

PROPOSED WOODLAND CROSSING

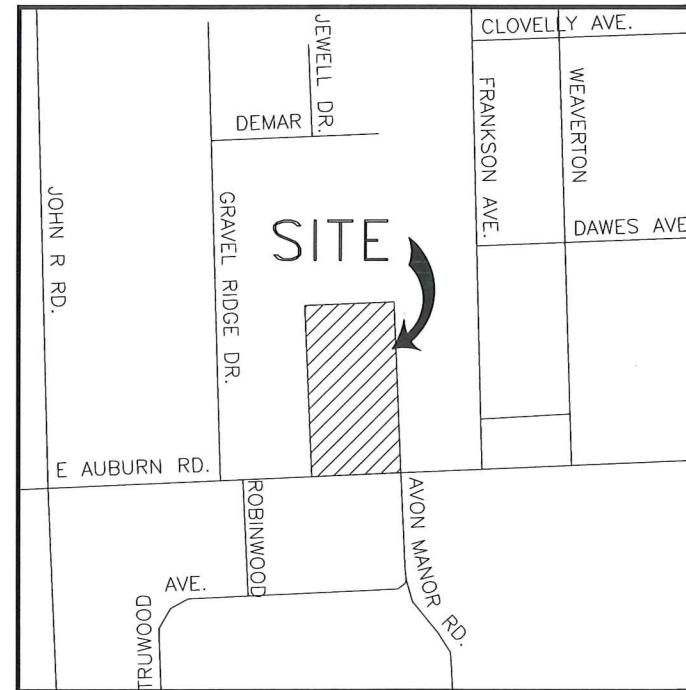
PART OF THE SOUTHWEST 1/4 OF SECTION 25, T.3N.,R.11E.,
CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN

Developer

MJC WOODLAND CROSSINGS LLC
46600 Romeo Plank Rd., Suite 5
Macomb, MI 48044
Phone: (586) 263-1203

Project Engineering Consultant

 **LAND DEVELOPMENT CONSULTING SERVICES, INC.**
46600 ROMEO PLANK, SUITE 2 PHONE: (586)868-2350
MACOMB, MI 48044 FAX: (586)868-2351



 **LOCATION MAP**
CITY OF ROCHESTER HILLS,
OAKLAND COUNTY, MICHIGAN

PROPERTY DESCRIPTION: (PARCEL ID 70-15-25-352-017)

PART OF THE S.W. 1/4 OF SECTION 25, T.3N., R.11E., ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:
BEGINNING AT A POINT DISTANCE EAST 990.00 FEET FROM THE S.W. SECTION CORNER OF SAID SECTION 25; THENCE N00°36'49"E 660.00 FEET; THENCE E. 143.93'; THENCE S00°36'49"W 660.00 FEET; THENCE WEST 143.93 FEET ALONG SOUTH SECTION LINE OF SAID SECTION 25 TO THE POINT OF BEGINNING. CONTAINING 2.18 AC. SUBJECT TO THE RIGHTS OF THE PUBLIC AND ANY GOVERNMENTAL UNIT IN ANY PART THEREOF TAKEN, USED OR DEEDED FOR STREET, ROAD OR HIGHWAY PURPOSES AND ANY OTHER EASEMENTS OF RECORDS.

PROPERTY DESCRIPTION: (PARCEL ID 70-15-25-352-018)

PART OF THE S.W. 1/4 OF SECTION 25, T.3N., R.11E., ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:
BEGINNING AT A POINT DISTANCE EAST 1133.93 FEET FROM THE S.W. SECTION CORNER OF SAID SECTION 25; THENCE N00°36'49"E 660.00 FEET; THENCE E. 195.38'; THENCE S00°35'00"W 660.00 FEET; THENCE WEST 195.73 FEET ALONG SOUTH SECTION LINE OF SAID SECTION 25 TO THE POINT OF BEGINNING. CONTAINING 2.96 AC. SUBJECT TO THE RIGHTS OF THE PUBLIC AND ANY GOVERNMENTAL UNIT IN ANY PART THEREOF TAKEN, USED OR DEEDED FOR STREET, ROAD OR HIGHWAY PURPOSES AND ANY OTHER EASEMENTS OF RECORDS.

| DATE | REMARKS |
|----------|---------------------------------|
| 09-13-17 | FIRST SITE PLAN SUBMITTAL |
| 11-21-17 | REV. PER CITY PLANNING COMMENTS |
| 01-08-18 | REV. PER CITY PLANNING COMMENTS |
| | |
| | |
| | |
| | |
| | |
| | |

LIST OF DRAWINGS

Engineering:

- C1 Cover Sheet
- C2 Preliminary Site Plan
- C3 Topographic Survey Plan
- C4 Grading And Drainage Area Plan
- C5 Utility Plan
- C6 E Auburn Road Profile And Sight Lines

Landscaping:

- LA-1.0 Tree Survey
- LA-1.1 Landscaping Plan
- LA-2.0 Specifications and Details
- S-1.0 Tree Survey Inventory

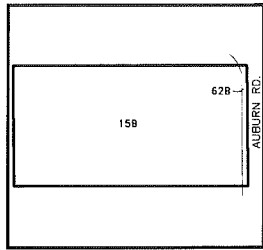


CITY FILE # 17-035

| | |
|--|-----------------------|
| COVER SHEET | LCDS JOB#17-01 |
| WOODLAND CROSSING CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MI | DRAWING NO. 1 OF 6 |

BENCH MARK LIST

- BENCH MARK No. 1
ARROW ON HYDRANT, N. SIDE AUBURN RD. @ #1251, RHD #2 BROOKLANDS
ELEV. 719.25
- BENCH MARK No. 2
SANITARY MH LOCATED 34' N. OF C/L AUBURN RD. AND 16' E. OF EAST PROPERTY LINE
ELEV. 715.66
- BENCH MARK No. 3
SET MAG NAIL N. FACE OF UTILITY POLE LOCATED N. SIDE AUBURN RD. AND 117' E. OF WEST PROPERTY LINE
ELEV. 719.65
- BENCH MARK No. 4
ARROW ON HYDRANT, LOCATED @ SE CORNER OF AUBURN RD. AND ROBINWOOD RD.
ELEV. 718.48



SOILS MAP

SOIL DATA:

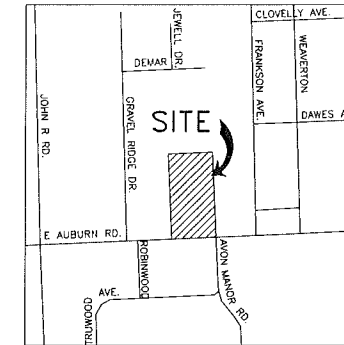
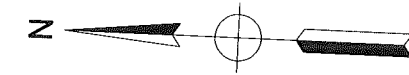
- 15B SPINKS LOAMY SANDS
0 TO 6 PERCENT SLOPES
- 62B URBAN-LAND SPINKS COMPLEX
0 TO 8 PERCENT SLOPES

FIRE DEPARTMENT NOTES :

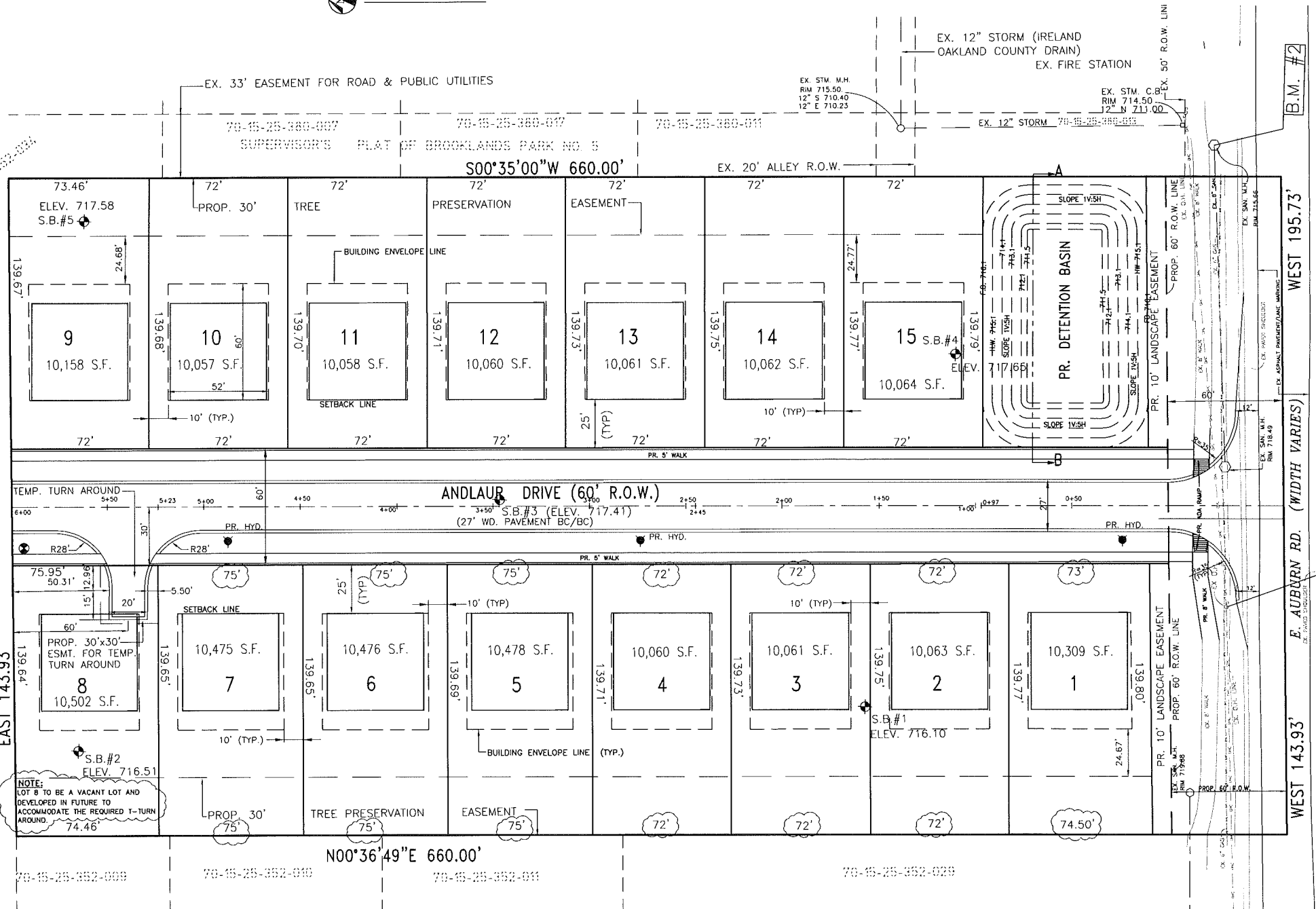
- CONSTRUCTION SITES SHALL BE SAFEGUARDED IN ACCORDANCE WITH IFC 2006 CHAPTER 14.
- OPEN BURNING IS NOT PERMITTED INCLUDING THE BURNING OF TRASH, DEBRIS, OR LAND CLEARING MATERIALS. OPEN BURNING FOR WARMING OF SAND AND/OR WATER FOR THE PREPARATION OF MORTAR SHALL BE WITHIN THE CITY OF ROCHESTER HILLS BURN PERMIT GUIDELINES.
- LARGEST DWELLING UNIT SIZE IN PROPOSED DEVELOPMENT WILL NOT EXCEED 3500 S.F.



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LOCATION MAP
CITY OF ROCHESTER HILLS,
OAKLAND COUNTY, MICHIGAN



AVON MANOR RD.

SITE DATA:

- SITE ZONING: R-4
- SITE AREA: 5.12 AC.
- GROSS SITE AREA: 0.47 AC.
- FUTURE R.O.W.: 4.65 AC.
- NET SITE AREA (EXCLUDING R.O.W.): 0.75 AC.
- TREE PRESERVATION AREA: 15
- PROPOSED NUMBER OF UNITS: 3.22 UNITS/AC. (PROPOSED)
- DENSITY: MAX. ALLOWED 3.44/AC. (3.22 UNITS/AC. PROPOSED)
- SETBACKS:
FRONT: 25'
REAR: 35' (PROVIDED 54.68' ALONG EAST BOUNDARY LINE & 54.63' ALONG WEST BOUNDARY LINE INCLUDING 30' OF TREE PRESERVATION EASEMENT)
- SIDE: 10' MIN. (TOTAL 20')
- MIN. LOT AREA REQ'D (R-4) = 9600 S.F. (MIN. 10,057 PROPOSED)
- MIN. FLOOR AREA = 912 S.F.
- MAXIMUM STORIES = 2
- MAXIMUM HEIGHT = 25'
- MAXIMUM LOT COVERAGE = 30%

**CITY OF ROCHESTER HILLS
HYDRANT FLOW TEST**

| | | | | | |
|---|--|----------------------------|----------|----------------|----------------|
| Date: | 10/1/17 | Time: | 10:50 AM | Test Location: | 311 E. E. Ave. |
| Location: | 1231 Auburn Rd | Calculations Performed By: | FSK | | |
| Number of Hydrants Flowing: | 1 | | | | |
| Number of Curb, (Open): | 1 | | | | |
| Size of Curb, (Inch): | 3.25 | | | | |
| Friction Loss Coefficient, (K): | 9 | | | | |
| Static Pressure, P _s (psi): | 52.5 | | | | |
| Residual Pressure, P _r (psi): | 42 | | | | |
| Flow Pressure, P _f (psi): | 10.5 | | | | |
| Residual Flow Q _r (GPM): | 1575 / 19.5' (to maximum flow) Provides | | | | |
| The Flow at 200' Q ₂₀₀ (GPM): | 827 / 16.7' (to 200' - 100' - 100') | | | | |
| Supply Main Size (to hydrant): | 6" / 100' - 100' | | | | |
| Supply Main Size (to hydrant): | 16" | | | | |
| Flowing of Flow Test Site (to include location of flow test hydrant): | Flowing of Flow Test Site (to include location of flow test hydrant) | | | | |

GENERAL NOTES :

- THIS SITE IS IN ZONED AS R-4
- ALL UNITS WILL BE SERVED WITH PUBLIC SANITARY SEWER AND PUBLIC WATER.
- 8" WATERMAIN WILL BE PROVIDED BY CONNECTION TO THE EXISTING 12" WATERMAIN ALONG AUBURN ROAD.
- 8" SANITARY WILL BE PROVIDED BY CONNECTION TO THE EXISTING SANITARY SEWER ALONG AUBURN ROAD.
- STORM SEWER SYSTEM WILL BE PROVIDED PER CITY OF ROCHESTER HILLS ENGINEERING DEPARTMENT AND OAKLAND COUNTY WATER RESOURCES COMMISSION. ON-SITE DETENTION BASIN WILL BE PROVIDED WITH PERMITTED RESTRICTED OUTLET.
- EASEMENT WILL BE PROVIDED TO SERVE ALL PUBLIC UTILITIES AS REQUIRED BY THE ENGINEERING PLANS AND UTILITY COMPANIES.
- SOIL EROSION AND SEDIMENTATION CONTROL MEASURES WILL BE TAKEN PER OAKLAND COUNTY WATER RESOURCES COMMISSION REQUIREMENTS.
- PAVING WILL BE PROVIDED MEETING ALL THE CITY OF ROCHESTER HILLS REQUIREMENTS.
- ALL WORK WITHIN AUBURN ROAD R.O.W. WILL BE IN ACCORDANCE WITH M.D.O.T. STANDARDS.
- THIS PROJECT WILL ABIDE BY THE CITY OF ROCHESTER HILLS TREE PRESERVATION ORDINANCE.
- PROPOSED GRADES WILL MATCH EXISTING ELEVATIONS AT THE PROPERTY LINES UNLESS GRADING EASEMENTS ARE OBTAINED OR RETAINING WALLS PROVIDED.
- ALL HYDRANTS INCLUDING PROJECTIONS WILL BE A MINIMUM OF 5 FEET FROM THE BACK OF CURB AND 3 FEET FROM THE EDGE OF SIDE WALK.
- ANY EXISTING SEPTIC SYSTEM HOUSELEADS OR WELLS WILL BE ABANDONED IN ACCORDANCE WITH CITY AND 'CDD' REQUIREMENTS.

CITY FILE # 17-035

LAND DEVELOPMENT CONSULTING SERVICES, INC.
46600 ROMEO PLANK, SUITE 2
MACOMB, MI 48044
PHONE: (586)868-2350
FAX: (586)868-2351

WOODLAND CROSSING
1171-1183 E AUBURN ROAD, ROCHESTER HILLS, MICHIGAN
PART OF THE SOUTHWEST 1/4 OF SEC. 25, T.3N., R.11E.,
CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN.

PRELIMINARY SITE PLAN

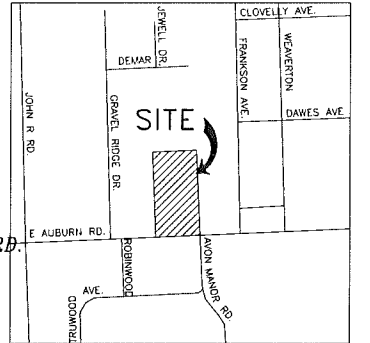
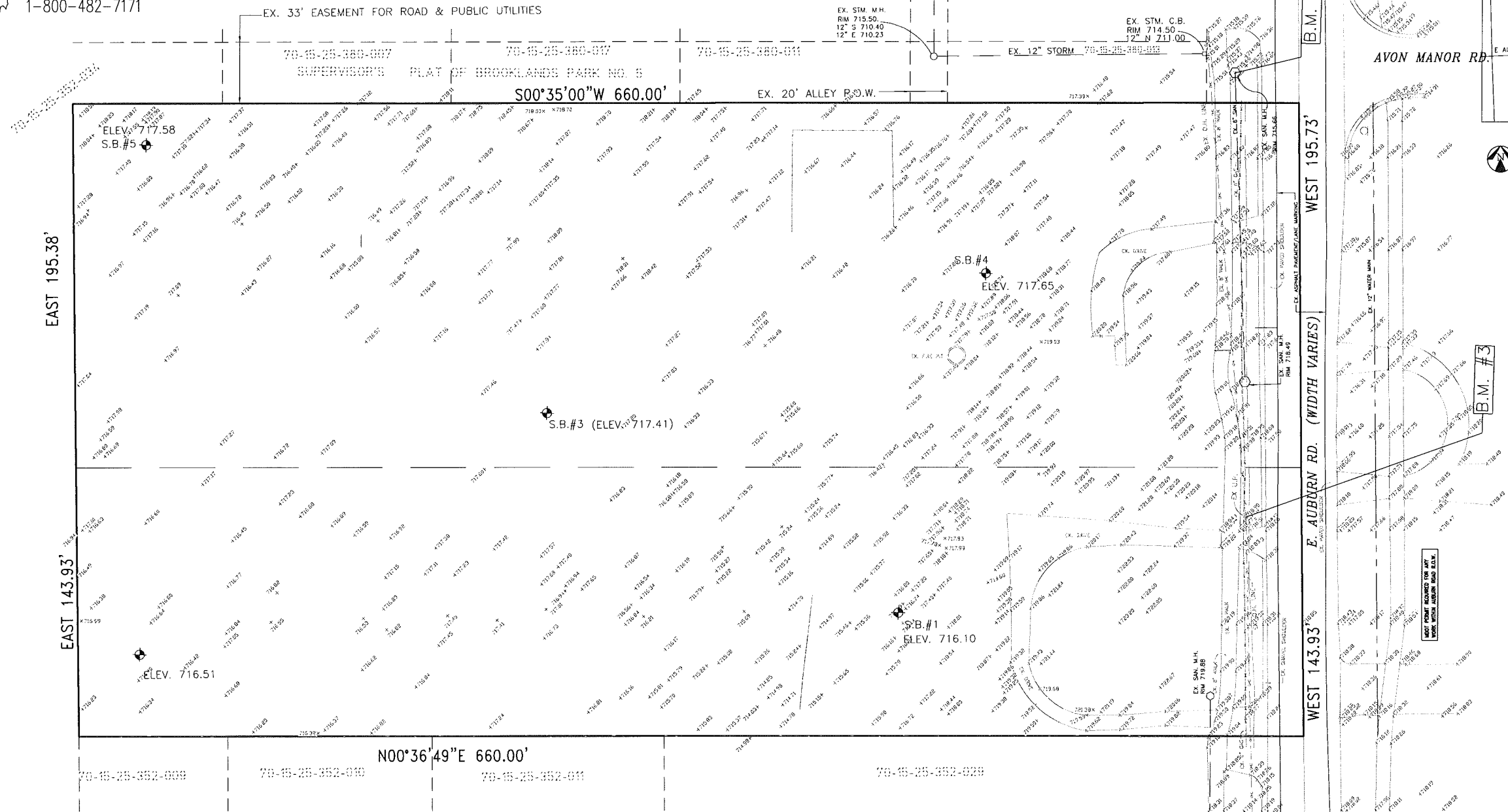
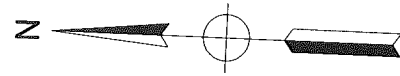
MJC WOODLAND CROSSING LLC
46600 ROMEO PLANK ROAD, SUITE 5
MACOMB, MI 48044

SCALE: 1" = 30'
DATE: 08-11-17
DRAWN BY: S.H.T.
LDCS # 15-SP-01
DRAWING NO.
PREL - 2 OF 6

REV. 01-08-18 PER CITY PLANNING
REV. 11-21-17 PER CITY PLANNING



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LOCATION MAP
CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MI
NOT TO SCALE

LEGEND: (EXISTING FEATURES)

- GATE VALVE
- HYDRANT
- SANITARY MANHOLE
- CATCH BASIN
- STORM SEWER CATCH BASIN OR MANHOLE
- UTILITY POLE
- SIGN
- ELEVATION
- WATERMAIN
- SANITARY SEWER
- STORM SEWER
- GAS PIPELINE
- OVERHEAD ELECTRIC

BENCH MARK LIST

- BENCH MARK No. 1
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#1251, RHFD #2 BROOKLANDS
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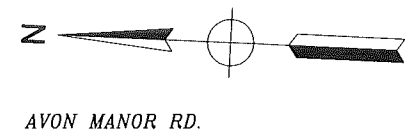
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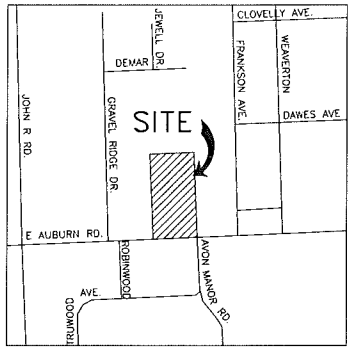
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PART OF THE SOUTHWEST 1/4 OF SEC. 25, T.3N., R.11E.,
CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN,
TOPOGRAPHIC SURVEY PLAN

M/JC WOODLAND CROSSING LLC (586)-263-1203
46600 ROMEO PLANK ROAD, SUITE 5
MACOMB, MI 48044

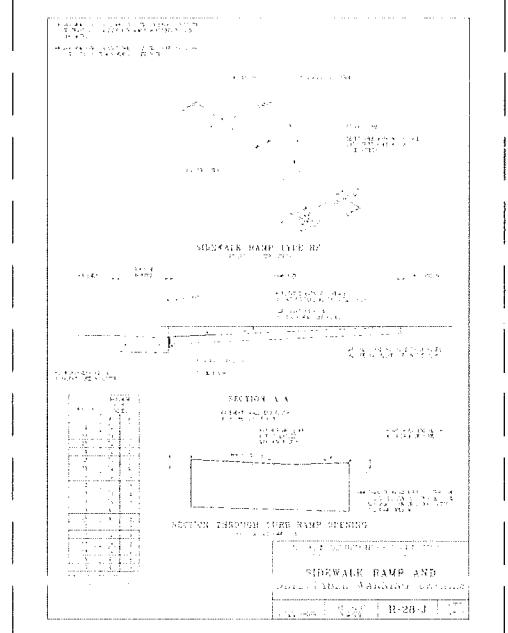
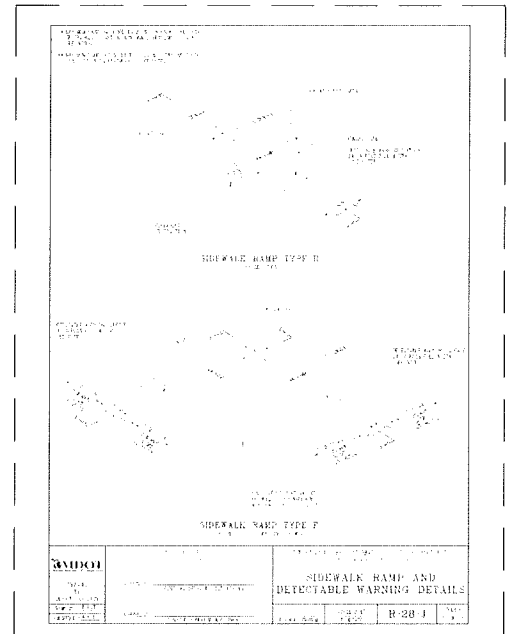
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PREL - 3 OF 6



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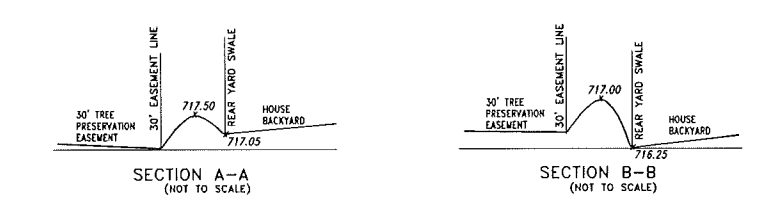
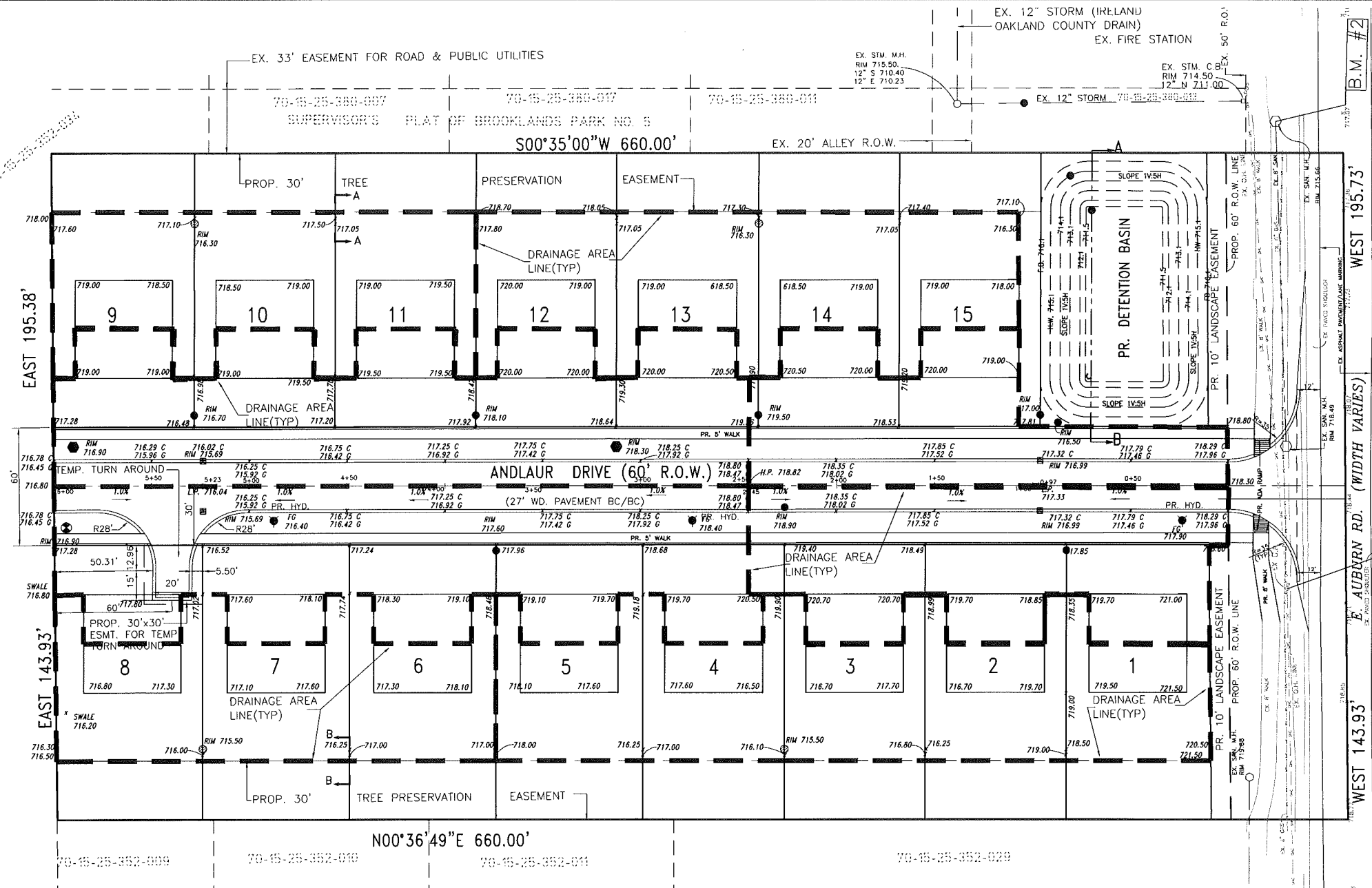
LOCATION MAP
CITY OF ROCHESTER HILLS,
OAKLAND COUNTY, MICHIGAN



CITY FILE # 17-035

| | | |
|---|--|--|
| | LAND DEVELOPMENT CONSULTING SERVICES, INC. 46600 ROMEO PLANK, SUITE 2 MACOMB, MI 48044 | PHONE: (586)868-2350 FAX: (586)868-2351 |
| | WOODLAND CROSSING 1171-1183 E AUBURN ROAD, ROCHESTER HILLS, MICHIGAN PART OF THE SOUTHWEST 1/4 OF SEC. 25, T.3N., R.11E., CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN. | SCALE: 1" = 30' DATE: 08-11-17 DRAWN BY: S.H.T. LDCS # 15-SP-01 |
| PRELIMINARY GRADING PLAN MJC WOODLAND CROSSING LLC 46600 ROMEO PLANK ROAD, SUITE 5 MACOMB, MI 48044 | | (586)-263-1203 DRAWING NO. PREL - 4 OF 6 |

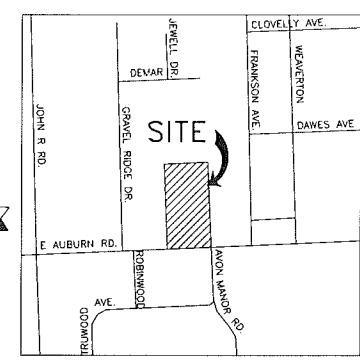
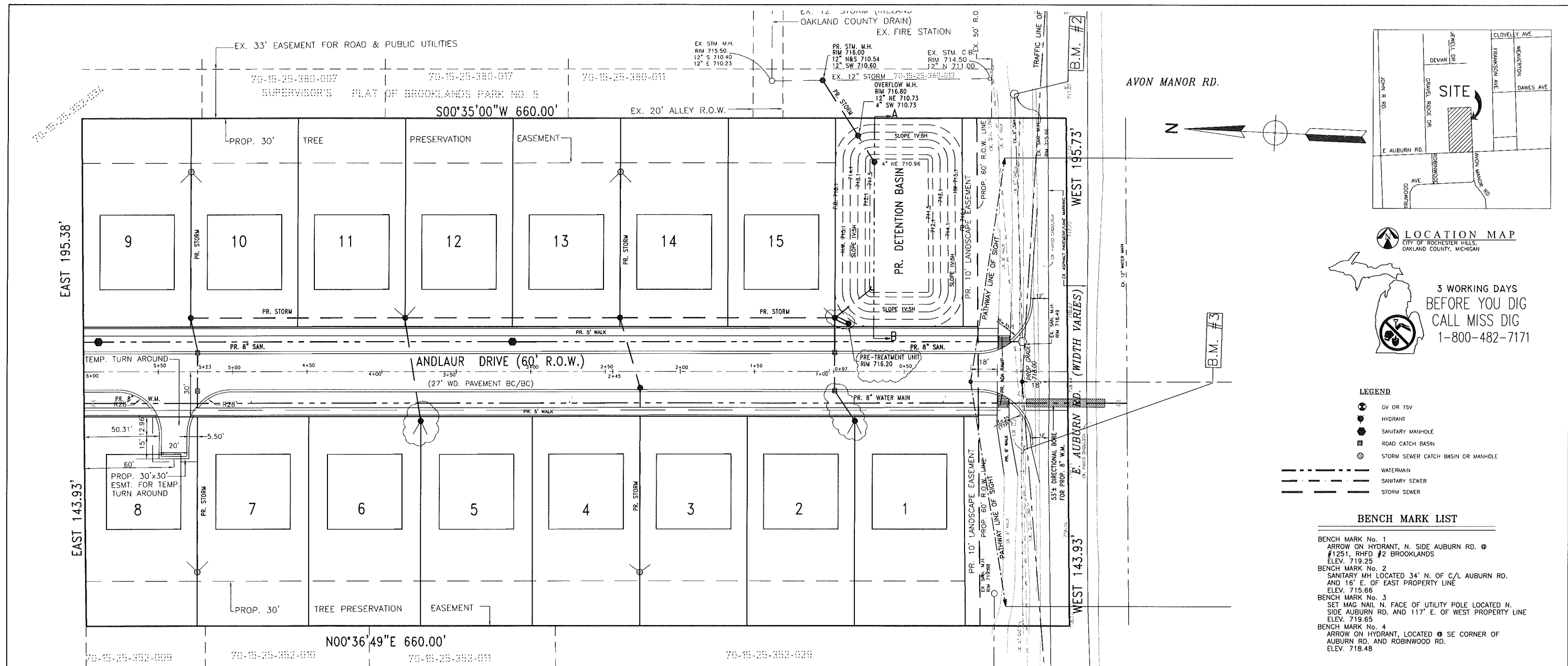
REV. 01-08-18 PER CITY PLANNING
REV. 11-21-17 PER CITY PLANNING



- LEGEND**
- GV OR TSV
 - HYDRANT
 - SANITARY MANHOLE
 - ROAD CATCH BASIN
 - ⊙ STORM SEWER CATCH BASIN OR MANHOLE
 - PROPOSED GRADE
 - - - DRAINAGE AREA LINE

BENCH MARK LIST

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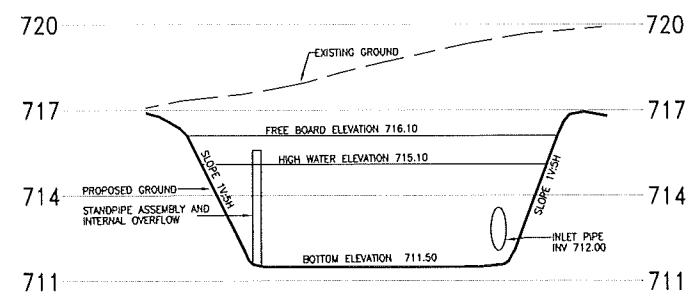


LOCATION MAP
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- LEGEND**
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DETENTION BASIN CROSS SECTION A-B
SCALE: HOR 1" = 30'; VER 1" = 3'
A PRETREATMENT UNIT WILL BE PROVIDED FOR WATER QUALITY VOLUME FOR THIS PROJECT

SANITARY SEWER BASIS OF DESIGN:
POPULATION = (3.5 PEOPLE / UNITS) = 3.5 x 15 UNITS = 52.5 PEOPLE
PEOPLE AVERAGE FLOW = (52.5 PEOPLE x 100 GPCPD) = 5,250 GPD = 0.0079 CFS
PEAK FLOW = 4 x 0.0079 = 0.0316 CFS
CAPACITY OF A 8" PVC PIPE @ 0.40% = 0.77 CFS
THEREFORE THE PROPOSED 8" SEWER SYSTEM WILL HAVE ADEQUATE CAPACITY.

INFILTRATION VOLUME:
INFILTRATION VOLUME REQUIRED = 1815*A*C
INFILTRATION VOLUME REQUIRED = 1815*4.67*0.41 = 3475 CFT
INFILTRATION VOLUME PROVIDED =
INFILTRATION RATE*INFILTRATION PERIOD*AREA*(1/12)
INFILTRATION RATE = 0.52 INCH/HOUR
INFILTRATION PERIOD = 6 HOURS
AREA = TREE PRESERVATION AREA = (503+580)*30 = 32490 SQ FT
INFILTRATION VOLUME PROVIDED = 0.52*6*32490/12 = 8447 CFS
(REF: CITY OF STURGIS, MI: STORM WATER DESIGN CRITERIA MANUAL PAGE: 70)
VOLUME PROVIDED 8447 > VOLUME REQUIRED 3475 CFS; HENCE OK.

WEIGHTED "C" FACTOR CALCULATIONS
THE PROPOSED DEVELOPMENT HAS SPINKS SOILS WHICH HAS HYDROLOGIC SOIL GROUP 'A' SO 'C' WILL BE 0.15
C' FOR PAVEMENT AND ROOF AREAS WILL BE 0.95
TOTAL AREA = 4.67 ACRES
IMPERVIOUS AREAS
PAVEMENT = 18983 SQFT
WALK = 4560 SQFT
DRIVEWAY = 15'41"16 = 9840 SQ FT
ROOF AREA = 15'2200 = 33000 SQ FT
TOTAL IMPERVIOUS AREA = 68373 SQ FT = 1.52 AC
TOTAL PERVIOUS AREA = 4.67-1.52 = 3.15 AC
COMPOSITE 'C' = (1.52*0.95+3.15*.15)/4.67 = 0.41

WATER QUALITY VOLUME REQUIRED = WQV
A = 4.67 ACRES
C = 0.41
WQV = 4320*A*C = 8272 CFT
FOR WATER QUALITY VOLUME PRETREATMENT UNIT PROVIDED

DETENTION BASIN VOLUME REQUIRED (100 YEAR STORM EVENT)
ALLOWABLE DISCHARGE = 0.20 CFS
Qa = 0.20 X A = 0.93
Qp = 0.25 X A X C = 0.49 CFS/AC MIN
T = .25 + (10312 S/Qa)^0.50 = 120.40 MINUTES
Vs = (16500 X T)^0.25 = 40 X Qa X T = 11313.73 CFS/AC MIN
Vt = Vs X A X C = 21662 CFT

| ELEVATION | AREA (A) | A1+A2 | A1A2 | HT(H) | VOLUME | TOTAL VOLUME |
|-----------|----------|-------|----------|-------|--------|--------------|
| 711.5 | 3508 | 7811 | 15094924 | 0.6 | 2339 | 2339 |
| 712.1 | 4303 | 10057 | 24759462 | 1 | 5011 | 7350 |
| 713.1 | 5754 | 13116 | 42350948 | 1 | 6542 | 13892 |
| 714.1 | 7352 | 16490 | 67200336 | 1 | 8229 | 22121 |
| 715.1 | 9128 | | | | | |

DETENTION BASIN VOLUME PROVIDED = 22121 CFT

CITY FILE # 17-035

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PRELIMINARY UTILITIES PLAN
MJC WOODLAND CROSSING LLC (586)-263-1203
46600 ROMEO PLANK ROAD, SUITE 5
MACOMB, MI 48044
DRAWING NO. PREL - 5 OF 6

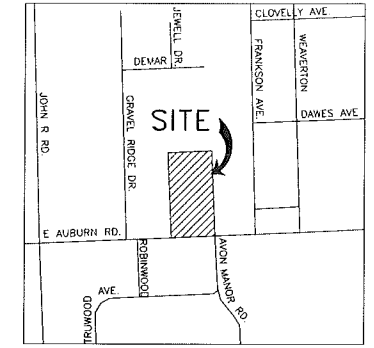
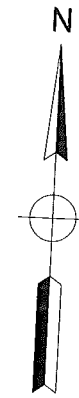
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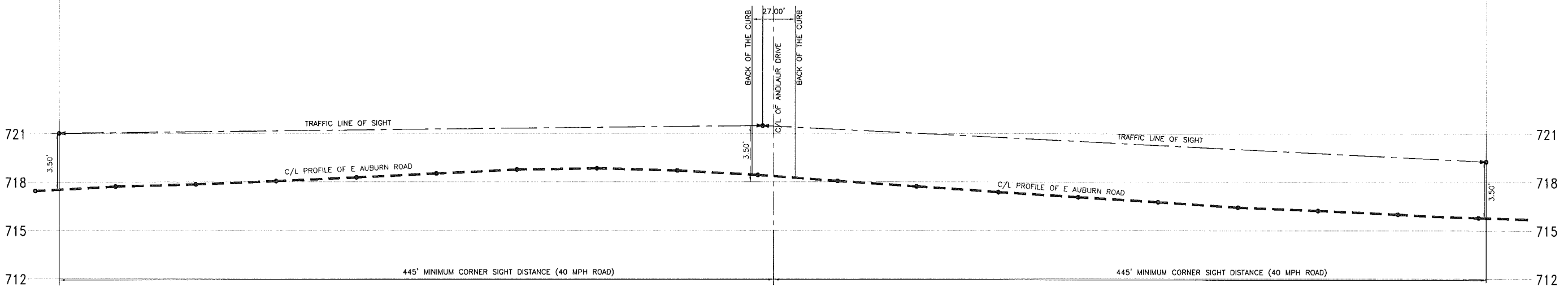
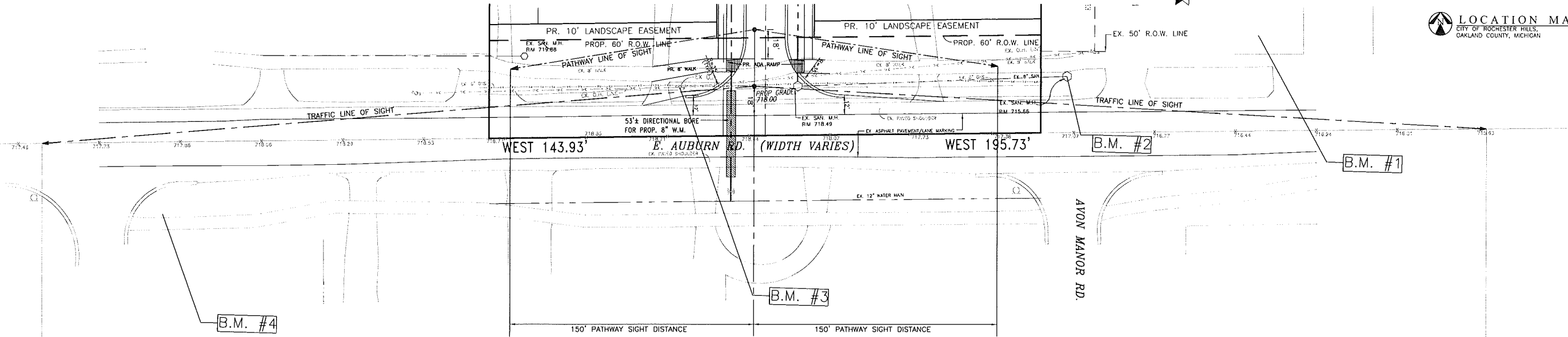
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LOCATION MAP
CITY OF ROCHESTER HILLS,
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|--|--|---|
| | LAND DEVELOPMENT CONSULTING SERVICES, INC. 46600 ROMEO PLANK, SUITE 2 MACOMB, MI 48044 | PHONE: (586)868-2350 FAX: (586)868-2351 |
| | 1171-1183 E AUBURN ROAD, ROCHESTER HILLS, MICHIGAN PART OF THE SOUTHWEST 1/4 OF SEC. 25, T.3N., R.11E., CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN. | SCALE: 1" = 30' DATE: 08-11-17 DRAWN BY: S.H.T. |
| E AUBURN ROAD PROFILE AND SIGHT LINES | MJC WOODLAND CROSSING LLC 46600 ROMEO PLANK ROAD, SUITE 5 MACOMB, MI 48044 | (586)-263-1203 DRAWING NO. PREL - 6 OF 6 |



**NÚÑEZ
DESIGN**



TREE SURVEY LEGEND

- REGULATED TREES
- PRESERVED REGULATED TREES
- REMOVED - REGULATED & REPLACED
- EXEMPT + REMOVED - HEALTH CONDITION
- EXEMPT + REMOVED - BUILDING PAD:

TREE PROTECTION FENCING

TREE ANALYSIS:

| | |
|--|---------|
| TOTAL # OF TAGGED TREES* | = 439 |
| # OFF SITE TAGGED TREES (PRESERVED) | = 5 |
| # POOR/VERY POOR /DEAD TREES (NON-REGULATED) | = 162 |
| # TREES IN BUILDING PAD (NON-REGULATED) | = 52 |
| # OF REGULATED TREES | = 216 |
| TOTAL # OF TREES TO BE REMOVED | = 134 |
| TOTAL # OF TREES TO BE PRESERVED | = 81 |
| TOTAL % TREES PRESERVED | = 37.5% |
| TOTAL # OF REPLACEMENT CREDITS REQUIRED. | = 134 |
| TOTAL # OF REPLACEMENT CREDITS PROVIDED | = 136 |

REFER TO SHEET LA 1.1 FOR THE BREAKDOWN OF PLANT SIZES AND REPLACEMENT CREDITS

*One (1) regulated 8" Maple was not included in the tree survey and is being removed and is included in the replace calculations above.

TREE REPLACEMENT CREDITS

| Tree Type and Size | Replacement Credits |
|-------------------------|---------------------|
| 2" Caliper Shade Tree | 1 Credit (MINIMUM) |
| 2.5" Caliper Shade Tree | 1.5 Credits |
| 3" Caliper Shade Tree | 2 Credits |
| 4" Caliper Shade Tree | 3 Credits |
| 5" Caliper Shade Tree | 4 Credits |
| 8' Evergreen Trees | 1 Credit (MINIMUM) |
| 9' Evergreen Trees | 1.5 Credits |
| 10' Evergreen Trees | 2 Credits |
| 12' Evergreen Trees | 3 Credits |
| 14' Evergreen Trees | 4 Credits |

SITE GRADING NOTES:

- SITES SHALL BE GRADED TO DRAIN SURFACE WATER AWAY FROM FOUNDATION WALLS. THE GRADE SHALL FALL A MINIMUM OF 6" WITHIN THE FIRST 10' (R401.3).
- WHEREVER POSSIBLE, SWALES SHALL BE PROVIDED ALONG LOT LINES WITH 1% MINIMUM SLOPE TO CONVEY RUNOFF TO CONVEY RUNOFF TO A STORM SEWER OR OTHER APPROVED COLLECTION POINTS.
- DRIVEWAY SLOPES SHALL MEET THE FOLLOWING REQUIREMENTS:
 - APPROACH AND DRIVEWAY: 2% MINIMUM, - 10% MAXIMUM.
 - SIDEWALK CROSS-SLOPE (INCLUDING DRIVEWAY APPROACH): 1% MINIMUM, 2% MAXIMUM.
 - SIDE ENTRY GARAGE: 2% MINIMUM, 4% MAXIMUM.
 - NEGATIVE SLOPE DRIVEWAY: 2% MINIMUM, 7% MAXIMUM.

MJC COMPANIES

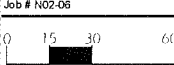
46600 Romeo Plank Rd., Suite 5
Macomb MI, 48044
586-263-1203
montalbano@mjccompanies.com

| | |
|------------|----------------------|
| 2-1-2018 | Submittal to PC |
| 1-8-2018 | Submittal to PC |
| 12-20-2017 | REV. Site Plan |
| 11-21-2017 | Submittal to PC |
| 11-13-2017 | REV. Per City Review |
| 11-7-2017 | REV. Per City Review |
| 09-11-2017 | REVISIONS |
| 09-01-2017 | REVISIONS |
| 06-18-2017 | PRELIM SUBMITTAL |
| 03-22-2017 | CLIENT REVIEW |
| Date: | 06/08/2017 |



LANDSCAPE ARCHITECTURE • URBAN DESIGN
249 Park Street
Troy, Michigan 48063
P. 248. 224. 5933
nunezdesigninc@gmail.com

Designed / Drawn: RLN / RC
Checked / Approved: RLN
Job # N02-06



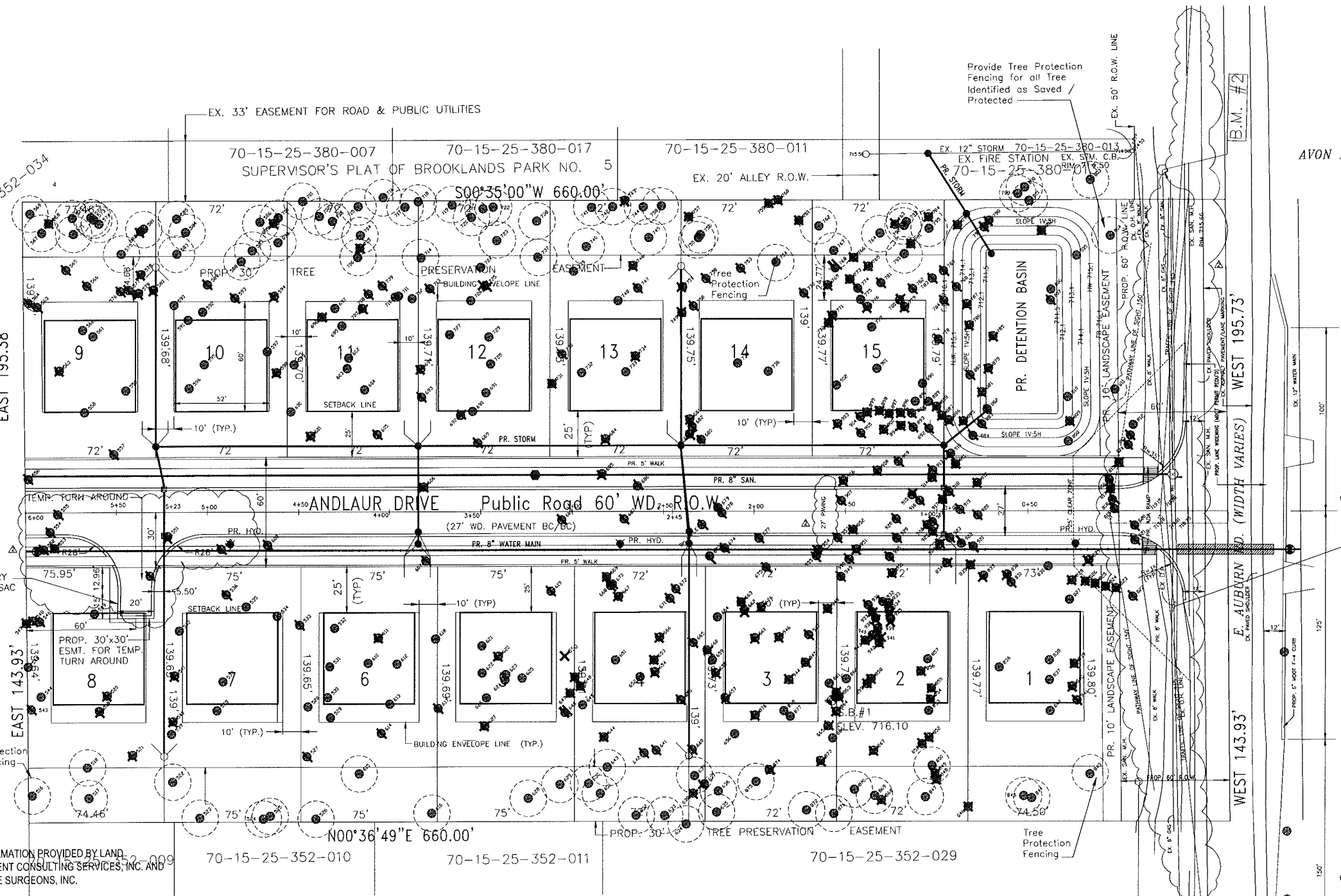
SCALE: 1" = 30'-0"



City File: #17-035
SHEET: LA - 1.0



Tree Survey



NOTES:
BASE INFORMATION PROVIDED BY LAND DEVELOPMENT CONSULTING SERVICES, INC. AND MIKE'S TREE SURGEONS, INC.

PROJECT FILE: N02-06_Auburn_12-2018_06082017.dwg

PLANTING NOTES

- ALL LANDSCAPED AREAS TO BE WATERED BY AUTOMATIC WATERING SYSTEM.
- IRRIGATION PLAN MUST BE SUBMITTED PRIOR TO STAFF APPROVAL OF THE FINAL SITE PLAN. WATERING WILL ONLY OCCUR BETWEEN THE HOURS OF 12AM AND 5AM.
- LANDSCAPE COST ESTIMATE HAS BEEN PROVIDED.
- ALL PLANT MATERIAL INSTALLED IN THE LANDSCAPED AREAS WITHIN THE IDENTIFIED CLEAR ZONES, WILL NOT EXCEED AN UNMAINTAINED, MATURE HEIGHT OF 24 INCHES.
- 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. 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 5' FROM THE NEAREST UNDERGROUND UTILITY.
- REFER TO LA 2.0 FOR PLANTING DETAILS.
- LOW QUALITY TREES WILL BE REMOVED FOR SITE GRADING.
- ALL TREES TO BE REPLACED BY HIGH QUALITY TREES THAT PROVIDE DENSITY AND DIVERSITY.

TREE REPLACEMENT CREDITS

| Tree Type and Size | Replacement Credits |
|-------------------------|---------------------|
| 2" Coliper Shade Tree | 1 Credit (MINIMUM) |
| 2.5" Coliper Shade Tree | 1.5 Credits |
| 3" Coliper Shade Tree | 2 Credits |
| 4" Coliper Shade Tree | 3 Credits |
| 5" Coliper Shade Tree | 4 Credits |
| 8" Evergreen Trees | 1 Credit (MINIMUM) |
| 9" Evergreen Trees | 1.5 Credits |
| 10" Evergreen Trees | 2 Credits |
| 12" Evergreen Trees | 3 Credits |
| 14" Evergreen Trees | 4 Credits |

PLANT MATERIAL LIST

| QTY | KEY | SPECIES | COMMON NAME | SPECIFICATION |
|---------------------------|-----|-----------------------------------|-------------------------------|-------------------|
| 5 | BN | Betula nigra | River Birch | 3" cal. B&B |
| 3 | QB | Quercus bicolor | Swamp Oak | 3" cal. B&B |
| 4 | AJ | Acer x Freemanii 'Jeffersred' | Autumn Blaze Maple | 3" cal. B&B |
| 10 | QR | Quercus rubra | Red Oak | 3" cal. B&B |
| 10 | LT | Liriodendron tulipifera | Tulip Tree | 3" cal. B&B |
| 9 | AR | Acer rubrum 'Franksred' | Frank's Red Maple | 3" cal. B&B |
| 7 | TG | Tilia cordata | Greenspire Linden | 3" cal. B&B |
| Ornamental Trees | | | | |
| 4 | MP | Malus 'Prairifire' | Prairifire Flowering Crab | 2" cal. B&B |
| 3 | MS | Malus 'Snowdrift' | Snowdrift Flowering Crabapple | 2" cal. B&B |
| Evergreen Trees | | | | |
| 12 | PG | Picea glauca | White Spruce | 10' ht. B&B |
| 12 | PE | Pinus strobus | Eastern White Pine | 10' ht. B&B |
| 9 | PT | Pseudotsuga menziesii | Douglas Fir | 10' ht. B&B |
| Shrubs | | | | |
| 8 | HG | Hydrangea m. 'Glowing Embers' | Glowing Embers Hydrangea | 30" ht. # 5 Cont. |
| 8 | PD | Potentilla fruticosa 'Gold Drop' | Gold Drop Potentilla | 30" ht. # 5 Cont. |
| 22 | RM | Rosa 'Radiko' | Double Knock Out Rose X | 30" ht. # 5 Cont. |
| Perennials | | | | |
| 106 | HM | Hemerocallis 'Black Eyed Stella' | Black Eyed Stella Daylily | 1' ht. 1'O.C. |
| 57 | NF | Nepeta x Faassenii 'Walker's Low' | 'Walker's Low' Nepela | 1' ht. 1'O.C. |
| Planting Materials | | | | |
| ± 50 CY | | Plant Mix | | |
| ± 60 CY | | Mulch | | |
| ± 2,600 | | Sod or Seed X | | |

PROBABLE COST

| QTY | UNIT COST | TOTAL |
|-----------------|-----------|--------------------|
| 5 | 335.00 | 1,675.00 |
| 3 | 365.00 | 1,095.00 |
| 4 | 335.00 | 1,340.00 |
| 10 | 365.00 | 3,650.00 |
| 10 | 320.00 | 3,200.00 |
| 9 | 335.00 | 3,015.00 |
| 7 | 335.00 | 2,345.00 |
| Subtotal | | |
| 4 | 265.00 | 1,060.00 |
| 3 | 265.00 | 795.00 |
| Subtotal | | |
| 15 | 315.00 | 4,725.00 |
| 14 | 315.00 | 4,410.00 |
| 11 | 335.00 | 3,685.00 |
| Subtotal | | |
| 8 | 50.00 | 400.00 |
| 8 | 50.00 | 400.00 |
| 22 | 26.00 | 572.00 |
| Subtotal | | |
| 106 | 12.00 | 1,272.00 |
| 57 | 12.00 | 684.00 |
| Subtotal | | |
| ± 50 | 28.00 | 1,400.00 |
| ± 60 | 55.00 | 3,300.00 |
| ± 2,600 | 3.15 | 8,190.00 |
| Subtotal | | |
| TOTAL | | \$47,213.00 |

TREE REPLACEMENT CREDITS

Replacement Tree Credits Required = 134

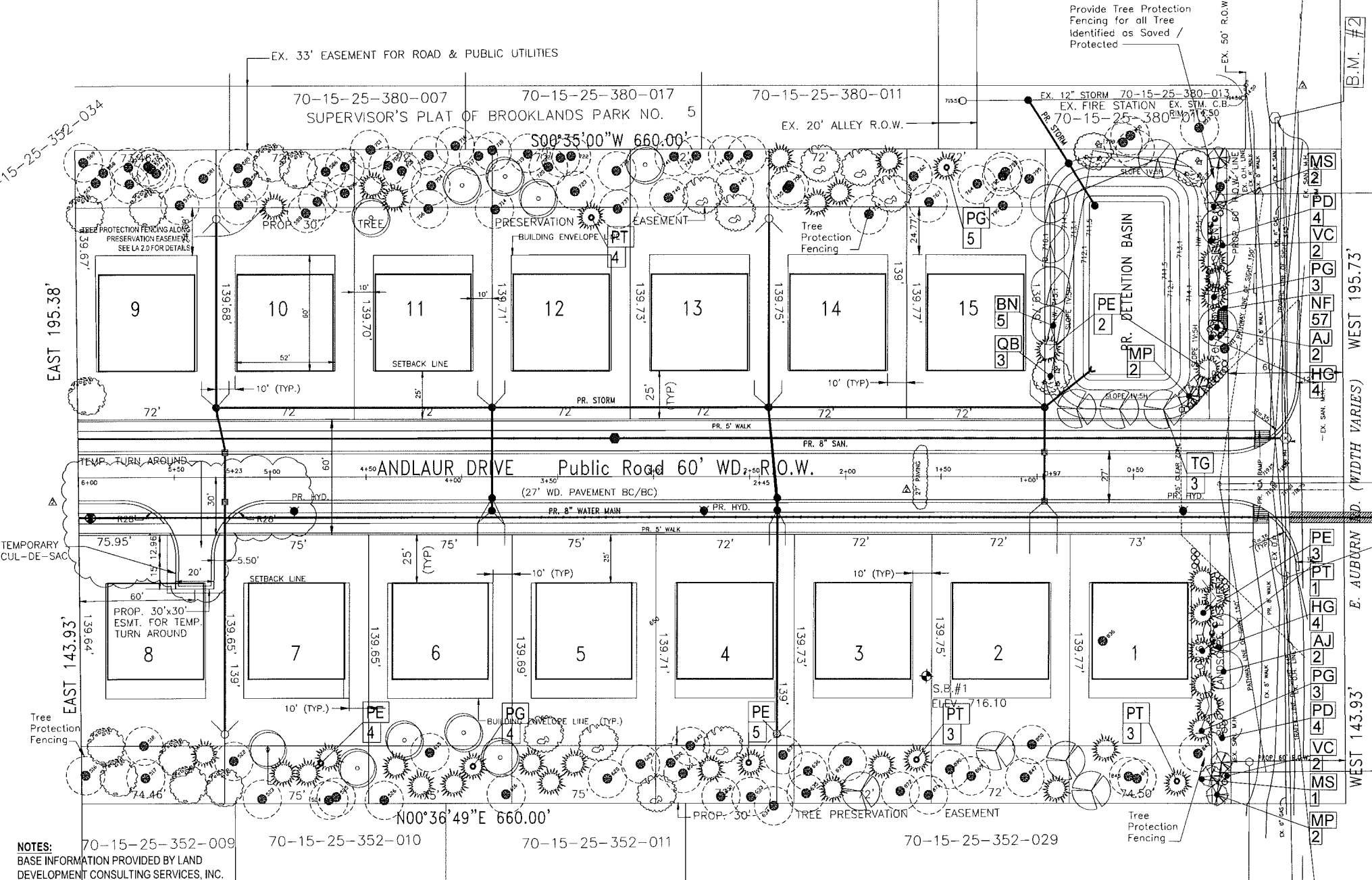
| Deciduous Trees | QTY | SIZE | CREDIT | TOTAL |
|---|-----|---------|--------|-------|
| (4) 3" cal. Trees @ 2 Credits = 8 | 4 | 3" cal. | 2 | 8 |
| (10) 3" cal. Trees @ 2 Credits = 20 | 10 | 3" cal. | 2 | 20 |
| (10) 3" cal. Trees @ 2 Credits = 20 | 10 | 3" cal. | 2 | 20 |
| (9) 3" cal. Trees @ 2 Credits = 18 | 9 | 3" cal. | 2 | 18 |
| (5) 3" cal. Trees @ 2 Credits = 10 | 5 | 3" cal. | 2 | 10 |
| Evergreen Trees | | | | |
| (11) 10' ht. Trees @ 2 Credits = 22 | 11 | 10' ht. | 2 | 22 |
| (10) 10' ht. Trees @ 2 Credits = 20 | 10 | 10' ht. | 2 | 20 |
| (9) 10' ht. Trees @ 2 Credits = 18 | 9 | 10' ht. | 2 | 18 |
| Replacement Tree Credit Provided = 136 Credits | | | | |

STREET TREES: (Interior Street)
Min. 1 Deciduous Tree per Lot = 15 Deciduous Trees

THE CITY SHALL PLANT STREET TREES IN THE ROW AFTER CONSTRUCTION OF THE PROJECT IS COMPLETED. THE APPLICANT SHALL PAY \$200 PER LOT TO ACCOUNT FOR THIS PLANTING. AMOUNT = \$ 3,000.00

CITY OF ROCHESTER HILLS MAINTENANCE NOTES 138-12.109

- LANDSCAPING SHALL BE KEPT IN A NEAT, ORDERLY AND HEALTHY GROWING CONDITION, FREE FROM DEBRIS AND REFUSE.
- PRUNING SHALL BE MINIMAL AT TIME OF INSTALLATION, ONLY TO REMOVE DEAD OR DISEASED BRANCHES. SUBSEQUENT PRUNING SHALL ASSURE PROPER MATURATION OF PLANTS TO ACHIEVE THEIR APPROVED PURPOSE.
- ALL DEAD, DAMAGED OR DISEASED PLANT MATERIAL SHALL BE REMOVED IMMEDIATELY AND REPLACED WITHIN (6) SIX MONTHS AFTER IT DIES OR IN THE NEXT PLANTING SEASON, WHICH EVER COMES FIRST. THE PLANTING SEASON FOR DECIDUOUS PLANTS SHALL BE BETWEEN MARCH 1 AND JUNE 1 AND FROM OCT 1 UNTIL THE PREPARED SOIL FREEZES. THE PLANTING SEASON FOR EVERGREEN PLANTS SHALL BE BETWEEN MARCH 1 AND JUNE 1. 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.



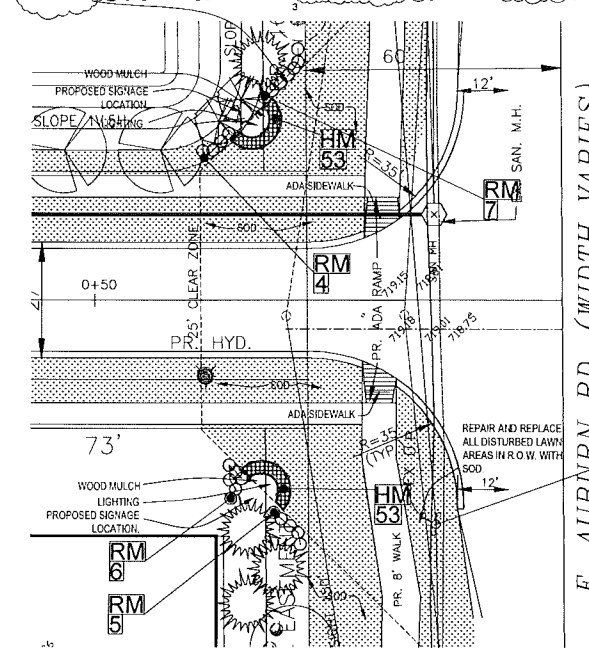
Right of Way Landscape Requirements (E. Auburn: 340 FT.)

| Required | Provided |
|---|----------|
| 1 Deciduous Tree per 35 FT. = 10 (3" cal. Deciduous Trees) | 4 |
| or Evergreen Tree per 35 FT. | 4 |
| Preserved Existing Trees | 2 |
| 1 Ornamental Tree per 60 FT. = 6 (2" cal. Ornamental Trees) | 7 |

Stormwater Landscape Requirements (Perimeter: 379 FT.)

| Required | Provided |
|--|----------|
| 1.5 Deciduous Tree per 100 FT. = 6 (3" cal. Deciduous Trees) | 6 |
| 1 Evergreen Tree per 100 FT. = 4 (10' ht. Evergreen Trees) | 4 |
| 4 Shrubs per 100 FT. = 16 (30" ht. Shrubs) | 21 |

CLEARZONE AREA:
ALL PLANT MATERIAL INSTALLED IN THE LANDSCAPED AREAS WITHIN THE IDENTIFIED CLEAR ZONES WILL NOT EXCEED AN UNMAINTAINED, MATURE HEIGHT OF 24 INCHES.



- NOTES:**
- AN IRRIGATION PLAN MUST BE PROVIDED TO THE PLANNING STAFF PRIOR TO APPROVAL OF THE FINAL SITE PLAN. IRRIGATION SYSTEM MUST SPECIFY THAT WATERING WILL ONLY OCCUR BETWEEN THE HOURS OF 12:00AM AND 5AM.
 - ALL SIGNS MUST MEET THE REQUIREMENTS OF THE CITY AND BE APPROVED UNDER SEPARATE PERMITS ISSUED BY THE BUILDING DEPARTMENT.
 - PROJECT SIGNAGE & FINAL DETAILS TO BE PROVIDED BY OTHERS.



WOODLAND CROSSING
1171-1183 E. Auburn Rd.
Rochester Hills, MI

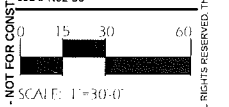
PROJECT FILE: N006-02_Auburn_1-2-2018 Woodland.dwg

MJC COMPANIES
46600 Romeo Plank Rd., Suite 5
Macomb MI, 48044
586-263-1203
montalbanoa@mjccompanies.com

2-1-2018 Submit to PC
1-8-2018 Submit to PC
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11-21-2017 REV. Per City Review
11-17-2017 REV. Per City Review
09-11-2017 REV. Per City Review
08-14-2017 REVISIONS
05-15-2017 PRELIM SUBMITTAL
03-22-2017 CLIENT REVIEW
Date: 06/08/2017

NUNEZ DESIGN
LANDSCAPE ARCHITECTURE • URBAN DESIGN
249 Park Street
Troy, Michigan 48063
P: 248-724-5933
nunezdesigninc@gmail.com

Designed / Drawn: RLN / JRC
Checked / Approved: RLN
Job # N02-06



PLAN SUBMITTED FOR SITE PLAN REVIEW - NOT FOR CONSTRUCTION
CITY FILE: #17-035
SHEET: **LA-1.1**

LANDSCAPING PLAN

Tree Inventory
1171 & 1183 Auburn Rd & State Blvd
N of Rochester Hills, Michigan
City of Rochester Hills, Michigan
January 30, 2016

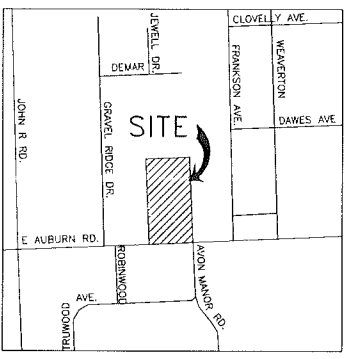
By: MJC Tree Services, Inc.
Adam P. Matus
Registered Forester - Michigan
ID # 331045628

Tree Health Legend
EX - Dead
R - Root Rot
C - Cavities
F - Fungal
D - Decay
M - Mechanical Damage
P - Pest
W - Wound
S - Stress
O - Other

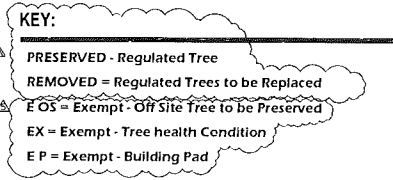
Table with columns: Tree ID, DBH in Inches, Species Name (Common - Scientific), Health Condition, Crown (Feet), and Notes. Lists individual trees and their status.

Table with columns: Tree ID, DBH in Inches, Species Name (Common - Scientific), Health Condition, Crown (Feet), and Notes. Continuation of tree inventory list.

Table with columns: Tree ID, DBH in Inches, Species Name (Common - Scientific), Health Condition, Crown (Feet), and Notes. Continuation of tree inventory list.



LOCATION MAP
CITY OF ROCHESTER HILLS,
OAKLAND COUNTY, MICHIGAN



TREE ANALYSIS:
TOTAL # OF TAGGED TREES* = 439
OFF SITE TAGGED TREES (PRESERVED) = 5
POOR/VERY POOR / DEAD TREES (NON-REGULATED) = 162
TREES IN BUILDING PAD (NON-REGULATED) = 57
OF REGULATED TREES = 216
TOTAL # OF TREES TO BE REMOVED = 134
TOTAL # OF TREES TO BE PRESERVED = 81
TOTAL % TREES PRESERVED = 37.5%
TOTAL # OF REPLACEMENT CREDITS REQUIRED = 134
TOTAL # OF REPLACEMENT CREDITS PROVIDED = 136
REFER TO SHEET LA 1.1 FOR THE BREAKDOWN OF PLANT SIZES AND REPLACEMENT CREDITS
*One (1) regulated 'B' Maple was not included in the tree survey and is being removed and is included in the replace calculations above.



WOODLAND CROSSING
1171 & 1183 E. Auburn Rd.
Rochester Hills, MI

MJC COMPANIES
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Macomb MI, 48044
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montalbanoa@mjccompanies.com

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Checked / Approved: RLN
Job # N02-06



LAND DEVELOPMENT CONSULTING SERVICES, INC.
46600 ROMEO PLANK, SUITE 2
MACOMB, MI 48044
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FAX: (586)668-2351

TREE SURVEY INVENTORY