

SANITARY SEWER BASIS OF DESIGN

INITIAL NUMBER OF UNITS/LOTS = 1 UNITS/LOTS
 FUTURE NUMBER OF UNITS/LOTS = 2 UNITS/LOTS
 TOTAL NUMBER OF UNITS/LOTS = 3 UNITS/LOTS
 3.5 PEOPLE PER UNIT * NO. OF UNITS = 9 PEOPLE

AVE Q = $\frac{(100 \text{ G.P.C.P.D.} * \text{NO. PEOPLE})}{(86,400 \text{ SEC/DAY} * 7.48 \text{ GAL/CF})}$ = 0.0014 cfs

PEAK Q = $\frac{((118 + \text{S.O.P.}) * (4 + \text{S.O.P.})) * (\text{AVE. Q.})}{(\text{PEOP. IN THOUSANDS})}$ = 0.006 cfs

SIZE OF SANITARY SEWER = 8 inch
 PIPE SLOPE = 1.10 %
 PIPE CAPACITY = 1.27 cfs

WATER MAIN BASIS OF DESIGN

NUMBER OF CONNECTIONS = 1
 FEET PER UNIT = 30
 TOTAL FEET = CONNECTIONS * FEET PER UNIT = 30

AVE Q = $\frac{(118 \text{ G.P.C.P.D.} * \text{REU})}{(86,400)}$ = 0.0005 MGD

PEAK Q = $\frac{(\text{MAX DAILY DEMAND} * 2) * \text{AVE. Q.}}{}$ = 0.0009 MGD

QUANTITY ESTIMATE

NO.	ITEM	QUANTITY
UTILITIES		
1.	8" DI CL-54 WATER MAIN	82 LF
2.	4" DI CL-54 WATER MAIN	5 LF
3.	VALVE BOX	1 EA
4.	TYPE "X" COPPER WATER SERVICE	56 LF
5.	4" DIA SANITARY MANHOLE	1 EA
6.	8" PVC TRUSS	80 LF
7.	6" SCH-40 PVC	12 LF

NOTE: CONTRACTOR SHALL CALCULATE HIS OWN QUANTITIES FOR ALL ITEMS OF WORK WHETHER OR NOT INDICATED ON THESE PLANS. THE OWNER OR ENGINEER IS NOT RESPONSIBLE FOR ANY DIFFERENCES IN QUANTITIES.

CURVE DATA

CURVE	ARC LENGTH	RADIUS	DELTA ANGLE	CHORD BEARING	CHORD LENGTH
C1	68.35'	250.00'	15°39'55"	N 81°34'33" E	68.14'

CONSTRUCTION SEQUENCE

CONSTRUCTION SEQUENCE	OPERATION TIME SCHEDULE - BEGINNING										
	PREP	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10
A SOIL EROSION CONTROL MEASURES											
B HOUSE CONSTRUCTION											
C DRIVEWAY & SIDEWALK CONSTRUCTION											
D FINAL GRADING											
E PERMANENT SOIL EROSION											

NOTE: THIS TIMING AND SEQUENCE CHART IS TO BE FILLED IN BY THE CLIENT PRIOR TO SUBMITTAL TO THE CITY/TOWNSHIP.

SEE DETAIL OF 4" BLOWOFF ON CITY WATER MAIN DETAIL SHEET 1 OF 2

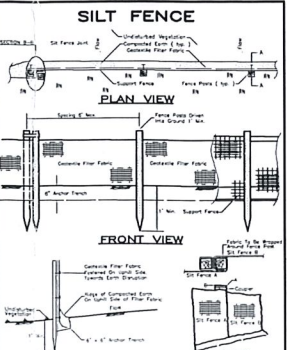
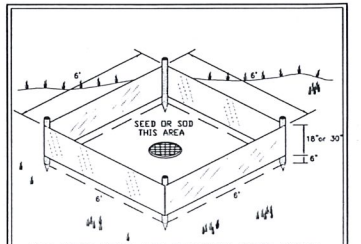
NOTE: THE NEAREST WATER COURSE IS STONY CREEK. APPROX. 1,400' ± TO THE NORTHWEST.

SOIL TYPE PER OAKLAND COUNTY SOIL MAP: MARLETTE SANDY LOAM, 1% TO 6% SLOPES

NOTE: PROPOSED SANITARY CLEAN-OUT MUST BE CONSTRUCTED IN ACCORDANCE WITH TOWNSHIP/CITY STANDARDS. LEAVE RIM HIGH UPON INSTALLATION AND SAWCUT DOWN TO MEET FINAL GRADINGS.

NOTE: AREA OF PROPOSED EARTH CHANGE 27,228 SQ. FT.

NOTE: SOIL EROSION CONTROL MEASURES WILL BE MAINTAINED ON A WEEKLY BASIS AND AFTER EACH STORM EVENT BY THE BUILDER.



- SOIL EROSION NOTES:**
- INSTALL EROSION CONTROL MEASURES PRIOR TO CONSTRUCTION.
 - ALL SOIL EROSION MEASURES MUST BE IN PLACE PRIOR TO ANY EARTH MOVEMENT.
 - COMPLETE ALL EARTH MOVEMENT.
 - RIGHT-OF-WAY MUST BE STABILIZED PRIOR TO FINAL GRADE INSPECTION.
 - ALL SHALE AREAS, ALL SLOPES GREATER THAN 1:5 AND 10' AROUND STEEP STRUCTURES MUST BE STABILIZED PRIOR TO FINAL GRADE INSPECTION.
 - AFTER PERMANENT EARTH STABILIZATION IS COMPLETED, REMOVE EROSION CONTROL MEASURES.

LEGAL DESCRIPTION

PROPOSED - UNIT 2

Part of the NE 1/4 of Section 1, T.3N, R.11E, Rochester Hills, Oakland County, Michigan, being more particularly described as follows:

Commencing at the East 1/4 corner of Section 1;

thence N89°45'00" W 444.04 feet to the Point of Beginning;

thence N89°44'16" W 167.70 feet;

thence N00°35'30" W 204.80 feet;

thence N77°48'40" E 64.95 feet;

thence N72°59'40" E 15.61 feet;

thence N21°22'51" W 10.94 feet;

thence with a curve bearing to the right 68.35 feet, having a radius of 250.00 feet, a central angle of 15°39'55", and a chord bearing N81°34'33" E 68.14 feet;

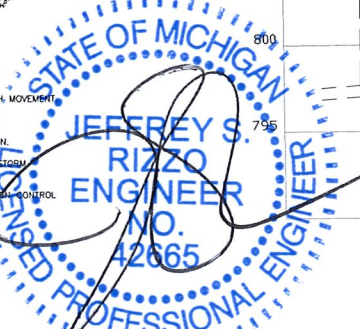
thence N89°24'30" E 16.67 feet;

thence S00°35'30" E 16.99 feet;

thence S35°20'15" E 15.43 feet;

thence S00°35'30" E 294.58 feet to the Point of Beginning;

Containing 1.163 acres.



SANITARY PROFILE
 EX MH TO MH#1
 H: 1"=20'
 V: 1"=5'

CHRISTENBURY CT. VACANT LOT
 ADDRESS: 1930 CHRISTENBURY CT.
 PARCEL I.D. #15-01-278-007

FILE #19-014
 SECTION #1

3 WORKING DAYS (EXCLUDING SAT, SUN, AND HOLIDAYS)

BEFORE YOU DIG CALL MISS DIG
 1-800-482-7171 (TOLL FREE)

Fenn & Associates, Inc.
 Land Surveying and Civil Engineering
 14433 Coopersville Drive, Ste 107, Troy, MI 48065-1119
 Phone: 986.2551 (4837) Fax: 986.2554 (9020)
 www.fennandassociates.com

FINAL SITE CONDOMINIUM PLANS
1930 CHRISTENBURY COURT
 PART OF NE 1/4 OF SECTION 1, T. 3N, R. 11E,
 ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN

DISTRIBUTION

○	PRELIMINARY
●	APPROVAL
○	CONSTRUCTION
○	AS-BUILT

REVISIONS

DATE	REMARKS
06/20/2019	PER CITY
07/02/2019	PER CITY
07/18/2019	PER CITY APPROVAL

SEAL

CLIENT
 VITO TERRACCIANO

248-835-4796

PROJECT NAME
 1930 CHRISTENBURY COURT

PROJECT NUMBER
 C18-047.05X

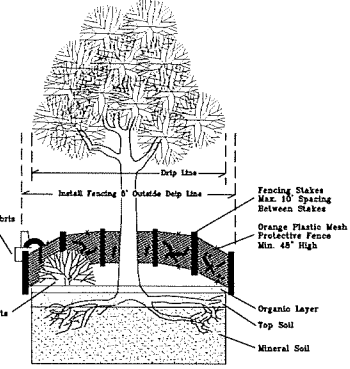
SHEET NAME
 GRADING & UTILITY PLAN

DRAWING SCALE: 1"=20'
 DATE: 5-16-2019
 PROJECT MANAGER: JSR
 DESIGNED BY: JH
 DRAWN BY: JH
 FIELD BY: BH
 CHECKED BY: JSR

SHEET NUMBER
 1 OF 2

Tree Protection Notes

- Approved tree protection shall be erected prior to start of construction activities, and shall remain in place until construction is complete. The Forestry Division shall be notified after tree protection is in place prior to construction activities, including delivery of materials.
- No person may conduct any activity within the drip line of any tree designated to remain, including, but not limited to, placing solvents, building materials, construction equipment, or soil deposits within the drip line.
- Grade changes may not occur within the drip lines of protected trees.
- During construction, no person shall attach any device or wire to remaining tree.
- All utility service requests must include notification to the installer that protected trees must be avoided. All trenching shall occur outside of the protective fencing.
- Stakes shall be routed to avoid the area within the drip lines of protected trees.
- If tree protection cannot be maintained for a tree throughout the construction period, replacement of that tree may be required prior to the issuance of the Certificate of Occupancy.
- Regulated trees located on adjacent property that may be affected by construction activities must be protected.



TREE PROTECTION DETAIL

LANDSCAPE CONTRACTOR'S "ONE-YEAR IRRIGATION REQUIREMENT PERIOD"

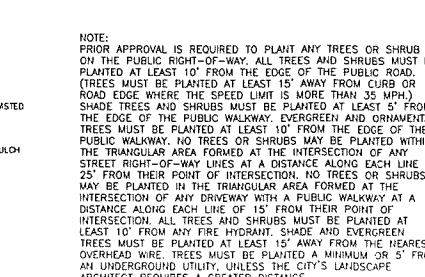
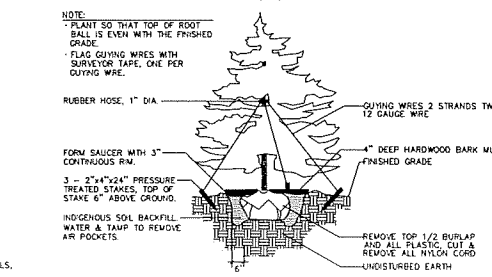
IT SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR TO PROGRAM AND PERIODICALLY ADJUST THE IRRIGATION SYSTEM (PROVIDED BY OTHERS) AS REQUIRED TO INSURE DELIVERY OF PROPER AND ADEQUATE WATER SUPPLY TO ALL PLANT MATERIALS, SOO AND SEEDED LAWN AREAS (SERVICED BY THE IRRIGATION SYSTEM) TO INSURE THE 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.

NOTE: CONTRACTOR SHALL MAKE EVERY EFFORT TO PROTECT AND PRESERVE QUALITY TREES WHERE APPROPRIATE, WHETHER INDICATED ON THIS PLAN OR NOT. IF TREE PROTECTION CANNOT BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD, REPLACEMENT OF THAT TREE MAY BE REQUIRED TO SATISFY CITY/TWP. ORDINANCES.

PLANT NOTES:

- PLANT MATERIALS SHALL BE SOUND, HEALTHY, WOOLY, 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-601.1996).
- PLANTING POCKETS SHALL BE DUG SO THAT THE POCKET DIAMETER IS A MINIMUM OF 24" LARGER THAN THE ROOT BALL AND THE SIDES OF POCKET ARE VERTICAL AND FRACTURED. INDIVIDUAL SOILS SHALL BE TAMPED AND WATERED DURING AND AFTER PLANTING.
- 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 12 GAUGE GALVANIZED WIRE. PROTECT THE TREE TRUNK WITH HOSE OR OTHER ACCEPTABLE MEANS. GUY TO TWO HARDWOOD 2" x 4" x 8' POSTS. GUYED 2' DEEP IN UNDISTURBED SOIL.
- WALSH SHALL BE GROUND OR SHREDDED 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 CIRCLE 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 DURING THE GUARANTEE PERIOD, IN ACCORDANCE WITH THE LOCAL ORDINANCE REQUIREMENTS.
- CONTRACTOR SHALL PROVIDE IN WRITING A LIST OF RECOMMENDED MAINTENANCE PROCEDURES FOR THE FIRST GROWING SEASON.
- REMOVE TOP 1/2 OF BURLAP ON ROOT BALL OR ALL IF WRAPPED IN PLASTIC COVERING AND/OR ALL HELIX GIRD.
- PLANT MATERIALS SHALL BE USED IN COMPLIANCE WITH THE PROVISIONS OF THE LOCAL ORDINANCE AND SHALL BE NURSERY GROWN, FREE OF PESTS AND DISEASES, HARDY IN THIS 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 COUNTY COOPERATIVE EXTENSION SERVICE. A COPY OF WHICH SHALL BE KEPT ON FILE WITH THE PLANNING OFFICIAL.
- SOO SHALL BE CEMENT TUNT GRASS SOO COMPLYING WITH I.P.A. SPECIFICATIONS FOR WALKER-CUT THICKNESS, SIZE, SHEDDING, MOISTURE, COLOR, AND MOVED HEIGHT. AND FREE OF WEEDS AND UNDESIRABLE NATIVE GRASSES. PROVIDE VARIABLE SOO OF UNIFORM DENSITY, COLOR, AND TEXTURE. SOO SHALL BE STRONGLY ROOTED AND GRASSY. PROVIDE GROWTH AND DEVELOPMENT WHEN PLANTED. CUT SOO SHALL NOT BE PERMITTED TO DRY OUT AND SHALL BE LAD WITHIN 24 HOURS OF WHEN CUT. FERTILIZE WITH WATER THE SOO AS REQUIRED DURING THE FIRST GROWING SEASON TO MAINTAIN A DENSE AND VIGOROUS GROWING SOO.
- PLANTING BED SOO FOR ANNUALS SHALL BE SCREENED TOPSOIL. TO DETER WEED GROWTH DURING THE ESTABLISHMENT OF ANNUAL BED, AFTER A PRE-EMERGENT (PREN) 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 WATERED WITH 6" WIDE HAWT CREPE. WRAP THE LEAVY PARTS OF THE FIRST LINES AND THE TRUNK. OVERLAP HALF OF EACH SPIRAL WRAP TO FORM A DOUBLE WRAPPING.

EVERGREEN TREE PLANTING DETAIL



NOTE: THE CITY SHALL PLANT STREET TREES IN THE ROW AFTER CONSTRUCTION OF THE PROJECT IS COMPLETE. THE APPLICANT SHALL BE RESPONSIBLE FOR LOT TO ACCOUNT FOR THE PLANTINGS.

LEGAL DESCRIPTION PROPOSED - UNIT 2

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 Commencing at the East 1/4 corner of Section 1;
 thence N89°45'00" W 444.04 feet to the Point of Beginning;
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 thence N00°35'30" W 264.80 feet;
 thence N77°48'40" E 64.93 feet;
 thence N72°59'40" E 15.61 feet;
 thence N12°21'51" W 19.94 feet;
 thence with a curve turning to the right 68.35 feet, having a radius of 250.00 feet, a central angle of 15°39'55", and a chord bearing 161°34'33" E 68.14 feet;
 thence N89°24'30" E 16.67 feet;
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 thence S00°35'30" E 16.99 feet;
 thence S55°20'15" E 15.43 feet;
 thence S00°35'30" E 294.58 feet to the Point of Beginning.
 Containing 1.183 acres.

PLANT LIST:

NO.	COMMON NAME	BOTANICAL NAME	SIZE
12	NORWAY SPRUCE	PICEA ABIES	10' HT. B&B
2	KINDERED SPIRIT OAK	QUERCUS X WAREI 'NADLER'	2" CAL.

CHRISTENBURY CT. VACANT LOT
 ADDRESS: 1930 CHRISTENBURY CT.
 PARCEL I.D. # 15-01-278-007

FILE #19-014
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TREE REMOVAL LIST				
TAG	TYPE	DIAMETER	CONDITION	REMOVE (Y/N)
455	NARBLE	15"	GOOD	Y INSIDE
456	SPRUCE	14"	POOR	N
457	SPRUCE	14"	POOR	N
458	SPRUCE	8"	POOR	Y
459	SPRUCE	30"	POOR	Y
460	SPRUCE	9"	POOR	Y INSIDE
461	SPRUCE	16"	POOR	Y INSIDE
462	SPRUCE	12"	POOR	Y INSIDE
463	SPRUCE	18"	POOR	Y INSIDE
464	SPRUCE	15"	POOR	Y INSIDE
465	SPRUCE	18"	POOR	Y INSIDE
467	SPRUCE	10"	POOR	Y INSIDE
468	MULBERRY	15"	GOOD	Y INSIDE
469	MULBERRY	10"	GOOD	Y INSIDE
470	MULBERRY	8"	GOOD	Y INSIDE
471	MULBERRY	7"	GOOD	Y INSIDE
472	ELM	7"	FAIR	Y INSIDE
473	BLACK CHERRY	8"	GOOD	Y INSIDE
474	MULBERRY	12"	POOR	Y INSIDE
475	MULBERRY	14"	FAIR	Y INSIDE
476	MULBERRY	9"	FAIR	Y INSIDE
477	MULBERRY	10"	FAIR	Y INSIDE
478	BOXELDER	8"	POOR	Y INSIDE
479	BOXELDER	10"	POOR	N INSIDE
480	BOXELDER	9"	POOR	Y INSIDE

TREE REMOVAL CALCULATIONS

TOTAL REGULATED TREES ON SITE..... 25
 REGULATED TREES INSIDE BUILDING ENVELOPE..... 21
 REGULATED TREES OUTSIDE BUILDING ENVELOPE..... 4

TOTAL REGULATED TREES BEING REMOVED..... 22

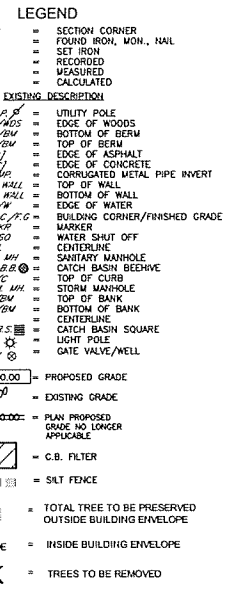
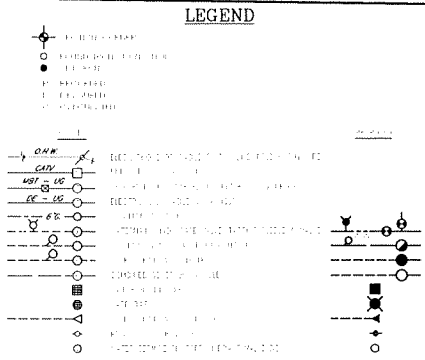
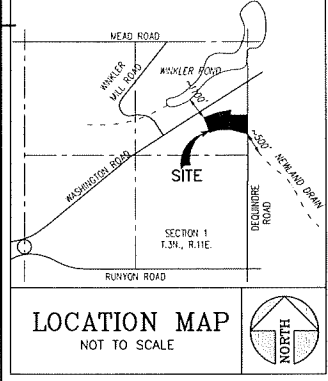
TOTAL REQUIRED TREE REPLACEMENT CREDITS..... 22

REPLACEMENT TREE CALCULATIONS

PROPOSED 10' HIGH NORWAY SPRUCE TREE..... 12
 12 TREES x 2 CREDIT/TREE = 24

PROPOSED 2" CALIPER KINDERED SPIRIT OAK..... 2
 2 TREES x 1 CREDIT/TREE = 2

TOTAL REPLACEMENT TREE CREDITS..... 26
 24 - 2 = 26



Fenn & Associates, Inc.
 Land Surveying and Civil Engineering
 14923 Commercial Drive, Shelby Township, MI 48150
 Phone: 588.261.1757 Fax: 588.261.9420
 www.fennassociates.com

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 PART OF NE 1/4 OF SECTION 1, T.3N, R.11E,
 ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN

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SEAL

CLIENT
 VITO TERRACCIANO

248-835-4796

PROJECT NAME
 1930 CHRISTENBURY COURT

PROJECT NUMBER
 C18-047.05X

SHEET NAME
 LANDSCAPE PLAN

SHEET NUMBER
 2 OF 2