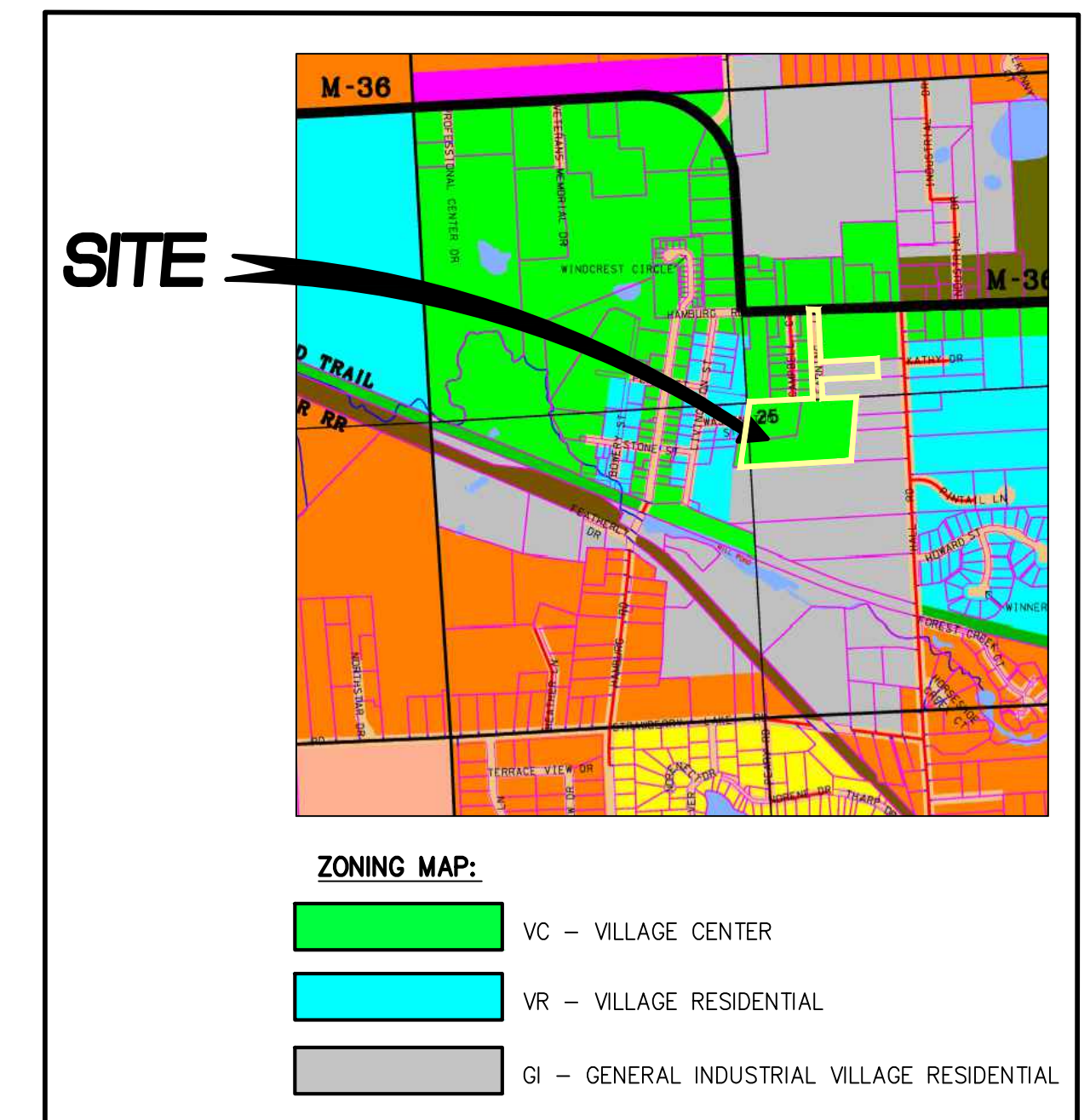
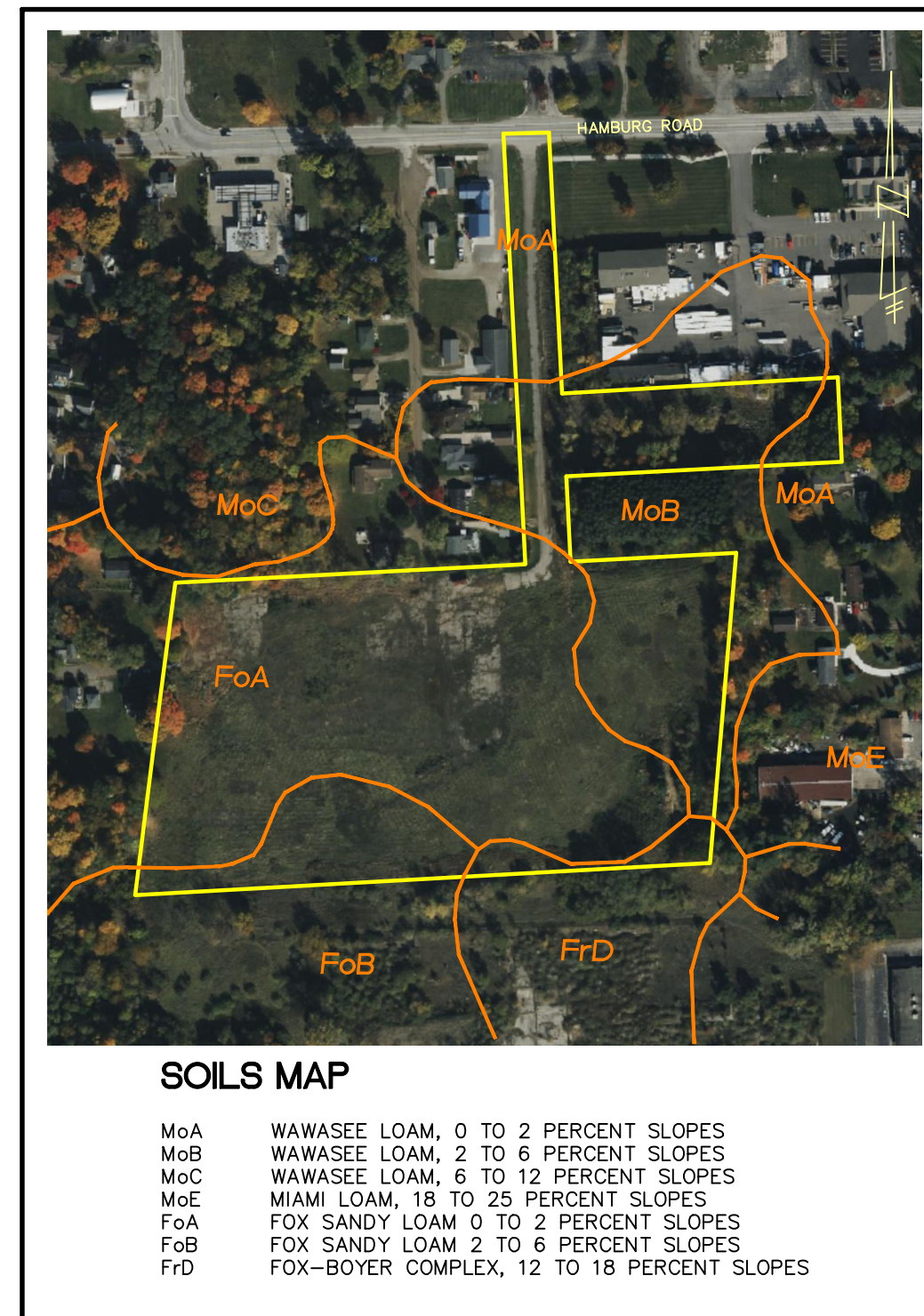


PRELIMINARY SITE PLANS FOR:  
**THE CROSSING AT LAKELANDS TRAIL**

PART OF E. 1/2 OF SECTION 25, TOWN 1 NORTH, RANGE 5 EAST  
 HAMBURG TWP., LIVINGSTON COUNTY, MICHIGAN

PREPARED FOR:  
 ELEVATE LAND HOLDINGS - THE CROSSING  
 128 N. CENTER STREET  
 NORTHVILLE, MICHIGAN 48167  
 248.344.1885



**SHEET INDEX**

**ENGINEERING PLANS:**

- COVER SHEET
- PREVIOUSLY APPROVED OPEN SPACE PLAN
- OVERALL PLAN AND OPEN SPACE PLAN
- UTILITIES PLAN
- GRADING PLAN
- GRADING PLAN
- GRADING PLAN
- STORM WATER MANAGEMENT PLAN

**LANDSCAPE PLANS:**

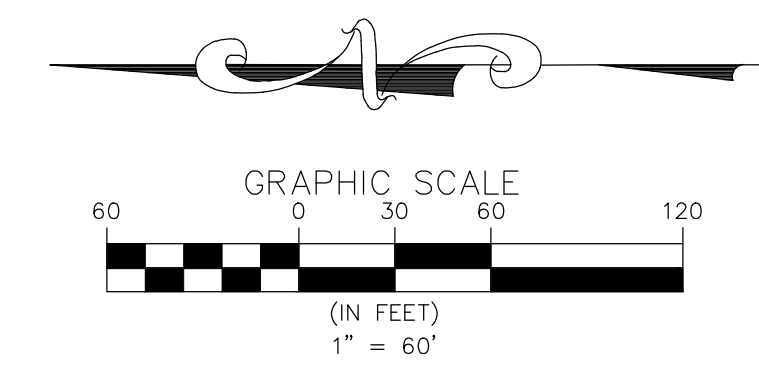
- LANDSCAPE PLAN
- LANDSCAPE PLAN
- LANDSCAPE PLAN
- LANDSCAPE DETAILS

<b>ARCHITECTURAL PLANS PREPARED BY:</b>	<b>LANDSCAPE PLANS PROVIDED BY:</b>	<b>TOPOGRAPHIC SURVEY PREPARED BY:</b>
TK DESIGN & ASSOCIATES 26030 PONTIAC TRAIL SOUTH LYON, MICHIGAN, 48178 PHONE: 248.446.1960	ALLEN DESIGN 557 CARPENTER NORTHVILLE, MICHIGAN 48167 PHONE: 248.467.4668	M. E. G. A. 298 VETERANS DRIVE FOWLerville, MICHIGAN, 48836 PHONE: 517.223.3512

**SKL SEIBER KEAST LEHNER ENGINEERING | SURVEYING**

CLINTON TOWNSHIP OFFICE 17001 NINETEEN MILE ROAD, SUITE 3 CLINTON TOWNSHIP, MI 48038 586.412.7050	FARMINGTON HILLS OFFICE 39205 COUNTRY CLUB DRIVE, SUITE C8 FARMINGTON HILLS, MI 48331 248.308.3331
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REVISIONS			ENGINEER'S SEAL
NO.	ITEM	DATE	
1.	PRE-APP SUBMITTAL	4-22-24	
2.	SUBMIT TO HAMBURG TWP.	8-16-24	
3.	SUBMIT TO HAMBURG TWP.	9-25-24	
DATE: 1-5-2024			DESIGNED BY: A.A. JOB NUMBER: 23-239
			CHECKED BY: C.S. DRAWING FILE: 1-23239-CV.dwg



PER PREVIOUSLY APPROVED PLANS  
 PREPARED BY M.E.G.A. ENGINEERING  
 DATED: 8-30-2022

OPEN SPACE REQUIRED:  
 1,500 S.F./ UNIT=1,500 x 208  
 312,000 S.F. (7.16 AC.) 44% OF SITE AREA (16.1 AC.)

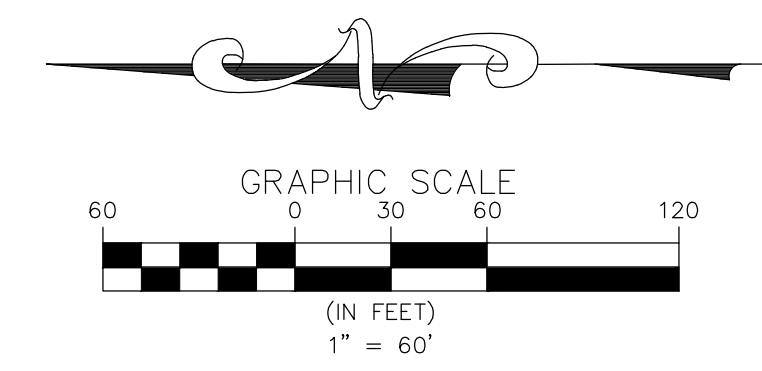
OPEN SPACE PROVIDED:  
 262,684 S.F. (6.03 AC.) 37% OF SITE AREA (16.1 AC.)

3 WORKING DAYS  
 BEFORE YOU DIG  
 CALL MISS DIG  
 1-800-482-7171  
 TOLL FREE FOR THE LOCATION  
 OF UNDERGROUND FACILITIES

CLIENT INFO:  
 ELEVATE LAND HOLDINGS-  
 THE CROSSING  
 128 N. CENTER STREET  
 NORTHVILLE, MI 48167  
 248.344.1885

PROJECT NAME:  
 THE CROSSING AT  
 LAKELANDS TRAIL  
 PART OF E 1/2 OF SEC. 25, T.1N., R.5E.,  
 HAMBURG TWP., LIVINGSTON COUNTY, MI

SHEET TITLE:  
 PREVIOUSLY APPROVED  
 SITE PLAN - OPEN SPACE

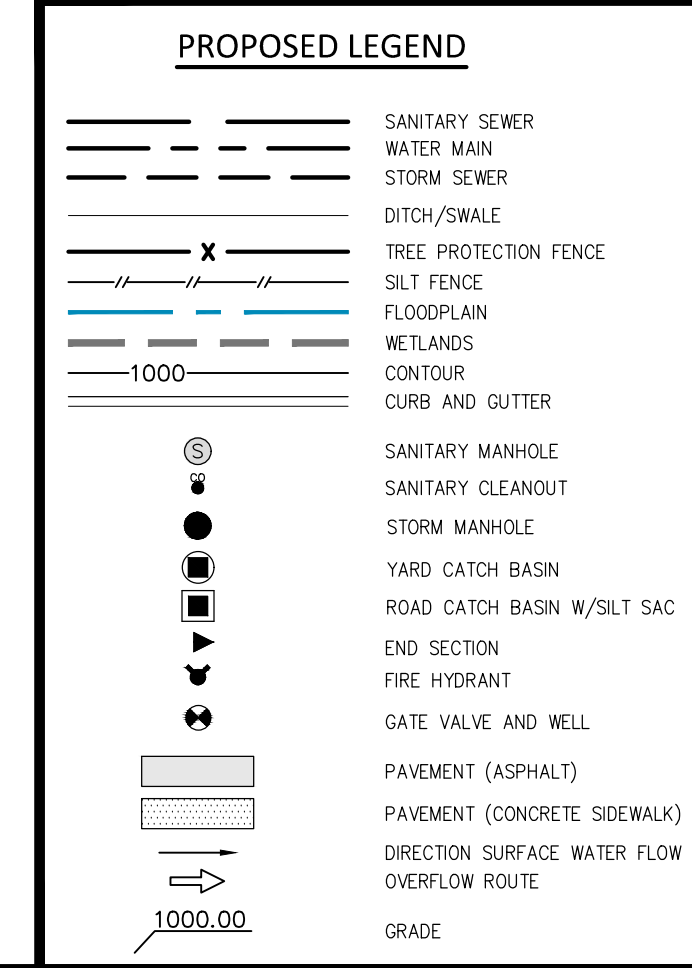


BUILDING TYPE	1B/R	2B/R	3B/R	TOTAL UNITS PER BLDG TYPE	TOTAL B/R PER BLDG TYPE	NO OF BLDGS	TOTAL B/R ALL BLDG TYPE
77' WD.	4	4	0	8	12	4	48
154' WD.	10	4	2	16	24	6	144
167' WD.	6	8	2	16	28	5	140
1B/R UNITS	106	51%				15	332
2B/R UNITS	80	38%					
3B/R UNITS	22	11%					
	208	100%					

**SITE DATA**  
 EXISTING ZONING: GENERAL PLANNED UNIT DEVELOPMENT (GPUD)  
 SITE AREA = 15.478 ACRES  
 MAX. DWELLING UNITS PER ACRE (V/C): 10 DU/CCRE  
 NO. OF BUILDING ON SITE: 16  
 NO. OF UNITS PROPOSED: 208  
 DWELLING UNITS PER ACRE: 13.44 DU/CCRE (AMEND TO PUD AGREEMENT)

BUILDING SETBACKS:	REQUIRED	PREVIOUSLY APPROVED	PROPOSED
FRONT (FROM PAVEMENT):	20'	15'	N/A
SIDE:	10'	15'	20' MIN.
REAR: TO PROPERTY LINE	25'	30'	20' MIN.
BUILDING TO BUILDING:	35'	N/A	N/A
BUILDING FRONT TO SIDE:	N/A	25'	N/A
BUILDING SIDE TO SIDE:	N/A	15'	N/A
MAXIMUM BUILDING HEIGHT:	35'	35'	35'
MAXIMUM BUILDING STORIES:	2.5 STORIES	2 STORIES	2 STORIES
MINIMUM FLOOR AREA:			
1 BEDROOM	550 S.F.	875 S.F.	815 S.F.
2 BEDROOMS	650 S.F.	1,100 S.F.	1,106 S.F.
3 BEDROOMS		N/A	1,435 S.F.
BUILDING COVERAGE:	50% MAX.	16%	16.8%
IMPERVIOUS AREA CALCULATION:	N/A	32%	37.85%
OPEN SPACE REQUIRED: 1,500 S.F./ UNIT=1,500 x 208 312,000 S.F. (7.16 AC.)	44%	37%	42.56%
OPEN SPACE PROVIDED:		6.03 AC.	6.41 AC.
PARKING REQUIRED: (1.5 SPACE/UNIT) 1.5 x 208 = 312 SPACES			
PARKING PROVIDED: 403 SPACES (INCLUDING 10 B.F. SPACES) (1.966 SPACES/UNIT)			

	PREVIOUSLY APPROVED PLANS	CURRENT PLANS
SITE AREA	16.1 AC.	15.478 AC.
NO. OF BUILDING ON SITE:	23	16
NO. OF UNITS PROPOSED:	208	208
DWELLING UNITS PER ACRE:	12.91 DU/CCRE	13.44 DU/CCRE
BUILDING COVERAGE:	16%	15.8%
PAVED SURFACE PARKING AND ROADS CIRCULATION	32%	35.4%
OPEN SPACE:	37%	41.41%
PARKING PROVIDED:	406 SPACES (1.952 SPACES/UNIT)	403 SPACES (1.937 SPACES/UNIT)



SEE LANDSCAPE PLANS FOR SCREENING WALL DETAILS

REVISIONS

NO.	DESCRIPTION	DATE
1	REV. LAYOUT PER HAMBURG TWP. REVIEW	4-22-24
2	REV. ISLAND, ADD VINYL FENCE	6-26-24
3	SUBMIT TO HAMBURG TWP.	9-16-24
4	SUBMIT TO HAMBURG TWP.	9-25-24

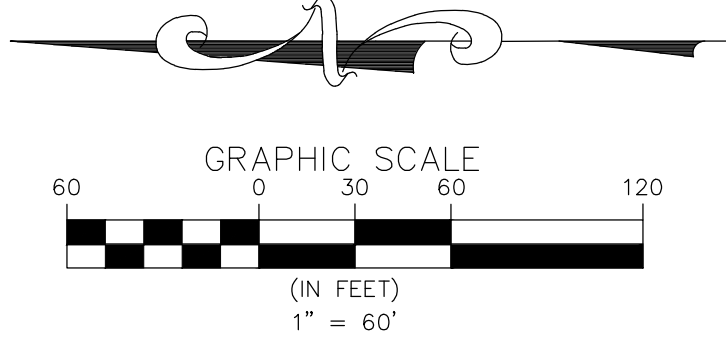
3 WORKING DAYS BEFORE YOU DIG  
 CALL MISS DIG  
 1-800-482-7171  
 TOLL FREE FOR THE LOCATION OF UNDERGROUND UTILITIES

PROJECT NUMBER: 23-239  
 PROJECT MANAGER: B. EMERINE  
 DRAWN BY: [Name]  
 CHECKED BY: [Name]  
 DATE: 1/10/24  
 OFFICE: FARMINGTON HILLS

**CLIENT INFO:**  
 ELEVATE LAND HOLDINGS - THE CROSSING  
 128 N. CENTER STREET  
 NORTHVILLE, MI 48167  
 248.344.1885

**THE CROSSING AT LAKELANDS TRAIL**  
 PART OF E. 1/2 OF SEC. 25, T.1N., R.1E., HAMBURG TWP., LIVINGSTON COUNTY, MI  
**OVERALL PLAN AND OPN SPACE PLAN**

SHEET TITLE: OVERALL PLAN AND OPN SPACE PLAN  
 PAGE No.: 3



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NO.	REVISIONS	DESCRIPTION	DATE
1.	REV. LAYOUT PER HAMBURG TWP. REVIEW		4-22-24
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PROJECT MANAGER:	B. EMERINE
DRAWN BY:	C.S.
CHECKED BY:	C.S.
DATE:	1/10/24
OFFICE:	FARMINGTON HILLS

**CLIENT INFO:**  
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THE CROSSING AT  
LAKELANDS TRAIL  
128 N. CENTER STREET  
NORTHVILLE, MI 48167  
248.344.1885

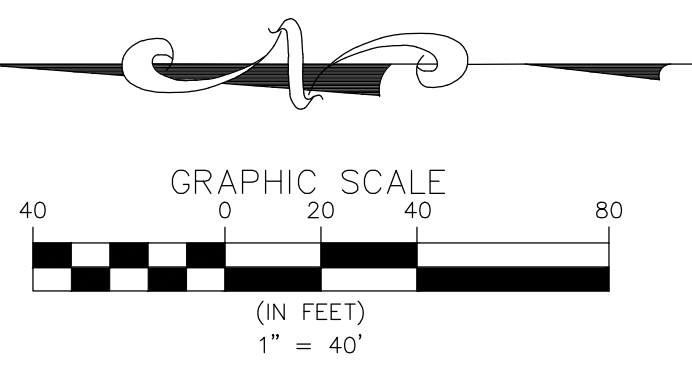
**PROJECT NAME:**  
THE CROSSING AT  
LAKELANDS TRAIL  
PART OF E. 1/2 OF SEC. 25, T.1N., R.8E.,  
HAMBURG TWP., LIVINGSTON COUNTY, MI

**SHEET TITLE:**  
UTILITIES PLAN

PAGE No.: 4

**PROPOSED LEGEND**

	SANITARY SEWER
	WATER MAIN
	STORM SEWER
	DITCH/SWALE
	TREE PROTECTION FENCE
	SILT FENCE
	FLOODPLAIN
	WETLANDS
	CONTOUR
	CURB AND GUTTER
	SANITARY MANHOLE
	SANITARY CLEANOUT
	STORM MANHOLE
	YARD CATCH BASIN
	ROAD CATCH BASIN W/SILT SAC
	END SECTION
	FIRE HYDRANT
	GATE VALVE AND WELL
	PAVEMENT (ASPHALT)
	PAVEMENT (CONCRETE SIDEWALK)
	DIRECTION SURFACE WATER FLOW
	OVERFLOW ROUTE
	GRADE



(SEE SHEET 6)

PROPOSED LEGEND	
	SANITARY SEWER
	WATER MAIN
	STORM SEWER
	DITCH/SWALE
	TREE PROTECTION FENCE
	SILT FENCE
	FLOODPLAIN
	WETLANDS
	CONTOUR
	CURB AND GUTTER
	SANITARY MANHOLE
	SANITARY CLEANOUT
	STORM MANHOLE
	YARD CATCH BASIN
	ROAD CATCH BASIN W/SILT SAC
	END SECTION
	FIRE HYDRANT
	GATE VALVE AND WELL
	PAVEMENT (ASPHALT)
	PAVEMENT (CONCRETE SIDEWALK)
	DIRECTION SURFACE WATER FLOW
	OVERFLOW ROUTE
	GRADE

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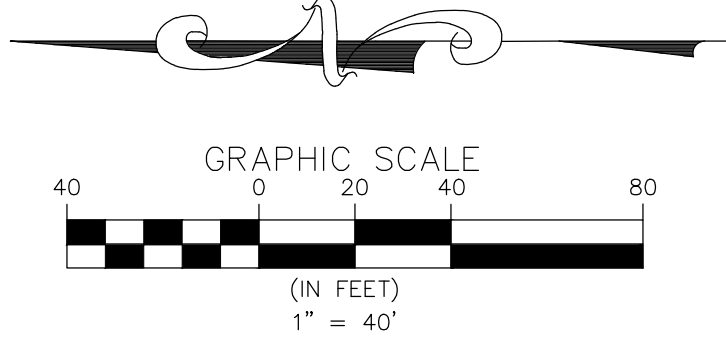
PROJECT NUMBER:	23-239
PROJECT MANAGER:	B. EMERINE
DRAWN BY:	
CHECKED BY:	
DATE:	1/10/24
OFFICE:	FARMINGTON HILLS

**CLIENT INFO:**  
ELEVATE LAND HOLDINGS-  
THE CROSSING AT  
LAKELANDS TRAIL  
128 N. CENTER STREET  
NORTHVILLE, MI 48167  
248.344.1885

(SEE SHEET 5)



(SEE SHEET 7)



**PROPOSED LEGEND**

	SANITARY SEWER
	WATER MAIN
	STORM SEWER
	DITCH/SWALE
	TREE PROTECTION FENCE
	SILT FENCE
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	OVERFLOW ROUTE
	GRADE

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**REVISIONS**

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**PROJECT MANAGER:** B. EMERINE  
**DRAWN BY:** C.S.  
**CHECKED BY:** C.S.  
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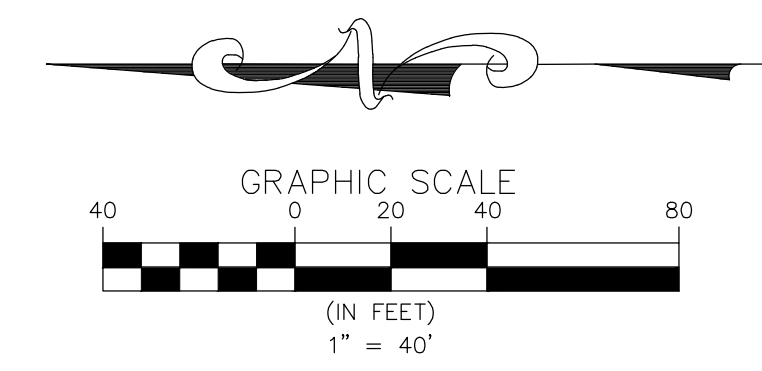
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LAKELANDS TRAIL  
128 N. CENTER STREET  
NORTHVILLE, MI 48167  
248.344.1885

**PROJECT NAME:** THE CROSSING AT LAKELANDS TRAIL  
PART OF E. 1/2 OF SEC. 25, T.1N., R.5E., HAMBURG TWP., LIVINGSTON COUNTY, MI

**SHEET TITLE:** GRADING PLAN

PAGE No.: 6

(SEE SHEET 6)



NO.	REVISIONS	DESCRIPTION	DATE
1.	REV. LAYOUT PER HAMBURG TWP. REVIEW		4-22-24
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DRAWN BY: C.S.
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DATE: 1/10/24
OFFICE: FARMINGTON HILLS

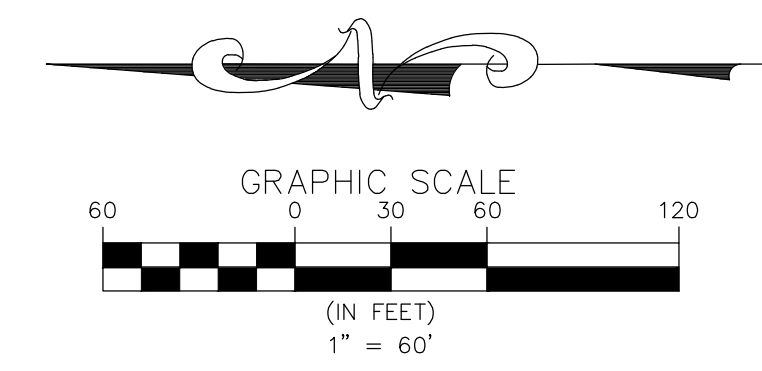
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 128 N. CENTER STREET  
 NORTHVILLE, MI 48167  
 248.344.1885

PROJECT NAME:  
 THE CROSSING AT  
 LAKELANDS TRAIL  
 PART OF E. 1/2 OF SEC. 25, T.1N., R.9E.,  
 HAMBURG TWP., LIVINGSTON COUNTY, MI

SHEET TITLE:  
 GRADING PLAN

PAGE No.:  
 7

PROPOSED LEGEND	
	SANITARY SEWER
	WATER MAIN
	STORM SEWER
	DITCH/SWALE
	TREE PROTECTION FENCE
	SILT FENCE
	FLOODPLAIN
	WETLANDS
	CONTOUR
	CURB AND GUTTER
	SANITARY MANHOLE
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	GATE VALVE AND WELL
	PAVEMENT (ASPHALT)
	PAVEMENT (CONCRETE SIDEWALK)
	DIRECTION SURFACE WATER FLOW
	OVERFLOW ROUTE
	GRADE



**WATER QUALITY VOLUME REQUIRED**  
 $A = 15.11$  Ac  
 $C = 0.65$   
 $Vw-q = 3,630 \times C \times A = 35,652 \text{ ft}^3 \text{ required} < Vr-a$

**DETERMINE DETENTION REQUIREMENTS (100-YEAR STORM)**  
 $Ac = 15.11$  Ac (Onsite Area Tributary to Basin)  
 $Ac_{off} = 0.00$  Ac (Offsite Area Tributary to Basin)  
 $C = 0.65$

**CALCULATE VARIABLE RELEASE RATE**  
 $Qvrr = 1.1055-0.206 \ln(A)$   $Qrr = \text{Allowable release rate in cfs/acre}$   
 $Qvrr = 0.55 \text{ cfs/acre}$   $A = \text{Contribugn area in acres (does not govern)}$   
 $Q100p = Qvrr \times A$   $Q100p = \text{Allowable 100-year post-development peak flow rate in cfs}$   
 $Q100p = 8.25 \text{ cfs}$

**CALCULATE 100-YEAR DETENTION VOLUME (V100D)**  
 $Ac = 15.11$  Ac (Onsite Area Tributary to Basin)  
 $Ac_{off} = 0.00$  Ac (Offsite Area Tributary to Basin)  
 $V100 = 18985 \times C \times A$   $V100 = \text{POST-DEVELOPMENT 100-YEAR RUNOFF VOLUME IN CF}$   
 $V100 = 186461 \text{ cf}$

**CALCULATE 100-YEAR PEAK INFLOW RATE (Q100IN)**  
 $Ac = 15.11$  Ac (Onsite Area Tributary to Basin)  
 $Ac_{off} = 0.00$  Ac (Offsite Area Tributary to Basin)  
 $Q100IN = C \times I100 \times A$   $Q100IN = 100\text{-YEAR POST-DEVELOPMENT PEAK INFLOW RATE IN CFS}$   
 $I100 = 83.3 / (Tc + 9.17)^{0.81}$   $I100 = 100\text{-year peak rainfall intensity in inches/hour}$   
 $I100 = 4.658 \text{ in/hr}$   
 $Q100IN = 45.75 \text{ cfs}$

**CALCULATE STORAGE CURVE FACTOR FOR THE 100-YEAR DETENTION VOLUME (R)**  
 $R = [0.206 - 0.15 \ln(Q100P/Q100IN)]$   
 $R = 0.463$

**CALCULATE 100-YEAR REQUIRED DETENTION BASIN VOLUME**  
 $V100D = (V100R \times R) - VCP-P$   $V100D = \text{Required 100-year detention volume in cf}$   
 $V100R = 100\text{-Year runoff volume in cf}$   
 $R = \text{Storage curve factor}$   
 $Vcp-p = \text{Provided CVPC Volume in cf}$   
 $V100D = VED$   
 $V100D = 86316 \text{ C.F.}$  **REQUIRED DETENTION VOLUME**  
 $117041 \text{ C.F.}$  **PROVIDED DETENTION VOLUME**

**DETERMINE STORAGE IN SEDIMENT BASIN**

Elevation	Area	Volume (c.f.)
904	6864	0
905	8526	7695
906	10321	17119
907	12214	28386

**HW EL = 907.0 Volume at HW = 28386**

**DETERMINE STORAGE IN DETENTION BASIN**

Elevation	Area	Volume (c.f.)
904	24897	0
905	27939	26418
906	31098	55937
907	34338	88655

**HW EL = 907.0 Volume at HW = 88655**

**C-Factor Determination**

Tributary Area =	15.11 Acres		
Imperious Areas			
Bldgs, Roads and S/W =	8.83	Ac.	at C = 0.90
Pervious Areas			
Lawn Areas =	5.60	Ac.	at C = 0.20
Low Water	0.68	Ac.	at C = 1.00
<b>C Avg.</b>	<b>= 0.65</b>		

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**BEFORE YOU DIG CALL MISS DIG**  
 1-800-482-7171  
 TOLL FREE FOR THE LOCATION OF UNDERGROUND UTILITIES

**811**

PROJECT NUMBER:	23-239
PROJECT MANAGER:	B. EMERINE
DRAWN BY:	
CHECKED BY:	
DATE:	1/10/24
OFFICE:	FARMINGTON HILLS

**CLIENT INFO:**  
 ELEVATE LAND HOLDINGS—  
 THE CROSSING  
 128 N. CENTER STREET  
 NORTHVILLE, MI 48167  
 248.344.1885

**PROJECT NAME:**  
 THE CROSSING AT  
 LAKELANDS TRAIL  
 PART OF E. 1/2 OF SEC. 25, T.1N., R.9E.,  
 HAMBURG TWP., UNIVINGTON COUNTY, MI

**SHEET TITLE:**  
 STORM WATER  
 MANAGEMENT PLAN

PAGE No.: **08**