JMU2021-0005
PSP2023-0007
Revision #2
Received 4/9/24

City of Rochester Hills Planning & Economic Development

Site Plan Review

Reviewed for compliance with City Ordinance, Building and Fire Codes
Conditions and mark-ups noted throughout plan set must be addressed prior to final approval

SP
LIP
TRP
BP

Department	Reviewer	Approved
Assessing	Assessing	Yes
Building	Mark Artinian 248-841-2446 ArtinianM@RochesterHills.org	Yes
Engineering - Utilities	Jason Boughton 248-841-2490 BoughtonJ@RochesterHills.org	Yes
Engineering Legal	Jenny McGuckin 248-841-2494 mcguckinj@rochesterhills.org	YES Date:04/22/2024
Fire	Capt. Ann Echols 248-841-2701 EcholsA@RochesterHills.org	No
Natural Resources	Matt Einheuser 248-841-2551 EinheuserM@RochesterHills.org	No
Planning	Chris McLeod 248-841-2572 mcleodc@RochesterHills.org	No
Traffic	Keith Depp 248-841-2503 DeppK@RochesterHills.org	Yes

Condition on the Pathway sightline notes and details are addressed.

Next Steps: Submit revised site plans addressing reviewers comments.

ADM

Civil Engineer

NOWAK & FRAUS ENGINEERS
46777 Woodward Ave
Pontiac, MI 48342-5032

Contact: Patrick Williams, P.E.
Tel. (248) 332-7931
Fax. (248) 332-8257

Architect

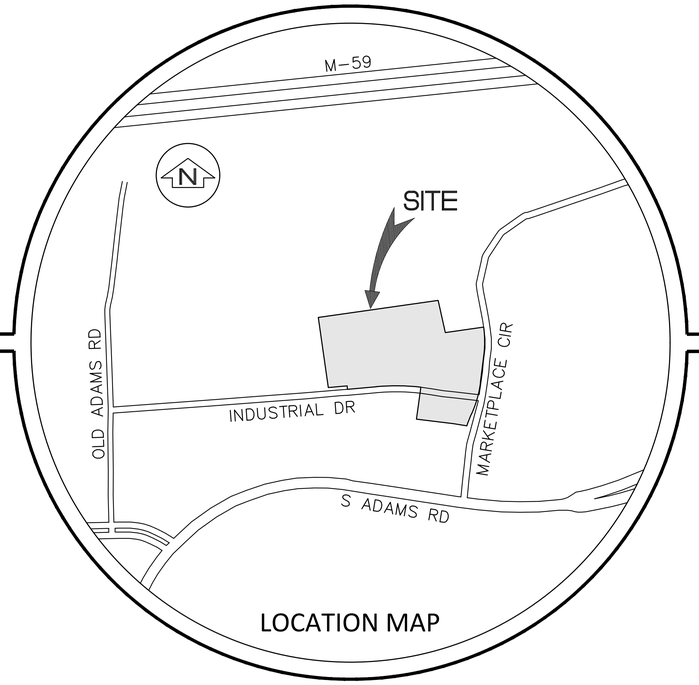
MICHAEL A. BOGGIO ASSOCIATES
30150 Telegraph Rd.
Suite 150
Bingham Farms, MI 48025

Phone: (248) 258-5155

NF Responses. Placed adjacent to comments throughout

City of Rochester Hills, Oakland County, Michigan SITE PLAN DOCUMENTS

PART OF THE SOUTHWEST $\frac{1}{4}$
OF SECTION 30,
TOWN 3 NORTH, RANGE 11 EAST



LOCATION MAP

LEGAL DESCRIPTION

LAND SITUATED IN THE CITY OF ROCHESTER HILLS IN THE COUNTY OF OAKLAND IN THE STATE OF MI

THE LAND IS DESCRIBED AS FOLLOWS: A PARCEL OF LAND LOCATED IN THE SOUTHWEST 1/4 OF SECTION 30, TOWN 3 NORTH, RANGE 11 EAST, CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN, MORE PARTICULARLY DESCRIBED AS:

COMMENCING AT THE WEST 1/4 CORNER (AS REMONUMENTED) OF SAID SECTION 30 AND PROCEEDING ALONG THE EAST AND WEST 1/4 LINE NORTH 85 DEGREES 49 MINUTES 02 SECONDS EAST 823.73 FEET; THENCE SOUTH 07 DEGREES 21 MINUTES 28 SECONDS EAST 66.85 FEET TO THE POINT OF BEGINNING; THENCE NORTH 82 DEGREES 38 MINUTES 29 SECONDS EAST 531.04 FEET; THENCE SOUTH 11 DEGREES 53 MINUTES 53 SECONDS EAST 144.77 FEET; THENCE NORTH 82 DEGREES 38 MINUTES 32 SECONDS EAST 169.46 FEET; THENCE ALONG THE WEST RIGHT-OF-WAY LINE OF MARKETPLACE CIRCLE (60 FEET WIDE) THE FOLLOWING FOUR (4) COURSES: 1) 122.60 FEET ALONG THE ARC OF A CURVE TO RIGHT, RADIUS 470.00 FEET, CENTRAL ANGLE 14 DEGREES 56 MINUTES 46 SECONDS, AND A CHORD THAT BEARS SOUTH 00 DEGREE 19 MINUTES 32 SECONDS WEST 122.26 FEET, 2) SOUTH 07 DEGREES 47 MINUTES 53 SECONDS WEST 121.81 FEET, 3) 143.15 FEET ALONG THE ARC OF A CURVE TO THE RIGHT, RADIUS 470.00 FEET, CENTRAL ANGLE 17 DEGREES 27 MINUTES 04 SECONDS, AND A CHORD THAT BEARS SOUTH 16 DEGREES 31 MINUTES 26 SECONDS WEST 142.60 FEET AND 4) 57.02 FEET ALONG THE ARC OF A CURVE TO THE LEFT, RADIUS 530.00 FEET, CENTRAL ANGLE 06 DEGREES 09 MINUTES 50 SECONDS, AND A CHORD THAT BEARS SOUTH 22 DEGREES 10 MINUTES 03 SECONDS WEST 56.99 FEET; THENCE NORTH 79 DEGREES 54 MINUTES 04 SECONDS WEST 58.24 FEET; THENCE NORTH 82 DEGREES 12 MINUTES 07 SECONDS WEST 164.66 FEET; THENCE NORTH 08 DEGREES 30 MINUTES 03 SECONDS EAST 141.36 FEET; THENCE 194.39 FEET ALONG THE ARC OF A CURVE TO THE LEFT, RADIUS 970.00 FEET, CENTRAL ANGLE 11 DEGREES 28 MINUTES 55 SECONDS AND A CHORD THAT BEARS NORTH 88 DEGREES 36 MINUTES 41 SECONDS WEST 194.06 FEET; THENCE SOUTH 85 DEGREES 38 MINUTES 52 SECONDS WEST 128.81 FEET; THENCE NORTH 02 DEGREES 02 MINUTES 36 SECONDS WEST 15.01 FEET; THENCE SOUTH 85 DEGREES 38 MINUTES 52
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CONTAINING 262,812 SQUARE FEET OR 6.033 ACRES.

VACANT
TAX ID: 15-30-301-042
TAX ID: NEW PARCEL FOR 2020: 15-30-301-043

Project Name

Marketplace of Rochester Hills 3900 Industrial Dr.

SHEET INDEX

REVISIONS:
02-27-2024 ISSUED FOR SP REVIEW
04-08-2024 REVISED PER CITY

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

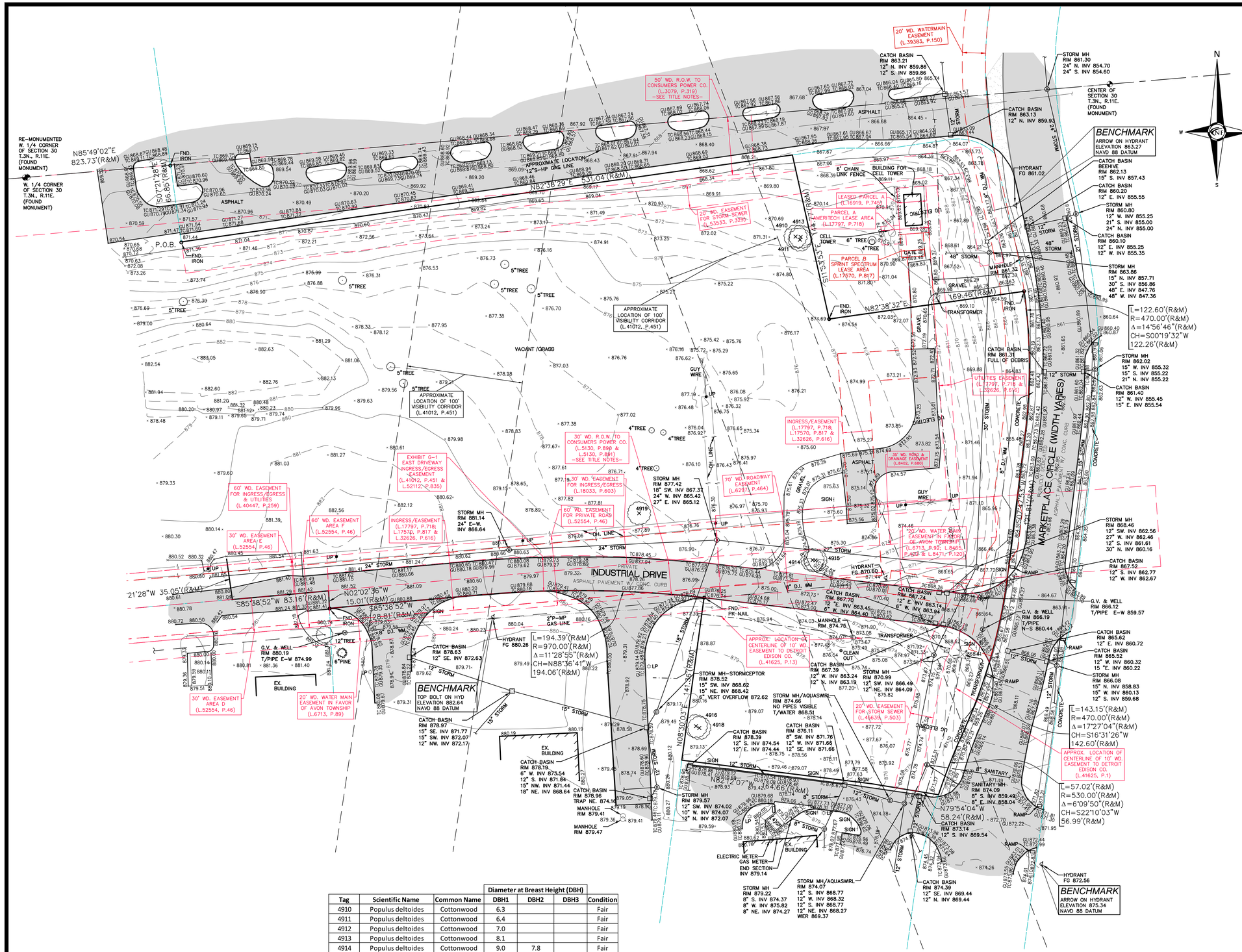
Understood. Will be completed at time of CD submittal.

City File #22-042 Section #30
N & F JOB #L762-01

NF ENGINEERS
CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS

NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257
WWW.NFE-ENGR.COM

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.



			Diameter at Breast Height (DBH)			
Tag	Scientific Name	Common Name	DBH1	DBH2	DBH3	Condition
4910	Populus deltoides	Cottonwood	6.3			Fair
4911	Populus deltoides	Cottonwood	6.4			Fair
4912	Populus deltoides	Cottonwood	7.0			Fair
4913	Populus deltoides	Cottonwood	8.1			Fair
4914	Populus deltoides	Cottonwood	9.0	7.8		Fair
4915	Populus deltoides	Cottonwood	6.6			Fair
4916	Populus deltoides	Cottonwood	9.3			Fair
4917	Populus deltoides	Cottonwood	8.4			Fair
4918	Populus deltoides	Cottonwood	6.2			Fair
4919	Robinia pseudoacacia	Black locust	6.0	5.6		Fair

* no specimen trees as defined by Rochester Hills Ordinance Article III; Division 2; Sect. 126-397

Barr Engineering Co.
Project No. 22631166.00
Novermber 30, 2021

JMU2021-0005
PSP2023-0007
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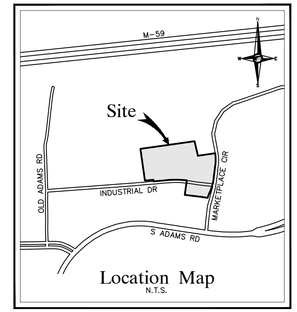
Received
4/5/2024
City of Rochester Hills
Planning & Economic Development

CERTIFICATE OF SURVEY

WE HEREBY CERTIFY THAT WE HAVE SURVEYED THE PROPERTY HEREIN DESCRIBED.

KEVIN NAVAROLI, PLS
NO.: 53503

DATE: 12-17-2021



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VACANT
TAX ID: 15-30-301-042
TAX ID: NEW PARCEL FOR 2020: 15-30-301-043

BASIS OF BEARING

THE BASIS OF BEARING FOR THIS SURVEY WAS ESTABLISHED BY THE RECORD DESCRIPTION AS SHOWN IN THE TITLE COMMITMENT REFERENCED HEREON.

FLOOD HAZARD NOTE

THE PROPERTY DESCRIBED ON THIS SURVEY DOES NOT LIE WITHIN A SPECIAL FLOOD HAZARD AREA AS DEFINED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY; THE PROPERTY LIES WITHIN ZONE X OF THE CURRENT AVAILABLE FLOOD INSURANCE RATE MAP IDENTIFIED AS MAP NO. 26125C0389F WITH AN EFFECTIVE DATE OF 09-29-2006.

COVID-19 PANDEMIC CONDITION

DUE TO THE UNPRECEDENTED COVID-19 PANDEMIC CONDITION AND RESTRICTIONS THE STANDARD DATA WHICH IS OBTAINED FROM MISS DIG / CALL 811 HAS BEEN RESTRICTED TO CRITICAL INFRASTRUCTURE ONLY. NFE WILL MAKE EVERY EFFORT TO OBTAIN CURRENT REFERENCE DATA FROM THE GOVERNING AGENCIES; HOWEVER, THIS DATA MAY BE PARTIAL OR INCOMPLETE. NFE WILL ISSUE THIS SURVEY WITH THE BEST AVAILABLE INFORMATION FROM OUR FIELD SURVEY AND OTHER AVAILABLE REFERENCE DATA. NFE WILL NOT BE RESPONSIBLE FOR INCOMPLETE OR PARTIAL DATA PROVIDED BY THIRD PARTY FACILITY OWNERS.

ALL SURVEYS BEING UTILIZED FOR DESIGN PURPOSES BY OTHERS; IT WILL BE THE CLIENT'S OBLIGATION TO UPDATE THE UTILITY INFORMATION AS IT BECOMES AVAILABLE. NFE IS NOT RESPONSIBLE FOR BURIED UTILITIES FOR WHICH PLANS WERE NOT FURNISHED OR CANNOT BE OBSERVED IN THE FIELD.

MISS DIG / UTILITY DISCLAIMER NOTE

A MISS DIG TICKET NUMBER A13210129, PURSUANT TO MICHIGAN PUBLIC ACT 174 WAS ENTERED FOR THE SURVEYED PROPERTY. DUE TO THE EXTENDED REPORTING PERIOD FOR UNDERGROUND FACILITY OWNERS TO PROVIDE THEIR RECORDS, THE SURVEY MAY NOT REFLECT ALL THE UTILITIES AT THE TIME THE SURVEY WAS ISSUED ON 12-17-2021. THE SURVEY ONLY REFLECTS THOSE UTILITIES WHICH COULD BE OBSERVED BY THE SURVEYOR IN THE FIELD OR AS DEPICTED BY THE UTILITY COMPANY RECORDS FURNISH PRIOR TO THE DATE THIS SURVEY WAS ISSUED. **THE CLIENT AND/OR THEIR AUTHORIZED AGENT SHALL VERIFY WITH THE FACILITY OWNERS AND/OR THEIR AUTHORIZED AGENTS, THE COMPLETENESS AND EXACTNESS OF THE UTILITIES LOCATION.**

TOPOGRAPHIC SURVEY NOTES

ALL ELEVATIONS ARE EXISTING ELEVATIONS, UNLESS OTHERWISE NOTED.

UTILITY LOCATIONS WERE OBTAINED FROM MUNICIPAL OFFICIALS AND RECORDS OF UTILITY COMPANIES, AND NO GUARANTEE CAN BE MADE TO THE COMPLETENESS, OR EXACTNESS OF LOCATION.

THIS SURVEY MAY NOT SHOW ALL EASEMENTS OF RECORD UNLESS AN UPDATED TITLE POLICY IS FURNISHED TO THE SURVEYOR BY THE OWNER.

LEGEND

- MANHOLE — EXISTING SANITARY SEWER
- HYDRANT — EXISTING SAN. CLEAN OUT
- GATE VALVE — EXISTING WATER MAIN
- MANHOLE / CATCH BASIN — EXISTING STORM SEWER
- EX. R.Y. CATCH BASIN
- EXISTING BURIED CABLES
- UTILITY POLE / GUY POLE / GUY WIRE — OVERHEAD LINES
- LIGHT POLE
- SIGN
- EXISTING GAS MAIN

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FAX. (248) 332-8257
WWW.NOWAKFRAUS.COM

NOT TO BE USED AS CONSTRUCTION DRAWINGS

SEAL

STATE OF MICHIGAN — KEVIN CHRISTOPHER NAVAROLI — License No. 4001053503 — PROFESSIONAL SURVEYOR

PROJECT

Marketplace of Rochester Hills
3900 Industrial Drive
Rochester Hills, MI 48309

CLIENT

Grenadier Adams MP, LLC
Contact: Josh Grenadier
Ph-248-752-1748

PROJECT LOCATION

Part of the SW. 1/4 of Section 30, T.3N., R.11E., City of Rochester Hills, Oakland County, MI

SHEET

Boundary - Topographic - Tree Survey

Know what's below Call before you dig.

DATE	ISSUED/REVISED
02-27-2024	ISSUED FOR SP REVIEW
04-08-2024	REVISED PER CITY

DRAWN BY: D. McConkey

DESIGNED BY:

APPROVED BY: K. Navaroli

DATE: September 29, 2022

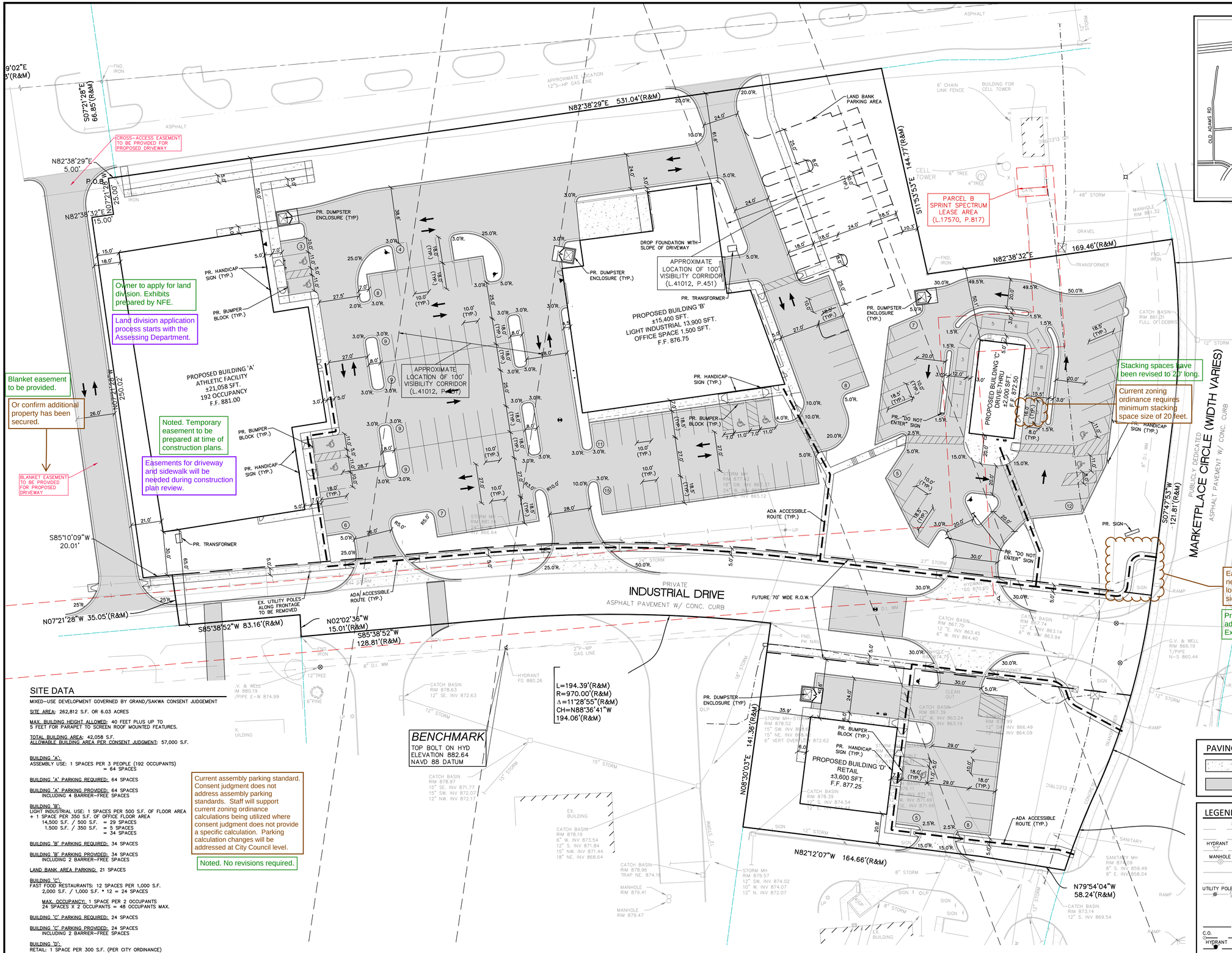
SCALE: 1" = 40'

40 20 0 20 40 60

City File #22-042
Section #30

NFE JOB NO. L762-01

SHEET NO. SP1



SITE DATA

MIXED-USE DEVELOPMENT GOVERNED BY GRAND/SAKWA CONSENT JUDGEMENT

SITE AREA: 262,812 S.F. OR 6.03 ACRES

MAX. BUILDING HEIGHT ALLOWED: 40 FEET PLUS UP TO 5 FEET FOR PARAPET TO SCREEN ROOF MOUNTED FEATURES.

TOTAL BUILDING AREA: 42,058 S.F.
ALLOWABLE BUILDING AREA PER CONSENT JUDGMENT: 57,000 S.F.

BUILDING 'A':
ASSEMBLY USE: 1 SPACES PER 3 PEOPLE (192 OCCUPANTS)
= 64 SPACES

BUILDING 'A' PARKING REQUIRED: 64 SPACES

BUILDING 'A' PARKING PROVIDED: 64 SPACES
INCLUDING 4 BARRIER-FREE SPACES

BUILDING 'B':
LIGHT INDUSTRIAL USE: 1 SPACES PER 500 S.F. OF FLOOR AREA
+ 1 SPACE PER 350 S.F. OF OFFICE FLOOR AREA
14,500 S.F. / 500 S.F. = 29 SPACES
1,500 S.F. / 350 S.F. = 5 SPACES
= 34 SPACES

BUILDING 'B' PARKING REQUIRED: 34 SPACES

BUILDING 'B' PARKING PROVIDED: 34 SPACES
INCLUDING 2 BARRIER-FREE SPACES

LAND BANK AREA PARKING: 21 SPACES

BUILDING 'C':
FAST FOOD RESTAURANTS: 12 SPACES PER 1,000 S.F.
2,000 S.F. / 1,000 S.F. * 12 = 24 SPACES

MAX. OCCUPANCY: 1 SPACE PER 2 OCCUPANTS
24 SPACES X 2 OCCUPANTS = 48 OCCUPANTS MAX.

BUILDING 'C' PARKING REQUIRED: 24 SPACES

BUILDING 'C' PARKING PROVIDED: 24 SPACES
INCLUDING 2 BARRIER-FREE SPACES

BUILDING 'D':
RETAIL: 1 SPACE PER 300 S.F. (PER CITY ORDINANCE)
3,600 S.F. / 300 S.F. = 12 SPACES

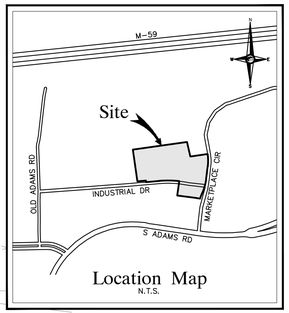
5 SPACES PER 1,000 S.F. (PER CONSENT JUDGEMENT)

BUILDING 'D' PARKING REQUIRED: 12 SPACES

BUILDING 'D' PARKING PROVIDED: 13 SPACES
INCLUDING 1 BARRIER-FREE SPACES

SIGN NOTE

PROPOSED SIGNAGE REQUIRES A SEPARATE REVIEW AND PERMIT.



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WWW.NOWAKFRAUS.COM

NOT TO BE USED AS CONSTRUCTION DRAWINGS

SEAL

STATE OF MICHIGAN
PATRICK J. WILLIAMS
LICENSED
ENGINEER NO. 44351
PROFESSIONAL ENGINEER

PROJECT

Marketplace of Rochester Hills
3900 Industrial Drive
Rochester Hills, MI 48309

CLIENT

Grenadier Adams MP, LLC
Contact: Josh Grenadier
Ph-248-752-1748

PROJECT LOCATION

Part of the SW. 1/4 of Section 30, T.3N., R.11E., City of Rochester Hills, Oakland County, MI

SHEET

Stringer Dimension Plan

Know what's below Call before you dig.

DATE	ISSUED/REVISED
02-27-2024	ISSUED FOR SP REVIEW
04-08-2024	REVISED PER CITY

DRAWN BY: J. Lawrey
DESIGNED BY: A. Eizember
APPROVED BY: P. Williams
DATE: September 29, 2022
SCALE: 1" = 30'

30 15 0 15 30 45

City File #22-042
Section #30
NFE JOB NO. L762-01
SHEET NO. SP2

PAVING LEGEND

PROPOSED CONCRETE PAVEMENT
PROPOSED ASPHALT PAVEMENT

LEGEND

MANHOLE — EXISTING SANITARY SEWER
HYDRANT, GATE VALVE — SAN. CLEAN OUT
MANHOLE, CATCH BASIN — EXISTING STORM SEWER
EX. R. Y. CATCH BASIN
EXISTING BURIED CABLES
UTILITY POLE, GUY POLE, GUY WIRE — OVERHEAD LINES
LIGHT POLE
SIGN
EXISTING GAS MAIN
C.O., MANHOLE — PR. SANITARY SEWER
HYDRANT, GATE VALVE — PR. WATER MAIN
INLET, C.B., MANHOLE — PR. STORM SEWER
PR. R. Y. CATCH BASIN
PROPOSED LIGHT POLE

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There are several instances where the auto turn hangs over the curb. The fire apparatus needs to maneuver through the site with zero overhang over the curbs measured at the front of curb. These areas are highlighted in orange.

Many of these are within the gutter pan, no actually hitting the curb. We have cleaned up the turning movements to address the concerns.

Note added that FDC shall include bollard protection per city requirements.

Provide vehicle impact protection for the fire department connection. See installation requirements here:

Curb to curb dimension is 26'. Label added.

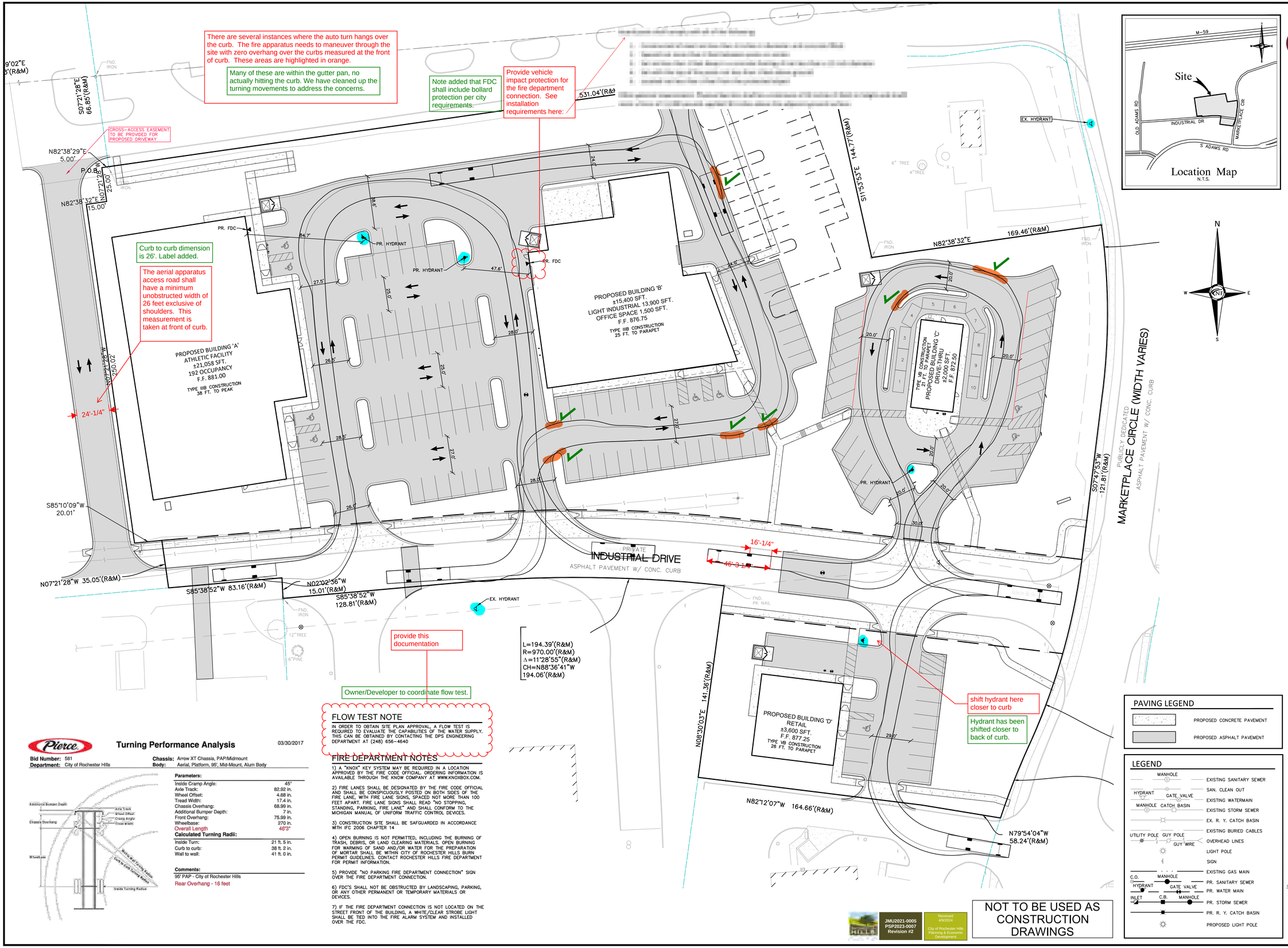
The aerial apparatus access road shall have a minimum unobstructed width of 26 feet exclusive of shoulders. This measurement is taken at front of curb.

provide this documentation

Owner/Developer to coordinate flow test.

shift hydrant here closer to curb

Hydrant has been shifted closer to back of curb.



FLOW TEST NOTE

IN ORDER TO OBTAIN SITE PLAN APPROVAL, A FLOW TEST IS REQUIRED TO EVALUATE THE CAPABILITIES OF THE WATER SUPPLY. THIS CAN BE OBTAINED BY CONTACTING THE DPS ENGINEERING DEPARTMENT AT (248) 656-4640

FIRE DEPARTMENT NOTES

1) A "KNOX" KEY SYSTEM MAY BE REQUIRED IN A LOCATION APPROVED BY THE FIRE CODE OFFICIAL. ORDERING INFORMATION IS AVAILABLE THROUGH THE KNOW COMPANY AT WWW.KNOXBOX.COM.

2) FIRE LANES SHALL BE DESIGNATED BY THE FIRE CODE OFFICIAL AND SHALL BE CONSPICUOUSLY POSTED ON BOTH SIDES OF THE FIRE LANE, WITH FIRE LANE SIGNS, SPACED NOT MORE THAN 100 FEET APART. FIRE LANE SIGNS SHALL READ "NO STOPPING, STANDING, PARKING, FIRE LANE" AND SHALL CONFORM TO THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

3) CONSTRUCTION SITE SHALL BE SAFGUARDED IN ACCORDANCE WITH IFC 2006 CHAPTER 14

4) OPEN BURNING IS NOT PERMITTED, INCLUDING THE BURNING OF TRASH, DEBRIS, OR LAND CLEARING MATERIALS. OPEN BURNING FOR WARMING OF SAND AND/OR WATER FOR THE PREPARATION OF MORTAR SHALL BE WITHIN CITY OF ROCHESTER HILLS BURN PERMIT GUIDELINES. CONTACT ROCHESTER HILLS FIRE DEPARTMENT FOR PERMIT INFORMATION.

5) PROVIDE "NO PARKING FIRE DEPARTMENT CONNECTION" SIGN OVER THE FIRE DEPARTMENT CONNECTION.

6) FDC'S SHALL NOT BE OBSTRUCTED BY LANDSCAPING, PARKING, OR ANY OTHER PERMANENT OR TEMPORARY MATERIALS OR DEVICES.

7) IF THE FIRE DEPARTMENT CONNECTION IS NOT LOCATED ON THE STREET FRONT OF THE BUILDING, A WHITE/CLEAR STROBE LIGHT SHALL BE TIED INTO THE FIRE ALARM SYSTEM AND INSTALLED OVER THE FDC.

Turning Performance Analysis

03/30/2017

Bid Number: 581
Department: City of Rochester Hills
Chassis: Arrow XT Chassis, PAP/Midmount
Body: Aerial, Platform, 95', Mid-Mount, Alum Body

Parameters:	
Inside Cramp Angle:	45°
Axle Track:	82.92 in.
Wheel Offset:	4.68 in.
Tread Width:	17.4 in.
Chassis Overhang:	68.99 in.
Additional Bumper Depth:	7 in.
Front Overhang:	75.99 in.
Wheelbase:	270 in.
Overall Length	46'3"
Calculated Turning Radii:	
Inside Turn:	21 ft. 5 in.
Curb to curb:	38 ft. 2 in.
Wall to wall:	41 ft. 0 in.

Comments:
95' PAP - City of Rochester Hills
Rear Overhang - 16 feet

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- PROPOSED CONCRETE PAVEMENT
- PROPOSED ASPHALT PAVEMENT

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SHEET
Fire Truck Maneuvering Plan

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DESIGNED BY: A. Eizember
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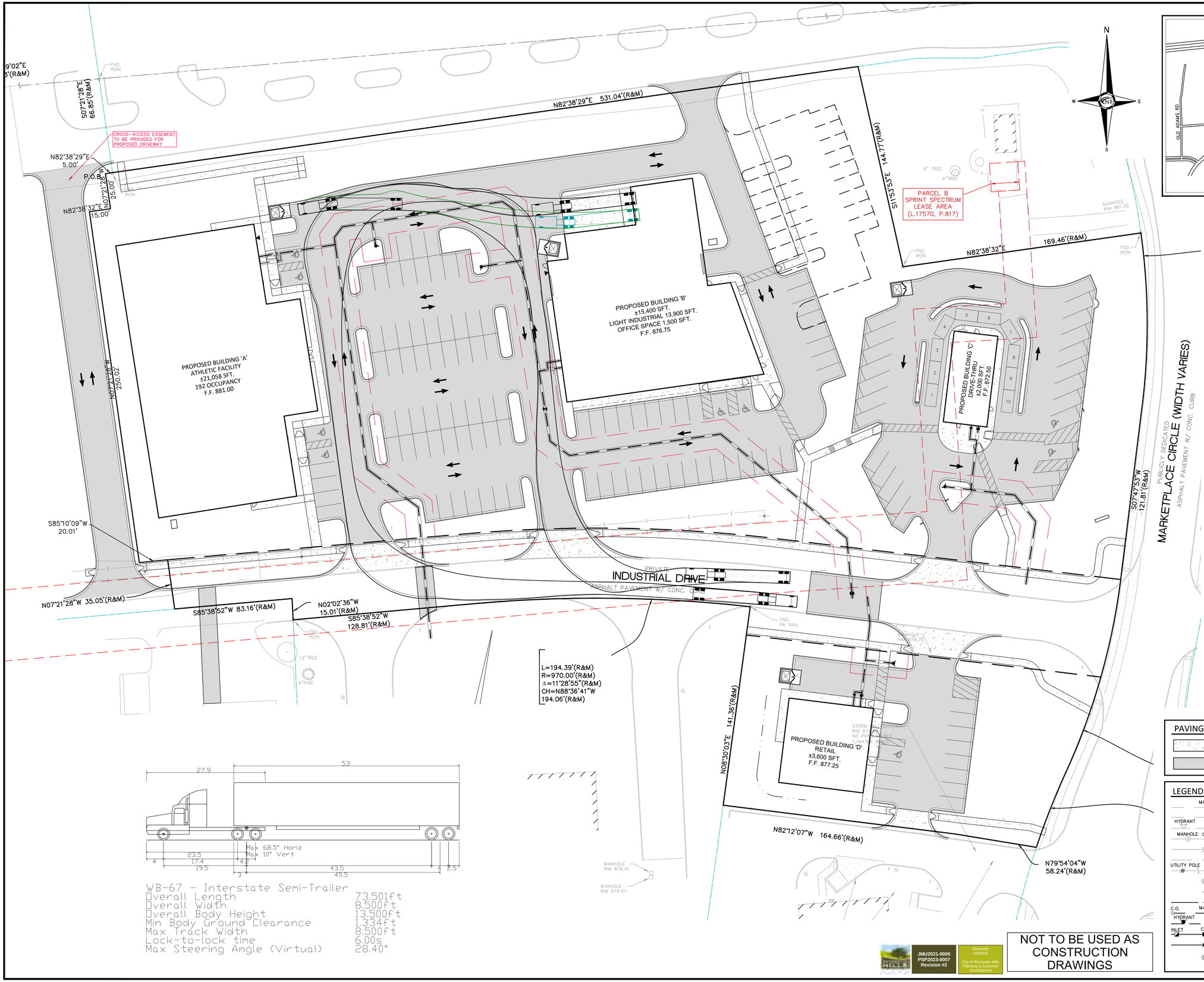
City File #22-042
Section #30
NFE JOB NO. L762-01
SHEET NO. SP3



WB-67 - Interstate Semi-Trailer

Overall Length	73.501ft
Overall Width	8.500ft
Overall Body Height	13.500ft
Min Body Ground Clearance	1.334ft
Max Track Width	8.500ft
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	28.40°

PAVING LEGEND

- PROPOSED CONCRETE PAVEMENT
- PROPOSED ASPHALT PAVEMENT

LEGEND

- MANHOLE — EXISTING SANITARY SEWER
- SAN. CLEAN OUT
- HYDRANT, GATE VALVE — EXISTING WATERMAIN
- MANHOLE, CATCH BASIN — EXISTING STORM SEWER
- EX. R. Y. CATCH BASIN
- EXISTING BURIED CABLES
- UTILITY POLE, GUY POLE, GUY WIRE — OVERHEAD LINES
- LIGHT POLE
- SIGN
- EXISTING GAS MAIN
- C.O., MANHOLE — PR. SANITARY SEWER
- HYDRANT, GATE VALVE — PR. WATER MAIN
- INLET, C.B., MANHOLE — PR. STORM SEWER
- PR. R. Y. CATCH BASIN
- PROPOSED LIGHT POLE

JMU2021-0005
PSP2023-0007
Revision #2

Received
4/8/2024
City of Rochester Hills
Planning & Economic Development

NOT TO BE USED AS CONSTRUCTION DRAWINGS

NF ENGINEERS
CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS

NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257
WWW.NOWAKFRAUS.COM

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SEAL

PROJECT
Marketplace of Rochester Hills
3900 Industrial Drive
Rochester Hills, MI 48309

CLIENT
Grenadier Adams MP, LLC
Contact: Josh Grenadier
Ph-248-752-1748

PROJECT LOCATION
Part of the SW. 1/4 of Section 30, T.3N., R.11E., City of Rochester Hills, Oakland County, MI

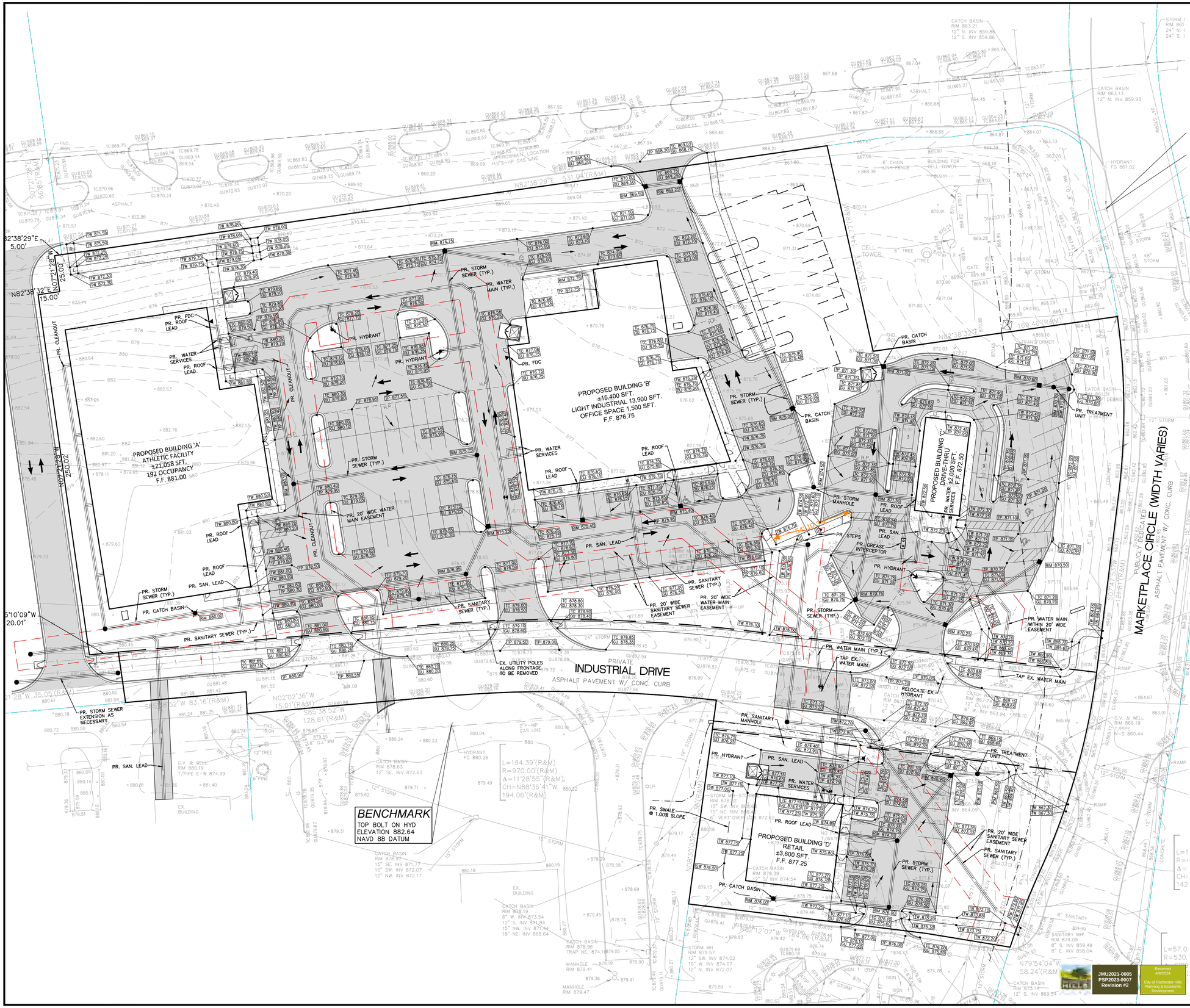
SHEET
Semi-Truck Maneuvering Plan

Know what's below Call before you dig.

DATE	ISSUED/REVISED
02-27-2024	ISSUED FOR SP REVIEW
04-08-2024	REVISED PER CITY

DRAWN BY: J. Lawrey
DESIGNED BY: A. Eizember
APPROVED BY: P. Williams
DATE: September 29, 2022
SCALE: 1" = 30'
30 15 0 15 30 45

City File #22-042
Section #30
NFE JOB NO. L762-01
SHEET NO. SP3.1



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NOT TO BE USED AS CONSTRUCTION DRAWINGS

SEAL

STATE OF MICHIGAN
PATRICK J. WILLIAMS
ENGINEER NO. 44351
LICENSED PROFESSIONAL ENGINEER

PROJECT

Marketplace of Rochester Hills
3900 Industrial Drive
Rochester Hills, MI 48309

CLIENT

Grenadier Adams MP, LLC
Contact: Josh Grenadier
Ph-248-752-1748

PROJECT LOCATION

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SHEET

Engineering Site Plan

Know what's below Call before you dig.

DATE	ISSUED/REVISED
02-27-2024	ISSUED FOR SP REVIEW
04-08-2024	REVISED PER CITY

DRAWN BY: M. Hani

DESIGNED BY: A. Eizember

APPROVED BY: P. Williams

DATE: September 29, 2022

SCALE: 1" = 30'

30 15 0 15 30 45

City File #22-042
Section #30

NFE JOB NO. L762-01

SHEET NO. SP4

PAVING LEGEND

- PROPOSED CONCRETE PAVEMENT
- PROPOSED ASPHALT PAVEMENT

LEGEND

- MANHOLE — EXISTING SANITARY SEWER
- HYDRANT / GATE VALVE — SAN. CLEAN OUT
- MANHOLE / CATCH BASIN — EXISTING WATERMAIN
- EXISTING STORM SEWER
- EX. R. Y. CATCH BASIN
- UTILITY POLE / GUY POLE / GUY WIRE — EXISTING BURIED CABLES
- OVERHEAD LINES
- LIGHT POLE
- SIGN
- C.O. / MANHOLE — EXISTING GAS MAIN
- HYDRANT / GATE VALVE — PR. SANITARY SEWER
- INLET / C.B. / MANHOLE — PR. WATER MAIN
- PR. STORM SEWER
- PR. R. Y. CATCH BASIN
- PROPOSED LIGHT POLE
- TC 600.00 — PR. TOP OF CURB ELEVATION
- GU 600.00 — PR. GUTTER ELEVATION
- TW 600.00 — PR. TOP OF WALK ELEVATION
- TP 600.00 — PR. TOP OF PVMT. ELEVATION
- FG 600.00 — FINISH GRADE ELEVATION

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GENERAL PAVING NOTES

PAVEMENT SHALL BE OF THE TYPE, THICKNESS AND CROSS SECTION AS INDICATED ON THE PLANS AND AS FOLLOWS:

CONCRETE: PORTLAND CEMENT TYPE IA (AIR-ENTRAINED) WITH A MINIMUM CEMENT CONTENT OF SIX SACKS PER CUBIC YARD, MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3,500 PSI AND A SLUMP OF 1 1/2 TO 3 INCHES.

ASPHALT: BASE COURSE – MDOT BITUMINOUS MIXTURE NO. 1100T, 20AA; SURFACE COURSE – MDOT BITUMINOUS MIXTURE NO. 1100T, 20AA; ASPHALT CEMENT PENETRATION GRADE 85–100, BOND COAT – MDOT SS–1H EMULSION AT 0.10 GALLON PER SQUARE YARD; MAXIMUM 2 INCH LIFT.

PAVEMENT BASE SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY (MODIFIED PROCTOR) PRIOR TO PLACEMENT OF PROPOSED PAVEMENT. EXISTING SUB–BASE SHALL BE PROOF–ROLLED IN THE PRESENCE OF THE ENGINEER TO DETERMINE STABILITY.

ALL CONCRETE PAVEMENT, DRIVEWAYS, CURB & GUTTER, ETC., SHALL BE SPRAY CURED WITH WHITE MEMBRANE CURING COMPOUND IMMEDIATELY FOLLOWING FINISHING OPERATION.

ALL CONCRETE PAVEMENT JOINTS SHALL BE FILLED WITH HOT POURED RUBBERIZED ASPHALT JOINT SEALING COMPOUND IMMEDIATELY AFTER SAWCUT OPERATION. FEDERAL SPECIFICATION SS–S164.

ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARDS AND SPECIFICATIONS OF THE MUNICIPALITY AND THE MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, CURRENT EDITION.

ALL TOP OF CURB ELEVATIONS, AS SHOWN ON THE PLANS, ARE CALCULATED FOR A 6" CONCRETE CURB UNLESS OTHERWISE NOTED.

ALL SIDEWALK RAMPS, CONFORMING TO PUBLIC ACT NO. 8, 1993, SHALL BE INSTALLED AS INDICATED ON THE PLANS.

CONSTRUCTION OF A NEW OR RECONSTRUCTED DRIVE APPROACH CONNECTING TO AN EXISTING STATE OR COUNTY ROADWAY SHALL BE ALLOWED ONLY AFTER AN APPROVED PERMIT HAS BEEN SECURED FROM THE AGENCY HAVING JURISDICTION OVER SAID ROADWAY.

FOR ANY WORK WITHIN THE PUBLIC RIGHT–OF–WAY, THE CONTRACTOR SHALL PAY FOR AND SECURE ALL NECESSARY PERMITS AND LIKEWISE ARRANGE FOR ALL INSPECTION.

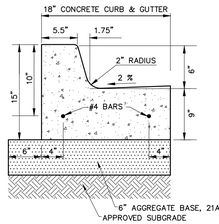
EXISTING TOPSOIL, VEGETATION AND ORGANIC MATERIALS SHALL BE STRIPPED AND REMOVED FROM PROPOSED PAVEMENT AREA PRIOR TO PLACEMENT OF BASE MATERIALS.

EXPANSION JOINTS SHOULD BE INSTALLED AT THE END OF ALL INTERSECTION RADII.

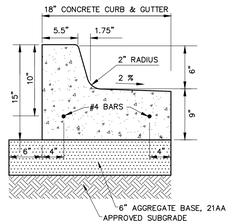
SIDEWALK RAMPS, CONFORMING TO PUBLIC ACT NO. 8, 1973, SHALL BE INSTALLED AS SHOWN AT ALL STREET INTERSECTIONS AND AT ALL BARRIER FREE PARKING AREAS AS INDICATED ON THE PLANS.

ALL PAVEMENT AREAS SHALL BE PROOF–ROLLED UNDER THE SUPERVISION OF A GEOTECHNICAL ENGINEER PRIOR TO THE PLACEMENT OF BASE MATERIALS AND PAVING MATERIALS.

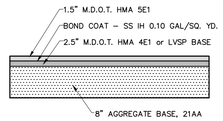
FILL AREAS SHALL BE MACHINE COMPACTED IN UNIFORM LIFTS NOT EXCEEDING 9 INCHES THICK TO 98% OF THE MAXIMUM DENSITY (MODIFIED PROCTOR) PRIOR TO PLACEMENT OF PROPOSED PAVEMENT.



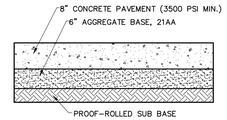
CONCRETE CURB DETAIL 'A'
N.T.S.



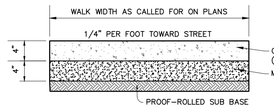
CONCRETE CURB DETAIL 'B'
N.T.S.



ASPHALT PAVEMENT SECTION
(DRIVE AND PARKING)



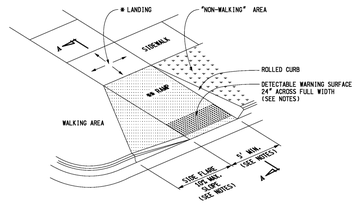
CONCRETE PAVEMENT SECTION
N.T.S.



CONCRETE SIDEWALK SECTION
N.T.S.

* MAXIMUM LANDING SLOPE IS 2.0% IN EACH DIRECTION OF TRAVEL. MINIMUM DIMENSIONS 5' x 5'. SEE NOTES.

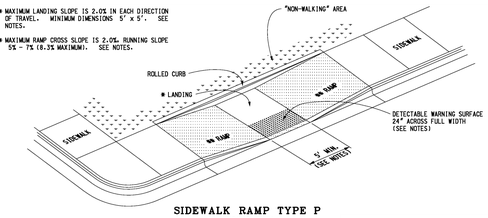
** MAXIMUM RAMP CROSS SLOPE IS 2.0% RUNNING SLOPE 5% – 7% (8.3% MAX(MUM). SEE NOTES.



SIDEWALK RAMP TYPE RF
(ROLLED / FLARED SIDES)

* MAXIMUM LANDING SLOPE IS 2.0% IN EACH DIRECTION OF TRAVEL. MINIMUM DIMENSIONS 5' x 5'. SEE NOTES.

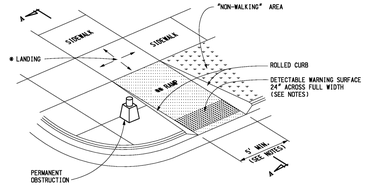
** MAXIMUM RAMP CROSS SLOPE IS 2.0% RUNNING SLOPE 5% – 7% (8.3% MAX(MUM). SEE NOTES.



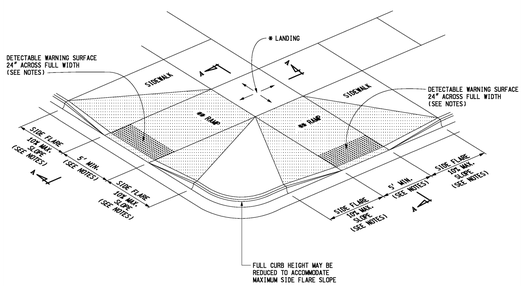
SIDEWALK RAMP TYPE P
(PARALLEL RAMP)
DO NOT USE IN AREAS WHERE PONDING MAY OCCUR

* MAXIMUM LANDING SLOPE IS 2.0% IN EACH DIRECTION OF TRAVEL. MINIMUM DIMENSIONS 5' x 5'. SEE NOTES.

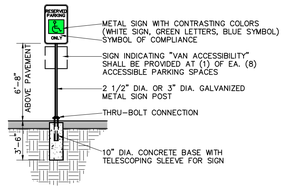
** MAXIMUM RAMP CROSS SLOPE IS 2.0% RUNNING SLOPE 5% – 7% (8.3% MAX(MUM). SEE NOTES.



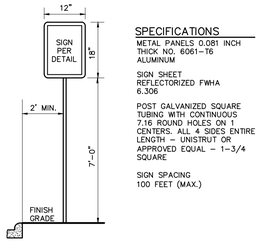
SIDEWALK RAMP TYPE R
(ROLLED SIDES)



SIDEWALK RAMP TYPE F
(FLARED SIDES, TWO RAMPS SHOWN)



BARRIER FREE PARKING SIGN DETAIL
N.T.S.
Provide (1) for each accessible parking space



SPECIFICATIONS
METAL PANELS 0.081 INCH THICK NO. 6061–T6 ALUMINUM

SIGN SHEET REFLECTORIZED FWHA 6.306

POST GALVANIZED SQUARE TUBING WITH CONTINUOUS 7.16 ROUND HOLES ON 1 CENTERS. ALL 4 SIDES ENTIRE LENGTH – UNISTRUT OR APPROVED EQUAL – 1–3/4 SQUARE

SIGN SPACING 100 FEET (MAX.)

NO PARKING SIGN DETAIL
N.T.S.

FIRE LANE SIGN DETAIL

SANITARY SEWER BASIS OF DESIGN

Use	Qty.			Unit Factor				
Fitness Center (Building A)	19,500	Sq. Ft.	@	0.29	Per 1,000	Sq. Ft.	=	5.66 REUs
Offices - General (Building A)	1,920	Sq. Ft.	@	0.40	Per 1,000	Sq. Ft.	=	0.77 REUs
Warehouses & Storage (Building B)	8	Fixtures	@	0.12	Per 1	Fixtures	=	0.96 REUs
Offices - General (Building B)	1,604	Sq. Ft.	@	0.40	Per 1,000	Sq. Ft.	=	0.64 REUs
Quick Service Restaurants (w/ Dining) (Building C)	20	Fixtures	@	0.49	Per 1	Fixtures	=	9.80 REUs
Stores (Building D)	3,600	Sq. Ft.	@	0.04	Per 1,000	Sq. Ft.	=	0.14 REUs
	Total REUs		=	17.97 REUs				
	Equivalent Population		=	2.44 People Per REU				
	Total Population		=	44 People				

Average Flow	=	100 Gal/Per/Day * Population / 7.48 gal/cf * 86,400 sec/day					
	=	**4384.34 GPD**	=	**0.0068 CFS**			
Peak Factor	=	18 + (# of Persons/1000) ^ 0.50 / 4 + (# of Persons/1000) ^ 0.50			=	4.33	
Peak Flow	=	Peak Factor * Average Flow					
	=	**18966.21 GPD**	=	**0.0293 CFS**			
Proposed Sanitary Sewer	=	8	In.	@ 0.40 %	=	0.764	CFS

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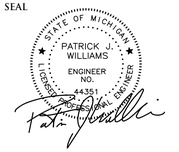

PROJECT
Marketplace of Rochester Hills
3900 Industrial Drive
Rochester Hills, MI 48309

CLIENT
Grenadier Adams MP, LLC
Contact: Josh Grenadier
Ph-248-752-1748

PROJECT LOCATION
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SHEET
Site Notes and Details

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DATE	ISSUED/REVISED
02-27-2024	ISSUED FOR SP REVIEW
04-08-2024	REVISED PER CITY

DRAWN BY: A. Eizember
DESIGNED BY: A. Eizember
APPROVED BY: P. Williams
DATE: September 29, 2022
SCALE: N.T.S.

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Received 4/9/2024
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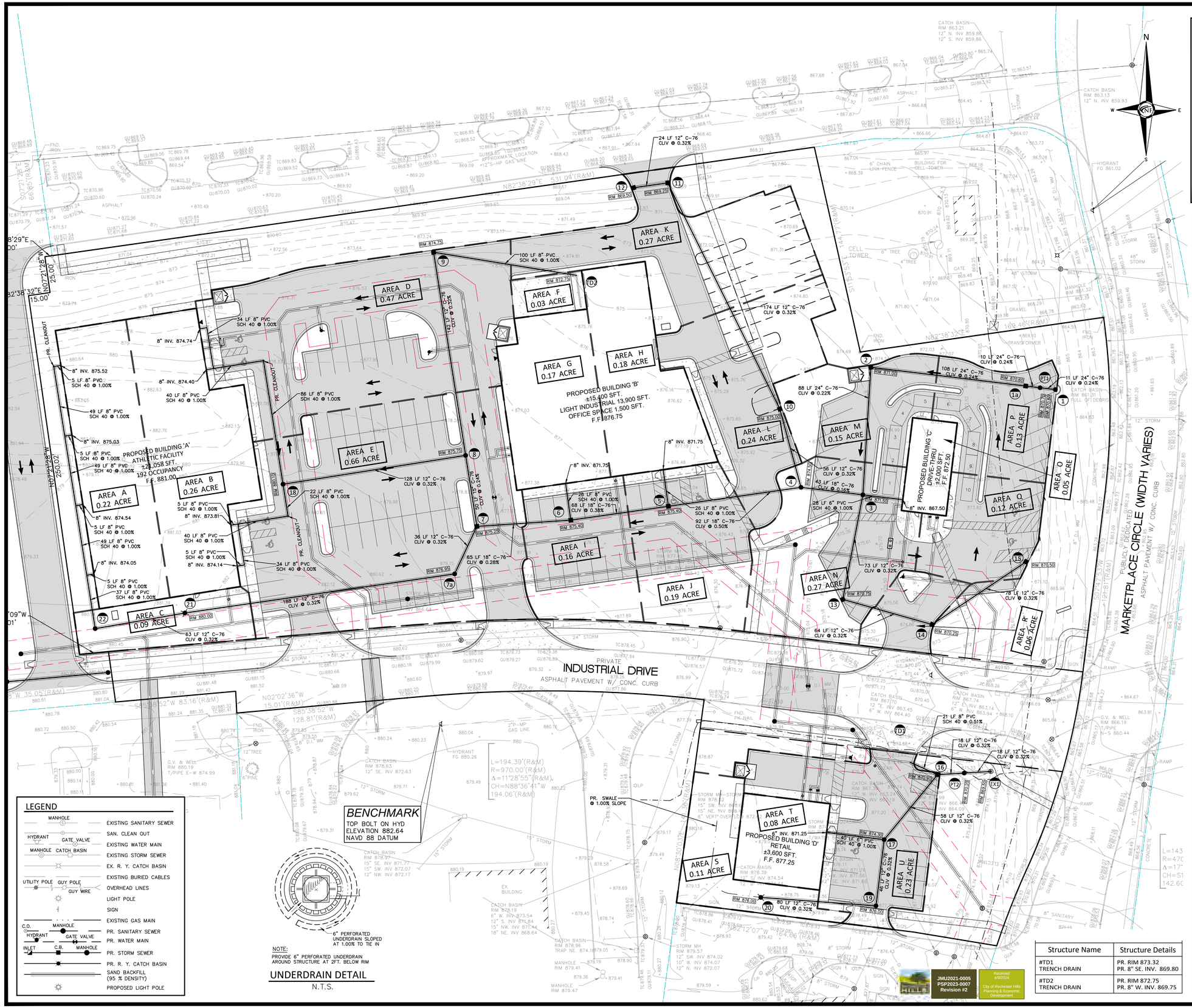
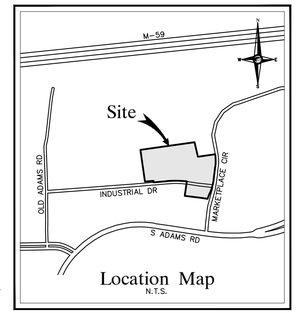
City File #22-042
Section #30
NFE JOB NO. L762-01
SHEET NO. SP5





Location Map
N.T.S.

Storm Drainage Structure Schedule

Structure Name	Structure Details
#1 Concentric Cylindrical Structure	PR. RIM 870.80 PR. 24" W. INV. 863.42 EX. 30" N. INV. 857.50 EX. 30" S. INV. 857.50
#1a 4' DIA CB W/ 2' SUMP	PR. RIM 870.60 PR. 24" W. INV. 863.67 PR. 24" E. INV. 863.57
#2 4' DIA. CB	PR. RIM 871.00 PR. 24" S. INV. 864.02 PR. 24" E. INV. 863.92
#3 4' DIA. MH	PR. RIM 871.50 PR. 18" W. INV. 864.32 PR. 12" S. INV. 865.61 PR. 24" N. INV. 864.22 PR. 6" E. INV. 867.22
#4 4' DIA. MH	PR. RIM 874.50 PR. 12" N. INV. 864.49 PR. 18" W. INV. 866.78 PR. 18" E. INV. 864.39
#5 4' DIA. CB	PR. RIM 875.40 PR. 18" W. INV. 867.34 PR. 18" E. INV. 867.24 PR. 8" N. INV. 871.49
#6 4' DIA. CB	PR. RIM 875.40 PR. 18" W. INV. 867.69 PR. 18" E. INV. 867.59 PR. 8" N. INV. 871.49
#7 4' DIA. CB	PR. RIM 875.25 PR. 15" N. INV. 867.98 PR. 18" E. INV. 867.88 PR. 12" SW. INV. 872.41
#7a 4' DIA MANHOLE	PR. RIM 876.95 PR. 12" NE. INV. 872.53 PR. 12" W. INV. 872.63
#8 4' DIA. MH	PR. RIM 875.75 PR. 12" N. INV. 868.20 PR. 12" W. INV. 872.63 PR. 15" S. INV. 868.10
#9 4' DIA. CB	PR. RIM 874.75 PR. 8" E. INV. 868.75 PR. 12" S. INV. 868.65
#10 4' DIA. CB	PR. RIM 875.00 PR. 12" NW. INV. 864.77 PR. 12" S. INV. 864.67
#11 4' DIA. CB	PR. RIM 869.25 PR. 12" W. INV. 865.42 PR. 12" SE. INV. 865.32
#12 4' DIA. CB	PR. RIM 869.50 PR. 12" E. INV. 865.50
#13 4' DIA. CB	PR. RIM 870.75 PR. 12" E. INV. 865.95 PR. 12" N. INV. 865.85
#14 4' DIA. CB	PR. RIM 870.25 PR. 12" NE. INV. 866.25 PR. 12" W. INV. 866.15
#15 4' DIA. CB	PR. RIM 870.50 PR. 12" SW. INV. 866.50
#16 4' DIA. CB	PR. RIM 870.90 PR. 12" E. INV. 864.91 PR. 8" NW. INV. 869.70 PR. 12" SW. INV. 866.91
#17 4' DIA. MH	PR. RIM 874.30 PR. 12" NE. INV. 867.10 PR. 6" W. INV. 870.85 PR. 12" S. INV. 869.60
#18 4' DIA. MH	PR. RIM 880.10 PR. 8" N. INV. 873.14 PR. 8" S. INV. 873.14 PR. 12" E. INV. 873.04
#19 4' DIA. MH	PR. RIM 876.00 PR. 12" N. INV. 869.74 PR. 12" W. INV. 871.74
#20 4' DIA. RYCB	PR. RIM 876.00 PR. 12" E. INV. 872.00
#21 4' DIA. RYCB	PR. RIM 880.00 PR. 12" E. INV. 873.23 PR. 12" W. INV. 873.33
#22 4' DIA. MH	PR. RIM 880.50 PR. 12" E. INV. 873.53 PR. 8" N. INV. 873.63
#EX1 TAP & ADJUST EX. MANHOLE	PR. RIM 871.00 PR. 12" W. INV. 864.69 EX. 12" NE. INV. 864.09 EX. 12" S. INV. 866.49
#PT1 PRE-TREATMENT UNIT	PR. RIM 870.70 PR. 24" W. INV. 863.54 PR. 24" E. INV. 863.44
#PT2 PRE-TREATMENT UNIT	PR. RIM 870.20 PR. 12" E. INV. 864.75 PR. 12" W. INV. 864.85

Structure Name	Structure Details
#TD1 TRENCH DRAIN	PR. RIM 873.32 PR. 8" SE. INV. 869.80
#TD2 TRENCH DRAIN	PR. RIM 872.75 PR. 8" W. INV. 869.75

LEGEND

- MANHOLE — EXISTING SANITARY SEWER
- HYDRANT, GATE VALVE — SAN. CLEAN OUT
- MANHOLE, CATCH BASIN — EXISTING WATER MAIN
- EXISTING STORM SEWER
- EX. R. Y. CATCH BASIN
- UTILITY POLE, GUY POLE, GUY WIRE — EXISTING BURIED CABLES
- OVERHEAD LINES
- LIGHT POLE
- SIGN
- EXISTING GAS MAIN
- C.O., MANHOLE, HYDRANT, GATE VALVE — PR. SANITARY SEWER
- PR. WATER MAIN
- INLET, C.B., MANHOLE — PR. STORM SEWER
- PR. R. Y. CATCH BASIN
- SAND BACKFILL (95 % DENSITY)
- PROPOSED LIGHT POLE

NOTE:
PROVIDE 6" PERFORATED UNDERDRAIN AROUND STRUCTURE AT 2FT. BELOW RIM

UNDERDRAIN DETAIL
N.T.S.

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PATRICK J. WILLIAMS
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SHEET
Storm Water Management Plan

Know what's below Call before you dig.

DATE	ISSUED/REVISED
02-27-2024	ISSUED FOR SP REVIEW
04-08-2024	REVISED PER CITY

DRAWN BY: M. Hani
DESIGNED BY: A. Eizember
APPROVED BY: P. Williams
DATE: September 29, 2022
SCALE: 1" = 30'
30 15 0 15 30 45

City File #22-042
Section #30

NFE JOB NO. L762-01
SHEET NO. SP6

Weighted Run-off Coefficient Calculation "C"

Total Site:	180,141	S.F.	or	4.14	Acres		
1. Pavement and Roofs:	151,399	S.F.	or	3.48	Acres	84%	
2. Lawn, Landscape & Buffers:	28,742	S.F.	or	0.66	Acres	16%	
Sum of Individual Areas:	180,141	S.F.	or	4.14	Acres	100%	
Area No. 1 - Coefficient:	0.95						
Area No. 2 - Coefficient:	0.35						

"C" (Average) = Area 1 * C1 + Area 2 * C2 / Area 1 + Area 2

"C" (Average) = 0.85

"C" by Areas

Area A:	Pavement:	9569 S.F.	0.22 Acres		
	Grass:	0 S.F.	0.00 Acres	C=	0.95
	Total:	9569 S.F.	0.22 Acres		
Area B:	Pavement:	11490 S.F.	0.26 Acres		
	Grass:	0 S.F.	0.00 Acres	C=	0.95
	Total:	11490 S.F.	0.26 Acres		
Area C:	Pavement:	362 S.F.	0.01 Acres		
	Grass:	3645 S.F.	0.08 Acres	C=	0.40
	Total:	4007 S.F.	0.09 Acres		
Area D:	Pavement:	18788 S.F.	0.43 Acres		
	Grass:	1896 S.F.	0.04 Acres	C=	0.90
	Total:	20684 S.F.	0.47 Acres		
Area E:	Pavement:	24758 S.F.	0.57 Acres		
	Grass:	3852 S.F.	0.09 Acres	C=	0.87
	Total:	28610 S.F.	0.66 Acres		
Area F:	Pavement:	1338 S.F.	0.03 Acres		
	Grass:	0 S.F.	0.00 Acres	C=	0.95
	Total:	1338 S.F.	0.03 Acres		
Area G:	Pavement:	7429 S.F.	0.17 Acres		
	Grass:	0 S.F.	0.00 Acres	C=	0.95
	Total:	7429 S.F.	0.17 Acres		
Area H:	Pavement:	7963 S.F.	0.18 Acres		
	Grass:	0 S.F.	0.00 Acres	C=	0.95
	Total:	7963 S.F.	0.18 Acres		
Area I:	Pavement:	5185 S.F.	0.12 Acres		
	Grass:	1900 S.F.	0.04 Acres	C=	0.79
	Total:	7085 S.F.	0.16 Acres		
Area J:	Pavement:	5289 S.F.	0.12 Acres		
	Grass:	3114 S.F.	0.07 Acres	C=	0.73
	Total:	8403 S.F.	0.19 Acres		
Area K:	Pavement:	10540 S.F.	0.24 Acres		
	Grass:	1018 S.F.	0.02 Acres	C=	0.90
	Total:	11558 S.F.	0.27 Acres		
Area L:	Pavement:	9824 S.F.	0.23 Acres		
	Grass:	419 S.F.	0.01 Acres	C=	0.93
	Total:	10243 S.F.	0.24 Acres		
Area M:	Pavement:	4388 S.F.	0.10 Acres		
	Grass:	2007 S.F.	0.05 Acres	C=	0.76
	Total:	6395 S.F.	0.15 Acres		
Area N:	Pavement:	6430 S.F.	0.15 Acres		
	Grass:	5199 S.F.	0.12 Acres	C=	0.68
	Total:	11629 S.F.	0.27 Acres		
Area O:	Pavement:	2000 S.F.	0.05 Acres		
	Grass:	0 S.F.	0.00 Acres	C=	0.95
	Total:	2000 S.F.	0.05 Acres		
Area P:	Pavement:	5577 S.F.	0.13 Acres		
	Grass:	201 S.F.	0.00 Acres	C=	0.93
	Total:	5778 S.F.	0.13 Acres		
Area Q:	Pavement:	5161 S.F.	0.12 Acres		
	Grass:	53 S.F.	0.00 Acres	C=	0.94
	Total:	5214 S.F.	0.12 Acres		
Area R:	Pavement:	1899 S.F.	0.04 Acres		
	Grass:	708 S.F.	0.02 Acres	C=	0.79
	Total:	2607 S.F.	0.06 Acres		
Area S:	Pavement:	224 S.F.	0.01 Acres		
	Grass:	4489 S.F.	0.10 Acres	C=	0.38
	Total:	4713 S.F.	0.11 Acres		
Area T:	Pavement:	3600 S.F.	0.08 Acres		
	Grass:	0 S.F.	0.00 Acres	C=	0.95
	Total:	3600 S.F.	0.08 Acres		
Area U:	Pavement:	9585 S.F.	0.22 Acres		
	Grass:	241 S.F.	0.01 Acres	C=	0.94
	Total:	9826 S.F.	0.23 Acres		

T= 15 Minutes — **Time of Concentration** — **City of Rochester Hills, Oakland County, Michigan**
I = 30.20p^0.22 / (Tc+9.17)^0.81 — **10 Year Storm Event Intensity** — **Storm Sewer Calculations**
n (Conc. 0.013 — **Manning's Roughness Coefficient**
n (Pvc) 0.013 — **Manning's Roughness Coefficient**

Project No: L762
Project Name: Marketplace of Rochester Hills
Location: Marketplace Circle
Dated: September 28, 2022
Revised: 04/08/24

Drainage Area	From Struc. No.	To Struc. No.	Drainage Area (Acres)	Runoff Coefficient (C)	Equivalent Area (C * A)	Total Area (Sum C * A)	Time of Concentration (Minutes)	Rainfall Intensity (Inches/Hr.)	Actual Discharge (CFS)	Pipe Size (Inches)	Pipe Slope (% Slope)	Pipe Length (Feet)	Flow Full Velocity (Ft / Sec)	Time of Flow (Minutes)	Full Pipe Capacity (CFS)	H. G. Elev. Upper End (Feet)	H. G. Elev. Lower End (Feet)	H. G. Slope (% Slope)	Theoretical Velocity (Ft / Sec)	Ground Elevation (Upper)	Change in Elevation (Feet)	Invert Elev. Upper End (Feet)	Invert Elev. Lower End (Feet)	Upper Rim to HGL (Feet)
A	ROOF	22	0.22	0.95	0.209	0.209	15.00	3.798	0.794	8	1.00	37	3.462	0.18	1.208	874.32	874.16	0.431	2.27	881.00	0.37	874.00	873.63	6.68
B	ROOF	18	0.26	0.95	0.247	0.247	15.00	3.798	0.938	8	1.00	86	3.462	0.41	1.208	874.19	873.67	0.603	2.69	881.00	0.86	874.00	873.14	6.81
-	18	8	0.00	0.95	0.000	0.247	15.41	3.746	0.925	12	0.32	128	2.566	0.83	2.015	873.52	873.43	0.067	1.18	880.10	0.41	873.04	872.63	6.58
F	TD2	9	0.03	0.95	0.029	0.029	15.00	3.798	0.108	8	1.00	100	3.462	0.48	1.208	869.38	869.37	0.008	0.31	872.75	1.00	869.75	868.75	3.37
D	9	8	0.47	0.90	0.423	0.452	15.48	3.738	1.688	12	0.32	142	2.566	0.92	2.015	869.37	869.05	0.224	2.15	874.75	0.45	868.65	868.20	5.38
-	8	7	0.00	0.95	0.000	0.699	16.40	3.628	2.534	15	0.24	50	2.579	0.32	3.165	869.05	868.98	0.154	2.07	875.75	0.12	868.10	867.98	6.70
-	22	21	0.00	0.95	0.000	0.209	15.18	3.775	0.789	12	0.32	63	2.566	0.41	2.015	874.16	874.13	0.049	1.00	880.50	0.20	873.53	873.33	6.34
C	21	7a	0.09	0.40	0.036	0.245	15.59	3.725	0.913	12	0.32	188	2.566	1.22	2.015	873.55	873.43	0.066	1.16	880.00	0.60	873.23	872.63	6.45
-	7a	7	0.00	0.95	0.000	0.245	16.81	3.582	0.878	12	0.32	36	2.566	0.23	2.015	873.23	873.21	0.061	1.12	876.95	0.12	872.53	872.41	3.72
E	7	6	0.66	0.87	0.574	1.518	17.04	3.556	5.398	18	0.28	65	3.145	0.34	5.558	869.07	868.89	0.264	3.05	875.25	0.18	867.88	867.69	6.18
G	6A	6	0.17	0.95	0.162	0.162	15.00	3.798	0.613	8	1.00	26	3.462	0.13	1.208	872.17	872.10	0.258	1.76	876.75	0.26	871.75	871.49	4.58
I	6	5	0.16	0.79	0.126	1.806	17.39	3.519	6.354	18	0.38	68	3.664	0.31	6.475	872.35	872.10	0.366	3.60	875.40	0.26	867.59	867.34	3.05
H	5A	5	0.18	0.95	0.171	0.171	15.00	3.798	0.649	8	1.00	26	3.462	0.13	1.208	872.10	872.02	0.289	1.86	876.75	0.26	871.75	871.49	4.65
J	5	4	0.19	0.73	0.139	2.115	17.70	3.486	7.374	18	0.50	92	4.203	0.36	7.428	868.43	867.98	0.493	4.17	875.40	0.46	867.24	866.78	6.97
K/2	12	11	0.14	0.90	0.126	0.126	15.00	3.798	0.479	12	0.32	24	2.566	0.16	2.015	866.23	866.22	0.018	0.61	869.50	0.08	865.50	865.42	3.27
K/2	11	10	0.14	0.90	0.126	0.252	15.16	3.778	0.952	12	0.32	174	2.566	1.13	2.015	865.69	865.57	0.071	1.21	869.25	0.56	865.32	864.77	3.56
L	10	4	0.24	0.93	0.223	0.475	16.29	3.642	1.731	12	0.32	56	2.566	0.36	2.015	866.12	865.99	0.236	2.20	875.00	0.18	864.67	864.49	8.88
-	4	3	0.00	0.95	0.000	2.591	18.06	3.448	8.933	24	0.16	43	2.880	0.25	9.049	865.99	865.92	0.156	2.84	874.50	0.07	864.39	864.32	8.51
Q	15	14	0.12	0.94	0.113	0.113	15.00	3.798	0.428	12	0.32	78	2.566	0.51	2.015	867.06	867.05	0.014	0.55	870.50	0.25	866.50	866.25	3.44
R	14	13	0.06	0.79	0.047	0.160	15.51	3.735	0.598	12	0.32	64	2.566	0.42	2.015	867.67	867.65	0.028	0.76	870.25	0.20	866.15	865.95	2.58
N	13	3	0.27	0.68	0.184	0.344	15.92	3.685	1.267	12	0.32	73	2.566	0.47	2.015	867.74	867.65	0.126	1.61	870.75	0.23	865.85	865.61	3.01
O	3A	3	0.05	0.95	0.048	0.048	15.00	3.798	0.180	6	1.00	28	2.858	0.16	0.561	867.65	867.62	0.103	0.92	872.50	0.28	867.50	867.22	4.85
-	3	2	0.00	0.95	0.000	2.982	18.31	3.423	10.207	24	0.22	88	3.378	0.43	10.611	865.80	865.62	0.204	3.25	871.50	0.19	864.22	864.02	5.70
M	2	1a	0.15	0.76	0.114	3.096	18.74	3.380	10.463	24	0.24	108	3.528	0.51	11.083	865.50	865.27	0.214	3.33	871.00	0.26	863.92	863.67	5.50
P	1a	PT1	0.13	0.93	0.121	3.217	19.25	3.331	10.714	24	0.24	10	3.528	0.05	11.083	865.16	865.14	0.224	3.41	870.60	0.02	863.57	863.54	5.44
-	PT1	1	0.00	0.95	0.000	3.217	19.30	3.326	10.699	24	0.24	11	3.528	0.05	11.083	865.04	865.02	0.224	3.41	870.70	0.03	863.44	863.42	5.66

T= 15 Minutes — **Time of Concentration** — **City of Rochester Hills, Oakland County, Michigan**
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S	20	19	0.11	0.38	0.042	0.042	15.00	3.798	0.159	12	0.32	80	2.566	0.52	2.015	872.55	872.54	0.002	0.20	876.00	0.26	872.00	871.74	3.45
-	19	17	0.00	0.95	0.000	0.042	15.52	3.733	0.156	12	0.32	46	2.566	0.30	2.015	870.40	870.40	0.002	0.20	876.00	0.15	869.74	869.60	5.60
T	17A	17	0.08	0.95	0.076	0.076	15.00	3.798	0.289	6	1.00	40	2.858	0.23	0.561	871.36	871.25	0.265	1.47	877.25	0.40	871.25	870.85	5.89
-	17	16	0.00	0.95	0.000	0.118	15.82	3.697	0.435	12	0.32	58	2.566	0.38	2.015	867.72	867.71	0.015	0.55	874.30	0.19	867.10	866.91	6.58
U	16	PT2	0.23	0.94	0.216	0.334	16.20	3.652	1.220	12	0.32	18	2.566	0.12	2.015	865.67	865.65	0.117	1.55	870.90	0.06	864.91	864.85	5.23
-	PT2	EX1	0.00	0.95	0.000	0.334	16.31	3.639	1.215	12	0.32	18	2.566	0.12	2.015	865.52	865.50	0.116	1.55	870.20	0.06	864.75	864.70	-

Table 1 Aqua-Swirl® XCelerator Models and Associated MTFRs

Model	Manhole Diameter (ft)	NJDEP 50% TSS Maximum Treatment Flow Rate, MTFR (cfs)	50% Maximum Sediment Storage Area Volume (ft^3)
XC-2	2.5	0.57	2.46
XC-3	3.5	1.13	4.81
XC-4	4.5	1.86	7.95
XC-5	5.5	2.78	11.88
XC-6	6.5	3.88	16.59
XC-7	7.5	5.17	22.09
XC-8	8.5	6.64	28.38
XC-9	9.5	8.29	35.44
XC-10	10.5	10.13	43.30
XC-11	11.5	12.15	51.94
XC-12	12.5	14.35	61.36
XC-13	13	15.53	66.37

MANUFACTURED TREATMENT CALCULATIONS

Per OCWRC Requirements, mechanical treatment structures shall meet applicable requirements of the New Jersey Department of Environmental Protection (NJDEP):
https://www.njstormwater.org/treatment.html

Based on OCWRC Equations for Water Quality Flow Rate (Qwq)

Name of Project:	**Adams Marketplace**
Location of Project:	**Rochester Hills, MI**
Contributing Drainage Area ("A")	3.72 acres
Weighted Runoff Coefficient ("C"):	0.86
Time of Concentration ("Tc")	19.30 minutes
Calculate Water Quality Flow Rate (Qwq)	
Qwq = (C)(A)[30.20/([Tc+9.17)^0.81]	
Qwq =	**6.41 cfs**

MANUFACTURED TREATMENT CALCULATIONS

Per OCWRC Requirements, mechanical treatment structures shall meet applicable requirements of the New Jersey Department of Environmental Protection (NJDEP):
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Based on OCWRC Equations for Water Quality Flow Rate (Qwq)

Name of Project:	**Adams Marketplace**
Location of Project:	**Rochester Hills, MI**
Contributing Drainage Area ("A")	0.42 acres
Weighted Runoff Coefficient ("C"):	0.79
Time of Concentration ("Tc")	16.31 minutes
Calculate Water Quality Flow Rate (Qwq)	
Qwq = (C)(A)[30.20/([Tc+9.17)^0.81]	
Qwq =	**0.73 cfs**

JMU2021-0005
PSP2023-0007
Revision #2

Received
4/9/2024
City of Rochester Hills
Planning & Economic
Development

NOT TO BE USED AS CONSTRUCTION DRAWINGS

NF ENGINEERS
CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS

NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257
WWW.NOWAKFRAUS.COM

NOT TO BE USED AS CONSTRUCTION DRAWINGS

SEAL

STATE OF MICHIGAN — PATRICK J. WILLIAMS — ENGINEER NO. 44351 — LICENSED PROFESSIONAL ENGINEER

PROJECT
Marketplace of Rochester Hills
3900 Industrial Drive
Rochester Hills, MI 48309

CLIENT
Grenadier Adams MP, LLC
Contact: Josh Grenadier
Ph-248-752-1748

PROJECT LOCATION
Part of the SW. 1/4 of Section 30, T.3N., R.11E., City of Rochester Hills, Oakland County, MI

SHEET
Storm Sewer Calculations

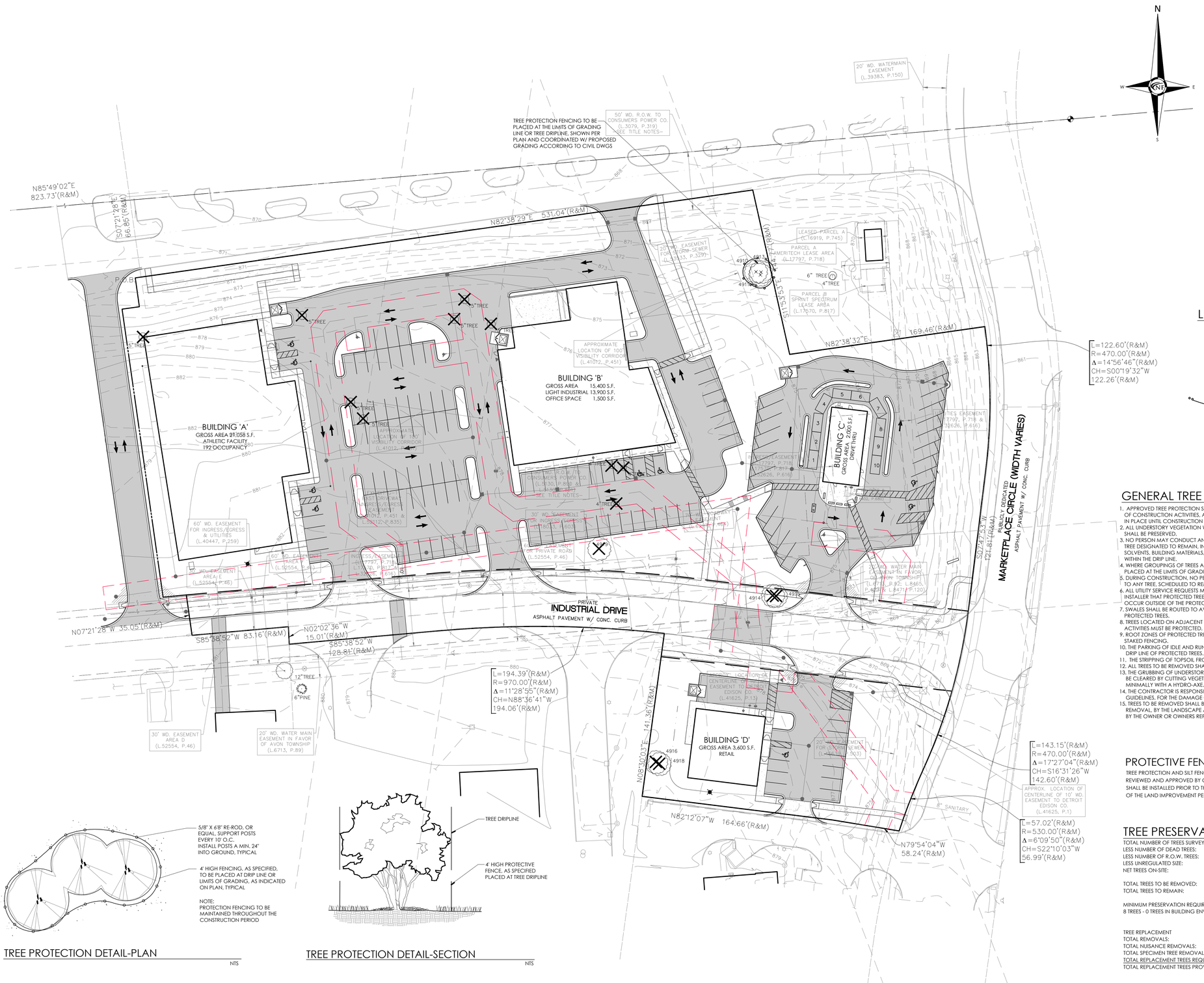
Know what's below Call before you dig.

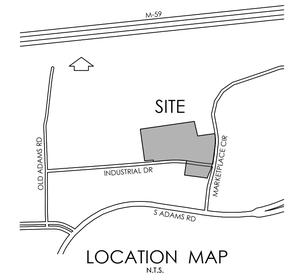
DATE	ISSUED/REVISED
02-27-2024	ISSUED FOR SP REVIEW
04-08-2024	REVISED PER CITY

DRAWN BY: M. Hani
DESIGNED BY: A. Eizember
APPROVED BY: P. Williams
DATE: September 29, 2022
SCALE: 1" = 30'

30 15 0 15 30 45

City File #22-042
Section #30
NFE JOB NO. L762-01
SHEET NO. SP7





LOCATION MAP
N.T.S.

LEGEND:

- TREES TO BE REMOVED
- 950 — TREES TO REMAIN
- TREE PROTECTION FENCING

GENERAL TREE PROTECTION NOTES

1. APPROVED TREE PROTECTION SHALL BE ERECTED PRIOR TO THE START OF CONSTRUCTION ACTIVITIES, AND SHALL REMAIN IN PLACE UNTIL THE IN PLACE UNTIL CONSTRUCTION IS COMPLETE.
2. ALL UNDERSTORY VEGETATION WITHIN THE LIMITS OF PROTECTIVE FENCING SHALL BE PRESERVED.
3. NO PERSON MAY CONDUCT ANY ACTIVITY WITHIN THE DRIP LINE OF ANY TREE DESIGNATED TO REMAIN, INCLUDING BUT NOT LIMITED TO, PLACING SOLVENTS, BUILDING MATERIALS, CONSTRUCTION EQUIPMENT, OR SOIL DEPOSITS WITHIN THE DRIP LINE.
4. WHERE GROUPINGS OF TREES ARE TO REMAIN, TREE FENCING SHALL BE PLACED AT THE LIMITS OF GRADING LINE.
5. DURING CONSTRUCTION, NO PERSON SHALL ATTACH ANY DEVICE OR WIRE TO ANY TREE, SCHEDULED TO REMAIN.
6. ALL UTILITY SERVICE REQUESTS MUST INCLUDE NOTIFICATION TO THE INSTALLER THAT PROTECTED TREES MUST BE AVOIDED. ALL TRENCHING SHALL OCCUR OUTSIDE OF THE PROTECTIVE FENCING.
7. SWALES SHALL BE ROUTED TO AVOID THE AREA WITHIN THE DRIP LINES OF PROTECTED TREES.
8. TREES LOCATED ON ADJACENT PROPERTIES THAT MAY BE AFFECTED BY CONSTRUCTION ACTIVITIES MUST BE PROTECTED.
9. ROOT ZONES OF PROTECTED TREES SHOULD BE SURROUNDED WITH RIGIDLY STAKED FENCING.
10. THE PARKING OF IDLE AND RUNNING EQUIPMENT SHALL BE PROHIBITED UNDER THE DRIP LINE OF PROTECTED TREES.
11. THE STRIPPING OF TOPSOIL FROM AROUND PROTECTED TREES SHALL BE PROHIBITED.
12. ALL TREES TO BE REMOVED SHALL BE CUT AWAY FROM TREES TO REAMIN.
13. THE GRUBBING OF UNDERSTORY VEGETATION WITHIN CONSTRUCTION AREAS SHOULD BE CLEARED BY CUTTING VEGETATION AT THE GROUND WITH A CHAIN SAW OR MINIMALLY WITH A HYDRO-AXE.
14. THE CONTRACTOR IS RESPONSIBLE FOR THE REPLACEMENT PER ORDINANCE GUIDELINES, FOR THE DAMAGE OR REMOVAL OF ANY TREE DESIGNATED TO REMAIN.
15. TREES TO BE REMOVED SHALL BE FIELD VERIFIED, EVALUATED AND FLAGGED FOR REMOVAL, BY THE LANDSCAPE ARCHITECT OR FORESTER, ONLY AS DIRECTED BY THE OWNER OR OWNERS REPRESENTATIVE.

PROTECTIVE FENCING NOTE:

TREE PROTECTION AND SILT FENCING, AS REVIEWED AND APPROVED BY CITY STAFF, SHALL BE INSTALLED PRIOR TO THE ISSUANCE OF THE LAND IMPROVEMENT PERMIT.

TREE PRESERVATION SUMMARY:

TOTAL NUMBER OF TREES SURVEYED:	18
LESS NUMBER OF DEAD TREES:	0
LESS NUMBER OF R.O.W. TREES:	0
LESS UNREGULATED SIZE:	10
NET TREES ON-SITE:	8
TOTAL TREES TO BE REMOVED:	5
TOTAL TREES TO REMAIN:	3

MINIMUM PRESERVATION REQUIREMENT
8 TREES - 0 TREES IN BUILDING ENVELOPE = 8 X 40% = 3 TREES REQUIRED TO BE PRESERVED
3 TREES PROPOSED TO BE SAVED

TREE REPLACEMENT

TOTAL REMOVALS:	5 TREES
TOTAL NUISANCE REMOVALS:	0 TREES
TOTAL SPECIMEN TREE REMOVALS:	0 TREES
TOTAL REPLACEMENT TREES REQUIRED:	5 TREES
TOTAL REPLACEMENT TREES PROVIDED:	5 TREES

TREE PROTECTION DETAIL-PLAN
NTS

TREE PROTECTION DETAIL-SECTION
NTS

NF ENGINEERS
CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS

NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257

SEAL

PROJECT
Marketplace of Rochester Hills
3900 Industrial Drive

CLIENT
Grenadier Adams MP, LLC
24255 West 13 Mile
Suite 220
Bingham Farms, MI 48025

Contact: Josh Grenadier
Ph: (248) 752-1748

PROJECT LOCATION
Part of the Southwest ¼ of Section 30
T. 3 North, R. 11 East
City of Rochester Hills, Oakland County, Michigan

SHEET
Tree Preservation Plan

811 Know what's below Call before you dig.

REVISIONS
02/27/24 ISSUED FOR SITE PLAN REVIEW
04/08/24 REVISED PER CITY REVIEW

DRAWN BY: G. Ostrowski
DESIGNED BY: G. Ostrowski
APPROVED BY: G. Ostrowski
DATE: 01-19-2024
SCALE: 1" = 40'
40 20 0 20 40 60

NFE JOB NO. L762
SHEET NO. L1

JMU2021-0005
PSP2023-0007
Revision #2

Received 4/9/2024
City of Rochester Hills Planning & Economic Development

CITY FILE NO. 22-042, SECTION 30

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IRRIGATION NOTE:

ALL LANDSCAPE AREAS, INCLUDING THOSE WITHIN THE R.O.W. SHALL BE IRRIGATED WITH AN AUTOMATIC UNDERGROUND IRRIGATION SYSTEM. THE SYSTEM SHALL OPERATE IN COMPLIANCE WITH LOCAL STANDARDS AND SEASONAL RESTRICTIONS. SEPARATE ZONES SHALL BE PROVIDED FOR LAWN AREAS AND PLANTING BEDS. IRRIGATION SHALL BE DESIGNED IN THE MOST EFFICIENT MANNER NECESSARY TO FULLY IRRIGATE ALL PLANTING AREAS.

Trees were removed and replaced with foundation plants along the western facade of Building 'A'

A note was added indicating that a 3' clearance must be maintained around the FDC

Landscaping (except for small shrubs) shall be removed in this area. Landscaping cannot obstruct the building due to the designation of this area being in the aerial apparatus access road.

Ensure landscaping provides a three foot clearance on either side of the fire department connection and does not obstruct its view.

Provide plantings along foundation in lieu of trees along access drive to accommodate fire department comments.

see note above

Evergreen shrubs were added around the dumpster enclosure

Additional evergreen plantings, typical of other dumpsters.

Note branches need to be maintained by being limbed up 3.5' from ground surface and/or the point of vision from the drivers eye maintained clear. (typical)

ensure the landscaping is a minimum of 3 feet away from the fire hydrant and will not obstruct its view.

A note was added indicating that a 3' clearance must be maintained around the hydrant

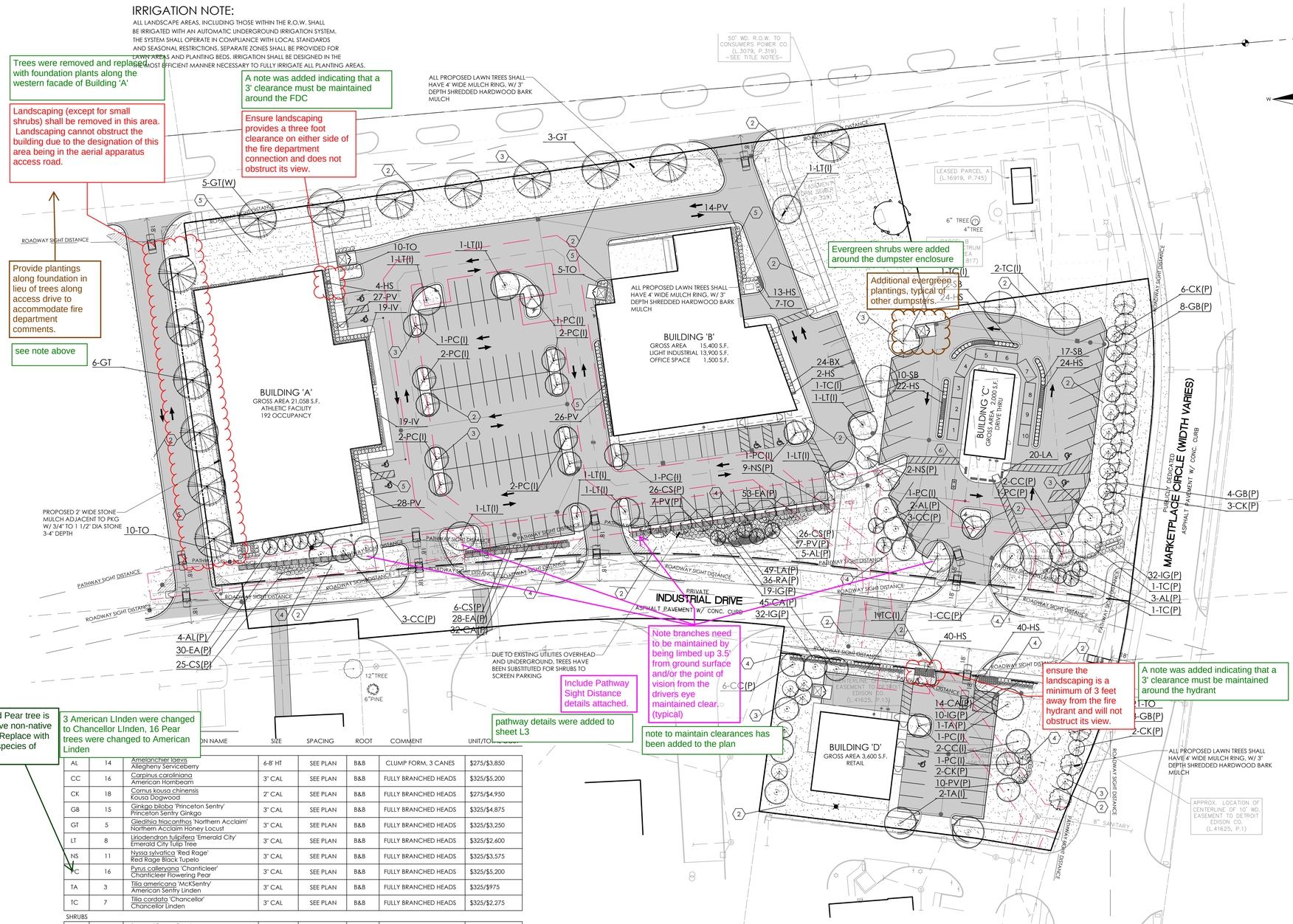
Include Pathway Sight Distance details attached.

pathway details were added to sheet L3

note to maintain clearances has been added to the plan

Proposed Pear tree is an invasive non-native species. Replace with another species of tree.

3 American LInden were changed to Chancellor LInden, 16 Pear trees were changed to American Linden



	QTY	COMMON NAME	SIZE	SPACING	ROOT	COMMENT	UNIT/TOTAL COST
AL	14	Amelanchier laevis Allegheny Serviceberry	6-8' HT	SEE PLAN	B&B	CLUMP FORM, 3 CANES	$275/$3,850
CC	16	Carpinus caroliniana American Hornbeam	3" CAL	SEE PLAN	B&B	FULLY BRANCHED HEADS	$325/$5,200
CK	18	Cornus kousa chinensis Kousa Dogwood	2" CAL	SEE PLAN	B&B	FULLY BRANCHED HEADS	$275/$4,950
GB	15	Ginkgo biloba 'Princeton Sentry' Princeton Sentry Ginkgo	3" CAL	SEE PLAN	B&B	FULLY BRANCHED HEADS	$325/$4,875
GT	5	Gleditsia triacanthos 'Northern Acclaim' Northern Acclaim Honey Locust	3" CAL	SEE PLAN	B&B	FULLY BRANCHED HEADS	$325/$3,250
LT	8	Liriodendron tulipifera 'Emerald City' Emerald City Tulip Tree	3" CAL	SEE PLAN	B&B	FULLY BRANCHED HEADS	$325/$2,600
NS	11	Nyssa sylvatica 'Red Rage' Red Rage Black Tupelo	3" CAL	SEE PLAN	B&B	FULLY BRANCHED HEADS	$325/$3,575
PC	16	Pyrus calleryana 'Chanticleer' Chanticleer Flowering Pear	3" CAL	SEE PLAN	B&B	FULLY BRANCHED HEADS	$325/$5,200
TA	3	Tilia americana 'McKSentry' American Sentry Linden	3" CAL	SEE PLAN	B&B	FULLY BRANCHED HEADS	$325/$975
TC	7	Tilia cordata 'Chancellor' Chancellor Linden	3" CAL	SEE PLAN	B&B	FULLY BRANCHED HEADS	$325/$2,275
SHRUBS							
BX	24	Buxus x 'Green Gem' Green Gem Boxwood	24" HT	30" OC	B&B	MAINTAIN AS HEDGE	$50/1,200
CS	83	Cornus sericea 'Kelseyii' Kelsey Red Twig Dogwood	24" HT	30" OC	B&B		$50/4,150
EA	111	Euonymous alatus 'Moses' Moses Burning Bush	30" HT	30" OC	B&B	MAINTAIN AS HEDGE	$50/$5,500
IG	93	Ilex glabra 'Strongbox' Strongbox Holly	30" HT	30" OC	B&B	MAINTAIN AS HEDGE	$50/$4,650
RA	36	Rhus aromatica 'Grow Low' Grow Low Fragrant Sumac	24" HT	30" OC	B&B		$50/$1,800
SB	39	Spiraea x m. 'Snow Storm' Snow Storm Spiraea	24" HT	30" OC	B&B		$50/$1,950
TO	53	Thuja occidentalis 'Smaragd' Emerald Green Arborvitae	60" HT	36" OC	B&B		$50/$2,650
GROUNDCOVERS/PERENNIALS							
CA	91	Calamagrostis a. 'Karl Foerster' Karl Foerster Feather Reed Grass	3 GAL	30" OC	CONT		$15/$1,365
HS	169	Hemerocallis 'Stella D'Oro' Stella D'Oro Daylily	2 GAL	24" OC	CONT		$15/$2,535
IV	38	Iris versicolor 'Gerald Darby' Gerald Darby Multicolored Iris	1 GAL	18" OC	CONT		$15/$570
LA	69	Lavanadula angustifolia 'Baby Blue' Baby Blue Lavender	2 GAL	18" OC	CONT		$15/$1,035
PV	119	Panicum virgatum 'Northwind' Northwind Switch Grass	3 GAL	30" OC	CONT		$15/$1,800
MISCELLANEOUS							
IRR	1	AUTOMATIC UNDEGROUND IRRIGATION SYSTEM	LS				$20,000
MULCH	35	3" DEPTH DOUBLE SHREDDED HARDWOOD MULCH	CYD				$45/$1,575
						LANDSCAPE ESTIMATE TOTAL	$87,530

GROUNDCOVER KEY

1. TYPICAL SOD LAWN AREAS, SOWN ON 3" TOPSOIL
2. TYPICAL HYDRO-SEEDED LAWN ON 3" TOPSOIL
3. 4' DIA SPADE CUT EDGE W/ 3" SHREDDED BARK MULCH
4. 3" DEPTH DOUBLE SHREDDED HARDWOOD BARK MULCH
5. 3/4" - 1 1/2" STONE MULCH, 3-4" DEPTH ON WEED BARRIER
6. 72" x 16" x 32" FIBERGLASS PLANTER AT PATIO, 5 TOTAL

TYPICAL SEEDED LAWN MIX:

ALL LAWN AREAS DESIGNATED TO BE SEEDED, SHALL BE HYDROSEEDED WITH TYPICAL DROUGHT TOLERANT, DURABLE BLENDED SEED MIX, AT A RATE OF 220 LBS PER ACRE
MIX IS COMPRISED OF

- 30% NITE HAWK PERENNIAL RYE
- 30% KENTUCKY BLUEGRASS
- 20% CREEPING RED FESCUE
- 10% MERIT KENTUCKY BLUEGRASS
- 10% NEWPORT KENTUCKY BLUEGRASS

NOTE:

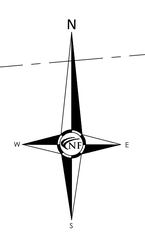
PRIOR APPROVAL IS REQUIRED TO PLANT ANY TREE OR SHRUB ON THE PUBLIC RIGHT-OF-WAY. ALL TREES AND SHRUBS MUST BE PLANTED AT LEAST 10' FROM THE EDGE OF THE PUBLIC ROAD. (TREES MUST BE PLANTED AT LEAST 15' AWAY FROM CURB OR ROAD EDGE WHERE THE SPEED IS MORE THAN 35 MPH.) SHADE TREES AND SHRUBS MUST BE PLANTED AT LEAST 5' FROM THE EDGE OF THE PUBLIC WALKWAY. EVERGREEN AND ORNAMENTAL TREES MUST BE PLANTED AT LEAST 10' FROM THE EDGE OF THE PUBLIC WALKWAY. NO TREES OR SHRUBS MAY BE PLANTED WITHIN THE TRIANGULAR AREA FORMED AT THE INTERSECTION OF ANY STREET RIGHT-OF-WAY LINES AT A DISTANCE ALONG EACH LINE OF 25' FROM THEIR POINT OF INTERSECTION. NO TREES OR SHRUBS MAY BE PLANTED IN THE TRIANGULAR AREA FORMED AT THE INTERSECTION OF ANY DRIVEWAY WITH A PUBLIC WALKWAY AT A DISTANCE ALONG EACH LINE OF 15' FROM THEIR POINT OF INTERSECTION. ALL TREES AND SHRUBS MUST BE PLANTED AT LEAST 10' FROM ANY FIRE HYDRANT. SHADE AND EVERGREEN TREES MUST BE AT LEAST 15' AWAY FROM THE NEAREST OVERHEAD WIRE. TREES MUST BE PLANTED A MINIMUM OF 5' FROM AN UNDERGROUND UTILITY, UNLESS THE CITY'S LANDSCAPE ARCHITECT REQUIRES A GREATER DISTANCE.

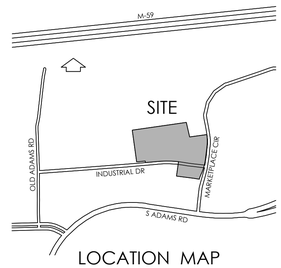
PRIOR TO THE RELEASE OF THE PERFORMANCE BOND, THE CITY OF ROCHESTER HILLS FORESTRY DIVISION NEEDS TO INSPECT ALL TREES, EXISTING OR PLANTED, TO IDENTIFY ANY THAT POSE A HAZARD TO THE SAFE USE OF THE PUBLIC RIGHT-OF-WAY. FORESTRY MAY REQUIRE THE DEVELOPER TO REMOVE, AND POSSIBLY REPLACE, ANY SUCH TREES.

THESE REQUIREMENTS ARE INCORPORATED INTO THE PLAN.

CITY MAINTENANCE NOTES:

1. LANDSCAPING SHALL BE KEPT IN A NEAT, ORDERLY AND HEALTHY GROWING CONDITION, FREE FROM DEBRIS AND REFUSE.
2. PRUNING SHALL BE MINIMAL AT THE TIME OF INSTALLATION, ONLY TO REMOVE DEAD AND DISEASED BRANCHES. SUBSEQUENT PRUNING SHALL ASSUME PROPER MATURATION OF PLANTS TO ACHIEVE THEIR APPROVED PURPOSE.
3. ALL DEAD, DISEASED PLANT MATERIAL SHALL BE REMOVED IMMEDIATELY AND REPLACED WITHIN SIX (6) MONTHS AFTER IT DIES, OR IN THE NEXT PLANTING SEASON, WHICHEVER OCCURS FIRST. FOR PURPOSES OF THIS SECTION, THE PLANTING SEASON FOR DECIDUOUS PLANTS SHALL BE BETWEEN MARCH 1 AND JUNE 1. PLANT MATERIAL INSTALLED TO REPLACE DEAD OR DISEASED MATERIAL SHALL BE AS CLOSE AS PRACTICAL TO THE SIZE OF THE MATERIAL IT IS INTENDED TO REPLACE. THE CITY MAY NOTIFY PROPERTY OWNERS OF THE NEED TO REPLACE DEAD, DAMAGED, OR DISEASED MATERIAL.
4. THE APPROVED LANDSCAPE PLAN SHALL BE CONSIDERED A PERMANENT RECORD AND INTEGRAL PART OF THE SITE PLAN APPROVAL. UNLESS OTHERWISE APPROVED IN ACCORDANCE WITH THE AFOREMENTIONED PROCEDURES, ANY REVISIONS TO, OR REMOVAL OF PLANT MATERIALS, NON-COMPLIANCE WITH THE MAINTENANCE REQUIREMENTS OF THIS SECTION 138-12.109 WILL PLACE THE PARCEL IN NON-CONFORMITY WITH THE APPROVED LANDSCAPE PLAN AND BE A VIOLATION OF THIS ORDINANCE.
5. IF PROTECTED TREES ARE DAMAGED, A FINE SHALL BE ISSUED ON AN INCH-BY-INCH BASIS AT A MONETARY RATE AS DEFINED BY THE FORESTRY DEPARTMENT.





LOCATION MAP
N.T.S.

LANDSCAPE REQUIREMENTS

EXISTING SITE AREA: 145,695.75 S.F. OR 3.34 ACRES

PARKING INTERIOR LANDSCAPE (I)
REQUIRED: 5% OF THE PARKING LOT SHALL BE LANDSCAPED WITH 1 TREE PER 150 S.F.
BUILDING A&B
REQUIRED AREA: 60,256.74 S.F. X 5% = 3,013 S.F.
3,013 S.F. / 150 S.F. = 20.29 OR 20 TREES REQUIRED
REQUIRED: 3,044 S.F. AND 20 TREES
PROVIDED: 4,246.69 S.F. AND 20 TREES

BUILDING C
REQUIRED AREA: 20,514.86 S.F. X 5% = 1,026 S.F.
1,026 S.F. / 150 S.F. = 6.8 OR 7 TREES
REQUIRED: 1,026 S.F. AND 7 TREES
PROVIDED: 1,163.21 S.F. AND 7 TREES

BUILDING D
REQUIRED AREA: 8,306 S.F. X 5% = 415 S.F.
415 S.F. / 150 S.F. = 2.76 OR 3 TREES
REQUIRED: 415 S.F. AND 3 TREES
PROVIDED: 658.14 S.F. AND 3 TREES

PARKING LOT PERIMETER LANDSCAPE (P)
REQUIRED: 1 CANOPY TREE/25 L.F. , 1 ORNAMENTAL/35 L.F.
PARKING IS GREATER THAN 30' TO R.O.W., NO SHRUBS REQUIRED
MARKETPLACE CIRCLE: 375 L.F. TOTAL (241 L.F. (N) + 134 L.F. (S))
375 L.F. / 25 L.F.= 15 CANOPY TREES
375 L.F. / 35 L.F. = 10.71 OR 11 ORNAMENTAL TREES
PROVIDED:
15 CANOPY TREES, 11 ORNAMENTAL TREES

INDUSTRIAL DRIVE: 726 L.F. (N) AND 255 L.F. (S)
REQUIRED:
NORTH
726 L.F. / 25 L.F. = 29 CANOPY TREES
726 L.F. / 35 L.F. = 21 ORNAMENTAL TREES
726 L.F. / 2.5 = 290 SHRUBS
PROVIDED:
21 CANOPY TREES, 14 ORNAMENTAL TREES, 297 SHRUBS
A WAIVER IS SOUGHT FOR THE BALANCE OF REQUIREMENTS DUE TO THE PRESENCE OF UTILITIES, EASEMENTS AND CLEARANCE ZONES
SOUTH
255 L.F. / 25 L.F. = 10 CANOPY TREES
255 L.F. / 35 L.F. = 7 ORNAMENTAL TREES
255 L.F. / 2.5 = 102 SHRUBS
PROVIDED:
10 CANOPY TREES, 7 ORNAMENTAL TREES, 111 SHRUBS & ORNAMENTAL GRASS, SINCE MUCH OF THE ENTIRE FRONTAGE IS WITHIN EITHER THE ROADWAY SIGHT DISTANCE OR PATHWAY SIGHT DISTANCE TRIANGLES TREES HAVE BEEN ACCOMMODATED ELSEWHERE ALONG THE FRONTAGE

TREE REPLACEMENTS (W)
REQUIRED: 5 REPLACEMENT TREES
PROVIDED: 5 TREES

GENERAL SEED NOTE:

ALL LAWN AREAS DESIGNATED TO BE SEEDED, SHALL BE HYDRO-SEEDED WITH SPECIFIED BLENDS, AND STABILIZED WITH WOOD CELLULOSE FIBER MULCH (2,000 LBS PER ACRE) . IN AREAS SUBJECT TO EROSION, SEEDED LAWN SHALL BE FURTHER STABILIZED WHERE NECESSARY WITH BIODEGRADABLE EROSION BLANKET AND STAKED UNTIL ESTABLISHED. ALL SEED SHALL BE APPLIED OVER A MINIMUM 3" PREPARED TOPSOIL, AND SHALL BE KEPT MOIST AND WATERED DAILY UNTIL ESTABLISHED.
SEEDING INSTALLATION SHALL OCCUR ONLY:
SPRING: APRIL1 TO JUNE1
FALL: AUGUST 15 TO OCTOBER 15

GENERAL LANDSCAPE NOTES

1. LANDSCAPE CONTRACTOR SHALL VISIT SITE, INSPECT EXISTING CONDITIONS AND REVIEW PROPOSED PLANTING AND RELATED WORK. IN CASE OF DISCREPANCY BETWEEN PLAN AND PLANT LIST, THE PLAN SHALL GOVERN QUANTITIES. CONTACT THE LANDSCAPE ARCHITECT WITH ANY CONCERNS.
2. THE CONTRACTOR SHALL VERIFY LOCATIONS OF ALL ON-SITE UTILITIES PRIOR TO BEGINNING CONSTRUCTION ON HIS/HER PHASE OF WORK. ANY DAMAGE OR INTERUPTION OF SERVICES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
3. THE CONTRACTOR SHALL COORDINATE ALL RELATED ACTIVITIES WITH OTHER TRADES, AND SHALL REPORT ANY UNACCEPTABLE SITE CONDITIONS TO THE OWNER'S REPRESENTATIVE PRIOR TO COMMENCEMENT.
4. PLANTS SHALL BE FULL, WELL-BRANCHED, AND IN HEALTHY VIGOROUS GROWING CONDITION.
5. PLANTS SHALL BE WATERED BEFORE AND AFTER PLANTING IS COMPLETE.
6. ALL TREES MUST BE STAKED, FERTILIZED AND MULCHED AND SHALL BE GUARANTEED TO EXHIBIT A NORMAL GROWTH CYCLE FOR AT LEAST ONE (1) YEAR FOLLOWING PLANTING.
7. ALL MATERIAL SHALL CONFORM TO THE GUIDELINES ESTABLISHED IN THE MOST RECENT EDITION OF THE "AMERICAN STANDARDS FOR NURSERY STOCK".
8. CONTRACTOR WILL SUPPLY FINISHED GRADE AND EXCAVATE AS NECESSARY TO SUPPLY PLANT MIX DEPTH IN ALL PLANTING BEDS AS INDICATED IN PLANT DETAILS AND A DEPTH OF 4" IN ALL LAWN AREAS.
9. PROVIDE CLEAN BACKFILL SOIL, USING MATERIAL STOCKPILED ON-SITE. SOIL SHALL BE SCREENED AND FREE OF DEBRIS, FOREIGN MATERIAL, AND STONE.
10. SLOW-RELEASE FERTILIZER SHALL BE ADDED TO THE PLANT PITS BEFORE BEING BACKFILLED. APPLICATION SHALL BE AT THE MANUFACTURERS RECOMMENDED RATES.
11. AMENDED PLANT MIX (PREPARED TOPSOIL) SHALL CONSIST OF 1/3 SCREENED TOPSOIL, 1/3 SAND, AND 1/3 "DAIRY DOO" COMPOST, MIXED WELL AND SPREAD TO A DEPTH AS INDICATED IN PLANTING DETAILS.
12. ALL PLANTINGS SHALL BE MULCHED WITH SHREDDED HARDWOOD BARK, SPREAD TO A DEPTH OF 3" FOR TREES AND SHRUBS, AND 2" ON ANNUALS, PERENNIALS, AND GROUNDCOVER PLANTINGS. MULCH SHALL BE FREE FROM DEBRIS AND FOREIGN MATERIAL, AND PIECES ON INCONSISTENT SIZE.
13. NO SUBSTITUTIONS OR CHANGES OF LOCATION, OR PLANT TYPE SHALL BE MADE WITHOUT THE APPROVAL OF THE LANDSCAPE ARCHITECT, CITY OF ROCHESTER HILLS AND OWNERS REPRESENTATIVE.
14. THE LANDSCAPE ARCHITECT SHALL BE NOTIFIED OF ANY DISCREPANCIES BETWEEN THE PLANS AND FIELD CONDITIONS PRIOR TO INSTALLATION.
15. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL PLANT MATERIAL IN A VERTICAL CONDITION THROUGHOUT THE GUARANTEED PERIOD.
16. THE LANDSCAPE ARCHITECT OR OWNERS REPRESENTATIVE SHALL HAVE THE RIGHT TO REJECT ANY WORK OR MATERIAL THAT DOES NOT MEET THE REQUIREMENTS OF THE PLANS AND/OR SPECIFICATIONS.
17. THE LANDSCAPE CONTRACTOR SHALL SEED AND MULCH OR SOD (AS INDICATED ON PLANS) ALL AREAS DESIGNATED AS SUCH ON THE PLANS, THROUGHOUT THE CONTRACT LIMITS. FURTHER, THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING AREAS DISTURBED DURING CONSTRUCTION, NOT IN THE CONTRACT LIMITS, TO EQUAL OR GREATER CONDITION.
18. ALL LANDSCAPE AREAS SHALL HAVE PROPER DRAINAGE THAT PREVENTS EXCESSIVE WATER FROM PONDING ON LAWN AREAS OR AROUND TREES AND SHRUBS.
19. ALL LANDSCAPE AREAS SHALL BE IRRIGATED WITH AN AUTOMATIC UNDERGROUND SYSTEM.

NF ENGINEERS
CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS

NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
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SEAL

PROJECT
Marketplace of Rochester Hills
3900 Industrial Drive

CLIENT
Grenadier Adams MP, LLC
24255 West 13 Mile
Suite 220
Bingham Farms, MI 48025

Contact: Josh Grenadier
Ph: (248) 752-1748

PROJECT LOCATION
Part of the Southwest ¼ of Section 30
T. 3 North, R. 11 East
City of Rochester Hills, Oakland County, Michigan

SHEET
Landscape Plan

Know what's below Call before you dig.

REVISIONS
02/27/24 ISSUED FOR SITE PLAN REVIEW
04/08/24 REVISED PER CITY REVIEW

DRAWN BY: G. Ostrowski
DESIGNED BY: G. Ostrowski
APPROVED BY: G. Ostrowski
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Planning & Economic Development

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69345.72	72"L x 16"W x 32"H	69"L x 13.25"W	72"L x 16"W	73.2 lbs	137

FIBERGLASS PLANTERS

MODULAR FIBERGLASS PLANTER AVAILABLE FROM:
POTS, PLANTERS AND MORE
1-855-208-2709
COLOR: GUNMETAL
FINISH: LOW GLOSS

PLANTING NOTES:

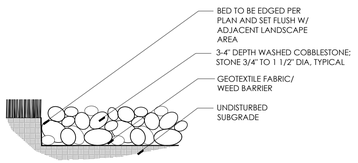
1. THE CONTRACTOR SHALL VERIFY ALL RIGHTS OF WAY, EASEMENTS, PROPERTY LINES AND LIMITS OF WORK, ETC., PRIOR TO COMMENCING WORK.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING AND COORDINATING WITH ALL PERTINENT UTILITY COMPANIES 72 HOURS IN ADVANCE OF ANY DIGGING TO MAKE HIMSELF FAMILIAR WITH ALL UNDERGROUND UTILITIES, PIPES AND STRUCTURES. THE CONTRACTOR SHALL TAKE SOLE RESPONSIBILITY FOR ANY COST INCURRED DUE TO DAMAGE OF SAID UTILITIES.
3. THE CONTRACTOR SHALL NOT WILLFULLY PROCEED WITH CONSTRUCTION AS DESIGNED WHEN IT IS OBVIOUS THAT UNKNOWN OBSTRUCTIONS AND/OR GRADE DIFFERENCES EXIST. SUCH CONDITIONS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE AND/OR LANDSCAPE ARCHITECT. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ALL NECESSARY REVISIONS DUE TO FAILURE TO GIVE SUCH NOTIFICATION.
4. ANY DISCREPANCIES BETWEEN DIMENSIONED LAYOUT AND ACTUAL FIELD CONDITIONS SHALL BE REPORTED TO THE OWNER'S REPRESENTATIVE AND LANDSCAPE ARCHITECT. FAILURE TO MAKE SUCH DISCREPANCIES KNOWN WILL RESULT IN CONTRACTOR'S RESPONSIBILITY AND LIABILITY FOR ANY CHANGES AND ASSOCIATED COST.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COORDINATION WITH SUBCONTRACTORS AS REQUIRED TO ACCOMPLISH CONSTRUCTION INSTALLATION OPERATIONS.
6. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN POSITIVE SURFACE DRAINAGE. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT, AND OR OWNER'S REPRESENTATIVE.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY EXISTING MATERIALS THAT ARE DAMAGED DURING CONSTRUCTION.
8. SEE SPECIFICATIONS, PLANT LIST AND PLANTING DETAILS FOR PLANTING REQUIREMENTS, MATERIALS AND EXECUTION.
9. ALL TREES TO HAVE CLAY LOAM OR CLAY BALLS - TREES WITH SAND BALLS SHALL NOT BE ACCEPTED.
10. ALL TREES TO BE APPROVED BY OWNER'S REPRESENTATIVE AND/OR LANDSCAPE ARCHITECT PRIOR TO DELIVERY TO THE SITE. ANY TREES DELIVERED TO THE SITE NOT PREVIOUSLY APPROVED MAY BE REJECTED AND ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
11. FINAL LOCATION OF ALL PLANT MATERIAL SHALL BE SUBJECT TO THE APPROVAL OF THE LANDSCAPE ARCHITECT.
12. THE CONTRACTOR TO VERIFY PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION OF PLANT MATERIAL.
13. THE CONTRACTOR SHALL PLACE 3" DEPTH OF SHREDDED BARK MULCH IN ALL PLANTING BEDS, UNLESS OTHERWISE INDICATED.

CONSTRUCTION NOTES:

1. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL EXISTING SURVEY INFORMATION INCLUDING THE UTILITY SYSTEMS BEFORE ANY DEMOLITION OR CONSTRUCTION WORK OCCURS. ANY DISCREPANCIES WITH THE SURVEY INFORMATION SHALL BE REPORTED TO THE ARCHITECT AND OWNER'S REPRESENTATIVE IMMEDIATELY.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING HIMSELF FAMILIAR WITH ALL UNDERGROUND UTILITIES, PIPES AND STRUCTURES. CONTRACTOR SHALL TAKE SOLE RESPONSIBILITY FOR COST INCURRED DUE TO DAMAGE AND REPLACEMENT OF SAID UTILITIES.
3. CONTRACTOR SHALL NOT WILLFULLY PROCEED WITH CONSTRUCTION AS DESIGNED WHEN IT IS OBVIOUS THAT UNKNOWN OBSTRUCTIONS AND / OR GRADE DIFFERENCES EXIST THAT MAY NOT HAVE BEEN KNOWN DURING THE DESIGN. SUCH CONDITIONS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE CITY ENGINEER. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ALL NECESSARY REVISIONS DUE TO LACK OF SUCH NOTIFICATION.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COORDINATION WITH SUBCONTRACTORS AS REQUIRED TO ACCOMPLISH OPERATIONS.
5. CONTRACTOR IS RESPONSIBLE FOR REPLACEMENT OF ANY EXISTING MATERIALS THAT ARE DAMAGED DURING CONSTRUCTION.
6. SEE SPECIFICATIONS FOR CONSTRUCTION REQUIREMENTS, MATERIALS, AND EXECUTION.
7. ALL PROPERTY LINES AND LOT LINES SHALL BE VERIFIED PRIOR TO COMMENCING WORK.
8. CONTRACTOR SHALL SUBMIT ALL SAMPLES PER SPECIFICATIONS. ALL SAMPLES SHALL BE APPROVED BY THE ARCHITECT OR OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION.
9. DIMENSIONAL FLEXIBILITY SHALL BE WITHIN PLANT BEDS ONLY.
10. CONTRACTOR SHALL COORDINATE ALL SITE LAYOUT WITH THE LANDSCAPE ARCHITECT AND REPORT ANY DIMENSIONAL DISCREPANCIES PRIOR TO CONSTRUCTION.
11. HANDICAPPED RAMPS SHALL MEET ALL CURRENT BARRIER FREE DESIGN CODES.

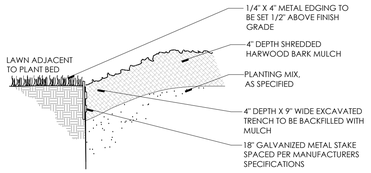
GRADING NOTES:

1. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL EXISTING SURVEY INFORMATION INCLUDING THE UTILITY SYSTEMS BEFORE ANY DEMOLITION OR CONSTRUCTION WORK OCCURS. ANY DISCREPANCIES WITH THE SURVEY INFORMATION SHALL BE REPORTED TO THE ARCHITECT AND OWNER'S REPRESENTATIVE IMMEDIATELY.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING HIMSELF FAMILIAR WITH ALL UNDERGROUND UTILITIES, PIPES AND STRUCTURES. CONTRACTOR SHALL TAKE SOLE RESPONSIBILITY FOR COST INCURRED DUE TO DAMAGE AND REPLACEMENT OF SAID UTILITIES.
3. CONTRACTOR SHALL NOT WILLFULLY PROCEED WITH CONSTRUCTION AS DESIGNED WHEN IT IS OBVIOUS THAT UNKNOWN OBSTRUCTIONS AND / OR GRADE DIFFERENCES EXIST THAT MAY NOT HAVE BEEN KNOWN DURING THE DESIGN. SUCH CONDITIONS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE CITY ENGINEER. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ALL NECESSARY REVISIONS DUE TO LACK OF SUCH NOTIFICATION.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COORDINATION WITH SUBCONTRACTORS AS REQUIRED TO ACCOMPLISH OPERATIONS.
5. CONTRACTOR IS RESPONSIBLE FOR REPLACEMENT OF ANY EXISTING MATERIALS THAT ARE DAMAGED DURING CONSTRUCTION.
6. NO CHANGE IN CONTRACT PRICE WILL BE ALLOWED FOR ACTUAL OR CLAIMED BETWEEN EXISTING GRADE AND THOSE SHOWN ON PLANS AFTER CONTRACTOR HAS ACCEPTED EXISTING GRADES AND MOVED ON TO THE SITE.
7. ALL PROPOSED GRADES ARE TO MEET AND BLEND IN WITH THE EXISTING GRADE AT PROJECT LIMIT. PRECISE ELEVATIONS INDICATED ON THE PLANS TO BE VERIFIED IN FIELD TO AS-BUILT CONDITION.
8. ALL GRADING AND PLACEMENT OF DRAINAGE STRUCTURES TO BE SUPERVISED IN THE FIELD BY THE OWNER'S REPRESENTATIVE.
9. INSTALL 4" DEPTH TOPSOIL OVER ALL DISTURBED LAWN AREAS.
10. SEED ALL PROPOSED OR DISTURBED LAWN AREAS.



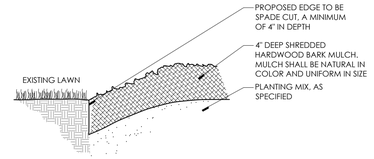
COBBLESTONE MULCH DETAIL

NTS



METAL EDGING DETAIL

NTS



SPADE CUT EDGE DETAIL

NTS

ORNAMENTAL GRASS PLANTING DETAIL

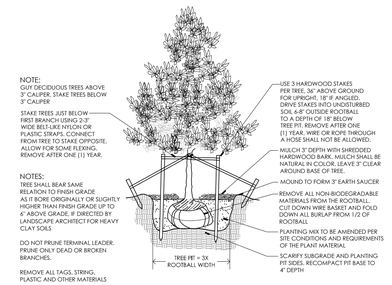
NTS

TRANSFORMER SCREENING DETAIL

NTS

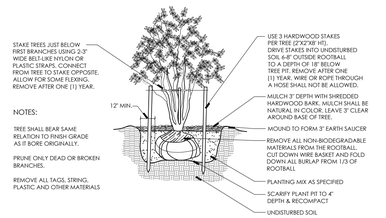
UPRIGHT EVERGREEN SHRUB PLANTING DETAIL

NTS



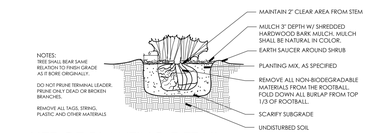
DECIDUOUS TREE PLANTING DETAIL

NTS



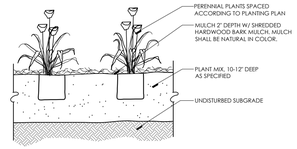
MULTI-STEM TREE PLANTING DETAIL

NTS



HEDGE PLANTING DETAIL

NTS



PERENNIAL PLANTING DETAIL

NTS

PLANT MIX SPECIFICATION

STANDARD PLANT MIX BACKFILL SHALL BE PROVIDED FOR ALL PROPOSED PLANTINGS. ONE CUBIC YARD OF PLANT MIX SHALL BE COMPOSED OF:
- 1/3 SCREENED TOPSOIL
- 1/3 CLEAN COARSE SAND
- 1/3 PEAT MOSS

PLANT MIX TYPE 'A' : TREE AND SHRUB PLANT BEDS SHALL BE AMENDED W/ OSMOCOTE 18-6-12 SLOW RELEASE FERTILIZER PER MANUFACTURER

PLANT MIX TYPE 'B' : ANNUAL, PERENNIAL AND GROUNDCOVER PLANT BEDS SHALL INCLUDE STANDARD MIX WITH THE AMENDMENTS AND AT THE RATES DESCRIBED BELOW:

1. "DAIRY DOO": OR APPROVED EQUAL APPLIED AT THE MANUFACTURERS RECOMMENDED RATES
2. 13:13:13 FERTILIZER: APPLIED AT THE MANUFACTURERS RECOMMENDED RATES
3. BONE MEAL: APPLIED AT 5 LBS PER CUBIC YARD OF SOIL MIX

NF ENGINEERS
CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS

NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257

SEAL

PROJECT
Marketplace of Rochester Hills
3900 Industrial Drive

CLIENT
Grenadier Adams MP, LLC
24255 West 13 Mile
Suite 220
Bingham Farms, MI 48025

Contact: Josh Grenadier
Ph: (248) 752-1748

Part of the Southwest ¼ of Section 30
T. 3 North, R. 11 East
City of Rochester Hills, Oakland County, Michigan

SHEET
Landscape Notes and Details

Know what's below Call before you dig.

REVISIONS
02/27/24 ISSUED FOR SITE PLAN REVIEW
04/08/24 REVISED PER CITY REVIEW

DRAWN BY: G. Ostrowski
DESIGNED BY: G. Ostrowski
APPROVED BY: G. Ostrowski
DATE: 01/19/2024
SCALE: VARIES

JMU2021-0005
PSP2023-0007
Revision #2

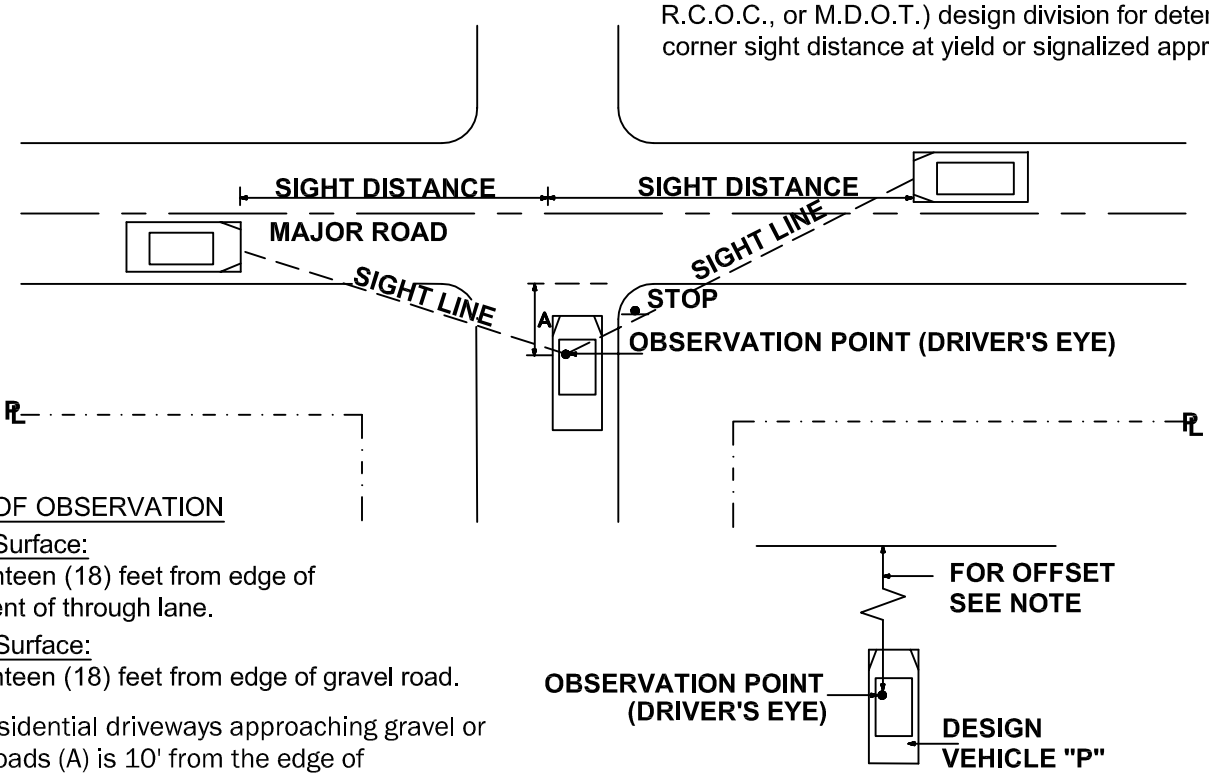
Received 4/8/2024
City of Rochester Hills Planning & Economic Development

CITY FILE NO. 22-042, SECTION 30

NFE JOB NO. M623
SHEET NO. L3

W:\JOBS\2000 Files\JOB FILES\2420 Offices\Landscape\L24-01_LS.REV.dwg, 4/8/2024 9:17:43 AM

Different sight distances are required for yield or signal controlled intersections. Contact road agency's (City, R.C.O.C., or M.D.O.T.) design division for determining corner sight distance at yield or signalized approaches.



POINT OF OBSERVATION

Paved Surface:
(A) Eighteen (18) feet from edge of pavement of through lane.

Gravel Surface:
(A) Eighteen (18) feet from edge of gravel road.

* For residential driveways approaching gravel or paved roads (A) is 10' from the edge of gravel/pavement.

The point of vision shall be from the height of eye, 3.5 feet above the proposed intersecting elevation to a height of object 3.5 feet above the existing or proposed road centerline and shall be continuously visible within the specified limits.

MINIMUM CORNER SIGHT DISTANCE FOR DRIVEWAYS AND STREETS AT MAJOR ROAD INTERSECTIONS FOR PASSENGER VEHICLES		
MAJOR ROAD POSTED OR 85% SPEED IN MPH	MINIMUM SIGHT DISTANCE IN FEET, BOTH DIRECTIONS	
	2 OR 3 LANE THRU ROAD IN FEET	4 OR 5 LANE THRU ROAD IN FEET
25	280	295
30	335	355
35	390	415
40	445	470
45	500	530
50	555	590
55	610	650

The basic prima facia speed shall be used for gravel roads, unless otherwise approved by the Engineer.

NOTES

1. Any deviation from given data requires an engineering study approved by the road agency (City, R.C.O.C., or M.D.O.T.) in accordance with the latest edition AASHTO policy on geometric design.
2. This design guide also applies to new Permit and Plat construction projects.
3. The above data is based on a left turn maneuver into the intersecting roadway as described in AASHTO. Due to the higher potential accident severity, the left turning sight distance was used to determine the corner sight distanced required. Right turn onto major roads shall have the same sight distances.
4. Existing site conditions may require an engineering study to determine sight distance.

CITY OF ROCHESTER HILLS
STANDARD DETAIL FOR:

Sight Distance Roadways

ROCHESTER HILLS MICHIGAN

DRAWN BY:	FILE NAME:	PLAN DATE:	REV.	REV.	REV.
B. SMITH	CIRC DRV	8/28/1996	4/12/2012	3/15/2014	

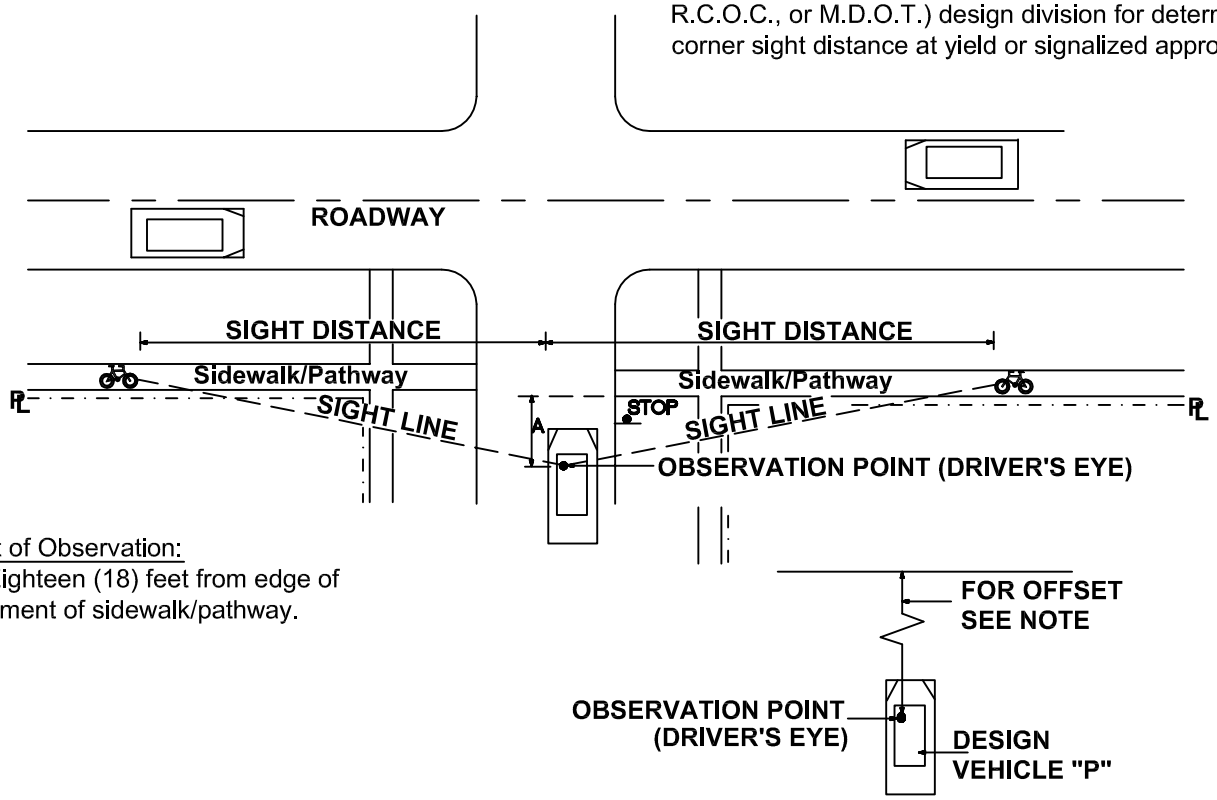
APPROVED BY:
PAUL SHUMEJKO, P.E., PTOE
CITY TRANSPORTATION ENGINEER

NOT TO SCALE

SHEET 1 OF 2

I:\ENG\DWG\DETAILS\ROADS\SIGHT DISTANCE-Rds & Paths.DWG

Different sight distances are required for yield or signal controlled intersections. Contact road agency's (City, R.C.O.C., or M.D.O.T.) design division for determining corner sight distance at yield or signalized approaches.



Point of Observation:
(A) Eighteen (18) feet from edge of pavement of sidewalk/pathway.

The point of vision shall be from the height of eye, 3.5 feet above the proposed intersecting elevation to a height of object 3.5 feet above the existing or proposed road centerline and shall be continuously visible within the specified limits.

MINIMUM CORNER SIGHT DISTANCE FOR STREETS AT INTERSECTIONS	
PATHWAY GRADE APPROACHING INTERSECTION (%)	MINIMUM SIGHT DISTANCE IN FEET, BOTH DIRECTIONS
0	135
-1	140
-2	145
-3	150
-4	160
-5	165
-6	175
-7	190
-8	205

NOTES

1. Any deviation from given data requires an engineering study approved by the road agency (City, R.C.O.C., or M.D.O.T.) in accordance with the latest edition AASHTO Guide for the Development of Bicycle Facilities.
2. This design guide also applies to new Permit and Plat construction projects.
3. The bicycle design speed used in the chart is 18 MPH.
4. Approach pathway slope greater than 8% is not allowed due to ADA compliance.
5. Existing site conditions may require an engineering study to determine sight distance.

CITY OF ROCHESTER HILLS
STANDARD DETAIL FOR:

Sight Distance Pathways

DRAWN BY:	FILE NAME:	PLAN DATE:	REV.	REV.	REV.
B. SMITH	CIRC DRV	8/28/1996	4/12/2012	3/15/2014	

APPROVED BY:
PAUL SHUMEJKO, P.E., PTOE
CITY TRANSPORTATION ENGINEER

NOT TO SCALE

SHEET 2 OF 2

I:\ENG\DWG\DETAILS\ROADS\SIGHT DISTANCE-Rds & Paths.DWG

ROCHESTER HILLS
MICHIGAN

FIRE DEPARTMENT
Sean Canto, Fire Chief

From: Vince Foisy
To: Planning Dept.
Date: May 2, 2024
Re: Marketplace of RH – Legacy Bldg & out Bldgs. - Section #30 – City Project # 22-042 Review #3

APPROVED

NOTE:
3900 Industrial Drive should be removed from the plans as these buildings have yet to be addressed, and all will appear to be addressed off Marketplace.

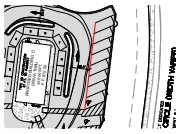
If you have any further questions, please contact me at 248.841.2709

_____
VINCENT B. FOISY
Communication Systems Administrator

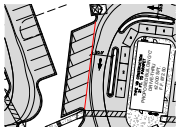
cc: File
h:\data

SITE PLAN.pdf Markup Summary

Arrow (3)



Subject: Arrow
Author: Ann Echols
Date: 4/9/2024 10:56:33 AM
Status:



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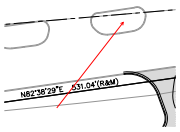

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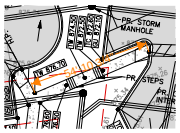
Author: Ann Echols
Date: 4/9/2024 11:34:53 AM
Status:

Building Department (3)



Subject: Building Department
Author: Mark Artinian
Date: 4/22/2024 4:01:21 PM
Status:

54'-10 3/4"

Subject: Building Department
Author: Mark Artinian
Date: 4/22/2024 4:25:13 PM
Status:

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

Subject: Building Department
Author: Mark Artinian
Date: 4/22/2024 4:26:12 PM
Status:

Yes

Cloud+ (5)

Subject: Cloud+
Author: Ann Echols
Date: 4/9/2024 10:55:00 AM
Status:

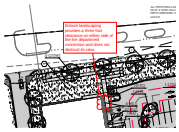
provide this documentation

Subject: Cloud+
Author: Ann Echols
Date: 4/9/2024 11:11:56 AM
Status:

Landscaping (except for small shrubs) shall be removed in this area. Landscaping cannot obstruct the building due to the designation of this area being in the aerial apparatus access road.

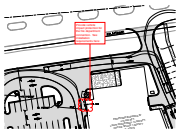
Subject: Cloud+
Author: Ann Echols
Date: 4/9/2024 11:28:24 AM
Status:

ensure the landscaping is a minimum of 3 feet away from the fire hydrant and will not obstruct its view.



Subject: Cloud+
Author: Ann Echols
Date: 4/9/2024 11:30:04 AM
Status:

Ensure landscaping provides a three foot clearance on either side of the fire department connection and does not obstruct its view.



Subject: Cloud+
Author: Ann Echols
Date: 4/9/2024 11:33:28 AM
Status:

Provide vehicle impact protection for the fire department connection. See installation requirements here:

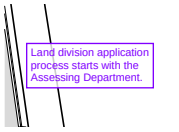
Engineering Department (2)

Subject: Engineering Department
Author: Jason Boughton
Date: 4/23/2024 10:44:45 AM
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: 4/23/2024 10:51:44 AM
Status:

Engineering Legal Review (2)



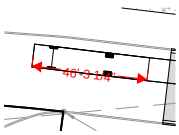
Subject: Engineering Legal Review
Author: Jenny McGuckin
Date: 4/22/2024 8:40:55 AM
Status:

Land division application process starts with the Assessing Department.

Subject: Engineering Legal Review
Author: Jenny McGuckin
Date: 4/23/2024 8:36:00 AM
Status:

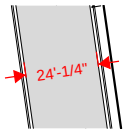
Easements for driveway and sidewalk will be needed during construction plan review.

Fire Department (7)



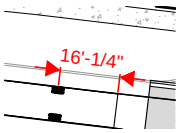
Subject: Fire Department
Author: Ann Echols
Date: 4/9/2024 10:45:53 AM
Status:

46'-3 1/4"



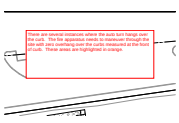
Subject: Fire Department
Author: Ann Echols
Date: 4/9/2024 10:47:58 AM
Status:

24'-1/4"



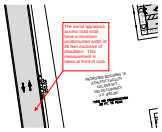
Subject: Fire Department
Author: Ann Echols
Date: 4/9/2024 11:00:51 AM
Status:

16'-1/4"



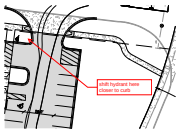
Subject: Fire Department
Author: Ann Echols
Date: 4/9/2024 11:06:18 AM
Status:

There are several instances where the auto turn hangs over the curb. The fire apparatus needs to maneuver through the site with zero overhang over the curbs measured at the front of curb. These areas are highlighted in orange.



Subject: Fire Department
Author: Ann Echols
Date: 4/16/2024 3:27:52 PM
Status:

The aerial apparatus access road shall have a minimum unobstructed width of 26 feet exclusive of shoulders. This measurement is taken at front of curb.



Subject: Fire Department
Author: Ann Echols
Date: 4/16/2024 3:28:23 PM
Status:

shift hydrant here closer to curb

Subject: Fire Department
Author: Ann Echols
Date: 4/16/2024 4:33:20 PM
Status:

Group (25)

Subject: Group
Author: macdonaldj
Date: 4/9/2024 10:10:36 AM
Status:

City of Rochester Hills Planning & Economic Development

Subject: Group
Author: C.McLeod
Date: 4/24/2024 3:31:04 PM
Status:

SP

Subject: Group
Author: C.McLeod
Date: 4/24/2024 3:31:08 PM
Status:

LIP

Subject: Group
Author: C.McLeod
Date: 4/24/2024 3:31:13 PM
Status:

Subject: Group
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Date: 4/24/2024 3:32:04 PM
Status:

BP

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Date: 4/24/2024 3:34:03 PM
Status:

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4/9/2024

City of Rochester Hills Planning & Economic Development

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Status:

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4/9/2024

City of Rochester Hills Planning & Economic Development

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4/9/2024

City of Rochester Hills Planning & Economic Development

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4/9/2024

City of Rochester Hills Planning & Economic Development

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4/9/2024

City of Rochester Hills Planning & Economic Development

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4/9/2024

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City of Rochester Hills Planning & Economic Development

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4/9/2024

City of Rochester Hills Planning & Economic Development

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City of Rochester Hills Planning & Economic Development

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City of Rochester Hills Planning & Economic Development

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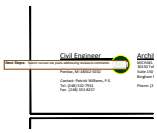
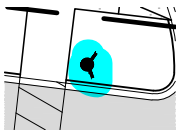
Received
4/9/2024

City of Rochester Hills Planning & Economic Development

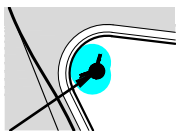


Subject: Group
Author: C.McLeod
Date: 5/1/2024 12:16:14 PM
Status:

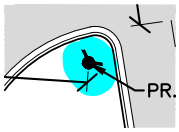
Highlight (13)



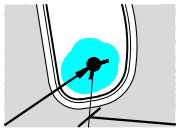
Subject: Highlight
Author: Ann Echols
Date: 4/9/2024 10:46:13 AM
Status:



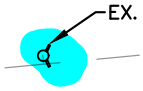
Subject: Highlight
Author: Ann Echols
Date: 4/9/2024 10:46:20 AM
Status:



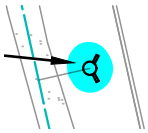
Subject: Highlight
Author: Ann Echols
Date: 4/9/2024 10:49:25 AM
Status:



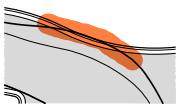
Subject: Highlight
Author: Ann Echols
Date: 4/9/2024 10:49:28 AM
Status:



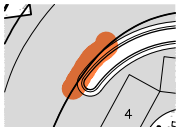
Subject: Highlight
Author: Ann Echols
Date: 4/9/2024 10:55:22 AM
Status:



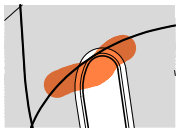
Subject: Highlight
Author: Ann Echols
Date: 4/9/2024 10:55:38 AM
Status:



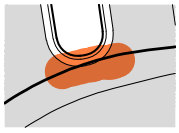
Subject: Highlight
Author: Ann Echols
Date: 4/9/2024 10:57:13 AM
Status:



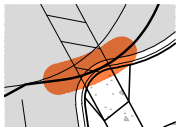
Subject: Highlight
Author: Ann Echols
Date: 4/9/2024 10:57:19 AM
Status:



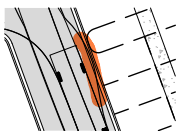
Subject: Highlight
Author: Ann Echols
Date: 4/9/2024 10:57:41 AM
Status:



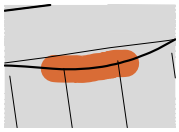
Subject: Highlight
Author: Ann Echols
Date: 4/9/2024 10:57:44 AM
Status:



Subject: Highlight
Author: Ann Echols
Date: 4/9/2024 10:57:49 AM
Status:



Subject: Highlight
Author: Ann Echols
Date: 4/9/2024 10:58:00 AM
Status:



Subject: Highlight
Author: Ann Echols
Date: 4/9/2024 11:09:22 AM
Status:

Image (1)

Subject: Image
Author: Ann Echols
Date: 4/9/2024 11:34:48 AM
Status:

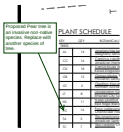
Jenny McGuckin - YES (1)

Subject: Jenny McGuckin - YES
Author: Jenny McGuckin
Date: 4/22/2024 9:07:38 AM
Status:

Natural Resouces (1)

Subject: Natural Resouces
Author: Matt Einheuser
Date: 4/18/2024 11:43:43 AM
Status:

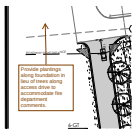
Natural Resources (1)



Subject: Natural Resources
Author: Matt Einheuser
Date: 4/18/2024 11:39:05 AM
Status:

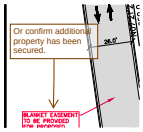
Proposed Pear tree is an invasive non-native species. Replace with another species of tree.

Planning Department (8)



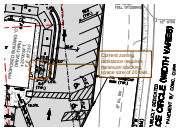
Subject: Planning Department
Author: C.McLeod
Date: 4/24/2024 3:26:42 PM
Status:

Provide plantings along foundation in lieu of trees along access drive to accommodate fire department comments.



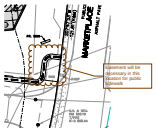
Subject: Planning Department
Author: C.McLeod
Date: 5/1/2024 12:17:20 PM
Status:

Or confirm additional property has been secured.



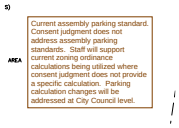
Subject: Planning Department
Author: C.McLeod
Date: 5/1/2024 12:18:13 PM
Status:

Current zoning ordinance requires minimum stacking space size of 20 feet.



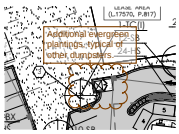
Subject: Planning Department
Author: C.McLeod
Date: 5/1/2024 12:18:56 PM
Status:

Easement will be necessary in this location for public sidewalk



Subject: Planning Department
Author: C.McLeod
Date: 5/1/2024 12:22:53 PM
Status:

Current assembly parking standard. Consent judgment does not address assembly parking standards. Staff will support current zoning ordinance calculations being utilized where consent judgment does not provide a specific calculation. Parking calculation changes will be addressed at City Council level.



Subject: Planning Department
Author: C.McLeod
Date: 5/1/2024 12:30:59 PM
Status:

Additional evergreen plantings, typical of other dumpsters.

Subject: Planning Department
Author: C.McLeod
Date: 5/1/2024 2:10:24 PM
Status:

Subject: Planning Department
Author: C.McLeod
Date: 5/1/2024 2:11:06 PM
Status:

Assessing Yes

Traffic (1)

Subject: Traffic
Author: Keith
Date: 4/22/2024 11:41:07 AM
Status:

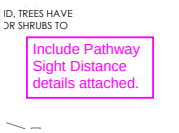
Traffic, Pathways, Sidewalks (6)

Subject: Traffic, Pathways, Sidewalks
Author: Keith
Date: 4/22/2024 11:37:41 AM
Status:

Note branches need to be maintained by being limbed up 3.5' from ground surface and/or the point of vision from the drivers eye maintained clear. (typical)

Subject: Traffic, Pathways, Sidewalks
Author: Keith
Date: 4/22/2024 11:33:59 AM
Status:

Subject: Traffic, Pathways, Sidewalks
Author: Keith
Date: 4/22/2024 11:38:58 AM
Status:



Subject: Traffic, Pathways, Sidewalks
Author: Keith
Date: 4/22/2024 11:37:49 AM
Status:

Include Pathway
Sight Distance details attached.

Subject: Traffic, Pathways, Sidewalks
Author: Keith
Date: 4/22/2024 11:39:11 AM
Status:

Subject: Traffic, Pathways, Sidewalks
Author: Keith
Date: 4/22/2024 11:41:51 AM
Status:

Condition on the Pathway sightline notes and details are addressed.