



COMMUNITY DEVELOPMENT DEPARTMENT

45175 Ten Mile Road
Novi, MI 48375
(248) 347-0415 Phone
(248) 735-5600 Facsimile
www.cityofnovi.org

ZONING BOARD OF APPEALS STAFF REPORT

FOR: City of Novi Zoning Board of Appeals

ZONING BOARD APPEALS DATE: May 14, 2019

REGARDING: 27175 Energy Way, Parcel # 50-22-13-200-037 (PZ19-0016)

BY: Larry Butler, Deputy Director Community Development

I. GENERAL INFORMATION:

Applicant

ITC Holdings Corp

Variance Type

Dimensional

Property Characteristics

Zoning District:	Office Service Technology
Location:	West of Haggerty Road and South of Twelve Mile Road
Parcel #:	50-22-13-200-037

Request

The applicant is requesting a variance from the Novi Code of Ordinance Section 4.19.1.j to allow for the building of a 2900 square foot accessory structure. No more than two accessory structures are allowed, per lot, for lots over 21,700 square feet. This property is zoned Office Service Technology (OST).

II. STAFF COMMENTS:

Property is 2.5 million square feet.

III. RECOMMENDATION:

The Zoning Board of Appeals may take one of the following actions:

1. I move that we **grant** the variance in Case No. **PZ19-0016**, sought by _____, for _____ because Petitioner has shown practical difficulty requiring _____.
- (a) Without the variance Petitioner will be unreasonably prevented or limited with respect to use of the property because _____.
- (b) The property is unique because _____.
- (c) Petitioner did not create the condition because _____.

(d) The relief granted will not unreasonably interfere with adjacent or surrounding properties because_____.

(e) The relief if consistent with the spirit and intent of the ordinance because _____.

(f) The variance granted is subject to:

1. _____.

2. _____.

3. _____.

4. _____.

2. I move that we deny the variance in Case No. **PZ19-0016**, sought by _____ for _____ because Petitioner has not shown practical difficulty requiring _____.

(a) The circumstances and features of the property including _____ are not unique because they exist generally throughout the City.

(b) The circumstances and features of the property relating to the variance request are self-created because _____.

(c) The failure to grant relief will result in mere inconvenience or inability to attain higher economic or financial return based on Petitioners statements that _____.

(d) The variance would result in interference with the adjacent and surrounding properties by _____.

(e) Granting the variance would be inconsistent with the spirit and intent of the ordinance to _____.

Should you have any further questions with regards to the matter please feel free to contact me at (248) 347-0417.

Larry Butler
Deputy Director Community Development
City of Novi



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ZONING BOARD OF APPEALS APPLICATION

APPLICATION MUST BE FILLED OUT COMPLETELY

Application Fee: _____

Meeting Date: _____

ZBA Case #: PZ _____

I. PROPERTY INFORMATION (Address of subject ZBA Case)			
PROJECT NAME / SUBDIVISION STARLIGHT			
ADDRESS 27175 ENERGY WAY		LOT/SIUTE/SPACE #	
SIDWELL # 50-22- 13 - 200 - 033		May be obtain from Assessing Department (248) 347-0485	
CROSS ROADS OF PROPERTY W 12 MILE RD AND HAGGERTY RD			
IS THE PROPERTY WITHIN A HOMEOWNER'S ASSOCIATION JURISDICTION? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		REQUEST IS FOR: <input type="checkbox"/> RESIDENTIAL <input checked="" type="checkbox"/> COMMERCIAL <input type="checkbox"/> VACANT PROPERTY <input type="checkbox"/> SIGNAGE	
DOES YOUR APPEAL RESULT FROM A NOTICE OF VIOLATION OR CITATION ISSUED? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO			
II. APPLICANT INFORMATION			
A. APPLICANT		EMAIL ADDRESS NBISHOP@ITCTRANSCO.COM	CELL PHONE NO.
NAME NEAL BISHOP		TELEPHONE NO. 989-391-0131	
ORGANIZATION/COMPANY ITC HOLDINGS CORP		FAX NO.	
ADDRESS 27175 ENERGY WAY	CITY NOVI	STATE MI	ZIP CODE 48377
B. PROPERTY OWNER <input type="checkbox"/> CHECK HERE IF APPLICANT IS ALSO THE PROPERTY OWNER			
Identify the person or organization that owns the subject property:		EMAIL ADDRESS	CELL PHONE NO.
NAME		TELEPHONE NO. 248-482-4829	
ORGANIZATION/COMPANY ITC HOLDINGS CORP		FAX NO.	
ADDRESS 27175 ENERGY WAY	CITY NOVI	STATE MI	ZIP CODE 48377
III. ZONING INFORMATION			
A. ZONING DISTRICT			
<input type="checkbox"/> R-A <input type="checkbox"/> R-1 <input type="checkbox"/> R-2 <input type="checkbox"/> R-3 <input type="checkbox"/> R-4 <input type="checkbox"/> RM-1 <input type="checkbox"/> RM-2 <input type="checkbox"/> MH <input type="checkbox"/> I-1 <input type="checkbox"/> I-2 <input type="checkbox"/> RC <input type="checkbox"/> TC <input type="checkbox"/> TC-1 <input checked="" type="checkbox"/> OTHER <u>OST</u>			
B. VARIANCE REQUESTED			
INDICATE ORDINANCE SECTION (S) AND VARIANCE REQUESTED:			
1. Section <u>4.19.1.J</u>	Variance requested	<u>ONE ACCESSORY STRUCURE IN ADDITION TO THE TWO ALLOWED IN ORDINANCE BASED ON LOT SIZE</u>	
2. Section _____	Variance requested	_____	
3. Section _____	Variance requested	_____	
4. Section _____	Variance requested	_____	
IV. FEES AND DRAWINGS			
A. FEES			
<input type="checkbox"/> Single Family Residential (Existing) \$200 <input type="checkbox"/> (With Violation) \$250 <input type="checkbox"/> Single Family Residential (New) \$250 <input checked="" type="checkbox"/> Multiple/Commercial/Industrial \$300 <input type="checkbox"/> (With Violation) \$400 <input type="checkbox"/> Signs \$300 <input type="checkbox"/> (With Violation) \$400 <input type="checkbox"/> House Moves \$300 <input type="checkbox"/> Special Meetings (At discretion of Board) \$600			
B. DRAWINGS 1-COPY & 1 DIGITAL COPY SUBMITTED AS A PDF			
<ul style="list-style-type: none"> • Dimensioned Drawings and Plans • Site/Plot Plan • Existing or proposed buildings or addition on the property • Number & location of all on-site parking, if applicable 		<ul style="list-style-type: none"> • Existing & proposed distance to adjacent property lines • Location of existing & proposed signs, if applicable • Floor plans & elevations • Any other information relevant to the Variance application 	



ZONING BOARD OF APPEALS APPLICATION

V. VARIANCE

A. VARIANCE (S) REQUESTED

DIMENSIONAL USE SIGN

There is a five-(5) hold period before work/action can be taken on variance approvals.

B. SIGN CASES (ONLY)

Your signature on this application indicates that you agree to install a **Mock-Up Sign** ten-(10) days before the schedule ZBA meeting. Failure to install a mock-up sign may result in your case not being heard by the Board, postponed to the next schedule ZBA meeting, or cancelled. A mock-up sign is **NOT** to be actual sign. Upon approval, the mock-up sign must be removed within five-(5) days of the meeting. If the case is denied, the applicant is responsible for all costs involved in the removal of the mock-up or actual sign (if erected under violation) within five-(5) days of the meeting.

C. ORDINANCE

City of Novi Ordinance, Section 3107 – Miscellaneous

No order of the Board permitting the erection of a building shall be valid for a period longer than one-(1) year, unless a building permit for such erection or alteration is obtained within such period and such erection or alteration is started and proceeds to completion in accordance with the terms of such permit.

No order of the Board permitting a use of a building or premises shall be valid for a period longer than one-hundred and eighty-(180) days unless such use is establish within such a period; provided, however, where such use permitted is dependent upon the erection or alteration or a building such order shall continue in force and effect if a building permit for such erection or alteration is obtained within one-(1) year and such erection or alteration is started and proceeds to completion in accordance with the terms of such permit.

D. APPEAL THE DETERMINATION OF THE BUILDING OFFICIAL

PLEASE TAKE NOTICE:

The undersigned hereby appeals the determination of the Building Official / Inspector or Ordinance made

CONSTRUCT NEW HOME/BUILDING ADDITION TO EXISTING HOME/BUILDING SIGNAGE
 ACCESSORY BUILDING USE OTHER _____

VI. APPLICANT & PROPERTY SIGNATURES

A. APPLICANT

Deal Bisler
Applicant Signature

4-1-19
Date

B. PROPERTY OWNER

If the applicant is not the owner, the property owner must read and sign below:

The undersigned affirms and acknowledges that he, she or they are the owner(s) of the property described in this application, and is/are aware of the contents of this application and related enclosures.

Deal Bisler - Area Manager and designated representative of ITC
Property Owner Signature

4-1-19
Date

VII. FOR OFFICIAL USE ONLY

DECISION ON APPEAL:

GRANTED DENIED

The Building Inspector is hereby directed to issue a permit to the Applicant upon the following and conditions:

Chairperson, Zoning Board of Appeals

Date



Community Development Department

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**REVIEW STANDARDS
DIMENSIONAL VARIANCE**

The Zoning Board of Appeals (ZBA) will review the application package and determine if the proposed Dimensional Variance meets the required standards for approval. In the space below, and on additional paper if necessary, explain how the proposed project meets each of the following standards. (Increased costs associated with complying with the Zoning Ordinance will not be considered a basis for granting a Dimensional Variance.)

Standard #1. Circumstances or Physical Conditions.

Explain the circumstances or physical conditions that apply to the property that do not apply generally to other properties in the same zoning district or in the general vicinity. Circumstances or physical conditions may include:

- a. Shape of Lot.** Exceptional narrowness, shallowness or shape of a specific property in existence on the effective date of the Zoning Ordinance or amendment.

Not Applicable Applicable If applicable, describe below:

At more than 59 acres, our lot is well suited for a small accessory structure. However, the ordinance, as written, does not provide clear language for lots of significant size. Our request for variance would honor the spirit of the ordinance while also recognizing that our project is compatible with community expectations for growth and development.

and/or

- b. Environmental Conditions.** Exceptional topographic or environmental conditions or other extraordinary situations on the land, building or structure.

Not Applicable Applicable If applicable, describe below:

and/or

- c. Abutting Property.** The use or development of the property immediately adjacent to the subject property would prohibit the literal enforcement of the requirements of the Zoning Ordinance or would involve significant practical difficulties.

Not Applicable Applicable If applicable, describe below:

Standard #2. Not Self-Created.

Describe the immediate practical difficulty causing the need for the Dimensional Variance, that the need for the requested variance is not the result of actions of the property owner or previous property owners (i.e., is not self-created).

After a thorough review of the project with City planning and engineering staff, it was suggested that a request for variance would be appropriate based on the current limitations within the ordinance. At approximately 2.5 millions square feet, our lot and any potential development is not clearly recognized or accounted for within the existing language of the ordinance.

Standard #3. Strict Compliance.

Explain how the Dimensional Variance in strict compliance with regulations governing area, setback, frontage, height, bulk, density or other dimensional requirements will unreasonably prevent the property owner from using the property for a permitted purpose, or will render conformity with those regulations unnecessarily burdensome.

Sec. 4.19.1.J of the ordinance restricts the construction of accessory structures based on lot size. The ordinance calls for limits when a lot is over 21,780 square feet (1/2 acre). However, the ordinance does not provide clear language for an OST lot such as ours which is 59.11 acres or approximately 2.5 million square feet. We feel this variance honors the spirit of the ordinance when considering the size and location of our property.

Standard #4. Minimum Variance Necessary.

Explain how the Dimensional Variance requested is the minimum variance necessary to do substantial justice to the applicant as well as to other property owners in the district.

The ordinance, as written, allows two (2) accessory structures, per lot, for lots over 21,780 square feet. This request is for one (1) additional accessory structure measuring approximately 2900 square feet on a lot that is over 2.5 million square feet.

Standard #5. Adverse Impact on Surrounding Area.

Explain how the Dimensional Variance will not cause an adverse impact on surrounding property, property values, or the use and enjoyment of property in the neighborhood or zoning district.

This project is well within and contained by the existing footprint of the ITC Corporate Headquarters campus. The property is zoned properly for this type of project and fits with the character of the existing office building and electric transmission assets.

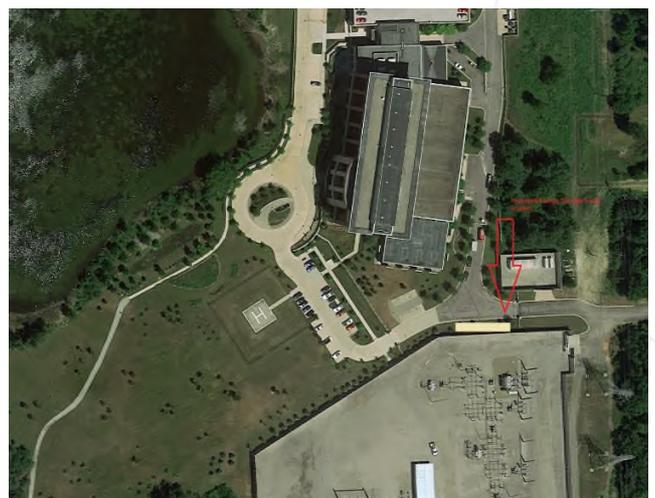
ITC Solar and Energy Storage Project Overview

ITC is an innovative transmission solutions provider building the grid of the future that connects consumers to energy resources across North America. As the energy landscape continues to evolve towards a greater integration of renewables and new technology, ITC will create a microcosm on its award-winning Novi headquarters campus that will allow the company to demonstrate effective integration of solar and storage technologies into the grid. Through this project ITC will underscore its environmental commitment, enhance resiliency and allow for real-time monitoring of these technologies for the benefit of customers.

ITC will install multiple rows of photovoltaic (PV) solar panels covering approximately 1.5 acres of its campus, and a 58-foot-long energy storage unit that will contain lithium ion and flow battery technology. Together these technologies will support a significant portion of ITC’s energy needs, and provide a unique opportunity to study these technologies and their impact on the grid in real time.

Construction of the solar and battery storage units is scheduled to begin in July 2019 and be completed by the end of the year. By installing and studying forward-thinking technologies, ITC is demonstrating its operational excellence model, environmental stewardship and approach to innovation. This enhances the reputation of the company, and Novi, as a destination to attract high-tech talent.

Below are illustrations indicating the approximate location of the solar panels and energy storage unit.



SOLAR PHOTOVOLTAIC SYSTEM

ITC SOLAR STARLIGHT PROJECT 27175 ENERGY WAY NOVI, MICHIGAN 48377, SECTION S13 T1N R8E

GENERAL NOTES

ANNOTATIVE DEFINITIONS

- : EQUIPMENT TAG, REFER TO SINGLE LINE DIAGRAM FOR DETAILS
- : FEEDER TAG, REFER TO SINGLE LINE DIAGRAM FOR DETAILS
- : ASSEMBLY REFERENCE POINT TAG
- : ELEVATION CALLOUT
- : SECTION CALLOUT
- : SITE DETAIL CALLOUT
- : COLUMN LINE

ELECTRICAL DEFINITIONS

- S-I-P : INVERTER - STRING #
- INV# : INVERTER #
- ACCP# : AC INVERTER COMBINER PANEL #
- HSS# : MAIN DISCONNECT SWITCH #
- LC# : LOADS CENTER #
- MCF# : MONITORING EQUIPMENT #
- TRM# : TRANSFORMER #
- EGC : EQUIPMENT GROUNDING CONDUCTOR
- GGC : GROUNDING ELECTRODE CONDUCTOR
- OPD : OVER CURRENT PROTECTION DEVICE
- SPD : SURGE PROTECTION DEVICE
- TVPD : TRANSIENT VOLTAGE SURGE SUPPRESSION DEVICE

GENERAL

1. ALL WIRING METHODS AND INSTALLATION PRACTICES SHALL BE IN COMPLIANCE WITH THE APPROPRIATE ELECTRIC CODE OF THE TERRITORY OF THE INSTALLATION, LOCAL STATE/PROVINCE CODES, AND OTHER APPLICABLE LOCAL CODES.
2. CONTRACTOR SHALL BECOME FAMILIAR WITH ALL INSTALLATION INFORMATION IN THE EQUIPMENT DOCUMENTATION PRIOR TO BEGINNING THE INSTALLATION, AND SHALL OBSERVE THE MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS.
3. CONTRACTOR SHALL CONFIRM THAT CONDUIT LOCATIONS HAVE BEEN COMPLETED BEFORE EXISTING GRADES IS EXCAVATED OR EXISTING IS DEMOLISHED, DRILLED, OR CUT, REGARDLESS OF THE LOCATION ON THE SITE.
4. CONTRACTOR SHALL UPDATE "FIELD-USE" CONSTRUCTION DOCUMENTS ON A DAILY BASIS, AND PROVIDE THE COMPLETE RED-LINE DOCUMENT PACKAGE TO THE PROJECT MANAGER UPON SUBstantial COMPLETION OF THE PROJECT.
5. CONTRACTOR SHALL DAILY CLEAN UP TRASH AND WASTE RESULTING FROM THEIR WORK. CONTRACTOR SHALL REVIEW AND ADHERE TO ALL BACK MANUFACTURER'S INSTRUCTIONS FOR TORQUE SETTINGS AND MARKING OF HARDWARE FOR PROFILE AND RACKING.
6. RACKING AND MODULES SHALL BE INSTALLED WITHIN SPECIFIED TOLERANCES IN MANUFACTURER'S INSTRUCTIONS.
7. RACKING SHALL BE FULLY SECURED WITH ALL SPECIFIED BALLAST OR MECHANICAL ATTACHMENTS PRIOR TO MOUNTING MODULES.
8. ALL NEWLY INSTALLED MODULES SHALL BE FULLY SECURED AND TORQUED HARDWARE PRIOR TO LEAVING THE PROJECT SITE DAILY.

GROUNDING & BONDING

1. SEE SINGLE LINE DIAGRAM & SPECIFICATIONS FOR AC AND DC SPECIFIC GROUNDING DETAILS AND ADDITIONAL NOTES.
2. GROUNDING CONNECTIONS FROM THE INSIDE TO THE RACKING SYSTEM IS MADE VIA GROUNDING PINS AS A COMPONENT OF THE RACKING MISC/CLAMP.
3. SEE MANUFACTURER'S SPECIFICATIONS FOR ADDITIONAL DETAILS.
4. EGC AND/OR SEC CONTINUITY IN THE ARRAY RACKING IS PROVIDED BY BOLTED MECHANICAL CONNECTIONS WITHIN RACKING FRAMEWORK [NEC 250.40(C)]. THE EGC CONDUCTORS SHALL BE BONDING TO RACKING USING LISTED LUGS AT TWO OR MORE POINTS IN EACH SUB-ARRAY ASSEMBLY.
5. DC EQUIPMENT GROUNDING CONDUCTORS, GROUNDING ELECTRODE CONDUCTORS, AND BONDING JUMPERS SHALL BE CONNECTED BY MACHINE SCREWS THAT ENGAGE NOT LESS THAN TWO THREADS IN THE ENCLOSURE, OR BY BONDING LUGS WITH BOLTED HARDWARE APPROVED FOR THAT PURPOSE. SCREWS SHOULD BE THROUGH-DRILLING, NOT THROUGH CUTTING.
6. ALL METALLIC CONDUITS ENTERING A JUNCTION BOX OR OTHER CONDUIT BODY WHERE CURRENT CONDUITS OF CONDUITS RINGS SHALL HAVE A BONDING BUSHING AND JUMPER FROM THE CONDUIT TO THE GROUNDING CONDUCTOR, EXCEPTIONS AS ALLOWED BY NEC 250.7.
7. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR GROUNDING SYSTEM INCLUDING GROUNDING ELECTRODE (GEC), MULTIPLE GROUNDING ELECTRODES SPACED 6' APART OR GREATER SHALL BE INSTALLED IF TOTAL RESISTANCE TO GROUND IS GREATER THAN 5 OHMS. ELECTRICAL CONTRACTOR SHALL VERIFY TOTAL RESISTANCE TO GROUND.
8. DC-SEC (WHEN REQUIRED) CAN BE COMBINED WITH AC-SEC, THE COMBINED CONDUCTOR SHALL BE SIZED AS THE LARGER OF THE TWO CONDUCTORS, AND BE CONTINUOUS, OR USE EXTERIOR WELDING, OR LISTED, IRREVERSIBLE COMPRESSION CONNECTORS [NEC 250.40].

ELECTRICAL

1. SEE SINGLE LINE DIAGRAM & SPECIFICATIONS, AND OTHER ELECTRICAL SHEETS FOR SPECIFIC ELECTRICAL DETAILS AND ADDITIONAL NOTES.
2. ELECTRICAL SYSTEM COMPONENTS SHALL BE LISTED FOR THEIR INTENDED PURPOSE, INCLUDING BUT NOT LIMITED TO WIRINGMATS, DISCONNECTS, JUNCTION BOXES, MODULES, COMBINERS, INVERTERS, ETC.
3. ALL JUNCTION BOXES OR COMBINERS SHALL BE INSTALLED IN READILY ACCESSIBLE LOCATIONS, WHERE APPLICABLE. POSITION THE ROOF PENETRATION JUNCTION BOX OVER THE PENETRATION SUCH THAT IT DIVERTS RAINWATER AWAY FROM FALLING ON THE TOP OF THE PENETRATION.
4. ALL CONDUIT RUNS ABOVE GROUND SHALL BE ELECTRICAL METALLIC TUBING (EMT) OR INTERMEDIATE METALLIC CONDUIT (IMC) AND ALL CONDUIT UNDER GROUND SHALL BE PVC SCHEDULE 40 UNLESS OTHERWISE SPECIFIED. HORIZONTAL CONDUIT RUNS ON A ROOF SHALL USE EMT CONDUIT WITH APPROPRIATELY INSTALLED EXPANSION FITTINGS. EMT IS NOT ALLOWED FOR HORIZONTAL CONDUIT RUNS ON A ROOF. PVC CONDUIT WITH APPROPRIATELY INSTALLED EXPANSION FITTINGS CAN BE SUBSTITUTED FOR HORIZONTAL RUNS ON A ROOF DEPENDING ON LOCAL JURISDICTION AND PROJECT APPROVAL. EMT IS ALLOWED FOR ALL OTHER ABOVE GROUND CONDUIT RUNS, UNLESS OTHERWISE NOTED.
5. WHEN ENTERING OR EXITING AN UNDER GROUND RUN, ALL CONDUIT TRANSITIONS SHALL HAVE A GALVANIZED RIGID SWEET INSTALLED BETWEEN PVC SCHEDULE 40 CONDUIT (BELOW GROUND) AND GALVANIZED RIGID CONDUIT OR PVC SCHEDULE 40 ABOVE GROUND.
6. CONDUIT PENETRATING ANY FIRE-RATE PARTITION SHALL BE SEALED WITH INTENSIFIED FIRE CAULK INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
7. PENETRATIONS INTO JUNCTION BOXES IN EXPOSED LOCATIONS SHOULD BE ON THE SIDE OR BOTTOM, AND NOT ON THE TOP SURFACE. WHEN THE CONNECTION PENETRATES THE TOP OF AN ENCLOSURE, WEATHER-TIGHT METERS PULS SHALL BE USED. CONNECTIONS TO REMAIN (OR HIGHER) CONDUIT BODIES, VIEWWAYS, AND JUNCTION BOXES SHALL BE MADE WITH UNLISTED WEATHER-TIGHT CONNECTORS TO MAINTAIN THE ENCLOSURE'S WEATHER BARRIER.
8. ALL WIRE TERMINATION HARDWARE SHALL BE TORQUED TO MANUFACTURER'S SPECIFICATIONS, AND MARKED WITH AN INDELIBLE MARKER TO INDICATE FINAL SETTINGS. INSTALLING CONTRACTOR SHALL REVIEW AND ADHERE TO ALL MANUFACTURER'S INSTRUCTIONS FOR TORQUE SETTINGS OF HARDWARE FOR CONDUCTOR TERMINATIONS. CONTRACTOR SHALL USE A CALIBRATED TORQUE WRENCH TO ENSURE THAT APPROPRIATE TORQUE SETTINGS ARE MET.
9. DISCONNECTED WIRES SHALL NOT BE USED, UNLESS APPROVED IN ADVANCE. TAPS, TERMINAL BLOCKS, AND OTHER TYPES OF CONNECTORS THAT ARE NOT LISTED SHALL NOT BE USED FOR EMPLOYMENT WIRE.
10. WHEN USING ALUMINUM WIRE, TERMINALS SHALL BE PADDED LUGS WITH HOLLOW ANTI-OXIDANT COMPOUND OR APPROVED EQUAL APPLIED PRIOR TO TERMINATION. ELECTRICAL SHALL KE-HECK TERMINAL TORQUE BEFORE COMPLETING THE PROJECT AND AGAIN AFTER ONE YEAR OF OPERATION.
11. WHERE TERMINALS ARE LOCATED OUTDOORS, APPROPRIATE SIZES END FERRULES SHALL BE USED TO TERMINATE DC SOURCE CIRCUIT AND AC INVERTER OUTPUT CURRENT-CARRYING CONDUCTORS SMALLER THAN #20 AWG. DC CONDUCTORS SHALL USE UN-INSULATED END FERRULES, WHILE AC CONDUCTORS SHALL USE PRE-INSULATED END FERRULES.
12. COLOR MARKINGS OF CONDUCTORS SHALL BE CONSISTENT THROUGHOUT ELECTRICAL SYSTEM AND WIRE CONDUCTORS PASS THRU A BOX WITHOUT TERMINATING. CONDUCTORS SHALL BE MARKED/PHASED APPROPRIATELY.
13. COLOR MARKINGS AND IDENTIFICATION ON 800V-1A UNGROUNDING CONDUCTORS SHALL BE AS FOLLOWS:
PHASE-C: BROWN, PHASE-B: ORANGE, PHASE-A: YELLOW
14. WIRE TYPES SHALL BE AS FOLLOWS:
P-WIRE: DC SINGLE CONDUCTOR EXPOSED WITHIN THE ARRAY OR IN CONDUIT THROUGH ALL AC CONDUCTORS
XHW-14

MECHANICAL & CONSTRUCTION

1. SEE SITE AND OTHER RACKING SHEETS FOR SPECIFIC MECHANICAL AND CONSTRUCTION NOTES.
2. INSTALLING CONTRACTOR SHALL REVIEW AND ADHERE TO ALL BACK MANUFACTURER'S INSTRUCTIONS FOR TORQUE SETTINGS AND MARKING OF HARDWARE FOR PROFILE AND RACKING.
3. RACKING AND MODULES SHALL BE INSTALLED WITHIN SPECIFIED TOLERANCES IN MANUFACTURER'S INSTRUCTIONS.
4. RACKING SHALL BE FULLY SECURED WITH ALL SPECIFIED BALLAST OR MECHANICAL ATTACHMENTS PRIOR TO MOUNTING MODULES.
5. ALL NEWLY INSTALLED MODULES SHALL BE FULLY SECURED AND TORQUED HARDWARE PRIOR TO LEAVING THE PROJECT SITE DAILY.

DC CIRCUITS

1. ALL FIELD INSTALLED PV CONNECTORS SHALL MATCH THE EXACT MAKE/MODEL OF THE MANUFACTURER INSTALLED BY CONTRACTORS.
2. SOURCE CIRCUIT CONDUCTORS IN FREE AIR SHALL BE SECURED WITHIN 1" OF ALL PV CONNECTORS, AND EVERY 45' (E-4-F) THEREAFTER. SOURCE CIRCUIT CONDUCTORS SHALL BE ROUTED TO FOLLOW RAILS OR MODULES AS MUCH AS POSSIBLE.
3. WIRE MANAGEMENT SHALL USE WIRE CLIPS APPROVED IN ADVANCE BY THE PROJECT MANAGER. SUCH AS CADDY OR EQUAL. ZIP TIES ARE ACCEPTABLE FOR WIRE CLIPPING ABOVE OR SHALLOW. PROVIDED ZIP TIES MEET THE FOLLOWING SPECIFICATIONS: STEEL BARE, UV RESISTANT, MINIMUM 40LB TENSILE STRENGTH, 1/4 LISTED, TENSILE STRENGTH RANGE 200' TO 1400' OR BETTER.
4. EXPOSED CONDUCTORS ENTERING CONDUIT BODIES, VIEWWAYS, AND JUNCTION BOXES SHALL BE PROVIDED WITH DRIP LOOPS THAT DIVERT WATER AWAY FROM THE REQUIRED WIRE-GLAND, CABLE-GRIP, OR WEATHERHEAD, WIRE-GLANDS, CABLE-GRIPS, AND WEATHERHEADS SHALL BE UNLISTED FOR THE NUMBER AND SIZE OF CONDUCTORS TO PROVIDE STRAIN RELIEF FOR ALL CONDUCTORS ENTERING ENCLOSURES.
5. ALL DC CONDUCTORS SHALL BE LABELED AT ALL TERMINATIONS WITH STRING ID AND POLARITY WITH PRINTED SELF-LAMINATING LABELS. ALL PV WIRE/E-4-F/THERM-2 USED AS A DC CONDUCTOR SHALL COMPLY WITH THESE COLOR STANDARDS, WHEN APPROVED TO MARK WITH TAPE AT THE TERMINATIONS, THE TAPE SHALL SHOW THE SAME COLORS: UNGROUNDING ARRAY: RED-POSITIVE, BLACK-NEGATIVE
6. DC CIRCUITS SHALL BE MEGOHM TESTED PRIOR TO TERMINATION AT EITHER END, AND RESULTS SHALL BE RECORDED. CONFIRM TESTING VOLTAGE WITH THE PROJECT MANAGER PRIOR TO TESTING.
7. SOURCE CIRCUIT CONDUCTORS WHEN RUNNING IN CONDUIT ABOVE AND BETWEEN RACKING ROWS, SHALL BE REFERRED TO AS AN INTER-TABLE NIPPLE AND CONTAINED IN EMT OR SHALLOTT RESISTANT PVC SCHEDULE 40 INTER-TABLE NIPPLE CONDUIT SHALL BE LESS THAN OR EQUAL TO 34" IN LENGTH, WHERE SOURCE CIRCUIT CONDUCTORS ARE 10" TO 20" WIRE CONDUIT SIZE SHALL BE CHOSEN ACCORDING TO THE TABLE BELOW AND THE NATIONAL ELECTRIC CODE.
MAXIMUM NUMBER OF 1/4 IN-2000V PVC SCHEDULE 40 INTER-TABLE NIPPLE SIZE SOURCE CIRCUIT CONDUCTORS
1/4" = 12
1/2" = 14
8. DC SAFETY-ASSEMBLY PROCEDURE:
A) CONTRACTOR SHALL BECOME FAMILIAR WITH ALL INSTALLATION INFORMATION IN THE EQUIPMENT DOCUMENTATION FROM THE MANUFACTURER PRIOR TO BEGINNING THE INSTALLATION, AND SHALL OBSERVE THE INSTRUCTIONS.
B) ENSURE THE REQUIRED INVERTER CLEARANCE ACCORDING TO INSTRUCTIONS.
C) REMOVE ALL DC FUSES FROM THE DC COMBINER, RECUMBER AND/OR INVERTER.
D) OPEN AND TAG OUT ALL DC DISCONNECTS ON THE COMBINER AND/OR INVERTER.
E) CONNECT THE DC STRINGS TOGETHER AS SPECIFIED, LEAVING THE END-OF-RUN (+) TOUCH-SAFE PLUGS UNCONNECTED, THESE PLUGS WILL BE THE LAST CONNECTIONS TO BE MADE.
F) IF LANDING ON THE DC COMBINER OR INVERTER WITH HORIZONTAL CABLES, MAKE SURE LABELS AND LAND THOSE CABLES ON THE TERMINAL BLOCKS IF LANDING WITH THE MODULE WIRING, CUT, DRESS, AND LABEL THOSE END WIRES AND LAND ON THE TERMINAL BLOCKS. THERE WILL BE NO CURRENT FLOW BECAUSE THE DISCONNECT SWITCHES ARE ALL OPEN AND THE LAST TOUCH-SAFE INTER-MODULE CONNECTOR IS OPEN.
G) CONNECT THE LAST TOUCH-SAFE INTER-MODULE CONNECTORS TO COMPLETE THE SOURCE CIRCUITS, THERE WILL BE NO CURRENT FLOW BECAUSE THE DISCONNECT SWITCHES ARE ALL OPEN.
H) INSURE THE (+) CONDUCTORS ON THE TERMINAL BLOCKS, DO NOT TOUCH THE (-) CONDUCTORS, AS THEY WILL HAVE TO BE REMOVED FOR INSULATION REMOVAL TESTING.

AC CIRCUITS

1. CONDUCTORS ORIGINATING ON THE ARRAY SIDE OF THE SYSTEM SHALL BE LABELED ON "LOAD" SIDE OF ALL DC SWITCHES AND COMPONENTS, AND THE UTILITY SHALL BE ON THE "LINE" SIDE OF THAT COMPONENT.

VICINITY MAP



SYSTEM SUMMARY

- DC SYSTEM SIZE: 577,940 KW-DC (STC)
- AC SYSTEM SIZE: 500,000 KW-AC
- MODULES: (1,562) GCL M67 370W
- INVERTERS: (110) SMA STP CORE1-50KW
- RACKING: RBL SOLAR GROUND MOUNT AND SOLAR PARKING CANOPY
- TILT ANGLE: 25°
- AZIMUTH: 180° (SOUTH+180°)
- DC SYSTEM ARCHITECTURE: UNGROUNDING, 1000VDC MAX

LOCATION DETAILS

1. SIDWELL NUMBER (PARCEL IDENTIFICATION NUMBERS): 22-13-200-037; 22-13-200-033
2. LEGAL LAND DESCRIPTION:
22-13-200-037, 20,22 ACRES
T1N, R8E, SEC 13 PART OF NW 1/4 OF NE 1/4 BEG AT PT DIST N 86-24-35 E 324.51 FT N 17-26-33 W 395.56 FT & N 22-04-49 W 290.12 FT & N 12-15-57 W 272.82 FT & N 03-00-05 E 283.60 FT & N 25-10-59 E 197.27 FT FROM SW COR OF NE 1/4, TH N 35-10-39 E 171.63 FT, TH N 48-11-54 E 252.26 FT, TH N 21-57-22 E 444.19 FT, TH N 02-04-19 E 384.78 FT, TH N 35-14-04 E 113.26 FT, TH N 86-04-18 E 251.83 FT, TH N 86-04-18 E 27.20 FT, TH N 03-55-42 W 30 FT, TH N 86-04-18 E 258.79 FT, TH S 02-27-41 E 1204.65 FT, TH S 86-54-14 W 1120.07 FT TO BEG 20,21 A 3-28-07 FR 009, 031 & 036 9/11/12/COMB, ON 04/12/2007 COMPLETED 04/12/2007 GLEMMON OWNER REQUEST : PARENT PARCEL(S): 50-23-13-200-031, 50-23-13-200-009, 50-23-13-200-036; CHILD PARCEL(S): 50-23-13-200-037, 22-13-200-033, 59,11 ACRES
1. T1N, R8E, SEC 13 PART OF E 1/2 OF SEC BEG AT PT DIST S 86-25-42 W 1150 FT FROM E 1/4 COR, TH S 86-25-42 W 222.13 FT, TH S 02-33-45 E 891.88 FT, TH ALS CURVE TO RIGHT, RAD 2051.83 FT, CHORD BEARS N 51-37-29 W 1223.02 FT, DIST OF 1241.89 FT, TH N 17-26-33 W 372.39 FT, TH N 22-40-48 W 290.12 FT, TH N 12-15-57 W 272.82 FT, TH N 09-40-26 E 281.60 FT, TH N 35-10-39 E 136.94 FT, TH N 86-54-57 E 937.04 FT, TH S 02-25-05 E 561 FT, TH N 86-54-57 E 515 FT (TO A POINT ON THE EAST LINE OF SAID SECTION 13), BEING S 02-25-05 E 1696.00 FT FROM THE NE CORNER OF SAID SECTION 13, TH S 02-25-05 E 227.62 FT (ALONG THE EAST LINE OF SAID SECTION 13 TO A POINT BEING N 02-25-05 W 546.01 FT FROM THE E 1/4 CORNER OF SAID SECTION 13), TH S 86-25-42 W 1150 FT, TH S 02-25-05 E 546 FT TO BEG 20,21 A 1-14-93 FR 030
3. LAND AREA: 75.11 ACRES
4. EXISTING ZONING: OST- OFFICE, SERVICE, TECHNOLOGY
5. ADJACENT PROPERTIES:
NORTH: HAGGERTY CORRIDOR CORPORATE PARK, NORTH SIDE OF 12MILE RD.
EAST: COUNTRY COUSIN MOBILE HOME PARK, VACANT LAND, NOVI RESEARCH PARK (TOWER AUTOMOTIVE), LANDSCAPE COMPANY AND SOME SINGLE FAMILY HOMES FRONTING ONTO HAGGERTY RD.
WEST: M-5 CONNECTOR
SOUTH: M-5 AND I-96 CONNECTOR RAMP

PROJECT INFORMATION

CITY OF NOVI	PRELIMINARY	DATE

SHEET INDEX

NOV	DESCRIPTION	DATE
1	TITLE PAGE	
2	CANOPY SOUTH ELEVATION	
3	CANOPY FOUNDATION PLAN	
4	GROUND MOUNT FOUNDATION PLAN	
5	SINGLE LINE DIAGRAM AND SPECIFICATIONS	
6	CANOPY ELECTRICAL PLAN	
7	GROUND MOUNT ELECTRICAL PLAN	
8	CANOPY STRINGING PLAN	
9	GROUND MOUNT STRINGING PLAN	
10	DETAILS AND DATA SHEETS	
11	DETAILS	
12	MONITORING DETAILS	
13	ECT: OVERALL LANDSCAPE PLAN	
14	ECT: SOLAR FIELD LANDSCAPE PLAN	
15	ECT: SOLAR FIELD SEEDING PLAN	
16	ECT: SOLAR FIELD LANDSCAPE DETAILS	

PROJECT CONTACTS

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1,248,946,3000

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OWNER
ITC
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NOVI, MI 48377
248.946.3000

REVISIONS

REV	DESCRIPTION	DATE
1	ISSUED FOR PERMIT	10/14/2024
2	REVISED FOR PERMIT	10/14/2024

ITC SOLAR STARLIGHT PROJECT
27175 ENERGY WAY
NOVI, MICHIGAN 48377,
SECTION S13 T1N R8E

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PROJECT DETAILS

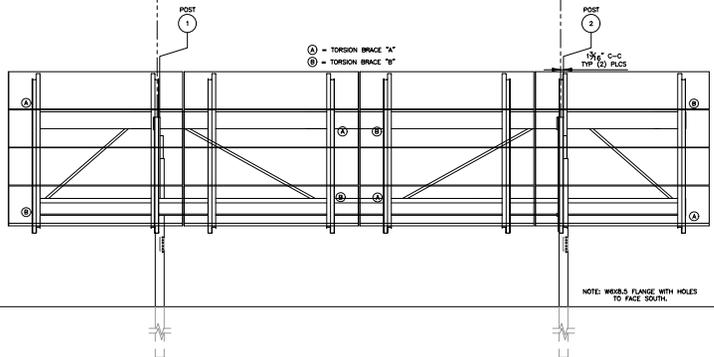
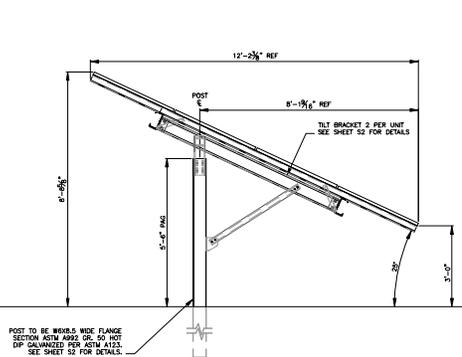
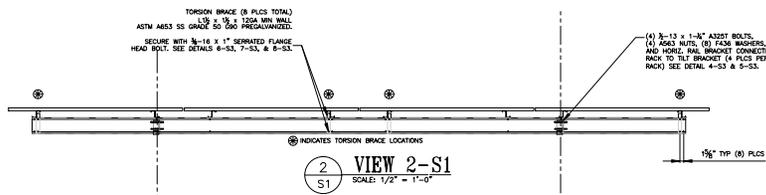
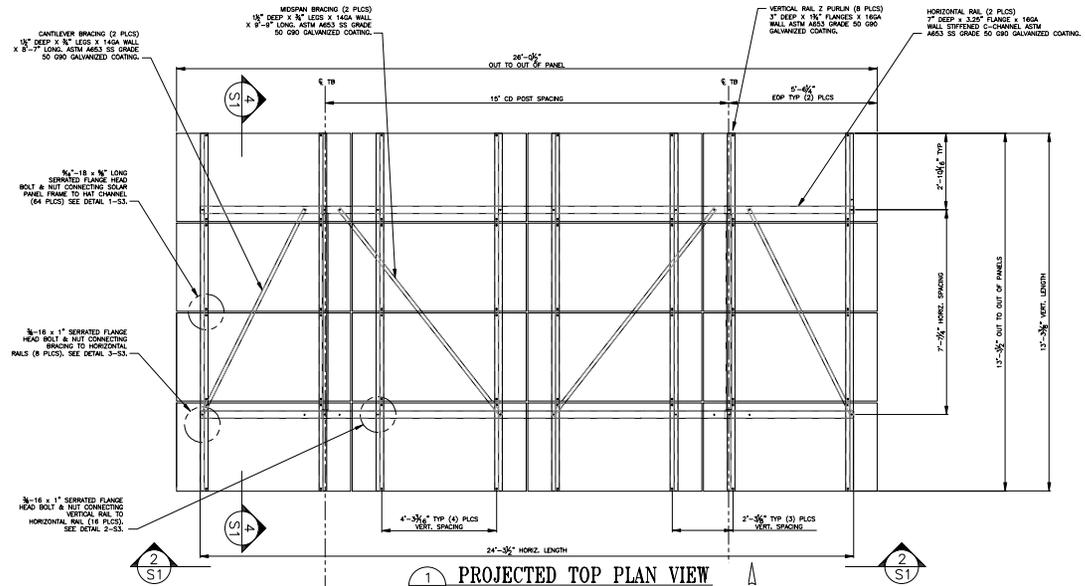
DATE:	10/04/2024
DESIGNED BY:	CR
DRAWN BY:	CR
CHECKED BY:	DAS
SHEET SIZE:	ARCH D (24"X36")
SCALE:	1" = 80' ±

SHEET TITLE

TITLE PAGE

SHEET NO.

PV001



AZIMUTH ENERGY
ITC Project
Kansas City, MI 48377

DATE: 3/19/2019
DRAWN BY: RC
CHECK BY: DK

DATE: 9/27/8
PAGE: S1 of S3

GCL-P6/72H_370W
4x4 SOLAR FLEXRACK G3L-X

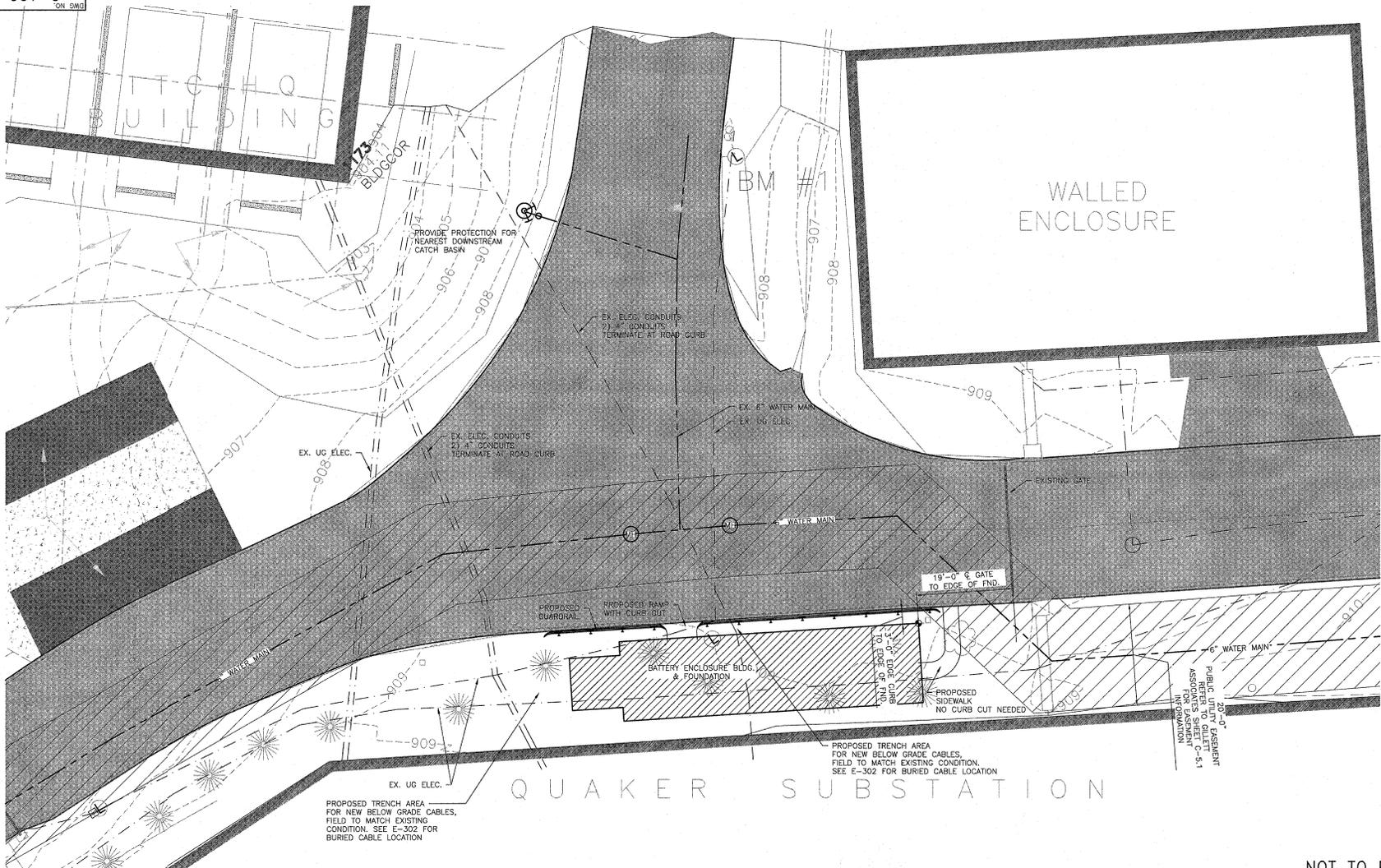
SOLAR FLEXRACK

3207 Innovation Place
Youngstown, OH 44508-0223
Phone (888) 380-8138

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REV	DESCRIPTION	DATE

001-C
(ON SWD)

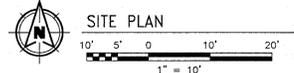


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BENCH MARKS
 BM #1 - "X" ON SOUTH SIDE LIGHT POLE BASE
 ELEVATION 910.85
 BM #2 - TOP OF TOP NUT ON HYDRANT
 ELEVATION 908.22
 BM #3 - TOP OF TOP NUT ON HYDRANT
 ELEVATION 908.42

LEGEND

- STORM SEWER
- SANITARY SEWER
- WATER MAIN
- UNDERGROUND ELECTRIC
- UNDERGROUND PHONE/FIBER
- DIESEL FUEL LINES
- MINOR CONTOUR
- MAJOR CONTOUR
- FENCE LINE
- X LIGHT POLE ON CONCRETE BASE
- ⊕ HYDRANT/VALVE BOX
- ⊙ IRRIGATION VALVE
- ⊙ FLAG POLE
- ⊙ CHAINS
- ⊙ CONIFEROUS TREE (DBH IN INCHES)
- ⊙ DECIDUOUS TREE (DBH IN INCHES)



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Commonwealth
 PA 02201019
 DATE 02-21-2019
 END CJM

REVISIONS	DATE: 2/22/2019	CITY OF NON REVIEW
A	PRELIMINARY OWNER REVIEW	DATE: 2/01/2019

BID NUMBER: E18046	DATE: 2/22/19
PROJECT NUMBER:	CHECKED:
PROPRIETARY This document is the property of Mitsubishi Electric Power Products Inc. and contains proprietary and confidential information which must not be duplicated, used or disclosed other than as expressly authorized by Mitsubishi Electric Power Products Inc.	DATE: 02/22/19
ENGINEER: JDM (CA)	DATE: 02/22/19
LEAD ENGINEER: CJM (CA)	DATE: 02/22/19
FILE LOCATION:	APPROVED:

Professional Engineer
 Christopher Riley
 No. 31024
 2-1-2019

DIM. IN FT-IN	SCALE: AS SHOWN	SF: 1	DRAFTER: JAS (CA)	DATE: 2/22/19
STANDARD TOLERANCE REFERENCE	ENGINEER: JDM (CA)	DATE: 02/22/19	LEAD ENGINEER: CJM (CA)	DATE: 02/22/19
REF. DWG. NO.	FILE LOCATION:	APPROVED:	DATE:	

ITC STARLIGHT BESS - SECTION 13, TIN, RBE				
DWG. NO.: C-100	REV.: B	TITLE: PRELIMINARY SITE PLAN AND TOPOGRAPHY	DATE: 02-21-2019	END: CJM

MITSUBISHI ELECTRIC
 WARRENDALE, PA
 DATE 02-21-2019
 END CJM