



CITY of NOVI CITY COUNCIL

Agenda Item J

July 21, 2014

SUBJECT: Approval of a request from Mirage Development, LLC for a variance from the following ordinance sections: 1) Subdivision Ordinance Section 4.05(A) requiring that pedestrian safety paths be constructed along both sides of local streets (a sidewalk on only the north side is proposed), 2) Section 11-94(c) to provide less than three feet of cover for storm sewer pipe, 3) Section 11-194(a)(7) for exceeding the 800-foot maximum length of a cul-de-sac (975 feet is proposed), and 4) Section 11-194(a)(19) for the lack of a secondary or emergency access; as part of the site plan for Orchard Hills North single family residential development (parcel 22-26-201-006).

SUBMITTING DEPARTMENT: Department of Public Services, Engineering Division ^{RJ} BTC

CITY MANAGER APPROVAL: *[Signature]*

BACKGROUND INFORMATION:

Mirage Development, LLC, is the developer of Orchard Hills North, a single-family residential development located south of Ten Mile Road and west of Meadowbrook Road. The site plan was approved by the Planning Commission on April 23, 2014, subject to several variances, four of which require approval from the City Council. A similar version of the site plan, requiring three City Council variances, was previously approved by the Planning Commission in 2005. Two of the variances (Section 4.05A and 11-194(a)(7)) were approved by City Council in November 2005 (see attached minutes). A third variance from Section 11-278(b)(5) for the location of the pathway relative to the future right-of-way was denied; however, this ordinance section was changed in 2006 to allow administrative approval of variances in specific cases.

This item was previously considered on the June 2, 2014 agenda and City Council voted to postpone consideration of this item until a future date to give the applicant an opportunity to work with staff to evaluate the secondary access options. The packet and minutes from the June 2, 2014 meeting are attached for reference.

The four variances for City Council consideration are as follows:

- Subdivision Ordinance Section 4.05(A) requires that pedestrian safety paths be constructed along both sides of local streets. The developer is proposing to install a pedestrian safety path on only the north side of the street.
- Section 11-194(c) requires that all storm sewer have three feet of cover (e.g., burial depth) or more.
- Section 11-194(a)(7) allows a maximum cul-de-sac length of 800 feet for this site, however, the applicant has proposed a cul-de-sac length of 975 feet.
- Section 11-194(a)(19) requires a secondary (emergency) access where only one access point is provided and in the case of residential development, each unit must be within 800 feet of street distance from the nearest point of external access.

The recommendations from staff are as follows:

Depth of storm sewer. There are no concerns with the variance relating to the depth of storm sewer and staff recommends approval of the variance from Section 11-94(c) because of the fixed elevation of the outlet to the existing wetland and the practical difficulty of placing additional fill on the remainder of the parcel.

Sidewalk: There are also no concerns with the variance related to the construction of the sidewalk on one side of the street and staff recommends approval of the variance from Section 4.05(a) of the Subdivision Ordinance.

Cul-de-sac Length and Secondary Emergency Access: Following the postponement, the applicant has demonstrated that the proposed alternative of 12 homes on a single loaded cul-de-sac that is 975 feet long (without a secondary emergency access) would not substantially deviate from the strict enforcement of the standard. On a typical double-loaded street, the standard would result in approximately 20 homes on an 800 foot cul-de-sac, without need for any variance relief. The single loading and smaller number of homes proposed here--even with the longer cul-de-sac--allows the conclusion that the basic purpose of the limitation on cul-de-sac length (to minimize the number of homes at risk of inaccessibility) is still met. For the same reason, the lack of a secondary emergency access would not be detrimental to public health, safety and welfare, nor injurious to adjoining or neighboring property. The developer's plan results in fewer homes on the longer cul-de-sac than would normally be permitted on a cul-de-sac of 800 feet or less without a secondary access being required under the ordinance. Finally, the applicant has provided documentation to demonstrate that meeting the requirement of the ordinance would result in an exceptional, practical difficulty, since it would decrease the building footprint proposed for unit 11 and make construction of a home on that site more difficult.

The application package, asserted justifications, relevant ordinance sections, and a recent supplementary submittal from the applicant along with a memo discussing this new information, are attached.

RECOMMENDED ACTION:

Approval of a request from Mirage Development, LLC for a variance from the following ordinance sections:

1) Subdivision Ordinance Section 4.05(A) requiring that pedestrian safety paths be constructed along both sides of local streets (a sidewalk on only the north side is proposed), on the basis that a literal application of the substantive requirement would result in exceptional, practical difficulty to the applicant because of the a large area of wetlands comprising almost the entire northern portion of the subject property allows for the placement of homes on only one side of the street, eliminating the need for a sidewalk to be constructed on the other side of the street. The construction of a sidewalk on only the side of the street where homes are located is adequate for the intended use and does not substantially deviate from the performance that would be obtained by strict enforcement of the standards since there would be little or no use of a sidewalk on the opposite side of the street. Finally, the granting of the variance will not be detrimental to the public health, safety or welfare, nor injurious to adjoining or neighboring property, because a sidewalk will be constructed on the side of the street where the homes are;

2) Section 11-94(c) to provide less than three feet of cover for storm sewer pipe, because a literal application of the substantive requirement would result in exceptional, practical difficulty to the applicant since the fixed elevation of the outlet to the existing wetland would require unnecessarily placing additional fill on the remainder of the parcel. The alternative proposed by the applicant is adequate for the intended use and does not substantially deviate from the performance that would be obtained by strict enforcement of the standards, because the lack of pipe cover would occur outside of traffic areas. Finally, the granting of the variance will not be detrimental to the public health, safety or welfare, nor injurious to adjoining or neighboring property.

3) Section 11-194(a)(7) for exceeding the 800 foot maximum length of a cul-de-sac (975 feet is proposed), and 4) Section 11-194(a)(19) for the lack of a secondary or emergency access; because the placement of homes on only one side of the street limits the number of homes that can be constructed on the available space to 12 rather than 20 that could otherwise be permitted even without a variance on a shorter cul-de-sac. On that basis, the cost of modifying home plans, modifying the proposed detention/sedimentation basin, and constructing the retaining wall necessary to support a secondary access homes, would be significant compared to the limited number of lots. Additionally, constructing 12 homes on a single loaded cul-de-sac that is 975 feet long would not substantially deviate from the strict enforcement of the standard. Approximately 20 homes could be constructed on an 800 foot cul-de-sac on a double-loaded street in a typical development. The smaller number of homes on this proposed street places less demand for public safety response and would result in a smaller distance to be traveled for a response on a per home basis. On this basis, a secondary emergency access is also unnecessary. Finally the variances for the cul-de-sac length and for the lack of a secondary emergency access would not be detrimental to public health, safety and welfare, nor injurious to adjoining or neighboring property, given the decreased demand on public safety given the number of lots that could otherwise be permitted.

	1	2	Y	N
Mayor Gatt				
Mayor Pro Tem Staudt				
Council Member Casey				
Council Member Fischer				

	1	2	Y	N
Council Member Markham				
Council Member Mutch				
Council Member Wrobel				

Orchard Hills North Location Map



50-22-26-201-006

Map Author: A. Wayne
Date: May 23, 2014
Project:
Version #:

Amended By:
Date:
Department:

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.



City of Novi

Engineering Division
Department of Public Services
26300 Lee BeGole Drive
Novi, MI 48375
cityofnovi.org

Feet
0 30 60 120 180 240

1 inch = 158 feet

MEMORANDUM



TO: ROB HAYES, P.E.; DIRECTOR OF PUBLIC SERVICES
FROM: BRIAN COBURN, P.E.; ENGINEERING MANAGER *BTC*
SUBJECT: ORCHARD HILLS NORTH VARIANCE REQUEST UPDATE
DATE: JULY 15, 2014

Mirage Development, LLC, is the developer of Orchard Hills North, a single-family residential development located south of Ten Mile Road and west of Meadowbrook Road. The site plan was approved by the Planning Commission on April 23, 2014, subject to several variances, four of which require approval from the City Council. The variance request was considered on the June 2, 2014 agenda and City Council voted to postpone consideration of this item until a future date to give the applicant an opportunity to work with staff to evaluate the secondary access options.

Staff from Fire and Engineering met with the developer on June 4, 2014 following the action by City Council to postpone consideration of the variance requests, specifically on the variance regarding the lack of secondary emergency access. Several ideas for providing the secondary access were discussed, but the developer continued to assert that each alternative was infeasible. Staff suggested that the applicant document the alternatives and provide the rationale behind the assertions that they are not feasible.

The applicant submitted the attached letter and plans dated June 16, 2014 in response to the meeting. Staff also received the attached cost estimate for the secondary access drive without a letter attached. The applicant provided another letter on July 7, 2014 (attached).

Staff reviewed the variance application again using the additional information provided by the applicant since the June 2 City Council meeting using the criteria in Section 11-10 of the ordinance (attached).

The June 16 submittals provided by the applicant primarily provide information regarding the additional cost to provide the secondary emergency access in terms of retaining wall construction to overcome the grades and the potential costs associated with the modification of architectural plans resulting from a smaller building footprint on lot 11. The July 7 letter provides a comparison of the number of homes permitted by the ordinance on a typical 800-foot long cul-de-sac versus the proposal by the applicant.

The Zoning Ordinance requires a minimum lot frontage in R-4 zoning of 80 feet, therefore on an 800-foot cul-de-sac the developer could construct approximately 20 homes. In that case, the ordinance would not require the construction of a secondary emergency access since the cul-de-sac length would not exceed 800 feet. In the proposed development, Mirage is proposing to construct only 12 homes on a 975 foot long cul-de-sac. While the length of the cul-de-sac triggers the need for the secondary emergency access, there are actually fewer houses on the cul-de-sac in this scenario than on a

typical "double loaded" cul-de-sac. The site plan provided by the developer has fewer homes at risk than what would be allowed on a typical cul-de-sac that would not require the secondary emergency access.

Staff contacted the City's traffic consultant, Clearzoning, for a general discussion of cul-de-sac lengths in other communities to better understand the background behind the City's ordinance limiting cul-de-sac lengths to 800 feet. The traffic consultant confirmed that there is usually a maximum number of homes that serves as the basis of the maximum cul-de-sac length to not only reduce fire and emergency medical services risk, but to limit the average daily traffic for the street. The threshold of 200 trips per day is often used which equates to about 20 homes. The attached excerpt from the *Guidelines for Residential Subdivision Street Design* by the Institute of Transportation Engineers provides additional background in this regard.

Given the new argument provided by the developer in the July 7 letter and subsequent discussions with the traffic consultant, staff now supports the variance for the cul-de-sac length and the lack of a secondary access.

2.03.08. Minimum Stopping Sight Distance

Design values for safe stopping sight distance are recommended as shown. They are calculated for wet pavement conditions at the various design speeds listed in Section 2.03.13, (Table 1). These sight distances should be provided on both horizontal and vertical curves.

2.03.09. Grades

The permissible longitudinal grade represents a compromise between construction costs and traffic safety. This allowable grade must increase as steepness of terrain increases. Grades of four percent for level terrain, 8 percent for rolling terrain, and 15 percent for hilly terrain are suggested as reasonable design values.

In areas having severe winter icing conditions, maximum grades of 8 percent may be preferred for all design conditions.

For drainage, a minimum grade of 0.5 percent up to 2 percent is recommended for portland cement and asphalt, respectively. A crown slope of 1/4-inch per foot of lane width is appropriate for paved surfaces, and 1/2 to 3/4-inch for unpaved surfaces.

2.03.10. Maximum Cul-de-Sac Length

Generally, all residential parcels should be accessible from two directions. This usually reduces total vehicle-miles of travel and improves emergency vehicle access. However, the most efficient subdivision of certain tracts (considering shape and terrain) might work best by locating limited numbers of lots along dead-end streets.

A 1,500-foot length is recommended as a maximum for cul-de-sacs in low-density developments and lesser

lengths for other densities. This is proposed for the ordinary type of subdivision layout and obviously does not apply to a cluster-type development, nor to one involving a single road winding up a mountain, for example.

Reference 5 suggests that 'places' (short street, cul-de-sac or court) be designed for ADTs of up to 200. For a typical single-family subdivision, each home has been found to generate an average of about 10 trips per day.⁷ A 200 ADT is equivalent to a 20-home generation. If an average lot width of 70 feet is assumed, with development along both sides of the street, a length of 700 feet is produced. The 1,000-foot length then corresponds to about 30 dwelling units. A 100-foot lot width gives a length of 1,500 feet for the same number of dwelling units and is typical of low-density development.

A high-density cluster development may involve several apartment buildings with hundreds of total dwelling units. Use of only a single roadway to provide access to such sites should be allowed only after a careful consideration of alternative treatments and with full regard for the potential problems. As the number of people exclusively served by a given roadway increases, the potential hazard of temporary roadway blockage also increases. Blockages can result from numerous causes, such as vehicular accident, utility break, falling tree or pole, and pavement repairs. While such occurrences are exceptional, they must still be regarded in terms of their effect on access to the development by emergency police, fire or ambulance equipment. In addition to this problem, it is even possible to run into capacity limitations. As an extreme example, consider a 1,000-unit development. During the peak hour, the exit flow could reach 400 to 500 vehicles per hour. Depending on

characteristics of the boundary roadway, signal control warrants might be reached. In this case, consolidation of exit traffic at a single point might be a desirable design feature.

Joint consideration of the factors of both emergency access and capacity suggest alternative layouts for access to high-density development as follows:

- Provide at least two separate roadways, fully connected to the internal system of roadways or parking access drives, or
- Provide a divided-type entrance roadway, with median of sufficient width to largely ensure freedom of continued emergency access by lanes on one side. Depending on location and height of nearby poles or trees, the median width would range between 10 feet and 20 feet.

2.03.11. Minimum Cul-de-Sac Radius

The recommended minimum right-of-way radius for most circular cul-de-sac designs is 60 feet. The desirable outside turning radius for older passenger cars is 25 feet, suggesting a 30-foot minimum curb radius. For smaller trucks, and a small piece of fire apparatus, a 45-foot curb radius is desirable. Within cul-de-sacs, sidewalks are often placed slightly closer to the curb, with attendant reduction in border area dimensions, in order to conserve right-of-way. Similarly, curb parking is often prohibited by the community or is artificially inhibited by the pie-shaped lot construction and small distances between adjacent driveways. On large lots, frontage space may exist for curb parking. When this occurs, the design may call for a larger radius cul-de-sac right-of-way and curb, in order to accommodate parking plus the



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May 20, 2014

Adam Wayne, Construction Engineer
City of Novi
45175 Ten Mile Road
Novi, Michigan 48375

Re: Orchard Hills North
Variances from Design and Construction Standards

Dear Mr. Wayne:

Our office has reviewed the proposed request for four (4) variances from the City's Design and Construction Standards, as follows:

1. Variance from **Section 11-94(c)**. Section 11-94(c) prohibits the construction of storm sewer with less than 3-feet of cover:
 - (c) Minimum depth of sewers. Unless specifically otherwise approved, no sewer shall have less than three (3) feet of cover.

2. Variance from **Section 11-194(a)(7)**. Section 11-194(a)(7) prohibits the construction of a cul-de-sac exceeding 800-feet:
 - (7) Cul-de-sac shall be designed in accordance with Figures VIII-F. The maximum cul-de-sac street length shall be eight hundred (800) feet for all developments except for R-A zoned properties where maximum cul-de-sac street length shall be one thousand five-hundred (1,500) feet unless the property is to be developed using a Zoning Option which decreases lot size below the R-A district minimum in which case maximum cul-de-sac street length will be one thousand (1,000) feet. The standard outside pavement radius of cul-de-sac shall be sixty (60) feet in industrial areas and fifty-four (54) feet in all other areas. Wherever cul-de-sac contain islands, parking shall be prohibited along the island. The island radius shall be twenty-two (22) feet and standard pavement width

shall be thirty-two (32) feet, back to back of curb. Islands will not be allowed in industrial areas.

3. Variance from **Section 11-194(a)(19)**. Section 11-194(a)(19) prohibits the construction of residential units more than 800-feet from an external access:

(19) Except as provided below, a secondary (emergency) access driveway is required where only one access point is provided. A secondary access driveway shall be a minimum of eighteen (18) feet in width and paved to provide all-weather access and shall be designed to support a vehicle of thirty-five (35) tons. Minimum easement width for secondary access driveways shall be twenty-five (25) feet. A permanent "break-away" gate shall be provided at the secondary access driveway's intersection with the public roadway in accordance with Figure VIII-K. Cellular pavers, with established and viable turf, known as "turf pavers," may be used for a secondary access only, subject to the requirements of subsection c. below.

- a. **In the case of residential development, when each dwelling unit is within eight hundred (800) feet of street distance from the nearest point of external access;** one thousand five hundred (1,500) feet in the RA district with conventional development; one thousand (1,000) feet in RA district with development option, e.g., RUD, preservation option, etc.

4. Variance from **Section 4.05A** of the Subdivision Ordinance. Section 4.05A of the Subdivision Ordinance requires the construction of sidewalks along both sides of a local street:

A. Pedestrian safety path (sidewalks) shall be constructed of concrete along both sides of all local streets shown on the plat. Provided, however, that pedestrian safety paths will not be required along industrial service streets, service drives, and will only be required along one side of marginal access streets. Pedestrian safety paths, where required, shall be five (5) feet wide and shall be placed one (1) foot off property lines.

Section 11-10 of the Ordinance Code permits the City Council to grant a variance from the Design and Construction Standards when a property owner shows all of the following:

- (b) A variance may be granted when all of the following conditions are satisfied:

- (1) A literal application of the substantive requirement would result in exceptional, practical difficulty to the applicant;
- (2) The alternative proposed by the applicant shall be adequate for the intended use and shall not substantially deviate from the performance that would be obtained by strict enforcement of the standards; and
- (3) The granting of the variance will not be detrimental to the public health, safety or welfare, nor injurious to adjoining or neighboring property.

The developer's variance application indicates that the proposed Orchard Hills North Subdivision has unusual topographical conditions that create practical difficulties relating to access to the subdivision resulting in the need for multiple variances from the City's Design and Construction Standards. The unusual topography includes a large area of wetlands comprising almost the entire northern portion of the subject property, and the existing barrier created by the existing school property to the south and apartment complex to the west which both prevent the developer from making additional roadway connections.

As a result of the surrounding conditions, homes will be placed on only side of the street, eliminating the need for a sidewalk to be constructed on one side of the street.

In addition to limiting the availability for the connection to a secondary access, the street will be longer than contemplated by the City's Design and Construction Standards.

It is our understanding that proposed development is not able to connect with the school because the school's access point is to the south and that previous attempts to connect to the adjacent apartments have been rejected by the owners due to the loss of parking that would be likely to result.

Finally, due to the topography and the location of the storm sewer, 3-feet of cover cannot be placed over the storm sewer.

In the event that the developer can demonstrate, and City Council finds that the standards for the variances have been met, including providing a showing that the proposed variances will not be detrimental to the public health, safety or welfare, our office sees no legal impediment to granting the variances.

If you have any questions regarding the above, please call me.

Very truly yours,

JOHNSON, ROSATI, SCHULTZ & JOPPICH, P.C.

Elizabeth Kudla Saarela

Adam Wayne, Construction Engineer

May 20, 2014

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EKS

Enclosures

C: Maryanne Cornelius, Clerk (w/Enclosures)
Charles Boulard, Community Development Director (w/Enclosures)
Matt Wiktorowski, Field Operations (w/Enclosures)
Brian Coburn, Engineering Manager (w/Enclosures)
David Beschke, Landscape Architect (w/Enclosures)
Jeff Johnson, Fire Department (w/Enclosures)
Thomas R. Schultz, Esquire (w/Enclosures)

Mirage

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City of Novi - Council Members

July 7, 2014

RE: Response letter for Orchard Hills North variance request. [Section 11-194(19)(a)]

Council Members,

I have reviewed the latest City of Novi staff letters (posted on the City of Novi's web site Thursday afternoon July 3, 2014) regarding the variance from Section 11-194(19)(a) which prohibits the construction of residential units more than 800 feet in R4 zoning without an additional point of external access.

As previously explained in a letter from our engineers dated June 16, 2014 addressed to City of Novi Public Services, the intent of this ordinance is to limit the number of homes within a particular distance without having a secondary or emergency access. The reason why it is the number of homes and not the distance that matters is because the distance in an RA zoning class increases from 800 feet to 1500 feet, but still limiting the number of homes to around 20.

If this ordinance was solely due to distance, then there would be no difference in the zoning class, it would be solely limited to 800'. This is not the case. So taking Orchard Hills North, the distance is 975' which is less than 1500' and the number of homes is 12 which is less than the 20 [80' lot width x 10 x 2 (both sides of a single road)] which would be allowed in an 800' distance of R4 zoning or the 20 [150' lot width x 10 x 2 (both sides of a single road)] which would be allowed in a 1500' distance of RA zoning.

I ask the question, is it safer to go down a 975' cul-de-sac that serves 12 homes or 1500' cul-de-sac that serves 20 homes? I hope that common sense logic will prevail and that this addresses Section (2) and (3) of the city attorney's letter dated June 30, 2014. I believe if any of the council members ask their legal counsel for the strict interpretation of this ordinance, you will find that it's the number of units being limited and that the distance is a function of the zoning class.

We now hope to have council's support for this variance.

Sincerely,



Claudio Rossi

Phone: (248) 848-1666
Fax: (248) 848-9896

WARNER, CANTRELL & PADMOS, INC.
CIVIL ENGINEERS & LAND SURVEYORS

27300 Haggerty Road, Suite F2
Farmington Hills, MI 48331

June 16, 2014

City of Novi
Public Services
26300 Lee Begole Drive
Novi, MI 48375

Attn: Mr. Adam Wayne

Re: Orchard Hills North
N.E. 1/4, Section 26, T.1N.-R.8E.
City of Novi, MI
Request for Variance from Section 11-194(a)(7)

Dear Mr. Wayne:

Pursuant to the comments by the City Council and our meeting with you, we have studied several options regarding the secondary access to the site as follows:

- Reducing the length of the cul-de-sac to 800 feet
The effect of limiting the cul-de-sac length to 800 feet is that a variance would not be required. However, this causes a great hardship to the owner by the loss of two units; please see the attached site study (10 units). Also note that the shortening of the cul-de-sac to 800 feet does not shorten the distance emergency personnel will have to travel to reach homes on new units 8 and 9.
- Providing an emergency access at the west end of site
We have prepared a site study of an emergency access to the site; see attached plan. The proposed drive meets Novi's requirement of 18 foot wide paved surface within a 25 foot access easement. Due to the existing cross slope from the west property line to the existing pond (see attached drawing), a retaining wall is required. The retaining wall will vary in height from 0.5 to 7.0 feet.
The effect on unit 11 is that the home width would be reduced by 10 feet, to 40 feet in width. The builder/developer does not have a house plan for that size house, therefore unit 11 is effectively eliminated.
One of the council members suggested downsizing the lots in order to pick up the necessary width for an access easement alongside unit 11. This not only would require a variance from City Council, but a revised site plan and the related engineering would have to go in front of the Planning Commission for their approval. This would also

cause the builder/developer to redesign his proposed home plans to meet the reduced unit size. The planned homes have the same footprints he used for Orchard Hills West. The cost of redesigning the house plans and the cost of retraining his work force, including working out the “bugs”, is a practical difficulty for only 11 homes. Therefore, the costs to build the access drive, construct the retaining wall, and the loss of unit 11, make the secondary access an exceptional hardship.

- Elimination of the sediment forebay/water quality basin

At our meeting we discussed the use of bio swale along the rear yards of units on the north side of Woodglen Drive, in lieu of the sediment forebay/water quality basin, to eliminate the need for a retaining wall along the emergency access drive. The practical difficulty of the use of bio swales on single family lot/units is that maintenance and care of the specialized vegetation required to make them effective, is not under unified control. Single family home owners typically install and maintain landscaping features on their units, which makes consistent plantings and maintenance difficult. Bioswales are very similar to miniature wetlands. They are mostly wet swampy features, which many people would not find aesthetically pleasing; please see the attached.

Our experience with bioswales has been good where they are under the control of a single entity that is responsible for their planting and maintenance.

- Relocating the sediment/water quality basin eastward, into the 25' wetland buffer

We have reviewed that option and discovered that, due to the slope of the existing ground, the basin would not move very much because of the berming required to make the basin function hydraulically. The move into the buffer would only reduce the wall height by approximately 1 foot. We do not believe that a complete disturbance of the buffer is worth the 1 foot reduction in wall height.

- Access through the apartment complex to the west

The developer has spoken with the apartment managers and they are not interested in providing easement for access and will provide written correspondence to that effect.

- Access through the school property to the south

The developer has correspondence from the school stating that they do not want the secondary access through their site.

We appreciate meeting with your team to discuss the options regarding the secondary access. Based on our study of the options, and with the new documentation provided, we have shown:

- A literal interpretation of the ordinance results in an exceptional and practical difficulty in creating a secondary access.
- **The performance of the proposed variance does not substantially deviate from strict interpretation of the ordinance. The ordinance allows cul-de-sac streets up to 1500 feet long in RA zoning districts, which limits the number of units to 20 to 25; an 800 foot cul-de-sac on a normal site in the R-4 zoning district would allow 20 to 25 units. This site has only 12 units.**

- The granting of this variance will not be detrimental to public health, safety, or welfare, due to the fact that homes on the proposed 950 foot cul-de-sac would not be substantially further from an outlet, than homes on an 800 foot cul-de-sac.

We hope that you can now support our request for variance from Section 11-194(a)(7).

Please contact our office should you have any questions.

Very truly yours,



G. R. Hirth, P.E.

grh:slh

cc: Claudio Rossi, Mirage Development, LLC



cityofnovi.org

RECEIVED

MAY 09 2014

Request for Variance
Design and Construction Standards

CITY OF NOVI
COMMUNITY DEVELOPMENT

Applicant Information

Name: MIRAGE DEVELOPMENT, L.L.C

Address: 45380 W. TEN MILE
SUITE 135
NOVI, MI 48375

Phone No: 248 349 0582

Engineer Information

Name: WALTER, CANTRELL & PAOROS, INC

Address: 27300 HAGGERTY SUITE F2
FARMINGTON HILLS, MI 48331

Phone No: 248 848 1666

Applicant Status (please check one):

- Property Owner
- Developer
- Developer / Owner Representative
- Other _____

Project Name ORCHARD HILLS NORTH JCP 14-01

Project Address/Location SOUTH SIDE OF 10 MI BETWEEN
MEADOWBROOK & NOVI

Variance Request SEE ATTACHED

Justification (attach additional pages if necessary)

INTERNAL USE

Date Submitted: _____

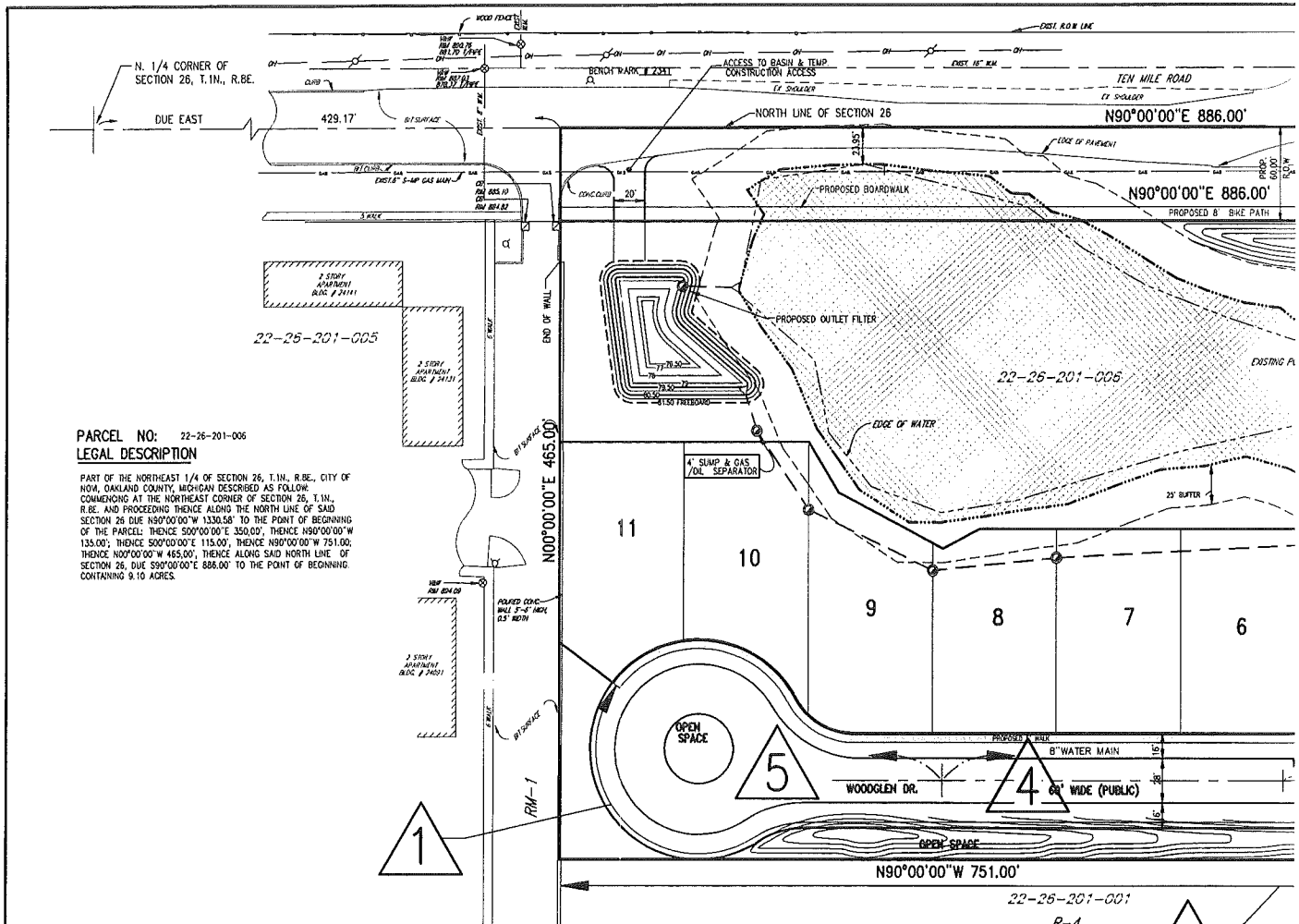
Code Section from which variance is sought: _____

- Submittal Checklist: One (1) copy of plan on 8.5 x 11 size paper
- \$100 Filing Fee (No fee for driveway width variance requests)

Request Status: APPROVED DENIED

Authorized By: _____

Authorization Date: _____



**REQUEST FOR VARIANCE
 DESIGN AND CONSTRUCTION STANDARDS**

- 1** A City Council waiver for having a sidewalk on only one side of Woodglen Street:

 - This waiver was granted by City Council on 11-14-05.
 - The reason for this request is that the sidewalk would serve no purpose, as there are no homes for the sidewalk to serve.

- 2** An administrative variance from Appendix C, Section 4.04(A)(1) for not providing stub street to adjacent school property.

 - The school site was developed with their access provided on the south side of their building.

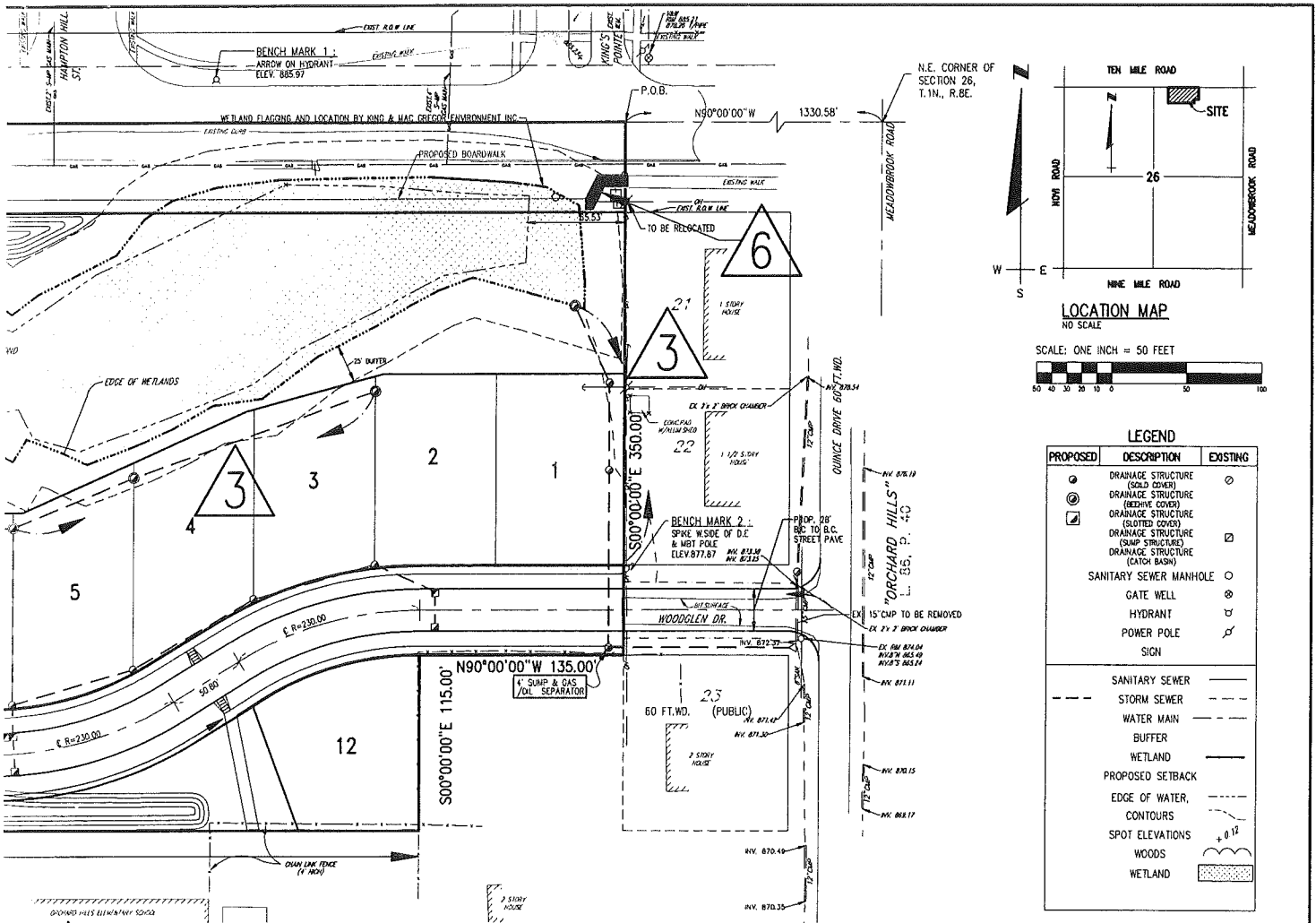
- 3** A City Council variance is requested from Section 11-94(C) for providing less than three feet of cover for storm sewer pipe.

 - The reason for this request is that there are several runs of storm sewer which, in order to outlet to the sediment basin, cannot be placed to provide the three feet of minimum cover. Additional fill cannot be placed due to their location and topography.

- 4** A variance is requested from City Council from Section 11-194(a)(7) for exceeding the 800 foot maximum length for a cul de sac.

 - Previously granted 11/14/05.
 - The reason for the request is due to the practical difficulty caused by the topographical and natural features of the site. Further, this proposed street is single loaded with homes on only one side of the street. The concept of limiting the length of the cul de sac street is the limit the number of units to between 20 and 30; this site is proposing only 12 units.

Michigan State University Extension, 4800 State Street, East Lansing, MI 48824-1324, 517/353-3300, www.maes.msu.edu



A variance is requested from City Council from Section 11-194(a)(19) for units in excess of 800 feet external access.

- Previously granted 11/14/05.
- The reason for this request is that there are no places to provide external access due to the topographic and natural features of the site. In addition, the property to the west is an apartment complex with private drives and the property to the south is the school. As with the request for exceeding the 800 foot maximum cul de sac length, there will be only 12 proposed units.



A variance is requested from City Council from Section 11-258(a) for a bicycle path more than (1) foot away from future right-of-way lines.

- Previously granted 11/14/05.
- The reason for the request is that, in order to tie into an existing walk at the N.E. corner of the site, the path needs to be more than the (1) foot as required.



VARIANCE REQUESTS PLAN

PROPRIETOR/OWNER:
MIRAGE DEVELOPMENT, L.L.C.
45380 W. 10 MILE ROAD
SUITE 135
NOVI, MI 48375
PHONE (248) 348-0582
FAX (248) 348-0588
AUTHORIZED REPRESENTATIVE:
CLAUDIO ROSSI

DATE: May 08, 2014
REVISIONS:
AS BUILT

ORCHARD HILLS NORTH CONDOMINIUM
PART OF THE N.E. 1/4 OF SECTION 26,
T.1 N., R.8 E., CITY OF NOVI,
OAKLAND COUNTY, MICHIGAN

SCALE: 1" = 50'

DATUM: U.S.C. & G.S.

WARNER, CANTRELL & PADMOS, INC.
CIVIL ENGINEERS & LAND SURVEYORS
27300 Haggerty Road, Suite F2
Farmington Hills, MI 48331
(248) 848-1888

PLOT FILE: 20030612UP D-01 Variance Plan.pdf

JOB NO.: 20030612

PLAN FILE: T3-SB-F113

SHEET 1 of 1

Phone: (248) 848-1666
Fax: (248) 848-9896

WARNER, CANTRELL & PADMOS, INC.
CIVIL ENGINEERS & LAND SURVEYORS

27300 Haggerty Road, Suite F2
Farmington Hills, MI 48331

ORCHARD HILLS NORTH
N.E. ¼ SECTION 26, T.1N.-R.8E.
CITY OF NOVI, OAKLAND CO.

REQUEST FOR VARIANCE
DESIGN AND CONSTRUCTION STANDARDS

1. A City Council waiver for having a sidewalk on only one side of Woodglen Street:
 - This waiver was granted by City Council on 11-14-05.
 - The reason for this request is that the sidewalk would serve no purpose, as there are no homes for the sidewalk to serve.
2. An administrative variance from Appendix C, Section 4.04(A)(1) for not providing stub street to adjacent school property.
 - The school site was developed with their access provided on the south side of their building.
3. A City Council variance is requested from Section 11-94(C) for providing less than three feet of cover for storm sewer pipe.
 - The reason for this request is that there are several runs of storm sewer which, in order to outlet to the sediment basin, cannot be placed to provide the three feet of minimum cover. Additional fill cannot be placed due to their location and topography.
4. A variance is requested from City Council from Section 11-194(a)(7) for exceeding the 800 foot maximum length for a cul de sac.
 - Previously granted 11/14/05.
 - The reason for the request is due to the practical difficulty caused by the topographical and natural features of the site. Further, this proposed street is single loaded with homes on only one side of the street. The concept of limiting the length of the cul de sac street is the limit the number of units to between 20 and 30; this site is proposing only 12 units.
5. A variance is requested from City Council from Section 11-194(a)(19) for units in excess of 800 feet external access.
 - Previously granted 11/14/05.
 - The reason for this request is that there are no places to provide external access due to the topographic and natural features of the site. In addition, the property to the west is an apartment complex with private drives and the property to the south is the school. As with the request for exceeding the 800 foot maximum cul de sac length, there will be only 12 proposed units.

6. A variance is requested from City Council from Section 11-258(a) for a bicycle path more than (1) foot away from future right-of-way lines.
 - Previously granted 11/14/05.
 - The reason for the request is that, in order to tie into an existing walk at the N.E. corner of the site, the path needs to be more than the (1) foot as required.

We feel the City Council may grant the variances based on the criteria outlined in Article 1 in General, and Section 11-10 Variances (b)(1)(2)(3), as this request meets all of the conditions required.

Section 4.05 Pedestrian Safety Paths, Bicycle Paths and Public Walkways.

- A. Pedestrian safety path (sidewalks) shall be constructed of concrete along both sides of all local streets shown on the plat. Provided, however, that pedestrian safety paths will not be required along industrial service streets, service drives, and will only be required along one side of marginal access streets. Pedestrian safety paths, where required, shall be five (5) feet wide and shall be placed one (1) foot off property lines.
- B. Bicycle paths which conform to the City of Novi Design and Construction Standards shall be constructed along all major arterials, arterials and minor arterials shown on or abutting the plat.
- C. Pedestrian safety paths (sidewalks) shall be required where necessary along retention ponds, outlots, and open space areas to provide continuity with sidewalks installed in other adjoining developments.
- D. The design and construction of pedestrian safety paths and bicycle paths shall be in conformity with Chapter 11 of the Novi Code of Ordinances (Design and Construction Standards).
- E. When a plat is adjacent to property owned by a school district, the plat shall include at least one pedestrian safety path to provide access to such adjacent property. In addition, such pedestrian safety paths may be required where adjacent property is utilized or planned to be utilized for a church, park or other community facility, or within the plat where the length of a block exceeds one thousand (1,000) feet.
- F. An easement at least twelve (12) feet wide shall be maintained for a public walkway.
- G. The surface of a public walkway shall be eight (8) feet wide and constructed to meet Chapter 11 of the Novi Code of Ordinances (Design and Construction Standards).
- H. Pedestrian safety paths and bicycle paths, or portions thereof, otherwise required may be eliminated where the City Council determines upon Planning Commission recommendation that installation would have an adverse impact on a woodland area. In such instances, the City Council may require alternative methods of providing public walkways.

(Ord. No. 87-45.05, Pts. I, II, 7-20-87; Ord. No. 87-45.07, Pt. I, 11-9-87; Ord. No. 92-45.14, Pt. I, 6-1-92; Ord. No. 95-45.22, Pt. II, 6-19-95; Ord. No. 97-45.25, Pt. I, 10-20-97)

Cross reference— Design and construction standards for bicycle paths, § 11-256 et seq.; design and construction standards for pedestrian safety paths, § 11-276 et seq.

Sec. 11-94. Design considerations.

(a) Location of sewers.

- (1) In right-of-ways. Storm sewers shall generally be located on the same sides of streets as water mains within the public road, in an easement along lot frontages, on the northerly and easterly side of the street. All sewers shall be dimensioned to the right-of-way, property lines, or other suitable means of locating the sewer.
 - a. Sewers shall whenever feasible be constructed outside of the influence of paved street, parking areas, driveways, bicycle paths and pedestrian safety paths, and not closer than ten (10) feet to any building.
- (2) In easements. Easements for sewers shall have a minimum width of twenty (20) feet. The utility shall be centered in the easement unless otherwise permitted by the engineer. Such easements shall be deeded or dedicated to the city with restrictions against use or occupation of easements by the property owners and/or by other utilities in any manner which would restrict sewer maintenance or repair operations.
 - a. Easements for possible extensions shall be provided to the property lines at locations designated by the engineer.
 - b. Easements shall be provided for all drainage ditches and storm sewers located within a platted subdivision or site condominium. In the case of roadway drainage systems, such conveyance may be with the dedication and acceptance of the road right-of-way.
 - c. Drainage and storm sewer easements shall be provided where off-site drainage enters onto the lot or parcel to be developed.
 - d. Easements shall be provided in size and location in accordance with the City of Novi Stormwater Management Master Plan.
 - e. Drainage easements shall be provided at the location of and of the design width required for the 100-year overflow drainage way.
- (3) Discharge of storm sewers. Storm sewers shall not be permitted to discharge directly into a wetland or watercourse unless pretreatment is provided prior to its discharge.

(b) Sewer capacity.

- (1) Tributary area. Sewers shall be designed to serve all natural tributary areas and areas designated in the City of Novi Stormwater Management Master Plan with due consideration given to topography, established zoning and the adopted city master land use plans and the capacity of the stormwater outlet proposed to be used. Discharge must not be diverted onto abutting properties without necessary easements. The outlet must be in accordance with the existing natural drainage courses in the area. Provisions for detention/retention of stormwaters where required must be included in the storm drainage system as described in article V of this chapter.
- (2) Hydrologic considerations. In general:
 - a. All stormwater drainage designs shall provide for a major/minor stormwater disposal system.
 - b. The minor stormwater disposal system shall utilize a piping system designed for a ten-year rainfall event. The rational formula shall be utilized to determine flows to be accommodated using a ten-year curve ($I=175/T + 25$) for rainfall. Initial time of concentration shall be twenty (20) minutes maximum.
 - c. Runoff coefficients shall be determined for each individual drainage area and

calculations for each drainage area must be submitted as part of the design computations. Coefficient design determinations shall be based upon the following minimum coefficients:

Agricultural C=0.15
Pavement and buildings C=0.80

- d. The major stormwater disposal system shall include an overland flood routing for a 100-year storm. The rational formula shall be utilized to determine flows to be accommodated using a 100-year curve ($I=275/T + 25$). Initial time of concentration shall be twenty (20) minutes maximum. Typical cross sections of the overland flood route shall be shown on the storm sewer plans. Calculations shall be submitted verifying the ability of the cross section to accommodate the 100-year storm. A minimum freeboard of one (1) foot shall be provided from any building structure finish grade to the 100-year flood elevation. Manning's formula shall be used in hydraulic calculations for the overland flood routing and open channel design.

(3) Hydraulics.

- a. Pipe sizes.
 - 1. Minimum pipe sizes for storm sewers receiving surface runoff shall be 12-inch nominal internal diameter.
 - 2. Pipe sizes shall not decrease going downstream unless specifically approved by the engineer.
Trunk sewers shall be sized as design dictates with allowance for extensions.
- b. Allowable pipe slopes (n=0.013).

Pipe diameter (inches)	Minimum slope (feet per 100 feet)
10	0.42
12	0.32
15	0.24
18	0.18
21	0.14
24	0.12
27	0.10
30	0.09
36	0.067
42	0.054
48	0.045
54	0.038
60	0.034

Generally, all catch basin and inlet leads shall have a minimum of one (1) percent slope.

- c. Minimum and maximum velocities. Minimum design velocity shall be two and one-half (2½) feet per second with pipe flowing full. Maximum design velocity shall be

- twenty-five (25) feet per second.
- d. Calculations. Manning's formula shall be used for hydraulic calculations. Allowances for head losses through manholes shall be provided.
 1. Allowances for changes in pipe size. The hydraulic gradient shall be maintained by matching the 0.80 diameter depth above invert for pipe size increases.
 2. Allowance for direction changes. Provide a drop of 0.10 feet in the downstream sewer invert for direction changes in excess of thirty (30) degrees to compensate for the hydraulic head losses.
 - e. Surcharging. Surcharging under design conditions is allowed. However, the hydraulic gradient should not exceed any structure cover elevations.
 - f. Submerged storm sewers. Submerged storm sewers shall not be permitted unless specifically otherwise approved by the engineer.
- (c) **Minimum depth of sewers. Unless specifically otherwise approved, no sewer shall have less than three (3) feet of cover.**
- (d) Plunge pools. Whenever differences in manhole pipe invert elevations exceed two (2) feet, the manhole shall be provided with a plunge pool (sump) to prevent channel erosion. Plunge pools shall generally be two (2) feet in depth.
- (e) Manholes, inlets and catch basins.
- (1) Manhole locations. Manholes shall be constructed at every change in sewer material, grade, alignment, pipe size, and at the junction of sewer lines. Generally, manholes shall be placed not more than three hundred (300) feet apart. The maximum distance between manholes shall be three hundred fifty (350) feet for sewers less than twenty-four (24) inches in diameter, four hundred (400) feet for twenty-four (24) to thirty (30) inches in diameter, four hundred fifty (450) feet for thirty-six (36) inches to forty-two (42) inches in diameter, and five hundred (500) feet maximum for forty-eight-inch diameter sewers and larger. Generally, manholes should be placed at street intersections. Manholes shall be provided where catch basin and inlet leads are to be connected to the sewer, unless expressly waived by the engineer for a specific location to a particular project.
 - (2) Catch basin and inlet locations. Catch basins and inlets shall be located using the following design criteria:
 - a. So that the flows to be accommodated do not exceed the intake capacity of the cover. The intake capacity of the cover is assumed to be 0.011 cubic feet per second (cfs) per square inch of opening.
 - b. At all low points in gutters, swales and ditches. A minimum of two (2) catch basins shall be located at all gutter low points in all public or private roadways.
 - c. At the upstream curb return, if more than two hundred (200) feet downstream of high point in gutter or of intercepting structure.
 - d. At maximum intervals of five hundred (500) feet along a continuous roadway slope.
 - e. Inlets shall only be allowed in pavement areas, and then, only as a high end structure and when followed by a catch basin within fifty (50) feet of the inlet.
 - f. End sections may be used as a ditch inflow device when followed within fifty (50) feet by a catch basin. Field catch basins shall be provided at the low point of all swales and ditches so as to prevent a concentrated flow of stormwater onto a paved surface such as streets, driveways, parking lots, etc.
 - g. In rear yard drainage systems (sub-division) so that not more than four (4) lots

Sec. 11-194. Design considerations.

- (a) Street and roadway right-of-way widths, curbed pavement widths and pavement thickness.
- (1) See Table VIII-A for minimum requirements. Roads under the jurisdiction of the state department of transportation and the county road commission shall be subject to the requirements of those agencies. County road right-of-way dedication shall be in accordance with the current adopted road commission master right-of-way plan.
 - (2) Residential and industrial subdivision streets shall be surfaced with bituminous pavement or portland cement concrete pavement, curbed with portland cement concrete curb and gutter sections, and provided with enclosed storm drainage systems.
 - (3) The above requirements may be modified for residential subdivisions to permit open roadside ditches if the following conditions are met:
 - a. Each lot must have a gross area not less than one (1) acre.
 - b. Each lot must have a frontage of not less than one hundred fifty (150) feet.
 - c. Each lot must have a depth not less than the lot width, nor greater than three (3) times the lot width.
 - d. No lot shall be partitioned or divided if such partitioning or dividing would produce lots having less than the minimum width and area stipulated above.
 - e. No water, other than natural surface stormwater shall be allowed to enter such open roadside ditches. Basement sump water, for example, shall not be discharged into open roadside ditches. Footing drainage discharge shall be in accordance with Chapter 12, Article II, "Drainage in Connection with the Construction of Buildings and/or Improvement of Property."
 - f. Discharge of storm drainage into an open roadside ditch shall be in accordance with storm drainage design standards as set forth in this chapter.
 - g. The natural groundwater table must be below the bottom of all ditches.
 - h. Designs for subdivision roads with open roadside ditches shall conform to the requirements shown in Figure VIII-B.
 - (4) Whenever a subdivision is contiguous with a section line, and a road does not exist along the section line, a dedication of sixty (60) feet will be required along the section line as a half-width right-of-way for an arterial road. If some overriding feature of terrain, aesthetics or the like makes it impossible or undesirable for this arterial road to follow the section line, it may be relocated within the plat if it serves the same function. Where the arterial road is relocated within the plat, a dedication of one hundred twenty (120) feet for full-width right-of-way will be required. Provision for arterial roads in locations as outlined above will be required unless a detailed study reveals the inadvisability of same.
 - (5) Whenever a subdivision is contiguous with a quarter-section line, and a road does not exist along that line, a dedication of forty-three (43) feet will be required along the quarter-section line as a half-width right-of-way for a collector street. If some overriding feature of terrain, aesthetics or the like makes it impossible or undesirable for this collector street to follow the quarter-section line, it may be relocated within the plat if it serves the same function. Where the collector street is relocated within the plat, a dedication of eighty-six (86) feet for a full-width right-of-way will be required. Provision for collector streets in locations as outlined above will be required unless a detailed study reveals the inadvisability of same

- (6) Subdivision street right-of-way dedication shall not be less than sixty (60) feet in single-family residential subdivisions and for other than collector streets in multiple-occupancy developments, seventy (70) feet in industrial subdivisions (a sixty-foot dedicated right-of-way and two (2) five-foot easements for all public highway purposes may be substituted for a seventy-foot right-of-way), seventy (70) feet for collector streets in multiple-occupancy developments, eighty-six (86) feet for single-family residential collector streets or one-half mile roads, and one hundred (100) feet for boulevards (collector type), and eighty-six (86) feet for boulevards (minor or local type).
- (7) Cul-de-sac shall be designed in accordance with Figures VIII-F. The maximum cul-de-sac street length shall be eight hundred (800) feet for all developments except for R-A zoned properties where maximum cul-de-sac street length shall be one thousand five-hundred (1,500) feet unless the property is to be developed using a Zoning Option which decreases lot size below the R-A district minimum in which case maximum cul-de-sac street length will be one thousand (1,000) feet. The standard outside pavement radius of cul-de-sac shall be sixty (60) feet in industrial areas and fifty-four (54) feet in all other areas. Wherever cul-de-sac contain islands, parking shall be prohibited along the island. The island radius shall be twenty-two (22) feet and standard pavement width shall be thirty-two (32) feet, back to back of curb. Islands will not be allowed in industrial areas.
- (8) Eyebrows. Eyebrows will be accepted for use in areas where property boundary or environmental restrictions limit the ability to provide a continuous two hundred thirty (230) feet centerline road radius. Eyebrows shall be designed in accordance with Figure VIII-G. Eyebrows shall have an outside pavement radius of sixty-four (64) feet for industrial developments and fifty-four (54) feet for residential subdivisions. The radius point shall be the intersection of, or projected intersection of the right-of-way lines on the opposite side of the street from the eyebrow. Islands will not be permitted in eyebrows.
- (9) U-street right-of-way widths shall be at least one hundred forty (140) feet, terminating in a half-circle at least one hundred forty (140) feet in diameter. Minimum pavement width at the half circle shall be thirty-two (32) feet back to back of curb.
- (10) Marginal access streets for residential or nonresidential uses, where permitted or required, shall have a right-of-way or easement width of at least thirty (30) feet for one-way operation abutting a major thoroughfare right-of-way. The width of the marginal access street shall be twenty (20) feet, back to back of curb and parking shall be prohibited. One-way operation shall be standard. However, the pavement width and right-of-way width may be increased to provide for two-way operation when it is demonstrated that two-way operation is more desirable than one-way operation from a safety and traffic flow perspective. At a minimum, pavement width for two-way operation shall be twenty-eight (28) feet and right-of-way or easement width shall be forty (40) feet.
- (11) Pavement width for alleys shall be at least twenty-two (22) feet.
- (12) For roadways (private), public right-of-way is not required.
- (13) Right-of-way shall be required to be platted or deeded for all public highway purposes.
- (14) The right-of-way widths required above shall generally govern; however, if the city determines that additional right-of-way is required for proper construction because of special circumstances, which shall include but not be limited to requirements for horizontal sight distances, grading operations, location of open channels, permanent structures occupying portions of the right-of-way, or for a road that is not so designated but which may function as a collector or arterial road, such facts will be made known to

- the proprietor after a review of the plans by the planning commission and/or the council.
- (15) A minimum eight-inch 21AA full width aggregate base is required under all concrete roadways. However, alternate designs for pavement cross sections that provide equal or greater structural stability and longevity will be considered by the city engineer if adequate engineering data is furnished for analysis.
 - (16) Joint layout for concrete pavement shall be in accordance with Figure VIII-H.
 - (17) Standard details governing such items as intersection geometrics, grading cross sections and other design and construction details shall conform to current Road Commission for Oakland County (RCOC) and/or Michigan Department of Transportation (MDOT) standards, except where exceeded by a city standard detail. Standard details are available from the city and shall be considered a part of these standards.
 - (18) Temporary "T" turn-around. A temporary "T" turn-around will be required to be constructed on all public street stubs which exceed one hundred fifty (150) feet in length as measured from the right-of-way line of the intersecting street to the end of the stub street. Design shall be in accordance with Figure VIII-I.
 - (19) Except as provided below, a secondary (emergency) access driveway is required where only one access point is provided. A secondary access driveway shall be a minimum of eighteen (18) feet in width and paved to provide all-weather access and shall be designed to support a vehicle of thirty-five (35) tons. Minimum easement width for secondary access driveways shall be twenty-five (25) feet. A permanent "break-away" gate shall be provided at the secondary access driveway's intersection with the public roadway in accordance with Figure VIII-K. Cellular pavers, with established and viable turf, known as "turf pavers," may be used for a secondary access only, subject to the requirements of subsection c. below.
 - a. In the case of residential development, when each dwelling unit is within eight hundred (800) feet of street distance from the nearest point of external access; one thousand five hundred (1,500) feet in the RA district with conventional development; one thousand (1,000) feet in RA district with development option, e.g., RUD, preservation option, etc.
 - b. In the case of non-residential development, when the development is of a single building, and when the fire chief (or designee) determines, based upon the use and occupancy of the proposed building, the manner of construction of the proposed building, and the number of occupants for the proposed building, that there is a reduced risk of fire hazard such that the facility may be served by a single point of external access.
 - c. Turf pavers may be allowed for a secondary access drive, if all of the following are met:
 1. The proposed use of turf pavers shall be evaluated by the fire marshal, which evaluation shall include a review of the standard details for construction established by the city engineer and adopted by resolution of the city council.
 2. The pavers proposed for such use shall have a minimum design compressive strength of thirty-five (35) tons.
 3. A secondary access drive constructed of turf pavers shall be designated by landscaping and signage clearly indicating its function as a secondary access drive, and shall be mowed and kept clear of snow and ice as necessitated by the weather conditions.
 4. Under no circumstances shall the secondary access drive permitted under this section be considered suitable or intended for use as a platform for

fire engine or ladder truck operations.

- a. In the case of residential development, when each dwelling unit is within eight hundred (800) feet of street distance from the nearest point of external access; one thousand five hundred (1,500) feet in the RA district with conventional development; one thousand (1,000) feet in RA district with development option, e.g., RUD, preservation option, etc.
 - b. In the case of non-residential development, when the development is of a single building, and when the fire chief (or designee) determines, based upon the use and occupancy of the proposed building, the manner of construction of the proposed building, and the number of occupants for the proposed building, that there is a reduced risk of fire hazard such that the facility may be served by a single point of external access.
- (20) All fire apparatus access roads (public and private) with a dead-end drive in excess of one hundred fifty (150) feet shall be designed with a turn-around designed in accordance with Figure VIII-I or a cul-de-sac designed in accordance with Figure VIII-F.
- (b) Alignment.
- (1) Minimum sight distance entering onto a major or section line road shall be in accordance with Figure VIII-E entitled "Guide for Corner Sight Distance."
 - (2) Horizontal curves in proposed streets which appear to be continuous shall have a centerline radius of not less than two hundred thirty (230) feet.
 - (3) Vertical curves shall be designed in accordance with Figure VIII-D (minimum design speed shall be thirty (30) miles per hour).
 - (4) The centerline of construction shall coincide with the centerline of the right-of-way, except in those instances where the engineer determines that the presence of unusual topography or sensitive lands justifies off-center placement.
 - (5) The use of skewed intersections will be discouraged.
 - (6) The use of superelevation of horizontal curves will not be allowed in residential and industrial street design.
 - (7) Where left turn passing lanes are warranted, (see Figure IX-8) or, where directed by the city, where center turn lanes are warranted as a passing lane alternative, dimensions shall be in accordance with Figures IX-9 and IX-7, respectively.
 - (8) Local street and roadway intersections shall have a minimum pavement turning radius of twenty-five (25) feet. All other street intersections shall provide a minimum pavement turning radius as provided in Figure IX-1.
 - (9) Any public street which provides access to a major arterial, arterial, minor arterial or collector shall be separated from other public streets and commercial drives according to the standards and provisions in [section 11-216\(d\)\(1\)d](#).
- (c) Grades.
- (1) Industrial subdivisions.
 - a. Minimum grade, 0.6 percent.
 - b. Preferred maximum grade, six (6) percent; however, grades up to eight (8) percent will be considered under special conditions.
 - (2) Collector streets.
 - a. Minimum grade, 0.6 percent.
 - b. Maximum grade, eight (8) percent.
 - (3) Residential streets.
 - a. Minimum grade, 0.6 percent.

Sec. 11-10. Variances.

- (a) Upon application, a specific variance to a substantive requirement of these standards may be granted, subject to the following criteria. Where the proposed activity requires site plan or plat approval, or otherwise involves the design or construction of a facility intended to be public, the variance application shall be to the city council. Where the proposed activity does not otherwise require site plan or plat approval, the variance application shall be to the construction board of appeals.
- (b) A variance may be granted when all of the following conditions are satisfied:
 - (1) A literal application of the substantive requirement would result in exceptional, practical difficulty to the applicant;
 - (2) The alternative proposed by the applicant shall be adequate for the intended use and shall not substantially deviate from the performance that would be obtained by strict enforcement of the standards; and
 - (3) The granting of the variance will not be detrimental to the public health, safety or welfare, nor injurious to adjoining or neighboring property.
- (c) The city council may, by resolution, establish an application fee for requests for variances from these standards.

(Ord. No. 86-124, § 16.01, 4-21-86; Ord. No. 87-124.01, Pt. I (16.01), 4-13-87; Ord. No. 91-124.05, Pt. I, 6-3-91; Ord. No. 93-124.06, Pt. V, 2-1-93; Ord. No. 99-124.11, Pt. III, 7-26-99)

2. Consideration of a request from Mirage Development, LLC for a variance from the following ordinance sections: 1) Subdivision Ordinance Section 4.05(A) requiring that pedestrian safety paths be constructed along both sides of local streets (a sidewalk on only the north side is proposed), 2) Section 11-94(c) to provide less than three feet of cover for storm sewer pipe, 3) Section 11-194(a)(7) for exceeding the 800 foot maximum length of a cul-de-sac (975 feet is proposed), 4) Section 11-194(a)(19) for the lack of a secondary or emergency access; as part of the site plan for Orchard Hills North single family residential development (parcel 22-26-201-006).

Mr. Cardenas said this request is for a new development located on Ten Mile just north of Orchard Hills Elementary School. The City Administration supports three of the four requests.

Mayor Pro Tem Staudt asked the developer, Claudio Rossi, what their alternatives would be if they denied the cul-de-sac length. Mr. Rossi said there wasn't an alternative due to the constraints to the site. He didn't think they could have any access through the school. Any access would go through a playground and the schools probably wouldn't allow that. They have tried in the past for another easement and were denied. Rick Hirth, Warner, Cantrell, & Padmos noted two issues, length of cul-de-sac and the lack of a secondary access is, on the face, difficult to understand if taking a 800 foot long cul-de-sac with houses on both side of the road, but our project only involves twelve lots. Under the RA zoning designation the ordinance allows 1,500 foot length cul-de-sac without secondary access and those lots would yield the same amount of lots on cul-de-sac. The length of cul-de-sac and the access to the homes is generally limited to 20-24 lots and they have 12 lots. The difficulty they have is that Ten Mile Road is 13-14 feet below the level where our cul-de-sac begins. The grades are very steep along there. It is deceiving because of a gravel access road used by the school now isn't bad but we have to build a storm water sediment basin in the middle of that road. It will be 8-10 feet below Ten Mile Road. So getting from the west property line down to the bottom of the basin is too much slope. It is their opinion that when they were granted the variance on another project and felt there was a common sense approach, that the secondary access would be required. If they did build an emergency road immediately adjacent to the west property line, it would require retaining walls that would have public safety problems. They didn't think the number of units compared to a regular cul-de-sac is about half the amount and would be sufficient justification to not have a secondary access. Mayor Pro Tem Staudt said it was clear they would lose their 11th lot on the drawing if it is needed for a cul-de-sac. Mr. Hirth said even if that is the case, they still have the physical problems of the grade and crossroads.

Member Mutch asked City Attorney Schultz when granting a variance on these items how much flexibility Council has and if they are held to what is approved. Mr. Schultz said they have flexibility. Council has the ability to specify a deviation but not with the plan that they want. With a minor deviation, they could grant approval with a change to an ordinance requirement, but not a zoning requirement. If it is significant change, the builder would have the opportunity to come back. Member Mutch asked what steps the builder would have to take before Council. Mr. Schultz said it depends on what it is that you want in order to allow it and if it involves amending a zoning requirement, they have to go through the process again. Council can be flexible if it is an engineering consideration. Member Mutch said the secondary access wasn't addressed in 2005, so there must have been a change since then. He asked Director of Public Services Hayes if he could show Council the site plan indicating where the water main easement is proposed to go. Member Mutch said it is a 20 foot wide secondary access road that would run along the west property line from Ten Mile Road south and asked if there is a way to accomplish an alternative. Mr. Hayes said in concept there is one possible alignment. They have requested from the applicant to provide details to demonstrate there is a practical difficulty, but haven't received any details. Mr. Hayes said he just learned at this Council meeting what the obstacles may be to placing the emergency access at that location. He said the sedimentation basin location is flexible

also. It doesn't have to be at that location. Member Mutch asked how do the grade, slope and the necessity for retaining walls factor into recommending approving or denying the variance. Mr. Hayes said he would have to see how extreme the grades are to see what the applicant would be faced with at a cost. Member Mutch questioned where the basin could possibly go on the plan. Mr. Hayes didn't know because he didn't have the details. Member Mutch noted it is a constrained site with natural resources and features. He wouldn't want the basin moved if it resulted in cutting more trees or impacting wetlands. He asked what the concerns were. Mr. Hayes said both DPS and Public Safety have concerns. Engineering has determined the ordinance falls under their purview and has given their opinion following Chapter 11 of the ordinance. Member Mutch asked Public Safety about their concerns. Mr. Jeff Johnson, Director of EMS & Fire Operations, said their main concern was if there was a blocked off entrance there would be no way to enter the site. They have a limited amount of hose for fire emergencies because of the length and of the way it is land locked. The number of homes doesn't make a difference. The access from 10 Mile would have to support the emergency vehicles. It would have to be a gated access with the proper amount of foundation and grading to support the service vehicles. The access would have to be built to what the ordinances require. Member Mutch asked about the width of the paved access. Mr. Hayes said the easement would have to be 20 feet and a paved width of 12 feet. Member Mutch said it had been mentioned about the difficulty of sites like this in the City. He didn't have an answer to address all the needs for developing this property. The developer is doing the best they can on this constrained site. He thought maybe a reduction of lot sizes as a solution. He was open to solutions and wanted to hear from the other Councilmembers.

Member Markham was concerned with the Fire aspects of this issue. She thought those who move to our Community have an expectation they will be safe. She has a concern with the cul-de-sac being almost 25% longer than our ordinance would allow on this constrained space. She is looking for an alternative access. She mentioned discussion whether the pathway would become a longer path and should be fenced off. She thought there are solutions as happened with Thornton Creek Elementary to promote walkability through our community as a suggestion.

Member Wrobel saw this while on the Planning Commission years ago and would like to see a win for both sides. He is very cognizant that we need to provide public safety and didn't know where it could be placed. He wants to wait until due diligence is done.

Member Casey echoed Member Wrobel's comments and would be open for further conservation to investigate a possible solution for a secondary access.

Member Gatt would like to see the property developed but not at the expense of public safety. In 2014 the reviews are different than in 2005. He thought make the lots smaller and the developer needs to decide.

CM 14-06-094

Moved by Mutch, seconded by Wrobel; CARRIED UNANIMOUSLY:

To postpone consideration of a request from Mirage Development, LLC for a variance from the following ordinance sections: 1) Subdivision Ordinance Section 4.05(A) requiring that pedestrian safety paths be constructed along both sides of local streets (a sidewalk on only the north side is proposed), 2) Section 11-94(c) to provide less than three feet of cover for storm sewer pipe, 3) Section 11-194(a)(7) for exceeding the 800 foot maximum length of a cul-de-sac (975 feet is proposed), 4) Section 11-194(a)(19) for the lack of a secondary or emergency access; as part of the site plan for Orchard Hills North single family residential development (parcel 22-26-201-006) until future date to give the applicant an opportunity to work with Planning and Engineering staff to evaluate the secondary access options.

Roll call vote on CM 14-06-094

Yeas: Markham, Mutch, Wrobel, Gatt, Staudt,
Casey, Fischer

Nays: None