



## SCENIC PINES ESTATES JSP18-76

### SCENIC PINES ESTATES JSP 18-76

Consideration at the request of Singh Development for Final Site Plan approval. The subject properties are approximately 9.44 acres and are located south of South Lake Drive, on the 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 Final Site Plan with One-Family Clustering Option

REVIEW	RESULT	DATE	COMMENTS
Planning	Approval recommended	4-29-20	<ul style="list-style-type: none"> <li>• Planning Commission findings and approval of the following granted 9/25/19:               <ul style="list-style-type: none"> <li>○ Clustering of one-family dwelling may be permitted for this subject parcel based on Section 3.28.1.B</li> <li>○ Approval of the Special Land Use permit based on section 6.1.2.C.</li> <li>○ Reduction of minimum distance between clusters.</li> <li>○ Reduction of front building setback from the streets.</li> <li>○ Determination of the future use of the Parcel 50-22-03-327-004 fronting on the Walled Lake.</li> </ul> </li> <li>• Area undeveloped will be preserved in a permanent easement.</li> <li>• Items to be addressed on the Electronic Stamping Set submittal.</li> </ul>
Engineering	Approval recommended	1-8-20	<ul style="list-style-type: none"> <li>• Administrative variance for not having 15 feet from back of curb to outside edge of sidewalk;</li> <li>• Items to be addressed on the Final Site Plan submittal.</li> </ul>
Landscaping	Approval recommended	12-13-19	<ul style="list-style-type: none"> <li>• Landscape waivers for not providing street trees along Pembine and for not proposing trees between curb and the sidewalk granted 9/25/19</li> <li>• Items to be addressed on the Final Site Plan submittal.</li> </ul>
Wetlands	Approval recommended	12-31-19	<ul style="list-style-type: none"> <li>• City of Novi Non-Minor Wetland Permit and an Authorization to encroach the 25-Foot Natural Features Setback approved 9/25/19</li> <li>• Items to be addressed on the final site</li> </ul>

			plan submittal
Woodlands	Approval recommended	4-27-20	<ul style="list-style-type: none"> <li>• <b>City of Novi Woodland Permit approved 9/25/19</b></li> <li>• Items to be addressed on the final site plan submittal</li> </ul>
Traffic	Approval recommended	1-3-20	<ul style="list-style-type: none"> <li>• <b>Planning Commission waiver for not meeting the minimum driveway spacing for opposite side driveways granted 9/25/19</b></li> <li>• Items to be addressed on the Final Site Plan submittal.</li> </ul>
Facade	Not Applicable		
Fire	Approval recommended	12-16-19	



## MOTION SHEET

### Approval

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

1. The previous conditions of the Planning Commission approval for the Preliminary Site Plan;
2. The bridge design shall receive approval by AECOM prior to the approval of the Final Stamping Set;
3. The utility enclosure and landscape screening details for the necessary grinder pump and generator located south of Pembine Drive shall be included on the plans prior to approval of the Final Stamping Set;
4. The findings of compliance with Ordinance standards in the staff and consultant review letters, and the conditions and items listed in those letters, with these items being addressed prior to Final Stamping Set approval; and
5. *(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.)*

**-OR-**

### Denial – Final 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 Final 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.)*

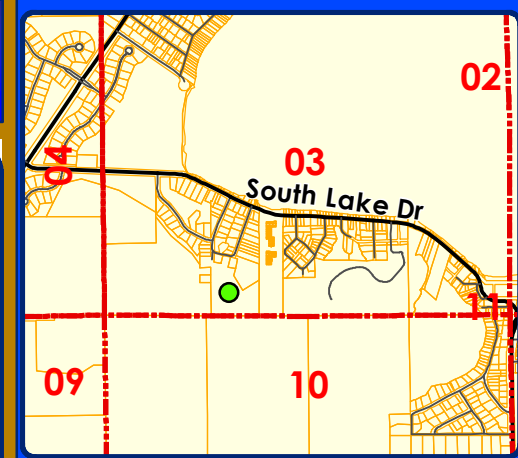
**MAPS**  
Location  
Zoning  
Future Land Use  
Natural Features

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# 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



1 inch = 244 feet



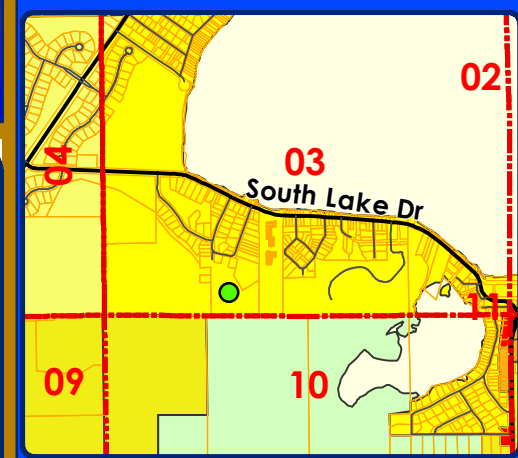
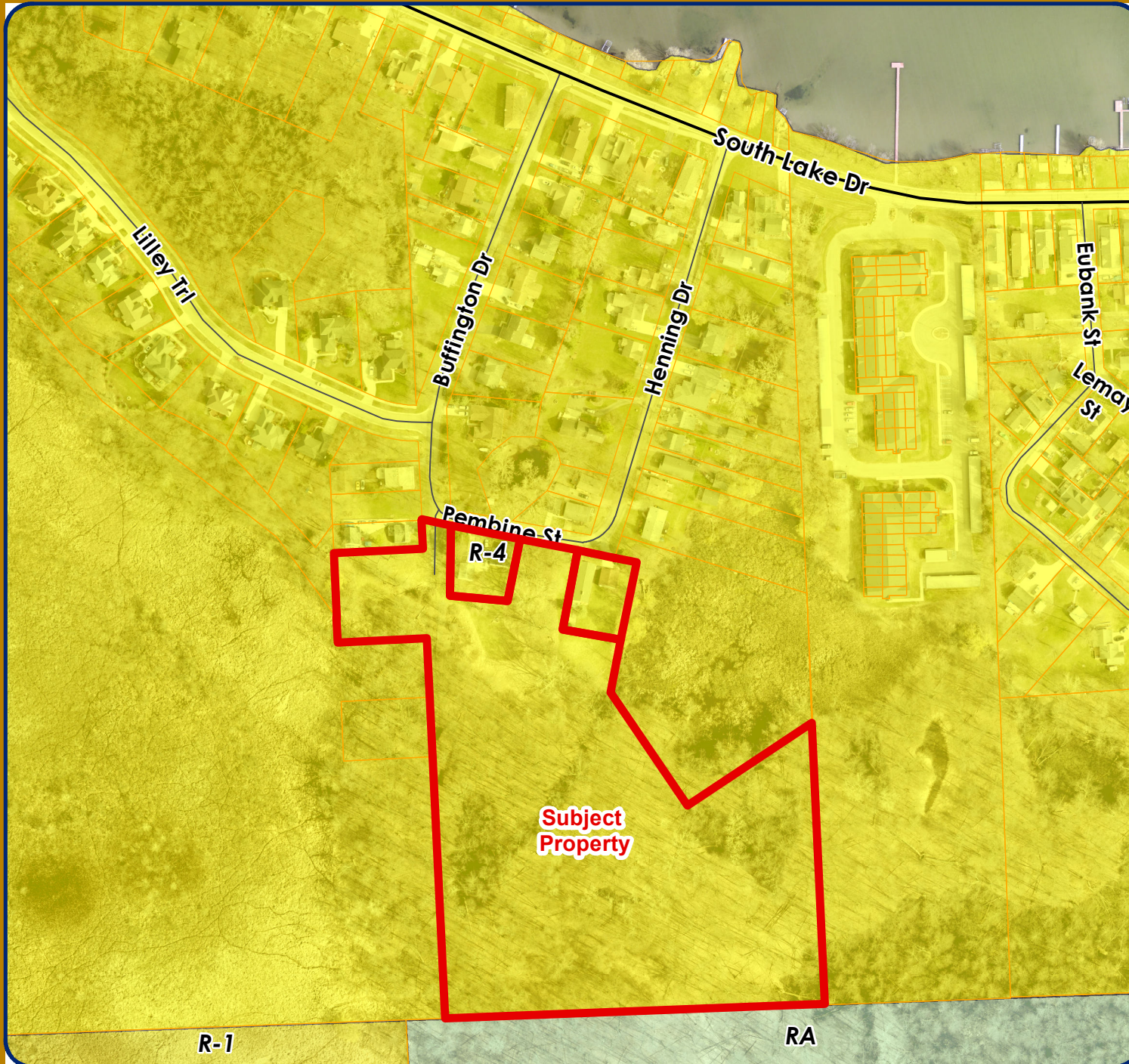
### MAP INTERPRETATION NOTICE

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

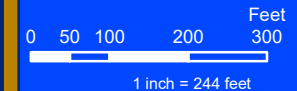


- LEGEND**
- Sections
  - R-A: Residential Acreage
  - R-1: One-Family Residential District
  - R-2: One-Family Residential
  - R-4: One-Family Residential District
  - RM-1: Low-Density Multiple Family
  - RM-2: High-Density Multiple Family
  - B-3: General Business District



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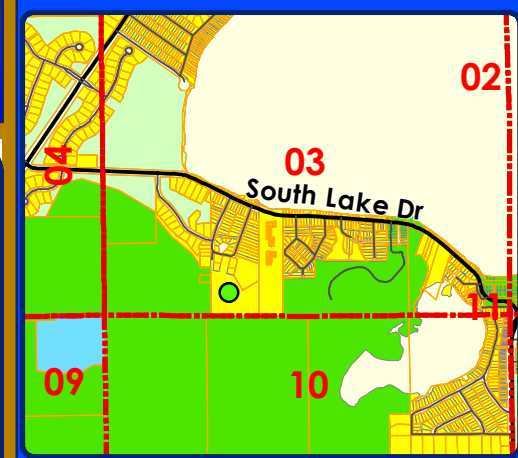
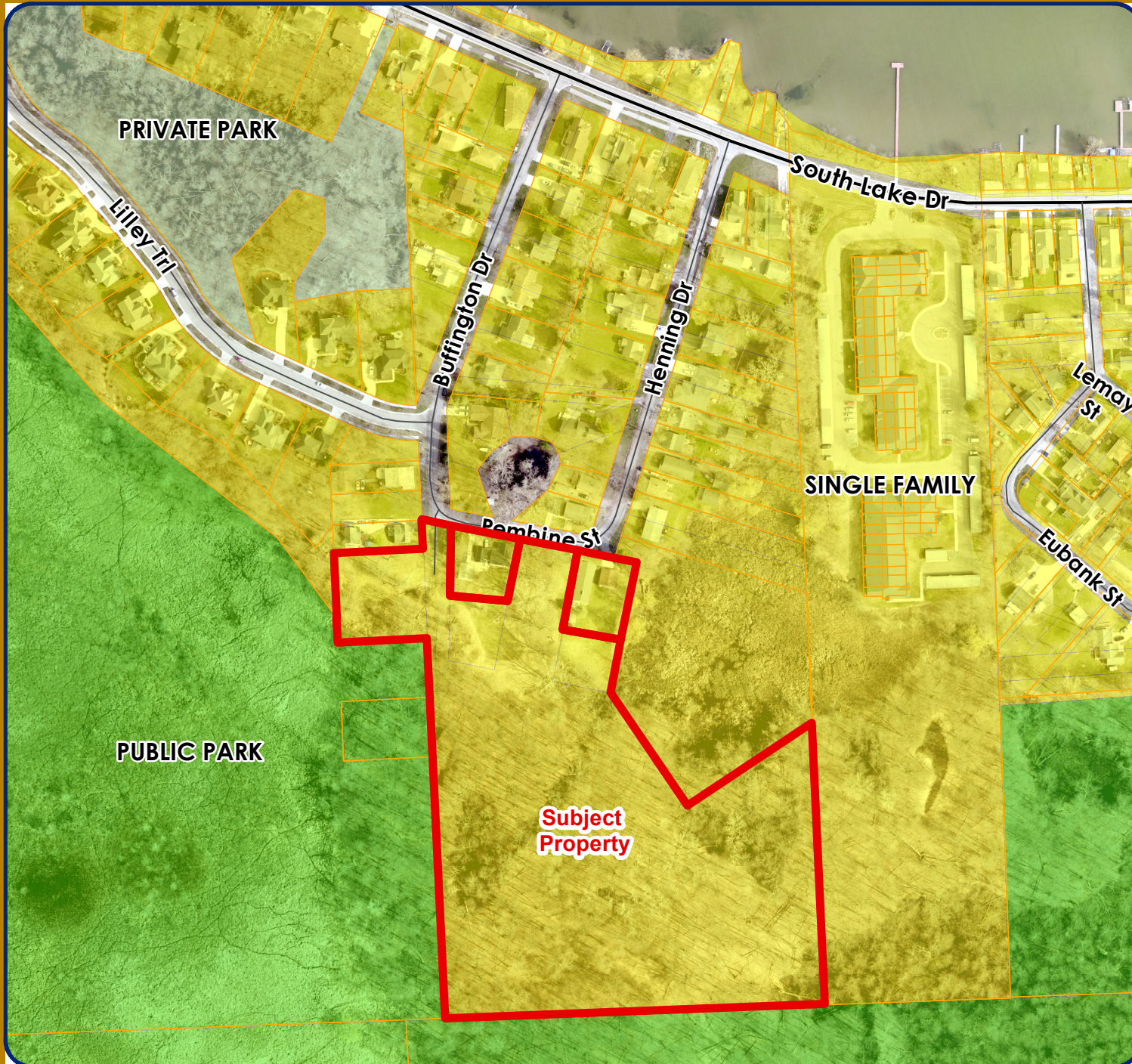
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# JSP 18-76 SCENIC PINES ESTATES

Future Landuse




**LEGEND**

- Sections
- FUTURE LAND USE**
- Single Family
- Multiple Family
- Local Commercial
- Public
- Public Park
- Private Park

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0 50 100 200 300 Feet  
1 inch = 244 feet



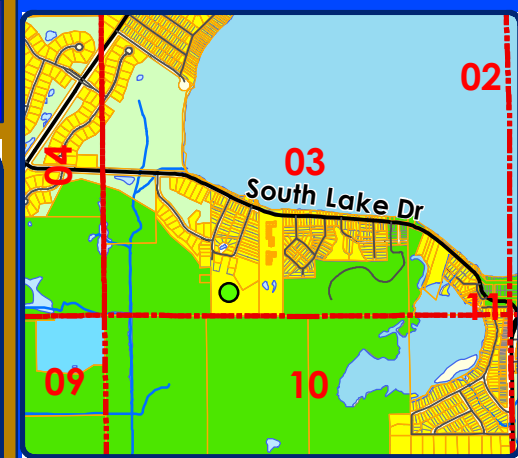
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# JSP 18-76 SCENIC PINES ESTATES

## Natural Features

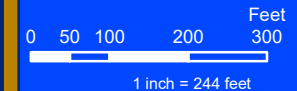


- LEGEND**
- Sections (Red dashed line)
  - FUTURE LAND USE
    - Single Family (Yellow)
    - Multiple Family (Orange)
    - Local Commercial (Light Orange)
    - Public (Light Blue)
    - Public Park (Green)
    - Private Park (Light Green)
  - WETLANDS (Blue hatched)
  - WOODLANDS (Light Green)



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**SITE PLAN**

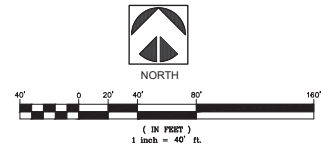
(Full plan set available for viewing by emailing [bmcbeth@cityofnovi.org](mailto:bmcbeth@cityofnovi.org))

**NOTE:**

- EXISTING ROADS SHALL BE MAINTAINED DURING CONSTRUCTION AND RECONSTRUCTED AS NECESSARY UPON COMPLETION OF CONSTRUCTION.
- DUST CONTROL TECHNIQUES SHALL BE EMPLOYED FOR THE DURATION OF SITE CONSTRUCTION ACTIVITIES.
- EXISTING ROADS SHALL BE DOCUMENTED VIA VEGETATE PLOTS TO CONSTRUCTION UPON COMPLETION OF CONSTRUCTION. EXISTING ROADS SHALL BE RE-VEGETATED TO REVERSE RECONSTRUCTION REQUIREMENTS IF ANY.
- CONSTRUCTION ACTIVITIES SHALL BE COORDINATED WITH RESPECT TO THE ELEMENTARY SCHOOL BUS SCHEDULE.

**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)
8-8-10-11	4-5-6-7	8	100	105, N/A	75	N/A
18-19-20-21	4-5-6-7	8	100	N/A	75	N/A
4-5-6-7	12-13-14-15	8	100	138, N/A	75	N/A
1-2-3	22-23-24-25	7	85	78, N/A	75	N/A
1-2-3	18-19-20-21	7	85	75, 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



**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**

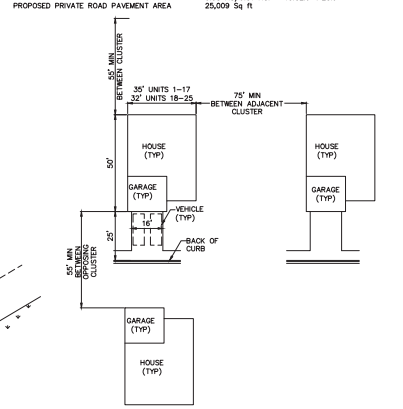
SIGN #	SIGN TYPE	REQUIRED
R1-1	STOP (30")	2
D3-2	STREET NAME SIGN	2
R8-3A	NO PARKING (18")	8

**NOTES:**

- 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 (OBSERVATION)	9.31 AC.
REGULATED WETLANDS	1.70 AC.
NET SITE AREA (GENUITY)	7.61 AC.
PROPOSED DENSITY	3.3 UNITS/AC.
RESIDENTIAL UNITS PROPOSED	25.146
RESIDENTIAL UNITS PROPOSED	25
REGULATED WOODLAND	7.45 AC.
RWA/NSA (7.45/9.31)	80%
WOODLANDS REQUIRED TO REMAIN	4.67 AC.
PERCENT OF SITE PERMANENTLY PRESERVED	53.3% (4.96 AC.) (CLUSTER OPTION)
MAX. LOT COVERAGE < 25%	1,318 - 1,518 Sq. Ft.
(ALL BUILDINGS)	35 (2.5 STORES)
MIN. FLOOR AREA > (1000 Sq Ft)	30
BUILDING HEIGHT (PROHIBITED)	30'-0" - 1,750 SQ-FT./UNIT x 17 = 29,750 SQ-FT.,
TOTAL LOT COVERAGE (PROVIDING TOTAL)	32'-0" - 1,600 SQ-FT./UNIT x 8 = 12,800 SQ-FT.,
	29,750 + 12,800 = 42,550 SQ-FT. = 0.98 ACRES
	0.98 AC./9.31 AC. = 10.52% < 25%
	25,009 Sq. Ft.

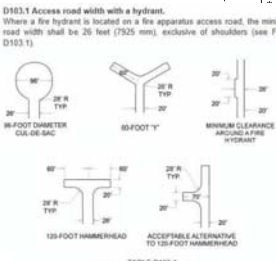


**NOTE:**

- 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:**

- SHOWS 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.



**TABLE D103.4**

LENGTH (FEET)	WIDTH (FEET)	TURNAROUNDS REQUIRED
0 - 9	12	None required
10 - 120	20	120' foot Hammerhead, 60' foot "Y" or 96' foot diameter cul-de-sac in accordance with Figure D103.1
120 - 150	24	120' foot Hammerhead, 60' foot "Y" or 96' foot diameter cul-de-sac in accordance with Figure D103.1
150 - 750	30	Special approval required

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

THE LOCATION OF EXISTING UNDEVELOPED UTILITIES ARE SHOWN AS AN APPROXIMATE GUESS ONLY AND SHOULD NOT BE RELIED UPON FOR THE LOCATION OF EXISTING UTILITIES. THE LOCATION OF EXISTING UTILITIES SHOULD BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE LOCATION OF EXISTING UTILITIES. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE LOCATION OF EXISTING UTILITIES. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE LOCATION OF EXISTING UTILITIES.

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**UMOLOR Group**

LAND DEVELOPMENT SERVICES

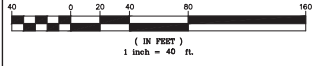
SECTION 3  
TOWN 1 NORTH, RANGE 8 EAST  
BLOOMFIELD HILLS, MICHIGAN 48322

CLIENT: SINGH DEVELOPMENT, LLC  
7125 ORCHARD LAKE ROAD  
BLOOMFIELD HILLS, MICHIGAN 48322

DATE: 11-27-2019  
REVISIONS:  
PER CITY 03-24-2020

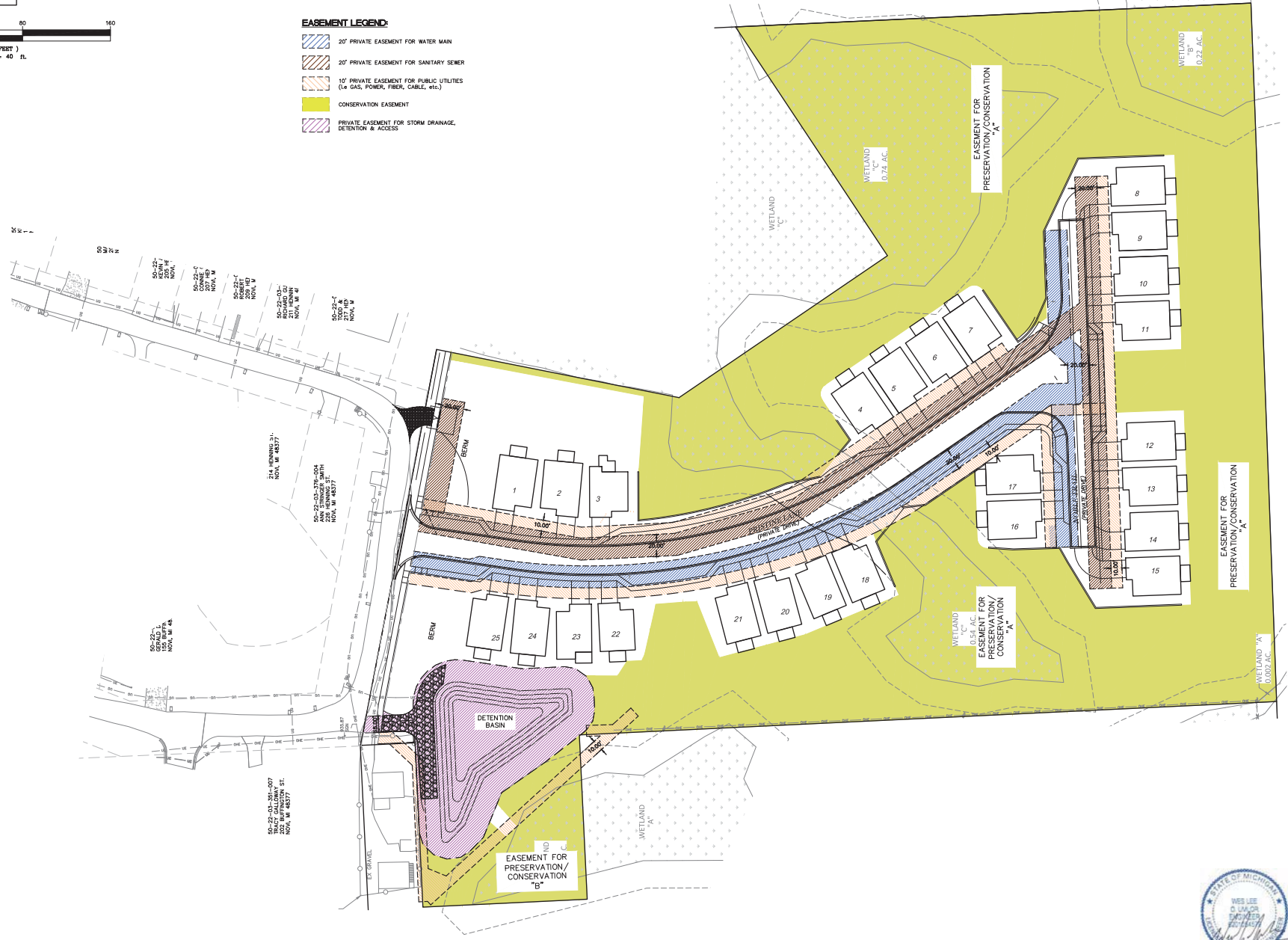
DR BY: SDT  
DC BY: SDT/MTY  
P.L.A.: SDT  
SCALE: 0 20 40  
1" = 40 FEET  
JOB NO. 180905  
SHEET NO. 2  
SHEET 2 OF 38





- EASEMENT LEGEND:**
- 20' PRIVATE EASEMENT FOR WATER MAIN
  - 20' PRIVATE EASEMENT FOR SANITARY SEWER
  - 10' PRIVATE EASEMENT FOR PUBLIC UTILITIES (1/4 GAS, POWER, FIBER, CABLE, etc.)
  - CONSERVATION EASEMENT
  - PRIVATE EASEMENT FOR STORM DRAINAGE, DETENTION & ACCESS

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



THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN AS AN APPROXIMATION ONLY AND NOT TO BE CONSIDERED AS A GUARANTEE. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES CAUSED BY THE WORK OF ANY PARTY CONTRACTOR OR ANY OTHER PARTY. THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PROTECT ANY AND ALL UNDERGROUND UTILITIES.

**811**  
Know what's below.  
Call before you dig.  
CONSTRUCTION OF THIS PROJECT IS THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES CAUSED BY THE WORK OF ANY PARTY CONTRACTOR OR ANY OTHER PARTY. THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PROTECT ANY AND ALL UNDERGROUND UTILITIES.

These documents are instruments of service in support of the project and any reuse without written permission is prohibited. All work shall be done in accordance with the approved plans and specifications. The contractor shall be responsible for any damage to existing utilities caused by the work of any party contractor or any other party. The contractor's failure to exactly locate and protect any and all underground utilities.

**The UMLOR Group**  
LAND DEVELOPMENT SERVICES

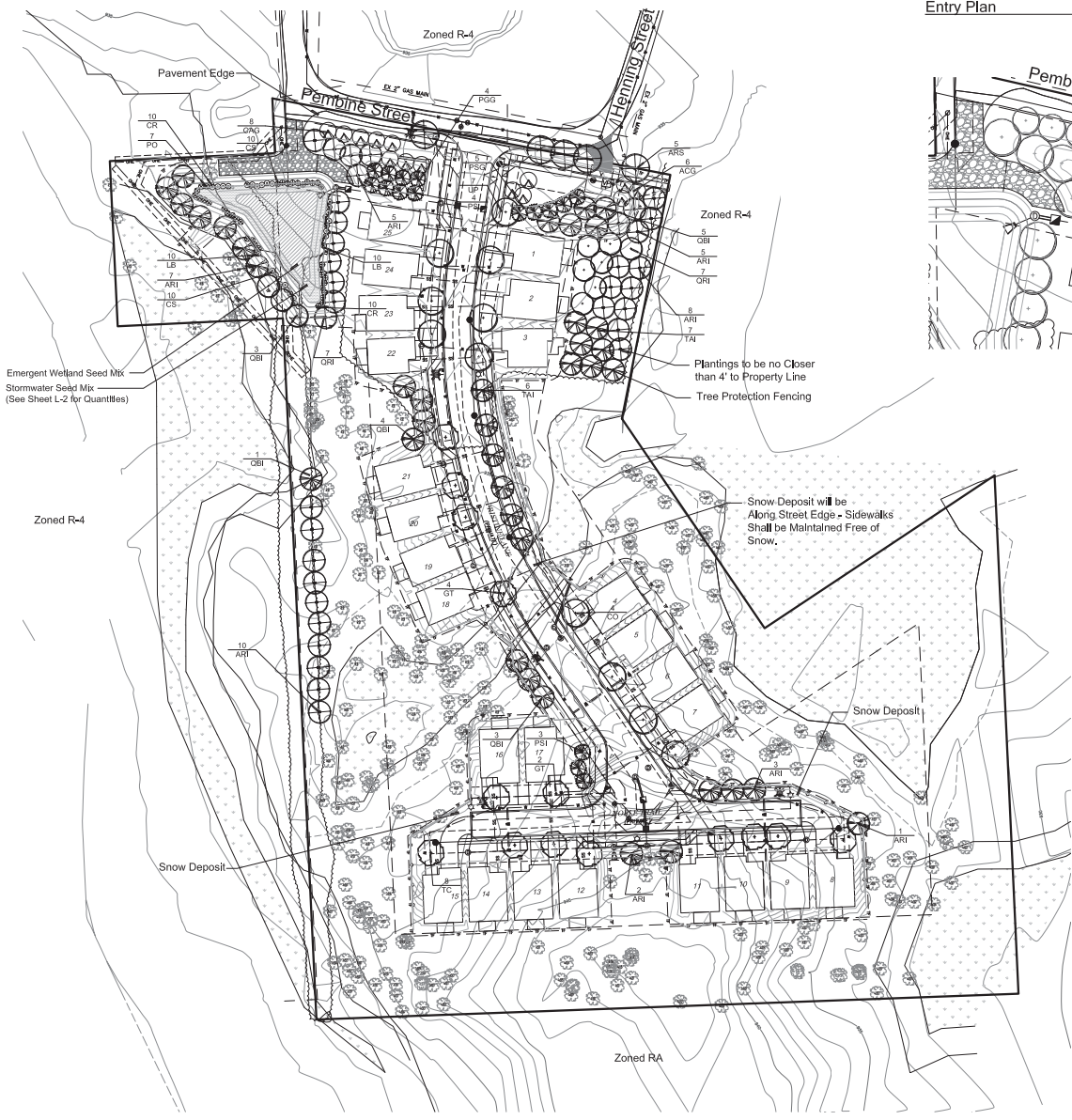
SECTION 3  
TOWN 1 NORTH, RANGE 8 EAST  
CITY OF NOVI  
OAKLAND COUNTY, MICHIGAN

SCENIC PINES  
SINGH DEVELOPMENT, LLC  
7125 ORCHARD LAKE ROAD  
BLOOMFIELD HILLS, MICHIGAN 48322  
EASEMENT PLAN

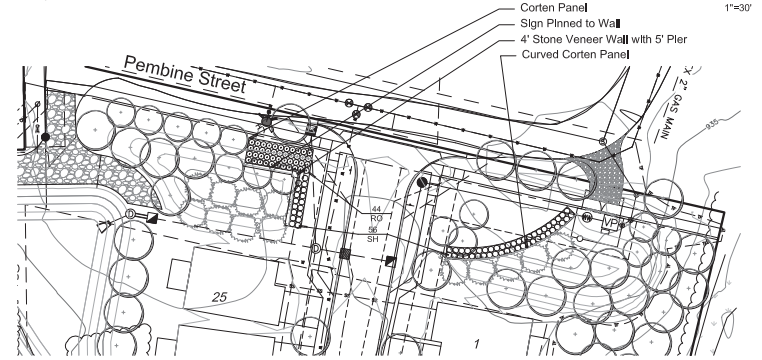
DATE: 11-27-2019  
REVISIONS:  
PER CITY 03-24-2020

DR BY: SDT  
DC BY: SDT/MY  
PK: SA  
SCALE: 0 20 40  
1" = 40 FEET  
JOB NO. 180305  
SHEET NO. 11  
SHEET 11 OF 30





Entry Plan



Landscape Summary

<b>Street Trees</b>	25 Units	Woodland Replacement	438 Trees
Unit Trees	25 Trees (1 per unit)	Replacement Required	88.6 Trees
Trees Required	25 Trees	Trees to be Paid into Fund	349.4 Trees
Trees Provided	25 Trees		
<b>Street Lawn</b>		<b>Detention Pond</b>	
Total Street Frontage	367 Lf.	High Water Length	415 Lf.
Less Drive Opening	28 Lf.	Landscape Required	291 Lf. (415 x 70%)
Net Street Frontage	339 Lf.	Landscape Provided	301 Lf. (73%)
Trees Required	9.6 Trees (339 / 35)		
Trees Provided	5 Trees		
<b>Greenbelt Plantings</b>			
Total Street Frontage	367 Lf.		
Less Drive Opening	28 Lf.		
Net Street Frontage	339 Lf.		
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		

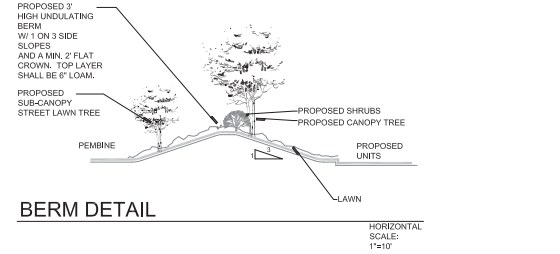
Absence of 3 required street trees along Pembine street frontage that can't be planted due to a lack of space between the sidewalk and curb.

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

Item #	Botanical Name	Common Name	Caliper	Spacing	Unit	Height	Price	Total	Species	Genus	Native	Total
ARB 41	Acer rubrum	Red Maple	2.0"	as shown	668	\$ 400.00	1,468.00					1
ARB 18	Quercus laevis	Red White Oak	2.0"	as shown	668	\$ 400.00	1,468.00					1
ARB 14	Quercus laevis	Red Oak	2.0"	as shown	668	\$ 400.00	1,468.00					1
FRS 7	Fraxinus americana	White Pine	2.0"	as shown	668	\$ 320.00	1,232.00					1
FRS 13	Fraxinus americana	Blackwood	2.0"	as shown	668	\$ 400.00	1,300.00					1
ARB 6	Platanus occidentalis	Sycamore	2.0"	as shown	668	\$ 400.00	1,300.00					1
ARB 20	Cornus alternifolia	Red Dogwood	as shown	as shown	36"	\$ 50.00	1,800.00					1
ARB 25	Lonicera maackii	Spicebush	as shown	as shown	36"	\$ 50.00	1,800.00					1
POD 7	Physalis peruviana	Eastern Newt	as shown	as shown	36"	\$ 50.00	1,800.00					1
ARB 17	Smilax latifolia	Smilax	as shown	as shown	36"	\$ 50.00	1,800.00					1
<b>Unit and Street Trees</b>												
COY 4	Celtis occidentalis	Northern Hackberry	3.0"	as shown	668	\$ 400.00	1,300.00	2%	8%			1
COY 5	Celtis occidentalis var. borealis	Thornless Hackberry	3.0"	as shown	668	\$ 400.00	1,300.00	1%	1%			1
YC 8	Thuja occidentalis	Greenery Linden	3.0"	as shown	668	\$ 400.00	1,300.00	1%	1%			1
SP 7	Thuja occidentalis	Princess Elm	3.0"	as shown	668	\$ 400.00	1,300.00	1%	1%			1
SP 25	Trees Provided											
<b>Street Lawn and Greenbelt</b>												
AGC 6	Amelanchier lamarckii	Shadbush	2.0"	as shown	668	\$ 200.00	1,300.00	1%	1%			1
ARB 6	Aster multiflorus	Red Aster	2.0"	as shown	668	\$ 400.00	1,300.00	8%	8%			1
CAG 8	Cornus alternifolia	Alternative Leaf Dogwood	2.0"	as shown	668	\$ 200.00	1,300.00	1%	1%			1
FRS 9	Fraxinus americana	White Pine	2.0"	as shown	668	\$ 320.00	1,300.00	1%	1%			1
FRS 28	Trees Provided											
<b>General Plantings</b>												
POD 44	Rosa chinensis	Old Rose	as shown	as shown	42"	\$ 110.00	840.00					1
POD 56	Spirea japonica	Japanese Spiraea	1.0" c.c.	as shown	42"	\$ 110.00	840.00					1
<b>Match</b>												
19	4" Deep Shredded Hardwood Bark Mulch (1/4")						\$31	\$61.00				
44	Seed (s.p.)						\$3.00	\$270.00				
732	Seed (s.p.)						\$3.00	\$270.00				
801	Seed (s.p.)						\$6.00	\$540.00				
<b>Subtotal</b>								\$1,300.00				



Seal:



Title:  
Landscape Plan

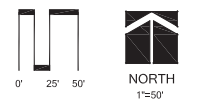
Project:  
Scenic Pines  
Novi, MI

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

Revision: Issued:  
Review February 22, 2019  
Revised May 24, 2019  
Revised July 16, 2019  
Revised November 25, 2019  
Revised March 23, 2020

Job Number:  
19-019

Drawn By: Checked By:  
jca jca



Sheet No.

L-1

# BUILDING ELEVATIONS

---





**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'

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN AS AN APPROXIMATION ONLY AND ARE NOT TO BE CONSIDERED AS A BASIS FOR ANY CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES CAUSED BY HIS NEGLIGENCE OR FAILURE TO VERIFY THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES CAUSED BY HIS NEGLIGENCE OR FAILURE TO VERIFY THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO ANY CONSTRUCTION.



Know what's below.  
**Call before you dig.**  
 CONSTRUCTION SITE SAFETY IS THE RESPONSIBILITY OF THE CONTRACTOR. BEFORE ANY CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES CAUSED BY HIS NEGLIGENCE OR FAILURE TO VERIFY THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO ANY CONSTRUCTION.

These documents are prepared by the architect in cooperation with the engineer and are not to be construed as a contract. The architect and engineer shall not be responsible for any damage to existing utilities caused by the contractor's failure to verify the location of all existing utilities prior to any construction. The contractor shall be fully responsible for any damage to existing utilities caused by his negligence or failure to verify the location of all existing utilities prior to any construction.

**The UMLOR Group**  
 LAND DEVELOPMENT SERVICES

SECTION 3  
 TOWN 1 NORTH, RANGE 8 EAST  
 CITY OF NOVI  
 OAKLAND COUNTY, MICHIGAN

SCENIC PINES  
 SINGH DEVELOPMENT, LLC  
 7125 ORCHARD LAKE ROAD  
 BLOOMFIELD HILLS, MICHIGAN 48322  
 CLIENT  
 ARCHITECTURAL SKETCHES

DATE: 11-27-2019  
 REVISIONS:  
 PER CITY 03-24-2020

DR BY: SDT  
 CK BY: SDT/AMY  
 P.W. SA  
 SCALE: 0' = 1" AS NOTED  
 JOB NO. 180905  
 SHEET NO. **A1**  
 SHEET 11 OF 37



UMLOR GROUP PROJECT FOLDER\2019 DEVELOPMENT\SCENIC PINES - SCENIC PINES DESIGN FILES & P.L.S. 811\SCENIC PINES 03\180905-ARCHITECTURAL SKETCHES.dwg





ELEVATION "2200-A"  
BUILDING HEIGHT MAX. 35'



ELEVATION "2200-B"  
BUILDING HEIGHT MAX. 35'



ELEVATION "2200-C"  
BUILDING HEIGHT MAX. 35'



ELEVATION "2300-A"  
BUILDING HEIGHT MAX. 35'



ELEVATION "2300-B"  
BUILDING HEIGHT MAX. 35'



ELEVATION "2300-C"  
BUILDING HEIGHT MAX. 35'

18. VULNER GROUP PROJECT FOLDER\2024\2024 DEVELOPMENT\2024 - SCENIC PINES DESIGN FILES & PLAN SETS\SCENIC PINES 0315\2024-ARCHITECTURAL SKETCHES.rvt

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN AS AN APPROXIMATION ONLY AND SHOULD NOT BE RELIED UPON FOR THE LOCATION OF ALL UTILITIES. UTILITIES SHOULD BE FULLY RECONSTRUCTED TO BE FULLY RESPONSIBLE FOR ANY DAMAGES THAT MAY BE OCCURRED BY CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PROTECT ANY AND ALL UNDERGROUND UTILITIES.



Know what's below.  
Call before you dig.  
CONTRACTOR'S SAFETY IS THE RESPONSIBILITY OF THE CONTRACTOR. BEFORE THE WORK FOR THE PROJECT BEGINS, THE CONTRACTOR SHALL BE FULLY RESPONSIBLE TO VERIFY THE LOCATION OF ALL UTILITIES. CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY DAMAGES THAT MAY BE OCCURRED BY CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PROTECT ANY AND ALL UNDERGROUND UTILITIES.

These documents are prepared by the contractor and are not to be used for any other purpose without the written permission of the contractor. The contractor shall be responsible for any damages that may be incurred by the contractor's failure to verify the location of all utilities. The contractor shall be responsible for any damages that may be incurred by the contractor's failure to verify the location of all utilities.

The UMLOR Group  
LAND DEVELOPMENT SERVICES

SECTION 3  
TOWN 1 NORTH, RANGE 8 EAST  
CITY OF NOV  
OAKLAND COUNTY, MICHIGAN

SCENIC PINES  
SINGH DEVELOPMENT, LLC  
7125 ORCHARD LAKE ROAD  
BLOOMFIELD HILLS, MICHIGAN 48322  
ARCHITECTURAL SKETCHES

DATE: 11-27-2019  
REVISIONS:  
PER CITY 03-24-2020



DR BY: SDT  
DC BY: SDT/AMY  
SCALE: 0  
AS NOTED  
JOB NO. 180905  
SHEET NO. **A2**  
SHEET 22 OF 37



18. UMLOR GROUP PROJECT FOLDER\2019 DEVELOPMENT\18085 - SCENIC PINES\SCENIC PINES CITY\18085-ARCHITECTURAL SKETCHES\DWG



ELEVATION "2400-A"  
BUILDING HEIGHT MAX. 35'



ELEVATION "2400-B"  
BUILDING HEIGHT MAX. 35'



ELEVATION "2400-C"  
BUILDING HEIGHT MAX. 35'

THE LOCATION OF EXISTING  
 UNDERGROUND UTILITIES ARE SHOWN  
 AS AN APPROXIMATION ONLY AND  
 SHALL NOT BE CONSIDERED AS A  
 WARRANTY. THE CONTRACTOR  
 SHALL BE RESPONSIBLE FOR THE  
 LOCATION OF ALL UTILITIES. THE  
 CONTRACTOR SHALL BE FULLY RESPONSIBLE  
 FOR ANY AND ALL DAMAGES THAT  
 MAY BE OCCURRED BY THE CONTRACTOR'S  
 FAILURE TO EXACTLY  
 LOCATE AND PROTECT ANY AND  
 ALL UNDERGROUND UTILITIES.



Know what's below.

Call before you dig.

CONSTRUCTION SITE SAFETY IS THE  
 RESPONSIBILITY OF THE CONTRACTOR.  
 BEFORE YOU BEGIN ANY WORK,  
 YOU MUST CALL 811 TO REPORT THE  
 LOCATION OF ALL UTILITIES. IT IS THE  
 CONTRACTOR'S RESPONSIBILITY TO  
 VERIFY THE LOCATION OF ALL UTILITIES  
 BEFORE ANY WORK BEGINS. THE  
 CONTRACTOR SHALL BE FULLY RESPONSIBLE  
 FOR ANY AND ALL DAMAGES THAT  
 MAY BE OCCURRED BY THE CONTRACTOR'S  
 FAILURE TO EXACTLY  
 LOCATE AND PROTECT ANY AND  
 ALL UNDERGROUND UTILITIES.

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The UMLOR Group  
 LAND DEVELOPMENT SERVICES

SECTION 3	TOWN 1 NORTH, RANGE 8 EAST	OAKLAND COUNTY, MICHIGAN
	CITY OF NOVI	

SCENIC PINES	SINGH DEVELOPMENT, LLC 7125 ORCHARD LAKE ROAD BLOOMFIELD HILLS, MICHIGAN 48322	ARCHITECTURAL SKETCHES
CLIENT:		

DATE:	11-27-2019
REVISIONS:	
PER CITY:	03-24-2020

DR BY:	SDT
CK BY:	SDT/AMY
SCALE:	0' = 1"
AS NOTED	
JOB NO.:	180805
SHEET NO.:	A3
	SHEET A3 OF 37



## PLANNING REVIEW

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# PLAN REVIEW CENTER REPORT

April 29, 2020

## Planning Review SCENIC PINES ESTATES

JSP 18-76

### PETITIONER

Singh Development, LLC

### REVIEW TYPE

Revised Final Site Plan with One-Family Cluster Option

### 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	March 24, 2020	

### 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.

### RECOMMENDATION

Approval for the Final Site with One-Family Cluster option is recommended with additional information to be provided in a response letter prior to Final Site Plan approval by the Planning Commission.

### PROJECT HISTORY

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

On September 25, 2019, the Planning Commission approved the Preliminary Site Plan with One-Family clustering option, Site Condominium, Special Land Use, Wetland Permit, Woodland Permit and Stormwater Management Plan Approval. Action summary is attached at the end of this letter.



On November 19, 2019, the Zoning Board of Appeals approved a variance to allow the absence of a landscape berm on east, west, and south property lines. Action summary is attached at the end of this letter.

### **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 response letter prior to the Planning Commission meeting:

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 applicant indicates the open space can be preserved either through a conservation easement established by the Master Deed, or in a separate instrument. **The City Attorney has indicated the areas to be protected under a conservation easement should be reflected in the Master Deed for the development, but should be permanently protected by a separate Conservation Easement or Open Space Preservation Easement. Sample templates for these documents are available on the City's website.**
3. **Planning Commission Conditions:** The approval shall be subject to the following conditions at this time:
  - a. The Planning Commission finding that Parcel ID No. 22-03-327-004, mentioned in the notes to the site plan, located on the north side of South Lake Drive, is not part of this development and shall not become or be made part of this development, as it does not comply with Sec. 36-62, Lakefront use standards, of the City Code of Ordinances as relates to lakefront recreational parks; *This is noted on Sheet 2.*
  - 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; *This is noted on Sheet 2.*
  - c. Limit Construction times with respect to elementary school bus schedule; *This is noted on Sheet 2.*
  - d. 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; *This has been addressed.*
  - e. The applicant shall obtain necessary approvals from all related outside agencies for the proposed location of storm water pond and related landscape under the existing overhead lines prior to approval of Final Site Plan; *The applicant has noted they will submit applications for these approvals.*
  - f. *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.* 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.  
*See comments in (2) above.*

4. Proposed Patio and Woodlands: The applicant has indicated that the construction of decks and patios will not result in additional woodland removals.
5. Lighting and Photometric plan: The site plan includes a lighting and photometric plan.
  - a. Foot-candle values at the property line is now indicated to be zero.
  - b. Hours of operation for the lights is now indicated to be dusk to dawn.
6. Generator for grinder pump: **Provide information regarding the following items with the required response letter prior to the next Planning Commission meeting:**
  - i. A generator is required per the Engineering review letter. The location and screening is subject to planning approval. *Provide related information on the plans – while the location is noted, details of the screening/enclosure are not found in the plan set.*
  - ii. Sound barriers are required due to proximity to residential areas. *Information about decibel levels for the generator and grinder pump should be provided in order to determine whether sound attenuating measures are required.*
7. Planning Legal Acceptance Documents: Drafts for the following documents require staff review and administrative approval and/or City Council acceptance:
  - a. Master Deed drafts and exhibits
  - b. Conservation easements
8. Proposed Bridge: A review of the structural engineering of the proposed bridge was done by the City's traffic consultant, AECOM. **Those comments and questions have been forwarded to the applicant separately, and will require revisions to be submitted for further review. The bridge design must be finalized in order to be approved in the Final Stamping Set.**

#### **OTHER REVIEWS**

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The following reviews previously recommended approval of the final site plan. Additional comments should be addressed with electronic stamping set submittal:

1. Engineering
2. Landscape
3. Wetlands
4. Traffic

The following reviews are currently recommending approval or approval with conditions of the revised Final Site Plan:

1. Planning (Approval recommended)
2. Woodlands (Approval recommended)
3. Fire (Approved)

#### **NEXT STEP: PLANNING COMMISSION MEETING**

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In their motion to approve the Preliminary Site Plan, the Planning Commission included a condition that the Final Site Plan shall be brought back before the Planning Commission for Final Approval. Therefore, this Site Plan is scheduled to go before the Planning Commission for consideration on **May 20, 2020 at 7:00 p.m.** Please provide via email the following **by noon on May 14, 2020**, if you wish to keep this schedule:

1. Site Plan submittal in PDF format (maximum of 10MB). **NO CHANGES MADE. (This has been received.)**
2. A response letter addressing ALL the comments from ALL the review letters and a request for waivers as you see fit.
3. A color rendering of the Site Plan (Optional to be used for Planning Commission presentation).

## REMAINING STEPS TO CONSTRUCTION

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### 1. Electronic Stamping Set Submittal and Response Letter

After receiving Final Site Plan approval from all the reviewers and the Planning Commission, please submit the following for Electronic stamping set approval:

- a. Plans addressing the comments in all of the staff and consultant review letters in PDF format, including AECOM comments on the bridge design.
- b. Response letter addressing all comments in ALL letters and ALL charts and **refer to sheet numbers where the change is reflected.**
- c. **Legal acceptance documents as listed in the attached Planning and Engineering legal transmittal. A electronic submittal is acceptable for the initial submittal.**

### 2. 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.

### 3. 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](mailto:smarchioni@cityofnovi.org)] in the Community Development Department.

## CHAPTER 26.5

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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 248.347.0484 or [lbell@cityofnovi.org](mailto:lbell@cityofnovi.org).



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Lindsay Bell, AICP – Senior Planner

## **PLANNING COMMISSION ACTION SUMMARY**

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**On September 25, 2019, the Planning Commission approved the Preliminary Site Plan with One-Family clustering Option, Site Condominium, Special Land Use, Wetland Permit, Woodland Permit and Storm water Management Plan Approval.**

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

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

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

1. *Planning Commission's finding per Section 3.28.1.B, that in all one-family residential districts, the clustering of one-family dwellings may be permitted, provided that the land consists of an unsubdivided area and the proposed site plan and, that the conventional approach to residential development would destroy the unique environmental significance of the site, and that the use of the cluster option is a desirable course of action to follow based on the following condition.*
  - a. *The majority (fifty (50) percent) of the net site area (defined as the area which is delineated by parcel lines, exclusive of rights-of-way as shown on the adopted master plan) is composed of lands that are within jurisdiction of Woodland Protection Ordinance, as amended, Chapter 37 of the Code of Ordinances, or within the jurisdiction of the Wetland and Watercourse Protection Ordinance, as amended, Chapter 12, Article V of the Code of Ordinances, or any combination of such lands. The applicant is proposing to permanently preserve up to 53% of qualifying area on site.*
2. *Planning Commission approval for reduction of minimum distance between the clusters, based on the finding, subject to conditions listed in Section 3.28.5., that the strict application of the*

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

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

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

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

### ZONING BOARD OF APPEALS ACTION SUMMARY

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**On November 19, 2019, the Zoning Board of Appeals approved a variance based on the following motion:**

*The motion to approve case PZ19-0042 for variance to allow the absence of a landscape berm on east, west, and south property lines was approved. The property is unique because of the location, topography, and existing woodland and wetland. The petitioner did not create the condition because the woodland has long been present. The relief granted will not unreasonably interfere with adjacent or surrounding properties 53% of the existing wetland/woodland will be left undisturbed and there are no residential properties on the affected sides. The relief is consistent with the spirit and intent of the ordinance because it will support the safety of young children and is a minimum request*

ENGINEERING REVIEW

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# PLAN REVIEW CENTER REPORT

January 8, 2020

## Engineering Review

Scenic Pines Estates

JSP18-0076

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### Applicant

Singh Development, LLC

### Review Type

Final Site Plan

### Property Characteristics

- Site Location: South of Pembine Street, East of West Park Drive
- Site Size: 9.44 acres
- Plan Date: 11/27/2019
- 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

Approval of the Final Site Plan is recommended contingent on Oakland County's approval of the pump station.



**Comments:**

The Final Site Plan 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 Electronic Stamping Set:

**General**

1. Provide a traffic control plan for the proposed road work activity on Henning Drive, Pembine Street, and Buffington Drive.
2. The traffic sign tables on sheets 2 and 30 do not match. Please revise to correct any discrepancies.
3. An additional 15 feet of half-width right-of-way is shown on sheet 2 to be dedicated to the City.
4. A right-of-way permit from the City of Novi is required and the permit application is currently under review.
5. On sheet 15, under "Sanitary Sewer" on the Utility Quantities table, "4-inch **DR11** Sanitary Sewer Forcemain" should read "4-inch **SDR11** Sanitary Sewer Forcemain".
6. Provide a construction materials table on a Paving Plan sheet clearly listing the quantity and material type for each pavement cross-section being proposed.
7. On sheet 10, the easement plan, specify the widths of all easements. Clarify what utilities would be placed in the 10-foot wide public utility easement.
  - a. If applicable, extend the water main and sanitary sewer easements that are required off-site.
8. If an irrigation system will be constructed, please provide a backflow prevention device on all irrigation systems. The backflow prevention device shall be an RPZ, or another approved device based on site conditions such as irrigation head heights (pop-ups), grade changes, berms etc. Please contact Kevin Roby in the Water and Sewer Division at 248-735-5640 with any questions.
9. Revise the north arrow on all sheets where it is incorrect.
10. 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](http://www.cityofnovi.org/DesignManual)).

**Water Main**

11. Show the right-of-way boundaries on the utility plans to ensure that the water main extension will be constructed in dedicated, public right-of-way and will not require any easements.
12. 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**

13. Revise the basis of design to have a peak factor of 4 and use a value of 2.38 people per unit.
14. 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.

**Sanitary Sewer Pump Station**

15. A sanitary sewer grinder pump is proposed to connect to the force main at the intersection of Henning Drive and Pembine Street. The system should be designed to meet Oakland County Water Resources Commission standards, which are understood to be an actual pump station with a separate valve vault. Include all appropriate Oakland County detail sheets with the plans and incorporate all comments made by OCWRC.
16. A sound attenuation enclosure is required for the generator.
17. Either completely remove the partially covered up labels on the Power/Control Equalization and Disposal System diagram (sheet 27) or make the labels legible.
18. Show the location of the generator and any other applicable pump station details on the utility plan (sheet 15).
  - a. If necessary, revise the sanitary sewer easement to encompass the entire pump station.
  - b. If necessary, revise any conflicts with the landscaping plan.

**Storm Sewer**

19. Exhibit 'A' on sheet 24 shows all storm sewer in an easement that the City of Novi would be responsible for. The SDFMEA exhibit 'A' should only include access easements to the basins and treatment units.
20. The minimum pipe sizes for storm sewer receiving surface runoff shall be 12-inches in diameter. Revise the plans accordingly.
21. Revise all 12-inch storm sewers that do not meet the minimum 0.32% slope requirement.
22. Label the storm sewer lead sizing and slope on the utility sheets.
23. 2-foot manholes are only allowed when followed by a catch basin within 50 feet. Upsize all manholes to at least 4 feet in diameter.
24. All 8-inch storm sewer leads must be SDR 26. Revise the plans accordingly.

**Storm Water Management Plan**

25. 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.
26. The underground storage system shall have 4-foot diameter manholes at each corner of the unit for maintenance purposes.
27. Update the piezometer readings on the underground detention detail on sheet 21 and reference the date that they were read.
28. The piezometer readings from December indicate that the groundwater elevation near the bottom of the underground detention unit will not interfere with its function. Thus, no further piezometer readings will be requested during the plan review process.
29. Specify the width of the access easement for maintenance over the storm water detention system. It should be a minimum of 15 feet wide with a maximum running slope of 1-foot vertical to 5-feet horizontal.
30. Provide an access easement to the pretreatment structure.

**Paving & Grading**

31. For clarification, label the interior roads as private or public on all sheets.
32. Extend the sidewalk across the entire Pembine Street frontage.
33. 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.
34. Show noted guard rail on the Culvert Cross-Section and include its detail on plan.
35. The separate submittal of bridge details will be sent to a consultant for review. An invoice will be sent to the applicant when the fee has been determined.
36. Provide a note on the Grading Plan stating that the proposed pathway within the Pembine Street right-of-way shall match existing grades at both ends.
37. Provide top of curb/walk and pavement/gutter grades to indicate height of curb adjacent to drive areas.
38. Provide a plan view and cross-section of the retaining wall.
39. The entire width of Buffington, Henning and Pembine shall be removed and replaced where water main and/or the sanitary sewer extension occurs to ensure the road is in better than or equivalent condition to that in which it was prior to construction.

**Soil Erosion and Sediment Control**

40. A SESC permit is required and the application is currently under review.

**Off-Site Easements**

41. 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 Electronic Stamping Set:**

42. 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.**
43. A **revised**, 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).
  - a. Include the quantity and cost of all proposed sidewalks.

**The following must be submitted with the Stamping Set:**

*(Please note that all documents must be submitted together as a package with the Stamping Set submittal with a legal review transmittal form that can be found on the City's website. Partial submittals will not be accepted.)*

44. A draft copy of the Storm Drainage Facility Maintenance Easement Agreement (SDFMEA), as outlined in the Storm Water Management Ordinance, must be submitted to the Community Development Department. Once the agreement is approved by the City's Legal Counsel, this agreement will then be sent to City Council for approval/acceptance. The SDFMEA will then be recorded at the office of the Oakland County Register of Deeds. This document is available on our website.
45. A draft copy of the 20-foot wide easement for the water main to be constructed onsite must be submitted to the Community Development Department. This document is available on our website.
46. A draft copy of the 20-foot wide easement for the sanitary sewer to be constructed onsite must be submitted to the Community Development Department. This document is available on our website.
47. A draft copy of the warranty deed for the additional proposed right-of-way along Pembine Street must be submitted for review and acceptance by the City.

**The following must be addressed prior to construction:**

48. 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).
49. 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.
50. 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.
51. Construction inspection fees in an amount that is to be determined must be paid to the Community Development Department.
52. 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.
53. 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.
54. 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.
55. A street sign financial guarantee of \$400 per traffic control sign must be posted at the Community Development Department. Signs must be installed in accordance with MMUTCD standards.
56. 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.
57. 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.
58. 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.
59. 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.
  60. 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.
  61. An inspection permit for the sanitary sewer tap must be obtained from the Oakland County Water Resource Commissioner (OCWRC).
  62. 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).
  63. 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:**

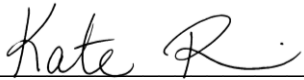
64. All easements and agreements referenced above must be executed, notarized and approved by the City Attorney and Engineering Division.
65. A Bill of Sale for the utilities conveying the improvements to the City of Novi must be submitted to the Community Development Department. This document is available on our website.
66. 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.
67. 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.
68. 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.

69. 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.
70. 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.



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Kate Richardson, EIT  
Plan Review Engineer

cc: Sri Komaragiri, Community Development  
Ben Croy, PE; Engineering  
Victor Boron, Engineering  
Angela Sosnowski, Community Development  
Tina Glenn, Treasurers  
Kristin Pace, Treasurers  
T. Meadows, T. Reynolds,; Spalding DeDecker

## LANDSCAPE REVIEW

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# PLAN REVIEW CENTER REPORT

December 13, 2019

## Final Site Plan - Landscaping

Scenic Pines Estates

### Review Type

Final Site Plan 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: 11/27/2019

### 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 revised Final Site Plan submittal. Please follow guidelines of the Zoning Ordinance and Landscape Design Guidelines. This review is a summary and is not intended to substitute for any Ordinance.

### Recommendation

This project is **recommended for approval for Final Site Plan**. Please make all revisions requested below in the electronic stamping set.

### **LANDSCAPE WAIVERS GRANTED BY THE PLANNING COMMISSION ON 9/25/2019:**

1. 3 street trees are planted more than 15 feet behind the curb, and not between the sidewalk and curb.
2. Absence of 3 required street trees along Pembine street frontage that can't be planted due to a lack of space between the sidewalk and road.

**Please copy the above granted waivers, along with the Planning Commission meeting date, to Sheet L-1.**

### 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. The utilities and street trees were adjusted as much as possible to meet the requirements for the trees to be located within 15 feet of the road. Only 3 trees do not meet this spacing and a waiver for this deficiency was granted by the Planning Commission.

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.

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

The ZBA granted a variance to not provide berms.

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.
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. A landscape waiver was granted by the Planning Commission for this deviation from the ordinance.

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)

1. Provided
2. **Please add maintenance instructions for the native seed mix areas that includes the need for mowing during the 2 year maintenance period to keep the height of the seeded area between 6-9" and the need for spot weeding of invasive and weedy species.**
3. **Please add a note stating that the landscape contractor shall send me (via email is fine – rmeader@cityofnovi.org) a photo of the label on the seed bag to confirm that the correct mix is used. Include in the note that failure to use the specified mix or a substitute approved by the city may require the area to be re-prepared and re-seeded with the correct mix).**

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. The current note does not indicate that.**

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](mailto:rmeader@cityofnovi.org).



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Rick Meader – Landscape Architect

## WETLANDS REVIEW

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ECT Project No. 190181-0600

December 31, 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 Final Site Plan (PSP19-0170)

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 Final Site Plan prepared by Diffin-Umlor & Associates dated November 27, 2019 and stamped "Received" by the City of Novi Community Development Department on December 6, 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 Final 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 Stamping Set 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

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 Sheets 7 (*Wetlands Impact 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		Impact Volume
			Acre	Square Feet	Acre	Cubic Yards
C	Yes, City Regulated /Essential	Likely	1.28	3,315	0.07	602
<b>TOTAL</b>	--	--	<b>1.28</b>	<b>3,315</b>	<b>0.07</b>	<b>602</b>

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. All but one (1) of these wetland buffer areas is proposed as a permanent impact. The area behind proposed Units 6/7 is listed as a temporary impact. Subsequent plan submittals shall indicate how this impact area will be restored. Specifically, the landscape plan shall indicate what seed mix will be used to restore this area (sod or common grass seed cannot be used in temporary wetland or wetland buffer impact areas).

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?	Existing 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	218	0.005	Stormwater outfall from basin

<i>Wetland Buffer</i>	<i>City Regulated?</i>	<i>Existing Wetland Buffer Area</i>		<i>Buffer Impact Area</i>	<i>Buffer Impact Area</i>	<i>Purpose of Impact</i>
		<i>Square Feet</i>	<i>Acre</i>	<i>Square Feet</i>	<i>Acre</i>	
B	<b>Yes, City Regulated /Essential</b>	Not Provided	Not Provided	None	None	N/A
C	<b>Yes, City Regulated /Essential</b>	Not Provided	Not Provided	44	0.001	Grading for Units 6 & 7
C	<b>Yes, City Regulated /Essential</b>	Not Provided	Not Provided	5,264	0.121	Construction of Pristine Lane
C	<b>Yes, City Regulated /Essential</b>	Not Provided	Not Provided	131	0.003	Grading for Unit 16
<b>TOTAL</b>	--	<b>Not Provided</b>	<b>Not Provided</b>	<b>5,657</b>	<b>0.130</b>	--

**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. EGLE 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 EGLE in order to confirm the regulatory authority with respect to the on-site wetland areas. ECT does not yet have a copy of this permit.



### **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 25-foot setbacks/buffers (i.e., provide sizes in square feet or acres). The plans have provided the overall on-site wetland areas as well as all wetland and wetland buffer impacts (both area and volume 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. The Wetland Buffer Disturbance Area #4 (for the detention basin outlet) quantity varies between the *Wetland & Buffer Table* and the plan view on Sheet 7 (*Wetlands Impact Plan*). The impact area is shown as 44 square feet on the Plan but indicated as 218 square feet in the *Wetland and Buffer Table*. Please review and revise the Plan as necessary.
2. The Total Buffer Impact is indicated as 0.013-acre in the *Wetland & Buffer Table* (Sheet 7) however this quantity should read 0.130-acre. Please revise this quantity on Sheet 7.
3. 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. A copy of the Draft Wetland Permit from EGLE (WRP018204v.1) has been provided with the Final Site Plan submittal. The Applicant should provide a copy of the approved EGLE Wetland Use Permit to the City (and our office) 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 25-foot setbacks/buffer areas. Currently, the existing on-site wetland areas have been provided however the existing 25-foot wetland buffer areas have not been provided.
5. The Plan should address how any temporary impacts to wetland or 25-foot wetland buffers shall be restored, if applicable. All but one (1) of these wetland buffer areas is proposed as a permanent impact. The area behind proposed Units 6/7 is listed as a temporary impact. Subsequent plan submittals shall indicate how this impact area will be restored. Specifically, the landscape plan shall indicate what seed mix will be used to restore this area (sod or common grass seed cannot be used in temporary wetland or wetland buffer impact areas).

**Recommendation**

ECT currently recommends approval of the Final 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 Stamping Set Site Plan.

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

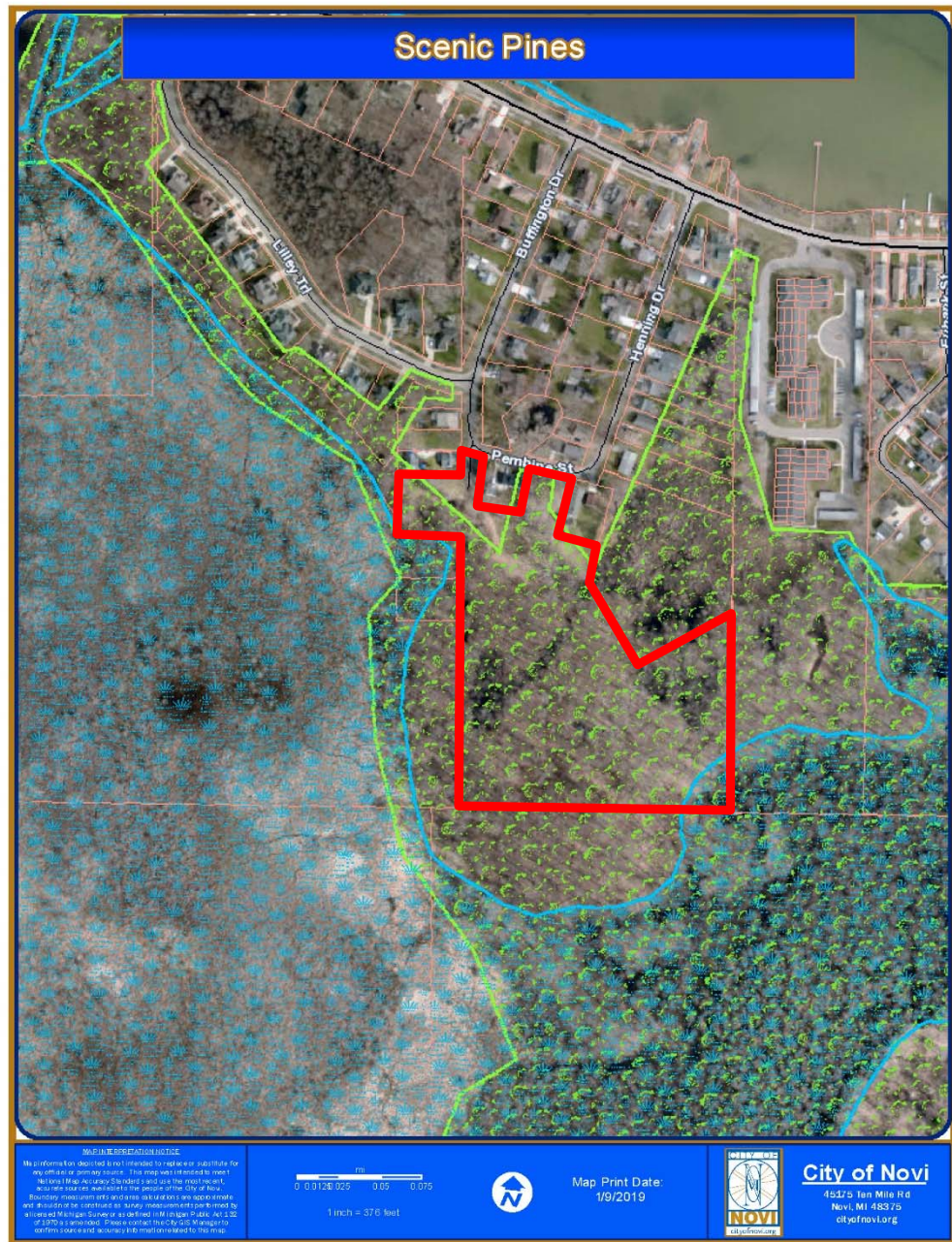
Respectfully submitted,  
**ENVIRONMENTAL CONSULTING & TECHNOLOGY, INC.**



Pete Hill, P.E.  
Senior Associate Engineer

cc: Lindsay Bell, City of Novi Planner ([lbell@cityofnovi.org](mailto:lbell@cityofnovi.org))  
Sri Komaragiri, City of Novi Planner ([skomaragiri@cityofnovi.org](mailto:skomaragiri@cityofnovi.org))  
Madeleine Kopko, City of Novi Planning Assistant ([mkopko@cityofnovi.org](mailto:mkopko@cityofnovi.org))  
Rick Meader, City of Novi Landscape Architect ([rmeader@cityofnovi.org](mailto:rmeader@cityofnovi.org))

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).

WOODLAND REVIEW

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ECT Project No. 190181-0800

April 27, 2020

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 Final Site Plan (PSP20-0026)

Dear Ms. McBeth:

Environmental Consulting & Technology, Inc. (ECT) has reviewed the Revised Final Site Plan (PSP20-0026) 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 Final Site Plan prepared by The Umlor Group dated March 24, 2020 (Plan). The Plan was reviewed for conformance with the City of Novi Woodland Protection Ordinance Chapter 37.

**ECT currently recommends approval of the Revised Final Site Plan for Woodlands. ECT recommends that the applicant address the remaining items noted in the *Woodland Comments* Section of this letter prior to receiving Woodland approval of the Final Stamping Set 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*),

2200 Commonwealth  
Blvd., Suite 300  
Ann Arbor, MI  
48105

(734)  
769-3004

FAX (734)  
769-3164

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 on-site with metal tree tags allowing ECT to compare the tree diameters reported on the *Tree List & Tree Calculations* Plan (Sheet 7 of 38) to the existing tree diameters in the field. ECT previously 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*). The applicant was previously asked to depict accurate critical



root zones 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 Critical Root Zone information has been graphically shown on the demolition plans (Sheets 4, 5, and 6).

The Plan (Sheet 7 – *Tree List & Tree Calculations*) continues to include a ‘*Saved trees with impact to critical root zone*’ table 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. Previously, the Plan noted 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. It should be noted that the Woodland Ordinance, Section 37.9.a.1 (*Tree Protection During Construction*) notes:

*This barrier shall be installed at the critical root zone (CRZ) perimeter of the onsite trees to be protected prior to initiating project construction. Should it not be possible to place the protection fencing at the CRZ of a regulated tree due to practical hardship, the applicant may provide replacement value for the tree into the city tree fund. The applicant may also choose to allow the tree in question to remain at his or her option. 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 Plan has been updated to incorporate the 59 Woodland Replacement credits required for the 25 regulated trees whose CRZs fall within the limits of disturbance of the project.

### **Proposed Woodland Impacts & Replacements**

The *Tree List & Tree Calculations* plan (Sheet 7) 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

As noted above, 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. These trees require a total of 59 Woodland Replacement Credits as the limits of disturbance have not been moved outside of the CRZ of these trees.

Woodland Replacement Trees Required for CRZ Impacts = 59  
**Total Woodland Replacement Tree Credits Required = 497**

The Plan (Sheet 7 – *Tree List & Tree Calculations*) indicates that a total of 88.6 credits of Woodland Replacement material will be planted on-site (17.8% of the required Woodland Replacement Credits). The *Landscape Plan* (Sheet L-1) indicates that 84 - 2.5” caliper deciduous trees at 1 credit/tree and 7 - 6-foot tall evergreens at 0.67 credit/tree) will be provided. The following Woodland Replacement trees are proposed:

- 41 red maple (*Acer rubrum*) – 41 Credits;
- 16 swamp white oak (*Quercus bicolor*) – 16 Credits;
- 14 red oak (*Quercus rubra*) – 14 Credits;
- 13 basswood (*Tilia americana*) – 13 Credits;
- 7 white pine (*Pinus strobus*) – 4.6 Credits;
- **TOTAL            88.6 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 **408.4** 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, a number of the Woodland Replacement Trees are proposed along Pristine Lane and adjacent to some of the Units. The location of some of the proposed 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 Final Site Plan (PSP19-0170) letter dated December 31, 2019. The current status of the comments follows in ***bold italics***:

1. The current Plan appears to propose a total of 88.6 on-site Woodland Replacement Credits (17.8% of the required Woodland Replacement Credits) through on-site planting of deciduous and coniferous tree plantings. ECT suggests that the applicant work to provide as many of the required **497** 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. The on-site Woodland Replacement quantities remain unchanged from the previous plan submittal.***

2. Accurate critical root zones have now been depicted on the site plan for all regulated trees within fifty (50) feet of proposed grading or construction activities. The *Tree List and Replacement Calculations* plan which was not included with the Final Site Plan submittal indicated 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. 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. The total required Woodland Replacement quantity is therefore **497** (438 for tree removals + 59 for encroachment within CRZ of 25 trees).

***This comment still applies. The proposed Woodland removal and replacement quantities remain unchanged from the previous plan submittal.***

3. 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 **\$35,440** (88.6 On-Site Woodland Replacement Credits x \$400/Credit).

***This comment still applies.***

4. 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. Based on the current Plan, the Woodland Maintenance Financial Guarantee would be **\$8,860** (88.6 On-Site Woodland Replacement Credits x \$400/Credit x 0.25).

***This comment still applies.***

5. 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 **\$163,360** (408.4 Woodland Replacement Credits x \$400/Credit).

***This comment still applies.***

6. 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. The Woodland Conservation Easement shall be indicated on the Plan.

***This comment still applies.***

7. 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.

Previously, the applicant has provided a table on Sheet 6 (*Tree List and Replacement Calculations*) that indicated 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. 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.

***This comment has been addressed. The current has been updated to incorporate the 59 Woodland Replacement credits required for the 25 regulated trees whose CRZs fall within the limits of disturbance of the project.***

Scenic Pines Estates (JSP18-0076)  
Woodland Review of the Revised Final Site Plan (PSP20-0026)  
April 27, 2020  
Page 7 of 11

**Recommendation**

ECT currently recommends approval of the Revised Final Site Plan for Woodlands. ECT recommends that the applicant address the remaining items noted in the *Woodland Comments* Section of this letter prior to receiving Woodland approval of the Final Stamping Set Plan.

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

Respectfully submitted,  
**ENVIRONMENTAL CONSULTING & TECHNOLOGY, INC.**

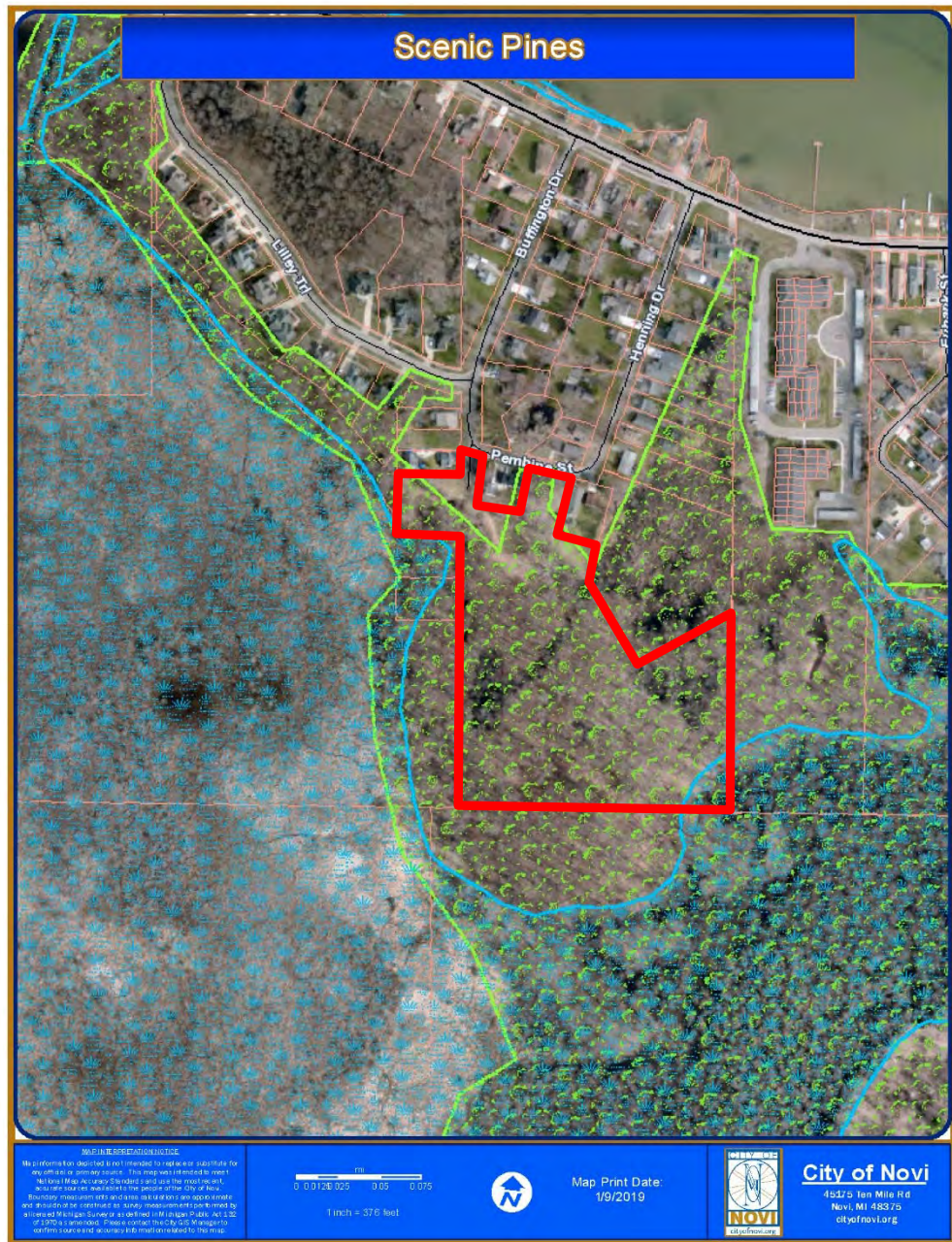


Pete Hill, P.E.  
Senior Associate Engineer

cc: Lindsay Bell, City of Novi Planner ([lbell@cityofnovi.org](mailto:lbell@cityofnovi.org))  
Madeleine Kopko, City of Novi Planning Assistant ([mkopko@cityofnovi.org](mailto:mkopko@cityofnovi.org))  
Rick Meader, City of Novi Landscape Architect ([rmeader@cityofnovi.org](mailto:rmeader@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

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

**Project name:**  
 JSP18-0076 Scenic Pines Estates Final Site  
 Plan Traffic Review

**From:**  
 AECOM

**Date:**  
 January 3, 2020

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

**CC:**  
 Sri Komaragiri, Lindsay Bell, Kate Richardson,  
 Madeleine Kopko, Victor Boron

# Memo

**Subject:** JSP18-0076 Scenic Pines Estates Final Site Plan Traffic Review

The final 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 has received a waiver for the minimum distance for opposite side street spacing between Pristine Lane and Henning Street from the Planning Commission on 9/25.
  - b. The applicant received an administrative variance for minimum sidewalk offset from Engineering, reported in Planning Commission minutes on 9/25.

## TRAFFIC IMPACTS

1. AECOM performed an initial trip generation estimate based on the ITE Trip Generation Manual, 10<sup>th</sup> 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?
<b>AM Peak-Hour Trips</b>	23	17	100	No

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

2. 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.

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

## EXTERNAL SITE ACCESS AND OPERATIONS

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

1. The applicant has provided width and radii information for the proposed new intersection of Pembine Street and Pristine Lane which meets City standards.
  - a. The applicant has received a waiver for the roadway spacing between Pristine Lane and Henning Street. Proposed spacing is 117 feet where 200 feet is required.
  - b. The applicant has indicated sight distance on the plans.
2. A 5’ sidewalk is proposed along Pembine Street for the length of the site. The applicant has provided the applicable sidewalk ramp details.
3. 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.
  - a. Fire truck travel patterns have been included to ensure adequate access and turn around capability for fire trucks on Noble Trail.
  - b. 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.

1. General Traffic Flow
  - a. The applicant has provided widths and turning radii for all roads and are in compliance with the requirements.
  - b. The applicant has indicated that the width of Pristine Lane is to be 28’ from back of curb to back of curb which is in compliance with Section 11-198 of the City’s Code of Ordinances.
  - c. The applicant has indicated that on-street parking will be permitted on the northbound side of Pristine Lane.
2. Parking Facilities
  - a. 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.

- b. The applicant has indicated mountable curb throughout the development with type F4 curb within the Pembine/Henning right-of-way. A detail for the mountable curb is included on sheet 14.
  - c. The applicant has indicated a proposed retaining wall around the bridge and woodland areas.
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 received an administrative variance for this requirement.

## 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.
    - i. **Sign AR-222 is not a standard MMUTCD sign code. The applicant should revise this to utilize a sign from the R7 or R8 series from the MMUTCD.**
2. The applicant has indicated proposed signing on site and has provided 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.**

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

## FIRE REVIEW

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December 16, 2019

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

RE: Scenic Pines Estates

**PSP#19-0170**

PSP#19-0124

PSP# 19-0091

PSP# 19-0039

PSP# 18-0203

**CITY COUNCIL**

**Mayor**

Bob Gatt

**Mayor Pro Tem**

Dave Staudt

Andrew Mutch

Laura Marie Casey

Kelly Breen

Hugh Crawford

Justin Fischer

**City Manager**

Peter E. Auger

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**Chief of Police**

David E. Molloy

**Fire Chief**

Jeffery R. Johnson

**Assistant Chief of Police**

Erick W. Zinser

**Assistant Chief of Police**

Scott R. Baetens

**Assistant Fire Chief**

John B. Martin

**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.**
- **CORRECTED 12/16/19 KSP**-**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**

Sincerely,

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

APPLICANT RESPONSE LETTER

---

May 13, 2020

**City of Novi**  
45175 Ten Mile Road  
Novi, Michigan 48375

**Attention:** Lindsay Bell, AICP  
Senior Planner

**Regarding:** Scenic Pines  
JSP 18-76  
Final Site Plan/Engineering Plans

In accordance with the Plan Review Center Report dated April 29, 2020, below are the required responses pertaining to outstanding issues noted in the various review letters. For your convenient reference, comments requiring corrective action from each review are listed below with our responses shown in red.

#### Planning Review

6. Generator for grinder pump: Provide information regarding the following items with the required response letter prior to the next Planning Commission meeting:
- i. A generator is required per the Engineering review letter. The location and screening is subject to planning approval. Provide related information on the plans – while the location is noted, details of the screening/enclosure are not found in the plan set. A detail of the screening/enclosure are not found in the plan set. **Shop drawings depicting the generator are attached.**
  - ii. Sound barriers are required due to proximity to residential areas. Information about decibel levels for the generator and grinder pump should be provided in order to determine whether sound attenuating measures are required. **The generator will produce 65 decibels at 23 feet. The pump supplier has stated that sound pressure in an underground/wet well installation will produce less than 60 decibels.**
8. Proposed Bridge: A review of the structural engineering of the proposed bridge was done by the City's traffic consultant, AECOM. Those comments and questions have been forwarded to the applicant separately, and will require revisions to be submitted for further review. The bridge design must be finalized in order to be approved in the Final Stamping Set. **Comments from AECOM regarding the bridge have been received and are included herewith. Our responses to each comment are shown in blue on the attachment and an email from Ryan Loerprich at Contech addressing some of the comments is also included. Updated plan sheets pertaining to the bridge are also included. Upon approval they will be incorporated into the Stamping Sets.**

#### **NEXT STEP: PLANNING COMMISSION MEETING**

In their motion to approve the Preliminary Site Plan, the Planning Commission included a condition that the Final Site Plan shall be brought back before the Planning Commission for Final

May 14, 2020

Lindsay Bell

Page 2 of 5

Approval. Therefore, this Site Plan is scheduled to go before the Planning Commission for consideration on May 20, 2020 at 7:00 p.m. Please provide via email the following by noon on May 14, 2020, if you wish to keep this schedule:

1. Site Plan submittal in PDF format (maximum of 10MB). NO CHANGES MADE. (This has been received.)
2. A response letter addressing ALL the comments from ALL the review letters and a request for waivers as you see fit. **Waivers being requested are noted in the Planning Commission Action Summary included with your review letter as follows:**

- **Planning Commission approval for reduction of minimum distance between the clusters, based on the finding, subject to conditions listed in Section 3.28.5., that the strict application of the distance in this instance would destroy a natural amenity such as regulated wetlands and woodlands. This is required for the Units 1-2-3 cluster and the Units 22-23-24-25 cluster. A minimum of 85 feet is required, approximately 78 feet is proposed;**
- **Planning Commission approval of reduction of front building setbacks from the streets as listed in Section 3.28.4.D. A minimum of 30 feet is required from the edge of Private drive, the plans currently propose 25 feet in order to protect regulated woodlands in the back yards; this is based on the following findings listed in Section 3.28.6.C:**
  - a. **All the conditions listed in Section 3.28.6.C. from i thru iv are met with the exception as noted below;**
  - b. **A Zoning Board of Appeals variance from Section 3.28.6.C.iv.a to allow absence of required berm along the east, west and south property boundaries adjacent to other single-family residential districts;**
- **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.**
- **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 and conflicts with other required proposed utilities and swales.**
- **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**



May 14, 2020

Lindsay Bell

Page 3 of 5

**conflicts with proposed utilities.**

• **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.**

3. A color rendering of the Site Plan (Optional to be used for Planning Commission presentation). **A colored rendering of the site plan is included with this submittal.**

#### **REMAINING STEPS TO CONSTRUCTION**

##### **1. Electronic Stamping Set Submittal and Response Letter**

After receiving Final Site Plan approval from all the reviewers and the Planning Commission, please

submit the following for Electronic stamping set approval:

a. Plans addressing the comments in all of the staff and consultant review letters in PDF format, including AECOM comments on the bridge design.

b. Response letter addressing all comments in ALL letters and ALL charts and refer to sheet numbers

where the change is reflected. **Plans for electronic stamping set approval will be provided.**

c. Legal acceptance documents as listed in the attached Planning and Engineering legal transmittal. A electronic submittal is acceptable for the initial submittal. **The legal acceptance documents will be provided.**

##### **2. 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. **Stamping sets will be provided.**

##### **3. 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. **We will request a pre-con at the appropriate time.**

May 14, 2020

Lindsay Bell

Page 4 of 5

### Woodland Review Comments

The following are repeat comments from our Woodland Review of the Final Site Plan (PSP19-0170) letter dated December 31, 2019. The current status of the comments follows in **bold italics**:

1. The current Plan appears to propose a total of 88.6 on-site Woodland Replacement Credits (17.8% of the required Woodland Replacement Credits) through on-site planting of deciduous and coniferous tree plantings. ECT suggests that the applicant work to provide as many of the required **497** 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): **(table omitted)**

*This comment has not been addressed. The on-site Woodland Replacement quantities remain unchanged from the previous plan submittal. This comment was addressed in our letter dated March 25, 2020. No additional plantings are proposed due to the limited area available for planting.*

2. Accurate critical root zones have now been depicted on the site plan for all regulated trees within fifty (50) feet of proposed grading or construction activities. The *Tree List and Replacement Calculations* plan which was not included with the Final Site Plan submittal indicated 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. 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. The total required Woodland Replacement quantity is therefore **497** (438 for tree removals + 59 for encroachment within CRZ of 25 trees).

*This comment still applies. The proposed Woodland removal and replacement quantities remain unchanged from the previous plan submittal. This comment was addressed in our letter dated March 25, 2020 and is reflected in the tree replacement summary on sheet 7 of the plan set.*

3. 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 \$35,440 (88.6 On-Site Woodland Replacement Credits x \$400/Credit).

*This comment still applies. Noted. The required financial guarantee will posted.*

4. 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

May 14, 2020

Lindsay Bell

Page 5 of 5

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. Based on the current Plan, the Woodland Maintenance Financial Guarantee would be **\$8,860** (88.6 On-Site Woodland Replacement Credits x \$400/Credit x 0.25).

***This comment still applies. Noted. The required maintenance financial guarantee will be posted upon successful inspection of the installed replacement trees and return of the Woodland Replacement Financial Guarantee.***

5. 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 **\$163,360** (408.4 Woodland Replacement Credits x \$400/Credit).

***This comment still applies. Noted. As no additional plantings are proposed, the applicant will pay the City of Novi Tree fund \$163,360 based on 408.4 replacement credits at \$400 per credit.***

6. 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. The Woodland Conservation Easement shall be indicated on the Plan.

***This comment still applies. Noted. The required preservation/conservation easements will be provided.***

If you have any questions or require anything further please do not hesitate to contact me.

Very truly yours,

The Umlor Group



Stephen C. Allen

Senior Project Manager

cc: Todd Rankine – Singh Development



## Quiet Connect™ Series - RS13A, RS17A, RS20A, & RS20AC



### Features and benefits

**Robust Design** – The generator is designed to operate in cold weather with performance down to 0 °F (-18 °C) out of the box. Cold Weather accessories allow for even colder. It is tested and certified per the latest EPA, UL, and CSA standards. The generator meets NFPA 37 which allows it to be installed 18 inches from a building. The generator enclosure has been evaluated to withstand 180 MPH wind loads in accordance with ASCE7-10. It has powerful motor starting ability and can easily start and run a 5 ton A/C<sup>1</sup> under full pre-load.

**Intelligent Load Management** - The generator can control up to 4 loads and continuously monitors how much power is required independently for each load. It then controls each load for maximum utilization of generator power by only restoring loads the generator has capacity to run.

**Flexible Exercise Modes** - Exercise modes can be set for time, date, and frequency that suits the owner. Our patented 'Crank only' exercise mode allows the generator to crank the engine and run diagnostics without starting the engine. This reduces wear and tear on the engine, fuel costs, and further reduces the sound of an already quiet generator.

**Remote Monitoring** - Remote monitoring is built into every generator. Using a computer, tablet, or smart phone, an operator can monitor, change exercise modes, and manually run the generator remotely.

**Generator and ATS packaged sets** – The RS20AC comes with a 20 kW generator and 200A service entrance rated ATS in one box to make ordering more convenient.

### Weight, size and sound level

**Size:** Length 34.1 in (865 mm), width 36.0 in (915 mm), height 27.3 in (694 mm)

**Sound:** 65 dB(A) at 23 ft. (7 m) at normal load<sup>2</sup>

Series	Model	Part number	Voltage (V)	Frequency (Hz)	Rated amp <sup>3</sup> (NG / LPV)	Weight Lbs. / Kg
RS13A	C13N6H	A054E399	120 / 240	60	54.2 / 54.2	479 / 217
RS17A	C17N6H	A054E397	120 / 240	60	70.8 / 70.8	531 / 241
RS20A	C20N6H	A054E395	120 / 240	60	75 / 83.3	531 / 241
RS20AC	C20N6HC	A054X497	120 / 240	60	75 / 83.3	596 / 271

<sup>1</sup> Air-conditioners vary by type, efficiency, operational conditions, etc. Consult with a qualified HVAC specialist or Cummins Power Generation distributor/dealer for proper sizing.

<sup>2</sup> Quietest point at a normal load. Sound performance may be affected by installation. Normal load is defined as typical household consumption of 3kW.

<sup>3</sup> Derating guidelines: Maximum wattage or maximum current are subject to and limited by such factors as fuel Btu content, ambient temperature, altitude, engine power and condition, etc. Full rated power available at the following:

RS20A & R20AC – at 15 °C (60 °F) and 0 m (0 ft.). Derate 3.5% for each increase of 300 m (1000 ft.) and 1% for each increase of 5.5 °C (10 °F)

RS17A - at 25 °C (77 °F) and 300 m (1000 ft.). Derate 3.5% for each increase of 300 m (1000 ft.) and 1% for each increase of 5.5 °C (10 °F)

RS13A – at 25 °C (77 °F) and 2100 m (6900 ft.). Derate 3.5% for each increase of 300 m (1000 ft.) and 1% for each increase of 5.5 °C (10 °F)

**Our energy working for you.™**



## Product Features

### Engine

- Natural gas/propane
- Engine air cleaner
- Engine oil (Synthetic)
- Oil drain extension tube
- Low oil pressure shutdown
- Low oil level warning or monitoring

### Fuel System

- Single fuel – natural gas or propane vapor, field selectable (Set to Natural gas from factory)

### Alternator

- 60 Hz, 1 phase, < 5% THD (total harmonic distortion)
- Long life electrographic DC brushes
- Slip ring heater

### Control

- Display language – English
- Under hood built in display

### Electrical

- Single 100A circuit breaker, UL certified (On all models)
- Battery charging alternator
- Battery charger – 4 Amps

### Cooling

- Single direct drive blower

### Enclosure

- Aluminum exterior, galvanized steel interior

### Code Compliance

- UL 2200
- CSA 22.2 and B149-2
- EPA emissions
- NFPA 37 – 18 inches

## Warranty

- Base: 5 years / 2000 hours
- Extended warranties available

## Generator Set performance

### Governor regulation class

**Voltage regulation, no load to full load:** ±1.25%

**Steady state voltage variation:** ±1.25%

**Frequency regulation:** Isochronous

**Motor starting kVA (30% voltage dip):** 40 for RS20A/AC, 34 for RS17A, and 26 for RS13A

**Steady state freq. variation:** ±1.25% (±1.5% @ No load)

**Operating temperature:** 122 °F (50 °C) to 0 °F (-18 °C)

*Additional accessories are available to allow for operation below 0 °F. See Accessories section for details.*

## Engine

**Model:** QSJ999G

**Design:** Naturally aspirated, V twin air cooled

**Bore:** 3.54 in (89.9 mm)

**Stroke:** 3.09 in (78.5 mm)

**Displacement:** 60.96 inch<sup>3</sup> (999 CC)

**Cylinder block:** Aluminum

**Battery capacity:** Group 51R, 450 CCA at ambient temperature of 32 °F (0 °C)

**Starting voltage:** 12 volt, negative ground

**Oil Filter type:** Spin-on

**Rated speed:** 3600 rpm

## Fuel supply pressure

**Minimum - in H<sub>2</sub>O (kPa):**

NG 3.5 (0.87)

LP 6.0 (1.49)

**Maximum - in H<sub>2</sub>O (kPa):**

NG 13.0 (3.2)

LP 13.0 (3.2)

## Average fuel consumption

### RS13A Fuel consumption – natural gas

Load:	1/4	1/2	3/4	Full
Ft <sup>3</sup> / hr.	121	143	171	203
M <sup>3</sup> / hr.	3.4	4.0	4.8	5.8
BTU / hr.	121000	143000	171000	203000

### RS13A Fuel consumption – LP vapor

Load:	1/4	1/2	3/4	Full
Ft <sup>3</sup> / hr.	51	60	71	87
M <sup>3</sup> / hr.	1.5	1.7	2.0	2.5
Gal / hr.	1.4	1.7	2.0	2.5

### RS17A Fuel consumption – natural gas

Load:	1/4	1/2	3/4	Full
Ft <sup>3</sup> / hr.	125	159	201	263
M <sup>3</sup> / hr.	3.5	4.5	5.7	7.4
BTU / hr.	125000	159000	201000	263000

### RS17A Fuel consumption – LP vapor

Load:	1/4	1/2	3/4	Full
Ft <sup>3</sup> / hr.	53	66	86	109
M <sup>3</sup> / hr.	1.5	1.9	2.4	3.1
Gal / hr.	1.5	1.9	2.4	3.1

### RS20A & RS20AC Fuel consumption – natural gas

Load:	1/4	1/2	3/4	Full
Ft <sup>3</sup> / hr.	127	168	210	278
M <sup>3</sup> / hr.	3.6	4.8	5.9	7.9
BTU / hr.	127000	168000	210000	278000

### RS20AC Fuel consumption – LP vapor

Load:	1/4	1/2	3/4	Full
Ft <sup>3</sup> / hr.	54	71	98	126
M <sup>3</sup> / hr.	1.5	2.0	2.8	3.6
Gal / hr.	1.5	2.0	2.8	3.6

Nominal fuel rating – 1000 BTU / ft<sup>3</sup> (37 MJ / M<sup>3</sup>)

Conversion factor:

8.58 ft<sup>3</sup> = 1 lb.

0.535m<sup>3</sup> = 1 kg

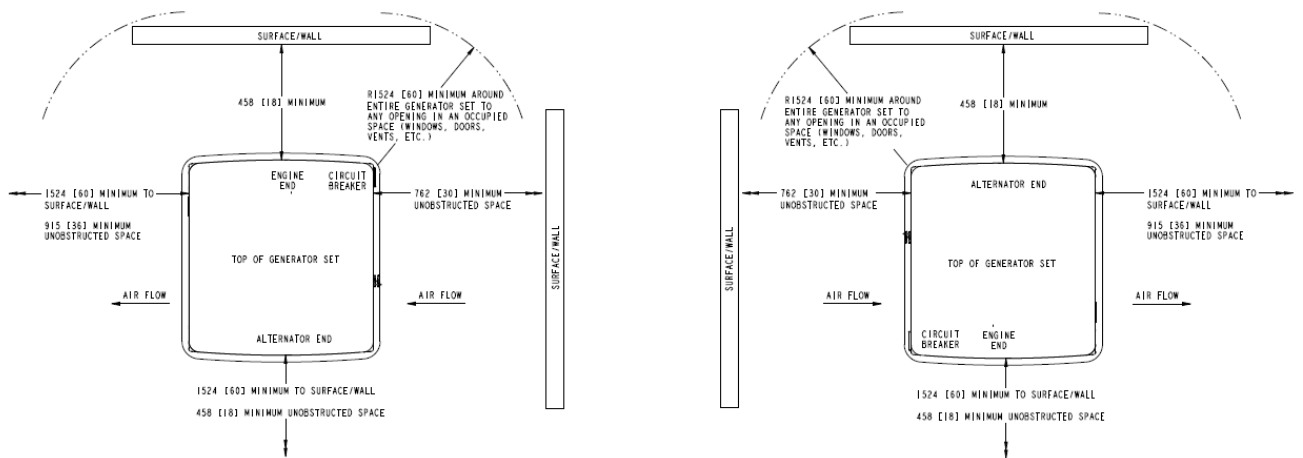
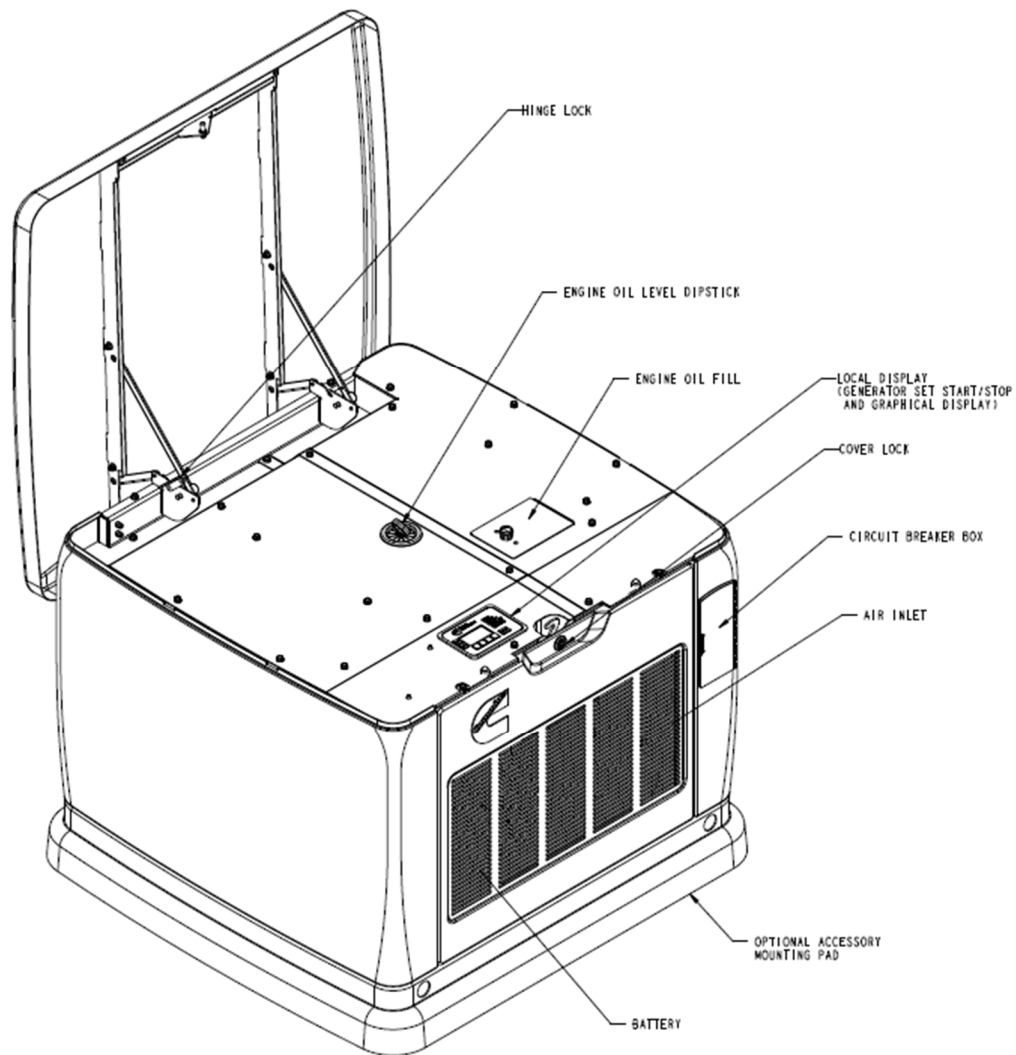
36.39 ft<sup>3</sup> = 1 gal

**Our energy working for you.™**

©2015 Cummins Inc. | NAS-6254d (A056T581) (05/17)

power.cummins.com

## Easy service and installation



**Our energy working for you.™**

©2015 Cummins Inc. | NAS-6254d (A056T581) (05/17)

[power.cummins.com](http://power.cummins.com)



## Accessories

- RS In-home display (A053K028) - Additional interface and display to monitor generator performance from a second location.
- Extreme Cold Weather Kit (A054B984) – For locations where the generator will be in climates that can go below 0 °F (-18 °C)
- Enclosure Paint Touchup Kit (A043J735)
- Preventative Maintenance Kit (A054H068) – Parts for scheduled maintenance intervals
- Load Add/Load Shed Device (A051C329) – Allows generator to control up to 2 - 50A loads
- Integrated ATS & Load Panel (A051C991) – Combines an 100A Non-Service Entrance (NSE) ATS with a load panel in an NEMA 1 box
- Concrete Composite Mounting Pad - 3” thick, 1” overhang composite pad for mounting the generator on (A057M349 for 5 and A057M351 for 10)
- E-stop Kit (A044Z051) - Externally mounted emergency stop button allows for additional safety
- Battery (A052Y816) - Group 51R, 450 CCA

## Transfer switch (also sold separately)

- Automatic Transfer Switches available in various amperages.
- Service Entrance and Non-Service Entrances models are available.
- Available for both Indoor and Outdoor applications.
- All models UL listed to UL 1008 standard.
- Compatibility with the Cummins generator set helps reduce the installation time for the complete application.

## Warranty policy

The Cummins Power Generation RS13A, RS17A, RS20A, and RS20AC generators come standard with a 5 year / 2,000 hour limited warranty. RA Automatic Transfer Switches come standard with a 2 year warranty. Extended warranty options available. See warranty statement for additional details.

## After sale support

### Largest distributor/dealer support network

Cummins Power Generation generator sets are supported by the largest and best trained worldwide certified distributor/dealer network in the industry. This network of knowledgeable distributor/dealers will help you select and install the right generator set and accessories to meet the requirements of your specific application. This same network offers a complete selection of commonly used generator set maintenance parts, accessories and products plus manuals and specification sheets. Plus, they can answer your questions regarding proper operation, maintenance schedules and more.

**Manuals:** Operation and installation manuals ship with the generator set. To obtain additional copies or other manuals for this model, see your distributor/dealer. To easily locate the nearest certified distributor/dealer for Cummins Power Generation generators in your area, or for more information, contact us at 1-800-888-6626 or visit [power.cummins.com](http://power.cummins.com).



### ⚠ WARNING:

Standby rating based on: Applicable for supplying emergency power for the duration of normal power interruption. No sustained overload capability is available for this rating. (Equivalent to fuel stop power in accordance with ISO3046, AS2789, DIN6271 and BS5514 nominally rated.) See T030.

### ⚠ WARNING:

Back feed to a utility system can cause electrocution and/or property damage. Do not connect to any building electrical except through an approved device or after building main breaker is open.

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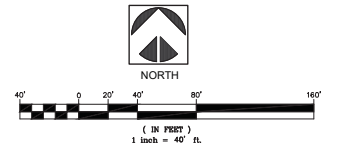
Contact your distributor/dealer for more information.



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

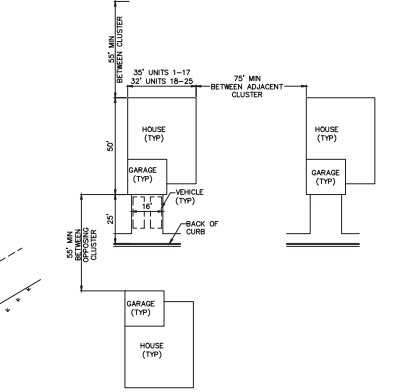


SYMBOL	DESCRIPTION
[Pattern]	PR ASPHALT
[Pattern]	PR CONC
[Pattern]	PR CROSS WALK
[Pattern]	PR DEVELOPED OPEN SPACE
[Pattern]	PRESERVED WOODLANDS OPEN SPACE

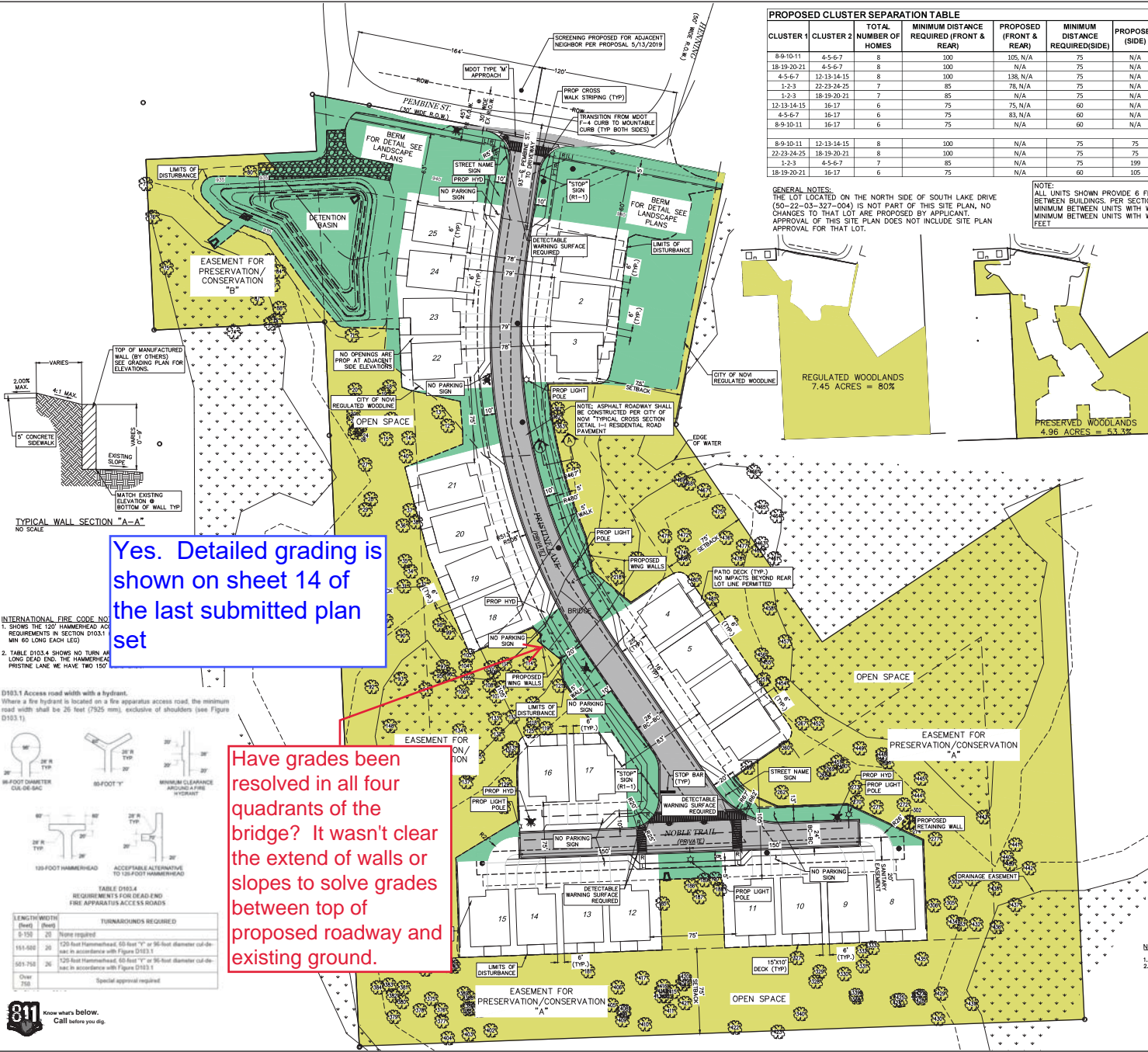
SIGN #	SIGN TYPE	REQUIRED
R1-1	STOP (30")	2
	STREET NAME SIGN	2
RB-3A	NO PARKING (18")	5

- NOTE:  
1. ALL SIGNS WILL COMPLY WITH CURRENT 2011 MUTATED STANDARDS  
2. ALL TRAFFIC CONTROL SIGNS WILL COMPLY WITH FHWA STANDARD ALPHABET SERIES.  
3. ALL TRAFFIC CONTROL SIGNS WILL USE HIGH INTENSITY PRISMATIC (HIP) SHEETING TO MEET FHWA RETRO-REFLECTIVITY REQUIREMENTS  
4. CITY OF 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	1.79 AC
NET SITE AREA (GENUINE)	7.51 AC
PROPOSED DENSITY	3.3 UNITS/AC
RESIDENTIAL UNITS PERMITTED	25.146
RESIDENTIAL UNITS PROPOSED	25
REGULATED WOODLAND	7.45 AC
RWA/NSA (7.45/9.31)	80%
WOODLANDS REQUIRED TO REMAIN	4.67 AC
PERCENT OF SITE PERMANENTLY PRESERVED	53.3% (4.96 AC)
MAX. LOT COVERAGE < 25%	1,316 - 1,518 Sq ft
(ALL BUILDINGS)	35 (2.5 STORES)
MAX. BUILDING HEIGHT	30'
BUILDING HEIGHT (PROVIDED TOTAL)	30'
30'x50'+1,750 SQ-FT./UNIT x 7 = 29,750 SQ-FT.	
32'x50'+1,600 SQ-FT./UNIT x 8 = 12,800 SQ-FT.	
29,750 + 12,800 = 42,550 SQ-FT. = 5.98 ACRES	
0.98 AC/9.31 AC = 10.52% < 25%	
TOTAL LOT COVERAGE (PROVIDED)	25,009 Sq ft



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



Yes. Detailed grading is shown on sheet 14 of the last submitted plan set

Have grades been resolved in all four quadrants of the bridge? It wasn't clear the extend of walls or slopes to solve grades between top of proposed roadway and existing ground.

INTERNATIONAL FIRE CODE NO. 1. SHOWS THE 120' HAMMERHEAD AND REQUIREMENTS IN SECTION D103.1 MIN 60 LONG EACH LEG  
2. TABLE D103.4 SHOWS NO TURN AN LONG DEAD END. THE HAMMERHEAD PRISTINE LANE WE HAVE TWO 150'

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).



LENGTH (FEET)	WIDTH (FEET)	REQUIREMENTS FOR DEAD END FIRE APPARATUS ACCESS ROADS	FURNISHMENTS REQUIRED
8 - 9	12 - 20	None required	
10 - 14	20	120-foot Hammerhead, 60-foot "Y" or 96-foot diameter cul-de-sac in accordance with Figure D103.1	
15 - 20	20	120-foot Hammerhead, 60-foot "Y" or 96-foot diameter cul-de-sac in accordance with Figure D103.1	
Over 20	20	Special approval required	







1 - GENERAL

1.0 STANDARDS AND DEFINITIONS

1.1 STANDARDS - ALL STANDARDS REFER TO LATEST EDITION UNLESS OTHERWISE NOTED.

1.1.1 ASTM B-864 "STANDARD SPECIFICATION FOR CORRUGATED ALUMINUM BOX CULVERTS" (AASHTO DESIGNATION M-219).

1.1.2 AASHTO STANDARD SPECIFICATION FOR HIGHWAY BRIDGES - SECTION 12 DIVISION I - DESIGN.

1.1.3 AASHTO STANDARD SPECIFICATION FOR HIGHWAY BRIDGES - SECTION 26 DIVISION II - CONSTRUCTION.

1.2 DEFINITIONS

1.2.1 OWNER - IN THESE SPECIFICATIONS THE WORD "OWNER" SHALL MEAN CONTECH Engineered Solutions, LLC.

1.2.2 ENGINEER - IN THESE SPECIFICATIONS THE WORD "ENGINEER" SHALL MEAN THE ENGINEER OF RECORD OR OWNER'S DESIGNATED ENGINEERING REPRESENTATIVE.

1.2.3 MANUFACTURER - IN THESE SPECIFICATIONS THE WORD "MANUFACTURER" SHALL MEAN CONTECH ENGINEERED SOLUTIONS, LLC 800-338-1122 Winchester.

1.2.4 CONTRACTOR - IN THESE SPECIFICATIONS THE WORD "CONTRACTOR" SHALL MEAN THE FIRM OR CORPORATION UNDERTAKING THE EXECUTION OF ANY INSTALLATION WORK UNDER THE TERMS OF THESE SPECIFICATIONS.

1.2.5 APPROVED - IN THESE SPECIFICATIONS THE WORD "APPROVED" SHALL REFER TO THE APPROVAL OF THE ENGINEER OR HIS DESIGNATED REPRESENTATIVE.

1.2.6 AS DIRECTED - IN THESE SPECIFICATIONS THE WORDS "AS DIRECTED" SHALL REFER TO THE DIRECTIONS TO THE CONTRACTOR FROM THE OWNER OR HIS DESIGNATED REPRESENTATIVE.

2.0 GENERAL CONDITIONS

2.1 THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIAL AND EQUIPMENT AND PERFORM ALL WORK AND SERVICES EXCEPT THOSE SET OUT AND FURNISHED BY THE OWNER, NECESSARY TO COMPLETE IN A SATISFACTORY MANNER THE SITE PREPARATION, EXCAVATION, FILLING, COMPACTION, GRADING AS SHOWN ON THE PLANS AND AS DESCRIBED THEREIN. THIS WORK SHALL CONSIST OF ALL MOBILIZATION CLEARING AND GRADING, GRUBBING, STRIPPING, REMOVAL OF EXISTING MATERIAL UNLESS OTHERWISE STATED, PREPARATION OF THE LAND TO BE FILLED, FILLING OF THE LAND, SPREADING AND COMPACTION OF THE FILL, AND ALL SUBSIDIARY WORK NECESSARY TO COMPLETE THE GRADING OF THE CUT AND FILL AREAS TO CONFORM WITH THE LINES, GRADES, SLOPES, AND SPECIFICATIONS. THIS WORK IS TO BE ACCOMPLISHED UNDER THE OBSERVATION OF THE OWNER OR HIS DESIGNATED REPRESENTATIVE.

2.2 PRIOR TO BIDDING THE WORK, THE CONTRACTOR SHALL EXAMINE, INVESTIGATE AND INSPECT THE CONSTRUCTION SITE AS TO THE NATURE AND LOCATION OF THE WORK, AND THE GENERAL AND LOCAL CONDITIONS AT THE CONSTRUCTION SITE, INCLUDING WITHOUT LIMITATION, THE CHARACTER OF SURFACE OR SUBSURFACE CONDITIONS AND OBSTACLES TO BE ENCOUNTERED ON AND AROUND THE CONSTRUCTION SITE AND SHALL MAKE SUCH ADDITIONAL INVESTIGATION AS HE MAY DEEM NECESSARY FOR THE PLANNING AND PROPER EXECUTION OF THE WORK.

IF CONDITIONS OTHER THAN THOSE INDICATED ARE DISCOVERED BY THE CONTRACTOR, THE OWNER SHALL BE NOTIFIED IMMEDIATELY. THE MATERIAL WHICH THE CONTRACTOR BELIEVES TO BE A CHANGED CONDITION SHALL NOT BE DISTURBED SO THAT THE OWNER CAN INVESTIGATE THE CONDITION.

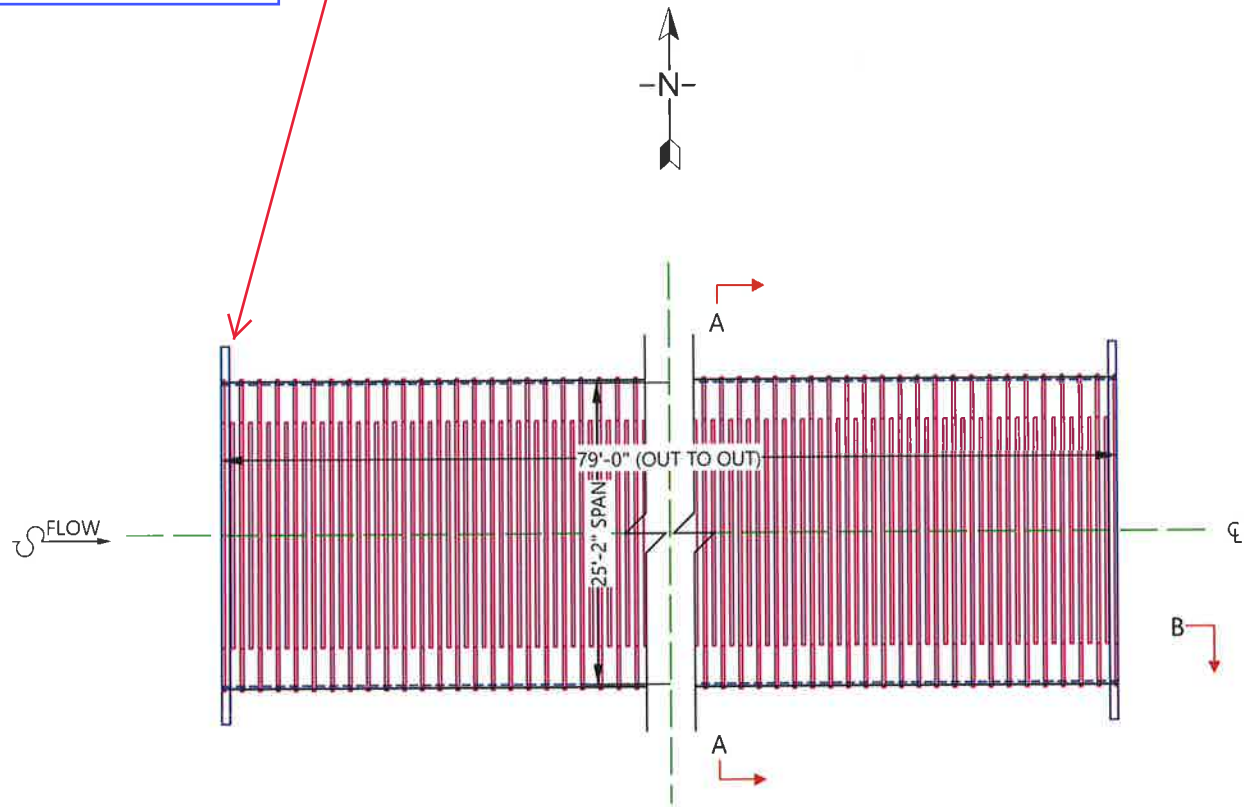
2.3 THE CONSTRUCTION SHALL BE PERFORMED UNDER THE DIRECTION OF THE ENGINEER.

2.4 ALL ASPECTS OF THE STRUCTURE DESIGN AND SITE LAYOUT INCLUDING FOUNDATIONS, BACKFILL, END TREATMENTS AND NECESSARY SCOUR CONSIDERATION SHALL BE PERFORMED BY THE ENGINEER.

ANY INSTALLATION GUIDANCE PROVIDED HEREIN SHALL BE ENDORSED BY THE ENGINEER OR SUPERSEDED BY THE ENGINEER'S PLANS AND SPECIFICATIONS.

McDowell & Associates designed a segmented block retaining wall. Design previously submitted.

Who is responsible for the design of the headwall? What material is used for the headwall?



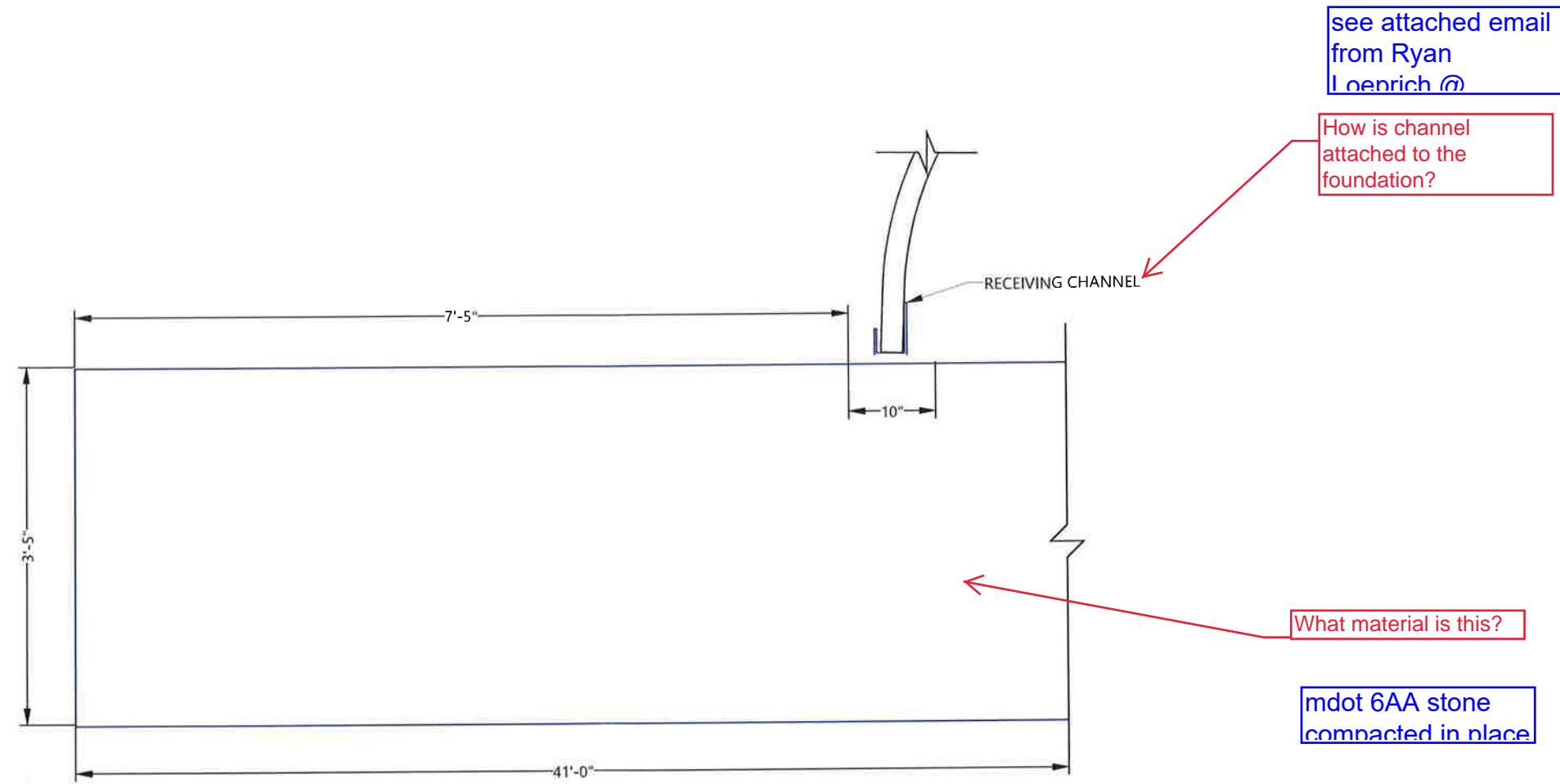
**BRIDGE PLAN**

TYPE VI CROWN RIBS (TYP.) @ 9" O.C.  
TYPE VI HAUNCH RIBS (TYP.) @ 18" O.C.

Stamp

**PRELIMINARY**  
NOT FOR CONSTRUCTION

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			Designed:	Drawn:				
			Checked:	Approved:				
			Sheet No.:					



**TYPICAL FOOTING DETAIL**

**NOTES**

- FOOTING DIMENSIONS AND DETAILS SHOWN ARE CONCEPTUAL ONLY
- FINAL DIMENSIONS & DETAILS TO BE FURNISHED BY THE PROJECT ENGINEERS
- FOUNDATION REINFORCING TO BE DETERMINED

**PRELIMINARY**  
NOT FOR CONSTRUCTION

Project No.: 616403552	Seq No.: 925	Date: 12/3/2019
Designed:		Drawn:
Checked:		Approved:
Sheet No.:		

ALBC #82 - 25'-2" X 6'-2"  
SCENIC PINES ESTATES SUBDIVISION  
WETLAND CROSSING ON PEMBINE ROAD  
NOV 14 11



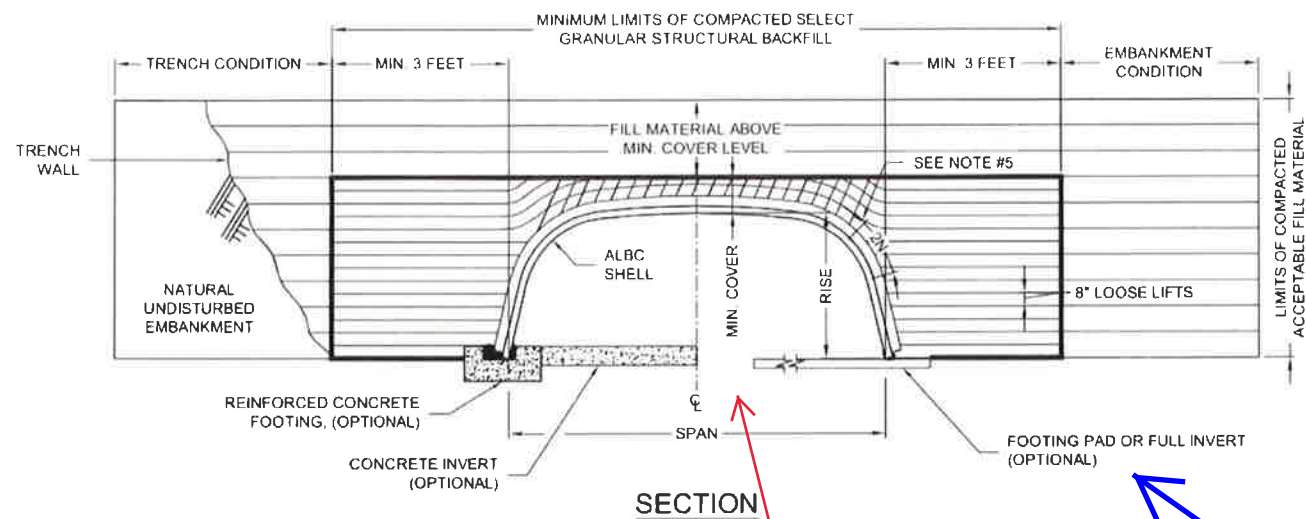
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069  
800.338.4433 513.645.7000 513.645.7003 FAX

**PROPOSAL**  
DRAWING

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Discrepancies between the supplied information upon which the design is based and actual field conditions are encountered as work progresses, these discrepancies must be reported to CONTECH immediately for re-evaluation of the design. CONTECH





- SELECT GRANULAR STRUCTURAL BACKFILL LIMITS
- INITIAL LIFTS OVER THE CROWN OF STRUCTURE AS INDICATED BY SHADED AREA TO BE COMPACTED TO REQUIRED DENSITY WITH HAND OPERATED EQUIPMENT OR WITH LIGHTWEIGHT (D-4 OR LIGHTER) EQUIPMENT

**NOTES:**

1. TRENCH WIDTH OTHER THAN 3 FEET SHALL BE BY DIRECTION OF THE ENGINEER.
2. ALL SELECT GRANULAR BACKFILL TO BE PLACED IN A BALANCED FASHION IN THIN LIFTS (8" TYPICALLY) AND COMPACTED TO 90 PERCENT DENSITY PER AASHTO T-180.
3. COMPLETE AND REGULAR MONITORING OF THE ALUMINUM BOX CULVERT STRUCTURE IS NECESSARY DURING THE ENTIRE BACKFILL PROCESS TO AT LEAST THE MINIMUM COVER LEVEL.
4. PREVENT DISTORTION OF SHAPE AS NECESSARY BY VARYING COMPACTION METHODS AND EQUIPMENT.
5. PLACE SELECT GRANULAR BACKFILL IN RADIAL LIFTS 2N (APPROXIMATELY 2 LIFTS) ABOVE THE HAUNCH RADIUS CHANGE.

**SECTION**

**ADDITIONAL SELECT GRANULAR STRUCTURAL BACKFILL NOTES**

SATISFACTORY BACKFILL MATERIAL, PROPER PLACEMENT, AND COMPACTION ARE REQUIRED IN OBTAINING MAXIMUM STRENGTH AND STABILITY.

THE BACKFILL MATERIAL SHOULD BE FREE OF ROCKS, FROZEN LUMPS, AND FOREIGN MATERIAL THAT COULD CAUSE HARD SPOTS OR DECOMPOSE TO CREATE VOIDS. BACKFILL MATERIAL SHOULD BE WELL GRADED TO MEET THE REQUIREMENTS OF AASHTO M-145 FOR SOIL CLASSIFICATION.

SEE THE STRUCTURAL PLATE BACKFILL GROUP CLASSIFICATION TABLE ON THIS SHEET. BACKFILL MATERIAL SHALL BE PLACED IN 8" LOOSE LIFTS. EACH LIFT IS TO BE COMPACTED TO 90 PERCENT DENSITY PER AASHTO T-180.

A HIGH PERCENTAGE OF FINE SANDS, WINDBLOWN SANDS, STREAM DEPOSITED SANDS, ETC., EXHIBITING FINE, ROUNDED PARTICLES AND TYPICALLY CLASSIFIED BY AASHTO M-145 AS A-3 MATERIALS SHOULD NOT BE USED.

DURING BACKFILL, ONLY LIGHTWEIGHT TRACKED VEHICLES (D-4 OR LIGHTER) SHOULD BE NEAR THE STRUCTURE AS FILL PROGRESSES ABOVE THE CROWN AND TO THE FINISHED GRADE. THE ENGINEER AND CONTRACTOR ARE CAUTIONED THAT THE MINIMUM COVER MAY NEED TO BE INCREASED TO HANDLE TEMPORARY CONSTRUCTION VEHICLE LOADS (HEAVIER THAN D-4).

**STRUCTURAL PLATE BACKFILL GROUP CLASSIFICATION, REFERENCE AASHTO M-145**

GROUP CLASSIFICATION	A-1-a	A-1-b	A-2-4	A-2-5	A-3
Sieve Analysis Percent Passing					
No. 10 (2.000 mm)	50 max.	---	---	---	---
No. 40 (0.425 mm)	30 max.	50 max.	---	---	51 max.
No. 200 (0.075 mm)	15 max.	25 max.	35 max.	35 max.	10 max.
Aterberg Limits for Fraction Passing No. 40 (0.425 mm)					
Liquid Limits	---	---	40 max.	41 min.	---
Plasticity Index	6 max.	6 max.	10 max.	10 max.	Non Plastic
Usual Materials	Stone Fragment, Gravel and Sand		Silty or Clayey Gravel and Sand		Coarse Sand

Fine beach sands, windblown sands, stream deposited sands, etc., exhibiting fine, rounded particles and typically classified by AASHTO M-145 as A-3 materials should not be used.

Reference the most current version of ASTM D2487, Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System), for comparable soil groups.

footing pad = plates

Site plane shows "plates". I don't see that as one of the options shown here.

**1.0 STANDARDS AND DEFINITIONS**

- 1.1 STANDARDS - All standards refer to the current ASTM/AASHTO edition unless otherwise noted.
  - 1.1.1 ASTM B864 "Standard Specification for Corrugated Aluminum Box Culverts" (AASHTO Designation M-219)
  - 1.1.2 AASHTO Standard Specification for Highway Bridges - Section 12 Division I - Design, AASHTO LRFD Bridge Design Specifications - Section 12
  - 1.1.3 AASHTO Standard Specification for Highway Bridges - Section 26 Division II - Construction, AASHTO LRFD Bridge Construction Specifications - Section 26. ASTM B789, Standard Practice for Installing Corrugated Aluminum Structural Plate Pipe.
- 1.2 DEFINITIONS
  - 1.2.1 Owner - In these specifications the word "Owner" shall mean \*\*\*\*\*
  - 1.2.2 Engineer - In these specifications the word "Engineer" shall mean the Engineer of Record or Owner's designated engineering representative.
  - 1.2.3 Manufacturer - In these specifications the word "Manufacturer" shall mean CONTECH ENGINEERED SOLUTIONS 800-338-1122 \*\*\*\*\*
  - 1.2.4 Contractor - In these specifications the word "Contractor" shall mean the firm or corporation undertaking the execution of any installation work under the terms of these specifications.
  - 1.2.5 Approved - In these specifications the word "approved" shall refer to the consent of the Engineer or his designated representative.

**2.0 GENERAL CONDITIONS**

- 2.1 Any installation guidance provided herein shall be endorsed by the engineer; discrepancies herein are governed by the Engineer's plans and specifications.
- 2.2 The Contractor shall furnish all labor, material and equipment and perform all work and services except those set out and furnished by the Owner, necessary to complete in a satisfactory manner the site preparation, excavation, filling, compaction, grading as shown on the plans and as described therein. This work shall consist of all mobilization, clearing and grading, grubbing, stripping, removal of existing material unless otherwise stated, preparation of the land to be filled, filling of the land, spreading and compaction of the fill, and all subsidiary work necessary to complete the grading of the cut and fill areas to conform with the lines, grades, slopes, and specifications. This work is to be accomplished under the observation of the Owner or his designated representative.
- 2.3 Prior to bidding the work, the Contractor shall examine, investigate and inspect the construction site as to the nature and location of the work, and the general and local conditions at the construction site, including without limitation, the character of surface or subsurface conditions and obstacles to be encountered on and around the construction site, and shall make such additional investigation as he may deem necessary for the planning and proper execution of the work.
- 2.4 The construction shall be performed under the direction of the Engineer.
- 2.5 All aspects of the structure design and site layout including foundations, backfill, and treatments and necessary scour consideration shall be performed by the Engineer.

**3.0 ASSEMBLY AND INSTALLATION**

- 3.1 Bolts and nuts shall conform to the requirements of ASTM A307 and/or ASTM A449. The box culvert structure shall be assembled in accordance with the plate layout drawings provided by the Manufacturer and per the Manufacturer's recommendations.
  - Bolts shall be tightened using an applied torque of between 100 and 150 ft-lbs.
- 3.2 The box culvert structure shall be installed in accordance with the plans and specifications, the Manufacturer's recommendations, and AASHTO Standard Specification for Highway Bridges - Section 26 Division II - Construction/AASHTO LRFD Bridge Construction Specifications - Section 26.
- 3.3 Trench excavation shall be made in embankment material that is structurally adequate. The trench width shall be shown on the plans. Poor quality in situ embankment material must be removed and replaced with suitable backfill as directed by the Engineer.
- 3.4 Aluminum Box Culvert designs require a minimum allowable soil-bearing pressure of 4,000 psf. Lower bearing capacities may be accommodated with a site specific design for an aluminum foundation or a concrete footing.
  - If the Engineer determines the natural foundation is inadequate to support the structure's backfill, the poor material shall be excavated, removed and replaced to a suitable depth with competent material. The specific depth of excavation required may be reduced by utilizing a geosynthetic reinforced foundation as designed by a qualified geotechnical engineer. For additional information contact your local Contech representative.
- 3.5 A metal or concrete footing is required. When a metal foundation is used, the soil bedding requires a minimum of 6 inches of loose granular material with a maximum particle size of one half the corrugation depth. The proper width of the bedding material required shall conform to the project plans and specifications.
  - Bedding preparation is critical to both structure performance and service life. The bedding should be constructed to uniform line and grade to avoid distortions that may create undesirable stresses in the structure and/or rapid deterioration of the roadway. The bed should be free of rock formations, protruding stones, frozen lumps, roots, and other foreign matter that may cause unequal settlement.
- 3.6 The structure shall be assembled in accordance with the Manufacturer's instructions. All plates shall be unloaded and handled with reasonable care. Plates shall not be rolled or dragged over gravel rock and shall be prevented from striking rock or other hard objects during placement in trench or on bedding.
  - When installed on a full invert or on flexible footing pads, assembly of the invert or footing pads shall start at the downstream end. Circumferential seam laps shall shingle over the top of the downstream plates as assembly progresses upstream. Whether the box culvert is installed on a concrete footing, full metal invert, or flexible footing pad, assembly of the structure shall start at the upstream end. Downstream rings of plates shall be assembled outside of the upstream rings (Circumferential seams are shingled downstream when viewed from the inside of the shell).
- 3.7 The structure shall be backfilled using clean well graded granular material that meets the requirements for soil classifications A-1, A-2-4, A-2-5, or A-3 modified per AASHTO M-145. See the structural plate backfill group classification table on this sheet.
  - Backfill must be placed symmetrically on each side of the structure in 6 inch loose lifts. Each lift shall be compacted to a minimum of 90 percent density per AASHTO T-180.
- 3.8 Standard highway loads that meet the permissible design load limits for an Aluminum Box Culvert are not allowed on the structure until it is backfilled completely and pavement is in place.
  - The addition of temporary soil for heavy construction loads is not feasible or permissible for Aluminum Box Culverts. By design, these structures are limited in the range of permissible fill heights and live loads.
  - Heavy construction loads that exceed that of the particular highway live load design limits are not allowed on Aluminum Box Culverts without approval from the Engineer.
- 3.9 If an aluminum headwall and/or wingwall system is specified, the select granular structural backfill limits shall extend past the deadman anchor system. Contact the Engineer if stiff material or rock is encountered where the wingwalls and deadmen are to be installed.

**STRUCTURES 1-87**

**PRELIMINARY**  
NOT FOR CONSTRUCTION

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**CONTECH**  
ENGINEERED SOLUTIONS

9025 Centre Pointe Dr., Suite 400, West Chester, OH 45061

800-338-1122 513-645-7000 513-645-7003 FAX

**PROPOSAL**  
DRAWING

ALBC #82 - 25'-2" X 6'-2"  
SCENIC PINES ESTATES SUBDIVISION  
WETLAND CROSSING ON PEMBINE ROAD

Project No:	Seq No.:	Date:
616403552	925	12/3/2019
Designed:	Drawn:	
Checked:	Approved:	
Sheet No.:		

PLANNING COMMISSION  
MINUTES FROM SEPTEMBER 25, 2019  
EXCERPT

---

**Commission meeting. Motion carried 6-0.**

**2. 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.

Planner Komaragiri said the subject property is currently zoned R-4 and surrounded by R-4 on all sides with RA to the south. The Future Land Use Map identifies this property and the surrounding properties as single family use and a public park to the south for the area shown in green on the map. The applicant is proposing to combine three existing parcels for this development. The site is predominantly undeveloped. However, it does contain two single family homes which are 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 also single family homes that are within the Lakewood Subdivision. To the Northwest is the Lilley Pond Subdivision. To the East are the South Pointe Condominiums. To the South is vacant land which is part of the City's Lakeshore Park.

The site frontage spans the entire length of Pembine Street. There is no outlet from the side. All existing single family homes to the North are all legal non-conforming with smaller lot frontages and setbacks. Buffington Drive, Henning Drive, and Pembine Street are public roads with a width of eighteen to twenty-one feet with a fifty foot wide right-of-way. They are paved with chip seal pavement and are not planned for asphalt.

The site is surrounded by and has a significant amount of regulated wetlands and woodlands. Our Zoning Ordinance provides a one-family clustering option for similar sites as an alternate development option. The intent of that section is to allow flexibility in single family developments where conventional developments would destroy the unique environmental significance of the site. This option does not allow additional density, but does allow relief in certain developments standards such as setbacks and yard requirements. To be able to use this option, the applicant has to preserve a minimum of 50% natural features to qualify. The current plan proposes to preserve about 53%.

Just a little bit of background, Planning Commission has approved a Preliminary Site Plan for a similar development on this property in 2003, subject to a number of conditions. The current layout is similar and is also using the same option with a slightly different road layout. The applicant has referred to that Site Plan approval and a couple of locations in their response letter. However, the current review is independent from that approval. Staff did recommend some conditions that were a part of their approval which are still applicable at this time. I wanted to share this slide which gives a brief overview of existing site conditions and the proposed impacts before we get into other details. As you can see on the slide, the area highlighted in the blue boundaries are the existing regulated wetlands and everything south of the green line shown on the map is all regulated woodlands on site. The applicant is proposing to clear the woodlands within the shaded area in green shown on the map to propose the twenty-five unit development. The wetland impacts are in the area shown in dark green on the map and the wetland buffer

impacts are in the area shown in red on the map. The impact shown on the map is mainly because of the bridge that is proposed. All the other impacts are because of the grading for the new units. The plan proposes about 0.07 acres of wetland impacts and 0.129 acres of buffer impacts as part of them are temporary. Currently, they are proposing about 219 trees to be removed within the green shaded area on the map. That would require about 438 replacement woodland credits and only seventy-four are proposed to be replaced on site.

The applicant has performed soil boring tests at twelve different locations. The soil type mostly includes clay type with layers of sand. Storm water is proposed to be detained on site with an above ground storm water pond in the North West corner and an underground retention pond south of Pristine Lane (proposed street name). Approximately 2.15 acres of the northern portion of the development will drain to the on-site detention basin and about 1.7 will drain to the underground retention to the south. Engineering staff had some concerns originally that the ground water elevation may be within three feet from the bottom of the underground detention unit however, after reviewing the soil borings and meeting with the applicant and discussing in detail, we are at a comfort level where they are recommending approval with some conditions. The plans that are in the packet are good enough for a level of detail for Preliminary Site Plan, but we will continue monitoring the piezometer readings where requested near the underground detention to be provided with each future Site Plan submittal.

The landscape review notes two landscape waivers that would be required. One of which is completely supported by staff, which is lack of street trees along Pembine Street. The other one is the engineering review requires that the sidewalk to be placed fifteen feet from the edge of the road and then the street trees are expected to be planted between the curb and the sidewalk, however, given the cluster development plan trying to protect the woodlands in the back, the sidewalk is pushed closer to the curb in certain locations and less than fifteen feet in some locations due to which the street trees which are expected to be along the road are pushed farther away. Our landscape review recommends support of the deviation as long as the trees are kept within 15 feet from the road right-of-way.

Traffic review does not note any major concerns, just asks for a few details at the time of Final Site Plan application.

The applicant has provided about twelve different elevations for the proposed units. They are proposing a first floor master bedroom to gear towards older senior citizens. Our façade review notes, they include adequate variations to comply with similar and dissimilar Ordinance requirements which would be reviewed at the time of plot plan review.

The fire review noted some additional comments to be addressed at the time of Final Site Plan which the applicant indicated will be addressed.

Due to the close proximity with the single family homes, the Site Plan has gathered a lot of public interest. The applicant has held two public meetings on their own to gather comments from the surrounding residents. They also noted they met with a few of the immediate neighbors multiple times to address their concerns. There's a resident who lives on the opposite side of Pristine Lane, she was bothered by the headlights shining into her house and the applicant has agreed to provide additional screening on her property to protect her from the shining headlights. Staff also met with the residents and immediate



neighbors multiple times to address their concerns and explain the review and process and a majority of the concerns relate to the site drainage. Engineering review agrees with most of the public comments, but they note the comments can be addressed adequately with detailed engineering drawings at the time of Final Site Plan submittal. Our engineers are available here tonight if you have any questions. The Planning Commission is asked to hold the public hearing today and make a decision on the Site Plan, special land use, and other items. I do want to point out that the motion sheet that was posted online has been revised and the one in front of you is the revised motion sheet. The changes mainly refer to two deviations that the Site Plan would require which refer to the reduction of distance between the clusters and reduction of front building setbacks from the street. There was a little confusion as what the Planning Commission can approve and what would need to go to the Zoning Board of Appeals. The one you have in front of you is the final clarified version of the motion sheet. Planning Commission can approve the reduction of distance between the clusters if they can make a finding that the strict allegation of the distance would destroy a natural amenity such as regulated wetlands and woodlands. This deviation is only requested for one set of clusters, not all. The other one where the Planning Commission can approve a reduction of building setbacks from the streets provided that the applicant met certain conditions that is listed in the Ordinance, which the applicant is meeting with an exception of one which would require a landscape berm on all sides abutting single family districts. Staff would not support a berm because of the existence of the wetlands and woodlands so they have to go to the Zoning Board of Appeals to get a relief from that. But, Planning Commission, if they make a finding that the other conditions are met they can provide a conditional approval subject to ZBA approval. The other two options the Planning Commission needs to make a finding and make a motion is the approval of the one family clustering option. The applicant as noted earlier is proposing to permanently preserve up to 53% of the qualifying area and then a special land use based on Section 6.1.2.C and this is where staff has included certain conditions which were part of the previous approval but are still applicable at this time. We have Todd Rankine from Singh Development with his engineer Mike Noles if you have any questions for them. Thank you.

Chair Avdoulos asked if the applicant would like to address the Planning Commission?

Mike Noles, Diffin-Umlor, said good evening. I'm representing Singh Development tonight. I'm pleased to be back in front of the Novi Planning Commission with another fantastic, luxury development. Scenic Pines is a wonderful opportunity to develop a unique property with significant natural features. As Sri indicated, we are in the R-4 Zoning and we're utilizing the one-family clustering option in Section 3.2A, which provides a framework to allow certain innovations, constraints, and also departures and whose goal is to cluster the homes closely together to preserve and permanently protect the abundant natural resources on this site. The cluster option is not easy to navigate. I'm grateful for Singh Development's patience and understanding while we spent the last year perfecting the plan before you. We are pleased to have secured unanimous recommendations for approval from your diligent staff and consultants. We look forward to discussing the details for our project tonight.

As Sri mentioned, Scenic Pines was Final Site Plan approved in 2003, those approvals have since expired. The City staff at the time, Planning Commission, and residents collaborated on the previously approved plan to identify and resolve many of the conflicts. We carefully examined the record and identified opportunities to further improve the plan. The changes from the previously approved plan include 53% woodlands preservation which was up from 50%, a better storm water management configuration that has been

updated to today's stricter standards including storage for the 100-year event versus the 10-year event, an approved entry configuration, less impact to the natural features, and elimination of a contentious wall. We also engaged the neighbors to listen to and address their comments. I would like to thank the thirty-five neighbors who actively and courteously participated in our informal meetings. I would especially like to express my gratitude to Dorothy and Mike Duchesneau who helped to coordinate communication with the neighbors and help coordinate our informational events. All in all, we held two public meetings at the Novi Public Library which lasted three hours each. We attempted to answer all questions and the input helped guide the plan before you tonight. We've exchanged over thirty emails with residents, held multiple one-on-one meetings, fielded over twenty phone calls, and prepared dozens of specialty exhibits to clarify and communicate our proposal. We didn't always agree on every aspect and I'm sure you'll hear about that tonight, but many concerns were addressed and the process greatly reduced rejections to the development.

I won't belabor my remarks by reiterating Sri's thorough report, but I do wish to highlight a couple of bullet points. The density: the twenty-five units proposed are consistent with the previously approved plan, the Master Plan, and the cluster ordinance restrictions. The 9.45 acre property would technically yield thirty units under strict adherence to R-4 zoning rules. The right of way: the proposed 0.17 acre Pembine Road right-of-way dedication associated with this plan greatly improves the configuration of the City street that was built long before construction standards were enforced. The roads in the Lakewood Subdivision meander in and out of the prescribed right-of-way and this additional property dedication to the City helps resolve that issue. The wetlands: the existing 1.7 acre on-site wetlands are minimally impacted under our proposal and an EGLE/MDEQ draft permit was issued for the site last week. Trees: 53% of the regulated woodlands will be preserved. They will be protected by a conservation easement. Interesting fact, in the last sixteen years since the old tree survey was done, the number of regulated trees has increased, but the number of trees called for removal with this proposed plan has actually decreased. We are going the right way with this and we have some fantastic slides if you want to see how we managed to do that, we can show you that as well. Mitigation is proposed in strict accordance with the City of Novi replacement requirements including a bond for saved but at risk trees. The extension of the water main through the Lakewood Subdivision and looping of the water main is a definite benefit for all the residents of Lakewood. That subdivision previously had a special assessment district that was only partially completed. Singh is bringing the water main through the Lakewood Subdivision to serve Scenic Pines so a future dig will not be required, which eases the burden on residents should they one day want to hook up to the public water supply.

We have spent a considerable amount of time discussing the drainage on this site and the surrounding properties so that our neighbors can see graphic depictions of where their issues really lie and how the Scenic Pines proposal helps them and in no way exacerbates their situation. I can go into further detail if you wish, but the City staff has also looked at this proposal in detail and has also issued a recommendation for approval. Thank you for your time tonight. I hope we can count on your support and I'm available to answer any questions you may have.

Chair Avdoulos said this is a public hearing, if there are those who wish to address the Planning Commission on a Public Hearing, please approach the podium. Please state your name and address and please address the Planning Commission and not the audience. We are here to listen to your concerns and then we'll address it during our discussion. Thank you.

Gary Zack, 359 South Lake Drive, said on September 25, 2002 a previous developer was planning to develop the same sensitive wetland and woodland area and was meeting with the Planning Commission. After significant discussion of citizen input, a final motion was made regarding Scenic Pines Estates SP01-63B to approve the Preliminary Site Plan with several stipulations including but not limited to the following: One, the Planning Commission approval for a brick screen wall in lieu of the required thirty inch tall landscape berm abutting Pembine Road. Two, subject to the understanding that the Site Plan does not carry with it, approval of the lake access lot. Three, conditional on no lots encroaching in the wetland buffer. Final Site Plan requires additional significant detail of the Northwest corner, engineering issues being satisfied as well as DEQ permit being obtained. Four, the Site Plan shall return to the Planning Commission for Final Site Plan approval and be subject to the comments on the attached review letter being addressed at the time of Final Site Plan review. The concerns of the residents and neighbors remain the same today as they did seventeen years ago. I recommend that the Planning Commission incorporate the wording of the final motion from September 25, 2002 regarding SP01-63B and any motion made today regarding the current Scenic Pines Estates JSP18-76. It is also very important that citizens have a chance to review the final plans and provide comment. I do not recommend allowing administrative approval of the final plan. Developers go into these projects eyes wide open and know the restrictions and City ordinances. They should not receive or expect large numbers of deviations and variances for it defeats the intended purposes of the Ordinance. If they cannot work with the guidelines they should not pursue development of the property.

Howard Katz, 1155 South Lake Drive, said I am appearing on behalf of the condominium association to the Northwest. One of the issues nobody has addressed yet is the wetland water table that extends to the northwest into South Pointe Condos. I didn't see any boring samples taken there. The drainage according to the plans is going to the west and going to the north and I believe that the only water that is going to come through that wetland is going to come from those seven houses on the plan and they're going to keep dumping more water. We see the water level right now as pretty high, it's just going to get higher because that water has no place to go. It's a very moist area and to quote the engineer, he says the borings genuinely indicate major problems for installing basements. The builder is looking for trouble because this is not a suitable parcel to build. More importantly if you look at the plan of the development itself, they're going to bring in tons of dirt. They have to build up that whole level five to eight feet tall, where's the water going to run from there? When it runs to the Northwest, it's going to go down into the wetlands and it's going to come to the north and flood our homes. We're a senior citizen development. That water is going to come up and we have no recourse whatsoever.

Mr. Katz continued, if you approve this today and administratively accept them without any input, you're doing us a disservice. You're going to raise the ground level another seven to nine feet and you're going to be driving down South Lake Road and looking at these towers going over the trees and you're going to cut down all those trees anyway. You're going to destroy the whole natural beauty of a piece of property you have here which is one in a million. I would recommend that you see the final plan, and then you give us an opportunity to come back and look at the final plans because the builders going to have to adjust. He's taking advantage of a lot of zoning requirements and ordinances. He's asking you to give him a break because it's to his benefit. He could eliminate a couple of houses off the plan and not have very many variances, he chose not to, he wants to maximize the houses and he's asking you to help him do it. I just don't think it's the right thing to do.

Gerald Montes, 128 Buffington, said the first thing that I want to get into is something that is going to affect the future owners of Scenic Pines and it's the borings that were taken in place by the engineers. The water table is so great they recommended that this is going to be a problem site for quite a few of the units. According to a study, it's in the plans, on page 7, this is a recommendation by the services of McDowell and Associates that they would be engaged for all soil and footing extractions and placements. In order to do tests on each foundation setting which will include a density test after the hole is dug to place the foundations and that the foundations be extra-large to support the soil which is not be given enough time to settle. You're going to bring in that much fill, you need to have soil densities done at different levels as the soil is placed. They're going to have basement problems and cracks. In Texas, it's 25 years before you can build on any type of fill.

Mr. Montes continued, the entrance for the trucks coming in to Buffington and leaving on Henning for the fill is another concern for me. South Lake Drive is considered a B-class road with a weight limitation of 18,000 pounds for all weather conditions. It says single axels are 20 tandems or 36,000. No through traffic because of the bridge on South Lake Drive. Henning and Buffington have very small entrances, there's also a sewer cap to the right for the entrance into Buffington, that's for all the main sewers that connect into South Lake Drive and all the remaining streets. For the amount of trucks and that amount of fill, it's probably going to be one hundred to three hundred semi-trucks. The turning radius for a semi-truck single trailer is forty feet out of the corner. As it stands now that truck approaching South Lake Drive having to turn on to Buffington is going to have to access the opposite side of the road into oncoming traffic. Hopefully people slow down and with the way people drive there now, I doubt it. The trucks are going to tear out our new curbs that we put in this year. It's also going to run over the City sewer which is right at the corner base. I recommend that this be denied and wait until these conditions are corrected. The developer says they are responsible and they will maintain the road, but for two to three years the residents are going to have to live with a torn up road. For that reason I would ask that you would deny their request for approval. Thank you.

Michelle Werner, 135 Henning, said I live about midway down the block from the property. I want to talk to you today about basements and groundwater. We have the only house on Henning Street with a full depth basement. We live in a house that never should have been allowed to be built. Thirty years ago, a different developer came before this Commission and said the same things the developer is saying now. They were wrong thirty years ago and they're still wrong now. I and the previous owners of our property have been fighting a battle that's expensive and unending for thirty years against groundwater encroachment because the water table is just as high as they found it to be in April. We replace our sump every twelve to eighteen months because we pull that much silty water through our basement. We have had to have our foundation resealed twice, it has major problems because fill settles harder when you have groundwater running underneath it and it does not settle as evenly as when you built up on dry ground.

Ms. Werner continued, the developer is selling these houses as low maintenance luxury homes for retirees. They are not signing up to deal with flooding basements and high water tables and flooded backyards and living in the middle of a swamp. Please don't let this developer dig basements on this property. The people that are going to buy these homes, they're not going to know what's underground until they put their life savings into these properties. It's not fair to say we hope that the July numbers were right. It's just not fair to these folks who are going to be retiring and think this is an easy house to live in and finding that they're pumping water constantly. Where will the tens of thousands of gallons



of the sump discharge supposed to go every day? Are those tanks big enough to hold hundreds of thousands of gallons of sump discharge for four months a year? Until you can get a full years' worth of readings to see what's on on that site I don't think it's fair to approve anything, because the water is there and not going away and I don't want to see these folks get hurt the way we were. Thank you.

Robert Harris, 209 Henning, said I'm a lifetime Novi guy. I've lived on the north side for about seventeen years when this project was first brought on so I'm familiar with it. I'm not against the project. What I'm against is that I live three houses in from the project off of Henning on the east side and my garage is sitting in thirteen inches in water three to four months out of the year. As soon as the first thaw hits, it just fills. Mike Noles, who I have spoken to - when he talks about the phone calls and the emails trying to work through things and we have still have not came up with a solution. Todd, my neighbor, deals with the same thing. All of our neighbors have flooding and when Mike tells me it's going to divert the water away and I can't understand how that is. The engineers have no idea what's going on. I don't know who to believe. I've emailed City Council, I've been in front of them and no one can come up with a solution of what's going on at my house and what's going on with South Pointe Condos. It's just concerning that were building another project less than two hundred feet from my house. I'm really concerned about my house and myself and I don't find this to be anything that's conducive to help me out until we find out why the drainage is going on. We sit on wetlands and it's pretty wet back there. I know it better than anybody, we do have to address it, the project is sitting on both sides of wetland preserves and they're talking about putting it up on fill. So it falls on you guys to see where it's at before we approve this. Thank you.

Gerry Cooper, 155 Buffington, said I'm right across the street from where the developer is going to put the pond. They're running the water back towards Pembine. There's no pond there now, there's no water there now, it sheds to the back, it runs to the south so were taking water and bringing it to the road. Across the street I have a pond, if the proposed pond ends up being higher in elevation than what my pond is, that's going to fill my pond with what's going to end up in my basement. There are twenty-five condos being put in and fifty vehicles going down the street. You're going to bring in all these giant trailers full of dirt over capacity. It's going to ruin the roads and the houses are going to get ruined that are on Buffington and Henning, they're going to flood out and the liability lies with the City.

Danielle Fasseel, 1185 South Lake Drive, said I live right at the end of Henning. Mostly I'm here just to say I agree with most of my neighbors. I am very concerned about the water, especially the runoff. If we're going to be building up these houses seven to eight feet higher, were going to get all the rain water and sump pump water, I know they're saying this can be contained, but I know my neighbor's yards flood in the spring almost all the way up to their houses so if this does go in and it does increase the levels, what is that going to do to everybody that already has houses there? I was shocked to learn they were going to put in basements just because I know many of the neighbors with basement problems. Because of how high the water table is, I feel like it's just asking for problems for all these people who are going to be buying these houses. I also agree with the fact that they should have to bring back their final plans so the neighbors can have final comments about what can be done so this isn't just put straight through and approved. With the water problems that are already there and how high quality these wetlands and woodlands are, I really recommend that they decrease the number of houses that they're proposing to put in. I don't know if Buffington and Henning are actually made for an increase in traffic, those streets are crumbling already. I know they

have repaved them already this year, but they're not high quality roads. I'm also concerned, I know you're only increasing maybe fifty cars every day but we're also increasing traffic because of the beautiful park renovation and we renovated the other park and there's so much traffic on South Lake Drive, I would just like this to be a smaller development because all of the people that live on South Lake Drive already know there's a problem with traffic. We all have kids; they cross the streets and people are always speeding. Maybe a stop sign gets put in at Buffington with the way that traffic is going to be coming in and out down those small streets. That's all I had to say, thank you so much for listening to me.

Rachel Sines, 2219 Austin, said I moved to this area for the nature and in the last 5 years it has just been devastating watching all these trees come down. In fact, developments at 12 ½ and Novi Road and 13 Mile Road and Novi Road and now Old Novi Road and even Lakeshore Park, just everything is coming down. There is probably more tree credits that you guys have than places that will ever be able to plant trees. So my question to you is that this development can probably be done without many deviations and variances yet the City tends to bend over backwards and give the developers whatever they want. I would challenge the City to hold the development to the current standards, deviations, and variances and limit those so our community wouldn't be as impacted as it is now.

Xiaoli Xiao, 29785 Lilley Trail, said my concern is about Buffington or Henning Road being pretty narrow. Both sides are private parking so I guess that the people and traffic, at least a portion of the traffic, will travel through Lilley Trail, which I do not like. The second concern is to the south of Lilley Trail is zoned as Residential Acreage so I would like to know if the City of Novi also plans to have that developed because I hope not. Thank you.

Dorothy Duchesneau, 125 Henning, said my home is also one of the homes where the backyard tends to flood. It's like an anniversary tonight. Exactly seventeen years ago, on September 25, 2002 Scenic Pines Version 1 came in front of the Planning Commission as Site Plan 01-63. It was the only item under Public Hearings that evening. According to the minutes, the Planning Commission was here until 12:35 in the morning that night. Many concerns were brought up then by the neighbors, but it was approved that night with certain restrictions in the Motion to Approve.

Ms. Duchesneau continued, Scenic Pines Version 2 now comes before you with a different builder involved. One who it seems has read the issues brought during Scenic Pines Version 1 and has addressed many of them up front. There are still some issues with details that need to be explained and worked out. I believe it is in the City's and the neighboring resident's best interests to still include some of the restrictions put on the development back in 2002 on the 2019 version. As a Preliminary Site Plan there are still unanswered questions that won't come up until further engineering work is done on the project. The actual answers to these questions may dictate a change in the plans of the developer or the scope of the project. For example, the recent soil borings have shown high water levels in several areas of build. Planning basements in these areas even if staying within the two and a half story height, will require substantial grading changes to bring the basements underground to comply with our ordinances for building heights in an R-4 cluster option. At this time, all we know is the amount of fill that will be required to create the bridge, 2,100 cubic yards worth. That by itself will be about twenty-five big semi-truck loads and trips for just that small area. It's approximately twenty-eight cubic yards to one big truck.

Ms. Duchesneau said the previous motion also approved a brick screen wall and I just

want to bring that up because at that time, at the front of the development the motion required in lieu of the required thirty inch tall landscape berm abutting Pembine Road a brick screen wall would be applied. That helped to facilitate the continuing flow of water onto the City owned property of 2.4 acres on the northeast corner that had been bought by the City years back to help with storm water management back when South Pointe Condos were developed. The same for the northwest berm, which helped the flow south towards the proposed retention pond area. Even though berms are required by the City, the creation of berms along Pembine in this case, were deemed to hurt, not help the water run off by staff at that time. There will be more than enough tree credits left over to more than adequately shield Scenic Pines from Pembine by creating a small forest on both sides of their entry road. Additional pines in Scenic Pines would be appropriate. Another important condition stipulated at that time was that no lots encroach into the wetlands buffer. The most important condition added to the motion at that time, the Site Plan shall return to the Commission for Final Site Plan approval and subject to the comments on the attached review letter being addressed at the time of the Final Site Plan review. This is the most important to me. By returning to the Commission for Final Site Plan approval rather than just as administrative approval stamp, the residents and neighbors will have a chance to make final comments on the rest of all those details we don't know about now. If this gets approved tonight please make these conditions as part of the approval. There are too many loose details that are not required to be answered in the preliminary approval process especially with the location of this site. Thank you.

Tod Neff, 217 Henning, said I'm the last house on the left, which I think I will be affected the most because everyone around me has filled in the swamp, the condos behind me, everybody else, and now you're going to push water over onto my side. I have pictures on my phone of how high the water is. I've never seen it this high. My furnace is the crawl space and I've never replaced it since I've built that house. I've been on this property for a long time, haven't seen the water this high since this year. Now we're going to build and push water and affect me more. I can't have that. I hold you guys responsible if my crawl space gets flooded. Please don't allow this.

Mike Duchesneau, 1191 South Lake Drive, said my front door and entrance as well as my mailbox is on Henning Street. You probably have received this morning the summary of my concerns that I have been raising and asking for answers to these questions. The staff has been very helpful as far as reviewing and communicating with the developer to try to answer some of those questions. There are many items that are left unanswered. My letter was written at the staffs request because I have been so concerned and have been identifying things for months. Many of these items have been on the original list back in April when we met with the developer who was very cooperative as I say in my letter and I'd like to make that letter a part of the record. I'd like to see this item tabled so the applicant can address some of the concerns and items listed by the staff. I recognize this is not a PRO, but the proposal seems to have many built in variances and items needing to be addressed. The soiling borings summary should be enough to alert anybody that these are not typical houses with typical basements. Side and rear elevations were not provided and I've been told the front elevations are all that's required for this particular project. The side elevations and rear elevations would have shown where the patios and decks and the drainage as far as the side of the hill. Screened-in patios do not meet the setback requirements. I've been told through staff that the applicant is proposing to not have any screened enclosures. If you're going to hold that to them, that should be part of the motion. But that wasn't my purpose as far as restricting that, my purpose was just to identify things so they wouldn't have to go to the Zoning Board of Appeals. My concern is mainly about drainage. I've suggested, repeatedly, that we have a twelve foot setback

between the edge of road and the edge of sidewalk. I understand in talking with staff, that generally they follow the item that goes with the back of the curb, they use a different setback calculation, but there's also in that same set of standards that there's a twelve foot setback required when there is no curb. So this is an item. Many mentions were made of the previous approval. The applicant fails to mention that the previous approval was for twenty-four houses not twenty-five. The previous approval also had conditions in it. The Preliminary Site Plan that was approved seventeen years ago also said that it was conditional on no lots encroaching into the wetlands buffer. The Ordinances say that the City has to determine that this is in the public's best interest to encroach into a wetlands buffer. Proposals should also come back as was mentioned to the Planning Commission for Final Site Plan approval. This was basically mentioned a few times, it was part of the original Preliminary Site Plan recommendation. They've done a lot of work, don't get me wrong, because they really have come a long way and they've addressed issues. I'm just not sure they're there, and I would like to see, if you choose to push this forward today, that certain amendments be made to the motion. I'm kind of disappointed that this is such a flurry right now and that the package that we are seeing doesn't include the most recent changes as far as what goes to ZBA because what the package to the public says is that it's going to go to ZBA for certain variances, I don't understand. I guess we should just kind of address this thing and get a good package and more answers. Thank you.

Tom Skrobecki, 132 Henning, said I would just like to agree with my neighbors and object to the development on many of the same reasons: construction traffic and construction noise. Our road is unimproved. We currently have sixteen houses on our street, it's a very quiet street, and I don't know why we would more than double that. I also believe it is a very risky development. It's been for sale for twenty years. No one has developed it for twenty years, why would that be? We went through this in 2002, it got rejected, it never got built, tried again in 2006-2007 bought other lots on Buffington and I question the City's value with trying to go forward with it.

Chair Avdoulos said, seeing no one else wishing to speak, Member Lynch could you review the written responses.

Member Lynch said we have a few response forms. I'm just going to summarize these. We have an objection, Marc Kennedy 1201 South Lake Drive, primarily concerned about the traffic. Another objection, Patricia Koonter, 29740 Lilley Trail, concerned with road deterioration, traffic, noise. Ann Smith, 226 Henning, concerned about loading and unloading, construction site traffic, wetland concerns. Mike Duchesneau, he just spoke and pretty much summarized his findings with pictures. We have Virginia Runyon, 1155 South Lake Drive, concerned about the wetlands and water level. Objection from Gwendolyn Martin, 1127 South Lake Drive, concerned about wetlands and traffic. Lois Nugent, 1155 South Lake Drive, concerned about wetlands and drainage issues and traffic. They're all objections. To summarize the concerns: wetlands, drainage, traffic, and wildlife.

Chair Avdoulos said those will be in our public record for anyone who wants to take a look at what the concerns are but I think we will be addressing mainly everything the residents have concerns about too. Chair Avdoulos closed the public hearing, and turned this over for the Planning Commission's discussion.

Member Anthony asked if the houses include basements?



Mike Noles said they will.

Member Anthony said how high will you be building up fill for these homes? Will fill be needed under all the homes or just a few select homes?

Mike Noles said no, we will be filling the entire site, but it varies how much. For example, on the very south end of the site the existing elevation is at 942 which is significantly higher so over there those are going to be standard basements. This came up when one of the folks was trying to see if our basements are considered basements under the definition of basements in the Novi Ordinance. So I picked the worst-case cross section which is a walk out basement and you can see the basement floor is at 936. Sri mentioned we'll have to do additional piezometer readings to show what that level is. The scientists are determined that the ground water is at 931.

Member Anthony said so in that particular case, how much of that is built up with fill?

Mike Noles said so it will be about zero at the back and then at the front it will be about eight feet.

Member Anthony said so you will not be putting fill that will actually elevate the homes so that the bottom of the basements are elevated?

Mike Noles said to a certain extent there will be some of that. It varies on the grading plan, but we have to match the existing condition with the existing grade ten feet away from the house so there will be a slope down from the house but at the back of the property the fill is zero, at the house it's probably a foot and at the front of the house it's eight feet.

Member Anthony said so it's likely every house will have some degree of fill, but towards the front and no fill towards the back?

Mike Noles said that's correct.

Member Anthony said so there won't be really any adjustment to the bottom of the basement versus current elevation?

Mike Noles said yes, but it's tough to generalize twenty-five houses and the grading without actually looking at the grading plan. Mike Noles showed a map where there was a higher elevation, 942, and the road at 942. There won't be any fill in there. That will be a cut. Where there will be walk out elevations there's already a slope throughout there. He showed a line that was highlighted in blue showing a 934 elevation.

Mike Noles continued to say the water does go through all these Lakewoods backyards. We're not even touching that contour line with any of our development. So if you take the water that naturally flows off of this property, in every direction it's going to be seeing less water going into that direction. We will capture nearly everything, not 100%, but a large percentage of water within the limits of disturbance. We will put it into the detention basins which discharge at this location and at this location (shown on the map). We are not pushing any of our water to the east, were not pushing any of our water up to the Lakewoods. One of the problems is that the neighboring condo development, you can also see we took their engineering design and overlaid it onto a plan so people could understand how that was supposed to work. They have several inlets along the property

line, the rear yard property line that was supposed to allow water to enter into their system and discharge it at the south end. All of this water drains to the south and it even has a drainage easement across our property in this corner to allow it to keep going across the property. We're not doing any disturbance in any of that area. We're not adding water to this area. We're taking water out of the area, were sending it to the west and they're going to see a reduction of water going into that but their big problem is that the neighborhood was never graded properly. That 934 elevation is the same from the south lot all the way to the very north lot, that's not how you design a site. This site was designed a long time ago without any slope to their rear yard drainage. There are some maintenance issues with their neighbors with the inlets not picking up water, but this development has nothing to do with that. What this development is going to do is pick water up in our storm system and store it in our detention basin.

Member Anthony said before you go any further, I want to finish where I'm going with this. The outer blue line on your drawing is elevation 934. What is the significance of 934?

Mike Noles said so what I was trying to illustrate to the residents is in the area where the water is backing up, we don't even hit that contour line. Their water problem is below the existing conditions. We're capturing our storm water, were storing it, and were discharging it to the west. We are treating the storm water, and storing it for the one hundred year event so we are not exasperating their initial problem.

Member Anthony said what's the significance of the 934? Is that telling me that's the top of the surface water? Or are you just saying that's the area of where the surface water flows?

Mike Noles said what I was trying to show was that it's flat as a pancake through there. When the water rises up to the level of the 934, that's the shape of it. It's just a huge flat wet area back there with no slope to it.

Member Anthony said okay I got it now. So what is the elevation of the bottom of your deepest basement?

Mike Noles said I just have the one example with me which was 936 as the depth of that basement which is five feet above the ground water table.

Member Anthony said okay and just so you know, I know you guys do very good work. Singh is a very good developer. So where I'm cutting you short is I'm trying to just get through a train of thought without going on too long. So your bottom basement is at 936, so I realize different people within your team look at different parts of the reports that come in, are you familiar with the geotech report? How many wells or piezometers did they use on this site?

Mike Noles said there were six, I believe. They were all read and were reading the 931 elevation. They also did a ground water study.

Member Anthony said and how many episodes over what period of time did they gauge those wells?

Mike Noles said they only read the piezometers twice. One was at initial installation and really is just to make sure that the water is flowing at initial installation. They have only had one additional reading since then.

Member Anthony said and the time span between that?

Mike Noles said so the second one was July 9<sup>th</sup>, 2019 and the first one was a couple months before that.

Member Anthony said so you're looking at May and July?

Mike Noles said yes. Here are the readings from the piezometers. They had six of them. Piezometer number one is here in the detention pond that turned out to be all sand and that reading was at 93070 and that's a good indicator because it was really sandy material. Piezometer number six was of interest to us because it was right next to the underground storage detention area which I have highlighted in blue that was also 930. Piezometer number twelve was confirmation of the others and you have this all in one nice line all 931. There were three others that were off slightly. Two of them were at 93150 half a foot higher, but they were in stiff clay so it's harder to get a good ground water reading when it's in stiff clay because the groundwater doesn't move as well. The geotech scientist with McDowell and Associates determined that number eleven, which is over here on the high mound - that it was actually perched water.

Member Anthony said did McDowell state that they were concerned about basements and what the elevations of the basement would be because of the groundwater?

Mike Noles said no they didn't say that but what they did say is that it's a challenging and difficult site and they recommend that their services are engaged so that we can make sure that we don't have any problems. They wanted us to be up and above the ground water with the basements so the sump pumps were not constantly running. The tests that were mentioned earlier are standard practice, every time you dig a foundation you go down and test the compaction at the bottom of the hole.

Member Anthony said just for clarification, there's two separate things, one is compaction, it's pretty standard that when you're bringing in fill material you're compacting in six inch lifts by achieving 95% compaction or more and you have testing on site. Everyone does that. I've seen Singh projects and they hit that nail square on the head. The other issue though is the groundwater and that you can't determine by a field observation during construction it's something that has to occur over time. Just so we don't blend the two because I've noticed some of the public comment had blended the two together and those are distinctly separate.

Member Anthony said when I first looked at this I thought this is not really intensive, I drove the roads and I drove the area and I thought wow this would be nice, I like the Singh product. I thought the Site Plan was really quite well done in preserving all the wetlands, but once I got to that point I saw that the roads and the sidewalks went over one of the wetland areas and I'm sure that's where the bridge is, but that immediately triggered my concern with shallow groundwater because beyond the bridge when we have shallow groundwater. As groundwater comes up we hit the freeze/thaw cycle, we get liquefaction with soil. Then you begin to get failure under your big surfaces, your driveways will shift, your sidewalk will crack so you do run into those problems on infrastructure. Some of the concerns here were basements so that's why I just put you through these questions on depth and groundwater. One of the solutions I have seen, is to raise the elevation of the base of the homes, bringing it above the water table.

Member Anthony said July is our dry season; five foot fluctuation in Michigan is pretty easy, so it is important knowing how that fluctuates throughout the interior. The sump pump is not designed or intended to run 24-7. It's not just in old homes that are struggling with this, there are two brand new developments in South Lyon where this is happening in every home. They didn't have Singh or McDowell, but they are struggling with it. The industry standard of checking a couple of wells or just having one episode checked in geotech is common, but this is a really complex groundwater site. You can see that when you go through the wetlands pictures, you see the surface, you don't know if that's held up from the clay or if that's truly the potentiometric surface. Once you get that potentiometric surface, what's our fluctuation? And if you're a homeowner that ends up with a basement flooding and your sump pump is running constantly there are all sorts of consequential problems. Trying to find someone that's liable it becomes pass the hot potato. I've been in the middle of those. I started thinking through some mechanisms like, I know Singh does a one year warranty on their homes, is there a way to do a three to five year warranty. But as a City we have no legal authority to require that and it really does take that long to sort these things out. Then I went and I saw the regulated woodland and how much of the regulated woodland came up. Then I had to ask myself is this really a developable site? Rick, help me with where else in the City or how frequently have we seen a site that is nearly 100% regulated woodland become redeveloped?

Landscape Architect Rick Meader said it's happened and there have been commercial sites and residential sites. When you develop a site that's wooded you're going to end up ripping out more than half of the woods, that's a fact of life.

Member Anthony said but I've seen the difference between old growth that's not the regulated woodland where we designate the woodland area versus that's just an old tree we want to keep. What I haven't seen before out of the seven years of sitting here of this density of a regulated woodland where they have come in and removed half of it. This I really the first one I've seen and I kind of cringe at that. I start to go through the reasons, and I like the product and I'm confident in the builder but I'm not confident in the site. I have a really difficult time supporting the site when I look at we don't know enough about shallow groundwater, and the shallow groundwater was measured in July which is our traditional dry season when the groundwater is at its lowest. The construction over the wetland where they do the bridge will work because that's a much deeper foundation but it's going to struggle where the driveways and the sidewalks are. I worry about how frequently the concrete slabs will fail, and I worry about in the flat areas of the road, will we end up with pockets where you get sinkholes or potholes much easier. When I add all of that up, that's where I struggle with the site and having it developed. I guess with that I'm going to turn it over to the rest of the commissioners.

Member Gronachan said I have a question for the experts. Could you help with the clarification of the ZBA variances/ no variances and what we have the right to approve, I'm a little confused. In our packet it said that to allow absence of a required berm, but then there was this eighty-five foot for the driveways, so do they need a variance, what variances is it that they are going to need?

Planner Komaragiri said I have on the screen the section of the Zoning Ordinance that was compared for compliance against the Site Plan. This is section 3.28 it talks about required conditions for one family clustering option. This item talks about a minimum distance required between two-cluster homes. If it's a cluster of four homes against a cluster of two you would apply the minimum distance required based on the total number of homes. That section says Planning Commission can approve the reduction in the



distance. One of the proposed clusters does not meet the required distance of separation of eighty-five. But Planning Commission can approve the reduction if they feel like the deviation is to protect woodlands or wetlands.

Planner Komaragiri said the other item is the reduction of setbacks from the front façade of the home to the back of curb which needs to be thirty feet. The Planning Commission may approve reduction in setbacks if the Site Plan meets all the conditions. The plan meets all the conditions except the one shown in green and they would have to go to ZBA to get relief from that item. So the Planning Commission can go ahead and approve reduction in setbacks or can do it as a conditional approval at this time.

Member Gronachan said thank you for that explanation. So for clarification, somewhere in all of this, I read that if one house was removed and they were down to twenty-four then they would meet the eighty-five foot requirement, is that correct? That would be on the 22-25 cluster and the 1-3.

Planner Komaragiri said I think that they are opposite clusters so that the distance between the clusters is here. For them to meet the eighty-five feet they would have to be pushed further back into the woodlands.

Member Gronachan said so having one more or one less house would not solve that problem?

Planner Komaragiri said no, it would push them farther away from each other.

Member Gronachan said that's another thing that we will have to address for the resident that brought that up in one of the letters we received. Overall, I concur with our first speaker who asked so many wonderful questions. His experience shows at this table. I am concerned about the amount of water. I too think it's a wonderful plan. I feel at this point that more work needs to be done. I will add to this that I have not sat at this table for a long time, but I have been well versed in the development arena. My concern is that I think the developer has a great plan and I think he is doing his due diligence. Lord knows there's been enough time and experts looking at this but as previously spoken, I don't know if we know enough about the water flow and what it's going to do about those basements. Now I will say, I am an insurance agent so when it comes to flooding basements, it's not my favorite time of year. I live in a subdivision where they couldn't build basements, I'm not saying I recommend that for this project, but we don't have basements in my subdivision and we have a ton of water problems. It's a very old subdivision, I don't know what my subdivision looked like thirty to forty years ago and if it was sitting on wetlands or not but I know what the current drainage problems are. I wouldn't want to be a part of something that could create a problem for all these new wonderful home owners. I'm going to reserve any further comments at this time and wait to hear from the rest of my fellow Commissioners.

City Attorney, Tom Schultz said that because there have been a couple of comments about the water table I guess I just want to make sure that were on the same page with what the Planning Commission's role is in reviewing that question. At the Preliminary Site Plan stage, what the developer is obligated to do is to essentially establish for your engineer, engineering feasibility, but not detailed engineering plans. The developer comes to you with a Preliminary Site Plan that shows compliance with your Zoning Ordinance requirements: how big the lots are, how far setback they are from the roads, things like that, and as part of that they are authorized under your ordinance to ask you

for a couple things for that you're here holding the public hearing on tonight: clustering the units together instead of having them separate single family homes and in that process asking you for some relief from things that Sri just went through. The engineering part, the water part, is really an inquiry on part of the Planning Commission at this point to say what does our engineer say about the likelihood that this development is going to be able to be built. Your engineer at this point is essentially saying it looks like we're going to be able to deal with the engineering issues and the storm drainage issues.

Attorney Schultz continued, our Ordinance doesn't really say whether or not they have basements, you are not the building official, and you're not in charge of grading plans. You're looking at: does the lot layout work, should we allow them to do the cluster to save additional natural features, does it look like they're going to be able to deal with engineering issues, and are there any giant red flags about not being able to build a basement that somebody should know about. So the developer has stood up and said were familiar with this. We are going to have deal with your professional staff as we go on with the development process, but the Planning Commission doesn't really have enough information -- and more importantly -- doesn't have a standard in its ordinance to say you can't have this development because you might not be able to have basements. That's just not your role here tonight. You are detail oriented, but not every detail is yours.

Attorney Schultz said, to address one Planning Commissioner's comment, on a regular basis we actually see more than 53% of trees taken down from a development site, because if the plan meets all the setbacks and can create a buildable parcel that fits the Zoning Ordinance, it's probably going to impact trees. We do see a more significant number of trees taken down in other plans. The ironic thing about that is the developer is here in front of you saying I'm going to cluster these homes so I don't have to come to you on this piece of property with just a subdivision that has big lots and impacts even more trees and more wetlands. That's the question you're really here for, and technically holding the Public Hearing on: do we like this plan better because it saves more trees than it might otherwise and maybe impacts less wetlands? That's the fundamental question. It's your decision but I just want to make sure we stay focused on what that question is.

Member Lynch said I do like the cluster option. I like how it saves most of or a large percentage of woodlands that wouldn't normally be saved. I have a follow up question on that, for all the trees you cut down on the property, you have to put money into a tree credit? Is there any way possible, I'm not a big supporter of this tree fund, instead of donating to the tree credit fund, you can put more trees in areas away from the homes to still give it that kind of rural feeling, but I don't want too many close together that they die.

Mike Noles said yes, that would be a problem, but we are using the tightest spacing that we could possibly use. We would love to plant them on here because it would be cheaper for us to plant a tree rather than for us to pay into the fund.

Member Lynch said okay I'm going to take your word for it. I wanted you to keep the issue in mind, if this gets approved. Another thing, the property that's located by the condos, that's a low area. I didn't want this property causing any damage to an existing problem, number one. Number two is I was looking for opportunities where maybe we can alleviate some of the existing problem and based on what you were saying, it looks like the property or the way you set up the flow plus now you put the retention basins in, the water doesn't actually flow in that direction. You mentioned you were going to have some impact, a reduction in the amount of water that's going to flow into the existing areas and also you mentioned there was a maintenance issue with water flowing out of

this property, this condo. There has to be an ordinance that requires maintenance of this drainage, we approve these drainage systems, somebody has to maintain it. It's not the City, it has to be the property owner. What recourse do we or the home owners have to ensure that these drains are maintained?

Staff Engineer, Kate Richardson, said I know that an ordinance officer and the engineering department have been involved reviewing the swale that's back there that's been clogged. An ordinance officer recently went back there to verify what's going on. South Pointe Condo ended up clearing out that swale. I believe they ended up clearing everything out and hopefully when we get a big rainstorm again they'll see some benefits from that work, but right now it has been cleared.

City Attorney, Tom Schultz, said one of the things since 2002 that the City has more standards on is for each development that's approved that has a retention or detention basin, there's an agreement the property owner is obligated to enter into with the City that says if the owner doesn't maintain the system, the City will.

Member Lynch said so that's one of the benefits of approving this now. If they were to build this in 2003 they were under a whole different set of rules.

City Attorney, Tom Schultz, said I think they still had that obligation. I just like to think over seventeen years maybe the forms have become a little more detailed just as you become more developed as a City and you've improved a little bit. It all helps engineering and helps code enforcement.

Member Lynch said so I do like the cluster option and I do like the idea that you're preserving as much as you possibly can. My primary concern is if I was going to reject this was drainage flow. Correct me if I'm wrong, you're going to come in and do all these drawings, guarantee that the storm water performance as designed and flowing away from this area to somehow alleviate some of the problems there and you're going to put a 120% cost in escrow. You're going to post a performance guarantee and what you're telling us here today is that all this storm water is going to flow in these areas away from that area in the blue with the arrows that you're showing on the map.

Mike Noles said so the arrows that you see, if you notice none of them are inside the development area, that's the existing drainage. Those are areas that we are not touching so if that's what it's doing right now and I'm not going to touch it.

Member Lynch said but what I'm getting at with the number of comments that people are worried about, and I would be worried too, is that here's this development going in and I know I have a bad situation now and this development it's going to make it a lot worse. But we're saying here and what we're guaranteeing is you're going to put in a storm water management system in order to accommodate this subdivision that's not going to create a negative impact on the existing sites.

Mike Noles said that's right, it won't have a negative impact. Now I don't want to broaden that out, performance guarantee is not how the system performs it's for the contractor to perform to install the improvements on the plan and once you've complied with the plan you get your performance guarantee at the end.

Member Lynch said okay but you won't get your approval until the City engineer approves the plans.

Mike Noles said so there's a phasing in there but it's not really performance in the concept of what you're talking about. The other thing that you should know there's multiple drainage areas around the development that go into different areas. There are some areas at the back of the lot by the walkouts that will continue the current drainage pattern so not everything within the perimeter of the development area is going to end up in the basin. Some of them are going to continue on these existing drainage patterns. But what I'm saying is that a great bulk of that water that's currently going that way will be stored, discharged at a controlled rate, and discharged on the other side of the problem area, and that has to help.

Member Lynch said okay that was my concern. At some point this property is going to get developed. I just want to make sure with whatever we do we're not exacerbating an already dicey situation. Based on what I have heard and what I've read in the letters here, I'm comfortable with our engineering department and with the performance guarantees that are in here. They won't approve a storm water management plan that's basically going to exacerbate the situation and I'm confident in that. I guess my overall feeling of the site is that I like the idea of saving as many woodlands as you can, I don't mind the cluster option I think it's more efficient, I do like the idea of the storm water management where there is none right now. Right now there's no directed water flow, at least were going to have directed water flow now with the performance guarantees. That's really a Singh issue with your guarantees and with your homeowner guarantees. Certainly you are cognizant of that because you don't want the blow back. Does the cluster option preserve more area, yes it does. I would like you to save as many trees as you can. Are we causing any more harm in doing what we're doing? I don't believe so, I think there's some checks and balances with it, you won't even get approval from engineering to build it if it doesn't meet ordinance. The last thing that I have written down is that I do share a concern with that narrow road and getting the trucks in and out. My understanding is that if you cause damage the developer will have to take responsibility.

Mike Noles said we have to videotape it at the beginning so we show what the condition is before we start. Ted Meadows is a pretty tough guy when he goes out and does his final inspections and we have to put it back equal or better condition.

Member Lynch said as far as traffic goes, what they do is they shut down the road so the developer can bring in the heavy equipment. It will be backed up, and it doesn't last forever. I'm leaning more towards approving this, I think it's a decent plan. I do like the idea based on what happened with the other project we're working on. Things turned out better than what we initially thought. That was another tough parcel and it was all water drainage issues. I think this project has some potential. Not only do I think it fits into the neighborhood, I think it has the potential for reducing some of the water problems.

Member Maday said I'm not as concerned about the woodlands, the clustering is going to help tremendously with that but I am more concerned about the water. I'm assuming and I'm confident that as this project evolves that there will be work with the engineer back and forth to make sure you're developing a site that's feasible for the people that are potentially going to purchase the property. How long is this taking to do the next phase? Will it be in the spring when you can take some more samples?

Mike Noles said if we move forward tonight we should be starting development in the spring and be fully permitted. One of the conditions that the engineering review made is with each submittal, and we have multiple submittals to make between now and then,

they wanted another set of piezometer readings because they wanted to see those in different seasons. It's a condition of the Ordinance. If you were to support it and approve the plan, that's already written in the Ordinance that we have to do that.

Member Maday said that's what I mean by evolving with the way that these projects work and evolve to work with the City and the developer to make sure it's properly developed.

Chair Avdoulos said before we have a motion, I wanted to respond to Ms. Duchesneau, I don't know but I think I was on that Planning Commission. I was relatively new and we had many late nights and I can't think that far back to remember what was discussed, but you know this property obviously has a lot of concerns and is very sensitive. There are issues with water and with trees and I think we're looking at a vehicle that is offered by the City to create an option where we do cluster more of these homes so that we can save more woodlands and make it more natural. There's a development near my house that has basically done the same thing. I know there are concerns related to construction traffic but I've been very impressed with the City and how they review those projects and if there are concerns from the residents, they do answer them and make sure everything is running the way it should be running. I think based on what I've seen and I appreciate Member Anthony's expertise on a lot of the environmental impacts to the site, but I have one question to Kate. Based on this diagram where the outline is indicating what the developed area is, outside of that is basically left as natural as possible. So this particular development is containing all the storm water within its own footprint?

Staff Engineer, Kate Richardson, said for the most part, like what Mike Noles said, there are still some spots where it is sheet flowing out past its boundaries, but they're not increasing the concentration, or the rate at which the storm water is discharged, or the volume. They are allowed to do that under Michigan Law.

Chair Avdoulos said as the project progresses and we have engineering documentation and obviously that will be reviewed as every project is, I trust the City Engineers and City Landscape Architect to monitor this. I think our due diligence is to listen to make sure that the project follows the process and our engineering teams, our site teams, our staff reviews will be looking to address all the concerns. I think up to this point and from what I've seen and read, I think we're heading in that direction.

Member Anthony said can I just get a point of clarification? The engineering report we're looking at is really just for information and that it's done and submitted and has been approved. Our vote really has no opinion on the engineering side.

City Attorney, Tom Schultz, said so there are communities at the Planning Commission that do not ask for engineering stuff; you do want to see it, obviously. Under the Site Plan section of your Zoning Ordinance says that you want to see engineering feasibility. So engineering gets a copy of the plan and additional details that are shared by the developer, they write an initial review which is what you have in your packet and the planning staff's summary of it. For Final Site Plan, that letter is usually quite a bit more detailed. You go from fifteen things to pay attention to thirty things and detailed engineering plans that you have to get before we give you our final stamp of approval. You get detail that the engineers looked at and everything seems to flow the right way.

Member Anthony said so if I'm hearing you correctly then my vote simply is that the process of submitting to engineering and the review has been done correctly.



Planner Komaragiri said that would be after the Planning Commission approves Preliminary Site Plan and the applicant will start working on the construction drawings.

Member Anthony said I recognize that I'm just trying to clarify my vote.

City Attorney Schultz said so they have submitted the plans that your ordinance requires, and that the engineer typically reviews and comments on for a Site Plan. They have done that.

Member Anthony said okay and that's what my vote reflects.

City Attorney Schultz said can I just say one more thing just because I know a number of people have brought it up. I didn't want it to look like the Planning Commission didn't say anything about it. There was a long motion that was written at the table back in 2002 and a number of speakers have said you should require all these things that you as a Commission did seventeen years ago. I think Sri wanted an opportunity to generally say, in the way your motions are set up now, you're generally doing that because you're referring back to your detailed staff reports which pick most of those things up. There are a couple of things that you should know are not in the motion that were in the motion before.

Planner Komaragiri said so there were two items which we did not carry forward from the last motion. The one is the condition that no lots would encroach into the wetland buffer. They are proposing buffer impacts in three locations. They are very minor. Only one of the impacts is permanent and the rest are temporary. They're going to seed and put them back so we did not carry that forward because it's only happening with one unit, unit 16, where the impact is permanent and because the applicant noted they were trying to make a choice between moving a tree as opposed to impacting the buffer. The other one is the Site Plan shall return to the Commission for the Final Site Plan approval and subject to the comments on the attached review letters being addressed. At that time, after going through the minutes at the moment I think that discussion was brought forward because there were many other Preliminary level concerns that were not addressed so the Planning Commission wanted an opportunity to review it one more time. They have to deal with some additional ZBA variances which are no longer needed because they are proposing to demolish those buildings and some retaining walls and a few other items which were within the scope of Planning Commissions review which was not addressed at that time. Because that didn't happen this time we didn't recommend that as part of the motion.

City Attorney Schultz said but just to be clear, in your Ordinance you are allowed to ask for a Final Site Plan.

Member Anthony said so we would have to amend this motion to see a Final Site Plan?

Planner Komaragiri said yes if you choose to do so.

Member Lynch said before you do that, Mr. Noles there's something I want to address. There's something on here about the future use of a parcel, what is that?

Mike Noles said that is a parcel that is out on the lake that is not subject to this Site Plan request. There was a lot of concern from the residents in Lakewood that somehow this

property would get rights to be able to use that parcel because one of the parcels where the detention basin is located had a right to use it. That is by the parcel number and that parcel number will go away once the property is combined. We have assured them that in no way does authorization of this plan have anything to do with lake access.

Member Lynch said okay, before you made the motion I wanted to make sure that was clear.

City Attorney Schultz said, through the Chair, the motion that is in front of you tonight, because of the questions that were raised over the last few days it is specifically called out in what you have in front of you for the first motion the Special Land Use where you have the most discretion. You are essentially making a finding that that parcel on the lake is not a part of this development and isn't going to become a part of it. I assume that the developer is fine with that from what he just said.

Mike Noles said we are aware, and it was never part of it. It was a legitimate concern that the residents had because it could be a possible connection to it.

Member Anthony said I'll make a motion.

Motion made by Member Anthony and seconded by Member Lynch.

**ROLL CALL VOTE TO APPROVE SPECIAL LAND USE PERMIT MADE BY MEMBER ANTHONY AND SECONDED BY MEMBER LYNCH.**

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

- 1. The proposed use will not cause any detrimental impact on existing thoroughfares (based on the Traffic review);**
- 2. The proposed use will not cause any detrimental impact on the capabilities of public services and facilities;**
- 3. The proposed use is compatible with the natural features and characteristics of the land (because the applicant is proposing to preserve 53% of qualifying area that includes regulated woodlands and wetlands);**
- 4. The proposed use is compatible with adjacent uses of land (because the subject property is surrounded by single family residential uses. Façade review notes that the proposed elevations portray an overall architectural standard equal or higher than the existing homes in the surrounding neighborhood);**
- 5. The proposed use is consistent with the goals, objectives, and recommendations of the City's Master Plan for Land Use (because the development is age-targeted. The proposed floor plans indicate first-floor master);**
- 6. The proposed use will promote the use of land in a socially and economically desirable manner;**
- 7. The proposed use is (1) listed among the provision of uses requiring special land use review as set forth in the various zoning districts of this Ordinance, and (2) is in harmony with the purposes and conforms to the applicable site design regulations of the zoning district in which it is located;**
- 8. The approval shall be subject to the following conditions at that time:**
  - a. The Planning Commission finding that Parcel ID No. 22-03-327-004, mentioned in the notes to the Site Plan, located on the north side of South Lake Drive, is not part of this development and shall not become or be made part of this**

development, as it does not comply with Sec. 36-62, Lakefront use standards, of the City Code of Ordinances as relates to lakefront recreational parks;

- b. Maintenance and reconstruction of the roads during and after construction, dust maintenance control and the stipulation that the roads be videotaped before and after construction to determine reconstruction requirements;
- c. Limit Construction times with respect to elementary school bus schedule;
- d. Construction traffic to comply with the City load limits; and

9. Final Site Plan shall come back to Planning Commission for Final Approval.

**Motion Carried 6-0.**

Motion made by Member Anthony and seconded by Member Gronachan.

**ROLL CALL VOTE TO APPROVE THE PRELIMINARY SITE PLAN WITH ONE-FAMILY CLUSTERING OPTION AND THE SITE CONDOMINIUM MADE MY MEBER ANTHONY AND SECONDED BY MEMBER GRONACHAN.**

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

1. Planning Commission's finding per Section 3.28.1.B, that in all one-family residential districts, the clustering of one-family dwellings may be permitted, provided that the land consists of an unsubdivided area and the proposed Site Plan and, that the conventional approach to residential development would destroy the unique environmental significance of the site, and that the use of the cluster option is a desirable course of action to follow based on the following condition.
  - a. The majority (fifty (50) percent) of the net site area (defined as the area which is delineated by parcel lines, exclusive of rights-of-way as shown on the adopted master plan) is composed of lands that are within jurisdiction of Woodland Protection Ordinance, as amended, Chapter 37 of the Code of Ordinances, or within the jurisdiction of the Wetland and Watercourse Protection Ordinance, as amended, Chapter 12, Article V of the Code of Ordinances, or any combination of such lands. The applicant is proposing to permanently preserve up to 53% of qualifying area on site.
2. Planning Commission approval for reduction of minimum distance between the clusters, based on the finding, subject to conditions listed in Section 3.28.5., that the strict application of the distance in this instance would destroy a natural amenity such as regulated wetlands and woodlands. This is required for the Units 1-2-3 cluster and the Units 22-23-24-25 cluster. A minimum of 85 feet is required, approximately 78 feet is proposed;
3. Planning Commission approval of reduction of front building setbacks from the streets as listed in Section 3.28.4.D. A minimum of 30 feet is required from the edge of Private drive, the plans currently propose 25 feet in order to protect regulated woodlands in the back yards; this is based on the following findings listed in Section 3.28.6.C:
  - a. All the conditions listed in Section 3.28.6.C. from i thru iv are met with the exception as noted below;
  - b. A Zoning Board of Appeals variance from Section 3.28.6.C.iv.a to allow absence of required berm along the east, west and south property boundaries adjacent to other single-family residential districts;
4. Planning Commission waiver for reduction of the minimum distance for opposite-side spacing requirement, Design and Construction Standards Section 11-216(d), for the roadway spacing between Pristine Lane and Henning Street( A minimum of

200 feet is required, 117 feet is proposed, due to estimated low volume of vehicles expected from the proposed development, which is hereby granted;

5. A landscape waiver for absence of three required street trees along Pembine Street Frontage, as listed in 5.5.3.E.i.c and LDM 1.d., due to lack of space between the edge of pavement and the future Right-of-way and conflicts with other required proposed utilities and swales, which is hereby granted;
6. A landscape waiver from Section 2.1 of Landscape Design Manual to allow some of the proposed trees to be located outside of the space between the sidewalk and the curb due to conflicts with proposed utilities, which is hereby granted. This waiver is supported as most of the proposed trees are located within 15 feet from the curb, with an exception of three trees;
7. Administrative approval from Engineering for variance from Engineering Design Manual Section 7.4.2.C.1 for not meeting the minimum distance of 15 feet from back of curb to outside edge of sidewalk;
8. The applicant shall revise the woodland replacement plan at the time of Final Site Plan to avoid the conflict between the proposed tree replacement locations and the existing overhead electric line along the western property boundary;
9. The applicant shall obtain necessary approvals from all related outside agencies for the proposed location of storm water pond and related landscape under the existing overhead lines prior to approval of Final Site Plan;
10. Assurance of the permanence of the open space and its continued maintenance shall be submitted for review and approval by the City Attorney at the time of Final Site Plan approval.
11. The findings of compliance with Ordinance standards in the staff and consultant review letters, and the conditions and items listed in those letters, as well as all of the terms and conditions of the PRO Agreement as approved, with these items being addressed on the Final Site Plan; and
12. The Final Site Plan shall come back to Planning Commission for Final Approval.

***Motion Carried 6-0.***

Motion made by Member Anthony and seconded by Member Gronachan.

**ROLL CALL VOTE TO APPROVE THE WETLAND PERMIT MADE MY MEMBER ANTHONY AND SECONDED BY MEMBER GRONACHAN.**

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

Motion made by Member Anthony and seconded by Member Gronachan.

**ROLL CALL VOTE TO APPROVE THE WOODLAND PERMIT MADE MY MEMBER ANTHONY AND SECONDED BY MEMBER GRONACHAN.**

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

Motion made by Member Anthony and seconded by Member Gronachan.

**ROLL CALL VOTE TO APPROVE THE STORM WATER MANAGEMENT PLAN PERMIT MADE MY MEMBER ANTHONY AND SECONDED BY MEMBER GRONACHAN.**

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

**MATTERS FOR CONSIDERATION**

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

Motion made by Member Anthony and seconded by Member Gronachan.

**ROLL CALL VOTE TO APPROVE THE AUGUST 28, 2019 PLANNING COMMISSION MINUTES MADE MY MEMBER ANTHONY AND SECONDED MY MEMBER GRONACHAN.**

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

**SUPPLEMENTAL ISSUES**

There were no supplemental issues.

**AUDIENCE PARTICIPATION**

Mike Duchesneau, 1191 South Lake Drive, said I'm really appreciative of you adding the coming back for Final Site Plan approval. I am disappointed in the response from staff as far as the cluster spacing. If one of the houses was taken out between clusters 1, 2, and 3 and 22, 23, and 24 the required setback would change from eighty-five feet to seventy-five feet and then it would be up to the applicant to decide whether to eliminate a house or whether to redesign a lot. I thought that answer was off base. The other question that I had is we looked at a packet and in that packet, Scenic Pines was going to the ZBA. Now, the ZBA is going to be looking at some other things that were listed but not the things in the packet. I find it a little disappointing that the motion went forward without the information available to the public as to what it is we're looking at today. I do thank you for what you're doing and your process and I do respect that you are all residents and are very concerned about what happens in Novi and how it happens. Thank you.

Howard Katz, 1155 South Lake Drive, said there are only two more things I want to say. I don't know what you hired an engineer for because McDowell came back and said you're going to have problems with this site, he says it right here in your letter and he says they're going to do a lot of things that the builder's not doing, but that's going to fall upon you. The other thing I have an issue with when you look at the Site Plan is that no one seemed to address when they talked about the water dispersal system. There are seven houses on the east side, those houses are not connected to that system, their sump pumps are going to run 24/7 and they're going to shoot water into that pond which is wet enough as it is and when the builder says the water is going to the south, it's not, it's just going to fill up that pond and by definition it's not a part of the water retention, at least according to the plan unless they've changed it. The sump pump will be running 24/7 and you didn't address that. You've got all this water going underground to the west but that's to the houses on the west side, that's a problem you're going to have to deal with and nobody said that but I thought you should know. Thank you.



Gerry Cooper, 155 Buffington, said I just find something confusing. Mr. Schultz is saying the only reason that you guys are here is to say that the engineering did the paperwork. Why do you have all of us come down here and actually think that we have input? You said all you people are here to look at the documentation and say if it's put together correctly per the ordinance. If that's all you guys get to look at and that's all you judge the approval by, we don't have any input. You gave them that direction, you guys don't get to make any decisions, you look at the engineering package and you approve it based upon does it meet the ordinance? But you brought all the people down here and say come down here we really want to hear from you and that's not true according to the way that your process works. Think about that because that's the way it happened here today and you know I'm right.

#### **ADJOURNMENT**

Moved by Member Lynch and seconded by Member Anthony.

#### **VOICE VOTE ON THE MOTION TO ADJOURN MADE BY MEMBER LYNCH AND SECONDED BY MEMBER ANTHONY.**

***Motion to adjourn the September 25, 2019 Planning Commission Meeting. Motion carried 6-0.***

The meeting was adjourned at 9:41 PM.

# FINAL SITE PLAN/ENGINEERING DEVELOPMENT DRAWINGS

## SCENIC PINES ESTATES

PROPOSED RESIDENTIAL DEVELOPMENT  
CITY OF NOVI, OAKLAND COUNTY, MICHIGAN  
SECTION 3, TOWN 1 NORTH, RANGE 8 EAST



### CONTACT INFORMATION

**CITY OF NOVI**  
CITY MANAGER  
PETE AUER  
PHONE: (248) 347-0420  
45175 WEST 10 MILE ROAD  
NOVI, MI 48375

**CITY OF NOVI**  
CITY PLANNER  
BARBARA WURTH  
PHONE: (248) 347-0475  
45175 WEST 10 MILE ROAD  
NOVI, MI 48375

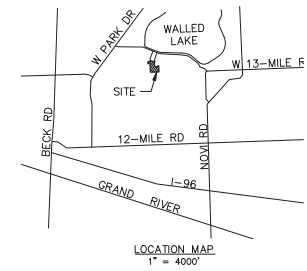
**CITY OF NOVI**  
PLANNER  
SRI KOMARAGIRI  
PHONE: (248) 735-5607  
45175 TEN MILE RD  
OAKLAND COUNTY, MI 48375

**CITY OF NOVI**  
FIRE MARSHALL  
KEVIN PIERCE  
PHONE: (248) 347-0504  
45175 TEN MILE RD  
OAKLAND COUNTY, MI 48375

**CITY OF NOVI**  
LANDSCAPE ARCHITECT  
RICK MEADER, R.L.A.  
PHONE: (248) 735-5621  
45175 TEN MILE RD  
OAKLAND COUNTY, MI 48375

**CITY OF NOVI**  
CITY REVIEW ENGINEER  
KATE RICHARDSON  
PHONE: (248) 347-0454/45175 TEN  
MILE RD  
OAKLAND COUNTY, MI 48375

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



Sheet Number	Sheet Title
1	COVER SHEET
2	SITE PLAN
3	EXISTING CONDITIONS PLAN
4	ON-SITE DEMOLITION PLAN
5	DEMOLITION PLAN - SOUTH
6	DEMOLITION PLAN - NORTH
7	TREE LIST & TREE CALCULATIONS
8	WETLANDS IMPACT PLAN
9	OFF-SITE DEMOLITION PLAN
10	GENERAL DEVELOPMENT PLAN
11	EASEMENT PLAN
12	SITE EROSION CONTROL PLAN
13	EROSION CONTROL DETAILS
14	SITE GRADING PLAN
15	ENTRANCE AND INTERSECTION GRADING AND DETAILS
16	PRISTINE LANE - ROAD, SANITARY, & WATERMAIN PLAN & PROFILE
17	NOBLE TRAIL - ROAD, SANITARY, & WATERMAIN PLAN & PROFILE
18	BUFFINGTON-PEMBINE-HENNING ST. WATERMAIN PLAN & PROFILE
19	OVERALL STORM SEWER PLAN
20	STORM SEWER PROFILES
21	STORM SEWER PROFILES
22	SANITARY PUMP STATION STORMWATER MANAGEMENT PLAN AND DETAILS
23	DETENTION BASIN - STORMWATER MANAGEMENT PLAN
24	ARCH PIPE BRIDGE PLAN AND DETAILS
25	ARCH PIPE DETAILS
26	ARCH PIPE DETAILS CONTINUED
27	STORM WATER MAINTENANCE EXHIBIT
28	SANITARY PUMP STATION PLAN & DETAILS
29	PUMP DETAILS
30	WRC PUMP-SCADA CONTROL PANEL DIAGRAM-1
31	WRC PUMP-SCADA CONTROL PANEL DIAGRAM-2
32	WRC PUMP-SCADA CONTROL PANEL DIAGRAM-3
33	SANITARY STRUCTURE AND LEAD SCHEDULES
34	STORM STRUCTURE AND LEAD SCHEDULES
35	PHOTOMETRIC PLAN
36	TRAFFIC SIGNAGE PLAN
37	SOIL BORE LOGS-1
38	SOIL BORE LOGS-2
A1	ARCHITECTURAL SKETCHES
A2	ARCHITECTURAL SKETCHES
A3	ARCHITECTURAL SKETCHES
L1	LANDSCAPE PLAN
L2	LANDSCAPE DETAILS
IR1	IRRIGATION PLAN

APPROVED-PERMIT LIST	
PRELIMINARY SITE PLAN	APPROVED 9-25-2019

NOT APPROVED-PERMIT LIST	
PRELIMINARY SITE PLAN	APPROVED
CITY OF NOVI	
FINAL SITE PLAN	REQUIRED
CITY OF NOVI	
CITY OF NOVI	
RIGHT-OF-WAY PERMIT	REQUIRED
CITY OF NOVI	
GRADING PERMIT	NOT APPROVED
CITY OF NOVI	
RETAINING WALL PERMIT	NOT APPROVED
CITY OF NOVI	
SOIL EROSION AND SEDIMENTATION	NOT APPROVED
CITY OF NOVI	
ACT 451 NOTICE OF COVERAGE	REQUIRED
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY	
PART 303 WETLAND PERMIT; MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY	ISSUED
WETLAND PERMIT, CITY OF NOVI	APPROVED
WETLAND BUFFER AUTHORIZATION	APPROVED
WOODLANDS PERMIT, CITY OF NOVI	APPROVED
PART 41 WASTEWATER SYSTEM PERMIT; MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY	REQUIRED
ACT 399 WATER SYSTEM CONSTRUCTION PERMIT; MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY	REQUIRED

### ENGINEER/SURVEYOR

The **UMLOR** Group  
LAND DEVELOPMENT SERVICES  
Wee Lee O. Umlor, P.E.

49287 WEST ROAD  
WIXOM, MI 48393  
Phone: (248) 733-7656  
Fax: (866) 690-4307  
E-mail: [weelee@umlorgroup.com](mailto:weelee@umlorgroup.com)  
Web: [www.umlorgroup.com](http://www.umlorgroup.com)

**OWNER/DEVELOPER**  
SINGH DEVELOPMENT LLC  
7125 ORCHARD LAKE ROAD  
BLOOMFIELD HILLS, MICHIGAN 48322  
PH: (248) 865-1600



**WETLAND CONSULTANT**  
WILSON ROAD GROUP  
303 W. NEPPESING ST  
LAFAYETTE, MI 48446  
PH: (810) 664-6300

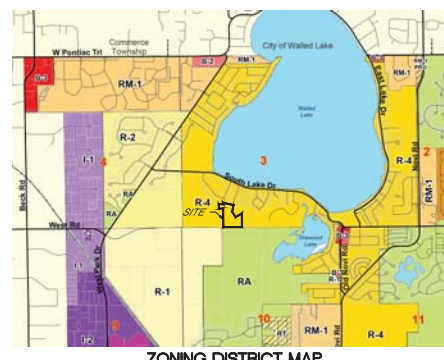
### LANDSCAPE ARCHITECT

ALLEN DESIGN  
PH: (248) 467-4669  
EMAIL: [JCA@WIDEOPENWEST.COM](mailto:JCA@WIDEOPENWEST.COM)

### GEOTECHNICAL CONSULTANT

MCDOWELL & ASSOCIATES  
DAVID QUINTAL (248) 399-2066  
EMAIL: [DAVID.QUINTAL@MCDOWASC.COM](mailto:DAVID.QUINTAL@MCDOWASC.COM)

### SITE MAP



- GENERAL NOTES:**
- ALL WORK SHALL CONFORM TO THE CITY OF NOVI'S CURRENT STANDARDS AND SPECIFICATIONS, UNLESS OTHERWISE APPROVED.
  - ALL PAVED MARKINGS, TRAFFIC CONTROL SIGNS, AND PARKING SIGNS SHALL COMPLY WITH THE DESIGN AND PLACEMENT REQUIREMENTS OF THE 2011 MICHIGAN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
  - CONTRACTOR TO FIELD VERIFY ALL EXISTING UTILITY LOCATIONS, INVERTS AND GRADES PRIOR TO START OF WORK.
  - TWO (2) COPIES OF AS-BUILT PLANS SHALL BE SUBMITTED TO THE CITY ENGINEER WITHIN THIRTY (30) DAYS OF THE COMPLETION OF THE UTILITY INSTALLATION AS PER SECTION 31-7 (A) CITY OF NOVI ORDINANCE.
  - CITY OF NOVI HAS NO RESPONSIBILITY TO IMPROVE OR MAINTAIN THE PRIVATE STREETS CONTAINED WITHIN OR PRIVATE STREETS PROVIDING ACCESS TO THE PROPERTY DESCRIBED IN THIS PLAN.
  - "ECONOMIC IMPACT: 25 HOMES X \$500,000 (APPROX) = \$12,500,000 INCREASE TAX BASE AT BUILDOUT. HOME SIZE & EXPECTED SALES PRICE OF NEW HOMES: 1,800-2,200 SQ FT, \$450,000-\$600,000."
  - THE SITE PLAN SHALL BE DESIGNED IN ACCORDANCE WITH THE DESIGN AND CONSTRUCTION STANDARDS (CHAPTER 11).
- FIRE DEPARTMENT NOTES:**
- ALL FIRE HYDRANTS AND WATER MAINS SHALL BE INSTALLED AND IN SERVICE PRIOR TO ABOVE FOUNDATION BUILDING CONSTRUCTION.
  - ALL ROADS SHALL BE PAVED AND CAPABLE OF SUPPORTING 35 TONS PRIOR TO CONSTRUCTION OF ABOVE FOUNDATIONS.
  - BUILDING ADDRESSES SHALL BE POSTED FACING THE STREET DURING ALL PHASES OF CONSTRUCTION. ADDRESSES SHALL BE A MINIMUM OF THREE INCHES IN HEIGHT ON A CONTRASTING BACKGROUND.
  - PROVIDE 4"-6" DIAMETER OF CONCRETE FILLED STEEL POST 48" ABOVE FINISH GRADE AT EACH HYDRANT AS REQUIRED.
  - FIRE LINES SHALL BE POSTED WITH "FIRE LANE - NO PARKING" SIGNS IN ACCORDANCE WITH ORDINANCE 485.09.02.

### REQUESTED VARIANCES:

- DRIVEWAY SPACING: WAIVER FOR THE MINIMUM OPPOSITE SIDE DRIVEWAY SPACING IS REQUESTED.
- STREET TREE LOCATION: REQUEST TO NOT PLANT 3 STREET TREES DUE TO LACK OF ROOM AS A RESULT OF CLUSTERING.
- CLUSTERS ARE REQUIRED TO BE 30' FROM EDGE OF PAVED DRIVE. PROPOSED SET BACK FROM CURB IS 20' TO PRESERVE NATURAL FEATURE TO GREATEST EXTENT POSSIBLE CONSTANT WITH PRIOR APPROVAL. (EXPIRED) WAIVER IS REQUESTED.
- WAIVER REQUESTED FOR NOT MEETING THE MINIMUM DISTANCE BETWEEN THE SIDEWALK AND THE CURB IN LIMITED AREAS (IN FRONT OF UNITS ONLY).

### ZONING DISTRICT MAP

- Zoning Districts**
- R-A: Residential Acreage
  - R-1: One-Family Residential
  - R-2: One-Family Residential
  - R-3: One-Family Residential
  - R-4: One-Family Residential
  - RM: Mobile Home
  - RM-1: Low-Density Multiple-Family
  - RM-2: High-Density Multiple-Family
  - RM-3: Medium-Density Multiple-Family
  - RM-4: Medium-Density Multiple-Family
  - RM-5: Medium-Density Multiple-Family
  - RM-6: Medium-Density Multiple-Family
  - RM-7: Medium-Density Multiple-Family
  - RM-8: Medium-Density Multiple-Family
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  - RM-98: Medium-Density Multiple-Family
  - RM-99: Medium-Density Multiple-Family
  - RM-100: Medium-Density Multiple-Family
  - GE: Gateway East
  - FS: Freeway Service
  - I-1: Light Industrial
  - I-2: General Industrial
  - I-3: General Industrial
  - I-4: General Industrial
  - I-5: General Industrial
  - I-6: General Industrial
  - I-7: General Industrial
  - I-8: General Industrial
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  - I-96: General Industrial
  - I-97: General Industrial
  - I-98: General Industrial
  - I-99: General Industrial
  - I-100: General Industrial
  - NC-C: Non-Center Commercial
  - OS-1: Office Service
  - OS-2: Office Service
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  - OS-95: Office Service
  - OS-96: Office Service
  - OS-97: Office Service
  - OS-98: Office Service
  - OS-99: Office Service
  - OS-100: Office Service
  - EXO: EXO District with EXO Overlay
  - RC: Regional Center
  - P-1: Vehicular Parking
  - TC: Town Center
  - TC-1: Town Center-1
  - EXPD: Expo

### CITY OF NOVI / OAKLAND CO. STANDARD DETAILS

- PAVEMENT DETAILS
- STORM SEWER DETAILS
- SANITARY SEWER DETAILS NO. 1
- SANITARY SEWER DETAILS NO. 2
- WATER SYSTEM DETAILS NO. 1
- WATER SYSTEM DETAILS NO. 2
- LANDSCAPE DETAILS
- DETAILS FOR PATHWAYS & BOARDWALKS

**SITE DATA:**

GROSS ACREAGE	9.44 AC.
PROPOSED RIGHT OF WAY	0.13 AC.
NET SITE ACREAGE (PRESERVATION)	9.31 AC.
REGULATED WETLANDS	1.70 AC.
NET SITE ACREAGE (DENSITY)	7.61 AC.
PROPOSED DENSITY	3.3 DU/AC.
RESIDENTIAL UNITS PERMITTED	31,146 UNITS
RESIDENTIAL UNITS PROPOSED	25 UNITS
PERCENT OF SITE THAT IS REGULATED WOODLANDS	7.9%
REGULATED WOODLANDS ACREAGE	7.45 AC.
ACRES OF WOODLANDS TO BE PRESERVED	4.98 AC.
PERCENT OF SITE PERMANENTLY PRESERVED	53.3% (4.98 AC.)
REPLACEMENT TREES REQUIRED	228
CURRENT ZONING	R-4 ONE FAMILY RESIDENTIAL - CLUSTER OPTION
PROPOSED ZONING	R-4 ONE FAMILY RESIDENTIAL - SINGLE FAMILY RESIDENTIAL
MASTER PLAN	

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

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN AS AN APPROXIMATE INDICATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES CAUSED BY THE WORK OF ANY PARTY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM ALL UNDERGROUND UTILITIES.

**811**

Know what's below.  
Call before you dig.

CONSTRUCTION SITE SAFETY IS THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM ALL UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES CAUSED BY THE WORK OF ANY PARTY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM ALL UNDERGROUND UTILITIES.

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These documents are instruments of service in support of the Project and any other project without further obligation or responsibility for the contractor. The contractor shall be responsible for the accuracy of the information provided herein and shall be responsible for any damage to existing utilities caused by the work of any party. The contractor shall be responsible for obtaining all necessary permits and approvals from all underground utilities.

**The UMLOR Group**

LAND DEVELOPMENT SERVICES

SECTION 3  
TOWN 1 NORTH, RANGE 8 EAST  
BLOOMFIELD HILLS, MICHIGAN 48322  
CITY OF NOVI  
OAKLAND COUNTY, MICHIGAN

SCENIC PINES  
SINGH DEVELOPMENT, LLC  
7125 ORCHARD LAKE ROAD  
BLOOMFIELD HILLS, MICHIGAN 48322  
CLIENT

DATE: 11-27-2019  
REVISIONS:  
PER CITY 03-24-2020

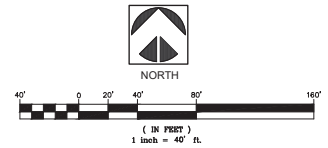
DR BY: SDT  
DC BY: SDT/AMY  
P.L. SCALE: 0  
AS NOTED  
JOB NO. 18095  
SHEET NO. 1  
SHEET 1 OF 38

**NOTE:**

- EXISTING ROADS SHALL BE MAINTAINED DURING CONSTRUCTION AND RECONSTRUCTED AS NECESSARY UPON COMPLETION OF CONSTRUCTION.
- DUST CONTROL TECHNIQUES SHALL BE EMPLOYED FOR THE DURATION OF SITE CONSTRUCTION ACTIVITIES.
- EXISTING ROADS SHALL BE DOCUMENTED VIA VEGETATE PLOTS TO CONSTRUCTION UPON COMPLETION OF CONSTRUCTION. EXISTING ROADS SHALL BE RE-VEGETATED TO REVERSE RECONSTRUCTION REQUIREMENTS IF ANY.
- CONSTRUCTION ACTIVITIES SHALL BE COORDINATED WITH RESPECT TO THE ELEMENTARY SCHOOL BUS SCHEDULE.

**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)
8-8-10-11	4-5-6-7	8	100	105, N/A	75	N/A
18-19-20-21	4-5-6-7	8	100	N/A	75	N/A
4-5-6-7	12-13-14-15	8	100	138, N/A	75	N/A
1-2-3	22-23-24-25	7	85	78, N/A	75	N/A
1-2-3	18-19-20-21	7	85	75, 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



**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
D3-2	STREET NAME SIGN	2
R8-3A	NO PARKING (18")	8

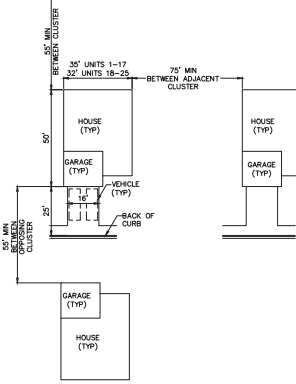
**NOTES:**

- 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 (OBSERVATION)	9.31 AC.
REGULATED WETLANDS	1.70 AC.
NET SITE AREA (GENUITY)	7.61 AC.
PROPOSED DENSITY	3.3 UNITS/AC.
RESIDENTIAL UNITS PERMITTED	25,140
RESIDENTIAL UNITS PROPOSED	25
REGULATED WOODLAND	7.45 AC.
RWA/NSA (7.45/9.31)	80%
WOODLANDS REQUIRED TO REMAIN	4.67 AC.
PERCENT OF SITE PERMANENTLY PRESERVED	53.3% (4.96 AC.) (CLUSTER OPTION)
MAX. LOT COVERAGE < 25%	1,318 - 1,518 Sq. Ft.
(ALL BUILDINGS)	35 (2.5 STORES)
MIN. FLOOR AREA > (1000 Sq Ft)	30
BUILDING HEIGHT (PROHIBITED)	30'
TOTAL LOT COVERAGE (PROVIDED TOTAL)	30'x50' = 1,500 SQ-FT./UNIT x 17 = 25,500 SQ-FT., 32'x50' = 1,600 SQ-FT./UNIT x 8 = 12,800 SQ-FT., 28'x50' = 1,400 SQ-FT./UNIT x 5 = 7,000 SQ-FT. = 45,300 SQ-FT. = 0.98 ACRES
TOTAL LOT COVERAGE (PROVIDED TOTAL)	0.98 AC./9.31 AC. = 10.52% < 25%
	25,009 Sq. Ft.

PROPOSED PRIVATE ROAD PAVEMENT AREA



**NOTE:**

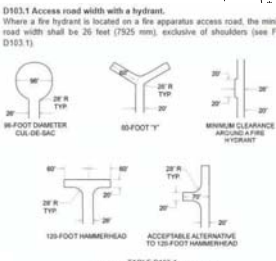
- TRASH SHALL BE WEEKLY CURB SIDE PICKUP
- PER SECTION 26.5-35(C), A STATEMENT IS REQUIRED ON ANY PLAN CONTAINING A PRIVATE STREET WITH THE FOLLOWING LANGUAGE: 'CITY OF NOV HAS NO RESPONSIBILITY TO IMPROVE OR MAINTAIN THE PRIVATE STREETS CONTAINED WITHIN OR PRIVATE STREETS PROVIDING ACCESS TO THE PROPERTY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

DATE: 11-27-2019  
 REVISIONS:  
 PER CITY 03-24-2020

DR BY: SDT  
 DC BY: SDT/MT  
 P.L.M. SCALE: 0 20 40  
 1" = 40 FEET  
 JOB NO. 180905  
 SHEET NO. 2  
 SHEET 2 OF 38

**INTERNATIONAL FIRE CODE NOTES:**

- SHOWS 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.



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

LENGTH/WIDTH (Feet) (Feet)	FURNISHINGS REQUIRED
0 - 9	None required
10 - 29	120-foot Hammerhead, 60-foot "Y" or 96-foot diameter cul-de-sac in accordance with Figure D103.1
30 - 79	120-foot Hammerhead, 60-foot "Y" or 96-foot diameter cul-de-sac in accordance with Figure D103.1
80 - 149	Special approval required

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

THE LOCATION OF EXISTING UTILITIES ARE SHOWN AS AN APPROXIMATE GUESS AND ARE NOT GUARANTEED. THE LOCATION OF ALL UTILITIES ARE SHOWN AS AN APPROXIMATE GUESS AND ARE NOT GUARANTEED. THE LOCATION OF ALL UTILITIES ARE SHOWN AS AN APPROXIMATE GUESS AND ARE NOT GUARANTEED. THE LOCATION OF ALL UTILITIES ARE SHOWN AS AN APPROXIMATE GUESS AND ARE NOT GUARANTEED.

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

**The UMLOR Group**  
 LAND DEVELOPMENT SERVICES

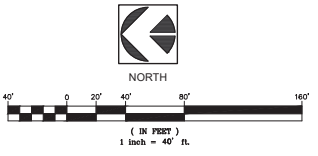
SECTION 3  
 TOWN 1 NORTH, RANGE 8 EAST  
 BLOOMFIELD HILLS, MICHIGAN 48322  
 CITY OF NOV  
 OAKLAND COUNTY, MICHIGAN  
 SCENIC PINES  
 SINGH DEVELOPMENT, LLC  
 7125 ORCHARD LAKE ROAD  
 BLOOMFIELD HILLS, MICHIGAN 48322

SITE PLAN

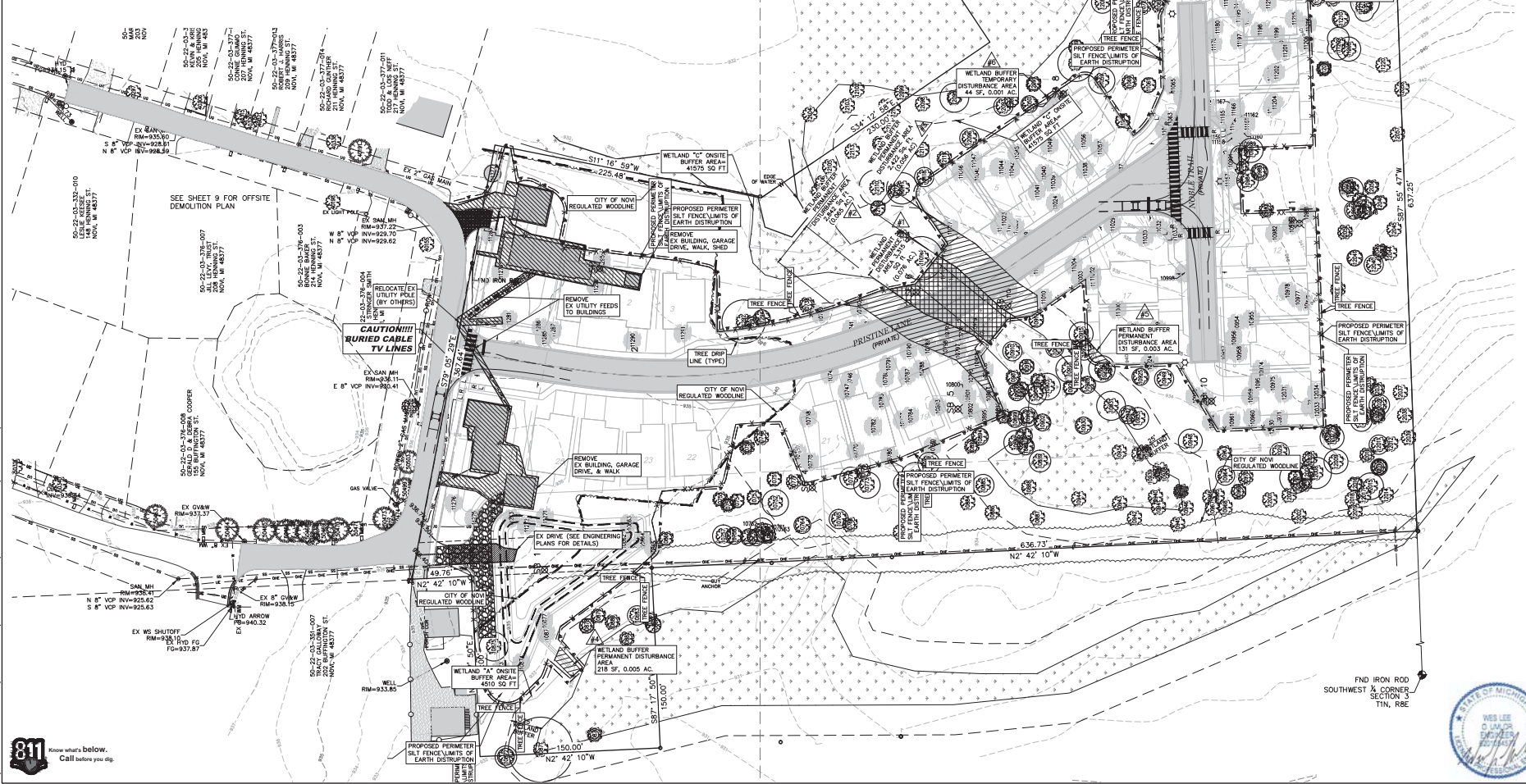




LEGEND					
⊕	CLEAN OUT	⊕	SIGN	—S—S—	EX STORM
⊕	ELEC RISER	⊕	2 POLE SIGN	—S—S—	EX SANITARY
⊕	FIRE HYDRANT	⊕	MAILBOX	—S—S—	EX WM
⊕	ELEC TRANSFORMER	⊕	POST	—S—S—	ELEC OVERHEAD
⊕	GUY ANCHOR	⊕	ELECTRICAL RISER	—S—S—	UNDERGROUND ELECTRIC
⊕	STM MANHOLE	⊕	TELEPHONE RISER	—S—S—	GAS
⊕	SAN MANHOLE	⊕	COMMUNICATIONS RISER	—S—S—	FENCE
⊕	VENT	⊕	ELECTRICAL METER	—S—S—	SILT FENCE
⊕	WATER STOP BOX	⊕	EXISTING FLAG POLE	—S—S—	EX FIBER OH
⊕	GATE VALVE	⊕	EXISTING GENERATOR	—S—S—	EX GUARDRAIL
⊕	SPEAKER BOX	⊕	EXISTING SIGNAL POLE	—S—S—	EX WETLAND BUFFER
⊕	POWER POLE	⊕	EXISTING GAS METER	—S—S—	EX GRAVEL
⊕	SINGLE LIGHT POLE	⊕	FOUND IRON	—S—S—	EX ASPHALT
⊕	DOUBLE LIGHT POLE	⊕	RECORDED DISTANCE	—S—S—	EX CONCRETE
⊕	ROUND CATCH BASIN	⊕	MEASURED DISTANCE	—S—S—	REGULATED TREE
⊕	SQUARE CATCH BASIN	⊕			
⊕	SOIL BORE LOCATION	⊕			



DEMO LEGEND	
⊕	EX TREE REMOVAL
⊕	TREE CRITICAL ROOT ZONE
⊕	WETLAND BUFFER DISTURBANCE AREA
⊕	WETLAND DISTURBANCE AREA (TEMPORARY)
⊕	REMOVE



THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN AS AN APPROXIMATION AND ARE NOT TO BE CONSIDERED AS A GUARANTEE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION OF ALL UTILITIES AND SHALL BE FULLY RESPONSIBLE FOR ANY DAMAGE TO UTILITIES CAUSED BY THE WORK OF ANY TRADES CONTRACTORS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND ALL UNDERGROUND UTILITIES.



CONSTRUCTION OF THIS PROJECT IS THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION OF ALL UTILITIES AND SHALL BE FULLY RESPONSIBLE FOR ANY DAMAGE TO UTILITIES CAUSED BY THE WORK OF ANY TRADES CONTRACTORS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND ALL UNDERGROUND UTILITIES.

These documents are instruments of service and do not constitute a contract. The contract is the agreement between the client and the contractor. The contractor shall be responsible for obtaining all necessary permits and for complying with all applicable laws and regulations. The contractor shall be responsible for protecting all existing utilities and for obtaining all necessary permits and for complying with all applicable laws and regulations.

**The UMLOR Group**  
LAND DEVELOPMENT SERVICES

SECTION 3  
TOWN 1 NORTH, RANGE 8 EAST  
CITY OF NOVI  
OAKLAND COUNTY, MICHIGAN

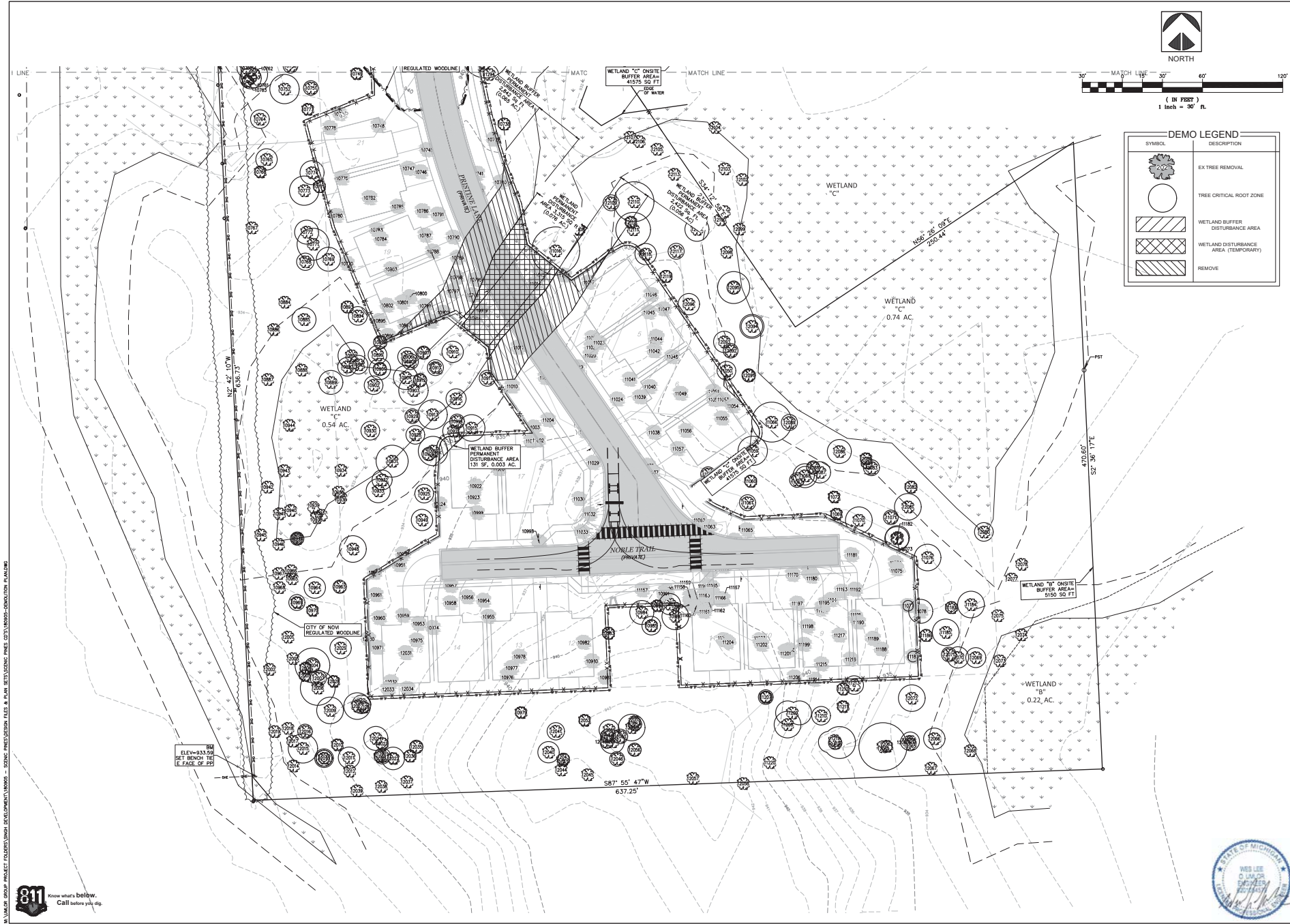
CLIENT: SCENIC PINES  
SINGH DEVELOPMENT, LLC  
7125 ORCHARD LAKE ROAD  
BLOOMFIELD HILLS, MICHIGAN 48322  
ONSITE DEMOLITION PLAN

DATE: 11-27-2019  
REVISIONS:  
PER CITY 03-24-2020

DR BY: SDT  
DC BY: SDT/AMY  
SCALE: 0 20 40  
1" = 40 FEET  
JOB NO. 180905  
SHEET NO. 4  
SHEET 4 OF 38







**DEMO LEGEND**

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

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN AS AN APPROXIMATION ONLY AND NOT GUARANTEED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES FROM OCCURRENCE OF ANY UNDERGROUND UTILITIES. CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PROTECT ANY AND ALL UNDERGROUND UTILITIES.

**811**  
Know what's below.  
Call before you dig.  
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These documents are instruments of service in respect of the project and any other project without written notification in accordance with the contract documents. The contract documents shall be the only documents that shall govern the project. No other documents, including but not limited to, shall be used to modify or amend the contract documents. No other documents shall be used to modify or amend the contract documents. No other documents shall be used to modify or amend the contract documents.

**The UMLOR Group**  
LAND DEVELOPMENT SERVICES

SECTION 3  
TOWN 1 NORTH, RANGE 8 EAST  
CITY OF NOVI  
OAKLAND COUNTY, MICHIGAN

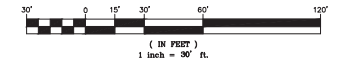
CLIENT: SCENIC PINES  
SINGH DEVELOPMENT, LLC  
7125 ORCHARD LAKE ROAD  
BLOOMFIELD HILLS, MICHIGAN 48322  
DEMOLITION PLAN - SOUTH

DATE: 11-27-2019  
REVISIONS:  
PER CITY 03-24-2020

DR BY: SDT  
DC BY: SDT/MT  
SCALE: 0 15 30  
1" = 30 FEET  
JOB NO. 180905  
SHEET NO. 5  
SHEET 5 OF 18



UMLOR GROUP PROJECT FOLDER\0304 DEMOLITION\0304 - SCENIC PINES\DESIGN FILES & PLAN SETS\SCENIC PINES CITY\WETLAND DEMOLITION PLAN.DWG



THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN AS AN APPROXIMATION ONLY AND SHOULD BE VERIFIED BY THE CONTRACTOR BEFORE ANY EXCAVATION IS MADE. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE LOCATION OF ALL EXISTING UTILITIES AND FOR THE PROTECTION OF ALL UTILITIES. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES.



Know what's below. Call before you dig.

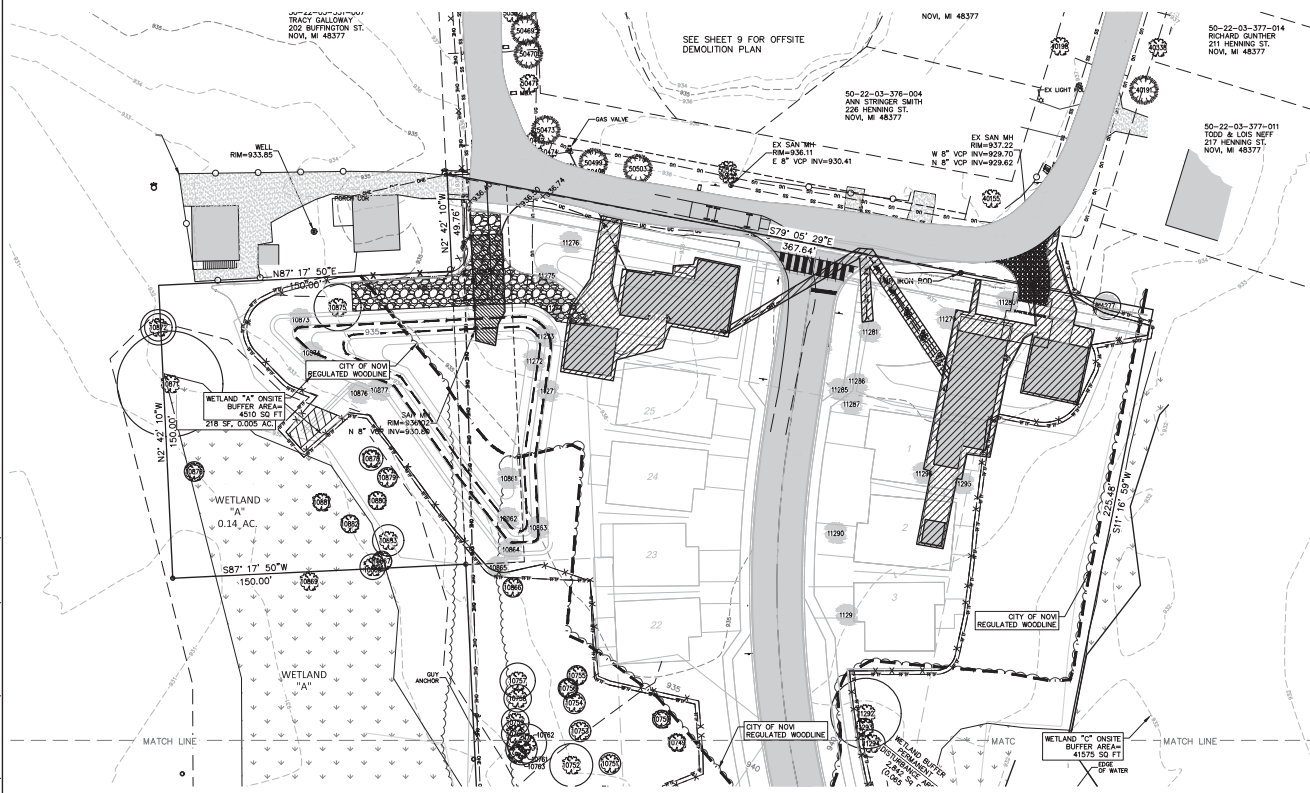
CONSTRUCTION SITE SAFETY IS THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES.

These documents are instruments of service in support of the project and any reuse without written permission is prohibited. All use of these plans and drawings shall be limited to the project and shall not be used for any other purpose. Any reuse of these plans and drawings for any other purpose shall be at the user's risk and shall not constitute an endorsement or approval by the engineer or architect.

**The UMLOR Group**  
LAND DEVELOPMENT SERVICES

SYMBOL		DESCRIPTION		SYMBOL		DESCRIPTION	
⊕	CLEAN OUT	— — —	SIGN	— — —	EX STORM		
⊕	ELEC. RISER	— — —	2 POLE SIGN	— — —	EX SANITARY		
⊕	FIRE HYDRANT	⊕	MAILBOX	— — —	EX W/M		
⊕	ELEC. TRANSFORMER	⊕	POST	— — —	ELEC OVERHEAD		
⊕	GLY ANCHOR	⊕	ELECTRICAL RISER	— — —	UNDERGROUND ELECTRIC		
⊕	STM MANHOLE	⊕	TELEPHONE RISER	— — —	GAS		
⊕	SAN MANHOLE	⊕	COMMUNICATIONS RISER	— — —	FENCE		
⊕	VENT	⊕	ELECTRICAL METER	— — —	SILT FENCE		
⊕	WATER STOP BOX	⊕	EXISTING FLAG POLE	— — —	EX FIBER OH		
⊕	GATE VALVE	⊕	EXISTING GENERATOR	— — —	EX GUARDRAIL		
⊕	SPEAKER BOX	⊕	EXISTING SIGNAL POLE	— — —	EX WETLAND BUFFER		
⊕	POWER POLE	⊕	EXISTING GAS METER	— — —	EX GRAVEL		
⊕	SINGLE LIGHT POLE	⊕	SET IRON	— — —	EX ASPHALT		
⊕	DOUBLE LIGHT POLE	⊕	FOUND IRON	— — —	EX CONCRETE		
⊕	ROUND CATCH BASIN	(R)	RECORDED DISTANCE	— — —	REGULATED TREE		
⊕	SQUARE CATCH BASIN	(M)	MEASURED DISTANCE	— — —			
⊕	SOIL BORE LOCATION						

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



UMLOR GROUP PROJECT FOLDER\2024\03\03\SCENIC PINES 03\WETLAND DEMOLITION PLAN.DWG

SECTION 3  
TOWN 1 NORTH, RANGE 8 EAST  
CITY OF NOV  
OAKLAND COUNTY, MICHIGAN

SCENIC PINES  
CLIENT: SINGH DEVELOPMENT, LLC  
7125 ORCHARD LAKE ROAD  
BLOOMFIELD HILLS, MICHIGAN 48322  
DEMOLITION PLAN - NORTH

DATE: 11-27-2019  
REVISIONS:  
PER CITY 03-24-2020

DR BY: SDT  
OC BY: SDT/MT  
SCALE: 0 15 30  
1" = 30 FEET  
JOB NO. 180905  
SHEET NO. 6  
SHEET 6 OF 18



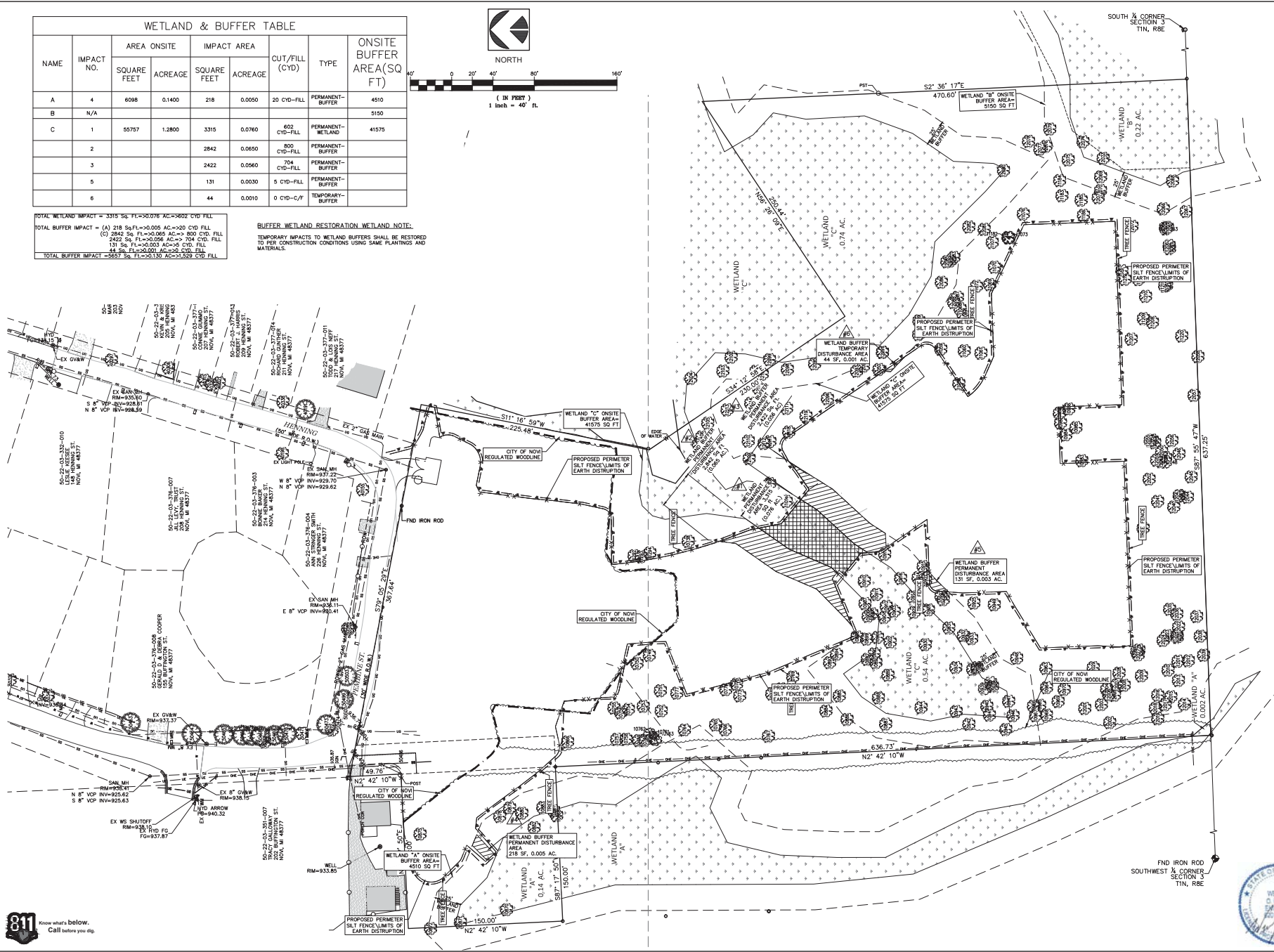
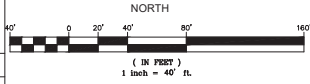


Tag	Scientific Name	Common Name	DBH(x)	Multi Adjust	Condition	Status	Replacement Trees	Value
1	Quercus rubra	Red Oak	12	1	Good	Save	1	120
2	Quercus rubra	Red Oak	14	1	Good	Save	1	168
3	Quercus rubra	Red Oak	16	1	Good	Save	1	192
4	Quercus rubra	Red Oak	18	1	Good	Save	1	216
5	Quercus rubra	Red Oak	20	1	Good	Save	1	240
6	Quercus rubra	Red Oak	22	1	Good	Save	1	264
7	Quercus rubra	Red Oak	24	1	Good	Save	1	288
8	Quercus rubra	Red Oak	26	1	Good	Save	1	312
9	Quercus rubra	Red Oak	28	1	Good	Save	1	336
10	Quercus rubra	Red Oak	30	1	Good	Save	1	360
11	Quercus rubra	Red Oak	32	1	Good	Save	1	384
12	Quercus rubra	Red Oak	34	1	Good	Save	1	408
13	Quercus rubra	Red Oak	36	1	Good	Save	1	432
14	Quercus rubra	Red Oak	38	1	Good	Save	1	456
15	Quercus rubra	Red Oak	40	1	Good	Save	1	480
16	Quercus rubra	Red Oak	42	1	Good	Save	1	504
17	Quercus rubra	Red Oak	44	1	Good	Save	1	528
18	Quercus rubra	Red Oak	46	1	Good	Save	1	552
19	Quercus rubra	Red Oak	48	1	Good	Save	1	576
20	Quercus rubra	Red Oak	50	1	Good	Save	1	600
21	Quercus rubra	Red Oak	52	1	Good	Save	1	624
22	Quercus rubra	Red Oak	54	1	Good	Save	1	648
23	Quercus rubra	Red Oak	56	1	Good	Save	1	672
24	Quercus rubra	Red Oak	58	1	Good	Save	1	696
25	Quercus rubra	Red Oak	60	1	Good	Save	1	720
26	Quercus rubra	Red Oak	62	1	Good	Save	1	744
27	Quercus rubra	Red Oak	64	1	Good	Save	1	768
28	Quercus rubra	Red Oak	66	1	Good	Save	1	792
29	Quercus rubra	Red Oak	68	1	Good	Save	1	816
30	Quercus rubra	Red Oak	70	1	Good	Save	1	840
31	Quercus rubra	Red Oak	72	1	Good	Save	1	864
32	Quercus rubra	Red Oak	74	1	Good	Save	1	888
33	Quercus rubra	Red Oak	76	1	Good	Save	1	912
34	Quercus rubra	Red Oak	78	1	Good	Save	1	936
35	Quercus rubra	Red Oak	80	1	Good	Save	1	960
36	Quercus rubra	Red Oak	82	1	Good	Save	1	984
37	Quercus rubra	Red Oak	84	1	Good	Save	1	1008
38	Quercus rubra	Red Oak	86	1	Good	Save	1	1032
39	Quercus rubra	Red Oak	88	1	Good	Save	1	1056
40	Quercus rubra	Red Oak	90	1	Good	Save	1	1080
41	Quercus rubra	Red Oak	92	1	Good	Save	1	1104
42	Quercus rubra	Red Oak	94	1	Good	Save	1	1128
43	Quercus rubra	Red Oak	96	1	Good	Save	1	1152
44	Quercus rubra	Red Oak	98	1	Good	Save	1	1176
45	Quercus rubra	Red Oak	100	1	Good	Save	1	1200
46	Quercus rubra	Red Oak	102	1	Good	Save	1	1224
47	Quercus rubra	Red Oak	104	1	Good	Save	1	1248
48	Quercus rubra	Red Oak	106	1	Good	Save	1	1272
49	Quercus rubra	Red Oak	108	1	Good	Save	1	1296
50	Quercus rubra	Red Oak	110	1	Good	Save	1	1320
51	Quercus rubra	Red Oak	112	1	Good	Save	1	1344
52	Quercus rubra	Red Oak	114	1	Good	Save	1	1368
53	Quercus rubra	Red Oak	116	1	Good	Save	1	1392
54	Quercus rubra	Red Oak	118	1	Good	Save	1	1416
55	Quercus rubra	Red Oak	120	1	Good	Save	1	1440
56	Quercus rubra	Red Oak	122	1	Good	Save	1	1464
57	Quercus rubra	Red Oak	124	1	Good	Save	1	1488
58	Quercus rubra	Red Oak	126	1	Good	Save	1	1512
59	Quercus rubra	Red Oak	128	1	Good	Save	1	1536
60	Quercus rubra	Red Oak	130	1	Good	Save	1	1560
61	Quercus rubra	Red Oak	132	1	Good	Save	1	1584
62	Quercus rubra	Red Oak	134	1	Good	Save	1	1608
63	Quercus rubra	Red Oak	136	1	Good	Save	1	1632
64	Quercus rubra	Red Oak	138	1	Good	Save	1	1656
65	Quercus rubra	Red Oak	140	1	Good	Save	1	1680
66	Quercus rubra	Red Oak	142	1	Good	Save	1	1704
67	Quercus rubra	Red Oak	144	1	Good	Save	1	1728
68	Quercus rubra	Red Oak	146	1	Good	Save	1	1752
69	Quercus rubra	Red Oak	148	1	Good	Save	1	1776
70	Quercus rubra	Red Oak	150	1	Good	Save	1	1800
71	Quercus rubra	Red Oak	152	1	Good	Save	1	1824
72	Quercus rubra	Red Oak	154	1	Good	Save	1	1848
73	Quercus rubra	Red Oak	156	1	Good	Save	1	1872
74	Quercus rubra	Red Oak	158	1	Good	Save	1	1896
75	Quercus rubra	Red Oak	160	1	Good	Save	1	1920
76	Quercus rubra	Red Oak	162	1	Good	Save	1	1944
77	Quercus rubra	Red Oak	164	1	Good	Save	1	1968
78	Quercus rubra	Red Oak	166	1	Good	Save	1	1992
79	Quercus rubra	Red Oak	168	1	Good	Save	1	2016
80	Quercus rubra	Red Oak	170	1	Good	Save	1	2040
81	Quercus rubra	Red Oak	172	1	Good	Save	1	2064
82	Quercus rubra	Red Oak	174	1	Good	Save	1	2088
83	Quercus rubra	Red Oak	176	1	Good	Save	1	2112
84	Quercus rubra	Red Oak	178	1	Good	Save	1	2136
85	Quercus rubra	Red Oak	180	1	Good	Save	1	2160
86	Quercus rubra	Red Oak	182	1	Good	Save	1	2184
87	Quercus rubra	Red Oak	184	1	Good	Save	1	2208
88	Quercus rubra	Red Oak	186	1	Good	Save	1	2232
89	Quercus rubra	Red Oak	188	1	Good	Save	1	2256
90	Quercus rubra	Red Oak	190	1	Good	Save	1	2280
91	Quercus rubra	Red Oak	192	1	Good	Save	1	2304
92	Quercus rubra	Red Oak	194	1	Good	Save	1	2328
93	Quercus rubra	Red Oak	196	1	Good	Save	1	2352
94	Quercus rubra	Red Oak	198	1	Good	Save	1	2376
95	Quercus rubra	Red Oak	200	1	Good	Save	1	2400
96	Quercus rubra	Red Oak	202	1	Good	Save	1	2424
97	Quercus rubra	Red Oak	204	1	Good	Save	1	2448
98	Quercus rubra	Red Oak	206	1	Good	Save	1	2472
99	Quercus rubra	Red Oak	208	1	Good	Save	1	2496
100	Quercus rubra	Red Oak	210	1	Good	Save	1	2520
101	Quercus rubra	Red Oak	212	1	Good	Save	1	2544
102	Quercus rubra	Red Oak	214	1	Good	Save	1	2568
103	Quercus rubra	Red Oak	216	1	Good	Save	1	2592
104	Quercus rubra	Red Oak	218	1	Good	Save	1	2616
105	Quercus rubra	Red Oak	220	1	Good	Save	1	2640
106	Quercus rubra	Red Oak	222	1	Good	Save	1	2664
107	Quercus rubra	Red Oak	224	1	Good	Save	1	2688
108	Quercus rubra	Red Oak	226	1	Good	Save	1	2712
109	Quercus rubra	Red Oak	228	1	Good	Save	1	2736
110	Quercus rubra	Red Oak	230	1	Good	Save	1	2760
111	Quercus rubra	Red Oak	232	1	Good	Save	1	2784
112	Quercus rubra	Red Oak	234	1	Good	Save	1	2808
113	Quercus rubra	Red Oak	236	1	Good	Save	1	2832
114	Quercus rubra	Red Oak	238	1	Good	Save	1	2856
115	Quercus rubra	Red Oak	240	1	Good	Save	1	2880
116	Quercus rubra	Red Oak	242	1	Good	Save	1	2904
117	Quercus rubra	Red Oak	244	1	Good	Save	1	2928
118	Quercus rubra	Red Oak	246	1	Good	Save	1	2952
119	Quercus rubra	Red Oak	248	1	Good	Save	1	2976
120	Quercus rubra	Red Oak	250	1	Good	Save	1	3000
121	Quercus rubra	Red Oak	252	1	Good	Save	1	3024
122	Quercus rubra	Red Oak	254	1	Good	Save	1	3048
123	Quercus rubra	Red Oak	256	1	Good	Save	1	3072
124	Quercus rubra	Red Oak	258	1	Good	Save	1	3096
125	Quercus rubra	Red Oak	260	1	Good	Save	1	3120
126	Quercus rubra	Red Oak	262	1	Good	Save	1	3144
127	Quercus rubra	Red Oak	264	1	Good	Save	1	3168
128	Quercus rubra	Red Oak	266	1	Good	Save	1	3192
129	Quercus rubra	Red Oak	268	1	Good	Save	1	3216
130	Quercus rubra	Red Oak	270	1	Good	Save	1	3240
131	Quercus rubra	Red Oak	272	1	Good	Save	1	3264
132	Quercus rubra	Red Oak	274	1	Good	Save	1	3288
133	Quercus rubra	Red Oak	276	1	Good	Save	1	3312
134	Quercus rubra	Red Oak	278	1	Good	Save	1	3336
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137	Quercus rubra	Red Oak	284	1	Good	Save	1	3408
138	Quercus rubra	Red Oak	286	1	Good	Save	1	3432
139	Quercus rubra	Red Oak	288	1	Good	Save	1	3456
140	Quercus rubra	Red Oak	290	1	Good	Save	1	3480
141	Quercus rubra	Red Oak	292	1	Good	Save	1	3504
142	Quercus rubra	Red Oak	294	1	Good	Save	1	3528
143	Quercus rubra	Red Oak	296	1	Good	Save	1	3552
144	Quercus rubra	Red Oak	298	1	Good	Save	1	3576
145	Quercus rubra	Red Oak	300	1	Good	Save	1	3600
146	Quercus rubra	Red Oak	302	1	Good	Save	1	3624
147	Quercus rubra	Red Oak	304	1	Good	Save	1	3648
148	Quercus rubra	Red Oak	306	1	Good	Save	1	3672
149	Quercus rubra	Red Oak	308	1	Good	Save	1	3696
150	Quercus rubra	Red Oak	310	1	Good	Save	1	3720
151	Quercus rubra	Red Oak	312	1	Good	Save	1	3744
152	Quercus rubra	Red Oak	314	1	Good	Save	1	3768
153	Quercus rubra	Red Oak	316	1	Good	Save	1	3792
154	Quercus rubra	Red Oak	318	1	Good	Save	1	3816
155	Quercus rubra	Red Oak	320	1	Good	Save	1	3840
156	Quercus rubra	Red Oak	322	1	Good	Save	1	3864
157	Quercus rubra	Red Oak	324	1	Good	Save	1	3888
158	Quercus rubra	Red Oak	326	1	Good	Save	1	3912
159	Quercus rubra	Red Oak	328	1	Good	Save	1	3936
160	Quercus rubra	Red Oak	330	1	Good	Save	1	3960
161	Quercus rubra	Red Oak	332	1	Good	Save	1	3984
162	Quercus rubra	Red Oak	334	1	Good	Save	1	4008
163	Quercus rubra	Red Oak	336	1	Good	Save	1	4032
164	Quercus rubra	Red Oak	338	1	Good	Save	1	4056
165	Quercus rubra	Red Oak	340	1	Good	Save	1	4080
166	Quercus rubra	Red Oak	342	1	Good	Save	1	4104
167	Quercus rubra	Red Oak	344	1	Good	Save	1	4128
168	Quercus rubra	Red Oak	346	1	Good	Save	1	4152
169	Quercus rubra	Red Oak	348	1	Good	Save	1	4176
170	Quercus rubra	Red Oak	350	1	Good	Save	1	4200
171	Quercus rubra	Red Oak	352	1	Good	Save	1	4224
172	Quercus rubra	Red Oak	354	1	Good	Save	1	4248
173	Quercus rubra	Red Oak	356	1	Good	Save	1	4272
174	Quercus rubra	Red Oak	358	1	Good	Save	1	4296
175	Quercus rubra	Red Oak	360	1	Good	Save	1	4320
176	Quercus rubra	Red Oak						

WETLAND & BUFFER TABLE								
NAME	IMPACT NO.	AREA ONSITE		IMPACT AREA		CUT/FILL (CYD)	TYPE	ONSITE BUFFER AREA(SQ FT)
		SQUARE FEET	ACREAGE	SQUARE FEET	ACREAGE			
A	4	6098	0.1400	218	0.0050	20 CYD-FILL	PERMANENT-BUFFER	4510
B	N/A							5150
C	1	55797	1.2800	3315	0.0760	602 CYD-FILL	PERMANENT-WETLAND	41575
	2			2842	0.0650	800 CYD-FILL	PERMANENT-BUFFER	
	3			2422	0.0560	704 CYD-FILL	PERMANENT-BUFFER	
	5			131	0.0030	5 CYD-FILL	PERMANENT-BUFFER	
	6			44	0.0010	0 CYD-C/F	TEMPORARY-BUFFER	

TOTAL WETLAND IMPACT = 3315 SQ. FT. = 0.076 AC. = 602 CYD FILL  
 TOTAL BUFFER IMPACT = (A) 218 SQ. FT. = 0.005 AC. = 20 CYD FILL  
 (C) 2842 SQ. FT. = 0.065 AC. = 800 CYD FILL  
 (E) 2422 SQ. FT. = 0.056 AC. = 704 CYD FILL  
 (F) 131 SQ. FT. = 0.003 AC. = 5 CYD FILL  
 (G) 44 SQ. FT. = 0.001 AC. = 0 CYD FILL

**BUFFER WETLAND RESTORATION WETLAND NOTE:**  
 TEMPORARY IMPACTS TO WETLAND BUFFERS SHALL BE RESTORED TO PER CONSTRUCTION CONDITIONS USING SAME PLANTINGS AND MATERIALS.



THE LOCATION OF EXISTING UNDEVELOPED UTILITIES ARE SHOWN AS AN APPROXIMATE LOCATION AND NOT A GUARANTEE OF ACCURACY. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY DAMAGE TO UTILITIES CAUSED BY THE WORK OF ANY TRADES. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY DAMAGE TO UTILITIES CAUSED BY THE WORK OF ANY TRADES. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY DAMAGE TO UTILITIES CAUSED BY THE WORK OF ANY TRADES.

**811**  
 Know what's below.  
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 CONSTRUCTION OF THIS PROJECT IS THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY DAMAGE TO UTILITIES CAUSED BY THE WORK OF ANY TRADES. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY DAMAGE TO UTILITIES CAUSED BY THE WORK OF ANY TRADES. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY DAMAGE TO UTILITIES CAUSED BY THE WORK OF ANY TRADES.

These documents are instruments of service and do not constitute a contract. The contract is the agreement between the client and the engineer. The engineer shall not be responsible for any damage to utilities caused by the work of any trades. The engineer shall not be responsible for any damage to utilities caused by the work of any trades. The engineer shall not be responsible for any damage to utilities caused by the work of any trades.

**The UMLOR Group**  
 LAND DEVELOPMENT SERVICES

SECTION 3  
 TOWN 1 NORTH, RANGE 8 EAST  
 CITY OF NOVI  
 OAKLAND COUNTY, MICHIGAN

CLIENT: SCENIC PINES  
 SINGH DEVELOPMENT, LLC  
 7125 ORCHARD LAKE ROAD  
 BLOOMFIELD HILLS, MICHIGAN 48322  
 WETLANDS IMPACT PLAN

DATE: 11-27-2019  
 REVISIONS:  
 PER CITY 03-24-2020  
 DR BY: SDT  
 CK BY: SDT/AMY  
 P.W. SDT  
 SCALE: 0" = 40' FEET  
 JOB NO. 180905  
 SHEET NO. 8  
 SHEET 8 OF 18



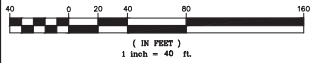








NORTH



PR. UTILITY LEGEND	
SYMBOL	DESCRIPTION
---	PR. STORM SEWER
---	PR. SANITARY SEWER
---	PR. WATER MAIN
---	PR. CONTOUR
X	PR. LIMITS DISTURBANCE
+	PR. WATER VALVE
+	PR. HYDRANT
+	PR. FLOW DIRECTION
○	PR. SANITARY STRUCTURE NUMBER
○	PR. STORM STRUCTURE NUMBER
○	PR. WATER VALVE/HYDRANT NUMBER

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

SEE SHEET 11 FOR OVERALL EASEMENT PLAN  
SEE SHEET 19 FOR OVERALL STORM SEWER PLAN  
SEE SHEETS 20 & 21 FOR STORM SEWER PROFILES

UTILITY QUANTITIES

SANITARY SEWER

- 8" PVC SDR 26 SANITARY PIPE 1122 LF
- 8" PVC SDR 23.5 SANITARY LEAD 1009 LF
- 4" SDR11 SANITARY FORCE MAIN 84 LF
- 4" SANITARY MANHOLE 8 EA
- DUPLEX RISING STATION 1 EA
- VALVE VAULT BOX 1 EA

WATER MAIN

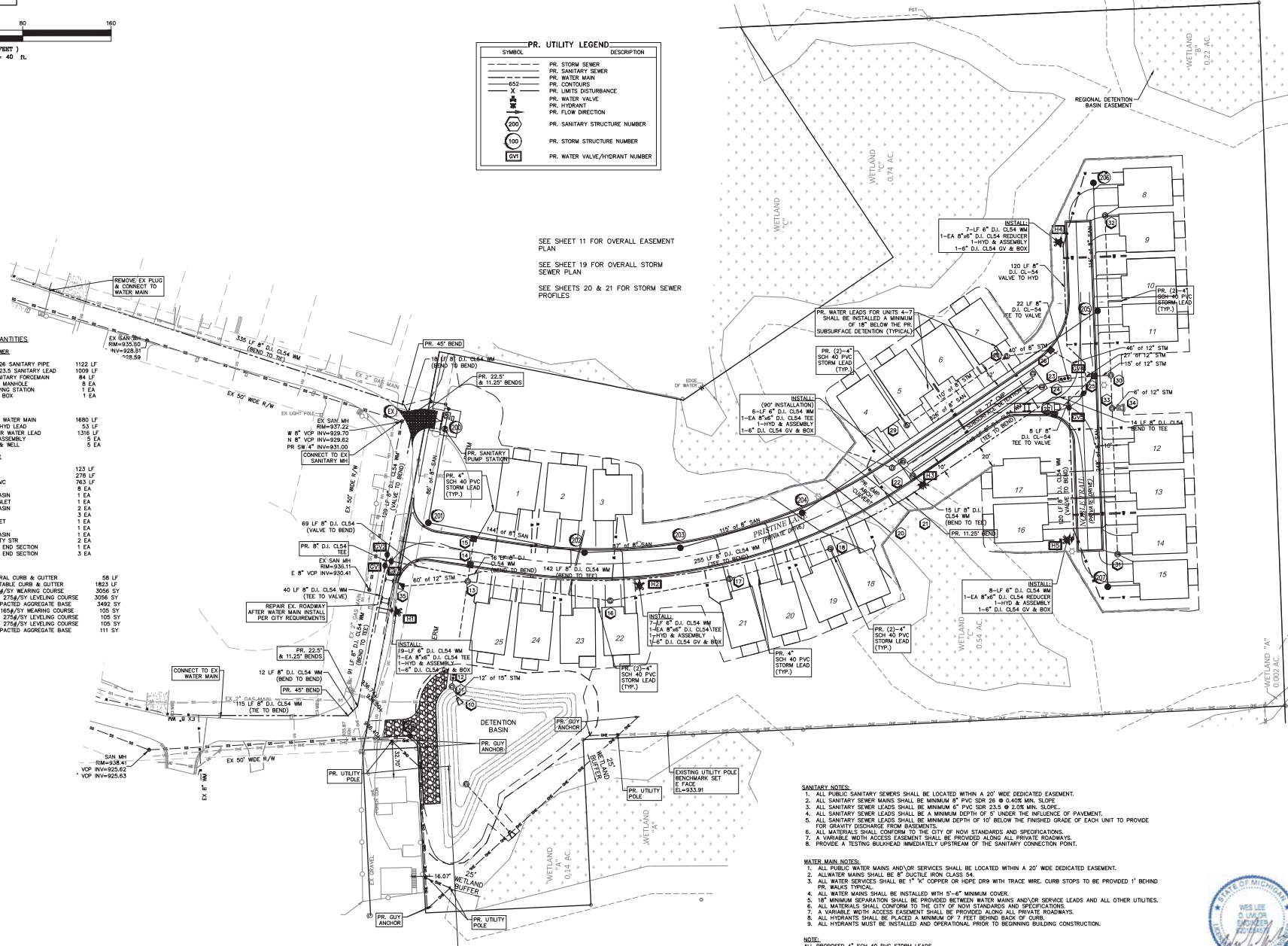
- 8" D.I. CL 54 WATER MAIN 1680 LF
- 6" D.I. CL54 HYD LEAD 53 LF
- 1" COPPER WATER LEAD 1316 LF
- HYDRANT & ASSEMBLY 5 EA
- GATE VALVE & WELL 5 EA

STORM SEWER

- 15" CLIV ROP 123 LF
- 12" CLIV ROP 278 LF
- 8" SDR 35 PVC 763 LF
- 2" MANHOLE 8 EA
- 2" CATCH BASIN 1 EA
- 4" STREET INLET 1 EA
- 4" CATCH BASIN 2 EA
- 4" MANHOLE 3 EA
- 4" YARD INLET 1 EA
- 6" MANHOLE 1 EA
- 7" CATCH BASIN 1 EA
- WATER QUALITY STR 2 EA
- 15" CLIV ROP END SECTION 1 EA
- 12" CLIV ROP END SECTION 3 EA

PAVING

- 6"x30" INTEGRAL CURB & GUTTER 58 LF
- 3"x18" MOUNTABLE CURB & GUTTER 1823 LF
- SEL 1.5" 165#/SY WEARING COURSE 3056 SY
- HMA 3C 2.5" 275#/SY LEVELING COURSE 3056 SY
- 6" 21AA COMPACTED AGGREGATE BASE 3492 SY
- HMA 3E1 2" 165#/SY WEARING COURSE 105 SY
- HMA 4C 2.5" 275#/SY LEVELING COURSE 105 SY
- HMA 3C 2.5" 275#/SY LEVELING COURSE 105 SY
- 8" 21AA COMPACTED AGGREGATE BASE 111 SY



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

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

NOTE:  
ALL PROPOSED 4" SCH 40 PVC STORM LEADS SHALL BE SLOPED A MINIMUM OF 1%.

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN AS FAR AS APPRACTICABLE AND ONLY FOR INFORMATION. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES. THE CONTRACTOR'S FAILURE TO PROTECT EXISTING UTILITIES SHALL BE AT HIS OWN RISK AND ALL UNDERGROUND UTILITIES.



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CONTRACTORS ARE RESPONSIBLE FOR THE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTORS SHALL BE FULLY RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES. THE CONTRACTOR'S FAILURE TO PROTECT EXISTING UTILITIES SHALL BE AT HIS OWN RISK AND ALL UNDERGROUND UTILITIES.

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SECTION 3  
TOWN 1 NORTH, RANGE 8 EAST  
CITY OF NOV  
OAKLAND COUNTY, MICHIGAN

SCENIC PINES  
SINGH DEVELOPMENT, LLC  
7125 ORCHARD LAKE ROAD  
BLOOMFIELD HILLS, MICHIGAN 48322

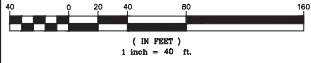
DATE: 11-27-2019

PER CITY 03-24-2020






DR BY: SDT  
DC BY: SDT/AMT  
P.L. 54  
SCALE: 0 20 40  
1" = 40 FEET

JOB NO. 180905  
SHEET NO. 10  
SHEET 10 OF 30

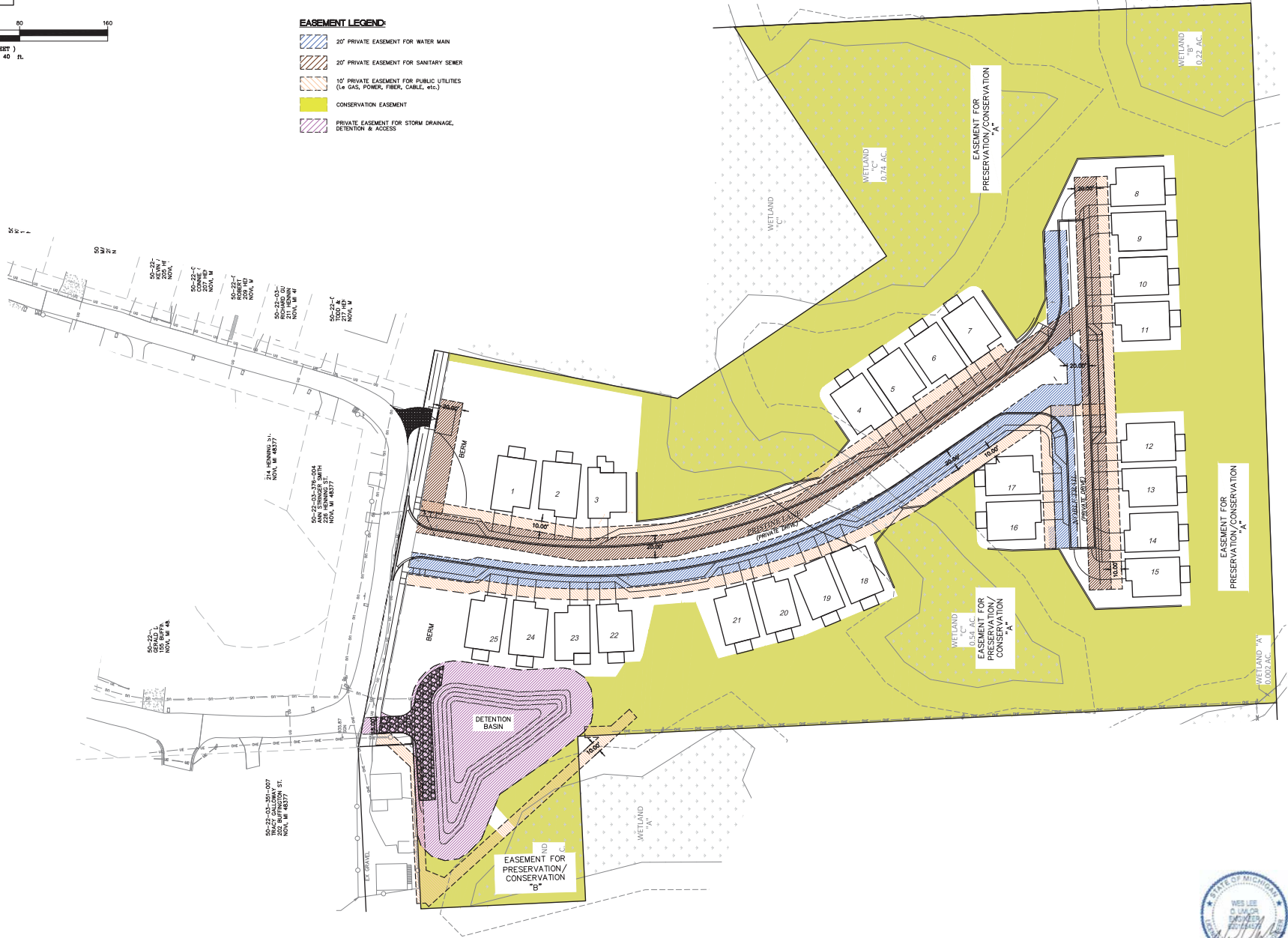




**EASEMENT LEGEND:**

-  20' PRIVATE EASEMENT FOR WATER MAIN
-  20' PRIVATE EASEMENT FOR SANITARY SEWER
-  10' PRIVATE EASEMENT FOR PUBLIC UTILITIES (4 GAS, POWER, FIBER, CABLE, etc.)
-  CONSERVATION EASEMENT
-  PRIVATE EASEMENT FOR STORM DRAINAGE, DETENTION & ACCESS

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



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**The UMLOR Group**  
LAND DEVELOPMENT SERVICES

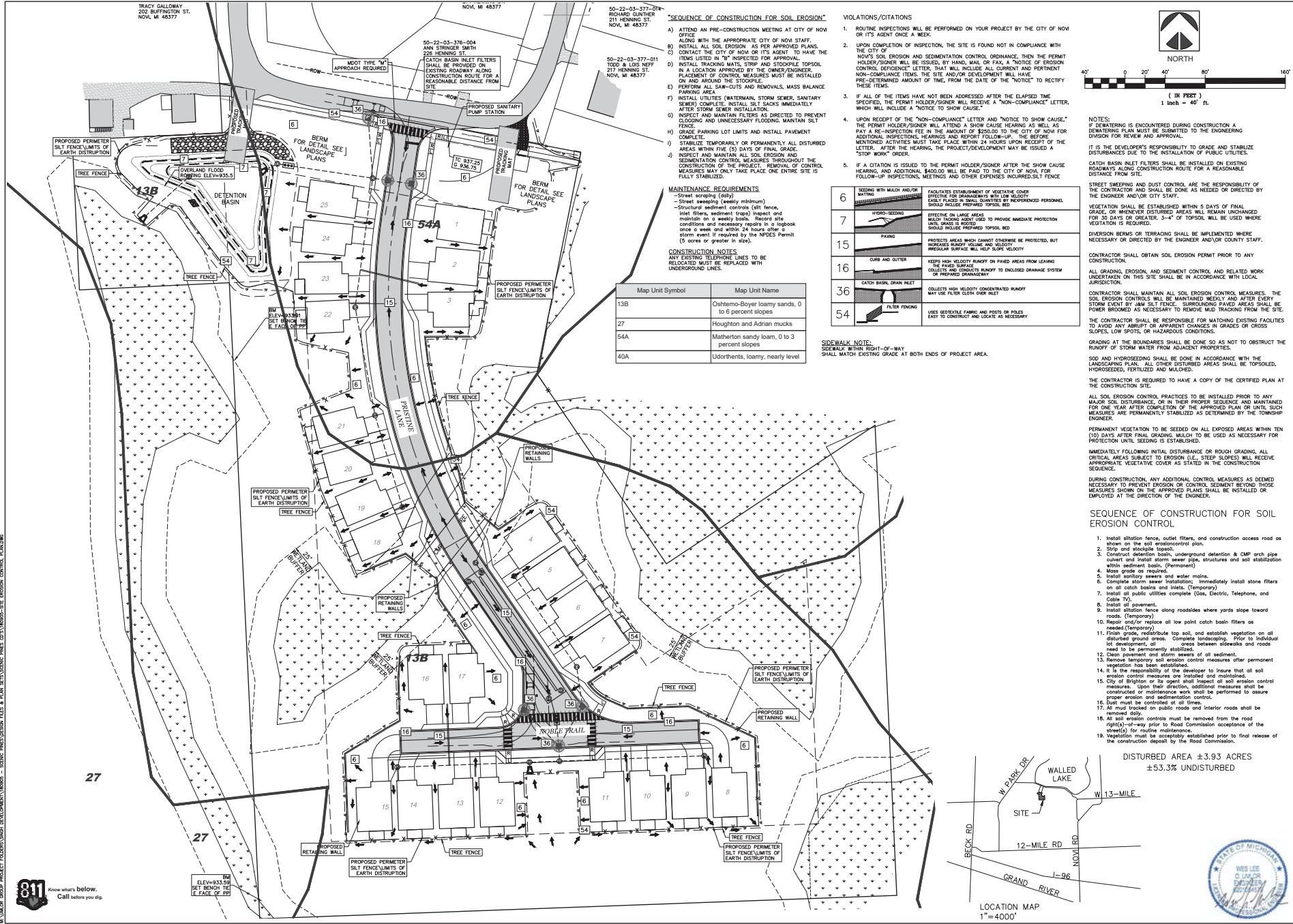
SECTION 3  
TOWN 1 NORTH, RANGE 8 EAST  
CITY OF NOVI  
OAKLAND COUNTY, MICHIGAN

SCENIC PINES  
SINGH DEVELOPMENT, LLC  
7125 ORCHARD LAKE ROAD  
BLOOMFIELD HILLS, MICHIGAN 48322  
EASEMENT PLAN

DATE: 11-27-2019  
REVISIONS:  
PER CITY 03-24-2020

DR BY: SDT  
DC BY: SDT/MT  
PK: SA  
SCALE: 0 20 40  
1" = 40 FEET  
JOB NO. 180305  
SHEET NO. 11





**"SEQUENCE OF CONSTRUCTION FOR SOIL EROSION"**

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

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

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

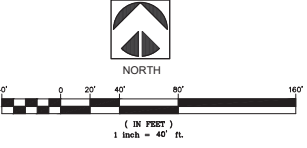
Map Unit Symbol	Map Unit Name
13B	Osheno-Boyer loamy sands, 0 to 6 percent slopes
27	Houghton and Adrian mucks
54A	Matherton sandy loam, 0 to 3 percent slopes
40A	Udorthents, loamy, nearly level

**VIOLATIONS/CITATIONS**

1. ROUTINE INSPECTIONS WILL BE PERFORMED ON YOUR PROJECT BY THE CITY OF NOV OR ITS AGENT ONCE A WEEK.
2. UPON COMPLETION OF INSPECTION, THE SITE IS FOUND NOT IN COMPLIANCE WITH THE CITY OF NOV'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 DEFICIENCY" LETTER, THAT WILL INCLUDE ALL CURRENT AND PREVIOUS 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.
3. IF ALL OF THE ITEMS HAVE NOT BEEN ADDRESSED AFTER THE ELAPSED TIME SPECIFIED, THE PERMIT HOLDER/SIGNER WILL RECEIVE A "NON-COMPLIANCE" LETTER, WHICH WILL INCLUDE A "NOTICE TO SHOW CAUSE."
4. UPON RECEIPT OF THE "NON-COMPLIANCE" LETTER AND "NOTICE TO SHOW CAUSE," THE PERMIT HOLDER/SIGNER WILL ATTEND A SHOW CAUSE HEARING AS WELL AS PAY A RE-INSPECTION FEE IN THE AMOUNT OF \$250.00 TO THE CITY OF NOV FOR ADDITIONAL INSPECTIONS, HEARINGS AND REPORT FOLLOW-UP. BEFORE THE MENTIONED ACTIVITIES MUST TAKE PLACE WITHIN 24 HOURS UPON RECEIPT OF THE LETTER. AFTER THE HEARING, THE PROJECT/DEVELOPMENT WILL BE ISSUED A "STOP WORK" ORDER.
5. IF A CITATION IS ISSUED TO THE PERMIT HOLDER/SIGNER AFTER THE SHOW CAUSE HEARING, AND ADDITIONAL \$400.00 WILL BE PAID TO THE CITY OF NOV, FOR FOLLOW-UP INSPECTIONS, MEETINGS AND OTHER EXPENSES INCURRED BY THE CITY.

6	SEEDING WITH MULCH AND/OR MATING	REVEGETATION ESTABLISHMENT OF VEGETATIVE COVER EFFECTIVE FOR SOIL EROSION BY RESPONSIBLE PERSONNEL. SHOULD INCLUDE PREPARED TOPSOIL BID.
7	HYDRO-SEEDING	EFFECTIVE ON LARGE AREAS. MULCH TACKING AGENT USED TO PROVIDE IMMEDIATE PROTECTION UNTIL GRASS IS ROOTED. SHOULD INCLUDE PREPARED TOPSOIL BID.
15	PAVING	PROTECTS AREAS WHICH CANNOT OTHERWISE BE PROTECTED, BUT INCREASES RUNOFF VOLUME AND VELOCITY. IRREGULAR SURFACE WILL HELP SLOPE VELOCITY.
16	CURB AND GUTTER	KEEPS HIGH VELOCITY RUNOFF ON PAVED AREAS FROM LEAVING THE PAVED SURFACE. COLLECTS AND CONDUCTS RUNOFF TO ENCLOSED DRAINAGE SYSTEM OR PREPARED DRAINAGE.
36	CATCH BASIN, DRAIN INLET	COLLECTS HIGH VELOCITY CONCENTRATED RUNOFF. MAY USE FILTER GLOYS OVER INLET.
54	FILTER FENCING	USE VEGETATIVE FABRIC AND POSTS OR POLES EASY TO CONTRACT AND LOCATE AS NECESSARY.

**SIDEWALK NOTE:**  
 SIDEWALK WITHIN RIGHT-OF-WAY SHALL MATCH EXISTING GRADE AT BOTH ENDS OF PROJECT AREA.



**NOTES:**  
 IF SEAWATER IS ENCOUNTERED DURING CONSTRUCTION A DETERMINING 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. ON WHATEVER DISTURBED AREAS WILL REMAIN UNCHANGED FOR 30 DAYS OR GREATER, 3" OF TOPSOIL WILL BE USED WHERE VEGETATION IS REQUIRED.

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

CONTRACTOR SHALL OBTAIN SOIL EROSION PERMIT PRIOR TO ANY CONSTRUCTION.

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

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

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

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

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

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

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

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

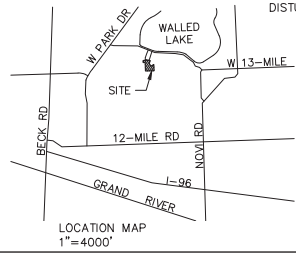
IMMEDIATELY FOLLOWING INITIAL GRADING OR ROUGH GRADING, ALL CRITICAL AREAS SUBJECT TO EROSION (I.E. STEEP SLOPES) WILL RECEIVE APPROPRIATE VEGETATIVE COVER AS STATED IN THE CONSTRUCTION SEQUENCE.

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

**SEQUENCE OF CONSTRUCTION FOR SOIL EROSION CONTROL**

1. Install siltation fence, outlet filters, and construction access road as shown on the soil erosion control plan.
2. Strip and steeple topsoil.
3. Construct detention basin, underground detention & CMP pipe culvert and install storm sewer pipe, structures and soil stabilization within sediment basin. (Permanents)
4. Mass grade as required.
5. Install sanitary sewers and water mains.
6. Complete storm sewer installation; immediately install stone filters on all catch basins and inlets. (Temporary)
7. Install all public utilities complete (Gas, Electric, Telephone, and Cable TV).
8. Install all pavement.
9. Install siltation fence along roadways where yards slope toward roads. (Temporary)
10. Repair and/or replace oil low point catch basin filters as needed. (Temporary)
11. Final grade, redistribute top soil, and establish vegetation on all disturbed ground areas. Complete landscaping. Prior to individual lot development, all areas between sidewalks and roads need to be permanently stabilized.
12. Clean pavement and storm sewers of all sediment.
13. Remove temporary soil erosion control measures after permanent vegetation has been established.
14. If the responsibility of the developer to insure that all soil erosion control measures are installed and maintained.
15. City of Brighton or its agent will inspect all soil erosion control measures. Upon their direction, additional measures shall be constructed or maintenance work shall be performed to assure proper erosion and sedimentation control.
16. Soil must be controlled at all times.
17. All mud tracked on public roads and interior roads shall be removed daily.
18. All soil erosion controls must be removed from the road right-of-way prior to Road Commission acceptance of the street(s) for routine maintenance.
19. Vegetation must be established prior to final release of the construction deposit by the Road Commission.

**DISTURBED AREA ±3.93 ACRES ±53.3% UNDISTURBED**



**Call before you dig.**

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

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**DISTURBED AREA ±3.93 ACRES ±53.3% UNDISTURBED**

SECTION 3  
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 BLOOMFIELD HILLS, MICHIGAN 48322  
 CITY OF NOV  
 OAKLAND COUNTY, MICHIGAN

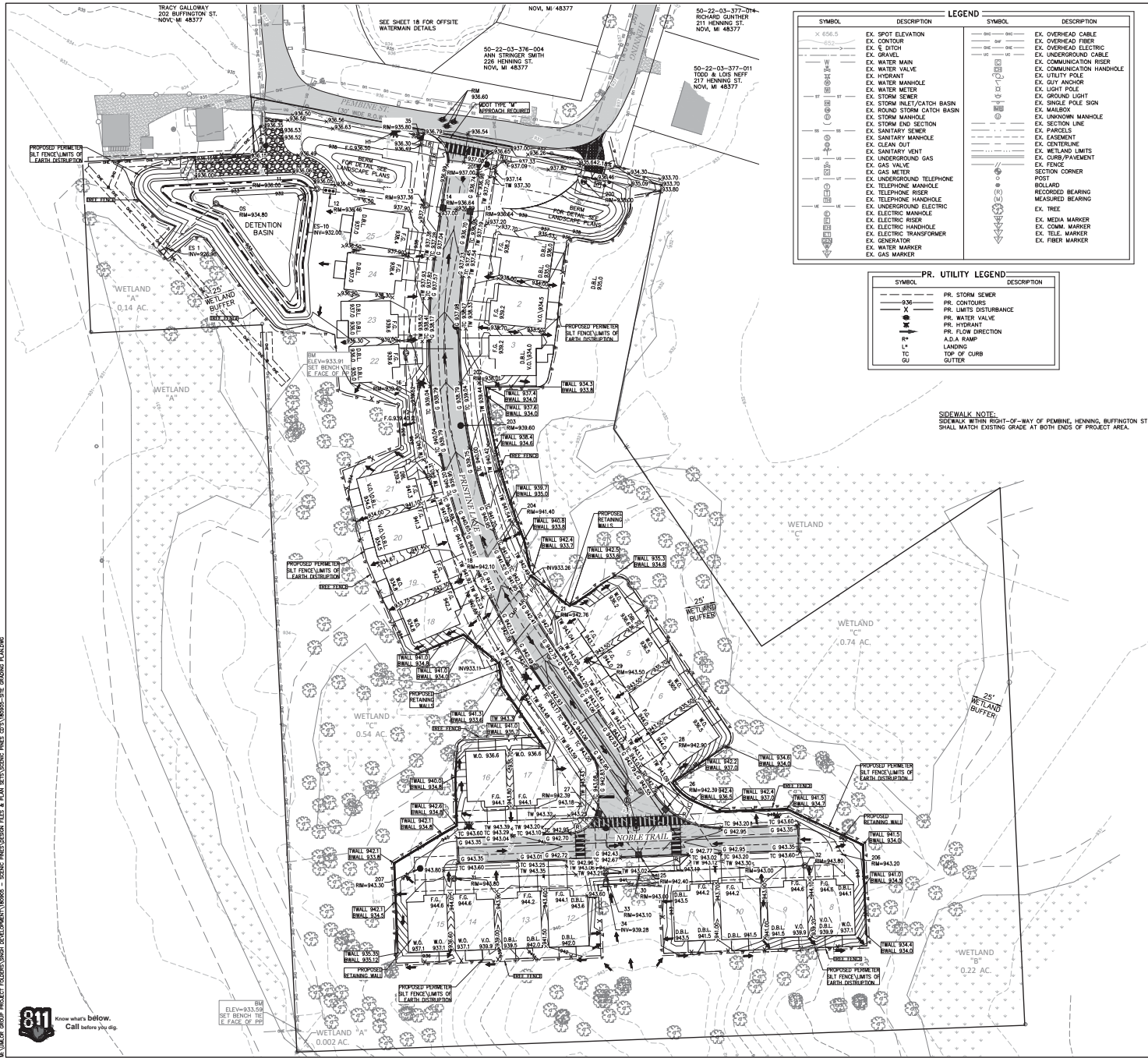
**UMLOR Group**  
 LAND DEVELOPMENT SERVICES

DATE: 11-27-2019  
 REVISIONS:  
 PER CITY 03-24-2020

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 CK BY: SDT/AMY  
 SCALE: 1" = 40 FEET  
 JOB NO. 180905  
 SHEET NO. 12  
 SHEET 12 OF 38

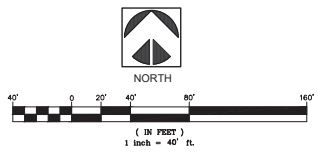






LEGEND		LEGEND	
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
X 656.5	EX. SPOT ELEVATION	—	EX. OVERHEAD CABLE
—	EX. CONTOUR	—	EX. OVERHEAD FIBER
—	EX. DITCH	—	EX. OVERHEAD ELECTRIC
—	EX. GRAVEL	—	EX. UNDERGROUND CABLE
—	EX. WATER MAIN	—	EX. UNDERGROUND ELECTRIC
—	EX. WATER VALVE	—	EX. UNDERGROUND RISER
—	EX. HYDRANT	—	EX. COMMUNICATION HANDHOLE
—	EX. WATER MANHOLE	—	EX. UTILITY POLE
—	EX. WATER METER	—	EX. GUY ANCHOR
—	EX. STORM SEWER	—	EX. LIGHT POLE
—	EX. STORM INLET/CATCH BASIN	—	EX. GROUND LIGHT
—	EX. ROUND STORM CATCH BASIN	—	EX. SINGLE POLE SIGN
—	EX. STORM MANHOLE	—	EX. MANHOLE
—	EX. STORM END SECTION	—	EX. UNKNOWN MANHOLE
—	EX. SANITARY SEWER	—	EX. SECTION LINE
—	EX. SANITARY MANHOLE	—	EX. PARCELS
—	EX. CLEAN OUT	—	EX. EASEMENT
—	EX. SANITARY VENT	—	EX. WETLAND LIMITS
—	EX. UNDERGROUND GAS	—	EX. CURB/PAVEMENT
—	EX. GAS VALVE	—	EX. CENTERLINE
—	EX. GAS METER	—	EX. FENCE
—	EX. UNDERGROUND TELEPHONE	—	EX. TELEPHONE RISER
—	EX. TELEPHONE MANHOLE	—	EX. TELEPHONE HANDHOLE
—	EX. TELEPHONE RISER	—	EX. UNDERGROUND ELECTRIC
—	EX. TELEPHONE HANDHOLE	—	EX. ELECTRIC MANHOLE
—	EX. UNDERGROUND ELECTRIC	—	EX. ELECTRIC RISER
—	EX. ELECTRIC MANHOLE	—	EX. ELECTRIC HANDHOLE
—	EX. ELECTRIC RISER	—	EX. ELECTRIC TRANSFORMER
—	EX. ELECTRIC HANDHOLE	—	EX. GENERATOR
—	EX. ELECTRIC TRANSFORMER	—	EX. WATER MARKER
—	EX. GENERATOR	—	EX. GAS MARKER

PR. UTILITY LEGEND	
SYMBOL	DESCRIPTION
—	PR. STORM SEWER
—	PR. CONTOURS
X	PR. LIMITS DISTURBANCE
—	PR. WATER VALVE
—	PR. HYDRANT
—	PR. FLOW DIRECTION
—	A.D.A. RAMP
—	LANDING
—	TOP OF CURB
—	GUTTER



**SIDEWALK NOTE:**  
SIDEWALK WITH RIGHT-OF-WAY OF PEMBINE/HENNING/BUFFINGTON ST SHALL MATCH EXISTING GRADE AT BOTH ENDS OF PROJECT AREA.

- GRADING NOTES:**
1. PRISTINE LANE GRADING SHALL MATCH ELEVATIONS AT PEMBINE ST.
  2. WETLAND BUFFERS IMPACTED BY CONSTRUCTION SHALL BE RESTORED WITH THE WETLAND EDGE SED MIX SPECIFIED ON LANDSCAPE SHEET L-2 OR APPROPRIATE ALTERNATE.
  3. TEMPORARY STOCKPILING OF MATERIAL IS NOT ANTICIPATED. IF NEEDED, STOCKPILES WILL BE PLACED AT PERMANENT BERM LOCATIONS AND TEMPORARY SILT FENCE SHALL BE INSTALLED SURROUNDING ANY STOCKPILE AREA.
  4. ALL SLOPES STEEPER THAN 1:1.66 SHALL BE STABILIZED WITH EROSION BLANKET.
  5. ALL CULVERT END SECTIONS MUST BE PROVIDED WITH GROUDED RIPRAP IN ACCORDANCE WITH CITY SPECIFICATIONS.
  6. INSTALLATION OF SILT FENCING AND TREE FENCING SHALL NOT OCCUR PRIOR TO THE INITIAL CITY PRE-CONSTRUCTION MEETING.
  7. RETAINING WALLS SHALL BE PER DETAILS PROVIDED BY WALL ENGINEER.
  8. IT IS THE DEVELOPER'S RESPONSIBILITY TO GRADE AND STABILIZE DISTURBANCES DUE TO THE INSTALLATION OF PUBLIC UTILITIES.
  9. ALL WORK WITHIN THE RIGHT-OF-WAY OF BUFFINGTON/PEMBINE/HENNING STREETS SHALL MEET OR EXCEED CITY OF NOVI SPECIFICATIONS.
  10. WHERE THE WATERMAIN IS LOCATED IN THE CENTER OF THE ROAD (ALONG PEMBINE STREET) OR REQUIRES WORK IN BOTH SIDES OF THE ROAD, THE CONTRACTOR SHALL REPLACE THE PAVEMENT FROM EDGE TO EDGE, ALONG BUFFINGTON AND HENNING STREETS WHERE THE TRENCH ONLY AFFECTS ONE SIDE OF THE ROAD CONTRACTOR SHALL REPLACE FROM CENTERLINE TO EDGE OF EXISTING PAVEMENT.



CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING UNDERGROUND UTILITIES AND SHOWN ON AN APPROPRIATE CITY OR UTILITY RECORDS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY DAMAGE TO ANY UTILITIES. THE CONTRACTOR'S FAILURE TO PROTECT EXISTING UTILITIES IS THE CONTRACTOR'S RESPONSIBILITY. ALL UNDERGROUND UTILITIES.

Know what's below. Call before you dig.

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**The UMLOR Group**  
LAND DEVELOPMENT SERVICES

SECTION 3  
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CITY OF NOV  
OAKLAND COUNTY, MICHIGAN

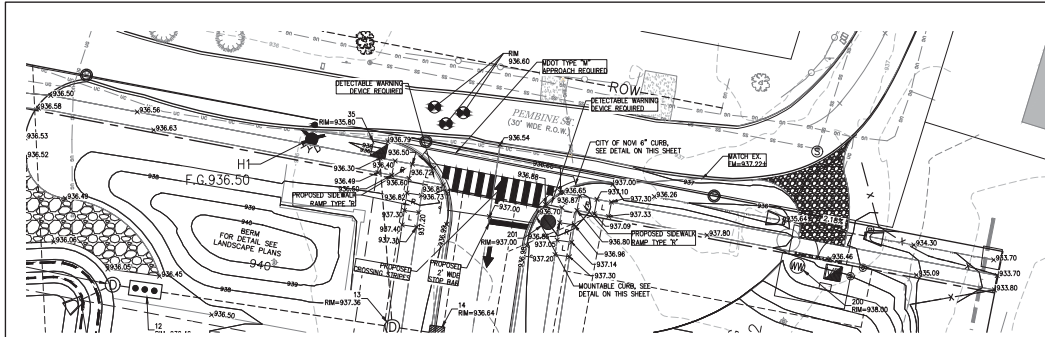
SCENIC PINES  
SINGH DEVELOPMENT, LLC  
7125 ORCHARD LAKE ROAD  
BLOOMFIELD HILLS, MICHIGAN 48322

DATE: 11-27-2019  
REVISIONS:  
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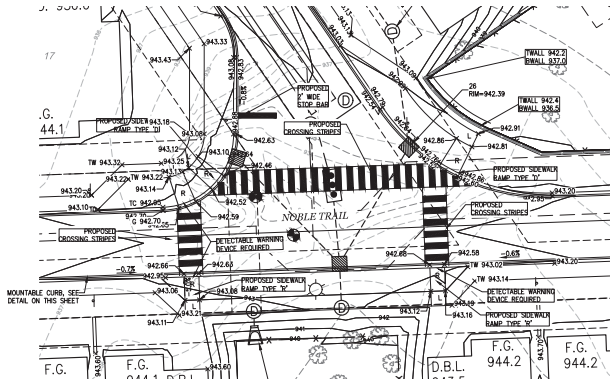
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1" = 40 FEET  
JOB NO. 180905  
SHEET NO. 14  
SHEET 14 OF 38







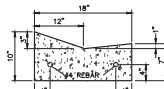
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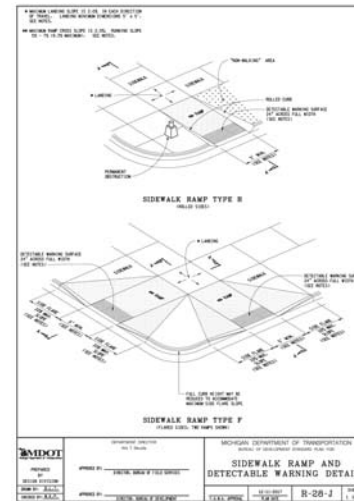
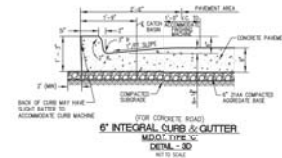
INTERSECTION - PRISTINE LN. & NOBLE TR.  
SCALE: 1"=20'

PAVING

6"x30" INTEGRAL CURB & GUTTER	58 LF
3"x18" MOUNTABLE CURB & GUTTER	1823 LF
SE1 1.5" 165#/SY WEARING COURSE	3056 SY
HMA 3C 2.5" 275#/SY LEVING COURSE	3056 SY
8" 21AA COMPACTED AGGREGATE BASE	3499 SY
HMA SE1 2" 165#/SY WEARING COURSE	105 SY
HMA 4C 2.5" 275#/SY LEVING COURSE	105 SY
HMA 3C 2.5" 275#/SY LEVING COURSE	105 SY
8" 21AA COMPACTED AGGREGATE BASE	111 SY



MOUNTABLE CONCRETE CURB & GUTTER DETAIL  
NO SCALE



NORTH

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN AS FAR AS APPROPRIATE. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES CAUSED BY HIS FAILURE TO EXACTLY LOCATE AND PROTECT ANY AND ALL UNDERGROUND UTILITIES.



Know what's below.  
Call before you dig.  
CONSTRUCTION OF ANY KIND IS THE RESPONSIBILITY OF THE CONTRACTOR. BEFORE THE CONSTRUCTION OF ANY KIND, THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES CAUSED BY HIS FAILURE TO EXACTLY LOCATE AND PROTECT ANY AND ALL UNDERGROUND UTILITIES.

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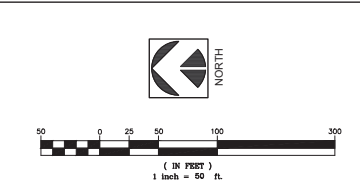
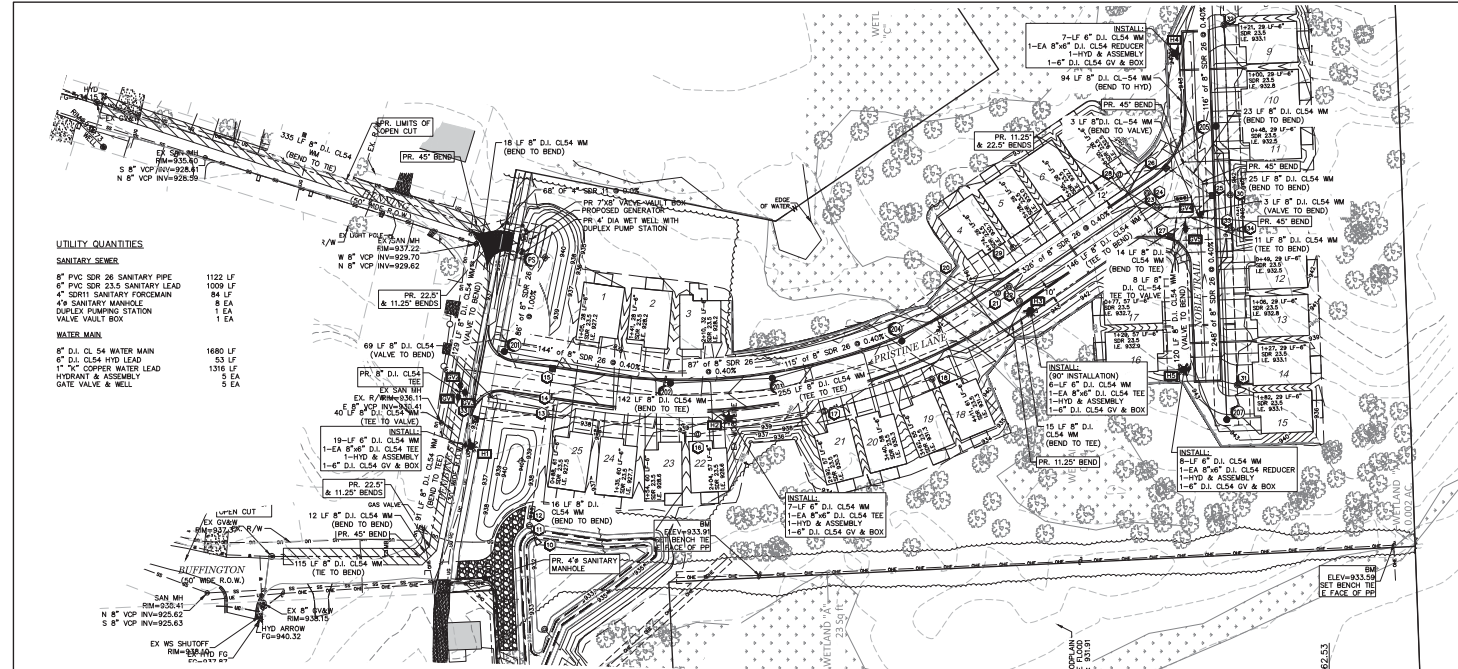
SCENIC PINES  
SINGH DEVELOPMENT, LLC  
7125 ORCHARD LAKE ROAD  
BLOOMFIELD HILLS, MICHIGAN 48322  
ENTRANCE AND INTERSECTION  
ENTRANCE AND DETAILS

DATE: 11-27-2019  
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PER CITY 03-24-2020

DR BY: SDT  
DC BY: SDT/MT  
P.W. SA  
SCALE: 0 10 20  
1" = 20 FEET  
JOB NO. 180905  
SHEET NO. 15  
SHEET 15 OF 30



UMLOR GROUP PROJECT FOLDER\SCENIC PINES DEVELOPMENT\SCENIC PINES\SCENIC PINES 03\180905-01 GRADING PLAN.DWG



**UTILITY QUANTITIES**

**SANITARY SEWER**

8" PVC SDR 26 SANITARY PIPE	1122 LF
8" PVC SDR 23.5 SANITARY LEAD	1009 LF
8" SDR SANITARY FORCE MAIN	94 LF
4" SANITARY MANHOLE	8 EA
DUPLEX PUMPING STATION	1 EA
VALVE VAULT BOX	1 EA

**WATER MAIN**

8" D.I. CL 54 WATER MAIN	1680 LF
8" D.I. CL54 HYD LEAD	53 LF
1" COPPER WATER LEAD	1316 LF
HYDRANT & ASSEMBLY	3 EA
GATE VALVE & WELL	1 EA

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

SEE SHEET 11 FOR OVERALL EASEMENT PLAN  
SEE SHEET 17 FOR SANITARY & WATER PROFILES FOR NOBLE TRAIL  
SEE SHEET 18 FOR WATER PROFILES FOR BLUFFINGTON, PEMBINE ST & HENNING  
SEE SHEET 19 FOR OVERALL STORM SEWER PLAN  
SEE SHEETS 20 & 21 FOR STORM SEWER PROFILES

**SANITARY BASIS OF DESIGN**  
Connection to existing 8" PVC sanitary sewer along Henning St.

NUMBER OF UNITS	25	UNITS TOTAL	
POPULATION	2.38	PEOPLE/UNIT X 25	59.5 PEOPLE
AVERAGE FLOW	59.5 PEOPLE X	100 GAL/CAP/DAY	
PEAK FACTOR	PEAK FACTOR X AVERAGE FLOW		0.00893 CFS
PEAK FLOW			4
(CAPACITY OF 8" PIPE @ 0.40% IS 0.76 CFS) THEREFORE PIPE CAPACITY IS SUFFICIENT			

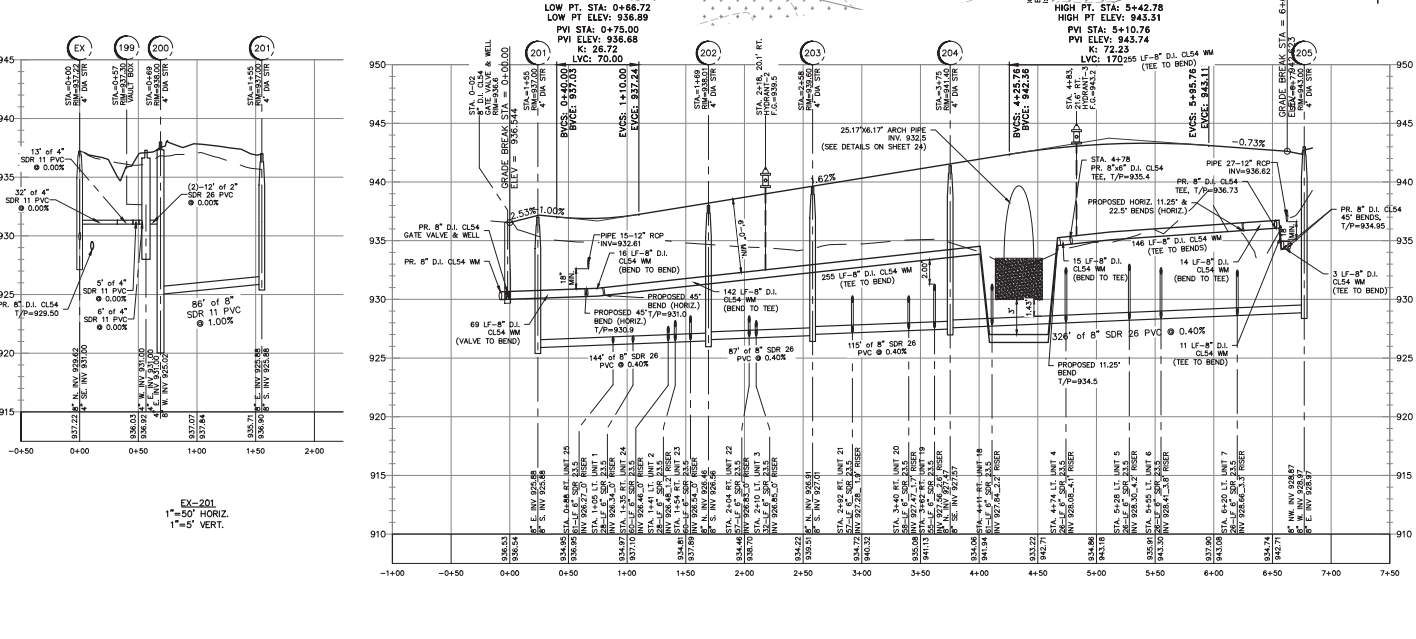
**SANITARY NOTES:**

- ALL PUBLIC SANITARY SEWERS SHALL BE LOCATED WITHIN A 20' WIDE DEDICATED EASEMENT.
- ALL SANITARY SEWER MAINS SHALL BE MINIMUM 8" PVC SDR 26 @ 0.40% MIN. SLOPE.
- ALL SANITARY SEWER LEADS SHALL BE MINIMUM 8" PVC SDR 23.5 @ 2.0% MIN. SLOPE.
- ALL SANITARY SEWER LEADS SHALL BE A MINIMUM DEPTH OF 10' UNDER THE INFLUENCE OF PAVEMENT.
- ALL SANITARY SEWER LEADS SHALL BE MINIMUM DEPTH OF 10' BELOW THE FINISHED GRADE OF EACH UNIT TO PROVIDE FOR GRAVITY DISCHARGE FROM EASEMENTS.
- ALL MATERIALS SHALL CONFORM TO THE CITY OF NOBLES STANDARDS AND SPECIFICATIONS.
- A 27" WIDE ACCESS EASEMENT SHALL BE PROVIDED ALONG ALL P.S. ROADWAYS.
- PROVIDE A TESTING BLOCKHEAD IMMEDIATELY UPSTREAM OF THE SANITARY CONNECTION POINT.

**WATER MAIN NOTES:**

- ALL PUBLIC WATER MAINS AND/OR SERVICES SHALL BE LOCATED WITHIN A 20' WIDE DEDICATED EASEMENT.
- ALL WATER MAINS SHALL BE 8" DUCTILE IRON CLASS 54.
- ALL WATER SERVICES SHALL BE 1" COPPER OR HOPE DR99 WITH TRACE WIRE. CURB STOPS TO BE PROVIDED 1' BEHIND PR. WALKS TYPICAL.
- ALL WATER MAINS SHALL BE INSTALLED WITH 3'-4" MINIMUM COVER.
- 18" MINIMUM SEPARATION SHALL BE PROVIDED BETWEEN WATER MAINS AND/OR SERVICE LEADS AND ALL OTHER UTILITIES.
- ALL MATERIALS SHALL CONFORM TO THE CITY OF NOBLES STANDARDS AND SPECIFICATIONS.
- A 27" WIDE ACCESS EASEMENT SHALL BE PROVIDED ALONG ALL P.S. ROADWAYS.
- ALL HYDRANTS SHALL BE PLACED A MINIMUM OF 7' FEET BEHIND BOUND OF CURB.
- ALL HYDRANTS MUST BE INSTALLED AND OPERATIONAL PRIOR TO BEGINNING BUILDING CONSTRUCTION.

**NOTE:**  
ALL PROPOSED 4" SCH 40 PVC STORM LEADS SHALL BE SLOPED A MINIMUM OF 1%



**PR. UTILITY LEGEND**

SYMBOL	DESCRIPTION
(Line with dots)	PR. STORM SEWER
(Line with dashes)	PR. SANITARY SEWER
(Line with circles)	PR. WATER MAIN
(Line with triangles)	PR. CONTOURS
(Line with crosses)	PR. LIMITS DISTURBANCE
(Line with squares)	PR. WATER VALVE
(Line with diamonds)	PR. HYDRANT
(Arrow)	PR. FLOW DIRECTION
(Circle with '200')	PR. SANITARY STRUCTURE NUMBER
(Circle with '200')	PR. STORM STRUCTURE NUMBER
(Circle with '200')	PR. WATER VALVE/HYDRANT NUMBER



PRISTINE LANE  
1"=50' HORIZ.  
1"=5' VERT.

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**The UMLOR Group**  
LAND DEVELOPMENT SERVICES

SECTION 3  
TOWN 1 NORTH, RANGE 8 EAST  
BIOFIELD HILLS, MICHIGAN 48322  
CITY OF NOBLES  
OAKLAND COUNTY, MICHIGAN

SCENIC PINES  
SINGH DEVELOPMENT, LLC  
7125 ORCHARD LAKE ROAD  
BIOFIELD HILLS, MICHIGAN 48322

CLIENT:  
PRISTINE LANE - ROAD, SANITARY, & WATERMAIN PLAN & PROFILE

DATE: 11-27-2019  
REVISIONS:  
PER CITY 03-24-2020

DR BY: SDT  
OC BY: SDT/MTY  
P.L.  
SCALE: 0 25 50  
1" = 50 FEET  
JOB NO. 180905  
SHEET NO. 16  
SHEET 16 OF 38

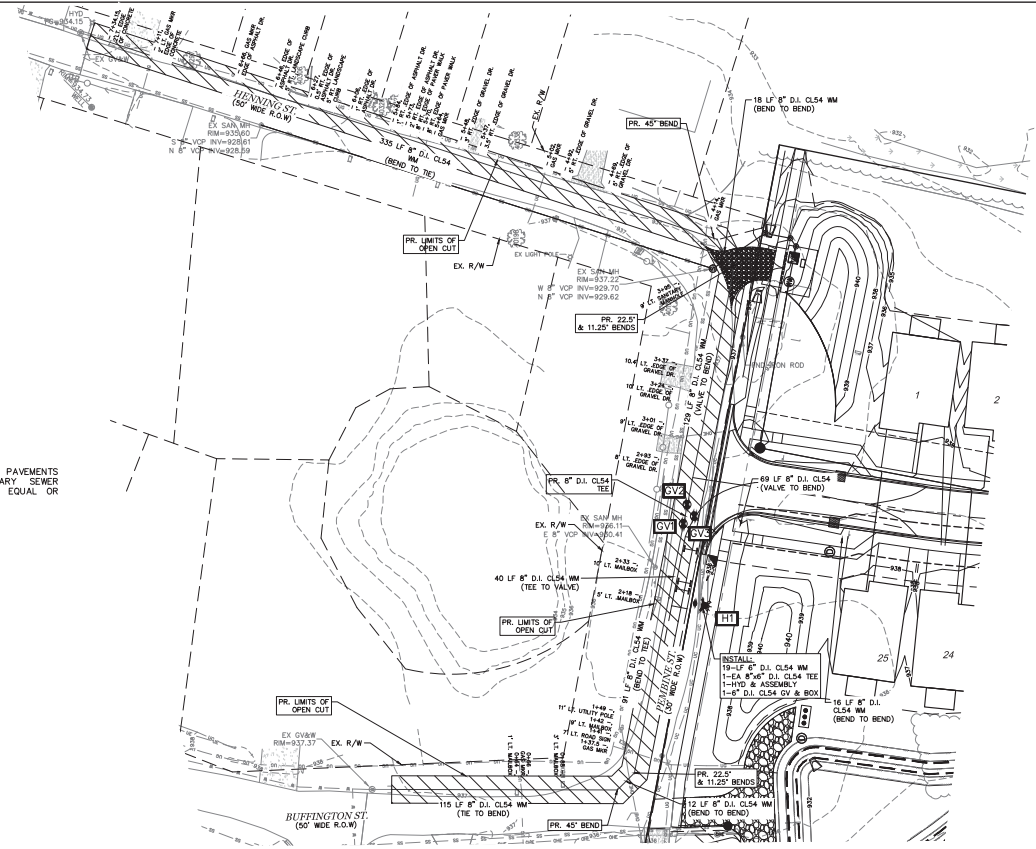




**UTILITY QUANTITIES**

WATER MAIN	
8" D.I. CL 54 WATER MAIN	1680 LF
6" D.I. CL54 HYD LEAD	53 LF
1" K" COPPER WATER LEAD	1316 LF
HYDRANT & ASSEMBLY	5 EA
GATE VALVE & WELL	5 EA

**NOTE:**  
THE FULL WIDTH OF BUFFINGTON, HENNING AND PEMBINE PAVEMENTS ADJACENT TO PROPOSED WATER MAIN AND SANITARY SEWER CONSTRUCTION SHALL BE REMOVED AND RESTORED TO EQUAL OR BETTER THAN PRECONSTRUCTION CONDITIONS.

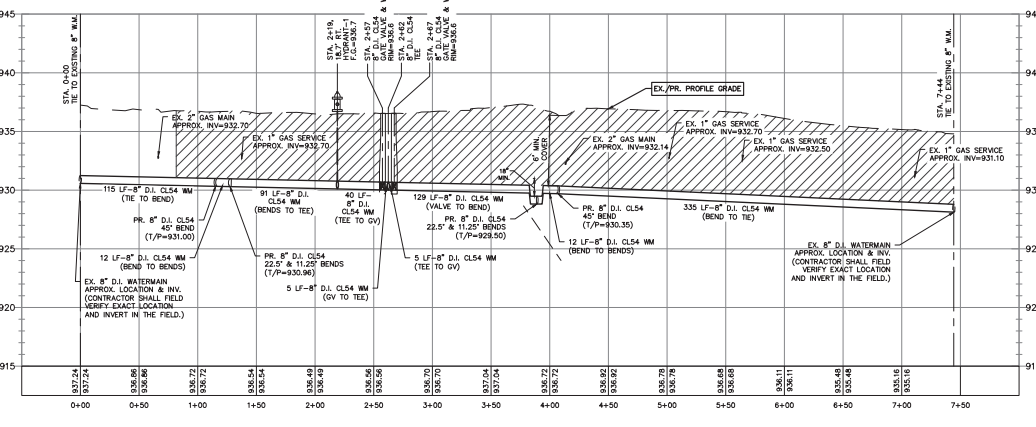


**NOTE:**  
COMPACTED SAND BACKFILL (MDOT SAND CLASS 2) SHALL BE PROVIDED FOR ALL UTILITIES WITHIN THE INFLUENCE OF PAVED AREAS.

**WATER MAIN NOTES:**

1. ALL PUBLIC WATER MAINS AND/OR SERVICES SHALL BE LOCATED WITHIN A 20' WIDE DEDICATED EASEMENT.
2. ALL WATER MAINS SHALL BE 8" DUCTILE IRON CLASS 54.
3. ALL WATER SERVICES SHALL BE 1" K" COPPER OR HDPE WITH TRACE WIRE. CURB STOPS TO BE PROVIDED 1' BEHIND PR. WALKS TYPICAL.
4. ALL WATER MAINS SHALL BE INSTALLED WITH 5'-6" MINIMUM COVER.
5. 18" MINIMUM SEPARATION SHALL BE PROVIDED BETWEEN WATER MAINS AND/OR SERVICE LEADS AND ALL OTHER UTILITIES.
6. ALL MATERIALS SHALL CONFORM TO THE CITY OF NOVI STANDARDS AND SPECIFICATIONS.
7. A 28' WIDE ACCESS EASEMENT SHALL BE PROVIDED ALONG ALL PR. ROADWAYS.
8. ALL HYDRANTS SHALL BE PLACED A MINIMUM OF 7 FEET BEHIND BACK OF CURB.
9. ALL HYDRANTS MUST BE INSTALLED AND OPERATIONAL PRIOR TO BEGINNING BUILDING CONSTRUCTION.

SEE SHEET 11 FOR OVERALL EASEMENT PLAN  
SEE SHEET 16 FOR SANITARY & WATER PROFILES FOR PRISTINE LANE  
SEE SHEET 17 FOR SANITARY & WATER PROFILES FOR NOBLE TRAIL  
SEE SHEET 19 FOR OVERALL STORM SEWER PLAN  
SEE SHEETS 20 & 21 FOR STORM SEWER PROFILES



**PROPOSED WATER MAIN**  
1"=50' HORIZ.  
1"=5' VERT.

SYMBOL	PR. UTILITY LEGEND	DESCRIPTION
(Symbol)	PR. STORM SEWER	
(Symbol)	PR. SANITARY SEWER	
(Symbol)	PR. WATER MAIN	
(Symbol)	PR. LIMITS DISTURBANCE	
(Symbol)	PR. WATER VALVE	
(Symbol)	PR. HYDRANT	
(Symbol)	PR. FLOW DIRECTION	
(Symbol)	PR. SANITARY STRUCTURE NUMBER	
(Symbol)	PR. STORM STRUCTURE NUMBER	
(Symbol)	PR. WATER VALVE/HYDRANT NUMBER	



THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN AS FAR AS KNOWN TO THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.



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**The UMLOR Group**  
LAND DEVELOPMENT SERVICES

SECTION 3  
TOWN 1 NORTH, RANGE 8 EAST  
CITY OF NOVI  
OAKLAND COUNTY, MICHIGAN

SCENIC PINES  
SINGH DEVELOPMENT, LLC  
7125 ORCHARD LAKE ROAD  
BLOOMFIELD HILLS, MICHIGAN 48322  
CLIENT  
BUFFINGTON-PEMBINE-HENNING ST.  
WATERMAIN PLAN & PROFILE

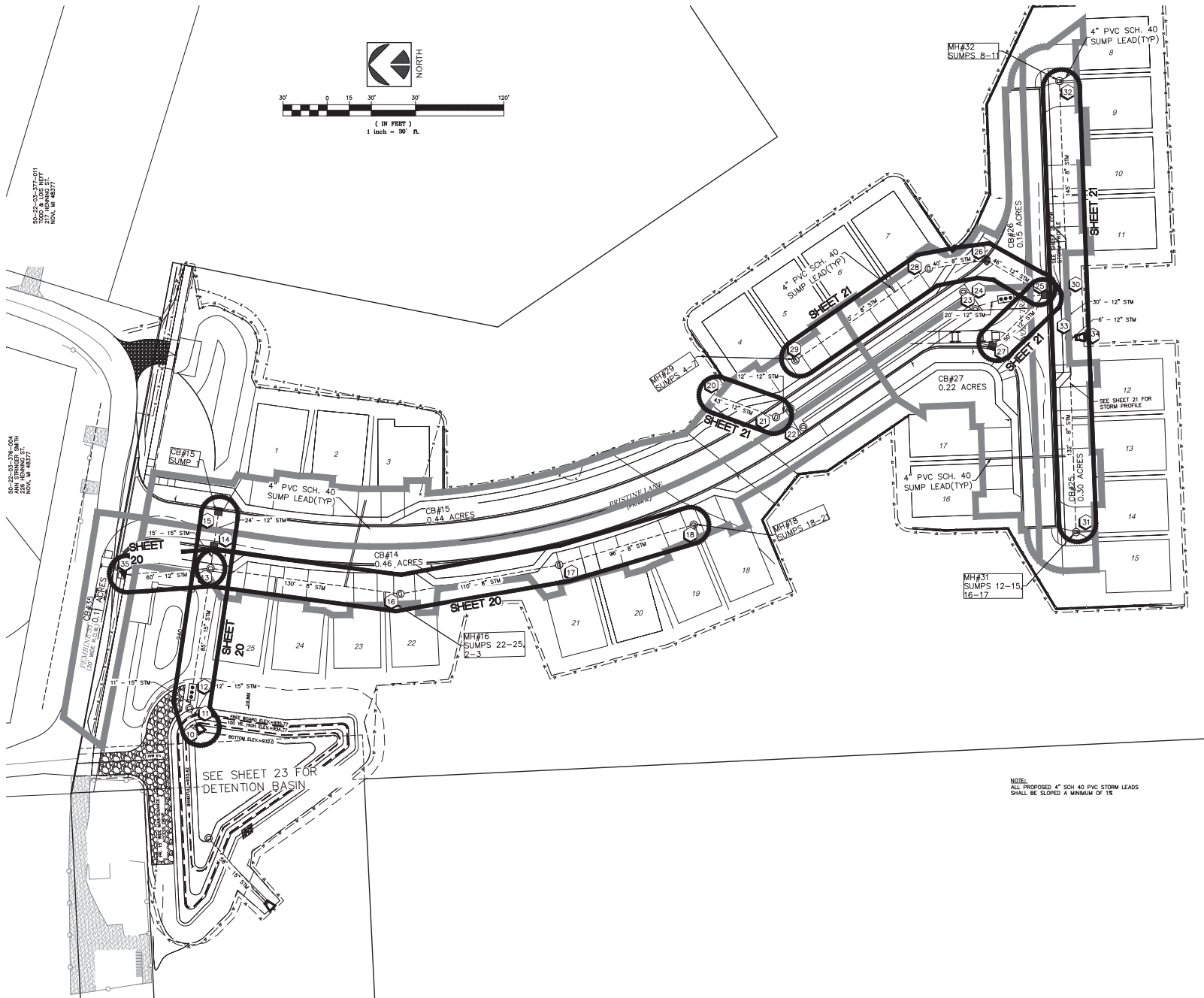
DATE: 11-27-2019  
REVISIONS:

PER CITY 03-24-2020

DR BY: SDT  
DC BY: SDT/AMT  
P.L. 54  
SCALE: 0 25 50  
1" = 50 FEET  
JOB NO. 180305  
SHEET NO. 18  
SHEET 18 OF 38



UMLOR GROUP PROJECT FOLDER\SCENIC PINES DEVELOPMENT\WORKS - SCENIC PINES\SCENIC PINES 03\180305-TOWN SEWER PLAN & PROFILE.DWG



30'x20'x20' TYP  
20'x10'x10' TYP  
20'x10'x10' TYP

SEE SHEET 23 FOR  
DETENTION BASIN

NOTE:  
ALL PROPOSED 4" SCH 40 PVC STORM LEADS  
SHALL BE SLOPED A MINIMUM OF 1%

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN AS AN APPROXIMATION ONLY AND NOT TO BE RELIED UPON FOR CONSTRUCTION. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR VERIFYING THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR VERIFYING THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR VERIFYING THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.



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The UMLOR Group  
LAND DEVELOPMENT SERVICES

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CITY OF NOVI  
OAKLAND COUNTY, MICHIGAN

SCENIC PINES  
SINGH DEVELOPMENT, LLC  
7125 ORCHARD LAKE ROAD  
BLOOMFIELD HILLS, MICHIGAN 48322  
OVERALL STORM SEWER PLAN

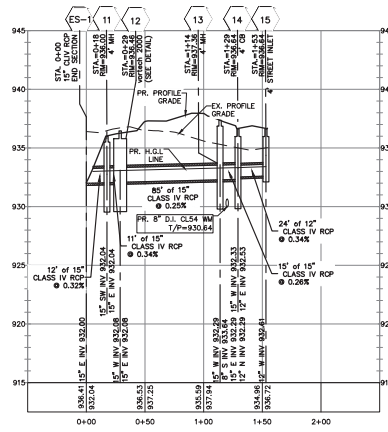
DATE: 11-27-2019

REVISIONS:  
PER CITY 03-24-2020

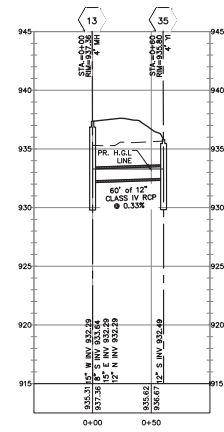
DR BY: SDT  
CK BY: SDT/MTY  
P.W. SA  
SCALE: 0 15 30  
1" = 30 FEET  
JOB NO. 180305  
SHEET NO. 19  
SHEET 19 OF 30



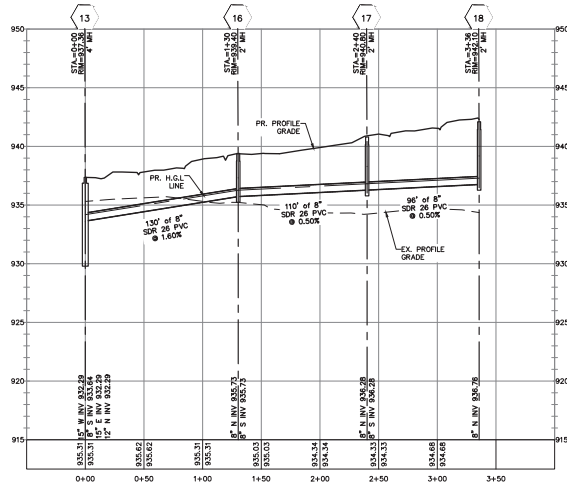
UMLOR GROUP PROJECT: FORDS ROAD DEVELOPMENT/ROADS - SANITARY MAINS DESIGN FILES & PLAN SETS/SCENIC PINES 03/1/2020/STORM SEWER PLAN & PROFILE SHEET



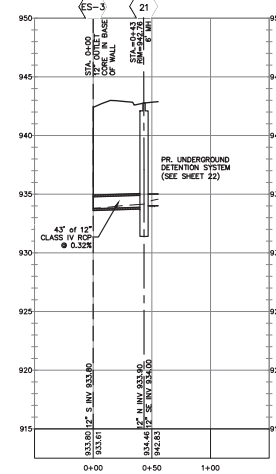
ES10-CB15  
1"=50' HORIZ.  
1"=5" VERT.



MH 13 - IN35  
1"=50' HORIZ.  
1"=5" VERT.



MH 13 - MH 18  
1"=50' HORIZ.  
1"=5" VERT.



ES3 - UGD  
1"=50' HORIZ.  
1"=5" VERT.

NOTE:  
8" SDR 26 PVC PIPE RECEIVES SWMP LEAD WATER ONLY, NO SURFACE WATER TO ENTER THIS PART OF SYSTEM.

**STORM QUANTITIES**

**STORM SEWER**

15" CLV RCP	123 LF
12" CLV RCP	278 LF
8" SDR 26 PVC	763 LF
24" MANHOLE	8 EA
24" CATCH BASIN	1 EA
48" STREET INLET	1 EA
48" CATCH BASIN	2 EA
48" MANHOLE	3 EA
48" YARD INLET	1 EA
6" MANHOLE	1 EA
74" CATCH BASIN	1 EA
WATER QUALITY STR	1 EA
15" CLV RCP END SECTION	1 EA
12" CLV RCP END SECTION	3 EA

**UTILITY CROSSING TABLE:**

#1 - SANITARY/STORM 8" STM B/P: 937.55 8" SAN T/P: 929.29 CLEARANCE = 8.26'	#6 - WTR/STORM 12" STM B/P: 936.45 8" WM T/P: 934.95 CLEARANCE = 1.50'
#2 - SANITARY/STORM 12" STM B/P: 936.85 8" SAN T/P: 929.89 CLEARANCE = 6.96'	#7 - WTR/STORM 18" STM B/P: 936.25 8" WM T/P: 934.75 CLEARANCE = 1.50'
#3 - WTR/SANITARY 8" WM B/P: 935.79 8" SAN T/P: 930.44 CLEARANCE = 5.35'	#8 - WTR/STORM 12" STM B/P: 936.54 8" WM T/P: 934.95 CLEARANCE = 1.59'
#4 - WTR/STORM 12" STM B/P: 936.52 8" WM T/P: 934.95 CLEARANCE = 1.57'	#9 - WTR/STORM 15" STM B/P: 932.11 8" WM T/P: 930.61 CLEARANCE = 1.50'
#5 - WTR/STORM 12" STM B/P: 936.50 8" WM T/P: 934.95 CLEARANCE = 1.55'	#10 - SAN/WTR 4" SAN B/P: 931.00 8" WM T/P: 929.50 CLEARANCE = 1.5'

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN AS FAR AS APPROPRIATE. ONLY THE LOCATION OF THE UNDERGROUND UTILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES TO ANY EXISTING UTILITIES. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES TO ANY EXISTING UTILITIES. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES TO ANY EXISTING UTILITIES.

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The UMLOR Group

LAND DEVELOPMENT SERVICES

SECTION 3

TOWN 1 NORTH, RANGE 8 EAST

CITY OF NOVI

OAKLAND COUNTY, MICHIGAN

SCENIC PINES

CLIENT: SINGH DEVELOPMENT, LLC  
7125 ORCHARD LAKE ROAD  
BLOOMFIELD HILLS, MICHIGAN 48322

STORM SEWER PROFILES

DATE: 11-27-2019

REVISIONS:

PER CITY 03-24-2020

DR BY: SDT  
OC BY: SDT/MT  
P.L. SA  
SCALE: 0 25 50  
1" = 50 FEET  
JOB NO. 180905  
SHEET NO. 20  
SHEET 20 OF 38

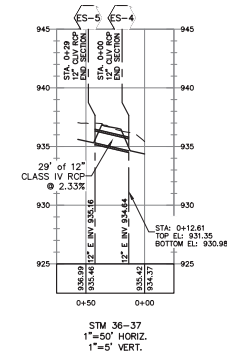
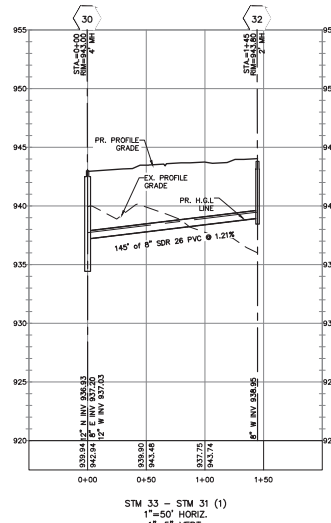
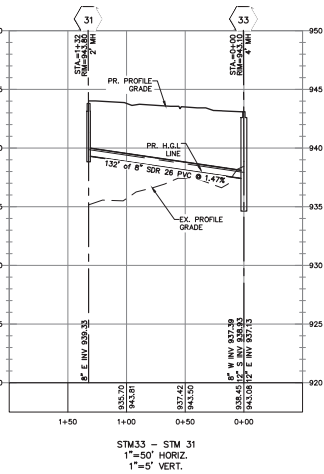
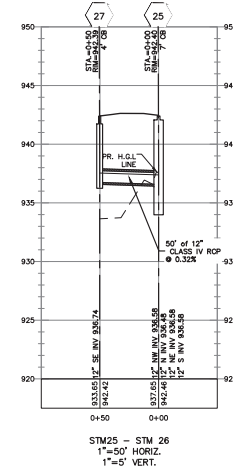
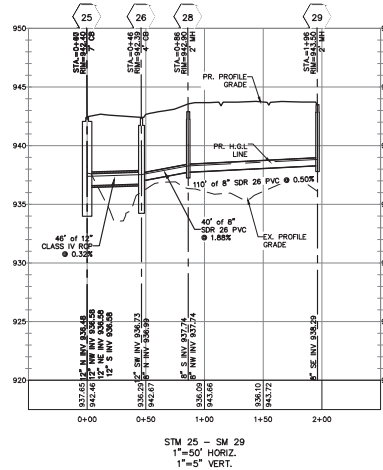
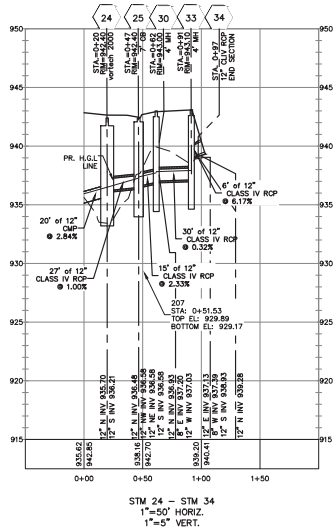


**UTILITY CROSSING TABLE:**

- #1 - SANITARY/STORM  
8" STM 8/P: 937.55  
8" SAN T/P: 929.29  
CLEARANCE = 8.26'
- #2 - SANITARY/STORM  
12" STM 8/P: 936.85  
8" SAN T/P: 929.89  
CLEARANCE = 6.96'
- #3 - WTR/SANITARY  
8" WM 8/P: 935.79  
8" SAN T/P: 930.44  
CLEARANCE = 5.35'
- #4 - WTR/STORM  
12" STM 8/P: 936.52  
8" WM T/P: 934.95  
CLEARANCE = 1.57'
- #5 - WTR/STORM  
12" STM 8/P: 936.50  
8" WM T/P: 934.95  
CLEARANCE = 1.55'
- #6 - WTR/STORM  
12" STM 8/P: 936.45  
8" WM T/P: 934.95  
CLEARANCE = 1.50'
- #7 - WTR/STORM  
18" STM 8/P: 936.25  
8" WM T/P: 934.75  
CLEARANCE = 1.50'
- #8 - WTR/STORM  
12" STM 8/P: 936.54  
8" WM T/P: 934.95  
CLEARANCE = 1.59'
- #9 - WTR/STORM  
12" STM 8/P: 932.11  
8" WM T/P: 930.61  
CLEARANCE = 1.50'
- #10 - SAN/WTR  
4" SAN 8/P: 931.00  
8" WM T/P: 929.50  
CLEARANCE = 1.5'

**STORM QUANTITIES**

<b>STORM SEWER</b>	
157' CLIV RCP	123 LF
12' CLIV RCP	278 LF
8" SDR 26 PVC	763 LF
2" MANHOLE	8 EA
2" CATCH BASIN	1 EA
4" STREET INLET	1 EA
4" CATCH BASIN	2 EA
4" MANHOLE	1 EA
4" YARD INLET	1 EA
6" MANHOLE	1 EA
7" CATCH BASIN	1 EA
WATER QUALITY SIB	2 EA
15' CLIV RCP END SECTION	1 EA
12' CLIV RCP END SECTION	3 EA



NOTE:  
8" SDR 26 PVC PIPE RECEIVES SUMP LEAD  
WATER ONLY; NO SURFACE WATER TO ENTER  
THIS PART OF SYSTEM.

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN AS AN APPROXIMATION ONLY AND SHOULD BE VERIFIED BY THE CONTRACTOR BEFORE ANY CONSTRUCTION BEGINS. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES CAUSED BY THE WORK OF ANY SERVICE CONNECTIONS OF ANY KIND.



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Call before you dig.

CONSTRUCTION OF THIS PROJECT IS THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES CAUSED BY THE WORK OF ANY SERVICE CONNECTIONS OF ANY KIND.

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The UMLOR Group  
LAND DEVELOPMENT SERVICES

SECTION 3  
TOWN 1 NORTH, RANGE 8 EAST  
CITY OF NOVI  
OAKLAND COUNTY, MICHIGAN

SCENIC PINES DEVELOPMENT, LLC  
7125 ORCHARD LAKE ROAD  
BLOOMFIELD HILLS, MICHIGAN 48322  
STORM SEWER PROFILES

DATE: 11-27-2019  
REVISIONS:  
PER CITY 03-24-2020

DR BY: SDT  
OC BY: SDT/AMY  
P.L. SA  
SCALE: 0 25 50  
1" = 50 FEET  
JOB NO. 180305  
SHEET NO. 21  
SHEET 21 OF 38





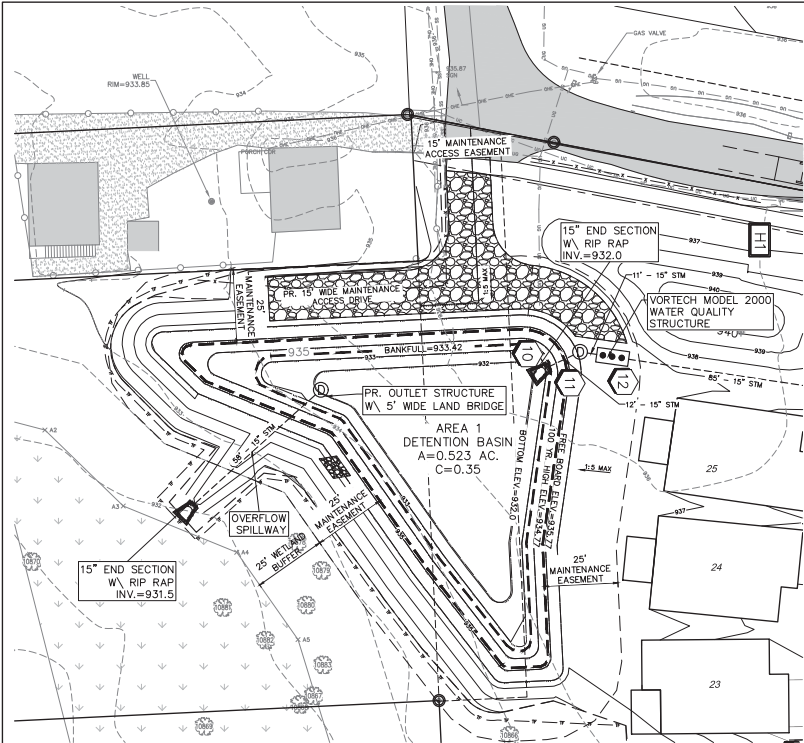
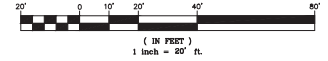


# SCENIC PINES

## SINGLE FAMILY RESIDENTIAL

### STORM WATER MANAGEMENT PLAN

PEMBINE ROAD, CITY OF NOVI, OAKLAND COUNTY



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

Type	Area (SF)	Runoff Coefficient 'C'	C x A
Total Damage Area 'A'	77,101	0.2	
Proposed Impervious Area	30,207	0.95	19,197
Proposed Impervious Area	20,302	0.95	19,287
Proposed Permeous Area	26,592	0.35	9,297
Sum (C x A)			37,691
Weighted Coefficient (C x A) / A		<b>0.67</b>	Use

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

Time of Concentration (T <sub>pc</sub> ) =	20
Existing Coefficient C =	0.2
Proposed Coefficient C =	0.67
Area 1 (A <sub>1</sub> ) =	1.77

Frequency of Storm	Rainfall Intensity I (in/hr)	Allowable Outflow (cfs/acre)	Maximum Outflow (cfs/acre)	Storage Time Equation (T <sub>min</sub> )	Storage Volume Equation V <sub>ft<sup>3</sup></sub> (A <sub>1</sub> C <sub>1</sub> )	Storage Volume (V <sub>ft<sup>3</sup></sub> )
1 Year	1.60	0.35	0.30	69.77	2341	2757
5 Year	3.22	0.35	0.30	109.49	3786	4789
15 Year	3.95	0.35	0.30	123.74	7247	8533
25 Year	4.78	0.35	0.30	138.76	5062	10906
50 Year	5.44	0.35	0.30	149.81	10796	12712
100 Year	6.11	0.35	0.30	160.21	12346	14337

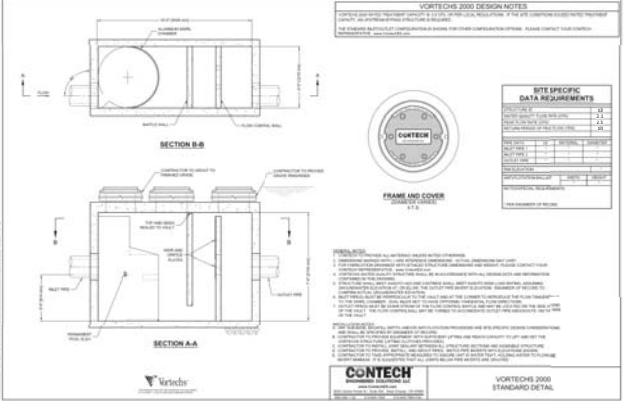
**Mechanical Pre-treatment Calculation:**  
 $Q = C \times I \times A = 0.67 \times 9.7 \times 1.77 = 11.1$   
 Use Vortech Model 2000 rated at 2.8 cfs

**Bankfull**

V <sub>ft<sup>3</sup></sub> = 1500 A <sub>1</sub> C	6075.77035
W <sub>ft</sub> Elev	933.43
Elev. 100YR	934.80

**Storage Analysis**

Elevation	Area (sf)	Ave. Area (sf)	Cumulative Volume (cft)
932	3,121	0	0
933	4,414	3,798	3,798
934	6,011	5,243	9,040
935	7,663	6,837	15,877
936	9,360	8,562	24,439



**STORM WATER DETENTION CALCULATION**

Area 1	1.77	0.264 ACRES	0.264 ACRES
Q <sub>1</sub>	0.67		0.264 ACRES
Q <sub>2</sub>	3.054	0.264 ACRES	0.264 ACRES
Q <sub>3</sub>	3.95	0.264 ACRES	0.264 ACRES
Q <sub>4</sub>	4.78	0.264 ACRES	0.264 ACRES
Q <sub>5</sub>	5.44	0.264 ACRES	0.264 ACRES
Q <sub>6</sub>	6.11	0.264 ACRES	0.264 ACRES

**BANK FULL CALCULATIONS**

Q <sub>1</sub>	0.67	0.264 ACRES	0.264 ACRES
Q <sub>2</sub>	3.054	0.264 ACRES	0.264 ACRES
Q <sub>3</sub>	3.95	0.264 ACRES	0.264 ACRES
Q <sub>4</sub>	4.78	0.264 ACRES	0.264 ACRES
Q <sub>5</sub>	5.44	0.264 ACRES	0.264 ACRES
Q <sub>6</sub>	6.11	0.264 ACRES	0.264 ACRES

**STANDPIPE OUTLET HOLES SIZING - "BANK FULL" DISCHARGE**

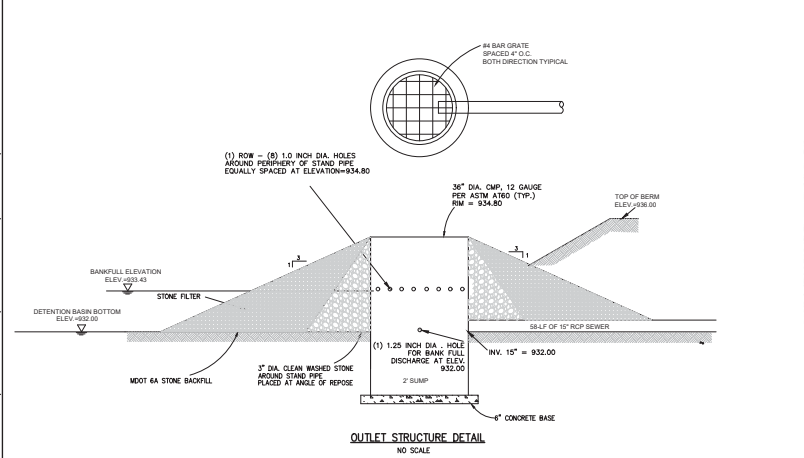
Q <sub>1</sub>	0.67	0.264 ACRES	0.264 ACRES
Q <sub>2</sub>	3.054	0.264 ACRES	0.264 ACRES
Q <sub>3</sub>	3.95	0.264 ACRES	0.264 ACRES
Q <sub>4</sub>	4.78	0.264 ACRES	0.264 ACRES
Q <sub>5</sub>	5.44	0.264 ACRES	0.264 ACRES
Q <sub>6</sub>	6.11	0.264 ACRES	0.264 ACRES

**STANDPIPE OUTLET HOLES SIZING - "100 YR DISCHARGE"**

Q <sub>1</sub>	0.67	0.264 ACRES	0.264 ACRES
Q <sub>2</sub>	3.054	0.264 ACRES	0.264 ACRES
Q <sub>3</sub>	3.95	0.264 ACRES	0.264 ACRES
Q <sub>4</sub>	4.78	0.264 ACRES	0.264 ACRES
Q <sub>5</sub>	5.44	0.264 ACRES	0.264 ACRES
Q <sub>6</sub>	6.11	0.264 ACRES	0.264 ACRES

**OVERFLOW WEIR SIZING**

Q <sub>1</sub>	0.67	0.264 ACRES	0.264 ACRES
Q <sub>2</sub>	3.054	0.264 ACRES	0.264 ACRES
Q <sub>3</sub>	3.95	0.264 ACRES	0.264 ACRES
Q <sub>4</sub>	4.78	0.264 ACRES	0.264 ACRES
Q <sub>5</sub>	5.44	0.264 ACRES	0.264 ACRES
Q <sub>6</sub>	6.11	0.264 ACRES	0.264 ACRES



THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN AS AN APPROXIMATION ONLY AND NOT TO BE RELIED UPON FOR CONSTRUCTION. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES CAUSED BY THE WORK OF ANY EXISTING UNDERGROUND UTILITIES. ALL UNDERGROUND UTILITIES.



Know what's below.  
Call before you dig.  
These documents are prepared by the contractor and are not to be relied upon for construction. The contractor shall verify the location of all existing utilities prior to construction. The contractor shall be fully responsible for any damage to existing utilities caused by the work of any existing underground utilities. All underground utilities.

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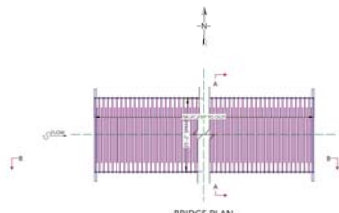
SECTION 3  
TOWN 1 NORTH, RANGE 8 EAST  
CITY OF NOVI  
OAKLAND COUNTY, MICHIGAN

SCENIC PINES  
SINGH DEVELOPMENT, LLC  
7125 ORCHARD LAKE ROAD  
BLOOMFIELD HILLS, MICHIGAN 48322  
DETENTION BASIN - STORMWATER MANAGEMENT PLAN

DATE: 11-27-2019  
REVISIONS:  
PER CITY 03-24-2020  
DR BY: SDT  
OC BY: SDT/MT  
P.W. SA  
SCALE: 0  
AS NOTED  
JOB NO. 180905  
SHEET NO. 23  
SHEET 23 OF 38



- 1.0 GENERAL
- 1.1 CONSTRUCTION CONTRACT
- 1.2 PERMITS
- 1.3 MATERIALS
- 1.4 CONSTRUCTION
- 1.5 GENERAL NOTES
- 1.6 BRIDGE PLAN
- 1.7 ARCH PIPE CROSS SECTION
- 1.8 ALUMINUM FENCE DETAIL
- 1.9 WETLAND "C"
- 1.10 ARCH PIPE CULVERT PLAN



ALBC #82 - 25'-2" X 6'-3"  
SCENIC PINES ESTATES SUBDIVISION  
WETLAND CROSSING ON PEMBINE ROAD  
NOVI, MI

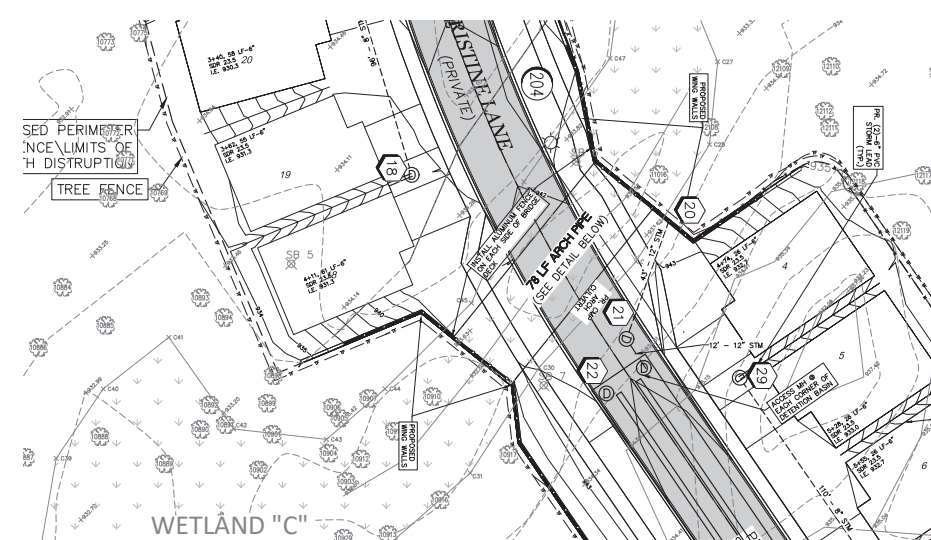
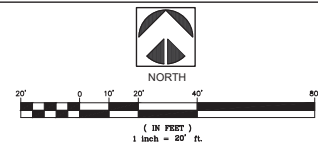
**CONTECH**  
ENGINEERED SOLUTIONS

PROPOSAL

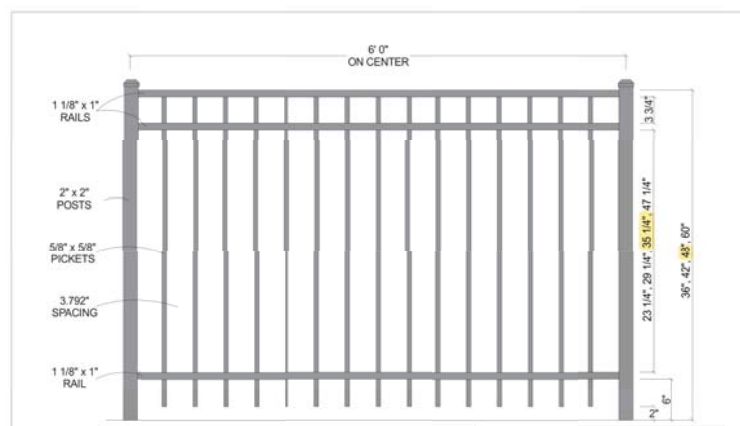
PRELIMINARY

# SCENIC PINES

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



ARCH PIPE CULVERT PLAN  
SCALE: 1"=20'



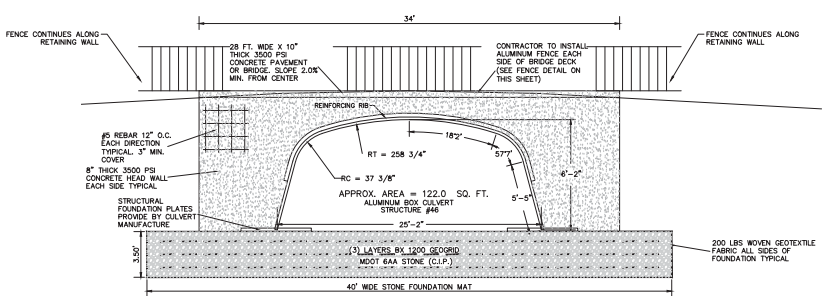
Post Size	
36" Tall	2" x 2" x 5 1/2"
42" Tall	2" x 2" x 6"
48" Tall	2" x 2" x 6 1/2"
60" Tall	2" x 2" x 7 1/2"

**Courtyard® Aluminum Fence**

Scale: 3/32" = 1"  
Date: 8/20/20  
Approved By: F.S.B.  
Drawn By: J.D.S.  
Revised:  
**0230 (3-Rail Flat Top)**  
As Shown: 8/24/2020  
Drawing Number: 0230



ALUMINUM FENCE DETAIL  
NO SCALE



ARCH PIPE CROSS SECTION  
NO SCALE

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN AS AN APPROXIMATE INDICATION AND NOT TO BE RELIED UPON FOR THE LOCATION OF THE UTILITIES OR ITS DEPTH. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY OCCURRENCES THAT MAY BE CAUSED BY ANY CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PROTECT ANY AND ALL UNDERGROUND UTILITIES.



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**The UMLOR Group**  
LAND DEVELOPMENT SERVICES

SECTION 3  
TOWN 1 NORTH, RANGE 8 EAST  
CITY OF NOVI  
OAKLAND COUNTY, MICHIGAN

SCENIC PINES  
SINGH DEVELOPMENT, LLC  
7125 ORCHARD LAKE ROAD  
BLOOMFIELD HILLS, MICHIGAN 48322  
ARCH PIPE BRIDGE PLAN AND  
ARCH PIPE BRIDGE DETAILS

DATE: 11-27-2019  
REVISIONS:  
PER CITY 03-24-2020  
DR BY: SDT  
DC BY: SDT/MT  
P.W. SA  
SCALE: 0  
AS NOTED  
JOB NO: 180905  
SHEET NO: 24  
SHEET 24 OF 30







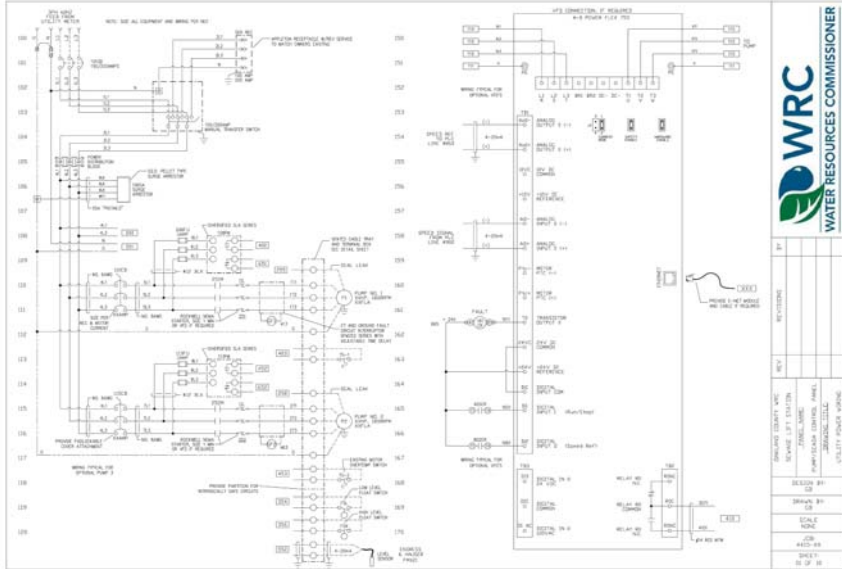




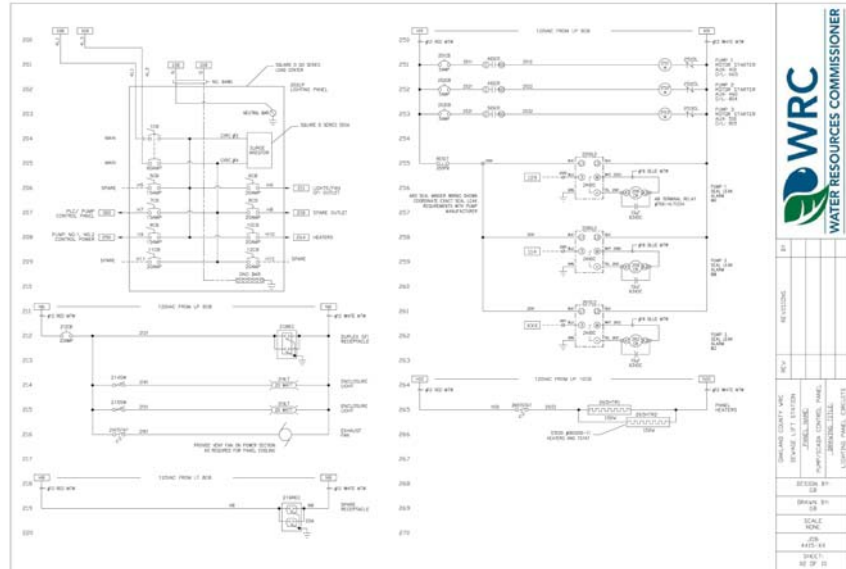




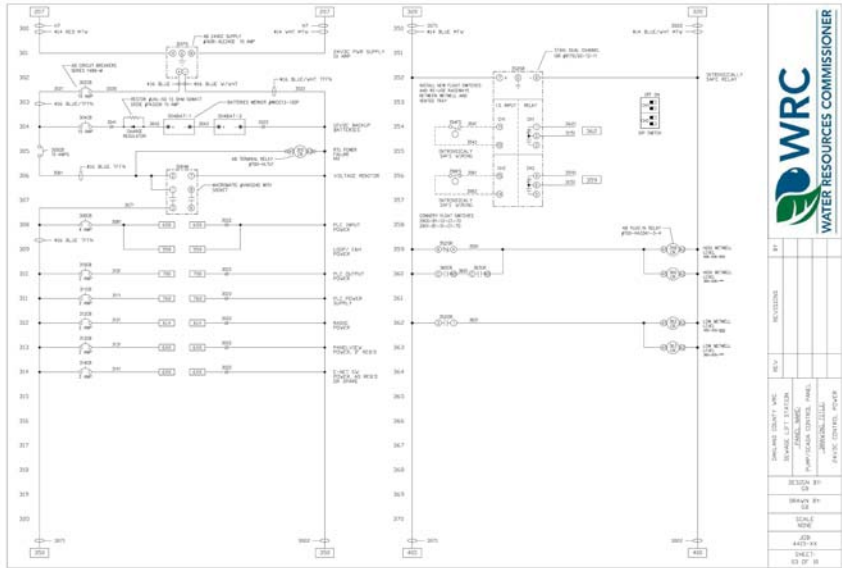
U:\WORK GROUP PROJECT\FOURDEVELOPMENT\WORKS - SCENIC TRANSMISSION FILES & PLAN SETS\SCENIC PINES CDP\WORKS-PUMP DRAWINGS



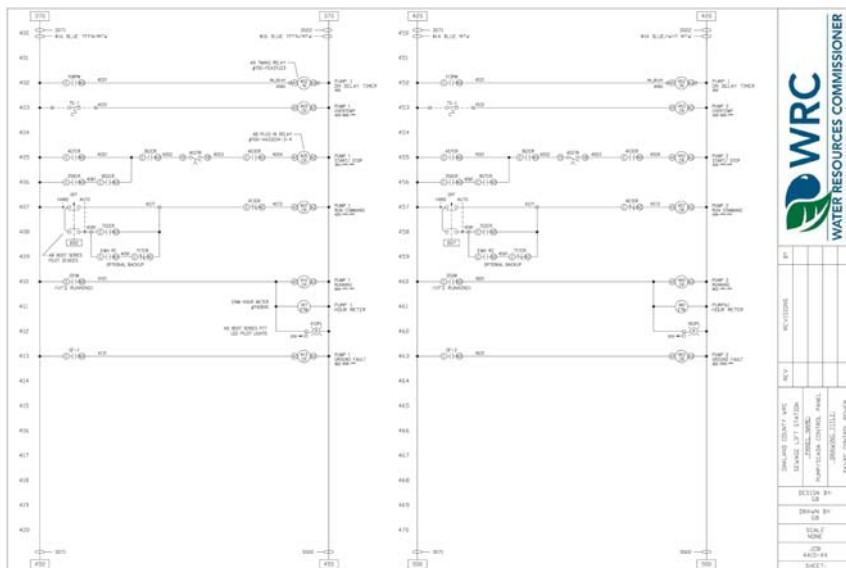
DETAIL OF UTILITY POWER WIRING  
NO SCALE



DETAIL OF LIGHTING PANEL CIRCUITS  
NO SCALE



DETAIL OF 24VDC CONTROL POWER  
NO SCALE



DETAIL OF 24VDC CONTROL POWER  
NO SCALE



THE OBLIGATION OF EXERCISING REASONABLE CARE AND SAFETY IN THE PERFORMANCE OF PROFESSIONAL SERVICES IS AN OBLIGATION THAT CANNOT BE DELEGATED TO ANOTHER PROFESSIONAL PERSON. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF THE PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF THE PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF THE PROJECT.

**811**

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Call before you dig.

CONSTRUCTION OF ANY KIND IS THE RESPONSIBILITY OF THE CONTRACTOR. BEFORE THE WORK BEGINS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF NOVI. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF THE PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF THE PROJECT.

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**The UMLOR Group**  
LAND DEVELOPMENT SERVICES

SECTION 3  
TOWN 1 NORTH, RANGE 6 EAST  
CITY OF NOVI  
OAKLAND COUNTY, MICHIGAN

CLIENT: SCENIC PINES  
SINCH DEVELOPMENT, LLC  
7025 ORCHARD LAKE ROAD  
BLOOMFIELD HILLS, MICHIGAN 48322  
WRC PUMP-SCADA CONTROL  
PANEL DIAGRAM-1

DATE: 11-27-2019  
REVISIONS:  
PER CITY 03-24-2020

DR BY: SDT  
CK BY: SDT/AMY  
SCALE: AS NOTED  
JOB NO. 180905  
SHEET NO. 30  
SHEET 39 OF 38









STORM SEWER CALCULATIONS														
15-Nov-2019														
PROJECT NAME: SCENIC PINES														
1 x 175.11 x 20														
PIPE SIZES														
FROM STA	TO STA	LENGTH	AREA	TOTAL AREA	AVG. VELOCITY	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
8"	12"	15"	18"	24"	30"	36"	42"	48"	54"	60"	72"	84"	96"	108"
32	30	0.00	0.1500	0.1500	1.5000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	31	0.00	0.2200	0.2200	0.7400	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
34	33	0.00	0.1600	0.1600	1.2500	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
33	30	0.00	0.2000	0.2000	1.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	28	0.00	0.2000	0.2000	1.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	26	0.00	0.2200	0.2200	0.7400	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	28	0.00	0.1600	0.1600	1.2500	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	26	0.00	0.2000	0.2000	1.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	25	0.00	0.1500	0.1500	1.2500	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	24	0.00	0.2000	0.2000	0.7400	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	24	0.00	0.2000	0.2000	0.7400	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	100	0.00	0.2000	0.2000	0.7400	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

STORM SEWER DESIGN CALCULATIONS  
NO SCALE

STORM SEWER STRUCTURE TABLE									
Number	Type	Size (Dia)	Bump Depth	848 ELEV	849 IN	849 OUT	Frame & Cover		
34	MH	4	2	935.00	932.49	932.29	EJW 1040 FRAME WITH B COVER		
34	END SECTION	0	0	939.29	-	939.29	-		
32	MH	4	2	943.10	937.30	937.13	EJW 1040 FRAME WITH B COVER		
32	MH	2	0	943.80	-	939.86	EJW 1040 FRAME WITH B COVER		
31	MH	2	0	943.80	-	939.33	EJW 1040 FRAME WITH B COVER		
30	MH	4	2	943.00	937.03	936.93	EJW 1040 FRAME WITH B COVER		
28	MH	2	0	943.00	-	939.29	EJW 1040 FRAME WITH B COVER		
28	MH	2	0	942.80	-	937.74	EJW 1040 FRAME WITH B COVER		
27	INLET	4	0	942.20	-	936.74	EJW N4 7045 FRAME WITH M1 COVER		
25	CB	4	2	941.55	936.00	936.73	EJW N4 7045 FRAME WITH M1 COVER		
25	CB	7	2	942.40	936.56	936.48	EJW N4 7045 FRAME WITH M1 COVER		
24	Vertical 2000	942.40	936.70	935.70	-	-	-		
18	MH	2	0	942.10	-	938.79	EJW 1040 FRAME WITH B COVER		
17	MH	2	0	942.00	938.29	938.28	EJW 1040 FRAME WITH B COVER		
16	MH	2	0	939.40	935.73	935.73	EJW 1040 FRAME WITH B COVER		
15	INLET	4	0	936.69	-	932.61	EJW N4 7045 FRAME WITH M1 COVER		
14	CB	4	2	936.69	932.53	932.33	EJW N4 7045 FRAME WITH M1 COVER		
13	MH	4	2	937.69	932.29	932.29	EJW 1040 FRAME WITH B COVER		
12	MH	V 4000	-	936.46	932.08	932.08	EJW 1040 FRAME WITH B COVER		
11	MH	4	2	936.25	932.04	932.04	EJW 1040 FRAME WITH B COVER		
ES-1	END SECTION	0	0	942.76	-	932.00	-		
21	CB	6	2	942.76	934.00	933.90	EJW 1040 FRAME WITH B COVER		
ES-2	END SECTION	0	0	933.90	-	933.90	-		

STORM SEWER STRUCTURE TABLE  
NO SCALE

UTILITY CROSSING TABLE:

#1 - SANITARY/STORM  
8" STM 8/P: 937.55  
8" SAN T/P: 929.29  
CLEARANCE = 8.26"

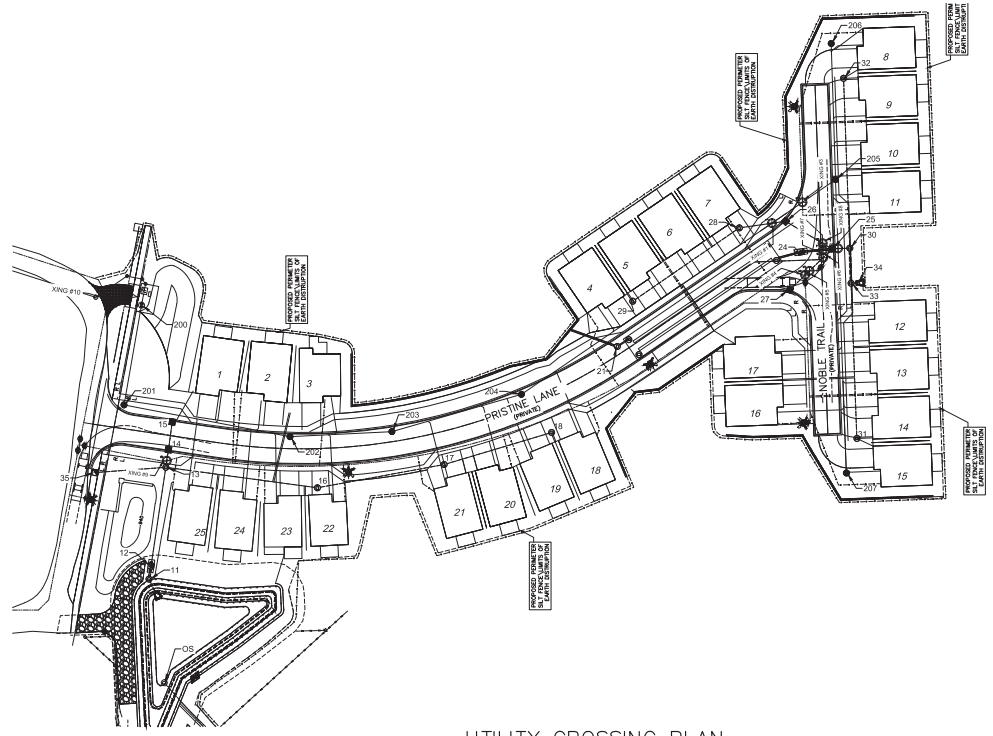
#2 - SANITARY/STORM  
12" STM 8/P: 936.85  
8" SAN T/P: 929.89  
CLEARANCE = 6.96"

#3 - WTR/SANITARY  
8" WM 8/P: 935.79  
8" SAN T/P: 930.44  
CLEARANCE = 5.35"

#4 - WTR/STORM  
12" STM 8/P: 936.52  
8" WM T/P: 934.95  
CLEARANCE = 1.57"

#5 - WTR/STORM  
12" STM 8/P: 936.50  
8" WM T/P: 934.95  
CLEARANCE = 1.55"

- #6 - WTR/STORM  
12" STM 8/P: 936.46  
8" WM T/P: 934.95  
CLEARANCE = 1.50"
- #7 - WTR/STORM  
10" STM 8/P: 936.25  
8" WM T/P: 934.75  
CLEARANCE = 1.50"
- #8 - WTR/STORM  
12" STM 8/P: 936.54  
8" WM T/P: 934.95  
CLEARANCE = 1.59"
- #9 - WTR/STORM  
15" STM 8/P: 932.11  
8" WM T/P: 930.61  
CLEARANCE = 1.50"
- #10 - SAN/WTR  
4" SAN 8/P: 931.00  
8" WM T/P: 929.50  
CLEARANCE = 1.5"



UTILITY CROSSING PLAN  
1 inch = 50ft.



THE LOCATION OF EXISTING UTILITIES AND THE LOCATION OF NEW UTILITIES ARE SHOWN IN AN APPROXIMATE MANNER AND ARE NOT TO BE CONSIDERED AS A GUARANTEE OF THE LOCATION OF THE UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES TO EXISTING UTILITIES CAUSED BY HIS CONTRACTOR'S FAILURE TO PROPERLY LOCATE AND MARK UTILITIES. ALL RIGHTS RESERVED.



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The UMLOR Group  
LAND DEVELOPMENT SERVICES

SECTION 3  
TOWN 1 NORTH, RANGE 6 EAST  
CITY OF NOV  
OAKLAND COUNTY, MICHIGAN

CLIENT: SINGH DEVELOPMENT, LLC  
7025 ORCHARD LAKE ROAD  
BLOOMFIELD HILLS, MICHIGAN 48322  
STORM STRUCTURE AND LEAD  
SCHEDULE

DATE: 11-27-2019

REVISIONS:  
PER CITY 03-24-2020

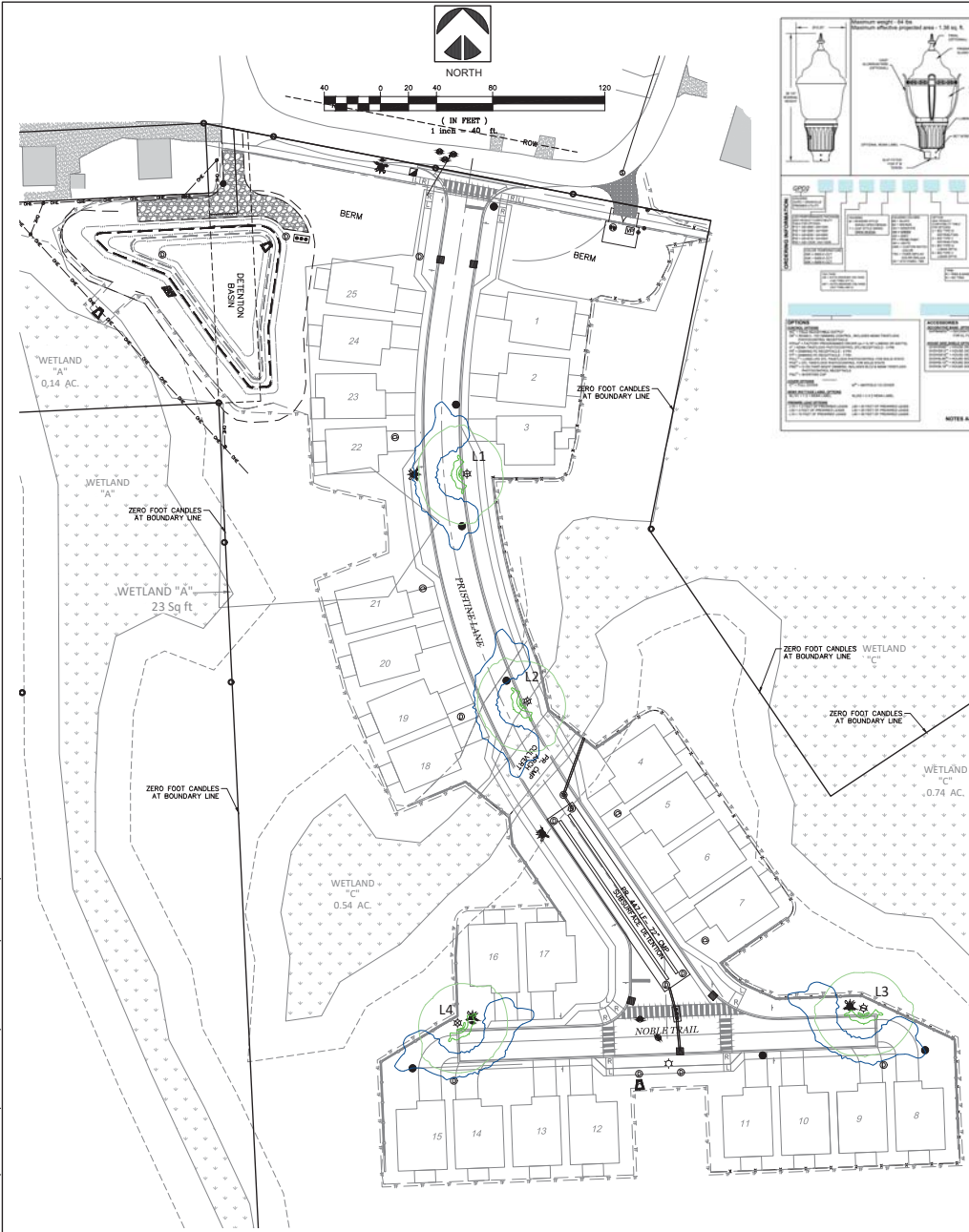
DR BY: SDT  
CK BY: SDT/AM  
SCALE: 0  
AS NOTED

JOB NO. 180905  
SHEET NO. 34  
SHEET 34 OF 38





1:10,000 GROUND PROJECT: FOUNDRY/STAMP DEVELOPMENT/ROADS - SCENIC PINES DEVELOPMENT/ROADS - SCENIC PINES DESIGN FILES & PLAN SETS/SCENIC PINES DEVELOPMENT/ROADS/PHOTOMETRIC PLAN/PA



**GranVille II LED**  
Decorative Outdoor Lighting Pole Group

NOTES ARE LOCATED ON PAGE 3

**Performance Data**

**All Voltage Option Data**

Model	Power (W)	Current (A)	Voltage (V)	Temp. (°C)	Temp. (°F)
GP2	100	0.83	120	25	77
GP2	100	0.83	277	25	77
GP2	100	0.83	347	25	77
GP2	100	0.83	480	25	77
GP2	100	0.83	575	25	77
GP2	100	0.83	600	25	77
GP2	100	0.83	660	25	77
GP2	100	0.83	720	25	77
GP2	100	0.83	792	25	77
GP2	100	0.83	864	25	77
GP2	100	0.83	936	25	77
GP2	100	0.83	1008	25	77
GP2	100	0.83	1080	25	77
GP2	100	0.83	1152	25	77
GP2	100	0.83	1224	25	77
GP2	100	0.83	1296	25	77
GP2	100	0.83	1368	25	77
GP2	100	0.83	1440	25	77
GP2	100	0.83	1512	25	77
GP2	100	0.83	1584	25	77
GP2	100	0.83	1656	25	77
GP2	100	0.83	1728	25	77
GP2	100	0.83	1800	25	77
GP2	100	0.83	1872	25	77
GP2	100	0.83	1944	25	77
GP2	100	0.83	2016	25	77
GP2	100	0.83	2088	25	77
GP2	100	0.83	2160	25	77
GP2	100	0.83	2232	25	77
GP2	100	0.83	2304	25	77
GP2	100	0.83	2376	25	77
GP2	100	0.83	2448	25	77
GP2	100	0.83	2520	25	77
GP2	100	0.83	2592	25	77
GP2	100	0.83	2664	25	77
GP2	100	0.83	2736	25	77
GP2	100	0.83	2808	25	77
GP2	100	0.83	2880	25	77
GP2	100	0.83	2952	25	77
GP2	100	0.83	3024	25	77
GP2	100	0.83	3096	25	77
GP2	100	0.83	3168	25	77
GP2	100	0.83	3240	25	77
GP2	100	0.83	3312	25	77
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GP2	100	0.83	3456	25	77
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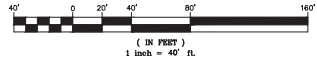
TRACY GALLOWAY  
202 BUFFINGTON ST.  
NOVI, MI 48377

NOVI, MI 48377

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RICHARD GUNTER  
211 HENNING ST.  
NOVI, MI 48377

50-22-03-376-004  
ANN STRICKER SMITH  
228 HENNING ST.  
NOVI, MI 48377

50-22-03-377-011  
TODD & LOIS NEFF  
217 HENNING ST.  
NOVI, MI 48377



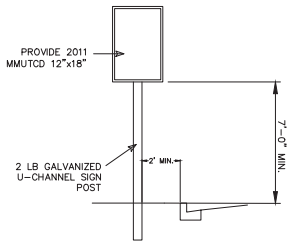
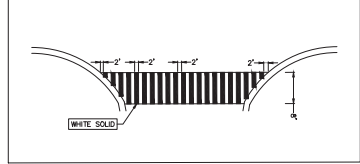
**LEGEND**

SYMBOL	DESCRIPTION
	PR SIGN
	PR CROSS WALK

**SIGN TABLE**

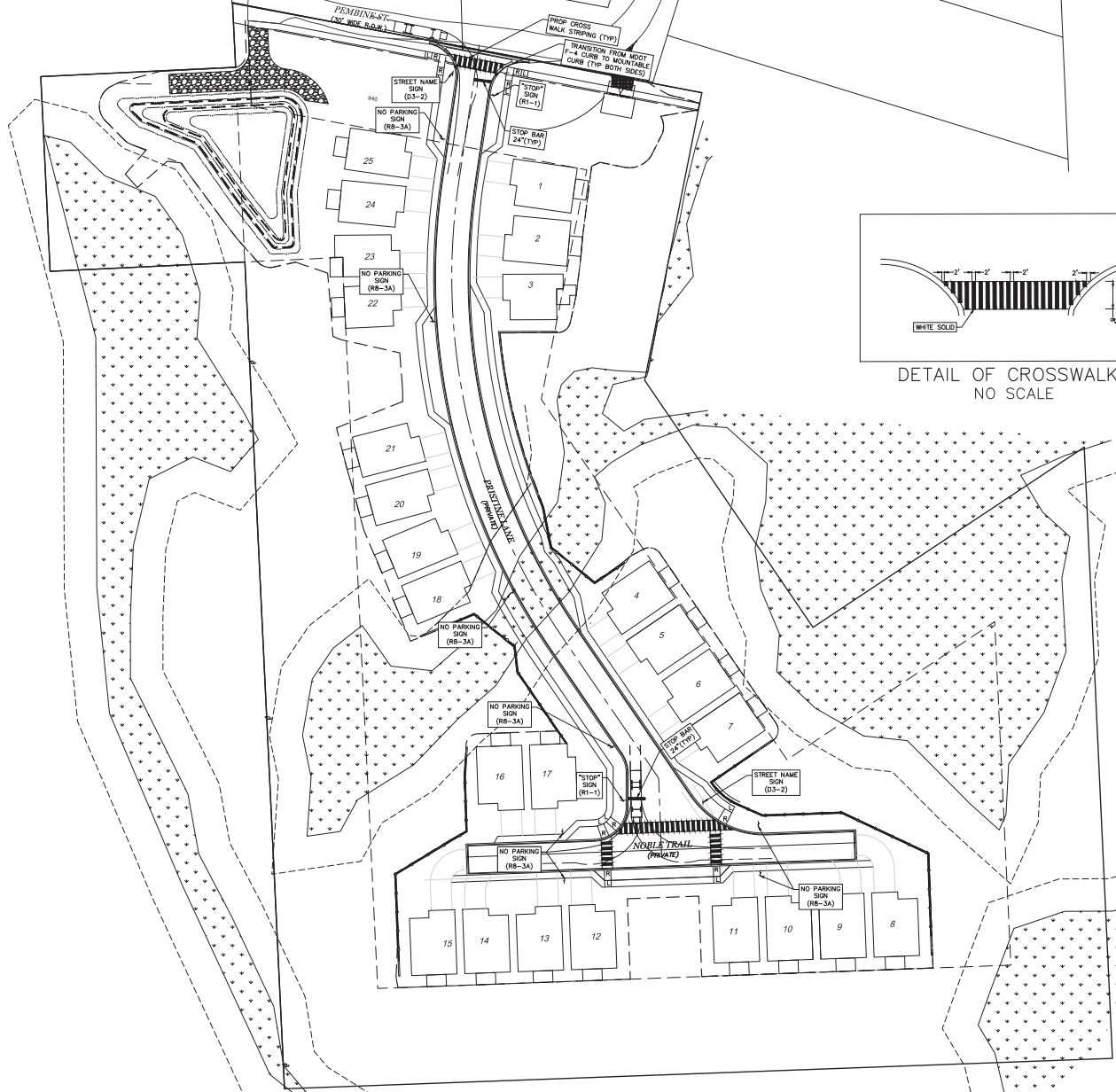
SIGN #	SIGN TYPE	REQUIRED
R1-1	STOP (30")	2
D3-2	STREET NAME SIGN	2
RB-3A	NO PARKING (18")	8

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



**SIGN NOTE:**  
MULTIPLE SIGNS AND/OR SIGNS WITH NOMINAL DIMS GREATER THAN 12"x18" SHALL BE MOUNTED ON GALVANIZED 3 LB. OR GREATER U-CHANNEL POSTS.

**SIGN DETAIL**  
NO SCALE



THE LOCATION OF EXISTING UNDERGROUND UTILITIES AND OTHER SERVICES IS APPROXIMATE. THE LOCATION OF ALL EXISTING UTILITIES SHOWN ON THIS PLAN IS THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES INCURRED BY HIS FAILURE TO EXACTLY LOCATE AND PROTECT ANY AND ALL UNDERGROUND UTILITIES.



Know what's below. Call before you dig.

CONSTRUCTION OF THE SAFETY OF THE CONSTRUCTION OF THE CONTRACTOR. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES INCURRED BY HIS FAILURE TO EXACTLY LOCATE AND PROTECT ANY AND ALL UNDERGROUND UTILITIES. COPYRIGHT © 2010 THE UMLOR GROUP. ALL RIGHTS RESERVED.

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The UMLOR Group  
LAND DEVELOPMENT SERVICES

SECTION 3  
TOWN 1 NORTH, RANGE 8 EAST  
CITY OF NOVI  
OAKLAND COUNTY, MICHIGAN

CLIENT:  
SCENIC PINES  
SINGH DEVELOPMENT, LLC  
7125 ORCHARD LAKE ROAD  
BIOFIELD HILLS, MICHIGAN 48322  
TRAFFIC SIGNAGE PLAN

DATE: 11-27-2019  
REVISIONS:  
PER CITY 03-24-2020

DR BY: SDT  
OC BY: SDT/MTY  
P.M. SA  
SCALE: 0 20 40  
1" = 40 FEET  
JOB NO. 180905  
SHEET NO. 36  
SHEET 36 OF 38



UMLOR GROUP PROJECT FOLDER\NOVI DEVELOPMENT\TRAFFIC SIGNAGE PLAN\TRAFFIC SIGNAGE PLAN.DWG



























Seal: \_\_\_\_\_

Title:  
**Irrigation Plan**

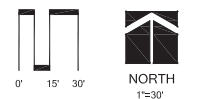
Project:  
**Scenic Pines  
 Novi, MI**

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

Revision: \_\_\_\_\_ Issued: \_\_\_\_\_  
 Review March 23, 2020

Job Number:  
 19-019

Drawn By: \_\_\_\_\_ Checked By: \_\_\_\_\_  
 ajb jca



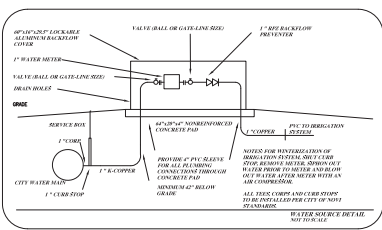
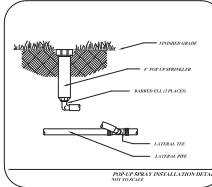
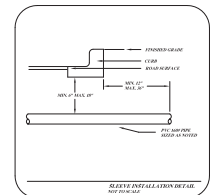
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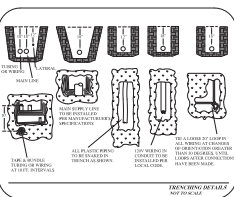
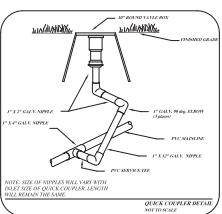
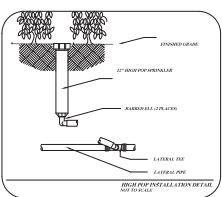
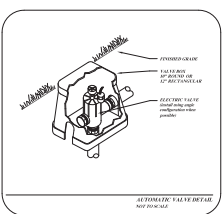
IR-1

**PIPE SIZE CHART**

0-12 GPM	= 1" DIAMETER POLYETHYLENE PIPE
12-24 GPM	= 1 1/2" DIAMETER POLYETHYLENE PIPE
24-30 GPM	= 1 1/2" DIAMETER POLYETHYLENE PIPE
30-60 GPM	= 2" DIAMETER POLYETHYLENE PIPE



**IRRIGATION CONTRACTOR RESPONSIBLE TO COORDINATE INSTALLATION OF WATER MAIN TAP WITH CITY PRIOR TO CONSTRUCTION. ALL PERMITS AND FEES ARE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR. CONTINUE WATER TAP CONSTRUCTION AND CONNECTION TO IRRIGATION SYSTEM PER DETAIL SHOWN.**



**IRRIGATION LEGEND:**

Hunter  
 FIXED SPRAY POP-UP (12")  
 #10 Series #12 Series #15 Series # Strip Series PROS-12  
 # FIXED SPRAY POP-UP (12") w/ 2" radius nozzle PROS-12-CV  
 # MP1000 # MP2000 # MP3000 # MPSS30/MP/CL(RC)15 PROS-04 PRS30-CV

⊕ ELECTRIC MASTER VALVE - LINE SIZE - with Decoder ICV-Series  
 ⊕ ELECTRIC VALVE -with Decoder ICV-Series  
 ⊕ QUICK COUPLER VALVE HQ44 RC  
 ⊕ CONTROLLER mount along backside of entrance wall PRO HC  
 ⊕ REDUCED PRESSURE ASSEMBLY FEBCO 825Y100  
 ⊕ ISOLATION GATE VALVE (LINE SIZE)  
 ⊕ RAIN SENSOR DEVICE (install at all controller locations) SOLAR SYNC (wireless)  
 ⊕ POINT OF CONNECTION TO WATER SOURCE See note this sheet  
 --- PVC MAINLINE, SDR 26, BE, Size as shown  
 --- POLYETHYLENE PIPE, 100#, NSF APPROVED, Size as shown  
 --- PVC SLEEVES - SDR 26 - Size as shown

**VALVE DESIGNATION:**  
 Controller and Station Number  
 Valve Size  
 Gallons Per Minute

**WATER REQUIREMENTS:** 24 GPM @ 65 PSI  
 CONNECTION TO WATER MAIN SHALL BE MADE PER CITY REQUIREMENTS

- NOTES:**
1. Refer to the specifications for installation details and descriptions, as well as, construction methods which will be accepted.
  2. All work shall be in compliance with all local, state, and federal codes and ordinances.
  3. All electrical connections shall be made using 3m DBY-6 splice kits.
  4. All control wiring downstream of the controller shall be Hunter IDWIRE communication cable UL approved for direct bury.
  5. All polyethylene lateral pipe clamps shall be stainless steel worm gear type clamps. Lateral pipes 1-1/2" or larger shall be double clamped.
  6. Pipe routing is schematic. All heads are to be field adjusted to within 2' to take into consideration any obstruction. Final head placements are subject to the landscape architect's approval.
  7. All sprinkler heads shall be mounted on 2 elbow poly swing joints as specified.
  8. Contractor to verify final controller location with owner's authorized representative prior to installation.
  9. All pipe not sized downstream of control valve is 1".
  10. All sleeves shall be PVC SDR 21 (see specifications).
  11. Irrigation contractor's point of connection to water source shall be as noted on this sheet.
  12. Locate and connect to indicated water source. All pipe installed above grade shall be copper type "M".
  13. 120V power to the controller locations should be provided others. Coordinate with owner's representative. Hardwire controller directly to nearest circuit panel. Place all wires in conduit per code.
  14. Design pressure does not take into account seasonal supply fluctuations. Periods of drought may cause temporary pressure losses to the city water supply resulting in inadequate irrigation system performance. Irrigation design is based on normal weather conditions and typical municipal water supply abilities.
  15. Irrigation contractor shall be responsible for determining and maintaining the irrigation schedule during the project construction and throughout the length of the warranty period.
  16. The irrigation schedule shall deliver 1" of precipitation per week +/- natural rainfall quantities for turf grass.
  17. Landscape material shall receive adjusted amounts of precipitation to maintain proper plant health.
  18. Landscape and turf grass shall be irrigated separately.
  19. Rotors and spray zones may not be combined to operate at the same time.

