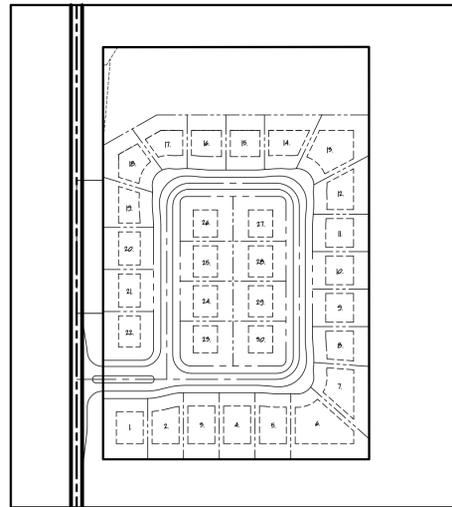


Bloomer Woods

SITE CONDOMINIUM COMMUNITY SITE PLANS

IN SECTION 13, T3N, R11E, ROCHESTER HILLS,
OAKLAND COUNTY, MICHIGAN



SITE PLAN

N.T.S.



LOCATION MAP

SCALE: 1" = 2000'

LEGAL DESCRIPTION:

PARCEL 15-13-301-058

PART OF THE SOUTHWEST 1/4 OF SECTION 13, T3N., R.11E., BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS: BEGINNING AT A POINT WHICH IS NORTH 344.58' ALONG THE WEST LINE OF SAID SECTION 13 AND THE CENTERLINE OF JOHN R ROAD AND EAST 60.00' FROM THE SOUTHWEST CORNER OF SAID SECTION 13; THENCE NORTH 928.59'; THENCE N89°57'06"E 602.12'; THENCE S00°01'17"E 929.10'; THENCE WEST 602.47' TO THE POINT OF BEGINNING.
CONTAINING 559,438 SQUARE FEET - 12.843 ACRES (NET)

Bloomer Woods

A Lombardo Community

DEVELOPER:

LOMBARDO HOMES

51237 DANVIEW TECHNOLOGY COURT, SHELBY TOWNSHIP, MI 48315
(586) 781-2364

ENGINEER:

COMMUNITY E.S., INC.

CIVIL ENGINEERING & SURVEYING
(586) 677-4081

6303 26 MILE ROAD, STE. 110, WASHINGTON, MI 48094

LANDSCAPE ARCHITECT:

DONALD C. WESTPHAL ASSOCIATES L.L.C.

LANDSCAPE ARCHITECTS AND SITE PLANNERS

(248) 651-5518

71 N. LIVERNOIS, SUITE A, ROCHESTER HILLS, MI 48307



LEGEND

SANITARY SEWER	---
STORM SEWER	---
WATER MAIN	---
EXISTING MAJOR CONTOUR	---
EXISTING MINOR CONTOUR	---
EXISTING SPOT GRADE	---
PROPOSED SPOT GRADE	836.30
PROPOSED MANHOLE	○
EXISTING CATCH BASIN AND MANHOLE AS NOTED	○
PROPOSED R.Y.C.B.	□
EXISTING PAVEMENT CATCH BASIN	□
PROPOSED PAVEMENT CATCH BASIN	■
EXISTING GATE VALVE	⊗
PROPOSED GATE VALVE	⊗
EXISTING HYDRANT	X
PROPOSED HYDRANT	X
SIGN	+
UTILITY POLE	+
DRAINAGE ARROW	→
EXISTING FENCE	— — —
CL. ROAD OR DITCH AS NOTED	---
TREE/BRUSH LINE	~
TC= TOP OF CURB	—
GU= GUTTER	—
THIS TEXT TYPE (HAND) DENOTES EXISTING	

SHEET INDEX:

0 OF 9	COVER SHEET
1 OF 9	SITE PLAN
2 OF 9	TOPOGRAPHY SURVEY
3 OF 9	UTILITY PLAN
4 OF 9	GRADING PLAN
5 OF 9	DETAILS
6 OF 9	R.O.W. IMPROVEMENTS
7 OF 9	TREE PRESERVATION PLAN
8 OF 9	LANDSCAPE PLAN
9 OF 9	LANDSCAPE DETAILS
IR - 1	IRRIGATION DESIGN



DATE: 11/20/2015
REVISIONS: 01/15/2016 PER CITY COMMENTS

SHEET No.

0 OF 9

DRAWN BY: JLB DRAWING #: 1103

CITY FILE #15-006

LEGAL DESCRIPTION: PARCEL 15-13-301-058

PART OF THE SOUTHWEST 1/4 OF SECTION 13, T.3N., R.11E., BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS: BEGINNING AT A POINT WHICH IS NORTH 344.58' ALONG THE WEST LINE OF SAID SECTION 13 AND THE CENTERLINE OF JOHN R ROAD AND EAST 60.00' FROM THE SOUTHWEST CORNER OF SAID SECTION 13; THENCE NORTH 928.59'; THENCE N89°57'06"E 602.12'; THENCE S00°01'17"E 929.10'; THENCE WEST 602.47' TO THE POINT OF BEGINNING. CONTAINING 559,438 SQUARE FEET - 12.843 ACRES (NET)

NOTES:

FLOOD PLAIN REQUIREMENTS:

BASED ON THE FLOOD INSURANCE RATE MAP (FIRM) FOR THE CITY OF ROCHESTER HILLS, ACCORDING TO COMMUNITY PANEL NUMBER 26125C0411F, DATED SEPTEMBER 29, 2006 A 100-YEAR FLOODPLAIN DOES NOT AFFECT THIS PROPERTY.

ZONING REQUIREMENTS:

THIS PROPERTY IS ZONED R-3 SINGLE FAMILY RESIDENTIAL. BASED ON THE ROCHESTER HILLS ZONING ORDINANCE, THE FOLLOWING REQUIRED SETBACKS APPLY:
 MINIMUM WIDTH 90 FEET
 MINIMUM AREA 12,000 SF
 FRONT YARD SETBACK 30 FEET
 SIDE YARD SETBACK 10 FEET (20' TOTAL)/25' SIDE FOR ABUTTING CORNER
 REAR YARD SETBACK 35 FEET
 MAXIMUM HEIGHT 2.5 STORIES/30 FEET
 MINIMUM FLOOR AREA 1,200 SF
 MAXIMUM BUILDING COVERAGE 30%

NOTES:

- 1) THE DEVELOPER IS PROPOSING A 30 UNIT SITE CONDOMINIUM.
- 2) ALL SIGNAGE SHALL BE IN CONFORMANCE WITH THE CITY OF ROCHESTER HILLS REQUIREMENTS. A SEPARATE SIGN PERMIT MUST BE OBTAINED FROM THE BUILDING DEPARTMENT.
- 3) THE DEVELOPER WILL DEDICATE THE PROPOSED RIGHT-OF-WAY FOR THE PROPOSED ROADS.
- 4) THE PROPOSED ROADS WITHIN THIS DEVELOPMENT WILL BE PAVED WITH 3" MOUNTABLE CONCRETE CURB AND GUTTERS.
- 5) THE SITE ROADS ARE PROPOSED TO BE PRIVATE.

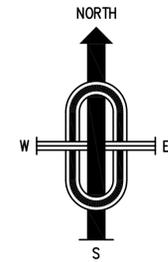
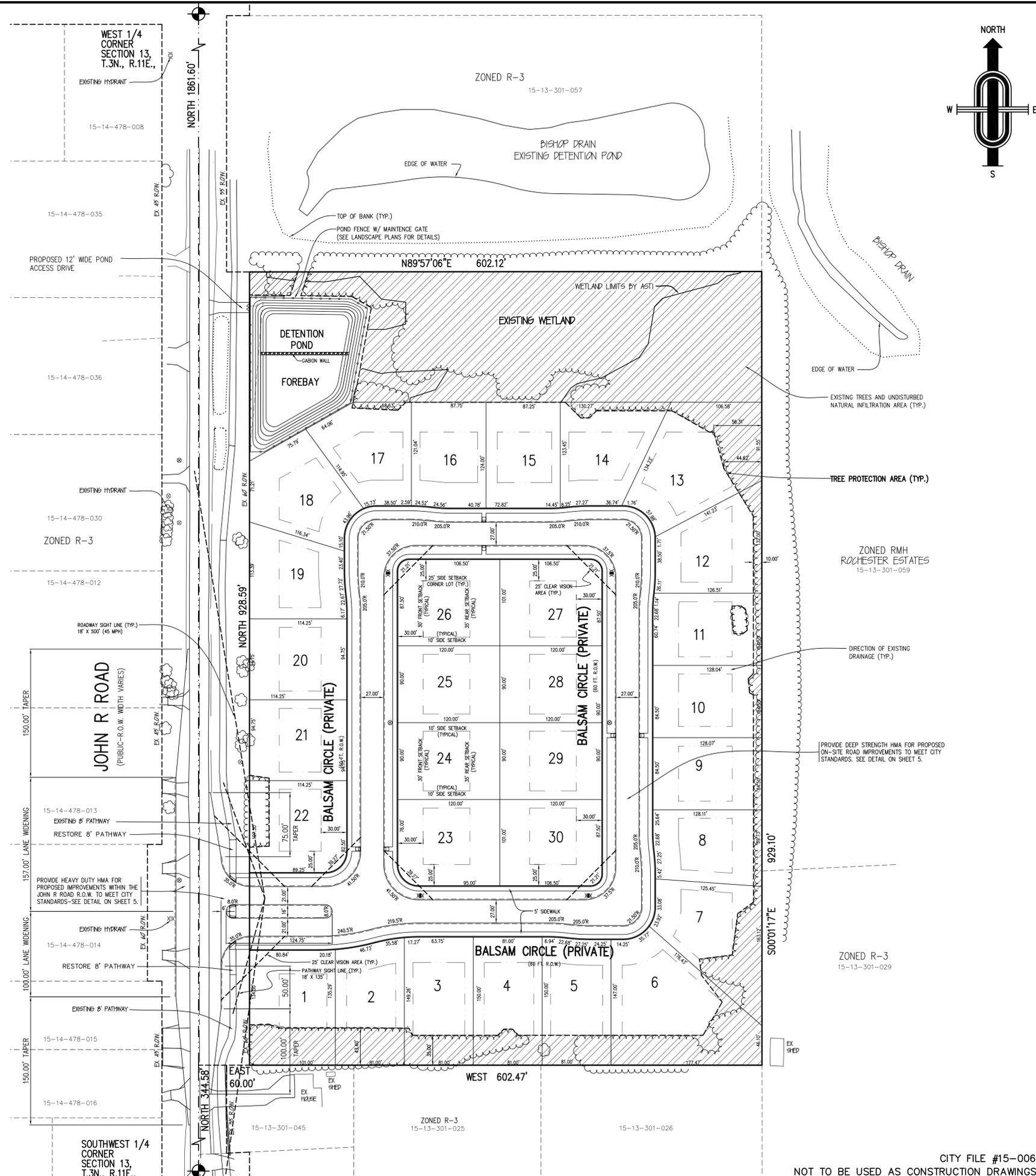
FIRE DEPARTMENT NOTES:

- 1) CONSTRUCTION SITES SHALL BE SAFEGUARDED IN ACCORDANCE WITH IFC 2006 CHAPTER 14.
- 2) OPEN BURNING IS NOT PERMITTED INCLUDING THE BURNING OF TRASH, DEBRIS, OR LAND CLEARING MATERIALS. OPEN BURNING FOR 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.
- 3) HOUSES SHALL BE FRAME CONSTRUCTION WITH AN AVERAGE HOUSE SIZE OF APPROX. 2800 SF.

NOTE: THE PROPOSED PRIVATE ROADS ARE NOT BEING CONSTRUCTED TO THE CITY'S PUBLIC ROAD STANDARDS, AND THEREFORE, CANNOT BE TRANSFERRED AS PUBLIC ROADS IN FUTURE

LOT SIZE VARIATION TABLE

LOT	WIDTH	DEPTH	AREA
1	101.00'	134.90'	13,589 SF
2	81.00'	142.28'	11,507 SF
3	81.00'	149.63'	12,145 SF
4	81.00'	150.00'	12,150 SF
5	81.00'	148.50'	12,000 SF
6	81.00'	161.72'	20,581 SF
7	86.00'	150.95'	14,155 SF
8	82.98'	126.79'	10,823 SF
9	84.50'	128.10'	10,824 SF
10	84.50'	128.07'	10,822 SF
11	84.50'	127.29'	10,807 SF
12	82.06'	133.88'	12,406 SF
13	81.00'	137.74'	17,150 SF
14	86.56'	128.84'	12,278 SF
15	87.25'	123.73'	10,816 SF
16	87.75'	122.52'	10,813 SF
17	81.00'	118.00'	11,257 SF
18	81.00'	115.65'	11,912 SF
19	88.32'	115.30'	10,813 SF
20	94.75'	114.25'	10,825 SF
21	94.75'	114.25'	10,825 SF
22	107.50'	114.25'	12,148 SF
23	101.00'	120.00'	11,986 SF
24	90.00'	120.00'	10,800 SF
25	90.00'	120.00'	10,800 SF
26	101.00'	120.00'	12,081 SF
27	101.00'	120.00'	12,081 SF
28	90.00'	120.00'	10,800 SF
29	90.00'	120.00'	10,800 SF
30	101.00'	120.00'	12,081 SF
88.81'	128.22'	12,069 SF AVERAGE	



LEGEND

- SANITARY SEWER
- WATER MAIN
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING SPOT GRADE
- PROPOSED SPOT GRADE 836.30
- PROPOSED MANHOLE
- EXISTING CATCH BASIN AND MANHOLE AS NOTED
- PROPOSED R.Y.C.B.
- EXISTING PAVEMENT CATCH BASIN
- PROPOSED PAVEMENT CATCH BASIN
- EXISTING GATE VALVE
- PROPOSED GATE VALVE WITH NO.
- EXISTING HYDRANT
- PROPOSED HYDRANT WITH NO.
- SANITARY SEWER STRUCTURE NO.
- STORM SEWER STRUCTURE NO.
- SIGN
- UTILITY POLE
- DRAINAGE ARROW
- EXISTING FENCE
- CL ROAD OR DITCH AS NOTED
- EXISTING TREE/BRUSH SCHEDULED TO BE SAVED
- TC= TOP OF CURB
- GU= GUTTER
- THIS TEXT TYPE (HAND) DENOTES EXISTING

PREPARED FOR:
 LARRY MILLER
 LOMBARDO HOMES
 51237 DANVIEW TECHNOLOGY CT.
 SHELBY TWP, MI 48315
 LMILLER@LOMBARDOCOMPANIES.COM
 (586) 855-9556

PREPARED BY:
 COMMUNITY E.S., INC.
 C/O RICHARD HODSDON, P.E. #48078
 6303 26 MILE ROAD, STE. 110
 WASHINGTON, MI 48094
 PH: (586) 677-4081
 FX: (586) 677-4084
 E-MAIL: RICH@COMMUNITYENG.COM

© 2015 - COMMUNITY E.S., INC. ALL RIGHTS RESERVED. THESE PLANS AND DRAWINGS ARE OWNED BY AND THE SOLE PROPERTY OF COMMUNITY E.S., INC. ANY REPRODUCTION, COPYING, REUSE OR DISTRIBUTION OF THESE PLANS AND DRAWINGS IS STRICTLY PROHIBITED WITHOUT THE PRIOR WRITTEN CONSENT OF COMMUNITY E.S., INC.

REV. 01/15/16 CITY COMMENTS
 REV. 11/20/15 FORMAL SUBMITTAL TO CITY
 REV. 10/15/15 UTILITY & GRADING LIMITS TO SAVE ADJ. TREES

COMMUNITY
 CIVIL ENGINEERING & SURVEYING

30000 SQ FT BEFORE YOU DIG CALL MISS DIG 1-800-482-7171

City Engineering and Surveying
 6303 26 Mile Road, Suite 110
 Washington Twp., Michigan 48094
 Telephone (586) 677-4081
 www.communityeng.com

"BLOOMER WOODS"
 PART OF THE SOUTHWEST 1/4 OF SECTION 13, T.3N., R.11E., CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN.

DATE Sept. 14, 2015	SCALE 1"=60'
DRAWN BY J.M.B.	SHEET 1 OF 9
CHECKED BY R.S.H.	DRAWING Z-15-085

CITY FILE #15-006
 NOT TO BE USED AS CONSTRUCTION DRAWINGS

SITE PLAN

LEGAL DESCRIPTION: PARCEL 15-13-301-058

PART OF THE SOUTHWEST 1/4 OF SECTION 13, T.3N., R.11E., BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS: BEGINNING AT A POINT WHICH IS NORTH 344.58' ALONG THE WEST LINE OF SAID SECTION 13 AND THE CENTERLINE OF JOHN R ROAD AND EAST 60.00' FROM THE SOUTHWEST CORNER OF SAID SECTION 13; THENCE NORTH 928.59'; THENCE N89°57'06"E 602.12'; THENCE S00°01'17"E 929.10'; THENCE WEST 602.47' TO THE POINT OF BEGINNING. CONTAINING 559,438 SQUARE FEET - 12.843 ACRES (NET)

BENCHMARK DESCRIPTIONS (NAVD 88 DATUM) *

- ARROW ON HYDRANT AT SOUTHWEST CORNER OF JOHN R ROAD AND GALLARD ROAD. ELEVATION: 763.34
- ARROW ON HYDRANT AT WEST SIDE OF JOHN R ROAD IN FRONT OF HOUSE #790. ELEVATION: 761.48
- ARROW ON HYDRANT AT WEST SIDE OF JOHN R ROAD IN FRONT OF HOUSE #910. ELEVATION: 775.30

*** DATUM NOTES**

VERTICAL DATUM USED BY THE CITY IS USGS (UNITED STATES GEODETIC SURVEY) NAVD 29. THIS DIFFERS FROM THE CURRENT VERTICAL DATUM (NAVD 88) BY -40' AT THE GEOGRAPHICAL CENTER OF AVON TOWNSHIP ACCORDING TO THE NGS PROGRAM VERTCON.

THE PROPER MATH IS NAVD 88 - (-.40) = NAVD 29 E.G. 830.21 - (-0.40) = 830.61

NOTE THAT CORRECTION IS SUBTRACTED ALGEBRAICALLY, IN OTHER WORDS, ADDED TO NAVD 88.

THE CITY'S BENCHMARK SYSTEM IS BASED ON A LEVEL NETWORK RUN IN THE EARLY 1980'S THAT TIED TO UNITED STATES GEOLOGICAL SURVEY, ARMY CORPS OF ENGINEERS, AND FEMA BENCHMARKS.

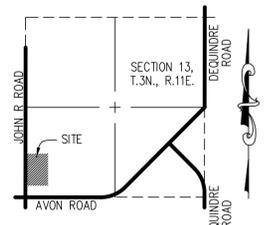
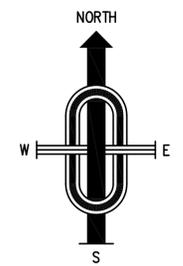
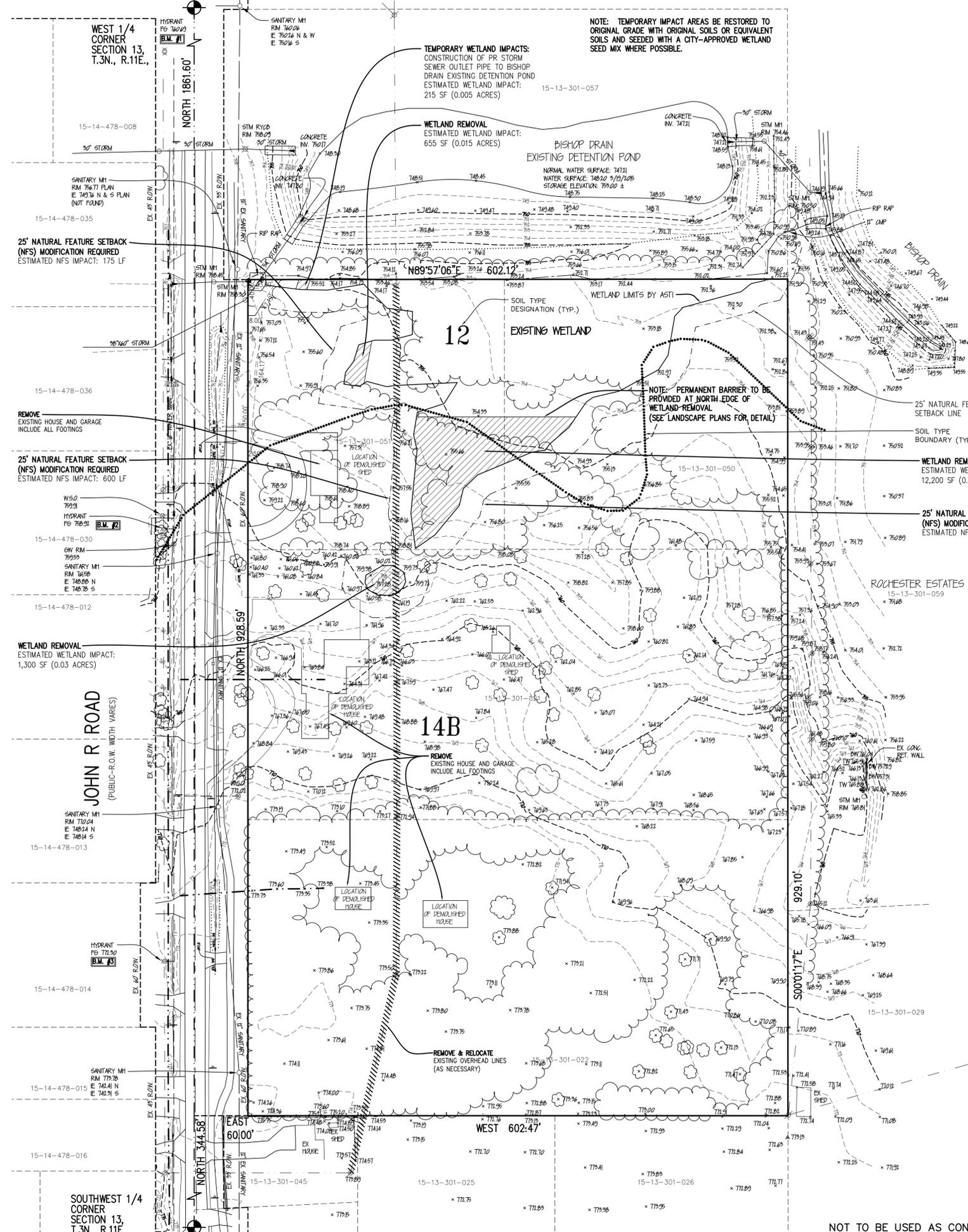
SOIL TYPES:

- 12 - BROOKSTON AND COLWOOD LOAMS.
- 14B - OAKVILLE FINE SAND, 0 TO 6 PERCENT SLOPES

NOTES:

- PRIOR TO CONSTRUCTION, BENCHMARKS WILL BE SET AROUND THE DEVELOPMENT TO ENSURE THAT VERTICAL CONTROL WILL BE AVAILABLE THROUGHOUT THE DEVELOPMENT.
- THE EXISTING HOUSES AND GARAGES ON THIS PROPERTY WILL BE DEMOLISHED. EXISTING SERVICES WILL BE SHUT-OFF AND REMOVED WITH THE UTILITY COMPANY/CITY'S INSPECTION.
- ALL WORK SHALL BE DONE IN CONFORMANCE WITH THE CITY'S REQUIREMENTS. FLOODPLAIN DOES NOT EXIST ON THIS PROPERTY BASED ON RESEARCH OF THE FLOOD INSURANCE RATE MAP (FIRM).
-

TOTAL ESTIMATED WETLAND IMPACT: 0.33 ACRES



LOCATION MAP
NOT TO SCALE

LEGEND

- △ CONTROL POINT
- XX FIRE HYDRANT
- ⊗ GATE WELL OR D-BOX
- MANHOLE AS NOTED
- PAVEMENT CATCH BASIN
- ⊘ UTILITY POLE
- ▲ GUY WIRE BASE
- ⊙ SIGN
- LIGHT POLE
- FOUND IRON (F.I.) OR FOUND PIPE (F.P.)
- EXISTING FENCE
- - - CL ROAD OR DITCH AS NOTED
- ~ TREE/BRUSH LINE
- EA= EDGE OF ASPHALT
- EC= EDGE OF CONCRETE
- TC= TOP OF CURB
- GU= GUTTER
- TB= TOP OF BANK
- THIS TEXT TYPE (HAND) DENOTES EXISTING

NOTE: A WETLAND USE PERMIT FROM THE CITY AND A DEQ PART 303 PERMIT ARE REQUIRED. A COPY OF DEQ PERMIT WILL BE PROVIDED TO THE CITY UPON OBTAINING.

REV. 01/15/16 CITY COMMENTS
REV. 11/20/15 FORMAL SUBMITTAL TO CITY
REV. 10/15/15 UTILITY & GRADING LIMITS TO SAVE ADD'L TREES

COMMUNITY CIVIL ENGINEERING & SURVEYING

30000 DWS
BEFORE YOU DIG
CALL MISS DIG
1-800-482-7171

1503 26 Mile Road, Suite 110
Washington Twp., Michigan 48094
Telephone (586) 877-4081
www.communityeng.com

"BLOOMER WOODS"
PART OF THE SOUTHWEST 1/4 OF SECTION 13, T.3N., R.11E., CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN.

DATE Sept. 14, 2015 SCALE 1" = 60'
DRAWN BY J.M.B. SHEET 2 OF 9
CHECKED BY R.S.H. DRAWING Z-15-085

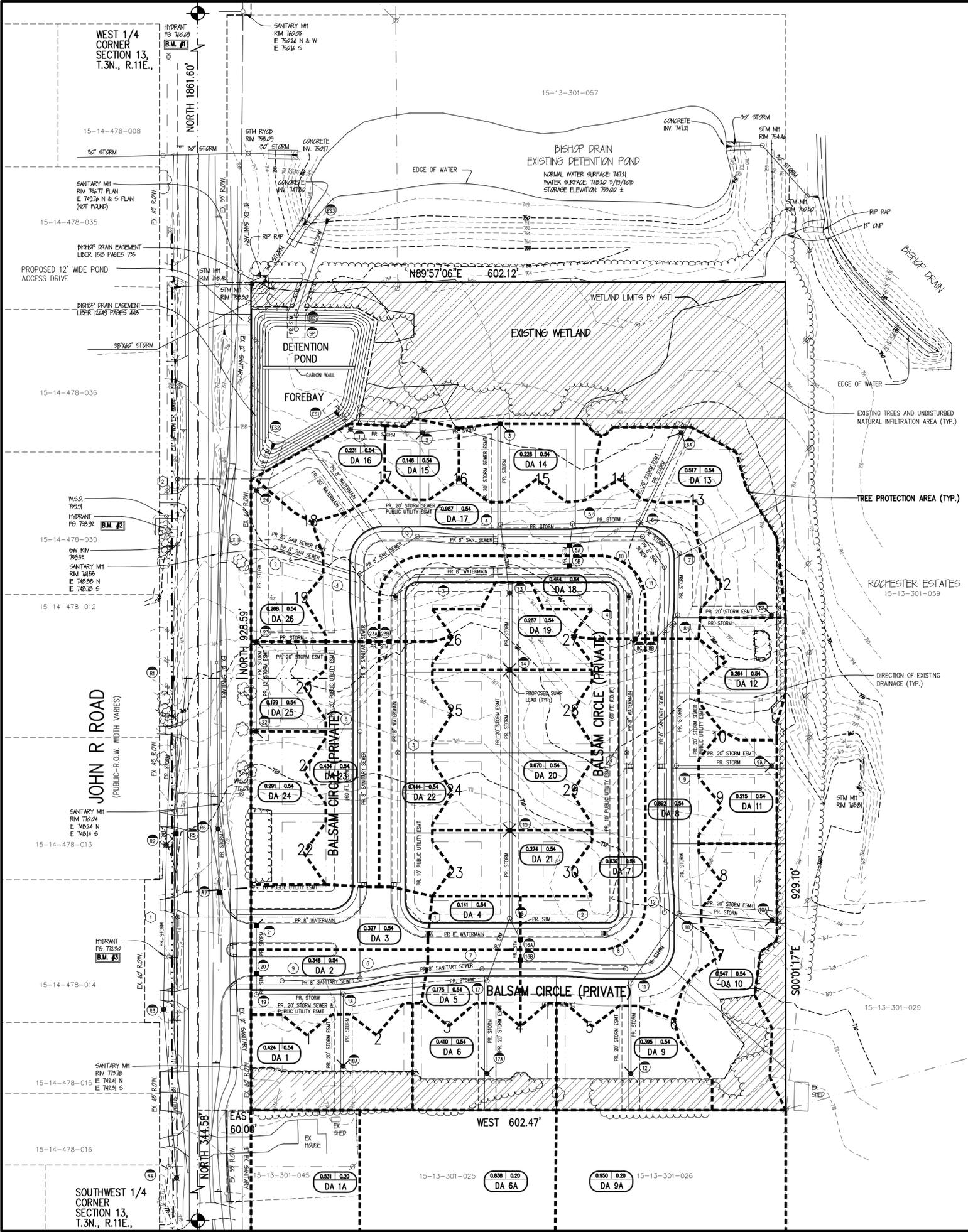
TOPOGRAPHIC SURVEY

CITY FILE #15-006
NOT TO BE USED AS CONSTRUCTION DRAWINGS

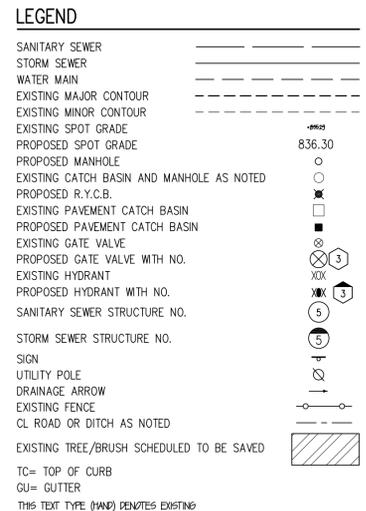
WEST 1/4 CORNER SECTION 13, T.3N., R.11E.



LOCATION MAP
NOT TO SCALE



FROM MH	TO MH	ACRES	IMPERV. FACTOR	EQUIV. AREA A * C	ADD. AREA A * C	SUM OF A * C	INTENSITY I	TIME OF CONCENTRATION	RUNOFF (CFS) Q	LENGTH OF PIPE	PIPE DIAMETER IN	HYDRAULIC GRADIENT SLOPE %	ACTUAL SLOPE USED %	HYDRAULIC VELOCITY FULL (FPS)	ACTUAL VELOCITY FULL (FPS)	TIME (MIN)	FLOW Q (CFS)	HG ELEV UPPER END	HG ELEV LOWER END	RM ELEV UPPER END	INVERT UPPER END	INVERT LOWER END	FROM MH	TO MH	
12	11	9	0.395	0.54	0.21	0.19	0.40	3.89	20.00	1.56	102	0.19%	2.00%	1.98	6.43	0.00	5.05	768.35	766.31	771.80	767.55	765.51	12	11	
11	10	0	0.000	0.54	0.00	0.00	0.40	3.89	20.00	1.56	90	0.19%	2.00%	1.98	6.43	0.00	5.05	766.21	764.41	774.35	763.81	763.81	11	10	
10	9	0	0.000	0.54	0.00	0.30	0.70	3.89	20.00	2.72	166	0.19%	2.00%	2.22	7.46	1.25	9.16	761.61	758.29	773.30	760.61	757.29	10	9	
9	8	0	0.000	0.54	0.00	0.12	0.82	3.78	21.25	3.10	169	0.23%	2.00%	2.53	7.46	1.12	9.16	758.19	754.81	769.10	757.19	753.81	9	8	
8	7	0	0.000	0.54	0.00	0.97	1.79	3.69	22.36	6.61	70	0.17%	1.00%	2.75	6.61	0.42	15.89	753.81	753.11	764.00	752.41	751.71	8	7	
7	6	0	0.000	0.54	0.00	1.79	3.66	22.79	6.55	58	21	0.17%	1.00%	2.72	6.61	0.35	15.89	752.64	752.06	763.85	751.24	750.66	7	6	
6	5	0	0.000	0.54	0.00	0.28	2.07	3.64	23.14	7.53	74	0.24%	0.20%	2.40	3.23	0.51	10.14	751.06	750.91	763.15	749.46	749.31	6	5	
5	4	0	0.000	0.54	0.00	0.79	2.86	3.60	23.66	10.30	81	0.30%	0.06%	2.10	3.75	0.64	18.39	750.81	750.65	761.75	748.81	748.65	5	4	
4	3	0	0.000	0.54	0.00	1.93	4.79	3.55	24.30	17.00	113	0.36%	0.08%	2.41	2.68	0.78	18.92	750.55	750.46	762.60	748.15	748.06	4	3	
3	2	14	0.228	0.54	0.12	4.91	3.49	26.08	17.14	88	36	0.07%	0.08%	2.42	2.68	0.61	18.92	750.36	750.29	755.00	747.96	747.89	3	2	
2	1	15	0.146	0.54	0.08	4.99	3.45	25.69	17.22	81	36	0.07%	0.08%	2.44	2.68	0.55	18.92	750.19	750.13	750.03	747.79	747.73	2	1	
1	ES1	16	0.231	0.54	0.12	5.11	3.42	26.24	17.48	38	36	0.07%	0.08%	2.47	2.68	0.26	18.92	750.03	750.00	756.00	747.63	747.60	1	ES1	
21	20	3	0.327	0.54	0.18	0.18	3.89	20.00	0.70	54	12	0.04%	1.00%	0.89	4.55	0.00	3.57	770.15	770.07	773.55	769.35	768.81	21	20	
20	19	2	0.348	0.54	0.19	0.37	3.89	20.00	1.44	24	12	0.16%	0.32%	1.83	2.57	0.00	2.02	770.07	770.03	773.55	768.81	768.73	20	19	
19	18	0	0.000	0.54	0.00	0.34	0.71	3.89	20.00	1.44	96	0.16%	0.32%	1.83	2.57	0.00	2.02	770.03	769.87	774.80	768.63	768.32	19	18	
18	17	0	0.000	0.54	0.00	0.71	3.89	20.00	2.76	163	12	0.60%	0.32%	3.52	2.57	0.77	2.76	769.87	768.90	775.55	767.40	767.40	18	17	
17	16	0	0.000	0.54	0.00	0.39	1.10	3.82	20.77	4.20	75	0.13%	0.32%	5.35	2.57	0.23	4.20	768.90	767.95	767.30	767.06	767.06	17	16	
16	15	0	0.000	0.54	0.00	0.17	1.27	3.80	21.01	4.83	99	0.12%	0.32%	6.14	6.90	0.27	5.42	767.76	765.48	775.80	766.96	764.68	16	15	
15	14	21	0.274	0.54	0.15	1.42	3.78	21.77	5.37	180	15	0.09%	2.30%	4.37	8.00	0.69	9.82	764.70	760.56	767.90	763.70	759.56	15	14	
14	13	20	0.670	0.54	0.36	1.78	3.73	21.96	6.64	86	18	0.40%	2.30%	3.76	9.04	0.38	15.97	760.38	758.40	765.50	759.18	757.20	14	13	
13	4	19	0.287	0.54	0.15	1.93	3.70	22.34	7.14	78	18	0.46%	2.00%	4.04	8.43	0.32	14.90	758.30	756.74	761.30	757.10	755.54	13	4	
22	23	24	0.291	0.54	0.16	0.16	3.89	20.00	0.62	101	12	0.03%	3.00%	0.79	7.88	0.00	6.19	763.32	760.29	766.70	762.52	759.49	22	23	
23	24	25	0.179	0.54	0.10	0.47	0.73	3.89	20.00	2.84	182	0.15%	3.00%	2.31	9.14	1.31	11.22	758.40	752.84	763.90	757.40	751.84	23	24	
24	ES2	26	0.268	0.54	0.14	0.87	3.78	21.31	3.29	78	15	0.26%	3.00%	2.68	9.14	0.49	11.22	750.94	748.60	758.50	749.94	747.60	24	ES2	
10A	10	10	0.547	0.54	0.30	0.30	3.89	20.00	1.17	105	12	0.11%	3.00%	1.49	2.57	0.00	2.02	762.05	761.25	765.50	761.25	760.91	10A	10	
9A	9	11	0.215	0.54	0.12	0.12	3.89	20.00	0.47	107	12	0.02%	0.32%	0.59	2.57	0.00	2.02	762.05	761.71	765.50	761.25	760.91	9A	9	
8A	8	12	0.264	0.54	0.14	0.14	3.89	20.00	0.54	106	12	0.02%	0.32%	0.69	2.57	0.00	2.02	754.25	753.91	757.70	753.45	753.11	8A	8	
8C	8B	7	0.639	0.54	0.35	0.35	3.89	20.00	1.36	24	12	0.15%	1.00%	1.73	4.55	0.00	3.57	760.27	760.03	763.67	759.47	759.23	8C	8B	
8B	8	8	0.892	0.54	0.48	0.83	3.89	20.00	3.23	37	15	0.25%	1.00%	2.63	5.28	0.23	6.48	759.93	759.56	763.67	758.93	758.56	8B	8	
5B	5A	18	0.494	0.54	0.26	0.26	3.87	20.23	1.01	24	12	0.08%	1.00%	1.28	4.55	0.00	3.57	757.28	757.04	760.67	756.48	756.24	5B	5A	
5A	5	17	0.987	0.54	0.53	0.79	3.87	20.23	3.06	24	15	0.22%	1.00%	2.49	5.28	0.16	6.48	756.94	756.70	760.67	756.94	756.70	5A	5	
6A	6	13	0.517	0.54	0.28	0.28	3.86	20.39	1.08	111	12	0.09%	0.32%	1.38	2.57	0.00	2.02	751.61	751.25	755.00	750.81	750.45	6A	6	
23B	23A	22	0.444	0.54	0.24	0.24	3.86	20.39	0.93	24	12	0.07%	1.00%	1.18	4.55	0.00	3.57	766.03	765.79	769.41	765.23	764.99	23B	23A	
23A	23	23	0.434	0.54	0.23	0.47	3.86	20.39	1.81	127	12	0.26%	3.00%	2.31	7.88	0.00	6.19	764.21	760.40	769.41	763.41	759.60	23A	23	
18A	18	1	0.424	0.54	0.23	0.11	0.34	3.86	20.39	1.31	81	12	0.13%	0.32%	1.67	2.57	0.00	2.02	769.08	768.82	772.50	768.28	768.02	18A	18
17A	17	6	0.410	0.54	0.22	0.17	0.39	3.86	20.39	1.51	104	12	0.18%	0.32%	1.92	2.57	0.00	2.02	769.10	768.77	772.50	768.30	767.97	17A	17
16B	16A	5	0.175	0.54	0.09	0.09	3.86	20.39	0.35	24	12	0.01%	1.00%	0.44	4.55	0.00	3.57	771.31	771.07	774.71	770.51	770.27	16B	16A	
16A	16	4	0.141	0.54	0.08	0.17	3.86	20.39	0.66	27	12	0.03%	0.32%	0.84	2.57	0.00	2.02	770.97	770.88	774.71	770.17	770.08	16A	16	
POND OVERFLOW																									
SP	OCS	0	0.000	0.54	0.00	0.00	3.86	20.39	0.00	24	12	0.00%	0.32%	0.00	2.57	0.00	2.02	749.42	749.42	756.50	747.60	747.52	SP	OCS	
OCS	ES3	0	0.000	0.54	0.00	5.98	1.81	127.33	10.82	114	30	0.07%	0.18%	2.21	3.55	0.86	17.45	749.42	749.21	756.50	747.42	747.21	OCS	ES3	
SOUTH PROPERTY ADDITIONAL DRAINAGE AREA																									
9A	0.950	0.20	0.19																						
6A	0.838	0.20	0.17																						
1A	0.531	0.20	0.11																						



- NOTES:**
- CONTRACTOR SHALL VERIFY DEPTH AND LOCATION OF EXISTING UTILITIES.
 - THE STORM SEWER OUTLET FROM THE DETENTION BASIN WILL BE SIZED TO ACCOMMODATE THE UN-RESTRICTED FLOW FOR THE 10-YEAR STORM FROM THE OFFSITE AREAS TO THE SOUTH. COMPLETE COMPUTATIONS WILL BE PROVIDED ON THE ENGINEERING PLANS.
 - A PERMIT IS REQUIRED FROM THE OAKLAND COUNTY WATER RESOURCE COMMISSION FOR THE CONNECTION TO THE EXISTING NORTH DETENTION POND.
 - FINAL CONSTRUCTION PLANS SHALL INCLUDE PLAN AND PROFILE VIEWS AND HYDRAULIC GRADE LINE FOR ALL STORM LINES. CROSS-SECTIONS, SLOPES, ETC. SHALL BE PROVIDED FOR ALL EXISTING AND PROPOSED OPEN DRAINAGE COURSES. DESIGN CALCULATIONS SHALL BE PROVIDED FOR ALL DRAINAGE FACILITIES PROPOSED AND EXISTING.
 - THE MINIMUM STORM SEWER PIPE SIZE WILL BE 12" DIAMETER.
 - A SOIL EROSION AND SEDIMENTATION CONTROL PERMIT IS REQUIRED.

REV. 01/15/16 CITY COMMENTS
REV. 11/20/15 FORMAL SUBMITTAL TO CITY
REV. 10/15/15 UTILITY & GRADING LIMITS TO SAVE ADD'L TREES

COMMUNITY
CIVIL ENGINEERING & SURVEYING

3 WORKING DAYS BEFORE YOU DIG CALL MISS DIG 1-800-482-7171

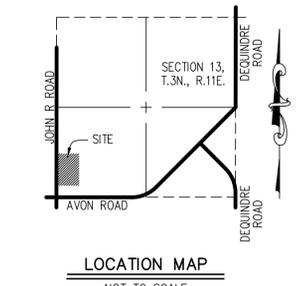
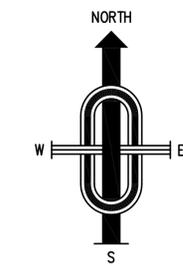
DATE **Sept. 14, 2015** SCALE **1"=60'**
DRAWN BY **J.M.B.** SHEET **3** OF **9**
CHECKED BY **R.S.H.** DRAWING **Z-15-085**

CITY FILE #15-006
NOT TO BE USED AS CONSTRUCTION DRAWINGS

"BLOOMER WOODS"
PART OF THE SOUTHWEST 1/4 OF SECTION 13, T.3N., R.11E., CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN.

City Engineering and Surveying
6303 26 Mile Road, Suite 110
Washington Twp., Michigan 48094
Telephone (586) 877-4081
www.communityeng.com

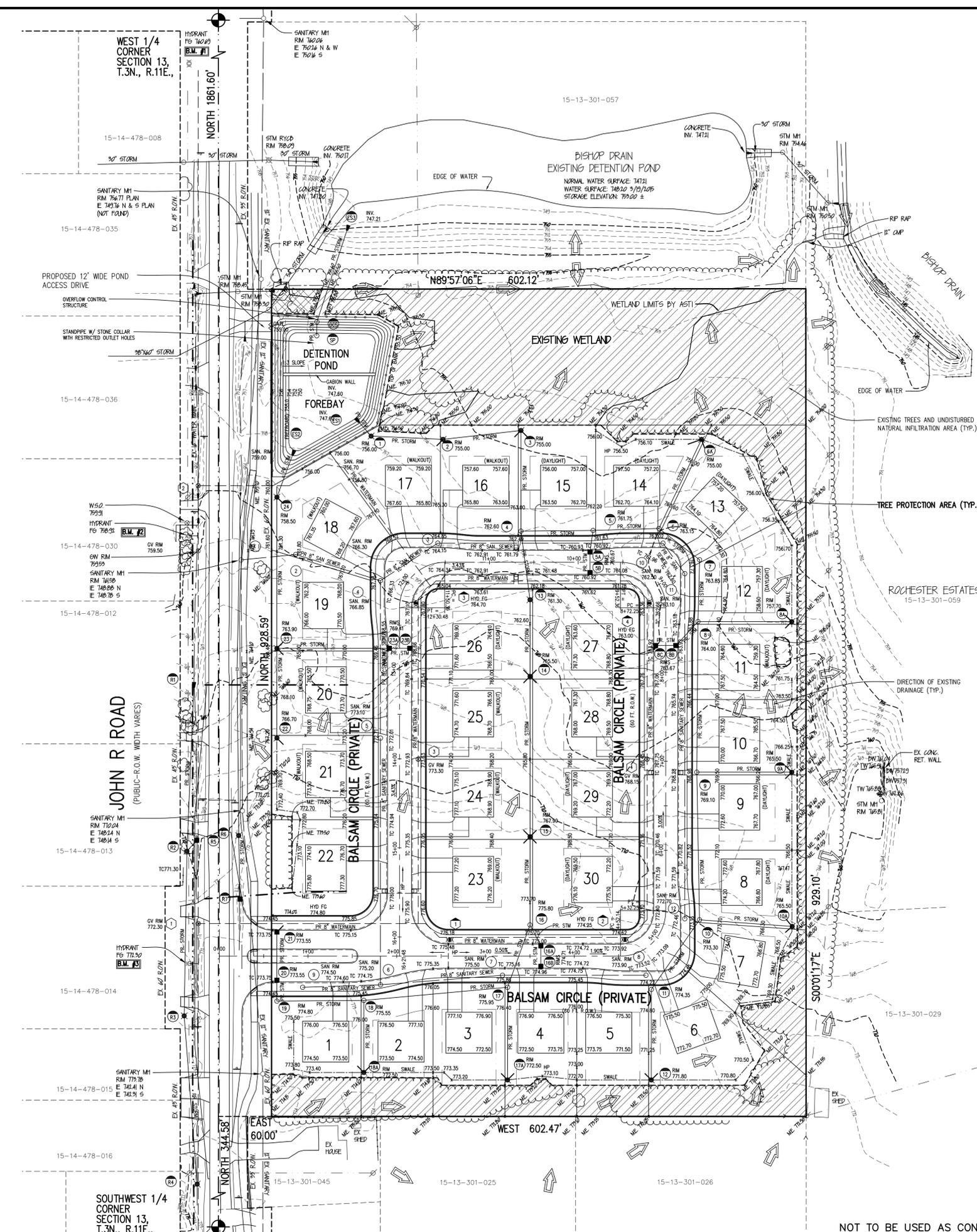
UTILITY PLAN



LEGEND

SANITARY SEWER	---
STORM SEWER	---
WATER MAIN	---
EXISTING MAJOR CONTOUR	---
EXISTING MINOR CONTOUR	---
EXISTING SPOT GRADE	---
PROPOSED SPOT GRADE	836.30
PROPOSED MANHOLE	○
EXISTING CATCH BASIN AND MANHOLE AS NOTED	○
PROPOSED R.Y.C.B.	○
EXISTING PAVEMENT CATCH BASIN	□
PROPOSED PAVEMENT CATCH BASIN	□
EXISTING GATE VALVE	⊗
PROPOSED GATE VALVE WITH NO.	⊗
EXISTING HYDRANT	⊗
PROPOSED HYDRANT WITH NO.	⊗
SANITARY SEWER STRUCTURE NO.	⑤
STORM SEWER STRUCTURE NO.	⑤
SIGN	+
UTILITY POLE	+
DRAINAGE ARROW	→
EXISTING FENCE	---
CL ROAD OR DITCH AS NOTED	---
EXISTING TREE/BUSH SCHEDULED TO BE SAVED	▨
TC= TOP OF CURB	
GU= GUTTER	
THIS TEXT TYPE (HAND) DENOTES EXISTING	

- SOIL EROSION CONTROL NOTES:**
1. THE DEVELOPER SHALL SUBMIT AN EROSION CONTROL PLAN, COMPLETED APPLICATION, AND CHECKLIST FORMS, PAY ALL FEES AND POST AN EROSION CONTROL PERFORMANCE BOND, AS REQUIRED, PRIOR TO ANY EARTH CHANGE.
 2. CONSTRUCTION OPERATION SHALL BE SCHEDULED AND PERFORMED SO THAT PREVENTATIVE SOIL EROSION CONTROL MEASURES ARE IN PLACE PRIOR TO EXCAVATION IN CRITICAL AREAS AND TEMPORARY STABILIZATION MEASURES ARE IN PLACE IMMEDIATELY FOLLOWING BACKFILLING.
 3. SPECIAL PRECAUTIONS WILL BE TAKEN WITH THE USE OF CONSTRUCTION EQUIPMENT TO PREVENT SITUATIONS THAT PROMOTE EROSION.
 4. CLEANUP WILL BE DONE IN A MANNER TO ENSURE THAT EROSION CONTROL MEASURES ARE NOT DISTURBED.
 5. THE PROJECT WILL CONTINUALLY BE INSPECTED FOR SOIL EROSION AND SEDIMENT CONTROL COMPLIANCE. DEFICIENCIES WILL BE CORRECTED BY THE CONTRACTOR WITHIN 24 HOURS.
 6. NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT FOR STORM WATER DISCHARGE FROM THE CONSTRUCTION ACTIVITIES IS REQUIRED PRIOR TO STARTING ANY EARTH CHANGE.
 7. DEVELOPER IS RESPONSIBLE FOR GRADING THE SIDE AND REAR YARD SWALES AS DESIGNED SO THAT THE ENTIRE SITE DRAINS AS IS DESIGNED.
- CONSTRUCTION SEQUENCE:**
1. CLEAR TREES, BRUSH, AND STUMPS FROM DESIGNATED CLEARING AREAS. ALL STUMPS, CHIPS, AND DEBRIS SHALL BE DISPOSED OFF-SITE.
 2. MASS GRADE SITE, INCLUDING EXCAVATION OF DETENTION POND. MAINTAIN EROSION CONTROL AS REQUIRED.
 3. INSTALL SANITARY SEWER, WATERMAIN AND STORM SEWER. IMMEDIATELY AFTER INSTALLATION OF STORM SEWER INSTALL STONE AND SOD INLET FILTERS AT ALL INLETS TO THE STORM SEWER SYSTEM.
 4. BRING PAVEMENT AREAS TO SUB-BASE GRADE AND PLACE TOPSOIL ON SIDE SLOPES. VERIFY THAT IT HAS BEEN CHECKED BY THE ENGINEER AND CORRECTED IF NECESSARY.
 5. INSTALL PAVEMENT AND BACKFILL CURBS. AFTER INSTALLATION OF PAVEMENT, REPLACE STONE INLET FILTERS IN PAVED AREAS.
 6. FINISH GRADE AND REDISTRIBUTE A MINIMUM OF 4" OF TOP SOIL, SEED AND MULCH ALL DISTURBED AREAS AND MAINTAIN TEMPORARY SOIL EROSION MEASURES AS REQUIRED.
 7. UPON COMPLETION, REMOVE ACCUMULATED SEDIMENT AND DEBRIS FROM STORM SYSTEM AND REMOVE SOIL EROSION CONTROLS.
- NOTES:**
1. ALL DRIVES SHALL BE A MINIMUM 16" WIDE.
 2. THE BISHOP DRAIN IS UNDER THE JURISDICTION OF THE OAKLAND COUNTY DRAIN COMMISSIONER'S OFFICE.
 3. THE PROPOSED ROAD WILL BE CROWNED AND WILL FOLLOW THE CITY'S STANDARDS.
 4. PROPOSED GRADES SHALL MATCH EXISTING ELEVATIONS AT THE SILT FENCE.
 5. THE PROPOSED ROADS WILL BE PUBLIC.
 6. ALL ROAD IMPROVEMENTS WITHIN THE JOHN R ROAD R.O.W. WILL MEET CITY OF ROCHESTER HILLS STANDARDS. AN ACCESS PERMIT WILL BE OBTAINED FROM THE CITY PRIOR TO STARTING CONSTRUCTION.
 7. ALL LOTS AND OPEN SPACE AREAS SHALL HAVE ACCESS TO A UTILITY EASEMENT.
- GRADING NOTES:**
1. THE BOXES SHOWN ARE TO REPRESENT THE ESTIMATED HOME LOCATION. ACTUAL HOME SIZING, LOCATION AND GRADING WILL BE DETERMINED AT THE TIME THE PLOT PLAN IS PREPARED.
 2. NO WORK WILL BE PERMITTED IN A WETLAND AREA UNLESS A PERMIT HAS BEEN ISSUED TO DO SO.
 3. ALL GRADE IN PAVEMENT AREA ARE TOP OF CURB (0.25' OR 3" HIGH) UNLESS OTHERWISE NOTED.
 4. ALL SIDE YARD AND REAR YARD GRADES SHALL HAVE A MINIMUM SLOPE OF 1%. THESE SWALES ARE REQUIRED TO BE ESTABLISHED BY THE DEVELOPER WHEN THE SITE IS ROUGH GRADED.
 5. SLOPES BETWEEN 2% AND 4.5% WILL BE SODDED. SLOPES GREATER THAN 4.5% WILL BE SODDED AND STAKED.
 6. ALL PROPOSED GRADES WILL MATCH THE EXISTING AT THE PERIMETER OF THE SITE (SLT FENCE LOCATION).
 7. A PERMANENT BENCHMARK WILL BE ESTABLISHED ON-SITE PRIOR TO STARTING WORK.
 8. ALL DRAINAGE SWALES SHALL BE A MINIMUM SLOPE OF 1%.



REV. 01/15/16 CITY COMMENTS
REV. 11/20/15 FORMAL SUBMITTAL TO CITY
REV. 10/15/15 UTILITY & GRADING LIMITS TO SAVE ADD'L TREES

COMMUNITY CIVIL ENGINEERING & SURVEYING

30000 17'E
1-800-482-7171

"BLOOMER WOODS"
PART OF THE SOUTHWEST 1/4 OF SECTION 13, T.3N., R.11E., CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN.

DATE Sept. 14, 2015 SCALE 1"=60'
DRAWN BY J.M.B. SHEET 4 OF 9
CHECKED BY R.S.H. DRAWING Z-15-085

CITY FILE #15-006
NOT TO BE USED AS CONSTRUCTION DRAWINGS

GRADING PLAN

C-FACTOR CALCULATIONS (STORM SEWER SIZING):

LOT AREA = 90.0' X 134.10' = 12,069 SF
 R.O.W. AREA = 3,371 SF
 TOTAL = 15,440 SF

"DECKED AREAS"
 BUILDING COVERAGE = 3,017 SF (25%)
 DRIVEWAY = 1,615 SF
 SIDEWALK (PUBLIC) = 370 SF
 SIDEWALK (PRIVATE) = 130 SF
 ROAD (HALF) = 1,215 SF
 TOTAL = 6,347 SF
 GRASSED AREAS = 15,440 SF - 6,347 SF = 9,093 SF
 WEIGHTED C-FACTOR = (9,093 X 0.25 + 6,347 SF X 0.95) / 15,440 SF = 0.54

DETENTION CALCULATIONS (EXISTING POND OFF SITE):

C = 0.29 RUNOFF COEFFICIENT USED IN ORIGINAL POND DESIGN
 A = 12.843 ACRES (NET)
 Q = 0.20 CFS/ACRE
 ALLOWABLE RELEASE RATE: (0.20 CFS/ACRE)
 $Q_A = 12.843 \text{ ACRES} \times 0.20 = 2.569 \text{ CFS}$

DETENTION REQUIRED
 FLOODING PROTECTION (OVERBANK)
 10-YEAR FLOOD VOLUME PROVIDED
 IN EXISTING POND NORTH OF SITE:

$Q_0 = \frac{Q_A}{A \times C} = 0.690 \text{ CFS/ACRE-IMP}$
 $T = -25 + \sqrt{\frac{6562.5}{Q_0}} = 72.55 \text{ MIN.}$
 $V_S = \frac{[(10,500 \times T)/(T + 25)] - (40 \times T \times Q_0)}{5,808 \text{ CF/ACRE-IMP}}$

$V_{10} = V_S \times A \times C$
 $V_{10} = 21,631 \text{ CF}$ TOTAL PROVIDED 10-YEAR FLOODING PROTECTION IN EXISTING POND NORTH OF SITE

DETENTION CALCULATIONS (PROPOSED SITE):

C = 0.54 RUNOFF COEFFICIENT
 A = 10.11 ACRES
 (12.843 ACRES SITE - 2.737 ACRES WETLAND & NAT. AREA)
 Q = 0.20 CFS/ACRE
 ALLOWABLE RELEASE RATE: (0.20 CFS/ACRE)
 $Q_A = 10.11 \text{ ACRES} \times 0.20 = 2.022 \text{ CFS}$

DETENTION REQUIRED
 FLOODING PROTECTION (OVERBANK)
 100-YEAR FLOOD VOLUME REQUIRED:

$Q_0 = \frac{Q_A}{A \times C} = 0.370 \text{ CFS/ACRE-IMP}$
 $T = -25 + \sqrt{\frac{6562.5}{Q_0}} = 141.86 \text{ MIN.}$
 $V_S = \frac{(16,500 \times T)/(T + 25) - (40 \times T \times Q_0)}{11,926.24 \text{ CF/ACRE-IMP}}$

$V_{100} = V_S \times A \times C$
 $V_{100} = 65,110 \text{ CF}$

100-YEAR ADJUSTED FLOOD VOLUME REQUIRED ON-SITE:
 ADJUSTED FOR EXISTING 10-YEAR STORAGE VOLUME PROVIDED IN EXISTING POND NORTH OF SITE

$V_{100 \text{ ADJ.}} = V_{100} - V_{10}$
 $V_{100 \text{ ADJ.}} = 65,110 - 21,631$
 $V_{100 \text{ ADJ.}} = 43,480 \text{ CF}$ TOTAL REQUIRED FLOODING PROTECTION

FLOODING PROTECTION VOLUME PROVIDED:

ELEVATION	AREA	VOLUME	TOTAL
749.83	5670	973	973
750.00	5778	6138	7111
751.00	6498	6878	13989
752.00	7258		
TOTAL PROPOSED WATER QUALITY / FOREBAY VOLUME		13989 CF	

FOREBAY REQUIRED
 POST DEVELOPMENT WATER QUALITY
 1/2" STORM VOLUME REQUIRED:

$W_0 = 1.815 \times A \times C$
 $W_0 = 1.815 \times (10.11) \times (0.54)$
 $W_0 = 9,909 \text{ CF}$ TOTAL REQUIRED WATER QUALITY

WATER QUALITY VOLUME PROVIDED:

ELEVATION	AREA	VOLUME	TOTAL
749.83	5670	973	973
750.00	5778	6138	7111
751.00	6498	6878	13989
752.00	7258		
TOTAL PROPOSED WATER QUALITY / FOREBAY VOLUME		13989 CF	

CHANNEL PROTECTION (BANKFULL)
 1-YEAR FLOOD VOLUME REQUIRED:

$C_{pv} = 6,788 \times A \times C$
 $C_{pv} = 6,788 \times (10.11) \times (0.54)$
 $C_{pv} = 37,058 \text{ CF}$ TOTAL REQUIRED CHANNEL PROTECTION
 $C_{pv} \text{ ELEV.} = 753.58$

CHANNEL PROTECTION VOLUME PROVIDED:

ELEVATION	AREA	VOLUME	TOTAL
749.83	4200	722	722
750.00	4290	4587	5308
751.00	4883	5196	10504
752.00	5508		
752.00	13078	13814	24318
753.00	14550	15319	39636
754.00	16087		
TOTAL PROPOSED CHANNEL PROTECTION VOLUME		53625 CF	

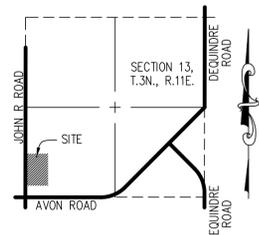
INFILTRATION AREA REQUIRED
 STORMWATER RECHARGE AND INFILTRATION
 1-YEAR FLOOD VOLUME REQUIRED:

$W_0 = 1.815 \times A \times C$
 $W_0 = 1.815 \times (10.11) \times (0.54)$
 $W_0 = 9,909 \text{ CF}$ TOTAL REQUIRED STORMWATER RECHARGE & INFILTRATION

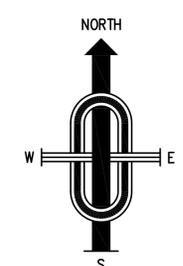
EXISTING UNDISTURBED WETLAND & EXISTING TREE AREAS

EX. WETLAND & DETENTION BASIN & AREA NORTH OF LOTS 13-18: 96,621 SF
 AREA EAST OF LOTS 6-13: 20,337 SF
 AREA SOUTH OF LOTS 1-6: 129,821 SF
 TOTAL AREA: 236,780 SF

INFILTRATION OF 1" (.08') USED IN CALCULATION.
 $139,879 \text{ SF} \times .08' = 11,190 \text{ CF}$ TOTAL PROPOSED STORMWATER RECHARGE & INFILTRATION



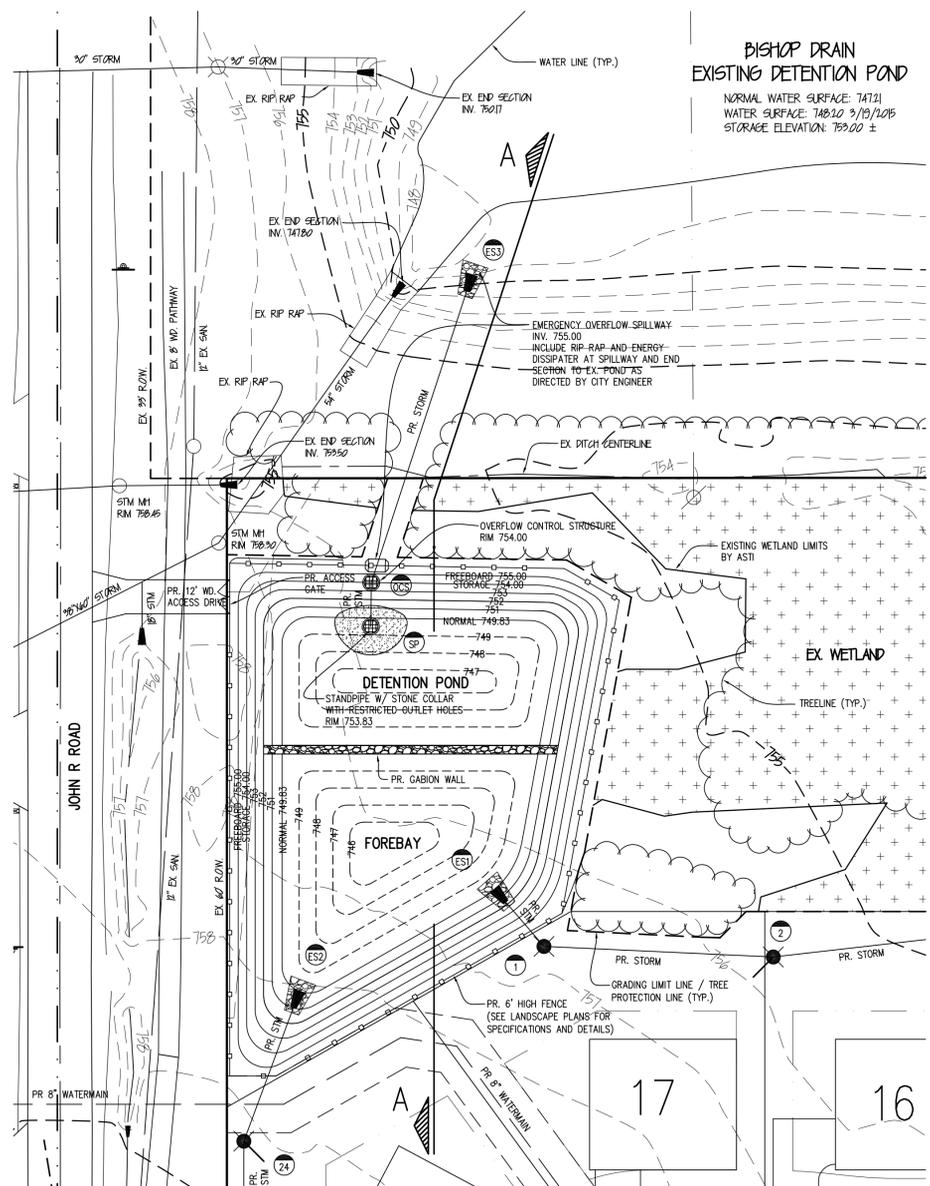
LOCATION MAP
 NOT TO SCALE



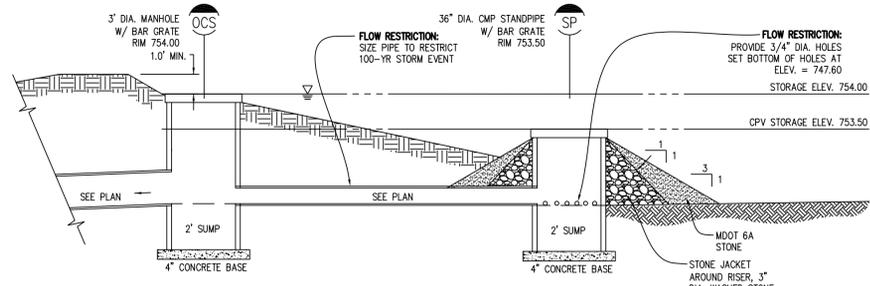
C-FACTOR CALCULATIONS (DETENTION POND SIZING):

TOTAL PARCEL AREA = 559,438 SF (12.843 ACRES)
 TOTAL WETLAND / NATURAL AREA = 119,227 SF (2.737 ACRES)
 TOTAL DEVELOPED AREA FOR LOTS = 419,483 SF (9.630 ACRES)
 TOTAL DETENTION POND AREA = 20,728 SF (0.476 ACRES)
 (5,060 SF NORMAL WATER + 15,668 SF GRASS AREAS)

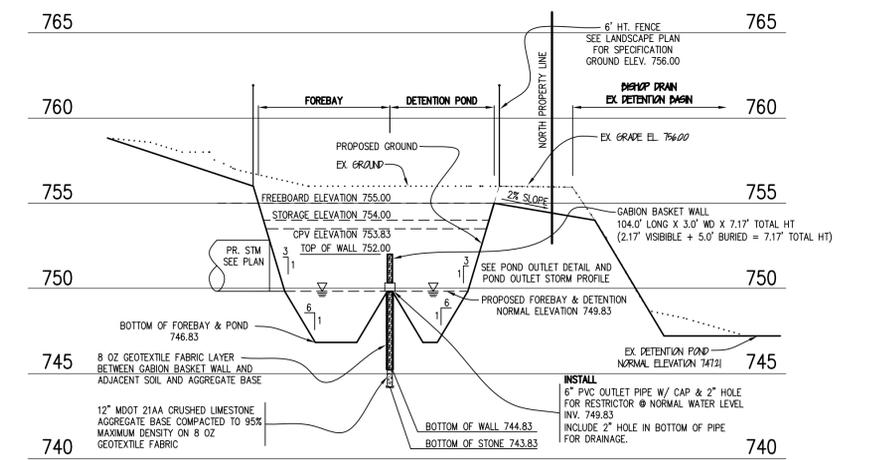
WEIGHTED C-FACTOR FOR POND SIZING = 0.54
 ((15,668 X 0.25 + 5,060 X 1.00 + 419,483 X 0.54) / 440,211 SF)



DETENTION POND & FOREBAY DETAILED LAYOUT PLAN
 SCALE: 1"=30'



POND OUTLET DETAIL
 (NO SCALE)



DETENTION POND & FOREBAY SECTION A-A
 SCALE: 1" = 50' HORIZONTAL
 SCALE: 1" = 5' VERTICAL

SANITARY SEWER BASIS OF DESIGN

INITIAL DISCHARGE

TOTAL SINGLE FAMILY UNITS = 30 UNITS
 PEOPLE = 30 UNITS X 3.5 PEOPLE/UNIT = 105 PERSONS
 AVERAGE ESTIMATED FLOW = 105 PEOPLE X 100 G.P.C.P.D. = 10500 G.P.D. = 0.014 CFS

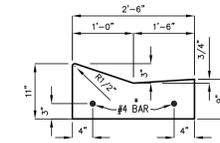
PEAK FACTOR = 4.0 X 0.014 CFS = 0.056 CFS

PEAK FLOW = 0.056 CFS

A 8" SANITARY SEWER AT A MINIMUM SLOPE OF 0.40 % HAS A CAPACITY OF 0.78 C.F.S.

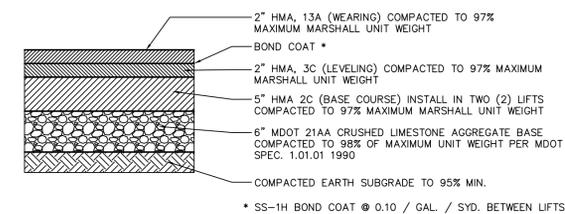
ULTIMATE DISCHARGE = INITIAL DISCHARGE

NOTE: EXISTING JOHN R. ROAD 12" SANITARY SEWER WAS DESIGNED TO ACCOMMODATE 32 LOTS AT 2.9 UNITS/ACRE FOR PARCELS 301-021, 301-022, AND 301-051 (SUB DISTRICT "A" MANHOLE 33). PROPOSED SITE IS DESIGNED FOR 30 LOTS AT 2.3 UNITS/ACRE. THE EXISTING SANITARY SEWER HAS THE CAPACITY TO HANDLE THE PROPOSED DEVELOPMENT.



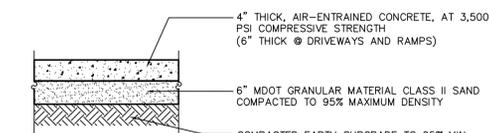
3" MOUNTABLE CONC. CURB & GUTTER DETAIL "ONSITE"

(R.O.C. STANDARD DETAIL)
 NOT TO SCALE



DEEP STRENGTH HMA PAVEMENT (SITE ROADS)

NOT TO SCALE



TYPICAL 5" SIDEWALK SECTION DETAIL

NOT TO SCALE

REV. 01/15/16 CITY COMMENTS
 REV. 11/20/15 FORMAL SUBMITTAL TO CITY
 REV. 10/15/15 UTILITY & GRADING LIMITS TO SAVE ADJ. TREES

COMMUNITY
 CIVIL ENGINEERING & SURVEYING

30000 LOTS BEFORE YOU DIG CALL MISS DIG 1-800-482-7171
 City Engineering and Surveying
 6303 26 Mile Road, Suite 110
 Washington Twp., Michigan 48094
 Telephone (586) 677-4081
 www.communityeng.com

"BLOOMER WOODS"
 PART OF THE SOUTHWEST 1/4 OF SECTION 13, T.3N., R.11E., CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN.

DATE Sept. 14, 2015 SCALE 1"=50'
 DRAWN BY J.M.B. SHEET 5 OF 9
 CHECKED BY R.S.H. DRAWING Z-15-085

CITY FILE #15-006
 NOT TO BE USED AS CONSTRUCTION DRAWINGS

DETAILS

CITY TREE PROTECTION NOTES

IMPORTANT:
 ALL TREES ON ADJACENT PROPERTIES MUST BE PROTECTED. THE TREE PROTECTIVE FENCING MAY BE PLACED ALONG THE ACTUAL PROPERTY LINE IF THE BRANCHES OF THE TREES ON THE ADJACENT PROPERTIES DO NOT OVERHANG ONTO THE SITE BEING DEVELOPED. IF THE BRANCHES OVERHANG ONTO THE AREA OF THE SITE BEING DEVELOPED, THE TREE PROTECTIVE FENCING MUST BE PLACED AT THE ACTUAL DRIP LINE OF THESE TREES. IT SHOULD ALSO BE NOTED THAT THE SILT FENCING MUST BE PLACED ON THE DEVELOPMENT SIDE OF THE TREE PROTECTIVE FENCING. THE SILT FENCING MAY NOT BE PLACED BETWEEN THE TREE BEING PRESERVED AND THE TREE PROTECTIVE FENCING. IF ANY REGULATED TREES ARE MANAGED ON THE ADJACENT PROPERTIES, THE DAMAGED TREES WILL BE EITHER REPLACED ON THE OWNER'S PROPERTY ON AN INCH FOR INCH BASIS OR A FINE IN THE SUM OF \$122.00 PER CALIPER INCH WILL BE ISSUED AGAINST THE DEVELOPMENT. THIS FINE WILL BE DUE PRIOR TO BUILDING PERMITS BEING ISSUED. IF YOU HAVE ANY QUESTIONS OR NEED ADDITIONAL INFORMATION, CALL THE CITY'S PLANNING DEPARTMENT AT 248-656-4660.

- TREE PROTECTION NOTES:**
- The tree protection fencing (TPF) shall be erected per the plans approved by the City of Rochester Hills Planning Department. The TPF must be in place and be inspected by the City of Rochester Hills Planning Staff prior to the start of any earthwork or construction operations. It is the developer's responsibility to contact the City Planning Department at 248-656-4660 to schedule a TPF inspection. The TPF shall remain in place throughout the entire construction process or until the City authorizes the removal or issues a final Certificate of Occupancy, whichever occurs first.
 - Upon completion of grading and the installation of the infrastructure, a second inspection of the TPF and the trees designated for preservation is required by the City of Rochester Hills Forestry prior to the start of any additional construction. It is the developer's responsibility to contact the City Planning Department at 248-656-4660 to schedule this TPF inspection.
 - A final inspection by the City of Rochester Hills Planning Staff is required at the end of the warranty and maintenance period. The Landscape Maintenance Bond will not be released until this inspection is complete and all related issues are resolved. It is the developer's responsibility to contact the City Planning Department at 248-656-4660 to schedule this inspection.
 - The Tree Conservation Ordinance prohibits any construction or development activities within the drip line of any regulated trees not approved for removal, including, but not limited to, land clearing, grubbing, trenching, grading or filling; no person shall place any solvents, building material, construction equipment, soil deposits or harmful materials within the drip line limit of trees designated for preservation.
 - Proposed grades are to match the existing elevations outside the limits of the TPF. No grading either cut or fill is permitted within the drip line of any tree designated for preservation.
 - During the construction process no person shall attach any device or wire/cable/card/rope to an existing tree designated to be preserved.
 - All utility service requests must include notification to the installer that protected trees must be avoided. All trenching shall occur outside the TPF.
 - Swales shall be routed to avoid the area within the drip line of the only tree designated for preservation. Swales shall be constructed so as to not direct any additional flow into the drip line of a tree designated for preservation.
 - If tree protection cannot be maintained for a tree throughout entire period required, the replacement of that tree will be required on an inch for inch basis prior to the issuance of any Certificate of Occupancy.
 - Regulated trees located off-site on adjacent properties that may be affected by construction operations must be protected defined herein.
 - The TPF shall consist of four-foot high orange snow fencing to be installed around the drip line of all trees designated to be saved. This fencing shall be supported by six-foot metal T-bar posts five-feet on center and driven a minimum of 24" into the ground. The TPF fencing shall remain upright and secure in place for the required time as specified above.
 - Prior to the release of the Performance Bond, the City of Rochester Hills Forestry Division needs to inspect all trees existing or planted, to identify any that pose a hazard to the safe use of the public right-of-way. Forestry may require the developer to remove and possibly replace any such trees.

TREE REPLACEMENT CREDITS

KEY: DECIDUOUS TREES: 2" CAL. = 1 CREDIT, 3" CAL. = 2 CREDITS
 EVERGREEN TREES: 8" HT. = 1 CREDIT, 10" HT. = 2 CREDITS

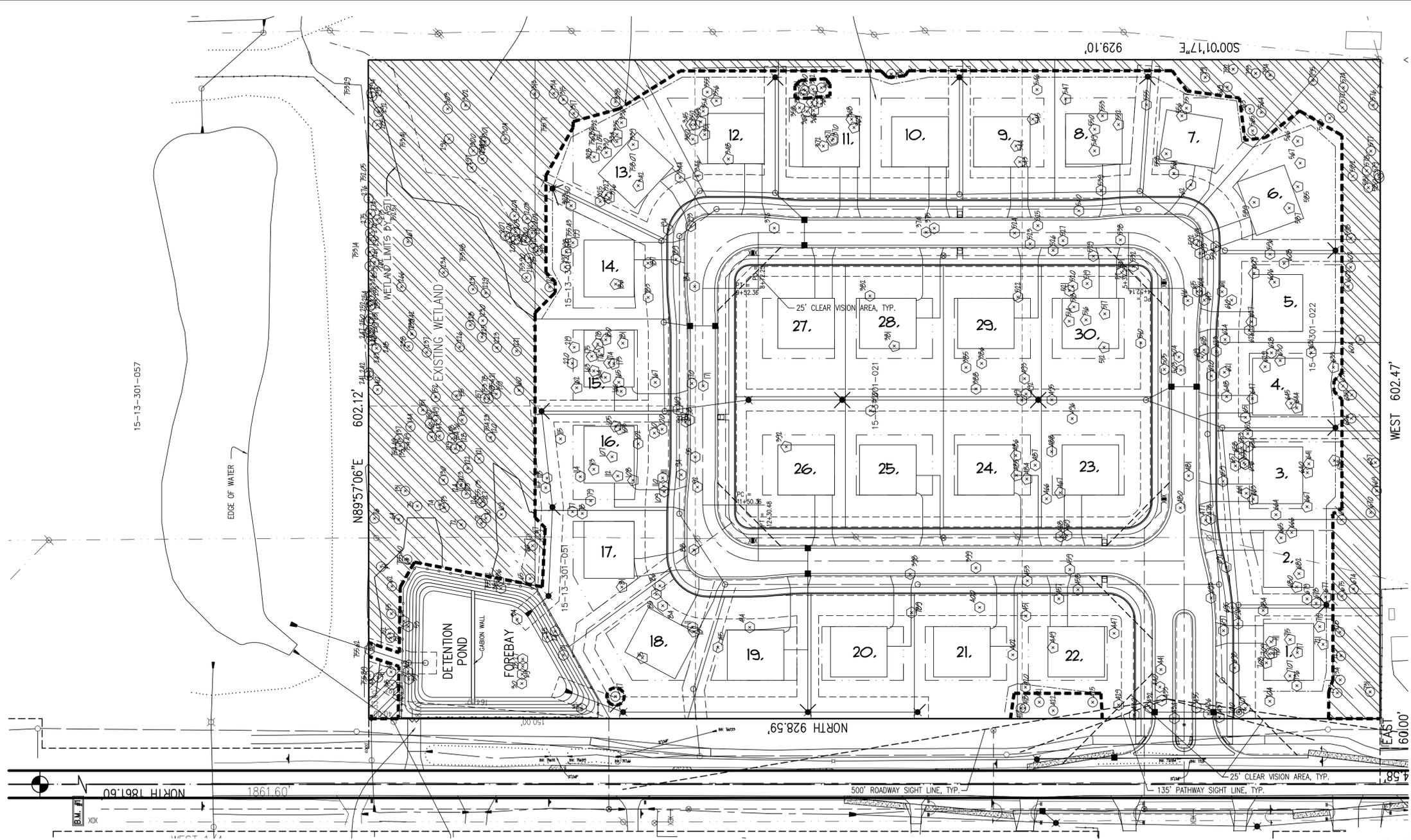
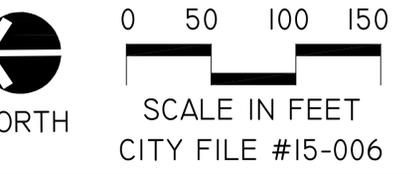
1. DECIDUOUS TREES:
 34 DECIDUOUS TREES AT 3" CALIPER
 REPLACEMENT TREE CREDITS: (34x2) = 68 CREDITS

2. EVERGREEN TREES:
 6 EVERGREEN TREES AT 8' HEIGHT
 93 EVERGREEN TREES AT 10' HEIGHT
 REPLACEMENT TREE CREDITS: (6x1)+(103x2) = 212 CREDITS

TOTAL TREE REPLACEMENT CREDITS:
 DECIDUOUS TREES - 68
 EVERGREEN TREES - 212
 TOTAL - (68+212) = 280 REPLACEMENT TREE CREDITS

KEY

- BUILDING ENVELOPE
- TREE PROTECTION BARRIER
- EXISTING TREE TO BE REMOVED FOR GRADING AND/OR UTILITIES
- EXISTING TREE TO BE REMOVED IN BUILDING ENVELOPE
- EXISTING TREE TO BE SAVED

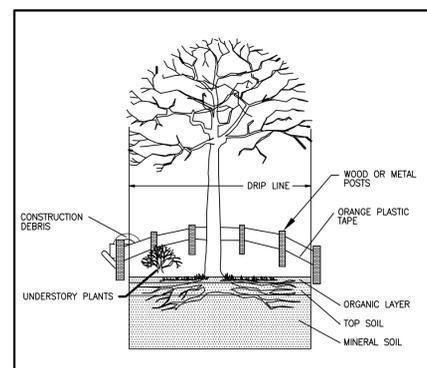


TREE REPLACEMENT PROGRAM

- NUMBER OF REPLACEMENT TREE CREDITS REQUIRED = 280. REPLACEMENT TREES WILL CONSIST OF 2" MINIMUM CALIPER DECIDUOUS TREES OR 8" MINIMUM HEIGHT EVERGREEN TREES.
- THE REPLACEMENT TREES SHALL CONFORM TO THE LATEST REVISION OF THE AMERICAN STANDARD FOR NURSERY STOCK ANSI 260.1-1990, AND MUST BE APPROVED BY THE CITY PRIOR TO PLANTING.
- ALL REPLACEMENT OR LANDSCAPE TREES SHALL NOT BE PLANTED WITHIN 10' OF AN UNDERGROUND UTILITY LINE, NOR WITHIN 15' OF AN OVERHEAD UTILITY LINE.
- REPLACEMENT TREES MAY NOT BE PLANTED WITHIN THE DRIP LINE OF EXISTING TREES.
- REPLACEMENT AND RELOCATED TREES MUST BE STAKED, FERTILIZED AND MULCHED, AND SHALL BE GUARANTEED BY THE TREE REMOVAL PERMIT HOLDER TO EXHIBIT A NORMAL GROWTH CYCLE FOR AT LEAST ONE (1) YEAR FOLLOWING PLANTING.
- ON-SITE REPLACEMENT TREE COST HAS BEEN ESTIMATED TO BE \$32,724.48 (SEE COST ESTIMATES SHEET 8 OF 9)

GENERAL TREE NOTES

- THIS TREE PRESERVATION AND REPLACEMENT PLAN INVENTORIES ALL REGULATED TREES IN PROXIMITY TO PROPOSED IMPROVEMENTS IN ACCORDANCE WITH THE CITY ORDINANCE.
- HEXAGONS REPRESENT REGULATED TREES TO BE REMOVED IN GRADING & UTILITIES AREAS, PENTAGONS REPRESENT TREES TO BE REMOVED IN BUILDING ENVELOPES. ALL CIRCLED TREES WILL BE PRESERVED.
- FOR TREE PROTECTION MEASURES, SEE "TREE PROTECTION NOTES".
- SEE THE ATTACHED "BLOOMER WOODS - TREE INVENTORY" DOCUMENT FOR TREE IDENTIFICATION LISTS.
- SEE THIS SHEET FOR TREE PROTECTION BARRIER LOCATIONS.
- BUILDING ENVELOPES SHALL CONSIST OF THE BUILDABLE AREA REMAINING ON A LOT OR BUILDING SITE AFTER SATISFYING THE SETBACK REQUIREMENTS.



TREE PROTECTION BARRIER DETAIL

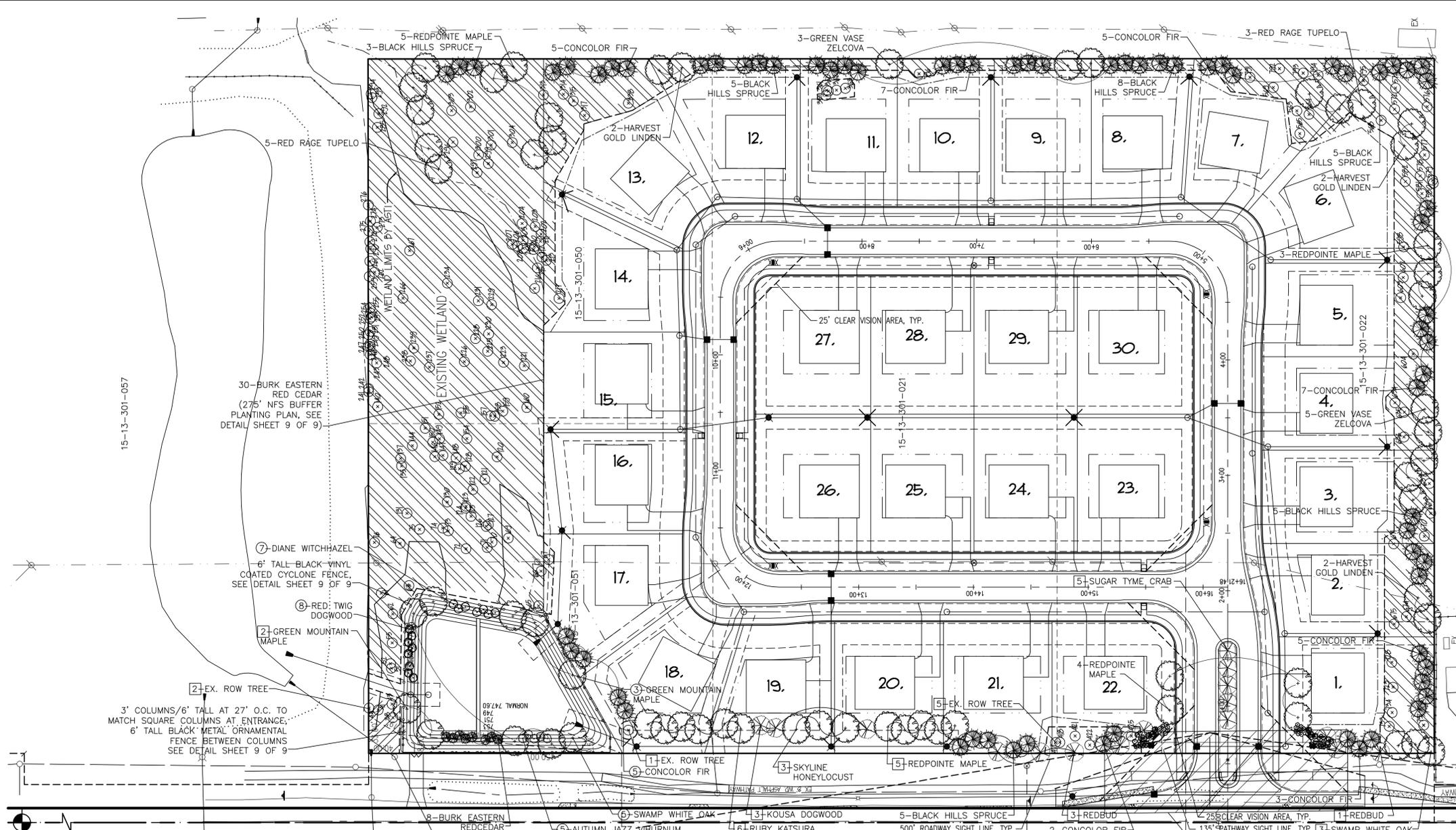
TREE REPLACEMENT CALCULATIONS

ON-SITE TREES	
TOTAL NUMBER OF REGULATED TREES (≥ 6"DBH).....	449
TOTAL NUMBER OF REGULATED TREES IN BUILDING ENVELOPES.....	108
TOTAL NUMBER OF REGULATED TREES IN PROPOSED GRADING AND UTILITIES AREAS.....	172
TOTAL NUMBER OF REGULATED TREES TO BE REMOVED (108+172).....	280
TOTAL NUMBER OF REGULATED TREES TO BE SAVED (449-280).....	169
PERCENTAGE OF REGULATED TREES TO BE SAVED.....	38%
REQUIRED PERCENTAGE OF REGULATED TREES TO BE SAVED.....	37%
TREES THAT ARE REMOVED WILL BE REPLACED ON A ONE-FOR-ONE BASIS PER CITY ORDINANCE	
ON-SITE REPLACEMENT TREES	
TOTAL NUMBER OF REPLACEMENT TREES REQUIRED	280
TOTAL NUMBER OF REPLACEMENT TREE CREDITS PROVIDED ON-SITE	280

ADDITIONAL TREE PROTECTION NOTES

- BEFORE DEVELOPMENT, LAND CLEARING, FILLING OR ANY LAND ALTERATION FOR WHICH A TREE REMOVAL PERMIT IS REQUIRED, THE PERMIT HOLDER SHALL CLEARLY MARK BY PAINTING, FLAGGING, OR OTHER APPROVED METHOD ALL TREES TO BE REMOVED AND SHALL ERECT AND MAINTAIN SUITABLE BARRIERS TO PROTECT REMAINING TREES. PROTECTIVE BARRIERS SHALL REMAIN IN PLACE UNTIL THE CITY AUTHORIZES THEIR REMOVAL OR ISSUES A FINAL CERTIFICATE OF OCCUPANCY, WHICHEVER OCCURS FIRST. BARRIERS ARE REQUIRED FOR ALL TREES NOT APPROVED FOR REMOVAL, EXCEPT FOR THE FOLLOWING:
 STREET RIGHT-OF-WAY AND UTILITY EASEMENTS MAY BE CORDONED BY PLACING STAKES A MINIMUM OF FIFTY (50) FEET APART AND TYING RIBBON, PLASTIC TAPE, ROPE ETC., FROM STAKE TO STAKE ALONG THE OUTSIDE PERIMETERS OF AREAS TO BE CLEARED.
 LARGE PROPERTY AREAS SEPARATE FROM THE CONSTRUCTION OR LAND CLEARING AREA ONTO WHICH NO EQUIPMENT WILL VENTURE MAY ALSO BE CORDONED OFF AS DESCRIBED IMMEDIATELY ABOVE.
- NO VEHICLE OR OTHER CONSTRUCTION EQUIPMENT SHALL BE PARKED OR STORED WITHIN PROTECTED AREAS.
- METHOD OF FIELD DELINEATION: INDIVIDUAL SPECIMEN TREES WERE LOCATED AND IDENTIFIED ACCORDING TO STANDARD SURVEYING PRACTICES.





- PLANT NOTES:**
- PLANT MATERIALS SHALL BE SOUND, HEALTHY, VIGOROUS, FREE FROM PLANT DISEASES AND INSECTS OR THEIR EGGS, AND SHALL HAVE NORMAL, HEALTHY ROOT SYSTEMS. CALIPER MEASUREMENTS SHALL BE TAKEN 6" ABOVE THE GROUND LEVEL. ALL OTHER MEASUREMENTS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF "AMERICAN STANDARD FOR NURSERY STOCK" (ANSI Z-60.1 1996).
 - PLANTING POCKETS SHALL BE DUG SO THAT THE POCKET DIAMETER IS A MINIMUM OF 12" LARGER THAN THE ROOT BALL AND THE SIDES OF POCKET ARE VERTICAL AND FRACTURED. INDIGENOUS SOILS SHALL BE TAMPED AND WATERED DURING BACK FILLING PROCEDURE.
 - PLANTING POCKETS SHALL BE NO DEEPER THAN THE HEIGHT OF THE ROOT BALL, SAUCER SHALL BE MADE ON THE EDGES OF PLANTING POCKET.
 - TREES SHALL BE GUYED WITH TWO STRANDS TWISTED OF 12 GAUGE GALVANIZED WIRE. PROTECT THE TREE TRUNK WITH HOSE OR OTHER ACCEPTABLE MEANS. GUY TO TWO HARDWOOD 2" x 2" x 8' POSTS, DRIVEN 2' DEEP IN UNDISTURBED SOIL.
 - MULCH SHALL BE GROUND OR SHREDED HARDWOOD BARK, FREE FROM DELETERIOUS MATERIALS AND SUITABLE AS A TOP DRESSING OF PLANTING BEDS AND INDIVIDUAL TREE PLANTINGS.
 - TREES SHALL BE MULCHED WITH MIN. 4" DEEP HARDWOOD BARK MULCH 30" DIAMETER CIRCLES AROUND THE TREE.
 - SHRUBS SHALL BE MULCHED IN BEDS ACCORDING WITH THE DETAIL ON THIS SHEET. MULCH SHALL BE MIN. 4" DEEP HARDWOOD BARK. SEE LANDSCAPE PLAN FOR LOCATION OF PLANTING BEDS. SEE PLANTING DETAILS FOR INDIVIDUAL PLANTINGS.
 - PLANTS SHALL BE GUARANTEED FOR ONE COMPLETE GROWING SEASON (12 MONTHS). DEAD MATERIALS SHALL BE REPLACED AS NEEDED PRIOR TO THE EXPIRATION OF THE GUARANTEE PERIOD, IN ACCORDANCE WITH THE CITY OR TOWNSHIP ORDINANCE REQUIREMENTS.
 - CONTRACTOR SHALL PROVIDE IN WRITING A LIST OF RECOMMENDED MAINTENANCE PROCEDURES FOR THE FIRST GROWING SEASON.
 - EVERGREEN TREES SHOWN ON THE PLANT LIST SHALL VARY IN HEIGHT IN THE RANGE SHOWN PROVIDING FOR AN EVEN DISTRIBUTION OF TALLER AND SHORTER TREES.
 - REMOVE TOP 1/2 OF BURLAP ON ROOT BALL OR ALL IF WRAPPED IN PLASTIC COVERING AND/OR ALL NYLON CORD.
 - PLANT MATERIALS SHALL BE USED IN COMPLIANCE WITH THE PROVISIONS OF THE CITY OR TOWNSHIP ORDINANCE AND SHALL BE NURSERY GROWN, FREE OF PESTS AND DISEASES, HARDY IN THE COUNTY, IN CONFORMANCE WITH THE STANDARDS OF THE AMERICAN ASSOCIATION OF NURSERYMEN, AND SHALL HAVE PASSED INSPECTIONS REQUIRED UNDER STATE REGULATIONS. IN ADDITION, PLANT MATERIALS SHALL CONFORM TO THE STANDARDS OF THE COUNTY COOPERATIVE EXTENSION SERVICE, A COPY OF WHICH SHALL BE KEPT ON FILE WITH THE PLANNING OFFICIAL.
 - SOD SHALL BE CERTIFIED TURF GRASS SOD COMPLYING WITH A.S.P.A. SPECIFICATIONS FOR MACHINE-CUT THICKNESS, SIZE, STRENGTH, MOISTURE CONTENT, AND MOWED HEIGHT, AND FREE OF WEEDS AND UNDESIRABLE NATIVE GRASSES. PROVIDE VISIBLE SOD OF UNIFORM DENSITY, COLOR, AND TEXTURE. SOD SHALL BE STRONGLY ROOTED AND CAPABLE OF VIGOROUS GROWTH AND DEVELOPMENT WHEN PLANTED. CUT SOD SHALL NOT BE PERMITTED TO DRY OUT AND SHALL BE LAID WITHIN 24 HOURS OF WHEN CUT. FERTILIZE AND WATER THE SOD AS REQUIRED DURING THE FIRST GROWING SEASON TO MAINTAIN A DENSE AND VIGOROUS GROWING SOD.
 - PLANTING BED SOIL FOR ANNUALS SHALL BE SCREENED TOPSOIL. TO DETER WEED GROWTH DURING THE ESTABLISHMENT OF ANNUAL BED, APPLY A PRE-EMERGENT ("GREEN" OR EQUAL) AFTER PLANTING ANNUALS, 2-3 TIMES PER GROWING SEASON, AT A RATE AS PER RECOMMENDATION OF PRODUCT MANUFACTURER.
 - TREES OF 2" CALIPER AND GREATER SHALL BE WRAPPED WITH 6" WIDE KRAFT CREPE. WRAP THE TRUNK TO THE FIRST LIMBS. OVERLAP HALF OF EACH SPIRAL WRAP TO FORM A DOUBLE WRAPPING. SECURE WRAPPING WITH TWINE. DO NOT WRAP SPECIES SUBJECT TO BORERS.

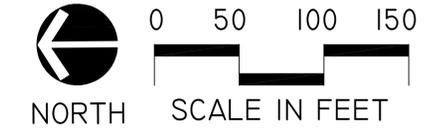
LANDSCAPE CONTRACTOR'S "ONE-YEAR IRRIGATION REQUIREMENT PERIOD"
 IT SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR TO PROGRAM AND PERIODICALLY ADJUST THE IRRIGATION SYSTEM (PROVIDED BY OTHERS) AS REQUIRED TO INSURE DELIVERY OF PROPER AND ADEQUATE WATER SUPPLY TO ALL PLANT MATERIALS, SOD AND SEEDED LAWN AREAS, SERVICED BY THE IRRIGATION SYSTEM TO INSURE THE ESTABLISHMENT OF HEALTHY PLANT MATERIALS AND LAWNS FOR THEIR FIRST YEAR OF GROWTH. FOLLOWING THE LANDSCAPE CONTRACTOR'S "ONE-YEAR IRRIGATION REQUIREMENT PERIOD", THE LANDSCAPE CONTRACTOR SHALL PROVIDE THE OWNER WITH A SUGGESTED "IRRIGATION MAINTENANCE SCHEDULE" FOR HIS USE.

GENERAL NOTES

- PROPOSED TREES WITHIN TREE PROTECTION AREAS SHALL BE FIELD ADJUSTED TO ACCOUNT FOR EXISTING TREES



Know what's below. Call before you dig.



PLANT LIST

TREES:

NO.	COMMON NAME	BOTANICAL NAME	SIZE	SPACING	TREE CREDITS
31	BLACK HILLS SPRUCE	PICEA GLAUCA VAR DENSATA	10' HT. B.&B.	13' O.C.	2 PER TREE
38	BURK EASTERN REDCEDAR	JUNIPERUS VIRGINIANA 'BURKII'	10' HT. B.&B.	6' O.C.	2 PER TREE
34	CONCOLOR FIR	ABIES CONCOLOR	10' HT. B.&B.	13' O.C.	2 PER TREE
8	GREEN VASE ZELCOVA	ZELCOVA SERRATA 'GREEN VASE'	3" CAL. B.&B.	20' O.C. MIN.	2 PER TREE
6	HARVEST GOLD LINDEN	TILIA CORDATA X MONGOLICA 'HARVEST GOLD'	3" CAL. B.&B.	20' O.C. MIN.	2 PER TREE
12	REDPOINTE MAPLE	ACER RUBRUM 'FRANK JR.'	3" CAL. B.&B.	20' O.C. MIN.	2 PER TREE
8	RED RAGE TUPELO	NYSSA SYLVATICA 'HAYMANRED'	3" CAL. B.&B.	20' O.C. MIN.	2 PER TREE

RIGHT OF WAY TREES:

NO.	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
2	GREEN MOUNTAIN MAPLE	ACER SACCHARUM 'GREEN MOUNTAIN'	3" CAL. B.&B.	25' O.C.
3	KOUSA DOGWOOD	CORNUS KOUSA	3" CAL. B.&B.	13' O.C.
4	REDBUD	CERCIS CANADENSIS	3" CAL. B.&B.	13' O.C. MIN.
5	REDPOINTE MAPLE	ACER RUBRUM 'FRANK JR.'	3" CAL. B.&B.	15' O.C. MIN.
6	RUBY KATSURA	CERCIDIPHYLLUM JAPONICUM 'RUBY'	3" CAL. B.&B.	15' O.C. MIN.
3	SKYLINE HONEYLOCUST	GLEDITSIA TRIACANTHOS INERMIS 'SKYCOLE'	3" CAL. B.&B.	20' O.C. MIN.
3	SWAMP WHITE OAK	QUERCUS BICOLOR	3" CAL. B.&B.	15' O.C. MIN.
1	SUGAR TYME CRAB	MALUS 'SUTYZAM'	3" CAL. B.&B.	15' O.C. MIN.

DETENTION POND BUFFER PLANTS

NO.	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
5	CONCOLOR FIR	ABIES CONCOLOR	10' HT. B.&B.	13' O.C.
3	GREEN MOUNTAIN MAPLE	ACER SACCHARUM 'GREEN MOUNTAIN'	3" CAL. B.&B.	20' O.C. MIN.
5	SWAMP WHITE OAK	QUERCUS BICOLOR	3" CAL. B.&B.	20' O.C. MIN.

SHRUBS:

NO.	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
5	AUTUMN JAZZ VIBURNUM	VIBURNUM DENTATUM 'RALPH SENIOR'	30" HT. B.&B.	6' O.C.
7	DIANE WITCHHAZEL	HAMAMELIS X INTERMEDIA 'DIANE'	30" HT. B.&B.	6' O.C.
8	RED TWIG DOGWOOD	CORNUS SERICEA F. 'BAILEY'	30" HT. B.&B.	6' O.C.

PERENNIALS AND GRASSES:
 11.5# STORMWATER SEED MIX BY CARDNO JFNEW
 *SUBSTITUTIONS TO BE APPROVED BY LANDSCAPE ARCHITECT.

COST ESTIMATES

REPLACEMENT TREE ESTIMATE:	\$32,724.48
REQUIRED LANDSCAPING ESTIMATE:	\$17,652.45
ENTRANCE LANDSCAPE ESTIMATE:	\$ 947.50
TOTAL LANDSCAPING ESTIMATE:	\$51,323.43

LANDSCAPE REQUIREMENTS

STORMWATER MANAGEMENT POND BUFFER: 1.5 DECIDUOUS TREES + 1 EVERGREEN TREE + 4 SHRUBS PER 100 LINEAL FEET

LINEAL FEET OF STORMWATER POND PERIMETER: 491 LF
 NUMBER OF DECIDUOUS TREES REQUIRED (491/100)x1.5: 8
 NUMBER OF EVERGREEN TREES REQUIRED (491/100)x1: 5
 NUMBER OF SHRUBS REQUIRED (491/100)x4: 20
 NUMBER OF DECIDUOUS TREES PROVIDED: 8
 NUMBER OF EVERGREEN TREES PROVIDED: 5
 NUMBER OF SHRUBS PROVIDED: 20

RIGHT OF WAY: 1 DECIDUOUS TREE PER 35 LINEAL FEET + 1 ORNAMENTAL TREE PER 60 LINEAL FEET

LINEAL FEET OF RIGHT OF WAY (JOHN R): 928 LF
 NUMBER OF DECIDUOUS TREES REQUIRED (928/35)x1: 27
 NUMBER OF ORNAMENTAL TREES REQUIRED (928/60)x1: 16
 NUMBER OF DECIDUOUS TREES PROVIDED: 27
 (8 OF THE 27 ARE EXISTING ROW TREES PRESERVED)
 NUMBER OF ORNAMENTAL TREES PROVIDED: 16

STREET TREES: 1 DECIDUOUS TREE PER LOT = 30 DECIDUOUS TREES

*THE CITY PLANTS ONE TREE PER UNIT AFTER THE HOMES ARE CONSTRUCTED.

**NOTE-ALL CALCULATIONS INCLUDE PLANT MATERIALS ON SHEETS 8 & 9.

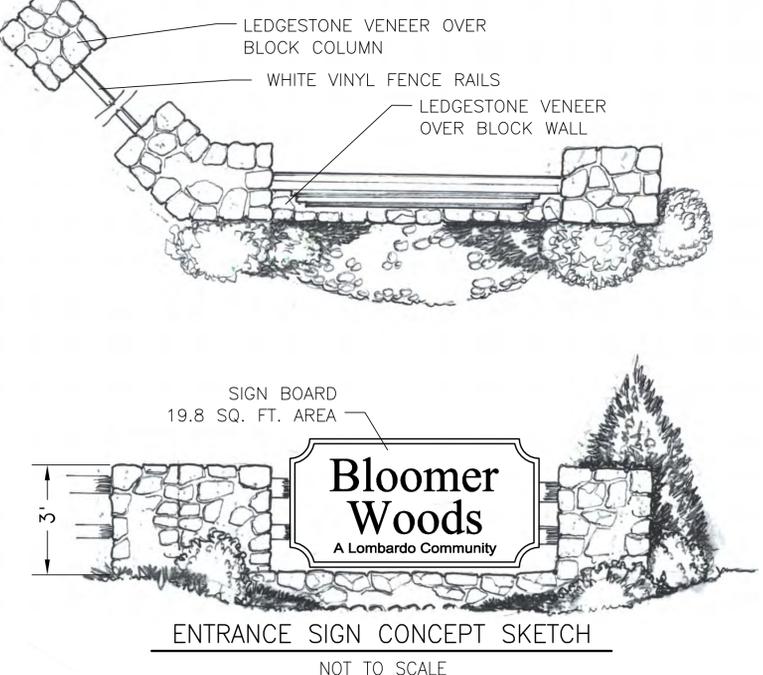
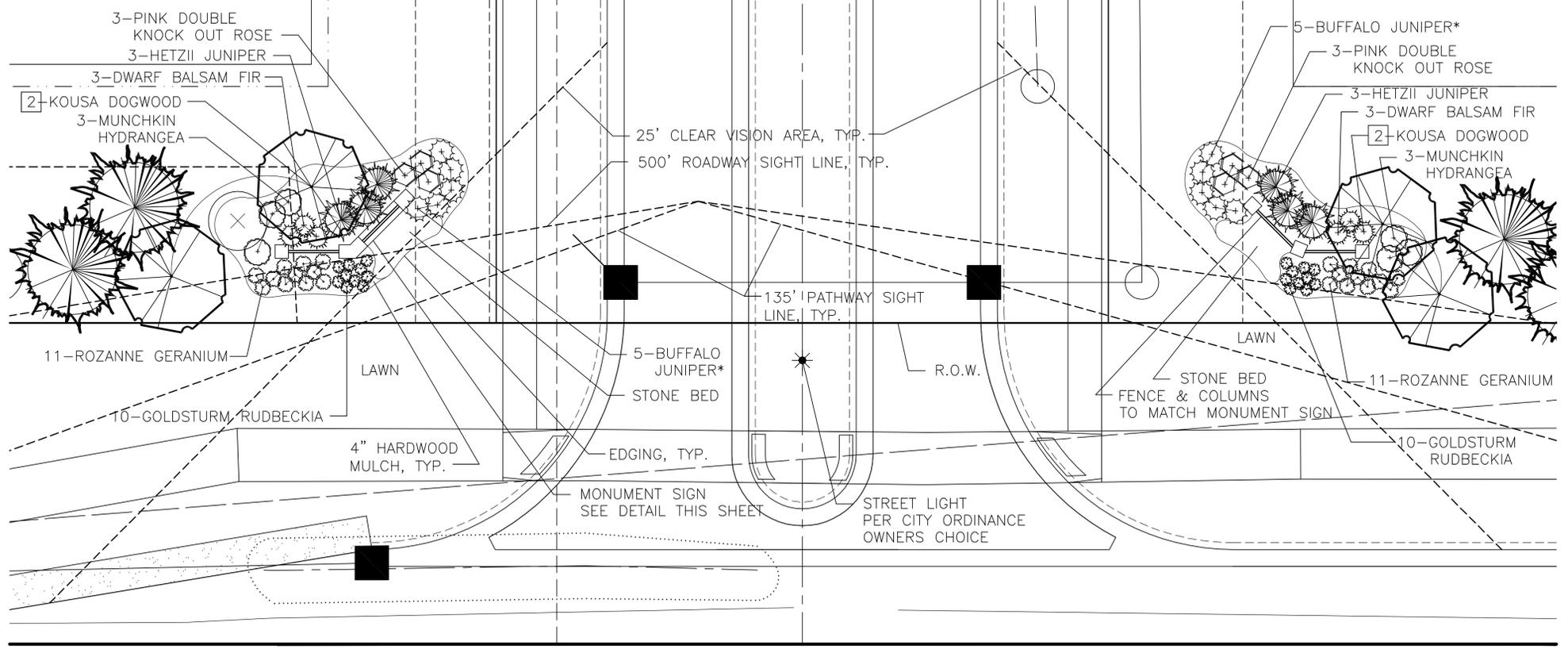
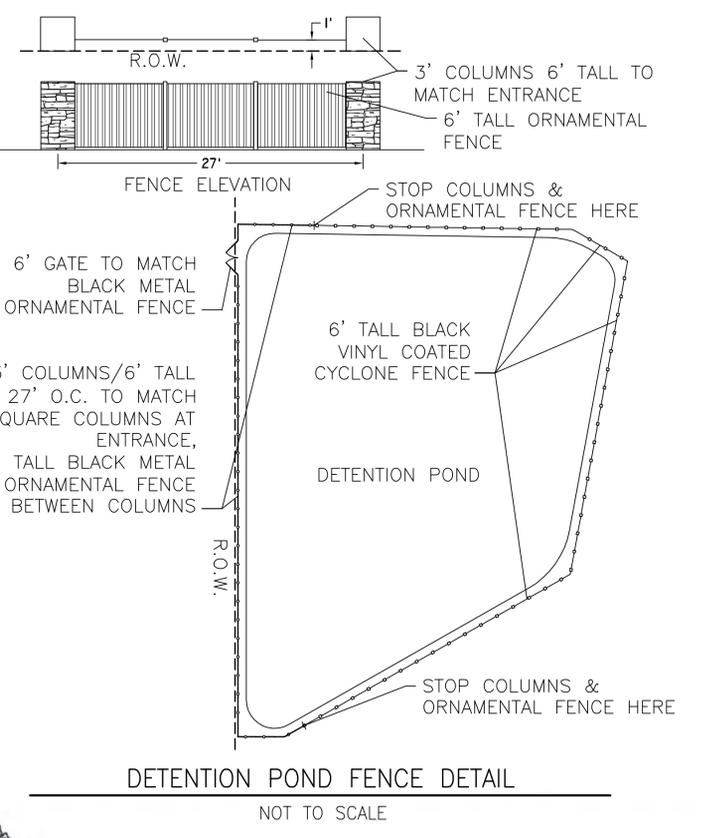
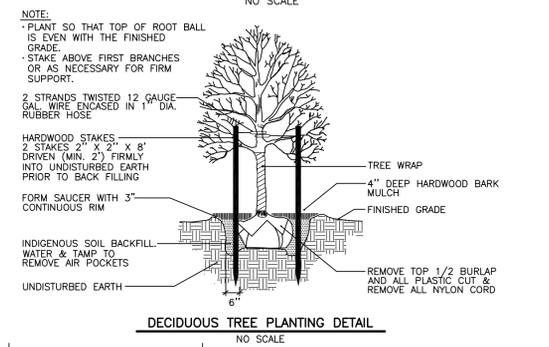
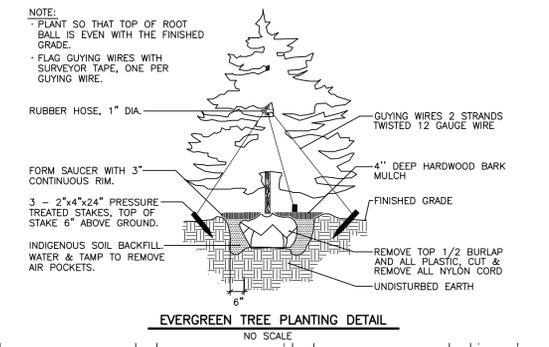
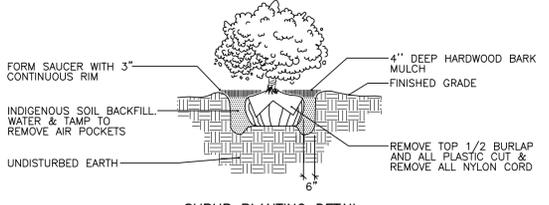
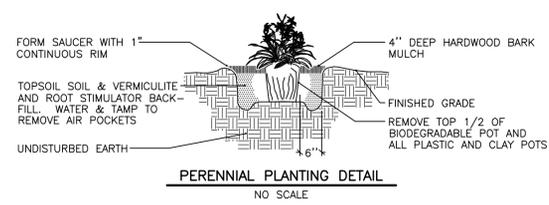
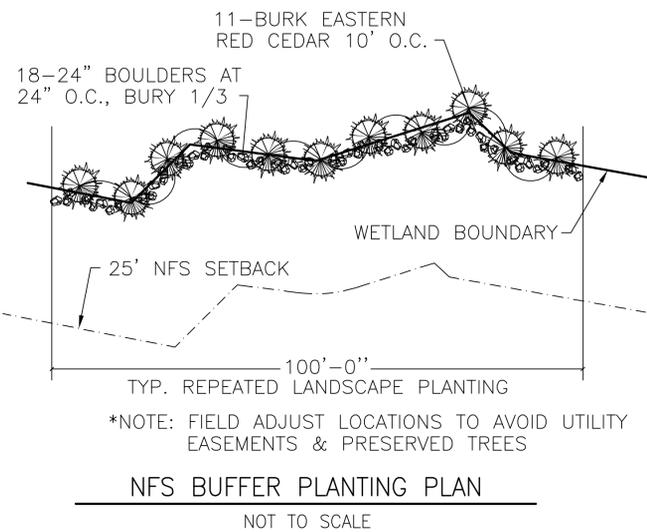
LANDSCAPE NOTES

- NO TREE OR SHRUB MAY BE PLANTED WITHIN THE TRIANGULAR AREA FORMED AT THE INTERSECTION OF ANY STREET RIGHT-OF-WAY AT A DISTANCE OF 25' FROM THEIR POINT OF INTERSECTION. NO TREE OR SHRUB MAY BE PLANTED IN THE TRIANGULAR AREA FORMED AT THE INTERSECTION OF ANY DRIVEWAY WITH A PUBLIC SIDEWALK AT A DISTANCE ALONG EACH LINE OF 15' FROM THEIR POINT OF INTERSECTION.
- PLANT MATERIALS MAY NOT BE PLACED CLOSER THAN 4 FEET FROM THE PROPERTY LINE, OR WITHIN 10 FEET OF A FIRE HYDRANT. DECIDUOUS TREES AND ALL SHRUBS MAY NOT BE PLANTED WITHIN 5 FEET, AND EVERGREEN TREES MAY NOT BE PLANTED WITHIN 10 FEET OF ANY CURB OR PUBLIC WALKWAY. TREES SHALL NOT BE PLANTED WITHIN 10' OF AN UNDERGROUND UTILITY LINE, NOR WITHIN 15' OF AN OVERHEAD UTILITY LINE.
- THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL UNDERGROUND AND OVERHEAD UTILITIES.
- A MINIMUM 4 INCHES OF TOPSOIL SHALL BE PROVIDED FOR ALL LAWN AREAS, GROUND COVERS, AND PLANTING BEDS.
- LAWN TREES AND PLANTING BEDS SHALL BE MULCHED WITH A MINIMUM OF 4 INCHES OF SHREDED HARDWOOD BARK. GROUNDCOVERS SHALL BE MULCHED WITH 2 INCHES OF SHREDED HARDWOOD BARK.
- ALL LANDSCAPED AREAS, INCLUDING LAWNS, SHALL BE IRRIGATED BY AUTOMATIC UNDERGROUND OR DRIP IRRIGATION SYSTEM DESIGNED TO MINIMIZE WATER USAGE.
- ALL LANDSCAPING SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE CITY OF ROCHESTER HILLS STANDARDS.
- NO SUBSTITUTIONS OR CHANGES OF LOCATION OR PLANT TYPES SHALL BE MADE WITHOUT THE APPROVAL OF THE DEVELOPER AND THE CITY OF ROCHESTER HILLS LANDSCAPE ARCHITECT.
- \$200 PER LOT WILL BE DEPOSITED WITH THE CITY OF ROCHESTER HILLS FOR STREET TREE PLANTINGS, PER SECTION 122-304(7) OF THE SUBDIVISION CONTROL ORDINANCE.

LEGEND

(362)	EXISTING TREE TO BE SAVED
---	TREE PROTECTION / GRADING LIMIT LINE
(circle with dot)	PROPOSED DECIDUOUS TREE
(circle with star)	PROPOSED EVERGREEN TREE
(circle with cross)	PROPOSED ORNAMENTAL TREE
(circle with horizontal lines)	PROPOSED SHRUB
(circle with vertical lines)	CIRCLED NUMBERS INDICATE REQUIRED DETENTION POND BUFFER TREES OR SHRUBS
(circle with diagonal lines)	NUMBERS WITH SQUARES INDICATE REQUIRED RIGHT OF WAY TREES





PLANT LIST

TREES:

NO.	COMMON NAME	BOTANICAL NAME	SIZE	SPACING	TREE CREDITS
6	HETZII JUNIPER	JUNIPERUS CHINENSIS 'HETZII'	8" HT. B.&B.	4' O.C.	1 PER TREE

SHRUBS:

NO.	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
10	BUFFALO JUNIPER	JUNIPERUS SABINA 'BUFFALO'	24" SPD. B.&B.	3' O.C.
6	DWARF BALSAM FIR	ABIES BALSAMEA 'NANA'	24" SPD. B.&B.	2.5' O.C.
6	MUNCHKIN HYDRANGEA	HYDRANGEA QUERCIFOLIA 'MUNCHKIN'	30" HT. B.&B.	3' O.C.
6	PINK DOUBLE KNOCK OUT ROSE	ROSA 'RADTKOPINK' PP#18,507	24" SPD. B.&B.	3' O.C.

PERENNIALS:

NO.	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
20	GOLDSTURM RUDBECKIA	RUDBECKIA FULDIGA 'GOLDSTURM'	1 GAL. CONT.	1.5' O.C.
22	ROZANNE GERANIUM	GERANIUM MACULATUM 'ROZANNE'	1 GAL. CONT.	2' O.C.

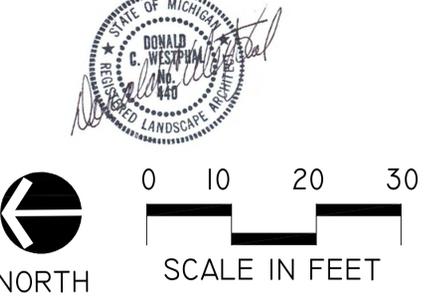
RIGHT OF WAY TREES:

NO.	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
4	KOUSA DOGWOOD	CORNUS KOUSA	3" CAL. B.&B.	12' O.C.

*SUBSTITUTIONS TO BE APPROVED BY LANDSCAPE ARCHITECT.

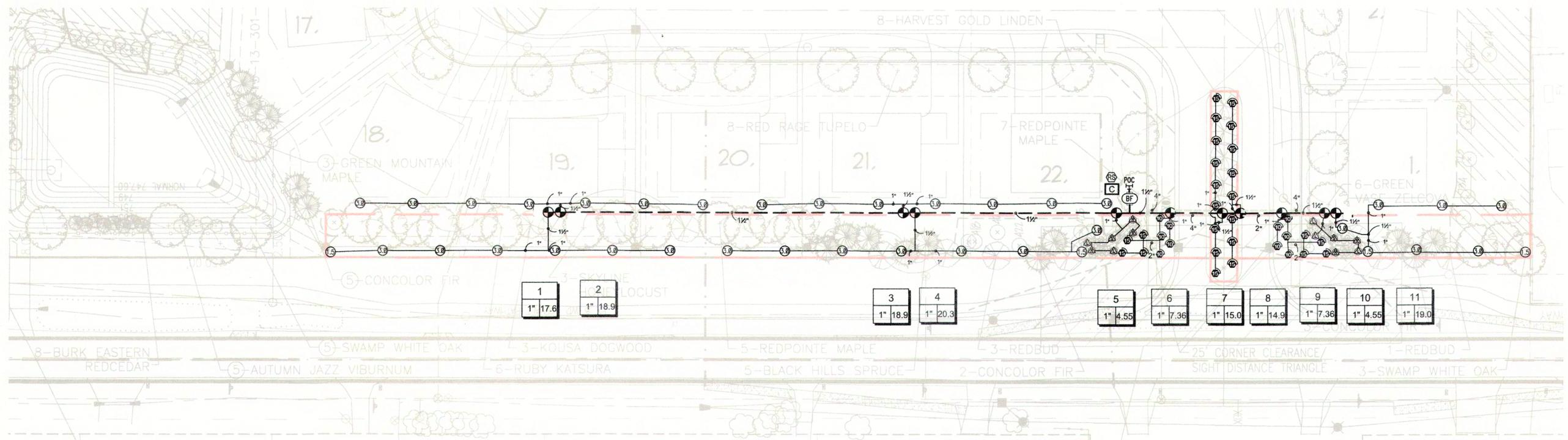
LANDSCAPE NOTES

- PRIOR APPROVAL IS REQUIRED TO PLANT ANY TREE OR SHRUB ON THE PUBLIC RIGHT-OF-WAY. ALL TREES AND SHRUBS MUST BE PLANTED AT LEAST 10' FROM THE EDGE OF THE PUBLIC ROAD. SHADE TREES AND SHRUBS MUST BE PLANTED AT LEAST 5' FROM THE EDGE OF THE PUBLIC WALKWAY. EVERGREEN AND ORNAMENTAL TREES MUST BE PLANTED AT LEAST 10' FROM THE EDGE OF THE PUBLIC WALKWAY. NO TREES OR SHRUBS MAY BE PLANTED WITHIN THE TRIANGULAR AREA FORMED AT THE INTERSECTION OF ANY STREET RIGHT-OF-WAY LINES AT A DISTANCE ALONG EACH LINE OF 25' FROM THEIR POINT OF INTERSECTION. NO TREES OR SHRUBS MAY BE PLANTED IN THE TRIANGULAR AREA FORMED AT THE INTERSECTION OF ANY DRIVEWAY WITH A PUBLIC WALKWAY AT A DISTANCE ALONG EACH LINE OF 15' FROM THEIR POINT OF INTERSECTION. ALL TREES AND SHRUBS MUST BE PLANTED AT LEAST 10' FROM ANY FIRE HYDRANT. SHADE AND EVERGREEN TREES MUST BE PLANTED AT LEAST 15' AWAY FROM THE NEAREST OVERHEAD WIRE. TREES MUST BE PLANTED A MINIMUM OF 5' FROM AN UNDERGROUND UTILITY, UNLESS THE CITY'S LANDSCAPE ARCHITECT REQUIRES A GREATER DISTANCE.
- PRIOR TO THE RELEASE OF THE PERFORMANCE BOND, THE CITY OF ROCHESTER HILLS FORESTRY DIVISION NEEDS TO INSPECT ALL TREES, EXISTING OR PLANTED, TO IDENTIFY ANY THAT POSE A HAZARD TO THE SAFE USE OF THE PUBLIC RIGHT-OF-WAY. FORESTRY MAY REQUIRE THE DEVELOPER TO REMOVE, AND POSSIBLY REPLACE, ANY SUCH TREES.
- THESE REQUIREMENTS ARE INCORPORATED INTO THE PLAN.



LEGEND

- EXISTING TREE TO BE SAVED
- TREE PROTECTION / GRADING LIMIT LINE
- PROPOSED DECIDUOUS TREE
- PROPOSED EVERGREEN TREE
- PROPOSED ORNAMENTAL TREE
- PROPOSED SHRUB
- NUMBERS WITH SQUARES
- REDBUD
- INDICATE REQUIRED RIGHT OF WAY TREES



650 Stephenson Highway
Troy, Michigan 48063
Phone 248.588.2100
Fax 248.588.3528
www.Siteone.com
800.347.4272

Project Name:
BLOOMER WOODS
ROCHESTER HILLS, MI, 48308

Customer Name:

Design Date: 01/07/16

Drawn By:
Travis F. Robertson, Inc.
205 Brown Rd
Orion, MI
48359
248-391-2950

REVISIONS

Description	Date

Drawing Title:
IRRIGATION DESIGN

Drawing Scale: 1" = 30'

Project Services Number: 91717

Sheet Number:
IR-1

IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL	QTY
	mist 4"	10
	mist 4"	25
	mist 4"	12
SYMBOL	MANUFACTURER/MODEL	QTY
	Rain Bird 5004	4
	Rain Bird 5004	33
SYMBOL	MANUFACTURER/MODEL	QTY
	Rain Bird Valve 1"	11
	Febc 765 1"	1
	Controller	1
	POC	1
	Irrigation Lateral Line: Polyethylene Pipe	1"
	Irrigation Lateral Line: Polyethylene Pipe	1"
	Irrigation Mainline:	
	Pipe Sleeve: PVC Class 160 SDR 26 2"	
	Pipe Sleeve: PVC Class 160 SDR 26 4"	
	Valve Callout	
	Valve Number	
	Valve Flow	
	Valve Size	

IRRIGATION SPECIFICATIONS

- IRRIGATION SYSTEM DESIGN BASED ON 22 GPM AT 55 PSI.
- IRRIGATION DESIGN IS FROM THE POINT OF CONNECTION(POC) ONLY. THE DESIGN IS BASED ON GALLONS PER MINUTE(GPM) AND POUNDS PER SQUARE INCH(PHI) FURNISHED BY OTHERS.
- IRRIGATION CONTRACTOR IS TO VERIFY POINT OF CONNECTION IN THE FIELD. INSTALLER IS TO CONFIRM THE MINIMUM DISCHARGE REQUIREMENTS OF THE POINT OF CONNECTION AS INDICATED ON THE LEGEND PRIOR TO INSTALLATION.
- THE PRESSURE REQUIREMENT AT THE POINT OF CONNECTION IS BASED ON NO MORE THAN 5 FEET OF ELEVATION CHANGE IN THE AREAS OF IRRIGATION.
- ALL PRODUCTS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND ACCORDING TO LOCAL BUILDING, ELECTRICAL, AND PLUMBING CODES.
- IRRIGATION CONTRACTOR WILL ARRANGE INSPECTIONS REQUIRED BY LOCAL AGENCIES AND ORDINANCES DURING THE COURSE OF CONSTRUCTION AS REQUIRED. ALL WIRING TO BE PER LOCAL CODE. BACKFLOW PREVENTION TO BE PER LOCAL CODE.
- LOCATION OF IRRIGATION COMPONENTS SHOWN ON DRAWING IS APPROXIMATE. ACTUAL PLACEMENT MAY VARY SLIGHTLY AS REQUIRED TO ACHIEVE FULL, EVEN COVERAGE.
- ALL SPRINKLER HEADS SHALL BE INSTALLED PERPENDICULAR TO FINISH GRADES. EXCEPT AS OTHERWISE INDICATED.

9. Watering will only occur between the hours of 12am and 5am

