

cityofnovi.org

ANDELINA RIDGE JSP13-12

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Public hearing at the request of Pinnacle- Novi 12 LLC for Preliminary Site Plan utilizing the Open Space Preservation Option, Phasing Plan, Woodland Permit, Wetland Permit and Stormwater Management Plan approval. The subject property is 64.0 acres in Section 18 of the City of Novi and located south of Twelve Mile Road and east of Napier Road in the R-4, One-Family Residential District. The applicant is proposing a 146 unit development using the Open Space Preservation Option.

Required Action

Approval/denial of the Preliminary Site Plan, Phasing Plan, Woodland Permit, Wetland Permit and Stormwater Management Plan

REVIEW	RESULT	DATE	COMMENTS
Planning	Approval recommended	03-11-13	Items to be addressed on the Final Site Plan submittal
Engineering	Approval recommended	03-11-13	<ul style="list-style-type: none"> • City Council waiver to allow unpaved eyebrows required • Items to be addressed on the Final Site Plan submittal
Traffic	Approval recommended	03-05-13	Items to be addressed on the Final Site Plan submittal
Landscaping	Approval recommended	02-26-13	<ul style="list-style-type: none"> • Waiver required for lack of a berm along the south property line • Waiver required for the lack of a berm along the Twelve Mile Road frontage • Items to be addressed on the Final Site Plan.
Wetland	Approval recommended	03-11-13	Items to be addressed on the Final Site Plan submittal.
Woodland	Approval recommended	03-11-13	<ul style="list-style-type: none"> • Planning Commission waiver to allow greater credit for upsized woodland replacement plantings required • Items to be addressed on the Final Site Plan submittal.
Fire	Approval recommended	02-22-13	Items to be addressed on the Final Site Plan submittal

Motion sheet

Approval – Preliminary Site Plan

In the matter of Andelina Ridge, JSP13-12, motion to **approve** the Preliminary Site Plan with Open Space Preservation Option based on and subject to the following:

- a. City Council waiver of to allow unpaved eyebrows;
- b. Planning Commission waiver for the lack of a berm along the south property line;
- c. Planning Commission waiver for the lack of a berm along the Twelve Mile Road frontage;
- d. Planning Commission waiver to allow greater credit for upsized woodland replacement plantings;
- e. The conditions and items listed in the staff and consultant review letters being addressed on the Final Site Plan; and
- f. *(additional conditions here if any)*

(This motion is made because the plan is otherwise in compliance with Article 4, Article 24 and Article 25 of the Zoning Ordinance and all other applicable provisions of the Ordinance.)

Approval – Phasing Plan

In the matter of Andelina Ridge, JSP13-12, motion to **approve** the Phasing Plan based on and subject to the following:

- a. The conditions and items listed in the staff and consultant review letters being addressed on the Final Site Plan; and
- b. *(additional conditions here if any)*

(This motion is made because the plan is otherwise in compliance with Article 4, Article 24 and Article 25 of the Zoning Ordinance and all other applicable provisions of the Ordinance.)

Approval – Wetland Permit

In the matter of Andelina Ridge, JSP13-12, motion to **approve** the Wetland Permit based on and subject to the following:

- a. The conditions and items listed in the staff and consultant review letters being addressed on the Final Site Plan; and
- b. *(additional conditions here if any)*

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

Approval – Woodland Permit

In the matter of Andelina Ridge, JSP13-12, motion to **approve** the Woodland Permit based on and subject to the following:

- a. Planning Commission waiver to allow greater credit for upsized woodland replacement plantings;

- b. The conditions and items listed in the staff and consultant review letters being addressed on the Final Site Plan; and
- c. *(additional conditions here if any)*

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

Approval – Stormwater Management Plan

In the matter of Andelina Ridge, JSP13-12, motion to **approve** the Stormwater Management Plan, based on and subject to:

- a. The conditions and items listed in the staff and consultant review letters being addressed on the Final Site Plan; and
- b. *(additional conditions here if any)*

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

Denial – Preliminary Site Plan

In the matter of Andelina Ridge, JSP13-12, motion to **deny** the Preliminary Site Plan...(because the plan is not in compliance with Article 4, Article 24 and Article 25 of the Zoning Ordinance and all other applicable provisions of the Ordinance.)

Denial – Phasing Plan

In the matter of Andelina Ridge, JSP13-12, motion to **deny** the Phasing Plan...(because the plan is not in compliance Article 4, Article 24 and Article 25 of the Zoning Ordinance and all other applicable provisions of the Ordinance.)

Denial- Wetland Permit

In the matter of Andelina Ridge, JSP13-12, motion to **deny** the Wetland Permit...(because the plan is not in compliance with Chapter 12, Article V of the Code of Ordinances and all other applicable provisions of the Ordinance.)

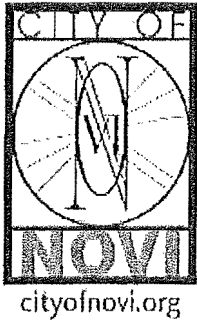
Denial- Woodland Permit

In the matter of Andelina Ridge, JSP13-12, motion to **deny** the Woodland Permit...(because the plan is not in compliance with Chapter 37 of the Code of Ordinances and all other applicable provisions of the Ordinance.)

Denial – Stormwater Management Plan

In the matter of Andelina Ridge, JSP13-12, motion to **deny** the Stormwater Management Plan...(because the plan is not in compliance with Chapter 11 of the Code of Ordinances and all other applicable provisions of the Ordinance.)

PLANNING REVIEW



PLAN REVIEW CENTER REPORT

March 11, 2013

Planning Review

Andelina Ridge

JSP13-12

Petitioner

Pinnacle – Novi 12, LLC

Review Type

Preliminary Site Plan and Phasing Plan

Property Characteristics

- Site Location: South of Twelve Mile Rd., East of Napier Rd. (Section 18)
- Site Zoning: R-4, One-Family Residential
- Adjoining Zoning: North (City of Wixom): RM-1, Multiple-Family Residential; East: R-1 and RA, Residential Acreage; West: R-4; South: MH, Mobile Home
- Current Site Use: Vacant Land
- Adjoining Uses: North (City of Wixom): Multiple-family housing; East: vacant, Catholic Central High School; West: Knightsbridge Gate residential development; South: Mobile Home Park
- School District: South Lyon Community School District
- Site Size: 64.0 acres

Project Summary

The parcel in question is located on the south side of Twelve Mile Road just east of the existing Knightsbridge Gate residential development in Section 18 of the City of Novi. The property totals 64 acres. The current zoning of the property is R-4, One-Family Residential. The applicant has proposed a 146 unit single-family residential development utilizing the Open Space Preservation Option.

The Open Space Preservation Option is intended "...to encourage the long-term preservation of open space and natural features and the provision of recreation and open space areas." The site has a substantial amount of regulated woodlands and wetlands and meets the general eligibility requirements outlined in the ordinance detailing the Open Space Preservation Option.

Recommendation

Approval of the **Preliminary Site Plan is recommended**. The plan generally meets the requirements of the Zoning Ordinance and the Open Space Preservation Option. There are only minor planning related items to be addressed on the Final Site Plan submittal. Planning Commission approval of the Preliminary Site Plan is required.

Ordinance Requirements

This project was reviewed for conformance with the Zoning Ordinance with respect to Article 4 (R-1 through R-4: One-Family Residential Districts), Article 24 (Schedule of Regulations), Article 25 (General Provisions) and any other applicable provisions of the Zoning Ordinance. Items in **bold** below must be addressed by the applicant and incorporated as part of the final site plan submittal.

1. Open Space Preservation Option: The applicant is utilizing the Open Space Preservation Option which allows an applicant to develop the allowed number of units on a property on a

portion of the site in exchange for the preservation of natural features and open space. The applicant has provided the required parallel plan showing the number of units that could be developed on the site. In order to qualify for the option, the applicant must save a minimum of 10% of the site as permanent open space. The applicant has proposed 20.65% open space in this case. The minimum lot size and width may be reduced depending on the amount of open space proposed. In this case, the applicant could have reduced lot areas to 8,000 sq. ft. and lot widths to 71.86 ft. The applicant has proposed a minimum lot size of 9,000 sq. ft. and a minimum lot width of 75 ft. The Planning Commission will hold the required public hearing prior to their consideration of the matter.

2. Phasing Plan: The applicant has proposed a three-phase plan. The first phase is located at the north end of the site and composed of 35 units. Phase 2 is located in the middle of the site and composed of 43 units. Phase 3 is located on the south end of the site and composed of 68 units. **The applicant should revise the plan to show the Phase 1 line extending to the stormwater detention basin near "Granada Park."**
3. Utility Connections: Phases 2 and 3 of the development propose connections to the water main and sanitary sewer that currently exist on the Island Lake of Novi development site. The applicant has proposed a directional bore under the existing wetlands in order to connect. **Revisions to existing Non-Development Agreement(s) and/or Conservation Easement(s) are required and will need to be approved by the City Council prior to Stamping Set approval.**
4. Non-Motorized Features: The applicant has proposed a 5 ft. sidewalk along both sides of the proposed street network throughout the development in accordance with City requirements. A 5 ft. sidewalk has been provided along Twelve Mile Road. **The City's Bicycle and Pedestrian Master Plan recommends a 6 ft. sidewalk on 12 Mile Road. The applicant should revise the plans accordingly.** A potential 8 ft. pathway connection to the neighboring property has also been proposed near the southeast corner of the site.
5. Decorative Screen Wall: The decorative screen wall proposed near the front entrance of the development is permitted. See the landscape review letter for additional information.
6. Wetland and Woodland Impacts: There are a total of 1.38 acres of regulated wetlands on the subject property and the applicant is proposing 0.14 acres of impact. The plan proposes the removal of 197 regulated trees requiring 355 replacement tree credits. The applicant has proposed 350 replacement trees and is seeking a waiver from the Planning Commission to allow greater credit for upsized woodland replacement plantings. See the woodland review letter for additional information.
7. Access Connections: Section 4.04 of the Subdivision Ordinance requires access to adjoining properties every 1,300 ft, unless the extension is impractical or will result in the creation of undesirable traffic patterns. An extension to the property to the west is not practical as this property has already developed as a residential subdivision and no connection to the subject property was provided. A connection to the east or south is also not practical given the amount of regulated natural features along the eastern and southern property lines.
8. Lighting: The City Council recently passed a text amendment requiring an entrance light at all residential developments. **The applicant should send via email a plan showing the location of a proposed entrance light. Once the proposed location has been approved by the Planning Division, the applicant should contact Adam Wayne (248.735.5648) in the Engineering Division to begin the process of working with the City and DTE on the installation of the entrance light.** Attached are the options available through DTE for residential development entrance lighting.

Response Letter

A letter from either the applicant or the applicant's representative addressing comments in this, and in the other review letters, is requested to be submitted prior to the Planning Commission meeting and with the next set of plans addressing each of the comments listed above and in other review letters.

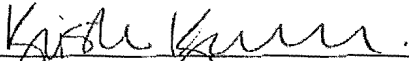
Chapter 26.5

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

Pre-Construction Meeting

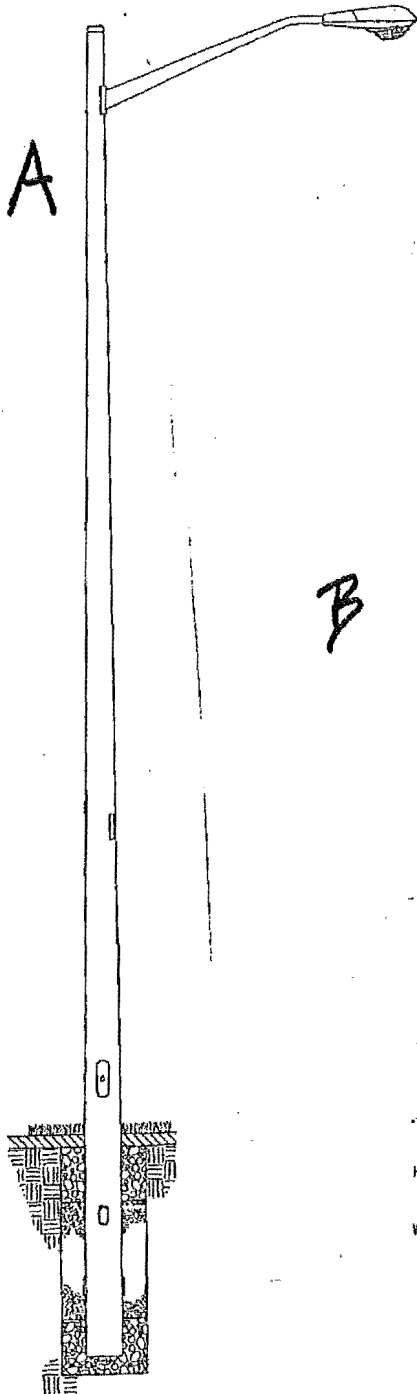
Prior to the start of any work on the site, Pre-Construction (Pre-Con) meetings must be held with the applicant's contractor and the City's consulting engineer. Pre-Con meetings are generally held after Stamping Sets have been issued and prior to the start of any work on the site. There are a variety 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.

If the applicant has any questions concerning the above review or the process in general, do not hesitate to contact me at 248.347.0586 or kkapelanski@cityofnovi.org.



Kristen Kapelanski, AICP – Planner
kkapelanski@cityofnovi.org or 248-347-0586

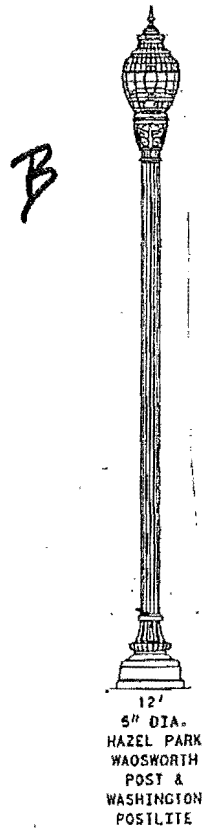
RESIDENTIAL DEVELOPMENT ENTRANCE LIGHTING OPTIONS



A

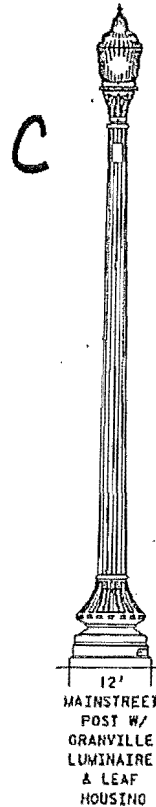
SILVER
 CODE 80 - 30'
 CODE 81 - 30' DUAL
 CODE 82 - 40'
 CODE 83 - 40' DUAL

BLACK
 CODE 70 - 30'
 CODE 71 - 30' DUAL
 CODE 72 - 40'
 CODE 73 - 40' DUAL



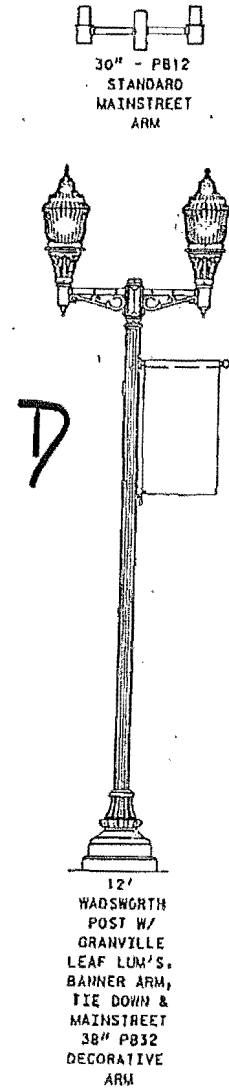
B

12'
 5" DIA.
 HAZEL PARK
 WAOSWORTH
 POST &
 WASHINGTON
 POSTLITE



C

12'
 MAINSTREET
 POST W/
 GRANVILLE
 LUMINAIRE
 & LEAF
 HOUSING



30" - PB12
 STANDARD
 MAINSTREET
 ARM

D

12'
 WADSWORTH
 POST W/
 GRANVILLE
 LEAF LUM'S,
 BANNER ARM,
 TIE DOWN &
 MAINSTREET
 38" PB32
 DECORATIVE
 ARM

Planning Review Summary Chart

Andelina Ridge JSP13-12

Preliminary Site Plan

Plan Date: 02-12-13

Item	Required	Proposed	Meets Requirements?	Comments
Master Plan	Single Family Residential @ 1.65 dwelling units per acre	Single Family	Yes	
Zoning	R-4	No change	Yes	
Use (Sec. 401)	Use permitted per Article 4 of the Zoning Ordinance	Single-Family Site Condominium with Open Space Preservation Option	Yes	Public hearing required.
Lot Depth Abutting a Secondary Thoroughfare (Sec. 4.02.A.5 of the Sub. Ord.)	Lots abutting a major or secondary thoroughfare must have a depth of at least 140'	Min. 140'	Yes	
Open Space Preservation Option Requirements				
Qualification Requirements (Sec. 2403)	Zoning RA through R-4	R-4	Yes	
	The total number of units permitted may be placed on 80% of the site area 80% of site = 50.48 acres Permitted density = 3.3 units/acre Bona-Fide plan provided	146 units proposed	Yes	
	Min. 10% of the site area must be preserved as open space	20.65% open space	Yes	
	Min. lot area 8,000 sq. ft. Min. lot width 71.86 ft. Min. side yard setback 10 ft. with aggregate of 20 ft.	Min. 9,000 sq. ft. Min. lot width 75 ft. Min. side yard 10' with aggregate of 20'	Yes	

Item	Required	Proposed	Meets Requirements?	Comments
	Open space must be accessible to all lots in the development	Open space accessible via the internal sidewalk system	Yes	
	Conservation easement required for all open space areas except developed recreation areas Developed recreation areas shall be preserved via a restrictive covenant or other legal means			Applicant must provide a conservation easement for undeveloped open space areas. Applicant must preserve any developed recreation areas.
Sidewalks (Sec. 2405.9) Bicycle & Pedestrian Master Plan and Non-Motorized Plan	Five (5) foot wide concrete sidewalks are required on both sides of all internal streets A 6' pathway is required along 12 Mile Rd.	Five foot sidewalks proposed along internal streets 5' sidewalk proposed	No	Consideration should be given to providing providing a pedestrian connection along the south property line and along the southwestern property line. The applicant should revise the pathway along 12 Mile Rd. to 6' Instead of 5'.
Master Deed/ Covenants and Restrictions	Applicant is required to submit this information for review with the Final Site Plan submittal			Master Deed will be reviewed at the time of Final Site Plan submittal
Lighting				

Item	Required	Proposed	Meets Requirements?	Comments
Exterior Lighting (Section 2511)	Photometric plan required at the time of Final Site Plan submittal A residential development entrance light must be provided at the entrance to the development off of Twelve Mile Road.	No lighting provided.	No	See the planning and engineering review letter for additional information on required development entrance lighting.

ENGINEERING REVIEW



PLAN REVIEW CENTER REPORT

March 11, 2013

Engineering Review

Andelina Ridge

JSP13-0012

Petitioner

Pinnacle, property owner

Review Type

Preliminary Site Plan

Property Characteristics

- Site Location: S. of Twelve Mile Rd and E. of Napler
- Site Size: 64 acres
- Plan Date: February 12, 2013

Project Summary

- Construction of a 146 lot, three phase subdivision under the 'Preservation' Option. Site access would be provided by constructing new public roadways off of Twelve Mile Rd.
- Water service would be provided by an 8-inch extension from the existing 12-inch water main along the south side of Twelve Mile Rd. The current submittal proposes a 12-inch water main along the property frontage on Twelve Mile Rd. terminating at the east property line. Phase II of the development prompts a second point of connection for the 8-inch water main to the existing 12-inch stub off of Island Lake Drive.
- Sanitary sewer service for Phase I would be provided by an 8-inch extension from the existing 8-inch sanitary sewer stub on Twelve Mile Rd. Sanitary sewer service for Phase II and III would be provided by an 8-inch sanitary sewer which gravity flows to a pump station adjacent to the detention basin in the southwest corner of the site. This pump station feeds a force main which discharges into the sanitary sewer on Island Lake Drive. The pump station and force main construction are part of Phase II of the development.
- Storm water for all three phases would be collected by a storm sewer collection system and detained in a single basin for a 100-year flood before discharging to the east into an established wetland. The proposed detention basin would be completed as part of Phase I of the development.

Recommendation

Approval of the Preliminary Site Plan and Preliminary Storm Water Management Plan is recommended.

Comments:

The Preliminary Site Plan meets the general requirements of Chapter 11, the Storm Water Management Ordinance and the Engineering Design Manual with the following items to be addressed at the time of Final Site Plan submittal (further engineering detail will be required at the time of the final site plan submittal):

Additional Comments (to be addressed prior to the Final Site Plan submittal):

General

1. Provide a note on the plans that all work shall conform to the current City of Novi standards and specifications.
2. The City standard detail sheets are not required for the Final Site Plan submittal. They will be required with the Stamping Set submittal.
3. Revise the subdivision phase lines to follow the limits of construction for each phase.
4. Revise the layout for all utilities to eliminate the conflict between utility structures and pedestrian safety paths whenever possible.

Water Main

5. Provide a profile for the proposed water main with the pipe invert and stationing of all valves, fittings, flanges, hydrants, blow-offs, high and low points, and any other appurtenances.
6. Three (3) sealed sets of revised utility plans along with the MDEQ permit application (1/07 rev.) for water main construction and the Streamlined Water Main Permit Checklist should be submitted to the Engineering Department 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

7. Provide a profile with material type and size for the proposed sanitary sewer showing a minimum cover of four (4) feet for gravity mains and a minimum depth of five (5) feet for force mains. Provide a drop of one-tenth (0.1) foot in the downstream sewer invert for direction changes in the gravity sewer that are in excess of thirty (30) degrees.
8. Sewage pumping stations shall have at least two (2) pumps or ejectors, each sized to handle maximum design flow, for three (3) or more pumps or ejectors, sizing of units shall be such that design flows can be handled with the largest unit out of service. Design features shall conform to the Ten States Standards of GLUMRB. When all pumps are operating, the pumping station shall not discharge flows which exceed the capacity of any downstream sewers.

9. Force mains shall be provided with automatic air release valves in wells at all main high points.
10. Provide the location for all potential sanitary sewer building leads. Building leads that cross through adjacent parcels to reach the public sanitary sewer are not permitted.
11. Five (5) sealed sets of revised utility plans along with the MDEQ permit application (11/07 rev.) for sanitary sewer construction and the Streamlined Sanitary Sewer Permit Certification Checklist should be submitted to the Engineering Department 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. Also, the MDEQ can be contacted for an expedited review by their office.

Storm Sewer

12. Provide a profile of the proposed storm sewer showing a minimum cover of 3 feet and all catch basin sumps. Indicate all structure types and diameters.
13. Revise the catch basin layout so that drainage does not cross more than one yard to reach a catch basin. Based upon the drainage arrows provided, this occurs at several points throughout the proposed development including but not limited to Parcels 71 & 72, 76 & 77, 78 & 79, 102 & 103, 109 & 110, 126 & 127, 143 & 144 and 145 & 146.

Storm Water Management Plan

14. The Storm Water Management Plan for this development shall be designed in accordance with the Storm Water Ordinance and Chapter 5 of the new Engineering Design Manual.
15. The SWMP must detail the storm water system design, calculations, details, and maintenance as stated in the ordinance. The SWMP must address the discharge of storm water off-site, and evidence of its adequacy must be provided. This should be done by comparing **pre- and post-development discharge areas, discharge points, rates and volumes**. The area being used for this off-site discharge should be delineated and the ultimate location of discharge shown.
16. Revise the storm water detention calculations to note that bank full volumes shall be retained in the detention facility for a minimum of 24 hours and no more than 40 hours.

Paving & Grading

17. Providing a note stating that sidewalks in common areas must be built with the site plan construction.
18. Provide grade percentages for all rear yard swales. These grades must be at a minimum of 2%.
19. Provide a public easement for any sidewalks/pathways located outside of the proposed ROW.

20. Provide a detail for each proposed ramp with elevations provided to demonstrate a level landing adjacent to each side of the pathway crossing and general ADA compliance.
21. No more than 1/4" vertical obstacle shall be allowed at each transition between the pathway and the roadway.
22. Revise the pathway alignment on Twelve Mile Rd to match the alignment shown on the landscape plan.
23. Consider extending the paving improvements on Twelve Mile Rd to the eastern development boundary.
24. Provide spot elevations at the subdivision boundary for the proposed 8-ft concrete pathway on Twelve Mile Rd.
25. Add a note to the plan stating that the emergency access gate is to be installed and closed prior to the issuance of the first TCO in the subdivision.

Off-Site Easements

26. Provide executed easements for the proposed off-site sanitary sewer and water main improvements prior to stamping set approval for Phase II.
27. Provide an executed temporary construction easement for the proposed off-site sanitary sewer and water main improvements prior to stamping set approval for Phase II.

The following must be submitted at the time of Final Site Plan submittal:

28. 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.
29. An itemized construction cost estimate must be submitted to the Community Development Department at the time of Final Site Plan submittal 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 cost estimate must be itemized for each utility (water, sanitary, storm sewer), on-site paving, right-of-way paving (including proposed right-of-way), grading, and the storm water basin (basin construction, control structure, pretreatment structure and restoration).

The following must be submitted at the time of Stamping Set submittal:

30. A draft copy of the maintenance agreement for the storm water facilities, as outlined in the Storm Water Management Ordinance, must be submitted to the Community Development Department with the Final Site Plan. Once the form of the agreement is approved, this agreement must be approved by City Council and shall be recorded in the office of the Oakland County Register of Deeds.

31. A draft copy of the 20-foot wide easement for the water main to be constructed on the site must be submitted to the Community Development Department.
32. A draft copy of the 20-foot wide easement for the sanitary sewer to be constructed on the site must be submitted to the Community Development Department.
33. A 20-foot wide easement where storm sewer or surface drainage crosses lot boundaries must be shown on the Exhibit B drawings of the Master Deed.
34. Executed copies of any required off-site utility easements must be submitted to the Community Development Department.

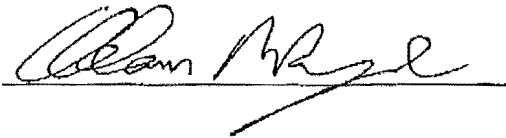
The following must be addressed prior to construction:

35. 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).
36. 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. Once determined, a grading permit fee must be paid to the City Treasurer's Office.
37. An NPDES permit must be obtained from the MDEQ because the site is over 5 acres in size. The MDEQ requires an approved plan to be submitted with the Notice of Coverage.
38. A Soil Erosion Control Permit must be obtained from the City of Novi. Contact Sarah Marchioni in the Community Development Department (248-347-0430) for forms and information.
39. A permit for work within the right-of-way of Twelve Mile Rd must be obtained from the City of Novi. The application is available from the City Engineering Department and should be filed at the time of Final Site Plan submittal. Please contact the Engineering Department at 248-347-0454 for further information.
40. A permit for water main construction must be obtained from the MDEQ. This permit application must be submitted through the City Engineer after the water main plans have been approved.
41. A permit for sanitary sewer construction must be obtained from the MDEQ. This permit application must be submitted through the City Engineer after the sanitary sewer plans have been approved.
42. Construction Inspection Fees to be determined once the construction cost estimate is submitted must be paid prior to the pre-construction meeting.
43. A storm water performance guarantee, equal to 1.5 times the amount required to complete storm water management and facilities as specified in

The Storm Water Management Ordinance, must be posted at the Treasurer's Office.

44. An Incomplete site work performance guarantee, equal to 1.5 times the amount required to complete the site improvements (excluding the storm water detention facilities) as specified in the Performance Guarantee Ordinance, must be posted at the Treasurer's Office.
45. A street sign financial guarantee in an amount to be determined (\$400 per traffic control sign proposed) must be posted at the Treasurer's Office.
46. Permits for the construction of each retaining wall must be obtained from the Community Development Department (248-347-0415).

Please contact Adam Wayne at (248) 735-5648 with any questions.



cc: Ben Croy, Engineering
Brian Coburn, Engineering
Kristen Kapelanski, Community Development Department
Tina Glenn, Water & Sewer Dept.

TRAFFIC REVIEW

March 5, 2013

Barbara McBeth, AICP
Deputy Director of Community Development
City of Novi
45175 W. Ten Mile Rd.
Novi, MI 48375

SUBJECT: Andelina Ridge, JSP13-0012; Preliminary Site Plan, Phasing Plan, & Traffic Impact Study, PSP13-0051; Traffic Review

Dear Ms. McBeth:

At your request, we have reviewed the above and offer the following recommendation and supporting comments.

Recommendation

We recommend approval of the preliminary site plan, phasing plan, and traffic study, subject to the items shown below in **bold** being satisfactorily addressed on or before the final site plan.

Site Description

What is the applicant proposing, and what are the surrounding land uses and road network?

1. The applicant is proposing a 3-phase residential site condominium designed for 146 single-family homes. Primary vehicular access would be provided by a boulevard-style entrance on 12 Mile Road. Secondary access would eventually be available via a connection – some 400 ft south of 12 Mile – to an anticipated future residential development to the east. Pending completion of that connection, a gated secondary access for emergency vehicles would be provided via a gravel driveway along the eastern boundary of the property.
2. Immediately west of the site is the partially completed, 348-unit residential site condominium known as Knightsbridge Gate (Figure 1). To the south is the Novi Meadows manufactured housing community. To the east is Catholic Central High School's football stadium and two baseball diamonds (off the bottom of Figure 1), a well as the smaller future residential parcel cited in comment 1. There are multiple-family units to the north, in the City of Wixom, but most are set well back from 12 Mile.
3. Twelve Mile Road is a Non-Residential Collector under the jurisdiction of the City of Novi. Although this road is paved to a point just west of the subject site's western boundary, the balance east to the right-angle bend (Figure 1) is gravel and only about 20 ft wide. The posted speed limit is 35 mph. Traffic counts made in September 2010 showed 12 Mile between Napier and Grandnapier to be serving only about 420 vehicles per day, but those counts did not reflect traffic from either Knightsbridge Gate or the since-completed St. Catherine of Siena Academy (on the east side of Grandnapier).

Traffic Study & Trip Generation

Was a traffic study submitted and was it acceptable? How much new traffic would be generated?

4. According to the current (9th) edition of ITE's *Trip Generation Manual*, 146 single-family homes can be expected to generate 1,488 one-way vehicular trips per day, 112 in the AM peak hour (28 entering and 84 exiting) and 148 in the PM peak hour (93 entering and 55 exiting). Since more than 750 trips would be generated per day, City policy calls for the completion of a full-scale Traffic Impact Statement.
5. The required traffic study was completed for the applicant by Wilcox Professional Services, LLC, and is titled *Capital Park Residential Development Traffic Impact Study, January 2012* (although material within the report shows that it was, in fact, completed in January 2013). We find the study generally acceptable and offer the following comments:
 - a. *Study Area* – The offsite intersections included in the study were 12 Mile/Napier (nearest intersection), Napier/Grand River (needed to develop a trip distribution model), and Grand River/12 Mile (useful in evaluating traffic impacts, but optional).
 - b. *Existing Traffic* – Peak-period turning-movement counts were made at the above locations in early November of last year. The applicant's previous automated hourly counts (done for the rezoning study) are no longer representative (per comment 3) and were appropriately not included in the current report.
 - c. *Trip Generation Forecasts* – Traffic at build-out of Andelina Ridge was assumed to include additional traffic generated by the build-out of adjoining Knightsbridge Gate (but no other general growth in background traffic by 2015). Wilcox estimated 100 more homes to occupy in the latter development – which is acceptably close to the 113 we counted as part of this review – and accurately forecasted that those homes would generate 80 more trips in the AM peak hour (20 in and 60 out) and 105 more trips in the PM peak hour (66 in and 39 out). Wilcox also accurately forecasted the additional traffic to be generated by Andelina Ridge, as reported above in comment 4.
 - d. *Trip Distribution* – Wilcox evaluated existing traffic patterns and the proposed site access location and concluded that traffic generated by Andelina Ridge would be distributed in the same fashion in both the AM and PM peak hours: 60% to/from the east via Grand River, 35% to/from the west via Grand River, and 5% to/from the south via Napier. Wilcox further assumed that half of the traffic to/from the east would access Grand River via narrow and unpaved 12 Mile Road east of the site, and half would access Grand River via the less direct but paved 12 Mile west of the site. (We also note that a WB left-turn arrow is included in the signal at Napier but not the one at 12 Mile.) The above trip distribution percentages appear reasonable.
 - e. *Access Improvements* – Combining the above trip generation forecast and assumed trip distribution, it is expected that the daily traffic approaching the site access point would be 1,500-1,700 vehicles, and during the busier PM peak hour, there would be about 29

entering left turns and 64 entering right turns. We agree with the study's conclusion that none of the forecasted volumes meet City warrants for auxiliary lanes. A left-turn lane is not required on 12 Mile due to its daily two-way volume being less than 3,000 vehicles (DCS Fig IX.8), and a right-turn lane is not required given the forecasted combination of daily two-way and peak-hour right-turn volumes (DCS Fig IX.10).

- f. *Intersection Levels of Service (LOS)* – Table 1 is our summary of the study's findings for the site access point and three off-site intersections. While overall intersection LOS is and will remain an acceptable D or better, some approaches will experience LOS E.

Table 1. Peak-Hour Levels of Service by Scenario

Intersection	Approach	Current		Future Background		Future Total	
		AM	PM	AM	PM	AM	PM
Site Access ¹	NB	N/A		N/A		A	A
	WB (left)	N/A		N/A		A	A
Napier & East Leg of 12 Mile ¹	WB	B	B	B	B	B	B
	SB (left)	A	A	A	A	A	A
Napier & West Leg of Napier ¹	EB	B	B	B	C	B	C
	NB (left)	A	A	A	A	A	A
Grand River & Napier Rd / Clover Ct	Overall	C	C	C	D	Not Evaluated without Assumed Signal Re-Timing	
	EB	B	C	C	C		
	WB	B	C	B	E (63.6)		
	NB	D	D	D	D		
	SB	A	D	A	D		
	With Recommended Signal Timing Changes²						
<i>(Note: Average delay in sec/veh is shown for LOS <=E.)</i>	Overall	None warranted		C	D	D	D
	EB	None warranted		C	D	C	D ³
	WB	None warranted		B	C	C	C
	NB	None warranted		D	D	D ⁴	D
	SB	None warranted		A	E (60.8)	A	E (60.8)
Grand River & 12 Mile Rd / Meijer Dr	Overall	B	B	B	B	C	B
	EB	B	B	B	B	C	A
	WB	A	A	A	A	A	A
	NB	D	D	D	D	E (65.8)	D
	SB	D	D	D	D	E (57.5)	D

¹ At two-way stop-controlled intersections, the LOS on the non-stopped approaches are only for left turns.
² Willcox has recommended a longer cycle to reduce delays on the WB approach (the WB left-turn delay alone, in the absence of re-timing, has been predicted to average over 146 sec per vehicle, yielding LOS F).
³ But average delay is 54.9 sec, only 0.2 sec below threshold for LOS E.
⁴ But average delay is 54.8 sec, only 0.3 sec below threshold for LOS E.

Lengthening the signal cycle length at Grand River/Napier would avoid LOS E on a major approach (WB), but some minor approaches will remain E until Grand River is widened to five lanes. Per guidance on page 49 of the *City of Novi Site Plan and Development Manual*, RCOC should be advised of the recommended signal timing change, likely to be needed within 2-3 years.

Vehicular Access Locations

Do the proposed "driveway" locations meet City spacing standards?

6. Yes. The only existing driveways nearby are the two on the north side of 12 Mile, one each near the site's east and west boundaries. Relative to the west side of the proposed boulevard island (the effective centerline for entering left turns), the spacing to the west would be 286 ft and the spacing to the east would be 407 ft. Both are well in excess of the City's respective minimum spacings (150 ft and 200 ft).

Vehicular Access Improvements

Will there be any improvements to the abutting road(s) at the proposed access point(s)?

7. The preliminary site plan proposes a 43-ft half right-of-way (ROW) and an extension – some 700 ft long – of the existing 36-ft-wide pavement immediately east of Albert Street. We note that Table VIII-A in the City's Design and Construction Standards (DCS) Ordinance indicates that the ultimate total right-of-way for a Non-Residential Collector (such as this section of 12 Mile) is 70 ft, not 86 ft. **Making the worst-case assumption that the 33-ft existing half ROW north of the section line (in the already-developed City of Wixom) is likely to remain as is, the appropriate (or at least minimum) new half ROW south of the section line would be (70-33=) 37 ft.**
8. Table VIII-A further indicates that the standard pavement section for a Non-Residential Collector is 36 ft wide, as currently proposed. Such a width would facilitate either (a) two-way traffic in the presence of on-street parking, or (b) the eventual striping of three traffic lanes (e.g., to include a two-way left-turn lane).
9. City-standard acceleration/deceleration lanes have been proposed, which would place the new back of curb near the curb returns about 31 ft south of the section line or within 6 ft of the half ROW identified in comment 7. **If the proposed half ROW is reduced from the 43 ft now proposed, it appears that additional ROW triangles may be required near the entrance to keep the sidewalk with the right-of-way.**
10. A 100-ft-long deceleration taper and 25-ft-long deceleration lane are proposed, consistent with City standards. However, **given the relatively low speed limit and traffic volumes, and negligible likelihood that this section of 12 Mile Road will ever be further widened, we recommend that the City waive the requirement for acceleration/deceleration lanes and have the applicant's engineer design smooth (tangential) transitions between the entering and exiting curb returns and the deceleration and acceleration tapers.**

11. As indicated in our review of the traffic study, neither a left-turn nor a right-turn lane is warranted on 12 Mile at the access drive. Hence, no lane striping will be required in the area of the pavement extension.

Access Drive Design and Control

Are the proposed design, pavement markings, and signage satisfactory?

12. The boulevard island nearest 12 Mile is proposed to be 66 ft long, greater than the 35-ft City standard but within the 30-100-ft permissible range. DCS Figure IX.3 also identifies a standard nose offset for that island of 12 ft. **The north nose offset now proposed is not dimensioned, but it appears to be only 6 ft and therefore needs to be increased by 6 ft.**
13. **The two Keep Right signs at the entrance – one on the north end of the north island and one on the south end of the south island – should be the diagrammatic type, MMUTCD code R4-7. (The Keep Right signs on the two cul-de-sac islands should remain the non-diagrammatic type, R4-7a.)**
14. **The proposed temporary gravel access drive along the site's eastern boundary would be 18 ft wide and equipped, per DCS Figure VIII-K, with the corner returns at the so-called "major road" having only a 10-ft radius. Given these small-radius corners and the fact that 12 Mile Road at this location is only about 20 ft wide, the City's largest fire truck would not be able to enter and exit without leaving the improved roadbed. The proposed uncurbed gravel radii at 12 Mile and the emergency access drive should be increased to 25 ft.**
15. Relative to the three proposed development phases:
 - a. **The phase line on Marbella Circle East should continue across the street at a right angle from the line between units 35 and 49 (necessary to ensure a squared end on the road stub).**
 - b. **A temporary End of Road Marker (OM4-3) should be placed on the street centerline at the end of each of the two Phase 1 road stubs, Marbella Circle East and Cabrera Lane (north), pending commencement of street construction in Phase 2.**
 - c. **A temporary End of Road Marker (OM4-3) should be placed on the street centerline at the end of each of the two Phase 2 road stubs, Seville Circle North and Cabrera Lane (south), pending commencement of street construction in Phase 3.**

Pedestrian Access

Are pedestrians safely and reasonably accommodated?

16. **The proposed provision of a 5-ft-wide concrete sidewalk along the site's 12 Mile Road frontage is consistent with the City's Bicycle & Pedestrian Master Plan. This sidewalk needs to transition via a smooth curve to the approved sidewalk to the west, which will be located 1 ft north of the neighboring 33-ft half right of way (Figure 3).**

17. In response to our pre-application comments, most internal sidewalk stubs are now proposed on what we consider to be the most appropriate corners. **One pair of stubs not relocated as we suggested are those at Seville Circle South and Tavira Lane, which should be shifted from the west to the east (lower-volume) side of the intersection. Also, the unmatched stub on the northeast corner of Marbella Circle East and Murcia Road should be eliminated.**
18. Along with any other concerns expressed by the City's ADA compliance officer, **all sidewalk stubs should be equipped with ramps and detectable warning surfaces. A note to this effect should appear on the site plan, and they (the features) should also be shown on the plan in some fashion at each location required.**

Circulation and Parking

Can vehicles safely and conveniently maneuver through the site?

19. Many but not all street centerline radii are dimensioned on the plan. **Additional street centerline radii needing to appear are those for the:**
 - a. Southwest bend in Marbella Circle West
 - b. Cabrera Lane adjacent to Marbella Circle West
 - c. Granada Court (leading to the center of the island)
 - d. Seville Circle South (leading to the center of the island, not the center of the north side of the turnaround)
 - e. Seville Circle South passing through its intersection with Cabrera Lane
 - f. Seville Circle South between Cabrera Lane and Tavira Lane
 - g. Seville Circle South immediately east of Tavira Lane
 - h. The bend between Seville Circle South and Seville Circle East
 - i. Two curves in Seville Circle East
 - j. The bend between Seville Circle East and Seville Circle North
20. **The plan should dimension and/or otherwise note that all internal street corner radii will be 25 ft (to back of curb).**
21. **Street name signs need to be shown where they will be installed. A distinction should be made between the two street name signs atop the STOP sign at 12 Mile Road and those atop the YIELD signs at internal intersections, as they will be different in size (see City standards, attached).**
22. As noted above, the Keep Right signs on the two cul-de-sac turnaround islands are to be the non-diagrammatic type (R4-7a), and are to be located on the approaching street centerline (the latter to be added to the plan, per comments 19c and 19d). **The No Parking signs on the islands are to be the symbolic type (R8-3), however, 12" x 12" in size and located at the 3 o'clock and 9 o'clock positions relative to the Keep Right sign at 6 o'clock. The eight No Parking Any Time signs now shown on the two islands – and eight of the 23 signs of that type now shown in the Sign Legend – are incorrect.**


23. **The proposal to not provide the paved eyebrows that would normally be required at three 60-ft-radius bends in Phase 3 streets will require a Council waiver of DCS Section 11-194(a)(8).**
24. **As previously advised, the proposed absence of paved eyebrows will require the posting and effective enforcement of no parking along both sides of the street through the bends, to ensure adequate mobility of both fire trucks and moving vans (not to mention large trucks delivering building materials). This requirement was recognized in a note on plan sheet 3 entitled Eyebrow Usage, and a number of No Parking signs have been proposed to implement the requirement. However, the sign locations shown do not accurately account for truck maneuvering needs, lot lines (preferred locations for signs), and fire hydrants. We evaluated each of the three curves in detail and prefer to see No Parking Any Time (R7-1) signs installed with the appropriate arrows (single- or double-ended) as follows:**
 - a. On Tavira Lane, three signs along the outside of the curve: (i) on the line between units 88 and 89, with an arrow to the right; (ii) on the line between units 86 and 87, with a double-headed arrow; and (iii) at a point 25 ft west of the line between units 84 and 85, with an arrow to the left.
 - b. On Tavira Lane, two signs along the inside of the curve: (i) directly across the street from the line between units 88 and 89, with an arrow to the left; and (ii) directly across the street from the sign to be located 25 ft west of the line between units 84 and 85, with an arrow to the right.
 - c. Three signs along the outside of the curve between Seville Circle South and Seville Circle East: (i) on the line between units 113 and 114, with an arrow to the left; (ii) as close as possible to where the sanitary sewer will cross under the street, with a double-headed arrow; and (iii) on the line between units 129 and 130, with an arrow to right.
 - d. Two signs along the inside of the curve between Seville Circle South and Seville Circle East: (i) directly across the street from the line between units 129 and 130, with an arrow to the left; and (ii) directly across the street from the line between units 113 and 114, with an arrow to the right.
 - e. Three signs along the outside of the curve between Seville Circle East and Seville Circle North: (i) on the line between units 139 and 140, with an arrow to the left; (ii) on the line between units 141 and 142, with a double-headed arrow; and (iii) on the line between units 143 and 144, with an arrow to the right.
 - f. Three signs along the inside of the curve between Seville Circle East and Seville Circle North: (i) directly across the street from the line between units 143 and 144, with an arrow to the left; (ii) at a point 15 ft south of the line between units 81 and 82 (by law, the same distance from the fire hydrant on that line, with an arrow to the right; and (iii) at the midpoint between the preceding two signs, with a double-headed arrow.

25. The Sign Legend on sheet 3 should be renamed Sign Quantities. This table should separately list the two types of Keep Right signs; two general types of No Parking signs; number of No Parking Any Time (R7-1) signs having each of the three arrow types (arrow to left, double-headed arrow, and arrow to right); and two sizes of street name signs. All quantities need to be updated to reflect other comments in this letter.

Sincerely,
CLEARZONING, INC.



Rodney L. Arroyo, AICP
President



William A. Stimpson, P.E.
Director of Traffic Engineering

Attachments:

Figure 1 (site aerial)

Figure 2 (aerial of Napier / 12 Mile)

Figure 3 (site plan for Knightsbridge Gate pool house, showing future sidewalk location along 12 Mile).



Figure 1. Site of Proposed Andelina Ridge



Figure 2. Napier and 12 Mile

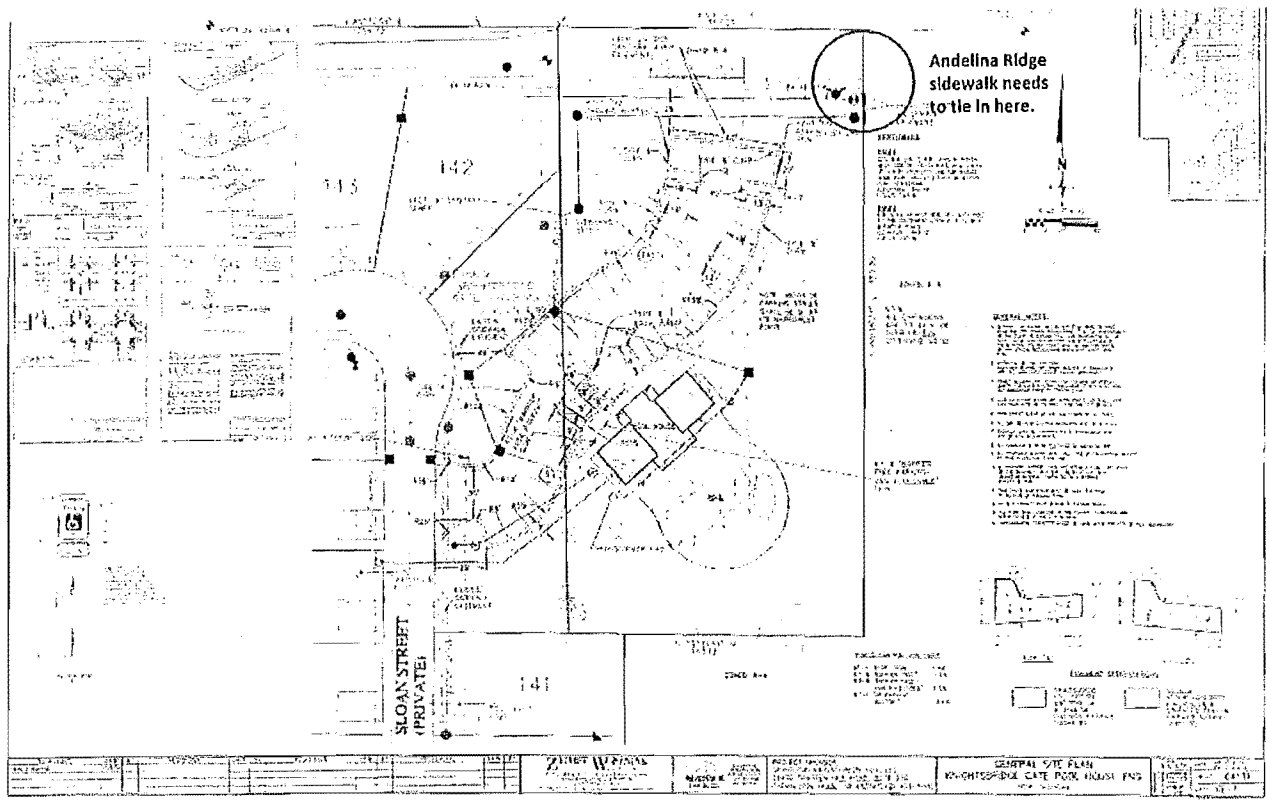
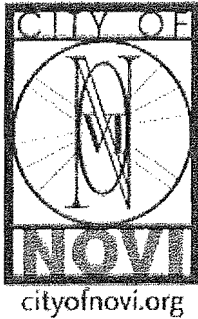


Figure 3. Knightsbridge Gate Pool House Site Plan

LANDSCAPE REVIEW



PLAN REVIEW CENTER REPORT

February 26, 2013

Preliminary Landscape Review

Andelina Ridge JSP#13-12

Petitioner

Pinnacle – Novi 12, LLC

Review Type

Preliminary Site Plan and Phasing Plan

Property Characteristics

Site Location: South of Twelve Mile Rd., East of Napier Rd. (Section 18)
Site Zoning: R-4, One-Family Residential
Adjoining Zoning: North (City of Wixom): RM-1, Multiple-Family Residential; East: R-1 and RA, Residential Acreage; West: R-4; South: MH, Mobile Home
Current Site Use: Vacant Land
Adjoining Uses: North (City of Wixom): Multiple-family housing; East: vacant, Catholic Central High School; West: Knightsbridge Gate residential development; South: Mobile Home Park
School District: South Lyon Community School District
Site Size: 64.0 acres

Recommendation

Approval of the Preliminary Site Plan for Andelina Ridge JSP#13-12 is recommended.

Please address the concerns noted below upon subsequent submittal.

Ordinance Considerations

Adjacent to Residential – Buffer (Sec. 2509.3.a.)

1. The project site is adjacent to residential property to the west and south. A berm would be required to the south as the adjacent property is zoned MH – Mobile District. The Applicant has not proposed a berm in order to preserve the mature existing woodland. There has been preserved a significant buffer area between the proposed homes and the adjacent mobile home park. **The Applicant would need a Planning Commission waiver for the berm in order to preserve the mature trees and woodlands. Staff would support the waiver.**

Adjacent to Public Rights-of-Way – Berm (Wall) & Buffer (Sec. 2509.3.b.)

1. A 3' tall landscape buffer berm is required along the Twelve Mile frontage. **It appears that the Applicant is seeking a waiver for the berm in order to preserve existing mature vegetation. Staff would support the waiver.**

2. The Applicant has also proposed a 4' tall decorative wall in the location of the entry road. This will form an adequate buffer much like a berm. Staff believes that the wall is an attractive alternative to the berm and that it allows for the preservation of additional trees. The cut stone wall is in a pedestrian scale and forms a good wayfinding feature for the subdivision.
3. The Applicant has extended the existing landscape to adequately provide the required 40' landscape buffer along the road frontage. **Lot 1 will need to be adjusted so as not to overlap the required buffer.**
4. One canopy tree per 40 l.f. is required along the berm area. It appears that this requirement has been met. Please list the quantity of trees required and provided on the site plan. Existing trees to remain may be counted toward this requirement.
5. One subcanopy tree per 35 l.f. is required along the frontage of Twelve Mile. It appears that this requirement has been met. Please list the quantity of subcanopy trees required and provided on the site plan. Existing trees to remain may be counted toward this requirement.

Street Tree Requirements (Sec. 2509.3.b.)

1. One street tree is required per 45 l.f. of road frontage. This requirement has been met.

Parking Landscape (Sec. 2509.3.c.)

1. No parking areas are proposed.

Building Foundation Landscape (Sec. 2509.3.d.)

1. No public buildings are proposed.

Plant List (LDM)

1. The Plant List meets the requirements of the Ordinance and Landscape Design Manual.

Planting Details & Notations (LDM)

1. Planting Details and Notations meet the requirements of the Ordinance and Landscape Design Manual.

Storm Basin Landscape (Sec. 2509.3.e.(4)) & LDM)

1. A total of 70% to 75% of storm basin rims are required to have a landscape buffer. The Applicant has extended the existing landscape in order to meet this requirement.

Irrigation (Sec. 2509 3.f.(6)(b))

1. All landscape areas are required to be irrigated.

General

1. Two benches have been proposed near the entry in a small pocket park area. This is a positive amenity for the residents.
2. Please see woodland and wetland reviews for additional comments.

Please follow guidelines of the Zoning Ordinance and Landscape Design Guidelines. This review is a summary and not intended to substitute for any Ordinance. For the landscape requirements, see the Zoning Ordinance landscape section on 2509, Landscape Design Manual and the appropriate items in the applicable zoning classification. Also see the Woodland and Wetland review comments.



Reviewed by: David R. Beschke, RLA

Financial Requirements Review

To be completed at time of Final Site Plan Review.

Item	Amount	Verified	Adjustment	Comments
Full Landscape Cost Estimate	\$ 32,880			Includes street trees. Does not include Irrigation costs.
Final Landscape Review Fee	\$ 493.20			1.5% of full cost estimate Any adjustments to the fee must be paid in full prior to stamping set submittal.

Financial Requirements (Bonds & Inspections)

Item	Required	Amount	Verified	Comments
Landscape Cost Estimate	YES	\$ 42,880		Does not include street trees. Includes irrigation.
Landscape Financial Guaranty	YES	\$ 64,320		This financial guarantee is based upon 150% of the verified cost estimate. For Commercial, this letter of credit is due prior to the Issuance of a Temporary Certificate of Occupancy. For Residential this is letter of credit is due prior to pre-construction meeting.
Landscape Inspection Fee (Development Review Fee Schedule 3/15/99)	YES	\$ 1,972.80		For projects up to \$250,000, this fee is \$500 or 6 % of the amount of the Landscape cost estimate, whichever is greater. This cash or check is due prior to the Pre-Construction meeting.
Landscape Administration Fee (Development Review Fee Schedule 3/15/99)	YES	\$ 295.92		This fee is 15% of the Landscape Inspection Fee. This cash or check is due prior to the Pre-Construction meeting.
Transformer Financial Guarantee	YES	\$ 500		\$500 per transformer if not included above. For Commercial this letter of credit is due prior to the issuance of a Temporary Certificate of Occupancy. For Residential this is letter of credit is due prior to pre-construction meeting.
Street Tree Financial Guaranty	NO	\$ 0		\$400 per tree.
Street Tree Inspection Fee	NO	\$ 0		6% of the Street Tree Bond as listed above.
Street tree Maintenance Fee	NO	\$ 0		\$25 per tree.
Landscape Maintenance Bond	YES	\$ 4,288		10% of verified cost estimate due prior to release of Financial Guaranty.

WETLAND REVIEW



Environmental Consulting & Technology, Inc.

March 11, 2013

Ms. Barbara McBeth
Deputy Director of Community Development
City of Novi
45175 West Ten Mile Road
Novi, MI 48375

Re: Andelina Ridge (f.k.a. Capital Park of Novi)
Wetland Review of the Preliminary Site Plan
(JSP#13-0012, PSP#13-0051)

Dear Ms. McBeth:

Environmental Consulting & Technology, Inc. (ECT) has reviewed the Preliminary Site Plan (Plan) for the proposed Andelina Ridge project (f.k.a. Capital Park of Novi) prepared by Seiber, Keast Engineering, L.L.C. dated February 12, 2013. The wetland information was prepared by King and MacGregor Environmental, Inc. 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 visited the site on Tuesday, March 5, 2013 in order to verify wetland boundaries. The wetland boundaries appear to be accurately depicted on the Plan.

The proposed development is located south of Twelve Mile Road and east of Napier Road in Section 18. The proposed Plan would construct 146 single-family homes (in 3 phases), associated roads and utilities and a storm water detention basin.

What follows is a summary of our findings regarding on-site wetlands and proposed wetland impacts associated with the proposed project. ECT also reviewed a Pre-Application Plan for this proposed project, also prepared by Seiber, Keast Engineering, L.L.C. dated January 7, 2013.

Wetlands

Based on our review of the Plan, Novi aerial photos, Novi GIS, and the City of Novi Official Wetlands Map, it appears as if this proposed project site contains five (5) wetland areas:

- Both Wetlands A and B are located along the western edge of the property.
 - Wetland A is a small forested wetland area (0.09 acres). The Plan appears to propose preservation of this wetland and its 25-foot wetland buffer within a proposed open space (Granada Park). Wetland A did not have a significant herbaceous plant layer present. Existing tree species consisted of mainly silver maple (*Acer saccharinum*) and American elm (*Ulmus americana*).
 - Wetland B is also a small forested wetland (0.02-acre on-site) just west of the proposed storm water detention basin. The Plan appears to propose preservation of this wetland and its 25-foot wetland buffer. Wetland B did not have a significant herbaceous plant layer present. Existing tree species consisted of mainly silver

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maple (*Acer saccharinum*) and American elm (*Ulmus americana*). See attached Site Photos.

- Wetland C is a forested wetland located in the southeast corner of the project property (1.13 acres of on-site wetland). The Plan does not propose any direct impacts to Wetland C, but does propose to directional-bore both water main and sanitary sewer under this wetland towards the southeast. Wetland C did not have a significant herbaceous plant layer present. Existing tree species consisted of mainly silver maple (*Acer saccharinum*) and American elm (*Ulmus americana*). See attached Site Photos.
- Wetland D is a small (0.07-acre), emergent wetland located within an existing agricultural field. The Plan proposes to fill this wetland and the associated 25-foot wetland buffer. Wetland D contains broad-leaved cattail (*Typha latifolia*), side-flowering aster (*Aster laterifloris*), water horehound (*Lycopus americanus*), reed canary grass (*Phalaris arundinacea*), dogbane (*Apocynum cannabinum*), grass-leaved goldenrod (*Euthamia graminifolia*), and curly dock (*Rumex crispus*). See attached Site Photos.
- Wetland E is a small (0.07-acre), forested wetland located near the eastern edge of the property (near the Catholic Central H.S. property). Wetland E did not have a significant herbaceous plant layer present. Existing tree species consisted of mainly silver maple (*Acer saccharinum*) and American elm (*Ulmus americana*). See attached Site Photos.

Wetland Impact Review

Five (5) wetland areas exist on this parcel totaling 1.38 acres of on-site wetland. The following table (Table 1) summarizes the existing wetlands and the proposed wetland impacts:

Table 1. Proposed Wetland Impacts

Wetland Area	Wetland Area (acres)	City Regulated?	Likely MDEQ Regulated?	Impact Area (acre)	Impact Volume (cubic yards)
A	0.09	City/Essential	No	None	None
B	0.02	City/Essential	No	None	None
C	1.13	City/Essential	Yes	None	None
D	0.07	City/Essential	No	0.07	120
E	0.07	City/Essential	No	0.07	113
TOTAL	1.38	--	--	0.14	233 (Fill)

As shown in Table 1, the current Plan indicates a total proposed wetland impact of 0.14-acre (and 233 cubic yards of fill).

The Applicant has categorized only Wetland C as being regulated by the Michigan Department of Environmental Quality (MDEQ). This wetland also appears to have been categorized as City of Novi essential.

The Applicant has categorized Wetlands A, B, D, and E as City of Novi non-essential, as well as non-regulated by MDEQ, as they do not appear to be within 500-feet of an Inland lake, pond stream or river and are not greater than 5 acres in size.

It should be noted that it is the Applicant's responsibility to confirm the need for a Permit from the MDEQ for any proposed wetland impact. Final determination as to the regulatory status of each of the on-site wetlands shall be made by MDEQ.

Based on the essentiality criteria outlined in the City of Novi's Wetland and Watercourse Protection Ordinance, ECT believes that all of the on-site wetland areas appear to be essential (i.e., exhibit storm water storage function as well as provide wildlife habitat) and are therefore regulated by the City of Novi. This information has been noted in the *Proposed Wetland Impacts* table, above.

In addition to wetland impacts, the Plan also specifies impacts to the 25-foot natural features setbacks. The following table (Table 2) summarizes the proposed impacts to the wetland setbacks:

Table 2. Proposed Permanent Wetland Buffer Impacts

<i>Buffer Area</i>	<i>Existing Buffer Area (acre)</i>	<i>Permanent Buffer Impact Area (acre)</i>	<i>Fill Volume (cubic yards)</i>
A	Not Provided	None	None
B	Not Provided	None	None
C	Not Provided	0.17	155
D	0.18	0.18	310
E	Not Provided	0.16	260
TOTAL	--	0.51	725

As shown in Table 2, the Plan proposes approximately 0.51-acre of permanent disturbance to the wetland setbacks (and 725 cubic yards of fill). It should be noted that the existing quantities (i.e., acres) of on-site wetland buffer should be noted on the Plan. In addition, the quantity of impact to the 25-foot Wetland C setback/buffer is not clear on the Plan. Sheet 4 (*Preliminary Site Plan/Wetland and Soil Erosion Control Plan*) indicates 0.17-acre of disturbance, whereas the *Wetland Impact Table* (on the same Sheet) indicates a permanent wetland buffer impact of 0.09-acre. The existing on-site wetland buffer areas as well as the appropriate proposed impact areas (and volumes) should be clarified on subsequent Plans.

Comments

1. Based on our assessment, Wetlands A, B, C, D, and E (i.e., all on-site wetlands) appear to be essential wetlands (i.e., exhibit storm water storage function as well as provide wildlife habitat) and are therefore regulated by the City of Novi. Any direct impacts to these wetlands will require a Wetland and Watercourse Permit from the City of Novi.

2. Wetland C appears to be MDEQ-regulated. It is the Applicant's responsibility to determine whether the proposed project will require a Permit from MDEQ. It is likely that the proposed directional bore for the water main and sanitary sewer connections will require an MDEQ Permit. At a minimum, the MDEQ will require a permit application that details the proposed directional boring activities. The Applicant should provide a copy of the MDEQ Wetland Use Permit application to the City (and our office) for review and a copy of the approved permit upon issuance. A City of Novi Wetland Permit cannot be issued prior to receiving this information. Based on a search of the MDEQ's Coastal and Inland Waters Permit Information System (CIWPIS), there does not appear to be an active file associated with this project location.
3. The existing on-site wetland buffer areas as well as the appropriate proposed impact areas (and volumes) should be clarified on subsequent Plans.
4. Because proposed wetland impacts are less than 0.25-acre, wetland mitigation would not be a requirement of the City of Novi Wetland and Watercourse Permit.

Permits

It appears as though an MDEQ *Wetland Permit*, *City of Novi Wetland Non-Minor Use Permit*, and *Authorization to Encroach the 25-Foot Natural Features Setback* would be required for the proposed impacts.

Recommendation

The Preliminary Site Plan is **Approved as Noted for Wetlands**. ECT recommends that the Applicant address the concerns noted above in a revised site plan.

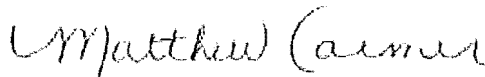
If you have any questions regarding the contents of this letter, please contact us.

Respectfully submitted,

ENVIRONMENTAL CONSULTING & TECHNOLOGY, INC.



Pete Hill, P.E.
Senior Associate Engineer



Matthew Carmer, PWS
Senior Scientist

cc: David Beschke, City of Novi, Licensed Landscape Architect
Kristen Kapelanski, AICP, City of Novi Planner
Angela Pawlowski, City of Novi, Senior Customer Service

Attached: Site Photos



Photo 1. Looking west at Wetland B (ECT, Inc., March 5, 2013).



Photo 2. Looking southeast at Wetland C (ECT, Inc., March 5, 2013).



Photo 3. Looking northwest at Wetland D (ECT, Inc., March 5, 2013).



Photo 4. Looking east at Wetland E (ECT, Inc., March 5, 2013).

WOODLAND REVIEW



Environmental Consulting & Technology, Inc.

March 11, 2013

Ms. Barbara McBeth
Deputy Director of Community Development
City of Novi
45175 West Ten Mile Road
Novi, MI 48375

Re: Andelina Ridge (f.k.a. Capital Park of Novi)
Woodland Review of the Preliminary Site Plan
(JSP#13-0012, PSP#13-0051)

Dear Ms. McBeth:

Environmental Consulting & Technology, Inc. (ECT) has reviewed the Preliminary Site Plan (Plan) for the proposed Andelina Ridge project (f.k.a. Capital Park of Novi) prepared by Seiber, Keast Engineering, L.L.C. dated February 12, 2013. The tree inventory information was prepared by King and MacGregor Environmental, Inc. The Plan and supporting documentation were reviewed for conformance with the City of Novi Woodland Protection Ordinance Chapter 37.

The proposed development is located south of Twelve Mile Road and east of Napier Road in Section 18. The proposed Plan would construct 146 single-family homes (in 3 phases), associated roads and utilities and a stormwater detention basin.

ECT has reviewed the City of Novi Official Woodlands Map and aerial photos and the site appears to contain City of Novi regulated woodlands. Regulated woodland areas are mapped across a significant portion of the property (the north, west and south sides of the proposed project).

On-site Woodland Evaluation

On-site woodland is dominated by sugar maple (*Acer saccharum*), black cherry (*Prunus serotina*), American beech (*Fagus grandifolia*) and American basswood (*Tilia americana*). On-site forested wetlands are dominated by silver maple (*Acer saccharinum*) and American elm (*Ulmus americana*).

ECT completed an on-site Woodland Evaluation on March 5, 2013. ECT found that the *Woodland Plan* (Sheets L-4, L-5, and L-6) and the *Woodland List* (Sheets L-7 and L-8) appear to accurately depict the location, species composition and the size of the existing trees. ECT took numerous diameter-at-breast-height (d.b.h.) measurements and found that the data provided in the Plan was consistent with the field measurements. The surveyed trees have been marked with white paint, allowing ECT to compare the reported diameters to the existing tree diameters in the field.

Proposed Woodland Impacts

Per summary calculations on the *Woodland Plan* (Sheet L-6) the Plan proposes the removal of 197 live, regulated trees with d.b.h. greater than or equal to 8 inches, requiring a total of 355 replacement credits. The Plan indicates a total of 5 tree credits for Woodland Credits for Non-Woodland Preservation. This brings the total Woodland Replacements Required to 350 Trees. The Applicant appears to be proposing these Woodland Replacement Trees on-site.

2200 Commonwealth
Boulevard, Suite 300
Ann Arbor, MI
48105

(734)
769-3004

FAX (734)
769-3164

An Equal Opportunity/Affirmative Action Employer

It appears is if the Applicant has done an adequate job in minimizing disturbance to existing woodland trees through site design and Lot placement. A significant portion of the existing regulated woodlands on site will be preserved in proposed parks.

Woodland Replacement Review

Per the summary provided on Sheet L-1 (*Landscape Plan*), 350 total tree replacement credits will be provided on site. The Plan proposes to accomplish this through the following plantings:

- 2.5" deciduous trees - 77 trees (77 replacement credits);
- 10'-12' evergreens - 38 trees (38 x 1.5 = 57 replacement credits);
- 12'-14' evergreens - 58 trees (58 x 2.0 = 116 replacement credits);
- 14'+ evergreens - 40 trees (40 x 2.5 = 100 replacement credits).

It should be noted that the Applicant has proposed up-sized woodland replacement trees (evergreens) in order to receive additional credits as woodland replacements. The minimum sizing for Woodland Replacement canopy trees is 2.5" caliper and for evergreens a minimum height of 7' is required. The Applicant has proposed upsizing a portion of the evergreen woodland replacement trees with 10'-12', 12'-14' and 14'+ trees.

The Plan is seeking 1.5 replacement credits for the 10'-12' evergreens, 2.0 credits for each 12'-14' evergreen, and 2.5 replacement credits for each 14'+ evergreen.

It should be noted that the increased credits for planting larger-sized vegetation applies only to Landscape plantings and not to Woodland Replacement plantings. ***The Planning Commission will need to determine if a waiver shall be permitted under the ordinance for greater credit for upsized woodland replacement plantings.***

Comments

1. A Woodland Permit from the City of Novi would be required for proposed impacts to any trees 8-inch d.b.h. or greater. Such trees shall be relocated or replaced by the permit grantee. All replacement trees shall be two and one-half (2 ½) inches caliper or greater.
2. It should be noted that the Applicant has proposed up-sized woodland replacement trees in order to receive additional credits as woodland replacements. ***The Planning Commission will need to determine if a waiver shall be permitted under the ordinance for greater credit for upsized woodland replacement plantings.***
3. One of the species listed in *Replacement Plant List* on the *Landscape Plan* (Sheet No. L-1) is not acceptable as a Woodland Replacement Tree species in Novi. The species are not listed as accepted species in the City of Novi's *Woodland Tree Replacement Chart* found in the *Woodland Ordinance* (Chapter 37) or in the *Suggested Plant Materials List* found in the City of Novi's *Landscape Design Manual*. This should be addressed in subsequent site plan submittals. The species is:
 - London Plane Tree (*Platanus acerfolia*) – Listed as exotic or non-hardy;

Refer to the *Woodland Tree Replacement Chart* and *Reforestation Credit Table* in the Woodland Ordinance for guidance on acceptable native tree species and other types of native woodland vegetation that can count toward woodland replacement credits.

4. Replacement material should not be located 1) within 10' of built structures or the edges of utility easements and 2) over underground structures/utilities or within their associated easements. In addition, replacement trees spacing should follow the *Plant Material Spacing Relationship Chart for Landscape Purposes* found in the City of Novi *Landscape Design Manual* (<http://www.cityofnovi.org/services/commdev/infoSheetsManualsAndPubs/LandscapeDesignManual.pdf>).
5. The Plan lacks information necessary for compliance with the Site Plan standards in the Woodland Ordinance (Chapter 37). The following information must be provided in the Final Site Plan:
 - For regulated trees depicted as being saved within 50' of proposed grading or construction activity boundaries, graphic depiction of the trees' critical root zones shall be shown in order to indicate that impact will be avoided and aid in correct placement of woodland protection fence.
6. A financial guarantee for the planting of replacement trees will be required. This Woodland Replacement Financial Guarantee shall be returned to the Applicant only after a successful inspection of the replacement trees 2 years following the planting. The Financial Guarantee would then be returned to the Applicant. The Woodland Replacement Financial Guarantee shall be determined based on a per tree amount representing the market value for the tree replacements as approved by the Planning Commission.
7. The Applicant will be required to pay the City of Novi Tree Fund at a value of \$400/credit for any Woodland Replacement tree credits that cannot be placed on-site, or at a Planning Commission-approved location.

Recommendation

The Preliminary Site Plan is **Approved as Noted** for Woodlands. ECT recommends that the Applicant address the concerns noted above in a revised site plan.

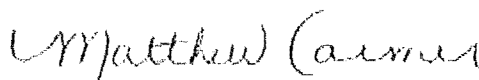
If you have any questions regarding the contents of this letter, please contact us.

Respectfully submitted,

ENVIRONMENTAL CONSULTING & TECHNOLOGY, INC.



Pete Hill, P.E.
Senior Associate Engineer



Matthew Carmer, PWS
Senior Scientist

Andellna Ridge (fka Capital Park of Novi)
Woodland Review of the Preliminary Site Plan
(JSP#13-0012/PSP#13-0051)
March 11, 2013
Page 4 of 6

cc: David Beschke, City of Novi, Licensed Landscape Architect
Kristen Kapelanski, AICP, City of Novi Planner
Angela Pawlowski, City of Novi, Senior Customer Service

Attached: Site Photos



Photo 1. Looking southeast at Woodland located at north side of project site (ECT, Inc., March 5, 2013).

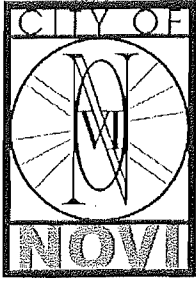


Photo 2. Looking south at area of Woodland to be preserved (i.e., Granada Park) (ECT, Inc., March 5, 2013).



Photo 3. Looking south at the area of Woodland located on the south side of the project site (Seville Park). (ECT, Inc., March 5, 2013).

FIRE REVIEW



January 18, 2013

February 22, 2013 REVISED

TO: Barbara McBeth, Deputy Director of Community Development
Joe Shelton, Fire Marshal

RE: Preliminary Site plan (2x) – Andelina Ridge – (old project name of
- Capital Park of Novi).

SP#: JSP13-0012
PSP13-0040
PSP13-0051 – 2/22/13

CITY COUNCIL

Mayor
Bob Gatt

Mayor Pro Tem
Dave Staudt

Terry K. Margolls

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Wayne Wrobel

Laura Marie Casey

City Manager
Clay J. Pearson

Director of Public Safety
Chief of Police
David E. Molloy

Director of EMS/Fire Operations
Jeffery R. Johnson

Assistant Chief of Police
Victor C.M. Lauria

Assistant Chief of Police
Jerrod S. Hart

Project Description:

146 new Residential homes (R-4), on 63.10 acres.

Comments:

Same as previous review 2/22/13- All fire department notes on page #1 are acceptable at this time.

Same as previous review 2/22/13 - Fire Hydrant Locations and spacing is acceptable, however full engineering plans of water mains are needed.

From previous review with ADDITIONAL notes: - The "Secondary Emergency Access" requirement per Novi Ordinance, should be better defined on plans. Page #2 lists an area access, however not clearly defined. This has now been corrected from previous review and is acceptable – However, fire apparatus turning radii leading from secondary access onto Murcia Rd must meet the 50' outside/30' inside turning radiuses. Fire hydrant listed on Murcia Rd may need to be relocated, to accommodate this.

Also – Secondary Access drive must meet the 35 ton weight requirement for Novi Fire Dept. apparatuses.

Break-away gate detail is acceptable. A "Knox Padlock" can be used to secure gate, if desired (not required). Pad Lock must be cored for "City of Novi Fire Dept" if installed.

Recommendation:

The above plan has been reviewed and it is Recommended for Approval, pending notes above.

Sincerely,

Andrew Copeland – Inspector II/CFPE
City of Novi – Fire Dept.

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

cityofnovi.org

APPLICANT RESPONSE LETTER



March 27, 2013

Ms. Kristen Kapelanski, AICP - Planner

CITY OF NOVI

45175 W. Ten Mile Road

Novi, Michigan 48375

Re: Andelina Ridge Residential Development – Preliminary Site Plan
Response to City Staff review letters

Dear Kristen,

We appreciate receiving all the review letters and correspondence regarding the Preliminary Site Plan (PSP) for Andelina Ridge, and appreciate the full support of the staff recommending approval of our PSP documents to the Planning Commission. As requested, we are providing you the following information for your use in processing the plans to the Commission;

- One 8 ½" x 11" colored Site Plan
- 11 copies at 24" x 36" plan set (no changes except; Street names and Project name)

In addition, we are providing the following responses to the staff review letters provided us;

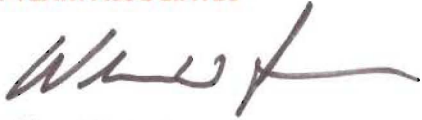
- Planning Review – We appreciate the recommendation for PSP approval, and will incorporate the review plan comments in the Final Site Plan documents. We have submitted the off-site easements signed by the Island Lake HOA's, and prepared to go to the City Council to request approval for a revision to the Non-Development Agreement. We will process the entrance lighting plan, as requested.
- Engineering Review – We appreciate the recommendation for PSP approval, and concur with the recommendations for plan changes to be shown on Final Site Plan documents.
- Traffic Review – We appreciate the recommendation for PSP approval, and will address the recommended design changes on the Final Site Plan. Further, we concur with the city traffic engineers and request a waiver from the acceleration/deceleration lanes.
- Landscape Review – We appreciate the recommendation for PSP approval and support for the berm waiver along 12 Mile Road to preserve existing trees.
- Wetland Review – We appreciate the recommendation for PSP approval, and will apply for the appropriate City wetland permits as the Final Site Plan design dictates.
- Woodland Review – We appreciate the recommendation for PSP approval, and respectfully request the greater credit be applied to the proposed upsized woodland replacement plantings, as identified in our plan.

Ms. Kristen Kapelanski, AICP, Planner
Re: Andelina Ridge – Preliminary Site Plan
March 27, 2013
Page 2 of 2

Again, Pinnacle Homes appreciates your support on this exciting new residential project, and we look forward to seeing you at the April 24th Planning Commission meeting. Should you need any additional information on this project, please don't hesitate to contact me.

Sincerely,

A-TEAM ASSOCIATES

A handwritten signature in black ink, appearing to read 'W. Anderson', written in a cursive style.

William W. Anderson, PE
President

Enc.

Xc: Howard Fingerroot, Pinnacle Homes
Pat Keast, Seiber Keast Engineering

SITE PLAN

Seal: _____

Title:
 Site Plan

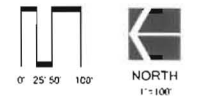
Project:
 Andelina Ridge
 Novi, Michigan

Prepared for:
 Pinnacle Homes
 26800 Orchard Lake Road, Suite 200
 Farmington Hills, MI 48334
 248.529.9332

Revision: Issued:
 Submission January 14, 2013
 Submission February 14, 2013

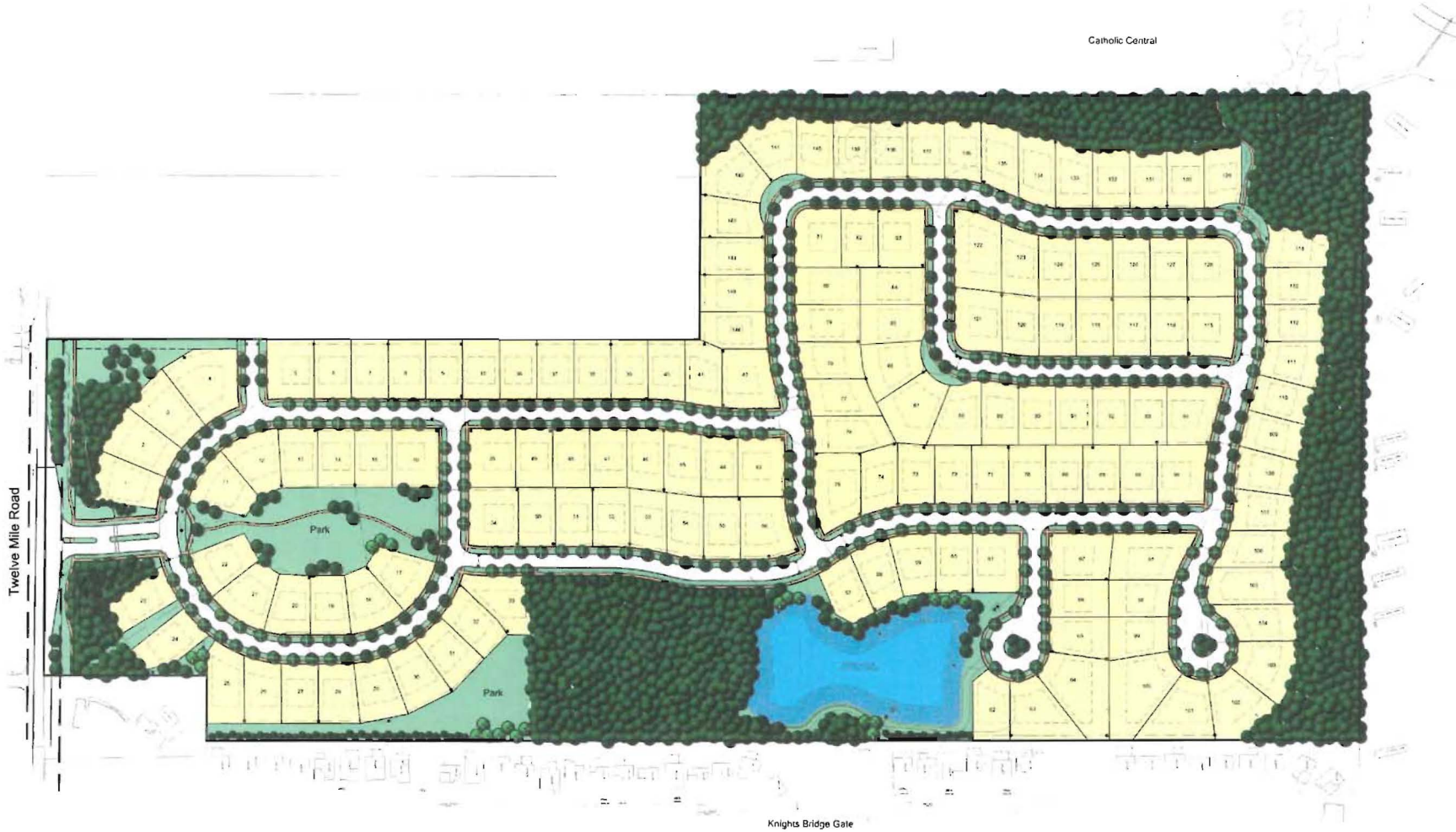
Job Number:
 11-002

Drawn By: Checked By:
 JCB JCB



Sheet No.

L-1



ANDELINA RIDGE

SECTION 18, CITY OF NOVI
OAKLAND COUNTY, MICHIGAN



SITE DATA

DURATION ZONING - R-4
OPEN SPACE PRESERVATION OPTION

TOTAL SITE AREA INCLUDING 45' R.O.W. = 63.33 AC
OPEN SPACE AREA PROVIDED = 13.06 AC
PERCENTAGE OF OPEN SPACE AREA = 13.06/63.33 = 20.63%

10,000 S.F. = (100'-20.83') x 50.00 S.F.
MIN. LOT AREA PERMITTED IS 8,000 S.F.
MIN. LOT AREA PROPOSED IS 9,000 S.F.

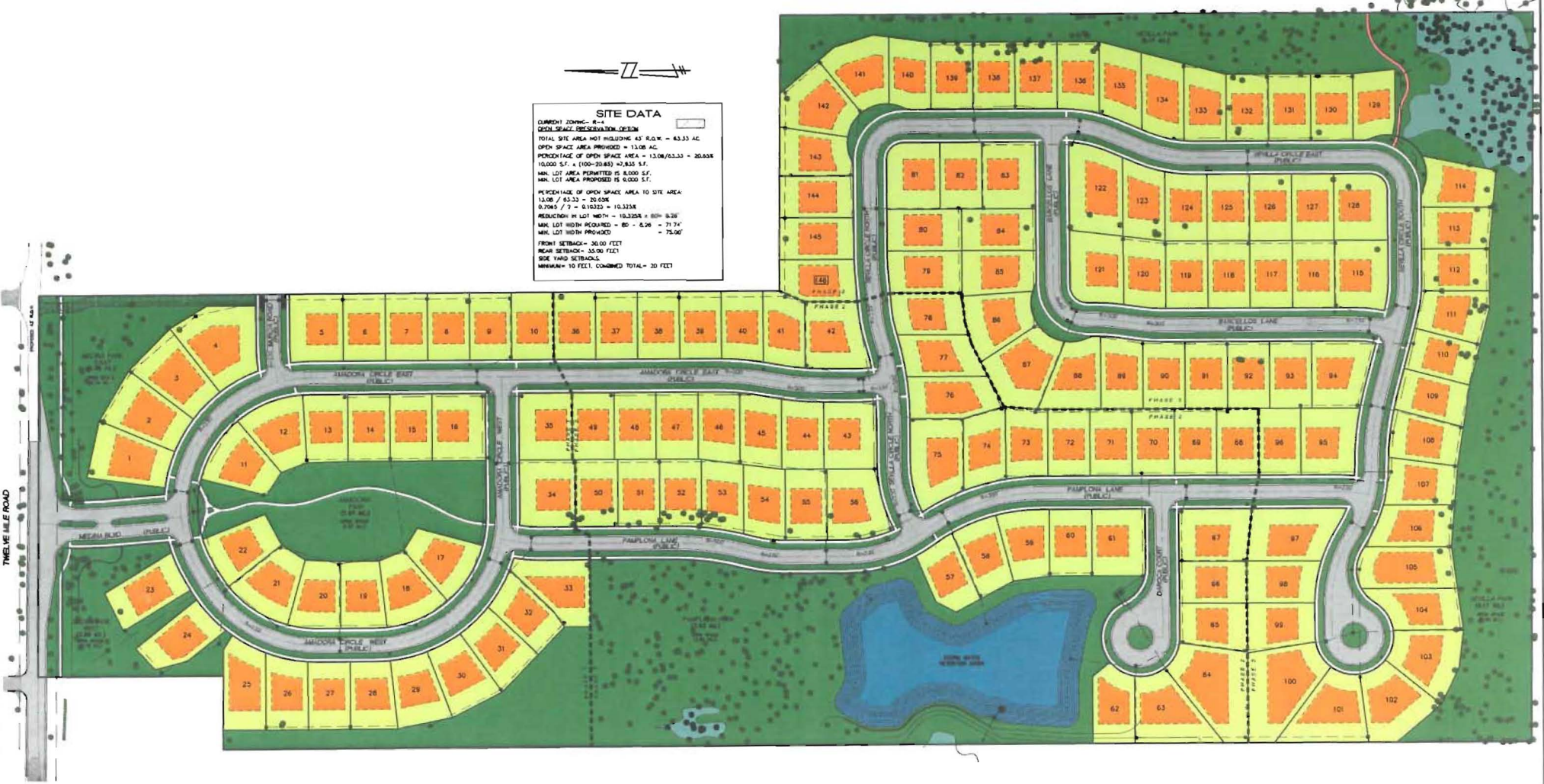
PERCENTAGE OF OPEN SPACE AREA TO SITE AREA:
13.06 / 63.33 = 20.63%

0.7085 / 3 = 0.16325 = 10.332%

REDUCTION IN LOT WIDTH = 10.332% x 80' = 8.26'

MIN. LOT WIDTH REQUIRED = 80' - 8.26' = 71.74'
MIN. LOT WIDTH PROVIDED = 75.00'

FRONT SETBACK = 30.00 FEET
REAR SETBACK = 30.00 FEET
SIDE YARD SETBACKS
MINIMUM = 10 FEET, COMBINED TOTAL = 20 FEET



SEIBER, KEAST ENGINEERING, L.L.C.

CONSULTING ENGINEERS

7125 ORCHARD LAKE ROAD • SUITE 314 • WEST BLOOMFIELD, MI • 48322
PHONE: 248.562.7357 FAX: 248.562.7397

MAPS
Location
Zoning
Future Land Use
Natural Features

Andelina Ridge JSP13-12



Location

Twelve Mile Rd



Map Author: Kristen Kapelanski
 Date: 04/16/13
 Project: JSP13-12 Andelina Ridge
 Version #: 1.0

Map Legend

-  Subject Property
-  City Incorporated Boundary



City of Novi

Planning Division
 Community Development
 45175 W Ten Mile Rd
 Novi, MI 48375
cityofnovi.org

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.

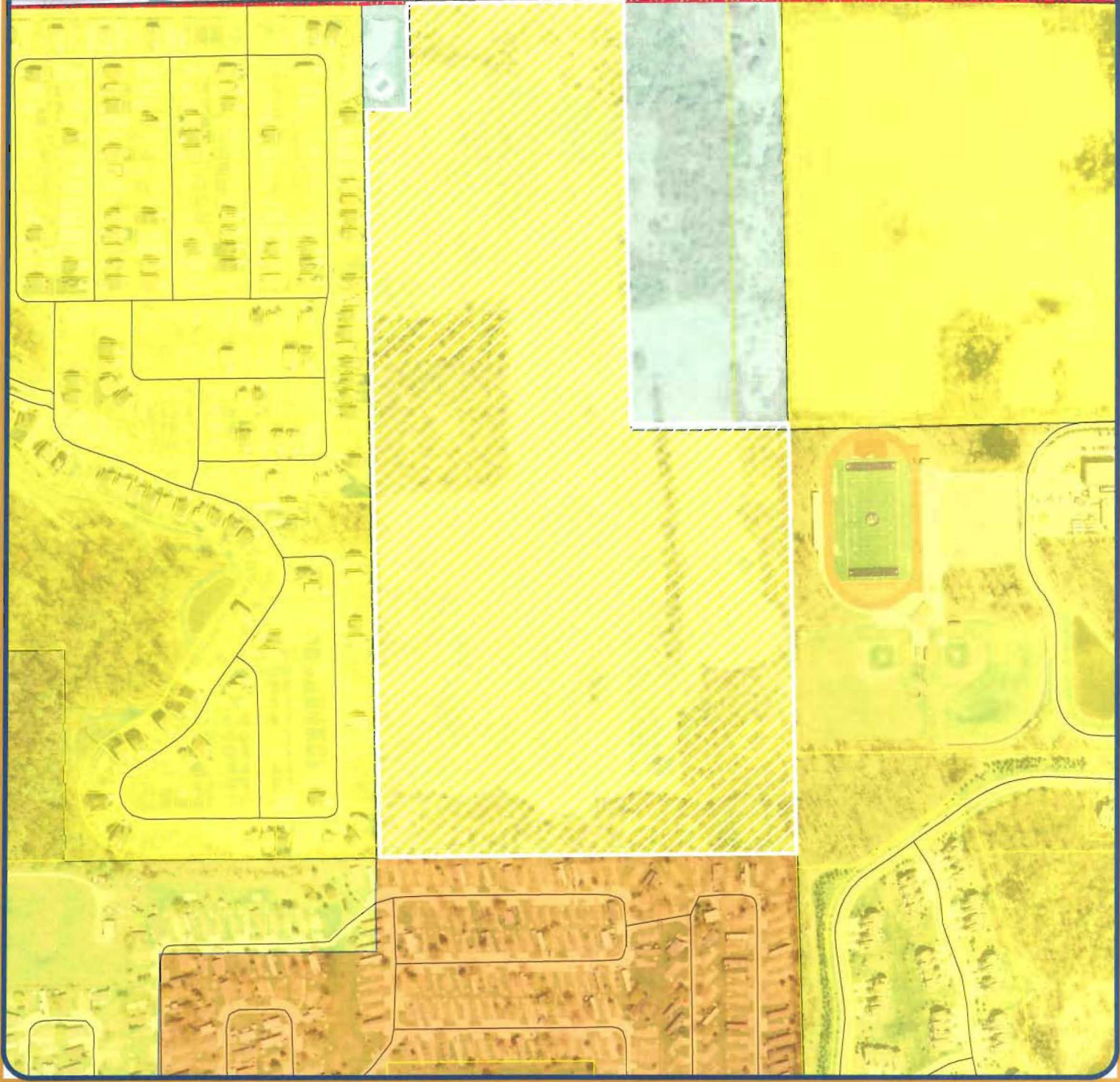


1 inch = 442 feet

Andelina Ridge JSP13-12

Zoning

Twelve Mile Rd



Map Author: Kristen Kapelanski
 Date: 04/16/13
 Project: JSP13-12 Andelina Ridge
 Version #: 1.0

Map Legend

-  Subject Property
-  City Incorporated Boundary
-  R-A Residential Acreage
-  R-1 One-Family Residential District
-  R-4 One-Family Residential District
-  MH Mobile Home District



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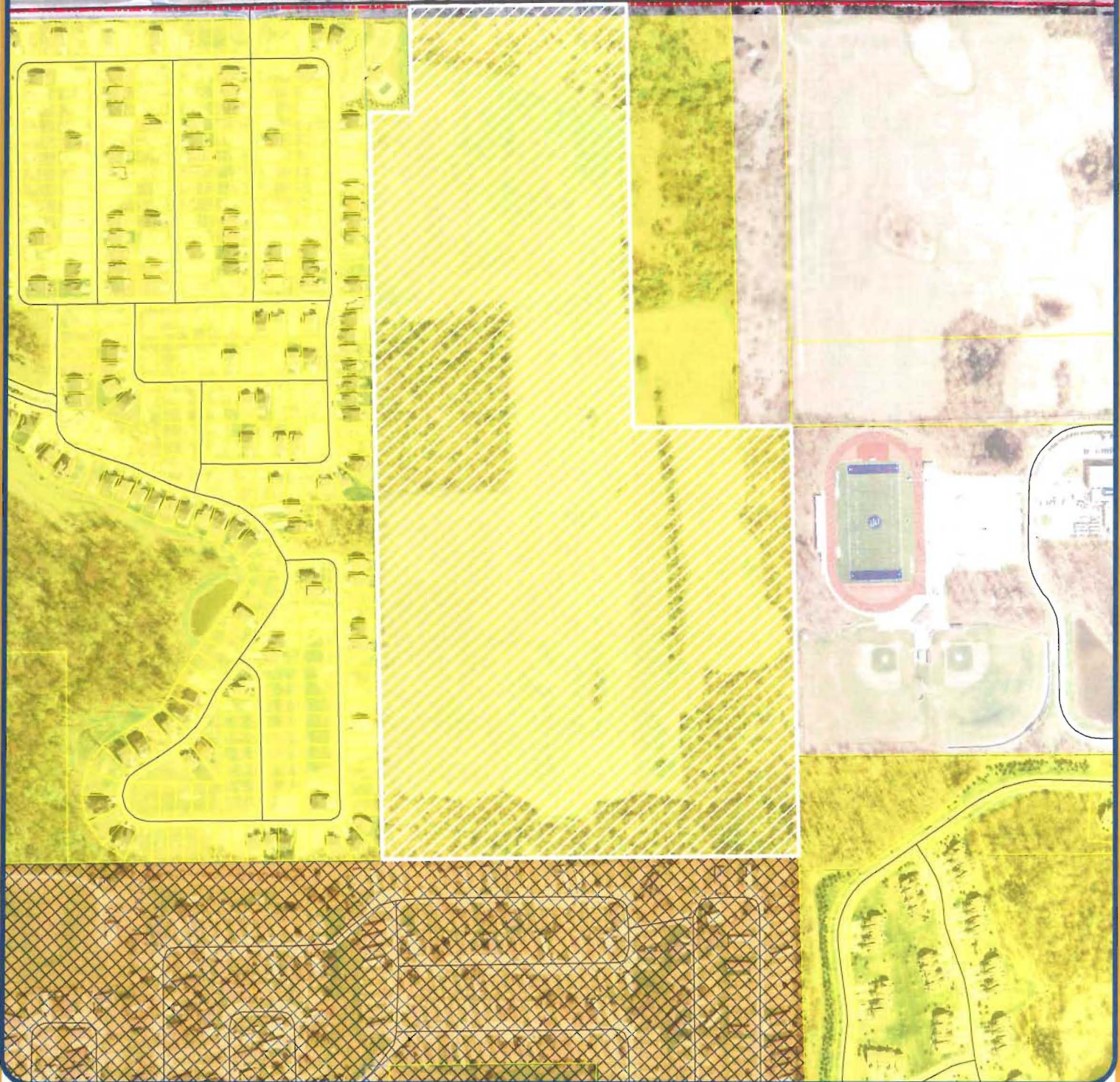


1 inch = 442 feet

Andelina Ridge JSP13-12




Future Land Use

Twelve Mile Rd



Map Author: Kristen Kapelanski
Date: 04/16/13
Project: JSP13-12 Andelina Ridge
Version #: 1.0

Map Legend

-  Subject Property
-  City Incorporated Boundary
-  Single Family
-  Mobile Home Park
-  Educational Facility



City of Novi

Planning Division
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Novi, MI 48375
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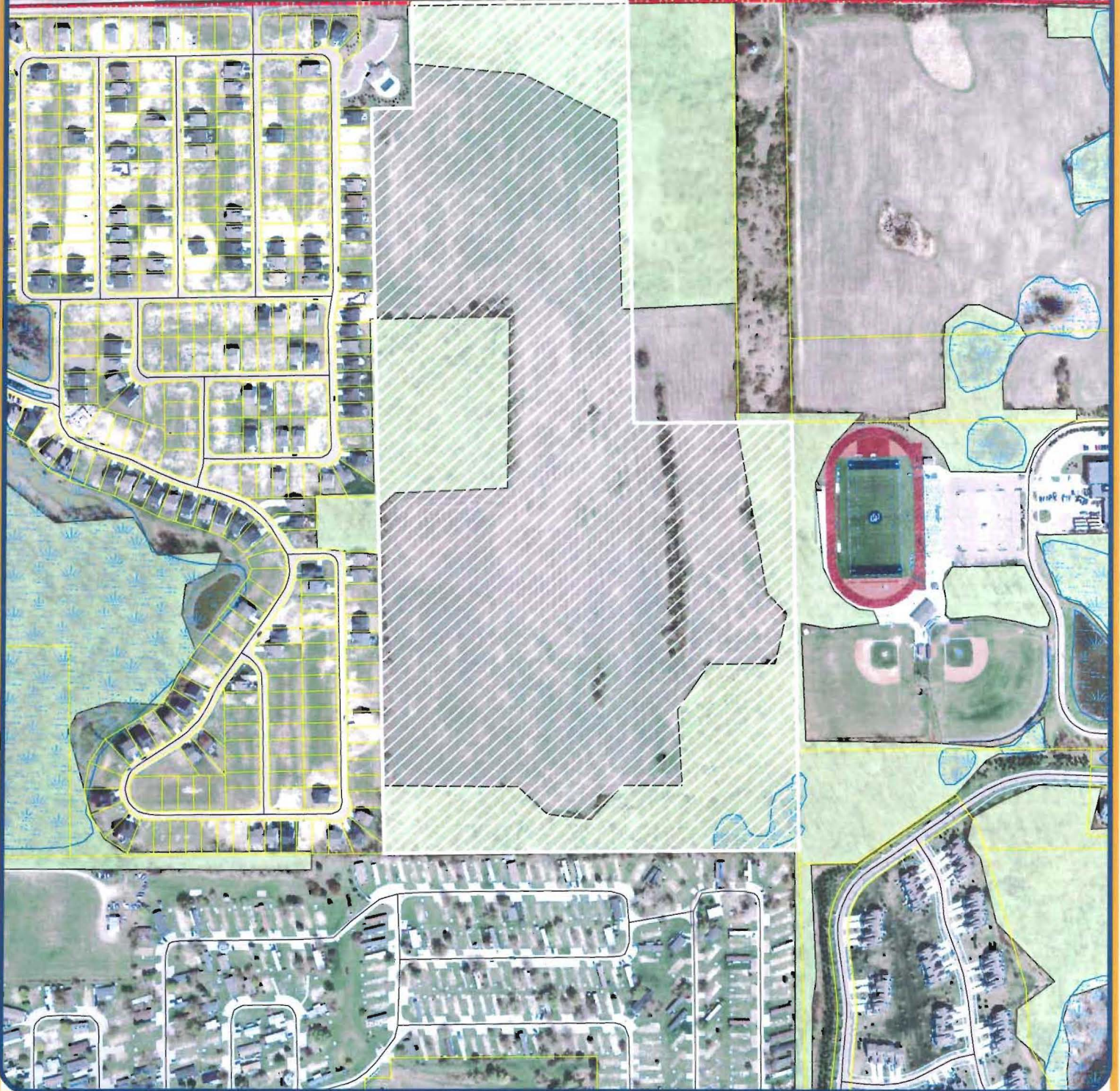


1 inch = 442 feet

Andelina Ridge JSP13-12

Natural Features

Twelve Mile Rd



Map Author: Kristen Kapelanski
 Date: 04/16/13
 Project: JSP13-12 Andelina Ridge
 Version #: 1.0

Map Legend

-  Subject Property
-  City Incorporated Boundary
-  Wetlands
-  Woodlands



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1 inch = 442 feet