# TUSCOLA II ENERGY STORAGE PROJECT

## TUSCOLA COUNTY, MICHIGAN
## FAIRGROVE TOWNSHIP
## SPECIAL LAND USE PERMIT - SITE PLAN

### APPLICANT:

TUSCOLA II ENERGY STORAGE, LLC
700 UNIVERSE BLVD
JUNO BEACH, FL 33408
PHONE: 561.348.4684
ATTN: BRENDAN WOOD

### CONSULTANT:

ATWELL, LLC
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MICHIGAN 48076
PHONE: 248.447.2000
FAX: 248.447.2001

PROJ. MGR/ENVIRONMENTAL: BEN SANFORD
ENGINEERING: CRAIG KANTOLA, PE
SURVEYING: CHRIS KELLY, PS

### PROJECT SUMMARY:

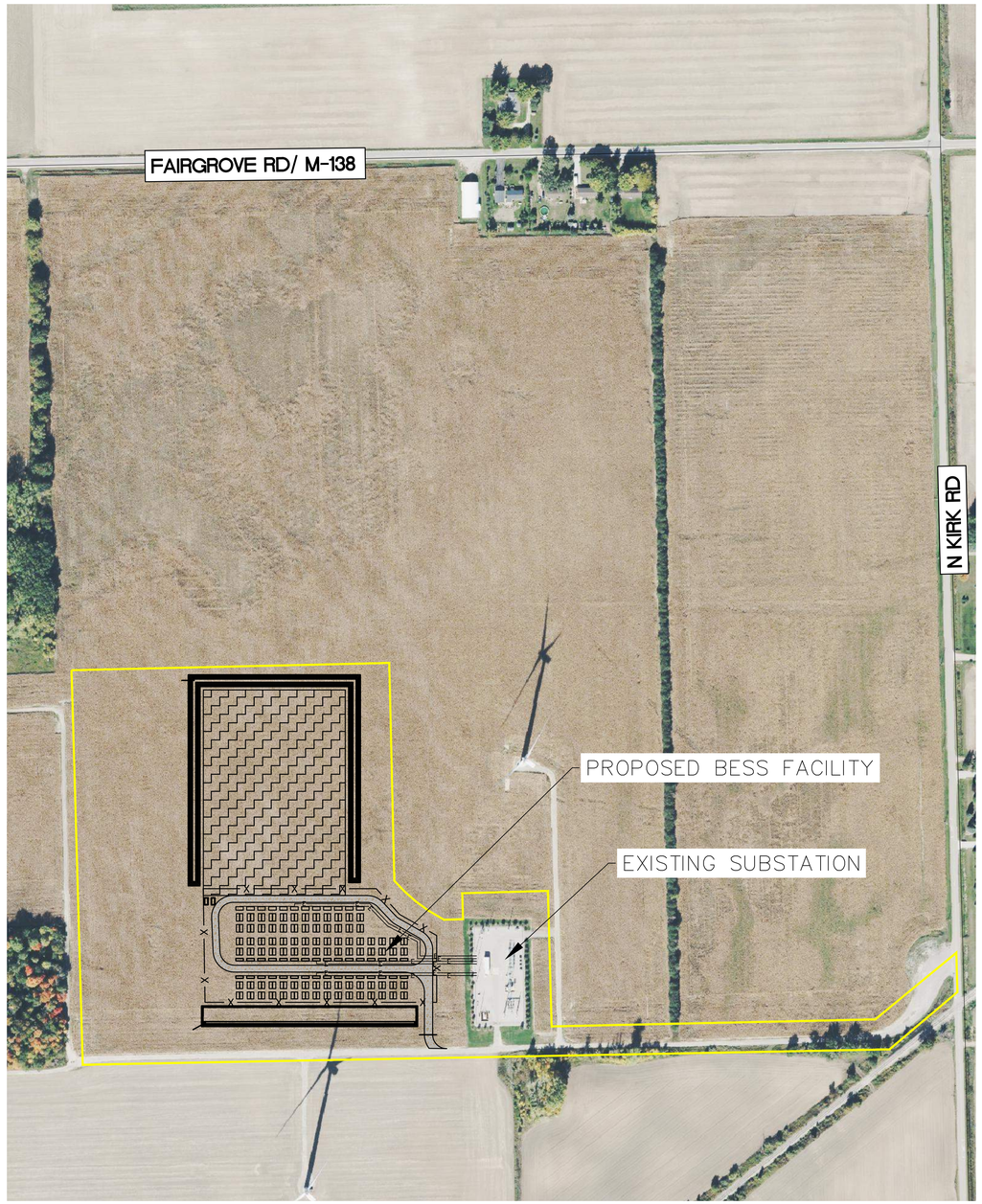
COUNTY: TUSCOLA
TOWNSHIP: FAIRGROVE TOWNSHIP

THIS PERMIT APPLICATION COVERS THE FOLLOWING PROPOSED PROJECT FACILITIES:

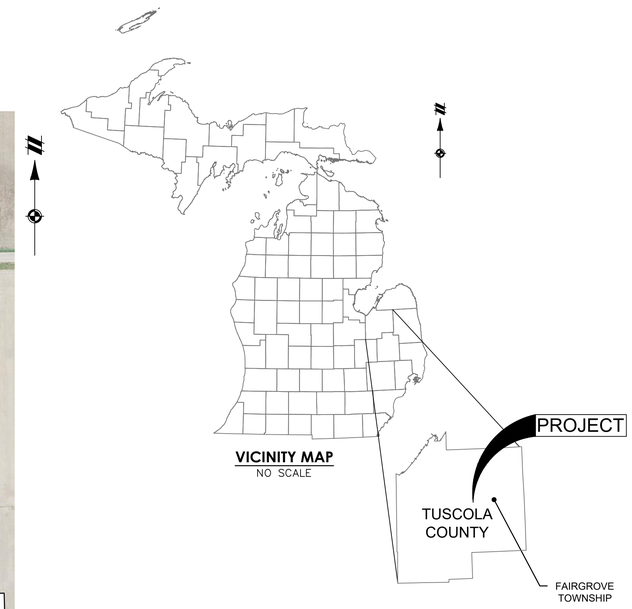
- COLLECTION LINES (PERMANENT)
- BESS FACILITY (PERMANENT)
- STORMWATER BASINS (PERMANENT & TEMPORARY)
- LAYDOWN YARD (TEMPORARY)

### DATA SOURCES:

| | |
|---|---|
| TOPOGRAPHICAL INFORMATION | AERIAL MAPPING PROVIDED BY NEXTERA (JANUARY 2024) |
| | LIMITED FIELD TOPO BY ATWELL, LLC. (COMPLETED JUNE, 2024) |
| | DRAIN MAPS PER COUNTY RECORDS |
| FINAL WETLAND DELINEATION | PROVIDED BY ATWELL (FIELD WORK COMPLETED JULY 2024) |
| PROPERTY BOUNDARY INFORMATION | PROVIDED BY ATWELL (MARCH 2024) |
| PARCEL PARTICIPATION | PROVIDED BY NEXTERA (JUNE 2024) |
| HABITABLE STRUCTURE LOCATIONS | AERIAL PHOTO REVIEW (JUNE 2024) |
| PROJECT LAYOUT | PROVIDED BY NEXTERA (JANUARY 2025) |




SITE MAP
SCALE 1"=200'




VICINITY MAP
NO SCALE

### LEGEND

- PROP. PROJECT BOUNDARY
- PROP. FENCE
- PROP. UNDERGROUND COLLECTION
- PROP. ACCESS ROAD
- EX. ROAD CENTERLINE
- PROP. TEMPORARY LAYDOWN YARD AREA
- PROPOSED BESS UNITS

STATE OF MICHIGAN
CRAIG A. KANTOLA
ENGINEER
0201046806
LICENSED PROFESSIONAL ENGINEER

SHEET INDEX

| SHEET NUMBER | SHEET TITLE |
|---|---|
| 01 | COVER SHEET |
| 02 | ZONING MAP & LEGAL DESCRIPTIONS |
| 03 | EXISTING CONDITIONS |
| 04 | PROPOSED LAYOUT – OVERALL |
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| 06 | LANDSCAPING PLAN |
| 07 | STORMWATER PLAN |
| 08 | GENERAL DETAILS |
| 09 | GENERAL DETAILS |

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

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866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION: 19
TOWN, RANGE: T13N, ROBE
FAIRGROVE TOWNSHIP
TUSCOLA COUNTY, MICHIGAN

CLIENT
TUSCOLA II ENERGY STORAGE, LLC

TUSCOLA II ENERGY STORAGE PROJECT
SPECIAL LAND USE PERMIT – SITE PLANS
COVER SHEET

DATE 07/01/2025
REV 08/20/2025

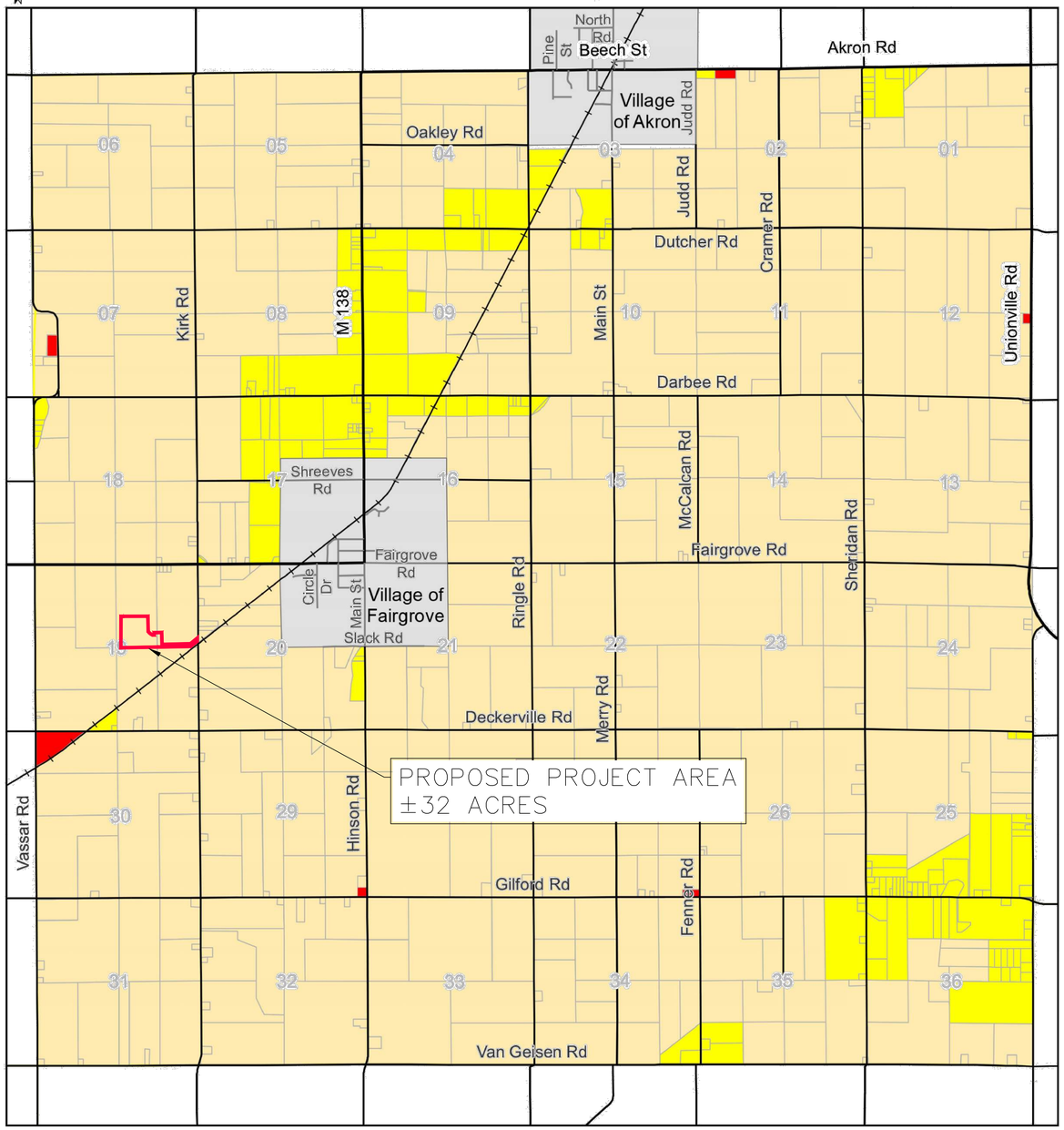
REVISIONS

DR. MB CH. BS
P.M. BS
BOOK --
JOB 24005306
SHEET NO. 01

CAD FILE: 24005306-00-CV.DWG

PRELIMINARY PLANS - NOT FOR CONSTRUCTION

# ZONING
# FAIRGROVE TOWNSHIP
## TUSCOLA COUNTY, MICHIGAN




| OWNER | PIN | LEGAL DESCRIPTION | TOTAL PARCEL ACREAGE | TOTAL ACREAGE WITHIN PROJECT BOUNDARY |
|---|---|---|---|---|
| Richard L. & Alice M. Starkey | 010-019-000-0600-01 | FRG-19-102 SEC 19 T13N R8E W 1/2 OF NE 1/4 EX COM AT A PT THAT IS S 01 DEG 29' 56 E 2365.57 FT & S 01 DEG 29' 56 E 100.92 FT & S 50 DEG 56' 28 W 266.03 FT & S 88 DEG 53' 17 W 1105.38 FT FROM NE COR OF SEC, TH S 88 DEG 53' 17 W 116.17 FT, TH N 01 DEG 06' 40 W 474.20 FT, TH N 88 DEG 53' 12 E 116.17 FT, TH S 01 DEG 06' 40 E 474.20 FT TO POB. 78.07 A. PA 116. SPLIT ON 01/01/2014 INTO 010-019-000-0600-01; 010-019-000-0100-02; | 77.43 | 26.40 |
| Tuscola Bay Wind II LLC | 010-019-000-0100-02 | FRG-19-101 SEC 19 T13N R8E COM AT A PT THAT IS S 01 DEG 29' 56 E 2365.57 FT FROM NE COR OF SEC, TH S 01 DEG 29' 56 E 100.92 FT, TH S 50 DEG 56' 28 W 266.03 FT, TH S 88 DEG 53' 17 W 1221.55 FT, TH N 01 DEG 06' 40 W 474.20 FT, TH N 88 DEG 53' 12 E 250 FT, TH S 01 DEG 06' 40 E 394.21 FT, TH N 88 DEG 53' 17 E 944.05 FT, TH N 50 DEG 56' 28 E 300.05 FT TO POB. 5 A. SPLIT ON 01/01/2014 FROM 010-019-000-0100-00; 010-019-000-0600-00; | 5.65 | 5.65 |

**LEGEND**

- Agricultural
- Business
- Residential
- Manufacturing

The entirety of Fairgrove Township is subject to the Wind Energy Overlay District, described further in Section 410 of the Zoning Ordinance.

*ALL PARCELS WITHIN PROJECT AREA ARE ZONED AGRICULTURE (AG)

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TUSCOLA II ENERGY STORAGE, LLC

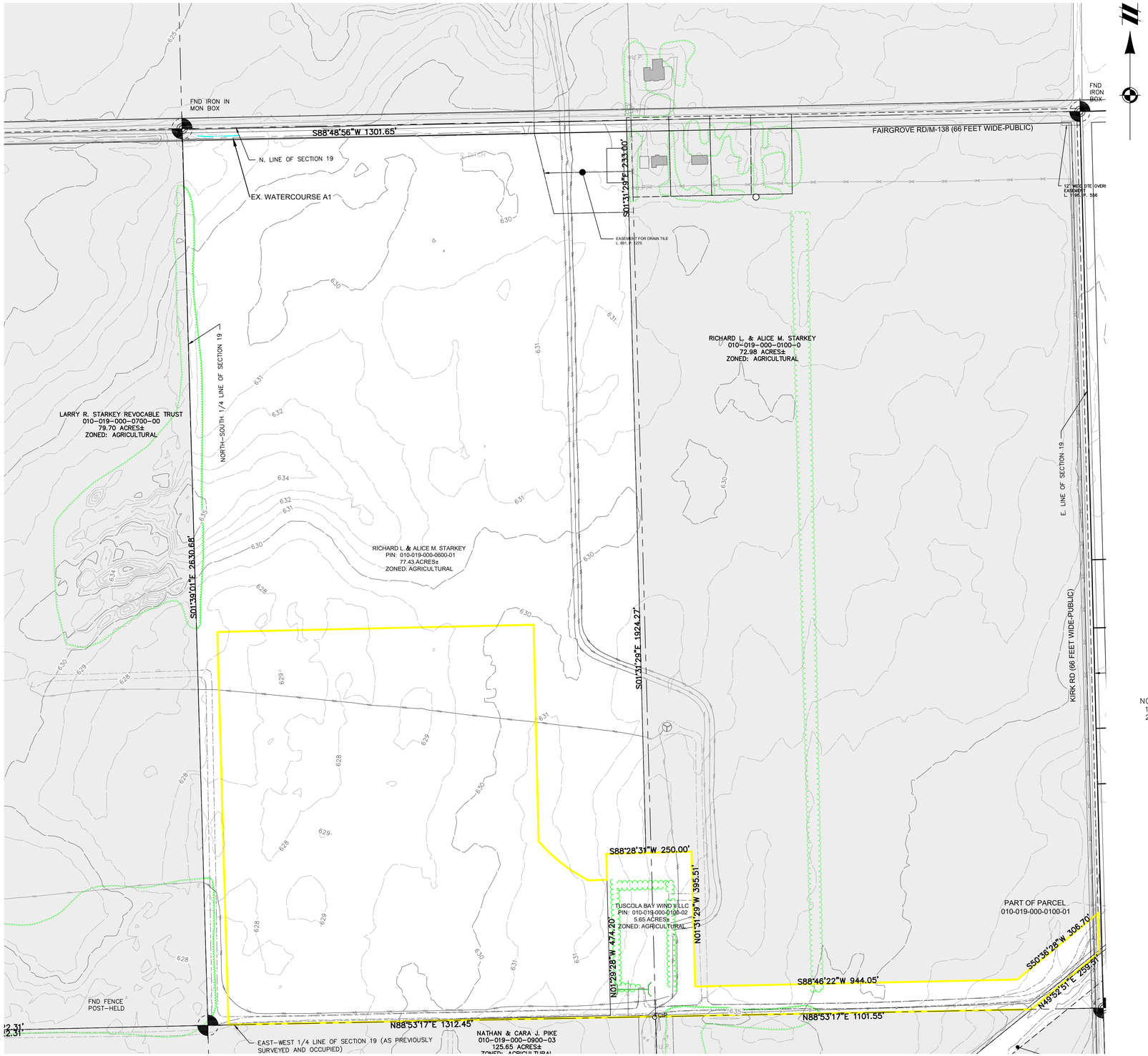
TUSCOLA II ENERGY STORAGE PROJECT
SPECIAL LAND USE PERMIT – SITE PLANS
FAIRGROVE TOWNSHIP ZONING MAP & LAND OWNER TABLE

DATE 07/01/2025
REV 08/20/2025

REVISIONS

DR. MB CH. BS
P.M. BS
BOOK --
JOB 24005306
SHEET NO. 02

CAD FILE: 24005306-00-CV.DWG




NOTES:
1. THE PROJECT SITE DOES NOT CONTAIN ANY WATERWAYS.
2. THE PROJECT SITE DOES NOT CONTAIN ANY EXISTING SLOPES THAT ARE GREATER THAN 10 PERCENT.

## LEGEND

- PROJECT BOUNDARY
- EX. WATERCOURSE
- EX. CULVERT
- EX. VEGETATION LINE
- EX. STRUCTURE/RESIDENCE
- EX. UNDERGROUND COLLECTION LINE
- EX. UNDERGROUND TELEPHONE LINE
- EX. GRAVEL ROAD
- EX. ELECTRIC UNDERGROUND
- EX. ELECTRIC OVERHEAD
- EX. EASEMENT
- SECTION BOUNDARY
- EX. ROAD CENTERLINE
- EX. ROAD ROW
- EX. MAJOR CONTOUR (652)
- EX. MINOR CONTOUR (700)
- EX. TURBINE
- NON-PARTICIPATING PARCELS

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TUSCOLA II ENERGY STORAGE PROJECT
SPECIAL LAND USE PERMIT – SITE PLANS

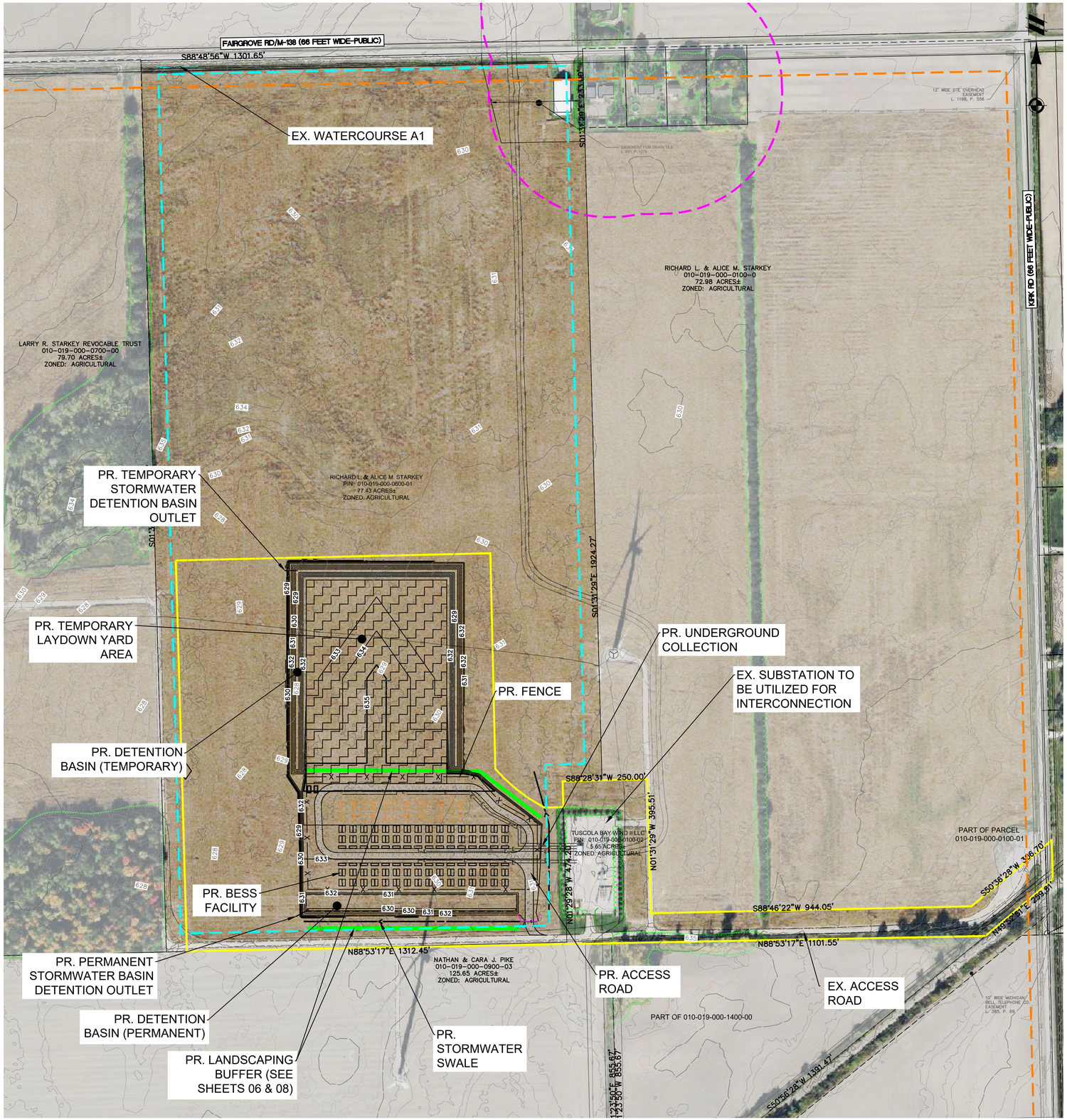
EXISTING CONDITIONS

DATE 07/01/2025
REV 08/20/2025

REVISIONS

SCALE 0 90 180
1" = 180 FEET

| | |
|---|---|
| DR. MB | CH. BS |
| P.M. BS | |
| BOOK -- | |
| JOB 24005306 | |
| SHEET NO. 03 | |




NOTES:

1. NO LIGHTING IS PROPOSED FOR THE PROJECT AS THE PROJECT WILL BE UTILIZING THE EXISTING SUBSTATION.
2. THIS DESIGN PRESERVES THE EXISTING TOPOGRAPHY AND VEGETATION TO THE GREATEST EXTENT POSSIBLE AND LIMITS THE DESTRUCTION OF NATURAL FEATURES.
3. THE PROJECT IS DESIGNED AND WILL BE CONSTRUCTED IN ACCORDANCE WITH THE NFPA (NATIONAL FIRE PROTECTION ASSOCIATION) 855 STANDARD AND THE MINIMUM REQUIREMENTS FOR MITIGATING THE HAZARDS ASSOCIATED WITH STATIONARY ENERGY STORAGE SYSTEMS.
4. THE PROJECT SYSTEM AND COMPONENTS WILL BE APPROVED AND LISTED BY AN UL (UNDERWRITERS LABORATORIES) 9540 NATIONALLY RECOGNIZED TESTING LABORATORY PRIOR TO OPERATION. THE PROJECT COMPLIES WITH THE ELECTRICAL SAFETY, THERMAL SAFETY, MECHANICAL SAFETY, FIRE SAFETY, SYSTEM PERFORMANCE, SYSTEM RELIABILITY, AND SYSTEM DOCUMENTATION REQUIREMENTS TO BE LISTED BY UL 9540.
5. SUBCOMPONENTS WILL MEET THE APPLICABLE STANDARDS UNDER UL 1973 (STANDARD FOR BATTERIES FOR USE IN STATIONARY, VEHICLE AUXILLARY POWER AND LIGHT ELECTRIC RAIL APPLICATIONS).
6. SUBCOMPONENTS WILL MEET THE APPLICABLE STANDARDS UNDER UL 1642 (STANDARD FOR LITHIUM BATTERIES).
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9. PEDESTRIAN WALKWAYS SHALL BE PROVIDED AS DEEMED NECESSARY BY THE PLANNING COMMISSION FOR SEPARATING PEDESTRIAN AND VEHICULAR TRAFFIC.
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## LEGEND

- PROJECT BOUNDARY
- EX. WATERCOURSE
- EX. CULVERT
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- EX. STRUCTURE/RESIDENCE
- EX. UNDERGROUND COLLECTION LINE
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- 700 EX. MINOR CONTOUR
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- PR. CULVERT
- PR. ACCESS ROAD GRAVEL
- PR. FENCE
- PR. LANDSCAPING BUFFER
- 700 PR. CONTOUR
- NON-PARTICIPATING PARCELS
- AUGMENTATION BESS UNITS
- INITIAL BESS UNITS
- PR. UNDERGROUND COLLECTION
- PR. TEMPORARY LAYDOWN YARD AREA
- PR. SWALE

SYSTEM SPECIFICATIONS

| | |
|---|---|
| SYSTEM AC RATING AT POI (MW) | 100.00 |
| STORAGE DURATION (HOURS) | 4 |
| SYSTEM STORED CAPACITY (MWh) | 400.00 |
| INVERTER RATING (MVA) | 3.125 |
| QUANTITY OF INVERTERS | 32 |
| TRANSFORMER RATING (MVA) | 3.125 |
| QUANTITY OF TRANSFORMERS | 32 |
| BATTERY ENCLOSURES | 128 |
| BATTERY ENCLOSURE CAPACITY (MWh) | 3.125 |
| BATTERY AUGMENTATION BLOCKS | 48 |
| AUGMENTATION INVERTER QUANTITY | 12 |
| INTERCONNECTION VOLTAGE (KV) | 138 |
| GEN-TIE LINE LENGTH (MILES) | 0.04 |
| PROJECT AREA (ACRES) | 32.05 |
| FENCED AREA (ACRES) | 4.84 |
| FENCING LENGTH (L.F.) | 1933 |
| ROADS (L.F.) | 1758 |

| BESS PERIMETER FENCING SETBACK TABLE | |
|---|---|
| 50' PUBLIC ROW SETBACK | |
| 300' NON-PARTICIPATING DWELLING OR COMMUNITY BUILDINGS SETBACK | |
| 50' NON-PARTICIPATING PARCEL SETBACK | |

SETBACK NOTES:

1. THE PROJECT MEETS OR EXCEEDS ALL TOWNSHIP REQUIRED SETBACKS PER SECTION 7.28, SUBSECTION 7 SETBACKS APPROVED ON DECEMBER 2, 2024.

PRELIMINARY PLANS - NOT FOR CONSTRUCTION

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TUSCOLA II ENERGY STORAGE PROJECT
SPECIAL LAND USE PERMIT – SITE PLANS
PROPOSED CONDITIONS – OVERALL

DATE 07/01/2025
REV 08/20/2025

REVISIONS

SCALE 0 50 100
1" = 100 FEET
DR. MB CH. BS
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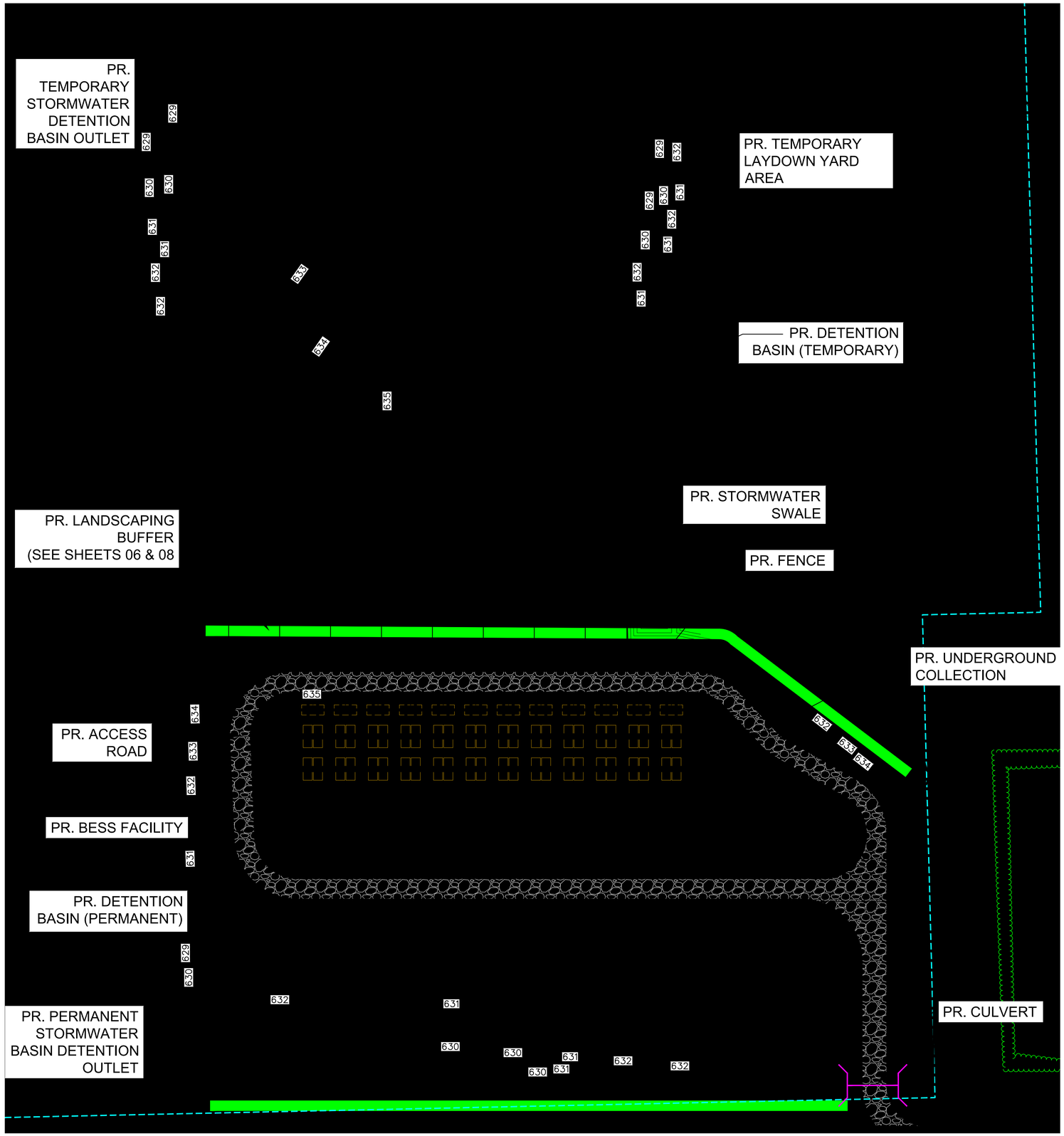
SHEET NO. 04

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SPECIAL LAND USE PERMIT - SITE PLANS
PROPOSED LAYOUT

DATE 07/01/2025
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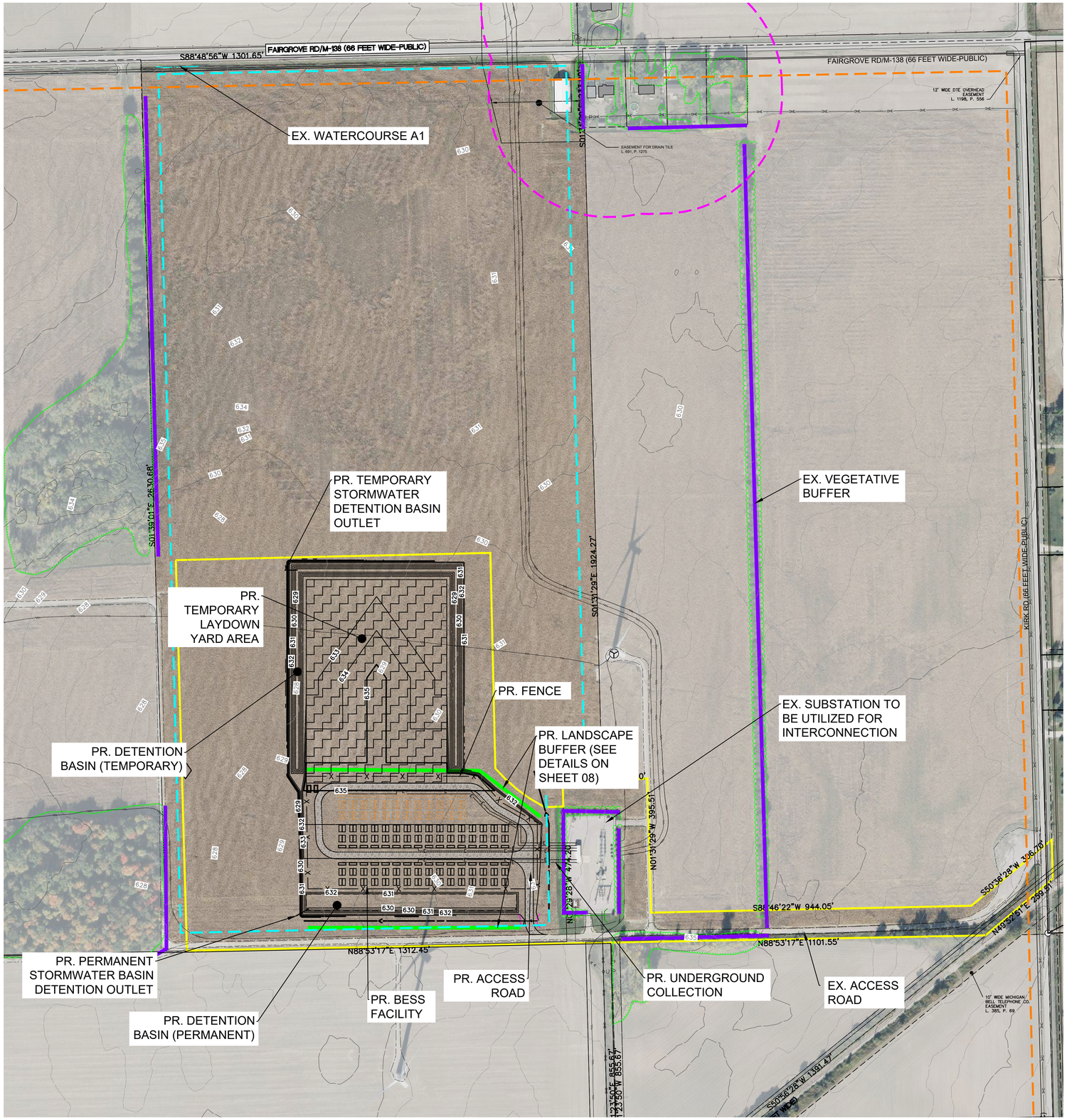
REVISIONS

SCALE 0 25 50
1" = 50 FEET

| | |
|---|---|
| DR. MB | CH. BS |
| P.M. BS | |
| BOOK -- | |
| JOB 24005306 | |
| SHEET NO. 05 | |

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| 50' NON-PARTICIPATING PARCEL SETBACK | |

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NOTES:
1. LANDSCAPE BUFFER TO BE PLACED ON THE OUTSIDE OF THE PERIMETER FENCING OF THE BESS FACILITY WHERE THERE IS POTENTIAL VIEWSHED FROM A PUBLIC USE OR NON-PARTICIPATING RESIDENTIAL STRUCTURE.
2. A DETAILED MAINTENANCE PLAN IS PROVIDED ON SHEET 08.
3. PLANTS OR GRASSES NOT PART OF THE REQUIRED LANDSCAPING BUFFER WILL NOT EXCEED 12 INCHES IN HEIGHT UNLESS APPROVED BY THE PLANNING COMMISSION.
4. THE PROJECT DOES NOT ANTICIPATE ANY VEGETATION CLEARING.
5. LANDSCAPE BUFFER IS NOT PROPOSED FOR THE TEMPORARY LAYDOWN YARD AREA.
6. LANDSCAPE BUFFER SHALL CONTAIN A MIX OF NATIVE DECIDUOUS AND EVERGREEN PLANT MATERIAL AT LEAST FIVE (5) FEET IN HEIGHT AT INSTALLATION.

## LEGEND

- PROJECT BOUNDARY
- EX. WATERCOURSE
- EX. CULVERT
- EX. VEGETATION LINE
- EX. STRUCTURE/RESIDENCE
- EX. UNDERGROUND COLLECTION LINE
- EX. UNDERGROUND TELEPHONE LINE
- EX. GRAVEL ROAD
- EX. ELECTRIC UNDERGROUND
- EX. ELEC-OH
- EX. EASEMENT
- SECTION BOUNDARY
- EX. ROAD CENTERLINE
- EX. ROAD ROW
- 652 EX. MAJOR CONTOUR
- 700 EX. MINOR CONTOUR
- EX. TURBINE
- PR. CULVERT
- PR. ACCESS ROAD GRAVEL
- PR. FENCE
- PR. LANDSCAPING BUFFER
- EX. VEGETATIVE BUFFER
- 700 PR. CONTOUR
- NON-PARTICIPATING PARCELS
- AUGMENTATION BESS UNITS
- INITIAL BESS UNITS
- PR. UNDERGROUND COLLECTION
- PR. TEMPORARY LAYDOWN YARD AREA
- PR. SWALE

STATE OF MICHIGAN JUSTIN CRABLE LANDSCAPE ARCHITECT NO. 01580 PROFESSIONAL LANDSCAPE ARCHITECT
08/21/2025
Exp: 10/06/2026

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

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SECTION: 19
TOWN, RANGE: T13N, R08E
FAIRGROVE TOWNSHIP
TUSCOLA COUNTY, MICHIGAN

CLIENT
TUSCOLA II ENERGY STORAGE, LLC

TUSCOLA II ENERGY STORAGE PROJECT
SPECIAL LAND USE PERMIT – SITE PLANS

LANDSCAPING PLAN

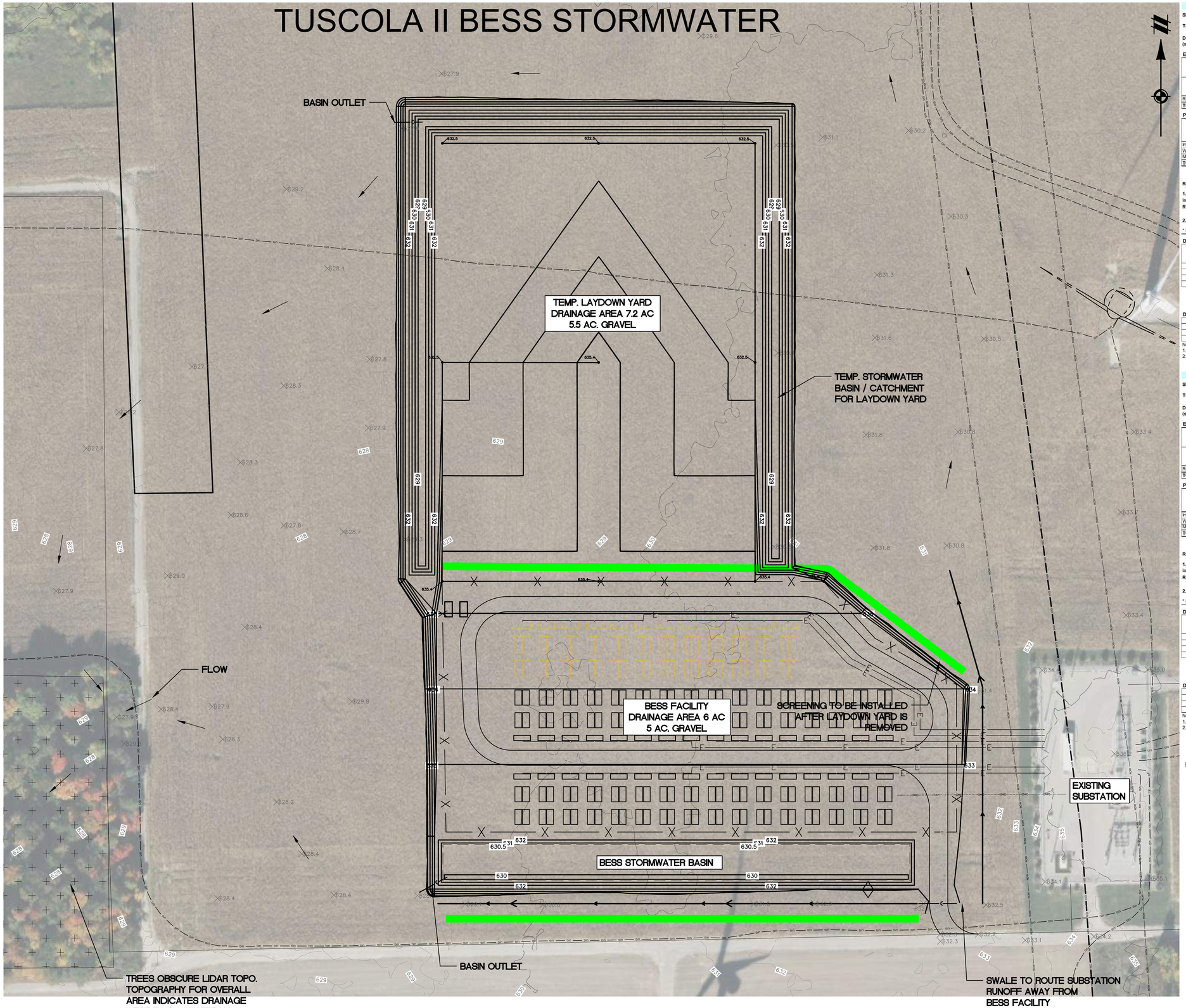
DATE 07/01/2025
REV 08/20/2025

REVISIONS

SCALE 0 50 100
1" = 100 FEET
DR. MB CH. BS
P.M. BS
BOOK --
JOB 24005306
SHEET NO. 06

PRELIMINARY PLANS - NOT FOR CONSTRUCTION

# TUSCOLA II BESS STORMWATER




## Calculations for Storm Water Runoff Volume Control

**SITE NAME:** Laydown Stormwater Basin

**Total Drainage Area:** 7.2 acres

**Design Rainfall Event:** 5.83 in
**(see Rainfall Tab or Section 2.0 for aid in using ATLAS 14 for determining local or site specific rainfall events)**

**Existing Conditions**

| Land Cover Type | Soil Type | Area (sf) | Area (ac) | CN (from TR-55) | S | Q Runoff[1] (in) | Runoff Volume[2] ($ft^3$) |
|---|---|---|---|---|---|---|---|
| | | | | | $\frac{1000}{CN} - 10$ | $\frac{(P-0.2S)^2}{(P+0.8S)}$ | $Q \times 1/12 \times A$ |
| Row Crops | D | 313,632 | 7.20 | 89 | 1.2 | 4.571 | 119,465 |
| **TOTAL:** | N/A | 313,632 | 7.20 | | | 4.57 | 119,465 |

**Post-Development Conditions**

| Land Cover Type | Soil Type | Area (sf) | Area (ac) | CN* | S | Q Runoff[1] (in) | Runoff Volume[2] ($ft^3$) |
|---|---|---|---|---|---|---|---|
| Impervious (gravel) | N/A | 239,580 | 5.50 | 98 | 0.2 | 5.592 | 111,645 |
| Wetland / Open Water | N/A | 29,500 | 0.68 | 100 | 0.0 | 5.830 | 14,332 |
| Meadow | D | 44,552 | 1.02 | 78 | 2.8 | 3.429 | 12,731 |
| **TOTAL:** | | 313,632 | 7.20 | | | 5.31 | 138,709 |

**Runoff Volume Increase (ft3):** 19,244

**Runoff Volume Increase = (Post-Dev. Runoff Volume) MINUS (Existing Runoff Volume)**

**1. Runoff (in) = Q = (P - Ia)2 / (P- Ia)+S**
Ia =0.2S therefore;
**Runoff (in)** = Q = $(P - 0.2S)^2$ / (P+ 0.8S)

Where: P = 100-Year, 24-Hour Rainfall (in)
S = 1000/ CN - 10
CN = Curve Number
Q = Runoff (in)
Area = Area of specific land cover ($ft^2$)

**2. Runoff Volume ($ft^3$)** = Q x 1/12 x Area

* Runoff Volume must be calculated separately for pervious and impervious areas (without using a weighted CN)

**Detention Basin Volume**

| Elevation | Surface Area (SF) | Depth (FT) | Cumulative Volume (CF) | 100-Year Z100 | | |
|---|---|---|---|---|---|---|
| Zo 629.0 | 16,300 | 0 | 0 | 19,244 | | |
| 630.0 | 29,500 | 1.0 | 22,576 | 629.85 | | |
| 631.0 | 42,800 | 1.0 | 58,520 | | | |
| 632.0 | 56,200 | 1.0 | 107,869 | - | | |

**Design Elevations: 629.85**

Total Basin Volume Provided to EL 632 = = 107,869 cf
Freeboard Provided = Top of Bank - Z100 = 2.15 ft

**Detention Basin Outlet Rate (existing 10-year runoff rate)**

| | | |
|---|---|---|
| A = | 7.2 | ac |
| C = | 0.3 | (per MDOT Manual for undeveloped, poor soils) |
| I10 = | 1.99 | in/hr (per NOAA & Tc) |
| Q10 = | 4.30 | cfs (max basin outlet rate) |

Notes:
1. Outlet rate from detention basin may not exceed 10-year existing runoff flow rate
2. Tuscola County has no published stormwater standards. Use EGLE / MDOT for guidelines

## Calculations for Storm Water Runoff Volume Control

**SITE NAME:** BESS Detention Basin

**Total Drainage Area:** 6 acres

**Design Rainfall Event:** 5.83 in
**(see Rainfall Tab or Section 2.0 for aid in using ATLAS 14 for determining local or site specific rainfall events)**

**Existing Conditions**

| Land Cover Type | Soil Type | Area (sf) | Area (ac) | CN (from TR-55) | S | Q Runoff[1] (in) | Runoff Volume[2] ($ft^3$) |
|---|---|---|---|---|---|---|---|
| | | | | | $\frac{1000}{CN} - 10$ | $\frac{(P-0.2S)^2}{(P+0.8S)}$ | $Q \times 1/12 \times A$ |
| Row Crops | D | 261,360 | 6.00 | 89 | 1.2 | 4.571 | 99,554 |
| **TOTAL:** | N/A | 261,360 | 6.00 | | | 4.57 | 99,554 |

**Post-Development Conditions**

| Land Cover Type | Soil Type | Area (sf) | Area (ac) | CN* | S | Q Runoff[1] (in) | Runoff Volume[2] ($ft^3$) |
|---|---|---|---|---|---|---|---|
| Impervious (gravel) | N/A | 217,800 | 5.00 | 98 | 0.2 | 5.592 | 101,496 |
| Wetland / Open Water | N/A | 29,600 | 0.68 | 100 | 0.0 | 5.830 | 14,381 |
| Meadow | D | 13,960 | 0.32 | 78 | 2.8 | 3.429 | 3,989 |
| **TOTAL:** | | 261,360 | 6.00 | | | 5.50 | 119,866 |

**Runoff Volume Increase (ft3):** 20,312

**Runoff Volume Increase = (Post-Dev. Runoff Volume) MINUS (Existing Runoff Volume)**

**1. Runoff (in) = Q = (P - Ia)2 / (P- Ia)+S**
Ia =0.2S therefore;
**Runoff (in)** = Q = $(P - 0.2S)^2$ / (P+ 0.8S)

Where: P = 100-Year, 24-Hour Rainfall (in)
S = 1000/ CN - 10
CN = Curve Number
Q = Runoff (in)
Area = Area of specific land cover ($ft^2$)

**2. Runoff Volume ($ft^3$)** = Q x 1/12 x Area

* Runoff Volume must be calculated separately for pervious and impervious areas (without using a weighted CN)

**Detention Basin Volume**

| Elevation | Surface Area (SF) | Depth (FT) | Cumulative Volume (CF) | 100-Year Z100 | | |
|---|---|---|---|---|---|---|
| Zo 630.0 | 3,600 | 0 | 0 | 20,312 | | |
| 630.5 | 29,600 | 0.5 | 7,254 | - | | |
| 631.0 | 32,300 | 0.5 | 22,724 | 630.92 | | |
| 632.0 | 37,800 | 1.0 | 57,738 | | | |

**Design Elevations: 630.95**

Total Basin Volume Provided to EL 632 = = 57,738 cf
Freeboard Provided = Top of Bank - Z100 = 1.05 ft

**Detention Basin Outlet Rate (existing 10-year runoff rate)**

| | | |
|---|---|---|
| A = | 6 | ac |
| C = | 0.3 | (per MDOT Manual for undeveloped, poor soils) |
| I10 = | 1.99 | in/hr (per NOAA & Tc) |
| Q10 = | 3.58 | cfs (max basin outlet rate) |

Notes:
1. Outlet rate from detention basin may not exceed 10-year existing runoff flow rate
2. Tuscola County has no published stormwater standards. Use EGLE / MDOT for guidelines

NOTES:
1. TUSCOLA COUNTY HAS NO PUBLISHED STORMWATER DESIGN GUIDELINES. THIS STORMWATER DESIGN CONCEPT IS BASED ON THE STATE OF MICHIGAN - EGLE - STORMWATER RUNOFF VOLUME CONTROL DESIGN TOOL, USING A COMPARISON OF EXISTING (CROPLAND) AND PROPOSED (GRAVEL) LAND COVER FOR THE FENCED AREA.
2. CONCEPT GRADES USE THE FOLLOWING PARAMETERS:
   - 2.1. BASIN SIDE SLOPES OF 1V-4H
   - 2.2. 1 PERCENT SLOPE FOR BESS FACILITY TOWARDS BASIN
   - 2.3. BASIN OUTLET DISCHARGE TO EX. GRADE (APPROX. EL. 628)
3. EXISTING SOILS ARE CLASSIFIED AS TAPPAN (HSG D/B)
4. RAINFALL DATA PER NOAA ATLAS 14 ONLINE TOOL.
5. Tc ESTIMATED AT 48 MIN. USING EGLE METHODOLOGY.
6. TOPOGRAPHY PER LIDAR - SURVEY RECOMMENDED TO CONFIRM GRADES FOR FINAL DESIGN

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SPECIAL LAND USE PERMIT – SITE PLANS
STORMWATER PLAN

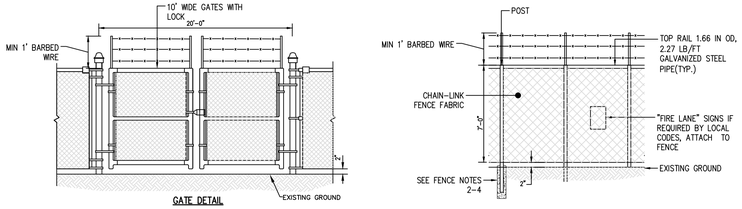
DATE 07/01/2025
REV 08/20/2025

REVISIONS

SCALE 0 30 60
1" = 60 FEET

| | |
|---|---|
| DR. MB | CH. BS |
| P.M. BS | |
| BOOK -- | |
| JOB 24005306 | |
| SHEET NO. 07 | |

CAD FILE: 24005306WS-05 STORMWATER REVDWG

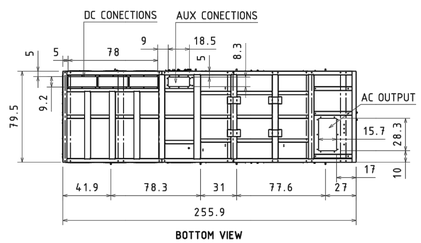



SECURITY FENCE DETAIL

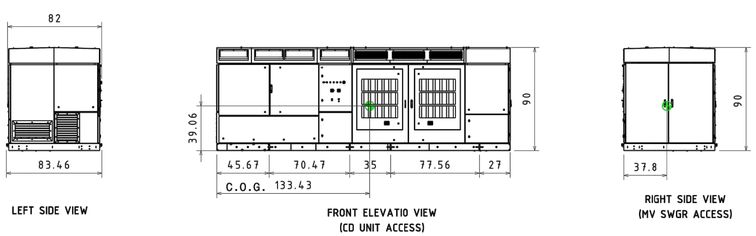
NO SCALE

FENCE NOTES:

1. FENCE INSTALLATION AND MATERIALS SHALL BE PER CURRENT MDOT SPECIFICATIONS AND STANDARD PLAN R-98-B "CHAIN LINK FENCE (USING TENSION WIRE)", EXCEPT AS MODIFIED / CLARIFIED BY THE NOTES BELOW.
2. CORNER, END AND PULL POSTS SHALL HAVE CONCRETE FOOTINGS (COMPRESSIVE STRENGTH 2,500 PSI MIN.), 18" DIAMETER AND 36" MIN. DEPTH.
3. TYPICAL LINE POSTS MAY BE DIRECT-DRIVEN PER FENCE CONTRACTOR RECOMMENDATION (MINIMUM EMBEDMENT DEPTH T.B.D.), OR HAVE CONCRETE FOOTINGS (9" DIA., 36" MIN. DEPTH).
4. SLOPE TOP OF CONCRETE FENCE FOOTINGS TO SHED WATER AWAY FROM POST.
5. LINE POSTS SHALL BE CIRCULAR PIPE SECTION, 2" NOMINAL (2.375" ACTUAL) O.D.




BOTTOM VIEW



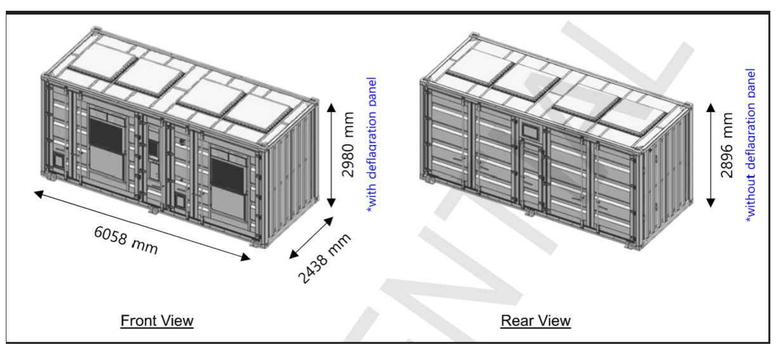

LEFT SIDE VIEW

FRONT ELEVATIO VIEW (CD UNIT ACCESS)

RIGHT SIDE VIEW (MV SWGR ACCESS)

CONCEPTUAL INVERTER STATION DETAIL

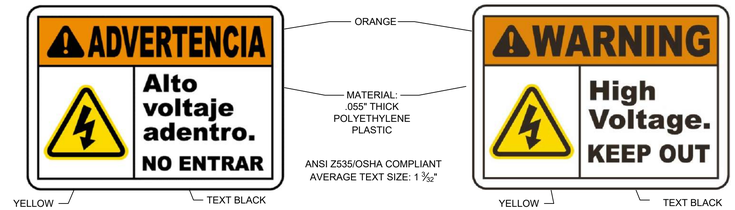
NO SCALE




CONCEPTUAL BESS CONTAINER DETAIL

NO SCALE

## SIGNAGE DETAILS




WARNING SIGNS

NO SCALE

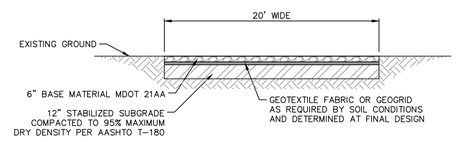
WARNING:
HAZARDOUS VOLTAGE
AUTHORIZED ACCESS
ONLY

NOTES:

1. TOP OF SIGN TEXT 125 mm (5") MIN CLEAR SPACE FROM GATE OR DOOR JAMB (STRIKE SIDE).
2. PROVIDE A BLANK PANEL FOR BACK SIDE.
3. CONTRAST BETWEEN CHARACTER, SYMBOLS AND THEIR BACKGROUND SHALL BE 70% MINIMUM AND HAVE A NON-GLARE FINISH.
4. CHARACTERS SHALL HAVE A WIDTH-TO-HEIGHT RATIO OF BETWEEN 3:5 AND 1:1 AND A STROKE WIDTH-TO-HEIGHT RATIO OF BETWEEN 1:5 AND 1:10.
5. SIGN SHALL BE 1 mm (0.04") THK (MIN) ALUMINUM SHEET.
6. RAISED UPPERCASE LETTER 1 mm (5/32") TALL, MIN.
7. FOR PCS TRANSFORMER MV COMPARTMENT.

AUTHORIZED PERSONNEL SIGNAGE

NO SCALE

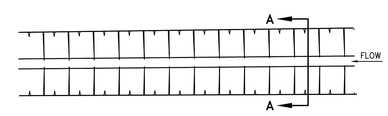



20' WIDE ACCESS PATHWAY

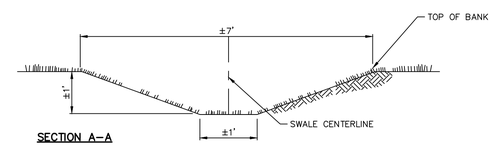
NO SCALE

## GENERAL NOTES

1. BESS SOURCE: NEXTERA 2024. THIS PLAN IS FOR PERMITTING PURPOSES AND THE FINAL PLAN WILL BE SUBMITTED PRIOR TO CONSTRUCTION.
2. THE PERIMETER OF THE BESS FACILITY WILL BE COMPLETELY ENCLOSED BY PERIMETER FENCING.
3. EXISTING DRAINAGE PATTERNS WILL GENERALLY BE MAINTAINED TO FOLLOW EXISTING CONDITIONS. THE SITE WILL BE GRADED IN ACCORDANCE WITH THE GRADING PLAN.
4. DURING CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED IN ACCORDANCE WITH PERMITTING REQUIREMENTS OF THE AGENCY HAVING JURISDICTION.




PLAN VIEW




SECTION A-A

SWALE DETAIL

NO SCALE

NOTE: ALL DETAILS REPRESENTED ON THIS PLAN SHEET ARE CONCEPTUAL IN NATURE, PROVIDED ONLY TO INDICATE A GENERAL OVERVIEW OF PROPOSED PROJECT FACILITIES, AND ARE EXPECTED TO BE MODIFIED AND REFINED DURING THE ENGINEERING PHASE OF THE PROJECT. FINAL PROJECT FACILITY DETAILS WILL BE SUBJECT TO REVIEW AND APPROVAL BY THE AGENCIES HAVING JURISDICTION.

PRELIMINARY PLANS - NOT FOR CONSTRUCTION

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GENERAL DETAILS

DATE 07/01/2025

REV 08/20/2025

REVISIONS

| | |
|---|---|
| DR. MB | CH. BS |
| P.M. BS | |
| BOOK -- | |
| JOB 24005306 | |
| SHEET NO. 08 | |

## SEEDING SPECIFICATION

GENERAL
SEEDING CAN BE USED FOR TEMPORARY OR PERMANENT STABILIZATION. DISTURBED AREAS OF THE SITE WHERE CONSTRUCTION ACTIVITY HAS CEASED FOR MORE THAN 14 DAYS SHALL BE TEMPORARILY SEEDED AND WATERED. AREAS WHERE FINAL GRADING HAS BEEN COMPLETED SHALL BE TEMPORARILY AND/OR PERMANENTLY SEEDED IMMEDIATELY FOLLOWING THE CONCLUSION OF GRADING ACTIVITIES (WEATHER PERMITTING) AND MUST BE COMPLETED WITHIN FIVE (5) DAYS. TEMPORARY AND PERMANENT SEED MIXTURES ARE SPECIFIED BELOW. TEMPORARY SEED MIX SHALL ALSO BE APPLIED DURING THE APPLICATION OF THE PERMANENT SEED MIX TO ENSURE TIMELY VEGETATIVE COVER OF EXPOSED AREAS.

IMMEDIATELY AFTER SEEDING, MULCH ALL SEEDED AREAS WITH UNWEATHERED SMALL GRAIN STRAW OR HAY UNIFORMLY AT THE RATE OF 1-1/2 TONS TO 2 TONS PER ACRE OR 100 POUNDS PER 1000 SQUARE FEET. ANCHOR MULCH WITH DISC-TYPE ANCHORING TOOL OR OTHER MEANS APPROVED BY THE LOCAL REGULATORY AGENCY.

SEEDING MIXTURES
SEE SEED MIXES IN TEMPORARY & PERMANENT SEED CHARTS.

SLOPES FLATTER THAN 3:1 (NOT INCLUDING BASINS)
APPLY 17-17-17 COMMERCIAL ORGANIC FERTILIZER AT A RATE OF 20 LBS PER 1000 SQ/FT. SEED IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:

| TEMPORARY SEEDINGPLANTING DATES | SEED VARIETY | APPLICATION RATE |
|---|---|---|
| IMMEDIATELY FOLLOWING LAST DISTURBANCE OR WITHIN 14 DAYS | (SEE CHART BELOW) | 60 LBS PER ACRE |

| PERMANENT SEEDING PLANTING DATES | SEED VARIETY | APPLICATION RATE |
|---|---|---|
| PREFERABLE EARLY SPRING OR EARLY FALL | (SEE CHART BELOW) | 80 LBS PER ACRE |

SLOPES 3:1 OR GREATER (NOT INCLUDING BASINS)
APPLY 17-17-17 COMMERCIAL ORGANIC FERTILIZER AT A RATE OF 20 LBS PER 1000 SQ/FT.
AND SEED IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:

| TEMPORARY SEEDING PLANTING DATES | SEED VARIETY | APPLICATION RATE |
|---|---|---|
| IMMEDIATELY FOLLOWING LAST DISTURBANCE OR WITHIN 5 DAYS | (SEE CHART BELOW) | 60 LBS PER ACRE |

| PERMANENT SEEDING PLANTING DATES | SEED VARIETY | APPLICATION RATE |
|---|---|---|
| PREFERABLE EARLY SPRING OR EARLY FALL | (SEE CHART BELOW) | 80 LBS PER ACRE |

### TEMPORARY SEED
SEED: 60 LBS PER ACRE
MIX:
- 40% SEED OATS
- 25% KENTUCKY 31 TALL FESCUE
- 22% CREEPING RED FESCUE
- 11% TIMOTHY
- 1.0% INERT MATTER
- 1.0% OTHER CROP
- 0.01% WEED SEED

### PERMANENT SEED
SEED 80 LBS PER ACRE
MIX:
- 70% TRUE BLUE KENTUCKY (BROOKLAWN, BOUTIQUE, GROME, AND H92-203 KENTUCKY BLUEGRASS)
- 30% PERENNIAL RYE GRASS (MANHATTAN 4, CHARGER, CITATION 4, AND PIZZAZZ PERENNIAL RYE GRASS)

SEED BED PREPARATION (PERMANENT SEEDING)
WEED CONTROL MEASURES SHALL BE TAKEN THE SEASON PRIOR TO PERMANENT PLANTING. SURFACE WATER CONTROL MEASURES SHALL BE IN PLACE. THE PLANTING AREA MUST BE WEED-FREE FOR SUCCESSFUL VEGETATIVE ESTABLISHMENT. AREA TO BE SEEDED SHALL BE RIPPED AND SPREAD WITH AVAILABLE TOPSOIL. TOTAL SEEDBED PREPARED DEPTH SHOULD BE AT LEAST 4 INCHES. LOOSE ROCKS, ROOTS AND OTHER OBSTRUCTIONS NEED TO BE REMOVED FROM THE SURFACE SO THAT THEY WILL NOT INTERFERE WITH THE ESTABLISHMENT AND MAINTENANCE OF VEGETATION. SURFACE FOR FINAL SEEDBED PREPARATION SHOULD BE AT FINISH GRADE AND BE REASONABLY SMOOTH AND UNIFORM.

TOPSOIL IN THE AREA TO BE SEEDED SHALL BE TESTED FOR PH, MAGNESIUM (MG), POTASSIUM (K), AND PHOSPHOROUS (P) PRIOR TO PERMANENT PLANTING. APPLY FERTILIZER AND LIME ACCORDING TO SOIL TEST REPORT. FERTILIZER AND LIME SHALL BE APPLIED UNIFORMLY AND MIXED WITH THE SOIL DURING SEEDBED PREPARATION. WEIGHTS, SEED SPECIES AND PERCENTAGE OF PURITY AND GERMINATION MUST BE CHECKED PRIOR TO SEEDING.

SEEDING SHALL BE ACCOMPLISHED IN TWO DIRECTIONS AND AT RIGHT ANGLES TO EACH OTHER. LAWN AREAS SHALL BE SEEDED AT THE RATE INDICATED ABOVE BY SOWING EVENLY WITH AN APPROVED SEEDER TO COVER THE SEED AND FORM THE SEEDBED IN ONE OPERATION. IF BROADCAST SEEDER IS USED THE SEEDING RATE SHALL BE TWO (2) TIMES THE DRILL RATE. IN INACCESSIBLE AREAS, THE SEED SHALL BE LIGHTLY RAKED WITH FLEXIBLE RAKES AND ROLLED WITH A WATER BALLAST ROLLER. AFTER ROLLING SEEDED AREAS ARE TO BE MULCHED ACCORDING TO SPECIFICATION. IF HYDRO-SEED OPERATION IS USED, SEEDING RATE SHALL BE FIVE (5) TIMES THE DRILL RATE INDICATED ON THE DRAWINGS.

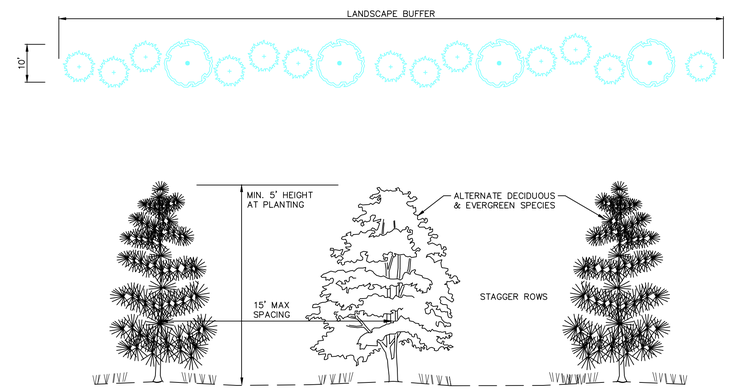
IF SEEDING CAN NOT BE ACCOMPLISHED DUE TO SEASONAL CONSTRAINTS, APPLY STRAW MULCH AND TACKIFIER TO ALL SLOPES AND DISTURBED AREAS UNTIL PERMANENT SEEDING IS ALLOWED. IN THE EVENT SEEDING OCCURS OUT OF SEASON, MAINTENANCE SHALL OCCUR AND CONTINUE INTO THE FOLLOWING GROWING SEASON OR UNTIL A UNIFORM STAND OF THE SPECIFIED PERMANENT GRASSES HAVE BEEN ESTABLISHED AND THE SITE HAS REACHED STABILIZATION. THE POLLINATOR HABITAT SEED MIX WILL TAKE APPROXIMATELY THREE YEARS TO ESTABLISH. THE PERMANENT AND TEMPORARY SEEDING SHALL BE ACCOMPLISHED THROUGHOUT THE CONSTRUCTION PROCESS.

INSPECTION
INSPECT SEEDED AREAS FREQUENTLY. IF SEEDED AREAS FAIL TO GERMINATE, OR TO PROVIDE ADEQUATE GROUND COVERAGE, THE AREA SHALL BE RE-SEEDED UNTIL FINAL STABILIZATION IS ACHIEVED.

## PLANTING SCHEDULE:

| DECIDUOUS TREES | EVERGREEN TREES |
|---|---|
| *ACER SACCHARUM* / SUGAR MAPLE | *ABIES BALSAMEA* / BALSAM FIR |
| *QUERCUS ALBA* / WHITE OAK | *ABIES CONCOLOR* / WHITE FIR |
| *QUERCUS MACROCARPA* / BUR OAK | *PICEA GLAUCA* / WHITE SPRUCE |
| *QUERCUS RUBRA* / RED OAK | *PINUS RESINOSA* / RED PINE |
| *TILIA AMERICANA* / AMERICAN LINDEN | *PINUS STROBUS* / WHITE PINE |

NOTE: THE PLANT SPECIES LISTED ARE REPRESENTATIVE OF THOSE TO BE INSTALLED. THIS LIST IS NOT CONSIDERED TO BE ALL INCLUSIVE DUE TO AVAILABILITY AT THE TIME OF INSTALLATION, AND SIMILAR SUBSTITUTE SPECIES NATIVE TO MICHIGAN MAY BE NECESSARY




VEGETATIVE BUFFER DETAILS
NO SCALE

1. A MIX OF EVERGREEN TREES, DECIDUOUS TREES IS PROPOSED WITHIN VEGETATIVE SCREENING AREAS FOR THE PROJECT ALONG NON-PARTICIPATING RESIDENTIAL OR PUBLIC USES WHERE ADEQUATE SCREENING DOES NOT EXIST.
2. TREES TO BE STAGGERED IN ROWS WITHIN A 20' VEGETATION BUFFER.
3. A 10' MINIMUM MAINTENANCE BUFFER WILL BE USED BETWEEN THE PROPOSED VEGETATIVE SCREENING AND PERIMETER FENCING.

## VEGETATION MAINTENANCE PLAN:

1. PLANT MATERIAL WILL MEET THE AMERICAN NURSERY STANDARDS.
2. ALL PLANTS WILL BE HEALTHY, VIGOROUS MATERIAL, FREE OF PESTS AND DISEASE.
3. ALL PLANTS WILL BE CONTAINER-GROWN OR BALLED AND BURLAPPED AS INDICATED IN THE PLANT LIST.
4. ALL TREES WILL BE STRAIGHT TRUNKED AND FULL-HEADED AND MEET ALL THE REQUIREMENTS SPECIFIED.
5. ALL TREES WILL BE GUYED OR STAKED AS SHOWN IN THE DETAILS OR WRITTEN SPECIFICATIONS.
6. ANY DEAD PLANT MATERIAL AS PART OF THE PROJECT LANDSCAPE PLAN SHALL BE REPLACED DURING THE NEXT GROWING SEASON.
7. ALL TREES IN LEAF AFTER BEING DUG AT THE NURSERY SOURCE WILL BE ACCLAIMED FOR TWO (2) WEEKS MINIMUM UNDER A MIST SYSTEM PRIOR TO INSTALLATION.
8. PRESERVED TREES WILL BE PROTECTED AND UNDAMAGED DURING CONSTRUCTION.
9. PLANTS OR GRASSES NOT PART OF THE REQUIRED LANDSCAPING BUFFER WILL NOT EXCEED 12 INCHES IN HEIGHT UNLESS APPROVED BY THE PLANNING COMMISSION.

STATE OF MICHIGAN
JUSTIN CRABLE
LANDSCAPE ARCHITECT
NO. 01393
PROFESSIONAL LANDSCAPE ARCHITECT
08/21/2025
Exp: 10/06/2026

NOTE: ALL DETAILS REPRESENTED ON THIS PLAN SHEET ARE CONCEPTUAL IN NATURE, PROVIDED ONLY TO INDICATE A GENERAL OVERVIEW OF PROPOSED PROJECT FACILITIES, AND ARE EXPECTED TO BE MODIFIED AND REFINED DURING THE ENGINEERING PHASE OF THE PROJECT. FINAL PROJECT FACILITY DETAILS WILL BE SUBJECT TO REVIEW AND APPROVAL BY THE AGENCIES HAVING JURISDICTION.

PRELIMINARY PLANS - NOT FOR CONSTRUCTION

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

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

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SECTION: 19
TOWN, RANGE: T13N, R08E
FAIRGROVE TOWNSHIP
TUSCOLA COUNTY, MICHIGAN

CLIENT
TUSCOLA II ENERGY STORAGE, LLC

TUSCOLA II ENERGY STORAGE PROJECT
SPECIAL LAND USE PERMIT - SITE PLANS
GENERAL DETAILS

DATE 07/01/2025
REV 08/20/2025

REVISIONS

| | |
|---|---|
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| P.M. BS | |
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| JOB 24005306 | |
| SHEET NO. 09 | |