

LEGEND

--- PROPOSED WATERMAIN	● PROPOSED SAN MANHOLE (SAN)	▨ STANDARD BITUMINOUS PAVEMENT	⊕ UTILITY CROSSING (SEE SEWER PROFILES)
--- PROPOSED SANITARY	● PROPOSED STORM MANHOLE (MH)	▨ HEAVY-DUTY BITUMINOUS PAVEMENT	CB-# STRUCT. TYPE
--- PROPOSED STORM SEWER	■ PROPOSED CATCH BASIN (CB)	▨ CONCRETE PAVEMENT	Z-# STRUCT. NO.
--- PROPOSED ELECTRIC	⊕ PROPOSED VALVE IN BOX (VIB)	▨ CONCRETE SIDEWALK	20

ISSUE DATE	ISSUED FOR
10/5/22	BIDS
10/24/22	ADDENDUM #1
11/23/22	PERMITS
12/2/22	NO CHANGE

DRAWN: JA
 CHECKED: JA
 APPROVED: JA

FRENCH associates
 architects planners interior

236 Mill Street
 Rochester, MI 48307
 T: 248.656.1377
 F: 248.656.7746
 © FRENCH ASSOCIATES, INC.

GRAPHIC SCALE
 0 15 30 60
 (IN FEET)
 1 inch = 30 ft.

CREATIVE SITE SOLUTIONS, PLC
 CIVIL ENGINEERING & SITE DESIGN
 3728 NASH DRIVE
 TROY, MI 48063
 248 259 2023
 jarnold@creative-site-solutions.com

PROJECT
ROCHESTER UNIVERSITY ATHLETIC FIELD IMPROVEMENTS
 ROCHESTER HILLS MICHIGAN

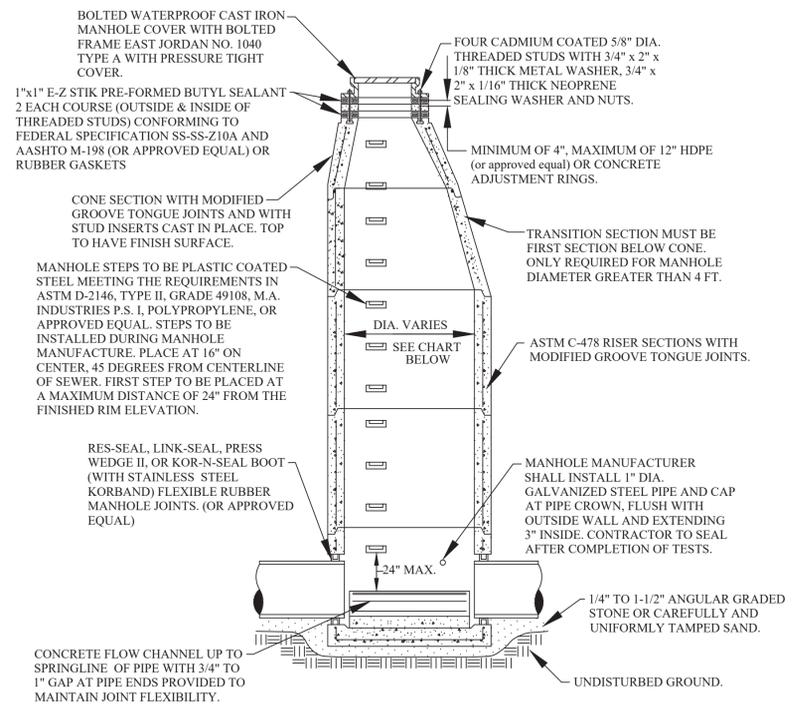
SHEET
 Paving & Layout Plan

PROJECT NUMBER
2020-003

SHEET NUMBER
City File #22-021 Section #15
 C9.0

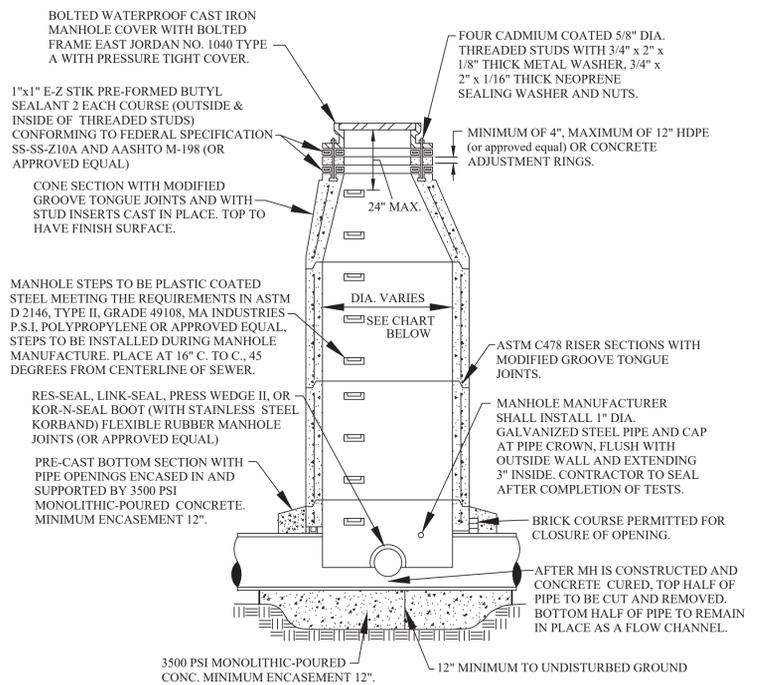
SANITARY SEWER CONSTRUCTION NOTES

- ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE CITY OF ROCHESTER HILLS AND THE OAKLAND COUNTY WATER RESOURCES COMMISSIONER (OCWRC). ALL SANITARY SEWER CONSTRUCTION SHALL HAVE FULL-TIME INSPECTION SUPERVISED BY THE CITY OF ROCHESTER HILLS INSPECTION SERVICES.
- NO SEWER INSTALLATION SHALL HAVE AN INFILTRATION EXCEEDING 100 GALLONS PER INCH DIAMETER PER MILE OF PIPE IN A 24 HOUR PERIOD, AND NO SINGLE RUN OF SEWER BETWEEN MANHOLES SHALL EXCEED 100 GALLONS PER INCH DIAMETER PER MILE. AIR TESTS IN LIEU OF INFILTRATION TESTS SHALL BE AS SPECIFIED IN THE OAKLAND COUNTY WATER RESOURCES COMMISSIONER STANDARDS. PRELIMINARY-AIR TESTS ARE WITNESSED BY THE CITY AND FINAL AIR TESTS ARE WITNESSED BY BOTH THE CITY AND THE OCWRC. ONLY PIPE AND PIPE JOINTS APPROVED BY THE CITY MAY BE USED FOR SANITARY SEWER CONSTRUCTION.
- LOCATED IN THE FIRST MANHOLE UPSTREAM FROM THE POINT OF ALL CONNECTIONS TO AN EXISTING SEWER, OR EXTENSION, A TEMPORARY 12-INCH DEEP SUMP SHALL BE PROVIDED IN THE FIRST MANHOLE ABOVE THE CONNECTION WHICH WILL BE FILLED IN AFTER SUCCESSFUL COMPLETION OF ANY ACCEPTANCE TEST UP TO THE STANDARD FILLET PROVIDED FOR THE FLOW CHANNEL. A WATERTIGHT BULKHEAD SHALL BE PROVIDED ON THE DOWNSTREAM SIDE OF THE SUMP MANHOLE.
- AT ALL TIMES WHEN LAYING OF NEW PIPE IS NOT ACTUALLY IN PROGRESS, THE UPSTREAM OPEN END OF THE PIPE SHALL BE CLOSED BY TEMPORARY WATERTIGHT PLUGS OR BY OTHER APPROVED MEANS. IF WATER IS IN THE TRENCH WHEN WORK IS RESUMED, THE PLUG SHALL NOT BE REMOVED UNTIL THE DANGER OF WATER ENTERING THE PIPE HAS PASSED. ALL MAIN LINE PIPE SHALL BE LAID WITH A PIPE LASER BEAM FOR LINE AND GRADE. A TARGET MUST BE INSTALLED AT THE END OF THE PIPE BEING LAID.
- SELF-LEVELING ACCESS ASSEMBLY STRUCTURES SHALL BE USED FOR ADJUSTING STRUCTURES WITHIN ASPHALT AND CONCRETE PAVEMENT.
- ALL SEWER PIPE SHALL BE INSTALLED IN CLASS "B" BEDDING OR BETTER.
- ALL NEW MANHOLES SHALL HAVE CITY APPROVED FLEXIBLE, WATERTIGHT SEALS WHERE PIPES PASS THROUGH WALLS. MANHOLES SHALL BE OF PRE CAST SECTIONS WITH MODIFIED GROOVE TONGUE AND BUTYL TYPE JOINTS. PRE CAST MANHOLE CONE SECTIONS SHALL BE CITY APPROVED MODIFIED ECCENTRIC CONE TYPE. ALL MANHOLES SHALL BE PROVIDED WITH BOLTED, WATERTIGHT COVERS.
- AT ALL CONNECTIONS TO MANHOLES IN ALL SEWERS, OR EXTENSIONS, DROP CONNECTIONS WILL BE REQUIRED WHEN THE DIFFERENCE IN INVERT ELEVATIONS EXCEEDS 18 INCHES.
- GROUND WATER, STORM WATER, CONSTRUCTION WATER, DOWN SPOUT DRAINAGE OR WEEP TILE DRAINAGE SHALL NOT BE ALLOWED TO ENTER ANY SANITARY SEWER INSTALLATION.
- PRIOR TO ANY EXCAVATION, THE CONTRACTOR SHALL CONTACT MISS DIG THREE (3) DAYS IN ADVANCE (811) FOR THE LOCATION OF UNDERGROUND PIPELINE AND CABLE FACILITIES AND SHALL ALSO NOTIFY REPRESENTATIVES OF OTHER UTILITIES LOCATED IN THE VICINITY OF THE WORK.
- AN 18 INCH MINIMUM VERTICAL SEPARATION AND A 10 FOOT MINIMUM HORIZONTAL SEPARATION MUST BE MAINTAINED BETWEEN SANITARY SEWER AND ALL OTHER UTILITIES.
- AS A MEANS OF INSURING PROPER INSTALLATION OF THE SANITARY SEWER PIPE, THE CONTRACTOR SHALL VIDEO INSPECT, ACCORDING TO THE CITY OF ROCHESTER HILLS VIDEO INSPECTION STANDARDS, 100% OF THE SANITARY SEWER PIPE. THE CONTRACTOR SHALL PROVIDE 24 HOURS NOTICE TO THE CITY OF ROCHESTER HILLS PRIOR TO VIDEO INSPECTION, SO A REPRESENTATIVE MAY BE PRESENT. ROCHESTER HILLS WILL BE PROVIDED WITH A DIGITAL COPY OF THE VIDEO INSPECTION AND LOG IN ACCORDANCE WITH THE CITY OF ROCHESTER HILLS INSPECTION STANDARDS.



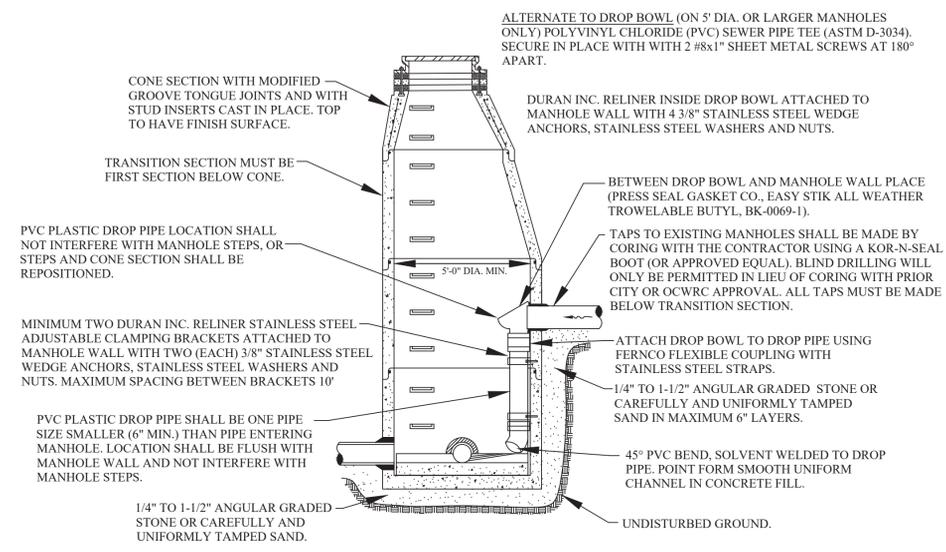
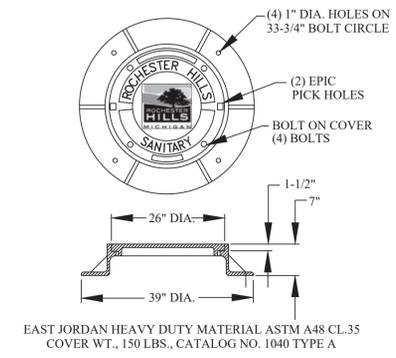
MANHOLE SIZING CHART

MANHOLE DIAMETER	MAX. PIPE SIZE FOR STRAIGHT THRU INST.	MAX. PIPE SIZE FOR RIGHT ANGLE INST.
4'	24"	18"
5'	36"	24"
6'	42"	36"
7'	60"	42"



MANHOLE SIZING CHART

MANHOLE DIAMETER	MAX. PIPE SIZE FOR STRAIGHT THRU INST.
4'	24"
5'	36"
6'	42"
7'	60"



SANITARY SEWER STANDARD DETAILS



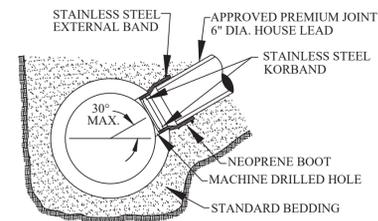
REVISIONS	DATE	APPROVED BY	NOTIFY ROCHESTER HILLS ENGINEERING DIVISION @ 248-841-2510 48 HRS. PRIOR TO START OF CONSTRUCTION
		CITY COUNCIL, DATE: _____	
		PREPARED BY ENGINEERING DIVISION DEPARTMENT OF PUBLIC SERVICES	

City of Rochester Hills
 1000 Rochester Hills Drive, Rochester Hills, Michigan 48309

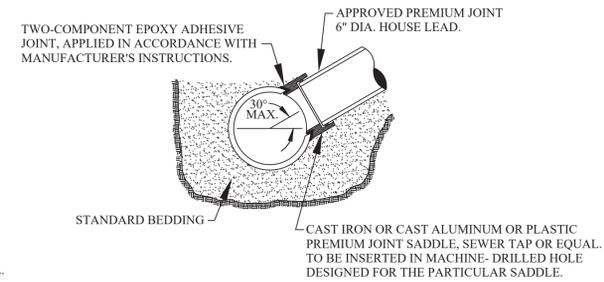
NOT TO SCALE	DATE: 1/10/2019
SHEET 1 OF 2	C10.1

CITY OF ROCHESTER HILLS GRAVITY BUILDING LEAD REQUIREMENTS AND DETAILS

- ALL BUILDING LEAD WORK MUST BE PERFORMED UNDER THE CITY OF ROCHESTER HILLS INSPECTION.
- FOR ALL CITY OF ROCHESTER HILLS SYSTEMS CALL 248-841-2510 48-HOURS PRIOR TO SCHEDULING INSPECTION.
FOR ALL OCWRC-OPERATED SYSTEMS, CALL 248-858-1110 48-HOURS IN ADVANCE PRIOR TO SCHEDULING INSPECTION.
- SANITARY SEWER MAY NOT BE USED AS A DE-WATERING OUTLET.
- WHERE AN EXISTING BUILDING LEAD IS BEING EXTENDED, DISSIMILAR TYPES AND SIZES OF PIPE SHALL BE JOINED USING A CITY OF ROCHESTER HILLS APPROVED ADAPTER.
- APPROVED BUILDING LEAD PIPE FOR GRAVITY SEWER LEADS:
 - PVC PLASTIC, ASTM D3034, SDR 23.5
 - SOLID WALL PVC SCHEDULE 40, ASTM D-2665
 - ANY DEVIATIONS FROM ABOVE SPECIFICATIONS REQUIRES APPROVAL BY CITY ENGINEER.
- ALLOWABLE TYPES OF SEWER PIPE ADAPTERS: FERNCO STRONGBACK COUPLING OR APPROVED EQUAL.
- FOR 6" LEADS A CLEANOUT MUST BE INSTALLED EVERY 100 FT. FOR 4" LEADS A CLEANOUT MUST BE INSTALLED EVERY 50 FT. 90° BENDS NOT ALLOWED EXCEPT FROM THE HORIZONTAL TO THE VERTICAL WITHIN 5 FEET OF THE BUILDING.

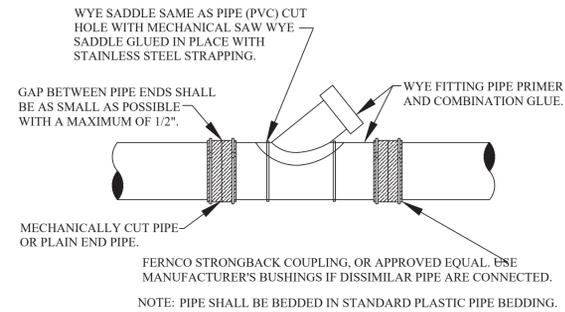


KOR-N-TEE TAP FOR CONCRETE PIPE



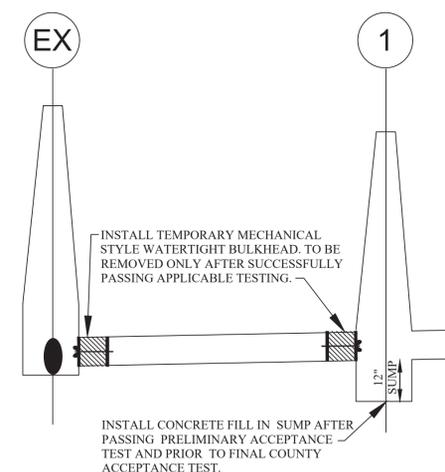
NOTE: SURFACE OF MAIN SEWER SHALL BE CLEANED WITH AN ABRASIVE GRINDER PRIOR TO EPOXY APPLICATION. DUE TO VARIATION OF SET-UP TIME OF EPOXY ADHESIVE WITH TEMPERATURE, ANCHOR STRAPS SHALL BE USED TO SECURE SADDLE IN POSITION IN COLD WEATHER OR WHENEVER WORK IS TO PROCEED PRIOR TO COMPLETE CURE OF EPOXY.

SEWER TAP-OVER 12" MAIN SEWER PIPES VITRIFIED CLAY



NOTE: PIPE SHALL BE BEDDED IN STANDARD PLASTIC PIPE BEDDING.

WYE SADDLE OR WYE PIPE INSERTION WITH FLEXIBLE COUPLINGS (RIGID PIPE)



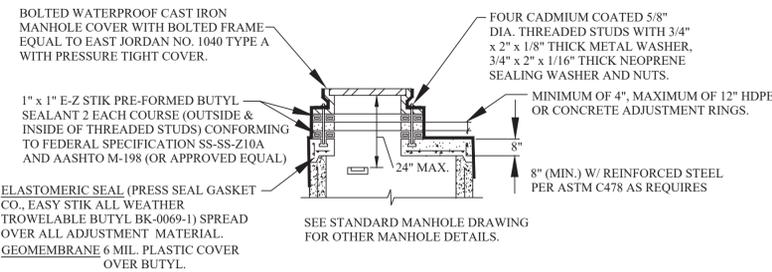
PROFILE OF BULKHEADS AND ONE FOOT SUMP

- THE MAXIMUM SCALE SHALL BE ONE (1) INCH EQUALS FIFTY (50) FEET.
- THE SIZE, LENGTH, CLASS AND MANUFACTURER OF PIPE INSTALLED SHALL BE INDICATED.
- THE SIZE, MANUFACTURER AND MODEL NUMBERS OF ALL VALVES AND PUMPS INSTALLED SHALL BE INDICATED.
- A TOTAL AS-BUILT DRAWING QUANTITY LIST SHALL BE INCLUDED.
- THE LOCATIONS SHALL BE SHOWN ON THE PLANS WITH AN ACCURACY OF ONE (1) FOOT.
- THE OFFSET OF THE SANITARY MAIN FROM PROPERTY LINES SHALL BE INDICATED.
- ALL MANHOLES, VALVE WELLS, PUMPS AND ALL SANITARY SYSTEM APPURTENANCES SHALL BE LOCATED FROM TWO FIXED OBJECTS (MANHOLES, BUILDING CORNERS ETC.).
- ALL UNDERGROUND APPURTENANCES, SUCH AS TFC/ARV WELLS, METER PITS, GRINDER PUMPS AND PUMP STATION PITS, ETC. SHALL BE LOCATED FROM THE NEAREST MANHOLE THAT IS CONNECTED TO THE SAME SANITARY MAIN AS THE APPURTENANCE.
- THE ACCURATE LOCATION OF ALL UTILITY CROSSINGS WHERE THE VERTICAL SEPARATION IS LESS THAN 18" SHALL BE NOTED.
- AS-BUILTS SHALL BE PREPARED IN ACCORDANCE WITH CITY OF ROCHESTER HILLS AS-BUILT GUIDELINES AS PROVIDED AT THE PRE-CONSTRUCTION MEETING.

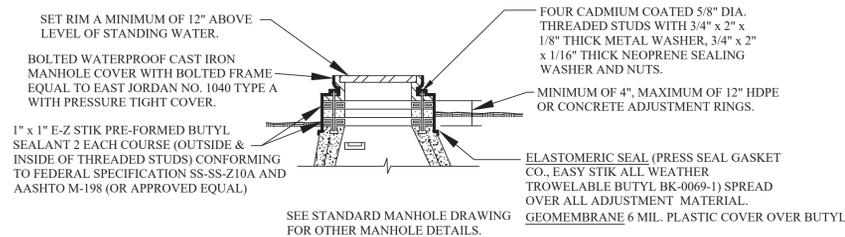


SANITARY SEWER STANDARD DETAILS

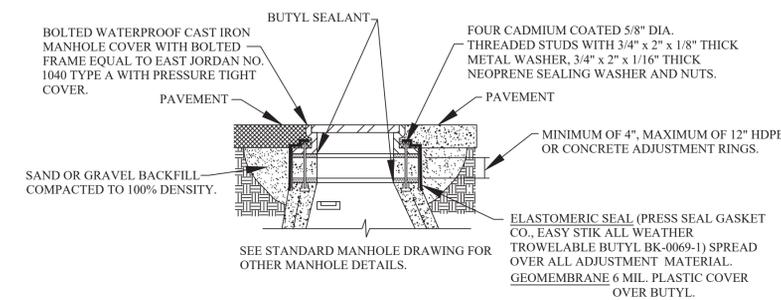
NOT TO SCALE DATE: 1/10/2019
SHEET 2 OF 2 C10.2



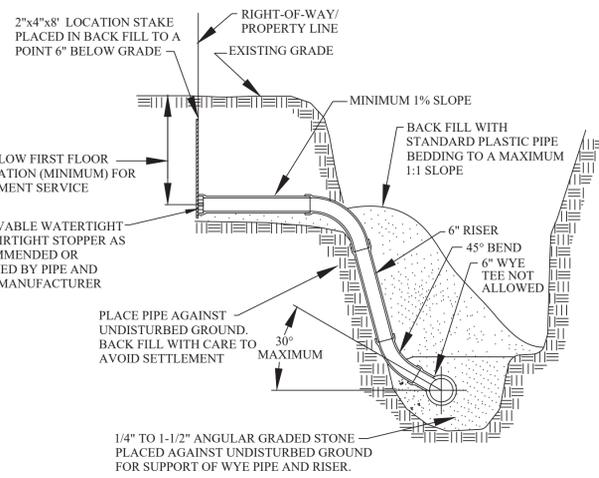
FLAT TOP MANHOLE



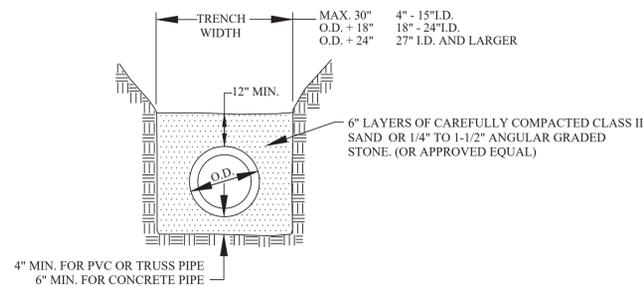
ADJUSTMENT DETAIL FOR MANHOLE TOPS WITHIN FLOOD PRONE AREAS



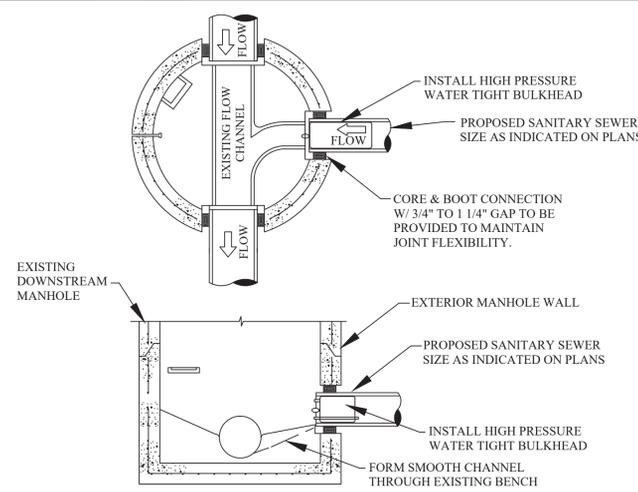
ADJUSTMENT DETAIL MANHOLE TOPS WITHIN PAVEMENT AREAS



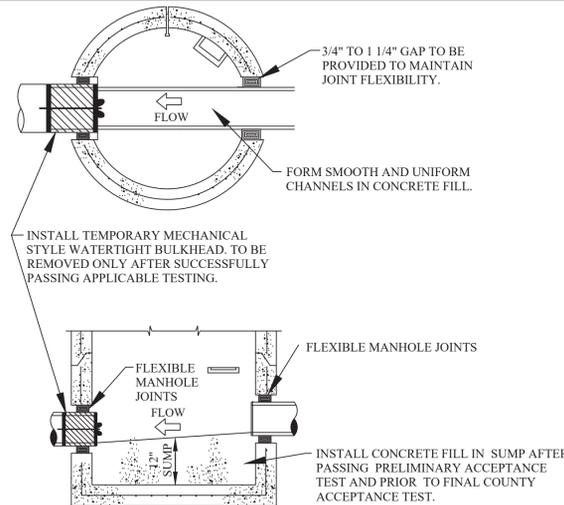
HOUSE LEAD DETAIL



STANDARD BEDDING (CLASS B)



TESTING BULKHEAD IN EXISTING MANHOLE

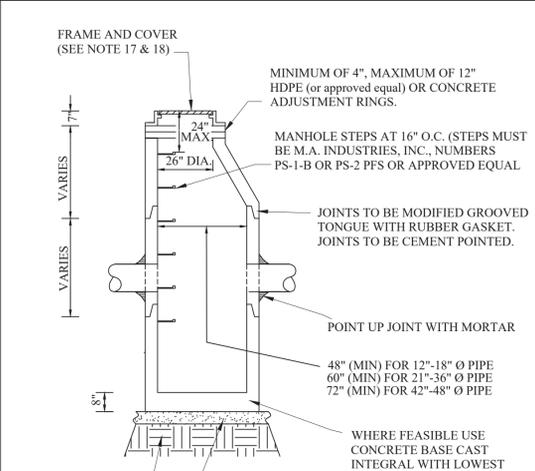
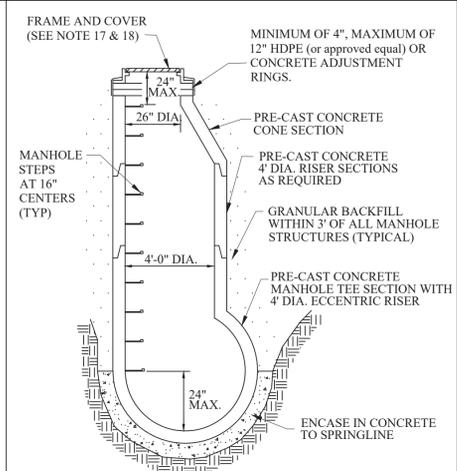
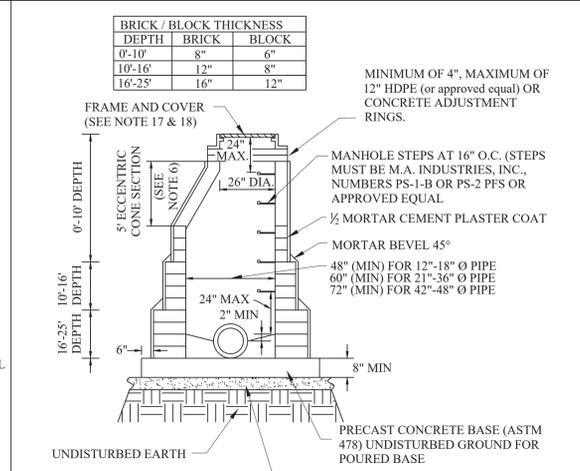
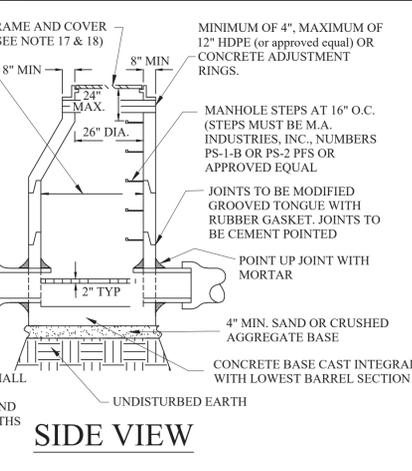
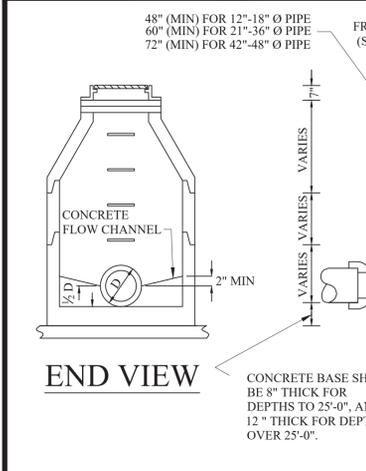


FIRST MANHOLE UPSTREAM FROM SANITARY TAP

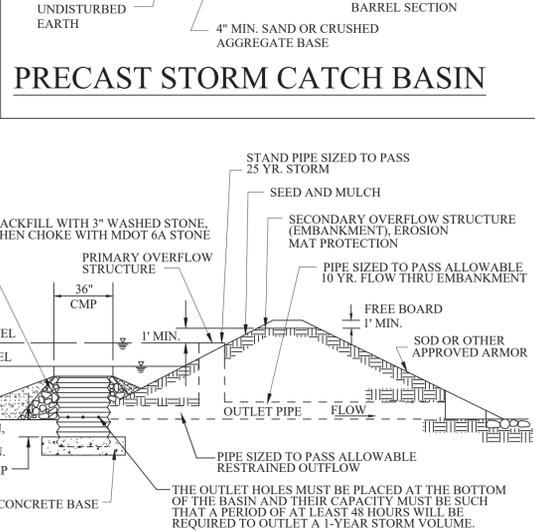
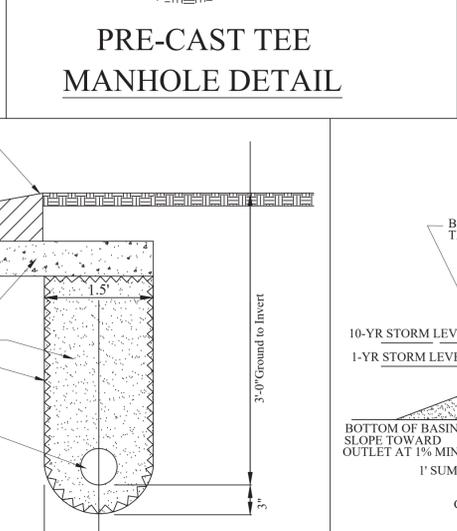
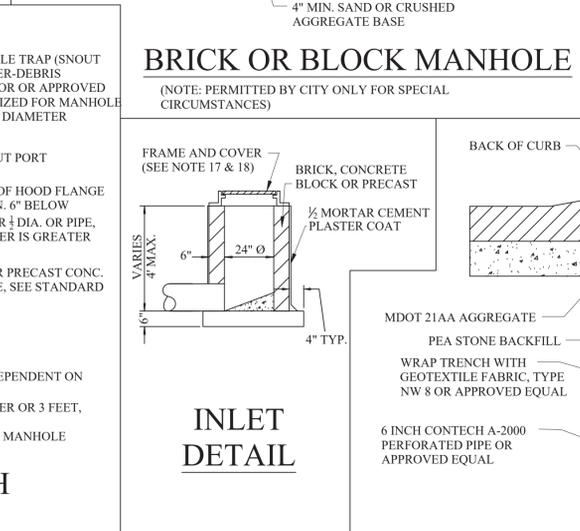
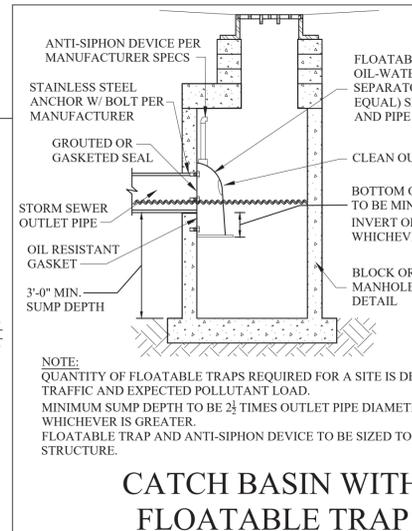
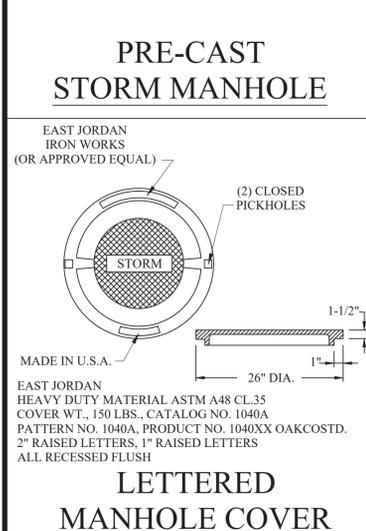
REVISIONS	DATE	APPROVED BY
		CITY COUNCIL, DATE: _____
		PREPARED BY ENGINEERING DIVISION DEPARTMENT OF PUBLIC SERVICES

NOTIFY ROCHESTER HILLS
ENGINEERING DIVISION @
248-841-2510 48 HRS. PRIOR
TO START OF
CONSTRUCTION

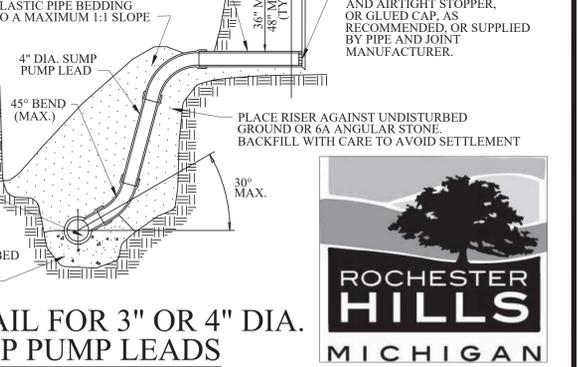
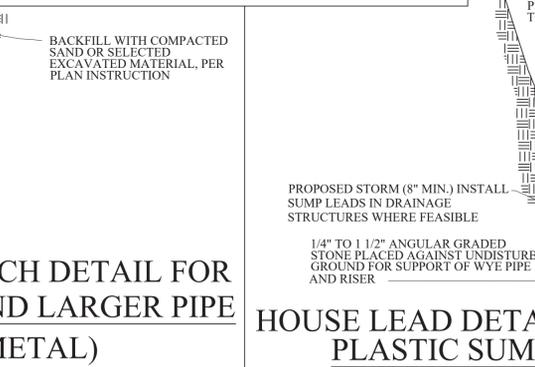
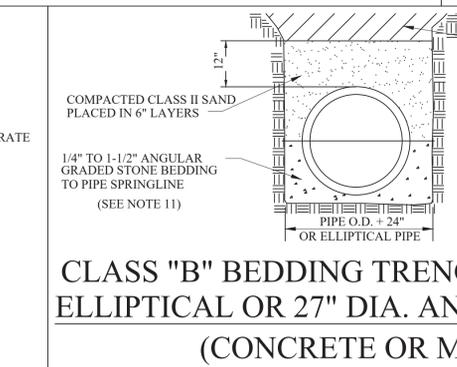
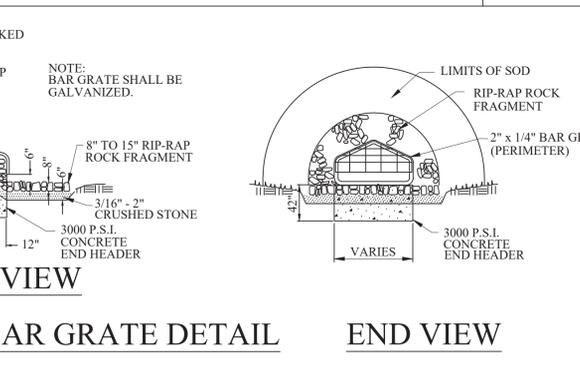
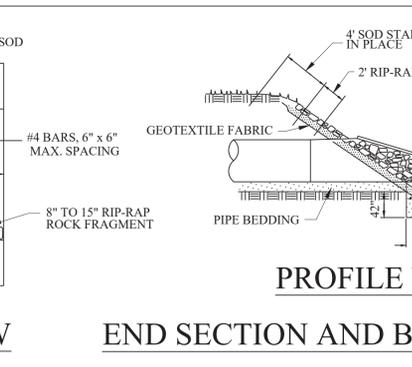
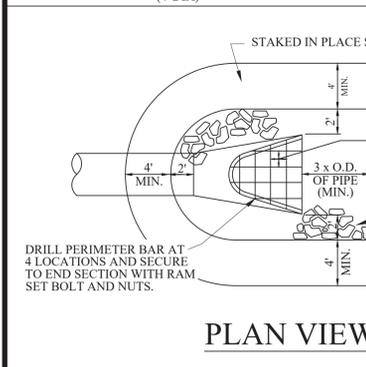
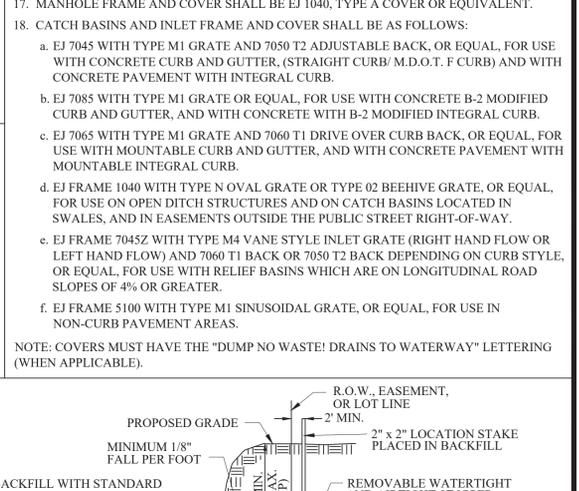
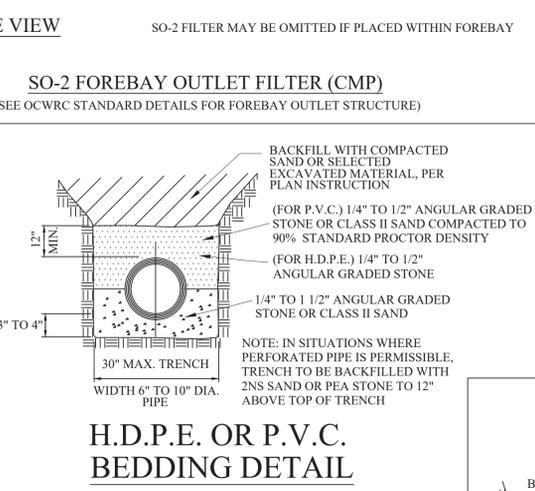
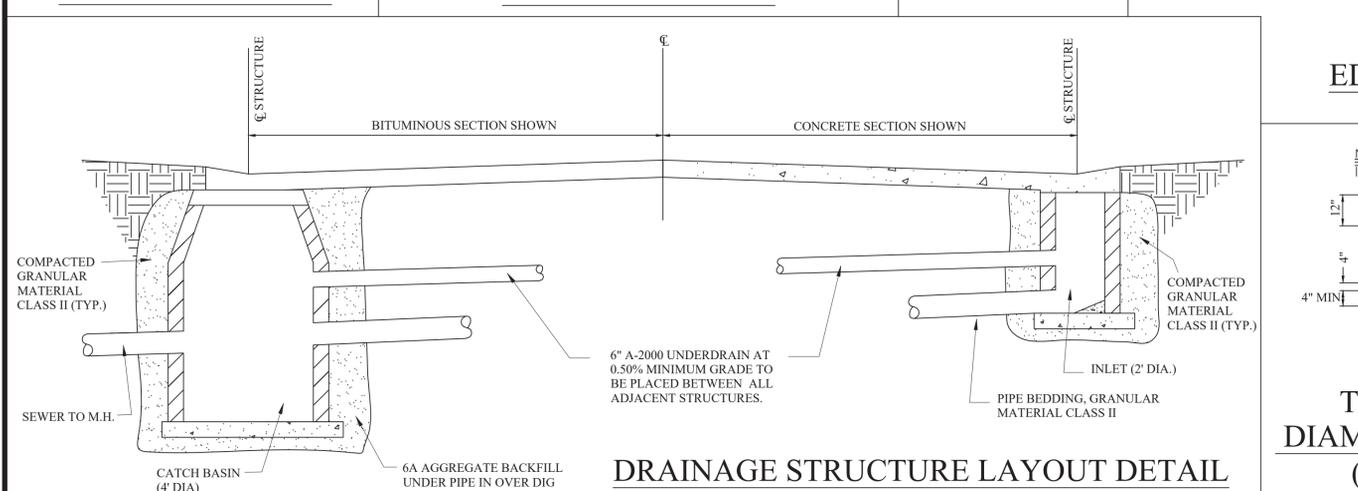
City of Rochester Hills
1000 Rochester Hills Drive, Rochester Hills, Michigan 48309



- ### GENERAL NOTES:
- ALL EXISTING AND NEW STORM SYSTEMS SHALL BE CLEANED AND FLUSHED ONCE SITE IS 90% BUILT OUT AND VEGETATED. SEDIMENT, ROCK, AND OTHER DEBRIS SHALL BE COLLECTED AND DISPOSED OF IN A PROPER MANNER. IN NO CASE SHALL DEBRIS BE FLUSHED DOWN A STORM OR SANITARY SEWER FOR DISPOSAL. ALL DAMAGED IRRIGATION AND HOUSE DRAINAGE PIPE, DRAIN TILES, SEWER LATERALS AND CULVERTS SHALL BE REPAIRED EXPEDITIOUSLY. DEBRIS COLLECTED SHALL BE DISPOSED IN A COMMERCIAL LANDFILL OR OTHER APPROVED LOCATION.
 - STORM SEWER PIPE SHALL BE OF SIZE AND TYPE NOTED ON THE APPROVED PLANS.
 - REINFORCED CONCRETE PIPE (RCP) SHALL BE MODIFIED GROOVED TONGUE JOINTS WITH O-RING TYPE RUBBER GASKET, PER ASTM C443.
 - ALL CATCH BASIN LEADS AND INLET LEADS SHALL BE ASTM C76-CLASS IV PIPE.
 - MINIMUM PIPE SIZE FOR SEWERS, CATCH BASIN LEADS, AND INLET LEADS SHALL BE 12" NOMINAL INTERNAL DIAMETER.
 - ECCENTRIC CONES SHALL BE PROVIDED ON ALL STRUCTURES, REGARDLESS OF THE MATERIAL USED. PRECAST REINFORCED CONCRETE MANHOLE, BLOCK, OR BRICK TO PROVIDE A TRUE VERTICAL FACE FOR PLACEMENT OF MANHOLE STEPS.
 - THE INSIDE JOINTS OF PIPES SIZES 42" AND LARGER DIAMETER SHALL BE POINTED UP WITH MORTAR UPON COMPLETION OF BACKFILLING OPERATIONS.
 - ALL PIPES SHALL HAVE CLASS, LOT NUMBER, AND DATE OF MANUFACTURE CONSPICUOUSLY MARKED ON EACH LENGTH BY MANUFACTURER.
 - ALL END SECTIONS 18" AND LARGER SHALL BE PROVIDED WITH A GALVANIZED BAR SCREEN.
 - PRECAST REINFORCED CONCRETE SECTIONS SHALL CONFORM TO ASTM 2478.
 - IN DRY, STABLE SOILS, PEASTONE (EQUIVALENT TO M.D.O.T. 34R SPECIFICATIONS) MAY BE SUBSTITUTED FOR THE STANDARD BEDDING. IF THE TRENCH IS WET OR UNSTABLE A GEOTEXTILE FABRIC MUST BE USED TO LINE THE TRENCH PRIOR TO THE PLACEMENT OF THE 2NS SAND, PEASTONE, OR 1/4" - 1-1/2" ANGULAR GRADED STONE.
 - SCHEDULE INSPECTIONS 48 HOURS PRIOR TO START OF CONSTRUCTION BY CALLING THE CITY'S INSPECTION LINE AT 248-841-2510. FULL TIME INSPECTION SHALL BE REQUIRED FOR ALL UNDERGROUND STORM SEWER CONSTRUCTION.
 - THE CONTRACTOR SHALL CONTACT MISS DIG 72 HOURS BEFORE CONSTRUCTION AT (811) TO LOCATE EXISTING UNDERGROUND UTILITIES.
 - PRIOR TO START OF CONSTRUCTION CONTRACTOR SHALL HAVE IN HIS POSSESSION A CURRENT SOIL EROSION CONTROL PERMIT AS ISSUED BY THE OCWRC.
 - MINIMUM SUMP DEPTH IS 2' FOR CATCH BASINS, MINIMUM SUMP DEPTH IS 3' FOR CATCH BASINS WITH FLOATABLE TRAP INSTALLATIONS.
 - AS A MEANS OF INSURING PROPER INSTALLATION OF THE STORM SEWER PIPE, AT THE DISCRETION OF THE CITY ENGINEER, THE CONTRACTOR SHALL VIDEO INSPECT, ACCORDING TO THE CITY OF ROCHESTER HILLS VIDEO INSPECTION STANDARDS, 100% OF THE STORM SEWER PIPE 12" AND LARGER IN DIAMETER. IF VIDEO INSPECTION IS REQUIRED BY THE CITY ENGINEER THE CONTRACTOR SHALL PROVIDE 24 HOURS NOTICE TO THE CITY OF ROCHESTER HILLS PRIOR TO VIDEO INSPECTION, SO A REPRESENTATIVE MAY BE PRESENT. ROCHESTER HILLS WILL BE PROVIDED WITH A DIGITAL COPY OF THE VIDEO INSPECTION AND LOG IN ACCORDANCE WITH THE CITY OF ROCHESTER HILLS VIDEO INSPECTION STANDARDS.



- ### COVERS FOR MANHOLES, CATCH BASINS, AND INLETS
- MANHOLE FRAME AND COVER SHALL BE EJ 1040, TYPE A COVER OR EQUIVALENT.
 - CATCH BASINS AND INLET FRAME AND COVER SHALL BE AS FOLLOWS:
 - EJ 7045 WITH TYPE M1 GRATE AND 7050 T2 ADJUSTABLE BACK, OR EQUAL, FOR USE WITH CONCRETE CURB AND GUTTER, (STRAIGHT CURB/ M.D.O.T. F CURB) AND WITH CONCRETE PAVEMENT WITH INTEGRAL CURB.
 - EJ 7085 WITH TYPE M1 GRATE OR EQUAL, FOR USE WITH CONCRETE B-2 MODIFIED CURB AND GUTTER, AND WITH CONCRETE WITH B-2 MODIFIED INTEGRAL CURB.
 - EJ 7065 WITH TYPE M1 GRATE AND 7060 T1 DRIVE OVER CURB BACK, OR EQUAL, FOR USE WITH MOUNTABLE CURB AND GUTTER, AND WITH CONCRETE PAVEMENT WITH MOUNTABLE INTEGRAL CURB.
 - EJ FRAME 1040 WITH TYPE N OVAL GRATE OR TYPE O2 BEEHIVE GRATE, OR EQUAL, FOR USE ON OPEN DITCH STRUCTURES AND ON CATCH BASINS LOCATED IN SWALES, AND IN EASEMENTS OUTSIDE THE PUBLIC STREET RIGHT-OF-WAY.
 - EJ FRAME 7045Z WITH TYPE M4 VANE STYLE INLET GRATE (RIGHT HAND FLOW OR LEFT HAND FLOW) AND 7060 T1 BACK OR 7050 T2 BACK DEPENDING ON CURB STYLE, OR EQUAL, FOR USE WITH RELIEF BASINS WHICH ARE ON LONGITUDINAL ROAD SLOPES OF 4% OR GREATER.
 - EJ FRAME 5100 WITH TYPE M1 SINUSOIDAL GRATE, OR EQUAL, FOR USE IN NON-CURB PAVEMENT AREAS.
- NOTE: COVERS MUST HAVE THE "DUMP NO WASTE! DRAINS TO WATERWAY" LETTERING (WHEN APPLICABLE).



REVISIONS	DATE	APPROVED BY

APPROVED BY
CITY COUNCIL, DATE: _____

PREPARED BY ENGINEERING DIVISION
DEPARTMENT OF PUBLIC SERVICES

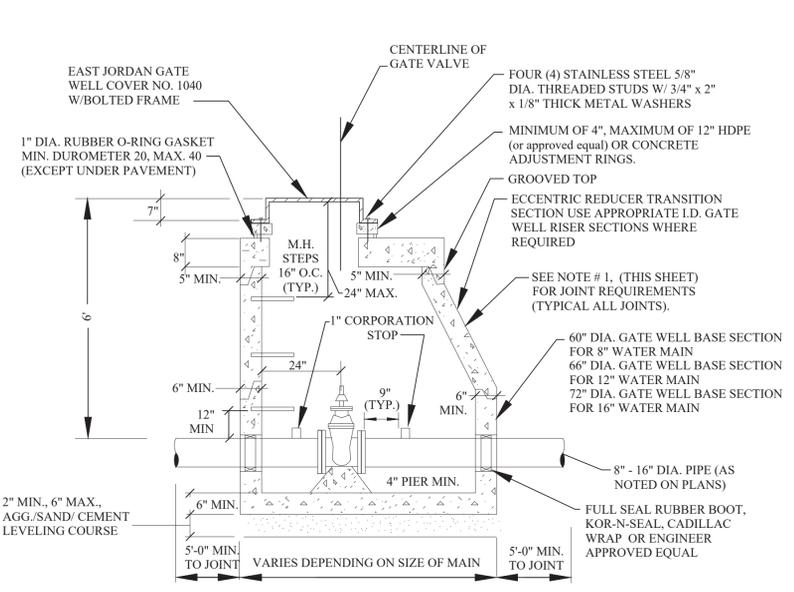
NOTIFY ROCHESTER HILLS
ENGINEERING DEPARTMENT
@ 248-841-2510 48 HRS. PRIOR
TO START OF
CONSTRUCTION

City of Rochester Hills
1000 Rochester Hills Drive, Rochester Hills, Michigan 48309

**STORM SYSTEM
STANDARD DETAILS**

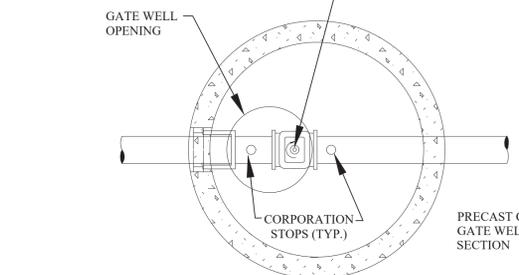
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SHEET 1 OF 1	C10.3



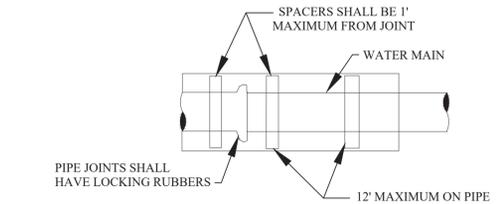


ALL GATE WELLS

MANHOLE STEPS TO BE PLASTIC COATED STEEL MEETING THE REQUIREMENTS IN ASTM D 2146, TYPE II, GRADE 49108, MA. INDUSTRIES, P.S.I. POLYPROPYLENE OR APPROVED EQUAL. STEPS TO BE INSTALLED DURING MANHOLE MANUFACTURE, PLACED AT 16" C. TO C.



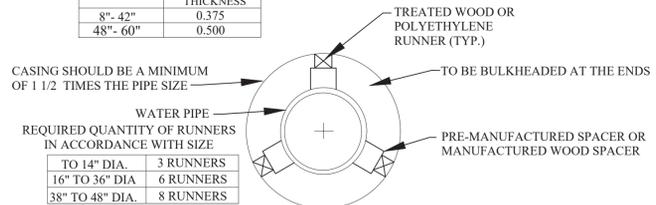
GATE WELL (TYPICAL)



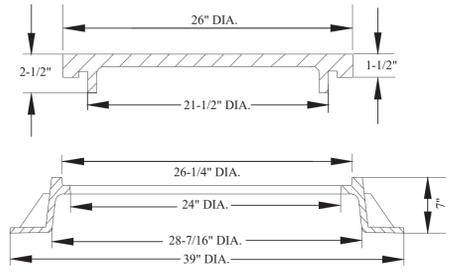
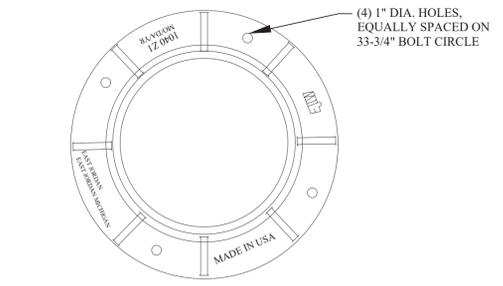
WATER MAIN IN CASING SECTION

UNLESS OTHERWISE SPECIFIED, MINIMUM CASING PIPE SHALL BE ASTM A-139 GRADE B, WALL THICKNESS AS FOLLOWS:

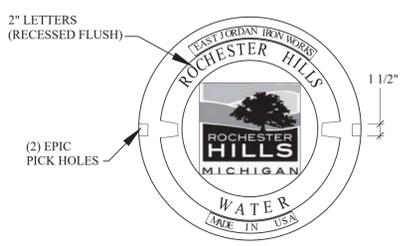
NOMINAL SIZE	MINIMUM WALL THICKNESS
8" - 42"	0.375
48" - 60"	0.500



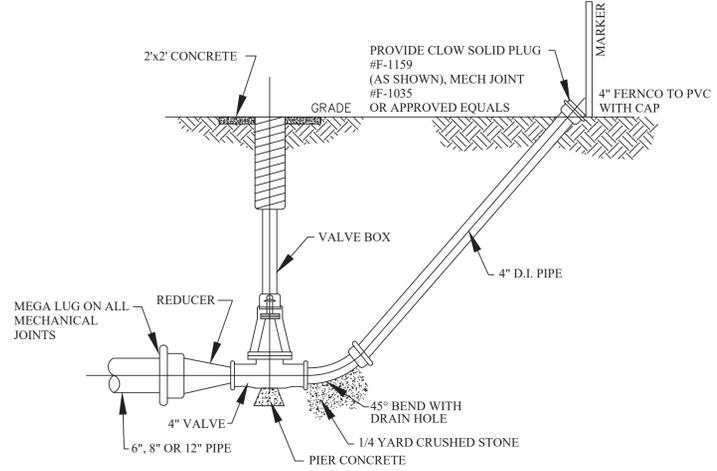
SUPPORT FOR WATER MAIN CONSTRUCTED IN CASING PIPE



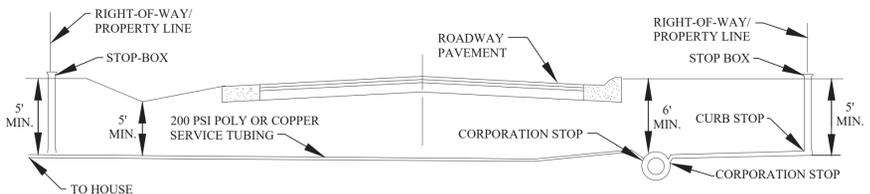
FRAME



LETTERING LAYOUT FOR GATE WELL COVERS

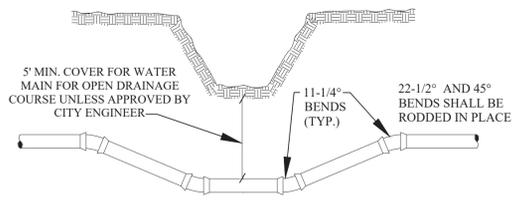


DETAIL OF 4" BLOWOFF

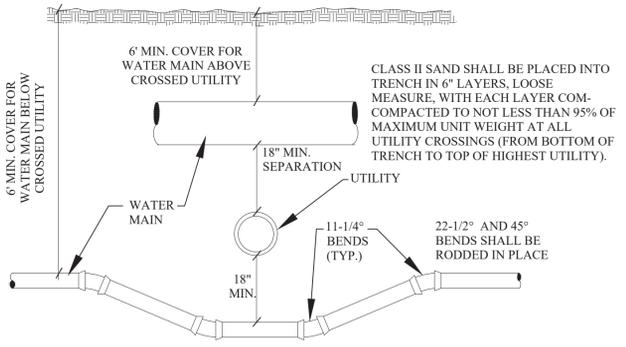


TYPICAL PUBLIC ROAD WATER SERVICE CONNECTION

NOTES:
1. WATER SERVICE SHUT-OFF TO BE PLACED AT PROPERTY LINE.
2. LATERAL LOCATION SHALL BE AS REQUESTED BY THE ABUTTING PROPERTY OWNER.
3. ROCHESTER HILLS DPS PERFORMS SERVICE LEAD TAPS UP TO 2" DIAMETER.

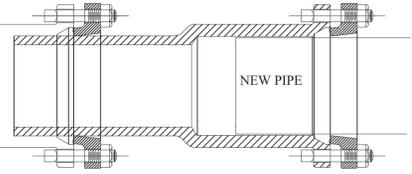


DITCH CROSSING

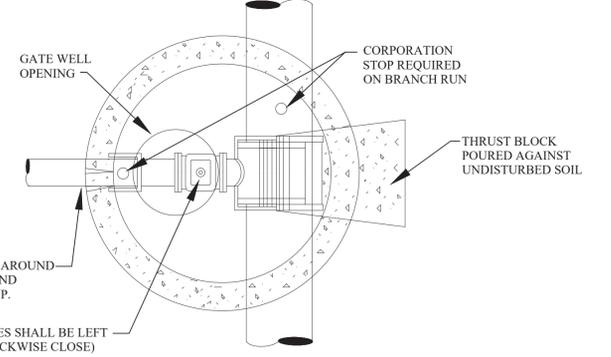


UTILITY CROSSING

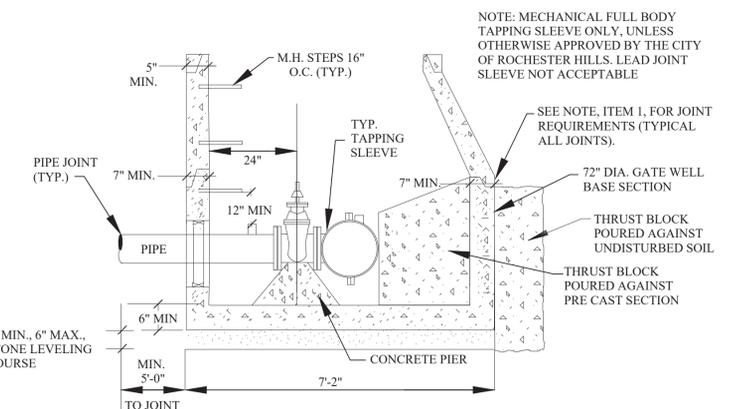
EAST JORDAN MJ x PE DUAL-PURPOSE CUTTING-IN SLEEVE OR APPROVED EQUAL



BOTTLE SLEEVE



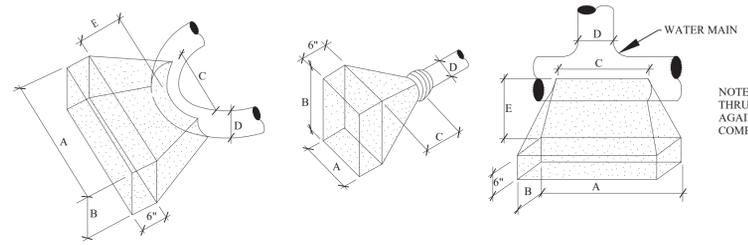
PLAN TAPPING SLEEVE VALVE & WELL (TYPICAL)



TAPPING SLEEVE, VALVE AND WELL (TYPICAL)

NOTES:

- ALL PRECAST CONCRETE GATE WELL SECTIONS SHALL BE MANUFACTURED TO CONFORM WITH A.S.T.M. C478, STANDARD SPECIFICATIONS FOR PRECAST REINFORCED CONCRETE MANHOLE SECTIONS, EXCEPT WALL THICKNESS SHALL BE AS SHOWN ON THESE DETAILS. ALL JOINTS FOR PRECAST CONCRETE GATE WELL SECTIONS SHALL BE "MODIFIED GROOVE TONGUE" WITH GASKET MANUFACTURED TO CONFORM WITH A.S.T.M. C 443, STANDARD SPECIFICATION FOR JOINTS FOR CIRCULAR CONCRETE SEWER AND CULVERT PIPE USING RUBBER GASKETS.
- CONTRACTOR SHALL INSTALL VALVES, TAPPING SLEEVES AND GATE WELL STRUCTURES IN STRICT COMPLIANCE WITH MEASUREMENTS PROVIDED ON SHEET 1 (i.e. 2'-0" BETWEEN GATE WELL WALL & CENTERLINE OF OPERATING NUT) TO ALLOW PROPER OPERATION OF VALVE THROUGH GATE WELL OPENING. FAILURE TO DO SO WILL REQUIRE CONTRACTOR TO CORRECT AT HIS EXPENSE.
- TAPPING SLEEVES SHALL BE MANUFACTURED BY ROMAC INDUSTRIES; MUELLER; EAST JORDAN; SMITH-BLAIR OR APPROVED EQUAL AND APPROVED BY THE CITY OF ROCHESTER HILLS. FULL BODY SLEEVES MUST BE USED EXCEPT FOR REINFORCED CONCRETE PRESSURE PIPE OR A.C. PIPE.
- FOR ALL PIPE USE A 1" CORPORATION STOP. NO CORPS SHALL BE USED IN CONCRETE PRESSURE PIPE.
- RUBBER O-RINGS SHALL NOT BE USED IN PAVEMENT.



FOR 90° BENDS OR SMALLER

D	A	B	C	E MIN.
20"	8'	6.5'	3.5'	2.5'
16"	6'	4'	2.5'	2'
12"	4'	3'	2'	1.75'
10"	3'	3'	2'	1.75'
8"	3'	2'	2'	1.5'
6"	2'	1.5'	2'	1.25'

FOR PLUGS

D	A	B	C MIN.
20"	7'	5'	2.5'
16"	4'-10"	4'-10"	2'
12"	4'-4"	3'	1'-9"
10"	3'	2'	1'-6"
8"	2'-10"	2'-6"	1'-6"
6"	1'-6"	1'-6"	3"

FOR TEES

D	A	B	C	E MIN.
20"	6.5'	4.5'	3.5'	3'
16"	4'-8"	4'-8"	2.5'	2.75'
12"	4'	3'	2.5'	2.5'
10"	3'	2'	2'	2.25'
8"	2'-6"	2'	2'	2.25'
6"	2'	2'	2'	2.25'

THRUST BLOCK DETAILS



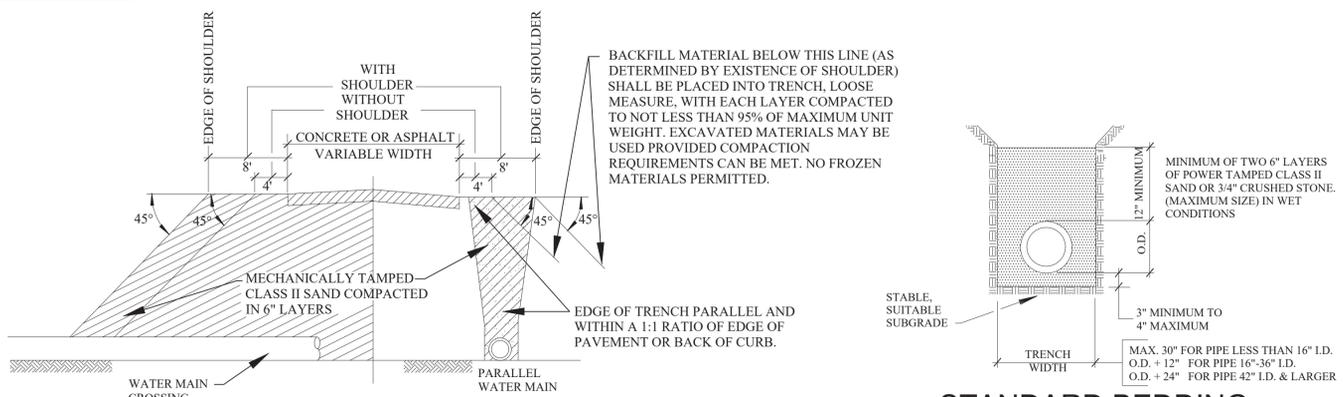
REVISIONS	DATE	APPROVED BY
		CITY COUNCIL, DATE: SEPTEMBER 23, 2019
		PREPARED BY ENGINEERING DIVISION DEPARTMENT OF PUBLIC SERVICES

NOTIFY ROCHESTER HILLS ENGINEERING DIVISION AT 248-841-2510 48 HRS. PRIOR TO START OF CONSTRUCTION

City of Rochester Hills
1000 Rochester Hills Drive, Rochester Hills, Michigan 48309

WATER MAIN STANDARD DETAILS

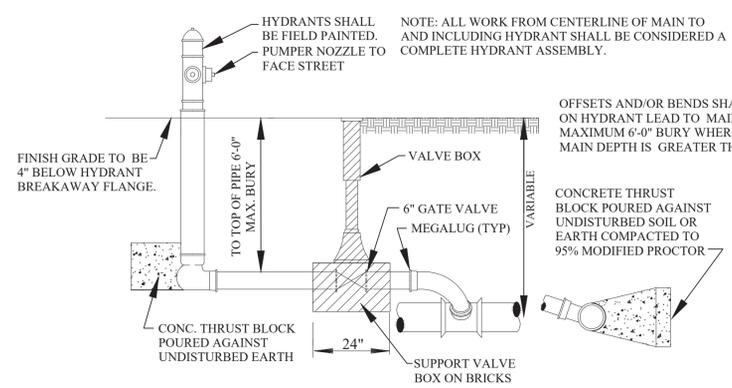
NOT TO SCALE	DATE: 1/10/2018
SHEET 1 OF 2	C10.4



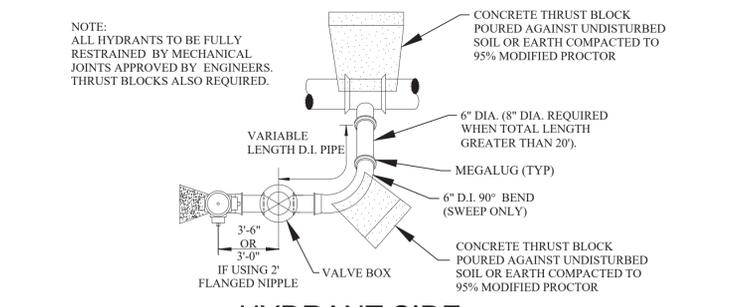
MINIMUM BACKFILL UNDER OR WITHIN PAVEMENT INFLUENCE



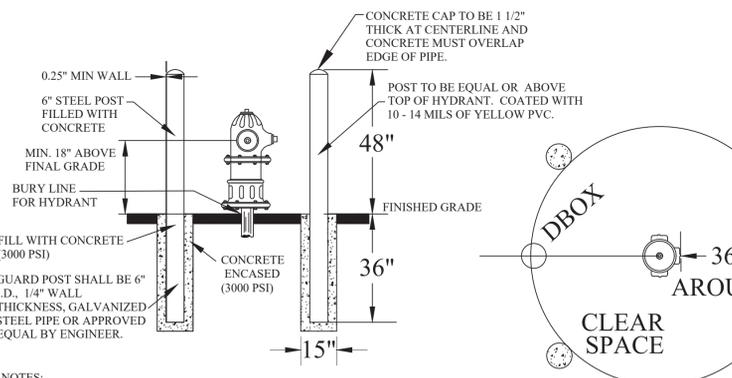
STANDARD BEDDING FOR WATER MAIN



HYDRANT SIDE OUTLET OPTION

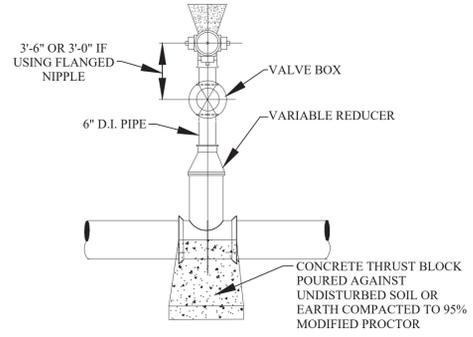


HYDRANT SIDE OUTLET OPTION

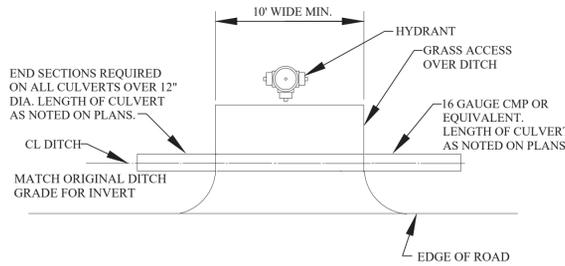


GUARD POST

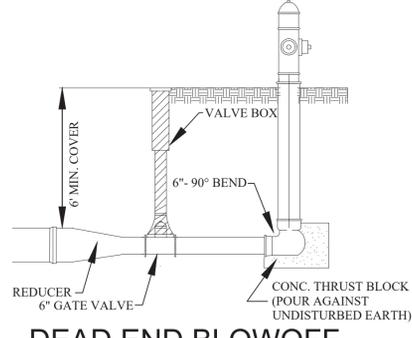
HYDRANT & BLOWOFF DETAILS



HYDRANT CONNECTION (TYPICAL)



DITCH ENCLOSURE AT HYDRANT/ GATE WELL



DEAD END BLOWOFF CONNECTION

GENERAL NOTES

1. ALL CONSTRUCTION PROCEDURES AND MATERIALS SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE CITY OF ROCHESTER HILLS.
2. A PRE-CONSTRUCTION MEETING SHALL BE SCHEDULED BY THE CITY OF ROCHESTER HILLS AND HELD PRIOR TO THE START OF CONSTRUCTION.
3. CONTRACTOR MUST CONTACT MISS DIG (811) AT LEAST THREE WORKING DAYS PRIOR TO THE START OF CONSTRUCTION FOR UNDERGROUND UTILITY LOCATIONS. ALL UTILITIES SHALL BE STAKED BEFORE CONSTRUCTION BEGINS.
4. ALL WATER MAIN EASEMENTS SHALL BE PROVIDED PRIOR TO CONSTRUCTION AND ACCEPTANCE OF THE WATER DISTRIBUTION SYSTEM.
5. WATER MAINS SHALL BE CONSTRUCTED WITH A MINIMUM COVER OF 6 FEET BELOW FINISHED GRADES, INCLUDING OPEN DRAINAGE COURSES.
6. ALL TRENCHES UNDER OR WITHIN A 1:1 RATIO OF EXISTING OR PROPOSED PAVEMENT OR DRIVEWAYS, SHALL BE BACKFILLED WITH COMPACTED CLASS II SAND TO GRADE (95% MAXIMUM UNIT DENSITY).
7. WHERE TWO UTILITIES CROSS, PROVIDE CLASS II BACKFILL MATERIAL IN SIX (6) INCH COMPACTED LAYERS TO TOP OF HIGHEST UTILITY.
8. WHERE WATER MAINS DIP UNDER OTHER UTILITIES, THE SECTIONS WHICH ARE DEEPER THAN NORMAL SHALL BE CONSTRUCTED WITH 11-1/4" VERTICAL BENDS, 22 1/2" OR 45" BENDS MUST BE RODDED AND PROPERLY ANCHORED.
9. ALL PRECAST CONCRETE GATE WELL SECTIONS SHALL BE IN ACCORDANCE WITH A.S.T.M. C478, STANDARD SPECIFICATIONS FOR PRECAST REINFORCED CONCRETE MANHOLE SECTIONS. WALL THICKNESS SHALL BE AS SHOWN ON THESE DETAILS. ALL JOINTS FOR PRECAST CONCRETE GATE WELL SECTIONS SHALL BE "MODIFIED GROOVE TONGUE" WITH GASKET MANUFACTURED TO CONFORM WITH A.S.T.M. C 443, STANDARD SPECIFICATION FOR JOINTS FOR CIRCULAR CONCRETE SEWER AND CULVERT PIPE USING RUBBER GASKETS.
10. CONTRACTOR SHALL INSTALL VALVES, TAPPING SLEEVES AND GATE WELL STRUCTURES IN STRICT COMPLIANCE WITH MEASUREMENTS PROVIDED ON SHEET 1 (2'-0" BETWEEN GATE WELL WALL & CENTERLINE OF OPERATING NUT) TO ALLOW PROPER OPERATION OF VALVE THROUGH GATE WELL OPENING.
11. ALL CROSS-CONNECTION CONTROL DEVICES SHALL BE INSTALLED AS REQUIRED BY THE ROCHESTER HILLS PLUMBING INSPECTOR AND IN ACCORDANCE WITH THE STANDARDS OF THE OAKLAND COUNTY WATER RESOURCE COMMISSIONER OPERATION AND MAINTENANCE DIVISION AND THE MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF DRINKING WATER AND RADIOLOGICAL PROTECTION.
12. ALL WATER SERVICE CONNECTIONS TWO (2) INCHES AND SMALLER SHALL BE MADE BY THE CITY OF ROCHESTER HILLS, DEPARTMENT OF PUBLIC SERVICES AFTER WATER MAIN ACCEPTANCE AND APPLICABLE PERMITS ARE OBTAINED.
13. ALL FITTINGS AND BENDS SHOULD BE BLOCKED IN ACCORDANCE WITH THRUST BLOCK DETAILS, UNLESS ALTERNATE THRUST RESTRAINT SYSTEM, AS INDICATED PLANS AND SPECIFICATIONS, IS APPROVED BY THE CITY OF ROCHESTER HILLS DEPARTMENT OF PUBLIC SERVICE.

WATER MAIN MATERIALS NOTES

1. TEMPORARY CONNECTIONS, WHICH MAY BE MADE FOR CHLORINATING AND FLUSHING PURPOSES, SHALL INCLUDE A TESTABLE DOUBLE CHECK VALVE BACKFLOW PREVENTER WITH CURRENT CERTIFICATION.
2. CORPORATION STOPS USED FOR INSERTION INTO MAINS SHALL BE FORD TYPE B-44. ALL STOPS SHALL HAVE BRONZE CAST BODIES, KEYS, STEM WASHERS AND NUTS. INLET THREADS SHALL CONFORM TO THE LATEST VERSION OF AWWA C800.
3. ALL DUCTILE IRON PIPE (D.I.P.) WATER MAIN SHALL BE DESIGNED FOR 150 PSI MINIMUM WORKING PRESSURE. A ZINC COATING WITH CLASS 52 MAY BE PROPOSED AND IS SUBJECT TO FINAL DECISION FOR APPROVAL BY THE CITY ENGINEER.
4. THE DUCTILE IRON PIPE TO BE FURNISHED AND DELIVERED UNDER THIS SPECIFICATION SHALL MEET ALL THE REQUIREMENTS OF THE CURRENT AWWA C151 (ANSI A21.5), EXCEPT AS OTHERWISE SPECIFIED HEREIN. PIPE SHALL BE DOUBLE CEMENT-LINED AND SEAL COATED WITH AN APPROVED BITUMINOUS SEAL COAT IN ACCORDANCE WITH AWWA C104 (ANSI A21.4).
5. DUCTILE IRON PIPE SHALL BE CLASS 54 FOR SIZES THREE (3) INCH THROUGH TWENTY (20) INCHES SIZE. TWENTY-FOUR (24) INCH AND LARGER SHALL BE CLASS 55 DUCTILE IRON PIPE.
6. PIPES TWENTY-FOUR (24) INCHES AND LARGER IN NOMINAL DIAMETER SHALL MEET ALL THE REQUIREMENTS OF THE CURRENT AWWA C100 FOR DUCTILE IRON WATER PIPE.
7. MECHANICAL JOINTS FOR DUCTILE IRON WATER MAIN SHALL BE IN ACCORDANCE WITH AWWA C111 (ANSI A21.11).
8. FLANGE JOINTS FOR DUCTILE IRON WATER MAIN SHALL BE IN ACCORDANCE WITH AWWA C110 (ANSI A21.10).
9. FITTINGS FOR DUCTILE IRON PIPE SHALL BE DUCTILE IRON AND SHALL MEET REQUIREMENTS OF AWWA C110 (ANSI A21.10) OR AWWA C153 (ANSI A21.53). DUCTILE IRON FITTINGS SHALL BE RATED FOR 350 PSI. PIPE SIZES TWENTY-FOUR (24) INCH DIAMETER AND LESS, AND 250 PSI FOR PIPE SIZES OVER TWENTY-FOUR (24) INCH DIAMETER. DUCTILE IRON FLANGE FITTINGS SHALL BE RATED FOR 250 PSI FOR ALL PIPE DIAMETERS.
10. ALL DUCTILE IRON PIPE, FITTINGS AND HYDRANTS SHALL BE ENCASED WITH POLYETHYLENE ENCASEMENT IN ACCORDANCE WITH THE REQUIREMENTS OF A.N.S.I./A.W.W.A. STANDARD SPECIFICATION D1248 AND AWWA C105. POLYETHYLENE TUBE MATERIAL SHALL HAVE A THICKNESS OF .008" (8-MILS). ADHESIVE TAPE SHALL BE A GENERAL PURPOSE ADHESIVE TAPE 2" WIDE AND APPROXIMATELY 10-MILS THICK, SUCH AS SCOTCHRAP. NO.50, POLYKEN NO. 900, OR TAPECOAT CT.

VALVE AND SLEEVE NOTES

1. GATE VALVES, SIZES THREE (3) INCH THROUGH SIXTEEN (16) INCH AND TAPPING VALVES SHALL MEET THE CITY OF ROCHESTER HILLS STANDARD AS DETAILED WITH NON-RISING STEM. (EAST JORDAN, AMERICAN FLOW CONTROL, MUELLER)
2. ALL IN LINE GATE VALVES EIGHT (8) INCH AND LARGER SHALL BE IN WELLS. SPECIFICATIONS SHALL INCLUDE THE DIRECTION OF OPERATION OF ALL VALVES (CLOCKWISE CLOSURE). VALVE BOX USE TO BE APPROVED BY ENGINEERING DIVISION.
3. ALL GATE WELL COVERS SHALL BE CITY OF ROCHESTER HILLS STANDARD AS DETAILED.
4. ALL GATE VALVES WITH OPERATING NUTS AT A DISTANCE GREATER THAN FIVE (5) FEET BELOW GROUND SURFACE SHALL BE PROVIDED WITH AN EXTENSION STEM. THE LENGTH OF THE EXTENSION STEM SHALL REACH WITHIN FIVE (5) FEET FROM THE GROUND SURFACE. WHEN AN EXTENSION STEM IS USED, IT SHALL BE HELD IN PLACE BY AN EXTENSION STEM GUIDE SUITABLY FASTENED TO THE WALL OF THE GATE WELL. THE EXTENSION STEM SHALL BE MECHANICALLY ATTACHED TO THE OPERATING NUT. DETAILS OF THE EXTENSION SYSTEM AND THE METHOD OF INSTALLATION SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.
5. BUTTERFLY VALVES SHALL BE USED FOR VALVES GREATER THAN 16-INCH DIAMETER AND SHALL BE MODEL 2F11 AS MANUFACTURED BY HENRY PRATT COMPANY OR APPROVED EQUAL.
6. TAPPING VALVES SHALL BE SERIES "A" AS MANUFACTURED BY EAST JORDAN OR RESILIENT SEATED GATE VALVES AS APPROVED BY THE CITY OF ROCHESTER HILLS ENGINEERING SERVICES.
7. TAPPING SLEEVES SHALL BE MANUFACTURED BY ROMAC INDUSTRIES; MUELLER; EAST JORDAN; SMITH-BLAIR OR APPROVED EQUAL AND APPROVED BY THE CITY OF ROCHESTER HILLS. FULL BODY SLEEVES MUST BE USED EXCEPT FOR REINFORCED CONCRETE PRESSURE PIPE OR A.C. PIPE.

HYDRANT REQUIREMENTS

1. ALL HYDRANTS SHALL BE CONSTRUCTED WITH A SIX (6) INCH COMPANION GATE VALVE IN A THREE (3) PIECE, ADJUSTABLE DUCTILE IRON VALVE BOX, WHICH SHALL INCLUDE A FIVE AND ONE-QUARTER (5-1/4) INCH SCREW SHAFT. VALVE BOXES SHALL BE SERIES 6860 AS MANUFACTURED BY TYLER PIPE OR APPROVED EQUAL.
2. ALL HYDRANTS SHALL BE EAST JORDAN NO. 5-BR-250 TRAFFIC MODEL, OR CITY APPROVED EQUAL. SELF-DRAINING HYDRANTS SHALL NOT BE USED. HYDRANTS SHALL HAVE BREAKAWAY FLANGE.
3. ALL HYDRANTS SHALL BE PAINTED RED ABOVE GROUND WITH A FINISH COAT OF RUST-OLEUM SAFETY RED OR APPROVED EQUAL. HYDRANT CAPS SHALL BE PAINTED SAME COLOR AS THE HYDRANT.
4. ALL FIRE HYDRANT JOINTS SHALL BE TOTALLY RESTRAINED BY THE USE OF RESTRAINED JOINT. THRUST BLOCKS ARE ALSO REQUIRED.

ACCEPTANCE OF NEW WATER MAINS

1. PRIOR TO WATER MAIN ACCEPTANCE THE FOLLOWING CONDITIONS MUST BE MET: 1) PRESSURE TESTING AND BACTERIA TESTING MUST BE COMPLETED IN ACCORDANCE WITH THE CITY OF ROCHESTER HILLS 2) ALL EASEMENT AND RIGHT-OF-WAY ACQUISITION MUST BE ACCEPTED BY THE CITY OF ROCHESTER HILLS ENGINEERING SERVICES 3) THE CITY OF ROCHESTER HILLS MUST BE PROVIDED WITH THE BILL OF SALE AND 4) ALL MYLAR "AS-BUILT DRAWINGS" MUST BE ACCEPTED AND APPROVED BY THE CITY OF ROCHESTER HILLS, ENGINEERING SERVICES. THE CITY OF ROCHESTER HILLS INSPECTION DIVISION MUST WITNESS THE CONNECTION OF THE WATER MAIN TO THE EXISTING WATER MAIN, AFTER WHICH RESIDENTIAL AND COMMERCIAL TAPS WILL BE ALLOWED.
2. THE CONTRACTOR SHALL NOTIFY THE CITY OF ROCHESTER HILLS, INSPECTION DEPARTMENT (248.841.2510) FOR PRESSURE TESTING, BACTERIOLOGICAL SAMPLING, CONNECTIONS TO EXISTING WATER MAIN AND FINAL FIELD REVIEW. A FORTY-EIGHT (48) HOUR ADVANCE NOTICE IS REQUIRED.
3. THE CONTRACTOR SHALL DISINFECT AND PRESSURE TEST ALL NEW WATER MAIN IN ACCORDANCE WITH ROCHESTER HILLS STANDARDS. THE WATER MAIN SHALL PASS A 150 PSI PRESSURE TEST FOR A TWO (2) HOUR PERIOD. WATER LOSS SHALL NOT EXCEED A RATE OF 11.65 U.S. GALLONS PER INCH DIAMETER PER MILE OF WATER MAIN IN TWENTY-FOUR (24) HOURS.
4. WHERE CONTRACTOR SUPPLIED GAUGES ARE REQUIRED, MINIMUM SIZE SHALL BE 3 1/2" DIAMETER OR LARGER GRADUATED IN ONE (1) OR TWO (2) POUND INCREMENTS FROM 1 TO 160 P.S.I. OR HIGHER AND HAVE CURRENT CERTIFICATION.
5. PRESSURE TESTING AND BACTERIA TESTING MUST BE COMPLETED AND APPROVED PRIOR TO CONNECTING TO THE EXISTING WATER MAIN.

CITY OF ROCHESTER HILLS WATER SYSTEMS AS-BUILT DRAWING SPECIFICATIONS

IN AREAS WHERE WATER SYSTEMS ARE OPERATED AND MAINTAINED BY THE CITY OF ROCHESTER HILLS DEPARTMENT OF PUBLIC SERVICES, FINAL ACCEPTANCE OF THE WATER SYSTEM MUST BE RENDERED BY THE DEPARTMENT OF PUBLIC SERVICES, BEFORE THE SYSTEM CAN BE USED FOR THE SERVICE INTENDED.

ONE ITEM REQUIRED FOR FINAL ACCEPTANCE SHALL BE THE SUBMISSION OF AS-BUILT DRAWINGS TO THE CITY OF ROCHESTER HILLS, DPS, BY THE DESIGN ENGINEER. AS-BUILT DRAWINGS SHALL BE DEFINED AS AND CONTAIN THE FOLLOWING INFORMATION:

1. FINAL AS-BUILT DRAWINGS SHALL BE PROVIDED IN REPRODUCIBLE PDF FORMAT VIA DIGITAL STORAGE MEDIA. XEROX OR ANY HEAT PROCESS REPRODUCTIONS WILL NOT BE ACCEPTED.
2. ALONG WITH THE PDF PLAN SET PROVIDE TWO (2) SETS OF BLACK-LINED DRAWINGS AND THE PLANS ON ELECTRONIC MEDIA IN AUTOCAD FORMAT (LATEST VERSION).
3. EACH AND EVERY SHEET SHALL BE SEALED BY THE DESIGN ENGINEER, ALONG WITH THE FOLLOWING CERTIFICATION STATEMENT ON THE COVER SHEET:

I HEREBY CERTIFY THAT OUR FIRM HAS PREPARED THESE AS-BUILT DRAWINGS OF THE IMPROVEMENTS AS CONSTRUCTED, AND THAT TO THE BEST OF MY KNOWLEDGE THOSE IMPROVEMENTS NOTED AS "AS BUILT" WERE CONSTRUCTED IN SUBSTANTIAL CONFORMANCE WITH THE APPROVED CONSTRUCTION PLANS; AND ALSO THAT THE WATER MAIN AND STRUCTURES, AS CONSTRUCTED, LIE WITHIN THE EASEMENT DESCRIPTIONS REQUIRED BY THE CITY OF ROCHESTER HILLS.

(COMPANY NAME)

(ENGINEER'S SIGNATURE)

PROFESSIONAL ENGINEER NO. _____

ENGINEER SEAL

4. THE MAXIMUM SCALE SHALL BE ONE (1) INCH EQUALS FIFTY (50) FEET.
5. THE SIZE, LENGTH, CLASS AND MANUFACTURER OF PIPE INSTALLED SHALL BE INDICATED.
6. THE SIZE, BRAND AND MODEL NUMBERS OF ALL VALVES AND HYDRANTS INSTALLED SHALL BE INDICATED.
7. A TOTAL AS-BUILT DRAWING QUANTITY LIST SHALL BE INCLUDED, AS WELL AS AN AS-BUILT DRAWING QUANTITY LIST ON EACH INDIVIDUAL SHEET.
8. THE LOCATIONS SHALL BE SHOWN ON THE PLANS WITH AN ACCURACY OF ONE (1) FOOT.
9. THE OFFSET OF THE WATER MAIN FROM PROPERTY LINES SHALL BE INDICATED.
10. ALL GATE VALVE WELLS, HYDRANTS AND ALL WATER SYSTEM APPURTENANCES SHALL BE LOCATED FROM TWO FIXED OBJECTS (MANHOLES, BUILDING CORNERS ECT.).
11. ALL UNDERGROUND APPURTENANCES, SUCH AS GATE VALVE WELLS, METER PITS, PRESSURE REDUCING VALVE PITS, ETC. SHALL BE LOCATED FROM THE NEAREST HYDRANT THAT IS CONNECTED TO THE SAME WATER MAIN AS THE APPURTENANCE.
12. THE LOCATION AND SIZE OF EVERY RESTRAINED JOINT SHALL BE NOTED.
13. THE ACCURATE LOCATION OF ALL UTILITY CROSSINGS WHERE THE VERTICAL SEPARATION, IS LESS THAN 18" SHALL BE NOTED.
14. AS-BUILT SHALL BE PREPARED IN ACCORDANCE WITH THE CITY OF ROCHESTER HILLS AS-BUILT GUIDELINES AS PROVIDED AT THE PRE-CONSTRUCTION MEETING.



REVISIONS	DATE	APPROVED BY CITY COUNCIL, DATE: SEPTEMBER 23, 2019
		PREPARED BY ENGINEERING DIVISION DEPARTMENT OF PUBLIC SERVICES

NOTIFY ROCHESTER HILLS ENGINEERING DIVISION @ 248-841-2510 48 HRS. PRIOR TO START OF CONSTRUCTION

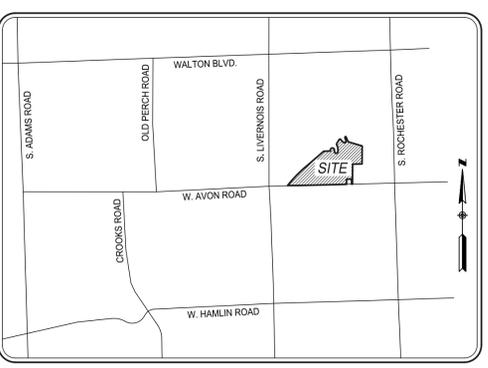
City of Rochester Hills
1000 Rochester Hills Drive, Rochester Hills, Michigan 48309

WATER MAIN STANDARD DETAILS

NOT TO SCALE	DATE: 1/10/2019
SHEET 2 OF 2	C10.5

LEGEND

- MANHOLE
- ⊕ CATCH BASIN
- ⊖ SEWER CLEAN OUT
- ⊙ GAS METER
- ⊕ GAS SHUT OFF VALVE
- ⊕ VALVE BOX
- ⊕ GATE VALVE & WELL
- ⊕ WATER SHUT OFF VALVE
- ⊕ FIRE HYDRANT
- ⊕ SPRINKLER VALVE BOX
- ⊕ LAWN SPRINKLER HEAD
- ⊕ HAND HOLE
- ⊕ ELECTRIC RISER OR METER
- ⊕ TELEPHONE RISER
- ⊕ CABLE TV RISER
- ⊕ AIR CONDITION UNIT
- ⊕ UTILITY POLE
- ⊕ UTILITY POLE W/ TRANSFORMER
- ⊕ UTILITY POLE W/ LAMP EXTENSION (ARROW INDICATES DIRECTION OF ARM)
- ⊕ LIGHT POLE
- ⊕ LIGHT POLE WITH LAMP EXTENSION
- ⊕ TRAFFIC SIGNAL
- ⊕ POLE W/ TRAFFIC SIGNAL (OVER ROAD)
- ⊕ GUY WIRE
- ⊕ GUY POLE
- ⊕ GROUND LEVEL / DECORATIVE LIGHTING
- ⊕ FLAG POLE
- ⊕ PHONE OR PHONE BOOTH
- ⊕ METAL OR CONC. POST
- ⊕ MAILBOX
- ⊕ SIGN
- ⊕ WATER FOUNTAIN
- ⊕ PARKING METER
- ⊕ BILLBOARD OR LARGE SIGN
- ⊕ BASKETBALL HOOP
- ⊕ BOULDER
- ⊕ STATUE OR SCULPTURE
- ⊕ BENCH
- ⊕ STUMP
- ⊕ DS-S DOWNSPOUT INTO STORM DRAIN
- ⊕ DS-C DOWNSPOUT TO GROUND
- ⊕ CONIFEROUS TREE
- ⊕ DECIDUOUS TREE
- ⊕ DECIDUOUS SHRUB
- ⊕ CONIFEROUS SHRUB
- ⊕ SECTION CORNER
- ⊕ TRAVERSE POINT
- ⊕ STRUCTURE NUMBER
- ⊕ SDA POINT No.
- ⊕ SPOT ELEVATION
- TC TOP OF CURB ELEVATION
- GU GUTTER ELEVATION
- TP TOP OF PAVEMENT ELEVATION
- EM EDGE OF METAL ELEVATION
- TW TOP OF WALK ELEVATION
- TWALL BOTTOM OF WALL ELEVATION
- GR GROUND ELEVATION
- UG UNDERGROUND
- FO FIBER OPTIC
- CONC CONCRETE
- ASPH ASPHALT
- FF FINISH FLOOR ELEVATION
- DL DOOR LEDGE ELEVATION
- F.I FOUND IRON
- F.M FOUND MONUMENT
- F.P.K FOUND P.K. NAIL
- S.I SET IRON W/SDA CAP
- S.P.K SET P.K. NAIL
- S.P.K/TAG SET P.K. NAIL W/SDA TAG
- MAG SET MAGNETIC NAIL
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- M MEASURED
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- SN SANITARY SEWER (SAN)
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- OH OVERHEAD WIRE
- CS COMBINED SEWER
- STE STEAM LINE
- O OIL LINE
- E UG ELECTRIC (ELEC.)
- T UG PHONE (PH)
- C UG CABLE (CBL)
- CHAIN LINK FENCE (CL)
- WOOD FENCE
- WOVEN WIRE FENCE (WW)
- GUARD RAIL
- EDGE OF BRUSHWOODS
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- BOUNDARY LINES
- ROW LINES
- SECTION LINES
- PROPERTY LINES
- ASPHALT
- CONCRETE
- GRAVEL
- BRICK / PAVERS
- WATER



LOCATION MAP
NOT TO SCALE

BENCHMARK DESCRIPTIONS

DATUM: GPS-DERIVED NAVD'88

SITE BM#100 CHISELED "X" ON NORTH RIM OF BEEHIVE CATCH BASIN (STRUCTURE 22), LOCATED 475' SOUTHEAST OF THE NORTHEAST BUILDING CORNER OF GARTH PLEASANT ARENA. ELEV = 778.89

SITE BM#101 ARROW ON HYDRANT, LOCATED 475' SOUTHEAST OF THE SOUTHEAST BUILDING CORNER OF HAGGOTT HALL. ELEV = 762.44

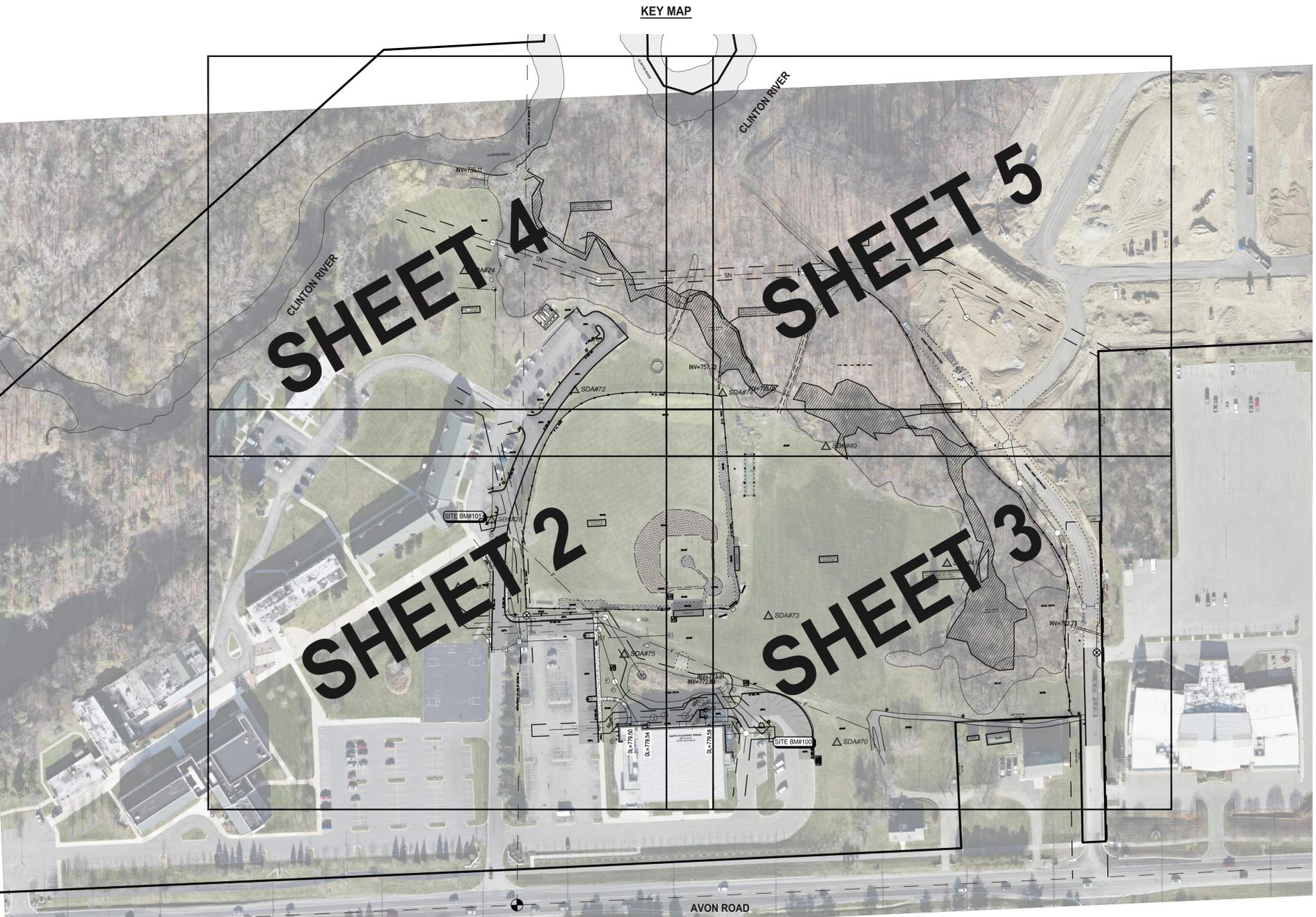
SURVEYOR'S COMMENTS

- THIS TOPOGRAPHICAL SURVEY IS BASED UPON A FIELD SURVEY PERFORMED BY SPALDING DEDECKER (SDA) DURING DECEMBER, 2020. THE SURVEY INCLUDES A BASE MAP CREATED USING AERIAL MAPPING TECHNIQUES BASED ON PHOTOGRAPHY OBTAINED IN NOVEMBER, 2020 WHICH WAS SUPPLEMENTED WITH CONVENTIONAL ON THE GROUND SURVEY MEASUREMENTS FOR HARD SURFACE ELEVATIONS, UTILITIES, AND OTHER FEATURES.
- THE PROPERTY LINES/RIGHT-OF-WAY LINES SHOWN ON THIS TOPOGRAPHICAL SURVEY ARE BASED UPON A PRIOR ALTA/SPUR LAND TITLE SURVEY PERFORMED BY RAYMOND J. DONNELLY ASSOCIATES FOR THE OVERALL CAMPUS WHICH WAS MORE RECENTLY UPDATED BY SPALDING DEDECKER. THERE IS A NEW DEVELOPMENT UNDER CONSTRUCTION ON THE NORTHERLY AND EASTERLY EDGES OF THE SURVEY LIMITS WHICH IS PART OF A PLANNED URBAN DEVELOPMENT (PUD) BEING DEVELOPED BY PULTE HOMES. WE HAVE REVIEWED THE ENGINEERING PLANS FOR THE DEVELOPMENT, AND THERE IS A SEPARATE LEGAL DESCRIPTION FOR THE PUD AREA. HOWEVER, IT IS NOT CLEAR IF THE PARCEL HAS BEEN SPLIT YET AND IF THIS CONFIGURATION IS FINAL. THE BOUNDARY LINES FOR THE PUD ARE NOT CURRENTLY SHOWN ON THE SURVEY DRAWING FOR THESE REASONS.
- THIS SURVEY HAS BEEN PREPARED WITHOUT THE BENEFIT OF A CURRENT TITLE SEARCH AND THEREFORE THIS PROPERTY MAY BE SUBJECT TO EASEMENTS, RIGHT-OF-WAY TAKINGS AND RESTRICTIVE COVENANTS THAT COULD ENCUMBER THIS PARCEL OF LAND.
- THE INITIAL BEARING BASE AND COORDINATES FOR THE FIRST RELEASE OF THE DRAWING WERE BASED UPON A LOCAL COORDINATE SYSTEM AND BASIS OF BEARINGS THAT WAS ESTABLISHED BASED ON THE PRIOR ALTA SURVEY FOR THE OVERALL CAMPUS. BASED ON A CLIENT REQUEST, THE SURVEY WAS UPDATED ON FEBRUARY 10, 2021 TO NOW USE THE STATE PLANE COORDINATE SYSTEM. THE CURRENT COORDINATE SYSTEM IS THE STATE PLANE COORDINATE SYSTEM, MICHIGAN SOUTH ZONE (2113), BASED ON NAD83(2011). THE BASIS OF BEARINGS IS THE STATE PLANE COORDINATE SYSTEM GRID. UNITS ARE INTERNATIONAL FEET AND ALL DISTANCES ARE BASED ON GRID.
- THE VERTICAL DATUM OF THIS SURVEY IS BASED UPON NORTH AMERICAN VERTICAL DATUM OF 1988. CONTROL WAS ESTABLISHED BY GPS OBSERVATION USING THE AVAILABLE MDOOT CONTINUOUSLY OPERATION STATIONS (CORS).
- THE UTILITY INFORMATION SHOWN ON THIS SURVEY IS BASED UPON A COMBINATION OF RECORD INFORMATION AND FIELD MEASUREMENTS. A MISS DIG DESIGN TICKET NUMBER OF A03070988-00A HAS BEEN REFERENCED TO THIS PROJECT AND A UTILITY PROVIDER CHART IS SHOWN ON THIS DRAWING. THERE ARE NO ASSURANCES THAT ALL PROVIDERS HAVE RESPONDED AND THE SURVEYOR DOES NOT GUARANTEE THAT ALL UNDERGROUND UTILITIES ARE SHOWN AND/OR POSITIONED PROPERLY ON THIS DRAWING DUE TO AMBIGUOUS PLANS AND RECORDS PROVIDED TO US. THE INFORMATION SHOWN ON THIS DRAWING IS INTENDED TO BE USED AS A GUIDE FOR POSSIBLE UNDERGROUND UTILITY CONFLICTS. IT IS THE RESPONSIBILITY OF OTHERS TO RESOLVE THE ACTUAL LOCATION OF ANY UNDERGROUND UTILITY THROUGH THE MISS DIG FIELD VERIFICATION SYSTEM PRIOR TO ANY SITE EXCAVATION. CALL 811 OR 800-482-7171.
- WETLANDS WERE FLAGGED BY OTHERS AND FIELD-LOCATED BY SDA.
- THE TREE SURVEY WAS PERFORMED BY REGISTERED FORESTER JOHN MOSES. MANY OF THE TREES HAD BEEN TAGGED BY OTHERS, AND IN THOSE CASES THE SAME TREE TAG NUMBER WAS USED IF THE TREE TAG WAS STILL VISIBLE.



UTILITY CHART

UTILITY PROVIDER	MISS-DIG RESULTS	DATE	CONTACT	CONTACT #	CONTACT EMAIL
ATT	RECEIVED	11/3/2020	LINDA DENNISUK	248-456-8256	ld2154@att.com
CROWN CASTLE	NOT RECEIVED YET	1/22/2021	FIBER DIG TEAM	888-632-0931	FIBER.DIG@CROWNCastle.COM
CONSUMERS ENERGY	RECEIVED	11/3/2020	KURT GOLDING	517-374-2002	MISSDIGDESIGNTICKETS@CMEENERGY.COM
COMCAST	RECEIVED	11/19/2020	CRAIG PUDAS	248-809-2715	CRAIG_PUDAS@CABLE.COMCAST.COM
DETROIT EDISON	RECEIVED	11/9/2020	UNKNOWN	313-235-5632	Design_MissDig@DTEenergy.com
OAKLAND COUNTY DRAIN COMMISSIONER	NOT RECEIVED YET	1/22/2021	CHRIS GIANAKOS	248-858-1116	GIANAKOSC@OAKGOV.COM
OAKLAND COUNTY ROAD COMMISSION	NOT RECEIVED YET	1/22/2021	AHMAD JAWAD	248-858-7250	AJAWAD@RCDC.ORG
ROCHESTER HILLS CITY	RECEIVED	11/9/2020	TRACEY BALINT	248-841-3504	BALINTT@ROCHESTERHILLS.ORG
ROCHESTER COMMUNITY SCHOOLS	NOT RECEIVED YET	1/22/2021	TIM FORTIN	248-726-3031	TFORTIN@ROCHESTER.K12.MI.US



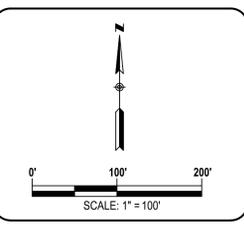
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Fax: (313) 309-7101

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Phone: (248) 844-6274

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ROCHESTER HILLS, MI 48307

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

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING UTILITIES IN CONFLICT WITH PROPOSED IMPROVEMENTS SHALL BE VERIFIED IN THE FIELD. CALL MISS DIG 3 WORKING DAYS PRIOR TO CONSTRUCTION.

UTILITY NOTE

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ROCHESTER UNIVERSITY ATHLETIC FIELD
ROCHESTER HILLS, MI
TOPOGRAPHICAL SURVEY

SECTION 15
TOWN 03 NORTH RANGE 11 EAST
CITY OF ROCHESTER HILLS
OAKLAND COUNTY, MICHIGAN

NO.	DATE	REVISION
1	2-10-21	MOVED TO STATE PLANE COORDINATE SYSTEM

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DRAFTER	DATE	PROJECT SURVEYOR
S. BROWN	01-25-21	M. DEDECKER
CHECKED	DATE	DEPARTMENT MANAGER
M. DEDECKER	01-25-21	C. PLATZ
FIELD LEADER	DRAWING NO.	DRAWING NO.
A. MINER	SM20193TPG	SM20193TPG-SP
PROJECT MANAGER	DEPARTMENT MANAGER	SCALE:
M. DEDECKER	C. PLATZ	1" = 100'
JOB NO.	DRAWING NO.	SHEET NO.
SM20193TPG	SM20193TPG-SP	1 OF 6

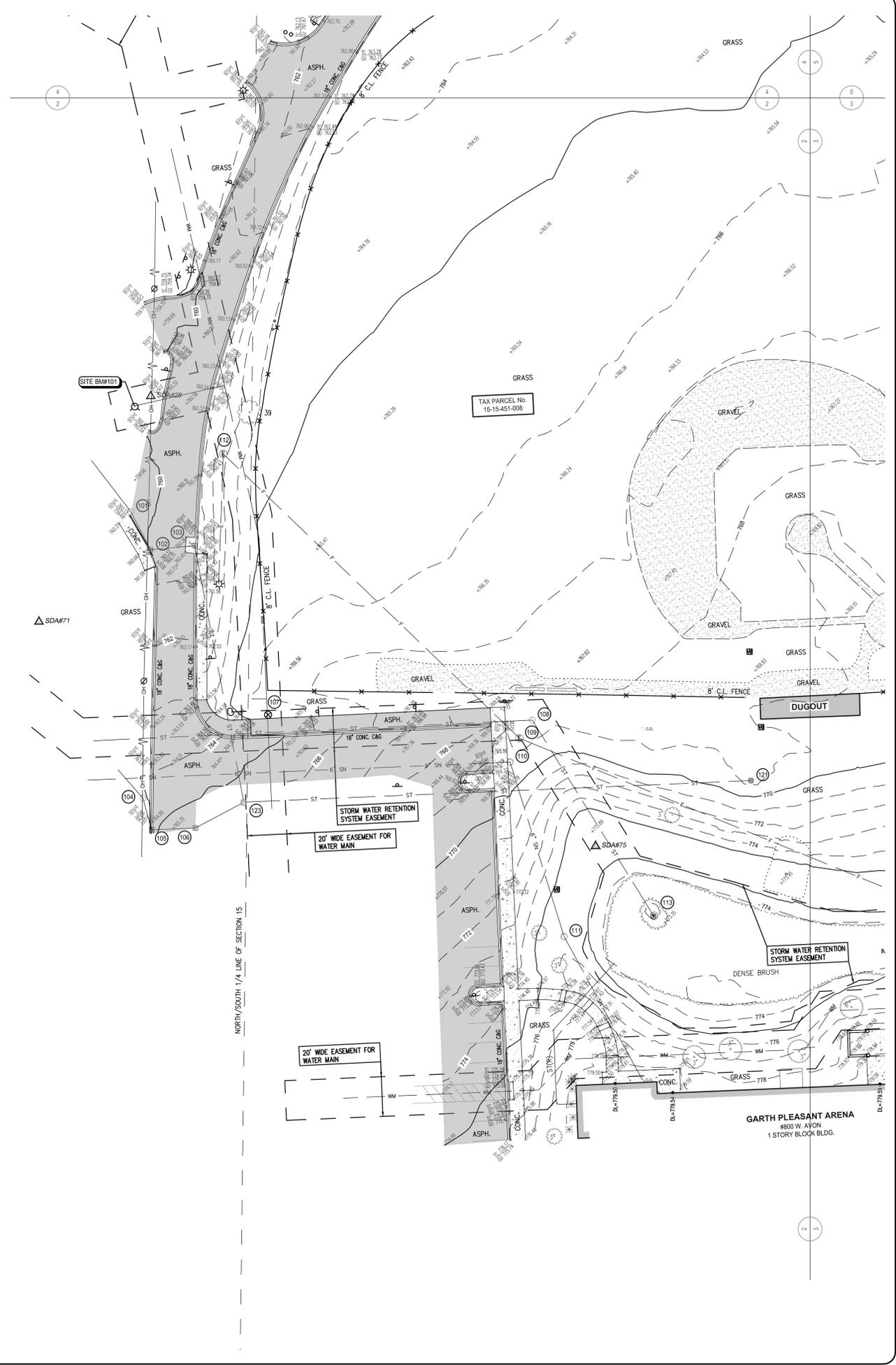
LEGEND

- MANHOLE
- CATCH BASIN
- SEWER CLEAN OUT
- GAS METER
- GAS SHUT OFF VALVE
- VALVE BOX
- GATE VALVE & WELL
- WATER SHUT OFF VALVE
- FIRE HYDRANT
- SPRINKLER VALVE BOX
- LAWN SPRINKLER HEAD
- HAND HOLE
- ELECTRIC RISER OR METER
- TELEPHONE RISER
- CABLE TV RISER
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- LIGHT POLE
- LIGHT POLE WITH LAMP EXTENSION
- TRAFFIC SIGNAL
- POLE W/ TRAFFIC SIGNAL (OVER ROAD)
- QUIV WIRE
- QUIV POLE
- GROUND LEVEL / DECORATIVE LIGHTING
- FLAG POLE
- PHONE OR PHONE BOOTH
- METAL OR CONC. POST
- MAILBOX
- SIGN
- WATER FOUNTAIN
- PARKING METER
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- BASKETBALL HOOP
- BOULDER
- STATUE OR SCULPTURE
- BENCH
- STUMP
- DOWNSPUT INTO STORM DRAIN
- DOWNSPUT TO GROUND
- CONIFEROUS TREE
- DECIDUOUS TREE
- DECIDUOUS SHRUB
- CONIFEROUS SHRUB
- SECTION CORNER
- TRAVERSE POINT
- STRUCTURE NUMBER
- SDA No.
- SPOT ELEVATION
- TOP OF CURB ELEVATION
- GUTTER ELEVATION
- TOP OF PAVEMENT ELEVATION
- EDGE OF METAL ELEVATION
- TOP OF WALK ELEVATION
- BOTTOM OF WALL ELEVATION
- GROUND ELEVATION
- UNDERGROUND
- FIBER OPTIC
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- DOOR LEDGE ELEVATION
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- WATERMAIN (WM)
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- STEAM LINE
- OIL LINE
- UG ELECTRIC (ELEC.)
- UG PHONE (PH)
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- WOOD FENCE
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- ASPHALT
- CONCRETE
- GRAVEL
- BRICK/PAVERS
- WATER

STRUCTURE TABLE

THE STRUCTURE TABLE ON THIS DRAWING IDENTIFIES THE AS-SURVEYED UNDERGROUND UTILITY MANHOLES THAT WERE FIELD MEASURED USING REASONABLE AND TRADITIONAL SURVEYING PRACTICES. PIPE SIZES, DIRECTIONS AND ELEVATIONS ARE INDICATED BY A COMBINATION OF FIELD EVIDENCE AND AVAILABLE RECORD INFORMATION. UNDERGROUND UTILITY PIPE SIZES AND CONNECTIONS ARE MANY TIMES AMBIGUOUS. SOME STRUCTURES MAY HAVE PIPES WITH UNKNOWN CONNECTIONS, SUMPS AND / OR PIPES THAT ARE FILLED WITH DEBRIS. IT WILL BE UP TO THE DESIGN ENGINEER TO LOOK AT THE PRESENTED SURVEY RESULTS AND DECIDE IF FURTHER INVESTIGATION BY OTHER METHODS, SUCH AS VACUUM CLEAN OUT, UNDERGROUND RADAR, SMOKE TESTING AND PHYSICAL EXCAVATION IS REQUIRED AS AN ADDITIONAL SERVICE.

#	TYPE	RM	SIZE	MTL	INVERT	DIRECTION	CONNECT
100	SQUARE CATCH BASIN	760.15	12"	RCP	755.25	SW	
	TOP / WATER	762.75					
	BOTTOM	755.25					
101	STORM MANHOLE	759.53	18"	RCP	750.63	SSE	102
	TOP / WATER	751.93			N/A	NW	
	BOTTOM	750.63					
102	SQUARE CATCH BASIN	760.24	18"	RCP	753.83	EAST	103
	TOP / WATER	753.64			753.44	NNW	101
	TOP / DEBRIS	753.04					
103	SQUARE CATCH BASIN	760.18	18"	RCP	754.08	WEST	102
	TOP / WATER	754.08			754.08	SOUTH	123
	BOTTOM	753.23					
104	STORM MANHOLE	765.23	12"	RCP	760.13	SE	105
	TOP / WATER	760.13			760.13	NW	
	TOP / DEBRIS	759.98					
105	SQUARE CATCH BASIN	764.85	12"	RCP	760.05	EAST	106
	TOP / WATER	760.05			760.15	NW	104
	TOP / DEBRIS	759.95					
106	SQUARE CATCH BASIN	765.13	12"	RCP	759.63	NE	123
	TOP / WATER	759.62			759.63	WEST	105
	TOP / DEBRIS	759.33					
107	GATE VALVE & WELL	765.11				N / S	
	TOP / PIPE	758.36					
	TOP / DEBRIS	757.11					
108	STORM MANHOLE	768.68	12"	RCP	763.88	WEST	
	CANNOT SEE PIPE TOWARDS SE... TOO HIGH					SE	113
	BOTTOM	764.18					
109	ELECTRIC MANHOLE	768.56					
	TOP / WATER	762.06					
	TOP / DEBRIS	761.76				NW	
	TOP / WIRE	762.06					
110	SANITARY MANHOLE	769.07	6"	PVC	757.66	SE	111
	CHANNEL				757.62	WEST	
111	SANITARY MANHOLE	775.93	6"	PVC	770.65	SE	110
	CHANNEL				770.14	NW	
112	ELECTRIC MANHOLE	762.69					
	TOP / DEBRIS	760.09				SE	
	TOP / WIRE	762.69					
113	ROUND CATCH BASIN	775.10	12"	PVC	772.80	NW	108
	48IN CMP ESC/3.8 TO BOTTOM OF 12IN VERT. PIPE						
	TOP / WATER	772.80					
	BOTTOM	769.50					
114	SANITARY MANHOLE	744.00	8"	PVC	733.37	WNW	115
	CHANNEL				735.16	ESE	
115	SANITARY MANHOLE	753.48	8"	PVC	736.85	EAST	116
	CHANNEL				736.76	WNW	114
116	SANITARY MANHOLE	752.04	8"	PVC	738.19	WSW	115
	CHANNEL				738.20	EAST	117
	CHANNEL				743.12	EAST	
117	SANITARY MANHOLE	774.43	8"	PVC	759.48	WEST	116
	CHANNEL				759.69	EAST	
118	SANITARY MANHOLE	795.26					
	DID NOT OPEN						
119	GATE VALVE & WELL	789.29				N / S	
	TOP / PIPE	782.63	12"				
	BOTTOM	780.69					
120	ELECTRIC MANHOLE	786.22					
	TOP / WATER	778.54					
	TOP / DEBRIS	778.44				NW / S	
	TOP / WIRE	778.68					
121	BEE-HIVE CATCH BASIN	768.36	12"	RCP	766.21	WEST	123
	TOP / DEBRIS	766.21					
122	BEE-HIVE CATCH BASIN	778.89	18"	CPP	775.29	WEST	125
	BOTTOM	775.29					
123	SQUARE CATCH BASIN	765.20	12"	RCP	758.80	NORTH	103
	TOP / WATER	759.00			759.40	SW	106
	BOTTOM	758.40			N/A	EAST	121
124	ELECTRIC MANHOLE	778.83					
	COULD NOT OPEN - BURIED						
125	STORM MANHOLE	778.44	18"	CMP	772.84	NNW	ES
	TOP / WATER	774.84			774.84	EAST	122
	TOP / DEBRIS	772.84			772.84	SOUTH	
	BOTTOM	772.84			N/A	WEST	
126	SQUARE CATCH BASIN	787.68					
	DID NOT OPEN						
127	SQUARE CATCH BASIN	787.76					
	DID NOT OPEN						
128	STORM MANHOLE	790.54					
	DID NOT OPEN						
129	STORM MANHOLE	792.03					
	DID NOT OPEN						
130	SQUARE CATCH BASIN	792.77					
	DID NOT OPEN						
131	SQUARE CATCH BASIN	792.99					
	DID NOT OPEN						
132	SQUARE CATCH BASIN	792.84					
	DID NOT OPEN						
133	SQUARE CATCH BASIN	793.04					
	DID NOT OPEN						
134	ROUND CATCH BASIN	781.99					
	DID NOT OPEN						



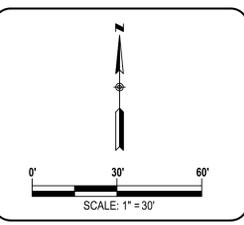
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ROCHESTER UNIVERSITY ATHLETIC FIELD
ROCHESTER HILLS, MI
TOPOGRAPHICAL SURVEY

SECTION 15
TOWN 03 NORTH RANGE 11 EAST
CITY OF ROCHESTER HILLS
OAKLAND COUNTY, MICHIGAN

NO.	DATE	REVISION
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DRAFTER	DATE	PROJECT SURVEYOR
S. BROWN	01-25-21	M. DeDECKER
CHECKED	DATE	DEPARTMENT MANAGER
M. DeDECKER	01-25-21	C. PLATZ
FIELD LEADER	DRAWING NO.	DRAWING NO.
A. MINER	SM20193TPG	SM20193TPG-SP
PROJECT MANAGER	SHEET NO.	SHEET NO.
M. DeDECKER	1" = 30'	2 OF 6

Plotted: Mar 25, 2021, 8:3 AM by user: 510 - Saved: 2/10/2021 by user: 510
 J:\SM\20193\20193 Rochester University\DWG\SM20193TPG-SP.dwg

LEGEND

- MANHOLE
- ⊕ CATCH BASIN
- ⊖ SEWER CLEAN OUT
- ⊕ GAS METER
- ⊕ GAS SHUT OFF VALVE
- ⊕ VALVE BOX
- ⊕ GATE VALVE & WELL
- ⊕ WATER SHUT OFF VALVE
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- ⊕ PHONE OR PHONE BOOTH
- ⊕ METAL OR CONC. POST
- ⊕ MAILBOX
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- ⊕ PARKING METER
- ⊕ BILLBOARD OR LARGE SIGN
- ⊕ BASKETBALL HOOP
- ⊕ BOULDER
- ⊕ STATUE OR SCULPTURE
- ⊕ BENCH
- ⊕ STUMP
- ⊕ DS-S DOWNSPOUT INTO STORM DRAIN
- ⊕ DS-C DOWNSPOUT TO GROUND
- CONIFEROUS TREE
- DECIDUOUS TREE
- DECIDUOUS SHRUB
- CONIFEROUS SHRUB
- SECTION CORNER
- △ SDA#10 TRAVERSE POINT
- STRUCTURE NUMBER
- ⊕ SDA POINT No.
- SPOT ELEVATION
- TC TOP OF CURB ELEVATION
- GU GUTTER ELEVATION
- TP TOP OF PAVEMENT ELEVATION
- EM EDGE OF METAL ELEVATION
- TW TOP OF WALK ELEVATION
- BWALL BOTTOM OF WALL ELEVATION
- GR GROUND ELEVATION
- UG UNDERGROUND
- FO FIBER OPTIC
- CONC CONCRETE
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- BRICK / PAVERS
- WATER



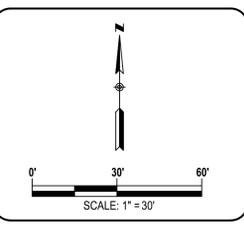
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ROCHESTER UNIVERSITY ATHLETIC FIELD
 ROCHESTER HILLS, MI
 TOPOGRAPHICAL SURVEY

SECTION 15
 TOWN 03 NORTH RANGE 11 EAST
 CITY OF ROCHESTER HILLS
 OAKLAND COUNTY, MICHIGAN

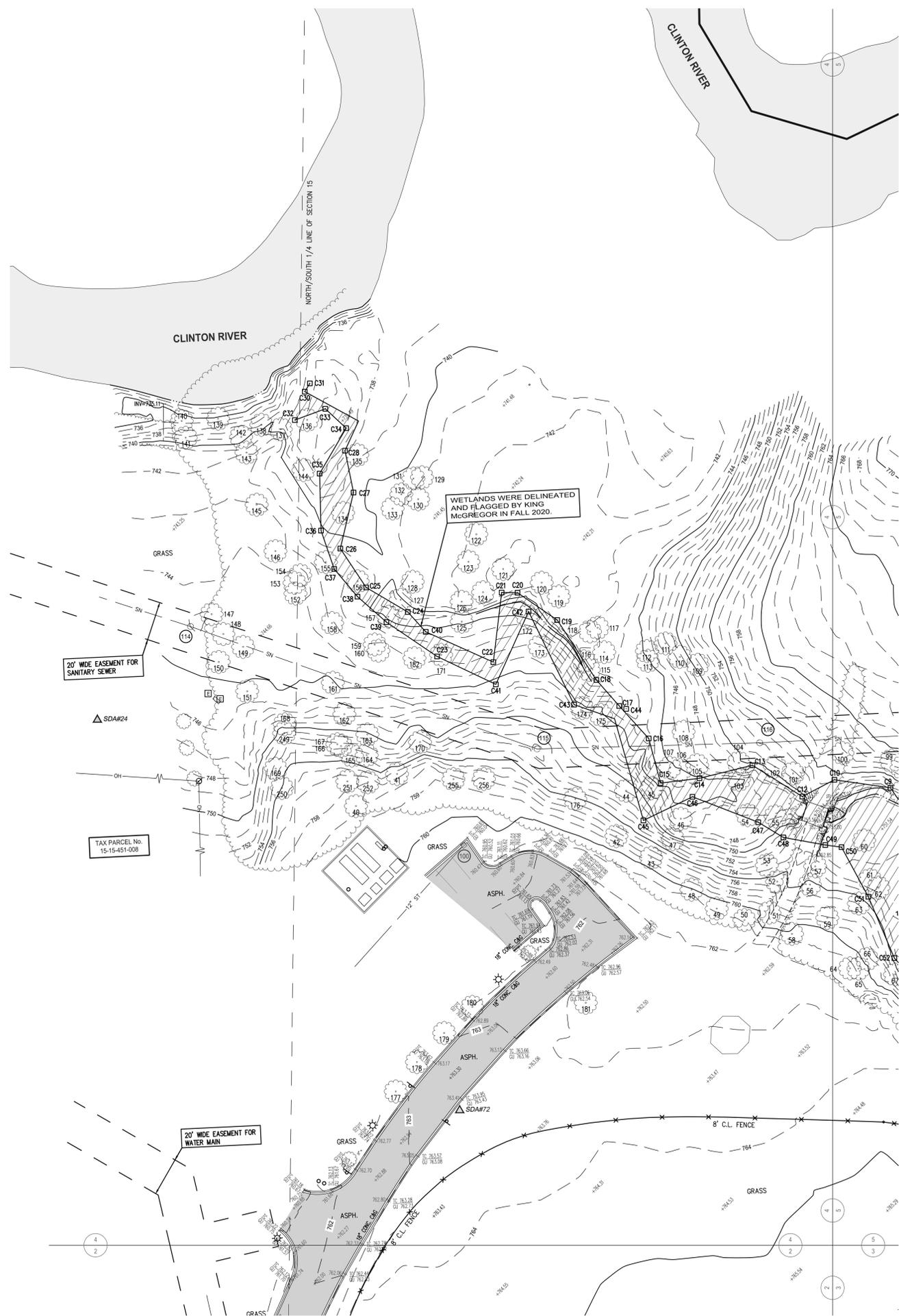
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M. DeDECKER	C. PLATZ
JOB NO.	DRAWING NO.
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1" = 30'	3 OF 6

LEGEND

- MANHOLE
- ⊕ CATCH BASIN
- SEWER CLEAN OUT
- ⊕ GAS METER
- ⊕ GAS SHUT OFF VALVE
- ⊕ VALVE BOX
- ⊕ GATE VALVE & WELL
- ⊕ WATER SHUT OFF VALVE
- ⊕ FIRE HYDRANT
- ⊕ SPRINKLER VALVE BOX
- ⊕ LAWN SPRINKLER HEAD
- ⊕ HAND HOLE
- ⊕ ELECTRIC RISER OR METER
- ⊕ TELEPHONE RISER
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- ⊕ AIR CONDITION UNIT
- ⊕ UTILITY POLE
- ⊕ UTILITY POLE W/ TRANSFORMER
- ⊕ UTILITY POLE W/ LAMP EXTENSION (ARROW INDICATES DIRECTION OF ARM)
- ⊕ LIGHT POLE
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- ⊕ TRAFFIC SIGNAL
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- GUY WIRE
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- ⊕ PARKING METER
- ⊕ BILLBOARD OR LARGE SIGN
- ⊕ BASKETBALL HOOP
- ⊕ BOULDER
- ⊕ STATUE OR SCULPTURE
- ⊕ BENCH
- ⊕ STUMP
- ⊕ DS-S DOWNSPOUT INTO STORM DRAIN
- ⊕ DS-G DOWNSPOUT TO GROUND
- CONIFEROUS TREE
- DECIDUOUS TREE
- ⊕ DECIDUOUS SHRUB
- ⊕ CONIFEROUS SHRUB
- ⊕ SECTION CORNER
- △ SDAM#10 TRAVERSE POINT
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- TP TOP OF PAVEMENT ELEVATION
- EM EDGE OF METAL ELEVATION
- TW TOP OF WALK ELEVATION
- BWALL BOTTOM OF WALL ELEVATION
- GR GROUND ELEVATION
- UG UNDERGROUND
- FO FIBER OPTIC
- CONC CONCRETE
- ASPH ASPHALT
- FF FINISH FLOOR ELEVATION
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- F.I FOUND IRON
- F.M FOUND MONUMENT
- F.P.K FOUND P.K. NAIL
- S.I SET IRON W/SDA CAP
- S.P.K SET P.K. NAIL
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- O OIL LINE
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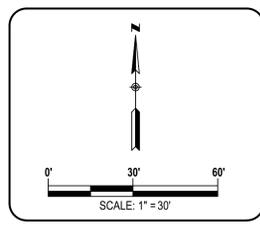
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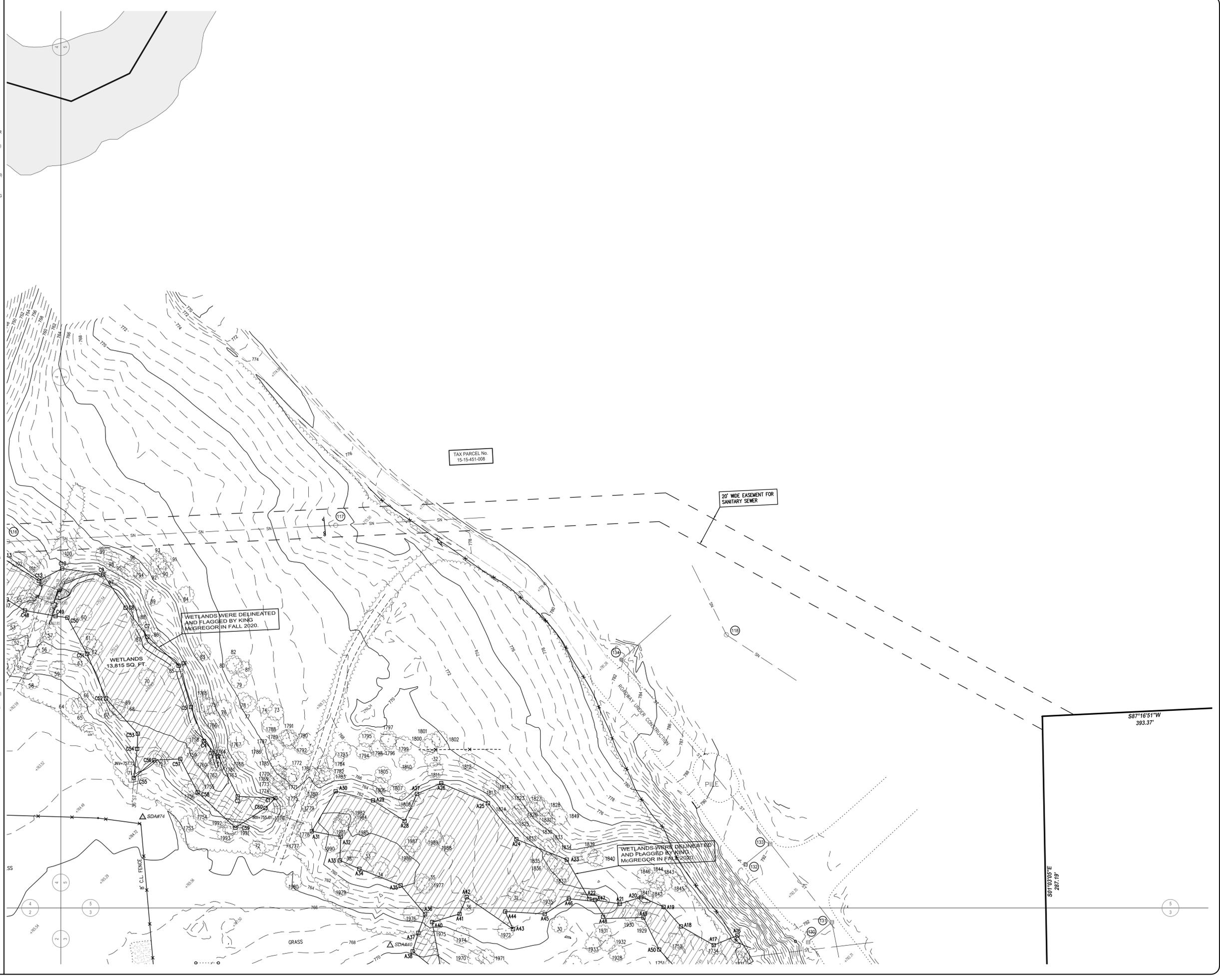
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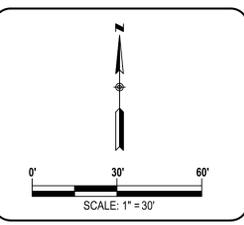
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TREE INVENTORY

JOHN P. MOSES
REGISTERED FORESTER - MICHIGAN
ID# 330104588

EX TREE RECOMMENDED FOR REPLACEMENT EXEMPTION PER ORDINANCE SECTION 126-286(5) - HEALTH
Specimen SPECIMEN TREE AS DEFINED PER ORDINANCE SECTION 126-397(3)

HEALTH DETERMINED USING INTERNATIONAL SOCIETY OF ARBORICULTURE GUIDELINES (9TH EDITION)

CROWN SPREAD IS VISUALLY ESTIMATED AT PLUS OR MINUS FIVE (5) FEET IN DIAMETER

TREE TAG #	D.B.H. IN INCHES	SPECIES NAME (COMMON-SCIENTIFIC)	HEALTH CONDITION*	CROWN SPREAD*	NOTES
1	6	European White Birch - <i>Betula pendula</i>	Poor	10	
2	9	Black Walnut - <i>Juglans nigra</i>	Good	15	
3	11	Black Walnut - <i>Juglans nigra</i>	Good	20	
4	9	Eastern Red Cedar - <i>Juniperus virginiana</i>	Poor	10	
5	9	Eastern Red Cedar - <i>Juniperus virginiana</i>	Good	10	
6	8	Eastern Red Cedar - <i>Juniperus virginiana</i>	Good	10	
7	6	White Ash - <i>Fraxinus americana</i>	Poor	10	EX
8	6	Black Walnut - <i>Juglans nigra</i>	Good	10	
9	7	White Ash - <i>Fraxinus americana</i>	Very Poor	15	EX
10	8.7	White Ash - <i>Fraxinus americana</i>	Very Poor	15	EX
11	7	Black Walnut - <i>Juglans nigra</i>	Fair	15	
12	8	American Elm - <i>Ulmus americana</i>	Dead	15	EX
13	6	Black Walnut - <i>Juglans nigra</i>	Fair	15	
14	6	Black Walnut - <i>Juglans nigra</i>	Fair	15	
15	16,15,11	Black Willow - <i>Salix nigra</i>	Good	55	
16	6	Black Walnut - <i>Juglans nigra</i>	Fair	15	
17	6.6	Apple - <i>Malus spp.</i>	Poor	15	
18	6	Buckhorn - <i>Rhamnus spp.</i>	Poor	15	
19	8	White Ash - <i>Fraxinus americana</i>	Very Poor	15	EX
20	8	White Ash - <i>Fraxinus americana</i>	Poor	15	EX
21	6	Black Cherry - <i>Prunus serotina</i>	Very Poor	10	EX
22	17	Cottonwood - <i>Populus deltoides</i>	Dead	15	EX
23	6.6	Hawthorn - <i>Crataegus spp.</i>	Poor	15	
24	33	Black Walnut - <i>Juglans nigra</i>	Fair	25	Specimen
25	20	Boxelder - <i>Acer negundo</i>	Dead	25	EX
26	15,12,10	Cottonwood - <i>Populus deltoides</i>	Dead	20	EX
27	10	Cottonwood - <i>Populus deltoides</i>	Dead	10	EX
28	16,13	Cottonwood - <i>Populus deltoides</i>	Dead	20	EX
29	10	Cottonwood - <i>Populus deltoides</i>	Dead	10	EX
30	6	Shagbark Hickory - <i>Carya ovata</i>	Good	15	
31	7	American Elm - <i>Ulmus americana</i>	Poor	25	
32	6	Sugar Maple - <i>Acer saccharum</i>	Fair	15	
33	6	White Ash - <i>Fraxinus americana</i>	Very Poor	10	EX
34	16	Black Willow - <i>Salix nigra</i>	Poor	25	
35	9	Norway Maple - <i>Acer platanoides</i>	Fair	15	
36	6	Black Walnut - <i>Juglans nigra</i>	Good	15	
37	6	Basewood - <i>Tilia americana</i>	Poor	15	
38	21,16	Black Walnut - <i>Juglans nigra</i>	Fair	35	Specimen
39	31	Siberian Elm - <i>Ulmus pumila</i>	Good	60	Specimen
40	9	Norway Maple - <i>Acer platanoides</i>	Fair	20	
41	9	American Elm - <i>Ulmus americana</i>	Fair	15	
42	7	Black Walnut - <i>Juglans nigra</i>	Fair	10	
43	6	Hawthorn - <i>Crataegus spp.</i>	Very Poor	15	EX
44	7	Sugar Maple - <i>Acer saccharum</i>	Good	15	
45	21	Shagbark Hickory - <i>Carya ovata</i>	Fair	45	Specimen
46	22	Sugar Maple - <i>Acer saccharum</i>	Poor	35	Specimen
47	41	Black Oak - <i>Quercus velutina</i>	Poor	45	Specimen
48	21	White Oak - <i>Quercus alba</i>	Poor	40	Specimen
49	24,20	White Oak - <i>Quercus alba</i>	Fair	45	Specimen
50	25	White Oak - <i>Quercus alba</i>	Very Poor	40	EX (Specimen)
51	6	Sugar Maple - <i>Acer saccharum</i>	Fair	10	
52	29	White Oak - <i>Quercus alba</i>	Good	50	Specimen
53	7	Sugar Maple - <i>Acer saccharum</i>	Fair	15	
54	6	Sugar Maple - <i>Acer saccharum</i>	Fair	10	
55	7	Sugar Maple - <i>Acer saccharum</i>	Poor	15	
56	6	Basewood - <i>Tilia americana</i>	Poor	15	
57	10.9	American Elm - <i>Ulmus americana</i>	Fair	25	
58	6	Sugar Maple - <i>Acer saccharum</i>	Fair	15	
59	23,23	White Oak - <i>Quercus alba</i>	Good	50	Specimen
60	9	Cottonwood - <i>Populus deltoides</i>	Fair	15	
61	12	Cottonwood - <i>Populus deltoides</i>	Good	35	
62	6	American Elm - <i>Ulmus americana</i>	Poor	20	
63	31	Red Oak - <i>Quercus rubra</i>	Poor	45	Specimen
64	10	Red Oak - <i>Quercus rubra</i>	Fair	20	
65	7	Sugar Maple - <i>Acer saccharum</i>	Fair	15	
66	8	Sugar Maple - <i>Acer saccharum</i>	Fair	15	
67	8	Sugar Maple - <i>Acer saccharum</i>	Good	15	
68	10	American Elm - <i>Ulmus americana</i>	Poor	25	
69	11	Basewood - <i>Tilia americana</i>	Fair	15	
70	21	Black Willow - <i>Salix nigra</i>	Very Poor	20	EX
71	9.7	Catalpa - <i>Catalpa speciosa</i>	Fair	15	
72	12	Siberian Elm - <i>Ulmus pumila</i>	Good	20	
73	10,10,7	Sugar Maple - <i>Acer saccharum</i>	Fair	25	
74	11	Basewood - <i>Tilia americana</i>	Fair	20	
75	8	Sugar Maple - <i>Acer saccharum</i>	Fair	15	
76	8	Sugar Maple - <i>Acer saccharum</i>	Fair	15	
77	10	Sugar Maple - <i>Acer saccharum</i>	Fair	20	
78	8	Sugar Maple - <i>Acer saccharum</i>	Fair	15	
79	8	Sugar Maple - <i>Acer saccharum</i>	Poor	15	
80	7	Sugar Maple - <i>Acer saccharum</i>	Poor	10	
81	8	Sugar Maple - <i>Acer saccharum</i>	Poor	15	
82	9	Sugar Maple - <i>Acer saccharum</i>	Fair	15	
83	30	Sugar Maple - <i>Acer saccharum</i>	Good	55	Specimen
84	32	Sugar Maple - <i>Acer saccharum</i>	Good	60	Specimen
85	7	American Elm - <i>Ulmus americana</i>	Fair	15	
86	9	Sugar Maple - <i>Acer saccharum</i>	Good	20	
87	9	Basewood - <i>Tilia americana</i>	Poor	20	
88	8	Apple - <i>Malus spp.</i>	Poor	20	
89	8	Red Elm - <i>Ulmus rubra</i>	Poor	15	
90	7	Basewood - <i>Tilia americana</i>	Very Poor	15	EX
91	10	Basewood - <i>Tilia americana</i>	Poor	20	
92	8	Basewood - <i>Tilia americana</i>	Poor	15	
93	13.8	Basewood - <i>Tilia americana</i>	Good	30	
94	11	Basewood - <i>Tilia americana</i>	Fair	25	
95	9	Basewood - <i>Tilia americana</i>	Fair	15	
96	10	Basewood - <i>Tilia americana</i>	Good	20	
97	8	Sugar Maple - <i>Acer saccharum</i>	Fair	15	
98	10	Sugar Maple - <i>Acer saccharum</i>	Fair	15	
99	12	Basewood - <i>Tilia americana</i>	Fair	25	
100	29	White Oak - <i>Quercus alba</i>	Good	50	Specimen
101	11	Sugar Maple - <i>Acer saccharum</i>	Good	20	
102	6	Sugar Maple - <i>Acer saccharum</i>	Poor	15	
103	7	Sugar Maple - <i>Acer saccharum</i>	Fair	15	

TREE TAG #	D.B.H. IN INCHES	SPECIES NAME (COMMON-SCIENTIFIC)	HEALTH CONDITION*	CROWN SPREAD*	NOTES
104	7	Sugar Maple - <i>Acer saccharum</i>	Fair	15	
105	6.6	Sugar Maple - <i>Acer saccharum</i>	Poor	15	
106	6	Sugar Maple - <i>Acer saccharum</i>	Poor	10	
107	7	Sugar Maple - <i>Acer saccharum</i>	Fair	15	
108	10	Buckler - <i>Acer negundo</i>	Fair	25	
109	7.7	Black Cherry - <i>Prunus serotina</i>	Fair	20	
110	6	Sugar Maple - <i>Acer saccharum</i>	Very Poor	15	EX
111	8	Sugar Maple - <i>Acer saccharum</i>	Good	20	
112	8	Sugar Maple - <i>Acer saccharum</i>	Fair	15	
113	8	Basewood - <i>Tilia americana</i>	Poor	20	
114	11	Basewood - <i>Tilia americana</i>	Fair	15	
115	9	American Elm - <i>Ulmus americana</i>	Very Poor	25	EX
116	16	American Elm - <i>Ulmus americana</i>	Good	35	
117	9	Sugar Maple - <i>Acer saccharum</i>	Fair	20	
118	6	Basewood - <i>Tilia americana</i>	Poor	15	
119	6	Basewood - <i>Tilia americana</i>	Good	15	
120	6	Black Cherry - <i>Prunus serotina</i>	Poor	15	
121	48	White Oak - <i>Quercus alba</i>	Good	80	Specimen
122	6	White Ash - <i>Fraxinus americana</i>	Fair	10	
123	6	Black Cherry - <i>Prunus serotina</i>	Fair	15	
124	8	Norway Maple - <i>Acer platanoides</i>	Fair	15	EX
125	13	Buckler - <i>Acer negundo</i>	Very Poor	45	EX
126	9	Hawthorn - <i>Crataegus spp.</i>	Poor	25	
127	8	Buckler - <i>Acer negundo</i>	Poor	15	
128	11	Basewood - <i>Tilia americana</i>	Good	20	EX
129	7	Black Cherry - <i>Prunus serotina</i>	Very Poor	10	EX
130	10	Black Cherry - <i>Prunus serotina</i>	Good	15	
131	10	Black Cherry - <i>Prunus serotina</i>	Fair	15	
132	6	Sugar Maple - <i>Acer saccharum</i>	Fair	10	
133	9	Norway Maple - <i>Acer platanoides</i>	Good	20	
134	14	Norway Maple - <i>Acer platanoides</i>	Good	25	
135	10	Norway Maple - <i>Acer platanoides</i>	Good	20	
136	13,11,12	Red Maple - <i>Acer rubrum</i>	Poor	35	
137	6	American Elm - <i>Ulmus americana</i>	Poor	15	
138	30	Cottonwood - <i>Populus deltoides</i>	Good	75	Specimen
139	6	Hawthorn - <i>Crataegus spp.</i>	Poor	15	
140	11	Buckler - <i>Acer negundo</i>	Poor	20	
141	6	American Elm - <i>Ulmus americana</i>	Very Poor	15	EX
142	6	Sumac - <i>Rhus spp.</i>	Very Poor	15	EX
143	13	Buckler - <i>Acer negundo</i>	Very Poor	35	EX
144	9.7,6	Basewood - <i>Tilia americana</i>	Fair	20	
145	10,10	Black Cherry - <i>Prunus serotina</i>	Very Poor	30	EX
146	9,6,6,6	Buckler - <i>Acer negundo</i>	Very Poor	35	EX
147	6	Sugar Maple - <i>Acer saccharum</i>	Good	10	
148	7	American Elm - <i>Ulmus americana</i>	Good	10	
149	9	Cottonwood - <i>Populus deltoides</i>	Good	15	
150	11	Cottonwood - <i>Populus deltoides</i>	Good	15	
151	16	Cottonwood - <i>Populus deltoides</i>	Good	25	
152	8.7	Buckler - <i>Acer negundo</i>	Very Poor	35	EX
153	8	Buckler - <i>Acer negundo</i>	Very Poor	30	EX
154	7	Buckler - <i>Acer negundo</i>	Very Poor	25	EX
155	13	White Mulberry - <i>Morus alba</i>	Very Poor	25	EX
156	29	Cottonwood - <i>Populus deltoides</i>	Good	50	Specimen
157	19	Cottonwood - <i>Populus deltoides</i>	Poor	20	
158	24	Buckler - <i>Acer negundo</i>	Poor	45	Specimen
159	16	Black Willow - <i>Salix nigra</i>	Poor	30	
160	11,10,8,6,6	Basewood - <i>Tilia americana</i>	Fair	30	
161	8	Black Willow - <i>Salix nigra</i>	Poor	10	
162	9	Basewood - <i>Tilia americana</i>	Fair	15	
163	7	American Elm - <i>Ulmus americana</i>	Fair	15	
164	8	Basewood - <i>Tilia americana</i>	Poor	15	
165	7	Sugar Maple - <i>Acer saccharum</i>	Fair	15	
166	9	Basewood - <i>Tilia americana</i>	Poor	15	
167	7	Basewood - <i>Tilia americana</i>	Poor	10	
168	10	Black Walnut - <i>Juglans nigra</i>	Poor	25	
169	7	Basewood - <i>Tilia americana</i>	Poor	20	
170	9	American Elm - <i>Ulmus americana</i>	Good	20	
171	15	Bittersweet - <i>Ahojstřípek</i>	Fair	25	
172	11	Norway Maple - <i>Acer platanoides</i>	Fair	20	
173	8	Black Cherry - <i>Prunus serotina</i>	Good	15	
174	7	Sugar Maple - <i>Acer saccharum</i>	Good	15	
175	6	Buckler - <i>Acer negundo</i>	Poor	15	
176	6	Hawthorn - <i>Crataegus spp.</i>	Poor	15	
177	6	Linden - <i>Tilia cordata</i>	Good	10	
178	6	Linden - <i>Tilia cordata</i>	Good	10	
179	7	Linden - <i>Tilia cordata</i>	Good	10	
180	7	Linden - <i>Tilia cordata</i>	Good	10	
181	6	Linden - <i>Tilia cordata</i>	Good	10	
182	19	Black Walnut - <i>Juglans nigra</i>	Fair	30	
183	24	White Oak - <i>Quercus alba</i>	Fair	35	Specimen
184	28	White Oak - <i>Quercus alba</i>	Good	50	Specimen
185	31	White Oak - <i>Quercus alba</i>	Good	45	Specimen
186	29	White Oak - <i>Quercus alba</i>	Poor	35	Specimen
187	35	White Oak - <i>Quercus alba</i>	Very Poor	50	EX (Specimen)
188	39	White Oak - <i>Quercus alba</i>	Fair	50	Specimen
189	17,12	Buckler - <i>Acer negundo</i>	Very Poor	20	EX
190	17	Black Walnut - <i>Juglans nigra</i>	Good	35	
191	13	Buckler - <i>Acer negundo</i>	Very Poor	20	EX
192	15	Buckler - <i>Acer negundo</i>	Poor	40	
193	17	Black Walnut - <i>Juglans nigra</i>	Good	35	
194	18,17	Siberian Elm - <i>Ulmus pumila</i>	Good	45	
195	17	Siberian Elm - <i>Ulmus pumila</i>	Good	35	
196	16	Black Willow - <i>Salix nigra</i>	Very Poor	15	EX
197	12	Black Willow - <i>Salix nigra</i>	Very Poor	15	EX
198	16	Black Willow - <i>Salix nigra</i>	Very Poor	15	EX
199	20	Black Willow - <i>Salix nigra</i>	Very Poor	25	EX
200	17,12	Sugar Maple - <i>Acer saccharum</i>	Fair	20	
201	11,6	American Elm - <i>Ulmus americana</i>	Good	25	
202	7	Sugar Maple - <i>Acer saccharum</i>	Poor	15	
203	11	Shagbark Hickory - <i>Carya ovata</i>	Good	20	
204	8	Siberian Elm - <i>Ulmus pumila</i>	Very Poor	10	EX
205	12	Sugar Maple - <i>Acer saccharum</i>	Good	25	
206	16	Black Oak - <i>Quercus velutina</i>	Good	25	
207	19	Black Walnut - <i>Juglans nigra</i>	Good	40	
208	9	Sugar Maple - <i>Acer saccharum</i>	Poor	15	
209	8	Black Cherry - <i>Prunus serotina</i>	Very Poor	10	EX
210	11	Black Cherry - <i>Prunus serotina</i>	Poor	15	
211	16	Sugar Maple - <i>Acer saccharum</i>	Fair	20	
212	11	Sugar Maple - <i>Acer saccharum</i>	Poor	20	
213	12	Sugar Maple - <i>Acer saccharum</i>	Fair	20	
214	11	Sugar Maple - <i>Acer saccharum</i>	Poor	20	
215	7	Eastern Red Cedar - <i>Juniperus virginiana</i>	Poor	10	
216	39,39,37,15	Black Willow - <i>Salix nigra</i>	Very Poor	55	EX (Specimen)
217	10	Black Willow - <i>Salix nigra</i>	Fair	25	</

Sent Via Email Only

July 26, 2022

Sara Roediger, Director
Department of Planning and
Economic Development
City of Rochester Hills
1000 Rochester Hills Drive
Rochester Hills, MI 48309-3033

**Subject: Rochester University Athletic Improvements
Wetland Use Permit Review #1;
Plans received by the City of Rochester Hills on
June 21, 2022
ASTI File No. 11482-34**

Applicant: French Associates, Inc.

Dear Ms. Roediger:

The above referenced project proposes to redevelop an existing outdoor athletic field into a multi-sport outdoor athletic field complex on Rochester University grounds. The site is located along Avon Road, east of Livernois and west of Rochester Road. The site includes wetland regulated by the City of Rochester Hills and likely the Michigan Department of Environment, Great Lakes, and Energy (EGLE).

ASTI has reviewed the site plans received by the City on June 21, 2022 (Current Plans) for conformance to the Wetland and Watercourse Protection Ordinance and the Natural Features Setback Ordinance and offers the following comments for your consideration.

COMMENTS

1. **Applicability of Chapter (§126-500).** The Wetland and Watercourse Protection Ordinance is applicable to the subject site because the subject site

is not included within a site plan which has received final approval, or a preliminary subdivision plat which received approval prior to January 17, 1990, which approval remains in effect and in good standing and the proposed activity has not been previously authorized.

2. **Wetland and Watercourse Determinations (§126-531).** This Section lists specific requirements for completion of a Wetland and Watercourse Boundary Determination.

This review has been undertaken in the context of a valid Wetland and Watercourse Boundary Determination completed on the site by Atwell, LLC on April 30, 2019, as part of another project on Rochester University grounds, which was confirmed by ASTI in May of 2019. ASTI reinspected the wetland boundaries as depicted on the Current Plans on July 20, 2022. ASTI did not observe any significant changes to the wetland boundaries in the field as compared to the Current Plans.

Wetland was not identified within the project boundary; two wetlands were identified adjacent to the project boundary, both of which are regulated by the City and likely EGLE. Wetland impacts are not proposed as part of the project.

3. **Use Permit Required (§126-561).** This Section establishes general parameters for activity requiring permits, as well as limitations on nonconforming activity. This review of the Current Plans has been undertaken in the context of those general parameters, as well as the specific requirements listed below.
 - a. ASTI inspected the wetland boundaries adjacent to the proposed project on June 20, 2022; the Current Plans depict these wetlands to ASTI's satisfaction.
 - b. All wetland adjacent to the proposed project is regulated by the City and likely EGLE. No impacts to any wetlands are proposed as part of the project.
4. **Use Permit Approval Criteria (§126-565).** This Section lists criteria that shall govern the approval or denial of an application for a Wetland Use

Permit. The following items must be addressed on a revised and dated Wetland Use Permit application and additional documentation submitted for further review:

- a. A Wetland Use Permit from the City is not required for this project. Furthermore, it is ASTI's opinion that a Part 303 permit from EGLE is not required for this project, however, this should be confirmed with EGLE by the applicant prior to construction.
5. **Natural Features Setback (§21.23).** This Section establishes the general requirements for Natural Features Setbacks and the review criteria for setback reductions and modifications.
- a. Should the City accept the Applicant's proposal to develop the property as a PUD, subject to final review and approval as part of the site plan review process, the on-site Natural Features Setback regulations can be waived by the City at its discretion. The Applicant should note that upon the request of the City, ASTI will re-evaluate any Natural Features Setback impacts if the City does not waive Natural Feature Setback regulations.

RECOMMENDATION

ASTI recommends the City approve the Current Plans.

Respectfully submitted,

ASTI ENVIRONMENTAL



Kyle Hottinger
Wetland Ecologist
Professional Wetland Scientist #2927



Dianne Martin
Vice President
Professional Wetland Scientist #1313



June 24, 2022

Jennifer MacDonald
City of Rochester Hills
1000 Rochester Hills Drive
Rochester Hills, MI 48309

Reference: **Rochester University – 800 W. Avon, CAMS #202200522
Part of the SE ¼ of Section 15, City of Rochester Hills**

Dear Ms. MacDonald,

This office has received a set of plans for the Rochester University Project to be developed in part of the Southeast ¼ of Section 15, City of Rochester Hills.

Our stormwater system review indicates that the proposed project does not have an involvement with any legally established County Drain under the jurisdiction of this office. Therefore, a storm drain permit will not be required from this office.

The water system is operated and maintained by the City of Rochester Hills and plans must be submitted to the City of Rochester Hills for review.

The sanitary sewer is within the Clinton Oakland Sewage Disposal System. Any proposed sewers of 8" or larger may require a permit through this office.

Any related earth disruption must conform to applicable requirements of Part 91, Soil Erosion and Sedimentation Control of the Natural Resource and Environmental Protection Act, Act 451 of the Public Acts of 1994. Applications should be submitted to our office for the required soil erosion permit.

Please note that all applicable permits and approvals from federal, state or local authorities, public utilities and private property owners must be obtained.

If there are any questions regarding this matter, please contact Dan Butkus at 248-897-2744.

Sincerely,

A handwritten signature in blue ink, appearing to read "B. Bennett", is written over a light blue background.

Brian Bennett, P.E.
Civil Engineer III

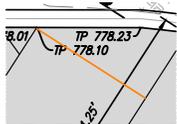


SITE PLAN.pdf Markup Summary

Building Department (10)



Subject: Building Department
Author: Mark Artinian
Date: 12/22/2022 11:34:05 AM
Status:

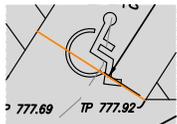


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Author: Mark Artinian
Date: 12/22/2022 11:34:29 AM
Status:



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Author: Mark Artinian
Date: 12/22/2022 11:35:06 AM
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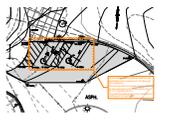
14'-8 1/2"



Subject: Building Department
Author: Mark Artinian
Date: 12/22/2022 11:36:07 AM
Status:



Subject: Building Department
Author: Mark Artinian
Date: 12/22/2022 11:36:07 AM
Status:



Subject: Building Department
Author: Mark Artinian
Date: 12/22/2022 1:18:53 PM
Status:

All accessible parking spaces shall be van accessible and a minimum of 18' deep per City ordinance.
The access aisle for angled parking shall be on the passenger side of the vehicle per A117.1, Section 502.4.1.
This shall be addressed on the submittal for building permit application.



Subject: Building Department
Author: Mark Artinian
Date: 12/22/2022 1:20:07 PM
Status:

The slope of this end of this parking space shall not exceed 2%.
This shall be addressed on the submittal for building permit application.



Subject: Building Department
Author: Mark Artinian
Date: 12/22/2022 12:03:04 PM
Status:

An accessible route is required per 2015 MBC, Section 1104.2 unless an exception from 1104.2 and/or 1103.2.3 thru 1103.2.15 is applicable.

Subject: Building Department
Author: Mark Artinian
Date: 12/22/2022 1:13:31 PM
Status:

Mark Artinian 248-841-2446
ArtinianM@RochesterHills.org

No

Subject: Building Department
Author: Mark Artinian
Date: 12/22/2022 1:13:53 PM
Status:

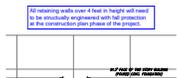
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Engineering Department (10)



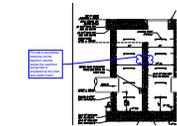
Subject: Engineering Department
Author: Jason Boughton
Date: 12/12/2022 1:58:34 PM
Status:

The applicant needs to submit a Land Improvement Permit (LIP) application with engineer's estimate, fee and construction plans to proceed with the construction plan review process.



Subject: Engineering Department
Author: Jason Boughton
Date: 12/12/2022 2:03:09 PM
Status:

All retaining walls over 4 feet in height will need to be structurally engineered with fall protection at the construction plan phase of the project.



Subject: Engineering Department
Author: Jason Boughton
Date: 12/12/2022 2:16:22 PM
Status:

Provide a secondary restrictor at the bankfull volume, revise the restrictor sizing that is proposed at the inlet and outlet invert.



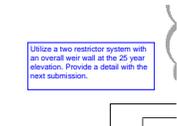
Subject: Engineering Department
Author: Jason Boughton
Date: 12/12/2022 2:20:23 PM
Status:

Revise WQV from 1/2" to 1" sizing for the mechanical treatment device per EGLE.



Subject: Engineering Department
Author: Jason Boughton
Date: 12/12/2022 2:20:10 PM
Status:

Revise channel protection volume and release rate from 1.87inch to 2.39 inch rainfall design event per EGLE.



Subject: Engineering Department
Author: Jason Boughton
Date: 12/12/2022 2:21:56 PM
Status:

Utilize a two restrictor system with an overall weir wall at the 25 year elevation. Provide a detail with the next submission.



Subject: Engineering Department
Author: Jason Boughton
Date: 12/12/2022 2:24:48 PM
Status:

Revise to 1.00% slope

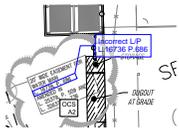


Subject: Engineering Department
Author: Jason Boughton
Date: 12/12/2022 2:25:32 PM
Status:

Update to the current tax parcel description. The parcel was split after 2005.



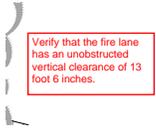
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Author: Jenny McGuckin
Date: 12/14/2022 8:05:08 AM
Status:



Subject: Engineering Department
Author: Jenny McGuckin
Date: 12/14/2022 8:37:37 AM
Status:

Incorrect L/P
L.16736 P.686

Fire Department (2)



Subject: Fire Department
Author: Joshua
Date: 12/13/2022 2:48:26 PM
Status:

Verify that the fire lane has an unobstructed vertical clearance of 13 foot 6 inches.

Subject: Fire Department
Author: Joshua
Date: 12/13/2022 2:48:43 PM
Status:

Lt. John Byrne 248-641-2713
Byrne.J@rochesterhills.org

Group (1)



Subject: Group
Author: C. McLeod
Date: 12/8/2022 11:30:20 AM
Status:

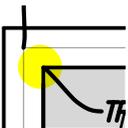
Received
12/7/2022

City of Rochester Hills Planning & Economic Development

Highlight (35)



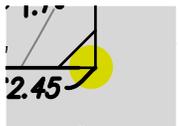
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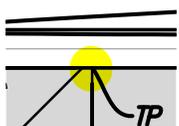
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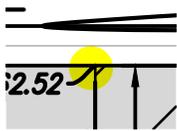
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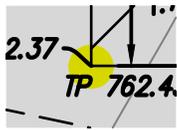
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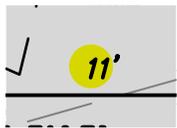
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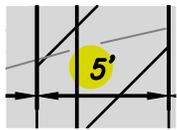
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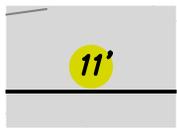
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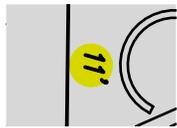
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Date: 12/22/2022 11:07:34 AM
Status:



Subject: Highlight
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Date: 12/22/2022 11:07:35 AM
Status:



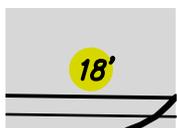
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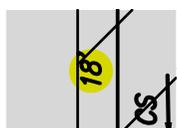
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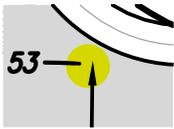
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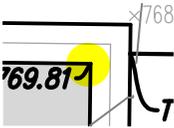
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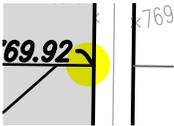
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Author: Mark Artinian
Date: 12/22/2022 11:09:07 AM
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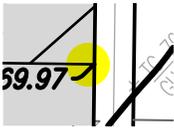
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Author: Mark Artinian
Date: 12/22/2022 11:09:09 AM
Status:



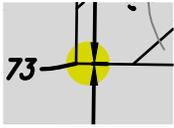
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Author: Mark Artinian
Date: 12/22/2022 11:09:10 AM
Status:



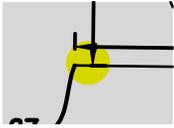
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Author: Mark Artinian
Date: 12/22/2022 11:09:12 AM
Status:



Subject: Highlight
Author: Mark Artinian
Date: 12/22/2022 11:09:27 AM
Status:



Subject: Highlight
Author: Mark Artinian
Date: 12/22/2022 11:09:29 AM
Status:



Subject: Highlight
Author: Mark Artinian
Date: 12/22/2022 11:09:49 AM
Status:



Subject: Highlight
Author: Mark Artinian
Date: 12/22/2022 11:11:30 AM
Status:



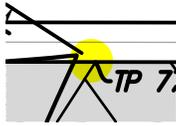
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Author: Mark Artinian
Date: 12/22/2022 11:11:32 AM
Status:



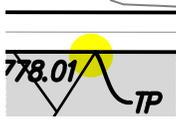
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Author: Mark Artinian
Date: 12/22/2022 11:11:34 AM
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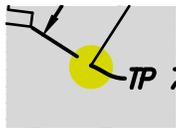
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Author: Mark Artinian
Date: 12/22/2022 11:44:05 AM
Status:



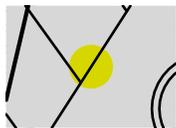
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Author: Mark Artinian
Date: 12/22/2022 11:44:07 AM
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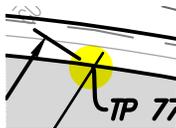
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Author: Mark Artinian
Date: 12/22/2022 11:44:34 AM
Status:



Subject: Highlight
Author: Mark Artinian
Date: 12/22/2022 11:46:43 AM
Status:



Subject: Highlight
Author: Mark Artinian
Date: 12/22/2022 11:46:45 AM
Status:



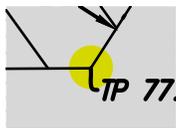
Subject: Highlight
Author: Mark Artinian
Date: 12/22/2022 11:46:51 AM
Status:



Subject: Highlight
Author: Mark Artinian
Date: 12/22/2022 11:47:35 AM
Status:



Subject: Highlight
Author: Mark Artinian
Date: 12/22/2022 11:47:36 AM
Status:

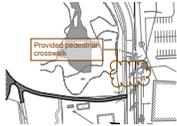


Subject: Highlight
Author: Mark Artinian
Date: 12/22/2022 11:47:51 AM
Status:

Natural Resources (1)

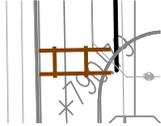
Subject: Natural Resources
Author: Matt Einheuser
Date: 12/15/2022 1:09:56 PM
Status:

Planning Department (3)



Subject: Planning Department
Author: C.McLeod
Date: 12/14/2022 4:05:44 PM
Status:

Provided pedestrian crosswalk



Subject: Planning Department
Author: C.McLeod
Date: 12/14/2022 4:04:23 PM
Status:

Chris McLeod 248-941-2072
mcleod@richmondflex.org

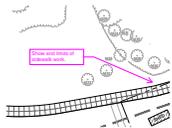
Subject: Planning Department
Author: C.McLeod
Date: 12/22/2022 3:27:06 PM
Status:

Site Plan Review (1)



Subject: Site Plan Review
Author: macdonaldj
Date: 12/7/2022 10:09:00 AM
Status:

Traffic (5)



Subject: Traffic
Author: Keith
Date: 12/8/2022 11:09:45 AM
Status:

Show end limits of sidewalk work.



Subject: Traffic
Author: Keith
Date: 12/8/2022 11:16:58 AM
Status:

Show Private Street name and ROW limits.



Subject: Traffic
Author: Keith
Date: 12/8/2022 3:48:31 PM
Status:

Show curb drop and ramp detail for connection to the road.

Keith Duggan 248-941-2072
kduggan@richmondflex.org

Subject: Traffic
Author: Keith
Date: 12/19/2022 11:27:17 AM
Status:



Subject: Traffic
Author: Keith
Date: 12/19/2022 11:29:45 AM
Status:

Per conditions on sheet C4.4, Grading Plan, Area 4