

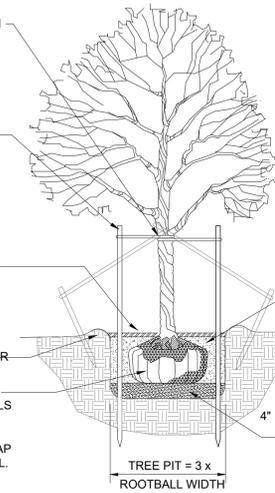
NOTE:
GUY DECIDUOUS TREES ABOVE
3" CAL. STAKE DECIDUOUS
TREES BELOW 3" CAL.

STAKE TREES AT FIRST BRANCH
USING 2"-3" WIDE BELT-LIKE
NYLON OR PLASTIC STRAPS.
ALLOW FOR SOME MINIMAL
FLEXING OF THE TREE.
REMOVE AFTER ONE YEAR.

2" X 2" HARDWOOD STAKES,
MIN. 36" ABOVE GROUND FOR
UPRIGHT, 18" IF ANGLED. DRIVE
STAKES A MIN. 18" INTO
UNDISTURBED GROUND
OUTSIDE ROOTBALL. REMOVE
AFTER ONE YEAR.

MULCH 4" DEPTH WITH
SHREDDED HARDWOOD BARK,
NATURAL IN COLOR. LEAVE 3"
CIRCLE OF BARE SOIL AT BASE
OF TREE TRUNK.

MOUND EARTH TO FORM SAUCER
REMOVE ALL
NON-BIODEGRADABLE MATERIALS
COMPLETELY FROM THE
ROOTBALL. CUT DOWN WIRE
BASKET AND FOLD DOWN BURLAP
FROM TOP 1/2 OF THE ROOTBALL.



NOTE:
TREE SHALL BEAR SAME
RELATION TO FINISH GRADE AS
IT BORE ORIGINALLY OR
SLIGHTLY HIGHER THAN FINISH
GRADE UP TO 6" ABOVE GRADE,
IF DIRECTED BY LANDSCAPE
ARCHITECT FOR HEAVY CLAY
SOIL AREAS.

DO NOT PRUNE TERMINAL
LEADER. PRUNE ONLY DEAD OR
BROKEN BRANCHES.

REMOVE ALL TAGS, STRING,
PLASTICS AND OTHER
MATERIALS THAT ARE
UNSIGHTLY OR COULD CAUSE
GIRDLING.

PLANTING MIXTURE:
AMEND SOILS PER
SITE CONDITIONS
AND REQUIREMENTS
OF THE PLANT
MATERIAL.

SCARIFY SUBGRADE
AND PLANTING PIT
SIDES. RECOMPACT
BASE OF TO 4"
DEPTH.

DECIDUOUS TREE PLANTING DETAIL

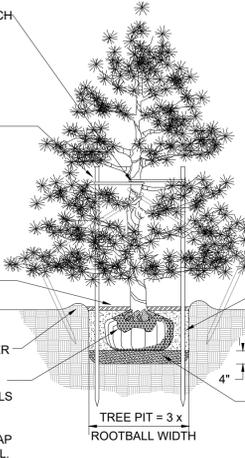
NOTE:
GUY EVERGREEN TREES ABOVE
12' HEIGHT. STAKE EVERGREEN
TREE BELOW 12' HEIGHT.

STAKE TREES AT FIRST BRANCH
USING 2"-3" WIDE BELT-LIKE
NYLON OR PLASTIC STRAPS.
ALLOW FOR SOME MINIMAL
FLEXING OF THE TREE.
REMOVE AFTER ONE YEAR.

2" X 2" HARDWOOD STAKES,
MIN. 36" ABOVE GROUND FOR
UPRIGHT, 18" IF ANGLED. DRIVE
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OUTSIDE ROOTBALL. REMOVE
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MULCH 4" DEPTH WITH
SHREDDED HARDWOOD BARK,
NATURAL IN COLOR. LEAVE 3"
CIRCLE OF BARE SOIL AT BASE
OF TREE TRUNK
MOUND EARTH TO FORM SAUCER

REMOVE ALL
NON-BIODEGRADABLE MATERIALS
COMPLETELY FROM THE
ROOTBALL. CUT DOWN WIRE
BASKET AND FOLD DOWN BURLAP
FROM TOP 1/2 OF THE ROOTBALL.



NOTE:
TREE SHALL BEAR SAME
RELATION TO FINISH GRADE AS
IT BORE ORIGINALLY OR
SLIGHTLY HIGHER THAN FINISH
GRADE UP TO 6" ABOVE GRADE,
IF DIRECTED BY LANDSCAPE
ARCHITECT FOR HEAVY CLAY
SOIL AREAS.

DO NOT PRUNE TERMINAL
LEADER. PRUNE ONLY DEAD OR
BROKEN BRANCHES.

REMOVE ALL TAGS, STRING,
PLASTICS AND OTHER
MATERIALS THAT ARE
UNSIGHTLY OR COULD CAUSE
GIRDLING.

PLANTING MIXTURE:
AMEND SOILS PER
SITE CONDITIONS
AND REQUIREMENTS
OF THE PLANT
MATERIAL.

SCARIFY SUBGRADE
AND PLANTING PIT
SIDES. RECOMPACT
BASE OF TO 4"
DEPTH.

EVERGREEN TREE PLANTING DETAIL

NOTE:
TREE SHALL BEAR SAME
RELATION TO FINISH GRADE AS
IT BORE ORIGINALLY OR
SLIGHTLY HIGHER THAN FINISH
GRADE UP TO 4" ABOVE GRADE,
IF DIRECTED BY LANDSCAPE
ARCHITECT FOR HEAVY CLAY
SOIL AREAS.

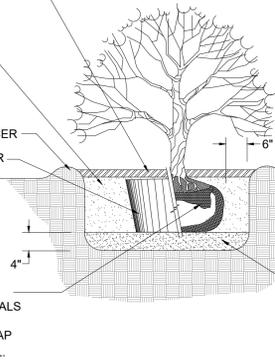
PRUNE ONLY DEAD OR BROKEN
BRANCHES.

REMOVE ALL TAGS, STRING,
PLASTICS AND OTHER
MATERIALS THAT ARE
UNSIGHTLY OR COULD CAUSE
GIRDLING.

PLANTING MIXTURE:
AMEND SOILS PER
SITE CONDITIONS
AND REQUIREMENTS
OF THE PLANT
MATERIAL.

MOUND EARTH TO FORM SAUCER
REMOVE COLLAR OF ALL FIBER
POTS. POTS SHALL BE CUT TO
PROVIDE FOR ROOT GROWTH.
REMOVE ALL NONORGANIC
CONTAINERS COMPLETELY.

REMOVE ALL
NON-BIODEGRADABLE MATERIALS
COMPLETELY FROM THE
ROOTBALL. FOLD DOWN BURLAP
FROM TOP 1/2 OF THE ROOTBALL.



SHRUB PLANTING DETAIL

NOT TO SCALE

MAINTENANCE NOTES

SECTION 138-12.109 - Maintenance

The owner of the property shall be responsible for all maintenance of site landscaping, as follows:

- Landscaping shall be kept in a neat, orderly and healthy growing condition, free from debris and refuse.
- Pruning shall be minimal at the 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 six months after it dies or in the next planting season, whichever occurs first. For purposes of this Section, the planting season for deciduous plants shall be between March 1 and June 1 and from October 1 until the prepared soil becomes frozen. 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.
- The approved landscape plan shall be considered a permanent record and integral part of the Site Plan Approval. Unless otherwise approved in accordance with the aforementioned procedures, any revisions to or removal of plant materials, or non-compliance with the maintenance requirements of this Section 138-12.109 will place the parcel in non-conformity with the approved landscape plan and be a violation of this ordinance.
- If protected trees are damaged, a fine shall be issued on an inch-by-inch basis at a monetary rate as defined by the Forestry Department.

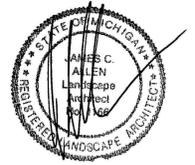
LANDSCAPE NOTES

- All plants shall be north Midwest American region grown, No. 1 grade plant materials, and shall be true to name, free from physical damage and wind burn.
- Plants shall be full, well-branched, and in healthy vigorous growing condition.
- Plants shall be watered before and after planting is complete.
- All trees must be staked, fertilized and mulched and shall be guaranteed to exhibit a normal growth cycle for at least two (2) full years following City approval.
- All material shall conform to the guidelines established in the most recent edition of the American Standard for Nursery Stock.
- Provide clean backfill soil, using material stockpiled on site. Soil shall be screened and free of any debris, foreign material, and stone.
- "Agriform" tabs or similar slow-release fertilizer shall be added to the planting pits before being backfilled.
- Amended planting mix shall consist of 1/3 screened topsoil, 1/3 sand and 1/3 peat, mixed well and spread to the depth as indicated in planting details.
- All plantings shall be mulched per planting details located on this sheet.
- The Landscape Contractor shall be responsible for all work shown on the landscape drawings and specifications.
- No substitutions or changes of location, or plant types shall be made without the approval of the Landscape Architect.
- The Landscape Architect shall be notified of any discrepancies between the plans and field conditions prior to installation.
- The Landscape Contractor shall be responsible for maintaining all plant material in a vertical condition throughout the guaranteed period.
- The 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 and specifications, if requested by owner.
- Contractor shall be responsible for checking plant quantities to ensure quantities on drawings and plant list are the same. In the event of a discrepancy, the quantities on the plans shall prevail.
- The Landscape Contractor shall seed and mulch or sod (as indicated on plans) all areas disturbed during construction, throughout the contract limits.
- A pre-emergent weed control agent, "Preen" or equal, shall be applied uniformly on top of all mulching in all planting beds.
- All landscape areas shall be provided with an underground automatic sprinkler system.
- Sod shall be two year old "Baron/Cheriadelpi" Kentucky Blue Grass grown in a sod nursery on loam soil.

ADDITIONAL 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 needs to inspect all trees, existing or planted, to identify any that pose a hazard to the safe use of the public right-of-way. Forestry may require the developer to remove and possibly replace, any such trees.
- These requirements are incorporated into the plan.
- Prior approval is required to plant any tree or shrub on the public right-of-way. All trees and shrubs must be planted 10' from the edge of the public road. (Trees must be planted at least 15' away from the curb or road edge where the speed limit is more than 35 mph). 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. No trees or shrubs may be planted within the triangular area formed at the intersection of any street right-of-way at a distance along each line of 25' from their point intersection. No trees or shrubs may be planted within the triangular area formed at the intersection of any driveway with a public walkway at a distance along each line of 15' from their point of intersection. All trees and shrubs must be planted at least 10' from any fire hydrant. Shade and evergreen trees must be at least 15' away from the nearest overhead wire. Trees must be planted a minimum of 5' from an underground utility, unless the City's Landscape Architect requires a greater distance.
- 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 may not be planted within 4' of any property line.
- Irrigation Shall Only Occur Between the Hours of 12am and 5am in Accordance with the City's Watering Ordinances.
- Irrigation overspray shall not broadcast onto the City pathways.

Seal:



Title:

Landscape Details

Project:

The Groves
Rochester Hills, Michigan

Prepared for:

Pulte Group
2800 Livernois Road, Building D, Suite 320
Troy, MI 48063

Revision:

Submission
Revised

Issued:

April 15, 2020
May 11, 2020

Job Number:

20-021

Drawn By:

jca

Checked By:

jca

Sheet No.



L-3

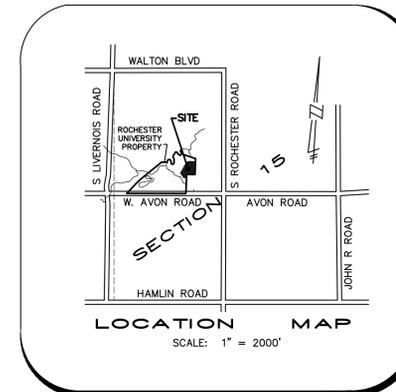
City File #19-022
Section 15

CONSTRUCTION PLANS FOR THE GROVES

A SINGLE FAMILY RESIDENTIAL CONDOMINIUM DEVELOPMENT SECTION 15, TOWN 3 N, RANGE 11 E, CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN

PREPARED FOR:
PULTE HOMES OF MICHIGAN, LLC.
2800 LIVERNOIS ROAD, BUILDING D, SUITE 320
TROY, MI 48083

CONTACT: JOE SKORE
PHONE: 248.249.4611



LEGAL DESCRIPTION

LEGAL DESCRIPTION -- AS SURVEYED:
A PARCEL OF LAND LOCATED IN THE WEST 1/2 OF THE SOUTHWEST 1/4 AND PART OF THE SOUTH 1/2 OF THE SOUTHWEST 1/4 OF SECTION 15, T3N-R11E, CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN, MORE PARTICULARLY DESCRIBED AS: COMMENCING AT THE SOUTHEAST CORNER OF SAID SECTION 15, THENCE DUE WEST, ALONG THE SOUTH LINE OF SAID SECTION 15 AND THE CENTERLINE OF AVON ROAD, 2794.58 FEET TO THE SOUTH 1/4 CORNER OF SAID SECTION 15; THENCE NORTH 03°26'11" EAST 60.11 FEET ALONG THE NORTH-SOUTH 1/4 LINE TO THE POINT OF BEGINNING AND THE NORTH LINE OF SAID AVON ROAD, 60 FOOT HALF WIDTH; THENCE, ALONG THE NORTH LINE OF SAID AVON ROAD, NORTH 89°47'56" WEST 1313.10 FEET AND NORTH 88°26'03" WEST 391.01 FEET TO THE SOUTHEASTERLY LINE OF THE CLINTON RIVER "TRAIL" (FORMALLY KNOWN AS THE GRAND TRUNK WESTERN RAILROAD); THENCE, ALONG THE SOUTHEASTERLY LINE OF SAID "TRAIL", NORTH 42°34'57" EAST 252.70 FEET; THENCE CONTINUING ALONG THE SOUTHEASTERLY LINE OF SAID "TRAIL", NORTHEASTERLY 797.44 FEET ON THE ARC OF A 5524.16 FOOT RADIUS CURVE TO THE RIGHT, WITH A DELTA ANGLE OF 08°16'15" AND CHORD BEARING AND DISTANCE OF NORTH 46°42'59" EAST 796.75 FEET; THENCE, CONTINUING ALONG THE SOUTHEASTERLY LINE OF SAID "TRAIL", NORTH 50°51'00" EAST 1021.05 TO THE SOUTH LINE OF THE NORTHEAST 1/4 OF THE SOUTHWEST 1/4 OF SAID SECTION 15; THENCE, ALONG SAID SOUTH LINE, NORTH 89°38'14" EAST 244.84 FEET TO THE EAST 1/8 CORNER OF THE SOUTHWEST 1/4 OF SAID SECTION 15; THENCE, ALONG THE SOUTH LINE OF THE NORTHWEST 1/4 OF THE SOUTHWEST 1/4 OF SAID SECTION 15, NORTH 89°45'33" EAST 27 FEET, MORE OR LESS, TO A POINT ON THE CENTER OF THE CLINTON RIVER; THENCE FOLLOWING ALONG THE CENTER OF THE CLINTON RIVER IN MEANDERING DIRECTIONS, BUT GENERALLY NORTHEASTERLY, A DISTANCE OF 1740 FEET, MORE OR LESS, DOWNSTREAM; THENCE LEAVING THE CENTER OF THE CLINTON RIVER, SOUTH 59°41'28" EAST 25 FEET, MORE OR LESS; THENCE SOUTH 22°04'32" EAST 226.40 FEET; THENCE SOUTH 71°53'04" EAST 609.74 FEET; THENCE SOUTH 02°10'13" WEST 118.12 FEET; THENCE SOUTH 01°51'27" WEST 623.78 FEET TO THE NORTHEAST CORNER OF THE ROCHESTER CHURCH OF CHRIST PARCEL AS SURVEYED BY BUCKERFIELD ENGINEERING, RECORDED IN LIBER 10030, PAGES 313 & 314, OAKLAND COUNTY RECORDS; THENCE ALONG THE NORTHERLY AND WESTERLY BOUNDARY OF SAID CHURCH PARCEL, DUE WEST 393.37 FEET; THENCE SOUTH 01°40'04" WEST 287.19 FEET; THENCE DUE WEST 2.50 FEET; THENCE SOUTH 01°40'04" WEST 539.97 FEET TO THE NORTH LINE OF SAID AVON ROAD; THENCE, ALONG SAID NORTH LINE, DUE WEST 39.55 FEET; THENCE NORTH 01°40'04" EAST 213.09 FEET; THENCE DUE WEST 212.24 FEET; THENCE DUE SOUTH 213.00 FEET TO THE NORTH LINE OF SAID AVON ROAD; THENCE, ALONG SAID NORTH LINE, DUE WEST 753.34 FEET TO THE POINT OF BEGINNING. SAID PARCEL CONTAINS 76.26 ACRES OF LAND AND IS SUBJECT TO ANY AND ALL EASEMENTS AND RESTRICTIONS WHICH MAY OR MAY NOT BE OF RECORD.

LEGAL DESCRIPTION OF PROPOSED SPLIT PARCEL (THE GROVES):

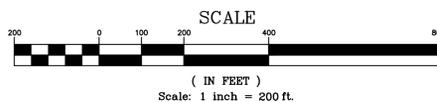
A PARCEL OF LAND LOCATED IN THE SOUTHWEST 1/4 OF SECTION 15, T3N-R11E, CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN, MORE PARTICULARLY DESCRIBED AS: COMMENCING AT THE SOUTHEAST CORNER OF SAID SECTION 15, THENCE, ALONG THE SOUTH LINE OF SAID SECTION 15, DUE WEST 1793.79 FEET; THENCE NORTH 01°40'04" EAST, 600.00 FEET; THENCE DUE EAST, 2.50 FEET; THENCE NORTH 01°40'04" EAST, 272.83 FEET TO THE POINT OF BEGINNING; THENCE SOUTH 53°54'10" WEST, 179.32 FEET; THENCE NORTH 36°05'50" WEST, 60.00 FEET; THENCE NORTH 53°54'10" EAST, 81.99 FEET; THENCE NORTH 52°53'14" WEST, 202.49 FEET; THENCE NORTH 28°45'21" EAST, 508.13 FEET; THENCE NORTH 57°20'54" EAST, 128.22 FEET; THENCE SOUTH 88°21'57" EAST, 336.59 FEET; THENCE SOUTH 01°51'27" WEST, 604.32 FEET; THENCE DUE WEST, 393.37 FEET; THENCE SOUTH 01°40'04" WEST, 14.36 FEET TO THE POINT OF BEGINNING. SAID PARCEL CONTAINS 7.90 ACRES OF LAND.

LEGAL DESCRIPTION OF PROPOSED REMAINDER PARCEL:

A PARCEL OF LAND LOCATED IN THE WEST 1/2 OF THE SOUTHWEST 1/4 AND PART OF THE SOUTH 1/2 OF THE SOUTHWEST 1/4 OF SECTION 15, T3N-R11E, CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN, MORE PARTICULARLY DESCRIBED AS: COMMENCING AT THE SOUTHEAST CORNER OF SAID SECTION 15, THENCE DUE WEST, ALONG THE SOUTH LINE OF SAID SECTION 15 AND THE CENTERLINE OF AVON ROAD, 2794.58 FEET TO THE SOUTH 1/4 CORNER OF SAID SECTION 15; THENCE NORTH 03°26'11" EAST 60.11 FEET ALONG THE NORTH-SOUTH 1/4 LINE TO THE POINT OF BEGINNING AND THE NORTH LINE OF SAID AVON ROAD, 60 FOOT HALF WIDTH; THENCE, ALONG THE NORTH LINE OF SAID AVON ROAD, NORTH 89°47'56" WEST 1313.10 FEET AND NORTH 88°26'03" WEST 391.01 FEET TO THE SOUTHEASTERLY LINE OF THE CLINTON RIVER "TRAIL" (FORMALLY KNOWN AS THE GRAND TRUNK WESTERN RAILROAD); THENCE, ALONG THE SOUTHEASTERLY LINE OF SAID "TRAIL", NORTH 42°34'57" EAST 252.70 FEET; THENCE CONTINUING ALONG THE SOUTHEASTERLY LINE OF SAID "TRAIL", NORTHEASTERLY 797.44 FEET ON THE ARC OF A 5524.16 FOOT RADIUS CURVE TO THE RIGHT, WITH A DELTA ANGLE OF 08°16'15" AND CHORD BEARING AND DISTANCE OF NORTH 46°42'59" EAST 796.75 FEET; THENCE, CONTINUING ALONG THE SOUTHEASTERLY LINE OF SAID "TRAIL", NORTH 50°51'00" EAST 1021.05 TO THE SOUTH LINE OF THE NORTHEAST 1/4 OF THE SOUTHWEST 1/4 OF SAID SECTION 15; THENCE, ALONG SAID SOUTH LINE, NORTH 89°38'14" EAST 244.84 FEET TO THE EAST 1/8 CORNER OF THE SOUTHWEST 1/4 OF SAID SECTION 15; THENCE, ALONG THE SOUTH LINE OF THE NORTHWEST 1/4 OF THE SOUTHWEST 1/4 OF SAID SECTION 15, NORTH 89°45'33" EAST 27 FEET, MORE OR LESS, TO A POINT ON THE CENTER OF THE CLINTON RIVER; THENCE FOLLOWING ALONG THE CENTER OF THE CLINTON RIVER IN MEANDERING DIRECTIONS, BUT GENERALLY NORTHEASTERLY, A DISTANCE OF 1740 FEET, MORE OR LESS, DOWNSTREAM; THENCE LEAVING THE CENTER OF THE CLINTON RIVER, SOUTH 59°41'28" EAST 25 FEET, MORE OR LESS; THENCE SOUTH 22°04'32" EAST 226.40 FEET; THENCE SOUTH 71°53'04" EAST 609.74 FEET; THENCE SOUTH 02°10'13" WEST 118.12 FEET; THENCE SOUTH 01°51'27" WEST 623.78 FEET TO THE NORTHEAST CORNER OF THE ROCHESTER CHURCH OF CHRIST PARCEL AS SURVEYED BY BUCKERFIELD ENGINEERING, RECORDED IN LIBER 10030, PAGES 313 & 314, OAKLAND COUNTY RECORDS; THENCE, ALONG SAID WEST BOUNDARY LINE, SOUTH 01°40'04" WEST 272.83 FEET; THENCE DUE WEST 2.50 FEET; THENCE SOUTH 01°40'04" WEST 539.97 FEET TO THE NORTH LINE OF SAID AVON ROAD; THENCE, ALONG SAID NORTH LINE, DUE WEST 39.55 FEET; THENCE NORTH 01°40'04" EAST 213.09 FEET; THENCE DUE WEST 212.24 FEET; THENCE DUE SOUTH 213.00 FEET TO THE NORTH LINE OF SAID AVON ROAD; THENCE, ALONG SAID NORTH LINE, DUE WEST 753.34 FEET TO THE POINT OF BEGINNING. SAID PARCEL CONTAINS 68.36 ACRES OF LAND AND IS SUBJECT TO ANY AND ALL EASEMENTS AND RESTRICTIONS WHICH MAY OR MAY NOT BE OF RECORD.

GENERAL NOTES

- NOTIFY THE CITY OF ROCHESTER HILLS ENGINEERING DEPARTMENT AT (248) 656-4640 A MIN. OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION.
- ALL CONSTRUCTION MUST CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS ADOPTED BY THE CITY OF ROCHESTER HILLS.
- CALL 811 ONE-CALL UTILITY LOCATING A MINIMUM OF 72 HOURS PRIOR TO THE START OF CONSTRUCTION.
- ALL SOIL EROSION AND SILTATION MUST BE CONTROLLED AND CONTAINED ON-SITE. A SOIL EROSION CONTROL PERMIT MUST BE OBTAINED FROM THE OAKLAND COUNTY WATER RESOURCE COMMISSION PRIOR TO THE START OF CONSTRUCTION.
- ALL EXCAVATION UNDER OR WITHIN 1 ON 1 INFLUENCE OF ANY PAVEMENT, EXISTING OR PROPOSED, OR WHERE SAND BACKFILL IS CALLED FOR ON THE PLAN, SHALL BE BACKFILLED AND COMPACTED WITH GRANULAR MATERIAL (SAND) MDOT CLASS II TO 95 PERCENT MAXIMUM UNIT DENSITY (ALL OTHERS 90 PERCENT).
- THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES AND FACILITIES. THE CONTRACTOR SHALL EXPOSE EXISTING UTILITIES AT THE PROPOSED UTILITY CROSSINGS PRIOR TO THE START OF UNDERGROUND CONSTRUCTION. ANY CONFLICTS WITH UTILITIES SHALL BE IMMEDIATELY REPORTED TO THE PROJECT ENGINEER.
- WHERE TWO UTILITIES CROSS, INCLUDING SANITARY SEWER LEADS, PROVIDE POROUS GRADE "B" BACKFILL MATERIAL COMPACTED TO THE UNDERSIDE OF THE HIGHER UTILITY OR AS SPECIFIED ON THE DETAIL SHEET.
- DUST CONTROL SHALL BE MAINTAINED AT ALL TIMES.
- ANY MUD TRACKED ONTO AVON ROAD AND WARRIOR WAY DRIVE SHALL BE REMOVED DAILY.
- A ROAD COMMISSION FOR OAKLAND COUNTY RIGHT-OF-WAY PERMIT IS REQUIRED FOR WORK WITHIN THE PUBLIC ROAD RIGHT-OF-WAY OF AVON ROAD.
- CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LOCATIONS, INVERTS AND GRADES PRIOR TO THE START OF ANY WORK.
- ALL PAVEMENT MARKINGS, TRAFFIC CONTROL SIGNS AND PARKING SIGNS SHALL COMPLY WITH THE DESIGN AND PLACEMENT REQUIREMENTS OF THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
- THE PROPOSED PRIVATE ROADS (UNIVERSITY PARK CIRCLE, EAGLES WING WAY AND WARRIOR WAY) ARE NOT BEING CONSTRUCTED TO CITY PUBLIC ROAD STANDARDS, AND THEREFORE, CANNOT BE CONVEYED TO THE CITY AS PUBLIC ROADS IN THE FUTURE.
- RETAINING WALLS SHALL COMPLY WITH SECTION R404.1.1 SIGNED AND SEALED ENGINEERING DRAWINGS ARE REQUIRED FOR ANY RETAINING WALL THAT FALLS WITHIN THE NOTED DESIGN REQUIREMENTS.
- EXISTING PATHWAY RAMPS AT THE AVON ROAD APPROACH SHALL BE UPGRADED TO CURRENT ADA STANDARDS.
- DETECTABLE WARNING PLATES FOR ADA RAMPS SHALL BE CAST-IN-PLACE AND BRICK RED IN COLOR. ACCEPTABLE PRODUCTS INCLUDE ASA SOLUTIONS, ARMOR TILE, EJ OR EQUI.
- SIDEWALKS INTERSECTING THE PATHWAY WILL BE CONSTRUCTED TO MEET ADA REQUIREMENTS.



SEIBER, KEAST ENGINEERING, L.L.C.

CONSULTING ENGINEERS

100 MAINCENTRE • SUITE 10 • NORTHVILLE, MICHIGAN • 48167
PHONE: 248.308.3331

TOPOGRAPHIC & BOUNDARY SURVEY PREPARED BY:
THE UMLOR GROUP
49287 WEST ROAD, WIXOM,
MICHIGAN 48393
PHONE: 248.773.7656

SHEET INDEX

- COVER SHEET
- OVERALL SITE PLAN
- COMPOSITE UTILITY PLAN
- EXISTING CONDITIONS PLAN
- GRADING PLAN
- DETAILED GRADING PLAN
- WARRIOR WAY ROAD AND WATER MAIN PLAN & PROFILE
- EAGLES WING LANE ROAD PLAN & PROFILE
- UNIVERSITY PARK CIRCLE ROAD PLAN & PROFILE
- EAGLES WING LANE SANITARY & WATER MAIN PLAN
- UNIVERSITY PARK CIRCLE SANITARY & WATERMAIN PLAN
- STORM SEWER PLAN
- STORM SEWER PROFILES
- DETENTION BASIN PLAN AND PROFILE
- DETENTION BASIN CALCULATIONS
- APPROACH PLAN
- DRAINAGE DISTRIBUTION PLAN
- STORM SEWER CALCULATIONS
- FIRE PROTECTION
- EMERGENCY ACCESS PLAN
- ND NOTES AND DETAILS
- WP WETLAND PLAN
- WP2 WETLAND PLAN
- WP3 WETLAND PLAN- WALL DETAIL

CITY OF ROCHESTER HILLS STANDARD DETAILS

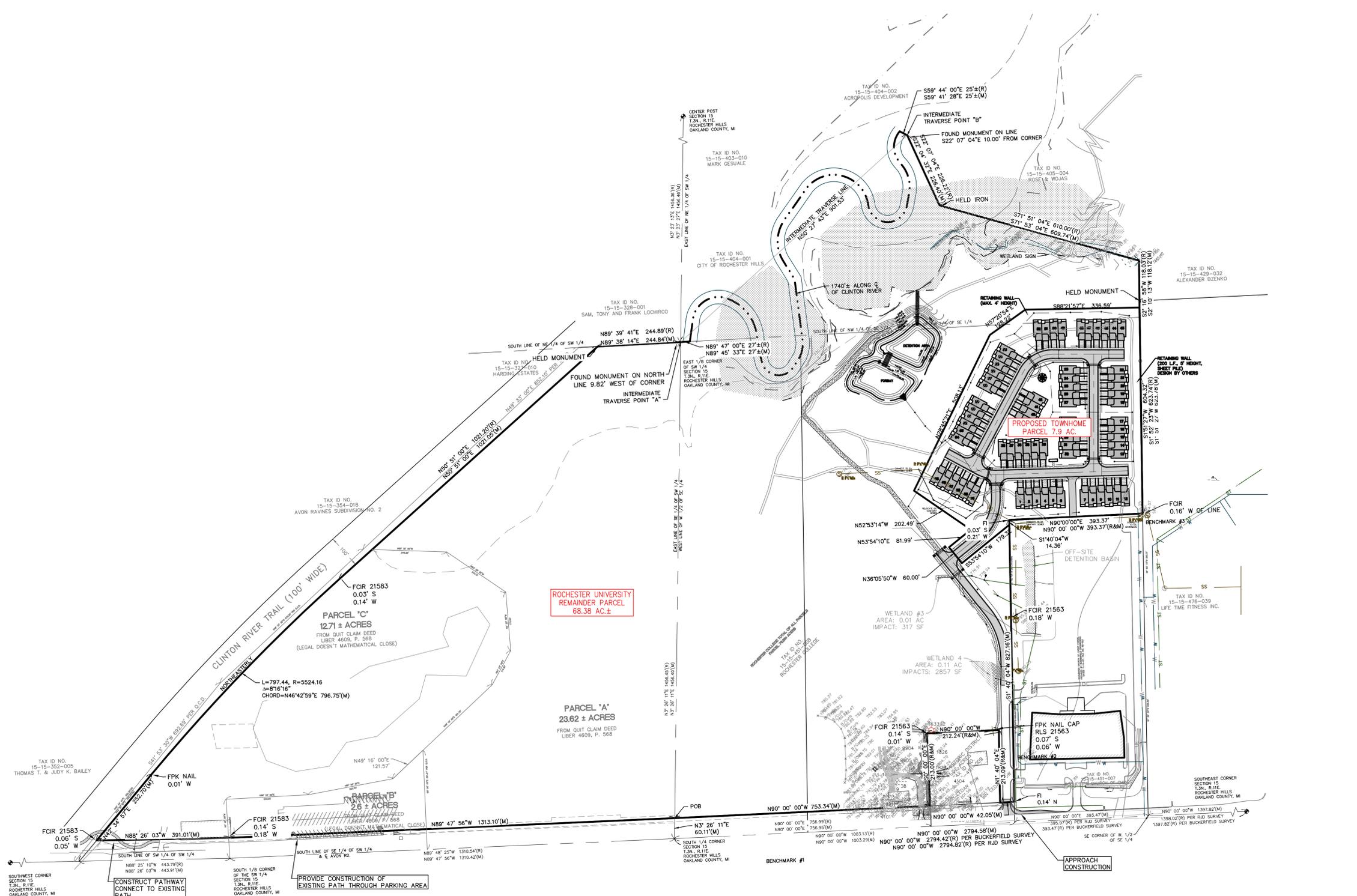
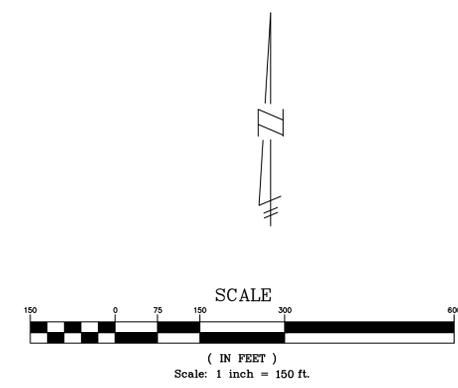
SANITARY SEWER STANDARD DETAILS (2)
WATER MAIN STANDARD DETAILS (3)
STORM SYSTEM STANDARD DETAILS (1)

OAKLAND COUNTY SOIL EROSION AND SEDIMENTATION CONTROL DETAILS (1)

BENCHMARKS

- ARROW TOP HYDRANT
ELEV.: = 792.50' (M) NAVD88
SOUTH SIDE AVON RD., 320'± EAST FROM S 1/4 CORNER
- LP BASIN SQUARE CHISELED
ELEV.: = 797.55' (M) NAVD88
NW BLDG CORNER OF ROCHESTER CHURCH, 170'± NORTH & AVON RD.
- ARROW TOP HYDRANT
ELEV.: = 818.00' (M) NAVD88
NE PROPERTY CORNER ROCHESTER CHURCH

REVISIONS			ENGINEER'S SEAL	
NO.	ITEM	DATE		
1.	REVISE WETLAND NUMBERS	4-28-2020		
2.	REVISE PER CITY OF ROCHESTER HILLS	5-11-2020		
3.	REVISED PER CITY PUD REVIEW	6-4-20		
DATE: 03-23-2020			DESIGNED BY: GWN	JOB NUMBER: 19-034
			CHECKED BY: F.K.	DRAWING FILE: 19054CV.dwg



LEGEND		
EXISTING	PROPOSED	
		PAVEMENT (ASPHALT)
		SIDE WALK (CONCRETE)
		CONCRETE CURB AND GUTTER
		STORM SEWER
		SANITARY SEWER
		WATER MAIN
		MANHOLE
		REAR YARD INLET FILTER (SI-3)
		CURB INLET W/SILT SAC (SI-4A)
		END SECTION GATE VALVE
		HYDRANT
		FLOOD PLAIN CONTOURS
		SPOT ELEVATION
		SURFACE DRAINAGE OVERFLOW ROUTE
		TREE FENCE
		SILT FENCE
		PROPOSED DRIVEWAY LOCATION
		LIMIT OF DISTURBANCE
		SILT FENCE GRAVEL FILTER (SP-3)

THE GROVES
SECTION 15, TOWN 3 NORTH, RANGE 11 EAST
CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
NO.	ITEM	DATE
1.	REVISE WETLAND NUMBERS	4-28-2020
2.	REVISE PER CITY OF ROCHESTER HILLS	5-11-2020
3.	REVISED PER CITY PUD REVIEW	6-4-20

UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

811 Know what's below.
Call before you dig.

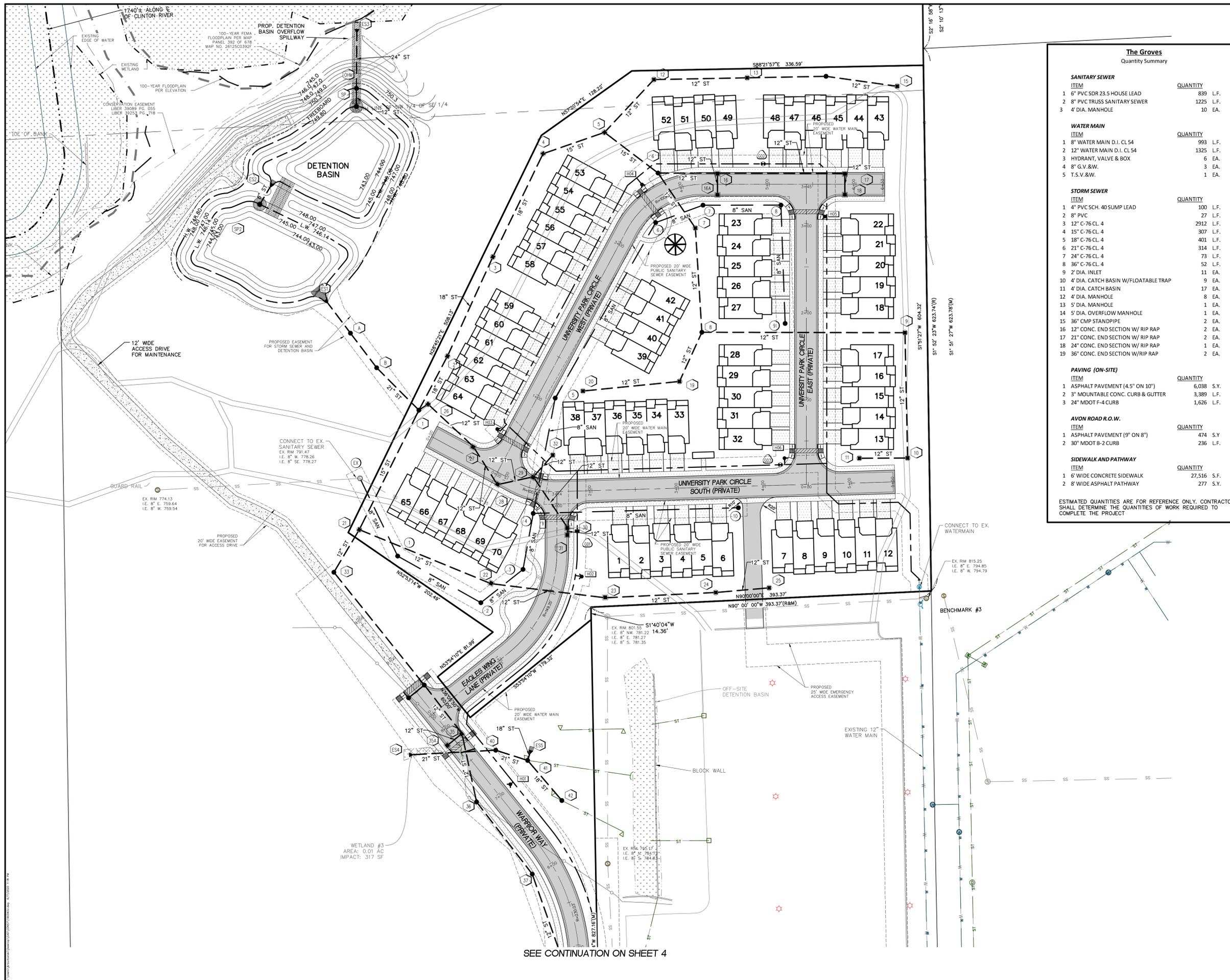
THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.

DATE: 03-23-2020 DESIGNED BY: GWN JOB NUMBER: 19-034
CHECKED BY: P.K. DRAWING FILE: 190340A.dwg

OVERALL SITE PLAN

<p>SEIBER, KEAST ENGINEERING, L.L.C. CONSULTING ENGINEERS 100 MAINCENTRE • SUITE 10 • NORTHVILLE, MI • 48167 PHONE: 248.308.3331 EMAIL: info@seiberkeast.com</p>	<p>SHEET 2</p>

City File No. 19-022 Section 15

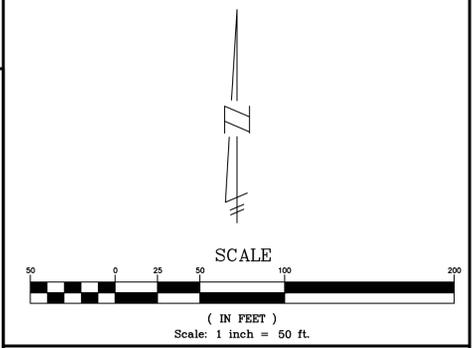


The Groves

Quantity Summary

ITEM	QUANTITY
SANITARY SEWER	
1 6" PVC SDR 23.5 HOUSE LEAD	839 L.F.
2 8" PVC TRUSS SANITARY SEWER	1225 L.F.
3 4" DIA. MANHOLE	10 EA.
WATER MAIN	
1 8" WATER MAIN D.I. CL 54	993 L.F.
2 12" WATER MAIN D.I. CL 54	1325 L.F.
3 HYDRANT, VALVE & BOX	6 EA.
4 8" G.V.&W.	3 EA.
5 T.S.V.&W.	1 EA.
STORM SEWER	
1 4" PVC SCH. 40 SUMP LEAD	100 L.F.
2 8" PVC	27 L.F.
3 12" C-76CL 4	2912 L.F.
4 15" C-76CL 4	307 L.F.
5 18" C-76CL 4	401 L.F.
6 21" C-76CL 4	314 L.F.
7 24" C-76CL 4	73 L.F.
8 36" C-76CL 4	52 L.F.
9 2' DIA. INLET	11 EA.
10 4' DIA. CATCH BASIN W/FLOATABLE TRAP	9 EA.
11 4' DIA. CATCH BASIN	17 EA.
12 4' DIA. MANHOLE	8 EA.
13 5' DIA. MANHOLE	1 EA.
14 5' DIA. OVERFLOW MANHOLE	1 EA.
15 36" CMP STANDPIPE	2 EA.
16 12" CONC. END SECTION W/ RIP RAP	2 EA.
17 21" CONC. END SECTION W/ RIP RAP	2 EA.
18 24" CONC. END SECTION W/ RIP RAP	1 EA.
19 36" CONC. END SECTION W/ RIP RAP	2 EA.
PAVING (ON-SITE)	
1 ASPHALT PAVEMENT (4.5" ON 10")	6,038 S.Y.
2 3" MOUNTABLE CONC. CURB & GUTTER	3,389 L.F.
3 24" MDOT F-4 CURB	1,626 L.F.
AVON ROAD R.O.W.	
1 ASPHALT PAVEMENT (9" ON 8")	474 S.Y.
2 30" MDOT B-2 CURB	236 L.F.
SIDEWALK AND PATHWAY	
1 6" WIDE CONCRETE SIDEWALK	27,516 S.F.
2 8" WIDE ASPHALT PATHWAY	277 S.Y.

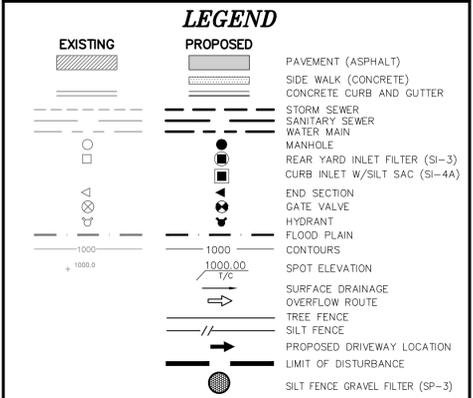
ESTIMATED QUANTITIES ARE FOR REFERENCE ONLY. CONTRACTOR SHALL DETERMINE THE QUANTITIES OF WORK REQUIRED TO COMPLETE THE PROJECT.



SANITARY SEWER BASIS OF DESIGN

CONNECTION TO EXISTING 8" SANITARY SEWER LOCATED ON SITE

INITIAL AND ULTIMATE SERVICE AREA	
NUMBER OF UNITS	70 units
POPULATION	= 2.44 people/unit x 70 units = 170.8 people
AVERAGE FLOW	= 170.8 people x 100 gal/cap/day = 17,080 gal/day = 0.026 cfs
PEAK FACTOR	= (18+SQRT(P/1000))/(4+SQRT(P/1000)) = 4.17 (28,400 > Pop > 500) = 4 (Pop < 500 people, Rochester Hills/10 State Standard)
PEAK FLOW	= PEAK FACTOR X AVERAGE FLOW = 0.106 cfs
CAPACITY OF A 8" PIPE @ 0.40 % IS 0.76 cfs THEREFORE PIPE CAPACITY IS SUFFICIENT.	



THE GROVES

SECTION 15, TOWN 3 NORTH, RANGE 11 EAST
CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
NO.	ITEM	DATE
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2.	REVISE PER CITY OF ROCHESTER HILLS	5-11-2020
3.	REVISED PER CITY PUD REVIEW	6-4-20

UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

DATE: 03-23-2020 DESIGNED BY: GWN JOB NUMBER: 19-034
CHECKED BY: P.K. DRAWING FILE: 10034CU.dwg

COMPOSITE UTILITY PLAN

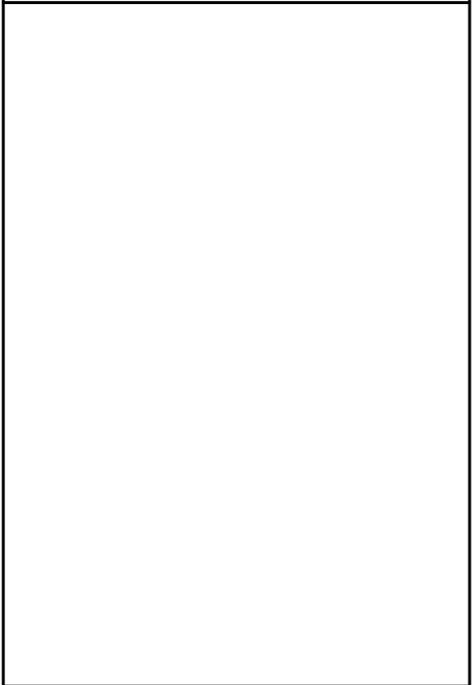
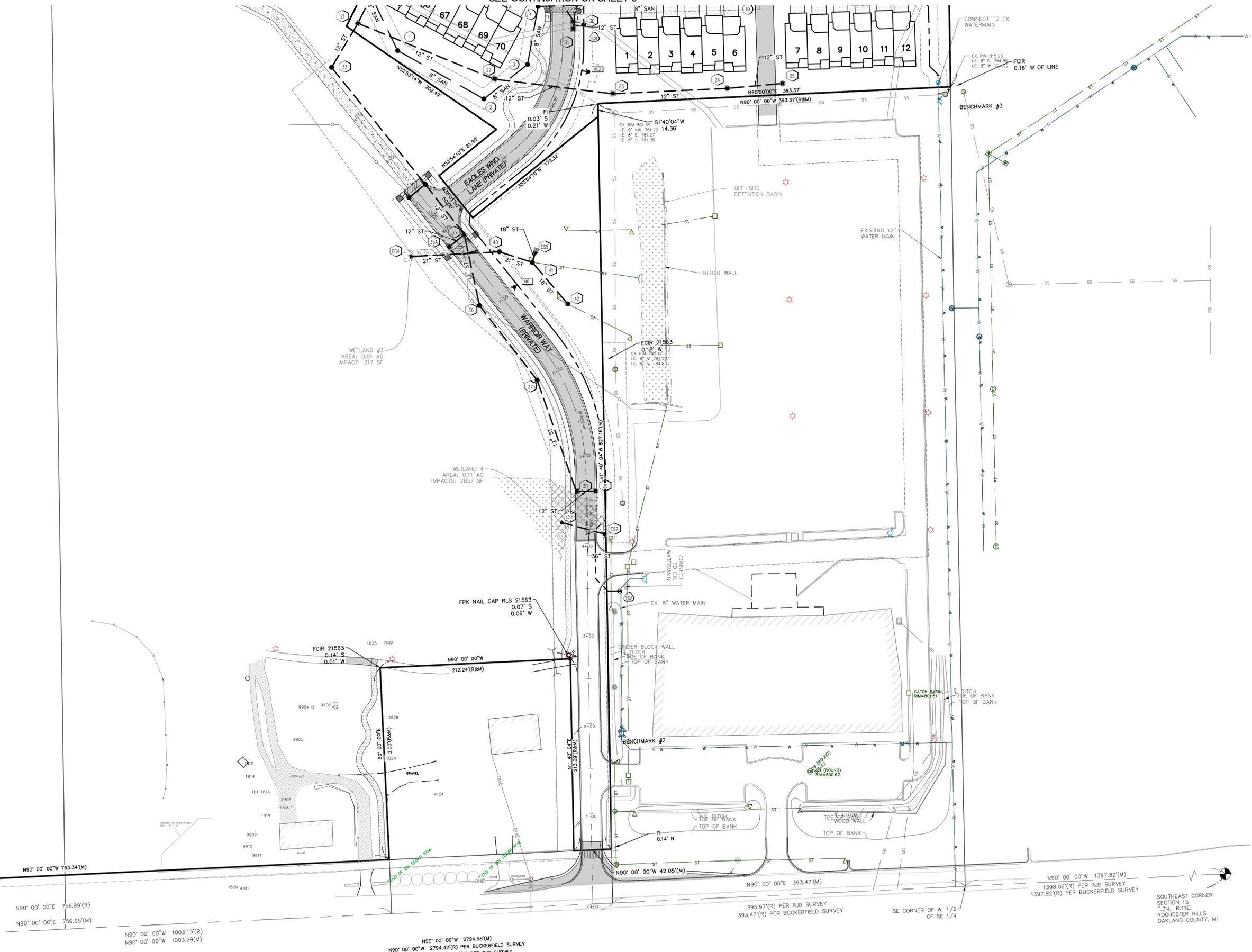
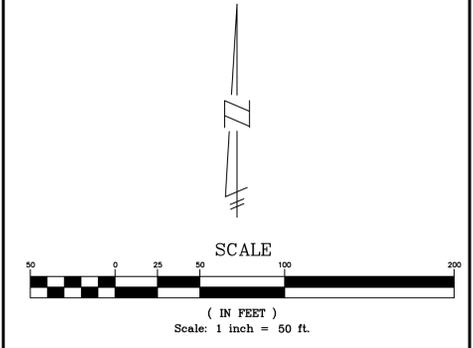
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SHEET **3**

SEE CONTINUATION ON SHEET 4

City File No. 19-022 Section 15

SEE CONTINUATION ON SHEET 3



LEGEND

EXISTING	PROPOSED	DESCRIPTION
[Symbol]	[Symbol]	PAVEMENT (ASPHALT)
[Symbol]	[Symbol]	SIDE WALK (CONCRETE)
[Symbol]	[Symbol]	CONCRETE CURB AND GUTTER
[Symbol]	[Symbol]	STORM SEWER
[Symbol]	[Symbol]	SANITARY SEWER
[Symbol]	[Symbol]	WATER MAIN
[Symbol]	[Symbol]	MANHOLE
[Symbol]	[Symbol]	REAR YARD INLET FILTER (SI-3)
[Symbol]	[Symbol]	CURB INLET W/SILT SAC (SI-4A)
[Symbol]	[Symbol]	END SECTION
[Symbol]	[Symbol]	GATE VALVE
[Symbol]	[Symbol]	HYDRANT
[Symbol]	[Symbol]	FLOOD PLAIN
[Symbol]	[Symbol]	CONTOURS
[Symbol]	[Symbol]	SPOT ELEVATION
[Symbol]	[Symbol]	1000.00 / 1/8"
[Symbol]	[Symbol]	SURFACE DRAINAGE
[Symbol]	[Symbol]	OVERFLOW ROUTE
[Symbol]	[Symbol]	TREE FENCE
[Symbol]	[Symbol]	SILT FENCE
[Symbol]	[Symbol]	PROPOSED DRIVEWAY LOCATION
[Symbol]	[Symbol]	LIMIT OF DISTURBANCE
[Symbol]	[Symbol]	SILT FENCE GRAVEL FILTER (SP-3)

THE GROVES
SECTION 15, TOWN 3 NORTH, RANGE 11 EAST
CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
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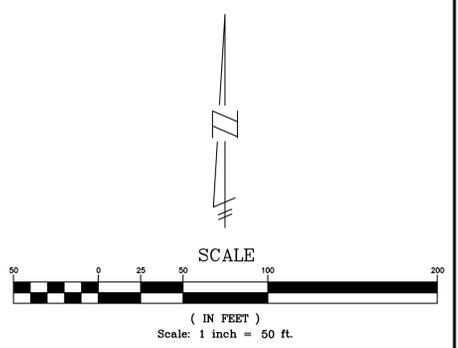
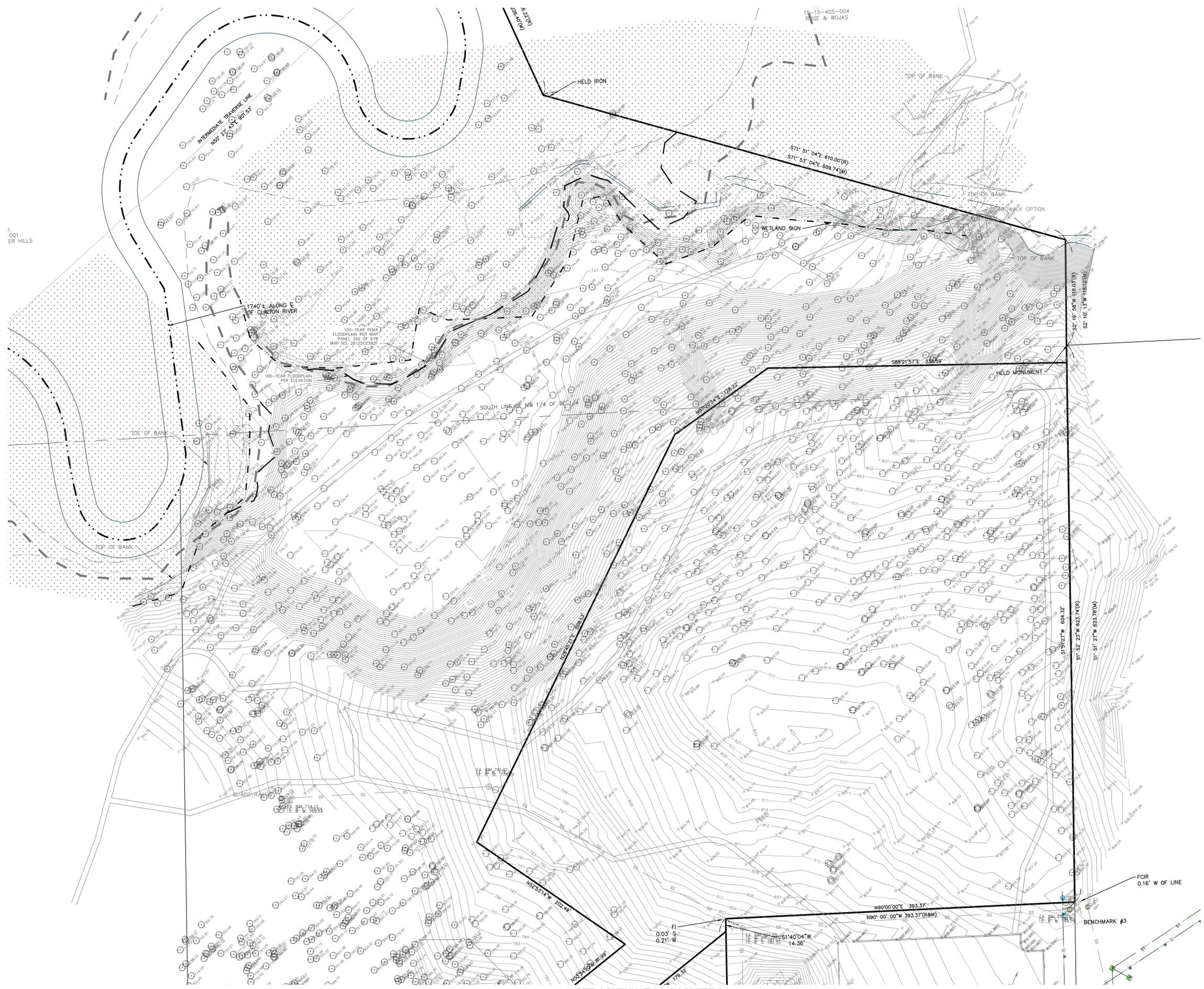
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CHECKED BY: P.K. DRAWING FILE: 19034CU.dwg

COMPOSITE UTILITY PLAN

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SHEET 4

City File No. 19-022 Section 15



TREE LEGEND

EXISTING TREE

LEGEND

EXISTING	PROPOSED	DESCRIPTION
		PAVEMENT (ASPHALT)
		SIDE WALK (CONCRETE)
		CONCRETE CURB AND GUTTER
		STORM SEWER
		SANITARY SEWER
		WATER MAIN
		MANHOLE
		REAR YARD INLET FILTER (SI-3)
		CURB INLET W/SILT SAC (SI-4A)
		END SECTION GATE VALVE
		HYDRANT
		FLOOD PLAIN CONTOURS
		SPOT ELEVATION
		SURFACE DRAINAGE OVERFLOW ROUTE
		TREE FENCE
		SILT FENCE
		PROPOSED DRIVEWAY LOCATION
		LIMIT OF DISTURBANCE
		SILT FENCE GRAVEL FILTER (SP-3)

THE GROVES
SECTION 15, TOWN 3 NORTH, RANGE 11 EAST
CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN

REVISIONS

NO.	ITEM	DATE
1.	REVISE WETLAND NUMBERS	1-28-2020
2.	REVISE PER CITY OF ROCHESTER HILLS	5-11-2020
3.	REVISED PER CITY PUD REVIEW	6-4-20

UTILITY WARNING

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DATE: 03-23-2020 DESIGNED BY: GWN JOB NUMBER: 19-034
 CHECKED BY: P.K. DRAWING FILE: 19034EX.dwg

EXISTING CONDITIONS PLAN

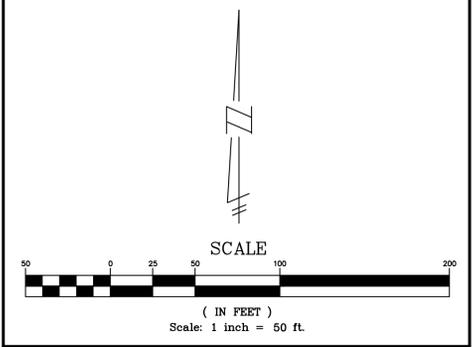
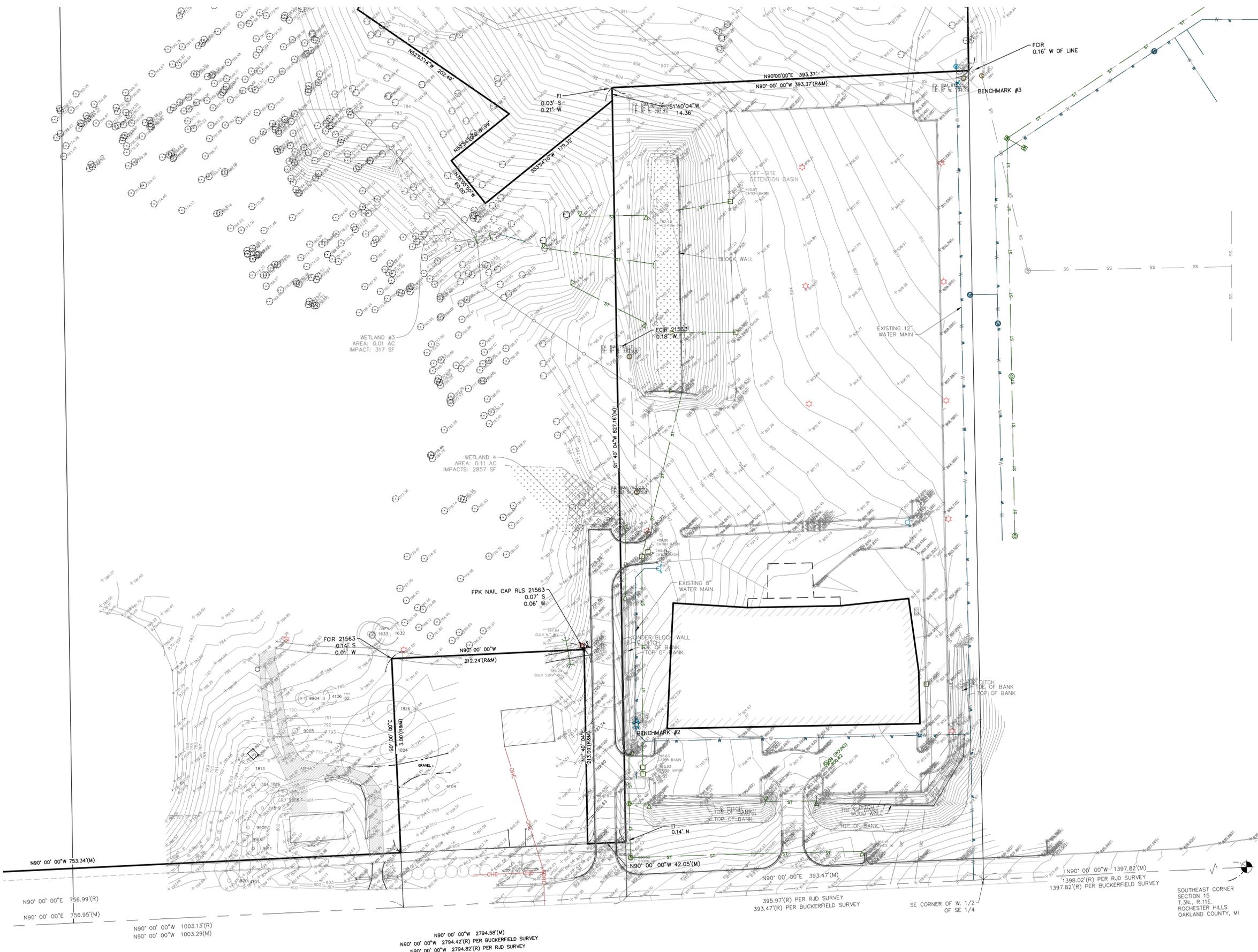
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SHEET 5

SEE CONTINUATION ON SHEET 6

City File No. 19-022 Section 15

SEE CONTINUATION ON SHEET 5



TREE LEGEND

EXISTING TREE

LEGEND

EXISTING	PROPOSED	DESCRIPTION
[Hatched pattern]	[Hatched pattern]	PAVEMENT (ASPHALT)
[Dashed line]	[Dashed line]	SIDE WALK (CONCRETE)
[Dashed line]	[Dashed line]	CONCRETE CURB AND GUTTER
[Dashed line]	[Dashed line]	STORM SEWER
[Dashed line]	[Dashed line]	SANITARY SEWER
[Dashed line]	[Dashed line]	WATER MAIN
[Circle with cross]	[Circle with cross]	MANHOLE
[Circle with cross]	[Circle with cross]	REAR YARD INLET FILTER (SI-3)
[Circle with cross]	[Circle with cross]	CURB INLET W/SILT SAC (SI-4A)
[Circle with cross]	[Circle with cross]	END SECTION
[Circle with cross]	[Circle with cross]	GATE VALVE
[Circle with cross]	[Circle with cross]	HYDRANT
[Circle with cross]	[Circle with cross]	FLOOD PLAIN
[Circle with cross]	[Circle with cross]	CONTOURS
[Circle with cross]	[Circle with cross]	SPOT ELEVATION
[Circle with cross]	[Circle with cross]	1000.00
[Circle with cross]	[Circle with cross]	1000.00
[Circle with cross]	[Circle with cross]	1/4"
[Circle with cross]	[Circle with cross]	SURFACE DRAINAGE
[Circle with cross]	[Circle with cross]	OVERFLOW ROUTE
[Circle with cross]	[Circle with cross]	TREE FENCE
[Circle with cross]	[Circle with cross]	SILT FENCE
[Circle with cross]	[Circle with cross]	PROPOSED DRIVEWAY LOCATION
[Circle with cross]	[Circle with cross]	LIMIT OF DISTURBANCE
[Circle with cross]	[Circle with cross]	SILT FENCE GRAVEL FILTER (SP-3)

THE GROVES
SECTION 15, TOWN 3 NORTH, RANGE 11 EAST
CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN

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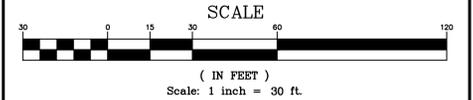
EXISTING CONDITIONS PLAN

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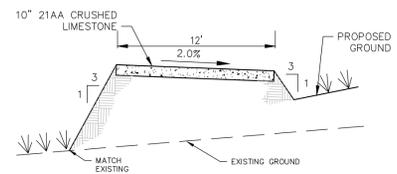
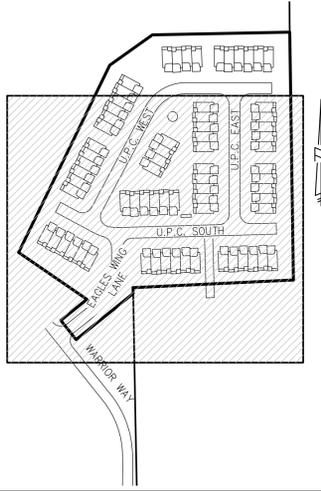
SHEET 6

City File No. 19-022 Section 15

SEE SHEET 8 FOR CONTINUATION



KEY MAP NOT TO SCALE



DETENTION ACCESS ROAD CROSS SECTION A-A (NOT TO SCALE)

LEGEND

- EXISTING**
 - PAVEMENT (ASPHALT)
 - SIDE WALK (CONCRETE)
 - CONCRETE CURB AND GUTTER
 - STORM SEWER
 - SANITARY SEWER
 - WATER MAIN
 - MANHOLE
 - REAR YARD INLET FILTER (SI-3)
 - CURB INLET W/SILT SAC (SI-4A)
 - END SECTION
 - GATE VALVE
 - HYDRANT
 - FLOOD PLAN
 - CONTOURS
 - SPOT ELEVATION
 - SURFACE DRAINAGE
 - OVERFLOW ROUTE
 - TREE FENCE
 - SILT FENCE
 - PROPOSED DRIVEWAY LOCATION
 - LIMIT OF DISTURBANCE
 - SILT FENCE GRAVEL FILTER (SP-3)
- PROPOSED**
 - PAVEMENT (ASPHALT)
 - SIDE WALK (CONCRETE)
 - CONCRETE CURB AND GUTTER
 - STORM SEWER
 - SANITARY SEWER
 - WATER MAIN
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 - CONTOURS
 - SPOT ELEVATION
 - SURFACE DRAINAGE
 - OVERFLOW ROUTE
 - TREE FENCE
 - SILT FENCE
 - PROPOSED DRIVEWAY LOCATION
 - LIMIT OF DISTURBANCE
 - SILT FENCE GRAVEL FILTER (SP-3)

THE GROVES

SECTION 15, TOWN 3 NORTH, RANGE 11 EAST CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN

REVISIONS

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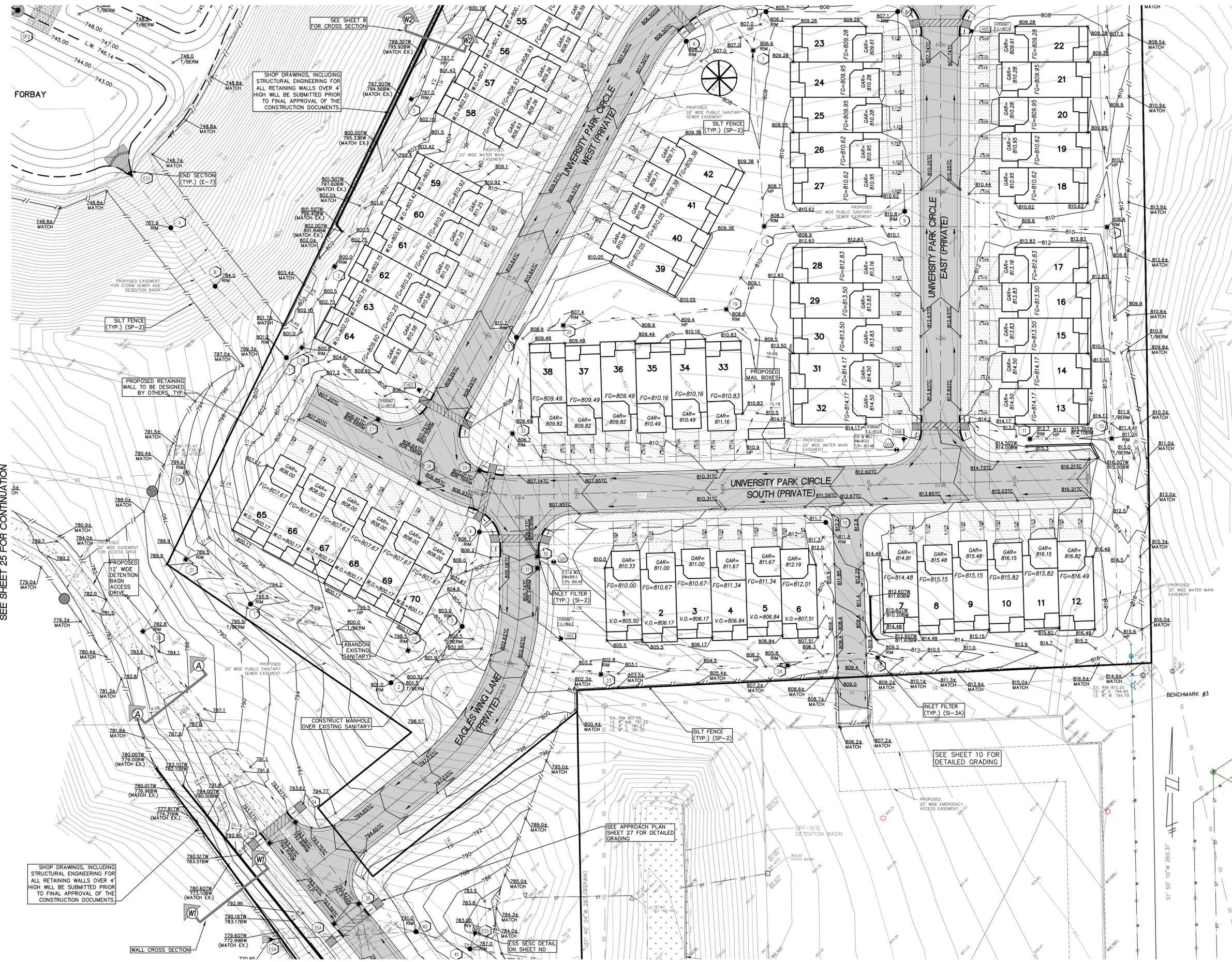
UTILITY WARNING UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

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GRADING PLAN

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SHEET 7



SEE SHEET 11 FOR CONTINUATION

SEE SHEET 10 FOR DETAILED GRADING

SEE APPROACH PLAN SHEET 27 FOR DETAILED GRADING

SHOP DRAWINGS, INCLUDING STRUCTURAL ENGINEERING FOR ALL RETAINING WALLS OVER 4' HIGH WILL BE SUBMITTED PRIOR TO FINAL APPROVAL OF THE CONSTRUCTION DOCUMENTS.

END SECTION (TYP.) (E-7)

PROPOSED RETAINING WALL TO BE DESIGNED BY OTHERS, TYP.

PROPOSED 12' WIDE DETENTION BASIN ACCESS DRIVE

CONSTRUCT MANHOLE OVER EXISTING SANITARY

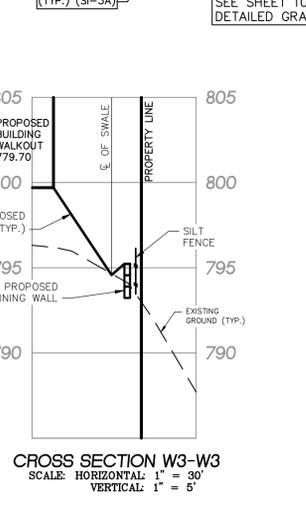
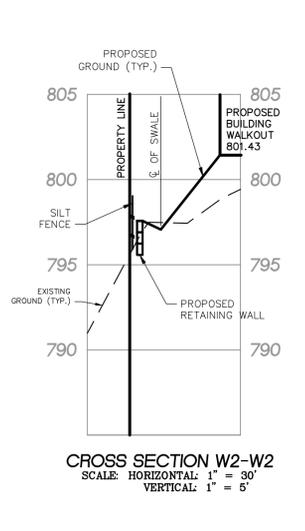
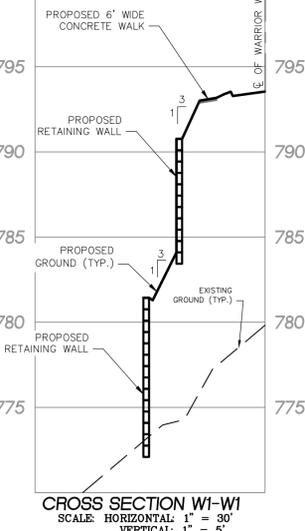
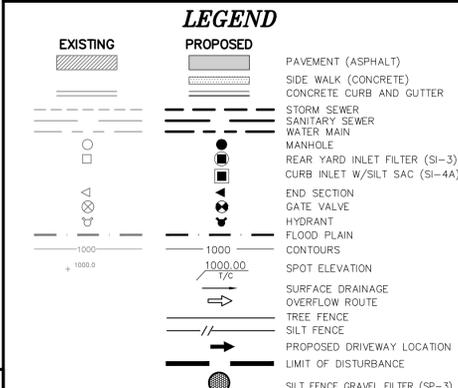
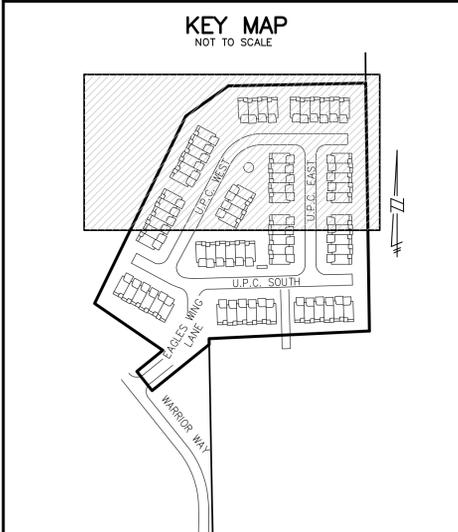
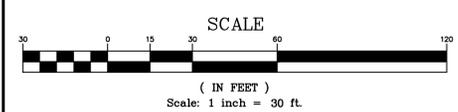
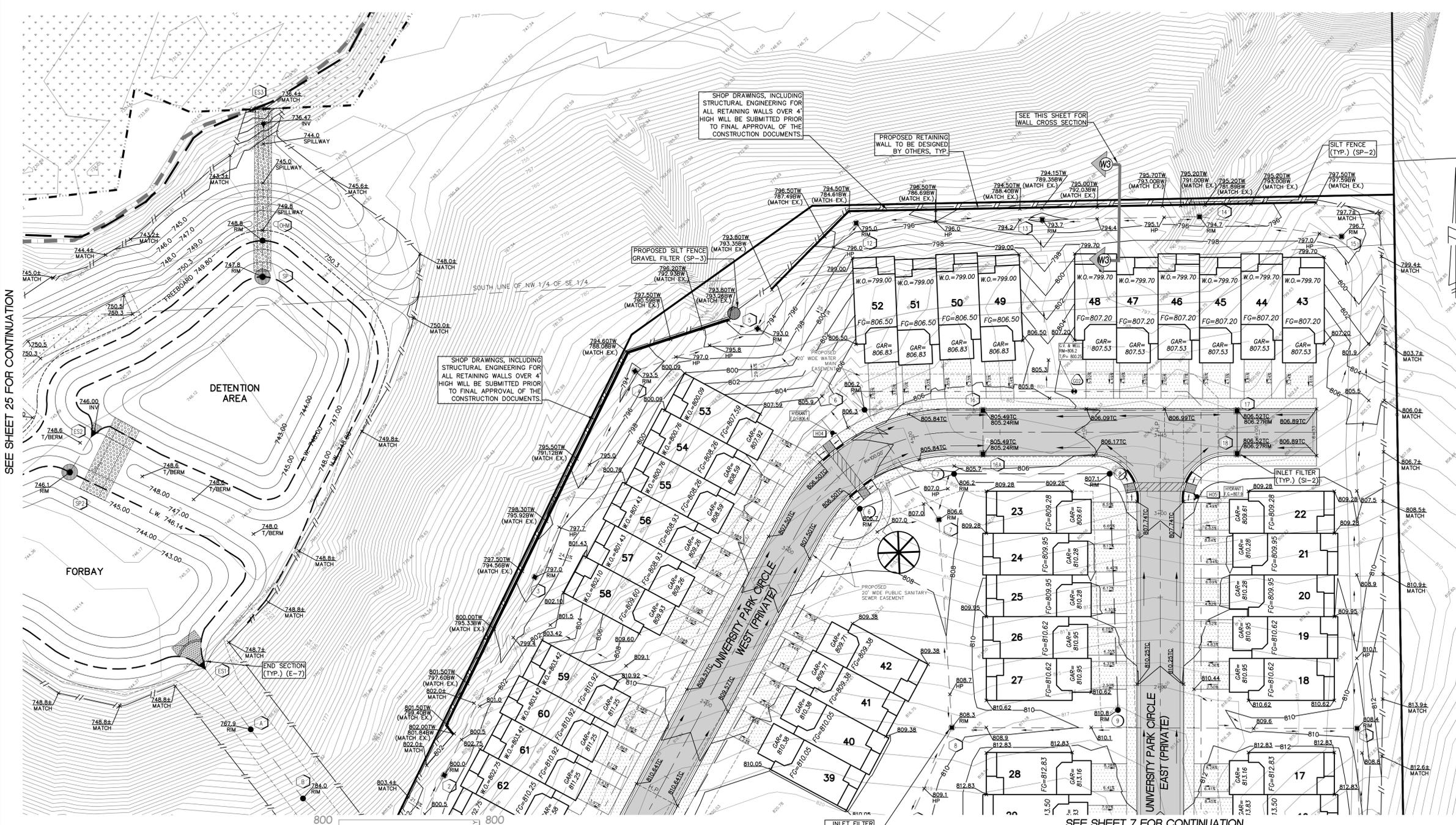
SHOP DRAWINGS, INCLUDING STRUCTURAL ENGINEERING FOR ALL RETAINING WALLS OVER 4' HIGH WILL BE SUBMITTED PRIOR TO FINAL APPROVAL OF THE CONSTRUCTION DOCUMENTS.

WALL CROSS SECTION

SEE SHEET 25 FOR CONTINUATION

City File No. 19-022 Section 15

SEE SHEET 25 FOR CONTINUATION



- ### SEQUENCE OF CONSTRUCTION FOR SOIL EROSION CONTROL
1. INSTALL ALL SOIL EROSION FENCING AS PER APPROVED PLANS. CLEAR ONLY WHAT IS NECESSARY TO INSTALL FENCING.
 2. CLEAR AND GRUBB SITE, INCLUDING TREE REMOVAL IN ACCORDANCE WITH THE TREE PLAN.
 3. STRIP AND STOCKPILE TOPSOIL IN A LOCATION APPROVED BY THE OWNER/ENGINEER. PLACEMENT OF ADDITIONAL CONTROL MEASURES MUST BE INSTALLED ON AND AROUND THE STOCKPILE.
 4. CONSTRUCT SEDIMENTATION/DETENTION BASIN ALONG WITH APPLICABLE STORM SEWER (END-SECTIONS, SHORT STORM SEWER LENGTHS, STANDPIPE OUTLET FILTER). GRADE TO FINAL ELEVATIONS, DISTRIBUTE TOPSOIL, SEED AND STAKE STRAW MULCH BLANKETS ON THE SLOPES OF THE BASIN.
 5. INSTALL UTILITIES (WATER MAIN, STORM SEWER, SANITARY SEWER) COMPLETE.
 6. INSTALL, AS PER APPROVED PLANS, THE CATCH BASIN INLET FILTERS. INSPECT AND MAINTAIN FILTERS AS DIRECTED TO PREVENT CLOGGING AND UNNECESSARY FLOODING.
 7. GRADE ROADS. INSTALL SUBBASE AND BASE COURSE OF ASPHALT PAVING.
 8. BEGIN BUILDING CONSTRUCTION.
 9. INSTALL ALL PUBLIC UTILITIES (GAS, ELECTRIC, TELEPHONE, CABLE) COMPLETE.
 10. STABILIZE TEMPORARILY OR PERMANENTLY ALL DISTURBED AREAS WITHIN FIVE (5) DAYS OF FINAL GRADE.
 11. INSPECT AND MAINTAIN ALL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES WEEKLY AND AFTER EVERY STORM EVENT THROUGHOUT THE CONSTRUCTION OF THE PROJECT. REMOVAL OF CONTROL MEASURES MAY ONLY TAKE PLACE ONCE THE ENTIRE SITE IS FULLY STABILIZED. UPON FULL STABILIZATION IS COMPLETE, REMOVE THE TEMPORARY STAND PIPE AND GRAVEL FILTER. THE DEVELOPER IS RESPONSIBLE FOR ALL SOIL EROSION CONTROL MEASURES.
 12. SEE SHEET ND FOR SOIL EROSIONS CONTROL MAINTENANCE SCHEDULE.

THE GROVES

SECTION 15, TOWN 3 NORTH, RANGE 11 EAST
CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN

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GRADING PLAN

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SHEET **8**

City File No. 19-022 Section 15