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October 20, 2023

Melanie A. Bachman, Esq.
Executive Director/Staff Attorney
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: Petition No. 1588 – Endurant Energy petition for a declaratory ruling, pursuant to Connecticut General Statutes §4-176 and §16-50k, for the proposed construction, maintenance and operation of a 7.0-megawatt AC battery energy storage facility located at 22 Deerfield Road, Windsor, Connecticut, and associated electrical interconnection.

Dear Ms. Bachman:

Enclosed for filing with the Connecticut Siting Council (“Council”) are Endurant Energy’s responses to the Connecticut Siting Council’s October 2, 2023 interrogatories.

An original and fifteen (15) copies of this filing will be hand delivered to the Council today.

Should the Council have any questions regarding this filing, please do not hesitate to contact me.

Very truly yours,



Bruce L. McDermott

Enclosures

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Interrogatory CSC 1

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 1

Q-CSC 1: Has Endurant Energy (Endurant) received any comments since the Petition was submitted to the Council? If yes, summarize the comments and how these were addressed.

A-CSC 1: No comments have been received.

Interrogatory CSC 2

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 1

Q-CSC 2: If the project is approved, identify all permits necessary for construction and operation and which entity will hold the permit(s)?

A-CSC 2: Only municipal permits such as a building permit, mechanical permit, and electrical permit will be needed.

Endurant DB, LLC as EPC contractor will hold the various building permits. We do not anticipate the requirement to hold any operational permits.

Interrogatory CSC 3

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 1

Q-CSC 3: Referencing Petition page 3, when was the project selected for the state Energy Storage Solutions Program (ESSP)? What ESSP incentives apply to the project?

A-CSC 3: The project received its "Reservation of Funds" from the CT Green Bank and the Public Utilities Regulatory Authority in July 2022.

Interrogatory CSC 4

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 1

Q-CSC 4: What is the term of the ESSP agreement to provide energy storage, and with which entity? If the facility operates beyond the terms of such agreement, will Endurant decommission the facility or seek other revenue mechanisms?

A-CSC 4: The Energy-Storage-as-a-Service (ESaaS) Agreement and associated Site Lease Terms are both 10 years, and are extendable. They are held between The Taylor & Fenn Company and a special purpose entity that will be wholly owned by Endurant.

At the end of the contract term, Endurant will remove all the system equipment and restore the site to its pre-installation state.

Interrogatory CSC 5

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 1

- Q-CSC 5: If Endurant transfers the facility to another entity, would Endurant provide the Council with a written agreement as to the entity responsible for any outstanding conditions of the Declaratory Ruling and quarterly assessment charges under CGS §16-50v(b)(2) that may be associated with this facility, including contact information for the individual acting on behalf of the transferee?
- A-CSC 5: Yes. In the unlikely event Endurant transfers the facility to another entity, Endurant will provide the Council with a written agreement confirming the entity responsible for complying with the Declaratory Ruling and assessment charges, including all appropriate contact information.

Interrogatory CSC 6

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 1

- Q-CSC 6: Submit a map clearly depicting the boundaries of the battery energy storage facility (BESF) site and the boundaries of the host parcel(s). Under Regulations of Connecticut State Agencies (RCSA) §16-50j-2a(29), “**Site**” means a contiguous parcel of property with specified boundaries, including, but not limited to, the leased area, right-of-way, access and easements on which a facility and associated equipment is located, shall be located or is proposed to be located.
- A-CSC 6: The BESF site and host parcel are mapped on Attachment CSC-6-1. The "Site" is defined as the area of the host parcel that is to be leased by Endurant, and is identified by the BESF perimeter fencing. No rights-of-way, access or easements are associated with the proposed Site. The final dimensions may vary slightly from what is shown depending on utility requirements.

Interrogatory CSC 7

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 1

Q-CSC 7: Is the Town of South Windsor within 2,500 feet of the Site? If yes, was notification provided pursuant to RCSA §16-50j-40?

A-CSC 7: The boundaries of the Town of South Windsor are within 2,500 feet of the site. South Windsor was provided notice of the filing of the petition on October 4, 2023.

Interrogatory CSC 8

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 1

- Q-CSC 8: Has the property owner expressed any concerns or requested any specific requirements related to decommissioning or site restoration at the end of the project's useful life? If so, please describe.
- A-CSC 8: No. The property owner has not expressed any concerns or requested any requirements related to decommissioning or site restoration.

Interrogatory CSC 9

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 1

Q-CSC 9: Referencing Petition Figure 3, what is the length and width of the existing access drive to the point where it would reach the BESF? Figure 3, Note 3 states the access to the BESF “shall include road material and be at least 20 feet to meet NG personnel and equipment requirements”. Explain.

A-CSC 9: The distance from Deerfield Road through the fenced entrance gates and to the site is 1,600 feet. With a new access road, distance from Deerfield Road to the Site will be approximately 1,100 feet. The width of the main driveway from Deerfield Road to the fenced entrance gate is 30 feet, and widths of internal facility roadways vary between 20 and 30 feet.

NG personnel is shorthand for electric utility and distribution grid personnel. Endurant has been asked to ensure that there is a minimum access of 20 feet.

Interrogatory CSC 10

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 1

Q-CSC 10: Is the 7.0 MW AC output based on the point of electrical interconnection?

A-CSC 10: Yes. This number may be adjusted slightly when the interconnection is finalized with Eversource.

Interrogatory CSC 11

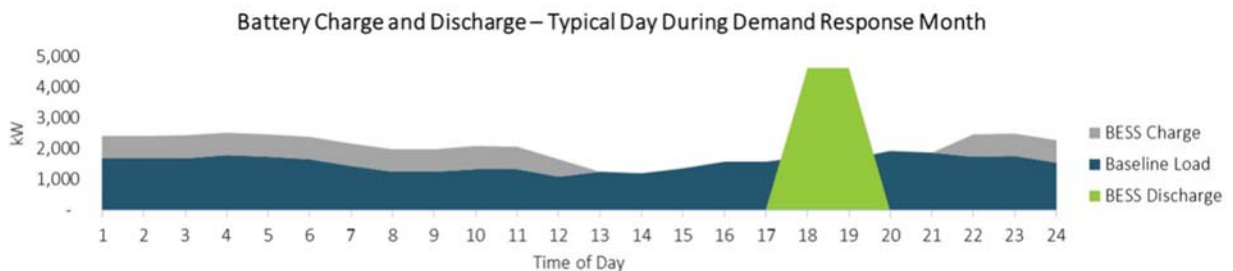
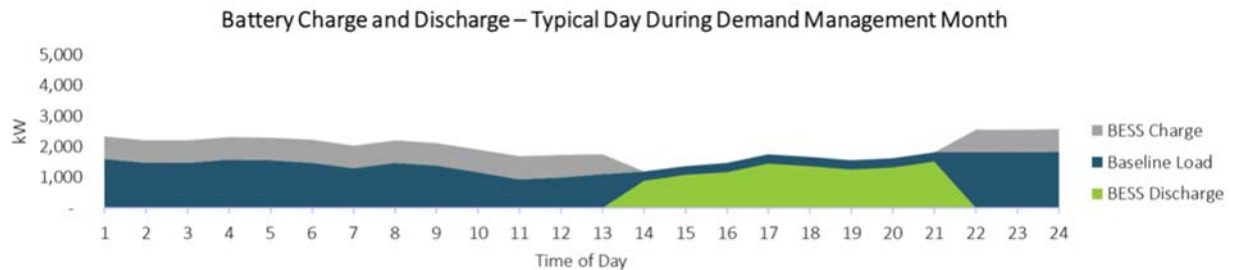
Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 1

Q-CSC 11: What is the approximate percentage of Taylor & Fenn's annual electric load that would be served by the BESF?

A-CSC 11: Because this is an energy storage system and not an energy generation system, when the BESF serves Taylor & Fenn, it will not 'off-set' a specific portion of Taylor & Fenn's overall load, but instead will 'shift' the load required to lower-priced 'off-peak' times from expensive peak times (when the battery will be discharged). This load shifting, or management, will occur year-round. See Demand Management graph below. During the summer months, from June 1 through September 31, the battery will be participating in the Energy Storage Solutions Program. Again, it will charge during off-peak hours, but during the program's Performance Season, it will discharge as requested by the Program Administrators. See Demand Response graph below.

In terms of approximate percentages, the total annual consumption of the site with the battery is expected to be around 3,620 MWh, and the load that the battery will manage will be 900 MWh - approximately 25% served.



Interrogatory CSC 12

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 1

Q-CSC 12: Can the facility operate between 0 and 7.0 MW? Would each module be dispatched based on need?

A-CSC 12: Yes. The facility will operate between 0-7.0MW. Each module will be dispatched on need, either as required by the host facility, or the utility, or in cases where neither requires it, into the wholesale markets. The system can 'balance' between each container, to optimize the system.

Interrogatory CSC 13

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 1

Q-CSC 13: How long will it take for the BESF to attain full output from when it is dispatched?

A-CSC 13: The BESF's inverter systems can dispatch almost instantaneously once called by the controls system. Typically, this is a matter of milliseconds. However, utility calls are sent 24-hours in advance under the ESS Program rules.

Interrogatory CSC 14

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 1

Q-CSC 14: Referencing Petition, p. 20, it states the BESF would discharge for 2-3 hours during “blue sky” peak demand. Would the BESF be completely depleted after three hours?

A-CSC 14: Yes, in most circumstances the system would be completely depleted, presuming the host site requires the energy. In cases where the host site does not require the energy, there might be residual charge in the BESF.

Interrogatory CSC 15

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 1

Q-CSC 15: What is the shortest time to export the stored 14.0 MWh AC to the grid? Does typical operation completely deplete the BESF or does output cease once a minimum remaining charge threshold is reached?

A-CSC 15: The shortest time for the battery to be discharged will be over 2 hours - specifically, this will be in the summer when the BESF is participating in the ESS Program. This discharge will be triggered by a request from the ESS Program Administrator and will fully deplete the battery. At other times of the year, when the ESS program is not active, Endurant will be discharging to reduce Taylor & Fenn's load at peak times, thereby reducing its electricity costs. Discharge can therefore be to a maximum of their load at those times.

Interrogatory CSC 16

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 1

- Q-CSC 16: Referencing Petition pp. 4-5, it states the BESF will be connected behind the customer's electric utility meter, which will allow the facility to run on battery power during peak demand time. It further states the BESF will operate in parallel with the grid and can also export power into the utility distribution system, during peak demand times. During peak demand times does the grid or the Taylor & Fenn facility utilize the BESF output?
- A-CSC 16: During peak demand times, the grid and Taylor & Fenn's facility will both use the battery's energy. In the summer, when the BESF is participating in the ESS Program ('summer time' deemed by grid to be June through September), upon the ESS Program manager's instructions, the battery will be depleted in 2 to 3 hours. For the remaining 8 months of the year, Taylor & Fenn will use the output for demand management purposes.

Interrogatory CSC 17

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 1

Q-CSC 17: Does Taylor & Fenn operate their facility at full capacity on weekends? If no, would the BESF be dispatched to export excess power to the grid?

A-CSC 17: Although Taylor & Fenn works on Saturdays, they do not operate at full capacity during the weekends, so their weekend demand is significantly lower than during Monday to Friday. During the summer, the BESF is enrolled in the ESS Program, and can be actively dispatched between 12pm and 9pm any day of the week. During times when dispatch has been called for by the program manager it will be discharged to the grid, otherwise the BESF will not be dispatched to export excess power to the grid, only to the maximum of Taylor and Fenn's energy load.

Interrogatory CSC 18

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 1

Q-CSC 18: Referencing Petition p. 21-22, assuming favorable energy prices, what is the minimum time it would take the BESF to fully recharge after a full 14.0 MWh AC discharge?

A-CSC 18: The minimum amount of time it could theoretically take for the battery to fully recharge is 2 hours. In reality, it will depend on Taylor & Fenn's energy demand and as noted, favorable energy pricing periods. Typically, charging will occur over several off-peak hours.

Interrogatory CSC 19

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 1

Q-CSC 19: Is the facility required to reserve any battery storage capability for backup power? Where would the backup power be used and by whom?

A-CSC 19: The facility is not required to reserve any battery storage capability for backup power. The BESF can provide backup power to the site host. The amount and duration of backup power will depend on the battery's state of charge when the outage occurs. Per UL and utility interconnection rules, the system will disconnect from the grid ("island") in the event of a power outage, and therefore will not export electricity into the grid during such an outage - any charge will be used by Taylor & Fenn.

Interrogatory CSC 20

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 1

Q-CSC 20: Referencing Petition p. 7, when would Endurant select a battery supplier? Do all of the suppliers under consideration offer the Canadian Solar Inc. SolBank battery modules?

A-CSC 20: Endurant will select a battery supplier when it is confident that all of the permitting and regulatory questions have been completed. The timing will depend on factors such as equipment lead time and availability. Not all of the suppliers offer the Canadian Solar Inc SolBank battery modules, however any final product will adhere to the same strict safety and operating parameters, and be aesthetically very similar (a containerized solution). In no case will we be changing the transformers or inverters, so the interconnection will be unaffected.

Interrogatory CSC 21

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 1

Q-CSC 21: Which equipment would step-down the 13.8-kV AC grid voltage and then convert it to DC to recharge the batteries? Explain.

A-CSC 21: The transformers are the equipment that steps the AC grid voltage down to the 690 volts required to recharge the batteries. Please note that this system will tie to the grid's 23.0kV high-tension distribution system, not a stepped-down 13.8kV. Inverters are responsible for converting the energy from AC to DC.

Interrogatory CSC 22

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 1

Q-CSC 22: Referencing Petition p. 11, what is the status of the interconnection agreement with Eversource? Is it anticipated the battery manufacturer/model will change based on the interconnection agreement?

A-CSC 22: Taylor & Fenn is expected to start the Affected System Operator System Impact Study in October after the conclusion of the Distribution System Impact Study. The expected delivery date of the Interconnection Agreement is June 2024. Based on feedback received, Endurant does not believe that the interconnection agreement will directly impact the battery manufacturer or model. If Endurant is required to change supplier, it will be due to commercial factors, such as the supplier's ability to provide the equipment within reasonable timeframes. If the supplier does change, the interconnection agreement will not be affected, because the inverter and transformer manufacturers will remain the same - it is the invertors and transformers that impact the utility.

Interrogatory CSC 23

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 1

Q-CSC 23: Would the project comply with the current National Electrical Code (NEC) and the National Electrical Safety Code (NESC)? What codes and standards apply to battery storage facilities?

A-CSC 23: Yes. The Project will comply with the current National Electric Code (NEC) and National Electrical Safety Code (NESC) standards. This system will be designed to NFPA 855, UL 1642, UL 1741 SA, UL 1973, UL 9540, UL 9540A and IEEE 1547.

Interrogatory CSC 24

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 1

Q-CSC 24: Identify the code/standard and section that addresses the minimum fence height for the BESF.

A-CSC 24: The fence will be 8 feet tall. There is no code or standard addressing fence height requirement for this application.

Interrogatory CSC 25

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 1

Q-CSC 25: Is a gap proposed between the bottom of the fence and grade. What animal deterrents are in place for small animals, such as nesting birds, chewing rodents, etc.?

A-CSC 25: All equipment and any penetrations are properly sealed to limit intrusive rodent concerns. Endurant's experience is that this has been sufficient, however regular visual inspections will confirm.

Interrogatory CSC 26

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 1

- Q-CSC 26: Referencing Petition p. 15, a battery fire would be self-extinguishing. What is the typical duration of a battery fire before it self-extinguishes? If one battery caught fire, can it easily spread to adjacent batteries? Explain.
- A-CSC 26: Each battery system completes UL 9540A testing which is a destructive test method used for evaluating the thermal runaway impacts in a battery energy storage system (BESS) and gathering data to assist in assessing or developing mitigation plans. Endurant would only consider deploying systems which have demonstrated no module-to-module propagation. The Solbank BESS is made up of 8 racks of 6 modules per rack and 69 cells per module. The 9540A testing showed only 4 cells damaged during the test confirming the design limited propagation within the module and will not propagate through the entire BESS nor adjacent BESS. The test indicated no external flames or explosive gas levels were detected. BESS fires can take several hours to burn themselves out.

Interrogatory CSC 27

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 1

Q-CSC 27: Referencing Petition p. 15, would firewater or other runoff from a battery fire be considered hazardous and require cleanup by a hazardous materials response contractor?

A-CSC 27: The Emergency Response Plan does not advise putting water on a battery fire. Water can be used to keep adjacent equipment cool if significant heat is generated and is of concern. If water happened to come in contact with the battery cells there is no evidence that it becomes a hazardous material.

Interrogatory CSC 28

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 1

- Q-CSC 28: Referencing Petition Exhibit E, a lithium-ion phosphate safety data sheet is provided. The sheet states the battery may burst and release hazardous decomposition products when exposed to a fire situation. If a battery burst,
- a. would smoke from the fire be considered hazardous and require notification to local authorities?
 - b. would smoke require area residences to stay in place or evacuate? If yes, who would determine if these actions are necessary?
- A-CSC 28:
- a. The data sheet is for the lithium-ion phosphate material itself which is packaged and designed into a larger system which includes various measures to prevent explosion. The 9540A testing conducted to assess results from thermal events shows gas composition of carbon dioxide, hydrogen, carbon monoxide and traces of various hydrocarbons. These may pose a direct inhalation risk and is a reason the first responders are instructed not to enter the fenced location, however the venting of the resulting smoke or gases in an open area above and around the facility will dissipate them such that they quickly become below IDHL (Immediately Dangerous to Health or Life) levels in the surrounding areas. This has been documented by a hazard mitigation analysis conducted by Energy Safety Response Group (ESRG).
 - b. It is extremely unlikely that evacuation would be required. Nonetheless, in such a situation, the Emergency Response Plan outlines an Incident Command System lead by the senior member of the Fire Department (Incident Commander). It is that Incident Commander who would monitor the situation and determine whether they deemed further evacuation to be necessary.

Interrogatory CSC 29

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 1

Q-CSC 29: Provide a detailed standard operating procedure for emergency response and notifications in the event of a battery fire.

A-CSC 29: Endurant's standard operating procedure for emergency response and notifications is the same as our Emergency Response Plan, as included in Appendix J - ERP of the Petition. Endurant has worked with multiple parties including CPower whose Enerwise software and operations team provide continuous monitoring of the whole system ("BESF Remote System Operator") which triggers automatic emergency response notifications in the event of certain parameters being met, such as would be caused by a fire, and the local Fire Department. Taylor & Fenn staff will also be reminded that should they discover any fire, they should call 911 immediately.

Endurant follows an Incident Command System to ensure absolute clarity on authority, which ensures that appropriate messaging and notifications are performed. A fire would be deemed to be an Uncontrollable Emergency per clause 3.1.2 on page 12. The Incident Commander for Uncontrollable Emergencies will always be an outside responder, in this case the most senior member of the Fire Department response team, or whichever member of the Fire Department Team that they delegate the Incident Commander.

When the initial emergency has been appropriately resolved, the Endurant Emergency Coordinator leads the administrative conclusion of the incident, which will include preparation of reports, investigations and follow up recommendations (Appendix J clause 3.2.5 on p14).

Interrogatory CSC 30

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 1

Q-CSC 30: Would Endurant dispatch personnel to the BESF in the event of a fire? Where would Endurant personnel be located that can respond to site emergencies?

A-CSC 30: The facility is remotely staffed, except for semi-annual routine maintenance activities when contractors are on-site however it is continuously remotely monitored by a Remote System Operator via a proprietary system called Enerwise, which is built and operated by CPower, Endurant's associate company with whom Taylor & Fenn have a pre-existing contractual relationship for demand response services. In the event of a fire, an Endurant employee would be available 24/7 by telephone and would consult with responders to provide system information useful in event characterization and response planning. A member of Endurant's team would be dispatched to the location as soon as possible (at most 24 hours). An on-site member of the property owner's team (a Taylor & Fenn employee) is designated as the BESF contact/liason and will be trained on the BESF and in emergency response protocols related to the facility. This liaison would respond immediately to the event and provide information and facilitate communication with Endurant staff. During an emergency response event, staff personnel and emergency responders are automatically contacted. The communications plan will be reviewed and approved by the Windsor Fire Marshal and Windsor Volunteer Fire Department, and training on its implementation will be conducted with Windsor Fire Marshal, Windsor Volunteer Fire Department and Taylor & Fenn staff, after installation and prior to operation. See Petition Appendix J for further detail on Emergency Planning and Communications.

Interrogatory CSC 31

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 1

- Q-CSC 31: Would placards be installed at the facility to alert emergency responders as to how to extinguish a fire, the fire media to be used, and contact numbers to operators of the BESF? If yes, provide detail. If no, explain why such measures are not necessary.
- A-CSC 31: Signage will be conformant with NFPA 855 and will be reviewed with the Windsor Fire Marshal and Windsor Volunteer Fire Department as part of the Fire Plan Review. Additional signage to ensure clear communication of disconnects, protocols, and contact information will be reviewed with the Windsor Fire Marshal and Windsor Volunteer Fire Department and all requirements and recommendations will be followed. Prior to the system coming online, there will be training with the Windsor Fire Marshal and Windsor Volunteer Fire Department on all response procedures.

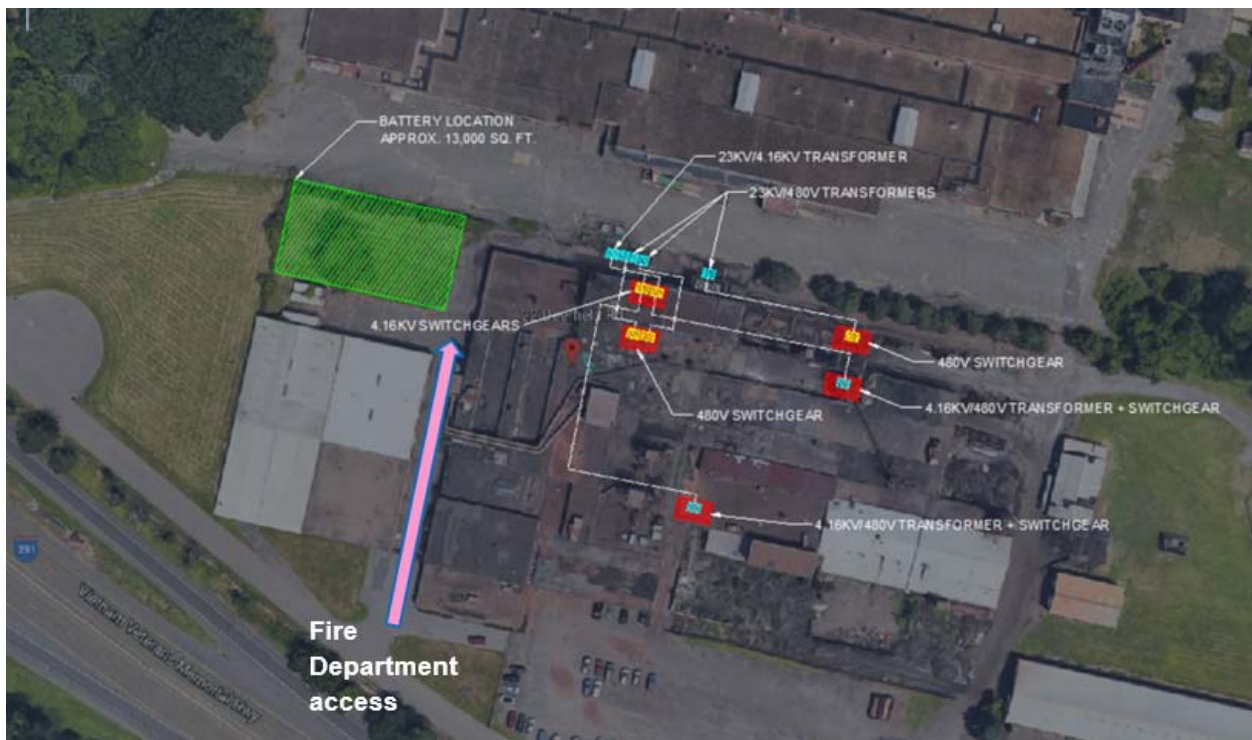
Interrogatory CSC 32

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 1

Q-CSC 32: Referring Petition p. 12, provide a diagram showing the proposed emergency access driveway to the site.

A-CSC 32: The primary emergency vehicle access to the site will be through the lane between the main Taylor & Fenn facility and the auxiliary building on the west side of the property, as shown in the diagram below. This allows full access from the paved area to the south of the proposed BESS. When we met with the Windsor Fire Marshall and the Windsor Volunteer Fire Department we discussed the possibility of installing another access roadway running north-east to south-west across the grass to the west of the BESS and auxiliary building, to potentially allow access to the other side of the BESS and provide more staging space. As we move forward, we will continue the dialogue with them to ensure they are comfortable with the primary access and look to install the additional access if required.



Interrogatory CSC 33

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 1

Q-CSC 33: Petition pp 25-26 states explosion risk would be minimized by exhaust fans/sensors. Are these features susceptible to fire and subject to failure? Are they within a fire enclosure?

A-CSC 33: Upon heat or smoke detection the fans will activate and vents will open allowing the system container to vent well before any fire may propagate through the BESF to cause damage. If both of the redundant fans were to fail, the pressure balancer would be activated to further mitigate explosion risk. The pressure balancer balances pressure when pressure difference occurs in the container. Pressure difference would arise due to insufficient air flow.

Interrogatory CSC 34

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 1

Q-CSC 34: What explosion mitigation system is more effective, vent panels or an exhaust system? Explain.

A-CSC 34: NFPA 855 requires one of two methods of explosion control; one being deflagration management with the use of explosion panels which will direct the impact of explosion to minimize damage; another being the use of active ventilation to prevent the build-up of explosive or flammable gases to reduce the risk of explosion, which is preferred due to its proactive nature. In the event of the failure of both redundant exhaust fans, the systems are equipped with a passive pressure balancer which will activate if unvented air builds up pressure to allow air/gases to vent.

Interrogatory CSC 35

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 1

Q-CSC 35: Referencing Petition Exhibit A, the battery module has an optional aerosol-based fire suppression system. What media is used in the system? Does Endurant intend on selecting this option for the site?

A-CSC 35: The Battery Energy Storage System OEM does not include the aerosol suppression system as standard, as it is not deemed an effective fire protection scheme and Endurant does not plan to include it. It has been shown that fire suppression agents are not effective with battery fires, especially in combination with active ventilation systems.

Interrogatory CSC 36

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 1

Q-CSC 36: Referencing Petition Exhibit E, the air-cooling refrigerant safety data sheet states refrigerant could be explosive under certain conditions. Would a battery fire or other fire at the site potentially cause the refrigerant to explode?

A-CSC 36: The refrigerant becomes combustible at over 1,400 degrees F and the battery system under fire will not reach that temperature.

Interrogatory CSC 37

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 1

- Q-CSC 37: Referencing Petition Exhibit E – a transformer oil safety data sheet is provided.
- a. How much oil is contained within the transformer?
 - b. Are there alarms (such as low-level oil alarms) that can alert personnel of a leak? If not, how would a leak be detected?
 - c. Do the transformers have a leak containment system? If yes, describe.
- A-CSC 37: The current design includes dry type transformers, which are air cooled, without the use of oil. Response below applies to oil transformers.
- a. There are approximately 500 gallons of oil in each transformer. This project is designed to have two dry-type transformers. See Petition Table 1.
 - b. Transformers are designed as closed systems and leaks are very rare. Any leaks would be identified during visual site inspections. The Remote Operating System will alert us should operating parameters fall outside anticipated norms, triggering a physical inspection.
 - c. Oil based transformer structures can contain some oil leakage but do not have complete leak containment built into them.

Interrogatory CSC 38

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 1

- Q-CSC 38: Referencing Petition Exhibit G – Sound Assessment, will the system generate noise during charging of the facility, discharge of the facility, neutral conditions (i.e. neither charging nor discharging), or all three? Was the modeling performed for the worst-case scenario, and does such scenario also take into account any fans for the cooling system? Explain.
- A-CSC 38: The system will generate sound when charging and discharging, and when the air conditioning system is in use. The scenario takes the cooling fans into account. Neutral conditions ('standby mode') do not generate noise. The sound assessment was modelled on the 'worst-case' scenario and examined noise levels from all the equipment of the proposed system, including the batteries, the inverters and the transformers.

Interrogatory CSC 39

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 1

Q-CSC 39: What are the industry Best Management Practices for Electric and Magnetic Fields at battery storage facilities?

A-CSC 39: Electric and magnetic fields at storage facilities are not a cause of concern to the industry, due to the fact that static fields are produced by the battery banks and DC cabling. Best practice is therefore driven by fire safety and installation health and safety requirements, not EMF.

Interrogatory CSC 40

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 1

Q-CSC 40: Describe how the proposed facility would comply with the Council's White Paper on the Security of Siting Energy Facilities, *available at*: https://portal.ct.gov/-/media/CSC/1_Dockets-medialibrary/Docket_346/whitepprFINAL2009114810pdf.pdf

A-CSC 40: Please see the discussion on the consistency of the proposed facility with state policy in Section II C of the petition.

The Council's White Paper on the Security of Siting Energy considers the planning, preparedness, response, and recovery capabilities of transmission and distribution assets, including generation assets. While a BESS is not a generating asset, it performs many of the same functions.

System planners, grid operators, and energy infrastructure developers see the major shift in the energy system as being one from centralized to decentralized, which gains multiple significant advantages, including cost-effectiveness for ratepayers (equity), flexibility, reliability and resiliency (protection from external events such as adverse weather, but also cybersecurity threats). Distributed assets provide security by eliminating single points of failure. Battery energy storage systems are critical components of this security in their ability to maintain the integrity of the grid's 60hz sinusoidal wave form and provide excess electric capacity in the event of a grid outage. They give grid planners flexibility when upgrading distribution systems, allow businesses (such as Taylor & Fenn) to be prepared for outage events, offer dynamic millisecond response capability to a variety of systemic needs, and, most importantly, can provide first responders time and options during emergency events. This also applies to the building process for the proposed Project. As discussed with the Town's Fire Marshal, Endurant will host an emergency preparedness training session with key personnel from the Windsor Fire Marshal's office and the Windsor Volunteer Fire Department to co-develop safe response-scenarios for any disruptions to the system.

Interrogatory CSC 41

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 1

Q-CSC 41: Would the proposed facility have any on-site lighting? If yes, identify the type, location and potential visual impacts.

A-CSC 41: The proposed facility will not have any additional lighting.

Interrogatory CSC 42

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 1

Q-CSC 42: Referencing Petition pp. 16-17, what is the status of the DEEP Natural Diversity Database review?

A-CSC 42: The CT DEEP Project Review has been completed and found that "negative impacts to populations of Federal or State Endangered, Threatened, or Special Concern species are not anticipated from the proposed Building and Infrastructure Development". See Attachment CSC-42-1.

Interrogatory CSC 43

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 1

Q-CSC 43: Describe the amount of tree clearing, if any, to develop the site.

A-CSC 43: Endurant's preferred approach is always to avoid tree clearing if possible. In this case, there is one mature tree may need to be removed.

Interrogatory CSC 44

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 1

Q-CSC 44: Are there any wells on the site or in the vicinity of the site? If so, how would Endurant protect the wells and/or water quality from potential construction, operation and/or emergency response impacts?

A-CSC 44: There are no wells on the site. The property due east across the railroad tracks is identified in the Connecticut Drinking Water GIS as a parcel containing a well. The parcel boundary is approximately 1,000 feet from the Site location. See Attachment CSC-44-1.

Interrogatory CSC 45

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 1

Q-CSC 45: What is the distance of the site from Windsor Meadows State Park? Would the BESF be visible from the state park?

A-CSC 45: Windsor Meadows State Park is a 155-acre park along the Connecticut River in Windsor. The park is in a north/south configuration, bound to the west by railroad tracks and to the east by the Connecticut River. The Taylor & Fenn property is located west of the railroad tracks which creates the western boundary of the Park. The BESF is located on the northwest portion of the Taylor & Fenn property. Due to the position of the Taylor & Fenn building complex, the BESF would not be visible from the Windsor Meadows State Park. The distance from the BESF location to the western edge of the Park is approximately 1,000 feet.

Interrogatory CSC 46

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 2

Q-CSC 46: Submit photographic site documentation with notations linked to the site plans or a detailed aerial image that identify locations of site-specific and representative site features. The submission should include photographs of the site from public road(s) or publicly accessible area(s) as well as Site-specific locations depicting site features including, but not necessarily limited to, the following locations as applicable:

For each photo, please indicate the photo viewpoint direction and stake or flag the locations of site-specific and representative site features. Site-specific and representative site features include, but are not limited to, **as applicable**:

1. wetlands, watercourses and vernal pools;
2. forest/forest edge areas;
3. agricultural soil areas;
4. sloping terrain;
5. proposed stormwater control features;
6. nearest residences;
7. Site access and interior access road(s);
8. utility pads/electrical interconnection(s);
9. clearing limits/property lines;
10. mitigation areas; and
11. any other noteworthy features relative to the Project.

A photolog graphic must accompany the submission, using a site plan or a detailed aerial image, depicting each numbered photograph for reference. For each photo, indicate the photo location number and viewpoint direction, and clearly identify the locations of site-specific and representative site features show (e.g., physical staking/flagging or other means of marking the subject area).

The submission shall be delivered electronically in a legible portable document format (PDF) with a maximum file size of <20MB. If necessary, multiple files may be submitted and clearly marked in terms of sequence.

Interrogatory CSC 46

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 2 of 2

A-CSC 46: See Attachment CSC-46-1

1. wetlands, watercourses and vernal pools: none
2. forest/forest edge areas: there are no forested portions of the property. There is a single tree located at the Site.
3. Agricultural soil areas: none
4. sloping terrain: none - project area is not sloped.
5. proposed stormwater control features: No stormwater control features planned.
6. nearest residences: Nearest residence is 600 feet from project, across highway I-291. BESF is not visible from this residence.
7. Site access and interior access road(s): Images of current and proposed site access locations shown.
8. utility pads/electrical interconnection(s): Eversource connection equipment and location shown in photolog.
9. clearing limits/property lines: the northern property line is in close proximity to the Site, and shown in photolog. Boundary line is shown in Attachment CSC-6-1.
10. mitigation areas: none.
11. any other noteworthy features relative to the Project: The photolog includes an image of the public view of the proposed access road location.

Interrogatory CSC 47

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 1

Q-CSC 47: Quantify the amounts of cut and fill that would be required to develop the proposed facility. If there is excess cut, will this material be removed from the site or deposited on the site? Were soils in the construction area assessed for the potential of hazardous materials?

A-CSC 47: Endurant expects to excavate up to 400 cubic yards of earth. We anticipate that most of it will be removed off-site and taken to an appropriate facility, to avoid causing Taylor & Fenn inconvenience. No soil sampling has been conducted to date, however prior to conducting site work, soil sampling will be conducted to identify the site conditions, and based on the results, an appropriate soil management plan will be developed.

As discussed in Section IV.F. of the Petition, the Taylor & Fenn property is subject to Environmental Land Use Restriction in the area north of the facility buildings and to the northern property line. Once final engineering drawings are developed, it will be determined whether any trenching will need to occur in a restricted subject area, and a release from the ELUR will be sought from CT DEEP to conduct the trenching activities. Soil management protocols from trenching in a subject area will be determined if and when a release is required.

Interrogatory CSC 48

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 1

- Q-CSC 48: Provide the estimated typical construction hours and days of the week (e.g. Monday through Friday 8 AM to 5 PM)?
- A-CSC 48: Endurant's construction teams and subcontractors typically work from 8 AM to 5 PM, Monday to Friday. Occasionally specialist equipment is required (such as a crane to lift the containerized batteries from the flatbed truck upon which they will be transported) which might require work to be done on-site outside these hours, from 7 AM to 6 PM.

Interrogatory CSC 49

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 1

- Q-CSC 49: Provide detailed site plans with notes/plans for site construction and environmental mitigation.
- A-CSC 49: See Attachment CSC-49-1 for details on construction notes, foundation layouts, sections and detail views. These are draft at this point as detailed engineering has not been completed. Environmental mitigation measures to be taken during site clearing and construction will include the use of silt fencing to control erosion and runoff during precipitation events, water spray to minimize dust, minimizing the clearing necessary for the project, and standardized operating times to minimize sound and light impacts outside normal business hours. Construction will be coordinated with Taylor & Fenn personnel to ensure continued access to the Taylor & Fenn facility by emergency responders and other critical traffic during the construction phase.

Interrogatory CSC 50

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 1

Q-CSC 50: Referring Petition p. 11, it states the battery cells may be replenished after 10 years.

- a. What is anticipated annual degradation of battery storage capacity?
- b. At what remaining battery capacity is replenishment recommended?
- c. What is the estimated cost of replenishment?

A-CSC 50: a. Please refer to this annual degradation table for the proposed batteries (note that this table is purely at the battery container level and does not include losses of energy throughput in the balance of plant equipment).

	CSI
End of Year	0.5P State of Health (SoH) of Initial Storage Capacity
1	91.7%
2	89.2%
3	86.7%
4	85.2%
5	84.0%
6	83.1%
7	81.9%
8	80.0%
9	78.6%
10	77.2%

b. This is not applicable, because the business model does not involve replenishment. The only circumstances under which replenishment would take place would be under manufacturer's warranty, due to a failure of the battery to meet required performance targets.

c. This is not applicable, because the business model does not involve replenishment. The only circumstances under which replenishment would take place would be under manufacturer's warranty, due to a failure of the battery to meet required performance targets.

Interrogatory CSC 51

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 1

Q-CSC 51: At what time intervals would the transformers, inverters and switchgear need replacement?

A-CSC 51: The equipment is designed for a 20-year life.

Interrogatory CSC 52

Endurant Energy
Docket No. 1588

Witness: Brian Mehler
Page 1 of 1

Q-CSC 52: Provide a decommissioning and site restoration plan.

A-CSC 52: Please see Attachment CSC-52-1.



**Taylor & Fenn
22 Deerfield Road, Windsor
Parcel and Site Boundaries**





79 Elm Street • Hartford, CT 06106-5127

www.ct.gov/deep

Affirmative Action/Equal Opportunity Employer

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6/16/2023

Maura Hawkins
BERKSHIRE ENVIRONMENTAL CONSULTANTS, INC.
1450 East St
Pittsfield, MA 01201
mhawkins@berkshireenvironmental.com

Subject: Filing # 98847
Windsor Site
NDDDB – New Determination Number: 202304967
22 DEERFIELD RD
WINDSOR

Expiration Date: 6/16/2025

Based on current data maintained by the Natural Diversity Database (NDDDB) and housed in the DEEP ezFile portal, negative impacts to populations of Federal or State Endangered, Threatened, or Special Concern species (RCSA Sec. 26-306) are not anticipated from the proposed Building and Infrastructure Development (including stormwater discharge associated with construction) / Addition to an existing facility, Windsor Site.

This NDDDB – New determination may be utilized to fulfill the Endangered and Threatened Species requirements for state-issued permit applications, licenses, registration submissions, and authorizations. However, please be aware of the following limitations and conditions:

- This determination does not preclude the possibility that listed species may be encountered on site. Should this occur, a report must be submitted to the Natural Diversity Database promptly and additional action may be necessary to remain in compliance with certain state permits. Please fill out the [appropriate survey form](#) and follow the instructions for submittal.
- If your project involves preparing an Environmental Impact Assessment, this NDDDB consultation and determination should not be substituted for conducting biological field surveys assessing on-site habitat and species presence.
- This determination applies only to the project as described in the submission and summarized at the end of this letter. Please re-submit an updated Request for Review if the project's scope of work and/or timeframe changes, including if work has not begun by 6/16/2025.

The NDDDB – New determination for the Windsor Site at 22 DEERFIELD RD, WINDSOR as described in the submitted information and summarized at the end of this document is valid for two years from the date on this letter.

Natural Diversity Database information includes all information regarding listed species available to us at the time of the request. This information is a compilation of data collected over the years by the Department of Energy and Environmental Protection's Natural History Survey and cooperating units of DEEP, land owners, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the Database and accessed through the ezFile portal as it becomes available.

This letter is computer generated and carries no signature. If however, any clarification is needed, or if you have further questions, please contact the following:

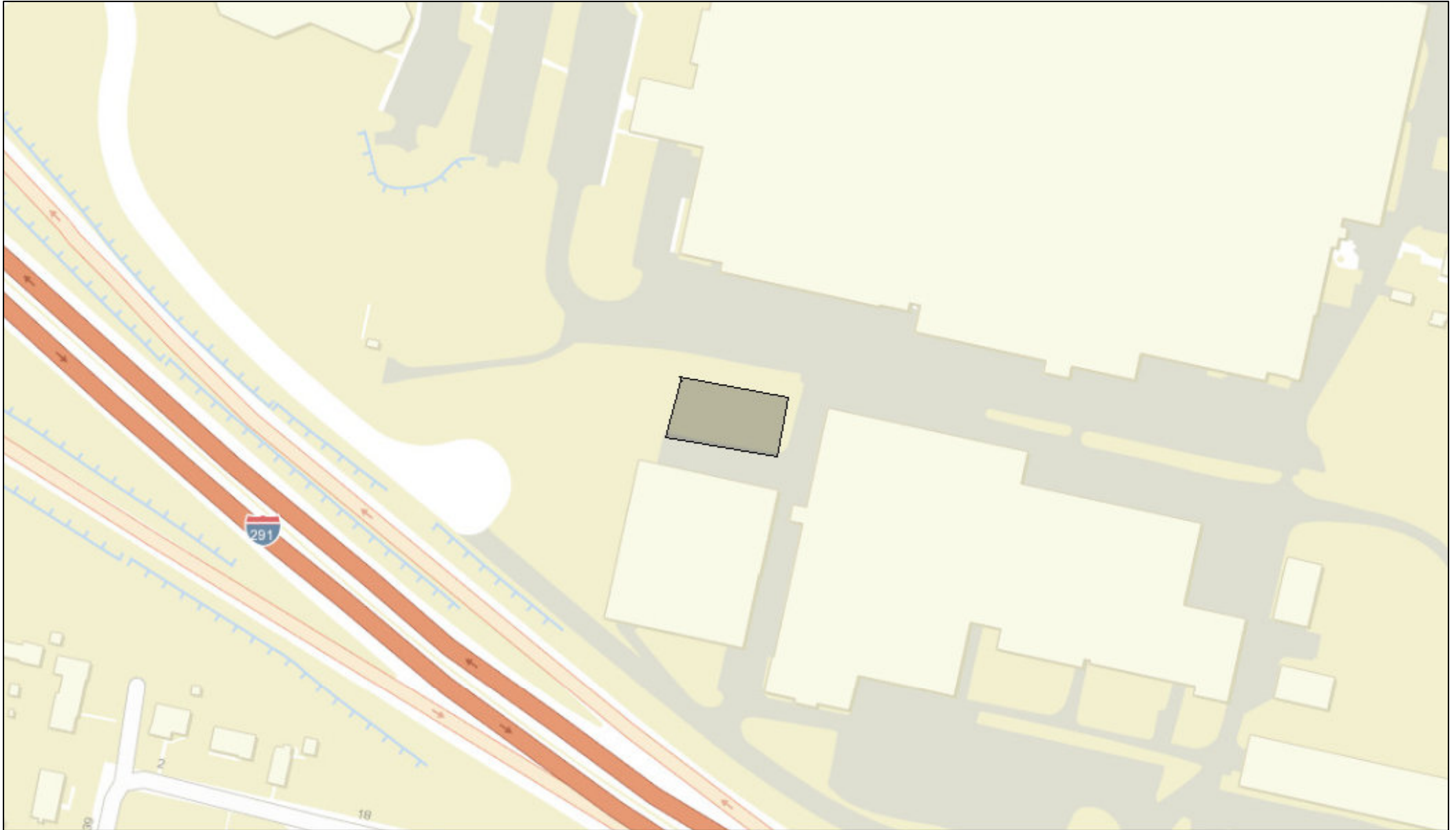
CT DEEP Bureau of Natural Resources
Wildlife Division
Natural Diversity Database
79 Elm Street, 6th floor
Hartford, CT 06106-5127
(860) 424-3011
deep.nddbrequest@ct.gov

Please reference the Determination Number provided in this letter when you e-mail or write. Thank you for submitting your project through DEEP's ezFile portal for Natural Diversity Database reviews.

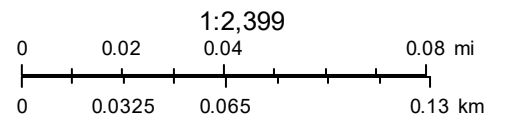
Application Details:

Project involves federal funds or federal permit:	No
Project involves state funds, state agency action, or relates to CEPA request:	No
Project requires state permit, license, registration, or authorization:	No
DEEP enforcement action related to project:	
Project Type:	Building and Infrastructure Development (including stormwater discharge associate with construction)
Project Sub-type:	Addition to an existing facility
Project Name:	Windsor Site
Project Description:	

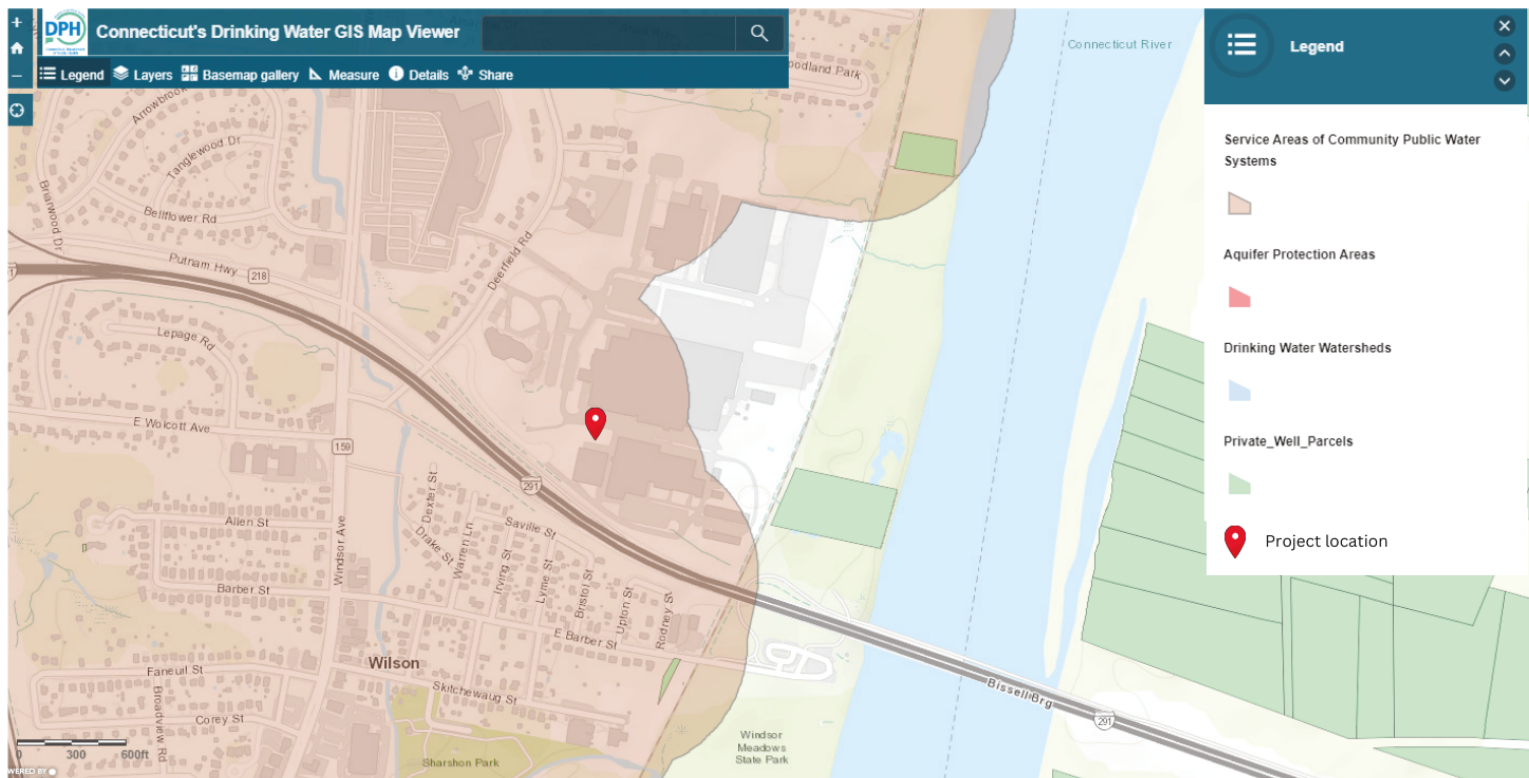
Windsor Site Map



June 16, 2023



Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Battery Energy Storage System
Taylor & Fenn
22 Deerfield Road
Windsor, Connecticut

Aquifer and Well Mapping



Taylor & Fenn Windsor
22 Deerfield Road
Photo Key





endurant 

Taylor & Fenn Windsor
22 Deerfield Road
Photo Key

GENERAL NOTES

- ALL CONSTRUCTION SHALL CONFORM WITH THE PROVISIONS OF THE CURRENTLY ADOPTED IBC & NY UNIFORM CONSTRUCTION CODES, OSHA AND ALL STATE AND LOCAL LAWS AND THEIR SUPPLEMENTS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE LOCATION OF ANY UTILITIES IN THE VICINITY OF THE CONSTRUCTION AND SHALL COMPLETE THE CONSTRUCTION IN A MANNER WHICH WILL PREVENT DAMAGE TO THEM. SHOULD ANY DAMAGE TO SUCH UTILITIES OCCUR, THE CONTRACTOR SHALL REPAIR THE DAMAGE AT ITS OWN EXPENSE AND TO THE SATISFACTION OF THE OWNER.
- THE CONTRACTOR SHALL FIELD CHECK AND VERIFY ALL DIMENSIONS AND ELEVATIONS OF EXISTING WORK PRIOR TO THE START OF FABRICATION & CONSTRUCTION.

SOIL NOTES

- FOUNDATIONS ARE DESIGNED FOR A MINIMUM BEARING PRESSURE OF 3,000 PSF.
- A GEOTECHNICAL ENGINEER SHALL INSPECT & APPROVE MINIMUM BEARING PRESSURE OF 3,000 PSF.
- CONTRACTOR SHALL PROVIDE ALL PROTECTION REQUIRED SO AS TO SAFE GUARD EXISTING UTILITIES AND NEIGHBORING PROPERTIES.
- CONTRACTOR SHALL REMOVE ALL ORGANIC FILL & SOFT SOILS COMPONENTS AS SPECIFIED BY GEO TECHNICAL ENGINEER.
- CONTRACTOR SHALL COMPACT ALL STRUCTURAL FILL UNDERNEATH THE FOUNDATION TO 95% OF DRY DENSITY AS PER ASTM D1557 WITH MAXIMUM LIFTS OF 9" OR LESS. ALL REMAINING FILLS WILL BE NON-STRUCTURAL FILL COMPACTED TO 90% OF DRY DENSITY PER SOILS REPORT.
- STRUCTURAL FILL SHOULD BE 12" BEFORE COMPACTION, AND 9" AFTER COMPACTION. FOR ADDITIONAL INFORMATION REGARDING STRUCTURAL BACK FILL, COMPACTION REQUIREMENTS, SUITABLE BACK FILL MATERIAL SEE GEOTECHNICAL, REPORT.
- DEWATERING MAY BE REQUIRED DURING AND UNTIL THE CONCRETE FOUNDATIONS ARE SET. SEE GEOTECHNICAL REPORT.

FOUNDATION NOTES

- A GEOTECHNICAL EXPLORATION REPORT SHALL BE PREPARED CONTAINING SUBSURFACE DATA AND FOUNDATION/EARTHWORK RECOMMENDATIONS HAS BEEN PREPARED BY SESI CONSULTING ENGINEERS. ALL RECOMMENDATIONS CONTAINED IN THE REPORT ARE TO BE CONSIDERED PART OF THE CONTRACT DOCUMENTS.
- PRESUMPTIVE BEARING CAPACITY: 3000 psf
- FOUNDATION DESIGN IS BASED ON SHALLOW SPREAD FOOTINGS BEARING ON SUITABLE NATURAL SOILS AND/OR NEW COMPACTED STRUCTURAL FILL.
- ALL ORGANIC MATERIALS, EXCESSIVELY SOFT OR LOOSE SOILS, TREES, ASPHALT, CONCRETE, DEBRIS AND OTHER DELETERIOUS MATERIALS SHOULD BE REMOVED WITHIN AND AT LEAST 5 FEET BEYOND THE BUILDING LIMIT.
- PROOF ROLL ALL SUBGRADES, UNDER THE OBSERVATION OF THE GEOTECHNICAL ENGINEER. UNSUITABLE AREAS SHALL BE REMOVED AND REPLACED AS DIRECTED BY THE GEOTECHNICAL ENGINEER. NO FILL FOR BUILDING SUPPORT SHALL BE PLACED UNTIL SUBGRADES AND FILL MATERIAL HAVE BEEN OBSERVED AND APPROVED BY THE GEOTECHNICAL ENGINEER.
- AREAS REQUIRING UNDERCUT AND FILL MATERIAL DUE TO THE PRESENCE OF UNSUITABLE MATERIAL SHALL BE BACKFILLED TO THE DESIGN FOOTING SUBGRADE WITH NEW COMPACTED STRUCTURAL FILL.
- COMPACTED STRUCTURAL FILL FOR BUILDING SUPPORT UTILIZING MATERIAL APPROVED FOR USE BY THE GEOTECHNICAL ENGINEER INCLUDE: ON-SITE GRANULAR SOILS INCLUDING GW, GP, GW, SM, SP AND SM CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM (USCS). FURTHERMORE, THE MATERIAL TO BE UTILIZED AS STRUCTURAL FILL SHOULD HAVE A PLASTICITY INDEX (PI) LESS THAN 2 SUBJECT TO FINAL APPROVAL BY GEOTECHNICAL ENGINEER.
- MATERIAL TRANSPORTED FROM OFF-SITE SHALL MEET THE REQUIREMENTS OF GEOTECHNICAL REPORT.
- SLABS ON GRADE MAY BE SUPPORTED ON FIRM SUITABLE NATURAL SOILS, OR ON COMPACTED STRUCTURAL FILL FOLLOWING STRIPPING OF TOPSOIL, VEGETATION, ASPHALT AND ANY SOFT OR DISTURBED SOILS WITHIN THE BUILDING AREA. A SIX INCH WASHED GRAVEL OR CRUSHED STONE LAYER CORRESPONDING TO AASHTO SIZE NO. 57 AGGREGATE SHOULD BE USED BENEATH ALL FLOOR SLABS ON GRADE.
- COMPACTED STRUCTURAL FILL BENEATH ALL FOUNDATIONS, SLABS ON GRADE AND ADJACENT TO FOUNDATION WALLS SHALL BE PLACED IN LIFTS NOT EXCEEDING 8 INCHES IN LOOSE THICKNESS AND BE COMPACTED TO 95 PERCENT OF MAXIMUM DRY DENSITY PER ASTM D-1557, MODIFIED PROCTOR TEST.
- BACKFILL IMMEDIATELY BEHIND BASEMENT WALLS SHOULD BE CLEAN, GRANULAR MATERIAL CONTAINING LESS THAN 10% PERCENT PASSING THE NO. 200 SIEVE (0.075mm). IN ADDITION, THE COMPACTION BEHIND THESE WALLS SHOULD BE NINETY-FIVE (95) PERCENT OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D-1557. EXCESSIVE COMPACTION MAY CAUSE DAMAGE TO THE WALLS. HAND OPERATED EQUIPMENT SHOULD BE USED FOR COMPACTION NEAR EXISTING AND NEW FOUNDATION WALLS. BACKFILL AGAINST NEW FOUNDATION WALLS ONLY AFTER FIRST FLOOR IS IN PLACE OR ADEQUATE BRACING HAS BEEN PROVIDED. CONCRETE FLOOR SLABS SHALL HAVE CURED 7 DAYS MINIMUM PRIOR TO BACKFILLING.
- THE EXCAVATION FOR PLACEMENT OF COMPACTED STRUCTURAL FILL SHOULD EXTEND BEYOND THE EDGE OF FOOTINGS A MINIMUM DISTANCE EQUAL TO THE DEPTH OF FILL.
- EXTEND BOTTOM OF EXTERIOR FOOTINGS AT LEAST 3.0 FEET BELOW THE EXTERIOR FINISH GRADE FOR PROTECTION AGAINST FROST.
- ALL SUBGRADES AND UNDERCUTS SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER. SOILS EXPOSED AT THE BASES OF ALL APPROVED FOUNDATION EXCAVATIONS SHOULD BE PROTECTED AGAINST ANY DETRIMENTAL CHANGE IN CONDITION, SUCH AS DISTURBANCE FROM RAIN OR FROST. SURFACE RUNOFF SHOULD BE DRAINED AWAY FROM THE EXCAVATIONS AND NOT BE ALLOWED TO POND. FOUNDATION EXCAVATIONS SHOULD BE PROTECTED FROM RAINFALL OR FREEZING CONDITIONS. SLOPE FOOTING EXCAVATIONS AS REQUIRED FOR STABILITY AND SAFETY OR PROVIDE SHEETING OR SHORING IN ACCORDANCE WITH OSHA REQUIREMENTS. IN THE EVENT THAT THE CONTRACTOR DETERMINES THAT SHEETING OR SHORING IS REQUIRED FOR EXCAVATION, THE CONTRACTOR SHALL RETAIN THE SERVICES OF A REGISTERED PROFESSIONAL STRUCTURAL ENGINEER FOR DESIGN AND DOCUMENTATION OF ALL SHEETING AND SHORING REQUIRED FOR THE WORK.

LOADS AND CODES

- THE DRAWINGS, TO THE BEST OF THE ENGINEERS KNOWLEDGE, COMPLY WITH THE APPLICABLE REQUIREMENTS OF THE FOLLOWING BUILDING CODE:
NYC BUILDING CODE (NYCBC) 2018 & ASCE 7-16
- THE FOLLOWING LOADING INFORMATION IS APPLICABLE TO ALL STRUCTURES ON THIS PROJECT, UNLESS NOTED OTHERWISE.
- DESIGN LOAD CRITERIA
 - WIND: PER ASCE 7-16 & ASCE 7-16
WIND VELOCITY (3 SECOND GUST): 114 MPH
EXPOSURE TYPE: C
OCCUPANCY CATEGORY: II
GUST FACTOR G: 0.85
TOPOGRAPHIC FACTOR Kzt: 1.0
WIND DIRECTIONALITY FACTOR: 1.0
WIND IMPORTANCE FACTOR: 1.0
 - SEISMIC: PER NYCBC 2018 & ASCE 7-16
MAPPED SPECTRAL RESPONSE ACCELERATION, Ss: 0.282g
MAPPED SPECTRAL RESPONSE ACCELERATION, S1: 0.059g
DESIGN SPECTRAL RESPONSE ACCELERATION, Sds: 0.296
DESIGN SPECTRAL RESPONSE ACCELERATION, Sd1: 0.094
SITE CLASS: CLASS D
SEISMIC DESIGN CATEGORY: B
IMPORTANCE FACTOR, I: 1
RESPONSE MODIFICATION COEFFICIENT, R: 3.25
STRUCTURAL PERIOD, T: SEE CALCULATIONS
RISK CATEGORY: II
 - SNOW: PER NYCBC 2018 & ASCE 7-16
RISK CATEGORY: II
IMPORTANCE FACTOR I= 1.0
EXPOSURE FACTOR Ce= 1.0
GROUND SNOW LOAD Pg= 20 PSF

ANCHORS

1. CONTRACTOR IS RESPONSIBLE FOR SURVEYING AND ASCERTAINING THE EXISTING BASE CONDITIONS THICKNESSES IN ACCORDANCE WITH THE EXISTING CONDITIONS AND DEMOLITIONS NOTES.

HIT HY 70 & 200 INJECTION ADHESIVE ANCHORS
2. INJECTION ADHESIVE ANCHORS SHALL BE HYBRID ADHESIVE TYPE SYSTEM IN PREDRILLED HOLES EXCEPT WHERE DRAWINGS SPECIFICALLY CALL FOR ANOTHER TYPE OF ANCHOR. ALL DESIGNS ARE BASED ON HILTI, INC., HIT HY 70 & 200 INJECTION ADHESIVE ANCHOR. INSTALL INJECTION ADHESIVE ANCHORS IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

3. ALL ANCHOR EMBEDMENT LENGTHS SHALL BE BASED ON THE BASE MATERIAL THICKNESS LESS 1 1/2".

CONCRETE NOTES

- ALL CONCRETE WORK SHALL CONFORM TO ACI 318 (LATEST EDITION).
- CONCRETE COMPRESSIVE STRENGTH AT 28 DAYS SHALL BE:
 - FOUNDATIONS: 4000 PSI
 - SLABS ON GRADE: 4000 PSI
 ALL CONCRETE SUBJECT TO FREEZE/THAW CYCLE SHALL BE AIR-ENTRAINED.
- CONCRETE SHALL NOT BE PLACED IN WATER OR ON FROZEN GROUND.
- REINFORCING BARS SHALL CONFORM TO ASTM A615, GRADE 60 DEFORMED BARS AND SHALL BE DETAILED, FABRICATED AND PLACED IN ACCORDANCE WITH ACI 315, LATEST EDITION. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A-185 AND BE PROVIDED IN FLAT SHEETS.
- COMPLETE SHOP DRAWINGS AND SCHEDULES OF ALL REINFORCING STEEL SHALL BE PREPARED BY THE CONTRACTOR AND SUBMITTED TO THE ENGINEER FOR REVIEW.
- REINFORCEMENT SHALL BE CONTINUOUS AROUND CORNERS AND AT INTERSECTIONS. PROVIDE CLASS "A" TENSION LAP SPLICES FOR ALL HORIZONTAL WALL REINFORCING; UNLESS OTHERWISE SHOWN ON PLAN. PROVIDE CLASS "B" TENSION LAP SPLICES FOR ALL HORIZONTAL GRADE BEAM REINFORCING.
- CLEARANCES FOR REINFORCEMENT:
 - CONCRETE PLACED DIRECTLY ON EARTH, FOOTINGS: 3"
 - SLABS, FROM TOP UNLESS OTHERWISE NOTED: 1"
 - FORMED SURFACES EXPOSED TO WEATHER OR EARTH: #5 BAR OR SMALLER: 1 1/2" #6 BAR OR LARGER: 2"
- FOR ALL OPENINGS IN CONCRETE WALLS AND SLABS, PROVIDE SUPPLEMENTAL REINFORCING AROUND OPENING AS SHOWN ON THE CONTRACT DOCUMENTS.
- CONTROL JOINTS IN SLABS ON GRADE: SEE SPECIFICATION SECTION 03300.
- CONTROL JOINTS SHALL BE LOCATED AS SHOWN ON SLAB ON GRADE PLAN.
 - CONTROL JOINTS SHALL BE SAW CUT (1/3 THE SLAB DEPTH) AND FILLED WITH JOINT SEALER. CUT JOINTS AS SOON AS POSSIBLE WITHOUT FRAYING THE CONCRETE SURFACE.
 - CONSTRUCTION JOINTS SHALL INCLUDE A 1"x2" SHEAR KEY AT MID-HEIGHT OF SLAB.
 - CONTROL JOINTS IN WALLS SHALL NOT EXCEED 40'-0" O.C. NOR 15'-0" FROM ANY CORNER. CONTROL JOINTS SHALL BE LOCATED BY CONTRACTOR IN ACCORDANCE WITH ACI CRITERIA, MAXIMUM SPACINGS AS PER TYPICAL SLAB ON GRADE DETAILS AND TYPICAL CONTROL JOINT LOCATION DETAILS (U.N.O.). MINIMUM CONTROL JOINT DEPTHS ARE INDICATED ON TYPICAL CONTROL JOINT DETAILS. CONTROL JOINTS WHICH ARE NOT PROMPTLY OR PROPERLY CUT AND ARE NOT FUNCTIONING SHALL BE RECUT BY THE CONCRETE CONTRACTOR. RECURS OF JOINTS WHICH WERE NOT PROMPTLY OR PROPERLY CUT SHALL BE 3" DEEP MINIMUM.
 - THE FINISH TOLERANCE OF ALL SLABS SHALL BE IN ACCORDANCE WITH ACI 302 AND THAT SPECIFIED ON THE CONTRACT DOCUMENTS. SEE SPECIFICATION SECTION 03300 FOR FINISHING.
- ANCHOR BOLTS SHALL CONFORM TO ASTM F1554 GR. 36 UNLESS NOTED OTHERWISE.
- LAP ALL BARS MINIMUM 40 DIAMETERS. LAP ALL WVF A MINIMUM OF 6 INCHES.
- LIGHTWEIGHT CONCRETE SHALL BE USED FOR ALL FRAMED ROOFS (WHERE INDICATED). THIS CONCRETE IS TO HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4000 PSI AND A MAXIMUM IN-PLACE DRY DENSITY OF 115 POUNDS PER CUBIC FOOT.
- UNLESS OTHERWISE APPROVED ALL REINFORCEMENT SHALL BE BLOCKED INTO POSITION WITH PRECAST CONCRETE BUSHES HAVING A MINIMUM COMPRESSIVE STRENGTH EQUAL TO THAT OF THE SLAB OR FOUNDATION SYSTEM.
- IN ORDER TO AVOID CONCRETE SHRINKAGE CRACKING, PLACE CONCRETE SLABS IN ALTERNATING LANE PATTERN. THE MAXIMUM LENGTH OF SLAB CAST IN ANY ONE CONTINUOUS POUR IS RECOMMENDED TO BE LESS THAN 100 FEET.
- SEE THE ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF DEPRESSED SLAB AREAS, DRAINS, AND DIMENSIONS.
- PROVIDE GALVANIZED STEEL SLEEVES WHERE PIPES PASS THROUGH EXTERIOR CONCRETE WALLS, BEAMS OR SLABS. PROVIDE PVC SLEEVES WHERE PIPES PASS THROUGH INTERIOR CONCRETE WALLS, BEAM OR SLABS (UNLESS NOTED OTHERWISE).
- DO NOT PLACE UNDERGROUND UTILITIES OR PIPES BELOW FOOTINGS. IF ANY SUCH CONDITIONS OCCUR, NOTIFY THE ENGINEER IMMEDIATELY AND DROP THE BOTTOM OF FOOTING ELEVATION IN ACCORDANCE WITH THE TYPICAL STEP FOOTING AT PIPE CROSSING DETAIL IN ORDER TO CLEAR THE PIPE.
- PROVIDE FOR ANY DEWATERING AS REQUIRED DURING EXCAVATION AND CONSTRUCTION OF THE FOUNDATION SYSTEM.
- CONTRACTOR SHALL USE TYPE II CONCRETE BLEND FOR CORROSION RESISTANCE.

STEEL NOTES

- STRUCTURAL STEEL FABRICATION, ERECTION, AND CONNECTION DESIGN SHALL CONFORM TO:
 - AISC "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS" (ANSI/AISC 360-10 OR (05) (PART 16 OF AISC "STEEL CONSTRUCTION MANUAL")
 - AISC "STEEL CONSTRUCTION MANUAL", 13TH EDITION (14TH EDITION)
 - AISC "DETAILING FOR STEEL CONSTRUCTION", 3RD EDITION
- ALL WELDING SHALL CONFORM TO:
 - "STRUCTURAL WELDING CODE - STEEL", AWS D1.1 - LATEST EDITION
 - "STRUCTURAL WELDING CODE - SHEET STEEL" AWS D1.3 - LATEST EDITION
- ALL STEEL SHALL CONFORM TO THE FOLLOWING ASTM SPECS:
 - WIDE FLANGE SHAPES: ASTM A992, Fy = 50 KSI.
 - CHANNELS, ANGLES, PLATES & BARS: ASTM A36, Fy = 36 KSI
 - CHANNELS, ANGLES, PLATES & BARS: ASTM A572 GR. 50 (WHERE NOTED)
 - HOLLOW STRUCTURAL SECTIONS: ASTM A500 GR. B, Fy = 46 KSI
 - STEEL PIPES: ASTM A53, GR. B, Fy = 35 KSI
 - WELDING ELECTRODES: AWS A5.1 OR A5.5, E70XX
 - HEADED STUDS: AWS D1.1 TYPE "B", Fu = 65 KSI (MIN.)
 - ANCHOR RODS: ASTM F1554 GR 36, U.N.O., ASTM F1554 GR. 55 (SECTION S1 WELDABILITY SUPPL.) ASTM F1554 GR. 105 (WHERE NOTED)
 - HIGH STRENGTH BOLTS: ASTM A325, U.N.O., ASTM 490 (WHERE NOTED)
- ALL STEEL WILL GET A FINISH OF PRIMER & TOPCOAT AS PER CLIENT'S REQUIREMENTS.

MASONRY NOTES

- ALL MASONRY CONSTRUCTION SHALL CONFORM TO ACI 530.1 SPECIFICATION FOR MASONRY STRUCTURES (LATEST EDITION).
- ALL CONCRETE MASONRY UNITS SHALL BE ASTM C90, GRADE N, TYPE 1 STANDARD WEIGHT BLOCKS INCLUDING STRETCHERS AND CORNER BLOCKS. SPECIFIED COMPRESSIVE STRENGTH OF MASONRY, f'm, SHALL BE A MINIMUM OF 1900. PSI, AS DETERMINED BY THE UNIT STRENGTH METHOD OR BY PRISM TESTS.
- MORTAR SHALL CONFORM TO ASTM SPECIFICATION C270, TYPE S. OWNER'S TESTING AGENCY SHALL VERIFY STRENGTH FROM FIELD-OBTAINED TEST CUBES.
- WHERE INDICATED, GROUT CORES SOLID WITH A HIGH SLUMP MIX IN ACCORDANCE WITH ASTM SPECIFICATION C476 HAVING A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 2000 PSI. OWNER'S TESTING AGENCY SHALL VERIFY STRENGTH FROM FIELD-OBTAINED TEST CUBES. THE USE OF WATER REDUCING ADMIXTURES IN GROUT IS NOT ALLOWED.
- PROVIDE VERTICAL REINFORCING IN GROUTED CELLS AS INDICATED. REINFORCING BARS SHALL CONFORM TO ASTM A615 GRADE 60. VERTICAL REINFORCING SHALL BE LAPPED 48 BAR DIAMETERS.
- HORIZONTAL WALL REINFORCING SHALL BE DUR-0-WAL TRUSS DESIGN WITH 3/16" Ø SIDE RODS AND 3/16" Ø GROSS TIES. REINFORCING SHALL BE PLACED IN MASONRY WALLS AT 16" O.C., MAXIMUM. SPACE HORIZONTAL JOINT REINFORCEMENT AT 8" ON CENTER IN ALL PARAPETS. USE SHOP FABRICATED SPECIAL PIECES AT ALL CORNERS AND TEES.
- CMU PLACED BELOW GRADE SHALL BE GROUTED SOLID.
- CONCRETE MASONRY UNITS SHALL BE LAID IN RUNNING BOND UNLESS NOTED OTHERWISE ON THE ARCHITECTURAL DRAWINGS. BOND CORNERS AND INTERSECTIONS OF LOAD BEARING WALLS. ALL EXTERNAL CORNERS SHALL BE BULL NOSE BLOCKS.
- ALL LOAD BEARING CMU WALLS SHALL CONTAIN JOINTS WHICH ARE FULLY BEDDED.
- FILL ALL BOND BEAMS WITH 3000 PSI CONCRETE USING 3/8" MAXIMUM AGGREGATE SIZE.
- PROVIDE TEMPORARY BRACING OF MASONRY WALLS TO WITHSTAND LATERAL LOADS DURING CONSTRUCTION.
- MASONRY WALLS WHICH SUPPORT LINTELS FOR DOORS, WINDOWS, DUCT OPENINGS 3FT OR LARGER (NOT INCLUDING STEEL JOISTS OR BEAMS) SHALL HAVE MINIMUM 16" WIDE CELLS GROUTED SOLID FULL HEIGHT UNDER BEARING WITH 1-#5 BAR MINIMUM VERTICAL AND DOWEL TO MATCH.
- BRICK VENEER ANCHORS FOR STUD BACKUP SHALL HAVE 3/16" ROUND HOT DIPPED GALVANIZED STEEL TIES FOR USE WITH DW-10 ANCHORS BY HOHMANN & BARNARD. LOCATE 16" O.C. VERTICALLY 32" O.C. HORIZONTALLY AND 8" O.C. AROUND OPENINGS. REINFORCEMENT FOR VENEER SHALL INCLUDE A MINIMUM OF ONE 3/16" Ø ROD IN THE VENEER CONNECTED TO ADJUSTABLE TIES. NOTE HEAVIER VENEERS MAY REQUIRE A SECOND ROD. DESIGN SHALL BE BASED ON HOHMANN AND BARNARD, INC. DW-10 SEISMICLIP INTERLOCK SYSTEM WITH BYNA-TIE MASONRY TIES.
- SEE ARCHITECTURAL DRAWINGS FOR CONTROL JOINTS.
- LOCATION OF LINTELS AT MASONRY OPENINGS SHALL BE COORDINATED WITH THE ARCHITECTURAL AND MECHANICAL DRAWINGS.
- UNLESS OTHERWISE NOTED, PROVIDE THE FOLLOWING LINTELS FOR EACH 4 INCH THICKNESS OF MASONRY WALL WITH 8 INCHES OF BEARING AT EACH END. FOR UNEQUAL LEG ANGLES, ORIENT THE LONG LEGS VERTICALLY. GALVANIZE ALL LINTELS EXPOSED TO THE WEATHER.
OPENINGS UP TO 4'----- L3 17x3 17x5/16
OPENINGS 4' TO 6'----- L4x3 17x5/16
OPENINGS 6' TO 8'----- L4x3 17x5/16
- PROVIDE REBAR DOWELS FROM THE FOUNDATIONS TO MATCH VERTICAL REINFORCING SIZE AND SPACING. DOWELS SHALL HAVE STANDARD 90 DEGREE HOOKS AND LAP WITH THE FIRST LIFT OF REINFORCING. STANDARD LAP LENGTH OF GRADE 60 MASONRY REINFORCING BARS SHALL BE 48 BAR DIAMETERS.
- PROVIDE STEEL JOIST AND BEAM BEARING PLATES AND OTHER ACCESSORIES AS INDICATED. PROVIDE 2 COURSES OF SOLIDLY GROUTED CMU BELOW ALL BEAM BEARINGS OVER A WIDTH OF 1'-4" CENTERED ON THE WALL OR BEARING POINT UNLESS OVER A BOND BEAM. SEE TYPICAL BEAM BEARING DETAIL FOR ADDITIONAL INFORMATION. PROVIDE PIERS PER PLAN AND PIER SCHEDULE.
- CONCRETE MASONRY UNITS NOTED AS "VANY" SHALL BE ONE-CORE, OPEN END UNITS WITH A COMPRESSIVE STRENGTH OF 3000 PSI ON THE NET AREA OF BLOCK. FURNISHED BY AN VANY BLOCK FRANCHISE HOLDER WALLS BUILT WITH VANY BLOCK SHALL USE TYPE M MORTAR AND GROUT FILL SHALL BE A PEA GRAVEL MIX HAVING A 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI. f'm = 2800 PSI. USE SPECIAL VANY CORNER UNITS AT CORNERS.
- BREAKAWAY FIRE ANCHORS SHALL BE ROLLED STRIP ZINC ALLOY IN 1/8" THICK BY HECKMANN BUILDING PRODUCTS INC., ANCHORS SHALL BE SUPPLIED AND INSTALLED BY THE GENERAL CONTRACTOR. GENERAL CONTRACTOR SHALL VERIFY ACTUAL SIZES, SHAPES AND NUMBER OF ANCHORS REQUIRED.
- CONTROL JOINTS IN MASONRY WALLS SHALL BE PLACED @ 20'-0" MAXIMUM

ABBREVIATIONS

AB	ANCHOR BOLT	INFO	INFORMATION
ABT	ABOUT	INS	INSIDE
ADTL	ADDITIONAL	IF	INSIDE FACE
ALT	ALTERNATE	INTER	INTERSECTION
B/PLT	BASE PLATE	JT	JOINT
B/B/PLT	BOTTOM OF BASE PLATE	KB	KNEE BRACE
BS	BOTH SIDES	LLD	LONG LEG OUTSTANDING
BCD	BOLT CIRCLE DIAMETER	LLV	LONG LEG VERTICAL
BC	BOLTED CONNECTION	MC	MOMENT CONNECTION
BOT	BOTTOM	NOM	NOMINAL
BRCG	BRACING	NS	NEAR SIDE
CHKD PLT	CHECKERED PLATE	NTS	NOT TO SCALE
CONST	CONSTRUCTION	OPNG	OPENING
CONT	CONTINUOUS	OS	OUTSIDE FACE
CONTR	CONTRACTOR	PLCS	PLACES
COL	COLUMN	PLTF	PLATFORM
CONC	CONCRETE	PROJ	PROJECTION
CJ	CONTROL JOINT	PLT	PLATE
DIA	DIAMETER	RAO	RADIUS
DIAG	DIAGONAL	REF	REFERENCE
DIM	DIMENSION	REM	REMOVABLE
DISCH	DISCHARGE	REINF	REINFORCING
DN	DOWN	REQD	REQUIRED
DWG	DRAWING	SCH	SCHEDULE
EA	EACH	SPCG	SPACING
EF	EACH FACE	SO	SQUARE
ES	EACH SIDE	SS	STAINLESS STEEL
EW	EACH WAY	STD	STANDARD
EL	ELEVATION	SPT	SUPPORT
EXIST	EXISTING	SYM	SYMMETRICAL
EQ	EQUAL	SH	SHEET
FAB	FABRICATE	THK	THICK
FS	FAR SIDE	T/PLT	TOE PLATE
FLG	FLANGE	T/C	TOP OF CONC
FTG	FOOTING	T/P	TOP OF PLATE
FDN	FOUNDATION	T/S	TOP OF STEEL
GAGE	GAGE	T/W	TOP OF WALL
GALV	GALVANIZED	T&B	TOP & BOTTOM
GR	GRADE	UON	UNLESS OTHERWISE NOTED
GRTG	GRATING	VERT	VERTICAL
HR	HAND RAIL	WC	WELDED CONNECTION
HORIZ	HORIZONTAL		

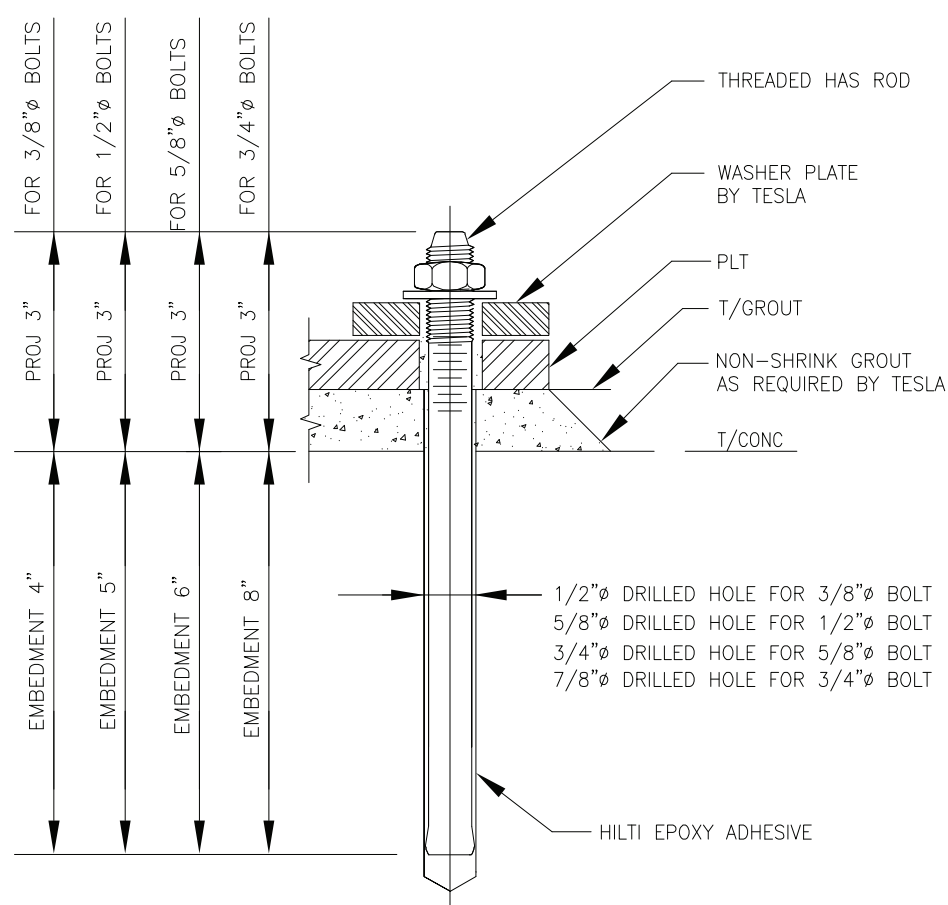
DRAWING LIST

DWG #	TITLE
S100	NOTES & DRAWING LIST
S101	FOUNDATION PLAN
S102	SECTIONS & DETAILS
S103	SECTIONS & DETAILS
S104	TYPICAL SECTIONS & DETAILS
S104	TYPICAL FENCE AND BOLLARD SECTIONS & DETAILS

SPECIAL INSPECTION ITEMS REQUIRED

SPECIAL INSPECTIONS	CODE/SECTION
STRUCTURAL STEEL DETAILS	BC 1704.3.2
STRUCTURAL STEEL HIGH STRENGTH BOLTS	BC 1704.3.3
MASONRY	BC 1704.5
CONCRETE--CAST IN PLACE	BC 1704.4
SUBSURFACE CONDITIONS:	BC 1704.7
SUBGRADE INSPECTION	BC 1704.7.1
SUBSURFACE CONDITIONS--FILL PLACEMENT & IN--PLACE DENSITY	BC 1704.7.2 BC 1704.7.3
SUBSURFACE INVESTIGATIONS (BORINGS/TEST PITS)	BC 1704.7.4
EXCAVATIONS--SHEETING, SHORING AND BRACING	BC 1704.20.2
POST INSTALLED ANCHORS	BC 1704.32
FOOTING & FOUNDATIONS	BC 110.3.1

Attachment CSC-49-1



HILTI HAS-R 304/316 SS
HIT-HY 200 EPOXY ANCHOR
BOLT
NTS

ANCHOR BOLT NOTES

- ANCHOR BOLT SHALL BE INSTALLED WITH HILTI HIT-HY-200 EPOXY, AS MANUFACTURED BY HILTI FASTENING SYSTEMS, TULSA, OKLAHOMA (OR APPROVED EQUAL). INSTALLATION SHALL BE PER MANUFACTURERS RECOMMENDATIONS.

endurant
320 W. 37TH STREET, 15TH FLOOR
NEW YORK, NY, 10018

DE
B

ENGINEERS
DB ENGINEERING SERVICES
88 WILMARD BLVD. COMMACK, NY 11728
TEL: (917) 326-1234 FAX: (631) 486-2469

STRUCTURAL ENGINEER:

EXL STRUCTURAL CONSULTANTS, LLC
BLUE HILL PLAZA
PEARL RIVER, NY 10965
TEL: (201) 561-4911

Issued:

08.21.2023 ISSUED FOR REVIEW & COMMENTS

PROJECT:

BATTERY ENERGY STORAGE
TAYLOR AND FENN
(7MW / 14MWH)

ADDRESS:

22 DEERFIELD ROAD,
WINDSOR, CT

DRAWING TITLE:

NOTES &
DRAWING LIST

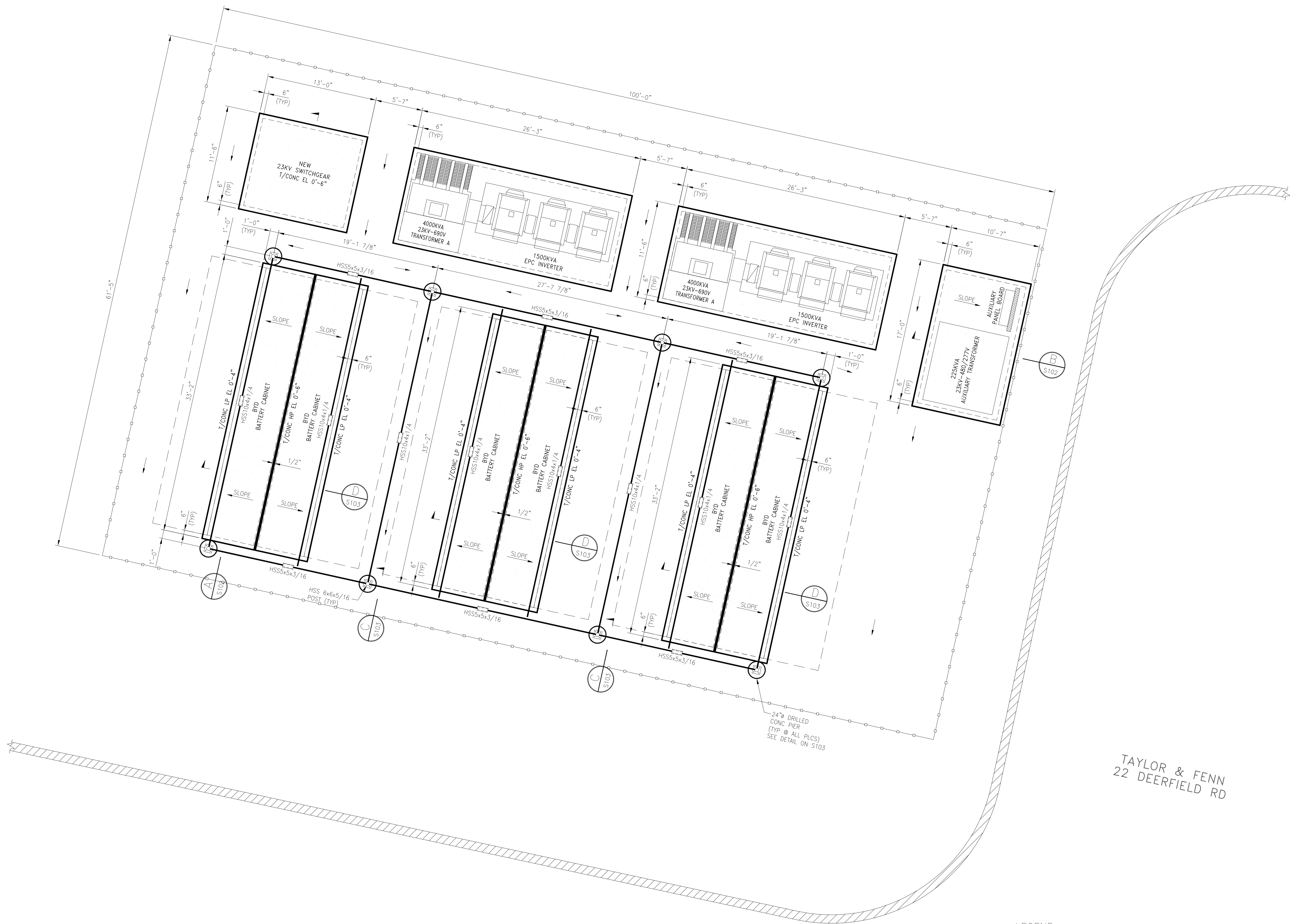
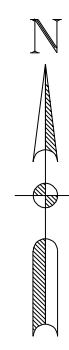
Seal & Signature:
RAJ EKHALIKAR

seal & signature:

DWG No:

S100

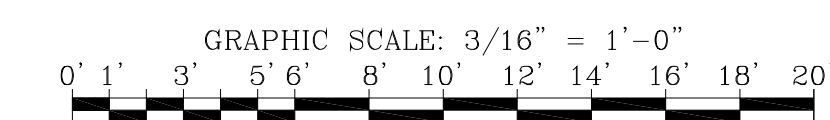
C.T. PROFESSIONAL ENGINEER
(NO 36942)

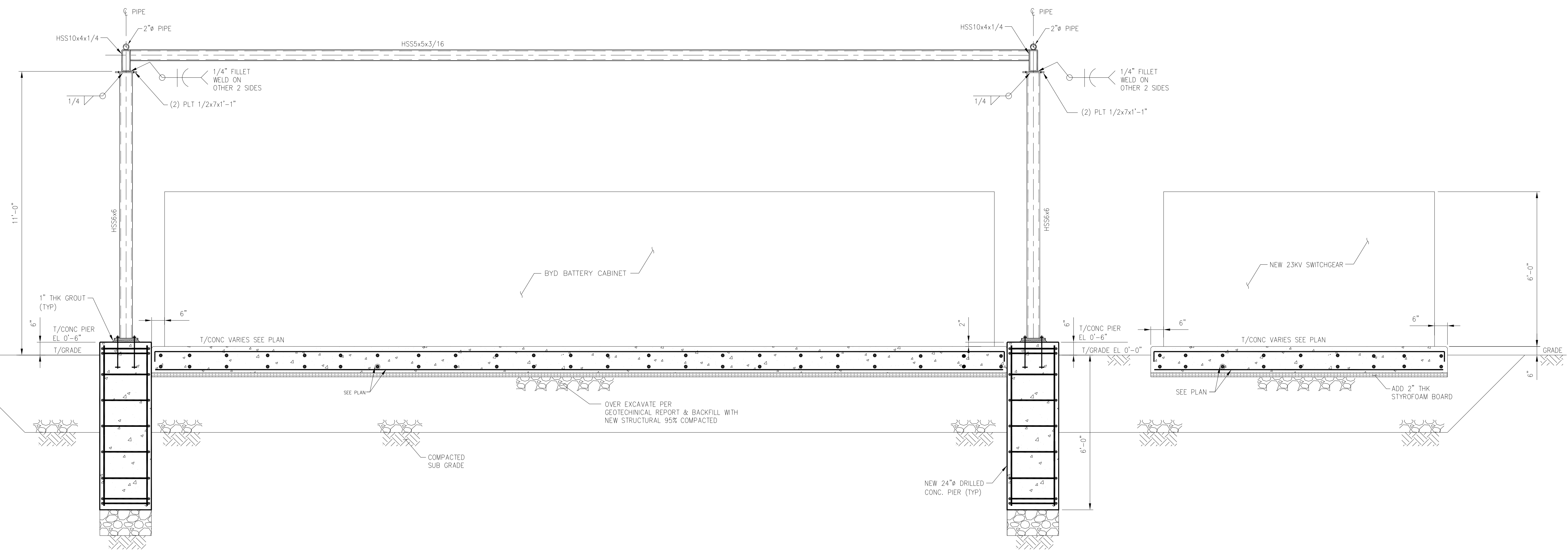


FOUNDATION PLAN
T/CONC HP EL 0'-6" (UON)
T/CONC LP EL 0'-4" (UON)
(SCALE: 3/16"=1'-0")

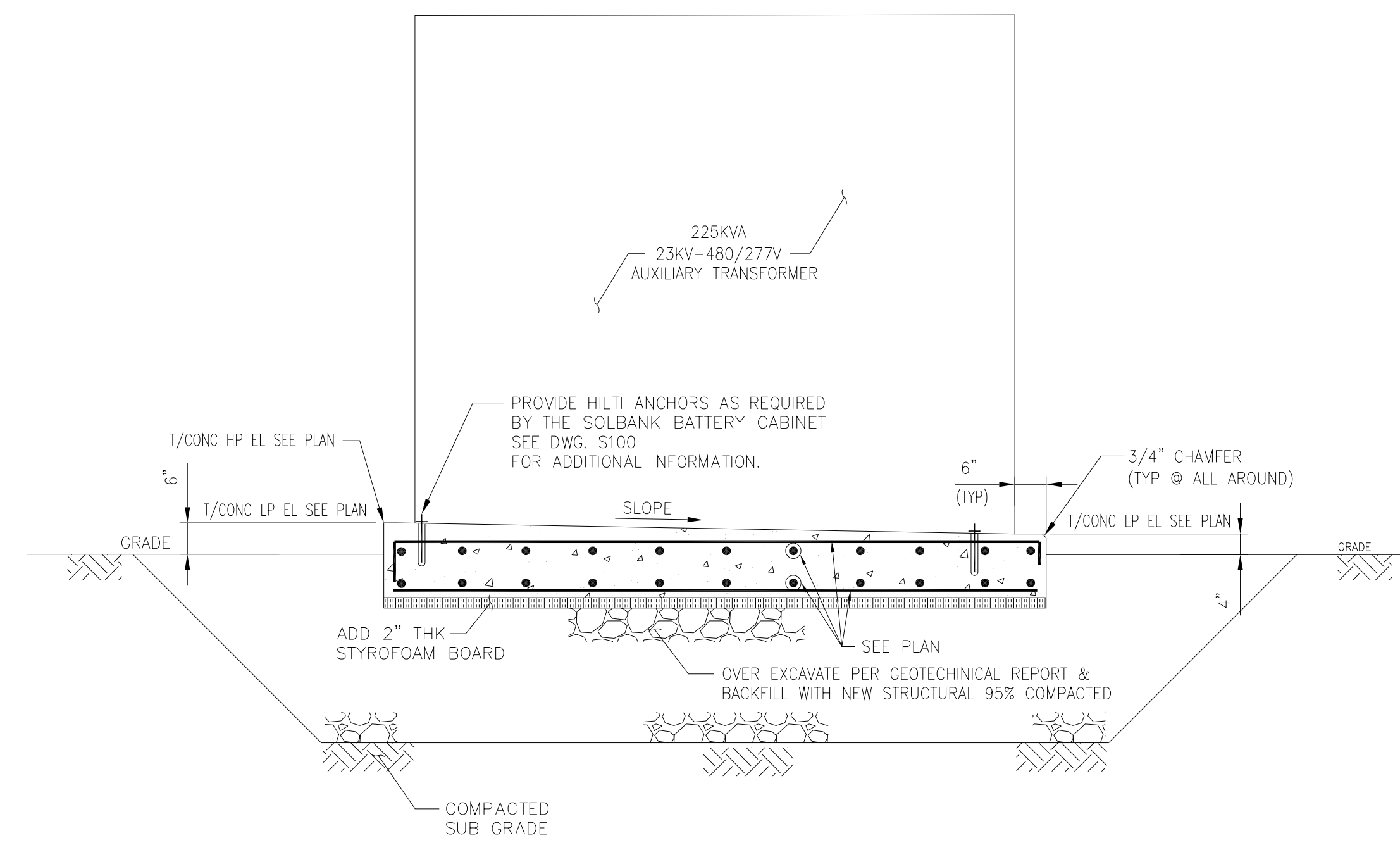
LEGEND:

- 1. DENOTES BLOCK
- 2. DENOTES CONC





SECTION **A**
(SCALE: 1/2"=1'-0") (S102)



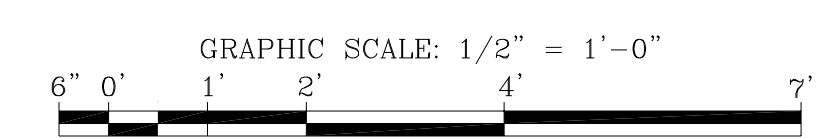
SECTION **B**
(SCALE: 1/2"=1'-0") (S101)

NOTES:

1. FOR GENERAL NOTES SEE DWG S100

LEGEND:

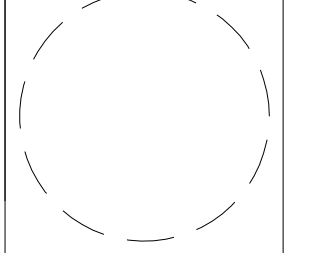
- 1. [Block Wall Symbol] DENOTES BLOCK WALL
- 2. [Concrete Symbol] DENOTES CONC



Seal & Signature:
RAJ EKHALIKAR

C.T. PROFESSIONAL ENGINEER
(NO 36942)

seal & signature: DWG No:



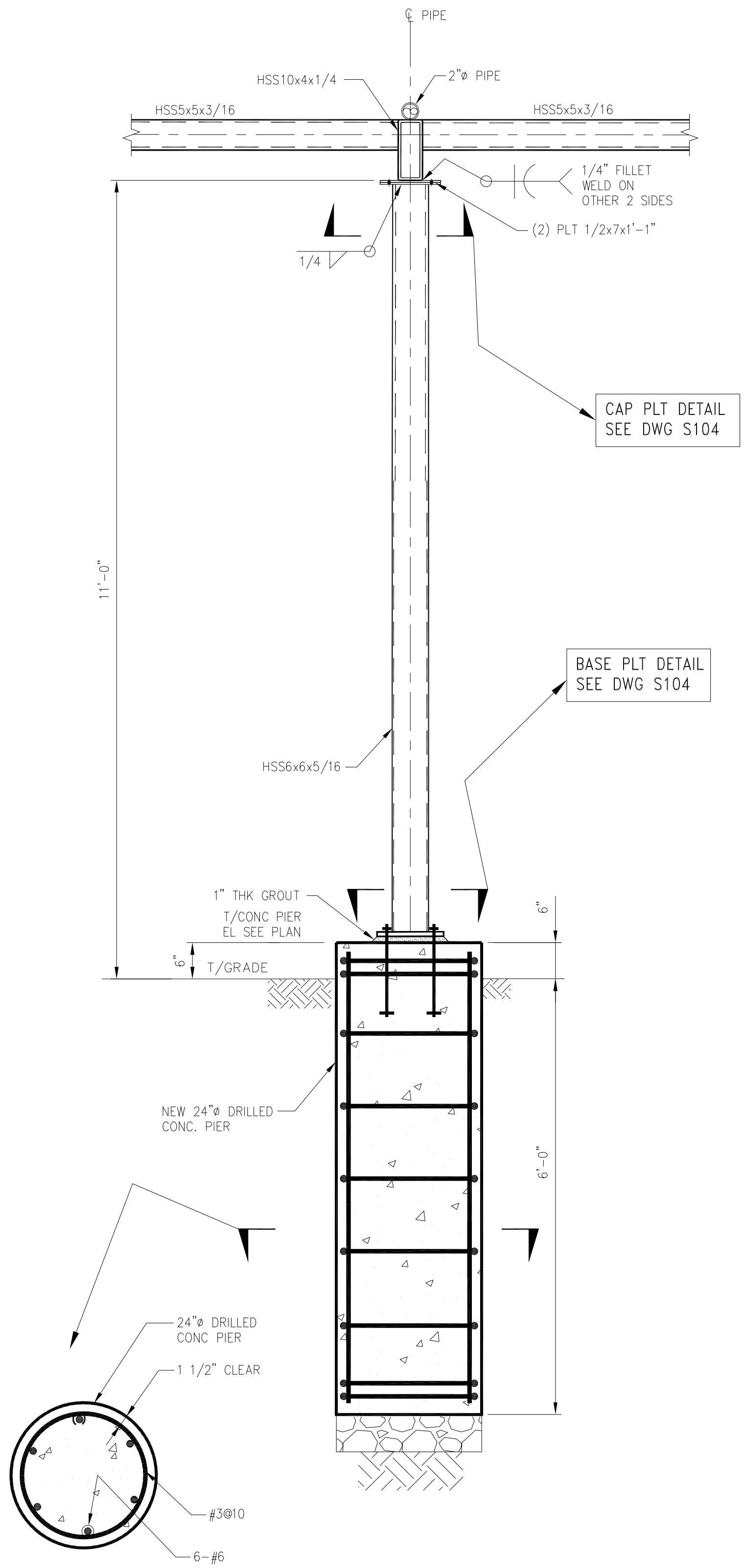
S102

Issued:
08.21.2023 ISSUED FOR REVIEW & COMMENTS

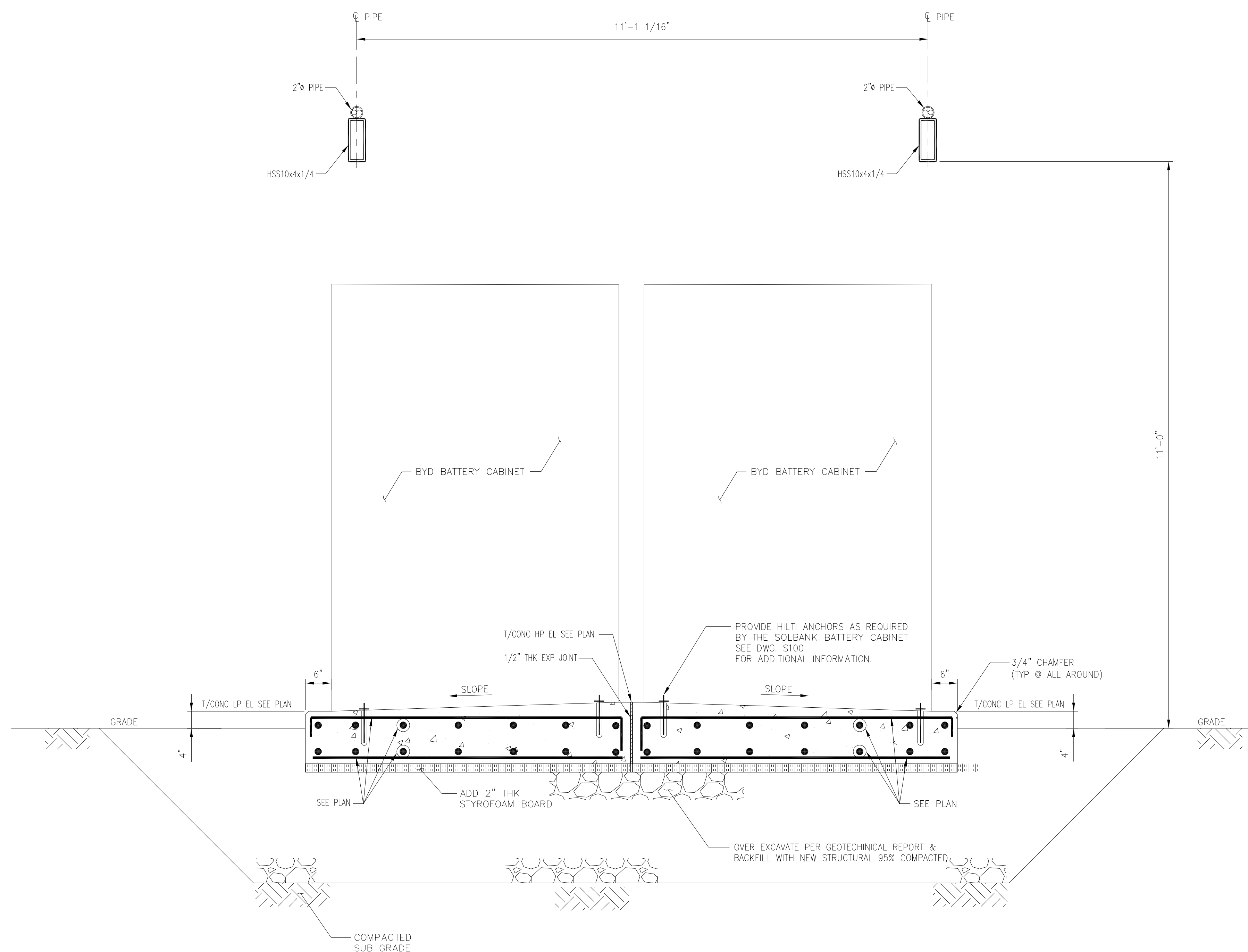
PROJECT:
**BATTERY ENERGY STORAGE
TAYLOR AND FENN
(7MW / 14MWH)**

ADDRESS:
**22 DEERFIELD ROAD,
WINDSOR, CT**

DRAWING TITLE:
**SECTIONS &
DETAILS**



SECTION **C**
 (SCALE: 3/4"=1'-0") (S101) S103



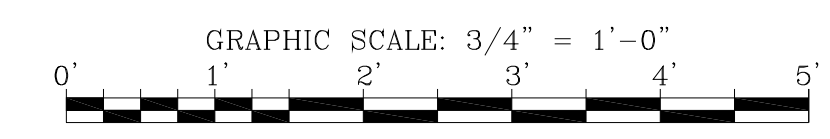
SECTION **D**
 (SCALE: 3/4"=1'-0") (S101) S103

NOTES:

1. FOR GENERAL NOTES SEE DWG S100

LEGEND:

- 1. [Pattern] DENOTES BLOCK WALL
- 2. [Pattern] DENOTES CONC



Issued: 08.21.2023 ISSUED FOR REVIEW & COMMENTS

PROJECT:
**BATTERY ENERGY STORAGE
 TAYLOR AND FENN
 (7MW / 14MWH)**

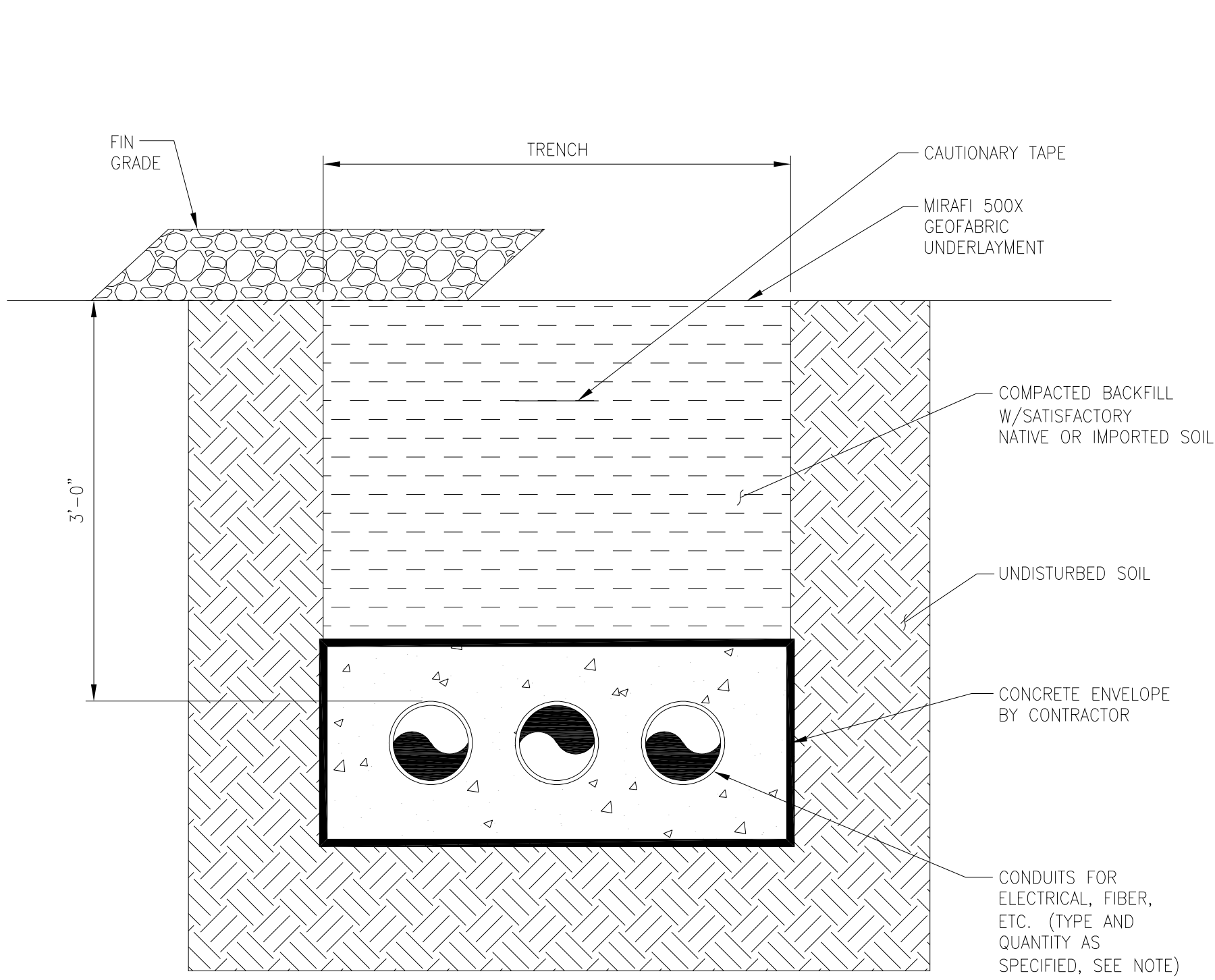
ADDRESS:
**22 DEERFIELD ROAD,
 WINDSOR, CT**

DRAWING TITLE:
**SECTIONS &
 DETAILS**

Seal & Signature:
 RAJ EKHAIKAR

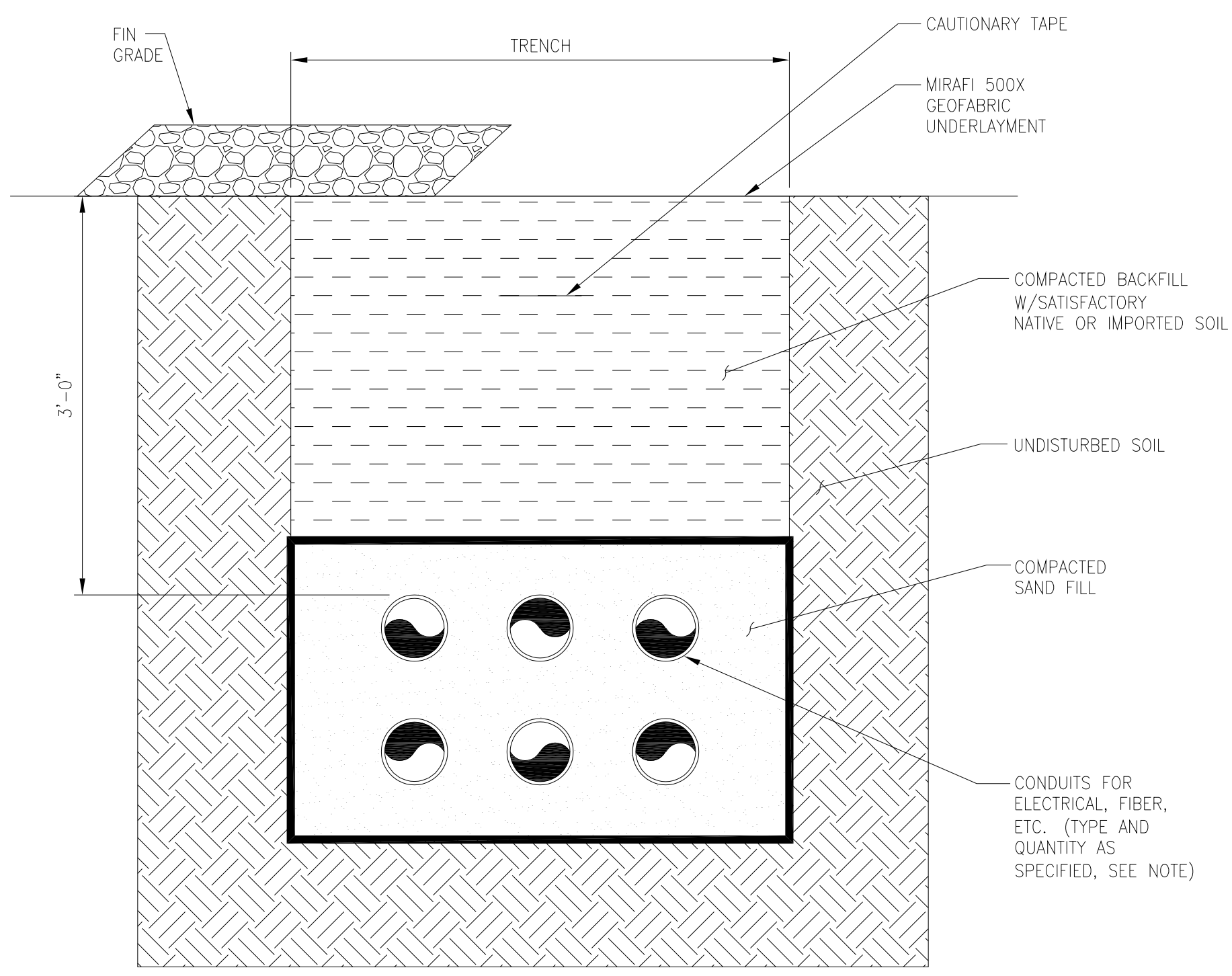
seal & signature: DWG No:
S103

C.T. PROFESSIONAL ENGINEER
 (NO. 36942)



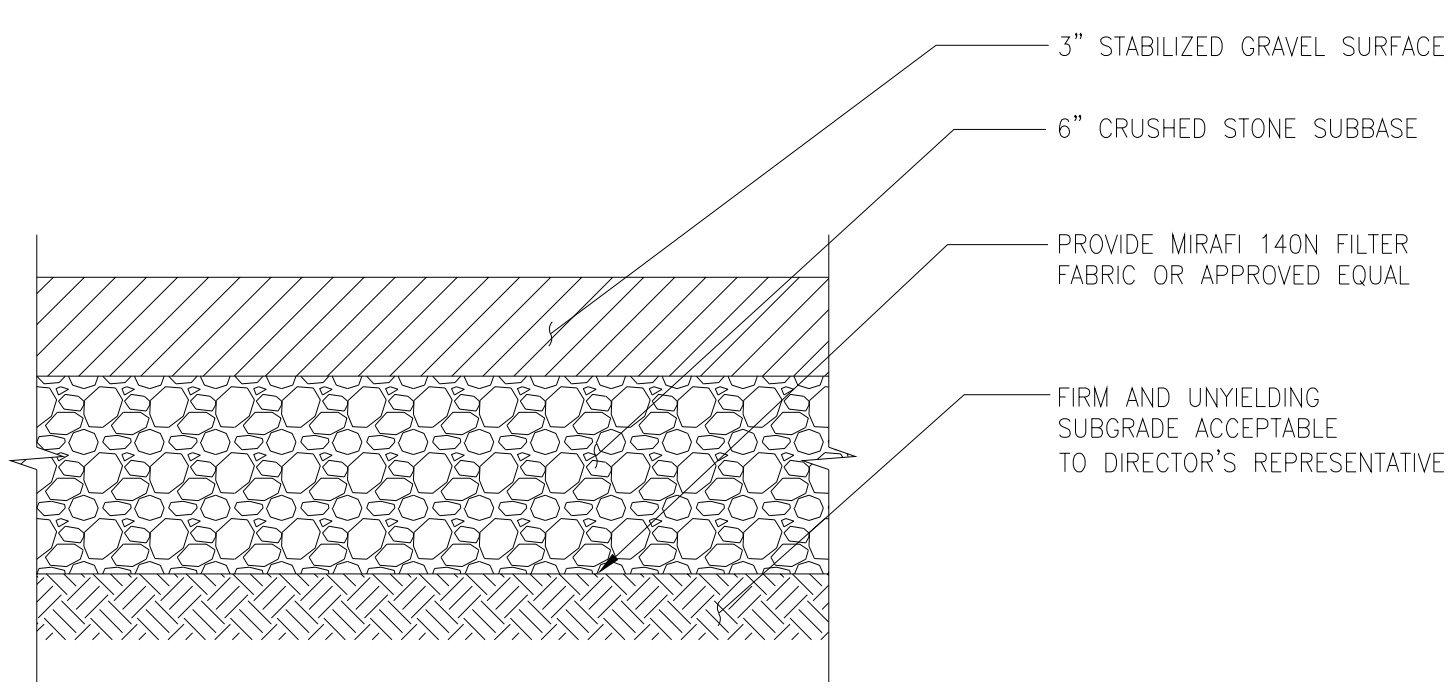
CONCRETE ENCASED CONDUITS

NOTE: CONDUIT SIZE, TYPE, QUANTITY AND SEPARATION DIMENSION TO BE VERIFIED WITH LOCAL UTILITY COMPANY REQUIREMENTS.

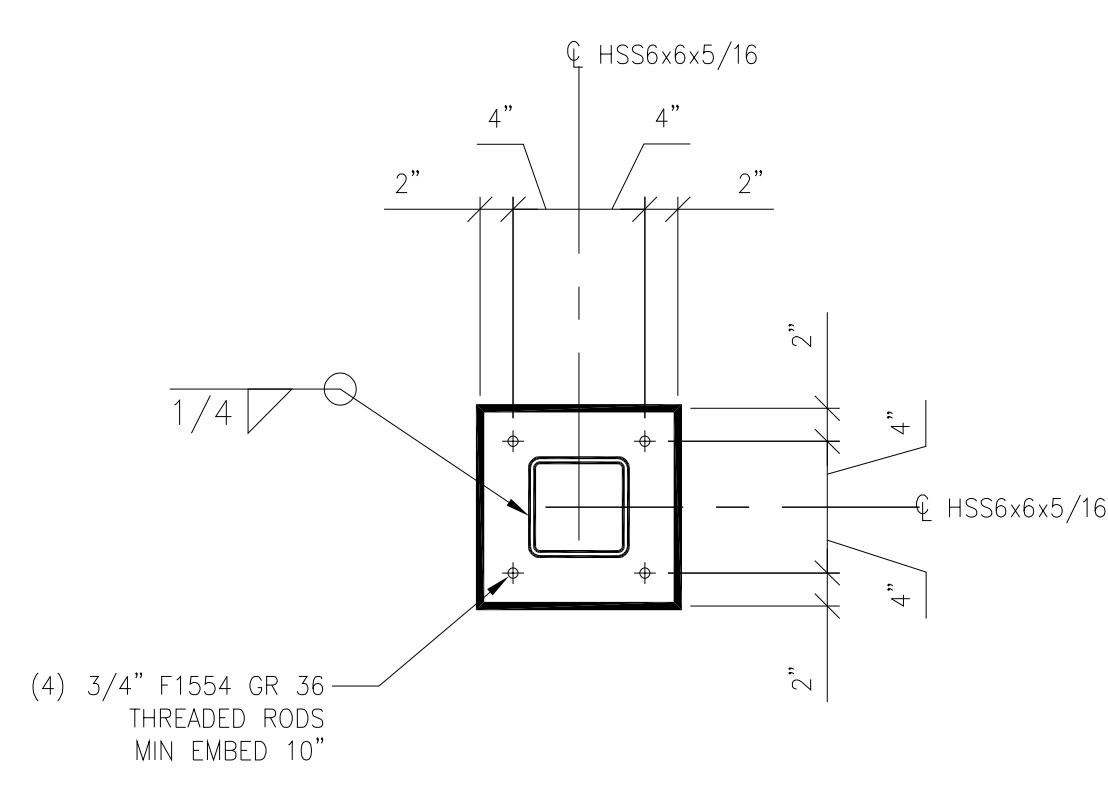


SAND ENCASED CONDUITS

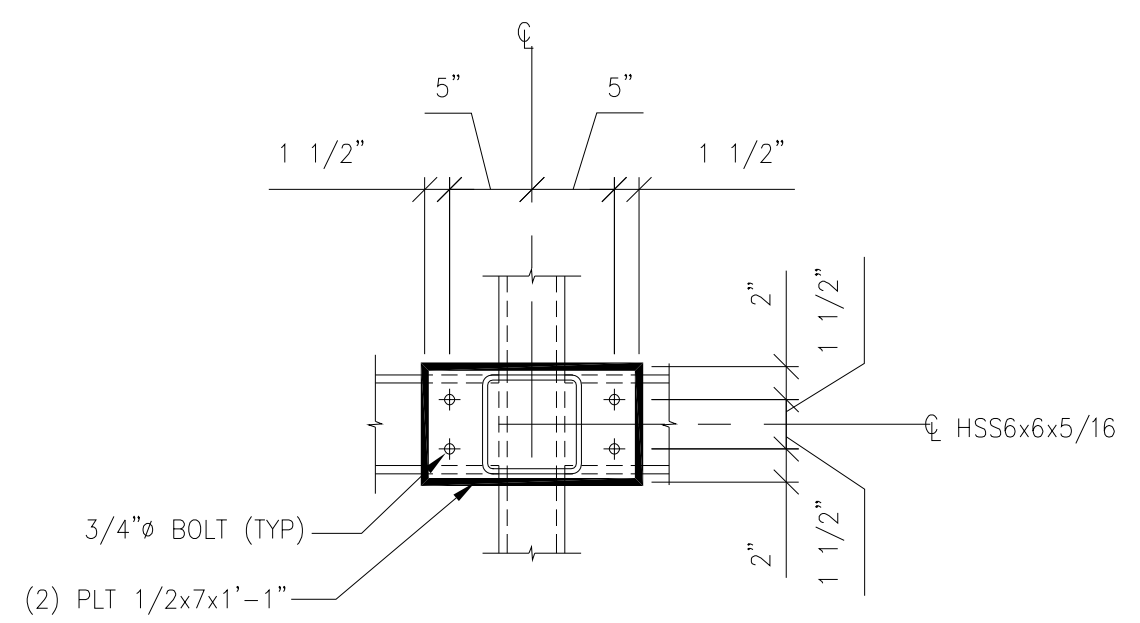
TRENCH DETAILS
(SCALE: NTS)



GRAVEL SURFACE DETAIL
(SCALE: NTS)



BASE PLATE
HSS6x6x5/16 COLUMN DETAIL
(SCALE: 1"=1'-0")



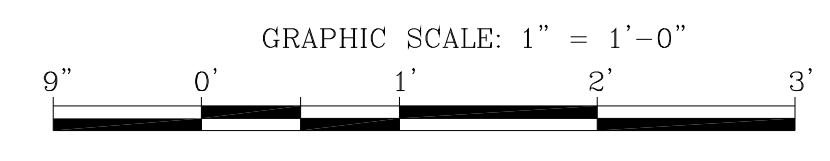
HSS6x6x5/16 CAP PLT DETAIL
(SCALE: 1"=1'-0")

NOTES:

1. FOR GENERAL NOTES SEE DWG S100

LEGEND:

- 1. [Cross-hatch pattern] DENOTES BLOCK WALL
- 2. [Dotted pattern] DENOTES CONC



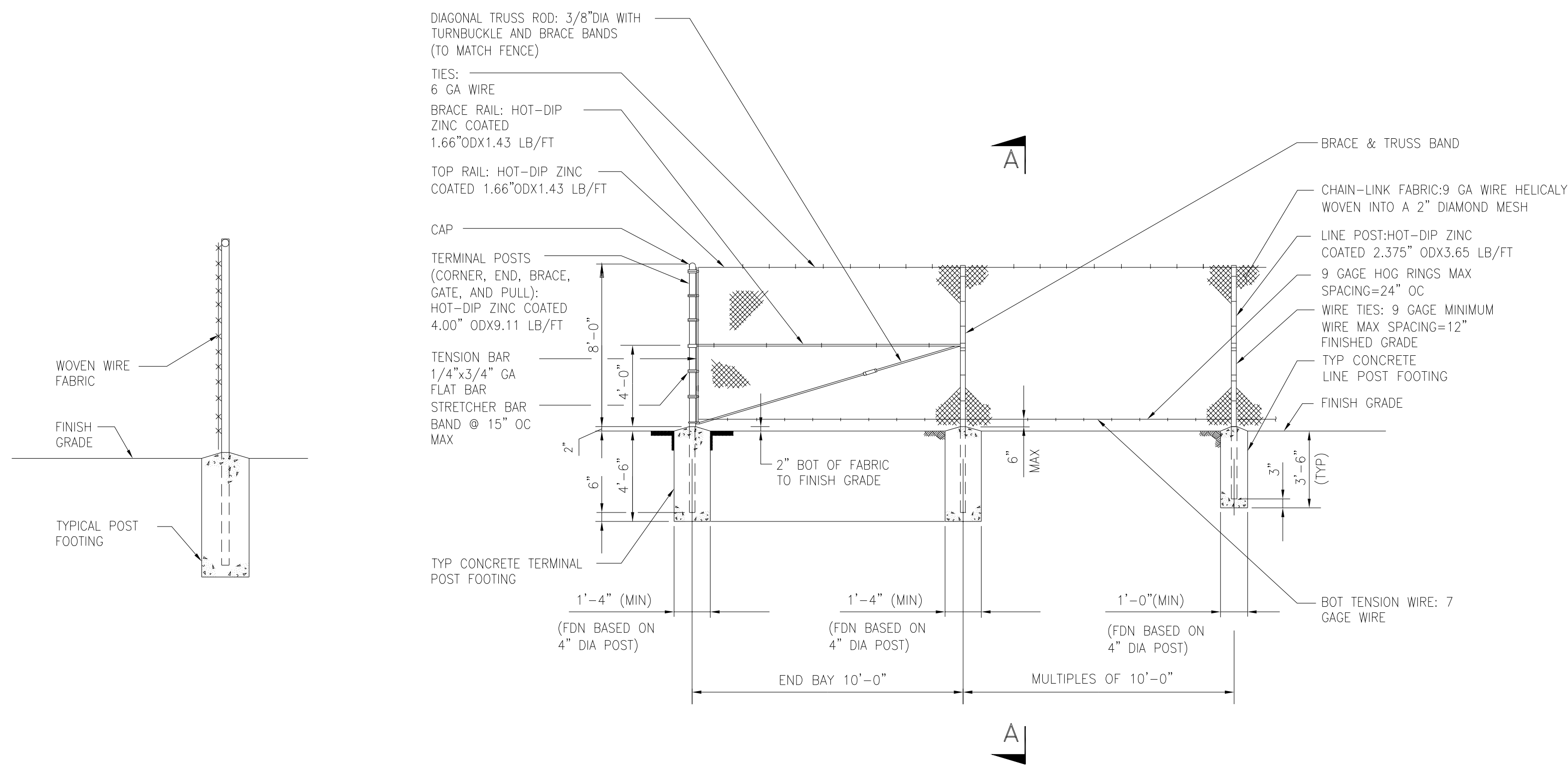
Issued: 08.21.2023 ISSUED FOR REVIEW & COMMENTS

PROJECT:
BATTERY ENERGY STORAGE
TAYLOR AND FENN
(7MW / 14MWH)

ADDRESS:
22 DEERFIELD ROAD,
WINDSOR, CT

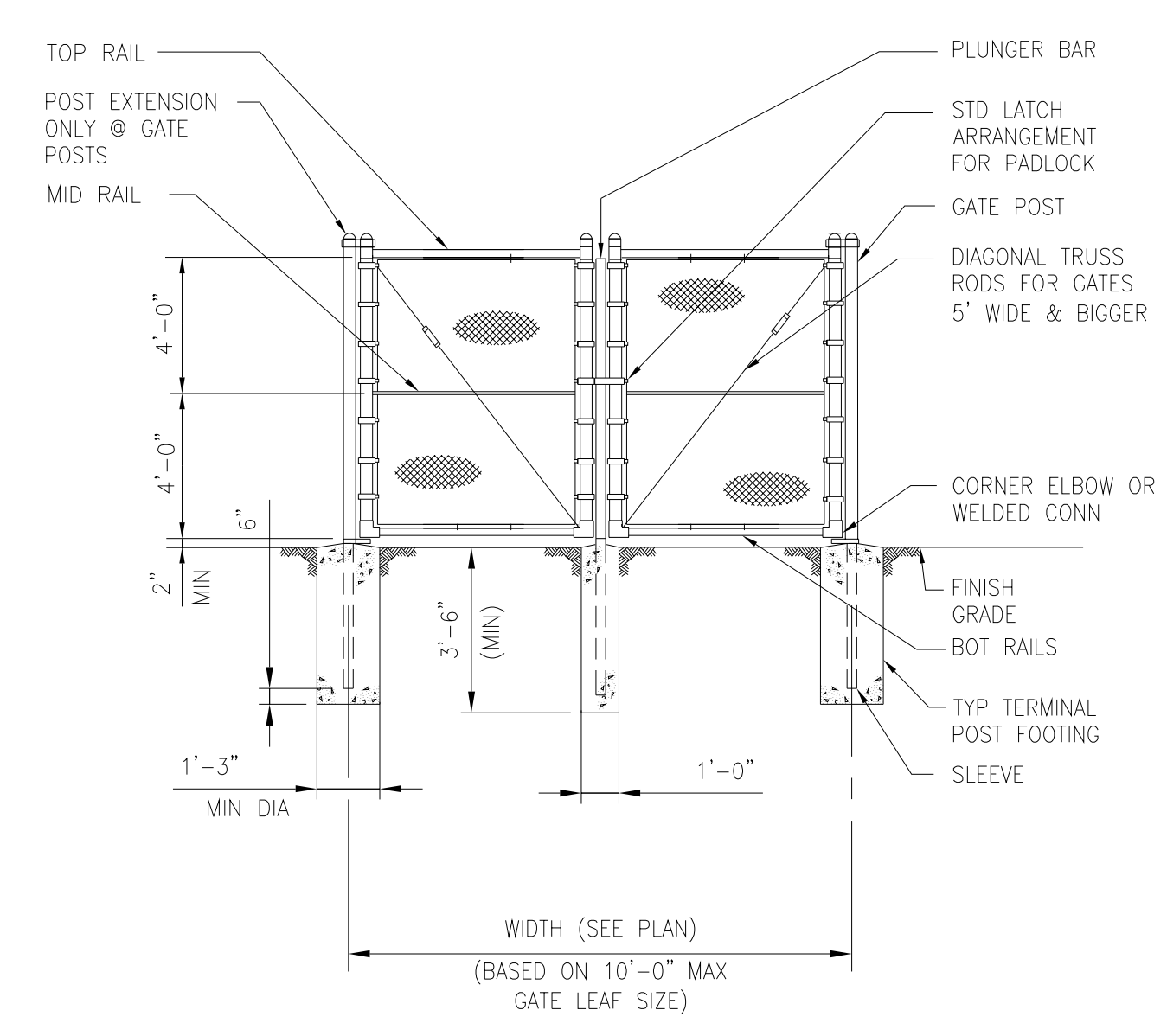
DRAWING TITLE:
TYPICAL
SECTIONS &
DETAILS

Seal & Signature: RAJ EKHALIKAR	seal & signature:	DWG No: S104
C.T. PROFESSIONAL ENGINEER (NO 36942)		

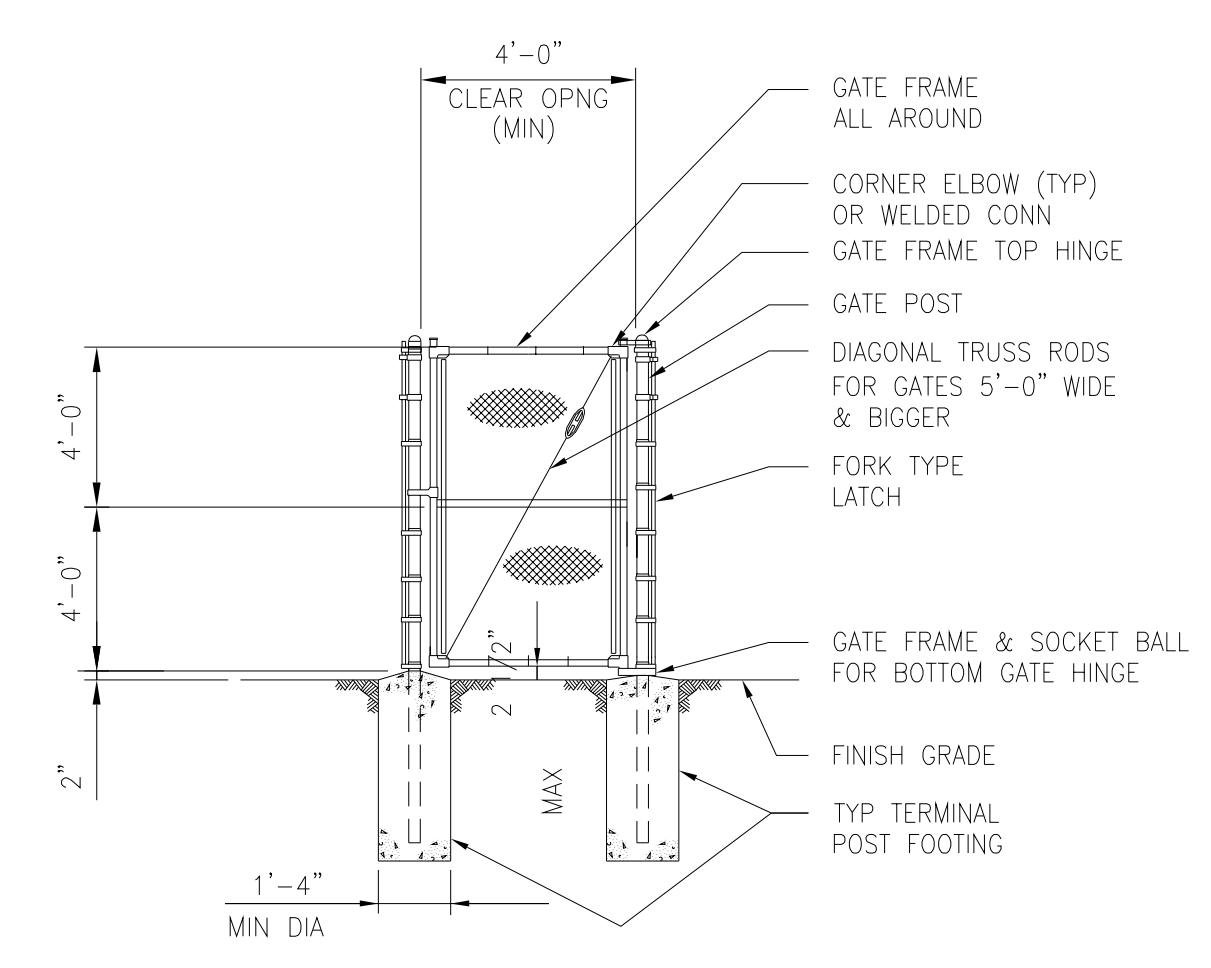


**ELEVATION
CHAIN LINK FENCE**

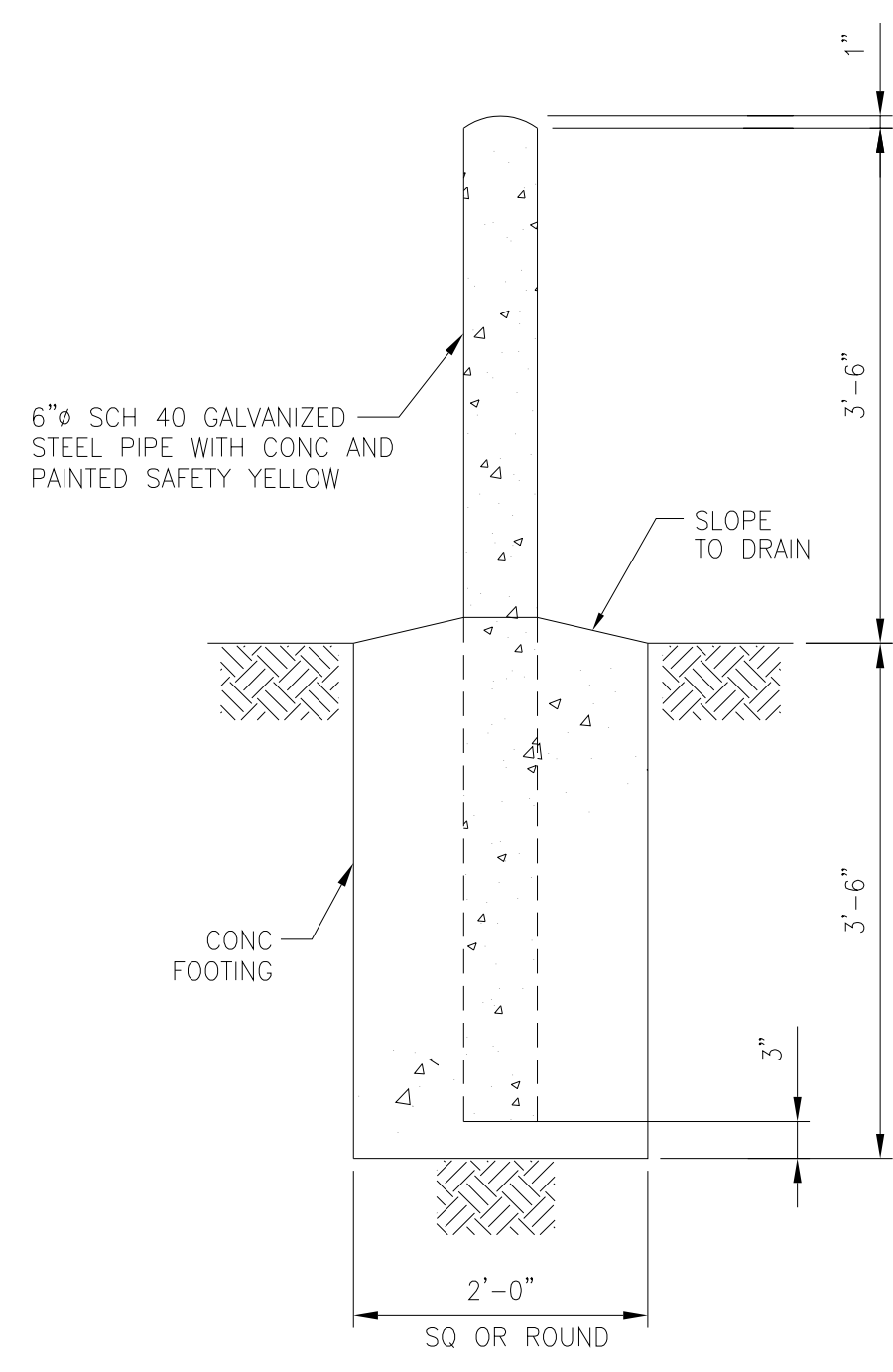
**TYPICAL FENCE
SECTION A-A**



DOUBLE SWING GATE
(FOR INFO NOT SHOWN SEE TYPICAL FENCE DETAILS DWG)



SINGLE SWING GATE
(FOR INFO NOT SHOWN SEE TYPICAL FENCE DETAILS DWG)



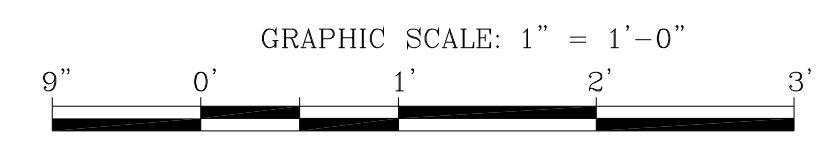
**ELEVATION
BOLLARD**
(SCALE: 1"=1'-0")

NOTES:

1. FOR GENERAL NOTES SEE DWG S100

LEGEND:

- 1. DENOTES BLOCK WALL
- 2. DENOTES CONC



Issued:

08.21.2023	ISSUED FOR REVIEW & COMMENTS

PROJECT:
**BATTERY ENERGY STORAGE
TAYLOR AND FENN
(7MW / 14MWH)**

ADDRESS:
**22 DEERFIELD ROAD,
WINDSOR, CT**

DRAWING TITLE:
**TYPICAL FENCE AND
BOLLARD SECTIONS
& DETAILS**

Seal & Signature: RAJ EKHALIKAR	seal & signature:	DWG No: S102
C.T. PROFESSIONAL ENGINEER (NO 36942)		



Site Decommissioning Plan: 7.0MW/14.0MWh Energy Storage System – Taylor & Fenn, Windsor

Prepared by
Endurant Energy

October 2023





1. Introduction

The decommissioning of the Taylor & Fenn Battery Energy Storage System (BESS) Project includes the removal of all components associated with the Project and the restoration of the Project site to as close to its original condition as possible. This plan is to provide detail on that process, with supporting time frames or milestones, after operations have ceased.

2. Project description

Endurant Energy (Endurant) has proposed the development of a 7.0-megawatt (MW) BESS for Taylor & Fenn at their site located at 22 Deerfield Road, Windsor, Connecticut (host property). The site zoning is I-Industrial, a fully developed industrial property. The property is bordered to the north by another industrial property. To the west, it is bordered by Deerfield Road, to the east by the Amtrak Railroad tracks, and to the south by CT 291 and an off-ramp of CT 291.

This 'behind the meter' project will comprise containerized lithium-ion battery modules alongside the switchgears, inverters and transformers required to enable an electrical interconnection to the local electricity distribution network (grid). Please note that the inverters and transformers will be manufactured by EPC, however the battery make and model will be finalized when the commercial arrangements are agreed. The BESS containers will be installed upon concrete pads and the entire BESS will be enclosed by 8 feet high palisade fencing, enclosing an area of approximately 7,000 square feet. Underground conduit will connect the BESS to the grid's 23.0kV feeder.

The commercial life of the facility is expected to be 10 years. At the end of commercial life, or upon termination of the Power Purchase Agreement, Endurant will cease operations and decommission the facility including necessary demolition and site reclamation. To the greatest degree possible, decommissioning will attempt to maximize the recycling of all BESS components.

3. Site condition pre-Storage System

The proposed BESS site area is on the north side of the host property's foundry facility, on a mostly flat area. It is currently grassed with 1 mature tree in the vicinity.

4. Decommissioning expectations

Endurant expects to meet the same exacting standards during deconstruction and it will during construction of the BESS. This will include, but may not be limited to:

- Environmentally appropriate methods of deconstruction will be applied including the recycling of as much equipment as can be done within a reasonable timeframe
- Excellent standards of Health and Safety adhered to; and
- All laws and regulations will be followed, local, state and federal.

5. Decommissioning Preparation

Pre-closure activities and reclamation planning includes:

- Set up and document a Site-specific health and safety plan and determine the specific sequence and procedures to be followed.



- Complete an analysis of the project materials and their composition to identify those specific components that can be recycled. For items that can't be recycled, determine what the most appropriate method of disposal will be.
- Identify specific recycling facilities and disposal sites for materials.
- Coordinate with local officials to develop plans for the transportation of materials and equipment to and from the site.
- Secure any municipal demolition or electrical permits necessary.
- Develop specifications for demolition and reclamation.
- Develop training for the personnel who will manage and perform the actual work, and document appropriately.
- A full assessment of the local zoning requirements, permitting needs and applicable environmental regulations, to ensure the compliance of the final plans.

6. Disassembly and Demolition

Site decommissioning and equipment removal is expected to take up to 6 weeks. Access roads¹, fencing, some electrical power, and other facilities may temporarily remain in place for use by the decommissioning workers as needed before they too are removed.

A plan for de-energizing portions of the facility to allow safe decommissioning and formal lock-out and tag-out procedures will be implemented. This will ensure all electrical components are placed and maintained in a safe condition for demolition activities prior start of work.

The decommissioning will begin with the de-energization of the Project by qualified electricians. Next, any hazardous or regulated materials shall be removed (in this case, this is minimal – the oil from the transformers being the only component to highlight). Various components will be removed from the site, including batteries, steel foundation tie-ins, concrete pads, inverters and transformers. These activities will take place in approximately the inverse order to which they were installed.

Excavation of the conduit trenched to the electrical room will be discussed with the Host Property, but we anticipate it will be required for the removal of foundations, piping, and utilities. Should Taylor & Fenn prefer less disruption, the option to leave the trenched conduit in situ will be given ('abandon in place').

A mobile crane will be used to move the battery containers onto flatbed trucks for removal. Crane use will be coordinated with the host Property Owner, the Town of Windsor, and other interested parties, such as aviation facilities, as is described in the Petition.

Demolition debris will be placed in temporary on-site storage area(s) pending final transportation and disposal and/or recycling according to the procedures listed below.

Stockpiled on-site waste will be transported off site for recycling or waste. It is important to Endurant Energy that components will be recycled as part of decommissioning.

All aspects of the decommissioning process will be in compliance with all applicable federal, state and local laws.

¹ As of October 2023 Endurant is still determining with the Windsor Volunteer Fire Department and the Windsor Fire Marshall whether a new access road is required.



7. Site Restoration

The Site will be revegetated. Any compacted areas that will inhibit the growth of new vegetation will be aerated to encourage new vegetative cover. The site will be assessed then aeration, de-compaction, disking and seeding processes will be used as needed to encourage full vegetative coverage.

8. Project Quality Control and Documentation

During the entire decommissioning process, from planning to site monitoring, the project will be subject to quality control and documentation. Endurant will ensure the effective execution of the decommissioning plan through project oversight and quality assurance. Additionally, the decommissioning process will be documented and progress reported to the Property Owners, Taylor & Fenn.