



J2025-0049
PSP2025-0003
Revision #3
Received 11/26/2025

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

Department	Reviewer	Approved
Assessing	Assessing	Yes
Building	Jason Rhoades 248-841-2435 RhoadesJa@RochesterHills.org	Yes
Engineering - Utilities	A Hysinger HysingerA@RochesterHills.org J Boughton BoughtonJ@RochesterHills.org	Yes
Engineering Legal	Seh Bucholz 248-841-2491 bucholz@rochesterhills.org	YES Date:12/15/2025
Fire	Lt. Walter Murphy 248-841-2712 MurphyW@RochesterHills.org	Yes
Natural Resources	Matt Einheuser 248-841-2551 EinheuserM@RochesterHills.org	Yes
Planning	Chris McLeod 248-841-2572 mleodc@RochesterHills.org	Yes
Traffic	Keith Depp 248-841-2503 DeppK@RochesterHills.org	Yes

APPLICANT / OWNER

ADM

AUBURN HILLS, MI 48326
CONTACT: PATRICK BURNS
248.276.8800

ENGINEER
SHARPE ENGINEERING, INC.
101 N. WASHINGTON ST.
OXFORD, MI 48371
248.877.2102
CONTACT: JAMES SHARPE, PE

SURVEYOR
KENNEDY SURVEYING, INC.
105 N. WASHINGTON ST.
OXFORD, MI 48371
248.628.4241
CONTACT: HUSTON KENNEDY, PS

LANDSCAPE ARCHITECT
6948 AEROWIEW ST.
WEST BLOOMFIELD, MI 48324
248.939.0157
CONTACT: RICK TUTTLE

LAND USE SUMMARY

Characteristic	Existing Conditions	Proposed Conditions
Total Development Area (ac)	4.011 Ac.	4.011 Ac.
Impervious Area (ac)	0.372 Ac.	0.793 Ac.
Total Pervious Area (ac)	3.639 Ac.	3.218 Ac.
Pervious Area Breakdown by Cover Type		
Meadow/fallow/natural areas (non-cultivated)	0.000 Ac.	0.000 Ac.
Predominant NRCS Soil Type (A, B, C, or D)	Type A	Type A
Improved areas (turf grass, landscape, row crops)	3.389 Ac.	3.218 Ac.
Predominant NRCS Soil Type (A, B, C, or D)	Type A	Type A
Wooded Areas	0.250 Ac.	0.000 Ac.
Predominant NRCS Soil Type (A, B, C, or D)	Type A	Type A
Proposed Pond Area (acres)	0.273 Ac.	
Required CPVC Volume (cubic feet)	9,012 CF	
Provided CPVC Volume (cubic feet)	9,450 CF	
Required ED Volume (cubic feet)	13,171 CF	
Provided ED Volume (cubic feet)	13,171 CF	

TIMBERLAND LANDSCAPE

CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN

A PART OF SECTION 30 T-3-N, R-11-E



Site Plan



Building Permit



Landscape Bond

Tree Removal Permit



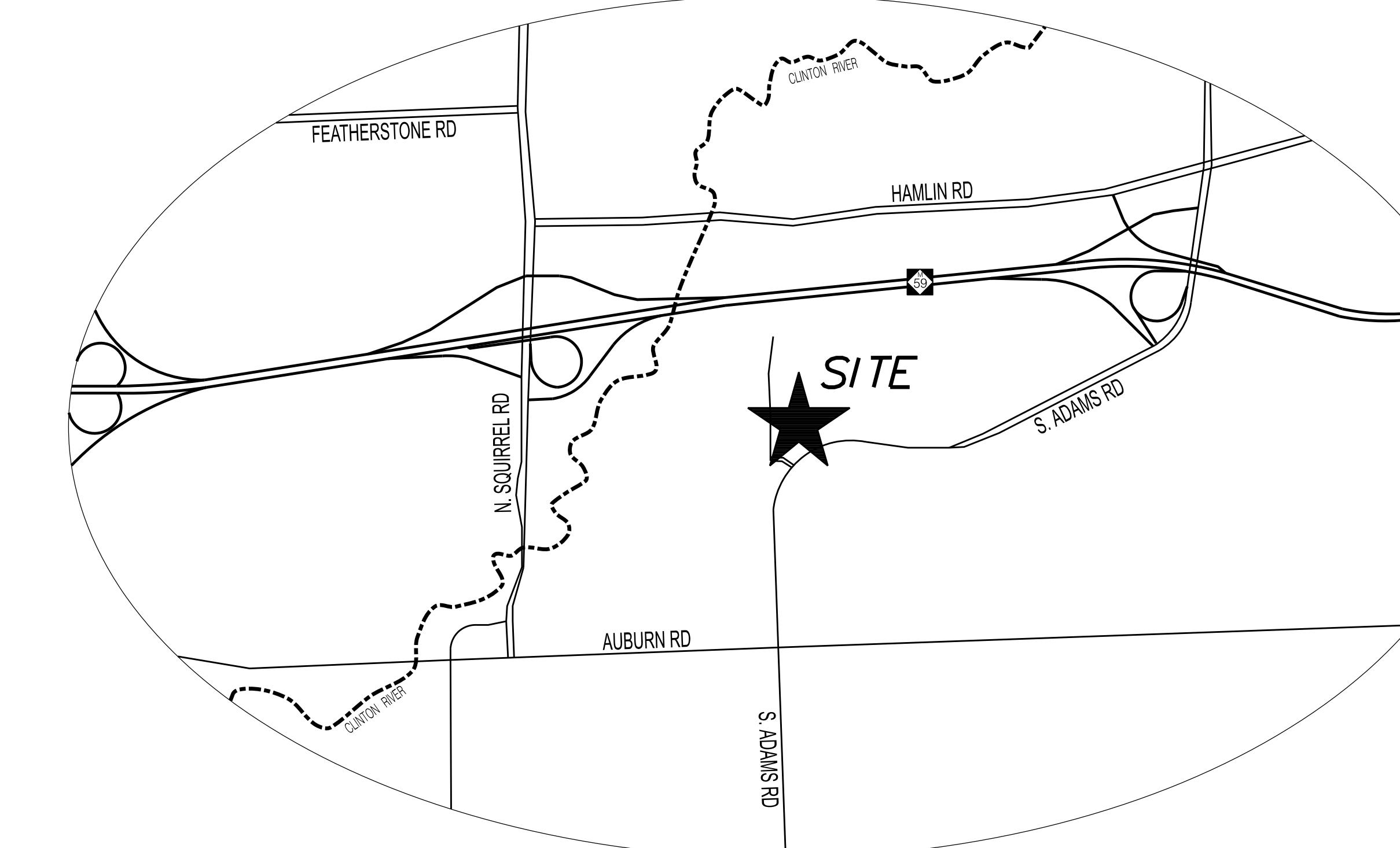
Tree Removal Permit = Remove 26 Trees, 17 Trees to Remain, Plant 4 trees, 19 Trees Paid into Tree Fund

In lieu of payment into tree fund, trees should be planted along berm/road frontage



Land Improvement Permit

Next Steps: The applicant should coordinate with Planning Staff for **LAND USE** and **2005 PONTIAC RD** attending January Planning Commission meeting.



LOCATION MAP
(1"=1000')

NOT TO BE USED AS
CONSTRUCTION DRAWINGS
CITY FILE #25-0049 SECTION #30

NOTE: A COPY OF ALL PERMITS PERTAINING TO THIS PROJECT SHALL BE
AVAILABLE ON-SITE DURING ALL PHASES OF CONSTRUCTION.

SE
SHARPE
ENGINEERING, Inc.
101 N. Washington
Oxford, MI 48371
248.877.2102

DATE:	SUBMITAL NOTE
02/11/25	PRELIMINARY SITE PLAN
07/10/25	REVISED PSP PER CITY COMMENTS & BUILDING ELIMINATION
09/05/25	REVISED PSP PER CITY COMMENTS
11/25/25	REVISED PSP PER CITY COMMENTS

MISS DIG SYSTEM
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800-482-7171 OR 811
CONTACT THE MISS DIG SYSTEM FOR CALLING DAYS IN ADVANCE

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JAMES W. SHARPE
PROFESSIONAL ENGINEER
NO. 6201045659

DEVELOPED FOR:
TIMBERLAND LANDSCAPE INC.
2005 PONTIAC RD
AUBURN HILLS, MI 48326
248.276.8800

COVER SHEET
TIMBERLAND LANDSCAPE

PLAN NAME:
CITY: ROCHESTER HILLS
COUNTY: OAKLAND
SECTION: 30
T-3-N, R-11-E

INITIAL SUBMITTAL: 02/11/25
THIS SUBMITTAL: 11/25/25
SCALE: N/A
SHEET: COVER
PROJECT: 071.11.01

SHEET INDEX

COVER SHEET	C1.0 EXISTING CONDITIONS
	C1.1 DEMOLITION PLAN
	C2.0 SITE PLAN
	C3.0 GRADING PLAN
	C3.1 STORMWATER CALCULATIONS
	C4.0 PROJECT DETAILS
	L1.0 EXISTING TREE REMOVAL AND PROTECTION PLAN
	L2.0 PROPOSED LANDSCAPE
	1 OF 1 CRH HOT-MIXED ASPHALT PATHWAY CONSTRUCTION, EXTENSIONS AND RELOCATIONS



PROPERTY DESCRIPTION (15-30-302-041)

PART OF THE WEST 1/2 OF THE SOUTHWEST 1/4 OF SECTION 30, TOWN 3 NORTH, RANGE 11 EAST, CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN, BEING MORE PARTICULARLY DESCRIBED AS BEGINNING AT A POINT DISTANT S85°49'02"W 1.93 FEET TO THE PREVIOUS PROPERTY CONTROLLING CORNER AND S01°30'03"E 385.17 FEET AND S02°03'12"E 295.34 FEET FROM THE REMONUMENTED WEST 1/4 CORNER; THENCE N85°38'28"E 945.60 FEET; THENCE S02°03'36"E 19.43 FEET; THENCE ALONG A CURVE TO THE LEFT, RADIUS 880.00 FEET, CHORD BEARING S70°53'56"W 749.44 FEET, DISTANCE OF 774.16 FEET; THENCE ALONG A CURVE TO THE LEFT, RADIUS 290.00 FEET, CHORD BEARING N72°57'21"W 189.79 FEET, DISTANCE OF 193.35; THENCE S87°56'48"W 48.97 FEET; THENCE N02°03'12"W 139.01 FEET TO THE POINT OF BEGINNING, CONTAINING 1.75 ACRES.

PROPERTY DESCRIPTION (15-30-302-039)

PART OF THE WEST 1/2 OF THE SOUTHWEST 1/4 OF SECTION 30, TOWN 3 NORTH, RANGE 11 EAST, CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN, BEING MORE PARTICULARLY DESCRIBED AS BEGINNING AT A POINT DISTANT S85°49'02"W 1.93 FEET TO THE PREVIOUS PROPERTY CONTROLLING CORNER AND S01°30'03"E 385.17 FEET AND S02°03'12"E 295.34 FEET FROM THE REMONUMENTED WEST 1/4 CORNER; THENCE N85°38'28"E 945.60 FEET; THENCE S02°03'36"E 19.43 FEET; THENCE ALONG A CURVE TO THE LEFT, RADIUS 880.00 FEET, CHORD BEARING S70°53'56"W 749.44 FEET, DISTANCE OF 774.16 FEET; THENCE ALONG A CURVE TO THE LEFT, RADIUS 290.00 FEET, CHORD BEARING N72°57'21"W 189.79 FEET, DISTANCE OF 193.35; THENCE S87°56'48"W 48.97 FEET; THENCE N02°03'12"W 139.01 FEET TO THE POINT OF BEGINNING, CONTAINING 1.75 ACRES.

GRAPHIC SCALE

DATE:	02/11/25	PRELIMINARY SITE PLAN SUBMISSION
	07/05/25	REVISED PSP PER CITY COMMENTS
	11/25/25	REVISED PSP PER CITY COMMENTS

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HUSTON K. KENNEDY
PROFESSIONAL SURVEYOR
NO. 401017623



DEVELOPED FOR:
TIMBERLAND LANDSCAPE INC.
2005 PONTIAC RD
AUBURN HILLS, MI 48326
248.276.8800

EXISTING CONDITIONS
TIMBERLAND LANDSCAPE

PLAN NAME:

CITY: ROCHESTER HILLS
COUNTY: OAKLAND
SECTION: 30
T-3-N, R-11-E

INITIAL SUBMITTAL: 02/11/25
THIS SUBMITTAL: 11/25/25
SCALE: 1" = 40'
SHEET: C1.0
PROJECT: 071.11.01

PROPERTY DESCRIPTION (15-30-302-039)

PART OF THE WEST 1/2 OF THE SOUTHWEST 1/4 OF SECTION 30, TOWN 3 NORTH, RANGE 11 EAST, CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN, BEING MORE PARTICULARLY DESCRIBED AS BEGINNING AT A POINT DISTANT S85°49'02"W 1.93 FEET TO THE PREVIOUS PROPERTY CONTROLLING CORNER AND S01°30'03"E 385.17 FEET AND S02°03'12"E 295.34 FEET FROM THE REMONUMENTED WEST 1/4 CORNER; THENCE N85°38'28"E 945.60 FEET; THENCE S02°03'36"E 19.43 FEET; THENCE ALONG A CURVE TO THE LEFT, RADIUS 880.00 FEET, CHORD BEARING S70°53'56"W 749.44 FEET, DISTANCE OF 774.16 FEET; THENCE ALONG A CURVE TO THE LEFT, RADIUS 290.00 FEET, CHORD BEARING N72°57'21"W 189.79 FEET, DISTANCE OF 193.35; THENCE S87°56'48"W 48.97 FEET; THENCE N02°03'12"W 139.01 FEET TO THE POINT OF BEGINNING, CONTAINING 1.75 ACRES.

If area is not dedicated to RCOC, appropriate landscaping pursuant to ordinance will be required in this area.

AREA OF LAND TO BE
DEEDED TO THE RCOC

TREE LEGEND

TREE TAG #	DIAMETER	TREE NAME
200	8"	Spruce
201	8"	Spruce
202	8"	Spruce
203	5"	Spruce
204	5"	Spruce
205	8"	Spruce
206	8"	Spruce
207	8"	Spruce
208	8"	Spruce
209	8"	Spruce
210	12"	Elm
321	8"-10"	Maple
322	8"-10"	Butternut
323	8"-10"	Butternut
324	8"-10"	Butternut
325	8"	Butternut
326	8"	Butternut
327	8"	Butternut
328	8"-10"	Butternut
329	8"-10"	Butternut
330	8"-10"	Butternut
331	8"-10"	Sassafras
337	14"	Elm
338	12"	Pine
339	18"	Apple
340	15"	Chion Elm
341	16"	Pine
342	20"	Maple
345	4"-6"-8"-10"	Maple
346	12"	Butternut
348	10"	Elm
349	12"-12"	Maple
350	8"-12"	Maple
409	14"	Butternut
410	14"	Maple
472	29"	Pine
473	20"	Elm
475	15"	Elm
476	26"	Spruce
478	10"	Spruce
479	15"	Spruce
480	26"	Spruce
489	50"-60"	Poplar

879.2 x	EXISTING ELEVATION
883 x	EXISTING CONTOUR
BM	BM
o	FND. 1/2" IRON ROD UNLESS NOTED
△	FND. PK NAIL
●	SET 1/2" IRON ROD W/ ID CAP
△	KSI CONTROL POINT
M	MEASURED DISTANCE
R	RECORDED DISTANCE
S	SET DISTANCE
o-h	EX. OVERHEAD LINES
P.P. O	EX. POWER POLE
—	EX. GUY WIRE
—	EX. TRAFFIC SIGN
—	EX. TRAFFIC SIGN
DE	DETROIT EDISON STRUCTURE
DE	EX. UTILITY RISER
o	GAS VALVE
■	GAS MARKER
○	SANITARY SEWER MANHOLE
ST	STORM SEWER STRUCTURE
ST	STORM SEWER CATCH BASIN
ST	STORM SEWER YARD DRAIN
FF	FF
FF	FINISH FLOOR
DS	DOOR SILL
302	302
—	EX. FENCE
x	EX. BITUMINOUS SURFACE
—	EX. CONCRETE SURFACE
—	EX. GRAVEL SURFACE

SURVEY PROVIDED BY:

Kennedy Surveying, Inc.
105 N. Washington St.
Oxford, MI 48371
248.628.4241

JOB NUMBER: 18-8067
DATED: August 31, 2018

NOT TO BE USED AS
CONSTRUCTION DRAWINGS
CITY FILE #25-0049 SECTION #30

BENCHMARKS

- BM *1 • Arrow on Fire Hydrant, West side at Intersection of Old Adams Road & Industrial Drive
ELEV • 867.28 (NAVD88, Construction plans on file at City)
- BM *2 • Arrow on Fire Hydrant, West side at Intersection of Old Adams Road & Forester Boulevard
ELEV • 888.07 (NAVD88, Transferred from BM *1)

PROJECT: J2025-0049/PS2025-0003
REVISION: Review #3
RECEIVED: 11/26/2025
PLANNING & ECONOMIC DEVELOPMENT DEPARTMENT

REMOVAL AND DEMOLITION NOTES

1. CONTACT MISS-DIG FOR UTILITY STAKING PRIOR TO ANY REMOVALS.
2. ALL DEMOLITION ITEMS REMOVED AS PART OF THE CONSTRUCTION ACTIVITIES SHALL BECOME PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OFF-SITE IN A SAFE AND LEGAL MANNER.
3. ANY ITEMS NOT SPECIFICALLY CALLED OUT FOR DEMOLITION BUT ARE REQUIRED FOR THE SUCCESSFUL COMPLETION OF THIS PROJECT SHALL NOT BE PAID FOR SEPARATELY, BUT RATHER INCLUDED IN OTHER CONTRACT PAY ITEMS.
4. ANY DAMAGE TO THE EXISTING SIDEWALKS, PATHWAYS, PARKING AREAS, CURBING, ETC. OUTSIDE THE SCOPE OF THE WORK SHALL BE SAWCUT OUT AND REPLACED PER EXISTING CROSS-SECTION AT NO ADDITIONAL COST TO THE OWNER.
5. PROPER CARE SHALL BE TAKEN FOR REMOVAL/DEMOLITION ITEMS ABUTTING EXISTING ITEMS TO REMAIN SUCH AS IRRIGATION BOXES, ROADWAYS, ELECTRICAL RISERS, FIRE HYDRANTS, LANDSCAPING, ETC. SO AS TO NOT CAUSE DAMAGE.
6. ALL PAVEMENT REMOVAL SHALL BE MADE BY SAWCUTTING FULL DEPTH IN STRAIGHT LINES IN THE AREAS OF PROPOSED REMOVALS AND PROTECTING EXISTING PAVEMENT TO REMAIN.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE WITHIN THE ROAD ROW.
8. EXISTING ON-SITE SOIL TYPE PREDOMINANTLY CONSISTS OF AIRPORT LOAMY SAND (45C), 6-12% SLOPES PER NRCS SOILS INFORMATION.
9. ANY TOPSOIL THAT IS STRIPPED SHALL BE STOCKPILED IN A SAFE AND LEGAL MANNER AT THE DIRECTION OF THE OWNER. ANY SOIL NEEDED FOR COMPLETE RESURFACING/TOPDRESSING TAKEN FROM THIS STOCKPILE MUST BE CONSIDERED BEFORE REMOVAL. IN THE EVENT OF INSUFFICIENT SOIL AVAILABLE WITHIN THE PROJECT SITE TO STOCKPILE THE TOPSOIL, THEN THE CONTRACTOR SHALL REMOVE THE TOPSOIL FROM THE SITE.
10. ALL LAWN AREAS DISRUPTED BY THE CONTRACTOR OUTSIDE OF THE PROPOSED LIMITS OF CONSTRUCTION SHALL BE PROPERLY GRADED AND RESTORED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
11. ALL MUCK, MARL, TOPSOIL, STUMPS, AND ANY OTHER UNSUITABLE MATERIAL ENCOUNTERED BY THE PAVING/CLEARING CONTRACTOR WITHIN THE SITE SHALL BE REMOVED AND DISPOSED OF AS DIRECTED BY THE ENGINEER. ALL MATERIALS REMOVED SHALL BE REPLACED WITH MATERIALS OF A NATURE AND COMPOSITION SIMILAR TO THE ADJACENT MATERIALS SUCH THAT THE PAVEMENT SHALL REST ON THE SUBBASE OF RELATIVELY UNALTERED COMPOSITION. SUCH MATERIAL SHALL BE MECHANICALLY COMPACTED TO 95% OF ITS MAXIMUM DENSITY.
12. A SOIL EROSION PERMIT WILL BE OBTAINED FROM THE WRC PRIOR TO ANY DEMOLITION, CONSTRUCTION, OR EARTHMOVING ACTIVITIES. ALL SOIL EROSION AND SEDIMENTATION CONTROL AND TEMPORARY ITEMS SHALL BE REMOVED UPON COMPLETION OF THE CONSTRUCTION ACTIVITIES.
13. LIMITS OF EARTH DISRUPTION SHALL BE STRICTLY CONFINED TO THE DEVELOPMENT PROPERTY. A SOIL EROSION & SEDIMENTATION CONTROL PLAN WILL BE PREPARED AND A PERMIT OBTAINED FROM THE WRC PRIOR TO CONSTRUCTION.

Forster Hills Condo
(Auburn Hills)

KSI*31, Set #60 Ngl
N. 9463.2030
E. 9963.8740
Elevation 872.68

Water Main Easement
10823, P. 184 O.C.R.

52' Detroit Edison Easement
L. 5313, P. 817 O.C.R.

Ex. Sanitary Sewer Manhole
Rim 879.80
12" N. Inv. + 868.40
12" S. Inv. - 868.40

12' Water Main Easement
L. 15988, P. 184 O.C.R.

12' Water Main Easement
L. 15691, P. 625 O.C.R.

Ex. Storm Sewer Structure
Rim 885.30
12" S. Inv. - 873.49

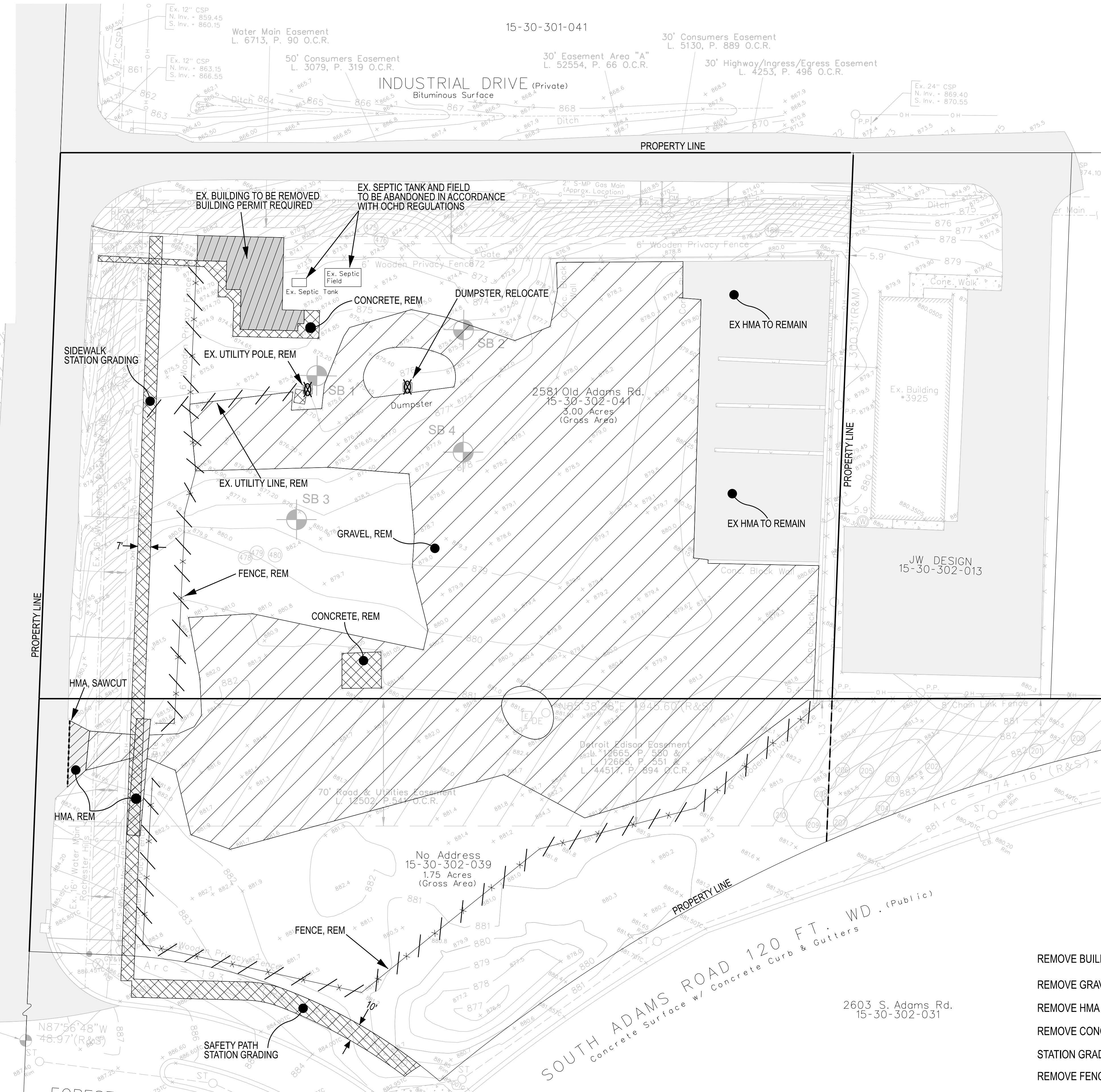
3' Edison Easement
313, P. 817 &
3, P. 821 O.C.R.

Southern
Town 03 North, No.
City of Rochester Hills, Fnd. Iron
Rod w/ Oakland County Remon
Cap in Monument Box

N87°56'48" W
48.97'(R&S)
x 886.60

PROJECT: J2025-0049/PS2025-0003
REVISION: Review #3
RECEIVED: 11/26/2025

PLANNING & ECONOMIC DEVELOPMENT DEPARTMENT



**NOT TO BE USED AS
CONSTRUCTION DRAWINGS
CITY FILE #25-0049 SECTION #30**



SCALE 1" = 30'
30 0 30
GRAPHIC SCALE

DATE:	02/11/25	PRELIMINARY SITE PLAN SUBMITTAL
	07/10/25	REVISED PSP PER CITY COMMENTS
	09/05/25	REVISED PSP PER CITY COMMENTS
	11/25/25	REVISED PSP PER CITY COMMENTS

MISS DIG SYSTEM
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JAMES W. SHARPE
PROFESSIONAL ENGINEER
NO. 6201045659

DEVELOPED FOR:
TIMBERLAND LANDSCAPE INC.
2005 PONTIAC RD
AUBURN HILLS, MI 48366
248.276.8800

DEMOLITION PLAN
TIMBERLAND LANDSCAPE
PLAN NAME: **DEMOLITION PLAN**

CITY: ROCHester HILLS
COUNTY: OAKLAND
SECTION: 30
T-3-N, R-11-E
INITIAL SUBMITTAL: 02/11/25
THIS SUBMITTAL: 11/25/25
SCALE: 1" = 40'
SHEET: C1.1
PROJECT: 071.11.01

Timberland Landscape
Preliminary Storm Water Calculations

TOTAL PROJECT AREA = 4.750 Acres
OLD ADAMS ROAD ROW AREA = 0.333 Acres
INDUSTRIAL DRIVE ROW AREA = 0.139 Acres
AREA DEEDED TO RCOC = 0.267 Acres
NET SITE AREA: A = 4.011 Acres
RUNOFF COEFFICIENT: C = 0.476

DETENTION POND STORAGE REQUIRED (100-YR EVENT) - OAKLAND COUNTY WRC METHOD

Channel Protection Volume Control (CPVC)

$$\begin{aligned} C &= \text{Post-development runoff coefficient} & = 0.476 \\ A &= \text{Contributing Area} & = 4.011 \text{ Acres} \\ V_{CPV} &= \text{Required CPVC volume in cubic feet} \\ V_{CPV} &= 4,719 \times C \times A = 4,719 \times 0.476 \times 4.011 = 9,012 \text{ CF} \end{aligned}$$

*The geotechnical report prepared by SME (No. 080466.00 dated 12-13-18) does not mention the measured in-situ infiltration rates of existing on-site soils. However, all four (4) soil boring logs show that the existing soils consist of primarily sand. Per NRCS, the on-site soil over the entire development area is Spinks loamy sand, 0-6% slopes (15B). This soil is categorized under hydrologic soil group 'A', the group most conducive to allowing surface water to infiltrate. The NRCS describes 15B soil having infiltration rates ranging from 2 - 6 in/hr. From this information, the assumption is that the in-situ infiltration rates meet or exceed 0.5 in/hr. An infiltration area consisting of clean, washed, open-graded 1" x 3" aggregate is proposed immediately south of the forebay and detention pond to satisfy the proposed CPVC volume requirement. All four (4), 15-foot-deep soil boring logs state that groundwater was not encountered. Soil Boring #4 is located within the infiltration area.

Proposed Channel Protection Volume Control Volume (V_{CPV})

$$\begin{aligned} V_{CPV} &= \text{Length of Trench} \times \text{Width of Trench} \times \text{Depth of Trench} \times \text{Stone Porosity} \\ V_{CPV} &= 150 \text{ LF} \times 35 \text{ LF} \times 6 \text{ LF} \times 30\% = 9,450 \text{ CF} \end{aligned}$$

Channel Protection Rate Control: Extended Detention

$$\begin{aligned} V_{ED} &= \text{Required extended detention volume in cubic feet. The volume of which must be dewatered in not less than 48 hours.} \\ V_{ED} &= 6,897 \times C \times A = 6,897 \times 0.476 \times 4.011 = 13,171 \text{ CF} \end{aligned}$$

*Calculations for outlet structure orifice sizing and dewatering time will be provided with the engineering submittal.

Water Quality Control

$$\begin{aligned} V_F &= \text{Required sediment forebay volume} \\ V_{WQ} &= \text{Required water quality volume in cubic feet} \\ V_F &= 0.15 \times V_{WQ} = 545 \times C \times A = 545 \times 0.476 \times 4.011 = 1,041 \text{ CF} \\ V_{WQ} &= V_F / 0.15 = 1,041 / 0.15 = 6,939 \text{ CF} \end{aligned}$$

*The Water Quality Control requirement will be accomplished using a sediment forebay. Calculations for the provided forebay volume are shown below.

Forebay Storage (Elev. 874.0 - 872.0) *Freeboard Elev is 875.0; 3-Foot Sump Provided 872.0 - 869.0

$$1 \text{ foot storage} = 1/3 h (A_{TOP} + A_{BOT} + (A_{TOP} \times A_{BOT})^{1/2})$$

Contour Area			Volume Between Contours
A ₈₇₄ -	4,620	>	3,871
A ₈₇₃ -	3,167	>	2,543
A ₈₇₂ -	1,966	>	1,480
A ₈₇₁ -	1,042	>	1,042
A ₈₇₀ -	406	>	700
A ₈₆₉ -	58	>	206
			6,413 CF of Forebay Storage Provided

Detention & Flood Control

Q_{VRR} = Allowable variable release rate in CFS / Acre
Q_{100P} = Allowable 100-year post development peak flow rate in CFS
V_{100R} = Post development 100-year runoff volume in cubic feet

T_c = Time of concentration in minutes (15 min, commercial development)

p = Design storm return period in years

I₁₀₀ = 100-year peak rainfall intensity in inches / hour

Q_{100IN} = 100-year post development peak inflow rate in CFS

R = Storage Curve Factor (dimensionless)

V_{100D} = Required 100-year detention volume in cubic feet

$$Q_{VRR} = 1.1055 - 0.206 \ln(A) = 1.1055 - 0.206 \ln(4.011) = 0.819 \text{ CFS / Acre}$$

$$Q_{100P} = Q_{VRR} \times A = 0.819 \times 4.011 = 3.287 \text{ CFS}$$

$$V_{100R} = 18,985 \times C \times A = 18,985 \times 0.476 \times 4.011 = 36,256 \text{ CF}$$

$$I_{100} = \frac{30.20 \times p^{0.22}}{(T_c + 9.17)^{0.81}} = \frac{30.20 \times 100^{0.22}}{(15 + 9.17)^{0.81}} = 6.303 \text{ Inches / Hour}$$

$$Q_{100IN} = C \times I_{100} \times A = 0.476 \times 6.303 \times 4.011 = 12.037 \text{ CFS}$$

$$R = 0.206 - 0.15 \times \ln(Q_{100P} / Q_{100IN}) = 0.206 - 0.15 \times \ln(3.287 / 12.037) = 0.401$$

$$V_{100D} = V_{100R} \times R = 36,256 \times 0.401 = 14,528 \text{ CF Required}$$

*Locations and calculations for sizing of emergency overflow spillways will be provided on the engineering submittal.

Detention Pond Storage (Elev. 874.0 - 870.0) *Freeboard Elev is 875.0

$$1 \text{ foot storage} = 1/3 h (A_{TOP} + A_{BOT} + (A_{TOP} \times A_{BOT})^{1/2})$$

Contour Area			Volume Between Contours
A ₈₇₄ -	4,746	>	3,988
A ₈₇₃ -	3,276	>	2,641
A ₈₇₂ -	2,053	>	1,556
A ₈₇₁ -	1,107	>	471
A ₈₇₀ -	57		8,657 CF Pond Storage

Required Stormwater Detention = 14,528 CF of Detention is to be provided where 1041 to be forebay storage
Provided Stormwater Detention = 15,070 CF of Detention is being provided where 6,413 is forebay storage

Runoff Coefficient Calculation (C-Factor)

Surface Type	Runoff Coefficient
Forebay	1.00
HMA / Conc.	0.95
Building	0.95
Gravel	0.50
Greenscape	0.15

*Predominant HSG is "A" (C=0.15)

C-FACTOR CALCULATION

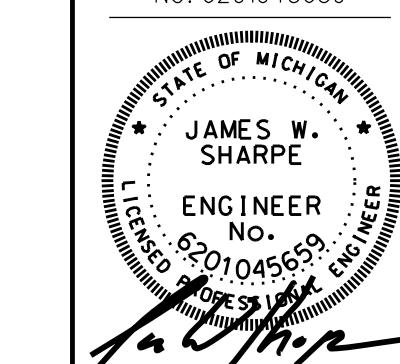
Drainage District	Net Area (ac)	Net Area (sf)	Future Building (sf)	Concrete / Asphalt (sf)	Forebay Permanent Pool (sf)	Gravel (sf)	Lawn Area / Greenscape (sf)	Runoff Coeff
PR. SITE	4.011	174,719	4,000	28,577	1,966	83,549	56,628	0.476



SCALE 1" = 60'
60 0 60 GRAPHIC SCALE

SUBMITTAL NOTE
DATE: 02/11/25 PRELIMINARY SITE PLAN SUBMITS & BUILDING ELIMINATION
07/10/25 REVISED PSP PER CITY COMMENTS
09/05/25 REVISED PSP PER CITY COMMENTS
11/25/25 REVISED PSP PER CITY COMMENTS

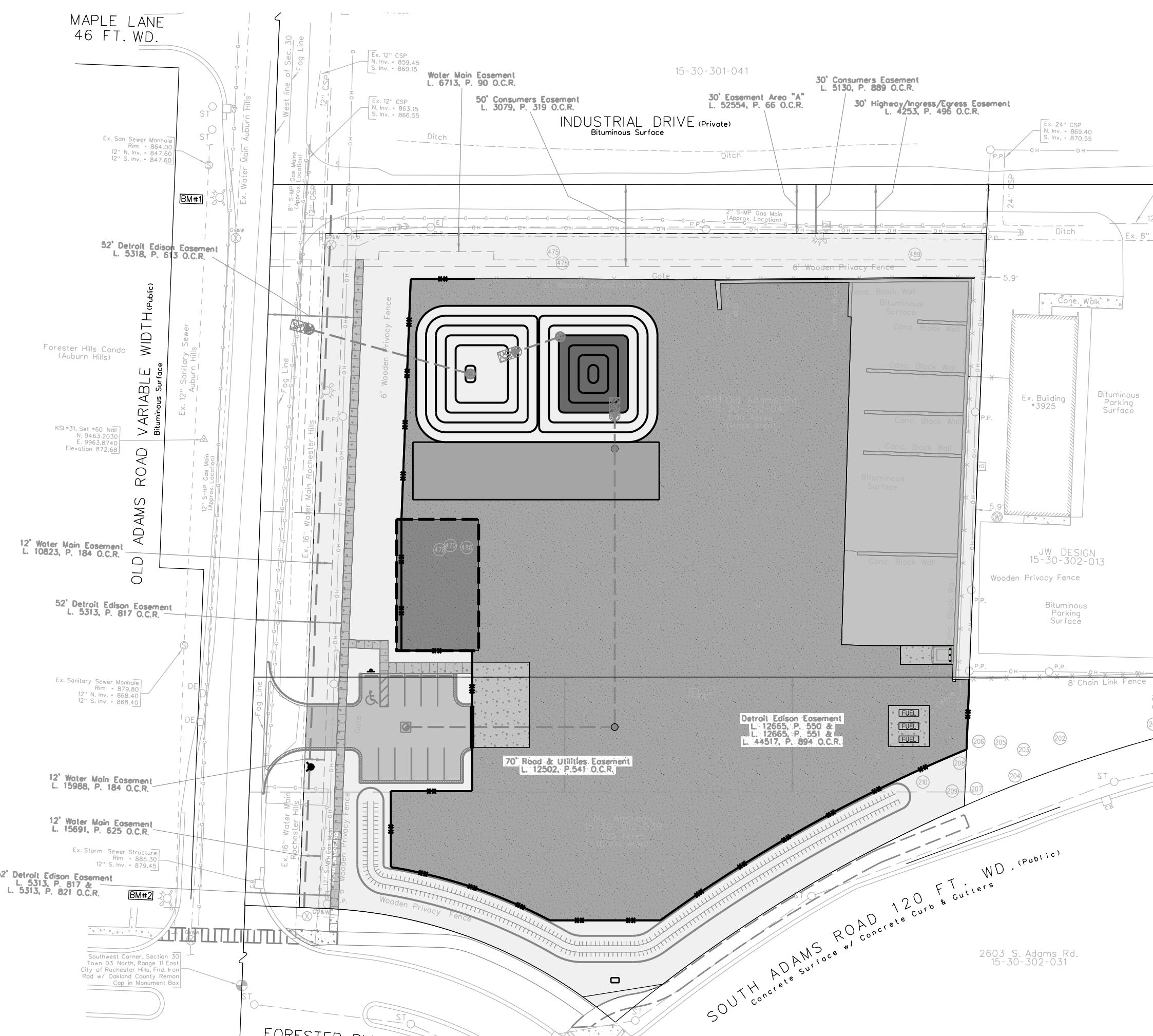
MISS DIG SYSTEM
KNOW WHAT'S BELOW
800-482-7171 OR 811
CONTACT THE MISS DIG HOTLINE 24 HOURS IN ADVANCE
THIS DOCUMENT IS INTENDED FOR THE USE OF SHARPE ENGINEERING AND OTHER USER AND AGREES THAT THE USE OR REUSE OF THIS DOCUMENT FROM ITS ORIGINAL OR MODIFIED FORM SHALL NOT EXCUSE THE USER FROM THE RESPONSIBILITY OF THE USER TO ACT ACCORDING TO THE DOCUMENT AND TO RELEASE SHARPE ENGINEERING FROM ANY LIABILITY FOR RELEASE WAIVER IN REFERENCE TO ELECTRONIC DATA TRANSFERS AND USE OF THIS DOCUMENT.
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JAMES W. SHARPE
PROFESSIONAL ENGINEER
NO. 6201045659


DEVELOPED FOR:
TIMBERLAND LANDSCAPE INC.
2005 PONTIAC RD
AUBURN HILLS, MI 48376
248.276.8800

STORMWATER CALCULATIONS
TIMBERLAND LANDSCAPE
PLAN NAME:

CITY: ROCHester HILLS
COUNTY: OAKLAND
SECTION: 30
T-3-N, R-11-E
INITIAL SUBMITTAL: 02/11/25
THIS SUBMITTAL: 11/25/25
SCALE: 1" - 60'
SHEET: C3.1
PROJECT: 071.11.01

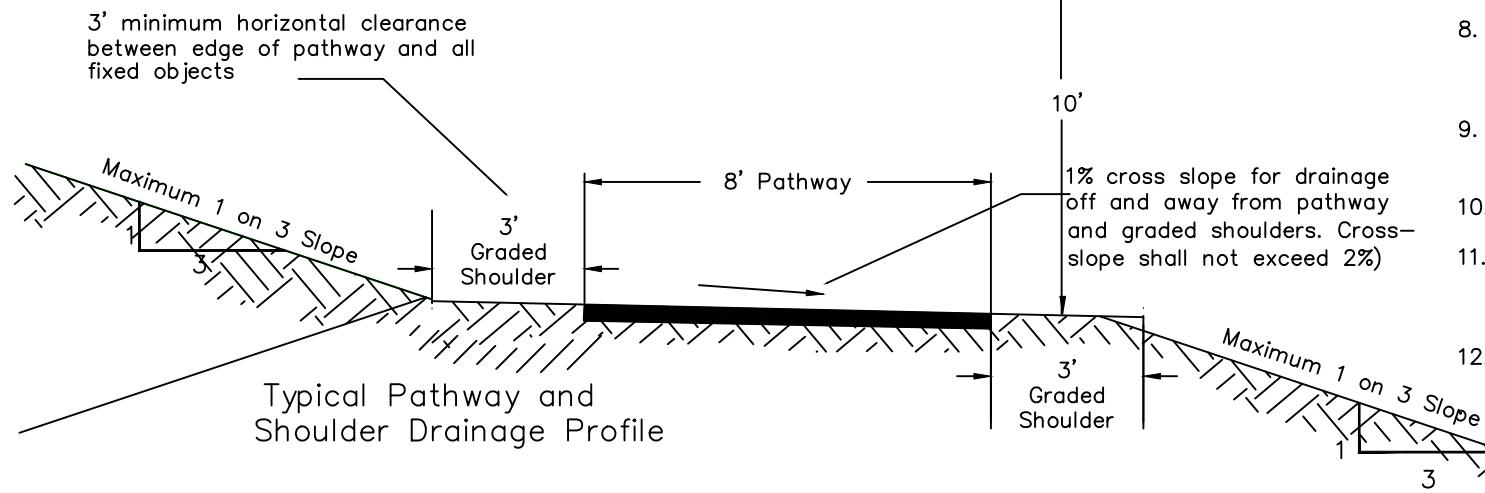
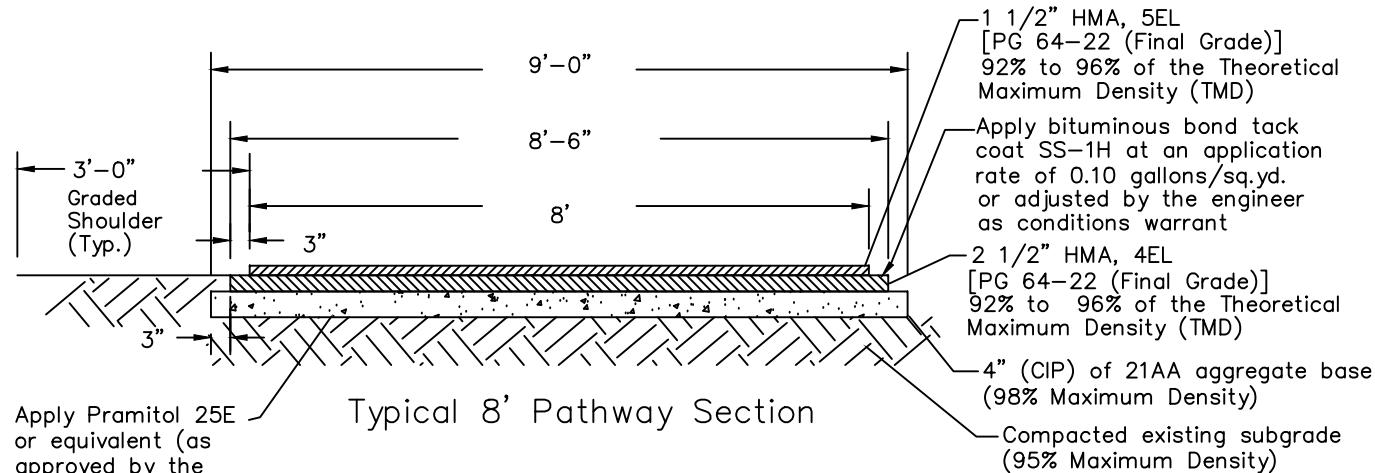


NOT TO BE USED AS
CONSTRUCTION DRAWINGS
CITY FILE #25-0049 SECTION #30

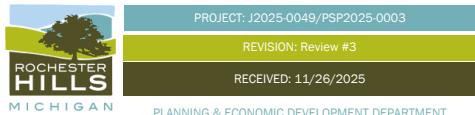


PROJECT: J2025-0049/PSP2025-0003
REVISION: Review #3
RECEIVED: 11/26/2025
PLANNING & ECONOMIC DEVELOPMENT DEPARTMENT

Standard Details:



Use the updated Pathway Standard Detail. Minor changes were recently made to the Standard Notes.



Standard Notes:

1. Maximum grade of 8.33% along pathway (less than 5% is recommended).
2. 1% cross slope (i.e. super elevation) for drainage off and away from pathway and graded shoulders (2% maximum cross-slope).
3. 60' minimum center line radii for pathway horizontal alignment.
4. Provide a minimum of 3' horizontal clearance and 10' vertical clearance from all fixed objects and the edge of pathway surface. Relocation of existing objects (i.e. mail boxes, signs, etc.) shall be considered incidental work items.
5. Pathway ramps shall be constructed in accordance with MDOT standard detail R-28 Series and shall have a minimum clear opening of 8' wide.
6. A clean saw cut joint shall be provided wherever new pavement matches existing pavement (incidental work item).
7. Utility structures shall be adjusted in accordance with the City of Rochester Hills standards and shall match the proposed grade of the pathway.
8. Pathway shall be 6 inch thick HMA or concrete through residential drives and 9 inch thick HMA or 8 inch thick concrete through commercial drives.
9. Pathway asphalt shall be paid for as "Shared Use Path, HMA" when part of public improvement project.
10. Ramps and landings shall be 6 inch thick concrete.
11. ADA detectable warning plates shall be preformed and brick red in color. Acceptable products included ADA Solutions, Inc., Armor-Tile, E.J., or approved equal.
12. Irrigation overspray shall not broadcast onto City pathway or sidewalk

CITY OF ROCHESTER HILLS STANDARD DETAIL FOR:

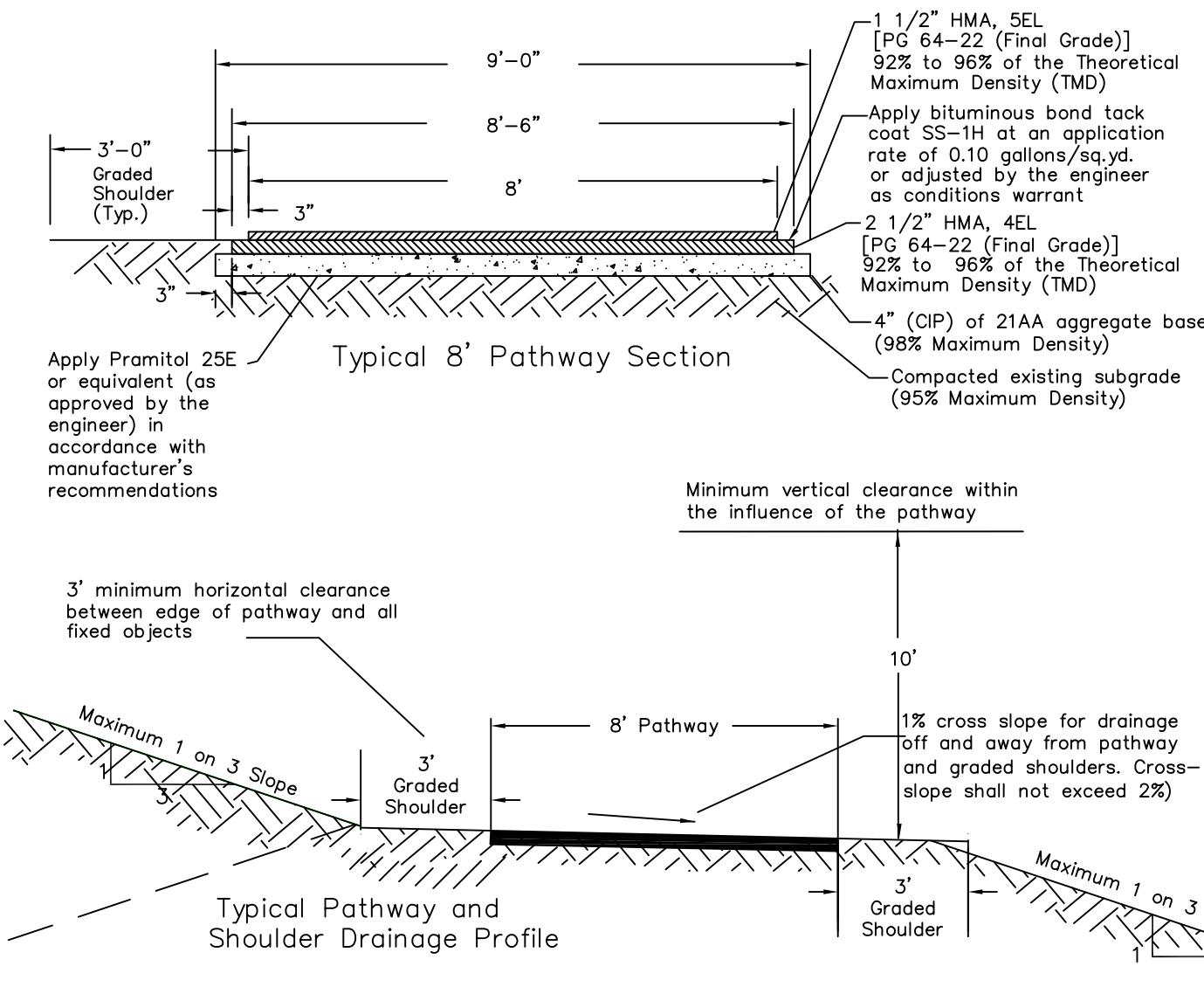
Pathway Details:

Hot-Mixed Asphalt Pathway Construction, Extensions and Relocations



DRAWN BY: S. BUCHOLZ	PLAN DATE: 8/28/1996	REVISIONS: 4/12/2012	2/25/2016	2/8/2022	8/22/2018	01/12/2022
APPROVED BY: SETH BUCHOLZ, CITY TRANSPORTATION TECHNICIAN KEITH DEPP, CITY PROJECT ENGINEER	NOT TO SCALE	SHEET 1 OF 1				

Standard Details:



Standard Notes:

1. Maximum grade of 5% along mainline pathway. Maximum grade at ramps 8.33% (recommended for 5%).
2. 1% cross slope (i.e. super elevation) for drainage off and away from pathway and graded shoulders (2% maximum cross-slope).
3. 60' minimum center line radii for pathway horizontal alignment.
4. Provide a minimum of 3' horizontal clearance and 10' vertical clearance from all fixed objects and the edge of pathway surface. Relocation of existing objects (i.e. mail boxes, signs, etc.) shall be considered incidental work items.
5. Pathway ramps shall be constructed in accordance with MDOT standard detail R-28 Series and shall have a minimum clear opening of 8' wide.
6. A clean saw cut joint shall be provided wherever new pavement matches existing pavement (incidental work item).
7. Utility structures shall be adjusted in accordance with the City of Rochester Hills standards and shall match the proposed grade of the pathway.
8. Pathway shall be 6 inch thick HMA or concrete through residential drives and 9 inch thick HMA or 8 inch thick concrete through commercial drives.
9. Pathway asphalt shall be paid for as "Shared Use Path, HMA" when part of public improvement project.
10. Ramps and landings shall be 6 inch thick concrete.
11. ADA detectable warning plates shall be preformed and brick red in color. Acceptable products included ADA Solutions, Inc., Armor-Tile, E.J., or approved equal
12. Irrigation overspray shall not broadcast onto City pathway or sidewalk

**CITY OF ROCHESTER HILLS
STANDARD DETAIL FOR:**

Pathway Details:

Hot-Mixed Asphalt Pathway Construction, Extensions and Relocations



DRAWN BY: S. BUCHOLZ	PLAN DATE: 8/28/1996	REVISIONS: 01/12/2022	12/2/2025	10/30/2024	2/8/2022	8/22/2018
APPROVED BY: SETH BUCHOLZ, CITY TRANSPORTATION TECHNICIAN EMIRA BARRETTE, TRANSPORTATION ENGINEER	NOT TO SCALE			SHEET 1 OF 1		

Reviewed plans for PC.pdf Markup Summary

Building Department (2)

Subject: Building Department
Author: J Rhoades
Date: 12/9/2025 11:26:55 AM
Status:

Jason Rhoades 248-841-2435
RhoadesJa@RochesterHills.org

Jason Rhoades 248-841-2435
RhoadesJa@RochesterHills.org

Yes

Subject: Building Department
Author: J Rhoades
Date: 12/9/2025 11:26:51 AM
Status:

Yes

Engineering Department (1)

Subject: Engineering Department
Author: Jason Boughton
Date: 12/1/2025 10:31:20 AM
Status:

J.Boughton.His@gmail.com
J.Boughton.J@RochesterHills.org Yes

File Attachment (1)



Subject: File Attachment
Author: Emira Barrette
Date: 12/3/2025 9:22:07 AM
Status:

Fire Department (1)

Subject: Fire Department
Author: Lieutenant W. Murphy
Date: 12/2/2025 8:21:40 AM
Status:

L.W.Murphy 248-841-2712 Yes
MurphyW@RochesterHills.org

Group (18)



Subject: Group
Author: macdonaldj
Date: 11/26/2025 2:31:28 PM
Status:

City of Rochester Hills Planning & Economic
Development



CITY SP Site Plan

Subject: Group
Author: C.McLeod
Date: 12/12/2025 1:31:57 PM
Status:



CITY

Subject: Group
Author: C.McLeod
Date: 12/12/2025 1:32:02 PM
Status:



CITY

Subject: Group
Author: C.McLeod
Date: 12/12/2025 1:32:08 PM
Status:

LB

Subject: Group
Author: C.McLeod
Date: 12/12/2025 1:32:14 PM
Status:

Tree Removal Permit

Subject: Group
Author: C.McLeod
Date: 12/12/2025 1:32:23 PM
Status:

LIP



Subject: Group
Author: C.McLeod
Date: 12/12/2025 1:32:51 PM
Status:



Subject: Group
Author: C.McLeod
Date: 12/12/2025 1:35:06 PM
Status:

REVISION: Review #3



Subject: Group
Author: C.McLeod
Date: 12/12/2025 1:35:02 PM
Status:

REVISION: Review #3



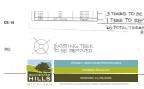
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Author: C.McLeod
Date: 12/12/2025 1:35:22 PM
Status:

REVISION: Review #3



Subject: Group
Author: C.McLeod
Date: 12/12/2025 1:35:28 PM
Status:

REVISION: Review #3



Subject: Group
Author: C.McLeod
Date: 12/12/2025 1:35:35 PM
Status:

REVISION: Review #3



Subject: Group
Author: C.McLeod
Date: 12/12/2025 1:35:43 PM
Status:

REVISION: Review #3



Subject: Group
Author: C.McLeod
Date: 12/12/2025 1:35:53 PM
Status:

REVISION: Review #3



Subject: Group
Author: C.McLeod
Date: 12/12/2025 1:35:58 PM
Status:

REVISION: Review #3



Subject: Group
Author: C.McLeod
Date: 12/12/2025 1:36:04 PM
Status:

REVISION: Review #3



Subject: Group
Author: C.McLeod
Date: 12/12/2025 1:36:22 PM
Status:

Tree Removal Permit



Subject: Group
Author: C.McLeod
Date: 12/12/2025 1:36:46 PM
Status:

LB



Jenny McGuckin - YES (1)

Subject: Jenny McGuckin - YES
Author: Seth Bucholz
Date: 12/15/2025 8:44:22 AM
Status:



Natural Resources (1)



Subject: Natural Resources
Author: Matt Einheuser
Date: 12/3/2025 2:24:27 PM
Status:

Note (1)



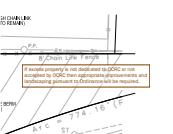
Subject: Note
Author: C.McLeod
Date: 12/12/2025 1:35:46 PM
Status:

Planning Department (8)



Subject: Planning Department
Author: C.McLeod
Date: 12/12/2025 1:45:12 PM
Status:

If area is not dedicated to RCOC, appropriate landscaping pursuant to ordinance will be required in this area.



Subject: Planning Department
Author: C.McLeod
Date: 12/12/2025 1:46:19 PM
Status:

If excess property is not dedicated to OCRC or not accepted by OCRC then appropriate improvements and landscaping pursuant to Ordinance will be required.

19 TREE
REMOVE
T
Tree Removal Permit = Remove 26 Trees, 17
Trees to Remain, Plant 4 trees, 19 Trees Paid into
Tree Fund

N.G.E. 18 trees of payment into tree fund, trees should
be planted along berm/road frontage
DUST MITIGATION PRIOR TO ANY
AROUND THE PERIMETER OF THE
TURFING CONSTRUCTION

19 TREE
REMOVE
T
Tree Removal Permit = Remove 26 Trees, 17
Trees to Remain, Plant 4 trees, 19 Trees Paid into
Tree Fund

Subject: Planning Department
Author: C.McLeod
Date: 12/12/2025 1:48:46 PM
Status:

Landscape bond = \$84,760, plus administrative fees

19 TREE
REMOVE
T
Tree Removal Permit = Remove 26 Trees, 17
Trees to Remain, Plant 4 trees, 19 Trees Paid into
Tree Fund

N.G.E. 18 trees of payment into tree fund, trees should
be planted along berm/road frontage
DUST MITIGATION PRIOR TO ANY
AROUND THE PERIMETER OF THE
TURFING CONSTRUCTION

19 TREE
REMOVE
T
Tree Removal Permit = Remove 26 Trees, 17
Trees to Remain, Plant 4 trees, 19 Trees Paid into
Tree Fund

Subject: Planning Department
Author: C.McLeod
Date: 12/12/2025 1:50:55 PM
Status:

Tree Removal Permit = Remove 26 Trees, 17
Trees to Remain, Plant 4 trees, 19 Trees Paid into
Tree Fund

In lieu of payment into tree fund, trees should be
planted along berm/road frontage

19 TREE
REMOVE
T
Tree Removal Permit = Remove 26 Trees, 17
Trees to Remain, Plant 4 trees, 19 Trees Paid into
Tree Fund

N.G.E. 18 trees of payment into tree fund, trees should
be planted along berm/road frontage
DUST MITIGATION PRIOR TO ANY
AROUND THE PERIMETER OF THE
TURFING CONSTRUCTION

19 TREE
REMOVE
T
Tree Removal Permit = Remove 26 Trees, 17
Trees to Remain, Plant 4 trees, 19 Trees Paid into
Tree Fund

Subject: Planning Department
Author: C.McLeod
Date: 12/12/2025 1:51:15 PM
Status:

Tree Removal Permit = Remove 26 Trees, 17
Trees to Remain, Plant 4 trees, 19 Trees Paid into
Tree Fund

In lieu of payment into tree fund, trees should be
planted along berm/road frontage

19 TREE
REMOVE
T
Tree Removal Permit = Remove 26 Trees, 17
Trees to Remain, Plant 4 trees, 19 Trees Paid into
Tree Fund

N.G.E. 18 trees of payment into tree fund, trees should
be planted along berm/road frontage
DUST MITIGATION PRIOR TO ANY
AROUND THE PERIMETER OF THE
TURFING CONSTRUCTION

19 TREE
REMOVE
T
Tree Removal Permit = Remove 26 Trees, 17
Trees to Remain, Plant 4 trees, 19 Trees Paid into
Tree Fund

Subject: Planning Department
Author: C.McLeod
Date: 12/12/2025 1:51:33 PM
Status:

Landscape bond = \$84,760, plus administrative fees

Assessing
Yes

Assessing
Yes

Subject: Planning Department
Author: C.McLeod
Date: 12/15/2025 8:54:05 AM
Status:

Assessing

Yes

Chris McLeod - 248-841-2072
mcleodc@RochesterHills.org

Assessing
Yes

Subject: Planning Department
Author: C.McLeod
Date: 12/15/2025 1:48:46 PM
Status:

APPLICANT
TIMBERLAND L.

Traffic (3)

Typical Pathway and
Shoulder Drainage Profile

Use the updated Pathway Standard
Detail. Minor changes were recently
made to the Standard Notes.

MAP 46 F

Subject: Traffic
Author: Emira Barrette
Date: 12/3/2025 9:22:51 AM
Status:

Use the updated Pathway Standard Detail. Minor
changes were recently made to the Standard
Notes.

MAP 46 F

On the Construction Plans, provide detailed grades
for pathways and sidewalks, at ramps, and at
landings areas, so longitudinal and cross slopes
can be checked for ADA compliance.

Subject: Traffic
Author: Emira Barrette
Date: 12/3/2025 9:24:54 AM
Status:

MAP 46 F

On the Construction Plans, provide detailed grades
for pathways and sidewalks, at ramps, and at
landings areas, so longitudinal and cross slopes
can be checked for ADA compliance.

MAP 46 F

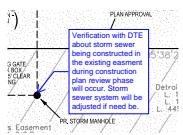
Subject: Traffic
Author: Keith
Date: 12/3/2025 10:35:47 AM
Status:

MAP 46 F

On the Construction Plans, provide detailed grades
for pathways and sidewalks, at ramps, and at
landings areas, so longitudinal and cross slopes
can be checked for ADA compliance.

MAP 46 F

Underground Utilities (1)



Subject: Underground Utilities
Author: Jason Boughton
Date: 12/1/2025 10:31:06 AM
Status:

Verification with DTE about storm sewer being constructed in the existing easement during construction plan review phase will occur. Storm sewer system will be adjusted if need be.