

FINAL SITE CONDOMINIUM PLAN REGAL ESTATES

PART OF THE S.W. 1/4 OF SECTION 25, T3N, R11E, CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN

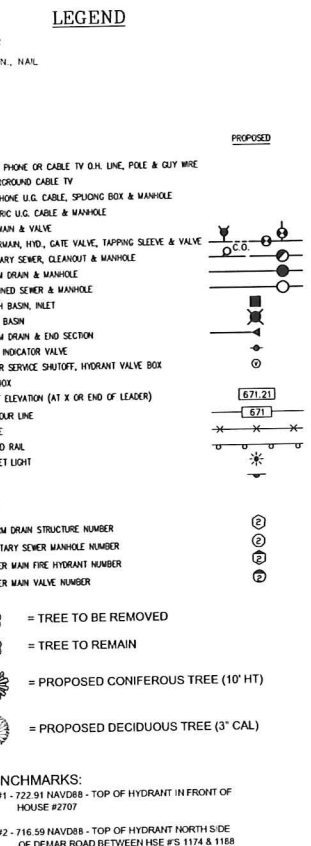
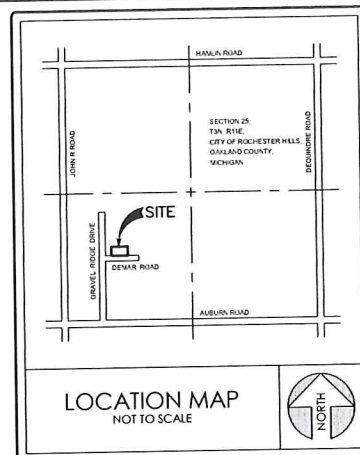
FLOOD PLAIN NOTE
EXAMINATION OF THE FLOOD HAZARD BOUNDARY MAP (MAP NUMBER 26125C0413F, EFFECTIVE SEPTEMBER 29, 2006) PREPARED IN ACCORDANCE WITH THE NATIONAL FLOOD INSURANCE PROGRAM OF 1968, INDICATES THE SUBJECT PROPERTY IS LOCATED OUTSIDE THE AREAS OF THE 100-YEAR FLOOD ZONE.

GENERAL NOTES:
1) NO STREET LIGHTING PROPOSED.
2) UNIT AREAS SHOWN ARE ROUNDED TO ±1.0 SFT AND MAY CHANGE UPON FINAL APPROVAL.
3) MINIMUM UNIT WIDTH DIMENSION IS MEASURED AT THE FRONT SETBACK LINE.
4) MINIMUM LOT DEPTHS ARE MEASURED AT THE CENTERLINE OF THE UNIT.
5) SMALL SIGNS TO BE INSTALLED TO DEMARCATATE WETLAND BOUNDARY LINES ON UNITS 5 TO PREVENT YARD FROM ENCRDACHING INTO WETLAND AREA.
6) ANY APPROVED AREAS OF TEMPORARY NATURAL FEATURES SETBACK IMPACTS MUST BE RESTORED WITH ORIGINAL SOILS OR EQUIVALENT SOILS AND SEEDED WITH A CITY APPROVED SEED MIX, WHERE POSSIBLE.
7) SIGNY FENCE SHALL BE PLACED ALONG THE NATURAL FEATURES SETBACKS TO INSURE NO ENCRDACHMENTS INTO THESE AREAS OTHER THAN THOSE WHICH ARE APPROVED HEREIN.

FIRE DEPARTMENT NOTES:
1) CONSTRUCTION SITES SHALL BE SAFEGUARDED IN ACCORDANCE WITH IFC 2006 CHAPTER 14
2) OPEN BURNING IS NOT PERMITTED INCLUDING THE BURNING OF TRASH, DEBRIS, OR LAND CLEARING MATERIALS.
3) 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. FIRE PREVENTION ORDINANCE CHAPTER 58, SECTION 307.6.2 & 307.6.3

NOTE
THIS SITE WILL CONSIST OF APPROXIMATELY 2,500 SQ. FT. SINGLE FAMILY HOMES CONSTRUCTED OF MASONRY BRICK AND WOOD.

PRIOR TO/DURING CONSTRUCTION OF EMERGENCY OVERFLOW DEVELOPER SHALL:
1) PROVIDE WRITTEN NOTICE TO THE CITY ENGINEER AND OBTAIN WRITTEN CONSENT FROM THE CITY MAYOR.
2) CONDUCT WORK USING BEST MANAGEMENT PRACTICES TO ENSURE FLOW AND CIRCULATION PATTERNS AND THAT CHEMICAL AND BIOLOGICAL CHARACTERISTICS OF WETLANDS ARE NOT IMPACTED.
3) MINIMIZE ALL IMPACTS TO THE AQUATIC ENVIRONMENT.



- SHEET INDEX**
- 1.) GENERAL PLAN
 - 2.) TOPOGRAPHIC SURVEY & TREE PRESERVATION PLAN
 - 3.) TREE PRESERVATION NOTES & DETAILS
 - 4.) PRELIMINARY GRADING PLAN
 - 5.) PRELIMINARY UTILITY PLAN
 - 6.) PRELIMINARY DETENTION AND DESIGN CALCS.

SITE DATA

RESIDENTIAL SINGLE FAMILY
EXISTING ZONING R-4
ALL ADJACENT ZONING R-4

SITE AREA 3.51 ACRES
COMMON AREA 0.44 ACRES

SETBACKS
FRONT 25'
REAR 35'
SIDEYARD MINIMUM 10'
SIDEYARD TOTAL BOTH 20'
REGULATED WETLAND BUFFER 25'
MINIMUM AREA OF UNIT: 6000 SQ FT
MINIMUM SIZE OF UNIT: 80' (WIDTH) X 120' (DEPTH)

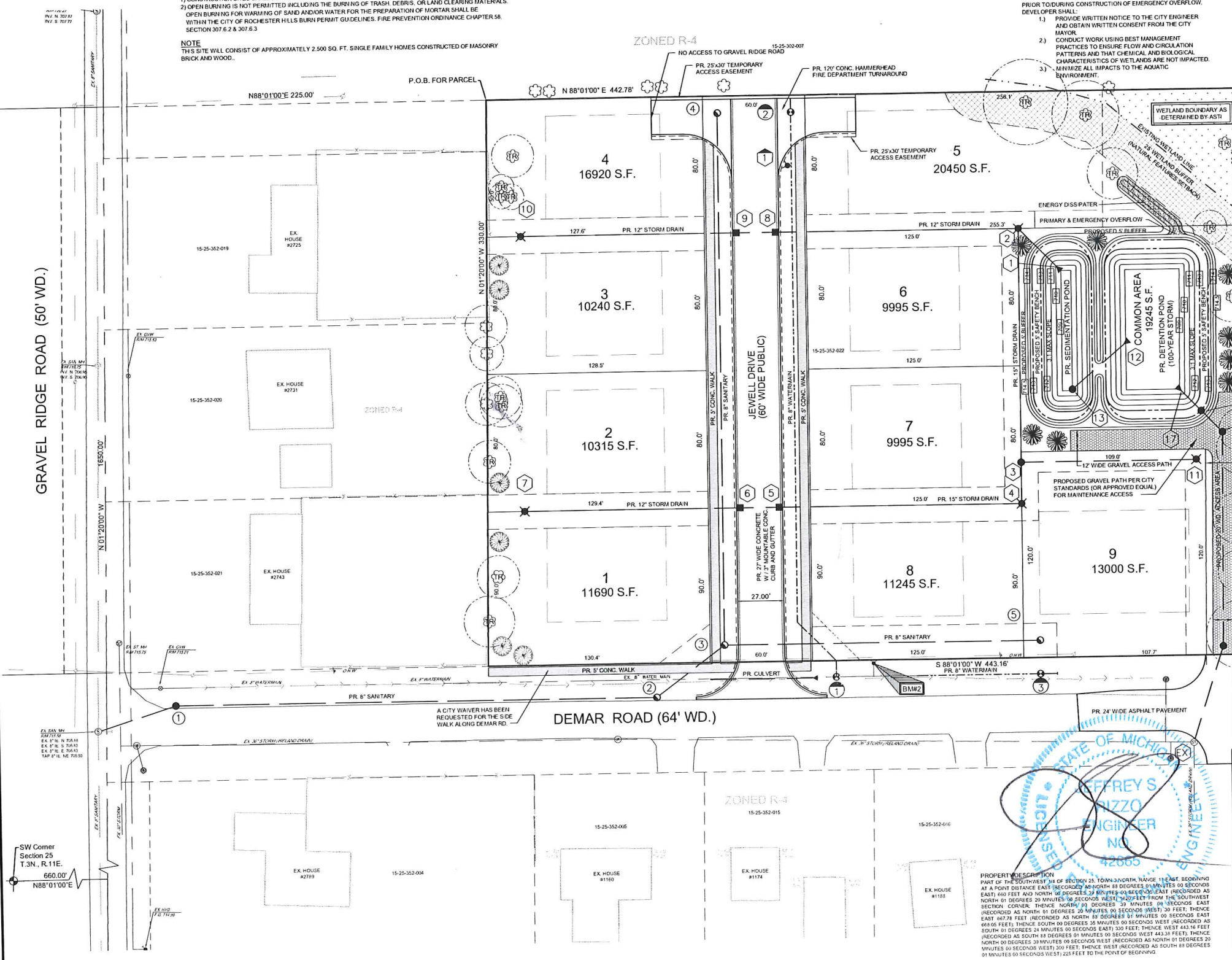
MAXIMUM DENSITY ALLOWED 34 UNITS/ACRE
MAXIMUM UNITS 3.51 x 34 = 12 UNITS
PROPOSED 9 UNITS
NET DENSITY 9/3.51 = 2.56 UNITS/ACRE

MINIMUM FLOOR AREA 912 SQ FT
MAXIMUM STORIES 2
MAXIMUM HEIGHT 25'
MAXIMUM LOT AREA COVERAGE 30%

NOTE: UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF FACILITIES ONLY, AS DISCLOSED TO THIS FIRM BY THE VARIOUS UTILITY COMPANY'S RECORDS. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY.

CALL MISS DIG

3 WORKING DAYS (EXCLUDING SAT, SUN, AND HOLIDAYS)
BEFORE YOU DIG CALL MISS DIG
1-800-482-7171
(TOLL FREE)



SW Corner Section 25 T.3N., R.11E.
N88°01'00"E
660.00'



PROPERTY DESCRIPTION
PART OF THE S.W. 1/4 OF SECTION 25, TOWN 3 NORTH, RANGE 11 EAST, BEGINNING AT A POINT DISTANCE EAST (RECORDED AS NORTH 88 DEGREES 01 MINUTES 00 SECONDS EAST) 400 FEET AND NORTH 90 DEGREES 24 MINUTES 00 SECONDS EAST (RECORDED AS NORTH 01 DEGREES 20 MINUTES 00 SECONDS WEST) 1400 FEET FROM THE SOUTHWEST CORNER, THENCE NORTH 01 DEGREES 20 MINUTES 00 SECONDS EAST SECTION CORNER, THENCE NORTH 01 DEGREES 20 MINUTES 00 SECONDS EAST 1400 FEET, THENCE SOUTH 01 DEGREES 20 MINUTES 00 SECONDS WEST (RECORDED AS SOUTH 01 DEGREES 20 MINUTES 00 SECONDS WEST) 1400 FEET, THENCE SOUTH 01 DEGREES 20 MINUTES 00 SECONDS WEST (RECORDED AS SOUTH 01 DEGREES 20 MINUTES 00 SECONDS WEST) 1400 FEET, THENCE WEST 443.16 FEET (RECORDED AS SOUTH 88 DEGREES 01 MINUTES 00 SECONDS EAST) 443.16 FEET, THENCE SOUTH 01 DEGREES 20 MINUTES 00 SECONDS WEST (RECORDED AS SOUTH 01 DEGREES 20 MINUTES 00 SECONDS WEST) 200 FEET, THENCE WEST (RECORDED AS SOUTH 88 DEGREES 01 MINUTES 00 SECONDS WEST) 200 FEET, TO THE POINT OF BEGINNING.

NOT TO BE USED AS CONSTRUCTION DRAWINGS

Fenn & Associates, Inc.
Land Surveying and Civil Engineering
14923 Commercial Drive, Shelby Township, Michigan 48315
Phone: 586-254-9277 Fax: 586-254-9020
www.fennandassociates.com

FINAL SITE CONDOMINIUM PLAN
REGAL ESTATES
PART OF THE S.W. 1/4 OF SECTION 25, T3N, R11E,
CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN

DISTRIBUTION

| ● | PRELIMINARY |
|------------|--------------|
| ○ | APPROVAL |
| ○ | CONSTRUCTION |
| ○ | AS-BUILT |
| ○ | REVISIONS |
| DATE | REMARKS |
| 06/18/2013 | PER CITY |
| 08/08/2013 | PER CITY |

SEAL

CLIENT
RATHKA BUILDING
11654 MAJESTIC COURT
SHELBY TOWNSHIP, MI
PHONE: 586-254-2576

PROJECT NAME
REGAL ESTATES

PROJECT NUMBER
C13-009.12X

SHEET NAME
GENERAL PLAN

DRAWING SCALE: 1" = 30'

DATE: 08/11/2014

PROJECT MANAGER: J.S.R. P.E.

DESIGNED BY: M.A.S.

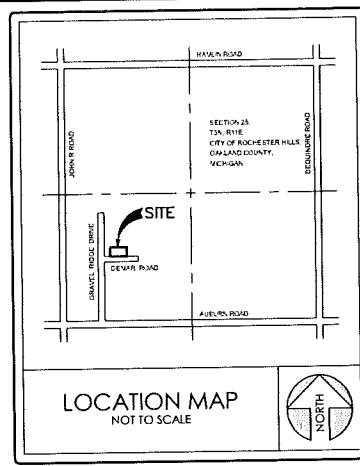
DRAWN BY: M.A.S.

FIELD BY: T.D. K.M.

CHECKED BY: J.S.R. P.E.

SHEET NUMBER
1 OF 6

PROPERTY DESCRIPTION
 PART OF THE SOUTHWEST 1/4 OF SECTION 25, TOWN 3 NORTH, RANGE 11 EAST, BEGINNING AT A POINT DISTANCE EAST (RECORDED AS NORTH 88 DEGREES 01 MINUTES 00 SECONDS EAST) 840 FEET AND NORTH 00 DEGREES 39 MINUTES 00 SECONDS EAST (RECORDED AS NORTH 91 DEGREES 20 MINUTES 00 SECONDS WEST) 1820 FEET FROM THE SOUTHWEST SECTION CORNER; THENCE NORTH 00 DEGREES 39 MINUTES 00 SECONDS EAST (RECORDED AS NORTH 91 DEGREES 20 MINUTES 00 SECONDS WEST) 30 FEET; THENCE EAST 667.74 FEET (RECORDED AS NORTH 88 DEGREES 01 MINUTES 00 SECONDS EAST 667.74 FEET); THENCE SOUTH 00 DEGREES 39 MINUTES 00 SECONDS WEST (RECORDED AS SOUTH 01 DEGREE 24 MINUTES 00 SECONDS EAST) 339 FEET; THENCE WEST 443.16 FEET (RECORDED AS SOUTH 88 DEGREES 01 MINUTES 00 SECONDS WEST) 443.16 FEET; THENCE NORTH 00 DEGREES 39 MINUTES 00 SECONDS WEST (RECORDED AS NORTH 91 DEGREES 20 MINUTES 00 SECONDS WEST) 30 FEET; THENCE WEST 88 DEGREES 01 MINUTES 00 SECONDS WEST (RECORDED AS SOUTH 88 DEGREES 01 MINUTES 00 SECONDS WEST) 525 FEET TO THE POINT OF BEGINNING.



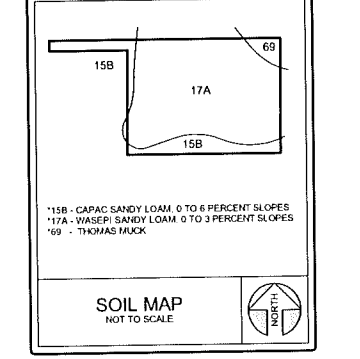
- LEGEND**
- SECTION CORNER
 - FOUND IRON, MON., NAIL
 - SET IRON
 - RECORDED
 - MEASURED
 - CALCULATED
- EXISTING**
- ELEC. PHONE OR CABLE TV O&L LINE, POLE & GUY WIRE
 - UNDERGROUND CABLE TV
 - TELEPHONE U.G. CABLE, SPLICING BOX & MANHOLE
 - ELECTRIC U.G. CABLE & MANHOLE
 - GAS MAIN & VALVE
 - WATERMAIN, HYD. GATE VALVE, TAPPING SLEEVE & VALVE
 - SANITARY SEWER, CLEANOUT & MANHOLE
 - STORM DRAIN & MANHOLE
 - COMBINED SEWER & MANHOLE
 - CATCH BASIN, INLET
 - YARD BASIN
 - STORM DRAIN & END SECTION
 - POST INDICATOR VALVE
 - WATER SERVICE SHUTOFF, HYDRANT VALVE BOX
 - MALIBOX
 - POINT ELEVATION (AT X OR END OF LEADER)
 - CONTOUR LINE
 - FENCE
 - GUARD RAIL
 - STREET LIGHT
 - SHO
 - TREE

TREE PRESERVATION DATA

X = TREE TO BE REMOVED
 TR = TREE TO REMAIN

TOTAL TREES ON SITE = 47
 TREES TO BE REMOVED = 27
 TREES TO REMAIN = 20
 TREE PRESERVATION = 20/47 = 42%

SEE SHEETS 1 & 3 FOR REPLACEMENT TREE LOCATIONS/DATA



BENCHMARKS:
 BM41 - 722.91 NAVD83 - TOP OF HYDRANT IN FRONT OF HOUSE #2707
 BM42 - 716.59 NAVD83 - TOP OF HYDRANT NORTH SIDE OF DEMAR ROAD BETWEEN HSE #1174 & 1188

NOTE: UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF FACILITIES ONLY, AS DISCLOSED TO THIS FIRM BY THE VARIOUS UTILITY COMPANY'S RECORDS. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY.

CALL MISS DIG
 3 WORKING DAYS (EXCLUDING SAT, SUN, AND HOLIDAYS)
811
 BEFORE YOU DIG
 CALL MISS DIG
 1-800-482-7171
 (TOLL FREE)

Fenn & Associates, Inc.
 Land Surveying and Civil Engineering
 14953 Commercial Drive, Shelby Township, MI 48315
 Phone: 586-254-0577 Fax: 586-254-9070
 WWW.FENNASSOCIATES.COM

FINAL SITE CONDOMINIUM PLAN
REGAL ESTATES
 PART OF THE S.W. 1/4 OF SECTION 25, T3N, R11E,
 CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN

DISTRIBUTION

- PRELIMINARY
- APPROVAL
- CONSTRUCTION
- AS-BUILT

REVISIONS

| DATE | REMARKS |
|------------|----------|
| 06/18/2013 | PER CITY |
| 08/08/2013 | PER CITY |

SEAL

CLIENT
 RATHKA BUILDING
 11684 MAJESTIC COURT
 SHELBY TOWNSHIP, MI
 PHONE: 586-254-2576

PROJECT NAME
REGAL ESTATES

PROJECT NUMBER
C13-009.12X

SHEET NAME
TOPOGRAPHIC SURVEY & TREE PRESERVATION PLAN

DRAWING SCALE: 1" = 30'
 DATE: 08/11/2014
 PROJECT MANAGER: J.S.R., P.E.
 DESIGNED BY: M.A.S.
 DRAWN BY: M.A.S.
 FIELD BY: T.D., K.M.
 CHECKED BY: J.S.R., P.E.

SHEET NUMBER
2 OF 6

CITY FILE NO. 13-001

NOT TO BE USED AS CONSTRUCTION DRAWINGS

LANDSCAPE REQUIREMENTS

- THE WORK SHALL CONSIST OF PROVIDING ALL NECESSARY MATERIALS, LABOR, WARRANTIES, EQUIPMENT, TOOLS AND SUPERVISION REQUIRED FOR THE COMPLETION AS SHOWN ON THE DRAWINGS.
- THE PLANT MATERIALS SHALL CONFORM TO TYPE STATED ON THE PLANT LIST. SIZES SHALL BE THE MINIMUM STATED ON THE PLANT LIST OR LARGER. ALL MEASUREMENTS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "A.A.H. STANDARDS FOR NURSERY STOCK."
- THE PLANT MATERIAL SHALL BE NURSERY GROWN AND INSPECTED BY THE OWNER'S REPRESENTATIVE BEFORE PLANTING. THE OWNER'S REPRESENTATIVE RESERVES THE RIGHT TO REJECT ANY PLANT MATERIAL AT ANY TIME.
- PLANTS DESIGNATED "B & B" SHALL BE BALLED AND BURLAPPED WITH FIRM BALLS OF EARTH.
- THE CONTRACTOR IS RESPONSIBLE FOR PLANTING THE MATERIALS AT THE CORRECT GRADES AND SPACING. THE PLANTS SHALL BE ORIENTED AS TO GIVE THE BEST APPEARANCE.
- WHEN THE PLANT HAS BEEN PROPERLY SET, THE PIT SHALL BE BACKFILLED WITH A TOPSOIL MIXTURE, GRADUALLY FILLING, PATTING AND SETTLING WITH WATER.
- ALL PLANT MATERIALS SHALL BE PRUNED AND INJURIES REPAIRED. THE AMOUNT OF PRUNING SHALL BE LIMITED TO THE REMOVAL OF DEAD OR INJURED TWIGS AND TO COMPENSATE FOR THE LOSS OF ROOTS FROM TRANSPANTING. CUTS SHOULD BE FLUSH, LEAVING NO STUBS. CUTS OVER 1" SHALL BE PAINTED WITH TREE PAINT.
- THE CONTRACTOR AGREES TO GUARANTEE ALL PLANT MATERIALS FOR THE PERIOD OF TWO YEARS. AT THAT TIME THE OWNER'S REPRESENTATIVE RESERVES THE RIGHT FOR FINAL INSPECTION. PLANT MATERIAL WITH 25% DIE BACK, AS DETERMINED BY THE OWNER'S REPRESENTATIVE SHALL BE REPLACED. THIS GUARANTEE INCLUDES THE FURNISHING OF NEW PLANTS, LABOR AND MATERIALS THESE NEW PLANTS SHALL ALSO BE GUARANTEED FOR THE PERIOD OF ONE YEAR.
- TOPSOIL SHALL BE FRIABLE, FERTILE TOPSOIL OF CLAY LOAM CHARACTER CONTAINING AT LEAST 5% BUT NOT MORE THAN 20% BY WEIGHT OF ORGANIC MATTER WITH A PH RANGE FROM 6.0 TO 7.0. SOIL SHALL BE FREE FROM CLAY LUMPS, COARSE SAND, PLANT ROOTS, STICKS AND OTHER FOREIGN MATERIALS.
- SEED MIX SHALL CONSIST OF THE FOLLOWING TYPES AND PROPORTIONS:
 KENTUCKY BLUE GRASS - "BARON/CHERIE/DELPHI" 60%
 CHEWING CHEWING FESCUE 15%
 CREEPING REED FESCUE 15%
 PERENNIAL RYE GRASS 10%
 WEED CONTENT SHALL NOT EXCEED 1%
 THE MIX SHALL BE APPLIED AT A RATE OF 200 LBS/ACRE
- SOD SHALL BE TOW YEAR OLD "BARON/CHERIE/DELPHI" KENTUCKY BLUE GRASS GROWN IN A SOD NURSERY ON LOAM SOIL.
- THE CONTRACTOR SHALL VERIFY ALL RIGHTS OF WAY, EASEMENTS, PROPERTY LINES AND LIMITS OF WORK, ETC. PRIOR TO COMMENCING WORK.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING AND COORDINATING WITH ALL PERTINENT UTILITY COMPANIES 72 HOURS IN ADVANCE OF ANY DIGGING TO MAKE HIMSELF FAMILIAR WITH ALL UNDERGROUND UTILITIES, PIPES, STRUCTURES. THE CONTRACTOR SHALL TAKE SOLE RESPONSIBILITY FOR ANY COST INCURRED DUE TO DAMAGE OF SAID UTILITIES.
- THE CONTRACTOR SHALL NOT WILLFULLY PROCEED WITH CONSTRUCTION AS DESIGNED WHEN IT IS OBVIOUS THAT UNKNOWN OBSTRUCTION AND/OR GRADE DIFFERENCES EXIST. SUCH CONDITIONS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE AND/OR LANDSCAPE ARCHITECT. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY AND LIABILITY FOR ANY CHANGES AND ASSOCIATED COST.
- ANY DISCREPANCIES BETWEEN DIMENSIONS LAYOUT AND ACTUAL FIELD CONDITIONS SHALL BE REPORTED TO THE OWNER'S REPRESENTATIVE AND LANDSCAPE ARCHITECT. FAILURE TO MAKE SUCH DISCREPANCIES KNOWN WILL RESULT IN CONTRACTORS RESPONSIBILITY FOR ANY CHANGES AND ASSOCIATED COST.
- THE CONTRACTOR TO VERIFY PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION OF PLANT MATERIAL.

OVERHEAD LINE STATEMENT:
NO OVERHEAD LINES EXIST

LOADING AREA STATEMENT:
PROPOSED LANDSCAPING AND/OR WALLS SHALL ADEQUATELY SCREEN LOADING AREAS FOR PUBLIC ROAD

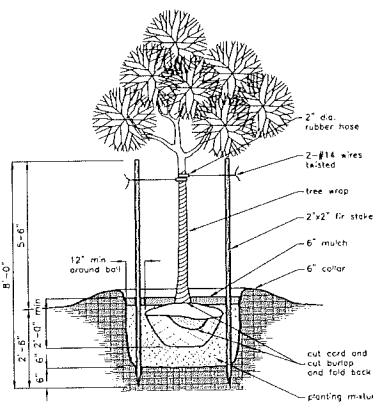
NOTES:

- ALL CONSTRUCTION AND PLANT MATERIAL LOCATION TO BE ADJUSTED ON SITE IF NECESSARY.
- ALL LARGE TREES AND EVERGREENS TO BE STAKED, GUYED AND WRAPPED AS DETAILED ON PLAN.
- PLANT BEDS TO BE MULCHED AND DRESSED WITH 4" OF SHREDDED HARBARK.
- DIG SHRUB PITS 1" LARGER THAN SHRUB ROOT BALLS AND TREE PITS 2" LARGER THAN ROOT BALL. BACK FILL WITH ONE PART TOPSOIL AND ONE PART SOIL FROM EXCAVATED PLANTING HOLE.
- REMOVE ALL TWINE, WIRE AND BURLAP FROM TREE AND SHRUB EARTH BALLS AND FROM TREE TRUNKS.
- LAWN TREES TO BE MULCHED WITH 2" WIDE MINIMUM OF 6" DEEP SHREDDED BARK RING OR APPROVED ALTERNATE DESIGN FOR TRUNK PROTECTION.
- PLANT MATERIAL, ESPECIALLY EVERGREENS, TO BE PLANTED HIGHER THAN NORMAL WHEN HEAVY SOIL CONDITIONS (CLAY, ETC.) PREVAIL.
- ALL PLANTING AREAS TO BE PREPARED WITH APPROPRIATE SOIL MIXTURES AND FERTILIZER BEFORE PLANT INSTALLATION.
- NO TREES OR EVERGREENS TO BE INSTALLED OVER ANY PROPOSED OR EXISTING UTILITY LINES AS SHOWN ON THE OVERALL LANDSCAPE PLAN. SEE ENGINEERING PLANS FOR EXACT LOCATIONS AND DETAILS.

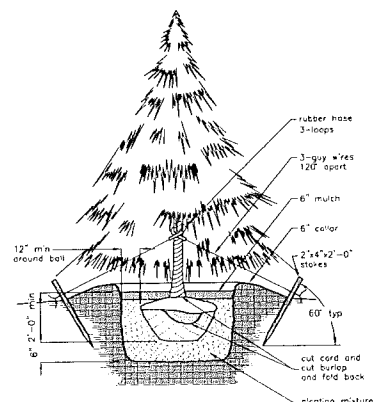
TREE PROTECTION NOTES

- ALL LANDSCAPED AREAS SHALL BE IRRIGATED WITH AN AUTOMATIC, UNDERGROUND SYSTEM.
- ISLANDS SHALL BE SOD.
- OWNER SHALL BE RESPONSIBLE FOR REPLACING DAMAGED PLANT MATERIAL DUE TO UTILITY MAINTENANCE.
- PRIOR TO THE RELEASE OF THE PERFORMANCE BOND, THE CITY OF ROCHESTER HILLS FORESTRY DIVISION MUST INSPECT ALL LANDSCAPE PLANTINGS, AND PARKING LOT ISLANDS 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 AND 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. CITY'S LANDSCAPE ARCHITECT HAS FINAL RIGHT OF APPROVAL FOR THE RELEASE OF THE PERFORMANCE AND MAINTENANCE BONDS.
- 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.
- TREES MUST BE AT LEAST 10' FROM UNDERGROUND UTILITIES AND 15' FROM OVERHEAD UTILITIES.
- TREES MAY NOT BE PLANTED WITHIN 4' OF ANY PROPERTY LINE.
- PRIOR TO RELEASE OF THE PERFORMANCE BOND, THE CITY OF ROCHESTER HILLS MUST INSPECT ALL LANDSCAPE PLANTINGS INCLUDING BUT NOT LIMITED TO EXISTING TREES, REPLACEMENT TREES, BUFFER PLANTINGS, AND PARKING LOT ISLANDS.
- IRRIGATION SHALL ONLY OCCUR BETWEEN THE HOURS OF 12:00 AND 5:00 PM IN ACCORDANCE WITH THE CITY'S WATERING ORDINANCES.

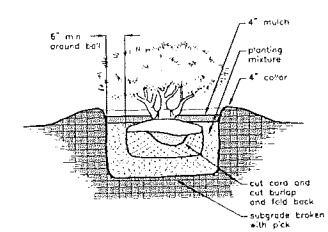
UTILITY MAINTENANCE STATEMENT:
IF, IN THE EVENT, UTILITY MAINTENANCE RESULTS IN THE REMOVAL OF LANDSCAPING, AS SHOWN ON THIS PLAN, IT WILL BE THE OWNER'S RESPONSIBILITY TO REPAIR AND REPLACE SHRUBS AND TREES THAT ARE LOCATED WITHIN THE UTILITY EASEMENTS.



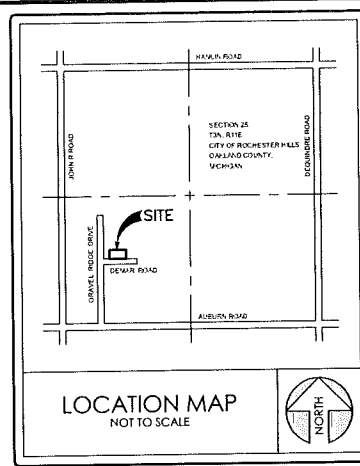
TREE PLANTING DETAIL
NO SCALE



EVERGREEN TREE PLANTING DETAIL
NO SCALE



SHRUB PLANTING DETAIL
NO SCALE



TREE LIST

| TAG # | TREE SIZE | SPECIES | NOTE |
|-------|-----------------|-----------|-----------|
| 1 | 18" | CHERRY | |
| 2 | 22" | ELM | |
| 3 | 12" | ELM | |
| 4 | 12" | POPLAR | |
| 5 | 12" | PINE | |
| 6 | 36" | SPRUCE | |
| 7 | 20" | BEECH | |
| 8 | 12", 8", 8", 6" | MAPLE | QUAD |
| 9 | 10" | ELM | |
| 10 | 16", 16" | MAPLE | TWIN |
| 11 | 8", 10", 16" | CHERRY | TRIPLE |
| 12 | 10" | SPRUCE | |
| 13 | 14" | PINE | |
| 14 | 10" | SPRUCE | |
| 15 | 12" | MAPLE | |
| 16 | 12" | MAPLE | |
| 17 | 10" | SPRUCE | |
| 18 | 16", 16" | MAPLE | TWIN |
| 19 | 10", 10" | ELM | TWIN |
| 20 | 8" | CHERRY | |
| 22 | 10" | PINE | |
| 23 | 10" | PINE | |
| 24 | 10" | PINE | |
| 25 | 18" | PINE | |
| 26 | 10" | PINE | |
| 27 | 12" | PINE | |
| 28 | 6" | CHERRY | |
| 29 | 16" | HICKORY | |
| 30 | 12", 12" | CHERRY | TWIN |
| 31 | 24" | OAK | |
| 32 | 15" | BOX ELDER | |
| 33 | 15" | LOCUST | |
| 34 | 18", 24" | OAK | TWIN |
| 35 | 15" | HICKORY | |
| 36 | 18", 18" | CHERRY | TWIN/613 |
| 37 | 12" | PINE | |
| 38 | 10" | CHERRY | ALSO #522 |
| 39 | 8", 10" | BOX ELDER | TWIN |
| 40 | 22" | HICKORY | |
| 41 | 8", 8", 10" | CHERRY | TRIPLE |
| 42 | 14" | BOX ELDER | |
| 43 | 10" | PINE | |
| 44 | 12" | PINE | |
| 45 | 9" | PINE | |
| 46 | 12" | PINE | |
| 47 | 12" | PINE | |
| 48 | 12" | PINE | |
| 49 | 8" | PINE | |
| 50 | 8", 10" | CHERRY | TWIN |
| 51 | 8" | CHERRY | |
| 517 | 8", 8" | CHERRY | TWIN |
| 564 | 10", 10" | CHERRY | TWIN |
| 645 | 16" | OAK | |
| 665 | 48" | MAPLE | |
| 661 | 18", 24" | OAK | TWIN |
| 699 | 22" | OAK | |

REPLACEMENT TREE DATA

TOTAL REPLACEMENT TREES: 14
 DECIDUOUS TREES (3" CAL): 7 (14 CREDITS)
 CONIFEROUS TREES (10" HT): 7 (14 CREDITS)
 TOTAL CREDITS REQUIRED: 27
 TOTAL CREDITS PROVIDED: 28

PRELIMINARY COST ESTIMATE

| | QTY | SIZE | CONDITION | SPACING | UNIT | TOTAL |
|-----------------------|-----|---------|-----------|----------|--------|----------|
| DECIDUOUS SHADE TREES | 7 | 3" CAL | B + B | AS SHOWN | \$ 425 | \$ 2,975 |
| EVERGREEN TREES | 7 | 10" HT. | B + B | AS SHOWN | \$ 500 | \$ 3,500 |
| TOTAL | | | | | | \$ 6,475 |

NOTE: UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF FACILITIES ONLY, AS DISCLOSED TO THIS FIRM BY THE VARIOUS UTILITY COMPANY'S RECORDS. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY.

CALL MISS DIG
 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
 14933 Cassin Road, Shelby Township, Michigan, 48215
 Phone: 586-254-0977 Fax: 586-254-0970
 WWW.FENNASSOCIATES.COM

FINAL SITE CONDOMINIUM PLAN
REGAL ESTATES
 PART OF THE S.W. 1/4 OF SECTION 25, T3N, R11E,
 CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN

DISTRIBUTION

- PRELIMINARY
- APPROVAL
- CONSTRUCTION
- AS-BUILT

REVISIONS

| DATE | REMARKS |
|------------|----------|
| 06/18/2013 | PER CITY |
| 08/08/2013 | PER CITY |

CLIENT
 RATHKA BUILDING
 11684 MAJESTIC COURT
 SHELBY TOWNSHIP, MI
 PHONE: 586-254-2576

PROJECT NAME
 REGAL ESTATES

PROJECT NUMBER
 C13-009.12X

SHEET NAME
 TREE PRESERVATION
 NOTES & DETAILS

DRAWING SCALE: N/A
DATE: 08/11/2014
PROJECT MANAGER: J.S.R. P.E.
DESIGNED BY: M.A.S.
DRAWN BY: M.A.S.
FIELD BY: T.D. KJA
CHECKED BY: J.S.R. P.E.

SHEET NUMBER
 3 OF 6

FINAL SITE CONDOMINIUM PLAN
REGAL ESTATES
 PART OF THE S.W. 1/4 OF SECTION 25, T3N, R11E,
 CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN

| DISTRIBUTION | |
|--------------|--------------|
| ● | PRELIMINARY |
| ○ | APPROVAL |
| ○ | CONSTRUCTION |
| ○ | AS-BUILT |
| REVISIONS | |
| DATE | REMARKS |
| 06/18/2013 | PER CITY |
| 08/08/2013 | PER CITY |

SEAL

CLIENT
 RATHKA BUILDING
 11684 MAJESTIC COURT
 SHELBY TOWNSHIP, MI
 PHONE: 586-254-2576

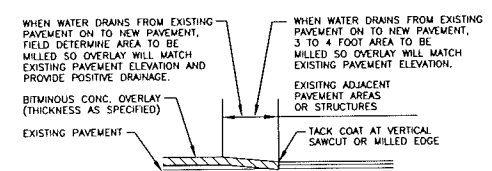
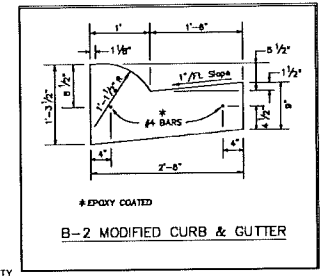
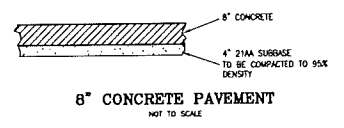
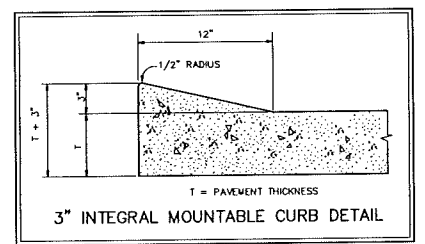
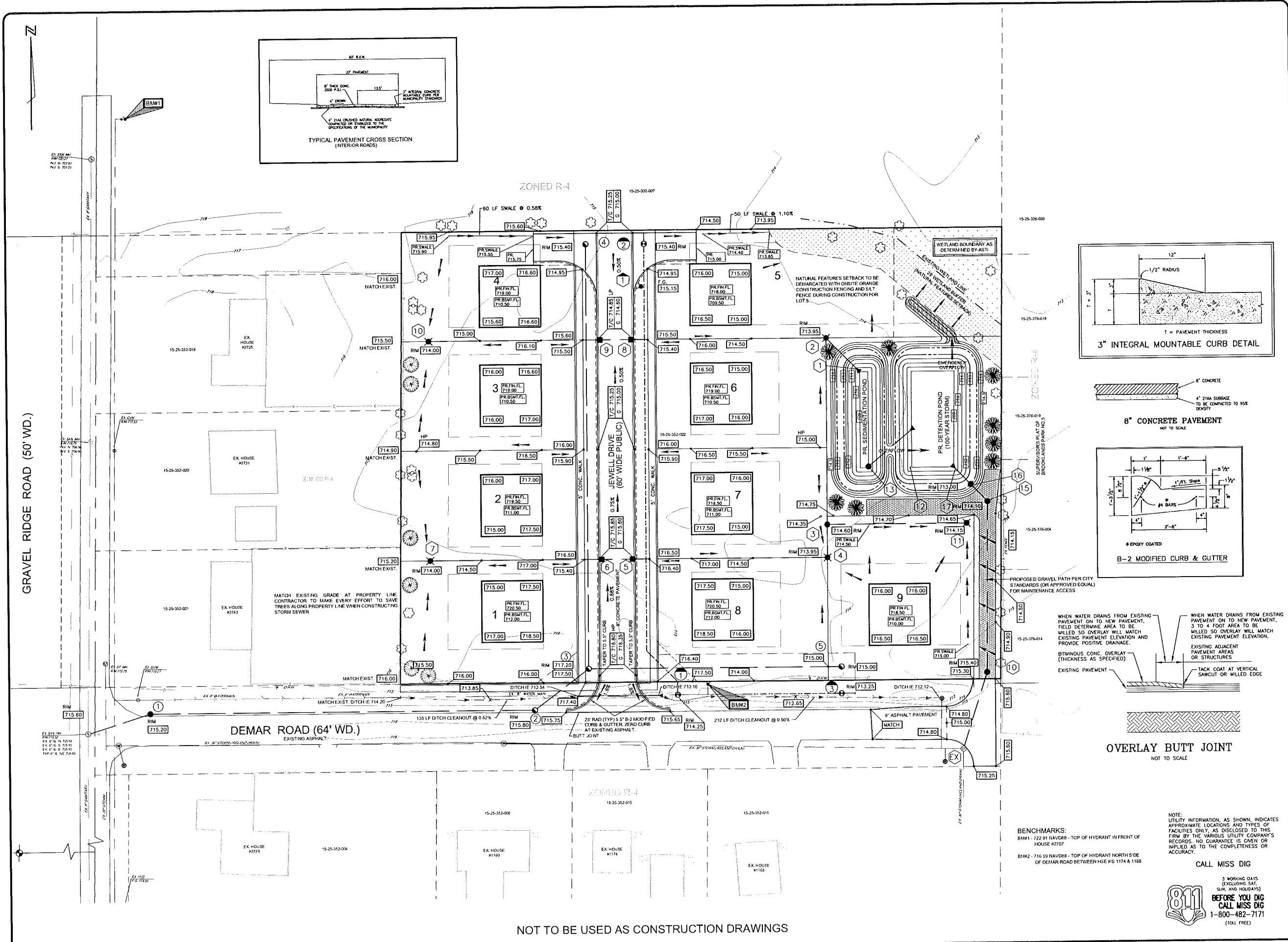
PROJECT NAME
REGAL ESTATES

PROJECT NUMBER
C13-009.12X

SHEET NAME
PRELIMINARY GRADING PLAN

DRAWING SCALE: 1" = 30'
 DATE: 08/11/2014
 PROJECT MANAGER: J.S.R. P.E.
 DESIGNED BY: H.A.S.
 DRAWN BY: H.A.S.
 FIELD BY: T.D. KM
 CHECKED BY: J.S.R. P.E.

SHEET NUMBER
4 OF 6



NOTE: UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF FACILITIES ONLY, AS DISCLOSED TO THIS FIRM BY THE VARIOUS UTILITY COMPANY'S RECORDS. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY.

BENCHMARKS:
 BM#1 - 722 91 NAVD83 - TOP OF HYDRANT IN FRONT OF HOUSE #2707
 BM#2 - 716 59 NAVD83 - TOP OF HYDRANT NORTH SIDE OF DEMAR ROAD BETWEEN HSE #S 1174 & 1188

CALL MISS DIG
 3 WORKING DAYS (EXCLUDING SAT, SUN, AND HOLIDAYS)
BEFORE YOU DIG CALL MISS DIG
 1-800-482-7171 (TOLL FREE)

NOT TO BE USED AS CONSTRUCTION DRAWINGS

| DISTRIBUTION | |
|--------------|--------------|
| ● | PRELIMINARY |
| ○ | APPROVAL |
| ○ | CONSTRUCTION |
| ○ | AS-BUILT |

| REVISIONS | |
|------------|----------|
| DATE | REMARKS |
| 05/18/2013 | PER CITY |
| 05/08/2013 | PER CITY |

| CLIENT | |
|---|--|
| RATHKA BUILDING 11684 MAJESTIC COURT SHELBY TOWNSHIP, MI PHONE: 586-254-2576 | |

PROJECT NAME
REGAL ESTATES

PROJECT NUMBER
C13-009.12X

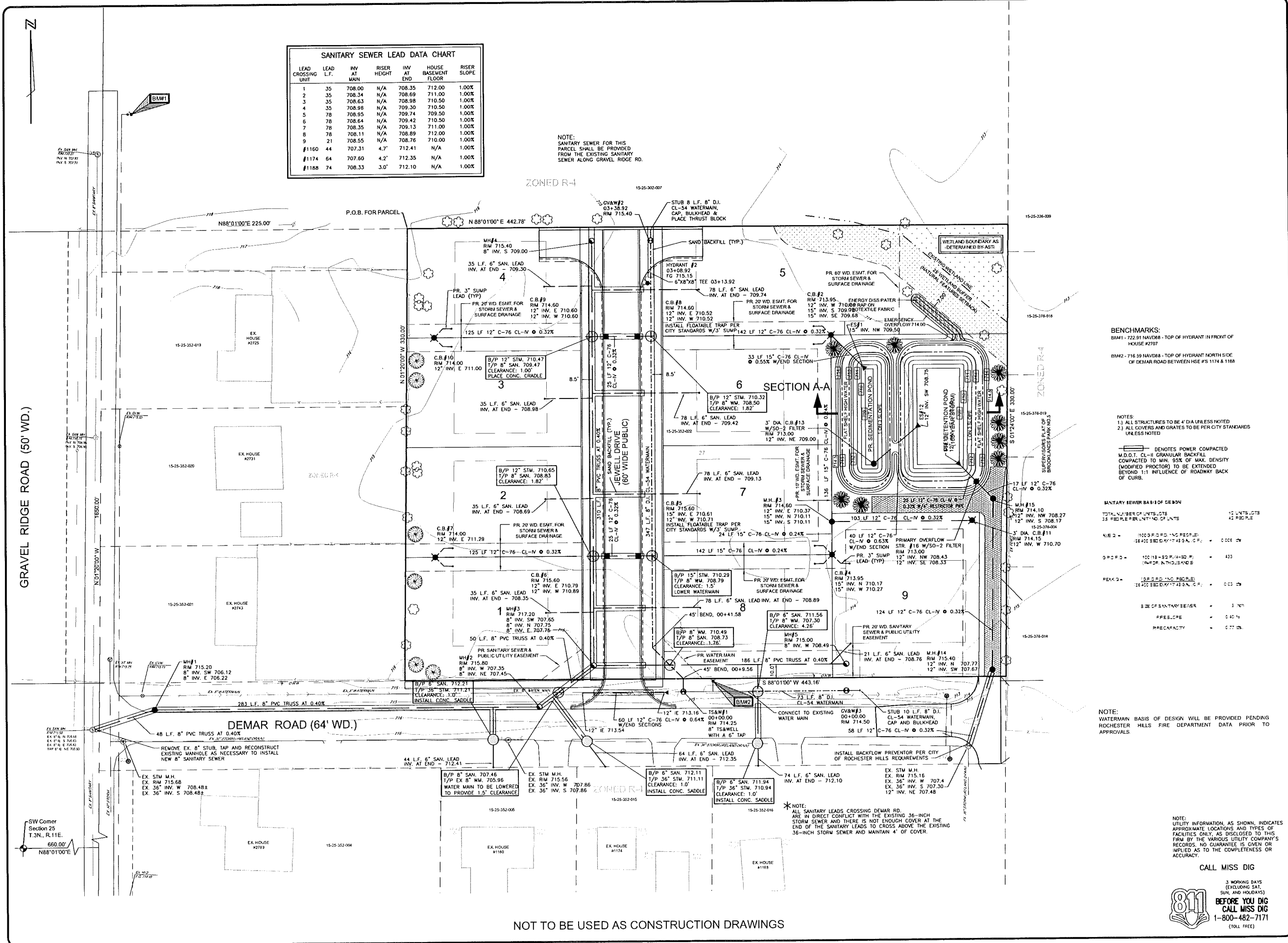
SHEET NAME
**PRELIMINARY
 UTILITY PLAN**

| | |
|------------------|-------------|
| DRAWING SCALE: | 1" = 30' |
| DATE: | 08/11/2014 |
| PROJECT MANAGER: | J.S.R. P.E. |
| DESIGNED BY: | M.A.S. |
| DRAWN BY: | M.A.S. |
| FIELD BY: | T.D. K.M. |
| CHECKED BY: | J.S.R. P.E. |

SHEET NUMBER
5 OF 6

| LEAD CROSSING UNIT | LEAD L.F. | INV. AT MAN | RISER HEIGHT | INV. AT END | HOUSE BASEMENT FLOOR | RISER SLOPE |
|--------------------|-----------|-------------|--------------|-------------|----------------------|-------------|
| 1 | 35 | 708.00 | N/A | 708.35 | 712.00 | 1.00% |
| 2 | 35 | 708.34 | N/A | 708.69 | 711.00 | 1.00% |
| 3 | 35 | 708.63 | N/A | 708.98 | 710.50 | 1.00% |
| 4 | 35 | 708.98 | N/A | 709.30 | 710.50 | 1.00% |
| 5 | 78 | 708.95 | N/A | 709.74 | 709.50 | 1.00% |
| 6 | 78 | 708.64 | N/A | 709.42 | 710.50 | 1.00% |
| 7 | 78 | 708.35 | N/A | 709.13 | 711.00 | 1.00% |
| 8 | 78 | 708.11 | N/A | 708.89 | 712.00 | 1.00% |
| 9 | 21 | 708.55 | N/A | 708.76 | 710.00 | 1.00% |
| #1160 | 44 | 707.31 | 4.7' | 712.41 | N/A | 1.00% |
| #1174 | 64 | 707.60 | 4.2' | 712.35 | N/A | 1.00% |
| #1188 | 74 | 708.33 | 3.0' | 712.10 | N/A | 1.00% |

NOTE:
 SANITARY SEWER FOR THIS PARCEL SHALL BE PROVIDED FROM THE EXISTING SANITARY SEWER ALONG GRAVEL RIDGE RD.



BENCHMARKS:
 BM#1 - 72.91 HAV088 - TOP OF HYDRANT IN FRONT OF HOUSE #2707
 BM#2 - 716.59 HAV088 - TOP OF HYDRANT NORTH SIDE OF DEMAR ROAD BETWEEN HSE #3 1174 & 1168

NOTES:
 1) ALL STRUCTURES TO BE 4' DIA UNLESS NOTED
 2) ALL COVERS AND GRATES TO BE PER CITY STANDARDS UNLESS NOTED
 DENOTES POWER COMPACTED M.D.O.T. CL-II GRANULAR BACKFILL COMPACTED TO MIN. 95% OF MAX. DENSITY (MODIFIED PROCTOR) TO BE EXTENDED BEYOND 1:1 INFLUENCE OF ROADWAY BACK OF CURB.

| SANITARY SEWER BASIS OF DESIGN | |
|---------------------------------|---------------|
| TOTAL NUMBER OF UNITS/LOTS | 12 UNITS/LOTS |
| 35 PEOPLE PER UNIT/NO. OF UNITS | 42 PEOPLE |

| | | |
|----------|----------------------|-------|
| N/E 2 = | 100 S.F. 2" PVC PIPE | 0.008 |
| O/P 2 = | 100 S.F. 2" PVC PIPE | 0.008 |
| PEAK 2 = | 100 S.F. 2" PVC PIPE | 0.008 |

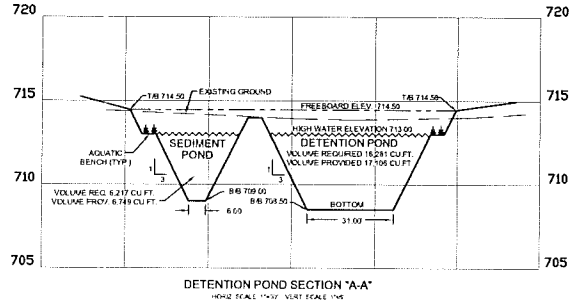
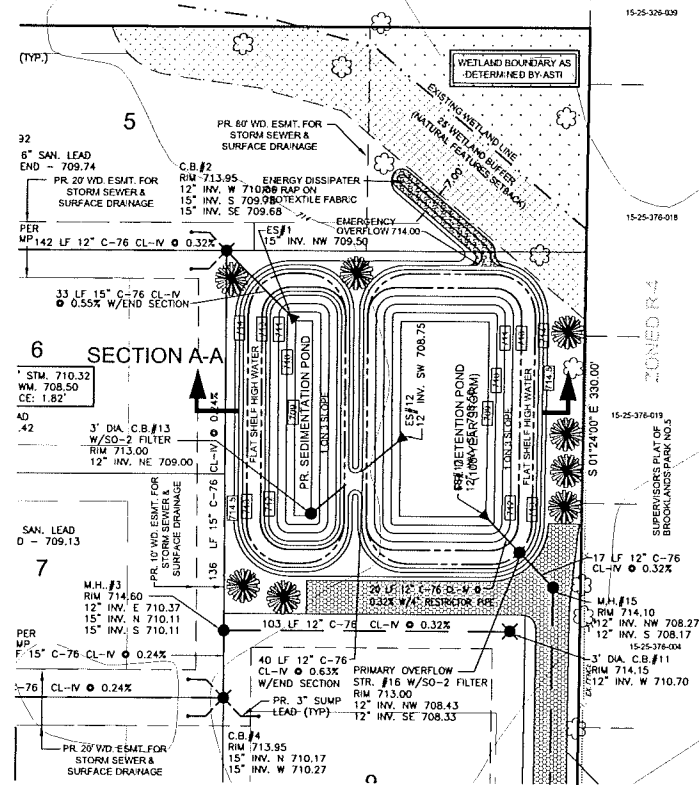
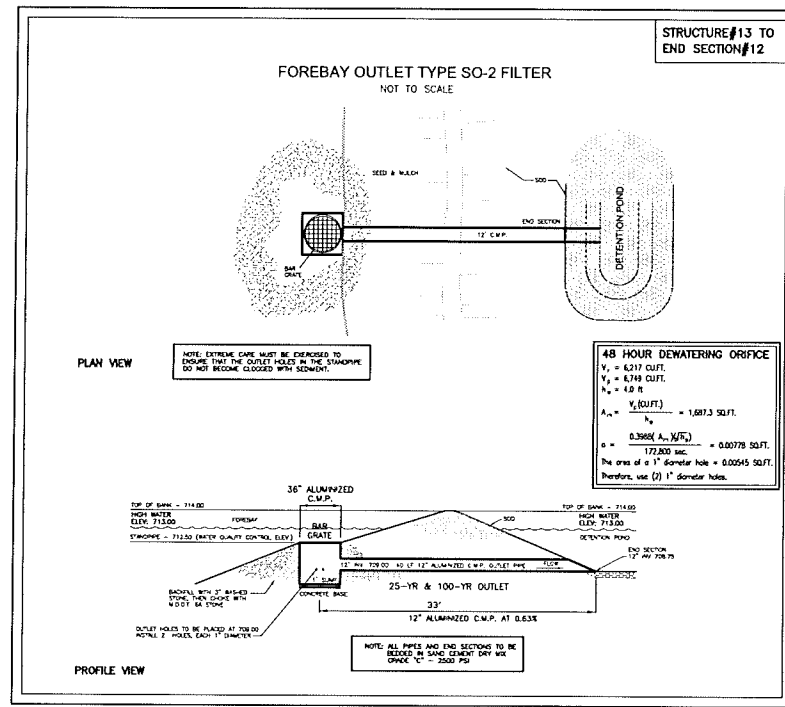
NOTE:
 WATERMAIN BASIS OF DESIGN WILL BE PROVIDED PENDING ROCHESTER HILLS FIRE DEPARTMENT DATA PRIOR TO APPROVALS.

NOTE:
 UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF FACILITIES ONLY, AS DISCLOSED TO THIS FIRM BY THE VARIOUS UTILITY COMPANIES' RECORDS. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY.

CALL MISS DIG
 3 WORKING DAYS (EXCLUDING SAT, SUN, AND HOLIDAYS)
811
 BEFORE YOU DIG
 CALL MISS DIG
 1-800-482-7171
 (TOLL FREE)

NOT TO BE USED AS CONSTRUCTION DRAWINGS

Z



**POND OVERFLOW CAPACITY CALCULATIONS
100-YEAR STORM (EMERGENCY)**

| | |
|--------------------------------|------------|
| REQUIRED FLOW - 100 YEAR STORM | |
| RUNOFF COEFF (C) | 0.41 |
| INTENSITY (I) | 5.22 in/hr |
| AREA (A) | 3.51 AC. |
| $Q_p = CIA = 7.51$ c.f.s. | |

Calculation of Flow Rate Over a Rectangular Weir (Sharp-crested, Contracted)

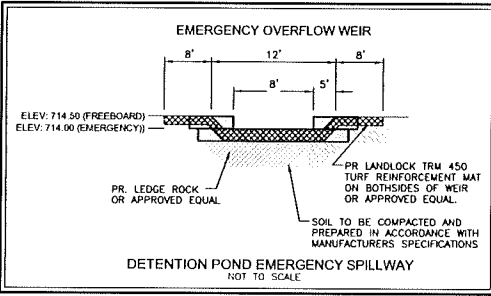
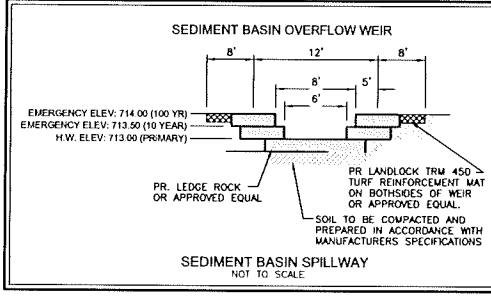
| Inputs | Calculations |
|---|-----------------------------|
| Height of weir crest above channel invert: $P = 2.2$ ft | $H = 1.74H = 2.00$ |
| Width of channel: $B = 12$ ft | $H < 1.4H \le 1.9$ yes |
| Length of weir: $L = 3$ ft | $P/2H = 4.00$ |
| Measured head over the weir: $H = 0.6$ ft | $P/2H \ge 1.7$ yes |
| | $H/L = 0.06$ |
| | $H/L \le 0.237$ yes |
| | $C = 3.36L^{-0.2} H^{0.75}$ |
| | Flow Rate: $Q = 9.40$ cfs |

**SEDIMENT BASIN OVERFLOW CAPACITY CALCULATIONS
25-YEAR STORM (EMERGENCY)**

| | |
|-------------------------------|------------|
| REQUIRED FLOW - 25 YEAR STORM | |
| RUNOFF COEFF (C) | 0.41 |
| INTENSITY (I) | 4.04 in/hr |
| AREA (A) | 3.51 AC. |
| $Q_p = CIA = 5.81$ c.f.s. | |

Calculation of Flow Rate Over a Rectangular Weir (Sharp-crested, Contracted)

| Inputs | Calculations |
|---|-----------------------------|
| Height of weir crest above channel invert: $P = 4$ ft | $H = 1.74H = 3.00$ |
| Width of channel: $B = 12$ ft | $H < 1.4H \le 1.9$ yes |
| Length of weir: $L = 6$ ft | $P/2H = 2.00$ |
| Measured head over the weir: $H = 0.6$ ft | $P/2H \ge 1.7$ yes |
| | $H/L = 0.06$ |
| | $H/L \le 0.237$ yes |
| | $C = 3.36L^{-0.2} H^{0.75}$ |
| | Flow Rate: $Q = 5.96$ cfs |



SEDIMENT BASIN VOLUME CALCULATION PER OAKLAND COUNTY STANDARDS

| | |
|-------------------------------|--|
| AREA | A = 3.51 ACRES |
| RUNOFF COEFF | C = 0.41 |
| VOLUME OF RUHOFF | $V_f = 4.320 \times C \times A = 6216.91$ CU FT |
| TOTAL STORAGE REQUIRED | 6217 CU FT |
| STORAGE HEIGHT PROVIDED | H = 4.00 FEET |
| TOP AREA OF BASIN | AREA OF CONTOUR 713.0 A1 = 3440.00 SQ FT |
| BOTTOM AREA OF BASIN | AREA OF CONTOUR 709.0 A2 = 420.00 SQ FT |
| TOTAL STORAGE VOLUME PROVIDED | $V = (A1 + A2 + \sqrt{A1 \times A2}) \times H \div 3 = 6739$ CU FT |

| | |
|--|------------------------|
| WEIGHTED 'C' VALUE | |
| TOTAL AREA OF AREA OF BUILDINGS AND PAVEMENT | = 3.51 AC = 152,896 SF |
| AREA OF LAWN | = 35,910 SF C = 0.05 |
| $C_{AV} = \left(\frac{35,910}{152,896} \right) (0.95) + \left(\frac{116,986}{152,896} \right) (0.25) = 0.4144$ | |
| USE C = 0.41 | |

DETENTION CALCULATION 100 YEAR STORM PER OAKLAND COUNTY STANDARDS

| | |
|-------------------------------|--|
| ALLOWABLE DISCHARGE | C1 = 0.20 CFS/ACRE |
| AREA | A = 3.51 ACRES |
| RUNOFF COEFF | C = 0.41 |
| TOTAL ALLOWABLE DISCHARGE | QA = C1 x A = 0.70 CFS |
| ALLOWABLE OUTFLOW | QO = QA / (A x C) = 0.49 CFS/ACRE |
| PEAK STORAGE TIME | T = 25 - (SQRT(10912.5 / QO)) = 120.40 MINUTES |
| MAX STORAGE VOLUME/ACRE | VS = (16500 x T / (1 + 25)) - (40 x QO x T) = 11313.73 CU FT/ACRE |
| TOTAL STORAGE REQUIRED | VT = VS x A x C = 16281.59 CU FT |
| STORAGE HEIGHT PROVIDED | H = 4.00 FEET |
| TOP AREA OF BASIN | AREA OF CONTOUR 713.0 A1 = 3440.00 SQ FT |
| BOTTOM AREA OF BASIN | AREA OF CONTOUR 709.0 A2 = 420.00 SQ FT |
| TOTAL STORAGE VOLUME PROVIDED | $V = (A1 + A2 + \sqrt{A1 \times A2}) \times H \div 3 = 17166.61$ CU FT |
| AREA OF ORFICE | AR = C1 x A / (0.62 + SQRT(0.2 + 32.2 x H)) = 0.07 SQ FT |
| DIAMETER OF OUTLET | D = 2 x SQRT(144 x AR / PI) = 3.49 INCHES |

DETENTION CALCULATION 25 YEAR STORM PER OAKLAND COUNTY STANDARDS

| | |
|-------------------------------|--|
| ALLOWABLE DISCHARGE | C1 = 0.20 CFS/ACRE |
| AREA | A = 3.51 ACRES |
| RUNOFF COEFF | C = 0.41 |
| TOTAL ALLOWABLE DISCHARGE | QA = C1 x A = 0.70 CFS |
| ALLOWABLE OUTFLOW | QO = QA / (A x C) = 0.49 CFS/ACRE |
| PEAK STORAGE TIME | T = 25 - (SQRT(10912.5 / QO)) = 102.56 MINUTES |
| MAX STORAGE VOLUME/ACRE | VS = (12190 x T / (1 + 25)) - (40 x QO x T) = 9370.76 CU FT/ACRE |
| TOTAL STORAGE REQUIRED | VT = VS x A x C = 12046.36 CU FT |
| STORAGE HEIGHT PROVIDED | H = 3.30 FEET |
| TOP AREA OF BASIN | AREA OF CONTOUR 711.8 A1 = 3100.00 SQ FT |
| BOTTOM AREA OF BASIN | AREA OF CONTOUR 709.0 A2 = 1900.00 SQ FT |
| TOTAL STORAGE VOLUME PROVIDED | $V = (A1 + A2 + \sqrt{A1 \times A2}) \times H \div 3 = 12544.85$ CU FT |

NOT TO BE USED AS CONSTRUCTION DRAWINGS

BENCHMARKS:
BM#1 - 722.91 NAVD83 - TOP OF HYDRANT IN FRONT OF HOUSE #2707
BM#2 - 716.59 NAVD83 - TOP OF HYDRANT NORTH SIDE OF DENAR ROAD BETWEEN HSE #5 1174 & 1188

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

CALL MISS DIG

Fenn & Associates, Inc.
Land Surveying and Civil Engineering
14923 Commercial Drive, Shelby Township, MI 48115
Phone: 586-254-0577 Fax: 586-254-9920
www.fenn-associates.com

FINAL SITE CONDOMINIUM PLAN
REGAL ESTATES
PART OF THE S.W. 1/4 OF SECTION 25, T3N, R11E,
CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN

| DISTRIBUTION | |
|--------------|--------------|
| ● | PRELIMINARY |
| ○ | APPROVAL |
| ○ | CONSTRUCTION |
| ○ | AS-BUILT |
| REVISIONS | |
| DATE | REMARKS |
| 06/11/2013 | PER CITY |
| 06/08/2013 | PER CITY |

CLIENT
RATHKA BUILDING
11684 MAJESTIC COURT
SHELBY TOWNSHIP, MI
PHONE: 586-254-2576

PROJECT NAME
REGAL ESTATES

PROJECT NUMBER
C13-009.12X

SHEET NAME
PRELIMINARY DETENTION & DESIGN CALC

DRAWING SCALE: 1" = 30'

DATE: 08/11/2014

PROJECT MANAGER: J.S.R. P.E.

DESIGNED BY: M.A.S.

DRAWN BY: M.A.S.

FIELD BY: T.D. KJA.

CHECKED BY: J.S.R. P.E.

SHEET NUMBER
6 OF 6