

F;\Share\2014-PROJECTS\24001 Used Car Sales - Auto Rite LLC\24001 - C1.dwg, 3/31/2016 2:18:40 PM, Adobe PDF

CITY PLAN NO. #13-005.2

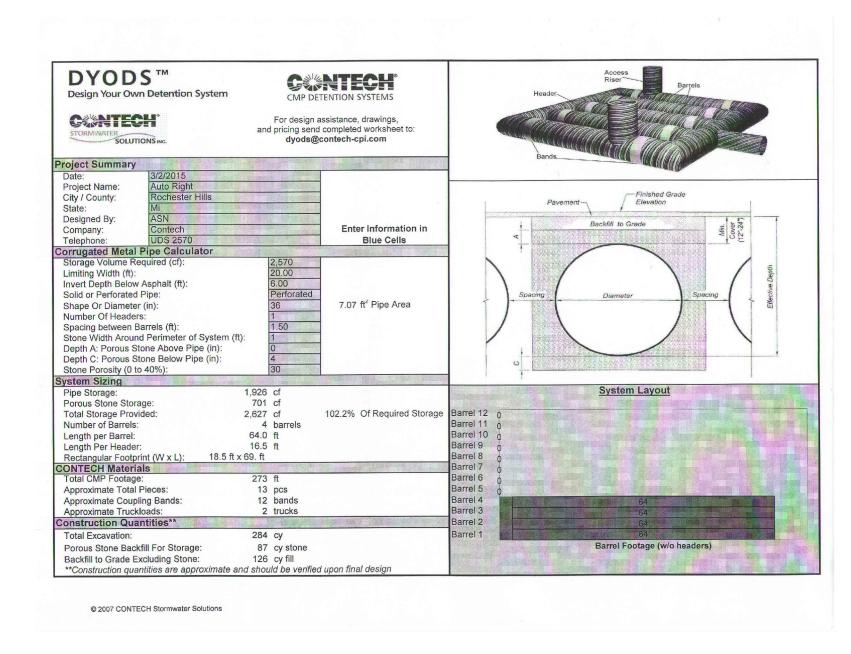
SOIL BORING DATA

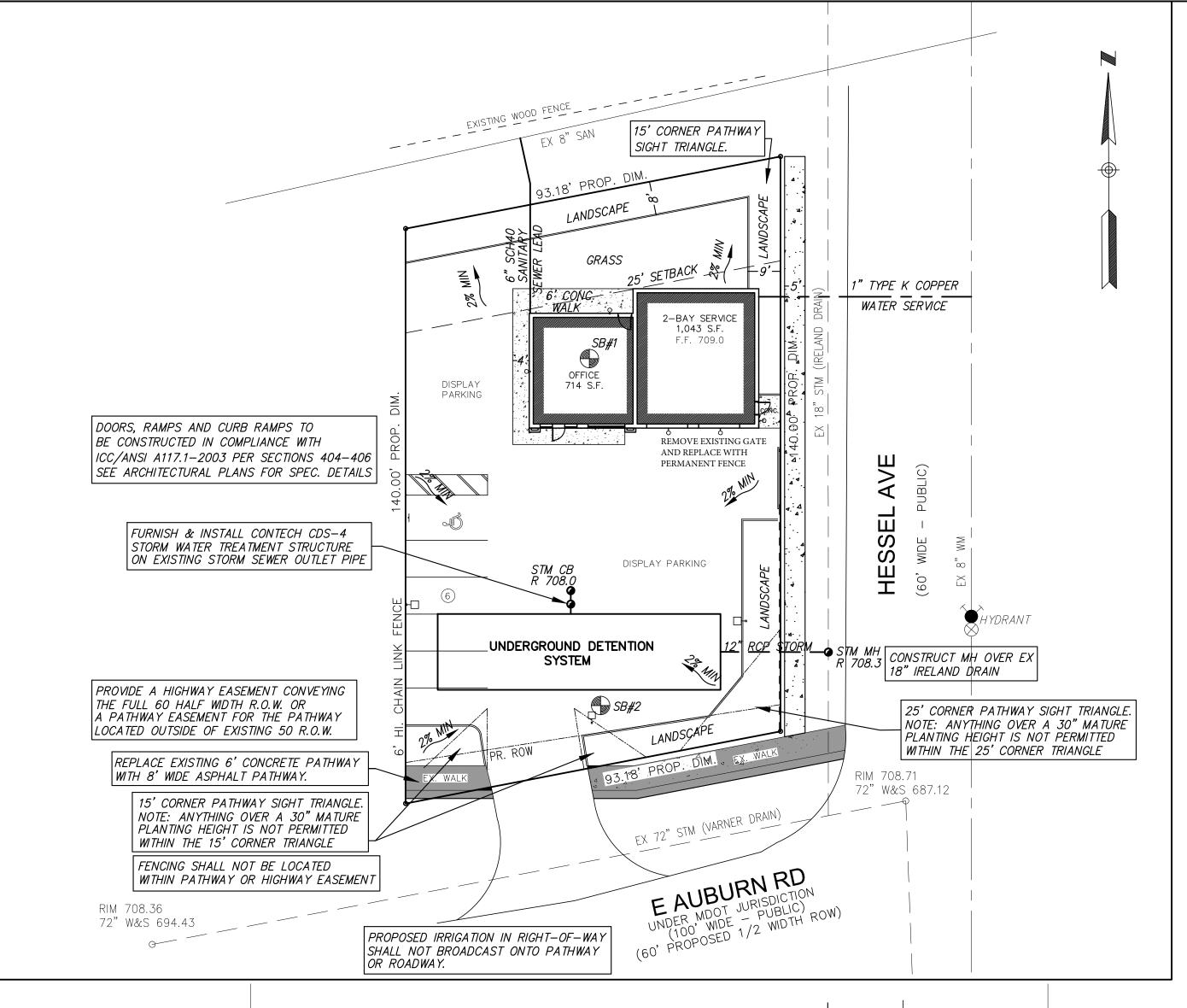
		OOIE BOIKING BIXIIX
	DEPTH	DESCRIPTION
• SB#1 2"		FROZEN DARK BROWN SANDY TOPSOIL W/TRACE OF VEGETATION, FILL
	8"	FROZEN BROWN AND GRAY FINE SAND W/ TRACE OF GRAVEL AND OCCASIONAL STONES, FILL
	3'4"	MEDIUM COMPACT MOIST BROWN FINE SAND W/TRACE OF GRAVEL, LITTLE PEBBLES, OCCASIONAL STONES AND POSSIBLE ORGANIC STREAKS, FILL
	6'0"	SLIGHTLY COMPACT WET BROWN FINE TO MEDIUM SAND W/TRACES OF GRAVEL AND SILT
	8'6"	MEDIUM COMPACT WET BROWN FINE SAND W/TRACE OF GRAVEL
	11'6"	EXTREMELY COMPACT WET BROWN FINE SAND W/TRACE OF GRAVEL
• SB#2	5"	FROZEN BLACK ASPHALT MILLINGS
,, -	10"	FROZEN GRAY SAND & GRAVEL, AGGREGATE FILL
	2'4"	VERY COMPACT MOIST BROWN FINE SAND W/TRACE OF GRAVEL, CINDERS AND DARK BROWN TOPSOIL STREAKS, FILL
	3'9"	COMPACT MOIST BROWN FINE SAND W/TRACE OF GRAVEL, FILL
	5'8"	COMPACT VERY MOIST BROWN FINE SAND W/TRACE OF GRAVEL, FILL
	6'0"	COMPACT VERY MOIST DARK BROWN TO BLACK SANDY TOPSOIL
	6'6"	COMPACT MOIST BROWN FINE SAND W/TRACE OF GRAVEL AND TOPSOIL STREAKS (BAG SAMPLE)
	12'0"	COMPACT WET BROWN FINE TO MEDIUM SAND W/TRACES OF GRAVEL AND SILT
	15'0"	EXTREMELY COMPACT WET BROWN FINE TO MEDIUM SAND W/TRACE OF GRAVEL.
		NOTES:
		1. INSTALLED 1" DIAMETER PVC PIEZOMETER IN BORING WITH SCREEN BOTTOM AT 14' AND 3' STICK-UP.
		2. WATER LEVEL IN PIEZOMETER AT COMPLETION AT 7.96' BELOW GROUND SURFACE.

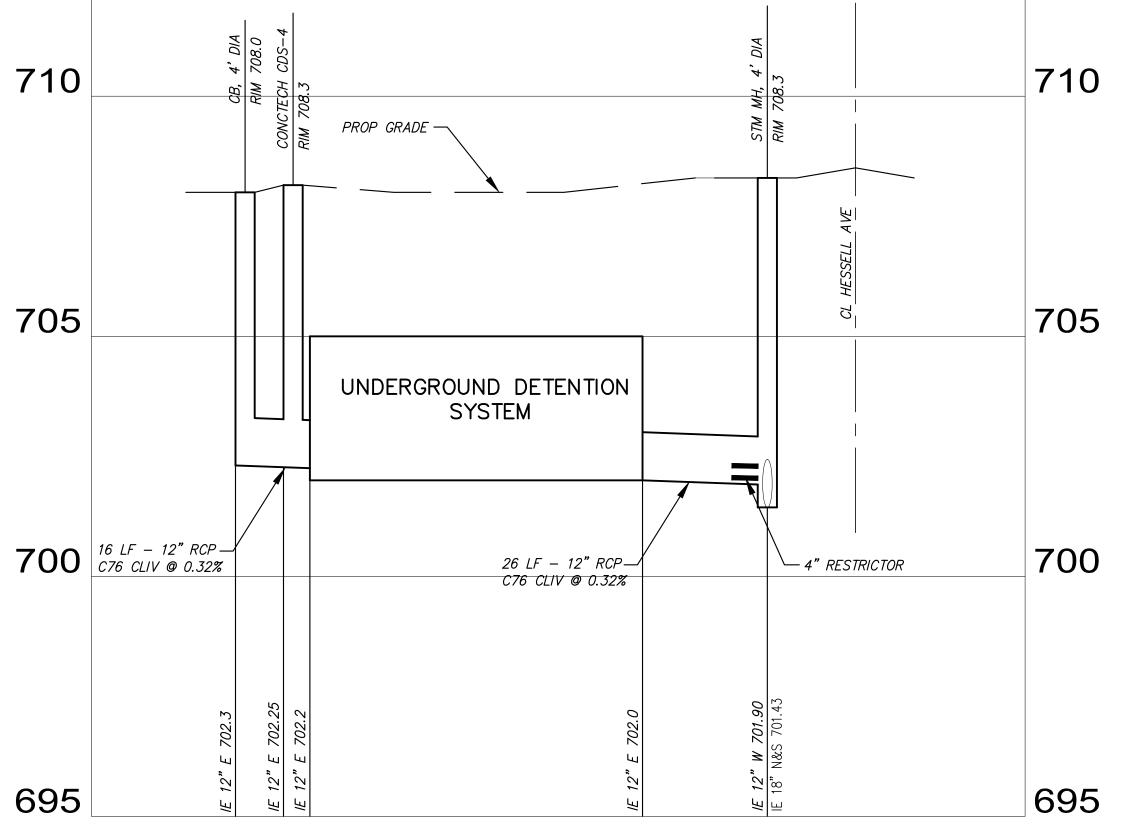
PRELIMINARY

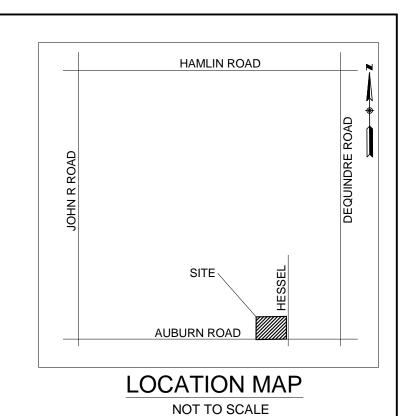
QUANTITIES THIS SHEET

<u>QOMMINICO ITIIO OTILLI</u>				
ITEM	UNIT	AMOUNT		
12" RCP C76 CLIV STORM SEWER	LF	26		
STORM CATCH BASIN, 4' DIA	EA	2		
STORM MANHOLE, 4' DIA	EA	1		
CONTECH CDS-4, 4' DIA	EA	1		
CONTECH CMP DETENTION SYSTEM (PER DETAIL THIS SHEET)	LS	1		
6" SCH40 SANITARY SEWER LEAD	LF	45		
1" TYPE K COPPER WATER SERVICE	LF	53		
ON-SITE PAVEMENT	SY	800		









SANITARY SEWER BASIS OF DESIGN

0.3 UNITS PER 1000 SQ.FT. 2,500 SQ.FT. X 0.3 = 0.75 UNITS

INITIAL FLOW: 3 PEOPLE/ UNIT TOTAL POPULATION = 2.5 PEOPLE = 3.0 PEOPLE

AVE. FLOW = $\frac{100 \text{ GAL/CAPITA/DAY X 3.0 PEOPLE}}{86,400 \text{ SEC/DAY X 7.48 GAL/C.F.}} = 0.0005 \text{ CFS}$

PEAK FLOW = $[(18 + \sqrt{.003}) / (4 + \sqrt{.003}) \times 0.0005] = 0.002 \text{ CFS}$

FUTURE POPULATION: INITIAL POPULATION = FUTURE POPULATION

= 3.0 PEOPLE

ULTIMATE FLOW: INITIAL FLOW = ULTIMATE FLOW

STORM SEWER CALCULATIONS

STORM SEWER OUTLET: IRELAND DRAIN (18")

PER OC-WRC IRELAND DRAIN STORM CALCULATIONS DESIGN FLOW TO MH11 OF VARNER DRAIN

C = 0.3 A = 8 AC $T_c = 80.31$ MIN $Q_a = 2.40 \text{ CFS}$

AUTO RITE LLC SITE

AREA = 0.29 AC

C = 70% 0.95 (FUTURE PAVEMENT/BUILDING) 30% 0.15 (GREENBELT) =0.71

 $T = 15 MIN, I_{25} = 215/T + 25 = 1.11$

Q = 0.98 CFS

 $Q_a = 0.2 \text{ CFS/AC}$

 $Q_a = 0.06 \text{ CFS}$

 $Q_o = Q_a/A \times C = 0.28 \text{ CFS}$

CONTECH CDS-4 TREATMENT FLOW CAPACITY = 0.70 CFS

V_t VOLUME OF STORAGE REQUIRED FOR 100 YR STORM

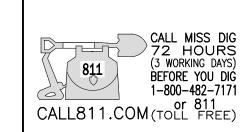
 $T_{100} = -25 + \sqrt{10,312.5/Q_0} = 166.34 \text{ MIN}$

 V_{s100} = (16,500 x T)/(T + 25) - 40 x Q x T = 12,469.90 FT

 $V_{t} = V_{s_{100}}/(A \times C) = 2,567.55 \text{ FT}^{3}$

VOLUME PROVIDED 2,627 FT³

EXISTING WATER TABLE ELEVATION IS APPROXIMATELY 700. THE BOTTOM OF THE ON-SITE STORAGE IS 702.





8140 PACTON SHELBY TOWNSHIP, MI 48317 PH: (586)737-7993 FAX: (586)737-7994 www.chippewaconsultingllc.com

CITY OF ROCHESTER HILLS AUTO RITE LLC STORM SEWER/UTILITY PLAN

NO.	DATE	SUBMITTAL	NO.	DATE	REVISION	PROJECT NO.: RH14-026
1	6/19/14	OWNER	1 2	5/15/15 5/20/15	PER R.H. REVIEW (4/22/15) PER STEMPIEN REVIEW (5/18/15)	DRAWING NO.: RH14026D1
3	3/17/15 11/10/15	OWNER PLANNING	3 4	5/27/15 6/01/15 9/15/15	PER STEMPIEN REVIEW (5/21/15) PER STEMPIEN REVIEW (5/29/15)	DRAWN BY: L. RODRIGUEZ
4	12/21/15	PLANNING	5 6	10/6/15	PER CITY REVIEW (8/27/15) PER CITY REVIEW (9/29/15)	CHECKED BY: M. O'CONNOR
			7 8 9	11/10/15 12/17/15 1/26/16	PER CITY REVIEW (10/28/15) PER STEMPIEN/CITY MTG PER STEMPIEN/CITY REVIEW (1/25/16)	SECTION 25 TOWN 3 NORTH
			10	1/26/16 3/16/16	PER STEMPIEN/CITY REVIEW (1/23/16)	CITY/TOWN: ROCHESTER HILLS

SHEET NO.

SCALE: 1"=20'

RANGE 11 EAST

DATE: 6/19/14

DATE: 6/19/14

general landscape notes:

- 1. LANDSCAPE CONTRACTOR SHALL VISIT THE SITE, INSPECT EXISITING CONDITIONS, REVIEW PROPOSED PLANTINGS AND RELATED WORK. CONTACT THE OWNER AND/OR LANDSCAPE ARCHITECT WITH ANY CONCERNS OR DISCREPANCY BETWEEN THE PLAN, PLANT MATERIAL LIST, AND/OR SITE CONDITIONS.
- 2. NUMERICAL VALUE ON THE LANDSCAPE QUANTITIES SPECIFIED ON THE PLAN TAKE PRECEDENCE OVER GRAPHIC REPRESENTATION. VERIFY ANY CONCERN-DISCREPANCY WITH LANDSCAPE ARCHITECT.
- 3. ALL CONSTRUCTION AND PLANT MATERIAL LOCATION TO BE ADJUSTED ON SITE
- 4. ALL SUBSTITUTIONS OR DEVIATIONS FROM THE LANDSCAPE PLAN MUST BE APPROVED BY ROCHESTER HILLS AND LANDSCAPE ARCHITECT
- 5. ALL LARGE TREES AND EVERGREENS TO BE STAKED, GUYED AND WRAPPED AS DETAIL SHOWN ON PLAN.
- 6. PLANT BEDS TO BE DRESSED WITH MIN. 3" OF FINELY DOUBLE SHREDDED HARDBARK MULCH.
 7. DIG SHRUB PITS 1' LARGER THAN SHRUB ROOT BALLS AND TREE PITS 2' LARGER THAN ROOT BALL. BACK FILL WITH ONE PART TOP SOIL AND ONE PART SOIL FROM EXCAYATED PLANTING HOLE.
- 8. REMOVE ALL TWINE, WIRE AND BURLAP FROM TREE AND SHRUB EARTH BALLS, AND FROM TREE TRUNKS.
- 9. NATURAL COLOR, FINELY SHREDDED HARDWOOD BARK MULCH REQUIRED FOR ALL PLANTINGS. 4" THICK BARK MULCH FOR TREES IN 4' DIA. CIRCLE WITH 3" PULLED AWAY FROM TRUNK. 3" THICK BARK MULCH FOR SHRUBS AND 2" THICK BARK MULCH FOR PERENNIALS.
- 10. PLANT MATERIAL QUALITY & INSTALLATION SHALL BE IN ACCORDANCE WITH THE CURRENT AMERICAN ASSOCIATION OF NURSERYMEN LANDSCAPE STANDARDS.
- AMERICAN ASSOCIATION OF NURSERTMEN LANDSCAPE STANDARDS.

 1. DROVIDE DEAT GOD FOR ALL NEW AND DISTURBED LAWN AREAS UNITED ATTIERN
- 11. PROVIDE PEAT SOD FOR ALL NEW AND DISTURBED LAWN AREAS UNLESS NOTED OTHERWISE.

 12. ALL PLANTING AREAS TO BE PREPARED WITH APPROPRIATE SOIL MIXTURES AND
- FERTILIZER BEFORE PLANT INSTALLATION.

 13. PLANT TREES AND SHRUBS GENERALLY NO CLOSER THEN THE FOLLOWING DISTANCES FROM SIDEWALKS, CURBS AND PARKING STALLS:

- 15. PRIOR TO BEGINNING OF CONSTRUCTION ON ANY WORK, CONTRACTORS SHALL VERIFY LOCATIONS OF ALL ON SITE UTILITIES. GAS, ELECTRIC, TELEPHONE, CABLE TO BE LOCATED BY CONTACTING MISS DIG 1-800-482-1111. ANY DAMAGE OR INTERRUPTION OF SERVICES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. COORDINATE ALL RELATED WORK ACTIVITIES WITH OTHER TRADES AND REPORT ANY UNACCEPTABLE JOB CONDITIONS TO OWNER PRIOR TO COMMENCING.
- 16. ALL LAWN AREAS AND LANDSCAPE BEDS TO BE FULLY
 IRRIGATED WITH A AUTOMATIC UNDERGROUND SYSTEMS.
 IRRIGATION SYSTEM TO HAVE SEPARATE ZONES FOR LAWN
 AREAS, PARKING ISLANDS, AND SHRUB BEDS WITH DIFFERENT
 CONTROL MOISTURE LEVEL ADJUSTMENT PER ZONE AS

PLANS FOR EXACT LOCATION AND DETAILS.

WATERING WILL ONLY OCCUR BETWEEN THE HOURS OF 12:00 AM AND 5:00 AM.

- 17. UNLESS NOTED OTHERWISE, LANDSCAPE BEDS ADJACENT TO LAWN TO RECIEVE EDGING. EDGING SHALL BE 4" × 1/8" METAL (FINISH BLACK OR GREEN) OR APPROVED EQUAL AND TO BE INSTALLED WITH HORIZONTAL METAL STAKES AT 32" O.C. OR PER MANUFACTERER'S SPECIFICATION.
- 18. ALL LANDSCAPE BEDS ADJACENT AND NEXT TO BUILDING SHALL BE EXCAVATED OF ALL BUILDING MATERIALS AND POOR SOILS A MIN. OF 12" DEPTH. BACK FILL WITH GOOD, MEDIUM TEXTURED PLANTING SOILS. ADD A MIN. 2" OF TOPSOIL OVERFILL TO FINISH GRADE, PROVIDE POSITIVE DRAINAGE.
- 19. WATERING OF ALL PLANTS AND TREES TO BE PROVIDED IMMEDIATELY AND MULCHING WITHIN 24 HOURS AFTER INSTALLATION.
- 20. ALL TREE PITS TO BE TESTED FOR PROPER DRAINAGE PRIOR TO TREE PLANTING. PROVIDE APPROPRIATE DRAINAGE SYSTEM AS REQUIRED IF THE TREE PIT DOES NOT DRAIN SUFFICIENTLY.
- 21. THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL LANDSCAPE PLANT MATERIALS AND IRRIGATION INSTALLATION FOR A PERIOD OF ONE YEAR BEGINNING AFTER THE COMPLETION OF LANDSCAPE INSTALLTION DATE APPROVED BY THE TOWNSHIP/CITY OR LANDSCAPE ARCHITECT. THE CONTRACTOR SHALL REPLACE DURING AND AT THE END OF THE GUARANTEE PERIOD, ANY DEAD OR UNACCEPTABLE PLANTS, AS DETERMINED BY THE TOWNSHIP/CITY OR LANDSCAPE ARCHITECT, WITHOUT COST TO THE OWNER.
- 22. PRIOR TO THE RELEASE OF THE PERFORMANCE BOND, THE CITY OF ROCHESTER HILLS MUST INSPECT ALL LANDSCAPE

city 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. (Trees must be planted at least 15' away from curb or road edge where the speed limit is more than 35 mph.) Shade trees and shrubs must be planted at least 5' from the edge of the public walkway. Evergreen and omamental 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 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.

key	quant.	botanical name common name		size	unit cost	total cost
		LARGE AND SMALL DECIDUOUS TREES				
ARA	5	ACER RUBRUM 'ARMSTRONG'	ARMSTRONG RED MAPLE (MULTI-STEM)	3" BB	\$400	\$2 <i>,000</i>
		DECIDUOUS SHRUBS				
VMK	6	VIBRUNUM X.B. 'MOHAWK'	MOHAWK VIBURNUM	3 1/2' BB	\$5 Ø	\$3 <i>00</i>
JT	20	JUNIPERUS S. TAMARISCIFOLIA	TAM JUNIPER (TYP. MATURE HGT. 24"-30")	24" BB	\$5 Ø	\$1000
TN		THUJA OCCIDENTALIS 'NIGRA'	AMERICAN DARK GREEN ARBORVITAE	6' BB	\$T5	\$825
VMK	6	HYFRANGEA M. 'ANNABELLE'	ANNABELLE HYDRANGEA	#5 CONT.	\$40	\$240
MSG		MISCANTHUS S. 'GRACILLIMUS'	JAPANESE SILVER MAIDEN GRASS	#5 CONT.	\$3Ø	\$3 <i>Ø</i>
PAH	Ш	PENNISETUM A 'HAMELN'	DWARF FOUNTAIN GRASS	*3 CONT.	\$2Ø	\$22Ø

REQUIRED PROVIDED

landscape requirement

right-of-way landscape

TOTAL LIN. FT. OF R.O.W. FRONTAGE AUBURN ROAD93'	<u> </u>	
ONE (I) DECIDUOUS OR EVERGREEN TREE PER 35 LIN. FT.	3	I (NOTE #2
ONE (I) ORNAMENTAL TREE PER 60 LIN. FT.	2	O (NOTE #2
TOTAL LIN. FT. OF R.O.W. FRONTAGE HESSELL STREET140	' <u>+</u>	
ONE (1) DECIDUOUS OR EVERGREEN TREE PER 35 LIN. FT.	4	4
ONE (I) ORNAMENTAL TREE PER 60 LIN. FT.	2	0 (NOTE #2
parking lot perimeter	REQUIRED	PROVIDED
parking lot perimeter TOTAL LIN. FT. PARKING FRONTAGE HESSELL STREET 45':		PROVIDED
· · · · · · · · · · · · · · · · · · ·	<u>•</u>	
TOTAL LIN. FT. PARKING FRONTAGE HESSELL STREET 45'	<u>•</u>	

landscape buffer (type-d)		REQUIRED	PROVIDED
TOTAL LIN. FT. OF NORTH PROPERTY BOUNDARY	_ 93' <u>+</u>		
TWO and HALF (2.5) DECIDUOUS TREES PER 100 LIN. FT.		2	GREENWALL (NOTE #1,
FIVE (5) EVERGREEN TREES PER 100 LIN. FT.		5	GREENWALL (NOTE #1
ONE & ONE HALF (1.5) ORNAMENTAL TREE PER 100 LIN. FT.		1.5	GREENWALL (NOTE #1)
EIGHT (8) DECIDUOUS OR EVERGREEN SHRUBS PER 100 LIN. FT.		7	GREENWALL (NOTE #1)

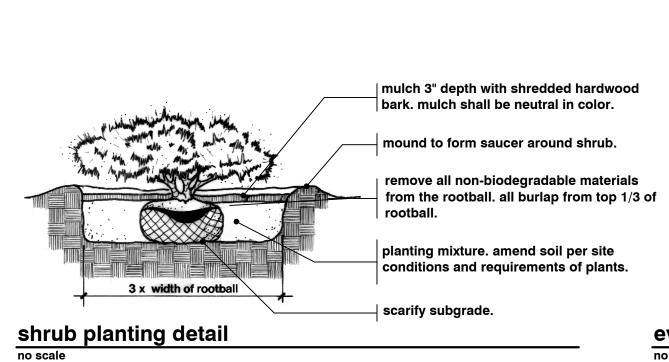
note:

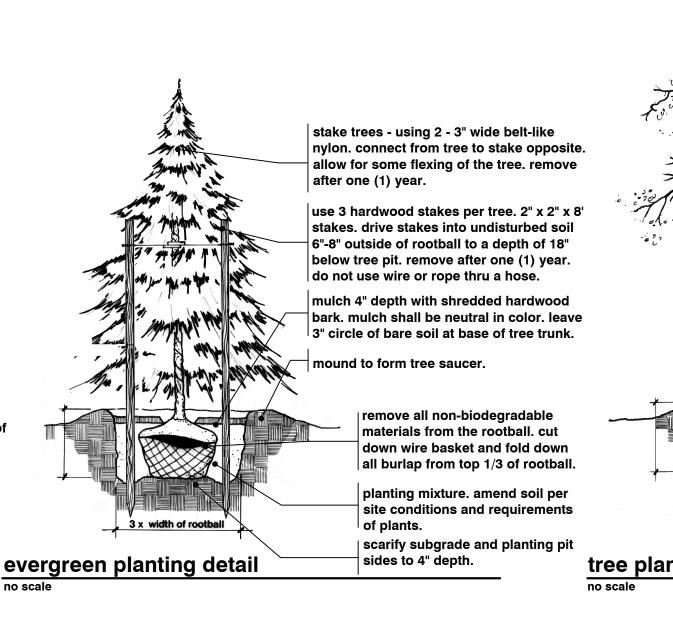
I. GREEN WALL CONSISTING OF 12-EXISTING ARBORVITAE PLUS II-NEW ARBORVITAE PER STAFF RECOMMENDATION

2. DEFICIENT TREES DUE TO SITE CONSTRICTION (2-PARKING LOT TREES, I-ORNAMENTAL PARKING LOT TREE, 2-R.O.W. TREES, AND 4-ORNAMENTAL R.O.W. TREES) TO BE PAID TOWARDS CITY TREE FUND AT RATE A OF \$200 PER TREE. 9-TREES TOTAL AT COST OF \$1,800

cost estimate summary

TOTAL ESTIMATED PLANT MATERIALS COST	\$,4,615.00
TOTAL ESTIMATED IRRIGATION COST	. \$1,2 <i>00.00</i>
TOTAL ESTIMATED SOD COST	\$600.00
TOTAL MISC. ITEM COST (MULCH, EDGING, ETC.)	\$150.00
TOTAL ESTIMATED LANDSCAPE COST	\$6,565.00





EXISTING 6' HIGH WOOD FENCE -

HATCHING DENOTES EXISTING

12- ARBORVITAE TO REMAIN.

TO MATCH EXISTING

FENCE

AS A HEDGE

REPLACE I-DEAD ARBORVITAE

PROPOSED 6' HIGH WOOD ____

PROPOSED ARBORVITEA TO BE

ALLOWED TO 'KNIT' TOGETHER

LAWN AREAS TO RECEIVE

IRRIGATION AND SOD ON -FINISH GRADES, PROVIDE

FUTURE 60' R.O.W.

CLEAR VIEW LINE

PEDESTRIAN WALK

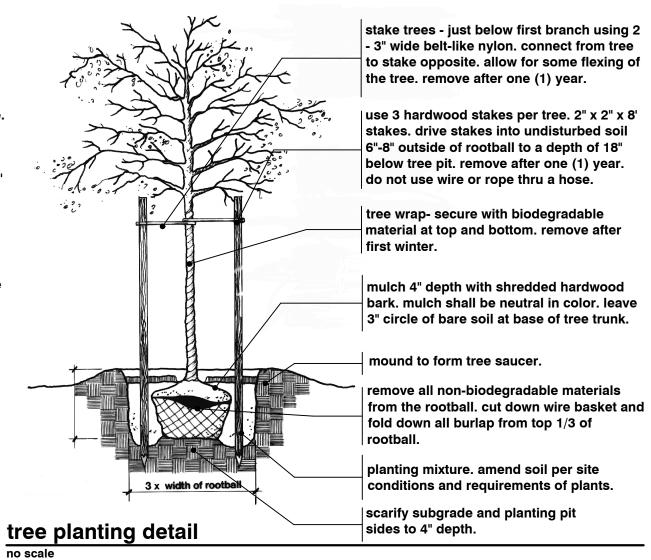
<u>JT-3</u>

PAH-4

landscape planting detail

15' YEHICULAR

POSITIVE DRAINAGE.



15' YEHICULAR CLEAR YIEW LINE

PEDESTRIAN WALK

DRAINAGE.

R.O.W. LAWN AREAS TO RECEIVE

IRRIGATION AND SOD ON FINISH

REMOVE EXISTING GATE AND

REPLACE WITH PERMANENT FENCE

LANDSCAPE AREA TO BE EXCAVATED

OF POOR SOILS A MIN. OF 12" DEPTH.

BACK FILL WITH GOOD, MEDIUM

PROPOSED JUNIPER TO BE

LAWN AREAS TO RECEIVE

IRRIGATION AND SOD ON FINISH GRADES, PROVIDE

POSITIVE DRAINAGE.

ALLOWED TO 'KNIT' TOGETHER

FINISH GRADE. .

AS A MASSING

25' YEHICULAR CLEAR YIEW LINE

NEW LAWN AREA TO BE EXCAVATED OF POOR SOILS A MIN. OF 12" DEPTH. BACK FILL WITH 8" GOOD, MEDIUM TEXTURED PLANTING SOILS AND TOP A

MIN. 4" OF TOPSOIL TO FINISH GRADE.

PROVIDE POSITIVE DRAINAGE.

TEXTURED PLANTING SOILS AND

CROWN ALL ISLAND 12" AT CENTER.

PROVIDE A MIN. 4" OF TOPSOIL TO

GRADES, PROVIDE POSITIVE

DEAD

ARA-2

R.O.W

JT-I7

ROW LAWN AREAS TO RECEIVE

IRRIGATION AND SOD ON FINISH

GRADES, PROVIDE POSITIVE

DRAINAGE.

BUFFER

Auto Rite

Building

Auburn Road

PAH-3

CITY PLAN NO. 13-005.2

FELINO A. PASCUAL and ASSOCIATES

Community Land Planner and registered Landscape Architect 24333 Orchard Lake Rd, Suite G Farmington Hills, MI 48336 ph. (248) 557-5588 fax. (248) 557-5416

Seal:

FELINO

A. PASCUAL

ARCHITECT

No. 1433

AUTO RITE. LLC

1923 E. AUBURN ROAD ROCHESTER HILLS, MICHIGAN , 48307

project:

AUTO RITE SALES

project location:
Rochester Hill,
Michigan
Auburn Road

sheet title:

job no./issue/revision date:

LS15.049.05 SPA 5-20-2015
6-01-2015
LS15.049.07 SPA 8-10-2015

LS15.049.11 SPA 11-10-2015 LS15.049.12 SPA 12-22-2015 LS16.026.02 SPA 2-5-2016

LS16.026.03 SPA 3-21-2016

9-10-2015

checked by:

date:
3-31-2016
notice:

Copyright © 2016

This document and the subject matter contained therein is proprietary and is not to be used or reproduced without the written permission of Felino Pascual and Associates

Do Not scale drawings. Use figured dimensions only

3 WORKING DAYS
BEFORE YOU DIG
CALL MISS DIG
1-800-482-717

The location and elevations of existing underground utilities as shown on this drawing are only approximate. no guarantee is either expressed or implied as to the completeness of accuracy. contractor shall be exclusively responsible for determining the exact location and elevation prior to the start of construction

project no:

LS16.026.02

sheet no:

LS- $\mathbf{1}_{\text{of }1}$