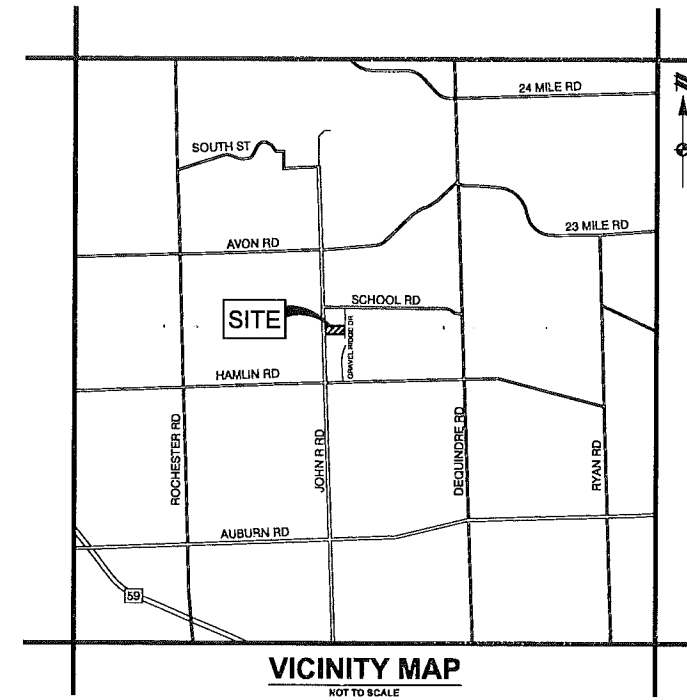


CRESTWYK ESTATES

4.44 ACRE DEVELOPMENT
CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN

PUD CONCEPT PLAN



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248.447.2000



DEVELOPMENT TEAM

DEVELOPER

M2J1, LLC
14955 TECHNOLOGY DRIVE
SHELBY TOWNSHIP, MI 48315
PHONE: (586) 421-5728
CONTACT: JIM POLYZOIS

LANDSCAPE ARCHITECT

NÚÑEZ DESIGN, INC.
249 PARK STREET
TROY, MI 48063
PHONE: (248) 224-5933
CONTACT: RALPH NÚÑEZ

CIVIL ENGINEER/SURVEYOR/ WETLAND CONSULTANT

ATWELL, LLC
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
PHONE: (248) 447-2000
CONTACT: ERIC LORD, P.E.

LEGAL DESCRIPTION

LEGAL DESCRIPTION

LOT 7 OF FERRYVIEW HOMELANDS SUBDIVISION AS RECORDED IN LIBER 27, PAGE 22, OAKLAND COUNTY RECORDS, A SUBDIVISION IN THE SOUTHWEST 1/4 OF SECTION 24, T3N, R11E, CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN

SITE DATA

THE CURRENT ZONING CLASSIFICATION IS R-4 (ONE FAMILY RESIDENTIAL DISTRICT)
GROSS AREA: 4.64 AC. NET AREA: 4.44 AC.

LOT DENSITY

AREA=4.44 AC
UNITS=16 SINGLE FAMILY DETACHED CONDOMINIUMS
COVERAGE=16/4.44= 3.60 UNITS PER ACRE

SETBACKS

FRONT: 24' FROM BACK OF SIDEWALK
SIDE: 20' MINIMUM BETWEEN BUILDINGS
REAR: 30'

5' SIDEWALK PROVIDED ON BOTH SIDES OF ROAD
8' WIDE PEDESTRIAN PATHWAY ALONG JOHN R RIGHT OF WAY
ROADS ARE TO BE PRIVATE.

SHEET INDEX

- C-01 COVER SHEET
- C-02 EXISTING CONDITIONS PLAN
- C-03 TREE INVENTORY
- C-04 SITE LAYOUT PLAN
- C-05 GRADING PLAN
- C-06 UTILITY PLAN

LANDSCAPE PLANS PREPARED BY NÚÑEZ DESIGN, INC.

- LA - 1.0 LANDSCAPE CONCEPT PLAN
- LA - 1.1 LANDSCAPE PLANTING PLAN
- LA - 1.2 TYPICAL SINGLE FAMILY UNIT PLANTING PLAN
- LA - 1.3 TYPICAL TWO FAMILY ATTACHED UNITS PLANTING PLAN
- LA - 1.4 ELEVATION & CROSS SECTIONS
- LA - 2.0 LANDSCAPE PLANTING DETAILS & NOTES

- T-1.0 EXISTING TREE SURVEY
- T-1.1 TREE ANALYSIS

SECTION 24

TOWN 3 NORTH, RANGE 11 EAST
CITY OF ROCHESTER HILLS
OAKLAND COUNTY, MICHIGAN

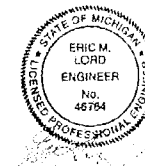
M2J1, LLC
CRESTWYK ESTATES
PUD CONCEPT PLAN
COVER SHEET

DATE
APRIL 21, 2017

06-15-2017
CITY RESUBMITTAL
07-04-2017
CITY RESUBMITTAL

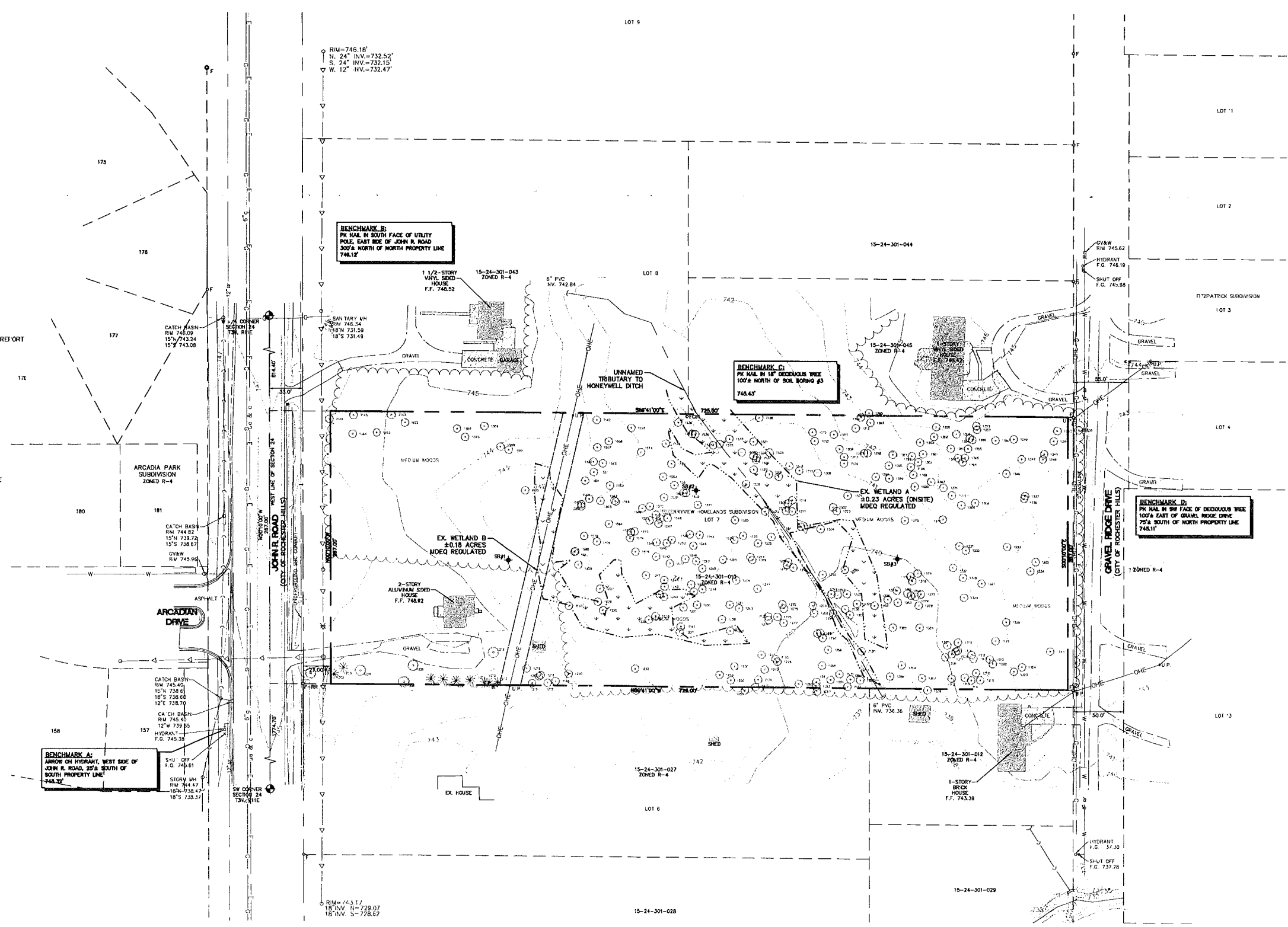
REVISIONS

DRAWN BY: REX
CHECKED BY: JPC
P.M.: E. LORD
JOB #: 17000274
FILE CODE: -
SHEET NO. C-01



CITY FILE #17-013

LEGEND	
---	BOUNDARY LINE
---	EXISTING ROW
---	BOUNDARY ADJACENT LINE
---	EXISTING EASEMENT LINE
---	EXISTING SETBACK LINE
---	EXISTING CONTOUR
---	EXISTING CURB AND GUTTER
---	EXISTING SANITARY SEWER
---	EXISTING STORM SEWER
---	EXISTING WATER LINE
---	EXISTING UNDERGROUND GAS
---	EXISTING UNDERGROUND TELEPHONE
---	EXISTING OVERHEAD TELEPHONE
---	EXISTING UNDERGROUND ELECTRIC
---	EXISTING OVERHEAD ELECTRIC
---	EXISTING UNDERGROUND CABLE
---	EXISTING OVERHEAD CABLE
---	EXISTING CENTERLINE OF DITCH
---	EXISTING FENCE
---	EXISTING GUARD RAIL
---	EXISTING RAILROAD
---	EXISTING VEGETATION LINE
---	EXISTING WETLAND
+	SECTION CORNER
○	SOIL BORING, REFER TO GEOTECHNICAL REPORT
○	FOUND IRON ROD
○	SET IRON ROD
○	FOUND PK NAIL
○	FOUND MONUMENT
○	EXISTING SIGN
○	EXISTING BOLLARD
○	EXISTING TREE WITH TREE TAG NUMBER
○	EXISTING CLEANOUT
○	EXISTING SANITARY MANHOLE
○	EXISTING FLARED END SECTION
○	EXISTING STORM CATCH BASIN/MANHOLE
○	EXISTING WATER VALVE
○	EXISTING FIRE HYDRANT
○	EXISTING WATER METER
○	EXISTING WATER MARKER
○	EXISTING GAS METER
○	EXISTING GAS RISER
○	EXISTING GAS MARKER
○	EXISTING TELEPHONE RISER
○	EXISTING TELEPHONE MANHOLE
○	EXISTING TELEPHONE MARKER
○	EXISTING TRAFFIC SIGNAL
○	EXISTING ELECTRIC TRANSFORMER
○	EXISTING ELECTRIC BOX
○	EXISTING ELECTRIC METER
○	EXISTING ELECTRIC MARKER
○	EXISTING UTILITY POLE
○	EXISTING LIGHT POLE
○	EXISTING CABLE RISER
○	EXISTING MAILBOX
○	EXISTING FLAG POLE
○	EXISTING SPOT ELEVATION
○	EXISTING WETLAND
○	EXISTING CONCRETE



LEGAL DESCRIPTION OF PARCEL NUMBER 15-24-301-010
 LOT 7 OF FERRYVIEW HOMELANDS SUBDIVISION AS RECORDED IN LIBER 27, PAGE 22, OAKLAND COUNTY RECORDS, A SUBDIVISION IN THE SOUTHWEST 1/4 OF SECTION 24, T3N, R11E, CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN

BASIS OF BEARING
 BEARINGS WERE BASED ON "FERRYVIEW HOMELAND" LIBER 27, PAGE 22, O.C.R. (WEST SECTION LINE)

WETLANDS
 THE EXISTING WETLANDS SHOWN ARE FROM A WETLAND DELINEATION PERFORMED BY ATWELL, LLC ON JANUARY 30, 2017.

811
 Know what's below.
 Call before you dig.
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SECTION 24
 TOWN 3 NORTH, RANGE 11 EAST
 CITY OF ROCHESTER HILLS
 OAKLAND COUNTY, MICHIGAN

M2/JT, LLC
 CRESTWYK ESTATES
 PUD CONCEPT PLAN
 EXISTING CONDITIONS PLAN

DATE: APRIL 21, 2017
 06-15-2017
 CITY DESIGN/ITAL
 02-08-2017
 CITY DESIGN/ITAL

REVISIONS

SCALE 0 25 50
 1" = 50 FEET

DRAWN BY: REX
 CHECKED BY: JPC
 P.M.: E. LORD
 JOB #: 17000274
 FILE CODE: -
 SHEET NO. C-02

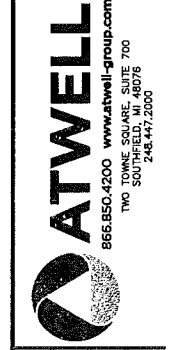
Table with columns: Tree Tag ID, Species, Botanical Name, Common Name, DBH (IN), Landmark Tree, Condition, Notes/Comments. Contains tree survey data for the City of Rochester Hills, Oakland County Michigan.

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Know what's below. Call before you dig. THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE MANNER...



SECTION 24 TOWN 3 NORTH, RANGE 11 EAST CITY OF ROCHESTER HILLS OAKLAND COUNTY, MICHIGAN

M2J1, LLC CRESTWYK ESTATES PUD CONCEPT PLAN TREE INVENTORY

DATE: APRIL 21, 2017. SCALE: 0 25 50 1" = 50 FEET. DRAWN BY: REK. CHECKED BY: JPC. P.M.: E. LORD. JOB #: 17000274. FILE CODE: -. SHEET NO. C-03.

LEGEND

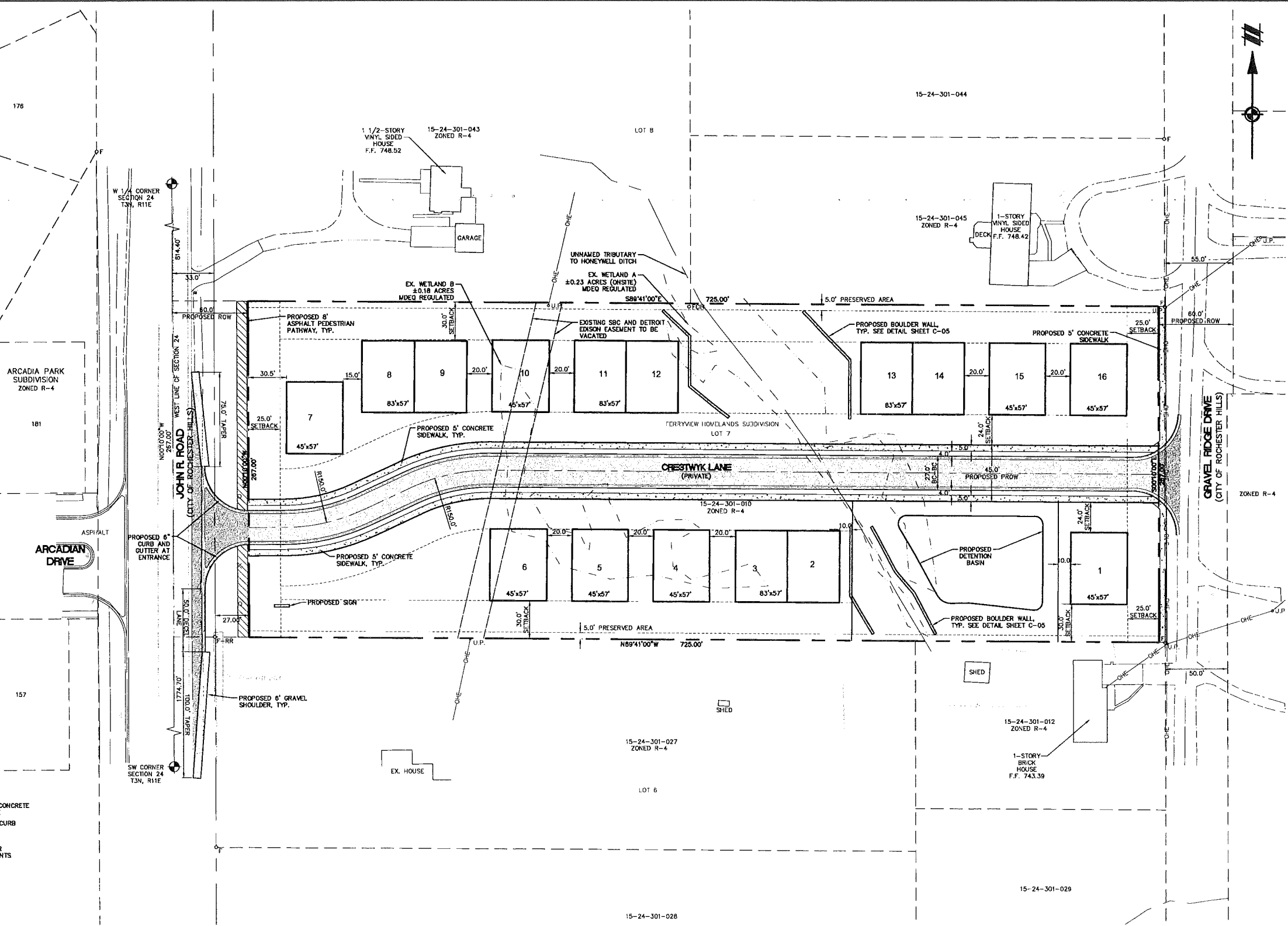
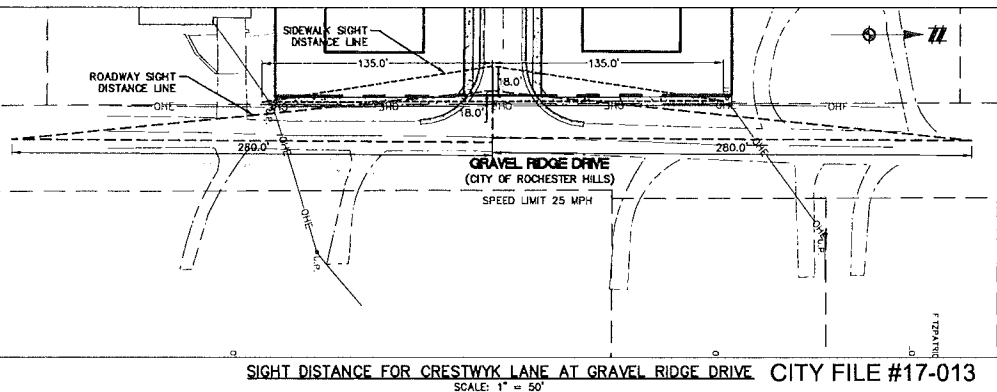
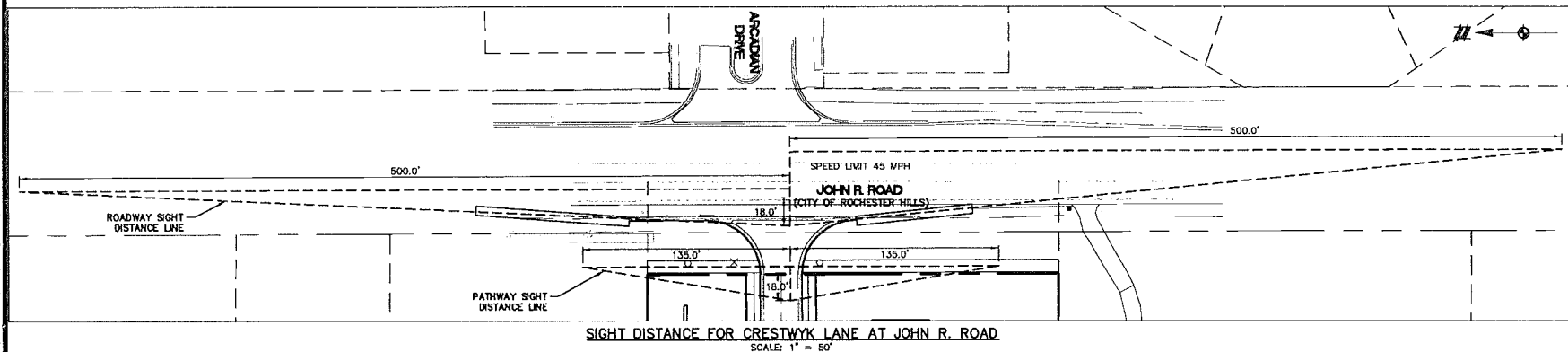
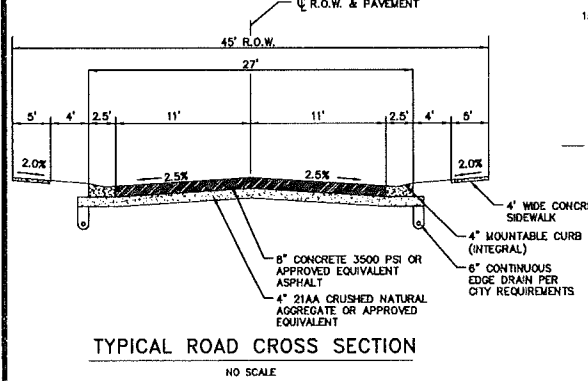
---	BOUNDARY LINE
---	EXISTING ROW
---	EXISTING CURB AND GUTTER
---	PROPOSED CURB AND GUTTER
---	EXISTING EASEMENT LINE
---	PROPOSED EASEMENT LINE
---	BUILDING SETBACK LINE
---	ADA RAMP
+	PROPOSED SIGN
+	PROP. STOP SIGN
BC	DIMENSION TO BACK OF CURB
PL	DIMENSION TO PROPERTY LINE
EP	DIMENSION TO EDGE OF PAVEMENT
B	DIMENSION TO BUILDING
○	EXISTING LIGHT POLE
▨	PROPOSED CONCRETE SIDEWALK
▨	PROPOSED STANDARD DUTY ASPHALT PAVEMENT
▨	PROPOSED HEAVY DUTY ASPHALT PAVEMENT
▨	PROPOSED GRAVEL SHOULDER
▨	PROPOSED ASPHALT PEDESTRIAN PATHWAY

FIRE DEPARTMENT NOTES:

- FIRE LANES SHALL BE DESIGNATED BY THE FIRE CODE OFFICIAL, AND SHALL BE CONSPICUOUSLY POSTED ON BOTH SIDES OF THE FIRE LANE, WITH FIRE LANE SIGNS, SPACED NOT MORE THAN 100 FEET APART. FIRE LANE SIGNS SHALL READ "NO STOPPING, STANDING, PARKING, FIRE LANE", AND SHALL CONFORM TO THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, FIRE PREVENTION ORDINANCE CHAPTER 58, SEC. 503
- 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, FIRE PREVENTION ORDINANCE CHAPTER 58, SEC. 307.6.2 & 307.6.2.3

NOTES:

- THE DEVELOPER IS PROPOSING A 16 UNIT SITE CONDOMINIUM.
- ALL SIGNAGE WILL BE IN CONFORMANCE WITH THE CITY OF ROCHESTER HILLS REQUIREMENTS. A SEPARATE SIGN PERMIT MUST BE OBTAINED FROM THE BUILDING DEPARTMENT.
- THE DEVELOPER WILL DEDICATE THE PROPOSED RIGHT-OF-WAY OF BOTH JOHN R ROAD AND GRAVEL RIDGE ROAD.
- DETECTABLE WARNING SURFACES SHALL BE PROVIDED AT THE SIDEWALK APPROACHES TO THE ROADWAYS.
- BUILDING CONSTRUCTION TYPE WILL BE WOOD FRAME.
- CITY SHALL FURNISH AND PLACE ALL PERMANENT ROW STREET SIGNS WITH MONIES PAID BY DEVELOPER.



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248.447.2000

SECTION 24
TOWN 3 NORTH, RANGE 11 EAST
CITY OF ROCHESTER HILLS
OAKLAND COUNTY, MICHIGAN

M2J, LLC
CRESTWYK ESTATES
PUD CONCEPT PLAN
SITE LAYOUT PLAN

DATE: APRIL 21, 2017
06-15-2017 CIV. RESIDENTIAL
03-24-2017 CIV. RESIDENTIAL
03-24-2017 CIV. RESIDENTIAL

REVISIONS
SCALE 0 20 40
1" = 40 FEET
DRAWN BY: REK
CHECKED BY: JPC
P.M.: E. LORD
JOB #: 17000274
FILE CODE: -
SHEET NO. C-04

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LEGEND

---	BOUNDARY LINE
---	EXISTING ROW
---	EXISTING CONTOUR
---	PROPOSED CONTOUR
---	PROPOSED SWALE
---	PROPOSED NATURAL FEATURE SETBACK
---	PROPOSED RIDGE LINE
---	EXISTING STORM SEWER
---	PROPOSED STORM SEWER
○	EXISTING STORM CATCH BASIN/MANHOLE
○	PROPOSED STORM CATCH BASIN/MANHOLE
○	PROPOSED SPOT ELEVATION
○	PROPOSED RIM ELEVATION
○	MATCH EXISTING ELEVATION
○	PROPOSED FINISHED GRADE ELEVATION
---	EMERGENCY OVERTFLOW ROUTE
---	PROPOSED DRAINAGE ARROW
---	WETLAND AREA NOT TO BE DISTURBED
---	WETLAND AREA TO BE FILLED

STORM WATER DETENTION REQUIREMENTS

Rochester Hills, Oakland County
Crestwyk Estates
April 20, 2017
Revised August 15, 2017

Design Basis:
Using Oakland County requirements (24 year storm event)

Drainage Area tributary to Basin	Area	Runoff Coefficient
Impervious Area (roof, driveway, sidewalk, and so on)	1.06	0.95
Landscaped Areas (Hydrologic Soil Group A)	2.25	0.25
Total Area	3.31	

Detention Area sizing

1) Total On Site Area	4.44
Developed Runoff Coefficient (C _d)	0.38
Allowable Detention Rate (C _a)	0.20 cfs/cu ft
2) Maximum Allowable Runoff Rate (C _a)	0.89 cfs
3) Available On - Site Storage (Q _o)	0.12 cfs/cu ft
4) Max Storage Time (T _s) = 25 * (0.89 / 0.12) = 187.5 minutes	187.5 minutes
5) Max Storage Required (V _s) = (12 * 0.89 * 187.5) / (2.58 * 1000) = 18,586 cf	18,586 cf
6) Total Storage Required (V _t) = V _s + V _o	18,586 cf

Determination of Storage Provided in Basin

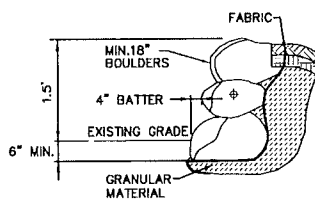
Elevation (feet)	Area (sf)	Incr. Vol. (cf)	Cum. Vol. (cf)
741.5	9,883		
741	9,238	1,968	11,851
740	5,963	7,501	19,352
739	5,015	5,180	24,532
738	4,146	1,581	26,113
737	3,356	1,580	27,693
736.5	2,965		
Total Volume			23,001 cf

Storage Elevations

24-Year Frequency Storm Elevation	=	740.12 feet
Flooded Elevation	=	741.12 feet
Minimum Top of Berm Elevation	=	741.92 feet

Outlet Restrictor Pipe Sizing

Maximum Storage Height (H) = 25 Yr. (1 Hr.) (Permitted Water)	3.92 feet
Restrictor Area (Q _a) = 0.62 cfs/ft ² (1.7)	0.69 cfs
Required Diameter of Restrictor Pipe	4.97 inches
Selected Diameter of Restrictor Pipe	4 inches
Maximum Allowable Runoff (Q _a)	0.89 cfs
Actual Runoff	0.86 cfs



BOULDER WALL
NO SCALE

WETLAND IMPACTS

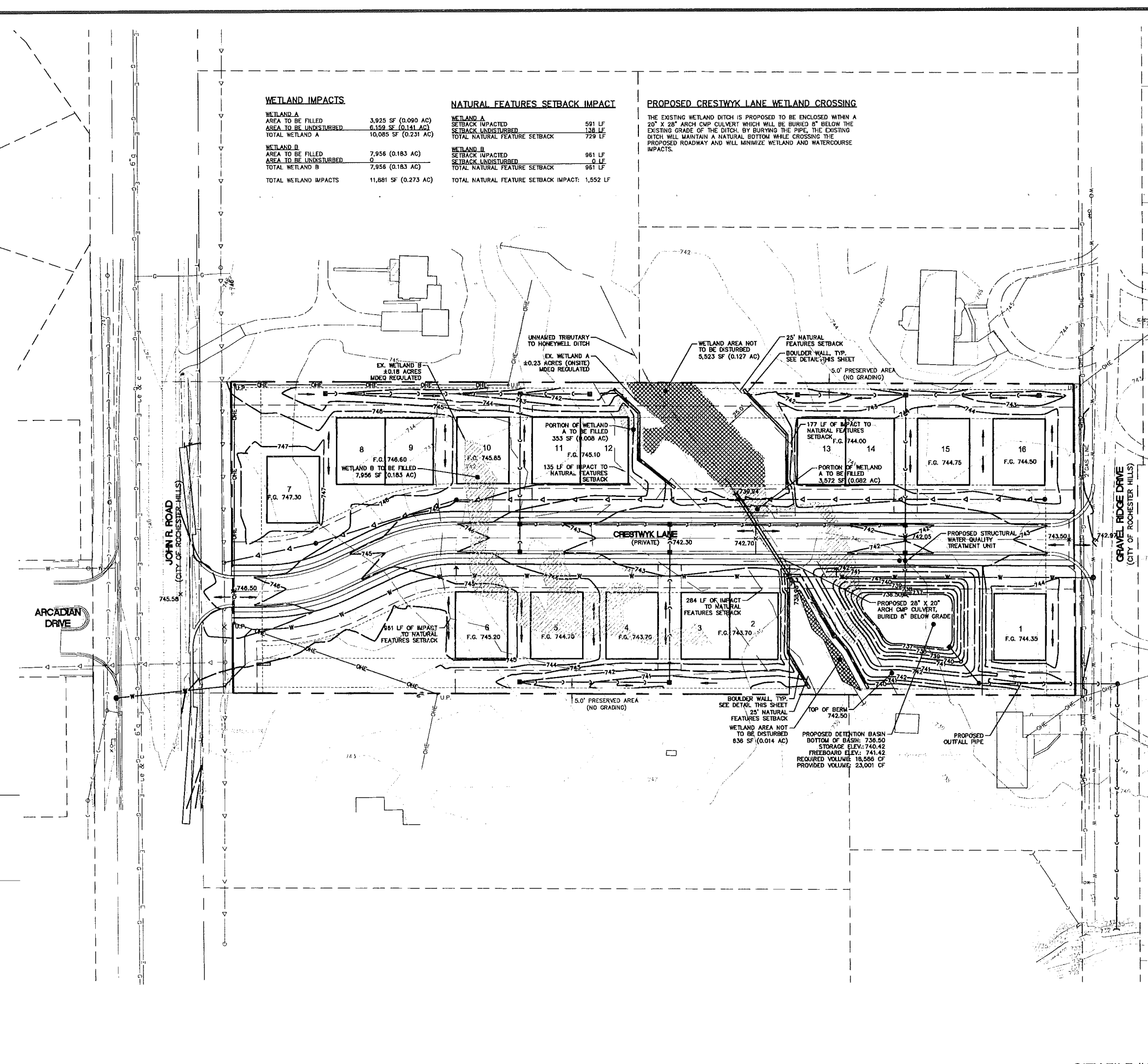
WETLAND A	
AREA TO BE FILLED	3,925 SF (0.090 AC)
AREA TO BE UNDISTURBED	6,159 SF (0.141 AC)
TOTAL WETLAND A	10,085 SF (0.231 AC)
WETLAND B	
AREA TO BE FILLED	7,956 SF (0.183 AC)
AREA TO BE UNDISTURBED	0
TOTAL WETLAND B	7,956 SF (0.183 AC)
TOTAL WETLAND IMPACTS	11,881 SF (0.273 AC)

NATURAL FEATURES SETBACK IMPACT

WETLAND A	
SETBACK IMPACTED	591 LF
SETBACK UNDISTURBED	138 LF
TOTAL NATURAL FEATURE SETBACK	729 LF
WETLAND B	
SETBACK IMPACTED	961 LF
SETBACK UNDISTURBED	0 LF
TOTAL NATURAL FEATURE SETBACK	961 LF
TOTAL NATURAL FEATURE SETBACK IMPACT	1,552 LF

PROPOSED CRESTWYK LANE WETLAND CROSSING

THE EXISTING WETLAND DITCH IS PROPOSED TO BE ENCLOSED WITHIN A 20" X 28" ARCH CMP CULVERT WHICH WILL BE BURIED 6" BELOW THE EXISTING GRADE OF THE DITCH. BY BURYING THE PIPE, THE EXISTING DITCH WILL MAINTAIN A NATURAL BOTTOM WHILE CROSSING THE PROPOSED ROADWAY AND WILL MINIMIZE WETLAND AND WATERCOURSE IMPACTS.



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TOWN 3 NORTH, RANGE 11 EAST
CITY OF ROCHESTER HILLS
OAKLAND COUNTY, MICHIGAN

M2JI, LLC
CRESTWYK ESTATES
PUD CONCEPT PLAN
GRADING PLAN

DATE: APRIL 21, 2017

04-15-2017 CITY SUBMITTAL
04-18-2017 CITY SUBMITTAL

REVISIONS

SCALE 0 20 40
1" = 40 FEET

DRAWN BY: REK
CHECKED BY: JPC
P.M.: E. LORD
JOB #: 17000274
FILE CODE: -
SHEET NO. C-05

LEGEND

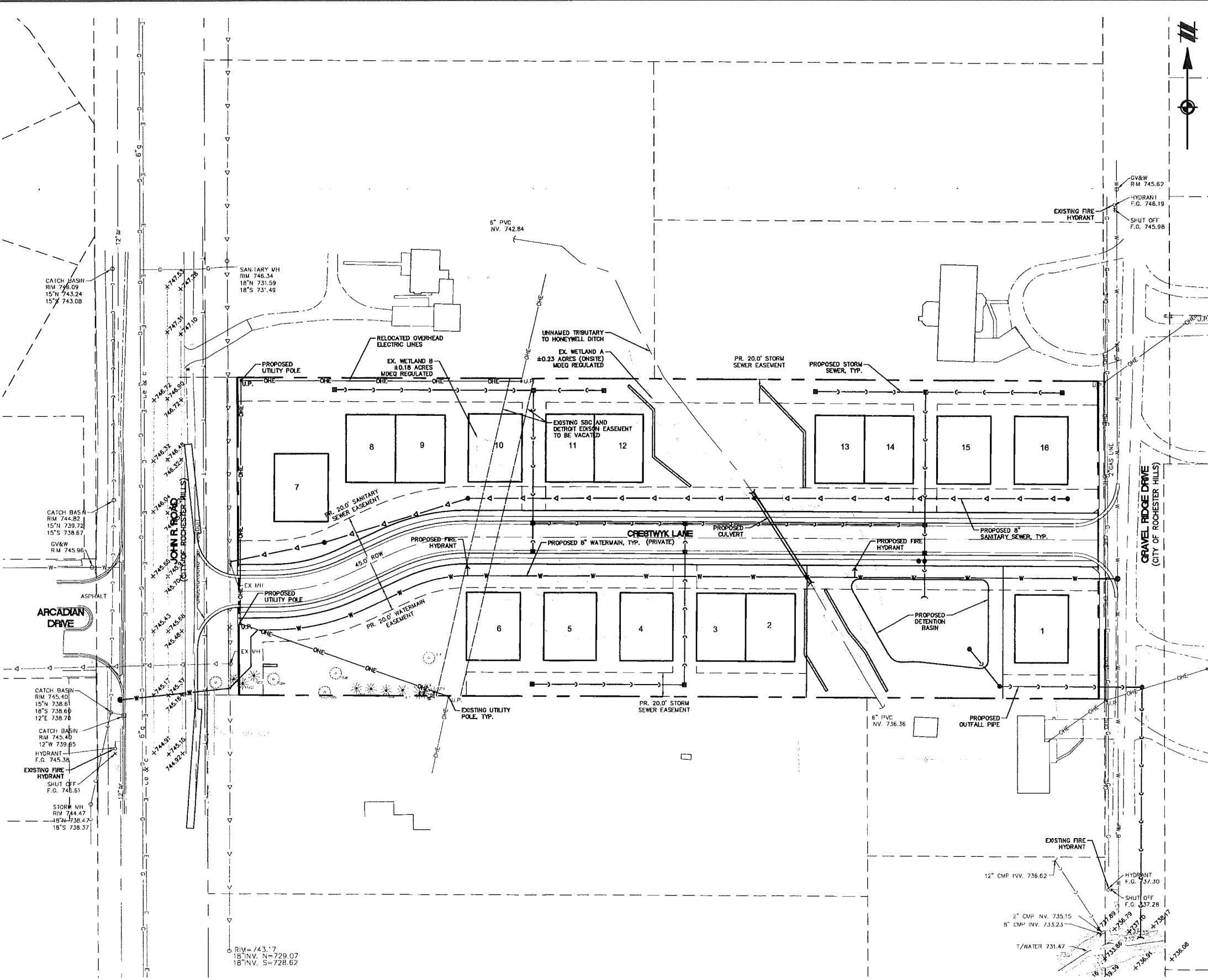
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- - - -	EXISTING ROW
- - - - -	EXISTING EASEMENT LINE
- - - - -	PROPOSED EASEMENT LINE
—●—●—	EXISTING SANITARY SEWER
—●—●—	PROPOSED SANITARY SEWER
—●—●—	EXISTING STORM SEWER
—●—●—	PROPOSED STORM SEWER
—●—●—	EXISTING WATER LINE
—●—●—	PROPOSED WATER LINE
—●—●—	EXISTING UNDERGROUND GAS
—●—●—	PROPOSED UNDERGROUND GAS
—●—●—	EXISTING UNDERGROUND TELEPHONE
—●—●—	PROPOSED UNDERGROUND TELEPHONE
—●—●—	EXISTING OVERHEAD TELEPHONE
—●—●—	PROPOSED OVERHEAD TELEPHONE
—●—●—	EXISTING UNDERGROUND ELECTRIC
—●—●—	PROPOSED UNDERGROUND ELECTRIC
—●—●—	EXISTING OVERHEAD ELECTRIC
—●—●—	PROPOSED OVERHEAD ELECTRIC
—●—●—	EXISTING UNDERGROUND CABLE
—●—●—	PROPOSED UNDERGROUND CABLE
—●—●—	EXISTING LIGHT POLE
—●—●—	PROPOSED LIGHT POLE/WALL PACK LIGHT
—●—●—	EXISTING MANHOLE/CATCH BASIN
—●—●—	PROPOSED MANHOLE/CATCH BASIN/INLET
—●—●—	EXISTING CLEANOUT
—●—●—	PROPOSED CLEANOUT
—●—●—	EXISTING DOWNSPOUT
—●—●—	PROPOSED DOWNSPOUT
—●—●—	EXISTING END SECTION
—●—●—	PROPOSED END SECTION
—●—●—	EXISTING WATER VALVE
—●—●—	PROPOSED WATER VALVE
—●—●—	EXISTING FIRE HYDRANT
—●—●—	PROPOSED FIRE HYDRANT
—●—●—	EXISTING WATER METER
—●—●—	PROPOSED WATER METER
—●—●—	EXISTING REDUCER
—●—●—	PROPOSED REDUCER
—●—●—	EXISTING FIRE DEPARTMENT CONNECTION
—●—●—	PROPOSED FIRE DEPARTMENT CONNECTION
—●—●—	EXISTING UTILITY POLE
—●—●—	PROPOSED UTILITY POLE
—●—●—	PROPOSED UTILITY CROSSING, SEE UTILITY CROSSING CHART THIS SHEET

NOTES

1. A CONTINUOUS EDGE DRAIN SHALL BE PROVIDED ALONG THE FULL LENGTH OF THE PROPOSED ROADWAY. THE EDGE DRAIN SHALL TIE INTO THE PROPOSED STORM SEWER SYSTEM.

SANITARY SEWER BASIS OF DESIGN

TOTAL SINGLE FAMILY UNITS = 16 UNITS
 PEOPLE = 16 UNITS X 3.5 PEOPLE/UNIT = 56 PERSONS
 AVERAGE ESTIMATED FLOW = 16 PEOPLE X 100 G.P.C.P.D. = 1600 G.P.D. = 0.0025 CFS
 PEAK FACTOR = $18 + \frac{471000}{4 + \sqrt{171000}}$ = $18 + \frac{471000}{4 + 41.24}$ = 4.30
 PEAK FLOW = 1600 G.P.D. X 4.30 = 6880 G.P.D. = 0.011 CFS
 AN 8" SANITARY SEWER AT A MINIMUM SLOPE OF 0.40% HAS A CAPACITY OF 0.78 C.F.S.
 AN 18" SANITARY SEWER AT A SLOPE OF 0.38% HAS A CAPACITY OF 6.47 C.F.S.
 NOTE: THE PROPOSED DEVELOPMENT LIES WITHIN 2 SEPARATE SANITARY SEWER DISTRICTS. THE PEAK FLOW DISCHARGE IS LESS THAN 0.01 CFS AND WILL REQUIRE APPROVAL BY THE CITY ENGINEERING DEPARTMENT.



THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE: CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK OF PERSONS ENGAGED IN THE WORK OF ANY NEARBY STRUCTURES OR OF ANY OTHER PERSONS.

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SECTION 24
 TOWN 3 NORTH, RANGE 11 EAST
 CITY OF ROCHESTER HILLS
 OAKLAND COUNTY, MICHIGAN

M2J, LLC
 CRESTWYK ESTATES
 PUD CONCEPT PLAN
 UTILITY PLAN

DATE: APRIL 21, 2017

08-13-2017
 10-04-2017
 07-28-2017

REVISIONS

SCALE 0 20 40
 1" = 40 FEET
 DRAWN BY: REK
 CHECKED BY: JPC
 P.M.: E. LORD
 JOB #: 17000274
 FILE CODE: -
 SHEET NO. C-06

CITY FILE #17-013

NOTES:

THIS PARCEL IS EXEMPT FROM THE CITY TREE PROTECTION ORDINANCE.

AN AUTOMATIC IRRIGATION SYSTEM WILL BE PROVIDED FOR THE LANDSCAPE AREAS AS REQUIRED BY CITY OF ROCHESTER HILLS REQUIREMENTS AT FINAL.
A PROBABLE COST OF THE LANDSCAPE MATERIAL WILL BE PROVIDED AT FINAL.

LANDSCAPE BUFFER STANDARDS

JOHN R - FRONTAGE
EAST PROPERTY BOUNDARY: TYPE 'C' BUFFER - 267 LF

	REQUIRED	EXISTING	PROPOSED
Deciduous Shade Trees	2.67 x 2 = 5.34	6	2
Evergreen Trees	2.67 x 4 = 10.6	11	11
Ornamental Trees	2.67 x 1.5 = 4	4	4
Shrubs	2.67 x 6 = 16	16	17

NORTH PROPERTY BOUNDARY: TYPE 'B' BUFFER - 725 LF

	REQUIRED	EXISTING	PROPOSED
Deciduous Shade Trees	7.25 x 2 = 14.5	15	6
Evergreen Trees	7.25 x 2 = 14.5	15	16
Ornamental Trees	7.25 x 1.5 = 11.8	12	12
Shrubs	7.25 x 4 = 29	29	29

GRAVEL RIDGE DRIVE - FRONTAGE
WEST PROPERTY BOUNDARY: TYPE 'C' BUFFER - 267 LF

	REQUIRED	EXISTING	PROVIDED
Deciduous Shade Trees	2.67 x 2 = 5.34	6	8
Evergreen Trees	2.67 x 4 = 10.6	11	10
Ornamental Trees	2.67 x 1.5 = 4	4	2
Shrubs	2.67 x 6 = 16	16	24

SOUTH PROPERTY BOUNDARY: TYPE 'B' BUFFER - 725 LF

	REQUIRED	EXISTING	PROPOSED
Deciduous Shade Trees	7.25 x 2 = 14.5	15	8
Evergreen Trees	7.25 x 2 = 14.5	15	15
Ornamental Trees	7.25 x 1.5 = 11.8	12	12
Shrubs	7.25 x 4 = 29	29	41

STORMWATER DETENTION BUFFER: 400 LF

	REQUIRED	EXISTING	PROPOSED
Deciduous Shade Trees	4.0 x 1.5 = 6	2	8
Evergreen Trees	4.0 x 1 = 4	-	-
Ornamental Trees	NA	-	-
Shrubs	4.0 x 4 = 16	-	16

STREET R.O.W. TREES:

	REQUIRED	PROPOSED
ROAD LENGTH (732.65 LF / 35' = 21 X 2) =	42	42 TREES
3 CALIPER INCHES STREET TREES		

PLANT MATERIAL REQUIREMENTS:

	REQUIRED
Deciduous Shade Trees	3 CALIPER INCHES*
Evergreen Trees	10 FEET HEIGHT AND 5 FEET SPREAD
Ornamental Trees	2 CALIPER INCHES* OR 6 FEET OVERALL HEIGHT

	REQUIRED
Shrubs	30 INCHES IN HEIGHT, 24 INCHES IN SPREAD WHEN USED FOR SCREENING OR BUFFERING PURPOSES, 3 GALLON CONTAINED SIZE WHEN USED FOR OTHER PURPOSES
Groundcovers	SHALL BE FROM FLATS

TREE PRESERVATION LIST:

Species	DBH (in.)	Condition
1203 Blue Spruce	7	Fair
1204* White Oak	24	Good
1205* White Oak	19.5	Good
1206 Red Oak	21.5	Fair
1207* Norway Spruce	11	Fair
1208* Norway Spruce	10	Poor
1214 Red Oak	41.5	Good Landmark
1215 White Oak	26.5	Good
1216 Black Oak	21.5	Fair
1217 Black Oak	29	Fair
1218 Norway Maple	7	Good
7146 White Mulberry	7	Fair
1280 Basswood	8.5	Good
1283 Shagbark Hickory	7	Good

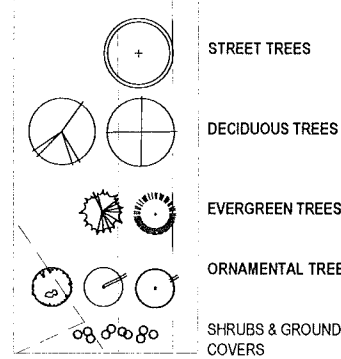
Offsite Trees

Species	DBH (in.)	Condition
1202 Blue Spruce	8	Good
1209 Norway Spruce	15.5	Fair
1210* Norway Spruce	14	Fair
1211* Norway Spruce	7	Fair
1212 Norway Spruce	8	Fair
1213 Norway Spruce	7.5	Fair
1254 Pignut Hickory	11.5	Good
1405 (Not on survey)		
1282 Pignut Hickory	8	Good
1308 Black Cherry	15	Fair
1338 R O W Black Cherry	7	Good
1395 Black Oak	13.5	Fair
7144 R O W White Oak	24.5	Good

TREE PRESERVATION LIST:

Species	DBH (in.)	Condition
7132 Bitternut Hickory	6	Good
1285 Shagbark Hickory	7.5	Good
1286 American Elm	17	Dead
1289 Pignut Hickory	7.5	Good
1290 White Oak	9.5	Fair
1299 Shagbark Hickory	7.5	Fair
7130 Boxelder	6	Fair
1538 Red Maple	12.5	Good
1537 Swamp White Oak	9	Good
1536 Red Maple	7	Good
1535 Silver Maple	27.5	Good
1534 Red Maple	7.5	Good
1533 Swamp White Oak	9	Good
1532 Silver Maple	8	Good
1531 Silver Maple	18	Good
1530 Silver Maple	9.5	Good
1528 Red Maple	21	Poor
1527 Silver Maple	16	Good
1526 Swamp White Oak	11	Good
7137 American Elm	6	Good
1516 Red Maple	17.5	Good
1515 Silver Maple	14	Fair
1514 Red Maple	28.5	Good
1514 Silver Maple	29.5	Good
1520 Red Maple	19	Good
1519 Red Maple	32	Fair
1518 Red Maple	19	Good
1517 Red Maple	7	Good
1506 Red Maple	10	Good

LEGEND:



NÚÑEZ DESIGN



PROJECT:
CRESTWYK ESTATES PUD
SECTION 24 TOWN 3 NORTH, RANGE 11 EAST
CITY OF ROCHESTER HILLS
CITY FILE # 17-013

CLIENT:
M2J1, LLC

JIM POLYZOIS
14955 TECHNOLOGY DRIVE
SHELBY TOWNSHIP, MI 48315
Phone: 585.421.5729

CITY SUBMITTAL 10/29/2017
REVISION 04/25/2017
Date 04/21/2017



249 Park Street
Troy, Michigan 48063
P: 248.224.5933
nunezdesigninc@gmail.com

Designed / Drawn: RN
Checked / Approved: JNR/RH
Job # N01-20



SCALE: 1" = 30'-0"



Know what's below.
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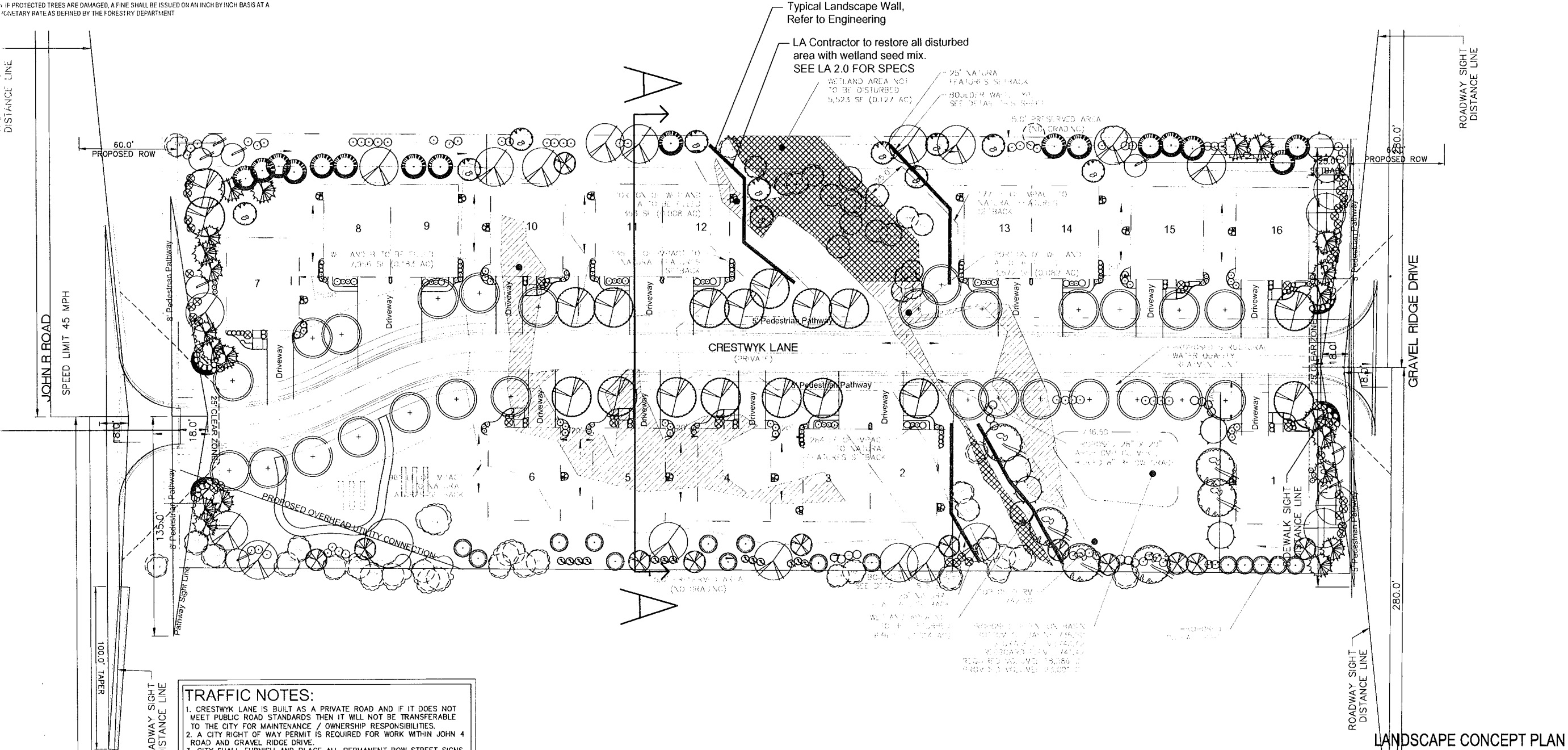
CITY FILE: #17-013

SHEET

LA -1.0

PLAN SUBMITTED FOR REVIEW - NOT FOR CONSTRUCTION.

PROJECT FILE # 17-013



TRAFFIC NOTES:
1. CRESTWYK LANE IS BUILT AS A PRIVATE ROAD AND IF IT DOES NOT MEET PUBLIC ROAD STANDARDS THEN IT WILL NOT BE TRANSFERABLE TO THE CITY FOR MAINTENANCE / OWNERSHIP RESPONSIBILITIES.
2. A CITY RIGHT OF WAY PERMIT IS REQUIRED FOR WORK WITHIN JOHN 4 ROAD AND GRAVEL RIDGE DRIVE.
3. CITY SHALL FURNISH AND PLACE ALL PERMANENT ROW STREET SIGNS WITH MONIES PAID BY DEVELOPER.

LANDSCAPE CONCEPT PLAN

MATERIAL LIST:

SHADE TREES					
QTY	KEY	BOTANICAL / COMMON NAME	SIZE	ROOT	Unit Cost Total / Item
9	AS	Acer Saccharum 'Commemoration' / Commemoration Sugar Maple	3" cal	B&B	
6	BN	Betula Nigra / River Birch	3" cal	B&B	
3	CE	Celtis occidentalis / Common hackberry	3" cal	B&B	
7	GB	Ginkgo biloba 'Lakeview' / Lakeview Maidenhair Tree	3" cal	B&B	
2	GT	Gleditsia triacanthos inermis / Thornless Honeylocust	3" cal	B&B	
18	LD	Liriodendron / Tulip Tree	3" cal	B&B	
6	MG	Metasequoia Glyptostroboides / Dawn Redwood	3" cal	B&B	
27	TG	Tilia cordata 'Greenspire' / Greenspire Linden	3" cal	B&B	

EVERGREEN TREES					
QTY	KEY	BOTANICAL / COMMON NAME	SIZE	ROOT	Unit Cost Total / Item
8	AB	Abies Concolor / Concolor White Fir	10' Ht.x 5'Sp	B&B	
18	PG	Picea Glauca / White Spruce	10' Ht.x 5'Sp	P&B	
11	PS	Pinus Strobus / White Pine	10' Ht.x 5'Sp	B&B	
15	TC	Tsuga Canadensis / Canadian Hemlock	10' Ht.x 5'Sp	B&B	

ORNAMENTAL TREES					
QTY	KEY	BOTANICAL / COMMON NAME	SIZE	ROOT	Unit Cost Total / Item
8	AC	Amelanchier canadensis / Shadblow Serviceberry	2" cal or 6' Ht.	B&B	
6	AcR	Amelanchier canadensis 'Retzam' / Reflection Shadblow Serviceberry	2" cal or 6' Ht.	B&B	
7	BnK	Betula Nigra 'Little King Fox Valley	2" cal or 6' Ht.	B&B	
6	MP	Malus 'Prairifire' / Prairifire Crab	2" cal or 6' Ht.	B&B	
4	SR	Syringa reticulata 'Ivory Silk' / Ivory Silk Lilac	2" cal or 6' Ht.	B&B	

SHRUBS for Buffers & Detention Areas					
QTY	KEY	BOTANICAL / COMMON NAME	SIZE / Spacing	ROOT	Unit Cost Total / Item
21	AA	Aronia arbutifolia 'Brilliantissima' / Brilliant Red Chokeberry	30"ht, 24"sp	No. 3 Cont.	
23	AM	Aronia melanocarpa 'Elata' / Glossy Black Chokeberry	30"ht, 24"sp	No. 3 Cont.	
20	CA	Cornus alba 'Regnzam' / Red Grome Dogwood	30"ht, 24"sp	No. 3 Cont.	
14	CR	Cornus racemosa / Gray Dogwood	30"ht, 24"sp	No. 3 Cont.	
6	RR	Rosa 'Radtko' The Double Knock Out / The Double Knock Out Rose	30"ht, 24"sp	No. 3 Cont.	
11	TM	Taxus x media 'Densifolmis' / Densifolmis Yew	30"ht, 24"sp	No. 3 Cont.	
29	SJ	Spiraea japonica 'Little Princess' / Little Princess Spiraea	18"ht, 18"sp	No. 3 Cont.	
31	VC	Virburnum carlesii / Koreanspice Virburnum	30"ht, 24"sp	No. 3 Cont.	
3	VO	Virburnum opulus 'Nanum' / Nanum Dwarf Cranberry Bush	24"ht, 24"sp	No. 3 Cont.	

PERENNIALS					
QTY	KEY	BOTANICAL / COMMON NAME	SIZE / Spacing	ROOT	Unit Cost Total / Item
116	NR	Nepeta x Faassenii 'Walker's Low' / Walker's Low Nepeta	1' o.c.	No. 1	
88	RS	Rudbeckia speciosa 'Little Suzy' / Little Suzy Dwarf Orange Coneflower	1' o.c.	No. 1	

PLANTING MATERIALS					
QTY	UNIT	Unit Cost	Total / Item		
+/-	CY			Topsoil Installed	T.B.D.
+/-	CY			Shredded Hardwood Mulch Installed	T.B.D.
+/-	LBS			Terra Sorb or Approved Equal	T.B.D.

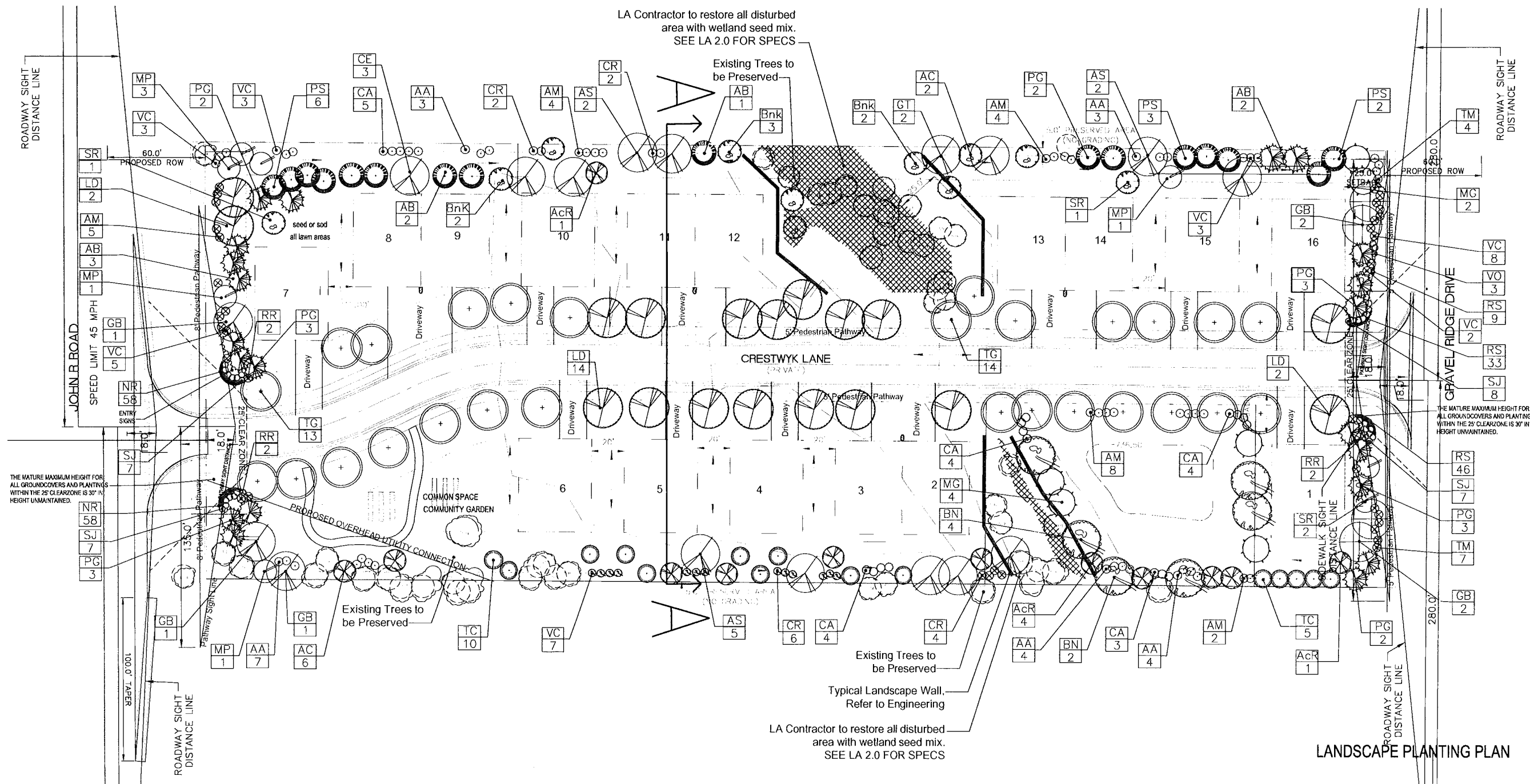
LAWN					
QTY	UNIT	Unit Cost	Total / Item		
+/-	SF			Seed	T.B.D.
+/-	SY			Sod (owner's option)	T.B.D.

IRRIGATION

ALL EVERGREEN AND DECIDUOUS TREES MUST BE FIELD VERIFIED AND PLANTED AT LEAST 15' FEET FROM OVERHEAD UTILITY WIRES.

THE MATURE MAXIMUM HEIGHT FOR ALL GROUNDCOVERS AND PLANTINGS WITHIN THE 25' CLEARZONE IS 30" IN HEIGHT UNMAINTAINED.

AN AUTOMATIC IRRIGATION SYSTEM WILL BE PROVIDE FOR THE LANDSCAPE AREAS AS REQUIRED BY CITY OF ROCHESTER HILLS REQUIREMENTS AT FINAL.



PROJECT: CRESTWYK ESTATES PUD
SECTION 24 TOWN 3 NORTH, RANGE 11 EAST
CITY OF ROCHESTER HILLS
CITY FILE # 17-013

CLIENT: M2J1, LLC

JIM POLYZOIS
14955 TECHNOLOGY DRIVE
SHELBY TOWNSHIP, MI 48315
Phone: 585.421.5729

CITY SUBMITTAL 10/26/2017
PRELIM DESIGN 04/25/2017
Date: 04/21/2017

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0 15 30 60
SCALE: 1" = 30'-0"

811
Know what's below.
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CITY FILE: #17-013
SHEET
LA-1.1

MATERIAL LIST:

SHRUBS

QTY	KEY	BOTANICAL / COMMON NAME	SIZE	ROOT	Unit Cost	Total / Item
1	BS	Buxus sempervirens 'Highlander' / Highlander Common Boxwood	36"ht, 24"sp	No. 3		
3	HM	Hydrangea m. 'Glowing Embers' / Glowing Embers Hydrangea	24"ht, 24"sp	No. 3		
3	RM	Rosa 'Meivahyn' / Knockout Rose	18"ht, 18"sp	No. 3		
6	SJ	Spiraea japonica 'Little Princess' / Little Princess Spiraea	18"ht, 18"sp	No. 3		
2	TM	Taxus x media 'Densifolmis' / Densifolmis Yew	30"ht, 24"sp	No. 5		

PERENNIALS

22	NF	Nepeta x faassenii 'Walker's Low' / 'Walker's Low Nepeta'	18"ht, 12"sp	No. 3		
10	RF	Rudbeckia Fulgida 'Goldsturm' / Black Eyed Susan	18"ht, 18"sp	No. 3		

PLANTING MATERIALS

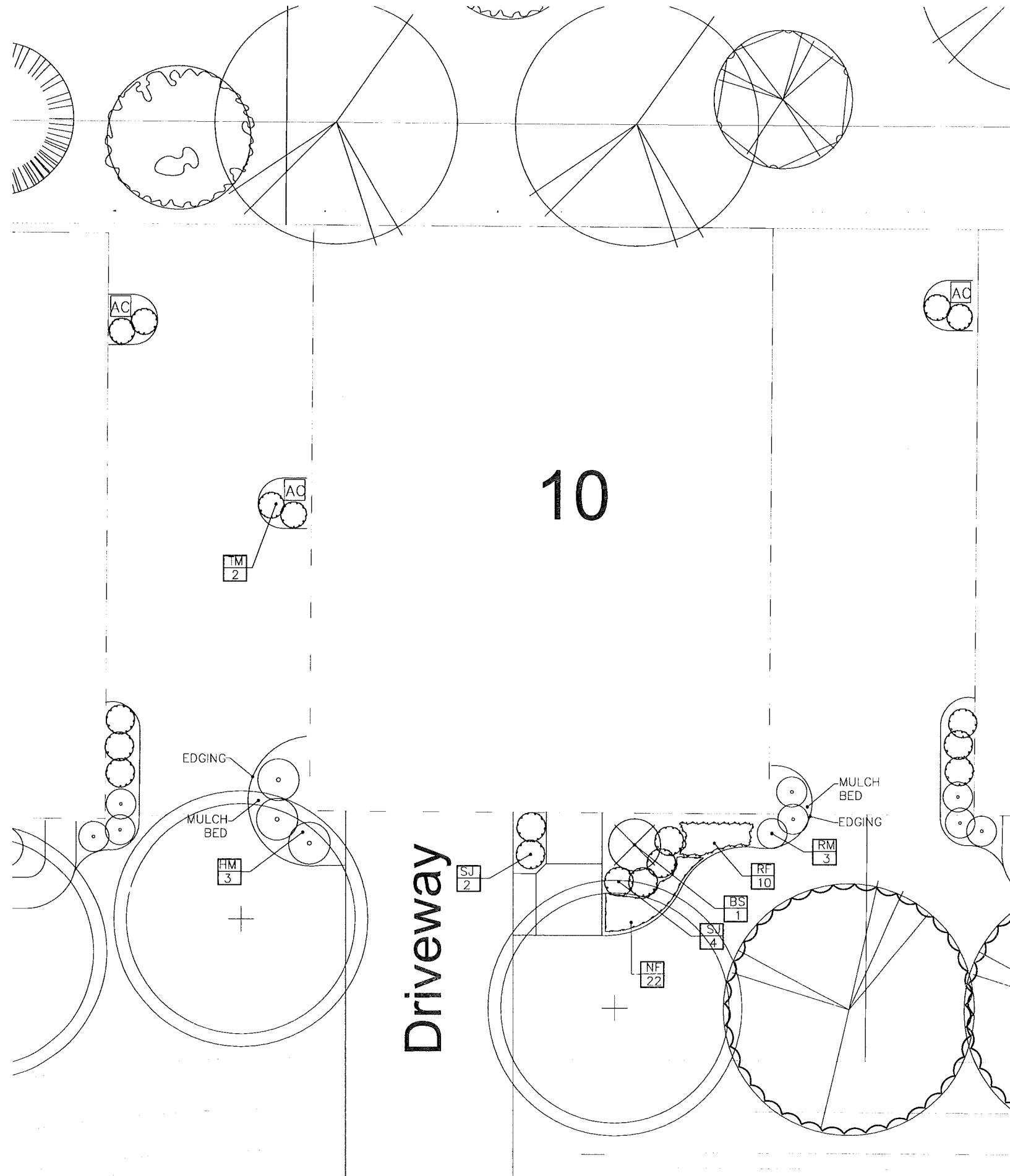
- +/- Topsoil Installed
- +/- Shredded Hardwood Mulch Installed
- +/- Terra Sorb or Approved Equal
- +/- Edging T.B.D.

LAWN

- +/- Seed
- +/- Sod (owner's option)

THE MATURE MAXIMUM HEIGHT FOR ALL GROUNDCOVERS AND PLANTINGS WITHIN THE 25' CLEARZONE IS 30" IN HEIGHT UNMAINTAINED.

AN AUTOMATIC IRRIGATION SYSTEM WILL BE PROVIDE FOR THE LANDSCAPE AREAS AS REQUIRED BY CITY OF ROCHESTER HILLS REQUIREMENTS AT FINAL.



PROJECT:
 CRESTWYK ESTATES PUD
 SECTION 24 TOWN 3 NORTH, RANGE 11 EAST
 CITY OF ROCHESTER HILLS
 CITY FILE # 17-013

CLIENT:
 M2J1, LLC

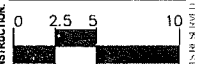
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 48315
 Phone: 585.421.5729

CITY SUBMITTAL 10/9/2017
 PRELIM DESIGN 04/28/2017
 Date: 08/11/2017



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Designed / Drawn: RN
 Checked / Approved: JHR



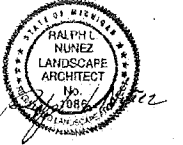
SCALE: 1"=5'-0"



CITY FILE: #17-013
 SHEET

TYPICAL SINGLE UNIT PLANTING PLAN

LA-1.2



PROJECT:
CRESTWYK ESTATES PUD
 SECTION 24 TOWN 3 NORTH, RANGE 11 EAST
 CITY OF ROCHESTER HILLS
 CITY FILE # 17-013

CLIENT:
M2J1, LLC

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CITY SUBMITTAL 10/9/2017
 PRELIM. DESIGN 04/25/2017
 Date 04/21/2017



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Designed / Drawn RN

Checked / Approved JN/RN

Job # N01-20



SCALE: 1" = 30'-0"



Know what's below.
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CITY FILE: #17-013

SHEET
LA -1.3

PROJECT FILE: N01-20, Crestwyk Estates, 10/10/2017.dwg

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MATERIAL LIST:

SHRUBS

QTY.	KEY SCIENTIFIC / COMMON NAME	SPECIFICATION
4	HM Hydrangea m. 'Glowing Embers' / Glowing Embers Hydrangea	24"ht, 24"sp No. 3
10	SJ Spiraea japonica 'Little Princess' / Little Princess Spiraea	18"ht, 18"sp No. 3
10	TM Taxus x media 'Densifomis' / Densifomis Yew	30"ht, 24"sp No. 5

PERENNIALS

8	RF Rudbeckia Fulgida 'Goldsturm' / Black Eyed Susan	18"ht, 18"sp No. 3
---	---	--------------------

PLANTING MATERIALS

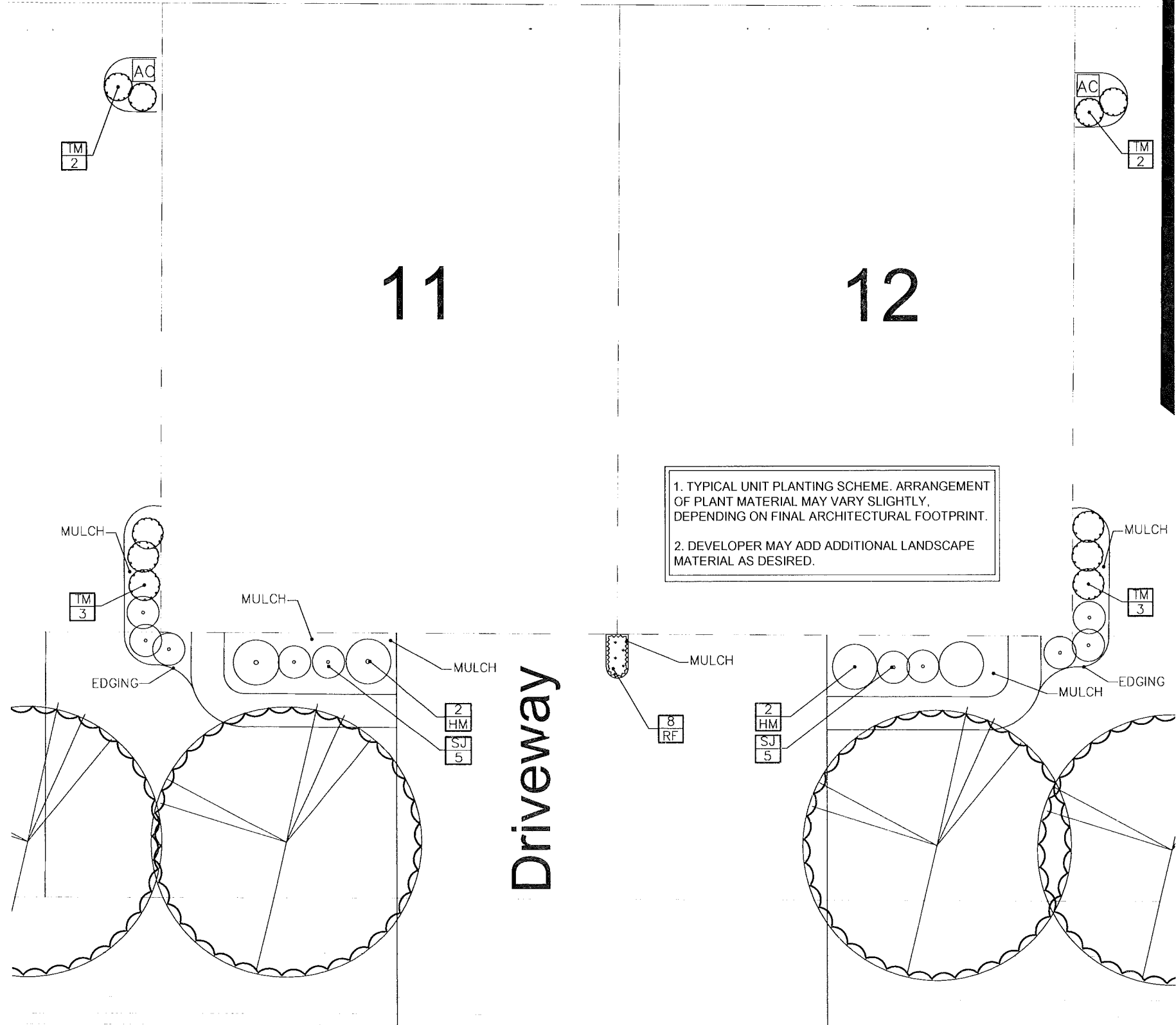
- +/- Topsoil Installed
- +/- Shredded Hardwood Mulch Installed
- +/- Terra Sorb or Approved Equal
- +/- Edging T.B.D.

LAWN

- +/- Seed
- +/- Sod (owner's option)

THE MATURE MAXIMUM HEIGHT FOR ALL GROUNDCOVERS AND PLANTINGS WITHIN THE 25' CLEARZONE IS 30" IN HEIGHT UNMAINTAINED.

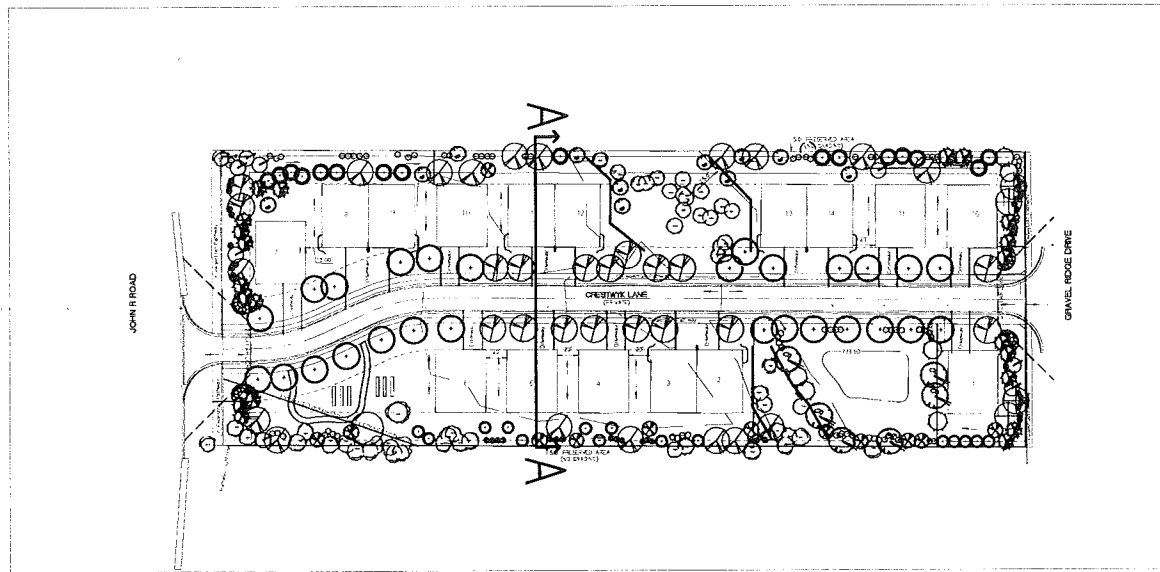
AN AUTOMATIC IRRIGATION SYSTEM WILL BE PROVIDED FOR THE LANDSCAPE AREAS AS REQUIRED BY CITY OF ROCHESTER HILLS REQUIREMENTS AT FINAL.



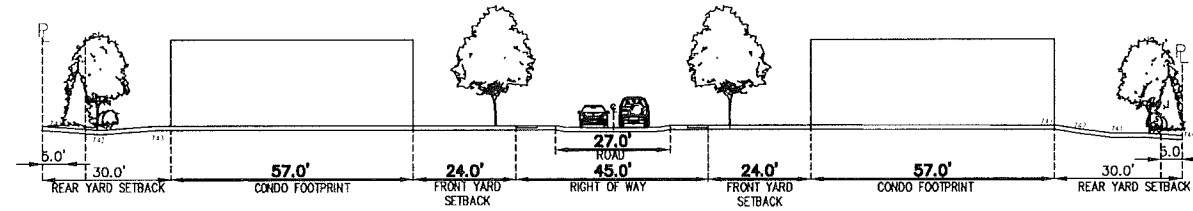
1. TYPICAL UNIT PLANTING SCHEME. ARRANGEMENT OF PLANT MATERIAL MAY VARY SLIGHTLY, DEPENDING ON FINAL ARCHITECTURAL FOOTPRINT.
 2. DEVELOPER MAY ADD ADDITIONAL LANDSCAPE MATERIAL AS DESIRED.

Driveway

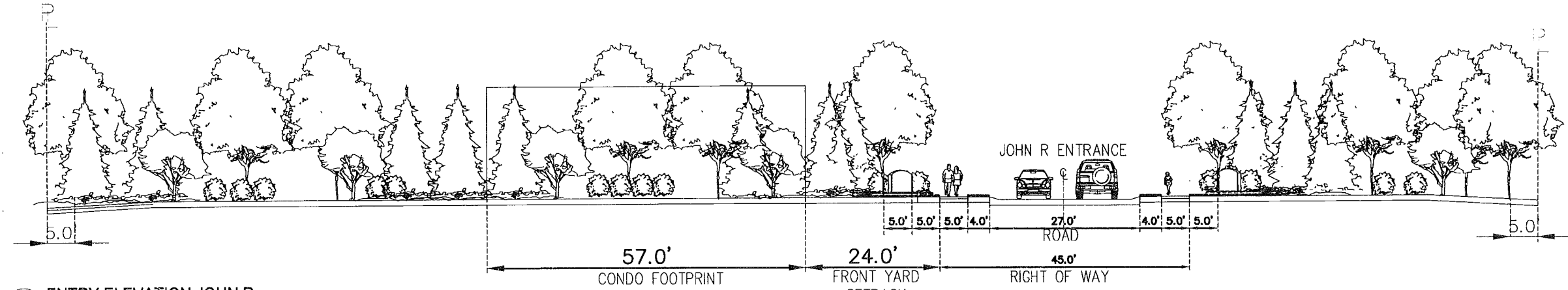
TYPICAL TWO FAMILY ATTACHED UNITS PLANTING PLAN



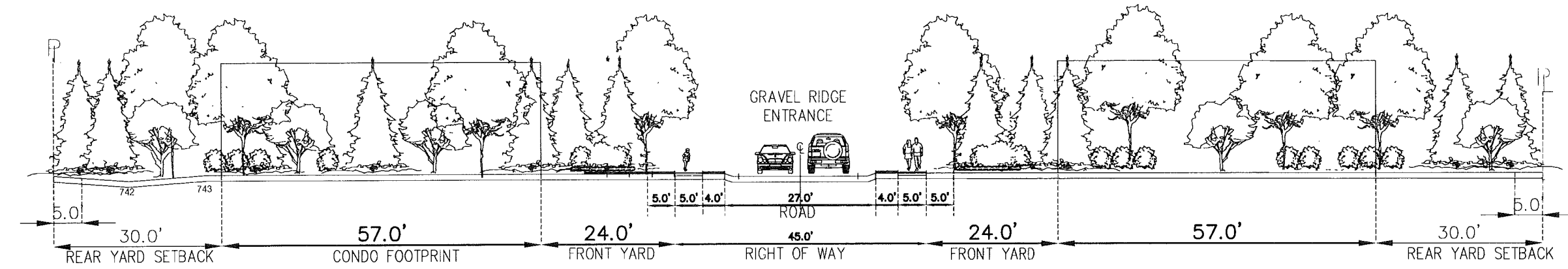
1 SECTION KEY
LA-1.4 SCALE: 1" = 50'



2 SECTION A-A: GRAVEL RIDGE DRIVE
LA-1.4 SCALE: 1" = 20'



3 ENTRY ELEVATION JOHN R
LA-1.4 SCALE: 1" = 10'



4 SECTION A-A
LA-1.4 SCALE: 1" = 10'

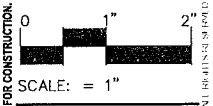


PROJECT:
CRESTWYK ESTATES PUD
SECTION 24 TOWN 3 NORTH, RANGE 11 EAST
CITY OF ROCHESTER HILLS
CITY FILE # 17-013

CLIENT:
M2J1, LLC
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48315
Phone: 585.421.5729

CITY SUBMITTAL 10/9/2017
PRELIM DESIGN 04/25/2017
Date 04/21/2017

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Designed / Drawn RN
Checked / Approved JNRN
Job # N0120



811
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CITY FILE: #17-013
SHEET
LA-1.4



TREE SURVEY BY ATWELL, LLC.
TREE CONDITIONS VERIFIED BY MIKE'S
TREE SURGEONS ON JUNE 9, 2017.

THIS PARCEL IS EXEMPT FROM THE CITY
TREE PROTECTION ORDINANCE.

SEE T-1.1 FOR TREE ANALYSIS.
PRESERVED TREES INDICATED ON LA 1.0

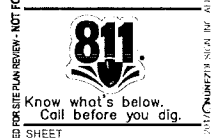
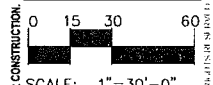


PROJECT:
CRESTWYK ESTATES PUD
SECTION 24 TOWN 3 NORTH, RANGE 11 EAST
CITY OF ROCHESTER HILLS
CITY FILE # 17-013

CLIENT:
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48315
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CITY SUBMITTAL 10/9/2017
PRELIM DESIGN 04/25/2017
Date 04/21/2017

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249 Park Street
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nunezdesigninc@gmail.com
Designed / Drawn RN
Checked / Approved JURN
Job # ND1-20



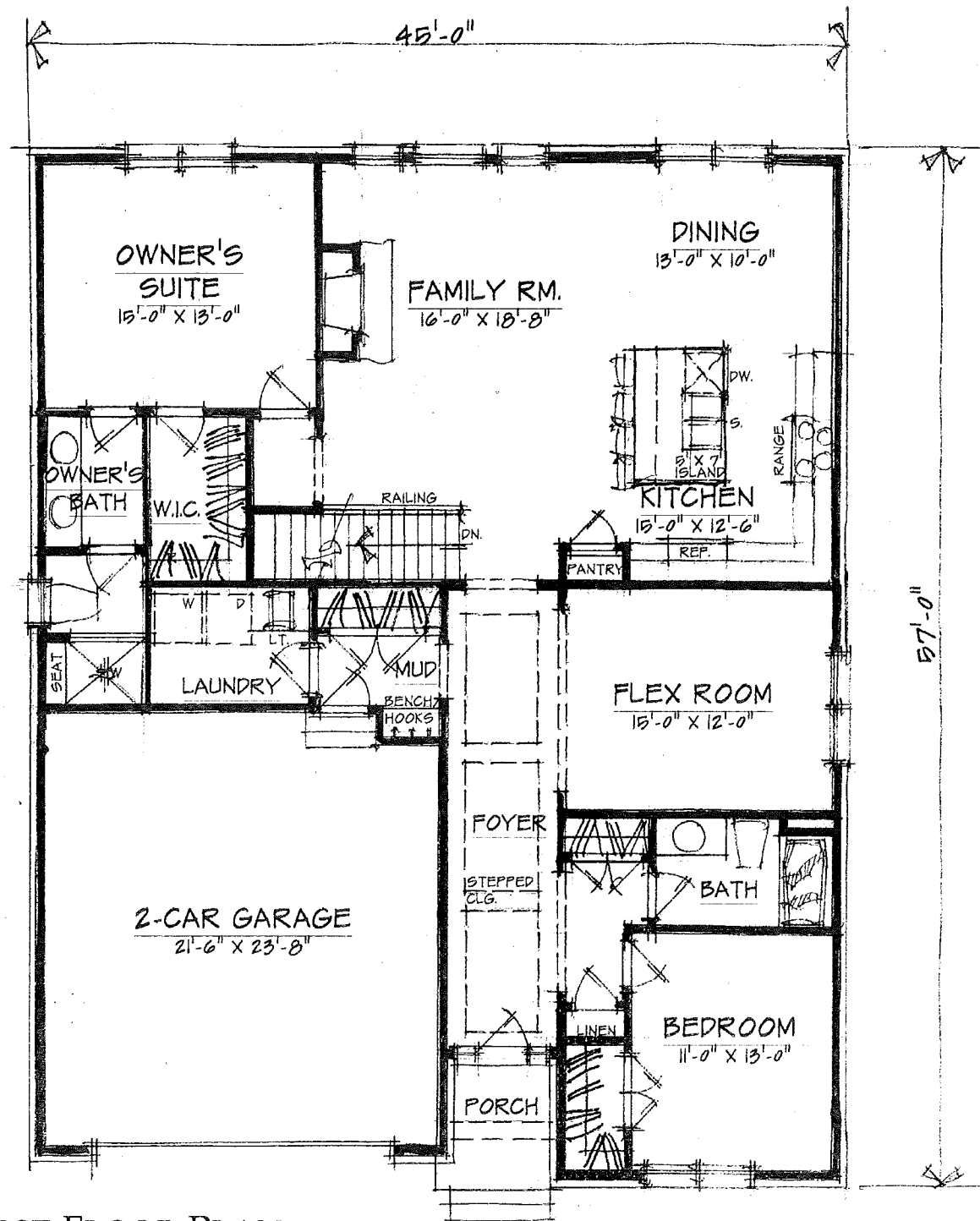
EXISTING TREE SURVEY

SHEET
T-1.0
CITY FILE NO.: 17-013

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Crestwyk Estates Individual Unit

MJ LLC



FIRST FLOOR PLAN

SCALE: 1/4" = 1'-0"

FIRST FLOOR: 1,953 SQ. FT.



Crestwyk Estates v. 2 08/04/17

Crestwyk Estates Individual Unit

MJ LLC



ELEVATION CONCEPT

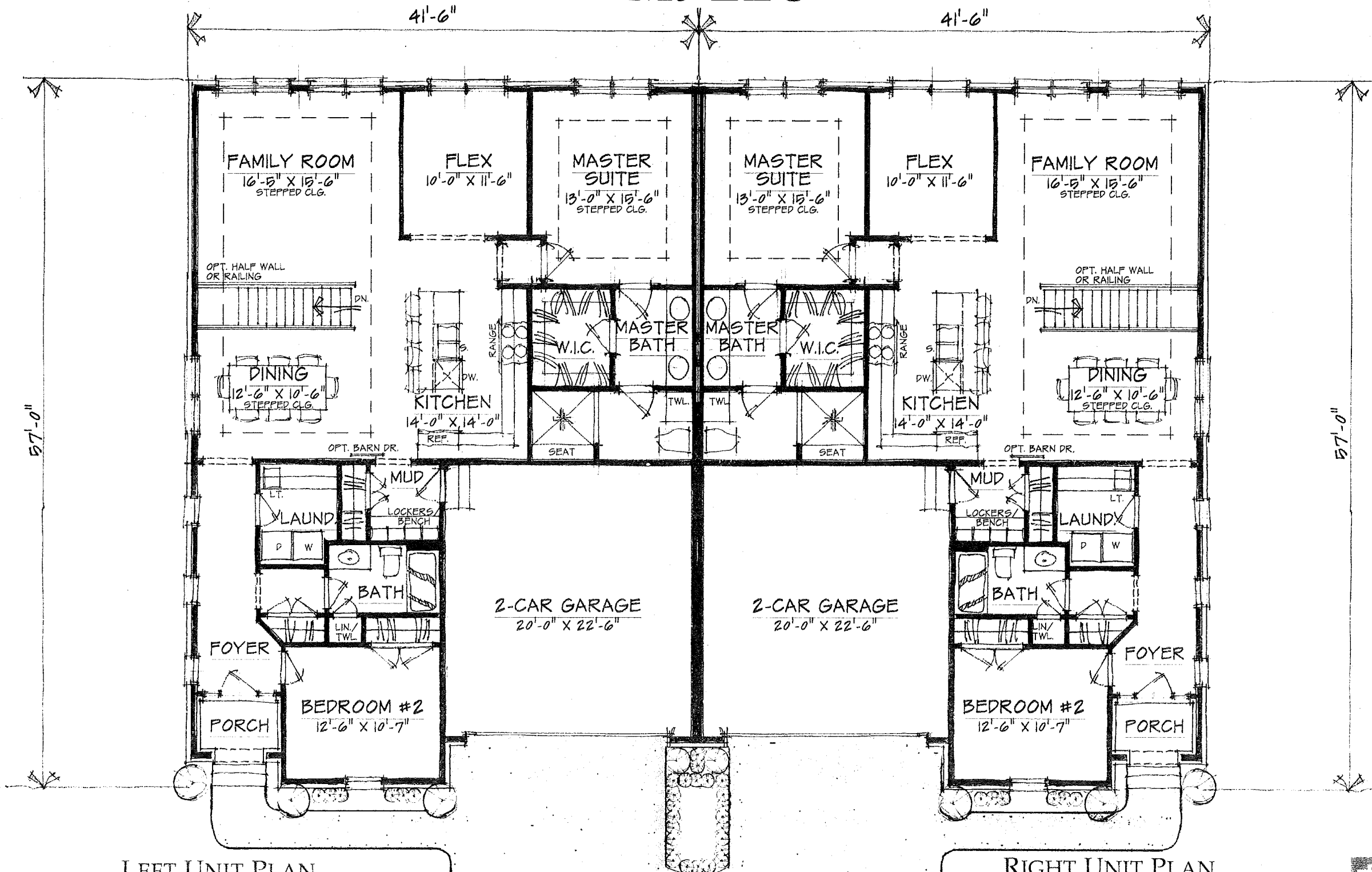
SCALE: 1/4" = 1'-0"



08/04/17

Crestwyk Estates Duplex

MJ LLC



LEFT UNIT PLAN

SCALE: 1/4" = 1'-0"

LEFT UNIT: 1,795 SQ. FT.

RIGHT UNIT PLAN

SCALE: 1/4" = 1'-0"

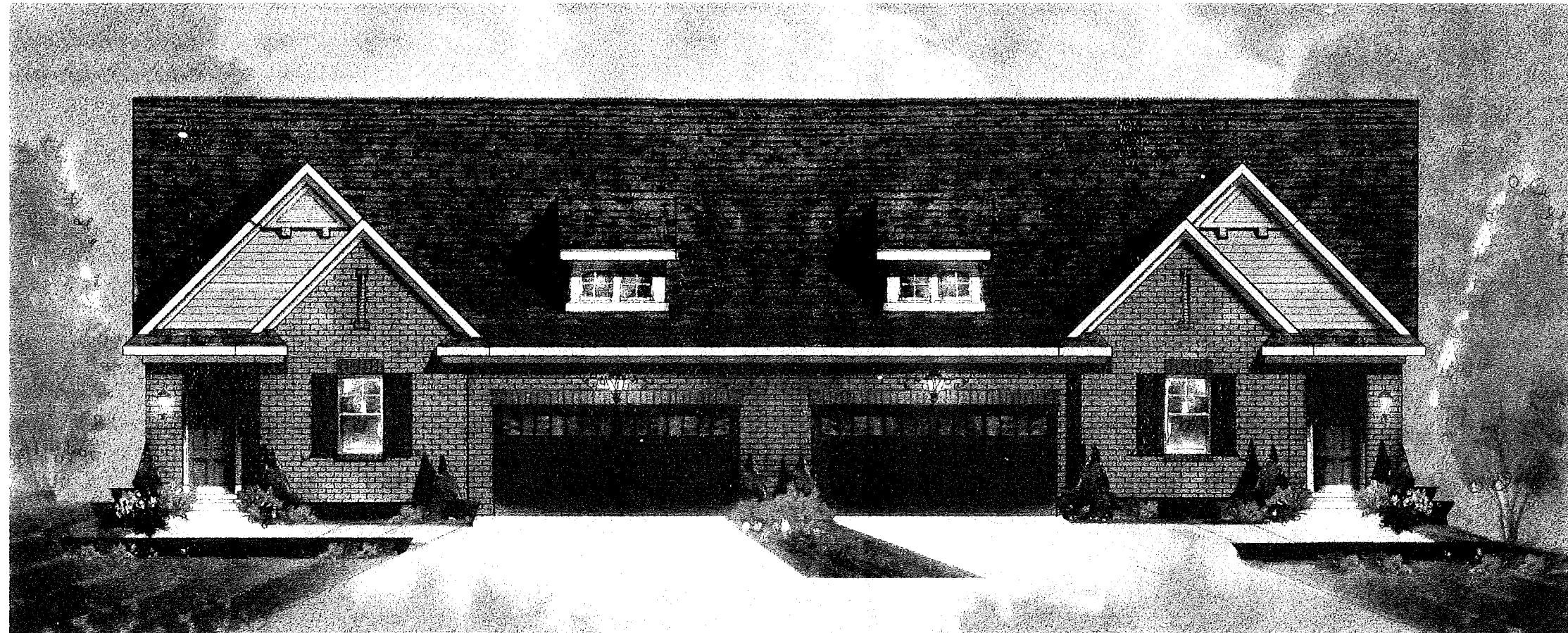
RIGHT UNIT: 1,795 SQ. FT.



Crestwyk Estates v. E 10/19/17

Crestwyk Estates Duplex

MJ LLC



ELEVATION CONCEPT

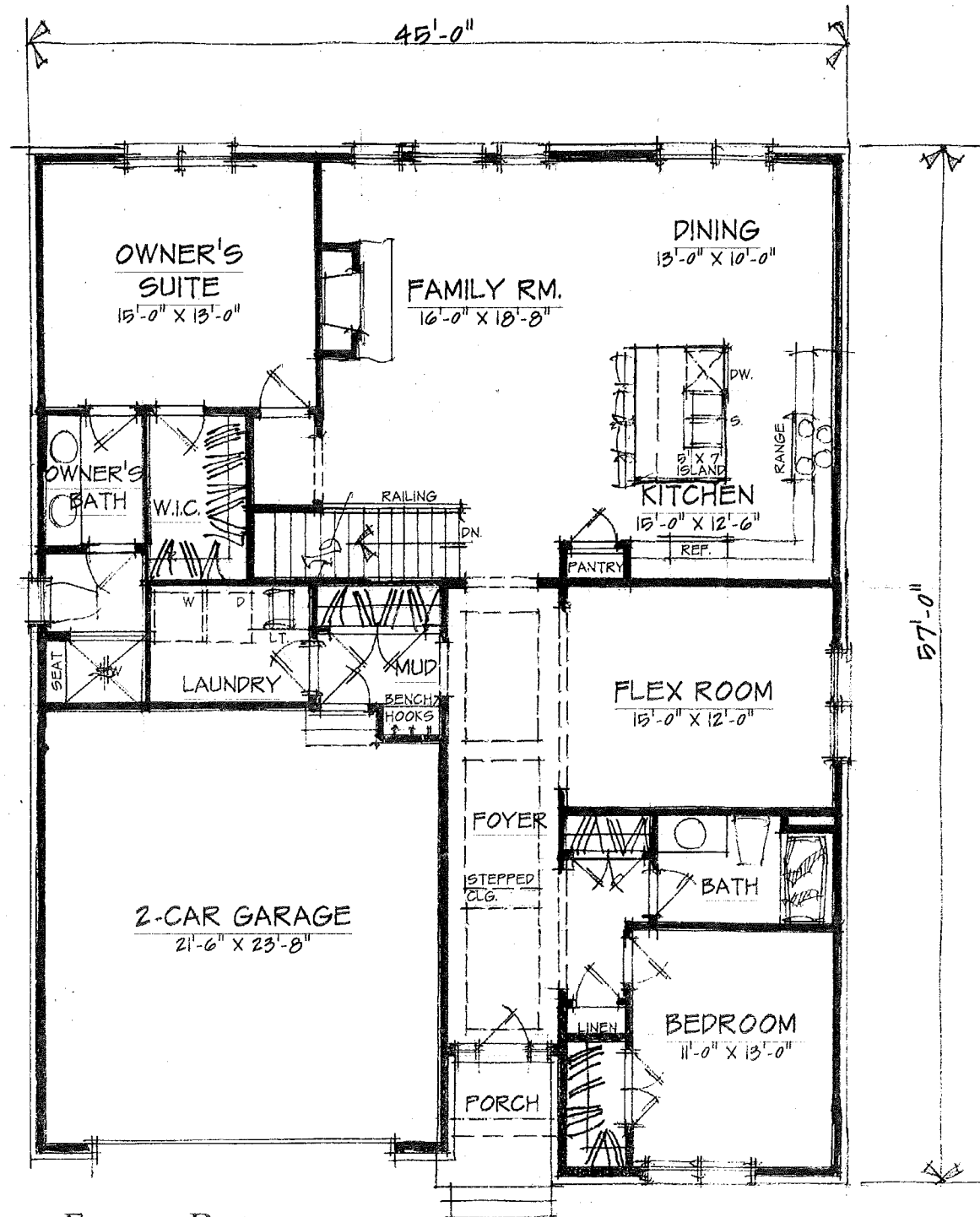
SCALE: 1/4" = 1'-0"

TR DESIGN
GROUP

Crestwyk Estates v. E 10/10/17

Crestwyk Estates Individual Unit

MJ LLC



FIRST FLOOR PLAN

SCALE: 1/4" = 1'-0"

FIRST FLOOR: 1,953 SQ. FT.



Crestwyk Estates 2 08/04/17

Crestwyk Estates Individual Unit

MJ LLC



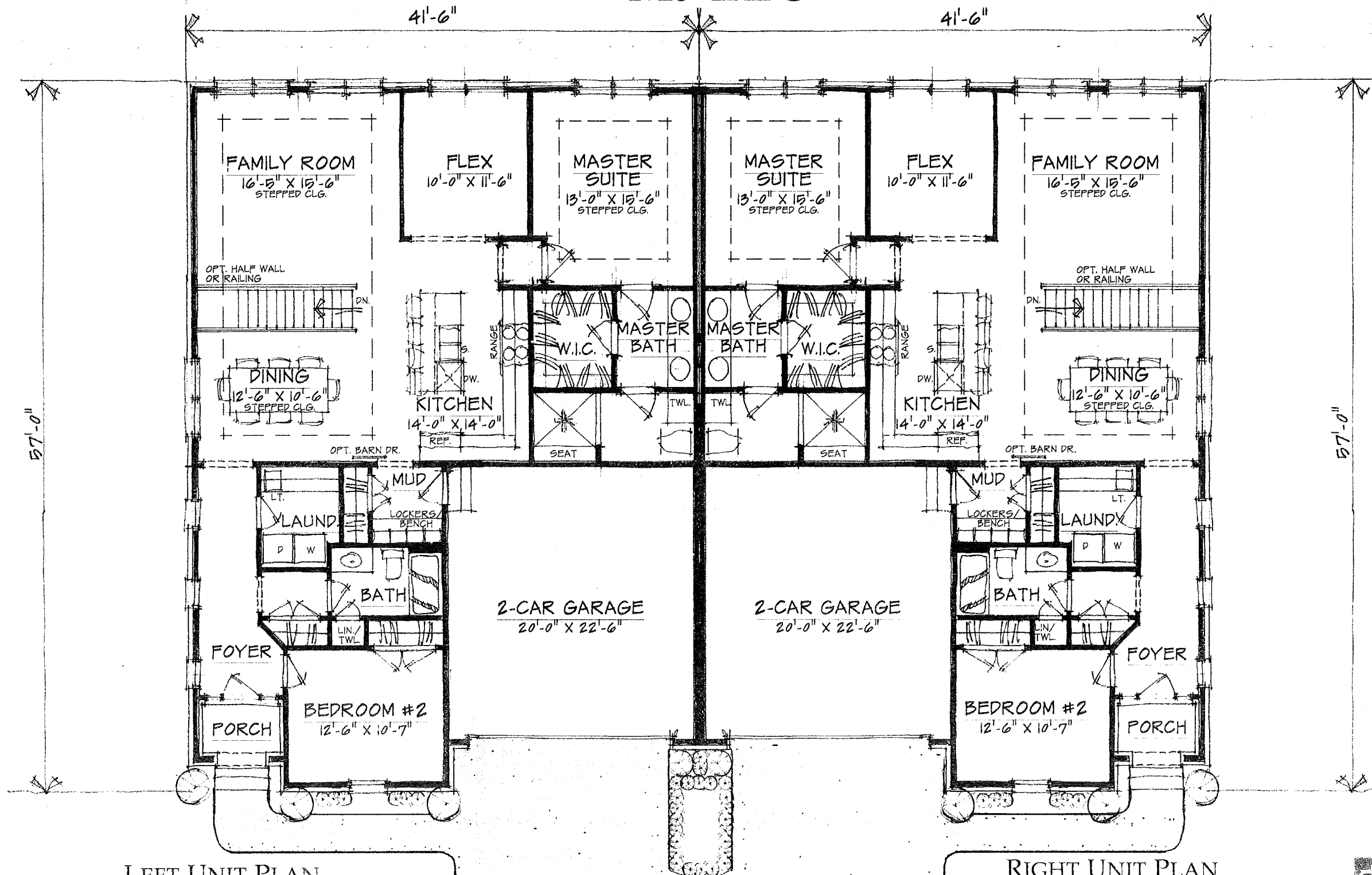
ELEVATION CONCEPT
SCALE: 1/4" = 1'-0"



Crestwyk Estates v. 2 08/04/17

Crestwyk Estates Duplex

MJ LLC



LEFT UNIT PLAN

SCALE: 1/4" = 1'-0"

LEFT UNIT: 1,795 SQ. FT.

RIGHT UNIT PLAN

SCALE: 1/4" = 1'-0"

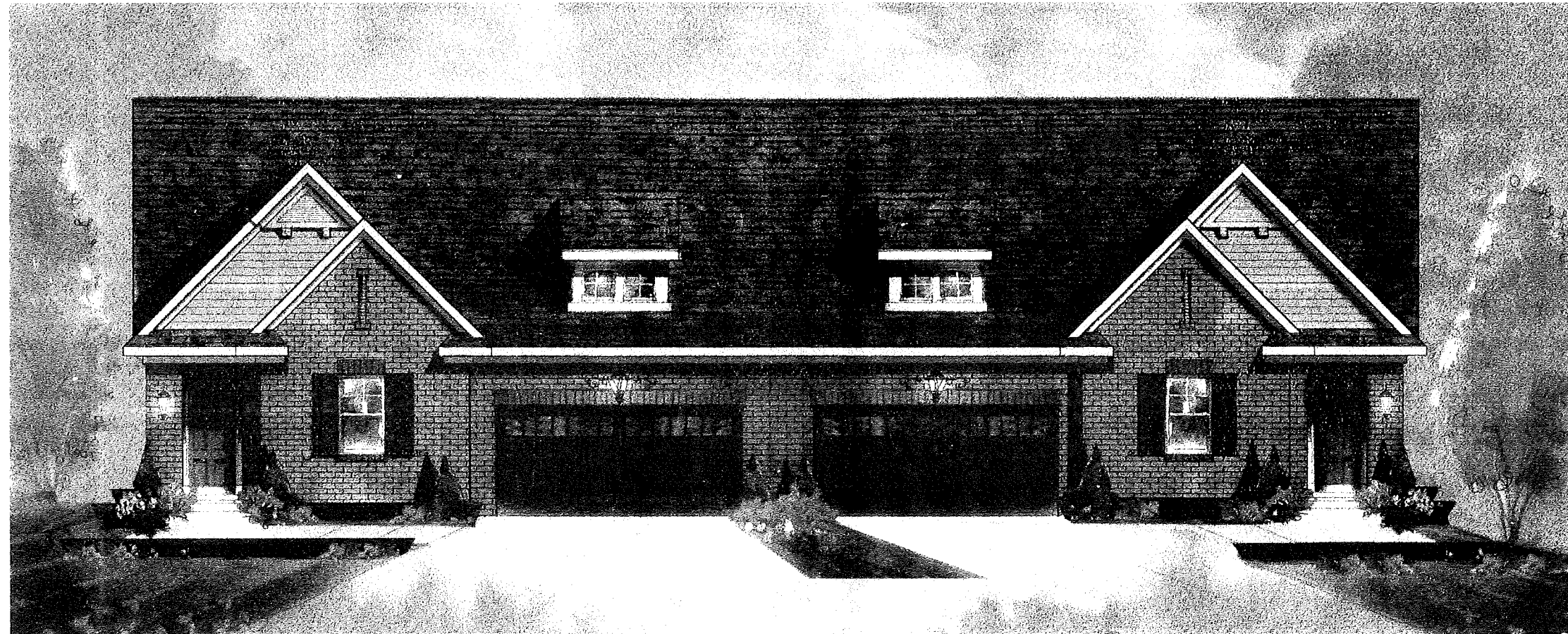
RIGHT UNIT: 1,795 SQ. FT.



Crestwyk Estates v. E 10/17/17

Crestwyk Estates Duplex

MJ LLC



ELEVATION CONCEPT

SCALE: 1/4" = 1'-0"



Crestwyk Estates v. E 10/17/17