

KEY PLAN:

CLIENT:  
**ROCHESTER HILLS REAL ESTATE LLC**  
 64500 VAN DYKE  
 WASHINGTON, MI 48095  
 PHONE (588) 752-5008  
 FAX (588) 752-7609

PROJECT:  
**PROPOSED AVON WELLNESS CENTER**

SHEET CONTENTS:  
**OVERALL FLOOR PLAN**

DATE: DESCRIPTION: DRAWN BY:

**"NOT TO BE USED AS CONSTRUCTION DRAWINGS"**  
 CITY FILE #05-016.2

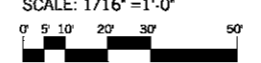
03/20/2012 REVISED PRELIMINARY SITE PLAN MB  
 02/06/2012 PRELIMINARY SITE PLAN REVIEW MB, RK, JS

DATE: DESCRIPTION: DRAWN BY:

JWD PROJECT NUMBER: SHEET NUMBER:  
**10020 A-2**



INDICATES EXIT LOCATIONS  
**OVERALL FLOOR PLAN**



**CONSULTANTS:**

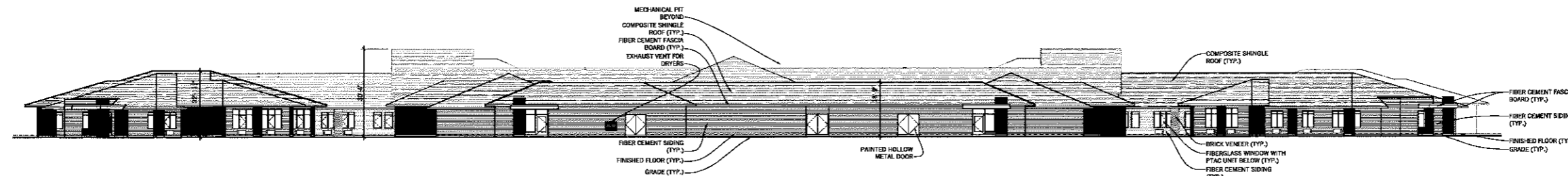
CIVIL ENGINEER:  
**LIVINGSTON ENGINEERING**  
3900 OLD US 23  
BRIGHTON, MICHIGAN 48116  
(810) 226-7100

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**KENNETH WEIKAL**  
LANDSCAPE ARCHITECTURE  
33203 RIDGESTONE LANE  
FARMINGTON HILLS, MICHIGAN 48334  
(248) 477-3600

ELECTRICAL:  
**ETS ENGINEERING, INC.**  
418 S. WASHINGTON  
ROYAL OAK, MI 48067  
(248) 344-0300

MECHANICAL:  
**SELLINGER ASSOCIATES INC.**  
19821 FARMINGTON ROAD  
LYNDIA, MI 48152  
(248) 482-0045

STRUCTURAL:  
**DESAI NASR CONSULTING ENGINEERS**  
8755 145 RD  
WEST BLOOMFIELD, MI 48322  
(248) 952-0310

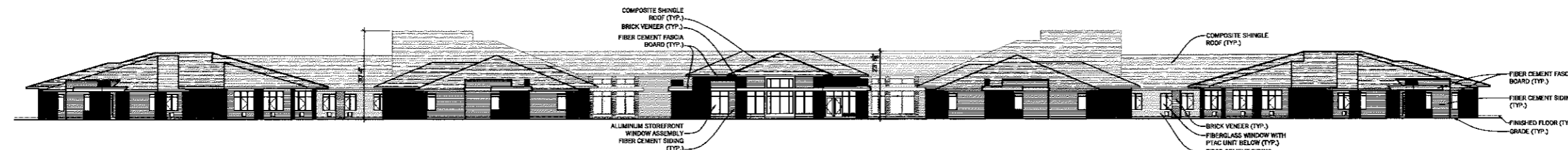


**1 OVERALL EAST ELEVATION**  
SCALE: 1/16" = 1'-0"

1. FIBER CEMENT SIDING TO BE JAMES HARDIE PLANK (COLOR - COBBLE STONE) OR EQUAL.
2. FIBER CEMENT FASCIA BOARD & ACCENT TRIM TO BE JAMES HARDIE PLANK (COLOR - KHAKI BROWN) OR EQUAL.
3. BRICK VENEER TO BE GRAND HAVEN MODULAR OR EQUAL.
4. COMPOSITE SHINGLE TO BE LANDMARK DESIGNER SHINGLE (COLOR - RESAWN SHANK) OR EQUAL.



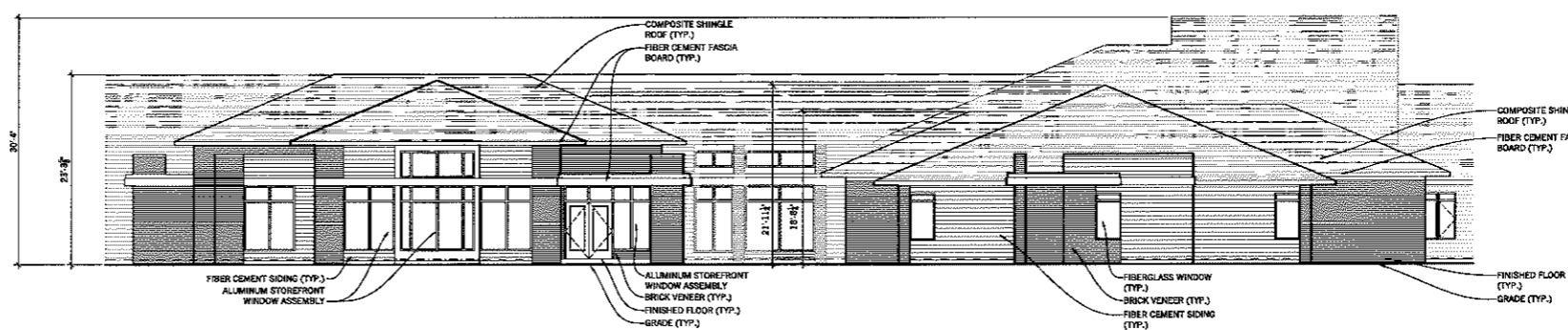
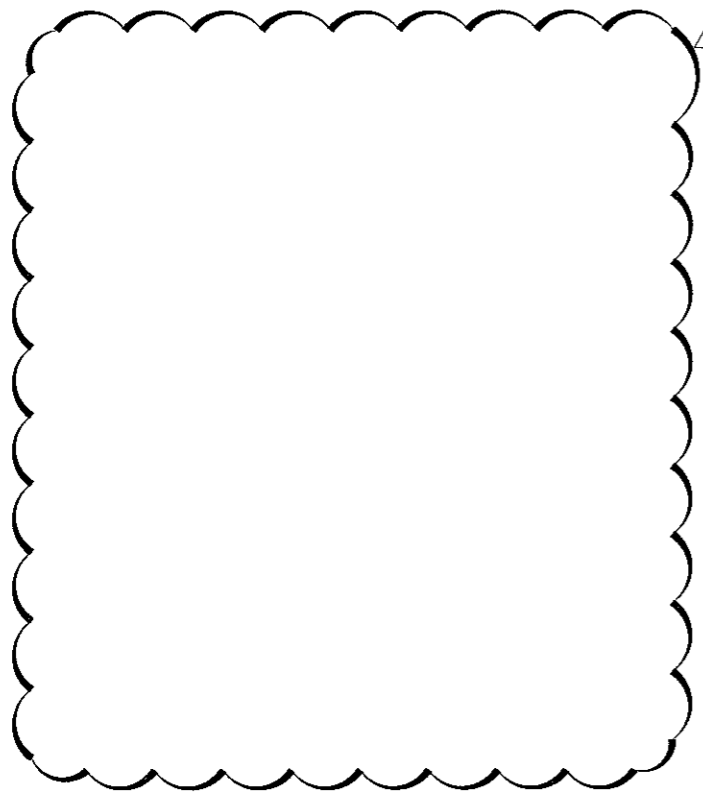
**2 OVERALL SOUTH ELEVATION**  
SCALE: 1/16" = 1'-0"



**3 OVERALL WEST ELEVATION**  
SCALE: 1/16" = 1'-0"



**4 OVERALL NORTH ELEVATION**  
SCALE: 1/16" = 1'-0"



**5 ENLARGED ELEVATION**  
SCALE: 1/8" = 1'-0"

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**PROJECT:**

**PROPOSED AVON WELLNESS CENTER**

**SHEET CONTENTS:**

**EXTERIOR ELEVATIONS**

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02/06/2012 PRELIMINARY SITE PLAN REVIEW MB, RK, JS  
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THIS DOCUMENT IS UNAPPROVED AND SHALL BE VOID TO THE EXTENT OF ANY CONTRACT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL, STATE AND FEDERAL AUTHORITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL, STATE AND FEDERAL AUTHORITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL, STATE AND FEDERAL AUTHORITIES.

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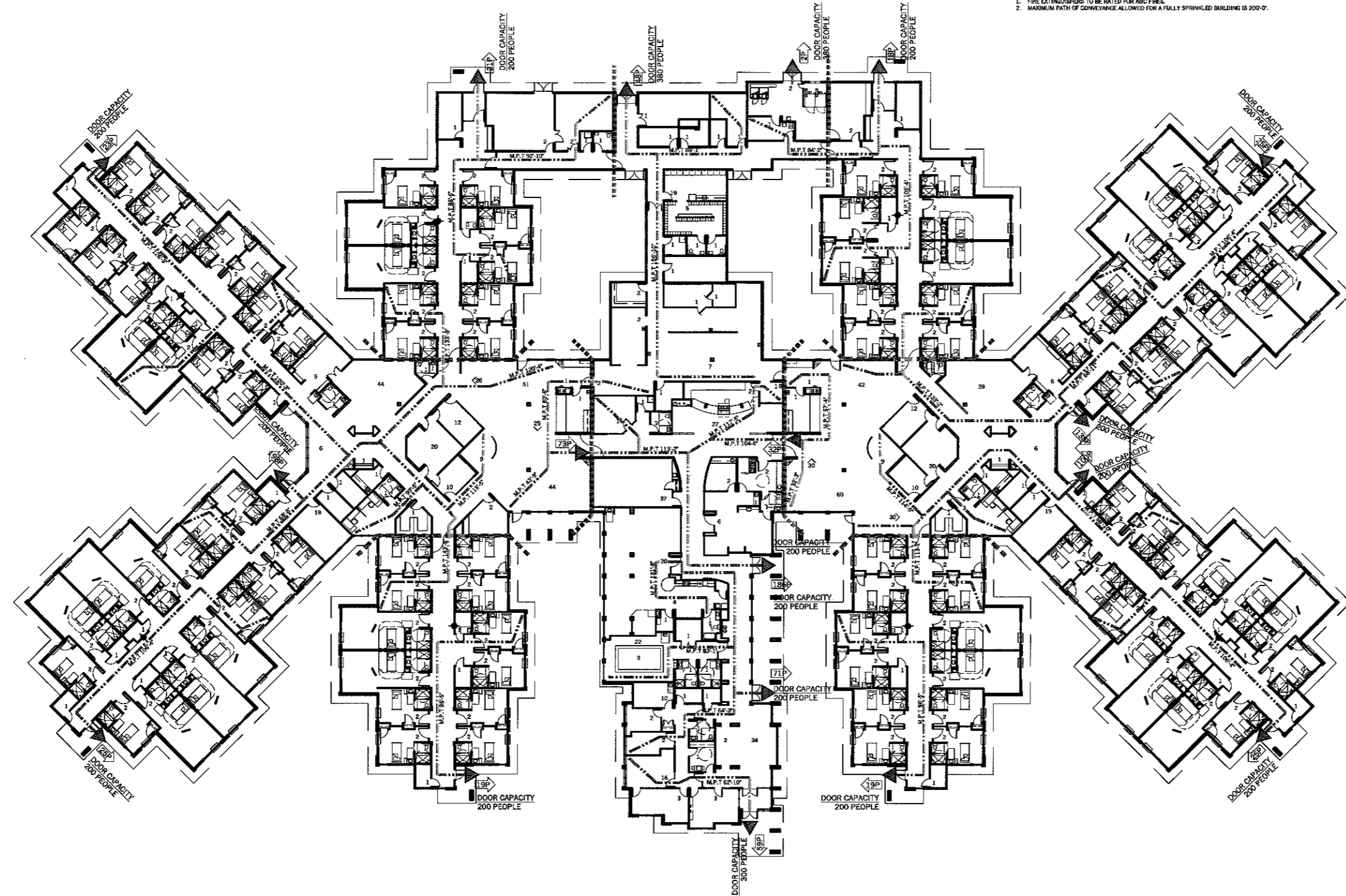
JWD PROJECT NUMBER: SHEET NUMBER:

10020 **A-3**

CONSULTANTS:  
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 LANDSCAPE ARCHITECT:  
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 (248) 344-0292  
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**SELLINGER ASSOCIATES INC.**  
 13821 FARMINGTON ROAD  
 LIVINGSTON, MI 48152  
 (248) 452-0045  
 STRUCTURAL:  
**DESAI NASR CONSULTING**  
 ENGINEERS  
 6765 GALE RD  
 WEST BLOOMFIELD, MI 48322  
 (248) 532-2010

**LIFE SAFETY LEGEND:**

- FIRE EXIT
  - 50 MINUTE RATED FIRE DOOR AND FRAME.
  - S.D. SMOKE BARRIER DOOR AND FRAME.
  - SMOKE BARRIER WALL.
  - TWO HOUR FIRE WALL.
  - MAXIMUM PATH OF TRAVEL (M.P.T.)
  - NFEC = NEW FIRE EXTINGUISHER CABINET.
  - EGRESS OCCUPANT LOAD  
DOOR CAPACITY = 1 PERSON \* GOLF CLEAR WIDTH
- NOTES:  
 1. FIRE EXTINGUISHERS TO BE RATED FOR ABC FIRES.  
 2. MAXIMUM PATH OF CONVEGANCE ALLOWED FOR A FULLY SPRINKLED BUILDING IS 200'-0".



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PROJECT:  
**PROPOSED AVON WELLNESS CENTER**

SHEET CONTENTS:  
**LIFE SAFETY PLAN**

DATE: DESCRIPTION: DRAWN BY:

**\*NOT TO BE USED AS CONSTRUCTION DRAWINGS\***  
 CITY FILE #05-016.2

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THE DRAWING IS PRELIMINARY AND IS NOT TO BE USED FOR CONSTRUCTION. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS OF THE SITE PRIOR TO CONSTRUCTION. ANY CHANGES TO THE DRAWING SHALL BE MADE BY THE ARCHITECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF ROYAL OAK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF ROYAL OAK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF ROYAL OAK.

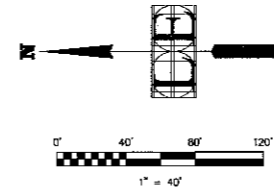
JWD PROJECT NUMBER: SHEET NUMBER:

10020 **A-4**





BEFORE YOU DIG  
CALL MISS DIG  
1-800-482-7171  
MISS DIG

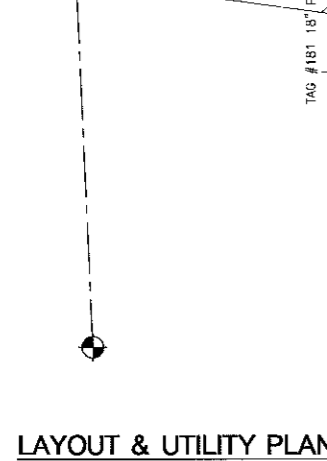
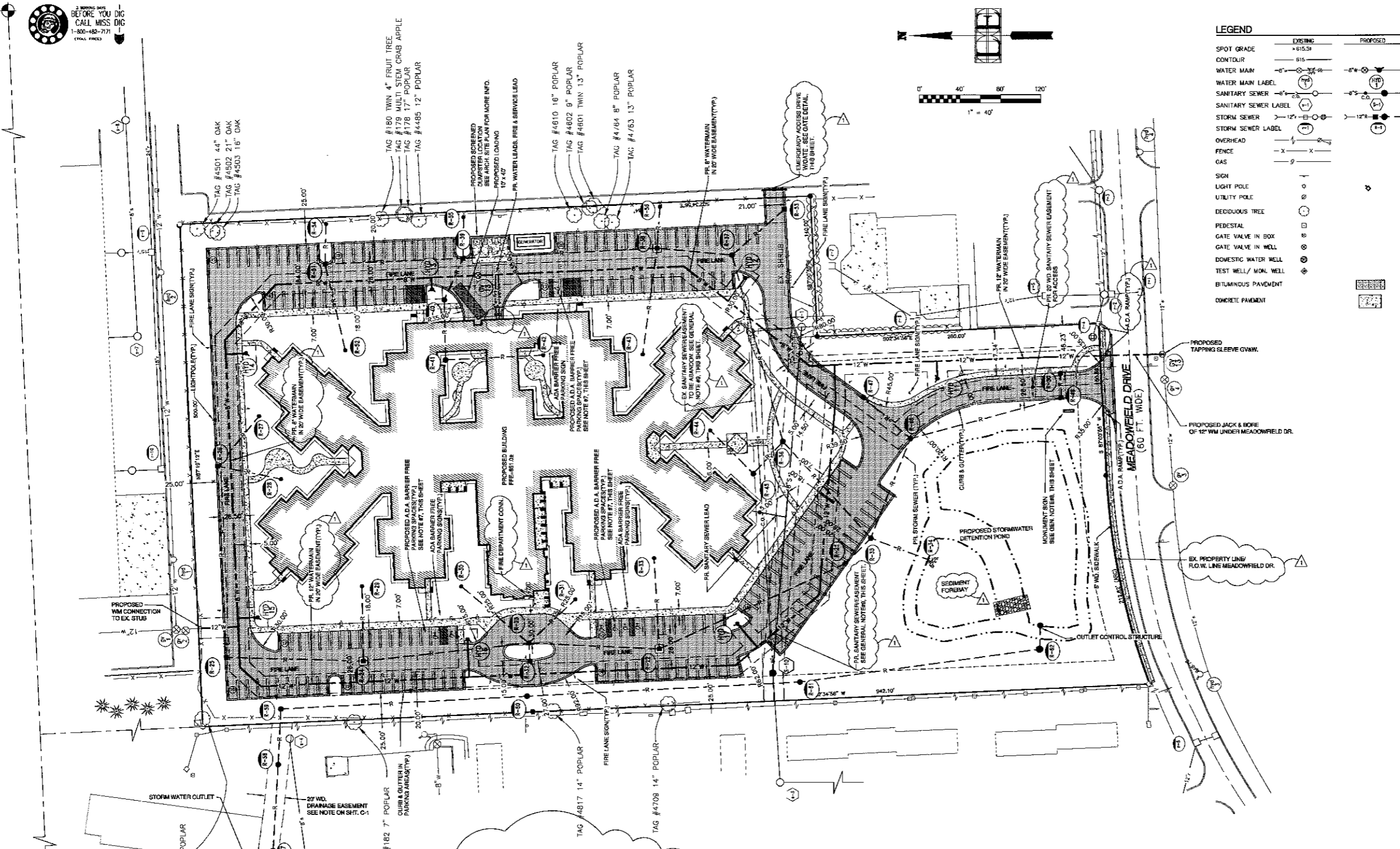


	EXISTING	PROPOSED
SPOT GRADE	815.59	
CONTOUR	815	
WATER MAIN LABEL	W	W
SANITARY SEWER LABEL	S	S
STORM SEWER LABEL	ST	ST
OVERHEAD		
FENCE	X	X
GAS		
SIGN		
LIGHT POLE		
UTILITY POLE		
DECIDUOUS TREE		
PEDESTAL		
GATE VALVE IN BOX		
GATE VALVE IN WELL		
DOMESTIC WATER WELL		
TEST WELL / MON. WELL		
BITUMINOUS PAVEMENT		
CONCRETE PAVEMENT		



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WEBSITE: WWW.JWDSTUDIO.COM

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11801 FARMINGTON ROAD  
LIVONIA, MI 48152  
(248) 482-5545  
STRUCTURAL:  
DESAI NASR CONSULTING  
ENGINEERS  
6765 DALY RD  
WEST BLOOMFIELD, MI 48322  
(248) 532-2010



CITY OF ROCHESTER HILLS FIRE DEPARTMENT NOTES

- CONSTRUCTION SITES SHALL BE SAFEGUARDED IN ACCORDANCE WITH FC-06, CHAPTER 14.
- OPEN BURNING IS NOT PERMITTED, INCLUDING THE BURNING OF TRASH, DEBRIS OR LAND CLEARING MATERIALS. OPEN BURNING FOR THE WARMING OF SAND AND/OR WATER FOR THE PREPARATION OF MORTAR SHALL BE WITHIN THE CITY OF ROCHESTER HILLS BURN PERMIT GUIDELINES. FIRE PREVENTION ORDINANCE CHAPTER 58, SEC. 307.6.2 & 307.6.2.3
- FIRE LANES SHALL BE DESIGNATED BY THE FIRE CODE OFFICIAL, AND SHALL BE CONSPICUOUSLY POSTED ON BOTH SIDES OF THE FIRE LANE, WITH FIRE LANE SIGNS, SPACED NOT MORE THAN 100 FEET APART, "NO STOPPING, STANDING, PARKING, FIRE LANE", AND IN CONFORMANCE WITH THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

GENERAL NOTES

- ALL WORK SHALL CONFORM TO THE CURRENT CITY OF ROCHESTER HILLS STANDARDS AND SPECIFICATIONS.
- A RIGHT-OF-WAY PERMIT FROM THE CITY OF ROCHESTER HILLS IS REQUIRED PRIOR TO ANY WORK WITHIN THE MEADOWFIELD DRIVE RIGHT OF WAY.
- ALL TRAFFIC CONTROL, SIGNING AND PAVEMENT MARKINGS SHALL BE INSTALLED PER THE CURRENT EDITION OF THE MICHIGAN MUTCD.
- COMPACTED SAND BACKFILL SHALL BE PROVIDED FOR ALL UNDERGROUND UTILITIES WITHIN THE INFLUENCE OF PAVED AREAS.
- ALL DIMENSIONS TO CURB LINE SHOWN ARE TO BACK OF CURB, UNLESS NOTED OTHERWISE.
- NO PUBLIC TRANSPORTATION STOPS ARE PROPOSED FOR THIS SITE.
- ACCESSIBLE PARKING SPACES, ACCESS AISLES, RAMPS AND OTHER ACCESS FEATURES ON THE SITE SHALL BE DESIGNED AND CONSTRUCTED PER THE CURRENT EDITION OF ADA STANDARDS FOR ACCESSIBLE DESIGN.
- SIGN LOCATION APPROXIMATE. MONUMENT SIGN REQUIRES SEPARATE PERMIT FROM THE BUILDING DEPARTMENT. MAX. MONUMENT SIGN SQUARE FOOTAGE IS EQUAL TO 20 SQ. FT.
- THE EXISTING SANITARY SEWER FROM NEW MH S-10 TO EXISTING MANHOLE #=1, INCLUDING MH #=2 SHALL BE ABANDON/REMOVED PER CITY/STATE STANDARDS AND SPECIFICATIONS. A NEW SANITARY SEWER IS PROPOSED FROM S-10 TO #=1 TO REPLACE THE SEWER THAT WILL BE ABANDON/REMOVED.

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PROJECT:  
PROPOSED AVON WELLNESS CENTER

DATE: 03/20/2012  
DESCRIPTION: REVISED PRELIMINARY SITE PLAN  
DRAWN BY: TEA

DATE: 02/06/2012  
DESCRIPTION: PRELIMINARY SITE PLAN REVIEW  
DRAWN BY: TEA

DATE: 03/20/2012  
DESCRIPTION: REVISED PRELIMINARY SITE PLAN  
DRAWN BY: TEA

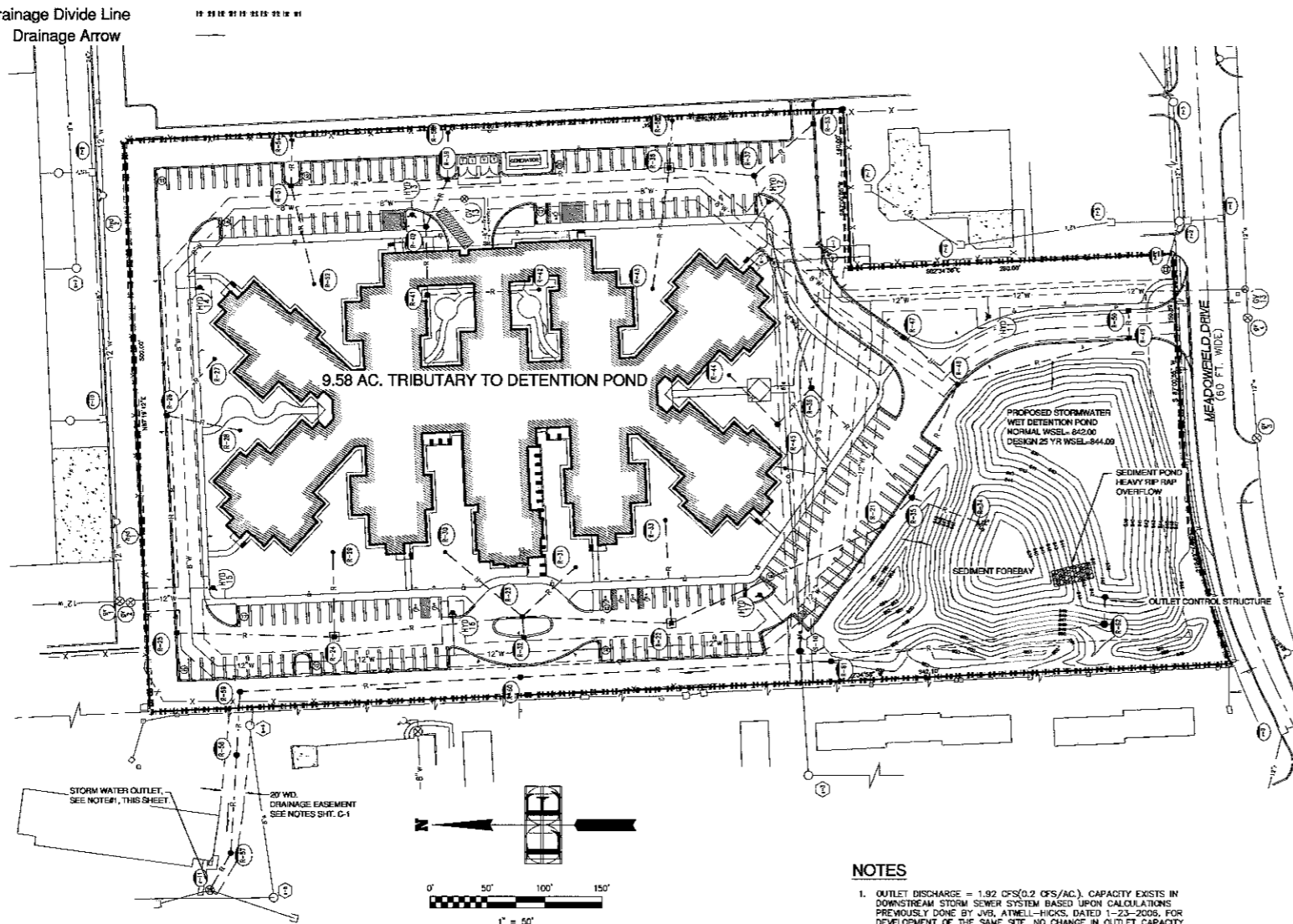
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LEGEND  
Proposed Drainage Divide Line  
Drainage Arrow



**NOTES**

1. OUTLET DISCHARGE = 1.92 CFS (0.2 CFS/AC). CAPACITY EXISTS IN DOWNSTREAM STORM SEWER SYSTEM BASED UPON CALCULATIONS PREVIOUSLY DONE BY JWB, ATWEL-HICKS, DATED 1-23-2005, FOR DEVELOPMENT OF THE SAME SITE. NO CHANGE IN OUTLET CAPACITY IS NEEDED FOR THE DEVELOPMENT SHOWN ON THESE PLANS.

**PRELIMINARY**

**Sediment Pond Volume:**

1. Contributing Area = 9.58 Ac.  
2. Developed Runoff Coefficient:  
Developed C = 0.80

3. Bankfull Flood Volume:  
 $V = 1.215 \times 0.80 \times 9.58 = 10433 \text{ CF}$

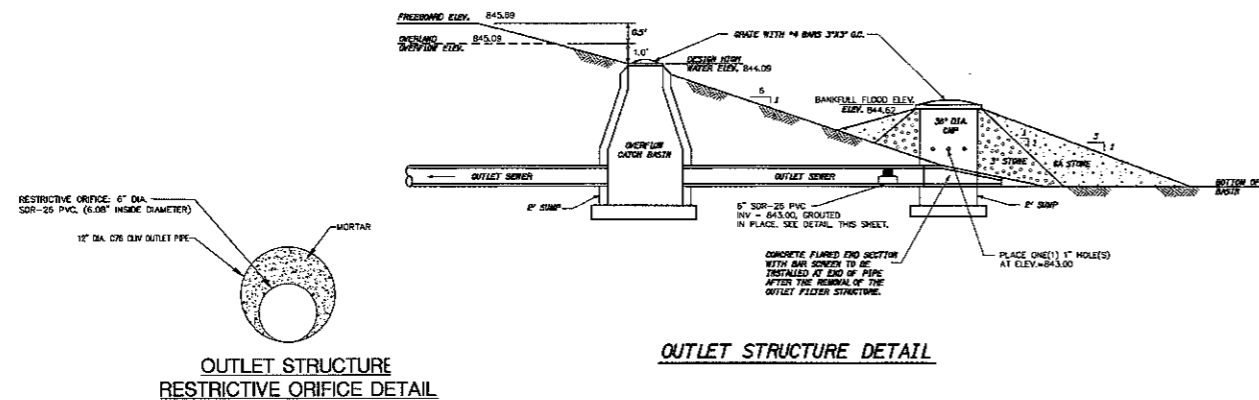
**B. Detention Volume Proposed**

Elev.	Area (ft <sup>2</sup> )	Vol (ft <sup>3</sup> )	Acc. Vol (ft <sup>3</sup> )
Elev. = 842.0	5432	6334	6334
843.0	7261	6334	13600
844.0	8575	5307	14641

The following interpolations determine the pond water elevation for the first flush storm event.

First Flush	844.0	843.0	x	843.0
	14641	6334	10433	6334

These yield pond water elevations of 843.49 for the First Flush Event.



**OUTLET STRUCTURE RESTRICTIVE ORIFICE DETAIL**

**OUTLET STRUCTURE DETAIL**

**STORM WATER DETENTION POND CALCULATIONS**  
Project: Avon Wellness Center  
Livingston Engineering Project No. 10020  
Oakland County Drain Comm./City of Rochester Hills Method

**PRELIMINARY**  
I. Common Area and Assumptions:

A. Bankfull Flood = 6,788 x area x developed C  
B. Detention Volume Equation:  
 $V = (A_1 + A_2 + A_3 + A_4) \times H \times 70.9 \text{ (195)}$   
where:  $A_1$  = Area at top of storage elevation  
 $A_2$  = Area at bottom of storage elevation  
 $H$  = Depth of analysis

**II. Detention Pond Volume:**

A. Bankfull Flood and 25-year Storm Event

1. Contributing Area =	9.58 Ac.				
2. Developed Runoff Coefficient:					
Rooftop / Asphalt Area	4.40	Coefficient (C)	0.95	A x C	4.18
Water Surface	0.32		1.00		0.32
Lawn/Landscaped Area	4.86		0.25		1.22
Total:	9.58				5.72
Developed C =	5.72 / 9.58 =	0.60			

3. Bankfull Flood Volume:

$V = 0.788 \times 0.60 \times 9.58 = 35917 \text{ CF}$   
 $Q_p = 0.15 \times 0.58 = 1.437 \text{ ft}^3/\text{s}$   
 $Q_s = 25 + (8,052.50 / 0.25) \times 0.60 = 154.58 \text{ cfs}$   
 $T = (12,800 \times 154.58) / (154.58 + 25) \times 40 \times 0.25 \times 154.58 = 9558.34 \text{ CF/imp.}$   
 $V_s = 9558.34 \times 0.58 \times 0.60 = 54941 \text{ CF}$

B. Detention Volume Proposed

Elev.	Area (ft <sup>2</sup> )	Vol (ft <sup>3</sup> )	Acc. Vol (ft <sup>3</sup> )
Elev. = 842.0	22411	23002	23002
843.0	25694	23002	46004
844.0	32244	2897	48901
845.0	35603	34400	85509

Total: 85309 CF

The following interpolations determine the pond water elevations for the two different storm events:

Bankfull Flood	846.0	843.0	x	843.0
	51900	23002	36017	23002

$x = \text{Elev.} = 843.55$

25 Yr. Flood	845.0	844.0	x	844.0
	85309	51909	54941	51909

$x = 844.09$

These yield pond water elevations of 843.55 for the Bankfull Flood, and 844.09 for the 25 Yr. Storm Event.

**C. Outflow Structure**

1. Bankfull Flood:

The bankfull flood must be detained in 24-48 hrs.

$H = 1.56 \text{ FT}$   
 $H_A = (2/3 H) = 1.04 \text{ FT}$

Time to empty basin at this discharge:

A target release time of 40.0 hrs. will be chosen for the bankfull flood.  
 $V = 35917 \text{ CF}$   
 $T = 40.0 \text{ hrs.}$   
 $Q = 0.270364 \text{ cfs}$

Therefore, use

$Q = 2/3 (843.55 - 842.00) = 1.04 \text{ FT}$

$Q = \text{discharge through bankfull orifice:}$   
 $\text{Area of Orifice} = Q / (0.62 \sqrt{2g(H_A + V^2/2g)}) = 0.00987 \text{ SF}$   
 $\text{Area of}$

$1.00 \text{\" hole} = 0.0055 \text{ SF}$   
 $\text{No. of } 1.00 \text{\" hole(s)} = 0.0097 / 0.0055 = 1.22 \text{ hole(s)}$

Therefore, use

$(ONE) 1 \text{\" } 1.00 \text{\" hole(s) at Elev.} = 842.00$

2. Design High Water:

This basin is designed to pass the design storm event without overflowing the basin.

Flow Required to pass:

$Q_A = (0.20 \times 9.58 \text{ Ac.}) = 1.916 \text{ CFS}$

$0.02 \sqrt{2g} \times 32.2 \times (844.09 - 842.00)^{1.5} = 1.916 \text{ CFS}$

$A = 0.256 \text{ SF}$

$\text{Area of } 0.06 \text{\" hole} = 0.0016 \text{ SF}$

$\text{No. of } 0.06 \text{\" hole(s)} = 0.256 / 0.0016 = 132 \text{ hole(s)}$

(8\" SOR 26 PVC INSIDE DIAMETER = 6.687\")

Use an orifice with One (1) 6\" SOR 26 PVC hole.



412 S. WASHINGTON ST, SUITE 100  
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LANDSCAPE ARCHITECTURE  
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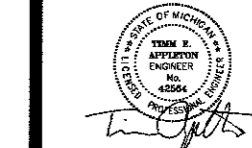
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**PROPOSED AVON WELLNESS CENTER**

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**STORM WATER MANAGEMENT PLAN**

DATE: DESCRIPTION: DRAWN BY:  
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03/20/2012 REVISION: PRELIMINARY SITE PLAN TEA  
02/06/2012 PRELIMINARY SITE PLAN FOR CIV

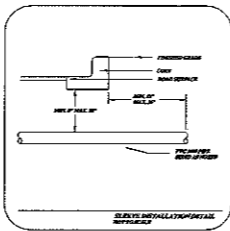
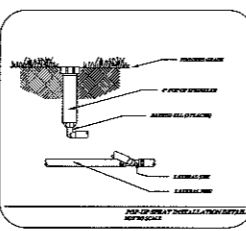
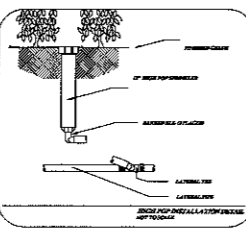
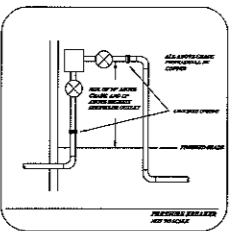
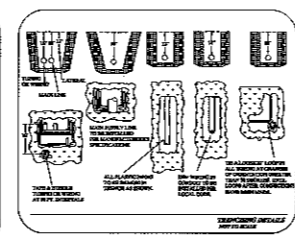
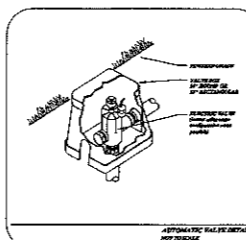
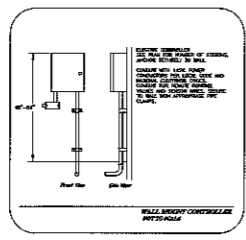
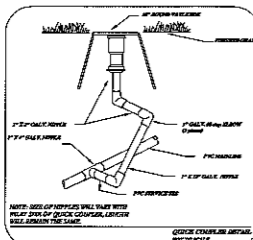
DATE: DESCRIPTION: DRAWN BY:  
03/20/2012 REVISION: PRELIMINARY SITE PLAN TEA  
02/06/2012 PRELIMINARY SITE PLAN FOR CIV

JWB PROJECT NUMBER: SHEET NUMBER:









- NOTES:**
1. Refer to the specifications for installation details and descriptions, as well as, construction methods which will be accepted.
  2. All work shall be in compliance with all local, state, and federal codes and ordinances.
  3. All electrical connections shall be made using 3m DBY-6 splice kits.
  4. All control wiring downstream of the controller shall be single strand copper 14AWG UL approved for direct bury.
  5. All clamps shall be stainless steel worm gear type clamps. Pipes 1-1/2" or larger shall be double clamped.
  6. Pipe routing is schematic. All heads are to be field adjusted to within 2' to take into consideration any obstruction. Final head placements are subject to the landscape architect's approval.
  7. All sprinkler heads shall be mounted on 2 elbow poly swing joints as specified.
  8. Contractor to verify final controller location with owner's authorized representative prior to installation.
  9. All pipe not sized downstream of control valve is 1".
  10. All sleeves shall be PVC 150# (see specifications).
  11. Irrigation contractor's point of connection to water source shall be as noted on this sheet. Locate and connect to indicated water source. All pipe installed above grade shall be copper type "M".
  12. 120V power to the controller locations should be provided others. Coordinate with owner's representative. Hardware controller directly to nearest circuit panel. Place all wires in conduit per code.
  13. Design pressure does not take into account seasonal supply fluctuations. Periods of drought may cause temporary pressure losses to the city water supply resulting in inadequate irrigation system performance. Irrigation design is based on normal weather conditions and typical municipal water supply abilities.
  14. Irrigation contractor shall be responsible for determining and maintaining the irrigation schedule during the project construction and throughout the length of the warranty period.
  15. The irrigation schedule shall deliver 1" of precipitation per week +/- natural rainfall quantities for turf grass.
  16. Landscape material shall receive adjusted amounts of precipitation to maintain proper plant health.
  17. Landscape and turf grass shall be irrigated separately.
  18. Rotors and spray zones may not be combined to operate at the same time.
  19. When specified, follow manufacturer's product recommendations concerning proper installation of water flow sensors. Allow proper straight pipe distances before and after flow sensors.

**IRRIGATION LEGEND:**

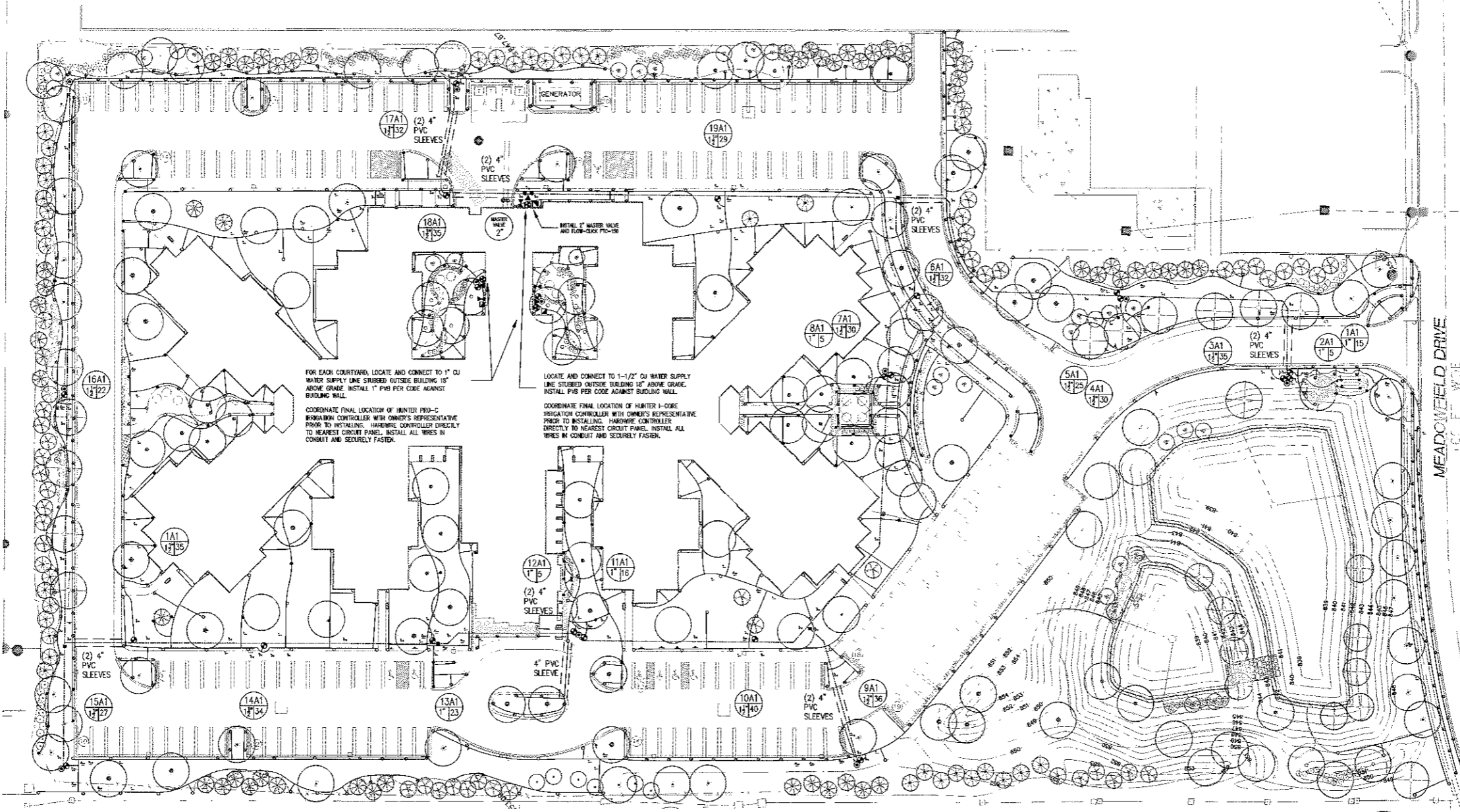
<p>FIXED SPRAY POP-UP (12")          10 Series    12 Series    15 Series    20 Series</p> <p>FIXED SPRAY POP-UP (12") w/ 2" radius nozzle</p> <p>FIXED SPRAY POP-UP (4") w/ MPR nozzle</p>	<p>PROS-12</p> <p>MPR40-04-cv</p> <p>MP1000</p> <p>MP2000</p> <p>MP3000</p> <p>MP3500(MPL/CIRC/IS)</p> <p>ICV-Series</p> <p>ICV-100</p> <p>KCORP-m</p> <p>FBCO 765F150</p> <p>SOLAR SYNC (wireless)</p> <p>See note this sheet</p>
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ELECTRIC VALVE  
 QUICK COUPLER VALVE  
 ELECTRIC CONTROLLER  
 PRESSURE VACUUM BREAKER  
 ISOLATION VALVE (Line Size)  
 RAIN SENSOR DEVICE (Install at all controller locations)  
 POINT OF CONNECTION TO WATER SOURCE  
 PVC MANLINE, SDR 26, 80, Size as shown  
 POLYETHYLENE PIPE, 100# NSF APPROVED, Size as shown  
 PVC SLEEVES - SDR 26 - Size as shown

**VALVE DESIGNATION:**

Controller and Station Number

Valve Size    Gallons Per Minute



**PIPE SIZE CHART**

0-12 GPM	= 1" DIAMETER POLYETHYLENE PIPE
12-24 GPM	= 1 1/4" DIAMETER POLYETHYLENE PIPE
24-30 GPM	= 1 1/2" DIAMETER POLYETHYLENE PIPE
30-60 GPM	= 2" DIAMETER POLYETHYLENE PIPE

**SITE IRRIGATION PLAN**  
 SCALE 1" = 30'



IRRIGATION DESIGN & WATER MANAGEMENT

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 Tel. (248) 789-0330 (818) 745-5779  
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 DESAI NASR CONSULTING  
 ENGINEERS  
 6765 DALY RD  
 WEST BLOOMFIELD, MI 48322  
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KEY PLAN:

**CLIENT:**

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 64500 VAN DYKE  
 WASHINGTON, MI 48095  
 PHONE (586) 752-5008  
 FAX (586) 752-7609

**PROJECT:**

**PROPOSED AVON WELLNESS CENTER**

**SHEET CONTENTS:**

**SITE IRRIGATION PLAN**

DATE:      DESCRIPTION:      DRAWN BY:

**"NOT TO BE USED AS CONSTRUCTION DRAWINGS"**  
 CITY FILE #05-016.2

03/20/2012 REVISED PRELIMINARY SITE PLAN  
 02/06/2012 PRELIMINARY SITE PLAN REVIEW  
 DATE:      DESCRIPTION:      DRAWN BY:

THIS DRAWING IS UNRECORDED AND SHOULD BE USED TO OBTAIN THE DESIGN RECORD. THE CONTRACTOR SHALL VERIFY ALL PIPE AND VALVE SIZES AND LOCATIONS. THE CONTRACTOR SHALL VERIFY ALL PIPE AND VALVE SIZES AND LOCATIONS. THE CONTRACTOR SHALL VERIFY ALL PIPE AND VALVE SIZES AND LOCATIONS. THE CONTRACTOR SHALL VERIFY ALL PIPE AND VALVE SIZES AND LOCATIONS.

JWD PROJECT NUMBER:      SHEET NUMBER:

10020      L103

