


Director's Report

File No: 17-020
 Project Name: Aspen Meadows Phase II
 Description: Public Hearing and Preliminary Site Plan Approval
 Date of Agenda that packet pertains to: March 1, 2018



- | | |
|--|--|
| <input checked="" type="checkbox"/> Public Hearing
<input checked="" type="checkbox"/> Initial Submittal
<input type="checkbox"/> Revised Plans
<input checked="" type="checkbox"/> Preliminary Approval
<input type="checkbox"/> Final Approval | <input type="checkbox"/> Special Land Use
<input type="checkbox"/> Rezoning
<input type="checkbox"/> Tentative Preliminary Plat
<input type="checkbox"/> Final Preliminary Plat
<input type="checkbox"/> Other _____ |
|--|--|

Contact	Consultants & Departments	Approval	Denial	Approved w/ Conditions	Comments
Dan Keller	Police Dept.	X			
John Holland	Fire Dept.			X	
Aaron Potter	Water Dept.				N/C
Sean O'Neil	Planning Director			X	PER COMMENTS
Johnson & Anderson	Engineering Consultant			X	
Mckenna & Associates	Planning Consultant				SEE LTR.
Brent Bonnavier	Building Dept.			X	
Jeanine Smith	Assessing Dept				N/C
Patricia Skull	Oakland County Int'l Airport			X	
Scott Sintkowski	RCOC				N/C

Planning Director's Recommended Action:

WHITE LAKE TOWNSHIP – PLANNING DEPARTMENT

TRANSMITTAL SHEET

DATE: January 23, 2018

FILE No: 17-020

PROJECT NAME: Aspen Meadows II

PARCEL NO.: 12-16-351-002

PLANS RECEIVED ON: January 23, 2018

PLEASE REVIEW AND RESPOND By: February 6, 2018

TO:

BUILDING DEPARTMENT

FIRE DEPARTMENT

POLICE DEPARTMENT

WATER DEPARTMENT

ATTORNEY

ENGINEERING CONSULTANT

PLANNING CONSULTANT

ASSESSING DEPARTMENT

OAKLAND CO. INT'L AIRPORT



SANITARY AND STORM SEWER DIRECTOR

WETLAND VERIFICATION

PLAN REVIEW – Minor Use Wetland Impact

PLAN REVIEW – Non Minor Use Wetland Impact

PLAN REVIEW – Individual Residential Wetland Impact

OTHER _____

ADDITIONAL COMMENTS:

- ^{3rd} 2nd review of preliminary plans
- Date on plans: 10/2/17
- Response letter sent to Mike L & Greg E

CAB



Chief Andrew Gurka

Fire Department
Charter Township
of White Lake

Site / Construction Plan Review

To: Sean O'Neil, Planning Department Director

Date: 01/31/18

Project: Aspen Meadows II

File #: 17-020

Date On Plans: 10/02/17

The Fire Department has the following comments with regards to the 3rd review of preliminary plans for the project known as Aspen Meadows II:

1. Turn radius, including cul-de-sacs - Shall accommodate the largest Fire Department Apparatus (40').
2. Hydrant spacing shall not exceed 500 feet.

John Holland
Fire Marshal
Charter Township of White Lake
(248)698-1980
jholland@whitelaketwp.com

Plans are reviewed using the International Fire Code (IFC), 2015 Edition and Referenced NFPA Standards.

February 1, 2018

Sean O'Neil, Director
Community Development Department
Charter Township of White Lake
7525 Highland Road
White Lake, Michigan 48383

Re: Aspen Meadows Phase II Preliminary Site Plan Review – 3rd Review

Ref: WLT File No. 17-020

J&A File No. 18622

Date of Plans: 1-22-18

Design Professional: Kieft Engineering, Inc.

The Preliminary Site Plans for the above referenced project have been reviewed for compliance with the Township's Engineering Standards. This site came in for review previously in 2005, the following comments in *italics* below are from our November 17, 2005 review letter, and our responses to those items are in **(bold)**. New comments have been added in plain text below. Previously addressed comments have been removed.

I. Proposed Improvements

- A. 39 Single Family Residential Units.
- B. Twenty seven foot wide paved public streets.
- C. Concrete curb and gutter.
- D. Enclosed storm sewers.
- E. Public watermain.
- F. Two open detention basins and one retention basin.

II. We offer the following comments on the Preliminary Site Plan:

General

1. *The plans do not indicate proposed sidewalks, we defer to the Township regarding the requirement of sidewalks for this development. (Comment addressed, proposed sidewalks have been indicated on the plan set.)*

1. *The slope along Loveland Pass Lane through the intersection of Loveland Pass Court is steeper than the recommended minimum of 3.0% within 100 feet of the intersection. It is our understanding however that the preliminary plans have been approved by RCOC. (Comment remains, the applicant has indicated the steep grades are a result of the two 36" gas main crossings within the DTE easement. We defer further comment to the Oakland County Road Commission)*

Storm Sewer

No comments at this time.

Detention/Retention Basin

1. *The tributary area to all basins and size in acres must be shown on the plan. (The plans have been modified to show the drainage district areas. We have a concern with large drainage areas shown discharging offsite. The plans show 1.54 acres discharging to the south, 5.6 acres discharging to the east, 4.7 acres draining to the south west. Clarification will be required regarding these discharges, every effort must be made to direct storm water from onsite areas to the onsite detention facilities. The detention basins will also need to be resized to accommodate this additional water.) (The Applicant met with J&A and the Township Planning staff to review the intent for the stormwater management system in an effort to come to an understanding in regards to the challenges of the stormwater management system for this site. The applicant has placed 40 to 50 foot natural buffers along the east property line in an attempt to minimize any impact from the development on properties to the east. The applicant has also provided calculations on the plan that indicate proposed post development runoff to adjacent property will be less than what currently exists based on agricultural runoff coefficients.)*
2. *Clarification will be required regarding the proposed pond outlets and the ultimate destination for this discharge. Offsite easements will be required for the storm water point discharges. (Comment remains, White Lake Township Engineering Design Standards dictate (C.1.a.) "When concentrated storm water is proposed to be discharged over, onto or across private property other than that owned by the developer, an agreement between the owners must be executed relieving the Township of any responsibility for damage that might occur." We recommend the offsite discharge routes be defined and an easement be required over the drainage course to the point of ultimate discharge. If an agreement with the*

adjacent property owners is not possible, retention may be required.) (Detention basin C has been revised to now be a retention basin which eliminates the need for an agreement with properties to the east. The applicant has indicated they intend to pursue an agreement with the property owner to the south for stormwater discharge from detention basin D. The applicant has better demonstrated the natural drainage course this discharge is intended to take. Provided the applicant can secure an agreement with the south property owner we believe the applicant has met the intent of the stormwater detention standards for this level of submittal.)

Water main

1. *Additional fire hydrants must be shown to limit hydrant spacing to a maximum of 500 feet. (We defer further comment to Fire Department regarding hydrant spacing.)*

Sanitary Sewer

1. The applicant has provided preliminary and final approval letters from the Oakland County Health Department (OCHD), no further comment.

There are challenges with the site development regarding stormwater management due to significant grade changes. We believe however, that the applicant has provided enough measures to meet the overall intent of the engineering design standards for this level of submittal provided an agreement can be reached with the property owner to the south regarding the stormwater discharge. If you have any questions, please feel free to call me.

Respectfully,

JOHNSON & ANDERSON, INC.



Michael Leuffgen, P.E.
Project Engineer

Cc: Jason Iacoangeli, Community Development *via e-mail*
Craig Burnside, Community Development *via e-mail*
Rik Kowall, Supervisor, White Lake Township *via e-mail*
Aaron Potter, Water Superintendent, White Lake Township *via e-mail*

February 1, 2018

Mr. Sean O'Neil

White Lake Township Library Preliminary Site Plan Review – 3rd Review

Page 4 of 4

John Holland, Fire Marshall, White Lake Township *via e-mail*

Enclosure: None

L:\18500\18622 Aspen Meadows Phase II\PSP Review\2018-1-23 3rd PSP Submittal\18622 WLT Aspen Meadows Phase II PSP
- 3rd review.doc



MCKENNA

February 6, 2018

Planning Commission
Charter Township of White Lake
7525 Highland Road

White Lake, MI 48383

Subject: 17-020: Aspen Meadows II Planned Development
Preliminary Site Plan Review #3

Location: South side of Highland Road (M-59), between Ford Road and Bogie Lake Road

Dear Planning Commissioners:

JFK Investment Company proposes to develop a 39-unit site condominium development. It is the second phase of a Planned Development that was first undertaken in 2001. While the site is already zoned PD, there is not previously approved preliminary site plan or development agreement to guide the development of this parcel. Given this, we look to Phase I of the project for guidance.

Planned Development approval, under the current ordinance provisions, involves three (3) steps: Preliminary Site Plan Review, Final Site Plan Review, and Development Agreement Review. We have reviewed the application for compliance with the Township's Zoning Ordinance and Master Plan as well as sound planning and design principles, and offer the following comments:

Planned Development Review Process

The Planned Development review process involves the following three (3) steps:

1. Preliminary Site Plan Review: This is the step that the number of units and road layout are established, the amount of open space is determined, and other project details are decided upon. At the preliminary review step the Planning Commission holds a public hearing. The Planning Commission must review the PD proposal and make a recommendation to the Township Board for the preliminary site plan. The Township Board is required to take action, approving or denying the preliminary site plan. If it were not already zoned PD, the property would be rezoned to PD at the end of the step.
2. Final Site Plan Review: Final site plan review is the step at which all of the details are included on the final site plan and all of the conditions of preliminary site plan review must be satisfied. The Planning Commission is required to review the final site plan and take action, approving or denying the final site plan. It is at this step where the Planning Commission also reviews the proposed Development Agreement and makes a recommendation to the Township Board.
3. Development Agreement Review: Upon recommendation of the Development Agreement by the Planning Commission, the Township Board takes final action on the Development Agreement.

Review Comments

1. **Zoning, Land Use, and Future Land Use:** The current Zoning District, current land use, and future land use of the site, as well as the surrounding areas, are as follows:

	Zoning Districts	Current Land Uses	Future Land Uses (Master Plan)
Site	Planned Development	Vacant	Rural Estates
North	PD – Aspen Meadows I	Residential	Rural Estates
East	Suburban Farm	Residential	Rural Estates
South	PD – Alpine Valley	Recreation	Parks and Open Space
West	Planned Development	Vacant	Rural Estates

Single family is a permitted use in the PD District. Rural Estates implies a planned density of 0.5 dwelling units per acre. The proposed density is just under one dwelling unit per acre. While Phase I acreage is not shown, the density of Phase II appears to be consistent with that of the first phase.

2. **Required Information:** The information required for Planned Development preliminary site plans, listed in Sections 6.7(B)(i)(a) and (b) of the Zoning Ordinance, is less than the information required in Section 6.8 for conventional site plans. However, at final site plan review, all of the required information listed in Section 6.8 must be included. Items of information required in Sections 6.7(B)(i)(a) and (b) that are not provided are listed in an appendix to this letter.

3. **Dimensional Standards¹:**

- a. **Lot Area, Setbacks, Lot Coverage.** Sections 3.1.10 (PD, Planned Development District) and 3.11 (Notes to District Standards) of the Zoning Ordinance include provisions for minimum lot area, setbacks, and lot coverage, as follows:

	Zoning Ordinance Requirements	Proposed
Min. Lot Area (Site)	10 acres (PD District)	40.77 acres
Min. Lot Area (Lots)	TBD	21,600 SF
Min. Lot Width	TBD ²	116' at setback
Min. Front Yard (Lots)	40'	40'
Min. Side Yard (Lots)	25' min and 50' combined.	25' min or 50' combined. ³
Min. Rear Yard (Lots)	TBD	40'
Max. Height	30' or 2 stories	30' or 2 stories
Max. Lot Coverage	Governed by parking, landscaping, etc.	Typical is 20% of less.

¹ Section 6.7(D)(iii) allows the Planning Commission to modify dimensional and density standards in a PD.

² A minimum of 65' of width is required along the right-of-way for lots on curvilinear streets or cul-de-sacs.

³ Should require a min. of 25 feet for side entry garages per Sec. 3.11(T).



- b. **Wetland Setbacks.** Section 3.11(Q) of the Zoning Ordinance requires all buildings to be located at least 25 feet from a regulated wetland, submerged land, or other water body. No wetlands are present in this phase.
4. **Landscaping and Screening:** Section 6.7(B)(i)(a)(9) requires only a conceptual landscape plan during preliminary site plan review. No conceptual landscaping plan has been provided.
5. **Building Architecture and Design:** Section 6.7(C)(iii) requires residential Planned Developments to provide variations in building facades and setbacks that avoid the creation of regimented alignment of buildings. However, design compatibility within the development is required, and garages are recommended. As the proposed streets are relatively short, alignment is not much of an issue. No information has been provided on building materials, design standards, or the intent regarding garages. This should be provided at this time.
6. **Sidewalks and Non-Motorized Pathway:** Section 6.7(C)(i) recommends sidewalks along all frontage streets and sidewalk connections to all major rights-of-way. The typical road cross-section provided does not provide for sidewalks along the proposed streets, but sidewalks are now shown in plan view. It does not appear that the first phase of Aspen Meadows had sidewalks.
7. **Roads and Access:** The proposed development has two access point across the Detroit Edison property as extensions of streets that were stubbed off in the first phase of Aspen Meadows. The streets are intended to be public, and so RCOC approval will be required. In general, the layout does not provide for excessively long dead-end, though it appears that Breckenridge Court will extend over 700 feet. We defer to the Township Engineer and RCOC on this point.
8. **Off-Street Parking:** Two car garages and driveways will be provided to accommodate the required off-street parking.
9. **Lighting:** Section 5.18(G) of the Zoning Ordinance includes standards for outdoor lighting. No information on exterior lighting has been provided. We assume street lighting is contemplated. The intended location of street lights should be shown.

Recommendation

The purpose of preliminary site plan review of a Planned Development is to establish the number of units and road layout, and to determine other project details to be decided upon. Additional information that is required at this stage has not been provided. We recommend that the applicant address the deficiencies identified above and in the appendix and resubmit.

If you have any questions about this report or require additional information, please do not hesitate to contact us.





Respectfully submitted,

McKENNA

Gregory Elliott, AICP
Principal Planner

cc: Mr. Sean O'Neal, AICP
Mr. Jason Iacoangeli, AICP
Mr. Craig Burnside.



Appendix to Site Plan Review Report; Required Site Plan Information

Applicable Sub-Section of the Zoning Ordinance	Information Requirements
6.7(B)(i)(a)(2)	While it appears that all natural features will be removed, the character of what is proposed for removal is not identified.
6.7(B)(i)(a)(5)	A general description of proposed restrictions should be provided.
6.7(B)(i)(a)(7)	General design and material for buildings, including plans for garages.
6.7(B)(i)(a)(9).	A conceptual landscape plan is required.
6.7(B)(i)(a)(11)	Rendering of a typical dwelling.
6.7(B)(i)(b)(4)	A traffic impact assessment.
6.7(B)(i)(b)(5)	A Community Impact Statement complying with Section 6.6.



Rik Kowall, Supervisor
Terry Lilley, Clerk
Mike Roman, Treasurer



Trustees
Scott Ruggles
Michael Powell
Andrea C. Voorheis
Liz Fessler Smith

WHITE LAKE TOWNSHIP

7525 Highland Road • White Lake, Michigan 48383-2900 • (248) 698-3300 • www.whitelaketwp.com

SITE PLAN REVIEW BUILDING DEPARTMENT 3RD Review of Preliminary Plans

To: Sean O'neil, Planning Director
From: Brent Bonnavier, Building Official
Project Name: Aspen Meadows II
File Number: 17-020 **Parcel Number:** 12-16-351-002

Zoning District:
Review Date: 1-24-18

Comments:

1. Secure off site easements as needed and as required.
2. Fire Hydrant location per White Lake Township Fire Department
3. Grading and drainage per White Lake Township Consulting Engineers
4. Septic permit will be required for each site prior to issuing permits
5. Water system per Water department

Memo

To: Sean O'Neil, Planning

From: Jeanine A Smith

Date: January 23, 2018

Re: Project Name: Aspen Meadows II File No: 17-020 Parcel Number: 12-16-351-002

Comments: No comment

Craig Burnside

From: Shull, Patricia J <shullp@oakgov.com>
Sent: Tuesday, November 28, 2017 12:54 PM
To: Craig Burnside
Cc: Bush, Cheryl L
Subject: Aspen Meadows II

Thank you for the opportunity to review and comment on the preliminary plans for Aspen Meadows II Site Condominiums.

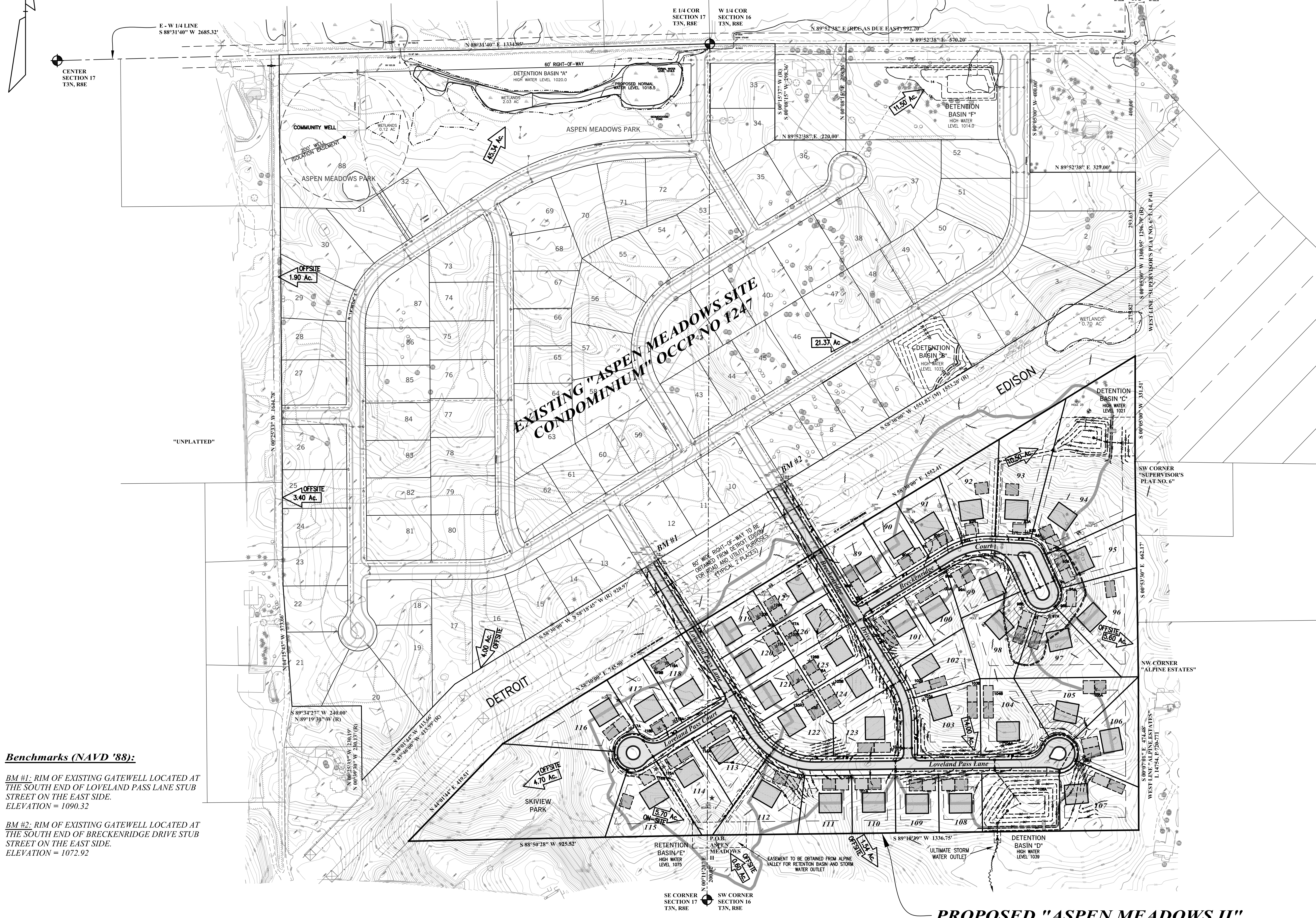
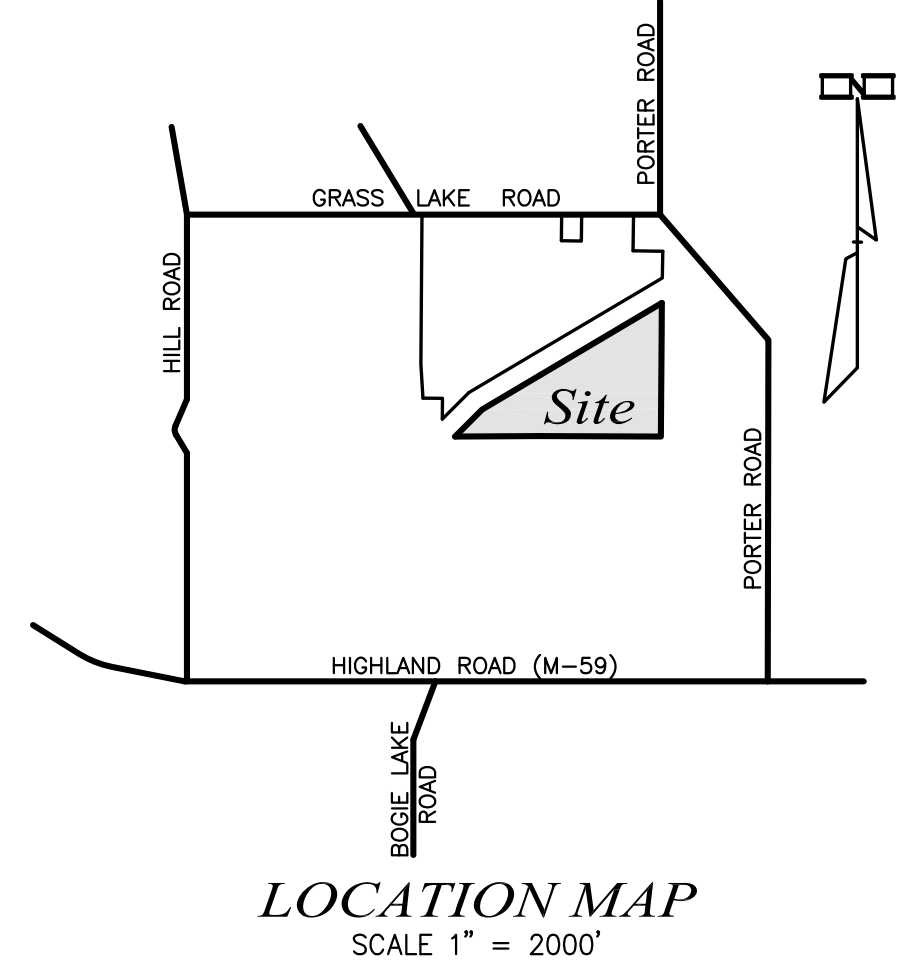
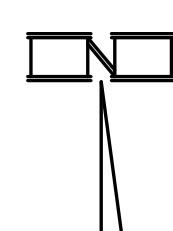
We recommend that any approval by the township includes consideration of and requires disclosure in some manner to potential future deed holders of the following:

- The subdivision is located approximately 4 ½ miles west of Oakland County International Airport, which operates 24 hours per day.
- There are now and will continue to be overflights by piston powered and jet aircraft arriving at and departing from the airport, with engine noise and combustion byproducts attendant thereto.
- The aircraft overflights can legally be as low as 500 feet above ground level under applicable Federal and State rules and regulations.
- Some persons may find the foregoing factors undesirable or offensive.
- Prospective owners may want to consider installation of higher than standard levels of insulation, window quality, and / or central air conditioning to mitigate the foregoing factors.
- Any purchase agreement should include a disclosure clause indicating the vicinity of the airport.

Thank you for the notification and opportunity to comment on the project.

Patricia

Patricia J. Shull
Oakland County International Airport
6500 Patterson Parkway
Waterford, MI 48327
Direct: 248.666.3902
shullp@oakgov.com



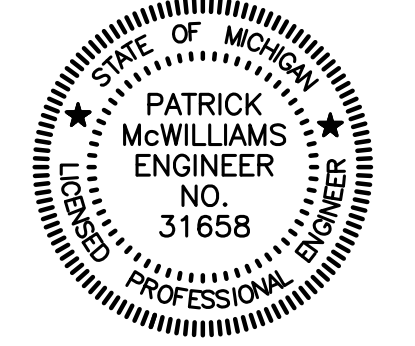
GENERAL NOTES

- PROPERTY SIDWELL NUMBER 12-16-351-002
- ZONING PDD - PLANNED DEVELOPMENT
- PROPOSED USE: SINGLE FAMILY RESIDENTIAL (SITE CONDOMINIUM)
- MINIMUM SIZE PROPOSED: LOT SIZE 21,800 S.F., LOT WIDTH 116 FEET.
- PROPOSED SETBACK REQUIREMENTS:
FRONT - 40 FEET
SIDE - 15 FEET / 40 FEET TOTAL
REAR - 40 FEET
- STREETS ARE 60 FOOT WIDE RIGHT-OF-WAY W/27 FT WIDE ASPHALT W/CONCRETE CURB AND GUTTER (3.847 LF TOTAL ROAD LENGTH). THE DEVELOPER INTENDS TO DEDICATE ALL ROADS TO ROAD COMMISSION FOR OAKLAND COUNTY.
- NUMBER OF LOTS (NORTH OF EDISON EASEMENT 88 (PHASE I); SOUTH OF EDISON EASEMENT 39 LOTS; TOTAL - 127 LOTS).
- SEWAGE DISPOSAL: INDIVIDUAL SEPTIC SYSTEMS UNDER PERMIT FROM THE OAKLAND COUNTY HEALTH DEPARTMENT.
- WATER SUPPLY: INDIVIDUAL WELLS, WITH AN OPTIONAL COMMUNITY WELL WATER SYSTEM IF A PERMIT CAN BE OBTAINED FROM WHITE LAKE TOWNSHIP AND THE STATE HEALTH DEPARTMENT.
- PERMIT REQUIRED FROM OAKLAND ROAD COMMISSION FOR CONNECTIONS TO LOVELAND PASS AND BRECKENRIDGE DRIVE.
- SOIL EROSION PERMIT REQUIRED FROM OAKLAND COUNTY WATER RESOURCE COMMISSION.
- ALL ROADWAY WILL BE 22' WIDE ASPHALT WITH 30" MOUNTABLE CONCRETE CURB AND GUTTER (27' WIDE TOTAL).
- PUBLIC UTILITIES SHALL BE INSTALLED UNDERGROUND.
- PHOSPHOROUS BASED LAWN FERTILIZERS WILL NOT BE ALLOWED.
- NO BRUSH OR GRASS CLIPPINGS WILL BE STORED OR DISPOSED OF INTO THE EXISTING WETLANDS OR PARK AREAS.
- ALL YARD WASTE TO BE REMOVED FROM SITE.
- ALL SEPTIC TANKS WILL BE INSPECTED EVERY TWO YEARS AND CLEANED AS NECESSARY.
- DUE TO THE RURAL NATURE OF THIS DEVELOPMENT NO PUBLIC SIDEWALKS ARE PROPOSED AS PER EXISTING ORDINANCE REQUIREMENTS.
- THE BUILDER WILL PROVIDE INDIVIDUAL PLOT PLANS AND GRADING WHEN REQUIRED BY THE BUILDING DIRECTOR.
- PROPOSED SITE GRADES SHALL MATCH EXISTING GRADES AT THE PROPERTY LINE WHERE OFF-SITE GRADING RIGHTS DO NOT EXIST.
- ALL DISTURBED AREAS SHALL BE RE-VEGETATED.
- DETENTION BASIN SIDE SLOPES SHALL BE 1 ON 6 OR LESS.
- APPLICATION TO THE OAKLAND COUNTY HEALTH DEPARTMENT FOR A SITE EVALUATION WILL BE MADE AFTER CONCEPTUAL/PRELIMINARY SITE PLAN APPROVAL BY THE TOWNSHIP.
- SOILS IN THE RETENTION BASIN ON LOTS 112-114 IS RIDGEL SANDY LOAM.
- REAR AND SIDE-YARD DRAINAGE EASEMENTS WILL BE SHOWN ON THE GRADING PLAN.
- ALL FINAL ROAD GRADES WILL COMPLY WITH ROAD COMMISSION FOR OAKLAND COUNTY STANDARDS.

Aspen Meadows II Description:
A PART OF THE SOUTHWEST 1/4 OF SECTION 16, AND A PART OF THE SOUTHWEST 1/4 OF SECTION 17, T-3-N, R-8-E, WHITE LAKE TOWNSHIP, OAKLAND COUNTY, MICHIGAN, DESCRIBED AS BEGINNING AT A POINT ON THE EAST LINE OF SAID SECTION 17, LOCATED N 00°11'20"E 200.02 FEET FROM THE SOUTHWEST CORNER OF SECTION 17, T-3-N, R-8-E; THENCE S 88°50'28"W 925.52 FEET; THENCE N 44°01'44"E (RECORDED AS N 45°06'00"E) 419.51 FEET; THENCE N 58°30'00"E (RECORDED AS N 59°38'45"E) 745.90 FEET TO THE EAST LINE OF SAID SECTION 17; THENCE N 58°30'00"E 1352.41 FEET (RECORDED AS 1553.70) TO A POINT ON THE WEST LINE OF "SUPERVISOR'S PLAT NO. 6," (RECORDED IN LIBER 14 OF PLATS, PAGE 41, OAKLAND COUNTY RECORDS; THENCE S 00°05'00"W 331.51 FEET (RECORDED AS 329.84 FEET) ALONG THE WEST LINE OF SAID "SUPERVISOR'S PLAT NO. 6" TO THE SOUTHWEST CORNER THEREOF; THENCE S 00°53'30"E 662.17 FEET (RECORDED AS S 00°56'10"E 664.51 FEET) TO THE NORTHWEST CORNER OF "ALPINE ESTATES" CONDOMINIUM SUBDIVISION PLAN NO. 865, RECORDED IN LIBER 14754, PAGES 720-771, OAKLAND COUNTY RECORDS; THENCE S 00°07'01"E (RECORDED AS S 00°03'50"E) 474.48 FEET ALONG THE WEST LINE OF SAID "ALPINE ESTATES"; THENCE S 89°19'51"W 1336.75 FEET TO THE POINT OF BEGINNING, CONTAINING 40.77 ACRES AND SUBJECT TO EASEMENTS AND RESTRICTIONS OF RECORDS, IF ANY.

Sheet Index:

- Overall Site Plan
- Preliminary Site Plan - Phase II
- Preliminary Site Plan - West
- Preliminary Site Plan - East
- Detention Basin Calculations & Details



Benchmarks (NAVD '88):

BM #1: RIM OF EXISTING GATEWELL LOCATED AT THE SOUTH END OF LOVELAND PASS LANE STUB STREET ON THE EAST SIDE. ELEVATION = 1090.32

BM #2: RIM OF EXISTING GATEWELL LOCATED AT THE SOUTH END OF BRECKENRIDGE DRIVE STUB STREET ON THE EAST SIDE. ELEVATION = 1072.92

PROPOSED "ASPEN MEADOWS II"

DATE	ISSUE

PROPRIETOR:
JFK INVESTMENT COMPANY
43252 WOODWARD AVENUE, STE 210
BLOOMFIELD HILLS, MICHIGAN 48302
(248) 333-2373

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KIEFT ENGINEERING, INC.
REG. PROF. ENGINEER AND REG. LAND SURVEYOR
5852 SOUTH MAIN STREET, STE #1, CLARKSTON, MICHIGAN 48346
PHONE (248) 625-5251 FAX (248) 625-7110

DATE	10-2-17	CKD. BY	DATE
DRAWN OF			
DESIGN PCM			



Overall Site Plan
"ASPEN MEADOWS II SITE CONDOMINIUM"
WHITE LAKE TOWNSHIP, OAKLAND COUNTY, MICHIGAN

SCALE	1" = 150'
SHEET	1 OF 5
KE	2017.305

HA:2005:260:drp/Aspen Meadows II Site Planning Overall: 11/13/2017 4:20:05 PM



EXISTING "ASPEN MEADOWS II CONDOMINIUM" OCCP NO 1247

EXISTING	LEGEND	PROPOSED
	STORM SEWER	
	WATERMAIN	
	GAS MAIN	
	ELEC. TELE. CABLE	
	STORM MANHOLE	
	CATCH BASIN	
	INLET	
	REAR YARD CATCH BASIN	
	END SECTION	
	SANITARY MANHOLE	
	GATE VALVE AND WELL	
	HYDRANT	
	CONTOURS	
	GRADE	
	PROP. FINISH GRADE	
	PROP. BSMT. WALKOUT ELEV.	
	MATCH EXIST. ELEV.	
	WETLANDS BOUNDARY	
	25' WETLANDS BUFFER	

Benchmarks (NAVD '88):

BM #1: RIM OF EXISTING GATEWELL LOCATED AT THE SOUTH END OF LOVELAND PASS LANE STUB STREET ON THE EAST SIDE. ELEVATION = 1090.32

BM #2: RIM OF EXISTING GATEWELL LOCATED AT THE SOUTH END OF BRECKENRIDGE DRIVE STUB STREET ON THE EAST SIDE. ELEVATION = 1072.92

SE CORNER SECTION 17 T3N, R8E

SW CORNER SECTION 16 T3N, R8E

11/13/2017 4:19:34 PM

DATE	ISSUE

PROPRIETOR:
 JFK INVESTMENT COMPANY
 43252 WOODWARD AVENUE, STE 210
 BLOOMFIELD HILLS, MICHIGAN 48302
 (248) 333-2373

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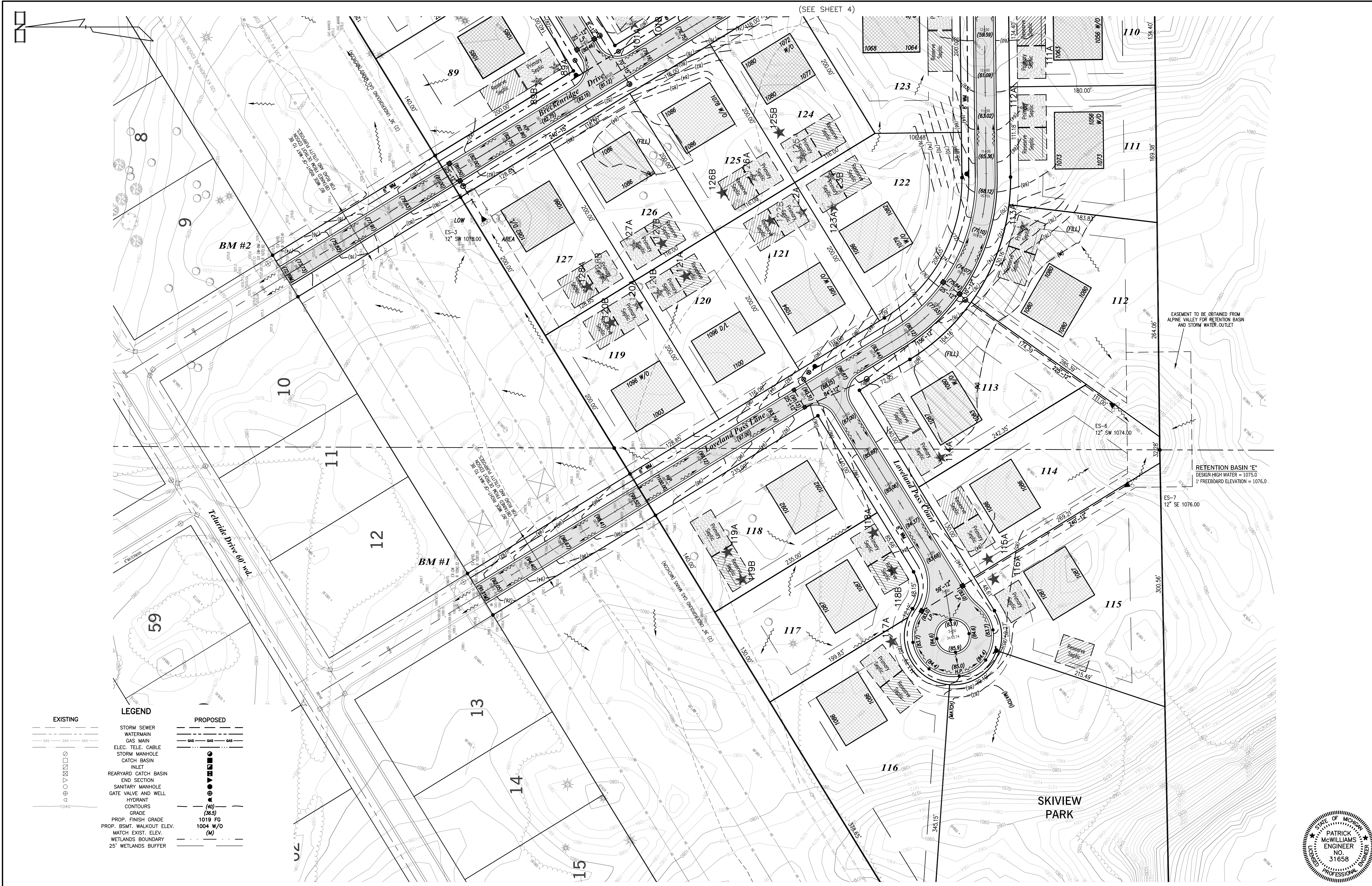
KIEFT ENGINEERING, INC.
 REG. PROF. ENGINEER AND REG. LAND SURVEYOR
 5852 SOUTH MAIN STREET, STE #1, CLARKSTON, MICHIGAN 48346
 PHONE (248) 625-5251 FAX (248) 625-7110

DATE	10-2-17	CKD. BY	DATE
DRAWN	GF		
DESIGN	PCM		
SECTIONS 16 & 17	T-3 -N- R- 8 -E		



Preliminary Site Plan - Phase II
"ASPEN MEADOWS II SITE CONDOMINIUM"
 WHITE LAKE TOWNSHIP, OAKLAND COUNTY, MICHIGAN

SCALE 1" = 100'
 SHEET 2 OF 5
 KE 2017.305



LEGEND

EXISTING	PROPOSED

EASEMENT TO BE OBTAINED FROM ALPINE VALLEY FOR RETENTION BASIN AND STORM WATER OUTLET

RETENTION BASIN "E"
 DESIGN HIGH WATER = 1075.0
 1' FREEBOARD ELEVATION = 1076.0

ES-7
 12" SE 1076.00

HA2005260.dwg/Aspen Meadows II Site Plan.dwg, Grids, 11/13/2017 4:18:13 PM

DATE	ISSUE

PROPRIETOR:
 JFK INVESTMENT COMPANY
 43252 WOODWARD AVENUE, STE 210
 BLOOMFIELD HILLS, MICHIGAN 48302
 (248) 333-2373

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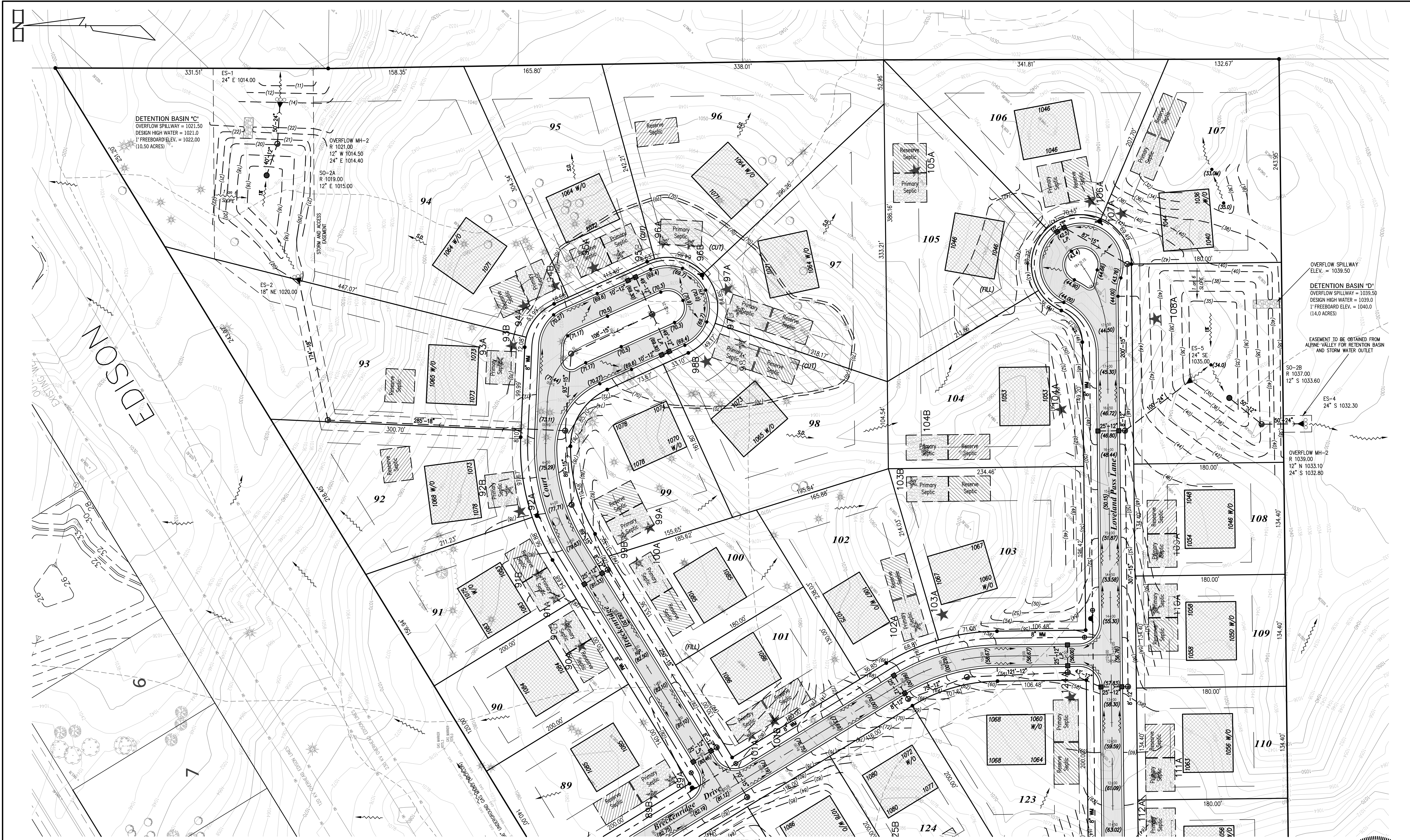
DATE	CKD. BY	DATE
10-2-17		

DESIGN PCM
 SECTIONS 16 & 17 T-3 -N, R-8 -E



Preliminary Site Plan - West
"ASPEN MEADOWS II SITE CONDOMINIUM"
 WHITE LAKE TOWNSHIP, OAKLAND COUNTY, MICHIGAN

SCALE 1" = 50'
 SHEET 3 OF 5
 KE 2017.305



DETENTION BASIN "C"
 OVERFLOW SPILLWAY = 1021.50
 DESIGN HIGH WATER = 1021.0
 1' FREEBOARD ELEV. = 1022.00
 (10.50 ACRES)

OVERFLOW MH-2
 R 1021.00
 12" W 1014.50
 24" E 1014.40
 SO-2A
 R 1019.00
 12" E 1015.00

OVERFLOW SPILLWAY
 ELEV. = 1039.50

DETENTION BASIN "D"
 OVERFLOW SPILLWAY = 1039.50
 DESIGN HIGH WATER = 1039.0
 1' FREEBOARD ELEV. = 1040.0
 (14.0 ACRES)

EASEMENT TO BE OBTAINED FROM
 ALPINE VALLEY FOR RETENTION BASIN
 AND STORM WATER OUTLET

OVERFLOW MH-2
 R 1039.00
 12" N 1033.10
 24" S 1032.80

OVERFLOW MH-2
 R 1037.00
 12" N 1033.60
 24" S 1032.30

OVERFLOW MH-2
 R 1039.00
 12" N 1033.10
 24" S 1032.80

DATE	ISSUE

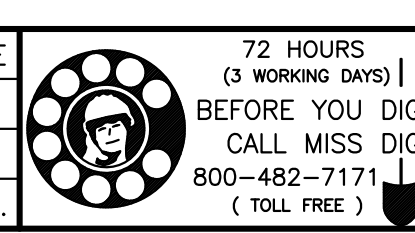
PROPRIETOR:
 JFK INVESTMENT COMPANY
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DATE	10-2-17	CKD. BY	DATE
DRAWN OF			
DESIGN PCM			
SECTIONS 16 & 17	T-3-N-R-8-E		



Preliminary Site Plan - East
"ASPEN MEADOWS II SITE CONDOMINIUM"
 WHITE LAKE TOWNSHIP, OAKLAND COUNTY, MICHIGAN

SCALE 1" = 50'
 SHEET 4 OF 5
KE 2017.305

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DETENTION BASIN "A" - PH I

EXISTING 10 YEAR DETENTION BASIN CALCULATIONS (i.e. WITH OUTLET)

TOTAL CONTRIBUTING AREA = 45.34 ACRES
 RUNOFF COEFFICIENT (C) = 0.32
 $Q_A = (0.20)(45.34 \text{ ACRES}) = 9.07 \text{ C.F.S.}$
 $Q_0 = \frac{Q_A}{(A)(C)} = \frac{9.07}{(45.34)(0.32)} = 0.625$
 $T = -25 + \sqrt{\frac{6,562.50}{Q_0}} = 77.5 \text{ MINUTES}$
 $V_S = \frac{10,500 T}{T + 25} - 40 Q_0 T = 6002 \text{ C.F./ACRE}$
 $V_T \text{ REQ'D} = V_S (C)(A) = (6002)(45.34)(0.32) = 87,082 \text{ C.F. REQ'D.}$
VOLUME PROVIDED:

ELEVATION	AREA (S.F.)	VOLUME (C.F.)
1018.5	46,598	94,540
1020	79,456	94,540

 VOLUME PROVIDED = 94,540 > VOLUME REQUIRED = 87,082

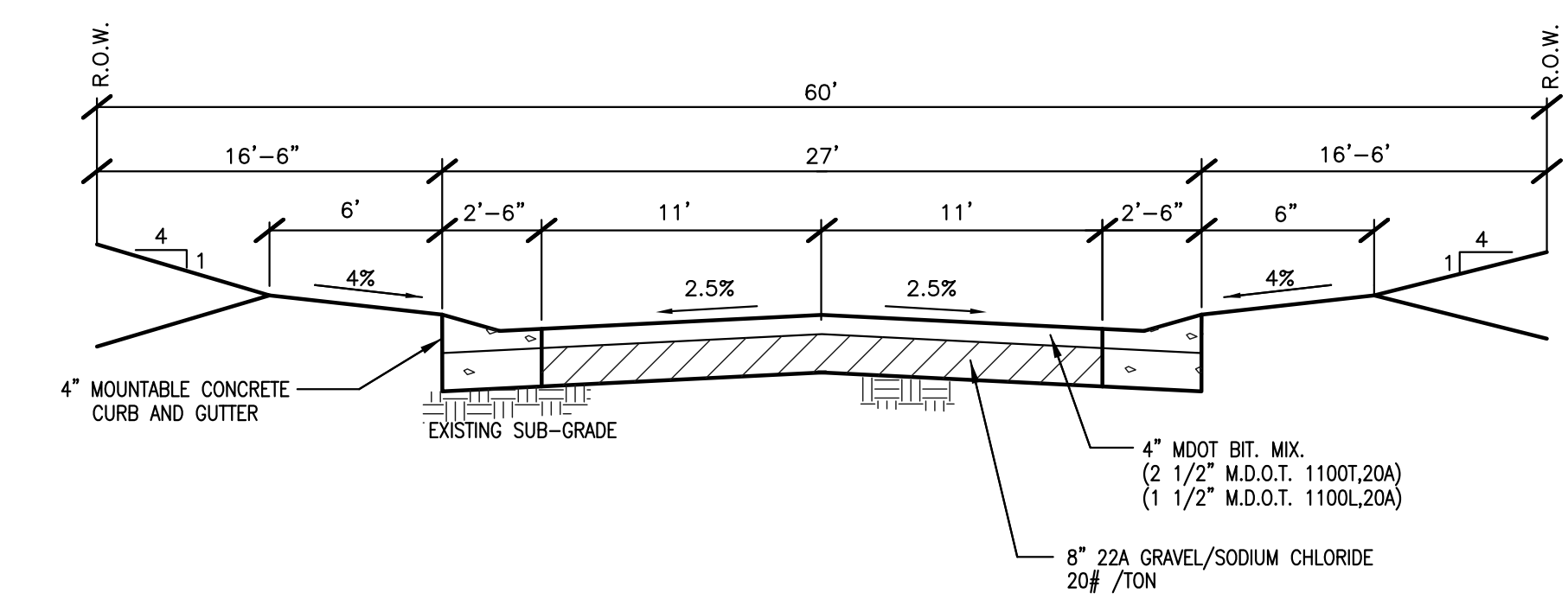
DETENTION BASIN "B" - PH I

EXISTING 10 YEAR DETENTION BASIN CALCULATIONS (i.e. WITH OUTLET)

TOTAL CONTRIBUTING AREA = 21.37 ACRES
 RUNOFF COEFFICIENT (C) = 0.285
 $Q_A = (0.20)(21.37 \text{ ACRES}) = 4.27 \text{ C.F.S.}$
 $Q_0 = \frac{Q_A}{(A)(C)} = \frac{4.27}{(21.37)(0.285)} = 0.701$
 $T = -25 + \sqrt{\frac{6,562.50}{Q_0}} = 72 \text{ MINUTES}$
 $V_S = \frac{10,500 T}{T + 25} - 40 Q_0 T = 5775 \text{ C.F./ACRE}$
 $V_T \text{ REQ'D} = V_S (C)(A) = (5775)(21.37)(0.285) = 35,172 \text{ C.F. REQ'D.}$
VOLUME PROVIDED:

ELEVATION	AREA (S.F.)	VOLUME (C.F.)
1025	0	400
1026	1,200	1,980
1027	2,760	3,540
1028	4,320	5,100
1029	5,880	6,600
1030	7,440	8,220
1031	9,000	9,780
1032	10,560	35,620

 VOLUME PROVIDED = 35,620 > VOLUME REQUIRED = 35,172



TYPICAL ROAD SECTION
NOT TO SCALE

100 YEAR DETENTION BASIN "C" CALCULATIONS (I.E. W/OUTLET)

ONSITE CONTRIBUTING AREA = 14.00 ACRES
 OFF-SITE CONTRIBUTING AREA = 0 ACRES
 TOTAL CONTRIBUTING AREA = 14.00 ACRES
 RUNOFF COEFFICIENT (C) = 0.35
 $Q_A = (0.20)(14.00 \text{ ACRES}) = 2.80 \text{ C.F.S.}$
 $Q_0 = \frac{Q_A}{(A)(C)} = \frac{2.80}{(14.00)(0.35)} = 0.5714$
 $T = -25 + \sqrt{\frac{10,312.50}{Q_0}} = 109.34 \text{ MINUTES}$
 $V_S = \frac{16,500 T}{T + 25} - 40 Q_0 T = 10,931 \text{ C.F./ACRE}$
 $V_T \text{ REQ'D} = V_S (C)(A) = (10,931)(0.35)(14.00) = 40,172 \text{ C.F. REQ'D.}$
VOLUME PROVIDED:

- 1016.0: 2,700 SF → 4,500 SF_{AV} x 2' DEPTH = 9,000 CF
- 1018.0: 6,300 SF → 9,150 SF_{AV} x 2' DEPTH = 18,300 CF
- 1020.0: 12,000 SF → 13,750 SF_{AV} x 1' DEPTH = 13,750 CF
- 1021.0: 15,500 SF → 13,750 SF_{AV} x 1' DEPTH = 13,750 CF

 TOTAL = 41,050 CF, OK

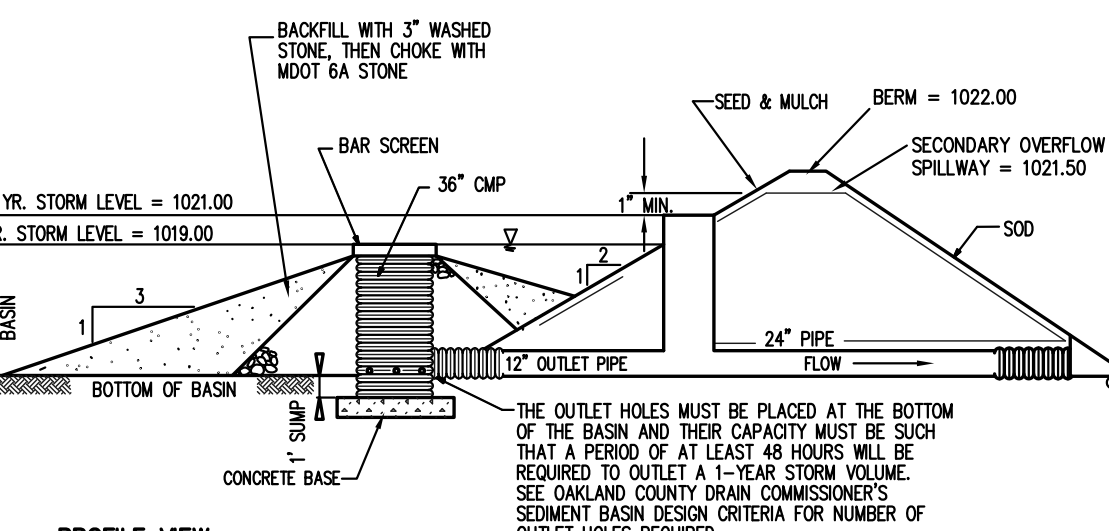
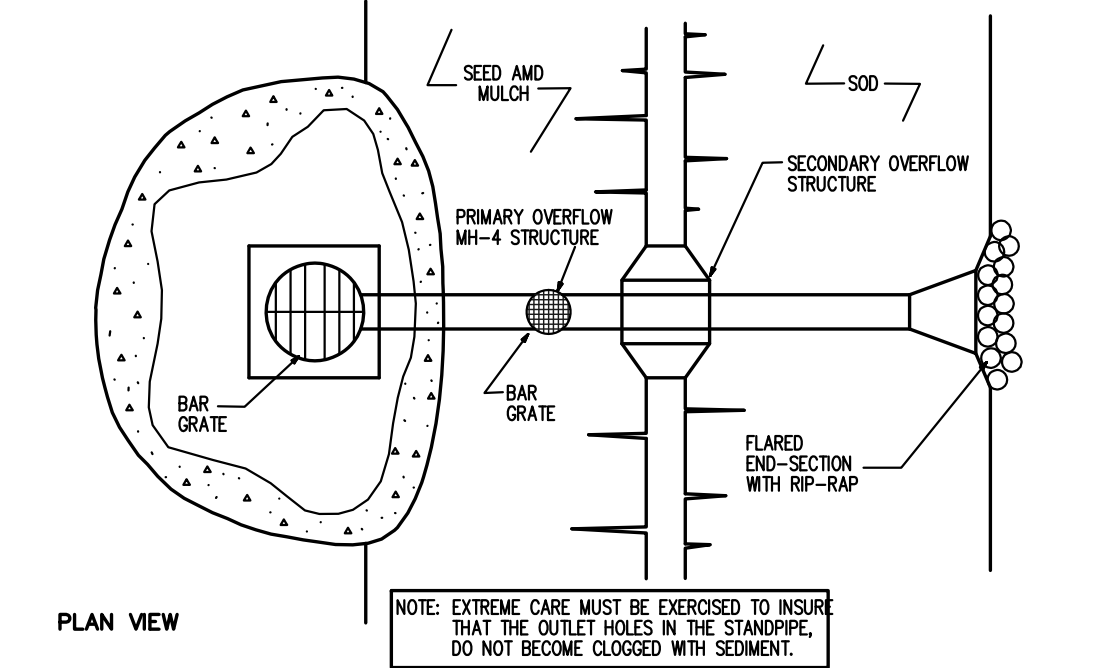
ORIFICE FORMULA

$Q_A = 0.62 (A_0)(2gH)^{1/2}$
 $A_0 = \text{AREA OF ORIFICE PIPE}$
 $g = 32.2 \text{ FT./SEC.}^2$
 $H = \text{DEPTH OF BASIN ABOVE CENTERLINE OUTLET PIPE} = 1021.0 - [1015.0 + \frac{6''}{2}] = 5.75'$
 $A_0 = 0.62 (2gH)^{1/2} = 0.62 [(2)(32.2)(5.75)]^{1/2} = 0.1760 \text{ S.F.}$
 $\text{DIAMETER ORIFICE } (D_0): D_0 = \sqrt{\frac{4(A_0)}{\pi}} = \sqrt{\frac{4(0.1760)}{\pi}} = 0.4734 \text{ FT.} = 5.68 \text{ INCH}$
 USE 6" RESTRICTION

DETENTION BASIN

EXISTING WATER ELEVATION = NONE
 DESIGN HIGH WATER ELEVATION = 1021.00
 1' FREEBOARD ELEVATION = 1022.00
 STORAGE REQUIRED = 40,172 C.F.
 STORAGE PROVIDED = 41,050 C.F.
 TIME TO DRAIN = 40,172 CF/2.10 CFS = 19,130 SEC./3,600 SEC./HR. = 5.31 HOURS

DETENTION BASIN "C" OUTLET FILTER (CMP) SO-2



1 YEAR REQUIRED VOLUME = (4,320)(C)(ACRES)
DETENTION BASIN
 1 YEAR REQUIRED VOLUME = (4,320)(0.35)(10.50 AC) = 15,876
 1 YEAR STORM LEVEL = 1019.00
 100 YEAR STORM LEVEL = 1021.00
 AREA = VOLUME/HEIGHT = 5,292 SF
 ORIFICE AREA REQUIRED $A = \frac{(0.3988)(\text{AREA})(\sqrt{\text{HEIGHT}})}{172,800} = 0.0212 \text{ FT}^2$
 THUS, IF AREA = 5,292, HEIGHT = 21', THEN $A = 0.0212 \text{ FT}^2$
 $0.0212 \text{ FT}^2 / 0.00545 \text{ FT}^2 \text{ PER } 1" \text{ DIA. HOLE} = 3.89 \text{ HOLES}$
 USE (6) 1" DIAMETER HOLES TO OFFSET FOR CLOGGING

100 YEAR DETENTION BASIN "D" CALCULATIONS (I.E. W/OUTLET)

ONSITE CONTRIBUTING AREA = 14.00 ACRES
 OFF-SITE CONTRIBUTING AREA = 0 ACRES
 TOTAL CONTRIBUTING AREA = 14.00 ACRES
 RUNOFF COEFFICIENT (C) = 0.35
 $Q_A = (0.20)(14.00 \text{ ACRES}) = 2.80 \text{ C.F.S.}$
 $Q_0 = \frac{Q_A}{(A)(C)} = \frac{2.80}{(14.00)(0.35)} = 0.5714$
 $T = -25 + \sqrt{\frac{10,312.50}{Q_0}} = 109.34 \text{ MINUTES}$
 $V_S = \frac{16,500 T}{T + 25} - 40 Q_0 T = 10,931 \text{ C.F./ACRE}$
 $V_T \text{ REQ'D} = V_S (C)(A) = (10,931)(0.35)(14.00) = 53,562 \text{ C.F. REQ'D.}$
VOLUME PROVIDED:

- 1035.0: 6,600 SF → 9,000 SF_{AV} x 1' DEPTH = 9,000 CF
- 1036.0: 11,400 SF → 14,500 SF_{AV} x 2' DEPTH = 29,000 CF
- 1038.0: 17,600 SF → 19,000 SF_{AV} x 1' DEPTH = 19,000 CF
- 1039.0: 20,400 SF → 19,000 SF_{AV} x 1' DEPTH = 19,000 CF

 TOTAL = 57,000 CF, OK

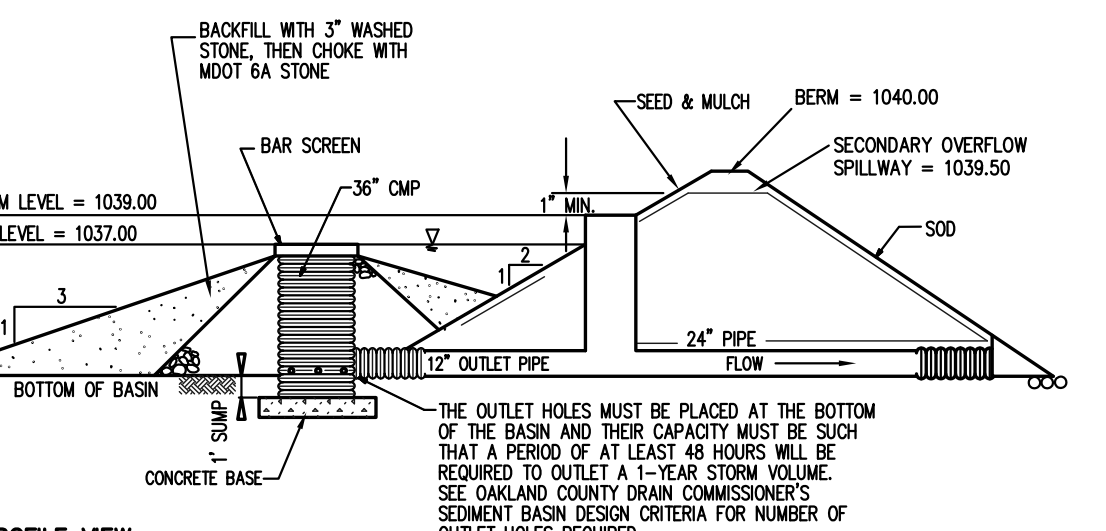
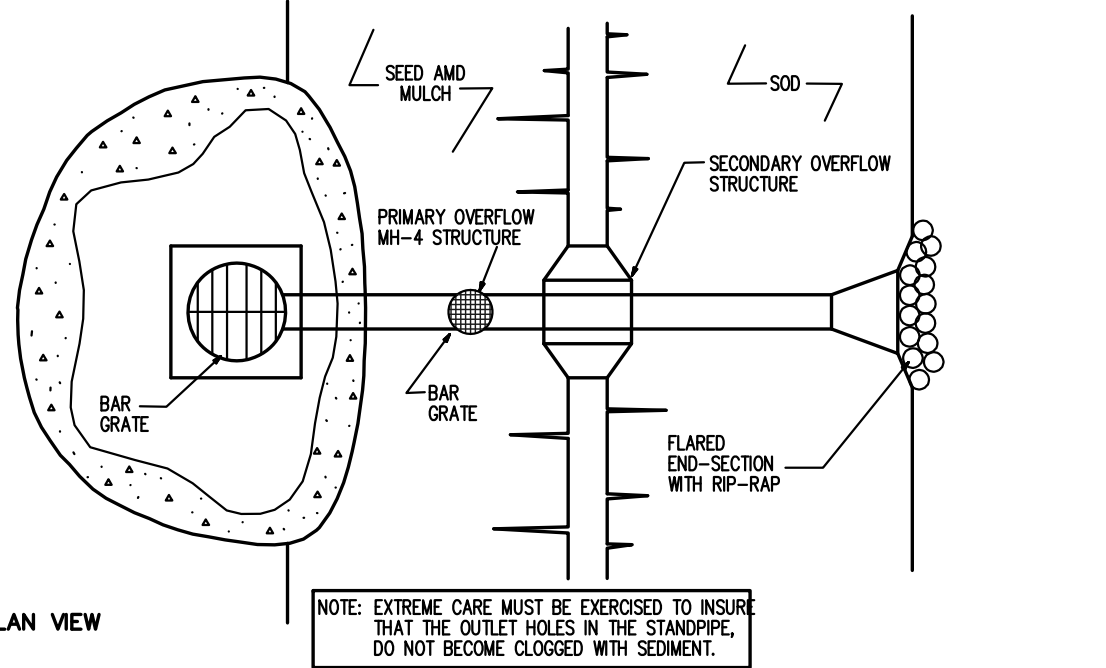
ORIFICE FORMULA

$Q_A = 0.62 (A_0)(2gH)^{1/2}$
 $A_0 = \text{AREA OF ORIFICE PIPE}$
 $g = 32.2 \text{ FT./SEC.}^2$
 $H = \text{DEPTH OF BASIN ABOVE CENTERLINE OUTLET PIPE} = 1039.0 - [1033.60 + \frac{6''}{2}] = 5.15'$
 $A_0 = 0.62 (2gH)^{1/2} = 0.62 [(2)(32.2)(5.15)]^{1/2} = 0.2480 \text{ S.F.}$
 $\text{DIAMETER ORIFICE } (D_0): D_0 = \sqrt{\frac{4(A_0)}{\pi}} = \sqrt{\frac{4(0.2480)}{\pi}} = 0.5619 \text{ FT.} = 6.74 \text{ INCH}$
 USE 6" RESTRICTION

DETENTION BASIN

EXISTING WATER ELEVATION = NONE
 DESIGN HIGH WATER ELEVATION = 1039.00
 1' FREEBOARD ELEVATION = 1040.00
 STORAGE REQUIRED = 52,797 C.F.
 STORAGE PROVIDED = 57,000 C.F.
 TIME TO DRAIN = 52,797 CF/2.80 CFS = 18,856 SEC./3,600 SEC./HR. = 5.24 HOURS

DETENTION BASIN "D" OUTLET FILTER (CMP) SO-2



1 YEAR REQUIRED VOLUME = (4,320)(C)(ACRES)
DETENTION BASIN
 1 YEAR REQUIRED VOLUME = (4,320)(0.35)(14.00 AC) = 21,168
 1 YEAR STORM LEVEL = 1037.00
 100 YEAR STORM LEVEL = 1039.00
 AREA = VOLUME/HEIGHT = 10,584 SF
 ORIFICE AREA REQUIRED $A = \frac{(0.3988)(\text{AREA})(\sqrt{\text{HEIGHT}})}{172,800} = 0.0345 \text{ FT}^2$
 THUS, IF AREA = 10,584, HEIGHT = 21', THEN $A = 0.0345 \text{ FT}^2$
 $0.0345 \text{ FT}^2 / 0.00545 \text{ FT}^2 \text{ PER } 1" \text{ DIA. HOLE} = 6.34 \text{ HOLES}$
 USE (8) 1" DIAMETER HOLES TO OFFSET FOR CLOGGING

(2) 100 YEAR RETENTION BASIN "E" CALCULATIONS

ONSITE CONTRIBUTING AREA = 5.70 ACRES
 OFF-SITE CONTRIBUTING AREA = 0.60 ACRES
 TOTAL CONTRIBUTING AREA = 6.30 ACRES
 AVERAGE RUNOFF COEFFICIENT (C) = 0.35
 $\text{VOLUME } (2) \text{ 100 YR} = (2)(A)(C)(16,500) = (2)(6.30)(0.35)(16,500) = 72,765 \text{ CF}$
VOLUME PROVIDED:

- 1062.0: 800 SF → 1,900 SF_{AV} x 3' DEPTH = 5,700 CF
- 1065.0: 3,000 SF → 4,550 SF_{AV} x 5' DEPTH = 22,750 CF
- 1070.0: 6,100 SF → 9,000 SF_{AV} x 5' DEPTH = 45,000 CF
- 1075.0: 11,900 SF → 9,000 SF_{AV} x 5' DEPTH = 45,000 CF

 TOTAL = 73,450 CF, OK

RETENTION BASIN

EXISTING WATER ELEVATION = NONE
 DESIGN HIGH WATER ELEVATION = 1075.00
 1' FREEBOARD ELEVATION = 1076.00
 STORAGE REQUIRED = 72,765 C.F.
 STORAGE PROVIDED = 73,450 C.F.

DETENTION BASIN "F" - PH I

EXISTING 10 YEAR DETENTION BASIN CALCULATIONS (i.e. WITH OUTLET)

TOTAL CONTRIBUTING AREA = 11.50 ACRES
 RUNOFF COEFFICIENT (C) = 0.32
 $Q_A = (0.20)(11.50 \text{ ACRES}) = 2.30 \text{ C.F.S.}$
 $Q_0 = \frac{Q_A}{(A)(C)} = \frac{2.30}{(11.50)(0.32)} = 0.625$
 $T = -25 + \sqrt{\frac{6,562.50}{Q_0}} = 77.5 \text{ MINUTES}$
 $V_S = \frac{10,500 T}{T + 25} - 40 Q_0 T = 6002 \text{ C.F./ACRE}$
 $V_T \text{ REQ'D} = V_S (C)(A) = (6002)(11.50)(0.32) = 22,082 \text{ C.F. REQ'D.}$
VOLUME PROVIDED:

ELEVATION	AREA (S.F.)	VOLUME (C.F.)
1010	0	1,150
1011	3,450	4,950
1012	6,450	7,950
1013	9,450	11,850
1014	14,260	25,905

 VOLUME PROVIDED = 25,905 > VOLUME REQUIRED = 22,082

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DATE	ISSUE	PROPRIETOR: JFK INVESTMENT COMPANY 43252 WOODWARD AVENUE, STE 210 BLOOMFIELD HILLS, MICHIGAN 48302 (248) 333-2373	THIS DRAWING IS THE PROPERTY OF KIEFT ENGINEERING, INC. AND MAY NOT BE USED, REPRODUCED OR PUBLISHED, IN PART OR IN WHOLE, WITHOUT EXPRESSED WRITTEN PERMISSION FROM KIEFT ENGINEERING, INC.		KIEFT ENGINEERING, INC. REG. PROF. ENGINEER AND REG. LAND SURVEYOR 5852 SOUTH MAIN STREET, STE #1, CLARKSTON, MICHIGAN 48346 PHONE (248) 625-5251 FAX (248) 625-7110	DATE	10-2-17	CKD. BY		DATE		72 HOURS (EX WORKING DAYS) BEFORE YOU DIG CALL MISS DIG 800-482-7171 (TOLL FREE)	Detention Basin Calculations & Details "ASPEN MEADOWS II SITE CONDOMINIUM" WHITE LAKE TOWNSHIP, OAKLAND COUNTY, MICHIGAN	SCALE	N/A
						DESIGN	PCM	SECTIONS	16 & 17	T	- 3			-N	-R

