



SCENIC PINES ESTATES JSP18-76

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.

Required Action

Approval of the Preliminary Site Plan with One-Family clustering Option, Site Condominium, Special Land Use, Wetland Permit, Woodland Permit and Stormwater Management Plan

REVIEW	RESULT	DATE	COMMENTS
Planning	Approval recommended	Current 08-22-19 Revised 09-20-19 Previous 06-25-19 03-27-19	• Approval of On-family clustering Option. • Area undeveloped will be preserved in a permanent preserved. • Zoning Board of Appeals approval for reduction of setbacks and distance between clusters • Items to be addressed on the Final Site Plan submittal.
Engineering	Approval recommended	Current 09-04-19 Previous 06-26-19 03-22-19	• Administrative variance for not having 15 feet from back of curb to outside edge of sidewalk; • Items to be addressed on the Final Site Plan submittal.
Landscaping	Approval recommended	Current 08-09-19 Previous 06-10-19 03-21-19	• Landscape waivers for not providing street trees along Pembine and for not proposing trees between curb and the sidewalk • Items to be addressed on the Final Site Plan submittal.
Wetlands	Approval recommended	Current 06-18-19 Previous 03-19-19	• Requires a City of Novi Minor Wetland Permit and an Authorization to encroach the 25-Foot Natural Features Setback. • Items to be addressed on the final site plan submittal
Woodlands	Approval recommended	Current 06-18-19 Previous 03-19-19	• Requires a City of Novi Woodland Permit • Items to be addressed on the final site plan submittal

Traffic	Approval recommended	Current 08-06-19 Previous 06-12-19 03-19-19	• Planning Commission waiver for not meeting the minimum driveway spacing for opposite side driveways. • Items to be addressed on the Final Site Plan submittal.
Facade	Not Applicable		
Fire	Approval recommended	Current 09-17-19 Previous 08-02-19 06-05-19 03-04-19	

MOTION SHEET

Approve

Approval – Special Land Use Permit

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;
 - a. The approval shall be subject to the following conditions at that time: Understanding that the site plan does not carry with it an approval of the lake access lot
 - 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
8. (additional comments here if any)

(This motion is made because the plan is otherwise in compliance with Article 3, Article 4, Article 5, and Article 6 of the Zoning Ordinance and all other applicable provisions of the Ordinance.)

- AND -

Approval – Preliminary Site Plan with One-family clustering option and the Site Condominium

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 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;
3. 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;
4. 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;
5. 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;
6. 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;
7. The applicant shall obtain necessary approvals from all related outside agencies for the proposed location of stormwater pond and related landscape under the existing overhead lines prior to approval of Final site plan;
8. A variance from Zoning Board of Appeals for reduced setbacks as noted below , as the proposed site plan does not meet the qualifying criteria listed in Sec. 3.28.6.C. for Planning Commission's approval of reduced setbacks:
 - a. Reduction of the minimum distance between the clusters from streets and Rights-of-way, as listed Sec. 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;
 - b. Reduction of minimum required distance between clusters, as listed Sec. 3.28. 5 for 1-2-3 unit cluster and 22-23-24-25 unit cluster. A minimum of 85 feet is required, approximately 78 feet is proposed;
9. 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.
10. 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
11. *(additional conditions here if any)*

(This motion is made because the plan is otherwise in compliance with Article 3, Article 4 and Article 5 of the Zoning Ordinance and all other applicable provisions of the Ordinance.)

-AND-

Approval – Wetland Permit

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

1. 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
2. *(additional conditions here if any)*

(This motion is made because the plan is otherwise in compliance with Chapter 12, Article V of the Code of Ordinances and all other applicable provisions of the Ordinance.)

-AND-

Approval – Woodland Permit

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

1. 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
2. *(additional conditions here if any)*

(This motion is made because the plan is otherwise in compliance with Chapter 37 of the Code of Ordinances and all other applicable provisions of the Ordinance.)

-AND-

Approval – Stormwater Management Plan

In the matter of Scenic Pines Estates, JSP 18-76, motion to **approve** the Stormwater Management Plan, based on and subject to:

1. 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
2. *(additional conditions here if any)*

(This motion is made because it otherwise in compliance with Chapter 11 of the Code of Ordinances and all other applicable provisions of the Ordinance.)

-OR-

Denial – Special Land Use Permit

In the matter of Scenic Pines Estates, JSP 18-76, motion to **deny** the Special Land Use Permit...*(because the plan is not in compliance with Article 4, Article 5, and Article 6 of the Zoning Ordinance and all other applicable provisions of the Ordinance.)*

- AND -

Denial –Preliminary Site Plan with One-family clustering option and the Site Condominium

In the matter of Scenic Pines Estates, JSP 18-76, motion to **deny** the Preliminary Site Plan Open Preservation and the Site Condominium... *(because the plan is not in compliance*

with Article 3, Article 4 and Article 5 of the Zoning Ordinance and all other applicable provisions of the Ordinance.)

-AND-

Denial– Wetland Permit

In the matter of Scenic Pines Estates, JSP 18-76, motion to **deny** the Wetland Permit...
(because the plan is not in compliance with Chapter 12, Article V of the Code of Ordinances and all other applicable provisions of the Ordinance.)

-AND-

Denial– Woodland Permit

In the matter of Scenic Pines Estates, JSP 18-76, motion to **deny** the Woodland Permit...
(because the plan is not in compliance with Chapter 37 of the Code of Ordinances and all other applicable provisions of the Ordinance.)

-AND-

Denial – Stormwater Management Plan

In the matter of Scenic Pines Estates, JSP 18-76, motion to **deny** the Stormwater Management Plan... *(because the plan is not in compliance with Chapter 11 of the Code of Ordinances and all other applicable provisions of the Ordinance.)*

MAPS

Location

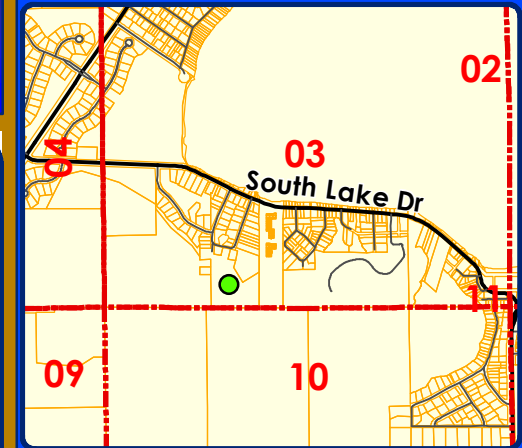
Zoning

Future Land Use

Natural Features

JSP 18-76 SCENIC PINES ESTATES

Location



LEGEND

 Sections



City of Novi

Dept. of Community Development
City Hall / Civic Center
45175 W Ten Mile Rd
Novi, MI 48375
cityofnovi.org

Map Author: Sri Komaragiri
Date: 09/20/19
JSP 18-76 Scenic Pines Estates
Version #: 1

0 50 100 200 300 Feet
1 inch = 244 feet

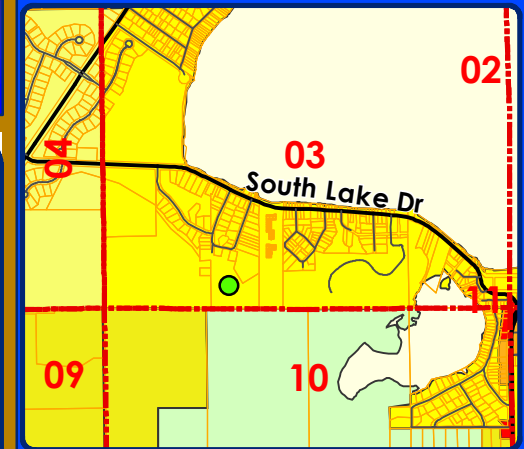
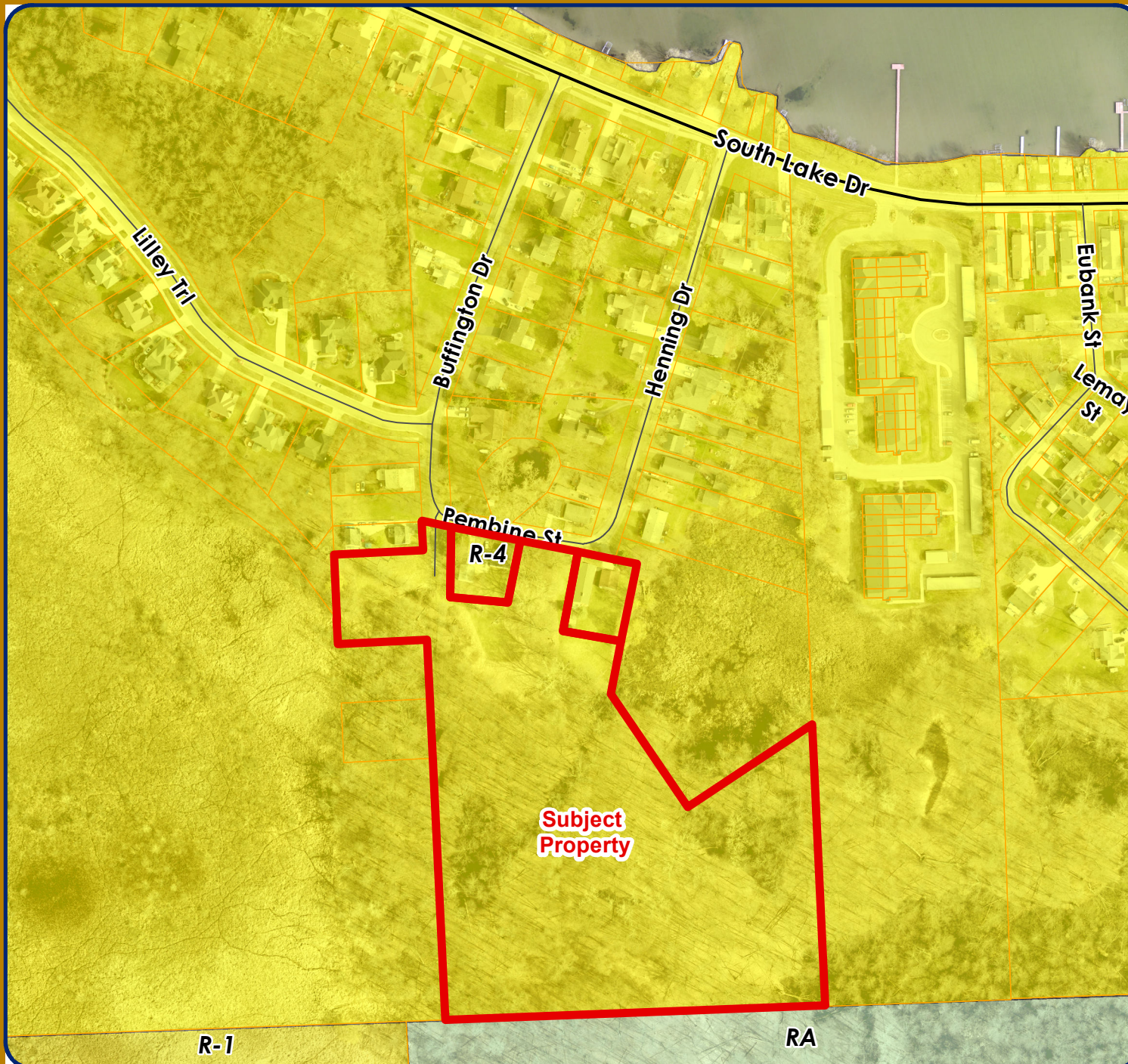


MAP INTERPRETATION NOTICE

Map information depicted is not intended to replace or substitute for any official or primary source. This map was intended to meet National Map Accuracy Standards and use the most recent, accurate sources available to the people of the City of Novi. Boundary measurements and area calculations are approximate and should not be construed as survey measurements performed by a licensed Michigan Surveyor as defined in Michigan Public Act 132 of 1970 as amended. Please contact the City GIS Manager to confirm source and accuracy information related to this map.

JSP 18-76 SCENIC PINES ESTATES

Zoning



LEGEND

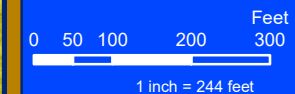
- Sections
- R-A: Residential Acreage
- R-1: One-Family Residential District
- R-2: One-Family Residential
- R-4: One-Family Residential District
- RM-1: Low-Density Multiple Family
- RM-2: High-Density Multiple Family
- B-3: General Business District



City of Novi

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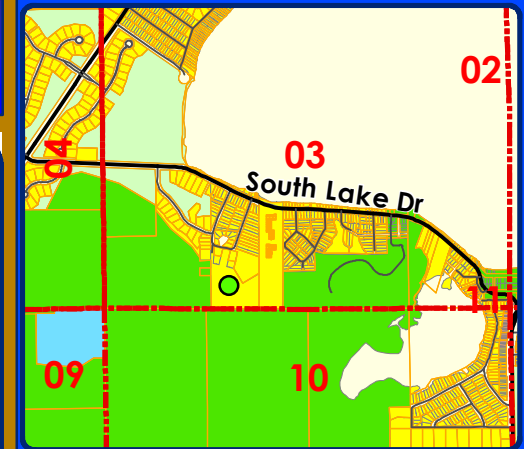
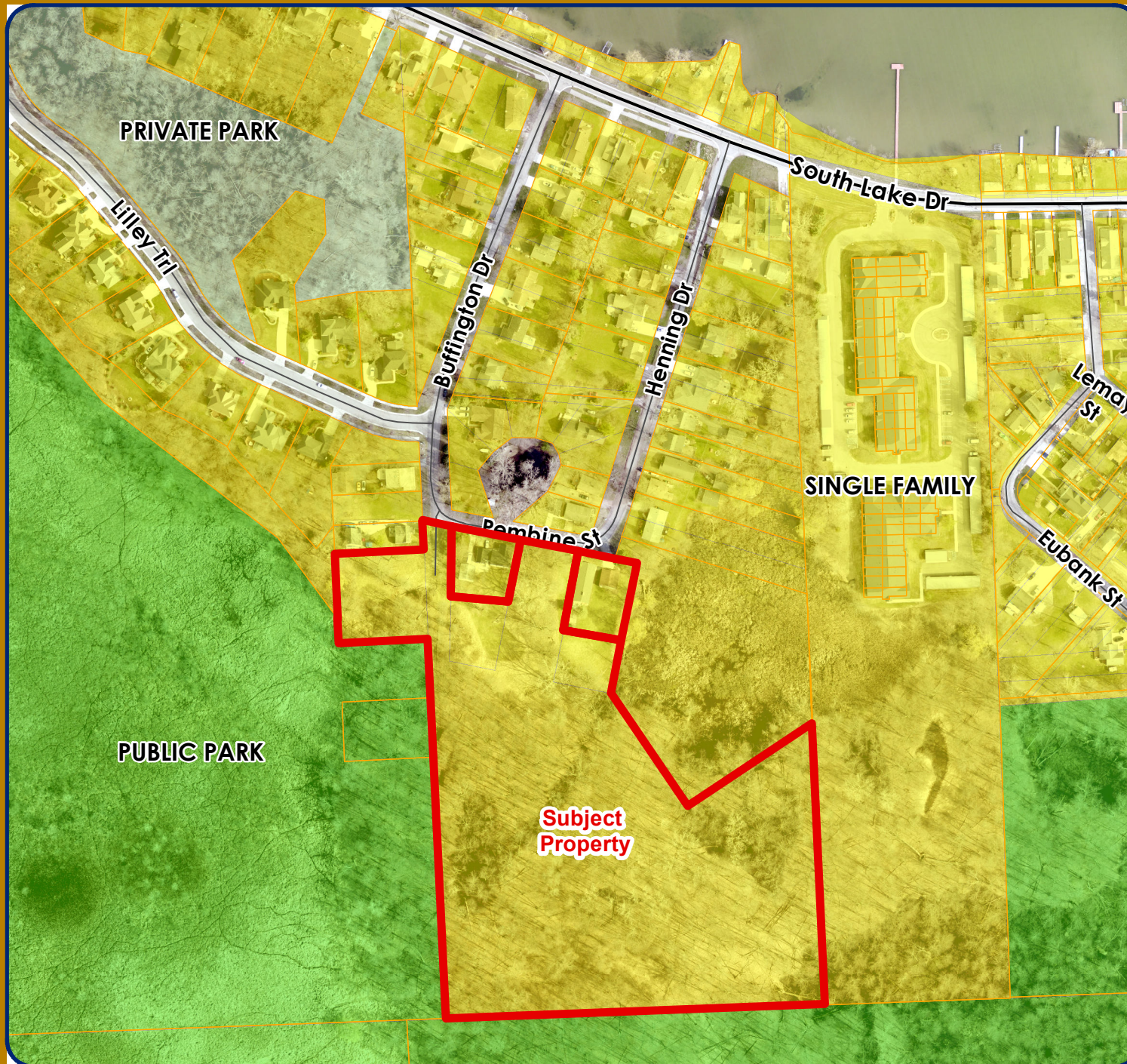


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JSP 18-76 SCENIC PINES ESTATES

Future Landuse



LEGEND

Sections

FUTURE LAND USE

Single Family

Multiple Family

Local Commercial

Public

Public Park

Private Park



City of Novi

Dept. of Community Development
City Hall / Civic Center
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JSP 18-76 Scenic Pines Estates

Version #: 1



1 inch = 244 feet



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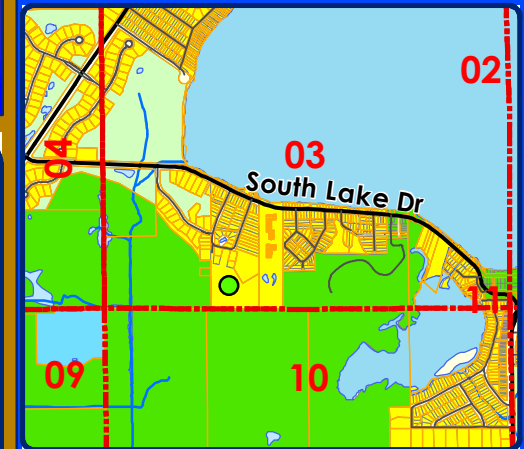
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JSP 18-76 SCENIC PINES ESTATES

Natural Features



**Subject
Property**



LEGEND

Sections

FUTURE LAND USE

Single Family

Multiple Family

Local Commercial

Public

Public Park

Private Park

WETLANDS

WOODLANDS



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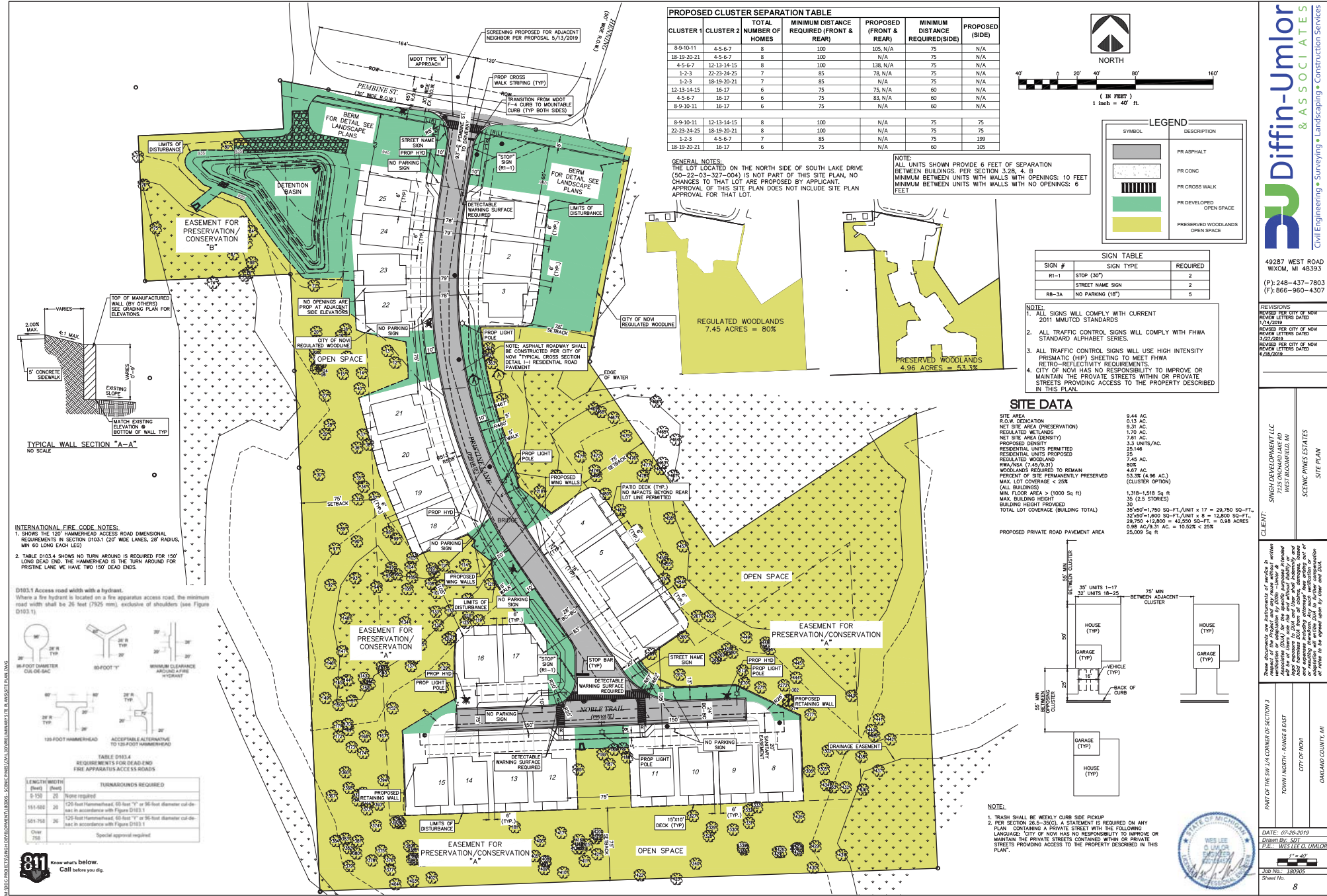


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SITE PLAN

(Full plan set available for viewing at the Community Development Department)



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	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
12-13-14-15	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, 5
MINIMUM BETWEEN UNITS WITH WALLS WITH OPENINGS: 10 FEET
MINIMUM BETWEEN UNITS WITH WALLS WITH NO OPENINGS: 6 FEET

NORTH

1 inch = 40 ft.

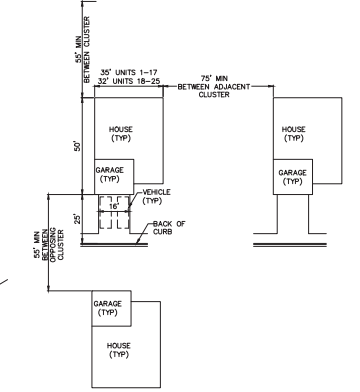
LEGEND

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

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

- NOTE:
- ALL SIGNS WILL COMPLY WITH CURRENT 2011 MUTCD STANDARDS
 - ALL TRAFFIC CONTROL SIGNS WILL COMPLY WITH FHWA STANDARD ALPHABET SERIES.
 - ALL TRAFFIC CONTROL SIGNS WILL USE HIGH INTENSITY PRISMATIC (HIP) SHEETING TO MEET FHWA RETRO-REFLECTIVITY REQUIREMENTS.
 - CITY OF NOV HAS NO RESPONSIBILITY TO IMPROVE OR MAINTAIN THE PRIVATE STREETS WITHIN OR PRIVATE 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 (IDENTITY)	7.61 AC.
PROPOSED DENSITY	25.146
RESIDENTIAL UNITS PROPOSED	205
REGULATED WETLAND	1.70 AC.
RWA/NSA (7.45/9.31)	80%
WOULDINGS REQUIRED TO REMAIN	4.67 AC.
PERCENT OF SITE PERMANENTLY PRESERVED	53.3% (4.96 AC.)
MAX. LOT COVERAGE < 25%	1,318-1,518 Sq ft
(ALL BUILDINGS)	35 (2.5 STORIES)
MIN. FLOOR AREA > (1000 Sq ft)	30
MAX. BUILDING HEIGHT	30'-0"=1,750 SQ-FT./UNIT x 17 = 29,750 SQ-FT.
BUILDING HEIGHT PROVIDED	32'-0"=1,600 SQ-FT./UNIT x 8 = 12,800 SQ-FT.
TOTAL LOT COVERAGE (BUILDING TOTAL)	29,750+12,800 = 42,550 SQ-FT. = 0.98 ACRES
	0.98 AC./9.31 AC. = 10.52% < 25%
	25,009 Sq ft



- NOTE:
- TRASH SHALL BE WEEKLY CURB SIDE PICKUP
 - PER SECTION 26.5-35(C), A STATEMENT IS REQUIRED ON ANY PLAN CONTAINING A PRIVATE STREET WITH THE FOLLOWING LANGUAGE: "CITY OF NOV 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:

- SHOW THE 120' HAMMERHEAD ACCESS ROAD DIMENSIONAL REQUIREMENTS IN SECTION D103.1 (20' WIDE LANES, 28' RADIUS, MIN 60' LONG EACH LEG)
- 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).

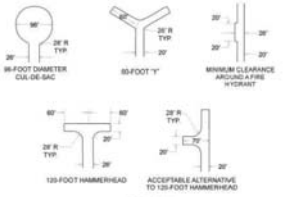


TABLE D103.4	
REQUIREMENTS FOR DEAD END FIRE APPARATUS ACCESS ROADS	
LENGTH (FEET)	TURNAROUNDS REQUIRED
0 - 150	None required
151 - 250	120-foot Hammerhead, 60-foot "Y" or 96-foot diameter cul-de-sac in accordance with Figure D103.1
251 - 750	120-foot Hammerhead, 60-foot "Y" or 96-foot diameter cul-de-sac in accordance with Figure D103.1
Over 750	Special approval required



Civil Engineering • Surveying • Landscaping • Construction Services

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

REVISIONS

NO.	DATE	DESCRIPTION
1	1/24/2019	REVISED PER CITY OF NOV LETTERS DATED 1/22/2019
2	1/22/2019	REVISED PER CITY OF NOV LETTERS DATED 1/22/2019

CLIENT:

SINGH DEVELOPMENT LLC
7123 ORCHARD LAKE RD
WEST BLOOMFIELD, MI

SCENIC PINES ESTATES

SITE PLAN

PART OF THE SW 1/4 CORNER OF SECTION 3
TOWNSHIP 14 NORTH, RANGE 8 EAST
CITY OF NOV
OAKLAND COUNTY, MI

DATE: 07-26-2019
P.E. WESTLEY D. UMLOR
1" = 40'
100' 0" 100' 0" 100' 0"
Sheet No. 8



"SEQUENCE OF CONSTRUCTION FOR SOIL EROSION"

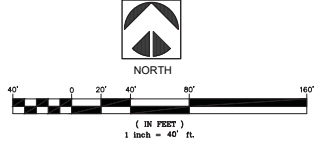
- ATTEND AN PRE-CONSTRUCTION MEETING AT CITY OF NOW OFFICE
- ALONG WITH THE APPROPRIATE CITY OF NOW STAFF.
- INSTALL ALL SOIL EROSION AS PER APPROVED PLANS.
- CONTACT THE CITY OF NOW OR ITS AGENT TO HAVE THE ITEMS LISTED IN "VIOLATIONS" INSPECTED FOR APPROVAL.
- INSTALL TRACKING MATS, STRIP AND STOOPHOLD TOPSOIL IN A LOCATION APPROVED BY THE OWNER/ENGINEER.
- PERFORM ALL SAW-CUTS AND REMOVALS, MASS BALANCE PARKING AREA.
- INSTALL UTILITIES (WATERMAIN, STORM SEWER, SANITARY SEWER) COMPLETE. INSTALL SILT SACKS IMMEDIATELY AFTER STORM SEWER INSTALLATION.
- INSPECT AND MAINTAIN FILTERS AS DIRECTED TO PREVENT CLOGGING AND UNNECESSARY FLOODING. MAINTAIN SILT FENCE.
- STABILIZE TEMPORARILY OR PERMANENTLY ALL DISTURBED AREAS WITHIN FIVE (5) DAYS OF FINAL GRADE.
- INSPECT AND MAINTAIN ALL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES THROUGHOUT THE CONSTRUCTION OF THE PROJECT. REMOVAL OF CONTROL MEASURES MAY ONLY TAKE PLACE ONCE ENTIRE SITE IS FULLY STABILIZED.

VIOLATIONS/CITATIONS

- ROUTINE INSPECTIONS WILL BE PERFORMED ON YOUR PROJECT BY THE CITY OF NOW OR ITS AGENT ONCE A WEEK.
- UPON COMPLETION OF INSPECTION, THE SITE IS FOUND NOT IN COMPLIANCE WITH THE CITY OF NOW'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 VIOLATION" LETTER, THAT WILL INCLUDE ALL CURRENT AND PENDING NON-COMPLIANCE ITEMS. THE SITE AND/OR DEVELOPMENT WILL HAVE PRE-DETERMINED AMOUNT OF TIME, FROM THE DATE OF THE "NOTICE" TO RECTIFY THESE ITEMS.
- 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."
- 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 \$500.00 TO THE CITY OF NOW FOR ADDITIONAL INSPECTIONS, HEARINGS AND REPORT FOLLOW-UP. 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.
- 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 NOW FOR FOLLOW-UP INSPECTIONS, MEETINGS AND OTHER EXPENSES INCURRED. SILT FENCE

6	SEEDING WITH MULCH AND/OR BATTING	VEGETATIVE ESTABLISHMENT OF VEGETATIVE COVER EFFECTIVE FOR SWALLOWING RUNOFF AND REDUCING EROSION. SHOULD INCLUDE PREPARED TOPSOIL, RED
7	HYDRO-SEEDING	EFFECTIVE ON LARGE AREAS. MULCH TACKLING AGENT USED TO PROVIDE IMMEDIATE PROTECTION WITH GRADES & ROOTS. SHOULD INCLUDE PREPARED TOPSOIL, RED
15	PAVING	PROTECTS AREAS WHICH CANNOT OTHERWISE BE PROTECTED, BUT IMPROVES 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 DRAINAGE
36	CATCH BASIN, DRAIN INLET	COLLECTS HIGH VELOCITY CONCENTRATED RUNOFF MAY USE FILTER CLOSER 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.



NOTES:
IF DEMATERIALING IS ENCOUNTERED DURING CONSTRUCTION A DEMATERIALING PLAN MUST BE SUBMITTED TO THE ENGINEERING DIVISION FOR REVIEW AND APPROVAL.
IT IS THE DEVELOPER'S RESPONSIBILITY TO GRADE AND STABILIZE DISTURBED AREAS 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 BERM OR TERRACING SHALL BE IMPLEMENTED WHEN 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.

THE CONTRACTOR SHALL MAINTAIN ALL SOIL EROSION CONTROL MEASURES. THE SOIL EROSION CONTROLS WILL BE MAINTAINED WEST AND AFTER EVERY STORM EVENT BY JAN SILT FENCE. SURROUNDING PAVED AREAS SHALL BE POWER BROOMED AS NECESSARY TO REMOVE MUD TRACING FROM THE SITE.
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, HYDROSEEDING, 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 SEEDING 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 LISTED 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 sweeping (daily)
- Street sweeping (weekly minimum)
- Structural sediment controls (all fences, 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 -TOPSOIL AND SOD -INSTALL LANDSCAPING
SITE RESTORATION AND 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



Difin-Umlor & Associates
Civil Engineering • Surveying • Landscaping • Construction Services

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

REVISIONS
REVISED PER CITY OF NOW
1/24/2019
REVISED PER CITY OF NOW
3/27/2019
REVISED PER CITY OF NOW
4/18/2019

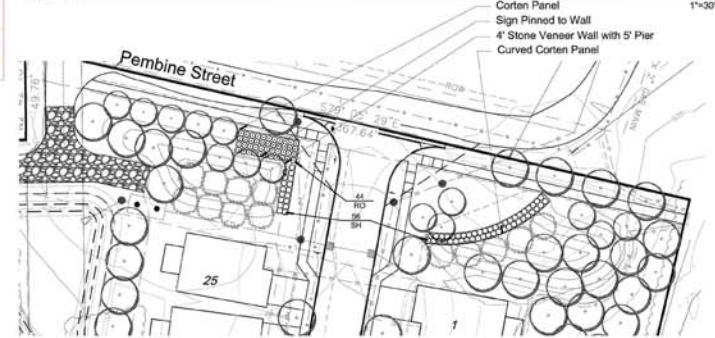
CLIENT:
SINGH DEVELOPMENT LLC
7125 ORCHARD LAKE RD
WEST BLOOMFIELD, MI
SCENE PINES ESTATES
SITE GRADING & SOIL EROSION CONTROL PLAN

PART OF THE SW 1/4 CORNER OF SECTION 3
TOWNSHIP 14 NORTH, RANGE 6 EAST
CITY OF NOW
OAKLAND COUNTY, MI

DATE: 07-26-2019
P.E.: WES LEE
1" = 40'
10' 10" 10' 10" 10' 10"
Sheet No. 9



Entry Plan



Landscape Summary

Street Trees	25 Units	Woodland Replacement	438 Trees
Unit Trees	25 Trees (1 per unit)	Replacement Required	91 Trees
Trees Required	25 Trees	Trees to be Paid into Fund	347 Trees
Street Lawn		Detention Pond	
Total Street Frontage	3671 L.F.	High Water Length	415 L.F.
Less Drive Opening	28 L.F.	Landscape Required	291 L.F. (415 x 70%)
Net Street Frontage	3339 L.F.	Landscape Provided	301 L.F. (73%)
Trees Required	9.6 Trees (339 / 35)	Requested Waiver	
Trees Provided	5 Trees	Waiver of 4 Street Lawn Trees Due to Inadequate Planting Area Between the Proposed Sidewalk and Existing Street	
Greenbelt Plantings			
Trees Shown Frontage	3671 L.F.		
Less Drive Opening	28 L.F.		
Net Street Frontage	3339 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		

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

SYMBOL	COMMON NAME	SCIENTIFIC NAME	SIZE	SPACING	ROOT HEIGHT	PRICE	TOTAL	SPECIES	GENUS	NATIVE	TOTAL
AR1	American Elm	Red Maple	2.5"	10' x 10'	8.00	\$ 400.00	\$ 14,400.00	1	1	1	1
AR2	American Elm	Red Maple	2.5"	10' x 10'	8.00	\$ 400.00	\$ 4,000.00	1	1	1	1
AR3	American Elm	Red Maple	2.5"	10' x 10'	8.00	\$ 400.00	\$ 4,000.00	1	1	1	1
AR4	American Elm	Red Maple	2.5"	10' x 10'	8.00	\$ 400.00	\$ 4,000.00	1	1	1	1
AR5	American Elm	Red Maple	2.5"	10' x 10'	8.00	\$ 400.00	\$ 4,000.00	1	1	1	1
AR6	American Elm	Red Maple	2.5"	10' x 10'	8.00	\$ 400.00	\$ 4,000.00	1	1	1	1
AR7	American Elm	Red Maple	2.5"	10' x 10'	8.00	\$ 400.00	\$ 4,000.00	1	1	1	1
AR8	American Elm	Red Maple	2.5"	10' x 10'	8.00	\$ 400.00	\$ 4,000.00	1	1	1	1
AR9	American Elm	Red Maple	2.5"	10' x 10'	8.00	\$ 400.00	\$ 4,000.00	1	1	1	1
AR10	American Elm	Red Maple	2.5"	10' x 10'	8.00	\$ 400.00	\$ 4,000.00	1	1	1	1
AR11	American Elm	Red Maple	2.5"	10' x 10'	8.00	\$ 400.00	\$ 4,000.00	1	1	1	1
AR12	American Elm	Red Maple	2.5"	10' x 10'	8.00	\$ 400.00	\$ 4,000.00	1	1	1	1
AR13	American Elm	Red Maple	2.5"	10' x 10'	8.00	\$ 400.00	\$ 4,000.00	1	1	1	1
AR14	American Elm	Red Maple	2.5"	10' x 10'	8.00	\$ 400.00	\$ 4,000.00	1	1	1	1
AR15	American Elm	Red Maple	2.5"	10' x 10'	8.00	\$ 400.00	\$ 4,000.00	1	1	1	1
AR16	American Elm	Red Maple	2.5"	10' x 10'	8.00	\$ 400.00	\$ 4,000.00	1	1	1	1
AR17	American Elm	Red Maple	2.5"	10' x 10'	8.00	\$ 400.00	\$ 4,000.00	1	1	1	1
AR18	American Elm	Red Maple	2.5"	10' x 10'	8.00	\$ 400.00	\$ 4,000.00	1	1	1	1
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AR20	American Elm	Red Maple	2.5"	10' x 10'	8.00	\$ 400.00	\$ 4,000.00	1	1	1	1
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AR30	American Elm	Red Maple	2.5"	10' x 10'	8.00	\$ 400.00	\$ 4,000.00	1	1	1	1
AR31	American Elm	Red Maple	2.5"	10' x 10'	8.00	\$ 400.00	\$ 4,000.00	1	1	1	1
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AR100	American Elm	Red Maple	2.5"	10' x 10'	8.00	\$ 400.00	\$ 4,000.00	1	1	1	1

ALLEN DESIGN
 LAND PLANNING / LANDSCAPE ARCHITECTURE
 557 CARPENTER • NORTHVILLE, MI 48167
 248 467 4668 • Fax 248 349 0359
 Email: jad@alldesignmi.com

Seal:

BUILDING ELEVATIONS

\\S05C-PROD-01\PROJECTS\2019\2019-0001\SCENIC PINES OF NOVI\SCENIC PINES OF NOVI - TWO CAR GARAGE - CAPE COD - FIRST FLOOR.dwg



**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

REVISIONS

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

INGH DEVELOPMENT LLC
7125 ORCHARD LAKE RD
WEST BLOOMFIELD, MI

SCENIC PINES ESTATES
ARCHITECTURAL PLANS

These documents are instruments of service in respect of the Project and any reuse without written verification of adaptation by Zlira - Unior is considered null and void. The documents are intended to be at Users sole risk and without liability or legal exposure to Zlira and User shall indemnify and hold harmless Zlira from all claims, damages, losses and expenses including attorneys fees arising out of or from the use of the documents. Further adaptation will involve Zlira to further compensation at rates to be agreed upon by User and Zlira.

THE SW 1/4 CORNER OF SECTION 3
NW 1 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

PLANNING REVIEW



PLAN REVIEW CENTER REPORT

August 22, 2019

(Updated 09-20-19)

Planning Review **SCENIC PINES ESTATES**

PETITIONER

Singh Development, LLC

REVIEW TYPE

Preliminary Site Plan with One-Family Cluster Option (2nd Revision)

PROPERTY CHARACTERISTICS

Section	3	
Site Location	50-22-03-378-008; 50-22-03-378-009 and 50-22-03-378-010 South of South Lake Drive, Southside of Pembine Drive	
Site School	Walled Lake Consolidated School District	
Current Zoning	R-4 One-Family Residential District	
Adjoining Zoning	North	R-4 One-Family Residential District
	East	R-4 One-Family Residential District
	West	R-4 One-Family Residential District
	South	RA Residential Acreage
Current Site	Two existing residences, mostly vacant	
Adjoining Uses	North	Single Family Homes
	East	Single Family Homes
	West	Single Family Homes
	South	Public Park (Lakeshore Park)
Site Size	9.44 acres	
Plan Date	July 26, 2019	

PROJECT SUMMARY

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 units 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.

The current revised submittal was primarily to address Engineering review comments. Planning does not have any additional comments from last review.

RECOMMENDATION

Approval for the Preliminary Site with One-Family Cluster option, Special Land Use and a Site Condominium recommended. The site plan is in general conformance with Ordinance requirements except for few deviations noted in this review.

PROJECT HISTORY

A pre-application meeting for this project was conducted on January 15, 2019.

PLANNED DEVELOPMENT OPTION CONDITIONS

Per Section 3.28.1.B, *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 Planning Commission finds, after reviewing the proposed site plan and after public hearing as required by Section 3.30.6, 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.*

One of the following conditions must also be found to exist:

- i. *Site is of such unusual shape that a conventional approach to residential development would cause peculiar or exceptional practical difficulties or exceptional undue hardship; or*
- ii. *Site is composed of generally unbuildable soils over a majority of the total site area; or* **The applicant completed site evaluations. The applicant noted that it is a challenging site, but not un-buildable.**
- iii. *Site is characterized to a substantial degree by severe topographic conditions in which changes in elevation include slopes in excess of fifteen (15) percent or where the achieving of road grades of less than six (6) percent is impossible over a majority of the site, absent mass grading; or*
- iv. *The majority (fifty (50) percent) of the net site area (defined here 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 53% of qualifying area.**

SPECIAL LAND USE CONSIDERATIONS

According to Section 3.28.7., the use of the one-family cluster option shall be subject to the Special Land Use regulations of Section 6.1.2.C and the approving body may impose conditions on its approval subject to the provisions of Section 6.1.2.C.as listed below:

- i. Whether, relative to other feasible uses of the site, the proposed use will cause any detrimental impact on existing thoroughfares in terms of overall volumes, capacity, safety, vehicular turning patterns, intersections, view obstructions, line of sight, ingress and egress, acceleration/deceleration lanes, off-street parking, off-street loading/unloading, travel times and thoroughfare level of service.
- ii. Whether, relative to other feasible uses of the site, the proposed use will cause any detrimental impact on the capabilities of public services and facilities, including water service, sanitary sewer service, storm water disposal and police and fire protection to service existing and planned uses in the area.
- iii. Whether, relative to other feasible uses of the site, the proposed use is compatible with the natural features and characteristics of the land, including existing woodlands, wetlands, watercourses and wildlife habitats. **The applicant is proposing to permanently preserve 53% of qualifying area. The applicant can consider staggering the houses within each cluster to protect woodlands and/or adding more green space in front yard.**
- iv. Whether, relative to other feasible uses of the site, the proposed use is compatible with adjacent uses of land in terms of location, size, character, and impact on adjacent property or the surrounding neighborhood. **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.**
- v. Whether, relative to other feasible uses of the site, the proposed use is consistent with the goals, objectives and recommendations of the City's Master Plan for Land Use. **The applicant indicated that the development is age-targeted. The proposed floor plans indicate first-floor master.**
- vi. Whether, relative to other feasible uses of the site, the proposed use will promote the use of land in a socially and economically desirable manner.
- vii. Whether, relative to other feasible uses of the site, the proposed use is

- a. Listed among the provision of uses requiring special land use review as set forth in the various zoning districts of this Ordinance, and
- b. Is in harmony with the purposes and conforms to the applicable site design regulations of the zoning district in which it is located.

SURROUNDING LAND USES

The site predominantly undeveloped however does contain two single-family homes and associated garages and outbuildings which are all proposed to be demolished. The properties to the west are developed with single-family homes and there are some vacant parcels of land to the west. To the north are single-family homes that are within in the Lakewoods Subdivision. To the northwest is the Lilley Pond Subdivision. To the east are the South Point Condominiums. To the south is vacant land, which is designated for a community park. The Master Plan designation for the parcel is single-family. To the south and southwest, the land uses are designated as Community Park. The remaining surrounding land uses are designated for Single-Family Residential.

The site frontage spans the entire length of Pembine Street. There is no outlet from the site. All existing single family homes are legal non-conforming with smaller lot frontges and setbacks. Buffington Drive, Henning Drive and Pembine Street are public roads with a varied width of 18 feet to 21 feet with a 50 feet wide Right-of-way. They are paved with chip seal pavement and are not planned for Asphalt pavement.



There is one house that sits on the opposite side of Pembine Street which is located at the proposed entrance driveway into the development (See picture to the left).

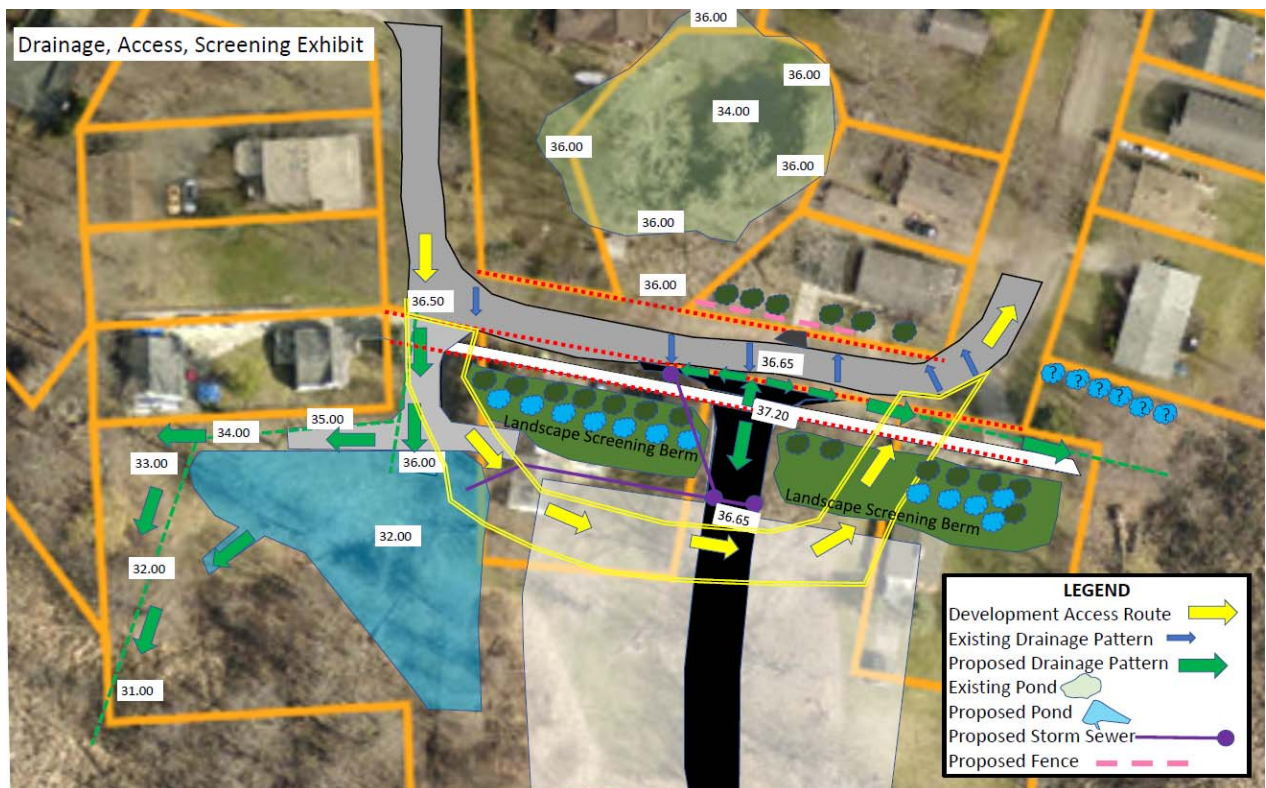
ORDINANCE REQUIREMENTS

This project was reviewed for conformance with the Zoning Ordinance with respect to Article 3 (Zoning Districts), Article 4 (Use Standards), Article 5 (Site Standards), and any other applicable provisions of the Zoning Ordinance. **Please see the attached chart for information pertaining to ordinance requirements.** Items in **bold** below must be addressed and incorporated as part of the Final Site Plan submittal:

1. One-Family Cluster Option: All Woodlands and Wetlands used to qualify for this option shall be left in their natural state so as to remain in excess of 50% of the net site area (excluding right-of-way). **The site plan indicates 4.92 acres (53%) to be preserved.**
2. Preservation of Open Space (Sec. 3.28.8.C): *The areas to be dedicated as open space and recreational use, showing access, location and any improvements. Assurance of the permanence of the open space and its continued maintenance shall be submitted for review and approval by the City Attorney. The City Attorney shall review and render an opinion with respect to:*
 - i. *The proposed manner of holding title to the open space.*
 - ii. *The proposed manner of payment of taxes.*
 - iii. *The proposed method of regulating the use of open land.*
 - iv. *The proposed method of maintenance of property and the financing thereof.*

*v. Any other factor relating to the legal or practical problems of ownership and maintenance of the open land.***The applicant should provide a draft document with final site plan submittal. This will be subject to City Council approval and acceptance.**

3. Meetings with Neighboring Residents: The applicant held two public meetings to gather comments from the surrounding residents. The applicant noted that they also met individually with few of the immediate neighbors multiple times. The applicant voluntarily agreed to pay for installation of landscape screening and a 4 feet fence on the property north of Pembine Street to screen the existing residence from headlights, as shown in the image below. However, details about type of screening are not provided. Proposed fence would require installation. The applicant and the home owner should consider the permit requirements and maintenance as part of their agreement.



4. Previous conditions: Planning Commission approved the Preliminary Site Plan for a similar development on the subject property on June 25, 2003 subject to a number of conditions. The current layout is using a similar option with slightly different road layout. At that time, a meaningful discussion happened about a number of items and the approval was subject to the following conditions. **It is staff's opinion that some of those conditions still apply for the current plan and the applicant should address them in the revised submittal.** The approval was subject to the following conditions at that time:
- Understanding that the site plan does not carry with it an approval of the lake access lot: At that time, there was a reference to a lake access lot which is under the same ownership. The current plan does not refer to any proposed changes or use of the lake access lot located north side of South Lake Drive (50-22-03-327-004). **The applicant agreed to comply by this requirement as a condition of site plan approval.**
 - 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. **The applicant agreed to comply by this requirement as a condition of site plan approval.**

- c. Limit Construction times with respect to elementary school bus schedule **The applicant agreed to comply by this requirement as a condition of site plan approval.**
 - d. Construction traffic to comply with the City load limits. **Pembine Street, Buffington Drive and Henning Drives have chip seal pavement. The City does not intend to widen or pave the roads at this time. The applicant has noted that the construction traffic would access the site entering from Buffington and exiting on Henning. However, heavy equipment trucks will use the yellow path to maneuver rather than Pembine. (See image above).**
5. Deviations: Following items do not conform to the Ordinance requirements for the proposed development: (Updated 09-20-19)
- a. These two items would require Zoning Board of Appeals approval as the current plan does not meet the following pre-requisite listed in Section 3.28.6.C.iv.a: *A landscape berm meeting the requirements of Section 5.5.3.A.i -ii is provided adjacent to other single family residential districts.* **Staff is in support of the proposed variances due to presence of quality wetlands and woodlands along the boundaries abutting single family districts to the east, west and south. Construction of a berm along these boundaries would be impractical. The applicant is currently proposing a berm at the entrance to the north.**
 - i. Distance of cluster from streets and ROW (Sec. 3.28. 4. D): Clusters cannot be within 30 feet from edge of private drive. They are currently proposed at 25 feet.
 - ii. Distance between clusters (Sec. 3.28. 5) Reduction of minimum required distance between clusters 1-2-3 cluster and 22-23-24-25 cluster. A minimum of 85 feet is required, 78 feet is proposed;
 - b. The applicant has indicated they will seek a waiver for the minimum opposite-side driveway spacing requirement. This requires Planning Commission approval
 - c. A waiver may be required for not meeting the minimum distance between the sidewalk and back-of-curb. This requires administrative approval of the City Engineer;
 - d. To allow trees along proposed provide to be farther than 15 feet from edge of pavement due to a lack of room for them between the sidewalk and the edge of pavement. Actual number of trees subject to City's landscape architect approval at the time of final site plan review.
 - e. A waiver is requested for lack of street trees along Pembine that can't be planted due to a lack of space between the sidewalk and road.
6. Proposed Patio and Woodlands: The applicant has indicated that the construction of decks and patios will not result in additional woodland removals. Please note that any enclosed patios will be subject to building setback requirements.
7. Plan Review Chart: Planning review chart provides additional comments and requests clarification for certain items. **Please address them in addition to the comments provided in this letter.**
8. Wetlands and Woodlands review: The plans were not routed for complete review of wetland and woodland impacts as those reviews recommended approval of the last set of plans. Previous reviews are attached for reference. Following updated comments are provided for next submittal.
- a. The applicant should try to minimize the proposed impacts to the 25-foot wetland setbacks proposed impacts to trees and increase the number of on-site replacements.
 - b. Two (2) small wetland buffer impacts are indicated for rear yard grading in the areas of Units 6, 7 and Unit 16. The area near Units 6 & 7 is 'temporary' and should be restored with a native seed mix. The area near Unit 16 is permanent.
 - c. **The applicant should work to avoid pushing in the wetland buffer for the construction of ALL Units.**
 - d. The removals appear to be slightly higher than the last Plan. Currently 219 trees are being removed requiring **438** Woodland Replacement Credits. This is 8 more trees than on the previous plan.

- e. Also, the Plan states that 91 Woodland Replacement Credits will be provided (20% of the required credits) on-site. This is up from 70 on-site Woodland Replacement Credits on the previous plan.
 - f. **However, the applicant has incorrectly counted the evergreen tree replacements as 1-to-1 replacement credit as opposed to 1.5-to-1. This shall be corrected on the Landscape Plan.**
 - g. **Currently the Plan shows 88.6 Woodland Replacement Credits, not 91.**
 - h. There appears to be conflict with the proposed woodland tree locations and existing overhead electric lines along the western property boundary. Please revise and update the calculations at the time of final site plan. (Updated 09-20-19)
 - i. ECT continues to recommend that the applicant work to provide as many of the required **438** Woodland Replacement Credits through on-site plantings. It should be noted that in addition to acceptable 2.5" caliper deciduous trees as well as 6-foot tall acceptable evergreen tree species, the City allows applicant's to meet Woodland Replacement Credit requirement plantings through planting of other types of approvable, native vegetation (as indicated in the Reforestation Credit Table contained in the Woodland Ordinance)
9. Planning Legal Acceptance Documents: Drafts for the following documents are required:
- a. Master Deed drafts and exhibits: Administrative review and approval
 - b. Conservation easements: City Attorney review

OTHER REVIEWS

- a. Engineering Review: Engineering is recommending approval, subject to the applicant providing additional information at the time of Final site plan.
- b. Landscape Review: Landscape is recommending approval of the Preliminary site plan subject to Planning Commission's approval of Landscape waivers. Additional items to be addressed with Final Site plan submittal.
- c. Wetlands Review: This site plan will require a City of Novi Wetland Use Permit as well as an Authorization to encroach the 25-Foot Natural Features Setback for any proposed impacts to the 25-foot wetland buffers. Wetlands recommend approval.
- a. Woodlands Review: This site plan will require a City of Novi Woodland Permit as well. Woodlands recommend approval.
- b. Traffic Review: Traffic recommends approval of the Preliminary site plan. Additional items to be addressed with final site plan submittal.
- c. Facade Review: Façade recommends approval.
- d. Fire Review: Fire is recommends approval with conditions.

PLANNING COMMISSION PUBLIC HEARING

The plan is schedule for a public hearing on September 25, 2019. Please submit the following prior to September 17, 2019 to stay on schedule.

- 1. Original site plan submittal (entire set including all sheets submitted for the review) in PDF format.
No revisions made.
- 2. A response letter addressing the comments and requesting the waivers/variances as noted in the review letters.
- 3. Color renderings of the site or building, if available for presentation purposes

ZONING BOARD OF APPEALS MEETING (Updated 09-20-19)

Zoning Board of Appeals approval is required for the following items prior to Final site plan approval.

- 1. Distance of cluster from streets and ROW (Sec. 3.28. 4. D): Clusters cannot be within 30 feet from edge of private drive. They are currently proposed at 25 feet.
- 2. Distance between clusters (Sec. 3.28. 5) Reduction of minimum required distance between clusters 1-2-3 cluster and 22-23-24-25 cluster. A minimum of 85 feet is required, 78 feet is proposed;

Please contact Kate Oppermann at 248-347-0459 for more details about the process and the timeline. The deadline for next meeting on November 19 is October 1, 2019.

FINAL SITE PLAN SUBMITTAL

After receiving the Preliminary site plan approval, please submit the following for final site plan approval.

1. Final Site Plan Application
2. Response letter
3. Six copies of final site plan

ELECTRONIC STAMPING SET SUBMITTAL AND RESPONSE LETTER

After receiving Final Site Plan approval, please submit the following for Electronic stamping set approval:

1. Plans addressing the comments in all of the staff and consultant review letters in PDF format.
2. Response letter addressing all comments in ALL letters and ALL charts and **refer to sheet numbers where the change is reflected.**

STAMPING SET APPROVAL

Stamping sets are still required for this project. After having received all of the review letters from City staff the applicant should make the appropriate changes on the plans and submit **10 size 24" x 36" copies with original signature and original seals,** to the Community Development Department for final Stamping Set approval.

STREET AND PROJECT NAME

Project and street names are approved.

PRE-CONSTRUCTION MEETING

A Pre-Construction meeting is required for this project. Prior to the start of any work on the site, Pre-Construction (Pre-Con) meetings must be held with the applicant's contractor and the City's consulting engineer. Pre-Con meetings are generally held after Stamping Sets have been issued. **No work on the site may be commenced before a pre-construction meeting is held.** There are a variety of requirements, fees and permits that must be issued before a Pre-Con can be scheduled. If you have questions regarding the checklist or the Pre-Con itself, please contact Sarah Marchioni [248.347.0430 or smarchioni@cityofnovi.org] in the Community Development Department.

CHAPTER 26.5

Chapter 26.5 of the City of Novi Code of Ordinances generally requires all projects be completed within two years of the issuance of any starting permit. Please contact Sarah Marchioni at 248-347-0430 for additional information on starting permits. The applicant should review and be aware of the requirements of Chapter 26.5 before starting construction.

If the applicant has any questions concerning the above review or the process in general, do not hesitate to contact me at 248.735.5607 or skomaragiri@cityofnovi.org.



Sri Ravali Komaragiri – Planner



PLANNING REVIEW CHART: R-4_One Family Residential with Cluster Option

Review Date: August 22, 2019
Review Type: Preliminary Site Plan (1st Revision)
Project Name: JSP18-76 Scenic Pines Estates
Plan Date: July 26, 2019
Prepared by: Sri Komaragiri, Planner
Contact: **E-mail:** skomaragiri@cityofnovi.org; **Phone:** (248) 735-5607

Items in **Bold** need to be addressed by the applicant with the next submittal. Underlined items need to be addressed on the Final Site Plan.

Item	Required Code	Proposed	Meets Code	Comments
Zoning and Use Requirements				
Master Plan (adopted July 27, 2017)	Single Family, with master planned 3.3 maximum dwelling units per acre.	25 Unit single family residential development with 3.3 DUA (net site area: 7.62Ac)	Yes	
Zoning (Effective December 25, 2013)	R-4:One-Family Residential	R-4: One-Family Residential site condominium with cluster development option	Yes	This would require a Planning Commission approval following a 15-day public hearing. It is subject to Special land use requirements.
Uses Permitted (Sec.3.1.6)	Single Family Dwellings	Single Family Dwellings	Yes	
Phasing		Phasing is not proposed	Yes	
One-Family Clustering Option (Sec. 3.28)				
Intent (Sec. 3.28.1)	To allow flexibility in development of single-family homes to protect environmental significance of land	Total site area: 9.44 Acres Total ROW: 0.13 Ac Total Wetlands: 1.70 Ac Net Site Area for density: 7.61 Ac Total Woodlands: 7.45 Ac Woodlands proposed to be preserved: 4.96 Ac (53.3 %)	Yes	
Eligibility Requirements (Sec. 3.28.B.1.iv)	Atleast 50% of net site area(excluding ROW) is composed regulated natural features	Net site area for preservation= (gross site area-ROW): 9.31 Ac	Yes	Planning Commission should make a finding that conventional approach would destroy the land of environmental significance.

Item	Required Code	Proposed	Meets Code	Comments
Woodlands Preservation (Sec. 3.28.B.2)	Woodlands and Wetlands used to qualify for this option should be left in their natural state so as to remain in exceed of 50% of net site area	The site plan indicates 4.96 acres (53%) to be preserved.	Yes	
Maximum Density Allowed (Sec. 3.28.B.3)	Overall density cannot exceed maximum allowed density permitted by the zoning district. Current parcel zoning: R-4 Maximum density: 3.3 DUA	Net Site Area for density (exclude wetlands and ROW): 7.61 Ac Proposed Density: 3.3 DUA	Yes	
Attached Single Family Homes (Sec. 3.28. 4. A)	Refer to section for additional details if attaching of on-family homes is proposed	The site plan proposes single detached homes	NA	
Distance between detached single family homes (Sec. 3.28. 4. B)	Minimum between units with walls with openings: 10 feet Minimum between units with walls with no openings: 6 feet	Buildings appear to be 6 feet apart; A note on the plan indicates no openings on the side elevations	Yes	
Maximum number of homes per cluster (Sec. 3.28. 4. C)	No less than 2 homes No more than 4 homes Subject to Planning Commission approval	7 clusters ranging from 2 to 4 homes are proposed		
<u>Distance of cluster from streets and ROW</u> (Sec. 3.28. 4. D)	No closer than - 30 feet to private street or drive - 30 feet from public ROW - 75 feet to any peripheral property line	Appears to conform 25 feet from proposed internal drive	No	<u>A waiver is requested for reduced setbacks from 30 feet to 25 feet;</u> <u>Reduction of setbacks can be approved if compliance with sec. 3.28.6.C.iv listed in next page are demonstrated</u>
Cluster Orientation (Sec. 3.28.4. D)	Not to face directly to a major thoroughfare, non-residential district or use	It is surrounded by residential use, away from major thoroughfares	Yes	
Distance between clusters (Sec. 3.28. 5)	Refer to this section if a cluster more than 4 is proposed.	All clusters meet the minimum required except for one as noted in bold below	No	The Planning Commission may modify the minimum required distance in those instances where it is found that a natural amenity would be destroyed or topographical or soil

Item	Required Code		Proposed		Meets Code	Comments
						conditions limit a practical dimensional separation of clusters. <u>The applicant should provide a response to demonstrate the need for the reduction of separation.</u>
Cluster 1	Cluster 2	Total Number Of Homes	Minimum distance required (Front & Rear)	Proposed Front & Rear	Minimum distance required (Side)	Proposed Side
Opposite side of the street Clusters						
8-9-10-11	4-5-6-7	8	100	105	75	NA
18-19-20-21	4-5-6-7	8	100	NA	75	NA
4-5-6-7	12-13-14-15	8	100	138	75	NA
1-2-3	22-23-24-25	7	85	78	75	NA
1-2-3	18-19-20-21	7	85	NA	75	NA
12-13-14-15	16-17	6	75	75	60	NA
4-5-6-7	16-17	6	75	83	60	NA
8-9-10-11	16-17	6	75	75	60	NA
Same-side of the street Clusters						
8-9-10-11	12-13-14-15	8	100	NA	75	75
22-23-24-25	18-19-20-21	8	100	NA	75	75
1-2-3	4-5-6-7	7	85	NA	75	199
18-19-20-21	16-17	6	75	NA	60	105
Allowable exceptions for parcels less than 10 acres (Sec. 3.28.6)	T turn arounds or alternate access, subject to approval by the City Engineer and Fire Marshal	Site plan proposes a T-turn around		Yes?	Refer to Traffic review for comments. Compliance with Sec 5.10 is required	
	Units facing arterial and collector streets	Not proposed		NA		
Reduced setbacks (Sec. 3.28.6.C.iv)	For parcels less than 10 acres, reduced setbacks are allowed subject to the Planning Commission making the findings listed in Sec. 3.28.5.C. and the following:					
	Landscape berm is provided adjacent to other single family districts					
	Setbacks adjacent to sing family homes is not reduced less than rear setbacks (35 ft. for R-4)					
	Setbacks to private drives: 25 feet minimum	30 feet required; 25 feet proposed		Yes		

Item	Required Code	Proposed	Meets Code	Comments
	Minimum distance between clusters Front and rear: 55 feet Side: 25 feet			
	Setbacks from existing and proposed ROW: 40 feet minimum			
Site plan requirements (Sec. 3.28.8)	Show building envelope on plans	Shown as required	Yes	
	Architectural renderings of building façade elevations are required	Included	Yes	Refer to Façade review for more detail
	Assurance of the permanence of the open space and its continued maintenance is required for City attorney review and approval. Refer to section 3.28.8.C for all details	Boundaries indicated on sheet 7	Yes	City Council approval of a legal document is required to address this requirement
	The location of access drives, streets and off-street parking areas, sidewalks, trash receptacles, etc.	Shown as required; Trash will be picked up weekly by the curbside	Yes?	
	A landscape in accordance with section 5.5	Landscape plan is included	Yes	Refer to landscape review for more details
Building plans and elevations (Sec. 3.28.9)	Building plans and elevations for each type are required	Included	Yes	Refer to Façade review for more detail
Planning Commission requirements for berms and sidewalks	- Landscape berm along property line abutting a major thoroughfare or nonresidential district - 5 feet concrete walks on both sides of proposed drives within development	- Sidewalks provided on both sides as required	No?	<u>Refer to Engineering and landscape comments about the lack of minimum space between sidewalk and curb</u>
Site Plan approval	- Expires after 1 year if the development has not started in this period	- Not applicable at this time		
Height, bulk, density and area limitations (Sec. 3.1.5)				
Maximum Dwelling Unit Density (Sec. 3.1.6)	3.3 DUA	3.3 DUA	Yes	

Item	Required Code	Proposed	Meets Code	Comments
Minimum Lot Area (Sec 3.1.5)	10,000 square feet	Not applicable	NA	
Minimum Lot Width (Sec 3.1.5)	80 ft.	Not applicable	NA	
Building Setbacks (Sec 3.1.5)				
Front	30 ft.	Not applicable	NA	
Side	10 ft. one side 25 ft. total two sides	Not applicable	NA	
Rear	35 ft.	Not applicable	NA	
Maximum % of Lot Area Covered (Sec 3.1.5)	25% (By All Buildings)	10.52%	Yes	
Minimum Floor Area (Sec 3.1.5)	1,000 Sq.ft.	Not provided at this time	Yes?	Reviewed at Plot plan phase
Building Height (Sec 3.1.5)	35 ft. or 2.5 stories whichever is less	35 ft	Yes	
Frontage on a Public Street. (Sec. 5.12)	No lot or parcel of land shall be used for any purpose permitted by this Ordinance unless said lot or parcel shall front directly upon a public street, unless otherwise provided for in this Ordinance.	Fronting on Pembine Street (public)	Yes	
Decks and Porches (Sec. 3.32.7)	Open, unenclosed porch or paved terrace, excludes fixed canopies ,can project into required front yard for up to 4 feet; into required rear yard for up to 18 feet; Spas and gazeboes as an accessory to a deck shall be permitted in all areas allowable for placement of a deck.			
Note to District Standards (Sec 3.6)				
Area Requirements (Sec 3.6A & Sec. 2.2)	- Lot width shall be measured between two lines where a front setback line	Not applicable	NA	

Item	Required Code	Proposed	Meets Code	Comments
	intersects with side setback lines. - Distance between side lot lines cannot be less than 90% between the front setback line and the main building.			
Additional Setbacks (Sec 3.6B)	NA	Single family development and no off-street parking	NA	
Exterior Side yard abutting Streets (Sec 3.6C)	NA	Side yards abutting residential districts	NA	
Wetland/Water-course Setback (Sec 3.6M)	25ft. from boundary of a wetland and 25ft. from the ordinary high water mark of a watercourse.	Buffers are indicated on plans. Lot 7 appears too close to the buffer	Yes?	Refer to wetlands review for additional comments.
Other Requirements				
Residential Entryway Lighting	A residential development entrance light must be provided at the entrances to the development off of Dixon Road	Three pole lights along the Major drive internally. After reconsidering the Ordinance and to protect immediately opposite residents from glare, staff recommended eliminating the proposed entry way light.	Yes?	A photometric plan is provided that complies with the Ordinance requirements.
Development and Street Names	Development and street names must be approved by the Street Naming Committee before Preliminary Site Plan approval	Previous approval expired	NA	Please contact Hannah Smith at 248-347-0579 for next steps
Economic Impact Information	- Total cost of the proposed building & site improvements - Home size & expected sales price of new homes			
Legal Requirements				
Property Split or Combination	Property combination or split shall be reviewed and approved by the	The development proposes to combine three parcels	No	Properties should be combined prior to final site plan approval

Item	Required Code	Proposed	Meets Code	Comments
	Community Development Department.			
Development/ Business Sign	Sign permit applications that relate to construction of a new building or an addition to an existing building may submitted, reviewed, and approved as part of a site plan application. Refer to Planning review for more details	Signage is not indicated	NA	<u>For sign permit information contact Ordinance at 248-735-5678</u>
Master Deed	A draft master deed is required at the time of electronic stamping sets	Not required at this time	TBD	<u>Please submit a draft Master Deed including buffers and other easement at the time of electronic stamping sets</u>
Conservation Easements	The Applicant shall provide preservation/conservation easements for any areas of remaining wetlands and woodland.	Wetland and Woodland Conservation easements are required in addition to the One-family cluster option	TBD	<u>Refer to woodlands review letter for more details.</u> <u>Applicant is required to submit the drafts prior to stamping sets approval</u>

NOTES:

1. This table is a working summary chart and not intended to substitute for any Ordinance or City of Novi requirements or standards.
2. The section of the applicable ordinance or standard is indicated in parenthesis. Please refer to those sections in Article 3, 4 and 5 of the zoning ordinance for further details.
3. Please include a written response to any points requiring clarification or for any corresponding site plan modifications to the City of Novi Planning Department with future submittals.

ENGINEERING REVIEW



PLAN REVIEW CENTER REPORT

September 4, 2019

Engineering Review

Scenic Pines Estates

JSP18-0076

Applicant

Singh Development, LLC

Review Type

Revised Preliminary Site Plan

Property Characteristics

- Site Location: South of Pembine Street, East of West Park Drive
- Site Size: 9.44 acres
- Plan Date: 07/26/2019
- Design Engineer: Diffin-Umlor and Associates

Project Summary

- Construction of twenty-five detached single family homes, and the demolition of two single family homes and associated garages on the north end of the property. Site access would be provided via Pembine Street.
- Water service would be provided by an 8-inch extension from the existing 8-inch water main along Buffington Drive.
- Sanitary sewer service would be provided by an 8-inch extension into the development from a proposed pump station. A 4-inch force main connects the pump station to the existing 8-inch sanitary sewer at the intersection of Henning and Pembine Street.
- Storm water would be collected by a storm sewer collection system and conveyed/discharged to a detention basin in the northwest region of the development and an underground detention basin underneath Pristine Lane.

Recommendation

Conditional Approval of the Revised Preliminary Site Plan and Revised Preliminary Storm Water Management Plan is recommended, given all comments below regarding storm water management are satisfied by submittal of the Final Site Plan.

Comments:

The Revised Preliminary Site Plan conditionally meets the general requirements of Chapter 11 of the Code of Ordinances, the Storm Water Management Ordinance and the Engineering Design Manual. The following must be addressed prior to submittal of the Final Site Plan:

General

1. **In the next site plan submittal**, provide a utility crossing table indicating that at least 18-inch vertical clearance will be provided, or that additional bedding measures will be utilized at points of conflict where adequate clearance cannot be maintained.
2. The City standard detail sheets are not required for the Final Site Plan submittal. They will be required with the Stamping Set submittal. They can be found on the City website (www.cityofnovi.org/DesignManual).

Water Main

3. In the next site plan submittal, provide a profile for all proposed water main 8-inch and larger.
4. Label the size and quantity of the water main in Pembine Street.
5. Three (3) sealed sets of revised utility plans along with the MDEGLE permit application (06/12 rev.) for water main construction and the Streamlined Water Main Permit Checklist should be submitted to the Engineering Division for review, assuming no further design changes are anticipated. Utility plan sets shall include only the cover sheet, any applicable utility sheets and the standard detail sheets.

Sanitary Sewer

6. Provide sanitary sewer profiles with the next site plan submittal.
7. At the time of Final Site Plan submittal, provide all of the necessary information that was left blank pertaining to the pump station design - elevations of the HWL alarm, lag pump on, lead pump on, etc. – on the detail, table, and basis of design.
8. The sanitary sewer district is under direct jurisdiction of the Oakland County Water Resources Commissioner, and as such, the proposed sanitary pump station will need to be reviewed by OCWRC.
9. Three (3) sealed sets of revised utility plans along with the MDEGLE permit application (01/18 rev.) for sanitary sewer construction and the Streamlined Sanitary Sewer Permit Certification Checklist should be submitted to the Engineering Division for review, assuming no further design changes are anticipated. Utility plan sets shall include only the cover sheet, any applicable utility sheets and the standard detail sheets. Communicate with the Engineering Department if an expedited review is requested.

Storm Sewer

10. Label all inlet storm structures on the profiles. Inlets are only permitted in paved areas and when followed by a catch basin within 50 feet.

11. Label the 10-year HGL on the storm sewer profiles, and ensure the HGL remains at least 1-foot below the rim of each structure.
12. Illustrate all pipes intersecting storm structures on the storm profiles.
13. Provide a schedule listing the casting type and other relevant information for each proposed storm structure on the utility plan. Round castings shall be provided on all catch basins except curb inlet structures.

Storm Water Management Plan

14. The Storm Water Management Plan for this development shall be designed in accordance with the Storm Water Ordinance and Chapter 5 of the new Engineering Design Manual.
15. According to Section 5.7 (g) of the Engineering Design Manual, a minimum three (3) feet of separation should exist between the bottom of the underground detention unit and the top of the ground water table. High water table elevations are indicated on the soil borings SB7 and SB9, which are directly abutting the proposed underground detention system. However, the piezometer readings for the soil borings show that the average water table elevation is typically lower than that shown by the soil borings, i.e. at or near the required three (3) feet below the invert of the underground detention system. Thus, the City understands that the high water elevations shown on the soil borings will likely not impact the proposed underground detention system and staff is currently in support of this conclusion.
 - a. To reinforce the above conclusion of the average water table elevation, **submit one additional set of groundwater elevation readings for piezometers #6 and #10 with each future site plan submittal.**
16. The proposed volume of the pond sized for a 100-year storm event must be greater or equal to the required volume.
17. Consider removing the pretreatment structure for the detention basin and redesigning it to have a permanent 3-foot pool depth. This would satisfy the City's storm water quality standards.
18. Provide an access easement for maintenance over the storm water detention system and the pretreatment structure. Also, include an access easement to the detention area from the public road right-of-way.

Paving & Grading

19. Sidewalks on private roadways should be located such that the outside edge of the sidewalk is a minimum of 15 feet from back of curb. Any distance less than 15 feet will require approval from the City Engineer who is currently supporting this deviation.

20. Provide the manufacturer's specifications and load calculations for the proposed bridge in the middle of Pristine Lane prior to Final Site Plan approval.
21. Show noted guard rail on the Culvert Cross-Section and include its detail on plan.
22. Provide a note on the Grading Plan stating that the proposed pathway within the road right-of-way shall match existing grades at both ends.
23. Provide top of curb/walk and pavement/gutter grades to indicate height of curb adjacent to drive areas.
24. Provide a plan view and cross-section of the retaining wall.
25. Add existing grades to the entire Pembine Street frontage to clarify proper drainage on the street.
26. Note and show the limits of removal and replacement of the portion of the existing road (Pembine Street) affected by the water main and sanitary sewer extension.

Soil Erosion and Sediment Control

27. A SESC permit is required. A full review has not been completed at this time. Please address the comments below and submit a SESC permit application under separate cover. The application can be found on the City's website at <http://cityofnovi.org/Reference/Forms-and-Permits.aspx>.

Off-Site Easements

28. Any off-site utility easements anticipated must be executed **prior to final approval of the plans**. If you have not already done so, drafts of the easements and a recent title search shall be submitted to the Community Development Department as soon as possible for review, and shall be approved by the Engineering Division and the City Attorney prior to executing the easements.

The following must be submitted with the Final Site Plan:

29. A letter from either the applicant or the applicant's engineer must be submitted with the Final Site Plan highlighting the changes made to the plans addressing each of the comments listed above and indicating the revised sheets involved. **Additionally, a statement must be provided stating that all changes to the plan have been discussed in the applicant's response letter.**
30. An itemized construction cost estimate must be submitted to the Community Development Department for the determination of plan review and construction inspection fees. This estimate should only include the civil site work and not any costs associated with construction of the building or any demolition work. **The estimate must be itemized** for each utility (water, sanitary, storm sewer), on-site paving (square yardage), right-of-way paving (including proposed right-of-way), grading, and the storm water basin (basin construction, control structure, pre-treatment structure and restoration).

The following must be addressed prior to construction:

31. A pre-construction meeting shall be required prior to any site work being started. Please contact Sarah Marchioni in the Community Development Department to setup a meeting (248-347-0430).
32. A City of Novi Grading Permit will be required prior to any grading on the site. This permit will be issued at the pre-construction meeting (no application required). No fee is required for this permit.
33. Material certifications must be submitted to Spalding DeDecker for review prior to the construction of any onsite utilities. Contact Ted Meadows at 248-844-5400 for more information.
34. Construction inspection fees in an amount that is to be determined must be paid to the Community Development Department.
35. Legal escrow fees in an amount that is to be determined must be deposited with the Community Development Department. All unused escrow will be returned to the payee at the end of the project. This amount includes engineering legal fees only. There may be additional legal fees for planning legal documents.
36. A storm water performance guarantee in an amount equal to 120% of the cost required to complete the storm water management facilities, as specified in the Storm Water Management Ordinance, must be posted at the Community Development Department.
37. Water and Sanitary Sewer Fees must be paid prior to the pre-construction meeting. Contact the Water & Sewer Division at 248-347-0498 to determine the amount of these fees.
38. A street sign financial guarantee in the amount of \$3,600 (\$400 per traffic control sign proposed) must be posted at the Community Development Department. Signs must be installed in accordance with MMUTCD standards.
39. A Soil Erosion Control Permit must be obtained from the City of Novi. Contact Sarah Marchioni in the Community Development Department, Building Division (248-347-0430) for forms and information. The financial guarantee and inspection fees will be determined during the SESC review.
40. A permit for all proposed work activities within the road right-of-way must be obtained from the City of Novi. This application is available from the City Engineering Division or on the City website and can be filed once the Final Site Plan has been submitted. Please contact the Engineering Division at 248-347-0454 for further information. Please submit the cover sheet, standard details and plan sheets applicable to the permit only.
41. A permit for water main construction must be obtained from the MDEGLE. This permit application must be submitted through the Engineering Division after the water main plans have been approved. Please submit the cover

- sheet, overall utility sheet, standard details and plan/profile sheets applicable to the permit.
42. A permit for sanitary sewer construction must be obtained from the MDEGLE. This permit application must be submitted through the Engineering Division after the sanitary sewer plans have been approved. Please submit the cover sheet, overall utility sheet, standard details and plan/profile sheets applicable to the permit.
 43. An NPDES permit must be obtained from the MDEGLE since the site is over 5 acres in size. The MDEGLE may require an approved SESC plan to be submitted with the Notice of Coverage.
 44. An inspection permit for the sanitary sewer tap must be obtained from the Oakland County Water Resource Commissioner (OCWRC).
 45. Permits for the construction of each retaining wall exceeding 48 inches in height (measured from bottom of the footing to top of the wall) must be obtained from the Community Development Department (248-347-0415).
 46. The amount of the incomplete site work performance guarantee for this development is equal to 1.2 times the amount required to complete the site improvements, excluding the storm water facilities, as specified in the Performance Guarantee Ordinance. This guarantee will be reduced prior to the Temporary Certificate of Occupancy (TCO), at which time it will be based on the percentage of construction completed.

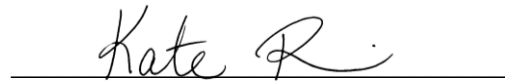
The following must be addressed prior to issuance of building permits:

47. All easements and agreements referenced above must be executed, notarized and approved by the City Attorney and Engineering Division.
48. A Bill of Sale for the utilities conveying the improvements to the City of Novi must be submitted to the Community Development Department. This document is available on our website.
49. The City's consultant Engineer Spalding DeDecker will prepare the record drawings for this development. The record drawings will be prepared in accordance with Article XII, Design and Construction Standards, Chapter 11 of the Novi Code of Ordinances.
50. Submit to the Community Development Department Waivers of Lien from any parties involved with the installation of each street as well as a Sworn Statement listing those parties. The Waivers of Lien shall state that all labor and material expenses incurred in connection with the subject construction improvements have been paid.
51. Submit to the Community Development Department, Waivers of Lien from any parties involved with the installation of each utility as well as a Sworn Statement listing those parties and stating that all labor and material

- expenses incurred in connection with the subject construction improvements have been paid.
52. Submit a Maintenance Bond to the Community Development Department in an amount that is equal to 25 percent of the cost of the construction of the utilities to be accepted. This bond must be for a period of two years from the date that the Utility Acceptance Permit is issued by the City of Novi Engineering Division. This document is available on our website.
 53. Submit an up-to-date Title Policy (dated within 90 days of City Council consideration of acceptance) for the purpose of verifying that the parties signing the Easement and Bill of Sale documents have the legal authority to do so. Please be sure that all parties of interest shown on the title policy (including mortgage holders) either sign the easement documents themselves or provide a Subordination Agreement. Please be aware that the title policy may indicate that additional documentation is necessary to complete the acceptance process.

To the extent this review letter addresses items and requirements that require the approval of or a permit from an agency or entity other than the City, this review shall not be considered an indication or statement that such approvals or permits will be issued.

Please contact Kate Richardson at (248) 347-0586 with any questions.



Kate Richardson, EIT
Plan Review Engineer

cc: Sri Komaragiri, Community Development
Ben Croy, PE; Engineering
Victor Boron, Engineering

LANDSCAPE REVIEW



PLAN REVIEW CENTER REPORT

August 9, 2019

Second Revised Preliminary Site Plan - Landscaping

Review Type

Second Revised Preliminary Landscape Review

Job

JSP18-0076

Property Characteristics

- Site Location: Pembine Street
- Site Acreage: 9.3 acres
- Site Zoning: R-4
- Adjacent Zoning: North, east, west: R-4; South: RA
- Plan Date: 6/18/2019

Ordinance Considerations

This project was reviewed for conformance with Chapter 37: Woodland Protection, Zoning Article 5.5 Landscape Standards, the Landscape Design Manual and any other applicable provisions of the Zoning Ordinance. Items in **bold** below must be addressed and incorporated as part of the Final Site Plan submittal. Please follow guidelines of the Zoning Ordinance and Landscape Design Guidelines. This review and the accompanying Landscape Chart are summaries and are not intended to substitute for any Ordinance.

Recommendation

This project is **recommended for approval for Preliminary Site Plan**. Two landscape waivers are required, one of which is completely supported by staff, and the other is supported with the request that the applicant explore options to reduce that waiver or eliminate it entirely. If the waivers are granted, the changes listed below can be incorporated in Final Site Plans.

GENERAL COMMENT:

The layout is extremely tight, which causes landscape waivers that would normally not be supported by staff. However, as the tightness is proposed in order to preserve more existing trees in the woods behind the units, extra consideration for them was given.

LANDSCAPE WAIVERS REQUIRED:

1. 9 street trees are planted more than 15 feet behind the curb, and not between the sidewalk and curb. *This waiver request is conditionally supported by staff as the trees' positioning is largely driven by the units being located closer to the street in order to preserve existing trees. However, it appears that some trees could be located closer to the street with a realignment of some of the utility lines, particularly water and storm. If possible, this should be done to reduce the waiver as much as possible.*
2. A waiver is requested for 4 street trees along Pembine that can't be planted due to a lack of space between the sidewalk and road. *This waiver is supported by staff (although only 8 trees are required, not 9, so the waiver is only for 3 trees).*

Ordinance Considerations

Existing Soils (Preliminary Site Plan checklist #10, #17)
Provided

Existing and proposed overhead and underground utilities, including hydrants (LDM 2.e.(4))

1. Provided
2. **Please adjust the location of underground utility lines and buildings such that all street trees can be placed between the sidewalk and curb, as is required by the ordinance.** In certain situations a waiver for locating them behind the sidewalk can be requested, in order to preserve more natural area, but they must be no further than 15 feet from the curb. The current configuration requires that 9 of the 25 required interior street trees be planted more than 15 feet more from the curb.
3. **The positioning of those trees behind the sidewalk, and more than 15 feet from the curb, requires a landscape waiver that is only grudgingly supported by staff. Please adjust the utility layout to allow as many as possible of the required street trees to be planted within 15 feet of the curb.**

Existing Trees (Sec 37 Woodland Protection, Preliminary Site Plan checklist #17 and LDM 2.3 (2))

1. The entire site is occupied by regulated woodland.
2. Tree survey, tree chart, and designation of trees to be removed are provided.
3. **Please see ECT's letters for full reviews of the wetlands and woodlands.**

Adjacent to Residential - Buffer (Zoning Sec. 5.5.3.B.ii and iii)

Property is adjacent to Residential but it is a Residential project so no buffering is required.

Adjacent to Public Rights-of-Way – Berm/Wall, Buffer and Street Trees (Zoning Sec. 5.5.3.B.ii, iii)

1. The required greenbelt and greenbelt plantings are proposed.
2. The required 4 foot tall berm is proposed but the contours and labels are not clearly visible on the Landscape Plan or Grading Plan. **Please make the contour lines more legible on the Grading Plan.**
3. 3 of 8 required street trees along Pembine are not proposed due to a lack of room in the right-of-way for those trees and a landscape waiver is requested. *This request is supported by staff.*

Lot Street Trees (LDM 2)

As no lots are proposed on the site, and there are no established standards for a site of this type, the requirement for street trees is based on the table in Section 2.a.(2) of the Landscape Design Manual, or 1 per dwelling unit. As 25 units are proposed, 25 trees are required, and 25 are provided. These have all been located close to the units.

Parking Lot Landscaping (Zoning Sec. 5.5.3.C.)

No parking areas are proposed.

Plant List (LDM 2.h. and t.)

1. Provided
2. 16 of 19 species used (84%) are native to Michigan.
3. The tree diversity standard is sufficiently met.

Planting Notations and Details (LDM)

Provided

Storm Basin Landscape (Zoning Sec 5.5.3.E.iv and LDM 1.d.(3))

1. Provided
2. No Phragmites was found on the site.

Irrigation (LDM 1.a.(1)(e) and 2.s)

1. The proposed landscaping must be provided with sufficient water to become established and survive over the long term.
2. Please provide an irrigation plan or note how this will be accomplished if an irrigation plan is not provided on Final Site Plans.
3. An irrigation system plan should be provided in electronic stamping sets at the latest.

Snow Deposit (LDM.2.q.)

1. A note indicates that snow will be deposited along the drive.
2. **An additional note should state that snow must not be piled on the sidewalk as multiple sections of sidewalk are immediately behind the curb.**

Corner Clearance (Zoning Sec 5.9)

Provided

If the applicant has any questions concerning the above review or the process in general, do not hesitate to contact me at 248.735.5621 or rmeader@cityofnovi.org.



Rick Meader – Landscape Architect

LANDSCAPE REVIEW SUMMARY CHART – REVISED PRELIMINARY SITE PLAN

Location: Pembine Street
Review Date: August 9, 2019
Project Name: JSP18 – 0076: SCENIC PINES ESTATES
Plan Date: 6/18/19
Prepared by: Rick Meader, Landscape Architect E-mail: rmeader@cityofnovi.org;
 Phone: (248) 735-5621

Items in **Bold** need to be addressed by the applicant before approval of the Preliminary Site Plan.
Underlined items need to be addressed for Final Site Plan.

GENERAL COMMENT:

The layout is extremely tight, which causes a significant landscape waiver that would normally not be supported by staff. However, as the tightness is proposed in order to preserve more existing trees in the woods behind the units, extra consideration for it was given.

LANDSCAPE WAIVERS REQUIRED:

1. 9 street trees are planted more than 15 feet behind the curb, and not between the sidewalk and curb. *This waiver request is conditionally supported by staff as the trees' positioning is largely driven by the units being located closer to the street in order to preserve existing trees. However, it appears that some trees could be located closer to the street with a realignment of some of the utility lines, particularly water and storm. If possible, this should be done to reduce the waiver as much as possible or eliminate it entirely.*
2. A waiver is requested for 4 street trees along Pembine that can't be planted due to a lack of space between the sidewalk and road. *This waiver is supported by staff (although only 8 trees are required, not 9, so the waiver is only for 3 trees).*

Item	Required	Proposed	Meets Code	Comments
Landscape Plan Requirements (LDM (2))				
Landscape Plan (Zoning Sec 5.5.2, LDM 2.e.)	▪ New commercial or residential developments ▪ Addition to existing building greater than 25% increase in overall footage or 400 SF whichever is less. ▪ 1"=20' minimum with proper North. Variations from this scale can be approved by LA ▪ Consistent with plans throughout set	Scale: 1"=50'	Yes	
Project Information (LDM 2.d.)	Name and Address	Yes	Yes	
Owner/Developer Contact Information (LDM 2.a.)	Name, address and telephone number of the owner and developer or association	Yes	Yes	

Item	Required	Proposed	Meets Code	Comments
Landscape Architect contact information (LDM 2.b.)	Name, Address and telephone number of RLA/LLA	Yes	Yes	
Sealed by LA. (LDM 2.g.)	Requires original signature	Yes	Yes	
Miss Dig Note (800) 482-7171 (LDM.3.a.(8))	Show on all plan sheets	Yes	Yes	
Zoning (LDM 2.f.)	Include all adjacent zoning	Zoning map provided on Cover Sheet	Yes	
Survey information (LDM 2.c.)	- Legal description or boundary line survey - Existing topography	Topographic survey and description on Sheet 2	Yes	
Existing plant material Existing woodlands or wetlands (LDM 2.e.(2))	- Show location type and size. Label to be saved or removed. - Plan shall state if none exists.	- Tree Survey on Sheets 3- 5 - Tree Chart and Woodland Replacement Calculations are provided on Sheet 6 - Removals are clearly indicated on plan view and chart. - Wetland impacts are shown on Sheet 7. - Proposed conservation easements are shown on Sheet 8.	Yes	- A number of trees being saved are actually right on the tree protection fence line, so half of the root zones will be disturbed. (See 85, 119, 125, 188, 189, 190, 259, 251 and 480 as examples). - The applicant is showing those and others with impacts to the root zones as being bonded. See ECT's letters for detailed reviews of wetlands and woodlands Please provide a tree protection fence detail showing the fence at 1 foot outside of the dripline.
Soil types (LDM.2.r.)	- As determined by Soils survey of Oakland county - Show types, boundaries	Sheet 2	Yes	
Existing and proposed improvements (LDM 2.e.(4))	Existing and proposed buildings, easements, parking spaces, vehicular use areas, and R.O.W	Yes	Yes	
Existing and proposed utilities	Overhead and underground utilities,	Utility lines and structures are	Yes	1. The utility leads have been adjusted to

Item	Required	Proposed	Meets Code	Comments
(LDM 2.e.(4))	including hydrants ▪ Proposed light posts	shown ▪ Light poles are provided.		allow more unit trees to be planted in front of Units 18-21. 2. A landscape waiver is required for the 9 trees located behind the sidewalk and more than 15 feet from the curb. This is caused by the tight site layout and utility layout. This waiver is conditionally supported by staff as the tight layout will preserve more existing trees in the healthy woodland. 3. The applicant is highly encouraged to explore utility layout modifications, particularly with regard to water and storm, that would allow street trees to be located closer to the curb.
Proposed grading. 2' contour minimum (LDM 2.e.(1))	Provide proposed contours at 2' interval	▪ Spot elevations and proposed contours are provided on Sheet 9 ▪ Berm appears to be provided, but not clearly	Yes	Please move the detail callout on Sheet 9 so all contour labels are visible.
Snow deposit (LDM.2.q.)	Show snow deposit areas on plan	A note indicates that snow will be deposited along drives and along the edge of the road.	TBD	1. Sidewalks at the edge of the road should not have snow plowed on them as is likely given the proposed layout where significant stretches of sidewalk are immediately behind the curb. 2. Please add a note to this effect to the plans.
LANDSCAPING REQUIREMENTS				

Item	Required	Proposed	Meets Code	Comments
Parking Area Landscape Requirements LDM 1.c. & Calculations (LDM 2.o.)				
General requirements (LDM 1.c)	- Clear sight distance within parking islands - No evergreen trees	NA – no parking areas are provided		
Name, type and number of ground cover (LDM 1.c.(5))	As proposed on planting islands	NA		
General (Zoning Sec 5.5.3.C.ii)				
Parking lot Islands (a, b. i)	- A minimum of 300 SF to qualify 6" curbs - Islands minimum width 10' BOC to BOC	NA		
Curbs and Parking stall reduction (c)	Parking stall can be reduced to 17' and the curb to 4" adjacent to a sidewalk of min 7 ft.	NA		
Contiguous space limit (i)	Maximum of 15 contiguous spaces	NA		
Plantings around Fire Hydrant (d)	- No plantings with matured height greater than 12' within 10 ft. of fire hydrants 5 feet spacing between trees and underground lines.	Proper spacing from utility lines and structures is provided.	Yes	
Landscaped area (g)	Areas not dedicated to parking use or driveways exceeding 100 sq. ft. shall be landscaped	NA		
Clear Zones (LDM 2.3.(5))	25 ft corner clearance required. Refer to Zoning Section 5.5.9	A clear vision zone is provided at the entry to Pembine.	Yes	
Berms, Walls and ROW Planting Requirements				
Berms				
- All berms shall have a maximum slope of 33%. Gradual slopes are encouraged. Show 1ft. contours - Berm should be located on lot line except in conflict with utilities. - Berms should be constructed with 6" of top soil.				
Residential Adjacent to Non-residential (Zoning Sec 5.5.3.A and LDM 1.a)				
Berm requirements (Zoning Sec 5.5.A)	Adjacent Zoning is RA and R1	NA		
Planting requirements (LDM 1.a.)	LDM Novi Street Tree List	NA		
Adjacent to Public Rights-of-Way (Zoning Sec 5.5.3.A and LDM 1.b)				
Cross-Section of Berms (Zoning Sec 5.5.3.B and LDM 2.j)				
Slope, height and	Label contour lines	Cross section detail	Yes	

Item	Required	Proposed	Meets Code	Comments
width (Zoning Sec 5.5.3.A.v)	- Maximum 33% slope - Min. 4 feet crest	is provided on Sheet L-2		
Type of Ground Cover		Yes	Yes	Lawn
Setbacks from Utilities	Overhead utility lines and 15 ft. setback from edge of utility or 20 ft. setback from closest pole	A note indicates that no overhead lines exist on the site.	Yes	
Walls (LDM 2.k & Zoning Sec 5.5.3.vi)				
Material, height and type of construction footing	Freestanding walls should have brick or stone exterior with masonry or concrete interior	There are numerous walls proposed, some taller than 3.5'	TBD	
Walls greater than 3 ½ ft. should be designed and sealed by an Engineer		See above	TBD	Detailed wall designs will need to be provided with building plans.
ROW Landscape Screening Requirements(Sec 5.5.3.B. ii)				
Greenbelt width (2)(3) (5)	34 ft.	76'	Yes	
Min. berm crest width	4 ft.	Varies from 8-14 ft	Yes	
Minimum berm height (9)	4 ft.	4 ft	Yes	
3' wall (4) (7)	NA	4 ft tall stone veneer walls with 5 ft piers are proposed on both sides of the entry		Detailed wall designs will need to be provided with building plans.
Canopy deciduous or large evergreen trees Notes (1) (10) LDM1.d.(1)(b)	1 tree per 40 lf (368-28-15)/40 = 8 trees	9 trees	Yes	
Sub-canopy deciduous trees Notes (2)(10)	1 tree per 25 lf (368-15-28)/25 = 13 trees	14 trees	Yes	
Street Trees (LDM 1.d.(1) and Novi Street Tree List))	- Pembine Rd: 1 tree per 35 lf (367-100)/35= 8 trees - Dwelling units – 1 tree per unit * 25 units = 25 trees	<u>Pembine Road</u> 5 trees <u>Dwelling units:</u> 25 trees	- No - Yes	<u>Pembine Street</u> - A landscape waiver is requested for 3 street trees that can't be planted due to a lack of room in right-of-way east of Pristine Lane. <i>This is supported by staff.</i> <u>Pristine Lane</u> 1. Currently, 9 of 25 required street trees

Item	Required	Proposed	Meets Code	Comments
				are behind the sidewalk and more than 15 feet away from the curb. 2. Please locate all street trees no more than 15 feet from the street curb. This may require re-alignment of the underground utilities. 3. The current configuration requires a landscape waiver that will be strongly supported by staff if it can be shown that no alternatives exist that would allow more of the required trees to be planted within 15 feet of the curb (and 4 feet from the sidewalk and 5 feet from underground utilities).
Island & Boulevard Planting (Zoning Sec & LDM 1.d.(1)(e))	- Must be landscaped & irrigated - Mix of canopy/sub-canopy trees, shrubs, groundcovers, etc. - No plant materials between heights of 3-6 feet as measured from street grade	There is no island or boulevard on the plan.		
Transformers/Utility boxes (LDM 1.e from 1 through 5)	- A minimum of 2ft. separation between box and the plants - Ground cover below 4" is allowed up to pad. - No plant materials within 8 ft. from the doors	- No transformers are currently shown. - A note stating that all transformers are to be screened per the provided detail is provided.	Yes	
Detention/Retention Basin Requirements (Sec. 5.5.3.E.iv)				
Planting requirements (Sec. 5.5.3.E.iv)	- Clusters shall cover 70-75% of the basin rim area 10" to 14" tall grass along sides of basin	The required shrubs are provided	Yes	

Item	Required	Proposed	Meets Code	Comments
	Refer to wetland for basin mix			
Phragmites Control (Sec 5.5.6.C)	- Any and all populations of Phragmites australis on site shall be included on tree survey. - Treat populations per MDEQ guidelines and requirements to eradicate the weed from the site.	A note indicates that no Phragmites was found on the site.	Yes	
Woodland Replacements (Chapter 37 Woodlands Protection)				
Woodland Replacement Calculations – Required/Provided	- Calculations provided on Sheet 6 indicate that 219 regulated trees are being removed and 438 replacements are required. - Another 25 trees that will be preserved will have grading within the critical root zone so they are being bonded.	91 trees are proposed to be planted on the site. 7 of those are evergreen trees. - A deposit to the tree fund for the remaining credits will be made by the developer.	Yes	1. The trees proposed as replacements are all good choices for the habitat the development is in. 2. Please see ECT's letter for a review of the woodland impacts.
LANDSCAPING NOTES, DETAILS AND GENERAL REQUIREMENTS				
Landscape Notes – Utilize City of Novi Standard Notes				
Installation date (LDM 2.l. & Zoning Sec 5.5.5.B)	Provide intended date	Fall or spring, 2019 or 2020	Yes	
Maintenance & Statement of intent (LDM 2.m & Zoning Sec 5.5.6)	- Include statement of intent to install and guarantee all materials for 2 years. - Include a minimum one cultivation in June, July and August for the 2-year warranty period.	Yes	Yes	
Plant source (LDM 2.n & LDM 3.a.(2))	Shall be northern nursery grown, No.1 grade	Yes	Yes	
Irrigation plan (LDM 2.s.)	A fully automatic irrigation system and a method of draining is required with Final Site Plan	No		<u>Need for final site plan – by electronic stamping sets at the latest</u>
Other information (LDM 2.u)	Required by Planning Commission	NA		

Item	Required	Proposed	Meets Code	Comments
Establishment period (Zoning Sec 5.5.6.B)	2 yr. Guarantee	Yes	Yes	
Approval of substitutions. (Zoning Sec 5.5.5.E)	City must approve any substitutions in writing prior to installation.	Yes	Yes	
Plant List (LDM 2.h., 4)				
Quantities and sizes	Refer to LDM suggested plant list	Yes	Yes	
Root type		Yes	Yes	
Botanical and common names		Yes	Yes	
Breakdown of genus/species diversity (LDM 4).		The tree diversity is satisfactory. 16 of 19 species (84%) used are native to Michigan.	Yes	
Type and amount of lawn		Seed and sod	Yes	
Cost estimate (LDM 2.t)	For all new plantings, mulch and sod as listed on the plan	Provided	Yes	
Planting Details/Info (LDM 2.i) – Utilize City of Novi Standard Details				
Canopy Deciduous Tree	Refer to LDM for detail drawings	Yes	Yes	
Evergreen Tree		Yes	Yes	
Multi-stem Tree		Yes	Yes	
Shrub		Yes	Yes	
Perennial/ Ground Cover		Yes	Yes	
Tree stakes and guys. (Wood stakes, fabric guys)		Yes	Yes	
Tree protection fencing	Located at Critical Root Zone (1' outside of dripline)	Yes	Yes	
Other Plant Material Requirements (LDM 3)				
General Conditions (LDM 3.a)	Plant materials shall not be planted within 4 ft. of property line	Yes	Yes	
Plant Materials & Existing Plant Material (LDM 3.b)	Clearly show trees to be removed and trees to be saved.	Yes	Yes	
Landscape tree credit (LDM3.b.(d))	Substitutions to landscape standards for preserved canopy trees outside woodlands/ wetlands should be approved	None		

Item	Required	Proposed	Meets Code	Comments
	by LA. • Refer to Landscape tree Credit Chart in LDM			
Plant Sizes for ROW, Woodland replacement and others (LDM 3.c)	Refer to Chapter 37, LDM for more details	Yes	Yes	
Plant size credit (LDM 3.c.(2))	NA			
Prohibited plants (LDM 3.d)	No plants on City Invasive Species List	None are used		
Recommended trees for planting under overhead utilities (LDM 3.e)	Label the distance from the overhead utilities	NA		
Collected or Transplanted trees (LDM 3.f)		NA		
Nonliving Durable Material: Mulch (LDM 4)	▪ Trees shall be mulched to 4" depth and shrubs, groundcovers to 3" depth ▪ Specify natural color, finely shredded hardwood bark mulch. Include in cost estimate. ▪ Refer to section for additional information	Yes	Yes	
NOTES: 1. This table is a working summary chart and not intended to substitute for any Ordinance or City of Novi requirements or standards. 2. The section of the applicable ordinance or standard is indicated in parenthesis. For the landscape requirements, please see the Zoning Ordinance landscape section 5.5 and the Landscape Design Manual for the appropriate items under the applicable zoning classification. 3. Please include a written response to any points requiring clarification or for any corresponding site plan modifications to the City of Novi Planning Department with future submittals.				

WETLANDS REVIEW



ECT Project No. 190181-0400

June 18, 2019

Ms. Barbara McBeth, AICP
City Planner
Community Development Department
City of Novi
45175 W. Ten Mile Road
Novi, Michigan 48375

Re: Scenic Pines Estates (JSP18-0076)
Wetland Review of the Revised Preliminary Site Plan (PSP19-0091)

Dear Ms. McBeth:

Environmental Consulting & Technology, Inc. (ECT) has reviewed the Revised Preliminary Site Plan for the proposed Scenic Pines Estates project located on Parcel No. 50-22-03-378-008 (approximately 9.5 acres), south of South Lake Drive and east of West Park Drive. The entrance to proposed development will be off of Pembine Street near Buffington Street (Section 3). The Plan includes the construction of a twenty-five (25) unit residential development (detached single-family homes), entrance drive, utilities, and a stormwater detention basin.

This included a review of the Revised Preliminary Site Plan prepared by Diffin-Umlor & Associates dated May 1, 2019 and stamped "Received" by the City of Novi Community Development Department on May 24, 2019 (Plan). The Plan was reviewed for conformance with the City of Novi Wetland and Watercourse Protection Ordinance and the natural features setback provisions in the Zoning Ordinance.

ECT currently recommends approval of the Revised Preliminary Site Plan for Wetlands. The Applicant shall address the items noted in the *Wetland Comments* Section of this letter prior to receiving Wetland approval of the Final Site Plan.

The following wetland and woodland related items are required for this project:

Item	Required/Not Required/Not Applicable
Wetland Permit (specify Non-Minor or Minor)	Required (Non-Minor)
Wetland Mitigation	Not Required
Wetland Buffer Authorization	Required
EGLE Wetland Permit	Likely required. The project proposes impacts to wetland that appears to be MDEQ regulated.
Wetland Conservation Easement	Not Required

Based on our review of the Plan, Novi aerial photos, Novi GIS, City of Novi Official Wetlands and Woodlands Maps (see Figure 1), and on-site Wetland Boundary Verification conducted on January 8, 2019, this proposed project site contains City-Regulated Wetlands and City-Regulated Woodlands. The site contains and is directly adjacent to wetland areas that are regulated by the City of Novi as well as likely by

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the Michigan Department of Environment, Great Lakes, and Energy (EGLE; formerly MDEQ). Areas mapped as Regulated Wetland are located along the western and southern sides of the parcel, and portions of these wetlands are indicated on the property in the northwest and southeast corners (see Figure 1). A large portion of the project site consists of mature upland woods containing a variety of tree species including white oak (*Quercus alba*), red oak (*Quercus rubra*), basswood (*Tilia americana*), red maple (*Acer rubrum*), black cherry (*Prunus serotina*), pignut hickory (*Carya glabra*), eastern cottonwood (*Populus deltoides*), sassafras (*Sassafras albidum*), ironwood (*Ostrya virginiana*) and several other species. Based on the City of Novi Regulated Wetlands & Woodlands mapping, the majority of the site is mapped as City-Regulated Woodland. The Plan includes proposed impacts to both Regulated Wetlands and Regulated Woodlands.

The proposed project site contains three (3) main areas of existing wetland that were flagged on-site by the Wilson Road Group. These on-site wetland areas total approximately 1.70 acres. The wetlands are subject to regulation by the City of Novi and likely by EGLE. Permits will likely be required from EGLE and will be required from the City of Novi for construction activities involving on-site regulated wetland areas.

On-Site Wetland Evaluation

ECT's in-office review of available materials included the City of Novi Regulated Wetland and Watercourse map (see Figure 1), USGS topographic quadrangle map, NRCS soils map, USFWS National Wetland Inventory map, and historical aerial photographs (from Oakland County and Google Earth). Based on our review of this information it appears as if this proposed project site contains areas mapped as City-Regulated Wetlands/Watercourses. The site appears to contain wetland/watercourse areas that are regulated by the City of Novi as well as the Michigan Department of Environmental Quality (MDEQ), as the on-site wetland areas appear to be part of a larger wetland complex that extends west, south, and east off the project site and appears to be larger than 5 acres in size. ECT conducted an on-site wetland boundary verification for the parcel on January 8, 2019.

The focus of the site inspection was to review site conditions in order to determine whether City-regulated wetlands are found on-site. Diffin-Umlor and Associates had provided a map of the surveyed wetland flags (flags A1 through A25, B1 through B11, and C1 through C49). The on-site wetlands were flagged by the Wilson Road Group, Inc. Pink wetland boundary flagging was in place at the time of this site inspection. ECT reviewed the flagging and agrees that overall the wetland boundaries were accurately flagged in the field.

The following is a brief description of the on-site wetland features:

Wetland A – Forested and emergent wetland located along the west side of the subject site and continues off site to the west. The dominant wetland vegetation includes sedges (*Carex spp.*), reed canary grass (*Phalaris arundinacea*), eastern cottonwood (*Populus deltoides*), American elm (*Ulmus americana*), red maple (*Acer rubrum*), and some silver maple (*Acer saccharinum*). The wetland area immediately off-site to the west consists of mainly emergent wetland with cattail (*Typha spp.*) and common reed (*Phragmites australis*).

Wetland B – Mainly forested wetland located in the southeastern corner of the site and continues offsite to the northeast and south. The dominant wetland vegetation includes eastern cottonwood (*Populus deltoides*), American elm (*Ulmus americana*), red maple (*Acer rubrum*), and some silver maple (*Acer saccharinum*).

Wetland C – Mainly forested wetland located throughout the central portion of the site (extends from southwest section of the site to the northeast). This wetland continues off site to the north, east and south

and connects to the same wetland complex offsite as Wetlands A and B. Like in Wetland B, the dominant wetland vegetation includes eastern cottonwood (*Populus deltoides*), American elm (*Ulmus americana*), red maple (*Acer rubrum*), and some silver maple (*Acer saccharinum*).

Proposed Wetland Impacts

The proposed impacts to wetlands and 25-foot wetland setbacks are indicated on Sheet 3 (*Demolition Plan*). The Plan proposes one (1) direct impact to Wetland C for the purpose of constructing the entrance road (Pristine Lane), including a proposed bridge with wing walls, as well as proposed storm sewer and water main.

The Plan also includes the construction of a storm water management basin located in the northwest portion of the site. This proposed detention basin has a proposed outfall to the existing wetland on the west side of the site (i.e., Wetland A). No direct impacts to Wetland A are proposed for this construction.

The following table summarizes the proposed wetland impacts as listed on the *Demolition Plan*:

Table 1. Proposed Wetland Impacts

Wetland	City Reg?	MDEQ Reg?	Wetland Area (On-Site)	Impact Area	
			Acre	Square Feet	Acre
C	Yes, City Regulated / Essential	Likely	1.28	3,315	0.07
TOTAL	--	--	1.28	3,315	0.07

With regard to the 25-foot wetland setbacks, the Plan appears to propose encroachment into several of the wetland setback areas for the purpose of the construction of the outfall from the stormwater detention basin and the wetland crossing for the construction of Pristine Lane. Two (2) small wetland buffer impacts are indicated for rear yard grading in the areas of Units 6, 7 and 16. The Applicant shall indicate whether all proposed impacts to the 25-foot wetland buffer are permanent or temporary on subsequent plan submittals.

The following table summarizes the proposed wetland setback impacts as listed on the Plan:

Table 2. Proposed 25-Foot Wetland Buffer Impacts

Wetland Buffer	City Regulated?	Wetland Buffer Area	Wetland Buffer Area	Buffer Impact Area	Buffer Impact Area	Purpose of Impact
		Square Feet	Acre	Square Feet	Acre	
A	Yes, City Regulated / Essential	Not Provided	Not Provided	Not Provided	0.005	Stormwater outfall from basin
B	Yes, City Regulated / Essential	Not Provided	Not Provided	None	None	N/A

Wetland Buffer	City Regulated?	Wetland Buffer Area	Wetland Buffer Area	Buffer Impact Area	Buffer Impact Area	Purpose of Impact
		Square Feet	Acre	Square Feet	Acre	
C	Yes, City Regulated /Essential	Not Provided	Not Provided	Not Provided	0.001	Grading for Units 6 & 7
C	Yes, City Regulated /Essential	Not Provided	Not Provided	5,569	0.12	Construction of Pristine Lane
C	Yes, City Regulated /Essential	Not Provided	Not Provided	Not Provided	0.003	Grading for Unit 16
TOTAL	--	Not Provided	Not Provided	Not Provided	0.129	--

Wetland Mitigation Review

In general, it can be noted that in those cases where an activity results in the impact to wetland areas of 0.25-acre or greater that are deemed essential under City of Novi Ordinance subsection 12-174(b) mitigation shall be required. The applicant shall submit a mitigation plan which provides for the establishment of replacement wetlands at a ratio of 1:1 through 2:1 times the area of the natural wetland impaired or destroyed, if impacts meet or exceed the 0.25-acre threshold (emergent and scrub-shrub wetlands are generally mitigated at a 1.5-to-1 ratio, forested wetlands are mitigated for at a 2.0-to-1 ratio, and open water areas are mitigated for at a 1.0-to-1 ratio). EGLE's threshold for the requirement of wetland mitigation is 0.3-acre of wetland impacts. As currently proposed, the project does not require compensatory wetland mitigation.

Regulatory Status - EGLE

ECT has evaluated the on-site wetland areas and believes that the wetlands are considered to be essential/regulated by the City of Novi as Wetlands A, B, and C are larger than 2 acres in size as they extend off-site and are part of a larger wetland complex, and they are likely regulated by EGLE as the wetland complex that they all appear to be connected to exceeds five (5) acres in size. The overall wetland complex also appears to be within 500-feet of Walled Lake. As noted, overall, the wetlands appear to accurately flagged in the field and appear to be generally indicated accurately on the site plans provided by Diffin-Umlor & Associates.

The Michigan Department of Environment, Great Lakes, and Energy (EGLE) generally regulates wetlands that are within 500 feet of an inland lake, pond, or stream, or within 1,000 feet of a Great Lake, Lake St. Clair, the St. Clair River, or the Detroit River. Isolated wetlands five (5) acres in size or greater are also regulated. The MDEQ may also exert regulatory control over isolated wetlands less than five acres in size "...if the department determines that protection of the area is essential to the preservation of the natural resources of the state from pollution, impairment, or destruction and the department has notified the owner".

It is the applicant's responsibility to contact MDEQ in order to confirm the regulatory authority with respect to the on-site wetland areas.

Regulatory Status – City of Novi

The City of Novi Wetland and Watercourse Protection Ordinance (City of Novi Code of Ordinances, Part II, Chapter 12, Article V.; Division 2.) describes the regulatory criteria for wetlands and review standards for wetland permit applications. The City of Novi regulates wetlands that are: (1) contiguous to a lake, pond, river or stream, as defined in Administrative Rule 281.921; (2) two (2) acres in size or greater; or (3) less than two (2) acres in size but deemed essential to the preservation of the natural resources of the city under the criteria set forth in subsection 12-174(b). Wetlands deemed regulated by the City of Novi require the approval of a use permit for any proposed impacts to the wetland.

The on-site wetlands appear to be located directly adjacent to area depicted as regulated wetland on the City of Novi Regulated Wetland and Watercourse Map (Figure 1). ECT has evaluated the on-site wetlands (Wetlands A, B, and C) and believes that the wetlands are regulated by the City's Wetland and Watercourse Protection Ordinance as these wetland areas are all part of an overall wetland complex that is greater than 2 acres in size (i.e., extends off site).

The applicant shall provide information on subsequent plans that clearly indicates the areas of all of the existing on-site wetlands and their 25-foot setbacks/buffers (i.e., provide sizes in square feet or acres). The plans shall also clearly indicate the area (square feet and acres) of all wetland and wetland buffer impacts (both permanent and temporary, if applicable) and the volume (cubic yards) of all wetland impacts.

As noted above, any proposed use of the wetlands will require a City of Novi *Wetland Use Permit* as well as an *Authorization to Encroach the 25-Foot Natural Features Setback* for any proposed impacts to the 25-foot wetland buffers. The applicant is urged to minimize impacts to on-site wetlands and wetland setbacks to the greatest extent practicable. The City regulates wetland buffers/setbacks. Article 24, Schedule of Regulations, of the Zoning Ordinance states that:

“There shall be maintained in all districts a wetland and watercourse setback, as provided herein, unless and to the extent, it is determined to be in the public interest not to maintain such a setback. The intent of this provision is to require a minimum setback from wetlands and watercourses”.

Wetland Comments

ECT recommends that the Applicant address the items noted below in subsequent site plan submittals:

1. ECT encourages the Applicant to minimize impacts to on-site wetlands and 25-foot wetland setbacks to the greatest extent practicable. Any proposed impacts to the on-site wetlands will require a City of Novi *Wetland and Watercourse Use Permit*, and an *Authorization to Encroach the 25-Foot Natural Features Setback* for any proposed impacts to the 25-foot wetland/watercourse buffers. ECT specifically suggests that the applicant consider options for modifying the site layout in order to avoid encroachment into these 25-foot wetland setback areas for the purpose of grading for the individual units (i.e., Units 6, 7 & 16).
2. It should be noted that it is the Applicant's responsibility to confirm the need for a Permit from EGLE for any proposed wetland impacts. Final determination as to the regulatory status of any on-site wetlands (if applicable) shall be made by EGLE. The Applicant should provide a copy of the EGLE Wetland Use Permit application to the City (and our office) for review and a copy of the approved permit upon issuance. A City of Novi Wetland Permit cannot be issued prior to receiving this information.

3. On future site plan submittals, the applicant shall indicate, label and quantify the areas (square feet or acres) of all of the existing wetlands and 25-foot setbacks/buffers. Currently, the existing 25-foot wetland buffer areas have not been provided.
4. The square footage of Wetland Buffer Impact No. 5 (0.001-acre) has not been provided on the Plan.
5. The cubic yardage of fill for the proposed wetland impact shall be provided on the Plan.
6. The Plan should address how any temporary impacts to wetland or 25-foot wetland buffers shall be restored, if applicable. Sod or common grass seed is not authorized in these areas.

Recommendation

ECT currently recommends approval of the Revised Preliminary Site Plan for Wetlands. The Applicant shall address the items noted in the *Wetland Comments* Section of this letter prior to receiving Wetland approval of the Final Site Plan.

If you have any questions regarding the contents of this letter, please contact us.

Respectfully submitted,
ENVIRONMENTAL CONSULTING & TECHNOLOGY, INC.



Pete Hill, P.E.
Senior Associate Engineer

cc: Lindsay Bell, City of Novi Planner
Sri Komaragiri, City of Novi Planner
Rick Meader, City of Novi Landscape Architect
Hannah Smith, City of Novi Planning Assistant

Attachments: Figure 1 – City of Novi Regulated Wetland and Woodland Map
Site Photos



Figure 1. City of Novi Regulated Wetland & Woodland Map (approximate project boundary shown in red). Regulated Woodland areas are shown in green and Regulated Wetland areas are shown in blue.

Site Photos



Photo 1. Looking southwest at Wetland A in the northwest section of the proposed site (near area of proposed stormwater detention basin). ECT, January 8, 2019.



Photo 2. Looking northeast at Wetland B located in the southeast section of the site (ECT, January 8, 2019).



Photo 3. Looking northeast at Wetland C in the central portion of the proposed site (ECT, January 8, 2019).



Photo 4. Looking north at Wetland C and existing homes south of Pembine Street on the north side of the proposed site (ECT, January 8, 2019).

WETLAND EVALUATION

January 10, 2019

Ms. Barbara McBeth, AICP
City Planner, Community Development Department
City of Novi
45175 W. Ten Mile Road
Novi, Michigan 48375

Re: Scenic Pines (JSP18-0076)
Parcel 50-22-03-378-008
Wetland Evaluation (PWT18-0014)

Dear Ms. McBeth:

Environmental Consulting & Technology, Inc. (ECT) conducted a wetland evaluation for the proposed Scenic Pines project located on Parcel No. 50-22-03-378-008 on January 8, 2019. The subject property (approximately 9.5 acres) is located south of South Lake Drive, east of West Park Drive. The entrance to proposed development will be off of Pembine Street near Buffington Street (Section 3). ECT reviewed a wetland boundary layout sheet prepared by Diffin-Umlor & Associates stamped "Received" by the City of Novi Community Development Department on January 4, 2019.

A large portion of the project site consists of mature upland woods containing a variety of tree species including: white oak (*Quercus alba*), red oak (*Quercus rubra*), basswood (*Tilia americana*), red maple (*Acer rubrum*), black cherry (*Prunus serotina*), pignut hickory (*Carya glabra*), eastern cottonwood (*Populus deltoides*), sassafras (*Sassafras albidum*), ironwood (*Ostrya virginiana*) and several other species. The proposed project site also contains a significant amount of high-quality wetland. Based on the City of Novi Regulated Wetlands & Woodlands mapping, the majority of the site is mapped as City-Regulated Woodland. Areas mapped as Regulated Wetland are located along the western and southern sides of the parcel, and portions of these wetlands are indicated on the property in the northwest and southeast corners (see Figure 1).

Wetland Evaluation

ECT's in-office review of available materials included the City of Novi Regulated Wetland and Watercourse map (see Figure 1), USGS topographic quadrangle map, NRCS soils map, USFWS National Wetland Inventory map, and historical aerial photographs (from Oakland County and Google Earth). Based on our review of this information it appears as if this proposed project site contains areas mapped as City-Regulated Wetlands/Watercourses. The site appears to contain wetland/watercourse areas that are regulated by the City of Novi as well as the Michigan Department of Environmental Quality (MDEQ.), as the on-site wetland areas appear to be part of a larger wetland complex that extends west, south, and east off the project site and appears to be larger than 5 acres in size.

The focus of the site inspection was to review site conditions in order to determine whether City-regulated wetlands are found on-site. As noted, Diffin-Umlor and Associates has provided a map (see Figure 2) of the surveyed wetland flags (flags A1 through A25, B1 through B11, and C1 through C49). The on-site wetlands were flagged by the Wilson Road Group, Inc. Pink wetland boundary flagging was in place at the time of this site inspection. ECT reviewed the flagging and agrees that overall the wetland boundaries were accurately flagged in the field with the exception of several flags along the south and east sides of Wetland C. It is ECT's opinion that some of the wetland boundaries need to be re-assessed by the applicant's wetland consultant. As noted above, the Wetland C boundary in the area of flag C9 and C16 should be re-flagged by the applicant's wetland consultant. These areas of wetland flags were hung on trees that were within areas

of standing water at the time of our wetland boundary evaluation. Additional signs of hydrology including water-stained leaves and water marks on tree trunks were also present outside of the currently-flagged wetland boundary in these areas.

Because there is little underbrush in these areas of the wooded wetlands, there are few places to hang the wetland flagging and the use of pin flags should be considered. If any changes to the locations of the wetland flags are made during this process, these wetland boundary flags shall be re-surveyed and indicated on the Plan. The revised locations can then be re-assessed at the time of Preliminary Site Plan review.

The following is a brief description of the on-site wetland features (see Figure 2 provided by Diffin-Umlor & Associates):

Wetland A – Forested and emergent wetland located along the west side of the subject site and continues off site to the west. The dominant wetland vegetation includes sedges (*Carex spp.*), reed canary grass (*Phalaris arundinacea*), eastern cottonwood (*Populus deltoides*), american elm (*Ulmus americana*), red maple (*Acer rubrum*), and some silver maple (*Acer saccharinum*). The wetland area immediately off-site to the west consists of mainly emergent wetland with cattail (*Typha spp.*) and common reed (*Phragmites australis*).

Wetland B – Mainly forested wetland located in the southeastern corner of the site and continues offsite to the northeast and south. The dominant wetland vegetation includes eastern cottonwood (*Populus deltoides*), american elm (*Ulmus americana*), red maple (*Acer rubrum*), and some silver maple (*Acer saccharinum*).

Wetland C – Mainly forested wetland located throughout the central portion of the site (extends from southwest section of the site to the northeast). This wetland continues off site to the north, east and south and connects to the same wetland complex offsite as Wetlands A and B. Like in Wetland B, the dominant wetland vegetation includes eastern cottonwood (*Populus deltoides*), american elm (*Ulmus americana*), red maple (*Acer rubrum*), and some silver maple (*Acer saccharinum*).

Regulatory Status - MDEQ

ECT has evaluated the on-site wetland areas and believes that the wetlands are considered to be essential/regulated by the City of Novi as Wetlands A, B, and C are larger than 2 acres in size as they extend off-site and are part of a larger wetland complex, and they are likely regulated by the MDEQ as the wetland complex that they all appear to be connected to exceeds five (5) acres in size. The overall wetland complex also appears to be within 500-feet of Walled Lake. As noted, overall, the wetlands appear to accurately flagged in the field and appear to be generally indicated accurately on the site plans provided by Diffin-Umlor & Associates.

The Michigan Department of Environmental Quality (MDEQ) generally regulates wetlands that are within 500 feet of an inland lake, pond, or stream, or within 1,000 feet of a Great Lake, Lake St. Clair, the St. Clair River, or the Detroit River. Isolated wetlands five (5) acres in size or greater are also regulated. The MDEQ may also exert regulatory control over isolated wetlands less than five acres in size "...if the department determines that protection of the area is essential to the preservation of the natural resources of the state from pollution, impairment, or destruction and the department has notified the owner".

It is the applicant's responsibility to contact MDEQ in order to confirm the regulatory authority with respect to the on-site wetland areas.

Regulatory Status – City of Novi

The City of Novi Wetland and Watercourse Protection Ordinance (City of Novi Code of Ordinances, Part II, Chapter 12, Article V.; Division 2.) describes the regulatory criteria for wetlands and review standards for wetland permit applications. The City of Novi regulates wetlands that are: (1) contiguous to a lake, pond, river or stream, as defined in Administrative Rule 281.921; (2) two (2) acres in size or greater; or (3) less than two (2) acres in size but deemed essential to the preservation of the natural resources of the city under the criteria set forth in subsection 12-174(b). Wetlands deemed regulated by the City of Novi require the approval of a use permit for any proposed impacts to the wetland.

The on-site wetlands appear to be located directly adjacent to area depicted as regulated wetland on the City of Novi Regulated Wetland and Watercourse Map (Figure 1). ECT has evaluated the on-site wetlands (Wetlands A, B, and C) and believes that the wetlands are regulated by the City's Wetland and Watercourse Protection Ordinance as these wetland areas are all part of an overall wetland complex that is greater than 2 acres in size (i.e., extends off site).

The applicant shall provide information on subsequent plans that clearly indicates the areas of all of the existing on-site wetlands and their 25-foot setbacks/buffers (i.e., provide sizes in square feet or acres). The plans shall also clearly indicate the area (square feet or acres) of all wetland and wetland buffer impacts (both permanent and temporary, if applicable) and the volume (cubic yards) of all wetland impacts.

It should be noted that in those cases where an activity results in the impact to wetland areas of 0.25-acre or greater that are deemed essential under City of Novi Ordinance subsection 12-174(b) mitigation shall be required. The applicant shall submit a mitigation plan which provides for the establishment of replacement wetlands at a ratio of 1:1 through 2:1 times the area of the natural wetland impaired or destroyed, if impacts meet or exceed the 0.25-acre threshold. In general, the MDEQ's threshold for the requirement of wetland mitigation is 0.3-acre of wetland impacts.

As noted above, any proposed use of the wetlands will require a City of Novi *Wetland Use Permit* as well as an *Authorization to Encroach the 25-Foot Natural Features Setback* for any proposed impacts to the 25-foot wetland buffers. The applicant is urged to minimize impacts to on-site wetlands and wetland setbacks to the greatest extent practicable. The City regulates wetland buffers/setbacks. Article 24, Schedule of Regulations, of the Zoning Ordinance states that:

“There shall be maintained in all districts a wetland and watercourse setback, as provided herein, unless and to the extent, it is determined to be in the public interest not to maintain such a setback. The intent of this provision is to require a minimum setback from wetlands and watercourses?”

Conclusions/Comments

Please consider the following comments as they relate to our on-site wetland verification inspection:

1. ECT encourages the Applicant to minimize impacts to on-site wetlands and 25-foot wetland setbacks to the greatest extent practicable. Any proposed impacts to the on-site wetlands will require a City of Novi *Wetland and Watercourse Use Permit*, and an *Authorization to Encroach the 25-Foot Natural Features Setback* for any proposed impacts to the 25-foot wetland/watercourse buffers.
2. In general, ECT concurs with the applicant's wetland consultant as to the boundaries of the on-site wetland areas (i.e., Wetlands A, B, and C). The approximate wetland boundaries are indicated in

Figure 2, attached. It is however ECT's opinion that several flags along the south and east sides of Wetland C shall be re-flagged. The Wetland C boundary in the area of flag C9 and C16 should be re-flagged by the applicant's wetland consultant. These areas of wetland flags were hung on trees that were within areas of standing water at the time of our wetland boundary evaluation. Additional signs of hydrology were also present outside of the currently-flagged wetland boundary in these areas including water-stained leaves and water marks on tree trunks.

Because there is little underbrush in these areas of the wooded wetlands, there are few places to hang the wetland flagging and the use of pin flags should be considered. If any changes to the locations of the wetland flags are made during this process, these wetland boundary flags shall be re-surveyed and indicated on the Plan. The revised locations can then be re-assessed at the time of Preliminary Site Plan review.

3. As noted above, it is the applicant's responsibility to contact MDEQ in order to confirm the regulatory authority and need for an MDEQ Permit with respect to any proposed impacts to the on-site wetlands. The Applicant should provide a copy of the MDEQ Wetland Use Permit application to the City (and our office) for review and a copy of the approved permit upon issuance. A City of Novi Wetland Permit cannot be issued prior to receiving this information.
4. On future site plan submittals, the applicant shall indicate, label and quantify the areas (square feet or acres) of all of the existing wetlands and 25-foot setbacks/buffers. In addition, any proposed impacts to these natural features shall be indicated on subsequent plan submittals, if applicable.

As always, please feel free to contact our office if you have any questions.

Sincerely,

ENVIRONMENTAL CONSULTING & TECHNOLOGY, INC.



Pete Hill, P.E.
Senior Associate Engineer

cc: Lindsay Bell, City of Novi Planner (lbell@cityofnovi.org)
Sri Komaragiri, City of Novi Planner (skomaragiri@cityofnovi.org)
Rick Meader, City of Novi Landscape Architect (rmeader@cityofnovi.org)
Hannah Smith, City of Novi Planning Assistant (hsmith@cityofnovi.org)

Attachments: Figure 1 – City of Novi Regulated Wetland & Woodland Boundaries Map
Wetland Plan (provided by Diffin-Umlor & Associates)
Site Photos

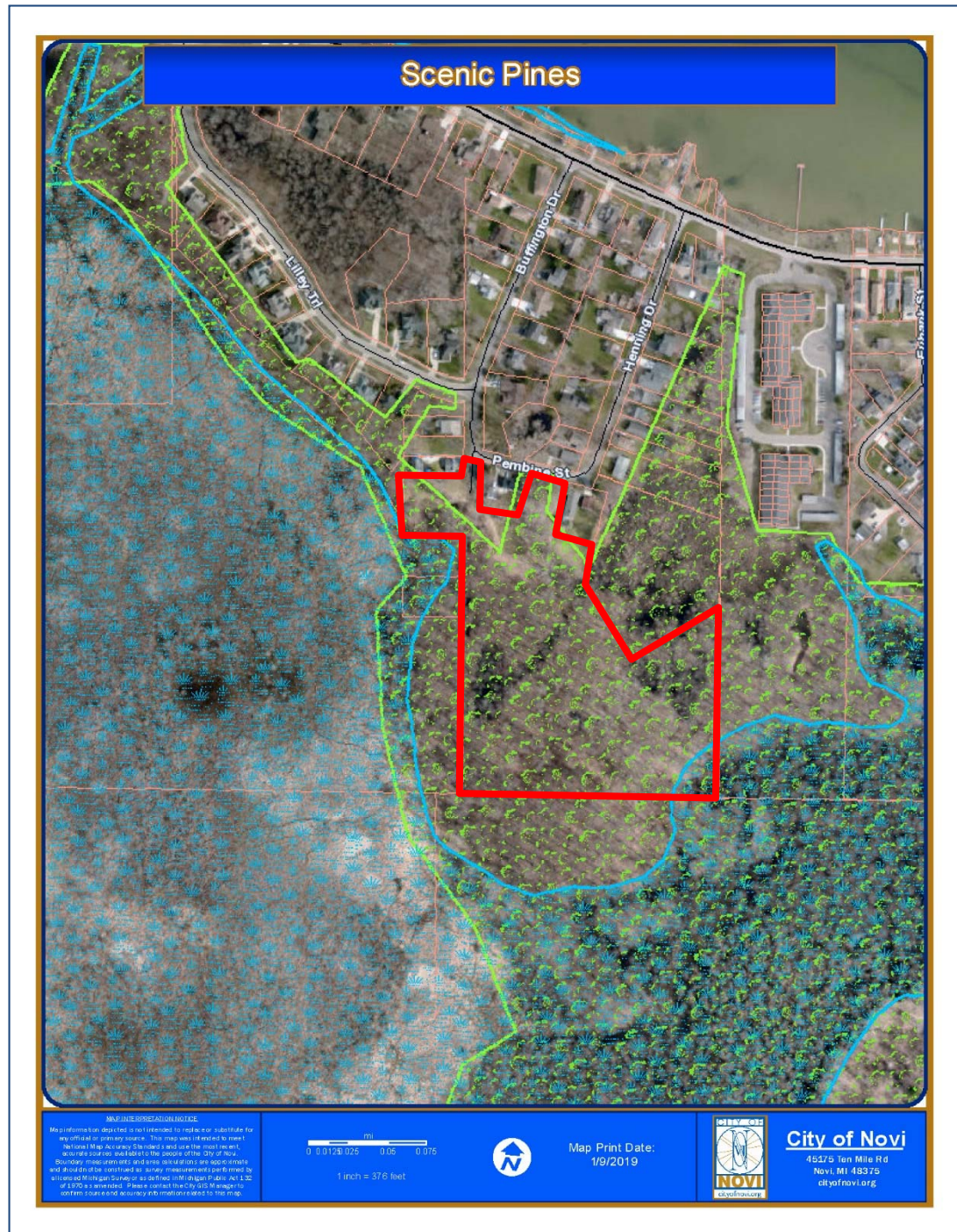


Figure 1. City of Novi Regulated Wetland and Watercourse Boundaries Map. City of Novi Regulated Wetland/Watercourse boundaries are shown in blue and City-Regulated Woodland boundaries are shown in green. The approximate, overall, project boundary is shown in red.

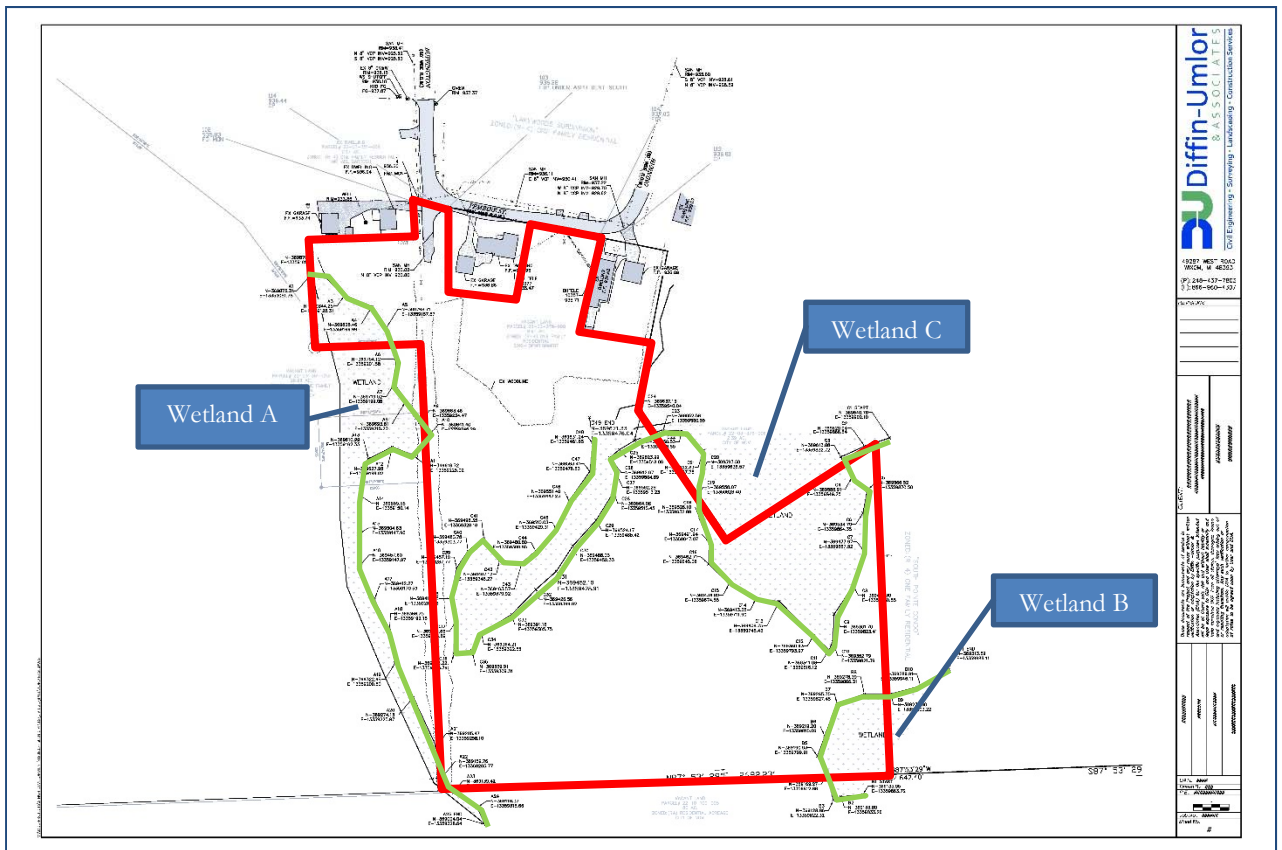


Figure 2. Wetland Plan, provided by Diffin-Umlor & Associates. The apparent project boundary is shown in red and existing, delineated wetlands are shown in green.

Site Photos



Photo 1. Looking southwest at Wetland A in the northwest portion of the site (ECT, January 8, 2019).



Photo 2. Looking east at Wetland C in the central portion of the site. Several of the Wetland C flags need to be moved out several feet from the wetland (including flags C9 and C16). (ECT, January 9, 2019).



Photo 3. Looking north at Wetland B in the southwest portion of the site (ECT, January 8, 2019).



Photo 4. Looking north at Wetland C in the northern/central portion of the site (ECT, January 9, 2019).



Photo 5. Looking northwest at Wetland C (near flag C9) in the eastern portion of the site. Several of the Wetland C flags need to be moved out several feet from the wetland (including flags C9 and C16). (ECT, January 9, 2019).



Photo 6. Looking east along the southern edge of Wetland C near proposed Lots 16 & 17 (ECT, January 9, 2019).

WOODLANDS REVIEW

ECT Project No. 190181-0500

June 18, 2019

Ms. Barbara McBeth, AICP
City Planner
Community Development Department
City of Novi
45175 W. Ten Mile Road
Novi, Michigan 48375

Re: Scenic Pines Estates (JSP18-0076)
Woodland Review of the Revised Preliminary Site Plan (PSP19-0091)

Dear Ms. McBeth:

Environmental Consulting & Technology, Inc. (ECT) has reviewed the Revised Preliminary Site Plan for the proposed Scenic Pines Estates project located on Parcel No. 50-22-03-378-008 (approximately 9.5 acres), south of South Lake Drive and east of West Park Drive. The entrance to proposed development will be off of Pembine Street near Buffington Street (Section 3). The Plan includes the construction of a twenty-five (25) unit residential development (detached single-family homes), entrance drive, utilities, and a stormwater detention basin.

This included a review of the Revised Preliminary Site Plan prepared by Diffin-Umlor & Associates dated May 1, 2019 and stamped "Received" by the City of Novi Community Development Department on May 24, 2019 (Plan). The Plan was reviewed for conformance with the City of Novi Woodland Protection Ordinance Chapter 37.

ECT currently recommends approval of the Revised Preliminary Site Plan for Woodlands. The Applicant shall address the items noted in the *Woodland Comments* Section of this letter prior to receiving Woodland approval of the Final Site Plan.

The following woodland related items are required for this project:

Item	Required/Not Required/Not Applicable
Woodland Permit	Required
Woodland Fence	Required
Woodland Conservation Easement	Required (For any proposed Woodland Replacement Tree Material)

Based on our review of the Plan, Novi aerial photos, Novi GIS, City of Novi Official Wetlands and Woodlands Maps (see Figure 1), and on-site Woodland Evaluation conducted on January 8, 2019, this proposed project site contains City-Regulated Wetlands and City-Regulated Woodlands. The site contains and is directly adjacent to wetland areas that are regulated by the City of Novi as well as likely by the Michigan Department of Environmental Quality (MDEQ). Areas mapped as Regulated Wetland are located along the western and southern sides of the parcel, and portions of these wetlands are indicated on the property in the northwest and southeast corners (see Figure 1). A large portion of the project site consists of mature

upland woods containing a variety of tree species including white oak (*Quercus alba*), red oak (*Quercus rubra*), basswood (*Tilia americana*), red maple (*Acer rubrum*), black cherry (*Prunus serotina*), pignut hickory (*Carya glabra*), eastern cottonwood (*Populus deltoides*), sassafras (*Sassafras albidum*), ironwood (*Ostrya virginiana*) and several other species. Based on the City of Novi Regulated Wetlands & Woodlands mapping, the majority of the site is mapped as City-Regulated Woodland. The Plan includes proposed impacts to both Regulated Wetlands and Regulated Woodlands.

The purpose of the Woodlands Protection Ordinance is to:

- 1) *Provide for the protection, preservation, replacement, proper maintenance and use of trees and woodlands located in the city in order to minimize disturbance to them and to prevent damage from erosion and siltation, a loss of wildlife and vegetation, and/or from the destruction of the natural habitat. In this regard, it is the intent of this chapter to protect the integrity of woodland areas as a whole, in recognition that woodlands serve as part of an ecosystem, and to place priority on the preservation of woodlands, trees, similar woody vegetation, and related natural resources over development when there are no location alternatives;*
- 2) *Protect the woodlands, including trees and other forms of vegetation, of the city for their economic support of local property values when allowed to remain uncleared and/or unharvested and for their natural beauty, wilderness character of geological, ecological, or historical significance; and*
- 3) *Provide for the paramount public concern for these natural resources in the interest of health, safety and general welfare of the residents of the city.*

What follows is a summary of our findings regarding on-site woodlands associated with the proposed project.

On-Site Woodland Evaluation

ECT has reviewed the City of Novi Official Woodlands Map and completed an onsite Woodland Evaluation on January 8, 2019. ECT's in-office review of available materials included the City of Novi Regulated Woodland map and other available mapping. The subject property includes area that is indicated as City-Regulated Woodland on the official City of Novi Regulated Wetland and Woodland Map (see Figure 1). As noted above, the majority of the development area is within area mapped as City Regulated Woodland.

The surveyed trees have been marked with metal tree tags allowing ECT to compare the tree diameters reported on the *Tree List & Replacement Calculations Plan* (Sheet 6) to the existing tree diameters in the field. ECT found that the Plan appears to accurately depict the location, species composition, size, and condition of the existing trees. ECT took a sample of diameter-at-breast-height (DBH) measurements and found that the data provided on the Plan was consistent with the field measurements.

The majority of the on-site trees are of good quality. In general, the on-site trees consist of northern red oak (*Quercus rubra*), basswood (*Tilia americana*), red maple (*Acer rubrum*), sassafras (*Sassafras albidum*), black cherry (*Prunus serotina*), eastern cottonwood (*Populus deltoides*), pignut hickory (*Carya glabra*), ironwood (*Ostrya virginiana*) and several other species.

In terms of habitat quality and diversity of tree species, the overall subject site consists of good quality trees. In terms of a scenic asset, wildlife habitat, windblock, noise buffer or other environmental asset, the forested area located on the subject site is considered to be of good quality. It should be noted that although the woodland areas contain some degree of invasive species such as buckthorn (*Rhamnus cathartica*), areas of the

existing woodlands are relatively open and free of dense undergrowth that deters some species of wildlife such as white-tailed deer (*Odocoileus virginianus*). Accurate critical root zones must be depicted on the site plan for all regulated trees within fifty (50) feet of proposed grading or construction activities. The critical root zone (CRZ) means a circular area around a tree with a radius measured to the tree's longest dripline radius plus one (1) foot. The drip line means an imaginary vertical line that extends downward from the outermost tips of the tree branches to the ground. The applicant has provided a table on Sheet 6 (*Tree List and Replacement Calculations*) that indicates that a total of twenty-five (25) trees are proposed to be saved however the proposed limits of disturbance lies within the CRZ of these 25 trees. The Plan notes that these 25 trees will be bonded. These trees require a total of 59 Woodland Replacement Credits if the limits of disturbance cannot be moved outside of the CRZ of these trees.

Proposed Woodland Impacts & Replacements

Tree List & Replacement Calculations Plan (Sheet 6) notes the following:

Trees Tagged 8" DBH and Greater = 481
Trees Preserved = 262 (54% of surveyed trees)
Trees Removed = 219 (46% of surveyed trees)
Woodland Replacement Trees Required = 438
Woodland Replacement Trees Required for CRZ Impacts = 59
Total Woodland Replacement Tree Credits Required = 497

The Landscape Plan (Sheet L-1) indicates that a total of seventy-four (74) on-site deciduous woodland replacement trees (2.5" caliper deciduous at 1 credit/tree and 8-foot tall evergreens at 0.67 credit/tree) will be provided (14% of the required Woodland Replacement Credits). The following acceptable Woodland Replacement Trees are proposed:

- 38 red maple (*Acer rubrum*);
- 13 swamp white oak (*Quercus bicolor*);
- 14 red oak (*Quercus rubra*);
- 7 basswood (*Tilia americana*);
- 4 white pine (*Pinus strobus*);
- **TOTAL 74 On-Site Woodland Replacement Credits**

The tree species currently proposed for Woodland Replacement Credits all appear to be acceptable species consistent with the City of Novi Woodland Tree Replacement Chart (see attached). The applicant will be required to pay the remaining **423** required Woodland Replacement Credits to the City of Novi Tree Fund.

The majority of the proposed Woodland Replacement Trees are to be located in the northern portion of the site; behind Units 1 through 3 and Units 23, 24, 25 and around part of the proposed stormwater detention basin. However, three (3) Woodland Replacement Trees are proposed north of Units 16 & 17, three (3) are proposed north of Unit 8, and ten (10) are proposed west of Units 18 through 21.

The location of these sixteen (16) Woodland Replacement trees may not be consistent with the intent of the Woodland Ordinance in mitigating for the loss of woodland tree canopy. In addition, it is not clear how these replacement trees will be protected in perpetuity through a landscape or woodland easement. ECT suggests that these proposed Woodland Replacement Trees be relocated to another area of the site that can

more easily be placed into such an easement. The Ordinance states that the location of replacement trees shall be such as to provide the optimum enhancement, preservation and protection of woodland areas. Where woodland densities permit, tree relocation or replacement shall be within the same woodland areas as the removed trees. Such woodland replanting shall not be used for the landscaping requirements of the subdivision ordinance or the zoning landscaping, Section 2509. Where replacements are installed in a currently non-regulated woodland area on the project property, appropriate provision shall be made to guarantee that the replacement trees shall be preserved as planted, such as through a conservation or landscape easement to be granted to the city. Such easement or other provision shall be in a form acceptable to the city attorney and provide for the perpetual preservation of the replacement trees and related vegetation.

An alternate location for these Woodland Replacement plantings could be within the existing 25-foot wetland buffers on the property. Trees can be planted within the wetland buffer as long as impact to existing vegetation within the regulated 25-foot setback is minimized by placing and planting the trees using the least disruptive means possible (i.e., hand tools or rubber tracked small equipment when not feasible to plant by hand). As noted, the Woodland Replacement trees shall be protected through the granting of a conservation or landscape easement.

Woodland Review Comments

The following are repeat comments from our *Woodland Review of the Preliminary Site Plan (PSP19-0039)* letter dated March 19, 2019. The current status of these comments follows in ***bold italics***. ECT recommends that the Applicant address the items noted below in subsequent site plan submittals:

1. ECT encourages the Applicant to minimize impacts to on-site woodlands to the greatest extent practicable. Currently 211 of the 481 tagged trees (44%) are proposed for removal.

This comment still applies. Currently 219 of the 481 tagged trees (46%) are proposed for removal. This is an increase of eight (8) trees being removed from the Preliminary Site Plan.

2. The current Plan appears to propose a total of 70 on-site Woodland Replacement Credits (16% of the required 430 Woodland Replacement Tree Credits) through on-site planting of deciduous and coniferous tree plantings. ECT suggests that the applicant work to provide as many of the required **430** Woodland Replacement Credits through on-site plantings. It should be noted that in addition to acceptable 2.5" caliper deciduous trees as well as 6-foot tall acceptable evergreen tree species, the City allows applicant's to meet Woodland Replacement Credit requirement plantings through planting of other types of approvable, native vegetation (as indicated in the Reforestation Credit Table contained in the Woodland Ordinance):

Reforestation Credit Table

Type	Minimum Size	DBH Credit Proposed Plant: Required Replacement.	Max. Use Percentage
Canopy Trees	1.5" Caliper	2:1	70%
Evergreen trees	36" Height	3:1	30%
Understory trees	1" Caliper	5:1	30%
Large shrubs	30" Height	6:1	30%
Small shrubs	18" Height	8:1	30%
Perennials	1 Gallon Cont.	25:1	50%
Groundcover seeding	Per seed source recommendations	70 SY area:1	None

This comment has not been addressed. Currently, the Plan proposes a total of seventy-four (74) on-site Woodland Replacement Credits (14% of the Required Woodland Replacement Credits).

3. Accurate critical root zones must be depicted on the site plan for all regulated trees within fifty (50) feet of proposed grading or construction activities. The critical root zone (CRZ) means a circular area around a tree with a radius measured to the tree's longest dripline radius plus one (1) foot. The drip line means an imaginary vertical line that extends downward from the outermost tips of the tree branches to the ground.

This comment has been partially addressed. The applicant has provided a table on Sheet 6 (Tree List and Replacement Calculations) that indicates that a total of twenty-five (25) trees are proposed to be saved however the proposed limits of disturbance lies within the CRZ of these 25 trees. The Plan notes that these 25 trees will be bonded. These trees require a total of 59 Woodland Replacement Credits if the limits of disturbance cannot be moved outside of the CRZ of these trees.

4. It should be noted that when a proposed tree to be removed has multiple trunks, each multi-stemmed tree's caliper inch diameter shall be totaled and then divided by 8 to determine the required number of Woodland Replacement trees. The result shall be rounded up to determine the number of replacement credits required. For example, a multi-stemmed tree with 10", 12" and 13" trunks ($10+12+13=34$ divided by $8 = 4.25$). Therefore, rounding to the next full number, five (5) replacement credits would be required. The applicant is urged to provide a column on the Tree List that indicates the number of Woodland Replacement Credits required for each tree proposed for removal.

This comment has been addressed. The table on Sheet 6 has been updated.

5. A Woodland Replacement financial guarantee for the planting of replacement trees will be required. This financial guarantee will be based on the number of on-site woodland replacement trees (credits) being provided at a per tree value of \$400. Based on the current Plan, the Woodland Replacement Financial Guarantee would be \$28,000 (70 On-Site Woodland Replacement Credits x \$400/Credit).

This comment still applies. Based on the current Plan, the Woodland Replacement Financial Guarantee would be \$29,600 (74 On-Site Woodland Replacement Credits x \$400/Credit).

6. Based on a successful inspection of the installed on-site Woodland Replacement trees, the Woodland Replacement financial guarantee will be returned to the Applicant. A Woodland Maintenance financial guarantee in the amount of twenty-five percent (25%) of the original Woodland Replacement financial guarantee will then be provided by the applicant. This Woodland Maintenance financial guarantee will be kept for a period of 2-years after the successful inspection of the on-site woodland replacement tree installation.

This comment still applies. Based on the current Plan, the Woodland Maintenance Financial Guarantee would be \$7,400 (74 On-Site Woodland Replacement Credits x \$400/Credit x 0.25).

7. The Applicant will be required to pay the City of Novi Tree Fund at a value of \$400/credit for any Woodland Replacement tree credits that cannot be placed on-site. Currently, this payment would be \$144,000 (360 Woodland Replacement Credits x \$400/Credit).

This comment still applies. Based on the current Plan, the payment to the City of Novi Tree Fund would be \$169,200 (423 Woodland Replacement Credits x \$400/Credit).

8. The Applicant shall provide preservation/conservation easements as directed by the City of Novi Community Development Department for any areas of woodland replacement tree planting outside of existing Regulated Woodland Boundaries. The applicant shall demonstrate that the all proposed woodland replacement trees will be guaranteed to be preserved as planted with a conservation easement or landscape easement to be granted to the city. This language shall be submitted to the City Attorney for review. The executed easement must be returned to the City Attorney within 60 days of the issuance of the City of Novi Woodland permit.

This comment still applies. The Woodland Conservation Easement shall be indicated on the Plan.

9. It should be noted that the proposed tree protection fence shall be installed at the Critical Root Zone (CRZ) perimeter (i.e., 1 foot outside of the tree's drip line) of all on-site trees to be preserved during the site development. Should it not be possible to place the protection fencing at the CRZ of a regulated tree, the applicant may provide replacement value for the tree into the City of Novi Tree Fund. ECT or a City representative will inspect the staking and note all trees to be removed or negatively impacted by the proposed construction. If any trees with a diameter-at-breast-height (DBH) of 8-inches or greater that are not already included in the schedule of removals will be removed or negatively impacted

by the construction, ECT will add those trees to the associated woodland permit. Payment for these trees will need to be made immediately or no later than prior to issuance of the first building permit.

See Comment No. 3, above. This comment has been partially addressed. The applicant has provided a table on Sheet 6 (Tree List and Replacement Calculations) that indicates that a total of twenty-five (25) trees are proposed to be saved however the proposed limits of disturbance lies within the CRZ of these 25 trees. The Plan notes that these 25 trees will be bonded. These trees require a total of 59 Woodland Replacement Credits if the limits of disturbance cannot be moved outside of the CRZ of these trees.

Recommendation

ECT currently recommends approval of the Revised Preliminary Site Plan for Woodlands. The Applicant shall address the items noted in the *Woodland Comments* Section of this letter prior to receiving Woodland approval of the Final Site Plan.

If you have any questions regarding the contents of this letter, please contact us.

Respectfully submitted,

ENVIRONMENTAL CONSULTING & TECHNOLOGY, INC.



Pete Hill, P.E.
Senior Associate Engineer

cc: Lindsay Bell, City of Novi Planner (lbell@cityofnovi.org)
Sri Komaragiri, City of Novi Planner (skomaragiri@cityofnovi.org)
Rick Meader, City of Novi Landscape Architect (rmeader@cityofnovi.org)
Hannah Smith, City of Novi Planning Assistant (hsmith@cityofnovi.org)

Attachments: Figure 1 – City of Novi Regulated Wetland and Woodland Map
Woodland Tree Replacement Chart
Site Photos



Figure 1. City of Novi Regulated Wetland & Woodland Map (approximate project boundary shown in red). Regulated Woodland areas are shown in green and Regulated Wetland areas are shown in blue.

Woodland Tree Replacement Chart

(from Chapter 37 Woodlands Protection)
(All canopy trees to be 2.5" cal or larger, evergreens as listed)

Common Name	Botanical Name
Black Maple	Acer nigrum
Striped Maple	Acer pennsylvanicum
Red Maple	Acer rubrum
Sugar Maple	Acer saccharum
Mountain Maple	Acer spicatum
Ohio Buckeye	Aesculus glabra
Downy Serviceberry	Amelanchier arborea
Smooth Shadbush	Amelanchier laevis
Yellow Birch	Betula alleghaniensis
Paper Birch	Betula papyrifera
American Hornbeam	Carpinus caroliniana
Bitternut Hickory	Carya cordiformis
Pignut Hickory	Carya glabra
Shagbark Hickory	Carya ovata
Northern Hackberry	Celtis occidentalis
Eastern Redbud	Cercis canadensis
Pagoda Dogwood	Cornus alternifolia
Flowering Dogwood	Cornus florida
American Beech	Fagus grandifolia
Thornless Honeylocust	Gleditsia triacanthos inermis
Kentucky Coffeetree	Gymnocladus dioica
Walnut	Juglans nigra or Juglans cinerea
Eastern Larch	Larix laricina
Tuliptree	Liriodendron tulipifera
Tupelo	Nyssa sylvatica
American Hophornbeam	Ostrya virginiana
White Spruce_(1.5:1 ratio) (6' ht.)	Picea glauca
Black Spruce_(1.5:1 ratio) (6' ht.)	Picea mariana
Red Pine_(1.5:1 ratio) (6' ht.)	Pinus resinosa
White Pine_(1.5:1 ratio) (6' ht.)	Pinus strobus
American Sycamore	Platanus occidentalis
Black Cherry	Prunus serotina
White Oak	Quercus alba
Swamp White Oak	Quercus bicolor
Scarlet Oak	Quercus coccinea
Shingle Oak	Quercus imbricaria
Burr Oak	Quercus macrocarpa
Chinkapin Oak	Quercus muehlenbergii
Red Oak	Quercus rubra
Black Oak	Quercus velutina
American Basswood	Tilia americana

Site Photos



Photo 1. Looking south at Regulated Woodland area (and forested Wetland A) in the northwest section of the site (ECT, January 8, 2019).



Photo 2. Looking northeast from the southwest corner of the project site (ECT, January 8, 2019).



Photo 3. Looking west along forested Wetland C in the central section of the site (ECT, January 8, 2019).



Photo 4. Forested area in the southeast section of the site (near Wetlands B and C). ECT, January 8, 2019.

TRAFFIC REVIEW



AECOM
27777 Franklin Road
Southfield
MI, 48034
USA
aecom.com

Project name:
JSP18-0076 Scenic Pines Estates Second
Revised Preliminary Site Plan Traffic Review

From:
AECOM

Date:
August 6, 2019

To:
Barbara McBeth, AICP
City of Novi
45175 10 Mile Road
Novi, Michigan 48375

CC:
Sri Komaragiri, Lindsay Bell, Kate Richardson,
Madeleine Kopko

Memo

Subject: JSP18-0076 Scenic Pines Estates Second Revised Preliminary Site Plan Traffic Review

The second revised preliminary site plan was reviewed to the level of detail provided and AECOM recommends **approval** for the applicant to move forward with the condition that the comments provided below are adequately addressed to the satisfaction of the City.

GENERAL COMMENTS

1. The applicant, Danovi, LLC, is proposing a 25 detached single-family residential development located on the south side of Pembine Street, south of South Lake Drive.
2. Pembine Street is under the jurisdiction of the City of Novi.
3. The parcel is currently zoned R-4, One Family Residential.
4. Summary of traffic-related waivers/variances:
 - a. The applicant is requesting a waiver for the minimum opposite-side driveway spacing requirement.
 - b. The applicant is requesting a variance for the minimum distance between the sidewalk and back-of-curb in front of the units.

TRAFFIC IMPACTS

1. AECOM performed an initial trip generation estimate based on the ITE Trip Generation Manual, 10th Edition, as follows:

ITE Code: 210 – Single-Family Detached Housing
Development-specific Quantity: 25 Units
Zoning Change: N/A

Trip Generation Summary				
	Estimated Trips	Estimated Peak-Direction Trips	City of Novi Threshold	Above Threshold?
AM Peak-Hour Trips	23	17	100	No

PM Peak-Hour Trips	27	17	100	No
Daily (One-Directional) Trips	290	N/A	750	No

- The number of trips does not exceed the City's threshold of more than 750 trips per day or 100 trips per either the AM or PM peak hour. AECOM recommends performing the following traffic impact study in accordance with the City's requirements.

Trip Impact Study Recommendation	
Type of Study:	Justification
None	N/A

EXTERNAL SITE ACCESS AND OPERATIONS

The following comments relate to the external interface between the proposed development and the surrounding roadway(s).

- The applicant has provided width and radii information for the proposed new intersection of Pembine St and Pristine Lane which meets City standards.
 - The applicant has indicated they are seeking a waiver for the roadway spacing between Pristine Lane and Henning Street. Proposed spacing is 117 feet where 200 feet is required.
 - The applicant has indicated sight distance on the plans.
- A 5' sidewalk is proposed along Pembine Street for the length of the site. The applicant has provided the applicable sidewalk ramp details.
- Noble Trail ends on each side directly into residential driveways. The applicant has dimensioned the length of each side of Noble Trail to be 150', and therefore, turnarounds will not be required per Section 5.10.1.B of the City's Zoning Ordinance.
 - Fire truck travel patterns could be included to ensure adequate access and turn around capability for fire trucks on Noble Trail.
 - The applicant has indicated that the proposed configuration meets International Fire Code (IFC) requirements and included the IFC hammerhead configuration.

INTERNAL SITE OPERATIONS

The following comments relate to the on-site design and traffic flow operations.

- General Traffic Flow
 - The applicant has provided widths and turning radii for all roads and are in compliance with the requirements.
 - The applicant has indicated that on-street parking will be permitted on the northbound side of Pristine Lane. The width of the roadway is 28', which is the minimum width required for on-street parking on one side, as per Section 5.10.1.B.ii.
- Parking Facilities
 - The applicant has indicated each driveway has sufficient area for two (2) vehicles to park and each garage is capable of housing two (2) vehicles.
 - The applicant has indicated curb height will be 4" throughout the development with 6" curb height within the Pembine/Henning right-of-way. Curb details have been included on sheet 10.

- c. The applicant has indicated a proposed retaining wall around the bridge and woodland areas. The applicant should include a detail and dimensions for offset from the roadway for all of these items.
3. Sidewalk Requirements
 - a. The applicant is proposing 5' sidewalk along both sides of Pristine Lane and Noble Trail and has provided ramp locations.
 - b. The applicant has provided the latest Michigan Department of Transportation (MDOT) sidewalk ramp detail.
4. The City requires the outside edge of sidewalks to be located a minimum of 15 feet from the back of curb. The applicant has indicated that they are requesting a waiver for the sidewalk setback for the portions of the sidewalk in front of the units.

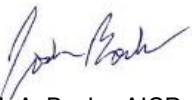
SIGNING AND STRIPING

1. All on-site signing and pavement markings shall be in compliance with the Michigan Manual on Uniform Traffic Control Devices (MMUTCD).
 - a. The applicant has provided a signing quantities table.
2. The applicant has indicated proposed signing on site and should provide notes and details related to the proposed signing.
 - a. Single signs with nominal dimensions of 12" x 18" or smaller in size shall be mounted on a galvanized 2 lb. U-channel post. Multiple signs and/or signs with nominal dimension greater than 12" x 18" shall be mounted on a galvanized 3 lb. or greater U-channel post as dictated by the weight of the proposed signs.
 - b. The applicant should indicate a bottom height of 7' from final grade for all signs installed.
 - c. The applicant should indicate that all signing shall be placed 2' from the face of the curb or edge of the nearest sidewalk to the near edge of the sign.
3. The applicant has proposed crosswalk pavement markings on Pristine Lane at Pembine Street and Noble Trail. A detail for the crosswalks as well as color for all proposed markings should be provided in future submittals.

Should the City or applicant have questions regarding this review, they should contact AECOM for further clarification.

Sincerely,

AECOM



Josh A. Bocks, AICP, MBA
Senior Transportation Planner/Project Manager



Patricia Thompson, EIT
Traffic Engineer

FACADE REVIEW



June 27, 2019

City of Novi Planning Department
45175 W. 10 Mile Rd.
Novi, MI 48375-3024

Re: Scenic Pines, Architectural Review, JSP18-0076
Zoning District: R-4

Dear Ms. McBeth;

This project is subject to Ordinance Section 3.7, commonly referred to as the Similar Dissimilar Ordinance. The applicant is proposing 25 detached single family dwellings approximately 2,100 S.F. in size. Colored renderings of the front elevation of twelve different models were provided and are the basis for this review. The side and rear elevations were not provided at the time of this review.

Ordinance Section 3.7.1.F.i requires that the square footage of a proposed home be within 75% of the average of the occupied homes in the surrounding area. Surrounding area is defined as within a 350' radius in the R-4 District. In this case the average square footage of existing homes within a 350' radius is approximately 1,600 S.F.. Based on this the minimum size for a new home in Scenic Pines would be approximately 1,200 square feet ($1,600 \times 75\% = 1,200$ SF). The minimum home size could change slightly based on the precise location of the lot and occupied homes within the Scenic Pines subdivision. Based on this it is our belief that the proposed 2,100 S.F. home would comply with the Similar / Dissimilar Ordinance with respect to minimum size. Additionally, we believe that the proposed models would comply with Sections 3.7.1.F.ii and 3.7.1.F.iii which require that the type of materials and overall architectural design not be grossly dissimilar to homes in the surrounding area.

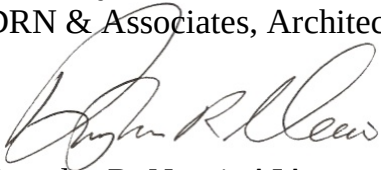
Ordinance Section 3.7.2 requires a variation in appearance between adjacent homes. The applicant has provided front elevations for 12 models. Approximately 10 of these models would be considered to have adequate variations in appearance under this Section of the Ordinance. Based on our experience on similar projects we believe that compliance with this Section of the Similar / Dissimilar Ordinance can readily be achieved assuming correct distribution of the models. The models exhibit well defined front entrances and extensive architectural features such as box cornices, multiple front-facing gables, well articulated rooflines, roof overhangs above garage doors, trussed gable features, shake siding, carriage house and raised panel garage doors and full width cornices. All models appear to have brick or stone up to the first floor window sill line and appear to portray an overall architectural standard equal or higher than the existing homes in the surrounding neighborhood.

It should be noted that the drawings are conceptual in nature with no material notations and that rear and side elevations have not been provided. It should be noted that the construction drawings must maintain consistency with the conceptual drawings with respect to the quantity and type of architectural details and materials on all elevations, including side and rear elevations.

Recommendation – It is our recommendation that the compliance with the Similar / Dissimilar Ordinance can be readily achieved with the 12 models provided. For reference, homes on the same side of a common street must be separated by two homes with a variation in appearance and homes sharing more than 50% common frontage must also have a variation in appearance as defined in Section 3.7.2.A.a of the Ordinance.

If you have any questions please do not hesitate to call.

Sincerely,
DRN & Associates, Architects PC



Douglas R. Necci, AIA

FIRE REVIEW



September 17, 2019

TO: Barbara McBeth- City Planner
Sri Ravali Komaragiri- Plan Review Center
Lindsay Bell-Plan Review Center
Madeleine Kopko-Planning Assistant

CITY COUNCIL

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Mayor Pro Tem
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Assistant Chief of Police
Scott R. Baetens

RE: Scenic Pines Estates

PSP19-0124

PSP# 19-0091

PSP# 19-0039

PSP# 18-0203

Project Description:

New subdivision development w/24 new residential homes, and 2 new paved streets, extending off Pembine St – between Buffington Dr & Henning St.

This proposal was first reviewed by the Fire Marshal's office back in Aug 2002 (SP01-63B).

This proposal was reviewed for a second time on 02-26-2015 by the Fire Marshal's office (PSP#15-0024).

Comments:

- **CORRECTED 8/2/19 KSP**-Hydrant spacing is **500'** from fire hydrant to fire hydrant. **(Not as the crow flies) (Novi City Ordinance 11-68(F)(1)C.)** Hydrant from old subdivision to new subdivision.
- **All** fire hydrants **MUST** in installed and operational prior to any building construction begins.
- **CORRECTED 3/4/2019**-Water mains **MUST** be put on the plans for review.
- **CORRECTED 8/2/19 KSP**-Fire access roads **MUST** designed and maintained to support a 35 ton weigh requirements. **IFC 503.2.3.**
- **MUST** provide documentation regarding the bridge. **Documentation MUST be provided prior to or at final site plan review.**
- **CORRECTED 3/4/2019**-**Must** provide road dimensions on plans for review.

Recommendation:

APPROVED WITH CONDITIONS

Sincerely,

A handwritten signature in black ink, appearing to read "KSP", with a horizontal line extending to the right.

Kevin S. Pierce-Fire Marshal
City of Novi – Fire Dept.

cc: file

Novi Public Safety Administration
45125 Ten Mile Road
Novi, Michigan 48375
248.348.7100
248.347.0590 fax

cityofnovi.org

SOIL BORING REPORT

SOILS INVESTIGATION
PROPOSED SCENIC PINES ESTATES SUBDIVISION
PEMBINE STREET
NOVI, MICHIGAN

SINGH DEVELOPMENT, LLC
7125 ORCHARD LAKE ROAD
SUITE 200
WEST BLOOMFIELD, MICHIGAN 48322

APRIL 30, 2019
BY
McDOWELL & ASSOCIATES

McDowell & Associates

Geotechnical, Environmental & Hydrogeological Services • Materials Testing & Inspection

21355 Hatcher Avenue • Ferndale, MI 48220

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

www.mcdowasc.com

April 30, 2019

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

Job No. 19-040

Attention: Mr. Todd Rankine

Subject: Soils Investigation
Proposed Scenic Pines Estates Subdivision
Pembine Street
Novi, Michigan

Gentlemen:

In accordance with your request, we have made a Soils Investigation at the subject project.

Field Work and Laboratory Testing

Twelve Soil Test Borings, designated as 1 through 12, were performed at the subject property at the approximate locations shown on the Soil Boring Location Plan which accompanies this report. The boring locations were staked prior to drilling by others. Where we offset from the boring stake, the offset is noted on the boring log. Several of the borings were drilled with a track mounted drill rig due to site conditions. The borings were extended to depths varying from fifteen feet (15') to twenty-five feet (25') below the existing ground surface. Piezometers were installed in Borings 1, 3, 6, and 10 through 12. The borings were drilled on April 18, 2019, April 22, 2019 and April 25, 2019. With the exception of Boring 10, the piezometers were read on April 26, 2019. The elevations shown on the boring logs were taken from the stakes provided by others. We suggest you have your surveyors determine the top of casing elevation of the piezometers to better determine the long-term groundwater elevations at the site. It is expected that you will let us know if you want us to read the piezometers and at what frequency.

Soil descriptions, groundwater observations, boring offset descriptions and the results of field and laboratory tests are to be found on the accompanying Logs of Soil Test Borings and summary sheet of Sieve Analysis results.

The borings encountered topsoil to depths varying from three inches (3") to eighteen inches (18"). The topsoil appeared to be fill in Borings 1, 2 and 3 where the apparent fill continued to depths varying from one foot two inches (1'2") to two feet ten inches (2'10"). The apparent fill consisted of topsoil and both clay and clayey sand. The underlying soils consisted of both clay and sand, with the sand generally containing various amounts of silt and clay. The sand layers often contained seams and layers of clay. Note that relatively clean sand was noted at two feet six inches (2'6") in Boring 4 and at ten feet (10') in Boring 11.

Soil descriptions and depths shown on the boring logs are approximate indications of change from one soil type to another and are not intended to represent an area of exact geologic change or stratification. Also, the site shows some signs of modification which could indicate fill and soil conditions different from those encountered at the boring locations.

Groundwater was initially noted at depths varying from six inches (0'6") to six feet (6'0") below the ground surface. Upon completion of drilling, groundwater levels were recorded in Borings 1 through 5 and 7 through 12 at depths ranging from two feet four inches (2'4") to thirteen feet (13') below the existing ground surface. Boring 6 had caved in upon completion of drilling at a depth of ten feet two inches (10'2"). It should be noted that short-term groundwater observations may not provide a reliable indication of the depth of the water table. In clay soils, this is due to the slow rate of infiltration of water into the borehole as well as the potential for water to become trapped in overlying layers of granular soils during periods of heavy rainfall. Water levels in granular soils fluctuate with seasonal and climatic changes, with changes in the water level of the surrounding swamp as well as with the amount of rainfall in the area immediately prior to the measurements. It should be expected that groundwater fluctuations could occur on a seasonal basis and that seams of water-bearing sands or silts could be found within the various clay strata at the site.

The piezometers were read on April 26, 2019 with the results shown in the table below. It should be noted that these readings were taken during a period of very wet weather and that surface water may have significantly affected the readings.

<u>Boring</u>	<u>Depth to Water</u>
1	1'4"
3	0'4"
6	+ 0'1" (above ground)
10	+ 1'0" (above ground)
11	6'7"
12	1'0"

Standard Penetration Tests made during sampling indicate various strength soils with generally reasonably good strengths. Test values at two feet six inches (2'6") varied from 5 to 22 blows per foot. At five feet (5'), the values ranged from 10 to 28 blows per foot, except at Boring 3 where a value of 3 blows per foot was recorded in wet sand. At seven feet six inches (7'6"), the values varied from 7 to 25 blows per foot, except at Boring 8 where a value of 2 blows per foot was recorded in soft silty clay with some organic content. This boring was near a wetland (swamp). It is suggested that a test pit be excavated to better evaluate this layer. If moving the proposed house location is an option, a series of test pits could be performed. We expect the soil will improve as you get farther from the wetland. At ten feet (10') and below, penetration indices varied from 8 to 25 blows per foot.

Project Description

It is understood that the project will consist of constructing single family homes with attached garages and possible basements are proposed for the site. It is understood that a bridge to cross the existing wetlands is proposed near the middle of the site and a retaining wall is proposed around most of the subject development. It is understood that the retaining wall will be up to about 7.8 feet tall. It is anticipated that the structures will transmit relatively light loads to the supporting soils.

If the site grade is to be raised more than a couple feet over a large area, we have concerns regarding the possibility for more than normal consolidation settlement. This is especially critical at the location of Boring 8 where soft clay with relatively high moisture content was encountered. As noted above, we suggest further investigating this area with test pits. Clay type soils with relatively high moisture contents were also encountered in Borings 6, 9, 11 and 12. Considerations for overloading and/or monitoring for settlement after the fill has been placed and prior to construction may be necessary.

Specific design considerations for the proposed retaining wall are beyond the scope of this report. It is suggested that our services be obtained to provide or review the retaining wall design.

The northeast bridge abutment appears to extend into the existing wetland. We proposed performing Boring 6 at the furthest extent of the abutment into the wetland. We were instructed to offset Boring 6 outside of the existing wetland. It should be noted that if the bridge abutments extend into the wetlands, poor soil conditions may be encountered.

Foundation Recommendations

The indications are that groundwater will present a major problem on this site. Note these borings were done in a wet spring and groundwater conditions may be much better in the normally dry summer months. Based on the project information provided and the results of field and laboratory tests, the indications are that the structures could be supported by conventional to deeper or wider than normal spread or strip footings. All exterior footings should be constructed at, or below, a minimum frost penetration depth of three feet six inches (3'6") below finished grade. All interior and exterior load-bearing footings should extend through non-engineered fill soils, soils containing significant amounts of organic substances, or excessively weak soils. All strip footings should be continuously reinforced in order to minimize any noticeable effects of differential settlement.

Footings constructed at the following boring locations could be proportioned for the design soil pressures shown below, provided this results in the footings bearing on native, non-organic soils:

<u>Boring</u>	<u>Depth</u>	<u>Soil Pressure (psf)</u>
1	2'10" to 10'0"	3,000
2	2'0" to 10'0"	3,000
3	2'2" to 6'2"	1,000
	6'2" to 7'9"	2,500
	7'9" to 10'0"	3,000
4	2'0" to 3'11"	2,000
	3'11" to 10'0"	3,000
5	2'0" to 10'0"	3,000
6	2'0" to 4'0"	1,500
	4'0" to 10'0"	3,000
7	2'0" to 3'6"	2,000
	3'6" to 5'0"	3,000
	5'0" to 7'6"	2,500
	7'6" to 10'0"	2,000
8	2'0" to 4'0"	1,000 ¹
	8'6" to 10'0"	2,500
9	2'0" to 10'0"	3,000
10	2'0" to 10'0"	3,000
11	2'0" to 4'0"	2,500
	4'0" to 10'0"	3,000
12	2'0" to 10'0"	3,000

¹ The composition of the underlying soft soil should be further evaluated with a test excavation prior to installing foundations.

Based on the above chart, it appears that lower strength soils may be encountered in the vicinity of Borings 3, 6 and 8 which will necessitate larger than normal footing sizes.

Higher design soil pressures are available at various depths in some of the borings and could be detailed, if desired.

Our laboratory tests indicate that the shallow clay soils at the locations of Borings 8, 9, 11 and 12 have generally high moisture contents, which could tend to indicate shrinkage-type soils. Our experience has been that low unit weight, high moisture content clay soils in Michigan may shrink and cause significant stress to structures. Rarely have we experienced conditions where swell has been a problem. Our experience has indicated that these soils could vary widely within a short

distance in the Michigan soils. In order for these clay soils to cause a problem, the moisture contents must vary. Our experience has been that the normal summer drying process may affect frost depth footings in these clay soils but does not likely affect basement footings unless trees are nearby.

In areas of the country where major shrink-swell problems occur, foundations typically consist of drilling piers with compressible material under the grade beams and special floor interior partition design. We have not found this type of construction necessary in Michigan. We have typically done some, or all, of the following to minimize the potential problem:

1. Heavily reinforced continuous footings.
2. Extended frost footings deeper than normal. Often they are taken four feet (4') to four feet six inches (4'6") below the finished exterior grade.
3. Kept trees away from foundations to prevent their root system from removing moisture from the soils near the footings.

Groundwater Considerations

The borings indicate that at the present elevations, frost depth footings will be near or below levels at which saturated granular soils were encountered in Borings 1, 3, 4, and 7 through 10. Water seepage from wet sand or silt seams in the clay type soils should be manageable with construction pumping and sumps. However, this is not known for certain. It is sometimes possible to construct strip footings a foot or so below the water table in granular soils using a rapid sequence of excavation and rapid placement of concrete. If this is not possible it may be necessary to use special dewatering techniques to depress the water table at specific locations. Care must be taken to minimize the removal of soil fines during any pumping operations.

The borings generally indicate major problems for installing basements. We typically suggest basement floors be maintained at least one foot (1') and preferably two feet (2') above the apparent seasonal high water table. It has been our experience that a significant depression in the groundwater table occurs when site development is done. We suggest storm sewers be installed at an elevation lower than basements. We believe that site development tends to direct rainwater or snow melt to the storm sewers rather than allowing it to soak into the ground and feed the water table. This is enhanced by grading as steep as practical, placing clay at the surface and piping roof water to the storm sewers. If possible, it would be desirable to lay a drain tile alongside the storm sewer and drain it into the storm structures. It should be noted that the site is surrounded by wetlands and this may result in less than normal ground water depression from grading.

It is anticipated that the installation of basements would require significantly raising the site grade. Potential alternatives could include installing a drainage system to lower the site water table at specific locations or installing a clay cutoff wall through granular soils around individual houses or groups of houses. We generally do not recommend the use of basement drainage systems to lower the groundwater table.

For any basement constructed in close proximity to the water table in granular soils we suggest a drainage system including interior and exterior drains with the following specifications:

1. In order to lessen the possibility of soil fines affecting the perimeter drain system, it is recommended that exterior footing drains be at least four-inch (4") diameter slotted or perforated pipe with maximum 1/16" slot openings; larger openings would require a filter sock. We also suggest surrounding the drain tiles with at least four inches (4") of MDOT Specification 2NS sand. The 2NS sand would preferably be extended vertically over the drain to within about one foot (1') to two feet (2') of the final grade. The 2NS sand against the basement wall should be maintained at a width of at least twelve inches (12") measured perpendicular to the walls and footings.
2. Interior underfloor drains should be provided and should be nominally four inch (4") diameter slotted or perforated pipe. These should be placed at ten foot (10') to twenty foot (20') centers and along the inside of the footings. A filter fabric such as a punched, non-woven geotextile similar to Mirafi 140 should completely cover the basement subgrade and extend several inches up the sides of the footing. A minimum of six inches (6") of coarse material such as pea stone or MDOT 6A stone should be placed over the fabric. Cleanouts should be provided for the underfloor drains. A good moisture barrier should be placed between the floor slab and the pea gravel.
3. Note that crushed concrete materials are not desirable since they occasionally clog/plug drain tiles and ruin sump pumps.
4. The interior and exterior drain tiles should be independently connected to the sump so that if one fails the other can continue to operate.
5. A backup power supply should be provided in case of power outages.

Floor Slabs

Fill soils were encountered in Borings 1 through 3 to depths ranging from one foot two inches (1'2") to two feet ten inches (2'10"). If the possibility of more than normal differential settlement can be tolerated, slab-on-grade floors or floor-supporting backfill could be placed at, or near, the present grade in the vicinity of these borings. Any existing topsoil or other obviously objectionable materials should be removed and the subgrade should then be thoroughly proof-compacted. If, during the proof-compaction operation, areas are found where the soils yield excessively, the yielding materials should be scarified, dried, and recompact or removed and replaced with engineered fill. Where fill or backfill is required to raise the subgrade for concrete floors or backfill utility trenches, it is suggested that clean, well-graded granular soils be used. If clay material is utilized, it should be placed within 3% of its optimum moisture content. The fill should be deposited in horizontal lifts not to exceed nine inches (9") in thickness with each lift being compacted uniformly to a minimum density of 95% of its maximum value as determined by the Modified Proctor Test (ASTM D-1557).

If the possibility of more than normal differential movement cannot be tolerated, then all existing fill and organic soils should be removed and replaced with engineered fill meeting the requirements outlined above, or the floor slab should be structurally supported.

Moisture contents greater than 20% were found in shallow soils at Borings 6, 8, 9, 11 and 12. High moistures may tend to make these soils unstable under vehicular loading. During periods of wet weather in the spring and fall, these soils could rut and pump under construction traffic. Undercutting and compacted crushed stone may be required in various areas to stabilize driveway, roadway and pavement subgrades or entail the complete removal of these soils.

Closing

Experience indicates that actual subsurface conditions at the site could vary from those found at the 12 test borings made at specific locations. It is, therefore, essential that McDowell & Associates be notified of any variation of soil conditions to determine their effects on the recommendations presented in this report. The evaluations and recommendations presented in this report have been formulated on the basis of reported or assumed data relating to the proposed project. Any significant change in the final design plans should be brought to our attention for review and evaluation with respect to the prevailing subsoil conditions.

It is recommended that the services of McDowell & Associates be engaged to observe the soils in the footing excavations prior to concreting in order to test the soils for the required bearing capacities. Testing should also be performed to check that suitable materials are being used for controlled fills and that they are properly placed and compacted.

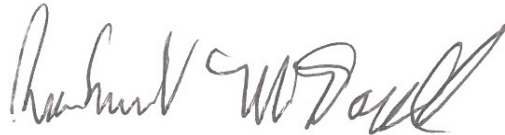
If we can be of any further service, please feel free to call.

Very truly yours,

McDOWELL & ASSOCIATES



David Quintal, M.S., P.E.
Geotechnical Engineer



Robert McDowell, M.S., P.E.
CEO McDowell & Associates

DQ/RM



McDOWELL & ASSOCIATES
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
LOCATION Proposed Scenic Pines
Estates Subdivision
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										
A	2		1'3" Stiff moist variegated silty CLAY with traces of sand and pebbles and topsoil markings, fill	3									
UL	2'10"		4	19.3	126								
	3		6		*	(4000)							
			3'6" Compact moist brown silty fine SAND										
	4												
B	5		3										
UL	6		5	16.9	124								
				6									
	7		6'8" Compact wet gray fine SAND with gravel and occasional sand and gravel seams	3									
C	8		4										
UL			5										
	9												
D	10		9'4" Stiff moist blue silty CLAY with little sand and pebbles	3									
UL	10'2"		5										
			8										
	11												
	12												
			12'4" Compact wet gray fine SAND with trace of gravel										
	13												
	14												
E	15		Stiff moist blue silty CLAY with little sand and pebbles	5									
UL			7										
			9										
	16		16'0"										
	17		Stiff moist blue silty CLAY with wet fine sand seams										
	18												
			17'5"										
	19												
F	20		3										
UL		7											
		10											
	21												
	22		21'10" Stiff moist blue silty CLAY with little sand and pebbles										
	23												
			Notes:										
	24		1) Used track rig.										
			2) Offset boring 14'6" west of stake due to power lines (about 8" lower).										
G				3									
UL	25		3) Piezometer set at 24'4" with 2'10" stick-up.	5									
			4) Added head of water in the augers at 10'.	8									
			25'6"										
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. INS. G.W. VOLUMES Heavy			



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LOG OF SOIL
BORING NO. 2

PROJECT Soils Investigation
Proposed Scenic Pines
LOCATION Estates Subdivision
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				5	14.1	133			
	3		Stiff moist variegated silty CLAY with traces of sand and pebbles	6			*	(3000- 6000)	
	4								
B			4'4"	7					
UL	5		Extremely stiff moist variegated CLAY with silt, some sand and pebbles and fine sand lenses	14	10.5	138			
	6			14			*	(9000+)	
			5'10"						
C	7			7					
UL			Very stiff moist variegated CLAY with silt, little sand and pebbles and wet fine sand seams	10	16.6	133			
	8			15			*	(9000+)	
	9								
D			8'9"	7					
UL	10			9					
				10					
	11								
	12		Very stiff moist variegated CLAY with some sand and pebbles and wet fine sand lenses						
	13								
			13'2"						
E	14								
UL	15		Stiff moist blue silty CLAY with little sand and pebbles	2					
				3					
	16		15'6"	5					
	17								
	18								
	19								
	20								
	21		Note: Used track rig.						
	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. INS.
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						
A	2		Medium compact moist brown clayey fine SAND with trace of gravel and topsoil markings, fill	2					
UL	3		2'2" Firm moist brown to dark brown silty CLAY with little vegetation and trace to seams of topsoil	2	17.3	126			
	4		3'11" Slightly compact wet gray silty fine SAND with gravel, vegetation and a layer of silty sandy clay at 5'	3			*	(2000)	
B	5		6'2" Firm moist blue silty CLAY with some sand and pebbles, trace of vegetation and wet fine sand seams	1	18.8	129			
UL	6		7'9" Stiff moist blue silty CLAY with some sand and pebbles, little variegated clay streaks and wet fine sand lenses	1			*	590 (2000)	
	7		11'10" Stiff moist blue silty CLAY with some sand and pebbles	2					
C	8		17'3" Stiff moist blue silty CLAY with little sand and pebbles	3	15.6	134			
UL	9		20'6" Notes:	4			*	(2000)	
	10		1) Used track rig.						
D	11		2) Offset boring 10' south due to pine tree.	3	12.7	139			
UL	12		3) Piezometer set at 9'9" with 3'3" stick-up.	4			*	(4500)	
	13			6					
	14								
E	15								
UL	16								
	17								
	18								
	19								
F	20								
UL	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. 11 INS.
G.W. ENCOUNTERED AT FT. INS.
G.W. AFTER COMPLETION 2 FT. 4 INS.
G.W. AFTER HRS. FT. INS.
G.W. VOLUMES Heavy



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LOG OF SOIL
BORING NO. 4

PROJECT Soils Investigation
Proposed Scenic Pines
LOCATIONS Estates Subdivision
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						
A	2		1'4"	3					
UL	3		Medium compact moist to wet brown gravelly fine to medium SAND with occasional stones	3	15.4	126			
	4		3'11"	4					
B	5			6	13.1	134			
UL	6			10			*	(5700)	
	7		Stiff moist variegated sandy CLAY with some silt, gravel, pebbles and occasional stones	4					
C	8			7					
UL	9			9					
	10		9'8"	4					
D	11		Stiff moist blue silty CLAY with some sand and pebbles and wet fine sand lenses	7	12.3	138			
UL	12			8			*	(5500)	
	13		12'2"						
	14		Stiff moist blue silty CLAY with little sand and pebbles						
E	15			4					
UL	16		15'6"	5					
	17			8					
	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 9 FT. 10 INS.
G.W. AFTER COMPLETION 7 FT. 7 INS.
G.W. AFTER HRS. FT. INS.
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						
A	2		1'3"	3					
UL	3		Stiff moist variegated silty CLAY with sand and pebbles and occasional wet fine sand seams	5	12.3	139			
				10			*	(7000)	
	4		3'6"						
B	5		Very stiff moist variegated silty CLAY with sand and pebbles and occasional moist fine sand seams	10					
UL	6			11	11.5	134			
				13			*	(5500)	
	7		6'0"						
C	8		Very stiff moist variegated silty CLAY with sand and pebbles	8					
UL	9			9	10.7	138			
				13			*	(9000+)	
	10		9'6"						
D	11		Very stiff moist blue silty CLAY with sand and pebbles	9					
UL	12			11					
				14					
	13		12'6"						
	14		Stiff moist blue silty CLAY with sand and pebbles, wet gravelly sand seams and stones						
E	15			6					
UL	16		15'6"	7					
				7					
	17								
	18								
	19								
	20								
	21								
	22								
	23		Note: Used track rig.						
	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. INS.
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						
	2			2					
A UL	3		Firm moist variegated silty CLAY with traces of sand and pebbles and wet fine sand seams	2 3	20.2	124		(1500)	
	4								
B UL	5		Very compact wet brown fine SAND with trace of gravel and a layer of silty clay	8 11 14	16.8	--	*	(3500)	
	6								
C UL	7		Very stiff moist brown silty CLAY with sand and pebbles and wet sand and gravel seams	4 7 11	11.7	138	*	(3500)	
	8								
	9								
D UL	10			4 8 10					
	11								
	12								
	13								
	14		Very stiff moist blue silty CLAY with sand and pebbles						
E UL	15			4 7 11					
	16								
	17								
	18								
	19		Stiff moist blue silty CLAY with sand and pebbles, occasional wet gray sand and gravel seams and occasional stones						
F UL	20			3 5 7					
	21								
	22								
	23		Notes:						
	24		1) Offset boring 12' northwest of staked location due to wetlands.						
	25		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. INS.
G.W. VOLUMES Heavy Cave-In at 10'2"



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JOB NO. 19-040

SURFACE ELEV. 933.6+ DATE 4-22-19

LOG OF SOIL
BORING NO. 7

PROJECT Soils Investigation
Proposed Scenic Pines
Estates Subdivision
LOCATION Pembine Street
Novi, Michigan

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						
	2		1'5"						
A	3		Compact wet variegated clayey fine SAND	1					
UL	3		with gravel, trace of silt and seams to layers of	3	14.0	135			
	4		sandy clay	5			*	(2500)	
	5		3'6"						
B	6		Very compact wet brown silty fine to medium	9					
UL	6		SAND with occasional trace of gravel	9	15.1	129			
	7		6'0"	11					
C	8		Stiff moist blue silty CLAY with sand and	2					
UL	8		pebbles	3	14.4	137		1680	
	9		8'6"	5			*	(2000)	
	10		Firm moist blue silty CLAY with sand and						
D	11		pebbles and wet fine sand seams	2					
UL	11		14'6"	3	12.0	142		625	
	12		15'6"	4			*	(2000)	
	13		Compact wet gray gravelly SAND	5					
	14								
E	15								
UL	15								
	16								
	17								
	18								
	19								
	20								
	21								
	22								
	23		Notes:						
	24		1) Offset boring 10' southeast of staked						
	25		location due to wetlands.						
			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. INS.
G.W. VOLUMES Heavy



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JOB NO. 19-040

SURFACE ELEV. 933.9 DATE 4-22-19

LOG OF SOIL BORING NO. 8

PROJECT Soils Investigation
Proposed Scenic Pines
LOCATIONS Estates Subdivision
Pembine Street
Novi, Michigan

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						
A	2		1'2"	3					
UL	3		Compact moist to wet variegated clayey fine SAND with silt and seams of clay	4	16.8	130			
	4		3'6"	4					
B	5		Firm moist variegated silty CLAY with sand and pebbles and wet gray fine sand seams	4					
UL	6		6'0"	5	19.6	125			
	7		8'6"	7			*	(3500)	
C	8		Soft moist blue silty CLAY with wet fine silt seams and organics	1					
UL	9		8'6"	1	25.6	124			
	10		13'6"	1					
D	11		Medium compact wet gray gravelly silty SAND with occasional trace to seams of silty clay	2					
UL	12		15'6"	3	14.1	134			
	13			4					
	14								
E	15		Stiff moist blue silty CLAY with sand and pebbles	3					
UL	16			6					
	17			9					
	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 3 FT. 5 INS.
G.W. ENCOUNTERED AT FT. INS.
G.W. AFTER COMPLETION 4 FT. 0 INS.
G.W. AFTER HRS. FT. INS.
G.W. VOLUMES Heavy



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LOG OF SOIL

BORING NO. 9

PROJECT Soils Investigation

LOCATION Proposed Scenic Pines

Estates Subdivision

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. %
	1		0'3" Moist dark brown clayey TOPSOIL						
A	2		Very stiff moist variegated silty CLAY with moist silt seams	7					
UL	3		2'10" Compact wet brown fine SAND with trace of gravel	9	24.3	120			
	4		3'4" Stiff moist variegated silty CLAY with sand and pebbles	13			*	(6000)	
B	5		5'0" Stiff moist blue silty CLAY with sand and pebbles and occasional wet fine sand seams	4					
UL	6			6	14.2	137			
	7			7			*	(3000- 6000)	
C	8		8'6" Stiff moist blue silty CLAY with sand and pebbles	2					
UL	9			3	13.4	141			
	10			5			*	(4000)	
D	11			4					
UL	12			7					
	13			9					
	14								
E	15			5					
UL	16		15'6" Stiff moist blue silty CLAY with sand and pebbles	6					
	17			8					
	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
LOCATION Proposed Scenic Pines Estates Subdivision
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. %
	1		0'6" Very moist dark brown clayey TOPSOIL						
A	2		Slightly compact wet clayey variegated fine SAND with some silt and trace of vegetation	1					
UL				2	17.2	128			
	3		2'5" Compact wet brown fine SAND with trace of vegetation and seams to layers of clayey sand	7					
	4								
B	5		4'3" Very stiff moist variegated sandy CLAY with some sand and pebbles and little silt	5					
UL				12	10.5	139			
	6			13			*	(8000)	
	7		6'10" Very stiff moist brown silty CLAY with trace of sand and pebbles	9					
C				10					
UL			7'6" Very stiff moist blue silty CLAY with little sand and pebbles	11					
	8		7'8" Very stiff moist blue silty CLAY with little sand and pebbles						
	9								
D	10			3					
UL				3	11.7	141		2295	
	11		Stiff moist blue silty CLAY with some sand and pebbles and seams of wet fine to medium sand	7			*	(2500-3000)	
	12								
	13								
	14		13'4" Very stiff moist blue silty CLAY with sand and pebbles and wet fine sand streaks	3					
E	15			7					
UL				10					
	16								
	17		16'10" Stiff moist blue silty CLAY with little sand and pebbles						
	18								
	19								
F	20			3					
UL				5					
	21		20'6" NOTES:	5					
	22								
	23								
	24		1) Set piezometer at 10' with 3' stick up.						
	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 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
LOCATIONS Estates Subdivision
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. %
	1		0'3" Moist dark brown clayey TOPSOIL with vegetation						
A	2			3					
UL	3		Stiff moist brown silty CLAY with wet brown silt seams	5	27.7	116			
	4			3			*	(1000-2000)	
B	5		4'0" Very stiff moist brown silty CLAY	6					
UL	6			7	24.4	124			
	7			12			*	(6000)	
C	8		6'6" Very compact moist to wet brown fine to medium SAND with trace of silt	7					
UL	9			9					
	10			11					
D	11			4					
UL	12			8	18.4	123			
	13			10					
	14		12'6" Very stiff moist blue silty CLAY with sand and pebbles and occasional stones						
E	15			8					
UL	16		15'6" Installed 1½" diameter PVC piezometer in boring with screen bottom at 10' and 3' stick-up.	12					
	17			12					
	18								
	19								
	20								
	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 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
LOCATIONS Estates Subdivision
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. %
	1		Moist dark brown clayey TOPSOIL with trace of vegetation						
A	2		1'6"	1					
UL	3		Stiff moist variegated sandy CLAY with moist to wet brown and gray silt seams	4	23.1	123			
	4		4'0"	5			*	(3500)	
B	5		6'6"	3					
UL	6		Compact wet brown silty fine to medium SAND with traces of clay and gravel	5	14.6	131			
	7		6'6"	5					
C	8		Stiff moist variegated silty CLAY with sand and pebbles and wet brown fine sand seams	3					
UL	9		9'6"	6	12.3	140		*	(5000)
	10		9'6"	6					
D	11		14'0"	3					
UL	12		Stiff moist variegated silty CLAY with sand and pebbles and wet brown fine sand seams	5					
	13		14'0"	5					
	14		14'0"						
E	15		20'6"	5					
UL	16		Very stiff moist blue silty CLAY with sand and pebbles and occasional stones	9					
	17		20'6"	11					
	18								
	19								
F	20			7					
UL	21			8					
	22			11					
	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 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

SIEVE ANALYSIS

<u>Boring</u>	<u>Sample</u>	<u>% Passing #4 Sieve</u>	<u>% Passing #10 Sieve</u>	<u>% Passing #40 Sieve</u>	<u>% Passing #100 Sieve</u>	<u>% Passing #200 Sieve</u>
1	B	95.6	90.8	74.2	29.2	15.6
4	A	83.9	76.8	56.2	12.3	4.2
7	B	98.8	95.2	78.6	37.9	21.8
8	D	87.7	81.1	68.0	37.9	31.3
11	D	99.4	97.5	81.5	9.9	4.8
12	B	97.1	93.4	62.7	28.9	20.7

APPLICANT RESPONSE LETTER

September 6, 2019

Sri Komaragiri, Planner
City Novi

Re: Scenic Pines Estates SP 18-76
Review Responses

Dear Ms. Komaragiri:

Thank you for the Site Plan review letter dated August 22, 2019.

Comments below directly correspond to the review letter. We are formally requesting the waivers noted in the review letters. We are also providing color renderings of the site and buildings as requested.

Planning Recommendation: Approval for Preliminary Site Plan, Special Land Use and Site Condominium. **Thank you!**

Previous Conditions: The 2003 approval was subject to conditions.

Applicant confirms that these conditions are still acceptable as follows:

- a. *The site plan does not carry with it an approval of any lake access lot. **Agreed.***
- b. *Maintenance & repair of roads resulting from applicant's work will be repaired by Applicant. Roads will be videotaped prior to construction. **Agreed.***
- c. *Applicant agrees to coordinate construction with the school bus schedule. **Agreed.***
- d. *Construction traffic will comply with the City load limits. **Agreed.***

Deviations/Waivers:

Applicant requests Waivers for items that do not conform to Ordinance requirements as follows:

- a. Distance of cluster from streets and ROW (Sec. 3.28. 4. D): Clusters cannot be within 30 feet from the edge of a private drive. They are currently proposed at 25 feet. **The reason for the request is because applicant has been encouraged by staff, outside consultants, and the Novi Cluster Ordinance as well as applicant's own desire to save as many natural features as possible. The site is heavily wooded, and we selected the Cluster option to preserve these resources. By reducing the front setback, we were able to accommodate visitor parking in the drives as well as save additional natural features in the back yards. The current plan saves a larger percentage of protected Woodlands than the previously approved version. The Cluster Ordinance encourages this type of innovation to achieve master plan goals. This waiver was previously approved on the June 25, 2003 plan.**
- b. The applicant has indicated they will seek a waiver for the minimum opposite-side driveway spacing requirement. **The reason for the waiver is because the dimensional restrictions for cluster developments for setbacks and cluster separations cannot be achieved while maintaining opposite-side driveway spacing. Clustering the homes together also clusters the drives together. This waiver was previously approved in the June 25, 2003 plan.**
- c. Reduction of minimum required Distance between clusters (Sec. 3.28. 5) for clusters 1-2-3 cluster and 22-23-24-25. 85 feet is required, 78 feet is proposed. **The spacing**

requirement varies depending on the number of units in the cluster. 23 of 25 units meet the required opposite side spacing. Only two of the seven units listed above violate the spacing requirement. The cluster in question has seven units (noted above.) The spacing requirement for 6-unit clusters is 75' which these units meet. The variance could also theoretically be achieved by reducing the building depth by seven feet. This would compromise the architectural integrity of the units and be inconsistent throughout the development. The allowable density of this plan has been reduced through voluntary adherence to 2003 plan conventions that are not ordinance based. This waiver was previously approved in the June 25, 2003 plan.

- d. A waiver will be required for not meeting the minimum distance between the sidewalk and back-of-curb. Engineering supports this waiver. See Engineering Review Item #19. ".... Any distance less than 15 feet will require approval from the City Engineer who is currently supporting this deviation." The sidewalk has been revised wherever possible. All the walks in common areas are located so the outside edge is 15' from the curb. We appreciate the City Engineer collaborating with us to find opportunities to increase the distance and we have incorporated all those suggestions. The only remaining area where the distance between the walk and the curb is less than the requirement is directly in front of the units. This decision was made to allow the resident's guests to park in the driveways while not impeding pedestrian travel. We believe this is an important factor given the limited space for development under the Cluster Option. The open space and preservation areas account for over half the site, limiting areas available for visitor parking. There is nowhere left to adjust the walks without compromising the parking.
- e. To allow trees along the proposed street to be farther than 15 feet from edge of pavement due to a lack of room for them between the sidewalk and the edge of pavement. The City landscape architect worked with us to identify locations where the trees in question could be located to add more street appeal along the frontage to improve the streetscape and satisfy this requirement. We modified the location of water and sewer leads to achieve these landscape revisions. This reduced the waiver to 6 remaining trees. These changes are described on the attachment and is now supported by staff. Prior comment was: *"This waiver request is conditionally supported by staff as the trees' positioning is largely driven by the units being located closer to the street in order to preserve existing trees. However, it appears that some trees could be located closer to the street with a realignment of some of the utility lines, particularly water and storm. If possible, this should be done to reduce the waiver as much as possible."* Subsequent communications with Landscape staff demonstrated compliance with this request and all the trees in question were relocated (See attachment addressing the final 6 trees.)
- f. A waiver is requested for lack of street trees along Pembine that can't be planted due to a lack of space between the sidewalk and road. Staff wrote: "A waiver is requested for street trees along Pembine that can't be planted due to a lack of space between the sidewalk and road. ***This waiver is supported by staff***" The waiver is for 3 trees (See Landscape review.) Pembine Road currently meanders outside of the right of way, closing the distance between the proposed walk and the road. This existing condition will be improved when the applicant donates additional right of way associated with this plan approval. The applicant has hundreds of tree replacements required and would be pleased to plant them on site rather than contribute to the tree fund, however the existing physical conditions prevent this in limited locations.

REVIEWS:

- a. Engineering Review: **Engineering recommends approval. Thank you!**
- b. Landscape Review: **Landscape recommends approval** subject to of the waivers. **Thank you!**
- c. Wetlands Review: Authorization to encroach the Natural Features Setback is required. **Wetlands recommends approval. Thank you!**
- a. Woodlands Review: **Woodlands recommend approval. Thank you!**
- b. Traffic Review: **Traffic recommends approval. Thank you!**
- c. Facade Review: **Facade recommends approval. Thank you!**
- d. Fire Review: **Fire recommends approval** with conditions. **Thank you!**

City Wetlands and Woodlands Review:

The revised plans were not routed for review of wetland and woodland impacts as **those reviews recommended approval** of the last set of plans. Updated comments will be provided for next submittal. **Applicant will continue to address comments as they are received.**

Two (2) small wetland buffer impacts are indicated for rear yard grading in the areas of Units 6, 7 and Unit 16. The area near Units 6 & 7 is 'temporary' and should be restored with a native seed mix. **Agreed.** The area near Unit 16 is permanent. **Agreed.**

The removals appear to be slightly higher than the last plan (8 more trees than previous plan.) **The Master Down House plan appealing to the empty nest buyer was added at the last round and required 3' of additional building area which accounted for the additional tree removals. The product change was mutually support by staff and the applicant. The preservation of protected woodlands remains above 50% at 53.3%. This is 3.3% more than the previously approved plan. Small discrepancies in the Woodland Replacement Credit calculation will be resolved during final engineering. Other drafting comments will be completed during final engineering.**

Engineering Review:

Storm Water Management Plan #15a. To reinforce the conclusion of the average water table elevation, submit one additional set of groundwater elevation readings for piezometers #6 and #10 with each future site plan submittal. **Agreed.**

Paving & Grading #19. Sidewalks on private roadways should be located such that the outside edge of the sidewalk is a minimum of 15 feet from back of curb. Any distance less than 15 feet will require approval from **the City Engineer who is currently supporting this deviation. Thank you! Other drafting comments will be completed during final engineering.**

Landscaping Review:

This project is **recommended for approval for Preliminary Site Plan. Thank you!** Two landscape waivers are required, one of which is completely supported by staff, and the other is supported with the request that the applicant explore options to reduce that waiver or eliminate it entirely. **Agreed and revisions completed and reviewed with staff (See waiver notes above.) Additional drafting comments will be corrected on final engineering.**

ECT Wetland Review:

ECT encourages the Applicant to minimize impacts. **Impacts have been minimized.** Applicant must confirm need for a Permit from EGLE. **Applicant has applied to EGLE.** Applicant shall quantify the areas of wetlands, buffers, list the square footage of Impact, provide CY of fill and show temporary impact restoration. **Agreed. Drafting comments have been corrected and will be reviewed with final engineering.**

ECT Woodland Review:

ECT encourages Applicant to minimize impacts to woodlands. **Impacts have been minimized.** ECT suggests that the applicant provide as many Woodland Credits on site. **This number was increased from 74 to 89 on the last round of revisions.**

Remaining comments regarding: Financial Guarantee, Maintenance Guarantee, City of Novi Tree Fund, preservation/conservation easements, and tree protection are all standard for City of Novi projects, are acknowledged by applicant and agreed.

Traffic Review:

AECOM recommends **approval** for the applicant to move forward with the condition that the comments are adequately addressed to the satisfaction of the City. **Applicant will continue to address comments as they are received. Thank you!**

Fire Review:

- All hydrants **MUST** be installed and operational prior to any building construction begins. **Agreed.**
- **MUST** provide documentation regarding the bridge at final review. **Agreed.**

Approved with Conditions. Thank you!

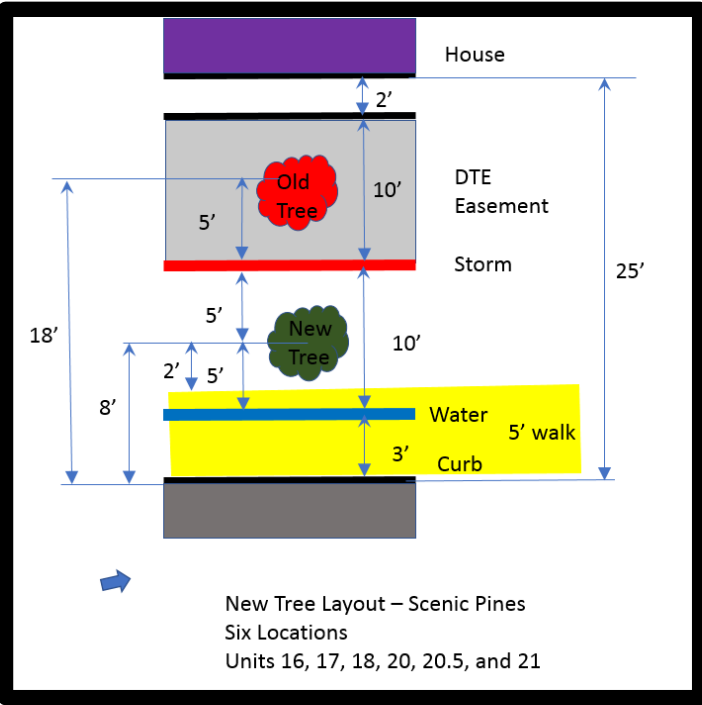
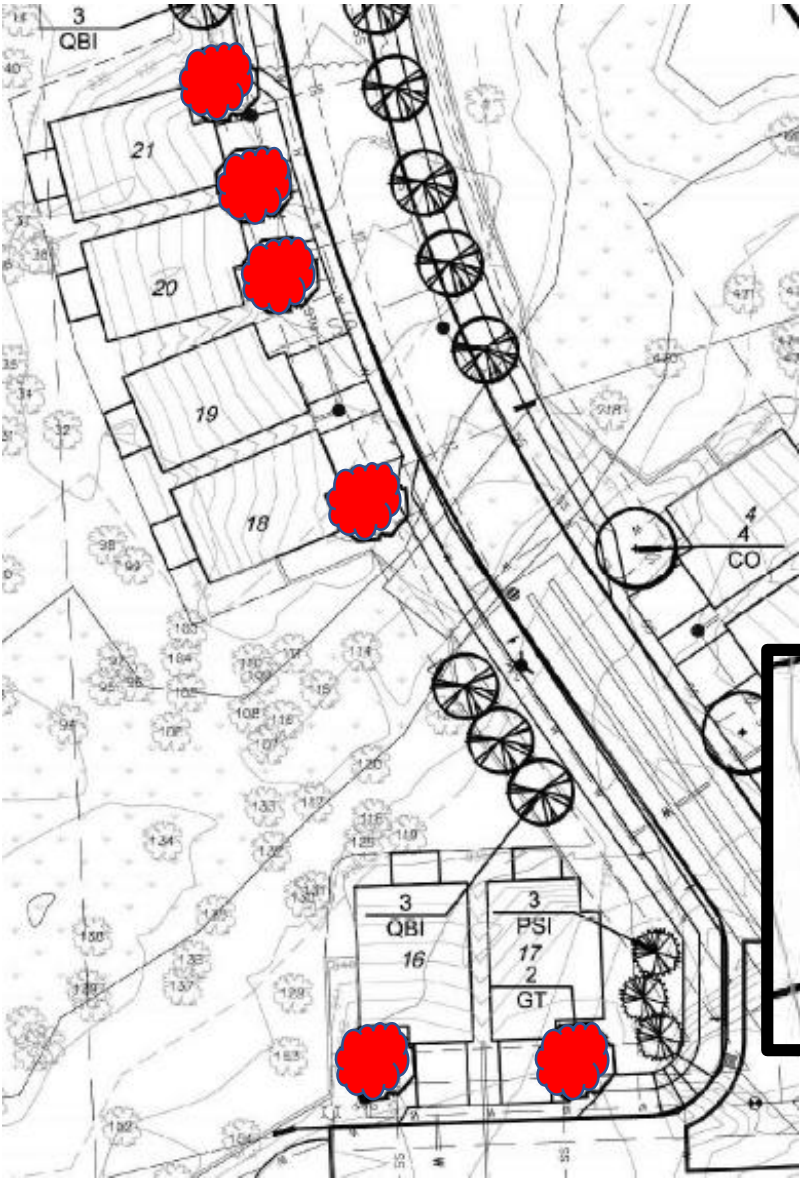
We hope additional information provided will suffice. Please let us know if there are any questions or if any additional information is needed.

Respectfully,
DIFFIN-UMLOR & ASSOCIATES



Michael Noles, Vice President

Old: Six Trees are 18' off Back of Curb



New: Six Trees are 8' off Back of Curb



McDowell & Associates

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August 29, 2019

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

Attention: Mr. Todd Rankine

Job No. 19-040

Subject: Groundwater Review
Scenic Pines Estates Subdivision
Pembine Street
Novi, Michigan

Gentlemen:

As requested, we are providing this letter to discuss groundwater conditions at the subject site.

The 12 borings at the subject site generally encountered mostly clay type soils with layers to areas of sand. Where this is the case, groundwater levels encountered during drilling or measured from piezometers can often be misleading due to the presence of perched water conditions. During and after periods of wet weather, perched groundwater conditions can cause significant short term groundwater fluctuations, especially where relatively small areas or layers of granular soils exist.

Piezometer readings were obtained in April, 2019 and July, 2019. The April readings were obtained soon after the piezometers were installed during a period of very wet weather. These readings generally indicated water levels near the existing ground surface and are not expected to be representative of the long term groundwater levels at the site. Five of the six July readings indicate a groundwater level near Elevation 931' (including the piezometer at Boring 1). Boring 1 encountered mostly sand type soils to about Elevation 922' and is expected to be a better indicator of the long term water table at the site than other locations where smaller areas or layers of sand type soils were encountered.

Where layered soils and perched water conditions are prevalent, the long term water table at a site can often be estimated by the elevation of long term surface water in the vicinity of the site. The attached drawing, provided by Diffin Umlor & Associates, shows water levels for nearby bodies of water ranging from about Elevation 930' to 933'.

Based on the piezometer data obtained to date along with the provided elevations of nearby surface water, considering the long term groundwater table for this site to be at about Elevation 931' appears to be appropriate. We suggest continuing to take piezometer readings in order to further understand seasonal groundwater fluctuations at the site.

If you have any questions or need additional information, please do not hesitate to call.

Very truly yours,

McDOWELL & ASSOCIATES

A handwritten signature in black ink, appearing to read "David Quintal". The signature is fluid and cursive, with the first name "David" and last name "Quintal" clearly distinguishable.

David E. Quintal M.S., P.E.
Geotechnical Engineer

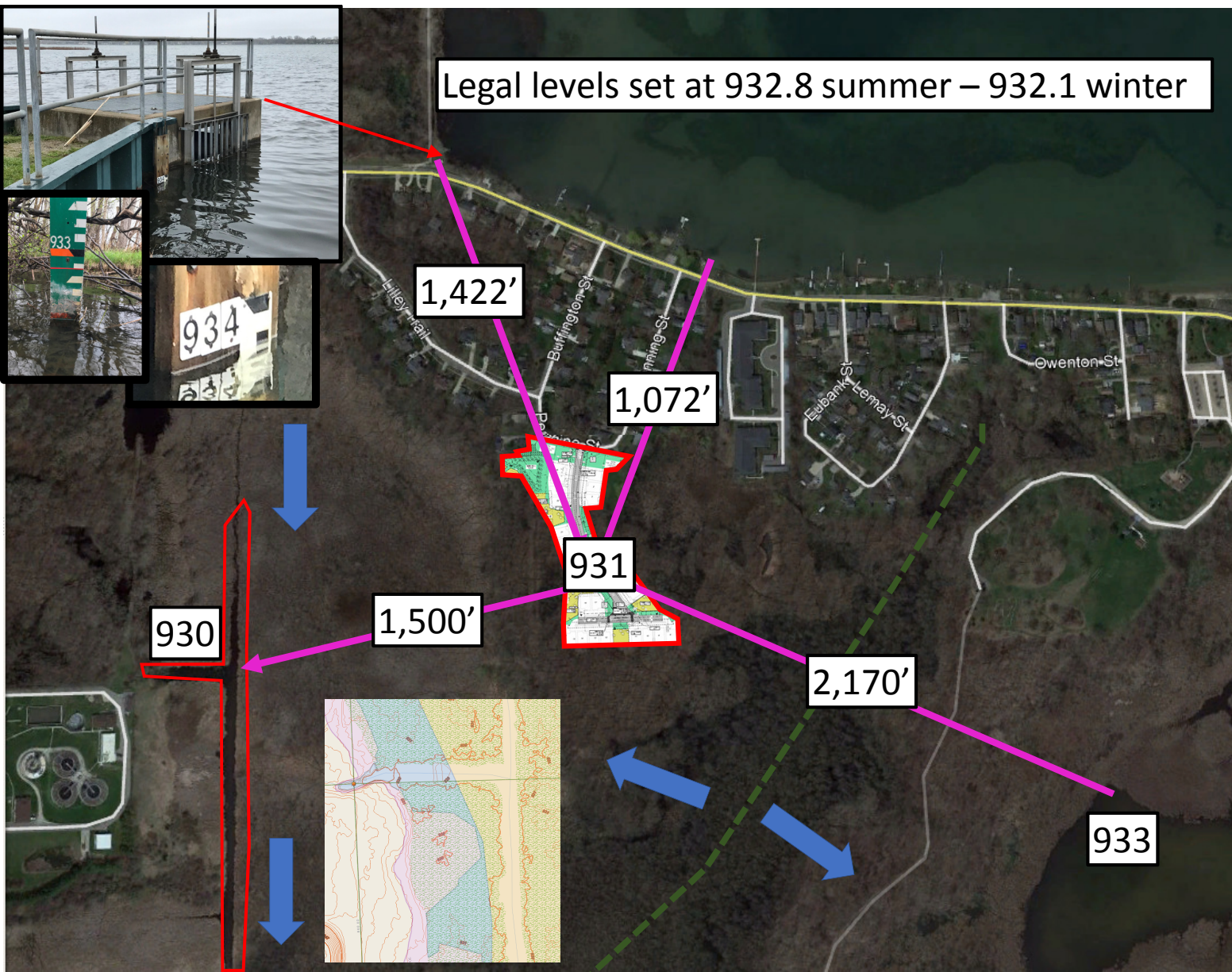
DELAYED WATER LEVEL MEASUREMENTS

Piezometer No.	Top of Casing Elevation (ft)	Ground Elevation (ft)	Groundwater Elevation (ft)	
			04/26/19	07/09/19
1	937.29	934.71	933.4 (3.91)	930.7 (6.61)
3	937.59	934.34	934.0 (3.58)	931.5 (6.12)
6	936.50	933.67	933.8 (2.74)	931.0 (5.48)
10	937.02	934.19	935.2 (1.80)	931.5 (5.48)
11	944.01	941.01	934.4 (9.58)	933.5 (10.49)
12	937.31	934.31	933.3 (4.00)	930.8 (6.48)

Notes:

1. Values in parentheses are depth to water from top of casing (TOC).
2. Ground Surface elevations provided by Diffin Umlor & Associates.
3. Top of casing elevations calculated by McDowell & Associates using ground elevations and stickup measurements .

M&A Job 19-040



Elev	PZ reading 7/9/2019	
PZ 1	930.70	All Sand
PZ 3	931.50	Stiff Clay
PZ 6	931.00	Closest
PZ 10	931.50	Stiff Clay
PZ 11	933.50	Perched on Clay
PZ 12	930.80	Confirmation

