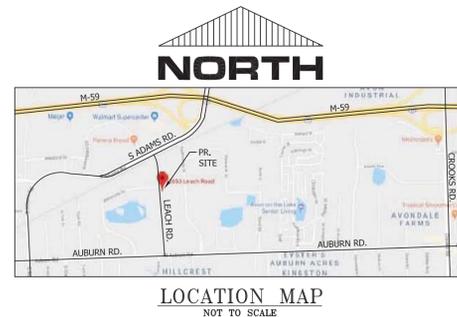




TOPOGRAPHIC SURVEY  
2653 LEACH RD.  
PARCEL ID # 70-15-30-452-013



**811** Know what's below.  
Call before you dig.

**8155 ANNSBURY DRIVE, SUITE # 109**  
SHELBY TWP., MI 48316  
OFFICE # (986) 796-5533 FAX # (986) 796-5575

**Gateway Engineering & Surveying, Inc.**  
Professional Engineering-Construction Staking Construction Services-Soil Testing-Architectural Design & Rendering Professional Surveyors-Planners



P.I.D. # 15-30-476-020  
EX. ZONING: I1 -  
LIGHT INDUSTRIAL

P.I.D. # 15-30-476-014  
EX. ZONING: I1 -  
LIGHT INDUSTRIAL

LOT 50  
P.I.D. # 15-30-452-012  
EX. ZONING: I1 -  
LIGHT INDUSTRIAL

LOT 51

LOTS 52-54  
P.I.D. # 15-30-452-057  
EX. ZONING: I1 -  
LIGHT INDUSTRIAL

**LEGAL DESCRIPTION:**  
A PARCEL OF LAND LOCATED IN THE S.E. 1/4 OF SECTION 30, T.3N., R.11E., ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:  
  
T3N, R11E, SEC 30 AUBURN HIGHLANDS LOT 51 EXC W 10 FT 9-6-94 CORR.  
  
CONTAINING: 0.45 ACRES, MORE OR LESS.  
  
SUBJECT TO THE RIGHTS OF A PUBLIC AND ANY EASEMENTS AND/OR RESTRICTIONS OF RECORD OR OTHERWISE.

**ZONING - I1**  
LOT SIZE - 0.45 ACRES (19,963 SF)

**BENCHMARK:**  
BENCHMARK # 1  
RIM OF CATCH BASIN IN DRIVEWAY AT 2691 LEACH RD.  
ELEVATION = 854.41  
\* RIM ELEVATION WAS OBTAINED FROM THE CITY OF ROCHESTER HILLS.  
  
BENCHMARK # 2  
RIM OF CATCH BASIN ON EAST SIDE OF LEACH ROAD IN FRONT OF 2641 LEACH RD.  
ELEVATION = 857.69

**SOIL LEGEND:**  
(10B) - MARLETTE SANDY LOAM, 1 TO 6% SLOPES.

\* SUBJECT PROPERTY AS DEPICTED HEREIN, DOES NOT LIE IN A SPECIAL FLOOD HAZARD AREA (SFHA), ACCORDING TO FLOOD INSURANCE RATE MAP (FIRM) NO. 26125C0389F, EFFECTIVE ON 09/29/2006.  
  
\* SUBJECT PROPERTY IS NOT WITHIN THE REGULATED WETLAND AREA.

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**PROJECT INFORMATION:**  
PARCEL ID: 70-15-30-452-013  
SHEELED: 07/18/18  
ROCHESTER HILLS, MI 48309

**CLIENT INFORMATION:**  
DRAFTER: BENJAMIN  
PROJECT: 18-0003  
STERLING HEIGHTS, MI 48310  
PHONE # 586-274-1111



- ISSUANCE:**
- SCHEMATIC
  - BIDDING
  - MUNI SUBMITTAL
  - CONSTRUCTION
  - OTHER

DRAWINGS SHALL NOT BE USED FOR CONSTRUCTION UNLESS INDICATED

NO.	DESC.	DATE
1.	MUNI SUBMITTAL	05/01/18
2.	REVISION	06/22/18

REVIEWED BY: J.V.  
DESIGNED BY: M.G.  
DRAWN BY: M.G.  
SCALE: 1" = 20.00'  
DRAWING: TOPOGRAPHIC SURVEY

CITY OF ROCHESTER HILLS #18-0011  
SECTION 30.

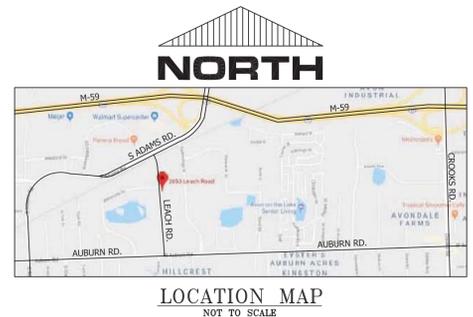
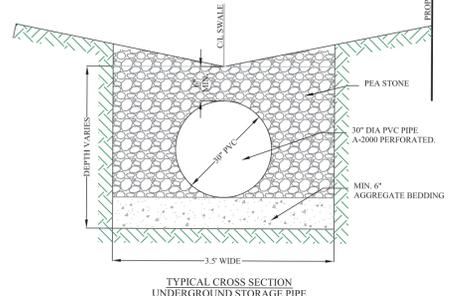
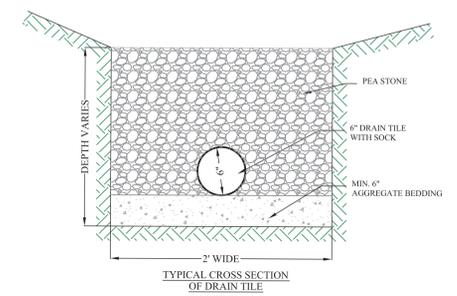
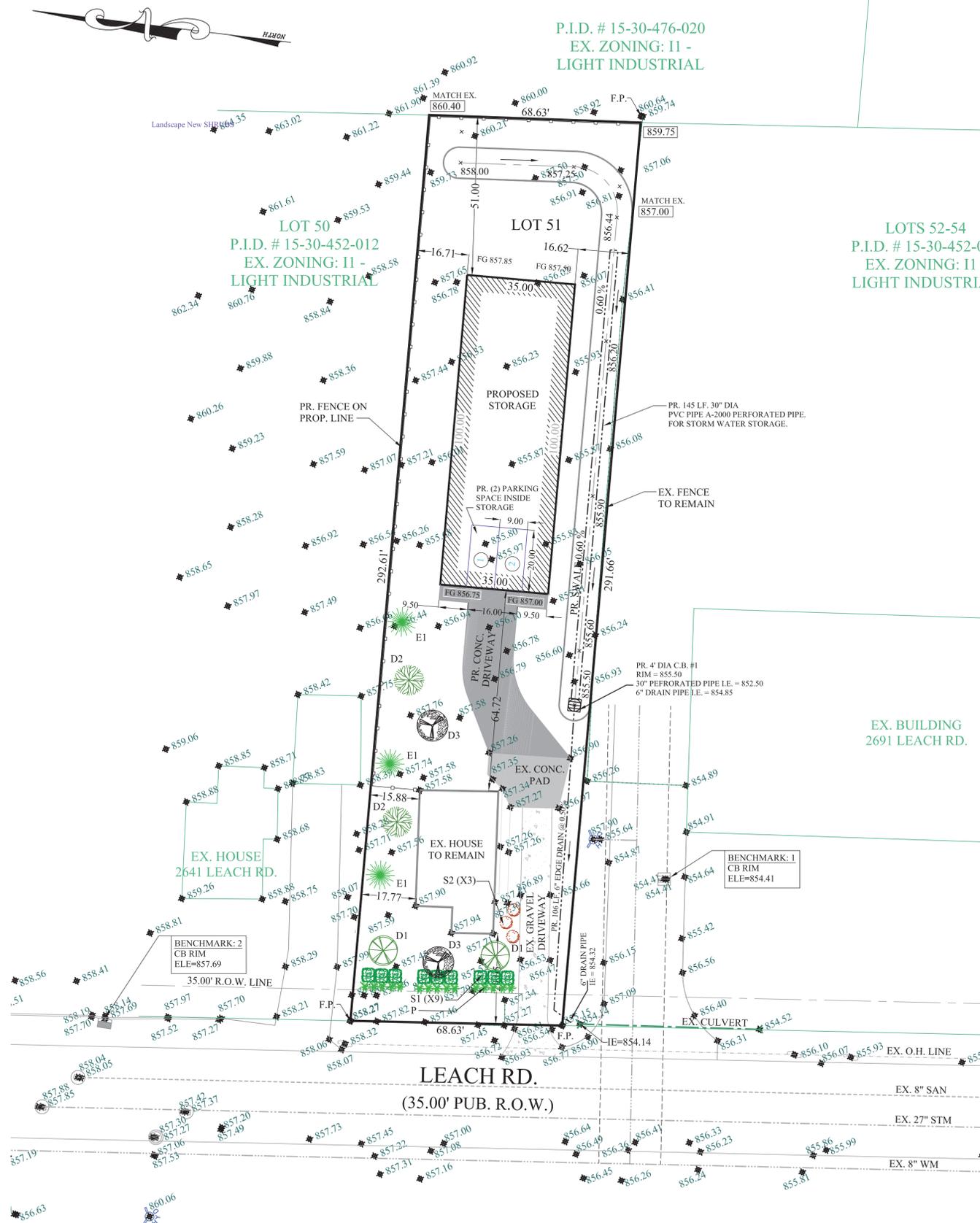
**C1.1**  
PROJECT NO. 18-0003

# SITE PLAN 2653 LEACH RD. PARCEL ID # 70-15-30-452-013

P.I.D. # 15-30-476-020  
EX. ZONING: I1 -  
LIGHT INDUSTRIAL

LOT 50  
P.I.D. # 15-30-452-012  
EX. ZONING: I1 -  
LIGHT INDUSTRIAL

LOTS 52-54  
P.I.D. # 15-30-452-013  
EX. ZONING: I1  
LIGHT INDUSTRIAL



### Oakland County Volume of Detention Basin Calculation.

A =	0.101410698	AC	
C =	0.95		
Qa = 0.2*	0.101410698	=	0.020
Qo = Qa / (A X C)		=	0.211
T10 = -25 + SQRT(4375 / Qo)		=	119.157
Vs10 = (10500 X T10 / (T10 + 25)) - (60 X Qo X T10)		=	7173.928
Vt10 = Vs10 X A X C		=	691.137

### ONSITE UNDERGROUND STORAGE:

PR. 145 LF. 30" PVC A-2000 PIPE A-2000 PEFORATED PIPE.  
C/S AREA OF 30" PIPE = 4.90 SF.  
TOTAL VOLUME PROVIDED = 4.90 X 145 = 7105 CU. FT.

### Outlet Orifice calculation.

AREA OF SITE (A) =	0.1014107 AC.
Qallowable =	0.2 X (A) CR/Sec.
Qallowable =	0.0202821 CR/Sec.
C =	0.95
h =	(TOP OF STORAGE ELEV. - INV. OF OUTLET PIPE)
h =	855.50 - 854.85
h =	0.65 FT.
Qa = C X A orifice x sqrt(2gh)	
Aorifice =	0.003 Sq. Ft.
Dia of orifice =	0.78 Inch

**BENCHMARK # 1**  
RIM OF CATCH BASIN IN DRIVEWAY AT 2691 LEACH RD.  
ELEVATION = 854.41  
\* RIM ELEVATION WAS OBTAINED FROM THE CITY OF ROCHESTER HILLS.

**BENCHMARK # 2**  
RIM OF CATCH BASIN ON EAST SIDE OF LEACH ROAD  
INFRONT OF 2641 LEACH RD.  
ELEVATION = 857.69

### TREE AND SHRUB PLANTING SCHEDULE

KEY	SYMBOL	QUANT.	TYPE	MIN. CAL./SIZE	
DECIDUOUS TREES					
D1		2	MAIDENHAIR TREE GINNOD BLOBA (MALE ONLY)	3" CALIPER	BB
D2		2	ACER PLATANOIDES NORWAY MAPLE	3" CALIPER	BB
D3		2	PYRUS CALLERYANA BROOKFORD PEAR	3" CALIPER	BB
TOTAL DECIDUOUS TREES PROVIDED: 6					
EVERGREEN TREES					
E1		3	GREEN SPRUCE	6' HT.	BB
TOTAL EVERGREEN TREES PROVIDED: 3					
SHRUBS AND FLOWERS					
S1		9	SHIBBYS YEW	1"-1.5"-Ø	BB
S2		3	COMPACT BURNING BUSH	30" HT.	BB
P		-	VARIOUS FLOWERING PLANTS OR GRASSES		
TOTAL SHRUBS PROVIDED: 12					
TOTAL TREES PROVIDED: 9					
TOTAL SHRUBS PROVIDED: 12					
TOTAL PLANTING PROVIDED: 21					

**LEGAL DESCRIPTION:**  
A PARCEL OF LAND LOCATED IN THE S.E. 1/4 OF SECTION 30, T.3N., R.11E., ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:  
T3N., R11E., SEC 30 AUBURN HIGHLANDS LOT 51 EXC W 10 FT 9-6-94 CORR. CONTAINING: 0.45 ACRES, MORE OR LESS.

SUBJECT TO THE RIGHTS OF A PUBLIC AND ANY EASEMENTS AND/OR RESTRICTIONS OF RECORD OR OTHERWISE.

### PROJECT DATA:

EXISTING ZONING: I1: LIGHT INDUSTRIAL

GROSS AREA OF SITE FOR GAS STATION: ± 19,962.95 SF. (± 0.458 ACRES)  
EX. BUILDING FOOT AREA: ± 1,062.77 SF.  
EX. GARAGE & SHED AREA (TO BE DEMOLISHED): ± 908.37 SF.  
PROPOSED STORAGE AREA: 3,500.00 SF.  
INCREASE IN IMPERVIOUS AREA (STORAGE + NEW PAVT. AREA) = 5325.82 - 908.37 = 4417.45 SF.

TOTAL AREA OF PAVT. (GRAVEL DRIVE & CONC. DRIVE) = ± 2,819.44 SF.  
SITE COVERAGE (BUILDING, PARKING & WALK) = ± 7,382.21 SF. = 36.97%

WATER SUPPLY: MUNICIPAL - EXISTING  
SANITARY: MUNICIPAL - EXISTING  
STORM: ON SITE SWALE  
DEFENTION: ON SITE UNDERGROUND STORAGE WITH RESTRICTED OUTLET AREAS LABELED "SOD" SHALL HAVE SPRINKLER SYSTEM INSTALLED.

LAWN: SIGN IS NOT PART OF THIS APPROVAL. SEPERATE PERMIT SHALL BE OBTAINED.

**REQUIRED PARKING:**  
REFERENCE (138-11.100-308) CITY OF ROCHESTER HILLS ZONING ORDINANCE

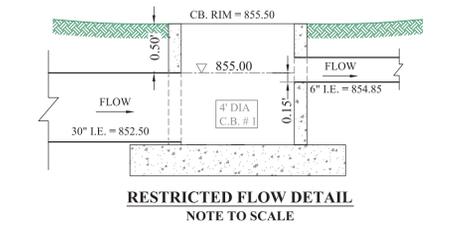
REQUIRED PARKING SPACES:  
WAREHOUSE & OFFICE: 1 SPACE PER 1700 SQ. FT. + 1 SPACE PER 350 SF. OF OFFICE AREA

PARKING REQUIRED:  
OFFICE = 1062.77 S.F. / 350 = 3 SPACES  
WAREHOUSE = 3500 SF. / 1700 = 2 SPACES  
TOTAL SPACES REQUIRED = 5 SPACES

**PARKING PROVIDED:** = 2 SPACES INSIDE STORAGE.

NOMINAL DIAMETERS (IN.)	AVERAGE O.D. (SLOTTED) (IN.)	AVERAGE I.D. (IN.)	SLOT LENGTH (IN.)	SLOT WIDTH (IN.)	SLOT CENTERS (IN.)	ANGLE (DEG.)	PIPE STIFFNESS (PSI)	STANDARD PERFORATION OPEN AREA PER FOOT (IN <sup>2</sup> )	STANDARD ROUND HOLE PERFORATION OPEN AREA PER FOOT (IN <sup>2</sup> )	FULLY PERFORATED OPEN AREA PER FOOT (IN <sup>2</sup> )
4	4.3	3.9	1.062	0.031	0.413	152	46	1.92		
6	6.4	5.9	1.375	0.031	0.516	134	46	1.99		
8	8.6	7.9	1.800	0.031	0.649	132	46	1.90		3.80
10	10.8	9.8	2.188	0.031	0.826	114	46	1.88		3.96
12	12.6	11.7	1.688	0.051	1.033	122	46	2.00		4.00
15	15.7	14.3	2.250	0.051	1.377	124	46	2.00	1.71	4.00/3.42
18	19.2	17.6	2.250	0.051	1.377	120	46	2.00	1.71	4.00/3.42
21	22.6	20.7					46		2.70	5.40
24	25.8	23.5					46		2.70	5.40
30	32.2	29.5					46		2.20	4.40
36	38.7	35.5					46		2.00	4.00

**CONTECH**  
A-2000 PERFORATED PIPE  
FOR (F349) PVC PIPE  
(ENGLISH)



### SECTION 138-12.109 MAINTENANCE NOTES:

THE OWNER OF THE PROPERTY SHALL BE RESPONSIBLE FOR ALL MAINTENANCE OF SITE LANDSCAPING, AS FOLLOWS:  
A. LANDSCAPING SHALL BE KEPT IN A NEAT, ORDERLY AND HEALTHY GROWING CONDITION, FREE FROM DEBRIS AND REFUSE.  
B. PRUNING SHALL BE MINIMAL AT THE TIME OF INSTALLATION, ONLY TO REMOVE DEAD OR DISEASED BRANCHES. SUBSEQUENT PRUNING SHALL ASSURE PROPER MATURATION OF PLANTS TO ACHIEVE THEIR APPROVED PURPOSE.  
C. ALL DEAD, DAMAGED, OR DISEASED PLANT MATERIAL SHALL BE REMOVED IMMEDIATELY AND REPLACED WITHIN SIX (6) MONTHS AFTER IT DIES OR IN THE NEXT PLANTING SEASON, WHICHEVER OCCURS FIRST. FOR PURPOSES OF THIS SECTION, THE PLANTING SEASON FOR DECIDUOUS PLANTS SHALL BE BETWEEN MARCH 1 AND JUNE 1 AND FROM OCTOBER 1 UNTIL THE PREPARED SOIL BECOMES FROZEN. THE PLANTING SEASON FOR EVERGREEN PLANTS SHALL BE BETWEEN MARCH 1 AND JUNE 1 AND PLANT MATERIAL INSTALLED TO REPLACE DEAD OR DISEASED MATERIAL SHALL BE AS CLOSE AS PRACTICAL TO THE SIZE OF THE MATERIAL IT IS INTENDED TO REPLACE. THE CITY MAY NOTIFY PROPERTY OWNERS OF THE NEED TO REPLACE DEAD, DAMAGED, OR DISEASED MATERIAL.  
D. THE APPROVED LANDSCAPE PLAN SHALL BE CONSIDERED A PERMANENT RECORD AND INTEGRAL PART OF THE SITE PLAN APPROVAL. UNLESS OTHERWISE APPROVED IN ACCORDANCE WITH THE AFORESAID PROCEDURES, ANY REVISIONS TO OR REMOVAL OF PLANT MATERIALS, OR NON-COMPLIANCE WITH THE MAINTENANCE REQUIREMENTS OF THIS SECTION 138-12.109 WILL PLACE THE PARCEL IN NON-COMPLIANCE WITH THE APPROVED LANDSCAPE PLAN AND BE A VIOLATION OF THIS ORDINANCE.  
E. IF PROTECTED TREES ARE DAMAGED, A FINE SHALL BE ISSUED ON AN INCH-BY-INCH BASIS AT A MONETARY RATE AS DEFINED BY THE FORESTRY DEPARTMENT.

### FIRE DEPT. NOTES:

A KNOX KEY SYSTEM SHALL BE INSTALLED. IN A LOCATION APPROVED BY THE FIRE CODE OFFICIAL. ORDERING INFORMATION IS AVAILABLE FROM THE KNOX COMPANY AT KNOXBOX.COM  
FIRE LINES 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. FIRE LANE SIGNS SHALL READ: NO STOPPING, STANDING, PARKING, FIRE LANE, AND SHALL CONFORM TO THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.  
CONSTRUCTION SITES SHALL BE SAFEGUARDED IN ACCORDANCE WITH FC 2008 CHAPTER 14.  
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.

**NORTH**

**LOCATION MAP**  
NOT TO SCALE

**LEGAL DESCRIPTION:**  
A PARCEL OF LAND LOCATED IN THE S.E. 1/4 OF SECTION 30, T.3N., R.11E., ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:  
T3N., R11E., SEC 30 AUBURN HIGHLANDS LOT 51 EXC W 10 FT 9-6-94 CORR. CONTAINING: 0.45 ACRES, MORE OR LESS.

**PROJECT INFORMATION:**  
PARCEL ID# 15-30-452-013  
2653 LEACH RD.  
ROCHESTER HILLS, MI 48309

**CLIENT INFORMATION:**  
CMA DESIGN  
PHONE # 586-726-1043



**ISSUANCE:**  
 SCHEMATIC  
 BIDDING  
 MUNI SUBMITTAL  
 CONSTRUCTION  
 OTHER

DRAWINGS SHALL NOT BE USED FOR CONSTRUCTION UNLESS INDICATED

NO.	DESC.	DATE
1.	MUNI SUBMITTAL	05/01/18
2.	REVISION	06/22/18

REVIEWED BY: J.V.  
DESIGNED BY: M.G.  
DRAWN BY: M.G.

SCALE: 1" = 20.00'

DRAWING:  
SITE PLAN

C2.1

NO. 18-0413



CITY OF ROCHESTER HILLS #18-011  
SECTION 30.









