

**STORM WATER CONTROL**  
 STORM WATER FROM THE PROPOSED MANCHESTER KNOLLS II SUBDIVISION ALONG WITH THE EXISTING MANCHESTER KNOLLS SUBDIVISION AND CONTRIBUTORY OFFSITE AREAS DRAIN INTO THE DETENTION POND IN THE NORTHEAST CORNER OF THE PARCEL.

**STORM WATER DETENTION**  
 CONTRIBUTORY AREAS TO DETENTION POND:  
 OFFSITE AREA TO THE WEST OF BREWSTER ROAD = 3.83 ACRES, RUNOFF COEFFICIENT = 0.28  
 OFFSITE AREA INCLUDING BREWSTER ROAD PAVING AND 3 HOUSES WEST OF THE SOUTHWEST CORNER OF MANCHESTER KNOLLS SUBDIVISION = 2.22 ACRES, RUNOFF COEFFICIENT = 0.520  
 PHASE ONE AREA OF MANCHESTER KNOLLS II SUBDIVISION = 23.16 ACRES, RUNOFF COEFFICIENT = 0.38  
 PROPOSED AREA OF MANCHESTER KNOLLS II SUBDIVISION = 12.84 ACRES, RUNOFF COEFFICIENT = 0.38  
 TOTAL TRIBUTARY AREA TO DETENTION POND = 42.05 ACRES  
 REQUIRED STORAGE VOLUME FOR 10 YEAR STORM = 101,083 CU.FT.  
 STORAGE VOLUME PROVIDED FROM ELEV. 908.60 TO ELEV. 911.70 = 101,083 CU.FT.

**RUNOFF COEFFICIENT**

|                          |   |      |
|--------------------------|---|------|
| 3.83 / 42.05 x 0.28      | = | 0.03 |
| 2.22 / 42.05 x 0.52      | = | 0.03 |
| 23.16 / 42.05 x 0.38     | = | 0.21 |
| 12.84 / 42.05 x 0.38     | = | 0.11 |
| TOTAL RUNOFF COEFFICIENT | = | 0.38 |

ALLOWABLE OUTFLOW FROM DETENTION POND = 8.41 CFS  
 OUTFLOW CONTROL ORIFICE = 13.5" DIA.

**SUBDIVISION CONTROL ORDINANCE NOTES**

1. PROPOSED MANCHESTER KNOLLS II SUBDIVISION IS FOR SINGLE FAMILY RESIDENTIAL USE.
2. THE PROPOSED SUBDIVISION SCHEME WAS CHOSEN TO BEST PROVIDE A CONTINUATION OF THE EXISTING MANCHESTER KNOLLS SUBDIVISION SCHEME.
3. THE PROPOSED IMPROVEMENTS FOR THE SUBDIVISION INCLUDE:  
 \* PUBLIC SANITARY SEWERS  
 \* PUBLIC WATER MAINS  
 \* PUBLIC ROADS TO BE CONCRETE CURBS AND ASPHALT PAVING  
 \* STORM DRAIN SEWERS  
 \* GAS, ELECTRIC, TELEPHONE & CABLE SERVICE PROVIDED BY PRIVATE COMPANIES.
4. ALL UTILITIES TO BE UNDERGROUND AND LOCATED IN THE STREET R.O.W. OR WITHIN EASEMENTS.
5. STREET TREES WILL BE PROVIDED IN ACCORDANCE WITH CITY REQUIREMENTS.

**CAUTION**  
 THE LOCATIONS 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 OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT UTILITY LOCATIONS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION.

*Thomas J. Nickerson*

NOT TO BE USED AS CONSTRUCTION DRAWINGS

**INDEX OF SHEETS**

- C-1 GENERAL SITE PLAN
- C-2 FINAL PRELIMINARY PLAT
- C-3 LANDSCAPE PLAN
- C-3A LANDSCAPE NOTES AND DETAILS
- C-4 EXISTING SLOPE GRADIENT PLAN
- C-5 SOIL SKETCH

**PRELIMINARY PLAT OF "MANCHESTER KNOLLS II" SUBDIVISION**

ROCHESTER HILLS CITY FILE # 96-016.2, SECTION 8

**LEGEND**

|                        |     |
|------------------------|-----|
| EX. STORM SEWER        | --- |
| EX. SANITARY SEWER     | --- |
| EX. WATER MAIN         | --- |
| OVERHEAD LINES         | --- |
| FENCE                  | --- |
| GUARD RAIL             | --- |
| MAIL BOX               | --- |
| UNIDENTIFIED STRUCTURE | --- |
| LIGHT POLE             | --- |
| TELEPHONE RISER        | --- |
| STREET SIGN            | --- |
| WATER SHUT OFF VALVE   | --- |
| EXISTING CONTOUR       | --- |
| EXISTING GROUND SHOT   | --- |

PROPOSED ELEVATION 942.66

PROPOSED STORM SEWER

PROPOSED SANITARY SEWER

PROPOSED WATER MAIN

PROPOSED CATCH BASIN

PROPOSED MANHOLE

PROPOSED FIRE HYDRANT

PROPOSED SETBACK LINE

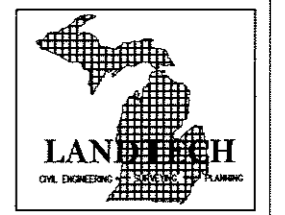
PROPOSED EASEMENT



NOTE: UTILITY INFORMATION ON THIS DRAWING MAY BE FROM INFORMATION DISCLOSED TO THIS FIRM BY THE VARIOUS UTILITY COMPANIES, CITY/COUNTY AGENCIES, AND OTHER VARIOUS SOURCES. NO GUARANTEE IS GIVEN AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING UTILITIES (IN CONFLICT WITH PROPOSED IMPROVEMENTS) SHALL BE VERIFIED IN THE FIELD CALL MISS DIG.

| DATE     | DESCRIPTION               |
|----------|---------------------------|
| 11-1-00  | REVISED PER CITY COMMENTS |
| 02-05-01 | REVISED PER CITY COMMENTS |
| 11-30-01 | REVISED PER CITY COMMENTS |
| 12-03-01 | REVISED PER OWNER         |
| 01-10-02 | REVISED PER CITY COMMENTS |
| 06-12-02 | REVISED PER CITY COMMENTS |
| 8-26-02  | REVISED PER CITY COMMENTS |
| 9-23-02  | NO CHANGES TO THIS SHEET  |
| 4-22-04  | REVISED PER CITY COMMENTS |
| 5-8-04   | NO REVISIONS              |



29000 Inkster Road, Suite 120  
 Southfield, MI 48034  
 (248) 357-7900  
 Fax (248) 357-3646

**PROJECT**  
 MANCHESTER KNOLLS II SUBDIVISION

**TITLE**  
 GENERAL SITE PLAN

**CLIENT**  
 KAY FAMILY ASSETS LLC

57 KAY INDUSTRIAL DRIVE  
 LAKE ORION, MI 48361

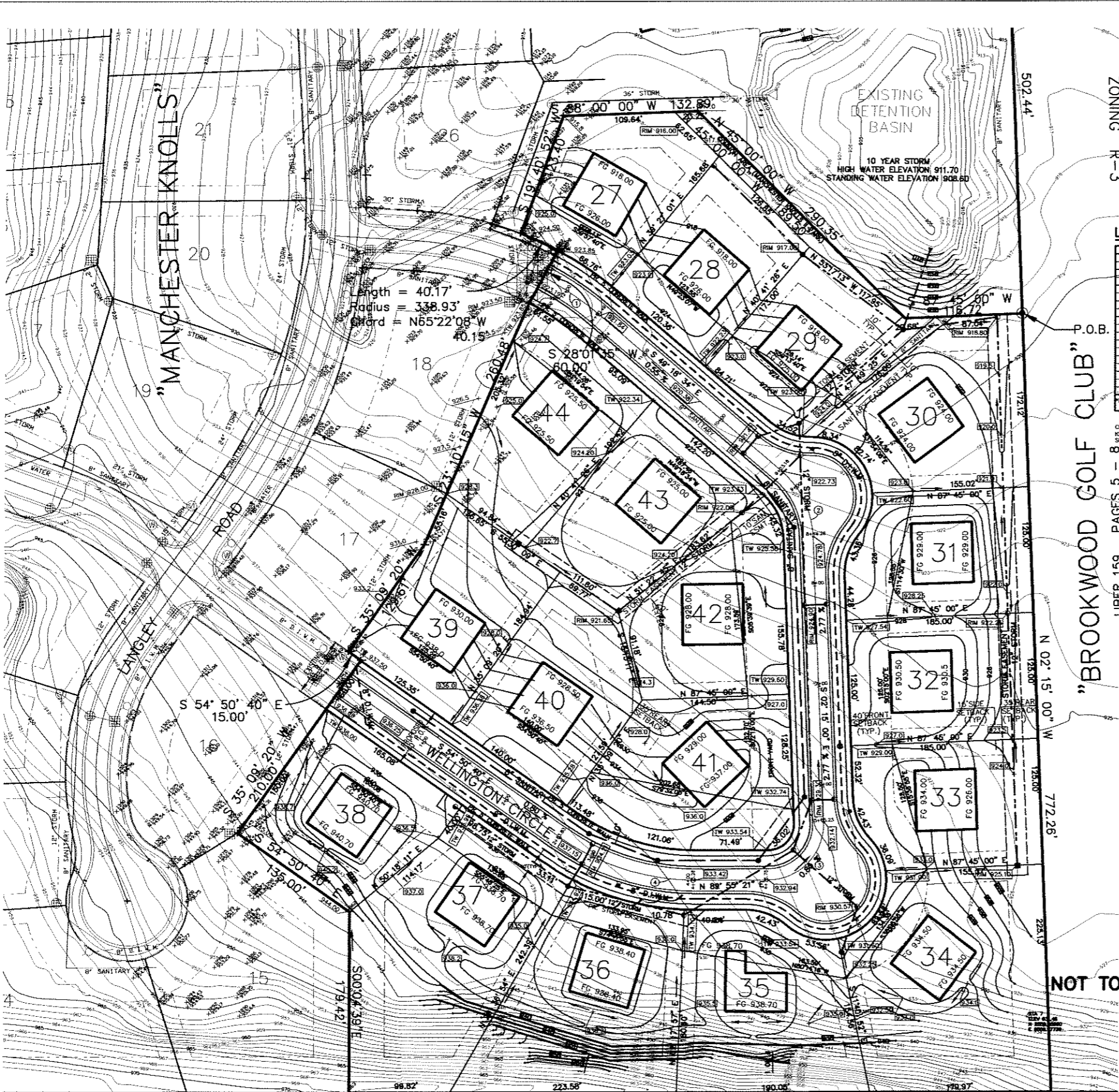
SCALE: Horizontal 1" = 100'  
 Vertical N/A

DRAWN BY: PM  
 CHECKED BY: MCK

DATE ISSUED: 8-17-99

PROJECT No. 9875

SHEET No. C-1



ZONING R-3

**LOT DATA**

| LOT NO. | AREA (SQ. FT.) | LOT WIDTH (FT.) |
|---------|----------------|-----------------|
| 27      | 20,520         | 118.13          |
| 28      | 20,010         | 123.35          |
| 29      | 20,410         | 126.14          |
| 30      | 27,430         | 114.36          |
| 31      | 21,893         | 128.25          |
| 32      | 23,125         | 125.00          |
| 33      | 23,134         | 128.50          |
| 34      | 40,907         | 134.35          |
| 35      | 28,777         | 163.59          |
| 36      | 33,167         | 133.95          |
| 37      | 39,386         | 125.68          |
| 38      | 23,126         | 165.08          |
| 39      | 23,373         | 125.25          |
| 40      | 23,933         | 140.00          |
| 41      | 27,466         | 152.70          |
| 42      | 23,436         | 173.59          |
| 43      | 23,767         | 137.44          |
| 44      | 24,981         | 144.26          |

COMMON AREA (MANCHESTER KNOLLS II PARK) - 4079 SQ. FT.

**LEGAL DESCRIPTION:**  
 MANCHESTER KNOLLS II, A SUBDIVISION OF PART OF THE NORTH-EAST 1/4 OF SECTION 8, T.3.N., R.11.E., CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN, DESCRIBED AS FOLLOWS:  
 COMMENCING AT THE NORTH 1/4 CORNER OF SAID SECTION 8; THENCE S. 04°29' 03" E., 1299.74 FEET (1280.36 FEET RECORDED); ALONG THE NORTH-SOUTH 1/4 LINE OF SAID SECTION 8, TO THE SOUTH-WEST CORNER OF "AVON MEADOWS", A SUBDIVISION RECORDED IN LIBER 153 OF PLATS, PAGE 7 AND 8, OAKLAND COUNTY RECORDS;  
 THENCE N. 88° 27' 40" E., ALONG THE SOUTH LINE OF SAID "AVON MEADOWS" SUBDIVISION, 1430.42 FEET TO THE SOUTH-EAST CORNER OF SAID SUBDIVISION AND THE WEST LINE OF "BROOKWOOD GOLF CLUB", A SUBDIVISION RECORDED IN LIBER 159 OF PLATS, PAGES 5, 6, 7 AND 8, OAKLAND COUNTY RECORDS;  
 THENCE S. 02° 15' 00" E., ALONG SAID LINE, 502.18 FEET TO THE POINT OF BEGINNING OF THIS DESCRIPTION;  
 THENCE S. 87° 45' 00" W., 116.72 FEET;  
 THENCE N. 45° 00' 00" W., 280.35 FEET;  
 THENCE S. 88° 00' 00" W., 132.89 FEET;  
 THENCE S. 18° 40' 52" W., 123.40 FEET;  
 THENCE ALONG A CURVE TO THE RIGHT OF RADIUS 338.93 FEET, (CENTRAL ANGLE 06° 47' 27") CHORD BEARS S. 65° 22' 08" E., 40.15 FEET, AN ARC DISTANCE OF 40.17 FEET;  
 THENCE S. 28° 01' 35" W., 80.00 FEET;  
 THENCE S. 23° 10' 15" W., 260.48 FEET;  
 THENCE S. 35° 09' 20" W., 129.61 FEET;  
 THENCE S. 54° 50' 40" E., 15.00 FEET;  
 THENCE S. 35° 09' 20" W., 210.00 FEET;  
 THENCE S. 34° 40' 40" E., 135.00 FEET;  
 THENCE S. 00° 04' 39" E., 179.42 FEET, TO THE NORTH LINE OF "HITCHMANS HAVEN-ESTATES NO. 1", A SUBDIVISION RECORDED IN LIBER 70 OF PLATS, PAGES 32 AND 33, OAKLAND COUNTY RECORDS;  
 THENCE N. 89° 54' 31" E., ALONG SAID LINE, 693.42 FEET TO NORTH-EAST CORNER OF SAID SUBDIVISION AND THE WEST LINE OF "BROOKWOOD GOLF CLUB", A SUBDIVISION;  
 THENCE N. 02° 15' 00" W., ALONG SAID LINE, 772.26 FEET TO THE POINT OF BEGINNING, AND CONTAINING 12.84 ACRES, MORE OR LESS.

- NOTES:**
- A PORTION OF ORIGINAL TAX I.D. NO. 15-B-251-002
  - BENCH MARKS:**  
 NO. 1 TOP OF CONCRETE MONUMENT 60 FT. E. OF CENTER OF BREWSTER RD., ON NORTH SUBDIVISION LINE, ELEVATION=947.07, U.S.G.S. DATUM.  
 NO. 2 6" BENT SPIKE W. SIDE OF 9" ASH, 52 FT. E. OF CENTER OF BREWSTER RD., 95 FT. S. OF S.W. SUBDIVISION CORNER, ELEVATION=954.87, U.S.G.S. DATUM.  
 NO. 3 R.R. SPIKE IN W. FACE TWIN 8" POPLAR, 55 FT. E. OF CENTER OF LANGLEY RD., 95 FT. S. OF CENTERLINE OF EXETER, ELEVATION=945.63, U.S.G.S. DATUM.  
 NO. 4 N. RIM OF SAN MANHOLE, W. SIDE OF LANGLEY RD., 110 FT. N. OF NORTH SUBDIVISION LINE, ELEVATION= 923.48, U.S.G.S. DATUM.
  - ZONING REQUIREMENTS:**  
 ZONING: R-1  
 BUILDING SETBACKS:  
 FRONT.....40 FEET  
 SIDE (EACH).....15 FEET  
 REAR.....35 FEET  
 MINIMUM LOT AREA REQUIRED: 20,000 SQ.FT.  
 MINIMUM LOT WIDTH AT BUILDING LINE: 100 FT.  
 MINIMUM LOT WIDTH AT BUILDING LINE (CORNER LOTS): 120 FT.
  - OPEN BURNING IS NOT PERMITTED INCLUDING THE BURNING OF TRASH, DEBRIS OR LAND CLEARING MATERIALS.
  - CONSTRUCTION SITES SHALL BE SAFEGUARDED IN ACCORDANCE WITH NPPA 241.
  - THE DEVELOPER WILL BE REQUIRED TO SECURE AN ACCESS PERMIT FROM THE CITY OF ROCHESTER HILLS DEPARTMENT OF PUBLIC SERVICE.
  - ALL OFFSITE IMPROVEMENTS WILL BECOME PUBLIC PROPERTY.
  - THIS PLAN IS NOT TO BE USED AS CONSTRUCTION DRAWINGS.
  - PROPOSED GRADES WILL MATCH EXISTING ELEVATIONS AT THE PROPERTY LINE.
  - MAXIMUM LOT COVERAGE BY ALL BUILDINGS PERMITTED IN THE R-1 DISTRICT IS 25% AND ALL LOTS SHALL CONFORM TO THIS REQUIREMENT.
  - APPLICANT MUST SECURE A "LAND IMPROVEMENT PERMIT" FROM ENGINEERING SERVICES PRIOR TO ANY WORK ON SITE.
  - ALL PROPOSED SIGNAGE SHALL CONFORM TO CITY REQUIREMENTS AND REQUIRE A SEPARATE SIGN PERMIT FOR THE BUILDING DEPARTMENT APPROVAL.
  - ERECT ALL PROTECTIVE BARRIERS PRIOR TO CONSTRUCTION ACTIVITY.
  - PRIOR TO COMMENCING ANY SITE IMPROVEMENT, A LAND IMPROVEMENT PERMIT IS TO BE OBTAINED THROUGH ENGINEERING SERVICES.

**LEGEND**

|                        |     |
|------------------------|-----|
| EX. STORM SEWER        | --- |
| EX. SANITARY SEWER     | --- |
| EX. WATER MAIN         | --- |
| OVERHEAD LINES         | --- |
| GAS LINE               | --- |
| FENCE                  | --- |
| GUARD RAIL             | --- |
| MAIL BOX               | --- |
| UNIDENTIFIED STRUCTURE | --- |
| LIGHT POLE             | --- |
| TELEPHONE RISER        | --- |
| STREET SIGN            | --- |
| WATER SHUT OFF VALVE   | --- |
| EXISTING CONTOUR       | --- |
| EXISTING GROUND SHOT   | --- |

**PROPOSED ELEVATION**

|                         |     |
|-------------------------|-----|
| PROPOSED STORM SEWER    | --- |
| PROPOSED SANITARY SEWER | --- |
| PROPOSED WATER MAIN     | --- |
| PROPOSED CATCH BASIN    | --- |
| PROPOSED MANHOLE        | --- |
| PROPOSED FIRE HYDRANT   | --- |
| PROPOSED SETBACK LINE   | --- |
| PROPOSED EASEMENT       | --- |
| SOIL BORING LOCATION    | --- |



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 PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING UTILITIES (IN CONFLICT WITH PROPOSED IMPROVEMENTS) SHALL BE VERIFIED IN THE FIELD.  
 CALL MISS DIG 1-800-482-7171

| DATE     | DESCRIPTION               |
|----------|---------------------------|
| 06-27-02 | REVISED PER CITY COMMENTS |
| 06-26-02 | REVISED PER CITY COMMENTS |
| 09-23-02 | REVISED PER CITY COMMENTS |
| 04-22-04 | REVISED PER CITY COMMENTS |
| 05-06-04 | REVISED PER CITY COMMENTS |
| 06-10-04 | REVISED PER CITY COMMENTS |



29000 Inlander Road, Suite 120  
 Southfield, MI 48034  
 (248) 357-7900  
 Fax (248) 357-3646

**PROJECT**  
 MANCHESTER KNOLLS II SUBDIVISION

**TITLE**  
 FINAL PRELIMINARY PLAT  
**CLIENT**  
 KAY FAMILY ASSETS LLC

57 KAY INDUSTRIAL DRIVE  
 LAKE ORION, MI 48361  
 PH. (248)377-3826

SCALE: Horizontal 1" = 50'  
 Vertical N/A  
 DRAWN BY: PM  
 CHECKED BY: MGK  
 DATE ISSUED: 3-16-00  
**PROJECT No.** 9875  
**SHEET No.** C-2

**PROPRIETER'S INTEREST**  
 THE OWNER IS KAY FAMILY ASSET COMPANY, LLC

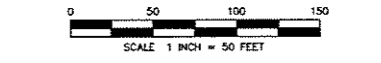
**CURVE TABLE**

| CURVE NO. | LENGTH (FT.) | RADIUS (FT.) | DELTA (DEG.) | CHD. BEARING     | CHORD LENGTH (FT.) |
|-----------|--------------|--------------|--------------|------------------|--------------------|
| 1         | 114.72       | 338.93       | 6.78         | S. 65.22° 08' E. | 114.72             |
| 2         | 116.72       | 338.93       | 6.78         | S. 65.22° 08' E. | 116.72             |

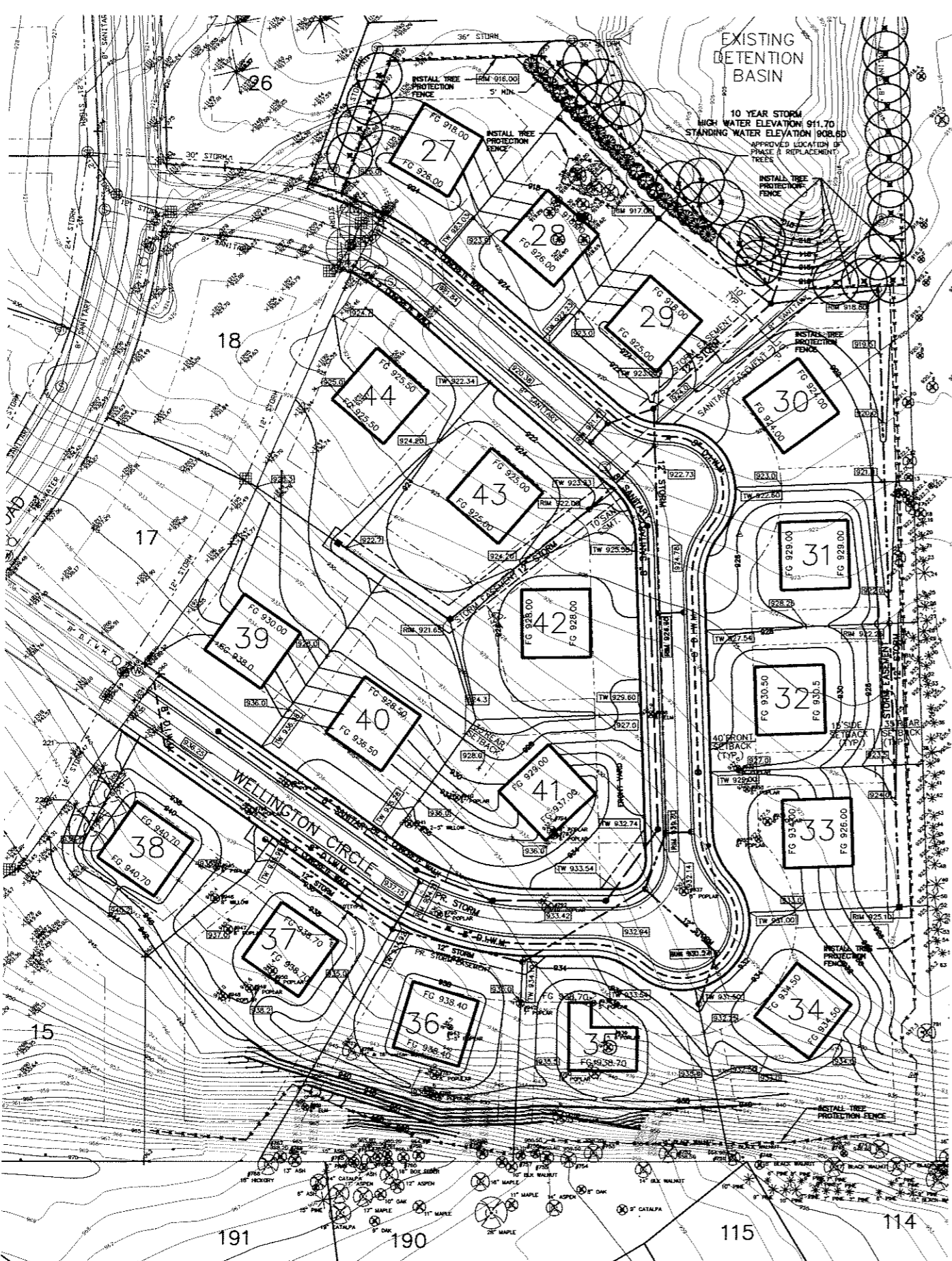
*Thomas M. Me...*  
 40076

**NOT TO BE USED AS CONSTRUCTION DRAWINGS**

**PRELIMINARY PLAT OF "MANCHESTER KNOLLS II" SUBDIVISION**



ROCHESTER HILLS CITY FILE # 96-016.2, SECTION 8



**TREE CALCULATION**

KNOWN: THERE ARE 72 REGULATED TREES ON MANCHESTER KNOLLS PHASE II PROPERTY ACCORDING TO THE TREE SURVEY AND THE SITE CONSTRUCTION REQUIRED 41 REGULATED TREES WILL NEED TO BE REMOVED.

CONCLUSION: SINCE THERE IS INSUFFICIENT SPACE ON SITE TO PLANT ALL OF THE REQUIRED REPLACEMENT TREES, ANY REQUIRED TREE REPLACEMENTS NOT PLANTED ON SITE WILL BE CREDITED/DEPOSITED INTO THE CITY TREE FUND.

CALCULATE THE PERCENT OF TREES REMAINING: 34 TREES REMAINING / 72 TREES TOTAL = 47%

CONCLUSION: THE PERCENT OF TREES REMAINING (47%) IS GREATER THAN THE REQUIRED NUMBER OF TREES (37%) TO REMAIN. 38 TREES ARE SCHEDULED TO BE REMOVED. 38 REPLACEMENT CREDITS ARE DUE.

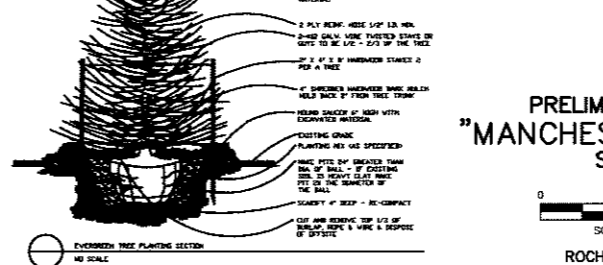
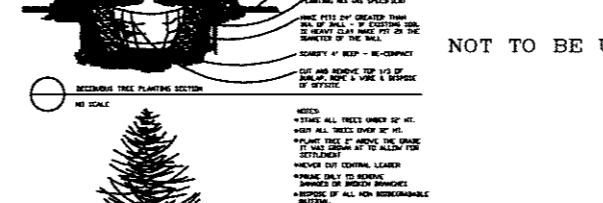
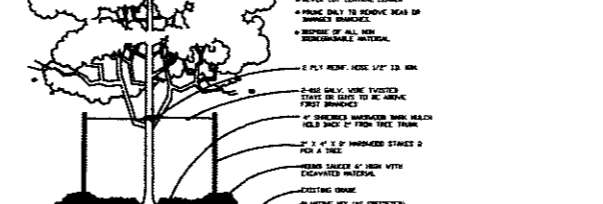
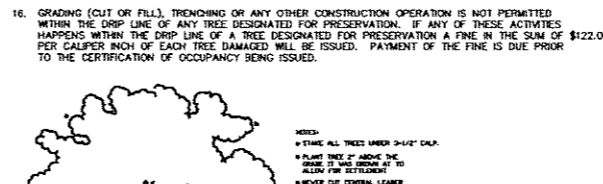
38 REPLACEMENTS CREDITS REQUIRED  
38 REPLACEMENT CREDITS PLANTED ON SITE

SEE NOTE#7 PERTAINING TO PLANTING OF REPLACEMENT TREES ONSITE.

**PROPOSED TREE LEGEND**

| SYMBOL             | COMMON NAME       | LATIN NAME    | SIZE        | MATURE SIZE   | QTY. | REPLACEMENT CREDITS | REPLACEMENT COST EACH | TOTAL COST    |
|--------------------|-------------------|---------------|-------------|---------------|------|---------------------|-----------------------|---------------|
| (Symbol)           | WHITE SPRUCE      | Picea Glauca  | 10' HEIGHT  | 60' H x 20' W | 13   | 26                  | \$400                 | \$5200        |
| (Symbol)           | GLEN LEVEN LINDEN | Tilia Cordata | 10' CALIPER | 50' H x 35' W | 6    | 12                  | \$400                 | \$2400        |
| <b>GRAND TOTAL</b> |                   |               |             |               |      |                     |                       | <b>\$7600</b> |

- TREE PROTECTION NOTES**
- STREET TREES TO BE PROVIDED IN ACCORDANCE WITH CITY REQUIREMENTS.
  - ALL TREES TO BE RETAINED SHALL BE IDENTIFIED BY PAINTING, FLAGGING, OR SOME OTHER APPROVED METHOD.
  - TREES WILL CONFORM TO THE GUIDELINES ESTABLISHED IN THE MOST RECENT EDITION OF THE "AMERICAN STANDARD FOR NURSERY STOCK" (ANSI Z60.1), AND MUST BE APPROVED BY THE CITY PRIOR TO PLANTING.
  - REPLACEMENT TREES MUST BE STAKED, FERTILIZED, AND MULCHED, AND SHALL BE GUARANTEED BY THE DEVELOPER TO EXHIBIT A NORMAL GROWTH CYCLE FOR AT LEAST TWO YEARS FOLLOWING PLANTING AND APPROVAL BY THE CITY OF ROCHESTER HILLS LANDSCAPE ARCHITECT.
  - 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 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 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.
  - PRIOR TO THE RELEASE OF THE PERFORMANCE BOND, THE CITY OF ROCHESTER HILLS LANDSCAPE ARCHITECT MUST INSPECT ALL LANDSCAPE PLANTINGS INCLUDING BUT NOT LIMITED TO EXISTING TREES AND THE FORESTRY DIVISION MUST INSPECT ALL RIGHT-OF-WAYS TO IDENTIFY ANY PLANTINGS NEW OR EXISTING THAT POSE A HAZARD TO THE SAFE USE OF THE RIGHT-OF-WAY. FORESTRY MAY REQUIRE THE DEVELOPER TO REMOVE AND POSSIBLY REPLACE ANY SUCH TREES.
  - THE CITY OF ROCHESTER HILLS LANDSCAPE ARCHITECT RESERVES THE RIGHT TO REJECT ANY PLANT MATERIAL THAT DOES NOT MEET PLAN OR INDUSTRY REQUIREMENTS.
  - THE DEVELOPER IS RESPONSIBLE FOR MAINTAINING TREE PROTECTION FENCING THROUGHOUT THE CONSTRUCTION PROCESS UP TO AND INCLUDING THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY. TREE PROTECTION NOTES.
  - APPROVED TREE PROTECTION SHALL BE ERECTED PRIOR TO THE ISSUANCE OF A LAND IMPROVEMENT PERMIT AND SHALL REMAIN IN PLACE UP TO AND INCLUDING THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
  - 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 LINES.
  - GRADE CHANGES MAY NOT OCCUR WITHIN THE DRIP LINES OF PROTECTED TREES.
  - DURING CONSTRUCTION, NO PERSON SHALL ATTACH ANY DEVICE OR WIRE TO ANY 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.
  - SWALES SHALL BE ROUTED TO AVOID THE AREA WITHIN THE DRIP LINES OF PROTECTED TREES.
  - REGULATED TREES LOCATED ON ADJACENT PROPERTY THAT MAY BE AFFECTED BY CONSTRUCTION ACTIVITIES MUST BE PROTECTED.
  - GRADING (CUT OR FILL), TRENCHING OR ANY OTHER CONSTRUCTION OPERATION IS NOT PERMITTED WITHIN THE DRIP LINE OF ANY TREE DESIGNATED FOR PRESERVATION. IF ANY OF THESE ACTIVITIES HAPPENS WITHIN THE DRIP LINE OF A TREE DESIGNATED FOR PRESERVATION A FINE IN THE SUM OF \$122.00 PER CALIPER INCH OF EACH TREE DAMAGED WILL BE ISSUED. PAYMENT OF THE FINE IS DUE PRIOR TO THE CERTIFICATION OF OCCUPANCY BEING ISSUED.



**EXISTING TREE LISTING**  
SURVEYED AUGUST 2000

| ON SITE TREE TAG # | SIZE      | COMMON NAME  | BASE ELEVATION | STATUS |
|--------------------|-----------|--------------|----------------|--------|
| 10                 | 10"       | POPLAR       | 921.10         | R      |
| 12                 | 12"       | POPLAR       | 921.10         | R      |
| 13                 | 7"        | POPLAR       | 922.00         | R      |
| 14                 | 8"        | POPLAR       | 922.60         | R      |
| 15                 | 8"        | POPLAR       | 922.00         | R      |
| 16                 | 7"        | POPLAR       | 922.60         | R      |
| 17                 | 12"       | POPLAR       | 922.60         | R      |
| 22                 | 12"       | POPLAR       | 923.10         | X      |
| 28A                | 6"        | JACK PINE    | 925.20         | R      |
| 31A                | 6"        | JACK PINE    | 925.60         | R      |
| 524                | 6"        | POPLAR       | 919.09         | X      |
| 525                | 6"        | POPLAR       | 918.95         | X      |
| 526                | 12"       | POPLAR       | 918.07         | R      |
| 527                | 7"        | POPLAR       | 918.68         | X      |
| 528                | 7"        | POPLAR       | 918.33         | R      |
| 529                | 6"        | POPLAR       | 918.20         | R      |
| 530                | 6"        | POPLAR       | 919.25         | X      |
| 532                | 10"       | POPLAR       | 918.05         | X      |
| 533                | 6"        | POPLAR       | 917.74         | R      |
| 534                | 6"        | POPLAR       | 918.02         | R      |
| 536                | 6"        | POPLAR       | 918.62         | X      |
| 537                | 12"       | POPLAR       | 919.28         | X      |
| 538                | 7"        | POPLAR       | 918.69         | X      |
| 747                | 18"       | WALNUT       | 946.80         | R      |
| 748                | 8"        | WALNUT       | 948.20         | R      |
| 751                | 13"       | WALNUT       | 954.90         | R      |
| 752                | 16"       | WALNUT       | 958.50         | R      |
| 754                | 12"       | WALNUT       | 959.50         | R      |
| 753                | 15"       | WALNUT       | 958.20         | R      |
| 755                | 11"       | WALNUT       | 960.40         | R      |
| 758                | 11"       | WALNUT       | 961.10         | R      |
| 759                | 11"       | WALNUT       | 963.20         | R      |
| 759                | 8"        | WALNUT       | 964.40         | R      |
| 760                | 6"        | WALNUT       | 965.10         | R      |
| 761                | 6"        | SASSAFRAS    | 965.20         | R      |
| 762                | 8"        | SASSAFRAS    | 965.5          | R      |
| 763                | 6"        | SASSAFRAS    | 965.8          | R      |
| 764                | 16"       | BLACK CHERRY | 965.70         | R      |
| 766                | 14"       | SASSAFRAS    | 968.40         | R      |
| 767                | 13"       | SASSAFRAS    | 968.20         | R      |
| 786                | 14" & 16" | COTTONWOOD   | 945.1          | X      |
| 787                | 8"        | POPLAR       | 950.6          | X      |
| 788                | 8"        | POPLAR       | 950.6          | X      |
| 789                | 12"       | POPLAR       | 949.6          | X      |
| 790                | 10"       | POPLAR       | 939.80         | X      |
| 791                | 16" & 17" | COTTONWOOD   | 927.30         | R      |
| 792                | 10"       | POPLAR       | 933.70         | X      |
| 793                | 8"        | POPLAR       | 932.10         | X      |
| 794                | 8"        | POPLAR       | 932.10         | X      |
| 795                | 7"        | POPLAR       | 936.7          | X      |
| 796                | 8"        | POPLAR       | 938.1          | X      |
| 932                | 6"        | POPLAR       | 927.0          | X      |
| 933                | 6"        | POPLAR       | 927.2          | X      |
| 934                | 8"        | POPLAR       | 927.5          | X      |
| 935                | 6"        | POPLAR       | 927.6          | X      |
| 936                | 6"        | ELM          | 927.9          | X      |
| 937                | 8"        | POPLAR       | 930.7          | X      |
| 938                | 5"        | POPLAR       | 934.3          | U      |
| 939                | 8"        | POPLAR       | 936.7          | X      |
| 940                | 6"        | POPLAR       | 933.1          | X      |
| 941                | 7"        | WILLOW       | 935.0          | X      |
| 942                | 2-7"      | POPLAR       | 935.7          | U      |
| 943                | 3-5"      | POPLAR       | 938.5          | U      |
| 945                | 6"        | POPLAR       | 939.1          | X      |
| 946                | 8"        | WILLOW       | 940.4          | X      |
| 947                | 8"        | POPLAR       | 940.8          | X      |
| 948                | 7"        | POPLAR       | 942.0          | X      |
| 949                | 7"        | POPLAR       | 941.6          | X      |
| 950                | 6"        | POPLAR       | 941.4          | X      |
| 951                | 6"        | ELM          | 957.0          | R      |
| 944                | 7"        | POPLAR       | 937.2          | X      |
| 220                | 8"        | POPLAR       | 940.6          | X      |
| 221                | 8"        | POPLAR       | 940.7          | X      |

**TREE LEGEND**

R TREES TO REMAIN  
X TREES TO BE REMOVED  
U UNREGULATED TREE

**IRRIGATION**

1. A WATER SUPPLY WILL BE AVAILABLE TO IRRIGATE THE TREES FROM A HOSE BIB LOCATED ON LOT 28.

NOT TO BE USED AS CONSTRUCTION DRAWINGS

**PRELIMINARY PLAT OF "MANCHESTER KNOLLS II" SUBDIVISION**

ROCHESTER HILLS CITY  
FILE # 96-016.2, SECTION B

Scale: 1" = 50 FEET

DATE ISSUED: 9-18-00

PROJECT No. 9875

SHEET No. C-3

**LEGEND**

- EX. STORM SEWER
- EX. SANITARY SEWER
- EX. WATER MAIN
- OVERHEAD LINES
- GAS LINE
- FENCE
- GUARD RAIL
- MAIL BOX
- UNIDENTIFIED STRUCTURE
- LIGHT POLE
- TELEPHONE RISER
- STREET SIGN
- WATER SHUT OFF VALVE
- EXISTING CONTOUR
- EXISTING GROUND SHOT

**PROPOSED ELEVATION**

PROPOSED STORM SEWER

PROPOSED SANITARY SEWER

PROPOSED WATER MAIN

PROPOSED CATCH BASIN

PROPOSED MANHOLE

PROPOSED FIRE HYDRANT

PROPOSED SETBACK LINE

PROPOSED EASEMENT

SOIL BORING LOCATION

TREE PROTECTION FENCE

**DATE DESCRIPTION**

08-12-02 REVISED PER CITY COMMENTS

08-28-02 REVISED PER CITY COMMENTS

08-23-02 REVISED PER CITY COMMENTS

10-23-02 REVISED PER CITY COMMENTS

04-22-04 REVISED PER CITY COMMENTS

05-06-04 REVISED PER CITY COMMENTS

2-5-01 REVISED PER CITY COMMENTS

6-5-01 REVISED PER CITY COMMENTS

11-1-01 REVISED PER CLIENT

11-28-01 REVISED PER CLIENT

11-28-01 REVISED PER CITY COMMENTS

12-03-01 REVISED PER OWNER

01-10-02 REVISED PER CITY COMMENTS

08-12-02 REVISED PER CITY COMMENTS

**LANDSCAPE ARCHITECT**

**LANE HILL**  
CIVIL ENGINEERING & LANDSCAPE ARCHITECTURE

29000 Inletor Road, Suite 120  
Southfield, MI 48034  
(248) 357-7900  
Fax (248) 357-3646

**PROJECT**

MANCHESTER KNOLLS II SUBDIVISION

**TITLE**

LANDSCAPE PLAN

**CLIENT**

KAY FAMILY ASSETS LLC

57 KAY INDUSTRIAL DRIVE  
LAKE ORION, MI 48361  
PH (248) 377-3826

SCALE: Horizontal 1" = 50'  
Vertical N/A

DRAWN BY: PM

CHECKED BY: MGK

DATE ISSUED: 9-18-00

PROJECT No. 9875

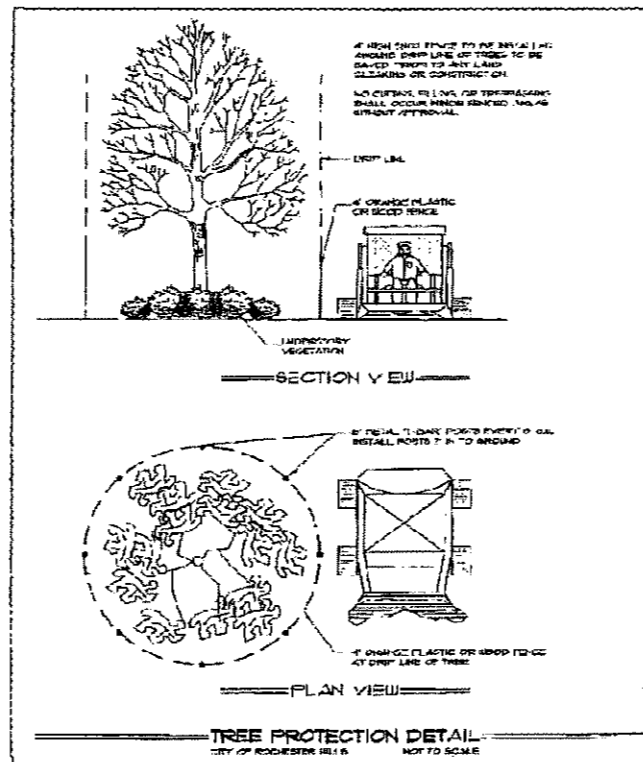
SHEET No. C-3

Ron Jona & Associates  
29000 Inletor Road, Suite 120  
Southfield, MI 48034  
248.357.3600

COLLEEN FITZPATRICK, RLA 1366

**Landscape Notes**

- Prior to the release of the Performance Bond, the City of Rochester Hills Landscape Architect must inspect all landscape plantings including but not limited to existing trees, replacement trees, buffer plantings, and parking lot islands. The right-of-way will be inspected by the Forestry Division to identify any plantings new or existing that pose a hazard to the safe use of the right-of-way. Forestry may require the developer to remove and possibly replace any such trees.
- All trees and shrubs must be planted at least 10' from the edge of a public roadway. Shade trees and shrubs must be planted at least 5' from the edge of a public walkway. Evergreen and ornamental trees must be planted at least 10' from the edge of a public walkway. All trees and shrubs must be planted at least 10' from any fire hydrant. Shade and evergreen trees must be planted at least 15' from the nearest overhead wire and at least 10' from the nearest underground utility.
- 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.
- Prior approval is required to plant any tree or shrub in the public right-of-way.
- 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.
- The developer and/or the City of Rochester Hills Landscape Architect shall have the right, at any stage of the installation, to reject any work or material that does not meet the requirements of the plans or specifications.
- Replacement trees may not be planted within the drip line of existing trees.
- No substitutions or changes of location or plant type shall be made without the approval of the developer and the City of Rochester Hills Landscape Architect.
- Trees must be at least 10' from underground utilities and 15' from overhead utilities.



**TREE PROTECTION NOTES**

1. 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' Landscape Architect prior to the start of any earthwork or construction operations. It is the developer's responsibility to contact the City Planning Department at 1-248-656-4889 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.
2. 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' Landscape Architect prior to the start of any additional construction. It is the developer's responsibility to contact the City Planning Department at 1-248-656-4889 to schedule this TPF inspection.
3. Upon completion of all construction and prior to the removal of the TPF the City of Rochester Hills' Landscape Architect must inspect all trees designated to be preserved. The Landscape Performance 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 1-248-656-4889 to schedule this inspection.
4. A final inspection by the City of Rochester Hills' Landscape Architect 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 1-248-656-4889 to schedule this inspection.
5. The Tree Conservation Ordinance prohibits any construction or development activities within the drip line of and 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.
6. 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.
7. During the construction process no person shall attach any device or wire/cable/corrupt to an existing tree designated to be preserved.
8. All utility service requests must include notification to the installer that protected trees must be avoided. All trenching shall occur outside the TPF.
9. Swales shall be routed to avoid the area within the drip line of any tree designated for preservation. Swales shall be constructed so as not to direct any additional flow into the drip line of a tree designated for preservation.
10. If tree protection cannot be maintained for a tree throughout entire period required. The replacement of that tree will be required on and inch for inch basis prior to the issuance of the Certificate of Occupancy.
11. Regulated trees located off-site on adjacent properties that may be affected by construction operations must be protected as defined here in.
12. The TPF shall consist of 4 foot high orange snow fencing to be installed around the drip line of all tree designated to be saved. This fencing shall be supported by 6 foot metal T-bar posts 5 feet on center and driven a minimum of 24" into ground. The TPF fencing shall remain upright and securely in place for the required time as specified above.

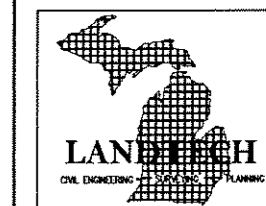
**LEGEND**

- EX. STORM SEWER
- EX. SANITARY SEWER
- EX. WATER MAIN
- OVERHEAD LINES
- GAS LINE
- FENCE
- GUARD RAIL
- MAIL BOX
- UNIDENTIFIED STRUCTURE
- LIGHT POLE
- TELEPHONE RISER
- STREET SIGN
- WATER SHUT OFF VALVE
- EXISTING CONTOUR
- EXISTING GROUND SHOT
- PROPOSED ELEVATION
- PROPOSED STORM SEWER
- PROPOSED SANITARY SEWER
- PROPOSED WATER MAIN
- PROPOSED CATCH BASIN
- PROPOSED MANHOLE
- PROPOSED FIRE HYDRANT
- PROPOSED SETBACK LINE
- PROPOSED EASEMENT
- SOIL BORING LOCATION
- TREE PROTECTION FENCE



NOTE: UTILITY INFORMATION ON THIS DRAWING MAY BE FROM INFORMATION PROVIDED TO THIS FIRM BY THE VARIOUS UTILITY COMPANIES, CITY/COUNTY AGENCIES, AND OTHER VARIOUS SOURCES. NO GUARANTEE IS GIVEN AS TO THE COMPLETENESS OR ACCURACY THEREOF PRIOR TO CONSTRUCTION. ALL LOCATIONS AND DEPTHS OF EXISTING UTILITIES (IN CONFLICT WITH PROPOSED IMPROVEMENTS) SHALL BE VERIFIED IN THE FIELD. CALL MISS DIG.

| DATE | DESCRIPTION |
|------|-------------|
|      |             |
|      |             |
|      |             |
|      |             |



29000 Inlander Road, Suite 120  
Southfield, MI 48034  
(248) 357-7900  
Fax (248) 357-3646

**PROJECT**

MANCHESTER  
KNOLLS II  
SUBDIVISION

**TITLE**

LANDSCAPE  
NOTES & DETAILS

**CLIENT**

KAY FAMILY  
ASSETS LLC

57 KAY INDUSTRIAL DRIVE  
LAKE ORION, MI 48361  
PH (248) 377-3825

SCALE: Horizontal N/A  
Vertical N/A

DRAWN BY: PM  
CHECKED BY: MGK

DATE ISSUED: 4-22-04

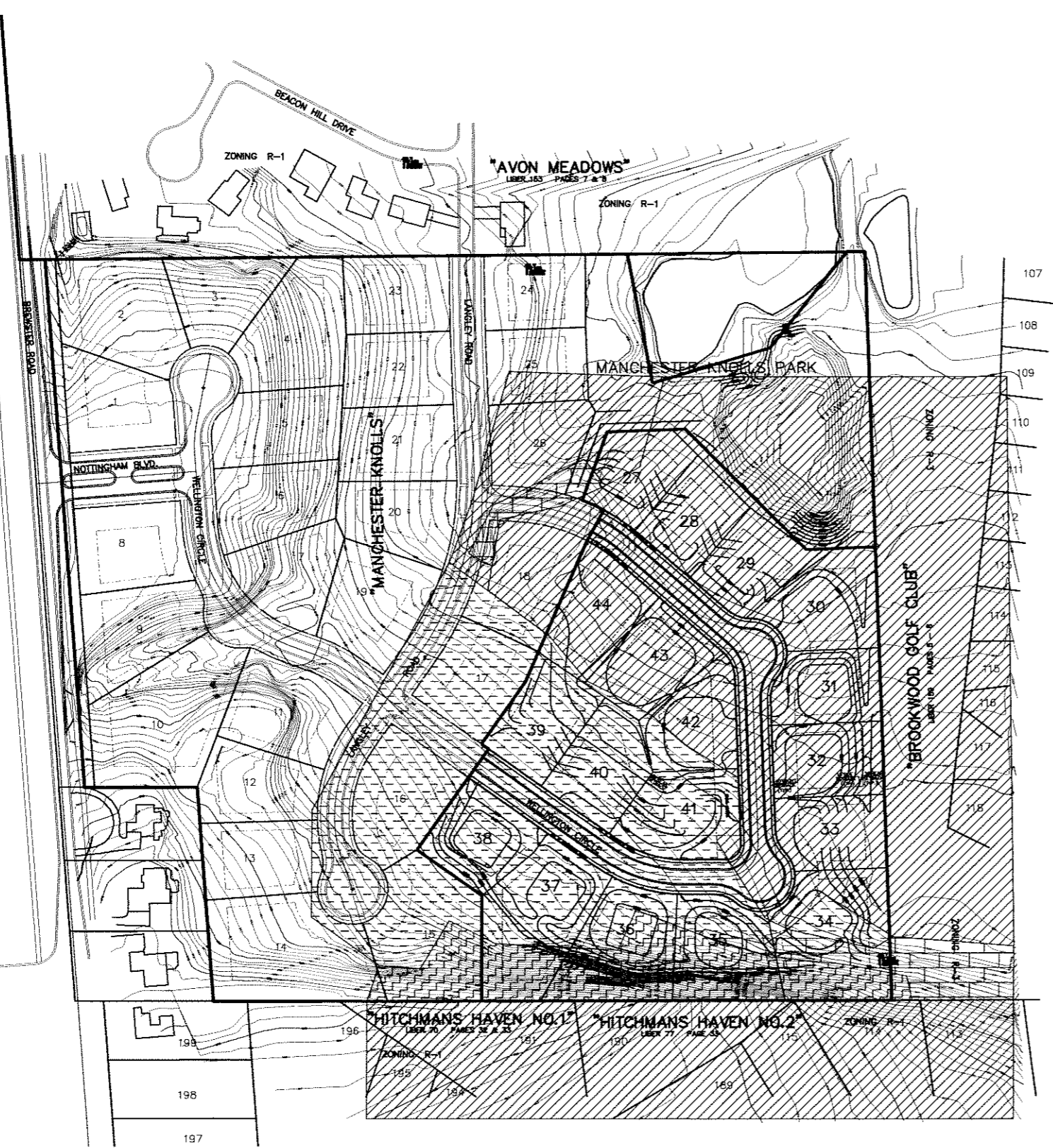
PROJECT No. 9875

SHEET No. C-3A

*Allen*

"SHADOW WOODS SUB NO. 2"  
LIBER 180 PAGES 30 - 38

"SHADOW WOODS SUB NO. 1"  
LIBER 180 PAGES 13 - 18



**EXISTING SLOPE GRADIENT AREA LEGEND**

- 2% TO 4% SLOPE AREAS
- 4% TO 10% SLOPE AREAS
- 10% TO 20% SLOPE AREAS
- OVER 20% SLOPE AREAS

**LEGEND**

- EX. STORM SEWER
- EX. SANITARY SEWER
- EX. WATER MAIN
- OVERHEAD LINES
- GAS LINE
- FENCE
- GUARD RAIL
- MAIL BOX
- UNIDENTIFIED STRUCTURE
- LIGHT POLE
- TELEPHONE RISER
- STREET SIGN
- WATER SHUT OFF VALVE
- EXISTING CONTOUR
- EXISTING GROUND SHOT

PROPOSED ELEVATION 942.86



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PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING UTILITIES (IN CONFLICT WITH PROPOSED IMPROVEMENTS) SHALL BE VERIFIED IN THE FIELD. CALL MISS DIG.

| DATE    | DESCRIPTION                |
|---------|----------------------------|
| 11-1-00 | PER CITY                   |
| 2-5-01  | PER CITY (LATEST REVISION) |
| 8-26-02 | PER CITY                   |
| 9-23-02 | NO CHANGES THIS SHEET      |
| 5-8-04  | NO CHANGES THIS SHEET      |



29000 Inkster Road, Suite 120  
Southfield, MI 48034  
(248) 357-7900  
Fax (248) 357-3646

**PROJECT**  
MANCHESTER KNOLLS II SUBDIVISION

**TITLE**  
EXIST. SLOPE GRADIENT

**CLIENT**  
KAY FAMILY ASSETS LLC  
57 KAY INDUSTRIAL DRIVE  
LAKE ORION, MI 48361  
PH. (248)377-3826

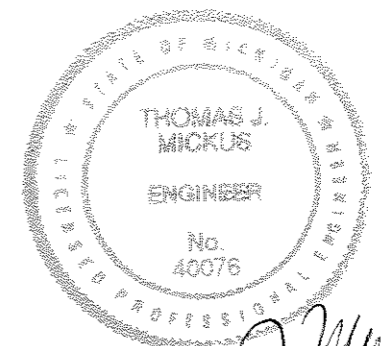
SCALE: Horizontal 1" = 100'  
Vertical N/A

DRAWN BY: TJM  
CHECKED BY: MGK

DATE ISSUED: 11-01-00

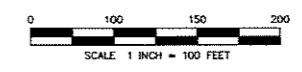
PROJECT No. 9875

SHEET No. C-4

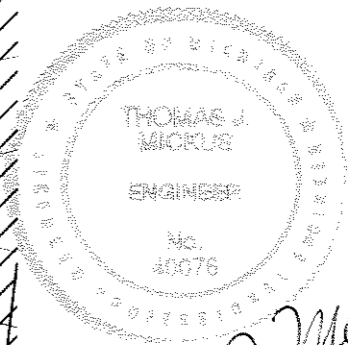
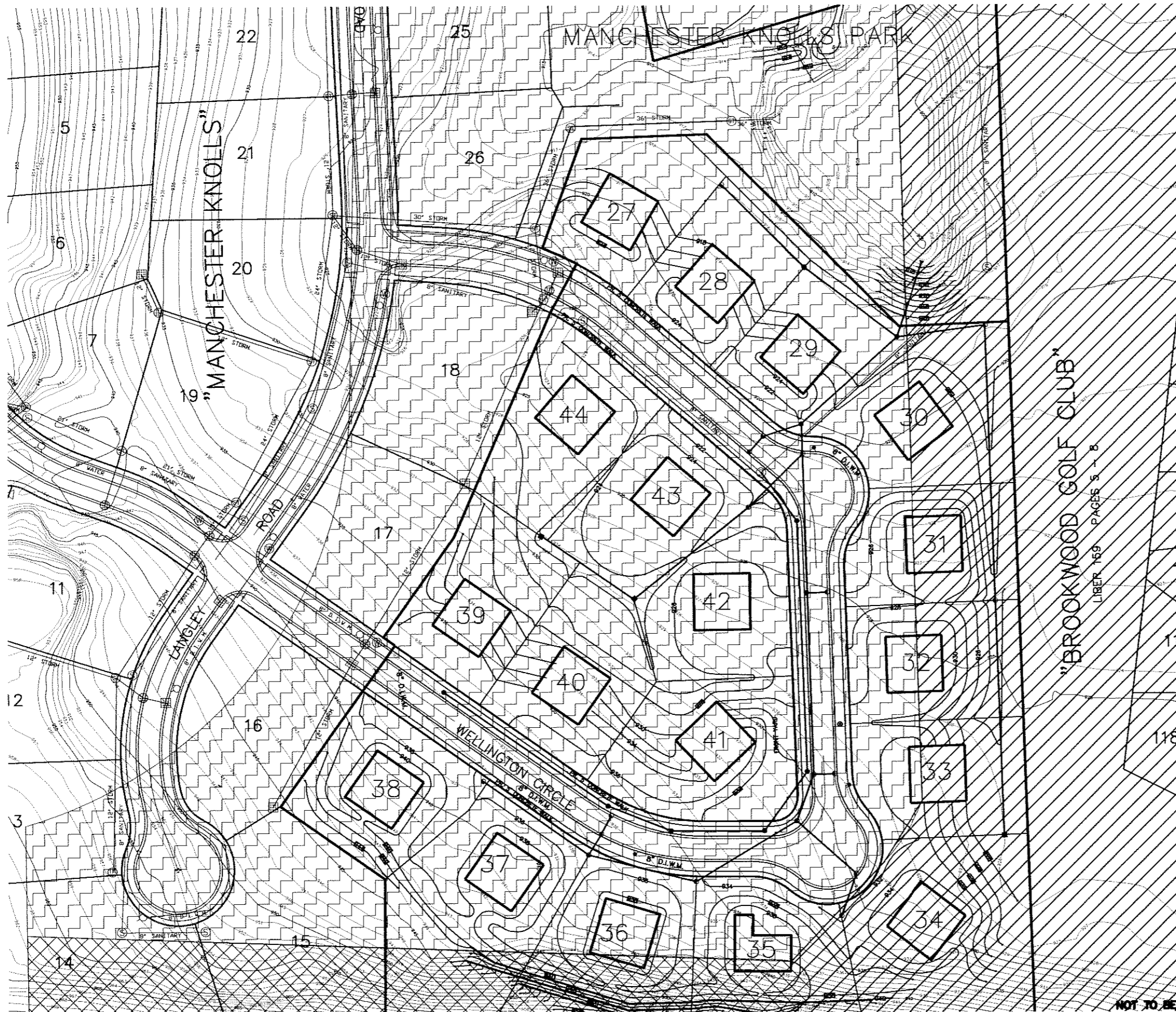


*Thomas J. Mickus*

NOT TO BE USED AS CONSTRUCTION DRAWINGS



PRELIMINARY PLAT OF  
"MANCHESTER KNOLLS II"  
SUBDIVISION  
ROCHESTER HILLS CITY FILL # 96-016.2, SECTION 8



*Thomas J. Mickus*



NOTE: UTILITY INFORMATION ON THIS DRAWING MAY BE FROM INFORMATION DISCLOSED TO THIS FIRM BY THE VARIOUS UTILITY COMPANIES, CITY/COUNTY AGENCIES, AND OTHER VARIOUS SOURCES. NO GUARANTEE IS GIVEN AS TO THE COMPLETENESS OR ACCURACY THEREOF. PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING UTILITIES (ON CONFLICT WITH PROPOSED IMPROVEMENTS) SHALL BE VERIFIED IN THE FIELD. CALL MISS DIG.

**SOIL LEGEND**

| SOIL TYPE | DESCRIPTION                                  |
|-----------|--|
|           | UDORTHENTS<br>(SANDY LOAM TO CLAY LOAM)      |
|           | PITS   |
|           | UDIPSAMMENTS<br>(FINE SAND TO GRAVELLY SAND) |

NOTE:  
THIS SOIL SURVEY WAS TAKEN FROM THE "SOIL SURVEY OF OAKLAND COUNTY MICHIGAN" BY THE U.S. DEPARTMENT OF AGRICULTURE.

THE CHARACTERISTICS OF THE ON SITE SOILS INDICATE THAT THE LAND SHOULD BE WELL DRAINED.

WE BELIEVE THAT THE SUITABILITY OF THE SOILS FOR THE PROPOSED RESIDENTIAL DEVELOPMENT WOULD BE ACCEPTABLE FOR ITS PURPOSE. HOWEVER, SPECIAL FOUNDATIONS MAY BE NECESSARY FOR SOME HOUSES.

| DATE     | DESCRIPTION                |
|----------|----------------------------|
| 11-1-00  | PER CITY                   |
| 2-5-01   | PER CITY                   |
| 11-30-01 | PER CITY (LATEST REVISION) |
| 8-26-02  | PER CITY                   |
| 9-23-02  | NO CHANGES THIS SHEET      |



29000 Inkster Road, Suite 120  
Southfield, MI 48034  
(248) 357-7900  
Fax (248) 357-3646

**PROJECT**  
MANCHESTER KNOLLS II SUBDIVISION

**TITLE**  
SOIL SKETCH

**CLIENT**  
KAY FAMILY ASSETS LLC

57 KAY INDUSTRIAL DRIVE  
LAKE ORION, MI 48361  
PH. (248) 377-3826

SCALE: Horizontal 1" = 50'  
Vertical N/A

DRAWN BY: TJM  
CHECKED BY: TJM

DATE ISSUED:

PROJECT No. 9875

SHEET No. C-5

NOT TO BE USED AS CONSTRUCTION DRAWINGS  
ROCHESTER HILLS CITY FILE # 96-016.2, SECTION 8