ESSENCE- PINCKNEY

1268 E M-36
PINCKNEY, MI 48169

SHEET INDEX		
	SHEET NO.	SHEET TITLE
	A-1	PROPOSED FLOOR PLAN
	A-2	ELEVATIONS
	S-1	TOPOGRAPHIC REPORT
	A002	LANDSCAPE PLAN
	C-002	REMOVAL PLAN
	C-3	SITE PLAN
	C-4	GRADING PLAN
	C-5	UTILITIES PLAN
	C-5A	UTILITIES DETAILS PLAN
	C-5B	UTILITIES DETAILS/PROFILES PLAN
	C-5C	UTILITIES LOCATIONS PLAN
	C-5D	UTILITIES DETAILS PLAN
	C-6	SESC PLAN
	C-7	SESC DETAILS PLAN
	C-8	AERIAL PLAN
	C-10	INFILTRATION REPORT
	MS-1	TRUCK SIMULATION PLAN
	A103	POWER PLAN
	EL1.10	PHOTOMETRICS PLAN
	EL 2.10	LUMINAIRE SCHEDULES

LOCATION MAP

BUILDING SIZE 3,095 SF

SPECIAL USE CONDITIONS

On December 11, 2023, the applicant received special land use approval for a Village of Pinckney Class A marihuana microbusiness license by Village Council, subject to the following conditions:

1. Establishment of a cross access agreement across the two parcels.
2. Provision of enhanced landscaping and pedestrian amenities, surpassing the minimum requirements of the Village Zoning Ordinance, to soften the appearance of the building and the site, especially the view from Main Street/M-36. This entails the addition of a low decorative wall combined with increased landscaping along the front of the property, and additional landscaping along the east property boundary.
3. Accommodations for walking/bicycling customers or employees with a sidewalk connection to Main Street/M-36, a bike rack by the entrance, outside seating, and waiting areas.
4. Incorporation of innovative stormwater management techniques aligning with the green infrastructure Master Plan goal.
5. Provision of additional information for Planning Commission review and approval on the proposed building, demonstrating attention to the existing character of the Village center and edge with compatible materials, colors, and detailing.

ARCHITECTURAL

RON JONA COLLABORATIVE
1066 COMMERCE STREET
BIRMINGHAM MI. 48009
248.789.2001

VIVID DESIGN STUDIO

maniaci associates incorporated
architects/planners

STATE OF MICHIGAN
PETER MANIACI
ARCHITECT
No. 27964
LICENSED ARCHITECT

CIVIL ENGINEERING

CARLO SANTIA, P.E

35890 MONTEREY
CLINTON TWP., MI. 48035
586.615.4120

STATE OF MICHIGAN
CARLO SANTIA
ENGINEER
REGISTERED
PROFESSIONAL ENGINEER

PROPERTY OWNER

PINCKNEY DEVELOPMENTS LLC

17228 SUMMIT DR, NORTHVILLE,
MI 48168
(734)674-3958

THERE ARE NO DEED RESTRICTIONS ON THIS PROPERTY

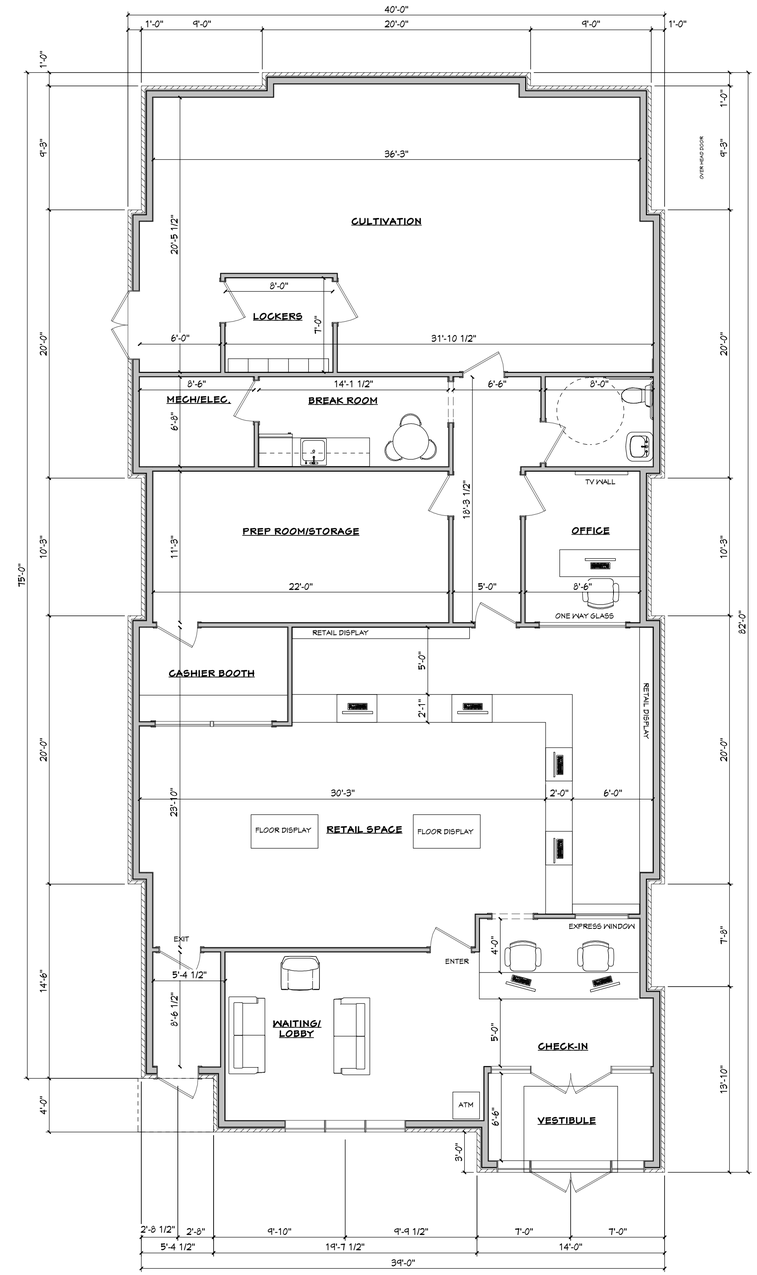
ZONE: SECONDARY BUSINESS DISTRICT
HOURS OF OPERATION 9:00 AM- 9:00 PM

GROSS LAND AREA:
+/- 87,400 SF COMBINED TOTAL
2 ACRES COMBINED TOTAL
1 PROPOSED STRUCTURE

THE LAND IS DESCRIBED AS FOLLOWS:

SITUATED IN THE TOWNSHIP OF PUTNAM, COUNTY OF LIVINGSTON AND STATE OF MICHIGAN, IS DESCRIBED AS FOLLOWS:
PARCEL 1:
PART OF THE SOUTHEAST 1/4 OF SECTION 23, TOWNSHIP 1 NORTH, RANGE 4 EAST, PUTNAM TOWNSHIP, LIVINGSTON COUNTY, MICHIGAN, DESCRIBED AS FOLLOWS: BEGINNING 322.6 FEET NORTH 84 DEGREES 45 MINUTES EAST FROM THE SOUTHWEST CORNER OF THE NORTHEAST 1/4 OF THE SOUTHEAST 1/4 OF SAID SECTION 23; THENCE NORTH 84 DEGREES 45 MINUTES EAST 116.4 FEET; THENCE NORTH 2 DEGREES 30 MINUTES WEST 390 FEET TO THE CENTERLINE OF HIGHWAY M-36; THENCE SOUTH 68 DEGREES 30 MINUTES WEST 121 FEET ALONG THE CENTERLINE OF SAID HIGHWAY M-36; THENCE SOUTH 2 DEGREES 30 MINUTES EAST 359 FEET TO THE POINT OF BEGINNING.

PARCEL 2:
PART OF THE SOUTHEAST 1/4 OF SECTION 23, TOWNSHIP 1 NORTH, RANGE 4 EAST, PUTNAM TOWNSHIP, LIVINGSTON COUNTY, MICHIGAN, DESCRIBED AS FOLLOWS: BEGINNING 439 FEET NORTH 84 DEGREES 45 MINUTES EAST FROM THE SOUTHWEST CORNER OF THE NORTHEAST 1/4 OF THE SOUTHEAST 1/4 OF SAID SECTION 23; THENCE NORTH 84 DEGREES 45 MINUTES EAST 107 FEET; THENCE NORTH 2 DEGREES 30 MINUTES WEST 424 FEET TO THE CENTERLINE OF HIGHWAY M-36; THENCE SOUTH 68 DEGREES 30 MINUTES WEST 111 FEET ALONG THE CENTERLINE OF SAID HIGHWAY M-36; THENCE SOUTH 2 DEGREES 30 MINUTES EAST 390 FEET TO THE POINT OF BEGINNING.



PROPOSED FLOOR PLAN
SCALE: 3/16"=1'-0"

RON JONA
COLLABORATIVE
1066 COMMERCE STREET
BIRMINGHAM MI. 48009
248.789.2001

VIVID DESIGN STUDIO

ESSENCE PINCKNEY

1268 E M-36 PICNKNEY, MI 48169

PROPOSED FLOOR PLAN

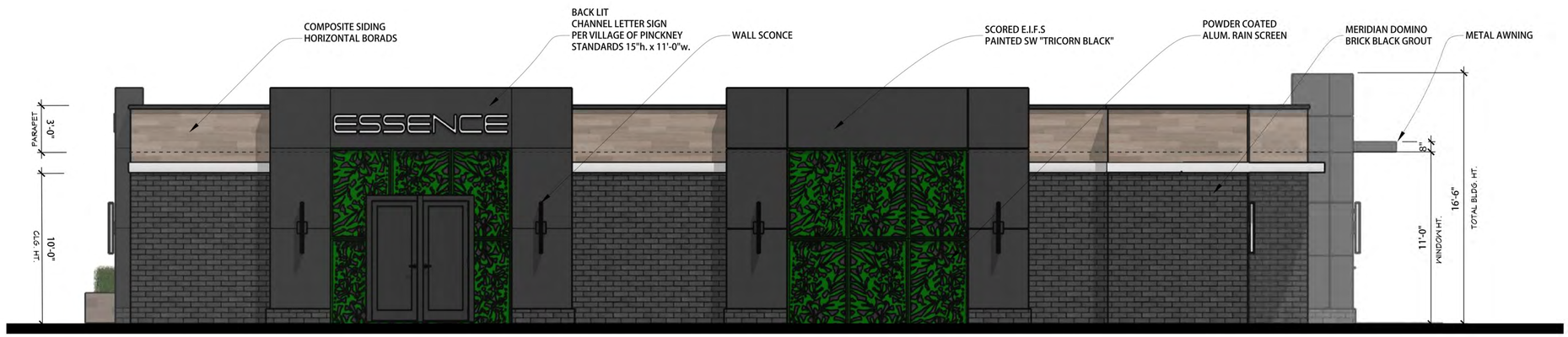
DATE ISSUED
11.20.2024

REVISIONS

SHEET NUMBER

A-1

STATE OF MICHIGAN
PETER MANIACI
ARCHITECT
No. 27964
LICENSED ARCHITECT

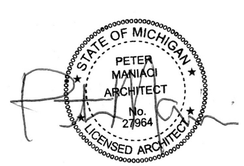


WEST ELEVATION
SCALE: 3/16"=1'-0"

SOUTH ELEVATION
SCALE: 3/16"=1'-0"

NORTH ELEVATION
SCALE: 3/16"=1'-0"

EAST ELEVATION
SCALE: 3/16"=1'-0"



RON JONA
COLLABORATIVE
1066 COMMERCE STREET
BIRMINGHAM MI. 48009
248.789.2001

VIVID DESIGN STUDIO

ESSENCE PINCKNEY

1268 E M-36 PICNKNEY, MI 48169

ELEVATIONS

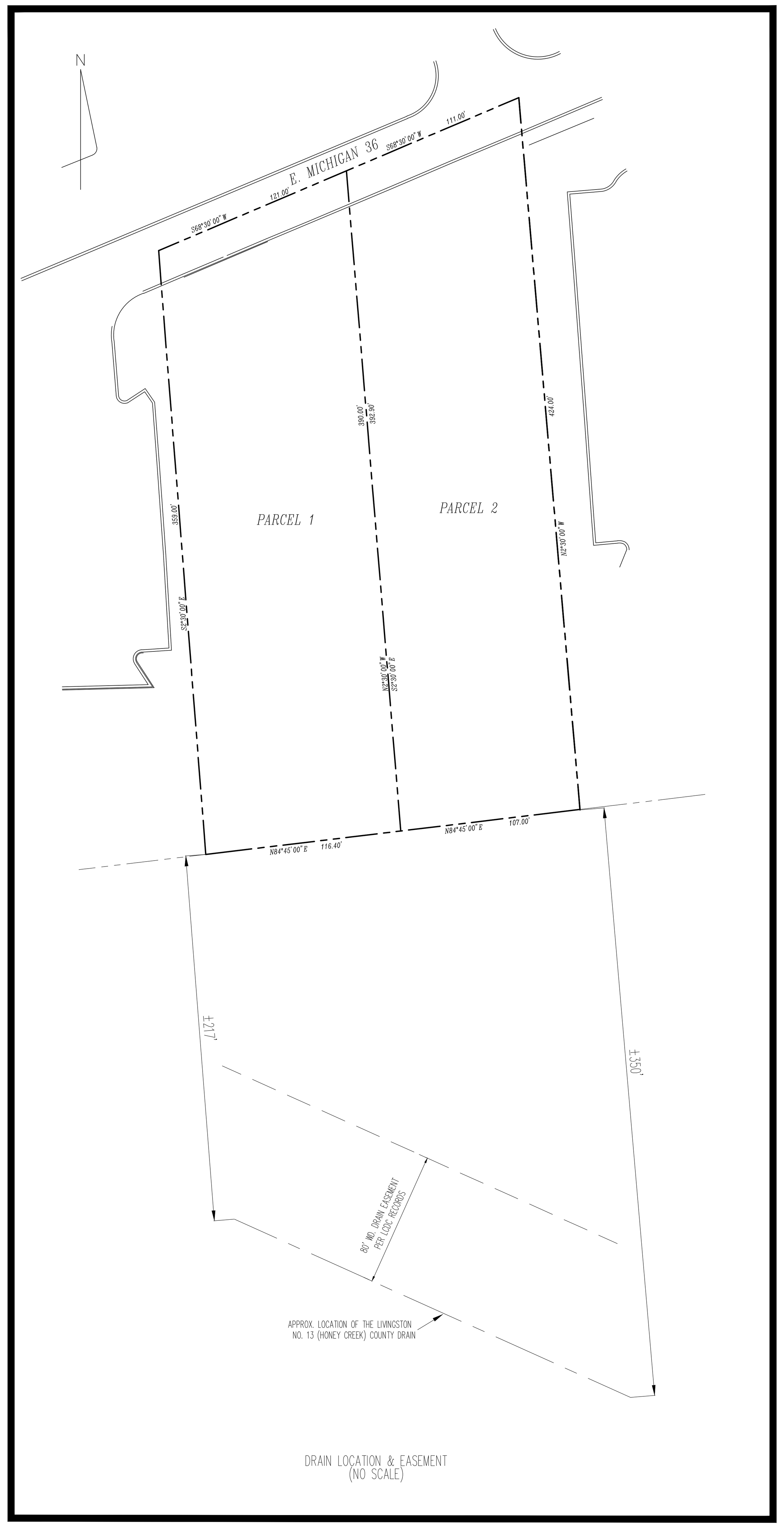
DATE ISSUED
11.20.2024

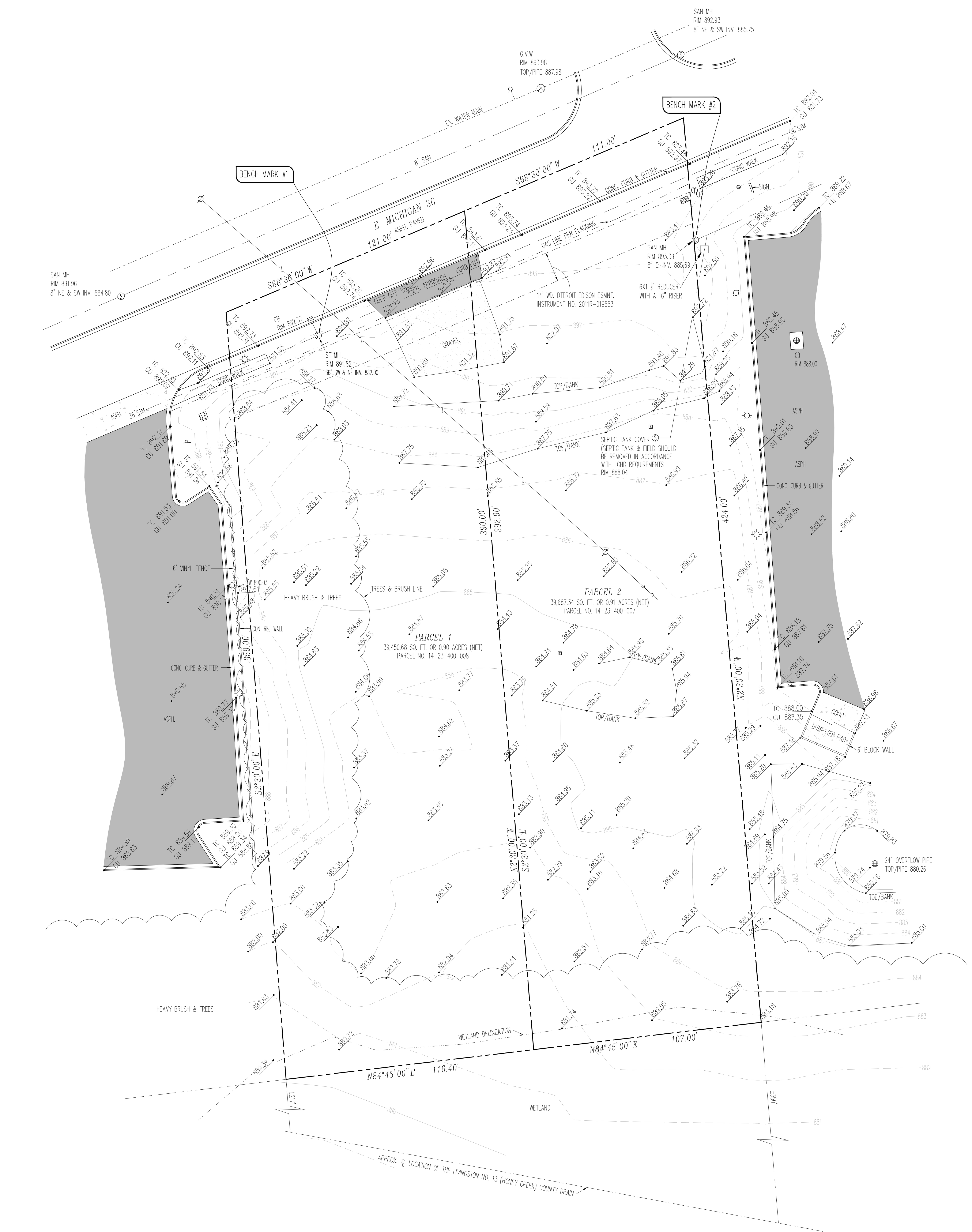
REVISIONS

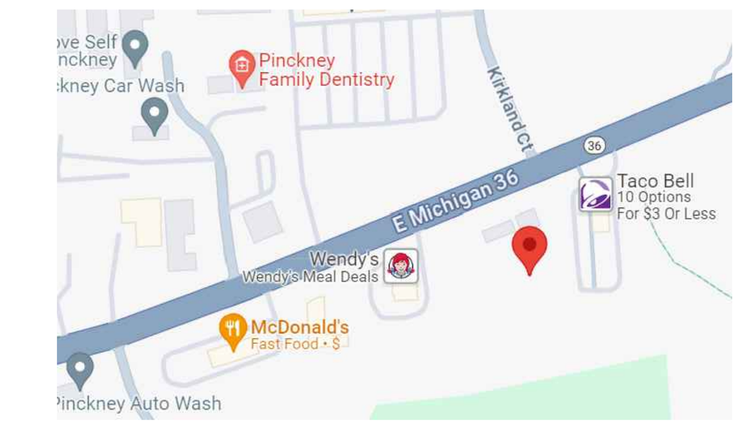
SHEET NUMBER

A-2

SCALE 1"=30'







LOCATION MAP
(NO SCALE)

NOTES:

- EGLE REGULATES THE WETLAND SHOWN.
- NO SANITARY SEWER CONNECTIONS WERE LOCATED. WE WILL ADD APPROPRIATE SANITARY LEADS FOR PURPOSES OF THIS COMMERCIAL DEVELOPMENT.
- THE UNIDENTIFIED WELLS HAVE BEEN ABANDONED BY A LICENSED INDIVIDUAL MEETING STATE REQUIREMENTS.

WELL REMOVAL

PERFORMED BY CRIBLEY DRILLING CO INC
8300 DEXTER CHELSEA
DEXTER, MI 48130
DATED: 08-30-2021

FLOODPLAIN NOTE:

THE FEMA 100 YEAR FREQUENCY (1% ANNUAL CHANCE) FLOOD PLAIN BOUNDARY (ZONE A) IDENTIFIED ON FIRM PANEL 26093C0433D HAVING AN EFFECTIVE DATE OF 09-17-2008
NO BASE FLOOD ELEVATION DETERMINED

WETLAND DELINEATION BY:

MARX WETLANDS LLC
9861 HIGH MEADOW DRIVE
YPSILANTI, MICHIGAN 48198
JOB NO. 671
DATED: 03-22-2024
TEL.: (734) 478-8277

BENCH MARKS

B.M #1: RIM OF STORM MANHOLE
ELEVATION= 891.82 (NAVD88)

B.M #2: RIM OF SANITARY MANHOLE
ELEVATION= 893.39 (NAVD88)

THE LAND IS DESCRIBED AS FOLLOWS:

SITUATED IN THE TOWNSHIP OF PUTNAM, COUNTY OF LIVINGSTON AND STATE OF MICHIGAN, IS DESCRIBED AS FOLLOWS:
PARCEL 1: (14-23-400-008)
PART OF THE SOUTHEAST 1/4 OF SECTION 23, TOWNSHIP 1 NORTH, RANGE 4 EAST, PUTNAM TOWNSHIP, LIVINGSTON COUNTY, MICHIGAN, DESCRIBED AS FOLLOWS: BEGINNING 322.6 FEET NORTH 84 DEGREES 45 MINUTES EAST FROM THE SOUTHWEST CORNER OF THE NORTHEAST 1/4 OF THE SOUTHEAST 1/4 OF SAID SECTION 23; THENCE NORTH 84 DEGREES 45 MINUTES EAST 116.4 FEET; THENCE NORTH 2 DEGREES 30 MINUTES WEST 390 FEET TO THE CENTERLINE OF HIGHWAY M-36; THENCE SOUTH 68 DEGREES 30 MINUTES WEST 121 FEET ALONG THE CENTERLINE OF SAID HIGHWAY M-36; THENCE SOUTH 2 DEGREES 30 MINUTES EAST 359 FEET TO THE POINT OF BEGINNING.

PARCEL 2: (14-23-400-007)
PART OF THE SOUTHEAST 1/4 OF SECTION 23, TOWNSHIP 1 NORTH, RANGE 4 EAST, PUTNAM TOWNSHIP, LIVINGSTON COUNTY, MICHIGAN, DESCRIBED AS FOLLOWS: BEGINNING 439 FEET NORTH 84 DEGREES 45 MINUTES EAST FROM THE SOUTHWEST CORNER OF THE NORTHEAST 1/4 OF THE SOUTHEAST 1/4 OF SAID SECTION 23; THENCE NORTH 84 DEGREES 45 MINUTES EAST 107 FEET; THENCE NORTH 2 DEGREES 30 MINUTES WEST 424 FEET TO THE CENTERLINE OF HIGHWAY M-36; THENCE SOUTH 68 DEGREES 30 MINUTES WEST 111 FEET ALONG THE CENTERLINE OF SAID HIGHWAY M-36; THENCE SOUTH 2 DEGREES 30 MINUTES EAST 390 FEET TO THE POINT OF BEGINNING.

EXISTING | *PROPOSED*

UNDER GROUND CABLE
GAS
SANITARY (SAN)
STORM (ST)
WATER MAIN (WM)
OVERHEAD WIRE
CHAIN LINK FENCE
WOOD FENCE
VINYL FENCE
GUARD RAIL

AMERITECH
WELL
TELEPHONE RISER
D.E. TRANSFORMER
C.O. SEWER CLEAN OUT
GAS METER
GAS VALVE /GAS MARKER
STORM MANHOLE (ST MH)
CATCH BASIN (CB)
GATE VALVE IN WELL
FIRE HYDRANT
X-ING SIGNAL POLE
TRAFFIC SIGNAL POLE
UTILITY POLE
UTILITY POLE W/ LAMP EXTENSION

FLOOD LIGHT
PUBLIC LIGHTING MANHOLE
ELECTRIC RISER OR OUTLET
CATHODIC PROTECTION
GUY WIRE
D.E TRANSFORMER
FLAG POLE
GUARD/METAL POST
STEEL COLUMN
MAILBOX
SIGN
PARKING METER
BILLBOARD OR LARGE SIGN
BASKETBALL HOOP

L.S LANDSCAPE
FILLER CAP
C.P. TEST
MONITOR WELL
TW 000.00 TP 000.00 TOP OF WALK ELEVATION
TOP OF PAVEMENT ELEVATION
TW TOP OF WALK
CULV CULVERT
CMP CORRUGATED METAL PIPE
F.F. FINISH FLOOR ELEVATION
SECTION CORNER
F.I. FOUND IRON
F.M. FOUND MONUMENT
F.P.K. FOUND P.K. NAIL
S.P.K. SET P.K. NAIL

ASPHALT
CONCRETE
LIGHT POLE
TRAFFIC SIGNAL
D.E MANHOLE
000.00 SPOT ELEVATION
TC 000.00 GU 000.00 TOP OF CURB ELEVATION
GUTTER ELEVATION
S.P.K. SET P.K. NAIL
F.I.P FOUND IRON PIPE
(000.0) PROPOSED GRADE
(000) PROPOSED CONTOUR

- THE UTILITY LOCATIONS AS HEREON SHOWN ARE BASED ON FIELD OBSERVATIONS AND A CAREFUL REVIEW OF MUNICIPAL AND UTILITY RECORDS. HOWEVER IT IS NOT POSSIBLE TO DETERMINE THE PRECISE SIZE, LOCATION, DEPTH, OR ANY OTHER CHARACTERISTICS OF UNDERGROUND UTILITIES WITHOUT EXCAVATION. THEREFORE WE CAN NOT GUARANTEE THE ACCURACY OR COMPLETENESS OF THE BURIED UTILITY INFORMATION HEREON SHOWN.

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

STATE OF MICHIGAN
MARK A. OWENS
PROFESSIONAL SURVEYOR
NO. 58308
LICENSED PROFESSIONAL SURVEYOR

[illegible]

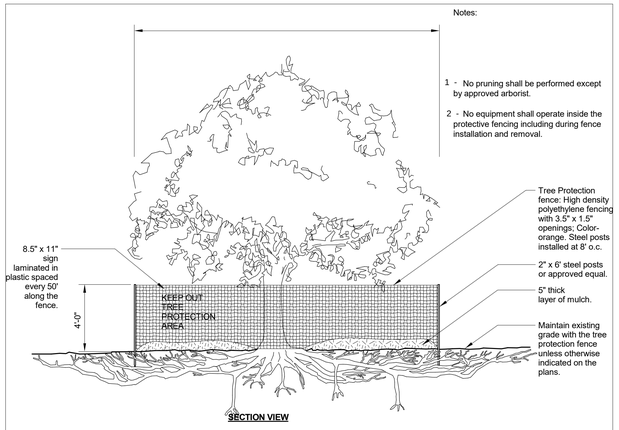
SURVEY TECH.
LAND SURVEYING *CIVIL ENGINEERING*
3253 LYNHURST CT. OAKLAND, MI 48306
TEL (248) 670-6556

TOPOGRAPHIC SURVEY

PROPRIETOR: MARCO LYTWYN

SCALE:	DATE:	JOB # :	SHEET:
1"=30'	01-18-2024	24103	S-1
DRAWN BY: M.M.F	CHECKED BY: M.M.F	APPROVED BY:	

REV. 10-28-2024 PER REVIEW
REV. 11-22-2024 ADD UTILITIES



S-X TREE PROTECTION FOR EXISTING TREES

1/4" = 1'-0"

GENERAL SITE REQUIREMENT CALCULATIONS: SECTION 10-282.2

GROSS SITE AREA = +/- 42,000 SF
PROPOSED LANDSCAPED OPEN AREAS = 13,000 SF +/-.
HARDSCAPED AREAS: 22,000 +/- SF
PROPOSED BUILDING SQ.FT = 3,320 SF

PERCENTAGE OF TOTAL PROPOSED LANDSCAPED OPEN AREAS: 23,500 SF / 46,700 SF = 0.503 X 100% = 50.3 +/- %

GENERAL SITE REQUIREMENT CALCULATIONS: SECTION 10-282.1 (A)(2)

GROSS LANDSCAPED AREAS = 6,079 SF +/-

(14) NEW JERSEY TEA FLOWERS @ 98 SF + (80) SHRUBBY CINQUEFOIL @ 560 SF + (20) PURPLE CONEFLOWER @ 60 SF. + (4) BLACKHAW VIBURNUM @ 452 SF. + (3) WHITE FLOWERING DOGWOOD @ 942 SF. + (3) BLACK GUM TREE @ 942 SF. + (34) SMOOTH ASTER FLOWER @ 102 SF. = 3,044 SF.

3,164 SF / 13,000 SF = 0.24 x 100% = +/- 24% LANDSCAPED

(14) NEW JERSEY TEA FLOWERS: 3' TALL AND 3' DIAMETER = (14) X 7 SF = 98 SQ.FT. TOTAL

(4) BLACKHAW VIBURNUM: 12-15' TALL AND 12' DIAMETER. = (4) X 113 SF = 452 SQ.FT. TOTAL

(20) PURPLE CONEFLOWER: 2'-4' TALL AND 2' DIAMETER = (12) X 3 SF = 60 SQ. FT. TOTAL

(80). SHRUBBY CINQUEFOIL: 1-4' TALL AND 3' DIAMETER = (80) x 7 SF = 560 SQ. FT. TOTAL

(3) WHITE FLOWERING DOGWOOD: 20-40' TALL AND 20' DIAMETER. = (3) X 314 SF = 942 SQ. FT TOTAL

(3) BLACK GUM TREE: 30-50' TALL AND 20' DIAMETER = (3) X 314 SF = 942 SQ. FT. TOTAL

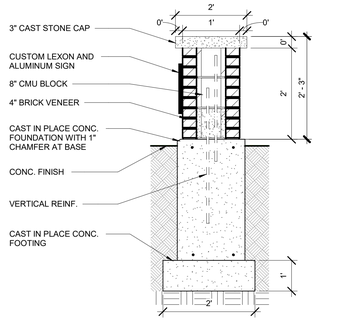
(34) SMOOTH ASTER: 2'-4' TALL AND 2' WIDE = (34) X 3 SF = 102 SQ. FT. TOTAL

(4) TOTAL LANDSCAPED MULCH AREAS = 2,685 SF +/- TOTAL

PLANT SPECIES IMAGES

TREES							
LATIN NAME	**COMMON NAME**	**HEIGHT**	**SPREAD**	**SPACING**	**ROOT TYPE**	**CONSTRUCTION DETAILS**	**GROUND COVER**
NYSSA SYLVATICA	BLACK GUM	30'-50'	20'-30'	30'-50'	DEEP TAP-ROOT	DIG A HOLE THAT IS ABOUT THE SIZE OF THE ROOT BALL, PLACE THE TREE UPRIGHT IN THE HOLE, AND BACKFILL THE HOLE WITH SOIL. WATER IN THE TREE THOROUGHLY	SOD
CORNUS FLORIDA	WHITE FLOWERING DOGWOOD	15'-30'	20'-30'	30'-50'	SHALLOW	DIG HOLE AT LEAST TWICE AS WIDE AS THE ROOT BALL AND THE SAME DEPTH. LOOSEN ROOTS OF TREE AND PLACE THE TREE IN THE HOLE SO ROOT BALL IS SLIGHTLY ABOVE THE SOIL.	SOD
SHRUBS							
LATIN NAME	**COMMON NAME**	**HEIGHT**	**SPREAD**	**SPACING**	**ROOT TYPE**	**CONSTRUCTION DETAILS**	**GROUND COVER**
VIBURNUM PRUNIFOLIUM	BLACKHAW VIBURNUM	12'-15'	6'-8'	5'-10'	SHALLOW TAP-ROOT	PLANT SEEDS IN SMALL POTS EARLY SPRING. ONCE A FOOT TALL, TRANSPLANT AND GROW IN FULL SUN TO PARTIAL SHADE AREAS.	SOD
DASIPHORA FRUTICOSA	SHRUBBY CINQUEFOIL	3'-5'	3'-5'	48"-60"	THIN ROOT	PLANT SEEDS WITH 2 INCHES OF COMPOST AND MIX INTO THE SOIL 6 YO 8 INCHES DEEP. DIG A HOLE, 1.5 TIMES LARGER THAN THE ROOT BALL AND GENTLY PLACE IN GROUND.	BLACK MULCH
PERENNIALS							
LATIN NAME	**COMMON NAME**	**HEIGHT**	**SPREAD**	**SPACING**	**ROOT TYPE**	**CONSTRUCTION DETAILS**	**GROUND COVER**
CEANOTHUS AMERICANUS	NEW JERSEY TEA FLOWER	3'-4'	3'-5'	48"-60"	DEEP TAPROOT	PLANT SEEDS 1/4" DEEP IN PREPARED SEED BED.	SOD
ECHINACEA PURPUREA	PURPLE CONEFLOWER	2'-5'	1'-2'	24"	WOODY TAP-ROOT	PLANT SEEDS 1/4" DEEP IN PREPARED SEED BED.	BLACK MULCH
SYMPHYOTRICHUM LAEVE	SMOOTH ASTER	2'-4'	2'-4'	24"-48"	SHORT ROOT	PLANT SEEDS IN WELL-DRAINED, MODERATELY FERTILE SOIL. 1/4" DEEP.	BLACK MULCH

PLANT SCHEDULE



Future sign per Village of Pinckney standards

3 A002 **DECORATIVE WALL SECTION**

SCALE: 3/4" = 1'-0"

MAINTENANCE INTENT GENERAL NOTES:

THE MAJOR GOAL OF THIS PROGRAM IS TO IMPROVE THE HEALTH AND VIGOR OF THE PLANT MATERIAL AND TO ARREST, IN ALL CASES, THE DECLINE OF THE PLANTS, THEREBY MAINTAINING THE ASSET VALUE OF THE LANDSCAPE.

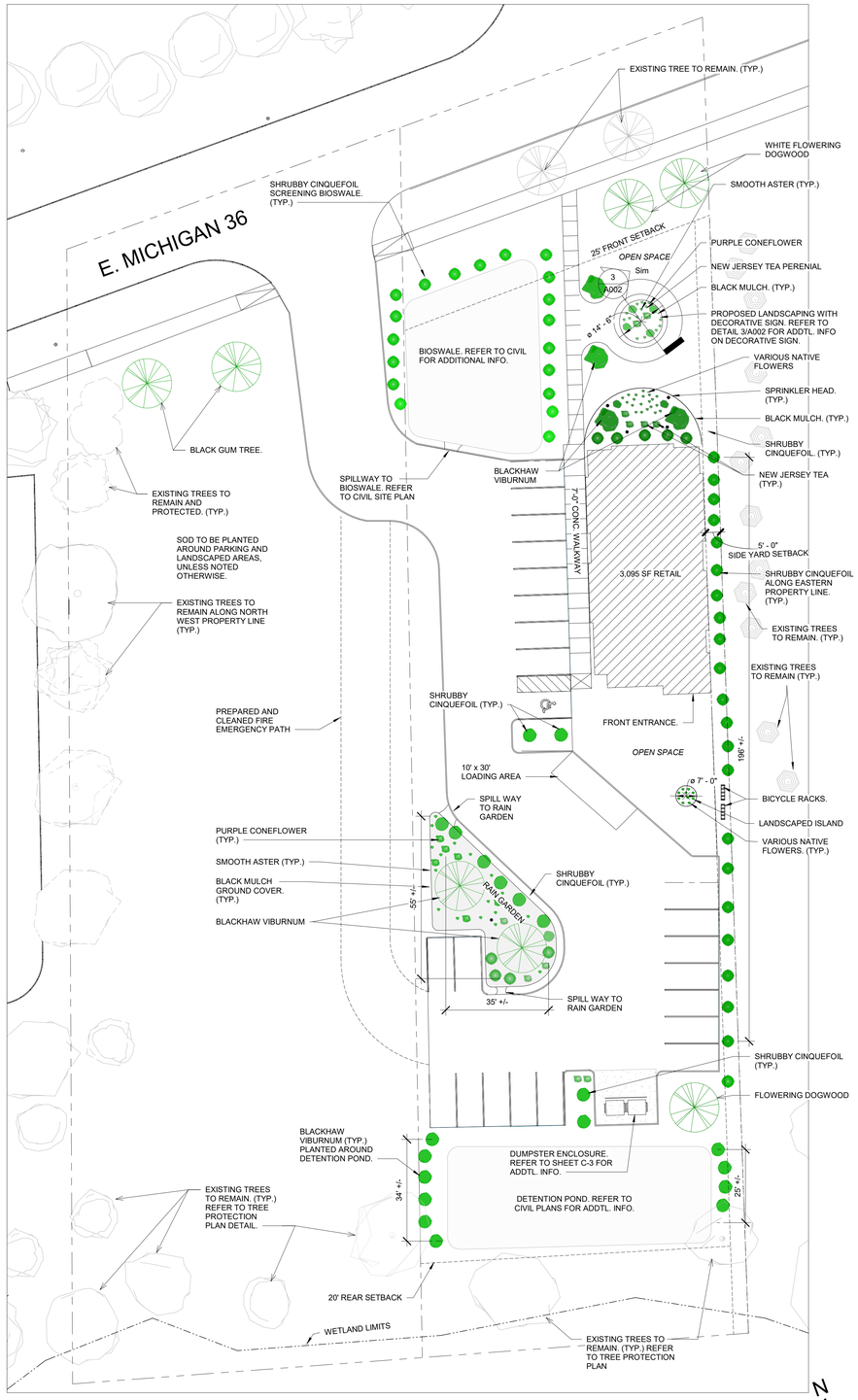
A. TREES;
- MUST BE ENCOURAGED TO ATTAIN MATURE HEIGHT AND REACH THEIR NATURAL FULL SPREAD, AS SPECIFIED.
- MUST BE MAINTAINED SO THAT THEY HAVE ABUNDANT FOLIAGE.
- N AREAS OF HEAVY PEDESTRIAN OR VEHICULAR USE, LIMBS MUST BE KEPT HIGH ENOUGH TO PREVENT A HAZARD.
- VEHICULAR, PEDESTRIAN AND STORM DAMAGE MUST BE RESPONDED TO QUICKLY.
- THORNED PLANTS MUST BE KEPT FROM BECOMING PEDESTRIAN HAZARDS.
- ORNAMENTAL AND UNDERSTORY TREES MUST BE MAINTAINED TO ENCOURAGE HORIZONTAL BRANCHING STRUCTURE AND A FULL CANOPY.
- PROFUSE BLOOMING MUST BE ENCOURAGED IN ALL FLOWERING ORNAMENTALS.
- MESSY, UNSIGHTLY FRUIT DROP MUST BE CLEANED UP REGULARY.

B. FLOWERING DECIDIOUS SHRUBS
- MUST BE KEPT FULL AND GREEN WHILE IN LEAF AND PROVIDE ABUNDANT COLOR WHEN IN FLOWER.
- MUST BE KEPT MAINTAINED AT A REASONABLE SIZE FOR SAFETY, SECURITY, SPACING AND DESIGN EFFECT.

C. GROUNDCOVER PLANTINGS, PERENNIAL BEDS AND VINES
- MUST FOR NEAT, WEED-FREE, DENSE MATS, LUSH WITH FOLIAGE, TO COVER TEH SOIL SURFACE.
- FLOWERING VARIETIES MUST BE ENCOURAGED TO BLOOM PROFUSELY.
- VINES MUST BE MAINTAINED SO THAT THEY ARE ATTACHED TO THE INTENDED SURFACE AND AWAY FROM SURFACES WHERE THEY COULD BECOME A NUISANCE.

D. ANNUAL BEDS
- MUST BE REGULARLY CLEANED OF SPENT BLOOM.
- MUST BE WATERED FREQUENTLY.
- MUST BE WEEDED AND PINCHED, WHERE REQUIRED, TO PREVENT LEAFINESS.
- MUST BE FED TO ENCOURAGE AN ABUNDANCE OF BLOOM

E. TURF AREAS
- MUST BE KEPT NEATLY MOWN AND TRIMMED, WEEDED AND FED TO STIMULATE A BLANKET OF DENSE GREEN.



LANDSCAPE PLAN

SCALE: 1" = 20'-0"

STATE OF MICHIGAN
WILLIAM C LEISER
ARCHITECT
No. 1301062503
LICENSED ARCHITECT

Seal Date : 12/03/2024
Expiration Date : 05/19/2026

www.autodesk.com/revit

Owner: Pinckney Developments
Phone: (313)-779-4492
Email: k_lytwyn@hotmail.com

Consultant William C Leiser
Address 926 Chester St Oakland, CA 94607
Email acenspe@gmail.com
Phone (909)-660-5577

Consultant
Address
Address
Address
Phone

Consultant
Address
Address
Address
Phone

Consultant
Address
Address
Address
Phone

No.	Description	Date
3	SITE PLAN REVISIONS - LANDSCAPING	04/07/2024
4	SITE PLAN REVISIONS - LANDSCAPING	04/10/2024
5	SITE PLAN REVISIONS - LANDSCAPING	05/06/2024
6	SITE PLAN REVISIONS - LANDSCAPING	05/14/2024
7	SITE PLAN REVISIONS - LANDSCAPING	07/15/2024
8	SITE PLAN REVISIONS - LANDSCAPING	08/31/2024
9	SITE PLAN REVISIONS - LANDSCAPING	10/21/2024
10	SITE PLAN REVISIONS - LANDSCAPING	11/01/2024
11	SITE PLAN REVISIONS - LANDSCAPING	11/23/2024

PINCKNEY DEVELOPMENTS LLC

PINCKNEY

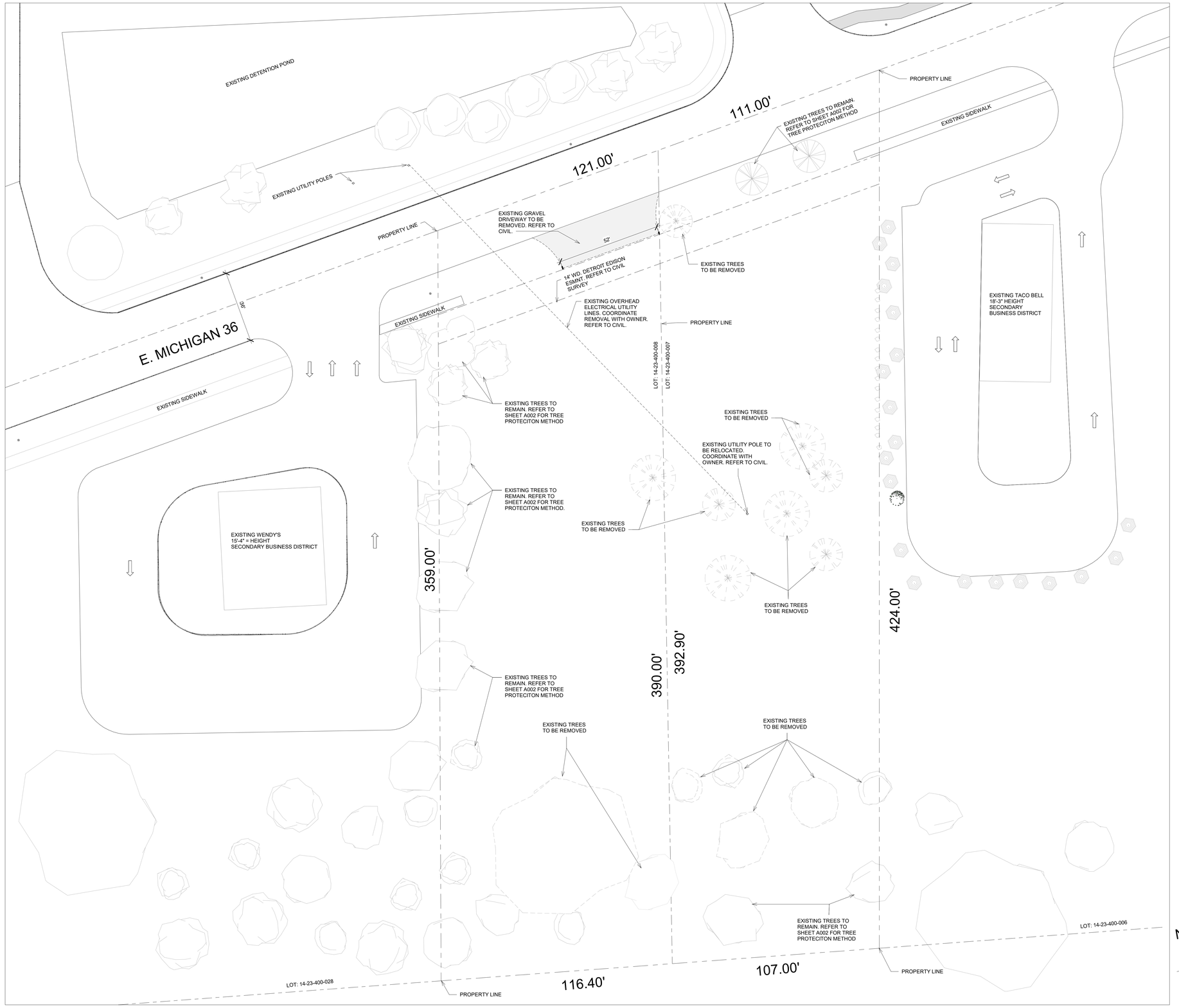
LANDSCAPE PLAN

Project Number	0002
Date	01/05/2024
Drawn By	Arton, Peter
Checked By	None.

A002

Scale: As indicated

11/24/2024 3:15:00 PM



REMOVAL PLAN
SCALE: 1" = 20'-0"

STATE OF MICHIGAN
JOEL A GADDY
No. 6201028542
PROFESSIONAL ENGINEER

Seal Date : 12/04/2024
Expiration Date : 08/27/2025

www.autodesk.com/revit

Owner: Pinckney Developments
Phone: (313)-779-4492
Email: k_lytwyn@hotmail.com

Consultant : Joel A Gaddy
Address : 560 Dickinson Blvd Kingsford, MI 49802
Email : pro.engineer1001@gmail.com
Phone : (304)-932-0136

Consultant
Address
Address
Address
Phone

Consultant
Address
Address
Address
Phone

Consultant
Address
Address
Address
Phone

No.	Description	Date
1	SITE PLAN REVISIONS	01/31/2024
4	SITE PLAN REVISIONS - LANDSCAPING	04/10/2024
5	SITE PLAN REVISIONS - LANDSCAPING	10/20/2024

PINCKNEY DEVELOPMENTS LLC

PINCKNEY

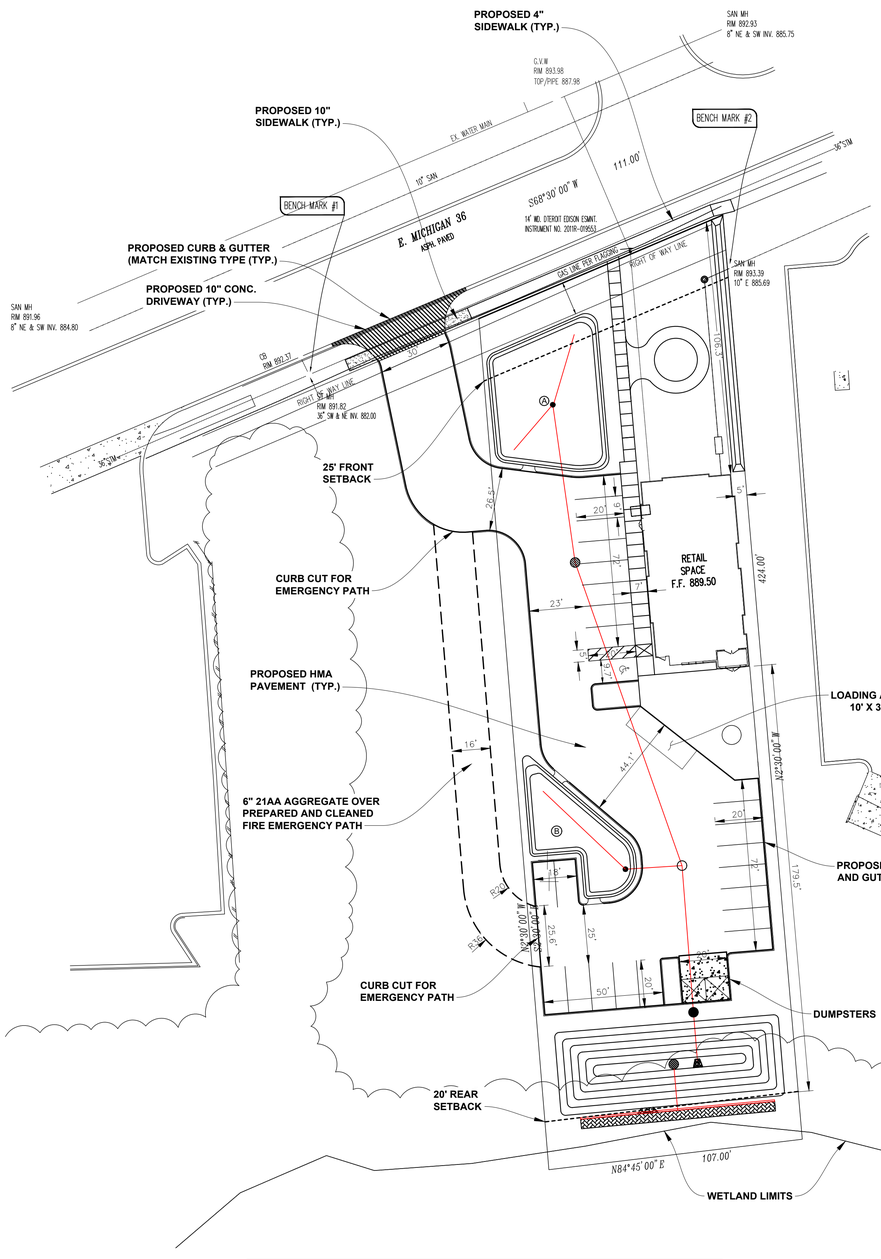
REMOVAL PLAN

Project Number	0002
Date	01/05/2024
Drawn By	Arton, Peter
Checked By	None.

C-002

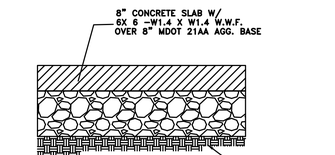
Scale 1" = 20'-0"

10/27/2024 5:04:20 PM



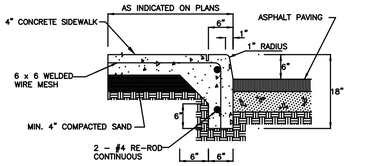
N

SCALE 1"=30'



DUMPSTER PAVEMENT SECTION

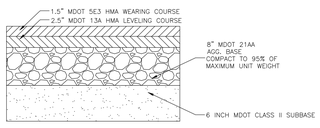
NOT TO SCALE



CONTRACTION JOINTS TO BE 2 1/2" DEEP. SPACED AT 5' INTERVALS (TOOLED). EXPANSION JOINTS TO BE 1/2" PREMOLDED FILLER, SPACED A MAXIMUM OF 30' APART.

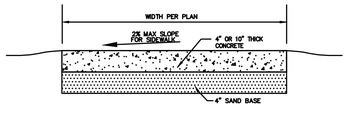
INTEGRAL CURB AND WALK

NOT TO SCALE



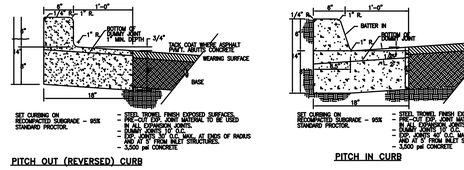
STANDARD DUTY HMA PAVEMENT DETAIL (PARKING LOT)

NOT TO SCALE



DETAIL FOR CONC. SIDEWALK AND CONC. PAD

NOT TO SCALE

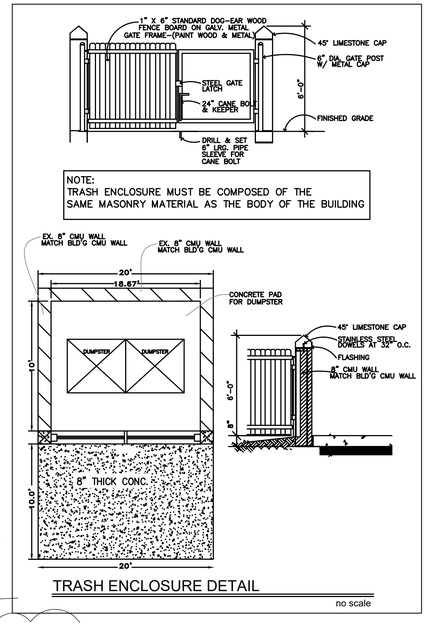


PITCH OUT (REVERSED) CURB

PITCH IN CURB

CURB & GUTTER DETAIL

NOT TO SCALE



TRASH ENCLOSURE DETAIL

no scale

YARDS AND SETBACKS. THE MINIMUM YARDS AND SETBACKS SHALL BE AS FOLLOWS:
(1) FRONT YARD. STRUCTURES SHALL BE SETBACK AT LEAST 25 FEET FROM THE FRONT LOT LINE.
(2) SIDE YARD. THE PRINCIPAL BUILDING MAY BE CONSTRUCTED ON THE SIDE LOT LINE; HOWEVER, THE ENTIRE SIDE YARD SHALL TOTAL AT LEAST 15 FEET IN WIDTH. WHERE THE SIDE LOT LINE ABUTS A RESIDENTIAL DISTRICT OR RESIDENTIAL USE, THE SIDE YARD SHALL BE AT LEAST 20 FEET IN WIDTH.
(3) REAR YARD. STRUCTURES SHALL BE SETBACK AT LEAST 20 FEET FROM THE REAR LOT LINE.

PARKING SPACES
PARKING REQUIREMENTS FOR RETAIL STORE 1 PARKING FOR EVERY 300 SQUARE FEET, WITH ONE 1 HANDICAP PARKING FOR BUILDINGS UP TO 20,000 SQ. FT.
TOTAL 23 + 1 HANDICAP PARKING

NOTE:
FOR EXACT BUILDING DIMENSIONS, REFER TO SHEET A-1."

NO HAZARDOUS OR POLLUTING MATERIALS ARE TO BE STORED ON THE SITE.

PER THE VILLAGE TECHNICAL STANDARDS, TRACE WIRE AND TRACE BOXES WILL BE PROVIDED.

FOLLOW THE VILLAGE OF PINCKNEY & LIVINGSTON COUNTY DRAIN COMMISSIONER TECHNICAL STANDARDS FOR DESIGN AND CONSTRUCTION.

ESSENCE TO PROVIDE THE REQUIRED PERFORMANCE GUARANTEE, OF 125% OF THE ESTIMATED COST OF IMPROVEMENTS, PER ORDINANCE REQUIREMENTS.

MARK	DATE	DESCRIPTION
	11/27/24	SITE PLAN SUBMITTAL

CS ENGINEERING
35890 MONTEREY DRIVE
CLINTON TOWNSHIP, MI 48035
(586) 615-4120

I hereby certify that this plan and specification was prepared by me or under my direct supervision and that I am a duly registered Architect or Engineer under the Laws of the State of Michigan by my hand and seal.

STATE OF MICHIGAN
CARLO SANTIA
ENGINEER
No. 6201028164
LICENSED PROFESSIONAL ENGINEER

ESSENCE PINCKNEY

CALL 811 BEFORE YOU DIG
811
SAFE DIGGING PARTNER

SHEET TITLE

SITE PLAN

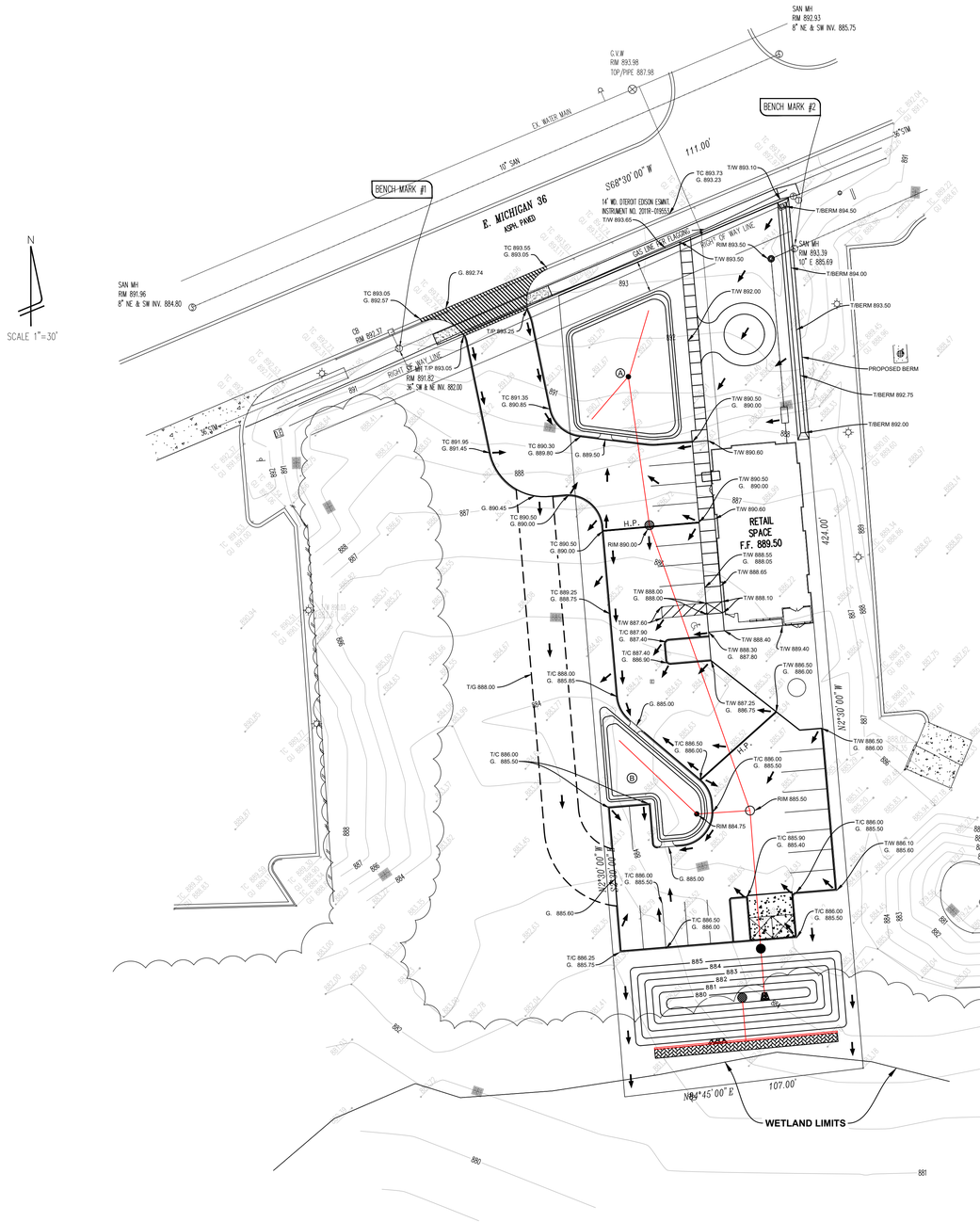
SCALE

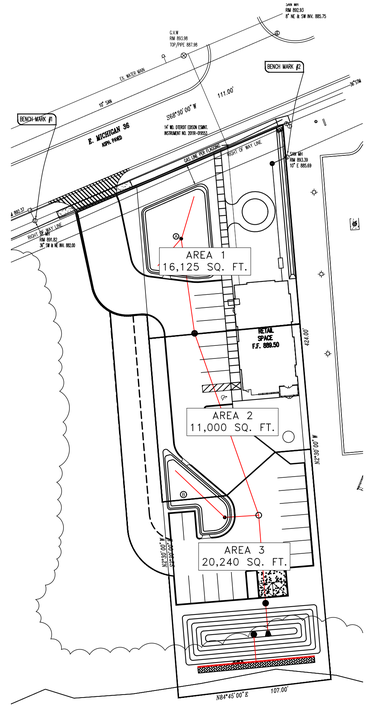
1" = 30'

SHEET No.

C-03

N





DRAINAGE AREAS

1" =50'-0"

MARK	DATE	DESCRIPTION
	11/27/24	SITE PLAN SUBMITTAL

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CLINTON TOWNSHIP, MI 48035
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STATE OF MICHIGAN
CARLO SANTIA
ENGINEER
No. 6201028164
LICENSED PROFESSIONAL ENGINEER

ESSENCE PINCKNEY

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SHEET TITLE
GRADING PLAN

SCALE
1" = 30'

SHEET No.
C-04

Elevation	Depth (ft)	Area (sf) Basin		Volume (cf) Basin	Total	Σ Volume (cf) Basin	Total
884		2,505				5,168	0
	1.00			2,164	0		
883		1,841		0		3,004	0
	1.00			1,536		0	
882		1,250		0		1,468	
	1.00			978		0	
881		730		0		489	
	1.00			489			
880		283		0			

DETENTION POND VOLUME

N

SCALE 1"=30'

Project ESSENCE - PINCKNEY / 1268 E M-36

Infiltration rate = 0.01 in/hr — Infiltration rate > 0.24in/hr? No — Dry Pond Design? No

Surface Type	A (ac)	C	AxC				
Pervious	0.34	0.25	0.09				
Impervious	0.60	0.9	0.54	Pavement	26,106.00	55.1%	Yes
Impervious	0.15	1	0.15	Water Surface	6,620.00	14.0%	
Total	**1.09**		0.78		47,365.00		No

C_{ave} = Σ (A x C) / A

C_{ave} = 0.78 / 1.09 = 0.72 — **0.72**

WATER QUALITY CONTROL – RETENTION VOLUME

V_{WQ} = **A x C x 3,630**

V_{WQ} = 1.09 x 0.72 x 3,630 = 2848.82 Ft³ — **2,848.82 ft³** Infiltration

CHANNEL PROTECTION VOLUME CONTROL

V_{CPVC} = **A x C x 4,719**

V_{CPVC} = 1.09 x 0.72 x 4,719 = 3703.47 Ft³ — **3,703.47 ft³** Infiltration

CHANNEL PROTECTION RATE CONTROL

V_{TD} OR V_{CPRC} = **A x C x 6,897**

V_{TD} OR V_{CPRC} = 1.09 x 0.72 x 6,897 = 5412.77 Ft³ — **5,412.77 ft³** Bank Full

FLOOD CONTROL

Q_{YRR} = **0.15** CFS/ACRE

Q_{100P} = **0.1635** CFS

100-YEAR PEAK RUNOFF VOLUME

V_{100R} = **18,985 X C X A**

V_{100R} = **14899.43** Ft³

100-YEAR PEAK RAINFALL INTENSITY

I_{100} = **83.3 / (Tc + 9.17)^0.81**

I_{100} = **6.31** Inches/Hour

TIME OF CONCENTRATION CALCULATIONS

Sheet Flow

T_1 = L / V

V = K x $S^{0.5}$ — Sheet Flow

S =	1.00 %	1.00 %
K =	0.48	0.48
L =	100.00 ft	100.00 ft
T_1 =	100 / (0.48 x 1^0.5 x 60) = 3.472 min.	3.47 min.

Shallow Flow

T_2 = L / V

V = K x $S^{0.5}$ — Shallow Flow

S =	0.35 %	0.35 %
K =	1.20	1.20
L =	450.00 ft	450.00 ft
T_1 =	450 / (1.2 x 0.35^0.5 x 60) = 10.564 min.	10.56 min.
T =	15 min	15 min

100-YEAR PEAK INFLOW RATE

Q_{100IN} = **C x I_{100} x A**

Q_{100IN} = **4.95** CFS

STORAGE CURVE FACTOR FOR THE 100-YEAR DETENTION VOLUME

R = [0.206-0.15 Ln (Q_{100P}/Q_{100IN})]

R = 0.72

100-YEAR DETENTION BASIN SIZE

V_{100D} = **(V_{100R} X R) - V_{CPVC}** — **No Infilteration V_{CPVC} Credit USED**

V_{100D} = **10692.02** Ft³

The Site Plan must be designed to accommodate the following volumes:

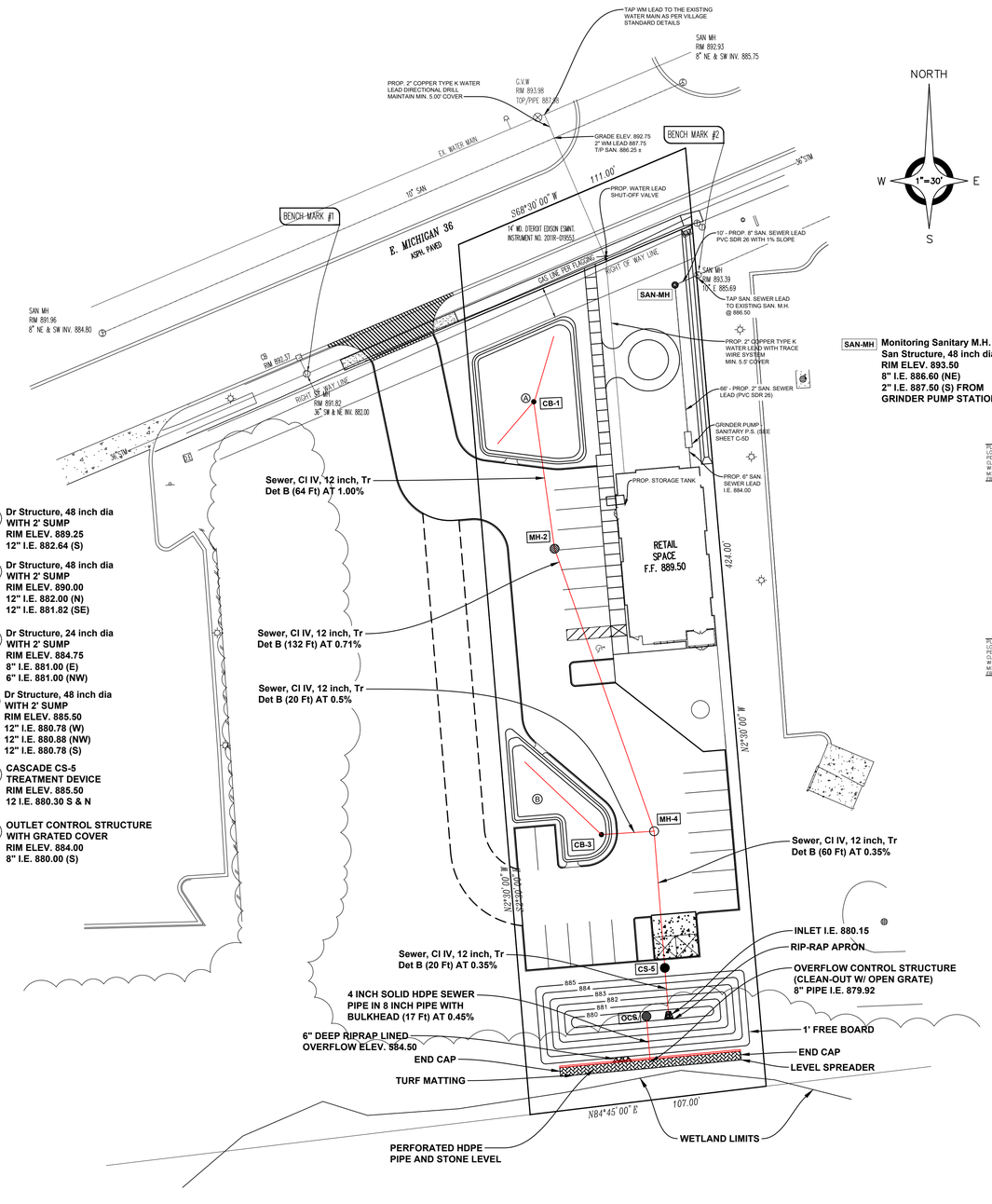
V_R OR CPCV = 3,703.47 ft³

V_{TD} OR CPRC = 5,412.77 ft³

Volume Control is NOT met, then:

Flood Control = 10,692.02 ft³

Provided Storage 12,190 ft³



1 **Dr Structure, 48 inch dia WITH 2' SUMP RIM ELEV. 889.25 12" I.E. 882.64 (S)**

2 **Dr Structure, 48 inch dia WITH 2' SUMP RIM ELEV. 890.00 12" I.E. 882.00 (N) 12" I.E. 881.82 (SE)**

3 **Dr Structure, 24 inch dia WITH 2' SUMP RIM ELEV. 884.75 8" I.E. 881.00 (E) 6" I.E. 881.00 (NW)**

4 **Dr Structure, 48 inch dia WITH 2' SUMP RIM ELEV. 885.50 12" I.E. 880.78 (W) 12" I.E. 880.88 (NW) 12" I.E. 880.78 (S)**

5 **CASCADE CS-5 TREATMENT DEVICE RIM ELEV. 885.50 12 I.E. 880.30 S & N**

OC **OUTLET CONTROL STRUCTURE WITH GRATED COVER RIM ELEV. 884.00 8" I.E. 880.00 (S)**

NORTH

W 1"=30" E

S

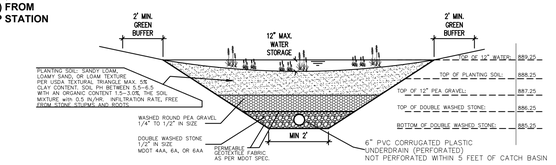
SYSTEM "A" BIORETENTION (RAIN GARDEN) PROVIDED VOLUME BY RAIN GARDEN

ELEVATION (FT)		AREA (SQ.FT)	HEIGHT (FT)	VOIDS RATIO	VOLUME (CU.FT.)
890.00	TOP OF WATER	2693	0	0%	0
12" OF WATER					
889.00	TOP OF SOIL	2488	1	100%	2590
36" OF PLANTING SOILS AND GRAVEL LAYERS					
886.00	BOT. OF STONE	2195	3	30%	2106
		TOTAL RAIN GARDEN VOLUME (C.F.) =			**4696**

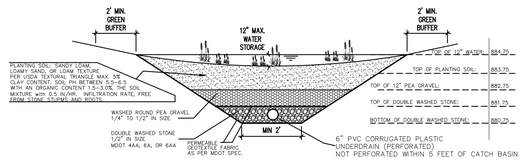
SYSTEM "B" BIORETENTION (RAIN GARDEN) PROVIDED VOLUME BY RAIN GARDEN

ELEVATION (FT)		AREA (SQ.FT)	HEIGHT (FT)	VOIDS RATIO	VOLUME (CU.FT.)
884.75	TOP OF WATER	1422	0.00	0.00	0.00
12" OF WATER					
883.75	TOP OF SOIL	1237	1.00	1.00	1328.43
36" OF PLANTING SOILS AND GRAVEL LAYERS					
880.75	BOT. OF STONE	985	3.00	0.30	997.75
		TOTAL RAIN GARDEN VOLUME (C.F.) =			**2326**

SAN-MH **Monitoring Sanitary M.H. San Structure, 48 inch dia RIM ELEV. 893.50 8" I.E. 886.60 (NE) 2" I.E. 887.50 (S) FROM GRINDER PUMP STATION**



INFILTRATION BIORETENTION "A" CROSS–SECTION
N.T.S.



INFILTRATION BIORETENTION "B" CROSS–SECTION
N.T.S.

AREA CALCULATED FOR STORAGE CALCULATIONS INCLUDE LOT AREA (39,687 FT² + 7,678 FT² FOR THE DRIVEWAY APPROACH & EMERGENCY DRIVE)

CURRENT SITE DISCHARGE IN ENTIRETY TO SOUTHERLY PARCEL
Q = C X I X A = 0.25 X 6.31 X (39687/43560) = 1.44 CFS

WE WILL LIMIT THE SITE RUNOFF FROM THE OUTLET CONTROL STRUCTURE TO 0.15 CFS.

TREATMENT STRUCTURE FLOW DESIGN = C X A X (97/(Tc+30)
= 0.72 X (97/(15+30)) X 1.09 = 1.69 CFS

CASCADE SEPARATOR CS–5 SIZING FLOW = 2.13 CFS

NOTES:

THE PROPOSED DRAINAGE SYSTEM SHALL BE OWNED AND PROPERLY MAINTAINED BY THE PROPERTY OWNER.

RIP–RAP APRON WITH MINIMUM OF 10 S.Y. OF 8" MINIMUM DIAMETER ANGULAR STONE PLACED OVER KEYED–IN GEOTEXTILE FABRIC.

THE PROPOSED DETENTION BASIN SHOULD INCLUDE A 6" DEEP RIP–RAP LINED OVERFLOW SPILLWAY SET AT AN ELEVATION 6 INCHES ABOVE THE BASIN'S DESIGN HIGH WATER ELEVATION.

THE PROPOSED DETENTION BASIN BOTTOM SHOULD HAVE A MINIMUM 0.5% SLOPE TOWARD ITS OUTLET.

DEVELOPER SHALL CLEAN AND TELEVISE CONDITION OF EXISTING SANITARY MANHOLE BEFORE AND AFTER CONSTRUCTION TO ENSURE CONNECTION IS SOUND AND NO DAMAGE HAS BEEN DONE.

SANITARY CONNECTIONS SHALL BE FIELD CORED; INSTALLED TO A WATER TIGHT CONDITION; EXTERNAL DROP PIPE INSTALLED IF THE SERVICE LEAD INVERT IS GREATER THAN 24 INCHES ABOVE THE MAIN SEWER FLOW LINE; AND THE FLOW CHANNELS SHAPED TO ASSURE SMOOTH HYDRAULIC FLOWS.

UTILIZE VILLAGE STANDARD DETAILS AS SHOWN IN THE TECHNICAL STANDARDS.

MARK	DATE	DESCRIPTION
	11/27/24	SITE PLAN SUBMITTAL

CS ENGINEERING
35890 MONTEREY DRIVE
CLINTON TOWNSHIP, MI 48035
(586) 615-4120

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STATE OF MICHIGAN
CARLO SANTIA ENGINEER No. 6201028164
LICENSED PROFESSIONAL ENGINEER

ESSENCE PINCKNEY

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SHEET TITLE

UTILITIES PLAN

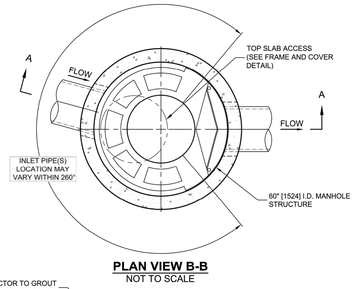
SCALE

1" = 30'

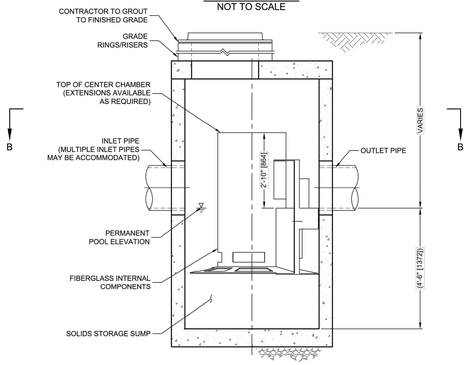
SHEET No.

C-05

N



PLAN VIEW B-B
NOT TO SCALE



ELEVATION A-A
NOT TO SCALE

CASCADE separator™

CASCADE SEPARATOR DESIGN NOTES

THE STANDARD CS-5 CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE AVAILABLE AND ARE LISTED BELOW. SOME CONFIGURATIONS MAY BE COMBINED TO SUIT SITE REQUIREMENTS.

CONFIGURATION DESCRIPTION
GRATED INLET ONLY (NO INLET PIPE)
GRATED INLET WITH INLET PIPE OR PIPES
CURB INLET ONLY (NO INLET PIPE)
CURB INLET WITH INLET PIPE OR PIPES

FRAME AND COVER
(DIAMETER VARIES)
NOT TO SCALE

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID			MH-5
WATER QUALITY FLOW RATE (cfs [L/s])			2.13
PEAK FLOW RATE (cfs [L/s])			1.69
RETURN PERIOD OF PEAK FLOW (yrs)			2-YEAR
RIM ELEVATION			885.50
PIPE DATA:	INVERT	MATERIAL	DIAMETER
INLET PIPE 1	880.30	CONCRETE	12 INCH
INLET PIPE 2	880.30	CONCRETE	12 INCH
OUTLET PIPE			

NOTES / SPECIAL REQUIREMENTS:

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.ContechES.com
3. CASCADE SEPARATOR WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. CASCADE SEPARATOR STRUCTURE SHALL MEET AASHTO HS20 LOAD RATING, ASSUMING EARTH COVER OF 0' - 2' [610], AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION.
5. CASTINGS SHALL MEET AASHTO M306 AND BE CAST WITH THE CONTECH LOGO.
6. CASCADE SEPARATOR STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C478 AND AASHTO LOAD FACTOR DESIGN METHOD.
7. ALTERNATE UNITS ARE SHOWN IN MILLIMETERS [mm].

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CASCADE SEPARATOR MANHOLE STRUCTURE.
C. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT INLET AND OUTLET PIPE(S). MATCH PIPE INVERTS WITH ELEVATIONS SHOWN. ALL PIPE CENTERLINES TO MATCH PIPE OPENING CENTERLINES.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

CONTECH ENGINEERED SOLUTIONS LLC
www.contechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

CS-5
CASCADE SEPARATOR
STANDARD DETAIL

I:\COMMON\CAD\TREATMENT\21 CASCADE\40 STANDARD DRAWINGS\SW\CS-5-DTL.DWG 1/22/2019 9:35 AM

Orifice Calculations

Orifice Channel Protection Rate Control (CPRC) Orifice

$Q_{avg\ CPRC}$ = **V_{ED} / 172,800**
$Q_{avg\ CPRC}$ = 5412.77 / 172,800 = 0.031 cfs

h_{ED} =	1.90 ft		1.90 ft
h_{ave} = h_{ED} / 2			
h_{ave} =	1.9 / 2 = 0.95 ft		0.95 ft
A =			
A =	0.031 / (0.62 (2 x 32.2 x 0.95)^0.5) = 0.0064 ft²		0.0064 ft²
	Or, 0.922 in²		0.922 in²
Hole Size =	1 in	*(1.0 in min.)*	1.1 in
No. of Holes =	1		
Use 1 - 1.1" Dia. Hole			
$A_{(act.)}$ =	1 x 1.1^2 x 3.14 / 4 = 0.95 in²		0.95 in²
	Or, 0.007 ft²		0.007 ft²
$Q_{avg\ CPRC\ (act.)}$ = $A_{(act.)}$ x 0.62 (2 x g x h_{ave})$^{0.5}$			
$Q_{avg\ CPRC\ (act.)}$ =	0.007 x 0.62 (2 x 32.2 x 0.95)^0.5 = 0.034 cfs		0.034 cfs
	Within 10% ---------- > O.K		9.677 %

Flood Control Orifice

h_{max} =	4.00 ft		4.00 ft
h_{res} = h_{max} - h_{ED}			
h_{res} =	4 - 1.9 = 2.1 ft		2.10 ft

100-yr flow through Ext. Det. Orifice:

Q_{ED} = A_{ED} x 0.62 (2 x g x h_{max})$^{0.5}$
Q_{ED} = 0.007 x 0.62 (2 x 32.2 x 4)^0.5 = 0.07 cfs

Q_o = A x $Q_{allowable}$
Q_o = 1.09 x 0.15 = 0.1635 cfs 0.16 cfs

Q_{res} = Q_o - Q_{ED}
Q_{res} = 0.1635 - 0.07 = 0.0935 cfs 0.09 cfs

A = Q_{res} / (0.62 (2 x g x h_{res})$^{0.5}$)

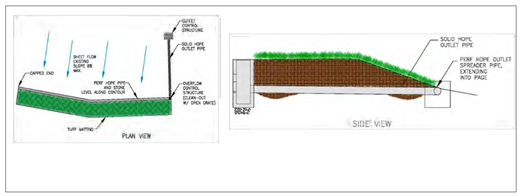
A =	0.0935 / (0.62 (2 x 32.2 x 2.1)^0.5) = 0.013 ft²		0.013 ft²
	Or, 1.872 in²		1.872 in²
Hole Size =	1.5 in	*(1.0 in min.)*	1.5 in
No. of Holes =	1		
Use 1 - 1.5" Dia.Hole			
$A_{(act.)}$ =	1 x 1.5^2 x 3.14 / 4 = 1.767 in2		1.767 in2
	Or, 0.012 ft2		0.012 ft2
$Q_{res\ (act.)}$ = $A_{(act.)}$ x 0.62 (2 x g x h_{ave})$^{0.5}$			
$Q_{res\ (act.)}$ =	0.012 x 0.62 (2 x 32.2 x 2.1)^0.5 = 0.087 cfs		0.087 cfs
	Within 10% ---------- > O.K		6.952 %

Land Use Summary

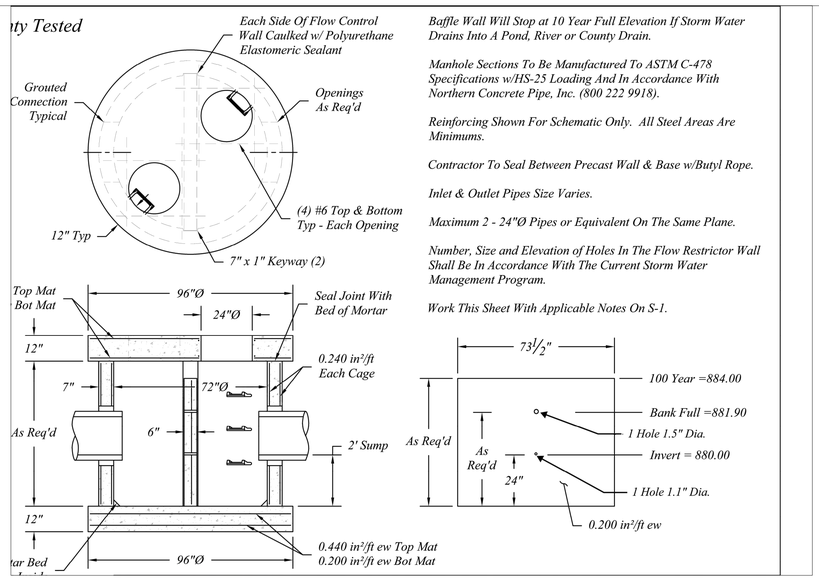
Characteristics	Existing Conditions	Proposed Conditions
Total Development Area (ac)	1.087	1.087
Impervious Area (ac) - Pavement	0.037	0.589
Water Surface (ac)	0.000	0.160
Total Pervious Area (ac)	1.050	0.338
Pervious Area Breakdown by Cover Type		
Meadow/fallow/natural areas (non-cultivated) (ac)	0.00	0.00
Predominant NRCS Soil Type (A, B, C, or D)	N/A	N/A
Improved areas (turf grass, landscape, row crops) (ac)	1.05	0.34
Predominant NRCS Soil Type (A, B, C, or D)	Type C	Type C
Wooded Areas (ac)	0.00	0.00
Predominant NRCS Soil Type (A, B, C, or D)	N/A	N/A
CPVC Volume Required (cubic feet)		3,703.47
CPVC Volume Provided (cubic feet)		3,703.47
CPRC Volume Required (cubic feet)		5,412.77
CPRC Volume Provided (cubic feet)		5,412.77

DRAINAGE AREAS CONTRIBUTE TO UGS SYSTEM

AREA #	TOTAL A	C 0.9	C 0.25	C 1.0	Cave	Cave.
AREA "1"	16125	7226.00	6206.00	2693.00	0.69	0.69
AREA "2"	11000	8517.00	1733.00	750.00	0.84	0.84
AREA "3"	20240	10363.00	6700.00	3177.00	0.73	0.73
SUM AREA	47365	26106.00	14639.00	6620.00	OK	
TOTAL AREA (SQ. FT.)	47365					
TOTAL AREA (ACRES)	1.090					
Cave. =	0.71					



LEVEL SPREADER DETAILS



MARK	DATE	DESCRIPTION
	11/27/24	SITE PLAN SUBMITTAL

CS ENGINEERING
35890 MONTEREY DRIVE
CLINTON TOWNSHIP, MI 48035
(586) 615-4120

I hereby certify that this plan and specification was prepared by me or under my direct supervision and that I am a duly registered Architect or Engineer under the Laws of the State of Michigan by my hand and seal.

STATE OF MICHIGAN
CARLO SANTIA
ENGINEER
No. 6201028164
LICENSED PROFESSIONAL ENGINEER

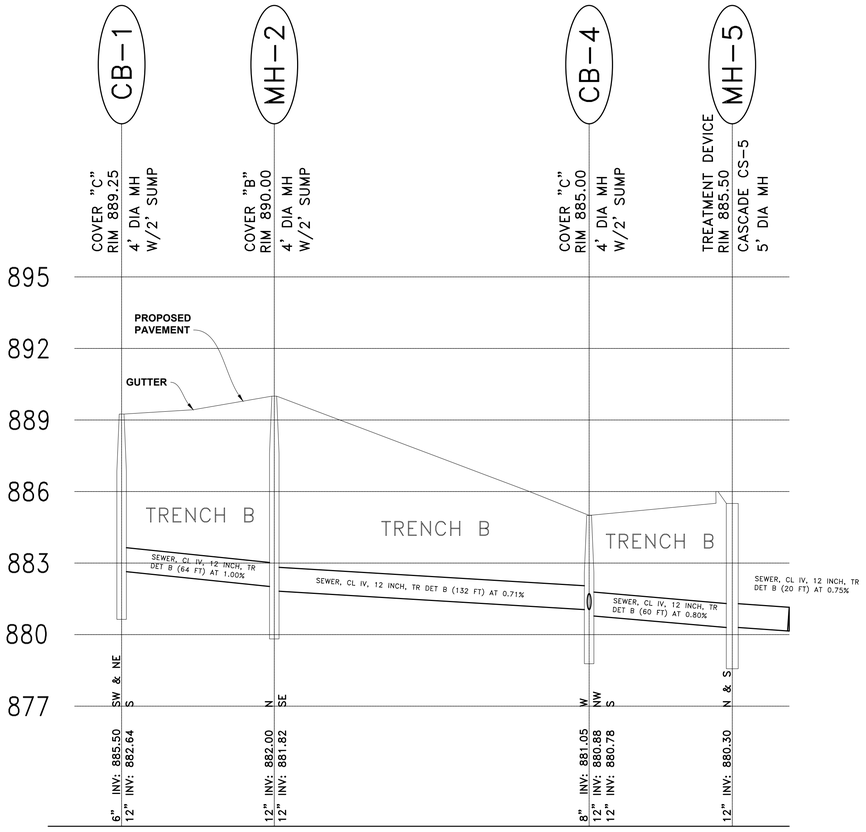
ESSENCE PINCKNEY

CALL 811 BEFORE YOU DIG
811
SITE DIGGING PARTNER

SHEET TITLE
UTILITIES DETAILS PLAN

SCALE
N.T.S

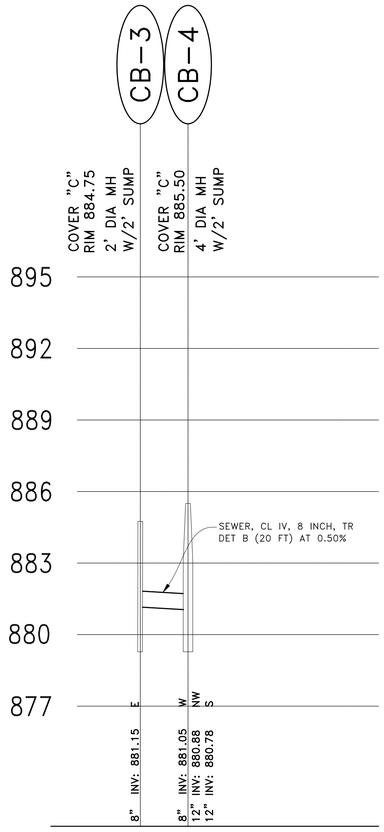
SHEET No.
C-05A



STORM SEWER PROFILES

SCALE : 1" = 30' (H)

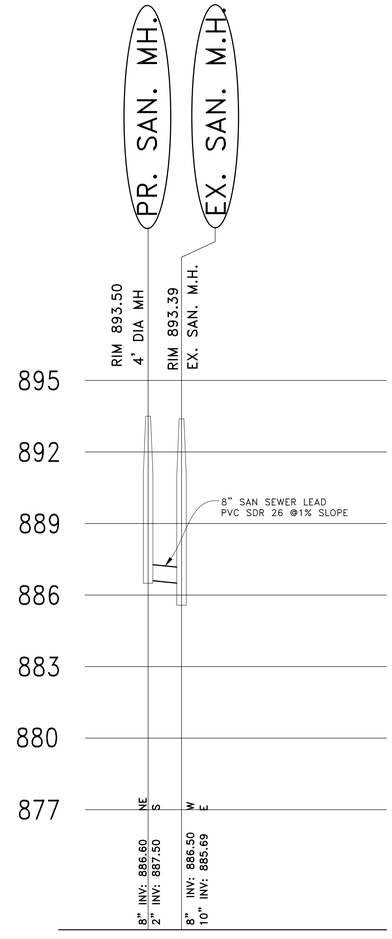
SCALE : 1" = 3' (V)



STORM SEWER PROFILES

SCALE : 1" = 30' (H)

SCALE : 1" = 3' (V)



SANITARY SEWER PROFILES

SCALE : 1" = 30' (H)

SCALE : 1" = 3' (V)

FROM M.H	TO M.H	AREA SQ. FT.	AREA (ACRES)	C	(C*A) ACRES	TOTAL (C*A) ACRES	T TIME MIN	I INCH PER HOUR	Q=CIA cfs	DIA OF PIPE INCH	PIPE AREA FT²	SLOPE %	LENGTH OF PIPE Ft	CAPACITY OF SEWER C.F.S (n=0.013)	VEL. FULL FLOW FT/S	TIME OF FLOW MIN	RIM ELEV.		INVERT ELEV.		H.G.L. U.S.	H.G.L. D.S.	RIM - H.G.L.		FINISH GRADE TO TOP PIPE	
																	UPPER ELEV	LOWER ELEV	UPPER END	LOWER END			UPPER ELEV	LOWER ELEV	UPPER END	LOWER END
CB-1	**MH-2**	**16,125**	0.370	0.69	0.255	0.255	15	3.91	**0.998**	12	0.7854	1.00	64	**3.57**	4.55	0.23	889.25	890.00	882.64	882.00	882.88	882.24	6.37	7.76	5.61	7.00
MH-2	**MH-4**	**0**	0.000	0.84	0.000	0.255	15.23	3.89	**0.991**	12	0.7854	0.71	132	**3.01**	3.84	0.57	890.00	885.50	881.82	880.88	882.24	881.30	7.76	4.20	7.68	3.62
MH-4	**CS-5**	**31,240**	0.717	0.78	0.559	0.814	15.81	3.82	**3.110**	12	0.7854	0.80	60	**3.20**	4.07	0.25	885.50	885.50	880.78	880.30	881.30	880.82	4.20	4.68	4.22	4.20
CS-5	**OUTLET**	**0**	0.000	0.00	0.000	0.814	16.05	3.79	**3.088**	12	0.7854	0.75	20	**3.09**	3.94	0.08	885.50	881.15	880.30	880.15	880.82	880.67	4.68	0.00	4.70	0.00
CB-3	**MH-4**	**0**	0.717	0.78	0.559	0.559	0.00	7.64	**4.272**	12	0.7854	1.10	20	**3.75**	4.77	0.07	884.75	885.50	881.00	880.78	881.52	881.30	3.23	4.20	3.25	3.72

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CLINTON TOWNSHIP, MI 48035
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ENGINEER
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LICENSED PROFESSIONAL ENGINEER

ESSENCE PINCKNEY

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SHEET TITLE

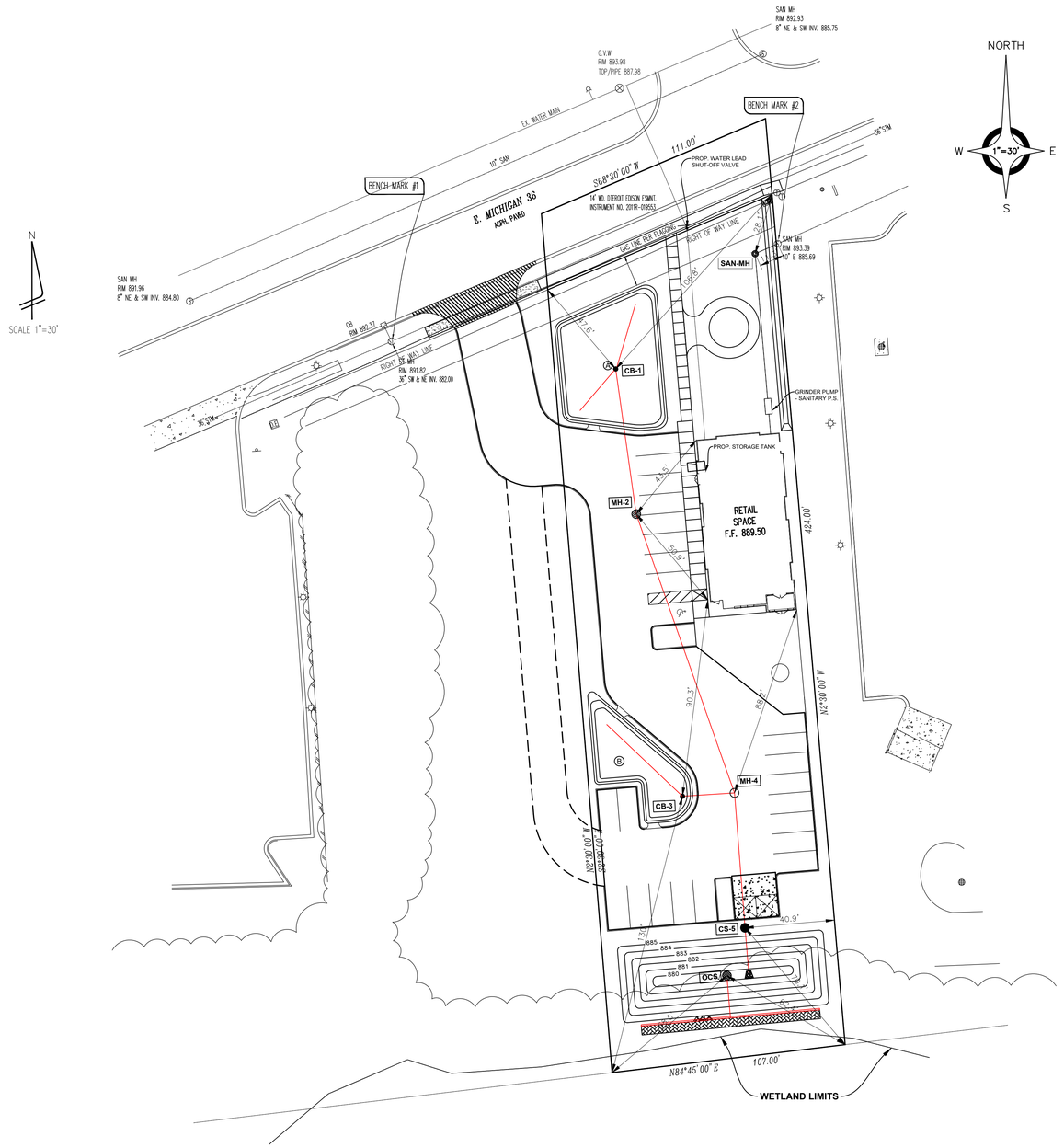
UTILITIES DETAILS & PROFILES PLAN

SCALE

N.T.S

SHEET No.

C-05B



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ESSENCE PINCKNEY

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811
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SHEET TITLE

UTILITIES LOCATION PLAN

SCALE

1" = 30'

SHEET No.

C-05C

ENGINEERED TO DO ONE JOB PERFECTLY

At the heart of the E/One Sewer System is the toughest, hardest working pump in the industry. The new standard in excellence, durability, and longevity, the E/One Extreme Series Grinder Pump. Its evolution reflects everything we've learned in nearly 40 years as the originator and leader in the category of low pressure sewer systems.

The pump stations incorporate the grinder pump, motor controls and level sensing device integrated into a compact unit, easily removable for servicing when necessary.

And, the geometry of the pump not only produces a near-vertical pump curve, but allows passage of ground solids without clogging. Because of the low rpm and highest quality components, we experience the lowest service call rate in the industry. An average mean time of 10 years between service calls is typical.

The progressing cavity pump itself is based on the Moineau principle. A rotor turns within a stator, creating a sequence of sealed chambers. The precision-cast and polished stainless steel rotor moves wastewater through these chambers at a nearly constant flow, over a wide range of conditions – from negative to abnormally high heads. Turning at just 1,725 rpm, the one-horsepower motor can pump fluid through more than two miles of small-diameter piping or elevation changes of over 185 feet.

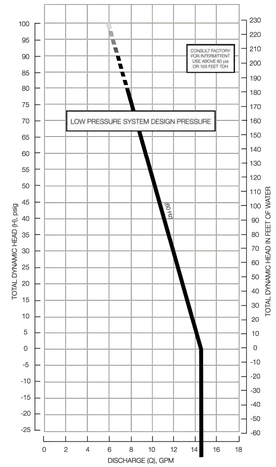
SOME KEY ADVANTAGES:

- **HIGH HEADS/NEGATIVE HEADS.** Reliable operation from negative head to 185 feet of total head for continuous duty reduces the number of lift stations and pipe sizes. This cuts costs – both initially and in long-term operation and maintenance.
- **CONSTANT FLOW.** The system pressures to be overcome by any given grinder pump in a low pressure system vary dramatically over the course of a day. E/One's progressing cavity pump readily accommodates these pressure variations while maintaining a nearly constant flow without ever operating at "near shut off" – thus avoiding the wear and motor burn-out suffered by other pump types.
- **HIGH GRINDING TORQUE.** Our unique pump system, driven by a one-horsepower motor turning at 1725 rpm, produces grinding torque greater than a two-horsepower pump turning at twice the speed.
- **ENERGY EFFICIENT.** The pump is activated automatically and runs for short periods. Typical annual energy consumption is comparable to a 40-watt light bulb.
- **LOW MAINTENANCE SUBMERSIBLE MOTOR.** Low maintenance and long life are the hallmarks of our air-filled motor. Permanently lubricated ball bearings and Class F insulation eliminate the need for periodic oil changes and oil disposal costs required by oil-filled submersible motors.
- **LARGE-DIAMETER GRINDER ASSEMBLY.** Almost twice the diameter of most other types of grinder pumps, contributing to a dramatic reduction of inflow velocity for less wear and no blinding, clogging or jamming.
- **NO PREVENTIVE MAINTENANCE.** Non-fouling static level sensors require no preventive maintenance. Because of our unique, near constant discharge rate, no main line flushing is required in a properly designed system.
- **CORROSION RESISTANCE.** E/One's stainless steel ball-type discharge valve and piping won't corrode like copper or galvanized, and hold up years longer. No corrosion, no maintenance.
- **DEPENDABILITY.** E/One pumps typically run ten years between service calls with more than 35 years of in-ground experience.
- **PROVIDES FOR ENVIRONMENTALLY SOUND WASTEWATER MANAGEMENT.** The E/One Extreme Series grinds waste material into small particles. This enables the use of inexpensive, small-diameter pressure pipes, buried at shallow depths, to transport wastewater to a suitable processing site. Result: Ground water contamination from failing septic tanks can be eliminated.
- **SERVICEABILITY.** Our unique core design eliminates the need for in-field troubleshooting and pump servicing. This means lower maintenance costs and minimum homeowner inconvenience.

GRAVITY SEWERS ARE NO LONGER THE RULE FOR SOLVING WASTEWATER PROBLEMS.

At the heart of the system is the E/One progressing cavity grinder pump – with high heads that can eliminate costly lift stations, and a robust, powerful design that translates into the industry's highest levels of reliability, availability and maintainability.

GRINDER PUMP PERFORMANCE CHARACTERISTICS



ENGINEERED LOW PRESSURE SYSTEMS

REPEALING THE LAW OF GRAVITY

NOBODY CAN TOUCH OUR CURVE.

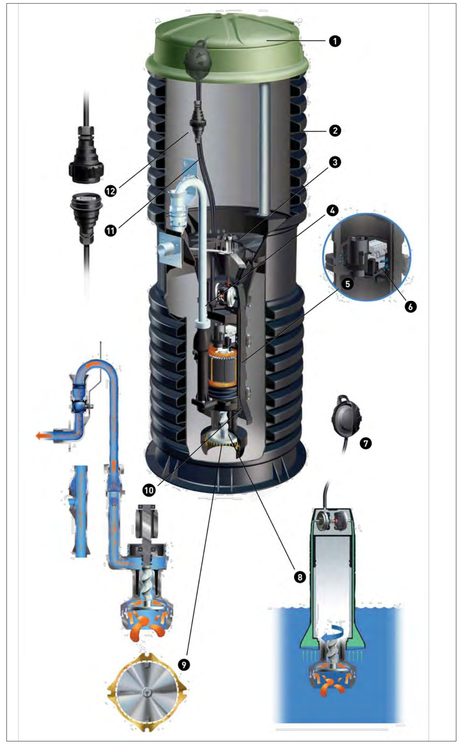
In a low pressure system, constant, predictable pump output is the foundation for proper hydraulic design. It enables the engineer to minimize retention time, pump wear, and keep scouring action at effective levels.

Environment One's semi-positive displacement, progressing cavity pump has a nearly vertical H-Q curve. It is by far the most "forgiving" pump design – providing predictable flow over the full range of typical system pressures; strengths critical in a large-scale, low pressure sewer.

E/One's superior high head capability allows a system with few, if any, lift stations. And, it easily accommodates additional future connections without compromising system performance.

These E/One pump characteristics translate into:

- predictable hydraulic design
- lower collection system capital costs
- less maintenance
- lower operating costs



ANATOMY OF A LEADER:

THE INSIDE STORY ON THE E/ONE GRINDER PUMP STATION.

1. **LOW-PROFILE COVER:** Aesthetically pleasing. Provides easy access for service while blending with surroundings.
2. **HIGH-DENSITY POLYETHYLENE TANK:** Double-wall construction of high-density thermoplastic for rugged reliability. Factory pressure tested for infiltration and exfiltration free installation.
3. **QUICK-RELEASE CORE LATCH:** All stainless mechanism secures core in place and can be easily released from ground level.
4. **STAINLESS STEEL PIPING & HARDWARE:** E/One's SS discharge piping and ball valve won't corrode. No corrosion, no maintenance, no tools required.
5. **UNIQUE CORE DESIGN:** Eliminates the need for in-field troubleshooting and service. Modular controls simplify service.
6. **DOUBLE O-RING SEALS:** Make assemblies waterproof and novel joint geometry minimizes the effects of crevice corrosion.
7. **E/ONE EQUALIZER:** Compensates for fluctuations in atmospheric pressure to enable accurate level sensing while assuring the level sensing system is watertight.
8. **PROGRESSING CAVITY PUMP:** A deceptively simple design produces a nearly constant flow under a wide range of continuously varying conditions.
9. **GRINDER WHEEL AND SHREDDER RING:** Hardened stainless steel cutter bars and teeth process sewage, grinding wastewater solids, as well as wood, plastic and cloth. Will not jam or clog!
10. **PRESSURE SWITCH LEVEL CONTROL:** Self-cleaning level sensors require no preventive maintenance.
11. **DIRECT-BURY CABLE:** For simple and inexpensive installation.
12. **ELECTRICAL QUICK DISCONNECT:** For safe and easy service. UL-listed, compatible with OSHA regulations for confined space entry.

LEADING THE INDUSTRY WE INVENTED.

Environment One not only pioneered the low pressure sewer system, but consistently leads the industry both in system deployment and innovation. The company is dedicated to Total Quality, Continuous Improvement, and Customer Satisfaction, as evidenced by the E/One Extreme Series. Today, there are nearly a million end users worldwide.

SEWER ANYWHERE

Driven by the remarkable E/One Extreme grinder pump, E/One Sewers give engineers, developers, municipal sanitarians, and land planners unprecedented new freedom in land usage and septic tank replacement.

With a smaller footprint and a softer touch on the land, they're so much easier to install. Front-end costs can be reduced by as much as 80%. Total installed costs by half. And O&M costs by up to 75%.

The E/One Extreme grinder pump reduces all forms of sanitary waste to a non-clogging slurry and pumps it through a network of small-diameter pipes. Since gravity is replaced by the power of the pump, sewer systems need not run downhill nor require large-diameter pipes, deep trenches, multiple booster stations – or their associated costs.

A system powered by the E/One Extreme grinder pump converts formerly cost-prohibitive building sites into cost-effective reality. "Problem areas," with high ground water, elevation changes or impenetrable bedrock, are transformed into valuable, developable real estate.

Of course, E/One's low upfront cost advances apply to conventional building sites as well.

In addition, E/One units are easy to install and virtually maintenance-free – refined through nearly 40 years experience with the largest installed base in the industry.

SAVE THOUSANDS, VIRTUALLY SERVICE-FREE.

Contact your local distributor:

e one
SEWER SYSTEMS

Environment One Corporation
2773 Baltitown Road
Niskayuna, NY USA 12309-1090
Voice (011 518.346.6161
Fax 518.346.6188
www.eone.com

A Precision Castparts Company
LM000344

UL NSF CSA

MARK	DATE	DESCRIPTION
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CS ENGINEERING
35890 MONTEREY DRIVE
CLINTON TOWNSHIP, MI 48035
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ENGINEER
No. 6201028164
LICENSED PROFESSIONAL ENGINEER

ESSENCE PINCKNEY

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SAFE DIGGING PARTNER

SHEET TITLE

UTILITIES DETAILS PLAN

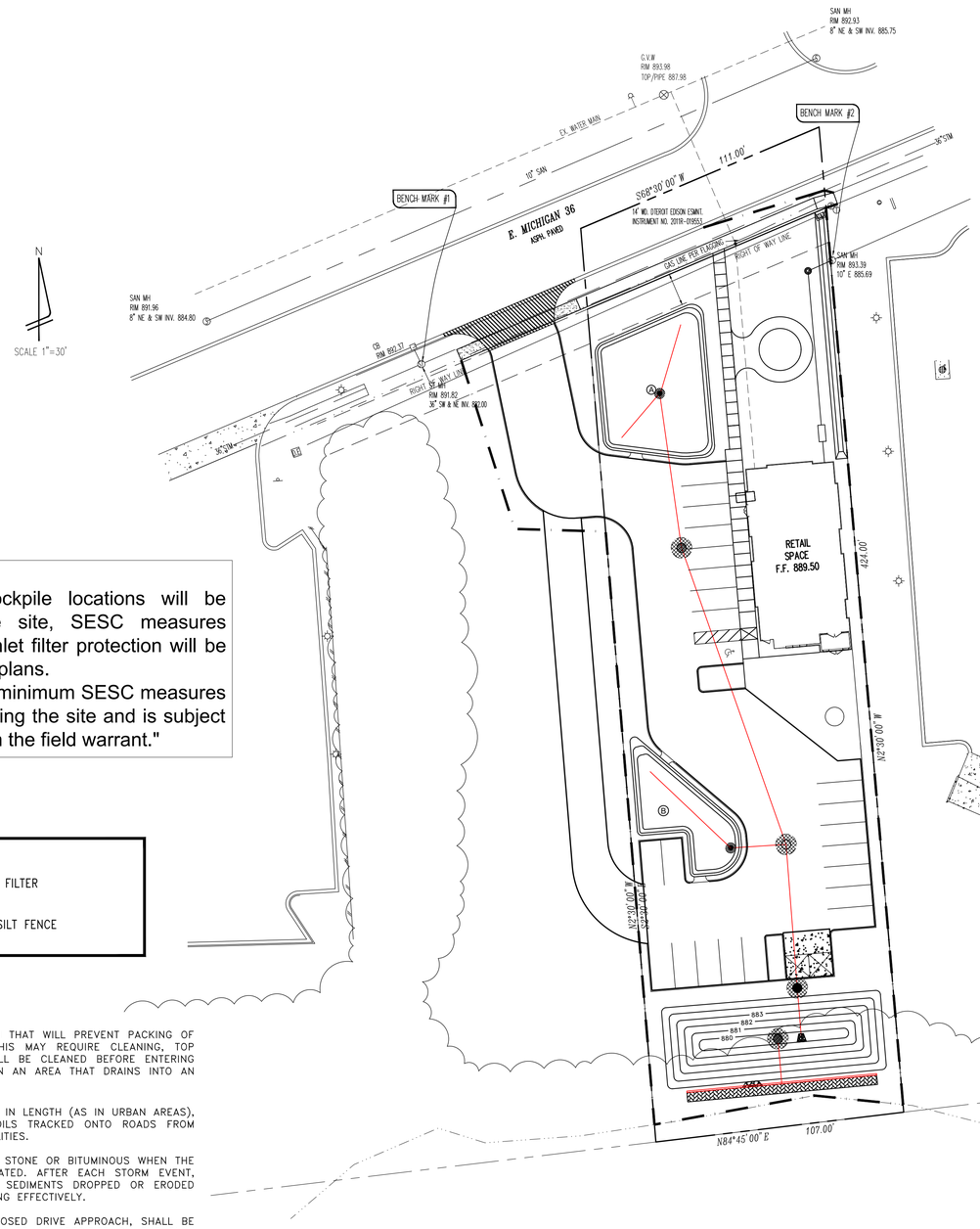
SCALE

N.T.S

SHEET No.

C-05D

N



NOTE:
- The staging and stockpile locations will be distributed all over the site, SESC measures including silt fence and inlet filter protection will be provided as shown in the plans.
- This plan illustrates the minimum SESC measures to prevent soils from leaving the site and is subject to change as conditions in the field warrant."

LEGEND

INLET FILTER

24" SILT FENCE

MAINTENANCE NOTES

1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT PACKING OF FLOWING OF SEDIMENTS ONTO ROAD RIGHT-OF-WAY. THIS MAY REQUIRE CLEANING, TOP DRESSING, REPAIR, ETC. WHEN NECESSARY WHEELS SHALL BE CLEANED BEFORE ENTERING ONTO ROAD RIGHT-OF-WAY. WASHING SHALL BE DONE IN AN AREA THAT DRAINS INTO AN APPROVED SEDIMENT TRAP/BASIN.

2. WHERE ACCESS TO THE CONSTRUCTION SITE IS LIMITED IN LENGTH (AS IN URBAN AREAS), DAILY STREET SWEEPING MAY BE NEEDED TO KEEP SOILS TRACKED ONTO ROADS FROM REACHING THE WAYNE COUNTY SEWERS SYSTEM AND FACILITIES.

3. MAINTENANCE MAY INCLUDE ADDING EXTRA LAYERS OF STONE OR BITUMINOUS WHEN THE ORIGINAL LAYERS BECOME MUD OR PARTIALLY DETERIORATED. AFTER EACH STORM EVENT, THE ROAD SHALL BE INSPECTED AND ALL DEBRIS AND SEDIMENTS DROPPED OR ERODED ONTO ROADS SHALL BE REMOVED IMMEDIATELY BY SWEEPING EFFECTIVELY.

4. TEMPORARY ACCESS, IF NOT CONSTRUCT WITHIN PROPOSED DRIVE APPROACH, SHALL BE REMOVED AND ROW RESTORED UPON PROJECT COMPLETION OR AS SPECIFIED ON THE PLAN OR PERMIT.

1. ALL EROSION AND SEDIMENT CONTROL WORK SHALL CONFORM TO STANDARDS AND SPECIFICATIONS OF THE OFFICE OF THE LIVINGSTON COUNTY PUBLIC WORKS COMMISSIONER.

2. DAILY INSPECTIONS SHALL BE MADE BY CONTRACTOR FOR EFFECTIVENESS OF EROSION AND SEDIMENTATION CONTROL MEASURES, AND ANY NECESSARY REPAIRS SHALL BE PERFORMED WITHOUT IMMEDIATELY

3. EROSION AND ANY SEDIMENTATION FROM WORK ON THIS SITE SHALL BE CONTAINED ON THE SITE AND NOT ALLOWED TO COLLECT ON ANY OFF-SITE AREAS OR IN WATERWAYS. WATERWAYS INCLUDE BOTH NATURAL AND MAN-MADE OPEN DITCHES, STREAMS, STORM DRAINS, LAKES AND PONDS.

4. CONTRACTOR SHALL APPLY TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES WHEN REQUIRED AND AS DIRECTED ON THESE PLANS. HE SHALL REMOVE TEMPORARY MEASURES AS SOON AS PERMANENT STABILIZATION OF SLOPES, DITCHES, AND OTHER EARTH CHANGES HAVE BEEN ACCOMPLISHED.

5. STAGING THE WORK WILL BE DONE BY THE CONTRACTOR AS DIRECTED IN THESE PLANS AND AS REQUIRED TO ENSURE PROGRESSIVE STABILIZATION OF DISTURBED EARTH.

6. SOIL EROSION CONTROL PRACTICES WILL BE ESTABLISHED IN EARLY STAGES OF CONSTRUCTION BY THE CONTRACTOR. SEDIMENT CONTROL PRACTICES WILL BE APPLIED AS A PERIMETER DEFENSE AGAINST ANY TRANSPORTING OF SILT OFF THE SITE.

1. INSTALL SILT FENCE AS SHOWN.

2. STRIP AND STOCKPILE TOPSOIL FROM PROPOSED PAVED AREAS. STOCKPILES SHALL BE LOCATED AWAY FROM DRAINAGE COURSES AND SHALL BE GRADED AND SEEDED.

3. INSTALL UTILITIES. INSTALL GEOTEXTILE FILTER CLOTH ON ALL CATCH BASINS AND INLET STRUCTURES.

4. INSTALL BASINS. STABILIZE SIDE SLOPES WITH SEED AND MULCH BLANKETS IMMEDIATELY. INSTALL SILT FENCE AT THE TOP OF THE BASIN THEN INSTALL PAVING

5. FINAL GRADE, REDISTRIBUTE STOCKPILE TOPSOIL, ESTABLISH VEGETATION AND/OR LANDSCAPE ALL DISTURBED AREAS NOT BUILT OR PAVED UPON.

6. CLEAN PAVEMENT AND REMOVE ALL TEMPORARY EROSION CONTROL MEASURES. REESTABLISH VEGETATION AS NECESSARY.

7. ALL DIRT AND MUD TRACKED ON TO PUBLIC ROADS SHALL BE REMOVED IMMEDIATELY.

8. STREET CATCH BASINS TO BE PERIODICALLY CLEANED AND FILTER CLOTH CHANGED AND MAINTAINED.

9. AFTER COMPLETION OF PAVING, REMOVAL OF FORMS, GRADING OF R.O.W. AND TEMPORARY SEED AND MULCH OF R.O.W. MUST BE COMPLETED.

MAINTENANCE OF EROSION CONTROL DEVICES

1. FILTERS MUST BE CLEANED PERIODICALLY SO THEY DON'T CLOGGED.

2. FILTER FENCING WHICH SAGS, FALLS OVER OR IS NOT STAKED IN, SHOULD BE PROMPTLY REPAIRED OR REPLACED.

3. SILT FENCES SHOULD BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND SEVERAL TIMES DURING PROLONGED RAINFALLS.

4. IF THE FENCE IS SAGGING OR THE SOIL HAS REACHED ONE HALF THE HEIGHT OF THE FABRIC, THE SOIL BEHIND THE FABRIC MUST BE REMOVED.

5. MULCHED AREAS SHOULD BE CHECKED FOLLOWING EACH RAIN TO ENSURE THE MULCH IS STAYING IN PLACE. ADDITIONAL TACKING MATERIALS OR NETTING MAY NEED TO BE APPLIED TO HOLD THE MULCH IN PLACE.

5. NEWLY SEEDED AREAS NEED TO BE INSPECTED FREQUENTLY FOR THE FIRST FEW MONTHS TO ENSURE THE GRASS IS GROWING. IF THE SEEDED AREA IS DAMAGED DUE TO RUNOFF, ADDITIONAL STORM WATER MEASURES MAY BE NEEDED.

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ESSENCE PINCKNEY

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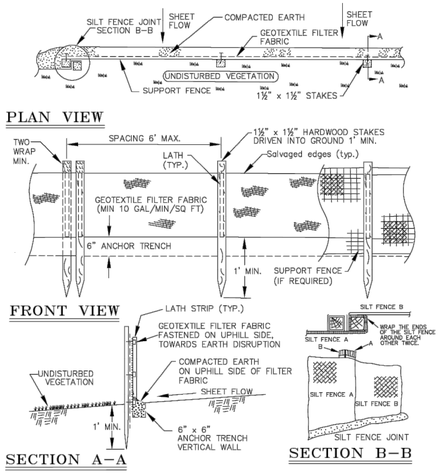
SITE DIGGING PARTNER

SHEET TITLE
SESC PLAN

SCALE
1" = 30'

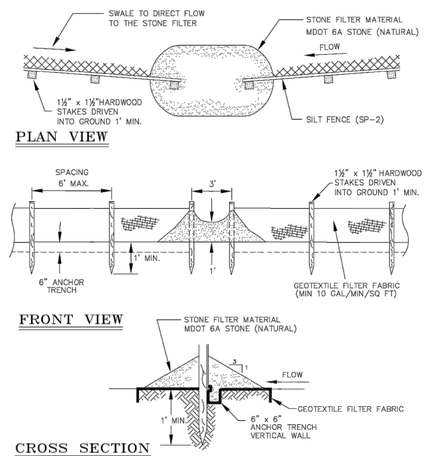
SHEET No.
C-06

36" SILT FENCE
STANDARD CONTROL



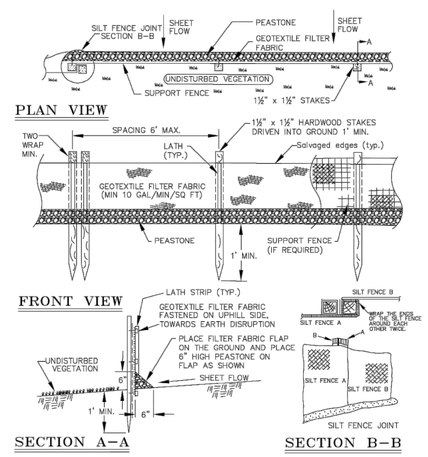
36" SILT FENCE GRAVEL FILTER
STANDARD CONTROL

(ALL ALTERNATIVES MUST BE PRE-APPROVED BY THE INSPECTOR ON A CASE BY CASE BASIS)

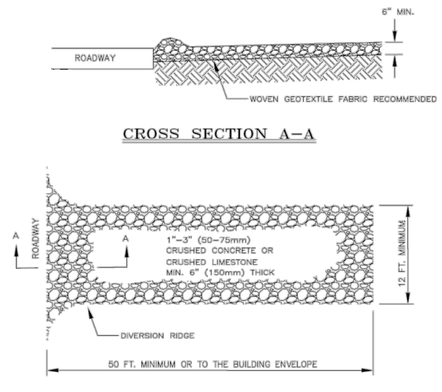


–PLACE GEOTEXTILE FABRIC UNDER STONE WITH 6 INCH MIN. OVERLAP AND TRENCHED IN 6 INCH MIN.

36" SILT FENCE
WINTER FROZEN GROUND INSTALLATION
STANDARD CONTROL

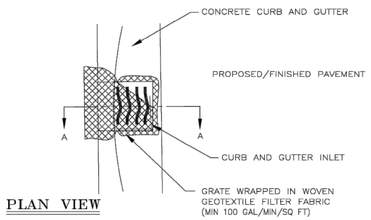


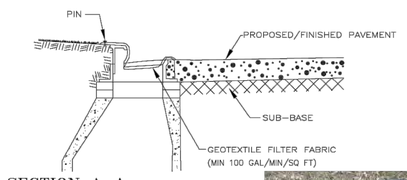
TRACKING MAT
STANDARD CONTROL



GEOTEXTILE FABRIC CURB AND GUTTER INLET FILTER
STANDARD NON-WINTER USE

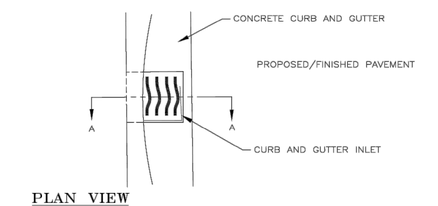
NOT FOR USE IN WINTER MONTHS OR IN AREAS THAT MAY BECOME A SAFETY HAZARD DUE TO FLOODING OR FREEZING

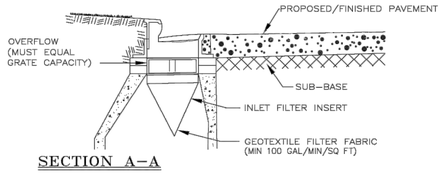




SILT SACK OR APPROVED EQUAL CURB AND GUTTER INLET FILTER
STANDARD CONTROL YEAR ROUND OR WINTER USE

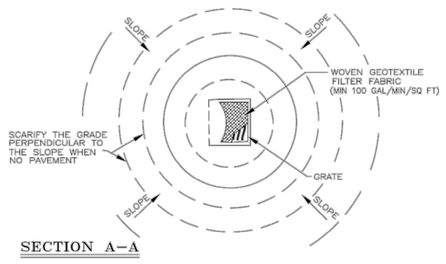
APPROVED FOR USE DURING WINTER MONTHS OR IN AREAS THAT MAY BECOME A SAFETY HAZARD DUE TO FLOODING OR FREEZING

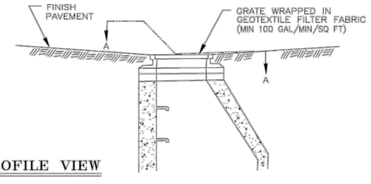




GEOTEXTILE FABRIC LOW POINT/YARD INLET FILTER
STANDARD CONTROL NON-WINTER USE

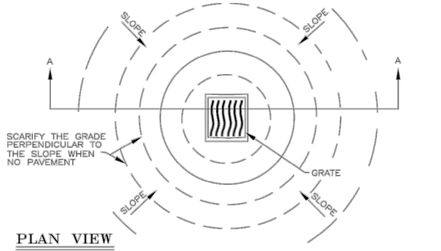
NOT FOR USE IN WINTER MONTHS OR IN AREAS THAT MAY BECOME A SAFETY HAZARD DUE TO FLOODING OR FREEZING

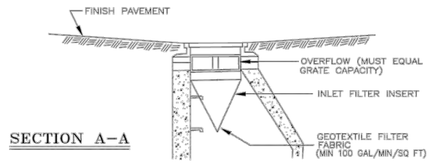




SILT SACK OR APPROVED EQUAL LOW POINT/YARD INLET FILTER
STANDARD CONTROL YEAR ROUND OR WINTER USE

APPROVED FOR USE DURING WINTER MONTHS OR IN AREAS THAT MAY BECOME A SAFETY HAZARD DUE TO FLOODING OR FREEZING





MARK	DATE	DESCRIPTION
	11/27/24	SITE PLAN SUBMITTAL

CS ENGINEERING
35890 MONTEREY DRIVE
CLINTON TOWNSHIP, MI 48035
(586) 615-4120

I hereby certify that this plan and specification was prepared by me or under my direct supervision and that I am a duly registered Architect or Engineer under the Laws of the State of Michigan by my hand and seal.

STATE OF MICHIGAN
CARLO SANTIA
ENGINEER
No. 6201028164
LICENSED PROFESSIONAL ENGINEER

ESSENCE
PINCKNEY

CALL 811 BEFORE YOU DIG
811
SAFE DIGGING PARTNER

SHEET TITLE
SESC DETAILS

SCALE
N.T.S

SHEET No.
C-07

LIVINGSTON COUNTY GIS MAP

7/11/2024, 9:33:18 AM

Tax Parcel	Roads	PLSS Section
Parcel Dimensions	State Route	Municipality
Subdivision / Condominium	Minor Road	

1:2,257

0 | 0.02 | 0.04 | 0.08 mi

0 | 0.03 | 0.07 | 0.13 km

SEMCOG, Esri, HERE, Garmin, GeoTechnologies, Inc., USGS, EPA, Livingston County IT/GIS

MARK	DATE	DESCRIPTION
	11/27/24	SITE PLAN SUBMITTAL

CS ENGINEERING
35890 MONTEREY DRIVE
CLINTON TOWNSHIP, MI 48035
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STATE OF MICHIGAN ★ CARLO SANTIA ENGINEER No. 6201028164 ★ LICENSED PROFESSIONAL ENGINEER

ESSENCE PINCKNEY

CALL 811 BEFORE YOU DIG — 811 — SAFE DIGGING PARTNER

SHEET TITLE

AERIAL PLAN

SCALE

1" = 30'

SHEET No.

C-08

FAIRWAY ENGINEERING LLC
Land Development-Geotechnical-Structural
28525 BECK RD., SUITE 114
WIXOM, MI 48393
(248) 214-5913

August 30, 2024,

Mr. Marco Lytwyn
Owner
1268 M-36
Pinckney, MI 48169
313-986-8381

Re: **Infiltration Exploration Report**
Proposed Development – Retail Store
1268 M-36
Pinckney, Livingston County, MI 48169
FE Project No.: 24-4052

Dear Mr. Lytwyn:

In accordance with your specific request, Fairway Engineering LLC (FE, LLC) has completed the infiltration tests at two of the three designated locations for the referenced site, in accordance with Livingston County Guidelines, Procedures & Design Criteria for Stormwater Management Systems. This letter report documents the field exploration procedures and presents the results of the test pits and double ring infiltration testing.

SCOPE OF SERVICES

The infiltration basin exploration was performed by FE, LLC representative, on 08-30-24 and included the following scope of work:

1. Observation of three (3) back-hoe excavated test pits performed on the above-mentioned date. The test pits, designated as TP-A, TP-B and TP-C respectively were performed at the approximate location shown on the Schematic Test Pit Location Plan. The test pits were excavated by Pinckney Trucking & Excavating, Inc. operator, using a back-hoe with a 36-inch bucket and were extended to a depth of approximately 7.5 to 8.0 feet below the existing ground surface (B.E.G.). The test pit logs are appended to this letter report.

2. Observation the Subsoils Horizon and Groundwater Information to the excavated depth of the Test Pits. The subsoils description is appended to this letter as well.

3. Performance of the infiltration testing in accordance with the Double-Ring Infiltrometer method. In accordance with the Livingston County, "Design Requirements for Stormwater Management Systems" requirements, two infiltration tests were performed at each of the test pit locations. The Double Ring Infiltrometer Test Log Sheet for the infiltration tests is appended to this letter report. Photographic Documentation of the test pits and infiltration testing are also appended to this letter report.

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Land Development-Geotechnical-Structural
28525 BECK RD., SUITE 114
WIXOM, MI 48393
(248) 214-5913

SOIL PROFILE

The subsoils encountered and observed during the back-hoe excavation of the test pits are summarized in the following tables, including information regarding to groundwater level:

Test Pit ID:	Depth	Soil Description
TP-A	0 to 12"	Dark-brown clayey topsoil, occasional roots - FILL
	12" to 2'-6"	Brown silty fine sand, trace gravel, occasional clay seams - FILL
	2'-6" to 3'-10"	Dark-brown silty clay, trace to some sand & gravel
	3'-10" to 8'-0"	Brown silty clay, trace to some sand & gravel
Groundwater:	Stabilized at 7'-0" below existing ground after 4 hrs.	

Test Pit ID:	Depth	Soil Description
TP-B	0 to 12"	Dark-brown clayey topsoil, occasional roots - FILL
	12" to 3'-0"	Brown sandy clay, trace to some gravel
	3'-0" to 4'-3"	Brown & gray silty clay, trace sand & gravel
	4'-3" to 4'-6"	Gray silty fine to medium sand, trace gravel
	4'-6" to 7'6"	Gray silty clay, trace sand & gravel
Groundwater:	Stabilized at 5'-0" below existing ground after 4 hrs.	

Test Pit ID:	Depth	Soil Description
TP-C	0 to 12"	Dark-brown clayey topsoil, occasional roots - FILL
	12" to 3'-0"	Brown sandy clay, trace to some gravel
	3'-0" to 5'-0"	Gray sandy clay, some gravel, occasional cobbles & boulders
	5'-0" to 7'-6"	Gray silty clay, trace sand & gravel
Groundwater:	Stabilized at 5'-0" below existing ground after 4 hrs.	

Test Pit A was excavated to 5 feet B.E.G. for the proposed Infiltration Test prior to extend the excavation for additional 3 feet to a depth of 8 feet B.E.G. Groundwater was not observed during excavation. Test Pit B was excavated to approximately 4.5 feet B.E.G. for set-up of Infiltration Test and extended for additional 2.5 feet B.E.G. Groundwater stabilized at 5 feet B.E.G. after 4 hrs. into the deepest excavated section did not affect the section of the Test Pit where the Infiltration Test was conducted.

At the location of designated Test Pit C, during the excavation, the ground water was observed at approximately 5 feet B.E.G. Due to presence of groundwater observed during excavation, corelated with the proposed bottom of the pound at approximately 7 to 8 feet B.E.G., the Infiltration Test at this location was abandoned.

PROCEDURE DESCRIPTION

The double-ring infiltration testing was conducted using a 6-inch diameter PVC inner pipes centered within a 10-inch diameter PVC outer pipes. The PVC pipes possessed a length of 12 inches and were seated approximately 2.5 to 3.5 inches into soil. The invert soils were "pre-soaked" prior to the start of testing by filling the inner pipe and the annular space between the inner and outer pipes with potable water to the top of the pipes.

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Land Development-Geotechnical-Structural
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Upon the first 30-minutes pre-soak, the infiltrometers were refilled and allowed to satisfy the pre-soak requirements for additional 30-minutes.

Based on the water drop in the inner ring at the end of the last 30-minute of the pre-socking period, the following rules should be applied, conforming to the standard procedures and requirements for the double-ring infiltration test:

- If the average drop in water level is less than 2-inch, the time intervals between the ridings during performing the infiltration test to be 30-minute measurements intervals
- If the average drop in water level is 2-inch or more, the time intervals between the ridings during performing the infiltration test to be 10-minute measurements intervals

ADDITIONAL INFO:

- No significant rainfall event (>0.5 inches) occurred within 24 hrs. prior to infiltration test
- No rain occurred during conducting the infiltration test
- The temperature was recorded to be above freezing (weather: Sunny, 54°F to 80°F)

RESULTS AND EVALUATION

The test results after the last 30-minutes of the pre-socking period indicated that the average drop in water level was less than 2-inch at the location of designated Test Pit TP-A and TP-B respectively. In conformance with the standard procedures and requirements for double-ring infiltration test, the time intervals between the ridings during performing the infiltration test were 30-minute measurement intervals.

The readings of the drop in water level were measured in the center of the inner 6-inch PVC pipe at 30 minutes time intervals. The stabilized water level drop measured in the inner 6-inch PVC pipe was observed after the 4th intervals readings at both tested locations (Stabilized Rate of Drop means a difference of 1/4-inch or less of drop between the highest and lowest readings of 4 (four) consecutive readings).

The drop of water that occurred in the center ring during the final period or the average stabilized rate, expressed as inch per hour represent the Infiltration Rate at that test location. The summary of the Double-Ring Infiltration Tests, based on the field readings/ measurements, are presented in Table 1.

TABLE 1: SUMMARY OF INFILTRATION TEST RESULTS

Test Pit ID.	Average Drop per Designated Interval (Inch per interval)	Average Calculated (unfactored) Infiltration Rate (Inch per hour)	Average Calculated (factored) Infiltration Rate (Inch per hour)
TP-A	1.375-inch / 30-minute	2.750-inch / hour	1.375-inch / hour
TP-B	0.0-inch / 10-minute	0.0-inch / hour	0.0-inch / hour

I, Mark Mahajan, P.E., a licensed professional engineer, trained in the science of soil mechanics, state that the above infiltration rate is valid and represents the average soil conditions encountered on the site at the test location.

FAIRWAY ENGINEERING LLC
Land Development-Geotechnical-Structural
28525 BECK RD., SUITE 114
WIXOM, MI 48393
(248) 214-5913

Thank you for the opportunity to provide our services to you on this project. If there are any questions regarding this letter, please contact us.

Respectfully,

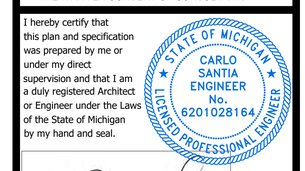
FAIRWAY ENGINEERING LLC

Mark D. Mahajan, P.E.
President/Owner

MARK	DATE	DESCRIPTION
	11/27/24	SITE PLAN SUBMITTAL

CS ENGINEERING
35890 MONTEREY DRIVE
CLINTON TOWNSHIP, MI 48035
(586) 615-4120

I hereby certify that this plan and specification was prepared by me or under my direct supervision and that I am a duly registered Architect or Engineer under the Laws of the State of Michigan by my hand and seal.



ESSENCE
PINCKNEY

FAIRWAY ENGINEERING, LLC
LAND DEVELOPMENT ♦ STRUCTURAL ♦ GEOTECHNICAL
28525 BECK ROAD, SUITE 114, WIXOM, MI 48393
OFFICE: (248)938-4902 ♦ CELL: (248)214-5913

DOUBLE RING INFILTROMETER TEST

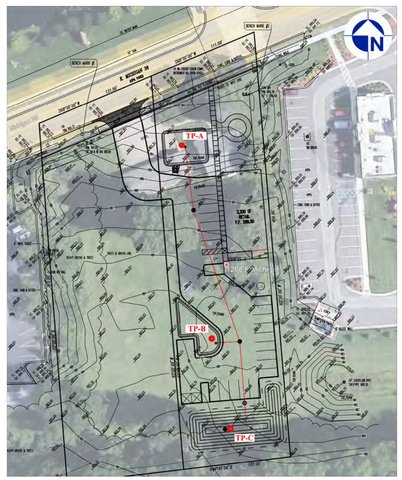
Project: Proposed Development – Retail Store		**Location:**	Pinckney, MI
Architect / Engineer: Danny Kekhwa, P.E.		**Project No.:**	24-4052
General Contractor:		**Date:**	08-30-2024
Excavating Contractor: Pinckney Trucking & Excavating, Inc.		**Report No.:**	2
Work Scheduled: Field Observation Double-Ring Infiltration Test		**Weather:**	Sunny, (54-80) °F

Test Pit ID:		TP-A		TP-B	
		1	2	1	2
Test Depth Below Surrounding Grade		5'-0"	5'-0"	4'-6"	4'-6"
Outer Ring Diameter		10"	10"	10"	10"
Inner Ring Diameter		6"	6"	6"	6"
Height of Rim above Ground		9.5"	9"	9"	8.5"
Seated Depth		2.5"	3"	3"	3.5"
30 min. Pre-Soak	Water Level	9.5"	9"	9"	8.5"
	Drop of Water Level	2"	1.125"	0.125"	0.125"
60 min. Pre-Soak	Water Level	9.5"	9"	9"	8.5"
	Drop of Water Level	1.875"	1.125"	0"	0"

Reading Interval / Test Pit ID:	TP-A			TP-B		
	Interval (minute)	1	2	Interval (minute)	1	2
1st reading interval	**30**	1.875"	1.125"	**10**	0"	0"
2nd reading interval	**60**	1.875"	1.0"	**20**	0"	0"
3rd reading interval	**90**	1.750"	1.0"	**30**	0"	0"
4th reading interval	**120**	1.750"	1.0"	**40**	0"	0"
5th reading interval						
6th reading interval						
7th reading interval						
8th reading interval						
Stabilized Water Drop per reading interval		**1.750"**	**1.0"**		**0.0"**	**0.0"**
Average Water Drop per test		**1.375"**			**0.0"**	
Infiltration Rate (unfactored)/ (inch/hr.)		**2.750"**			**0.0**	
Infiltration Rate (factored)/ (inch/hr.)		**1.375"**			**0.0**	

NOTE:
- The infiltration test should be performed until a min. of 8 readings are completed or until a stabilized rate of drop is obtained, whichever occurs first:
- A stabilized rate of drop means a difference of ¼ inch (0.25 inch) or less of drop between the highest and lowest readings of 4 consecutive readings;
- The drop of water level that occurs in the inner ring during final period or the average stabilized rate, expressed in "inch per hour", represent the infiltration rate for that test pit location;
- A minimum 2 infiltration test per pit are required;

Reported By: **Daniel Horotan** Reviewed By: **Mark Mahajan, P.E.**



FAIRWAY ENGINEERING, LLC
LAND DEVELOPMENT ♦ STRUCTURAL ♦ GEOTECHNICAL
28525 BECK RD., SUITE 114
WIXOM, MI 48393
OFFICE: (248)938-4902
CELL: (248)214-5913

PROJECT NAME
TEST PIT & INFILTRATION TEST LOCATION PLAN
PROPOSED DEVELOPMENT - RETAIL STORE
1268 M-36
PINCKNEY, LIVINGSTON COUNTY, MI

PROJECT No:	24-4052
DATE:	08-30-2024
SCALE:	N.T.S.

FAIRWAY ENGINEERING, LLC
LAND DEVELOPMENT ♦ STRUCTURAL ♦ GEOTECHNICAL
28525 BECK ROAD, SUITE 114, WIXOM, MI 48393
OFFICE: (248)938-4902 ♦ CELL: (248)214-5913

Project Name: Proposed Development – Retail Store
Location: 1268 M-36, Pinckney, MI
Project No.: 24-4052

TP-A 08-30-2024

FAIRWAY ENGINEERING, LLC
LAND DEVELOPMENT ♦ STRUCTURAL ♦ GEOTECHNICAL
28525 BECK ROAD, SUITE 114, WIXOM, MI 48393
OFFICE: (248)938-4902 ♦ CELL: (248)214-5913

Project Name: Proposed Development – Retail Store
Location: 1268 M-36, Pinckney, MI
Project No.: 24-4052

TP-B 08-30-2024

FAIRWAY ENGINEERING, LLC
LAND DEVELOPMENT ♦ STRUCTURAL ♦ GEOTECHNICAL
28525 BECK ROAD, SUITE 114, WIXOM, MI 48393
OFFICE: (248)938-4902 ♦ CELL: (248)214-5913

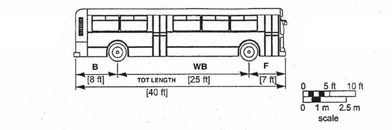
Project Name: Proposed Development – Retail Store
Location: 1268 M-36, Pinckney, MI
Project No.: 24-4052

TP-C 08-30-2024

SHEET TITLE
INFILTRATION REPORT

SCALE
N.T.S

SHEET No.
C-10



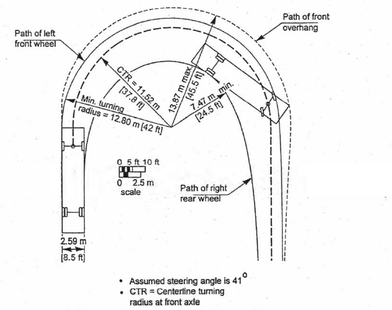
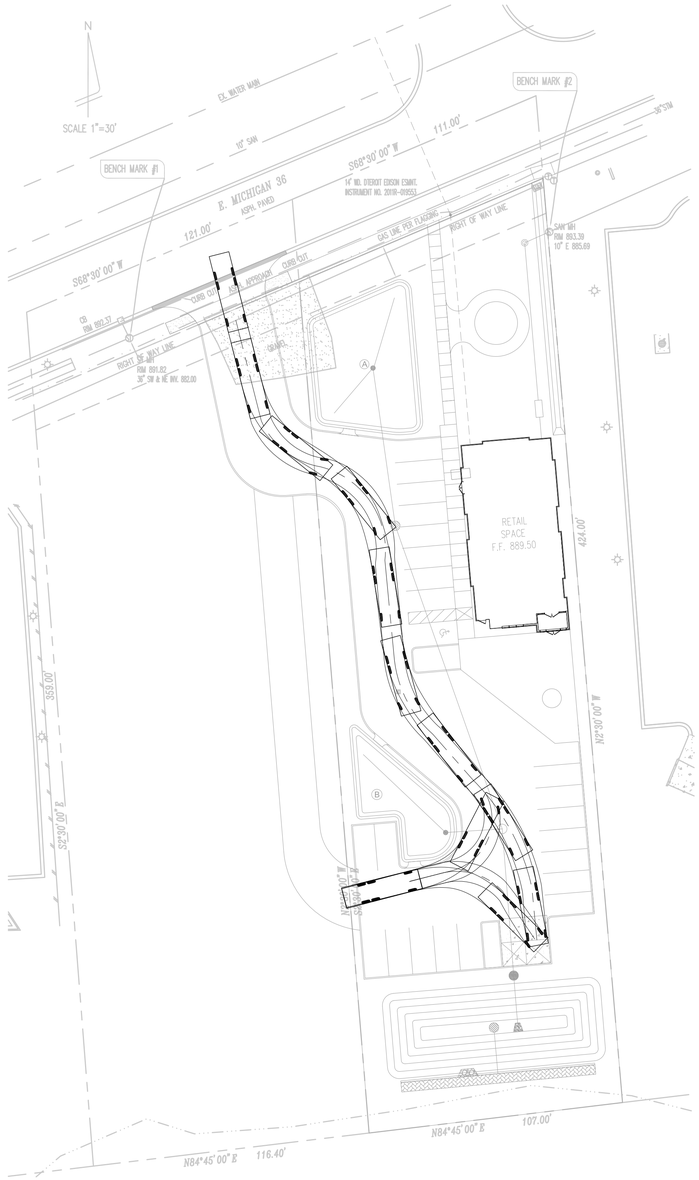


Exhibit 2-7. Minimum Turning Path for City Transit Bus (CITY-BUS) Design Vehicle

AASHTO TURNING TEMPLATE

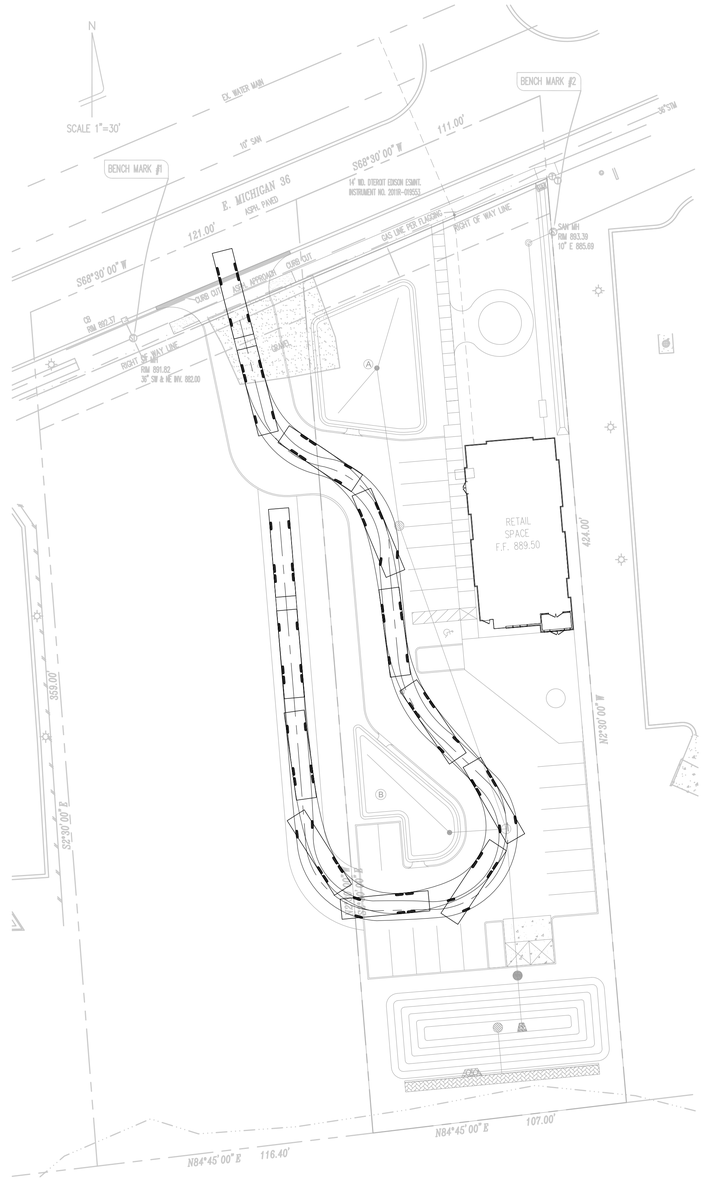
(SEE SIMULATION DETAILS)
NOT TO SCALE



TRASH TRUCK SIMULATION PLAN

(AASHTO TURNING TEMPLATE)
SCALE 1:30

WHEEL WIDTH 8.5'
VEHICLE WIDTH 8.5'
VEHICLE TOT LENGTH 32.8'
FRONT (F) 4.2'
WHEEL BASE (WB) 18'
BACK (B) 10.6'



FIRE TRUCK SIMULATION PLAN

(AASHTO TURNING TEMPLATE)
SCALE 1:30

WHEEL WIDTH 8.5'
VEHICLE WIDTH 8.5'
VEHICLE TOT LENGTH 37'
FRONT (F) 7'
WHEEL BASE (WB) 20'
BACK (B) 10'

TRI-COUNTY
Engineering Consultants

48701 Hayes Road
Shelby Twp, MI 48315
TEL: (810) 394-7887
info@Tri-CountyEng.com
www.Tri-CountyEng.com

CLIENT NAME:

PINCKNEY DEV LLC

17228 SUMMIT DR
NORTHVILLE, MI 48168
MARCO LYTWYN
313-986-8381

3 WORKING DAYS
800-482-7171
811
Know what's below.
Call before you dig.

PROJECT NAME:

ESSENCE
1268 E MICHIGAN 36
PINCKNEY, MI 48169

TRUCK SIMULATION PLAN & DETAILS

PROJECT LOCATION:

SEC 23, T01N, R04E
PINCKNEY, MICHIGAN
LIVINGSTON COUNTY

Drawn By: AS
Checked By: SS
Approved By: SS

REVISIONS:

1. AGENCY SUBMITTALS 11/19/24

STATE OF MICHIGAN
SERMED K. SAIF
ENGINEER
No. 51411
LICENSED PROFESSIONAL ENGINEER

SCALE VERIFICATION:

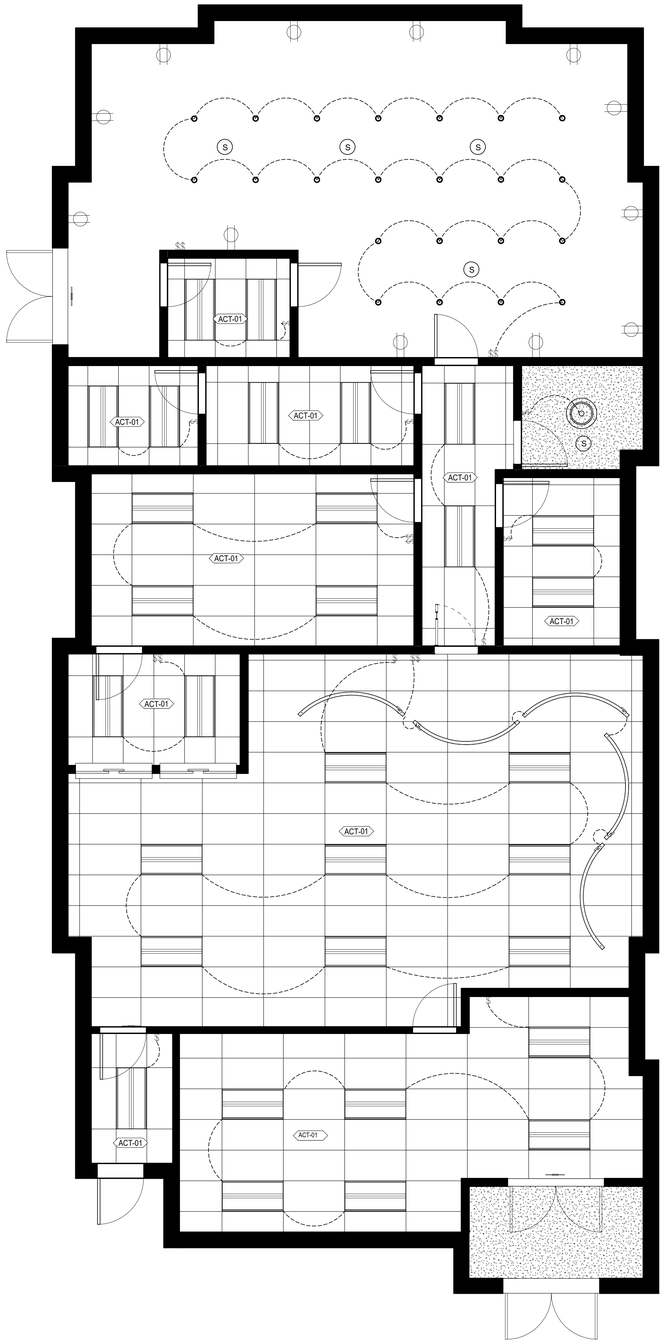
0 0.5 1
BAR IS ONE-INCH
ADJUST SCALES ACCORDINGLY IF NOT

SCALE:
1" = 30'

PROJECT NO:
BA24001

DRAWING NO:
BA24001MS

MS-1



POWER PLAN
SCALE: 1/4" = 1'-0"

POWER PLAN LEGEND

- GYP. BD. CEILING
- 2x4, LAY IN GRID ACT CEILING PANEL
- 2'-0"x 4'-0" TROFFER CEILING LIGHT
- EMERGENCY EXIT SIGN
- $ SWITCH
- $$ 2-WAY SWITCH
- DUPLEX RECEPTACLE OUTLET
- (S) SMOKE DETECTOR
- GROW ROOM LIGHTS
- RECESSED CEILING LIGHT

STATE OF MICHIGAN
WILLIAM C LEISER
ARCHITECT
No. 301062503
LICENSED ARCHITECT

Seal Date : 12/03/2024
Expiration Date : 05/19/2026

www.autodesk.com/revit

Owner: Pinckney Developments
Phone: (313)-779-4492
Email: k_lytwyn@hotmail.com

Consultant: William C Leiser
Address: 926 Chester St Oakland, CA 94607
Email: acenspe@gmail.com
Phone: (909)-660-5577

Consultant
Address
Address
Address
Phone

Consultant
Address
Address
Address
Phone

Consultant
Address
Address
Address
Phone

No.	Description	Date
1	REVISION 1	05/14/2024
7	SITE PLAN REVISIONS - LANDSCAPING	07/15/2024

PINCKNEY DEVELOPMENTS LLC

PINCKNEY

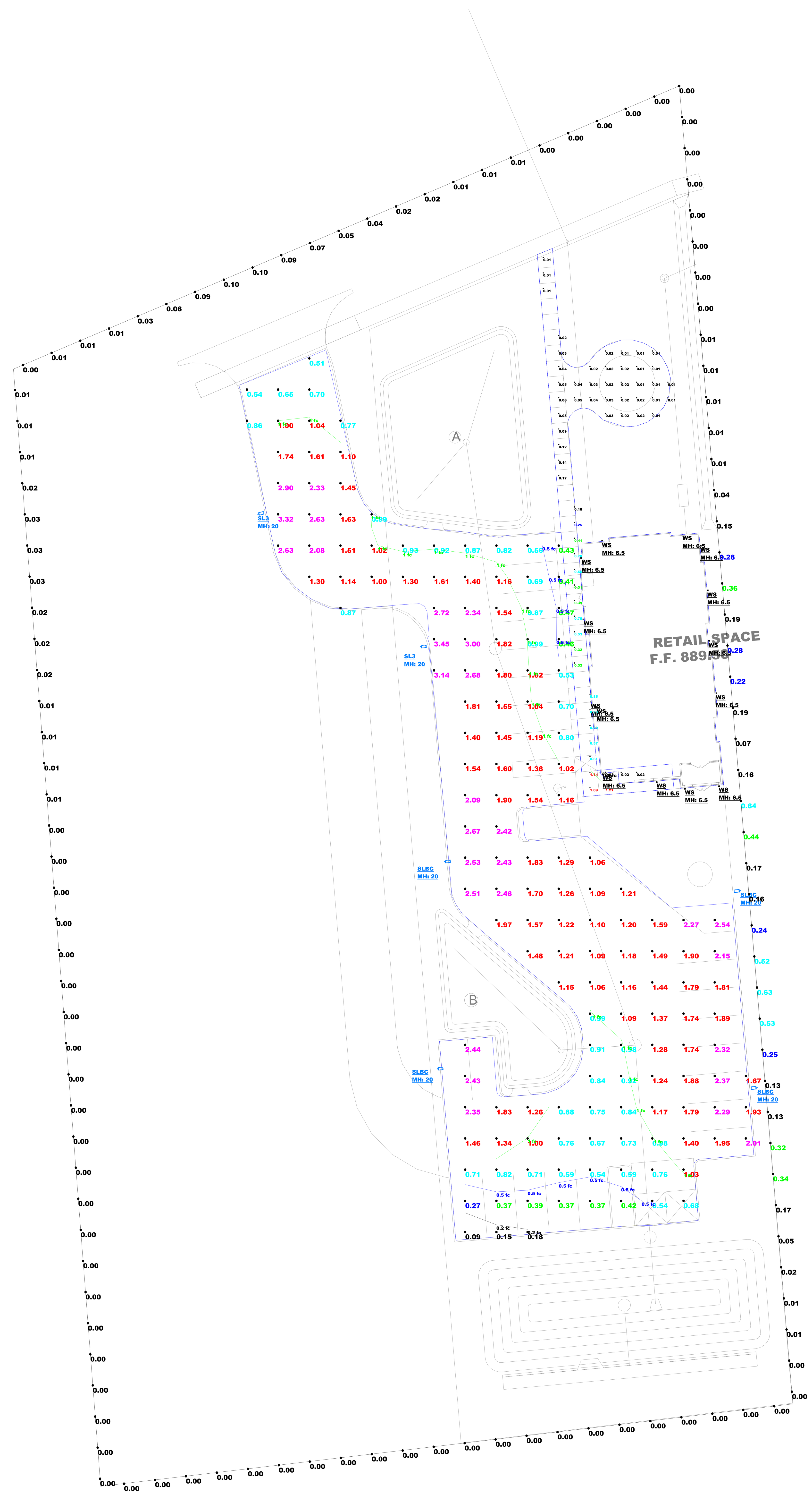
POWER PLAN

Project Number	0002
Date	01/05/2024
Drawn By	Arton, Peter
Checked By	None.

A103

Scale	1/4" = 1'-0"

7/15/2024 9:31:09 PM



GENERAL LIGHTING NOTES:
- WORK PLANE CACLULATIONS ARE SHOWN IN FOOT CANDLES (fc) AT: 2'-6" AFF
- CORRIDOR CALCULATIONS ARE SHOWN IN FOOTCANDLES (fc) AT: 2'-6" AFF
- EXTERIOR CALCULATIONS ARE SHOWN IN FOOTCANDLES (fc) AT FINISHED GRADE

EMERGENCY EGRESS NOTES:
- INTERIOR CALCULATIONS ARE SHOWN IN FOOT CANDLES (fc) AT FINISHED FLOOR
- EXTERIOR CALCULATIONS ARE SHOWN IN FOOTCANDLES (fc) AT FINISHED GRADE
- WIZARD LIGHTING COMPANY LLC IS NOT A REGISTERED ELECTRICAL ENGINEER. THERFORE THE EMERGENCY EGRESS CALCS ARE MERELY A REPRESENTATON OF ILLUMINATION. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR HIRING A REGISTERED ELECTRICAL ENGINEER TO VALIDATE THE CALCS SHOWN MEET CODE REQUIREMENTS.

THIS LIGHITNG LAYOUT REPRESENTS ILLUMINATION LEVELS CALCULATED FROM LABRATORY DATA TAKEN UNDER CONTROLLED CONDITIONS IN ACCORDANCE WITH ILLUMINATING ENGINEERING SOCIETY (IES) APPROVED METHODS. ACTUAL PERFORMACE ON ANY MANUFACTURE'S LUMINAIRE MAY VARY DUE TO VARIATION IN ELECTRICAL VOLTAGE, TOLERANCE IN LAMPS, AND OTHER VARIABLE FIELD CONDITIONS.

OVERALL SITE - NEW WORK LIGHTING PLAN
Scale: 1 inch= 18 Ft.

STATE OF MICHIGAN
JAMES B FLIS
No. 1301062503
LICENSED PROFESSIONAL ENGINEER
[illegible]

Seal Date : 12/03/2024
Expiration Date : 01/03/2026

WIZARD LIGHTING COMPANY
129 E. COMMERCE RD
MILFORD, MI 48381
248-714-5076

#	DATE	ISSUED FOR
1	04.10.24	DESIGN REVISIONS
3	08.06.24	CITY REVIEW COMMENTS
4	09.06.24	CITY REVIEW COMMENTS
5	11.08.24	100% SITE PLAN APPROVAL
6	11.22.24	100% SITE PLAN APPROVAL

Revisions

ESSENCE PROVISIONS

Drawn By: B.LASSEN
Checked By:
Date:11/25/2024

ESSENECE PROVISIONS - STORE FRONT

OVERALL SITE PLAN

EL1.10

LUMINAIRE SCHEDULE										
SYMBOL	QTY	TYPE	DESCRIPTION	MANUFACTURER	CATALOG #	LLF	LUMINIARE LUMENS	LUMINIARE WATTS	TOTAL WATTS	COMMENTS
	2	SL3	POLE MOUNTED LED LUMINAIRE. RUGGED DIE-CAST ALUMINUM HOUSING AND TYPE III DISTRIBUTION. LUMINAIRE COMPLETE WITH INTEGRAL BUTTON TYPE PHOTO CONTROL AND 0-10V DIMMING DRIVER. ARCHITECT TO SELECT FINISH.	GARDGO - OPTIFORM SERIES	OPF-S-A02-840-T3M-AR1-208-XX	0.910	8362	54.129	108.258	ELECTRTICAL ENGINEER SHALL VERIFY AVAILABLE VOLTAGE PRIOR TO ORDERING. ARCHITECT TO SELECT FINISH. LUMINAIRE HEAD SHALL BE MOUNTED AT A MAX HEIGHT OF 20 FEET, ATOP A 30in CONCRETE BASE.
	4	SLBC	POLE MOUNTED LED LUMINAIRE. RUGGED DIE-CAST ALUMINUM HOUSING AND TYPE III DISTRIBUTION. LUMINAIRE COMPLETE WITH INTEGRAL BUTTON TYPE PHOTO CONTROL AND 0-10V DIMMING DRIVER. ARCHITECT TO SELECT FINISH.	GARDGO - OPTIFORM SERIES	OPF-S-A02-840-BLC-AR1-208-XX	0.910	5877	54.129	216.516	ELECTRTICAL ENGINEER SHALL VERIFY AVAILABLE VOLTAGE PRIOR TO ORDERING. ARCHITECT TO SELECT FINISH. LUMINAIRE HEAD SHALL BE MOUNTED AT A MAX HEIGHT OF 20 FEET, ATOP A 30in CONCRETE BASE.
	14	WS	DECORATIVE WALL MOUNTED FACADE LUMINAIRE. METAL HOUSING AND DURABLE POWDER COAT FINISH. FROSTED WHITE GLASS DIFFUSER.	AFX - GALE SERIES	GLEW0518L30UDBK	0.910	2043	24.41	341.74	

CALCULATION SUMMARY								
LABEL	CALC TYPE	UNITS	AVG	MAX	MIN	AVG/MIN	MAX/MIN	WORK PLANE
PARKING - DRIVE_Planar	Illuminance	Fc	1.37	3.45	0.09	15.22	38.33	0
PROPERTY LINE	Illuminance	Fc	0.06	0.64	0.00	N.A.	N.A.	N.A.
WALKWAY_GRADE	Illuminance	Fc	0.21	1.21	0.01	21.00	121.00	0.277

Seal Date : 12/03/2024
Expiration Date : 01/03/2026

GENERAL LIGHTING NOTES:
- WORK PLANE CACLULATIONS ARE SHOWN IN FOOT CANDLES (fc) AT: 2'-6" AFF
- CORRIDOR CALCULATIONS ARE SHOWN IN FOOTCANDLES (fc) AT: 2'-6" AFF
- EXTERIOR CALCULATIONS ARE SHOWN IN FOOTCANDLES (fc) AT FINISHED GRADE

EMERGENCY EGRESS NOTES:
- INTERIOR CALCULATIONS ARE SHOWN IN FOOT CANDLES (fc) AT FINISHED FLOOR
- EXTERIOR CALCULATIONS ARE SHOWN IN FOOTCANDLES (fc) AT FINISHED GRADE
- WIZARD LIGHTING COMPANY LLC IS NOT A REGISTERED ELECTRICAL ENGINEER. THERFORE THE EMERGENCY EGRESS CALCS ARE MERELY A REPRESENTATON OF ILLUMINATION. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR HIRING A REGISTERED ELECTRICAL ENGINEER TO VALIDATE THE CALCS SHOWN MEET CODE REQUIREMENTS.

THIS LIGHITNG LAYOUT REPRESENTS ILLUMINATION LEVELS CALCULATED FROM LABRATORY DATA TAKEN UNDER CONTROLLED CONDITIONS IN ACCORDANCE WITH ILLUMINATING ENGINEERING SOCIETY (IES) APPROVED METHODS. ACTUAL PERFORMACE ON ANY MANUFACTURE'S LUMINAIRE MAY VARY DUE TO VARIATION IN ELECTRICAL VOLTAGE, TOLERANCE IN LAMPS, AND OTHER VARIABLE FIELD CONDITIONS.

Seal Date : 12/03/2024
Expiration Date : 01/03/2026

WIZARD LIGHTING COMPANY
129 E. COMMERCE RD
MILFORD, MI 48381
248-714-5076

WIZARD LIGHTING COMPANY

#	DATE	ISSUED FOR
1	04.10.24	DESIGN REVISIONS
3	08.06.24	CITY REVIEW COMMENTS
4	09.06.24	CITY REVIEW COMMENTS
5	11.08.24	100% SITE PLAN APPROVAL
6	11.22.24	100% SITE PLAN APPROVAL

Revisions

ESSENCE PROVISIONS

Drawn By: B.LASSEN
Checked By:
Date:11/25/2024
Scale: NONE

ESSENECE PROVISIONS - STORE FRONT

LUMINAIRE SCHEDULES

EL2.10