



**PLANNING COMMISSION  
MEETING AGENDA  
REGULAR MEETING**

500 W. Big Beaver  
Troy, MI 48084  
(248) 524-3364  
www.troymi.gov  
planning@troymi.gov

Donald Edmunds, Chair, Philip Sanzica, Vice Chair  
Karen Crusse, Steve Gottlieb, Michael W. Hutson, Tom Krent  
Gordon Schepke, Thomas Strat and John J. Tagle

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**October 14, 2014**

**7:00 P.M.**

**Council Chambers**

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1. ROLL CALL
2. APPROVAL OF AGENDA
3. MINUTES – September 23, 2014 Special/Study Meeting  
October 1, 2014 Special Meeting
4. PUBLIC COMMENT – For Items Not on the Agenda

**PRELIMINARY SITE PLAN REVIEW**

5. PRELIMINARY SITE PLAN REVIEW (File Number SP 1000) – Proposed Penske Automotive Group Parking Lot Expansion, North side of Maple, West of Stephenson (1225 East Maple), Section 26, Currently Zoned IB (Integrated Industrial and Business) District

**OTHER BUSINESS**

6. POTENTIAL PRELIMINARY SITE PLAN APPLICATION – Potential Multifamily Residential Development, Southeast corner of Maple Road and Axtell (2785 West Maple), Section 32, Currently Zoned IB (Integrated Industrial and Business) District
7. PUBLIC COMMENT – Items on Current Agenda
8. PLANNING COMMISSION COMMENT

**ADJOURN**

**NOTICE:** People with disabilities needing accommodations for effective participation in this meeting should contact the City Clerk by e-mail at [clerk@troymi.gov](mailto:clerk@troymi.gov) or by calling (248) 524-3317 at least two working days in advance of the meeting. An attempt will be made to make reasonable accommodations.

Chair Edmunds called the Special/Study meeting of the Troy City Planning Commission to order at 7:00 p.m. on September 23, 2014 in the Council Board Room of the Troy City Hall.

1. ROLL CALL

Present:

- Karen Crusse
- Donald Edmunds
- Steve Gottlieb
- Michael W. Hutson
- Tom Krent
- Philip Sanzica
- Gordon Schepke
- Thomas Strat (arrived 7:04 p.m.)
- John J. Tagle

Also Present:

- R. Brent Savidant, Planning Director
- Lori Grigg Bluhm, City Attorney
- Kathy L. Czarnecki, Recording Secretary

2. APPROVAL OF AGENDA

**Resolution # PC-2014-09-048**

- Moved by: Tagle
- Seconded by: Sanzica

**RESOLVED**, To approve the Agenda as prepared.

- Yes: All present (8)
- Absent: Strat (arrived 7:04 p.m.)

**MOTION CARRIED**

3. APPROVAL OF MINUTES

**Resolution # PC-2014-09-049**

- Moved by: Gottlieb
- Seconded by: Sanzica

**RESOLVED**, To approve the minutes of the September 9, 2014 Regular meeting as published.

- Yes: All present (8)
- Absent: Strat (arrived 7:04 p.m.)

**MOTION CARRIED**

4. PUBLIC COMMENTS – Items not on the Agenda

There was no one present who wished to speak.

(Mr. Strat arrived at 7:04 p.m.)

5. ZONING BOARD OF APPEALS (ZBA) REPORT

Mr. Krent gave a report on the September 16, 2014 Zoning Board of Appeals meeting.

6. PLANNING AND ZONING REPORT

Mr. Savidant invited Planning Commission members to attend the Big Beaver Symposium on October 1, 2014 at the Community Center.

Ms. Bluhm gave an update on the Troy Transit Center.

**PRELIMINARY SITE PLAN REVIEW**

7. PRELIMINARY SITE PLAN REVIEW (File Number SP 998) – Proposed Murray Plaza, West side of Rochester between Vanderpool and Trombley (3385 Rochester), Section 22, Currently Zoned GB (General Business) District

Mr. Savidant stated the Preliminary Site Plan application does not meet setback and greenbelt requirements of the Zoning Ordinance and identified multiple variances that would have to be sought by the applicant prior to the Planning Commission action. Mr. Savidant strongly encouraged the petitioner to consider moving the building closer to Rochester Road. He said that would provide a better site plan design and eliminate having to seek variances from the Zoning Board of Appeals for which the applicant would have to demonstrate practical difficulty.

Ed Al-Saati of A&M Consultants and Hussane Oseili of Quality One Construction were present to represent the property owner. Mr. Al-Saati said he would inform his client of the Planning Consultant recommendation and discussion at tonight's meeting.

There was discussion on:

- Entry doors for both front and rear elevations.
- Attractive customer entrance in rear.
- Visually attractive front elevation.
- Screening single family residential.
- Street presence in relation to neighboring businesses.

**OTHER BUSINESS**

8. **PLANNING COMMISSION TRAINING** – Items on Current Agenda

Ms. Bluhm conducted a PowerPoint training presentation as a refresher for seasoned members and fundamental training for newer members.

9. **PUBLIC COMMENT** – Items on Current Agenda

There was no one present who wished to speak.

10. **PLANNING COMMISSION COMMENT**

There were general Planning Commission comments.

The Special/Study meeting of the Planning Commission adjourned at 9:00 p.m.

Respectfully submitted,

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Donald Edmunds, Chair

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Kathy L. Czarnecki, Recording Secretary

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Chair Edmunds called the Special Meeting of the Troy City Planning Commission to order at 7:03 p.m. on October 1, 2014 in the Council Chambers of the Troy City Hall.

1. ROLL CALL

Present:

- Karen Crusse
- Donald Edmunds
- Steve Gottlieb
- Michael W. Hutson
- Tom Krent
- Thomas Strat

Absent:

- Philip Sanzica
- Gordon Schepke
- John J. Tagle

Also Present:

- R. Brent Savidant, Planning Director
- Ben Carlisle, Carlisle/Wortman Associates, Inc.
- Allan Motzny, Assistant City Attorney

2. APPROVAL OF AGENDA

**Resolution # PC-2014-10-050**

- Moved by:                 Strat
- Seconded by:             Gottlieb

**RESOLVED**, To approve the Agenda as prepared.

- Yes:                         All present (6)
- Absent:                    Sanzica, Schepke, Tagle

**MOTION CARRIED**

3. PUBLIC COMMENTS – Items not on the Agenda

There was no one present who wished to speak.

**PRELIMINARY SITE PLAN REVIEW**

4. PRELIMINARY SITE PLAN REVIEW (File Number SP 997) – Proposed Kresge Foundation Headquarters Expansion, South side of Big Beaver, West of Coolidge (3215 W Big Beaver) Section 30, Currently Zoned BB (Big Beaver) District

Mr. Savidant explained the reason for the special meeting. He stated the project was incorrectly granted a building permit prior to receiving Preliminary Site Plan approval. Construction was halted until approval is granted. Internal processes were reviewed and approved so that this situation does not happen again.

Mr. Carlisle summarized the application.

Alan Barker, Project Architect, Valerio Dewalt Train, summarized the project.

There was general discussion on the item.

**Resolution # PC-2014-10-051**

Moved by: Hutson

Seconded by: Strat

**RESOLVED**, The Planning Commission approves relief of off-street parking requirements by supporting the shared parking arrangement with the abutting neighbor, as per Section 13.06.E of the City of Troy Zoning Ordinance.

**BE IT FURTHER RESOLVED**, That Preliminary Site Plan Approval, pursuant to Article 8 of the Zoning Ordinance, as requested for the proposed Kresge Foundation Headquarters addition, located on the south side of Big Beaver, west of Coolidge (3215 W Big Beaver), Section 30, within the BB (Big Beaver) District, be granted

Yes: All present (6)  
Absent: Sanzica, Schepke, Tagle

**MOTION CARRIED**

**OTHER BUSINESS**

- 5. **PUBLIC COMMENT** – Items on Current Agenda

There was no one present who wished to speak.

- 6. **PLANNING COMMISSION COMMENT**

There were general Planning Commission comments.

The Special/Study meeting of the Planning Commission adjourned at 8:00 p.m.

Respectfully submitted,

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Donald Edmunds, Chair

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R. Brent Savidant, Recording Secretary

DATE: October 7, 2014

TO: Planning Commission

FROM: R. Brent Savidant, Planning Director

SUBJECT: PRELIMINARY SITE PLAN REVIEW (File Number SP 1000) – Proposed Penske Automotive Group Parking Lot Expansion, North side of Maple, West of Stephenson (1225 East Maple), Section 26, Currently Zoned IB (Integrated Industrial and Business) District

The petitioner Nowak & Fraus, on behalf of property owner Penske Automotive Group, submitted the above referenced Preliminary Site Plan application for a proposed parking lot expansion.

The property is currently zoned IB (Integrated Industrial and Business) District. The Planning Commission is responsible for granting Preliminary Site Plan approval for this item.

The attached report prepared by Carlisle/Wortman Associates, Inc. (CWA), the City's Planning Consultant, summarizes the project. CWA prepared the report with input from various City departments including Planning, Engineering, Public Works and Fire. City Management supports the findings of fact contained in the report and the recommendations included therein.

Attachments:

1. Maps
2. Report prepared by Carlisle/Wortman Associates, Inc.

G:\SITE PLANS\SP 1000 Penske Automotive Group Sec 26\SP-1000 PC Memo 10 14 2014.docx

**PROPOSED RESOLUTION**

PRELIMINARY SITE PLAN REVIEW (File Number SP 1000) – Proposed Penske Automotive Group Parking Lot Expansion, North side of Maple, West of Stephenson (1225 East Maple), Section 26, Currently Zoned IB (Integrated Industrial and Business) District

**Resolution # PC-2014-10-**

Moved by:

Seconded by:

**RESOLVED**, That Preliminary Site Plan Approval, pursuant to Article 8 of the Zoning Ordinance, as requested for the proposed Penske Automotive Group Parking Lot Expansion, located on the north side of Maple, west of Stephenson (1225 East Maple), Section 26, within the IB (Integrated Industrial and Business) District, be granted, subject to the following:

1. All repair and maintenance activities shall be performed entirely within the enclosed building
2. Dismantled, wrecked, or inoperable vehicles or any vehicle parts or scrap of any kind shall not be stored outdoors
3. Confirm that pole height does not exceed 25-feet
4. Provide lighting cut sheets to confirm that the fixtures are fully shielded or full cut off
5. Reduce lighting along western and eastern property line
6. Provide a tree buffer of 1 large evergreen per 10 lineal feet, or 1 narrow evergreen per 5 lineal feet on the outside of the detention pond fence
7. Supplement the existing landscape buffer along the western property line with additional trees where there are existing gaps

\_\_\_\_\_ ) or

(denied, for the following reasons: \_\_\_\_\_) or

(postponed, for the following reasons: \_\_\_\_\_)

Yes:

No:

**MOTION CARRIED/FAILED**



Legend:

- Tax Parcel
- Road Centerline Text

417 0 208 417Feet

Scale 1: 2,500



**Legend:**

- Tax Parcel
- Road Centerline Text
- Form Based Zoning 2
  - (PUD) Planned Unit Development
  - (CF) Community Facilities District
  - (EP) Environmental Protection District
  - (BB) Big Beaver Road
  - (MR) Maple Road
  - (NN) Neighborhood Nodes (A-U)
  - (CB) Community Business
  - (GB) General Business
  - (IB) Integrated Industrial Business District
  - (O) Office Building District
  - (OM) Office Mixed Use
  - (P) Vehicular Parking District
  - (R-1A) One Family Residential District
  - (R-1B) One Family Residential District
  - (R-1C) One Family Residential District
  - (R-1D) One Family Residential District
  - (R-1E) One Family Residential District
  - (RT) One Family Attached Residential District
  - (MF) Multi-Family Residential
  - (MHP) Manufactured Housing
  - (UR) Urban Residential
  - (RC) Research Center District
  - (PV) Planned Vehicle Sales

467 0 233 467 Feet

Scale 1: 2,800



CARLISLE

WORTMAN  
associates, inc.

605 S. Main Street, Ste. 1  
Ann Arbor, MI 48104

(734) 662-2200  
(734) 662-1935 Fax

Date: September 26, 2014

## Preliminary Site Plan Review For City of Troy, Michigan

<b>Applicant:</b>	Penske Automotive Group, LLC
<b>Project Name:</b>	1225 East Maple Road
<b>Plan Date:</b>	September 15, 2014
<b>Location:</b>	1225 East Maple Road. North side of Maple Road, between Stephenson Highway and Rochester Road
<b>Zoning:</b>	IB, Integrated Industrial and Business District
<b>Action Requested:</b>	Preliminary Site Plan Approval

### PROJECT AND SITE DESCRIPTION

The applicant is requesting approval of a preliminary site plan for a 566 parking space vehicle storage area addition to the existing 255 space parking lot. The only other additional site plan improvement is the construction of a detention pond.

The vehicle storage area addition is accessory to the principal use of the building for automobile customization. The applicant receives finished vehicles and customizes them based on customer demand. All vehicle customization should be performed entirely within the building and the applicant should not store dismantled, wrecked, or inoperable vehicles or any vehicle parts or scrap of any kind outdoors.

The location of the vehicle storage area addition is in the rear of the site, behind the existing building. The area is currently grass with some trees. The applicant proposes a stormwater management area as a buffer between the single-family homes and the new parking area.

**Figure 1**  
**Aerial Image of Subject Site and Vicinity**



Surrounding Property Details

Direction	Zoning	Use
North	IB, Integrated Industrial and Business	Light Industrial/Warehouse
South	IB, Integrated Industrial and Business	Light Industrial/Warehouse
East	IB, Integrated Industrial and Business	Light Industrial/Warehouse
West	RT, One-Family Attached Residential	Residential

**NATURAL RESOURCES**

There are some existing trees that will be removed as part of the site development. The applicant is required to landscape the parking lot addition, as well as provide a buffer along the western property line. See landscape section below.

The applicant is adding a significant amount of impervious surface. Rather than provide a detention pond with slopes that require a chain link fence, we encourage the applicant to incorporate naturalized stormwater management best practices on site. The use of stormwater management best practices is encouraged as a standard for stormwater management as set forth in Section 12.02.A and D of the ordinance.

**Items to be Addressed:** Consider more naturalized stormwater management best practices on site.

**PARKING**

The applicant is providing a total of 821 spaces on site. Parking is sufficient.

**Items to be Addressed:** None

**LIGHTING**

A Photometric Plan and lighting details have been provided. The applicant proposes eighteen (18) two-headed pole mounted lights. Due to the adjacent residential, the pole height cannot exceed 25-feet. The applicant shall confirm the lighting pole height. In addition, the applicant shall confirm that the fixtures are fully shielded or full cut off. The photometric reading slightly exceeds the allowable light level at along the western (adjacent to residential) property line and the eastern property line.

**Items to be Addressed:** 1). Confirm that pole height does not exceed 25-feet; 2). Provide lighting cut sheets to confirm that the fixtures are fully shielded or full cut off; and 3). Reduce lighting along western and eastern property line.

**LANDSCAPING & SCREENING**

The applicant has provided a landscape plan.

	Required	Provided	Compliance
<u>Parking Lot Landscaping:</u> 1 tree for every 8 parking spaces. Trees may be located adjacent to parking lot with planning commission approval.	566 spaces / 8 spaces per tree = 71 trees	38 trees in parking lot and 33 along perimeter.	The total number complies, but the location along the perimeter requires Planning Commission approval
<u>General Site Landscaping:</u> 20% of site area shall be landscaped	213,755 sq ft x 20% = 42,751 sq ft  (Calculation is based on a total project site of 6.6 acres)	47,044 sq ft = 22%	Complies
<u>Screening:</u> Opaque fence, wall, or 1 large evergreen per 10 lineal feet or 1 narrow evergreen per 5 lineal feet.	Opaque fence, wall, or 1 large evergreen per 10 lineal feet or 1 narrow evergreen per 5 lineal feet along western property line.	There is an existing tree buffer along the western property line.	Complies with conditions.

The applicant is showing a tree buffer along the detention pond; however it appears that the buffer is inside the proposed chain link fence. The applicant should provide a tree buffer of 1 large evergreen per 10 lineal feet, or 1 narrow evergreen per 5 lineal feet on the outside of the detention pond fence.

In addition, there is a landscape buffer along the entire length of the western property line. The applicant should supplement that buffer with additional trees where there are existing gaps.

**Items to be Addressed:** 1). *Provide a tree buffer of 1 large evergreen per 10 lineal feet, or 1 narrow evergreen per 5 lineal feet on the outside of the detention pond fence; and 2). Supplement the landscape buffer along the western property line with additional trees where there are existing gaps.*

## RECOMMENDATIONS

We recommend preliminary site plan approval, with the following conditions:

1. *All repair and maintenance activities shall be performed entirely within the enclosed building*
2. *Dismantled, wrecked, or inoperable vehicles or any vehicle parts or scrap of any kind shall not be stored outdoors*
3. *Consider more naturalized stormwater management best practices on site*
4. *Confirm that pole height does not exceed 25-feet*
5. *Provide lighting cut sheets to confirm that the fixtures are fully shielded or full cut off*
6. *Reduce lighting along western and eastern property line*
7. *Provide a tree buffer of 1 large evergreen per 10 lineal feet, or 1 narrow evergreen per 5 lineal feet on the outside of the detention pond fence*
8. *Supplement the existing landscape buffer along the western property line with additional trees where there are existing gaps*



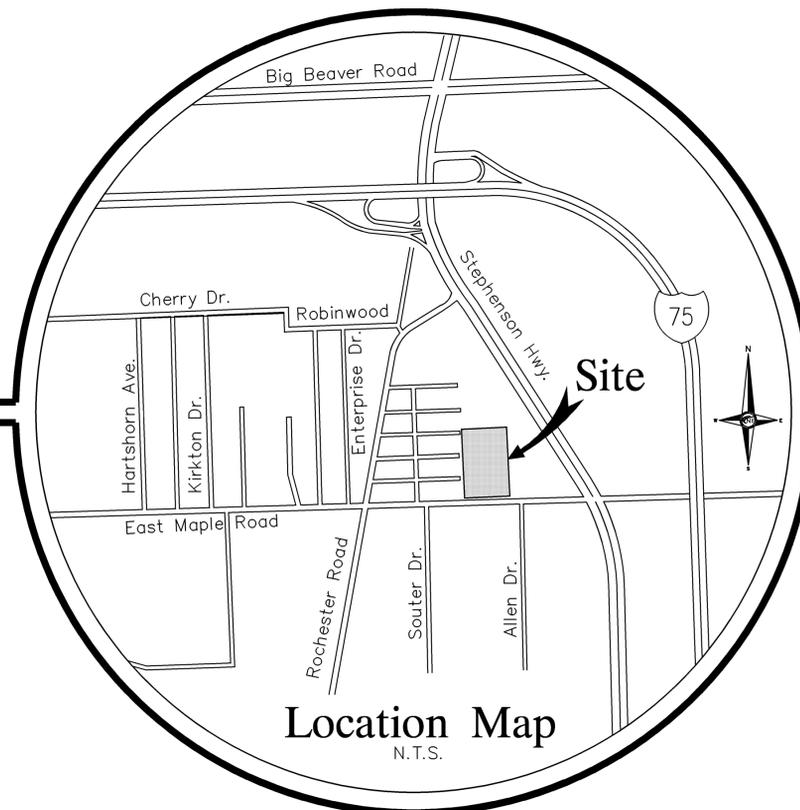
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CARLISLE/WORTMAN ASSOC., INC.  
Benjamin R. Carlisle, LEED AP, AICP

City of Troy,  
Oakland County, Michigan

PRELIMINARY SITE PLAN PACKAGE

Prepared For:  
PENSKE AUTOMOTIVE GROUP, LLC.



REVISIONS:  
09-15-14 ISSUED FOR SITE PLAN REVIEW

**Owner**

PENSKE AUTOMOTIVE GROUP  
2555 TELEGRAPH ROAD  
BLOOMFIELD HILLS, MICHIGAN 48302  
CONTACT:  
MR. JEFF ANDERSON  
PHONE: (248) 648-2574

**Civil Engineer**

NOWAK & FRAUS ENGINEERS  
46777 WOODWARD AVENUE  
PONTIAC, MICHIGAN 48342  
CONTACT:  
MR. JEFFREY J. HUHTA P.E., P.S.  
PHONE: (248) 332-7931  
FAX: (248) 332-8257

**Landscape Architect**

NOWAK & FRAUS ENGINEERS  
46777 WOODWARD AVENUE  
PONTIAC, MICHIGAN 48342  
PHONE: (248) 332-7931  
FAX: (248) 332-8257

**SHEET INDEX**

- S-0 COVER SHEET
- S-1 BOUNDARY, TOPOGRAPHIC, AND TREE SURVEY
- S-2 PRELIMINARY SITE PLAN
- S-3 NOTES AND DETAILS PLAN
  
- L-1 TREE PRESERVATION PLAN
- L-2 LANDSCAPE PLAN
  
- PHOTOMETRIC PLAN
  
- CITY OF TROY - STORM DETAIL SHEET
- CITY OF TROY - SOIL EROSION DETAIL SHEET

Project Name:

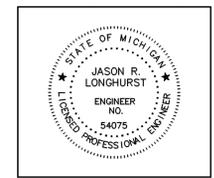
1225 East Maple Road

**LEGAL DESCRIPTION**

PARCEL 1 (TAX ITEM NO. 20-26-351-024):  
PART OF THE SOUTHWEST 1/4 OF SECTION 26 AND A PART OF THE SOUTHEAST 1/4 OF SECTION 27, TOWN 2 NORTH, RANGE 11 EAST, CITY OF TROY, OAKLAND COUNTY, MICHIGAN, DESCRIBED AS: COMMENCING AT THE SOUTHEAST CORNER OF SECTION 27; THENCE NORTH 00 DEGREES 13 MINUTES 23 SECONDS EAST A DISTANCE OF 43.00 FEET TO THE POINT OF BEGINNING; THENCE NORTH 89 DEGREES 45 MINUTES 00 SECONDS WEST, A DISTANCE OF 106.51 FEET; THENCE NORTH 29 DEGREES 36 MINUTES 52 SECONDS WEST, A DISTANCE OF 67.03 FEET; THENCE NORTH 00 DEGREES 11 MINUTES 46 SECONDS EAST, A DISTANCE OF 327.77 FEET; THENCE NORTH 50 DEGREES 11 MINUTES 46 SECONDS EAST, A DISTANCE OF 20.61 FEET; THENCE NORTH 00 DEGREES 11 MINUTES 46 SECONDS EAST, A DISTANCE OF 137.20 FEET; THENCE SOUTH 89 DEGREES 48 MINUTES 14 SECONDS EAST, A DISTANCE OF 124.62 FEET; THENCE NORTH 50 DEGREES 11 MINUTES 46 SECONDS EAST, A DISTANCE OF 58.95 FEET; THENCE SOUTH 89 DEGREES 48 MINUTES 14 SECONDS EAST, A DISTANCE OF 74.42 FEET; THENCE NORTH 00 DEGREES 11 MINUTES 46 SECONDS EAST, A DISTANCE OF 45.57 FEET; THENCE SOUTH 89 DEGREES 48 MINUTES 14 SECONDS EAST, A DISTANCE OF 80.28 FEET; THENCE NORTH 00 DEGREES 11 MINUTES 46 SECONDS EAST, A DISTANCE OF 23.43 FEET; THENCE SOUTH 89 DEGREES 48 MINUTES 14 SECONDS EAST, A DISTANCE OF 333.50 FEET; THENCE SOUTH 00 DEGREES 11 MINUTES 46 SECONDS WEST, A DISTANCE OF 23.43 FEET; THENCE SOUTH 89 DEGREES 48 MINUTES 14 SECONDS EAST, A DISTANCE OF 64.12 FEET; THENCE SOUTH 00 DEGREES 01 MINUTES 44 SECONDS WEST, A DISTANCE OF 619.94 FEET TO A POINT ON THE NORTH RIGHT OF WAY OF MAPLE ROAD (86 FEET WIDE); THENCE NORTH 89 DEGREES 48 MINUTES 14 SECONDS WEST, A DISTANCE OF 599.85 FEET TO THE POINT OF BEGINNING.

PARCEL 2 (TAX ITEM NO. 20-26-351-023):  
PART OF THE SOUTHWEST 1/4 OF SECTION 26 AND PART OF THE SOUTHEAST 1/4 OF SECTION 27, TOWN 2 NORTH, RANGE 11 EAST, CITY OF TROY, OAKLAND COUNTY, MICHIGAN, DESCRIBED AS: COMMENCING AT THE SOUTHEAST CORNER OF SECTION 27; THENCE NORTH 00 DEGREES 13 MINUTES 23 SECONDS EAST, A DISTANCE OF 43.00 FEET; THENCE NORTH 89 DEGREES 45 MINUTES 00 SECONDS WEST, A DISTANCE OF 106.51 FEET TO THE POINT OF BEGINNING; THENCE NORTH 89 DEGREES 45 MINUTES 00 SECONDS WEST, A DISTANCE OF 58.73 FEET TO THE POINT ON THE EASTERLY LINE OF STUMPF'S BEECH GROVE SUBDIVISION, ACCORDING TO THE PLAT THEREOF AS RECORDED IN LIBER 32, PAGE 11 OF PLATS, OAKLAND COUNTY RECORDS; THENCE NORTH 00 DEGREES 06 MINUTES 34 SECONDS WEST, A DISTANCE OF 856.83 FEET; THENCE SOUTH 89 DEGREES 48 MINUTES 14 SECONDS EAST, A DISTANCE OF 767.17 FEET; THENCE SOUTH 00 DEGREES 01 MINUTES 44 SECONDS WEST, A DISTANCE OF 237.10 FEET; THENCE NORTH 89 DEGREES 48 MINUTES 14 SECONDS WEST, A DISTANCE OF 64.12 FEET; THENCE NORTH 00 DEGREES 11 MINUTES 46 SECONDS EAST, A DISTANCE OF 23.43 FEET; THENCE NORTH 89 DEGREES 48 MINUTES 14 SECONDS WEST, A DISTANCE OF 333.50 FEET; THENCE SOUTH 00 DEGREES 11 MINUTES 46 SECONDS WEST, A DISTANCE OF 23.43 FEET; THENCE NORTH 89 DEGREES 48 MINUTES 14 SECONDS WEST, A DISTANCE OF 80.28 FEET; THENCE SOUTH 00 DEGREES 11 MINUTES 46 SECONDS WEST, A DISTANCE OF 45.57 FEET; THENCE NORTH 89 DEGREES 48 MINUTES 14 SECONDS WEST, A DISTANCE OF 74.42 FEET; THENCE SOUTH 50 DEGREES 11 MINUTES 46 SECONDS WEST, A DISTANCE OF 58.95 FEET; THENCE NORTH 89 DEGREES 48 MINUTES 14 SECONDS WEST, A DISTANCE OF 124.62 FEET; THENCE SOUTH 00 DEGREES 11 MINUTES 46 SECONDS WEST, A DISTANCE OF 137.20 FEET; THENCE SOUTH 50 DEGREES 11 MINUTES 46 SECONDS WEST, A DISTANCE OF 20.61 FEET; THENCE SOUTH 00 DEGREES 11 MINUTES 46 SECONDS WEST, A DISTANCE OF 327.77 FEET; THENCE SOUTH 29 DEGREES 36 MINUTES 52 SECONDS EAST, A DISTANCE OF 67.03 FEET TO THE POINT OF BEGINNING.

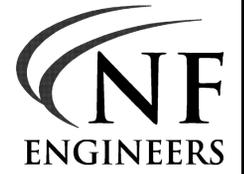
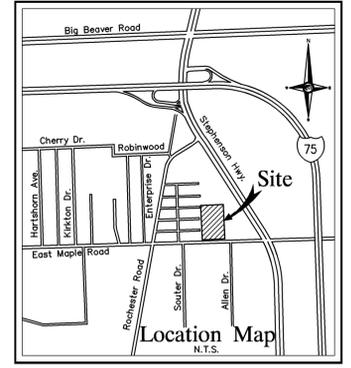
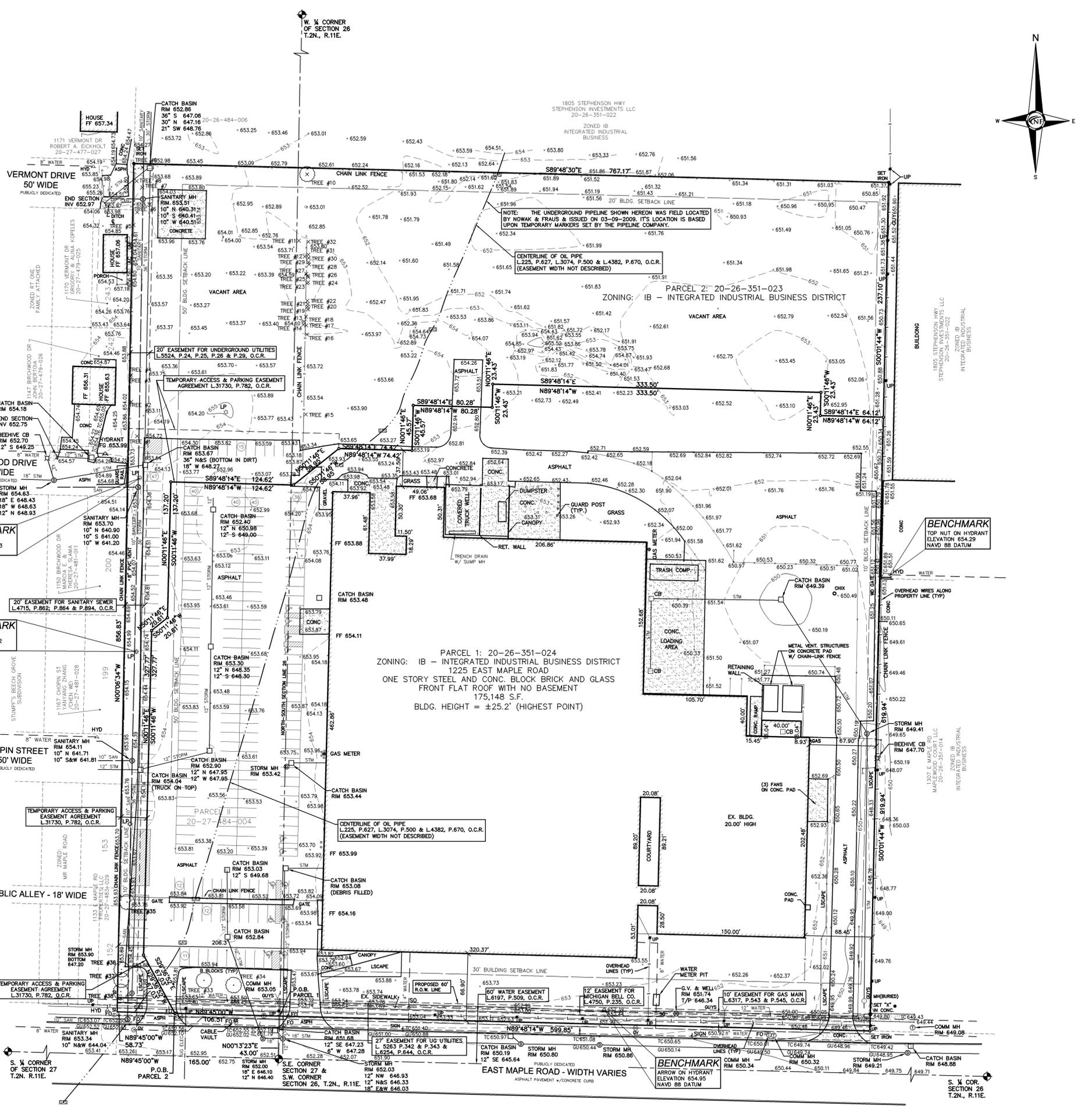
NFE JOB # F731-02



CIVIL ENGINEERS  
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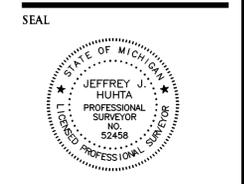
Tree #	Botanical Name	Common Name	Dia.	Type	Other Dia.	Condition
1	Ulmus pumila	Siberian Elm	15			Good
2	Acer regundo	Bowelder	10			Poor
3	Acer regundo	Bowelder	9			Poor
4	Acer regundo	Bowelder	10			Poor
5	Acer regundo	Bowelder	11			Poor
6	Acer regundo	Bowelder	9	Twin	4	Poor
7	Ulmus pumila	Siberian Elm	9			Poor
8	Acer regundo	Bowelder	5			Poor
9	Acer regundo	Bowelder	5			Poor
10	Populus deltoides	Eastern Cottonwood	13			Fair
11	Populus deltoides	Eastern Cottonwood	18			Fair
12	Populus deltoides	Eastern Cottonwood	15	Twin	13	Fair
13	Populus deltoides	Eastern Cottonwood	17			Fair
14	Populus deltoides	Eastern Cottonwood	22			Fair
15	Ulmus pumila	Siberian Elm	10			Poor
16	Populus deltoides	Eastern Cottonwood	19			Fair
17	Populus deltoides	Eastern Cottonwood	15	Twin	15	Poor
18	Ulmus pumila	Siberian Elm	20			Poor
19	Populus deltoides	Eastern Cottonwood	19	Multiple	16, 9	Fair
20	Populus deltoides	Eastern Cottonwood	10			Poor
21	Populus deltoides	Eastern Cottonwood	16			Fair
22	Populus deltoides	Eastern Cottonwood	14			Fair
23	Populus deltoides	Eastern Cottonwood	14			Fair
24	Populus deltoides	Eastern Cottonwood	12			Fair
25	Populus deltoides	Eastern Cottonwood	12			Fair
26	Populus deltoides	Eastern Cottonwood	16			Good
27	Populus deltoides	Eastern Cottonwood	17			Fair
28	Populus deltoides	Eastern Cottonwood	17			Dead
29	Populus deltoides	Eastern Cottonwood	12			Dead
30	Populus deltoides	Eastern Cottonwood	18			Good
31	Populus deltoides	Eastern Cottonwood	11	Twin	13	Dead
32	Populus deltoides	Eastern Cottonwood	28			Fair
33	Acer platanoides	Norway maple	6			Dead
34	Acer platanoides	Norway maple	8			Good
35	Ulmus pumila	Siberian Elm	12			Fair
36	Pinus nigra	Austrian Pine	9			Good
37	Pinus nigra	Austrian Pine	9			Fair
38	Pinus strobus	Austrian Pine	14			Good

**ANTHONY J. DOMBROWSKI**  
Registered Forester  
State of Michigan ID #3301000689



**CIVIL ENGINEERS  
LAND SURVEYORS  
LAND PLANNERS**

**NOWAK & FRAUS ENGINEERS**  
4677 WOODWARD AVE.  
PONTIAC, MI 48342-5032  
TEL. (248) 332-7931  
FAX. (248) 332-8257



**PROJECT**  
Penske - Troy  
1225 East Maple Road

**CLIENT**  
Penske Automotive Group  
2555 Telegraph Rd.  
Bloomfield Hills, MI 48302  
**CONTACT**  
Mr. Jeff Anderson  
Tel: 248-648-2574  
janderson@penskeautomotive.com

**PROJECT LOCATION**  
Part of the Southwest 1/4  
of Section 26  
T.2 North, R.11 East  
City of Troy, Oakland County,  
Michigan

**SHEET**  
Boundary, Topographic,  
and Tree Survey



**REVISIONS**  
09-15-2014 ISSUED FOR SITE PLAN REVIEW

**DRAWN BY:**  
J. Nelson  
**DESIGNED BY:**  
J. Huhta  
**APPROVED BY:**  
J. Huhta  
**DATE:**  
September 15, 2014

**SCALE:** 1" = 50'  
50 25 0 25 50 75  
**NFE JOB NO.** F731-02 **SHEET NO.** S-1

**LEGAL DESCRIPTION**

PARCEL 1 (TAX ITEM NO. 20-26-351-024): PART OF THE SOUTHWEST 1/4 OF SECTION 26 AND A PART OF THE SOUTHWEST 1/4 OF SECTION 27, TOWN 2 NORTH, RANGE 11 EAST, CITY OF TROY, OAKLAND COUNTY, MICHIGAN, DESCRIBED AS: COMMENCING AT THE SOUTHEAST CORNER OF SECTION 27; THENCE NORTH 00 DEGREES 13 MINUTES 23 SECONDS EAST A DISTANCE OF 43.00 FEET TO THE POINT OF BEGINNING; THENCE NORTH 89 DEGREES 45 MINUTES 00 SECONDS WEST, A DISTANCE OF 106.51 FEET; THENCE NORTH 23 DEGREES 36 MINUTES 52 SECONDS WEST, A DISTANCE OF 67.03 FEET; THENCE NORTH 00 DEGREES 11 MINUTES 46 SECONDS EAST, A DISTANCE OF 327.77 FEET; THENCE NORTH 50 DEGREES 11 MINUTES 46 SECONDS EAST, A DISTANCE OF 20.61 FEET; THENCE NORTH 00 DEGREES 11 MINUTES 46 SECONDS EAST, A DISTANCE OF 137.20 FEET; THENCE SOUTH 89 DEGREES 48 MINUTES 14 SECONDS WEST, A DISTANCE OF 124.62 FEET; THENCE NORTH 50 DEGREES 11 MINUTES 46 SECONDS EAST, A DISTANCE OF 56.95 FEET; THENCE SOUTH 89 DEGREES 48 MINUTES 14 SECONDS WEST, A DISTANCE OF 74.42 FEET; THENCE NORTH 00 DEGREES 11 MINUTES 46 SECONDS EAST, A DISTANCE OF 45.57 FEET; THENCE SOUTH 89 DEGREES 48 MINUTES 14 SECONDS WEST, A DISTANCE OF 80.28 FEET; THENCE NORTH 00 DEGREES 11 MINUTES 46 SECONDS EAST, A DISTANCE OF 23.43 FEET; THENCE SOUTH 89 DEGREES 48 MINUTES 14 SECONDS WEST, A DISTANCE OF 333.50 FEET; THENCE SOUTH 00 DEGREES 11 MINUTES 46 SECONDS WEST, A DISTANCE OF 23.43 FEET; THENCE SOUTH 89 DEGREES 48 MINUTES 14 SECONDS WEST, A DISTANCE OF 64.12 FEET; THENCE NORTH 00 DEGREES 01 MINUTES 44 SECONDS WEST, A DISTANCE OF 619.94 FEET TO A POINT ON THE NORTH RIGHT OF WAY OF MAPLE ROAD (86 FEET WIDE); THENCE NORTH 89 DEGREES 48 MINUTES 14 SECONDS WEST, A DISTANCE OF 599.85 FEET TO THE POINT OF BEGINNING.

PARCEL 2 (TAX ITEM NO. 20-26-351-023): PART OF THE SOUTHWEST 1/4 OF SECTION 26 AND A PART OF THE SOUTHWEST 1/4 OF SECTION 27, TOWN 2 NORTH, RANGE 11 EAST, CITY OF TROY, OAKLAND COUNTY, MICHIGAN, DESCRIBED AS: COMMENCING AT THE SOUTHEAST CORNER OF SECTION 27; THENCE NORTH 00 DEGREES 13 MINUTES 23 SECONDS EAST, A DISTANCE OF 43.00 FEET; THENCE NORTH 89 DEGREES 45 MINUTES 00 SECONDS WEST, A DISTANCE OF 106.51 FEET TO THE POINT OF BEGINNING; THENCE NORTH 23 DEGREES 36 MINUTES 52 SECONDS WEST, A DISTANCE OF 67.03 FEET; THENCE NORTH 00 DEGREES 11 MINUTES 46 SECONDS EAST, A DISTANCE OF 327.77 FEET; THENCE NORTH 50 DEGREES 11 MINUTES 46 SECONDS EAST, A DISTANCE OF 20.61 FEET; THENCE NORTH 00 DEGREES 11 MINUTES 46 SECONDS EAST, A DISTANCE OF 137.20 FEET; THENCE SOUTH 89 DEGREES 48 MINUTES 14 SECONDS WEST, A DISTANCE OF 124.62 FEET; THENCE NORTH 50 DEGREES 11 MINUTES 46 SECONDS EAST, A DISTANCE OF 56.95 FEET; THENCE SOUTH 89 DEGREES 48 MINUTES 14 SECONDS WEST, A DISTANCE OF 74.42 FEET; THENCE NORTH 00 DEGREES 11 MINUTES 46 SECONDS EAST, A DISTANCE OF 45.57 FEET; THENCE SOUTH 89 DEGREES 48 MINUTES 14 SECONDS WEST, A DISTANCE OF 80.28 FEET; THENCE NORTH 00 DEGREES 11 MINUTES 46 SECONDS EAST, A DISTANCE OF 23.43 FEET; THENCE SOUTH 89 DEGREES 48 MINUTES 14 SECONDS WEST, A DISTANCE OF 333.50 FEET; THENCE SOUTH 00 DEGREES 11 MINUTES 46 SECONDS WEST, A DISTANCE OF 23.43 FEET; THENCE SOUTH 89 DEGREES 48 MINUTES 14 SECONDS WEST, A DISTANCE OF 64.12 FEET; THENCE NORTH 00 DEGREES 01 MINUTES 44 SECONDS WEST, A DISTANCE OF 619.94 FEET TO A POINT ON THE NORTH RIGHT OF WAY OF MAPLE ROAD (86 FEET WIDE); THENCE NORTH 89 DEGREES 48 MINUTES 14 SECONDS WEST, A DISTANCE OF 599.85 FEET TO THE POINT OF BEGINNING.

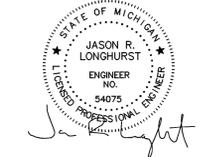
**TOPOGRAPHIC SURVEY NOTES**

ALL ELEVATIONS ARE EXISTING ELEVATIONS, UNLESS OTHERWISE NOTED.  
UTILITY LOCATIONS WERE OBTAINED FROM MUNICIPAL OFFICIALS AND RECORDS OF UTILITY COMPANIES, AND NO GUARANTEE CAN BE MADE TO THE COMPLETENESS, OR EXACTNESS OF LOCATION.  
THIS SURVEY MAY NOT SHOW ALL EASEMENTS OF RECORD UNLESS AN UPDATED TITLE POLICY IS FURNISHED TO THE SURVEYOR BY THE OWNER.

**LEGEND**

- MANHOLE
- HYDRANT
- MANHOLE
- UTILITY POLE
- EXISTING SANITARY SEWER
- EXISTING SAN. CLEAN OUT
- EXISTING WATER MAIN
- EXISTING STORM SEWER
- EX. R.Y. CATCH BASIN
- EXISTING BURIED CABLES
- OVERHEAD LINES
- LIGHT POLE
- SIGN
- EXISTING GAS MAIN

SEAL



PROJECT  
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1225 East Maple Road

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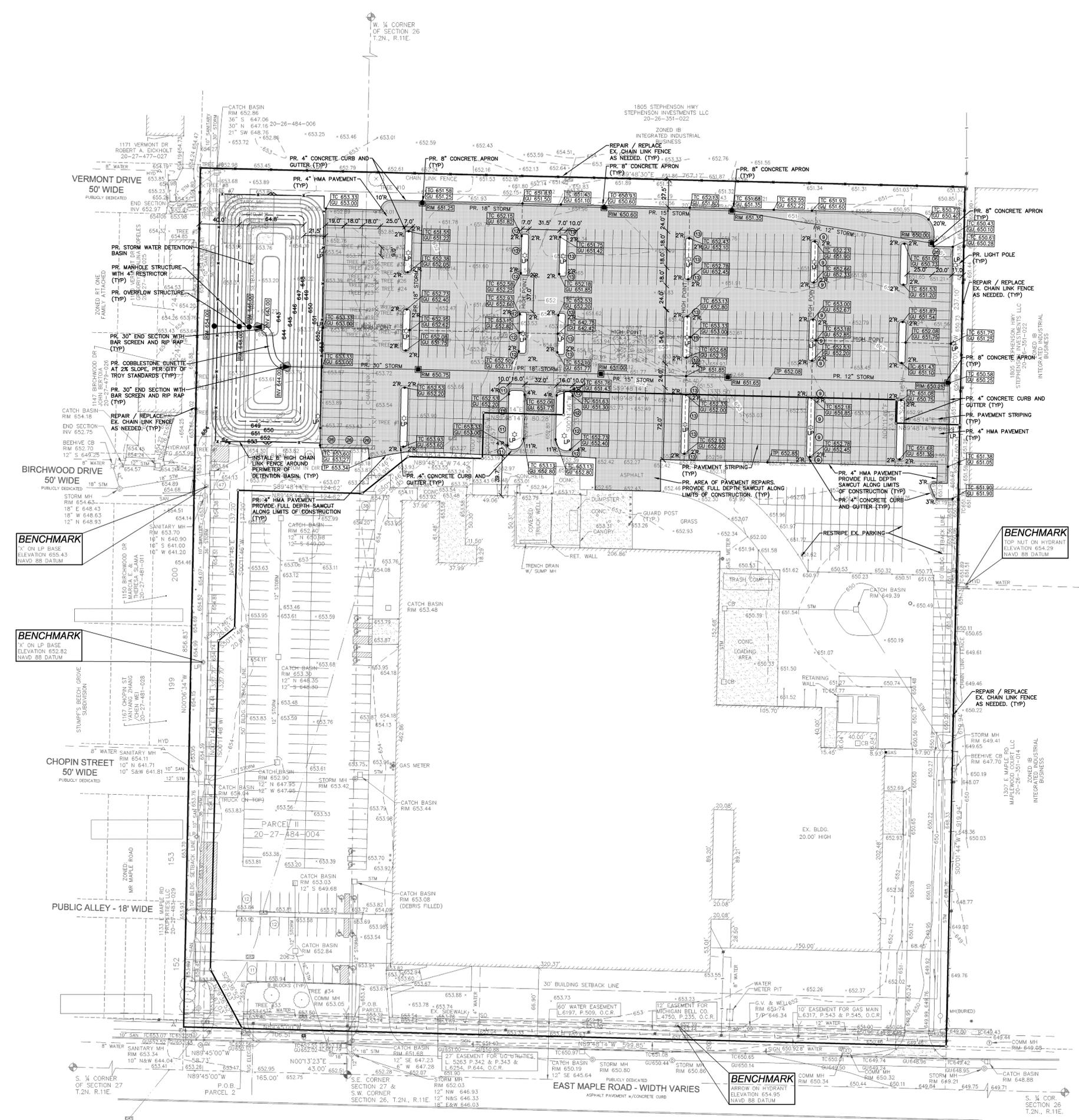
PROJECT LOCATION  
Part of the Southwest 1/4  
of Section 26  
T.2 North, R.11 East  
City of Troy, Oakland County,  
Michigan

SHEET  
Preliminary Site Plan



REVISIONS  
09-15-2014 ISSUED FOR SITE PLAN REVIEW

DRAWN BY:  
J. Klenk  
DESIGNED BY:  
J. Longhurst  
APPROVED BY:  
J. Huhta  
DATE:  
September 15, 2014  
SCALE: 1" = 50'  
50 25 0 25 50 75  
NFE JOB NO. SHEET NO.  
F731-02 S-2



**SITE DATA**

ZONING: IB - INDUSTRIAL BUSINESS DISTRICT		
MIN. YARD SETBACKS	REQUIRED	PROPOSED
FRONT	30.0 FT.	N/A
LEAST SIDE YARD	10.0 FT.	11.0 FT.
TOTAL SIDE YARDS	20.0 FT.	47.1 FT.
REAR	20.0 FT.	27.5 FT.

VEHICLE PARKING	
REQUIRED PARKING	PROPOSED
LIGHT INDUSTRIAL	1 SPACE / 550 SQ. FT. OF GROSS FLOOR AREA
REQUIRED SPACES	175,148 SQ.FT./550 SPACES = 318 SPACES
EXISTING SPACES =	255 SPACES
PROPOSED VEHICLE STORAGE SPACES =	566 SPACES
TOTAL PROVIDED SPACES =	821 SPACES

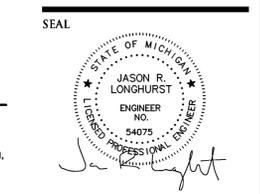
LOT COVERAGE (IMPROVEMENT AREA)	
PAVEMENT	151,250 SQ. FT. 70.64%
LANDSCAPE	47,238 SQ. FT. 22.06%
DETENTION POND:	15,635 SQ. FT. 7.30%
TOTAL	214,123 SQ. FT. 100.00%

**PAVING LEGEND**

	PROPOSED CONCRETE PAVEMENT
	PROPOSED ASPHALT PAVEMENT

**LEGEND**

	EXISTING SANITARY SEWER
	SAN. CLEAN OUT
	EXISTING WATERMAIN
	EXISTING STORM SEWER
	EX. R. Y. CATCH BASIN
	EXISTING BURIED CABLES
	OVERHEAD LINES
	LIGHT POLE
	EXISTING GAS MAIN
	PR. SANITARY SEWER
	PR. WATER MAIN
	PR. STORM SEWER
	PR. R. Y. CATCH BASIN
	PROPOSED LIGHT POLE
	PR. TOP OF CURB ELEVATION
	PR. GUTTER ELEVATION
	PR. TOP OF WALK ELEVATION
	PR. TOP OF P.W.M. ELEVATION
	FINISH GRADE ELEVATION



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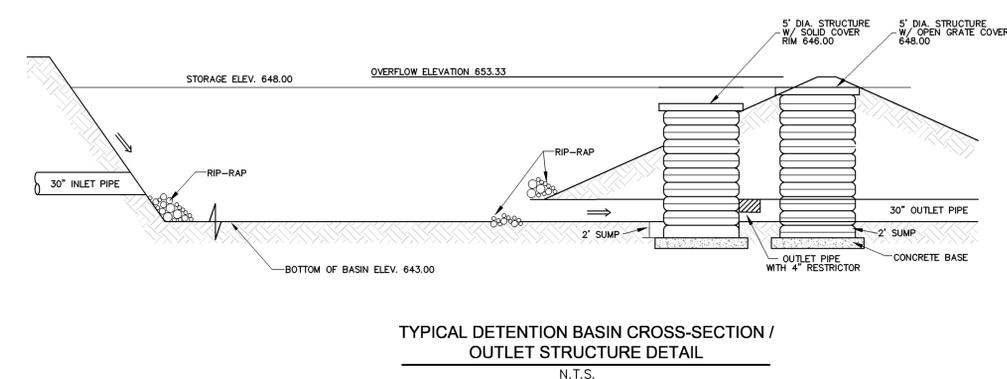
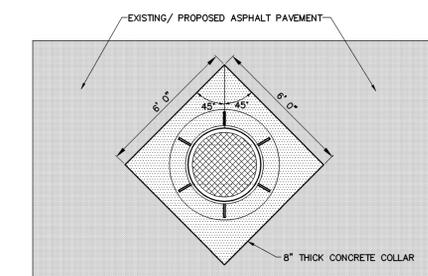
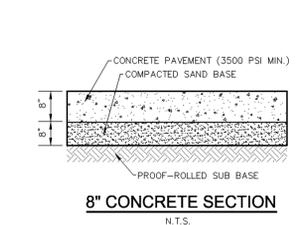
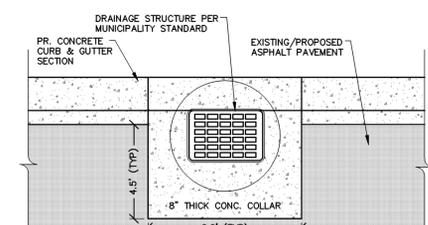
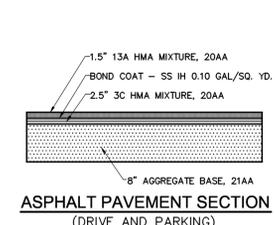
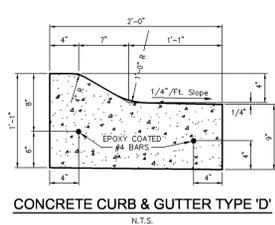
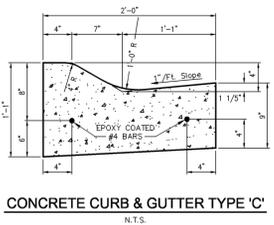
SHEET  
Notes and Details Plan



REVISIONS  
09-15-2014 ISSUED FOR SITE PLAN REVIEW

DRAWN BY:  
J. Klenk  
DESIGNED BY:  
J. Longhurst  
APPROVED BY:  
J. Huhta  
DATE:  
September 15, 2014

SCALE: N.T.S.  
50 25 0 25 50 75  
NFE JOB NO. SHEET NO.  
F731-02 S-3



City of Troy Storm Water Management Calculations - 25 Year Storm Event

Determine Site Runoff Coefficient:

Proposed Land Use:	Runoff Coefficient:	Drainage Area:
Pavement	0.90	3.470 Acres
Detention Basin	1.00	0.300 Acres
Landscape	0.20	1.140 Acres
<b>Total Acreage:</b>		<b>4.910 Acres</b>
<b>Weighted Runoff Coefficient "C" Factor =</b>	<b>0.744</b>	

Detention Calculation - Oakland County Method (Sites Less Than 5 Acres)  
(25 Year Storm Event)

Contributing Acreage:	4.910 Acres
Allowable Outflow, Q <sub>s</sub> :	0.200 CFS / Acre
Runoff Coefficient, C:	0.744 Imperviousness
Maximum Allowable Outflow, Q <sub>o</sub> :	0.269 CFS / (Acre * Imperv.)
Ts Storage Time (25 Year):	148.135 Minutes
Vs Storage Volume (25 Year):	9,443.55 CFS / (Acre * Imperv.)
Vt Total Volume (25 Year):	34,478.41 Cubic Feet
Volume Required:	34,478.41 Cubic Feet
Volume Provided:	40,236.80 Cubic Feet

Restrictor Calculation:

ORIFICE RESTRICTOR

FORMULA: Q = 0.62 \* A \* ((2gh)<sup>0.5</sup>)

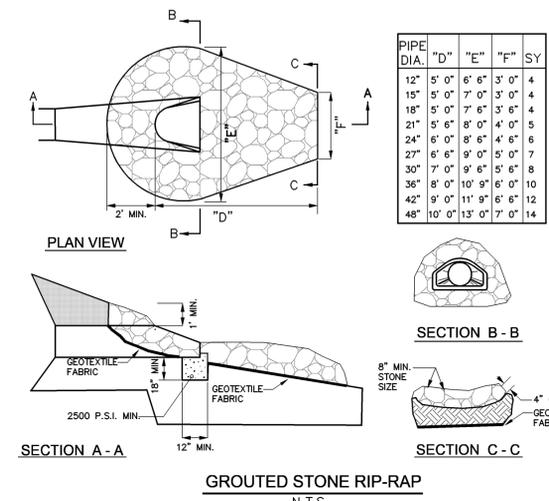
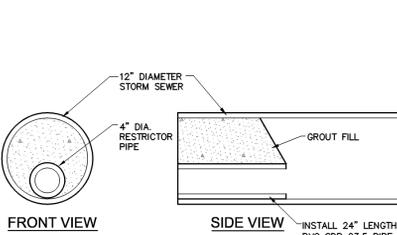
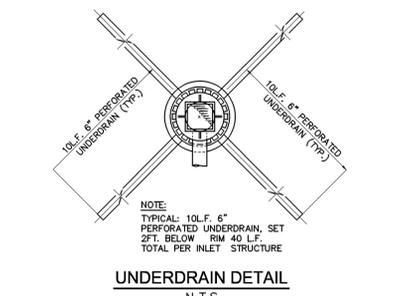
CONTRIBUTING ACREAGE:	4.91 ACRES
Q <sub>o</sub> ALLOWABLE OUTFLOW:	0.20 CFS/ACRE
STORAGE ELEVATION:	648.00 FEET
OUTLET ELEVATION:	643.00 FEET
DEPTH OF STORAGE:	5.00 FEET
Q <sub>o</sub> MAXIMUM ALLOWABLE OUTFLOW:	0.982 CFS
REQUIRED RESTRICTOR AREA:	0.089 SQUARE FEET
MAXIMUM RESTRICTOR SIZE:	4.023 INCH DIAMETER

PROVIDE 4" RESTRICTOR PIPE (SEE PLAN FOR LOCATION)

Job No: E156

Detention Storage Provided - Oakland County Method  
(25 Year Storm Event)

Elevation	Area (S.F.)	Depth (FT.)	Volume (C.F.)	Total Volume (C.F.)
648	13988.4	1	12,316.40	40,236.80
647	11264.4	1	10,276.40	27,920.40
646	9288.4	1	8,364.40	17,644.00
645	7440.4	1	6,174.40	9,279.60
644	4908.4	1	3,105.20	3,105.20
643	1302	1		
<b>Total Vol. Provided at H.W. Elevation (733.75):</b>			<b>40,236.80</b>	<b>Cubic Feet</b>



**GENERAL PAVING NOTES**

PAVEMENT SHALL BE OF THE TYPE, THICKNESS AND CROSS SECTION AS INDICATED ON THE PLANS AND AS FOLLOWS:

**CONCRETE:**  
PORTLAND CEMENT TYPE IA (AIR-ENTRAINED) WITH A MINIMUM CEMENT CONTENT OF SIX SACKS PER CUBIC YARD, MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3,500 PSI AND A SLUMP OF 1 1/2 TO 3 INCHES.

**ASPHALT:**  
BASE COURSE - MDT BITUMINOUS MIXTURE NO. 1100T, 20AA; SURFACE COURSE - MDT BITUMINOUS MIXTURE NO. 1100T, 20AA; ASPHALT CEMENT PENETRATION GRADE 85-100, BOND COAT - MDT SS-1H EMULSION AT 0.10 GALLON PER SQUARE YARD; MAXIMUM 2 INCH LIFT.

PAVEMENT BASE SHALL BE COMPACTED TO 98% OF THE MAXIMUM DENSITY (MODIFIED PROCTOR) PRIOR TO PLACEMENT OF PROPOSED PAVEMENT. EXISTING SUB-BASE SHALL BE PROOF-ROLLED IN THE PRESENCE OF THE ENGINEER TO DETERMINE STABILITY.

ALL CONCRETE PAVEMENT, DRIVEWAYS, CURB & GUTTER, ETC. SHALL BE SPRAY CURED WITH WHITE MEMBRANE CURING COMPOUND IMMEDIATELY FOLLOWING FINISHING OPERATION.

ALL CONCRETE PAVEMENT JOINTS SHALL BE FILLED WITH HOT POURED RUBBERIZED ASPHALT JOINT SEALING COMPOUND IMMEDIATELY AFTER SAWCUT OPERATION. FEDERAL SPECIFICATION SS-5164.

ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARDS AND SPECIFICATIONS OF THE MUNICIPALITY AND THE MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, CURRENT EDITION.

ALL TOP OF CURB ELEVATIONS, AS SHOWN ON THE PLANS, ARE CALCULATED FOR A 6" CONCRETE CURB UNLESS OTHERWISE NOTED.

ALL SIDEWALK RAMPS, CONFORMING TO PUBLIC ACT NO. 8, 1993, SHALL BE INSTALLED AS INDICATED ON THE PLANS.

CONSTRUCTION OF A NEW OR RECONSTRUCTED DRIVE APPROACH CONNECTING TO AN EXISTING STATE OR COUNTY ROADWAY SHALL BE ALLOWED ONLY AFTER AN APPROVED PERMIT HAS BEEN SECURED FROM THE AGENCY HAVING JURISDICTION OVER SAID ROADWAY.

FOR ANY WORK WITHIN THE PUBLIC RIGHT-OF-WAY, THE CONTRACTOR SHALL PAY FOR AND SECURE ALL NECESSARY PERMITS AND LICENSES AS REQUIRED BY THE AGENCY.

EXISTING TOPSOIL, VEGETATION AND ORGANIC MATERIALS SHALL BE STRIPPED AND REMOVED FROM PROPOSED PAVEMENT AREA PRIOR TO PLACEMENT OF BASE MATERIALS.

EXPANSION JOINTS SHOULD BE INSTALLED AT THE END OF ALL INTERSECTION RADIUS.

SIDEWALK RAMPS, CONFORMING TO PUBLIC ACT NO. 8, 1973, SHALL BE INSTALLED AS SHOWN AT ALL STREET INTERSECTIONS AND AT ALL BARRIER FREE PARKING AREAS AS INDICATED ON THE PLANS.

ALL PAVEMENT AREAS SHALL BE PROOF-ROLLED UNDER THE SUPERVISION OF A GEOTECHNICAL ENGINEER PRIOR TO THE PLACEMENT OF BASE MATERIALS AND PAVING MATERIALS.

FILL AREAS SHALL BE MACHINE COMPACTED IN UNIFORM LIFTS NOT EXCEEDING 9 INCHES TO 98% OF THE MAXIMUM DENSITY (MODIFIED PROCTOR) PRIOR TO PLACEMENT OF THICK PROPOSED PAVEMENT.

**STORM SEWER NOTES**

ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARDS AND SPECIFICATIONS OF THE MUNICIPALITY. THE MUNICIPALITY STANDARD NOTES, DETAILS AND SPECIFICATIONS SHALL BE INCORPORATED AS PART OF THEIR PLANS.

ALL STORM SEWER TRENCHES UNDER OR WITHIN THREE (3) FEET OF EXISTING OR PROPOSED PAVEMENT SHOULD BE BACKFILLED WITH MDT CLASS II MATERIAL (SAND) AND BE MACHINE COMPACTED TO A MINIMUM OF 95% OF THE MATERIAL'S MAXIMUM DENSITY. PAVEMENT SHALL INCLUDE PARKING LOTS, DRIVE APPROACHES, CURB & GUTTER AND ADJACENT WALLS.

ALL STORM SEWER PIPE SHALL BE INSTALLED ON CLASS "B" BEDDING OR BETTER UNLESS OTHERWISE INDICATED ON THE PLANS.

STORM SEWER SHALL BE OF THE TYPE, SIZE & CLASS DESIGNATION INDICATED ON THE PLANS AND SHALL BE INSTALLED AT THE PROPOSED LINE AND GRADE INDICATED.

ALL STORM SEWER PIPE SHALL BE REINFORCED CONCRETE PIPE CONFORMING TO ASTM SPECIFICATION C-76, CL. IV.

ALL MANHOLE, CATCH BASIN, INLET, REAR YARD DRAIN FRAMES AND COVERS SHALL BE AS INDICATED ON THE PLANS IN ACCORDANCE WITH MUNICIPALITY STANDARDS.

THE CONTRACTOR SHALL NOTIFY MISS DIG (1-800-482-7171) A MINIMUM OF THREE (3) WORKING DAYS PRIOR TO THE START OF CONSTRUCTION.

EXACT GRAPES AND INVERTS OF PROPOSED STORM SEWER ARE TO BE CHECKED WITH THE FIELD ENGINEER PRIOR AND DURING INSTALLATION. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE DESIGN ENGINEER OF ANY PLAN INCONSISTENCY AN/OR UTILITY CONFLICTS.

ALL STORM SEWER PIPE JOINTS SHALL BE "PREMIUM JOINT" MODIFIED GROOVED TONGUE, (M.G.T.) WITH SYNTHETIC RUBBER GASKETS CONFORMING TO ASTM SPECIFICATION C-443 & C-361 UNLESS OTHERWISE INDICATED ON THE PLANS. ALTERNATE JOINT CONNECTION MAY BE STANDARD GROOVED TONGUE WITH COLD MASTIC (DEWIT #10 JOINT COMPOUND OR EQUAL).

FACTORY MANUFACTURED PRECAST TEE SECTIONS SHALL BE USED FOR ROOF DRAINS AND/OR SUMP PUMP LEADS AND LATERALS WHERE INDICATED ON THE PLANS. BLIND TUB CONNECTIONS INTO STORM SEWER WILL NOT BE PERMITTED BY BREAKING PIPE WALL.

THE UNDERGROUND SITE CONTRACTOR SHALL INSTALL ALL STORM SEWER BUILDING LEADS TO WITHIN FIVE (5) FEET OF PROPOSED BUILDING.

GROUTED RIP RAP SHALL BE INSTALLED AT THE ENDS OF ALL CULVERTS AND END SECTIONS. GROUTED RIP RAP SHALL LIKEWISE BE INSTALLED AT OUTLET POINTS IN DETENTION AND SEDIMENTATION FACILITY. THE MINIMUM WIDTH OF THE RIP RAP SHALL BE TWICE THE OUTSIDE DIAMETER OF THE PIPE. THE RIP RAP SHALL EXTEND FROM THE BOTTOM OF THE SLOPE TO THE PIPE INVERT.

THE CONTRACTOR SHALL PAY FOR AND SECURE ALL NECESSARY PERMITS AND LICENSES AS REQUIRED FOR ALL SITE INSPECTION.

**IRRIGATION**

THE CONTRACTOR SHALL MAINTAIN OR REPAIR ANY EXISTING IRRIGATION SYSTEMS WITHIN THE PROJECT AREA UNLESS THE DRAWINGS CALL FOR THE IRRIGATION SYSTEM TO BE REMOVED. THE OWNER AND NFE MAKE NO REPRESENTATIONS, WARRANTY OR GUARANTY AS TO THE LOCATION OF THE IRRIGATION SYSTEM. THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO PROTECT THE IRRIGATION SYSTEM DURING CONSTRUCTION ACTIVITIES. COMPENSATION FOR MAINTAINING OR REPAIRING EXISTING IRRIGATION SYSTEMS SHALL BE CONSIDERED INCLUDED IN THE CONTRACT PRICE(S) UNLESS SPECIFIC IRRIGATION SYSTEM REPAIR ITEMS ARE INCLUDED IN THE ACCEPTED BID PROPOSAL.

**SUB-SOIL CONDITIONS**

ANY SOIL BORING PROVIDED BY THE OWNER AND/OR ENGINEER IS PROVIDED FOR INFORMATIONAL PURPOSES ONLY. THIS INFORMATION IS NOT OFFERED AS EVIDENCE OF GROUND CONDITIONS THROUGHOUT THE PROJECT AND ONLY REFLECT THE GROUND CONDITIONS AT THE LOCATION OF THE BORING ON THE DATE THEY WERE TAKEN.

THE ACCURACY AND RELIABILITY OF THE SOIL LOGS AND REPORT ARE NOT WARRANTED OR GUARANTEED IN ANY WAY BY THE OWNER OR ENGINEER AS TO THE SOIL CONDITIONS FOUND ON THE SITE. THE CONTRACTOR SHALL MAKE THEIR OWN DETERMINATION AND SUB-SOIL INVESTIGATION AND SECURE OTHER SUCH INFORMATION AS THE CONTRACTOR CONSIDERS NECESSARY TO DO THE WORK PROPOSED AND IN PREPARATION OF THEIR BID.

**SUBGRADE UNDERCUTTING AND PREPARATION**

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REMOVE ANY AND ALL SOILS WHICH DO NOT CONFORM TO THE PLANS AND SPECIFICATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE A SUBGRADE IN CONFORMANCE WITH THE PROJECT PLANS AND/OR SPECIFICATIONS. THE MEANS AND METHODS USED TO ACHIEVE THE REQUIRED RESULT SHALL REST SOLELY WITH THE CONTRACTOR.

ANY AREAS OF UNDERCUTTING THAT RESULT IN ADDITIONAL OR EXTRA WORK BECAUSE THEY COULD NOT BE IDENTIFIED BY THE CONTRACTOR'S PRE-BID SITE OBSERVATION OR ARE NOT SET FORTH IN THE PLANS AND SPECIFICATIONS, SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER AND ENGINEER BEFORE ANY EXTRA WORK IS PERFORMED. THE CONTRACTOR SHALL MAKE A REQUEST FOR ANY ADDITIONAL COMPENSATION FOR THE UNDERCUTTING IN WRITING AND THE REQUEST SHALL CONFORM TO THE CONTRACT'S CHANGE ORDER PROVISIONS.

**STRUCTURE BACKFILL**

STRUCTURAL BACKFILL SHALL BE PLACED IN CONFORMANCE WITH THE PROJECT PLANS, SPECIFICATIONS OR AS REQUIRED BY THE COMMUNITY, GOVERNMENT AGENCY OR UTILITY THAT HAS JURISDICTION OVER THE WORK.

**TRENCH BACKFILL**

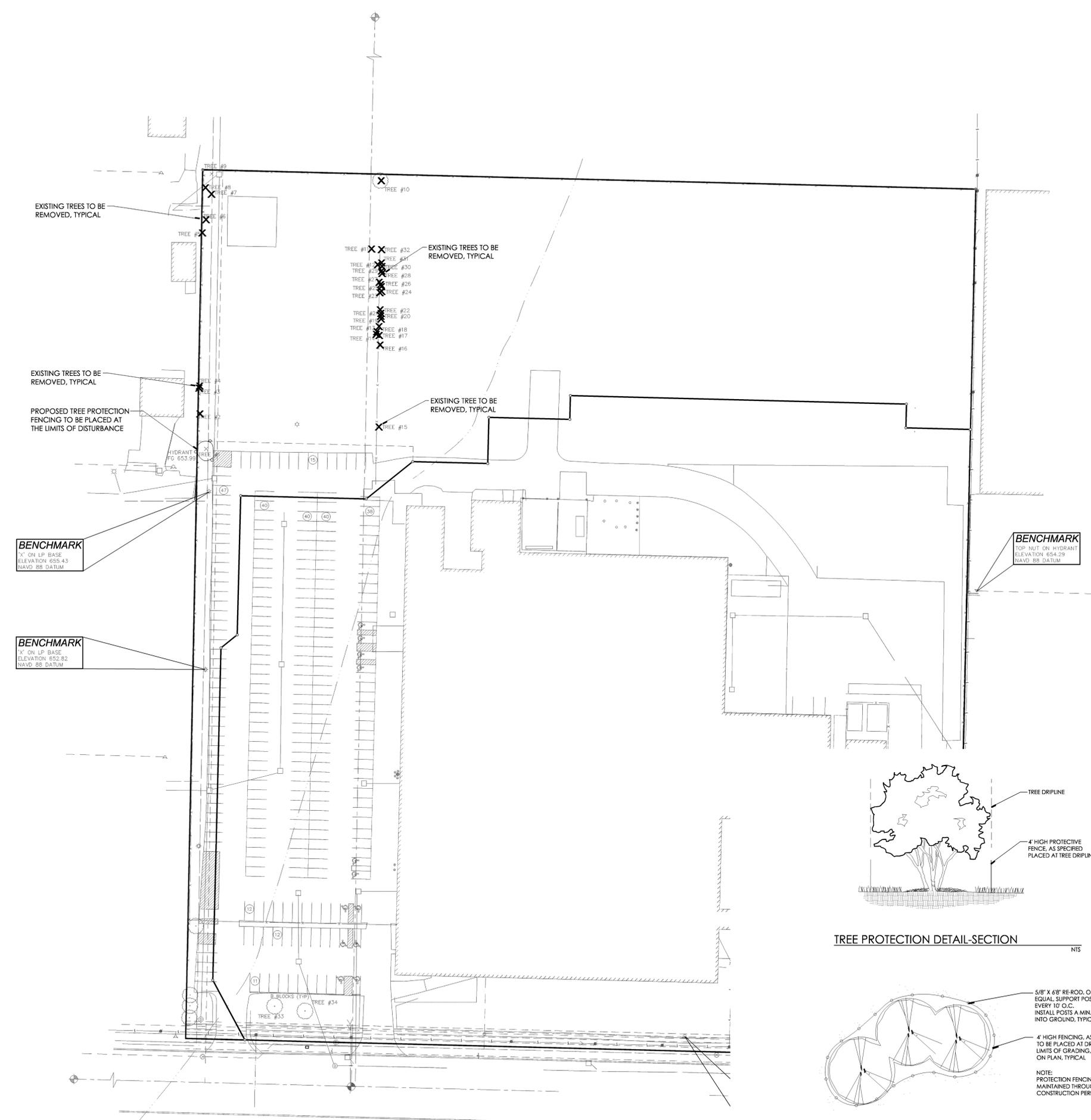
TRENCH BACKFILL SHALL BE PLACED IN CONFORMANCE WITH THE PLANS AND/OR SPECIFICATIONS. TRENCH BACKFILL SHALL ALSO BE INSTALLED IN CONFORMANCE WITH THE COMMUNITY REQUIREMENTS OR AGENCY/UTILITY GOVERNING SAID TRENCH CONSTRUCTION. IN THE CASE OF CONFLICTING REQUIREMENTS, THE MORE STRINGENT SHALL APPLY.

**EARTH BALANCE / GRADING**

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE WHETHER THE SITE EARTHWORK BALANCES OR NOT. ANY EXCESS CUT MATERIAL SHALL BE DISPOSED OF BY THE CONTRACTOR. IN A LIKE MANNER, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO IMPORT APPROVED FILL MATERIAL AND PLACE IT AS REQUIRED TO ATTAIN THE SITE GRADE AND COMPACTION REQUIREMENTS PER THE ENGINEER'S PLAN AND ALL APPLICABLE GOVERNMENTAL STANDARDS. THE ENGINEER AND OWNER MAKE NO REPRESENTATION AS TO THE QUANTITIES THAT MAY BE NEEDED TO CREATE A BALANCED EARTHWORK CONDITION OR THAT THE SITE EARTHWORK IS BALANCED.

**SOIL EROSION / SEDIMENTATION CONTROL**

THE CONTRACTOR SHALL OBTAIN THE REQUIRED SOIL EROSION PERMIT AND SATISFY ALL REGULATORY REQUIREMENTS FOR CONTROLLING SOIL EROSION AND SEDIMENT TRANSPORT. THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS. THE ENGINEER AND OWNER ARE NOT RESPONSIBLE FOR INSPECTION OR APPROVAL OF THE CONTRACTOR'S WORK IN CONNECTION WITH SATISFYING THE SOIL EROSION PERMIT REQUIREMENTS UNLESS SPECIFICALLY STATED IN THE CONTRACT DOCUMENTS.



**GENERAL TREE PROTECTION NOTES**

- APPROVED TREE PROTECTION SHALL BE ERRECTED PRIOR TO THE START OF CONSTRUCTION ACTIVITIES, AND SHALL REMAIN IN PLACE UNTIL THE CONSTRUCTION IS COMPLETE.
- ALL UNDERSTORY VEGETATION WITHIN THE LIMITS OF PROTECTIVE FENCING SHALL BE PRESERVED.
- NO PERSON MAY CONDUCT ANY ACTIVITY WITHIN THE DRIP LINE OF ANY TREE DESIGNATED TO REMAIN, INCLUDING BUT NOT LIMITED TO, PLACING SOLVENTS, BUILDING MATERIALS, CONSTRUCTION EQUIPMENT, OR SOIL DEPOSITS WITHIN THE DRIP LINE.
- WHERE GROUPINGS OF TREES ARE TO REMAIN, TREE FENCING SHALL BE PLACED AT THE LIMITS OF GRADING LINE.
- ALL UTILITY SERVICE REQUESTS MUST INCLUDE NOTIFICATION TO THE INSTALLER THAT PROTECTED TREES MUST BE AVOIDED. ALL TRENCHING SHALL OCCUR OUTSIDE OF THE PROTECTIVE FENCING.
- SWALES SHALL BE ROUTED TO AVOID THE AREA WITHIN THE DRIP LINES OF PROTECTED TREES.
- TREES LOCATED ON ADJACENT PROPERTIES THAT MAY BE AFFECTED BY CONSTRUCTION ACTIVITIES MUST BE PROTECTED.
- ROOT ZONES OF PROTECTED TREES SHOULD BE SURROUNDED WITH RIGIDLY STAKED FENCING.
- THE PARKING OF IDE AND RUNNING EQUIPMENT SHALL BE PROHIBITED UNDER THE DRIP LINE OF PROTECTED TREES.
- THE STRIPPING OF TOPSOIL FROM AROUND PROTECTED TREES SHALL BE PROHIBITED.
- ALL TREES TO BE REMOVED SHALL BE CUT AWAY FROM TREES TO REMAIN.
- THE GRUBBING OF UNDERSTORY VEGETATION WITHIN CONSTRUCTION AREAS SHOULD BE CLEARED BY CUTTING VEGETATION AT THE GROUND WITH A CHAINSAW OR MINIMALLY WITH A H2020 AXE.
- THE CONTRACTOR IS RESPONSIBLE FOR THE REPLACEMENT PER ORDINANCE GUIDELINES, FOR THE DAMAGE OR REMOVAL OF ANY TREE DESIGNATED TO REMAIN.
- TREES TO BE REMOVED SHALL BE FIELD VERIFIED, EVALUATED AND FLAGGED FOR REMOVAL, BY THE LANDSCAPE ARCHITECT OR FORESTER, ONLY AS DIRECTED BY THE OWNER OR OWNERS REPRESENTATIVE.

**TREE PRESERVATION SUMMARY**

TOTAL TREES SURVEYED: 38  
TOTAL TREES TO BE REMOVED: 31  
MINUS DEAD TREES: -2  
NET TREES TO BE REMOVED: 29

**TREE PROTECTION LEGEND**

- #20 X EXISTING TREES TO REMAIN
- X#27 EXISTING TREES TO BE REMOVED
- PROPOSED TREE PROTECTION FENCING

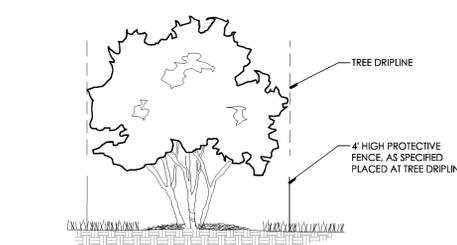
**Tree Inventory List**

Client Name: Penske  
Job Location: 1225 E. Maple, Troy  
Date Completed: 9/3/2014

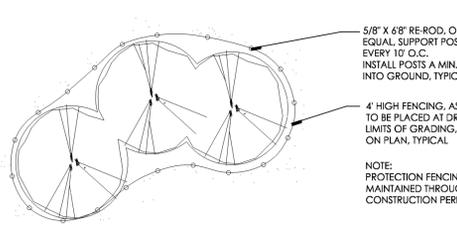
*Condition Description Notes:*  
"Good" - no observed structural defects  
"Fair" - minor structural defects, marginal form, some insect activity noted  
"Poor" - major structural defects, poor form, insect infested

*\*Structural defects may include decayed wood, cracks, root problems, weak branch unions, cankers, poor tree architecture, dead/failed branches due to various causes.*

Tree #	Botanical Name	Common Name	Dia.	Type	Other Dia.	Condition
1	Ulmus pumila	Siberian Elm	15			Good
2	Acer negundo	Boxelder	10			Poor
3	Acer negundo	Boxelder	9			Poor
4	Acer negundo	Boxelder	10			Poor
5	Acer negundo	Boxelder	11			Poor
6	Acer negundo	Boxelder	9	Twin	4	Poor
7	Ulmus pumila	Siberian Elm	8			Poor
8	Acer negundo	Boxelder	5			Poor
9	Acer negundo	Boxelder	5			Poor
10	Populus deltoides	Eastern Cottonwood	13			Poor
11	Populus deltoides	Eastern Cottonwood	18			Fair
12	Populus deltoides	Eastern Cottonwood	15	Twin	13	Fair
13	Populus deltoides	Eastern Cottonwood	17			Poor
14	Populus deltoides	Eastern Cottonwood	22			Fair
15	Ulmus pumila	Siberian Elm	10			Poor
16	Populus deltoides	Eastern Cottonwood	18			Fair
17	Populus deltoides	Eastern Cottonwood	15	Twin	15	Poor
18	Populus deltoides	Eastern Cottonwood	20			Good
19	Populus deltoides	Eastern Cottonwood	19	Multiple	16, 9	Fair
20	Populus deltoides	Eastern Cottonwood	10			Poor
21	Populus deltoides	Eastern Cottonwood	16			Good
22	Populus deltoides	Eastern Cottonwood	14			Fair
23	Populus deltoides	Eastern Cottonwood	14			Fair
24	Populus deltoides	Eastern Cottonwood	12			Fair
25	Populus deltoides	Eastern Cottonwood	12			Fair
26	Populus deltoides	Eastern Cottonwood	16			Good
27	Populus deltoides	Eastern Cottonwood	17			Fair
28	Populus deltoides	Eastern Cottonwood	17			Dead
29	Populus deltoides	Eastern Cottonwood	12			Dead
30	Populus deltoides	Eastern Cottonwood	16	Twin	13	Good
31	Populus deltoides	Eastern Cottonwood	11			Fair
32	Populus deltoides	Eastern Cottonwood	28			Fair
33	Acer platanoides	Norway maple	6			Dead
34	Acer platanoides	Norway maple	8			Good
35	Ulmus pumila	Siberian Elm	12			Fair
36	Pinus nigra	Austrian Pine	9			Fair
37	Pinus nigra	Austrian Pine	9			Good
38	Pinus nigra	Austrian Pine	16			Good



TREE PROTECTION DETAIL-SECTION



TREE PROTECTION DETAIL-PLAN

SEAL

PROJECT  
Penske - Troy  
1225 East Maple Road

CLIENT  
Penske Automotive Group  
2555 Telegraph Rd.  
Bloomfield Hills, MI 48302  
CONTACT  
Mr. Jeff Anderson  
Tel: 248-648-2574  
janderson@penskeautomotive.com

PROJECT LOCATION  
Part of the Southwest 1/4  
of Section 26  
T.2 North, R.11 East  
City of Troy, Oakland County,  
Michigan

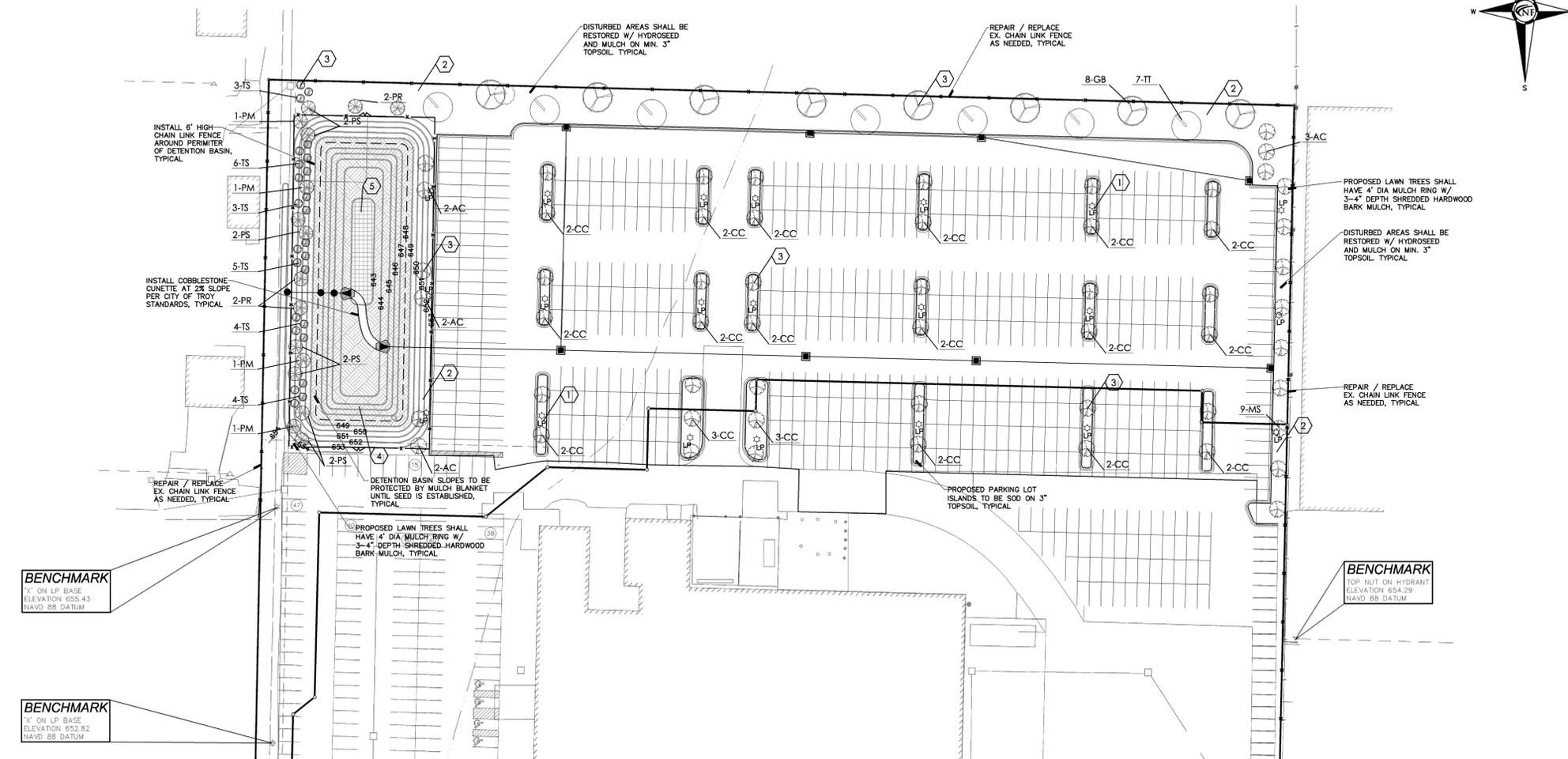
SHEET  
Tree Preservation Plan



REVISIONS  
09-15-2014 ISSUED FOR SITE PLAN REVIEW

DRAWN BY:  
J. Klenk  
DESIGNED BY:  
J. Longhurst  
APPROVED BY:  
J. Huhta  
DATE:  
September 15, 2014

SCALE: 1" = 50'  
SHEET NO.  
F731-02 L-1



**BENCHMARK**  
"X" ON LP BASE  
ELEVATION: 655.43  
NAVD: 88 DATUM

**BENCHMARK**  
"X" ON LP BASE  
ELEVATION: 652.92  
NAVD: 88 DATUM

**GENERAL LANDSCAPE NOTES**

- LANDSCAPE CONTRACTOR SHALL VERIFY SITE, INSPECT EXISTING CONDITIONS AND REVIEW PROPOSED PLANNING AND RELATED WORK. IN CASE OF DISCREPANCY BETWEEN PLAN AND PLANT LIST, THE PLAN SHALL GOVERN QUANTITIES. CONTACT THE LANDSCAPE ARCHITECT WITH ANY CONCERNS.
- CONTRACTOR SHALL VERIFY LOCATIONS OF ALL ON-SITE UTILITIES PRIOR TO BEGINNING CONSTRUCTION OR REPAIR PHASE OF WORK. ANY DAMAGE OR INTERFERENCE OF SERVICES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- CONTRACTOR SHALL COORDINATE ALL RELATED ACTIVITIES WITH OTHER TRADES, AND SHALL REPORT ANY UNACCEPTABLE SITE CONDITIONS TO THE OWNER'S REPRESENTATIVE PRIOR TO COMMENCEMENT.
- PLANTS SHALL BE FULLY BRANCHED, AND IN HEALTHY VIGOROUS GROWING CONDITION.
- PLANTS SHALL BE WATERED BEFORE AND AFTER PLANTING IS COMPLETE.
- ALL TREES MUST BE STAKED, FERTILIZED AND MULCHED AND SHALL BE GUARANTEED TO EXHIBIT A NORMAL GROWTH CYCLE FOR AT LEAST ONE (1) YEAR FOLLOWING PLANTING.
- ALL MATERIAL SHALL CONFORM TO THE GUIDELINES ESTABLISHED IN THE MOST RECENT EDITION OF THE AMERICAN STANDARDS FOR NURSERY STOCK.
- CONTRACTOR WILL SUPPLY FRESH GRADE AND DISCARD AS NECESSARY TO SUPPLY PLANT MIX DEPTH IN ALL PLANTING BEDS AS INDICATED IN PLANT DETAILS AND A DEPTH OF 4" IN ALL LAWN AREAS.
- PROVIDE CLEAN BACKFILL SOIL, USING MATERIAL STOCKPILED ON-SITE. SOIL SHALL BE SCREENED AND FREE OF DEBRIS, FOREIGN MATERIAL, AND STONE. SLOW-RELEASE FERTILIZER SHALL BE ADDED TO THE PLANT BEDS BEFORE BEING BACKFILLED. APPLICATION SHALL BE AT THE MANUFACTURER'S RECOMMENDED RATES.
- AMENDED PLANT MIX (PREPARED TOPSOIL) SHALL CONSIST OF 1/3 SCREENED TOPSOIL, 1/3 SAND, AND 1/3 "TWO" (20") COMPOST, MIXED WELL AND SPREAD TO A DEPTH AS INDICATED IN PLANTING DETAILS.
- ALL PLANTINGS SHALL BE MULCHED WITH SHREDDED HARDWOOD BARK, SPREAD TO A DEPTH OF 3" FOR TREES AND SHRUBS, AND 2" ON ANNUALS, PERENNIALS, AND GROUNDCOVER PLANTINGS. MULCH SHALL BE FREE FROM DEBRIS AND FOREIGN MATERIAL, AND PICES ON INCONSISTENT SIZE.
- NO SUBSTITUTION OR CHANGES OF LOCATION OR PLANT TYPE SHALL BE MADE WITHOUT THE APPROVAL OF THE LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE. THE LANDSCAPE ARCHITECT SHALL BE NOTIFIED OF ANY DISCREPANCIES BETWEEN MATERIAL AND FIELD CONDITIONS PRIOR TO COMMENCEMENT OF PLANTING.
- THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL PLANT MATERIAL IN A HEALTHY CONDITION THROUGHOUT THE PERIOD OF THE CONTRACT.
- THE LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE SHALL HAVE THE RIGHT TO RECTIFY ANY DEFECTS OR MATERIAL THAT DOES NOT MEET THE REQUIREMENTS OF THE PLANS AND/OR SPECIFICATIONS.
- LANDSCAPE CONTRACTOR SHALL STAKE AND MULCH ALL SOD (AS INDICATED ON PLANS) IN ALL AREAS DESIGNATED AS SUCH ON THE PLANS, THROUGHOUT THE CONTRACT PERIOD. FURTHER, THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING AREAS DISTURBED DURING CONSTRUCTION, NOT IN THE CONTRACT LIMITS, TO EQUAL OR GREATER CONDITION.
- ALL LANDSCAPE AREAS SHALL HAVE PROPER DRAINAGE THAT PREVENTS EXCESSIVE WATER FROM PONDING ON LAWN AREAS OR AROUND TREES AND SHRUBS.
- ALL LANDSCAPE AREAS SHALL BE IRRIGATED WITH AN AUTOMATIC, UNDERGROUND SYSTEM.

**GENERAL SEED NOTE:**

ALL LAWN AREAS DESIGNATED TO BE SEED, SHALL BE HYDRO SEEDED WITH SPECIFIED BLENDS, AND STABILIZED WITH WOOD CELLULOSE FIBER MULCH (2,000 LBS PER ACRE). IN AREAS SUBJECT TO EROSION, SEEDED LAWN SHALL BE FURTHER STABILIZED WHERE NECESSARY WITH BIODEGRADABLE EROSION BLANKET AND STAKES UNTIL ESTABLISHED. ALL SEED SHALL BE APPLIED OVER A MINIMUM 3" PREPARED TOPSOIL, AND SHALL BE KEPT MOIST AND WATERED DAILY UNTIL ESTABLISHED.

**TYPICAL SEEDED LAWN MIX:**

ALL LAWN AREAS DESIGNATED TO BE SEED, SHALL BE HYDROSEEDED WITH TYPICAL DROUGHT TOLERANT, DURABLE BLENDED SEED MIX AT A RATE OF 200 LBS PER ACRE.

MIX IS COMPOSED OF:

- 20% NITE LAWN PERENNIAL RYE
- 20% KENTUCKY BLUEGRASS
- 20% CREEPING RED FESCUE
- 10% WERT KENTUCKY BLUEGRASS
- 10% NEWPORT KENTUCKY BLUEGRASS

**LOW-GROW LAWN MIX:**

ALL LAWN AREAS DESIGNATED TO BE SEED, SHALL BE HYDROSEEDED WITH LOW-GROW LAWN SEED MIX, AT A RATE OF 3.185/1,200 S.F.

SEED AVAILABLE FROM:

NATIVESCAPE, LLC  
(71) 1-517-456-7245

\*MIX IS COMPOSED OF:

- 22.8% PENN LAWN RED FESCUE
- 22.8% CREEPING RED FESCUE
- 27.7% CHEWINGS FESCUE
- 11.8% VICTORY II CHEWINGS FESCUE
- 9.8% SPARTAN HEAD FESCUE
- 9.9% ALLEY SHEEPS FESCUE

**GENERAL SOD NOTE:**

ALL LAWN AREAS DESIGNATED TO BE SODDED, SHALL BE SODDED WITH A BLENDED DURABLE BLUEGRASS SOD, TYPICALLY GROWN IN THE REGION. ALL TURF SHALL BE PLACED ON A MINIMUM 3" PREPARED TOPSOIL, AND WATERED DAILY UNTIL ESTABLISHED. IN AREAS SUBJECT TO EROSION, SODDED LAWN SHALL BE STABILIZED WHERE NECESSARY, AND LAD PERPENDICULAR TO SLOPES. SOD INSTALLATION SHALL OCCUR ONLY:

SPRING: APRIL 15 TO JUNE 1  
FALL: AUGUST 15 TO OCTOBER 15

**DETENTION BASIN FLOOR MIX**

\*CONTAINS AT LEAST 12 WILDFLOWERS AND 4 GRASSES

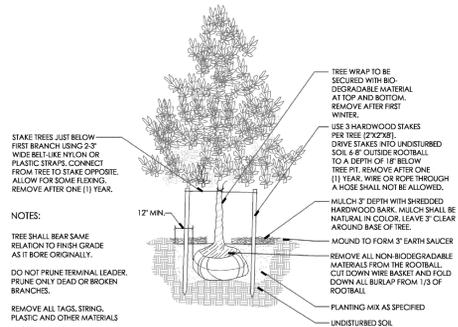
- |                         |                          |
|-------------------------|--------------------------|
| <b>WILDFLOWERS</b>      | <b>NATIVE GRASSES</b>    |
| NEW ENGLAND ASTER       | BIG BLUESTEM             |
| PALE INDIAN PLANTAIN    | CANADA WILD RYE          |
| JOE PYE WEED            | DARK GREEN BULLRUSH      |
| BONSET                  | INDIAN GRASS             |
| OX EYE SUNFLOWER        | PRAIRIE CORD GRASS       |
| DENSE BLAZINGSTAR       | WETLAND SEDGES           |
| GREAT BLUE LOBELIA      |                          |
| CARDINAL FLOWER         | <b>TEMPORARY GRASSES</b> |
| GREEN-HEADED CONEFLOWER | SEED OATS                |
| BLACK-FIED SUSAN        | ANNUAL RYE               |
| CLIFFPLANT              | WINTER WHEAT             |
| OHIO GOLDENROD          | AMERICAN SLOUGH GRASS    |
| BLUE VERVAIN            |                          |
| CLIVER'S ROOT           |                          |
| IRONWEED                |                          |
| YELLOW CONEFLOWER       |                          |

RECOMMENDED SEEDING RATE: 35-40 LBS/ACRE

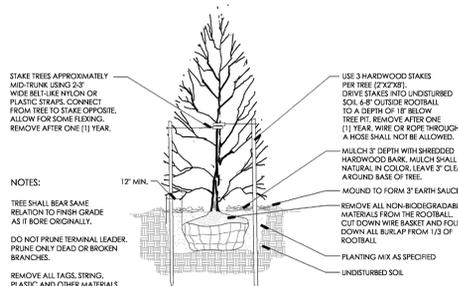
SEED MIX AVAILABLE:  
NATIVESCAPE, LLC  
PO BOX 122  
MANCHESTER, MI 48158  
1-517-456-7696

**PLANT SCHEDULE**

KEY	QTY	BOTANICAL/COMMON NAME	SIZE	SPACING	ROOT	COMMENT
<b>TREES</b>						
TT	7	Tilia Tomentosa 'Stirling Silver'	2.5' CAL	SEE PLAN	B&B	FULLY BRANCHED HEADS
GB	8	Pinus strobus 'Princeton Sentry'	2.5' CAL	SEE PLAN	B&B	FULLY BRANCHED HEADS
AC	9	Amelanchier Albovaria 'Serviceberry'	5' HT	SEE PLAN	B&B	FULLY BRANCHED HEADS
CC	38	Cercis canadensis 'Redbud'	2' CAL	SEE PLAN	B&B	FULLY BRANCHED HEADS
TS	25	Thuja Standishii 'Arborvitae'	5' HT	SEE PLAN	B&B	BRANCHED TO GROUND
PS	8	Pinus strobus 'White Pine'	5' HT	SEE PLAN	B&B	BRANCHED TO GROUND
PR	4	Pinus resinosa 'Red Pine'	5' HT	SEE PLAN	B&B	BRANCHED TO GROUND
PM	4	Pseudotsuga Menziesii 'Douglas Fir'	5' HT	SEE PLAN	B&B	BRANCHED TO GROUND
MS	9	Malus Sargentii 'Crispapple'	2' CAL	SEE PLAN	B&B	FULLY BRANCHED HEADS



**DECIDUOUS TREE PLANTING DETAIL**



**EVERGREEN TREE PLANTING DETAIL**

SEAL

PROJECT  
Penske - Troy  
1225 East Maple Road

CLIENT  
Penske Automotive Group  
2555 Telegraph Rd.  
Bloomfield Hills, MI 48302  
CONTACT  
Mr. Jeff Anderson  
Tel: 248-648-2574  
janderson@penskeautomotive.com

PROJECT LOCATION  
Part of the Southwest 1/4  
of Section 26  
T.2 North, R.11 East  
City of Troy, Oakland County,  
Michigan

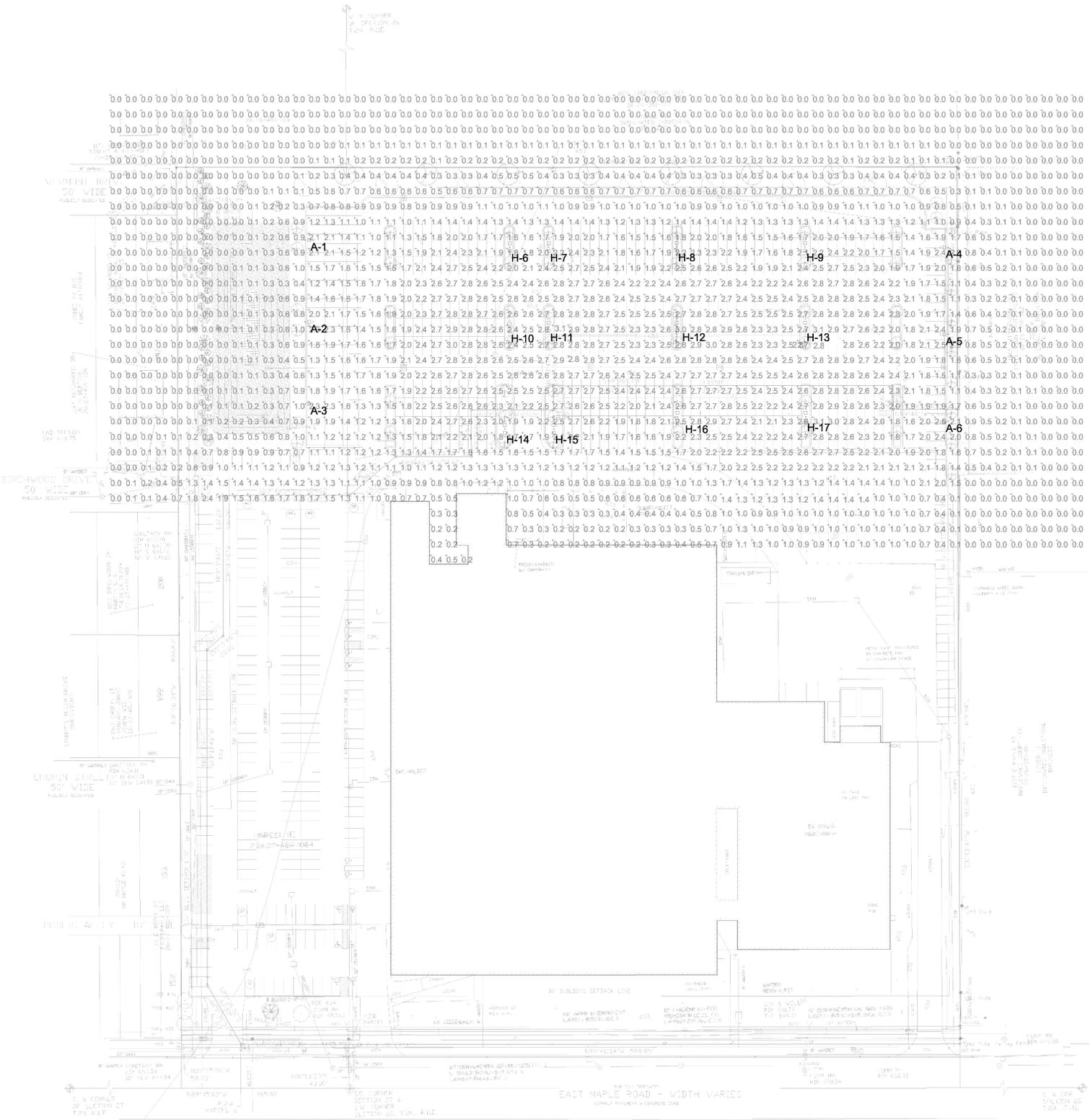
SHEET  
Landscape Plan



REVISIONS  
09-15-2014 ISSUED FOR SITE PLAN REVIEW

DRAWN BY:  
J. Klenk  
DESIGNED BY:  
J. Longhurst  
APPROVED BY:  
J. Huhta  
DATE:  
September 15, 2014

SCALE: 1" = 50'  
50 25 0 25 50 75  
NFE JOB NO. SHEET NO.  
F71-01 L-2



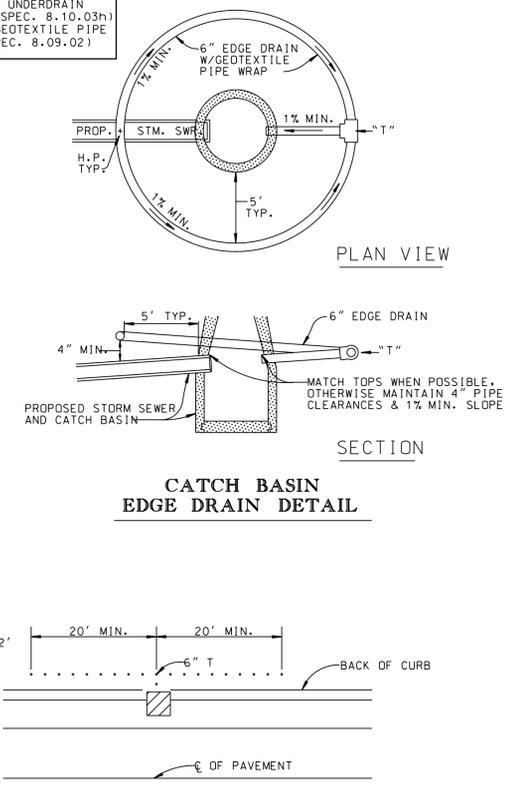
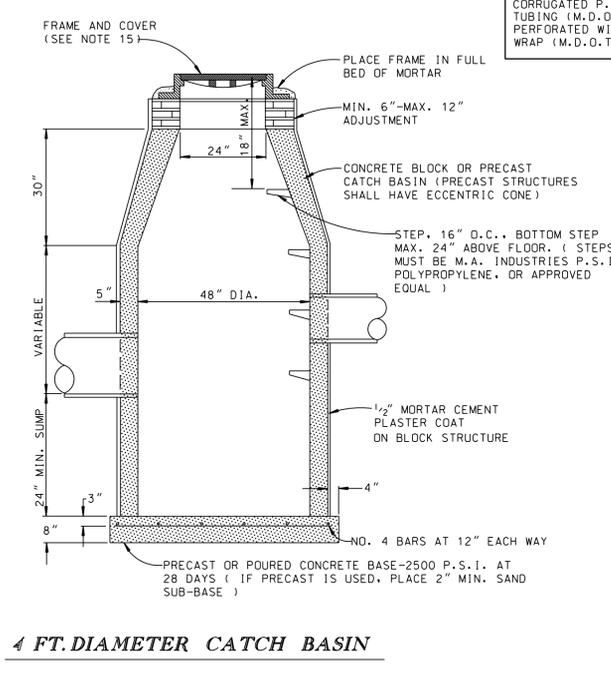
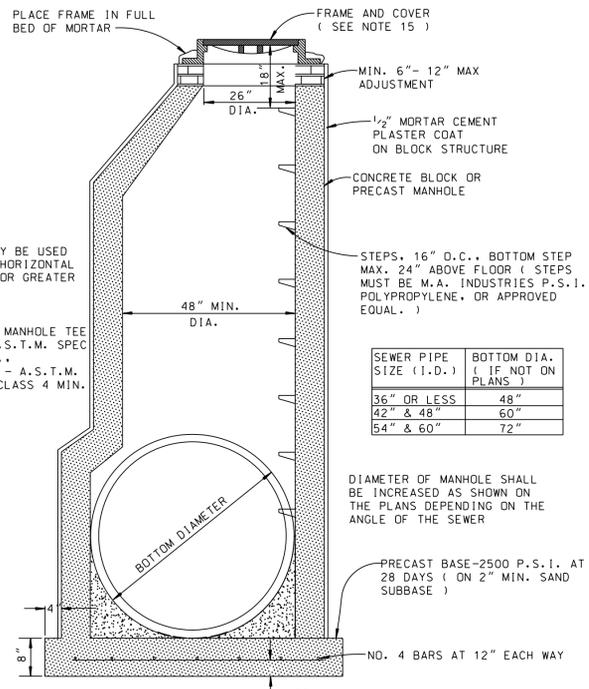
Plan View  
Scale - 1" = 60'

Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Lamp	Number Lamps	Filename	Lumens Per Lamp	Light Loss Factor	Wattage
⏏	A	15	Lithonia Lighting	DSXO LED 40C 1000 50K TFTM MVOLT	DSXO LED WITH (2) 20 LED LIGHT ENGINE, TYPE TFTM OPTIC, 5000K, @ 1000mA	LED	1	DSXO_LED_40C_1000_50K_TFTM_MVOLT.ies	12950.47	0.95	138
⏏	H	19	Lithonia Lighting	DSXO LED 40C 1000 50K TSW MVOLT	DSXO LED WITH (2) 20 LED LIGHT ENGINE, TYPE TSW OPTIC, 5000K, @ 1000mA	LED	1	DSXO_LED_40C_1000_50K_TSW_MVOLT.ies	13578.48	0.95	276

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min	Avg/Max
Calc Zone #1	+	1.0 fc	3.1 fc	0.0 fc	N/A	N/A	0.3:1
Parking	⊗	2.0 fc	3.1 fc	0.5 fc	6.2:1	4.0:1	0.6:1

**Disclaimer**  
This lighting design is not a professional engineering drawing and is provided for informational purposes only, without warranty as to accuracy, completeness, reliability or otherwise. Acuity Brands Lighting is not responsible for specifying the lighting or illumination requirements for any specific project. It is the obligation of the end-user to consult with a professional engineering advisor to determine whether this lighting design meets the applicable project requirements for lighting system performance, safety, suitability and effectiveness for use in a particular application. End-user environment and application (including, but not limited to, voltage variation and dirt accumulation) can cause actual field performance to differ from the calculated photometric performance represented in this lighting design. In no event will Acuity Brands Lighting be responsible for any loss resulting from any use of this lighting design.

**Note**  
1. Readings are shown in units of maintained footcandles.  
2. Total Light Loss Factor (LLF) = .95 LLF for LED  
3. Test Plane = 0' AFF  
4. Fixture Mounting Height = 25' AFF for pole-mount  
5. Fixture Spacing = See Plan view.  
6. This photometric layout was calculated using specific criteria. Any deviation from stated parameters will affect actual performance.  
7. These lighting calculations are not a substitute for independent engineering analysis of lighting system suitability and safety.

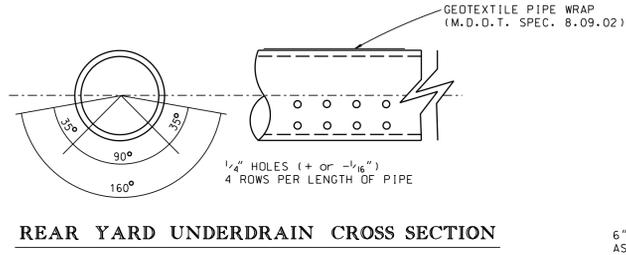
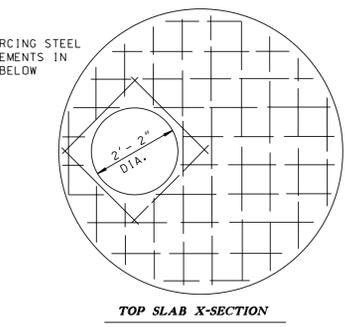


- ### GENERAL NOTES
- PRIOR TO CONSTRUCTION, THE CONTRACTOR MUST HAVE IN HIS POSSESSION A COPY OF A VALID PERMIT TO CONSTRUCT A CONNECTION TO, OR AN EXTENSION OF, THE STORM WATER DRAINAGE SYSTEM.
  - PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL ATTEND A PRE-CONSTRUCTION MEETING, AT A TIME AND PLACE AS ARRANGED BY THE ENGINEER DEPT., AT WHICH VARIOUS UTILITY COMPANIES AND GOVERNMENTAL AGENCY REPRESENTATIVES WILL BE PRESENT. THE OWNERS' ENGINEER SHALL SUBMIT APPROVED PLANS TO ALL UTILITY COMPANIES AND GOVERNMENTAL AGENCIES 10 DAYS PRIOR TO THE PRE-CONSTRUCTION MEETING. CONSTRUCTION SHALL START WITHIN 3 WEEKS OF MEETING.
  - AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL GIVE NOTIFICATION OF HIS INTENTION TO BEGIN CONSTRUCTION TO THE CITY OF TROY FIELD ENGINEERING DEPARTMENT, 524-3409, TO THE CITY OF DEPARTMENT OF PUBLIC WORKS 524-3392, AND THE COUNTY PUBLIC WORKS COMMISSIONERS OFFICE (858-0958) AND THE COUNTY ROAD COMMISSION (858-4835) IF APPLICABLE.
  - THE CONTRACTOR SHALL SECURE PERMITS FROM THE COUNTY PUBLIC WORKS COMMISSION FOR ALL TAPS AND CROSSINGS OF COUNTY DRAINS AND SHALL PAY THE COST OF SAID PERMITS AND THE COST OF ANY INSPECTION CHARGES BY THAT AGENCY FOR WORK DONE UNDER THE PERMITS.
  - 72 HOURS PRIOR TO ANY CONSTRUCTION, THE CONTRACTOR SHALL TELEPHONE MISS DIG (1-800-482-7171) FOR THE LOCATION OF UNDERGROUND FACILITIES, AND SHALL ALSO NOTIFY REPRESENTATIVES OF ANY OTHER FACILITIES, LOCATED IN THE VICINITY OF THE WORK, WHICH MAY NOT BE HANDLED BY MISS DIG.
  - ALL STORM WATER DRAINAGE SYSTEM CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE CITY OF TROY, COUNTY ROAD COMMISSION, AND/OR COUNTY DRAIN COMMISSION AS APPLICABLE.
  - STORM SEWER PIPE SHALL BE REINFORCED CONCRETE, ASTM C-76 CLASS III OR HIGHER UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER. THE FOLLOWING STORM SEWER PIPE MATERIALS MAY BE USED ONLY WITH APPROVAL OF THE CITY ENGINEER. ISOILS PH & RESISTIVITY TESTS DEMONSTRATE A PH OF 5.0 TO 9.0 AND AN ELECTRICAL RESISTANCE OF 2000 OHM/CM/CM OR HIGHER, THEN HELICALLY CORRUGATED, FULL WELDED SEAM, AASHTO M-218 STEEL PIPE, GAUGE AS SHOWN, MANUFACTURED ACCORDING TO AASHTO M-36 WITH 2 2/3" X 1/2" OR 125MM X 25MM CORRUGATIONS, ALUMINIZED AT 1.00 OZ PER SQ. FT. PER AASHTO M-274 MAY BE USED. THE C.S.P. DIAMETER MUST HAVE THE SAME HYDRAULIC CAPACITY AS THE CONCRETE PIPE WHEN THE PIPE IS NOT SUBJECT TO CRUSHING FROM CONSTRUCTION OPERATIONS AND PROPERTY MAINTENANCE AND A MIN. 3' OF COVER CAN BE MAINTAINED ABS COMPOSITE (TRUSS) PIPE AND PVC PIPE MAY BE USED OUTSIDE PUBLIC ROAD R.O.W. WITH APPROVAL OF THE CITY ENGINEER.
  - REINFORCED CONCRETE PIPE JOINTS SHALL BE MODIFIED TONGUE & GROOVE WITH RUBBER "O" RING GASKET. CORRUGATED STEEL PIPE SHALL HAVE TWO CIRCUMFERENTIAL CORRUGATIONS ROLLED ON EACH END OF EACH SECTION. STEEL COUPLING BANDS OF THE SAME MATERIAL AS THE PIPE, FITTING THE PIPE CONFIGURATION WITH TWO "O" RING RUBBER GASKETS SHALL PRODUCE A WATERTIGHT JOINT ("HUGGER BANDS"). "PVC & TRUSS" PIPE JOINTS SHALL BE CHEMICALLY FUSED IN ACCORDANCE WITH THE MANUFACTURERS' INSTRUCTIONS.
  - UNLESS OTHERWISE INDICATED ON THE PLANS, ALL STORM SEWER BEDDING SHALL BE STANDARD BEDDING. CRUSHED STONE BEDDING SHALL BE PLACED, IF THE INSPECTOR DEEMS THAT THE INSTALLATION WARRANTS IT.
  - ALL SUMP AND BUILDING SERVICE CONNECTIONS SHALL BE 3" POLY-VINYL CHLORIDE (PVC) SEWER PIPE, SCHEDULE 40 WITH CHEMICALLY FUSED JOINTS AND CONNECT TO A CATCH BASIN OR MANHOLE. NO BLIND TAPS.
  - ALL DRAINAGE STRUCTURES SHALL CONFORM TO THE DETAILS SHOWN. ALL CATCH BASINS SHALL HAVE 2 FT. SUMP.
  - CONNECTIONS TO DRAINAGE STRUCTURES SHALL BE CORED. THE OPENING BETWEEN THE HOLE AND PIPE SHALL BE SEALED WITH A NON-SHRINK GROUT.
  - IF THE WALL OF THE STRUCTURE BEING TAPPED IS DAMAGED, THE CITY SHALL DECIDE IF IT CAN BE REPAIRED AND APPROVE THE METHOD. IF THE STRUCTURE CANNOT BE REPAIRED IT WILL BE REPLACED.
  - UNLESS OTHERWISE NOTED ON THE PLANS, STRUCTURE FRAME AND COVERS SHALL BE AS FOLLOWS:
    - MANHOLE E.J.I.W. 1000 WITH TYPE "B" PERFORATED COVER, OR EQUAL.
    - CATCH BASIN IN PAVEMENT E.J.I.W. 5080 WITH SINUSOIDAL M2 GRATE, OR EQUAL, IN RESIDENTIAL AREAS.
    - CATCH BASIN IN PAVEMENT E.J.I.W. 5105 WITH SINUSOIDAL M2 GRATE, OR EQUAL, IN NON-RESIDENTIAL AREAS.
    - CATCH BASIN NOT IN PAVEMENT E.J.I.W. 1000-01 WITH TYPE M, C, OR O1 HEAVY DUTY GRATE, OR EQUAL.
    - CATCH BASIN IN LANDSCAPE AREAS OR ROADSIDE DITCH MAY REQUIRE THE USE OF E.J.I.W. OR ONE OF THE FOLLOWING:
      - 1040 TYPE "N" OVAL GRATE OR TYPE O2 BEEHIVE GRATE
      - 1130 TYPE "N" OVAL GRATE OR TYPE O1 BEEHIVE GRATE
      - 2800 TYPE "N" OVAL GRATE OR TYPE O2 BEEHIVE GRATE
      - 6508 OR 6517

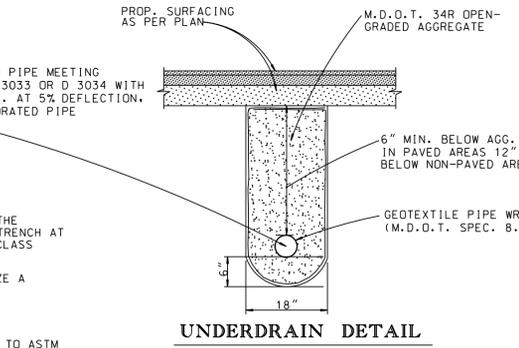
**STORM SEWER MANHOLE A**

**4 FT. DIAMETER CATCH BASIN**

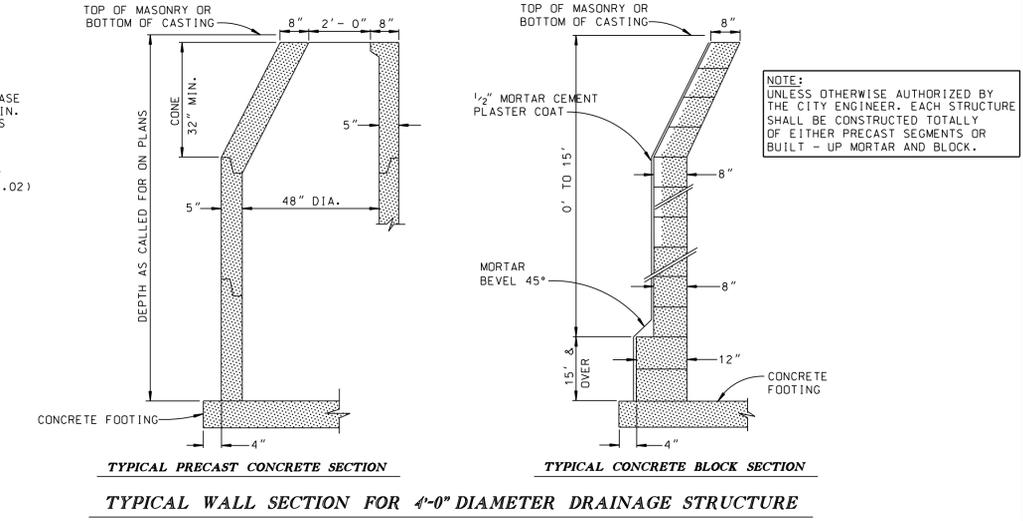
**UNDERDRAIN DETAIL FOR PAVEMENT WITHIN THE CITY R.O.W.**



**REAR YARD UNDERDRAIN CROSS SECTION**



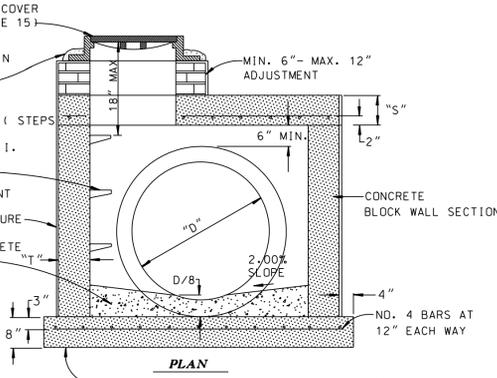
**UNDERDRAIN DETAIL**



**TYPICAL PRECAST CONCRETE SECTION** and **TYPICAL CONCRETE BLOCK SECTION**  
**TYPICAL WALL SECTION FOR 4'-0" DIAMETER DRAINAGE STRUCTURE**

**GENERAL PIPE BEDDING & TRENCH NOTES**

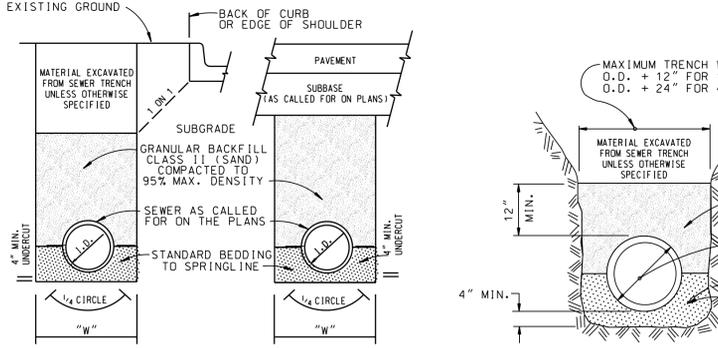
- THE CONTRACTOR SHALL INSTALL THE PIPE IN ACCORDANCE WITH THE BEDDING DETAIL REQUIRED FOR THE PIPE DEPTH (MEASURED FROM THE TOP OF THE PIPE), AND TRENCH WIDTH (MEASURED ACROSS THE TRENCH AT THE TOP OF THE PIPE) CONSTRUCTED. A CONTRACTOR MAY ALWAYS USE A HIGHER QUALITY BEDDING CLASS THAN REQUIRED. ANY OTHER VARIATIONS MUST BE APPROVED IN WRITING BY THE ENGINEER.
- CRUSHED STONE BEDDING SHALL BE UTILIZED FOR ALL DEWATERED GROUND TRENCHES AND SHALL UTILIZE A TRENCH WIDTH OF 30" (MINIMUM).
- BEDDING & BACKFILL MATERIAL SHALL BE AS FOLLOWS:
  - CRUSHED STONE BEDDING: SHALL CONSIST OF WELL GRADED CRUSHED STONE. THE STONE SHALL CONFORM TO ASTM D 448, #67, ASTM D 2487 CLASS 1, OR ALTERNATIVE APPROVED BY THE ENGINEER. ANY MATERIAL INCORPORATED SHALL PROVIDE A MINIMUM OF 90% CRUSHED MATERIAL. MDT COURSE AGGREGATES 6A, 6AA, 9A, 17A & 25 SERIES ARE ALSO APPROVED FOR USE IF THEY ARE MANUFACTURED WITH SUFFICIENT CRUSHED MATERIAL AND NO STONE IS LARGER THAN 1-1/4 INCH IN DIAMETER. SPADING THE HAUNCH AREA IS REQUIRED, FOR DENSITY.
  - STANDARD BEDDING: SHALL CONSIST OF WELL GRADED COURSE SANDS AND GRAVEL (1-1/4 INCH MAXIMUM DIAMETER) CONTAINING A SMALL PERCENTAGE OF FINES. THE MATERIAL SHALL CONFORM TO ASTM D 2487 CLASS 11 AND SHALL INCLUDE PEA PEBBLE AND MDT AGGREGATES 20 SERIES, 21 SERIES, 22 SERIES, 23A, 26A, 28 SERIES & 31 SERIES. 90% MINIMUM DENSITY REQUIRED.



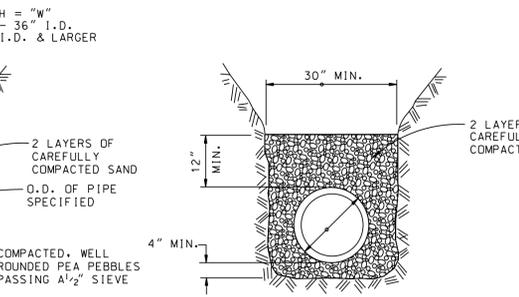
\* DIAMETER OF MANHOLE SHALL BE INCREASED AS SHOWN ON THE PLANS DEPENDING ON THE ANGLE OF THE SEWERS

OUTLET "D" I.D.	M.H. I.D.	TOP SLAB "S"	WALL "T"	REINFORCING STEEL
36" OR LESS	4	9"	12"	3/4" @ 9" EA. WAY
42"	5	10"	12"	3/4" @ 9" EA. WAY
48" - 54"	6	11"	12"	7/8" @ 9" EA. WAY
	7	12"	12"	1" @ 9" EA. WAY
	8	12"	12"	1" @ 9" EA. WAY

**STORM SEWER MANHOLE A WITH FLAT SLAB**



**STANDARD BEDDING TRENCH DETAIL 'A'** and **CRUSHED STONE BEDDING**



**STANDARD BEDDING TRENCH DETAIL 'A'**

**CITY OF TROY**  
OAKLAND COUNTY, MICHIGAN

**STANDARD STORM SEWER DETAILS**

**ENGINEERING DEPARTMENT**

APPROVED BY: STEVEN J. VANDETTE, CITY ENGINEER      DATE: JANUARY 8, 2001

DATE	REMARKS	PROJECT NO.	SHEET NO.
JANUARY 2001			
DRAWN BY: G.S.F.	CHECKED BY: W.D.J.		

STEVEN J. VANDETTE, P.E. 28197

**GENERAL SOIL EROSION AND SEDIMENTATION CONTROL NOTES**

- THE FOLLOWING ITEMS ARE INTENDED TO BE A GUIDE TO THE CONTRACTOR IN EVALUATING SOIL EROSION PREVENTION REQUIREMENTS FOR THE PROJECT. SPECIFIC SOIL EROSION PREVENTION DEVICES AND LOCATIONS ARE DETAILED ON THE PLANS. THE CONTRACTOR SHOULD ALSO NOTE THAT SOIL EROSION AND SEDIMENTATION CONTROLS ARE INCIDENTAL TO THE PROJECT UNLESS SPECIFIED OTHERWISE ON THE PLANS OR IN THE SPECIFICATIONS.
- ALL EROSION AND SEDIMENT CONTROL WORK SHALL CONFORM TO THE PERMITS AND STANDARDS AND SPECIFICATIONS OF THE CITY OF TROY.
  - DAILY INSPECTIONS SHALL BE MADE BY THE CONTRACTOR FOR EFFECTIVENESS OF EROSION AND SEDIMENTATION CONTROL MEASURES AND ANY NECESSARY REPAIRS SHALL BE PERFORMED WITHOUT DELAY.
  - EROSION AND ANY SEDIMENTATION FROM WORK ON THIS SITE SHALL BE CONTAINED ON THE SITE AND NOT ALLOWED TO COLLECT ON ANY OFF-SITE AREAS OR IN WATERWAYS.
- WATERWAYS INCLUDE NATURAL AND MAN-MADE OPEN DITCHES, STREAMS, STORM DRAINS, LAKES AND PONDS.
- CONTRACTOR SHALL APPLY TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES WHEN REQUIRED AND AS DIRECTED ON THESE PLANS. CONTRACTOR SHALL REMOVE TEMPORARY MEASURES AS SOON AS PERMANENT STABILIZATION OF SLOPES, DITCHES, AND OTHER EARTH CHANGES HAS BEEN ACCOMPLISHED.
  - STAGING THE WORK WILL BE DONE BY THE CONTRACTOR AS INDICATED ON THE SOIL EROSION PLANS AND AS REQUIRED TO ENSURE PROGRESSIVE STABILIZATION OF DISTURBED EARTH.
  - THE CONTRACTOR WILL ESTABLISH SOIL EROSION PREVENTION PRACTICES IN THE EARLY STAGES OF CONSTRUCTION. SEDIMENT CONTROL PRACTICES WILL BE APPLIED AS A PERIMETER DEFENSE AGAINST ANY TRANSPORTING OF SILT OFF THE SITE.
  - ENGINEER AND OWNER CERTIFICATION MUST BE INCLUDED ON THE PLANS.
  - SEPARATE SHEETS SHOWING EROSION PREVENTION AND SEDIMENTATION CONTROL PLANS MUST BE PROVIDED.

- THE FOLLOWING GUIDELINES ARE TO BE IMPLEMENTED:
  - CHECK DAMS
    - STONE SIZE MUST BE INCREASED WITH INCREASED SLOPE AND VELOCITY.
    - SLOPE OF THE DAM SHOULD BE 2:1 OR FLATTER.
    - STRAW BALES ARE NOT TO BE USED FOR CHECK DAMS.
    - ADD STONES AS NEEDED TO MAINTAIN DESIGN HEIGHT AND CATCH BASIN.
    - ANY ACCUMULATION OF SEDIMENT SHALL BE REMOVED AND STOCKPILED IN A STABILIZED AREA TO PREVENT THE MATERIAL FROM ERODING BACK INTO THE DRAINAGE COURSE.
  - VEGETATIVE BUFFER ZONES
    - VEGETATION MUST BE MAINTAINED IN A VIGOROUS CONDITION.
    - RESHAPE AND RESEED AREAS WHERE CONCENTRATED FLOW OCCURS OR VEGETATION FAILS.
    - TO BE USED FOR SHEET FLOWS ONLY.
    - NOT TO BE USED AS A ROADWAY.
  - SILT FENCE
    - MUST BE INSTALLED ALONG THE CONTOUR LINE.
    - IS NOT TO BE USED IN AREAS OF CONCENTRATED FLOW.
    - MUST BE TRENCHED AT LEAST 6" INCHES AND BACKFILLED.
    - MULTIPLE ROWS ARE TO BE USED UP A SLOPE.
    - ACCUMULATED SEDIMENT MUST BE PERIODICALLY REMOVED.
    - WHERE NECESSARY, A SUPPORT FENCE SHALL BE USED TO SUPPORT THE GEOTEXTILE FILTER FABRIC.
    - TO BE REMOVED AFTER SITE IS PERMANENTLY STABILIZED.
  - INLET SEDIMENT TRAP
    - THE SEDIMENT DEPOSITION AREA AND NONWOVEN GEOTEXTILE FILTER FABRIC SHOULD BE CLEANED OF ALL ACCUMULATED SEDIMENT AFTER EACH STORM.
    - INLET FILTERS CONTRIBUTING AREAS ARE STABILIZED, THE FILTER FABRIC WILL BE REMOVED FROM THE SEDIMENT DEPOSITION AREA, AND A SOD INLET FILTER PLACED OVER THE DISRUPTED LAWN AREA.
    - THE FILTER MATERIAL USED TO BACKFILL PARKING LOT DRAINAGE HOLES WILL BE PEASTONE. THE SIDE EXCAVATION FOR THE PLACEMENT OF THIS MATERIAL WILL NOT BE DEEPER THAN THE INVERT OF THE DRAINAGE HOLES.
  - INLET FILTERS AFTER PAVING OR GRADING
    - INLET FILTERS WILL REMAIN IN PLACE UNTIL ALL DENuded AREAS CONTRIBUTING TO THEM ARE STABILIZED WITH VEGETATION.
    - PERIODIC INSPECTION AND MAINTENANCE WILL BE PROVIDED TO INSURE THAT FILTERS ARE FUNCTIONING PROPERLY.

- SOD INLET FILTER
  - SOD INLET FILTERS WILL ONLY BE USED TO HANDLE LIGHT CONCENTRATIONS OF SEDIMENT.
  - RECOMMENDED FOR USE AFTER FINAL GRADING IS COMPLETE AND DURING THE ESTABLISHMENT OF A VEGETATIVE COVER.
  - CATCH BASIN INLET COVERS MAY BE WRAPPED IN A NON-WOVEN GEOTEXTILE FILTER FABRIC FOR ADDITIONAL FILTRATION.
  - PERIODIC INSPECTION AND MAINTENANCE MUST BE PROVIDED TO INSURE EFFICIENT OPERATION.

**GENERAL CONSTRUCTION NOTES**

THE FOLLOWING ITEMS OF WORK RELATED TO THE PROPOSED CONSTRUCTION ARE INTENDED TO ACT AS A GUIDE TO THE CONTRACTOR IN EVALUATING THE REQUIREMENTS FOR THE PROJECT. HOWEVER, THE CONTRACTOR IS RESPONSIBLE TO INSURE THAT THE PROJECT IS COMPLETED WITHIN THE DETERMINATION OF THE ITEMS OF WORK NECESSARY TO COMPLETE THE PROJECT. THE CONTRACTOR SHALL SPECIFICALLY DIRECT HIS ATTENTION TO THE EXTENT OF INCIDENTAL CONTRACT ITEMS, OR WORK IDENTIFIED AS BEING INCLUDED IN OTHER ESTABLISHED PAY ITEMS AND INCLUDE THIS WORK IN HIS BID PRICE.

THE CONTRACTOR SHALL PAY FOR ALL INSPECTION OVER EIGHT (8) HOURS PER DAY AND ALL INSPECTION ON SATURDAY AT THE CURRENT HOURLY RATE, PER MAN HOUR. THE CONTRACTOR WILL NOT BE CHARGED FOR OVERTIME ON SATURDAY IF HE HAS FIVE (5) MEN OR LESS PERFORMING CLEAN-UP WORK AND LANDSCAPE ITEMS. IN ADDITION, IF HOLIDAY OR SUNDAY WORK IS PERMITTED BY THE CITY, THE CONTRACTOR SHALL PAY FOR ALL INSPECTION AT THE CURRENT HOLIDAY RATE PER HOUR, PER MAN.

- THE CONTRACTOR SHALL NOTIFY THE CITY OF TROY AT (248) 524-3409 THREE (3) WORKING DAYS PRIOR TO CONSTRUCTION.
- ALL WATER MAIN AND SANITARY SEWER CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS AND CITY OF TROY SPECIFICATIONS AND THE DETROIT WATER AND SEWERAGE DEPARTMENTS.
- ROAD COMMISSION FOR OAKLAND COUNTY (RCOC) PERMITS:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETE RESTORATION OF THIS PROJECT TO CONDITIONS THAT ARE ACCEPTABLE TO THE JURISDICTIONAL AUTHORITY, ENGINEER AND/OR OWNER.

ALL ROAD CROSSINGS AND RELATED WORK IN THE COUNTY RIGHT-OF-WAYS SHALL BE PERFORMED UNDER THE SUPERVISION AND INSPECTION OF THE RCOC. ALL PERMITS SHALL BE OBTAINED BY THE CONTRACTOR, AND ALL PERMIT AND INSPECTION FEES SHALL BE PAID FOR BY THE CONTRACTOR (INCLUDED IN THE COST OF THE IMPROVEMENT). ROAD PATCHES SHALL BE AS SPECIFIED BY THE RCOC, AND ALL REMOVALS SHALL BE SAWCUT FULL DEPTH. TRAFFIC FOR ALL LOCAL RESIDENTS AND EMERGENCY VEHICLES MUST BE MAINTAINED AT ALL TIMES.

DRIVEWAYS SHALL BE RESTORED IN KIND WITH THE FOLLOWING MINIMUM MATERIAL THICKNESS, SIX (6) INCHES CONCRETE, FOUR (4) INCHES ASPHALT ON SIX (6) INCHES AGGREGATE OR EIGHT (8) INCHES OF AGGREGATE. (ALL DRIVEWAY CUT REMOVALS SHALL BE SAWCUT).

OAKLAND COUNTY DEPT. OF PUBLIC WORKS (OCDPW) PERMITS:

ALL DRAIN CROSSINGS AND RELATED WORK IN THE COUNTY DRAIN RIGHT-OF-WAY AND/OR ITS EASEMENTS SHALL BE PERFORMED UNDER THE SUPERVISION AND INSPECTION OF THE OCDPW. ALL PERMITS SHALL BE OBTAINED BY THE CONTRACTOR, AND ALL PERMIT AND INSPECTION FEES SHALL BE PAID FOR BY THE CONTRACTOR (INCLUDED IN THE COST OF THE IMPROVEMENT).

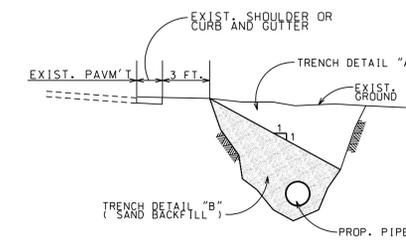
ALL DISTURBED LAWN AREAS SHALL BE SODDED WITH CLASS "A" SOD ON FOUR (4) INCHES OF TOPSOIL. ALL OTHER NON-RESIDENTIAL FIELD AREAS SHALL BE SEEDED, FERTILIZED AND MULCHED ON THREE (3) INCHES OF TOPSOIL (SEE SPECIFICATIONS).

PRIOR TO ANY EXCAVATION, THE CONTRACTOR SHALL TELEPHONE MISS DIG (1-800-482-7171) FOR THE LOCATION OF ALL UNDERGROUND GAS, CABLE AND OTHER UTILITIES, AND SHALL ALSO NOTIFY REPRESENTATIVES OF ALL OVERHEAD AND UNDERGROUND UTILITIES LOCATED IN THE VICINITY OF THE WORK.

THE TRENCH BACKFILL FOR WATER MAINS SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS AS SHOWN ON THE ATTACHED "STANDARD WATER DETAIL" SHEET. (ALL TRENCH BACKFILL FOR PROPOSED WATER MAINS SHALL BE INCLUDED IN THE COST OF THE WATER MAIN).

THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR PROTECTION OF ALL EXISTING UTILITIES DURING CONSTRUCTION. THE CONTRACTOR SHALL VERIFY THE EXISTING DEPTHS AND HORIZONTAL LOCATIONS OF ALL EXISTING UTILITIES BY PRE-EXCAVATING ALL CONFLICTS BEFORE ANY WORK IS STARTED. THE EXACT LOCATION OF EXISTING UTILITIES SHALL BE DETERMINED BY HAND-DIGGING. ALL UTILITIES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED WITH MATERIAL ACCEPTABLE TO THE UTILITY OWNER. ALL COST FOR LOCATING, PRE-EXCAVATING, REMOVING, AND REPLACING OR RELOCATING THESE UTILITIES SHALL BE INCLUDED IN THE COST OF THE IMPROVEMENT.

THE TRENCH BACKFILL FOR SANITARY SEWERS AND STORM SEWERS SHALL BE AS SHOWN BELOW.



TRENCH DETAIL "A" - SHALL BE BACKFILLED IN 12 INCH LAYERS AND COMPACTED TO 90% OF ITS MAXIMUM UNIT WEIGHT.

TRENCH DETAIL "B" - SHALL BE SAND BACKFILLED IN 12 INCH LAYERS AND COMPACTED TO 95% OF ITS MAXIMUM UNIT WEIGHT.

NO ADDITIONAL COMPENSATION WILL BE PAID TO THE CONTRACTOR FOR ANY DELAY OR INCONVENIENCE DUE TO MATERIAL SHORTAGES OR REASONABLE DELAYS DUE TO THE OPERATIONS OF OTHER CONTRACTORS, UTILITY COMPANIES, OR ANY PUBLIC AUTHORITY DOING THE WORK INDICATED OR SHOWN ON THE PLANS OR IN THE PROPOSAL, OR FOR ANY REASONABLE DELAY OF CONSTRUCTION DUE TO THE ENCOUNTERING OF EXISTING UTILITIES THAT MAY OR MAY NOT BE SHOWN ON THE PLANS.

THE CONTRACTOR SHALL HAVE AVAILABLE AT ALL TIMES A COMPETENT SUPERINTENDENT OR FOREMAN AUTHORIZED TO ACT FOR THE CONTRACTOR, AS HIS AGENT ON THE WORK, WHO THOROUGHLY UNDERSTANDS THE PLANS AND SPECIFICATIONS AND WHO SHALL RECEIVE ALL INSTRUCTIONS FROM THE ENGINEER. THE SUPERINTENDENT OR FOREMAN SHALL BE DESIGNATED BY NAME PRIOR TO COMMENCEMENT OF THE WORK AND SHALL BE AVAILABLE AS REQUIRED FOR PROPERTY MANAGEMENT OF THE PROJECT FOR THE DURATION OF THE CONTRACT. PLANS AND SPECIFICATIONS SHALL BE AVAILABLE ON THE PROJECT AT ALL TIMES.

ALL TREES, SHRUBS, LANDSCAPING, MAILBOXES, FENCES, DRIVEWAYS, SIDEWALKS, CULVERTS, STORM SEWERS, DITCHES, GUARD RAILS, SPRINKLER SYSTEMS, SIGNS, YARD OR SIGN LIGHTINGS, UTILITIES AND OTHER EXISTING ITEMS ALONG THE PATH OF THE PROPOSED WATER MAIN AND/OR SANITARY SEWER SHALL BE PROTECTED AND/OR RESTORED AS DESCRIBED IN THE SPECIFICATION BOOK (INCLUDED IN THE COST OF THE IMPROVEMENT).

ALL EXISTING MAILBOXES ON THE PROJECT WILL BE TEMPORARILY RESET ALONG THE OWNER'S DRIVEWAY, OR ALONG AN INTERSECTING STREET, BEYOND THE LIMITS OF CONSTRUCTION, AS DIRECTED BY THE ENGINEER. WHEN THE PROJECT IS COMPLETED THE MAILBOXES SHALL BE RESET BY THE CONTRACTOR IN ACCORDANCE WITH LOCAL POSTAL REGULATIONS. THE TEMPORARY RESETTling AND FINAL PLACEMENT OF MAILBOXES SHALL BE INCLUDED IN THE PROJECT AND WILL NOT BE PAID FOR SEPARATELY.

THE CONTRACTOR SHALL NOT EXPAND UPON THE WORK OR DEVIATE FROM THE LOCATIONS, ELEVATIONS OR SPECIFICATIONS OF ANY WORK AS SHOWN ON THESE PLANS WITHOUT RECEIVING PRIOR APPROVAL FROM THE CITY OF TROY ENGINEERING DEPARTMENT AND/OR OTHER JURISDICTIONAL AUTHORITIES.

IN ADDITION TO THE NOTES ON THIS SHEET, THE CONTRACTOR'S ATTENTION SHALL BE DIRECTED TO THE NOTES ON THE ATTACHED "STANDARD DETAIL" SHEETS AS WELL AS ADDITIONAL CONSTRUCTION REQUIREMENTS.

**CITY OF TROY**  
OAKLAND COUNTY, MICHIGAN

**STANDARD SOIL EROSION & GENERAL CONSTRUCTION (1 OF 1)**

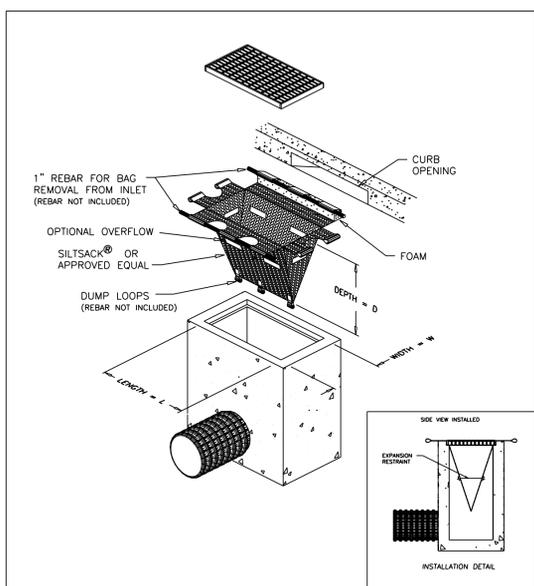
**ENGINEERING DEPARTMENT**

APPROVED BY: STEVEN J. VANDETTE, CITY ENGINEER DATE: \_\_\_\_\_

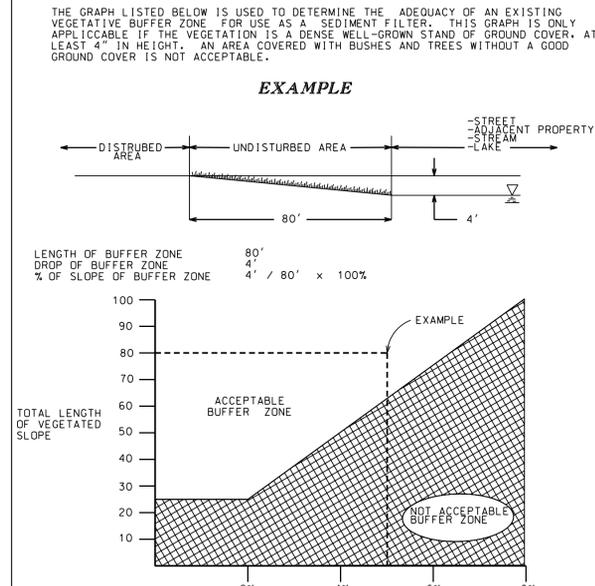
DATE	REMARKS	PROJECT NO.	SHEET NO.

DRAWN BY: G.S.F./M.P.B. CHECKED BY: J.E.L.

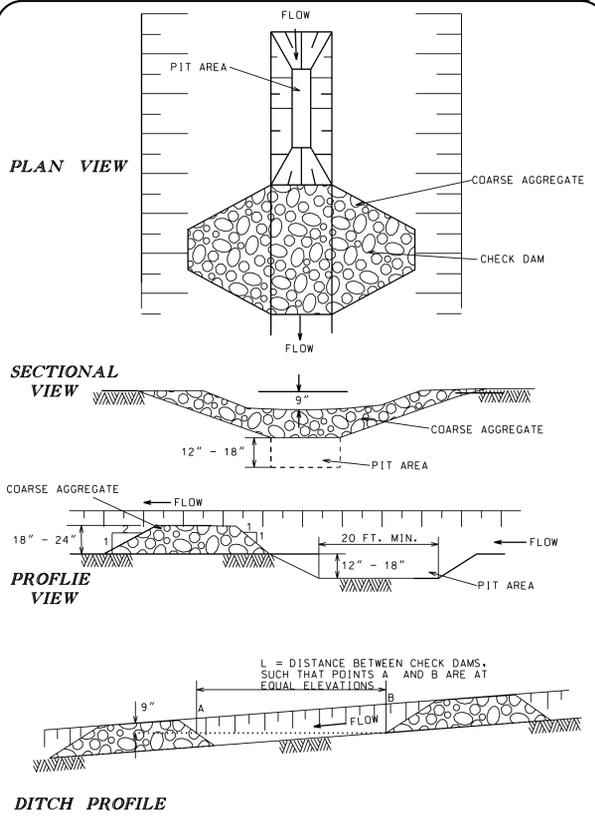
STEVEN J. VANDETTE, P.E. 28197



**INLET FILTERS AFTER PAVING OR GRADING**



**VEGETATIVE BUFFER ZONE**



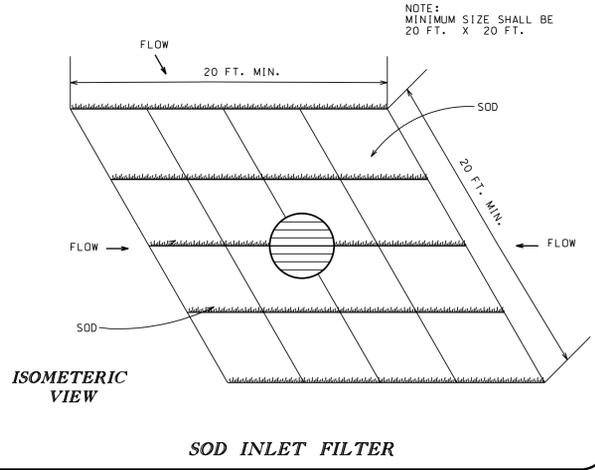
**SEDIMENT TRAP WITH CHECK DAM**

**DEFINITION**  
SOD INLET FILTER ARE PADS OF SOD PLACED AROUND A STORM DRAIN INLET OR CATCH BASIN.

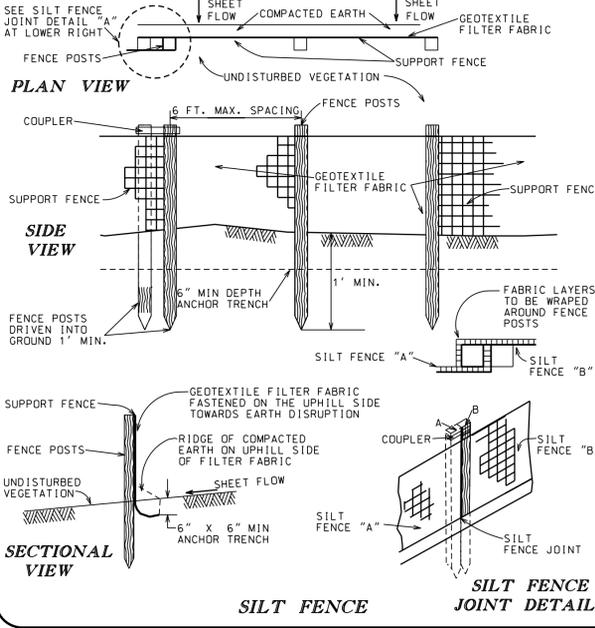
**PURPOSE**  
SOD INLET FILTERS ARE INSTALLED TO SLOW THE FLOW OF WATER INTO AN INLET OR CATCH BASIN AND TO FILTER OUT APPRECIABLE AMOUNTS OF SEDIMENT IN THE PROCESS.

**WHERE APPLICABLE**  
SOD INLET FILTERS SHOULD ONLY BE USED TO HANDLE LIGHT CONCENTRATIONS OF SEDIMENT. THEY ARE BEST USED AFTER FINAL GRADING IS COMPLETED AND DURING THE ESTABLISHMENT OF A VEGETATIVE COVER.

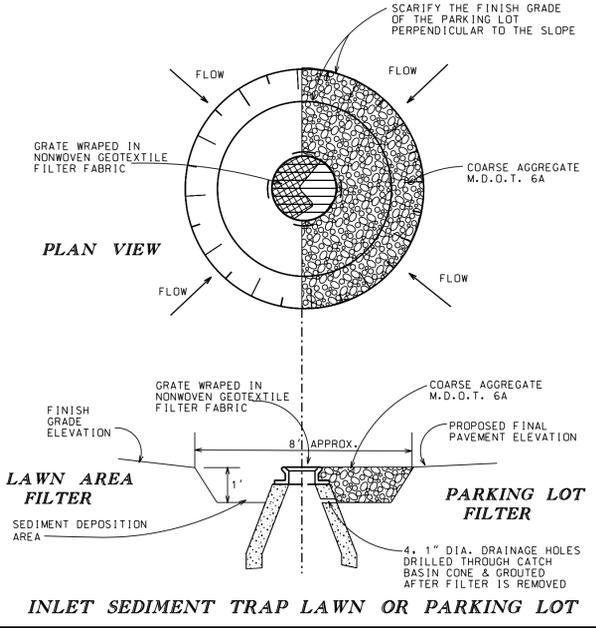
NOTE: MINIMUM SIZE SHALL BE 20 FT. X 20 FT.



**SOD INLET FILTER**



**SILT FENCE**



**INLET SEDIMENT TRAP LAWN OR PARKING LOT**

DATE: October 7, 2014

TO: Planning Commission

FROM: R. Brent Savidant, Planning Director

SUBJECT: POTENTIAL PRELIMINARY SITE PLAN APPLICATION – Potential Multifamily Residential Development, Southeast corner of Maple Road and Axtell (2785 West Maple), Section 32, Currently Zoned IB (Integrated Industrial and Business) District

The petitioner Schafer Development is interested in submitting a Preliminary Site Plan application for a multifamily residential development. The applicant submitted the attached concept drawings to the Planning Commission for informational purposes.

The property is currently zoned IB (Integrated Industrial & Business) District. Multifamily residential is permitted by right in the IB district. Therefore, the Planning Commission will be responsible for granting Preliminary Site Plan approval for the item.

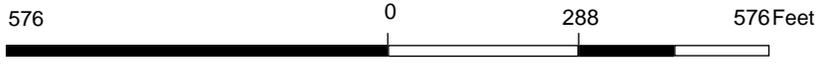
The attached report prepared by Carlisle/Wortman Associates, Inc. (CWA), the City's Planning Consultant, summarizes the potential project. The report was prepared prior to receiving the complete Preliminary Site Plan application.

The applicant does NOT seek approval on October 14, 2014. This item is intended to inform the Planning Commission of the upcoming item and generate discussion.

Attachments:

1. Maps
2. Report prepared by Carlisle/Wortman Associates, Inc.

C:\Users\czarneckik\Desktop\2785 W Maple Multifamily Residential\_PC Memo 2014 10 14.docx



Note: The information provided by this application has been compiled from recorded deeds, plats, tax maps, surveys, and other public records and data. It is not a legally recorded map survey. Users of this data are hereby notified that the source information represented should be consulted for verification.





CARLISLE

WORTMAN  
associates, inc.

605 S. Main Street, Ste. 1  
Ann Arbor, MI 48104

(734) 662-2200  
(734) 662-1935 Fax

**TO:** R. Brent Savidant, AICP, Planning Director

**FROM:** Ben Carlisle, AICP

**DATE:** October 3, 2014

**RE:** Maple Road Apartments

We have reviewed the concept plan for the redevelopment of the 9-acre McGregor site at the southeast corner of Maple Road and Axtell Drive. The applicant is requesting approval to demolish the existing building and construct seven (7) apartment buildings, each containing thirty-six (36) apartment units. The total number of proposed apartments is 252 dwelling unit for the entire site. The site is zoned IB, Integrated Industrial and Business District. Multiple family dwelling is a permitted use in this district.



This site is located in the “Transit Center Area” of the 2008 Master Plan. The Transit Center Area is to be a mixed use area made up of a complementary combination of residential, commercial, and service-oriented land uses.

The Plan calls for:

- A high-density mid-rise area in close proximity to the proposed train station and business airport.
- The area to become a lively village for residents and business customers alike.
- Limitation on the amount of surface parking.

This site is also located in the Study area of the 2014 draft Maple Road Corridor Plan. Strategies of the draft Maple Road Corridor Plan call for investment at development nodes by encouraging high-quality commercial and mixed-use development at major mile intersections. This site is within a quarter-mile of the Maple/Coolidge Node and three-quarters of a mile from the Troy Transit Center. The size of the site (9 acres) and the proximity of this site in relation to the new transit station makes the development of this parcel an important site in establishing the development pattern along Maple Road. This is a prime opportunity to create a development that is unique to Troy and Maple Road.

The applicant in making a significant investment in the site and has proposed attractive buildings. The submitted development meets many of the objectives of the 2008 plan and the draft 2014 plan. However, in continuing to push the evolution of Maple Road from an auto-dominated corridor to one that offers multiple transportation options and mixed use opportunities, we offer the following comments to be considered by the Planning Commission and applicant:

- 1) The size of the site is large enough to allow for creative site planning. The layout and site access with the boulevard drive-approach is very auto-oriented. One option to consider is to bisect the site with a main “urban” street and incorporate more of an interior street grid and alley pattern. Dividing the development with street(s) and alleys will eliminate the superblock and create a more walkable development. The urban style street grid would encourage the pedestrian and could allow for a mix of uses if desired by the applicant.



- 2) The main urban street could incorporate limited front setbacks, varied housing products, on-street parking, sidewalks, urban landscaping and lighting. May also include a mix of uses.



**Interior Urban Style Street: Eton Street Station, Birmingham.**

- 3) The applicant may need to slightly reduce the massing of the building in order to reorient the site plan. The applicant may be able to add additional smaller building(s) to offset reducing size of proposed ones.
- 4) All seven (7) buildings are the same. The applicant may consider incorporating one or two more housing types to break up the overall site massing.
- 5) The first floor of every unit is parking. Parking on the first floor creates a “dead” pedestrian space. While parking may be appropriate on the first floor for the interior buildings, alternative uses should be considered for the first floor of the buildings that front on Maple Road. The draft 2014 Maple Road Corridor Plan states that ground-level retail should be a focus of buildings in activity zones. We encourage the applicant to consider some retail or mixed use development along the first floor of buildings. The loss of residential units for those units on Maple Road may be made up elsewhere in the development.
- 6) The location of the center building along Axtell creates a gap in the streetwall. The applicant should move the building adjacent to Axtell to reinforce the streetwall.
- 7) Rather than turfgrass along the Maple Road frontage, the applicant is encouraged to create a more pedestrian friendly urban streetscape along Maple Road. Elsewhere in the development, the applicant is encouraged to diversity the landscape other than turf grass.
- 8) If the courtyard remains, it is currently is an underutilized space. It may be improved as more of a dynamic amenity.
- 9) The applicant is encouraged to incorporate more naturalized stormwater management.

Maple Road Apartments  
October 3, 2014

This concludes our preliminary comments. I look forward to discussing the plans with the Planning Commission.

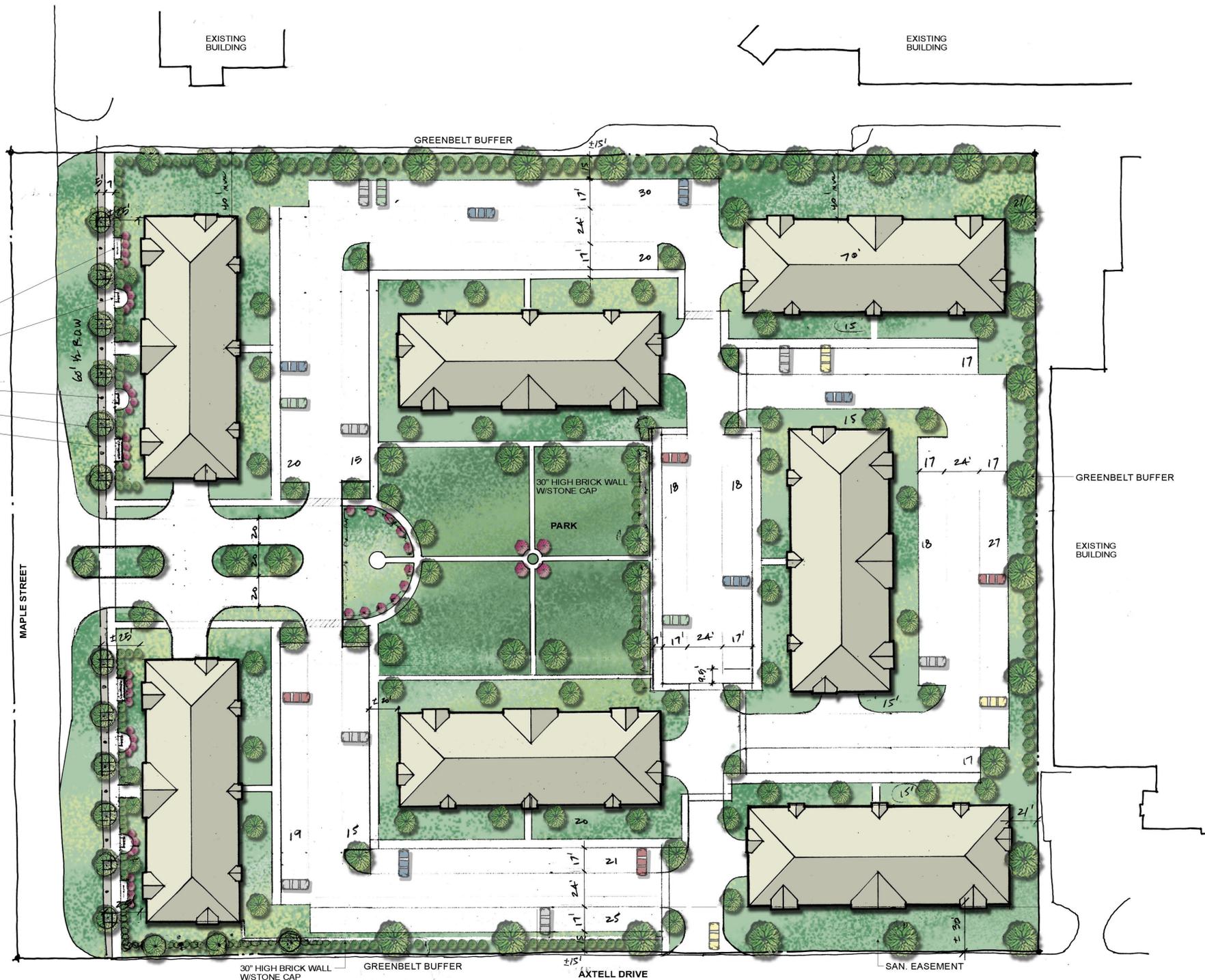
Yours Truly,



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**CARLISLE/WORTMAN ASSOC., INC.**  
**Benjamin R. Carlisle, LEED AP, AICP**

**NOTE**  
 BIKE RACK  
 BENCH  
 STREET LIGHTS  
 STREET TREE & GRATE  
 12' TEXTURED CONCRETE & WALK



**LEGEND**

TOTAL AC.:	±8.98 AC.
TOTAL UNITS:	252 DU
±1 BR:	112 DU
±2 BR:	112 DU
±3 BR:	128 DU
PARKING:	494
1.96'/UNIT	
GARAGE:	213
OPEN:	281

**\*NOTE: UNDERGROUND DETENTION**



**CONCEPTUAL SITE PLAN**  
 PROPOSED MULTI-FAMILY DEVELOPMENT  
 SHAFER DEVELOPMENT  
 TROY, MI

1"=40'-0"  
 09.09.14  
 09.12.14

Alexander V. Bogaerts + Associates, P.C.  
 Architecture • Planning • Interior Design  
 2445 Franklin Road  
 Bloomfield Hills, MI 48302  
 248-334-5000



©2014



■ HOBBS + BLACK ARCHITECTS

VIEW LOOKING EAST | W MAPLE ROAD

2014.09.29

**HOBBS + BLACK** ARCHITECTS

WEST MAPLE RESIDENTIAL

TROY, MICHIGAN

P14-815



**WEST MAPLE ELEVATION | BUILDING 1**



**WEST MAPLE ELEVATION | BUILDING 2**

2014.09.29