COMMUNITY DEVELOPMENT DEPARTMENT

45175 Ten Mile Road
Novi, MI 48375
(248) 347-0415 Phone
(248) 735-5600 Facsimile
www.cityofnovi.org

ZONING BOARD OF APPEALS STAFF REPORT

FOR: City of Novi Zoning Board of Appeals **ZONING BOARD APPEALS DATE:** November 19, 2019

REGARDING: **210 Buffington Drive, Parcel # 50-22-03-378-008 (PZ19-0042)**
BY: Larry Butler, Deputy Director Community Development

I. GENERAL INFORMATION:

Applicant
Singh Development

Variance Type
Dimensional Variance

Property Characteristics

Zoning District:	Single Family Residential
Location:	West of Old Novi Road and South of South Lake Drive
Parcel #:	50-22-03-378-008

Request
The applicant is requesting variances from the City of Novi Zoning Code Section 3.28.6.C.iv.a to allow the absence of landscape berm on the east, west, and south property lines. This property is zoned Single Family Residential (R-4).

II. STAFF COMMENTS:

III. RECOMMENDATION:

The Zoning Board of Appeals may take one of the following actions:

1. I move that we ***grant*** the variance in Case No. **PZ19-0042**, sought by _____, for _____ because Petitioner has shown practical difficulty requiring _____.

   (a) Without the variance Petitioner will be unreasonably prevented or limited with respect to use of the property because_____
   _____.

   (b) The property is unique because_____
   _____.

   (c) Petitioner did not create the condition because_____
   _____.

(d) The relief granted will not unreasonably interfere with adjacent or surrounding properties because_____
_____.

(e) The relief if consistent with the spirit and intent of the ordinance because _____
_____.

(f) The variance granted is subject to:

1._____.
2._____.
3._____.
4._____.

2. I move that we ***deny*** the variance in Case No. **PZ19-0042**, sought by _____, for_____ because Petitioner has not shown practical difficulty requiring _____.

(a) The circumstances and features of the property including_____ are not unique because they exist generally throughout the City.

(b) The circumstances and features of the property relating to the variance request are self-created because_____
_____.

(c) The failure to grant relief will result in mere inconvenience or inability to attain higher economic or financial return based on Petitioners statements that _____.

(d) The variance would result in interference with the adjacent and surrounding properties by_____.

(e) Granting the variance would be inconsistent with the spirit and intent of the ordinance to_____
_____.

Should you have any further questions with regards to the matter please feel free to contact me at (248) 347-0417.

Larry Butler
Deputy Director Community Development
City of Novi

MEMORANDUM

TO: ZONING BOARD OF APPEALS

THRU: BARBARA MCBETH, *AICP*, CITY PLANNER

FROM: SRI RAVALI KOMARAGIRI, PLANNER

SUBJECT: ZBA VARIANCE REQUESTS FOR 'THE SCENIC PINES' (ZBA Case No. 19-0042)

DATE: OCTOBER 31, 2019

The purpose of this memo is to provide some background information on the variance request by **Singh Development**. The request is being considered at the November 12, 2019 ZBA meeting.

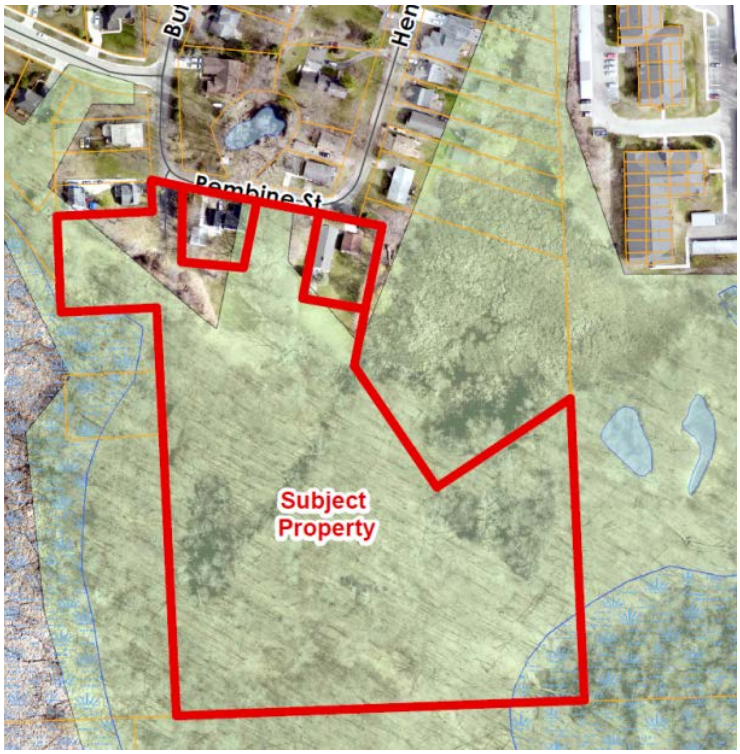
The applicant is proposing to utilize the One-family Cluster Option to develop a site condominium with 25 single family detached homes. Each home is proposed to be detached and clustered into two to four unis on each side of the proposed Pristine Lane and Noble Trail. Approximately 53% of existing wetlands and woodlands on subject property are proposed to be preserved in order to develop a cluster option.

Per section 3.28.4.D, clusters cannot be within 30 feet from edge of private drive. The plan currently proposed a distance of 25 feet (30 feet required). Section 3.28.6.C of one-family cluster option ordinance allows Planning Commission can approve this reduction in setback from edge of private drive provided the site plan meets the following conditions:

a. **A landscape berm meeting the requirements of Section 5.5.3.A.i - ii is provided adjacent to other single family residential districts;**
b. Setbacks to adjacent one-family and residential acreage properties are not reduced below the rear yard setbacks required in the adjacent zoning district;
c. Setbacks to private drives is not reduced below twenty-five (25) feet;
d. Clusters shall maintain a minimum fifty-five (55) foot front and rear and twenty-five (25) foot side setback between clusters; and e. Setbacks to existing right-of-way or proposed right-of-way, as determined by the City Engineer, shall not be reduced to less than forty (40) feet.

The site plan met all the required conditions except item a (in **bold** above). The applicant should get a variance from the ZBA from the condition that requires a berm due to absence of a proposed berm. The entire site is bordered by regulated woodlands and wetlands as shown in the image below.

In order to install a berm to meet the requirements, the applicant has to impact the regulated woodlands and wetlands. Staff supports the applicant's request for lack of berm, as the intent of the requirement to provide a buffer through a berm is achieved by the existing conditions and the impact to the natural features can be avoided. Also, the property to the west and the south is part of City's Lakeshore Park and to the east is part of a larger wetland. Due to which, it is unlikely for a single family residential development to occur in those areas.



On September 25, 2019, the Planning Commission has approved the Preliminary site plan, wetland permit, woodland permit and storm water management plan for this project. As part of the approval, they approved the reduction of setbacks, subject to a variance for lack of berm (per section 3.28.6.C..iv.a) approved by the Zoning Board of Appeals based on the following motion:

> *Planning Commission approval of reduction of front building setbacks from the streets as listed in Section 3.28.4.D. A minimum of 30 feet is required from the edge of Private drive, the plans currently propose 25 feet in order to protect regulated woodlands in the back yards; this is based on the following findings listed in Section 3.28.6.C:*
> *a. All the conditions listed in Section 3.28.6.C. from i thru iv are met with the exception as noted below;*
> *b. A Zoning Board of Appeals variance from Section 3.28.6.C.iv.a to allow absence of required berm along the east, west and south property boundaries adjacent to other single-family residential districts;*

Please feel free to contact me at 248-735-5607 or skomaragiri@cityofnovi.org if you need further information.

PLANNING COMMISSION
ACTION SUMMARY

CITY OF NOVI
Regular Meeting
September 25, 2019 7:00 PM
Council Chambers | Novi Civic Center
45175 W. Ten Mile (248) 347-0475

CALL TO ORDER
The meeting was called to order at 7:00 PM.

ROLL CALL

Present:	Member Anthony, Member Avdoulos, Member Ferrell, Member Gronachan, Member Lynch, Member Maday
Absent:	Chair Pehrson
Also Present:	Barbara McBeth, City Planner; Sri Komaragiri, Planner; Kate Richardson, Staff Engineer; Rick Meader, Landscape Architect; Thomas Schultz, City Attorney; Pete Hill, Environmental Consultant; Josh Bocks, Traffic Engineering Consultant; Doug Necci, Façade Consultant

APPROVAL OF AGENDA

Motion to approve the September 25, 2019 Planning Commission Agenda. *Motion carried 6-0.*

CONSENT AGENDA - REMOVALS AND APPROVAL

1. **39500 ORCHARD HILLS PLACE JF19-04 – SECTION 9 WAIVER**
   Approval of the request of JFK Investment Company, LLC, for 39500 Orchard Hills Place JSP19-04 for a Section 9 waiver related to an exterior remodel. The subject parcel is located in Section 36, west of Haggerty Road north of Eight Mile Road. It is zoned OSC, Office Service Commercial. The existing building was constructed in 1986, prior to the adoption of the Façade Ordinance. The applicant proposes to update the building facades to replace the existing primary material, EIFS, with a Flat Metal Panel system.

In the matter of request of JFK Investment Company, LLC, for 39500 Orchard Hills Place JSP19-04, motion to approve a Section 9 Façade Waiver to allow an underage of brick (30% required, 7% proposed) and an overage of Flat Metal Panels (50 % maximum allowed, 93% proposed) because bringing the existing building into compliance would represent extreme practical difficulty and would not significantly enhance the appearance of the building. *Motion carried 6-0.*

2. **CROSSPOINTE MEADOWS ACCESSORY BUILDING JSP 19-36**
   Approval at the request of Crosspointe Meadows Church for Preliminary Site Plan with a Section 9 waiver. The subject property is located on the eastside of

Meadowbrook Road, south of Thirteen Mile Road in section 12 . The primary building on the property is a Church. The applicant is proposing to build a 480 square feet storage building in the rear yard, adjacent to the existing dumpster. No other changes to the site plan are proposed.

In the matter of Crosspointe Meadows Church Accessory Building, JSP 15-40, motion to approve the Preliminary Site Plan and a Section 9 Waiver, based on and subject to the following:

a. **To allow the underage of brick on south façade (30% minimum required, 23% proposed) and overage of EIFS on the south façade (25% maximum allowed, 44% proposed) and Trim on the south façade (15% maximum allowed, 33% proposed), because the deviations are a result of the large overhead door which is not regulated by the Ordinance and the plan is consistent with the intent and purpose of the Façade Ordinance, which is hereby granted;**

b. **A waiver to allow a painted island in lieu of a raised end island near the entrance to the storage shed, because the drive is only used for dumpster pick up and lawn maintenance vehicles, which is hereby granted;**

c. **The findings of compliance with Ordinance standards in the staff review letter and the conditions and the items listed in that letter being addressed.**

Motion Carried 6-0.

PUBLIC HEARINGS

1. **GOLLING MASERATI & ALFA ROMEO JZ19-28 WITH REZONING 18.728**

   Public hearing at the request of Dorchen/Martin Associates for Planning Commission's recommendation to City Council for a Planned Rezoning Overlay Concept Plan associated with a Zoning Map amendment, to rezone from NCC (Non-Center Commercial) to B-3 (General Business). The subject property is approximately 5.25 acres and is located on the south side of Grand River Avenue, west of Joseph Drive (Section 24). The applicant is proposing an automobile dealership, a permitted use in the B-3 District, with outdoor space for exclusive sale of new and used automobiles, which is a Special Land Use in the B-3 District.

In the matter of Golling Maserati & Alfa Romeo, JZ19-28, with Zoning Map Amendment 18.728, motion to postpone making a recommendation to the City Council to rezone the subject property from NCC (Non-Center Commercial) to B-3 (General Business) with a Planned Rezoning Overlay Concept Plan. This motion is made for the following reason: the applicant requested that the matter be postponed until the October 30th meeting. ***Motion Carried 6-0.***

1. **SCENIC PINES ESTATES JSP 18-76**

   Public hearing at the request of Singh Development for Preliminary Site Plan With One-Family clustering Option, Site Condominium, Special Land Use, Wetland Permit, Woodland Permit and Stormwater Management Plan Approval. The subject properties are approximately 9.44 acres and are located south of South Lake Drive and south side of Pembine Drive (Section 3). The applicant is proposing to utilize the One-family Cluster Option to develop a site condominium with 25 single family detached homes.

In the matter of Scenic Pines Estates, JSP 18-76, motion to approve the Special Land Use Permit based on and subject to the following:

1. **The proposed use will not cause any detrimental impact on existing thoroughfares *(based on the Traffic review);***
2. **The proposed use will not cause any detrimental impact on the capabilities of public services and facilities*;***
3. **The proposed use is compatible with the natural features and characteristics of the land *(because the applicant is proposing to preserve 53% of qualifying area that includes regulated woodlands and wetlands);***
4. **The proposed use is compatible with adjacent uses of land *(because the subject property is surrounded by single family residential uses. Façade review notes that the proposed elevations portray an overall architectural standard equal or higher than the existing homes in the surrounding neighborhood)*;**
5. **The proposed use is consistent with the goals, objectives, and recommendations of the City's Master Plan for Land Use (because *the development is age-targeted. The proposed floor plans indicate first-floor master);***
6. **The proposed use will promote the use of land in a socially and economically desirable manner;**
7. **The proposed use is (1) listed among the provision of uses requiring special land use review as set forth in the various zoning districts of this Ordinance, and (2) is in harmony with the purposes and conforms to the applicable site design regulations of the zoning district in which it is located;**
8. **The approval shall be subject to the following conditions at that time:**
   a. **The Planning Commission finding that Parcel ID No. 22-03-327-004, mentioned in the notes to the site plan, located on the north side of South Lake Drive, is not part of this development and shall not become or be made part of this development, as it does not comply with Sec. 36-62, Lakefront use standards, of the City Code of Ordinances as relates to lakefront recreational parks;**
   b. **Maintenance and reconstruction of the roads during and after construction, dust maintenance control and the stipulation that the roads be videotaped before and after construction to determine reconstruction requirements;**
   c. **Limit Construction times with respect to elementary school bus schedule;**
   d. **Construction traffic to comply with the City load limits; and**
9. **Final Site Plan shall come back to Planning Commission for Final Approval.**

Motion Carried 6-0.

In the matter of Scenic Pines Estates, JSP 18-76, motion to approve the Preliminary Site Plan with One-family clustering option and the Site Condominium based on and subject to the following:

1. **Planning Commission's finding per Section 3.28.1.B, that in all one-family residential districts, the clustering of one-family dwellings may be permitted, provided that the land consists of an unsubdivided area and the proposed site plan and, that the conventional approach to residential development would destroy the unique environmental significance of the site, and that the use of the cluster option is a desirable course of action to follow based on the following condition.**
   a. **The majority (fifty (50) percent) of the net site area (defined as the area which is delineated by parcel lines, exclusive of rights-of-way as shown on the adopted master plan) is composed of lands that are within jurisdiction of Woodland Protection Ordinance, as amended, Chapter 37 of the Code of Ordinances, or within the jurisdiction of the Wetland and Watercourse Protection Ordinance, as amended, Chapter 12, Article V of the Code of Ordinances, or any combination**

of such lands. The applicant is proposing to permanently preserve up to 53% of qualifying area on site.

2. **Planning Commission approval for reduction of minimum distance between the clusters, based on the finding, subject to conditions listed in Section 3.28.5., that the strict application of the distance in this instance would destroy a natural amenity such as regulated wetlands and woodlands. This is required for the Units 1-2-3 cluster and the Units 22-23-24-25 cluster. A minimum of 85 feet is required, approximately 78 feet is proposed;**
3. **Planning Commission approval of reduction of front building setbacks from the streets as listed in Section 3.28.4.D. A minimum of 30 feet is required from the edge of Private drive, the plans currently propose 25 feet in order to protect regulated woodlands in the back yards; this is based on the following findings listed in Section 3.28.6.C:**
   a. **All the conditions listed in Section 3.28.6.C. from i thru iv are met with the exception as noted below;**
   b. **A Zoning Board of Appeals variance from Section 3.28.6.C.iv.a to allow absence of required berm along the east, west and south property boundaries adjacent to other single-family residential districts;**
4. **Planning Commission waiver for reduction of the minimum distance for opposite-side spacing requirement, Design and Construction Standards Section 11-216(d), for the roadway spacing between Pristine Lane and Henning Street(A minimum of 200 feet is required, 117 feet is proposed, due to estimated low volume of vehicles expected from the proposed development, which is hereby granted;**
5. **A landscape waiver for absence of three required street trees along Pembine Street Frontage , as listed in 5.5.3.E.i.c and LDM 1.d., due to lack of space between the edge of pavement and the future Right-of-way ad conflicts with other required proposed utilities and swales, which is hereby granted;**
6. **A landscape waiver from Section 2.1 of Landscape Design Manual to allow some of the proposed trees to be located outside of the space between the sidewalk and the curb due to conflicts with proposed utilities, which is hereby granted. This waiver is supported as most of the proposed trees are located within 15 feet from the curb, with an exception of three trees;**
7. **Administrative approval from Engineering for variance from Engineering Design Manual Section 7.4.2.C.1 for not meeting the minimum distance of 15 feet from back of curb to outside edge of sidewalk;**
8. **The applicant shall revise the woodland replacement plan at the time of final site plan to avoid the conflict between the proposed tree replacement locations and the existing overhead electric line along the western property boundary;**
9. **The applicant shall obtain necessary approvals from all related outside agencies for the proposed location of storm water pond and related landscape under the existing overhead lines prior to approval of Final site plan;**
10. **Assurance of the permanence of the open space and its continued maintenance shall be submitted for review and approval by the City Attorney at the time of final site plan approval.**
11. **The findings of compliance with Ordinance standards in the staff and consultant review letters, and the conditions and items listed in those letters, as well as all of the terms and conditions of the PRO Agreement as approved, with these items being addressed on the Final Site Plan; and**
12. **The Final Site Plan shall come back to Planning Commission for Final Approval.**

Motion Carried 6-0.

In the matter of Scenic Pines Estates, JSP 18-76, motion to approve the Wetland Permit based on and subject to the findings of compliance with Ordinance standards in the staff and consultant review letters, and the conditions and items listed in those letters being addressed on the Final Site Plan. *Motion Carried 6-0.*

In the matter of Scenic Pines Estates, JSP 18-76, motion to approve the Woodland Permit based on and subject to the findings of compliance with Ordinance standards in the staff and consultant review letters, and the conditions and items listed in those letters being addressed on the Final Site Plan. *Motion Carried 6-0.*

In the matter of Scenic Pines Estates, JSP 18-76, motion to approve the Stormwater Management Plan, based on and subject to the findings of compliance with Ordinance standards in the staff and consultant review letters, and the conditions and items listed in those letters being addressed on the Final Site Plan; and the Final Site Plan must come back to Planning Commission for Final Approval. *Motion Carried 6-0.*

MATTERS FOR CONSIDERATION

1. **APPROVAL OF THE AUGUST 28, 2019 PLANNING COMMISSION MINUTES**

Motion to approve the August 28, 2019 Planning Commission Meeting Minutes. *Motion carried 6-0.*

ADJOURNMENT

The meeting was adjourned at 9:41 PM.

*****Actual language of the motions subject to review.*

45175 Ten Mile Road
Novi, MI 48375
(248) 347-0415 Phone
(248) 735-5600 Facsimile
www.cityofnovi.org

ZONING BOARD OF APPEALS APPLICATION

APPLICATION MUST BE FILLED OUT COMPLETELY

Application Fee: _____

Meeting Date: _____

ZBA Case #: PZ_____

I. PROPERTY INFORMATION (Address of subject ZBA Case)

PROJECT NAME / SUBDIVISION: Scenic Pines Estates

ADDRESS: 1207 Pembine, Novi (JSP18-76) | LOT/SIUTE/SPACE #: N/A

SIDWELL #: 50-22-03 - 378 - 009 (May be obtain from Assessing Department (248) 347-0485)

CROSS ROADS OF PROPERTY: Pembine Road between Buffington and Henning Roads

IS THE PROPERTY WITHIN A HOMEOWNER'S ASSOCIATION JURISDICTION? ☐ YES ☑ NO

REQUEST IS FOR: ☑ RESIDENTIAL ☐ COMMERCIAL ☐ VACANT PROPERTY ☐ SIGNAGE

DOES YOUR APPEAL RESULT FROM A NOTICE OF VIOLATION OR CITATION ISSUED? ☐ YES ☑ NO

II. APPLICANT INFORMATION

A. APPLICANT

EMAIL ADDRESS	CELL PHONE NO.
Todd.Rankine@singhmail.com	248-866-9799

NAME: Todd Rankine | TELEPHONE NO.: 248-865-1614

ORGANIZATION/COMPANY: Singh Development | FAX NO.:

ADDRESS	CITY	STATE	ZIP CODE
7125 Orchard Lake Road Suite 200	West Bloomfield	MI	48325

B. PROPERTY OWNER ☑ CHECK HERE IF APPLICANT IS ALSO THE PROPERTY OWNER

Identify the person or organization that owns the subject property:	EMAIL ADDRESS	CELL PHONE NO.

NAME | TELEPHONE NO.

ORGANIZATION/COMPANY | FAX NO.

ADDRESS	CITY	STATE	ZIP CODE

III. ZONING INFORMATION

A. ZONING DISTRICT

☐ R-A ☐ R-1 ☐ R-2 ☐ R-3 ☑ R-4 ☐ RM-1 ☐ RM-2 ☐ MH

☐ I-1 ☐ I-2 ☐ RC ☐ TC ☐ TC-1 ☐ OTHER _____

B. VARIANCE REQUESTED

INDICATE ORDINANCE SECTION (S) AND VARIANCE REQUESTED:

1. Section 3.28.6.C.iv.a Variance requested Delete requirement for landscape berm along the east west and south property lines
2. Section _____ Variance requested _____
3. Section _____ Variance requested _____
4. Section _____ Variance requested _____

IV. FEES AND DRAWNINGS

A. FEES

☐ Single Family Residential (Existing) $200 ☐ (With Violation) $250 ☑ Single Family Residential (New) $250

☐ Multiple/Commercial/Industrial $300 ☐ (With Violation) $400 ☐ Signs $300 ☐ (With Violation) $400

☐ House Moves $300 ☐ Special Meetings (At discretion of Board) $600

B. DRAWINGS 1-COPY & 1 DIGITAL COPY SUBMITTED AS A PDF

- Dimensioned Drawings and Plans
- Site/Plot Plan
- Existing or proposed buildings or addition on the property
- Number & location of all on-site parking, if applicable
- Existing & proposed distance to adjacent property lines
- Location of existing & proposed signs, if applicable
- Floor plans & elevations
- Any other information relevant to the Variance application

ZONING BOARD OF APPEALS APPLICATION

V. VARIANCE

A. VARIANCE (S) REQUESTED

☑ DIMENSIONAL ☐ USE ☐ SIGN

There is a five-(5) hold period before work/action can be taken on variance approvals.

B. SIGN CASES (ONLY)

Your signature on this application indicates that you agree to install a **Mock-Up Sign** ten-(10) days before the schedule ZBA meeting. Failure to install a mock-up sign may result in your case not being heard by the Board, postponed to the next schedule ZBA meeting, or cancelled. A mock-up sign is **NOT** to be actual sign. Upon approval, the mock-up sign must be removed within five-(5) days of the meeting. If the case is denied, the applicant is responsible for all costs involved in the removal of the mock-up or actual sign (if erected under violation) within five-(5) days of the meeting.

C. ORDINANCE

City of Novi Ordinance, Section 3107 – Miscellaneous

No order of the Board permitting the erection of a building shall be valid for a period longer than one-(1) year, unless a building permit for such erection or alteration is obtained within such period and such erection or alteration is started and proceeds to completion in accordance with the terms of such permit.

No order of the Board permitting a use of a building or premises shall be valid for a period longer than one-hundred and eighty-(180) days unless such use is establish within such a period; provided, however, where such use permitted is dependent upon the erection or alteration or a building such order shall continue in force and effect if a building permit for such erection or alteration is obtained within one-(1) year and such erection or alteration is started and proceeds to completion in accordance with the terms of such permit.

D. APPEAL THE DETERMINATION OF THE BUILDING OFFICIAL

PLEASE TAKE NOTICE:

The undersigned hereby appeals the determination of the Building Official / Inspector or Ordinance made

☐ CONSTRUCT NEW HOME/BUILDING ☐ ADDITION TO EXISTING HOME/BUILDING ☐ SIGNAGE

☐ ACCESSORY BUILDING ☐ USE ☐ OTHER _____

VI. APPLICANT & PROPERTY SIGNATURES

A. APPLICANT

Todd J. Rankin — Applicant Signature

09.25.2019 — Date

B. PROPERTY OWNER

If the applicant is not the owner, the property owner must read and sign below:

The undersigned affirms and acknowledges that he, she or they are the owner(s) of the property described in this application, and is/are aware of the contents of this application and related enclosures.

Todd J. Rankin — Property Owner Signature

09.25.2019 — Date

VII. FOR OFFICIAL USE ONLY

DECISION ON APPEAL:

☐ GRANTED ☐ DENIED

The Building Inspector is hereby directed to issue a permit to the Applicant upon the following and conditions:

_____ — Chairperson, Zoning Board of Appeals

_____ — Date

Community Development Department
45175 Ten Mile Road
Novi, MI 48375
(248) 347-0415 Phone
(248) 735-5600 Facsimile
www.cityofnovi.org

REVIEW STANDARDS
DIMENSIONAL VARIANCE

The Zoning Board of Appeals (ZBA) will review the application package and determine if the proposed Dimensional Variance meets the required standards for approval. In the space below, and on additional paper if necessary, explain how the proposed project meets each of the following standards. (Increased costs associated with complying with the Zoning Ordinance will not be considered a basis for granting a Dimensional Variance.)

Standard #1. Circumstances or Physical Conditions.

Explain the circumstances or physical conditions that apply to the property that do not apply generally to other properties in the same zoning district or in the general vicinity. Circumstances or physical conditions may include:

a. Shape of Lot. Exceptional narrowness, shallowness or shape of a specific property in existence on the effective date of the Zoning Ordinance or amendment.

☐ Not Applicable ☑ Applicable If applicable, describe below:

See attached

and/or

b. Environmental Conditions. Exceptional topographic or environmental conditions or other extraordinary situations on the land, building or structure.

☐ Not Applicable ☑ Applicable If applicable, describe below:

See attached

and/or

c. Abutting Property. The use or development of the property immediately adjacent to the subject property would prohibit the literal enforcement of the requirements of the Zoning Ordinance or would involve significant practical difficulties.

☑ Not Applicable ☐ Applicable If applicable, describe below:

Standard #2. Not Self-Created.

Describe the immediate practical difficulty causing the need for the Dimensional Variance, that the need for the requested variance is not the result of actions of the property owner or previous property owners (i.e., is not self-created).

See attached

Standard #3. Strict Compliance.

Explain how the Dimensional Variance in strict compliance with regulations governing area, setback, frontage, height, bulk, density or other dimensional requirements will unreasonably prevent the property owner from using the property for a permitted purpose, or will render conformity with those regulations unnecessarily burdensome.

See Attached

Standard #4. Minimum Variance Necessary.

Explain how the Dimensional Variance requested is the minimum variance necessary to do substantial justice to the applicant as well as to other property owners in the district.

See Attached

Standard #5. Adverse Impact on Surrounding Area.

Explain how the Dimensional Variance will not cause an adverse impact on surrounding property, property values, or the use and enjoyment of property in the neighborhood or zoning district.

See Attached

The Zoning Board of Appeals (ZBA) will review the application package and determine if the proposed Dimensional Variance meets the required standards for approval. In the space below, and on additional paper if necessary, explain how the proposed project meets each of the following standards. (Increased costs associated with complying with the Zoning Ordinance will not be considered a basis for granting a Dimensional Variance.)

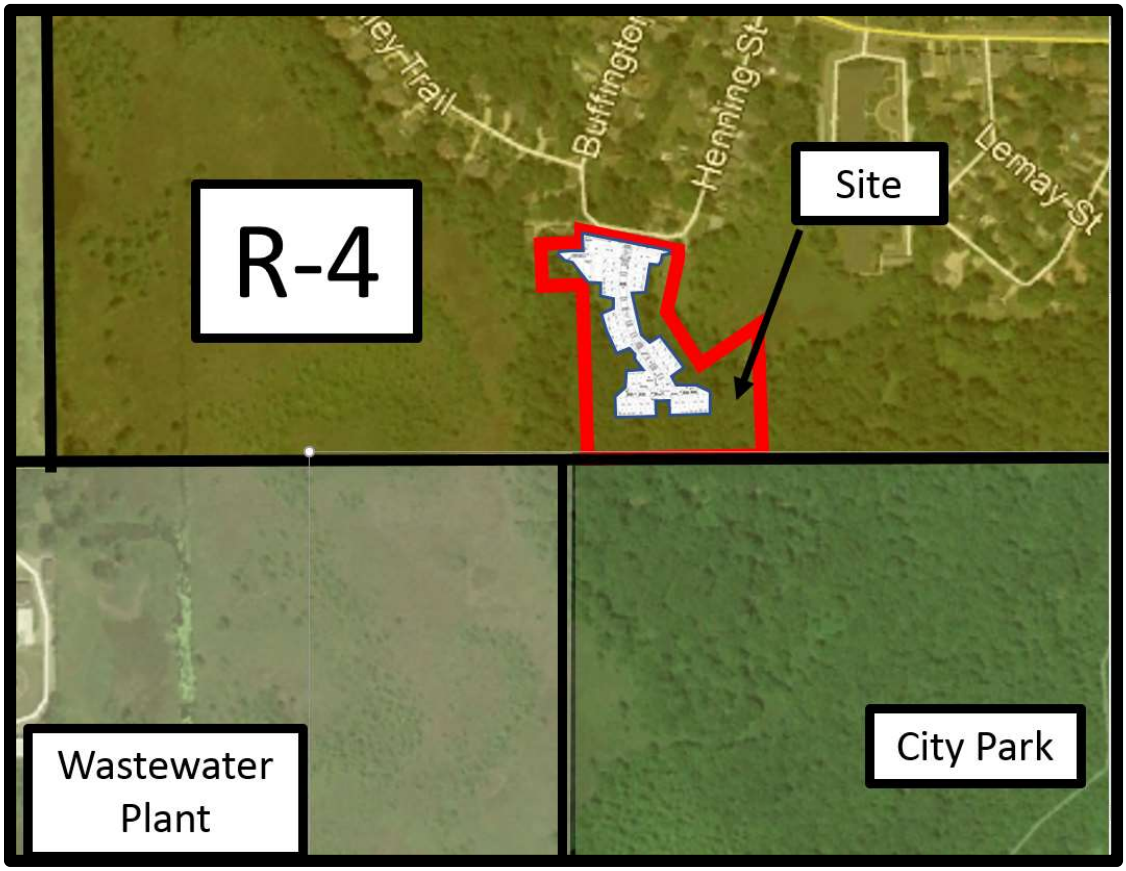
Standard #1. Circumstances or Physical Conditions.

Explain the circumstances or physical conditions that apply to the property that do not apply generally to other properties in the same zoning district or in the general vicinity. Circumstances or physical conditions may include:

a. **Shape of Lot.** Exceptional narrowness, shallowness or shape of a specific property in existence on the effective date of the Zoning Ordinance or amendment. **Applicable**, described below:

The need for a variance is due to unique circumstances peculiar to this property. These conditions create an unnecessary hardship that requires relief. The property is irregularly shaped. The unusual shape of the property is a polygon with uneven lengths and 11 unique bearings. Berm construction would be irregular and haphazard if were to follow the East, South and West property lines. Additionally, the geometry of the property lines would have the berm changing direction several times creating an unusual and impractical configuration winding through the existing woodlands that won't serve the purpose intended. A berm is provided at the north property line parallel with the existing street and situated in a standard configuration to provide intended screening between residential properties. The City of Novi Ordinance Section 3104 allows the Zoning board of Appeals to permit the elimination of the berm requirement prescribed in the Zoning Ordinance because the property line configuration clearly demonstrates that the Shape of the Property is so unique that the circumstances are not generally applicable to other rectilinear properties. This property meets the required legal standard.

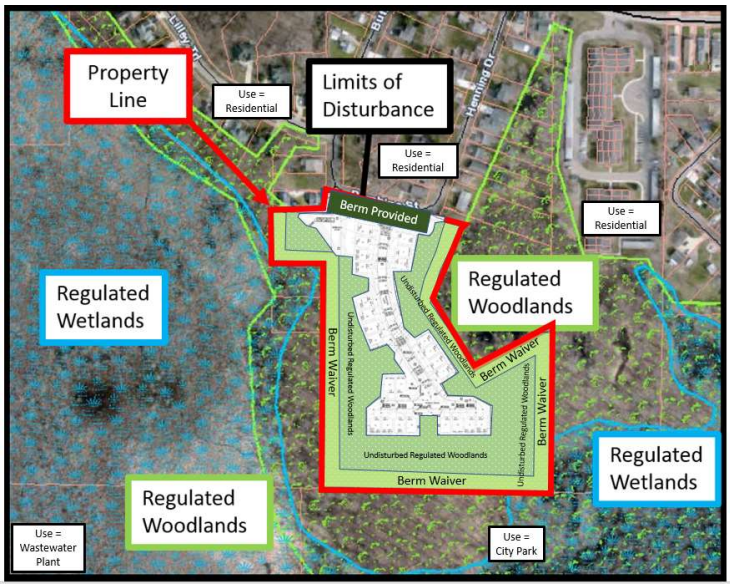
Exhibit 1: Shape of Property



b. **Environmental Conditions.** Exceptional topographic or environmental conditions or other extraordinary situations on the land, building or structure. **Applicable**, described below:

The need for a variance is due to unique circumstances peculiar to this property. These conditions create an unnecessary hardship that requires relief. The Site Area is 9.44 AC gross and includes 1.7 Ac of regulated wetlands and 7.45 Ac of regulated woodland that constitute 80% of the net acreage. These natural features are an important element for the property and surrounding community. The site plan strives to preserve the natural features to maximum affect by utilizing the City of Novi Cluster option which permits clustering of the units on the interior of the site to leave large sections undisturbed. The undisturbed area acts as a natural buffer between properties. The requirement to cut down trees and impact wetlands to construct a screening berm in the middle of the existing woods is impractical and undesirable. The existence of the abundant natural features on the site is the environmental condition that creates and extraordinary situation requiring relief. The City of Novi Ordinance Section 3104 allows the Zoning board of Appeals to permit the elimination of the screening berm requirement prescribed in the Zoning Ordinance because the large quantity of natural feature demonstrate that Environmental Conditions exist on the property that do not apply generally to other properties. This site clearly meets the legal standard.

Exhibit 2: Environmental Conditions





c. **Abutting Property.** The use or development of the property immediately adjacent to the subject property would prohibit the literal enforcement of the requirements of the Zoning Ordinance or would involve significant practical difficulties. **Not Applicable/Not Required.**

Standard #2. Not Self-Created.

Describe the immediate practical difficulty causing the need for the Dimensional Variance, that the need for the requested variance is not the result of actions of the property owner or previous property owners (i.e., is not self-created).

The applicant's problem is not self-created. The problem is an unnecessary hardship on the property owner requiring relief. Per City of Novi Zoning section 3.28.6.C the Planning Commission can and on 9/25/2019 did approve a reduction to building setbacks to preserve the natural features of the site. Commission approved a reduction of front building setbacks from the streets from 30 feet from the edge of pavement to 25 feet in order to protect regulated woodlands in the back yards. The approval was conditioned on a ZBA variance for elimination of the berms in question. The reason the Planning Commission could not waive the berm requirement themselves is because Section

3.28.6.C.iv.a wording says single-family residential <u>"districts"</u> rather than single-family residential <u>"use."</u> The wording of the ordinance inadvertently moves the jurisdiction out of Planning Commission purview regarding berm construction and places it into the jurisdiction of the ZBA as a zoning matter. This applicant did not write the ordinance and had no part in choice of words. The intent of the ordinance was to create berms between uses to protect adjacent neighbors from viewing non-standard configurations. The actual situation is there are no residential uses in proximity to the east, south, and west property lines and never will be. Those adjacent properties are zoned for residential uses but can never be developed as such. There is a city park to the east and south and a wastewater plant to the west. All the adjacent property is burdened with a 300 Ac wetland that is un-buildable. If the planners who wrote the ordinance has considered the possibility of a cluster development adjacent to permanent non-residential uses in a residential district, they may have had the foresight to include the phrase "residential use" rather than "residential district." Unfortunately, not every possible situation can be anticipated when the ordinances are being written and they did use the word "district" which make this a ZBA matter. The City planner is in full support of the variance, and as stated previously, the City Planning Commission has already approved it, subject to the ZBA granting the required variance to eliminate the required berm so a 75' natural buffer can remain. The City of Novi Ordinance Section 3104 allows the Zoning board of Appeals to permit the <u>elimination of the berm requirement</u> prescribed in the Zoning Ordinance because the narrative demonstrates that the <u>elimination of the berm</u> was <u>not Self-Created.</u> The legal standard has been met.

<u>Exhibit 3: Condition created by Ordinance word selection</u>

C. Reduced setbacks subject to the Planning Commission making the following findings:

i. The proposed changes will not adversely affect neighboring properties;

ii. Density will not exceed that permitted in the district;

iii. Safe access is provided to the development; and

iv. The following conditions are met:

a. A landscape berm meeting the requirements of Section 5.5.3.A.i - ii is provided adjacent to other single family residential districts;

<u>Standard #3. Strict Compliance.</u>

Explain how the Dimensional Variance in strict compliance with regulations governing area, setback, frontage, height, bulk, density or other dimensional requirements will unreasonably prevent the property owner from using the property for a permitted purpose or will render conformity with those regulations unnecessarily burdensome.

The property cannot be reasonably used for the purposes permitted which creates an unnecessary hardship. On 9/25/2019 the Planning commission unanimously approved the Scenic Pines Estates JSP 18-76 Special Land Use Permit, Preliminary Site Plan with One-Family clustering option and site condominium, Wetland Permit, Woodland Permit, and Stormwater Management Plan. Without ZBA approval of elimination of the berm, supported by planning staff and Planning Commission, the property owner will be unreasonably prevented from using the property for the approved and permitted purpose. Strict compliance with the berm requirement would render the City of Novi cluster option unavailable without cutting down the natural features it aims to protect. The clustered development area has

prescribed dimensional constraints, separations and requirements that limit the amount of development area. If berms were required within the development area, the area to build homes and infrastructure would be unavailable and the cluster option unobtainable. The spirit and intent of the cluster ordinance could not be achieved WITHOUT the variance. The City of Novi Ordinance Section 3104 allows the Zoning board of Appeals to permit the elimination of the berm requirement prescribed in the Zoning Ordinance because strict compliance with the berm requirement will unreasonably prevent use of the property in the permitted manner and the legal standard has been met.

Standard #4. Minimum Variance Necessary.

Explain how the Dimensional Variance requested is the minimum variance necessary to do substantial justice to the applicant as well as to other property owners in the district.

The variance requested is the minimum variance necessary. The 75' setback required by the City of Novi Cluster Option Ordinance along the three property lines in question will remain in full force and affect and will protect and preserve regulated woodland and wetlands along those property lines. The North property line is not included in this request because a berm can be built at that location without clearing abundant natural features to make way for the berm. The City of Novi Ordinance Section 3104 allows the Zoning board of Appeals to permit the elimination of the berm requirement prescribed in the Zoning Ordinance for three of the four property lines because the facts above demonstrate that the elimination of the requirement is limited to the east, west and south property lines, but EXCLUDES the north property line and is the minimum variance necessary to do substantial justice to the applicant as well as to other property owners in the district by preserving and protecting natural features rather than building a berm. The proposal meets the legal standard.

Standard #5. Adverse Impact on Surrounding Area.

Explain how the Dimensional Variance will not cause an adverse impact on surrounding property, property values, or the use and enjoyment of property in the neighborhood or zoning district.

The variance will not alter the essential character of the area but will actually enhance the character. Clearing the regulated woodlands creates an unnecessary hardship on both the property owner and the adjacent neighboring properties due to the loss of significant natural features. The spirit of the Zoning Ordinance is observed because the proposed 75' wide undisturbed regulated woodlands and wetlands on the eastern, southern, and western property lines create a natural buffer between the property and the adjacent districts so no adverse impacts will be introduced. These natural features provide a superior buffer than the alternative required by the zoning ordinance, from which we seek relief. Removal of these wonderful resources to build a less effective screening berm in their stead would be a disservice to the community and at the same time render the Cluster Option virtually pointless. Property values will not be diminished or impaired but instead will be enhanced through the preservation of the natural features for the property owner and adjacent parcels. The supply of light and air will remain exactly as they are in the existing condition by preserving the woodlands. Public safety is unaffected by the elimination of the berm because the berm requirement is not a public safety provision. Preserving the existing woodlands will not unreasonably increase the threat of fire danger because the woods currently exist naturally and is intermixed with 300 acres of wetland. The variance will not in any other respect impact the public health, safety, comfort, or morals or general welfare of residents. By granting this variance, substantial justice will be provided to the petitioner and surrounding property owners. The City of Novi Ordinance Section 3104 allows the Zoning board of Appeals to permit the elimination of the berm requirement prescribed in the Zoning Ordinance because the facts presented above demonstrate that the elimination of the berm requirement does not create an Adverse Impact on Surrounding Area and the proposed alternative meets the required legal standard.

Petitioner has met all requirements set forth to grant the variance.
All the Elements of Practical Difficulty exist. We respectfully request your support.

Exhibit 4: Enlarged version of site constraints and waiver locations

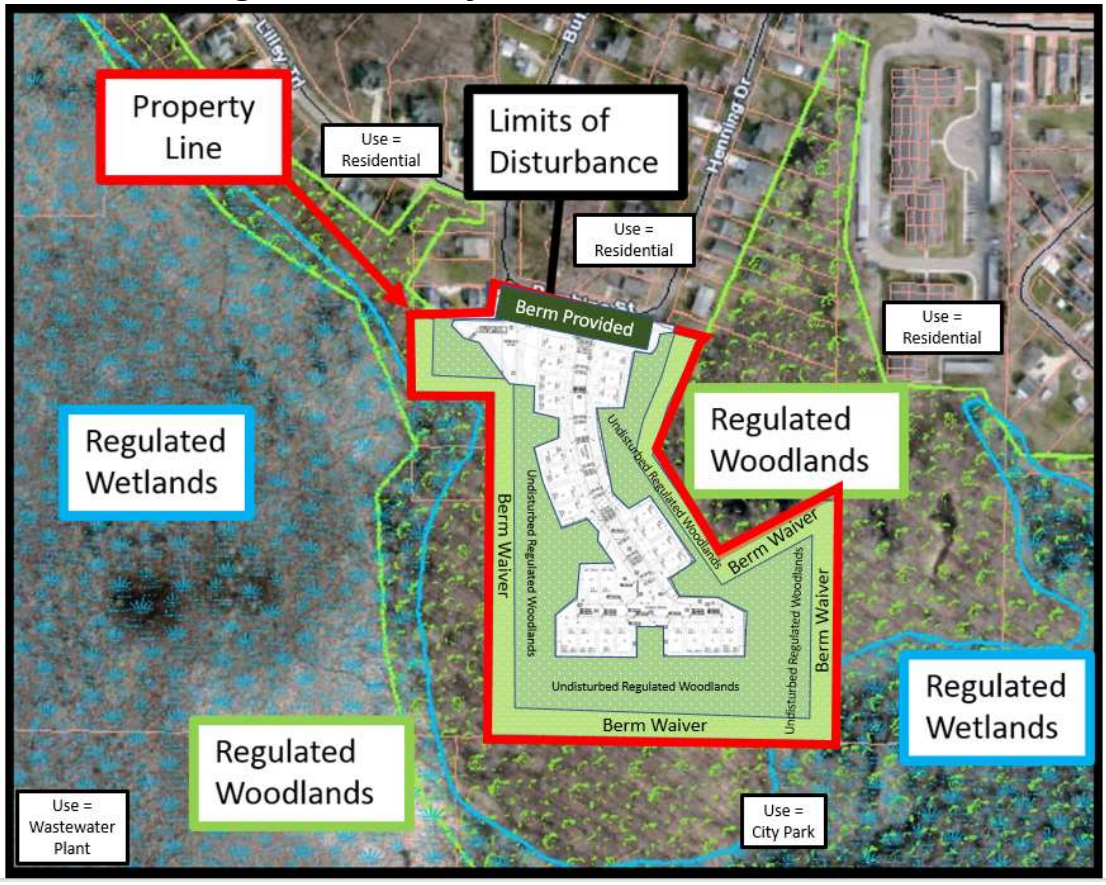
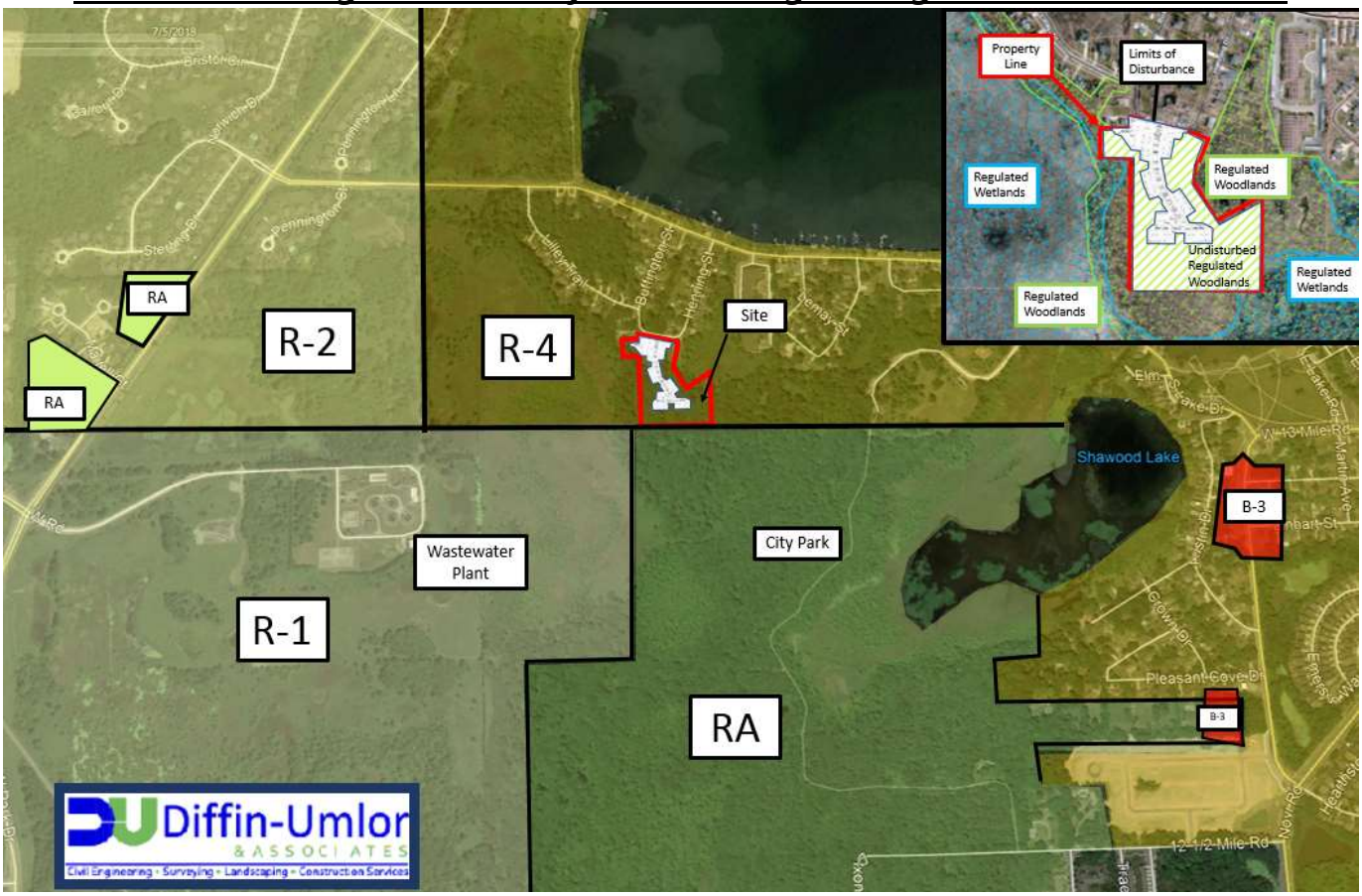


Exhibit 5: Enlarged version of surrounding zoning and site constraints



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Real Estate - Developers - Builders - Investors – Management

Singh Development, L.L.C.
7125 Orchard Lake Road
Suite 200
West Bloomfield, MI 48322

Telephone: (248) 865-1614
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todd.rankine@singhmail.com
www.singhweb.com

September 27, 2019

Zoning Board of Appeals
City of Novi
45175 10 Mile Road
Novi, MI 48375

Re: Scenic Pines Estates
Proposed Single Family Residential
Novi, MI

Dear members of the Zoning Board of Appeals,

We are submitting the following application package, seeking relief from Section 3.28.6.C.iv.a, Landscape Berm, for the above referenced project.

Included with this submittal package are the following:

1. (1) copy of the completed Zoning Board of Appeals Application form, which includes drawings and exhibits.
2. (1) copy of dimensioned site plans, dated July 26, 2019, as presented to and approved by the Planning Commission on September 25, 2019.
3. (1) copy of the Planning Commission Action Summary from the September 25, 2019 regular meeting of the Planning Commission, indicating approval of our Preliminary Site Plan Approval, conditional upon ZBA approval of our variance request.
4. (1) thumb drive containing electronic version of all documents in PDF format.
5. (1) check in the amount of $250 for New Single Family Residential

With this, I believe we have submitted all documents necessary to be placed on the November 19, 2019 agenda of the Zoning Board of Appeals.

Please do not hesitate to contact me should you need anything further.

Sincerely,

Todd Rankine
Director of Architecture and Planning

Cc: Sri Komaragiri, City Planner, City of Novi
Michael T. Noles, Vice President, Diffin-Umlor & Associates

PRELIMINARY SITE PLAN
SCENIC PINES ESTATES
PROPOSED RESIDENTIAL DEVELOPMENT
CITY OF NOVI, OAKLAND COUNTY, MICHIGAN
SECTION 3, TOWN 1 NORTH, RANGE 8 EAST

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CONTACT INFORMATION

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NOVI, MI 48375

CITY OF NOVI
CITY PLANNER
BARBARA McBETH
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LANDSCAPE ARCHITECT
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CITY OF NOVI
CITY REVIEW ENGINEER
KATE RICHARDSON
PHONE: (248) 347-045445175 TEN MILE RD
OAKLAND COUNTY, MI 48375

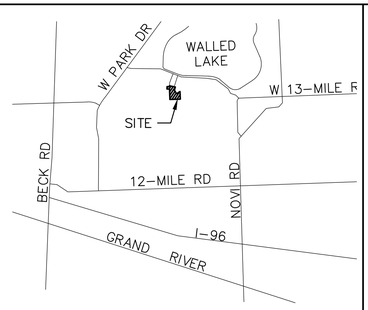
ECT
WOODLANDS/WETLANDS CONSULTANT
PETE HILL
PHONE: (734) 769-3004
2200 COMMONWEALTH BLVD., SUITE 300
ANN ARBOR, MI 48105

NOT APPROVED-PERMIT LIST

PRELIMINARY SITE PLAN CITY OF NOVI	NOT APPROVED
FINAL SITE PLAN CITY OF NOVI	NOT APPROVED
RIGHT-OF-WAY PERMIT CITY OF NOVI	REQUIRED
GRADING PERMIT CITY OF NOVI	NOT APPROVED
RETAINING WALL PERMIT CITY OF NOVI	NOT APPROVED
RIGHT-OF-WAY OAKLAND COUNTY ROAD COMMISSION	NOT REQUIRED
RIGHT-OF-WAY PERMIT MDOT	NOT REQUIRED
STORM WATER MANAGEMENT PERMIT OAKLAND COUNTY DRAIN COMMISSIONER	NOT REQUIRED
SOIL EROSION AND SEDIMENTATION CITY OF NOVI	NOT APPROVED
ACT 451 NOTICE OF COVERAGE: MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY	REQUIRED
PART 301 INLAND LAKES & STREAMS AND PART 31 FLOODPLAIN/WATER RESOURCES; MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY	NOT REQUIRED
PART 303 WETLAND PERMIT; MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY	REQUIRED
WETLAND PERMIT, CITY OF NOVI	REQUIRED
WETLAND BUFFER AUTHORIZATION	REQUIRED
WOODLANDS PERMIT, CITY OF NOVI	REQUIRED
PART 41 WASTEWATER SYSTEM PERMIT; MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY	REQUIRED
ACT 399 WATER SYSTEM CONSTRUCTION PERMIT, MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY	REQUIRED



SITE MAP
SCALE: 1=200'



LOCATION MAP
1" = 4000'

SHEET INDEX

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	BOUNDARY \ TOPOGRAPHIC SURVEY \ SOIL BORINGS
3	DEMOLITION PLAN
4	TREE REMOVAL
5	TREE REMOVAL
6	TREE LIST REPLACEMENT CALCULATIONS
7	WETLAND IMPACT PLAN
8	SITE PLAN
9	SITE GRADING \ SOIL EROSION CONTROL PLAN
10	GRADING & SOIL EROSION DETAILS
11	OVERALL UTILITY PLAN
12	STORM WATER MANAGEMENT PLAN
13	STORM WATER TRIBUTARY PLAN
14	PRE-DEVELOPED vs POST DEVELOPED BASINS
15	PHOTOMETRIC PLAN
16	PUMP STATION DETAILS
17	SOIL BORING LOGS
18	SOIL BORING LOGS
L1	LANDSCAPE PLAN
L2	LANDSCAPE DETAILS
A1	ARCHITECTURAL PLANS
A2	ARCHITECTURAL PLANS
A3	ARCHITECTURAL PLANS

CITY OF NOVI / OAKLAND CO. STANDARD DETAILS

1. PAVEMENT DETAILS
2. STORM SEWER DETAILS
3. SANITARY SEWER DETAILS NO. 1
4. SANITARY SEWER DETAILS NO. 2
5. WATER SYSTEM DETAILS NO. 1
6. WATER SYSTEM DETAILS NO. 2
7. LANDSCAPE DETAILS
8. DETAILS FOR PATHWAYS & BOARDWALKS

ENGINEER/SURVEYOR
Diffin-Umlor & ASSOCIATES
Civil Engineering • Surveying • Landscaping • Construction Services
Wes Lee O. Umlor, P.E.

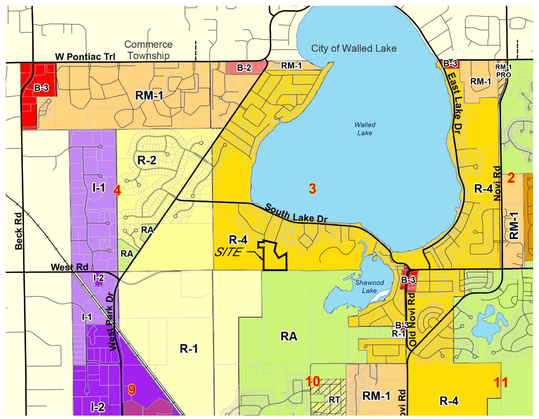
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Web: www.diffin-umlor.com Michigan

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GEOTECHNICAL CONSULTANT
MCDOWELL & ASSOCIATES
DAVID QUINTAL (248) 399-2066
EMAIL: DAVID.QUINTAL@MCDOWASC.COM



ZONING DISTRICT MAP
SCALE: 1=2000'

Zoning Districts

- R-A: Residential Acreage
- R-1: One-Family Residential
- R-2: One-Family Residential
- R-3: One-Family Residential
- R-4: One-Family Residential
- RT: Two-Family Residential
- RM-1: Low-Density Multiple-Family
- RM-2: High-Density Multiple-Family
- MH: Mobile Home
- B-1: Local Business
- B-2: Community Business
- B-3: General Business
- C: Conference
- EXPO: Expo
- GE: Gateway East
- FS: Freeway Service
- I-1: Light Industrial
- I-2: General Industrial
- NCC: Non-Center Commercial
- OS-1: Office Service
- OSC: Office Service Commercial
- OST: Office Service Technology
- EXO: OST District with EXO Overlay
- RC: Regional Center
- P-1: Vehicular Parking
- TC: Town Center
- TC-1: Town Center-1

GENERAL NOTES:

1. ALL WORK SHALL CONFORM TO THE CITY OF NOVI'S CURRENT STANDARDS AND SPECIFICATIONS, UNLESS OTHERWISE APPROVED.
2. ALL PAVEMENT MARKINGS, TRAFFIC CONTROL SIGNS, AND PARKING SIGNS SHALL COMPLY WITH THE DESIGN AND PLACEMENT REQUIREMENTS OF THE 2011 MICHIGAN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
3. CONTRACTRO TO FIELD VERIFY ALL EXISTING UTILITY LOCATIONS, INVERTS AND GRADES PRIOR TO START OF WORK.
4. TWO (2) COPIES OF AS-BUILT PLANS SHALL BE SUBMITTED TO THE CITY ENGINEER WITHIN THIRTY (30) DAYS OF THE COMPLETION OF THE UTILITY INSTALLATION AS PER SECTION 31-7 (A) CITY OF NOVI ORDINANCE.
5. CITY OF NOVI HAS NO RESPONSIBILITY TO IMPROVE OR MAINTAIN THE PRIVATE STREETS CONTAINED WITHIN OR PRIVATE STREETS PROVIDING ACCESS TO THE PROPERTY DESCRIBED IN THIS PLAN.
6. "ECONOMIC IMPACT; 25 HOMES X $500,000 (APPROX) = $12,500,000 INCREASE TAX BASE AT BUILDOUT". HOME SIZE & EXPECTED SALES PRICE OF NEW HOMES: 1,800-2,200 Sq ft, $450,000-$600,000".
7. THE SITE PLAN SHALL BE DESIGNED IN ACCORDANCE WITH THE DESIGN AND CONSTRUCTION STANDARDS (CHAPTER 11).

FIRE DEPARTMENT NOTES

1. ALL FIRE HYDRANTS AND WATER MAINS SHALL BE INSTALLED AND IN SERVICE PRIOR TO ABOVE FOUNDATION BUILDING CONSTRUCTION.
2. ALL ROADS SHALL BE PAVED AND CAPABLE OF SUPPORTING 35 TONS PRIOR TO CONSTRUCTION OF ABOVE FOUNDATIONS.
3. BUILDING ADDRESSES SHALL BE POSTED FACING THE STREET DURING ALL PHASES OF CONSTRUCTION. ADDRESSES SHALL BE A MINIMUM OF THREE INCHES IN HEIGHT ON A CONTRASTING BACKGROUND.
4. PROVIDE 4"-6" DIAMETER OF CONCRETE FILLED STEEL POST 48" ABOVE FINISH GRADE AT EACH HYDRANT AS REQUIRED.
5. FIRE LANES SHALL BE POSTED WITH "FIRE LANE - NO PARKING" SIGNS IN ACCORDANCE WITH ORDINANCE #85.99.02.

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

ALL WORK SHALL CONFORM TO CITY OF NOVI & OAKLAND COUNTY STANDARDS AND SPECIFICATIONS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.

UTILITY WARNING

UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

SITE DATA:

GROSS ACREAGE	9.44 AC.
PROPOSED RIGHT OF WAY	0.13 AC.
NET SITE ACREAGE (PRESERVATION)	9.31 AC.
REGULATED WETLANDS	1.70 AC.
NET SITE ACREAGE (DENSITY)	7.61 AC.
PROPOSED DENSITY	3.3 DU AC.
RESIDENTIAL UNITS PERMITTED	25.146 UNITS
RESIDENTIAL UNITS PROPOSED	25 UNITS
PERCENT OF SITE THAT IS REGULATED WOODLANDS	79%
REGULATED WOODLANDS ACREAGE	7.45
ACRES OF WOODLANDS TO REMAIN	4.96
PERCENT OF SITE PERMANENTLY PRESERVED	53.3% (4.96 AC.)
TREES REMOVED	220
REPLACEMENT TREES REQUIRED	
CURRENT ZONING	R-4 ONE FAMILY RESIDENTIAL
PROPOSED ZONING	R-4 ONE FAMILY RESIDENTIAL -CLUSTER OPTION
MASTER PLAN	SINGLE FAMILY RESIDENTIAL

REQUESTED VARIANCES:

1. DRIVEWAY SPACING: WAIVER FOR THE MINIMUM OPPOSITE SIDE DRIVEWAY SPACING IS REQUESTED
2. STREET TREE LOCATION: REQUEST TO NOT PLANT 3 STREET TREES DUE TO LACK OF ROOM AS A RESULT OF CLUSTERING
3. CLUSTERS ARE REQUIRED TO BE 30' FROM EDGE OF PAVEMENT DRIVE. PROPOSED SET BACK FROM CURB IS 25' TO PRESERVE NATURAL FEATURE TO GREATEST EXTENT POSSIBLE CONSTANT WITH PRIOR APPROVAL (EXPIRED) WAIVER IS REQUESTED
4. WAIVER REQUESTED FOR NOT MEETING THE MINIMUM DISTANCE BETWEEN THE SIDEWALK AND THE CURB IN LIMITED AREAS (IN FRONT OF UNITS ONLY)

SEAL

STATE OF MICHIGAN
WES LEE O. UMLOR
ENGINEER
#20104457
LICENSED PROFESSIONAL ENGINEER

811 Know what's below. Call before you dig.

Diffin-Umlor & ASSOCIATES
Civil Engineering • Surveying • Landscaping • Construction Services
49287 WEST ROAD
WIXOM, MI 48393
(P): 248-437-7803
(F): 866-960-4307

REVISIONS
REVISED PER CITY OF NOVI REVIEW LETTERS DATED 1/14/2019
REVISED PER CITY OF NOVI REVIEW LETTERS DATED 3/27/2019
REVISED PER CITY OF NOVI REVIEW LETTERS DATED 05/18/2019

CLIENT: SINGH DEVELOPMENT LLC
7125 ORCHARD LAKE RD
WEST BLOOMFIELD, MI

SCENIC PINES ESTATES
COVER

These documents are instruments of service in connection with the project. Without the written verification or adaptation by Diffin-Umlor & Associates (DUA) for the specific purposes intended by the client, any unauthorized use, without liability or legal exposure to DUA, and client shall indemnify and hold harmless DUA from all claims, damages, losses and expenses including attorneys' fees arising out of or resulting therefrom. Any such verification or adaptation will entitle DUA to further compensation at rates to be agreed upon by User and DUA.

PART OF THE SW 1/4 CORNER OF SECTION 3
TOWN 1 NORTH - RANGE 8 EAST
CITY OF NOVI
OAKLAND COUNTY, MI

DATE: 07-26-2019
Drawn By: SDT
P.E.: WES LEE O. UMLOR
AS NOTED
Job No.: 180905
Sheet No. 1

M:\DOC PROJECTS\SINGH DEVELOPMENT\180905 - SCENIC PINES\CIVIL 3D\PRELIMINARY SITE PLANS\COVER.DWG

Map Unit Symbol	Map Unit Name
13B	Oshtemo-Boyer loamy sands, 0 to 6 percent slopes
27	Houghton and Adrian mucks
54A	Matherton sandy loam, 0 to 3 percent slopes
40A	Udorthents, loamy, nearly level

NOTES:

– PHYSICAL SOIL BORINGS ARE SCHEDULED AND WILL BE PROVIDED.

NORTH

50' 0 25' 50' 100' 200'

(IN FEET)
1 inch = 50' ft.



LOCATION MAP
NO SCALE

LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	CLEAN OUT		SIGN	ST ST	EX STORM
E	ELEC. RISER		2 POLE SIGN	SS SS	EX SANITARY
	FIRE HYDRANT		MAILBOX	W W	EX WM
ET	ELEC. TRANSFORMER		POST	OHE OHE	ELEC OVERHEAD
	GUY ANCHOR	E	ELECTRICAL RISER	UE UE	UNDERGROUND ELECTRIC
	STM. MANHOLE	T	TELEPHONE RISER	UG UG	GAS
S	SAN. MANHOLE	C	COMMUNICATIONS RISER		FENCE
	VENT		ELECTRICAL METER	X X X	SILT FENCE
	WATER STOP BOX		EXISTING FLAG POLE	OHF OHF	EX FIBER OH
W	GATE VALVE	GEN	EXISTING GENERATOR		EX GUARDRAIL
	SPEAKER BOX		EXISTING SIGNAL POLE		EX WETLAND BUFFER
	POWER POLE	G	EXISTING GAS METER		EX GRAVEL
	SINGLE LIGHT POLE		SET IRON		EX ASPHALT
	DOUBLE LIGHT POLE		FOUND IRON		EX CONCRETE
	ROUND CATCH BASIN	(R)	RECORDED DISTANCE	85	REGULATED TREE
	SQUARE CATCH BASIN	(M)	MEASURED DISTANCE		
SB 1	SOIL BORE LOCATION				

SET BM
BM #10657
SET BM BENCH TIE EAST FACE OF UTILITY POLE 18'± N SW PROP CORNER 132'± SW OF 18" RED OAK (TAG 175)
ELEV=933.59

BM #10194
SET BM TIE EAST FACE OF UTILITY POLE 267'± SOUTH OF PEMBINE RD 20'± WEST OF 14" RED OAK (TAG 22)

NOVI BM
BM ID: 333
X ON NORTH FLANGE BOLT OF FIRE HYDRANT LOCATED 50 SOUTH OF VERNTERLINE OF SOUTH LAKE DRIVE AND WEST SIDE ENTRANCE TO CONDOS #1127–1155 SOUTH LAKE DRIVE.

BM ID: 332
X ON NORTH RIM OF GATEWELL LOCATED 20 FEET NORTH OF VENTERLINE OF SOUTH LAKE DRIVE AND BETWEEN HOUSES #1331 AND #1321 SOUTH LAKE DRIVE.

NOTES:

– FLOODPLAIN NOTE:
ACCORDING TO THE NATIONAL FLOOD INSURANCE RATE MAP COMMUNITY PANEL NUMBER 26125C0488F DATED SEPTEMBER 29, 2006 PORTIONS OF THE SITE ARE IN ZONE "X" (0.2%) ANNUAL CHANCE FLOOD HAZARD, AREAS OF 1% ANNUAL CHANCE OF FLOOD WITH AVERAGE DEPTH LESS THAN ONE FOOT OR WITH DRAINAGE AREAS OF LESS THAN ONE SQUARE MILE. THE REMAINDER OF THE SITE LIES IN ZONE "X"– AREAS DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN.

– THE LOCATION OF THE EXISTING UTILITIES AS SHOWN WERE OBTAINED FROM MUNICIPAL AND UTILITY COMPANIES RECORDS. NO GUARANTEE CAN BE MADE REGARDING THE COMPLETENESS OR EXACTNESS OF THE UTILITIES LOCATION. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY IN THE FIELD THE LOCATION OF ALL UTILITIES ANDY POTENTIAL CONFLICT SHALL BE REPORTED TO THE ENGINEER PRIOR TO CONSTRUCTION.

– THE CONTRACTOR SHALL CONTACT MISS DIG 3 WORKING DAYS PRIOR TO CONSTRUCTION.

– WETLANDS FLAGGED BY WILSON ROAD GROUP.

– !! CAUTION !!
DANGEROUS AND SENSITIVE UNDERGROUND FACILITIES MAY BE PRESENT THROUGHOUT THE PROJECT AREA THAT DO NOT APPEAR ON THIS DRAWING. ALL UNDERGROUND FACILITIES MUST BE LOCATED AND STAKED BY THE APPROPRIATE AGENCIES PRIOR TO EXCAVATION.

LEGAL DESCRIPTION AS SURVEYED

PART OF THE S.W. ¼ CORNER OF SECTION 3, T1N., R8E., CITY OF NOVI, OAKLAND COUNTY, MICHIGAN. BEGINNING AT A POINT S.87°55'47"W. 642.40 FEET, FROM THE SOUTH ¼ CORNER OF SAID SECTION 3; THENCE S.87°55'47"W. 637.25 FEET; THENCE N.02°42'10"W. 636.73 FEET; THENCE S.87° 17' 50"W. 150.00 FEET; THENCE N.02°42'10"W. 150.00 FEET; THENCE N.87°17'50"E. 150.00 FEET; THENCE N.02°42'10"W. 49.76 FEET TO SOUTHWEST CORNER OF "LAKEWOODS SUBDIVISION"; THENCE S.79°05'29"E. 367.64 FEET; THENCE S.11° 16' 59"W. 225.48 FEET; THENCE S.34°12'58"E. 230.00 FEET; THENCE N.56°26'09"E. 250.44 FEET; THENCE S.02°36'17"E. 470.60 FEET TO A POINT OF BEGINNING. CONTAINING 9.44 ACRES. SIDEWELL # 22–03–378–007

I HEREBY CERTIFY TO SINGH DEVELOPMENT THAT THIS SURVEY HAS BEEN COMPILED FROM A SURVEY ACTUALLY MADE ON THE GROUND UNDER MY SUPERVISION ON OCT, 2018 AND THAT IT IS CORRECT AND THAT I HAVE COMPLIED WIT THE REQUIREMENTS OF ACT 132, P.A. OF 1970 AND THAT THE ERROR OR CLOSURE OF THE UNADJUSTED FIELD OBSERVATION IS WITHIN THE LIMITS ESTABLISHED FOR THE PROFESSION

DATE:
SIGNED: WES LEE O. UMLOR
PS NO.: 56369

STATE OF MICHIGAN
WES LEE O. UMLOR
ENGINEER
#2101254570
LICENSED PROFESSIONAL ENGINEER

811 Know what's below. Call before you dig.

M:\DDC-PROJECTS\SINGH DEVELOPMENT\180905 - SCENIC PINES\CIVIL 3D\PRELIMINARY SITE PLANS\TOPOGRAPHY.DWG

Diffin-Umlor & ASSOCIATES
Civil Engineering • Surveying • Landscaping • Construction Services
49287 WEST ROAD
WIXOM, MI 48393
(P): 248–437–7803
(F): 866–960–4307

REVISIONS
REVISED PER CITY OF NOVI REVIEW LETTERS DATED 1/14/2019
REVISED PER CITY OF NOVI REVIEW LETTERS DATED 05/01/2019
REVISED PER CITY OF NOVI REVIEW LETTERS DATED 06/18/2019

CLIENT: SINGH DEVELOPMENT LLC
7125 ORCHARD LAKE RD
WEST BLOOMFIELD, MI

SCENIC PINES ESTATES

BOUNDARY, TOPO SURVEY & SOIL BORE LOCATIONS

These documents are instruments of service in which Diffin-Umlor & Associates has a property right. Any verification or adaptation by Diffin –Umlor & Associates (DUA) for the specific purposes intended by the client shall be at the client's sole risk without legal exposure to DUA and User shall indemnify and hold harmless DUA from all claims, damages, losses and expenses including attorneys' fees arising out of or resulting therefrom. Any unauthorized use, reuse or adaptation will entitle DUA to further compensation at rates to be agreed upon by User and DUA.

PART OF THE SW 1/4 CORNER OF SECTION 3
TOWN I NORTH - RANGE 8 EAST
CITY OF NOVI
OAKLAND COUNTY, MI

DATE: 07-26-2019
Drawn By: SDT
P.E.: WES LEE O. UMLOR
1" = 50'
Job No.: 180905
Sheet No. 2

LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	CLEAN OUT		SIGN	ST ST	EX STORM
E	ELEC. RISER		2 POLE SIGN	SS SS	EX SANITARY
	FIRE HYDRANT		MAILBOX	W W	EX WM
E.T.	ELEC. TRANSFORMER		POST	OHE OHE	ELEC OVERHEAD
	GUY ANCHOR	E	ELECTRICAL RISER	UE UE	UNDERGROUND ELECTRIC
D	STM. MANHOLE	T	TELEPHONE RISER	UG UG	GAS
S	SAN. MANHOLE	C	COMMUNICATIONS RISER		FENCE
	VENT	E	ELECTRICAL METER	X X X	SILT FENCE
	WATER STOP BOX		EXISTING FLAG POLE	OHF OHF	EX FIBER OH
W	GATE VALVE	GEN	EXISTING GENERATOR		EX GUARDRAIL
	SPEAKER BOX		EXISTING SIGNAL POLE		EX WETLAND BUFFER
	POWER POLE	G	EXISTING GAS METER		EX GRAVEL
	SINGLE LIGHT POLE		SET IRON		EX ASPHALT
	DOUBLE LIGHT POLE		FOUND IRON		EX CONCRETE
	ROUND CATCH BASIN	(R)	RECORDED DISTANCE		
	SQUARE CATCH BASIN	(M)	MEASURED DISTANCE	85	REGULATED TREE
SB 1	SOIL BORE LOCATION				

NORTH

40' 0 20' 40' 80' 160'

(IN FEET)
1 inch = 40' ft.

DEMO LEGEND

SYMBOL	DESCRIPTION
20"	EX TREE REMOVAL
	TREE CRITICAL ROOT ZONE
	WETLAND BUFFER DISTURBANCE AREA
	WETLAND DISTURBANCE AREA (TEMPORARY)
	REMOVE

SOUTH ¼ CORNER
SECTION 3
T1N, R8E

N87° 55' 47"W 637.25'

FND IRON ROD
SOUTHWEST ¼ CORNER
SECTION 3
T1N, R8E

EX GV&W

EX SAN MH
RIM=935.60
S 8" VCP INV=928.61
N 8" VCP INV=928.59

HENNING
(50' WIDE R.O.W.)

EX 2" GAS MAIN

EX SAN MH
RIM=937.22
W 8" VCP INV=929.70
N 8" VCP INV=929.62

S11° 16' 59"W 225.48'

CITY OF NOVI REGULATED WOODLINE

PROPOSED PERIMETER SILT FENCE\LIMITS OF EARTH DISTRUPTION

REMOVE EX BUILDING, GARAGE DRIVE, WALK, SHED

RELOCATE EX UTILITY POLE (BY OTHERS)

REMOVE EX UTILITY FEEDS TO BUILDINGS

CAUTION!!!! BURIED CABLE TV LINES

EX SAN MH
RIM=936.11
E 8" VCP INV=930.41

S79° 05' 29"E 367.64'

PEMBINE ST.
(66' WIDE R.O.W.)

GAS VALVE

REMOVE EX BUILDING, GARAGE DRIVE, & WALK

EX GV&W
RIM=937.37

EX 2" GAS MAIN

EX DRIVE (SEE ENGINEERING PLANS FOR DETAILS)

49.76'

N2° 42' 10"W

SAN MH
RIM=938.41
N 8" VCP INV=925.62
S 8" VCP INV=925.63

EX 8" GV&W
RIM=938.15

EX WS SHUTOFF
RIM=938.10

EX HYD FC
FG=937.87

EX 8" WM

POST

CITY OF NOVI REGULATED WOODLINE

PORCH CURB

WELL
RIM=933.85

N87° 17' 50"E 150.00'

PROPOSED PERIMETER SILT FENCE\LIMITS OF EARTH DISTRUPTION

TREE FENCE

WETLAND BUFFER

150.00'

N2° 42' 10"W

S87° 17' 50" 150.00'

WETLAND BUFFER PERMANENT DISTURBANCE AREA
44 SF, 0.005 AC.

#3

EDGE OF WATER

WETLAND BUFFER PERMANENT DISTURBANCE AREA 842 Sq. Ft. (0.065 AC.)

#2

WETLAND BUFFER PERMANENT DISTURBANCE AREA 3,315 Sq. Ft. (0.076 AC.)

#1

S34° 12' 58"E 230.00'

WETLAND BUFFER TEMPORARY DISTURBANCE AREA
44 SF, 0.001 AC.

#5

WETLAND BUFFER PERMANENT DISTURBANCE AREA
131 SF, 0.003 AC.

#4

TREE DRIP LINE (TYPE)

TREE FENCE

PROPOSED PERIMETER SILT FENCE\LIMITS OF EARTH DISTRUPTION

CITY OF NOVI REGULATED WOODLINE

25' WETLAND BUFFER

636.73'

N2° 42' 10"W

SB 1 SB 2 SB 3 SB 4 SB 5 SB 6 SB 7 SB 8 SB 9 SB 10 SB 11 SB 12

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REVISIONS
- REVISED PER CITY OF NOVI REVIEW LETTERS DATED 1/14/2019
- REVISED PER CITY OF NOVI REVIEW LETTERS DATED 3/27/2019
- REVISED PER CITY OF NOVI REVIEW LETTERS DATED 6/18/2019

CLIENT:
SINGH DEVELOPMENT LLC
7125 ORCHARD LAKE RD
WEST BLOOMFIELD, MI

SCENIC PINES ESTATES

DEMOLITION PLAN

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PART OF THE SW 1/4 CORNER OF SECTION 3
TOWN I NORTH - RANGE 8 EAST
CITY OF NOVI
OAKLAND COUNTY, MI

DATE: 07-26-2019
Drawn By: SDT
P.E.: WES LEE O. UMLOR

1" = 40'

Job No.: 180905
Sheet No.
3

STATE OF MICHIGAN
WES LEE O. UMLOR
ENGINEER
62015457
LICENSED PROFESSIONAL ENGINEER

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M:\DOC-PROJECTS\SINGH DEVELOPMENT\180905 - SCENIC PINES\CIVIL 3D\PRELIMINARY SITE PLANS\DEMOLITION PLAN.DWG

NORTH

30' 0 15' 30' 60' 120'

(IN FEET)
1 inch = 30' ft.

MATCH LINE

MATCH LINE

MATCH LINE

REGULATED WOODLINE

EDGE OF WATER

WETLAND BUFFER PERMANENT DISTURBANCE AREA 2,542 SQ. FT. (0.085 AC.)

WETLAND PERMANENT DISTURBANCE AREA 3,315 SQ. FT. (0.076 AC.)

WETLAND BUFFER PERMANENT DISTURBANCE AREA 131 SF, 0.003 AC.

WETLAND PERMANENT DISTURBANCE AREA 2,422 SQ. FT. (0.056 AC.)

WETLAND "C"

WETLAND "C" 0.54 AC.

WETLAND "C" 0.74 AC.

WETLAND "B" 0.22 AC.

CITY OF NOVI REGULATED WOODLINE

BM ELEV=933.59 SET BENCH TIE E FACE OF PP

N21° 42' 10"W 636.73'

S34° 12' 59"E 470.60'

N56° 26' 09"E 250.44'

S2° 36' 17"E 470.60'

S87° 55' 47"W 637.25'

1206# ×936.83 BS

PST

LEGEND

SYMBOL	DESCRIPTION
202	EX TREE REMOVAL
360	EX TREE

Know what's below. Call before you dig.

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Diffin-Umlor & ASSOCIATES
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WIXOM, MI 48393

(P): 248-437-7803
(F): 866-960-4307

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- REVISED PER CITY OF NOVI REVIEW LETTERS DATED 1/14/2019
- REVISED PER CITY OF NOVI REVIEW LETTERS DATED 3/27/2019
- REVISED PER CITY OF NOVI REVIEW LETTERS DATED 5/18/2019

CLIENT:
SINGH DEVELOPMENT LLC
7125 ORCHARD LAKE RD
WEST BLOOMFIELD, MI

SCENIC PINES ESTATES

DEMOLITION PLAN-TREE REMOVAL-SOUTH

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PART OF THE SW 1/4 CORNER OF SECTION 3
TOWN I NORTH - RANGE 8 EAST
CITY OF NOVI
OAKLAND COUNTY, MI

DATE: 07-26-2019
Drawn By: SDT
P.E.: WES LEE O. UMLOR

1" = 30'

Job No.: 180905
Sheet No.
4

STATE OF MICHIGAN
WES LEE O. UMLOR
ENGINEER
6201054571
LICENSED PROFESSIONAL ENGINEER



LEGEND

SYMBOL	DESCRIPTION
202	EX TREE REMOVAL
136"	EX TREE

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REVISIONS
- REVISED PER CITY OF NOVI REVIEW LETTERS DATED 1/14/2019
- REVISED PER CITY OF NOVI REVIEW LETTERS DATED 3/27/2019
- REVISED PER CITY OF NOVI REVIEW LETTERS DATED 6/18/2019

CLIENT: SINGH DEVELOPMENT LLC
7125 ORCHARD LAKE RD
WEST BLOOMFIELD, MI

SCENIC PINES ESTATES

DEMOLITION PLAN-NORTH

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PART OF THE SW 1/4 CORNER OF SECTION 3
TOWN I NORTH - RANGE 8 EAST
CITY OF NOVI
OAKLAND COUNTY, MI

DATE: 07-26-2019
Drawn By: SDT
P.E.: WES LEE O. UMLOR

1" = 30'

Job No.: 180905
Sheet No. 5

STATE OF MICHIGAN
WES LEE O. UMLOR
ENGINEER
6201044574
LICENSED PROFESSIONAL ENGINEER

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M:\DOC PROJECTS\SINGH DEVELOPMENT\180905 - SCENIC PINES\CIVIL 3D\PRELIMINARY SITE PLANS\DEMOLITION PLAN.DWG

Tag	Scientific Name	Common Name	DBH(s)	Multi Adjust	Condition	Status	Replacement Trees	Value
1	Prunis serotina	Black Cherry	8	8	Good	Save	0	$ -
2	Tilia	Basswood	(2) 18	36	Good	Save	0	$ -
3	Quercus rubra	Red Oak	15	15	Good	remove	2	$ 800
4	Quercus rubra	Red Oak	15	15	Good	remove	2	$ 800
5	Quercus rubra	Red Oak	17	17	Good	remove	2	$ 800
6	Quercus rubra	Red Oak	10	10	Good	remove	1	$ 400
7	Acer saccharinum	Silver Maple	11	11	Good	remove	1	$ 400
8	Quercus rubra	Red Oak	9	9	Good	remove	1	$ 400
9	Quercus rubra	Red Oak	18	18	Good	remove	2	$ 800
10	Quercus rubra	Red Oak	16	16	Good	remove	2	$ 800
11	Acer saccharinum	Silver Maple	10	10	Good	remove	1	$ 400
12	Acer saccharinum	Silver Maple	8	8	Good	Save	0	$ -
13	Tilia	Basswood	(2) 7, 9	9	Good	Save	0	$ -
14	Acer rubrum	Red Maple	11	11	Good	Save	0	$ -
15	Acer rubrum	Red Maple	22	22	Good	Save	0	$ -
16	Quercus rubra	Red Oak	11	11	Good	Save	0	$ -
17	Tilia	Basswood	11	11	Good	Save	0	$ -
18	Prunis serotina	Black Cherry	10	10	Good	Save	0	$ -
19	Tilia	Basswood	(2) 9, 10	19	Good	Save	0	$ -
20	Quercus rubra	Red Oak	18	18	Good	Save	0	$ -
21	Quercus rubra	Red Oak	14	14	Good	Save	0	$ -
22	Quercus rubra	Red Oak	14	14	Good	Save	0	$ -
23	Quercus rubra	Red Oak	(2) 14	28	Good	Save	0	$ -
24	Quercus rubra	Red Oak	16	16	Good	Save	0	$ -
25	Quercus rubra	Red Oak	20	20	Good	Save	0	$ -
26	Quercus rubra	Red Oak	8	8	Good	Save	0	$ -
27	Acer rubrum	Red Maple	14	14	Good	Save	0	$ -
28	Carya glabra	Pignut Hickory	16	16	Good	Save	0	$ -
29	Acer rubrum	Red Maple	8	8	Good	Save	0	$ -
30	Acer rubrum	Red Maple	16	16	Good	Save	0	$ -
31	Quercus rubra	Red Oak	13	13	Good	Save	0	$ -
32	Quercus rubra	Red Oak	18	18	Good	Save	0	$ -
33	Carya glabra	Pignut Hickory	11	11	Good	remove	1	$ 400
34	Quercus rubra	Red Oak	24	24	Good	Save	0	$ -
35	Quercus rubra	Red Oak	18	18	Good	Save	0	$ -
36	Quercus rubra	Red Oak	22	22	Good	Save	0	$ -
37	Quercus rubra	Red Oak	18	18	Good	Save	0	$ -
38	Prunis serotina	Black Cherry	9	9	Good	Save	0	$ -
39	Quercus rubra	Red Oak	(3) 14,15,18	47	Good	remove	6	$ 2,400
40	Acer rubrum	Red Maple	8	8	Good	Save	0	$ -
41	Quercus rubra	Red Oak	22	22	Good	remove	3	$ 1,200
42	Carya glabra	Pignut Hickory	8	8	Good	remove	1	$ 400
43	Quercus rubra	Red Oak	21	21	Good	remove	3	$ 1,200
44	Tilia	Basswood	9	9	Good	remove	1	$ 400
45	Quercus rubra	Red Oak	20	20	Good	remove	2	$ 800
46	Carya glabra	Pignut Hickory	15	15	Good	remove	2	$ 800
47	Quercus rubra	Red Oak	14	14	Good	remove	2	$ 800
48	Carya glabra	Pignut Hickory	15	15	Good	remove	2	$ 800
49	Quercus rubra	Red Oak	16	16	Good	remove	2	$ 800
50	Tilia	Basswood	11	11	Good	remove	1	$ 400
51	Quercus rubra	Red Oak	15	15	Good	remove	2	$ 800
52	Quercus rubra	Red Oak	24	24	Good	remove	3	$ 1,200
53	Carya glabra	Pignut Hickory	12	12	Good	remove	2	$ 800
54	Quercus rubra	Red Oak	14	14	Good	remove	2	$ 800
55	Quercus rubra	Red Oak	8	8	Good	remove	1	$ 400
56	Tilia	Basswood	9	9	Good	remove	1	$ 400
57	Tilia	Basswood	12	12	Good	remove	2	$ 800
58	Quercus rubra	Red Oak	18	18	Good	remove	2	$ 800
59	Acer rubrum	Red Maple	9	9	Good	remove	1	$ 400
60	Quercus rubra	Red Oak	20	20	Good	remove	2	$ 800
61	Quercus rubra	Red Oak	15	15	Good	remove	2	$ 800
62	Acer rubrum	Red Maple	(2) 10	20	Good	remove	2	$ 800
63	Quercus rubra	Red Oak	(3) 10,18,18	46	Good	remove	6	$ 2,400
64	Quercus rubra	Red Oak	20	20	Good	remove	2	$ 800
65	Quercus rubra	Red Oak	20	20	Good	remove	2	$ 800
66	Tilia	Basswood	14	14	Good	remove	2	$ 800
67	Tilia	Basswood	10	10	Good	remove	1	$ 400
68	Tilia	Basswood	9	9	Fair	remove	1	$ 400
69	Tilia	Basswood	9	9	Good	remove	1	$ 400
70	Tilia	Basswood	11	11	Good	remove	1	$ 400
71	Tilia	Basswood	10	10	Good	Save	0	$ -
72	Ulmus	Elm	10	10	Good	Save	0	$ -
73	Quercus alba	White Oak	13	13	Good	Save	0	$ -
74	Acer rubrum	Red Maple	14	14	Good	Save	0	$ -
75	Acer rubrum	Red Maple	(6) 7-10	35	Good	Save	0	$ -
76	Salix	Willow	54	54	Poor	Save	0	$ -
77	Acer rubrum	Red Maple	(2) 14,18	32	Good	Save	0	$ -
78	Carya glabra	Pignut Hickory	14	14	Good	remove	2	$ 800
79	Tilia	Basswood	22	22	Good	remove	3	$ 1,200
80	Quercus rubra	Red Oak	24	24	Good	Save	0	$ -
81	Tilia	Basswood	20	20	Good	remove	2	$ 800
82	Tilia	Basswood	20	20	Fair	remove	2	$ 800
83	Tilia	Basswood	(5) 8-12	50	Good	Save	0	$ -
84	Tilia	Basswood	10	10	Good	Save	0	$ -
85	Tilia	Basswood	9	9	Good	Save	0	$ -
86	Tilia	Basswood	8	8	Good	Save	0	$ -
87	Tilia	Basswood	9	9	Good	Save	0	$ -
88	Tilia	Basswood	(2) 16	32	Good	Save	0	$ -
89	Quercus alba	White Oak	44	44	Good	Save	0	$ -
90	Quercus rubra	Red Oak	18	18	Good	Save	0	$ -
91	Tilia	Basswood	(2) 20	40	Good	Save	0	$ -
92	Quercus rubra	Red Oak	(3) 6,12,20	32	Good	Save	0	$ -
93	Acer rubrum	Red Maple	20	20	Good	Save	0	$ -
94	Acer rubrum	Red Maple	18	18	Good	Save	0	$ -
95	Acer rubrum	Red Maple	14	14	Good	Save	0	$ -
96	Acer rubrum	Red Maple	14	14	Good	Save	0	$ -
97	Acer rubrum	Red Maple	20	20	Good	Save	0	$ -
98	Quercus rubra	Red Oak	9	9	Good	Save	0	$ -
99	Quercus rubra	Red Oak	14	14	Good	Save	0	$ -
100	Tilia	Basswood	10	10	Fair	remove	1	$ 400
101	Quercus rubra	Red Oak	16	16	Good	remove	2	$ 800
102	Quercus rubra	Red Oak	18	18	Good	remove	2	$ 800
103	Quercus rubra	Red Oak	10	10	Poor	Save	0	$ -
104	Quercus rubra	Red Oak	14	14	Good	Save	0	$ -
105	Quercus rubra	Red Oak	(2) 10,16	26	Good	Save	0	$ -
106	Quercus alba	White Oak	14	14	Good	Save	0	$ -
107	Acer rubrum	Red Maple	22	22	Good	Save	0	$ -
108	Quercus rubra	Red Oak	18	18	Good	Save	0	$ -
109	Quercus rubra	Red Oak	12	12	Good	Save	0	$ -
110	Quercus rubra	Red Oak	14	14	Good	Save	0	$ -
111	Quercus alba	White Oak	10	10	Good	Save	0	$ -
112	Quercus rubra	Red Oak	10	10	Good	Save	0	$ -
113	Quercus rubra	Red Oak	20	20	Good	Save	0	$ -
114	Acer rubrum	Red Maple	16	16	Good	Save	0	$ -
115	Acer rubrum	Red Maple	(3) 7,12,12	24	Good	Save	0	$ -
116	Quercus rubra	Red Oak	10	10	Good	Save	0	$ -
117	Acer rubrum	Red Maple	22	22	Good	Save	0	$ -
118	Tilia	Basswood	11	11	Good	Save	0	$ -
119	Tilia	Basswood	20	20	Good	Save	0	$ -
120	Quercus alba	White Oak	15	15	Good	Save	0	$ -
121	Tilia	Basswood	12	12	Good	Save	0	$ -
122	Quercus rubra	Red Oak	11	11	Good	remove	1	$ 400
123	Quercus alba	White Oak	20	20	Good	remove	2	$ 800
124	Tilia	Basswood	(2) 8,16	22	Good	remove	3	$ 1,200
125	Quercus rubra	Red Oak	16	16	Good	Save	0	$ -
126	Carya glabra	Pignut Hickory	17	17	Good	remove	2	$ 800
127	Quercus rubra	Red Oak	10	10	Good	remove	1	$ 400
128	Quercus rubra	Red Oak	12	12	Good	Save	0	$ -
129	Quercus rubra	Red Oak	14	14	Good	Save	0	$ -
130	Quercus alba	White Oak	10	10	Good	Save	0	$ -
131	Quercus rubra	Red Oak	22	22	Good	Save	0	$ -
132	Quercus alba	White Oak	14	14	Good	Save	0	$ -
133	Quercus alba	White Oak	11	11	Good	Save	0	$ -
134	Quercus alba	White Oak	14	14	Good	Save	0	$ -
135	Acer rubrum	Red Maple	24	24	Good	Save	0	$ -
136	Tilia	Basswood	15	15	Good	Save	0	$ -
137	Quercus alba	White Oak	18	18	Good	Save	0	$ -
138	Acer rubrum	Red Maple	16	16	Good	Save	0	$ -
139	Acer rubrum	Red Maple	(2) 12,18	30	Good	Save	0	$ -
140	Acer rubrum	Red Maple	16	16	Good	Save	0	$ -
141	Acer rubrum	Red Maple	18	18	Good	Save	0	$ -
142	Acer rubrum	Red Maple	14	14	Good	Save	0	$ -
143	Acer rubrum	Red Maple	20	20	Good	Save	0	$ -
144	Acer rubrum	Red Maple	14	14	Good	Save	0	$ -
145	Populus deltoides	Cottonwood	14	14	Good	Save	0	$ -
146	Populus deltoides	Cottonwood	11	11	Good	Save	0	$ -
147	Acer rubrum	Red Maple	18	18	Good	Save	0	$ -
148	Acer rubrum	Red Maple	30	30	Good	Save	0	$ -
149	Acer rubrum	Red Maple	14	14	Good	Save	0	$ -
150	Ulmus	Elm	12	12	Good	Save	0	$ -
151	Acer rubrum	Red Maple	(4) 4,6,8,10	18	Good	Save	0	$ -
152	Quercus rubra	Red Oak	20	20	Good	Save	0	$ -
153	Quercus rubra	Red Oak	16	16	Good	Save	0	$ -
154	Carya glabra	Pignut Hickory	14	14	Good	remove	2	$ 800
155	Quercus rubra	Red Oak	20	20	Good	remove	2	$ 800
156	Quercus rubra	Red Oak	(3) 16	48	Good	remove	6	$ 2,400
157	Quercus rubra	Red Oak	8	8	Good	remove	1	$ 400
158	Quercus rubra	Red Oak	14	14	Good	remove	2	$ 800
159	Acer rubrum	Red Maple	16	16	Good	remove	2	$ 800
160	Prunis serotina	Black Cherry	22	22	Good	remove	3	$ 1,200
161	Quercus rubra	Red Oak	12	12	Good	remove	2	$ 800
162	Quercus rubra	Red Oak	18	18	Good	remove	2	$ 800
163	Tilia	Basswood	9	9	Good	remove	1	$ 400
164	Quercus rubra	Red Oak	20	20	Good	remove	2	$ 800
165	Carya ovata	Shagbark Hickory	16	16	Good	remove	2	$ 800
166	Acer rubrum	Red Maple	20	20	Good	remove	2	$ 800
167	Tilia	Basswood	(2) 10	20	Good	Save	0	$ -
168	Tilia	Basswood	16	16	Good	Save	0	$ -
169	Acer rubrum	Red Maple	16	16	Good	Save	0	$ -
170	Acer rubrum	Red Maple	22	22	Good	Save	0	$ -
171	Quercus rubra	Red Oak	14	14	Good	Save	0	$ -
172	Tilia	Basswood	(2) 4,10	10	Good	Save	0	$ -
173	Carya glabra	Pignut Hickory	(2) 8,12	20	Good	Save	0	$ -
174	Carya glabra	Pignut Hickory	8	8	Good	Save	0	$ -
175	Quercus rubra	Red Oak	18	18	Good	remove	2	$ 800
176	Tilia	Basswood	8	8	Good	remove	1	$ 400
177	Tilia	Basswood	8	8	Good	remove	1	$ 400
178	Tilia	Basswood	(2) 11	22	Good	remove	3	$ 1,200
179	Tilia	Basswood	(6) 4-16	46	Good	remove	5	$ 2,400
180	Tilia	Basswood	(5) 5-8	20	Good	remove	2	$ 800
181	Tilia	Basswood	8	8	Good	Save	0	$ -
182	Tilia	Basswood	15	15	Good	remove	2	$ 800
183	Tilia	Basswood	10	10	Good	Save	0	$ -
184	Tilia	Basswood	14	14	Good	remove	2	$ 800
185	Tilia	Basswood	9	9	Good	Save	0	$ -
186	Quercus rubra	Red Oak	18	18	Good	Save	0	$ -
187	Tilia	Basswood	(2) 9,14	23	Good	Save	0	$ -
188	Quercus rubra	Red Oak	20	20	Good	Save	0	$ -
189	Sassafras albidum	Sassafras	8	8	Good	Save	0	$ -
190	Quercus rubra	Red Oak	16	16	Good	Save	0	$ -
191	Sassafras albidum	Sassafras	9	9	Good	remove	1	$ 400
192	Sassafras albidum	Sassafras	8	8	Good	remove	1	$ 400
193	Sassafras albidum	Sassafras	8	8	Good	remove	1	$ 400
194	Populus deltoides	Cottonwood	22	22	Good	remove	3	$ 1,200
195	Tilia	Basswood	(2) 9	18	Good	remove	2	$ 800
196	Populus deltoides	Cottonwood	16	16	Good	remove	2	$ 800
197	Populus deltoides	Cottonwood	18	18	Good	remove	2	$ 800
198	Quercus rubra	Red Oak	(4) 14,18,20,20	72	Good	remove	9	$ 3,600
199	Acer rubrum	Red Maple	12	12	Good	remove	2	$ 800
200	Quercus rubra	Red Oak	8	8	Good	remove	1	$ 400
201	Tilia	Basswood	13	13	Good	remove	2	$ 800
202	Tilia	Basswood	(4) 6,7,7,8	8	Good	remove	1	$ 400
203	Quercus rubra	Red Oak	9	9	Good	remove	1	$ 400
204	Tilia	Basswood	14	14	Good	remove	2	$ 800
205	Tilia	Basswood	12	12	Good	remove	2	$ 800
206	Populus deltoides	Cottonwood	14	14	Good	remove	2	$ 800
207	Tilia	Basswood	18	18	Good	remove	2	$ 800
208	Tilia	Basswood	18	18	Good	remove	2	$ 800
209	Tilia	Basswood	16	16	Good	remove	2	$ 800
210	Quercus rubra	Red Oak	16	16	Good	remove	2	$ 800
211	Quercus rubra	Red Oak	(2) 16	32	Good	remove	5	$ 2,000
212	Tilia	Basswood	(2) 9,10	19	Good	Save	0	$ -
213	Tilia	Basswood	9	9	Good	remove	1	$ 400
214	Quercus rubra	Red Oak	13	13	Good	remove	2	$ 800
215	Quercus rubra	Red Oak	20	20	Good	remove	2	$ 800
216	Acer rubrum	Red Maple	(3) 12,12,20	44	Good	remove	6	$ 2,400
217	Acer rubrum	Red Maple	20	20	Good	remove	2	$ 800
218	Acer rubrum	Red Maple	(2) 24,36	60	Good	Save	0	$ -
219	Quercus rubra	Red Oak	18	18	Good	remove	2	$ 800
220	Quercus rubra	Red Oak	8	8	Good	remove	1	$ 400
221	Quercus rubra	Red Oak	18	18	Good	remove	2	$ 800
222	Prunis serotina	Black Cherry	14	14	Good	remove	2	$ 800
223	Tilia	Basswood	(4) 3,9,12,12	33	Good	remove	5	$ 2,000
224	Tilia	Basswood	11	11	Good	remove	1	$ 400
225	Tilia	Basswood	12	12	Good	remove	2	$ 800
226	Quercus rubra	Red Oak	12	12	Poor	remove	2	$ 800
227	Tilia	Basswood	10	10	Good	remove	1	$ 400
228	Tilia	Basswood	16	16	Good	remove	2	$ 800
229	Tilia	Basswood	11	11	Good	remove	1	$ 400
230	Populus	Poplar	8	8	Good	remove	1	$ 400
231	Tilia	Basswood	16	16	Good	remove	2	$ 800
232	Tilia	Basswood	10	10	Good	remove	1	$ 400
233	Acer rubrum	Red Maple	9	9	Good	remove	1	$ 400
234	Populus deltoides	Cottonwood	16	16	Good	remove	2	$ 800
235	Quercus rubra	Red Oak	(2) 18	36	Good	remove	5	$ 2,000
236	Quercus rubra	Red Oak	(3) 14	42	Good	remove	6	$ 2,400
237	Populus	Poplar	14	14	Good	remove	2	$ 800
238	Acer rubrum	Red Maple	(3) 6,8,8	16	Good	remove	2	$ 800
239	Acer rubrum	Red Maple	14	14	Good	remove	2	$ 800
240	Quercus rubra	Red Oak	14	14	Good	remove	2	$ 800
241	Quercus rubra	Red Oak	18	18	Good	remove	2	$ 800
242	Quercus rubra	Red Oak	14	14	Good	remove	2	$ 800
243	Quercus rubra	Red Oak	16	16	Good	remove	2	$ 800
244	Tilia	Basswood	10	10	Fair	remove	1	$ 400
245	Tilia	Basswood	11	11	Good	remove	1	$ 400
246	Tilia	Basswood	9	9	Good	remove	1	$ 400
247	Quercus rubra	Red Oak	16	16	Good	remove	2	$ 800
248	Tilia	Basswood	9	9	Good	remove	1	$ 400
249	Quercus rubra	Red Oak	18	18	Good	remove	2	$ 800
250	Tilia	Basswood	(2) 16,18	34	Good	remove	5	$ 2,000
251	Populus	Poplar	14	14	Good	Save	0	$ -
252	Quercus rubra	Red Oak	16	16	Good	remove	2	$ 800
253	Quercus rubra	Red Oak	11	11	Good	remove	1	$ 400
254	Quercus rubra	Red Oak	(2) 16	32	Good	remove	5	$ 2,000
255	Tilia	Basswood	14	14	Good	remove	2	$ 800
256	Tilia	Basswood	12	12	Good	remove	2	$ 800
257	Tilia	Basswood	10	10	Good	remove	1	$ 400
258	Populus deltoides	Cottonwood	16	16	Good	remove	2	$ 800
259	Tilia	Basswood	11	11	Good	Save	0	$ -
260	Populus deltoides	Cottonwood	22	22	Good	Save	0	$ -
261	Tilia	Basswood	9	9	Good	Save	0	$ -
262	Tilia	Basswood	12	12	Good	Save	0	$ -
263	Populus deltoides	Cottonwood	16	16	Good	remove	2	$ 800
264	Populus deltoides	Cottonwood	12	12	Good	remove	2	$ 800
265	Populus	Poplar	15	15	Good	remove	2	$ 800
266	Quercus rubra	Red Oak	18	18	Good	remove	2	$ 800
267	Populus deltoides	Cottonwood	30	30	Good	Save	0	$ -
268	Tilia	Basswood	11	11	Good	Save	0	$ -
269	Tilia	Basswood	(2) 14,18	32	Good	Save	0	$ -
270	Tilia	Basswood	8	8	Good	Save	0	$ -
271	Quercus rubra	Red Oak	(2) 8,20	28	Good	Save	0	$ -
272	Olneya tesota	Ironwood	11	11	Fair	Save	0	$ -
273	Tilia	Basswood	8	8	Good	Save	0	$ -
274	Tilia	Basswood	18	18	Good	Save	0	$ -
275	Olneya tesota	Ironwood	9	9	Good	remove	1	$ 400
276	Prunis serotina	Black Cherry	14	14	Good	remove	2	$ 800
277	Acer rubrum	Red Maple	20	20	Good	Save	0	$ -
278	Acer rubrum	Red Maple	8	8	Good	remove	1	$ 400
279	Quercus rubra	Red Oak	18	18	Good	remove	2	$ 800
280	Sassafras albidum	Sassafras	10	10	Good	remove	1	$ 400
281	Sassafras albidum	Sassafras	8	8	Good	remove	1	$ 400
282	Sassafras albidum	Sassafras	9	9	Good	remove	1	$ 400
283	Sassafras albidum	Sassafras	8	8	Good	remove	1	$ 400
284	Sassafras albidum	Sassafras	9	9	Good	remove	1	$ 400
285	Tilia	Basswood	16	16	Good	remove	2	$ 800
286	Sassafras albidum	Sassafras	8	8	Good	remove	1	$ 400
287	Sassafras albidum	Sassafras	8	8	Good	remove	1	$ 400
288	Sassafras albidum	Sassafras	8	8	Good	remove	1	$ 400
289	Sassafras albidum	Sassafras	9	9	Good	remove	1	$ 400
290	Sassafras albidum	Sassafras	11	11	Good	remove	1	$ 400
291	Sassafras albidum	Sassafras	8	8	Good	remove	1	$ 400
292	Sassafras albidum	Sassafras	9	9	Good	remove	1	$ 400
293	Sassafras albidum	Sassafras	8	8	Good	remove	1	$ 400
294	Tilia	Basswood	14	14	Good	remove	2	$ 800
295	Tilia	Basswood	16	16	Good	remove	2	$ 800
296	Tilia	Basswood	8	8	Good	remove	1	$ 400
297	Populus	Poplar	9	9	Poor	remove	1	$ 400
298	Tilia	Basswood	9	9	Good	remove	1	$ 400
299	Tilia	Basswood	8	8	Good	remove	1	$ 400
300	Quercus rubra	Red Oak	18	18	Good	remove	2	$ 800
301	Acer rubrum	Red Maple	8	8	Good	remove	1	$ 400
302	Tilia	Basswood	18	18	Good	Save	0	$ -
303	Acer rubrum	Red Maple	(2) 6,9	9	Good	Save	0	$ -
304	Acer rubrum	Red Maple	20	20	Good	Save	0	$ -
305	Tilia	Basswood	20	20	Good	Save	0	$ -
306	Quercus rubra	Red Oak	9	9	Good	Save	0	$ -
307	Acer rubrum	Red Maple	8	8	Good	remove	1	$ 400
308	Quercus rubra	Red Oak	8	8	Good	remove	1	$ 400
309	Tilia	Basswood	18	18	Good	remove	2	$ 800
310	Quercus rubra	Red Oak	22	22	Good	remove	3	$ 1,200
311	Acer rubrum	Red Maple	(2) 5,9	9	Good	remove	1	$ 400
312	Quercus rubra	Red Oak	14	14	Good	remove	2	$ 800
313	Tilia	Basswood	11	11	Good	remove	2	$ 800
314	Quercus rubra	Red Oak	15	15	Good	remove	2	$ 800
315	Tilia	Basswood	11	11	Good	remove	2	$ 400
316	Tilia	Basswood	12	12	Good	remove	2	$ 800
317	Prunis serotina	Black Cherry	18	18	Good	remove	2	$ 800
318	Quercus rubra	Red Oak	20	20	Good	remove	2	$ 800
319	Tilia	Basswood	(2) 9	18	Good	remove	2	$ 800
320	Tilia	Basswood	8	8	Good	remove	1	$ 400
321	Tilia	Basswood	16	16	Good	remove	2	$ 800
322	Tilia	Basswood	11	11	Good	remove	1	$ 400
323	Tilia	Basswood	16	16	Good	remove	2	$ 800
324	Quercus rubra	Red Oak	11	11	Good	remove	1	$ 400
325	Tilia	Basswood	9	9	Good	remove	1	$ 400
326	Tilia	Basswood	9	9	Good	remove	1	$ 400
327	Tilia	Basswood	(3) 8,9,11	28	Fair	Save	0	$ -
328	Quercus rubra	Red Oak	20	20	Good	Save	0	$ -
329	Quercus rubra	Red Oak	(2) 18	36	Good	Save	0	$ -
330	Carya glabra	Pignut Hickory	14	14	Good	Save	0	$ -
331	Sassafras albidum	Sassafrass	8	8	Good	Save	0	$ -
332	Sassafras albidum	Sassafrass	9	9	Good	Save	0	$ -
333	Tilia	Basswood	14	14	Good	Save	0	$ -
334	Tilia	Basswood	16	16	Good	Save	0	$ -
335	Tilia	Basswood	(2) 9	18	Good	remove	2	$ 800
336	Tilia	Basswood	18	18	Good	remove	2	$ 800
337	Quercus rubra	Red Oak	(2) 14	28	Good	remove	4	$ 1,600
338	Tilia	Basswood	(2) 10,24	34	Good	Save	0	$ -
339	Tilia	Basswood	16	16	Good	Save	0	$ -
340	Carya glabra	Pignut Hickory	9	9	Good	Save	0	$ -
341	Tilia	Basswood	(3) 11,9,16	36	Good	remove	5	$ 2,000
342	Acer negundo	Box Elder	(2) 9,16	25	Good	remove	4	$ 1,600
343	Quercus rubra	Red Oak	16	16	Good	remove	2	$ 800
344	Acer rubrum	Red Maple	28	28	Good	remove	3	$ 1,200
345	Juniperus virginiana	Red Cedar	14	14	Good	remove	2	$ 800
346	Juniperus virginiana	Red Cedar	18	18	Good	remove	2	$ 800
347	Picea pungens	Blue Spruce	14	14	Good	Save	0	$ -
348	Pyrus calleryana	Bradford Pear	10	10	Good	remove	1	$ 400
349	Picea pungens	Blue Spruce	11	11	Good	remove	1	$ 400
350	Tilia	Basswood	32	32	Good	remove	4	$ 1,600
351	Quercus rubra	Red Oak	24	24	Good	remove	3	$ 1,200
352	Ulmus	Elm	14	14	Good	remove	2	$ 800
353	Acer rubrum	Red Maple	(2) 30,36	66	Good	remove	9	$ 3,600
354	Ulmus	Elm	10	10	Good	remove	1	$ 400
355	Tilia	Basswood	16	16	Good	remove	2	$ 800
356	Tilia	Basswood	(2) 7,16	16	Good	remove	2	$ 800
357	Populus deltoides	Cottonwood	32	32	Good	remove	4	$ 1,600
358	Ulmus	Elm	9	9	Good	remove	1	$ 400
359	Acer rubrum	Red Maple	(2) 10,42	52	Good	remove	4	$ 1,600
360	Quercus rubra	Red Oak	(2) 22	22	Good	remove	3	$ 1,200
361	Populus deltoides	Cottonwood	36	36	Good	Save	0	$ -
362	Tilia	Basswood	9	9	Good	Save	0	$ -
363	Quercus rubra	Red Oak	14	14	Good	Save	0	$ -
364	Picea pungens	Blue Spruce	14	14	Good	remove	2	$ 800
365	Picea pungens	Blue Spruce	9	9	Good	remove	1	$ 400
366	Quercus rubra	Red Oak	20	20	Good	Save	0	$ -
367	Quercus rubra	Red Oak	16	16	Good	Save	0	$ -
368	Tilia	Basswood	(3) 11	33	Good	Save	0	$ -
369	Tilia	Basswood	(2) 11,26	37	Good	Save	0	$ -
370	Tilia	Basswood	8	8	Good	Save	0	$ -
371	Olneya tesota	Ironwood	8	8	Good	Save	0	$ -

WETLAND & BUFFER TABLE

NAME	IMPACT NO.	AREA ONSITE		IMPACT AREA		CUT/FILL (CYD)	TYPE
		SQUARE FEET	ACREAGE	SQUARE FEET	ACREAGE		
A	4	6098	0.1400	218	0.0050	20 CYD–FILL	PERMANENT–BUFFER
B	N/A						
C	1	55757	1.2800	3315	0.0760	602 CYD–FILL	PERMANENT–WETLAND
	2			2842	0.0650	800 CYD–FILL	PERMANENT–BUFFER
	3			2422	0.0560	704 CYD–FILL	PERMANENT–BUFFER
	5			131	0.0030	5 CYD–FILL	PERMANENT–BUFFER
	6			44	0.0010	0 CYD–C/F	TEMPORARY–BUFFER

TOTAL WETLAND IMPACT = 3315 Sq. Ft.=>0.076 AC.=>602 CYD FILL

TOTAL BUFFER IMPACT = (A) 218 Sq.Ft.=>0.005 AC.=>20 CYD FILL
(C) 2842 Sq. Ft.=>0.065 AC.=> 800 CYD. FILL
2422 Sq. Ft.=>0.056 AC.=> 704 CYD. FILL
131 Sq. Ft.=>0.003 AC=>5 CYD. FILL
44 Sq. Ft.=>0.001 AC.=>0 CYD. FILL
TOTAL BUFFER IMPACT =5657 Sq. Ft.=>0.013 AC=>1,529 CYD FILL

BUFFER WETLAND RESTORATION WETLAND NOTE:

TEMPORARY IMPACTS TO WETLAND BUFFERS SHALL BE RESTORED TO PER CONSTRUCTION CONDITIONS USING SAME PLANTINGS AND MATERIALS.

NORTH

40' 0 20' 40' 80' 160'

(IN FEET)
1 inch = 40' ft.

SOUTH ¼ CORNER
SECTION 3
T1N, R8E

S2° 36' 17"E
470.60'

PST

25' WETLAND BUFFER

WETLAND "B"
0.22 AC.

N36° 25' 09"E
250.44'

WETLAND "C"
0.74 AC.

PROPOSED PERIMETER SILT FENCE\LIMITS OF EARTH DISTRUPTION

#6 WETLAND BUFFER TEMPORARY DISTURBANCE AREA 44 SF, 0.001 AC.

S34° 12' 58"E
230.00'

#3 WETLAND BUFFER PERMANENT DISTURBANCE AREA 2,422 Sq. Ft. (0.056 AC.)

#2 WETLAND BUFFER PERMANENT DISTURBANCE AREA 2,842 Sq. Ft. (0.065 AC.)

#1 WETLAND PERMANENT DISTURBANCE AREA 3,315 Sq. Ft. (0.076 AC.)

EDGE OF WATER

S11° 16' 59"W
225.48'

CITY OF NOVI REGULATED WOODLINE

PROPOSED PERIMETER SILT FENCE\LIMITS OF EARTH DISTRUPTION

EX GV&W

EX SAN MH
RIM=935.60
S 8" VCP INV=928.61
N 8" VCP INV=928.59

HENNING
(50' WIDE R.O.W.)

EX 2" GAS MAIN

EX SAN MH
RIM=937.22
W 8" VCP INV=929.70
N 8" VCP INV=929.62

EX SAN MH
RIM=936.11
E 8" VCP INV=930.41

PENNINE ST.
ROW=21' (66' WIDE R.O.W.)

S79° 05' 29"E
367.64'

CITY OF NOVI REGULATED WOODLINE

PROPOSED PERIMETER SILT FENCE\LIMITS OF EARTH DISTRUPTION

#5 WETLAND BUFFER PERMANENT DISTURBANCE AREA 131 SF, 0.003 AC.

PROPOSED PERIMETER SILT FENCE\LIMITS OF EARTH DISTRUPTION

WETLAND "C"
0.54 AC.

25' WETLAND BUFFER

CITY OF NOVI REGULATED WOODLINE

S87° 55' 47"W
637.25'

WETLAND "A"
0.002 AC.

636.73'
N2° 42' 10"W

EX GV&W
RIM=937.37

EX 2" GAS MAIN

EX 8" WM

SAN MH
RIM=938.41
N 8" VCP INV=925.62
S 8" VCP INV=925.63

EX 8" GV&W
RIM=938.15

EX WS SHUTOFF
RIM=938.10

EX HYD FG
FG=937.87

EX 8" WM

49.76'
N2° 42' 10"W

POST

CITY OF NOVI REGULATED WOODLINE

PORCH

#4 WETLAND BUFFER PERMANENT DISTURBANCE AREA 44 SF, 0.005 AC.

WELL
RIM=933.85

N87° 17' 50"E
150.00'

PROPOSED PERIMETER SILT FENCE\LIMITS OF EARTH DISTRUPTION

25' WETLAND BUFFER

WETLAND "A"
0.14 AC.

S87° 17' 50"W
150.00'

150.00'
N2° 42' 10"W

WETLAND "A"

FND IRON ROD
SOUTHWEST ¼ CORNER
SECTION 3
T1N, R8E

STATE OF MICHIGAN
WES LEE O. UMLOR
ENGINEER
62010545
LICENSED PROFESSIONAL ENGINEER

811 Know what's below. Call before you dig.

M:\DOC-PROJECTS\SINGH DEVELOPMENT\180905 - SCENIC PINES\CIVIL 3D\PRELIMINARY SITE PLANS\GRADING PLAN.DWG

Diffin-Umlor & ASSOCIATES
Civil Engineering • Surveying • Landscaping • Construction Services

49287 WEST ROAD
WIXOM, MI 48393

(P): 248–437–7803
(F): 866–960–4307

REVISIONS

CLIENT: SINGH DEVELOPMENT LLC
7125 ORCHARD LAKE RD
WEST BLOOMFIELD, MI

SCENIC PINES ESTATES
WETLANDS IMPACT PLAN

These documents are instruments of service in connection with the project. Any unauthorized use, written verification or adaptation by Diffin–Umlor & Associates (DUA) for the specific purposes intended will be at User's sole risk and without liability and hold harmless DUA from all claims, damages, losses and expenses including attorneys fees arising out of such unauthorized use. Any such verification or adaptation will entitle DUA to further compensation at rates to be agreed upon by User and DUA.

PART OF THE SW 1/4 CORNER OF SECTION 3
TOWN I NORTH - RANGE 8 EAST
CITY OF NOVI
OAKLAND COUNTY, MI

DATE: 07-26-2019
Drawn By: SDT
P.E.: WES LEE O. UMLOR
1" = 40'
Job No.: 180905
Sheet No. 7

PROPOSED CLUSTER SEPARATION TABLE

CLUSTER 1	CLUSTER 2	TOTAL NUMBER OF HOMES	MINIMUM DISTANCE REQUIRED (FRONT & REAR)	PROPOSED (FRONT & REAR)	MINIMUM DISTANCE REQUIRED(SIDE)	PROPOSED (SIDE)
8-9-10-11	4-5-6-7	8	100	105, N/A	75	N/A
18-19-20-21	4-5-6-7	8	100	N/A	75	N/A
4-5-6-7	12-13-14-15	8	100	138, N/A	75	N/A
1-2-3	22-23-24-25	7	85	78, N/A	75	N/A
1-2-3	18-19-20-21	7	85	N/A	75	N/A
12-13-14-15	16-17	6	75	75, N/A	60	N/A
4-5-6-7	16-17	6	75	83, N/A	60	N/A
8-9-10-11	16-17	6	75	N/A	60	N/A
8-9-10-11	12-13-14-15	8	100	N/A	75	75
22-23-24-25	18-19-20-21	8	100	N/A	75	75
1-2-3	4-5-6-7	7	85	N/A	75	199
18-19-20-21	16-17	6	75	N/A	60	105

GENERAL NOTES:
THE LOT LOCATED ON THE NORTH SIDE OF SOUTH LAKE DRIVE (50-22-03-327-004) IS NOT PART OF THIS SITE PLAN, NO CHANGES TO THAT LOT ARE PROPOSED BY APPLICANT. APPROVAL OF THIS SITE PLAN DOES NOT INCLUDE SITE PLAN APPROVAL FOR THAT LOT.

NOTE:
ALL UNITS SHOWN PROVIDE 6 FEET OF SEPARATION BETWEEN BUILDINGS. PER SECTION 3.28, 4. B
MINIMUM BETWEEN UNITS WITH WALLS WITH OPENINGS: 10 FEET
MINIMUM BETWEEN UNITS WITH WALLS WITH NO OPENINGS: 6 FEET

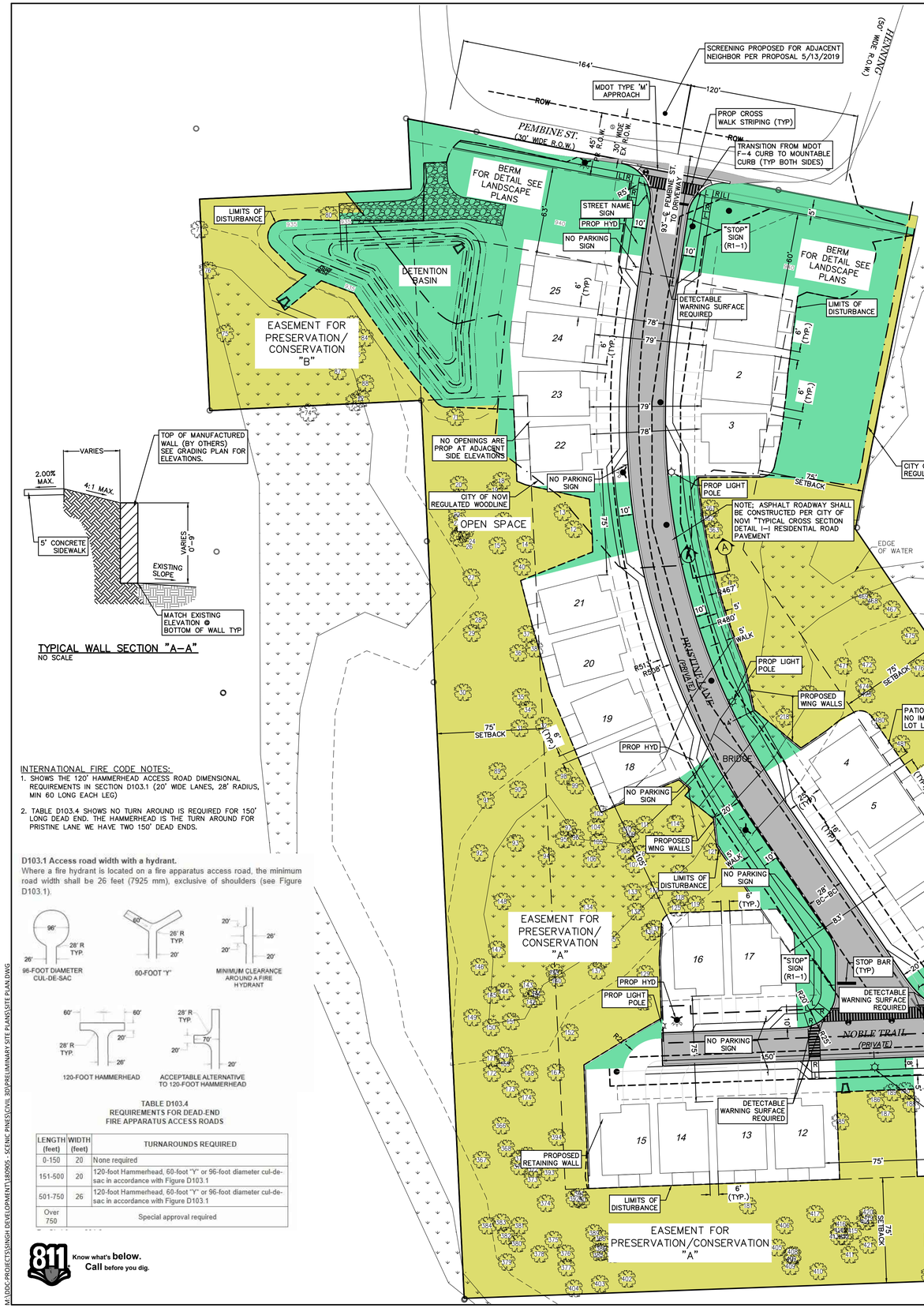
NORTH

40' 0 20' 40' 80' 160'

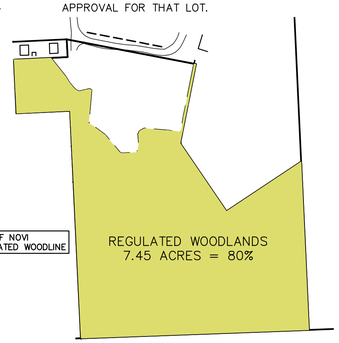
(IN FEET)
1 inch = 40' ft.

LEGEND

SYMBOL	DESCRIPTION
	PR ASPHALT
	PR CONC
	PR CROSS WALK
	PR DEVELOPED OPEN SPACE
	PRESERVED WOODLANDS OPEN SPACE



TYPICAL WALL SECTION "A-A"
NO SCALE



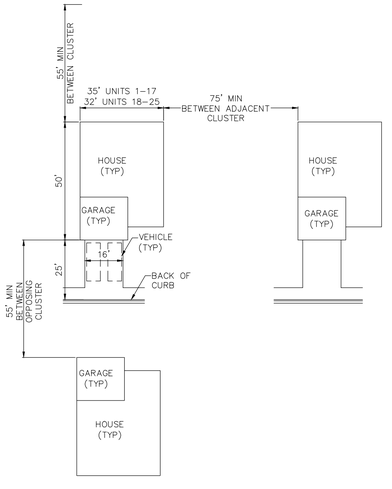


SIGN TABLE		
SIGN #	SIGN TYPE	REQUIRED
R1-1	STOP (30")	2
	STREET NAME SIGN	2
R8-3A	NO PARKING (18")	5

NOTE:
1. ALL SIGNS WILL COMPLY WITH CURRENT 2011 MMUTCD STANDARDS
2. ALL TRAFFIC CONTROL SIGNS WILL COMPLY WITH FHWA STANDARD ALPHABET SERIES.
3. ALL TRAFFIC CONTROL SIGNS WILL USE HIGH INTENSITY PRISMATIC (HIP) SHEETING TO MEET FHWA RETRO-REFLECTIVITY REQUIREMENTS.
4. CITY OF NOVI HAS NO RESPONSIBILITY TO IMPROVE OR MAINTAIN THE PROVATE STREETS WITHIN OR PROVATE STREETS PROVIDING ACCESS TO THE PROPERTY DESCRIBED IN THIS PLAN.

SITE DATA

SITE AREA	9.44 AC.
R.O.W. DEDICATION	0.13 AC.
NET SITE AREA (PRESERVATION)	9.31 AC.
REGULATED WETLANDS	1.70 AC.
NET SITE AREA (DENSITY)	7.61 AC.
PROPOSED DENSITY	3.3 UNITS/AC.
RESIDENTIAL UNITS PERMITTED	25.146
RESIDENTIAL UNITS PROPOSED	25
REGULATED WOODLAND	7.45 AC.
RWA/NSA (7.45/9.31)	80%
WOODLANDS REQUIRED TO REMAIN	4.67 AC.
PERCENT OF SITE PERMANENTLY PRESERVED	53.3% (4.96 AC.)
MAX. LOT COVERAGE < 25% (ALL BUILDINGS)	(CLUSTER OPTION)
MIN. FLOOR AREA > (1000 Sq ft)	1,318-1,518 Sq ft
MAX. BUILDING HEIGHT	35 (2.5 STORIES)
BUILDING HEIGHT PROVIDED	30
TOTAL LOT COVERAGE (BUILDING TOTAL)	35'x50'=1,750 SQ-FT./UNIT x 17 = 29,750 SQ-FT., 32'x50'=1,600 SQ-FT./UNIT x 8 = 12,800 SQ-FT., 29,750 +12,800 = 42,550 SQ-FT. = 0.98 ACRES 0.98 AC/9.31 AC. = 10.52% < 25%
PROPOSED PRIVATE ROAD PAVEMENT AREA	25,009 Sq ft



NOTE:
1. TRASH SHALL BE WEEKLY CURB SIDE PICKUP
2. PER SECTION 26.5-35(C), A STATEMENT IS REQUIRED ON ANY PLAN CONTAINING A PRIVATE STREET WITH THE FOLLOWING LANGUAGE: "CITY OF NOVI HAS NO RESPONSIBILITY TO IMPROVE OR MAINTAIN THE PRIVATE STREETS CONTAINED WITHIN OR PRIVATE STREETS PROVIDING ACCESS TO THE PROPERTY DESCRIBED IN THIS PLAN".

INTERNATIONAL FIRE CODE NOTES:
1. SHOWS THE 120' HAMMERHEAD ACCESS ROAD DIMENSIONAL REQUIREMENTS IN SECTION D103.1 (20' WIDE LANES, 28' RADIUS, MIN 60 LONG EACH LEG)
2. TABLE D103.4 SHOWS NO TURN AROUND IS REQUIRED FOR 150' LONG DEAD END. THE HAMMERHEAD IS THE TURN AROUND FOR PRISTINE LANE WE HAVE TWO 150' DEAD ENDS.

D103.1 Access road width with a hydrant.
Where a fire hydrant is located on a fire apparatus access road, the minimum road width shall be 26 feet (7925 mm), exclusive of shoulders (see Figure D103.1).

TABLE D103.4
REQUIREMENTS FOR DEAD-END FIRE APPARATUS ACCESS ROADS

LENGTH (feet)	WIDTH (feet)	TURNAROUNDS REQUIRED
0-150	20	None required
151-500	20	120-foot Hammerhead, 60-foot "Y" or 96-foot diameter cul-de-sac in accordance with Figure D103.1
501-750	26	120-foot Hammerhead, 60-foot "Y" or 96-foot diameter cul-de-sac in accordance with Figure D103.1
Over 750		Special approval required

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Civil Engineering • Surveying • Landscaping • Construction Services
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WIXOM, MI 48393
(P): 248-437-7803
(F): 866-960-4307

REVISIONS
REVISED PER CITY OF NOVI REVIEW LETTERS DATED 1/14/2019
REVISED PER CITY OF NOVI REVIEW LETTERS DATED 3/27/2019
REVISED PER CITY OF NOVI REVIEW LETTERS DATED 6/18/2019

CLIENT: SINGH DEVELOPMENT LLC
7125 ORCHARD LAKE RD
WEST BLOOMFIELD, MI

SCENIC PINES ESTATES
SITE PLAN

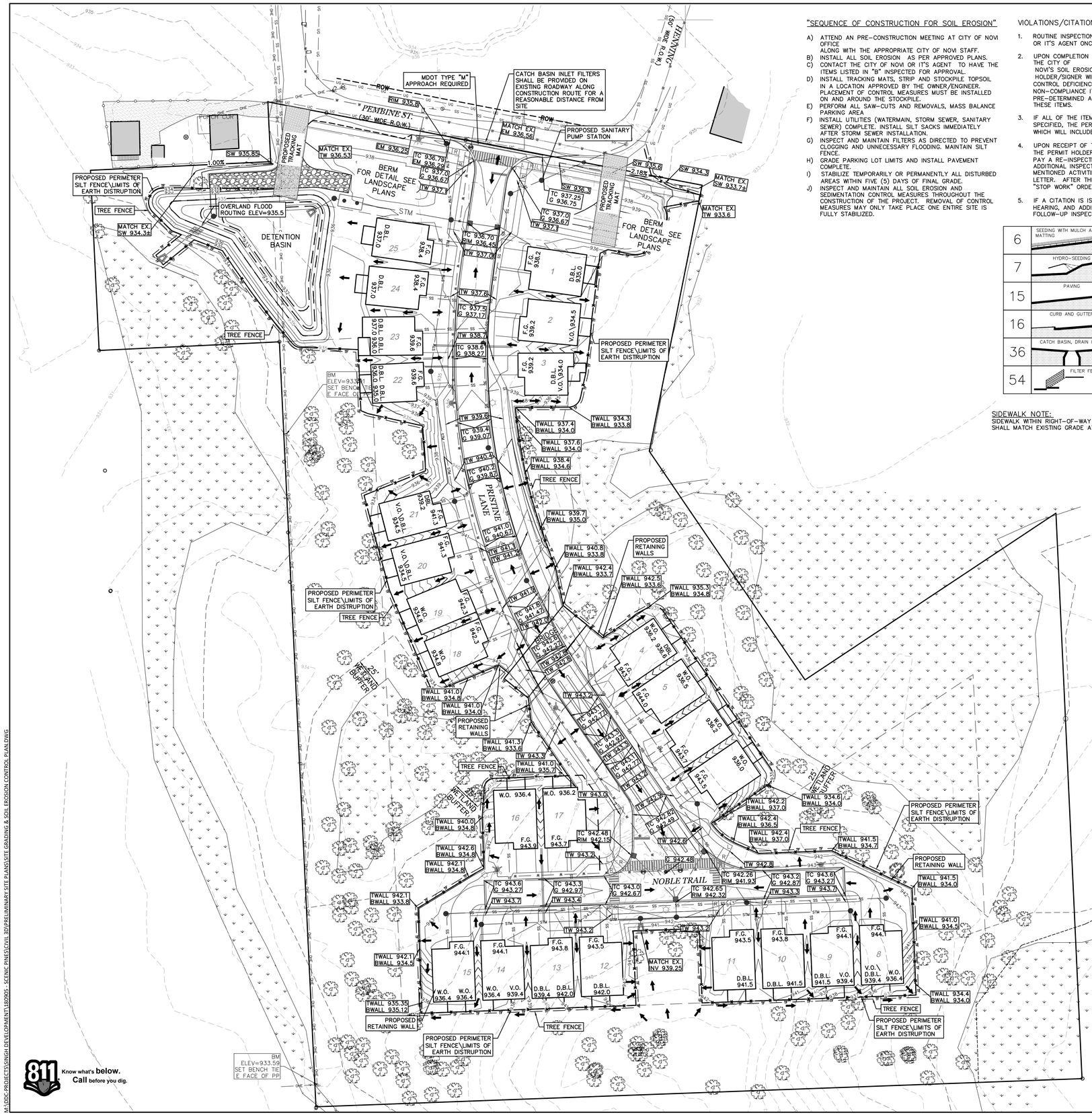
PART OF THE SW 1/4 CORNER OF SECTION 3
TOWN I NORTH - RANGE 8 EAST
CITY OF NOVI
OAKLAND COUNTY, MI

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DATE: 07-26-2019
Drawn By: SDT
P.E.: WES LEE O. UMLOR
1" = 40'
Job No.: 180905
Sheet No. 8

STATE OF MICHIGAN
WES LEE O. UMLOR
ENGINEER
6201045757
LICENSED PROFESSIONAL ENGINEER

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"SEQUENCE OF CONSTRUCTION FOR SOIL EROSION"

A) ATTEND AN PRE–CONSTRUCTION MEETING AT CITY OF NOVI OFFICE ALONG WITH THE APPROPRIATE CITY OF NOVI STAFF.
B) INSTALL ALL SOIL EROSION AS PER APPROVED PLANS.
C) CONTACT THE CITY OF NOVI OR IT'S AGENT TO HAVE THE ITEMS LISTED IN "B" INSPECTED FOR APPROVAL.
D) INSTALL TRACKING MATS, STRIP AND STOCKPILE TOPSOIL IN A LOCATION APPROVED BY THE OWNER/ENGINEER. PLACEMENT OF CONTROL MEASURES MUST BE INSTALLED ON AND AROUND THE STOCKPILE.
E) PERFORM ALL SAW–CUTS AND REMOVALS, MASS BALANCE PARKING AREA
F) INSTALL UTILITIES (WATERMAIN, STORM SEWER, SANITARY SEWER) COMPLETE. INSTALL SILT SACKS IMMEDIATELY AFTER STORM SEWER INSTALLATION.
G) INSPECT AND MAINTAIN FILTERS AS DIRECTED TO PREVENT CLOGGING AND UNNECESSARY FLOODING. MAINTAIN SILT FENCE.
H) GRADE PARKING LOT LIMITS AND INSTALL PAVEMENT COMPLETE.
I) STABILIZE TEMPORARILY OR PERMANENTLY ALL DISTURBED AREAS WITHIN FIVE (5) DAYS OF FINAL GRADE.
J) INSPECT AND MAINTAIN ALL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES THROUGHOUT THE CONSTRUCTION OF THE PROJECT. REMOVAL OF CONTROL MEASURES MAY ONLY TAKE PLACE ONE ENTIRE SITE IS FULLY STABILIZED.

VIOLATIONS/CITATIONS

1. ROUTINE INSPECTIONS WILL BE PERFORMED ON YOUR PROJECT BY THE CITY OF NOVI OR IT'S AGENT ONCE A WEEK.
2. UPON COMPLETION OF INSPECTION, THE SITE IS FOUND NOT IN COMPLIANCE WITH THE CITY OF NOVI'S SOIL EROSION AND SEDIMENTATION CONTROL ORDINANCE, THEN THE PERMIT HOLDER/SIGNER WILL BE ISSUED, BY HAND, MAIL OR FAX, A "NOTICE OF EROSION CONTROL DEFICIENCE" LETTER, THAT WILL INCLUDE ALL CURRENT AND PERTINENT NON–COMPLIANCE ITEMS. THE DATE AND/OR DEVELOPMENT WILL HAVE PRE–DETERMINED AMOUNT OF TIME, FROM THE DATE OF THE "NOTICE" TO RECTIFY THESE ITEMS.
3. IF ALL OF THE ITEMS HAVE NOT BEEN ADDRESSED AFTER THE ELAPSED TIME SPECIFIED, THE PERMIT HOLDER/SIGNER WILL RECEIVE A "NON–COMPLIANCE" LETTER, WHICH WILL INCLUDE A "NOTICE TO SHOW CAUSE."
4. UPON RECEIPT OF THE "NON–COMPLIANCE" LETTER AND "NOTICE TO SHOW CAUSE," THE PERMIT HOLDER/SIGNER WILL ATTEND A SHOW CAUSE HEARING AS WELL AS PAY A RE–INSPECTION FEE IN THE AMOUNT OF $250.00 TO THE CITY OF NOVI FOR ADDITIONAL INSPECTIONS, HEARINGS AND REPORT FOLLOW–UP. THE BEFORE MENTIONED ACTIVITIES MUST TAKE PLACE WITHIN 24 HOURS UPON RECEIPT OF THE LETTER. AFTER THE HEARING, THE PROJECT/DEVELOPMENT MAY BE ISSUED A "STOP WORK" ORDER.
5. IF A CITATION IS ISSUED TO THE PERMIT HOLDER/SIGNER AFTER THE SHOW CAUSE HEARING, AND ADDITIONAL $400.00 WILL BE PAID TO THE CITY OF NOVI, FOR FOLLOW–UP INSPECTIONS, MEETINGS AND OTHER EXPENSES INCURRED.SILT FENCE

6	SEEDING WITH MULCH AND/OR MATTING	FACILITATES ESTABLISHMENT OF VEGETATIVE COVER EFFECTIVE FOR DRAINAGEWAYS WITH LOW VELOCITY EASILY PLACED IN SMALL QUANTITIES BY INEXPERIENCED PERSONNEL SHOULD INCLUDE PREPARED TOPSOIL BED
7	HYDRO–SEEDING	EFFECTIVE ON LARGE AREAS MULCH TACKING AGENT USED TO PROVIDE IMMEDIATE PROTECTION UNTIL GRASS IS ROOTED SHOULD INCLUDE PREPARED TOPSOIL BED
15	PAVING	PROTECTS AREAS WHICH CANNOT OTHERWISE BE PROTECTED, BUT INCREASES RUNOFF VOLUME AND VELOCITY IRREGULAR SURFACE WILL HELP SLOPE VELOCITY
16	CURB AND GUTTER	KEEPS HIGH VELOCITY RUNOFF ON PAVED AREAS FROM LEAVING THE PAVED SURFACE COLLECTS AND CONDUCTS RUNOFF TO ENCLOSED DRAINAGE SYSTEM OR PREPARED DRAINAGEWAY
36	CATCH BASIN, DRAIN INLET	COLLECTS HIGH VELOCITY CONCENTRATED RUNOFF MAY USE FILTER CLOTH OVER INLET
54	FILTER FENCING	USES GEOTEXTILE FABRIC AND POSTS OR POLES EASY TO CONSTRUCT AND LOCATE AS NECESSARY

SIDEWALK NOTE:

SIDEWALK WITHIN RIGHT–OF–WAY SHALL MATCH EXISTING GRADE AT BOTH ENDS OF PROJECT AREA.

NORTH

40' 0 20' 40' 80' 160'

(IN FEET)
1 inch = 40' ft.

NOTES:
IF DEWATERING IS ENCOUNTERED DURING CONSTRUCTION A DEWATERING PLAN MUST BE SUBMITTED TO THE ENGINEERING DIVISION FOR REVIEW AND APPROVAL.

IT IS THE DEVELOPER'S RESPONSIBILITY TO GRADE AND STABILIZE DISTURBANCES DUE TO THE INSTALLATION OF PUBLIC UTILITIES.

CATCH BASIN INLET FILTERS SHALL BE INSTALLED ON EXISTING ROADWAYS ALONG CONSTRUCTION ROUTE FOR A REASONABLE DISTANCE FROM SITE.

STREET SWEEPING AND DUST CONTROL ARE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE DONE AS NEEDED OR DIRECTED BY THE ENGINEER AND\OR CITY STAFF.

VEGETATION SHALL BE ESTABLISHED WITHIN 5 DAYS OF FINAL GRADE, OR WHENEVER DISTURBED AREAS WILL REMAIN UNCHANGED FOR 30 DAYS OR GREATER. 3–4" OF TOPSOIL WILL BE USED WHERE VEGETATION IS REQUIRED.

DIVERSION BERMS OR TERRACING SHALL BE IMPLEMENTED WHERE NECESSARY OR DIRECTED BY THE ENGINEER AND\OR COUNTY STAFF.

CONTRACTOR SHALL OBTAIN SOIL EROSION PERMIT PRIOR TO ANY CONSTRUCTION.

ALL GRADING, EROSION, AND SEDIMENT CONTROL AND RELATED WORK UNDERTAKEN ON THIS SITE SHALL BE IN ACCORDANCE WITH LOCAL JURISDICTION.

CONTRACTOR SHALL MAINTAIN ALL SOIL EROSION CONTROL MEASURES. THE SOIL EROSION CONTROLS WILL BE MAINTAINED WEEKLY AND AFTER EVERY STORM EVENT BY J&M SILT FENCE. SURROUNDING PAVED AREAS SHALL BE POWER BROOMED AS NECESSARY TO REMOVE MUD TRACKING FROM THE SITE.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MATCHING EXISTING FACILITIES TO AVOID ANY ABRUPT OR APPARENT CHANGES IN GRADES OR CROSS SLOPES, LOW SPOTS, OR HAZARDOUS CONDITIONS.

GRADING AT THE BOUNDARIES SHALL BE DONE SO AS NOT TO OBSTRUCT THE RUNOFF OF STORM WATER FROM ADJACENT PROPERTIES.

SOD AND HYDROSEEDING SHALL BE DONE IN ACCORDANCE WITH THE LANDSCAPING PLAN. ALL OTHER DISTURBED AREAS SHALL BE TOPSOILED, HYDROSEEDED, FERTILIZED AND MULCHED.

THE CONTRACTOR IS REQUIRED TO HAVE A COPY OF THE CERTIFIED PLAN AT THE CONSTRUCTION SITE.

ALL SOIL EROSION CONTROL PRACTICES TO BE INSTALLED PRIOR TO ANY MAJOR SOIL DISTURBANCE, OR IN THEIR PROPER SEQUENCE AND MAINTAINED FOR ONE YEAR AFTER COMPLETION OF THE APPROVED PLAN OR UNTIL SUCH MEASURES ARE PERMANENTLY STABILIZED AS DETERMINED BY THE TOWNSHIP ENGINEER.

PERMANENT VEGETATION TO BE SEEDED ON ALL EXPOSED AREAS WITHIN TEN (10) DAYS AFTER FINAL GRADING. MULCH TO BE USED AS NECESSARY FOR PROTECTION UNTIL SEEDING IS ESTABLISHED.

IMMEDIATELY FOLLOWING INITIAL DISTURBANCE OR ROUGH GRADING, ALL CRITICAL AREAS SUBJECT TO EROSION (I.E., STEEP SLOPES) WILL RECEIVE APPROPRIATE VEGETATIVE COVER AS STATED IN THE CONSTRUCTION SEQUENCE.

DURING CONSTRUCTION, ANY ADDITIONAL CONTROL MEASURES AS DEEMED NECESSARY TO PREVENT EROSION OR CONTROL SEDIMENT BEYOND THOSE MEASURES SHOWN ON THE APPROVED PLANS SHALL BE INSTALLED OR EMPLOYED AT THE DIRECTION OF THE ENGINEER.

MAINTENANCE REQUIREMENTS

- Street scraping (daily)
- Street sweeping (weekly minimum)
- Structural sediment controls (silt fence, inlet filters, sediment traps) Inspect and maintain on a weekly basis. Record site conditions and necessary repairs in a logbook once a week and within 24 hours after a storm event if required by the NPDES Permit (5 acres or greater in size).

CONSTRUCTION NOTES

ANY EXISTING TELEPHONE LINES TO BE RELOCATED MUST BE REPLACED WITH UNDERGROUND LINES.

CONSTRUCTION SEQUENCE

AUG 2019 – AUG 2020	SOIL EROSION CONTROL MEASURES
PRIOR TO CONSTRUCTION	–IDENTIFY CONSTRUCTION LIMITS –INSTALL TRACKING MAT –INSTALL SILT FENCE
DEMOLITION	–SAWCUT AND REMOVE CURBING, STRIP VEGETATION AND TOPSOIL –MAINTAIN CONTROL MEASURES
CONSTRUCT UTILITIES	–MAINTAIN CONTROL MEASURES –INSTALL SILT SACKS IN PROP. STRUCTURES IMMEDIATELY FOLLOWING INSTALLATION
CONSTRUCT PARKING LOT	–REMOVE STONE ACCESS DRIVE –MAINTAIN OTHER CONTROL MEASURES
FINAL GRADING, INSTALL SIDEWALK	–MAINTAIN CONTROL MEASURES
SITE RESTORATION AND LANDSCAPING	–TOPSOIL AND SOD –INSTALL LANDSCAPING –MAINTAIN CONTROL MEASURES
AFTER DISTURBED AREAS HAVE STABILIZED	–REMOVE SILT FENCE –REMOVE INLET FILTERS ON CATCH BASINS

DISTURBED AREA ±3.93 ACRES
±53.3% UNDISTURBED

STATE OF MICHIGAN
WES LEE O. UMLOR
ENGINEER
#2101054571
LICENSED PROFESSIONAL ENGINEER

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CLIENT: SINGH DEVELOPMENT LLC
7125 ORCHARD LAKE RD
WEST BLOOMFIELD, MI

SCENIC PINES ESTATES

SITE GRADING & SOIL EROSION CONTROL PLAN

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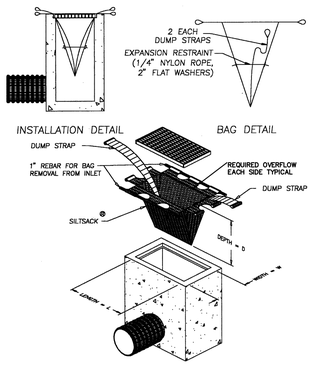
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1" = 40'

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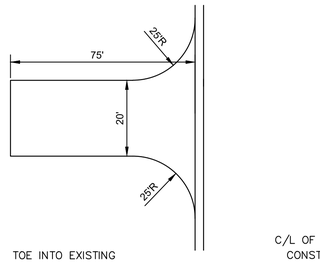
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CATCH BASIN SILT SACK #36

HI-FLOW SILTSACK
(For areas of moderate to heavy precipitation and run-off)

PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	265 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20%
PUNCTURE	ASTM D-4833	135 LBS
MULLEN BURST	ASTM D-3786	420 PSI
TRAPEZOID TEAR	ASTM D-4533	45 LBS
UV RESISTANCE	ASTM D-4355	50%
APPARENT OPENING SIZE	ASTM D-4751	20 US SIEVE
FLOW RATE	ASTM D-4491	200 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	1.5 SEC -1



TRACKING MAT CONSTRUCTION ENTRANCE DETAIL
NO SCALE

NOTES:

DETAILS SPECIFIED ON THIS PLAN APPLY TO ALL CONSTRUCTION, RECONSTRUCTION, OR ALTERATION OF STREETS, CURBS, OR SIDEWALKS IN THE PUBLIC RIGHT OF WAY.

SIDEWALK RAMPS ARE TO BE LOCATED AS SPECIFIED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

RAMPS SHALL BE PROVIDED AT ALL CORNERS OF AN INTERSECTION WHERE THERE IS EXISTING OR PROPOSED SIDEWALK AND CURB. RAMPS SHALL ALSO BE PROVIDED AT MARKED AND/OR SIGNALIZED MID-BLOCK CROSSINGS.

SURFACE TEXTURE OF THE RAMP SHALL BE THAT OBTAINED BY A COARSE BROOMING, TRANSVERSE TO THE RUNNING SLOPE.

SIDEWALK SHALL BE RAMPED WHERE THE DRIVEWAY CURB IS EXTENDED ACROSS THE WALK.

CARE SHALL BE TAKEN TO ASSURE A UNIFORM GRADE ON THE RAMP. WHERE CONDITIONS PERMIT, IT IS DESIRABLE THAT THE SLOPE OF THE RAMP BE IN ONLY ONE DIRECTION, PARALLEL TO THE DIRECTION OF TRAVEL.

RAMP WIDTH SHALL BE INCREASED, IF NECESSARY, TO ACCOMMODATE SIDEWALK SNOW REMOVAL EQUIPMENT NORMALLY USED BY THE MUNICIPALITY.

WHEN 5' MINIMUM WIDTHS ARE NOT FEASIBLE, RAMP WIDTH MAY BE REDUCED TO NOT LESS THAN 4' AND LANDINGS TO NOT LESS THAN 4' x 4'.

DETECTABLE WARNING SURFACE COVERAGE IS 24" MINIMUM IN THE DIRECTION OF RAMP/PATH TRAVEL AND THE FULL WIDTH OF THE RAMP/PATH OPENING EXCLUDING CURBED OR FLARED CURB TRANSITION AREAS. A BORDER OFFSET NOT GREATER THAN 2" MEASURED ALONG THE EDGES OF THE DETECTABLE WARNING IS ALLOWABLE. FOR RADIAL CURB THE OFFSET IS MEASURED FROM THE ENDS OF THE RADIUS.

FOR NEW ROADWAY CONSTRUCTION, THE RAMP CROSS SLOPE MAY NOT EXCEED 2.0%. FOR ALTERATIONS TO EXISTING ROADWAYS, THE CROSS SLOPE MAY BE TRANSITIONED TO MEET AN EXISTING ROADWAY GRADE. THE CROSS SLOPE TRANSITION SHALL BE APPLIED UNIFORMLY OVER THE FULL LENGTH OF THE RAMP.

THE MAXIMUM RUNNING SLOPE OF 8.3% IS RELATIVE TO A FLAT (0%) REFERENCE. HOWEVER, IT SHALL NOT REQUIRE ANY RAMP OR SERIES OF RAMPS TO EXCEED 15 FEET IN LENGTH.

DRAINAGE STRUCTURES SHOULD NOT BE PLACED IN LINE WITH RAMPS. THE LOCATION OF THE RAMP SHOULD TAKE PRECEDENCE OVER THE LOCATION OF THE DRAINAGE STRUCTURE. WHERE EXISTING DRAINAGE STRUCTURES ARE LOCATED IN THE RAMP PATH OF TRAVEL, USE A MANUFACTURER'S ADA COMPLIANT GRATE. OPENINGS SHALL NOT BE GREATER THAN ½". ELONGATED OPENINGS SHALL BE PLACED SO THAT THE LONG DIMENSION IS PERPENDICULAR TO THE DOMINANT DIRECTION OF TRAVEL.

TRANSITION THE GUTTER PAN CROSS SECTION SUCH THAT THE COUNTER SLOPE IN THE DIRECTION OF RAMP TRAVEL IS NOT GREATER THAN 5.0%. MAINTAIN THE NORMAL GUTTER PAN CROSS SECTION ACROSS DRAINAGE STRUCTURES.

THE TOP OF THE JOINT FILLER FOR ALL RAMP TYPES SHALL BE FLUSH WITH THE ADJACENT CONCRETE.

CROSSWALK AND STOP LINE MARKINGS, IF USED, SHALL BE SO LOCATED AS TO STOP TRAFFIC SHORT OF RAMP CROSSINGS. SPECIFIC DETAILS FOR MARKING APPLICATIONS ARE GIVEN IN THE "MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES".

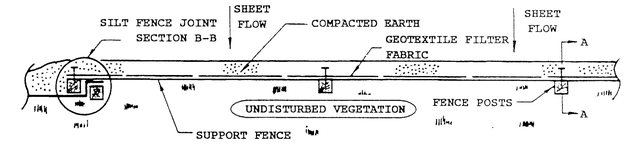
FLARED SIDES WITH A SLOPE OF 10% MAXIMUM, MEASURED ALONG THE ROADSIDE CURB LINE, SHALL BE PROVIDED WHERE AN UNOBSTRUCTED CIRCULATION PATH LATERALLY CROSSES THE SIDEWALK RAMP. FLARED SIDES ARE NOT REQUIRED WHERE THE RAMP IS BORDERED BY LANDSCAPING, UNPAVED SURFACE OR PERMANENT FIXED OBJECTS, WHERE THEY ARE NOT REQUIRED. FLARED SIDES CAN BE CONSIDERED IN ORDER TO AVOID SHARP CURB RETURNS AT RAMP OPENINGS.

DETECTABLE WARNING PLATES MUST BE INSTALLED USING FABRICATED OR FIELD CUT UNITS CAST AND/OR ANCHORED IN THE PAVEMENT TO RESIST SHIFTING OR HEAVING.

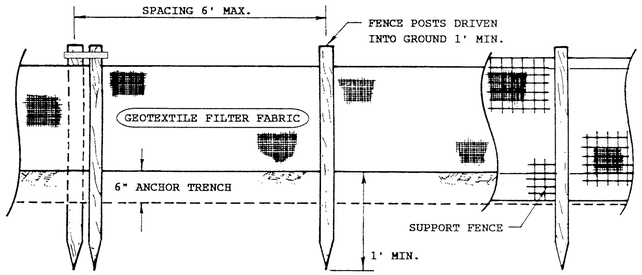
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

SIDEWALK RAMP AND DETECTABLE WARNING DETAILS

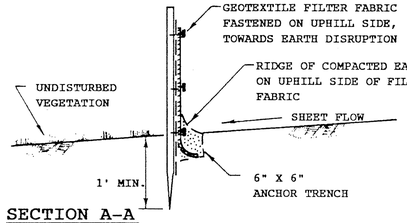
F.H.W.A. APPROVAL	3-15-2016 PLAN DATE	R-28-J	SHEET 7 OF 7



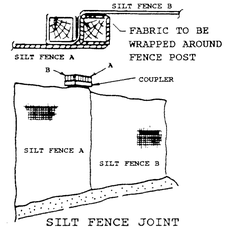
PLAN VIEW



FRONT VIEW



SECTION A-A

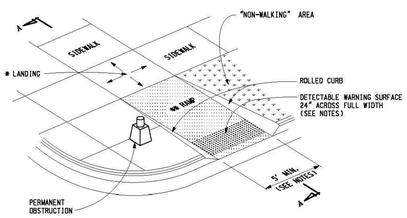


SILT FENCE JOINT

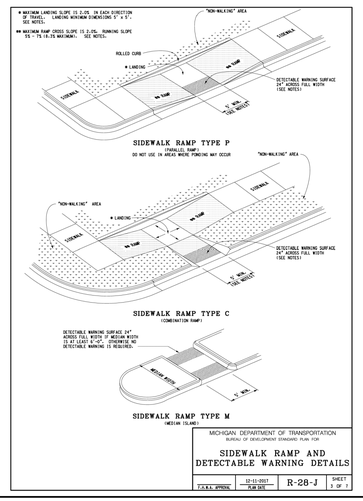
SECTION B-B

* MAXIMUM LANDING SLOPE IS 2.0% IN EACH DIRECTION OF TRAVEL. MINIMUM DIMENSIONS 5' x 5'. SEE NOTES.

** MAXIMUM RAMP CROSS SLOPE IS 2.0%. RUNNING SLOPE 5% - 7% (8.3% MAXIMUM). SEE NOTES.



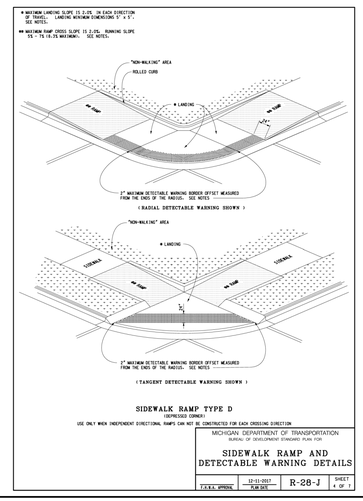
SIDEWALK RAMP TYPE R
(ROLLED SIDES)



MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

SIDEWALK RAMP AND DETECTABLE WARNING DETAILS

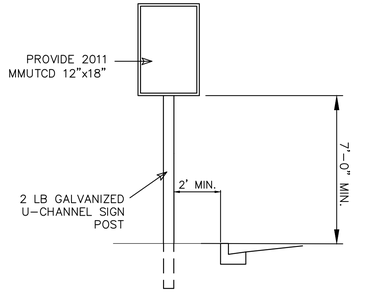
F.H.W.A. APPROVAL	12-11-2017 PLAN DATE	R-28-J	SHEET 5 OF 7



MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

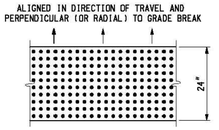
SIDEWALK RAMP AND DETECTABLE WARNING DETAILS

F.H.W.A. APPROVAL	12-11-2017 PLAN DATE	R-28-J	SHEET 6 OF 7

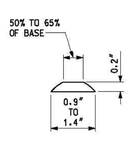


SIGN NOTE:
MULTIPLE SIGNS AND/OR SIGNS WITH NOMINAL DIMS GREATER THAN 12"x 18" SHALL BE MOUNTED ON GALVANIZED 3 LB. OR GREATER U-CHANNEL POSTS.

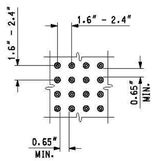
SIGN DETAIL
NO SCALE



DOME ALIGNMENT

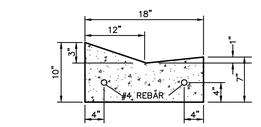


DOME SECTION

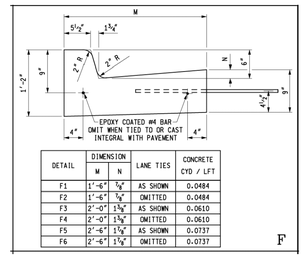


DOME SPACING

DETECTABLE WARNING DETAILS



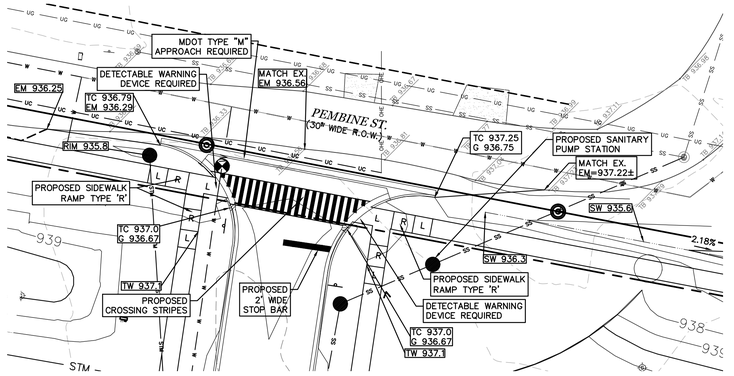
MOUNTABLE CONCRETE CURB & GUTTER DETAIL
NO SCALE



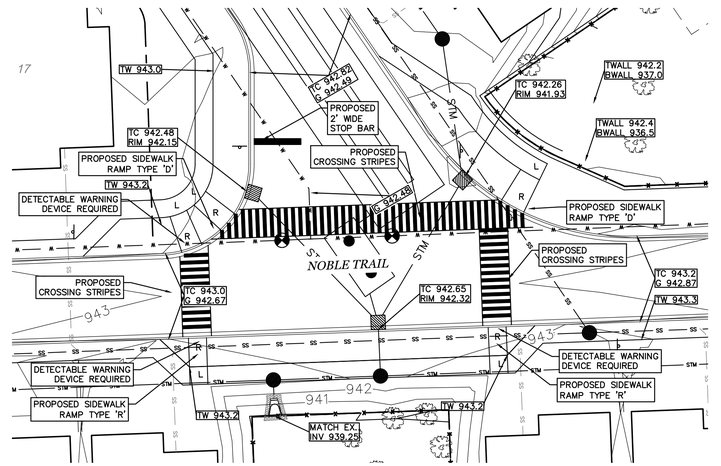
DETAIL	DIMENSION M	DIMENSION N	LANE TIES	CONCRETE CYD / LFT
F1	1'-6"	7/8"	AS SHOWN	0.0484
F2	1'-6"	7/8"	OMITTED	0.0484
F3	2'-0"	1¾"	AS SHOWN	0.0610
F4	2'-0"	1¾"	OMITTED	0.0610
F5	2'-6"	1¾"	AS SHOWN	0.0737
F6	2'-6"	1¾"	OMITTED	0.0737

F

MDOT	DEPARTMENT DIRECTOR Kirk T. Steudle	MICHIGAN DEPARTMENT OF TRANSPORTATION
PREPARED BY DESIGN DIVISION	APPROVED BY: DIRECTOR, BUREAU OF FIELD SERVICES	BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR
DRAWN BY: B.L.T.	APPROVED BY: DIRECTOR, BUREAU OF HIGHWAY DEVELOPMENT	CONCRETE CURB AND CONCRETE CURB & GUTTER
CHECKED BY: K.K.P.	9-30-2014 F.H.W.A. APPROVAL	2-6-2014 PLAN DATE
		R-30-G
		SHEET 1 OF 2



INTERSECTION –PRISTINE LN. & PEMBINE ST.
SCALE: 1"=20'



INTERSECTION – PRISTINE LN. & NOBLE TR.
SCALE: 1"=20'

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STATE OF MICHIGAN
WES LEE O. UMLOR
ENGINEER
#21016457
LICENSED PROFESSIONAL ENGINEER

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WIXOM, MI 48393
(P): 248-437-7803
(F): 866-960-4307

REVISIONS
REVISED PER CITY OF NOVI REVIEW LETTERS DATED 1/14/2019
REVISED PER CITY OF NOVI REVIEW LETTERS DATED 3/27/2019
REVISED PER CITY OF NOVI REVIEW LETTERS DATED 6/18/2019

CLIENT: SINGH DEVELOPMENT LLC
7125 ORCHARD LAKE RD
WEST BLOOMFIELD, MI

SCENIC PINES ESTATES

GRADING & SOIL EROSION DETAILS

PART OF THE SW 1/4 CORNER OF SECTION 3
TOWN 1 NORTH - RANGE 8 EAST
CITY OF NOVI
OAKLAND COUNTY, MI

DATE: 07-26-2019
Drawn By: SDT
P.E.: WES LEE O. UMLOR
NO SCALE
Job No.: 180905
Sheet No. 10

M:\DOC-PROJECTS\SINGH DEVELOPMENT\180905 - SCENIC PINES\CIVIL 2D\PRELIMINARY SITE PLANS\SITE GRADING & SOIL EROSION CONTROL PLAN.DWG

NORTH

40' 0 20' 40' 80' 160'

(IN FEET)
1 inch = 40' ft.

STRUCTURE TABLE			
STRUCTURE NAME:	DETAILS:	PIPES IN:	PIPES OUT
200	48" RIM = 937.00 SUMP = 923.7	8" PVC SW =925.67	4" NE =931.00
201	72" RIM = 937.00 SUMP = 926.0	8" PVC S =925.95	8" PVC NE =925.95
202	48" RIM = 938.50 SUMP = 926.5	8" PVC S =926.56	8" PVC N =926.46
203	48" RIM = 939.61 SUMP = 926.9	8" PVC S =927.01	8" PVC N =926.91
204	48" RIM = 941.60 SUMP = 927.5	8" PVC SE =927.57	8" PVC N =927.47
205	48" RIM = 942.60 SUMP = 445.0	8" PVC W =-2097.08 8" PVC E =928.97	8" PVC NW =928.87
206	48" RIM = 943.30 SUMP = 930.0		8" PVC W =930.00
207	48" RIM = 937.22 SUMP = 439.7		8" PVC E =-2094.58

NOTE:
COMPACTED SAND BACKFILL (MDOT SAND CLASS 2) SHALL BE PROVIDED FOR ALL UTILITIES WITHIN THE INFLUENCE OF PAVED AREAS.

SANITARY BASIS OF DESIGN

Connection to existing 8" PVC sanitary sewer along Henning St.

NUMBER OF UNITS
= 25 UNITS TOTAL

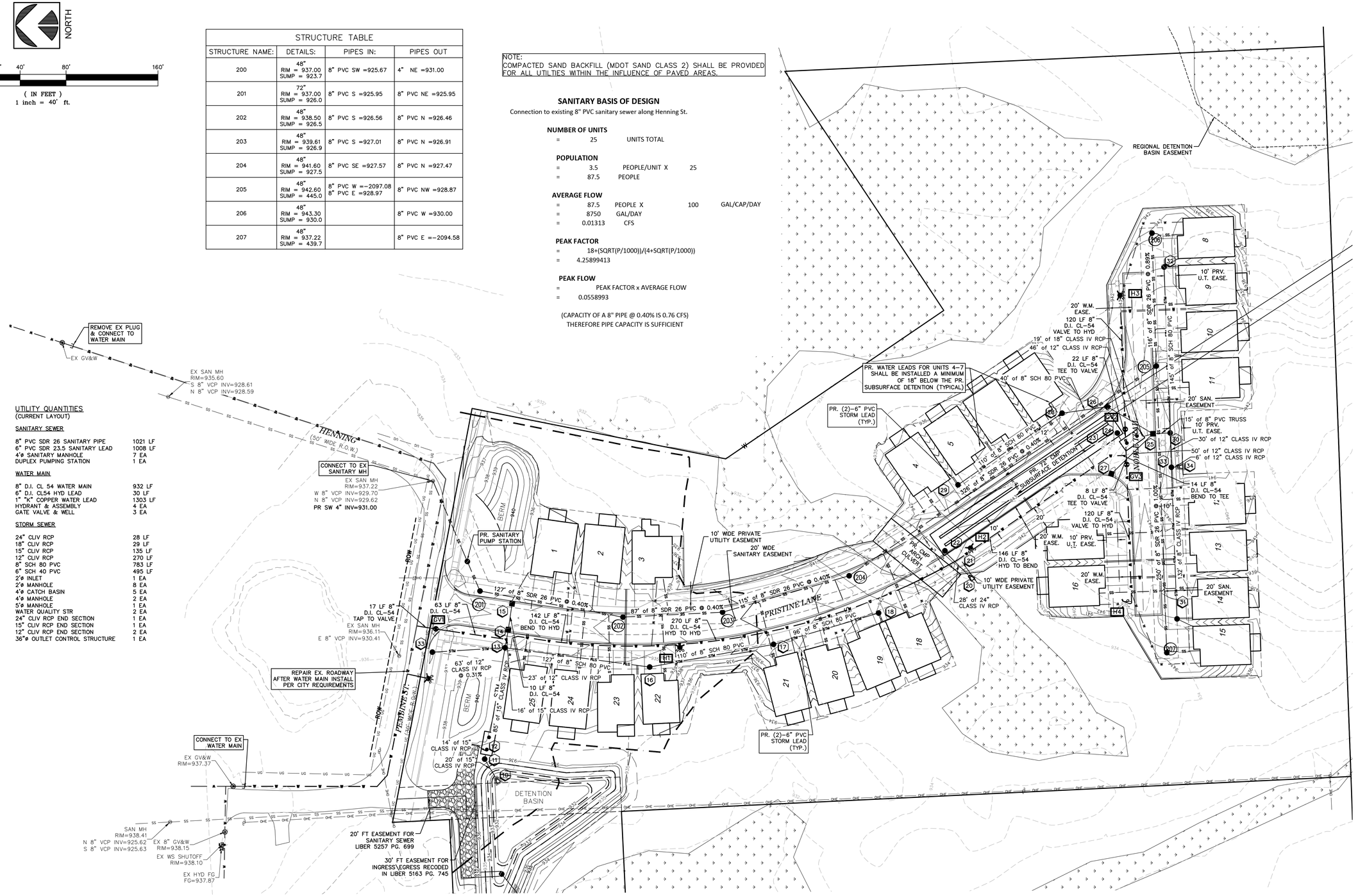
POPULATION
= 3.5 PEOPLE/UNIT X 25
= 87.5 PEOPLE

AVERAGE FLOW
= 87.5 PEOPLE X 100 GAL/CAP/DAY
= 8750 GAL/DAY
= 0.01313 CFS

PEAK FACTOR
= 18+(SQRT(P/1000))/(4+SQRT(P/1000))
= 4.25899413

PEAK FLOW
= PEAK FACTOR x AVERAGE FLOW
= 0.0558993

(CAPACITY OF A 8" PIPE @ 0.40% IS 0.76 CFS)
THEREFORE PIPE CAPACITY IS SUFFICIENT



UTILITY QUANTITIES
(CURRENT LAYOUT)

SANITARY SEWER

8" PVC SDR 26 SANITARY PIPE	1021 LF
6" PVC SDR 23.5 SANITARY LEAD	1008 LF
4'ø SANITARY MANHOLE	7 EA
DUPLEX PUMPING STATION	1 EA

WATER MAIN

8" D.I. CL 54 WATER MAIN	932 LF
6" D.I. CL54 HYD LEAD	30 LF
1" "K" COPPER WATER LEAD	1303 LF
HYDRANT & ASSEMBLY	4 EA
GATE VALVE & WELL	3 EA

STORM SEWER

24" CLIV RCP	28 LF
18" CLIV RCP	29 LF
15" CLIV RCP	135 LF
12" CLIV RCP	270 LF
8" SCH 80 PVC	783 LF
6" SCH 40 PVC	495 LF
2'ø INLET	1 EA
2'ø MANHOLE	8 EA
4'ø CATCH BASIN	5 EA
4'ø MANHOLE	2 EA
5'ø MANHOLE	1 EA
WATER QUALITY STR	2 EA
24" CLIV RCP END SECTION	1 EA
15" CLIV RCP END SECTION	1 EA
12" CLIV RCP END SECTION	2 EA
36"ø OUTLET CONTROL STRUCTURE	1 EA

SANITARY NOTES:
1. ALL PUBLIC SANITARY SEWERS SHALL BE LOCATED WITHIN A 20' WIDE DEDICATED EASEMENT.
2. ALL SANITARY SEWER MAINS SHALL BE MINIMUM 8" PVC SDR 26 @ 0.40% MIN. SLOPE
3. ALL SANITARY SEWER LEADS SHALL BE MINIMUM 6" PVC SDR 23.5 @ 2.0% MIN. SLOPE..
4. ALL SANITARY SEWER LEADS SHALL BE A MINIMUM DEPTH OF 5' UNDER THE INFLUENCE OF PAVEMENT.
5. ALL SANITARY SEWER LEADS SHALL BE MINIMUM DEPTH OF 10' BELOW THE FINISHED GRADE OF EACH UNIT TO PROVIDE FOR GRAVITY DISCHARGE FROM BASEMENTS.
6. ALL MATERIALS SHALL CONFORM TO THE CITY OF NOVI STANDARDS AND SPECIFICATIONS.
7. A 27' WIDE ACCESS EASMENT SHALL BE PROVIDED ALONG ALL PR. ROADWAYS.
8. PROVIDE A TESTING BULKHEAD IMMEDIATELY UPSTREAM OF THE SANITARY CONNECTION POINT.

WATER MAIN NOTES:
1. ALL PUBLIC WATER MAINS AND\OR SERVICES SHALL BE LOCATED WITHIN A 20' WIDE DEDICATED EASEMENT.
2. ALLWATER MAINS SHALL BE 8" DUCTILE IRON CLASS 54.
3. ALL WATER SERVICES SHALL BE 1" 'K' COPPER OR HDPE DR9 WITH TRACE WIRE. CURB STOPS TO BE PROVIDED 1' BEHIND PR. WALKS TYPICAL.
4. ALL WATER MAINS SHALL BE INSTALLED WITH 5'-6" MINIMUM COVER.
5. 18" MINIMUM SEPARATION SHALL BE PROVIDED BETWEEN WATER MAINS AND\OR SERVICE LEADS AND ALL OTHER UTILITIES.
6. ALL MATERIALS SHALL CONFORM TO THE CITY OF NOVI STANDARDS AND SPECIFICATIONS.
7. A 27' WIDE ACCESS EASMENT SHALL BE PROVIDED ALONG ALL PR. ROADWAYS.
8. ALL HYDRANTS SHALL BE PLACED A MINIMUM OF 7 FEET BEHIND BACK OF CURB.
9. ALL HYDRANTSMUST BE INSTALLED AND OPERATIONAL PRIOR TO BEGINNING BUILDING CONSTRUCTION.

811 Know what's **below.** **Call** before you dig.

STATE OF MICHIGAN
WES LEE O. UMLOR
ENGINEER
62011545
PROFESSIONAL ENGINEER

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REVISED PER CITY OF NOVI REVIEW LETTERS DATED 1/14/2019
REVISED PER CITY OF NOVI REVIEW LETTERS DATED 3/27/2019
REVISED PER CITY OF NOVI REVIEW LETTERS DATED 6/18/2019

CLIENT: SINGH DEVELOPMENT LLC
7125 ORCHARD LAKE RD
WEST BLOOMFIELD, MI

SCENIC PINES ESTATES
OVERALL UTILITY PLAN

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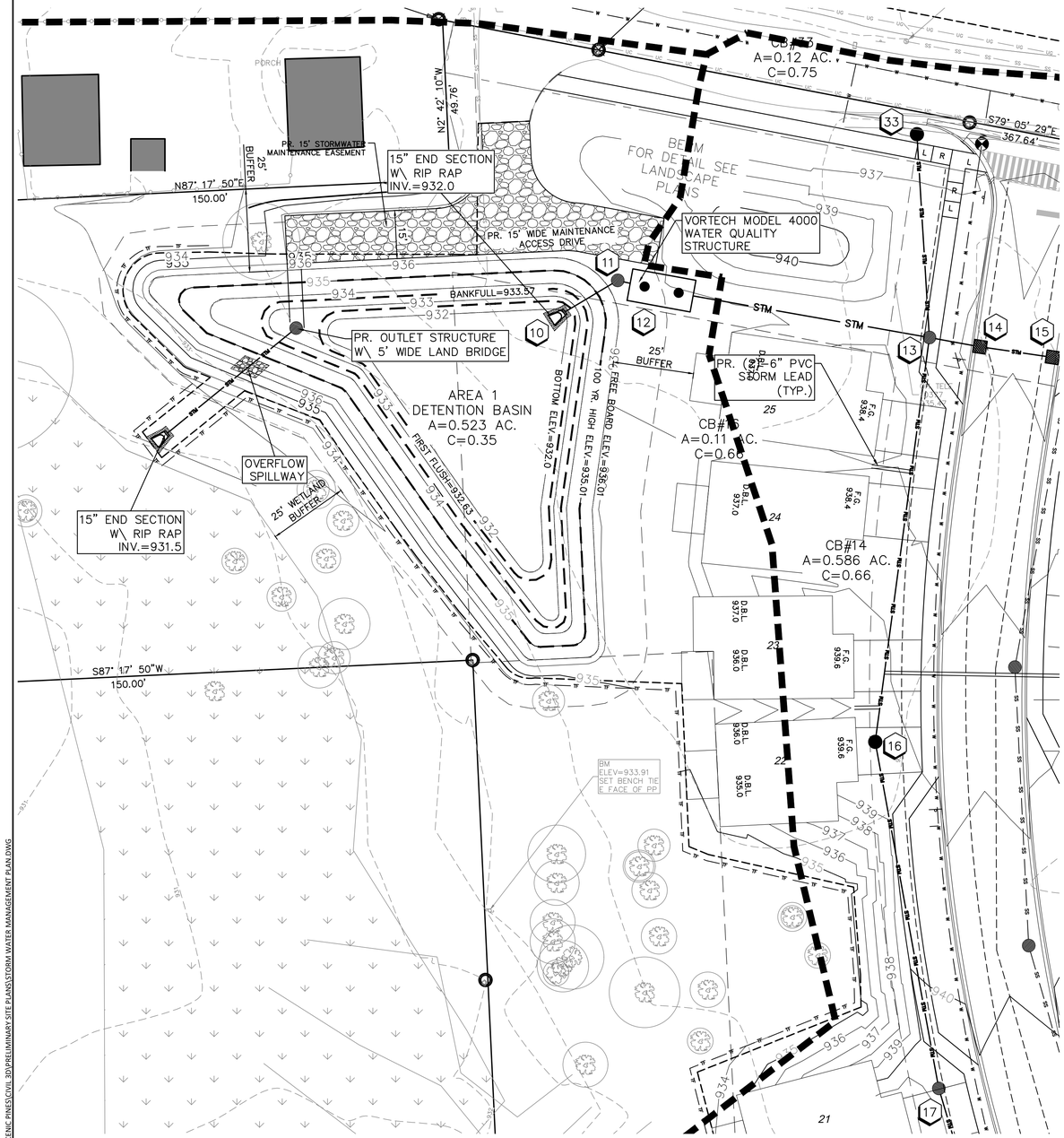
PART OF THE SW 1/4 CORNER OF SECTION 3 | TOWN I NORTH - RANGE 8 EAST | CITY OF NOVI | OAKLAND COUNTY, MI

DATE: 07-26-2019
Drawn By: SDT
P.E.: WES LEE O. UMLOR
1" = 40'
Job No.: 180905
Sheet No. 11

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SCENIC PINES

SINGLE FAMILY RESIDENTIAL
STORM WATER MANAGEMENT PLAN
PEMBINE ROAD, CITY OF NOVI, OAKLAND COUNTY



CITY OF NOVI
Oakland County Drain Commission Method
Gravity Outlet to Wetlands

Time of Concentration T(min) =	20
Existing Coefficient C =	0.15
Proposed Coefficient C =	0.61
Area 1 A(acres) =	2.15

Frequency of Storm	Rainfall Intensity I (in/Hr)	Allowable Outflow Qa(cfs)	Maximum Outflow Qo(cfs/acre)	Storage Time Equation T(min)	Storage Volume Equation Vs(Ft3/(AxC))	Storage Volume V(FT3)
1 Year	1.60	0.43	0.33	65.75	2268	2974
5 Year	3.22	0.43	0.33	103.78	5650	7410
10 Year	3.89	0.43	0.33	116.48	7117	**9334**
25 Year	4.78	0.43	0.33	131.81	9115	11954
50 Year	5.44	0.43	0.33	142.40	10637	13951
100 Year	6.11	0.43	0.33	152.35	12176	**15969**

Mechanical Pre-treatment Calculation:
Q10 = C x I10 x A = 5.10 CFS
Use Vortech Model 4000 rated at 6.0-cfs

First Flush
Vff=1815xAxC 2380.3725
Qff=Vff/T24= 0.02755061
FF Elev= 932.63

Bankfull
Vbf=5160xAxC 6767.34
BF Elev= 933.57
Elev.100YR= 935.01

City of Novi - Scenic Pines
AREA 1 WEIGHTED 'C' CALCULATIONS

Type	Area (SF)	Runoff Coefficient 'C'	C x A
Total Drainage Area 'A'			
Proposed Impervious Area	Non Improved Outlet	93,770	0.2
Proposed Impervious Area	Roofs, Patios, Drive, Walks	21,868	0.95 20,775
Proposed Impervious Area	Streets and Walks	18,378	0.95 17,459
Proposed Pervious Area		53,524	0.35 18,733
Sum (C x A)			56,967
Weighted 'Cw'=sum(C x A) /A	=	**0.61**	Use

Storage Analysis

	Elevation	Area (sf)	Ave. Area (sf)	Cumulative Volume (cft)
	932	3,121	0	0
	933	4,474	3,798	3,798
	934	6,011	5,243	9,040
	935	7,663	6,837	15,877
Xtop =	936	9,460	8,562	24,439

FIRST FLUSH

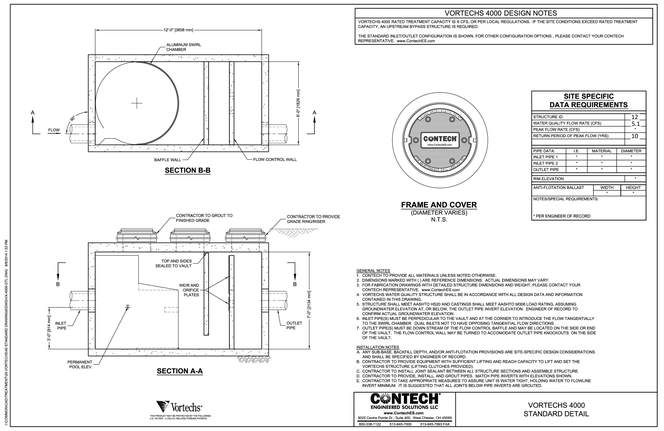
Vff	=	1815 x A x C			=	2380.373 cft
Zff	=	933 - (3798 - 2381) / (3798 - 0)			=	932.6268
Qff	=	Vff / 86400			=	0.027551 cfs

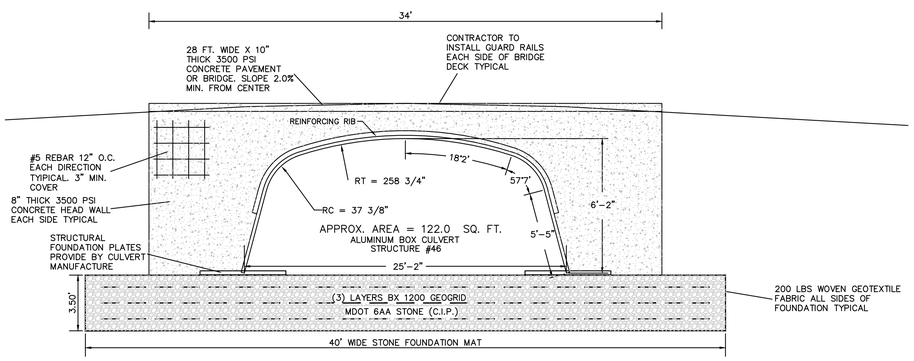
BANK FULL CALCULATIONS

Vbf	=	5160 x A x C			=	6767.34 cft
Vbf-adj	=	Vbf-Vff			=	4386.968 cft
Zbf	=	934-((9040-6767)/(9040-3798))			=	933.57
$V_{100\text{-}adj}$	=	V_{100} - Vff			=	13588.53 cft
Z_{100}	=	936-((24439-16396)/(24439-15877))			=	935.01
Qbf	=	Vbf/144000			=	0.046995 cfs

Area 1

TOTAL AREA	=	2.15				
Caxq	=	0.61				
Qa	=	0.20xA	=	0.20 x 2.15 ACRES	=	0.43 cfs



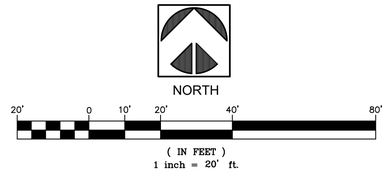


CULVERT CROSS SECTION
NO SCALE

NOTES:
1. FIRE ACCESS ROAD MUST BE DESIGNED AND MAINTAINED TO SUPPORT 35 TON WEIGHT REQUIREMENTS.
2. LOAD CALCULATIONS FOR BRIDGE STRUCTURE TO BE PROVIDED BY MANUFACTURER PRIOR TO CONSTRUCTION.

811 Know what's **below.** **Call** before you dig.





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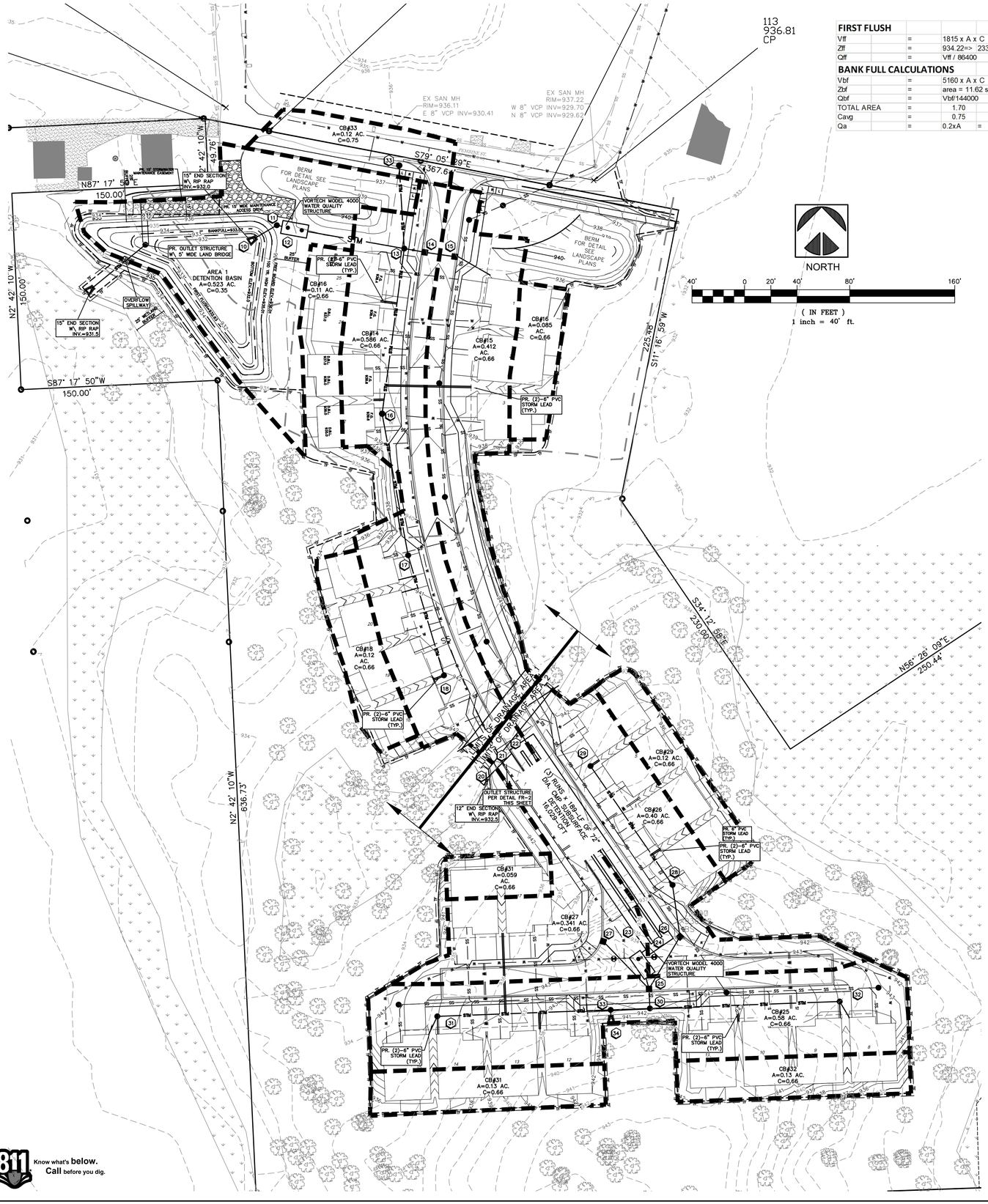
SCENIC PINES ESTATES
STORM WATER MANAGEMENT PLAN

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TOWN 1 NORTH - RANGE 8 EAST
CITY OF NOVI
OAKLAND COUNTY, MI

DATE: 07-26-2019
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P.E.: WES LEE O. UMLOR
1" = 20'
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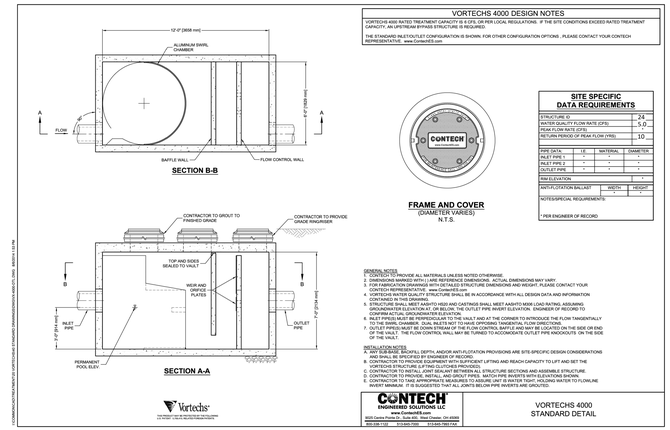
M:\DOC-PROJECTS\SINGH DEVELOPMENT\180905 - SCENIC PINES\CIVIL 3D\PRELIMINARY SITE PLANS\STORM WATER MANAGEMENT PLAN.DWG



FIRST FLUSH							
Vff	=	1815 x A x C			=	2314.125 cft	
Zff	=	934.22=> 2336 Cft			=	934.22	
Qff	=	Vff / 86400			=	0.026784 cfs	
BANK FULL CALCULATIONS							
Vbf	=	5160 x A x C			=	6579 cft	
Zbf	=	area = 11.62 sft x 567 lf			=	935.58	
Qbf	=	Vbf/144000			=	0.045688 cfs	
TOTAL AREA	=	1.70					
Cavg	=	0.75					
Qa	=	0.2xA	=	0.20 x 1.70 ACRES	=	0.34 cfs	

City of Novi - Scenic Pines
AREA 2 WEIGHTED 'C' CALCULATIONS

	Type	Area (SF)	Runoff Coefficient 'C'	C x A
Total Drainage Area 'A'	Non Improved Outlet	73,845	0.2	
Proposed Impervious Area	Roofs, Patios, Drive, Walks	21,051	0.95	19,998
Proposed Impervious Area	Streets and Walks	27,832	0.95	26,440
Proposed Pervious Area		24,962	0.35	8,737
Sum (C x A)				55,176
Weighted 'Cw'=sum(C x A) /A	=	**0.75**	Use	

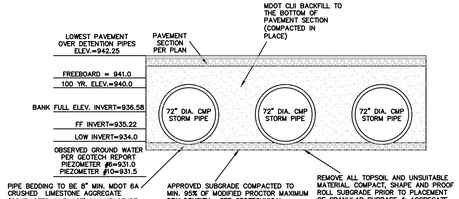


16,029-CFT
Oakland County Drain Commission Method
Gravity Outlet to Wetlands
Time of Concentration T (min) = 20
Existing Coefficient C = 0.15
Proposed Coefficient C = 0.75
Area 2 A(acres) = 1.70

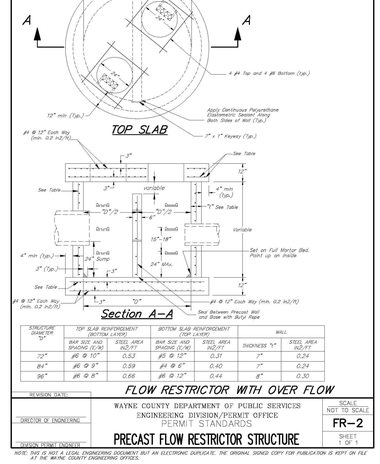
Frequency of Storm	Rainfall Intensity I (In/Hr)	Allowable Outflow Qa(cfs)	Maximum Outflow Qo(cfs/acre)	Storage Time Equation T(min)	Storage Volume Equation Vs(Ft3/(Ax/C))	Storage Volume V(FT3)
1 Year	1.60	0.34	0.27	75.62	2440	3111
5 Year	3.22	0.34	0.27	117.80	5920	7548
10 Year	3.89	0.34	0.27	131.87	7420	**9461**
25 Year	4.78	0.34	0.27	148.88	9457	12058
50 Year	5.44	0.34	0.27	160.62	11007	14034
100 Year	6.11	0.34	0.27	171.65	12571	**16029**

Subsurface Detention Calculation:
72" Dia. CMP Area = 28.26 Sq-ft/Lft
Length Required = 567 Lft
3 runs = 189 Lft/run

Mechanical Pre-treatment Calculation:
Q10 = C x I10 x A = 4.96 CFS
Use Vortech Model 4000 rated at 6.0-cfs



SUBSURFACE DETENTION DETAIL



STRUCTURE DIAMETER "D"	TOP SLAB REINFORCEMENT (BOTTOM LAYER)		BOTTOM SLAB REINFORCEMENT (TOP LAYER)		WALL	
	BAR SIZE AND SPACING (S/W)	STEEL AREA in2/FT	BAR SIZE AND SPACING (S/W)	STEEL AREA in2/FT	THICKNESS "t"	STEEL AREA in2/FT
72"	#5 @ 12"	0.53	#5 @ 12"	0.31	7"	0.24
84"	#6 @ 9"	0.59	#4 @ 6"	0.40	7"	0.24
96"	#6 @ 8"	0.66	#6 @ 12"	0.44	8"	0.30

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WAYNE COUNTY DEPARTMENT OF PUBLIC SERVICES
ENGINEERING DIVISION/PERMIT OFFICE
PERMIT STANDARDS
PRECAST FLOW RESTRICTOR STRUCTURE
SCALE: NOT TO SCALE
FR-2
SHEET OF 1

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Civil Engineering • Surveying • Landscaping • Construction Services
49287 WEST ROAD
WIXOM, MI 48393
(P): 248-437-7803
(F): 866-960-4307

REVISIONS
REVISED PER CITY OF NOVI REVIEW LETTERS DATED 1/14/2019
REVISED PER CITY OF NOVI REVIEW LETTERS DATED 3/27/2019
REVISED PER CITY OF NOVI REVIEW LETTERS DATED 6/18/2019

CLIENT: SINGH DEVELOPMENT LLC
7125 ORCHARD LAKE RD
WEST BLOOMFIELD, MI

SCENIC PINES ESTATES
STORM WATER TRIBUTARY PLAN

PART OF THE SW 1/4 CORNER OF SECTION 3
TOWN I NORTH - RANGE 8 EAST
CITY OF NOVI
OAKLAND COUNTY, MI

DATE: 07-26-2019
Drawn By: SDT
P.E.: WES LEE O. UMLOR
1" = 40'
Job No.: 180905
Sheet No. 13

STATE OF MICHIGAN
WES LEE O. UMLOR
ENGINEER
6201044570
LICENSED PROFESSIONAL ENGINEER

811 Know what's below. Call before you dig.

M:\DDC PROJECTS\SINGH DEVELOPMENT\180905 - SCENIC PINES\CIVIL 3D\PRELIMINARY\SITE PLANS\STORM WATER MANAGEMENT PLAN.DWG

NORTH

50 0 25 50 100 300

(IN FEET)
1 inch = 50 ft.

PRE-DEVELOPED AREA 1
TO WETLAND "A"
53,993 SF
1.24 ACRES
C=.20
CURRENT 100 YR. RATE=2.63 cfs

PRE-DEVELOPED AREA 3
TO WETLAND "C"
198549 SF
4.56 ACRES
C=0.2
CURRENT 100 YR. RATE = 5.57 cfs

PRE-DEVELOPED AREA 4
TO WETLAND "C"
80000 SF
1.83 ACRES
C=0.2
CURRENT 100 YR RATE = 2.24 cfs

PRE-DEVELOPED AREA 6
TO WETLAND "A"
13504 SF
0.31 ACRES
C=.2
CURRENT 100 YR. RATE=0.38 CFS

PRE-DEVELOPED AREA 5
TO WETLAND "B"
46505 SF
1.07 ACRES
C=0.2
CURRENT100 YR RATE = 1.31 cfs

PRE-DEVELOPED AREA 2
TO WETLAND "A"
18,470 SF
0.42 ACRES
C=.2
CURRENT 100 YR. RATE=0.51 CFS

DRAINAGE SUMMARY
AREA 1 PRE-DEVELOPED = 1.24 ACRES
100 RELEASE RATE OF 2.63 CFS

AREA 2 PRE-DEVELOPED = 0.42 ACRES
100 RELEASE RATE = 0.51 CFS

AREA 3 PRE-DEVELOPED = 4.56 ACRES
100 YR RELEASE RATE = 5.57 CFS

AREA 4 PRE-DEVELOPED = 1.83 ACRES
100 YR RELEASE RATE = 2.24 CFS

AREA 5 PRE-DEVELOPED = 1.07 ACRES
100 YR RELEASE RATE = 1.31 CFS

AREA 6 PRE-DEVELOPED = 0.31 ACRES
100 YR RELEASE RATE = 0.38 CFS

AREA 1 POST DEVELOPED = 2.93 ACRES
100 RELEASE RATE = 0.94 CFS 0.78 ACRES UNDISTURBED
0.43 CFS 2.15 ACRES DEVELOPED
1.37 CFS TOTAL POST DEVELOPED

AREA 2 POST-DEVELOPED = 0.42 ACRES
100 RELEASE RATE = 0.51 CFS

AREA 3 POST DEVELOPED = 3.16 ACRES
100 RELEASE RATE = 1.78 CFS 1.46 ACRES UNDISTURBED
0.34 CFS 1.70 ACRES DEVELOPED
2.12 CFS TOTAL POST DEVELOPED

AREA 4 POST DEVELOPED = 1.54 ACRES
100 YR RELEASE RATE = 1.88 CFS

AREA 5 POST DEVELOPED = 0.74 ACRES
100 YR RELEASE RATE = 0.90 CFS

AREA 6 PRE-DEVELOPED = 0.31 ACRES
ADDED TO AREA 2 POST DEVELOPED

STATE OF MICHIGAN
WES LEE
O. UMLOR
ENGINEER
#2101144573
LICENSED PROFESSIONAL ENGINEER

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SCENIC PINES ESTATES

PRE-DEVELOPED VS POST DEVELOPED BASINS

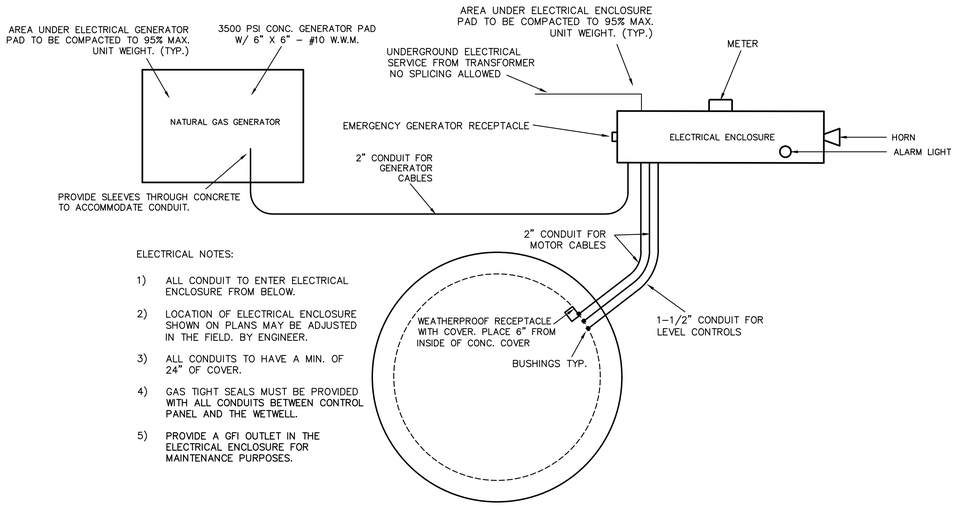
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PART OF THE SW 1/4 CORNER OF SECTION 3
TOWN I NORTH - RANGE 8 EAST
CITY OF NOVI
OAKLAND COUNTY, MI

DATE: 07-26-2019
Drawn By: SDT
P.E.: WES LEE O. UMLOR

1" = 40'

Job No.: 180905
Sheet No.
14



ELECTRICAL NOTES:

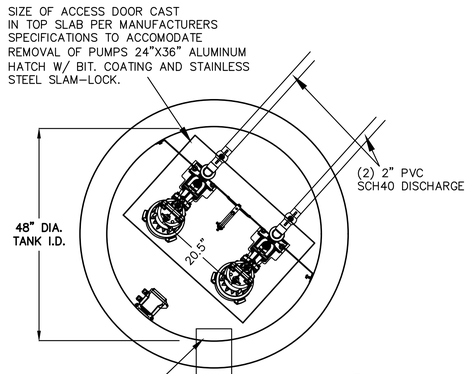
1) ALL CONDUIT TO ENTER ELECTRICAL ENCLOSURE FROM BELOW.
2) LOCATION OF ELECTRICAL ENCLOSURE SHOWN ON PLANS MAY BE ADJUSTED IN THE FIELD. BY ENGINEER.
3) ALL CONDUITS TO HAVE A MIN. OF 24" OF COVER.
4) GAS TIGHT SEALS MUST BE PROVIDED WITH ALL CONDUITS BETWEEN CONTROL PANEL AND THE WETWELL.
5) PROVIDE A GFI OUTLET IN THE ELECTRICAL ENCLOSURE FOR MAINTENANCE PURPOSES.

ELECTRICAL ENCLOSURE DETAIL
NO SCALE

DUPLEX LIQUID LEVEL CONTROL SETTINGS		
	PUMP#1	PUMP#2
LWL ALARM	*	*
HWL	*	*
PUMP ON	*	*
PUMP OFF	*	*

GENERAL NOTES:

1. DETAILS AND INSTALLATION OF PUMP AND PLUMBING WITHIN THE WETWELL WILL BE AS REQUIRED PER THE PUMP MANUFACTURES SPECIFICATIONS.
2. CONTRACTOR SHALL FURNISH PLANS OF THE COMPLETE PUMP INSTALLATION FOR APPROVAL



DUPLEX PUMP STATION

PUMP AND ACCESSORIES

FOR EASE OF PURCHASE/INSTALLATION, A PACKAGE DUPLEX PUMP SYSTEM SHALL BE REQUIRED. THE PACKAGE SYSTEM SHALL INCLUDE TOTALLY SUBMERSIBLE EXPLOSION PROOF CENTRIFUGAL PUMPS DESIGNED FOR PUMPING RAW, UNTREATED SEWAGE, A DISCONNECT SYSTEM WHICH PERMITS INSTALLATION AND REMOVAL OF EACH PUMP WITHOUT THE NEED FOR PERSONNEL TO ENTER THE WETWELL, TIGHT CONNECTION AT PUMP MOTOR, JUNCTION BOX, CONTROL FLOATS AND CONTROL PANEL, MOUNTING HARDWARE, PIPING, VALVES AND FITTINGS.

1. THE SUBMERSIBLE PUMPS SHALL PROVIDE 50 G.P.M. EACH AT A TOTAL DYNAMIC HEAD OF 15.0 FEET. THE PUMP SYSTEM SHALL ALTERNATE IN OPERATION. PUMP MOTORS SHALL BE 0.5 H.P., EXPLOSION PROOF, DESIGNED FOR OPERATION ON 240 VOLT, I PHASE, 60 HERTZ POWER.

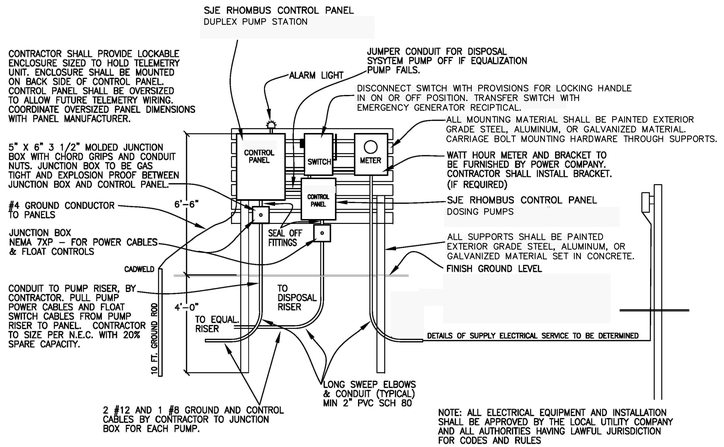
2. A COMPLETE CONTROL PANEL SHALL BE PROVIDED FOR AUTOMATIC OPERATION OF THE DUPLEX PUMPING SYSTEM. ALL CONTROLS SHALL BE MOUNTED IN A NEMA 3R METAL ENCLOSURE. THE CONTROL PANEL SHALL INCLUDE THE FOLLOWING: A) THE CONTROL PANEL AND ALL ELECTRICAL COMPONENTS SHALL BEAR THE (UL) LABEL; B) ALL CIRCUIT BREAKERS SHALL HAVE OPERATORS EXTENDING THROUGH THE DOOR OF THE ENCLOSURE, WITH INTERLOCKS TO PREVENT PANEL ACCESS WHEN CIRCUITS ARE ENERGIZED; C) ALL RESETS, SELECTOR SWITCHES, PUSH BUTTONS, AND PILOT LIGHTS SHALL BE MOUNTED ON THE DOOR OF THE ENCLOSURE AND LABELED PROPERLY TO PERMIT NORMAL OPERATION OF THE SYSTEM WITHOUT OPENING THE ENCLOSURE DOOR; D) THE CONTROL FOR EACH PUMP SHALL INCLUDE A THERMAL MAGNETIC CIRCUIT BREAKER, ROTARY H-O-A SWITCH, AND A MAGNETIC MOTOR STARTER WITH AMBIENT COMPENSATED OVERLOAD RELAYS AND QUICK-TRIP HEATERS; E) PUMP OPERATION SHALL BE CONTROLLED BY TWO BULB-TYPE LIQUID LEVEL SENSORS, A THIRD LEVEL SENSOR SHALL ALSO BE PROVIDED FOR INDICATION OF A HIGHWATER ALARM CONDITION. THIS ALARM SHALL BE INDICATED BY AN EXTERNALLY MOUNTED PILOT LIGHT AND A EXTERNAL AUDIBLE ALARM WITH SILENCE BUTTON. AN INTRINSICALLY SAFE PILOT CIRCUIT SHALL BE PROVIDED FOR EACH LEVEL SENSOR; F) AN AUTOMATIC ALTERNATOR SHALL BE PROVIDED TO ALTERNATE THE LEAD/LAG SEQUENCING ON EACH SUCCEEDING PUMP CYCLE; G) AN OUTER PUMP SEAL LEAKAGE DETECTION SYSTEM SHALL BE INCLUDED IN THE ENCLOSURE FOR EACH PUMP; H) A NON-RESETABLE METER SHALL BE PROVIDED FOR EACH PUMP TO RECORD OPERATING TIME, TO THE TENTHS OF AN HOUR; I) ALL MOUNTED CONTROLS SHALL BE CONCEALED BEHIND A LOCKABLE TAMPER PROOF FRONT.

3. ALL MECHANICAL AND ELECTRICAL COMPONENTS OF THE PUMPING SYSTEM MUST BE LISTED AND LABELED WITH THE (UL) LABEL FOR OPERATION IN A CLASS I, GROUP D, DIVISION 1 LOCATION.

4. ALL ELECTRICAL CONNECTIONS SHALL BE IN ACCORDANCE WITH NEW WASTEWATER PLANT PLANS.

5. AN AUTO DIALER SYSTEM SHALL BE INSTALLED IN THE CONTROL PANEL. ANY ALARM CONDITION FOR THE LIFT STATION SHALL INITIATE THE AUTO DIALER SYSTEM TO A MINIMUM OF FIVE (5) NUMBERS.

6. A SHOP DRAWING OF LIFT STATION INCLUDING ALL PIPING, CONTROL PANEL, VALVE AND PUMP INFORMATION MUST BE PROVIDED TO ENGINEER AND APPROVED PRIOR TO LIFT STATION AND APPURTENANCES CONSTRUCTION.



POWER / CONTROL PANEL EQUALIZATION & DISPOSAL SYSTEM

SANITARY BASIS OF DESIGN

Connection to existing 8" PVC sanitary sewer along Henning St.

NUMBER OF UNITS

= 25 UNITS TOTAL

POPULATION

= 3.5 PEOPLE/UNIT X 25
= 87.5 PEOPLE

AVERAGE FLOW

= 87.5 PEOPLE X 100 GAL/CAP/DAY
= 8750 GAL/DAY
= 0.01313 CFS

PEAK FACTOR

= 18+(SQRT(P/1000))/(4+SQRT(P/1000))
= 4.25899413

PEAK FLOW

= PEAK FACTOR x AVERAGE FLOW
= 0.0558993

(CAPACITY OF A 8" PIPE @ 0.40% IS 0.76 CFS)
THEREFORE PIPE CAPACITY IS SUFFICIENT

BASIS OF DESIGN

SITES = 25 UNITS x 350 G.P.D. = 8,750 G.P.D.
8,750 / 1,440 = 6.08 G.P.M. x Peaking factor 4.28 = 25.90 G.P.M.
USE 50 G.P.M. PUMP

NOTE: FLOATS SHALL BE INSTALLED SO AS NOT TO BE INFLUENCED BY INFLUENT WASTEWATER

SANITARY PUMP STATION BASIS OF DESIGN:
WETWELL SIZE (SEC. 42.62 TEN STATES STANDARDS)
FILL TIME NOT TO EXCEED 30 MIN. BASED ON AVERAGE FLOW
(30 MIN. x GPM = -GALLONS OR -CFT)
48" DIA. WETWELL PROVIDE 3.6' MIN. ABOVE PUMPS

EX. GRAVITY SEWER INVERT =
PR. PUMP ELEV. =
PR. DISCHARGE PIPING INV. =
PUMP LIFT HEAD =

PR. 4" DIA. FORCEMAIN =
PRESSURE LOSS =

TOTAL REQUIRED HEAD =

STATE OF MICHIGAN
WES LEE O. UMLOR
ENGINEER
#2101054571
LICENSED PROFESSIONAL ENGINEER

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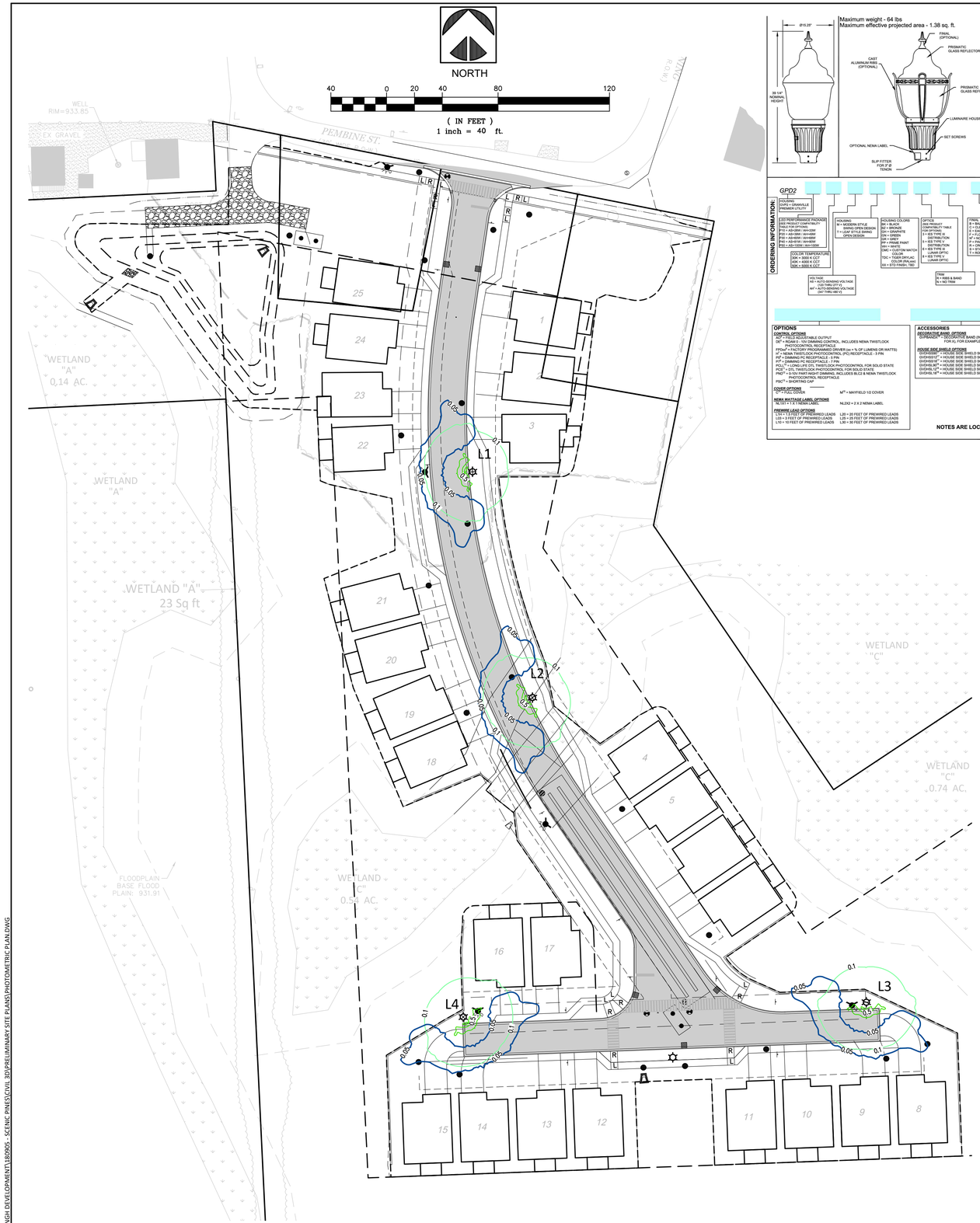
SCENIC PINES ESTATES
PUMP STATION

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PART OF THE SW 1/4 CORNER OF SECTION 3
TOWN / NORTH - RANGE 8 EAST
CITY OF NOVI
OAKLAND COUNTY, MI

DATE: 07-26-2019
Drawn By: SDT
P.E.: WES LEE O. UMLOR
AS NOTED
Job No.: 180905
Sheet No. 15

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GranVille® II LED
Prismatic Style: Glass Premier
Housing Size: Utility

DECORATIVE OUTDOOR

HOLOPHANE
A Part of the Signify Group

DRWG #: GPD2
TYPE:
DRAWN: RAF
DATE: 5-5-2017
DWG #: LUM_GPD2
1 of 4

Performance Data

AS Voltage Option Data

LED Package	Distribution	System Watts	30K (3000K, 70 CRI) Lumens	LPW	B	U	G	40K (4000K, 70 CRI) Lumens	LPW	B	U	G	50K (5000K, 70 CRI) Lumens	LPW	B	U	G
P10	3	26	3,429	132	1	4	3	3,605	139	1	4	3	3,605	139	1	4	3
	5	26	3,309	127	2	4	2	3,479	134	2	4	2	3,479	134	2	4	2
P20	3	39	5,164	132	2	5	3	5,430	139	2	5	3	5,430	139	2	5	3
	5	39	4,983	128	3	4	2	5,240	134	3	4	3	5,240	134	3	4	3
P30	3	60	7,271	121	2	5	4	7,645	127	3	5	4	7,645	127	3	5	4
	5	60	7,016	117	3	5	3	7,377	123	3	5	3	7,377	123	3	5	3
P40	3	81	9,140	113	3	5	4	9,611	119	3	5	5	9,611	119	3	5	5
	5	81	8,820	109	3	5	3	9,274	114	3	5	5	9,274	114	3	5	5
P50	3	100	10,695	107	3	5	5	11,245	112	3	5	5	11,245	112	3	5	5
	5	100	10,320	103	4	5	3	10,851	109	4	5	5	10,851	109	4	5	5

AH Voltage Option Data

LED Package	Distribution	System Watts	30K (3000K, 70 CRI) Lumens	LPW	B	U	G	40K (4000K, 70 CRI) Lumens	LPW	B	U	G	50K (5000K, 70 CRI) Lumens	LPW	B	U	G
P10	3	33	3,429	104	1	4	3	3,605	109	1	4	3	3,605	109	1	4	3
	5	33	3,309	100	2	4	2	3,479	105	2	4	2	3,479	105	2	4	2
P20	3	49	5,164	105	2	5	3	5,430	111	2	5	3	5,430	111	2	5	3
	5	49	4,983	102	3	4	2	5,240	107	3	4	3	5,240	107	3	4	3
P30	3	68	7,271	107	2	5	4	7,645	112	3	5	4	7,645	112	3	5	4
	5	68	7,016	103	3	5	3	7,377	108	3	5	3	7,377	108	3	5	3
P40	3	90	9,140	102	3	5	4	9,611	107	3	5	5	9,611	107	3	5	5
	5	90	8,820	98	3	5	3	9,274	103	3	5	3	9,274	103	3	5	3
P50	3	100	10,695	107	3	5	5	11,245	112	3	5	5	11,245	112	3	5	5
	5	100	10,320	103	4	5	3	10,851	109	4	5	3	10,851	109	4	5	5

FPDxx Data Table (Only Available With AS Option)

FPDxx setting	P10 30K	P10 40K	P10 50K
	Not Available	Not Available	Not Available

FPDxx setting	AS Wattage	P20 30K		P20 40K		P20 50K	
		B	U	B	U	B	U
Standard	39	5,164	4,983	5,430	5,240	5,430	5,240
FPD05	38	4,937	4,764	5,191	5,009	5,191	5,009
FPD90	36	4,705	4,540	4,947	4,774	4,947	4,774
FPD85	34	4,471	4,314	4,701	4,537	4,701	4,537
FPD80	32	4,233	4,085	4,451	4,296	4,451	4,296
FPD75	30	3,993	3,853	4,198	4,051	4,198	4,051

FPDxx setting	AS Wattage	P30 30K		P30 40K		P30 50K	
		B	U	B	U	B	U
Standard	60	7,271	7,016	7,645	7,377	7,645	7,377
FPD95	57	7,087	6,838	7,453	7,190	7,453	7,190
FPD90	54	6,895	6,653	7,249	6,980	7,249	6,980
FPD85	51	6,651	6,418	6,993	6,748	6,993	6,748
FPD80	48	6,402	6,178	6,730	6,494	6,730	6,494
FPD75	45	6,179	5,774	6,444	6,218	6,444	6,218

FPDxx setting	AS Wattage	P40 30K		P40 40K		P40 50K	
		B	U	B	U	B	U
Standard	81	9,140	8,820	9,611	9,274	9,611	9,274
FPD95	76	8,833	8,523	9,287	8,961	9,287	8,961
FPD90	72	8,505	8,208	8,944	8,630	8,944	8,630
FPD85	68	8,161	7,876	8,582	8,281	8,582	8,281
FPD80	64	7,799	7,526	8,201	7,913	8,201	7,913

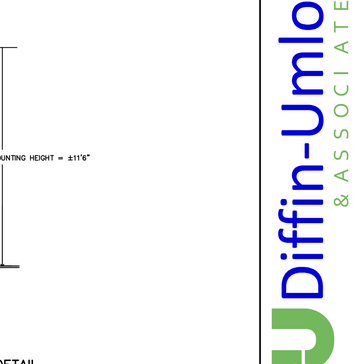
FPDxx setting	AS Wattage	P50 30K		P50 40K		P50 50K	
		B	U	B	U	B	U
Standard	100	10,695	10,320	11,245	10,851	11,245	10,851
FPD95	95	10,424	10,059	10,960	10,576	10,960	10,576
FPD90	90	10,120	9,765	10,645	10,268	10,645	10,268
FPD85	85	9,783	9,440	10,286	9,926	10,286	9,926

GranVille® II LED
Prismatic Style: Glass Premier
Housing Size: Utility

DECORATIVE OUTDOOR

HOLOPHANE
A Part of the Signify Group

DRWG #: GPD2
TYPE:
DRAWN: RAF
DATE: 5-5-2017
DWG #: LUM_GPD2
2 of 4



LIGHTING DETAIL
NO SCALE

NOTES

1. Not available with "AO", "DE", "FPDXX", "PCLL", "PCS" or "PND".
2. Not available with over options "C" or "H".
3. Only use if "N" for Trim and either "C" or "N" for Finial is selected.
4. Not available with "AH", "DE", "PF", "PY", "PCS" or "PND". Refer to instructions on website for details.
5. Not available with "AO", "AH", "H", "PCLL", "PCS", "PSC" or "PND".
6. Refer to the FPDxx Data Table for lumens and wattages options.
7. Photocontrol not included. Not available with option "DE", "PND", "PS" or "PY".
8. Photocontrol not included. Not available with options "DE", "H", "PND" and "PY".
9. Photocontrol not included. Not available with options "DE", "H", "PND" and "PS".
10. Requires "H", "PS", "PY" or "PND". Not available with "AO", "PCS" or "PSC" options.
11. Available with "AS" voltage only. Requires "H", "PS", "PY" or "PND". Not available with "AO", "PCLL" or "PSC" options.
12. Available with "AS" voltage only. Not available with options "DE", "H", "PND" and "PY".
13. Requires "H", "PS" or "PY" option photocontrol receptacle or "PND" (includes photocontrol receptacle). Not available with "PCLL" or "PCS".
14. Not available with "N" finial option or "M" option.
15. Not available with "N" finial option or "F" option.
16. Field installed. For use with units without factory installed ribs and band. X = Trim/Finial Color.
17. Field installed, for use with Optic "3" or "5" only.
18. Field installed, for use with Optic "6" or "8" only.

Product Compatibility Table

LUMINAIRE, HOUSING & LED PACKAGE CONFIGURATIONS			
LUMINAIRE	HOUSING		LED PACKAGE
GPD2	M	Modern style - Swing open design	P10, P20, P30, P40, P50
	T	Leaf Style - Swing open design	

WATTAGE TABLE		
LED PACKAGE	AS	AH
P10	26W	33W
P20	39W	49W
P30	60W	68W
P40	81W	90W
P50	100W	100W

OPTICS/HOUSING/LED CONFIGURATION		
OPTICS	HOUSING	LED PACKAGE
3	A, C, F, L, S, M, T	P10, P20, P30, P40, P50
5		
6	A, C, F, L, S, M, T	P10, P20, P30, P40
8		

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Average Lumen Ambient Temperature (LAT) Multipliers		
°C	°F	Lumen Multiplier
0	32	1.06
5	41	1.05
10	50	1.04
15	59	1.03
20	68	1.01
25	77	1.00
30	86	0.99
35	95	0.97
40	104	0.96

LED Packages: P10, P20, P30, P40, P50

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the platforms noted in a 25°C ambient, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).
To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Lumen Maintenance - LLD (same for all LED packages)						
Hours	0	25,000	36,000	50,000	60,000	75,000	100,000
Factor	1	0.93	0.93	0.92	0.91	0.9	0.89

The italicized data is extrapolated beyond the TM-21 standard.

E = (LM) x (CU) x (LAT) x (LLD)
LM and CU are obtained from published photometry.

GranVille® II LED
Prismatic Style: Glass Premier
Housing Size: Utility

DECORATIVE OUTDOOR

HOLOPHANE
A Part of the Signify Group

DRWG #: GPD2
TYPE:
DRAWN: RAF
DATE: 5-5-2017
DWG #: LUM_GPD2
3 of 4

Mark Appropriate Box for Trim Option

Housing
- Modern (M)
- Leaf (T)

Cover
- No Cover
- Mayfield Cover (M)
- Full Cover (C)

Ribs & Bands
- Ribs and Band (R)
- Ribs, Band, and Mayfield Cover (R & M)
- Ribs, Band, and Full Cover (R & C)

Finial
- NONE (N)
- BALL (B)
- CLEAR (C)
- EAGLE (E)
- FLOWER (F)
- PAWN (P)
- CROSS (R)
- STANDARD (S)
- ROMAN CROSS (T)

Specifications

GENERAL DESCRIPTION
The GranVille II LED Utility is designed for ease of maintenance with the plug-in electrical module common to each of the luminaires in Holophane's Utility Luminaire Series. The traditional acorn shaped luminaire, while reminiscent of the 1920's, contains a precision optical system that maximizes post spacings while maintaining uniform illumination.
OPTICAL SYSTEM
The optical system consists of a precisely molded thermal resistant borosilicate glass refractor and top reflector mounted within the decorative aluminum housing. The glass top reflector redirects over 50% of the upward light into the controlling refractor while allowing a soft uplight component to define the traditional acorn shape of the luminaire. Two decorative aluminum covers are available. The lower refractor uses precisely molded prisms to maximize pole spacings while maintaining uniform illuminance. Two refractors are available, designed for I.E.S. type III and V distributions. Lunar optics shielding is available for asymmetric and symmetric distribution.
LUMINAIRE HOUSING
The luminaire housing, cast of aluminum, provides an enclosure for the plug-in electrical module. Four uniquely designed stainless steel spring clips enclosed in a clear polyvinyl chloride sleeve and adjusted by hex head 1/4-20 bolts securely cradle the prismatic glass refractor. The same 1/4-20 bolts support the decorative rib and banding assembly. The slipfitter will accept a 3" by 2-7/8" to 3-1/8" O.D. tenon.
LUMINAIRE HOUSING / DOOR
Cast of aluminum, the housing opens with minimum use of tools and is retained on a hinge. For units with an E.E.I.-N.E.M.A. twist lock photocell receptacle, the housing contains a "window" to allow light to reach the cell.
ELECTRICAL MODULE
The electrical components are mounted on a aluminum plate that is removable with minimum use of tools. A matching five conductor plug connects to the receptacle in the luminaire housing to complete the wiring. For photoelectric operation, the electrical module is provided with an E.E.I.-N.E.M.A. twist lock photocell receptacle.
DRIVER
AS drivers are programmable dimmable drivers, with 0-10V control leads and AH drivers are dimmable (0-10V) drivers.
FINISH
The luminaire is finished with polyester powder paint to insure maximum durability.
WARRANTY
Limited warranty located at http://www.acuitybrands.com/resources/terms-and-conditions.
NOTE
Luminaire is CSA listed for Wet Locations.
Luminaire housing is IP55 rated. Optical chamber is IP66 rated.
Specification subject to change without notice.

GranVille® II LED
Prismatic Style: Glass Premier
Housing Size: Utility

DECORATIVE OUTDOOR

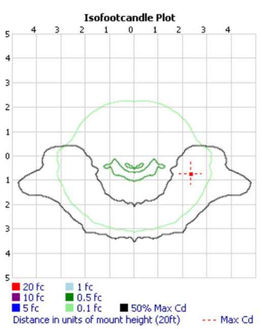
HOLOPHANE
A Part of the Signify Group

DRWG #: GPD2
TYPE:
DRAWN: RAF
DATE: 5-5-2017
DWG #: LUM_GPD2
4 of 4

NOTE:
ONLY NECESSARY LIGHTING FOR SECURITY PURPOSES AND LIMITED OPERATIONS SHALL BE PERMITTED AFTER SITE'S HOURS OF OPERATION.

ADDITIONAL EQUIPMENT:
(4) ROUND TAPERED STEEL POLES –

MOUNTING HEIGHT = ±11'–6"
PROPOSED POLE SHALL MEET 100 MPH WINDS RATING



Numeric Summary					
Project: All Projects					
Label		Max	Min	Avg	Ave/Min
GRADE		3.4	0.1	1.0	1.0/0.1

Luminaire Schedule				
Project: All Projects				
Symbol	Qty	Mounting Height	Arrangement	Description
☼	4	11'–6"	SINGLE POLE	GDP2 P20 50K AS 6 N,LED PKG. 20, 39W, 4000K CCT, AS, M, BK, 5, N, S, BK

SEAL

STATE OF MICHIGAN
WES LEE O. UMLOR
ENGINEER
6201045579
PROFESSIONAL ENGINEER

Diffin-Umlor & ASSOCIATES
Civil Engineering • Surveying • Landscaping • Construction Services

49287 WEST ROAD
WIXOM, MI 48393

(P): 248–773–7656
(F): 866–960–4307

REVISIONS

CLIENT: SINGH DEVELOPMENT LLC
7125 ORCHARD LAKE RD
WEST BLOOMFIELD, MI

SCENIC PINES ESTATES
PHOTOMETRIC PLAN

These documents are instruments of service in connection with the project. Any use without written verification or adaptation by Diffin –Umlor & Associates (DUA) for the specific purposes intended will be at User's sole risk and without liability and User agrees to indemnify, defend and hold harmless DUA from all claims, damages, losses and expenses including attorneys fees arising out of any use by User, its employees or agents. Any such adaptation will entitle DUA to further compensation at rates to be agreed upon by User and DUA.

PART OF THE SW 1/4 CORNER OF SECTION 3
TOWN I NORTH - RANGE 8 EAST
CITY OF NOVI
OAKLAND COUNTY, MI

DATE: 07-26-2019
Drawn By: SDT
P.E.: WES LEE O. UMLOR
1" = 30'
Job No.: 180905
Sheet No. 16

M:\DOC-PROJECTS\SINGH DEVELOPMENT\180905 - SCENIC PINES\CIVIL 3D\PRELIMINARY SITE PLANS\PHOTOMETRIC PLAN.DWG

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Geotechnical, Environmental, & Hydrogeologic Services
21355 Hatcher Avenue • Ferndale, MI 48220
Phone: (248) 399-2066 • Fax: (248) 399-2157

LOG OF SOIL BORING NO. 1
PROJECT Soils Investigation — Proposed Scenic Pines Estates Subdivision
LOCATION Pembine Street, Novi, Michigan
JOB NO. 19-040
SURFACE ELEV. 934.7 ± **DATE** 4-18-19

Sample & Type	Depth	Legend	SOIL DESCRIPTION	Penetration Blows for 6"	Moisture %	Natural Wt. P.C.F.	Dry Den Wt. P.C.F.	Unc. Comp. Strength PSF.	Str. %
	1		Moist brown clayey TOPSOIL with trace of vegetation and fine sand lenses, fill						
			1'3"						
A	2		Stiff moist variegated silty CLAY with traces of	3					
UL	3		sand and pebbles and topsoil markings, fill	4	19.3	126			
			2'10"	6			*	(4000)	
	4		Compact moist brown silty fine SAND						
			3'6"						
B	5		Compact wet brown silty fine to medium SAND	3					
UL			with trace of gravel	5	16.9	124			
	6			6					
C	7		6'8"	3					
UL	8		Compact wet gray fine SAND with gravel and	4					
			occasional sand and gravel seams	5					
	9								
D	10		9'4" Stiff moist blue silty CLAY with little sand and	3					
UL			10'2" pebbles	5					
	11			8					
	12		Compact wet gray fine SAND with trace of gravel						
			12'4"						
	13								
	14		Stiff moist blue silty CLAY with little sand and						
E			pebbles	5					
UL	15			7					
				9					
	16		16'0"						
	17		Stiff moist blue silty CLAY with wet fine sand						
			seams						
	18		17'5"						
	19								
F			Very stiff moist blue silty CLAY with some sand	3					
UL	20		and pebbles and wet fine sand lenses	7					
				10					
	21								
	22		21'10" Stiff moist blue silty CLAY with little sand and						
	23		pebbles						
	24								
G				3					
UL	25		25'6"	5					
				8					

Notes:
1) Used track rig.
2) Offset boring 14'6" west of stake due to power lines (about 8" lower).
3) Piezometer set at 24'4" with 2'10" stick-up.
4) Added head of water in the augers at 10'.

TYPE OF SAMPLE: D. - DISTURBED; U.L. - UNDIST. LINER; S.T. - SHELBY TUBE; S.S. - SPLIT SPOON; R.C. - ROCK CORE; ( ) - PENETROMETER

REMARKS: * Calibrated Penetrometer

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	3	FT.	6	INS.
G.W. ENCOUNTERED AT		FT.		INS.
G.W. AFTER COMPLETION	3	FT.	8	INS.
G.W. AFTER		HRS.		FT.
G.W. VOLUMES	Heavy			

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LOG OF SOIL BORING NO. 2
PROJECT Soils Investigation — Proposed Scenic Pines Estates Subdivision
LOCATION Pembine Street, Novi, Michigan
JOB NO. 19-040
SURFACE ELEV. 934.67 **DATE** 4-18-19

Sample & Type	Depth	Legend	SOIL DESCRIPTION	Penetration Blows for 6"	Moisture %	Natural Wt. P.C.F.	Dry Den Wt. P.C.F.	Unc. Comp. Strength PSF.	Str. %
	1		0'7" Moist brown sandy TOPSOIL, fill						
			1'2" Moist brown silty CLAY with traces of topsoil, fill						
A	2			3					
UL	3		Stiff moist variegated silty CLAY with traces of	5	14.1	133			
			sand and pebbles	6			*	(3000- 6000)	
	4		4'4"						
B	5		Extremely stiff moist variegated CLAY with silt,	7					
UL			some sand and pebbles and fine sand lenses	14	10.5	138			
	6		5'10"	14			*	(9000+)	
C	7			7					
UL	8		Very stiff moist variegated CLAY with silt, little	10	16.6	133			
			sand and pebbles and wet fine sand seams	15			*	(9000+)	
	9		8'9"						
D	10			7					
UL				9					
	11			10					
	12		Very stiff moist variegated CLAY with some sand						
			and pebbles and wet fine sand lenses						
	13		13'2"						
	14								
E			Stiff moist blue silty CLAY with little sand and	2					
UL	15		pebbles	3					
				5					
	16		15'6"						
	17								
	18								
	19								
	20		Note: Used track rig.						
	21								
	22								
	23								
	24								
	25								

TYPE OF SAMPLE: D. - DISTURBED; U.L. - UNDIST. LINER; S.T. - SHELBY TUBE; S.S. - SPLIT SPOON; R.C. - ROCK CORE; ( ) - PENETROMETER

REMARKS: * Calibrated Penetrometer

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	6	FT.	0	INS.
G.W. ENCOUNTERED AT		FT.		INS.
G.W. AFTER COMPLETION	8	FT.	5	INS.
G.W. AFTER		HRS.		FT.
G.W. VOLUMES	Heavy			

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LOG OF SOIL BORING NO. 3
PROJECT Soils Investigation — Proposed Scenic Pines Estates Subdivision
LOCATION Pembine Street, Novi, Michigan
JOB NO. 19-040
SURFACE ELEV. 934.34 **DATE** 4-18-19

Sample & Type	Depth	Legend	SOIL DESCRIPTION	Penetration Blows for 6"	Moisture %	Natural Wt. P.C.F.	Dry Den Wt. P.C.F.	Unc. Comp. Strength PSF.	Str. %
	1		0'6" Moist brown sandy TOPSOIL, fill						
			Medium compact moist brown clayey fine SAND						
			with trace of gravel and topsoil markings, fill						
A	2		2'2"	2					
UL	3		Firm moist brown to dark brown silty CLAY with	2	17.3	126			
			little vegetation and trace to seams of topsoil	3			*	(2000)	
	4		3'11"						
B	5		Slightly compact wet gray silty fine SAND with	1					
UL			gravel, vegetation and a layer of silty sandy clay	1	18.8	129		590	
	6		at 5'	2			*	(2000)	
C	7		6'2"	2					
UL	8		Firm moist blue silty CLAY with some sand and	3	15.6	134			
			pebbles, trace of vegetation and wet fine sand	4			*	(2000)	
	9		seams 7'9"						
D	10			3					
UL			Stiff moist blue silty CLAY with some sand and	4	12.7	139			
	11		pebbles, little variegated clay streaks and wet	6			*	(4500)	
	12		fine sand lenses 11'10"						
	13								
	14								
E				3					
UL	15		Stiff moist blue silty CLAY with some sand and	5	12.0	139			
			pebbles	8			*	(4500)	
	16								
	17		17'3"						
	18								
	19		Stiff moist blue silty CLAY with little sand and						
F			pebbles	4					
UL	20			5					
				9					
	21		20'6"						
	22								
	23								
	24								
	25								

Notes:
1) Used track rig.
2) Offset boring 10' south due to pine tree.
3) Piezometer set at 9'9" with 3'3" stick-up.

TYPE OF SAMPLE: D. - DISTURBED; U.L. - UNDIST. LINER; S.T. - SHELBY TUBE; S.S. - SPLIT SPOON; R.C. - ROCK CORE; ( ) - PENETROMETER

REMARKS: * Calibrated Penetrometer

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	3	FT.	11	INS.
G.W. ENCOUNTERED AT		FT.		INS.
G.W. AFTER COMPLETION	2	FT.	4	INS.
G.W. AFTER		HRS.		FT.
G.W. VOLUMES	Heavy			

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LOG OF SOIL BORING NO. 4
PROJECT Soils Investigation — Proposed Scenic Pines Estates Subdivision
LOCATION Pembine Street, Novi, Michigan
JOB NO. 19-040
SURFACE ELEV. 933.90 **DATE** 4-18-19

Sample & Type	Depth	Legend	SOIL DESCRIPTION	Penetration Blows for 6"	Moisture %	Natural Wt. P.C.F.	Dry Den Wt. P.C.F.	Unc. Comp. Strength PSF.	Str. %
	1		Moist brown sandy TOPSOIL						
			1'4"						
A	2		Medium compact moist to wet brown gravelly fine	3					
UL	3		to medium SAND with occasional stones	3	15.4	126			
			3'11"						
	4								
B	5			4					
UL				6	13.1	134			
	6			10			*	(5700)	
C	7		Stiff moist variegated sandy CLAY with some silt,	4					
UL	8		gravel, pebbles and occasional stones	7					
				9					
	9								
D	10			4					
UL			9'8"	7	12.3	138			
	11		Stiff moist blue silty CLAY with some sand and	8			*	(5500)	
	12		pebbles and wet fine sand lenses						
			12'2"						
	13								
	14		Stiff moist blue silty CLAY with little sand and						
E			pebbles	4					
UL	15			5					
				8					
	16		15'6"						
	17								
	18								
	19								
	20		Note: Used track rig.						
	21								
	22								
	23								
	24								
	25								

TYPE OF SAMPLE: D. - DISTURBED; U.L. - UNDIST. LINER; S.T. - SHELBY TUBE; S.S. - SPLIT SPOON; R.C. - ROCK CORE; ( ) - PENETROMETER

REMARKS: * Calibrated Penetrometer

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	2	FT.	0	INS.
G.W. ENCOUNTERED AT		FT.		INS.
G.W. AFTER COMPLETION	7	FT.	7	INS.
G.W. AFTER		HRS.		FT.
G.W. VOLUMES	Heavy			

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LOG OF SOIL BORING NO. 5
PROJECT Soils Investigation — Proposed Scenic Pines Estates Subdivision
LOCATION Pembine Street, Novi, Michigan
JOB NO. 19-040
SURFACE ELEV. 934.2 **DATE** 4-22-19

Sample & Type	Depth	Legend	SOIL DESCRIPTION	Penetration Blows for 6"	Moisture %	Natural Wt. P.C.F.	Dry Den Wt. P.C.F.	Unc. Comp. Strength PSF.	Str. %
	1		Moist dark brown clayey TOPSOIL						
			1'3"						
A	2		Stiff moist variegated silty CLAY with sand and	3					
UL	3		pebbles and occasional wet fine sand seams	5	12.3	139			
			3'6"	10			*	(7000)	
	4		Very stiff moist variegated silty CLAY with sand						
B	5		and pebbles and occasional moist fine sand	10					
UL			seams	11	11.5	134			
	6		6'0"	13			*	(5500)	
C	7			8					
UL	8		Very stiff moist variegated silty CLAY with sand	9	10.7	138			
			and pebbles	13			*	(9000+)	
	9								
D	10		9'6"	9					
UL				11					
	11		Very stiff moist blue silty CLAY with sand and	14					
			pebbles						
	12		12'6"						
	13								
	14		Stiff moist blue silty CLAY with sand and pebbles,						
E			wet gravelly sand seams and stones	6					
UL	15			7					
				7					
	16		15'6"						
	17								
	18								
	19								
	20								
	21								
	22		Note: Used track rig.						
	23								
	24								
	25								

TYPE OF SAMPLE: D. - DISTURBED; U.L. - UNDIST. LINER; S.T. - SHELBY TUBE; S.S. - SPLIT SPOON; R.C. - ROCK CORE; ( ) - PENETROMETER

REMARKS: * Calibrated Penetrometer

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	1	FT.	5	INS.
G.W. ENCOUNTERED AT	12	FT.	6	INS.
G.W. AFTER COMPLETION	8	FT.	3	INS.
G.W. AFTER		HRS.		FT.
G.W. VOLUMES	Heavy			

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LOG OF SOIL BORING NO. 6
PROJECT Soils Investigation — Proposed Scenic Pines Estates Subdivision
LOCATION Pembine Street, Novi, Michigan
JOB NO. 19-040
SURFACE ELEV. 933.7± **DATE** 4-22-19

Sample & Type	Depth	Legend	SOIL DESCRIPTION	Penetration Blows for 6"	Moisture %	Natural Wt. P.C.F.	Dry Den Wt. P.C.F.	Unc. Comp. Strength PSF.	Str. %
	1		Very moist dark brown clayey TOPSOIL						
			1'3"						
A	2		Firm moist variegated silty CLAY with traces of	2	20.2	124			
UL	3		sand and pebbles and wet fine sand seams	3			*	(1500)	
			4'4"						
B	5		Very compact wet brown fine SAND with trace of	8					
UL			gravel and a layer of silty clay	11	16.8	--			
	6		6'0"	14			*	(3500)	
C	7			4					
UL	8		Very stiff moist brown silty CLAY with sand and	7	11.7	138			
			pebbles and wet sand and gravel seams	11			*	(3500)	
	9								
D	10		9'6"	4					
UL				8					
	11			10					
	12								
	13								
	14		Very stiff moist blue silty CLAY with sand and						
E			pebbles	4					
UL	15			7					
				11					
	16								
	17								
	18								
	19		18'6" Stiff moist blue silty CLAY with sand and pebbles,						
F			occasional wet gray sand and gravel seams and	3					
UL	20		occasional stones	5					
				7					
	21		20'6"						
	22								
	23								
	24								
	25								

Notes:
1) Offset boring 12' northwest of staked location due to wetlands.
2) Used track rig.
3) Installed 1½" diameter PVC piezometer in boring with screen bottom at 10' and 3' stick-up.

TYPE OF SAMPLE: D. - DISTURBED; U.L. - UNDIST. LINER; S.T. - SHELBY TUBE; S.S. - SPLIT SPOON; R.C. - ROCK CORE; ( ) - PENETROMETER

REMARKS: * Calibrated Penetrometer

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	1	FT.	5	INS.
G.W. ENCOUNTERED AT	4	FT.	4	INS.
G.W. AFTER COMPLETION	10	FT.	2	INS.
G.W. AFTER		HRS.		FT.
G.W. VOLUMES	Heavy	Cave-In at 10'2"		

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Phone: (248) 399-2066 • Fax: (248) 399-2157

LOG OF SOIL BORING NO. 7
PROJECT Soils Investigation — Proposed Scenic Pines Estates Subdivision
LOCATION Pembine Street, Novi, Michigan
JOB NO. 19-040
SURFACE ELEV. 933.6+ **DATE** 4-22-19

Sample & Type	Depth	Legend	SOIL DESCRIPTION	Penetration Blows for 6"	Moisture %	Natural Wt. P.C.F.	Dry Den Wt. P.C.F.	Unc. Comp. Strength PSF.	Str. %
	1		Moist dark brown clayey TOPSOIL						
			1'5"						
A	2		Compact wet variegated clayey fine SAND	1					
UL	3		with gravel, trace of silt and seams to layers of	3	14.0	135			
			sandy clay	5			*	(2500)	
	4		3'6"						
B	5		Very compact wet brown silty fine to medium	9					
UL			SAND with occasional trace of gravel	9	15.1	129			
	6			11					
C	7		6'0"	2					
UL	8		Stiff moist blue silty CLAY with sand and	3	14.4	137		1680	
			pebbles	5			*	(2000)	
	9		8'6"						
D	10			2					
UL				3	12.0	142		625	
	11			4			*	(2000)	
	12		Firm moist blue silty CLAY with sand and						
			pebbles and wet fine sand seams						
	13								
	14								
E			14'6"	4					
UL	15		Compact wet gray gravelly SAND	5					
			15'6"	5					
	16								
	17								
	18								
	19								
	20								
	21								
	22		Notes:						
	23		1) Offset boring 10' southeast of staked						
	24		location due to wetlands.						
	25		2) Used track rig.						

TYPE OF SAMPLE: D. - DISTURBED; U.L. - UNDIST. LINER; S.T. - SHELBY TUBE; S.S. - SPLIT SPOON; R.C. - ROCK CORE; ( ) - PENETROMETER

REMARKS: * Calibrated Penetrometer

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	1	FT.	5	INS.
G.W. ENCOUNTERED AT		FT.		INS.
G.W. AFTER COMPLETION	2	FT.	8	INS.
G.W. AFTER		HRS.		FT.
G.W. VOLUMES	Heavy			

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LOG OF SOIL BORING NO. 8
PROJECT Soils Investigation — Proposed Scenic Pines Estates Subdivision
LOCATION Pembine Street, Novi, Michigan
JOB NO. 19-040
SURFACE ELEV. 933.9 **DATE** 4-22-19

Sample & Type	Depth	Legend	SOIL DESCRIPTION	Penetration Blows for 6"	Moisture %	Natural Wt. P.C.F.	Dry Den Wt. P.C.F.	Unc. Comp. Strength PSF.	Str. %
	1		Moist dark brown clayey TOPSOIL						
			1'2"						
A	2		Compact moist to wet variegated clayey fine	3					
UL	3		SAND with silt and seams of clay	4	16.8	130			
			3'6"	4					
	4		Firm moist variegated silty CLAY with sand and						
B	5		pebbles and wet gray fine sand seams	4					
UL				5	19.6	125			
	6		6'0"	7			*	(3500)	
C	7			1					
UL	8		Soft moist blue silty CLAY with wet fine silt	1	25.6	124			
			seams and organics	1					
	9		8'6"						
D	10			2					
UL				3	14.1	134			
	11		Medium compact wet gray gravelly silty SAND	4					
			with occasional trace to seams of silty clay						
	12								
	13		13'6"						
	14								
E			Stiff moist blue silty CLAY with sand and	3					
UL	15		pebbles	6					
				9					
	16		15'6"						
	17								
	18								
	19								
	20		Note: Used track rig.						
	21								
	22								
	23								
	24								
	25								

TYPE OF SAMPLE: D. - DISTURBED; U.L. - UNDIST. LINER; S.T. - SHELBY TUBE; S.S. - SPLIT SPOON; R.C. - ROCK CORE; ( ) - PENETROMETER

REMARKS: * Calibrated Penetrometer

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	3	FT.	5	INS.
G.W. ENCOUNTERED AT		FT.		INS.
G.W. AFTER COMPLETION	4	FT.	0	INS.
G.W. AFTER		HRS.		FT.
G.W. VOLUMES	Heavy			

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WIXOM, MI 48393
(P): 248-437-7803
(F): 866-960-4307

REVISIONS
REVISED PER CITY OF NOVI REVIEW LETTERS DATED 5/27/2019

CLIENT: SINGH DEVELOPMENT LLC
7125 ORCHARD LAKE RD
WEST BLOOMFIELD, MI

SCENIC PINES ESTATES
SOIL BORING LOGS

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PART OF THE SW 1/4 CORNER OF SECTION 3
TOWN I NORTH - RANGE 8 EAST
CITY OF NOVI
OAKLAND COUNTY, MI

DATE: 07-26-2019
Drawn By: SDT
P.E.: WES LEE O. UMLOR

NTS

Job No.: 180905
Sheet No. 17

M:\DOC-PROJECTS\SINGH DEVELOPMENT\180905 - SCENIC PINES\CIVIL 3D\PRELIMINARY SITE PLANS\SOIL BORINGS.DWG

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LOG OF SOIL BORING NO. 9
PROJECT Soils Investigation
Proposed Scenic Pines Estates Subdivision
LOCATION Pembine Street
Novi, Michigan

JOB NO. 19-040
SURFACE ELEV. 934.0+ **DATE** 4-22-19

Sample & Type	Depth	Legend	SOIL DESCRIPTION	Penetration Blows for 6"	Moisture %	Natural Wt. P.C.F.	Dry Den Wt. P.C.F.	Unc. Comp. Strength PSF.	Str. %
			0'3" Moist dark brown clayey TOPSOIL						
	1								
A	2		Very stiff moist variegated silty CLAY with moist silt seams	7					
UL				9	24.3	120			
	3		2'10" Compact wet brown fine SAND with trace of gravel	13				*	(6000)
			3'4"						
	4		Stiff moist variegated silty CLAY with sand and pebbles						
B	5		5'0"	6	14.2	137			
UL				7				*	(3000- 6000)
	6								
			Stiff moist blue silty CLAY with sand and pebbles and occasional wet fine sand seams						
C	7			2					
UL				3	13.4	141			
	8			5				*	(4000)
			8'6"						
	9								
D				4					
UL	10			7					
				9					
	11								
	12								
	13		Stiff moist blue silty CLAY with sand and pebbles						
	14								
E				5					
UL	15			6					
			15'6"	8					
	16								
	17								
	18								
	19								
	20								
	21								
	22								
	23								
	24								
	25								

Notes:
1) Offset boring 16' east of staked location due to large hole filled with water.
2) Used track rig.

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
( ) - PENETROMETER

REMARKS:
* Calibrated Penetrometer
Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS
G.W. ENCOUNTERED AT 2 FT. 10 INS.
G.W. ENCOUNTERED AT FT. INS.
G.W. AFTER COMPLETION 6 FT. 0 INS.
G.W. AFTER HRS. FT. INS.
G.W. VOLUMES Heavy

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LOG OF SOIL BORING NO. 10
PROJECT Soils Investigation
Proposed Scenic Pines Estates Subdivision
LOCATION Pembine Street
Novi, Michigan

JOB NO. 19-040
SURFACE ELEV. 934.2 **DATE** 4/25/2019

Sample & Type	Depth	Legend	SOIL DESCRIPTION	Penetration Blows for 6"	Moisture %	Natural Wt. P.C.F.	Dry Den Wt. P.C.F.	Unc. Comp. Strength PSF.	Str. %
			0'6" Very moist dark brown clayey TOPSOIL						
	1		Slightly compact wet clayey variegated fine SAND with some silt and trace of vegetation						
A	2		2'5"	1					
UL				2	17.2	128			
	3		Compact wet brown fine SAND with trace of vegetation and seams to layers of clayey sand	7					
	4								
B			4'3"	5					
UL	5			12	10.5	139			
			Very stiff moist variegated sandy CLAY with some sand and pebbles and little silt	13				*	(8000)
	6								
C	7		6'10" Very stiff moist brown silty CLAY with trace of sand and pebbles	9					
UL			7'6"	10					
	8		7'8" Very stiff moist blue silty CLAY with little sand and pebbles	11					
	9								
D				3					
UL	10			3	11.7	141		2295	
			Stiff moist blue silty CLAY with some sand and pebbles and seams of wet fine to medium sand	7				*	(2500-3000)
	11								
	12								
	13		13'4"						
	14								
E				3					
UL	15		Very stiff moist blue silty CLAY with sand and pebbles and wet fine sand streaks	7					
				10					
	16		16'10"						
	17								
	18		Stiff moist blue silty CLAY with little sand and pebbles						
	19								
F				3					
UL	20			5					
			20'6"	5					
	21								
	22								
	23								
	24								
	25								

NOTES:
1) Set piezometer at 10' with 3' stick up.
2) Used track rig.

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
( ) - PENETROMETER

REMARKS:
* Calibrated Penetrometer
Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS
G.W. ENCOUNTERED AT 0 FT. 6 INS.
G.W. ENCOUNTERED AT 2 FT. 5 INS.
G.W. AFTER COMPLETION 13 FT. 0 INS.
G.W. AFTER HRS. FT. INS.
G.W. VOLUMES Medium

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LOG OF SOIL BORING NO. 11
PROJECT Soils Investigation
Proposed Scenic Pines Estates Subdivision
LOCATION Pembine Street
Novi, Michigan

JOB NO. 19-040
SURFACE ELEV. 941.0 **DATE** 4-22-19

Sample & Type	Depth	Legend	SOIL DESCRIPTION	Penetration Blows for 6"	Moisture %	Natural Wt. P.C.F.	Dry Den Wt. P.C.F.	Unc. Comp. Strength PSF.	Str. %
			0'3" Moist dark brown clayey TOPSOIL with vegetation						
	1								
A	2			3					
UL			Stiff moist brown silty CLAY with wet brown silt seams	5	27.7	116			
	3			3			*	(1000-2000)	
	4		4'0"						
B				6					
UL	5			7	24.4	124			
			Very stiff moist brown silty CLAY	12			*	(6000)	
	6		6'6"						
C	7			7					
UL				9					
	8			11					
	9								
D				4					
UL	10		Very compact moist to wet brown fine to medium SAND with trace of silt	8	18.4	123			
				10					
	11								
	12		12'6"						
	13								
			Very stiff moist blue silty CLAY with sand and pebbles and occasional stones						
	14								
E				8					
UL	15			12					
			15'6"	12					
	16								
	17								
	18								
	19								
	20								
	21								
	22								
	23								
	24								
	25								

NOTE:
Installed 1½" diameter PVC piezometer in boring with screen bottom at 10' and 3' stick-up.

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
( ) - PENETROMETER

REMARKS:
* Calibrated Penetrometer
Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS
G.W. ENCOUNTERED AT 2 FT. 0 INS.
G.W. ENCOUNTERED AT 7 FT. 0 INS.
G.W. AFTER COMPLETION 7 FT. 3 INS.
G.W. AFTER HRS. FT. INS.
G.W. VOLUMES Medium-Heavy

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LOG OF SOIL BORING NO. 12
PROJECT Soils Investigation
Proposed Scenic Pines Estates Subdivision
LOCATION Pembine Street
Novi, Michigan

JOB NO. 19-040
SURFACE ELEV. 934.3 **DATE** 4-22-19

Sample & Type	Depth	Legend	SOIL DESCRIPTION	Penetration Blows for 6"	Moisture %	Natural Wt. P.C.F.	Dry Den Wt. P.C.F.	Unc. Comp. Strength PSF.	Str. %
			Moist dark brown clayey TOPSOIL with trace of vegetation						
	1		1'6"						
A	2		Stiff moist variegated sandy CLAY with moist to wet brown and gray silt seams	1					
UL				4	23.1	123			
	3			5			*	(3500)	
	4		4'0"						
B			Compact wet brown silty fine to medium SAND with traces of clay and gravel	3					
UL	5			5	14.6	131			
				5					
	6		6'6"						
C	7			3					
UL			Stiff moist variegated silty CLAY with sand and pebbles and wet brown fine sand seams	6	12.3	140			
	8			6			*	(5000)	
	9								
D			9'6"	3					
UL	10		Stiff moist variegated silty CLAY with sand and pebbles and wet brown fine sand seams	5					
				5					
	11								
	12								
	13								
			14'0"						
	14								
E				5					
UL	15			9					
				11					
	16								
	17		Very stiff moist blue silty CLAY with sand and pebbles and occasional stones						
	18								
	19								
F				7					
UL	20			8					
			20'6"	11					
	21								
	22								
	23								
	24								
	25								

Note:
Installed 1½" diameter PVC piezometer in boring with screen bottom at 10' and 3' stick-up.

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
( ) - PENETROMETER

REMARKS:
* Calibrated Penetrometer
Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS
G.W. ENCOUNTERED AT 4 FT. 0 INS.
G.W. ENCOUNTERED AT 7 FT. 0 INS.
G.W. AFTER COMPLETION 3 FT. 6 INS.
G.W. AFTER HRS. FT. INS.
G.W. VOLUMES Heavy

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49287 WEST ROAD
WIXOM, MI 48393
(P): 248-437-7803
(F): 866-960-4307

REVISIONS
REVISED PER CITY OF NOVI REVIEW LETTERS DATED 5/27/2019

CLIENT: SINGH DEVELOPMENT LLC
7125 ORCHARD LAKE RD
WEST BLOOMFIELD, MI

SCENIC PINES ESTATES
SOIL BORING LOGS

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PART OF THE SW 1/4 CORNER OF SECTION 3
TOWN I NORTH - RANGE 8 EAST
CITY OF NOVI
OAKLAND COUNTY, MI

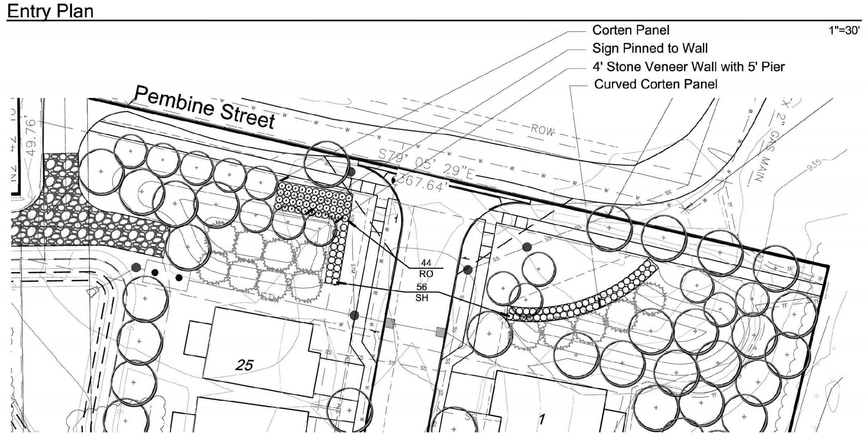
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P.E.: WES LEE O. UMLOR
NTS
Job No.: 180905
Sheet No.
18

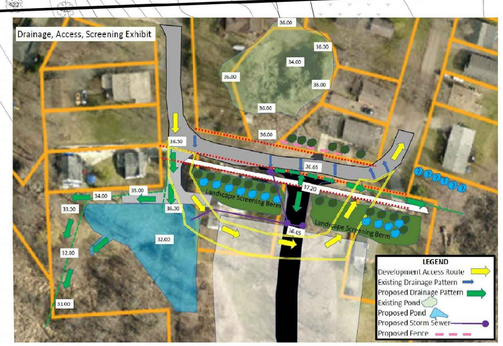
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Entry Plan

1"=30'





Landscape Summary

Street Trees	
Unit Trees	25 Units
Trees Required	25 Trees (1 per unit)
Trees Provided	25 Trees
Street Lawn	
Total Street Frontage	367 l.f.
Less Drive Opening	28 l.f.
Net Street Frontage	339 l.f.
Trees Required	9.6 Trees (339 / 35)
Trees Provided	5 Trees
Greenbelt Plantings	
Total Street Frontage	367 l.f.
Less Drive Opening	28 l.f.
Net Street Frontage	339 l.f.
Canopy Trees Required	8.5 Trees (339 / 40)
Canopy Trees Provided	9 Trees
Sub-Canopy Trees Required	13.5 Trees (339 / 25)
Sub-Canopy Trees Provided	14 Trees

Woodland Replacement	
Replacement Required	438 Trees
Total Trees Provided	91 Trees
Trees to be Paid into Fund	347 Trees
Detention Pond	
High Water Length	415 l.f.
Landscape Required	291 l.f. (415 x 70%)
Landscape Provided	301 l.f. (73%)

Requested Waiver:
Waiver of 4 Street Lawn Trees Due to Inadequate Planting Area Between the Proposed Sidewalk and Existing Street

Notes:
- Trees Shall be Planted 10' from Utility Structures Including Hydrants
- Snow Shall be Deposited Adjacent to Drives and within the Curb Lawn
- All Utility Boxes Shall be Screen per Detail on Sheet L-2
- Overhead Lines are Not Present
- Phragmites is not Present on the Site.

Plant List

sym.	qty.	botanical name	common name	caliper	spacing	root	height	price	total	Species	Genus	Native	Total
Woodland Replacement													
ARI	41	Acer rubrum	Red Maple	2.5"	as shown	B&B		$ 400.00	$ 16,400.00			1	1
QBI	16	Quercus bicolor	Swamp White Oak	2.5"	as shown	B&B		$ 400.00	$ 6,400.00			1	1
QRI	14	Quercus rubra	Red Oak	2.5"	as shown	B&B		$ 400.00	$ 5,600.00			1	1
PSI	7	Pinus strobus	White Pine		as shown	B&B	8'	$ 325.00	$ 2,275.00			1	1
TAI	13	Tilia americana	Basswood	2.5"	as shown	B&B		$ 400.00	$ 5,200.00			1	1
	91	Replacements Shown											
Detention Shrubs													
CR	20	Cornus racemosa	Gray Dogwood		as shown		36"	$ 50.00	$ 1,000.00			1	1
CS	20	Cornus stolonifera	Red-osier Dogwood		as shown		36"	$ 50.00	$ 1,000.00			1	1
LB	20	Lindera benzoin	Spicebush		as shown		36"	$ 50.00	$ 1,000.00			1	1
PO	7	Physocarpus opulifolius	Eastern Ninebark		as shown		36"	$ 50.00	$ 350.00			1	1
	67	Shrubs Shown											
Unit and Street Trees													
CO	4	Celtis occidentalis	Northern Hackberry	3.0"	as shown	B&B		$ 400.00	$ 1,600.00	8%	8%	1	1
GT	6	Gleditsia triacanthos var. inermis	Thornless Honeylocust	3.0"	as shown	B&B		$ 400.00	$ 2,400.00	11%	11%	1	1
TC	8	Tilia cordata 'Greenspire'	Greenspire Linden	3.0"	as shown	B&B		$ 400.00	$ 3,200.00	15%	15%		1
UP	7	Ulmus 'Pioneer'	Pioneer Elm	3.0"	as shown	B&B		$ 400.00	$ 2,800.00	13%	13%		1
	25	Trees Provided											
Street Lawn and Greenbelt													
ACG	6	Amelanchier laevis	Shadblow	2.5"	as shown	B&B		$ 250.00	$ 1,500.00	11%	11%	1	1
ARS	5	Acer rubrum	Red Maple	3.0"	as shown	B&B		$ 400.00	$ 2,000.00	9%	9%	1	1
CAG	8	Cornus alternifolia	Alternative Leaf Dogwood	2.5"	as shown	B&B		$ 250.00	$ 2,000.00	15%	15%	1	1
PGG	9	Pinus strobus	White Pine		as shown	B&B	8'	$ 325.00	$ 2,925.00	17%	17%	1	1
	28	Trees Provided											
General Plantings													
RO	44	Rosa 'Drift'	Drift Rose		as shown		#2	$ 15.00	$ 660.00				1
SH	56	Sporobolus heterolepis	Prairie Dropseed		18" o.c.	cont.	#2	$ 15.00	$ 840.00			1	1
											Total	16	19
Mulch											% Native	84%	
	19	4" Deep Shredded Hardwood Bark Mulch /s.y.						$35	$ 665.00				
	46	Sod /s.y.						$5	$ 275.00				
	732	Seed /s.y. (Lawn)						$3.00	$ 2,196.00				
	851	Seed / s.y. (Detention Pond)						$6.00	$ 5,106.00				
Irrigation									$ 6,000.00				
								L-2 Total	$ 73,393.00				

ALLEN DESIGN
LAND, PLANNING / LANDSCAPE ARCHITECTURE
557 CARPENTER • NORTHVILLE, MI 48167
248 467 4668 • Fax 248 349 0559
Email: jca@wideopenwest.com

Seal:



Title:

Landscape Plan

Project:

Scenic Pines
Novi, MI

Prepared for:

Singh Development, LLC
7125 Orchard Lake Road, Suite 200
West Bloomfield, Michigan 48322

Revision:	Issued:
Review	February 22, 2019
Revised	May 24, 2019
Revised	July 16, 2019

Job Number:

19-019

Drawn By:	Checked By:
jca	jca

0' 25' 50'

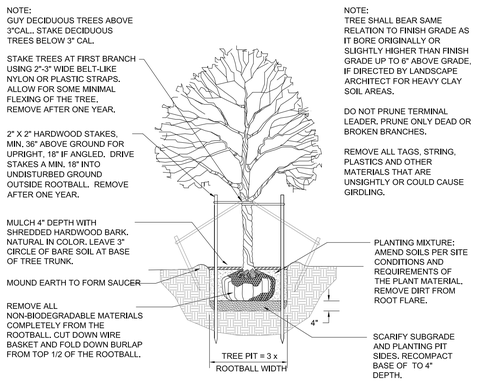
NORTH
1"=50'

Sheet No.

L-1

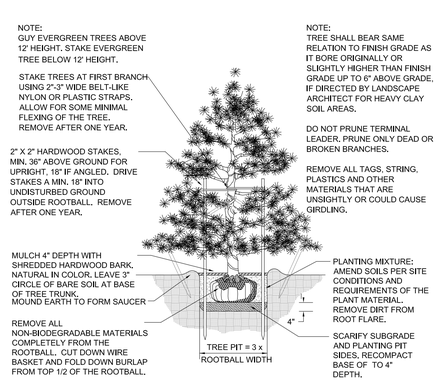
Know what's below. Call before you dig.

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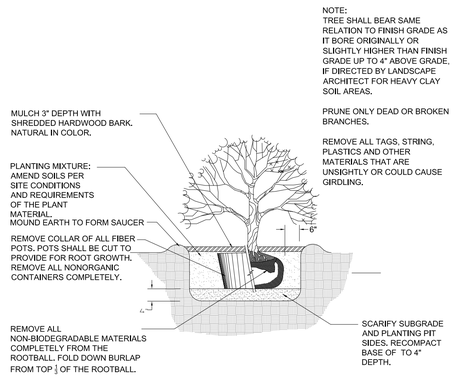
DECIDUOUS TREE PLANTING DETAIL

NOT TO SCALE



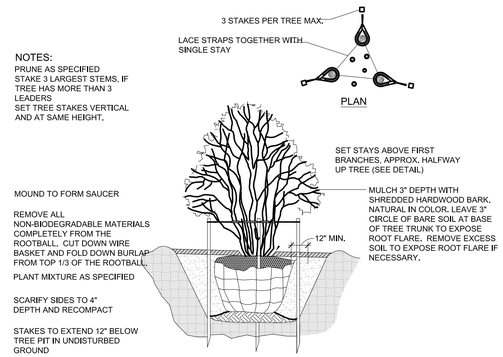
EVERGREEN TREE PLANTING DETAIL

Not to scale



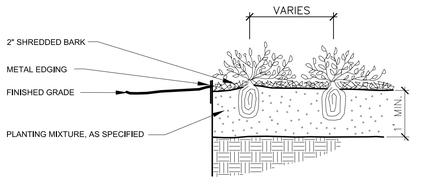
SHRUB PLANTING DETAIL

NOT TO SCALE



MULTI-STEM TREE PLANTING DETAIL

NOT TO SCALE



PERENNIAL PLANTING DETAIL

Not to scale

CITY OF NOVI NOTES

1. All landscape islands shall be backfilled with a sand mixture to facilitate drainage.
2. All proposed landscape islands shall be curbed.
3. All landscape areas shall be irrigated.
4. Overhead utility lines and poles to be relocated as directed by utility company of record.
5. Evergreen and canopy trees shall be planted a minimum of 10' from a fire hydrant, and manhole, 15' from overhead wires.
6. All plant material shall be guaranteed for two (2) years after City Approval and shall be installed and maintained according to City of Novi standards. Replace Failing Material within 3 Months of Discovering the Need for Replacement. One cultivation per month shall occur in July-August.
7. All proposed street trees shall be planted a minimum of 4' from both the back of curb and proposed walks.
8. All tree and shrub planting beds shall be mulched with shredded hardwood bark, spread to minimum depth of 4". All lawn area trees shall have a 4' diameter circle of shredded hardwood mulch 3" away from trunk. All perennial, annual and ground cover beds shall receive 2" of dark colored bark mulch as indicated on the plant list. Mulch is to be free from debris and foreign material, and shall contain no pieces of inconsistent size.
9. All Substitutions or Deviations from the Landscape Plan Must be Approved in Writing by the City of Novi Prior to their Installation.

NOTES:
THE APPROXIMATE DATE OF INSTALLATION FOR THE PROPOSED LANDSCAPE WILL BE FALL OR SPRING OF 2019 or 2020.

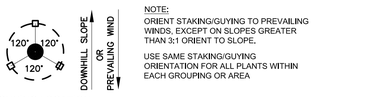
THE SITE WILL BE MAINTAINED BY THE DEVELOPER IN ACCORDANCE WITH THE STANDARDS SET FORTH IN THE CITY OF NOVI ZONING ORDINANCE. THIS INCLUDES WEEDING AND WATERING AS REQUIRED BY NORMAL MAINTENANCE PRACTICES.

DEVELOPER SHALL BE RESPONSIBLE FOR REPLACING ANY TREES WITHIN UTILITY EASEMENTS THAT ARE DAMAGED THROUGH NORMAL MAINTENANCE OR REPAIRS.

PLANT MATERIALS SHALL BE GUARANTEED FOR 2 YEARS AND SHALL BE MAINTAINED IN ACCORDANCE WITH CITY ORDINANCES. WARRANTY PERIOD BEGINS AT THE TIME OF CITY APPROVAL. WATERING AS NECESSARY SHALL OCCUR DURING THIS WARRANTY PERIOD.

LANDSCAPE NOTES

1. All plants shall be north Midwest American region grown, No. 1 grade plant materials, and shall be true to name, free from physical damage and wind burn.
2. Plants shall be full, well-branched, and in healthy vigorous growing condition.
3. Plants shall be watered before and after planting is complete.
4. All trees must be staked, fertilized and mulched and shall be guaranteed to exhibit a normal growth cycle for at least two (2) full years following City approval.
5. All material shall conform to the guidelines established in the most recent edition of the American Standard for Nursery Stock.
6. Provide clean backfill soil, using material stockpiled on site. Soil shall be screened and free of any debris, foreign material, and stone.
7. "Agriform" tabs or similar slow-release fertilizer shall be added to the planting pits before being backfilled.
8. Amended planting mix shall consist of 1/3 screened topsoil, 1/3 sand and 1/3 compost, mixed well and spread to the depth as indicated in planting details.
9. All plantings shall be mulched per planting details located on this sheet.
10. The Landscape Contractor shall be responsible for all work shown on the landscape drawings and specifications.
11. No substitutions or changes of location, or plant types shall be made without the approval of the Landscape Architect.
12. The City of Novi's Landscape Architect shall be notified in writing of any discrepancies between the plans and field conditions prior to installation.
13. The Landscape Contractor shall be responsible for maintaining all plant material in a vertical condition throughout the guaranteed period.
14. The Landscape Architect shall have the right, at any stage of the installation, to reject any work or material that does not meet the requirements of the plans and specifications, if requested by owner.
15. Contractor shall be responsible for checking plant quantities to ensure quantities on drawings and plant list are the same. In the event of a discrepancy, the quantities on the plans shall prevail.
16. The Landscape Contractor shall seed and mulch or sod (as indicated on plans) all areas disturbed during construction, throughout the contract limits.
17. A pre-emergent weed control agent, "Preen" or equal, shall be applied uniformly on top of all mulching in all planting beds.
18. All landscape areas shall be provided with an underground automatic sprinkler system.
19. Sod shall be two year old "Baron/Cheriadelphi" Kentucky Blue Grass grown in a sod nursery on loam soil.



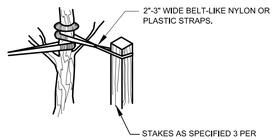
NOTE:
ORIENT STAKING/GUYING TO PREVAILING WINDS, EXCEPT ON SLOPES GREATER THAN 3:1 ORIENT TO SLOPE.

USE SAME STAKING/GUYING ORIENTATION FOR ALL PLANTS WITHIN EACH GROUPING OR AREA

STAKING/GUYING LOCATION



GUYING DETAIL



STAKING DETAIL

TREE STAKING DETAIL

Not to scale

DETENTION POND SEED MIXES

Emergent Seed Mix

Botanical Name	Common Name	PLS Oz/Acre
Boiboschoenus luviatilis	River Bulrush	1.00
Carex comosa	Bristly Sedge	2.50
Carex lacustris	Common Lake Sedge	0.25
Carex lurida	Bottlebrush Sedge	4.00
Carex stricta	Common Tussock Sedge	1.00
Carex vulpinoidea	Brown Fox Sedge	6.00
Eleocharis palustris	Great Spike Rush	1.00
Juncus effusus	Common Rush	1.00
Leersia oryzoides	Rice Cut Grass	3.00
Schoenoplectus acutus	Hardstem Bulrush	2.50
Schoenoplectus americanus	Chairmaker's Rush	3.00
Schoenoplectus tabernaemontani	Softstem Bulrush	6.00
	Total	31.25
Temporary Cover		
Avena sativa	Common Oat	360.00
Lolium multiflorum	Annual Rye	100.00
	Total	460.00
Forbs/Shrubs		
Acorus americanus	Sweet Flag	0.50
Alisma spp.	Water Plantain Mix	2.00
Asclepias incarnata	Swamp Milkweed	1.50
Cephalanthus occidentalis	Buttonbush	6.00
Decodon verticillatus	Swamp Loosestrife	0.50
Eutrochium maculatum	Spotted Joe Pye Weed	0.50
Hibiscus spp.	Rosemallow Mix	4.00
Iris virginica	Blue Flag	6.00
Lobelia cardinalis	Cardinal Flower	0.25
Lobelia siphilitica	Great Blue Lobelia	0.25
Lycopus americanus	Common Water Horehound	0.25
Mimulus ringens	Monkey Flower	1.00
Peltandra virginica	Arrow Arum	16.00
Penthorum sedoides	Ditch Stonecrop	0.50
Polygonum spp.	Pinkweed Mix	0.50
Pontederia cordata	Pickerel Weed	10.00
Sagittaria latifolia	Common Arrowhead	2.00
Sparganium eurycarpum	Common Bur Reed	6.00
Verbena hastata	Blue Vervain	1.00
	Total	58.75

Emergent Wetland Seed Mix by Cardno JFNew

4,471 s.f.

39.8 lbs. per Acre Application Rate
4.1 lbs. of Emergent Seed Mix
3"-6" of Topsoil or Wetland Mulch Shall be Placed in this Area. Use Seed Mat.

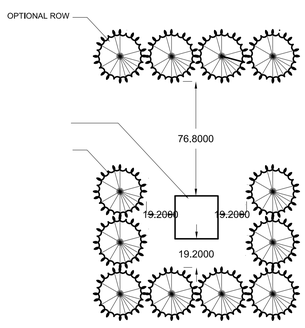
Stormwater Seed Mix

Botanical Name	Common Name	PLS Oz/Acre
Permanent Grasses/Sedges		
Boiboschoenus luviatilis	River Bulrush	0.25
Carex cristatella	Crested Oval Sedge	2.00
Carex lurida	Bottlebrush Sedge	3.00
Carex vulpinoidea	Brown Fox Sedge	6.00
Elymus virginicus	Virginia Wild Rye	13.50
Glyceria striata	Fowl Manna Grass	1.25
Juncus effusus	Common Rush	2.00
Leersia oryzoides	Rice Cut Grass	1.00
Panicum virgatum	Switch Grass	2.00
Schoenoplectus tabernaemontani	Softstem Bulrush	3.00
Scirpus atrovirens	Dark Green Rush	2.00
Scirpus cyperinus	Wool Grass	1.00
	Total	37.00
Temporary Cover		
Avena sativa	Common Oat	360.00
Lolium multiflorum	Annual Rye	100.00
	Total	460.00
Forbs		
Alisma spp.	Water Plantain Mix	4.25
Asclepias incarnata	Swamp Milkweed	1.50
Bidens spp.	Bidens Mix	2.00
Helenium autumnale	Sneezeweed	2.00
Iris virginica	Blue Flag	4.00
Lycopus americanus	Common Water Horehound	0.25
Mimulus ringens	Monkey Flower	1.00
Oligoneuron riddellii	Riddell's Goldenrod	0.50
Penthorum sedoides	Ditch Stonecrop	0.50
Polygonum spp.	Pinkweed Mix	4.00
Rudbeckia subtomentosa	Sweet Black-Eyed Susan	1.00
Rudbeckia triloba	Brown-Eyed Susan	1.50
Sagittaria latifolia	Common Arrowhead	1.00
Senna hebecarpa	Wild Senna	1.00
Symphyotrichum novae-angliae	New England Aster	1.50
Thalictrum dasycarpum	Purple Meadow Rue	2.00
	Total	28.00

Stormwater Seed Mix by Cardno JFNew

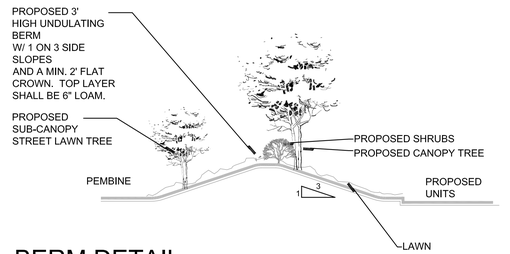
3,188 s.f.

32.6 lbs. per Acre Application Rate
2.4 lbs. of Storm Water Seed Mix
3"-6" of Topsoil Shall be Placed in this Area.



TRANSFORMER SCREENING DETAIL

Not to scale



BERM DETAIL

HORIZONTAL SCALE: 1"=10'

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ALLEN DESIGN
LAND PLANNING / LANDSCAPE ARCHITECTURE
557 CARPENTER • NORTHVILLE, MI 48167
248 467 4668 • Fax 248 349 0559
Email: jca@wideopenwest.com

Seal:



Title:

Landscape Details

Project:

Scenic Pines
Novi, MI

Prepared for:

Singh Development, LLC
7125 Orchard Lake Road, Suite 200
West Bloomfield, Michigan 48322

Revision:	Issued:
Review	February 21, 2019
Revised	May 24, 2019
Revised	July 16, 2019

Job Number:

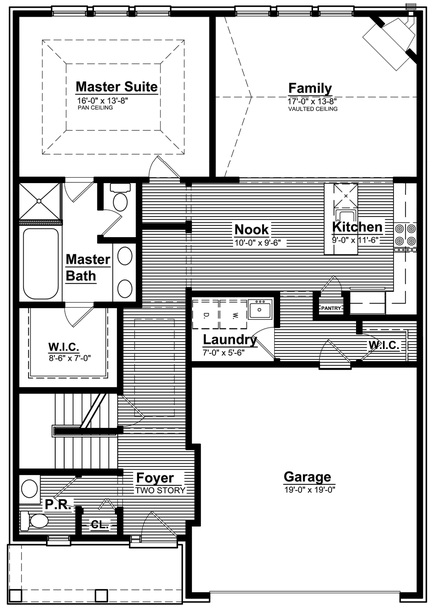
19-019

Drawn By:	Checked By:
jca	jca

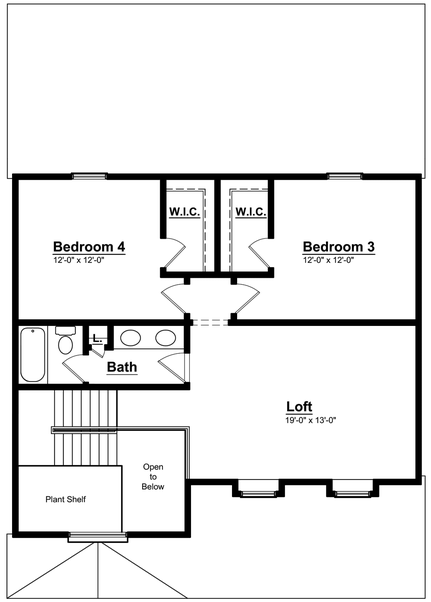
Know what's below. Call before you dig.

Sheet No.

L-2



Singh Homes - Scenic Pines of Novi
Two Car Garage - Cape Cod - First Floor
1,295 SF



Singh Homes - Scenic Pines of Novi
Two Car Garage - Cape Cod - Second Floor
805 SF



ELEVATION "A"
BUILDING HEIGHT MAX. 35'



ELEVATION "B"
BUILDING HEIGHT MAX. 35'



ELEVATION "C"
BUILDING HEIGHT MAX. 35'

Diffin-Umlor & ASSOCIATES
Civil Engineering • Surveying • Landscaping • Construction Services
49287 WEST ROAD
WIXOM, MI 48393
(P): 248-437-7803
(F): 866-960-4307

REVISIONS
REVISED PER CITY OF NOVI REVIEW LETTERS DATED 3/27/2019

CLIENT:
SINGH DEVELOPMENT LLC
7125 ORCHARD LAKE RD
WEST BLOOMFIELD, MI

SCENIC PINES ESTATES
ARCHITECTURAL PLANS

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PART OF THE SW 1/4 CORNER OF SECTION 3
TOWN I NORTH - RANGE 8 EAST
CITY OF NOVI
OAKLAND COUNTY, MI

DATE: 07-26-2019
Drawn By: SDT
P.E.: WES LEE O. UMLOR
NTS
Job No.: 180905
Sheet No.
A1

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ELEVATION "2200-A"

BUILDING HEIGHT MAX. 35'



ELEVATION "2300-A"

BUILDING HEIGHT MAX. 35'



ELEVATION "2200-B"

BUILDING HEIGHT MAX. 35'



ELEVATION "2300-B"

BUILDING HEIGHT MAX. 35'



ELEVATION "2200-C"

BUILDING HEIGHT MAX. 35'



ELEVATION "2300-C"

BUILDING HEIGHT MAX. 35'

Diffin-Umlor & ASSOCIATES

Civil Engineering • Surveying • Landscaping • Construction Services

49287 WEST ROAD
WIXOM, MI 48393

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CLIENT:
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7125 ORCHARD LAKE RD
WEST BLOOMFIELD, MI

SCENIC PINES ESTATES

ARCHITECTURAL PLANS

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TOWN I NORTH - RANGE 8 EAST

CITY OF NOVI

OAKLAND COUNTY, MI

DATE: 07-26-2019
Drawn By: SDT
P.E.: WES LEE O. UMLOR

NTS

Job No.: 180905
Sheet No.
A2

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ELEVATION "2400-A"

BUILDING HEIGHT MAX. 35'



ELEVATION "2400-B"

BUILDING HEIGHT MAX. 35'



ELEVATION "2400-C"

BUILDING HEIGHT MAX. 35'

Diffin-Umlor & ASSOCIATES

Civil Engineering • Surveying • Landscaping • Construction Services

49287 WEST ROAD
WIXOM, MI 48393

(P): 248-437-7803
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REVISIONS

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CLIENT:
SINGH DEVELOPMENT LLC
7125 ORCHARD LAKE RD
WEST BLOOMFIELD, MI

SCENIC PINES ESTATES

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PART OF THE SW 1/4 CORNER OF SECTION 3 | TOWN I NORTH - RANGE 8 EAST | CITY OF NOVI | OAKLAND COUNTY, MI

DATE: 07-26-2019
Drawn By: SDT
P.E.: WES LEE O. UMLOR

NTS

Job No.: 180905

Sheet No.
A3

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