

KENNETH C. BALDWIN

280 Trumbull Street
Hartford, CT 06103-3597
Main (860) 275-8200
Fax (860) 275-8299
kbaldwin@rc.com
Direct (860) 275-8345

Also admitted in Massachusetts
and New York

January 8, 2021

Via Electronic Mail

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

Re: **Petition No. 1417 - Watertown Solar One, LLC and VCP, LLC d/b/a Verogy
Petition for a Declaratory Ruling, Pursuant to Connecticut General Statutes §4-176
and §16-50k, for the Proposed Construction, Maintenance and Operation of a 1.975
Megawatt AC Solar Photovoltaic Generating Facility Located at 669 Platt Road,
Watertown, Connecticut, and Associated Electrical Connection**

Development and Management Plan Submission

Dear Attorney Bachman:

Pursuant to Condition No. 1 of its December 3, 2020 Decision in Petition No. 1417, attached are the required elements of the Watertown Solar One, LLC Development and Management (D&M) Plan for the Watertown Solar One facility at 669 Platt Road, Watertown, Connecticut. These elements include:

Final Site Plan and Electrical Design Plans

The attached Final Site Plans including the final solar panel layout, access roads, electrical design plans and interconnection route, fence design compliant with the National Electric Code, equipment plans, and landscaping plans, included in Exhibit A, and final electrical design plans included here in Exhibit B.

These Final Site Plan drawings contain some minor project modifications to the solar panels, the solar panel racking system and the perimeter fence design. More specifically:

1. Solar Panel Modifications
 - a. The proposed 390-Watt modules were changed to 400-Watt modules
 - b. The total solar panel count was reduced from 7,176 to 7,020. A reduction of 156 solar panels
 - c. Revised solar module counts are as follows:
 - i. 5,616 390-Watt modules were changed to 5,616 400-Watt modules
 - ii. 1,560 380-Watt modules were changed to 1,404 380-Watt modules
2. Racking System Modifications
 - a. The proposed 2-high portrait racking system was changed to a 4-high landscape racking system, optimized for the bi-facial solar panels.
3. Perimeter Fence Design
 - a. The proposed six-foot fence was changed to a seven-foot fence. The modified fence design is compliant with the National Electric code (“NEC”).

Final Racking System Structural Design

The final Racking System Structural Design plans, stamped by a Professional Engineer duly licensed in the State of Connecticut, are included here as Exhibit C.

DEEP Stormwater General Permit

Included in Exhibit D is a copy of the Notice of Permit Authorization for the General Permit Registration for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activity Application No.: 202008217 for the Watertown Solar One, LLC facility (the “Stormwater General Permit”). Also included in Exhibit D is the Watertown Solar One, LLC Stormwater Pollution Control Plan appended to the Stormwater General Permit.

DEEP Stormwater Construction Site Plans

Construction site plans fully compliant with the DEEP-approved Stormwater General Permit are also included in Exhibit A. The plans include details regarding site clearing, site grading, the location of construction laydown areas, erosion and sedimentation controls, site stabilization seeding/growing season details, and details regarding construction-related environmental mitigation measures.

Melanie A. Bachman, Esq.
January 8, 2021
Page 3

Please note that, unlike the circumstances in Council Petition No. 1347A, DEEP's Stormwater Program staff has not required that the Watertown Solar One LLC Project be constructed in phases nor have they required submission of evidence of full site stabilization prior to the commencement of construction the solar facility infrastructure. Pursuant to the approved Watertown Solar One Stormwater General Permit, Section 5(b)(2)(A)(i) (pp.29-30), Erosion and Sediment Control plans include interim and permeant soil stabilization practices for the management of disturbed area and any soil stockpiles. Once all construction activities have ceased or when final grades are reached, site stabilization and protection practices, as specified in the DEEP guidelines, will be implemented. Once the site is stabilized for a minimum of one growing season (at least three months), Watertown Solar One, LLC must have the site inspected to confirm final stabilization, which shall be noted in its Notice of Termination form filed with DEEP.

The Petitioner, therefore, respectfully requests that the Council consider the above-referenced conditions of the approved Stormwater General Permit as satisfaction of condition no. 2 of the Council Petition No. 1417 approval.

Post-Construction Site Maintenance and Vegetation Management Plan

The Post-Construction Site Maintenance and Vegetation Management Plan is intended to outline the required work expected to keep the Facility operating as designed throughout its lifecycle.

1. Energy Production Monitoring

Watertown Solar One, LLC will utilize a continuous 24/7 remote monitoring system to provide alarm and performance data of the system. The monitoring system will include full site and inverter level production and alarms as well as site weather and irradiance data. Watertown Solar One, LLC will analyze performance data to ensure that the system is performing as designed and will be responsible for dispatching crews if system maintenance and/or repair is required.

2. Inspections

Watertown Solar One, LLC will conduct inspections of the facility in accordance with the following schedule:

Table 1 - Onsite Inspections Schedule

Task	Frequency
On-Site Ground Inspection	Monthly
Visual Array & Equipment Inspection	1x per year or per equipment manufacturer requirements
Mechanical and Electrical Inspections	1x per year or per equipment manufacturer requirements
Panel Cleaning	As Needed
Mowing and Trimming	2-3 times annually or more as required to maintain a safe site
Snow Removal	As needed
Perimeter Fence Inspection	1x per year
Stormwater Management System Inspection	1x per year or per engineer's stormwater management plan

3. Maintenance and Repairs

Watertown Solar One, LLC will handle all repairs identified during site inspections and through remote monitoring in a timely and efficient manner.

4. Long-term Stormwater Maintenance Plan

Watertown Solar One, LLC will provide maintenance in accordance with the approved stormwater maintenance plan produce by the engineer of record and as required by applicable DEEP stormwater regulations.

5. Vegetation Management Plan

Vegetation around and under the solar array will be mowed in accordance with the schedule in Table 1 above and will be maintained to prevent panel shading from vegetation. Grass will be re-planted in bare areas to ensures that erosion control is maintained. The primary objectives of the vegetation management plan are as follows:

- Maintain a safe and productive site.
- Encourage flowering forb and plant species to maximize pollinator habitat.

Melanie A. Bachman, Esq.
January 8, 2021
Page 5

- Optimize sequestered soil carbon through increasing top-soil amount and root matter
- Control erosion

Contact Information for Construction Contractor

The Construction contractor for Watertown Solar One, LLC:
VCP EPC, LLC
Steve DeNino
Chief Operating Officer
sdenino@verogy.com
860-982-4264

Consultation with the DEEP Dam Safety Program

Watertown Solar One, LLC has initiated consultation with the DEEP Dam Safety program and inquired as to any additional permitting requirements for the proposed stormwater basins. Watertown Solar One will provide an update to the Council on this issue prior to the commencement of construction.

Together, this information constitutes a full and final D&M Plan submission for the Watertown Solar One, LLC facility at 669 Platt Road in Watertown, Connecticut.

We respectfully request that this information be reviewed, and this matter be placed on the next available Siting Council agenda for approval. Please feel free to contact me if you have any questions or require additional information. Thank you.

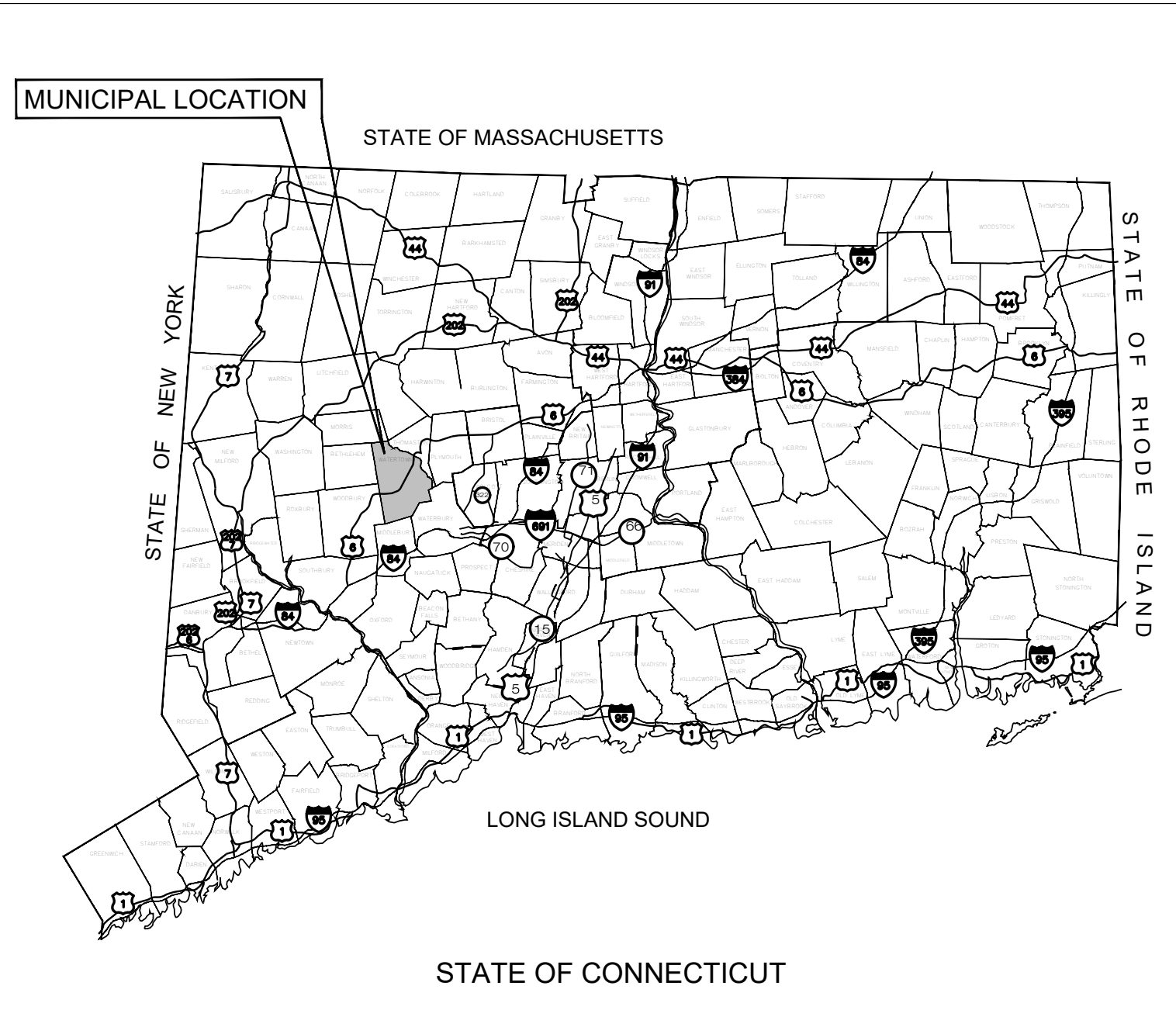
Sincerely,



Kenneth C. Baldwin

KCB/kmd
Attachments

EXHIBIT A



WATERTOWN SOLAR ONE, LLC

"WATERTOWN SOLAR ONE, LLC"

HINMAN ROAD & PLATT ROAD

WATERTOWN, CT 06795

CSC D&M PLAN SET

DECEMBER 30, 2020

WATERTOWN SOLAR ONE, LLC
 150 TRUMBULL STREET
 4TH FLOOR
 HARTFORD, CT, 06103



567 VAUXHAUL STREET EXTENSION - SUITE 311
 WATERFORD, CT 06385 PHONE: (860)-663-1697
 WWW.ALLPOINTSTECH.COM FAX: (860)-663-0835

APPROVED FOR CONSTRUCTION

NO.	DATE	REVISION
1	12/30/20	D&M PLANS: BJP
2		
3		
4		
5		
6		

DESIGN PROFESSIONAL OF RECORD
PROF: BRADLEY J. PARSONS P.E.
 COMP: ALL-POINTS TECHNOLOGY CORPORATION
 ADD: 567 VAUXHAUL STREET EXTENSION - SUITE 311
 WATERFORD, CT 06385

OWNER: CATHOLIC CEMETERIES
 ADDRESS: 669 PLATT ROAD
 WATERTOWN, CT 06795

WATERTOWN SOLAR ONE, LLC

SITE: HINMAN ROAD & PLATT ROAD
 ADDRESS: WATERTOWN, CT 06795

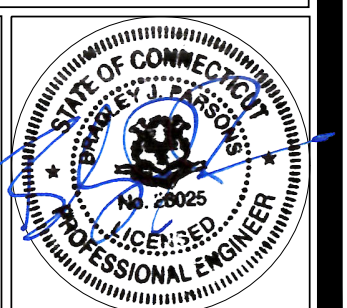
APT FILING NUMBER: GSH
 12/30/20
 DRAWN BY: BJP
 DATE: CHECKED BY:

SHEET TITLE:

TITLE SHEET & INDEX

SHEET NUMBER:

T-1



LIST OF DRAWINGS

- T-1 TITLE SHEET & INDEX
- 1 & 2 OF 2 PROPERTY AND TOPOGRAPHIC SURVEY
- GN-1 GENERAL NOTES
- GN-2 ENVIRONMENTAL NOTES RESOURCE PROTECTION MEASURES
- OP-0 OVERALL LOCUS MAP
- OP-1 PARTIAL SITE PLAN
- EC-1 SEDIMENTATION & EROSION CONTROL NOTES
- EC-2 SEDIMENTATION & EROSION CONTROL DETAILS
- EC-3 TO EC-5 PHASE 1 SEDIMENTATION & EROSION CONTROL PLANS
- EC-6 TO EC-8 PHASE 2 SEDIMENTATION & EROSION CONTROL PLANS
- EC-9 TO EC-11 PHASE 3 FINAL GRADING & DRAINAGE PLANS
- SP-1 TO SP-3 SITE & UTILITY PLANS
- DN-1 SITE DETAILS
- DN-2 SITE DETAILS

SITE INFORMATION

SITE NAME: "WATERTOWN SOLAR ONE, LLC"
 LOCATION: HINMAN ROAD & PLATT ROAD
 WATERTOWN, CT 06795

SITE TYPE/DESCRIPTION: ADD (1) GROUND MOUNTED SOLAR PANEL ARRAY W/ ASSOCIATED EQUIPMENT, GRAVEL ACCESS ROAD, AND STORMWATER MANAGEMENT.

PROPERTY OWNER: CATHOLIC CEMETERIES
 669 PLATT ROAD
 WATERTOWN, CT 06795

APPLICANT: WATERTOWN SOLAR ONE, LLC
 150 TRUMBULL STREET, 4TH FLOOR
 HARTFORD, CT 06103

ENGINEER CONTACT: BRADLEY J. PARSONS, P.E.
 (860) 663-1697 x208

LATITUDE: 41°36'51.98" N
 LONGITUDE: 73°09'01.63" W
 ELEVATION: 800± AMSL

MBLU: 59-9-2 & 67-9-3
 ZONE: R-70
 EXISTING LAND USE: RESIDENTIAL - CEMETERY
 PROPOSED LAND USE: COMMUNICATIONS, TRANSPORTATION AND PUBLIC UTILITY USES
 - LARGE SCALE GROUND MOUNTED SOLAR PHOTOVOLTAIC INSTALLATIONS

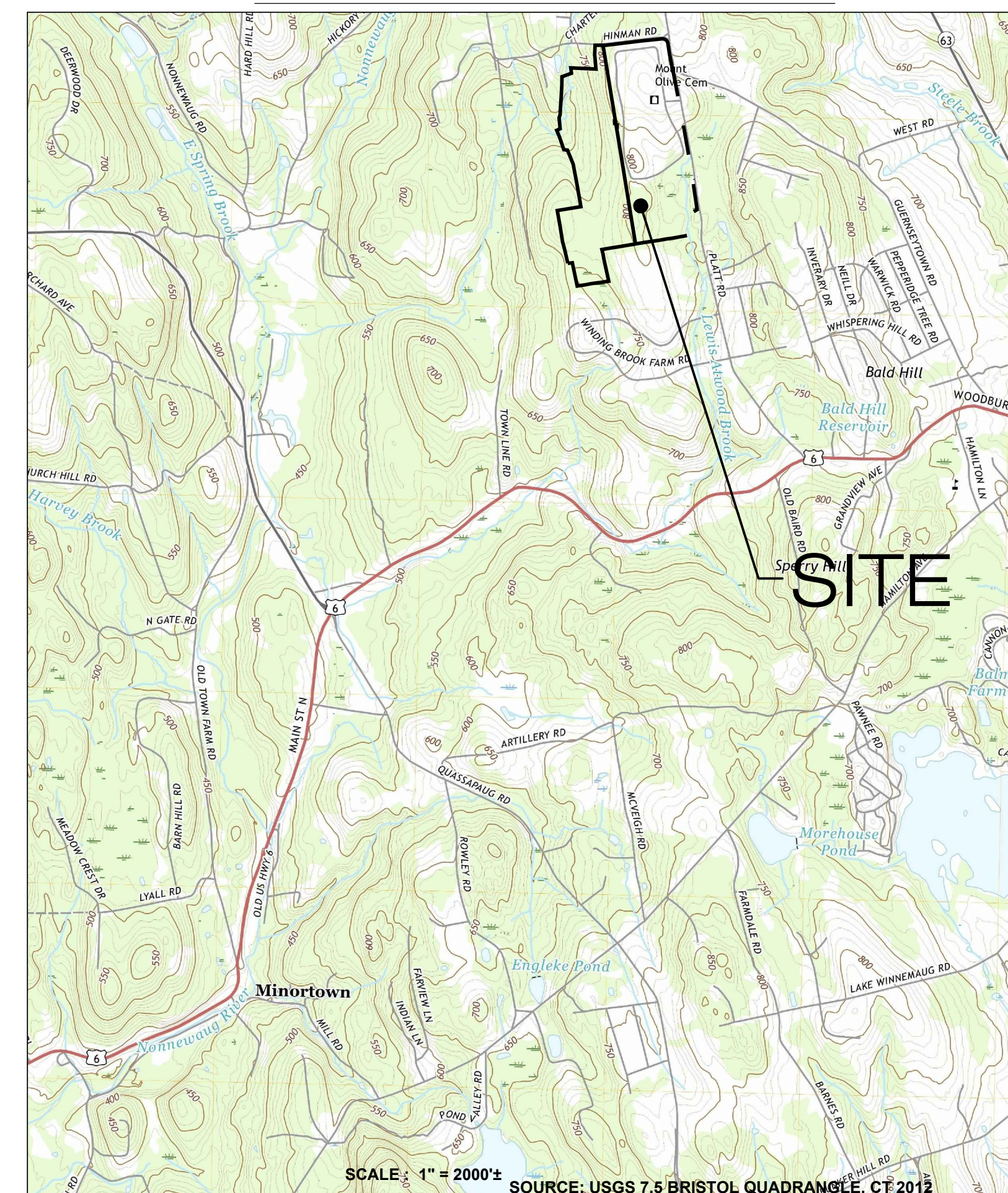
TOTAL SITE ACERAGE: 154.3± AC.
 TOTAL DISTURBED AREA: 16.70± AC.

PROP. SITE GRADING
 APPROX. VOLUME OF CUT : 14,015± CY
 APPROX. VOLUME OF FILL: 14,015± CY

APPROX. OVERALL NET VOLUME: 0± CY OF FILL

PROP. GRAVEL ACCESS ROAD: 940± LINEAR FEET
 PROP. FILTER SOCK: 7,950± LINEAR FEET
 TREE CLEARING AREA: 14.16± ACRE
 IMPERVIOUS AREA: 15,817± SQUARE FEET

USGS TOPOGRAPHIC MAP



GENERAL NOTES

- ALL CONSTRUCTION SHALL COMPLY WITH PROJECT DEVELOPER STANDARDS, TOWN OF WATERTOWN STANDARDS, CONNECTICUT DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS IN THE ABOVE REFERENCED INCREASING HIERARCHY. IF SPECIFICATIONS ARE IN CONFLICT, THE MORE STRINGENT SPECIFICATION SHALL APPLY.
- IF NO PROJECT CONSTRUCTION SPECIFICATION PACKAGE IS PROVIDED BY THE PROJECT DEVELOPER OR THEIR REPRESENTATIVE, THE CONTRACTOR SHALL COMPLY WITH THE MANUFACTURE, TOWN OF WATERTOWN, OR CONNECTICUT DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, AND BE IN ACCORDANCE WITH ALL APPLICABLE OSHA, FEDERAL, STATE AND LOCAL REGULATIONS.
- THE PROJECT DEVELOPER IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS REQUIRED BY GOVERNMENT AGENCIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL OBTAIN ALL TOWN OF WATERTOWN CONSTRUCTION PERMITS. THE CONTRACTOR SHALL POST ALL BONDS, PAY ALL FEES, PROVIDE PROOF OF INSURANCE AND PROVIDE TRAFFIC CONTROL NECESSARY FOR THIS WORK.
- REFER TO PLANS, DETAILS AND REPORTS PREPARED BY ALL-POINTS TECHNOLOGY CORPORATION FOR ADDITIONAL INFORMATION. THE CONTRACTOR SHALL VERIFY ALL SITE CONDITIONS IN THE FIELD AND CONTACT THE PROJECT DEVELOPER IF THERE ARE ANY QUESTIONS OR CONFLICTS REGARDING THE CONSTRUCTION DOCUMENTS AND/OR FIELD CONDITIONS SO THAT APPROPRIATE REVISIONS CAN BE MADE PRIOR TO BIDDING/CONSTRUCTION. ANY CONFLICT BETWEEN THE DRAWINGS AND SPECIFICATIONS SHALL BE CONFIRMED WITH THE PROJECT DEVELOPERS CONSTRUCTION MANAGER PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF ALL PRODUCTS, MATERIALS PER PLANS AND SPECIFICATIONS TO THE PROJECT DEVELOPER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION OR DELIVERY TO THE SITE. ALLOW A MINIMUM OF 14 WORKING DAYS FOR REVIEW.
- SHOULD ANY UNKNOWN OR INCORRECTLY LOCATED EXISTING PIPING OR OTHER UTILITY BE UNCOVERED DURING EXCAVATION, CONSULT THE PROJECT DEVELOPER IMMEDIATELY FOR DIRECTIONS BEFORE PROCEEDING FURTHER WITH WORK IN THIS AREA.
- DO NOT INTERRUPT EXISTING UTILITIES SERVICING FACILITIES OCCUPIED AND USED BY THE PROJECT DEVELOPER OR OTHERS DURING OCCUPIED HOURS, EXCEPT WHEN SUCH INTERRUPTIONS HAVE BEEN AUTHORIZED IN WRITING BY THE PROJECT DEVELOPER AND THE LOCAL MUNICIPALITY. INTERRUPTIONS SHALL ONLY OCCUR AFTER ACCEPTABLE TEMPORARY SERVICE HAS BEEN PROVIDED.
- THE CONTRACT LIMIT IS THE PROPERTY LINE UNLESS OTHERWISE SPECIFIED OR SHOWN ON THE CONTRACT DRAWINGS.
- THE CONTRACTOR SHALL ABIDE BY ALL OSHA, FEDERAL, STATE AND LOCAL REGULATIONS WHEN OPERATING CRANES, BOOMS, HOISTS, ETC. IN CLOSE PROXIMITY TO OVERHEAD ELECTRIC LINES. IF CONTRACTOR MUST OPERATE EQUIPMENT CLOSE TO ELECTRIC LINES, CONTACT POWER COMPANY TO MAKE ARRANGEMENTS FOR PROPER SAFEGUARDS. ANY UTILITY COMPANY FEES SHALL BE PAID FOR BY THE CONTRACTOR.
- THE CONTRACTOR SHALL COMPLY WITH OSHA CFR 29 PART 1926 FOR EXCAVATION TRENCHING AND TRENCH PROTECTION REQUIREMENTS.
- THE ENGINEER IS NOT RESPONSIBLE FOR SITE SAFETY MEASURES TO BE EMPLOYED DURING CONSTRUCTION. THE ENGINEER HAS NO CONTRACTUAL DUTY TO CONTROL THE SAFEST METHODS OR MEANS OF THE WORK, JOB SITE RESPONSIBILITIES, SUPERVISION OF PERSONNEL OR TO SUPERVISE SAFETY AND DO NOT VOLUNTARILY ASSUME ANY SUCH DUTY OR RESPONSIBILITY.
- THE CONTRACTOR SHALL RESTORE ANY DRAINAGE STRUCTURE, PIPE, CONDUIT, PAVEMENT, CURBING, SIDEWALKS, LANDSCAPED AREAS OR SIGNAGE DISTURBED DURING CONSTRUCTION TO THEIR ORIGINAL CONDITION OR BETTER, AS APPROVED BY THE PROJECT DEVELOPER OR TOWN OF WATERTOWN.
- THE CONTRACTOR SHALL PROVIDE AS-BUILT RECORDS OF ALL CONSTRUCTION (INCLUDING UNDERGROUND UTILITIES) TO THE PROJECT DEVELOPER AT THE END OF CONSTRUCTION.
- ALTERNATIVE METHODS AND PRODUCTS, OTHER THAN THOSE SPECIFIED, MAY BE USED IF REVIEWED AND APPROVED BY THE PROJECT DEVELOPER, ENGINEER, AND APPROPRIATE REGULATORY AGENCY PRIOR TO INSTALLATION DURING THE BIDDING/CONSTRUCTION PROCESS.
- INFORMATION ON EXISTING UTILITIES AND STORM DRAINAGE SYSTEMS HAS BEEN COMPILED FROM AVAILABLE INFORMATION INCLUDING UTILITY PROVIDER AND MUNICIPAL RECORD MAPS AND/OR FIELD SURVEY AND IS NOT GUARANTEED CORRECT OR COMPLETE. UTILITIES AND STORM DRAINAGE SYSTEMS ARE SHOWN TO ALERT THE CONTRACTOR TO THEIR PRESENCE AND THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL LOCATIONS AND ELEVATIONS OF ALL UTILITIES AND STORM DRAINAGE SYSTEMS INCLUDING SERVICES. PRIOR TO DEMOLITION OR CONSTRUCTION, THE CONTRACTOR SHALL CONTACT "DIG SAFE" 72 HOURS BEFORE COMMENCEMENT OF WORK AT "811" AND VERIFY ALL UTILITY AND STORM DRAINAGE SYSTEM LOCATIONS.
- NO CONSTRUCTION OR DEMOLITION SHALL BEGIN UNTIL APPROVAL OF THE FINAL PLANS IS GRANTED BY ALL GOVERNING AND REGULATORY AGENCIES.

SITE PLAN NOTES

- THE SURVEY WAS PROVIDED BY MARTIN SURVEYING ASSOCIATES, LLC DATED 04/13/20.
- THERE ARE WETLAND AREAS LOCATED ON THE SITE AS INDICATED ON THE PLANS. WETLAND AREA BOUNDARIES WERE FLAGGED AND LOCATED BY ALL POINTS TECHNOLOGY, IN NOVEMBER 2019.
- THERE WILL BE GRADING ON SITE FOR THE INSTALLATION OF STORMWATER MANAGEMENT FEATURES.
- THE CONTRACTOR SHALL FOLLOW THE RECOMMENDED SEQUENCE OF CONSTRUCTION NOTES PROVIDED ON THE EROSION CONTROL PLAN OR SUBMIT AN ALTERNATE PLAN FOR APPROVAL BY THE ENGINEER AND/OR PERMITTING AGENCIES PRIOR TO THE START CONSTRUCTION. ALLOW A MINIMUM OF 14 WORKING DAYS FOR REVIEW.
- PROPER CONSTRUCTION PROCEDURES SHALL BE FOLLOWED ON ALL IMPROVEMENTS WITHIN THIS PARCEL SO AS TO PREVENT THE SILTING OF ANY WATERCOURSE OR BVWS IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS. IN ADDITION, THE CONTRACTOR SHALL ADHERE TO "EROSION CONTROL PLAN" CONTAINED HEREIN. THE CONTRACTOR SHALL BE RESPONSIBLE TO POST ALL BONDS AS REQUIRED BY GOVERNMENT AGENCIES WHICH WOULD GUARANTEE THE PROPER IMPLEMENTATION OF THE PLAN.
- ALL SITE WORK, MATERIALS OF CONSTRUCTION, AND CONSTRUCTION METHODS FOR EARTHWORK AND STORM DRAINAGE WORK, SHALL CONFORM TO THE SPECIFICATIONS AND DETAILS AND APPLICABLE SECTIONS OF THE PROJECT SPECIFICATIONS MANUAL. OTHERWISE THIS WORK SHALL CONFORM TO THE STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION AND PROJECT GEOTECHNICAL REPORT IF THERE IS NO PROJECT SPECIFICATIONS MANUAL. ALL FILL MATERIAL UNDER STRUCTURES AND PAVED AREAS SHALL BE PER THE ABOVE STATED APPLICABLE SPECIFICATIONS, AND/OR PROJECT GEOTECHNICAL REPORT, AND SHALL BE PLACED IN ACCORDANCE WITH THE APPLICABLE SPECIFICATIONS UNDER THE SUPERVISION OF A QUALIFIED PROFESSIONAL ENGINEER. MATERIAL SHALL BE COMPACTED IN 8" LIFTS TO 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D 1557 AT 95% PERCENT OF OPTIMUM MOISTURE CONTENT.
- ALL DISTURBANCE INCURRED TO PUBLIC, MUNICIPAL, COUNTY, STATE PROPERTY DUE TO CONSTRUCTION SHALL BE RESTORED TO ITS PREVIOUS CONDITION OR BETTER, TO THE SATISFACTION OF THE TOWN OF WATERTOWN AND STATE OF CONNECTICUT.
- IF IMPACTED OR CONTAMINATED SOIL IS ENCOUNTERED BY THE CONTRACTOR, THE CONTRACTOR SHALL SUSPEND EXCAVATION WORK OF IMPACTED SOIL AND NOTIFY THE PROJECT DEVELOPER AND/OR PROJECT DEVELOPERS ENVIRONMENTAL CONSULTANT PRIOR TO PROCEEDING WITH FURTHER WORK IN THE IMPACTED SOIL LOCATION UNTIL FURTHER INSTRUCTED BY THE PROJECT DEVELOPER AND/OR PROJECT DEVELOPERS ENVIRONMENTAL CONSULTANT.

UTILITY NOTES

- CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE TOWN OF WATERTOWN TO SECURE CONSTRUCTION PERMITS AND FOR PAYMENT OF FEES FOR STREET CUTS AND CONNECTIONS TO EXISTING UTILITIES.
- REFER TO DRAWINGS BY PROJECT DEVELOPER FOR THE ONSITE ELECTRICAL DRAWINGS AND INTERCONNECTION TO EXISTING ELECTRICAL GRID. SITE CONTRACTOR SHALL SUPPLY AND INSTALL PIPE ADAPTERS AS NECESSARY AT BUILDING CONNECTION POINT OR AT EXISTING UTILITY OR PIPE CONNECTION POINT. THESE DETAILS ARE NOT INCLUDED IN THESE PLANS.
- UTILITY LOCATIONS AND PENETRATIONS ARE SHOWN FOR THE CONTRACTORS INFORMATION AND SHALL BE VERIFIED WITH THE ELECTRICAL ENGINEER AND THE PROJECT DEVELOPERS CONSTRUCTION MANAGER PRIOR TO THE START OF CONSTRUCTION.
- THE CONTRACTOR SHALL VISIT THE SITE AND VERIFY THE ELEVATION AND LOCATION OF ALL UTILITIES BY VARIOUS MEANS PRIOR TO BEGINNING ANY EXCAVATION. TEST PITS SHALL BE DUG AT ALL LOCATIONS WHERE PROP. SANITARY SEWERS AND WHERE PROP. STORM PIPING WILL CROSS EXISTING UTILITIES, AND THE HORIZONTAL AND VERTICAL LOCATIONS OF THE UTILITIES SHALL BE DETERMINED. THE CONTRACTOR SHALL CONTACT THE PROJECT DEVELOPER IN THE EVENT OF ANY DISCOVERED OR UNFORESEEN CONFLICTS BETWEEN EXISTING AND PROPOSED SANITARY SEWERS, STORM PIPING AND UTILITIES SO THAT AN APPROPRIATE MODIFICATION MAY BE MADE.
- UTILITY CONNECTION DESIGN AS REFLECTED ON THE PLAN MAY CHANGE SUBJECT TO UTILITY PROVIDER AND GOVERNING AUTHORITY STAFF REVIEW.
- THE CONTRACTOR SHALL ENSURE THAT ALL UTILITY PROVIDERS AND GOVERNING AUTHORITY STANDARDS FOR MATERIALS AND CONSTRUCTION METHODS ARE MET. THE CONTRACTOR SHALL PERFORM PROPER COORDINATION WITH THE RESPECTIVE UTILITY PROVIDER.
- THE CONTRACTOR SHALL ARRANGE FOR AND COORDINATE WITH THE RESPECTIVE UTILITY PROVIDERS FOR SERVICE INSTALLATIONS AND CONNECTIONS. THE CONTRACTOR SHALL COORDINATE WORK TO BE PERFORMED BY THE VARIOUS UTILITY PROVIDERS AND SHALL PAY ALL FEES FOR CONNECTIONS, DISCONNECTIONS, RELOCATIONS, INSPECTIONS, AND DEMOLITION UNLESS OTHERWISE STATED IN THE PROJECT SPECIFICATIONS MANUAL AND/OR GENERAL CONDITIONS OF THE CONTRACT.
- ALL EXISTING PAVEMENT WHERE UTILITY PIPING IS TO BE INSTALLED SHALL BE SAW CUT. AFTER UTILITY INSTALLATION IS COMPLETED, THE CONTRACTOR SHALL INSTALL TEMPORARY AND/OR PERMANENT PAVEMENT REPAIR AS DETAILED ON THE DRAWINGS OR AS REQUIRED BY THE TOWN OF WATERTOWN.
- ALL PIPES SHALL BE LAID ON STRAIGHT ALIGNMENTS AND EVEN GRADES USING A PIPE LASER OR OTHER ACCURATE METHOD.
- RELOCATION OF UTILITY PROVIDER FACILITIES, SUCH AS POLES, SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE UTILITY PROVIDER.
- THE CONTRACTOR SHALL COMPACT PIPE BACKFILL IN 8" LIFTS ACCORDING TO THE PIPE BEDDING DETAILS. TRENCH BOTTOM SHALL BE STABLE IN HIGH GROUNDWATER AREAS. A PIPE FOUNDATION SHALL BE USED PER THE TRENCH DETAILS AND IN AREAS OF ROCK EXCAVATION.
- CONTRACTOR TO PROVIDE STEEL SLEEVES AND ANNULAR SPACE SAND FILL FOR UTILITY PIPE AND CONDUIT CONNECTIONS UNDER FOOTINGS.
- ALL UTILITY CONSTRUCTION IS SUBJECT TO INSPECTION FOR APPROVAL PRIOR TO BACKFILLING, IN ACCORDANCE WITH THE APPROPRIATE UTILITY PROVIDER REQUIREMENTS.
- A ONE-FOOT MINIMUM VERTICAL CLEARANCE BETWEEN WATER, GAS, ELECTRICAL, AND TELEPHONE LINES AND STORM PIPING SHALL BE PROVIDED. A SIX-INCH MINIMUM CLEARANCE SHALL BE MAINTAINED BETWEEN STORM PIPING AND SANITARY SEWER. A 6-INCH TO 18-INCH VERTICAL CLEARANCE BETWEEN SANITARY SEWER PIPING AND STORM PIPING SHALL REQUIRE CONCRETE ENCASEMENT OF THE PROP. SANITARY PIPING.
- THE CONTRACTOR SHALL RESTORE ANY UTILITY STRUCTURE, PIPE, CONDUIT, PAVEMENT, CURBING, SIDEWALKS, DRAINAGE STRUCTURE, SWALE OR LANDSCAPED AREAS DISTURBED DURING CONSTRUCTION, TO THEIR ORIGINAL CONDITION OR BETTER TO THE SATISFACTION OF THE PROJECT DEVELOPER AND TOWN OF WATERTOWN.
- INFORMATION ON EXISTING UTILITIES AND STORM DRAINAGE HAS BEEN COMPILED FROM AVAILABLE INFORMATION INCLUDING UTILITY PROVIDER AND MUNICIPAL RECORD MAPS AND/OR FIELD SURVEY, AND IS NOT GUARANTEED CORRECT OR COMPLETE. UTILITIES AND STORM DRAINAGE ARE SHOWN TO ALERT THE CONTRACTOR TO THEIR PRESENCE. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL LOCATIONS AND ELEVATIONS OF ALL UTILITIES AND STORM DRAINAGE INCLUDING SERVICES. CONTACT "DIG SAFE" AT 811 72 HOURS PRIOR TO CONSTRUCTION AND VERIFY ALL UNDERGROUND AND OVERHEAD UTILITY AND STORM DRAINAGE LOCATIONS. THE CONTRACTOR SHALL EMPLOY THE USE OF A UTILITY LOCATING COMPANY TO PROVIDE SUBSURFACE UTILITY ENGINEERING CONSISTING OF DESIGNATING UTILITIES AND STORM PIPING ON PRIVATE PROPERTY WITHIN THE CONTRACT LIMIT AND CONSISTING OF DESIGNATING AND LOCATING WHERE PROP. UTILITIES AND STORM PIPING CROSS EXISTING UTILITIES AND STORM PIPING WITHIN THE CONTRACT LIMITS.
- THE CONTRACTOR SHALL ARRANGE AND COORDINATE WITH UTILITY PROVIDERS FOR WORK TO BE PERFORMED BY UTILITY PROVIDERS. THE CONTRACTOR SHALL PAY ALL UTILITY FEES UNLESS OTHERWISE STATED IN THE PROJECT SPECIFICATION MANUAL AND GENERAL CONDITIONS, AND REPAIR PAVEMENTS AS NECESSARY.
- ELECTRIC DRAWINGS AND REQUIREMENTS ARE NOT INCLUDED AS PART OF THIS DRAWING SET AND SHOULD BE OBTAINED FROM THE PROJECT DEVELOPER.
- ALTERNATIVE METHODS AND PRODUCTS OTHER THAN THOSE SPECIFIED MAY BE USED IF REVIEWED AND APPROVED BY THE PROJECT DEVELOPER, ENGINEER, AND APPROPRIATE REGULATORY AGENCIES PRIOR TO INSTALLATION.
- THE CONTRACTOR SHALL MAINTAIN ALL FLOWS AND UTILITY CONNECTIONS TO EXISTING BUILDINGS WITHOUT INTERRUPTION UNLESS/UNTIL AUTHORIZED TO DISCONNECT BY THE PROJECT DEVELOPER, TOWN OF WATERTOWN, UTILITY PROVIDERS AND GOVERNING AUTHORITIES.

GENERAL LEGEND		
	EXISTING	PROPOSED
PROPERTY LINE		
BUILDING SETBACK		
SOLAR SETBACK		
EASEMENT		
TREE LINE		
WETLAND		
WETLAND BUFFER		
VERNAL POOL		
VERNAL POOL BUFFER		
WATERCOURSE		
WATERCOURSE BUFFER		
MAJOR CONTOUR		
MINOR CONTOUR		
UNDERGROUND ELECTRIC		
OVERHEAD ELECTRIC		
GAS LINE		
WATER LINE		
BASIN		
SWALE		
FENCE		
LIMIT OF DISTURBANCE		
LIMIT OF CLEARING AND GRUBBING		
FILTER SOCK		
SILT FENCE		
BAFFLE		

WATERTOWN SOLAR ONE, LLC
150 TRUMBULL STREET
4TH FLOOR
HARTFORD, CT, 06103



567 VAUXHAUL STREET EXTENSION - SUITE 311
WATERFORD, CT 06385 PHONE: (860)-463-1697
WWW.ALLPOINTSTECH.COM FAX: (860)-463-0935

APPROVED FOR CONSTRUCTION

NO	DATE	REVISION
0	12/30/20	D&M PLANS: BJP
1		
2		
3		
4		
5		
6		

DESIGN PROFESSIONAL OF RECORD

PROF. BRADLEY J. PARSONS P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION
ADD: 567 VAUXHAUL STREET
EXTENSION - SUITE 311
WATERFORD, CT 06385

OWNER: CATHOLIC CEMETERIES
ADDRESS: 669 PLATT ROAD
WATERTOWN, CT 06795

WATERTOWN SOLAR ONE, LLC

SITE HINMAN ROAD & PLATT ROAD
ADDRESS: WATERTOWN, CT 06795

APT FILING NUMBER: CT590240

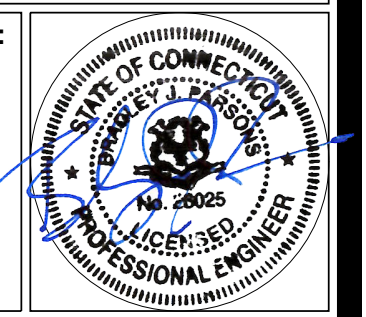
DRAWN BY: CSH
DATE: 12/30/20 **CHECKED BY: BJP**

SHEET TITLE:

GENERAL NOTES

SHEET NUMBER:

GN-1



ENVIRONMENTAL NOTES

RESOURCE PROTECTION PLAN

ENVIRONMENTAL NOTES

RESOURCE PROTECTION PLAN

AS A RESULT OF THE PROPOSED DEVELOPMENT'S LOCATION IN THE VICINITY OF WETLANDS AND VERNAL POOL HABITATS, THE FOLLOWING BEST MANAGEMENT PRACTICES ("BMPs") ARE RECOMMENDED TO AVOID UNINTENTIONAL IMPACT TO WETLAND HABITATS OR MORTALITY TO VERNAL POOL HERPETOFAUNA (I.E., SPOTTED SALAMANDER, WOOD FROG, TURTLES, ETC.) DURING CONSTRUCTION ACTIVITIES. THIS PLAN INCLUDES ELEMENTS THAT WILL PROTECT HERPETOFAUNA SHOULD CONSTRUCTION ACTIVITIES OCCUR DURING PEAK AMPHIBIAN MOVEMENT PERIODS (EARLY SPRING BREEDING [MARCH 1ST TO MAY 15TH] AND LATE SUMMER DISPERSAL [JULY 15TH TO SEPTEMBER 15TH]) AS WELL AS WETLANDS REGARDLESS OF THE TIME OF YEAR. COMPLETE DETAILS OF THE RECOMMENDED BMPs ARE PROVIDED BELOW, WHICH WILL BE INCORPORATED INTO THE CONSTRUCTION DRAWINGS TO ENSURE THE CONTRACTOR IS FULLY AWARE OF THE PROJECT'S ENVIRONMENTALLY SENSITIVE SETTING.

A WETLAND SCIENTIST FROM ALL-POINTS TECHNOLOGY CORP. ("APT") EXPERIENCED IN COMPLIANCE MONITORING OF CONSTRUCTION ACTIVITIES WILL SERVE AS THE ENVIRONMENTAL MONITOR FOR THIS PROJECT TO ENSURE THAT THE FOLLOWING BMPs ARE IMPLEMENTED PROPERLY. THE PROPOSED RESOURCE PROTECTION PROGRAM CONSISTS OF SEVERAL COMPONENTS INCLUDING: ISOLATION OF THE PROJECT PERIMETER; PERIODIC INSPECTION AND MAINTENANCE OF EROSION CONTROLS AND ISOLATION STRUCTURES; HERPETOFAUNA SWEEPS; EDUCATION OF ALL CONTRACTORS AND SUB-CONTRACTORS PRIOR TO INITIATION OF WORK ON THE SITE; PROTECTIVE MEASURES; AND, REPORTING.

1. EROSION AND SEDIMENTATION CONTROLS

- PLASTIC NETTING WITH LARGE MESH OPENINGS (> ¼") USED IN A VARIETY OF EROSION CONTROL PRODUCTS (I.E., EROSION CONTROL BLANKETS, FIBER ROLLS (WATTLES), REINFORCED SILT FENCE) HAS BEEN FOUND TO ENTANGLE WILDLIFE, INCLUDING REPTILES, AMPHIBIANS, BIRDS AND SMALL MAMMALS. NO PERMANENT EROSION CONTROL PRODUCTS OR REINFORCED SILT FENCE WILL BE USED ON THE PROJECT. TEMPORARY EROSION CONTROL PRODUCTS THAT WILL BE EXPOSED AT THE GROUND SURFACE REPRESENT A POTENTIAL FOR WILDLIFE ENTANGLEMENT WILL USE EITHER EROSION CONTROL BLANKETS AND FIBER ROLLS COMPOSED OF PROCESSED FIBERS MECHANICALLY BOUND TOGETHER TO FORM A CONTINUOUS MATRIX (NETLESS) OR NETTING WITH A MESH SIZE <¼" SUCH AS THAT TYPICALLY USED IN COMPOST FILTER SOCKS TO AVOID/MINIMIZE WILDLIFE ENTANGLEMENT.
- INSTALLATION OF EROSION AND SEDIMENTATION CONTROLS, REQUIRED FOR EROSION CONTROL COMPLIANCE AND CREATION OF A BARRIER TO POSSIBLE MIGRATING/DISPERSING HERPETOFAUNA, SHALL BE PERFORMED BY THE CONTRACTOR FOLLOWING CLEARING ACTIVITIES AND PRIOR TO ANY EARTHWORK. THE ENVIRONMENTAL MONITOR WILL INSPECT THE WORK ZONE AREA PRIOR TO AND FOLLOWING EROSION CONTROL BARRIER INSTALLATION TO ENSURE THE AREA IS FREE OF HERPETOFAUNA AND SATISFACTORILY INSTALLED. THE INTENT OF THE BARRIER IS TO SEGREGATE THE MAJORITY OF THE WORK ZONE FROM MIGRATING/DISPERSING HERPETOFAUNA. OFTENTIMES COMPLETE ISOLATION OF A WORK ZONE IS NOT FEASIBLE DUE TO ACCESSIBILITY NEEDS AND LOCATIONS OF STAGING/MATERIAL STORAGE AREAS, ETC. IN THOSE CIRCUMSTANCES, THE BARRIERS WILL BE POSITIONED TO DEFLECT MIGRATING/DISPERSAL ROUTES AWAY FROM THE WORK ZONE TO MINIMIZE POTENTIAL ENCOUNTERS WITH HERPETOFAUNA.
- IF A STAGING AREA FOR EQUIPMENT, VEHICLES OR CONSTRUCTION MATERIALS IS REQUIRED FOR THIS PROJECT, SUCH AREA(S) SHALL BE LOCATED OUTSIDE OF ANY WETLAND RESOURCE BUFFER ZONE AND SURROUNDED BY SILT FENCE TO ISOLATE THE AREA FROM POSSIBLE MIGRATING HERPETOFAUNA.
- ALL EROSION CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS OF COMPLETION OF WORK AND PERMANENT STABILIZATION OF SITE SOILS SO THAT HERPETOFAUNA MOVEMENTS BETWEEN UPLANDS AND WETLANDS ARE NOT RESTRICTED.

2. CONTRACTOR EDUCATION:

- PRIOR TO WORK ON SITE AND INITIAL DEPLOYMENT/MOBILIZATION OF EQUIPMENT AND MATERIALS, THE CONTRACTOR SHALL ATTEND AN EDUCATIONAL SESSION AT THE PRE-CONSTRUCTION MEETING WITH THE ENVIRONMENTAL MONITOR. THIS ORIENTATION AND EDUCATIONAL SESSION WILL CONSIST OF INFORMATION SUCH AS, BUT NOT LIMITED TO: REPRESENTATIVE PHOTOGRAPHS OF TYPICAL HERPETOFAUNA THAT MAY BE ENCOUNTERED, RARE THAT COULD BE ENCOUNTERED (IF POSSIBLE), TYPICAL SPECIES BEHAVIOR, AND PROPER PROCEDURES TO PROTECT SUCH SPECIES IF THEY ARE ENCOUNTERED. THE MEETING WILL FURTHER EMPHASIZE THE NON-AGGRESSIVE NATURE OF THESE SPECIES, THE ABSENCE OF NEED TO DESTROY SUCH ANIMALS AND THE NEED TO FOLLOW PROTECTIVE MEASURES AS DESCRIBED IN SECTION 4 BELOW. THE CONTRACTOR WILL DESIGNATE ONE OF ITS WORKERS AS THE "PROJECT MONITOR", WHO WILL RECEIVE MORE INTENSE TRAINING ON THE IDENTIFICATION AND PROPER HANDLING OF HERPETOFAUNA.
- THE PROJECT MONITOR WILL BE RESPONSIBLE FOR THE DAILY "SWEEPS" FOR HERPETOFAUNA WITHIN THE WORK ZONE EACH MORNING, DURING ANY AND ALL TRANSPORTATION OF VEHICLES ALONG THE ACCESS DRIVE, AND FOR ANY GROUND DISTURBANCE WORK. THIS INDIVIDUAL WILL RECEIVE MORE INTENSE TRAINING FROM THE ENVIRONMENTAL MONITOR ON THE IDENTIFICATION AND PROTECTION OF HERPETOFAUNA IN ORDER TO PERFORM SWEEPS. ANY HERPETOFAUNA DISCOVERED WILL BE REPORTED TO THE ENVIRONMENTAL MONITOR, PHOTOGRAPHED IF POSSIBLE, AND RELOCATED OUTSIDE THE WORK ZONE IN THE GENERAL DIRECTION THE ANIMAL WAS ORIENTED.
- THE ENVIRONMENTAL MONITOR WILL ALSO POST CAUTION SIGNS THROUGHOUT THE PROJECT SITE AND MAINTAIN THEM FOR THE DURATION OF CONSTRUCTION TO PROVIDE NOTICE OF THE ENVIRONMENTALLY SENSITIVE NATURE OF THE WORK AREA. THE POTENTIAL FOR ENCOUNTERING VARIOUS AMPHIBIANS AND REPTILES AND PRECAUTIONS TO BE TAKEN TO AVOID INJURY TO OR MORTALITY OF THESE ANIMALS.
- THE CONTRACTOR WILL BE PROVIDED WITH THE ENVIRONMENTAL MONITOR'S CELL PHONE AND EMAIL CONTACT INFORMATION TO IMMEDIATELY REPORT ANY ENCOUNTERS WITH HERPETOFAUNA.

3. PETROLEUM MATERIALS STORAGE AND SPILL PREVENTION

- CERTAIN PRECAUTIONS ARE NECESSARY TO STORE PETROLEUM MATERIALS, REFUEL AND CONTAIN AND PROPERLY CLEAN UP ANY INADVERTENT FUEL OR PETROLEUM (I.E., OIL, HYDRAULIC FLUID, ETC.) SPILL DUE TO THE PROJECT'S LOCATION IN PROXIMITY TO SENSITIVE WETLAND RESOURCES.
- A SPILL CONTAINMENT KIT CONSISTING OF A SUFFICIENT SUPPLY OF ABSORBENT PADS AND ABSORBENT MATERIAL WILL BE MAINTAINED BY THE CONTRACTOR AT THE CONSTRUCTION SITE THROUGHOUT THE DURATION OF THE PROJECT. IN ADDITION, A WASTE DRUM WILL BE KEPT ON SITE TO CONTAIN ANY USED ABSORBENT PADS/MATERIAL FOR PROPER AND TIMELY DISPOSAL OFF SITE IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL LAWS.
- THE FOLLOWING PETROLEUM AND HAZARDOUS MATERIALS STORAGE AND REFUELING RESTRICTIONS AND SPILL RESPONSE PROCEDURES WILL BE ADHERED TO BY THE CONTRACTOR.
 - PETROLEUM AND HAZARDOUS MATERIALS STORAGE AND REFUELING
 - REFUELING OF VEHICLES OR MACHINERY SHALL TAKE PLACE ON AN IMPERVIOUS PAD WITH SECONDARY CONTAINMENT DESIGNED TO CONTAIN FUELS.
 - ANY REFUELING DRUMS/TANKS OR HAZARDOUS MATERIALS THAT MUST BE KEPT ON SITE SHALL BE STORED ON AN IMPERVIOUS SURFACE UTILIZING SECONDARY CONTAINMENT A MINIMUM OF 100 FEET FROM WETLANDS OR WATERCOURSES.
 - INITIAL SPILL RESPONSE PROCEDURES
 - STOP OPERATIONS AND SHUT OFF EQUIPMENT.
 - REMOVE ANY SOURCES OF SPARK OR FLAME.
 - CONTAIN THE SOURCE OF THE SPILL.
 - DETERMINE THE APPROXIMATE VOLUME OF THE SPILL.
 - IDENTIFY THE LOCATION OF NATURAL FLOW PATHS TO PREVENT THE RELEASE OF THE SPILL TO SENSITIVE NEARBY WATERWAYS OR WETLANDS.
 - ENSURE THAT FELLOW WORKERS ARE NOTIFIED OF THE SPILL.
 - SPILL CLEAN UP & CONTAINMENT
 - OBTAIN SPILL RESPONSE MATERIALS FROM THE ON-SITE SPILL RESPONSE KIT. PLACE ABSORBENT MATERIALS DIRECTLY ON THE RELEASE AREA.
 - LIMIT THE SPREAD OF THE SPILL BY PLACING ABSORBENT MATERIALS AROUND THE PERIMETER OF THE SPILL.
 - ISOLATE AND ELIMINATE THE SPILL SOURCE.
 - CONTACT THE APPROPRIATE LOCAL, STATE AND/OR FEDERAL AGENCIES, AS NECESSARY.
 - CONTACT A DISPOSAL COMPANY TO PROPERLY DISPOSE OF CONTAMINATED MATERIALS.
 - REPORTING
 - COMPLETE AN INCIDENT REPORT.
 - SUBMIT A COMPLETED INCIDENT REPORT TO LOCAL, STATE AND FEDERAL AGENCIES, AS REQUIRED.

4. PROTECTIVE MEASURES

- A THOROUGH COVER SEARCH OF THE CONSTRUCTION AREA WILL BE PERFORMED BY THE ENVIRONMENTAL MONITOR FOR HERPETOFAUNA PRIOR TO AND FOLLOWING INSTALLATION OF EROSION CONTROL MEASURES/SILT FENCING BARRIERS TO REMOVE ANY SPECIES FROM THE WORK ZONE PRIOR TO THE INITIATION OF CONSTRUCTION ACTIVITIES. ANY HERPETOFAUNA DISCOVERED WOULD BE RELOCATED OUTSIDE THE WORK ZONE IN THE GENERAL DIRECTION THE ANIMAL WAS ORIENTED. PERIODIC INSPECTIONS WILL BE PERFORMED BY THE ENVIRONMENTAL MONITOR THROUGHOUT THE DURATION OF CONSTRUCTION.
- THE CONTRACTOR'S PROJECT MONITOR WILL INSPECT THE WORK AREA EACH MORNING AND ESCORT INITIAL VEHICLE ACCESS INTO THE SITE EACH MORNING ALONG THE ACCESS DRIVE TO VISUALLY INSPECT FOR ANY HERPETOFAUNA. ANY HERPETOFAUNA DISCOVERED WOULD BE RELOCATED OUTSIDE THE WORK ZONE IN THE GENERAL DIRECTION THE ANIMAL WAS ORIENTED.
- ANY HERPETOFAUNA REQUIRING RELOCATION OUT OF THE WORK ZONE WILL BE CAPTURED WITH THE USE OF A NET OR CLEAN PLASTIC BAG THAT HAS BEEN MOISTENED WITH CLEAN WATER FOR CAREFUL HANDLING AND PLACEMENT OUT OF THE WORK ZONE IN THE GENERAL DIRECTION IT WAS OBSERVED HEADING.
- ANY STORMWATER MANAGEMENT FEATURES, RUTS OR ARTIFICIAL DEPRESSIONS THAT COULD HOLD WATER CREATED INTENTIONALLY OR UNINTENTIONALLY BY SITE CLEARING/CONSTRUCTION ACTIVITIES WILL BE PROPERLY FILLED IN AND PERMANENTLY STABILIZED WITH VEGETATION TO AVOID THE CREATION OF VERNAL POOL "DECOY POOLS" THAT COULD INTERCEPT AMPHIBIANS MOVING TOWARD THE VERNAL POOL. STORMWATER MANAGEMENT FEATURES SUCH AS LEVEL SPREADERS WILL BE CAREFULLY REVIEWED IN THE FIELD TO ENSURE THAT STANDING WATER DOES NOT ENDURE FOR MORE THAN A 24-HOUR PERIOD TO AVOID CREATION OF DECOY POOLS AND MAY BE SUBJECT TO FIELD DESIGN CHANGES. ANY SUCH PROPOSED DESIGN CHANGES WILL BE REVIEWED BY THE DESIGN ENGINEER TO ENSURE STORMWATER MANAGEMENT FUNCTIONS ARE MAINTAINED.

REPORTING

- INSPECTION REPORTS (BRIEF NARRATIVE AND APPLICABLE PHOTOS) WILL BE PREPARED BY THE ENVIRONMENTAL MONITOR DOCUMENTING EACH INSPECTION AND SUBMITTED TO THE PERMITTEE FOR COMPLIANCE VERIFICATION. ANY NON-COMPLIANCE OBSERVATIONS OF EROSION CONTROL MEASURES OR EVIDENCE OF EROSION OR SEDIMENT RELEASE WILL BE IMMEDIATELY REPORTED TO THE PERMITTEE AND ITS CONTRACTOR AND INCLUDED IN THE REPORTS.
- ANY INCIDENTS OF RELEASE OF SEDIMENT OR OTHER MATERIALS INTO WETLAND RESOURCE AREAS SHALL BE REPORTED BY THE PERMITTEE WITHIN 24 HOURS TO THE PERMITTEE.
- ANY OBSERVATIONS OF RARE SPECIES WILL BE REPORTED TO THE CONNECTICUT DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION'S NATURAL DIVERSITY DATA BASE PROGRAM.
- FOLLOWING COMPLETION OF THE PROJECT, A SUMMARY REPORT WILL BE PREPARED BY THE ENVIRONMENTAL MONITOR DOCUMENTING COMPLIANCE WITH THE RESOURCE PROTECTION PLAN AND SUBMITTED TO THE PERMITTEE, WHO SHALL SUBMIT A COPY TO THE CONNECTICUT SITING COUNCIL.

WATERTOWN SOLAR ONE, LLC
150 TRUMBULL STREET
4TH FLOOR
HARTFORD, CT, 06103



567 VAUXHAUL STREET EXTENSION - SUITE 311
WATERFORD, CT 06385 PHONE: (860)-663-1697
WWW.ALLPOINTSTECH.COM FAX: (860)-663-0936

APPROVED FOR CONSTRUCTION

NO	DATE	REVISION
0	12/30/20	D&M PLANS: BJP
1		
2		
3		
4		
5		
6		

DESIGN PROFESSIONAL OF RECORD

PROF: BRADLEY J. PARSONS P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION
ADD: 567 VAUXHAUL STREET
EXTENSION - SUITE 311
WATERFORD, CT 06385

OWNER: CATHOLIC CEMETERIES
ADDRESS: 669 PLATT ROAD
WATERTOWN, CT 06795

WATERTOWN SOLAR ONE, LLC

SITE HINMAN ROAD & PLATT ROAD
ADDRESS: WATERTOWN, CT 06795

APT FILING NUMBER: CT590240

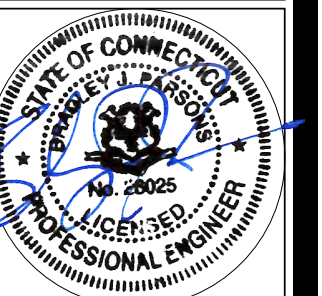
	DRAWN BY: CSH
DATE: 12/30/20	CHECKED BY: BJP

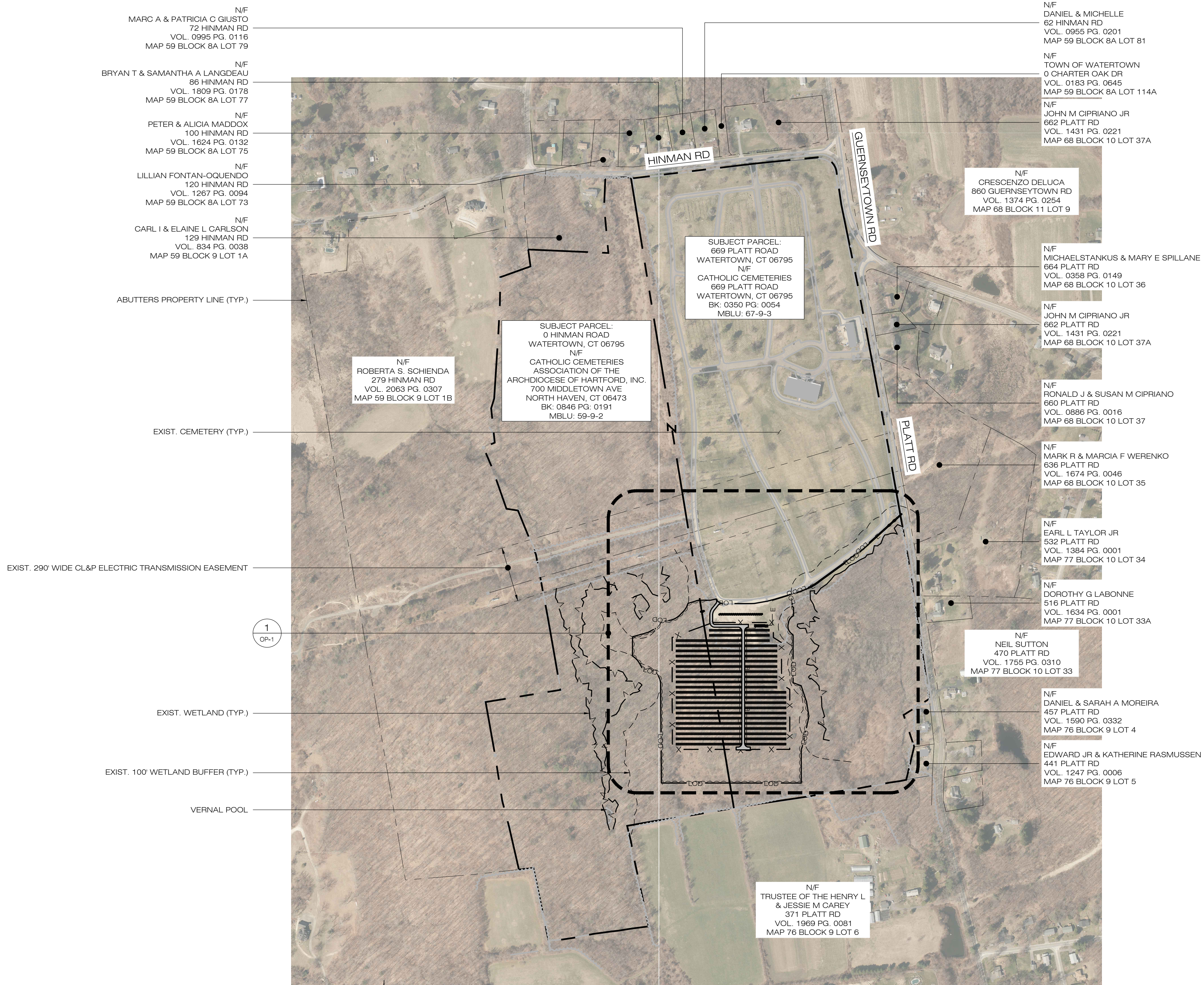
SHEET TITLE:

GENERAL NOTES

SHEET NUMBER:

GN-2





N/F
MARC A & PATRICIA C GIUSTO
72 HINMAN RD
VOL. 0995 PG. 0116
MAP 59 BLOCK 8A LOT 79

N/F
BRYAN T & SAMANTHA A LANGDEAU
86 HINMAN RD
VOL. 1809 PG. 0178
MAP 59 BLOCK 8A LOT 77

N/F
PETER & ALICIA MADDOX
100 HINMAN RD
VOL. 1624 PG. 0132
MAP 59 BLOCK 8A LOT 75

N/F
LILLIAN FONTAN-OQUEUNDO
120 HINMAN RD
VOL. 1267 PG. 0094
MAP 59 BLOCK 8A LOT 73

N/F
CARL I & ELAINE L CARLSON
129 HINMAN RD
VOL. 834 PG. 0038
MAP 59 BLOCK 9 LOT 1A

ABUTTERS PROPERTY LINE (TYP.)

N/F
ROBERTA S. SCHIENDA
279 HINMAN RD
VOL. 2063 PG. 0307
MAP 59 BLOCK 9 LOT 1B

SUBJECT PARCEL:
0 HINMAN ROAD
WATERTOWN, CT 06795
N/F
CATHOLIC CEMETERIES
ASSOCIATION OF THE
ARCHDIOCESE OF HARTFORD, INC.
700 MIDDLETOWN AVE
NORTH HAVEN, CT 06473
BK: 0846 PG: 0191
MBLU: 59-9-2

SUBJECT PARCEL:
669 PLATT ROAD
WATERTOWN, CT 06795
N/F
CATHOLIC CEMETERIES
669 PLATT ROAD
WATERTOWN, CT 06795
BK: 0350 PG: 0054
MBLU: 67-9-3

N/F
DANIEL & MICHELLE
62 HINMAN RD
VOL. 0955 PG. 0201
MAP 59 BLOCK 8A LOT 81

N/F
TOWN OF WATERTOWN
0 CHARTER OAK DR
VOL. 0183 PG. 0645
MAP 59 BLOCK 8A LOT 114A

N/F
JOHN M CIPRIANO JR
662 PLATT RD
VOL. 1431 PG. 0221
MAP 68 BLOCK 10 LOT 37A

N/F
CRESCENZO DELUCA
860 GUERNSEYTOWN RD
VOL. 1374 PG. 0254
MAP 68 BLOCK 11 LOT 9

N/F
MICHAELSTANKUS & MARY E SPILLANE
684 PLATT RD
VOL. 0358 PG. 0149
MAP 68 BLOCK 10 LOT 36

N/F
JOHN M CIPRIANO JR
662 PLATT RD
VOL. 1431 PG. 0221
MAP 68 BLOCK 10 LOT 37A

N/F
RONALD J & SUSAN M CIPRIANO
660 PLATT RD
VOL. 0886 PG. 0016
MAP 68 BLOCK 10 LOT 37

N/F
MARK R & MARCIA F WERENKO
636 PLATT RD
VOL. 1674 PG. 0046
MAP 68 BLOCK 10 LOT 35

N/F
EARL L TAYLOR JR
532 PLATT RD
VOL. 1384 PG. 0001
MAP 77 BLOCK 10 LOT 34

N/F
DOROTHY G LABONNE
516 PLATT RD
VOL. 1634 PG. 0001
MAP 77 BLOCK 10 LOT 33A

N/F
NEIL SUTTON
470 PLATT RD
VOL. 1755 PG. 0310
MAP 77 BLOCK 10 LOT 33

N/F
DANIEL & SARAH A MOREIRA
457 PLATT RD
VOL. 1590 PG. 0332
MAP 76 BLOCK 9 LOT 4

N/F
EDWARD JR & KATHERINE RASMUSSEN
441 PLATT RD
VOL. 1247 PG. 0006
MAP 76 BLOCK 9 LOT 5

N/F
TRUSTEE OF THE HENRY L
& JESSIE M CAREY
371 PLATT RD
VOL. 1969 PG. 0081
MAP 76 BLOCK 9 LOT 6

EXIST. 290' WIDE CL&P ELECTRIC TRANSMISSION EASEMENT

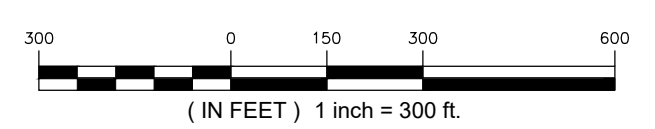
1
OP-1

EXIST. WETLAND (TYP.)

EXIST. 100' WETLAND BUFFER (TYP.)

VERNAL POOL

1
OP-0
OVERALL LOCUS MAP
SCALE: 1" = 300'-0"



**WATERTOWN SOLAR
ONE, LLC**
150 TRUMBULL STREET
4TH FLOOR
HARTFORD, CT, 06103



567 VAUXHAUL STREET EXTENSION - SUITE 311
WATERFORD, CT 06385 PHONE: (860)-663-1697
WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

APPROVED FOR CONSTRUCTION

NO	DATE	REVISION
0	12/30/20	D&M PLANS: BJP
1		
2		
3		
4		
5		
6		

DESIGN PROFESSIONAL OF RECORD

PROF: BRADLEY J. PARSONS P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION
ADD: 567 VAUXHAUL STREET
EXTENSION - SUITE 311
WATERFORD, CT 06385

OWNER: CATHOLIC CEMETERIES
ADDRESS: 669 PLATT ROAD
WATERTOWN, CT 06795

WATERTOWN SOLAR ONE, LLC

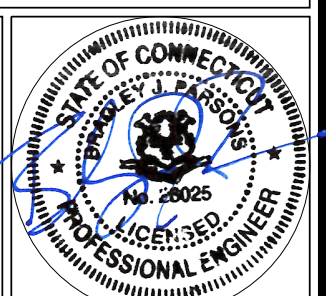
SITE HINMAN ROAD & PLATT ROAD
ADDRESS: WATERTOWN, CT 06795

APT FILING NUMBER: CT590240

DATE: 12/30/20
DRAWN BY: CSH
CHECKED BY: BJP

SHEET TITLE:
OVERALL LOCUS MAP

SHEET NUMBER:
OP-0



WATERTOWN SOLAR ONE, LLC
150 TRUMBULL STREET
4TH FLOOR
HARTFORD, CT, 06103

ALL-POINTS
 TECHNOLOGY CORPORATION
 567 VAUXHAUL STREET EXTENSION - SUITE 311
 WATERFORD, CT 06385 PHONE: (860)-663-1697
 WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

APPROVED FOR CONSTRUCTION

NO	DATE	REVISION
0	12/30/20	D&M PLANS: BJP
1		
2		
3		
4		
5		
6		

DESIGN PROFESSIONAL OF RECORD

PROF: BRADLEY J. PARSONS P.E.
 COMP: ALL-POINTS TECHNOLOGY CORPORATION
 ADD: 567 VAUXHAUL STREET EXTENSION - SUITE 311
 WATERFORD, CT 06385

OWNER: CATHOLIC CEMETERIES
 ADDRESS: 669 PLATT ROAD
 WATERTOWN, CT 06795

WATERTOWN SOLAR ONE, LLC

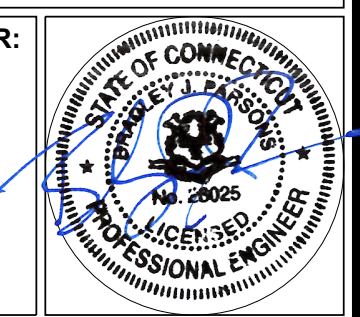
SITE HINMAN ROAD & PLATT ROAD
 ADDRESS: WATERTOWN, CT 06795

APT FILING NUMBER: CT590240

DRAWN BY: CSH
 DATE: 12/30/20 CHECKED BY: BJP

SHEET TITLE:
PARTIAL SITE PLAN

SHEET NUMBER:
OP-1



EXIST. 290' WIDE CL&P ELECTRIC TRANSMISSION EASEMENT

EXIST. TREE LINE (TYP.)

EXIST. PAVED CEMETERY ACCESS DRIVE (TYP.)

PROP. GRASS BERM LIMITS (TYP.)

PROP. LIMITS OF DISTURBANCE

PROP. SHADING LIMIT (TYP.)

PROP. STORMWATER BASIN (TYP.)

PROP. SOLAR ARRAY (5,460 MODULES)
 (APPROX. POWER GENERATION @400W/EA, TOTAL ±2.19 MW DC)

PROP. GRAVEL ACCESS DRIVE (TYP.)

PROP. FENCE (TYP.)

PROP. STORMWATER GRASS SWALE (TYP.)

PROP. SOLAR ARRAY (1,560 MODULES)
 (APPROX. POWER GENERATION @380W/EA, TOTAL ±0.59 MW DC)

EXIST. WETLAND (TYP.)

EXIST. 100' WETLAND BUFFER (TYP.)

PROP. CLEARING LIMITS (TYP.)

VERNAL POOL

EXIST. UTILITY POLE (CL&P #C6040)

EXIST. CEMETERY (TYP.)

PROP. ELECTRICAL TRENCH TO ELECTRICAL INTERCONNECTION POINT (TYP.)

PROP. GRASS BERM LIMITS (TYP.)

PROP. STORMWATER BASIN (TYP.)

PROP. CONCRETE ELECTRICAL EQUIPMENT PAD

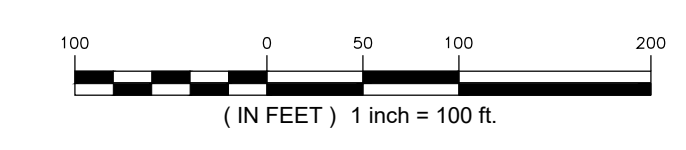
MATCHLINE - FOR 40 SCALE SHEETS

PROP. STORMWATER BASIN (TYP.)

ZONING BUILDING SETBACK LINE (TYP.)

PROPERTY LINE (TYP.)

1 PARTIAL SITE PLAN
 OP-1 SCALE: 1" = 100'-0"



EROSION CONTROL NOTES

EROSION AND SEDIMENT CONTROL PLAN NOTES

- THE CONTRACTOR SHALL CONSTRUCT ALL SEDIMENT AND EROSION CONTROLS IN ACCORDANCE WITH THE 2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL, LATEST EDITION, IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, AND AS DIRECTED BY THE TOWN OF WATERTOWN, PERMITTEE, AND/OR SWPCP MONITOR. ALL PERIMETER SEDIMENTATION AND EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE START OF CLEARING AND GRUBBING AND DEMOLITION OPERATIONS.
- THESE DRAWINGS ARE ONLY INTENDED TO DESCRIBE THE SEDIMENT AND EROSION CONTROL MEASURES FOR THIS SITE. SEE CONSTRUCTION SEQUENCE FOR ADDITIONAL INFORMATION. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHOWN ON THE EROSION & SEDIMENT CONTROL PLAN ARE SHOWN AS REQUIRED BY THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT ALL EROSION CONTROL MEASURES ARE CONFIGURED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION OF SOILS AND PREVENT THE TRANSPORT OF SEDIMENTS AND OTHER POLLUTANTS TO STORM DRAINAGE SYSTEMS AND/OR WATERCOURSES. ACTUAL SITE CONDITIONS OR SEASONAL AND CLIMATIC CONDITIONS MAY WARRANT ADDITIONAL CONTROLS OR CONFIGURATIONS, AS REQUIRED, AND AS DIRECTED BY THE PERMITTEE AND/OR SWPCP MONITOR. REFER TO SITE PLAN FOR GENERAL INFORMATION AND OTHER CONTRACT PLANS FOR APPROPRIATE INFORMATION.
- A BOND OR LETTER OF CREDIT MAY BE REQUIRED TO BE POSTED WITH THE GOVERNING AUTHORITY FOR THE EROSION CONTROL INSTALLATION AND MAINTENANCE.
- THE CONTRACTOR SHALL APPLY THE MINIMUM EROSION & SEDIMENT CONTROL MEASURES SHOWN ON THE PLAN IN CONJUNCTION WITH CONSTRUCTION SEQUENCING, SUCH THAT ALL ACTIVE WORK ZONES ARE PROTECTED. ADDITIONAL AND/OR ALTERNATIVE SEDIMENT AND EROSION CONTROL MEASURES MAY BE INSTALLED DURING THE CONSTRUCTION PERIOD IF FOUND NECESSARY BY THE CONTRACTOR, OWNER, SITE ENGINEER, MUNICIPAL OFFICIALS, OR ANY GOVERNING AGENCY. THE CONTRACTOR SHALL CONTACT THE OWNER AND APPROPRIATE GOVERNING AGENCIES FOR APPROVAL IF ALTERNATIVE CONTROLS OTHER THAN THOSE SHOWN ON THE PLANS ARE PROPOSED BY THE CONTRACTOR.
- THE CONTRACTOR SHALL TAKE EXTREME CARE DURING CONSTRUCTION SO AS NOT TO DISTURB UNPROTECTED WETLAND AREAS OR INSTALLED SEDIMENTATION AND EROSION CONTROL MEASURES. THE CONTRACTOR SHALL INSPECT ALL SEDIMENT AND EROSION CONTROLS WEEKLY AND WITHIN 24 HOURS OF A STORM WITH A RAINFALL AMOUNT OF 0.25 INCHES OR GREATER TO VERIFY THAT THE CONTROLS ARE OPERATING PROPERLY AND MAKE REPAIRS AS NECESSARY IN A TIMELY MANNER.
- THE CONTRACTOR SHALL KEEP A SUPPLY OF EROSION CONTROL MATERIAL (SILT FENCE, COMPOST FILTER SOCK, EROSION CONTROL BLANKET, ETC.) ON-SITE FOR PERIODIC MAINTENANCE AND EMERGENCY REPAIRS.
- ALL FILL MATERIAL PLACED ADJACENT TO ANY WETLAND AREA SHALL BE GOOD QUALITY, WITH LESS THAN 5% FINES PASSING THROUGH A #200 SIEVE (BANK RUN), SHALL BE PLACED IN MAXIMUM ONE FOOT LIFTS, AND SHALL BE COMPACTED TO 95% MAX. DRY DENSITY MODIFIED PROCTOR OR AS SPECIFIED IN THE CONTRACT SPECIFICATIONS.
- PROTECT EXISTING TREES THAT ARE TO BE SAVED BY FENCING, ORANGE SAFETY FENCE, CONSTRUCTION TAPE, OR EQUIVALENT FENCING/TAPE. ANY LIMB TRIMMING SHOULD BE DONE AFTER CONSULTATION WITH AN ARBORIST AND BEFORE CONSTRUCTION BEGINS IN THAT AREA. FENCING SHALL BE MAINTAINED AND REPAIRED DURING CONSTRUCTION.
- CONSTRUCTION ENTRANCES (ANTI-TRACKING PADS) SHALL BE INSTALLED PRIOR TO ANY SITE EXCAVATION OR CONSTRUCTION ACTIVITY AND SHALL BE MAINTAINED THROUGHOUT THE DURATION OF ALL CONSTRUCTION IF REQUIRED. THE LOCATION OF THE TRACKING PADS MAY CHANGE AS VARIOUS PHASES OF CONSTRUCTION ARE COMPLETED. CONTRACTOR SHALL ENSURE THAT ALL VEHICLES EXITING THE SITE ARE PASSING OVER THE ANTI-TRACKING PADS PRIOR TO EXISTING.
- ALL CONSTRUCTION SHALL BE CONTAINED WITHIN THE LIMIT OF DISTURBANCE, WHICH SHALL BE MARKED WITH SILT FENCE, SAFETY FENCE, HAY BALES, RIBBONS, OR OTHER MEANS PRIOR TO CLEARING. CONSTRUCTION ACTIVITY SHALL REMAIN ON THE UPHILL SIDE OF THE SEDIMENT BARRIER UNLESS WORK IS SPECIFICALLY CALLED FOR ON THE DOWNHILL SIDE OF THE BARRIER.
- NO CUT OR FILL SLOPES SHALL EXCEED 2:1 EXCEPT WHERE STABILIZED BY ROCK FACED EMBANKMENTS OR EROSION CONTROL BLANKETS. ALL SLOPES SHALL BE SEEDED AND BANKS WILL BE STABILIZED IMMEDIATELY UPON COMPLETION OF FINAL GRADING UNTIL TURF IS ESTABLISHED.
- DIRECT ALL DEWATERING PUMP DISCHARGE TO A SEDIMENT CONTROL DEVICE CONFORMING TO THE GUIDELINES WITHIN THE APPROVED LIMIT OF DISTURBANCE IF REQUIRED. DISCHARGE TO STORM DRAINS OR SURFACE WATERS FROM SEDIMENT CONTROLS SHALL BE CLEAR AND APPROVED BY THE PERMITTEE OR MUNICIPALITY.
- THE CONTRACTOR SHALL MAINTAIN A CLEAN CONSTRUCTION SITE AND SHALL NOT ALLOW THE ACCUMULATION OF RUBBISH OR CONSTRUCTION DEBRIS ON THE SITE. PROPER SANITARY DEVICES SHALL BE MAINTAINED ON-SITE AT ALL TIMES AND SECURED APPROPRIATELY. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO AVOID THE SPILLAGE OF FUEL OR OTHER POLLUTANTS ON THE CONSTRUCTION SITE AND SHALL ADHERE TO ALL APPLICABLE POLICIES AND REGULATIONS RELATED TO SPILL PREVENTION AND RESPONSE/CONTAINMENT.
- MINIMIZE LAND DISTURBANCES. SEED AND MULCH DISTURBED AREAS WITH TEMPORARY MIX AS SOON AS PRACTICABLE (2 WEEK MAXIMUM UNSTABILIZED PERIOD) USING PERENNIAL RYEGRASS AT 40 LBS PER ACRE. MULCH ALL CUT AND FILL SLOPES AND SWALES WITH LOOSE HAY AT A RATE OF 2 TONS PER ACRE. IF NECESSARY, REPLACE LOOSE HAY ON SLOPES WITH EROSION CONTROL BLANKETS OR JUTE CLOTH. MODERATELY GRADED AREAS, ISLANDS, AND TEMPORARY CONSTRUCTION STAGING AREAS MAY BE HYDROSEEDDED WITH TACKIFIER.
- SWEEP AFFECTED PORTIONS OF OFF SITE ROADS ONE OR MORE TIMES A DAY (OR LESS FREQUENTLY IF TRACKING IS NOT A PROBLEM) DURING CONSTRUCTION. FOR DUST CONTROL, PERIODICALLY MOISTEN EXPOSED SOIL SURFACES WITH WATER ON UNPAVED TRAVELWAYS TO KEEP THE TRAVELWAYS DAMP. CALCIUM CHLORIDE MAY ALSO BE APPLIED TO ACCESS ROADS. DUMP TRUCK LOADS EXITING THE SITE SHALL BE COVERED.
- VEGETATIVE ESTABLISHMENT SHALL OCCUR ON ALL DISTURBED SOIL, UNLESS THE AREA IS UNDER ACTIVE CONSTRUCTION, IT IS COVERED IN STONE OR SCHEDULED FOR PAVING WITHIN 30 DAYS. TEMPORARY SEEDING OR NON-LIVING SOIL PROTECTION OF ALL EXPOSED SOILS AND SLOPES SHALL BE INITIATED WITHIN THE FIRST 7 DAYS OF SUSPENDING WORK IN AREAS TO BE LEFT LONGER THAN 30 DAYS.
- MAINTAIN ALL PERMANENT AND TEMPORARY SEDIMENT CONTROL DEVICES IN EFFECTIVE CONDITION THROUGHOUT THE CONSTRUCTION PERIOD. UPON COMPLETION OF WORK SWEEP CONCRETE PADS, CLEAN THE STORMWATER MANAGEMENT SYSTEMS AND REMOVE ALL TEMPORARY SEDIMENT CONTROLS ONCE THE SITE IS FULLY STABILIZED AND APPROVAL HAS BEEN RECEIVED FROM PERMITTEE OR THE MUNICIPALITY.
- SEEDING MIXTURES SHALL BE NEW ENGLAND SEMI-SHADE GRASS AND FORBS MIX (SEE SITE DETAILS SHEET DN-1), OR APPROVED EQUAL BY OWNER.

CONSTRUCTION OPERATION AND MAINTENANCE PLAN - BY CONTRACTOR		
E&S MEASURE	INSPECTION SCHEDULE	MAINTENANCE REQUIRED
CONSTRUCTION ENTRANCE	DAILY	PLACE ADDITIONAL STONE, EXTEND THE LENGTH OR REMOVE AND REPLACE THE STONE. CLEAN PAVED SURFACES OF TRACKED SEDIMENT.
COMPOST FILTER SOCK	WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.25"	REPAIR/REPLACE WHEN FAILURE OR DETERIORATION IS OBSERVED.
SILT FENCE	WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.25"	REPAIR/REPLACE WHEN FAILURE OR DETERIORATION IS OBSERVED. REMOVE SILT WHEN IT REACHES 1/2 THE HEIGHT OF THE FENCE.
TOPSOIL/BORROW STOCKPILES	DAILY	REPAIR/REPLACE SEDIMENT BARRIERS AS NECESSARY.
TEMPORARY SEDIMENT BASIN (W/ BAFFLES)	WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.5"	REMOVE SEDIMENT ONCE IT HAS ACCUMULATED TO ONE HALF OF MINIMUM REQUIRED VOLUME OF THE WET STORAGE, DEWATERING AS NEEDED. RESTORE TRAP TO ORIGINAL DIMENSIONS. REPAIR/REPLACE BAFFLES WHEN FAILURE OR DETERIORATION IS OBSERVED.
TEMPORARY SEDIMENT TRAP (W/ BAFFLES)	WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.5"	REMOVE SEDIMENT ONCE IT HAS ACCUMULATED TO ONE HALF OF MINIMUM REQUIRED VOLUME OF THE WET STORAGE, DEWATERING AS NEEDED. RESTORE TRAP TO ORIGINAL DIMENSIONS. REPAIR/REPLACE BAFFLES WHEN FAILURE OR DETERIORATION IS OBSERVED.
TEMPORARY SOIL PROTECTION	WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.25"	REPAIR ERODED OR BARE AREAS IMMEDIATELY. RESEED AND MULCH.

SEDIMENT & EROSION CONTROL NARRATIVE

- THE PROJECT INVOLVES THE CONSTRUCTION OF A GROUND MOUNTED SOLAR PANEL FACILITY WITH ASSOCIATED EQUIPMENT, INCLUDING THE CLEARING, GRUBBING AND GRADING OF APPROXIMATELY 16.70± ACRES OF EXISTING LOT.

THE PROPOSED PROJECT INVOLVES THE FOLLOWING CONSTRUCTION:

- CLEARING, GRUBBING, AND GRADING OF EXISTING LOT.
 - CONSTRUCTION OF 7,176 GROUND MOUNTED SOLAR PANELS AND ASSOCIATED EQUIPMENT.
 - THE STABILIZATION OF DISTURBED AREAS WITH PERMANENT VEGETATIVE TREATMENTS.
- FOR THIS PROJECT, THERE ARE APPROXIMATELY 16.70± ACRE OF THE SITE BEING DISTURBED WITH NEGLIGIBLE INCREASE IN THE IMPERVIOUS AREA OF THE SITE, AS ALL ACCESS THROUGH THE SITE WILL BE GRAVEL. IMPERVIOUS AREAS ARE LIMITED TO THE CONCRETE PADS FOR ELECTRICAL EQUIPMENT.
 - THE PROJECT SITE, AS MAPPED IN THE SOIL SURVEY OF STATE OF CONNECTICUT (NRCS, VERSION 18, DEC 6, 2018), CONTAINS TYPE 84B, AND 84C (HYDROLOGIC SOIL GROUP C), AND 45B, 46B AND 3 (HYDROLOGIC SOIL GROUP D) SOILS. ADDITIONAL INFORMATION CAN BE FOUND IN THE GEOTECHNICAL ENGINEERING REPORT BY DOWN TO EARTH CONSULTING, LLC, DATED MAY 2020.
 - IT IS ANTICIPATED THAT CONSTRUCTION WILL BE COMPLETED IN APPROXIMATELY 3-4 MONTHS.
 - REFER TO THE CONSTRUCTION SEQUENCING AND EROSION AND SEDIMENTATION NOTES FOR INFORMATION REGARDING SEQUENCING OF MAJOR OPERATIONS IN THE ON-SITE CONSTRUCTION PHASES.
 - STORMWATER MANAGEMENT DESIGN CRITERIA UTILIZES THE APPLICABLE SECTIONS OF THE 2004 CONNECTICUT STORMWATER QUALITY MANUAL AND THE TOWN OF WATERTOWN STANDARDS, TO THE EXTENT POSSIBLE AND PRACTICABLE FOR THIS PROJECT ON THIS SITE. EROSION AND SEDIMENTATION MEASURES ARE BASED UPON ENGINEERING PRACTICE, JUDGEMENT AND THE APPLICABLE SECTIONS OF THE CONNECTICUT EROSION AND SEDIMENT CONTROL GUIDELINES FOR URBAN AND SUBURBAN AREAS, LATEST EDITION.
 - DETAILS FOR THE TYPICAL STORMWATER MANAGEMENT AND EROSION AND SEDIMENTATION MEASURES ARE SHOWN ON THE PLAN SHEETS OR PROVIDED AS SEPARATE SUPPORT DOCUMENTATION FOR REVIEW IN THIS PLAN.
 - CONSERVATION PRACTICES TO BE USED DURING CONSTRUCTION:
 - STAGED CONSTRUCTION;
 - MINIMIZE THE DISTURBED AREAS TO THE EXTENT PRACTICABLE DURING CONSTRUCTION;
 - STABILIZE DISTURBED AREAS WITH TEMPORARY OR PERMANENT MEASURES AS SOON AS POSSIBLE, BUT NO LATER THAN 7-DAYS FOLLOWING DISTURBANCE;
 - MINIMIZE IMPERVIOUS AREAS;
 - UTILIZE APPROPRIATE CONSTRUCTION EROSION AND SEDIMENTATION MEASURES.
 - THE FOLLOWING SEPARATE DOCUMENTS ARE TO BE CONSIDERED A PART OF THE EROSION AND SEDIMENTATION PLAN:
 - STORMWATER MANAGEMENT REPORT DATED JULY, 2020.
 - SWPCP DATED JULY, 2020

SUGGESTED CONSTRUCTION SEQUENCE

THE FOLLOWING SUGGESTED SEQUENCE OF CONSTRUCTION ACTIVITIES IS PROJECTED BASED UPON ENGINEERING JUDGEMENT AND BEST MANAGEMENT PRACTICES. THE CONTRACTOR MAY ELECT TO ALTER THE SEQUENCING TO BEST MEET THE CONSTRUCTION SCHEDULE, THE EXISTING SITE ACTIVITIES AND WEATHER CONDITIONS. SHOULD THE CONTRACTOR ALTER THE CONSTRUCTION SEQUENCE OR ANY EROSION AND SEDIMENTATION CONTROL MEASURES THEY SHALL MODIFY THE STORMWATER POLLUTION CONTROL PLAN ("SWPCP") AS REQUIRED BY THE GENERAL PERMIT. MAJOR CHANGES IN SEQUENCING AND/OR METHODS MAY REQUIRE REGULATORY APPROVAL PRIOR TO IMPLEMENTATION.

- THE CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING. PHYSICALLY FLAG THE LIMITS OF DISTURBANCE IN THE FIELD AS NECESSARY TO FACILITATE THE PRE-CONSTRUCTION MEETING.
- CONDUCT A PRE-CONSTRUCTION MEETING TO DISCUSS THE PROPOSED WORK AND EROSION AND SEDIMENTATION CONTROL MEASURES. THE MEETING SHOULD BE ATTENDED BY THE OWNER, THE OWNER REPRESENTATIVE(S), THE GENERAL CONTRACTOR, DESIGNATED SUB-CONTRACTORS AND THE PERSON, OR PERSONS, RESPONSIBLE FOR THE IMPLEMENTATION, OPERATION, MONITORING AND MAINTENANCE OF THE EROSION AND SEDIMENTATION MEASURES. THE CONSTRUCTION PROCEDURES FOR THE ENTIRE PROJECT SHALL BE REVIEWED AT THIS MEETING.

- NOTIFY CALL BEFORE YOU DIG AT 1-800-922-4455, AS REQUIRED, PRIOR TO THE START OF CONSTRUCTION.

PHASE 1

- REMOVE EXISTING IMPEDIMENTS AS NECESSARY AND PROVIDE MINIMAL CLEARING AND GRUBBING TO INSTALL THE REQUIRED CONSTRUCTION ENTRANCES.
- CLEAR ONLY AS NEEDED TO INSTALL THE PERIMETER EROSION AND SEDIMENTATION CONTROL MEASURES AND, IF APPLICABLE, TREE PROTECTION. ALL WETLAND AREAS SHALL BE PROTECTED BEFORE MAJOR CONSTRUCTION BEGINS.
- INSTALL PERIMETER EROSION CONTROL.
- INSTALL EROSION CONTROL BELOW EQUIPMENT AREA AND INSTALL CONCRETE EQUIPMENT PADS AND CONDUITS PROTECTED BY THESE CONTROLS.
- INSTALL TEMPORARY SEDIMENT TRAP 1 AND ASSOCIATED SWALES. UPON COMPLETION INSTALLATION AND STABILIZATION OF THE BASIN AND SWALES PHASE 2 WORK UP GRADIENT CAN PROCEED.
- INSTALL TEMPORARY SEDIMENT TRAP 2 AND ASSOCIATED SWALES. UPON COMPLETION INSTALLATION AND STABILIZATION OF THE BASIN AND SWALES PHASE 2 WORK UP GRADIENT CAN PROCEED.
- INSTALL TEMPORARY SEDIMENT BASIN 3 AND ASSOCIATED SWALES. UPON COMPLETION INSTALLATION AND STABILIZATION OF THE BASIN AND SWALES PHASE 2 WORK UP GRADIENT CAN PROCEED.

PHASE 2

- UPON COMPLETION OF THE INSTALLATION EACH OF THE TEMPORARY SEDIMENT BASINS, THE AREA ABOVE THE BASIN CAN HAVE THE REMAINING ARRAY AREA CLEARING AND GRUBBING COMPLETED AS REQUIRED. REMOVE CUT WOOD AND STOCKPILE FOR FUTURE USE OR REMOVE OFF-SITE. REMOVE AND DISPOSE OF DEMOLITION DEBRIS OFF-SITE IN ACCORDANCE WITH APPLICABLE LAWS.
- TEMPORARILY SEED DISTURBED AREAS NOT UNDER CONSTRUCTION FOR THIRTY (30) DAYS OR MORE.
- INSTALL REMAINING ELECTRICAL CONDUIT.
- INSTALL RACKING POSTS FOR GROUND MOUNTED SOLAR PANELS
- INSTALL GROUND MOUNTED SOLAR PANELS AND COMPLETE ELECTRICAL INSTALLATION.
- AFTER SUBSTANTIAL COMPLETION OF THE INSTALLATION OF THE SOLAR PANELS, COMPLETE REMAINING SITE WORK, INCLUDING ANY REQUIRED LANDSCAPE SCREENING, AND STABILIZE ALL DISTURBED AREAS.
- FINE GRADE, RAKE, SEED AND MULCH ALL REMAINING DISTURBED AREAS.
- AFTER THE SITE IS STABILIZED AND WITH THE APPROVAL OF THE PERMITTEE AND TOWN OF WATERTOWN AGENT, REMOVE PERIMETER EROSION AND SEDIMENTATION CONTROLS.

WATERTOWN SOLAR ONE, LLC
150 TRUMBULL STREET
4TH FLOOR
HARTFORD, CT, 06103



567 VAUXHAUL STREET EXTENSION - SUITE 311
 WATERFORD, CT 06385 PHONE: (860)-663-1697
 WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

APPROVED FOR CONSTRUCTION

NO	DATE	REVISION
0	12/30/20	D&M PLANS: BJP
1		
2		
3		
4		
5		
6		

DESIGN PROFESSIONAL OF RECORD

PROF: BRADLEY J. PARSONS P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION
ADD: 567 VAUXHAUL STREET
EXTENSION - SUITE 311
WATERFORD, CT 06385

OWNER: CATHOLIC CEMETERIES
ADDRESS: 669 PLATT ROAD
WATERTOWN, CT 06795

WATERTOWN SOLAR ONE, LLC

SITE HINMAN ROAD & PLATT ROAD
ADDRESS: WATERTOWN, CT 06795

APT FILING NUMBER: CT590240

	DRAWN BY: CSH
DATE: 12/30/20	CHECKED BY: BJP

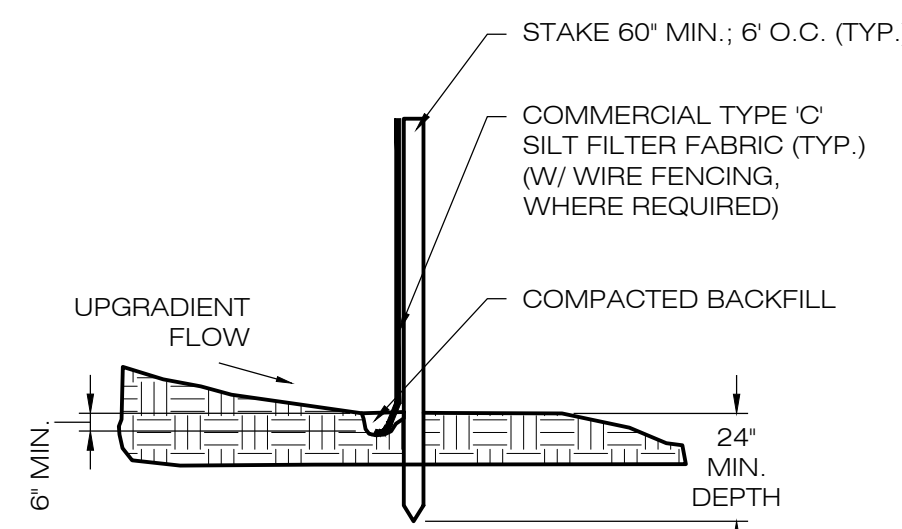
SHEET TITLE:

SEDIMENTATION & EROSION CONTROL NOTES

SHEET NUMBER:

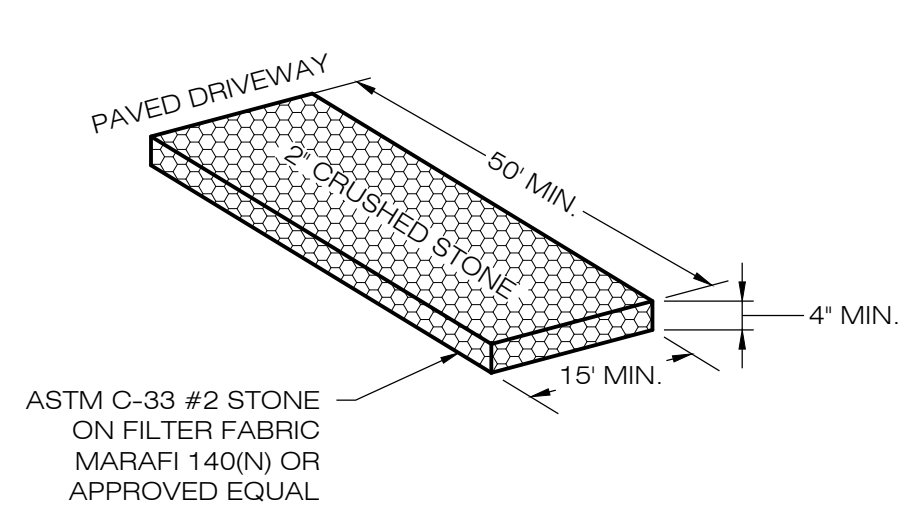


EC-1

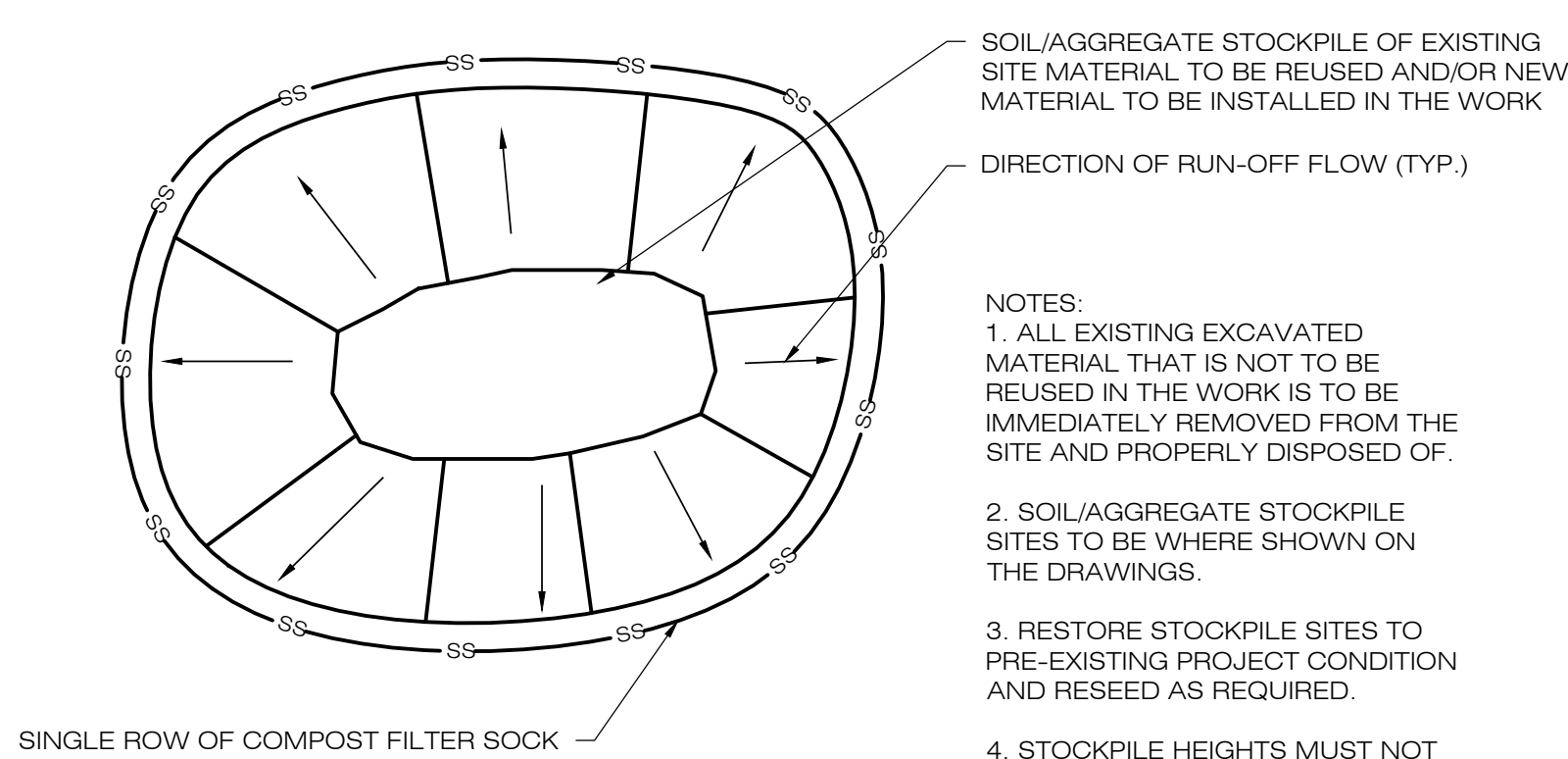


NOTE:
SILT FENCE SHALL BE LAPPED ONLY
WHEN NECESSARY PER THE
MANUFACTURER RECOMMENDATIONS.

1 SILT FENCE DETAIL
SCALE : N.T.S.

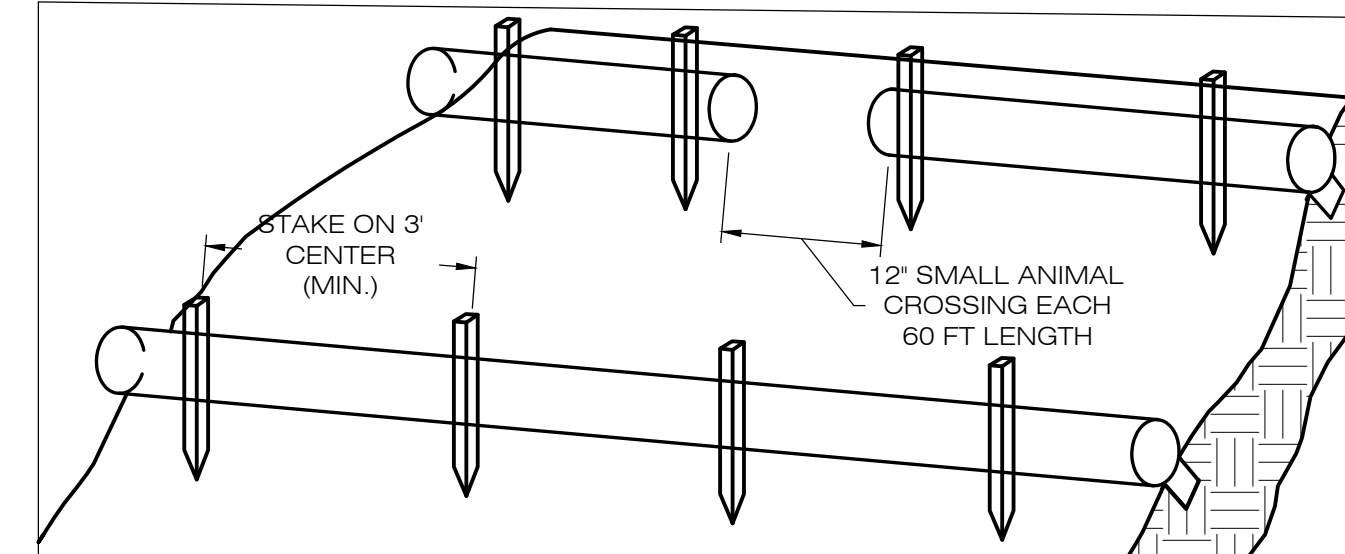


2 CONSTRUCTION ENTRANCE DETAIL
SCALE : N.T.S.



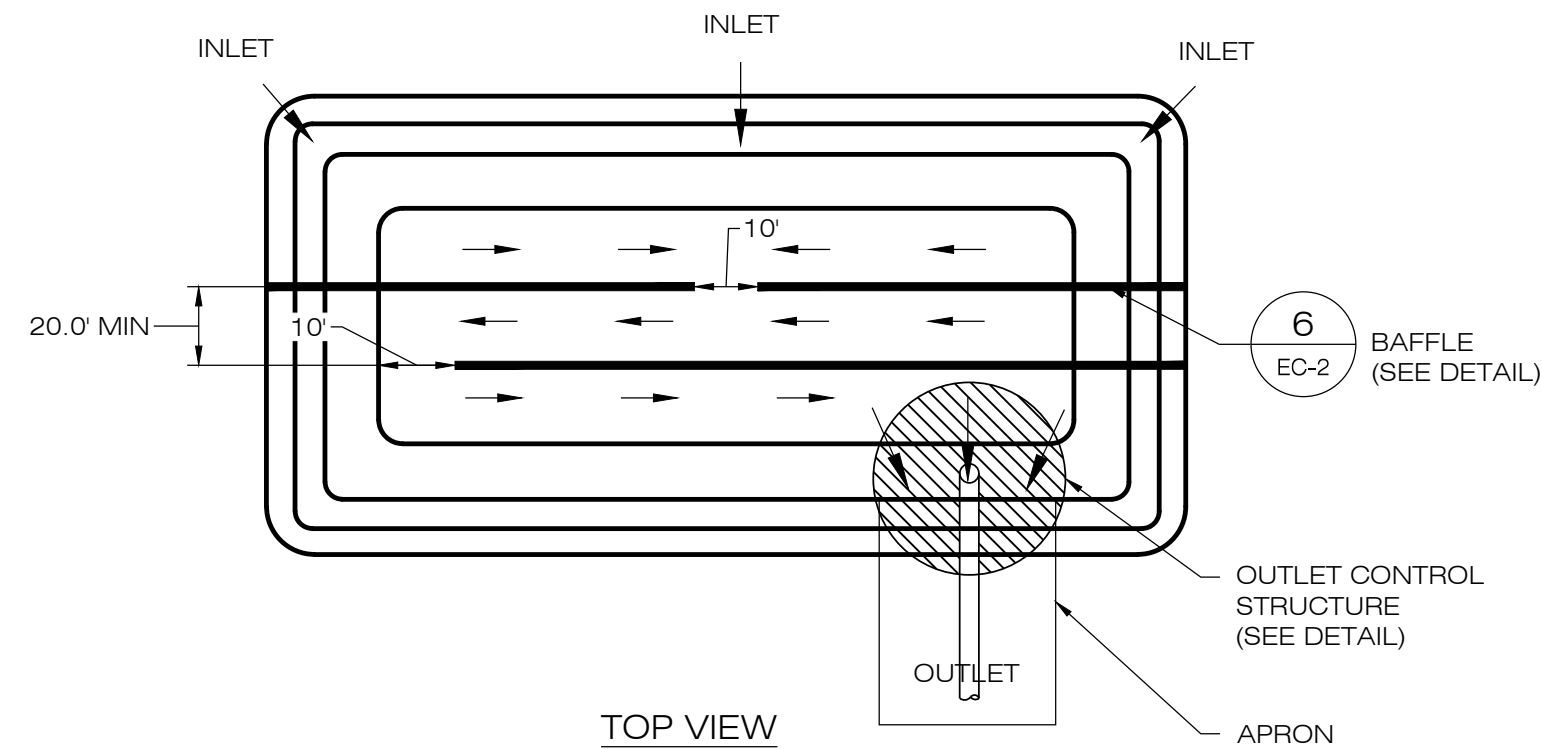
NOTES:
1. ALL EXISTING EXCAVATED
MATERIAL THAT IS NOT TO BE
REUSED IN THE WORK IS TO BE
IMMEDIATELY REMOVED FROM THE
SITE AND PROPERLY DISPOSED OF.
2. SOIL/AGGREGATE STOCKPILE
SITES TO BE WHERE SHOWN ON
THE DRAWINGS.
3. RESTORE STOCKPILE SITES TO
PRE-EXISTING PROJECT CONDITION
AND RESEED AS REQUIRED.
4. STOCKPILE HEIGHTS MUST NOT
EXCEED 35'. STOCKPILE SLOPES
MUST BE 2:1 OR FLATTER.

3 MATERIALS STOCKPILE DETAIL
SCALE : N.T.S.

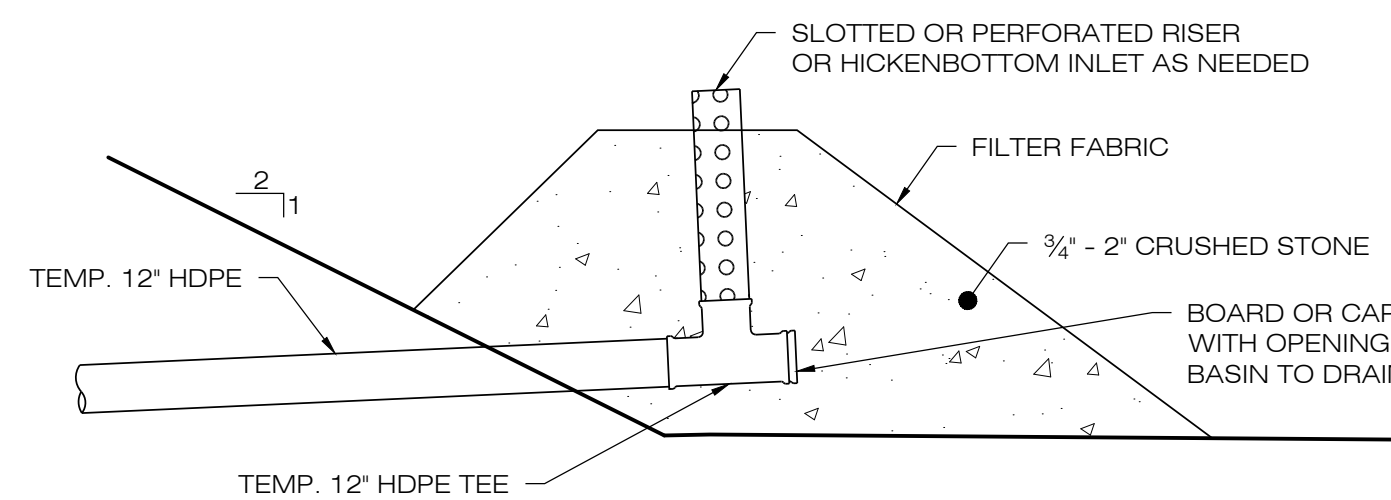


1. BEGIN AT THE LOCATION WHERE THE SOCK IS TO BE INSTALLED BY EXCAVATING A 2'-3" (5-7.5 CM) DEEP X 9" (22.9 CM) WIDE TRENCH ALONG THE CONTOUR OF THE SLOPE. EXCAVATED SOIL SHOULD BE PLACED UPSLOPE FROM THE ANCHOR TRENCH.
2. PLACE THE SOCK IN THE TRENCH SO THAT IT CONTOURS TO THE SOIL SURFACE. COMPACT SOIL FROM THE EXCAVATED TRENCH AGAINST THE SOCK ON THE UPSLOPE SIDE. SOCKS SHALL BE INSTALLED IN 60 FT CONTINUOUS LENGTHS WITH ADJACENT SOCKS TIGHTLY ABUT. EVERY 60 FT THE SOCK ROW SHALL BE SPACED 12 INCHES CLEAR, END TO END, FOR AMPHIBIAN AND REPTILE TRAVEL. THE OPEN SPACES SHALL BE STAGGERED MID LENGTH OF THE NEXT DOWN GRADIENT SOCK.
3. SECURE THE SOCK WITH 18-24" (45.7-61 CM) STAKES EVERY 3'-4" (0.9 - 1.2 M) AND WITH A STAKE ON EACH END. STAKES SHOULD BE DRIVEN THROUGH THE MIDDLE OF THE SOCK LEAVING AT LEAST 2'-3" (5-7.5 CM) OF STAKE EXTENDING ABOVE THE SOCK. STAKES SHOULD BE DRIVEN PERPENDICULAR TO THE SLOPE FACE.

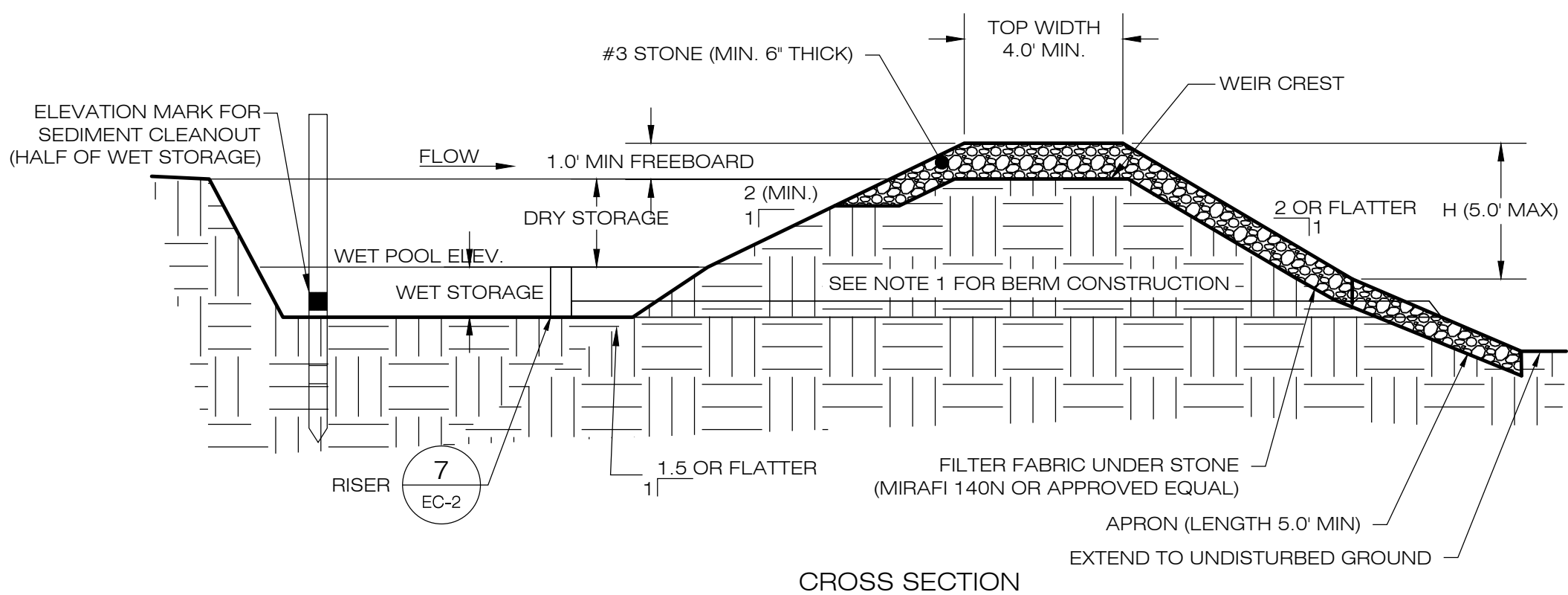
4 COMPOST FILTER SOCK SEDIMENTATION CONTROL BARRIER
SCALE : N.T.S.



TOP VIEW



7 RISER DETAIL
SCALE : N.T.S.

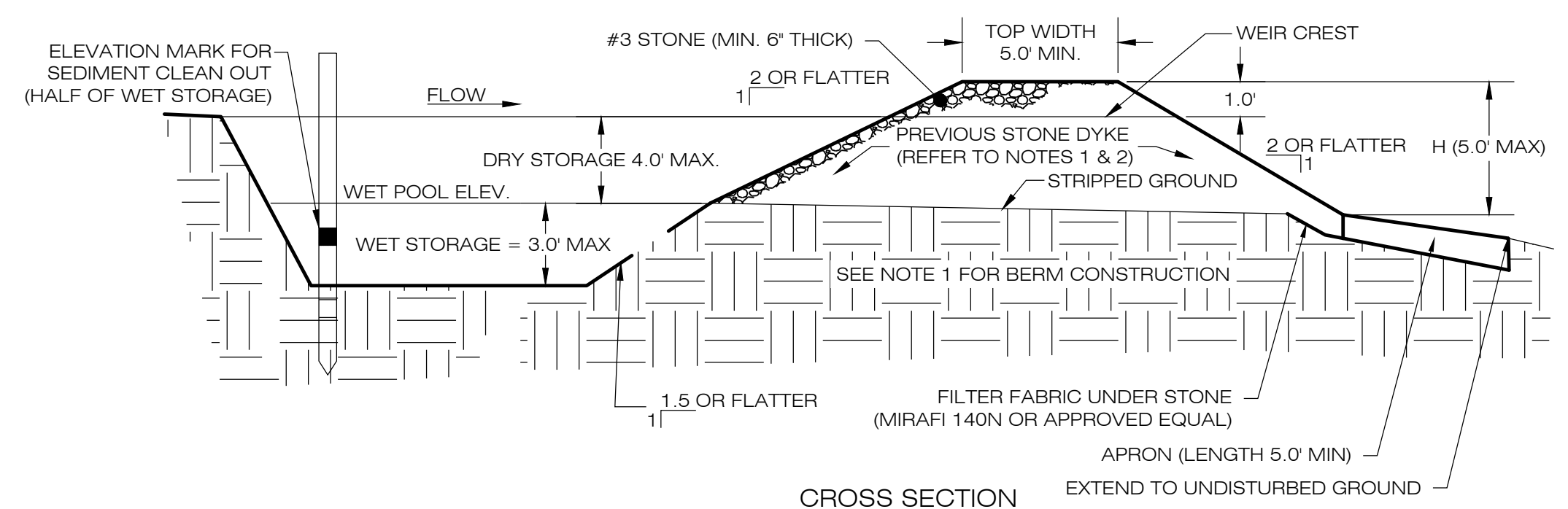


CROSS SECTION

NOTES:
1. CONSTRUCT TEMPORARY SEDIMENT BASIN BERMS AND SIDEWALLS PER THE INFILTRATION BASIN DETAIL.
2. SEDIMENT BAFFLES SHALL BE INSTALLED AS SHOWN ON EC-3 & EC-4.
3. SEE TSB SIZING TABLE FOR WET AND DRY STORAGE VOLUMES.

5 TEMPORARY SEDIMENT BASIN
SCALE : N.T.S.

TEMPORARY SEDIMENT BASIN SIZING TABLE										
NAME	DRAINAGE AREA (AC)	REQ. DRY VOLUME (CF)	REQ. WET VOLUME (CF)	PROP. BTM. ELEV. (FT)	PROP. OUTLET RIM ELEV. (FT)	PROP. WEIR CREST ELEV. (FT)	PROP. TOP ELEV. (FT)	WET VOL. PROVIDED (CF)	DRY VOL. PROVIDED (CF)	TOTAL VOL. PROVIDED (CF)
TSB-3	5.617	4,494	8,987	777.00	778.60	779.00	781.00	11,293	10,389	21,682

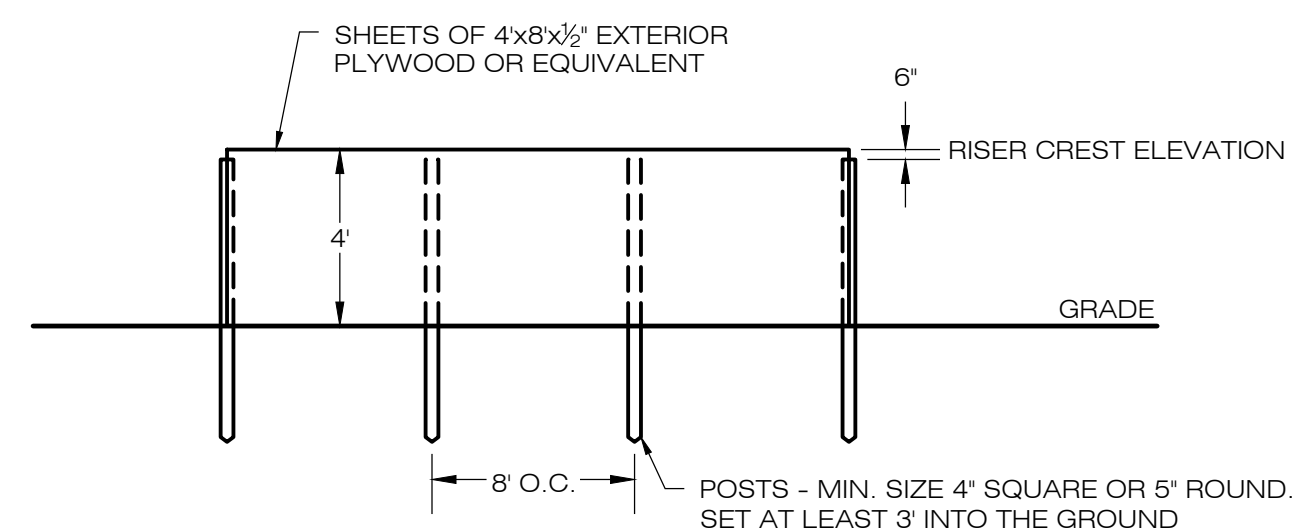


CROSS SECTION

NOTES:
1. CONSTRUCT TEMPORARY SEDIMENT TRAP BERMS AND SIDEWALLS PER THE INFILTRATION BASIN DETAIL.
2. PERVIOUS STONE DIKE SHALL BE CONSTRUCTED OF CT DOT MODIFIED RIP-RAP WITH #3 STONE ON FACE.
3. SEDIMENT TRAP BAFFLES SHALL BE INSTALLED AS SHOWN ON EC-3 AND EC-4.
4. SEE TSB SIZING TABLE FOR WET AND DRY STORAGE VOLUMES.

8 TEMPORARY SEDIMENT TRAP
SCALE : N.T.S.

TEMPORARY SEDIMENT BASIN SIZING TABLE										
NAME	DRAINAGE AREA (AC)	SEDIMENT VOLUME/ACRE AREA (CY)	REQ. VOLUME (CY)	REQ. WET VOLUME (CY)	PROP. BTM. ELEV. (FT)	PROP. STONE DIKE BTM. ELEV. (FT)	PROP. WEIR CREST ELEV. (FT)	PROP. TOP ELEV. (FT)	WET VOL. PROVIDED (CY)	TOTAL VOL. PROVIDED (CY)
TST-1	1.38	134 CYD	185	93	783.00	785.00	786.00	787.00	148	197
TST-2	3.83	134 CYD	514	257	779.00	781.50	782.50	783.50	475	818



6 SEDIMENT TRAP BAFFLE
SCALE : N.T.S.

WATERTOWN SOLAR ONE, LLC
150 TRUMBULL STREET
4TH FLOOR
HARTFORD, CT, 06103

ALL-POINTS TECHNOLOGY CORPORATION

567 VAUXHAUL STREET EXTENSION - SUITE 311
WATERFORD, CT 06385 PHONE: (860)-663-1697
WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

APPROVED FOR CONSTRUCTION

NO	DATE	REVISION
0	12/30/20	D&M PLANS: BJP
1		
2		
3		
4		
5		
6		

DESIGN PROFESSIONAL OF RECORD

PROF. BRADLEY J. PARSONS, P.E.
COMP. ALL-POINTS TECHNOLOGY CORPORATION
ADD: 567 VAUXHAUL STREET
EXTENSION - SUITE 311
WATERFORD, CT 06385

OWNER: CATHOLIC CEMETERIES
ADDRESS: 669 PLATT ROAD
WATERTOWN, CT 06795

WATERTOWN SOLAR ONE, LLC

SITE HINMAN ROAD & PLATT ROAD
ADDRESS: WATERTOWN, CT 06795

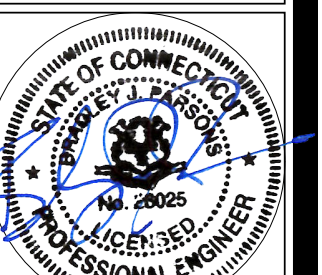
APT FILING NUMBER: CT590240

DATE: 12/30/20 DRAWN BY: CSH
CHECKED BY: BJP

SHEET TITLE:
SEDIMENTATION & EROSION CONTROL DETAILS

SHEET NUMBER:

EC-2



WATERTOWN SOLAR ONE, LLC
 150 TRUMBULL STREET
 4TH FLOOR
 HARTFORD, CT, 06103



567 VAUXHAUL STREET EXTENSION - SUITE 311
 WATERFORD, CT 06385 PHONE: (860)-963-1697
 WWW.ALLPOINTSTECH.COM FAX: (860)-963-0935

APPROVED FOR CONSTRUCTION

NO	DATE	REVISION
0	12/30/20	D&M PLANS: BJP
1		
2		
3		
4		
5		
6		

DESIGN PROFESSIONAL OF RECORD

PROF: BRADLEY J. PARSONS, P.E.
 COMP: ALL-POINTS TECHNOLOGY CORPORATION
 ADD: 567 VAUXHAUL STREET
 EXTENSION - SUITE 311
 WATERFORD, CT 06385

OWNER: CATHOLIC CEMETERIES
 ADDRESS: 669 PLATT ROAD
 WATERTOWN, CT 06795

WATERTOWN SOLAR ONE, LLC

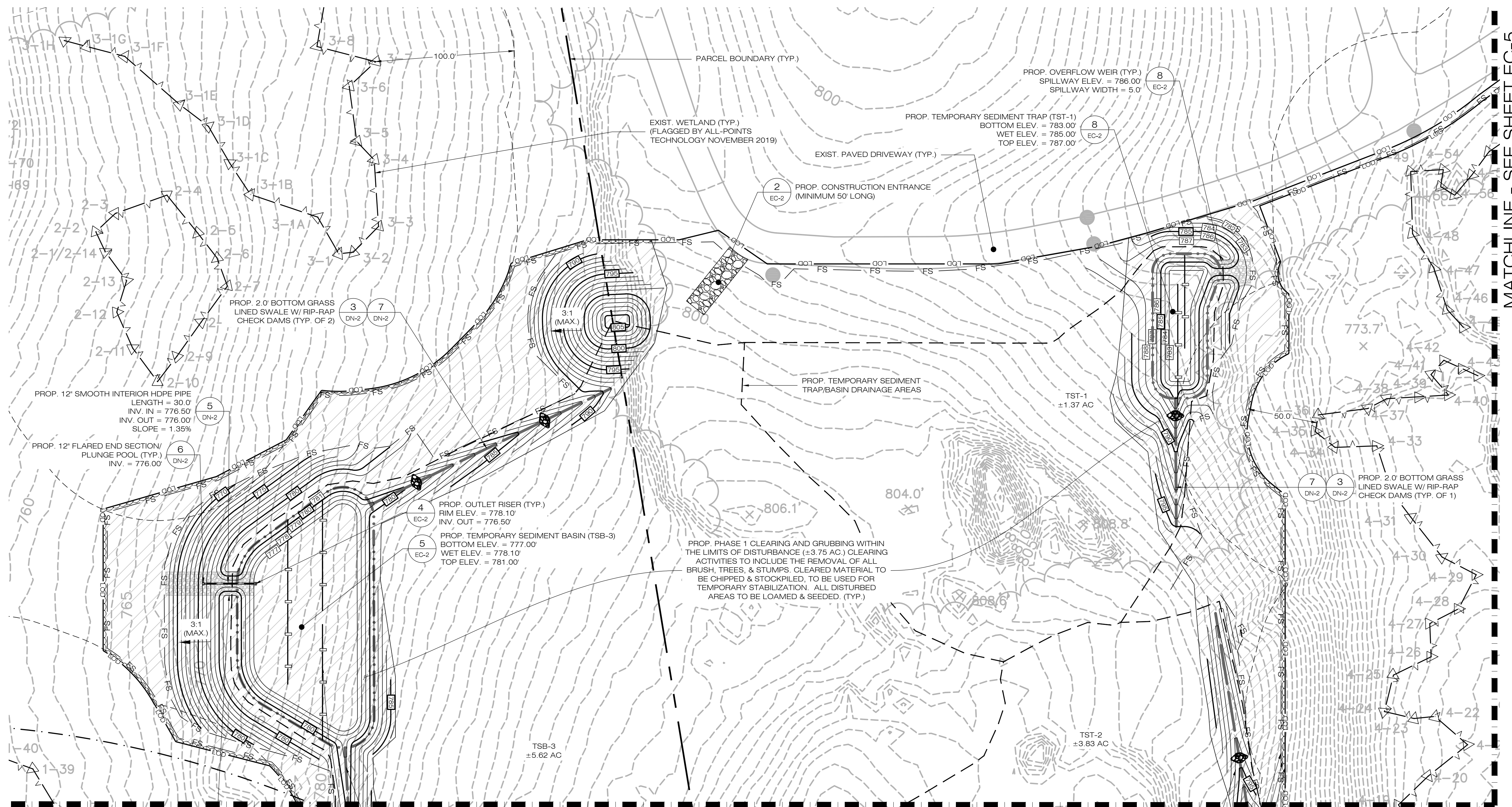
SITE: HINMAN ROAD & PLATT ROAD
 ADDRESS: WATERTOWN, CT 06795

APT FILING NUMBER: CT590240

DRAWN BY: CSH
 DATE: 12/30/20 CHECKED BY: BJP

SHEET TITLE:
**PHASE 1
 SEDIMENTATION &
 EROSION CONTROL PLAN**

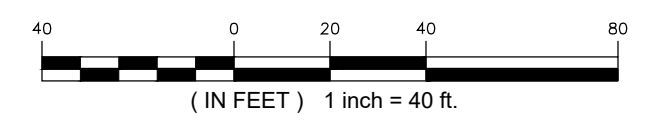
SHEET NUMBER:
EC-3



MATCHLINE - SEE SHEET EC-5

MATCHLINE - SEE SHEET EC-4

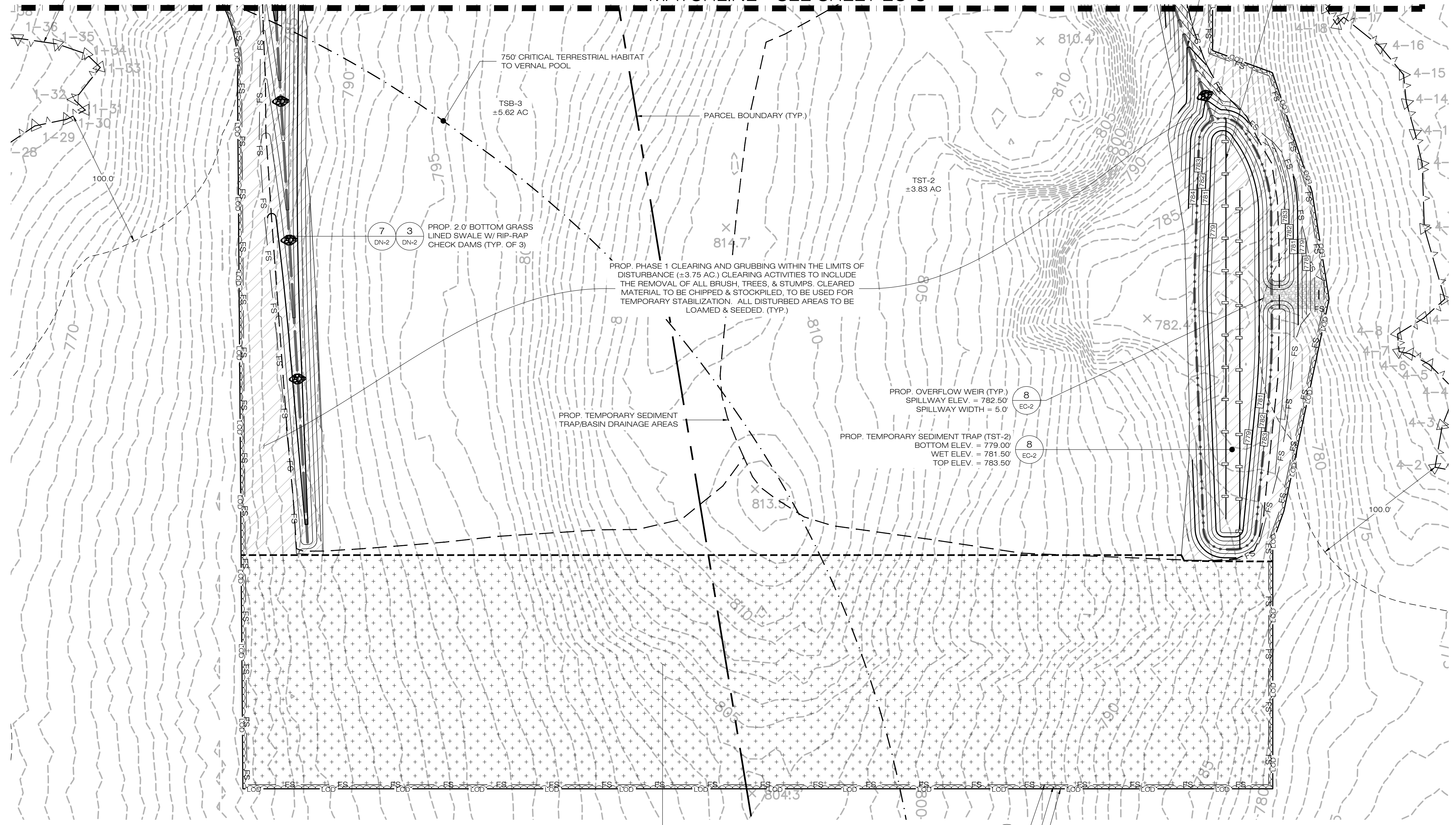
1 PHASE 1 - SEDIMENTATION & EROSION CONTROL PLAN
 EC-3 SCALE: 1" = 40'-0"



EXIST. WETLAND (TYP.)
(FLAGGED BY ALL-POINTS
TECHNOLOGY NOVEMBER 2019)

MATCHLINE - SEE SHEET EC-3

- 7 3 PROP. 2.0' BOTTOM GRASS
DN-2 DN-2 LINED SWALE W/ RIP-RAP
CHECK DAMS (TYP. OF 1)
- 6 5 PROP. SEDIMENT BAFFLE (TYP.)
EC-2 EC-2 (SEE DETAIL FOR LAYOUT
DIMENSIONS)



- 7 3 PROP. 2.0' BOTTOM GRASS
DN-2 DN-2 LINED SWALE W/ RIP-RAP
CHECK DAMS (TYP. OF 3)

PROP. PHASE 1 CLEARING AND GRUBBING WITHIN THE LIMITS OF
DISTURBANCE (±3.75 AC.) CLEARING ACTIVITIES TO INCLUDE
THE REMOVAL OF ALL BRUSH, TREES, & STUMPS. CLEARED
MATERIAL TO BE CHIPPED & STOCKPILED, TO BE USED FOR
TEMPORARY STABILIZATION. ALL DISTURBED AREAS TO BE
LOAMED & SEED. (TYP.)

- 8 PROP. OVERFLOW WEIR (TYP.)
EC-2 SPILLWAY ELEV. = 782.50'
SPILLWAY WIDTH = 5.0'

- 8 PROP. TEMPORARY SEDIMENT TRAP (TST-2)
EC-2 BOTTOM ELEV. = 779.00'
WET ELEV. = 781.50'
TOP ELEV. = 783.50'

PROP. PHASE 1 CLEARING ONLY (2.83± AC.)
CLEARING ACTIVITIES TO INCLUDE THE REMOVAL
OF ALL BRUSH & TREES. ALL STUMPS TO REMAIN. CLEARED
MATERIAL TO BE CHIPPED & STOCKPILED, TO BE USED
FOR TEMPORARY STABILIZATION. (TYP.)

- 4 PROP. 18" COMPOST FILTER SOCK (TYP.)
EC-2

PROP. CLEARING LIMITS (TYP.)

PROP. LIMIT OF DISTURBANCE (TYP.)

**WATERTOWN SOLAR
ONE, LLC**
150 TRUMBULL STREET
4TH FLOOR
HARTFORD, CT, 06103

**ALL-POINTS
TECHNOLOGY CORPORATION**
567 VAUXHAUL STREET EXTENSION - SUITE 311
WATERFORD, CT 06385 PHONE: (860)-663-1697
WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

APPROVED FOR CONSTRUCTION

NO	DATE	REVISION
0	12/30/20	D&M PLANS: BJP
1		
2		
3		
4		
5		
6		

DESIGN PROFESSIONAL OF RECORD

PROF. BRADLEY J. PARSONS, P.E.
COMP: ALL-POINTS TECHNOLOGY
CORPORATION
ADD: 567 VAUXHAUL STREET
EXTENSION - SUITE 311
WATERFORD, CT 06385

OWNER: CATHOLIC CEMETERIES
ADDRESS: 669 PLATT ROAD
WATERTOWN, CT 06795

WATERTOWN SOLAR ONE, LLC

SITE HINMAN ROAD & PLATT ROAD
ADDRESS: WATERTOWN, CT 06795

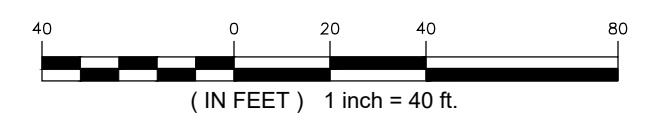
APT FILING NUMBER: CT590240

DRAWN BY: CSH
DATE: 12/30/20 CHECKED BY: BJP

SHEET TITLE:
**PHASE 1
SEDIMENTATION &
EROSION CONTROL PLAN**

SHEET NUMBER:
EC-4

1 PHASE 1 - SEDIMENTATION & EROSION CONTROL PLAN
EC-4 SCALE: 1" = 40'-0"



WATERTOWN SOLAR ONE, LLC
 150 TRUMBULL STREET
 4TH FLOOR
 HARTFORD, CT, 06103

ALL-POINTS
 TECHNOLOGY CORPORATION
 567 VAUXHAUL STREET EXTENSION - SUITE 311
 WATERFORD, CT 06385 PHONE: (860)-663-1697
 WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

APPROVED FOR CONSTRUCTION

NO	DATE	REVISION
0	12/30/20	D&M PLANS: BJP
1		
2		
3		
4		
5		
6		

DESIGN PROFESSIONAL OF RECORD

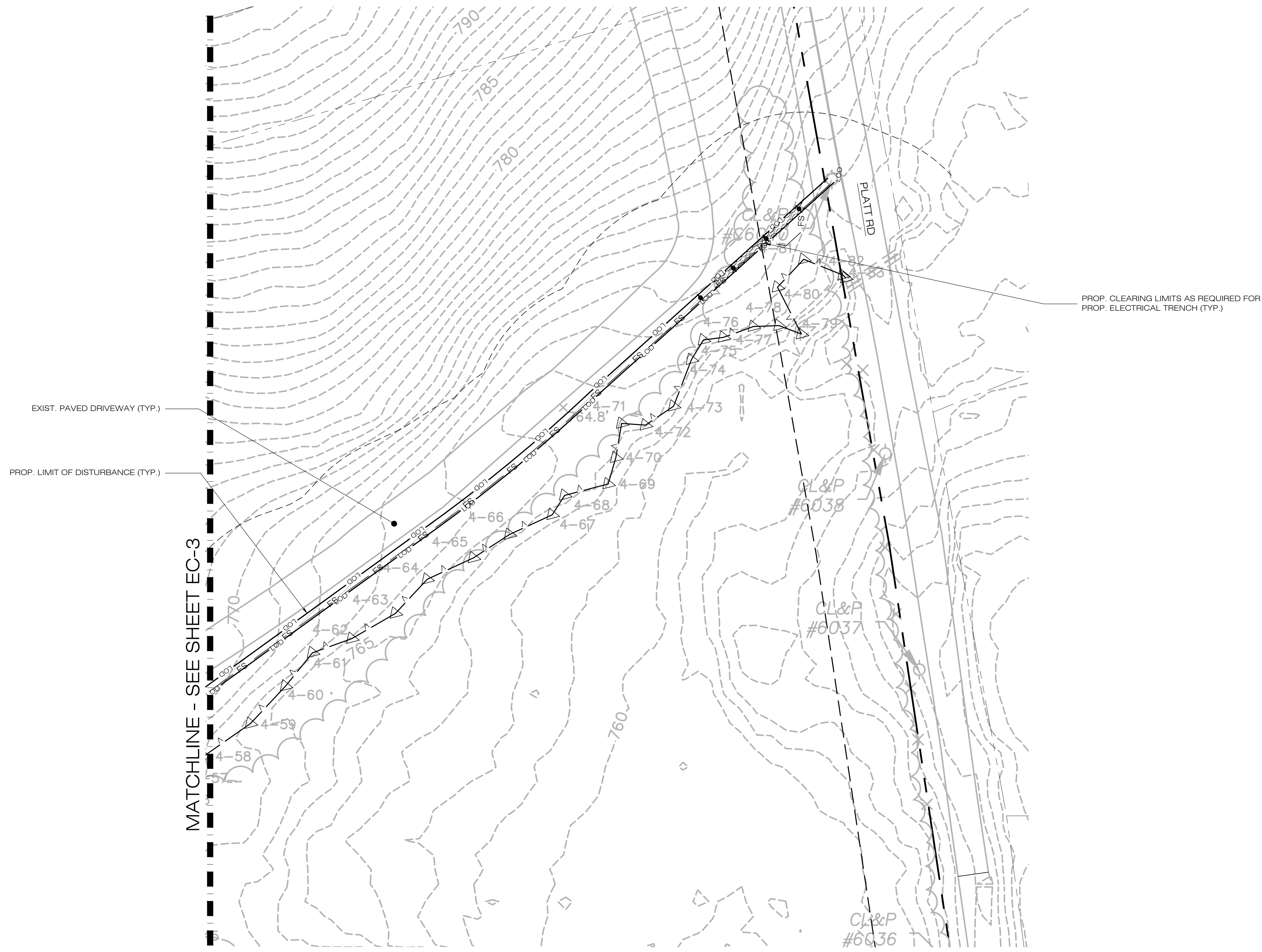
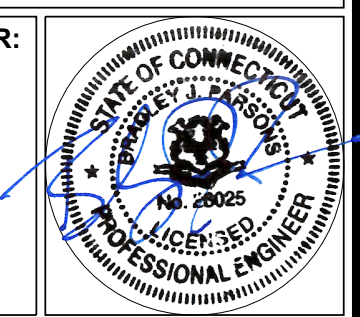
PROF: BRADLEY J. PARSONS P.E.
 COMP: ALL-POINTS TECHNOLOGY CORPORATION
 ADD: 567 VAUXHAUL STREET EXTENSION - SUITE 311
 WATERFORD, CT 06385
 OWNER: CATHOLIC CEMETERIES
 ADDRESS: 669 PLATT ROAD
 WATERTOWN, CT 06795

WATERTOWN SOLAR ONE, LLC

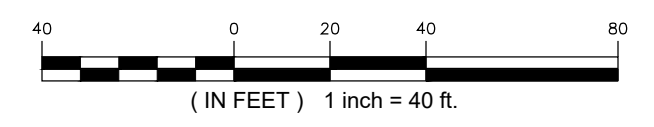
SITE: HINMAN ROAD & PLATT ROAD
 ADDRESS: WATERTOWN, CT 06795
 APT FILING NUMBER: CT590240
 DRAWN BY: CSH
 DATE: 12/30/20 CHECKED BY: BJP

SHEET TITLE:
**PHASE 1
 SEDIMENTATION &
 EROSION CONTROL PLAN**

SHEET NUMBER:
EC-5



1 PHASE 1 - SEDIMENTATION & EROSION CONTROL PLAN
 EC-5 SCALE: 1" = 40'-0"



WATERTOWN SOLAR ONE, LLC
150 TRUMBULL STREET
4TH FLOOR
HARTFORD, CT, 06103



567 VAUXHAUL STREET EXTENSION - SUITE 311
 WATERFORD, CT 06385 PHONE: (860)-663-1697
 WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

APPROVED FOR CONSTRUCTION

NO	DATE	REVISION
0	12/30/20	D&M PLANS: BJP
1		
2		
3		
4		
5		
6		

DESIGN PROFESSIONAL OF RECORD

PROF. BRADLEY J. PARSONS, P.E.
COMP. ALL-POINTS TECHNOLOGY CORPORATION
ADD: 567 VAUXHAUL STREET
EXTENSION - SUITE 311
WATERFORD, CT 06385

OWNER: CATHOLIC CEMETERIES
ADDRESS: 669 PLATT ROAD
WATERTOWN, CT 06795

WATERTOWN SOLAR ONE, LLC

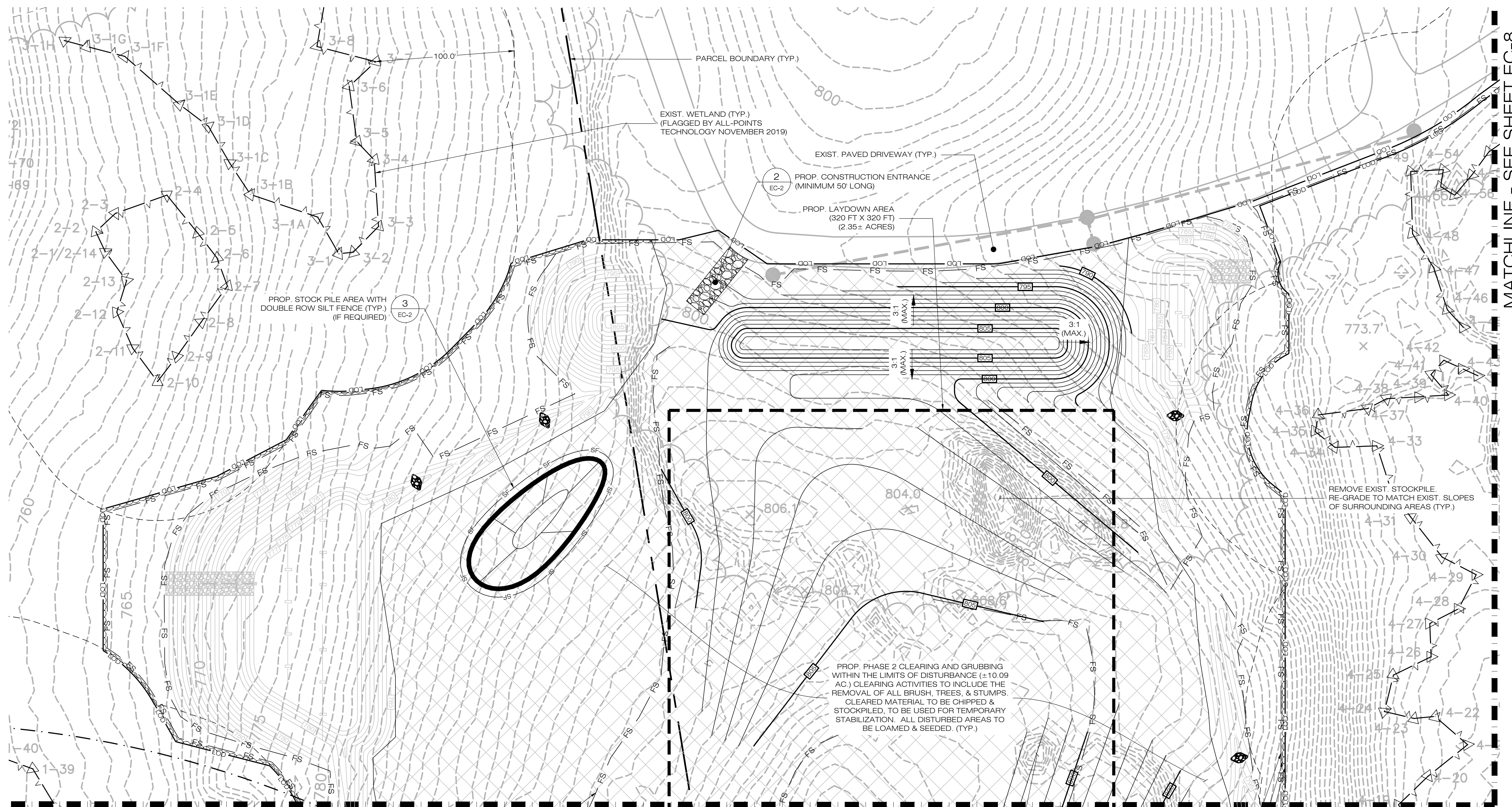
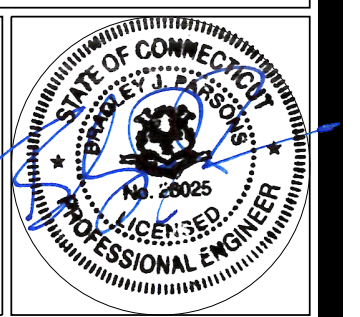
SITE HINMAN ROAD & PLATT ROAD
ADDRESS: WATERTOWN, CT 06795

APT FILING NUMBER: CT590240

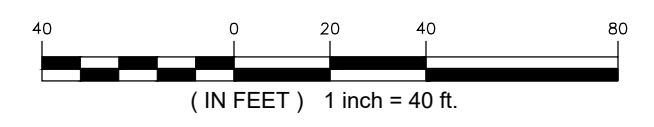
DRAWN BY: CSH
DATE: 12/30/20 **CHECKED BY: BJP**

SHEET TITLE:
PHASE 2
SEDIMENTATION &
EROSION CONTROL PLAN

SHEET NUMBER:
EC-6



1 PHASE 2 - SEDIMENTATION & EROSION CONTROL PLAN
 EC-6 SCALE: 1" = 40'-0"



MATCHLINE - SEE SHEET EC-8

MATCHLINE - SEE SHEET EC-7

WATERTOWN SOLAR ONE, LLC
150 TRUMBULL STREET
4TH FLOOR
HARTFORD, CT, 06103



567 VAUXHAUL STREET EXTENSION - SUITE 311
 WATERFORD, CT 06385 PHONE: (860)-663-1697
 WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

APPROVED FOR CONSTRUCTION

NO	DATE	REVISION
0	12/30/20	D&M PLANS: BJP
1		
2		
3		
4		
5		
6		

DESIGN PROFESSIONAL OF RECORD

PROF: BRADLEY J. PARSONS, P.E.
 COMP: ALL-POINTS TECHNOLOGY CORPORATION
 ADD: 567 VAUXHAUL STREET EXTENSION - SUITE 311
 WATERFORD, CT 06385

OWNER: CATHOLIC CEMETERIES
 ADDRESS: 669 PLATT ROAD
 WATERTOWN, CT 06795

WATERTOWN SOLAR ONE, LLC

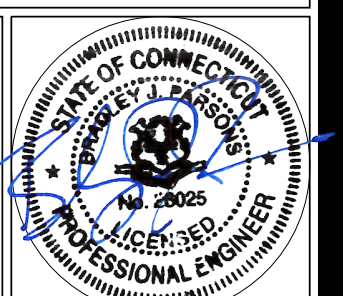
SITE: HINMAN ROAD & PLATT ROAD
 ADDRESS: WATERTOWN, CT 06795

APT FILING NUMBER: CT590240

DRAWN BY: CSH
 DATE: 12/30/20 CHECKED BY: BJP

SHEET TITLE:
PHASE 2
SEDIMENTATION & EROSION CONTROL PLAN

SHEET NUMBER:
EC-7



REMOVE EXIST. STOCKPILE. RE-GRADE TO MATCH EXIST. SLOPES OF SURROUNDING AREAS (TYP.)

MATCHLINE - SEE SHEET EC-6

EXIST. WETLAND (TYP.) (FLAGGED BY ALL-POINTS TECHNOLOGY NOVEMBER 2019)

750' CRITICAL TERRESTRIAL HABITAT TO VERNAL POOL

PROP. PHASE 2 CLEARING AND GRUBBING WITHIN THE LIMITS OF DISTURBANCE (±10.09 AC.) CLEARING ACTIVITIES TO INCLUDE THE REMOVAL OF ALL BRUSH, TREES, & STUMPS. CLEARED MATERIAL TO BE CHIPPED & STOCKPILED. TO BE USED FOR TEMPORARY STABILIZATION. ALL DISTURBED AREAS TO BE LOAMED & SEEDED. (TYP.)

3 EC-2 PROP. STOCK PILE AREA WITH DOUBLE ROW SILT FENCE (TYP.) (IF REQUIRED)

4 EC-2 PROP. STRAW WATTLE (TYP.) (TO BE PLACED ON CONTOUR APPROX. HALFWAY DOWN SLOPE) REMOVE AND REPLACE AS REQ. DURING CONSTRUCTION

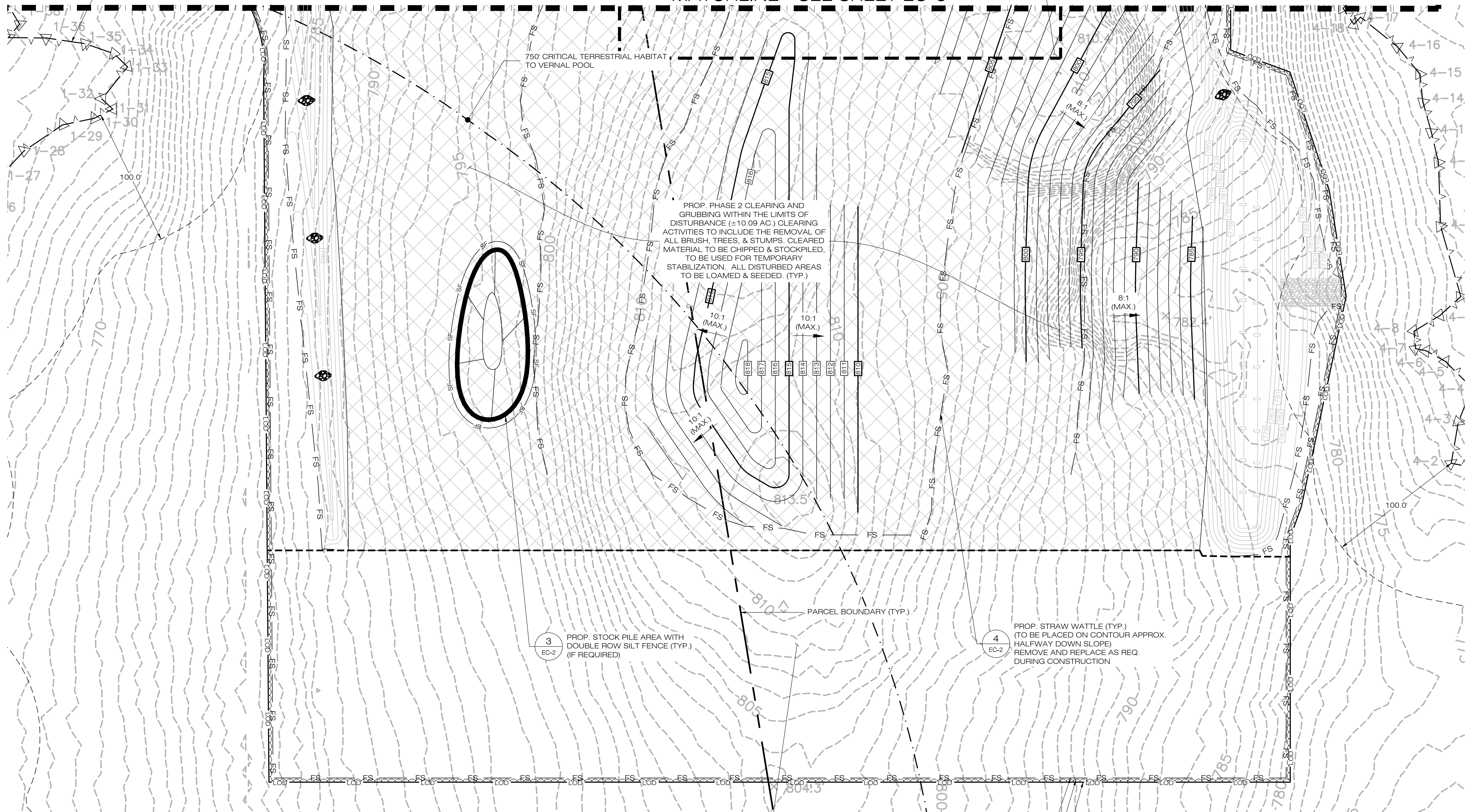
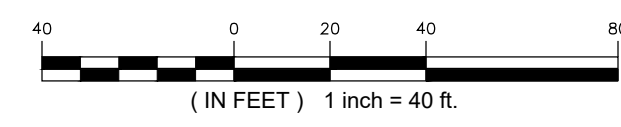
PROP. TREE CUTTING ONLY. STUMPS TO REMAIN (TYP.)

PROP. 18" COMPOST FILTER SOCK (TYP.)

PROP. CLEARING LIMITS (TYP.)

PROP. LIMIT OF DISTURBANCE (TYP.)

1 EC-7 PHASE 2 - SEDIMENTATION & EROSION CONTROL PLAN
 SCALE: 1" = 40'-0"



WATERTOWN SOLAR ONE, LLC
 150 TRUMBULL STREET
 4TH FLOOR
 HARTFORD, CT, 06103



567 VAUXHAUL STREET EXTENSION - SUITE 311
 WATERFORD, CT 06385 PHONE: (860)-663-1697
 WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

APPROVED FOR CONSTRUCTION

NO	DATE	REVISION
0	12/30/20	D&M PLANS: BJP
1		
2		
3		
4		
5		
6		

DESIGN PROFESSIONAL OF RECORD

PROF: BRADLEY J. PARSONS P.E.
 COMP: ALL-POINTS TECHNOLOGY CORPORATION
 ADD: 567 VAUXHAUL STREET
 EXTENSION - SUITE 311
 WATERFORD, CT 06385

OWNER: CATHOLIC CEMETERIES
 ADDRESS: 669 PLATT ROAD
 WATERTOWN, CT 06795

WATERTOWN SOLAR ONE, LLC

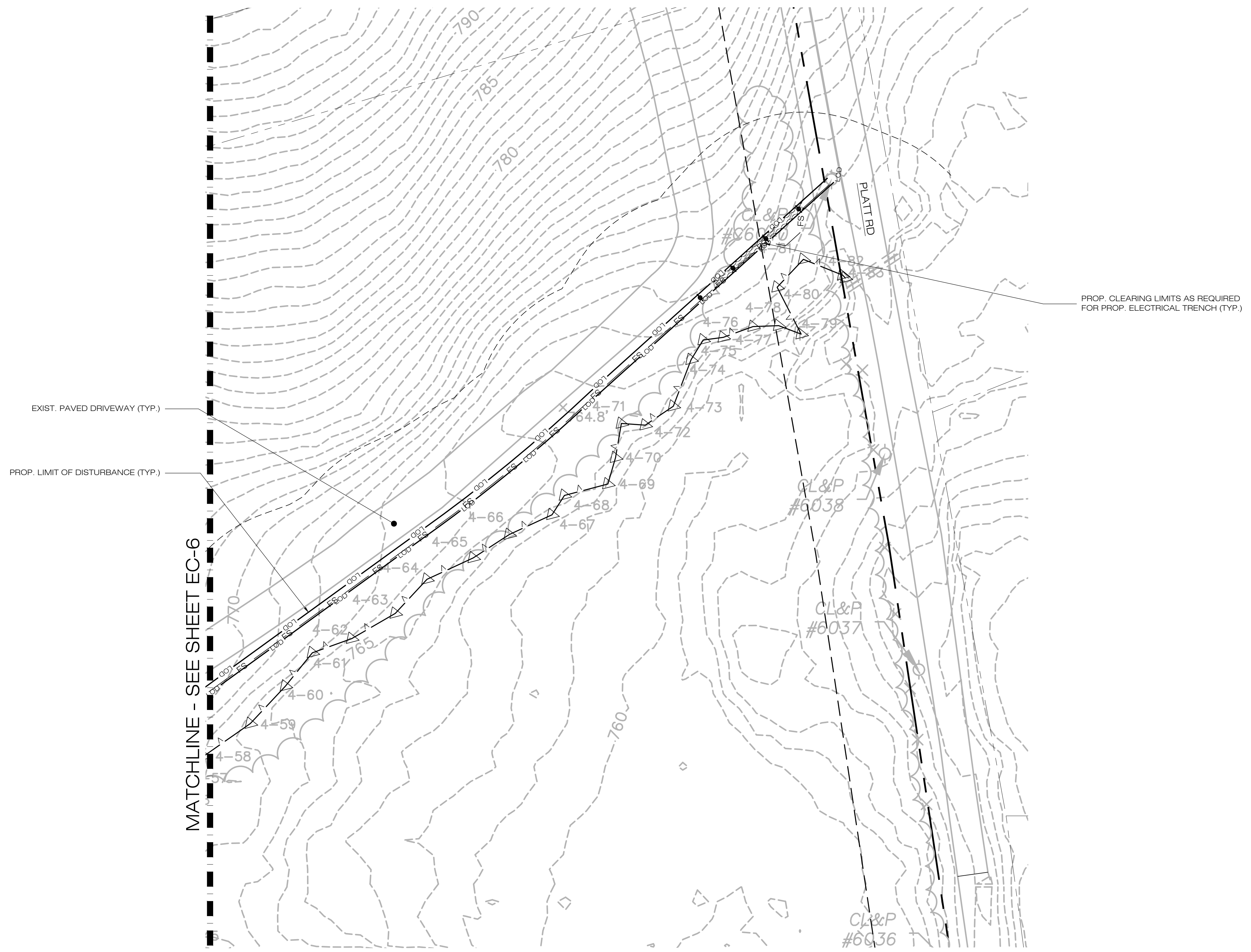
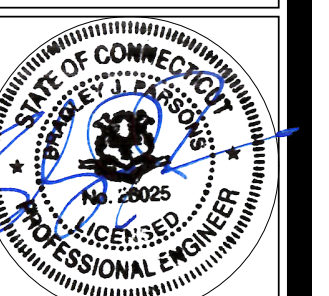
SITE: HINMAN ROAD & PLATT ROAD
 ADDRESS: WATERTOWN, CT 06795

APT FILING NUMBER: CT590240

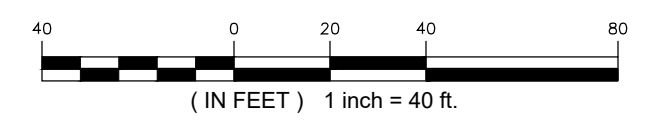
DRAWN BY: CSH
 DATE: 12/30/20 CHECKED BY: BJP

SHEET TITLE:
**PHASE 2
 SEDIMENTATION &
 EROSION CONTROL PLAN**

SHEET NUMBER:
EC-8



1 PHASE 2 - SEDIMENTATION & EROSION CONTROL PLAN
 EC-8 SCALE: 1" = 40'-0"



WATERTOWN SOLAR ONE, LLC
 150 TRUMBULL STREET
 4TH FLOOR
 HARTFORD, CT, 06103



567 VAUXHAUL STREET EXTENSION - SUITE 311
 WATERFORD, CT 06385 PHONE: (860)-663-1697
 WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

APPROVED FOR CONSTRUCTION

NO	DATE	REVISION
0	12/30/20	D&M PLANS: BJP
1		
2		
3		
4		
5		
6		

DESIGN PROFESSIONAL OF RECORD

PROF: BRADLEY J. PARSONS P.E.
 COMP: ALL-POINTS TECHNOLOGY CORPORATION
 ADD: 567 VAUXHAUL STREET
 EXTENSION - SUITE 311
 WATERFORD, CT 06385

OWNER: CATHOLIC CEMETERIES
 ADDRESS: 669 PLATT ROAD
 WATERTOWN, CT 06795

WATERTOWN SOLAR ONE, LLC

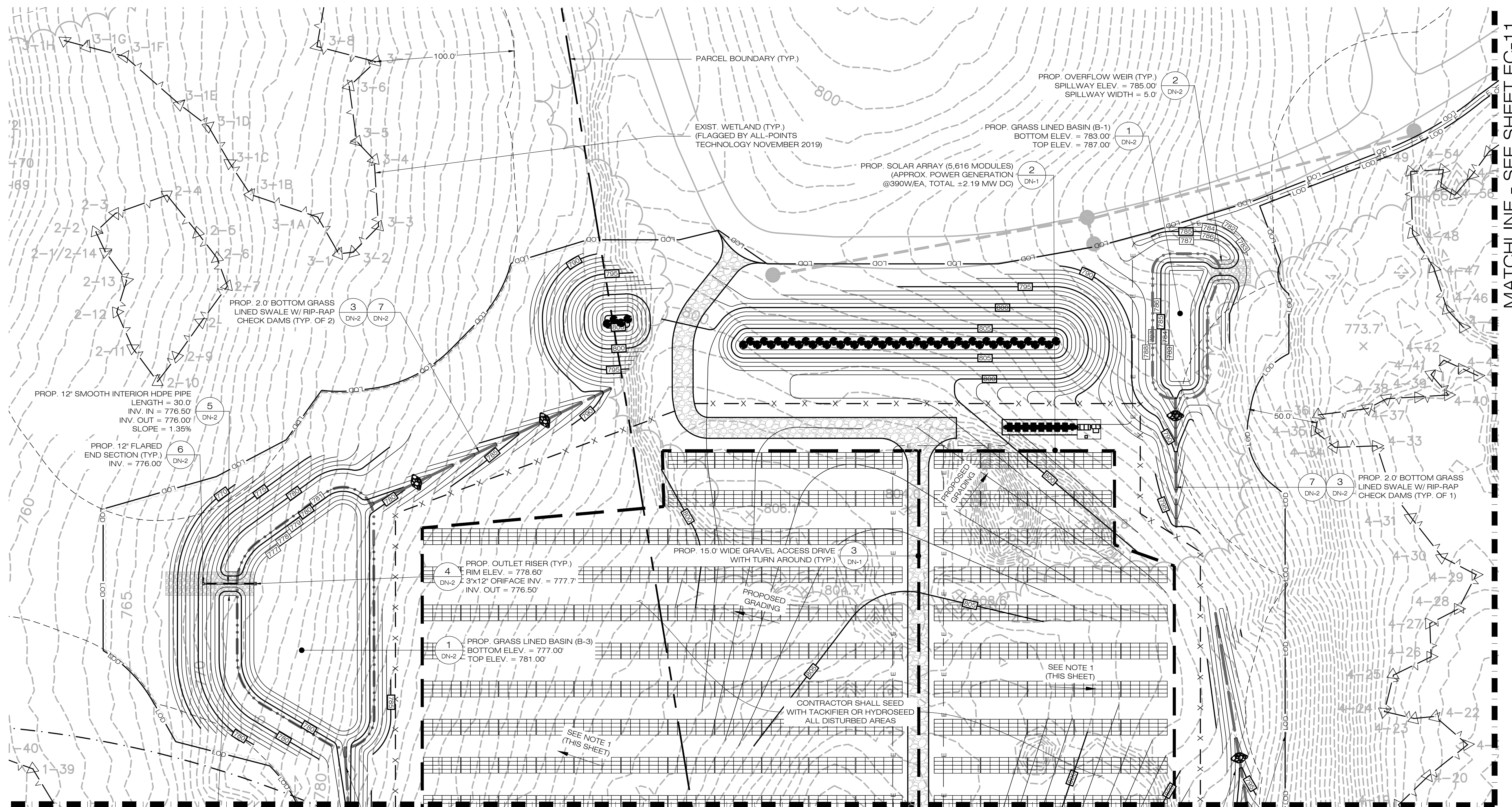
SITE: HINMAN ROAD & PLATT ROAD
 ADDRESS: WATERTOWN, CT 06795

APT FILING NUMBER: CT590240

DRAWN BY: CSH
 DATE: 12/30/20 CHECKED BY: BJP

**PHASE 3
 FINAL GRADING &
 DRAINAGE PLAN**

SHEET NUMBER:
EC-9

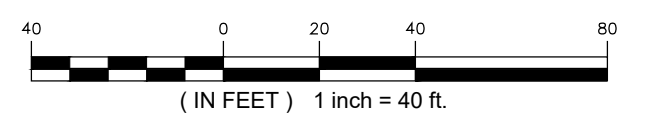


MATCHLINE - SEE SHEET EC-11

MATCHLINE - SEE SHEET EC-10

- NOTES:**
- GRADE/SHAPE AREA TO MAINTAIN EXIST. DRAINAGE PATTERNS.
 - CONTRACTOR SHALL REMOVE ALL BAFFLES AND SEDIMENT BASINS AND SWALES.
 - CONTRACTOR SHALL REPLACE TEMPORARY SEDIMENT BASIN OUTLET WITH GRAVEL OVERFLOW WEIR UPON THE SITE OR DRAINAGE AREA BEING DEEMED STABILIZED PER THE SWPCP.
 - CONTRACTOR SHALL MODIFY/REPLACE THE TEMPORARY SEDIMENT BASIN RISER AS NEEDED UPON THE SITE OR DRAINAGE AREA BEING DEEMED STABILIZED PER THE SWPCP.

1 PHASE 3 - FINAL GRADING & DRAINAGE PLAN
 EC-9 SCALE: 1" = 40'-0"



WATERTOWN SOLAR ONE, LLC
150 TRUMBULL STREET
4TH FLOOR
HARTFORD, CT, 06103

ALL-POINTS TECHNOLOGY CORPORATION
 567 VAUXHAUL STREET EXTENSION - SUITE 311
 WATERFORD, CT 06385 PHONE: (860)-663-1697
 WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

APPROVED FOR CONSTRUCTION

NO	DATE	REVISION
0	12/30/20	D&M PLANS: BJP
1		
2		
3		
4		
5		
6		

DESIGN PROFESSIONAL OF RECORD

PROF: BRADLEY J. PARSONS, P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION
ADD: 567 VAUXHAUL STREET EXTENSION - SUITE 311 WATERFORD, CT 06385

OWNER: CATHOLIC CEMETERIES
ADDRESS: 669 PLATT ROAD WATERFORD, CT 06795

WATERTOWN SOLAR ONE, LLC

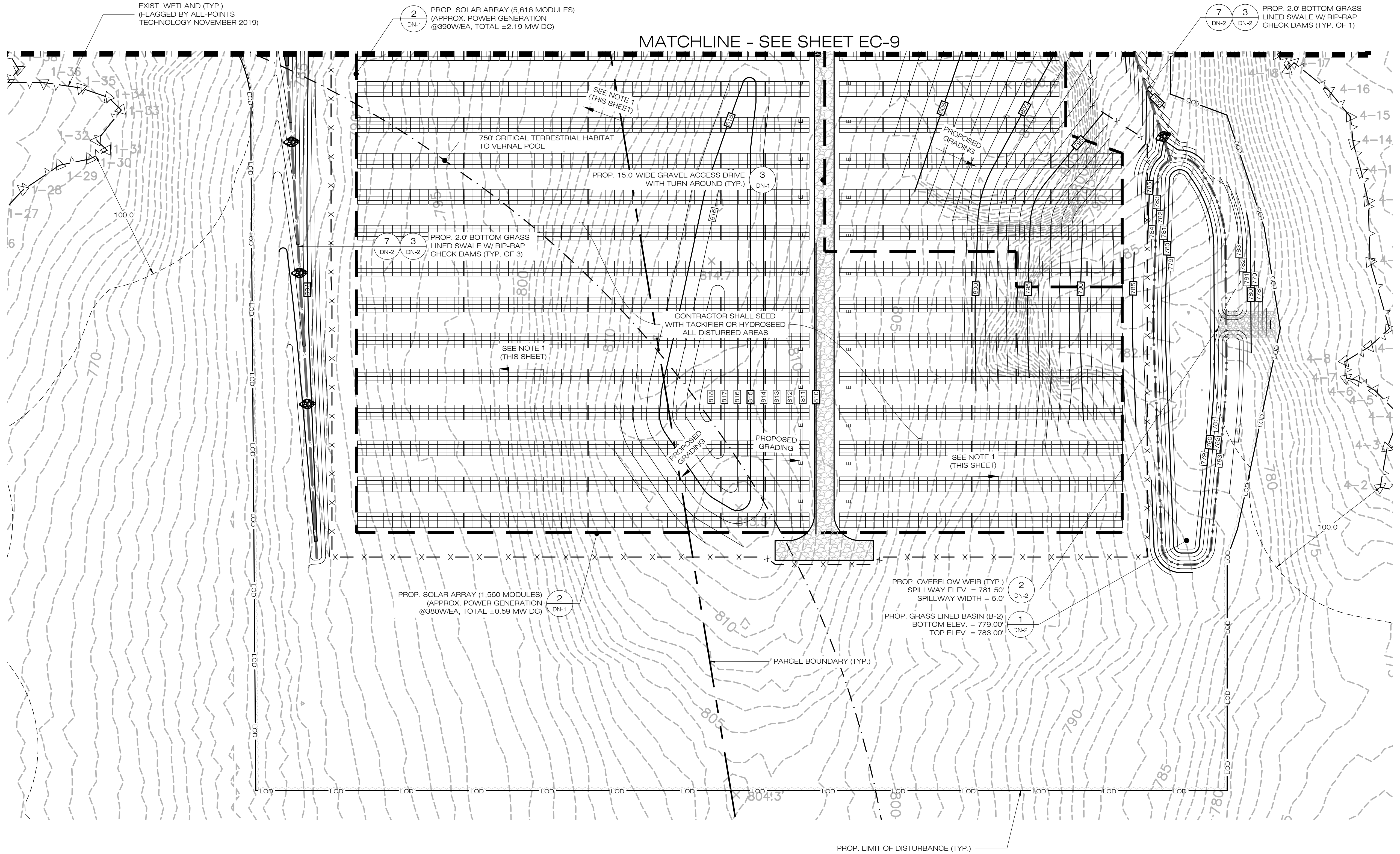
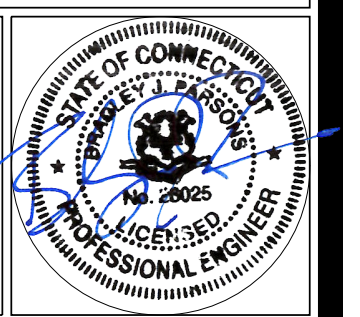
SITE HINMAN ROAD & PLATT ROAD
ADDRESS: WATERFORD, CT 06795

APT FILING NUMBER: CT590240

DRAWN BY: CSH
DATE: 12/30/20 **CHECKED BY: BJP**

SHEET TITLE:
PHASE 3
FINAL GRADING & DRAINAGE PLAN

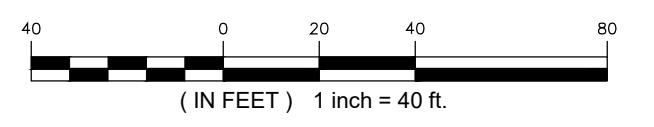
SHEET NUMBER:
EC-10



MATCHLINE - SEE SHEET EC-9

NOTES:
 1. GRADE/SHAPE AREA TO MAINTAIN EXIST. DRAINAGE PATTERNS.
 2. CONTRACTOR SHALL REMOVE ALL BAFFLES AND SEDIMENT BASINS AND SWALES.
 3. CONTRACTOR SHALL REPLACE TEMPORARY SEDIMENT BASIN OUTLET WITH GRAVEL OVERFLOW WEIR UPON THE SITE OR DRAINAGE AREA BEING DEEMED STABILIZED PER THE SWPCP.
 4. CONTRACTOR SHALL MODIFY/REPLACE THE TEMPORARY SEDIMENT BASIN RISER AS NEEDED UPON THE SITE OR DRAINAGE AREA BEING DEEMED STABILIZED PER THE SWPCP.

1 PHASE 3 - FINAL GRADING & DRAINAGE PLAN
 EC-10 SCALE: 1" = 40'-0"



WATERTOWN SOLAR ONE, LLC
 150 TRUMBULL STREET
 4TH FLOOR
 HARTFORD, CT, 06103



567 VAUXHAUL STREET EXTENSION - SUITE 311
 WATERFORD, CT 06385 PHONE: (860)-663-1697
 WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

APPROVED FOR CONSTRUCTION

NO	DATE	REVISION
0	12/30/20	D&M PLANS: BJP
1		
2		
3		
4		
5		
6		

DESIGN PROFESSIONAL OF RECORD

PROF: BRADLEY J. PARSONS P.E.
 COMP: ALL-POINTS TECHNOLOGY CORPORATION
 ADD: 567 VAUXHAUL STREET
 EXTENSION - SUITE 311
 WATERFORD, CT 06385

OWNER: CATHOLIC CEMETERIES
 ADDRESS: 669 PLATT ROAD
 WATERTOWN, CT 06795

WATERTOWN SOLAR ONE, LLC

SITE: HINMAN ROAD & PLATT ROAD
 ADDRESS: WATERTOWN, CT 06795

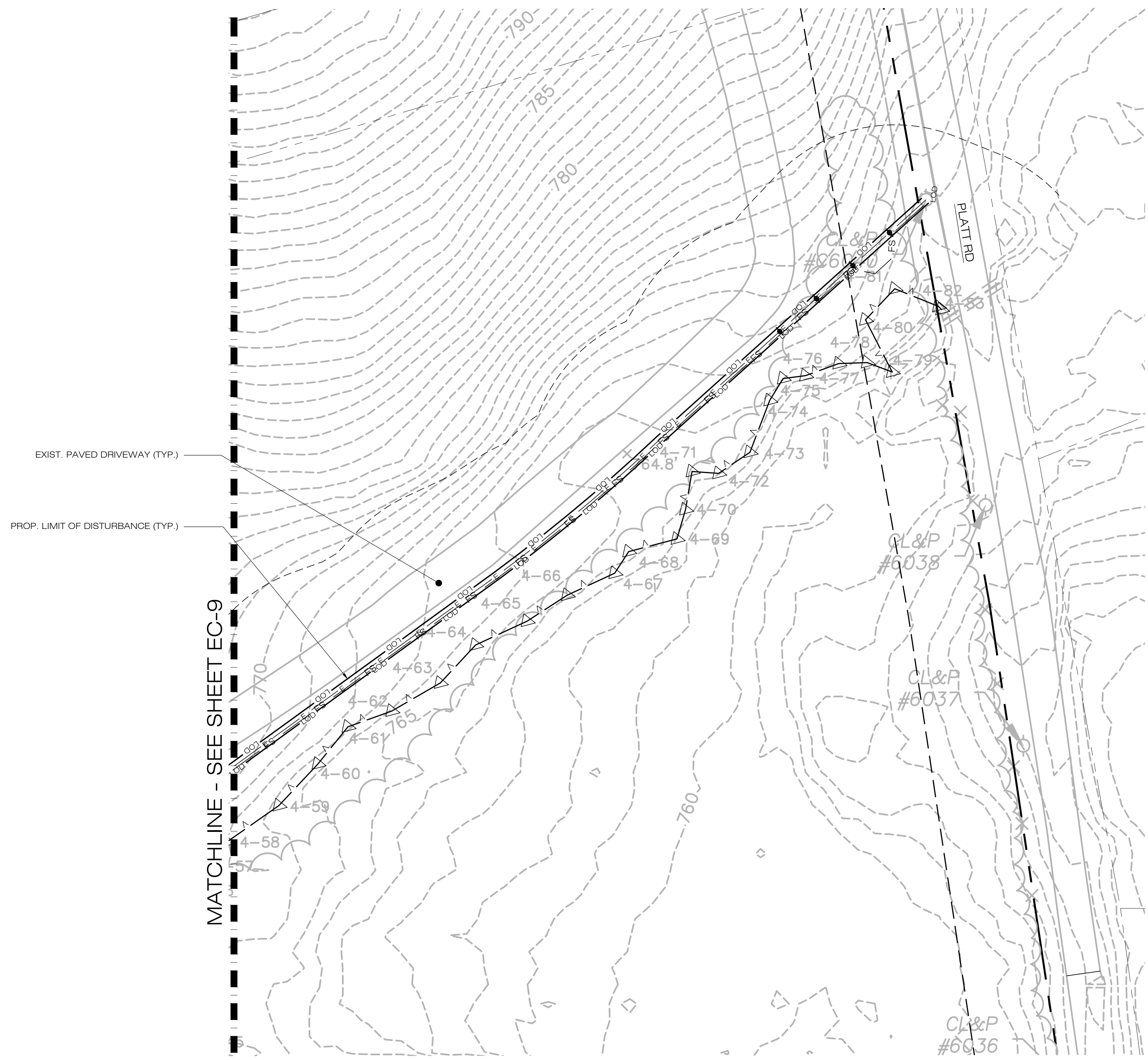
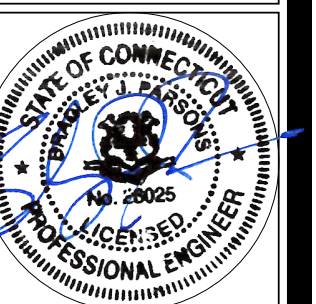
APT FILING NUMBER: CT590240

DRAWN BY: CSH
 DATE: 12/30/20 CHECKED BY: BJP

SHEET TITLE:
**PHASE 3
 FINAL GRADING &
 DRAINAGE PLAN**

SHEET NUMBER:

EC-11



1 PHASE 3 - FINAL GRADING & DRAINAGE PLAN
 SCALE: 1" = 40'-0"
 (IN FEET) 1 inch = 40 ft.

WATERTOWN SOLAR ONE, LLC
150 TRUMBULL STREET
4TH FLOOR
HARTFORD, CT, 06103

ALL-POINTS TECHNOLOGY CORPORATION
 567 VAUXHAUL STREET EXTENSION - SUITE 311
 WATERFORD, CT 06385 PHONE: (860)-663-1697
 WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

APPROVED FOR CONSTRUCTION

NO	DATE	REVISION
0	12/30/20	D&M PLANS: BJP
1		
2		
3		
4		
5		
6		

DESIGN PROFESSIONAL OF RECORD

PROF. BRADLEY J. PARSONS, P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION
ADD: 567 VAUXHAUL STREET EXTENSION - SUITE 311 WATERFORD, CT 06385

OWNER: CATHOLIC CEMETERIES
ADDRESS: 669 PLATT ROAD WATERFORD, CT 06795

WATERTOWN SOLAR ONE, LLC

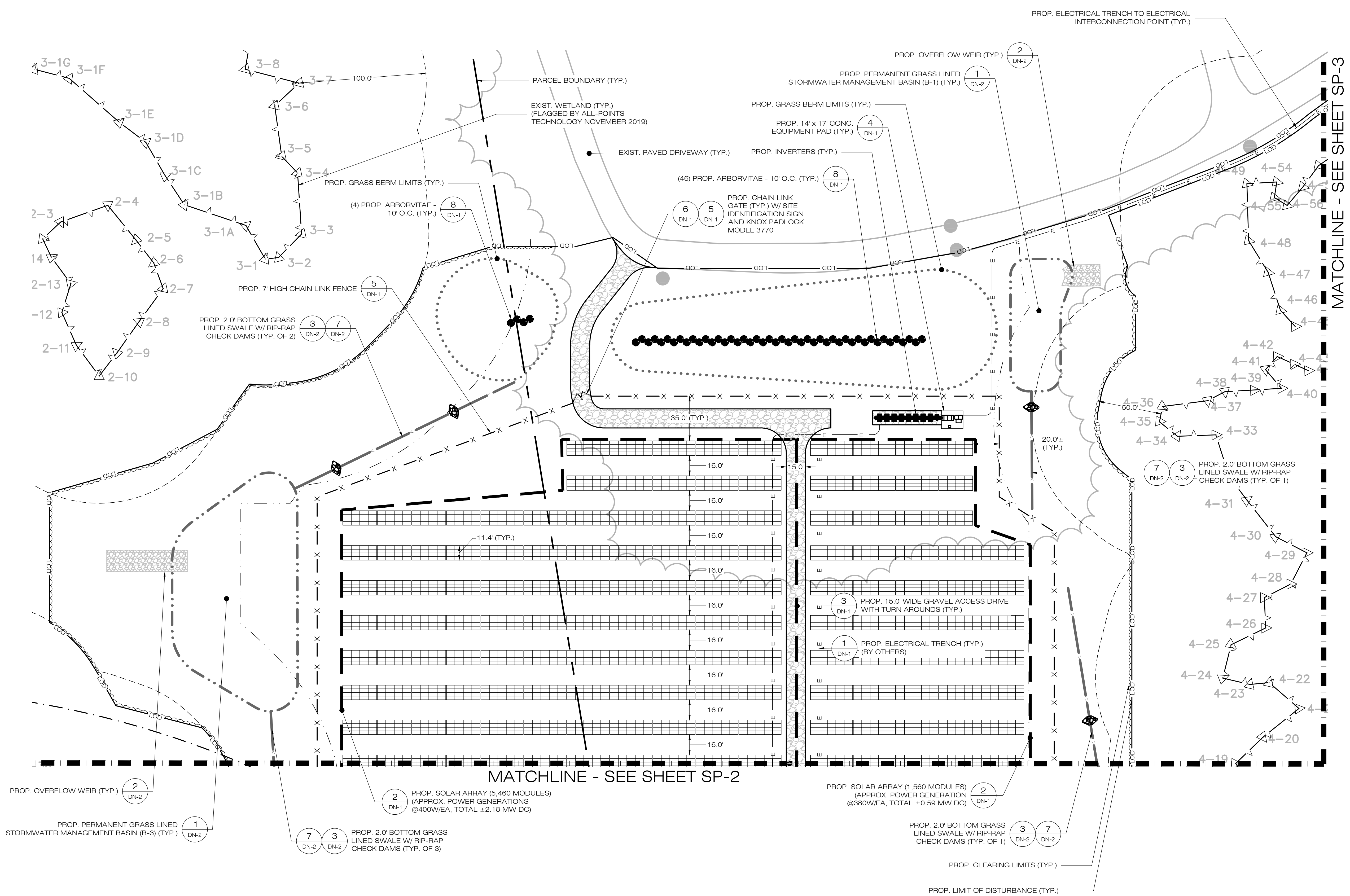
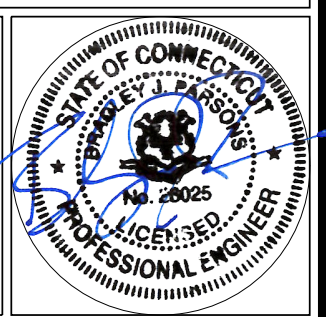
SITE HINMAN ROAD & PLATT ROAD
ADDRESS: WATERFORD, CT 06795

APT FILING NUMBER: CT590240

DRAWN BY: CSH
DATE: 12/30/20 **CHECKED BY: BJP**

SHEET TITLE:
SITE & UTILITY PLAN

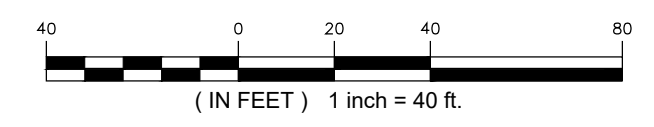
SHEET NUMBER:
SP-1

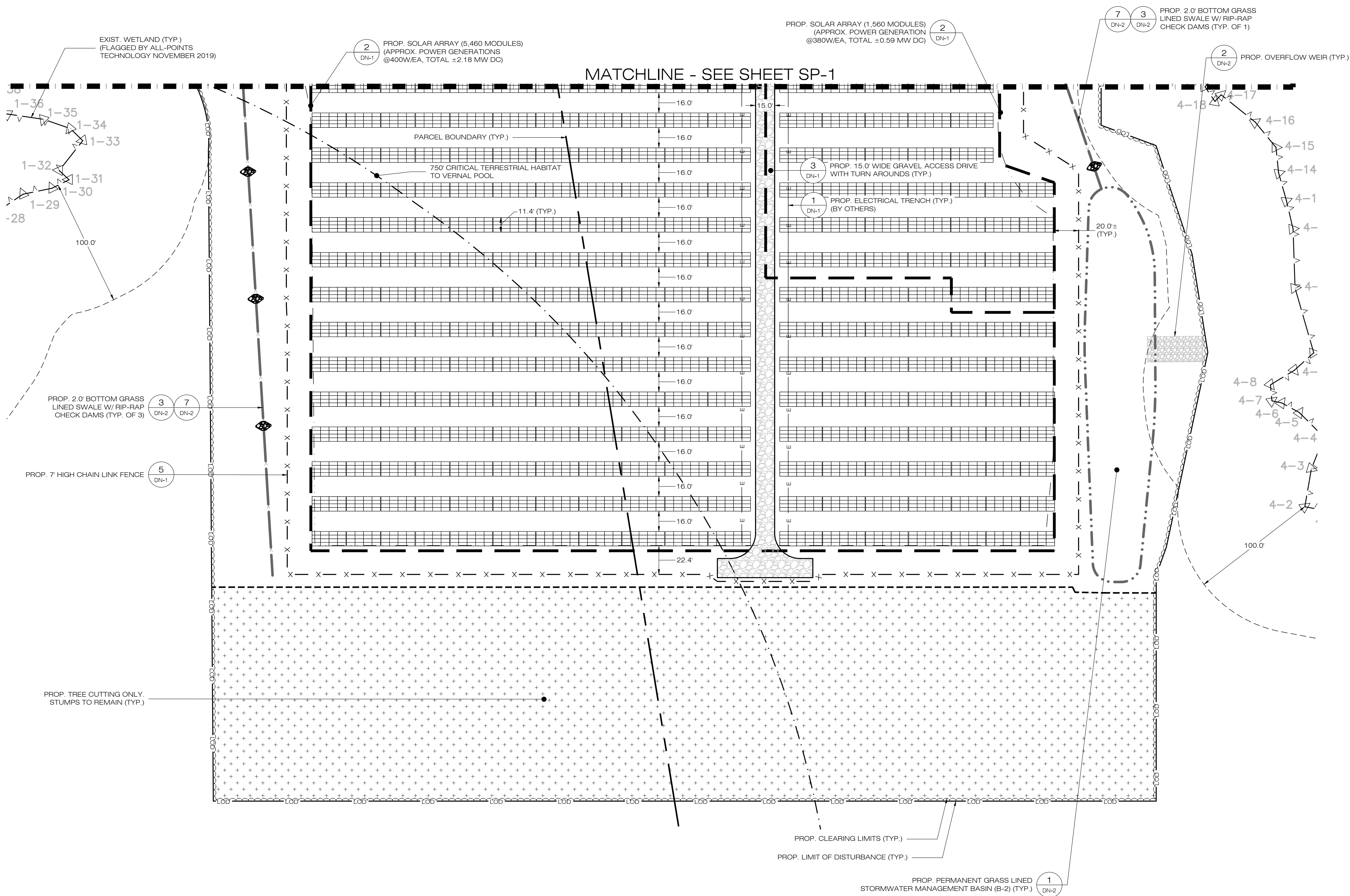


MATCHLINE - SEE SHEET SP-2

MATCHLINE - SEE SHEET SP-3

1 SITE & UTILITY PLAN
SP-1 SCALE: 1" = 40'-0"





WATERTOWN SOLAR ONE, LLC
 150 TRUMBULL STREET
 4TH FLOOR
 HARTFORD, CT, 06103

ALL-POINTS TECHNOLOGY CORPORATION
 567 VAUXHAUL STREET EXTENSION - SUITE 311
 WATERFORD, CT 06385 PHONE: (860)-663-1697
 WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

APPROVED FOR CONSTRUCTION

NO	DATE	REVISION
0	12/30/20	D&M PLANS: BJP
1		
2		
3		
4		
5		
6		

DESIGN PROFESSIONAL OF RECORD

PROF: BRADLEY J. PARSONS P.E.
 COMP: ALL-POINTS TECHNOLOGY CORPORATION
 ADD: 567 VAUXHAUL STREET EXTENSION - SUITE 311
 WATERFORD, CT 06385

OWNER: CATHOLIC CEMETERIES
 ADDRESS: 669 PLATT ROAD
 WATERTOWN, CT 06795

WATERTOWN SOLAR ONE, LLC

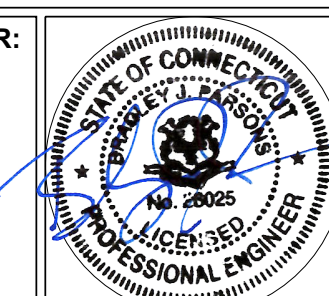
SITE: HINMAN ROAD & PLATT ROAD
 ADDRESS: WATERTOWN, CT 06795

APT FILING NUMBER: CT590240

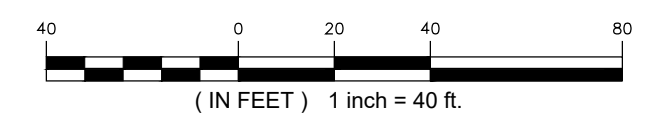
DATE: 12/30/20 DRAWN BY: CSH
 CHECKED BY: BJP

SHEET TITLE:
 SITE & UTILITY PLAN

SHEET NUMBER:
SP-2



1 SITE & UTILITY PLAN
 SP-2 SCALE: 1" = 40'-0"



WATERTOWN SOLAR ONE, LLC
 150 TRUMBULL STREET
 4TH FLOOR
 HARTFORD, CT, 06103



567 VAUXHAUL STREET EXTENSION - SUITE 311
 WATERFORD, CT 06385 PHONE: (860)-663-1697
 WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

APPROVED FOR CONSTRUCTION

NO	DATE	REVISION
0	12/30/20	D&M PLANS: BJP
1		
2		
3		
4		
5		
6		

DESIGN PROFESSIONAL OF RECORD

PROF: BRADLEY J. PARSONS, P.E.
 COMP: ALL-POINTS TECHNOLOGY CORPORATION
 ADD: 567 VAUXHAUL STREET
 EXTENSION - SUITE 311
 WATERFORD, CT 06385

OWNER: CATHOLIC CEMETERIES
 ADDRESS: 669 PLATT ROAD
 WATERTOWN, CT 06795

WATERTOWN SOLAR ONE, LLC

SITE: HINMAN ROAD & PLATT ROAD
 ADDRESS: WATERTOWN, CT 06795

APT FILING NUMBER: CT590240

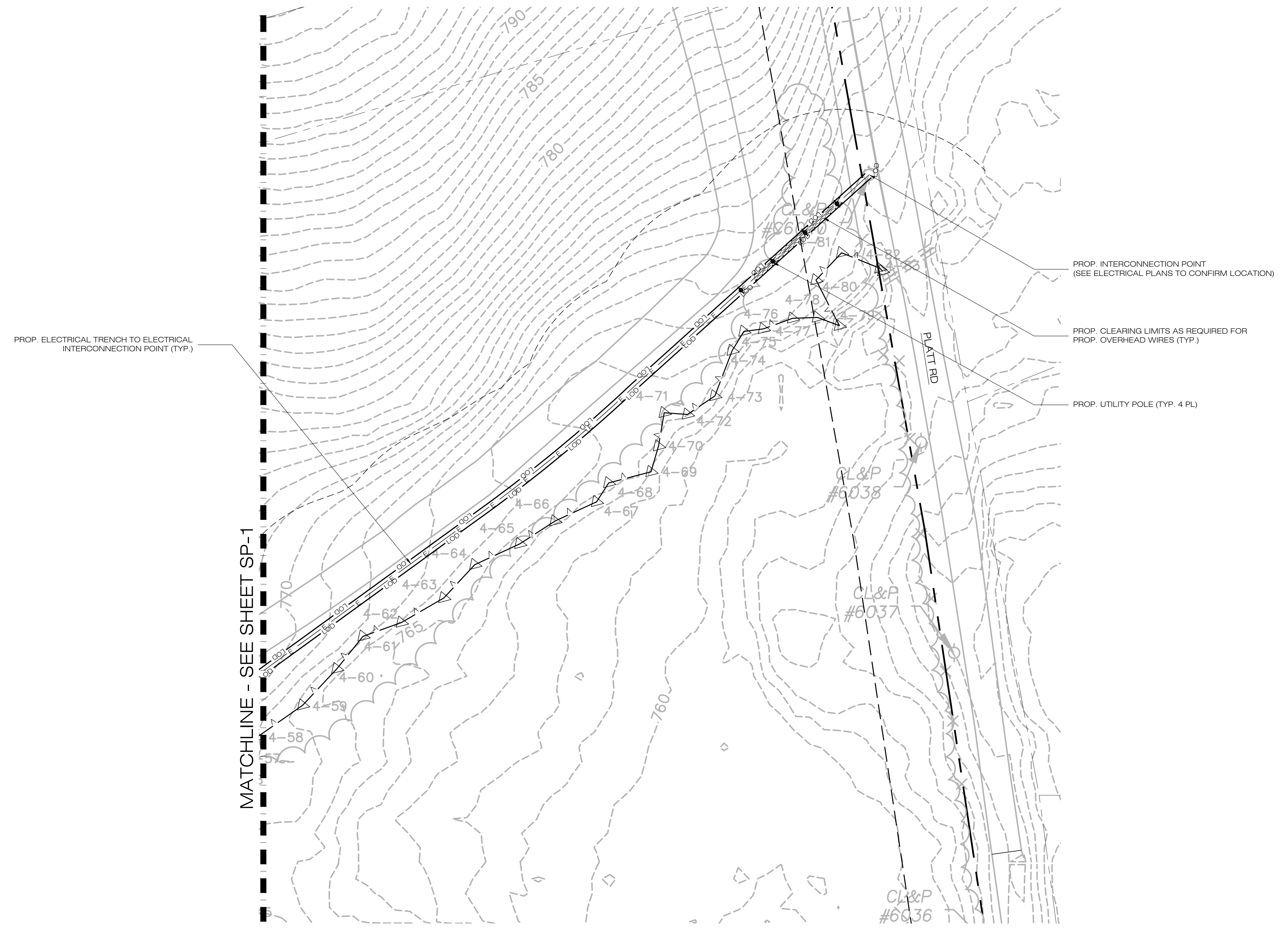
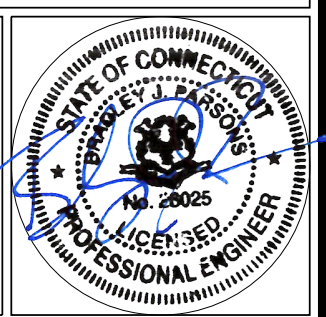
DRAWN BY: CSH
 DATE: 12/30/20 CHECKED BY: BJP

SHEET TITLE:

SITE & UTILITY PLAN

SHEET NUMBER:

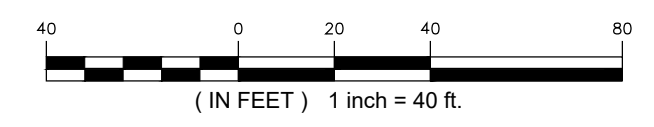
SP-3

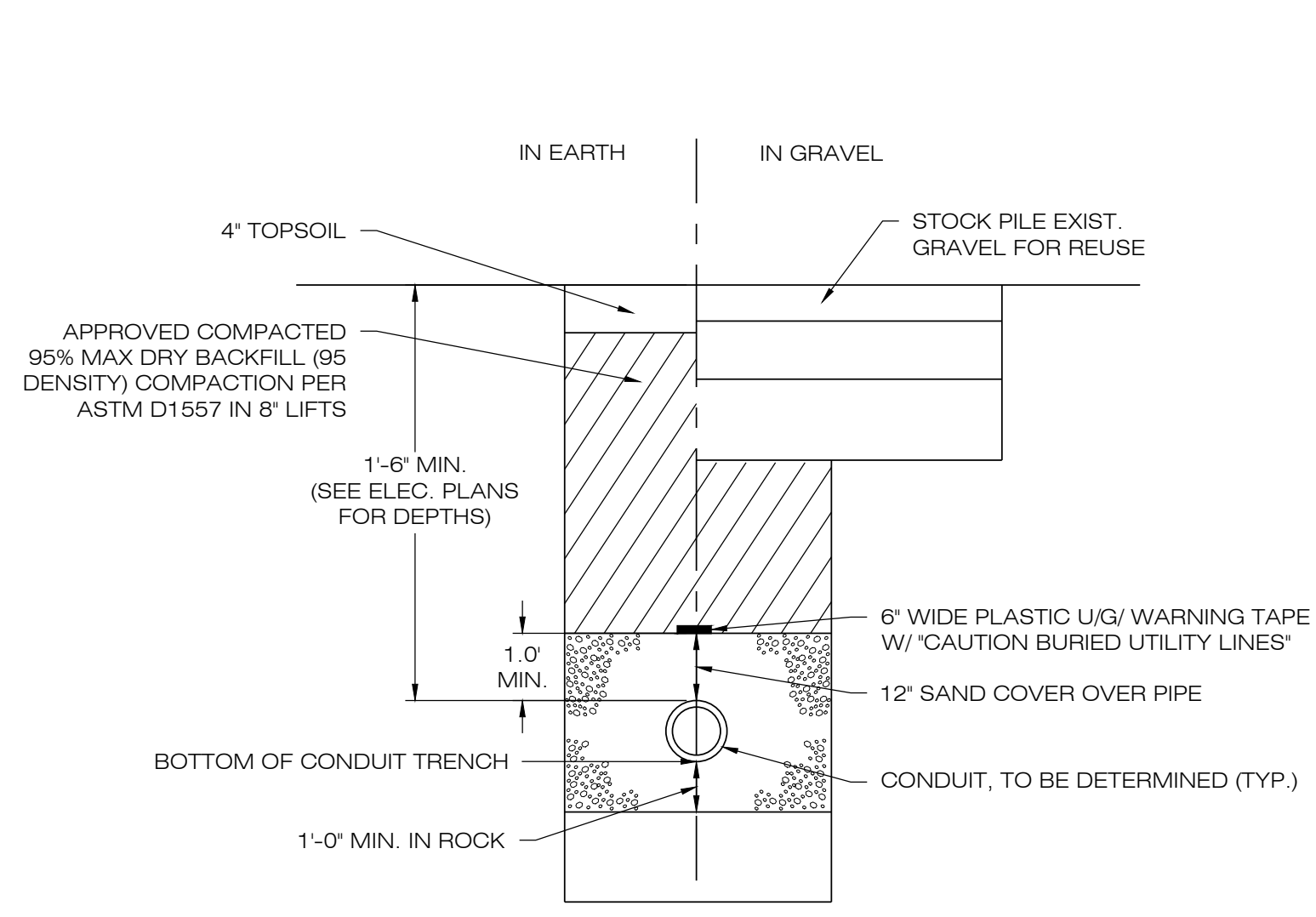


MATCHLINE - SEE SHEET SP-1

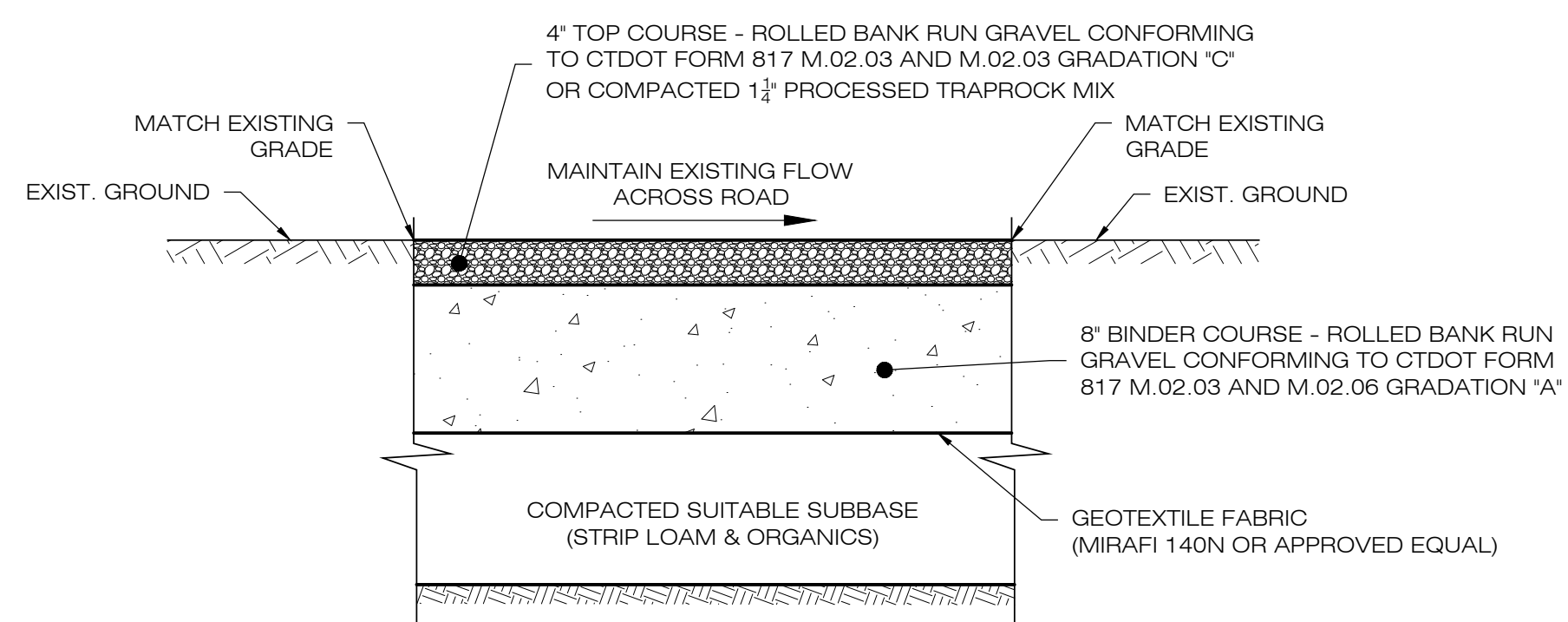


1 SITE & UTILITY PLAN
 SP-3 SCALE: 1" = 40'-0"



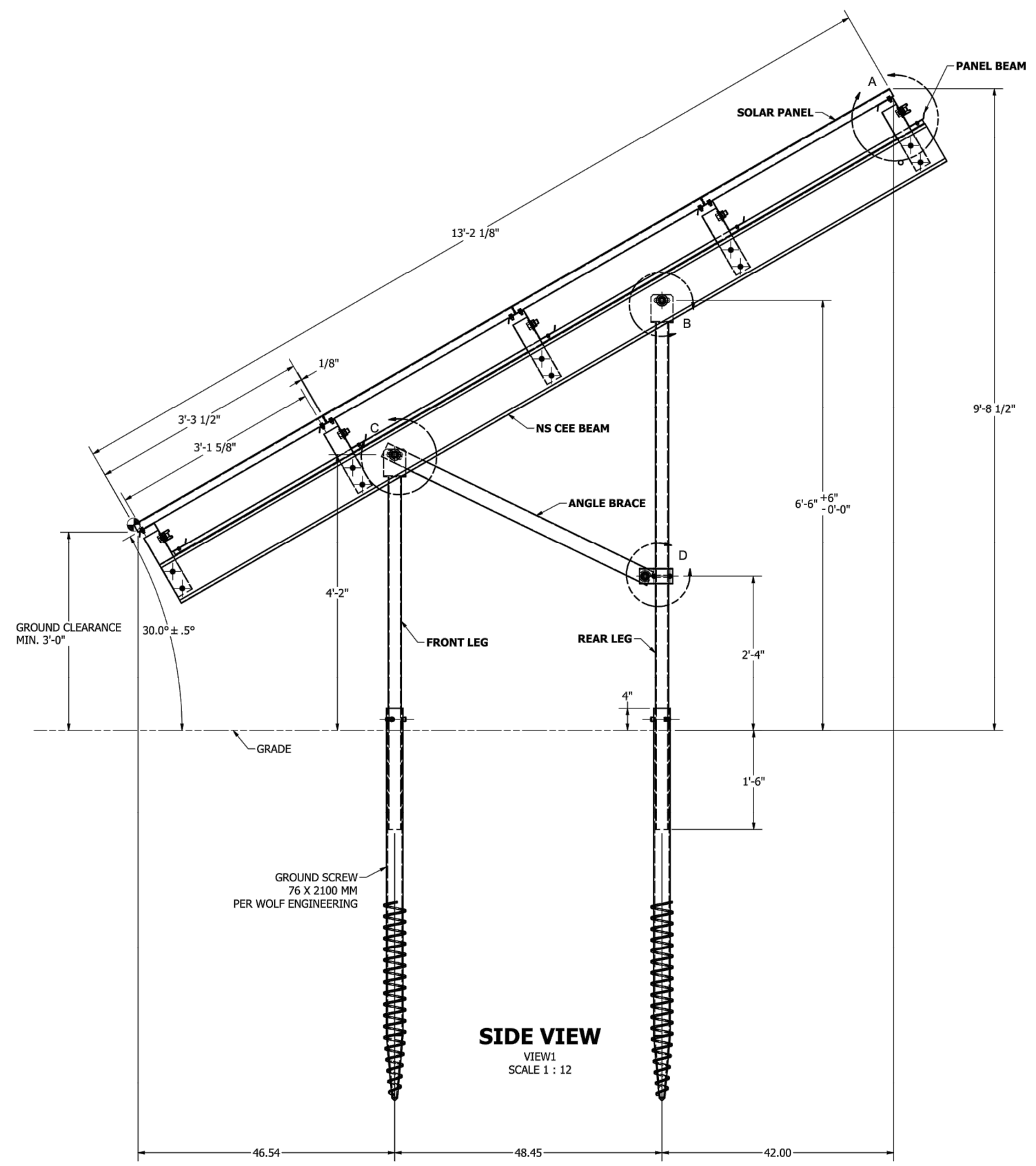


1 ELECTRICAL TRENCH DETAIL
DN-1 SCALE: N.T.S.



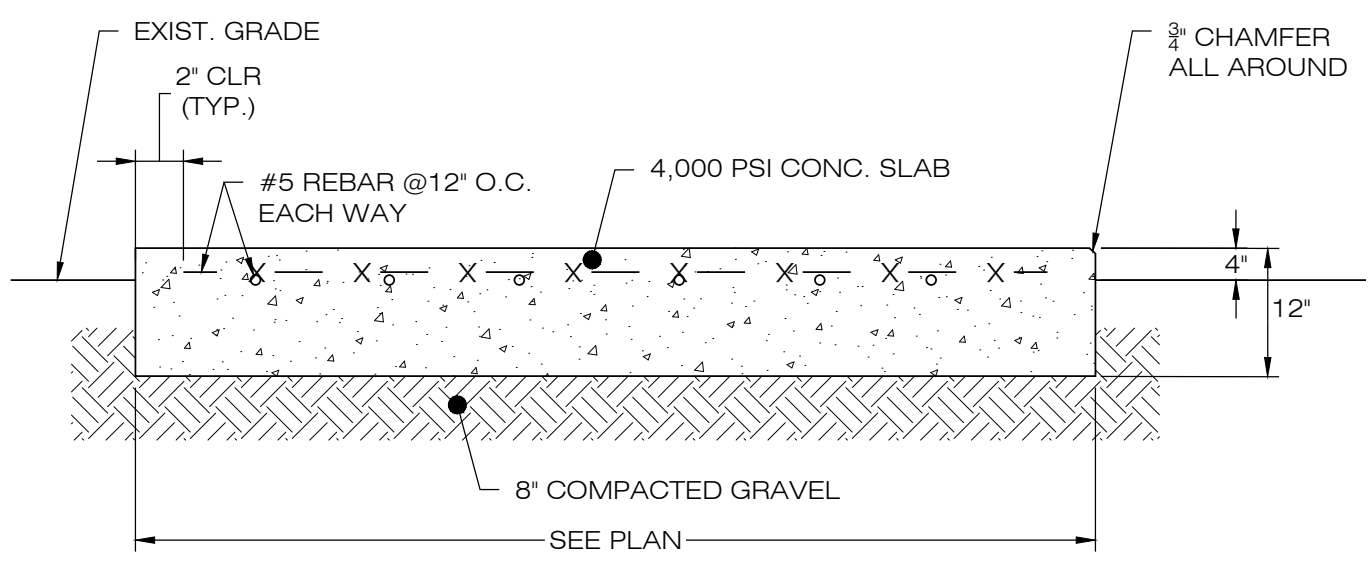
- NOTES:
- SUBBASE MAY CONSIST OF NATIVE MATERIALS IF FOUND ACCEPTABLE BY THE ENGINEER. SUBBASE TO BE COMPACTED TO 95% MAX DRY DENSITY.
 - SUBBASE IS TO BE FREE FROM DEBRIS AND UNSUITABLE MATERIALS.
 - CONTRACTOR SHALL INSTALL ACCESS ROAD FLUSH WITH EXISTING GRADE TO ENSURE DRAINAGE FLOW PATHS ARE MAINTAINED.
 - SEE PLAN VIEW SHEETS FOR ROAD WIDTH.

3 GRAVEL ACCESS DRIVE SECTION
DN-1 SCALE: N.T.S.

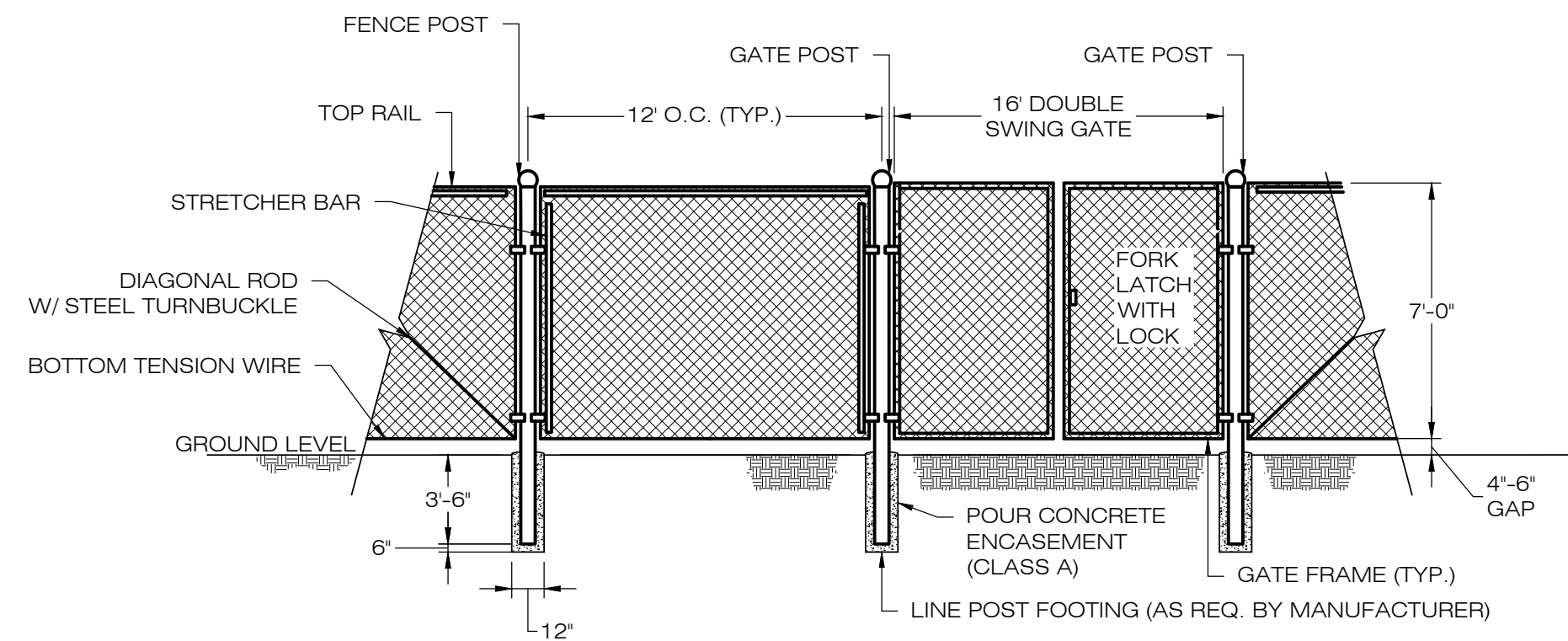


NOTES:
SEE MANUFACTURER'S DETAIL SHEETS FOR ADDITIONAL INFORMATION REGARDING RACKING SYSTEM REQUIREMENTS AND INSTALLATION PROCEDURES. RACKING SYSTEM TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.

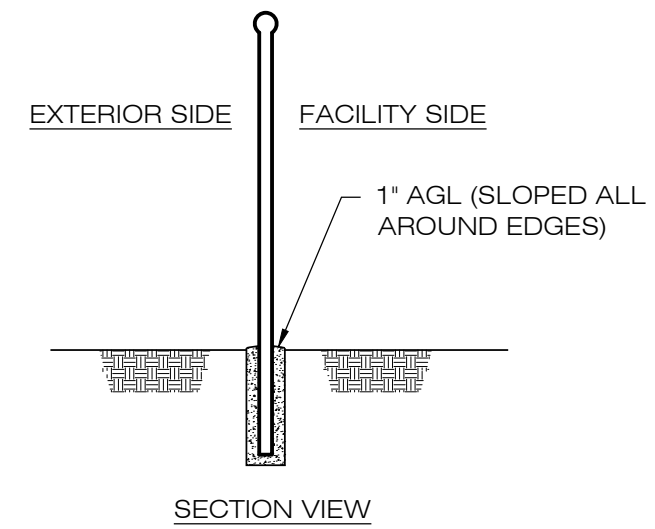
2 TYPICAL POST MOUNTED RACKING SYSTEM
DN-1 SCALE: N.T.S.



4 CONCRETE EQUIPMENT PAD
DN-1 SCALE: N.T.S.

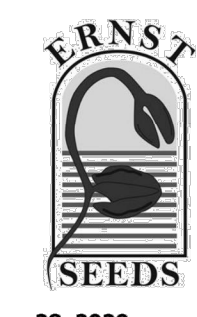


5 CHAIN-LINK FENCE & GATE DETAIL
DN-1 SCALE: N.T.S.



NOTES:
EMERGENCY CALL NUMBER TO BE PROVIDED ONCE DETERMINED.

6 NOTIFICATION SIGN DETAIL
DN-1 SCALE: N.T.S.



Ernst Conservation Seeds
8884 Mercer Pike
Meadville, PA 16335
(800) 873-3321 Fax (814) 336-5191
www.ernstseed.com

Date: June 28, 2020

Showy Northeast Native Wildflower Mix - ERNMX-153-1

Botanical Name	Common Name	Price/lb
20.10 % <i>Echinacea purpurea</i>	Purple Coneflower	39.60
12.00 % <i>Coreopsis lanceolata</i>	Lanceleaf Coreopsis	26.40
12.00 % <i>Rudbeckia hirta, Coastal Plain NC Ecotype</i>	Blackeyed Susan, Coastal Plain NC Ecotype	22.00
10.00 % <i>Chamaecrista fasciculata, PA Ecotype</i>	Partridge Pea, PA Ecotype	6.60
7.00 % <i>Heliopsis helianthoides, PA Ecotype</i>	Oxeye Sunflower, PA Ecotype	30.80
6.40 % <i>Tradescantia ohiensis, PA Ecotype</i>	Ohio Spiderwort, PA Ecotype	231.00
5.00 % <i>Liatris spicata</i>	Marsh Blazing Star	231.00
3.50 % <i>Aster oblongifolius, PA Ecotype</i>	Aromatic Aster, PA Ecotype	396.00
3.50 % <i>Aster prenanthoides, PA Ecotype</i>	Zigzag Aster, PA Ecotype	396.00
3.00 % <i>Zizia aurea, PA Ecotype</i>	Golden Alexanders, PA Ecotype	264.00
2.00 % <i>Aster laevis, NY Ecotype</i>	Smooth Blue Aster, NY Ecotype	396.00
2.00 % <i>Aster novae-angliae, PA Ecotype</i>	New England Aster, PA Ecotype	396.00
2.00 % <i>Baptisia australis, Southern WV Ecotype</i>	Blue False Indigo, Southern WV Ecotype	88.00
1.50 % <i>Asclepias tuberosa</i>	Butterfly Milkweed	396.00
1.50 % <i>Pycnanthemum tenuifolium</i>	Narrowleaf Mountainmint	154.00
1.50 % <i>Senna hebecarpa, VA & WV Ecotype</i>	Wild Senna, VA & WV Ecotype	26.40
1.20 % <i>Monarda fistulosa, Fort Indiantown Gap-PA Ecotype</i>	Wild Bergamot, Fort Indiantown Gap-PA Ecotype	105.60
1.10 % <i>Solidago nemoralis, PA Ecotype</i>	Gray Goldenrod, PA Ecotype	396.00
1.00 % <i>Eupatorium coelestinum, VA Ecotype</i>	Mistflower, VA Ecotype	281.60
1.00 % <i>Geum canadense, PA Ecotype</i>	White Avena, PA Ecotype	176.00
1.00 % <i>Penstemon digitalis, PA Ecotype</i>	Tall White Beardtongue, PA Ecotype	176.00
0.60 % <i>Coreopsis tripteris, PA Ecotype</i>	Tall Coreopsis, PA Ecotype	308.00
0.50 % <i>Senna marilandica</i>	Maryland Senna	26.40
0.20 % <i>Oenothera fruticosa var. fruticosa</i>	Sundrops	330.00
0.20 % <i>Solidago odora, PA Ecotype</i>	Licorice Scented Goldenrod, PA Ecotype	352.00
0.10 % <i>Penstemon hirsutus</i>	Hairy Beardtongue	440.00
0.10 % <i>Rudbeckia fulgida var. fulgida, Northern VA Ecotype</i>	Orange Coneflower, Northern VA Ecotype	352.00

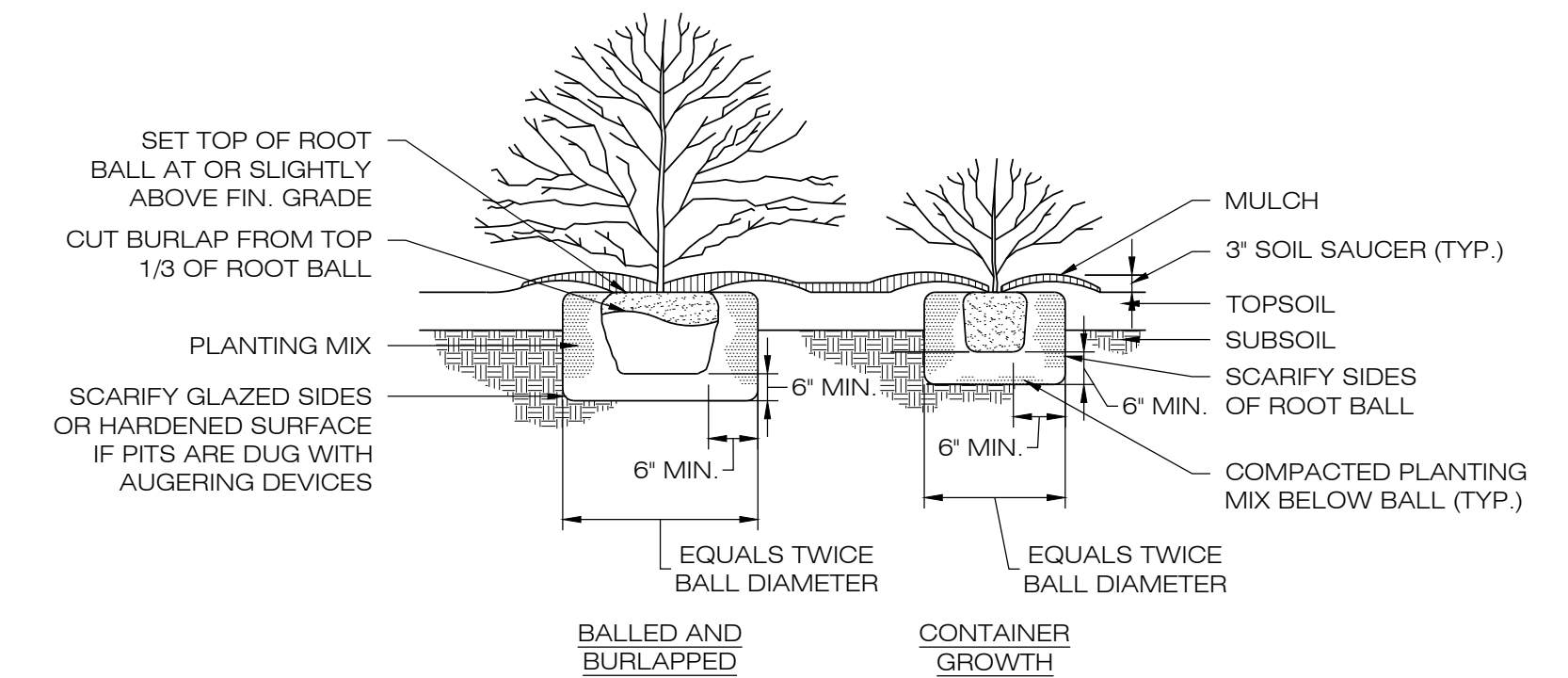
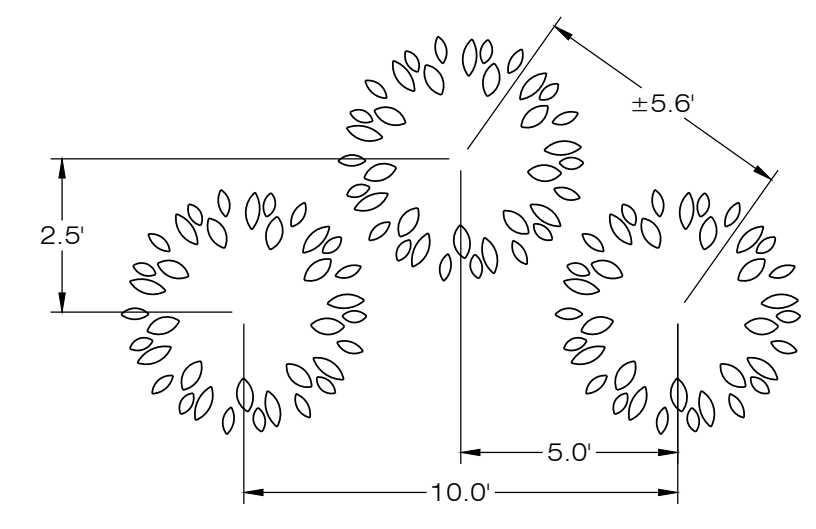
100.00 % **Mix Price/lb Bulk: \$120.90**

Seeding Rate: 5-10 lb per acre with 20 lb per acre of a cover crop (grain oats, Jan 1-Aug 1; grain rye, Aug 1-Jan 1)

Pollinator Favorites; Uplands & Meadows

Contains the showiest native forbs common in the Northeast. Excellent for wildlife food and shelter, including pollinators. Mix formulations are subject to change without notice depending on the availability of existing and new products. While the formula may change, the guiding philosophy and function of the mix will not.

7 SEMI-SHADE MIX
DN-1 SCALE: N.T.S.



NOTES:
IN AREAS OF MASS PLANTINGS, CONTINUOUSLY EXCAVATE AND MULCH ENTIRE BED..

8 TYPICAL PLANTING DETAIL
DN-1 SCALE: N.T.S.

WATERTOWN SOLAR ONE, LLC
150 TRUMBULL STREET
4TH FLOOR
HARTFORD, CT, 06103



567 VAUXHAUL STREET EXTENSION - SUITE 311
WATERFORD, CT 06385 PHONE: (860)-663-1697
WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

APPROVED FOR CONSTRUCTION

NO	DATE	REVISION
0	12/30/20	D&M PLANS: BJP
1		
2		
3		
4		
5		
6		

DESIGN PROFESSIONAL OF RECORD

PROF: BRADLEY J. PARSONS, P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION
ADD: 567 VAUXHAUL STREET
EXTENSION - SUITE 311
WATERFORD, CT 06385

OWNER: CATHOLIC CEMETERIES
ADDRESS: 669 PLATT ROAD
WATERTOWN, CT 06795

WATERTOWN SOLAR ONE, LLC

SITE: HINMAN ROAD & PLATT ROAD
ADDRESS: WATERTOWN, CT 06795

APT FILING NUMBER: CT590240

DATE: 12/30/20 DRAWN BY: CSH
CHECKED BY: BJP

SITE DETAILS

SHEET NUMBER: **DN-1**

APPROVED FOR CONSTRUCTION

NO	DATE	REVISION
0	12/30/20	D&M PLANS: BJP
1		
2		
3		
4		
5		
6		

DESIGN PROFESSIONAL OF RECORD

PROF. BRADLEY J. PARSONS P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION
ADD: 567 VAUXHAUL STREET
EXTENSION - SUITE 311
WATERFORD, CT 06385

OWNER: CATHOLIC CEMETERIES
ADDRESS: 669 PLATT ROAD
WATERTOWN, CT 06795

WATERTOWN SOLAR ONE, LLC

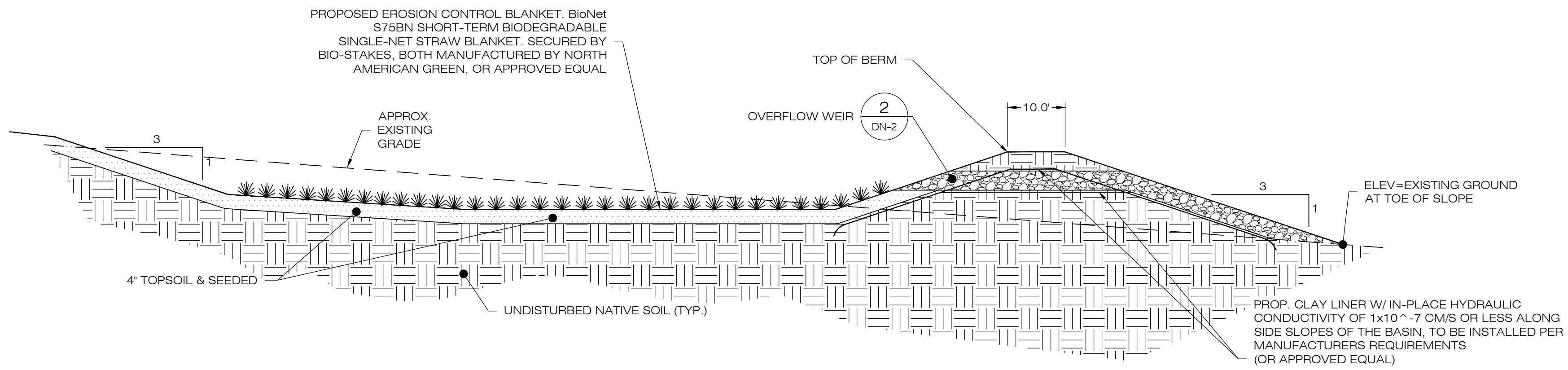
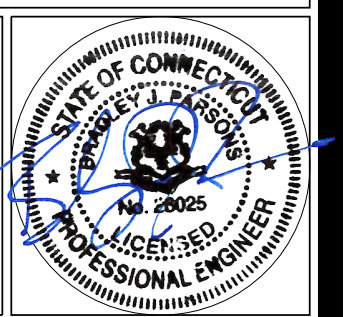
SITE HINMAN ROAD & PLATT ROAD
ADDRESS: WATERTOWN, CT 06795

APT FILING NUMBER: CT590240

DATE: 12/30/20 **DRAWN BY: CSH**
CHECKED BY: BJP

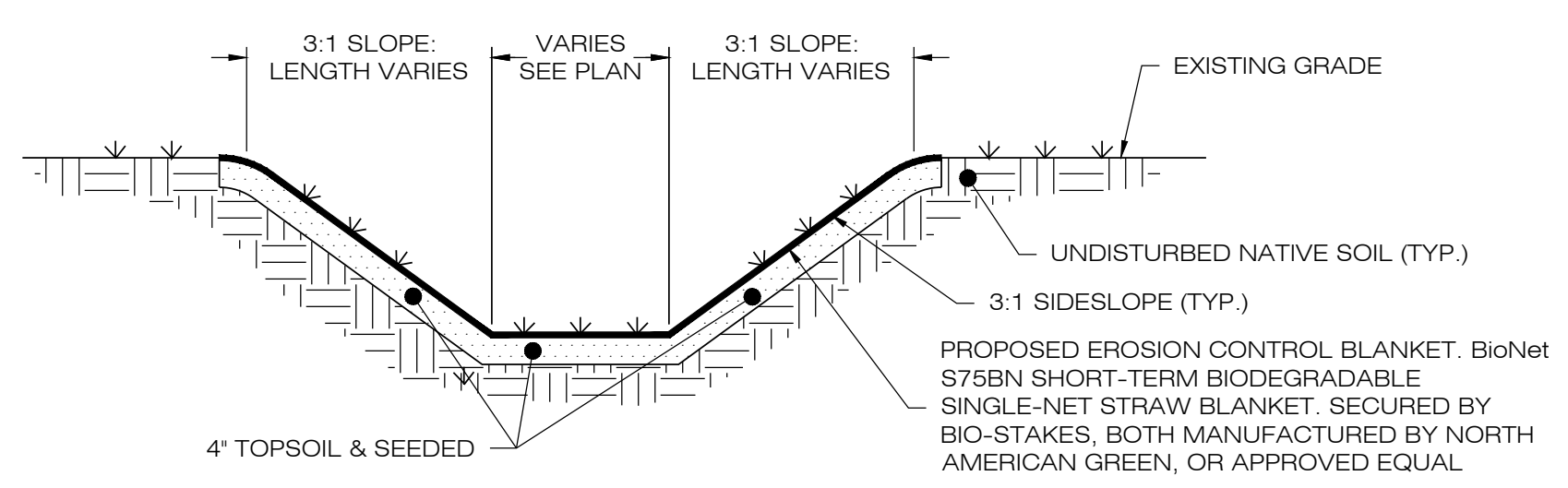
SHEET TITLE:
SITE DETAILS

SHEET NUMBER:
DN-2



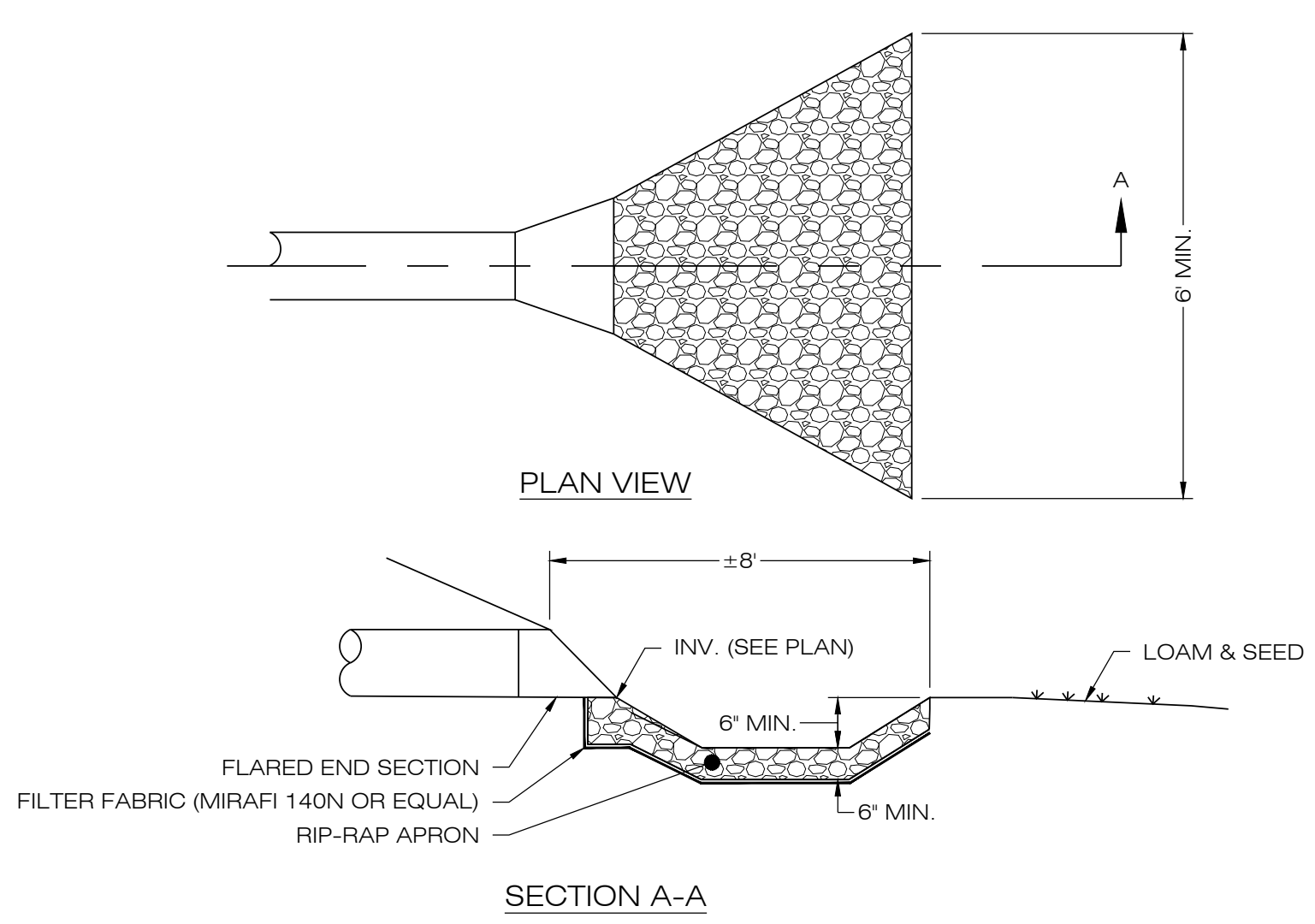
- NOTES:**
- SEED MIX TO BE NEW ENGLAND EROSION CONTROL/ RESTORATION MIX FOR MOIST SITES ON THE BOTTOM OF THE BASIN AND NEW ENGLAND EROSION/RESTORATION MIX FOR DRY SITES ON THE SIDE SLOPES.
 - FOR CONVERTING TSB TO INFILTRATION BASIN, REMOVE BAFFLES, CLEAN OUT SEDIMENT, RESHAPE AS REQUIRED.
 - INSPECT AND CLEAN PIPES.

1 GRASS LINED BASIN
 DN-2 SCALE: N.T.S.



- NOTES:**
- SEED MIX TO BE NEW ENGLAND EROSION CONTROL/ RESTORATION MIX FOR MOIST SITES ON THE BOTTOM OF THE BASIN AND NEW ENGLAND EROSION/RESTORATION MIX FOR DRY SITES ON THE SIDE SLOPES.

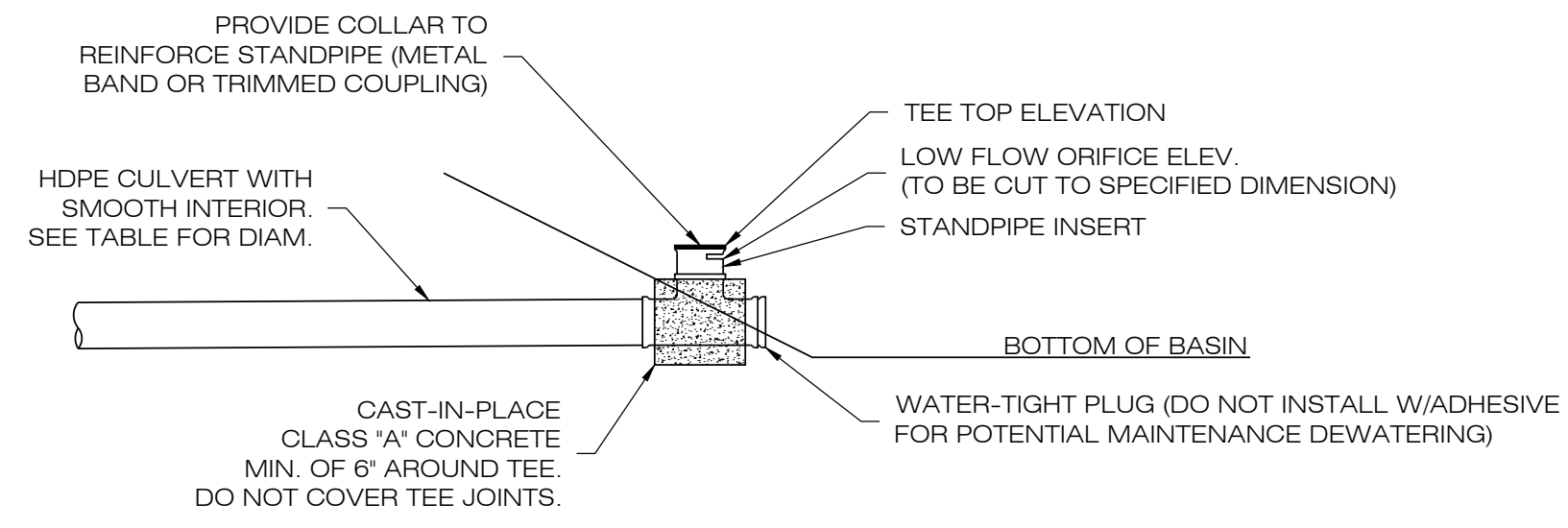
3 GRASS LINED SWALE
 DN-2 SCALE: N.T.S.



6 FLARED END SECTION/PLUNGE POOL
 DN-2 SCALE: N.T.S.

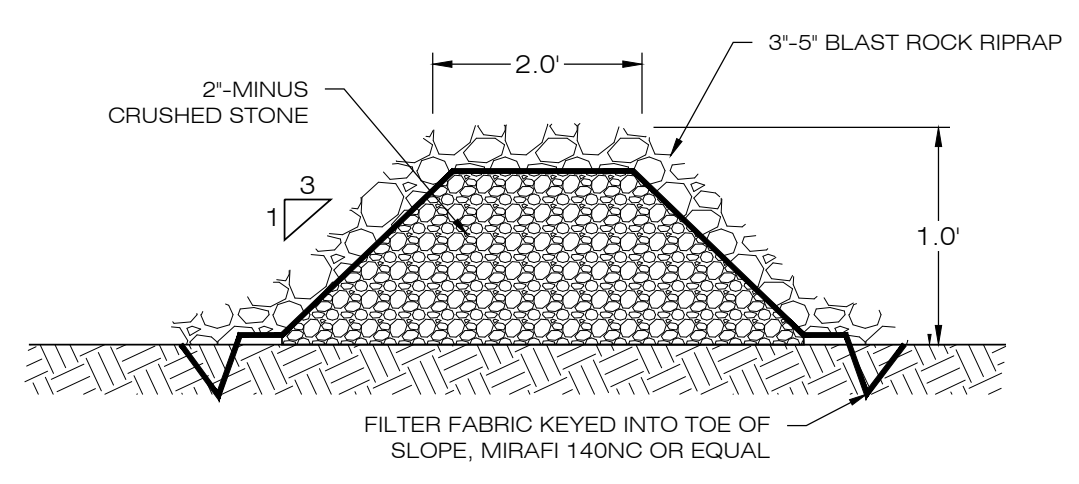
HDPE OUTLET RISER SIZING TABLE

BASIN	TEE TOP ELEV. (FT)	LOW FLOW ORIFICE ELEV. (FT)	LOW FLOW ORIFICE DIMENSION (FT)	OUTLET PIPE SIZE (IN.)	OUTLET PIPE LENGTH (FT)	OUTLET PIPE SLOPE (%)	OUTLET PIPE INV. ELEV. AT STRUCTURE (FT)	OUTLET PIPE INV. AT OUTFALL (FT)
B-3	778.60	777.70	WIDTH = 12.0' HEIGHT = 3.0'	12	37.0	1.35	776.50	776.00



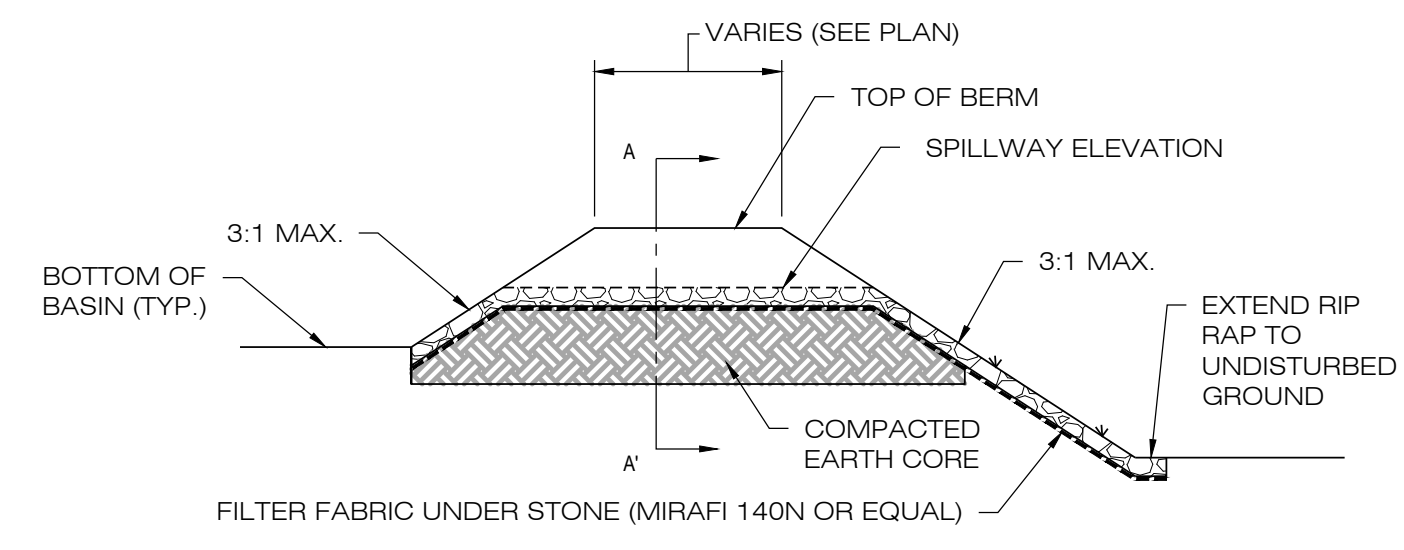
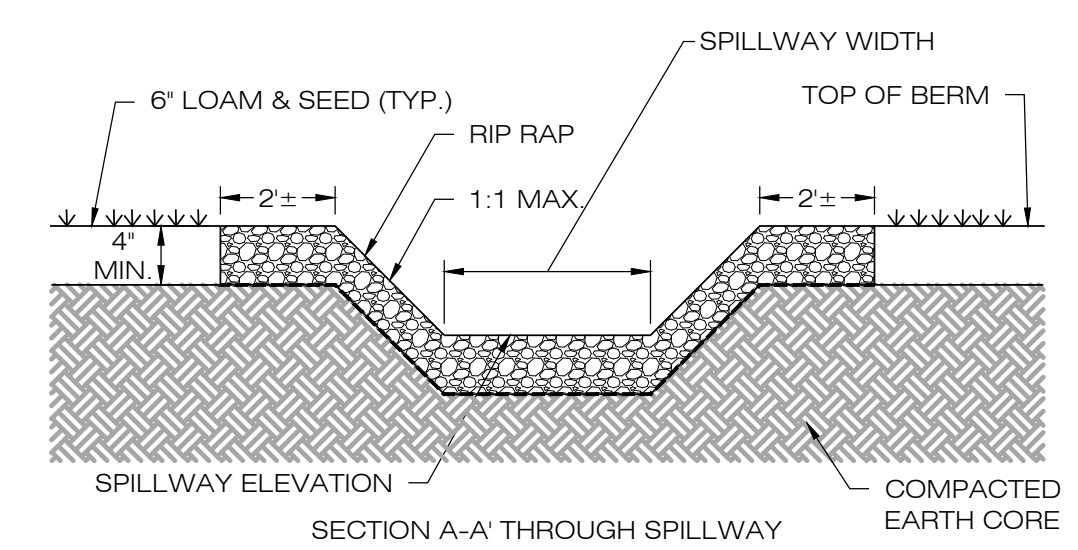
- NOTES:**
- TEE TO BE ADS ADVANEDGE (TM) FABRICATED TEE OR APPROVED EQUAL. CONTRACTOR TO MODIFY TEE AS NEEDED.

4 OUTLET RISER
 DN-2 SCALE: N.T.S.

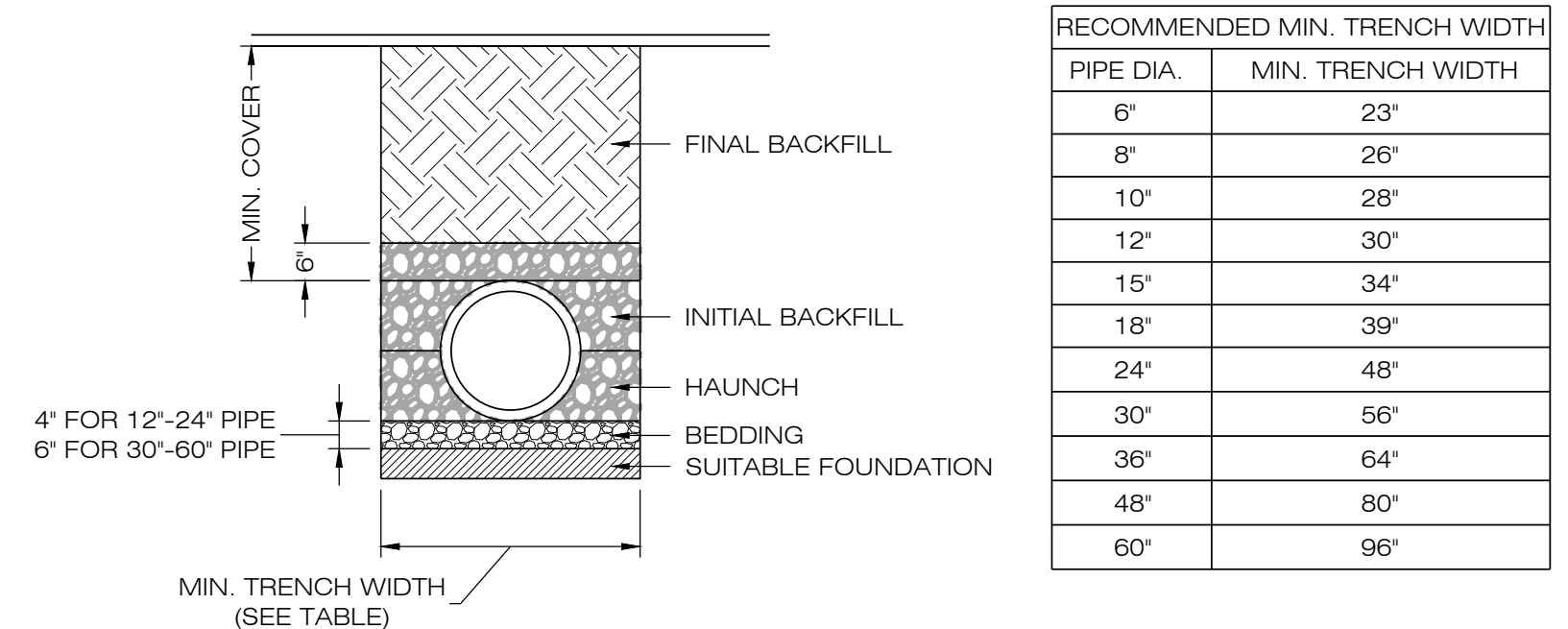


- NOTES:**
- STONE SHALL BE PLACED MECHANICALLY OR BY HAND. STONE SHALL NOT BE DUMPED DIRECTLY INTO FOREBAY. SEE GRADING AND DRAINAGE PLAN.

7 STONE CHECK DAM
 DN-2 SCALE: N.T.S.



2 OVERFLOW WEIR DETAIL
 DN-2 SCALE: N.T.S.



RECOMMENDED MIN. TRENCH WIDTH

PIPE DIA.	MIN. TRENCH WIDTH
6"	23"
8"	26"
10"	28"
12"	30"
15"	34"
18"	39"
24"	48"
30"	56"
36"	64"
48"	80"
60"	96"

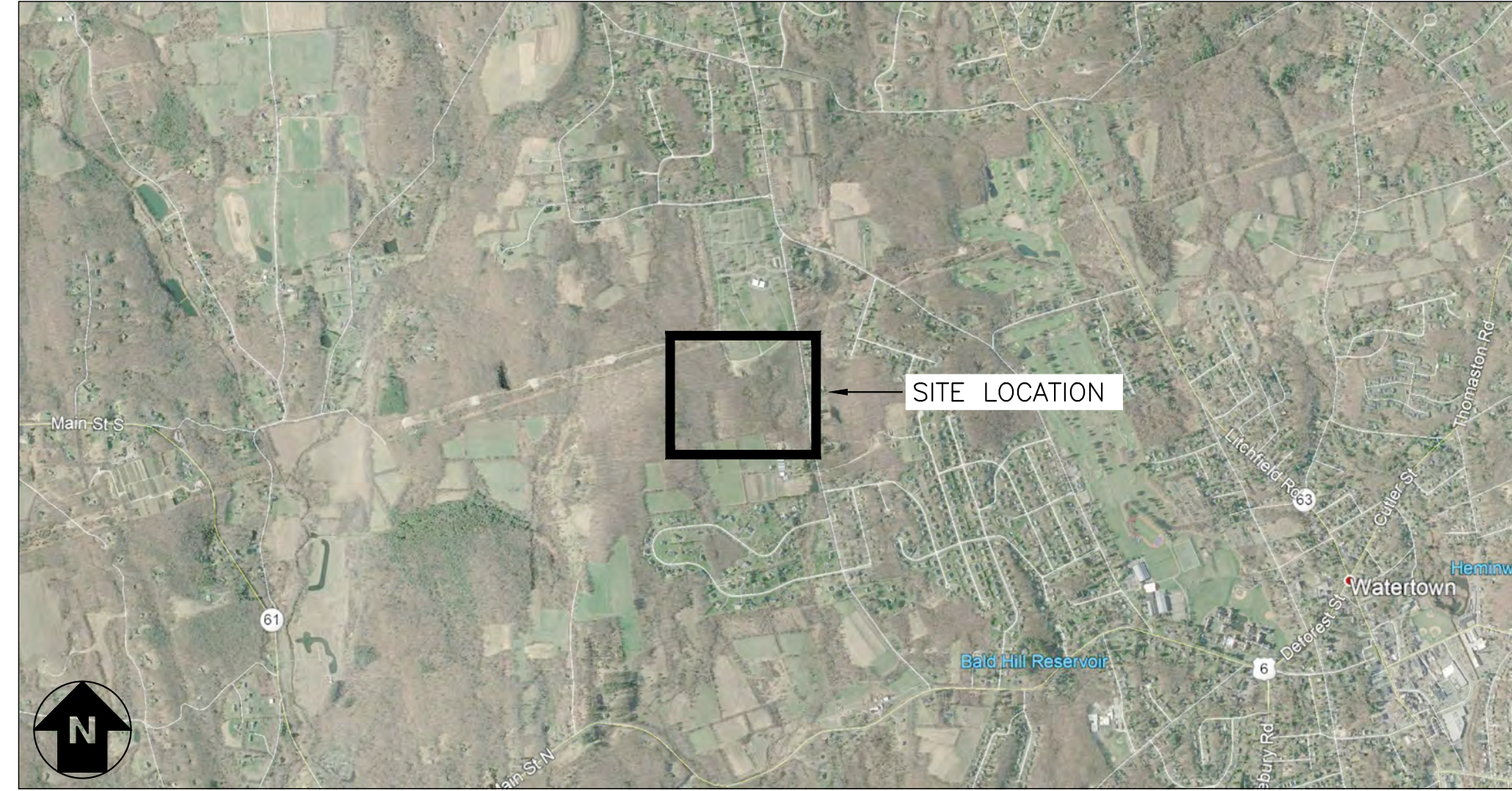
- NOTES:**
- ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST ADDITION.
 - MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.
 - FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.
 - BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100mm-600mm); 6" (150mm) FOR 30"-60" (750mm-900mm).
 - INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III IN THE PIPE ZONE EXTENDING NOT LESS THAN 6' ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.
 - MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOATATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" UP TO 48" DIAMETER PIPE AND 24" OF COVER FOR 54"-60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.

5 HDPE STORM DRAINAGE TRENCH DETAIL
 DN-2 SCALE: N.T.S.

EXHIBIT B

RULER IN INCHES: 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

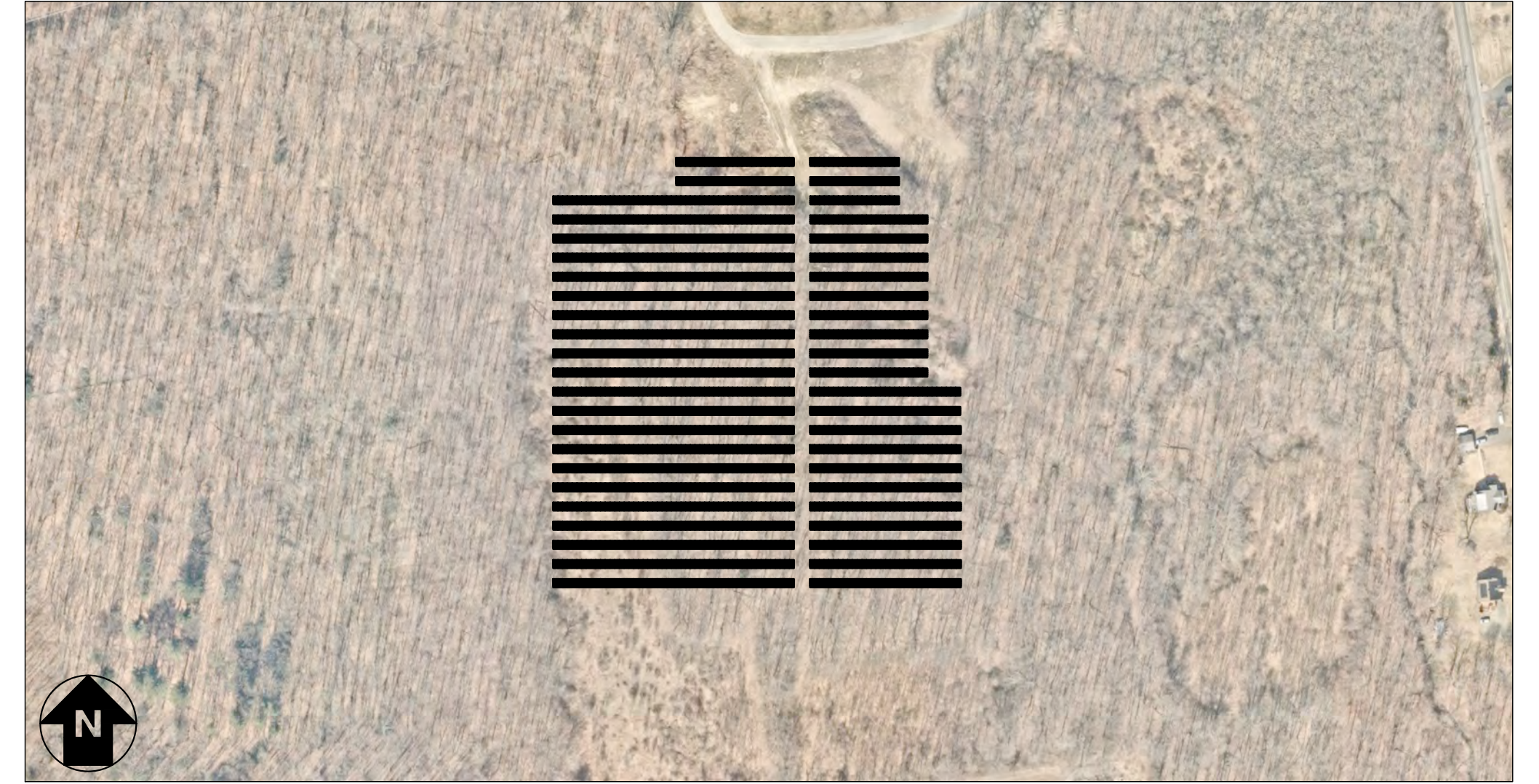
2,779.92 KW SOLAR GROUND MOUNT SYSTEM AT WATERTOWN SOLAR ONE 669 PLATT ROAD, WATERTOWN, CONNECTICUT 06795



LOCATION MAP
SCALE: 1" = 2000'-0"



BIRDS-EYE VIEW FROM SOUTH
SCALE: 1" = 300'-0"



SYSTEM PLAN
SCALE: 1" = 200'-0"

TOTAL SYSTEM SUMMARY:

TOTAL DC SYSTEM SIZE: 2,779.92 kWDC
 AC SYSTEM SIZE: 1,975.00 kWAC

MODULE MANUFACTURER: TRINA SOLAR
 MODULE MODEL: TSM-DEG15MC.20(II) 400W
 MODULES PER STRING: 26
 MODULE QUANTITY: 5,616
 STRING QUANTITY: 216

MODULE MANUFACTURER: RISEN SOLAR TECHNOLOGY
 MODULE MODEL: RSM144-6-380BMDG 380W
 MODULES PER STRING: 26
 MODULE QUANTITY: 1,404
 STRING QUANTITY: 54

MODULE TILT: 30°
 MODULE AZIMUTH: 180°

INVERTER MANUFACTURER: SOLECTRIA RENEWABLES
 INVERTER MODEL: XGI 1500-125/125
 INVERTER QUANTITY: 15

INVERTER MANUFACTURER: CHINT POWER SYSTEMS
 INVERTER MODEL: CPS SCH100KTL-DO/US-600
 INVERTER QUANTITY: 1

SCOPE OF WORK SUMMARY

GROUND MOUNT PV ARRAY:
 INSTALL SOLAR MODULES AND RACKING SYSTEM ON GROUND LEVEL. INSTALL INVERTERS
 AND ELECTRICAL DISTRIBUTION EQUIPMENT TO INTERCONNECT AT LOCAL UTILITY
 DISTRIBUTION LINES

DEVELOPER:



150 TRUMBULL ST, 4TH FLOOR
 HARTFORD, CT 06103

ENGINEERED BY:



5 MARINE VIEW PLAZA, SUITE 301
 HOBOKEN, NEW JERSEY, 07030

DRAWING INDEX

GENERAL	30% CONCEPTUAL DESIGN	30% CONCEPTUAL DESIGN	90% DESIGN DEVELOPMENT	90% DESIGN DEVELOPMENT	ISSUE FOR PERMIT
G001 TITLE SHEET	●	●	●	●	●
G200 ARRAY PLAN	●	●	●	●	●
ELECTRICAL					
E001 ELECTRICAL NOTES & SYMBOL LIST			●	○	
E100 OVERALL ELECTRICAL PLAN			●	●	
E110 EQUIPMENT AREA PLAN & ELEVATION PLAN			●	●	
E120 EQUIPMENT MOUNTING DETAILS IN ARRAY			●	○	
E130 POLE LINE DETAILS			●	○	
E200 DC ELECTRICAL PLAN - NORTH			●	●	
E201 DC ELECTRICAL PLAN - SOUTH			●	●	
E210 PV MODULES & WIRING DETAILS			●	●	
E300 ONE LINE DIAGRAM	●	●	●	●	
E301 RELAY AND PROTECTION SETTINGS	●	●	●	○	
E310 SCHEDULES & CALCULATIONS			●	●	
E311 SCHEDULES & CALCULATIONS			●	●	
E401 GROUNDING DETAILS			●	○	
E402 ELECTRICAL DETAILS			●	○	
E500 LABELS & SIGNAGE			●	●	
E600 EQUIPMENT DATA SHEETS			●	○	
E601 EQUIPMENT DATA SHEETS			●	○	

LEGEND:

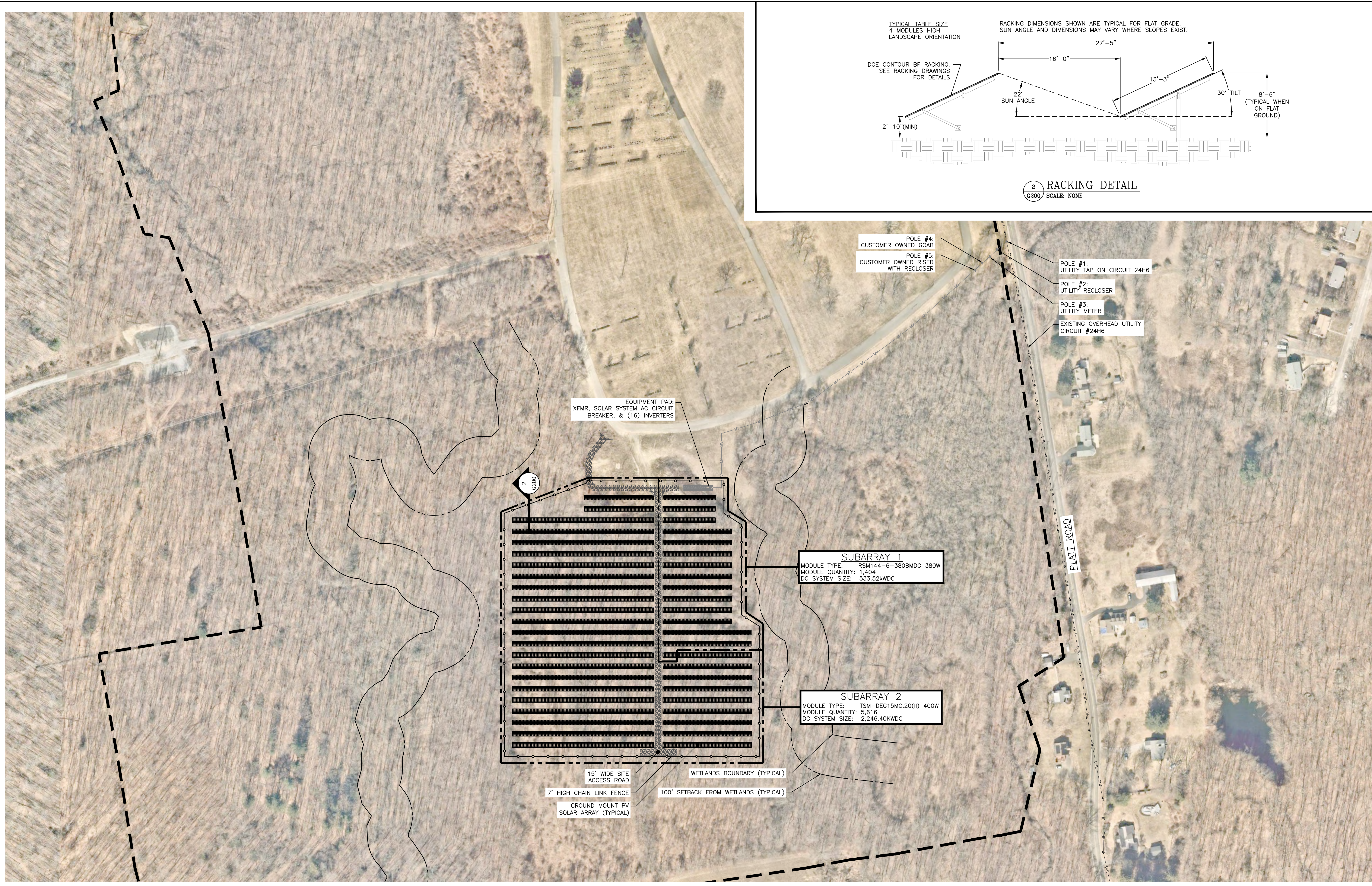
UPDATED DRAWING ISSUED	●
UNCHANGED, PREVIOUSLY ISSUED DRAWING STILL CURRENT	○
DRAWING REMOVED FROM SET	x

DRAWING TITLE: TITLE SHEET

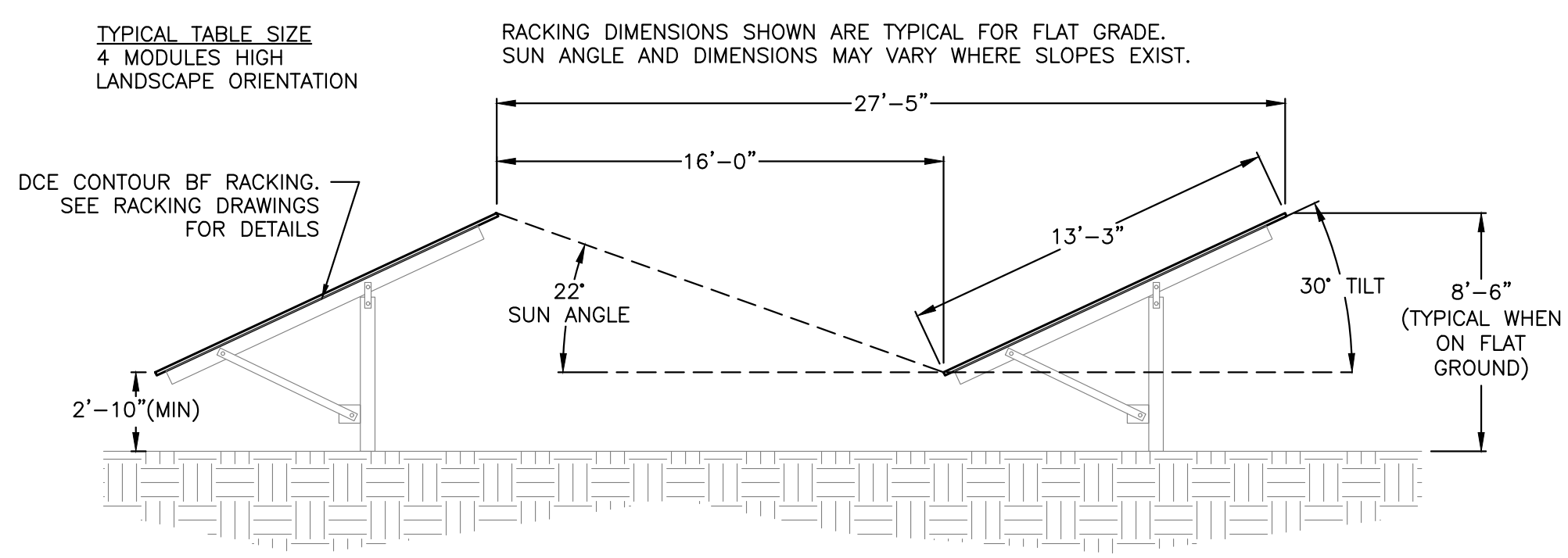
DRAWING #: G001

PROJECT: SOLAR GROUND MOUNT SYSTEM AT WATERTOWN SOLAR ONE
 669 PLATT ROAD
 WATERTOWN, CONNECTICUT 06795
 DC SYSTEM POWER: 2,779.92 kW
 AC SYSTEM POWER: 1,975.00 kW
 MODULE TYPE: 400W/380W
 MODULE QUANTITY: 5,616/1,404
 STRING QUANTITY: 216/54
 ORIENTATION: 30° TILT, 180° AZIMUTH
 DEVELOPER: VEROGY
 150 TRUMBULL ST, 4TH FLOOR
 HARTFORD, CT 06103
 WWW.VEROGY.COM
 VEROGY LICENSE NO. 00166
 PROJECT # 00166
 PAGE SIZE 36" x 24"
 REVISION DESCRIPTION: 30% CONCEPTUAL DESIGN, 90% DESIGN DEVELOPMENT, ISSUE FOR PERMIT, 30% CONCEPTUAL DESIGN
 DATE: 12/15/2020, 09/22/2020, 07/20/2020, 09/22/2020, 12/15/2020
 PUREPOWER ENGINEERING
 5 MARINE VIEW PLAZA, SUITE 301
 HOBOKEN, NJ 07030
 WWW.PUREPOWER.COM
 RICHARD A. VONN
 CT LICENSE NO. 00329282

RULER IN INCHES: 0 1/2 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18



1 OVERALL ARRAY PLAN
 G200 SCALE: 1" = 100'-0"

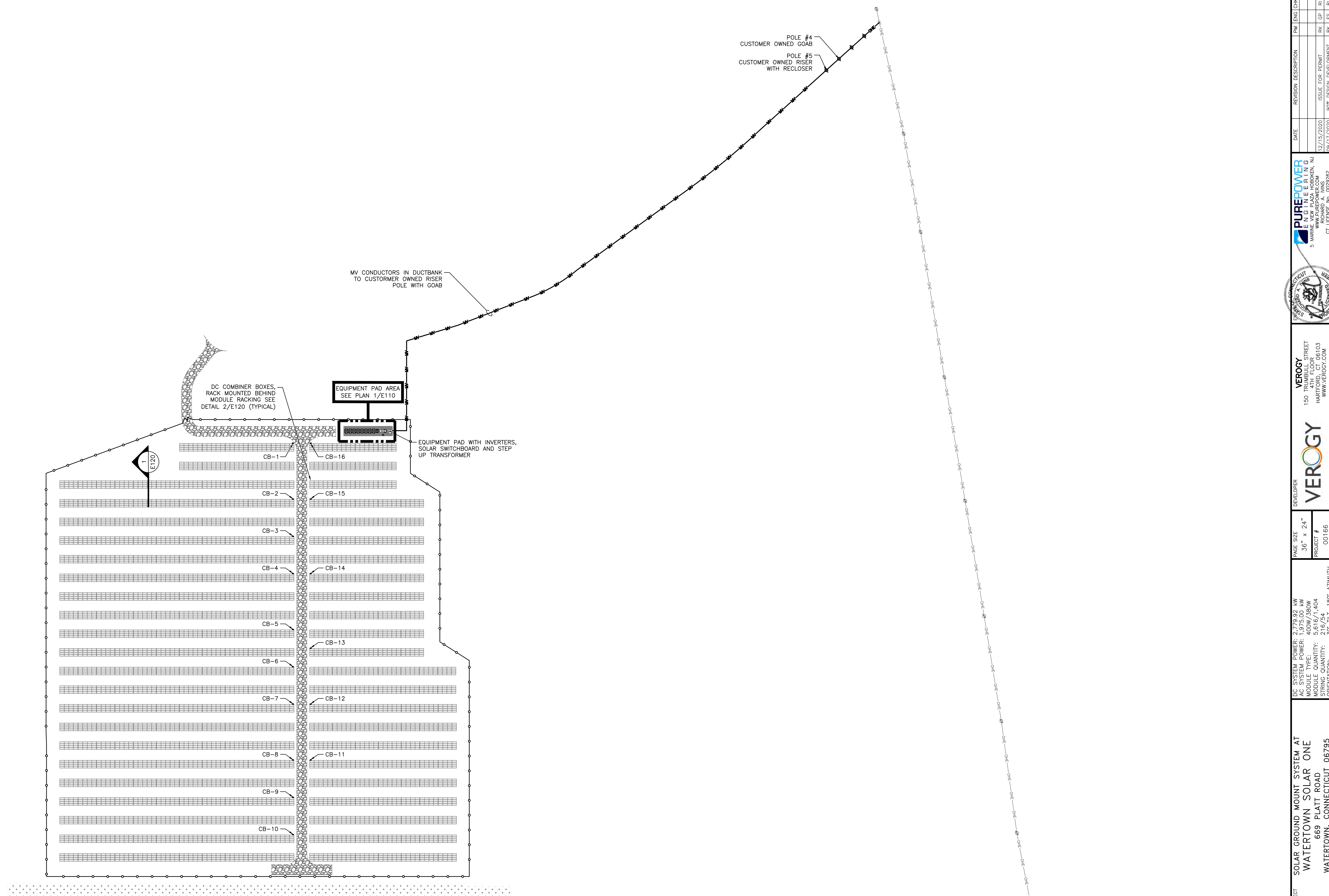


2 RACKING DETAIL
 G200 SCALE: NONE

PURE POWER 5 MARINE VIEW PLAZA - HARTFORD, CT WWW.PUREPOWER.COM RICHARD A. WILSON CT LICENSE NO. 03629282	REVISION DESCRIPTION ISSUE FOR PERMIT 90% DESIGN DEVELOPMENT 30% DESIGN - REV. 1 30% CONCEPTUAL DESIGN	DATE 12/15/2020 09/17/2020 07/10/2020 05/20/2020	PM ENG CHK RI RI RI RI RI	
	PROJECT SOLAR GROUND MOUNT SYSTEM AT WATERTOWN SOLAR ONE 669 PLATT ROAD WATERTOWN, CONNECTICUT 06795	DEVELOPER VEROGY 150 PLATT STREET 4TH FLOOR HARTFORD, CT 06103 WWW.VEROGY.COM	DC SYSTEM POWER: 2,779.92 kW AC SYSTEM POWER: 1,975.00 kW MODULE TYPE: 400W/380W MODULE QUANTITY: 5,616/1,404 STRING QUANTITY: 216/54 ORIENTATION: 30° TILT, 180° AZIMUTH	PAGE SIZE 3.6" x 24"
	PROJECT # 00166	PROJECT # 00166	PROJECT # 00166	PROJECT # 00166
	DRAWING TITLE OVERALL ARRAY PLAN	DRAWING # G200	DRAWING # G200	DRAWING # G200

RULER IN INCHES: 0 1/2 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

PLOT DATE: 12/14/2020 5:46 PM



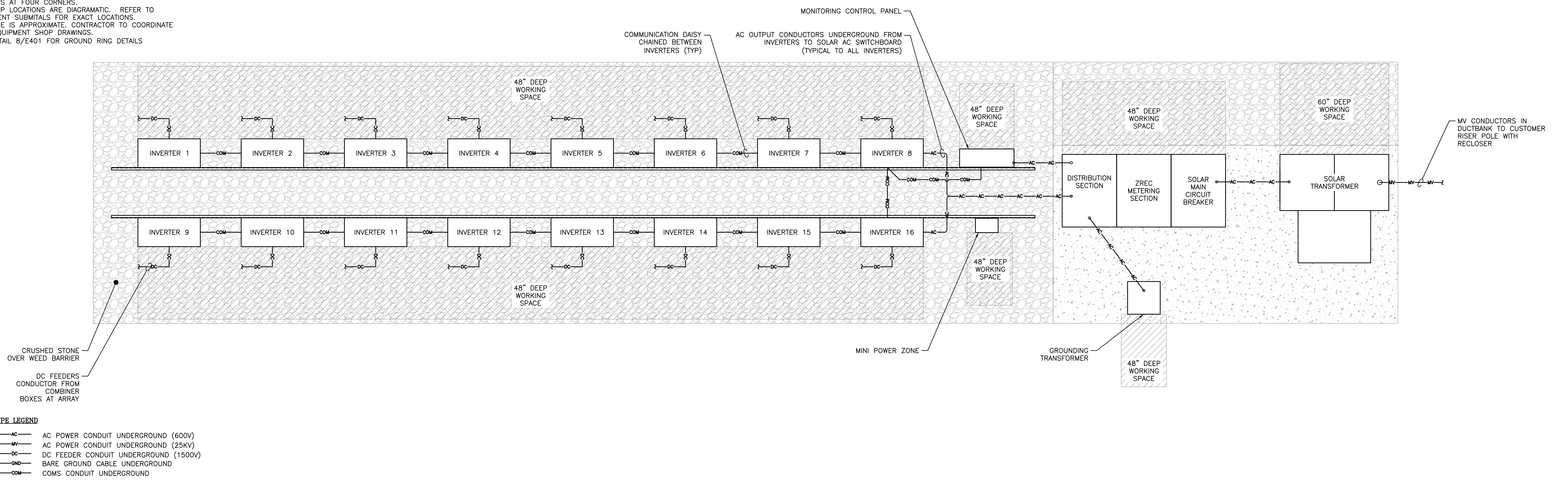
1 OVERALL ELECTRICAL PLAN
 E100 SCALE: 1" = 50'-0"

DRAWING TITLE	DRAWING #
OVERALL ELECTRICAL PLAN	E100

<p>VEROGY 150 HARTFORD STREET HARTFORD, CT 06103 WWW.VEROGY.COM</p>	<p>PUREPOWER 5 MARINE VIEW PLAZA - HOBOKEN, NJ WWW.PUREPOWER.COM LICENSED A. VINSON CT LICENSE NO. 03029282</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>DATE</th> <th>REVISION DESCRIPTION</th> <th>PM</th> <th>ENG</th> <th>CHK</th> </tr> <tr> <td>12/15/2020</td> <td>ISSUE FOR PERMIT</td> <td>RK</td> <td>CP</td> <td>RI</td> </tr> <tr> <td>02/17/2020</td> <td>90% DESIGN DEVELOPMENT</td> <td>RK</td> <td>ES</td> <td>TR</td> </tr> </table>	DATE	REVISION DESCRIPTION	PM	ENG	CHK	12/15/2020	ISSUE FOR PERMIT	RK	CP	RI	02/17/2020	90% DESIGN DEVELOPMENT	RK	ES	TR
DATE	REVISION DESCRIPTION	PM	ENG	CHK													
12/15/2020	ISSUE FOR PERMIT	RK	CP	RI													
02/17/2020	90% DESIGN DEVELOPMENT	RK	ES	TR													
<p>DC SYSTEM POWER: 2,779.92 kW AC SYSTEM POWER: 1,975.00 kW MODULE TYPE: 400W/380W MODULE QUANTITY: 5,616/1,404 STRING QUANTITY: 216/54 ORIENTATION: 30° TILT, 180° AZIMUTH</p>		<p>DEVELOPER VEROGY</p>															
<p>PROJECT SOLAR GROUND MOUNT SYSTEM AT WATERTOWN SOLAR ONE 669 PLATT ROAD WATERTOWN, CONNECTICUT 06795</p>		<p>PAGE SIZE 36" x 24" PROJECT # 00166</p>															

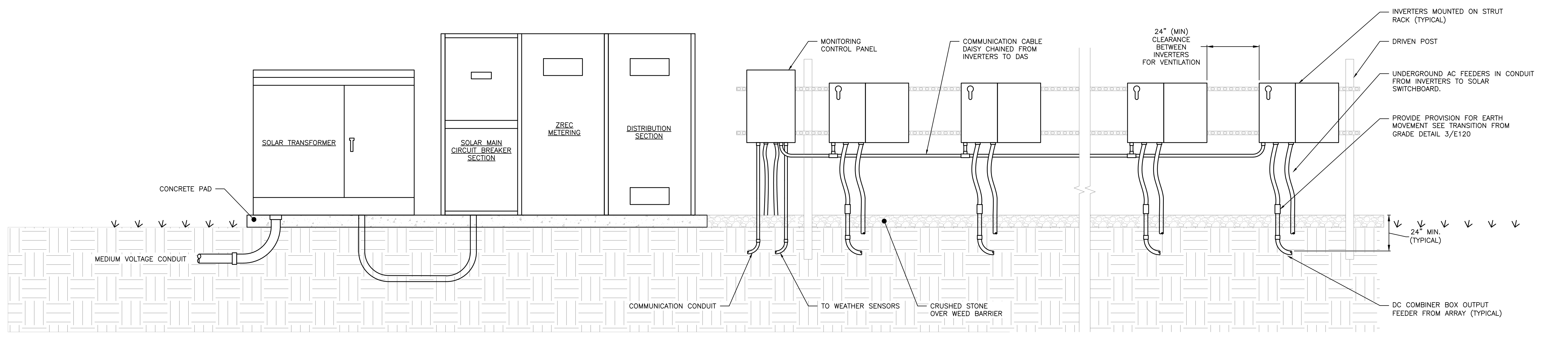
PLOT DATE: 12/14/2020 5:46 PM
 RULER IN INCHES: 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

- NOTES:
- ALL PAD MOUNTED EQUIPMENT SHALL BE BOLTED AND SECURED TO EQUIPMENT PAD WITH SUITABLE CONCRETE ANCHORS AT FOUR CORNERS.
 - STUB-UP LOCATIONS ARE DIAGRAMATIC. REFER TO EQUIPMENT SUBMITALS FOR EXACT LOCATIONS.
 - PAD SIZE IS APPROXIMATE. CONTRACTOR TO COORDINATE WITH EQUIPMENT SHOP DRAWINGS.
 - SEE DETAIL 8/E401 FOR GROUND RING DETAILS



- LINETYPE LEGEND**
- AC-AC AC POWER CONDUIT UNDERGROUND (600V)
 - MV-MV AC POWER CONDUIT UNDERGROUND (25KV)
 - DC-DC DC FEEDER CONDUIT UNDERGROUND (1500V)
 - GND-GND BARE GROUND CABLE UNDERGROUND
 - COM-COM COMS CONDUIT UNDERGROUND

1 EQUIPMENT AREA PLAN
 E110 SCALE: 3/8" = 1'-0"



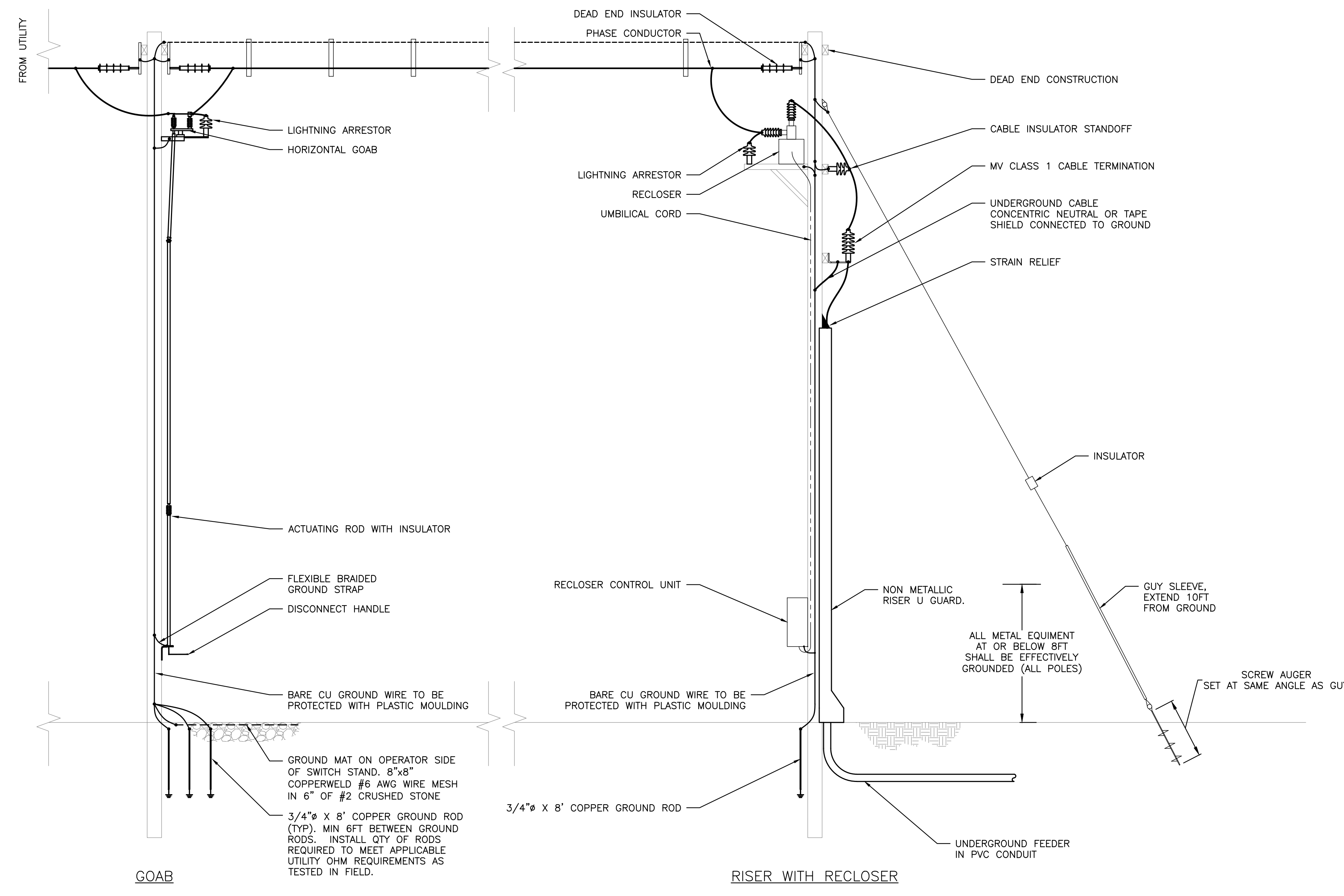
2 TYPICAL ELECTRICAL EQUIPMENT AREA ELEVATION
 E110 SCALE: 1/2" = 1'-0"

DRAWING TITLE		DRAWING #	
EQUIPMENT AREA PLAN & ELEVATION PLAN		E110	

PROJECT: SOLAR GROUND MOUNT SYSTEM AT WATERTOWN SOLAR ONE, 669 PLATT ROAD, WATERTOWN, CONNECTICUT 06795
 DEVELOPER: VEROGY, 150 HARTFORD STREET, 4TH FLOOR, HARTFORD, CT 06103, WWW.VEROGY.COM
 PAGE SIZE: 36" x 24", PROJECT #: 00166
 DC SYSTEM POWER: 2,779.92 kW, AC SYSTEM POWER: 1,975.00 kW, MODULE TYPE: 400W/380W, MODULE QUANTITY: 5,616/1,404, STRING QUANTITY: 216/54, ORIENTATION: 30° TILT, -180° AZIMUTH
 REVISION DESCRIPTION: DATE
 ISSUE FOR PERMIT: 12/15/2020
 90% DESIGN DEVELOPMENT: 09/17/2020
 PURE POWER ENERGY SOLUTIONS, INC., 5 MARINE VIEW PLAZA, HARTFORD, CT 06183, WWW.PUREPOWER.COM, RICHARD A. WILSON, LICENSE NO. 03029262, CT LICENSE NO. 03029262

RULER IN INCHES: 0 1/2 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

PLOT DATE: 12/14/2020 5:47 PM



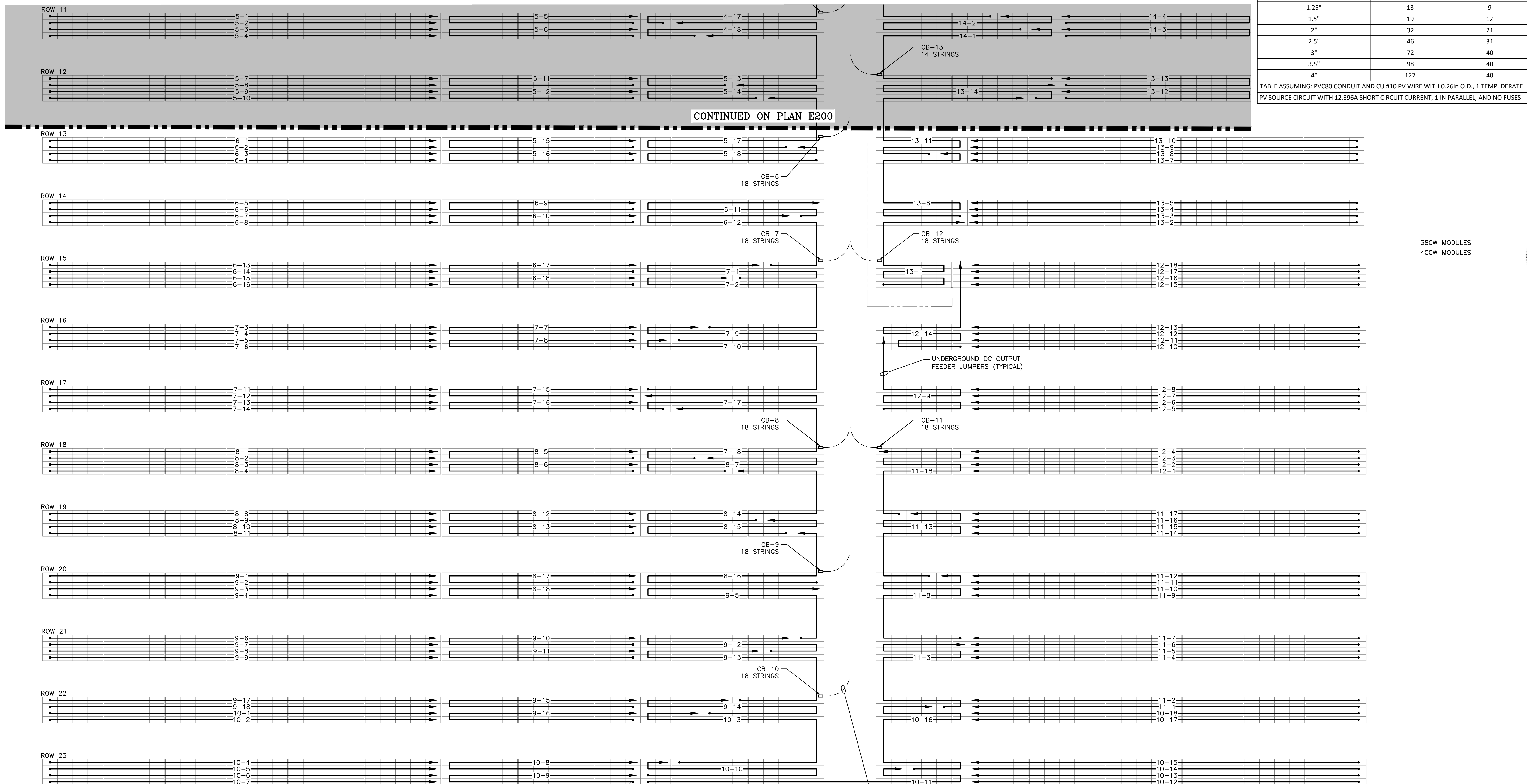
1 POLE LINE DETAILS
E130 SCALE: NONE

DRAWING TITLE	DRAWING #
POLE LINE DETAILS	E130

PURE POWER ENGINEERING 5 MARINE VIEW PLAZA - HARTFORD, CT WWW.PUREPOWER.COM LICENSED A. VINCENT CT LICENSE NO. 03029282	DATE	REVISION DESCRIPTION	PM / ENG / CHK
	09/17/2020	90% DESIGN DEVELOPMENT	RK ES RJ
VEROGY 150 WASHINGTON STREET 4TH FLOOR HARTFORD, CT 06103 WWW.VEROGY.COM	PAGE SIZE	PROJECT #	DEVELOPER
	3.6" x 24"	00166	VEROGY
DC SYSTEM POWER: 2,779.92 kW AC SYSTEM POWER: 1,975.00 kW MODULE TYPE: 400W/380W MODULE QUANTITY: 5,616/1,404 STRING QUANTITY: 216/54 ORIENTATION: 30° TILT, 180° AZIMUTH	PROJECT SOLAR GROUND MOUNT SYSTEM AT WATERTOWN SOLAR ONE 669 PLATT ROAD WATERTOWN, CONNECTICUT 06795	DC SYSTEM POWER: 2,779.92 kW AC SYSTEM POWER: 1,975.00 kW MODULE TYPE: 400W/380W MODULE QUANTITY: 5,616/1,404 STRING QUANTITY: 216/54 ORIENTATION: 30° TILT, 180° AZIMUTH	PROJECT SOLAR GROUND MOUNT SYSTEM AT WATERTOWN SOLAR ONE 669 PLATT ROAD WATERTOWN, CONNECTICUT 06795

PLOT DATE: 12/14/2020 5:47 PM

RULER IN INCHES:



CONDUIT FILL TABLE		
MAXIMUM NUMBER OF CU #10 WIRES (PV WIRE + GROUND)		
CONDUIT TRADE SIZE	CONDUIT LENGTH 24" OR LESS (60% FILL)	CONDUIT LENGTH OVER 24" (40% FILL)
3/4"	4	3
1"	7	5
1.25"	13	9
1.5"	19	12
2"	32	21
2.5"	46	31
3"	72	40
3.5"	98	40
4"	127	40

TABLE ASSUMING: PVC80 CONDUIT AND CU #10 PV WIRE WITH 0.26in O.D., 1 TEMP. DERATE
PV SOURCE CIRCUIT WITH 12.396A SHORT CIRCUIT CURRENT, 1 IN PARALLEL, AND NO FUSES

DATE: 12/15/2020

ISSUE FOR PERMIT

DATE: 09/18/2020

80% DESIGN DEVELOPMENT

REVISION DESCRIPTION

PM LENG CHK

PROJECT: SOLAR GROUND MOUNT SYSTEM AT WATERTOWN SOLAR ONE, 669 PLATT ROAD, WATERTOWN, CONNECTICUT 06795

DC SYSTEM POWER: 2,779.92 kW
AC SYSTEM POWER: 1,975.00 kW
MODULE TYPE: 400W/380W
MODULE QUANTITY: 5,616/1,404
STRING QUANTITY: 216/54
ORIENTATION: 30° TILT, 180° AZIMUTH

DEVELOPER: VEROGY
150 HARTFORD STREET
HARTFORD, CT 06103
WWW.VEROGY.COM

PAGE SIZE: 36" x 24"

PROJECT #: 00166

VEROGY
150 HARTFORD STREET
HARTFORD, CT 06103
WWW.VEROGY.COM

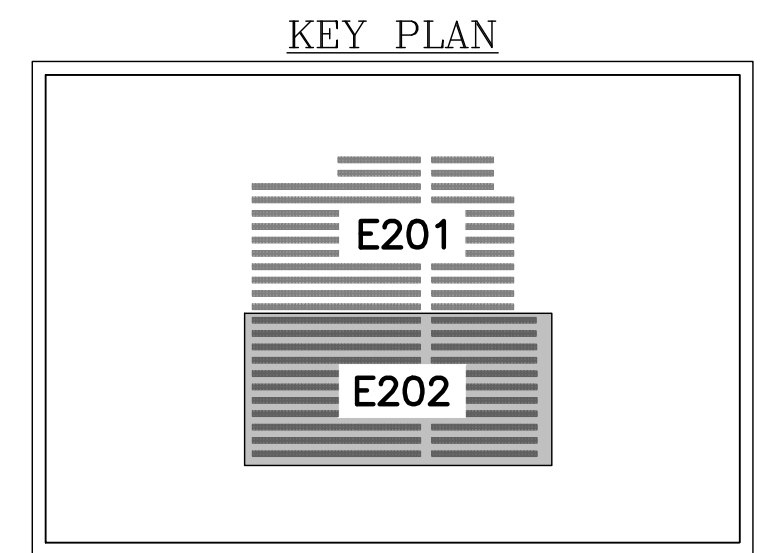
PURE POWER ENERGY SOLUTIONS
5 MARINE VIEW PLAZA, HOBOKEN, NJ
WWW.PUREPOWER.COM

CT LICENSE NO. 03029282

IMPORTANT
CONTRACTOR MUST REDLINE DRAWINGS TO REFLECT EXACT AS-BUILT STRINGING AND RETURN TO PURE POWER.

1 DC ELECTRICAL PLAN - SOUTH
E201 SCALE: 1" = 10'-0"

STRING LABEL KEY
2-3 STRING #
INVERTER/COMBINER BOX #



DRAWING TITLE	DRAWING #
DC ELECTRICAL PLAN SOUTH	E201

RULER IN INCHES: 0 1/2 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

PLOT DATE: 12/14/2020 5:47 PM

PROJECT: SOLAR GROUND MOUNT SYSTEM AT WATERTOWN SOLAR ONE
 669 PLATT ROAD
 WATERTOWN, CONNECTICUT 06795

INVERTER INTERNAL PROTECTIVE SETTINGS: UL1741-SA COMPLIANT					
ANSI ELEMENT #	Pickup	Units*	Level	Total Clear Time (sec)	Description
27-1	304.8	V	88%	2.00	Slow UV
27-2	173.2	V	50%	1.10	Fast UV
59-1	381.1	V	110%	2.00	Slow OV
59-2	415.7	V	120%	0.16	Fast OV
81U-1	56.50	Hz	94%	0.16	Fast UF
81U-2	58.50	Hz	98%	300.00	Slow UF
81O-1	62.00	Hz	103%	0.16	Fast OF
81O-2	61.20	Hz	102%	300.00	Slow OF
79	329.1	V	95%	300.00	Min Reclosing Voltage Value
79	363.7	V	105%	300.00	Max Reclosing Voltage Value
79	59.5	Hz	99%	300.00	Min Reclosing Frequency Value
79	60.5	Hz	101%	300.00	Max Reclosing Frequency Value
INVERTER INTERNAL OPERATION SETTINGS					
PF Set Point	1.00				Power Factor Control
Var Control	OFF				Reactive Power Control
Ramp Rate	10%/1 sec				dkw / dt
Freq Control	OFF				Speed Control

* voltages based off 346.4V Line to Neutral

1 INVERTER SETTINGS
 E301 SCALE: NONE

EXTERNAL RELAY SETTINGS								
ANSI ELEMENT #	Pickup	Real	Units	Level	Delay (sec)	Total Clear Time (sec)*	Curve	Description
27-1	60.96	7010	V	88%	1.95	2.00		Slow UV
27-2	34.64	3984	V	50%	1.05	1.10		Fast UV
59-1	76.21	8764	V	110%	1.95	2.00		Slow OV
59-2	83.13	9560	V	120%	0.11	0.16		Fast OV
81U-1	56.50	56.50	Hz	94%	0.11	0.16		Fast UF
81U-2	58.50	58.50	Hz	98%	299.95	300.00		Slow UF
81O-1	62.00	62.00	Hz	103%	0.11	0.16		Fast OF
81O-2	61.20	61.20	Hz	102%	299.95	300.00		Slow OF
79	65.81	7568	V	95%	299.95	300.00		Min Reclosing Voltage Value
79	72.74	8365	V	105%	299.95	300.00		Max Reclosing Voltage Value
79	59.50	59.50	Hz	99%	299.95	300.00		Min Reclosing Frequency Value
79	60.50	60.50	Hz	101%	299.95	300.00		Max Reclosing Frequency Value
83.67A USED FOR 50/51 ELEMENTS				7967.4V USED FOR 27/59 ELEMENTS				
CT RATIO FACTOR = 100				PT RATIO FACTOR = 115				
* total clear time includes 0.05 sec breaker opening time								

2 MV RELAY SETTINGS
 E301 SCALE: NONE

DC SYSTEM POWER: 2,779.92 kW
 AC SYSTEM POWER: 1,975.00 kW
 MODULE TYPE: 400W/380W
 MODULE QUANTITY: 5,616/1,404
 STRING QUANTITY: 216/54
 ORIENTATION: 30° TILT, -180° AZIMUTH

PROJECT: SOLAR GROUND MOUNT SYSTEM AT WATERTOWN SOLAR ONE
 669 PLATT ROAD
 WATERTOWN, CONNECTICUT 06795

DEVELOPER: VEROGY
 150 TOWN CENTER STREET
 4TH FLOOR
 HARTFORD, CT 06103
 WWW.VEROGY.COM

PAGE SIZE: 36" x 24"
 PROJECT #: 00166

DATE: 08/18/2020
 REVISION DESCRIPTION: 30% DESIGN - REV. 2
 DATE: 08/18/2020
 REVISION DESCRIPTION: 30% DESIGN - REV. 2

VEROGY
 150 TOWN CENTER STREET
 4TH FLOOR
 HARTFORD, CT 06103
 WWW.VEROGY.COM

PURE POWER
 5 MARINE VIEW PLAZA - HOBOKEN, NJ
 WWW.PUREPOWER.COM
 RICHARD A. VONN
 CT LICENSE NO. 00392862

RULER IN INCHES: 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

AC FEEDER CALCULATIONS

EQUIPMENT SUPPLIED	FED FROM	VOLTAGE	FULL LOAD AMPS 'FLA'	FLA x 1.25	OCPD SIZE	GROUND SIZE	CONDUCTORS PER PHASE	PHASE CONDUCTOR SIZE	NEUTRAL CONDUCTOR SIZE	75° AMPACITY	90° AMPACITY	90° AMPACITY WITH C.O.U.	C.O.U. DERATE AMBIENT TEMP	C.O.U. DERATE CONDUIT FILL	FEEDER LENGTH (FEET)	SEGMENT VOLTAGE DROP AT FLA	TOTAL VOLTAGE DROP AT FLA
SOLAR AC SWITCHBOARD	SOLAR TRANSFORMER	600	1896.2	2370.0	2500	CU #2 SSB	9	AL 500MCM	AL 500MCM	2790	3150	3150	1.00	1.00	20	0.05%	0.05%
INVERTER 1	SOLAR AC SWITCHBOARD	600	120.0	150.0	150	CU #4	1	CU #3/0	CU #3/0	200	225	225	1.00	1.00	55	0.15%	0.21%
INVERTER 2	SOLAR AC SWITCHBOARD	600	120.0	150.0	150	CU #4	1	CU #3/0	CU #3/0	200	225	225	1.00	1.00	50	0.14%	0.19%
INVERTER 3	SOLAR AC SWITCHBOARD	600	120.0	150.0	150	CU #4	1	CU #3/0	CU #3/0	200	225	225	1.00	1.00	45	0.12%	0.18%
INVERTER 4	SOLAR AC SWITCHBOARD	600	120.0	150.0	150	CU #4	1	CU #3/0	CU #3/0	200	225	225	1.00	1.00	40	0.11%	0.16%
INVERTER 5	SOLAR AC SWITCHBOARD	600	120.0	150.0	150	CU #4	1	CU #3/0	CU #3/0	200	225	225	1.00	1.00	35	0.10%	0.15%
INVERTER 6	SOLAR AC SWITCHBOARD	600	120.0	150.0	150	CU #4	1	CU #3/0	CU #3/0	200	225	225	1.00	1.00	30	0.08%	0.14%
INVERTER 7	SOLAR AC SWITCHBOARD	600	120.0	150.0	150	CU #4	1	CU #3/0	CU #3/0	200	225	225	1.00	1.00	25	0.07%	0.12%
INVERTER 8	SOLAR AC SWITCHBOARD	600	120.0	150.0	150	CU #4	1	CU #3/0	CU #3/0	200	225	225	1.00	1.00	20	0.05%	0.11%
INVERTER 9	SOLAR AC SWITCHBOARD	600	120.0	150.0	150	CU #4	1	CU #3/0	CU #3/0	200	225	225	1.00	1.00	55	0.15%	0.21%
INVERTER 10	SOLAR AC SWITCHBOARD	600	120.0	150.0	150	CU #4	1	CU #3/0	CU #3/0	200	225	225	1.00	1.00	50	0.14%	0.19%
INVERTER 11	SOLAR AC SWITCHBOARD	600	120.0	150.0	150	CU #4	1	CU #3/0	CU #3/0	200	225	225	1.00	1.00	45	0.12%	0.18%
INVERTER 12	SOLAR AC SWITCHBOARD	600	120.0	150.0	150	CU #4	1	CU #3/0	CU #3/0	200	225	225	1.00	1.00	40	0.11%	0.16%
INVERTER 13	SOLAR AC SWITCHBOARD	600	120.0	150.0	150	CU #4	1	CU #3/0	CU #3/0	200	225	225	1.00	1.00	35	0.10%	0.15%
INVERTER 14	SOLAR AC SWITCHBOARD	600	120.0	150.0	150	CU #4	1	CU #3/0	CU #3/0	200	225	225	1.00	1.00	30	0.08%	0.14%
INVERTER 15	SOLAR AC SWITCHBOARD	600	120.0	150.0	150	CU #4	1	CU #3/0	CU #3/0	200	225	225	1.00	1.00	25	0.07%	0.12%
INVERTER 16	SOLAR AC SWITCHBOARD	600	96.2	120.0	125	CU #4	1	CU #2/0	CU #2/0	175	195	195	1.00	1.00	20	0.06%	0.11%

AVERAGE AC VOLTAGE DROP FROM POI TO INVERTERS: 0.16%

MODULE SPECIFICATIONS	
MAKE/MODEL	RISEN TDS RSM144-6-380BMDG
POWER [W]	380
ISC [A]	12.12
IMP [A]	11.40
VOC [V]	48.00
VMP [V]	40.05
β VOC [%/degC]	-0.290%
SITE CLIMATE CRITERIA	
ASHRAE HIGH [°C]	30
ASHRAE LOW [°C]	-19
STRING SPECIFICATIONS AT STC	
MODULES/STRING	26
POWER [W]	9880
STRING ISC [A]	12.12
STRING IMP [A]	11.40
STRING VMP [V]	1041.30
STRING MAX VOLTAGE CALCULATION	
VOC TEMP ADJUSTMENT @ -19 °C	1.1276
VOC @ -19 °C [V]	54.12
MAX STRING VOC [V]	1407.2

DC STRING WIRING CALCULATION	
STRING ISC [AMPS]	12.12
MAXIMUM CIRCUIT CURRENT [AMPS]	15.15
1.25x MAX CIRCUIT CURRENT [AMPS]	18.94
MAX # OF WIRES PER CONDUIT	40
CONDUIT FILL DERATE	0.4
MAX AMBIENT TEMPERATURE	30
TEMPERATURE DERATE	1.00
WIRE GAUGE	CU #10
75DEG AMPACITY WITHOUT COU ADJUSTMENT [AMPS]	35
IS 75 DEG AMPACITY WITHOUT COU ADJUSTMENT >= 1.25x MAX CIRCUIT CURRENT?	YES. COMPLIES WITH 690.8(B)(1)
90DEG AMPACITY WITH COU ADJUSTMENT [AMPS]	16
IS 90DEG AMPACITY WITH COU ADJUSTMENT >= 1.0x MAX CIRCUIT CURRENT?	YES. COMPLIES WITH 690.8(B)(2)
PV SOURCE CIRCUIT FUSE RATING [AMPS]	None
AVAILABLE FAULT CURRENT FROM ALL PARALLEL SOURCES [AMPS]	15.15
IS 90DEG AMPACITY WITH COU ADJUSTMENT >= AVAILABLE FAULT CURRENT?	YES. COMPLIES WITH 690.9(A) EXCEPTION

MODULE SPECIFICATIONS	
MAKE/MODEL	TSM-DEG15.MC20(I)
POWER [W]	400
ISC [A]	12.40
IMP [A]	11.77
VOC [V]	48.90
VMP [V]	40.80
β VOC [%/degC]	-0.250%
SITE CLIMATE CRITERIA	
ASHRAE HIGH [°C]	30
ASHRAE LOW [°C]	-19
STRING SPECIFICATIONS AT STC	
MODULES/STRING	26
POWER [W]	10400
STRING ISC [A]	12.40
STRING IMP [A]	11.77
STRING VMP [V]	1060.80
STRING MAX VOLTAGE CALCULATION	
VOC TEMP ADJUSTMENT @ -19 °C	1.1100
VOC @ -19 °C [V]	54.28
MAX STRING VOC [V]	1411.3

DC STRING WIRING CALCULATION	
STRING ISC [AMPS]	12.40
MAXIMUM CIRCUIT CURRENT [AMPS]	15.50
1.25x MAX CIRCUIT CURRENT [AMPS]	19.37
MAX # OF WIRES PER CONDUIT	40
CONDUIT FILL DERATE	0.4
MAX AMBIENT TEMPERATURE	30
TEMPERATURE DERATE	1.00
WIRE GAUGE	CU #10
75DEG AMPACITY WITHOUT COU ADJUSTMENT [AMPS]	35
IS 75 DEG AMPACITY WITHOUT COU ADJUSTMENT >= 1.25x MAX CIRCUIT CURRENT?	YES. COMPLIES WITH 690.8(B)(1)
90DEG AMPACITY WITH COU ADJUSTMENT [AMPS]	16
IS 90DEG AMPACITY WITH COU ADJUSTMENT >= 1.0x MAX CIRCUIT CURRENT?	YES. COMPLIES WITH 690.8(B)(2)
PV SOURCE CIRCUIT FUSE RATING [AMPS]	None
AVAILABLE FAULT CURRENT FROM ALL PARALLEL SOURCES [AMPS]	15.495
IS 90DEG AMPACITY WITH COU ADJUSTMENT >= AVAILABLE FAULT CURRENT?	YES. COMPLIES WITH 690.9(A) EXCEPTION

MV UG CONDUCTOR SPECIFICATIONS	
FULL LOAD AMPS	83.7
CONDUCTOR SIZE	#2
CONDUCTOR MATERIAL	AL
FULL CONDUCTOR SPEC	(3)#2 AL MV-105 FULL CONCENTRIC NEUTRAL 15KV 133% EPR. INCLUDE (1)CU #6G (600V)
NEC TABLE REFERENCE	310.60(C)(78)
CONDUIT, PVC SCH 80	3.5"
VOLTAGE DROP	0.03%
OCPD TYPE	E-RATED FUSE
FUSE AMPACITY	150
COMPLIANT WITH 240.101(A)?	PASS

DC FEEDER CALCULATIONS

COMBINER BOX	CIRCUIT DESCRIPTION			FEEDER SIZING					CONDUCTOR CHECK PER 690.8(B)(1)			CONDUCTOR CHECK PER 690.8(B)(2)			TERMINAL CHECK			OCPD CHECK			VOLTAGE DROP CALCS							
	QTY OF STRINGS	OPERATING VOLTAGE Vmp (V)	STRING SHORT CIRCUIT CURRENT (STRING Isc)	FEEDER SHORT CIRCUIT CURRENT (Isc)	FEEDER MAX CURRENT (Isc x 1.25)	CONDUCTORS PER POLE	CONDUCTOR SIZE	GROUND SIZE	OCPD SIZE	90° AMPACITY	FEEDER CONTINUOUS CURRENT (Isc x 1.25 x 1.25)	PASS?	C.O.U. DERATE AMBIENT TEMP	C.O.U. DERATE CONDUIT FILL	90° AMPACITY WITH C.O.U.	FEEDER MAX CURRENT (Isc x 1.25)	PASS?	75° AMPACITY	FEEDER CONTINUOUS CURRENT (Isc x 1.25 x 1.25)	PASS?	90° AMPACITY WITH C.O.U.	75° AMPACITY	MAX ALLOWABLE OCPD	PASS?	STRING OPERATING CURRENT (STRING Imp)	FEEDER OPERATING CURRENT	FEEDER LENGTH (FT, ONE WAY)	FEEDER VOLTAGE DROP
CB-1	18	1061	12.40	223	279	2	AL #4/0	CU #2	350	410	349	PASS	1	1	410	279	PASS	360	349	PASS	410	360	400	PASS	11.77	211.90	120	0.2%
CB-2	18	1061	12.40	223	279	2	AL #4/0	CU #2	350	410	349	PASS	1	1	410	279	PASS	360	349	PASS	410	360	400	PASS	11.77	211.90	200	0.4%
CB-3	18	1061	12.40	223	279	2	AL #4/0	CU #2	350	410	349	PASS	1	1	410	279	PASS	360	349	PASS	410	360	400	PASS	11.77	211.90	255	0.5%
CB-4	18	1061	12.40	223	279	2	AL #4/0	CU #2	350	410	349	PASS	1	1	410	279	PASS	360	349	PASS	410	360	400	PASS	11.77	211.90	310	0.6%
CB-5	18	1061	12.40	223	279	2	AL #4/0	CU #2	350	410	349	PASS	1	1	410	279	PASS	360	349	PASS	410	360	400	PASS	11.77	211.90	395	0.8%
CB-6	18	1061	12.40	223	279	2	AL #4/0	CU #2	350	410	349	PASS	1	1	410	279	PASS	360	349	PASS	410	360	400	PASS	11.77	211.90	450	0.9%
CB-7	18	1061	12.40	223	279	2	AL #4/0	CU #2	350	410	349	PASS	1	1	410	279	PASS	360	349	PASS	410	360	400	PASS	11.77	211.90	505	1.0%
CB-8	18	1061	12.40	223	279	2	AL 250MCM	CU #2	350	410	349	PASS	1	1	410	279	PASS	360	349	PASS	460	410	450	PASS	11.77	211.90	585	1.0%
CB-9	18	1061	12.40	223	279	2	AL 250MCM	CU #2	350	410	349	PASS	1	1	410	279	PASS	360	349	PASS	460	410	450	PASS	11.77	211.90	640	1.1%
CB-10	18	1061	12.40	223	279	2	AL 250MCM	CU #2	350	410	349	PASS	1	1	410	279	PASS	360	349	PASS	460	410	450	PASS	11.77	211.90	695	1.2%
CB-11	18	1061	12.40	223	279	2	AL #4/0	CU #2	350	410	349	PASS	1	1	410	279	PASS	360	349	PASS	410	360	400	PASS	11.77	211.90	585	1.2%
CB-12	18	1061	12.40	223	279	2	AL #4/0	CU #2	350	410	349	PASS	1	1	410	279	PASS	360	349	PASS	410	360	400	PASS	11.77	211.90	505	1.0%
CB-13	14	1041	12.12	170	212	2	AL #4/0	CU #4	300	410	265	PASS	1	1	410	212	PASS	360	265	PASS	410	360	400	PASS	11.40	159.60	420	0.6%
CB-14	14	1041	12.12	170	212	2	AL #4/0	CU #4	300	410	212	PASS	1	1	410	212	PASS	360	265	PASS	410	360	400	PASS	11.40	159.60	315	0.5%
CB-15	14	1041	12.12	170	212	2	AL #4/0	CU #4	300	410	265	PASS	1	1	410	212	PASS	360	265	PASS	410	360	400	PASS	11.40	159.60	200	0.3%
CB-16	12	1041	12.12	145	182	2	AL #4/0	CU #4	250	410	227	PASS	1	1	410	182	PASS	360	227	PASS	410	360	400	PASS	11.40	136.80	120	0.2%

PROJECT: SOLAR GROUND MOUNT SYSTEM AT WATERTOWN SOLAR ONE 669 PLATT ROAD WATERTOWN, CONNECTICUT 06795

DC SYSTEM POWER: 2,779.92 kW
AC SYSTEM POWER: 1,975.00 kW
MODULE TYPE: 400W/380W
MODULE QUANTITY: 5,616/1,404
STRING QUANTITY: 216/54
ORIENTATION: 30° TILT, 180° AZIMUTH

DEVELOPER: VEROGY
150 PLATT FLOOR 3
HARTFORD, CT 06103
WWW.VEROGY.COM

DESIGNER: VEROGY
150 PLATT FLOOR 3
HARTFORD, CT 06103
WWW.VEROGY.COM

DATE: 12/15/2020
ISSUE FOR PERMIT: 09/17/2020
90% DESIGN DEVELOPMENT: 07/10/2020
30% DESIGN - REV. 1: 06/20/2020
30% CONCEPTUAL DESIGN: 05/20/2020

REVISION DESCRIPTION

DATE

PK | GP | RI

PK | ES | RI

PK | GP | RI

PK | GP | RI

PK | GP | RI

RULER IN INCHES: 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

INVERTERS 1 THRU 4				
STRING NUMBER	STRING TO INVERTER WIRE GAUGE	STRING TO INVERTER IMPEDANCE (Ω/ft)	STRING DISTANCE (FEET)	STRING VOLTAGE DROP
1-1	#10	0.00124	130	0.36%
1-2	#10	0.00124	135	0.37%
1-3	#10	0.00124	45	0.12%
1-4	#10	0.00124	50	0.14%
1-5	#10	0.00124	155	0.43%
1-6	#10	0.00124	160	0.44%
1-7	#10	0.00124	75	0.21%
1-8	#10	0.00124	80	0.22%
1-9	#10	0.00124	315	0.87%
1-10	#10	0.00124	315	0.87%
1-11	#10	0.00124	320	0.88%
1-12	#10	0.00124	325	0.89%
1-13	#10	0.00124	180	0.50%
1-14	#10	0.00124	190	0.52%
1-15	#10	0.00124	100	0.28%
1-16	#10	0.00124	105	0.29%
1-17	#10	0.00124	210	0.58%
1-18	#10	0.00124	130	0.36%
2-1	#10	0.00124	260	0.72%
2-2	#10	0.00124	260	0.72%
2-3	#10	0.00124	265	0.73%
2-4	#10	0.00124	270	0.74%
2-5	#10	0.00124	135	0.37%
2-6	#10	0.00124	70	0.19%
2-7	#10	0.00124	285	0.78%
2-8	#10	0.00124	290	0.80%
2-9	#10	0.00124	295	0.81%
2-10	#10	0.00124	295	0.81%
2-11	#10	0.00124	155	0.43%
2-12	#10	0.00124	160	0.44%
2-13	#10	0.00124	75	0.21%
2-14	#10	0.00124	315	0.87%
2-15	#10	0.00124	180	0.50%
2-16	#10	0.00124	190	0.52%
2-17	#10	0.00124	100	0.28%
2-18	#10	0.00124	105	0.29%
3-1	#10	0.00124	260	0.72%
3-2	#10	0.00124	265	0.73%
3-3	#10	0.00124	270	0.74%
3-4	#10	0.00124	285	0.78%
3-5	#10	0.00124	290	0.80%
3-6	#10	0.00124	295	0.81%
3-7	#10	0.00124	295	0.81%
3-8	#10	0.00124	155	0.43%
3-9	#10	0.00124	160	0.44%
3-10	#10	0.00124	70	0.19%
3-11	#10	0.00124	80	0.22%
3-12	#10	0.00124	315	0.87%
3-13	#10	0.00124	315	0.87%
3-14	#10	0.00124	320	0.88%
3-15	#10	0.00124	325	0.89%
3-16	#10	0.00124	180	0.50%
3-17	#10	0.00124	190	0.52%
3-18	#10	0.00124	100	0.28%
4-1	#10	0.00124	50	0.14%
4-2	#10	0.00124	285	0.78%
4-3	#10	0.00124	290	0.80%
4-4	#10	0.00124	295	0.81%
4-5	#10	0.00124	295	0.81%
4-6	#10	0.00124	155	0.43%
4-7	#10	0.00124	160	0.44%
4-8	#10	0.00124	75	0.21%
4-9	#10	0.00124	80	0.22%
4-10	#10	0.00124	315	0.87%
4-11	#10	0.00124	315	0.87%
4-12	#10	0.00124	320	0.88%
4-13	#10	0.00124	325	0.89%
4-14	#10	0.00124	180	0.50%
4-15	#10	0.00124	190	0.52%
4-16	#10	0.00124	100	0.28%
4-17	#10	0.00124	125	0.34%
4-18	#10	0.00124	130	0.36%

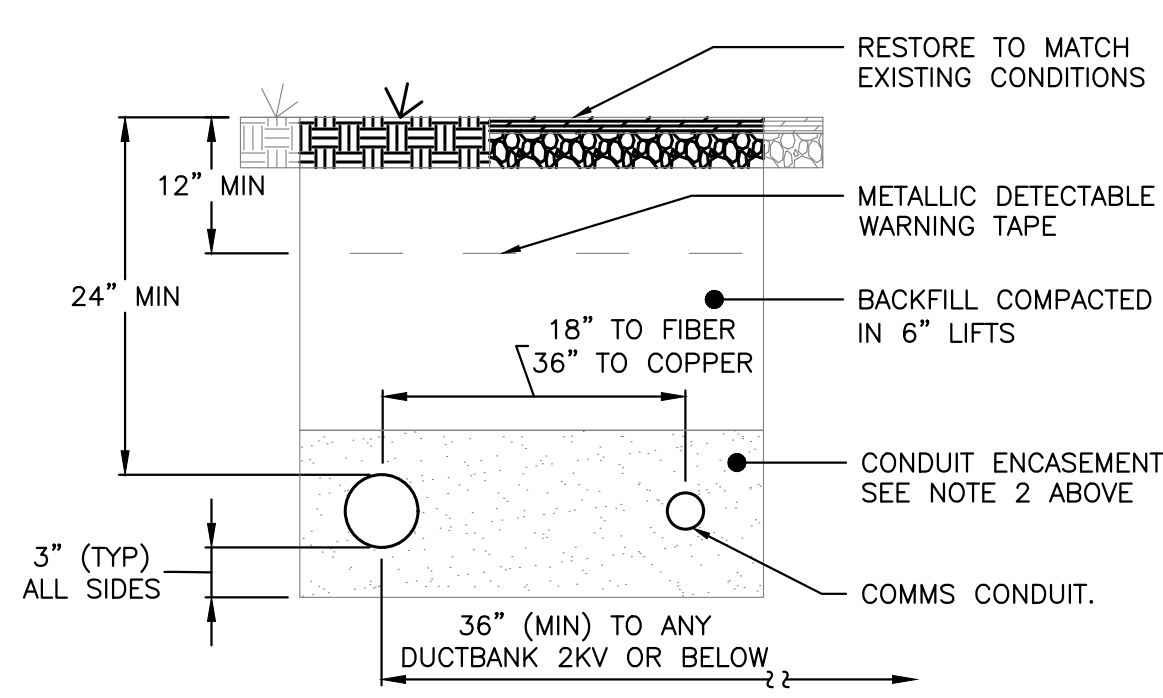
INVERTERS 5 THRU 8				
STRING NUMBER	STRING TO INVERTER WIRE GAUGE	STRING TO INVERTER IMPEDANCE (Ω/ft)	STRING DISTANCE (FEET)	STRING VOLTAGE DROP
5-1	#10	0.00124	260	0.72%
5-2	#10	0.00124	260	0.72%
5-3	#10	0.00124	265	0.73%
5-4	#10	0.00124	270	0.74%
5-5	#10	0.00124	130	0.36%
5-6	#10	0.00124	135	0.37%
5-7	#10	0.00124	285	0.78%
5-8	#10	0.00124	290	0.80%
5-9	#10	0.00124	295	0.81%
5-10	#10	0.00124	295	0.81%
5-11	#10	0.00124	155	0.43%
5-12	#10	0.00124	160	0.44%
5-13	#10	0.00124	70	0.19%
5-14	#10	0.00124	75	0.21%
5-15	#10	0.00124	180	0.50%
5-16	#10	0.00124	190	0.52%
5-17	#10	0.00124	100	0.28%
5-18	#10	0.00124	105	0.29%
6-1	#10	0.00124	260	0.72%
6-2	#10	0.00124	260	0.72%
6-3	#10	0.00124	265	0.73%
6-4	#10	0.00124	270	0.74%
6-5	#10	0.00124	285	0.78%
6-6	#10	0.00124	290	0.80%
6-7	#10	0.00124	295	0.81%
6-8	#10	0.00124	295	0.81%
6-9	#10	0.00124	155	0.43%
6-10	#10	0.00124	160	0.44%
6-11	#10	0.00124	75	0.21%
6-12	#10	0.00124	80	0.22%
6-13	#10	0.00124	315	0.87%
6-14	#10	0.00124	315	0.87%
6-15	#10	0.00124	320	0.88%
6-16	#10	0.00124	325	0.89%
6-17	#10	0.00124	180	0.50%
6-18	#10	0.00124	190	0.52%
7-1	#10	0.00124	45	0.12%
7-2	#10	0.00124	50	0.14%
7-3	#10	0.00124	285	0.78%
7-4	#10	0.00124	290	0.80%
7-5	#10	0.00124	295	0.81%
7-6	#10	0.00124	295	0.81%
7-7	#10	0.00124	155	0.43%
7-8	#10	0.00124	160	0.44%
7-9	#10	0.00124	75	0.21%
7-10	#10	0.00124	80	0.22%
7-11	#10	0.00124	315	0.87%
7-12	#10	0.00124	315	0.87%
7-13	#10	0.00124	320	0.88%
7-14	#10	0.00124	325	0.89%
7-15	#10	0.00124	180	0.50%
7-16	#10	0.00124	190	0.52%
7-17	#10	0.00124	105	0.29%
7-18	#10	0.00124	125	0.34%
8-1	#10	0.00124	260	0.72%
8-2	#10	0.00124	260	0.72%
8-3	#10	0.00124	265	0.73%
8-4	#10	0.00124	270	0.74%
8-5	#10	0.00124	130	0.36%
8-6	#10	0.00124	135	0.37%
8-7	#10	0.00124	50	0.14%
8-8	#10	0.00124	285	0.78%
8-9	#10	0.00124	290	0.80%
8-10	#10	0.00124	295	0.81%
8-11	#10	0.00124	295	0.81%
8-12	#10	0.00124	155	0.43%
8-13	#10	0.00124	160	0.44%
8-14	#10	0.00124	70	0.19%
8-15	#10	0.00124	75	0.21%
8-16	#10	0.00124	100	0.28%
8-17	#10	0.00124	180	0.50%
8-18	#10	0.00124	190	0.52%

INVERTERS 9 THRU 12				
STRING NUMBER	STRING TO INVERTER WIRE GAUGE	STRING TO INVERTER IMPEDANCE (Ω/ft)	STRING DISTANCE (FEET)	STRING VOLTAGE DROP
9-1	#10	0.00124	260	0.72%
9-2	#10	0.00124	260	0.72%
9-3	#10	0.00124	265	0.73%
9-4	#10	0.00124	270	0.74%
9-5	#10	0.00124	50	0.14%
9-6	#10	0.00124	285	0.78%
9-7	#10	0.00124	290	0.80%
9-8	#10	0.00124	295	0.81%
9-9	#10	0.00124	295	0.81%
9-10	#10	0.00124	155	0.43%
9-11	#10	0.00124	160	0.44%
9-12	#10	0.00124	75	0.21%
9-13	#10	0.00124	80	0.22%
9-14	#10	0.00124	100	0.28%
9-15	#10	0.00124	180	0.50%
9-16	#10	0.00124	190	0.52%
9-17	#10	0.00124	315	0.87%
9-18	#10	0.00124	315	0.87%
10-1	#10	0.00124	265	0.73%
10-2	#10	0.00124	270	0.74%
10-3	#10	0.00124	50	0.14%
10-4	#10	0.00124	285	0.78%
10-5	#10	0.00124	290	0.80%
10-6	#10	0.00124	295	0.81%
10-7	#10	0.00124	295	0.81%
10-8	#10	0.00124	155	0.43%
10-9	#10	0.00124	160	0.44%
10-10	#10	0.00124	75	0.21%
10-11	#10	0.00124	85	0.23%
10-12	#10	0.00124	195	0.54%
10-13	#10	0.00124	190	0.52%
10-14	#10	0.00124	185	0.51%
10-15	#10	0.00124	185	0.51%
10-16	#10	0.00124	60	0.17%
10-17	#10	0.00124	165	0.45%
10-18	#10	0.00124	165	0.45%
11-1	#10	0.00124	245	0.67%
11-2	#10	0.00124	240	0.66%
11-3	#10	0.00124	115	0.32%
11-4	#10	0.00124	220	0.61%
11-5	#10	0.00124	220	0.61%
11-6	#10	0.00124	215	0.59%
11-7	#10	0.00124	215	0.59%
11-8	#10	0.00124	85	0.23%
11-9	#10	0.00124	195	0.54%
11-10	#10	0.00124	190	0.52%
11-11	#10	0.00124	190	0.52%
11-12	#10	0.00124	185	0.51%
11-13	#10	0.00124	55	0.15%
11-14	#10	0.00124	165	0.45%
11-15	#10	0.00124	165	0.45%
11-16	#10	0.00124	160	0.44%
11-17	#10	0.00124	160	0.44%
11-18	#10	0.00124	30	0.08%
12-1	#10	0.00124	220	0.61%
12-2	#10	0.00124	220	0.61%
12-3	#10	0.00124	215	0.59%
12-4	#10	0.00124	215	0.59%
12-5	#10	0.00124	195	0.54%
12-6	#10	0.00124	190	0.52%
12-7	#10	0.00124	190	0.52%
12-8	#10	0.00124	185	0.51%
12-9	#10	0.00124	80	0.22%
12-10	#10	0.00124	165	0.45%
12-11	#10	0.00124	165	0.45%
12-12	#10	0.00124	160	0.44%
12-13	#10	0.00124	160	0.44%
12-14	#10	0.00124	55	0.15%
12-15	#10	0.00124	140	0.39%
12-16	#10	0.00124	135	0.37%
12-17	#10	0.00124	135	0.37%
12-18	#10	0.00124	130	0.36%
AVERAGE STRING VOLTAGE DROP				0.54%

INVERTERS 13 THRU 16				
STRING NUMBER	STRING TO INVERTER WIRE GAUGE	STRING TO INVERTER IMPEDANCE (Ω/ft)	STRING DISTANCE (FEET)	STRING VOLTAGE DROP
13-1	#10	0.00124	105	0.29%
13-2	#10	0.00124	195	0.53%
13-3	#10	0.00124	190	0.52%
13-4	#10	0.00124	190	0.52%
13-5	#10	0.00124	185	0.50%
13-6	#10	0.00124	80	0.22%
13-7	#10	0.00124	165	0.45%
13-8	#10	0.00124	165	0.45%
13-9	#10	0.00124	160	0.43%
13-10	#10	0.00124	160	0.43%
13-11	#10	0.00124	50	0.14%
13-12	#10	0.00124	135	0.37%
13-13	#10	0.00124	125	0.34%
13-14	#10	0.00124	50	0.14%
14-1	#10	0.00124	135	0.37%
14-2	#10	0.00124	130	0.35%
14-3	#10	0.00124	215	0.58%
14-4	#10	0.00124	210	0.57%
14-5	#10	0.00124	105</	

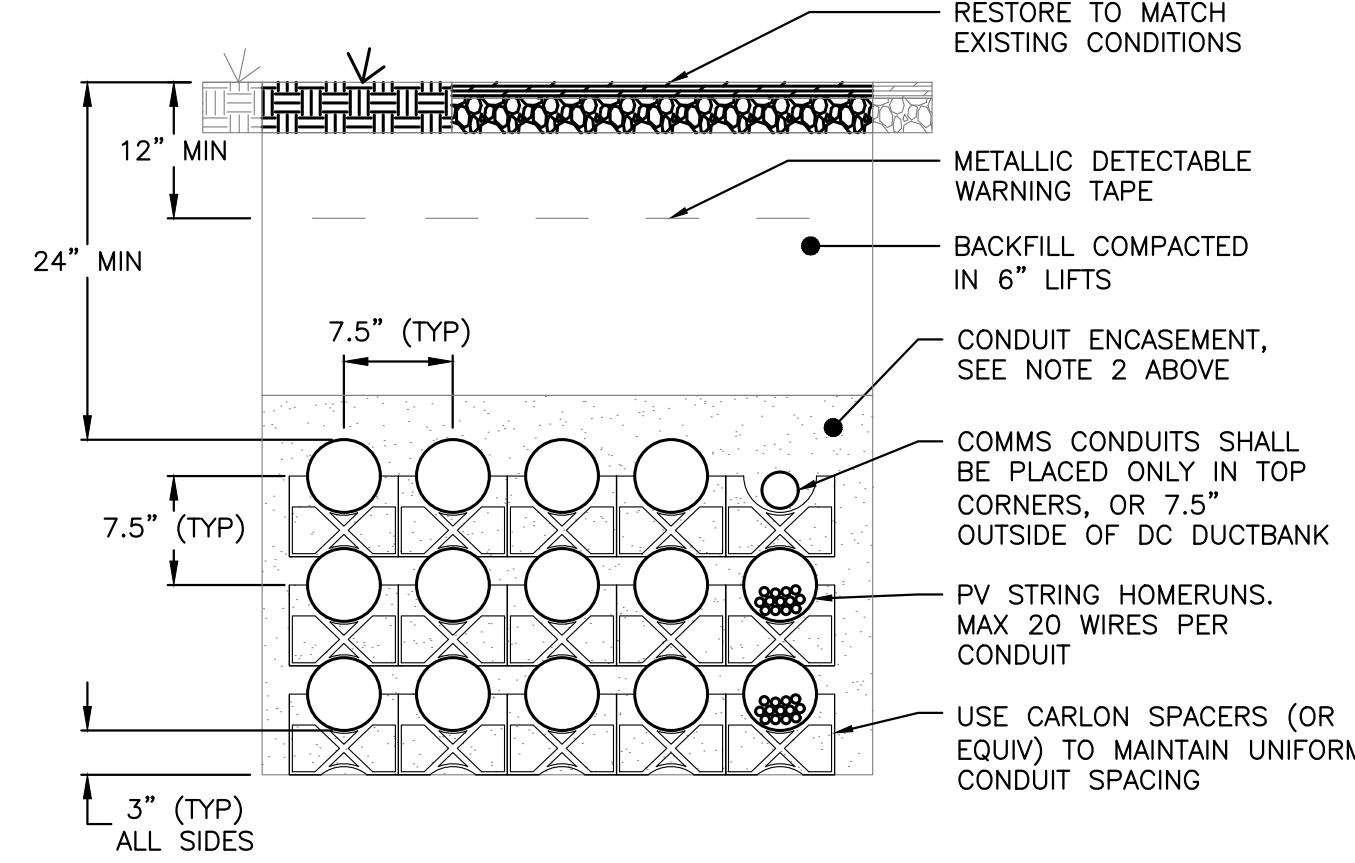
RULER IN INCHES: 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
 PLOT DATE: 12/14/2020 5:47 PM

- NOTES:**
- ALL UNDERGROUND CONDUIT SHALL BE PVC AND TRANSITION TO RMC FOR ELBOW. RMC ELBOW DOES NOT NEED TO BE BONDED IF THE ENTIRE ELBOW IS $\geq 18"$ DEEP (NEC 250.86 EXCEPTION 3)
 - UNDER ROADS AND PARKING AREAS ENCASUREMENT SHALL BE 2500 PSI CONCRETE. UNDER GRASSY AREAS NOT SUBJECT TO VEHICULAR TRAFFIC ENCASUREMENT SHALL BE SAND.
 - CALL BEFORE YOU DIG, DIAL 811 TO BE CONNECTED TO THE LOCAL ON-CALL CENTER. YOU MUST CALL AT LEAST 48 HOURS BEFORE EXCAVATING.
 - IF DUCTBANK SLOPES SUCH THAT ANY PART OF THE DUCTBANK IS ABOVE STUB UP ELEVATION, INCLUDE HAND HOLE WITH GRAVEL BASE TO ALLOW DRAINAGE.



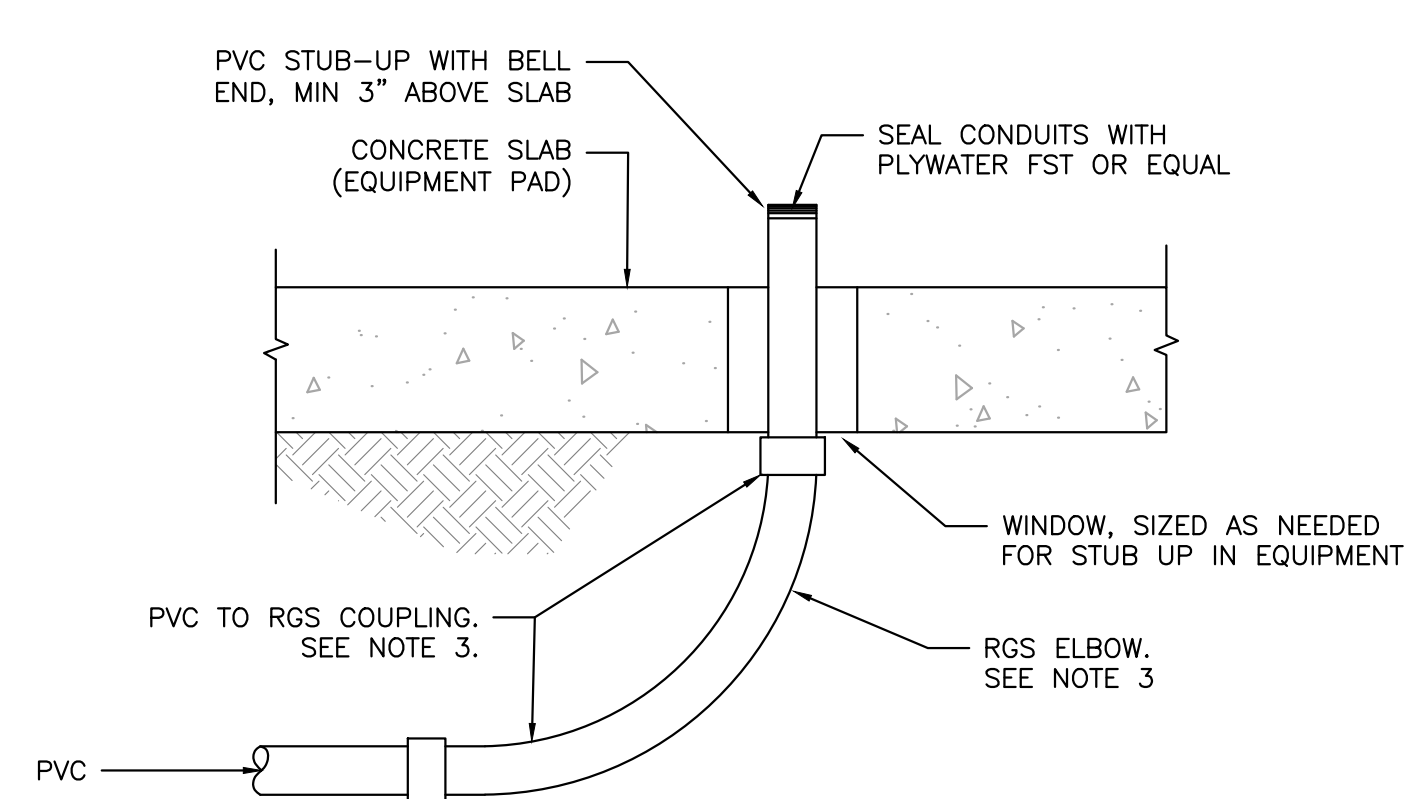
1 TYPICAL MV DUCTBANK DETAIL
E402 SCALE: NONE

- NOTES:**
- ALL UNDERGROUND CONDUIT SHALL BE PVC AND TRANSITION TO RMC FOR ELBOW. RMC ELBOW DOES NOT NEED TO BE BONDED IF THE ENTIRE ELBOW IS $\geq 18"$ DEEP (NEC 250.86 EXCEPTION 3)
 - UNDER ROADS AND PARKING AREAS ENCASUREMENT SHALL BE 2500 PSI CONCRETE. UNDER GRASSY AREAS NOT SUBJECT TO VEHICULAR TRAFFIC ENCASUREMENT SHALL BE SAND.
 - CALL BEFORE YOU DIG, DIAL 811 TO BE CONNECTED TO THE LOCAL ON-CALL CENTER. YOU MUST CALL AT LEAST 48 HOURS BEFORE EXCAVATING.
 - IF DUCTBANK SLOPES SUCH THAT ANY PART OF THE DUCTBANK IS ABOVE STUB UP ELEVATION, INCLUDE HAND HOLE WITH GRAVEL BASE TO ALLOW DRAINAGE.



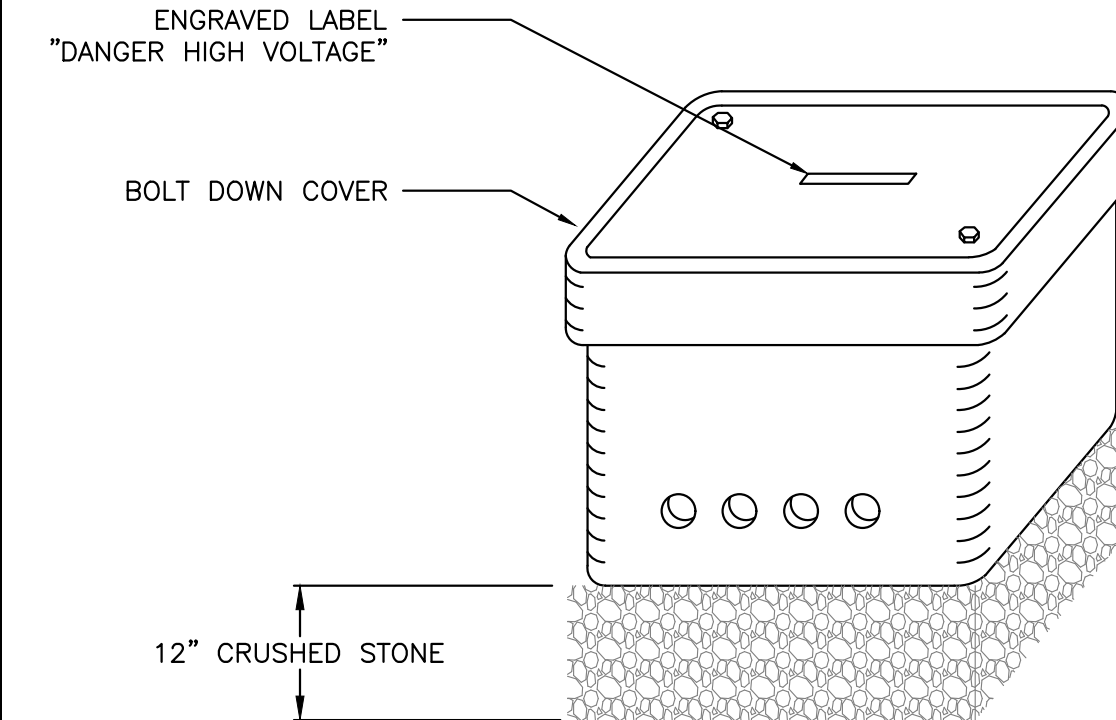
2 TYPICAL 1500VDC DUCTBANK DETAIL
E402 SCALE: NONE

- NOTES:**
- INITIALLY INSTALL COUPLING CAP TO PREVENT DAMAGE TO STUB-UP UNTIL GEAR IS SET.
 - INSTALL ROUNDED FITTING BEFORE PULLING CABLES TO AVOID DAMAGE TO CABLES.
 - RMC ELBOW ONLY REQUIRED ON ONE SIDE OF EACH PULL NEAREST THE LOCATION OF THE PULLING MACHINE. ON OPPOSITE SIDE, PVC SCH80 ELBOWS ARE PERMITTED.

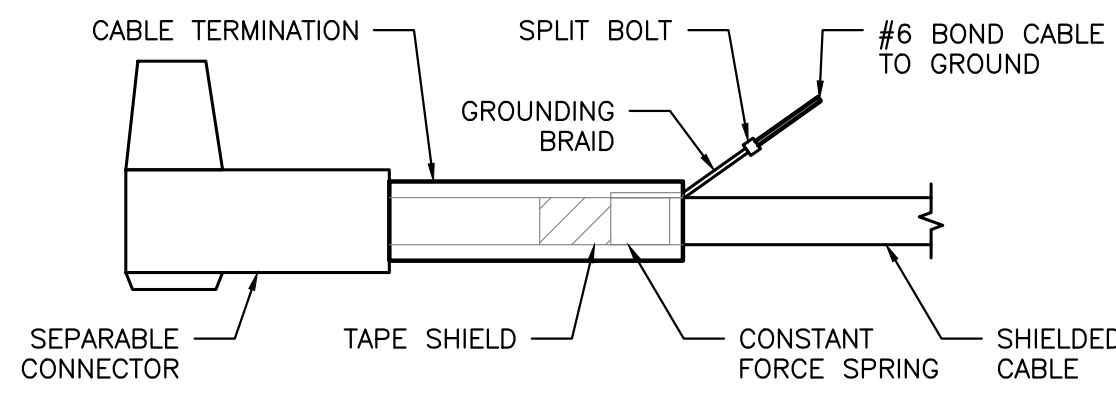


3 EQUIPMENT PAD STUB-UP DETAIL
E402 SCALE: NONE

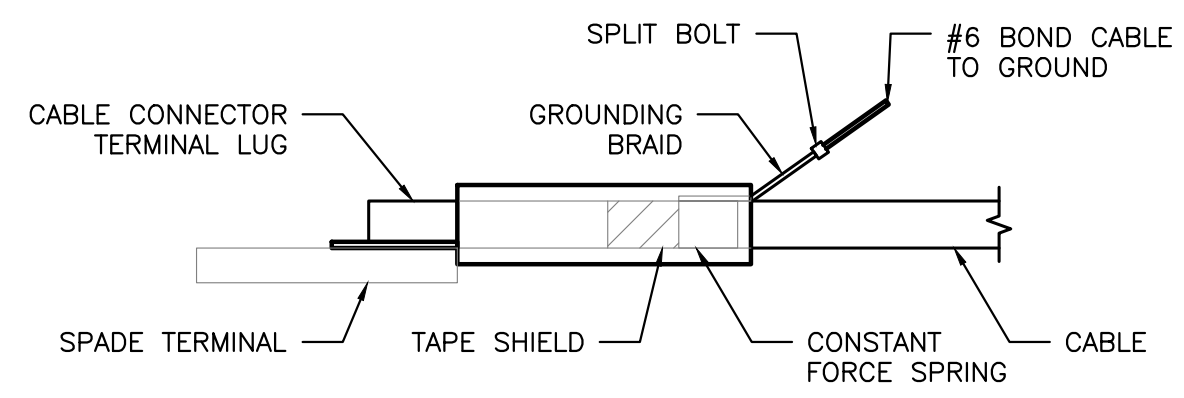
- NOTES:**
- BOX SHALL BE RATED T8 FOR USE IN GRASSY AREAS NOT SUBJECT TO VEHICULAR TRAFFIC, OR RATED T22 FOR USE IN SIDEWALKS OR PARKING LOTS SUBJECT TO OCCASIONAL NON-DELIBERATE HEAVY VEHICULAR TRAFFIC. BOXES TO BE USED IN ROADWAYS OR AREAS FREQUENTLY SUBJECT TO HEAVY VEHICULAR TRAFFIC SHALL BE SUBMITTED TO EFOR FOR APPROVAL
 - CONDUITS SHALL ENTER ON SIDES. MINIMUM BURIAL DEPTHS OF CONDUITS IS 24" BELOW FINISHED GRADE.
 - CONDUIT KNOCKOUTS SHALL BE DRILLED OR PUNCHED ON SITE. QUANTITIES AND SIZES TO MATCH TRENCH PLAN AND COMBINER SCHEDULE.



4 HANDHOLE DETAIL
E402 SCALE: NONE

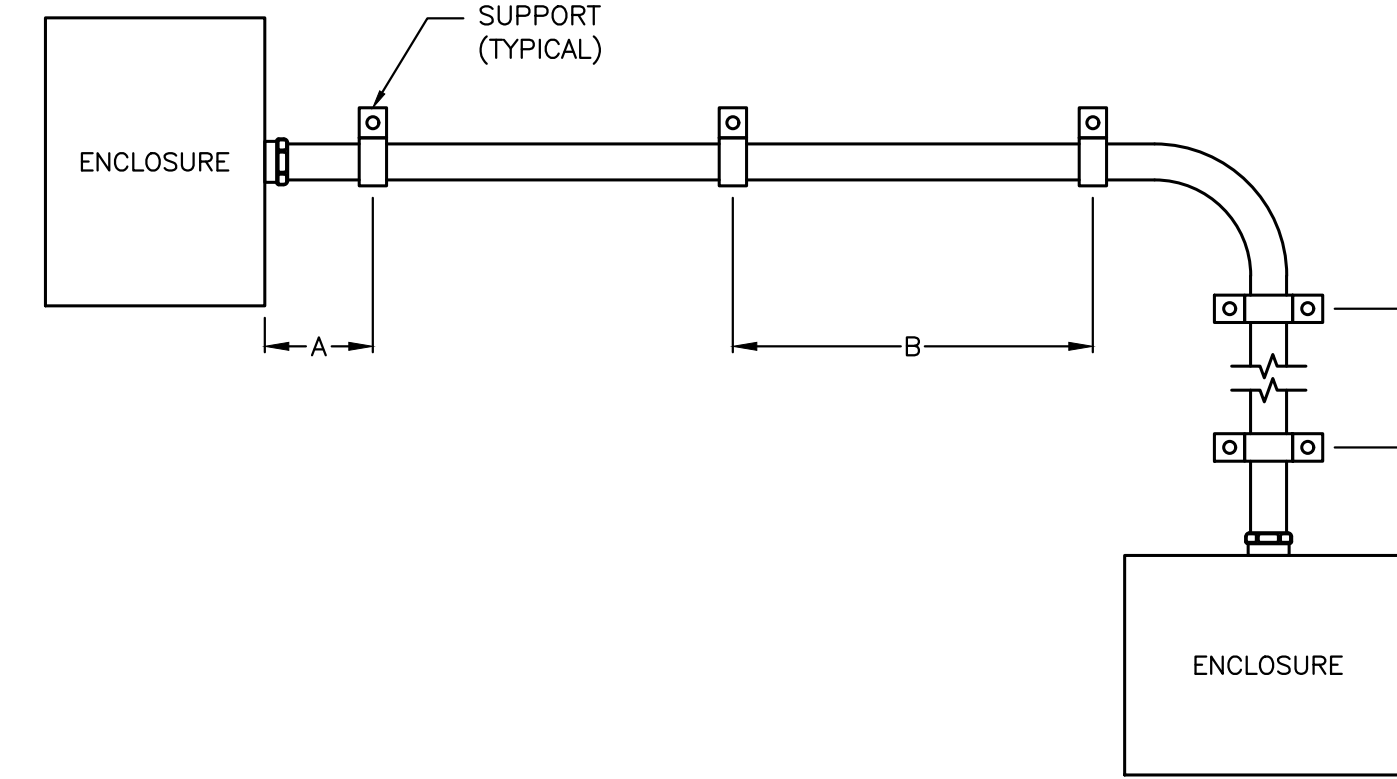


DEAD FRONT MV TERMINATION



LIVE FRONT MV TERMINATION

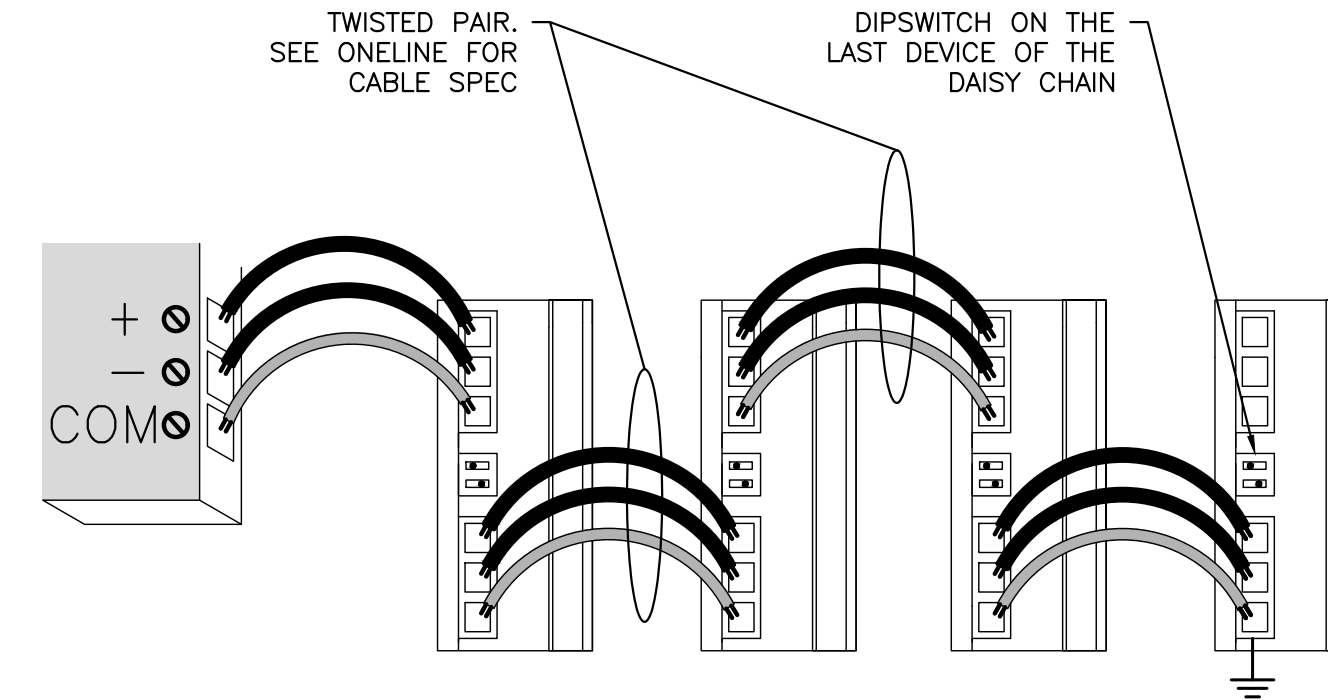
5 SHIELDED CABLE DETAIL
E402 SCALE: NONE



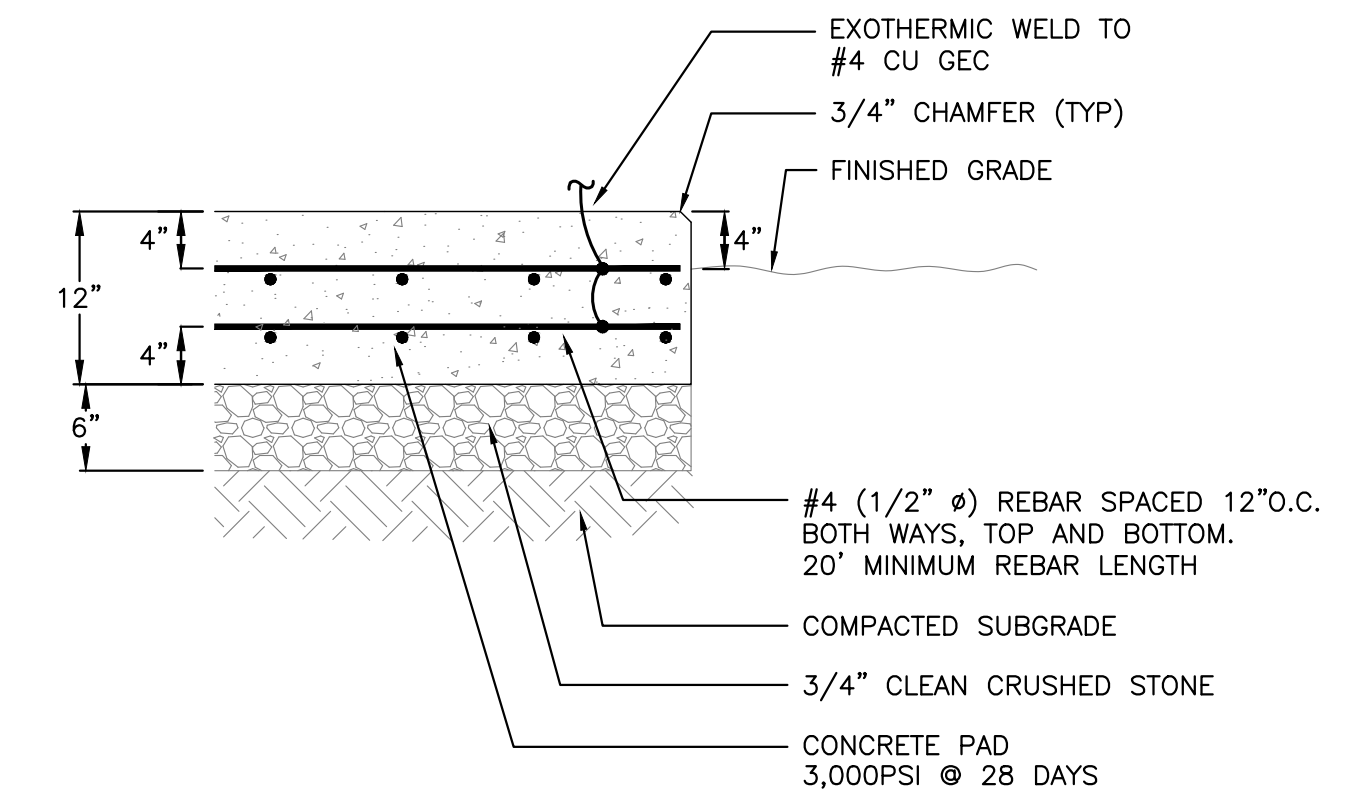
6 CONDUIT SUPPORT SPACING
E402 SCALE: NONE

MAXIMUM CONDUIT HARDWARE SPACING				
CONDUIT TYPE	ENCLOSURE TO SUPPORT (A)	SUPPORT TO SUPPORT (B)	VERTICAL RUNS (C)	NEC ARTICLE
ELECTRICAL METALLIC TUBING (EMT)	3'	10'	10'	358
INTERMEDIATE METAL CONDUIT (IMC)	3'	10'	20'	344
RIGID METAL CONDUIT (RMC)	3'	10'	20'	344
LIQUIDTIGHT FLEXIBLE METAL CONDUIT (LFMC)	1'	4.5'	4.5'	350
PVC (SCH40 & 80) [0.5" - 1"]	3'	3'	3'	352
PVC (SCH40 & 80) [1.25" - 2"]	3'	5'	5'	352
PVC (SCH40 & 80) [2.5" - 3"]	3'	6'	6'	352
PVC (SCH40 & 80) [3.5" - 5"]	3'	7'	7'	352
PVC (SCH40 & 80) [6"]	3'	8'	8'	352

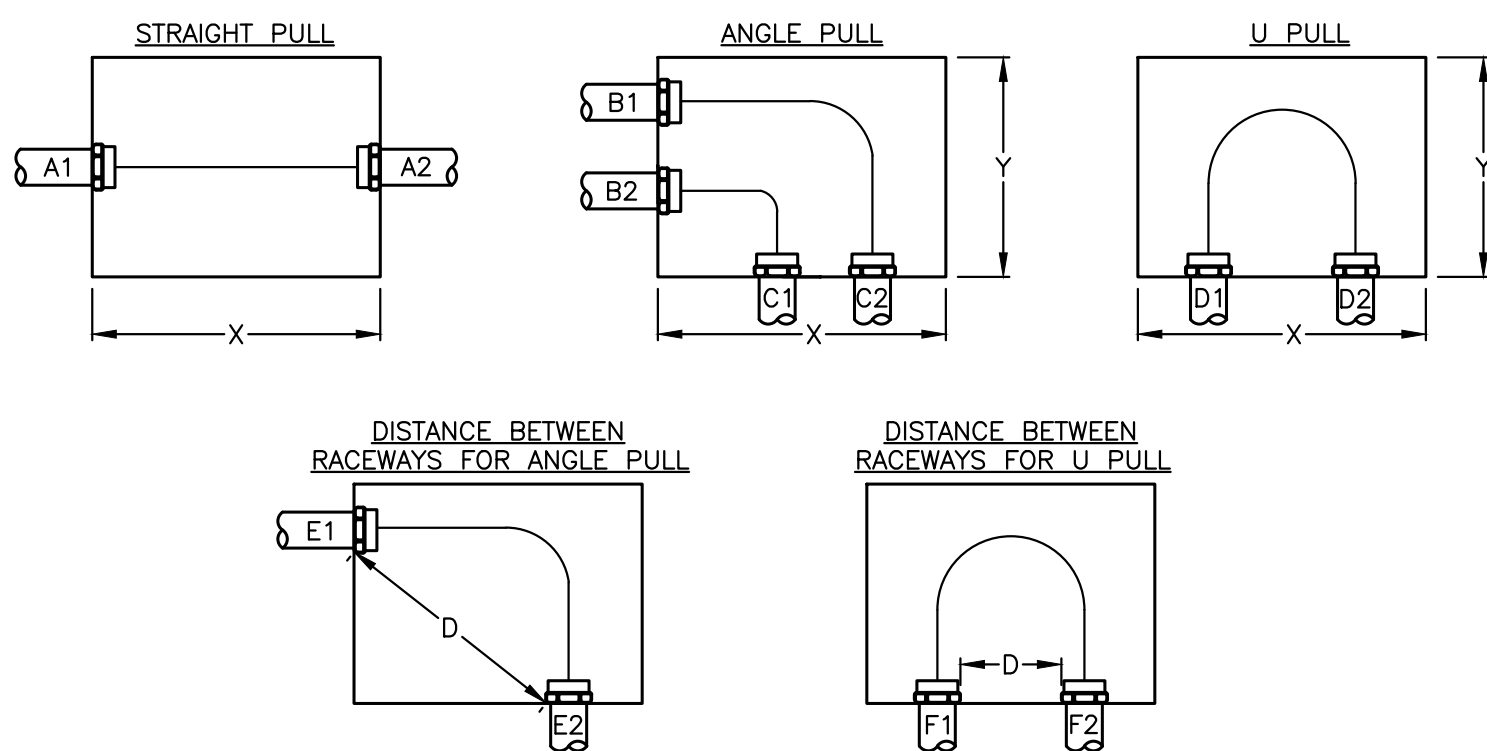
- MONITORING NOTES:**
- REFER TO MONITORING SYSTEM INSTALLATION MANUAL FOR DETAILS ON TERMINAL BLOCKS, CABLE TERMINATIONS, AND SYSTEM CONFIGURATION.
 - WIRELESS TRANSCEIVERS MUST HAVE LINE-OF-SIGHT BETWEEN EACH OTHER.
 - PYRANOMETER MUST BE INSTALLED IN UNSHADED LOCATION.



7 MODBUS DETAIL
E402 SCALE: NONE



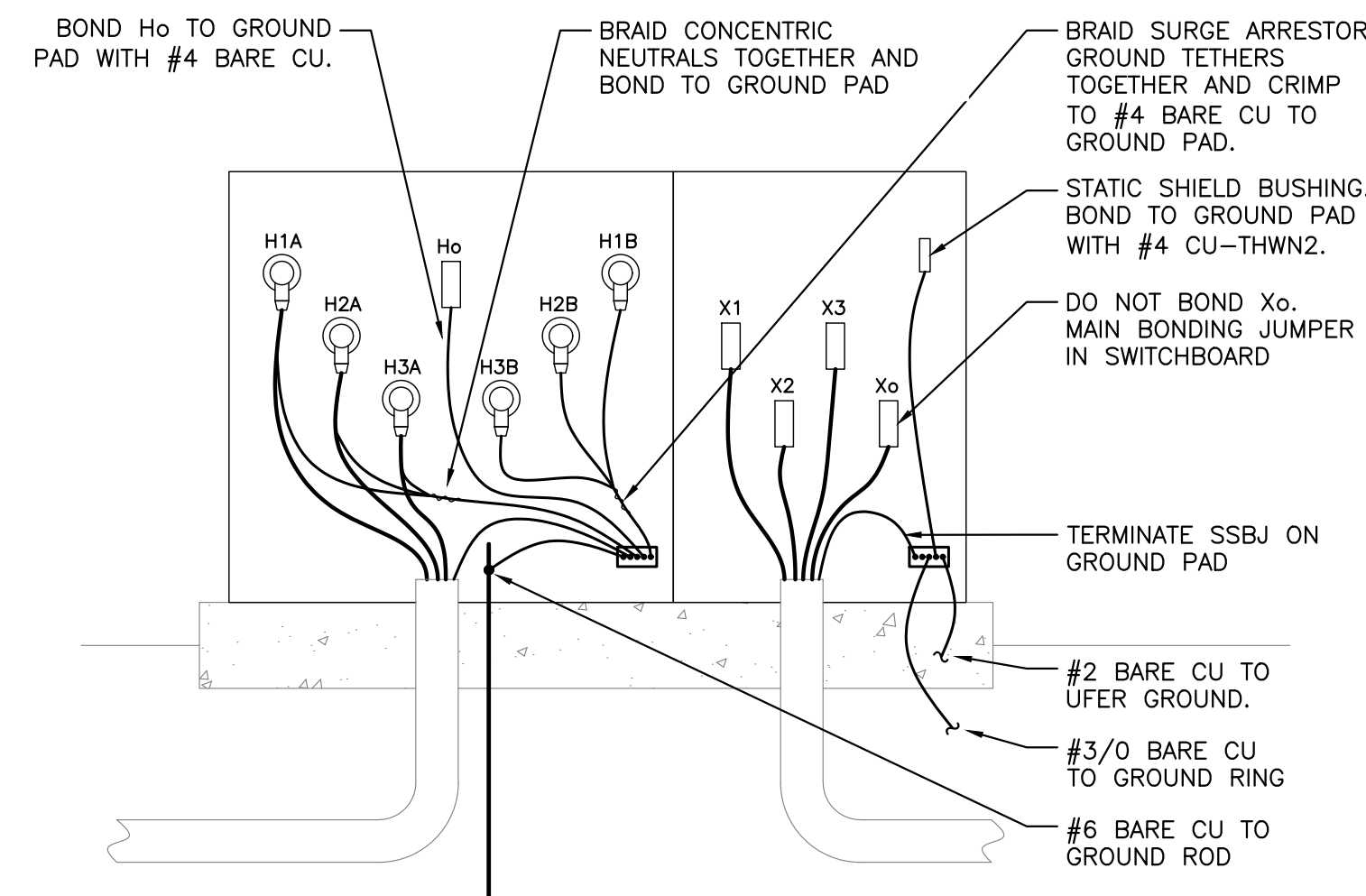
8 CONCRETE PAD DETAIL
E402 SCALE: NONE



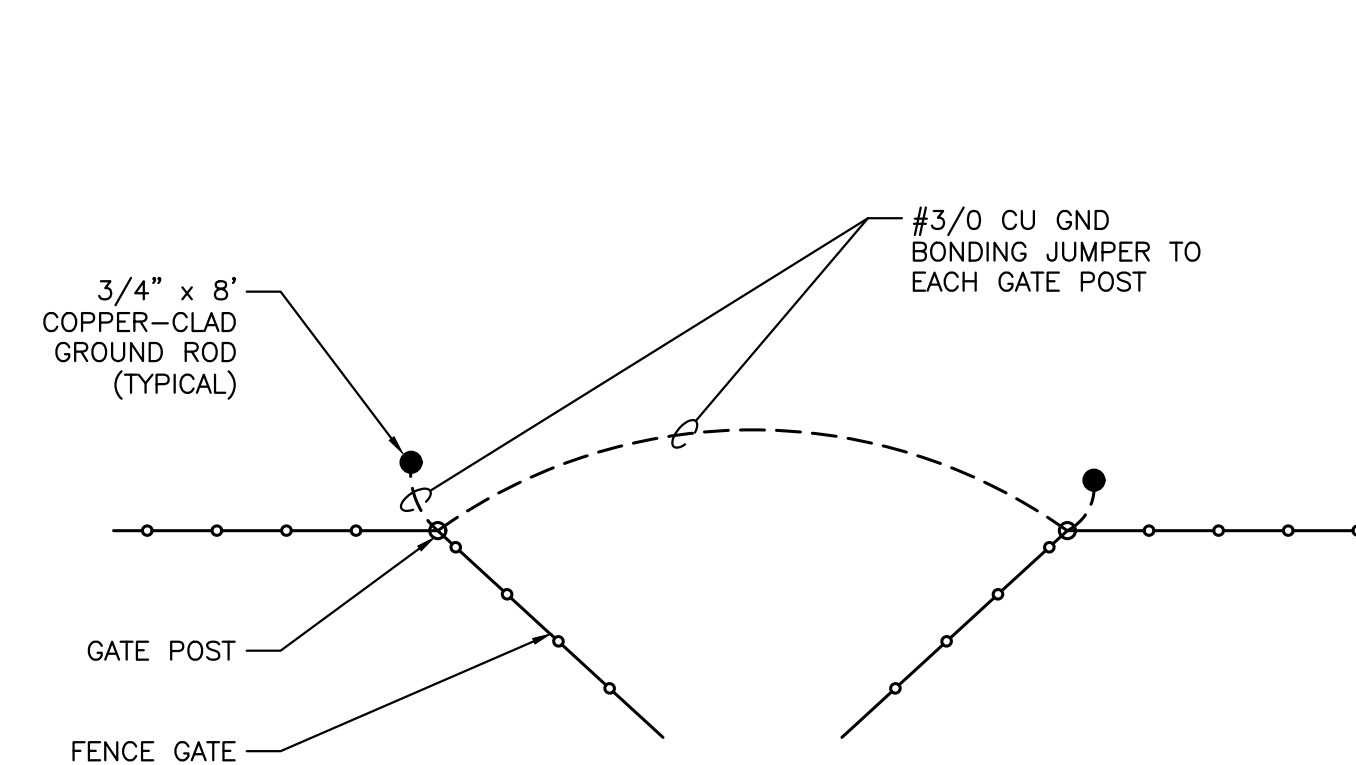
NEC 314.28(A)(1)-(3) PULL BOX SIZING			
PULL BOX TYPE	LENGTH (X)	HEIGHT (Y)	DISTANCE (D)
STRAIGHT PULL	8 X LARGEST OF A1 & A2	AS NEEDED	N/A
ANGLE PULL	6 X (LARGEST OF B1 & B2) + SUM OF OTHER CONDUIT ENTERING THE SAME WALL	6 X (LARGEST OF C1 & C2) + SUM OF OTHER CONDUIT ENTERING THE SAME WALL	6 X LARGEST OF E1 & E2
U PULL	AS NEEDED	6 X (LARGEST OF D1 & D2) + SUM OF OTHER CONDUIT ENTERING THE SAME WALL	6 X LARGEST OF F1 & F2

NOTE: REFER TO NEC 314.28 FOR ADDITIONAL REQUIREMENTS.

9 PULL BOX SIZING
E402 SCALE: NONE



10 TRANSFORMER GROUNDING: WYE-G/WYE-G
E402 SCALE: NONE



11 FENCE GATE GROUNDING DETAIL
E402 SCALE: NONE

DRAWING TITLE
ELECTRICAL DETAILS

PURE POWER
 5 MARINE VIEW PLAZA, HARTFORD, CT 06103
 WWW.PUREPOWER.COM
 ENGINEER: VEROGY
 150 PLATT STREET, HARTFORD, CT 06103
 WWW.VEROGY.COM
 DEVELOPER: VEROGY
 PAGE SIZE: 36" x 24"
 PROJECT #: 00166
 DC SYSTEM POWER: 2,779.92 KW
 AC SYSTEM POWER: 1,975.00 KW
 MODULE TYPE: 400W/380V
 MODULE QUANTITY: 5,616/1,404
 STRING QUANTITY: 216/54
 ORIENTATION: 30° TILT, 180° AZIMUTH
 PROJECT: SOLAR GROUND MOUNT SYSTEM AT WATERTOWN SOLAR ONE, 669 PLATT ROAD, WATERTOWN, CONNECTICUT 06795
 DRAWING #: E402

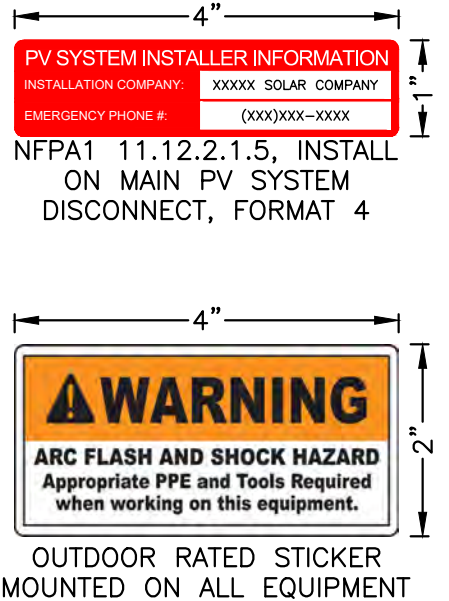
RULER IN INCHES: 0 1/2 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

GENERAL NOTES FOR LABELS:
 1. LABEL SCALE 1:2 UNLESS NOTED
 2. LETTERING ON SIGNS SHALL BE CAPITAL LETTERS
 3. CLEARLY LABEL ALL CIRCUIT BREAKERS IN THE PANELBOARD(S). THE LABEL SHALL INDICATE THE NAME OF THE DEVICE IT SERVES.

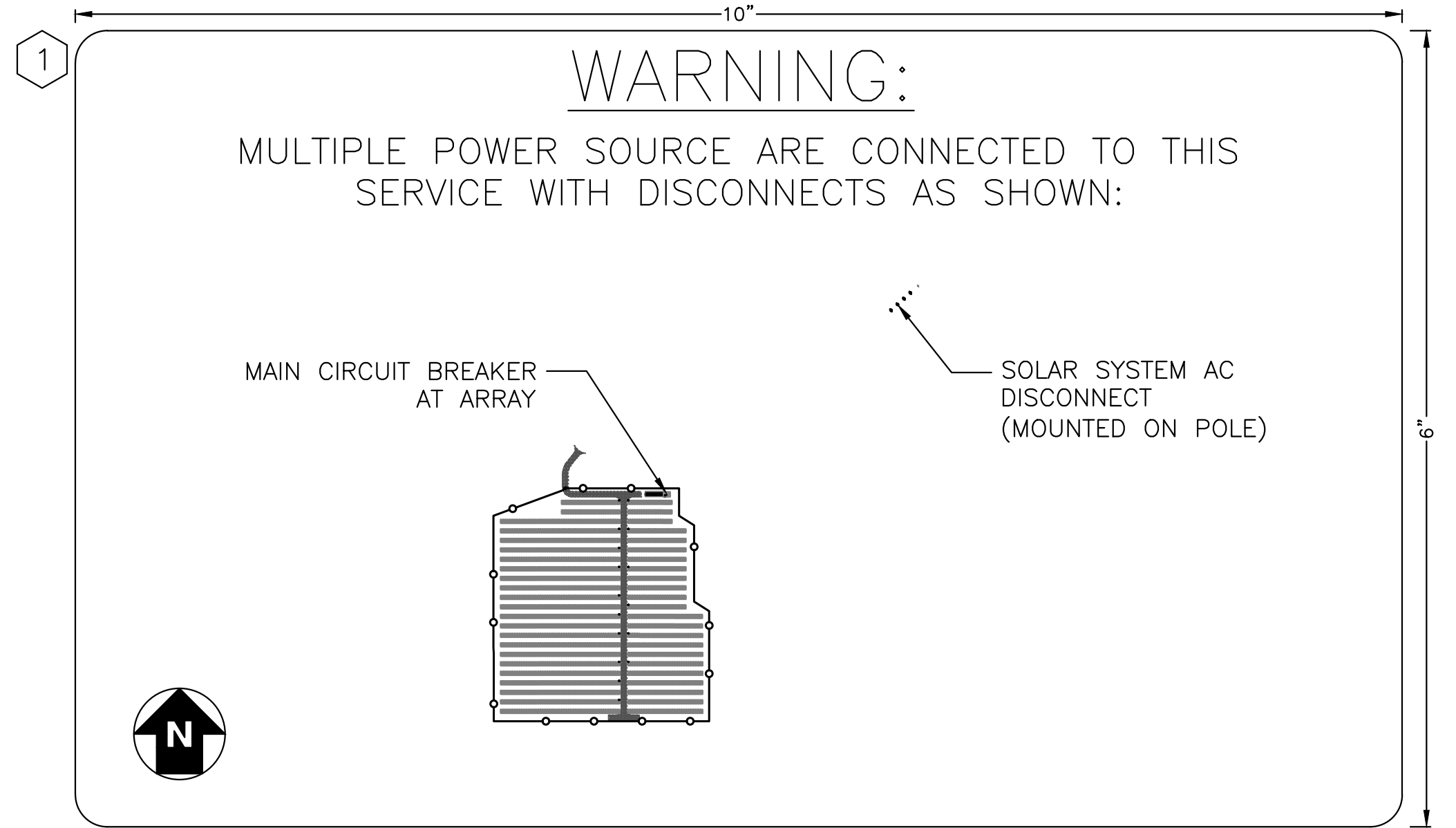
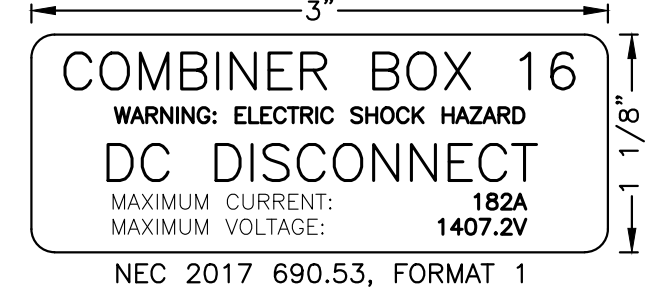
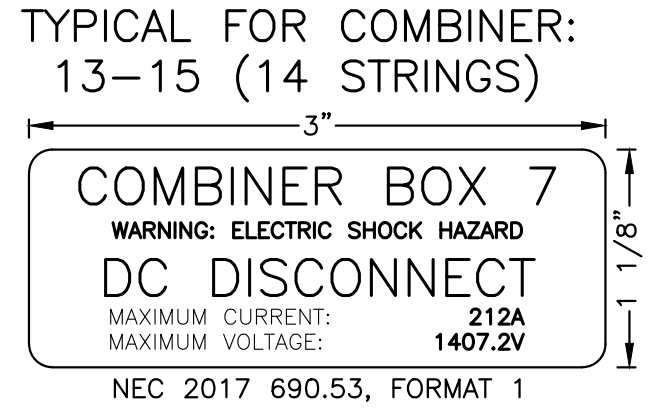
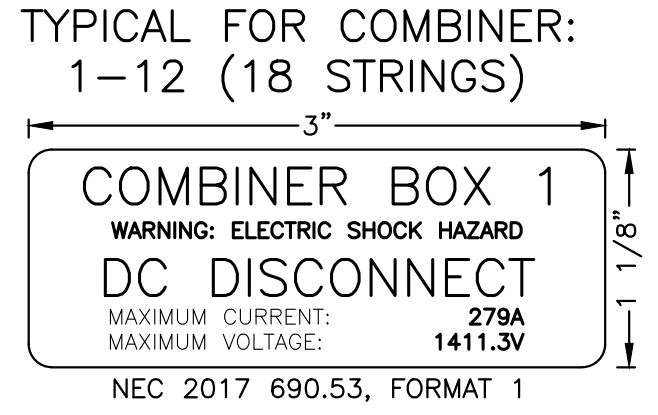
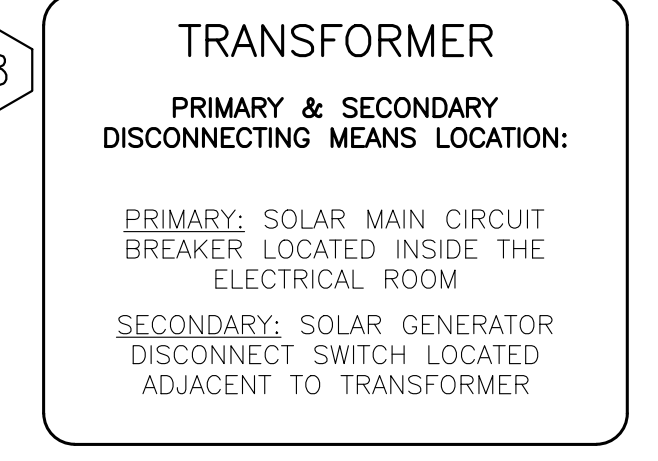
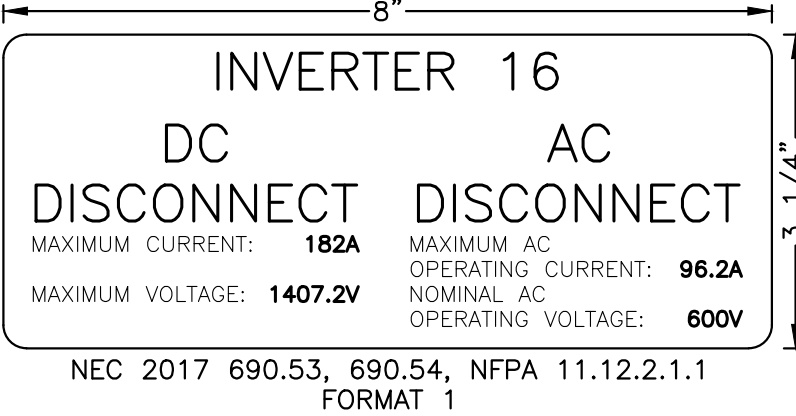
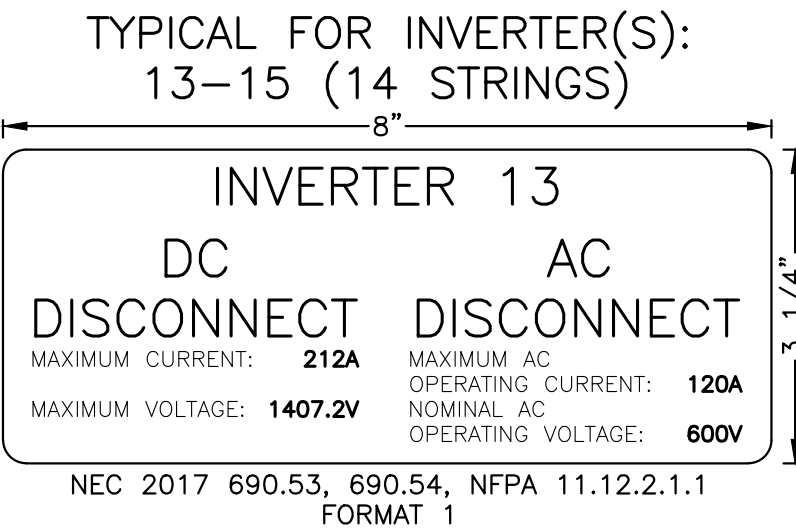
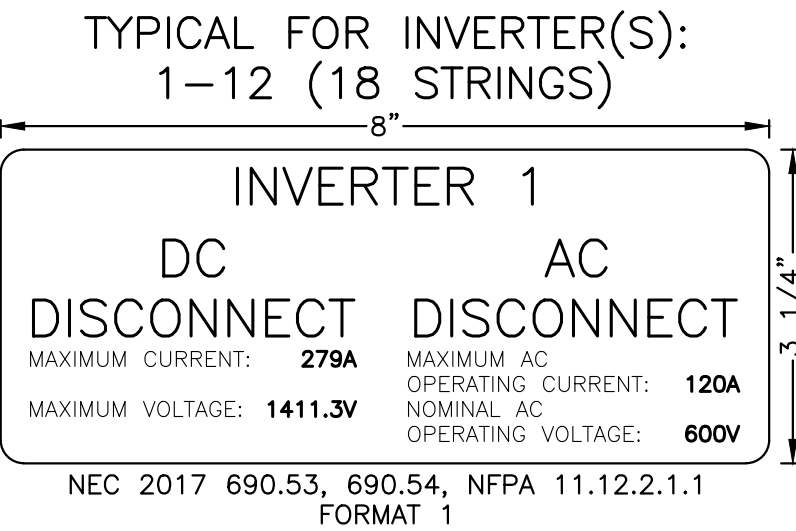
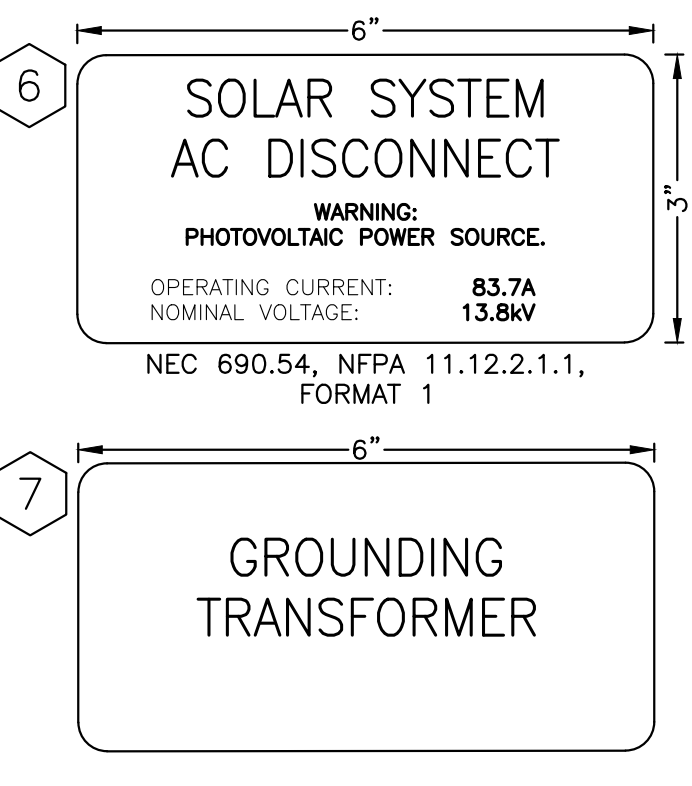
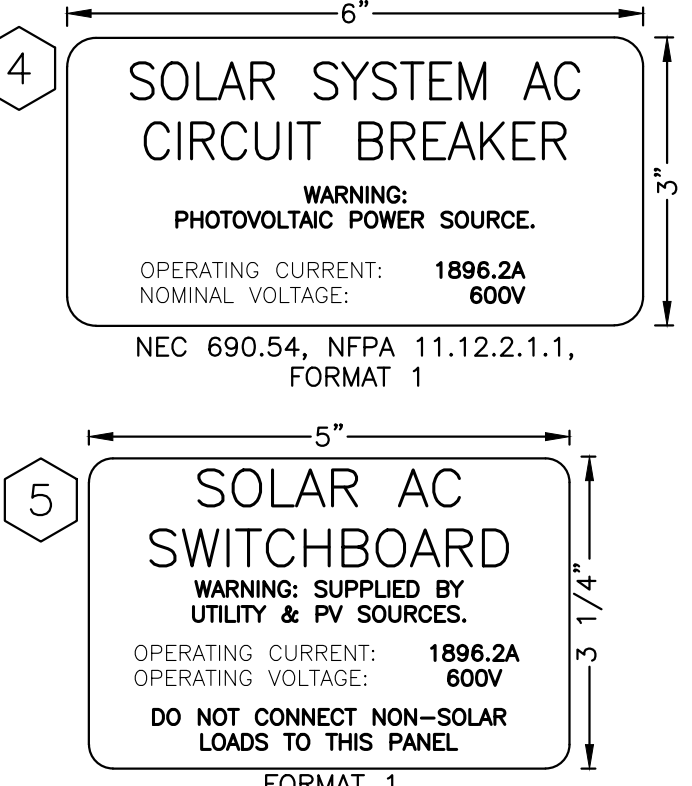
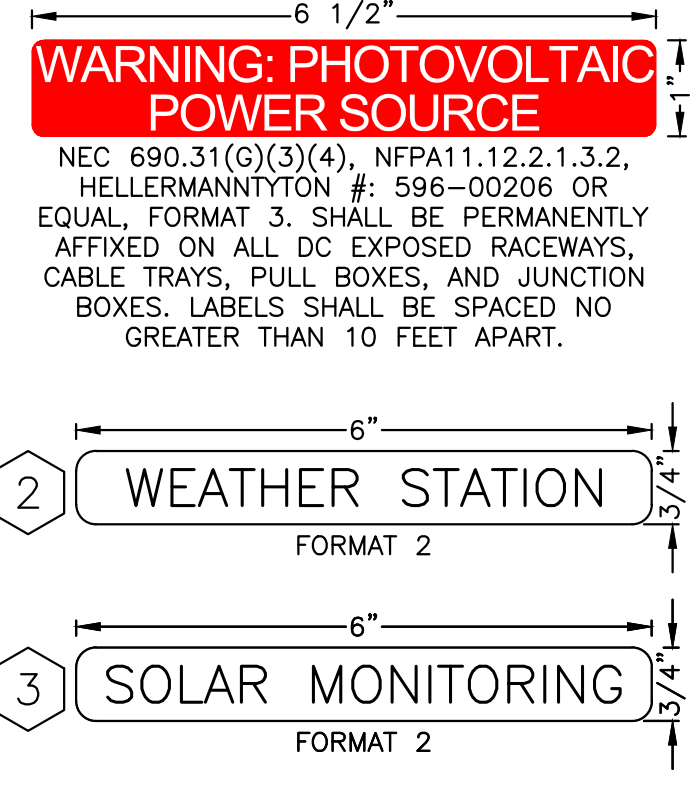
LABEL FORMAT NOTES:
 1. **FORMAT 1:** ENGRAVED MELAMINE, WHITE TEXT ON RED BACKGROUND. TEXT HEIGHT: TITLES 3/8", ALL OTHER TEXT 5/32".
 2. **FORMAT 2:** ENGRAVED MELAMINE, BLACK TEXT ON WHITE BACKGROUND. TEXT HEIGHT: 3/8".
 3. **FORMAT 3:** REFLECTIVE UV RATED LABEL, RED BACKGROUND WITH WHITE CAPITAL LETTERS AT LEAST 3/8" TALL. LABELS SHALL BE SUITABLE FOR THE ENVIRONMENT IN WHICH THEY ARE INSTALLED.
 4. **FORMAT 4:** ENGRAVED MELAMINE, WHITE TEXT ON RED BACKGROUND. TEXT HEIGHT: TITLES 5/32", ALL OTHER TEXT 3/32".

PER 2017 NEC 690.31(B)(1), PV SYSTEM CIRCUIT CONDUCTORS SHALL BE IDENTIFIED AT ALL ACCESSIBLE POINTS OF TERMINATION, CONNECTION, AND SPLICES.

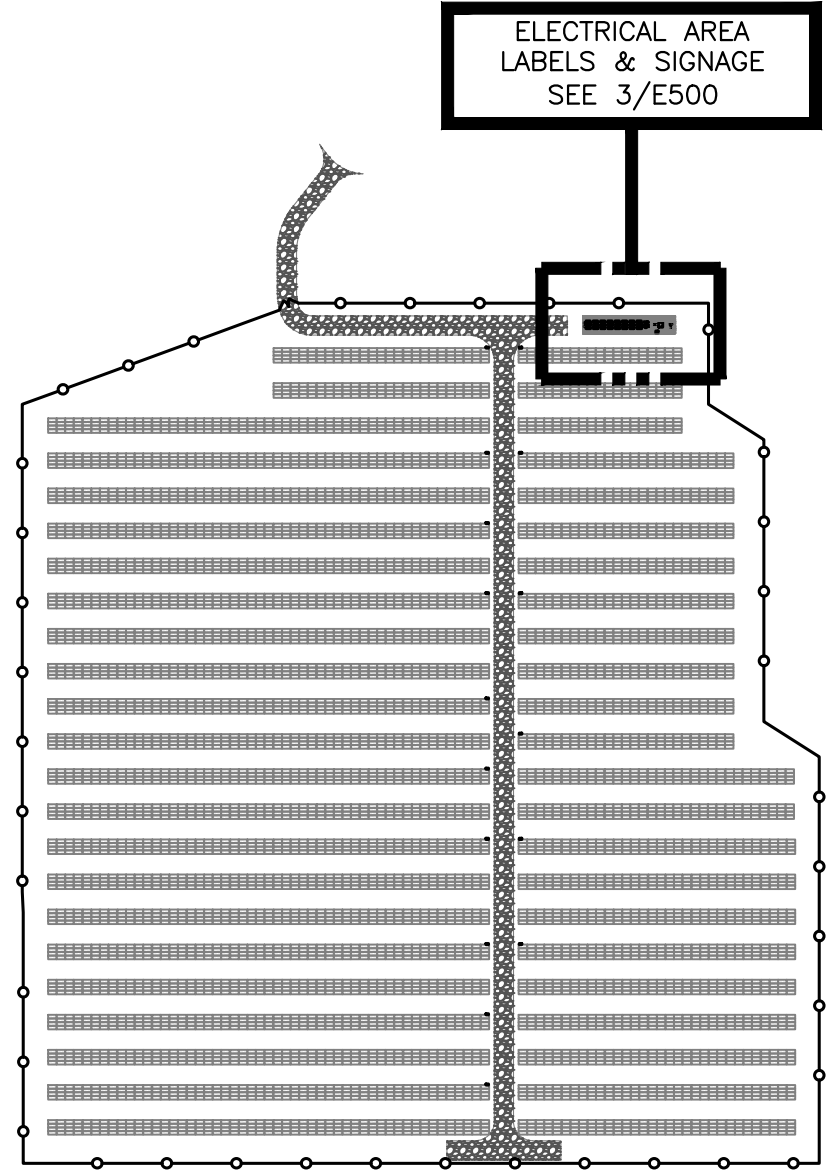
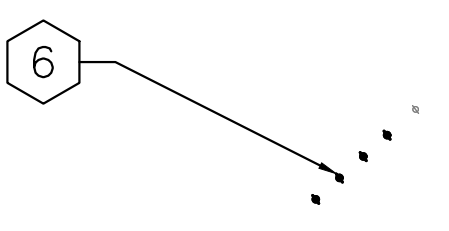
1. STRING HOMERUNS AT ARRAY
2. DC INPUT TERMINALS OF COMBINER BOX
3. DC OUTPUT TERMINALS OF COMBINER BOX
4. DC INPUT TERMINALS OF INVERTER
5. AC OUTPUT TERMINALS OF INVERTER
6. AC INPUT & OUTPUT TERMINALS OF EACH SUCCESSIVE DEVICE (WHERE APPLICABLE)



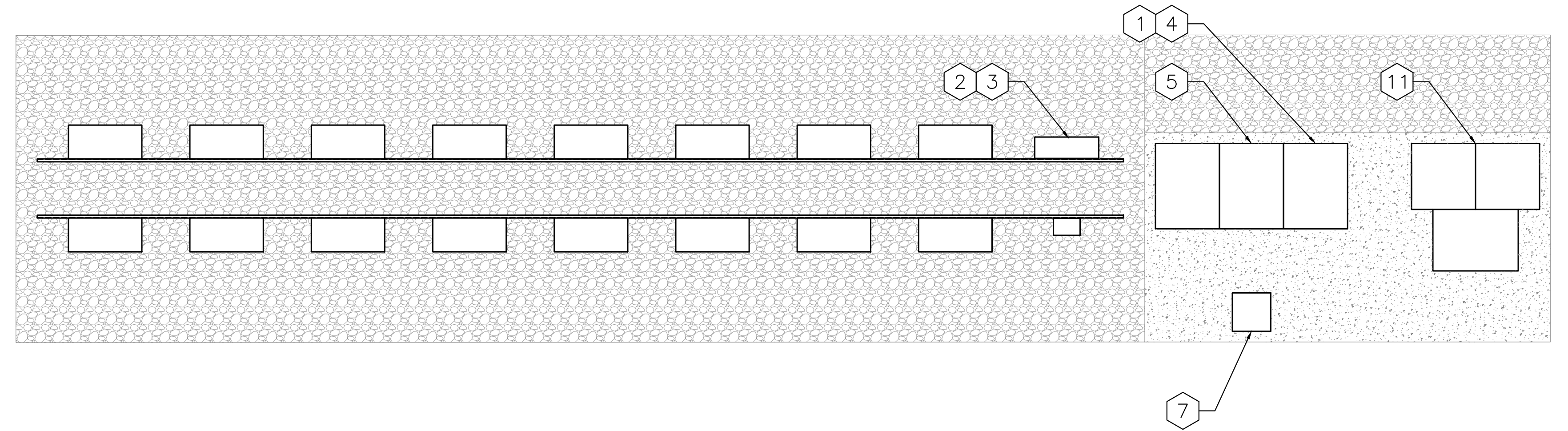
OUTDOOR RATED STICKER MOUNTED ON ALL EQUIPMENT



2 DIRECTORY LABEL SCALE: 1:1



1 LABELS & SIGNAGE SCALE: 1" = 150'-0"



3 ELECTRICAL AREA - LABELS & SIGNAGE SCALE: 1/4" = 1'-0"

DRAWING TITLE
 LABELS & SIGNAGE

DATE	REVISION DESCRIPTION	REV	ENG	CHK
12/15/2020	ISSUE FOR PERMIT	RK	GP	RI
03/18/2020	90% DESIGN DEVELOPMENT	RK	ES	RI

VEROGY
 150 PLATT ROAD
 HARTFORD, CT 06103
 WWW.VEROGY.COM
 LICENSE NO. 03029282

PURE POWER
 5 MARINE VIEW PLAZA - HARTFORD, CT
 WWW.PUREPOWER.COM
 LICENSE NO. 03029282

PROJECT: SOLAR GROUND MOUNT SYSTEM AT WATERTOWN SOLAR ONE
 669 PLATT ROAD
 WATERTOWN, CONNECTICUT 06795

DC SYSTEM POWER: 2,779.92 kW
 AC SYSTEM POWER: 1,975.00 kW
 MODULE TYPE: 400W/380W
 STRING QUANTITY: 5,616/1,404
 STRING QUANTITY: 216/54
 ORIENTATION: 30° TILT, 180° AZIMUTH

DEVELOPER: VEROGY
 PAGE SIZE: 3.6" x 24"
 PROJECT #: 00166

DRAWING #: E500

RULER IN INCHES: 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

PLOT DATE: 12/14/2020 5:47 PM

XGI 1500 COMBINERS

Increased Design Flexibility for SOLECTRIA XGI 1500

Features

- Made in the USA with global components
- Buy American Act (BAA) compliant
- Designed exclusively for use with XGI 1500 inverters
- Both poles fused and switched
- 16, 20, 24, 26, and 28 fuse positions
- 15 and 20 A fuse options for all models; 25 and 30 A fuse options for select models only
- Connection plates for compression terminals
- 90C terminal rating

Option

- Surge arrestor, both polarities

Yaskawa Solectria Solar offers two 1500V string combiners, Attachable & Remote, each designed to pair exclusively with SOLECTRIA XGI 1500 inverters. The 1500V Attachable Combiner is designed to mate directly to the XGI 1500 inverter for use in distributed PV systems where the combiner and inverter are located together throughout the array field. The 1500V Remote Combiner has similar features, but is designed for a centralized or clustered deployment of multiple XGI 1500 inverters where the combiners are distributed throughout the PV array field. Both combiner lines feature the highest quality and durability in the industry today.

Choose from models with 16 to 28 fused positions and either 15 or 20 A fuses. Specific models also available with 25 A fuses (20 positions) and 30 A fuses (16 positions). The combiners match the XGI 1500 in quality and appearance. Both models satisfy the National Electrical Code for systems with ungrounded PV source circuits. All Yaskawa Solectria Solar XGI inverters and combiners are Made in the USA with global components and are compliant with the Buy American Act.

SOLECTRIA SOLAR

XGI 1500 COMBINERS

Specifications

	1500V Remote Combiner	1500V Attachable Combiner
1500V String Combiners exclusively for use with SOLECTRIA XGI 1500		
Input Wire Compatibility	14-4 AWG	14-4 AWG
Output Wire Compatibility	1 conductor, 1/0 - 500 kcmil 2 conductors, 1/0 - 500 kcmil	1 conductor, 1/0 - 500 kcmil 2 conductors, 1/0 - 500 kcmil
Maximum Voltage	1500 VDC	1500 VDC
Fuse Rating Options	15 A or 20 A (fuses included) 25 A 30 A	15 A or 20 A (fuses included) 25 A 30 A
Number of Fused Positions	16 / 20 / 24 / 26 / 28	16 / 20 / 24 / 26 / 28
Input PV Source Circuit Configurations	Ungrounded PV Source Circuits	Ungrounded PV Source Circuits
Fuse Configurations	Both positive and negative polarities fused	Both positive and negative polarities fused
DC Disconnect	2-pole integrated DC disconnect, positive and negative poles switched	DC Disconnect located on XGI 1500 inverter
DC Disconnect Current Rating	250 A	250 A (located on XGI 1500)
Temperature Range	-40°F to 122°F (-40°C to 50°C)	-40°F to 122°F (-40°C to 50°C)
Mounting Positions	Indoor, Outdoor, Wall, Array - Vertical, Horizontal or Angled	Mechanically attaches to structure
Safety Certification & Listing	UL 1741	UL 1741
Standard Warranty	5 Years	5 Years
Enclosure Material Options & Rating	Polyester Powder Coated Aluminum, NEMA Type 4X	Polyester Powder Coated Aluminum, NEMA Type 4X
Option	Surge Protection	Both positive and negative polarities

Centralized or Clustered PV System

Distributed PV System

SOLECTRIA SOLAR

Yaskawa Solectria Solar
360 Merrimack Street
Lawrence, MA 01843
solectria.com

1-978-863-9700
inverters@solectria.com

DCOR-071001-C | February 2019
© 2018 Yaskawa Solectria Solar

CONTOUR BF

Boost your Bi-Facial PV Module production with DCE Solar's newest Contour racking solution.

- » Open-back racking that allows optimal performance of Bi-Facial panels
- » Accepts landscape or portrait module orientations
- » Newly designed pivot bracket allows for superior purlin adjustability
- » Integrated wire management & array bonding with panel clamps
- » Driven, ballasted, or screw foundations accommodating all soil & site conditions

OPEN-BACK FRAMING Bi-Facial panels can perform unobstructed with our open-back racking solution while also benefiting from the established flexibilities the Contour components offer: fewer parts, minimal site grading, greater longevity. Utilizing clamping fasteners and structural members carefully placed along the panel's frame lend to an increased installation time.

PIVOT ADAPTER The uniquely designed pivot adapter elevates each one-point purlin connection to drastically improve every table's adaptability to challenging topography. The fully grounded rows can adjust to changes up to 20% grade.

FOUNDATION FLEXIBILITY Ideal for maximizing ROI in virtually any condition - Driven beam, ground screw, and ballasted foundation variants available to minimize installation challenges or environmental demands.

INTEGRATED WIRE MANAGEMENT The underside flange on panel beams act as home run wire support, decreasing the need for additional wire management components and labor. Pre-punched weep holes for moisture drainage

INTEGRATED BONDING Each continuous row is bonded using serrated hardware, therefore only one ground is needed per row as shown in the picture. No additional costly grounding components needed such as WEEBS and star washers, lowering material and installation costs. This reduces labor time, hardware, and cost for additional bonding components. (Certified to UL 2703)

DCE Solar delivers industry-leading racking products with unbeatable customer service. All Contour solutions have been designed to minimize grading, lower foundation costs, and facilitate greater energy performance.

CONTOUR BF

Structural Components

All truss members are constructed from G115 galvanized steel. Integrated wire management and support are included as part of original construction without add-ons

Technical Benefits

- » Minimal hardware
- » Landscape and Portrait options
- » Fewer foundations per panel

TECHNICAL SPECIFICATIONS

Wind Load	Up to 130 MPH
Snow Load	Up to 90 PSF
Leading Module Height	18" - 36" MAX
Tilt Angle	10° - 25°
Module Suitability	All Major Brands
Panel Orientation	Portrait (2V x 12W) Landscape (4H x 5W)
Warranty	20 years

PROJECT: SOLAR GROUND MOUNT SYSTEM AT WATERTOWN SOLAR ONE
669 PLATT ROAD
WATERTOWN, CONNECTICUT 06795

DC SYSTEM POWER: 2,779.92 kW
AC SYSTEM POWER: 1,975.00 kW
MODULE TYPE: 400W/380W
MODULE QUANTITY: 5,616/1,404
STRING QUANTITY: 216/54
ORIENTATION: 30° TILT, 160° AZIMUTH

DEVELOPER: VEROGY
150 HARTFORD STREET
HARTFORD, CT 06103
WWW.VEROGY.COM

PAGE SIZE: 36" x 24"
PROJECT #: 00166

DATE: 09/18/2020
90% DESIGN DEVELOPMENT

REVISION DESCRIPTION: PM TENG CHK

EXHIBIT C

Watertown Solar One - BiFacial - GS

Installation Address:
Platt Road, Watertown, CT, 06795

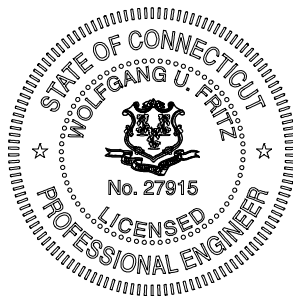
STRUCTURAL CALCULATION REPORT

CONTOUR™

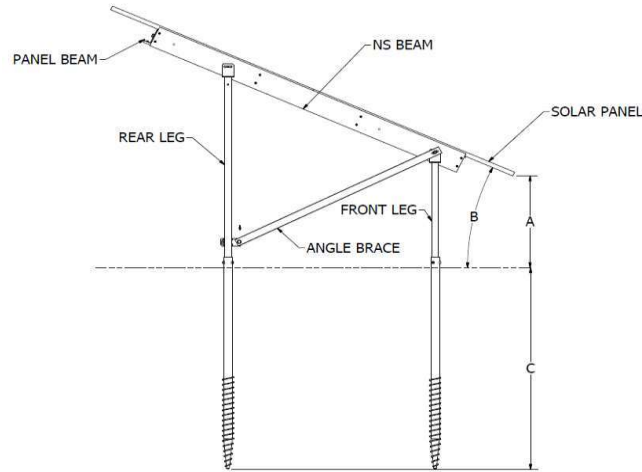
INDEX SHEET

Item	Page No.
Design Criteria	3-7
RISA 3D Model Input	8-20
RISA 3D Model Output	21-23
Foundation Design Reactions	24-26
Panel Spec sheet	27-28
Design Parameters	29-30

Engineer of Record



Ground Mound Racking Details



Module Specifications

	Trina		Risen
Module Length (mm)	2024	and	2016
Module Width (mm)	1002	and	998
Module Thickness (mm)	30	and	25
Module Area (ft ²)	21.83	and	21.66

System Information

Product Type	Contour-BF-GS
Module Orientation	Landscape
System Rows	4
System Columns	5
System Ground Clr., A (in)	36
System Tilt, B (Degrees)	30
System Length, (EW Dir.) (ft)	16.85
System Width, (NS Dir.) (ft)	26.62
System Area, (ft ²)	448.55
Pile Embedment Depth, C (ft)	~ 6ft-10in (screw length)

Dead Loads

PV Module Dead Load

Module Manufacturer	Trina Solar & Risen Solar
Module Model No.	TSM-DEG15MC.20(II) & RM144-6-380BMDG
Module Wattage (W)	400 & 380
Module Area (ft ²)	21.83
Module Weight (lbs)	57.32
Module Dead Load (PSF)	2.63

Racking Dead Load

Self Weight of Structural Members (PSF)	1.60
---	------

Other Loads

Electr./Misc. Equipment (PSF)	0.77
-------------------------------	------

Total Dead Load

Total Dead Load (PSF)	= 2.63 + 0.77 + 1.6
	5.00

Live Loads

Live Load (PSF)	0.00
-----------------	------

Snow Loads

Ground Snow Load (PSF)	35.00	ASCE 7-10, Fig. 7-1
Exposure Category	C	ASCE 7-10, § 6.5.6
Importance Factor Snow, I_s	0.80	ASCE 7-10, Table 7-4
Thermal Factor, C_t	1.20	ASCE 7-10, Table 7-3
Exposure Factor, C_e	0.90	ASCE 7-10, Table 7-2
Flat Snow Load, P_f	21.17	ASCE 7-10, Eqn. 7-1
Min. Snow Load, $P_{f, \min}$ (PSF)	30.00	ASCE 7-10, § 7.3.4
Tilt Angle Factor, C_s	0.82	ASCE 7-10, Fig. 7-2
Tilt Angle Snow Load, p_s (PSF)	24.55	ASCE 7-10, Eqn. 7-2
Rain-on-Snow Surcharge	0.00	ASCE 7-10, § 7.10
Total Snow Load (PSF)	30.00	

Wind Loads

Solar PV Roof Top arrays are typically designed for 25 years of life span. Hence, determining wind speed for 25 years.

$$V_t/V_{50} = [0.36 + 0.1 \ln(12T)]$$

Eq. C26.5-2

Assuming T = 25, V_t/V_{50} 0.93

MRI Factor

Wind Speed (3s-gust), V (mph) 110

ASCE 7-10, 26.5-1A, 26.5-1 B or 26.5-1 C

V for 25 years (mph) 102.30

Using V_t/V_{50} ratio

Risk Category 1

Table 1.5-2

Wind Importance Factor, I_w 1.00

Table 1.5-2

Exposure Category C

26.7.3

Topographic Factor, K_{zt} 1

Figure 26.8-1

Vel. Press. Exp. Coeff., K_h (MWFRS) 0.85

Section 27.3.1 & Table 27.3-1

Vel. Press/ Exp/ Coeff/, K_h (C&C) 0.85

Section 30.3.2 & Table 30.3-1

Directionality Factor, K_d 0.85

Section 26.6 & Table 26.6-1

Roof Velocity Pressure, q_h 19.36

Section 26.7.3

Roof Pressures, P = $q_h GC_N$ Clear Wind Flow

Section 30.8.2

Table 1: Downward Wind Pressure Coefficients GC_N , (DCE Solar GM Wind Tunnel Reports, 2014 & DCE GM DAF 2016)

Location	x^*	y^*	$x+y$ (psf)	GC_N	DAF GC_N	c/C	DAF c/C
E/W EDGE	10.90	9.20	20.10	0.75	1.07	0.45	1.00
NORTH	8.13	2.34	10.47	0.43	1.12	0.48	1.00
SOUTH	8.27	17.62	25.89	0.84	1.05	0.41	1.00
INTERIOR	6.79	1.84	8.63	0.36	1.12	0.48	1.00

Table 2: Upward Wind Pressure Coefficients GC_N , (DCE Solar GM Wind Tunnel Reports, 2014 & DCE GM DAF 2016)

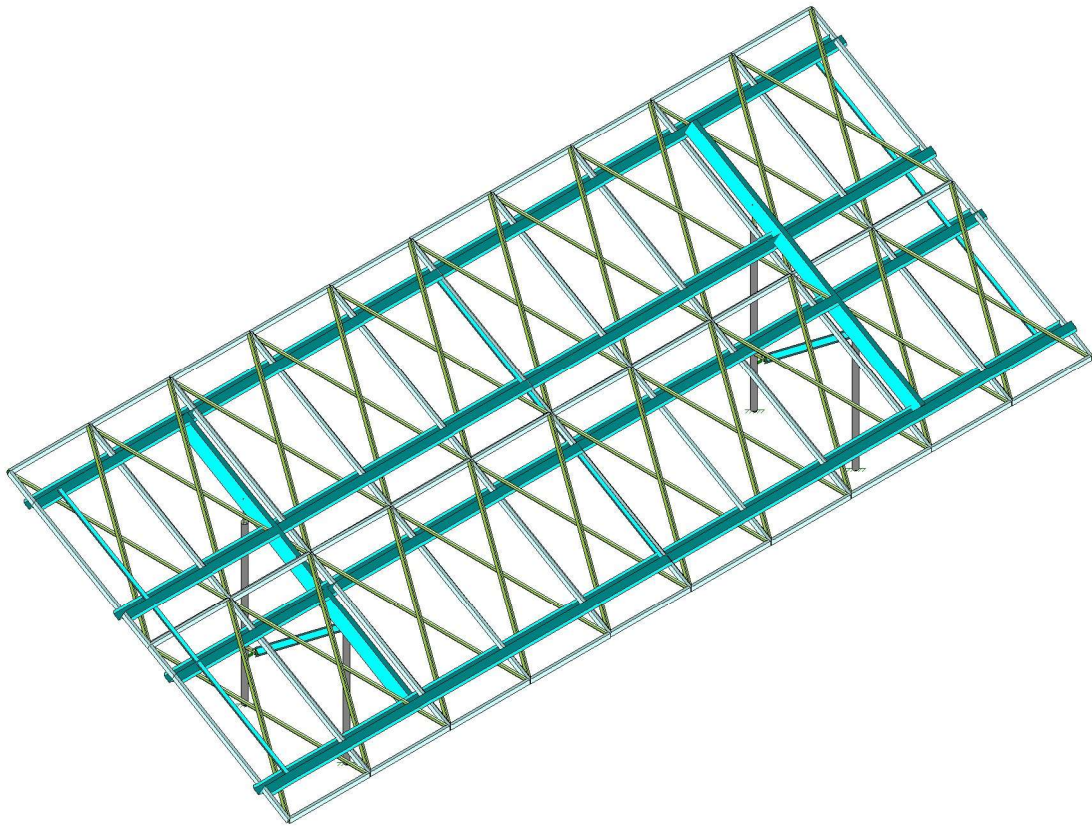
Location	x^*	y^*	$x+y$ (psf)	GC_N	DAF GC_N	c/C	DAF c/C
E/W EDGE	-3.28	-25.80	-29.08	-0.77	1.09	0.37	1.00
NORTH	-8.06	-17.99	-26.05	-0.81	1.09	0.41	1.00
SOUTH	-1.01	-25.55	-26.56	-0.66	1.09	0.35	1.00
INTERIOR	-3.39	-16.17	-19.56	-0.55	1.09	0.38	1.00

Table 3: Uniformly Distributed Wind Loads for Panel Beams In NS Direction

Panel Beam Trib. Length (ft) 3.29

Array Location	Downward Wind Dir.	
	Top (lb/ft)	Bottom (lb/ft)
EAST/WEST EDGE	-85.62	-71.05
NORTH ROW	-71.05	-56.49
SOUTH ROW	-56.49	-41.92
INTERIOR	-41.92	-27.35

Upward Wind Dir.	
Top (lb/ft)	Bottom (lb/ft)
26.66	41.53
41.53	56.40
56.40	71.28
71.28	86.15



A. Rivera

Verogy - Solar One - Watertown
3D Model

SK - 1

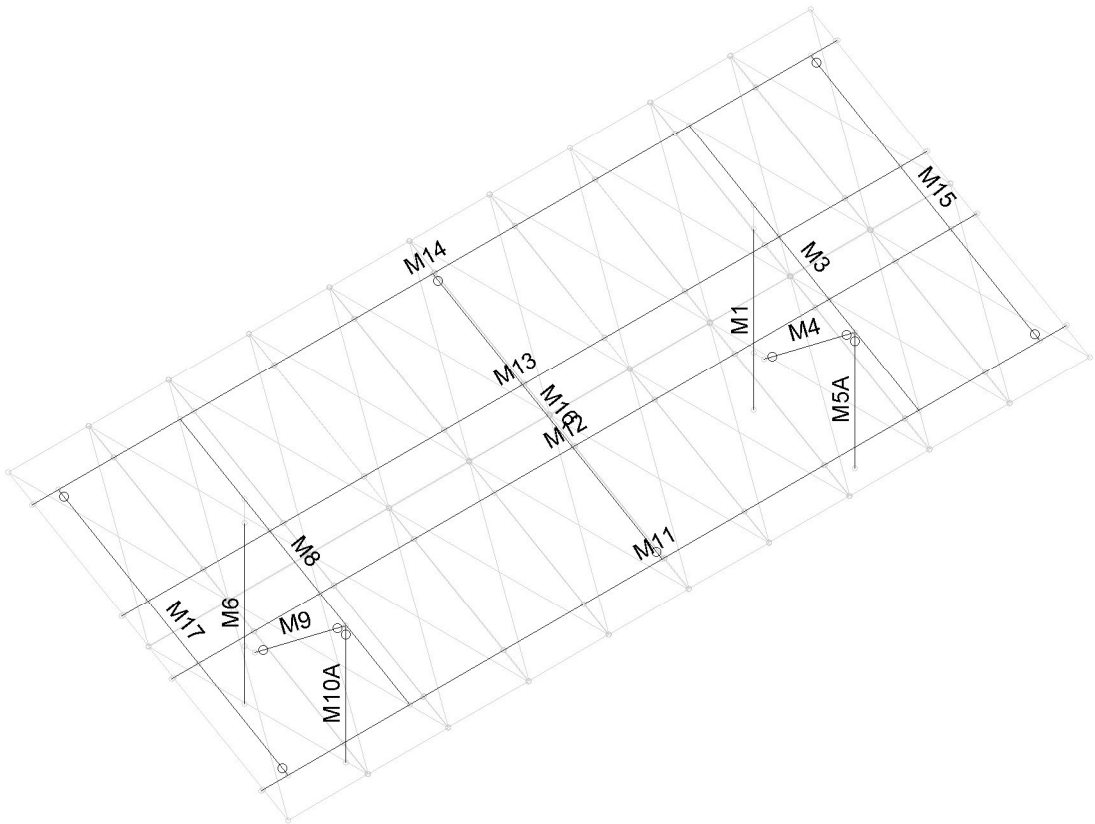
Jan 7, 2021 at 12:37 PM



A. Rivera

Verogy - Solar One - Watertown
Panel Modeling

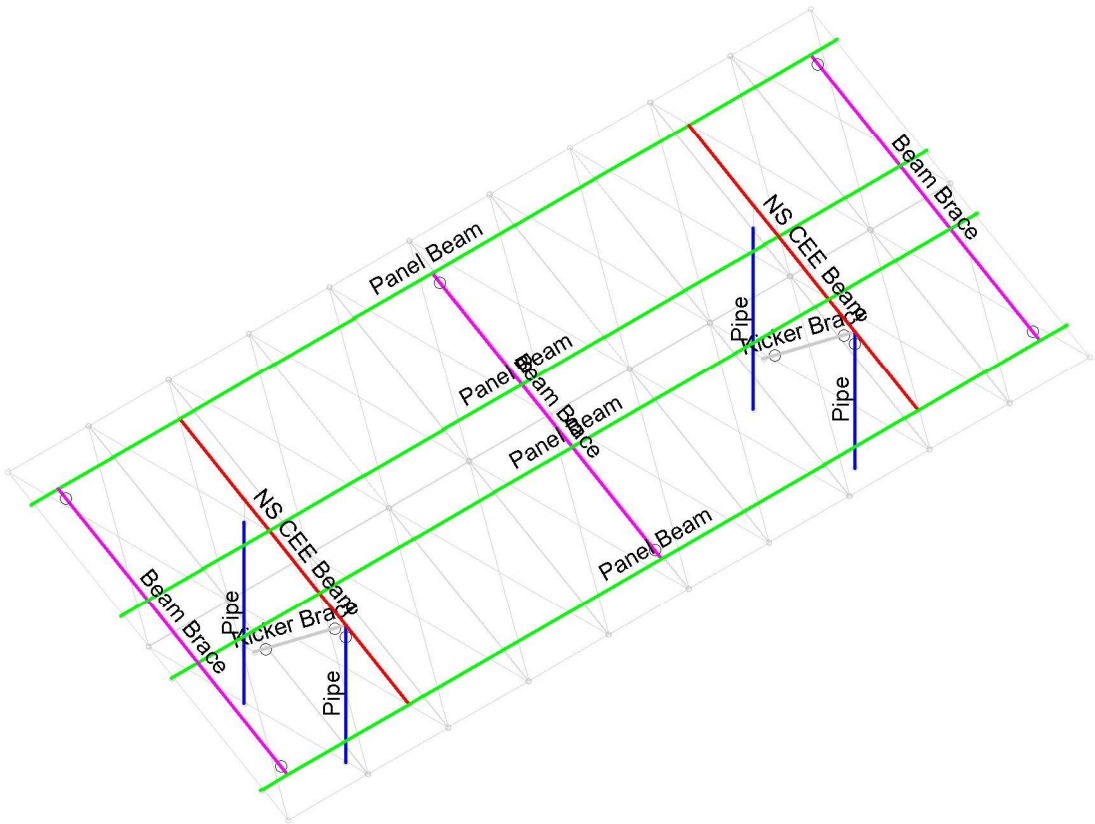
SK - 2
Jan 7, 2021 at 12:37 PM



		SK - 3
A. Rivera	Verogy - Solar One - Watertown	Jan 7, 2021 at 12:37 PM
	Member Labels	



Section Sets	
Blue	Pipe
Green	Panel Beam
Red	NS CEE Beam
Grey	Kicker Brace
Purple	Beam Brace
Cyan	RIGID
Brown	PANEL FRAME



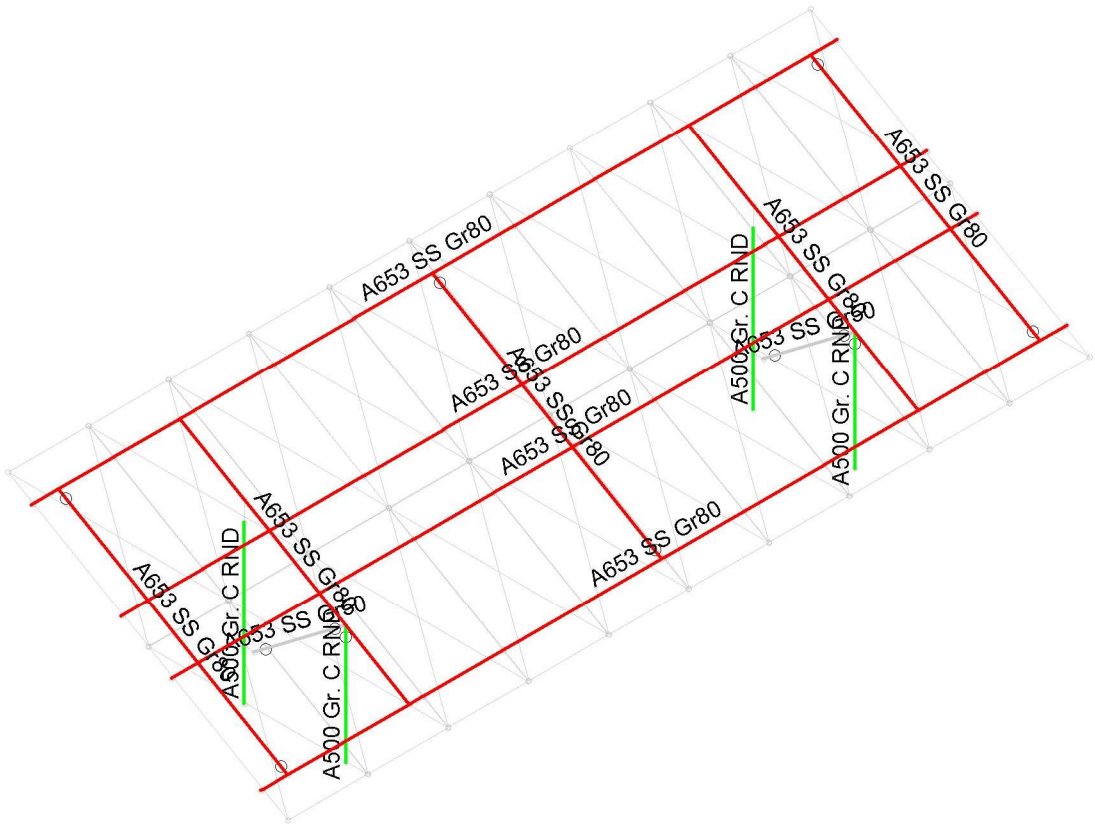
A. Rivera

Verogy - Solar One - Watertown
Member Section Set

SK - 4
Jan 7, 2021 at 12:37 PM



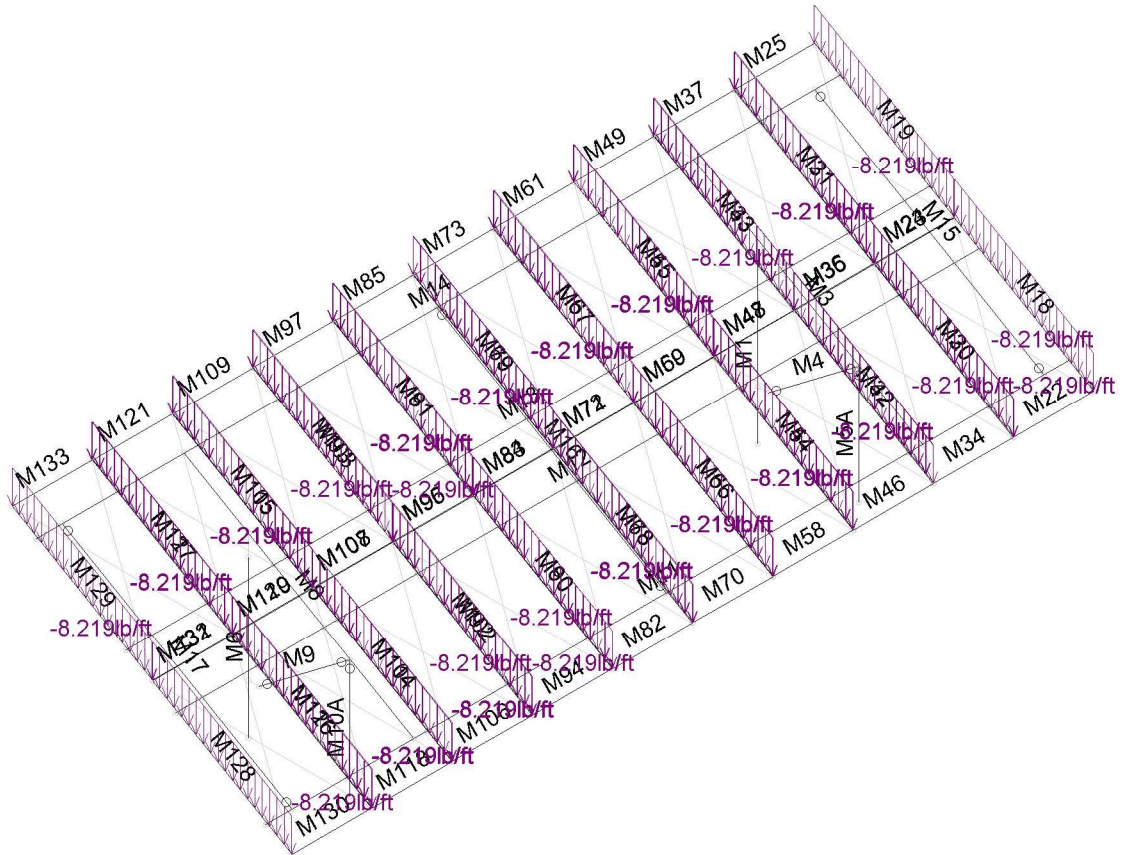
Material Sets	
Blue	RIGID
Green	A500 Gr. C RND
Red	A653 SS Gr80
Grey	A653 SS Gr60
Purple	6061-T6



A. Rivera

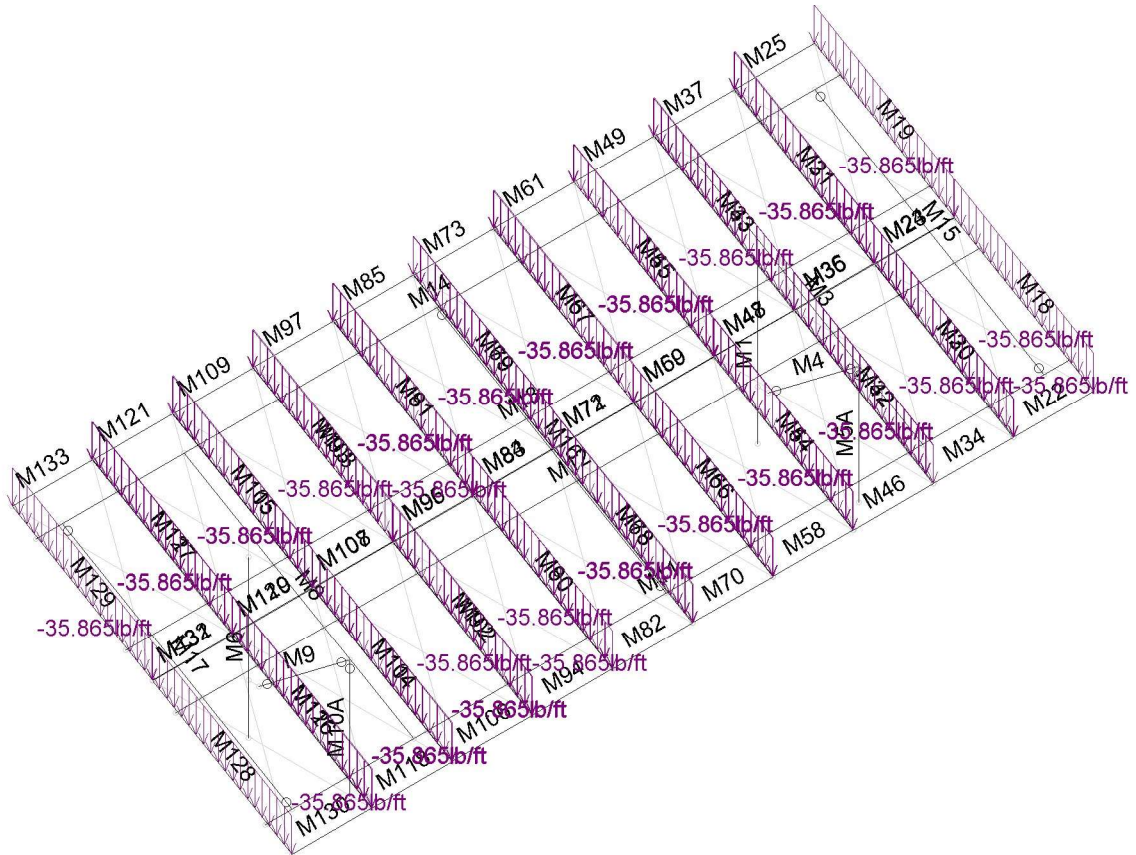
Verogy - Solar One - Watertown
Member Material Set

SK - 5
Jan 7, 2021 at 12:37 PM



Loads: BLC 1, D

		SK - 6
A. Rivera	Verogy - Solar One - Watertown	Jan 7, 2021 at 12:37 PM
	Dead Load	



Loads: BLC 2, S

A. Rivera

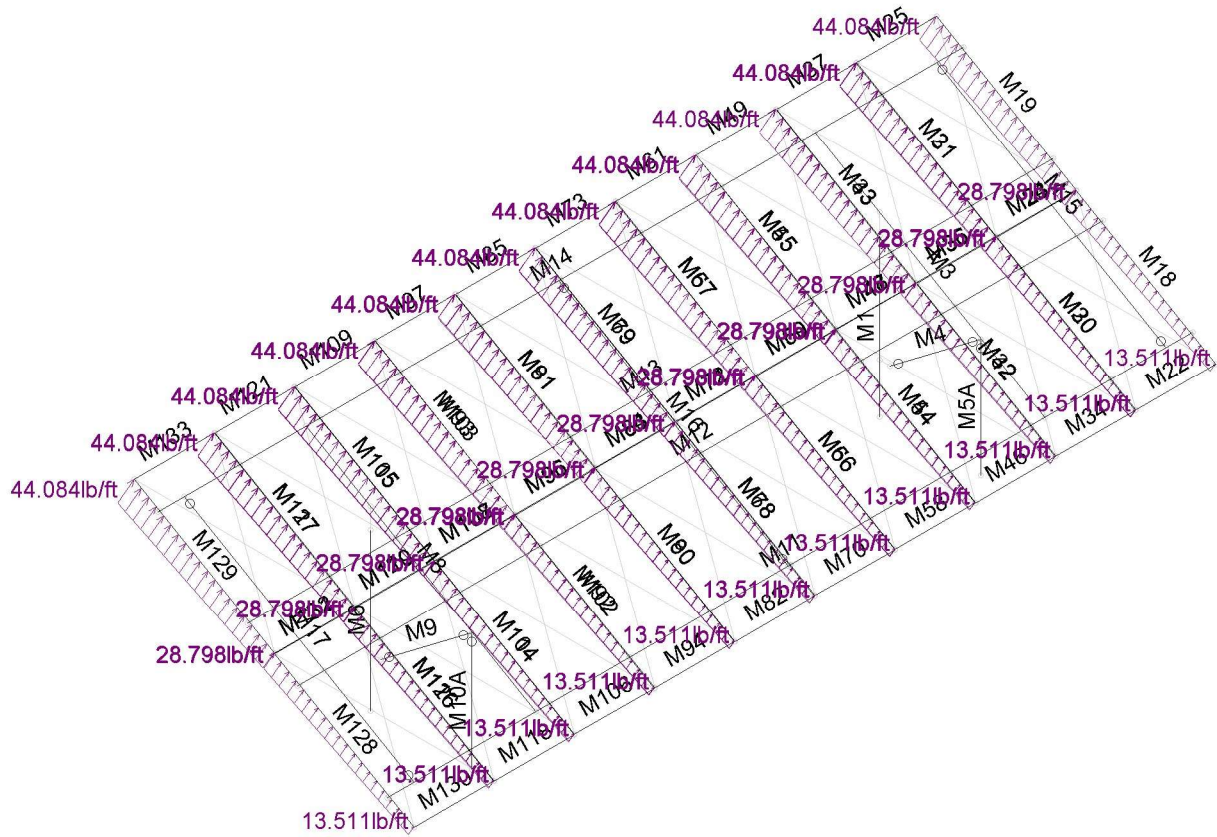
Verogy - Solar One - Watertown
Snow Load

SK - 7
Jan 7, 2021 at 12:37 PM



Loads: BLC 3, W1

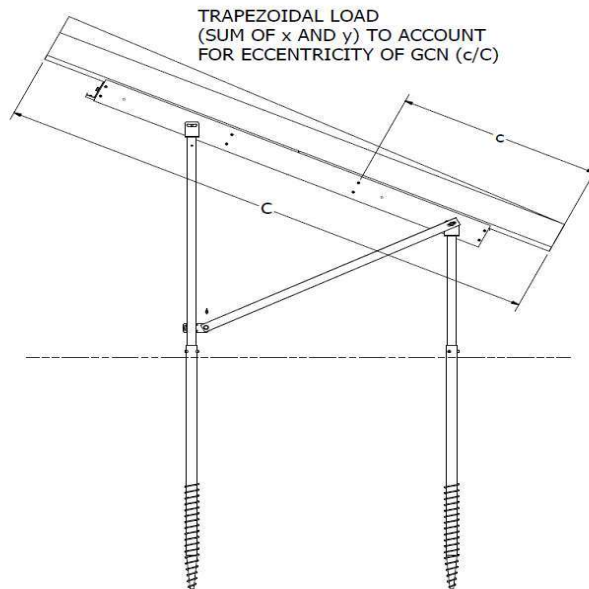
		SK - 8
A. Rivera	Verogy - Solar One - Watertown	Jan 7, 2021 at 12:37 PM
	Wind Downward Load	



Loads: BLC 4, W2

		SK - 9
A. Rivera	Verogy - Solar One - Watertown	Jan 7, 2021 at 12:37 PM
	Wind Uplift Load	

Wind Loads (Cont.)



$$\frac{1}{2}yC + xC = F = qGC_N C$$

$$x = qGC_N - \frac{1}{2}y \quad \rightarrow \quad (1)$$

$$xC \frac{C}{2} + \frac{1}{2}yC \frac{C}{3} = F_C = qGC_N Cc$$

$$\frac{xC}{2} + \frac{yC}{6} = qGC_N Cc$$

$$\frac{xC}{2} + \frac{yC}{6} = qGC_N Cc$$

$$3xC + yC = 6qGC_N Cc$$

$$-\frac{yC}{2} = 6qGC_N c - 3qGC_N C$$

$$-\frac{yC}{2} = 3qGC_N (2c - C)$$

$$Cy = -6qGC_N (2c - C)$$

$$y = -\frac{6qGC_N (2c - C)}{C} \quad \rightarrow \quad (2)$$



Company :
 Designer : A. Rivera
 Job Number :
 Model Name : Verogy - Solar One - Watertown

Aug 4, 2020
 5:13 PM
 Checked By: _____

(Global) Model Settings

Display Sections for Member Calcs	5
Max Internal Sections for Member Calcs	97
Include Shear Deformation?	Yes
Increase Nailing Capacity for Wind?	Yes
Include Warping?	Yes
Trans Load Btwn Intersecting Wood Wall?	Yes
Area Load Mesh (in^2)	144
Merge Tolerance (in)	.12
P-Delta Analysis Tolerance	0.50%
Include P-Delta for Walls?	Yes
Automatically Iterate Stiffness for Walls?	Yes
Max Iterations for Wall Stiffness	3
Gravity Acceleration (in/sec^2)	386.4
Wall Mesh Size (in)	24
Eigensolution Convergence Tol. (1.E-)	4
Vertical Axis	Y
Global Member Orientation Plane	XZ
Static Solver	Sparse Accelerated
Dynamic Solver	Accelerated Solver

Hot Rolled Steel Code	AISC 14th(360-10): ASD
Adjust Stiffness?	Yes(Iterative)
RISACONNECTION CODE	None
Cold Formed Steel Code	AISI S100-12: ASD
Wood Code	None
Wood Temperature	< 100F
Concrete Code	None
Masonry Code	None
Aluminum Code	None - Building
Stainless Steel Code	None

Number of Shear Regions	4
Region Spacing Increment (in)	4
Biaxial Column Method	Exact Integration
Parme Beta Factor (PCA)	.65
Concrete Stress Block	Rectangular
Use Cracked Sections?	Yes
Use Cracked Sections Slab?	No
Bad Framing Warnings?	No
Unused Force Warnings?	Yes
Min 1 Bar Diam. Spacing?	No
Concrete Rebar Set	REBAR_SET_ASTMA615
Min % Steel for Column	1
Max % Steel for Column	8

(Global) Model Settings, Continued

Seismic Code	None
Seismic Base Elevation (in)	Not Entered
Add Base Weight?	Yes
Ct X	.02
Ct Z	.02
T X (sec)	Not Entered
T Z (sec)	Not Entered
R X	3
R Z	3

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (\1E...Density[k/ft...	Yield[ksi]	Ry	Fu[ksi]	Rt	
1	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	.3	.65	.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	.3	.65	.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	.3	.65	.49	35	1.6	60	1.2
7	A1085	29000	11154	.3	.65	.49	50	1.4	65	1.3
8	A500 Gr. C RND	29000	11154	.3	.65	.527	50	1.4	62	1.3

Cold Formed Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (\1E5 F)	Density[k/ft^3]	Yield[ksi]	Fu[ksi]
1	A653 SS Gr33	29500	11346	.3	.65	.49	30	40
2	A653 SS Gr50/1	29500	11346	.3	.65	.49	50	65
3	A653 SS Gr80	29500	11346	.3	.65	.49	80	82
4	A653 SS Gr50	29500	11346	.3	.65	.49	50	68

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Pipe	HSS2.375X0...	Column	Pipe	A500 Gr. C ...	Typical	1	.627	.627	1.25
2	Column	W8X10	Column	Wide Flange	A992	Typical	2.96	2.09	30.8	.043

Cold Formed Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rul...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Panel Beam	6.25Z3X1X16GAX55D...	Beam	None	A653 SS G...	Typical	.883	2.393	5.633	.001
2	NS CEE Beam	8CS2X14GA-0.625	Beam	None	A653 SS G...	Typical	.987	.455	8.718	.002
3	Kicker Brace	2.75CU1.75X14GA	HBrace	None	A653 SS G...	Typical	.46	.146	.566	.000956
4	Beam Brace	1.5CU0.75X0.058	HBrace	None	A653 SS G...	Typical	.155	.008	.051	.000174
5	CEE POST	8CS3X0.75X11GA	Column	None	A653 SS G...	Typical	1.785	1.97	17.225	.009
6	EW CEE	6.25Z3X1X14GAX55D...	Beam	None	A653 SS G...	Typical	1.086	2.918	6.888	.002



Company :
 Designer : A. Rivera
 Job Number :
 Model Name : Verogy - Solar One - Watertown

Aug 4, 2020
 5:13 PM
 Checked By: _____

Basic Load Cases

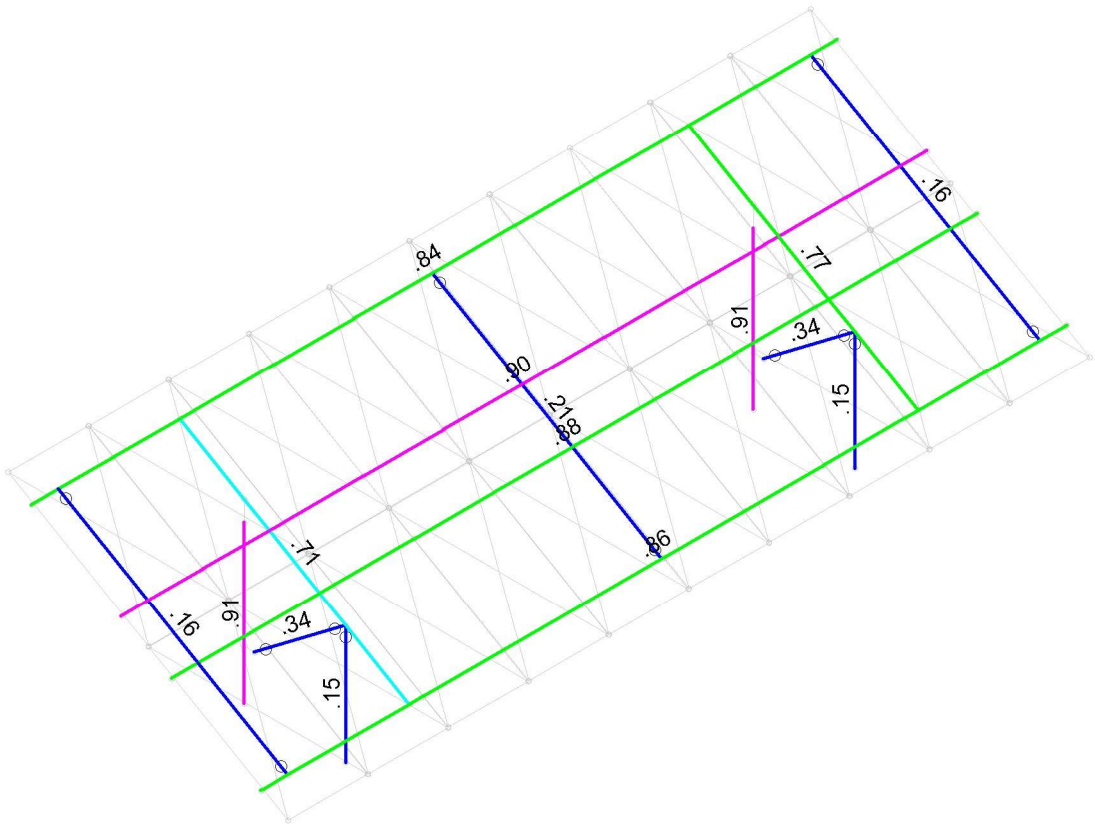
	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed Area(Me...)	Surface(P...
1	D	DL						40	
2	S	SL						40	
3	W1	WL						40	
4	W2	WL						40	

Load Combinations

Description	Sol..	PD..	SR..	BLC Fact..	BLC Fact..	BLC Fact..	BLC Fact..	BLC Fact..	BLC Fact..	BLC Fact..	BLC Fact..	BLC Fact..	BLC Fact..	BLC Fact..
1 D	Yes	Y		1	1									
2 D+S	Yes	Y		1	1	2	1							
3 D+0.6W1	Yes	Y		1	1	3	.6							
4 D+0.6W2	Yes	Y		1	1	4	.6							
5 D+0.45W1...	Yes	Y		1	1	3	.45	2	.75					
6 D+0.45W2...	Yes	Y		1	1	4	.45	2	.75					
7 0.6D+0.6W1	Yes	Y		1	.6	3	.6							
8 0.6D+0.6W2	Yes	Y		1	.6	4	.6							

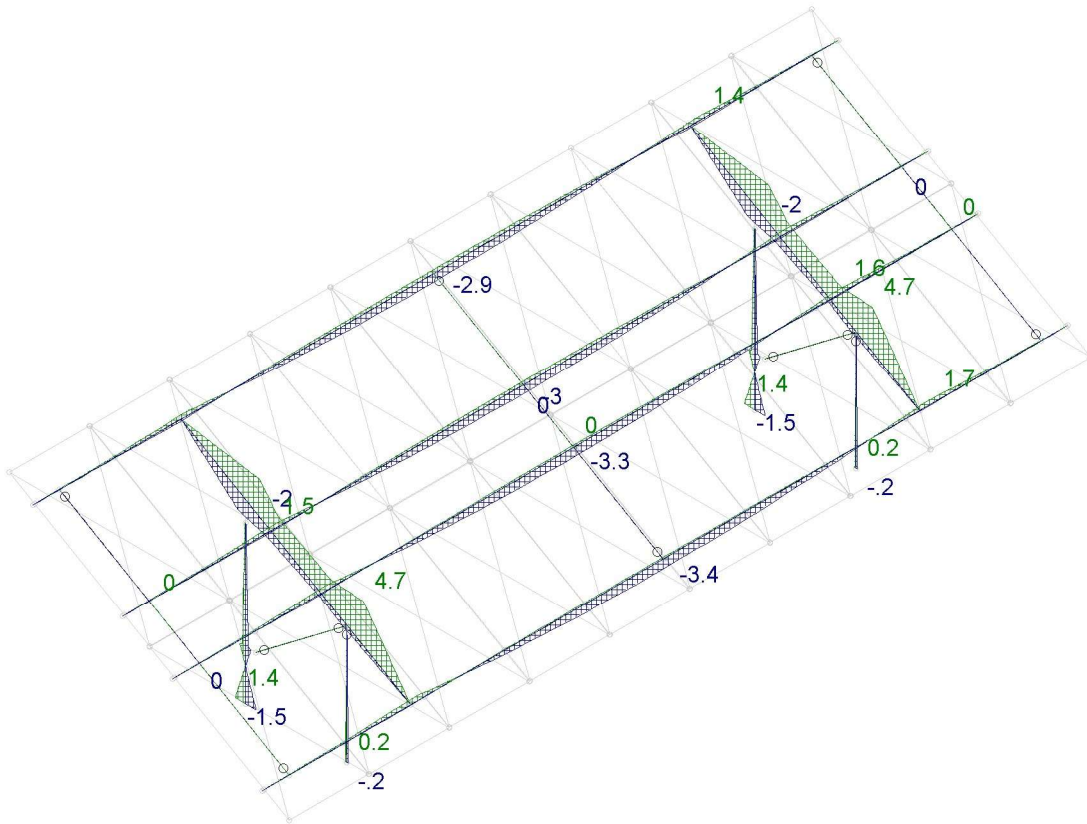


Code Check (Env)	
Black	No Calc
Red	> 1.0
Magenta	.90-1.0
Green	.75-.90
Cyan	.50-.75
Blue	0-.50



Member Code Checks Displayed (Enveloped)
 Loads: BLC 4, W2
 Envelope Only Solution

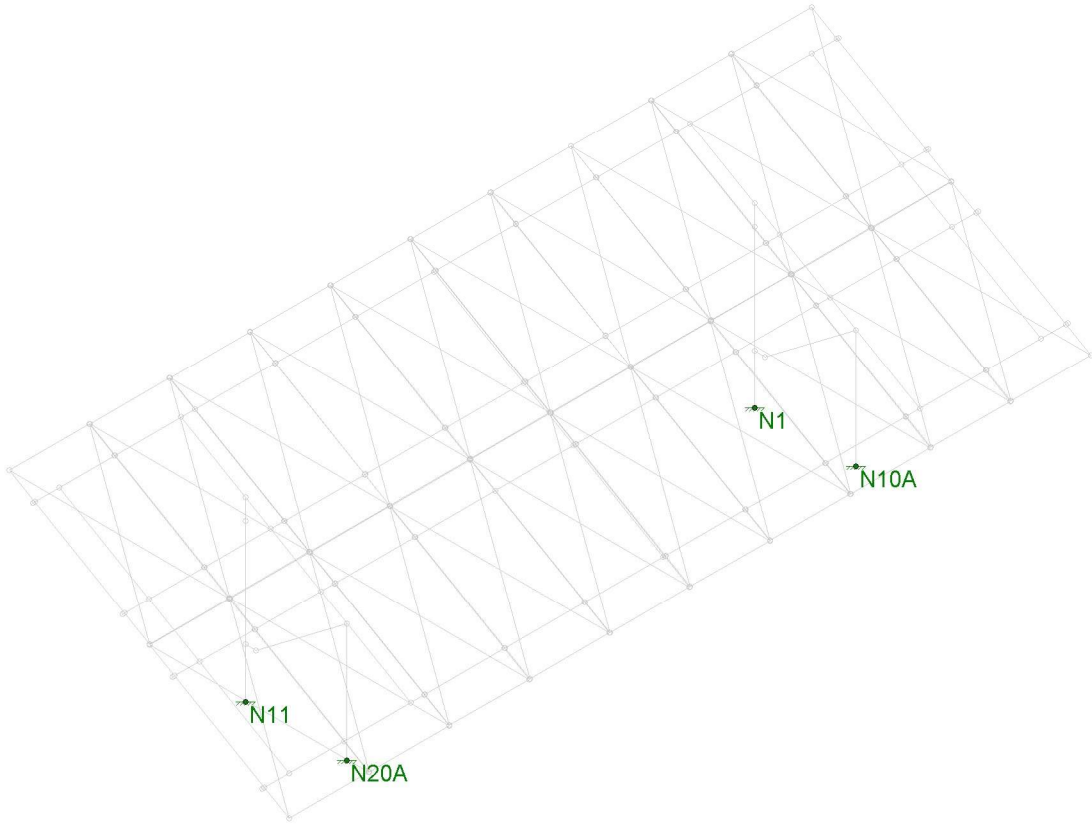
		SK - 10
A. Rivera	Verogy - Solar One - Watertown	Jan 7, 2021 at 12:37 PM
	Member Utilization Rate	



Loads: BLC 4, W2
 Envelope Only Solution
 Member z Bending Moments (k-ft) (Enveloped)

		SK - 13
A. Rivera	Verogy - Solar One - Watertown	Jan 7, 2021 at 12:37 PM
	Member Bending Stress	

FOUNDATION REACTION SUMMARY



Loads: BLC 4, W2
Envelope Only Solution

A. Rivera

Verogy - Solar One - Watertown
Foundation Nodes

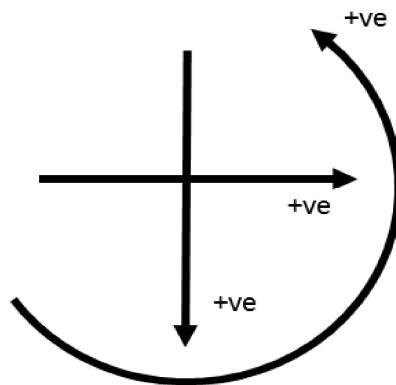
SK - 14

Jan 7, 2021 at 12:37 PM

FOUNDATION REACTION

	Load Combination	Nodes	Lateral X (kips)	Vertical Y (kips)	Moment Mzz (kip-ft)
All Zones	D	N1	0.00	0.55	0.00
	D+S	N1	0.00	3.01	0.00
Exterior Zones	D+0.6W1	N1	1.08	2.17	-1.48
	D+0.6W2	N1	-1.12	-2.38	1.45
	D+0.45W1+0.75S	N1	0.82	3.61	-1.14
	D+0.45W2+0.75S	N1	-0.84	0.17	1.13
	0.6D+0.6W1	N1	1.08	1.95	-1.48
	0.6D+0.6W2	N1	-1.12	-2.60	1.44

	Load Combination	Nodes	Lateral X (kips)	Vertical Y (kips)	Moment Mzz (kip-ft)
All Zones	D	N10A	0.00	0.54	0.00
	D+S	N10A	0.00	2.85	0.00
Exterior Zones	D+0.6W1	N10A	0.03	0.85	-0.18
	D+0.6W2	N10A	-0.03	1.49	0.18
	D+0.45W1+0.75S	N10A	0.02	2.50	-0.13
	D+0.45W2+0.75S	N10A	-0.02	3.00	0.14
	0.6D+0.6W1	N10A	0.03	0.64	-0.18
	0.6D+0.6W2	N10A	-0.03	1.27	0.18



HIGH PERFORMANCE BIFACIAL PERC MONOCRYSTALLINE MODULE

RSM144-6-370BMDG-390BMDG

144 CELL MONOCRYSTALLINE MODULE

370-390Wp POWER OUTPUT RANGE

1500VDC MAXIMUM SYSTEM VOLTAGE

19.5% MAXIMUM EFFICIENCY



About Risen Energy

Risen Energy is a leading, global tier 1 manufacturer of high-performance solar photovoltaic products and provider of total business solutions for residential, commercial and utility-scale power generation. The company, founded in 1986, and publicly listed in 2010, compels value generation for its chosen global customers. Techno-commercial innovation, underpinned by consummate quality and support, encircle Risen Energy's total Solar PV business solutions which are among the most powerful and cost-effective in the industry. With local market presence and strong financial bankability status, we are committed, and able, to building strategic, mutually beneficial collaborations with our partners, as together we capitalise on the rising value of green energy.

KEY SALIENT FEATURES



Global, Tier 1 bankable brand, with independently certified state-of-the-art automated manufacturing



Bifacial technology enables additional energy harvesting from rear side (up to 25%)



Industry leading lowest thermal co-efficient of power



Industry leading 12 years product warranty



Excellent low irradiance performance



Excellent PID resistance



Positive tight power tolerance



Dual stage 100% EL Inspection warranting defect-free product



Module Imp binning radically reduces string mismatch losses



Warranted reliability and stringent quality assurances well beyond certified requirements



Certified to withstand severe environmental conditions

- ◆ Anti-reflective & anti-soiling surface minimise power loss from dirt and dust
- ◆ Severe salt mist, ammonia & blown sand resistance, for seaside, farm and desert environments
- ◆ Excellent mechanical load 2400Pa & snow load 5400Pa resistance



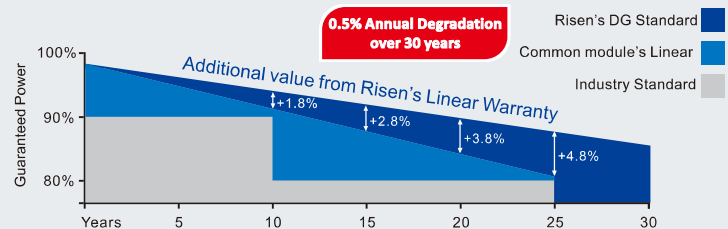
ISO9001
ISO14001
OHSAS18001

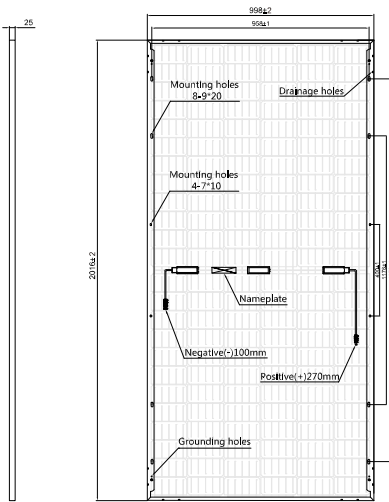


RISEN ENERGY CO., LTD.
Tashan Industry Zone, Meilin,
Ninghai 315609, Ningbo | PRC
Tel: +86-574-59953239
Fax: +86-574-59953599
E-mail: info@risenenergy.com
Website: www.risenenergy.com

LINEAR PERFORMANCE WARRANTY

12 year Product Warranty / 30 year Linear Power Warranty



Dimensions of PV Module Unit: mm

ELECTRICAL DATA (STC)

Model Number	RSM144-6-370BMDG	RSM144-6-375BMDG	RSM144-6-380BMDG	RSM144-6-385BMDG	RSM144-6-390BMDG
Rated Power in Watts-Pmax(Wp)	370	375	380	385	390
Open Circuit Voltage-Voc(V)	47.60	47.75	48.00	48.15	48.30
Short Circuit Current-Isc(A)	9.90	10.00	10.10	10.20	10.30
Maximum Power Voltage-Vmpp(V)	39.80	39.90	40.05	40.15	40.25
Maximum Power Current-Impp(A)	9.30	9.40	9.50	9.60	9.70
Module Efficiency (%)	18.5	18.8	19.0	19.3	19.5
Encapsulated Cell Efficiency (%)	20.8	21.1	21.4	21.6	21.9

STC: Irradiance 1000 W/m², Cell Temperature 25°C, Air Mass AM1.5 according to EN 60904-3.
 Power production tolerance: 0~+3%

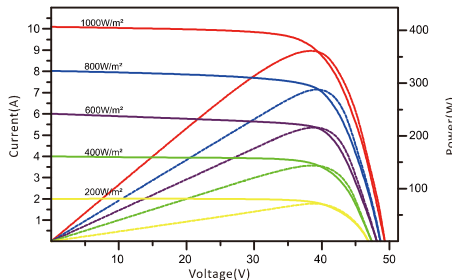
REAR SIDE POWER GAIN BIFACIAL FACTOR:75%±5

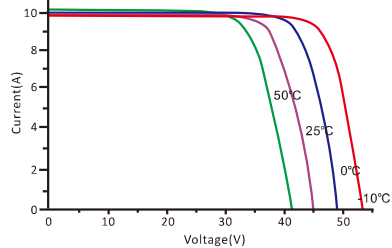
Model Number	RSM144-6-370BMDG	RSM144-6-375BMDG	RSM144-6-380BMDG	RSM144-6-385BMDG	RSM144-6-390BMDG
10% Power Output(Wp)	407	413	418	424	429
15% Power Output(Wp)	426	431	437	443	449
20% Power Output(Wp)	444	450	456	462	468
25% Power Output(Wp)	463	469	475	481	488

ELECTRICAL DATA (NMOT)

Model Number	RSM144-6-370BMDG	RSM144-6-375BMDG	RSM144-6-380BMDG	RSM144-6-385BMDG	RSM144-6-390BMDG
Maximum Power-Pmax (Wp)	276.7	280.3	284.4	288.1	291.8
Open Circuit Voltage-Voc (V)	43.8	43.9	44.2	44.3	44.4
Short Circuit Current-Isc (A)	8.12	8.20	8.28	8.36	8.45
Maximum Power Voltage-Vmpp (V)	36.5	36.6	36.7	36.8	36.9
Maximum Power Current-Impp (A)	7.59	7.67	7.75	7.83	7.92

NMOT: Irradiance at 800 W/m², Ambient Temperature 20°C, Wind Speed 1 m/s.

RSM144-6-390BMDG
I-V characteristics at different irradiances

I-V characteristics at different temperatures

 (AM1.5, 1000W/m²)

MECHANICAL DATA

Solar cells	Monocrystalline, 6" half cell
Cell configuration	144 cells (6×12+6×12)
Module dimensions	2016×998×25mm
Weight	26kg
Superstrate	2.0 mm, ARC Glass
Substrate	2.0 mm, Glazed Glass
Frame	Anodized Aluminium Alloy type 6063T5, Silver Color
J-Box	Potted, IP68, 1500VDC, 3 Schottky bypass diodes
Cables	4.0mm ² (12AWG), positive 270mm length, negative 100mm length
Connector	Risen Twinsel PV-SY02, IP68

TEMPERATURE & MAXIMUM RATINGS

Nominal Module Operating Temperature (NMOT)	45°C±2°C
Temperature Coefficient of Voc	-0.29%/°C
Temperature Coefficient of Isc	0.06%/°C
Temperature Coefficient of Pmax	-0.37%/°C
Operational Temperature	-40°C~+85°C
Maximum System Voltage	1500VDC
Max Series Fuse Rating	20A
Limiting Reverse Current	20A

PACKAGING CONFIGURATION

	40ft	20ft
Number of modules per container	880	400
Number of modules per pallet	40	40
Number of pallets per container	22	10
Packaging box dimensions (LxWxH) in mm	2110×1130×1140	2110×1130×1140
Box gross weight[kg]	1100	1100

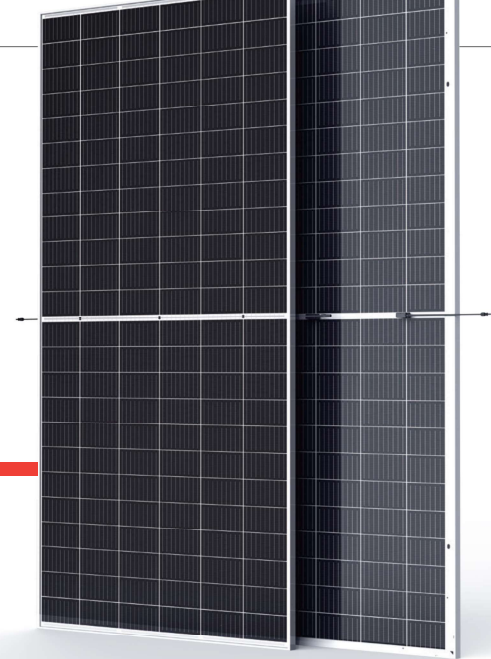
CAUTION: READ SAFETY AND INSTALLATION INSTRUCTIONS BEFORE USING THE PRODUCT.

©2019 Risen Energy. All rights reserved. Specifications included in this datasheet are subject to change without notice.

THE

DUOMAX^{tw}in

BIFACIAL DUAL GLASS 144 CELL MULTI BUSBAR MODULE



144-Cell
MONOCRYSTALLINE MODULE

390-410W
POWER OUTPUT RANGE

20.2%
MAXIMUM EFFICIENCY

0~+5W
POSITIVE POWER TOLERANCE

PRODUCTS	POWER RANGE
TSM-DEG15MC.20(II)	390-410W



High power output

- Up to 410W front power and 20.2% module efficiency with half-cut and MBB (Multi Busbar) technology enabling higher BOS savings
- Lower resistance of half-cut cells ensures higher power



Certified to perform in highly challenging environments

- High PID resistance through cell process and module material control
- Resistant to salt, acid, sand, and ammonia
- Proven to be reliable in high temperature and humidity areas
- Certified to the best fire class A
- Minimizes micro-crack and snail trails
- Certified to 5400 Pa positive load and 2400 Pa negative load



High energy generation, low LCOE

- Up to 25% additional power gain from back side, depending on the albedo
- Excellent 3rd party validated IAM and low light performance with cell process and module material optimization
- Low temp coefficient (-0.35%) and NMOT increases energy production
- Better anti-shading performance and lower operating temperature
- Higher power from same installation footprint as standard modules



Easy to install, wide application

- Frame design enables compatibility with standard installation methods
- Deployable for ground mounted utility, carports, and agricultural projects
- Safe and easy to transport, handle, and install like normal framed modules

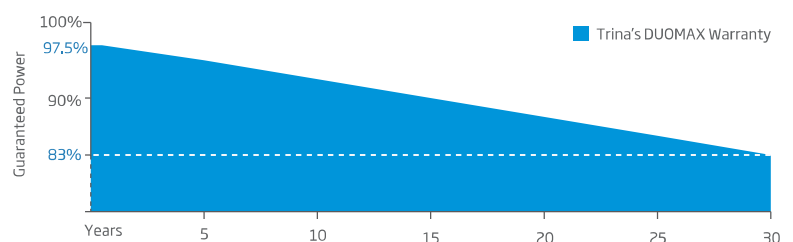
Founded in 1997, Trina Solar is the world's leading total solution provider for solar energy. With local presence around the globe, Trina Solar is able to provide exceptional service to each customer in each market and deliver our innovative, reliable products with the backing of Trina as a strong, bankable brand. Trina Solar now distributes its PV products to over 100 countries all over the world. We are committed to building strategic, mutually beneficial collaborations with installers, developers, distributors and other partners in driving smart energy together.

Comprehensive Products and System Certificates

IEC61215/IEC61730/IEC61701/IEC62716
 ISO 9001: Quality Management System
 ISO 14001: Environmental Management System
 ISO14064: Greenhouse Gases Emissions Verification
 OHSAS 18001: Occupation Health and Safety Management System

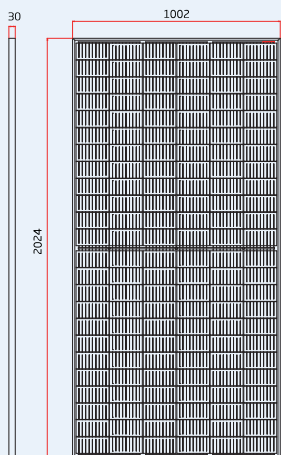


Trina Solar's DUOMAX Performance Warranty

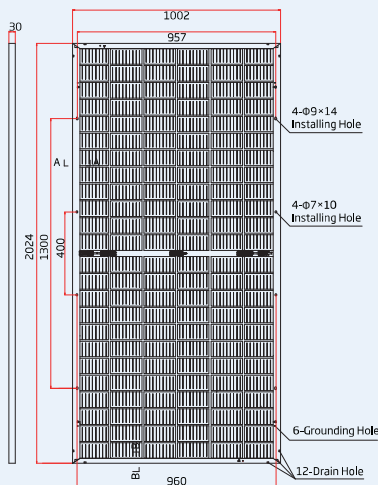


From the 2nd year to the 30th year, the average annual power decline will be no more than 0.5%.

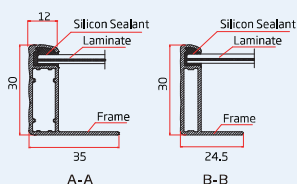
DIMENSIONS OF PV MODULE (mm)



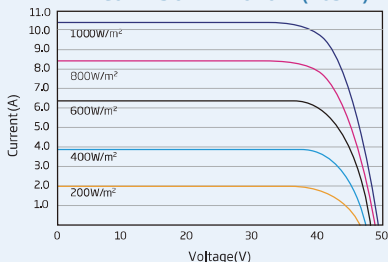
Front View



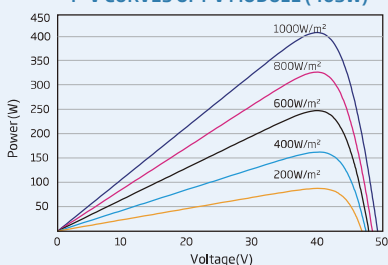
Back View



I-V CURVES OF PV MODULE (405W)



P-V CURVES OF PV MODULE (405W)



ELECTRICAL DATA (STC)

Peak Power Watts-P _{MAX} (Wp)*	390	395	400	405	410
Power Output Tolerance-P _{MAX} (W)	0 ~ +5				
Maximum Power Voltage-V _{MPP} (V)	40.2	40.5	40.8	41.1	41.4
Maximum Power Current-I _{MPP} (A)	9.71	9.76	9.81	9.86	9.91
Open Circuit Voltage-V _{OC} (V)	48.5	48.7	48.9	49.1	49.3
Short Circuit Current-I _{SC} (A)	10.25	10.29	10.33	10.37	10.41
Module Efficiency η _m (%)	19.2	19.5	19.7	20.0	20.2

STC: Irradiance 1000W/m², Cell Temperature 25°C, Air Mass AM1.5,

*Measuring tolerance: ±3%.

ELECTRICAL DATA (NMOT)

Maximum Power-P _{MAX} (Wp)	295	299	302	306	310
Maximum Power Voltage-V _{MPP} (V)	37.7	38.0	38.3	38.6	38.9
Maximum Power Current-I _{MPP} (A)	7.82	7.86	7.90	7.93	7.97
Open Circuit Voltage-V _{OC} (V)	45.7	45.9	46.1	46.3	46.5
Short Circuit Current-I _{SC} (A)	8.26	8.29	8.33	8.36	8.39

NMOT: Irradiance at 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s.

Electrical characteristics with different rear side power gains (referenced specifically to 405 Wp front)**

Maximum Power-P _{MAX} (Wp)	425	446	466	486	506
Maximum Power Voltage-V _{MPP} (V)	41.1	41.1	41.1	41.1	41.1
Maximum Power Current-I _{MPP} (A)	10.35	10.85	11.34	11.83	12.33
Open Circuit Voltage-V _{OC} (V)	49.2	49.3	49.4	49.5	49.6
Short Circuit Current-I _{SC} (A)	10.89	11.41	11.93	12.44	12.96
P _{max} gain	5%	10%	15%	20%	25%

Power Bifaciality:70±5%.

MECHANICAL DATA

Solar Cells	Monocrystalline
Cell Orientation	144 cells (6 × 24)
Module Dimensions	2024 × 1002 × 30 mm (79.69 × 39.45 × 1.18 inches)
Weight	26.0 kg (57.3 lb)
Front Glass	2.0 mm (0.08 inches), High Transmission, AR Coated Heat Strengthened Glass
Encapsulant material	POE/EVA
Back Glass	2.0 mm (0.08 inches), Heat Strengthened Glass (White Grid Glass)
Frame	30mm (1.18 inches) Anodized Aluminium Alloy
J-Box	IP 68 rated
Cables	Photovoltaic Technology Cable 4.0 mm ² (0.006 inches ²) Portrait: 280/280 mm (11.02/11.02 inches) Landscape: 1900/1900 mm (74.80/74.80 inches)
Connector	Trina TS4

TEMPERATURE RATINGS

NMOT (Nominal Module Operating Temperature)	41°C (±3°C)
Temperature Coefficient of P _{MAX}	- 0.35%/°C
Temperature Coefficient of V _{OC}	- 0.25%/°C
Temperature Coefficient of I _{SC}	0.04%/°C

(Do not connect Fuse in Combiner Box with two or more strings in parallel connection)

MAXIMUM RATINGS

Operational Temperature	-40~+85°C
Maximum System Voltage	1500V DC (IEC) 1500V DC (UL)
Max Series Fuse Rating	20A

WARRANTY

12 year Product Workmanship Warranty
30 year Power Warranty
(Please refer to product warranty for details)

** Back-side power gain varies depending upon the specific project albedo

PACKAGING CONFIGURATION

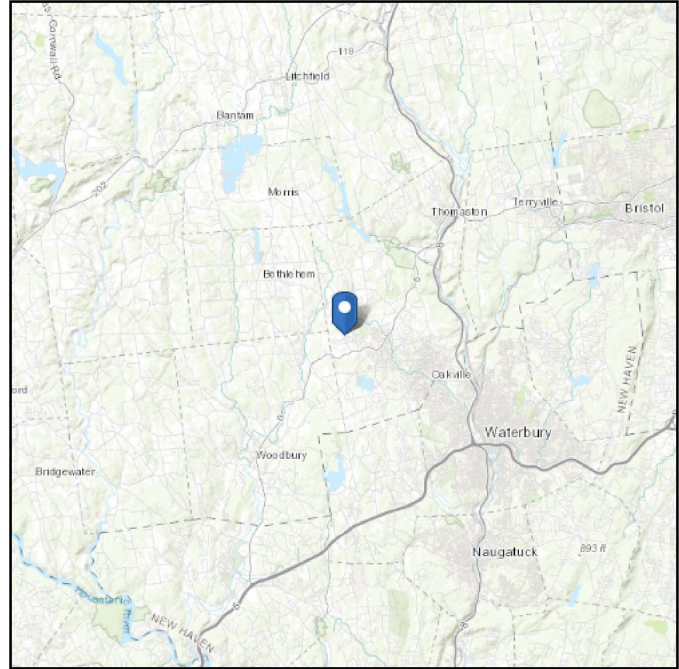
Modules per box: 35 pieces
Modules per 40' container: 665 pieces

ASCE 7 Hazards Report

Address:
Platt Rd
Watertown, Connecticut
06795

Standard: ASCE/SEI 7-10
Risk Category: I
Soil Class: D - Stiff Soil

Elevation: 740.51 ft (NAVD 88)
Latitude: 41.610347
Longitude: -73.146302



Wind

Results:

Wind Speed:	118 Vmph
10-year MRI	76 Vmph
25-year MRI	85 Vmph
50-year MRI	90 Vmph
100-year MRI	97 Vmph

Data Source: ASCE/SEI 7-10, Fig. 26.5-1A and Figs. CC-1–CC-4, incorporating errata of March 12, 2014

Date Accessed: Wed Jul 29 2020

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-10 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

Site is in a hurricane-prone region as defined in ASCE/SEI 7-10 Section 26.2. Glazed openings need not be protected against wind-borne debris.

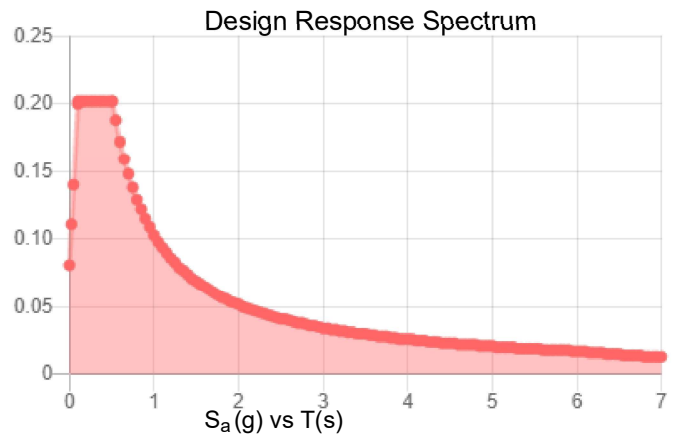
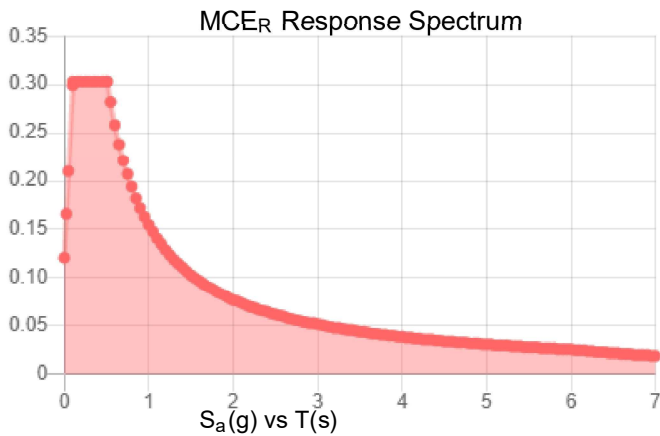
Mountainous terrain, gorges, ocean promontories, and special wind regions should be examined for unusual wind conditions.

Site Soil Class: D - Stiff Soil

Results:

S_s :	0.19	S_{DS} :	0.202
S_1 :	0.065	S_{D1} :	0.103
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.098
S_{MS} :	0.303	PGA _M :	0.157
S_{M1} :	0.155	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B



Data Accessed:

Wed Jul 29 2020

Date Source:

USGS Seismic Design Maps based on ASCE/SEI 7-10, incorporating Supplement 1 and errata of March 31, 2013, and ASCE/SEI 7-10 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-10 Ch. 21 are available from USGS.

Snow

Results:

Ground Snow Load, p_g : 35 lb/ft²
Elevation: 740.5 ft
Data Source: ASCE/SEI 7-10, Fig. 7-1.
Date Accessed: Wed Jul 29 2020

Values provided are ground snow loads. In areas designated "case study required," extreme local variations in ground snow loads preclude mapping at this scale. Site-specific case studies are required to establish ground snow loads at elevations not covered.

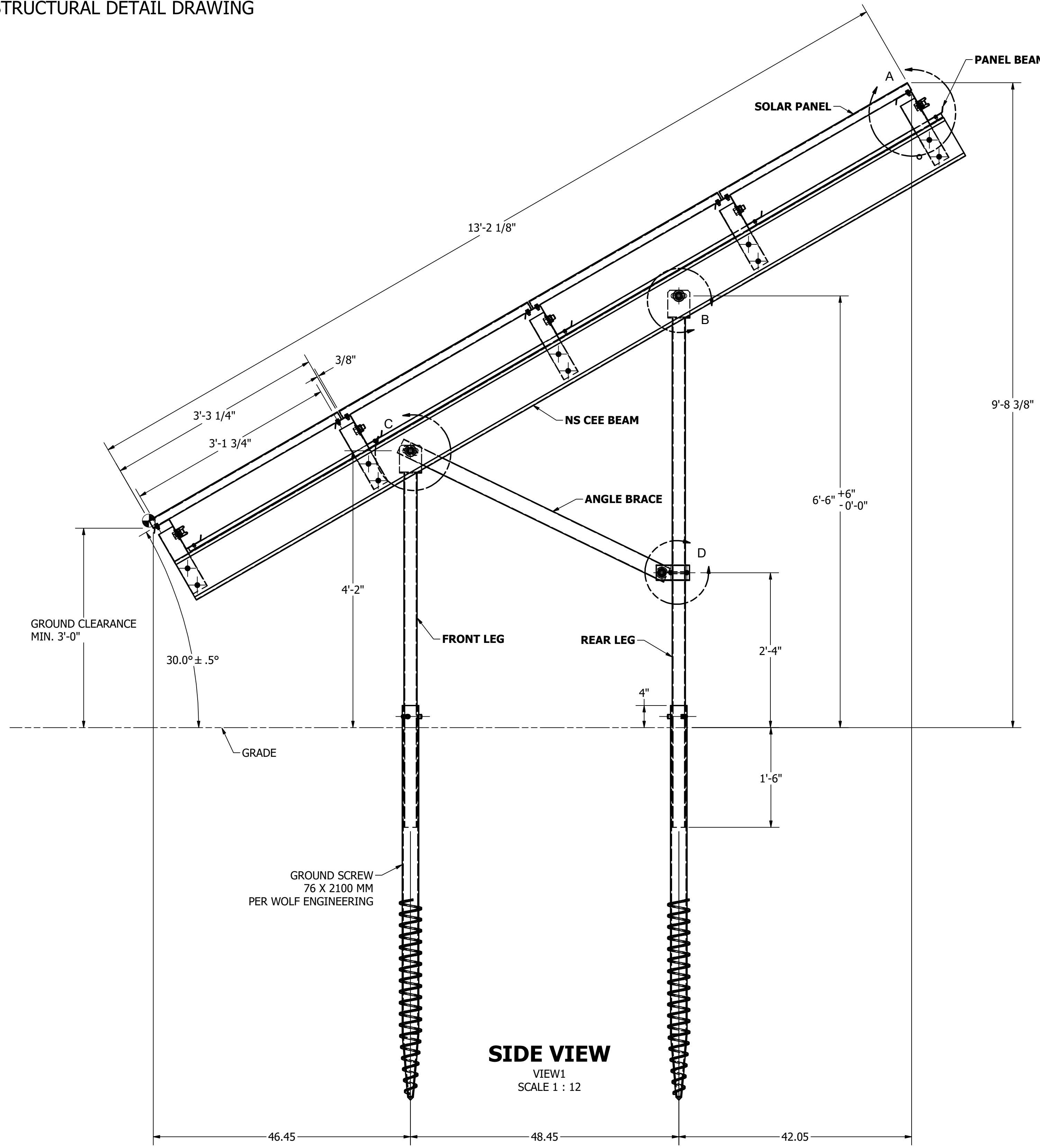
The ASCE 7 Hazard Tool is provided for your convenience, for informational purposes only, and is provided "as is" and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE 7 standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

ASCE does not intend, nor should anyone interpret, the results provided by this Tool to replace the sound judgment of a competent professional, having knowledge and experience in the appropriate field(s) of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the contents of this Tool or the ASCE 7 standard.

In using this Tool, you expressly assume all risks associated with your use. Under no circumstances shall ASCE or its officers, directors, employees, members, affiliates, or agents be liable to you or any other person for any direct, indirect, special, incidental, or consequential damages arising from or related to your use of, or reliance on, the Tool or any information obtained therein. To the fullest extent permitted by law, you agree to release and hold harmless ASCE from any and all liability of any nature arising out of or resulting from any use of data provided by the ASCE 7 Hazard Tool.

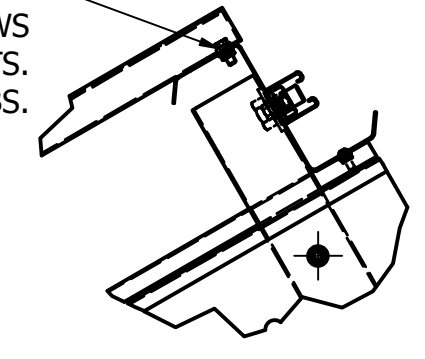
**APPENDIX- A
STRUCTURAL DETAIL DRAWING**

PROJECT INFORMATION	
INSTALLATION ADDRESS: PLATT ROAD, WATERTOWN, CT 06795	
Structural General Notes	
<p>1. The contractor will be solely responsible for all construction means, methods, techniques, sequences and procedures and shall at all times take reasonable precautions for the safety of its employees on the project, and shall comply with all applicable provisions of federal, state, and municipal safety laws and building construction codes.</p> <p>2. If existing conditions make it necessary to revise structural details, consult DCE Solar before proceeding with any change.</p> <p>3. These drawings and notes are for this specific project and no other use is authorized.</p> <p>4. Structure designed in accordance with the 2018 Connecticut State Building Code, ASCE 7-10, AISC 360-10 (14th Edition), and AISI S100-12: ASD</p> <p>Snow Loads: -Ground Snow Load pg = 40 psf -Importance Factor Is=0.8 -Exposure Factor Ce=1.0 -Slope Snow Load ps= 30 psf</p> <p>Wind Loads: -Basic Wind Speed V= 110 mph (MRI = 0.93 or 25 year) -Iw = 1 -Exposure = C -Wind Design performed in accordance with the requirements of ASCE - Wind Tunnel Procedure. Refer to Wind Tunnel Report by UWOL BLWT Laboratory dated 12/11/14.</p> <p>Seismic Loads: -SS = 0.182g, S1 = 0.065g -Site Class = D -SDS = 0.190g, SD1 = 0.100g -Seismic Design Category = B -Ordinary Steel Cantilever Column System</p> <p>5. Material strengths: -Hot-rolled structural steel ASTM A992 GR50 w/80 ksi yield. -Cold Formed Steel Sections comply w/ASTM A1003, structural grade, galvanized to Grade as noted. -Formed Steel Brackets - ASTM A653 Grade 50 SS, G115 HDG -I-Beams - A992, 50 ksi, Hot Dip Galvanized to ASTM 123 Grade 85 -Plate - A36 Steel, Hot Dip Galvanized -Connectors - Stainless Steel unless otherwise noted.</p> <p>6. Members and connections have been designed for worst-case loading associated with exterior zones of the array per the wind tunnel report.</p> <p>7. Foundation embedment depths are to be calculated and sealed by a CT State Licensed Geotechnical engineer.</p> <p>8. For the purposes of this project, all arrays are classified as Exterior Arrays.</p> <p>9. Scope of work by Structural Engineer includes member design, connection design, and determination of design base reactions only. Layout of PV arrays such that they do not conflict with existing site obstructions, determination of site-specific foundation and geotechnical parameters, and all other work not specifically noted is by others.</p>	
Engineer of Record	



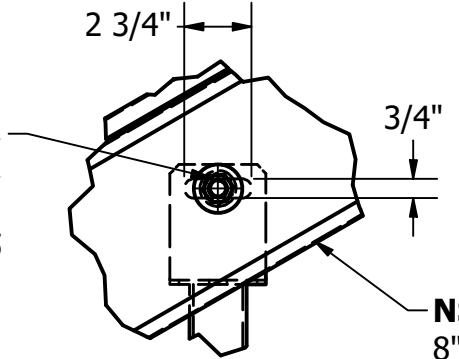
SIDE VIEW
VIEW1
SCALE 1 : 12

PANEL ATTACHES TO PANEL BEAMS WITH (4) 5/16-18 X 3/4" SERRATED FLANGE CAP SCREWS AND 5/16-18 SERRATED FLANGE NUTS. TORQUE TO 15 FT-LBS.



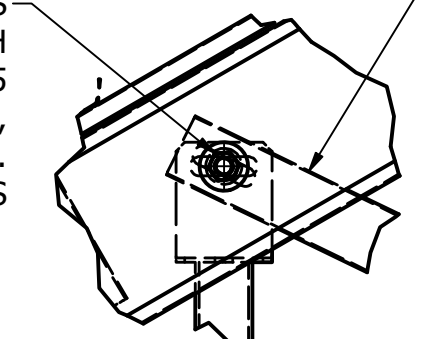
DETAIL A
SCALE 1 / 8

WELDED LEG ADAPTER BRACKET A36 STEEL, HSS2.375X0.154, A500 C, HOT DIP GALVANIZED TO ASTM A123. ATTACHES TO NS BEAM WITH (1) 3/4-10 X 1.5" GRADE 5 STEEL HHCS, WASHER, AND SERRATED FLANGE NUT. TORQUE TO 250 FT-LBS.



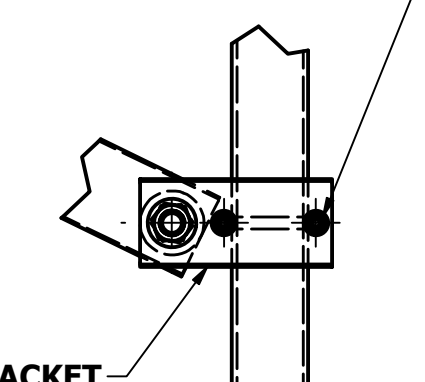
DETAIL B
SCALE 1 / 8

NS CEE BEAM ATTACHES TO ANGLE BRACE WITH (1) 3/4-10 X 1.5" GRADE 5 STEEL HHCS, WASHER, AND SERRATED FLANGE NUT. TORQUE TO 250 FT-LBS.



DETAIL C
SCALE 1 / 8

CHANNEL BRACKET ATTACHES TO LEG ADAPTER USING (1) 3/8-16 U-BOLT AND (2) SERRATED FLANGE NUTS. TORQUE TO 20 FT-LBS



DETAIL D
SCALE 1 / 6

CHANNEL BRACKET 2.75" X 1.75" U-CHANNEL, 14 GAUGE ASTM A653 GRADE 50 SS STEEL G115 GALVANIZED. ATTACHES TO ANGLE BRACE WITH (1) 3/4-10 X 1.5" GRADE 5 STEEL HHCS, WASHER AND SERRATED FLANGE NUT. TORQUE TO 250 FT-LBS

****PROPRIETARY AND CONFIDENTIAL****

THIS DRAWING AND ALL INFORMATION THEREIN IS THE PROPERTY OF DCE SOLAR AND IS CONFIDENTIAL AND MUST NOT BE MADE PUBLIC OR COPIED UNLESS AUTHORIZED BY DCE SOLAR AND IS SUBJECT TO RETURN UPON REQUEST.

DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED
TOLERANCES ARE AS FOLLOWS:
 .X = ± 0.050" (1.27mm)
 .XX = ± 0.015" (0.38mm)
 .XXX = ± 0.005" (0.127mm)

ANGLE = ± 5°
 MIN. BREAK = 0.012" (0.3mm)
 SURFACE FINISH = 63 (US)

Material:			
Weight:	1760.279 lbmass		
Description:	CT-BF-GS, RISEN SOLAR RSM144-6-380BMDG, 4x5, 30 DEG, WATERTOWN SOLAR ONE - BIFACIAL - RISEN SOLAR, VEROGY		
Project:	WATERTOWN SOLAR ONE - BIFACIAL - RISEN SOLAR		
Drawn:	TMAYHEW	Date:	12/14/2020
Scale:		Sheet:	1 of 3
Format:	D	Part Number:	4639
Rev:		Rev:	1

NOTE: GROUND SCREWS WILL BE PRE-DRILLED

REVISION HISTORY			
REV	DESCRIPTION	DATE	DESIGNER
0	STRUCTURAL DETAIL DRAWING	7/15/2020	JSCOTT
1	ADDED NOTE ON SHEET 1	12/14/2020	TMAYHEW

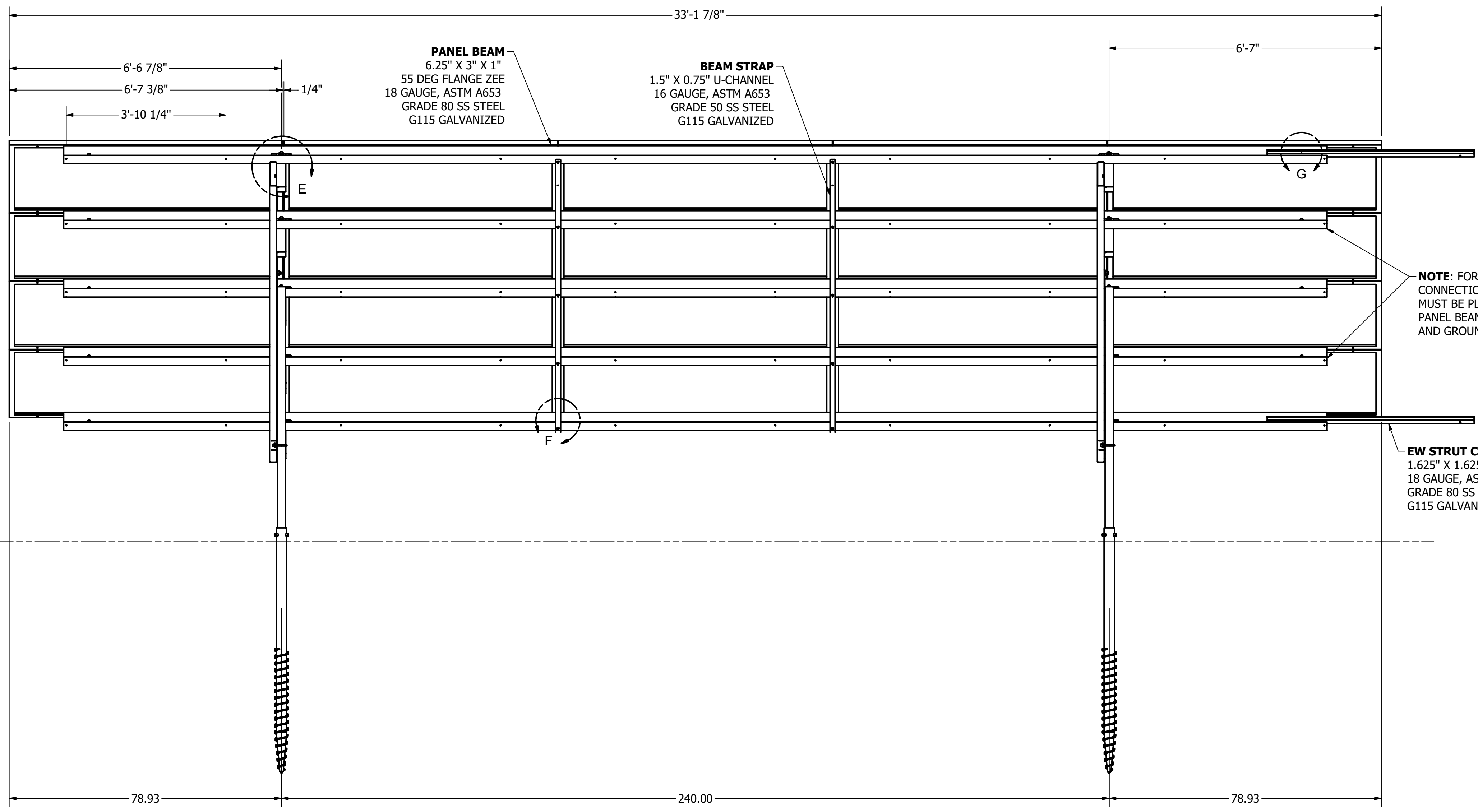
STRUCTURAL DETAIL DRAWING - REAR

PROJECT INFORMATION
 INSTALLATION ADDRESS: PLATT ROAD, WATERTOWN, CT 06795

Structural General Notes

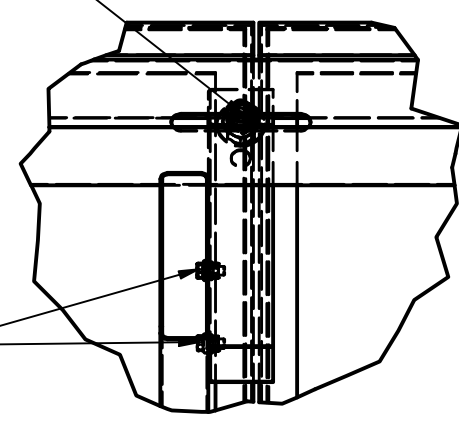
- The contractor will be solely responsible for all construction means, methods, techniques, sequences and procedures and shall at all times take reasonable precautions for the safety of its employees on the project, and shall comply with all applicable provisions of federal, state, and municipal safety laws and building construction codes.
- If existing conditions make it necessary to revise structural details, consult DCE Solar before proceeding with any change.
- These drawings and notes are for this specific project and no other use is authorized.
- Structure designed in accordance with the 2018 Connecticut State Building Code, ASCE 7-10, AISC 360-10 (14th Edition), and AISI S100-12: ASD
 Snow Loads:
 -Ground Snow Load $p_g = 40$ psf
 -Importance Factor $I_s = 0.8$
 -Exposure Factor $C_e = 1.0$
 -Slope Snow Load $p_s = 30$ psf
 Wind Loads:
 -Basic Wind Speed $V = 110$ mph (MRI = 0.93 or 25 year)
 - $I_w = 1$
 -Exposure = C
 -Wind Design performed in accordance with the requirements of ASCE - Wind Tunnel Procedure. Refer to Wind Tunnel Report by UWOLBLWT Laboratory dated 12/11/14.
 Seismic Loads:
 - $SS = 0.182g$, $S1 = 0.065g$
 -Site Class = D
 - $SDS = 0.190g$, $SD1 = 0.100g$
 -Seismic Design Category = B
 -Ordinary Steel Cantilever Column System
- Material strengths:
 -Hot-rolled structural steel ASTM A992 GR50 w/80 ksi yield.
 -Cold Formed Steel Sections comply w/ASTM A1003, structural grade, galvanized to Grade as noted.
 -Formed Steel Brackets - ASTM A653 Grade 50 SS, G115 HDG
 -I-Beams - A992, 50 ksi, Hot Dip Galvanized to ASTM 123 Grade 85
 -Plate - A36 Steel, Hot Dip Galvanized
 -Connectors - Stainless Steel unless otherwise noted.
- Members and connections have been designed for worst-case loading associated with exterior zones of the array per the wind tunnel report.
- Foundation embedment depths are to be calculated and sealed by a CT State Licensed Geotechnical engineer.
- For the purposes of this project, all arrays are classified as Exterior Arrays.
- Scope of work by Structural Engineer includes member design, connection design, and determination of design base reactions only. Layout of PV arrays such that they do not conflict with existing site obstructions, determination of site-specific foundation and geotechnical parameters, and all other work not specifically noted is by others.

Engineer of Record



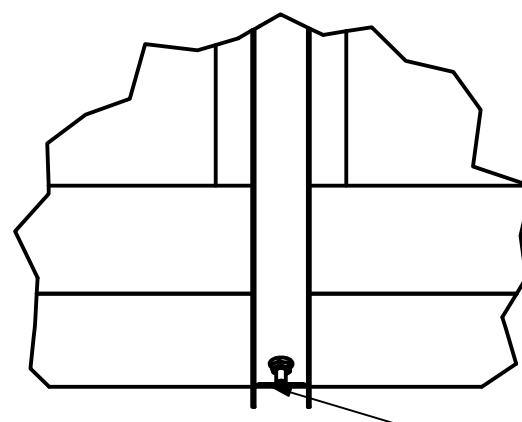
REAR VIEW
 VIEW3
 SCALE 1 / 20

ZEE BEAM ATTACHES TO PIVOT BRACKET USING (1) 3/4-10 GRADE 5 STEEL HHCS, WASHER, AND SERRATED FLANGE NUT. TORQUE TO 250 FT-LBS.



DETAIL E
 SCALE 1 / 8

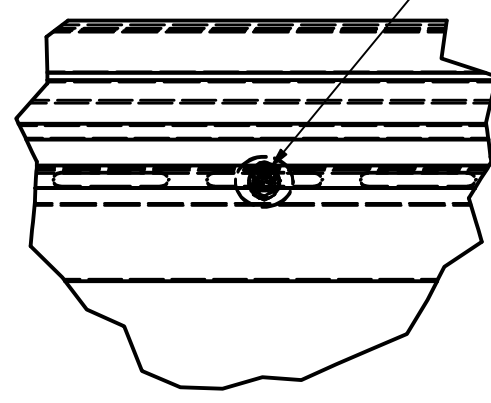
ZEE BEAM ATTACHES TO CEE BEAM USING PIVOT BRACKET 3" X 2.7" X 12.375" 14G CHANNEL ASTM A653 GRADE 80 SS STEEL G115 GALVANIZED. BRACKET ATTACHES TO NS BEAM WITH (2) 18-8 SS 3/8-16 SERRATED FLANGE CAP SCREWS AND SERRATED FLANGE NUTS. TORQUE TO 20 FT-LBS



DETAIL F
 SCALE 1 / 5

BEAM STRAP ATTACHES TO PANEL BEAMS WITH (4) 18-8 SS 1/4-20 BUTTON HEAD CAP SCREWS AND SERRATED FLANGE NUTS. TORQUE TO 15 FT-LBS

NEIGHBORING TABLES BONDED WITH 18G CHANNEL STRUTS. STRUTS CONNECT TO EW PANEL ZEE BEAMS WITH (2) 18-8 SS 3/8-16 SERRATED FLANGE CAP SCREWS, FENDER WASHERS, AND SERRATED FLANGE NUTS. TORQUE TO 20 FT-LBS.



DETAIL G
 SCALE 1 / 5

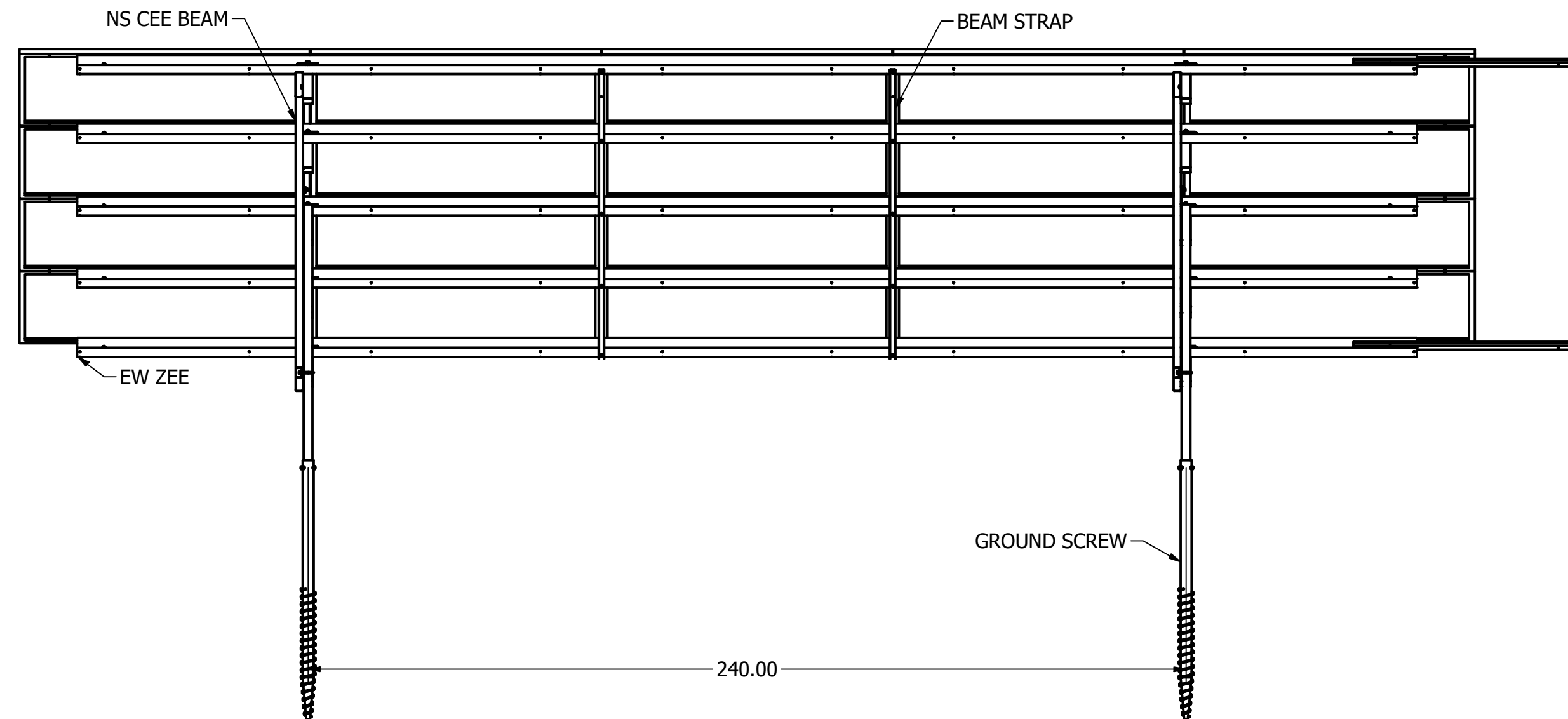
****PROPRIETARY AND CONFIDENTIAL****
 THIS DRAWING AND ALL INFORMATION THEREIN IS THE PROPERTY OF DCE SOLAR AND IS CONFIDENTIAL AND MUST NOT BE MADE PUBLIC OR COPIED UNLESS AUTHORIZED BY DCE SOLAR AND IS SUBJECT TO RETURN UPON REQUEST.

DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED TOLERANCES ARE AS FOLLOWS: .X = ± 0.050" (1.27mm) .XX = ± 0.015" (0.38mm) .XXX = ± 0.005" (0.127mm) ANGLE = ± 5° MIN. BREAK = 0.012" (0.3mm) SURFACE FINISH = 63 (US)	Material:
	Weight: 1760.279 lbmass
	Description: CT-BF-GS, RISEN SOLAR RSM144-6-380BMDG, 4x5, 30 DEG, WATERTOWN SOLAR ONE - BIFACIAL - RISEN SOLAR, VEROGY
	Project: WATERTOWN SOLAR ONE - BIFACIAL - RISEN SOLAR
Drawn: TMAYHEW	Date: 12/14/2020
Scale:	Sheet: 2 of 3

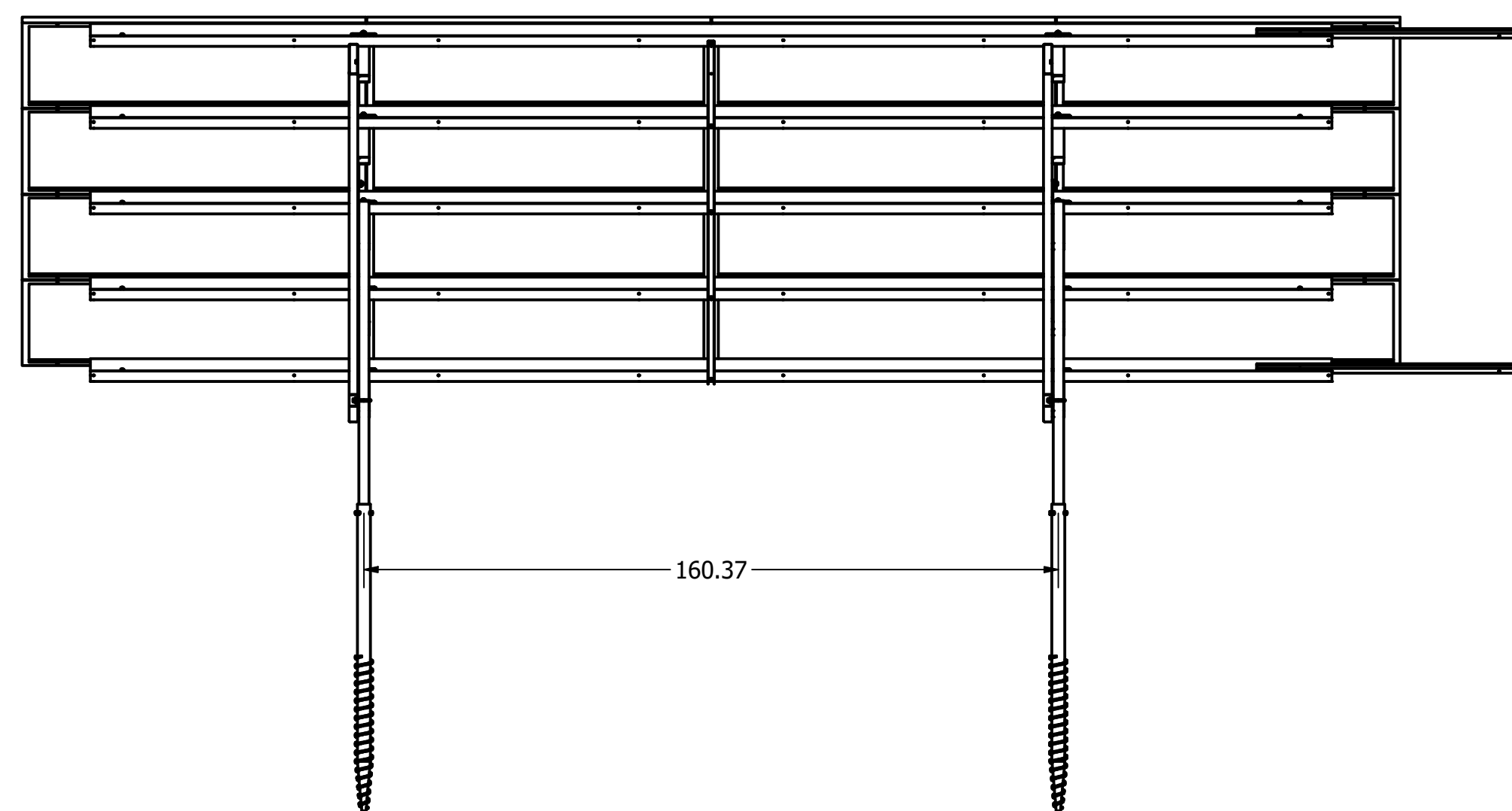
Format: D	Part Number: 4639	Rev: 1
-----------	-------------------	--------



19410 Jetton Rd, Ste 220
 Cornwall, NC, 28031
 www.dcesolar.com
 Phone: 1-704-659-7474

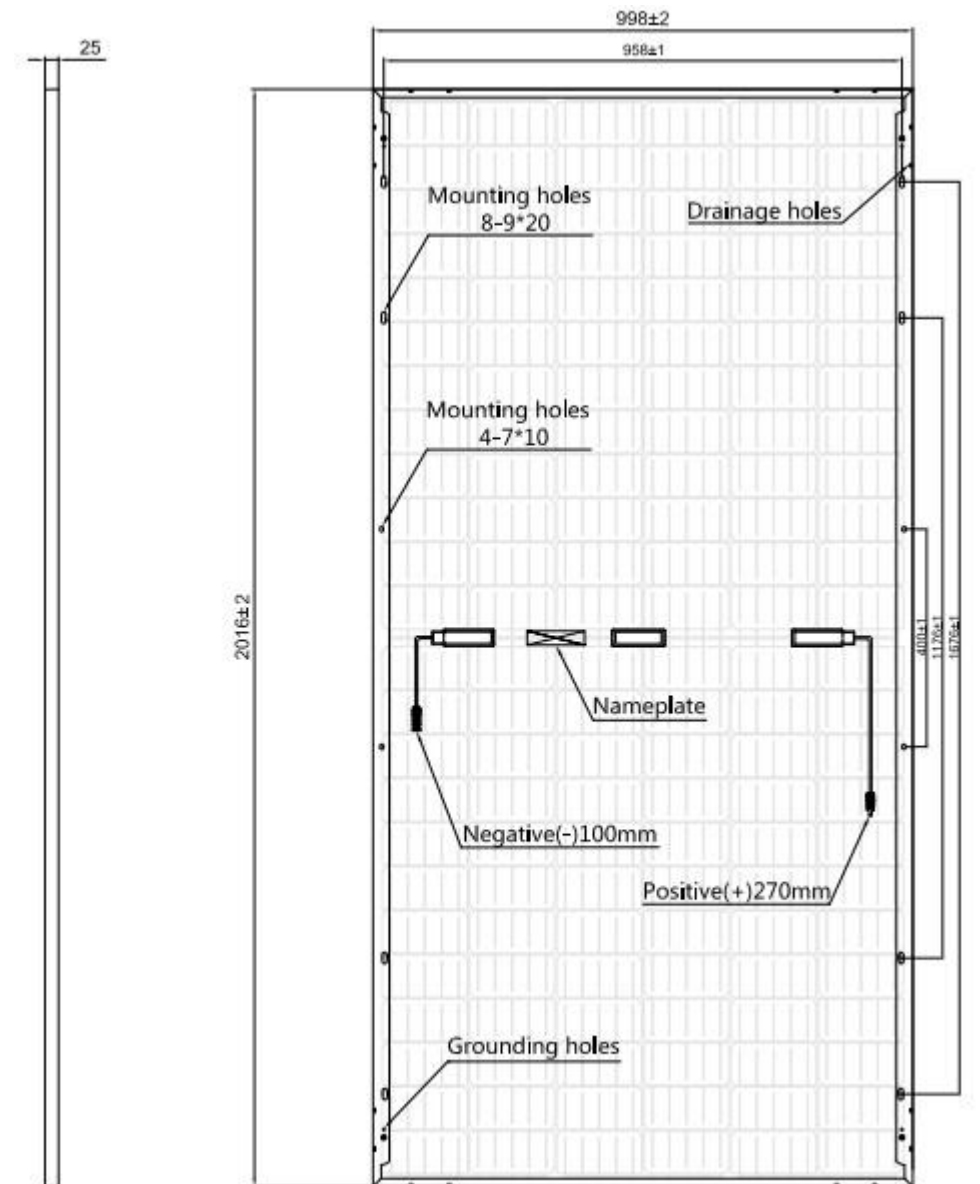


REAR VIEW
4x5 ARRAY
VIEW13
SCALE 0.03 : 1



REAR VIEW
4x4 ARRAY
VIEW19
SCALE 0.03 : 1

PANEL SPECIFICATION				PROJECT INFORMATION	
NAME		DESCRIPTION		INSTALLATION ADDRESS: PLATT ROAD, WATERTOWN, CT 06795	
MANUFACTURER		RISEN SOLAR TECHNOLOGY		Structural General Notes	
MODEL		RM144-6-380BMDG		1. The contractor will be solely responsible for all construction means, methods, techniques, sequences and procedures and shall at all times take reasonable precautions for the safety of its employees on the project, and shall comply with all applicable provisions of federal, state, and municipal safety laws and building construction codes.	
LENGTH (mm)		2016		2. If existing conditions make it necessary to revise structural details, consult DCE Solar before proceeding with any change.	
WIDTH (mm)		998		3. These drawings and notes are for this specific project and no other use is authorized.	
THICKNESS (mm)		25		4. Structure designed in accordance with the 2018 Connecticut State Building Code, ASCE 7-10, AISC 360-10 (14th Edition), and AISI S100-12: ASD	
MATERIAL DESCRIPTION				Snow Loads:	
MEMBER	SHAPE	MATERIAL	GAGE	-Ground Snow Load pg = 40 psf	
PANEL BEAM	6.25Z3X1X55DEG	A653 SS Gr80	18GA	-Importance Factor Is=0.8	
NS CEE BEAM	8CS2X0.625	A653 SS Gr80	14GA	-Exposure Factor Ce=1.0	
KICKER BRACE	2.75CU1.75	A653 SS Gr50	14GA	-Slope Snow Load ps= 30 psf	
BEAM BRACE	1.5CU0.75	A653 SS Gr50	16GA	Wind Loads:	
FRONT/REAR LEG	HSS2.375x0.154	A500 GRADE C	-	-Basic Wind Speed V= 110 mph (MRI = 0.93 or 25 year)	
PULL TEST LOADS (GROUNDSCREW)				-Iw = 1	
		REAR (lbs)	FRONT (LBS)	-Exposure = C	
UNFACTORED UPLIFT		2,750	350	-Wind Design performed in accordance with the requirements of ASCE - Wind Tunnel Procedure. Refer to Wind Tunnel Report by UWOLBLWT Laboratory dated 12/11/14.	
UNFACTORED ADJUSTED UPLIFT*		3,000	1,900	Seismic Loads:	
UNFACTORED COMPRESSIVE		4,250	2,700	-SS = 0.182g, S1 = 0.065g	
UNFACTORED LATERAL		1,100	50	-Site Class = D	
NOTES				-SDS = 0.190g, SD1 = 0.100g	
*ADJUSTED UPLIFT IS ASSUMED AS 70% OF THE DOWNWARD LOAD. IT'S RECOMMENDED TO USE THIS LOAD FOR PULL TEST IN CASE PUSH TEST CANNOT BE PERFORMED.				-Seismic Design Category = B	
1: USE ADJUSTED UPLIFT IF NO REFUSAL IS ENCOUNTERED.				-Ordinary Steel Cantilever Column System	
2: USE UPLIFT FORCE IN CASE OF REFUSAL.				5. Material strengths:	
3: FOR UPLIFT AND LATERAL FORCES USE SAFETY FACTOR OF 1.5 AND 2, RESPECTIVELY.				-Hot-rolled structural steel ASTM A992 GR50 w/80 ksi yield.	
IN-FIELD PILE REMEDIATION				-Cold Formed Steel Sections comply w/ASTM A1003, structural grade, galvanized to Grade as noted.	
ANY IN-FIELD REMEDIATION REQUIRING THE CUTTING OR DRILLING OF GALVANIZED MATERIAL SHOULD FOLLOW ONE OF THESE TWO GUIDELINES TO COAT AND TREAT METALS THAT ARE EXPOSED TO GALVANIZATION DAMAGE:				-Formed Steel Brackets - ASTM A653 Grade 50 SS, G115 HDG	
1. USE PAINTS CONTAINING ZINC DUST (IN ACCORDANCE WITH "ASTM A 780-01" SECTION A2)				-I-Beams - A992, 50 ksi, Hot Dip Galvanized to ASTM 123 Grade 85	
2. USE ZINC SPRAY (IN ACCORDANCE WITH "ASTM A 780-01" SECTION A3) ONE OF THE ABOVE GUIDELINES MUST BE FOLLOWED TO MAINTAIN THE DCE WARRANTY REQUIREMENTS.				-Plate - A36 Steel, Hot Dip Galvanized	
				-Connectors - Stainless Steel unless otherwise noted.	



****PROPRIETARY AND CONFIDENTIAL****
THIS DRAWING AND ALL INFORMATION THEREIN IS THE PROPERTY OF DCE SOLAR AND IS CONFIDENTIAL AND MUST NOT BE MADE PUBLIC OR COPIED UNLESS AUTHORIZED BY DCE SOLAR AND IS SUBJECT TO RETURN UPON REQUEST.

<p>DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED TOLERANCES ARE AS FOLLOWS: .X = ± 0.050" (1.27mm) .XX = ± 0.015" (0.38mm) .XXX = ± 0.005" (0.127mm) ANGLE = ± 5° MIN. BREAK = 0.012" (0.3mm) SURFACE FINISH = 63 (US)</p>	Material:	1760.279 lbmass				
	Weight:	CT-BF-GS, RISEN SOLAR RSM144-6-380BMDG, 4x5, 30 DEG, WATERTOWN SOLAR ONE - BIFACIAL - RISEN SOLAR, VEROGY				
	Description:	Project:	WATERTOWN SOLAR ONE - BIFACIAL - RISEN SOLAR			
	Project:	Drawn:	TMAYHEW	Date:	12/14/2020	
	Scale:		Sheet:	3 of 3		
	Format:	D	Part Number:	4639	Rev:	1

- The contractor will be solely responsible for all construction means, methods, techniques, sequences and procedures and shall at all times take reasonable precautions for the safety of its employees on the project, and shall comply with all applicable provisions of federal, state, and municipal safety laws and building construction codes.
 - If existing conditions make it necessary to revise structural details, consult DCE Solar before proceeding with any change.
 - These drawings and notes are for this specific project and no other use is authorized.
 - Structure designed in accordance with the 2018 Connecticut State Building Code, ASCE 7-10, AISC 360-10 (14th Edition), and AISI S100-12: ASD
- Snow Loads:
-Ground Snow Load pg = 40 psf
-Importance Factor Is=0.8
-Exposure Factor Ce=1.0
-Slope Snow Load ps= 30 psf
- Wind Loads:
-Basic Wind Speed V= 110 mph (MRI = 0.93 or 25 year)
-Iw = 1
-Exposure = C
-Wind Design performed in accordance with the requirements of ASCE - Wind Tunnel Procedure. Refer to Wind Tunnel Report by UWOLBLWT Laboratory dated 12/11/14.
- Seismic Loads:
-SS = 0.182g, S1 = 0.065g
-Site Class = D
-SDS = 0.190g, SD1 = 0.100g
-Seismic Design Category = B
-Ordinary Steel Cantilever Column System
- Material strengths:
-Hot-rolled structural steel ASTM A992 GR50 w/80 ksi yield.
-Cold Formed Steel Sections comply w/ASTM A1003, structural grade, galvanized to Grade as noted.
-Formed Steel Brackets - ASTM A653 Grade 50 SS, G115 HDG
-I-Beams - A992, 50 ksi, Hot Dip Galvanized to ASTM 123 Grade 85
-Plate - A36 Steel, Hot Dip Galvanized
-Connectors - Stainless Steel unless otherwise noted.
 - Members and connections have been designed for worst-case loading associated with exterior zones of the array per the wind tunnel report.
 - Foundation embedment depths are to be calculated and sealed by a CT State Licensed Geotechnical engineer.
 - For the purposes of this project, all arrays are classified as Exterior Arrays.
 - Scope of work by Structural Engineer includes member design, connection design, and determination of design base reactions only. Layout of PV arrays such that they do not conflict with existing site obstructions, determination of site-specific foundation and geotechnical parameters, and all other work not specifically noted is by others.

Engineer of Record

Contour™

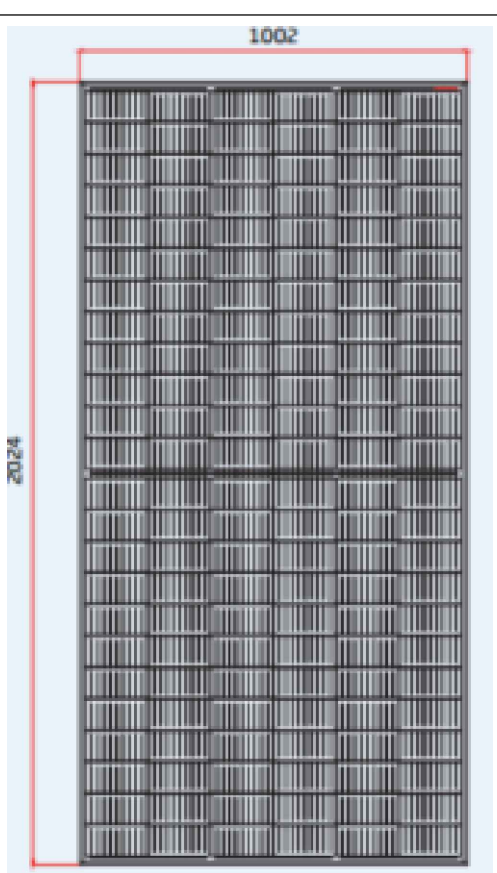
PROJECT INFORMATION

PROJECT NAME	WATERTOWN SOLAR ONE - BIFACIAL - TRINA SOLAR - GS
INSTALLATION ADDRESS	PLATT ROAD, WATERTOWN, CT 06795
CLIENT	VEROGY

SITE SPECIFICATION

WIND SPEED (MPH)	110	ASCE 7-10
SNOW LOAD (PSF)	35	ASCE 7-10
EXPOSURE CATEGORY	C	ASCE 7-10
RISK CATEGORY	1	ASCE 7-10

PANEL SPECSHEET



PANEL SPECIFICATION

MODEL	TRINA SOLAR TSM-DEG15MC.20(II)
LENGTH (mm)	2024
WIDTH (mm)	1002
WEIGHT (lb)	57.3
PANEL WATTAGE (W)	400
PROJECT PANEL COUNT	5,616

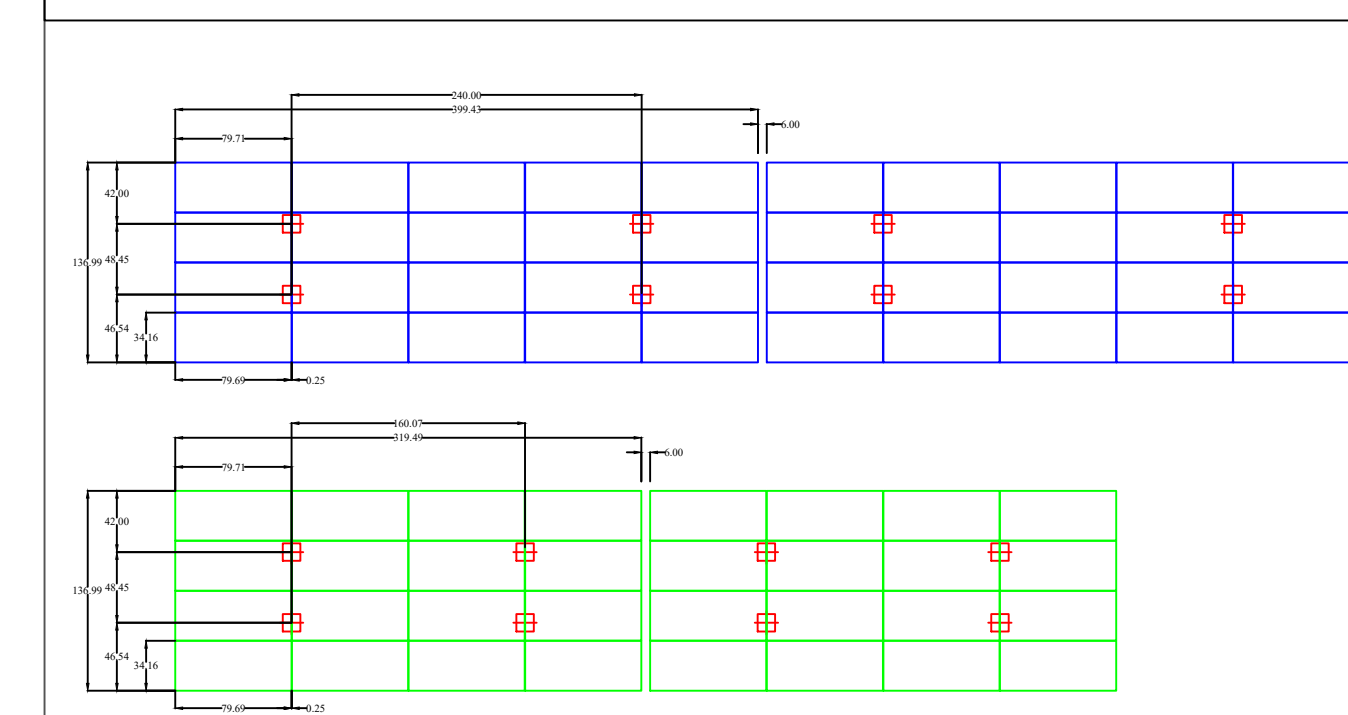
SYSTEM INFORMATION

ARRAY CONFIGURATION	4x5
SYSTEM SIZE (W)	2,246,400
ARRAY TILT (°)	30
GROUND CLEARANCE (in)	36

ARRAY DETAILS

ITEM	QUANTITY
4x5 Table	192
4x4 Table	111
Ground Screws	1212
Alternate Connection Locations	64

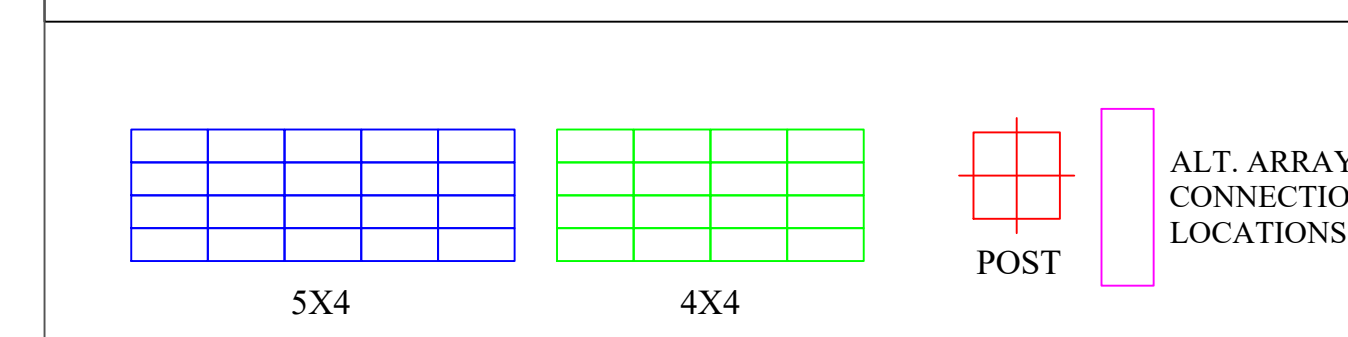
CAD BLOCK



GENERAL NOTES

1. **PROPRIETARY AND CONFIDENTIAL**
THIS DRAWING AND ALL INFORMATION THERE IN IS THE PROPERTY OF DCE SOLAR AND IS CONFIDENTIAL AND MUST NOT BE MADE PUBLIC OR COPIED UNLESS AUTHORIZED BY DCE SOLAR AND IS SUBJECT TO RETURN UPON REQUEST.
2. THE CONTRACTOR WILL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND SHALL AT ALL TIMES TAKE REASONABLE PRECAUTIONS FOR THE SAFETY OF ITS EMPLOYEES ON THE PROJECT, AND SHALL COMPLY WITH ALL APPLICABLE PROVISIONS OF FEDERAL, STATE, AND MUNICIPAL SAFETY LAWS AND BUILDING CONSTRUCTION CODES.
3. CUSTOMER PROVIDED SITE LAYOUTS WERE USED TO GENERATE THE LAYOUT AS SHOWN.
4. ANY CHANGES TO THE LAYOUT SHOWN THAT MAY CAUSE ERRORS DURING INSTALLATION ARE NOT THE RESPONSIBILITY OF DCE SOLAR.

LEGEND DETAILS



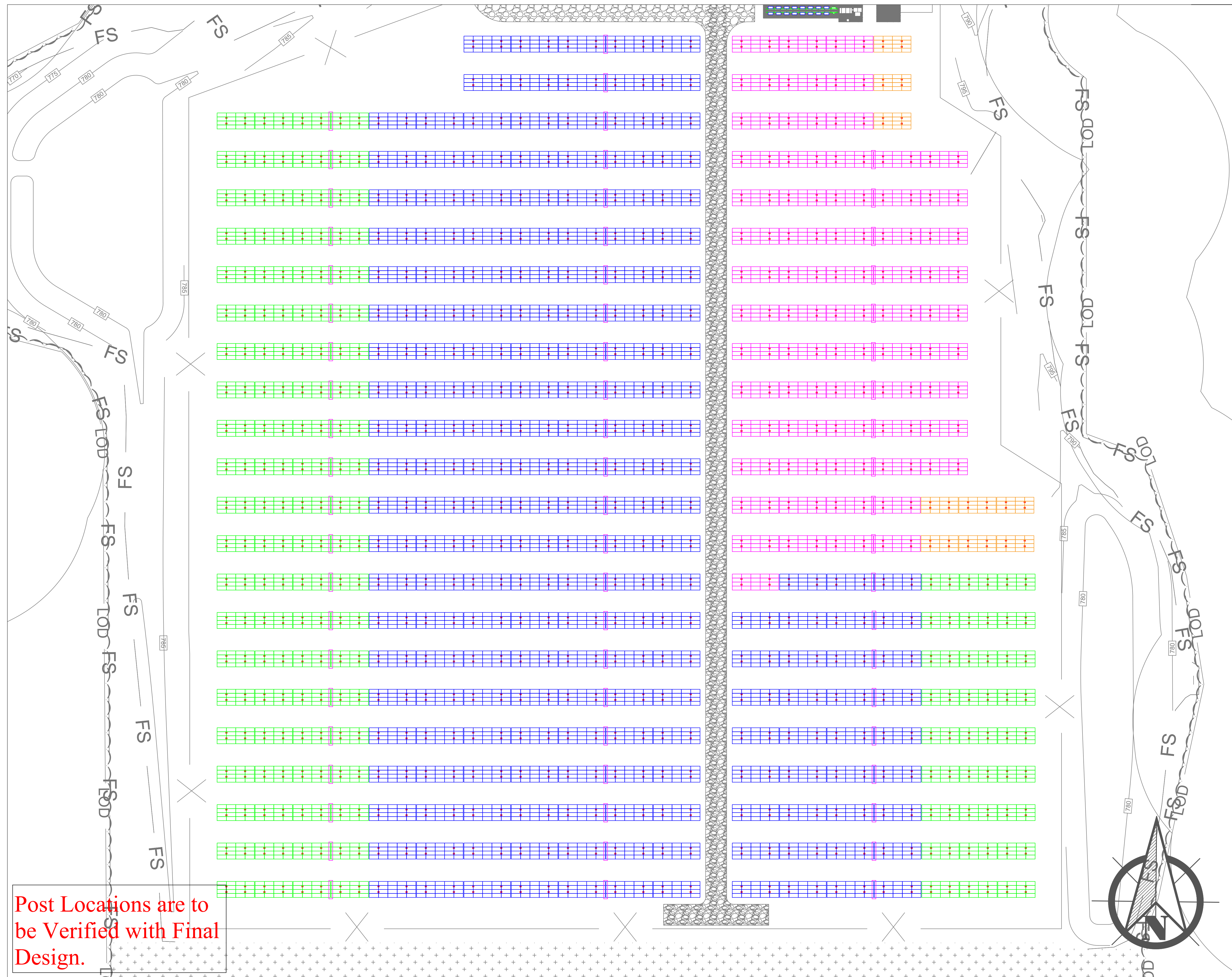
REVISION NOTES

REV	DESCRIPTION	PREPARED BY	DATE
0	GROUND MOUNT LAYOUT	A. MORLACCI	7/16/2020
1	MADE CHANGES TO LAYOUT BASED ON REVISION	R.MURPHY	12/10/2020
2	REVISED TABLE IN LEGEND	R.MURPHY	12/14/2020
3			
4			



19410 Jetton Rd., Ste 220
Cornelius, NC 28031
www.dcesolar.com
Phone: 1-704-659-7474

Format: D SHEET: 1 OF 2



Post Locations are to be Verified with Final Design.

Contour™

PROJECT INFORMATION

PROJECT NAME	WATERTOWN SOLAR ONE - BIFACIAL - RISEN SOLAR - GS	
INSTALLATION ADDRESS	PLATT ROAD, WATERTOWN, CT 06795	
CLIENT	VEROGY	

SITE SPECIFICATION

WIND SPEED (MPH)	110	ASCE 7-10
SNOW LOAD (PSF)	35	ASCE 7-10
EXPOSURE CATEGORY	C	ASCE 7-10
RISK CATEGORY	1	ASCE 7-10

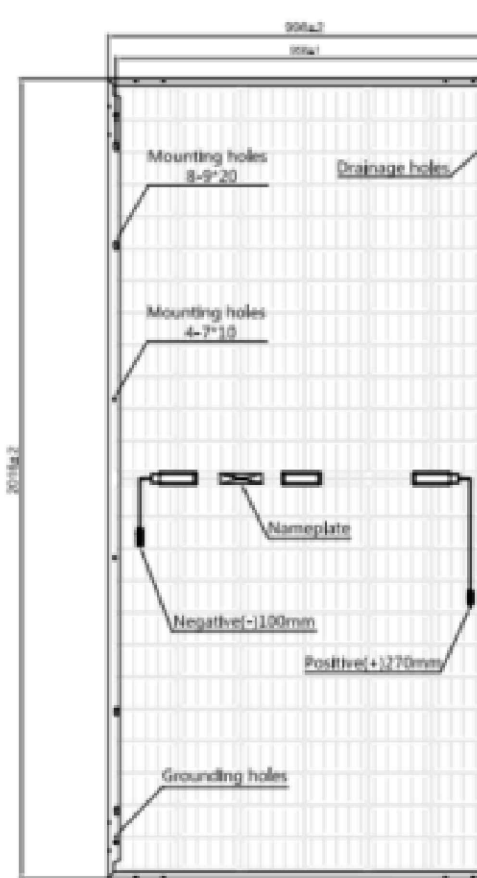
PANEL SPECIFICATION

MODEL	RISEN SOLAR TECHNOLOGY RM144-6-380BMDG	
LENGTH (mm)	2016	
WIDTH (mm)	998	
WEIGHT (lb)	57.3	
PANEL WATTAGE (W)	380	
PROJECT PANEL COUNT	1,404	

SYSTEM INFORMATION

ARRAY CONFIGURATION	4x5	
SYSTEM SIZE (W)	533,520	
ARRAY TILT (°)	30	
GROUND CLEARANCE (in)	36	

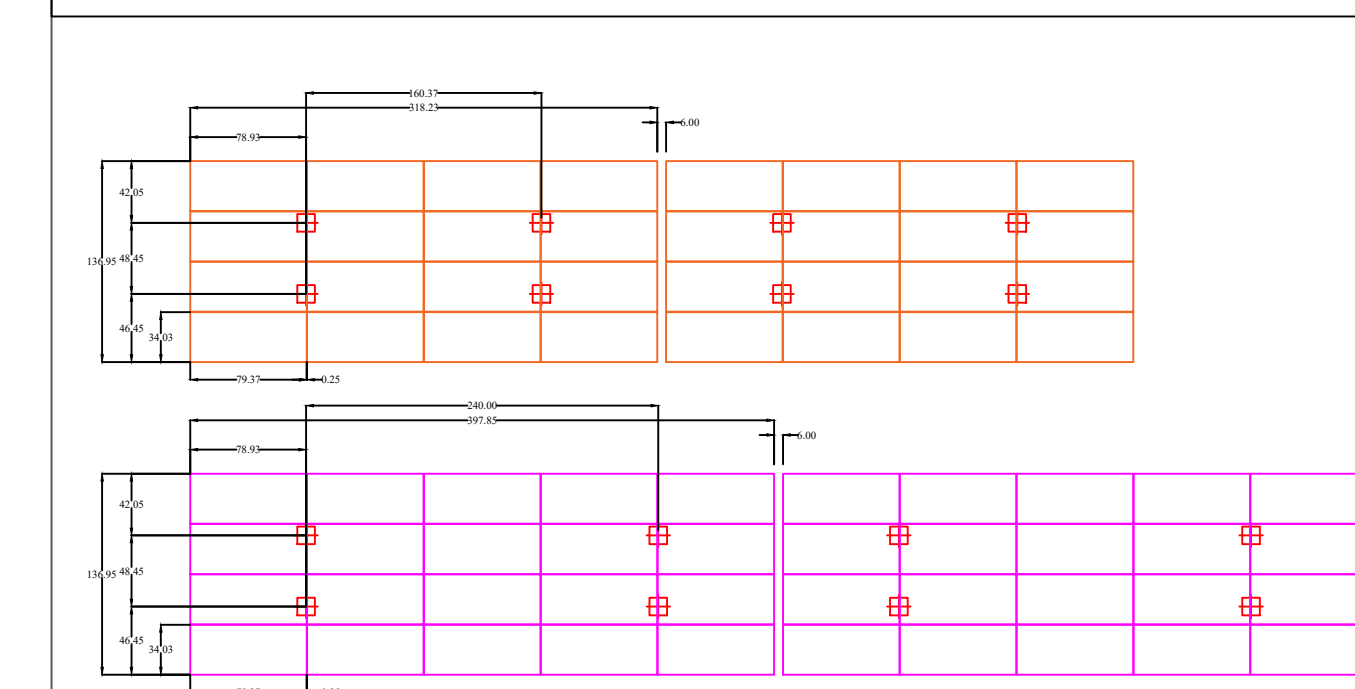
PANEL SPECSHEET



ARRAY DETAILS

ITEM	QUANTITY
4x5 Table	63
4x4 Table	9
Foundations	288
Alternate Connection Locations	64

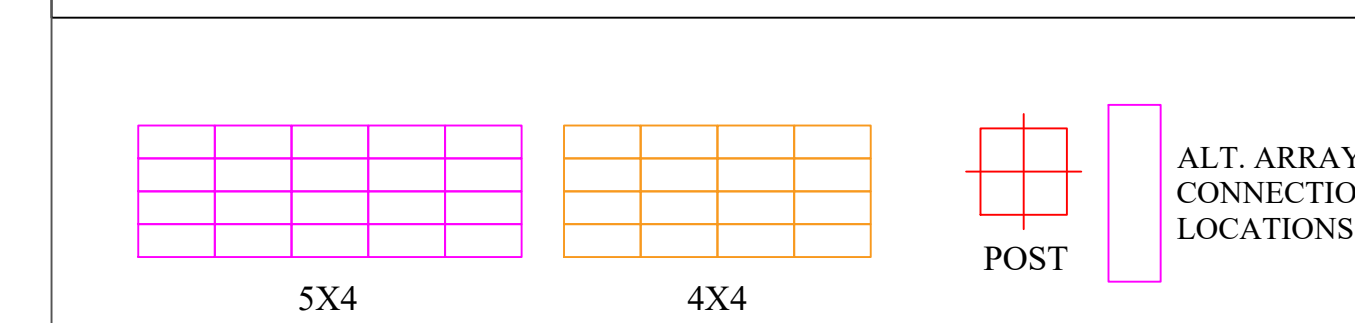
CAD BLOCK



GENERAL NOTES

1. **PROPRIETARY AND CONFIDENTIAL**
THIS DRAWING AND ALL INFORMATION THERE IN IS THE PROPERTY OF DCE SOLAR AND IS CONFIDENTIAL AND MUST NOT BE MADE PUBLIC OR COPIED UNLESS AUTHORIZED BY DCE SOLAR AND IS SUBJECT TO RETURN UPON REQUEST.
2. THE CONTRACTOR WILL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND SHALL AT ALL TIMES TAKE REASONABLE PRECAUTIONS FOR THE SAFETY OF ITS EMPLOYEES ON THE PROJECT, AND SHALL COMPLY WITH ALL APPLICABLE PROVISIONS OF FEDERAL, STATE, AND MUNICIPAL SAFETY LAWS AND BUILDING CONSTRUCTION CODES.
3. CUSTOMER PROVIDED SITE LAYOUTS WERE USED TO GENERATE THE LAYOUT AS SHOWN.
4. ANY CHANGES TO THE LAYOUT SHOWN THAT MAY CAUSE ERRORS DURING INSTALLATION ARE NOT THE RESPONSIBILITY OF DCE SOLAR.

LEGEND DETAILS



REVISION NOTES

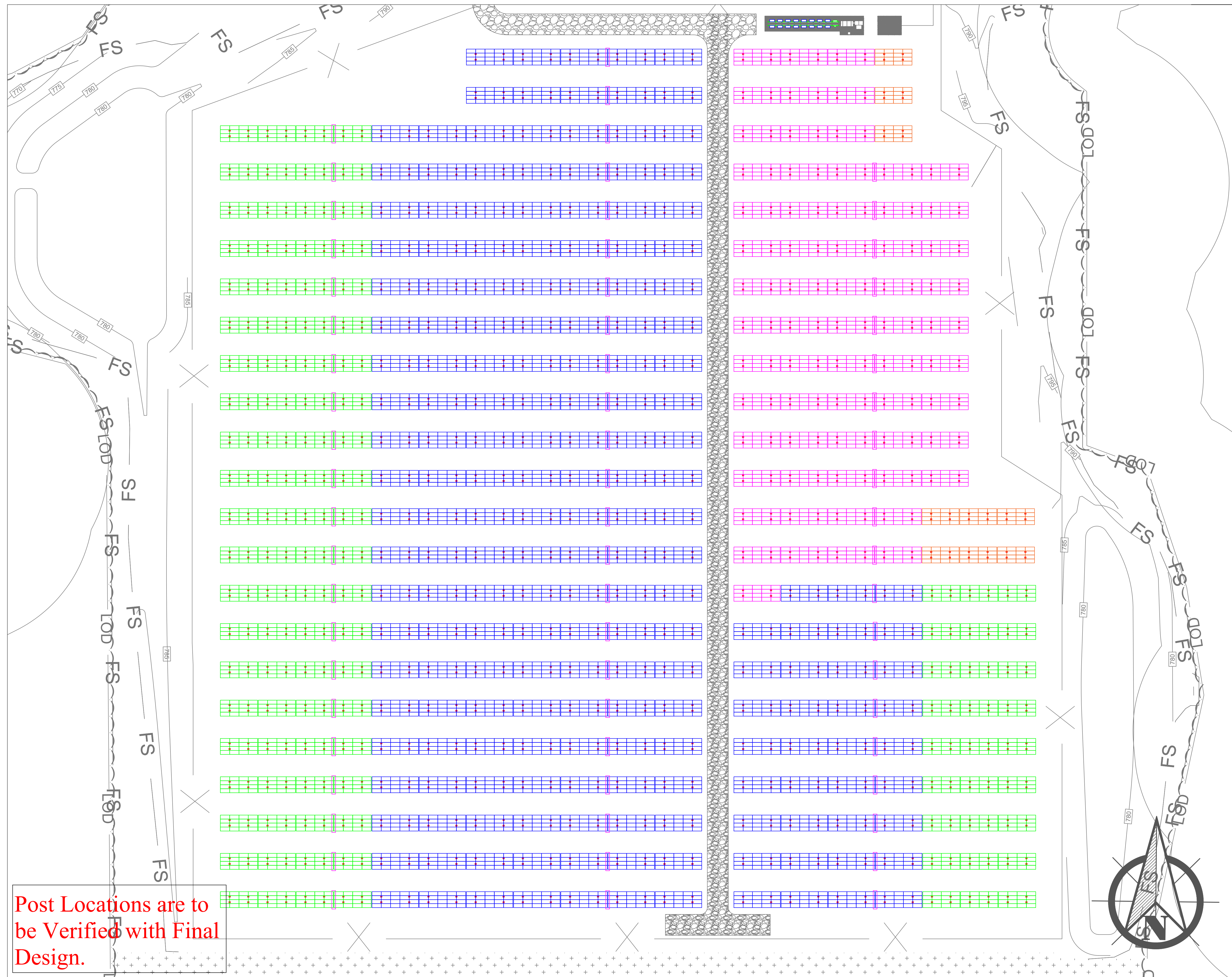
REV	DESCRIPTION	PREPARED BY	DATE
0	GROUND MOUNT LAYOUT	A. MORLACCI	7/16/2020
1	MADE CHANGES TO THE LAYOUT BASED ON REVISIONS	R.MURPHY	12/10/2020
2	REVISED TABLE LABEL IN LEGEND	R.MURPHY	12/14/2020
3			



19410 Jetton Rd., Ste 220
Cornelius, NC 28031
www.dcesolar.com
Phone: 1-704-659-7474

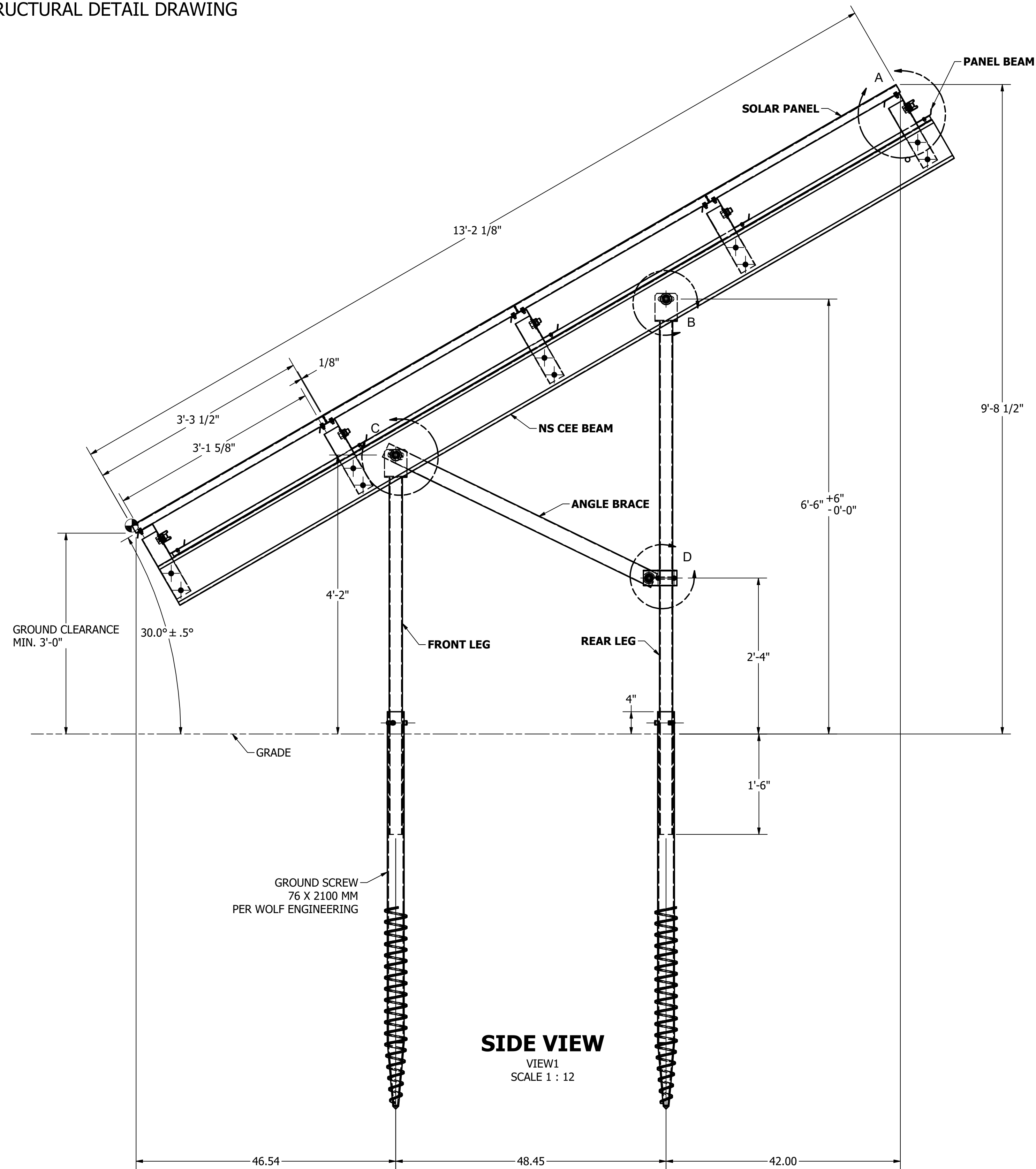
Format:
D

SHEET: 2 OF 2



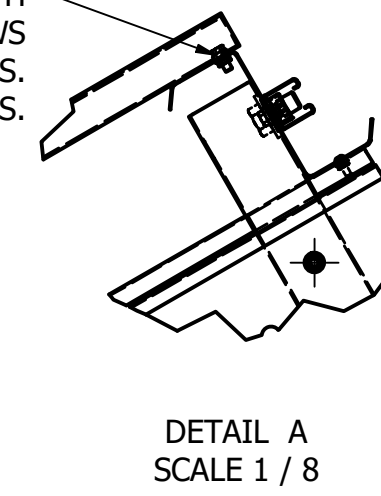
Post Locations are to be Verified with Final Design.

**APPENDIX- A
STRUCTURAL DETAIL DRAWING**

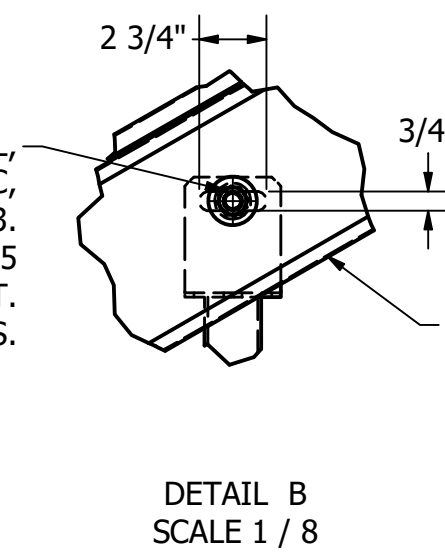


SIDE VIEW
VIEW 1
SCALE 1 : 12

PANEL ATTACHES TO PANEL BEAMS WITH
(4) 5/16-18 X 3/4" SERRATED FLANGE CAP SCREWS
AND 5/16-18 SERRATED FLANGE NUTS.
TORQUE TO 15 FT-LBS.

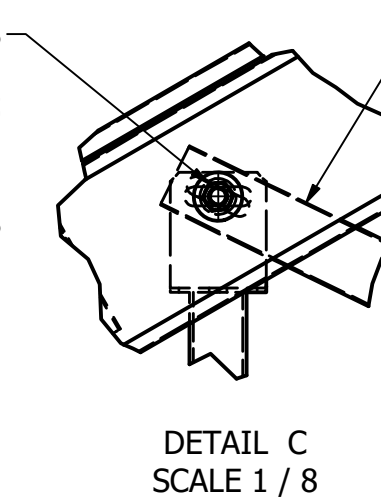


WELDED LEG ADAPTER BRACKET A36 STEEL,
HSS2.375X0.154, A500 C,
HOT DIP GALVANIZED TO ASTM A123.
ATTACHES TO NS BEAM WITH (1) 3/4-10 X 1.5" GRADE 5
STEEL HHCS, WASHER, AND SERRATED FLANGE NUT.
TORQUE TO 250 FT-LBS.

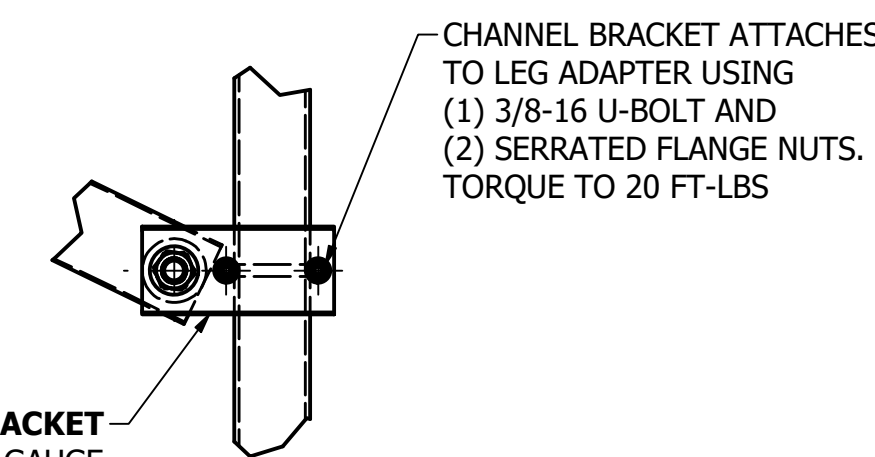


NS BEAM
8" X 2" X 0.6"
14 GAUGE, ASTM A653
GRADE 80 SS STEEL
G115 GALVANIZED

NS CEE BEAM ATTACHES
TO ANGLE BRACE WITH
(1) 3/4-10 X 1.5" GRADE 5
STEEL HHCS, WASHER,
AND SERRATED FLANGE NUT.
TORQUE TO 250 FT-LBS



ANGLE BRACE
2.75" X 1.75" U-CHANNEL
14 GAUGE, ASTM A653
GRADE 50 SS STEEL
G115 GALVANIZED



CHANNEL BRACKET
2.75" X 1.75" U-CHANNEL, 14 GAUGE
ASTM A653 GRADE 50 SS STEEL G115 GALVANIZED.
ATTACHES TO ANGLE BRACE WITH (1) 3/4-10 X 1.5" GRADE 5
STEEL HHCS, WASHER, AND SERRATED FLANGE NUT.
TORQUE TO 250 FT-LBS

****PROPRIETARY AND CONFIDENTIAL****

THIS DRAWING AND ALL INFORMATION THEREIN IS
THE PROPERTY OF DCE SOLAR AND IS CONFIDENTIAL
AND MUST NOT BE MADE PUBLIC OR COPIED UNLESS
AUTHORIZED BY DCE SOLAR AND IS SUBJECT TO
RETURN UPON REQUEST.

PROJECT INFORMATION	
INSTALLATION ADDRESS: PLATT ROAD, WATERTOWN, CT 06795	
Structural General Notes	
<p>1. The contractor will be solely responsible for all construction means, methods, techniques, sequences and procedures and shall at all times take reasonable precautions for the safety of its employees on the project, and shall comply with all applicable provisions of federal, state, and municipal safety laws and building construction codes.</p> <p>2. If existing conditions make it necessary to revise structural details, consult DCE Solar before proceeding with any change.</p> <p>3. These drawings and notes are for this specific project and no other use is authorized.</p> <p>4. Structure designed in accordance with the 2018 Connecticut State Building Code, ASCE 7-10, AISC 360-10 (14th Edition), and AISI S100-12: ASD</p> <p>Snow Loads: -Ground Snow Load pg = 40 psf -Importance Factor Is=0.8 -Exposure Factor Ce=1.0 -Slope Snow Load ps= 30 psf</p> <p>Wind Loads: -Basic Wind Speed V= 110 mph (MRI = 0.93 or 25 year) -Iw = 1 -Exposure = C -Wind Design performed in accordance with the requirements of ASCE - Wind Tunnel Procedure. Refer to Wind Tunnel Report by UWOLBLWT Laboratory dated 12/11/14.</p> <p>Seismic Loads: -SS = 0.182g, S1 = 0.065g -Site Class = D -SDS = 0.190g, SD1 = 0.100g -Seismic Design Category = B -Ordinary Steel Cantilever Column System</p> <p>5. Material strengths: -Hot-rolled structural steel ASTM A992 GR50 w/80 ksi yield. -Cold Formed Steel Sections comply w/ASTM A1003, structural grade, galvanized to Grade as noted. -Formed Steel Brackets - ASTM A653 Grade 50 SS, G115 HDG -I-Beams - A992, 50 ksi, Hot Dip Galvanized to ASTM 123 Grade 85 -Plate - A36 Steel, Hot Dip Galvanized -Connectors - Stainless Steel unless otherwise noted.</p> <p>6. Members and connections have been designed for worst-case loading associated with exterior zones of the array per the wind tunnel report.</p> <p>7. Foundation embedment depths are to be calculated and sealed by a CT State Licensed Geotechnical engineer.</p> <p>8. For the purposes of this project, all arrays are classified as Exterior Arrays.</p> <p>9. Scope of work by Structural Engineer includes member design, connection design, and determination of design base reactions only. Layout of PV arrays such that they do not conflict with existing site obstructions, determination of site-specific foundation and geotechnical parameters, and all other work not specifically noted is by others.</p>	
Engineer of Record	

REVISION HISTORY			
REV	DESCRIPTION	DATE	DESIGNER
0	STRUCTURAL DETAIL DRAWING	7/15/2020	JSCOTT
1	ADDED NOTE ON SHEET 1	12/14/2020	TMAYHEW

NOTE: GROUND SCREWS WILL BE PRE-DRILLED

<p>DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED TOLERANCES ARE AS FOLLOWS: .X = ± 0.050" (1.27mm) .XX = ± 0.015" (0.38mm) .XXX = ± 0.005" (0.127mm) ANGLE = ± 5° MIN. BREAK = 0.012" (0.3mm) SURFACE FINISH = 63 (US)</p>	Material:	1765.943 lbmass	
	Weight:	1765.943 lbmass	
	Description:	CT-BF-GS, TRINA SOLAR TSM-DEG15MC.20(11), 4x5, 30 DEG, WATERTOWN SOLAR ONE - BIFACIAL - TRINA SOLAR, VEROGY	
	Project:	WATERTOWN SOLAR ONE - BIFACIAL - TRINA SOLAR	
Drawn:	TMAYHEW	Date:	12/14/2020
Scale:		Sheet:	1 of 3
<p>19410 Jetton Rd, Ste 220 Cornelius, NC, 28031 www.dcesolar.com Phone: 1-704-659-7474</p>	Format:	Part Number	Rev:
D		4641	1

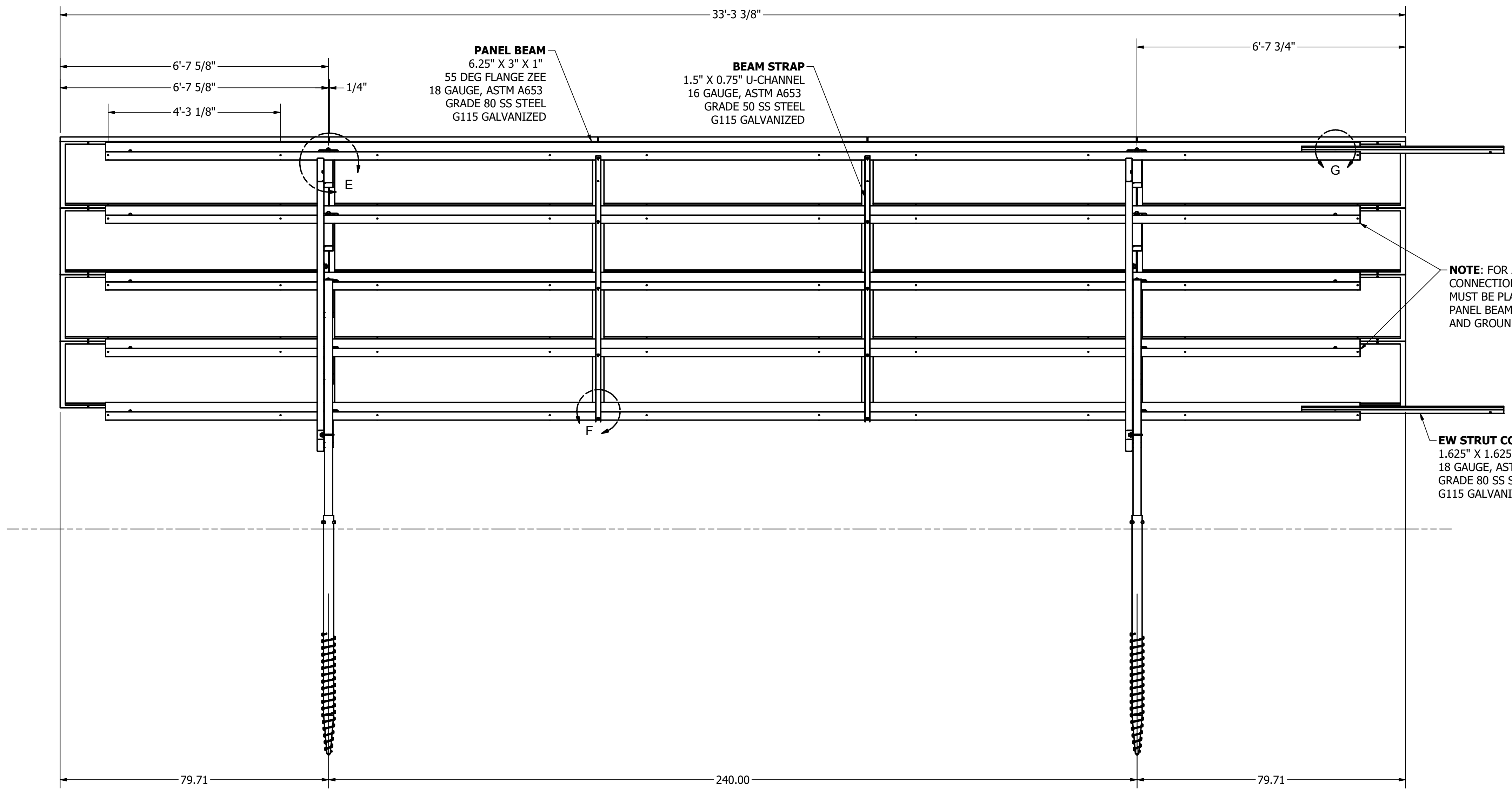
STRUCTURAL DETAIL DRAWING - REAR

PROJECT INFORMATION
 INSTALLATION ADDRESS: PLATT ROAD, WATERTOWN, CT 06795

Structural General Notes

- The contractor will be solely responsible for all construction means, methods, techniques, sequences and procedures and shall at all times take reasonable precautions for the safety of its employees on the project, and shall comply with all applicable provisions of federal, state, and municipal safety laws and building construction codes.
- If existing conditions make it necessary to revise structural details, consult DCE Solar before proceeding with any change.
- These drawings and notes are for this specific project and no other use is authorized.
- Structure designed in accordance with the 2018 Connecticut State Building Code, ASCE 7-10, AISC 360-10 (14th Edition), and AISI S100-12: ASD
 Snow Loads:
 -Ground Snow Load $p_g = 40$ psf
 -Importance Factor $I_s = 0.8$
 -Exposure Factor $C_e = 1.0$
 -Slope Snow Load $p_s = 30$ psf
 Wind Loads:
 -Basic Wind Speed $V = 110$ mph (MRI = 0.93 or 25 year)
 - $I_w = 1$
 -Exposure = C
 -Wind Design performed in accordance with the requirements of ASCE - Wind Tunnel Procedure. Refer to Wind Tunnel Report by UWOL BLWT Laboratory dated 12/11/14.
 Seismic Loads:
 - $SS = 0.182g$, $S1 = 0.065g$
 -Site Class = D
 - $SDS = 0.190g$, $SD1 = 0.100g$
 -Seismic Design Category = B
 -Ordinary Steel Cantilever Column System
- Material strengths:
 -Hot-rolled structural steel ASTM A992 GR50 w/80 ksi yield.
 -Cold Formed Steel Sections comply w/ASTM A1003, structural grade, galvanized to Grade as noted.
 -Formed Steel Brackets - ASTM A653 Grade 50 SS, G115 HDG
 -I-Beams - A992, 50 ksi, Hot Dip Galvanized to ASTM 123 Grade 85
 -Plate - A36 Steel, Hot Dip Galvanized
 -Connectors - Stainless Steel unless otherwise noted.
- Members and connections have been designed for worst-case loading associated with exterior zones of the array per the wind tunnel report.
- Foundation embedment depths are to be calculated and sealed by a CT State Licensed Geotechnical engineer.
- For the purposes of this project, all arrays are classified as Exterior Arrays.
- Scope of work by Structural Engineer includes member design, connection design, and determination of design base reactions only. Layout of PV arrays such that they do not conflict with existing site obstructions, determination of site-specific foundation and geotechnical parameters, and all other work not specifically noted is by others.

Engineer of Record



PANEL BEAM
 6.25" X 3" X 1"
 55 DEG FLANGE ZEE
 18 GAUGE, ASTM A653
 GRADE 80 SS STEEL
 G115 GALVANIZED

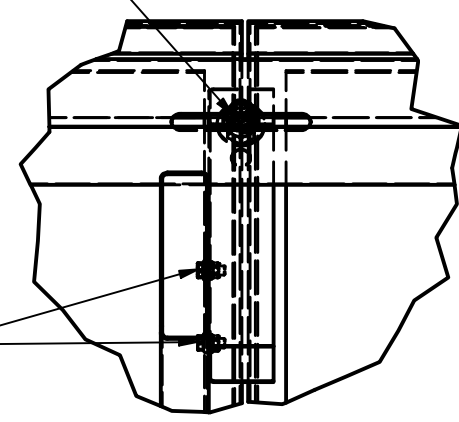
BEAM STRAP
 1.5" X 0.75" U-CHANNEL
 16 GAUGE, ASTM A653
 GRADE 50 SS STEEL
 G115 GALVANIZED

NOTE: FOR ALTERNATE ARRAY CONNECTIONS, STRUT CONNECTORS MUST BE PLACED ON 2ND & 4TH EW PANEL BEAMS PER INSTALLATION MANUAL AND GROUND MOUNT LAYOUT

EW STRUT CONNECTOR
 1.625" X 1.625" U-CHANNEL
 18 GAUGE, ASTM A653
 GRADE 80 SS STEEL
 G115 GALVANIZED

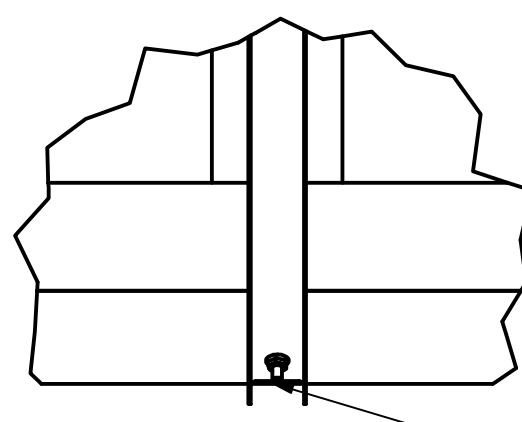
REAR VIEW
 VIEW3
 SCALE 1 / 20

ZEE BEAM ATTACHES TO PIVOT BRACKET USING (1) 3/4-10 GRADE 5 STEEL HHCS, WASHER, AND SERRATED FLANGE NUT. TORQUE TO 250 FT-LBS.



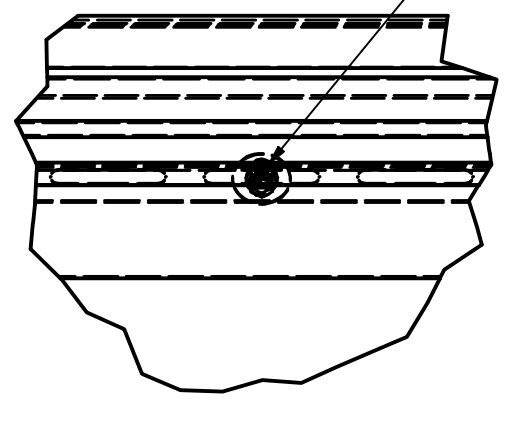
DETAIL E
 SCALE 1 / 8

ZEE BEAM ATTACHES TO CEE BEAM USING PIVOT BRACKET 3" X 2.7" X 12.375" 14G CHANNEL ASTM A653 GRADE 80 SS STEEL G115 GALVANIZED. BRACKET ATTACHES TO NS BEAM WITH (2) 18-8 SS 3/8-16 SERRATED FLANGE CAP SCREWS AND SERRATED FLANGE NUTS. TORQUE TO 20 FT-LBS



DETAIL F
 SCALE 1 / 5

BEAM STRAP ATTACHES TO PANEL BEAMS WITH (4) 18-8 SS 1/4-20 BUTTON HEAD CAP SCREWS AND SERRATED FLANGE NUTS. TORQUE TO 15 FT-LBS



DETAIL G
 SCALE 1 / 5

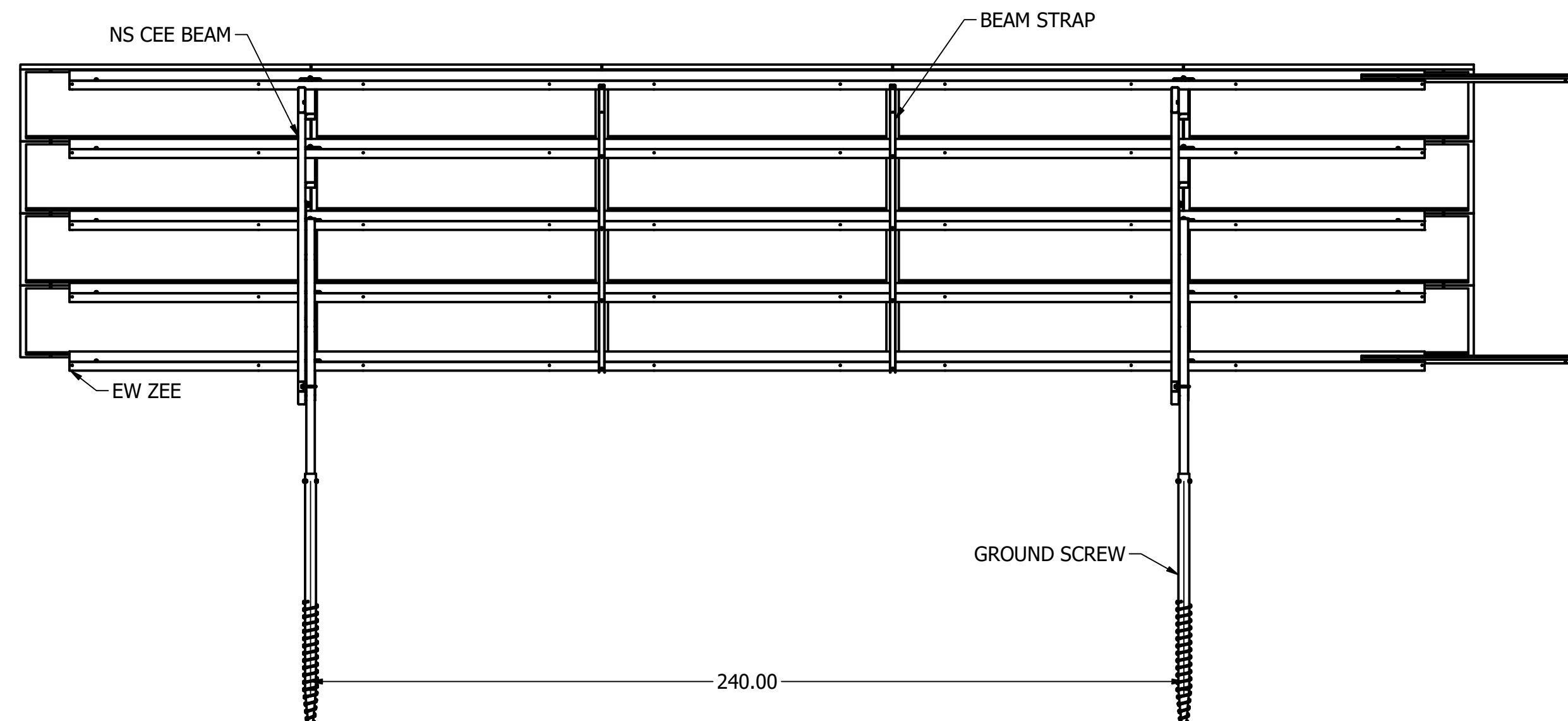
NEIGHBORING TABLES BONDED WITH 18G CHANNEL STRUTS. STRUTS CONNECT TO EW PANEL ZEE BEAMS WITH (2) 18-8 SS 3/8-16 SERRATED FLANGE CAP SCREWS, FENDER WASHERS, AND SERRATED FLANGE NUTS. TORQUE TO 20 FT-LBS.

****PROPRIETARY AND CONFIDENTIAL****
 THIS DRAWING AND ALL INFORMATION THEREIN IS THE PROPERTY OF DCE SOLAR AND IS CONFIDENTIAL AND MUST NOT BE MADE PUBLIC OR COPIED UNLESS AUTHORIZED BY DCE SOLAR AND IS SUBJECT TO RETURN UPON REQUEST.

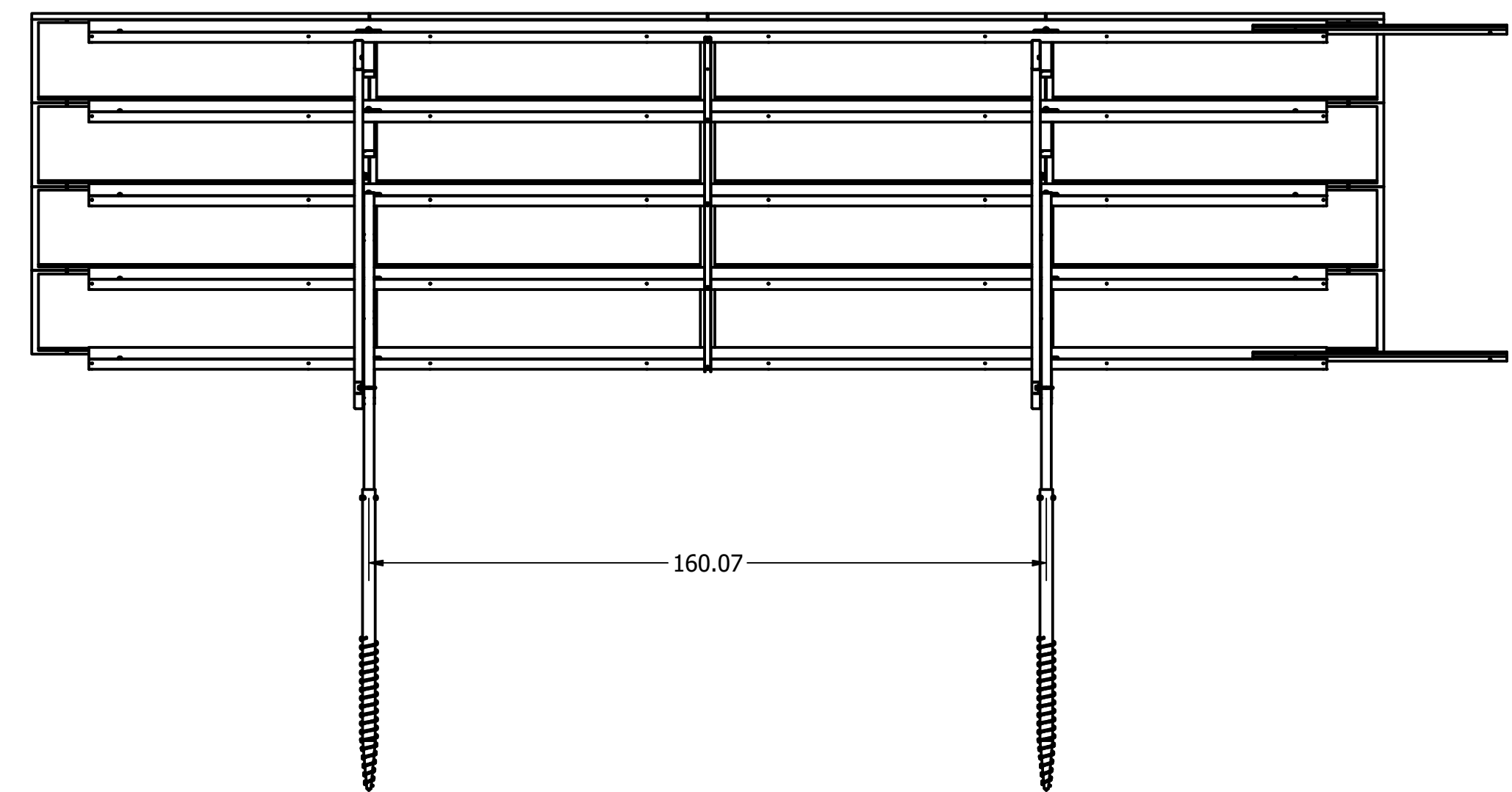
DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED
 TOLERANCES ARE AS FOLLOWS:
 .X = ± 0.050" (1.27mm)
 .XX = ± 0.015" (0.38mm)
 .XXX = ± 0.005" (0.127mm)
 ANGLE = ± 5°
 MIN. BREAK = 0.012" (0.3mm)
 SURFACE FINISH = 63 (US)

Material:			
Weight:	1765.943 lbmass		
Description:	CT-BF-GS, TRINA SOLAR TSM-DEG15MC.20(II), 4x5, 30 DEG, WATERTOWN SOLAR ONE - BIFACIAL - TRINA SOLAR, VEROGY		
Project:	WATERTOWN SOLAR ONE - BIFACIAL - TRINA SOLAR		
Drawn:	TMAIHEW	Date:	12/14/2020
Scale:		Sheet:	2 of 3
Format:	D	Part Number:	4641
Rev:			1

19410 Jetton Rd, Ste 220
 Cornelius, NC, 28031
 www.dcesolar.com
 Phone: 1-704-659-7474



REAR VIEW
4x5 ARRAY
VIEW13
SCALE 0.03 : 1



REAR VIEW
4x4 ARRAY
VIEW19
SCALE 0.03 : 1

PANEL SPECIFICATION				PROJECT INFORMATION	
NAME	DESCRIPTION			INSTALLATION ADDRESS: PLATT ROAD, WATERTOWN, CT 06795	
MANUFACTURER	TRINA SOLAR			Structural General Notes	
MODEL	TSM-DEG15MC.20(II)			1. The contractor will be solely responsible for all construction means, methods, techniques, sequences and procedures and shall at all times take reasonable precautions for the safety of its employees on the project, and shall comply with all applicable provisions of federal, state, and municipal safety laws and building construction codes.	
LENGTH (mm)	2024			2. If existing conditions make it necessary to revise structural details, consult DCE Solar before proceeding with any change.	
WIDTH (mm)	1002			3. These drawings and notes are for this specific project and no other use is authorized.	
THICKNESS (mm)	30			4. Structure designed in accordance with the 2018 Connecticut State Building Code, ASCE 7-10, AISC 360-10 (14th Edition), and AISI S100-12: ASD	

MATERIAL DESCRIPTION			
MEMBER	SHAPE	MATERIAL	GAGE
PANEL BEAM	6.25Z3X1X55DEG	A653 SS Gr80	18GA
NS CEE BEAM	8CS2X0.625	A653 SS Gr80	14GA
KICKER BRACE	2.75CU1.75	A653 SS Gr50	14GA
BEAM BRACE	1.5CU0.75	A653 SS Gr50	16GA
FRONT/REAR LEG	HSS2.375x0.154	A500 GRADE C	-

PULL TEST LOADS (GROUNDSCREW)		
	REAR (lbs)	FRONT (LBS)
UNFACTORED UPLIFT	2,750	350
UNFACTORED ADJUSTED UPLIFT*	3,000	1,900
UNFACTORED COMPRESSIVE	4,300	2,750
UNFACTORED LATERAL	1,100	50

NOTES

*ADJUSTED UPLIFT IS ASSUMED AS 70% OF THE DOWNWARD LOAD. IT'S RECOMMENDED TO USE THIS LOAD FOR PULL TEST IN CASE PUSH TEST CANNOT BE PERFORMED.

1: USE ADJUSTED UPLIFT IF NO REFUSAL IS ENCOUNTERED.
 2: USE UPLIFT FORCE IN CASE OF REFUSAL.
 3: FOR UPLIFT AND LATERAL FORCES USE SAFETY FACTOR OF 1.5 AND 2, RESPECTIVELY.

IN-FIELD PILE REMEDIATION

ANY IN-FIELD REMEDIATION REQUIRING THE CUTTING OR DRILLING OF GALVANIZED MATERIAL SHOULD FOLLOW ONE OF THESE TWO GUIDELINES TO COAT AND TREAT METALS THAT ARE EXPOSED TO GALVANIZATION DAMAGE:

- USE PAINTS CONTAINING ZINC DUST (IN ACCORDANCE WITH "ASTM A 780-01" SECTION A2)
- USE ZINC SPRAY (IN ACCORDANCE WITH "ASTM A 780-01" SECTION A3) ONE OF THE ABOVE GUIDELINES MUST BE FOLLOWED TO MAINTAIN THE DCE WARRANTY REQUIREMENTS.

Structural General Notes

1. The contractor will be solely responsible for all construction means, methods, techniques, sequences and procedures and shall at all times take reasonable precautions for the safety of its employees on the project, and shall comply with all applicable provisions of federal, state, and municipal safety laws and building construction codes.

2. If existing conditions make it necessary to revise structural details, consult DCE Solar before proceeding with any change.

3. These drawings and notes are for this specific project and no other use is authorized.

4. Structure designed in accordance with the 2018 Connecticut State Building Code, ASCE 7-10, AISC 360-10 (14th Edition), and AISI S100-12: ASD

Snow Loads:

- Ground Snow Load pg = 40 psf
- Importance Factor Is=0.8
- Exposure Factor Ce=1.0
- Slope Snow Load ps= 30 psf

Wind Loads:

- Basic Wind Speed V= 110 mph (MRI = 0.93 or 25 year)
- Iw = 1
- Exposure = C
- Wind Design performed in accordance with the requirements of ASCE - Wind Tunnel Procedure. Refer to Wind Tunnel Report by UWOLBLWT Laboratory dated 12/11/14.

Seismic Loads:

- SS = 0.182g, S1 = 0.065g
- Site Class = D
- SDS = 0.190g, SD1 = 0.100g
- Seismic Design Category = B
- Ordinary Steel Cantilever Column System

5. Material strengths:

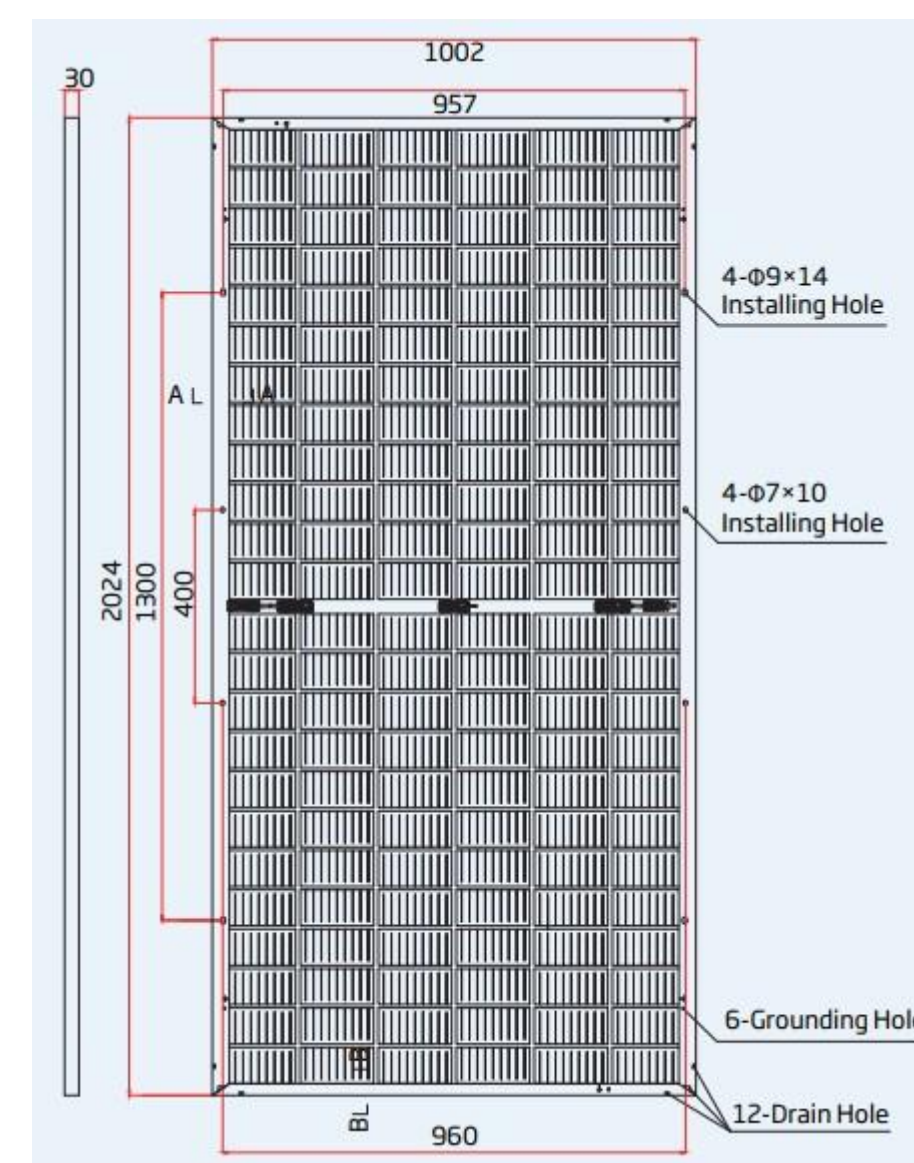
- Hot-rolled structural steel ASTM A992 GR50 w/80 ksi yield.
- Cold Formed Steel Sections comply w/ASTM A1003, structural grade, galvanized to Grade as noted.
- Formed Steel Brackets - ASTM A653 Grade 50 SS, G115 HDG
- I-Beams - A992, 50 ksi, Hot Dip Galvanized to ASTM 123 Grade 85
- Plate - A36 Steel, Hot Dip Galvanized
- Connectors - Stainless Steel unless otherwise noted.

6. Members and connections have been designed for worst-case loading associated with exterior zones of the array per the wind tunnel report.

7. Foundation embedment depths are to be calculated and sealed by a CT State Licensed Geotechnical engineer.

8. For the purposes of this project, all arrays are classified as Exterior Arrays.

9. Scope of work by Structural Engineer includes member design, connection design, and determination of design base reactions only. Layout of PV arrays such that they do not conflict with existing site obstructions, determination of site-specific foundation and geotechnical parameters, and all other work not specifically noted is by others.



DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED TOLERANCES ARE AS FOLLOWS: .X = ± 0.050" (1.27mm) .XX = ± 0.015" (0.38mm) .XXX = ± 0.005" (0.127mm) ANGLE = ± 5° MIN. BREAK = 0.012" (0.3mm) SURFACE FINISH = 63 (US)	Material:	1765.943 lbmass		
	Weight:	CT-BF-GS, TRINA SOLAR TSM-DEG15MC.20(II), 4x5, 30 DEG, WATERTOWN SOLAR ONE - BIFACIAL - TRINA SOLAR, VEROGY		
	Description:	Project:	WATERTOWN SOLAR ONE - BIFACIAL - TRINA SOLAR	
	Project:	Drawn:	TMAYHEW	Date:
Scale:	Sheet:	3	of	3
PROPRIETARY AND CONFIDENTIAL THIS DRAWING AND ALL INFORMATION THEREIN IS THE PROPERTY OF DCE SOLAR AND IS CONFIDENTIAL AND MUST NOT BE MADE PUBLIC OR COPIED UNLESS AUTHORIZED BY DCE SOLAR AND IS SUBJECT TO RETURN UPON REQUEST.		19410 Jetton Rd, Ste 220 Cornelius, NC, 28031 www.dcesolar.com Phone: 1-704-659-7474	Format: D Part Number: 4641 Rev: 1	

EXHIBIT D



STORMWATER POLLUTION CONTROL PLAN

PROPOSED
WATERTOWN SOLAR ONE, LLC
SOLAR PROJECT

HINMAN ROAD & PLATT ROAD
WATERTOWN, CONNECTICUT
LITCHFIELD COUNTY

Prepared for:

**Watertown Solar One, LLC
150 Trumbull Street, 4th Floor
Hartford, CT**

Prepared by:

**All-Points Technology Corporation, P.C.
567 Vauxhall Street Extension, Suite 311
Waterford, CT 06385**

July 2020

This Stormwater Pollution Control Plan (SWPCP) is prepared to comply with the requirements for the General Permit for the Discharge and Dewatering Wastewaters from Construction Activities. Also to be considered part of the SWPCP are the proposed construction plans, special provisions, and the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control.

Table of Contents

INTRODUCTION	1
SITE DESCRIPTION AND PROPOSED WORK.....	2
DRAFT APPENDIX I – STORMWATER MANAGEMENT AT SOLAR ARRAY CONSTRUCTION PROJECTS	2
ESTIMATED RUNOFF COEFFICIENT	4
RECEIVING WATERS	6
WETLANDS AND WATERCOURSES ON SITE.....	6
VERNAL POOLS.....	6
FLOOD ZONES.....	7
CONSTRUCTION SEQUENCE.....	7
CONTROL MEASURES	8
EROSION AND SEDIMENTATION CONTROLS GENERAL NOTES	8
SOIL STABILIZATION AND PROTECTION	10
TEMPORARY STABILIZATION PRACTICES	10
PERMANENT STABILIZATION PRACTICES	11
STRUCTURAL MEASURES	11
MAINTENANCE	11
DEWATERING WASTEWATERS.....	12
POST-CONSTRUCTION STORMWATER MANAGEMENT	13
POST-CONSTRUCTION GUIDELINES.....	13
OTHER CONTROLS.....	13
WASTE DISPOSAL	13
WASHOUT AREAS.....	13
ANTI-TRACKING PADS AND DUST CONTROL	14
POST-CONSTRUCTION	14
MAINTAINING AND STORING VEHICLES AND EQUIPMENT	14
INSPECTIONS.....	15
INSPECTION GUIDELINES.....	15
CORRECTIVE ACTIONS.....	16
MONITORING REQUIREMENTS.....	16
CONTRACTORS	17
GENERAL	17
CERTIFICATION STATEMENT	17
KEEPING PLANS CURRENT.....	17
TERMINATION.....	17

Attachment	Title
ATTACHMENT A	SITE LOCATION MAP
ATTACHMENT B	IDENTIFICATION OF CONTRACTORS AND CERTIFICATION STATEMENTS
ATTACHMENT C	STORMWATER MANANGEMENT REPORT
ATTACHMENT D	DESIGN PLANS
ATTACHMENT E	STORMWATER MONITORING REPORT FORM
ATTACHMENT F	NOTICE OF TERMINATION FORM

WETLAND DELINEATION REPORT PROVIDED UPON REQUEST

Introduction

All-Points Technology Corporation, P.C. ("APT") prepared this Storm Water Pollution Control Plan ("SWPCP") on behalf of Watertown Solar One, LLC ("Watertown Solar One" or "Permittee" or "Applicant") for the Watertown Solar One, LLC Solar Project ("Project") in the City of Watertown, Connecticut. See site location map, Appendix A.

This SWPCP has been completed to support Watertown Solar One's application for the Connecticut Department of Energy and Environmental Protection's ("CTDEEP") General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities ("General Permit"), effective date: October 1, 2013, expiration date: September 30, 2020.

Additionally, this SWPCP, Site Plans, and Stormwater Report have been completed to comply with the draft General Permit including Appendix I Stormwater Management at Solar Construction Projects ("Appendix I"). The draft General Permit can be found at the following link for review:

https://www.ct.gov/deep/lib/deep/public_notice_attachments/general_permits/2019December27ConstructionGPwithModificationsClean-DraftPermit.pdf

The Permittee will be required to renew the General Permit application for this Project upon the issuance of the new General Permit.

During construction, the contractor(s) shall be responsible for implementing all elements of the erosion and sedimentation control measures as defined on the drawings, in this plan, and as directed. Erosion and sedimentation controls will be implemented and adjusted as needed throughout construction to minimize soil erosion. Construction activities will be phased to minimize areas of disturbance throughout construction.

Throughout the construction process, the Permittee or Permittee's agent shall periodically inspect all erosion and sedimentation control measures. A monitoring program will be established to observe the effectiveness of these measures and identify corrective actions, where necessary. After construction, the Permittee shall be responsible for maintaining these erosion and sedimentation control measures until the Project is complete. The Project will not be considered complete until all disturbed areas have been satisfactorily stabilized for at least three months, all erosion has been repaired, and all temporary erosion and sedimentation control measures have been removed as called for on the plans.

All contractors and subcontractors who will perform actions on-site that may reasonably be expected to cause or have the potential to cause pollution of waters of the State will be identified prior to construction and must sign the certification included in Appendix B. Any new contractors and subcontractors brought on to the project during construction must sign the certification as well. The certification will be available for inspection prior to and during construction.

The Permittee or Permittee's agent is responsible for keeping the Plan in compliance with the General permit at all times. Should the Plan fail to prevent pollution or fail to otherwise comply with the General Permit at any time the permittee or their agent shall amend the Plan. The plan shall also be amended if there is a change in contractors and/or subcontractors or a change in design, construction, operation or maintenance at the site.

Site Description and Proposed Work

The Site is located at 669 Platt Road in Watertown, Connecticut (the "Site"; or "Project Site"). The property is an irregular shaped parcel of approximately 154.30± acres owned by the Catholic Cemeteries Association of the Archdiocese of Hartford, Inc. The property has an existing cemetery on the northeast portion of the lot with a 290-ft wide electrical transmission easement through the middle of the lot. The western and southern portions of the lot are existing woodlands. The site is zoned as residential (R70). The Site vicinity is characterized as a mix of woodlands, rural residential, and agricultural. Appendix A, *Site Location Map*, depicts the location of the Site and surrounding area.

Upon its completion, the Facility (including stormwater controls) will occupy 16.7± acres of the Site ("Project Area"). The Facility will be comprised of approximately 1,560 Risen RSM144-6 380W and 5,616 Trina TSM-DE15MC 390W photovoltaic modules ("panels") installed at a tilt angle of 30.0 degrees; 15 Solectria Solar's XGI 1500-125/125 inverters and one Chint CPS SCH100KTL-DO/US-600 inverter; one (1) pad mounted switchgear; one (1) transformer; and one (1) service interconnection line. A ground-mounted racking system, with posts mounted on driven piles, will be used to secure the panel arrays; the Facility will be enclosed within a six (6)-foot tall chain-link security fence. The proposed electrical interconnection will be to an existing distribution pole located on Platt Road to the east of the site entrance.

Draft Appendix I – Stormwater Management at Solar Array Construction Projects

The Permittee and the Contractor should be aware that construction of large-scale solar arrays such as this Project are unlike typical development projects due to significant amounts of disturbed area that are at times un-stabilized soils. As such, it is imperative that the Contractor follow the sequence of construction within this SWPCP and on the design plans. Any deviations from the proposed sequence of construction will require approval in writing.

CTDEEP has developed a draft Appendix I for inclusion in the proposed new General Permit. This Project complies with the draft Appendix I as follows:

Design and Construction Requirements

Requirement No. 1

The Project is designed to meet the WQV requirements accounting for all roadways, gravel surfaces, and equipment pads as effective impervious cover for the purposes of calculating WQV.

Requirement No. 2

The height of the lowest point of the panels is 3 feet off the ground which will allow for a robust vegetative cover when stabilized post-construction.

Requirements No. 3-7

The Permittee will comply with any requirements of the General Permit that is in effect during construction period of the Project.

Requirement No. 8

If required by the Commissioner, the Permittee will secure a letter of credit in the amount and per the specifications listed in App I and section 3 of the guidance document issued on Jan 8, 2020.

Design requirements for post-construction stormwater management

Requirement No. 1

Stormwater control measures include riprap downgradient of each of the stormwater basin outlets and are located a minimum of 50 feet from the downgradient wetland. The property line is located a minimum of 20 feet from the stormwater control measures.

Requirement No. 2

The orientation of the solar panels was considered with respect to drainage patterns. The existing grade throughout the site will be maintained so that channelized flow is not developed and sheet/shallow concentrated flow remain. For this project there is a 0.5" gap between each of the panels and they are in portrait configuration (2 high). All on-site drainage is designed to flow overland on vegetated surfaces or reach a stormwater management basin.

Requirement No. 3

The attached Stormwater Management Report addresses items (a) thru (e) with no significant increase in peak flow, erosive velocities or adverse impacts to downstream properties, including the reduction of Hydrologic Soil Group to account for compaction and field infiltrations rates.

Estimated Runoff Coefficient

The drainage on the site was analyzed using the SCS TR-20 method. Soil types were determined from a Natural Resources Conservation Service Soil Survey. For existing conditions, the land use inputs and modeled curve numbers are as follows:

<i>Drainage Area</i>	<i>Area (acre)</i>	<i>CN</i>	<i>Land Use Description</i>
EDA-1	3.464	79	
	0.540	70	Woods, Good, HSG C
	2.723	79	50-75% Grass cover, Fair, HSG C
	0.194	98	Paved parking, HSG C
	0.007	84	50-75% Grass cover, Fair, HSG D
EDA-2	4.856	70	
	4.682	70	Woods, Good, HSG C
	0.174	77	Woods, Good, HSG D
EDA-3	7.088	74	
	2.643	70	Woods, Good, HSG C
	0.136	79	50-75% Grass cover, Fair, HSG C
	4.264	77	Woods, Good, HSG D
	0.045	84	50-75% Grass cover, Fair, HSG D
EDA-4	0.941	73	
	0.576	70	Woods, Good, HSG C
	0.365	77	Woods, Good, HSG D
EDA-5	0.930	71	
	0.842	70	Woods, Good, HSG C
	0.088	77	Woods, Good, HSG D

For proposed conditions, the land use inputs and modeled curve numbers are as follows:

<i>Drainage Area</i>	<i>Area (acre)</i>	<i>CN</i>	<i>Land Use Description</i>
PDA-1A	1.727	81	
	0.671	79	50-75% Grass cover, Fair, HSG C
	0.194	98	Paved parking, HSG C
	0.826	78	Meadow, non-grazed, HSG D
	0.036	91	Gravel roads, HSG D
PDA-1B	1.557	79	
	0.005	98	Paved parking, HSG D
	1.416	78	Meadow, non-grazed, HSG D
	0.136	91	Gravel roads, HSG D
PDA-2	4.697	77	
	0.434	65	Brush, Good, HSG C
	0.032	73	Brush, Good, HSG D
	4.075	78	Meadow, non-grazed, HSG D
	0.156	91	Gravel roads, HSG D
PDA-3A	2.735	78	
	2.705	78	Meadow, non-grazed, HSG D
	0.030	91	Gravel roads, HSG D
PDA-3B	2.881	78	
	2.881	78	Meadow, non-grazed, HSG D
PDA-3C	1.801	78	
	0.111	65	Brush, Good, HSG C
	0.421	83	Brush, Poor, HSG D
	1.269	78	Meadow, non-grazed, HSG D
PDA-4	0.957	69	
	0.546	65	Brush, Good, HSG C
	0.365	83	Brush, Poor, HSG D
	0.046	78	Meadow, non-grazed, HSG D
PDA-5	0.931	69	
	0.836	65	Brush, Good, HSG C
	0.088	83	Brush, Poor, HSG D
	0.007	78	Meadow, non-grazed, HSG D

The array area will require clearing and grubbing since the project area is largely forested. The entire area will be seeded with a low growing forbs and grass mix following installation of the necessary utilities, access road, and stormwater management features. Overall, hydrologically, the post-developed condition is designed to mimic the pre-developed condition.

To account for an increase in runoff conditions predicted by initial modeling calculations three (3) grass lined stormwater basins are proposed around the perimeter of the site. These will have culvert outlets and/or overflow weirs for outlet structures. Their proposed grading was set to provide sufficient water quality volume and peak flow attenuation. They also provide the required sediment storage volumes as shown on the plans.

Receiving Waters

Based upon a review of DEEP mapping, the Site is located in Major Drainage Basin 6 (Housatonic); Regional Basin 68 (Pomperaug), Sub Regional Drainage Basin 6802, and Local Drainage Basins 6802-02 and 6802-03.

Based upon publicly available mapping, no surface waterbodies are found on the Site. Lewis Atwood Brook runs in a north-south direction approximately 440 feet to the east of the Facility fence and approximately 85 feet south of the underground interconnection line. It is classified by DEEP as Class A. The Project will have no effect on this surface waterbody.

Wetlands and Watercourses on Site

An APT Professional Soil Scientist identified four (4) wetlands on the Site during a field inspection and wetland delineation completed on November 11 and 19, 2019. The results of the field delineation are summarized below.

Wetland 1 is located west of the Project Area, embedded within the Mixed Hardwood Forest. It consists of a broad south to north flowing drainageway with an interior intermittent stream. Areas of seasonal flooding result from hillside seepage draining from south to north predominantly from the eastern slope. The southern end of the wetland contains a depressional area with an interior cryptic vernal pool.

Wetland 2 is a small hillside groundwater slope wetland with seasonally saturated hydrology located northwest of the Project Area. The wetland is bordered by marginally saturated areas consisting of Woodbridge soils. This wetland is formed at a seep break along the base of a significant slope break. As topography steepens to the east, hydrology that forms this wetland is lost and the delineated feature terminates.

Wetland 3 is located to the northwest of the Project Area along the Site's northern boundary. It consists of a hillside groundwater slope wetland with seasonally saturated hydrology. The wetland is bordered by marginally saturated areas of Woodbridge soils. This wetland is formed at a seep break along the base of a significant slope break. Wetland 3 continues off-Site to the north as part of a larger headwater seep system.

Wetland 4 is located to the east of the Project Area along the Site's eastern boundary and confined to the north by a fill slope associated with the cemetery. It is a forested hillside groundwater slope wetland with seasonally saturated hydrology. The wetland is bordered by marginally saturated areas of Woodbridge soils. This wetland is formed at a seep break along the base of a slope break and continues east beyond the Project Area into a large headwater wetland system. This feature generally drains east forming the headwaters to Lewis Atwood Brook, located farther to the east remote from the Project Area.

Vernal Pools

A single vernal pool is present on the Site, embedded within the southern portion of Wetland 1. With respect to vernal pool habitat within Wetlands 2, 3, and 4, these areas did not have sufficient standing water to support amphibian egg and larval development. Vernal pool surveys were

conducted on March 18 and 30, and April 7, 2020. Survey methods included aural surveys to record chorusing frogs, visual surveys to search for adults, egg masses and larvae, and dip-netting to identify species within the water column and benthic material.

The vernal pool supports two indicator species, the wood frog (*Lithobates sylvaticus*) and the spotted salamander (*Ambystoma maculatum*). These two species are the most common vernal pool indicator species, occurring statewide across all ecoregions. A total of 33 wood frog egg masses and nine (9) spotted salamander egg masses were present. The egg masses were located within shrubby vegetation consisting of sweet pepperbush (*Clethra alnifolia*) and winterberry (*Ilex verticillata*). The maximum observed water depth was approximately 10 inches.

Flood Zones

APT reviewed the United States Federal Emergency Management Agency ("FEMA") Flood Insurance Rate Maps ("FIRM") for the Site. A FIRM is the official map of a community on which FEMA has delineated both the special hazard areas and risk premium zones applicable to the community. The Site is mapped on FIRM PANEL #0900580009B, dated November 5, 1980. Based upon the reviewed mapping, the Site is classified as an area of minimal flooding, typically above the 500-year flood level.

The Project Area is outside the influence of 100- and 500-year floodplains and will have no effect on these resources. No special considerations or precautions relative to flooding are required for the Project.

Construction Sequence

The following suggested sequence of construction activities is projected based upon engineering judgement and best management practices. The contractor may elect to alter the sequencing to best meet the construction schedule, the existing site activities and weather conditions. Should the contractor alter the construction sequence or any erosion and sedimentation control measures they shall modify the Stormwater Pollution Control Plan ("SWPCP") as required by the general permit. Major changes in sequencing and/or methods may require regulatory approval prior to implementation.

1. The contractor shall schedule a pre-construction meeting. Physically flag the limits of disturbance in the field as necessary to facilitate the pre-construction meeting.
2. Conduct a pre-construction meeting to discuss the proposed work and erosion and sedimentation control measures. The meeting should be attended by the owner, the owner representative(s), the municipality, the general contractor, designated sub-contractors and the person, or persons, responsible for the implementation, operation, monitoring and maintenance of the erosion and sedimentation measures. The construction procedures for the entire project shall be reviewed at this meeting.
3. Notify Call Before You Dig at 1-800-922-4455, as required, prior to the start of construction.

4. Remove existing impediments as necessary and provide grading to install the required construction/site entrance.
5. Clear only as needed to install the perimeter erosion and sedimentation control measures and, if applicable, tree protection. All wetland areas shall be protected before major construction begins.
6. Install perimeter erosion control.
7. Install erosion control below equipment area and install concrete equipment pads and conduits protected by these controls.
8. Install sediment basins, gravel stabilized access roads, and associated swales. Upon completion of the installation and stabilization of the basins and swales, up gradient work can proceed.
9. Upon completion of the installation of each of the temporary sediment basins, the area above the basin can have the remaining array area clearing and grubbing completed as required. Remove and dispose of demolition debris off-site in accordance with applicable laws.
10. Temporarily seed disturbed areas not under construction for thirty (30) days or more.
11. Install remaining electrical conduit.
12. Install racking posts for ground mounted solar panels.
13. Install ground mounted solar panels and complete electrical installation.
14. After substantial completion of the installation of the solar panels, complete remaining site work, including any required landscape screening, and stabilize all disturbed areas.
15. Fine grade, rake, seed and mulch all remaining disturbed areas.
16. After the site is stabilized and with the approval of the Permittee and City of Watertown Agent, remove perimeter erosion and sedimentation controls.

Control Measures

The Contractor shall install and maintain staked silt fence around the site as perimeter control throughout the duration of construction. Construction entrances shall be installed at the locations where the contractor will be leaving disturbed areas of the site. Material stockpile area with appropriate controls shall be placed as needed throughout the limits of the site.

Erosion and Sedimentation Controls General Notes

- All erosion and sediment control measures shall be constructed in accordance with the standards and specifications of the "2002 Connecticut Guidelines for Soil Erosion and

Sediment Control” (CTDEEP Bulletin No. 34), and all amendments and addenda thereto as published by the Connecticut Department of Energy and Environmental Protection.

- Land disturbance shall be kept to the minimum necessary for construction operations.
- Install all control measures as shown on the plans and elsewhere as necessary to prevent soil erosion and sediment transport to resource areas. Additional controls not depicted on the plans may be necessary. It is the responsibility of the construction contractor to assess the need for and to install additional controls that are warranted by site conditions.
- Inspect and maintain control measures throughout the construction period. Inspections shall be conducted after each rainstorm and during major storm events to determine if all control measures are adequately in place and effective.
- Sediment removed shall be properly disposed of in an appropriate upland area within the defined limits of disturbance
- Stockpile topsoil in level upland areas and contain using straw bales and/or silt fence around the perimeter.
- In accordance with the project specification, stabilization of open soil surfaces will be implemented within 7 days after grading or construction activities have temporarily or permanently ceased, unless weather prohibits seed germination.
- Where necessary, in accordance with the project specifications, suitable topsoil, seedbed preparation, and water shall be provided for effective establishment of vegetative cover.
- The construction contractor shall keep all paved roadways clean.
- Inspect and maintain temporary erosion and sedimentation controls until restoration has been determined to be effective as defined by conformance to the CTDEEP General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities.
- If construction activities are complete or have been temporarily halted for more than seven (7) days, stabilization activities will be implemented within three (3) days.
- Areas that remain disturbed but inactive for at least 30 days shall receive temporary seeding or soil protection within seven (7) days.
- Disturbed areas that do not establish a vegetative cover within 30 days of seeding shall have erosion control blankets installed. Prior to the erosion control blanket installation, the soil would be prepared with the application of lime, fertilizer, and seed.

- Areas that will be disturbed past the planting season will be covered with a long-term, non-vegetative stabilization method that will provide protection through the winter.
- Stabilization practices will be implemented as quickly as possible in accordance with the Guidelines.
- The contractor shall stabilize disturbed areas with temporary or permanent measures as quickly as possible after the land is disturbed.

Soil Stabilization and Protection

Temporary and permanent stabilization measures are proposed to provide protection against erosion both during and after construction. Land disturbance shall be kept to the minimum necessary for construction operations and existing vegetation shall be preserved to the maximum extent practicable.

The contractor shall maintain temporary erosion and sediment control measures until final stabilization has been achieved. Areas that will remain disturbed but inactive for at least 30 days shall receive temporary seeding or soil protection in accordance with the 2002 Guidelines. Areas that will remain disturbed beyond the seeding season shall receive long term non-vegetative stabilization and protection measures sufficient to protect disturbed areas through the winter. In all cases, stabilization and protection measures shall be implemented as soon as possible in accordance with the 2002 Guidelines.

The stabilization practices to be implemented during the construction of the proposed project are as follows:

Temporary Stabilization Practices

Temporary Vegetative Cover: Temporary vegetative cover shall be established on all exposed areas and areas that have not reached finish grade that will be inactive for more than seven days, and stockpiles not in use for 30 days, during the planting season of March 15 to July 1 and August 1 to October 15. This temporary vegetative cover shall consist of perennial rye grass. The rye grass shall be planted at a rate of 2 lbs./1,000 sq. ft. at a depth of 1/2 inch.

Temporary Soil Protection: Temporary soil protection shall only be used when a disturbed area will be inactive for a period of 30 or more consecutive days, but less than 5 months. If surfaces will not be reworked within 5 months, temporary vegetative cover shall be used. This temporary soil protection shall consist of mulches, tackifiers, and erosion control blankets which shall be biodegradable or photo-degradable within 2 years but without substantial degradation for 5 months. Additionally, they shall be capable of being applied evenly such that it provides 100% initial soil coverage, still adheres to the soil surface, and are free of contaminants and foreign material.

Silt Fence: Silt fence is constructed of a permeable geotextile fabric secured by wooden stakes driven into the ground. It is installed as a temporary barrier to prevent sediment from flowing into an unprotected and/or sensitive area from a disturbed site. Staked silt fence and hay bales or wood chip bags can be used separately or in conjunction as erosion control barriers. A silt

fence should be installed downgradient of the work area and placed on contour or as directed by the engineer. Once the Project is complete and soils are stabilized, silt fence materials (i.e., geotextile fabric and wooden stakes) must be removed and properly disposed of off-site. It is important that this measure be installed on contour to reduce erosion along the system.

Construction Entrances: To prevent soil or sediment from being carried off-site by construction equipment, a construction entrance will be installed before construction traffic into and out of the Project area. The width of the anti-tracking pad shall not be less than the width of the ingress or egress. Adjacent roadways shall be swept daily to remove material that may be tracked onto pavement.

Permanent Stabilization Practices

All areas disturbed by construction and unpaved areas that are graded or disturbed by construction will receive topsoil from the site and/or turf establishment. The Contractor may use other permanent stabilization practices approved by the Engineer and conforming to the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control.

Structural Measures

The existing slopes will be maintained to capture runoff from the Project site. The Project Area has been divided into areas of less than five (5) acres that will be controlled by temporary sediment traps.

Maintenance

All construction and related activities shall conform to the requirements of the plans or as directed by the Engineer. In general, all construction activities shall proceed in such a manner so as not to pollute any wetlands, watercourses, water bodies, and conduits carrying stormwater. The Contractor shall limit, in so far as possible, the surface area of earthen materials exposed by construction activity and immediately provide temporary and permanent stabilization practices to prevent soil erosion and contamination on the site. Water pollution control provisions and best management practices shall be administered during construction in accordance with the 2002 Guidelines and as directed by the Engineer.

The following maintenance practices will be completed as part of this project:

Silt Fence: Inspect silt fence at least once per week and within 24 hours of the end of a storm with a rainfall amount of 0.25 inch or greater. For dewatering operations, inspect frequently before, during, and after pumping operations. Remove the sediment deposits or install a secondary barrier upslope from the existing barrier when sediment deposits reach one half the height of the barrier.

Compost Filter Sock: Inspect compost filter sock at least once per week and within 24 hours of the end of a storm with a rainfall amount of 0.25 inch or greater. For dewatering operations, inspect frequently before, during, and after pumping operations. Repair/replace when failure or deterioration is observed.

Temporary Soil Protection: Inspect the temporary soil protection at least once a week and within 24 hours of the end of a storm with a rainfall amount of 0.5 inch or greater for failures. If eroded or bare areas are found repair them immediately. When repetitive failures are observed at the same location, review conditions and limitations for use and determine if other measures are needed to reduce failure rate.

Temporary Sediment Basin (w/baffles): Inspect temporary sediment basins with baffles for failures at least once a week and within 24 hours of the end of a storm with a rainfall amount of 0.5 inch or greater. Remove sediment once it has accumulated to one half of minimum required volume of the wet storage, dewatering as needed. Restore basin to original dimensions. Repair/replace baffles when failure or deterioration is observed.

Temporary Sediment Trap (w/baffles): Inspect temporary sediment traps with baffles for failures at least once a week and within 24 hours of the end of a storm with a rainfall amount of 0.5 inch or greater. Remove sediment once it has accumulated to one half of minimum required volume of the wet storage, dewatering as needed. Restore trap to original dimensions. Repair/replace baffles when failure or deterioration is observed.

Construction Entrances: Maintain the entrance in a condition which will prevent tracking and washing sediment onto paved surfaces. Provide periodic top dressing with additional stone of additional length as conditions demand. Repair any measures used to trap sediment as needed. Remove all sediment spilled, dropped, washed or tracked onto paved surfaces. Adjacent roadways shall be left clean at the end of each day. If the construction is properly maintained and the action of a vehicle traveling over the stone pad is not sufficient to remove the majority of the sediment then either (1) increase the length of the construction entrance, (2) modify the construction access road surface, or (3) install washing racks and associated settling area or similar devices before the vehicle enters a paved surface.

Topsoil/Borrow Stockpiles: Inspect topsoil/borrow stockpiles daily. Repair/replace sediment barriers as necessary and stabilize stockpiles as needed.

Dewatering Wastewaters

The need for dewatering is not anticipated. However, if encountered, dewatering wastewaters will be infiltrated into the ground unless otherwise directed by the Engineer. When dewatering is necessary, pumps used shall not be allowed to discharge directly into a wetland or watercourse.

Prior to any dewatering, the Contractor shall prepare a written proposal for specific methods and devices to be used including, but not limited to, the pumping of water into a temporary sedimentation basin, providing surge protection at the inlet or outlet of pumps, floating the intake of a pump, or any other method for minimizing and retaining the suspended solids. If the Contractor witnesses a pumping operation causing turbidity problems, the Contractor shall halt said operation until a means of controlling the turbidity is established by the Contractor. No discharge of dewatering wastewater shall contain or cause a visible oil sheen, floating solids or foaming in the receiving water

It is expected that a pumping settling basin will be required and that this basin will be sized by the contractor in accordance with the 2002 Guidelines.

Post-Construction Stormwater Management

Post-construction Guidelines

After the project is complete the developer will perform the following maintenance and restoration measures:

- Mowing and maintenance of the turf and vegetated areas will occur as needed.
- The stormwater basins will be inspected on a bi-annual basis. The basins will be cleaned and maintained on an as needed basis.

Other Controls

Waste Disposal

Construction site waste shall be properly managed and disposed of during the entire construction period. Additionally;

- A waste collection area will be designated. The selected area will minimize truck travel through the site and will not drain directly to the adjacent wetlands.
- Waste collection shall be scheduled regularly to prevent the containers from overflowing.
- Spills shall be cleaned up immediately.
- Defective containers that may cause leaks or spills will be identified through regular inspection. Any found to be defective will be repaired or replaced immediately.
- Any stockpiling of materials should be confined to the designated area as defined by the engineer.

Washout Areas

Washout of applicators, containers, vehicles and equipment for concrete shall be conducted in a designated washout area. No surface discharge of washout wastewaters from the area will be allowed. All concrete wash water will be directed into a container or pit such that no overflows can occur. Washout shall be conducted in an entirely self-contained system and will be clearly designed and flagged or signed where necessary. The washout area shall be located outside of any buffers and at least 50 feet from any stream, wetland or other sensitive water or natural resources as shown on the plans.

The designated area shall be designed and maintained such that no overflows can occur during rainfall or after snowmelt. Containers or pits shall be inspected at least once a week to ensure structural integrity, adequate holding capacity and will be repaired prior to future use if leaks are present. The contractor shall remove hardened concrete waste when it accumulates to a height

of ½ of the container or pit or as necessary to avoid overflows. All concrete waste shall be disposed of in a manner consistent with all applicable laws, regulations and guidelines.

Anti-tracking Pads and Dust Control

Off-site vehicle tracking of sediments and the generation of dust shall be minimized. Temporary anti-tracking pads from the active work site to the existing pavement will be installed and maintained at the locations shown on the plans. The contractor shall:

- Maintain the entrance in a condition which will prevent tracking and washing of sediment onto paved surfaces.
- Provide periodic top dressing with additional stone or additional length as conditions demand.
- Repair any measures used to trap sediment as needed.
- Immediately remove all sediment spilled, dropped, washed or tracked onto paved surfaces.
- Ensure roads adjacent to a construction site are left clean at the end of each day.

If the construction entrance is being properly maintained and the action of a vehicle traveling over the stone pad is not sufficient to remove the majority of the sediment, then the contractor shall either:

- Increase the length of the construction entrance,
- Modify the construction access road surface, or
- Install washing racks and associated settling area or similar devices before the vehicle enters a paved surface.

For construction activities which cause airborne particulates, wet dust suppression shall be utilized. Construction site dust will be controlled by sprinkling the ground surface with water until it is moist on an as-needed basis. The volume of water sprayed shall be such that it suppresses dust yet also prevents the runoff of water.

Post-Construction

Upon completion of construction activities and stabilization of the site, the site shall be cleaned of construction sediment or debris and any remaining silt fence shall be removed prior to acceptance of the project. Sediment shall be properly disposed of in accordance with all applicable laws, regulations and guidelines.

Maintaining and Storing Vehicles and Equipment

The contractor shall take measures to prevent any contamination to wetlands and watercourses while maintaining and storing construction equipment on the site. All chemical and petroleum containers stored on site shall be provided with impermeable containment which will hold at least 110% of the volume of the largest container, or 10% of the total volume of all containers in the area, whichever is larger, without overflow from the containment area. All chemicals and their containers shall be stored under a roofed area except for those stored in containers of 100-gallon capacity or more, in which case double-walled tanks will suffice.

Inspections

Inspection Guidelines

All construction activities shall be inspected initially for Plan implementation and then weekly for routine inspections.

Plan implementation inspections shall occur at least one and no more than three times during the first 90 days of construction to confirm compliance with the General Permit. The plan implementation inspection(s) shall be completed by either a qualified soil erosion and sediment control professional or a qualified professional engineer who should be under contract and contacted within 30 days following commencement of the construction activities on site.

Routine inspections shall occur at least once every seven calendar days and within 24 hours of the end of a storm that generates a discharge. These inspections shall be conducted by a qualified inspector (provided by the Permittee), as defined in the General Permit, and at a minimum, will include inspection of all areas disturbed by the construction activity that have not been stabilized, all erosion and sedimentation control measures, all structural control measures, soil stockpile areas, washout areas and locations where vehicles enter or exit the site for evidence of, or the potential for, pollutants entering the drainage system and impacts to receiving waters.

For storms that end on a weekend, holiday or other time in which working hours will not commence within 24 hours, an inspection is required within 24 hours only for storms that equal or exceed 0.5 inches. For lesser storms, inspection shall occur immediately upon the start of subsequent normal working hours.

Where sites have been temporarily or finally stabilized, such inspection shall be conducted at least once every month for three months.

Qualified personnel provided by the Permittee shall conduct Inspections.

Items to be inspected: the following items shall be inspected as described below:

<u>Item</u>	<u>Procedure</u>
Silt Fence/Haybales	Inspected weekly and within 24 hours of rainfall to ensure that the fence line is intact with no breaks or tears. Repair/replace when failure, or observed deterioration, is observed. Remove silt when it reaches ½ the height of the fence or bale.
Topsoil/Borrow Stockpiles	Inspect daily. Repair sediment barriers as necessary.
Temporary Soil Protection	Inspected weekly and within 24 hours of rainfall to ensure that the fence line is intact with no breaks or tears. Repair eroded/bare areas immediately. Reseed and mulch.

Construction Entrance	Inspect daily. Place additional stone, extend the length or remove and replace the stone. Clean paved surfaces of tracked sediment.
Compost Filter Sock	Inspect weekly and within 24 hours of rainfall greater than 0.25". Repair/replace when failure or deterioration is observed.
Temporary Sediment Basin (with Baffles)	Inspect weekly and withing 24 hours of rainfall greater than 0.5". Remove sediment once it has accumulated to one half of minimum required volume of the wet storage, dewatering as needed. Restore basin to original dimensions. Repair/replace baffles when failure or deterioration is observed.
Temporary Sediment Trap (with Baffles)	Inspect weekly and withing 24 hours of rainfall greater than 0.5". Remove sediment once it has accumulated to one half of minimum required volume of the wet storage, dewatering as needed. Restore trap to original dimensions. Repair/replace baffles when failure or deterioration is observed.

Corrective Actions

If at any time an inspection determines that the Site is out of compliance with the terms and conditions of this SWPCP and the General Permit, corrective actions shall be taken. Non-engineered corrective actions (as identified in the 2002 Guidelines and 2004 Connecticut Stormwater Quality Manual) shall be implemented on site within 24 hours and incorporated into a revised SWPCP within three calendar days of the date of inspection. Engineered corrective actions shall be implemented on site within seven days and incorporated into a revised SWPCP within ten calendar days of the date of inspection unless another schedule is specified.

Monitoring Requirements

A written report summarizing the scope of the inspection, the name(s) and qualifications of inspection personnel, the date and time of the inspection, major observations relative to the implementation of the Pollution Control Plan, and actions taken shall be completed within 24 hours of the inspection. This report shall be retained as part of the Stormwater Pollution Control Plan for at least five years after the date of the inspection.

Turbidity monitoring shall be conducted at the outlet locations depicted on the Plan utilizing a procedure consistent with 40 CFR Part 136:

http://www.epa.gov/region9/qa/pdfs/40cfr136_03.pdf

and may be taken manually or by an in-situ turbidity probe or other automatic sampling device equipped to take individual turbidity readings. The first sample shall be taken within the first hour of stormwater discharge from the site and at least three grab samples shall be taken during a storm event and shall be representative of the flow and characteristics of the discharge. Sampling shall be conducted at least monthly when there is a discharge of stormwater from the

site while construction activity is ongoing, until final stabilization of the drainage area associated with each outfall is achieved.

Samples shall be taken during normal working hours, which for this project shall be defined as Monday through Friday, 8 am to 6 pm. If a storm continues past working hours, sampling shall resume the following morning or the morning of the next working day following a weekend or holiday, as long as the discharge continues. Sampling may be temporarily suspended when conditions exist that may reasonably pose a threat to the safety of the person taking the sample.

Within 30 days following the end of each month, the stormwater sampling results shall be submitted on the Stormwater Monitoring Report (SMR) and submitted in accordance with Net DMR. If there is no stormwater discharge during a month, sampling is not required, however, SMR's indicating "no discharge" shall be submitted.

Contractors

General

This section shall identify all Contractors and Subcontractors who will perform on-site actions which may reasonably be expected to cause or have potential to cause pollution of the waters of the State.

Certification Statement

All contractors and subcontractors must sign the attached statement. All certification will be included in the Stormwater Pollution Control Plan.

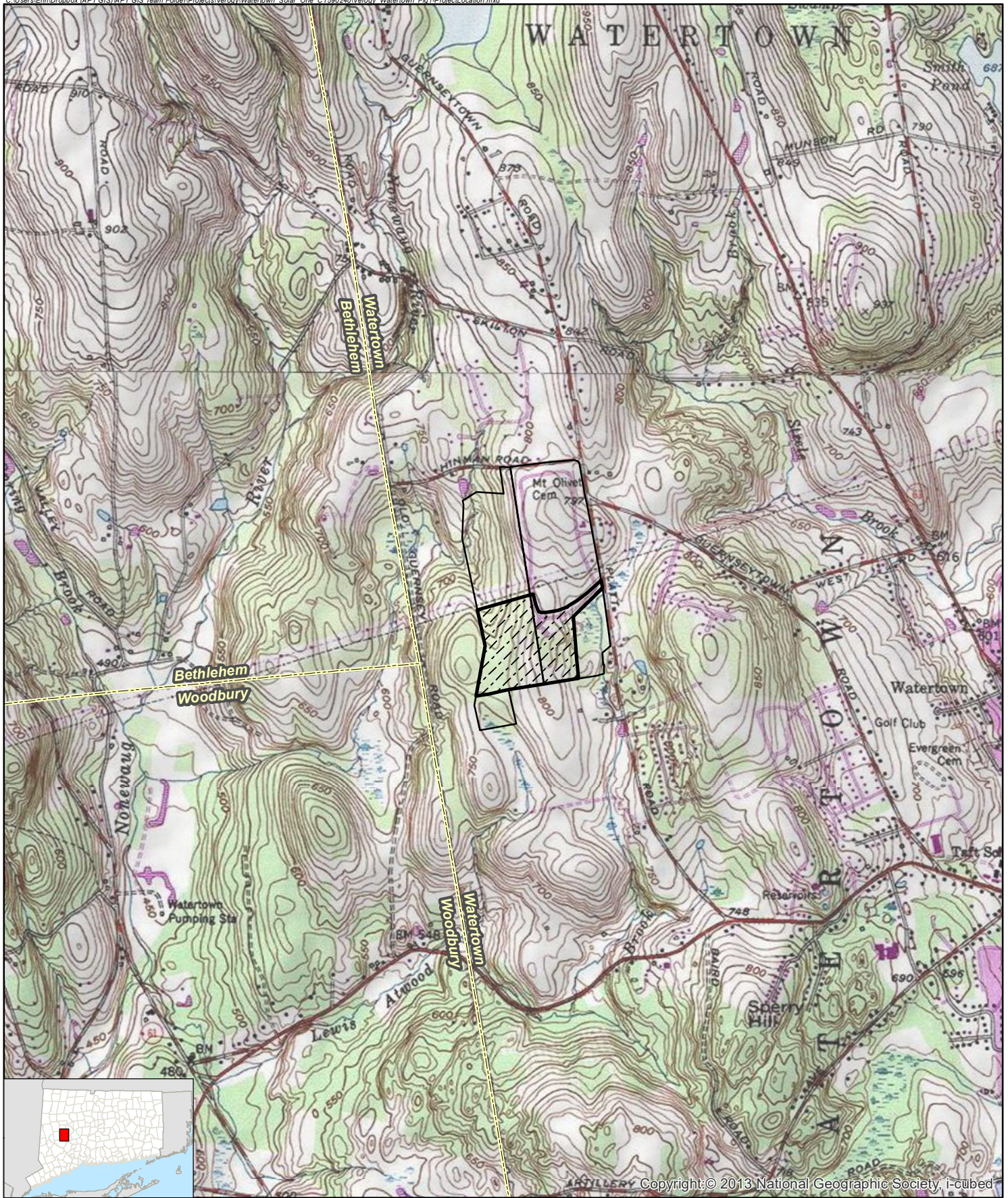
Keeping Plans Current

The Permittee shall amend the Plan whenever there is a change in contractors or subcontractors at the site, or a change in design, construction, operation, or maintenance at the site which has the potential for the discharge of pollutants to the waters of the state and which has not otherwise been addressed in the Plan or if the actions required by the Plan fail to prevent pollution.




Termination

Once the site has been stabilized and all final inspections have occurred, the Permittee shall file a termination notice. Prior to filing for termination, all temporary erosion and sediment control measure shall be removed. A blank copy of the Notice of Termination Form is provided in Appendix F.

ATTACHMENT A
Site Location Map



Legend

-  Site
-  Properties
-  Municipal Boundary

Map Notes:
 Base Map Source: USGS 7.5 Minute Topographic
 Quadrangle Maps: Woodbury (1984), CT
 Map Scale: 1 inch = 2,000 feet
 Map Date: June 2020

2,000 1,000 0 2,000
 Feet

Figure 1
Project Location Map

Proposed Solar Facility - Watertown Solar One
 669 Platt Road
 Watertown, Connecticut

Watertown Solar One, LLC



ATTACHMENT B
Identification of Contractors and
Certification Statements

WATERTOWN SOLAR ONE, LLC PROJECT
CITY OF WATERTOWN, CONNECTICUT

"I certify under penalty of law that I have read and understand the terms and conditions of the General Permit for the Discharge of Stormwater Associated with Construction Activity. I understand that as Contractor on the project, I am covered by this General Permit, and must comply with the terms and conditions of this permit, including, but not limited to, the requirements of the Stormwater Pollution Control Plan prepared for this project."

GENERAL CONTRACTOR

Signed: _____

Date: _____

Title: _____

Firm: _____

Telephone: _____

Address: _____

SUBCONTRACTOR

Signed: _____

Date: _____

Title: _____

Firm: _____

Telephone: _____

Address: _____

Provide additional sheets if necessary

ATTACHMENT C
Stormwater Management Report



STORMWATER MANAGEMENT REPORT

PROPOSED
WATERTOWN SOLAR ONE, LLC
SOLAR PROJECT

HINMAN ROAD & PLATT ROAD
WATERTOWN, CONNECTICUT
LITCHFIELD COUNTY

Prepared for:

**Watertown Solar One, LLC
150 Trumbull Street, 4th Floor
Hartford, CT**

Prepared by:

**All-Points Technology Corporation, P.C.
567 Vauxhall Street Extension, Suite 311
Waterford, CT 06385**

July 2020

Table of Contents

INTRODUCTION	1
EXISTING SITE CONDITIONS.....	1
DEVELOPED SITE CONDITIONS	1
STORMWATER MANAGEMENT	2
CONCLUSION	4

Tables

TABLE 1-1 PRE-DEVELOPED PEAK STORM RUNOFF (Q), CUBIC FEET PER SECOND (CFS)	3
TABLE 1-2 POST-DEVELOPED PEAK STORM RUNOFF (Q), CUBIC FEET PER SECOND (CFS)	4

Appendices

APPENDIX A: NRCS SOIL SURVEY

APPENDIX B: EXISTING DRAINAGE AREA MAP (EDA-1) & HYDROLOGIC COMPUTATION (HYDROCAD)

APPENDIX C: PROPOSED DRAINAGE AREA MAP (PDA-1) & HYDROLOGIC COMPUTATION (HYDROCAD)

APPENDIX D: NOAA ATLAS 14 PRECIPITATION FREQUENCY TABLE

APPENDIX E: TEST PIT LOCATION SKETCH

APPENDIX F: WATER QUALITY VOLUME CALCULATIONS

Introduction

At the request of Watertown Solar One, LLC, All-Points Technology Corporation, P.C. (“APT”) has undertaken analysis of and design to address stormwater impacts resulting from development of a proposed two and a three quarter megawatt (2.78 MW) direct current (DC) solar electric generating facility in Watertown, Connecticut (the “Project”). The Project, known as the Watertown Solar One, LLC project, involves the installation of solar panels and associated equipment at Hinman Road & Platt Road in Watertown, Connecticut (“Site”).

The purpose of this report is to provide an analysis of the potential stormwater drainage impacts associated with the Project, as well as a description of the design to mitigate such potential stormwater drainage impacts. The design is intended to be in full compliance with the State and Town regulations while taking prevailing site conditions and practical factors into account.

Existing Site Conditions

The Site is a privately-owned irregular shaped parcel located at 669 Platt Road in Watertown, Connecticut, that consists of approximately 154.30± acres of partially developed land. The property has an existing cemetery on the northeast portion of the lot with a 290’ wide electrical transmission easement through the middle of the lot. The western and southern portions of the lot are existing woodlands.

The Site’s existing topography generally slopes downward from several high points in the middle of the parcel in all directions. Within the project area, the topography slopes from high points to the east and to the west and includes slopes that range from approximately 0 to 50 percent throughout. Elevations within the Site range from approximately 845 feet AMSL in the northern portion of the site to approximately 760 feet AMSL along the south eastern side and 670 feet AMSL on the western side of the site. Elevations within the project area range from approximately 815 feet AMSL in the middle of the project area to approximately 775 feet AMSL on the eastern side of the project area and 765 feet AMSL on the western side of the project area.

Developed Site Conditions

The Project will be constructed in the southern area of the Site, between two wetland systems. Access to the Site will be provided via a proposed gravel access road off of the existing paved access drive in the southwestern corner of the cemetery. The Project includes the installation of 7,176 solar panels (5,616 Trina TSM-DEG15MC.20(II) 390W modules and 1,560 Risen RSM144-6-370BMDG-390BMDG 380W modules) and associated fencing, access road, utility and stormwater management features, within 16.70± acres of the Site. Of the 16.70± acres, 11.34± acres within existing woods will require clearing and grubbing & 2.83± will require clearing only for the Project. The remaining 2.53± acres within the Project limits of disturbance is in existing brush/fields and will require minimal clearing.

The proposed solar panels will be installed on a post driven ground mounted racking system. Existing soil stockpiles within the project area will be removed and the grades will match the surrounding existing grades. As a result the proposed grading, the post-development site

conditions will mimic the pre-developed site conditions. Areas of clearing and grubbing and any existing ground cover that is disturbed during construction will be reseeded with a low growth seed mix. In order to account for the change in ground cover and time of concentration, grass-lined stormwater management basins are proposed along the western, eastern, and southern sides of the proposed Project area.

Stormwater Management

Analysis Methodology

The hydrologic analysis was performed using the HydroCAD stormwater modeling system computer program developed by HydroCAD Software Solutions, LLC.

Hydrographs for each watershed were developed using the SCS Synthetic Unit Hydrograph Method with a Type III rainfall distribution. Hydrographs were developed for the NOAA Atlas 14, Volume 10, Version 2 Precipitation 2-, 25-, 50-, and 100-year storm event with rainfall depths of 3.55, 6.99, 7.95, and 9.02 inches respectively.

The existing and proposed drainage areas used in the calculations are illustrated on the Existing and Proposed Drainage Area Plans (EDA-1 & PDA-1). These maps and the corresponding HydroCAD output are attached.

Utilizing Appendix I, Stormwater Management at Solar Array Construction Projects, provided by Connecticut Department of Energy & Environmental Protection (“CT DEEP”), this hydrologic analysis will reflect a reduction of the Hydrologic Soil Group (“HSG”) present on-site by one (1) step (e.g. soils of HSG B shall be considered HSG C). This reduction, as indicated by CT DEEP, is intended to account for the compaction of soils that results from extensive machinery traffic during construction of the array. The Water Quality Volume (“WQV”) for the site will be calculated assuming that the solar panels, roadways, gravel surfaces, and transformer pads are effectively impervious cover. See Appendix F.

Existing Drainage Patterns

The proposed Project area drains from the center of the project area to a wetland system to the east and to a wetland system to the west. Both wetland systems ultimately drain off the property to the west and to the south.

The Site was modeled at four (4) Analysis Points (“AP-1”, “AP-2”, “AP-3” and “AP-4”). AP-1 & AP-4 follows the existing drainage patterns to the wetland located to the east, which eventually drains offsite to the south. AP-2 & AP-3 follows the existing drainage patterns to the wetland located to the west, which eventually drains offsite to the west. Peak discharges have been computed at the points of study for the 2-, 25-, 50-, and 100-year storm events.

The project site soils identified by the United States Department of Agriculture (USDA) Natural Resources Conservation Service consist of Map Unit Symbol 45B, named “Woodbridge fine

sandy loam, 3 to 8 percent slopes”, 46B, named “Woodbridge fine sandy loam, 0 to 8 percent slopes, very stony”, ”84B, named Paxton and Montauk fine sandy loams, 3 to 8 percent slopes”, 84C, named Paxton and Montauk fine sandy loams, 8 to 15 percent slopes”, and 3, named “Ridgebury, Leicester and Whitman soils, 0 to 8 percent slopes, extremely stony”. Map Unit Symbol 84B, and 84C are classified in the HSG rating of “C”, and 45B, 46B and 3 are classified in the HSG rating of “D”.

The pre-developed discharges at the Analysis Point are tabulated in Table 1-1.

Table 1-1

<i>Analysis Point</i>	Pre-developed Peak Storm Runoff (Q), cubic feet per second (cfs)			
	2-year	25-year	50-year	100-year
AP-1	7.48	24.59	29.72	35.51
AP-2	7.13	23.51	28.42	33.94
AP-3	0.90	3.06	3.71	4.44
AP-4	0.76	2.77	3.39	4.09

Proposed Drainage Patterns

The Project will require clearing and grubbing in the immediate area for the proposed solar installation, including the necessary utilities, access road, and stormwater management features, resulting in approximately 16.70± acres of disturbance. Overall, hydrologically, through the addition of catchment areas associated with the individual drainage areas of each proposed basin, the post-developed condition is designed to mimic the pre-developed condition.

To manage the increase in post-development runoff due to the change in cover type associated with converting woods to meadow and the reductions in one full HSG within the proposed limit of disturbance, three (3) grass-lined stormwater management basins are proposed throughout the project area; two (2) located on the east and just upstream of the wetland to the east and one (1) located to the west and upstream of the wetland to the west. Additionally, three (3) grass swales are proposed to facilitate flow to the proposed basins. Using an outlet control structure with a low flow orifice and grate top along with infiltration & a broad crested overflow weir in the west basin and infiltration & broad crested overflow weirs in the east basins, the basins are designed to provide the necessary water quality treatment volume for the additional impervious area, as recommended by CT DEEP Appendix I. See calculations attached.

Infiltration rates for the northeastern grass-lined stormwater management basin is modeled with a rate of 0.054 inches/hour; the southeastern grass-lined stormwater management basin is modeled with a rate of 0.047 inches/hour; the western grass-lined stormwater management basin is modeled with a rate of 0.186 inches/hour. The infiltration rates were determined from infiltration testing conducted by Down to Earth Consulting, LLC, Inc, April 27, 2020. The results table and test pit results are included in Appendix E. Each basin is designed with a rip-rap overflow weir and level spreader.

Since the proposed development mimics the existing conditions, the post-development condition was modeled using the same Analysis Points. Peak discharges have been computed at the point of study for the 2-year, 25-year, 50-year, and 100-year storm events. The post-development discharges at each point of study are tabulated in Table 1-2.

Table 1-2

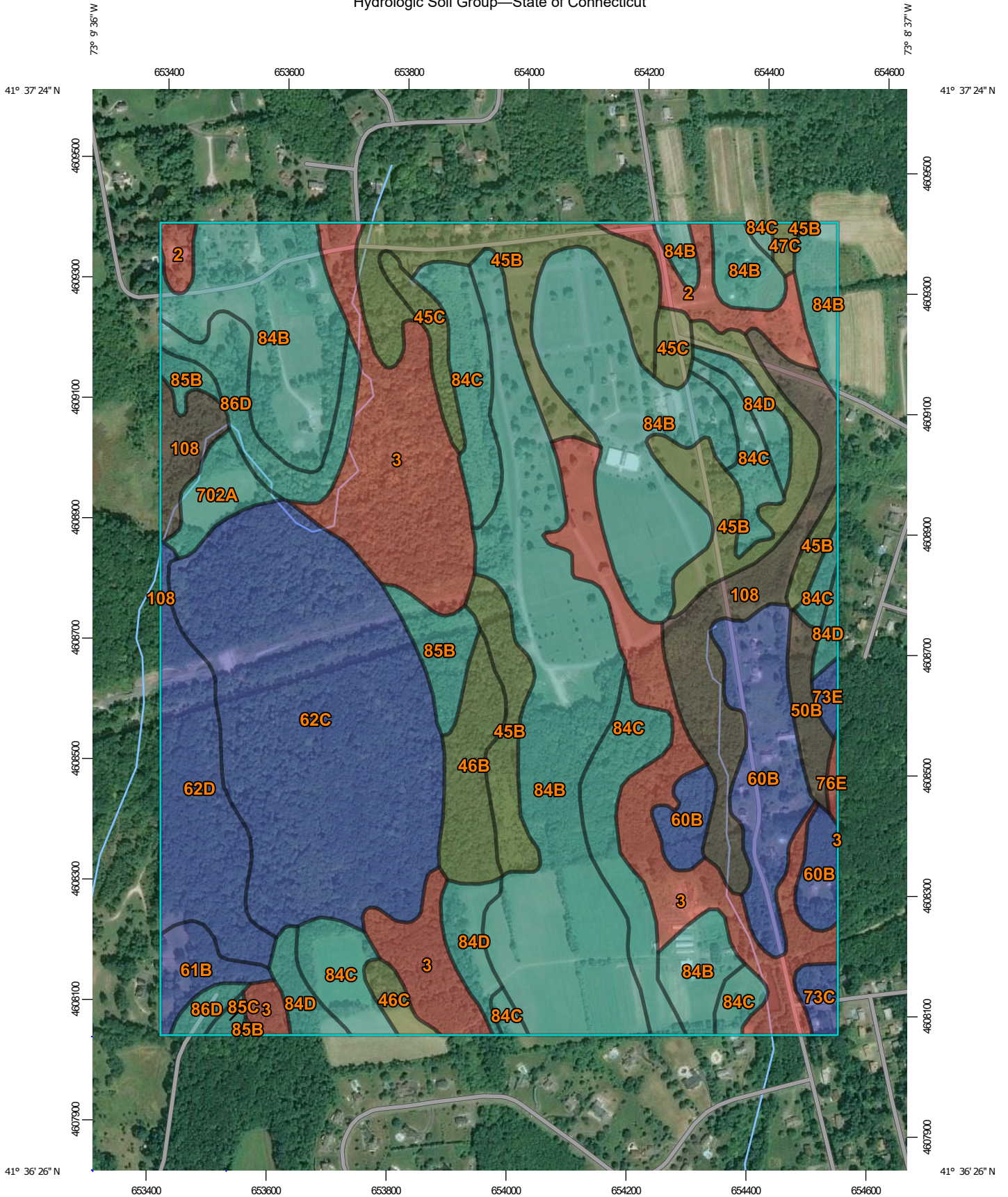
<i>Analysis Point</i>	Post-developed Peak Storm Runoff (Q), cubic feet per second (cfs)			
	2-year	25-year	50-year	100-year
AP-1	2.60	18.76	26.75	35.29
AP-2	3.15	17.73	23.81	30.36
AP-3	0.73	2.86	3.54	4.30
AP-4	0.54	2.44	3.05	3.75

Conclusion

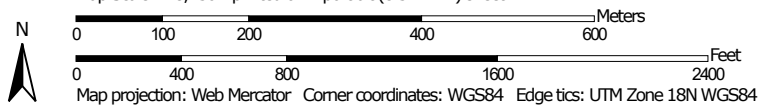
The stormwater management for the proposed site has been designed such that the post-development peak discharges to the waters of the State of Connecticut for the 2-, 25-, 50-, and 100- year storm events are less than the pre-development peak discharges. As a result, the proposed solar array will not result in any adverse conditions to the surrounding areas and properties.

APPENDIX A: NRCS SOIL SURVEY

Hydrologic Soil Group—State of Connecticut




Map Scale: 1:8,750 if printed on A portrait (8.5" x 11") sheet.



MAP LEGEND

Area of Interest (AOI)









 Area of Interest (AOI)

Soils

Soil Rating Polygons





 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Lines


 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Points






 A
 A/D
 B
 B/D

 C
 C/D
 D
 Not rated or not available


Water Features

 Streams and Canals

Transportation

 Rails
 Interstate Highways
 US Routes
 Major Roads
 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: State of Connecticut
 Survey Area Data: Version 19, Sep 13, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 23, 2018—Sep 17, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
2	Ridgebury fine sandy loam, 0 to 3 percent slopes	D	7.1	1.9%
3	Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony	D	49.6	13.1%
45B	Woodbridge fine sandy loam, 3 to 8 percent slopes	C/D	32.7	8.7%
45C	Woodbridge fine sandy loam, 8 to 15 percent slopes	C/D	4.6	1.2%
46B	Woodbridge fine sandy loam, 0 to 8 percent slopes, very stony	C/D	7.4	2.0%
46C	Woodbridge fine sandy loam, 8 to 15 percent slopes, very stony	C/D	1.7	0.4%
47C	Woodbridge fine sandy loam, 3 to 15 percent slopes, extremely stony	C/D	0.8	0.2%
50B	Sutton fine sandy loam, 3 to 8 percent slopes	B/D	3.3	0.9%
60B	Canton and Charlton fine sandy loams, 3 to 8 percent slopes	B	18.6	4.9%
61B	Canton and Charlton fine sandy loams, 0 to 8 percent slopes, very stony	B	3.9	1.0%
62C	Canton and Charlton fine sandy loams, 3 to 15 percent slopes, extremely stony	B	56.1	14.8%
62D	Canton and Charlton fine sandy loams, 15 to 35 percent slopes, extremely stony	B	15.8	4.2%
73C	Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky	B	1.7	0.5%
73E	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky	B	0.9	0.3%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
76E	Rock outcrop-Hollis complex, 3 to 45 percent slopes	D	0.5	0.1%
84B	Paxton and Montauk fine sandy loams, 3 to 8 percent slopes	C	97.3	25.7%
84C	Paxton and Montauk fine sandy loams, 8 to 15 percent slopes	C	28.3	7.5%
84D	Paxton and Montauk fine sandy loams, 15 to 25 percent slopes	C	9.3	2.5%
85B	Paxton and Montauk fine sandy loams, 3 to 8 percent slopes, very stony	C	5.5	1.5%
85C	Paxton and Montauk fine sandy loams, 8 to 15 percent slopes, very stony	C	0.6	0.2%
86D	Paxton and Montauk fine sandy loams, 15 to 35 percent slopes, extremely stony	C	8.8	2.3%
108	Saco silt loam	B/D	19.3	5.1%
702A	Tisbury silt loam, 0 to 3 percent slopes	C	4.1	1.1%
Totals for Area of Interest			378.0	100.0%

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

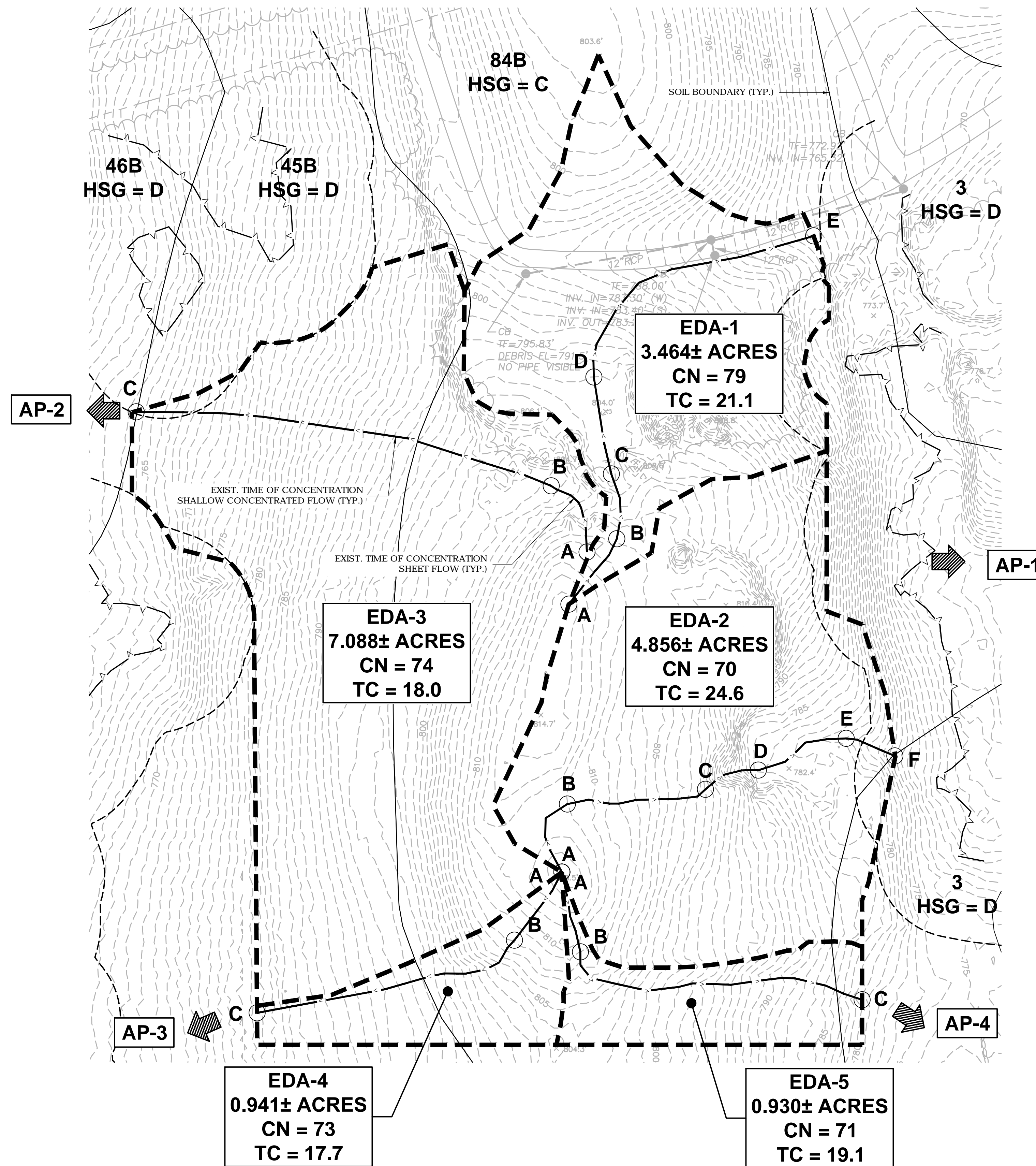
Component Percent Cutoff: None Specified

Tie-break Rule: Higher

**APPENDIX B: EXISTING DRAINAGE AREA MAP (EDA-1) &
HYDROLOGIC COMPUTATION (HYDROCAD)**

EXISTING DRAINAGE AREAS

	TOTAL AREA (ACRES)	COMPOSITE CN	TC (MINS.)
EDA-1	3.464	79	21.1
EDA-2	4.856	70	24.6
EDA-3	7.088	74	18.0
EDA-4	0.941	73	17.7
EDA-5	0.930	71	19.1



EXISTING DRAINAGE AREA MAP
SCALE: 1" = 80'-0"

WATERTOWN SOLAR ONE, LLC
150 TRUMBULL STREET
4TH FLOOR
HARTFORD, CT, 06103



567 VAUXHAUL STREET EXTENSION - SUITE 311
WATERFORD, CT 06385 PHONE: (860)-663-1697
WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

CSC PERMIT SET

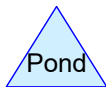
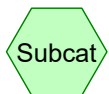
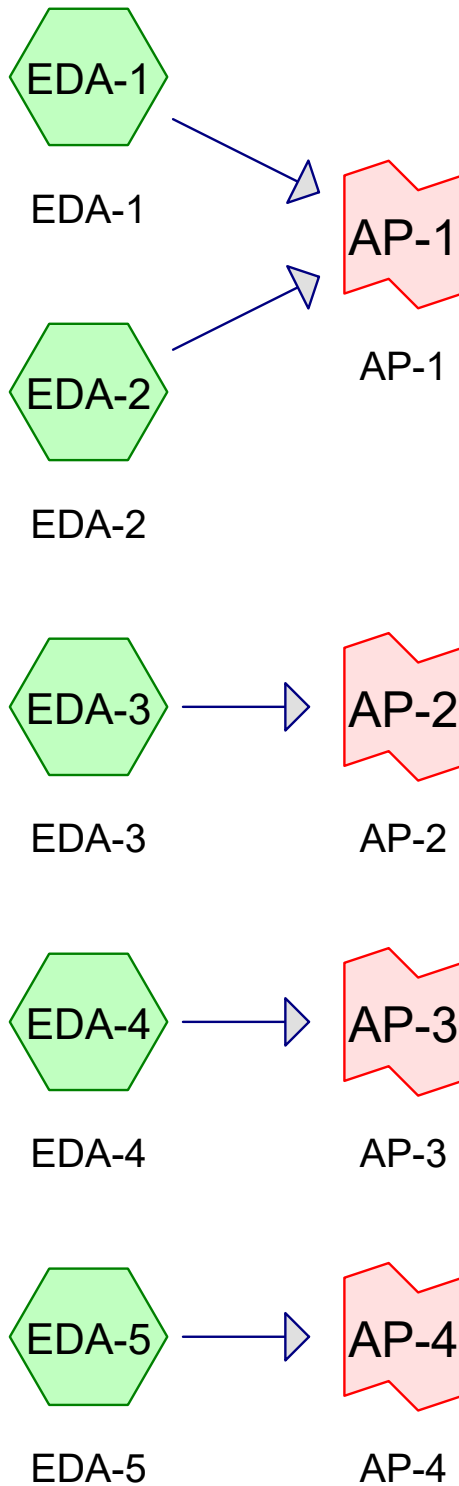
NO	DATE	REVISION
0	06/XX/20	FOR REVIEW: BJP
1		
2		
3		
4		
5		
6		

DESIGN PROFESSIONAL OF RECORD
PROF: BRADLEY J. PARSONS, P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION
ADD: 567 VAUXHAUL STREET EXTENSION - SUITE 311 WATERFORD, CT 06385
OWNER: CATHOLIC CEMETERIES
ADDRESS: 669 PLATT ROAD WATERFORD, CT 06795

WATERTOWN SOLAR ONE, LLC
SITE: HINMAN ROAD & PLATT ROAD
ADDRESS: WATERFORD, CT 06795
APT FILING NUMBER: CT590240
DRAWN BY: CSH
DATE: 06/XX/20 CHECKED BY: BJP

SHEET TITLE:
EXISTING DRAINAGE AREA MAP

SHEET NUMBER:
EDA-1



CT590240_Watertown - EX - Rev0

Prepared by {enter your company name here}

HydroCAD® 10.00-22 s/n 07402 © 2018 HydroCAD Software Solutions LLC

Printed 6/15/2020

Page 2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
2.859	79	50-75% Grass cover, Fair, HSG C (EDA-1, EDA-3)
0.052	84	50-75% Grass cover, Fair, HSG D (EDA-1, EDA-3)
0.194	98	Paved parking, HSG C (EDA-1)
9.283	70	Woods, Good, HSG C (EDA-1, EDA-2, EDA-3, EDA-4, EDA-5)
4.891	77	Woods, Good, HSG D (EDA-2, EDA-3, EDA-4, EDA-5)
17.279	74	TOTAL AREA

CT590240_Watertown - EX - Rev0

Prepared by {enter your company name here}

HydroCAD® 10.00-22 s/n 07402 © 2018 HydroCAD Software Solutions LLC

Printed 6/15/2020

Page 3

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
12.336	HSG C	EDA-1, EDA-2, EDA-3, EDA-4, EDA-5
4.943	HSG D	EDA-1, EDA-2, EDA-3, EDA-4, EDA-5
0.000	Other	
17.279		TOTAL AREA

CT590240_Watertown - EX - Rev0

Prepared by {enter your company name here}

Printed 6/15/2020

HydroCAD® 10.00-22 s/n 07402 © 2018 HydroCAD Software Solutions LLC

Page 4

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	2.859	0.052	0.000	2.911	50-75% Grass cover, Fair	EDA-1, EDA-3
0.000	0.000	0.194	0.000	0.000	0.194	Paved parking	EDA-1
0.000	0.000	9.283	4.891	0.000	14.174	Woods, Good	EDA-1, EDA-2, EDA-3, EDA-4, EDA-5
0.000	0.000	12.336	4.943	0.000	17.279	TOTAL AREA	

CT590240_Watertown - EX - Rev0

Type III 24-hr 2 YR Rainfall=3.55"

Prepared by {enter your company name here}

Printed 6/15/2020

HydroCAD® 10.00-22 s/n 07402 © 2018 HydroCAD Software Solutions LLC

Page 5

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment EDA-1: EDA-1	Runoff Area=3.464 ac 5.60% Impervious Runoff Depth=1.60" Flow Length=655' Tc=21.1 min CN=79 Runoff=4.24 cfs 0.463 af
Subcatchment EDA-2: EDA-2	Runoff Area=4.856 ac 0.00% Impervious Runoff Depth=1.04" Flow Length=529' Tc=24.6 min CN=70 Runoff=3.36 cfs 0.420 af
Subcatchment EDA-3: EDA-3	Runoff Area=7.088 ac 0.00% Impervious Runoff Depth=1.27" Flow Length=619' Tc=18.0 min CN=74 Runoff=7.13 cfs 0.753 af
Subcatchment EDA-4: EDA-4	Runoff Area=0.941 ac 0.00% Impervious Runoff Depth=1.21" Flow Length=437' Tc=17.7 min CN=73 Runoff=0.90 cfs 0.095 af
Subcatchment EDA-5: EDA-5	Runoff Area=0.930 ac 0.00% Impervious Runoff Depth=1.10" Flow Length=475' Tc=19.1 min CN=71 Runoff=0.76 cfs 0.085 af
Link AP-1: AP-1	Inflow=7.48 cfs 0.884 af Primary=7.48 cfs 0.884 af
Link AP-2: AP-2	Inflow=7.13 cfs 0.753 af Primary=7.13 cfs 0.753 af
Link AP-3: AP-3	Inflow=0.90 cfs 0.095 af Primary=0.90 cfs 0.095 af
Link AP-4: AP-4	Inflow=0.76 cfs 0.085 af Primary=0.76 cfs 0.085 af

Total Runoff Area = 17.279 ac Runoff Volume = 1.817 af Average Runoff Depth = 1.26"
98.88% Pervious = 17.085 ac 1.12% Impervious = 0.194 ac

Summary for Subcatchment EDA-1: EDA-1

Runoff = 4.24 cfs @ 12.30 hrs, Volume= 0.463 af, Depth= 1.60"

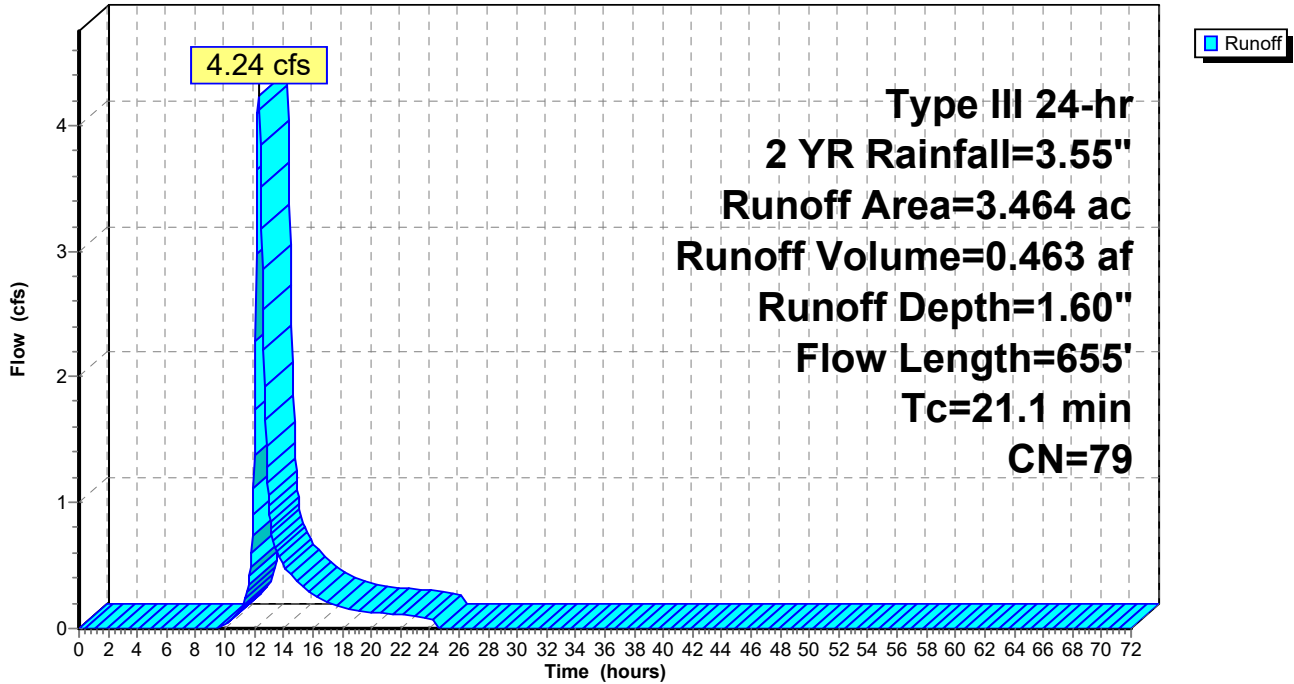
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2 YR Rainfall=3.55"

Area (ac)	CN	Description
0.540	70	Woods, Good, HSG C
2.723	79	50-75% Grass cover, Fair, HSG C
0.194	98	Paved parking, HSG C
0.007	84	50-75% Grass cover, Fair, HSG D
3.464	79	Weighted Average
3.270		94.40% Pervious Area
0.194		5.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0550	0.12		Sheet Flow, A-B Woods: Light underbrush n= 0.400 P2= 3.55"
1.1	81	0.0617	1.24		Shallow Concentrated Flow, B-C Woodland Kv= 5.0 fps
3.1	120	0.0083	0.64		Shallow Concentrated Flow, C-D Short Grass Pasture Kv= 7.0 fps
3.3	354	0.0654	1.79		Shallow Concentrated Flow, D-E Short Grass Pasture Kv= 7.0 fps
21.1	655	Total			

Subcatchment EDA-1: EDA-1

Hydrograph



Summary for Subcatchment EDA-2: EDA-2

Runoff = 3.36 cfs @ 12.38 hrs, Volume= 0.420 af, Depth= 1.04"

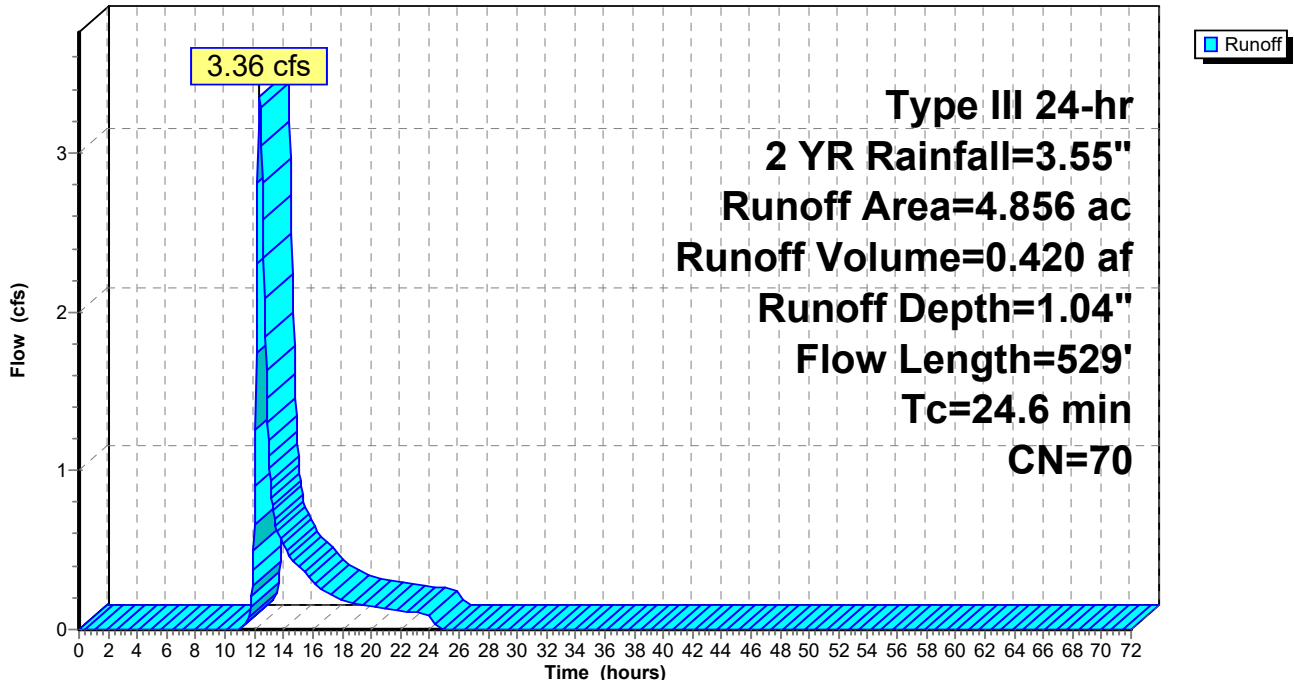
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 YR Rainfall=3.55"

Area (ac)	CN	Description
4.682	70	Woods, Good, HSG C
0.174	77	Woods, Good, HSG D
4.856	70	Weighted Average
4.856		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.6	100	0.0250	0.09		Sheet Flow, A-B Woods: Light underbrush n= 0.400 P2= 3.55"
2.3	174	0.0632	1.26		Shallow Concentrated Flow, B-C Woodland Kv= 5.0 fps
0.5	72	0.2361	2.43		Shallow Concentrated Flow, C-D Woodland Kv= 5.0 fps
2.5	119	0.0252	0.79		Shallow Concentrated Flow, D-E Woodland Kv= 5.0 fps
0.7	64	0.0937	1.53		Shallow Concentrated Flow, E-F Woodland Kv= 5.0 fps
24.6	529	Total			

Subcatchment EDA-2: EDA-2

Hydrograph



Summary for Subcatchment EDA-3: EDA-3

Runoff = 7.13 cfs @ 12.27 hrs, Volume= 0.753 af, Depth= 1.27"

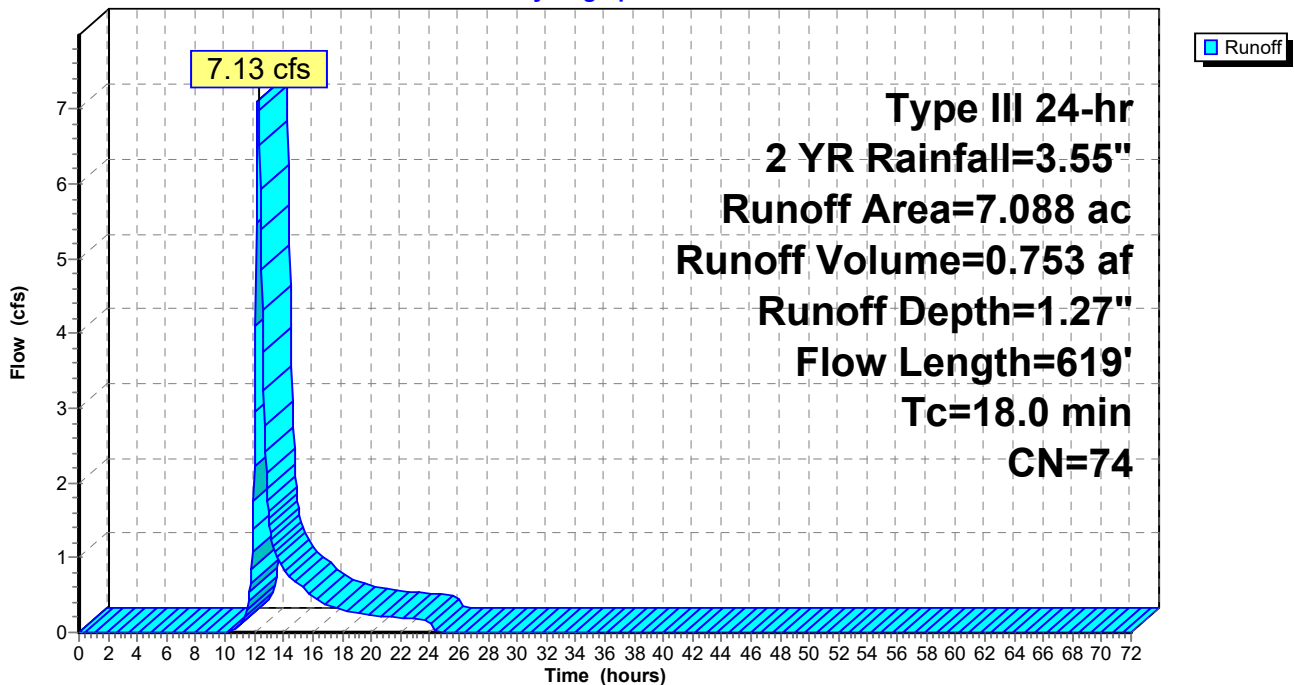
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 YR Rainfall=3.55"

Area (ac)	CN	Description
2.643	70	Woods, Good, HSG C
0.136	79	50-75% Grass cover, Fair, HSG C
4.264	77	Woods, Good, HSG D
0.045	84	50-75% Grass cover, Fair, HSG D
7.088	74	Weighted Average
7.088		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.7	100	0.0800	0.14		Sheet Flow, A-B Woods: Light underbrush n= 0.400 P2= 3.55"
6.3	519	0.0751	1.37		Shallow Concentrated Flow, B-C Woodland Kv= 5.0 fps
18.0	619	Total			

Subcatchment EDA-3: EDA-3

Hydrograph



Summary for Subcatchment EDA-4: EDA-4

Runoff = 0.90 cfs @ 12.26 hrs, Volume= 0.095 af, Depth= 1.21"

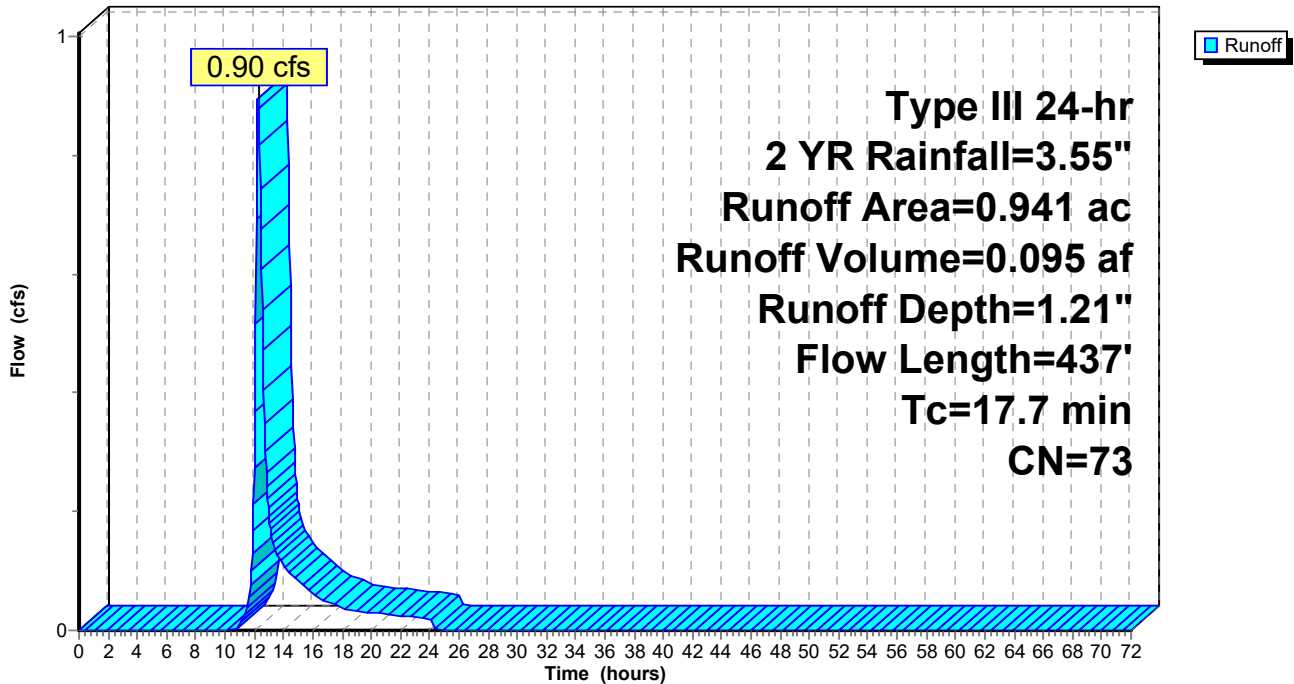
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 YR Rainfall=3.55"

Area (ac)	CN	Description
0.576	70	Woods, Good, HSG C
0.365	77	Woods, Good, HSG D
0.941	73	Weighted Average
0.941		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0550	0.12		Sheet Flow, A-B Woods: Light underbrush n= 0.400 P2= 3.55"
4.1	337	0.0760	1.38		Shallow Concentrated Flow, B-C Woodland Kv= 5.0 fps
17.7	437	Total			

Subcatchment EDA-4: EDA-4

Hydrograph



Summary for Subcatchment EDA-5: EDA-5

Runoff = 0.76 cfs @ 12.29 hrs, Volume= 0.085 af, Depth= 1.10"

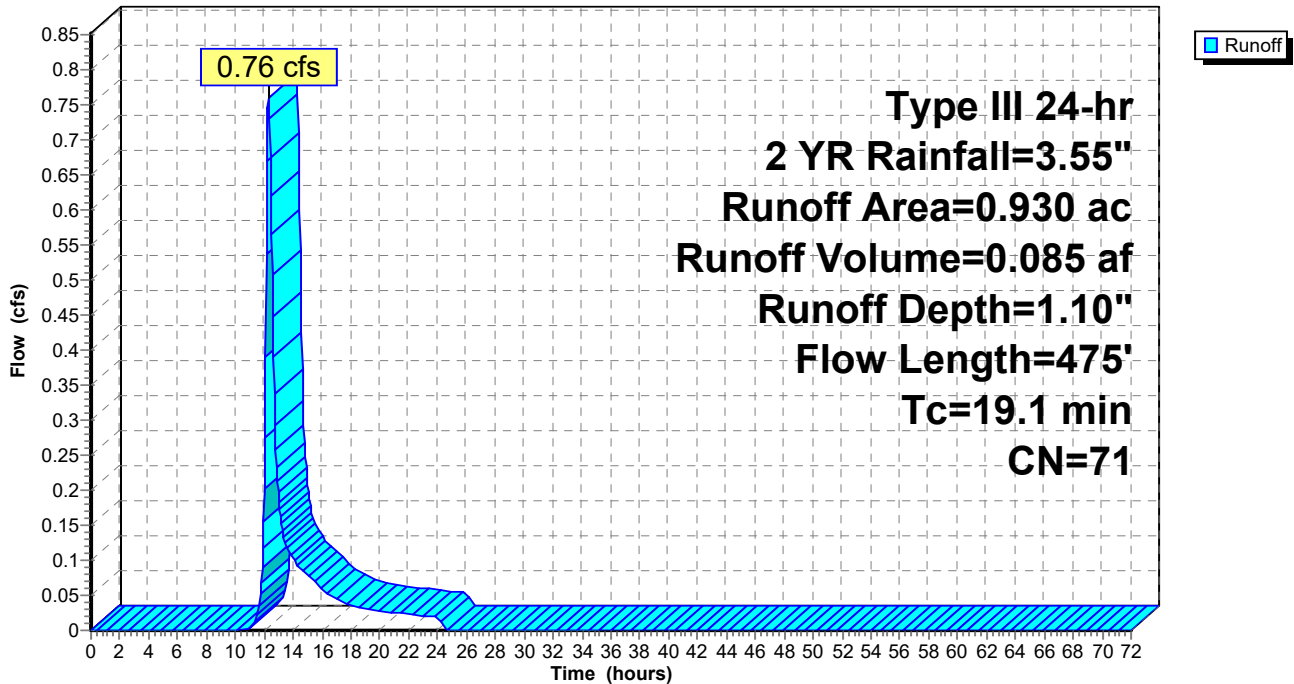
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 YR Rainfall=3.55"

Area (ac)	CN	Description
0.842	70	Woods, Good, HSG C
0.088	77	Woods, Good, HSG D
0.930	71	Weighted Average
0.930		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	100	0.0450	0.11		Sheet Flow, A-B Woods: Light underbrush n= 0.400 P2= 3.55"
4.4	375	0.0800	1.41		Shallow Concentrated Flow, B-C Woodland Kv= 5.0 fps
19.1	475	Total			

Subcatchment EDA-5: EDA-5

Hydrograph



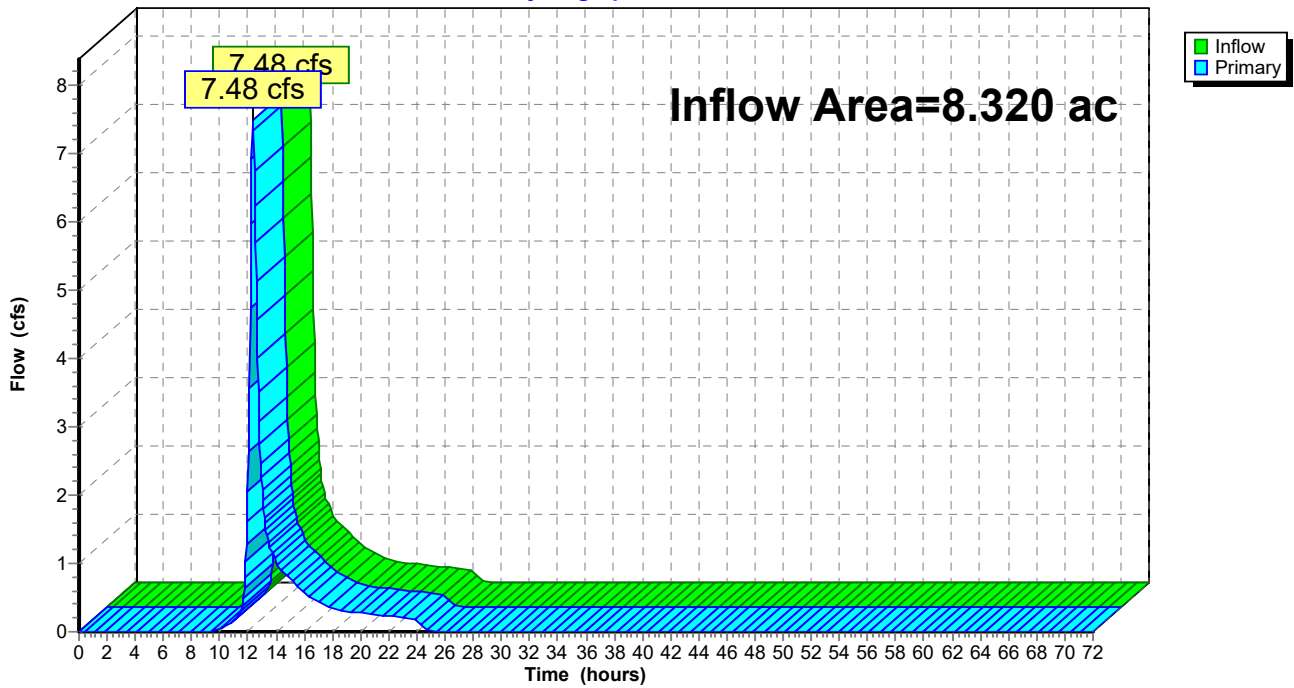
Summary for Link AP-1: AP-1

Inflow Area = 8.320 ac, 2.33% Impervious, Inflow Depth = 1.27" for 2 YR event
Inflow = 7.48 cfs @ 12.33 hrs, Volume= 0.884 af
Primary = 7.48 cfs @ 12.33 hrs, Volume= 0.884 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link AP-1: AP-1

Hydrograph



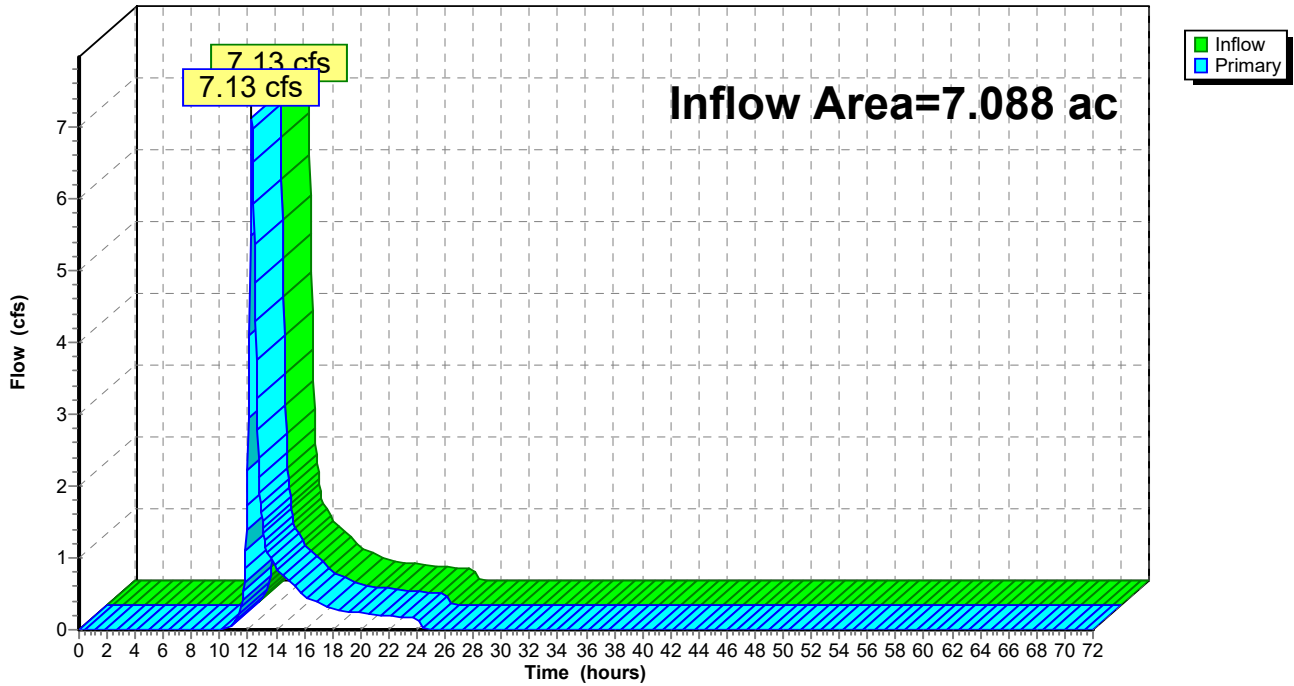
Summary for Link AP-2: AP-2

Inflow Area = 7.088 ac, 0.00% Impervious, Inflow Depth = 1.27" for 2 YR event
Inflow = 7.13 cfs @ 12.27 hrs, Volume= 0.753 af
Primary = 7.13 cfs @ 12.27 hrs, Volume= 0.753 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link AP-2: AP-2

Hydrograph



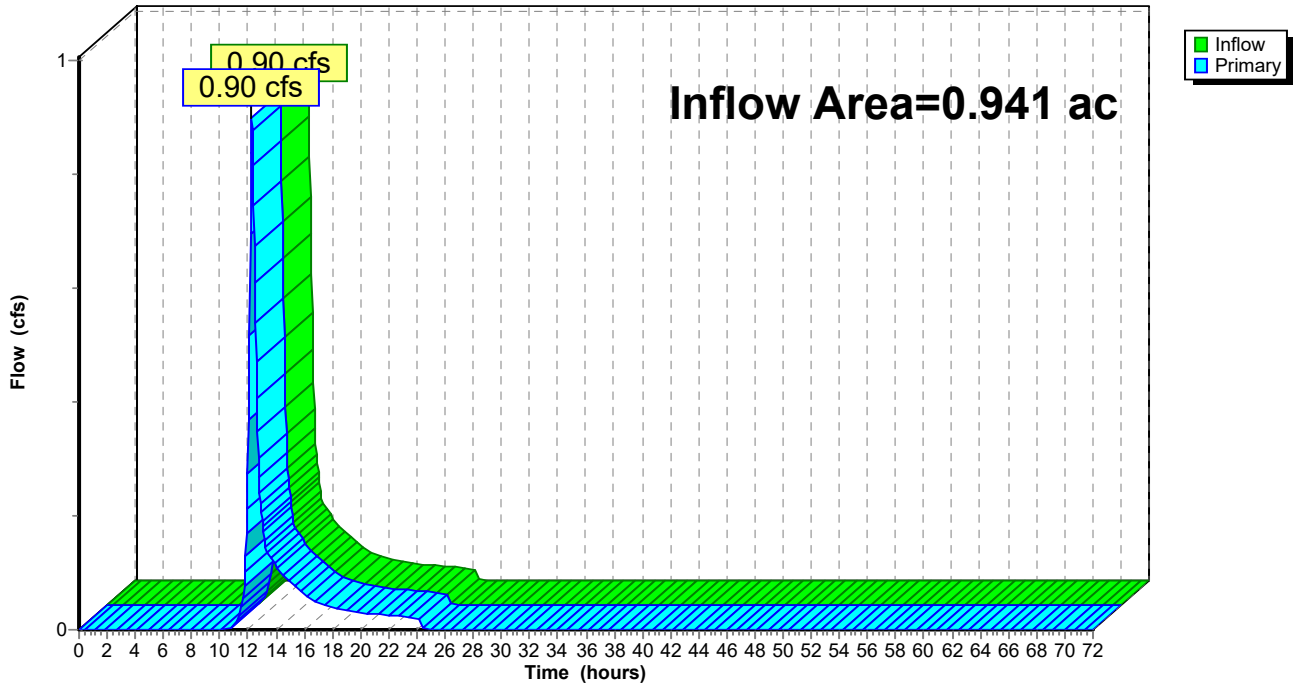
Summary for Link AP-3: AP-3

Inflow Area = 0.941 ac, 0.00% Impervious, Inflow Depth = 1.21" for 2 YR event
Inflow = 0.90 cfs @ 12.26 hrs, Volume= 0.095 af
Primary = 0.90 cfs @ 12.26 hrs, Volume= 0.095 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link AP-3: AP-3

Hydrograph



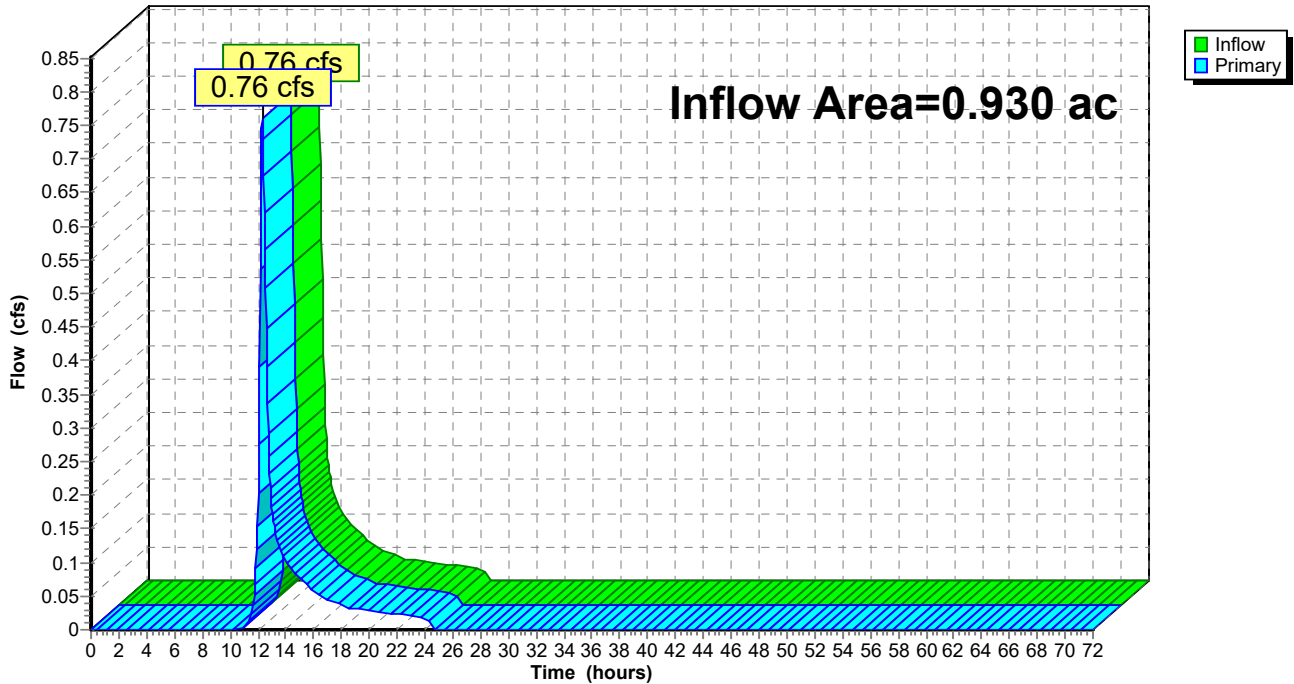
Summary for Link AP-4: AP-4

Inflow Area = 0.930 ac, 0.00% Impervious, Inflow Depth = 1.10" for 2 YR event
Inflow = 0.76 cfs @ 12.29 hrs, Volume= 0.085 af
Primary = 0.76 cfs @ 12.29 hrs, Volume= 0.085 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link AP-4: AP-4

Hydrograph



CT590240_Watertown - EX - Rev0

Type III 24-hr 25 YR Rainfall=6.99"

Prepared by {enter your company name here}

Printed 6/15/2020

HydroCAD® 10.00-22 s/n 07402 © 2018 HydroCAD Software Solutions LLC

Page 16

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment EDA-1: EDA-1 Runoff Area=3.464 ac 5.60% Impervious Runoff Depth=4.58"
Flow Length=655' Tc=21.1 min CN=79 Runoff=12.16 cfs 1.321 af

Subcatchment EDA-2: EDA-2 Runoff Area=4.856 ac 0.00% Impervious Runoff Depth=3.61"
Flow Length=529' Tc=24.6 min CN=70 Runoff=12.64 cfs 1.461 af

Subcatchment EDA-3: EDA-3 Runoff Area=7.088 ac 0.00% Impervious Runoff Depth=4.03"
Flow Length=619' Tc=18.0 min CN=74 Runoff=23.51 cfs 2.382 af

Subcatchment EDA-4: EDA-4 Runoff Area=0.941 ac 0.00% Impervious Runoff Depth=3.93"
Flow Length=437' Tc=17.7 min CN=73 Runoff=3.06 cfs 0.308 af

Subcatchment EDA-5: EDA-5 Runoff Area=0.930 ac 0.00% Impervious Runoff Depth=3.72"
Flow Length=475' Tc=19.1 min CN=71 Runoff=2.77 cfs 0.288 af

Link AP-1: AP-1 Inflow=24.59 cfs 2.782 af
Primary=24.59 cfs 2.782 af

Link AP-2: AP-2 Inflow=23.51 cfs 2.382 af
Primary=23.51 cfs 2.382 af

Link AP-3: AP-3 Inflow=3.06 cfs 0.308 af
Primary=3.06 cfs 0.308 af

Link AP-4: AP-4 Inflow=2.77 cfs 0.288 af
Primary=2.77 cfs 0.288 af

Total Runoff Area = 17.279 ac Runoff Volume = 5.760 af Average Runoff Depth = 4.00"
98.88% Pervious = 17.085 ac 1.12% Impervious = 0.194 ac

Summary for Subcatchment EDA-1: EDA-1

Runoff = 12.16 cfs @ 12.29 hrs, Volume= 1.321 af, Depth= 4.58"

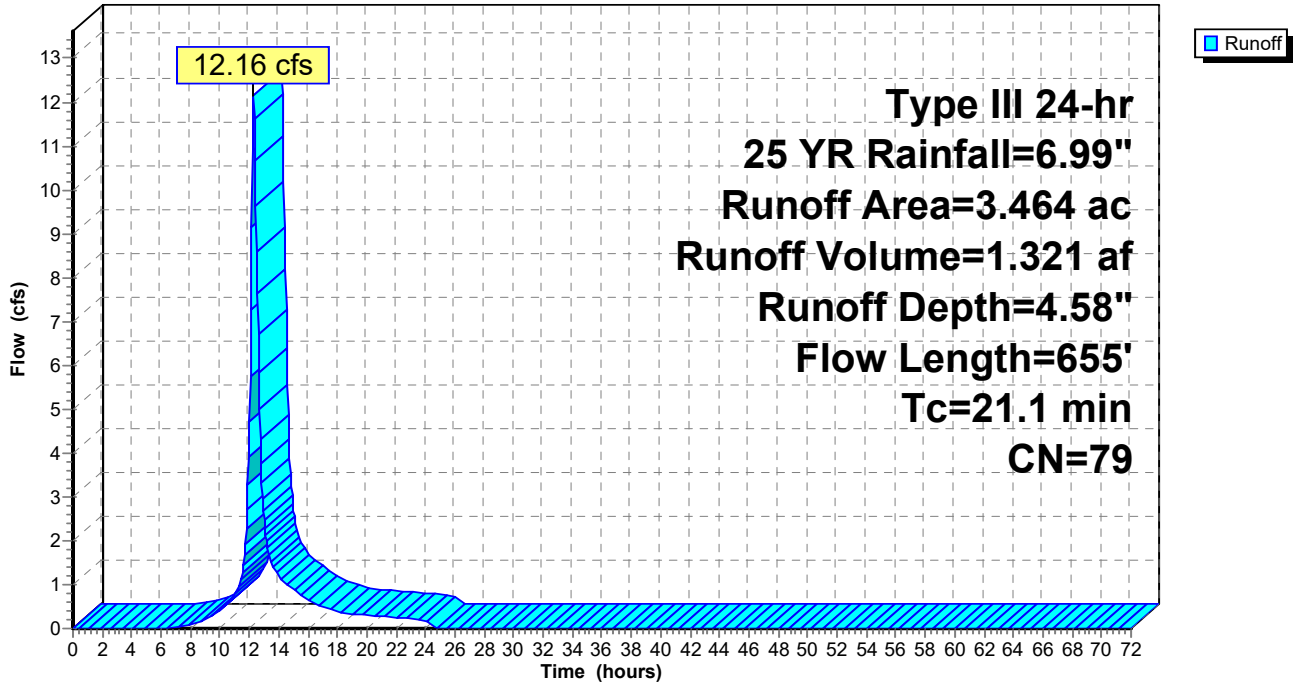
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25 YR Rainfall=6.99"

Area (ac)	CN	Description
0.540	70	Woods, Good, HSG C
2.723	79	50-75% Grass cover, Fair, HSG C
0.194	98	Paved parking, HSG C
0.007	84	50-75% Grass cover, Fair, HSG D
3.464	79	Weighted Average
3.270		94.40% Pervious Area
0.194		5.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0550	0.12		Sheet Flow, A-B Woods: Light underbrush n= 0.400 P2= 3.55"
1.1	81	0.0617	1.24		Shallow Concentrated Flow, B-C Woodland Kv= 5.0 fps
3.1	120	0.0083	0.64		Shallow Concentrated Flow, C-D Short Grass Pasture Kv= 7.0 fps
3.3	354	0.0654	1.79		Shallow Concentrated Flow, D-E Short Grass Pasture Kv= 7.0 fps
21.1	655	Total			

Subcatchment EDA-1: EDA-1

Hydrograph



Summary for Subcatchment EDA-2: EDA-2

Runoff = 12.64 cfs @ 12.35 hrs, Volume= 1.461 af, Depth= 3.61"

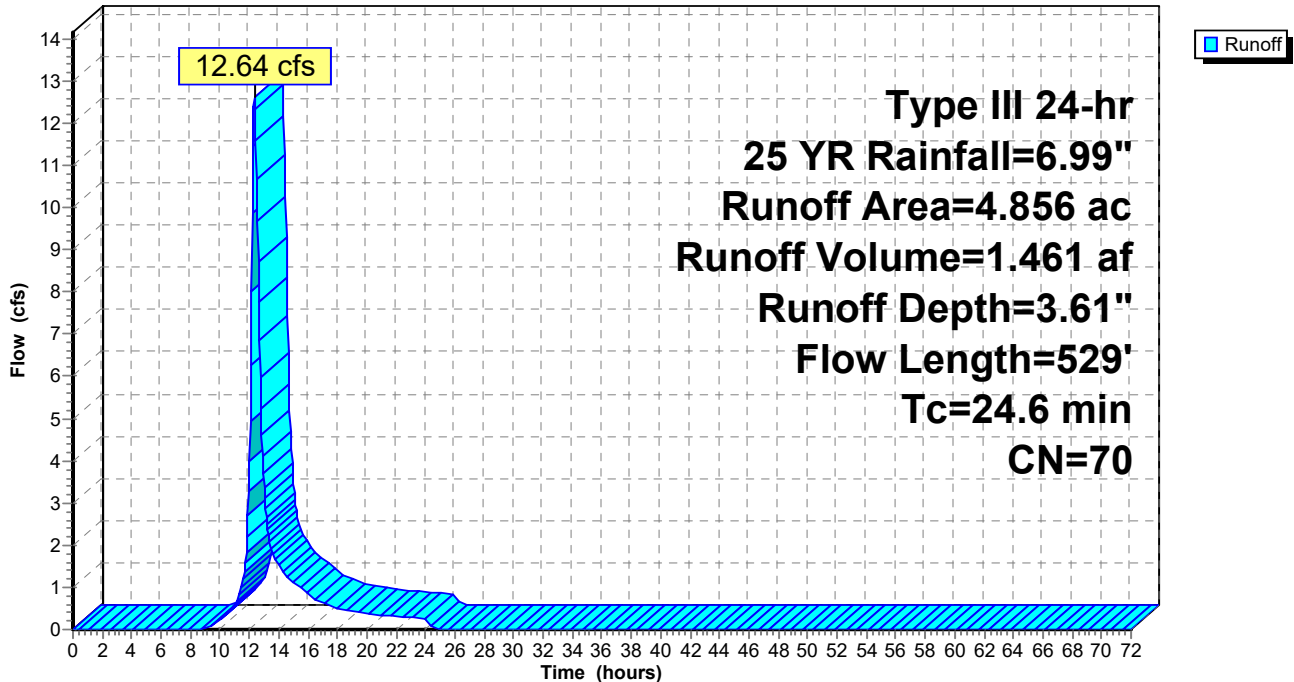
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=6.99"

Area (ac)	CN	Description
4.682	70	Woods, Good, HSG C
0.174	77	Woods, Good, HSG D
4.856	70	Weighted Average
4.856		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.6	100	0.0250	0.09		Sheet Flow, A-B Woods: Light underbrush n= 0.400 P2= 3.55"
2.3	174	0.0632	1.26		Shallow Concentrated Flow, B-C Woodland Kv= 5.0 fps
0.5	72	0.2361	2.43		Shallow Concentrated Flow, C-D Woodland Kv= 5.0 fps
2.5	119	0.0252	0.79		Shallow Concentrated Flow, D-E Woodland Kv= 5.0 fps
0.7	64	0.0937	1.53		Shallow Concentrated Flow, E-F Woodland Kv= 5.0 fps
24.6	529	Total			

Subcatchment EDA-2: EDA-2

Hydrograph



Summary for Subcatchment EDA-3: EDA-3

Runoff = 23.51 cfs @ 12.25 hrs, Volume= 2.382 af, Depth= 4.03"

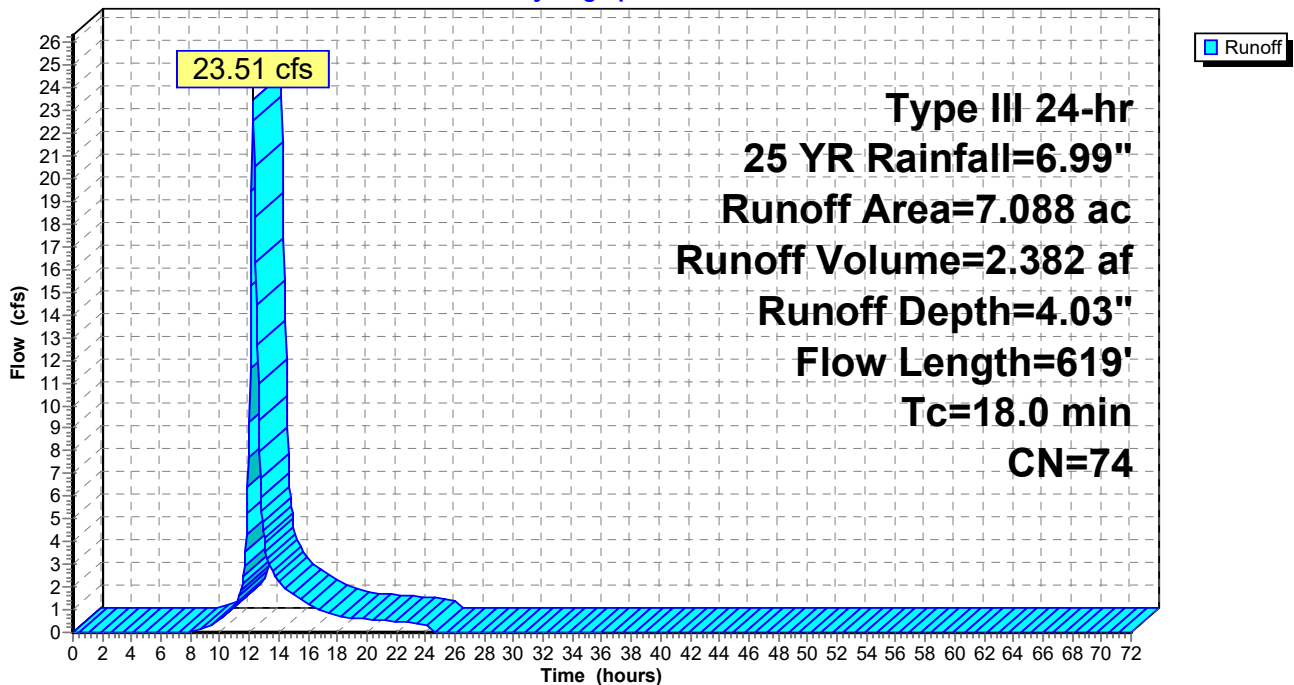
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=6.99"

Area (ac)	CN	Description
2.643	70	Woods, Good, HSG C
0.136	79	50-75% Grass cover, Fair, HSG C
4.264	77	Woods, Good, HSG D
0.045	84	50-75% Grass cover, Fair, HSG D
7.088	74	Weighted Average
7.088		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.7	100	0.0800	0.14		Sheet Flow, A-B Woods: Light underbrush n= 0.400 P2= 3.55"
6.3	519	0.0751	1.37		Shallow Concentrated Flow, B-C Woodland Kv= 5.0 fps
18.0	619	Total			

Subcatchment EDA-3: EDA-3

Hydrograph



Summary for Subcatchment EDA-4: EDA-4

Runoff = 3.06 cfs @ 12.25 hrs, Volume= 0.308 af, Depth= 3.93"

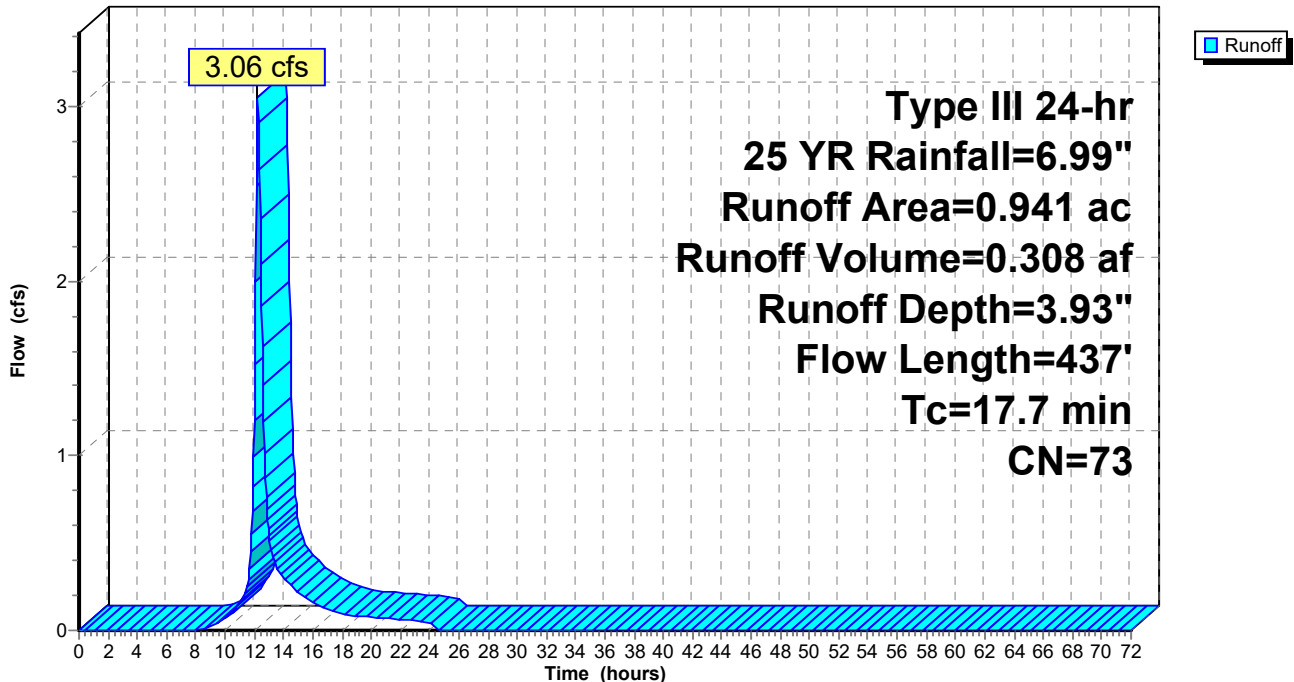
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=6.99"

Area (ac)	CN	Description
0.576	70	Woods, Good, HSG C
0.365	77	Woods, Good, HSG D
0.941	73	Weighted Average
0.941		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0550	0.12		Sheet Flow, A-B Woods: Light underbrush n= 0.400 P2= 3.55"
4.1	337	0.0760	1.38		Shallow Concentrated Flow, B-C Woodland Kv= 5.0 fps
17.7	437	Total			

Subcatchment EDA-4: EDA-4

Hydrograph



Summary for Subcatchment EDA-5: EDA-5

Runoff = 2.77 cfs @ 12.27 hrs, Volume= 0.288 af, Depth= 3.72"

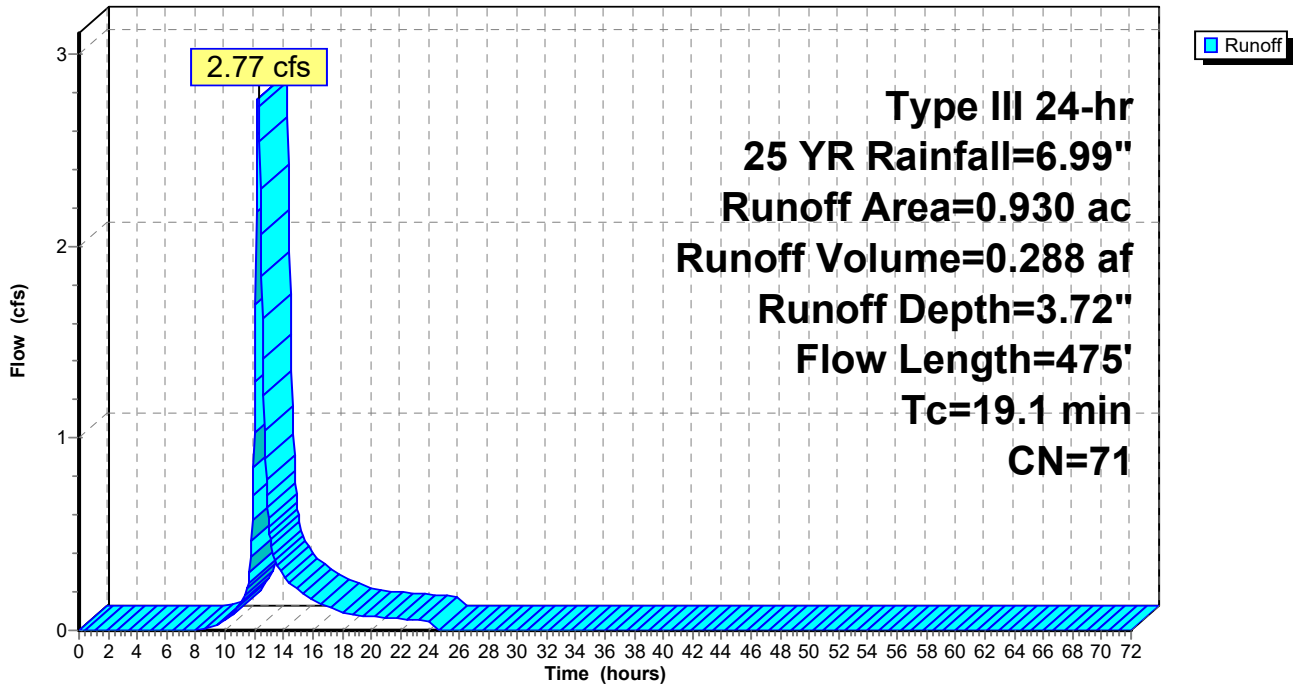
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25 YR Rainfall=6.99"

Area (ac)	CN	Description
0.842	70	Woods, Good, HSG C
0.088	77	Woods, Good, HSG D
0.930	71	Weighted Average
0.930		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	100	0.0450	0.11		Sheet Flow, A-B Woods: Light underbrush n= 0.400 P2= 3.55"
4.4	375	0.0800	1.41		Shallow Concentrated Flow, B-C Woodland Kv= 5.0 fps
19.1	475	Total			

Subcatchment EDA-5: EDA-5

Hydrograph



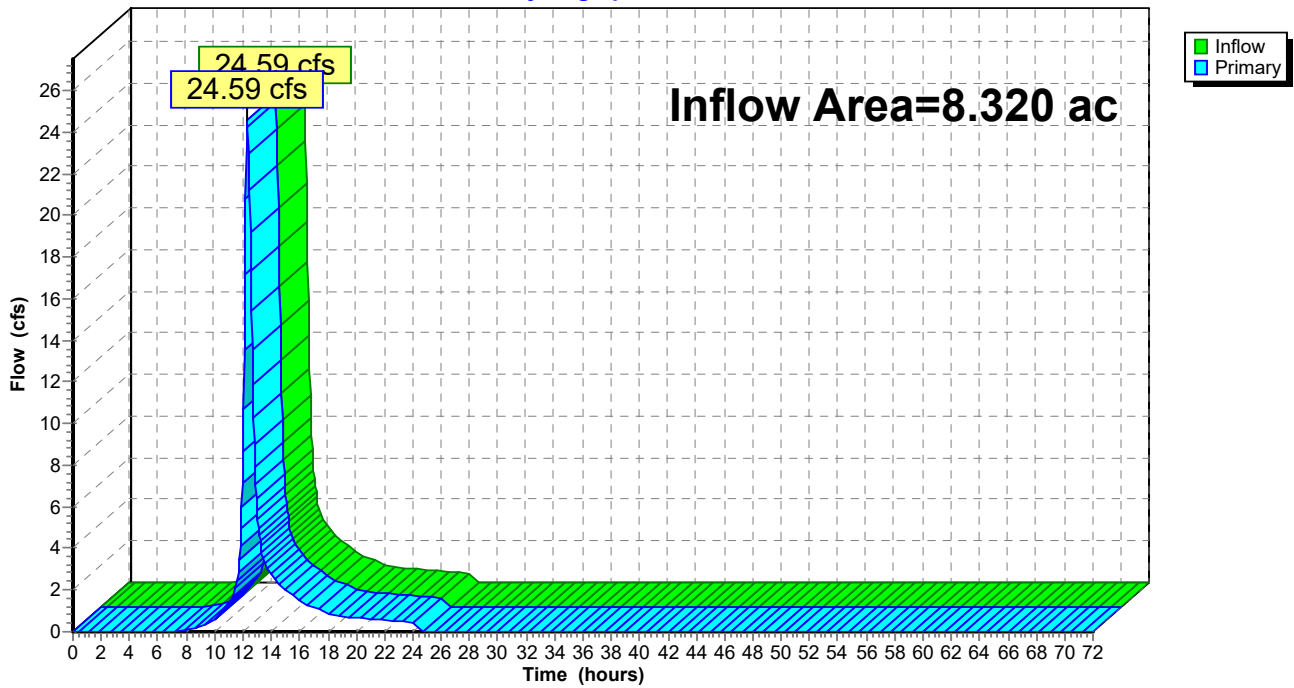
Summary for Link AP-1: AP-1

Inflow Area = 8.320 ac, 2.33% Impervious, Inflow Depth = 4.01" for 25 YR event
Inflow = 24.59 cfs @ 12.32 hrs, Volume= 2.782 af
Primary = 24.59 cfs @ 12.32 hrs, Volume= 2.782 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link AP-1: AP-1

Hydrograph



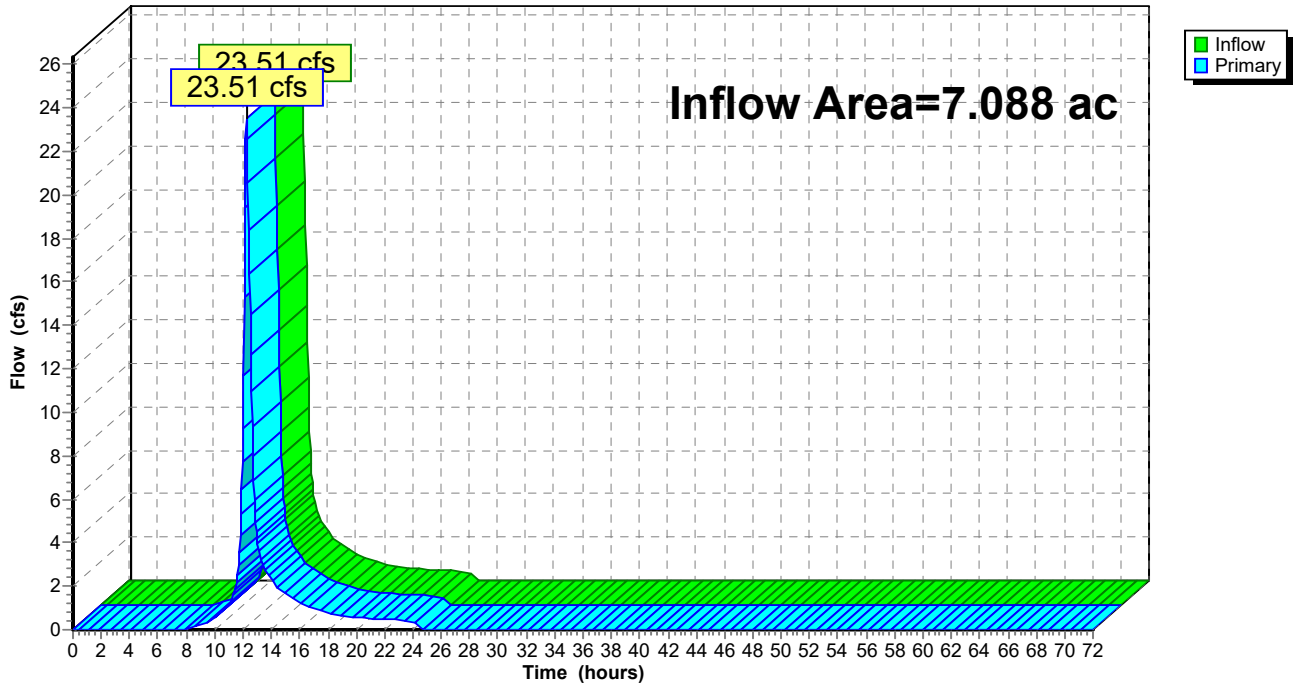
Summary for Link AP-2: AP-2

Inflow Area = 7.088 ac, 0.00% Impervious, Inflow Depth = 4.03" for 25 YR event
Inflow = 23.51 cfs @ 12.25 hrs, Volume= 2.382 af
Primary = 23.51 cfs @ 12.25 hrs, Volume= 2.382 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link AP-2: AP-2

Hydrograph



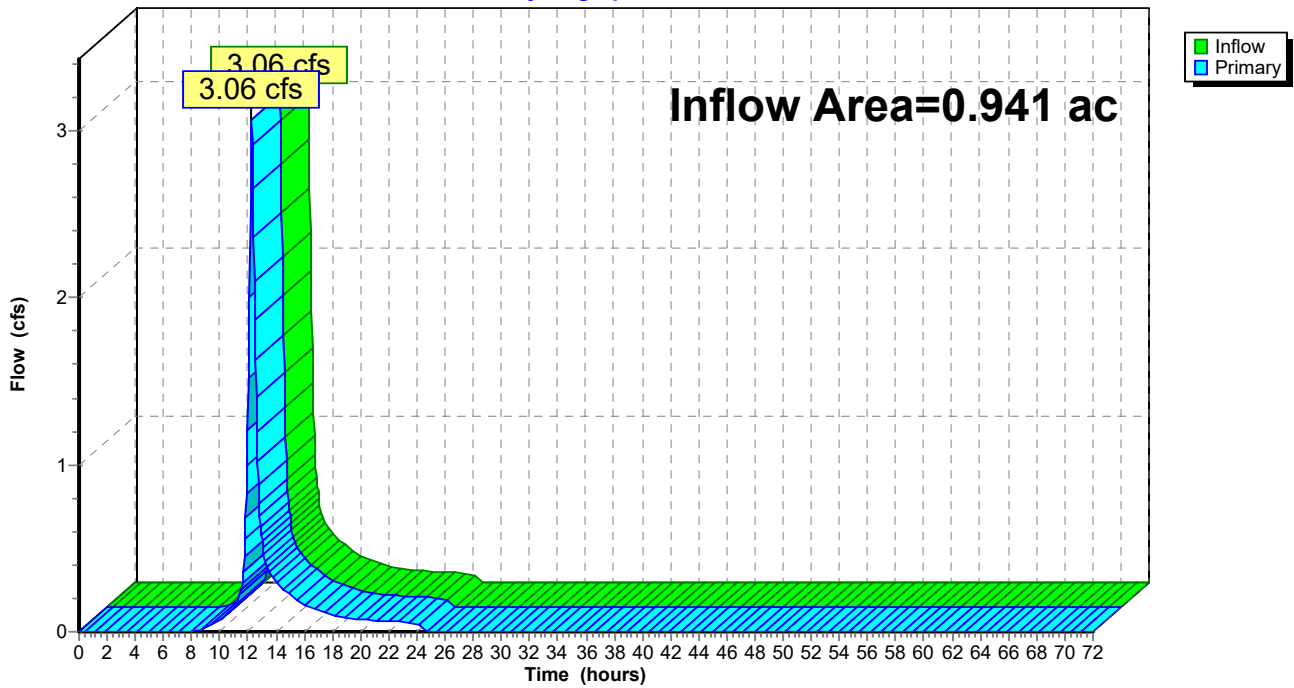
Summary for Link AP-3: AP-3

Inflow Area = 0.941 ac, 0.00% Impervious, Inflow Depth = 3.93" for 25 YR event
Inflow = 3.06 cfs @ 12.25 hrs, Volume= 0.308 af
Primary = 3.06 cfs @ 12.25 hrs, Volume= 0.308 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link AP-3: AP-3

Hydrograph



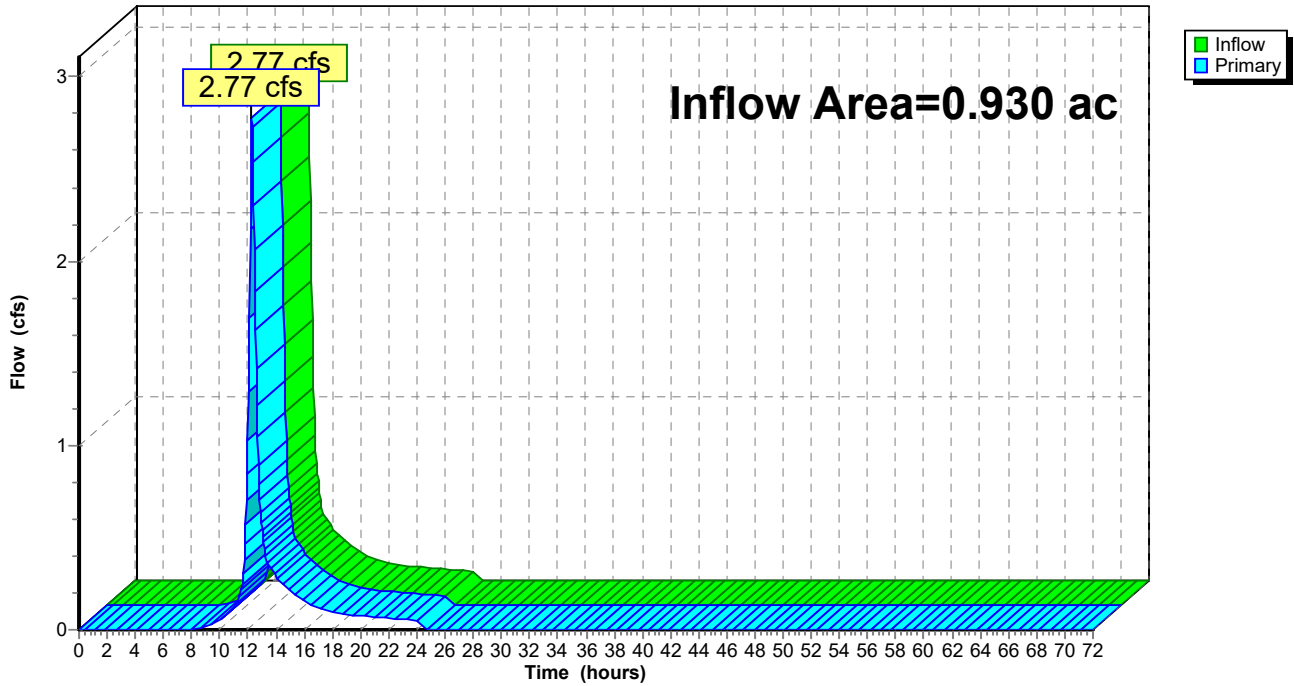
Summary for Link AP-4: AP-4

Inflow Area = 0.930 ac, 0.00% Impervious, Inflow Depth = 3.72" for 25 YR event
Inflow = 2.77 cfs @ 12.27 hrs, Volume= 0.288 af
Primary = 2.77 cfs @ 12.27 hrs, Volume= 0.288 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link AP-4: AP-4

Hydrograph



CT590240_Watertown - EX - Rev0

Type III 24-hr 50 YR Rainfall=7.95"

Prepared by {enter your company name here}

Printed 6/15/2020

HydroCAD® 10.00-22 s/n 07402 © 2018 HydroCAD Software Solutions LLC

Page 27

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment EDA-1: EDA-1	Runoff Area=3.464 ac 5.60% Impervious Runoff Depth=5.46" Flow Length=655' Tc=21.1 min CN=79 Runoff=14.45 cfs 1.577 af
Subcatchment EDA-2: EDA-2	Runoff Area=4.856 ac 0.00% Impervious Runoff Depth=4.42" Flow Length=529' Tc=24.6 min CN=70 Runoff=15.51 cfs 1.789 af
Subcatchment EDA-3: EDA-3	Runoff Area=7.088 ac 0.00% Impervious Runoff Depth=4.88" Flow Length=619' Tc=18.0 min CN=74 Runoff=28.42 cfs 2.883 af
Subcatchment EDA-4: EDA-4	Runoff Area=0.941 ac 0.00% Impervious Runoff Depth=4.77" Flow Length=437' Tc=17.7 min CN=73 Runoff=3.71 cfs 0.374 af
Subcatchment EDA-5: EDA-5	Runoff Area=0.930 ac 0.00% Impervious Runoff Depth=4.54" Flow Length=475' Tc=19.1 min CN=71 Runoff=3.39 cfs 0.352 af
Link AP-1: AP-1	Inflow=29.72 cfs 3.366 af Primary=29.72 cfs 3.366 af
Link AP-2: AP-2	Inflow=28.42 cfs 2.883 af Primary=28.42 cfs 2.883 af
Link AP-3: AP-3	Inflow=3.71 cfs 0.374 af Primary=3.71 cfs 0.374 af
Link AP-4: AP-4	Inflow=3.39 cfs 0.352 af Primary=3.39 cfs 0.352 af

Total Runoff Area = 17.279 ac Runoff Volume = 6.974 af Average Runoff Depth = 4.84"
98.88% Pervious = 17.085 ac 1.12% Impervious = 0.194 ac

Summary for Subcatchment EDA-1: EDA-1

Runoff = 14.45 cfs @ 12.29 hrs, Volume= 1.577 af, Depth= 5.46"

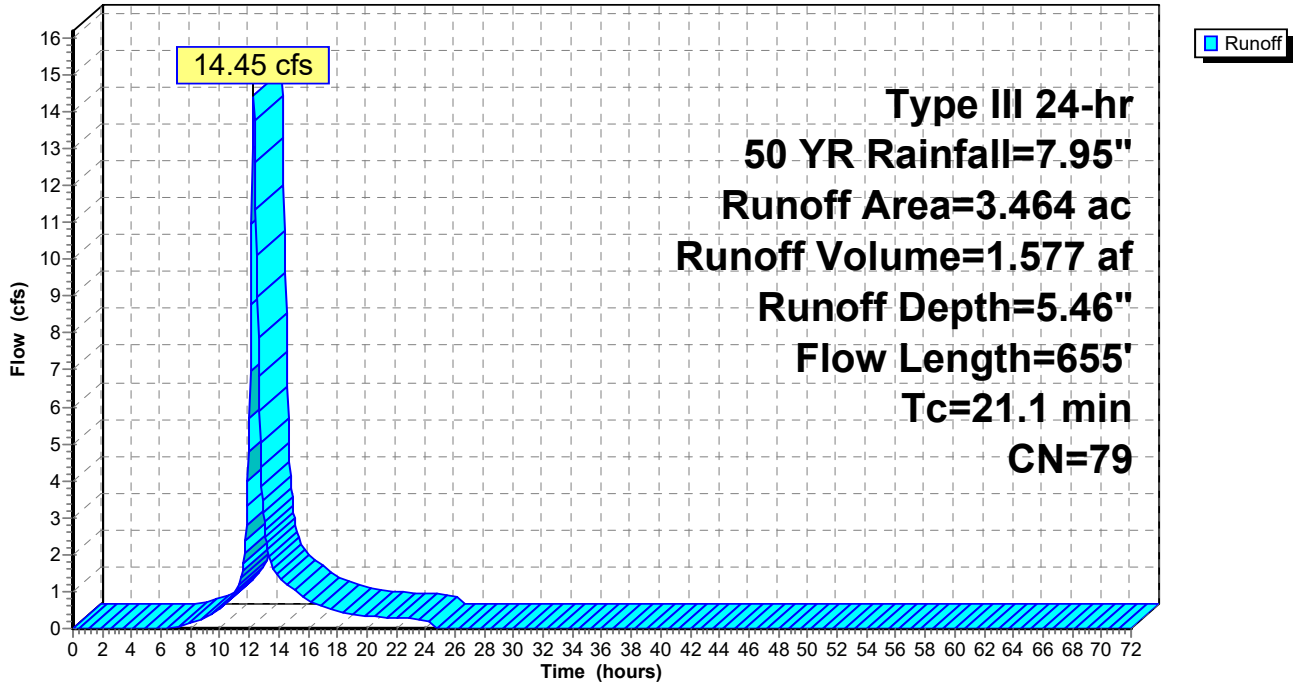
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 50 YR Rainfall=7.95"

Area (ac)	CN	Description
0.540	70	Woods, Good, HSG C
2.723	79	50-75% Grass cover, Fair, HSG C
0.194	98	Paved parking, HSG C
0.007	84	50-75% Grass cover, Fair, HSG D
3.464	79	Weighted Average
3.270		94.40% Pervious Area
0.194		5.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0550	0.12		Sheet Flow, A-B Woods: Light underbrush n= 0.400 P2= 3.55"
1.1	81	0.0617	1.24		Shallow Concentrated Flow, B-C Woodland Kv= 5.0 fps
3.1	120	0.0083	0.64		Shallow Concentrated Flow, C-D Short Grass Pasture Kv= 7.0 fps
3.3	354	0.0654	1.79		Shallow Concentrated Flow, D-E Short Grass Pasture Kv= 7.0 fps
21.1	655	Total			

Subcatchment EDA-1: EDA-1

Hydrograph



Summary for Subcatchment EDA-2: EDA-2

Runoff = 15.51 cfs @ 12.34 hrs, Volume= 1.789 af, Depth= 4.42"

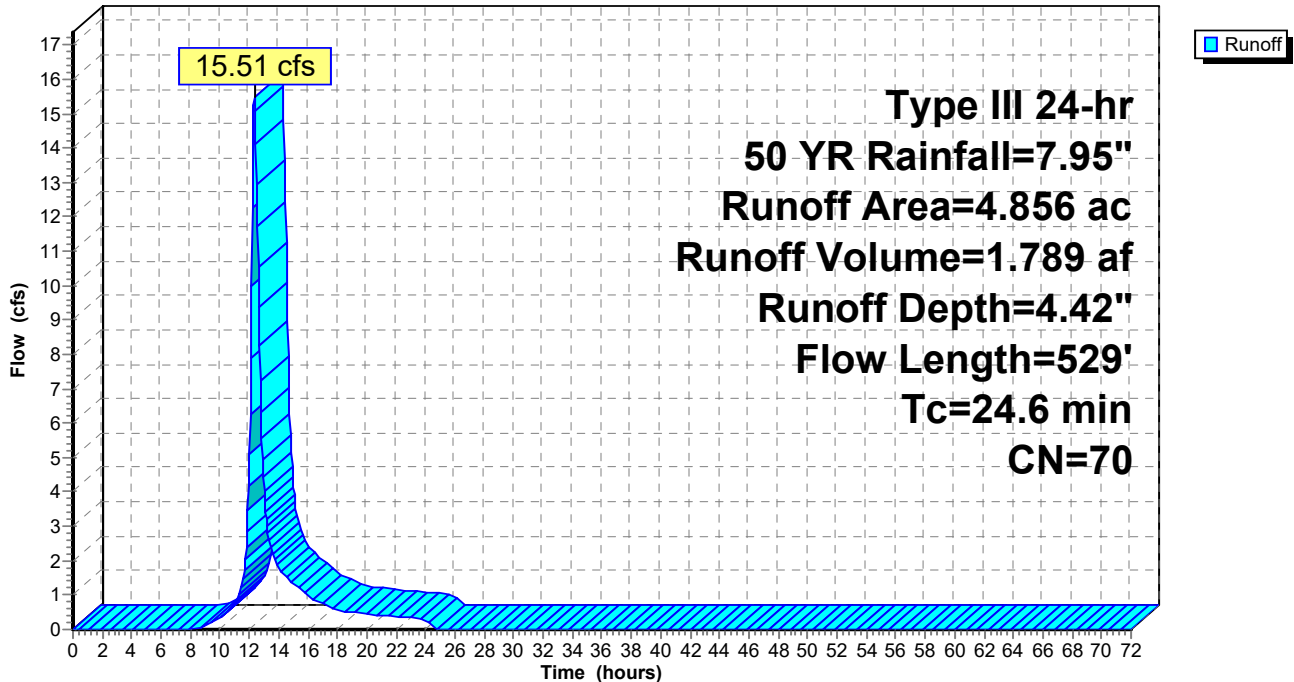
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 YR Rainfall=7.95"

Area (ac)	CN	Description
4.682	70	Woods, Good, HSG C
0.174	77	Woods, Good, HSG D
4.856	70	Weighted Average
4.856		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.6	100	0.0250	0.09		Sheet Flow, A-B Woods: Light underbrush n= 0.400 P2= 3.55"
2.3	174	0.0632	1.26		Shallow Concentrated Flow, B-C Woodland Kv= 5.0 fps
0.5	72	0.2361	2.43		Shallow Concentrated Flow, C-D Woodland Kv= 5.0 fps
2.5	119	0.0252	0.79		Shallow Concentrated Flow, D-E Woodland Kv= 5.0 fps
0.7	64	0.0937	1.53		Shallow Concentrated Flow, E-F Woodland Kv= 5.0 fps
24.6	529	Total			

Subcatchment EDA-2: EDA-2

Hydrograph



Summary for Subcatchment EDA-3: EDA-3

Runoff = 28.42 cfs @ 12.25 hrs, Volume= 2.883 af, Depth= 4.88"

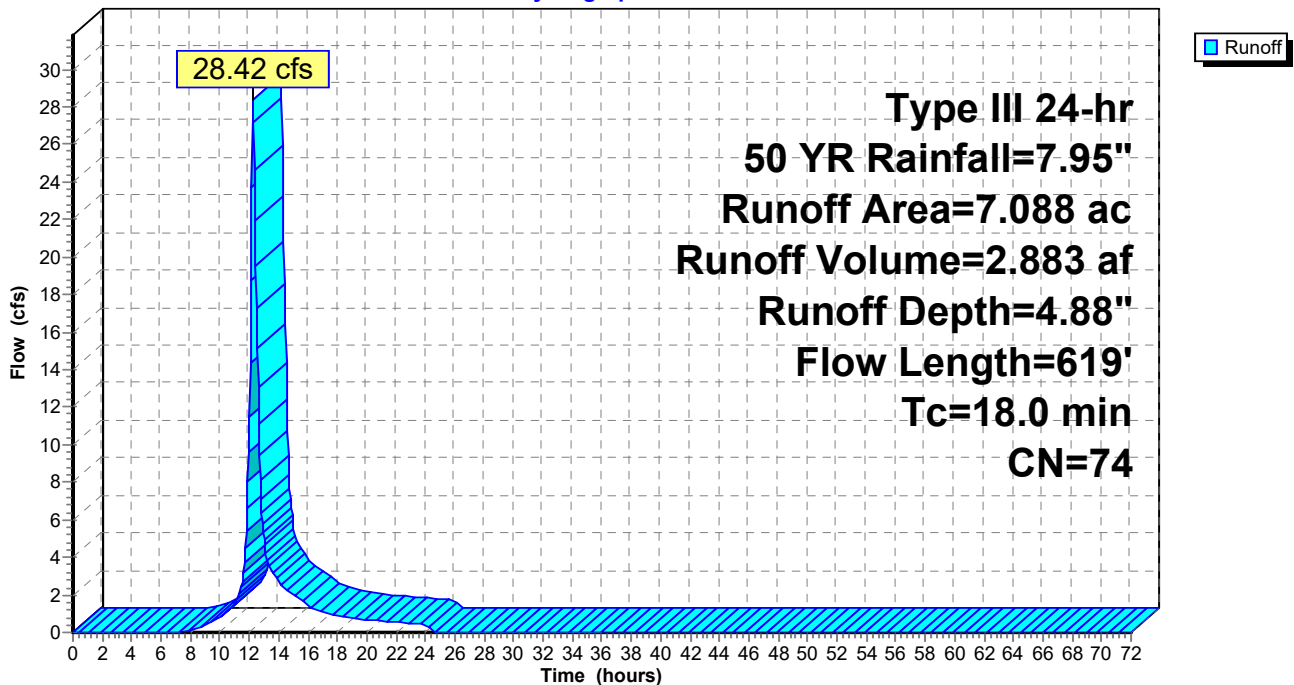
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 50 YR Rainfall=7.95"

Area (ac)	CN	Description
2.643	70	Woods, Good, HSG C
0.136	79	50-75% Grass cover, Fair, HSG C
4.264	77	Woods, Good, HSG D
0.045	84	50-75% Grass cover, Fair, HSG D
7.088	74	Weighted Average
7.088		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.7	100	0.0800	0.14		Sheet Flow, A-B Woods: Light underbrush n= 0.400 P2= 3.55"
6.3	519	0.0751	1.37		Shallow Concentrated Flow, B-C Woodland Kv= 5.0 fps
18.0	619	Total			

Subcatchment EDA-3: EDA-3

Hydrograph



Summary for Subcatchment EDA-4: EDA-4

Runoff = 3.71 cfs @ 12.24 hrs, Volume= 0.374 af, Depth= 4.77"

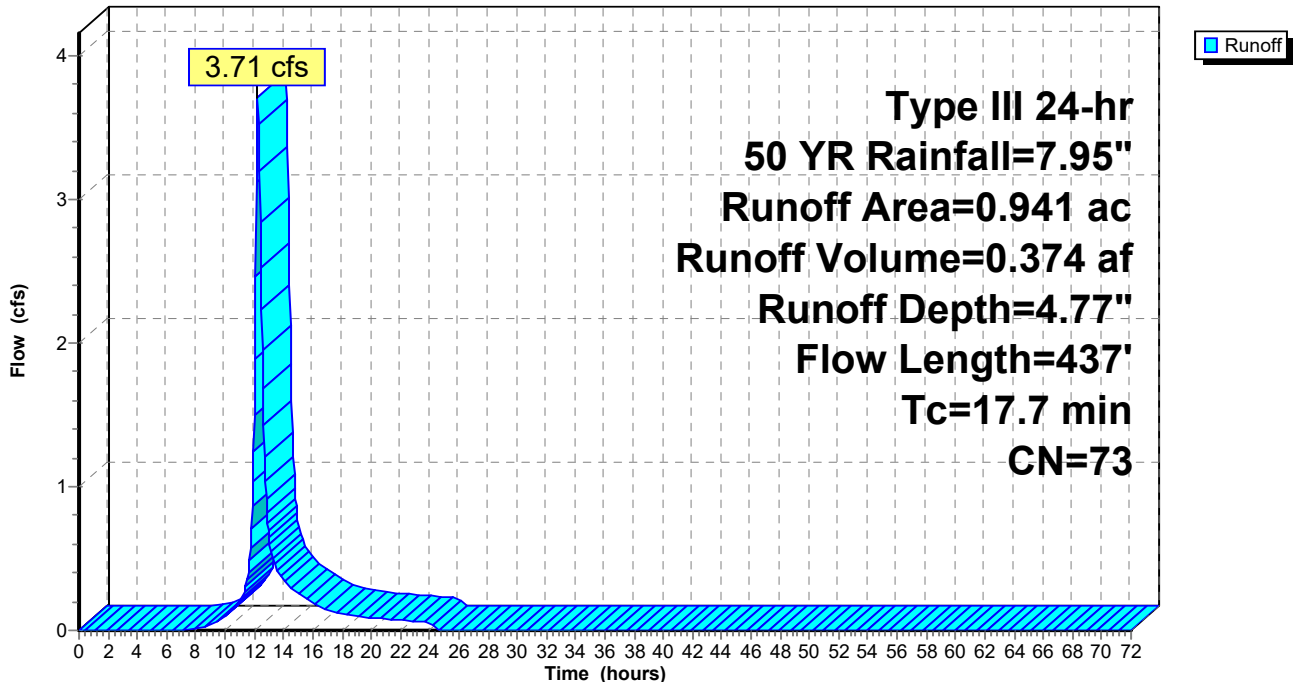
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 YR Rainfall=7.95"

Area (ac)	CN	Description
0.576	70	Woods, Good, HSG C
0.365	77	Woods, Good, HSG D
0.941	73	Weighted Average
0.941		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0550	0.12		Sheet Flow, A-B Woods: Light underbrush n= 0.400 P2= 3.55"
4.1	337	0.0760	1.38		Shallow Concentrated Flow, B-C Woodland Kv= 5.0 fps
17.7	437	Total			

Subcatchment EDA-4: EDA-4

Hydrograph



Summary for Subcatchment EDA-5: EDA-5

Runoff = 3.39 cfs @ 12.26 hrs, Volume= 0.352 af, Depth= 4.54"

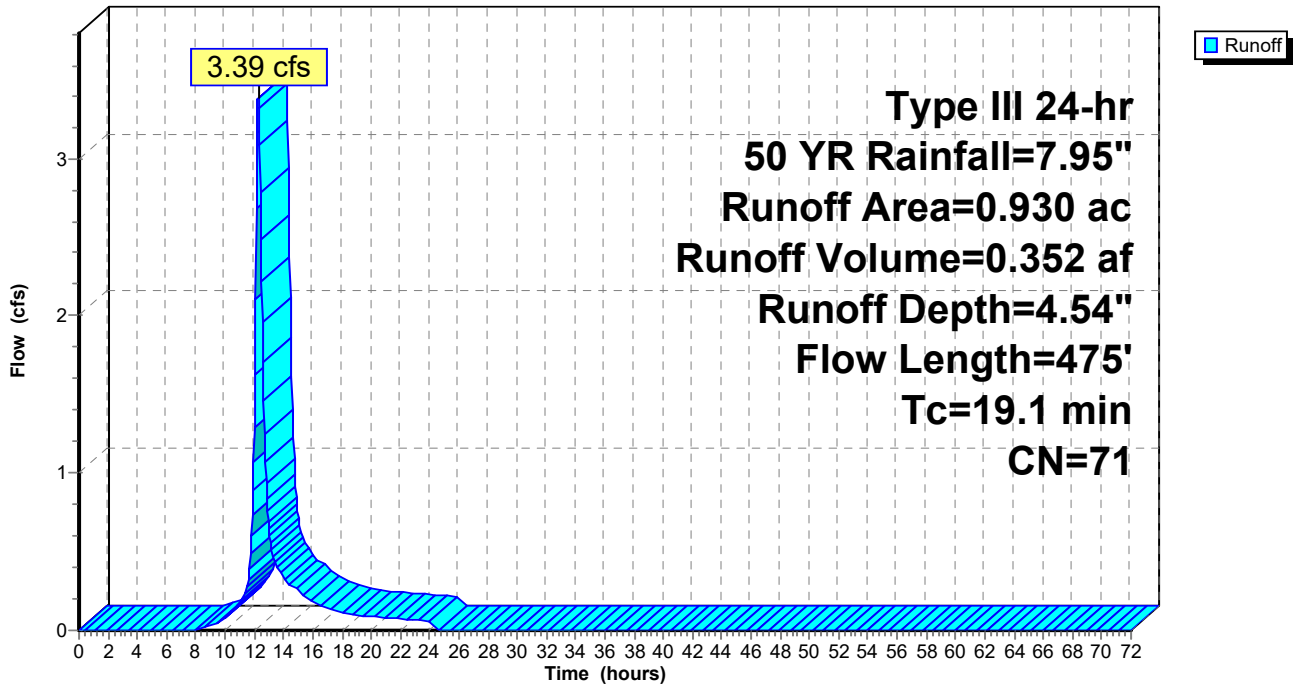
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 50 YR Rainfall=7.95"

Area (ac)	CN	Description
0.842	70	Woods, Good, HSG C
0.088	77	Woods, Good, HSG D
0.930	71	Weighted Average
0.930		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	100	0.0450	0.11		Sheet Flow, A-B Woods: Light underbrush n= 0.400 P2= 3.55"
4.4	375	0.0800	1.41		Shallow Concentrated Flow, B-C Woodland Kv= 5.0 fps
19.1	475	Total			

Subcatchment EDA-5: EDA-5

Hydrograph



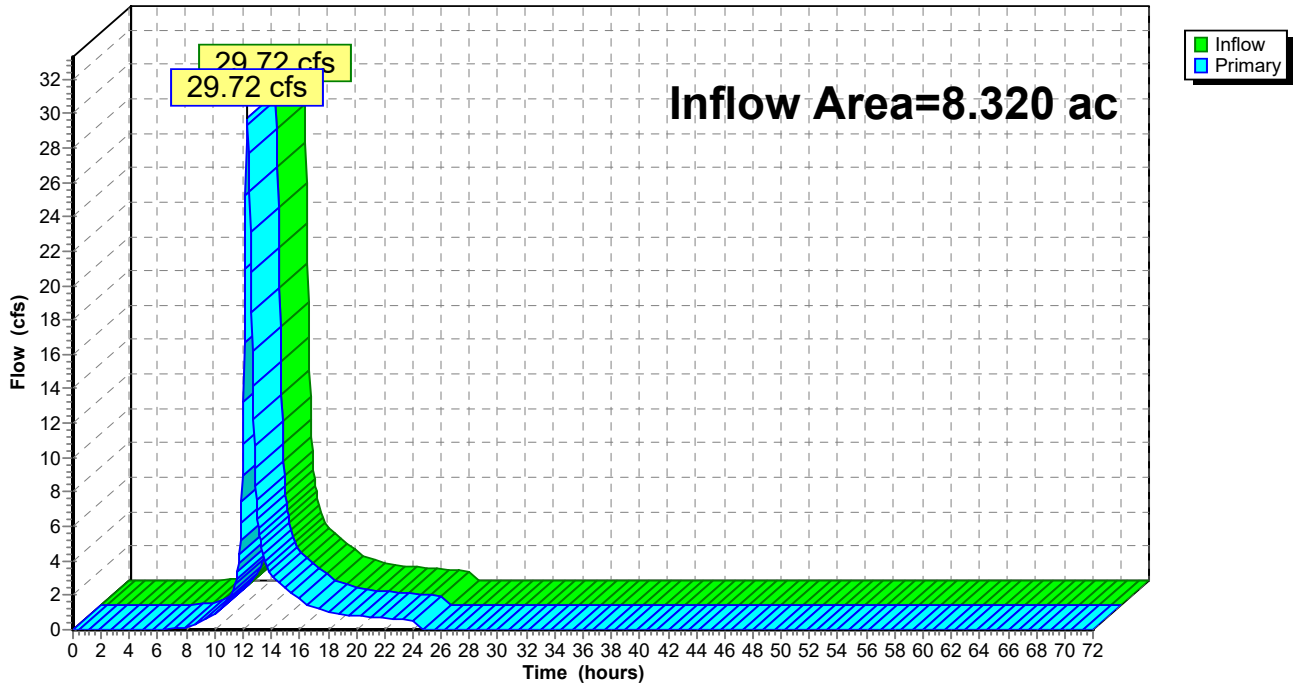
Summary for Link AP-1: AP-1

Inflow Area = 8.320 ac, 2.33% Impervious, Inflow Depth = 4.85" for 50 YR event
Inflow = 29.72 cfs @ 12.31 hrs, Volume= 3.366 af
Primary = 29.72 cfs @ 12.31 hrs, Volume= 3.366 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link AP-1: AP-1

Hydrograph



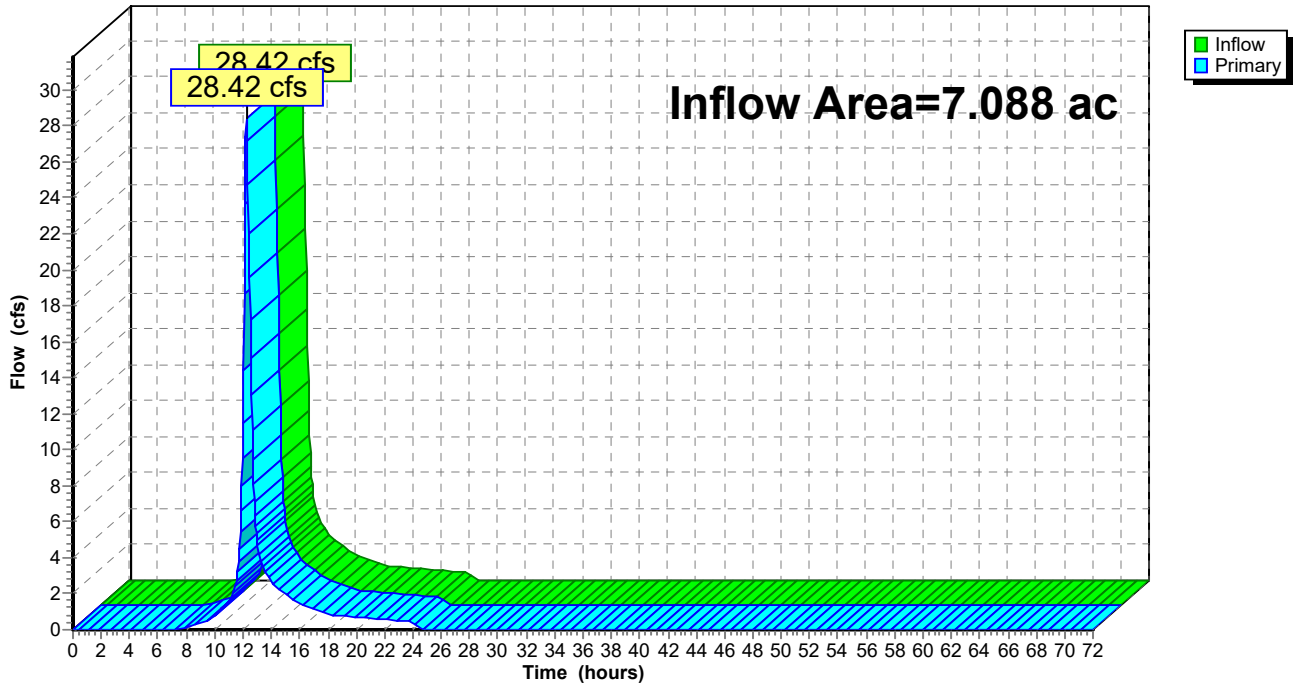
Summary for Link AP-2: AP-2

Inflow Area = 7.088 ac, 0.00% Impervious, Inflow Depth = 4.88" for 50 YR event
Inflow = 28.42 cfs @ 12.25 hrs, Volume= 2.883 af
Primary = 28.42 cfs @ 12.25 hrs, Volume= 2.883 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link AP-2: AP-2

Hydrograph



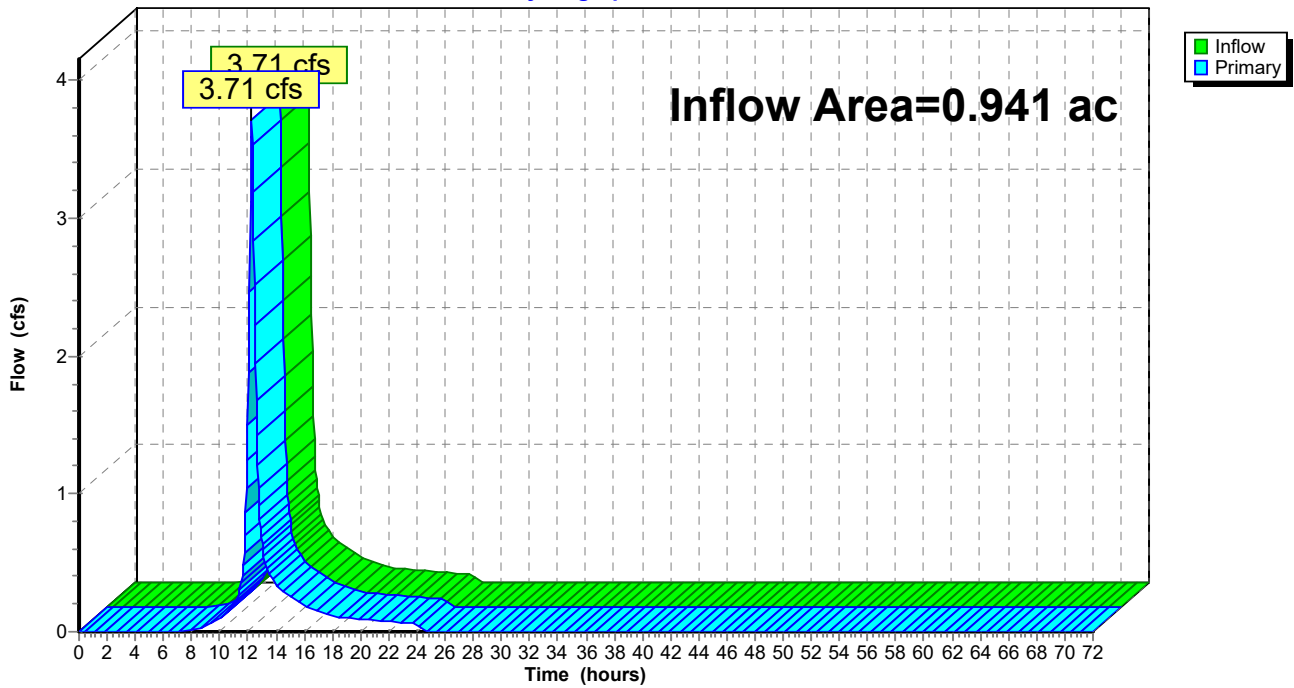
Summary for Link AP-3: AP-3

Inflow Area = 0.941 ac, 0.00% Impervious, Inflow Depth = 4.77" for 50 YR event
Inflow = 3.71 cfs @ 12.24 hrs, Volume= 0.374 af
Primary = 3.71 cfs @ 12.24 hrs, Volume= 0.374 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link AP-3: AP-3

Hydrograph



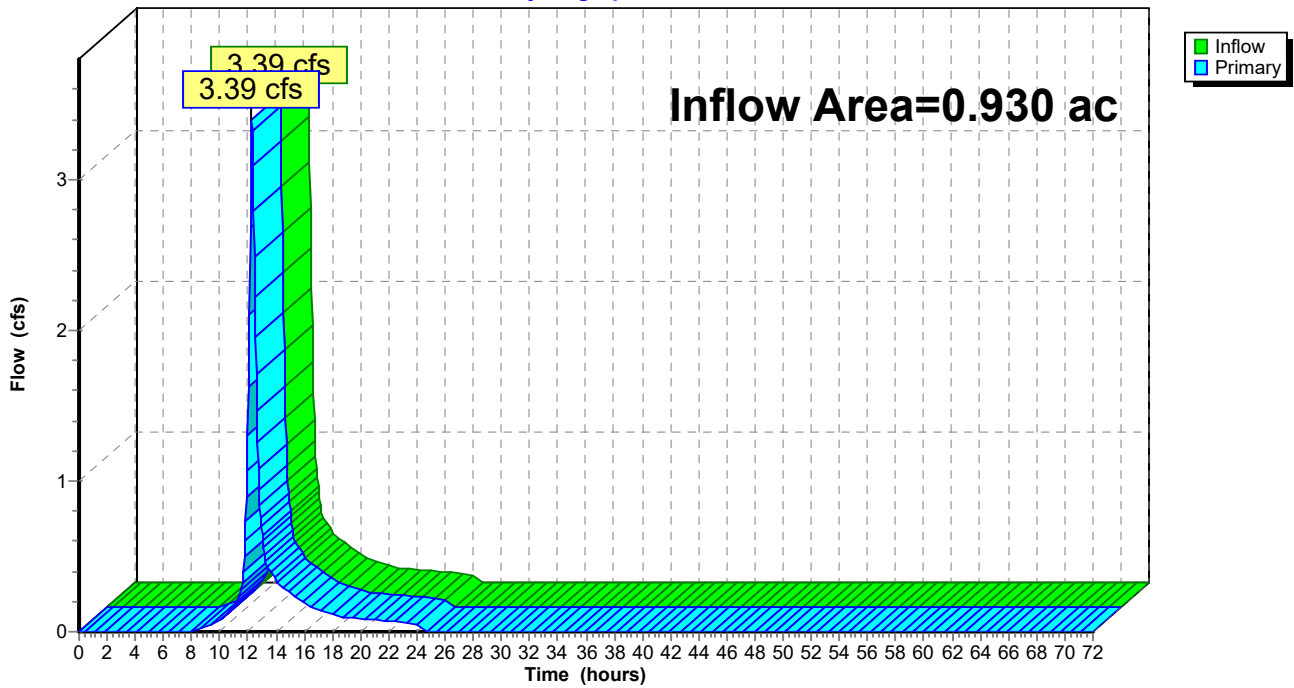
Summary for Link AP-4: AP-4

Inflow Area = 0.930 ac, 0.00% Impervious, Inflow Depth = 4.54" for 50 YR event
Inflow = 3.39 cfs @ 12.26 hrs, Volume= 0.352 af
Primary = 3.39 cfs @ 12.26 hrs, Volume= 0.352 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link AP-4: AP-4

Hydrograph



CT590240_Watertown - EX - Rev0

Type III 24-hr 100 YR Rainfall=9.02"

Prepared by {enter your company name here}

Printed 6/15/2020

HydroCAD® 10.00-22 s/n 07402 © 2018 HydroCAD Software Solutions LLC

Page 38

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment EDA-1: EDA-1 Runoff Area=3.464 ac 5.60% Impervious Runoff Depth=6.46"
Flow Length=655' Tc=21.1 min CN=79 Runoff=17.01 cfs 1.866 af

Subcatchment EDA-2: EDA-2 Runoff Area=4.856 ac 0.00% Impervious Runoff Depth=5.35"
Flow Length=529' Tc=24.6 min CN=70 Runoff=18.78 cfs 2.166 af

Subcatchment EDA-3: EDA-3 Runoff Area=7.088 ac 0.00% Impervious Runoff Depth=5.85"
Flow Length=619' Tc=18.0 min CN=74 Runoff=33.94 cfs 3.454 af

Subcatchment EDA-4: EDA-4 Runoff Area=0.941 ac 0.00% Impervious Runoff Depth=5.72"
Flow Length=437' Tc=17.7 min CN=73 Runoff=4.44 cfs 0.449 af

Subcatchment EDA-5: EDA-5 Runoff Area=0.930 ac 0.00% Impervious Runoff Depth=5.48"
Flow Length=475' Tc=19.1 min CN=71 Runoff=4.09 cfs 0.424 af

Link AP-1: AP-1 Inflow=35.51 cfs 4.032 af
Primary=35.51 cfs 4.032 af

Link AP-2: AP-2 Inflow=33.94 cfs 3.454 af
Primary=33.94 cfs 3.454 af

Link AP-3: AP-3 Inflow=4.44 cfs 0.449 af
Primary=4.44 cfs 0.449 af

Link AP-4: AP-4 Inflow=4.09 cfs 0.424 af
Primary=4.09 cfs 0.424 af

Total Runoff Area = 17.279 ac Runoff Volume = 8.359 af Average Runoff Depth = 5.81"
98.88% Pervious = 17.085 ac 1.12% Impervious = 0.194 ac

Summary for Subcatchment EDA-1: EDA-1

Runoff = 17.01 cfs @ 12.28 hrs, Volume= 1.866 af, Depth= 6.46"

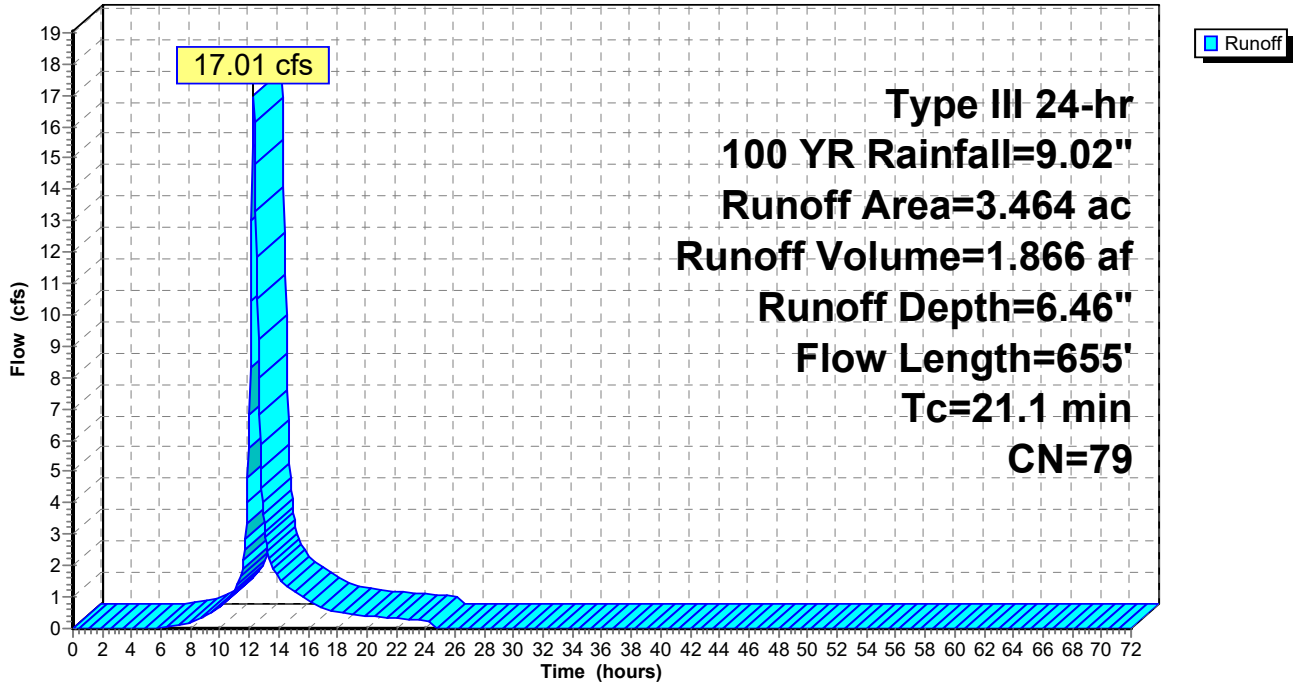
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 YR Rainfall=9.02"

Area (ac)	CN	Description
0.540	70	Woods, Good, HSG C
2.723	79	50-75% Grass cover, Fair, HSG C
0.194	98	Paved parking, HSG C
0.007	84	50-75% Grass cover, Fair, HSG D
3.464	79	Weighted Average
3.270		94.40% Pervious Area
0.194		5.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0550	0.12		Sheet Flow, A-B Woods: Light underbrush n= 0.400 P2= 3.55"
1.1	81	0.0617	1.24		Shallow Concentrated Flow, B-C Woodland Kv= 5.0 fps
3.1	120	0.0083	0.64		Shallow Concentrated Flow, C-D Short Grass Pasture Kv= 7.0 fps
3.3	354	0.0654	1.79		Shallow Concentrated Flow, D-E Short Grass Pasture Kv= 7.0 fps
21.1	655	Total			

Subcatchment EDA-1: EDA-1

Hydrograph



Summary for Subcatchment EDA-2: EDA-2

Runoff = 18.78 cfs @ 12.34 hrs, Volume= 2.166 af, Depth= 5.35"

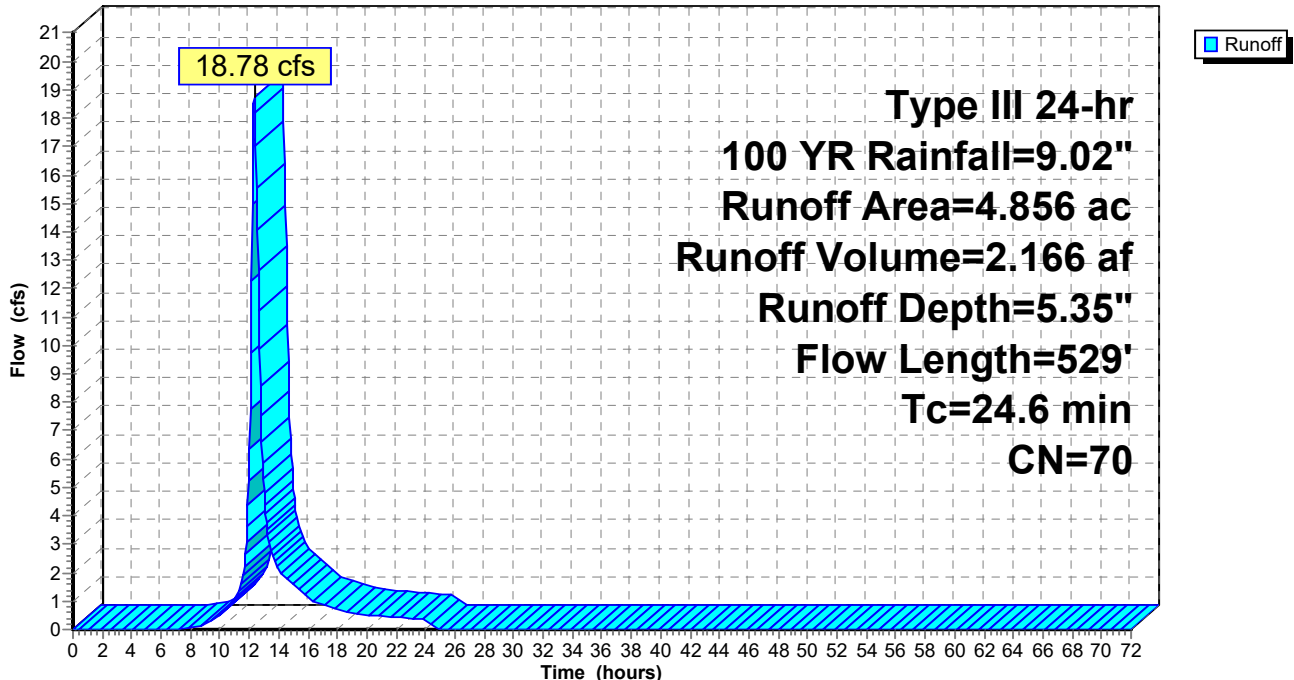
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 YR Rainfall=9.02"

Area (ac)	CN	Description
4.682	70	Woods, Good, HSG C
0.174	77	Woods, Good, HSG D
4.856	70	Weighted Average
4.856		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.6	100	0.0250	0.09		Sheet Flow, A-B Woods: Light underbrush n= 0.400 P2= 3.55"
2.3	174	0.0632	1.26		Shallow Concentrated Flow, B-C Woodland Kv= 5.0 fps
0.5	72	0.2361	2.43		Shallow Concentrated Flow, C-D Woodland Kv= 5.0 fps
2.5	119	0.0252	0.79		Shallow Concentrated Flow, D-E Woodland Kv= 5.0 fps
0.7	64	0.0937	1.53		Shallow Concentrated Flow, E-F Woodland Kv= 5.0 fps
24.6	529	Total			

Subcatchment EDA-2: EDA-2

Hydrograph



Summary for Subcatchment EDA-3: EDA-3

Runoff = 33.94 cfs @ 12.25 hrs, Volume= 3.454 af, Depth= 5.85"

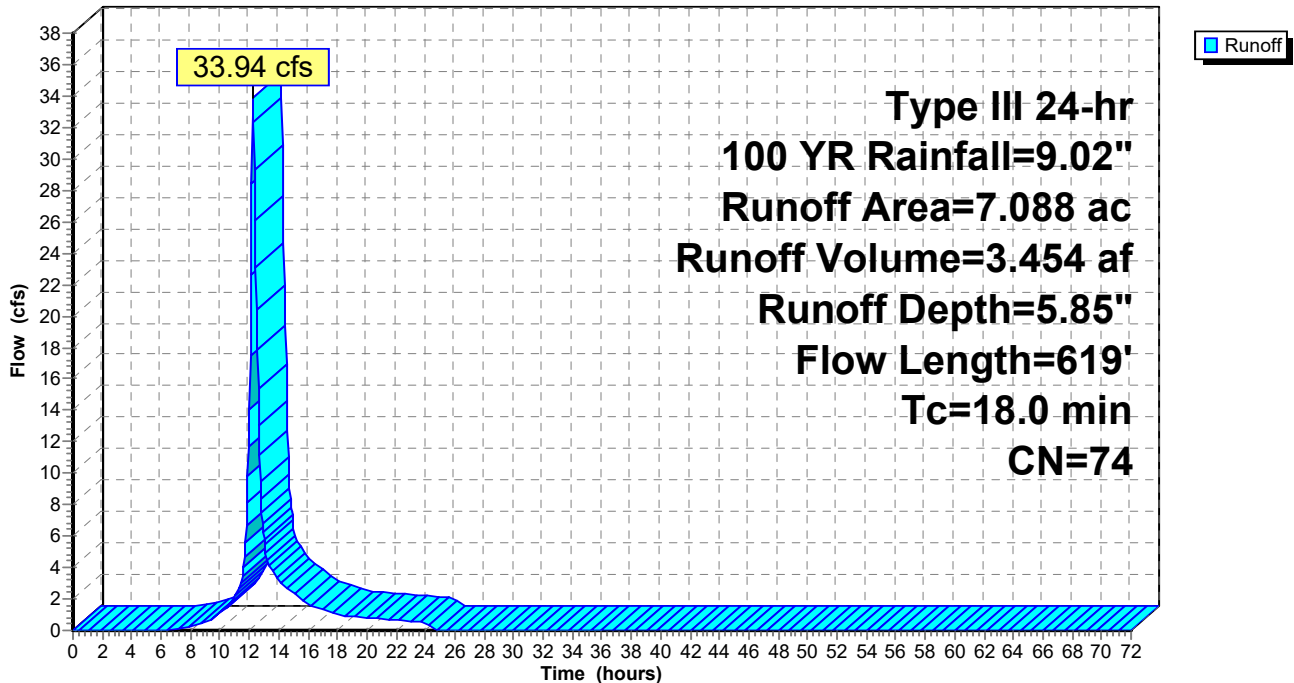
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 YR Rainfall=9.02"

Area (ac)	CN	Description
2.643	70	Woods, Good, HSG C
0.136	79	50-75% Grass cover, Fair, HSG C
4.264	77	Woods, Good, HSG D
0.045	84	50-75% Grass cover, Fair, HSG D
7.088	74	Weighted Average
7.088		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.7	100	0.0800	0.14		Sheet Flow, A-B Woods: Light underbrush n= 0.400 P2= 3.55"
6.3	519	0.0751	1.37		Shallow Concentrated Flow, B-C Woodland Kv= 5.0 fps
18.0	619	Total			

Subcatchment EDA-3: EDA-3

Hydrograph



Summary for Subcatchment EDA-4: EDA-4

Runoff = 4.44 cfs @ 12.24 hrs, Volume= 0.449 af, Depth= 5.72"

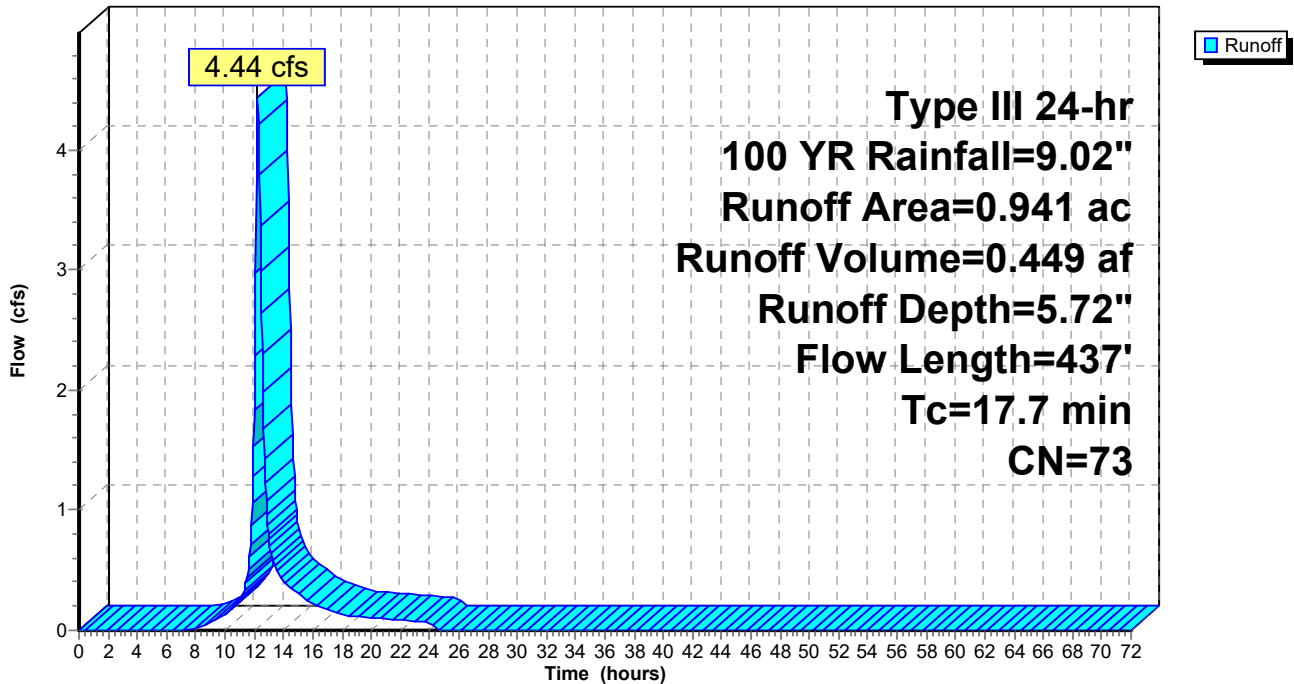
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 YR Rainfall=9.02"

Area (ac)	CN	Description
0.576	70	Woods, Good, HSG C
0.365	77	Woods, Good, HSG D
0.941	73	Weighted Average
0.941		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0550	0.12		Sheet Flow, A-B Woods: Light underbrush n= 0.400 P2= 3.55"
4.1	337	0.0760	1.38		Shallow Concentrated Flow, B-C Woodland Kv= 5.0 fps
17.7	437	Total			

Subcatchment EDA-4: EDA-4

Hydrograph



Summary for Subcatchment EDA-5: EDA-5

Runoff = 4.09 cfs @ 12.26 hrs, Volume= 0.424 af, Depth= 5.48"

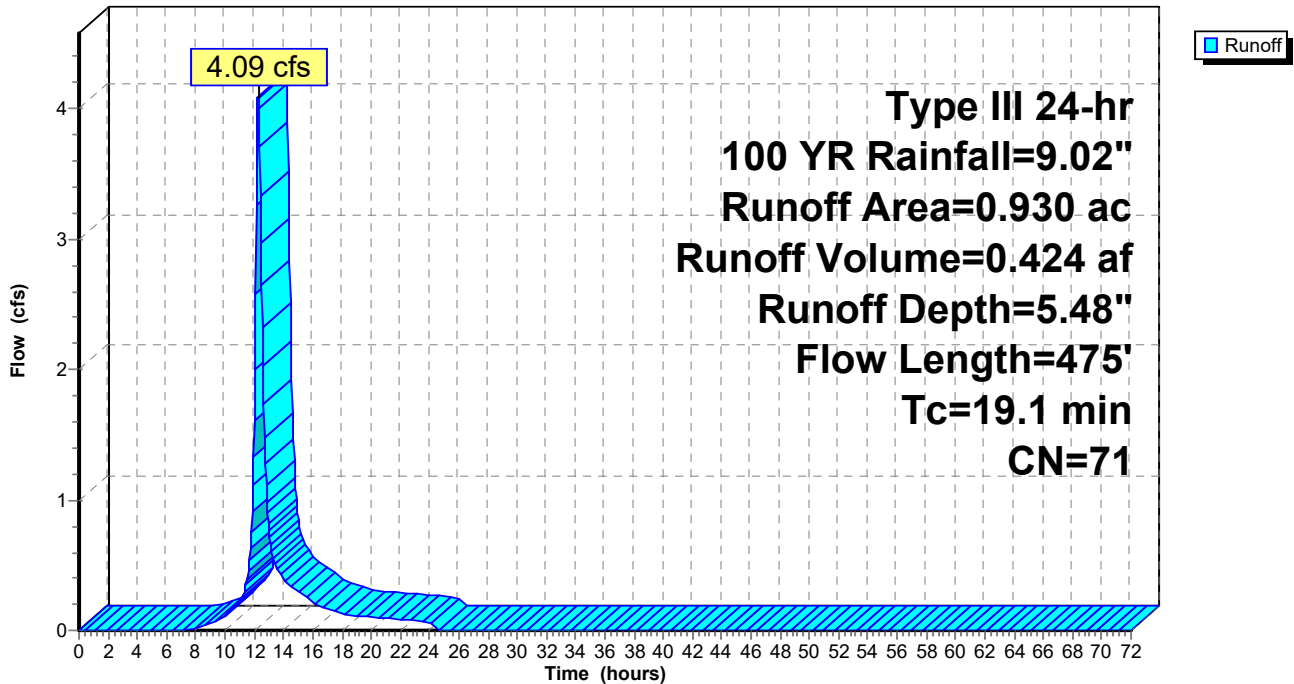
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 YR Rainfall=9.02"

Area (ac)	CN	Description
0.842	70	Woods, Good, HSG C
0.088	77	Woods, Good, HSG D
0.930	71	Weighted Average
0.930		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	100	0.0450	0.11		Sheet Flow, A-B Woods: Light underbrush n= 0.400 P2= 3.55"
4.4	375	0.0800	1.41		Shallow Concentrated Flow, B-C Woodland Kv= 5.0 fps
19.1	475	Total			

Subcatchment EDA-5: EDA-5

Hydrograph



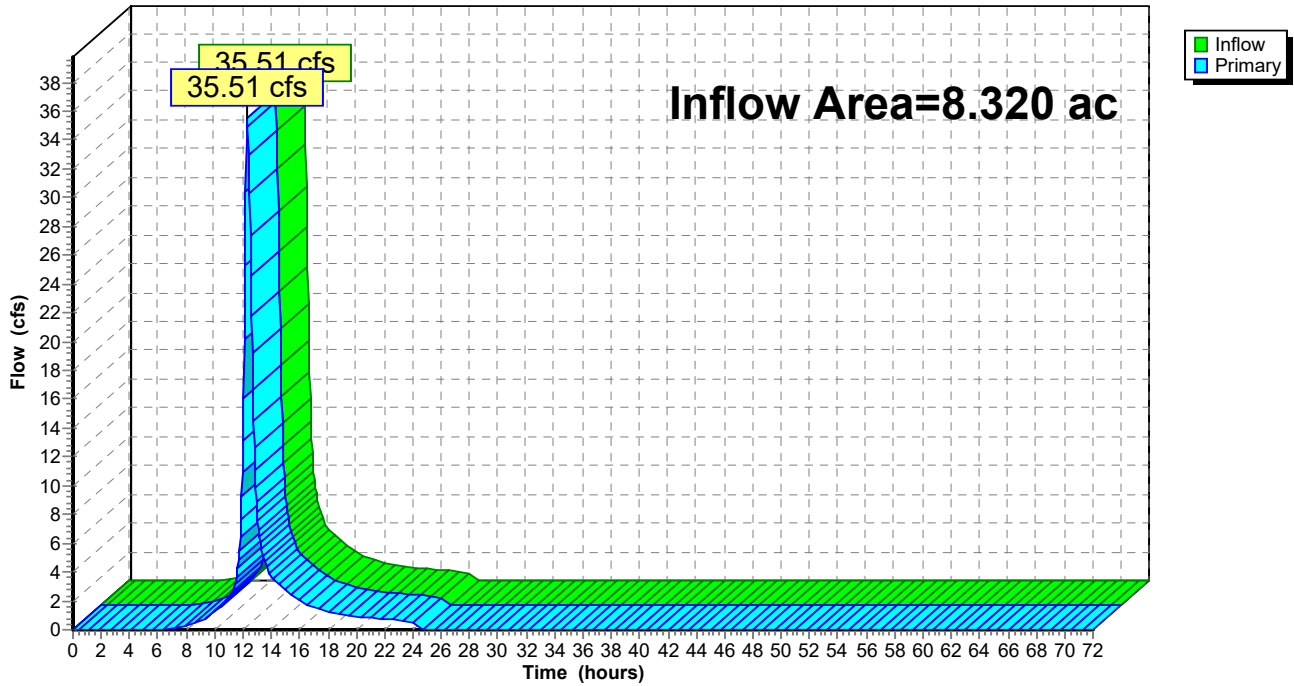
Summary for Link AP-1: AP-1

Inflow Area = 8.320 ac, 2.33% Impervious, Inflow Depth = 5.82" for 100 YR event
Inflow = 35.51 cfs @ 12.31 hrs, Volume= 4.032 af
Primary = 35.51 cfs @ 12.31 hrs, Volume= 4.032 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link AP-1: AP-1

Hydrograph



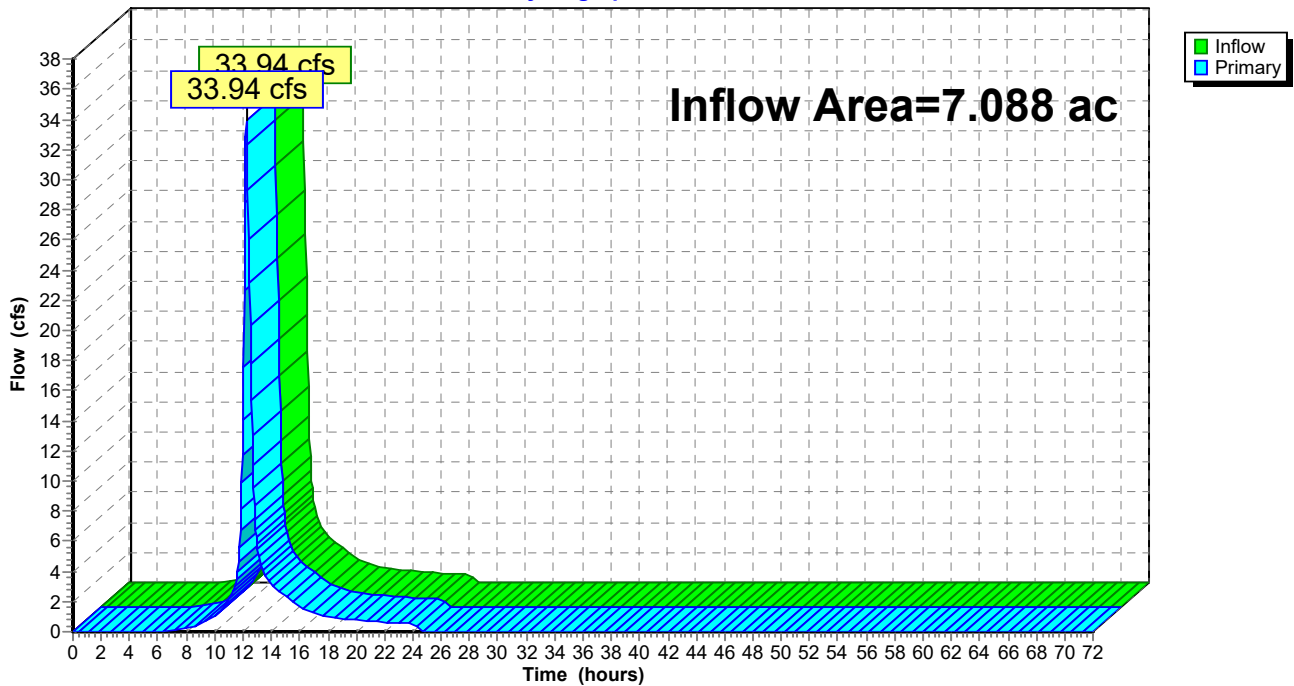
Summary for Link AP-2: AP-2

Inflow Area = 7.088 ac, 0.00% Impervious, Inflow Depth = 5.85" for 100 YR event
Inflow = 33.94 cfs @ 12.25 hrs, Volume= 3.454 af
Primary = 33.94 cfs @ 12.25 hrs, Volume= 3.454 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link AP-2: AP-2

Hydrograph



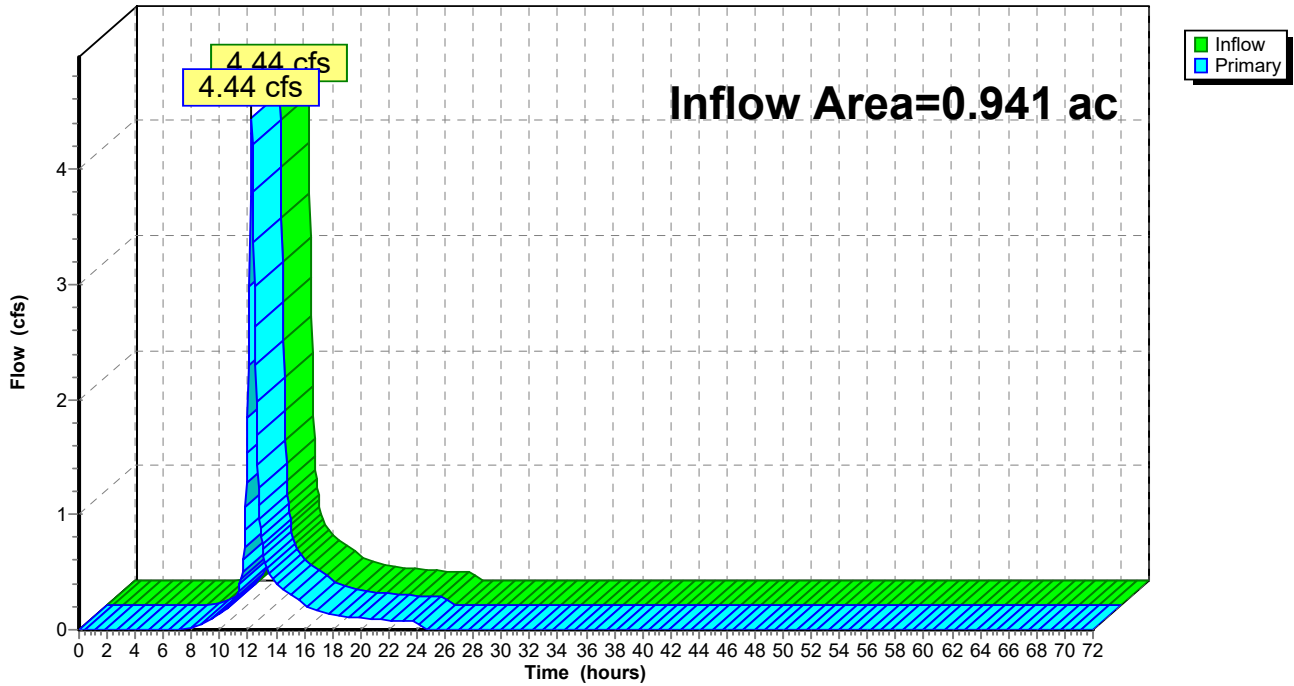
Summary for Link AP-3: AP-3

Inflow Area = 0.941 ac, 0.00% Impervious, Inflow Depth = 5.72" for 100 YR event
Inflow = 4.44 cfs @ 12.24 hrs, Volume= 0.449 af
Primary = 4.44 cfs @ 12.24 hrs, Volume= 0.449 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link AP-3: AP-3

Hydrograph



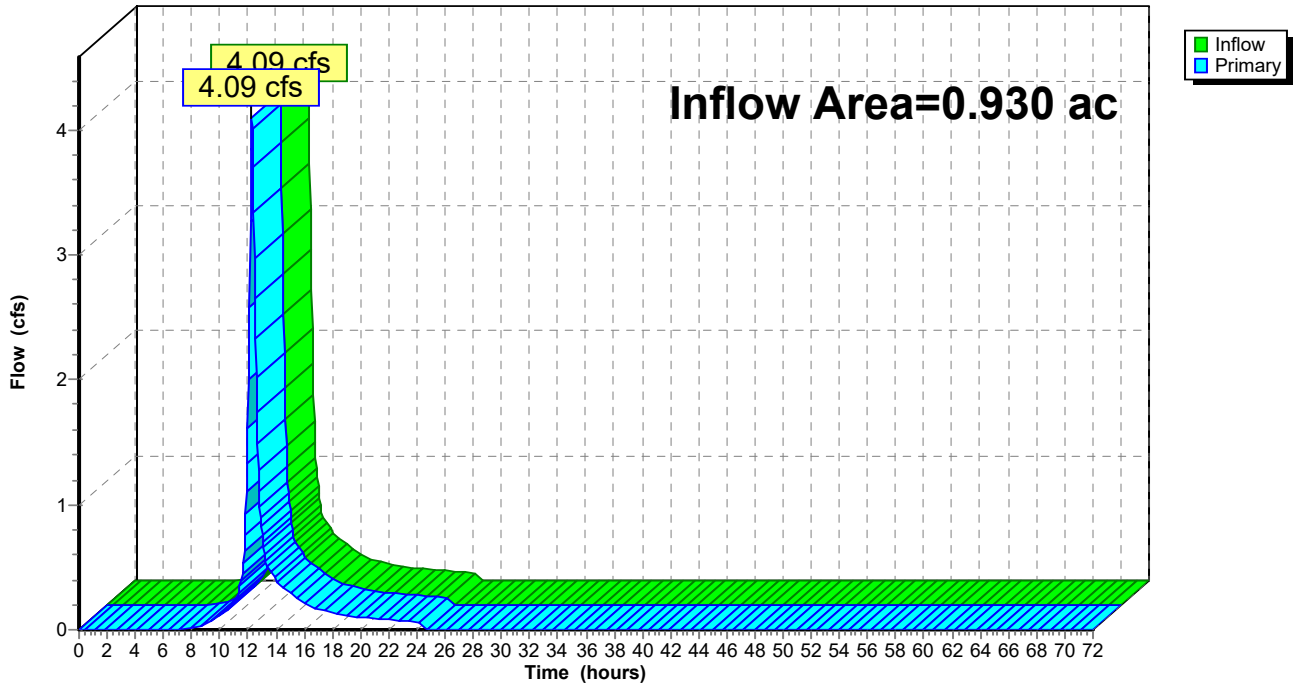
Summary for Link AP-4: AP-4

Inflow Area = 0.930 ac, 0.00% Impervious, Inflow Depth = 5.48" for 100 YR event
Inflow = 4.09 cfs @ 12.26 hrs, Volume= 0.424 af
Primary = 4.09 cfs @ 12.26 hrs, Volume= 0.424 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link AP-4: AP-4

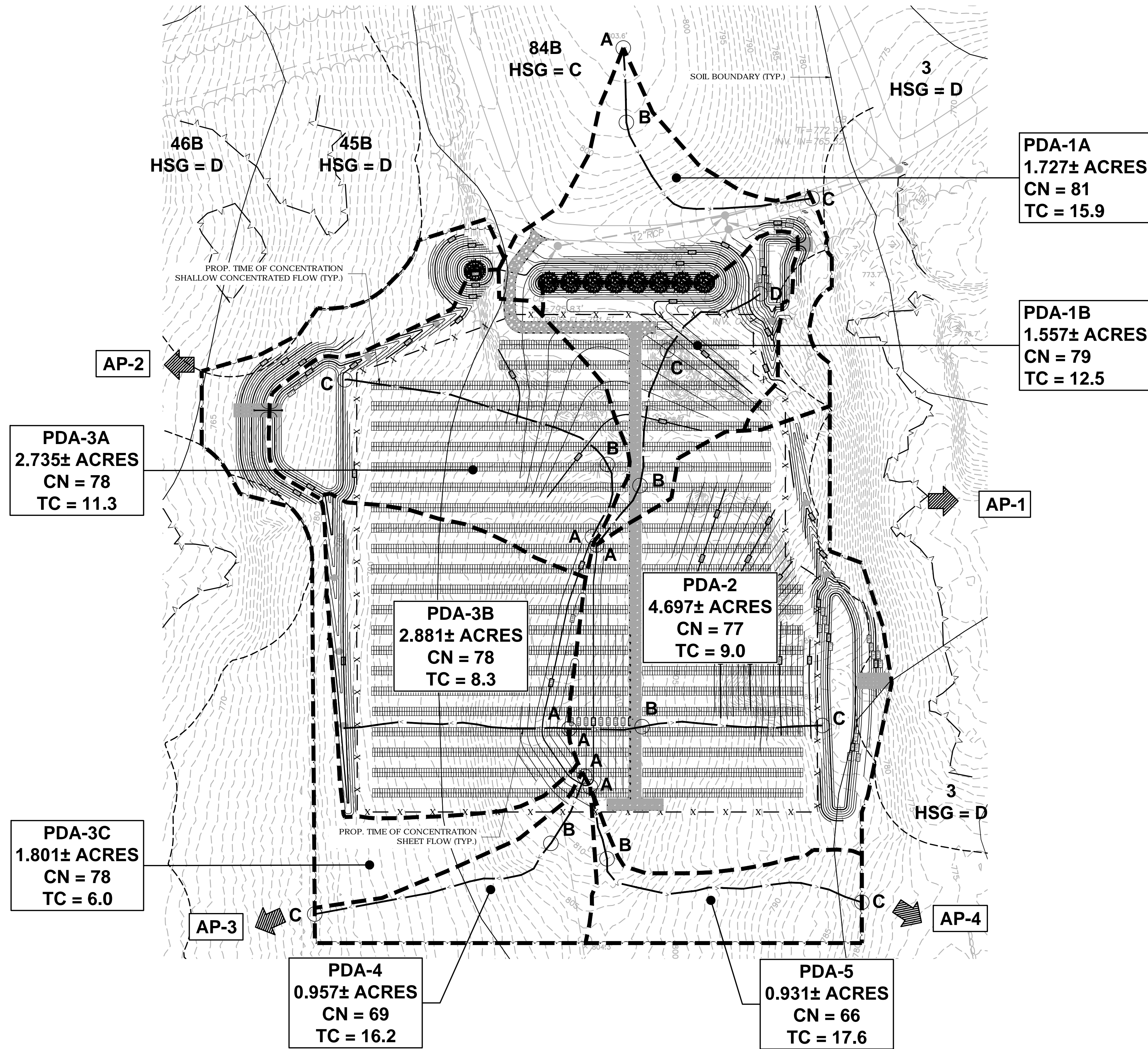
Hydrograph



**APPENDIX C: PROPOSED DRAINAGE AREA MAP (PDA-1) &
HYDROLOGIC COMPUTATION (HYDROCAD)**

PROPOSED DRAINAGE AREAS

	TOTAL AREA (ACRES)	COMPOSITE CN	TC (MINS.)
PDA-1A	1.727	81	15.9
PDA-1B	1.557	79	12.5
PDA-2	4.697	77	9.0
PDA-3A	2.735	78	11.3
PDA-3B	2.881	78	8.3
PDA-3C	1.801	78	6.0
PDA-4	0.957	69	16.2
PDA-5	0.931	66	17.6



PDA-1A
1.727± ACRES
CN = 81
TC = 15.9

PDA-1B
1.557± ACRES
CN = 79
TC = 12.5

PDA-3A
2.735± ACRES
CN = 78
TC = 11.3

PDA-3B
2.881± ACRES
CN = 78
TC = 8.3

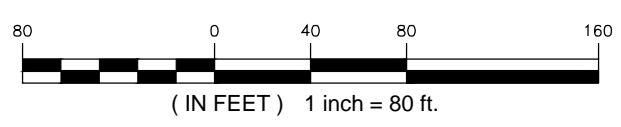
PDA-2
4.697± ACRES
CN = 77
TC = 9.0

PDA-3C
1.801± ACRES
CN = 78
TC = 6.0

PDA-4
0.957± ACRES
CN = 69
TC = 16.2

PDA-5
0.931± ACRES
CN = 66
TC = 17.6

1 PROPOSED DRAINAGE AREA MAP
SCALE: 1" = 80'-0"



WATERTOWN SOLAR ONE, LLC
150 TRUMBULL STREET
4TH FLOOR
HARTFORD, CT, 06103

ALL-POINTS TECHNOLOGY CORPORATION
567 VAUXHAUL STREET EXTENSION - SUITE 311
WATERFORD, CT 06385 PHONE: (860)-663-1697
WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

CSC PERMIT SET

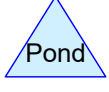
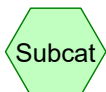
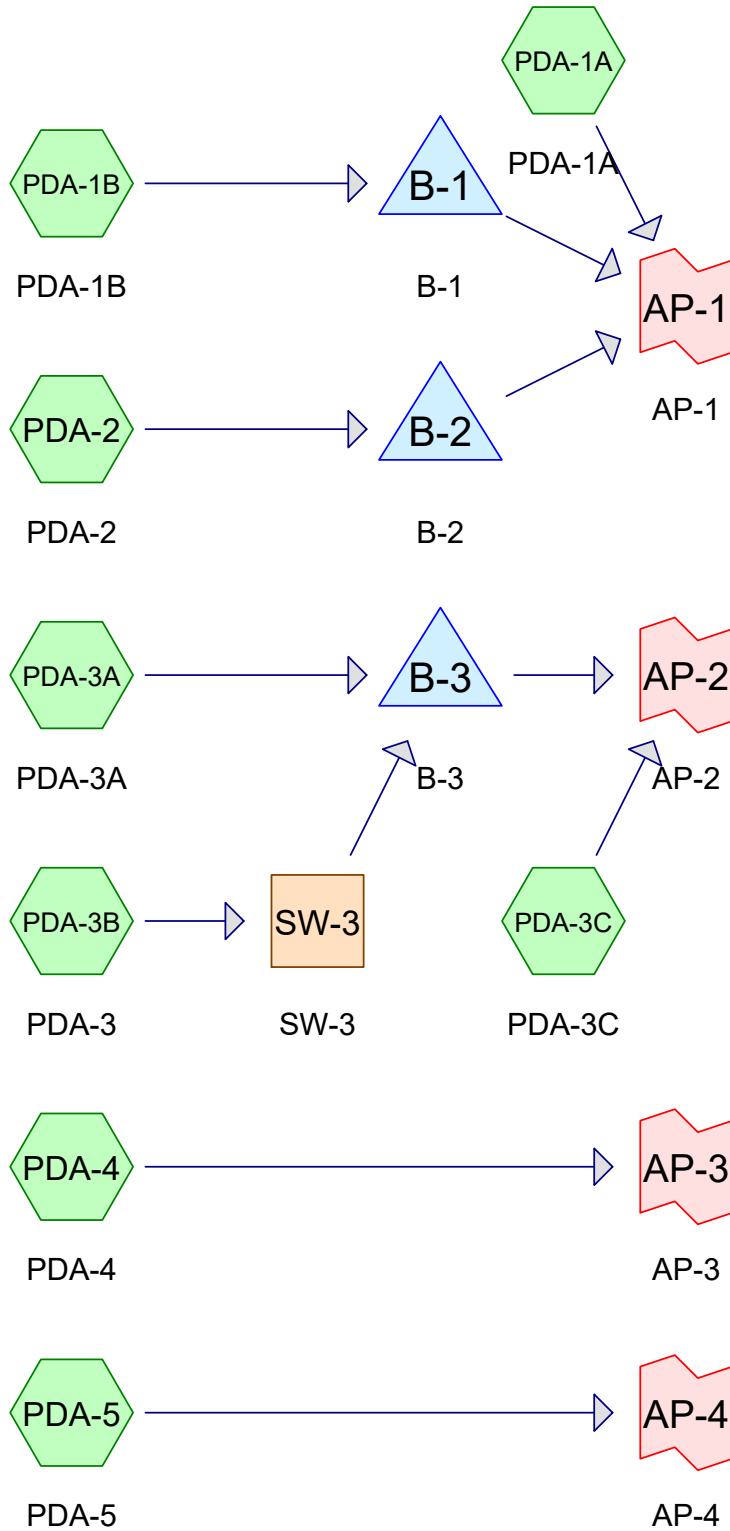
NO	DATE	REVISION
0	06/XX/20	FOR REVIEW: BJP
1		
2		
3		
4		
5		
6		

DESIGN PROFESSIONAL OF RECORD
PROF: BRADLEY J. PARSONS P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION
ADD: 567 VAUXHAUL STREET
EXTENSION - SUITE 311
WATERFORD, CT 06385
OWNER: CATHOLIC CEMETERIES
ADDRESS: 669 PLATT ROAD
WATERTOWN, CT 06795

WATERTOWN SOLAR ONE, LLC
SITE HINMAN ROAD & PLATT ROAD
ADDRESS: WATERTOWN, CT 06795
APT FILING NUMBER: CT590240
DRAWN BY: CSH
DATE: 06/XX/20 CHECKED BY: BJP

SHEET TITLE:
PROPOSED DRAINAGE AREA MAP

SHEET NUMBER:
PDA-1



Routing Diagram for CT590240_Watertown - PR - Rev0
 Prepared by {enter your company name here}, Printed 6/15/2020
 HydroCAD® 10.00-22 s/n 07402 © 2018 HydroCAD Software Solutions LLC

CT590240_Watertown - PR - Rev0

Prepared by {enter your company name here}

HydroCAD® 10.00-22 s/n 07402 © 2018 HydroCAD Software Solutions LLC

Printed 6/15/2020

Page 2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.671	79	50-75% Grass cover, Fair, HSG C (PDA-1A)
1.927	65	Brush, Good, HSG C (PDA-2, PDA-3C, PDA-4, PDA-5)
0.485	73	Brush, Good, HSG D (PDA-2, PDA-4, PDA-5)
0.421	83	Brush, Poor, HSG D (PDA-3C)
0.358	91	Gravel roads, HSG D (PDA-1A, PDA-1B, PDA-2, PDA-3A)
13.225	78	Meadow, non-grazed, HSG D (PDA-1A, PDA-1B, PDA-2, PDA-3A, PDA-3B, PDA-3C, PDA-4, PDA-5)
0.194	98	Paved parking, HSG C (PDA-1A)
0.005	98	Paved parking, HSG D (PDA-1B)
17.286	77	TOTAL AREA

CT590240_Watertown - PR - Rev0

Prepared by {enter your company name here}

HydroCAD® 10.00-22 s/n 07402 © 2018 HydroCAD Software Solutions LLC

Printed 6/15/2020

Page 3

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
2.792	HSG C	PDA-1A, PDA-2, PDA-3C, PDA-4, PDA-5
14.494	HSG D	PDA-1A, PDA-1B, PDA-2, PDA-3A, PDA-3B, PDA-3C, PDA-4, PDA-5
0.000	Other	
17.286		TOTAL AREA

CT590240_Watertown - PR - Rev0

Prepared by {enter your company name here}

Printed 6/15/2020

HydroCAD® 10.00-22 s/n 07402 © 2018 HydroCAD Software Solutions LLC

Page 4

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.671	0.000	0.000	0.671	50-75% Grass cover, Fair	PDA-1A
0.000	0.000	1.927	0.485	0.000	2.412	Brush, Good	PDA-2, PDA-3C, PDA-4, PDA-5
0.000	0.000	0.000	0.421	0.000	0.421	Brush, Poor	PDA-3C
0.000	0.000	0.000	0.358	0.000	0.358	Gravel roads	PDA-1A, PDA-1B, PDA-2, PDA-3A
0.000	0.000	0.000	13.225	0.000	13.225	Meadow, non-grazed	PDA-1A, PDA-1B, PDA-2, PDA-3A, PDA-3B, PDA-3C, PDA-4, PDA-5
0.000	0.000	0.194	0.005	0.000	0.199	Paved parking	PDA-1A, PDA-1B
0.000	0.000	2.792	14.494	0.000	17.286	TOTAL AREA	

CT590240_Watertown - PR - Rev0

Prepared by {enter your company name here}

Printed 6/15/2020

HydroCAD® 10.00-22 s/n 07402 © 2018 HydroCAD Software Solutions LLC

Page 5

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	B-3	776.50	776.00	37.0	0.0135	0.013	12.0	0.0	0.0

CT590240_Watertown - PR - Rev0

Type III 24-hr 2 YR Rainfall=3.55"

Prepared by {enter your company name here}

Printed 6/15/2020

HydroCAD® 10.00-22 s/n 07402 © 2018 HydroCAD Software Solutions LLC

Page 6

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment PDA-1A: PDA-1A	Runoff Area=1.727 ac 11.23% Impervious Runoff Depth=1.75" Flow Length=417' Tc=15.9 min CN=81 Runoff=2.60 cfs 0.252 af
Subcatchment PDA-1B: PDA-1B	Runoff Area=1.557 ac 0.32% Impervious Runoff Depth=1.60" Flow Length=445' Tc=12.5 min CN=79 Runoff=2.32 cfs 0.208 af
Subcatchment PDA-2: PDA-2	Runoff Area=4.697 ac 0.00% Impervious Runoff Depth=1.47" Flow Length=352' Tc=9.0 min CN=77 Runoff=7.03 cfs 0.574 af
Subcatchment PDA-3A: PDA-3A	Runoff Area=2.735 ac 0.00% Impervious Runoff Depth=1.54" Flow Length=481' Tc=11.3 min CN=78 Runoff=4.05 cfs 0.350 af
Subcatchment PDA-3B: PDA-3	Runoff Area=2.881 ac 0.00% Impervious Runoff Depth=1.54" Flow Length=300' Slope=0.1100 '/' Tc=8.3 min CN=78 Runoff=4.66 cfs 0.369 af
Subcatchment PDA-3C: PDA-3C	Runoff Area=1.801 ac 0.00% Impervious Runoff Depth=1.54" Tc=6.0 min CN=78 Runoff=3.15 cfs 0.230 af
Subcatchment PDA-4: PDA-4	Runoff Area=0.957 ac 0.00% Impervious Runoff Depth=0.98" Flow Length=445' Tc=16.2 min CN=69 Runoff=0.73 cfs 0.078 af
Subcatchment PDA-5: PDA-5	Runoff Area=0.931 ac 0.00% Impervious Runoff Depth=0.83" Flow Length=475' Tc=17.6 min CN=66 Runoff=0.54 cfs 0.064 af
Reach SW-3: SW-3	Avg. Flow Depth=0.44' Max Vel=3.14 fps Inflow=4.66 cfs 0.369 af n=0.030 L=380.0' S=0.0197 '/' Capacity=118.09 cfs Outflow=4.53 cfs 0.369 af
Pond B-1: B-1	Peak Elev=785.12' Storage=4,329 cf Inflow=2.32 cfs 0.208 af Discarded=0.00 cfs 0.023 af Primary=0.58 cfs 0.111 af Outflow=0.58 cfs 0.134 af
Pond B-2: B-2	Peak Elev=781.53' Storage=24,057 cf Inflow=7.03 cfs 0.574 af Discarded=0.02 cfs 0.074 af Primary=0.08 cfs 0.011 af Outflow=0.09 cfs 0.086 af
Pond B-3: B-3	Peak Elev=778.42' Storage=14,854 cf Inflow=8.56 cfs 0.719 af Discarded=0.05 cfs 0.230 af Primary=0.93 cfs 0.486 af Outflow=0.98 cfs 0.716 af
Link AP-1: AP-1	Inflow=2.60 cfs 0.374 af Primary=2.60 cfs 0.374 af
Link AP-2: AP-2	Inflow=3.15 cfs 0.716 af Primary=3.15 cfs 0.716 af
Link AP-3: AP-3	Inflow=0.73 cfs 0.078 af Primary=0.73 cfs 0.078 af
Link AP-4: AP-4	Inflow=0.54 cfs 0.064 af Primary=0.54 cfs 0.064 af

CT590240_Watertown - PR - Rev0

Prepared by {enter your company name here}

HydroCAD® 10.00-22 s/n 07402 © 2018 HydroCAD Software Solutions LLC

Type III 24-hr 2 YR Rainfall=3.55"

Printed 6/15/2020

Page 7

Total Runoff Area = 17.286 ac Runoff Volume = 2.126 af Average Runoff Depth = 1.48"
98.85% Pervious = 17.087 ac 1.15% Impervious = 0.199 ac

Summary for Subcatchment PDA-1A: PDA-1A

Runoff = 2.60 cfs @ 12.22 hrs, Volume= 0.252 af, Depth= 1.75"

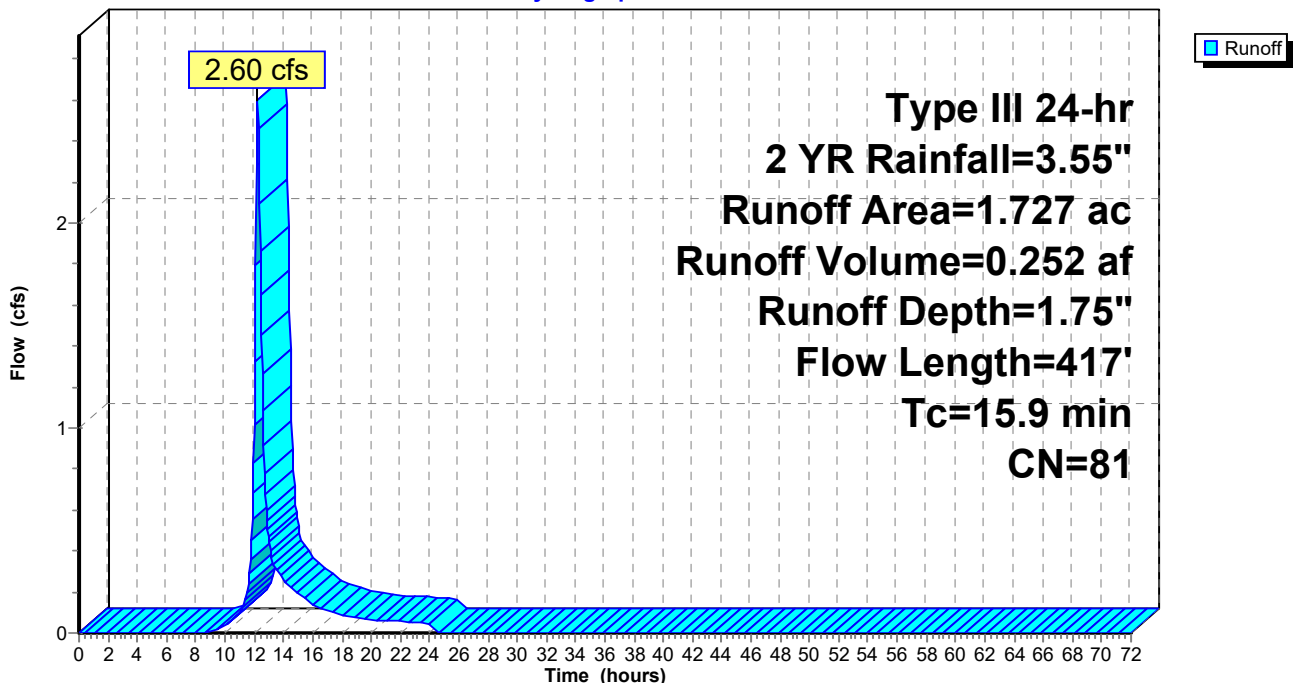
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 YR Rainfall=3.55"

Area (ac)	CN	Description
0.671	79	50-75% Grass cover, Fair, HSG C
0.194	98	Paved parking, HSG C
0.826	78	Meadow, non-grazed, HSG D
0.036	91	Gravel roads, HSG D
1.727	81	Weighted Average
1.533		88.77% Pervious Area
0.194		11.23% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0200	0.12		Sheet Flow, A-B Grass: Dense n= 0.240 P2= 3.55"
2.2	247	0.0688	1.84		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
0.2	70	0.0714	5.42		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
15.9	417	Total			

Subcatchment PDA-1A: PDA-1A

Hydrograph



Summary for Subcatchment PDA-1B: PDA-1B

Runoff = 2.32 cfs @ 12.18 hrs, Volume= 0.208 af, Depth= 1.60"

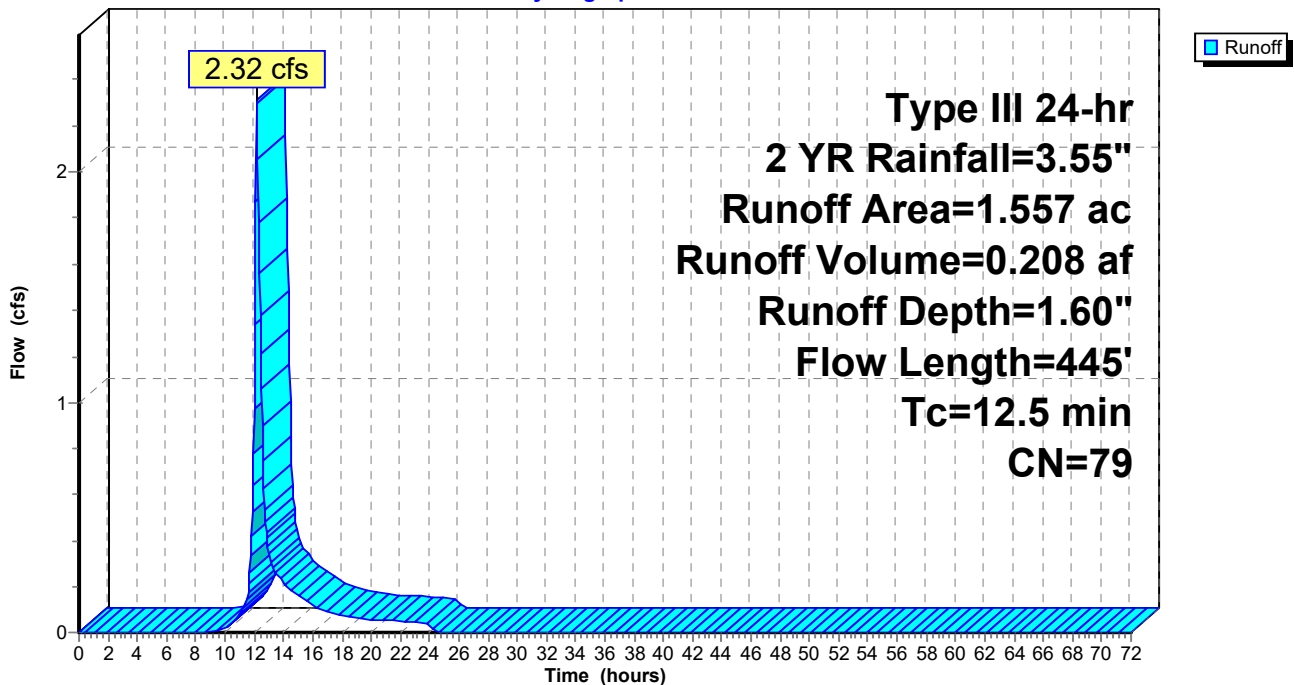
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 YR Rainfall=3.55"

Area (ac)	CN	Description
0.005	98	Paved parking, HSG D
1.416	78	Meadow, non-grazed, HSG D
0.136	91	Gravel roads, HSG D
1.557	79	Weighted Average
1.552		99.68% Pervious Area
0.005		0.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.0550	0.18		Sheet Flow, A-B Grass: Dense n= 0.240 P2= 3.55"
2.3	189	0.0370	1.35		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
1.2	156	0.0962	2.17		Shallow Concentrated Flow, C-D Short Grass Pasture Kv= 7.0 fps
12.5	445	Total			

Subcatchment PDA-1B: PDA-1B

Hydrograph



Summary for Subcatchment PDA-2: PDA-2

Runoff = 7.03 cfs @ 12.14 hrs, Volume= 0.574 af, Depth= 1.47"

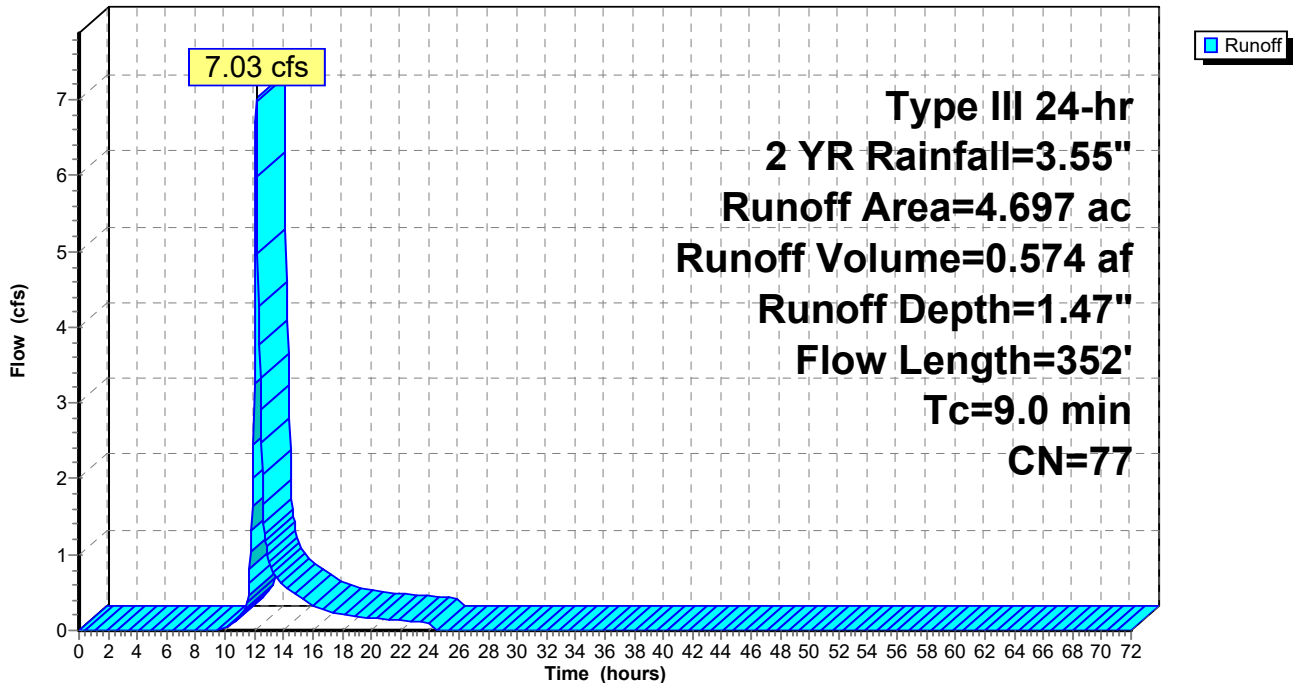
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2 YR Rainfall=3.55"

Area (ac)	CN	Description
0.434	65	Brush, Good, HSG C
0.032	73	Brush, Good, HSG D
4.075	78	Meadow, non-grazed, HSG D
0.156	91	Gravel roads, HSG D
4.697	77	Weighted Average
4.697		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	100	0.1000	0.23		Sheet Flow, A-B Grass: Dense n= 0.240 P2= 3.55"
1.9	252	0.1032	2.25		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
9.0	352	Total			

Subcatchment PDA-2: PDA-2

Hydrograph



Summary for Subcatchment PDA-3A: PDA-3A

Runoff = 4.05 cfs @ 12.16 hrs, Volume= 0.350 af, Depth= 1.54"

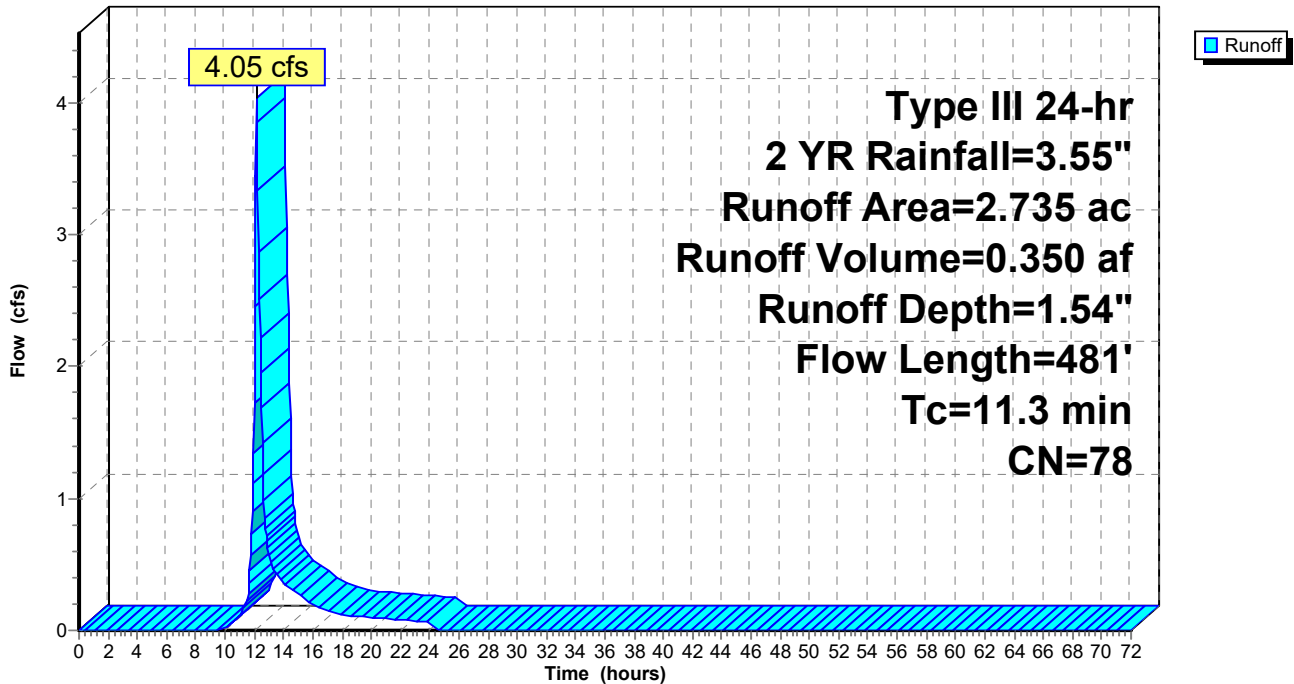
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 YR Rainfall=3.55"

Area (ac)	CN	Description
2.705	78	Meadow, non-grazed, HSG D
0.030	91	Gravel roads, HSG D
2.735	78	Weighted Average
2.735		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.8	100	0.0800	0.21		Sheet Flow, A-B Grass: Dense n= 0.240 P2= 3.55"
3.5	381	0.0656	1.79		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
11.3	481	Total			

Subcatchment PDA-3A: PDA-3A

Hydrograph



Summary for Subcatchment PDA-3B: PDA-3

Runoff = 4.66 cfs @ 12.12 hrs, Volume= 0.369 af, Depth= 1.54"

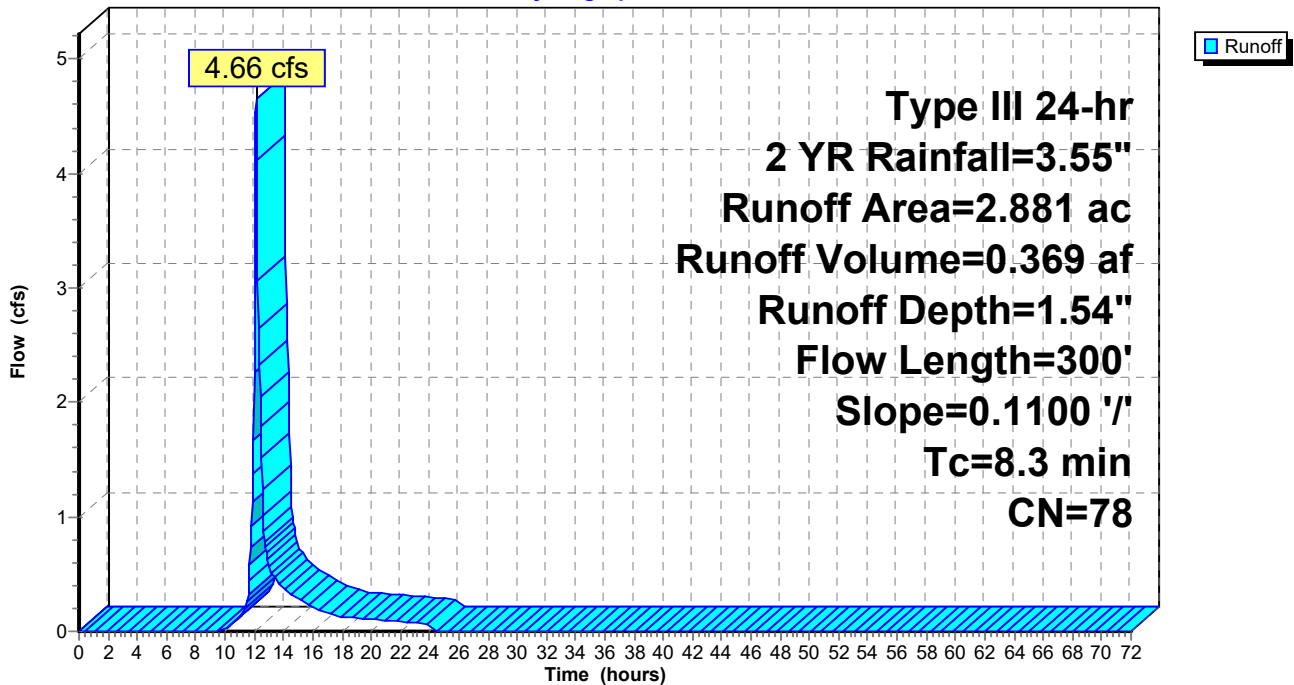
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2 YR Rainfall=3.55"

Area (ac)	CN	Description
2.881	78	Meadow, non-grazed, HSG D
2.881		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	100	0.1100	0.24		Sheet Flow, A-B Grass: Dense n= 0.240 P2= 3.55"
1.4	200	0.1100	2.32		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
8.3	300	Total			

Subcatchment PDA-3B: PDA-3

Hydrograph



Summary for Subcatchment PDA-3C: PDA-3C

Runoff = 3.15 cfs @ 12.10 hrs, Volume= 0.230 af, Depth= 1.54"

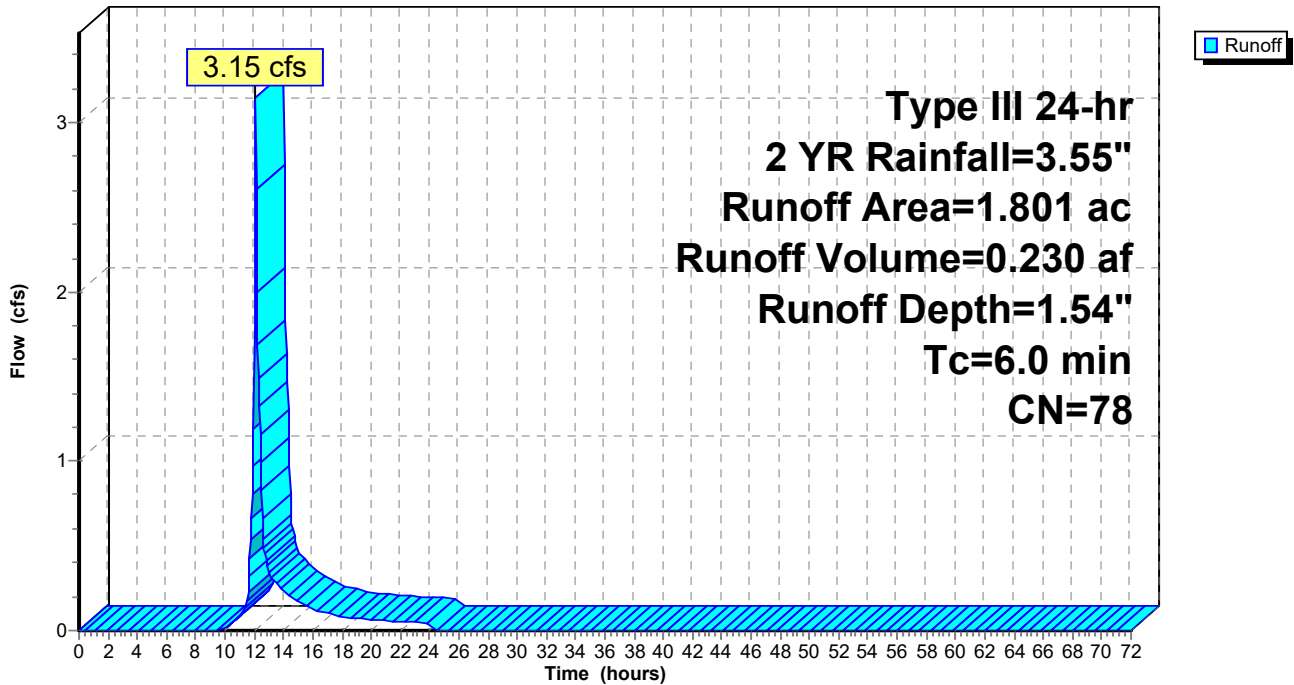
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2 YR Rainfall=3.55"

Area (ac)	CN	Description
0.111	65	Brush, Good, HSG C
0.421	83	Brush, Poor, HSG D
1.269	78	Meadow, non-grazed, HSG D
1.801	78	Weighted Average
1.801		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment PDA-3C: PDA-3C

Hydrograph



Summary for Subcatchment PDA-4: PDA-4

Runoff = 0.73 cfs @ 12.25 hrs, Volume= 0.078 af, Depth= 0.98"

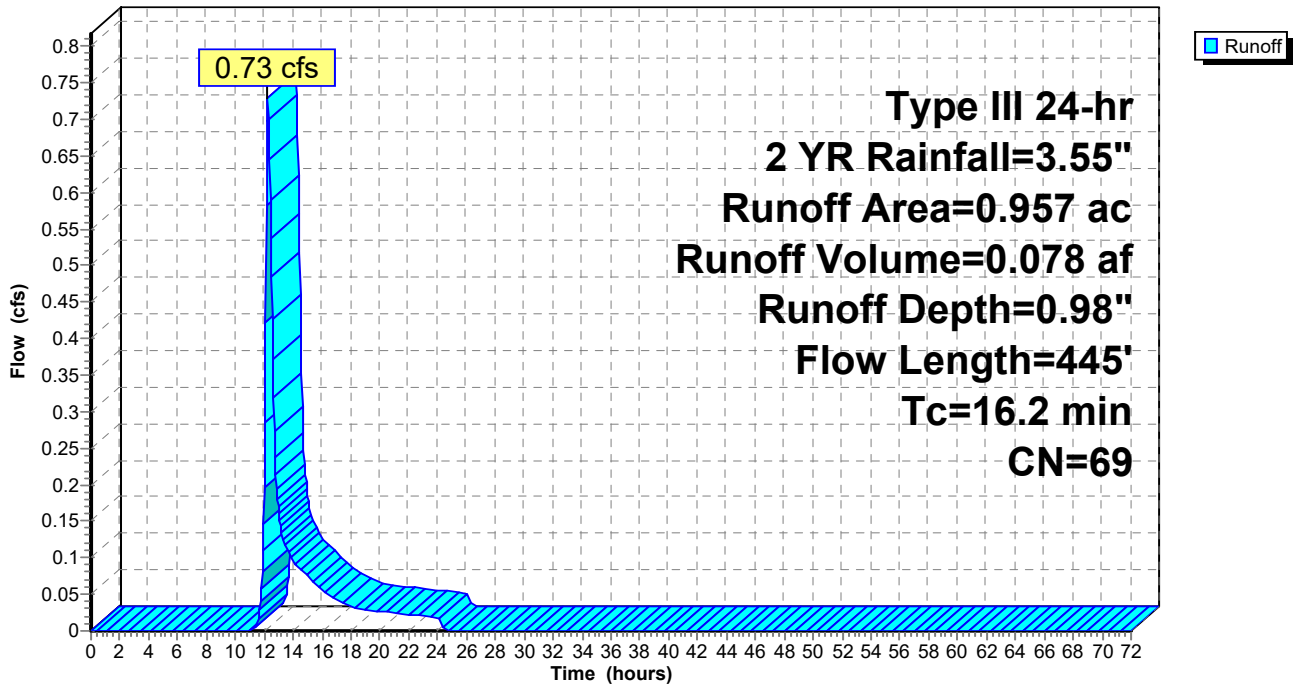
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2 YR Rainfall=3.55"

Area (ac)	CN	Description
0.546	65	Brush, Good, HSG C
0.365	73	Brush, Good, HSG D
0.046	78	Meadow, non-grazed, HSG D
0.957	69	Weighted Average
0.957		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	100	0.0750	0.14		Sheet Flow, A-B Woods: Light underbrush n= 0.400 P2= 3.55"
4.2	345	0.0754	1.37		Shallow Concentrated Flow, B-C Woodland Kv= 5.0 fps
16.2	445	Total			

Subcatchment PDA-4: PDA-4

Hydrograph



Summary for Subcatchment PDA-5: PDA-5

Runoff = 0.54 cfs @ 12.28 hrs, Volume= 0.064 af, Depth= 0.83"

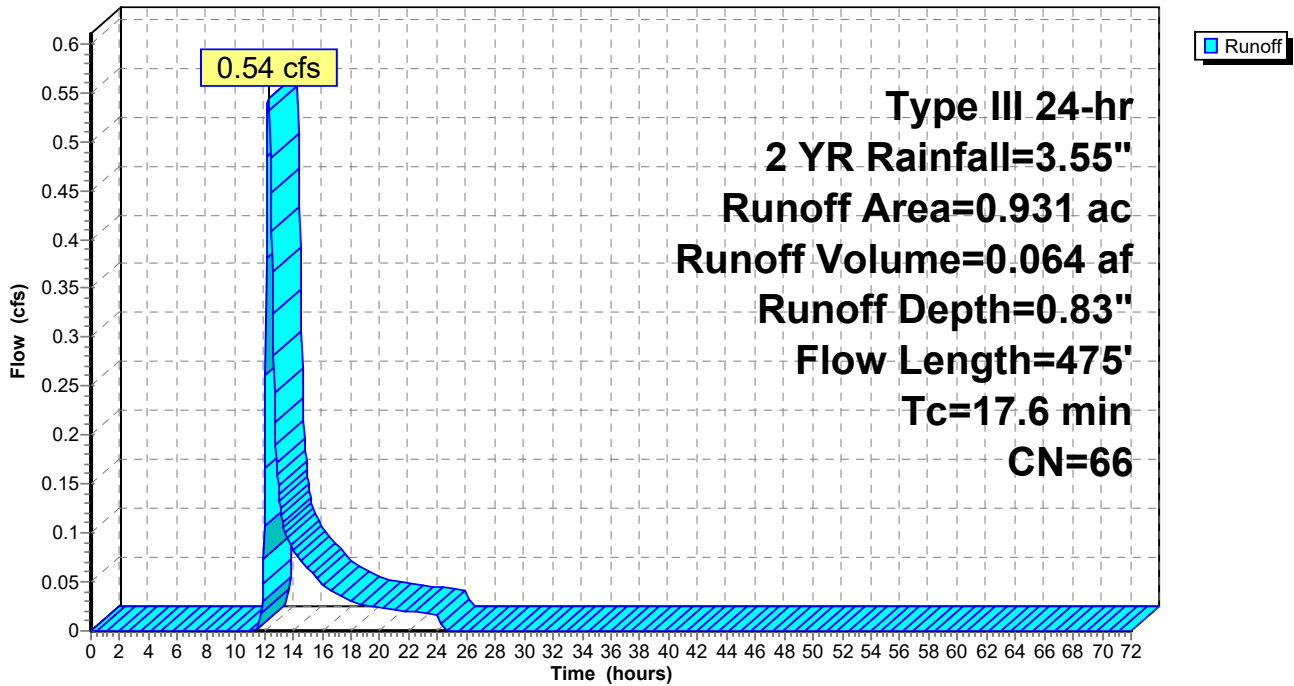
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2 YR Rainfall=3.55"

Area (ac)	CN	Description
0.836	65	Brush, Good, HSG C
0.088	73	Brush, Good, HSG D
0.007	78	Meadow, non-grazed, HSG D
0.931	66	Weighted Average
0.931		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	100	0.0600	0.13		Sheet Flow, A-B Woods: Light underbrush n= 0.400 P2= 3.55"
4.5	375	0.0787	1.40		Shallow Concentrated Flow, B-C Woodland Kv= 5.0 fps
17.6	475	Total			

Subcatchment PDA-5: PDA-5

Hydrograph



Summary for Reach SW-3: SW-3

Inflow Area = 2.881 ac, 0.00% Impervious, Inflow Depth = 1.54" for 2 YR event
 Inflow = 4.66 cfs @ 12.12 hrs, Volume= 0.369 af
 Outflow = 4.53 cfs @ 12.15 hrs, Volume= 0.369 af, Atten= 3%, Lag= 1.8 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Max. Velocity= 3.14 fps, Min. Travel Time= 2.0 min
 Avg. Velocity = 1.08 fps, Avg. Travel Time= 5.8 min

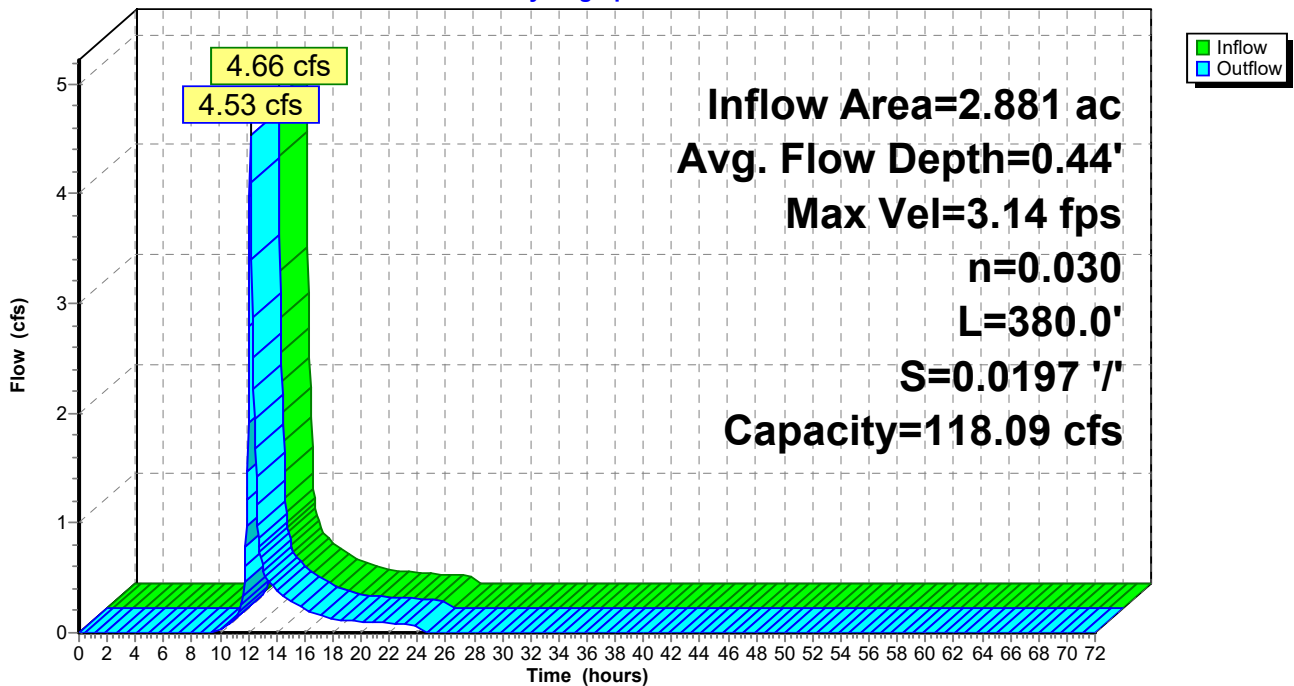
Peak Storage= 548 cf @ 12.15 hrs
 Average Depth at Peak Storage= 0.44'
 Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 118.09 cfs

2.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
 Side Slope Z-value= 3.0 '/' Top Width= 14.00'
 Length= 380.0' Slope= 0.0197 '/'
 Inlet Invert= 786.00', Outlet Invert= 778.50'



Reach SW-3: SW-3

Hydrograph



Summary for Pond B-1: B-1

Inflow Area = 1.557 ac, 0.32% Impervious, Inflow Depth = 1.60" for 2 YR event
 Inflow = 2.32 cfs @ 12.18 hrs, Volume= 0.208 af
 Outflow = 0.58 cfs @ 12.68 hrs, Volume= 0.134 af, Atten= 75%, Lag= 29.8 min
 Discarded = 0.00 cfs @ 12.68 hrs, Volume= 0.023 af
 Primary = 0.58 cfs @ 12.68 hrs, Volume= 0.111 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 785.12' @ 12.68 hrs Surf.Area= 2,757 sf Storage= 4,329 cf

Plug-Flow detention time= 468.6 min calculated for 0.134 af (64% of inflow)
 Center-of-Mass det. time= 360.5 min (1,207.1 - 846.6)

Volume	Invert	Avail.Storage	Storage Description
#1	783.00'	10,833 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
783.00	1,359	0	0
784.00	1,984	1,672	1,672
785.00	2,666	2,325	3,997
786.00	3,404	3,035	7,032
787.00	4,199	3,802	10,833

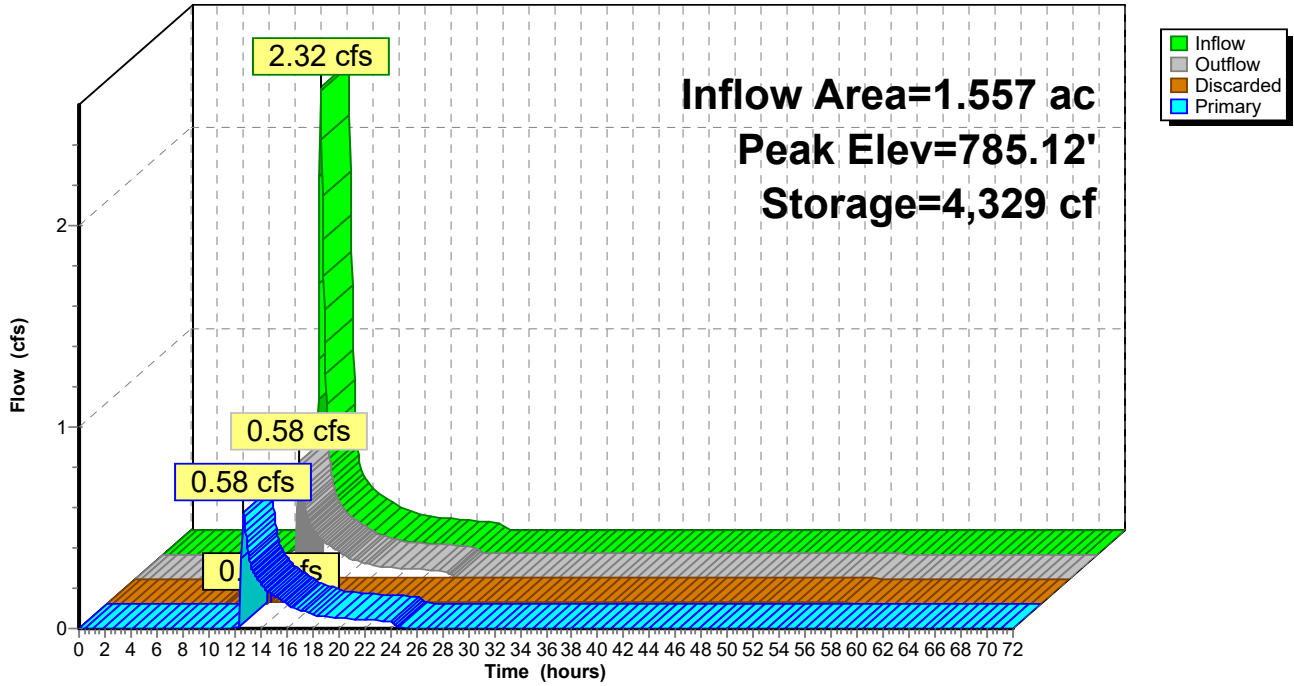
Device	Routing	Invert	Outlet Devices
#1	Discarded	783.00'	0.054 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 779.50'
#2	Primary	785.00'	5.0' long x 22.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.00 cfs @ 12.68 hrs HW=785.12' (Free Discharge)
 ↑1=Exfiltration (Controls 0.00 cfs)

Primary OutFlow Max=0.57 cfs @ 12.68 hrs HW=785.12' TW=0.00' (Dynamic Tailwater)
 ↑2=Broad-Crested Rectangular Weir (Weir Controls 0.57 cfs @ 0.94 fps)

Pond B-1: B-1

Hydrograph



Summary for Pond B-2: B-2

Inflow Area = 4.697 ac, 0.00% Impervious, Inflow Depth = 1.47" for 2 YR event
 Inflow = 7.03 cfs @ 12.14 hrs, Volume= 0.574 af
 Outflow = 0.09 cfs @ 24.07 hrs, Volume= 0.086 af, Atten= 99%, Lag= 716.1 min
 Discarded = 0.02 cfs @ 24.07 hrs, Volume= 0.074 af
 Primary = 0.08 cfs @ 24.07 hrs, Volume= 0.011 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 781.53' @ 24.07 hrs Surf.Area= 11,881 sf Storage= 24,057 cf

Plug-Flow detention time= 1,652.1 min calculated for 0.086 af (15% of inflow)
 Center-of-Mass det. time= 1,503.6 min (2,353.1 - 849.4)

Volume	Invert	Avail.Storage	Storage Description
#1	779.00'	43,605 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
779.00	7,183	0	0
780.00	8,991	8,087	8,087
781.00	10,859	9,925	18,012
782.00	12,782	11,821	29,833
783.00	14,762	13,772	43,605

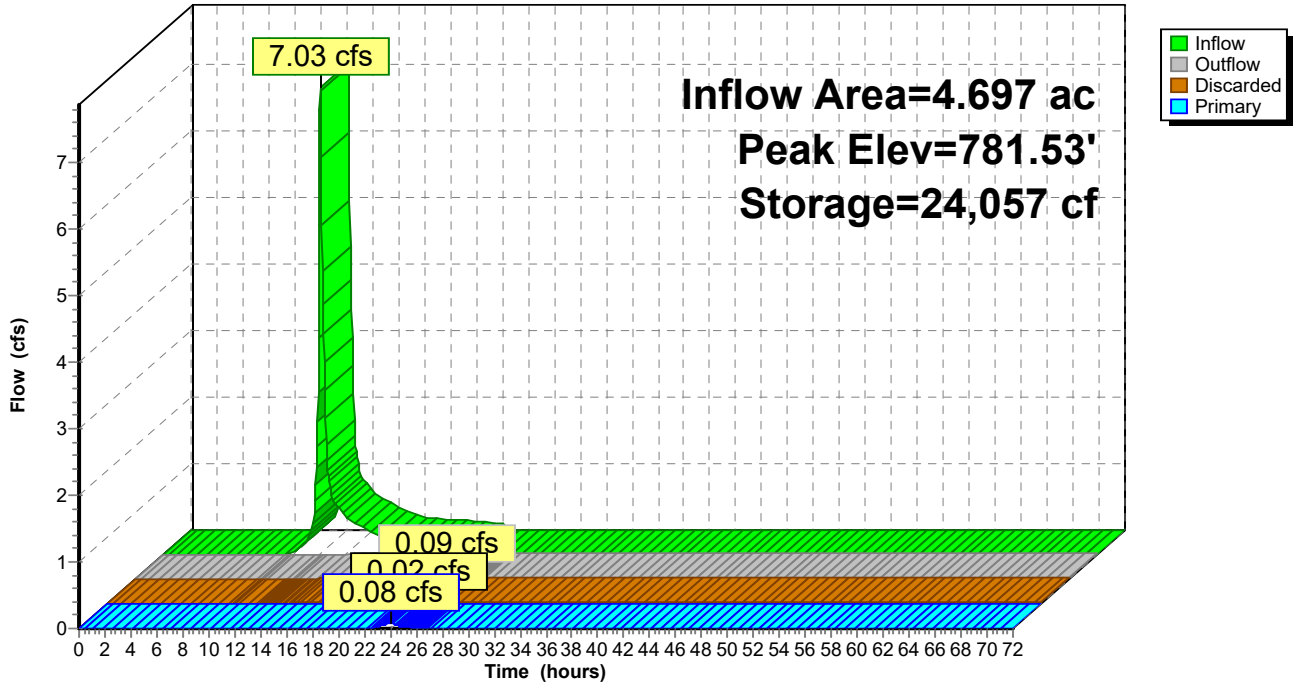
Device	Routing	Invert	Outlet Devices
#1	Discarded	779.00'	0.047 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 768.00'
#2	Primary	781.50'	5.0' long x 22.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.02 cfs @ 24.07 hrs HW=781.53' (Free Discharge)
 ↑1=Exfiltration (Controls 0.02 cfs)

Primary OutFlow Max=0.08 cfs @ 24.07 hrs HW=781.53' TW=0.00' (Dynamic Tailwater)
 ↑2=Broad-Crested Rectangular Weir (Weir Controls 0.08 cfs @ 0.48 fps)

Pond B-2: B-2

Hydrograph



Summary for Pond B-3: B-3

Inflow Area = 5.616 ac, 0.00% Impervious, Inflow Depth = 1.54" for 2 YR event
 Inflow = 8.56 cfs @ 12.16 hrs, Volume= 0.719 af
 Outflow = 0.98 cfs @ 13.24 hrs, Volume= 0.716 af, Atten= 89%, Lag= 65.1 min
 Discarded = 0.05 cfs @ 13.24 hrs, Volume= 0.230 af
 Primary = 0.93 cfs @ 13.24 hrs, Volume= 0.486 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 778.42' @ 13.24 hrs Surf.Area= 11,372 sf Storage= 14,854 cf

Plug-Flow detention time= 592.4 min calculated for 0.715 af (100% of inflow)
 Center-of-Mass det. time= 591.8 min (1,440.9 - 849.2)

Volume	Invert	Avail.Storage	Storage Description
#1	777.00'	48,687 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
777.00	9,581	0	0
778.00	10,827	10,204	10,204
779.00	12,129	11,478	21,682
780.00	13,488	12,809	34,491
781.00	14,904	14,196	48,687

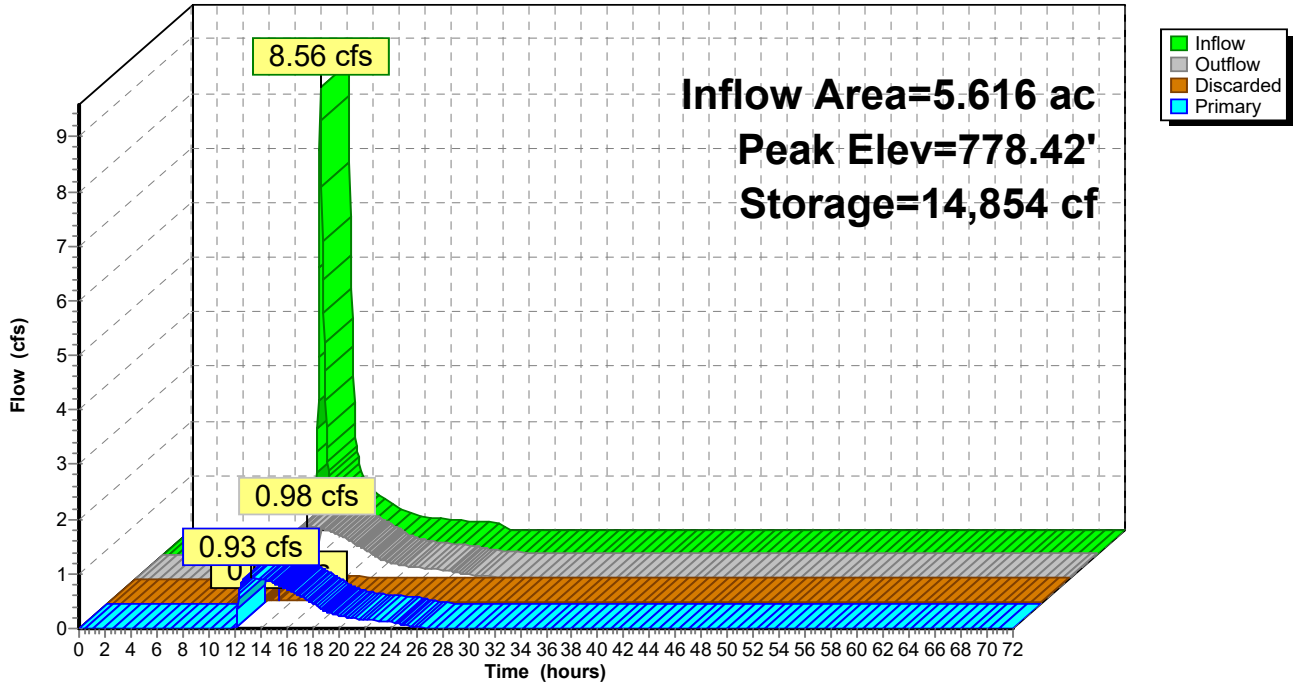
Device	Routing	Invert	Outlet Devices
#1	Discarded	777.00'	0.186 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 750.00'
#2	Primary	776.50'	12.0" Round Culvert L= 37.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 776.50' / 776.00' S= 0.0135 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	777.70'	12.0" W x 3.0" H Vert. Orifice/Grate C= 0.600
#4	Device 2	778.60'	12.0" Vert. Orifice/Grate C= 0.600
#5	Primary	779.00'	5.0' long x 22.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.05 cfs @ 13.24 hrs HW=778.42' (Free Discharge)
 ↳1=Exfiltration (Controls 0.05 cfs)

Primary OutFlow Max=0.93 cfs @ 13.24 hrs HW=778.42' TW=0.00' (Dynamic Tailwater)
 ↳2=Culvert (Passes 0.93 cfs of 4.50 cfs potential flow)
 ↳3=Orifice/Grate (Orifice Controls 0.93 cfs @ 3.70 fps)
 ↳4=Orifice/Grate (Controls 0.00 cfs)
 ↳5=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond B-3: B-3

Hydrograph



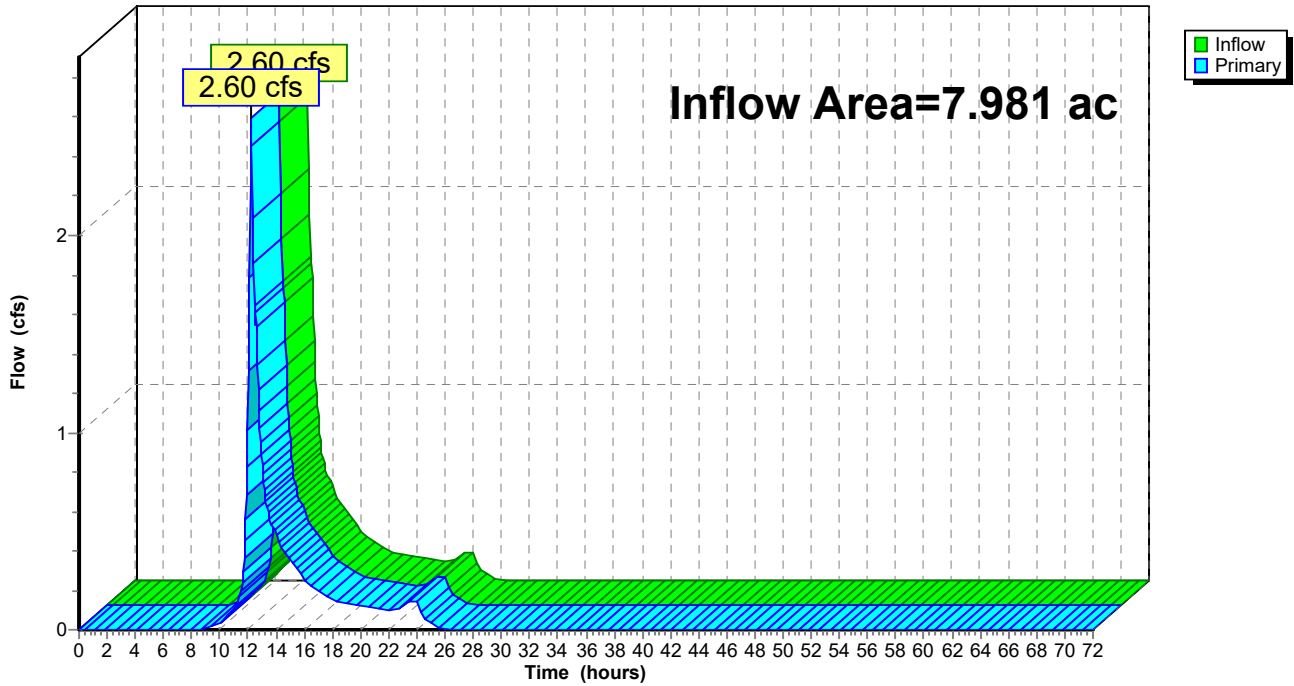
Summary for Link AP-1: AP-1

Inflow Area = 7.981 ac, 2.49% Impervious, Inflow Depth = 0.56" for 2 YR event
Inflow = 2.60 cfs @ 12.22 hrs, Volume= 0.374 af
Primary = 2.60 cfs @ 12.22 hrs, Volume= 0.374 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link AP-1: AP-1

Hydrograph



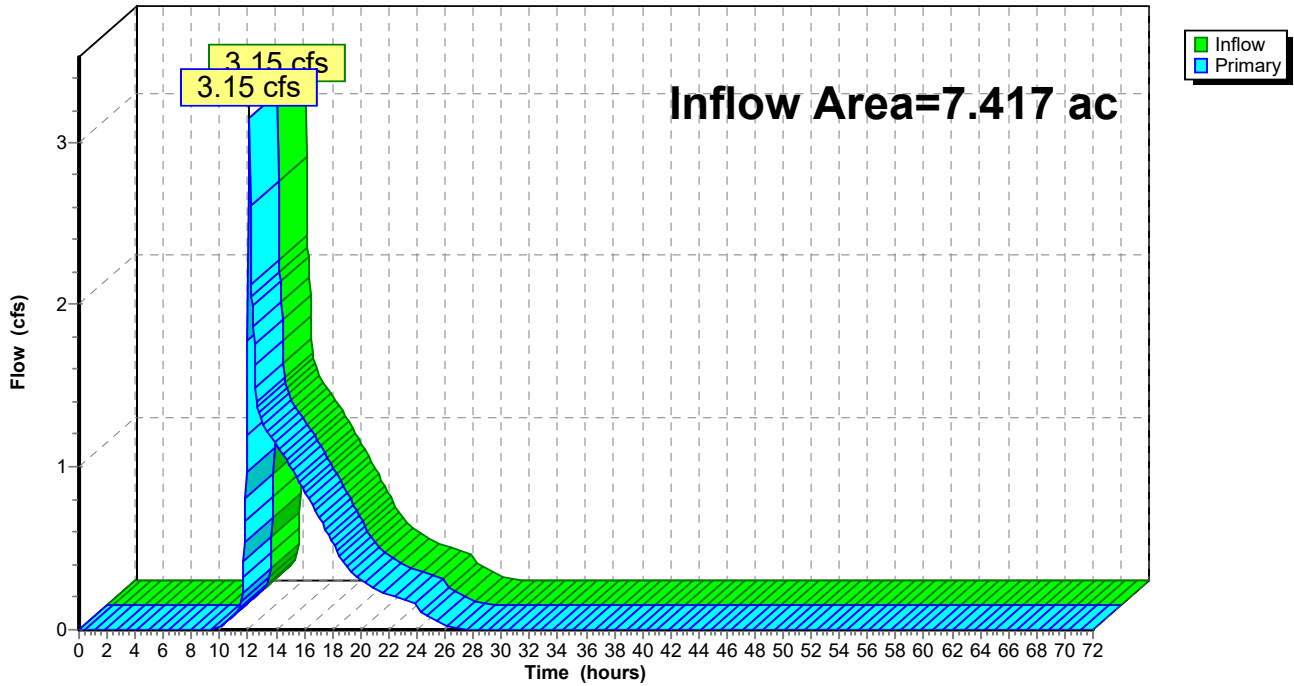
Summary for Link AP-2: AP-2

Inflow Area = 7.417 ac, 0.00% Impervious, Inflow Depth = 1.16" for 2 YR event
Inflow = 3.15 cfs @ 12.10 hrs, Volume= 0.716 af
Primary = 3.15 cfs @ 12.10 hrs, Volume= 0.716 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link AP-2: AP-2

Hydrograph



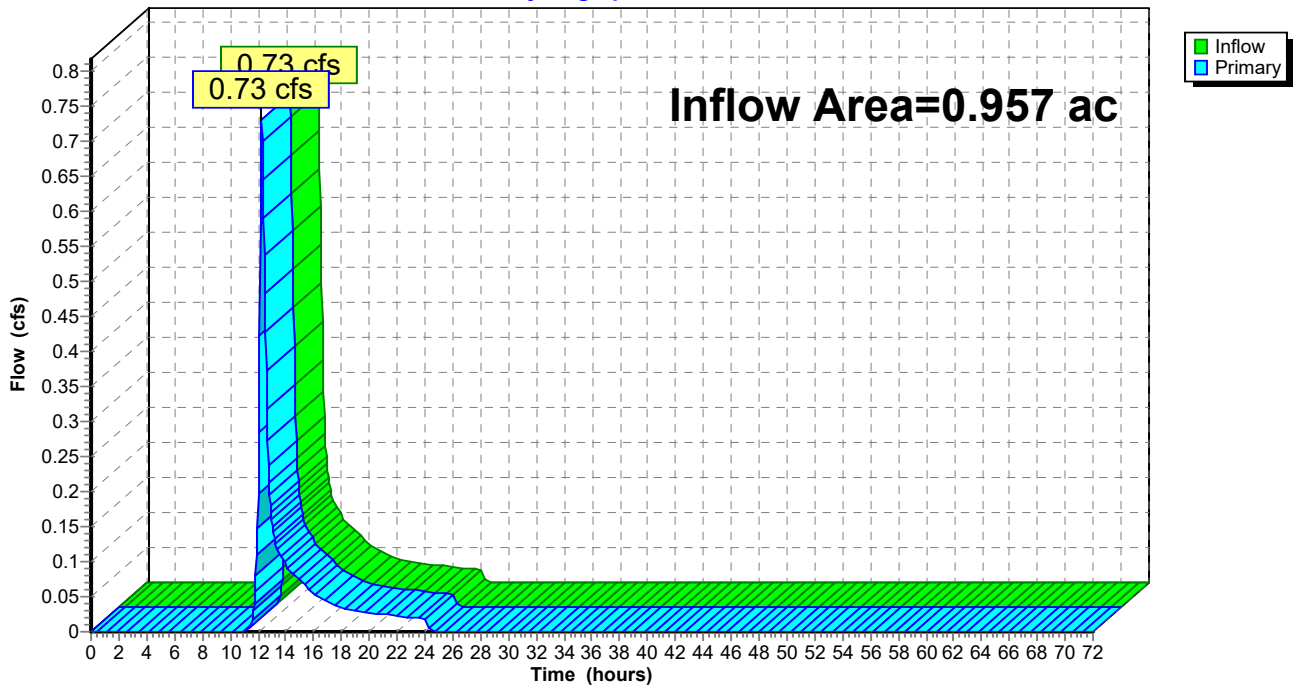
Summary for Link AP-3: AP-3

Inflow Area = 0.957 ac, 0.00% Impervious, Inflow Depth = 0.98" for 2 YR event
Inflow = 0.73 cfs @ 12.25 hrs, Volume= 0.078 af
Primary = 0.73 cfs @ 12.25 hrs, Volume= 0.078 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link AP-3: AP-3

Hydrograph



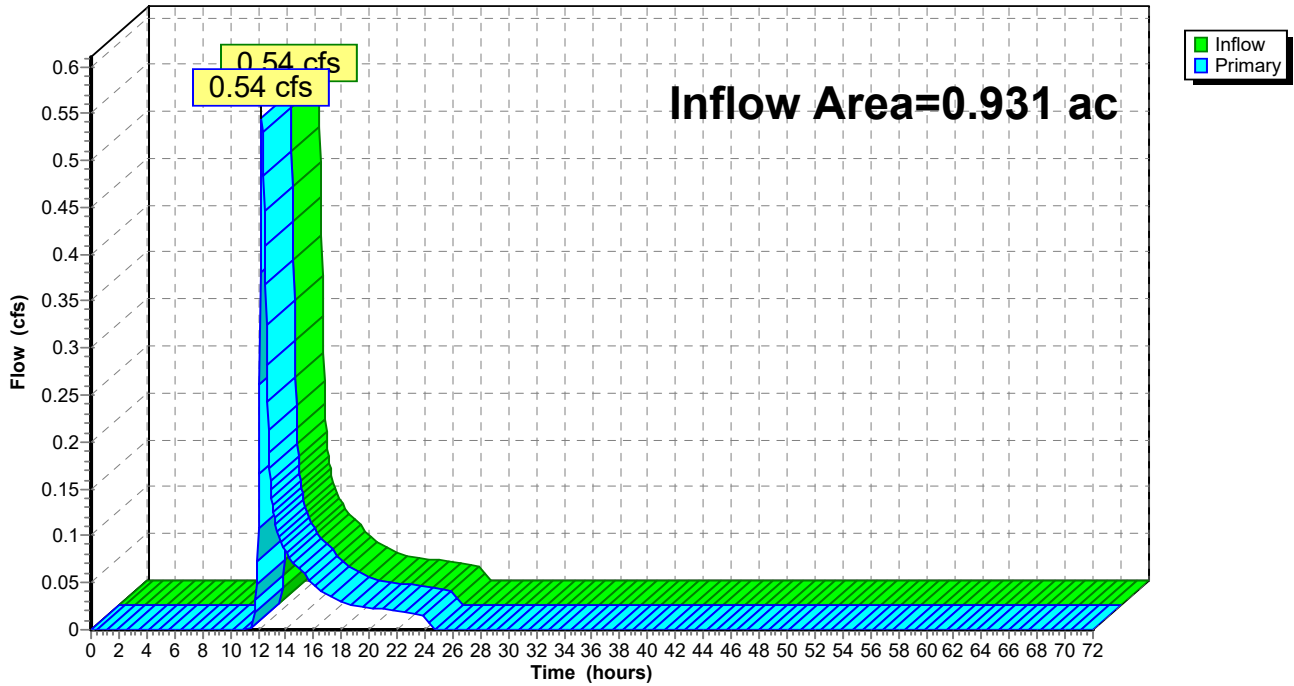
Summary for Link AP-4: AP-4

Inflow Area = 0.931 ac, 0.00% Impervious, Inflow Depth = 0.83" for 2 YR event
Inflow = 0.54 cfs @ 12.28 hrs, Volume= 0.064 af
Primary = 0.54 cfs @ 12.28 hrs, Volume= 0.064 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link AP-4: AP-4

Hydrograph



Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment PDA-1A: PDA-1A Runoff Area=1.727 ac 11.23% Impervious Runoff Depth=4.80"
Flow Length=417' Tc=15.9 min CN=81 Runoff=7.09 cfs 0.690 af

Subcatchment PDA-1B: PDA-1B Runoff Area=1.557 ac 0.32% Impervious Runoff Depth=4.58"
Flow Length=445' Tc=12.5 min CN=79 Runoff=6.68 cfs 0.594 af

Subcatchment PDA-2: PDA-2 Runoff Area=4.697 ac 0.00% Impervious Runoff Depth=4.36"
Flow Length=352' Tc=9.0 min CN=77 Runoff=21.16 cfs 1.705 af

Subcatchment PDA-3A: PDA-3A Runoff Area=2.735 ac 0.00% Impervious Runoff Depth=4.47"
Flow Length=481' Tc=11.3 min CN=78 Runoff=11.89 cfs 1.018 af

Subcatchment PDA-3B: PDA-3 Runoff Area=2.881 ac 0.00% Impervious Runoff Depth=4.47"
Flow Length=300' Slope=0.1100 '/' Tc=8.3 min CN=78 Runoff=13.69 cfs 1.072 af

Subcatchment PDA-3C: PDA-3C Runoff Area=1.801 ac 0.00% Impervious Runoff Depth=4.47"
Tc=6.0 min CN=78 Runoff=9.18 cfs 0.670 af

Subcatchment PDA-4: PDA-4 Runoff Area=0.957 ac 0.00% Impervious Runoff Depth=3.51"
Flow Length=445' Tc=16.2 min CN=69 Runoff=2.86 cfs 0.280 af

Subcatchment PDA-5: PDA-5 Runoff Area=0.931 ac 0.00% Impervious Runoff Depth=3.20"
Flow Length=475' Tc=17.6 min CN=66 Runoff=2.44 cfs 0.248 af

Reach SW-3: SW-3 Avg. Flow Depth=0.75' Max Vel=4.21 fps Inflow=13.69 cfs 1.072 af
n=0.030 L=380.0' S=0.0197 '/' Capacity=118.09 cfs Outflow=13.39 cfs 1.072 af

Pond B-1: B-1 Peak Elev=785.59' Storage=5,701 cf Inflow=6.68 cfs 0.594 af
Discarded=0.01 cfs 0.024 af Primary=6.13 cfs 0.495 af Outflow=6.14 cfs 0.519 af

Pond B-2: B-2 Peak Elev=782.22' Storage=32,721 cf Inflow=21.16 cfs 1.705 af
Discarded=0.02 cfs 0.078 af Primary=8.17 cfs 1.137 af Outflow=8.19 cfs 1.216 af

Pond B-3: B-3 Peak Elev=779.78' Storage=31,562 cf Inflow=25.22 cfs 2.090 af
Discarded=0.06 cfs 0.245 af Primary=13.92 cfs 1.837 af Outflow=13.99 cfs 2.082 af

Link AP-1: AP-1 Inflow=18.76 cfs 2.323 af
Primary=18.76 cfs 2.323 af

Link AP-2: AP-2 Inflow=17.73 cfs 2.508 af
Primary=17.73 cfs 2.508 af

Link AP-3: AP-3 Inflow=2.86 cfs 0.280 af
Primary=2.86 cfs 0.280 af

Link AP-4: AP-4 Inflow=2.44 cfs 0.248 af
Primary=2.44 cfs 0.248 af

CT590240_Watertown - PR - Rev0

Type III 24-hr 25 YR Rainfall=6.99"

Prepared by {enter your company name here}

Printed 6/15/2020

HydroCAD® 10.00-22 s/n 07402 © 2018 HydroCAD Software Solutions LLC

Page 28

Total Runoff Area = 17.286 ac Runoff Volume = 6.277 af Average Runoff Depth = 4.36"
98.85% Pervious = 17.087 ac 1.15% Impervious = 0.199 ac

Summary for Subcatchment PDA-1A: PDA-1A

Runoff = 7.09 cfs @ 12.22 hrs, Volume= 0.690 af, Depth= 4.80"

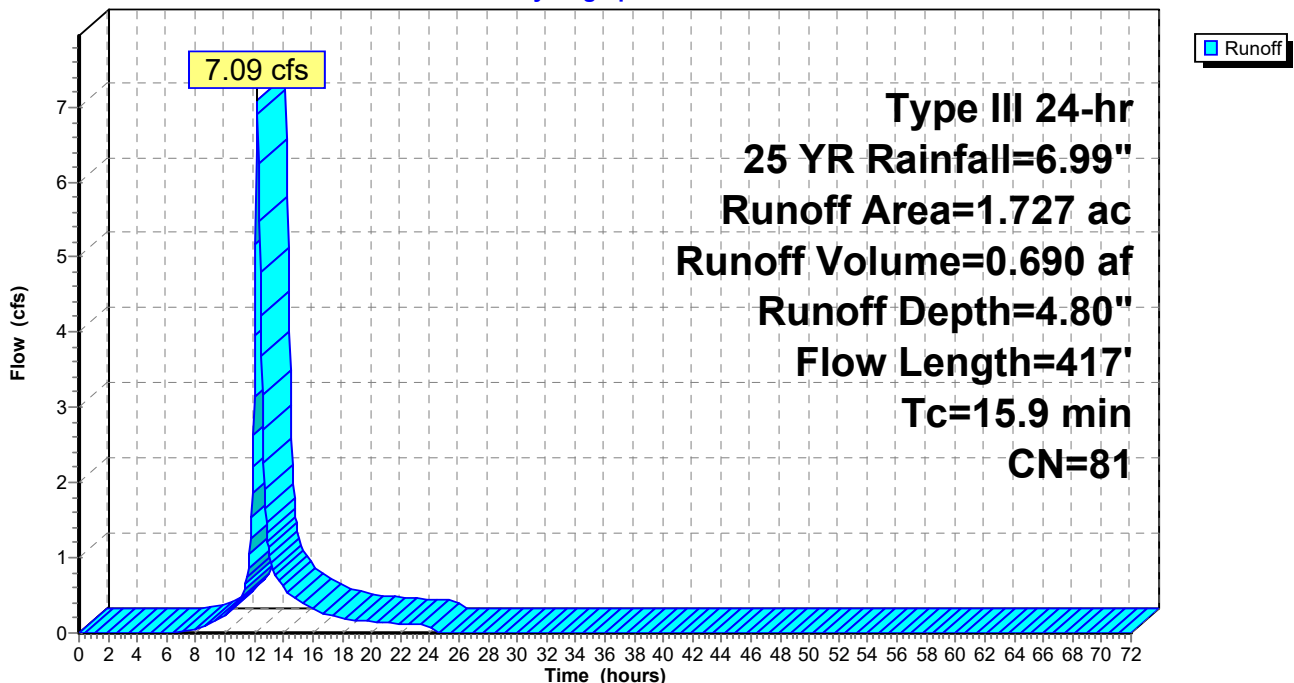
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25 YR Rainfall=6.99"

Area (ac)	CN	Description
0.671	79	50-75% Grass cover, Fair, HSG C
0.194	98	Paved parking, HSG C
0.826	78	Meadow, non-grazed, HSG D
0.036	91	Gravel roads, HSG D
1.727	81	Weighted Average
1.533		88.77% Pervious Area
0.194		11.23% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0200	0.12		Sheet Flow, A-B Grass: Dense n= 0.240 P2= 3.55"
2.2	247	0.0688	1.84		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
0.2	70	0.0714	5.42		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
15.9	417	Total			

Subcatchment PDA-1A: PDA-1A

Hydrograph



Summary for Subcatchment PDA-1B: PDA-1B

Runoff = 6.68 cfs @ 12.17 hrs, Volume= 0.594 af, Depth= 4.58"

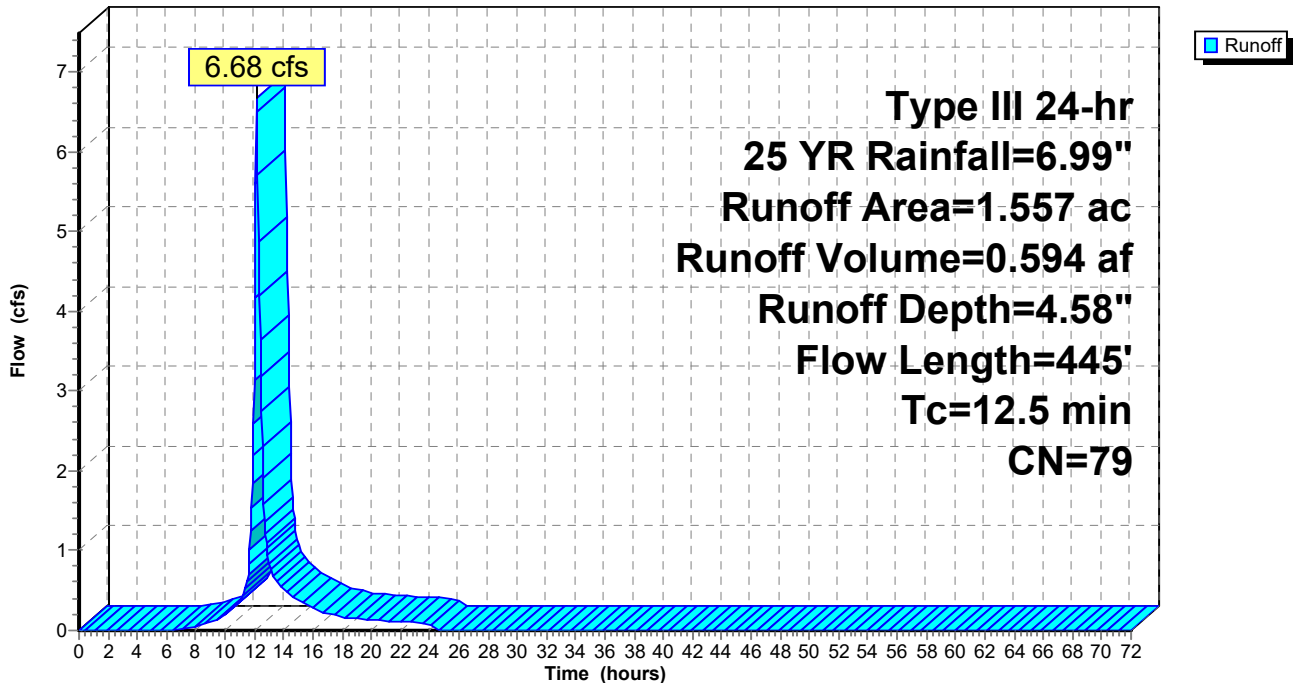
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25 YR Rainfall=6.99"

Area (ac)	CN	Description
0.005	98	Paved parking, HSG D
1.416	78	Meadow, non-grazed, HSG D
0.136	91	Gravel roads, HSG D
1.557	79	Weighted Average
1.552		99.68% Pervious Area
0.005		0.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.0550	0.18		Sheet Flow, A-B Grass: Dense n= 0.240 P2= 3.55"
2.3	189	0.0370	1.35		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
1.2	156	0.0962	2.17		Shallow Concentrated Flow, C-D Short Grass Pasture Kv= 7.0 fps
12.5	445	Total			

Subcatchment PDA-1B: PDA-1B

Hydrograph



Summary for Subcatchment PDA-2: PDA-2

Runoff = 21.16 cfs @ 12.13 hrs, Volume= 1.705 af, Depth= 4.36"

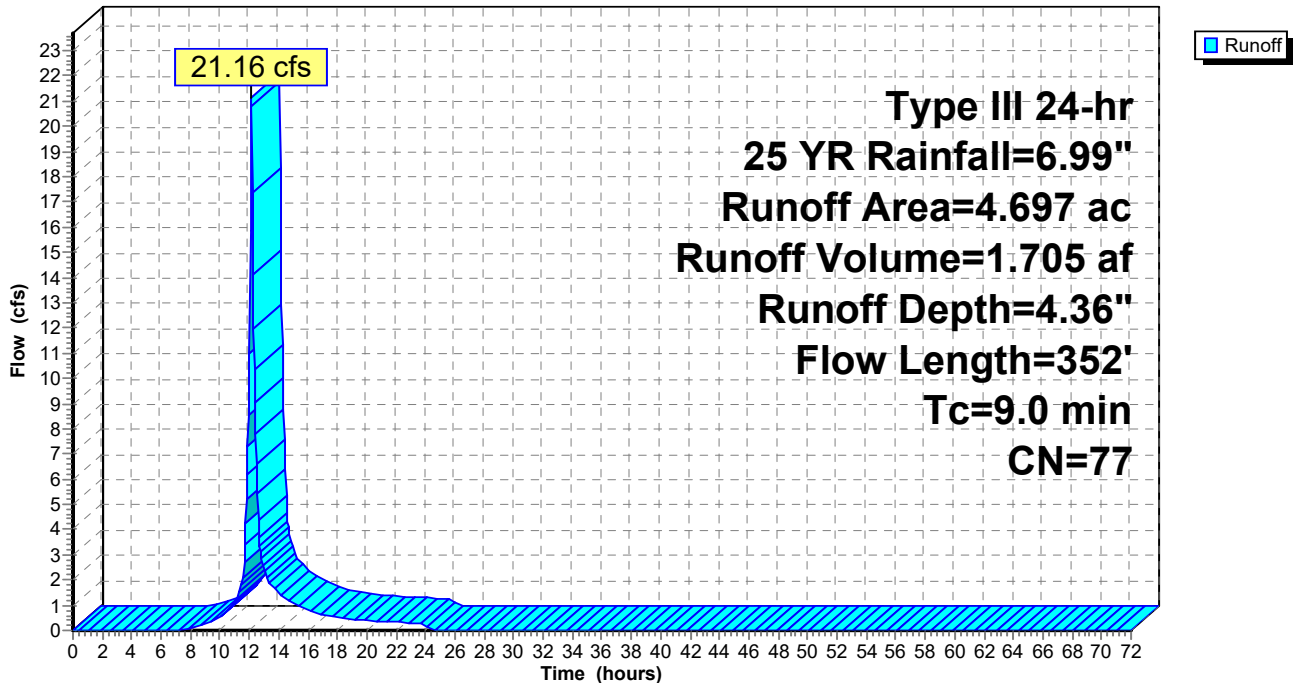
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=6.99"

Area (ac)	CN	Description
0.434	65	Brush, Good, HSG C
0.032	73	Brush, Good, HSG D
4.075	78	Meadow, non-grazed, HSG D
0.156	91	Gravel roads, HSG D
4.697	77	Weighted Average
4.697		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	100	0.1000	0.23		Sheet Flow, A-B Grass: Dense n= 0.240 P2= 3.55"
1.9	252	0.1032	2.25		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
9.0	352	Total			

Subcatchment PDA-2: PDA-2

Hydrograph



Summary for Subcatchment PDA-3A: PDA-3A

Runoff = 11.89 cfs @ 12.16 hrs, Volume= 1.018 af, Depth= 4.47"

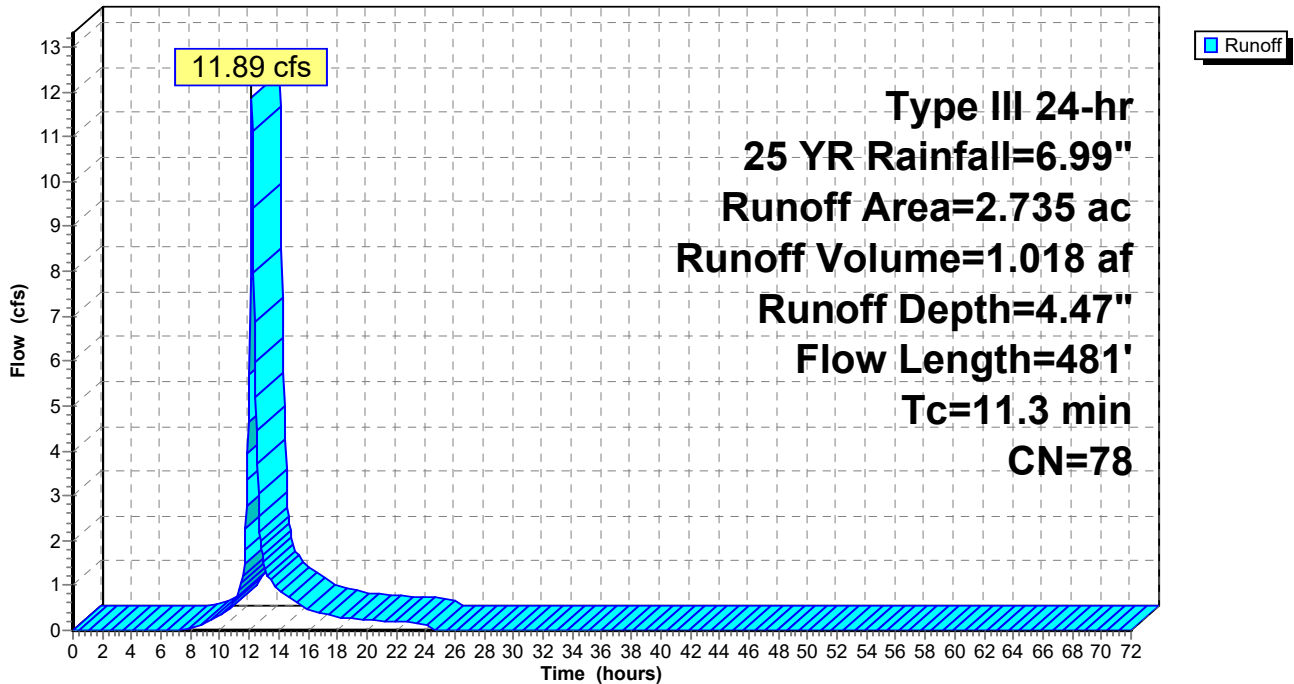
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25 YR Rainfall=6.99"

Area (ac)	CN	Description
2.705	78	Meadow, non-grazed, HSG D
0.030	91	Gravel roads, HSG D
2.735	78	Weighted Average
2.735		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.8	100	0.0800	0.21		Sheet Flow, A-B Grass: Dense n= 0.240 P2= 3.55"
3.5	381	0.0656	1.79		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
11.3	481	Total			

Subcatchment PDA-3A: PDA-3A

Hydrograph



Summary for Subcatchment PDA-3B: PDA-3

Runoff = 13.69 cfs @ 12.12 hrs, Volume= 1.072 af, Depth= 4.47"

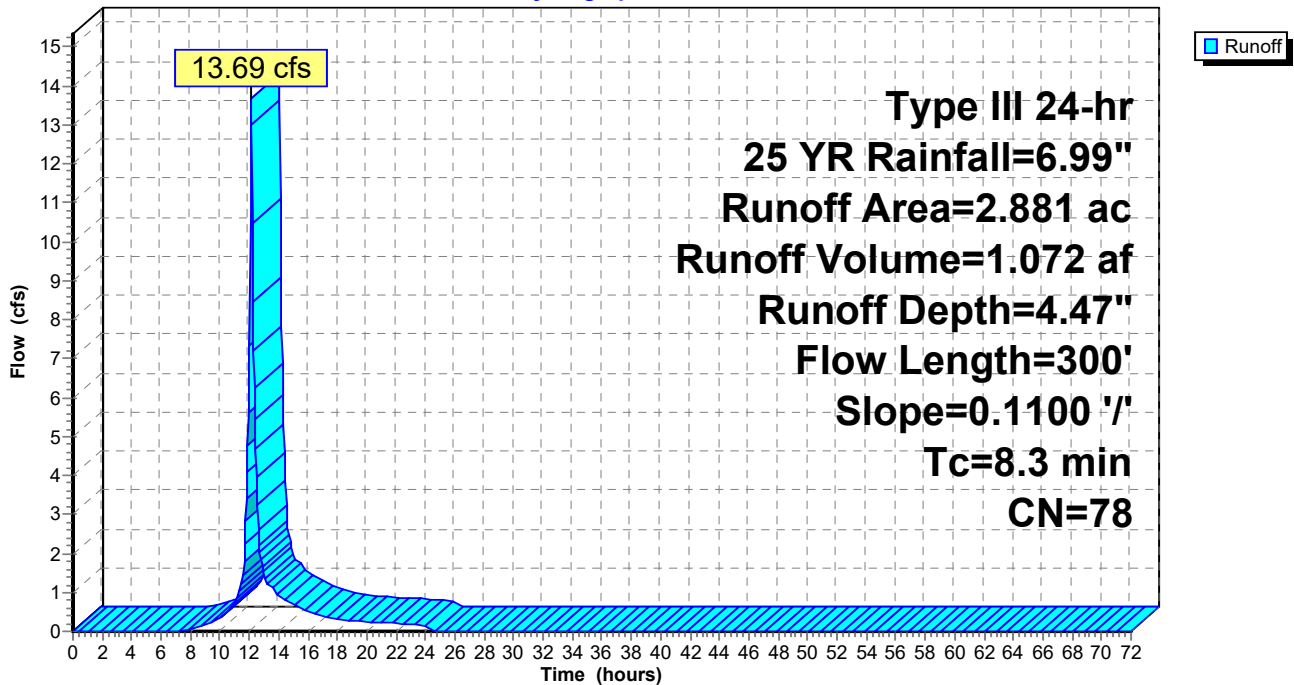
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25 YR Rainfall=6.99"

Area (ac)	CN	Description
2.881	78	Meadow, non-grazed, HSG D
2.881		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	100	0.1100	0.24		Sheet Flow, A-B Grass: Dense n= 0.240 P2= 3.55"
1.4	200	0.1100	2.32		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
8.3	300	Total			

Subcatchment PDA-3B: PDA-3

Hydrograph



Summary for Subcatchment PDA-3C: PDA-3C

Runoff = 9.18 cfs @ 12.09 hrs, Volume= 0.670 af, Depth= 4.47"

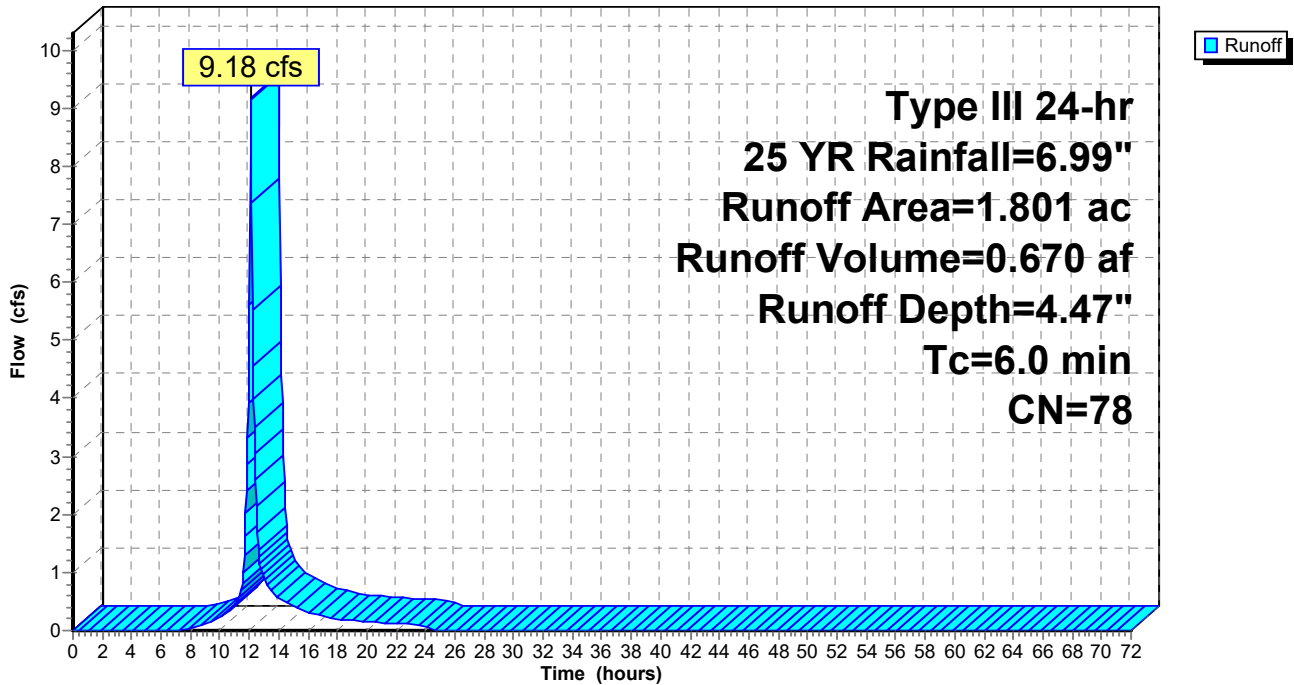
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25 YR Rainfall=6.99"

Area (ac)	CN	Description
0.111	65	Brush, Good, HSG C
0.421	83	Brush, Poor, HSG D
1.269	78	Meadow, non-grazed, HSG D
1.801	78	Weighted Average
1.801		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment PDA-3C: PDA-3C

Hydrograph



Summary for Subcatchment PDA-4: PDA-4

Runoff = 2.86 cfs @ 12.23 hrs, Volume= 0.280 af, Depth= 3.51"

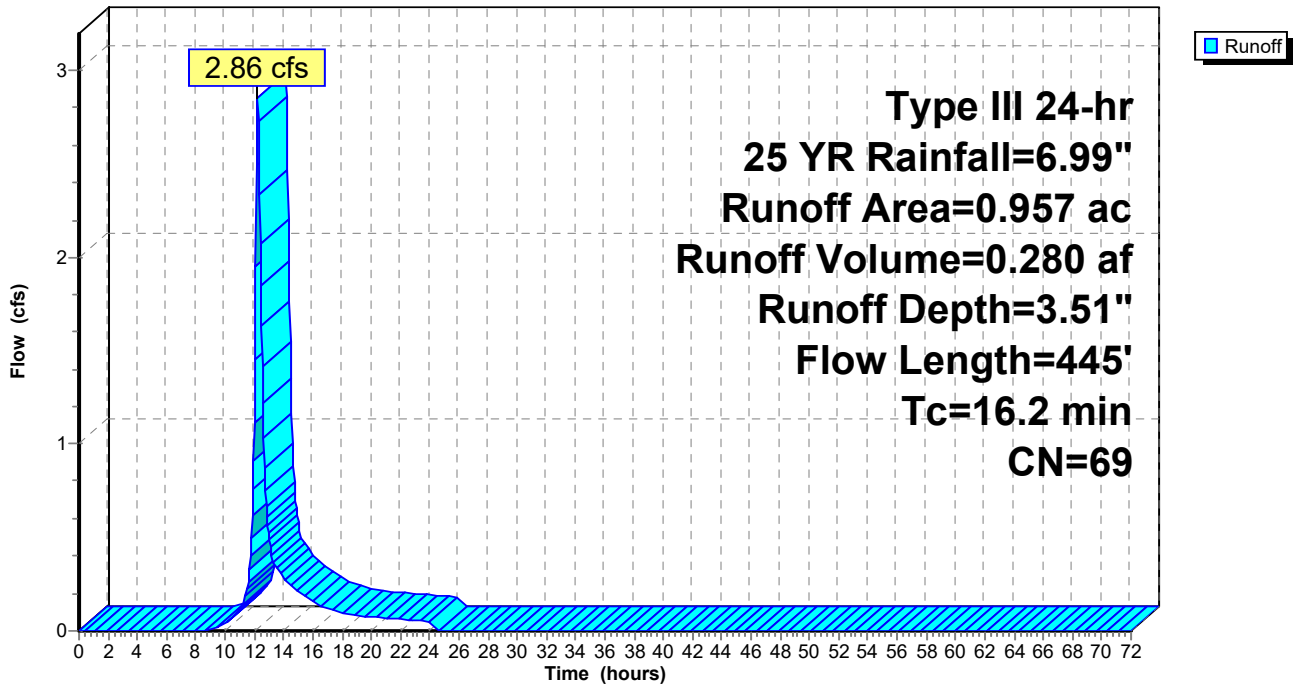
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25 YR Rainfall=6.99"

Area (ac)	CN	Description
0.546	65	Brush, Good, HSG C
0.365	73	Brush, Good, HSG D
0.046	78	Meadow, non-grazed, HSG D
0.957	69	Weighted Average
0.957		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	100	0.0750	0.14		Sheet Flow, A-B Woods: Light underbrush n= 0.400 P2= 3.55"
4.2	345	0.0754	1.37		Shallow Concentrated Flow, B-C Woodland Kv= 5.0 fps
16.2	445	Total			

Subcatchment PDA-4: PDA-4

Hydrograph



Summary for Subcatchment PDA-5: PDA-5

Runoff = 2.44 cfs @ 12.25 hrs, Volume= 0.248 af, Depth= 3.20"

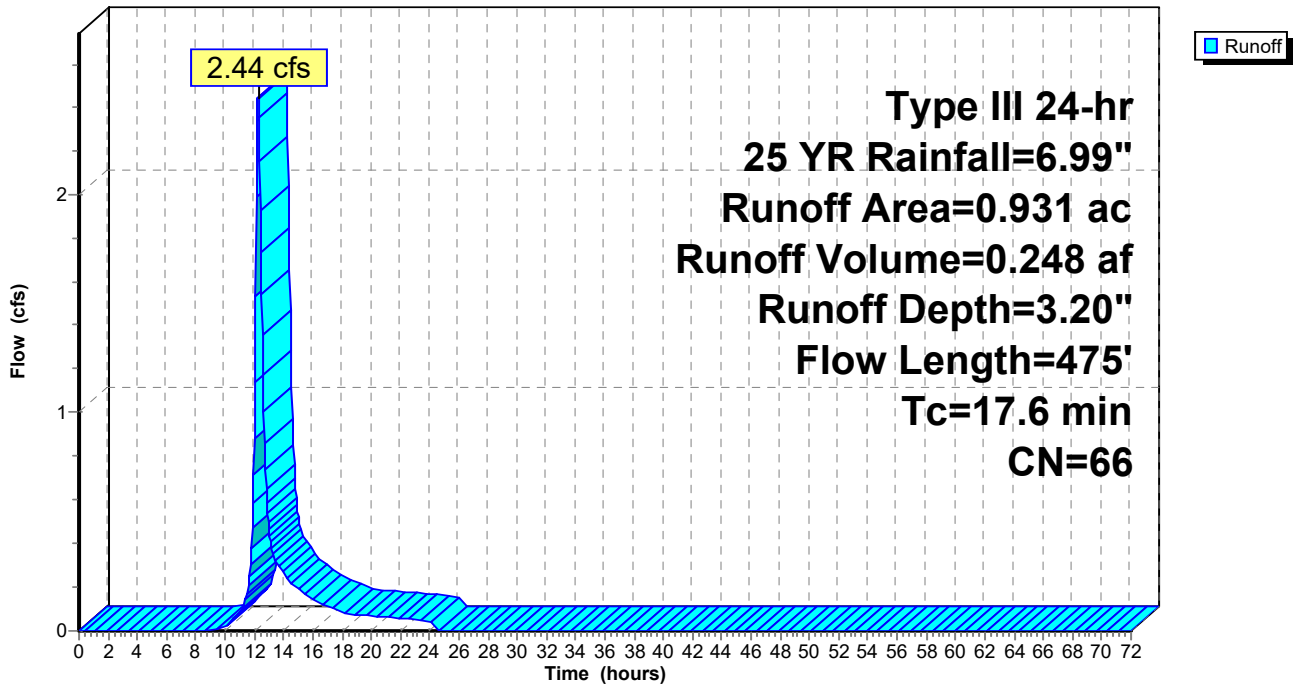
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25 YR Rainfall=6.99"

Area (ac)	CN	Description
0.836	65	Brush, Good, HSG C
0.088	73	Brush, Good, HSG D
0.007	78	Meadow, non-grazed, HSG D
0.931	66	Weighted Average
0.931		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	100	0.0600	0.13		Sheet Flow, A-B Woods: Light underbrush n= 0.400 P2= 3.55"
4.5	375	0.0787	1.40		Shallow Concentrated Flow, B-C Woodland Kv= 5.0 fps
17.6	475	Total			

Subcatchment PDA-5: PDA-5

Hydrograph



Summary for Reach SW-3: SW-3

Inflow Area = 2.881 ac, 0.00% Impervious, Inflow Depth = 4.47" for 25 YR event
 Inflow = 13.69 cfs @ 12.12 hrs, Volume= 1.072 af
 Outflow = 13.39 cfs @ 12.14 hrs, Volume= 1.072 af, Atten= 2%, Lag= 1.4 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Max. Velocity= 4.21 fps, Min. Travel Time= 1.5 min
 Avg. Velocity = 1.42 fps, Avg. Travel Time= 4.5 min

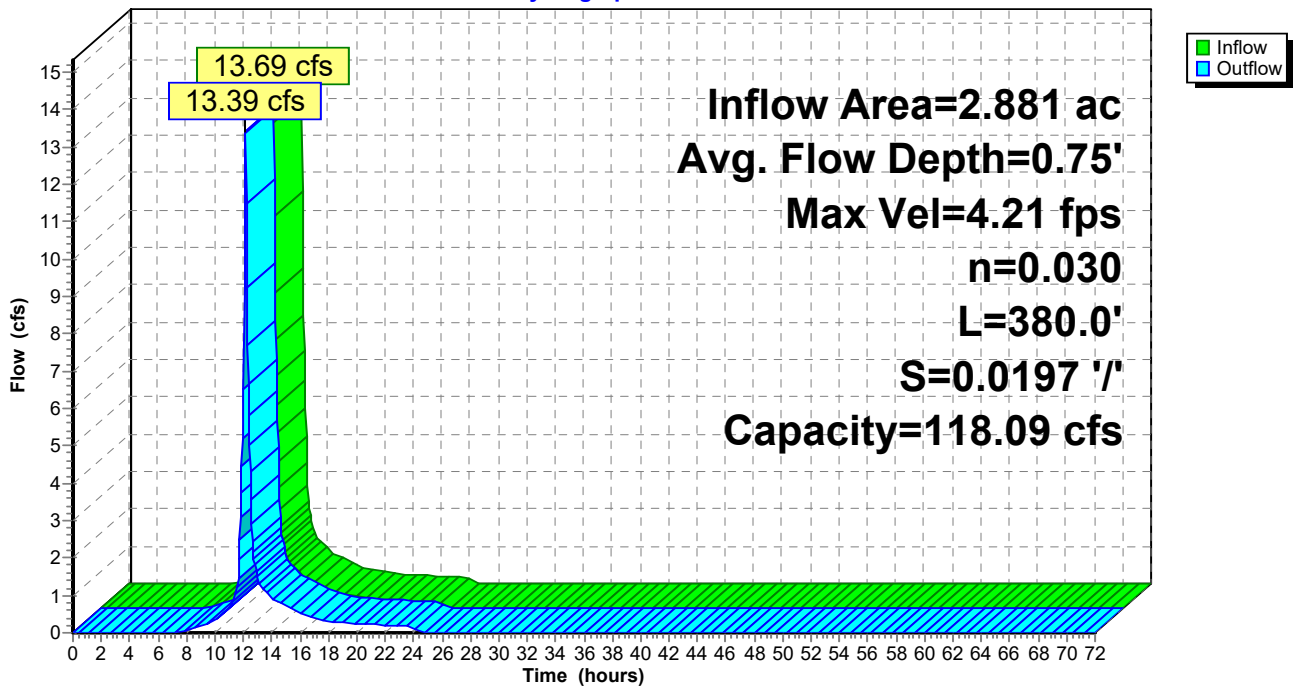
Peak Storage= 1,207 cf @ 12.14 hrs
 Average Depth at Peak Storage= 0.75'
 Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 118.09 cfs

2.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
 Side Slope Z-value= 3.0 '/' Top Width= 14.00'
 Length= 380.0' Slope= 0.0197 '/'
 Inlet Invert= 786.00', Outlet Invert= 778.50'



Reach SW-3: SW-3

Hydrograph



Summary for Pond B-1: B-1

Inflow Area = 1.557 ac, 0.32% Impervious, Inflow Depth = 4.58" for 25 YR event
 Inflow = 6.68 cfs @ 12.17 hrs, Volume= 0.594 af
 Outflow = 6.14 cfs @ 12.23 hrs, Volume= 0.519 af, Atten= 8%, Lag= 3.5 min
 Discarded = 0.01 cfs @ 12.23 hrs, Volume= 0.024 af
 Primary = 6.13 cfs @ 12.23 hrs, Volume= 0.495 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 785.59' @ 12.23 hrs Surf.Area= 3,102 sf Storage= 5,701 cf

Plug-Flow detention time= 162.0 min calculated for 0.519 af (87% of inflow)
 Center-of-Mass det. time= 106.9 min (923.4 - 816.5)

Volume	Invert	Avail.Storage	Storage Description
#1	783.00'	10,833 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
783.00	1,359	0	0
784.00	1,984	1,672	1,672
785.00	2,666	2,325	3,997
786.00	3,404	3,035	7,032
787.00	4,199	3,802	10,833

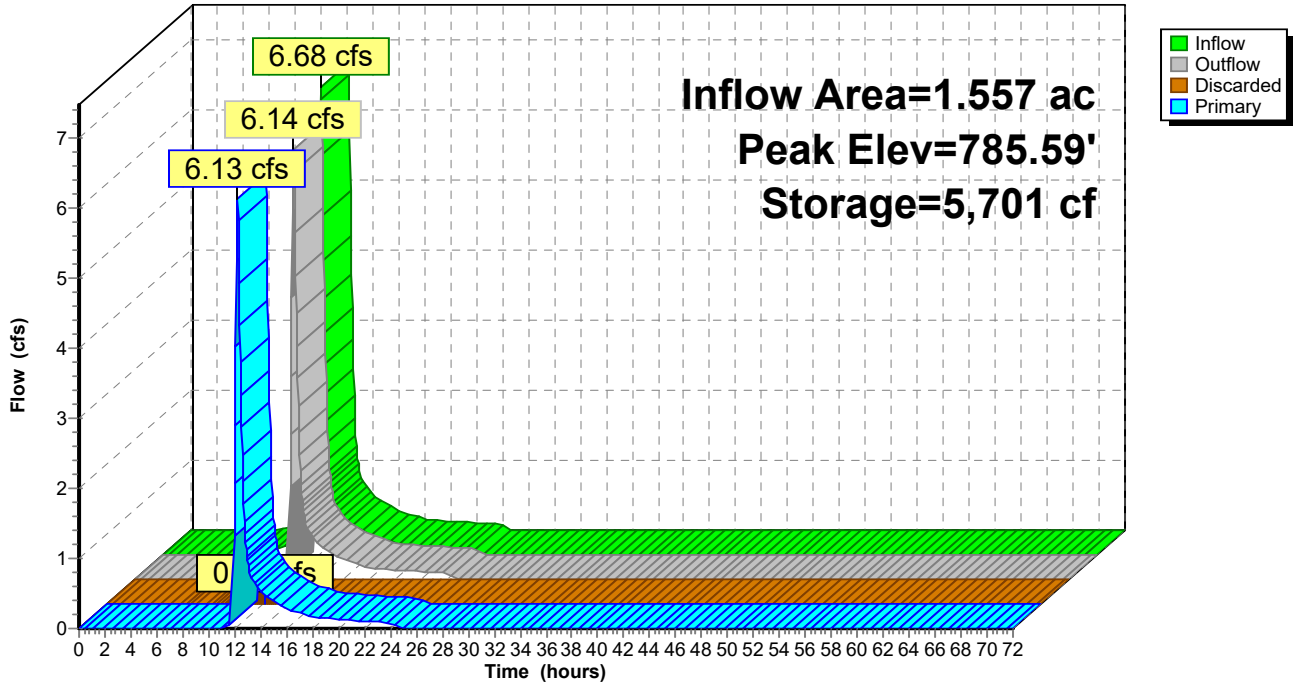
Device	Routing	Invert	Outlet Devices
#1	Discarded	783.00'	0.054 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 779.50'
#2	Primary	785.00'	5.0' long x 22.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.01 cfs @ 12.23 hrs HW=785.59' (Free Discharge)
 ↑1=Exfiltration (Controls 0.01 cfs)

Primary OutFlow Max=6.07 cfs @ 12.23 hrs HW=785.59' TW=0.00' (Dynamic Tailwater)
 ↑2=Broad-Crested Rectangular Weir (Weir Controls 6.07 cfs @ 2.07 fps)

Pond B-1: B-1

Hydrograph



Summary for Pond B-2: B-2

Inflow Area = 4.697 ac, 0.00% Impervious, Inflow Depth = 4.36" for 25 YR event
 Inflow = 21.16 cfs @ 12.13 hrs, Volume= 1.705 af
 Outflow = 8.19 cfs @ 12.44 hrs, Volume= 1.216 af, Atten= 61%, Lag= 18.5 min
 Discarded = 0.02 cfs @ 12.44 hrs, Volume= 0.078 af
 Primary = 8.17 cfs @ 12.44 hrs, Volume= 1.137 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 782.22' @ 12.44 hrs Surf.Area= 13,222 sf Storage= 32,721 cf

Plug-Flow detention time= 276.3 min calculated for 1.216 af (71% of inflow)
 Center-of-Mass det. time= 183.5 min (1,001.4 - 818.0)

Volume	Invert	Avail.Storage	Storage Description
#1	779.00'	43,605 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
779.00	7,183	0	0
780.00	8,991	8,087	8,087
781.00	10,859	9,925	18,012
782.00	12,782	11,821	29,833
783.00	14,762	13,772	43,605

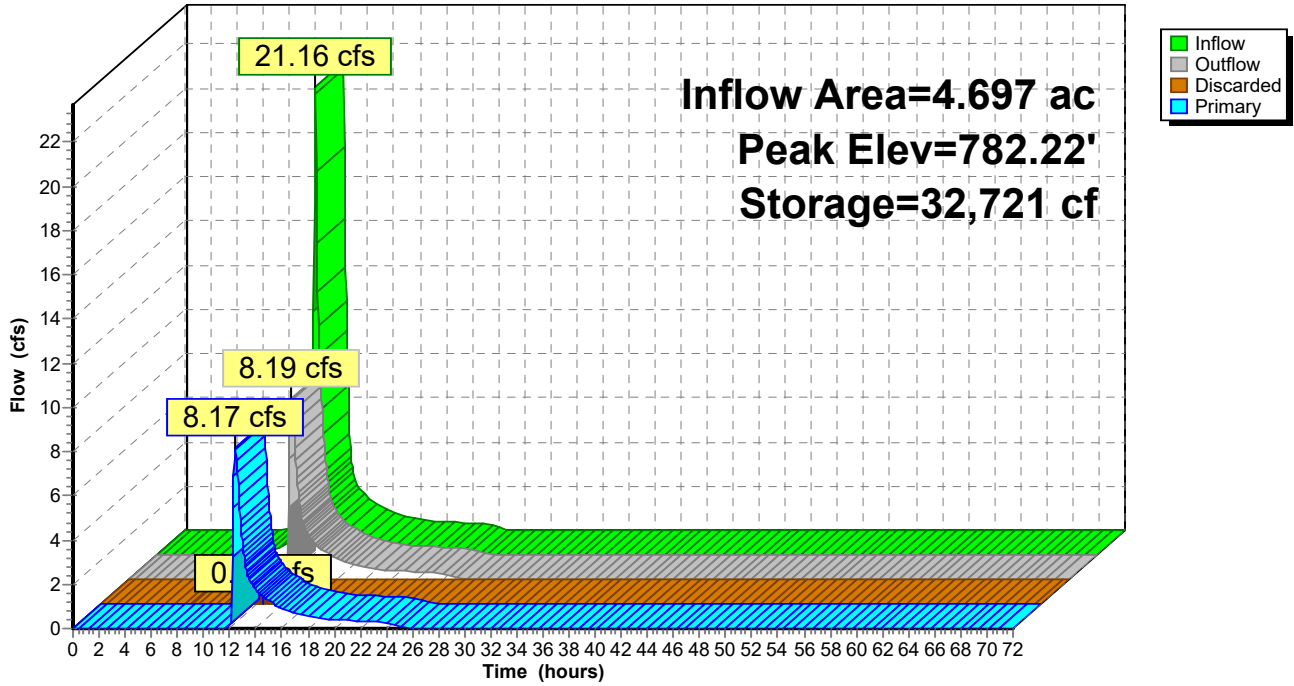
Device	Routing	Invert	Outlet Devices
#1	Discarded	779.00'	0.047 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 768.00'
#2	Primary	781.50'	5.0' long x 22.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.02 cfs @ 12.44 hrs HW=782.22' (Free Discharge)
 ↑1=Exfiltration (Controls 0.02 cfs)

Primary OutFlow Max=8.15 cfs @ 12.44 hrs HW=782.22' TW=0.00' (Dynamic Tailwater)
 ↑2=Broad-Crested Rectangular Weir (Weir Controls 8.15 cfs @ 2.26 fps)

Pond B-2: B-2

Hydrograph



Summary for Pond B-3: B-3

[62] Hint: Exceeded Reach SW-3 OUTLET depth by 0.77' @ 12.45 hrs

Inflow Area = 5.616 ac, 0.00% Impervious, Inflow Depth = 4.47" for 25 YR event
 Inflow = 25.22 cfs @ 12.15 hrs, Volume= 2.090 af
 Outflow = 13.99 cfs @ 12.34 hrs, Volume= 2.082 af, Atten= 45%, Lag= 11.7 min
 Discarded = 0.06 cfs @ 12.34 hrs, Volume= 0.245 af
 Primary = 13.92 cfs @ 12.34 hrs, Volume= 1.837 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 779.78' @ 12.34 hrs Surf.Area= 13,190 sf Storage= 31,562 cf

Plug-Flow detention time= 261.2 min calculated for 2.081 af (100% of inflow)
 Center-of-Mass det. time= 260.8 min (1,078.6 - 817.8)

Volume	Invert	Avail.Storage	Storage Description
#1	777.00'	48,687 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
777.00	9,581	0	0
778.00	10,827	10,204	10,204
779.00	12,129	11,478	21,682
780.00	13,488	12,809	34,491
781.00	14,904	14,196	48,687

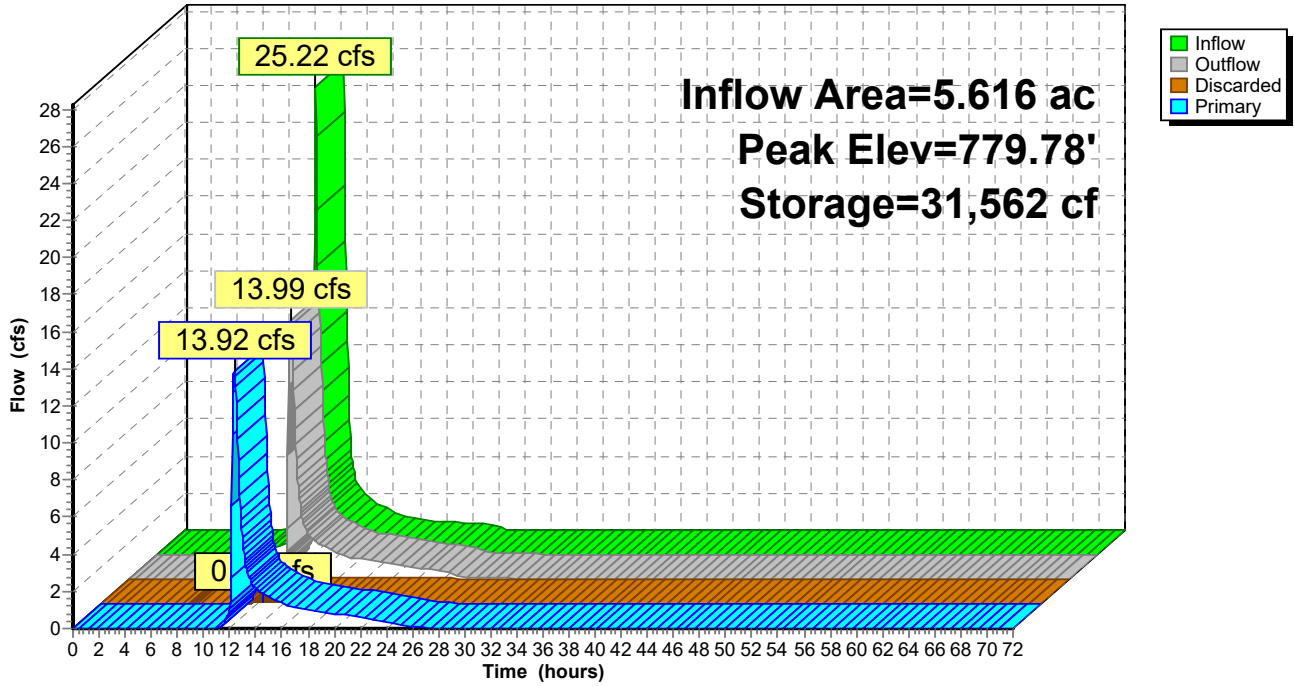
Device	Routing	Invert	Outlet Devices
#1	Discarded	777.00'	0.186 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 750.00'
#2	Primary	776.50'	12.0" Round Culvert L= 37.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 776.50' / 776.00' S= 0.0135 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	777.70'	12.0" W x 3.0" H Vert. Oriface/Grate C= 0.600
#4	Device 2	778.60'	12.0" Vert. Oriface/Grate C= 0.600
#5	Primary	779.00'	5.0' long x 22.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.06 cfs @ 12.34 hrs HW=779.78' (Free Discharge)
 ↳ **1=Exfiltration** (Controls 0.06 cfs)

Primary OutFlow Max=13.89 cfs @ 12.34 hrs HW=779.78' TW=0.00' (Dynamic Tailwater)
 ↳ **2=Culvert** (Passes 4.80 cfs of 6.30 cfs potential flow)
 ↳ **3=Oriface/Grate** (Orifice Controls 1.68 cfs @ 6.73 fps)
 ↳ **4=Oriface/Grate** (Orifice Controls 3.12 cfs @ 3.97 fps)
 ↳ **5=Broad-Crested Rectangular Weir** (Weir Controls 9.10 cfs @ 2.34 fps)

Pond B-3: B-3

Hydrograph



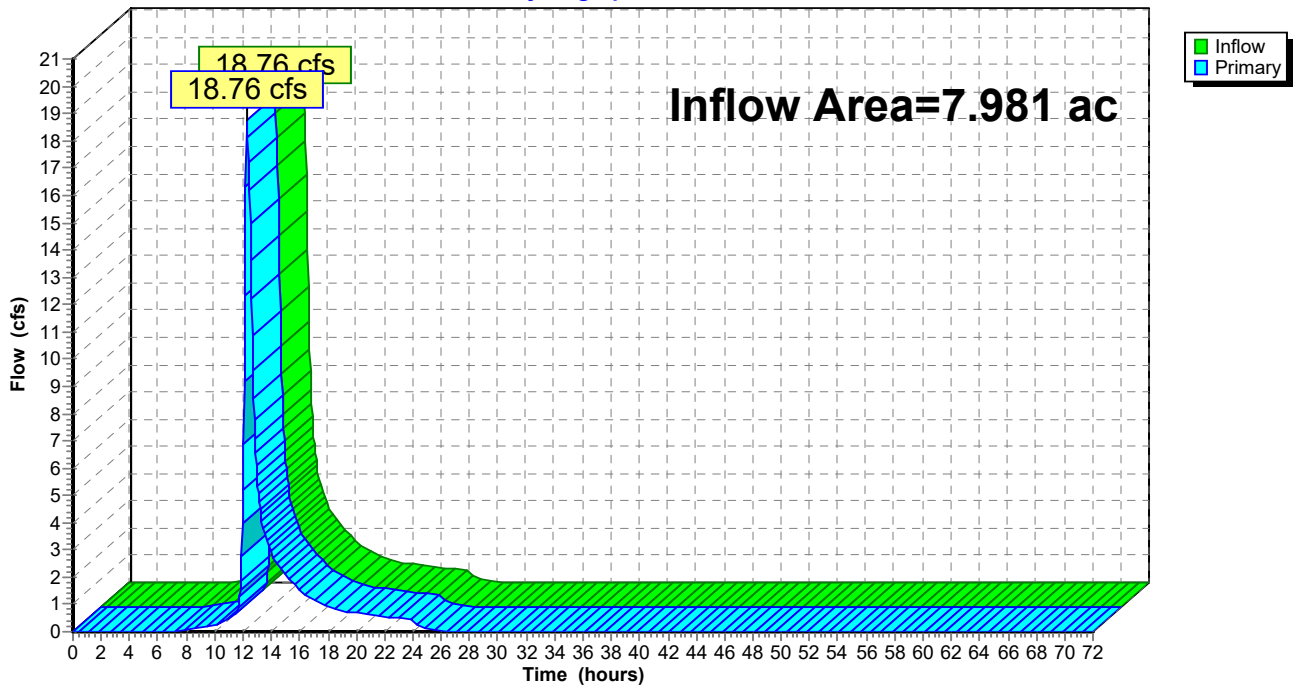
Summary for Link AP-1: AP-1

Inflow Area = 7.981 ac, 2.49% Impervious, Inflow Depth = 3.49" for 25 YR event
Inflow = 18.76 cfs @ 12.29 hrs, Volume= 2.323 af
Primary = 18.76 cfs @ 12.29 hrs, Volume= 2.323 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link AP-1: AP-1

Hydrograph



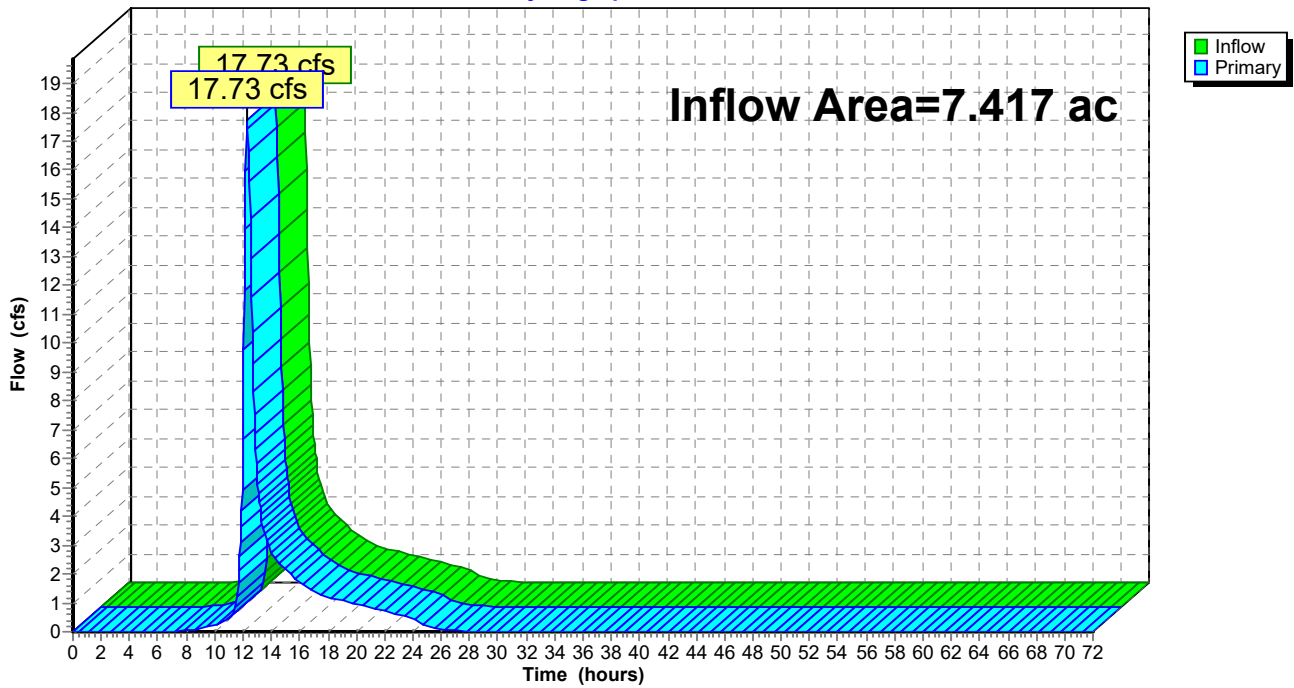
Summary for Link AP-2: AP-2

Inflow Area = 7.417 ac, 0.00% Impervious, Inflow Depth = 4.06" for 25 YR event
Inflow = 17.73 cfs @ 12.30 hrs, Volume= 2.508 af
Primary = 17.73 cfs @ 12.30 hrs, Volume= 2.508 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link AP-2: AP-2

Hydrograph



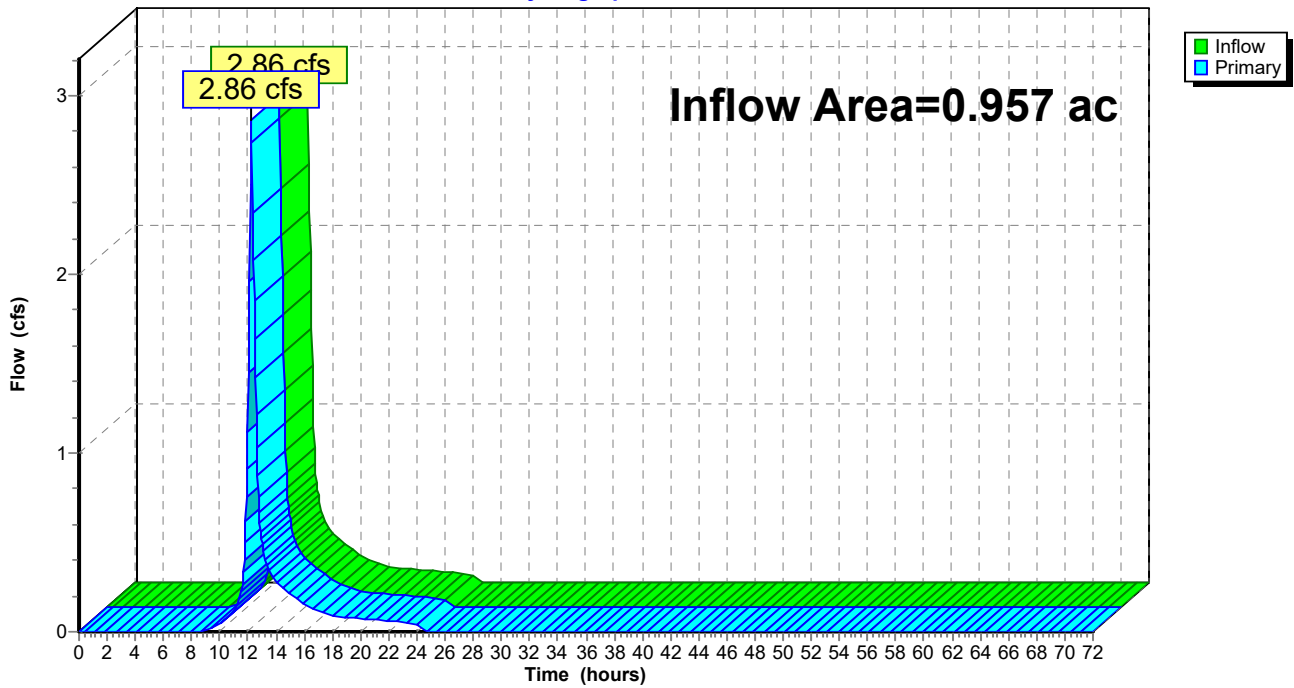
Summary for Link AP-3: AP-3

Inflow Area = 0.957 ac, 0.00% Impervious, Inflow Depth = 3.51" for 25 YR event
Inflow = 2.86 cfs @ 12.23 hrs, Volume= 0.280 af
Primary = 2.86 cfs @ 12.23 hrs, Volume= 0.280 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link AP-3: AP-3

Hydrograph



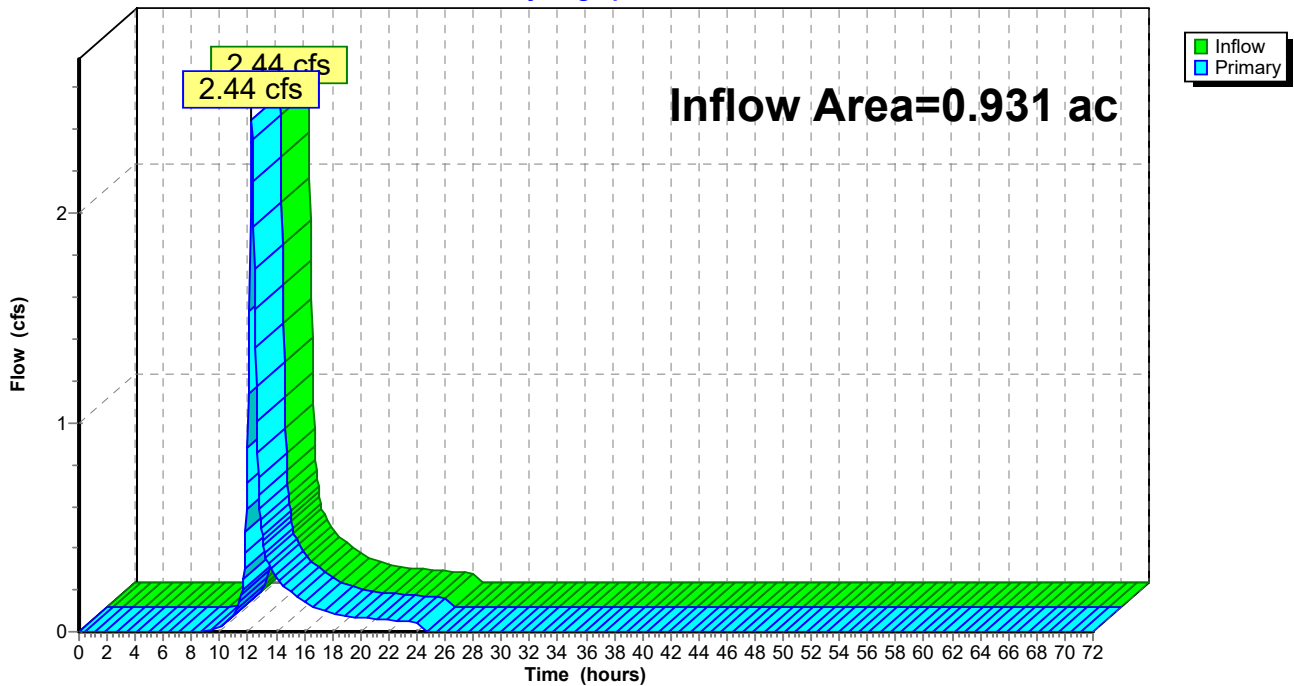
Summary for Link AP-4: AP-4

Inflow Area = 0.931 ac, 0.00% Impervious, Inflow Depth = 3.20" for 25 YR event
Inflow = 2.44 cfs @ 12.25 hrs, Volume= 0.248 af
Primary = 2.44 cfs @ 12.25 hrs, Volume= 0.248 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link AP-4: AP-4

Hydrograph



Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment PDA-1A: PDA-1A Runoff Area=1.727 ac 11.23% Impervious Runoff Depth=5.70"
Flow Length=417' Tc=15.9 min CN=81 Runoff=8.38 cfs 0.820 af

Subcatchment PDA-1B: PDA-1B Runoff Area=1.557 ac 0.32% Impervious Runoff Depth=5.46"
Flow Length=445' Tc=12.5 min CN=79 Runoff=7.94 cfs 0.709 af

Subcatchment PDA-2: PDA-2 Runoff Area=4.697 ac 0.00% Impervious Runoff Depth=5.23"
Flow Length=352' Tc=9.0 min CN=77 Runoff=25.29 cfs 2.047 af

Subcatchment PDA-3A: PDA-3A Runoff Area=2.735 ac 0.00% Impervious Runoff Depth=5.34"
Flow Length=481' Tc=11.3 min CN=78 Runoff=14.16 cfs 1.218 af

Subcatchment PDA-3B: PDA-3 Runoff Area=2.881 ac 0.00% Impervious Runoff Depth=5.34"
Flow Length=300' Slope=0.1100 '/' Tc=8.3 min CN=78 Runoff=16.31 cfs 1.283 af

Subcatchment PDA-3C: PDA-3C Runoff Area=1.801 ac 0.00% Impervious Runoff Depth=5.34"
Tc=6.0 min CN=78 Runoff=10.93 cfs 0.802 af

Subcatchment PDA-4: PDA-4 Runoff Area=0.957 ac 0.00% Impervious Runoff Depth=4.31"
Flow Length=445' Tc=16.2 min CN=69 Runoff=3.54 cfs 0.343 af

Subcatchment PDA-5: PDA-5 Runoff Area=0.931 ac 0.00% Impervious Runoff Depth=3.97"
Flow Length=475' Tc=17.6 min CN=66 Runoff=3.05 cfs 0.308 af

Reach SW-3: SW-3 Avg. Flow Depth=0.81' Max Vel=4.41 fps Inflow=16.31 cfs 1.283 af
n=0.030 L=380.0' S=0.0197 '/' Capacity=118.09 cfs Outflow=15.97 cfs 1.283 af

Pond B-1: B-1 Peak Elev=785.67' Storage=5,941 cf Inflow=7.94 cfs 0.709 af
Discarded=0.01 cfs 0.024 af Primary=7.31 cfs 0.610 af Outflow=7.31 cfs 0.634 af

Pond B-2: B-2 Peak Elev=782.46' Storage=35,937 cf Inflow=25.29 cfs 2.047 af
Discarded=0.02 cfs 0.079 af Primary=12.40 cfs 1.478 af Outflow=12.42 cfs 1.557 af

Pond B-3: B-3 Peak Elev=780.01' Storage=34,689 cf Inflow=30.05 cfs 2.501 af
Discarded=0.06 cfs 0.248 af Primary=18.84 cfs 2.245 af Outflow=18.91 cfs 2.493 af

Link AP-1: AP-1 Inflow=26.75 cfs 2.908 af
Primary=26.75 cfs 2.908 af

Link AP-2: AP-2 Inflow=23.81 cfs 3.047 af
Primary=23.81 cfs 3.047 af

Link AP-3: AP-3 Inflow=3.54 cfs 0.343 af
Primary=3.54 cfs 0.343 af

Link AP-4: AP-4 Inflow=3.05 cfs 0.308 af
Primary=3.05 cfs 0.308 af

CT590240_Watertown - PR - Rev0

Type III 24-hr 50 YR Rainfall=7.95"

Prepared by {enter your company name here}

Printed 6/15/2020

HydroCAD® 10.00-22 s/n 07402 © 2018 HydroCAD Software Solutions LLC

Page 49

Total Runoff Area = 17.286 ac Runoff Volume = 7.530 af Average Runoff Depth = 5.23"
98.85% Pervious = 17.087 ac 1.15% Impervious = 0.199 ac

Summary for Subcatchment PDA-1A: PDA-1A

Runoff = 8.38 cfs @ 12.21 hrs, Volume= 0.820 af, Depth= 5.70"

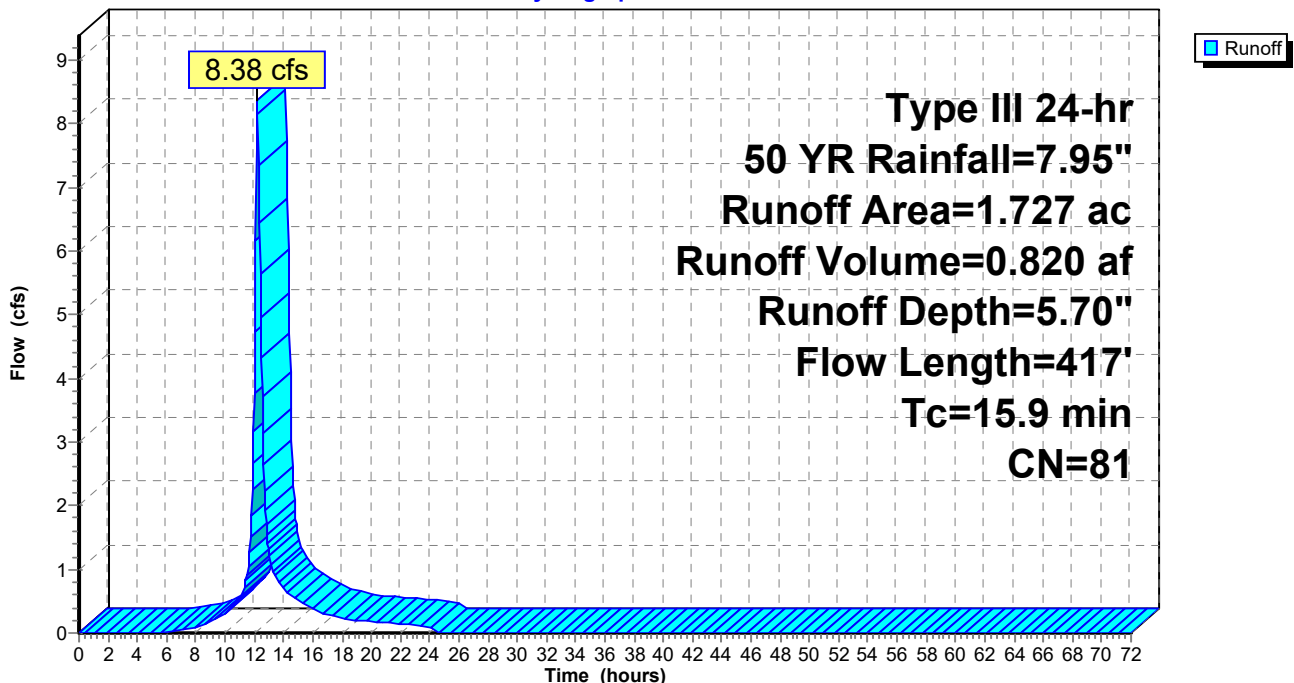
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 YR Rainfall=7.95"

Area (ac)	CN	Description
0.671	79	50-75% Grass cover, Fair, HSG C
0.194	98	Paved parking, HSG C
0.826	78	Meadow, non-grazed, HSG D
0.036	91	Gravel roads, HSG D
1.727	81	Weighted Average
1.533		88.77% Pervious Area
0.194		11.23% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0200	0.12		Sheet Flow, A-B Grass: Dense n= 0.240 P2= 3.55"
2.2	247	0.0688	1.84		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
0.2	70	0.0714	5.42		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
15.9	417	Total			

Subcatchment PDA-1A: PDA-1A

Hydrograph



Summary for Subcatchment PDA-1B: PDA-1B

Runoff = 7.94 cfs @ 12.17 hrs, Volume= 0.709 af, Depth= 5.46"

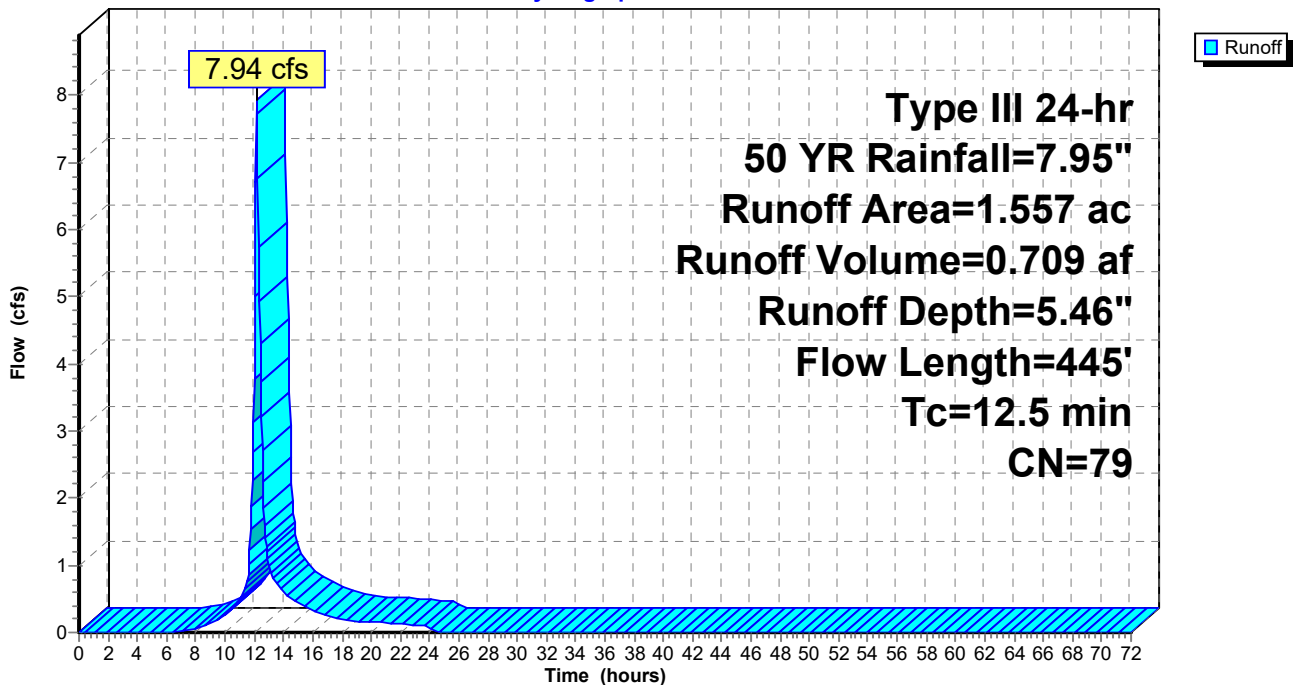
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 YR Rainfall=7.95"

Area (ac)	CN	Description
0.005	98	Paved parking, HSG D
1.416	78	Meadow, non-grazed, HSG D
0.136	91	Gravel roads, HSG D
1.557	79	Weighted Average
1.552		99.68% Pervious Area
0.005		0.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.0550	0.18		Sheet Flow, A-B Grass: Dense n= 0.240 P2= 3.55"
2.3	189	0.0370	1.35		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
1.2	156	0.0962	2.17		Shallow Concentrated Flow, C-D Short Grass Pasture Kv= 7.0 fps
12.5	445	Total			

Subcatchment PDA-1B: PDA-1B

Hydrograph



Summary for Subcatchment PDA-2: PDA-2

Runoff = 25.29 cfs @ 12.13 hrs, Volume= 2.047 af, Depth= 5.23"

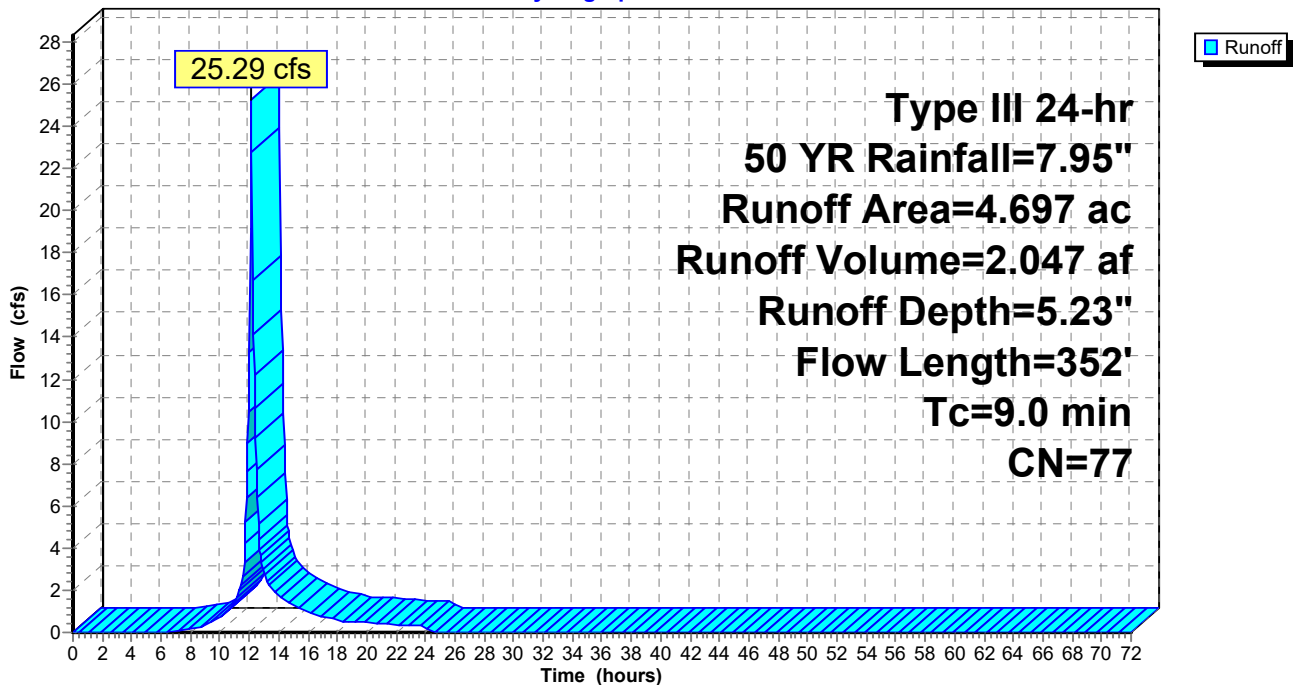
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 YR Rainfall=7.95"

Area (ac)	CN	Description
0.434	65	Brush, Good, HSG C
0.032	73	Brush, Good, HSG D
4.075	78	Meadow, non-grazed, HSG D
0.156	91	Gravel roads, HSG D
4.697	77	Weighted Average
4.697		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	100	0.1000	0.23		Sheet Flow, A-B Grass: Dense n= 0.240 P2= 3.55"
1.9	252	0.1032	2.25		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
9.0	352	Total			

Subcatchment PDA-2: PDA-2

Hydrograph



Summary for Subcatchment PDA-3A: PDA-3A

Runoff = 14.16 cfs @ 12.16 hrs, Volume= 1.218 af, Depth= 5.34"

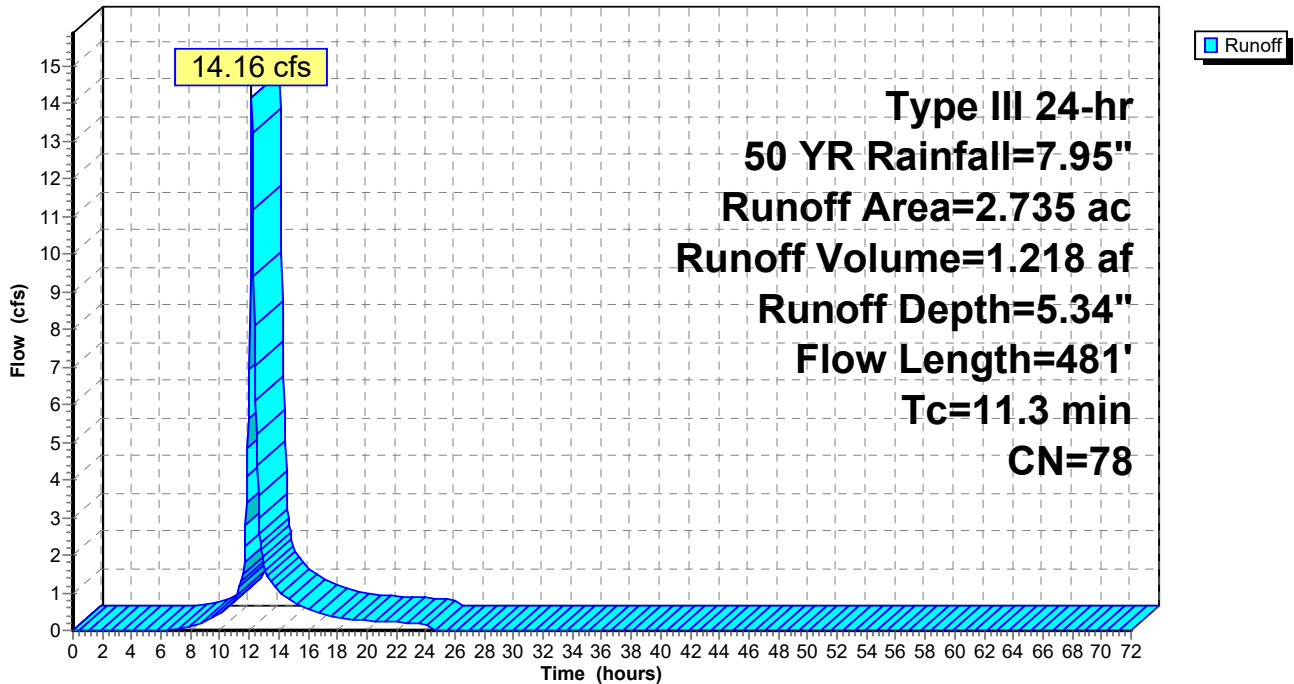
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 YR Rainfall=7.95"

Area (ac)	CN	Description
2.705	78	Meadow, non-grazed, HSG D
0.030	91	Gravel roads, HSG D
2.735	78	Weighted Average
2.735		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.8	100	0.0800	0.21		Sheet Flow, A-B Grass: Dense n= 0.240 P2= 3.55"
3.5	381	0.0656	1.79		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
11.3	481	Total			

Subcatchment PDA-3A: PDA-3A

Hydrograph



Summary for Subcatchment PDA-3B: PDA-3

Runoff = 16.31 cfs @ 12.12 hrs, Volume= 1.283 af, Depth= 5.34"

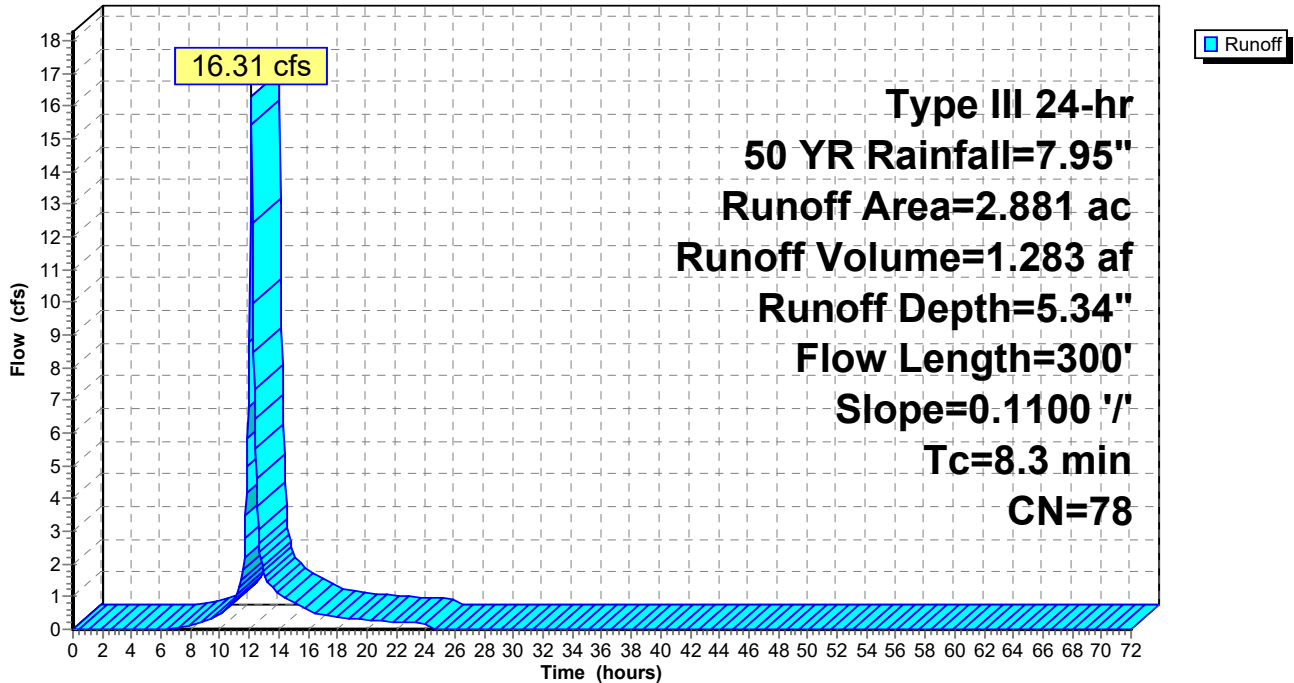
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 50 YR Rainfall=7.95"

Area (ac)	CN	Description
2.881	78	Meadow, non-grazed, HSG D
2.881		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	100	0.1100	0.24		Sheet Flow, A-B Grass: Dense n= 0.240 P2= 3.55"
1.4	200	0.1100	2.32		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
8.3	300	Total			

Subcatchment PDA-3B: PDA-3

Hydrograph



Summary for Subcatchment PDA-3C: PDA-3C

Runoff = 10.93 cfs @ 12.09 hrs, Volume= 0.802 af, Depth= 5.34"

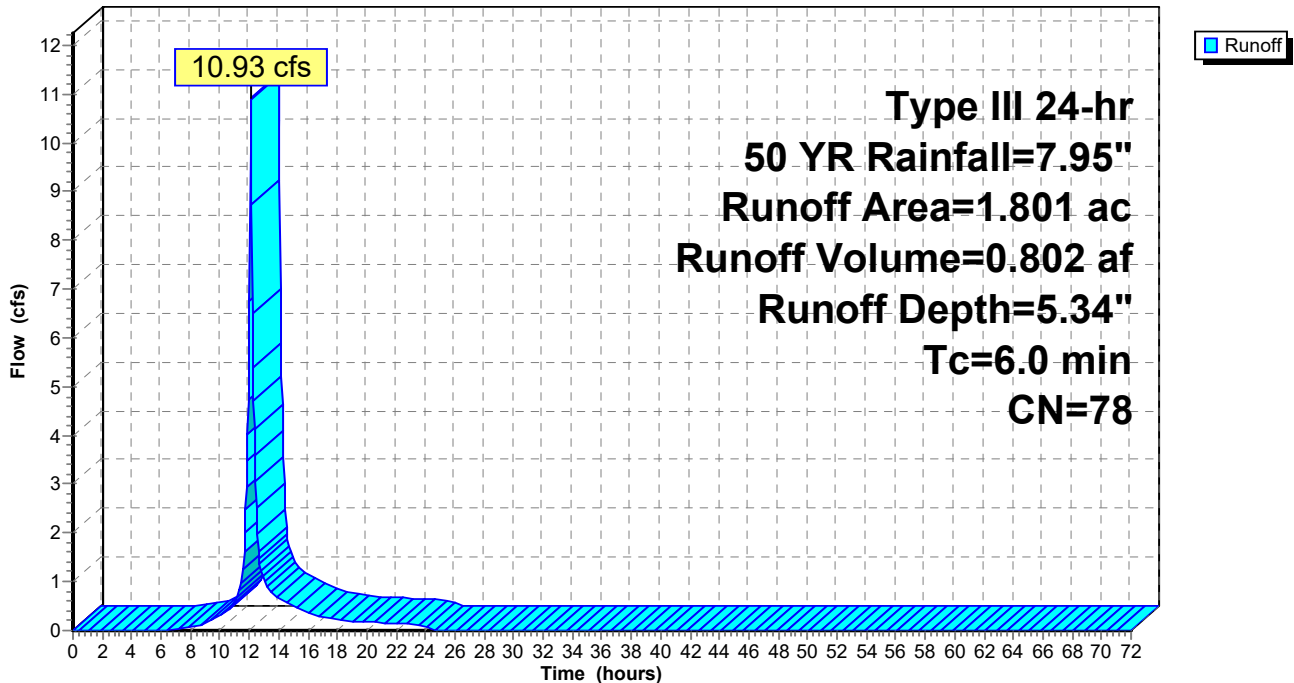
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 50 YR Rainfall=7.95"

Area (ac)	CN	Description
0.111	65	Brush, Good, HSG C
0.421	83	Brush, Poor, HSG D
1.269	78	Meadow, non-grazed, HSG D
1.801	78	Weighted Average
1.801		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment PDA-3C: PDA-3C

Hydrograph



Summary for Subcatchment PDA-4: PDA-4

Runoff = 3.54 cfs @ 12.22 hrs, Volume= 0.343 af, Depth= 4.31"

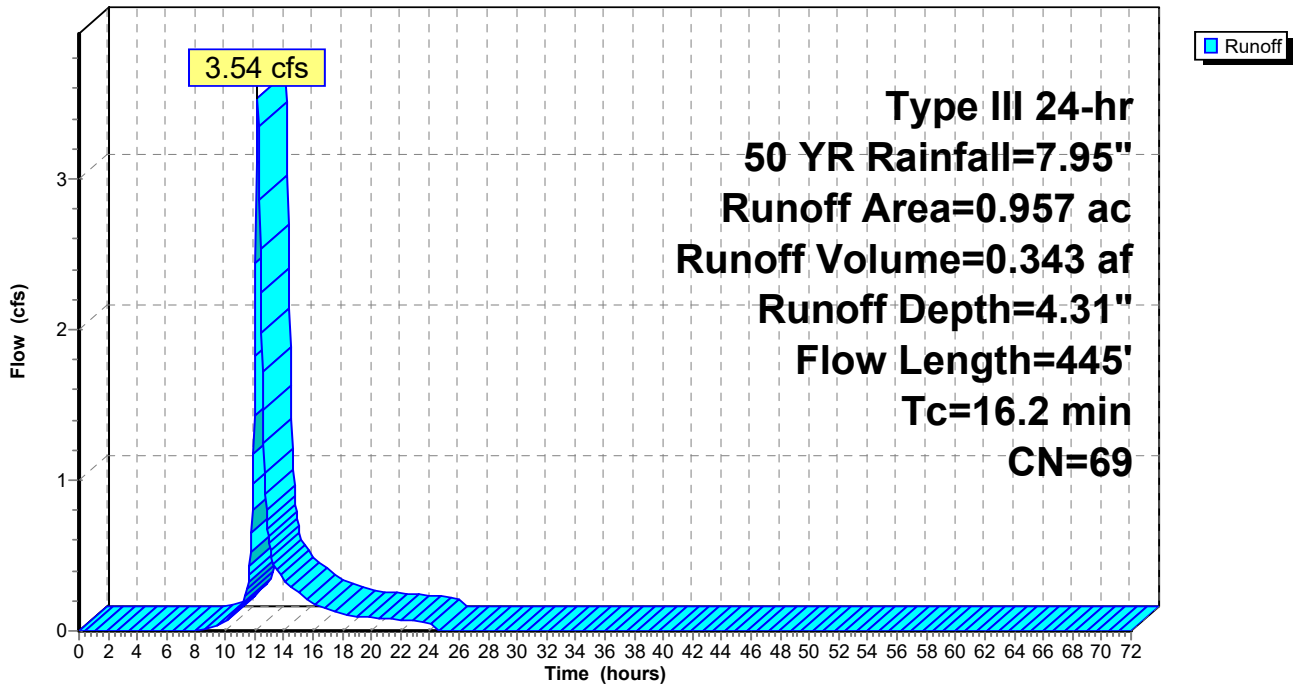
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 50 YR Rainfall=7.95"

Area (ac)	CN	Description
0.546	65	Brush, Good, HSG C
0.365	73	Brush, Good, HSG D
0.046	78	Meadow, non-grazed, HSG D
0.957	69	Weighted Average
0.957		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	100	0.0750	0.14		Sheet Flow, A-B Woods: Light underbrush n= 0.400 P2= 3.55"
4.2	345	0.0754	1.37		Shallow Concentrated Flow, B-C Woodland Kv= 5.0 fps
16.2	445	Total			

Subcatchment PDA-4: PDA-4

Hydrograph



Summary for Subcatchment PDA-5: PDA-5

Runoff = 3.05 cfs @ 12.25 hrs, Volume= 0.308 af, Depth= 3.97"

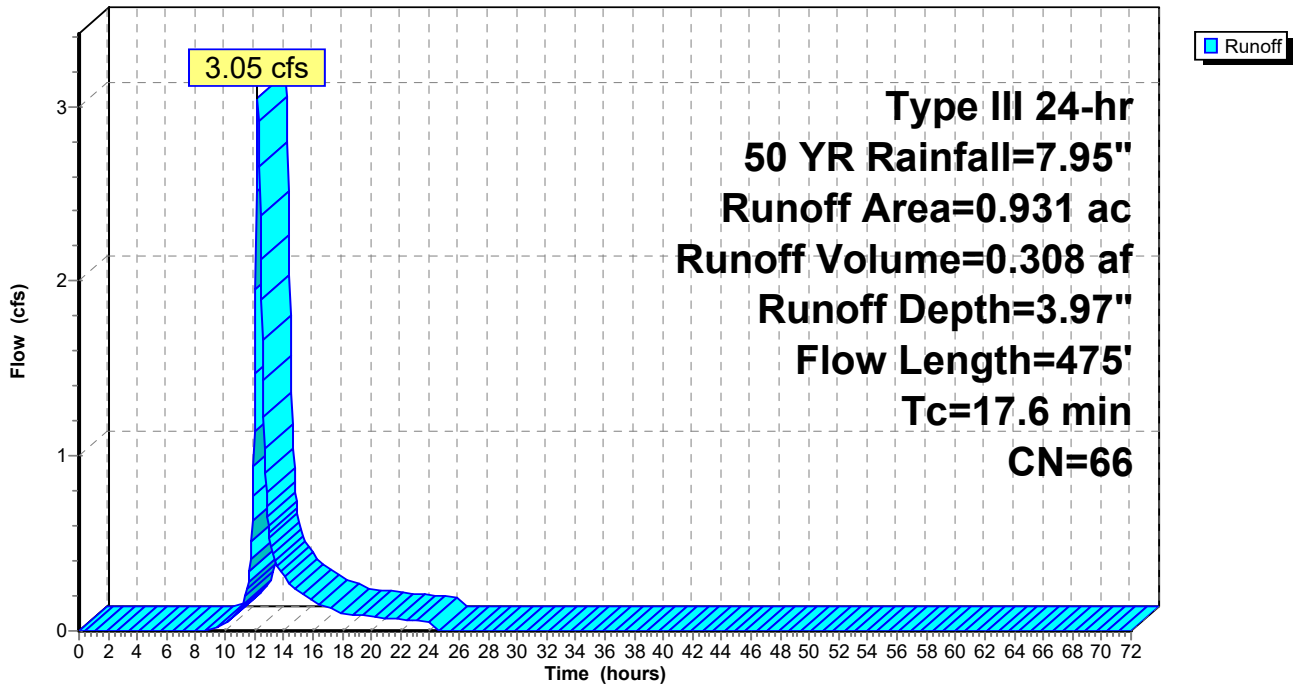
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 50 YR Rainfall=7.95"

Area (ac)	CN	Description
0.836	65	Brush, Good, HSG C
0.088	73	Brush, Good, HSG D
0.007	78	Meadow, non-grazed, HSG D
0.931	66	Weighted Average
0.931		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	100	0.0600	0.13		Sheet Flow, A-B Woods: Light underbrush n= 0.400 P2= 3.55"
4.5	375	0.0787	1.40		Shallow Concentrated Flow, B-C Woodland Kv= 5.0 fps
17.6	475	Total			

Subcatchment PDA-5: PDA-5

Hydrograph



Summary for Reach SW-3: SW-3

Inflow Area = 2.881 ac, 0.00% Impervious, Inflow Depth = 5.34" for 50 YR event
 Inflow = 16.31 cfs @ 12.12 hrs, Volume= 1.283 af
 Outflow = 15.97 cfs @ 12.14 hrs, Volume= 1.283 af, Atten= 2%, Lag= 1.4 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Max. Velocity= 4.41 fps, Min. Travel Time= 1.4 min
 Avg. Velocity = 1.48 fps, Avg. Travel Time= 4.3 min

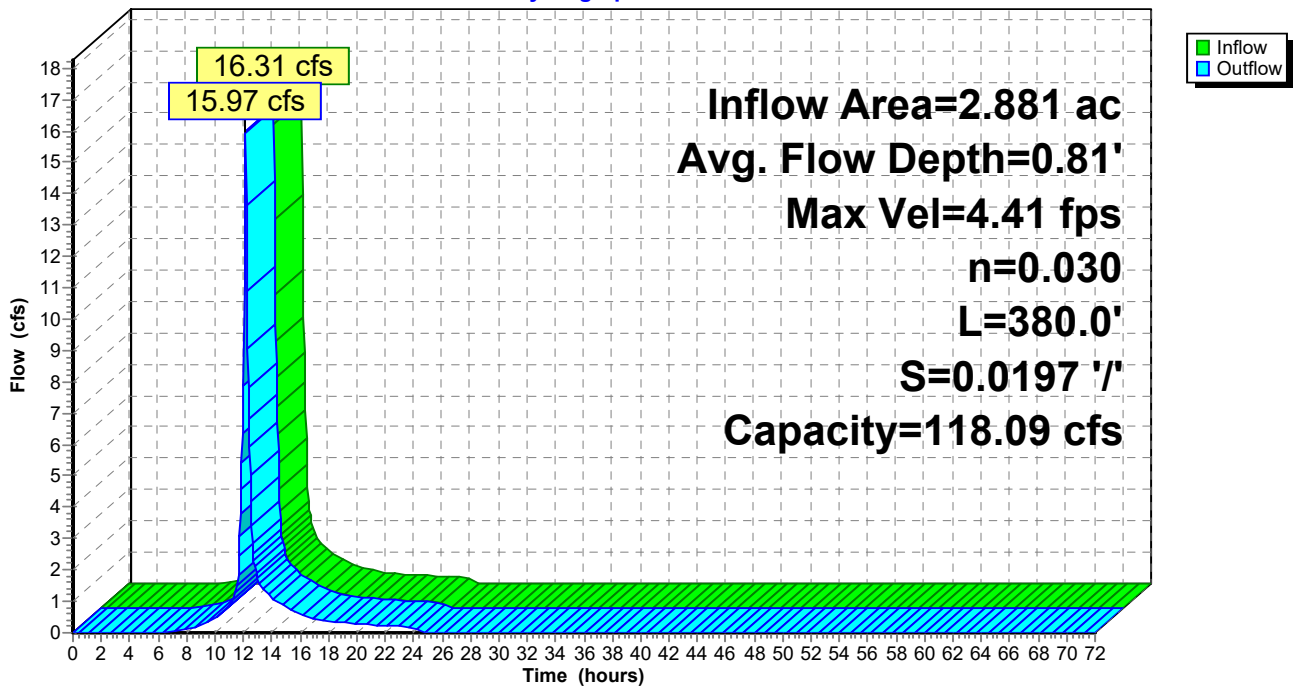
Peak Storage= 1,374 cf @ 12.14 hrs
 Average Depth at Peak Storage= 0.81'
 Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 118.09 cfs

2.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
 Side Slope Z-value= 3.0 '/' Top Width= 14.00'
 Length= 380.0' Slope= 0.0197 '/'
 Inlet Invert= 786.00', Outlet Invert= 778.50'



Reach SW-3: SW-3

Hydrograph



Summary for Pond B-1: B-1

Inflow Area = 1.557 ac, 0.32% Impervious, Inflow Depth = 5.46" for 50 YR event
 Inflow = 7.94 cfs @ 12.17 hrs, Volume= 0.709 af
 Outflow = 7.31 cfs @ 12.23 hrs, Volume= 0.634 af, Atten= 8%, Lag= 3.3 min
 Discarded = 0.01 cfs @ 12.23 hrs, Volume= 0.024 af
 Primary = 7.31 cfs @ 12.23 hrs, Volume= 0.610 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 785.67' @ 12.23 hrs Surf.Area= 3,159 sf Storage= 5,941 cf

Plug-Flow detention time= 140.0 min calculated for 0.633 af (89% of inflow)
 Center-of-Mass det. time= 91.6 min (903.1 - 811.5)

Volume	Invert	Avail.Storage	Storage Description
#1	783.00'	10,833 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
783.00	1,359	0	0
784.00	1,984	1,672	1,672
785.00	2,666	2,325	3,997
786.00	3,404	3,035	7,032
787.00	4,199	3,802	10,833

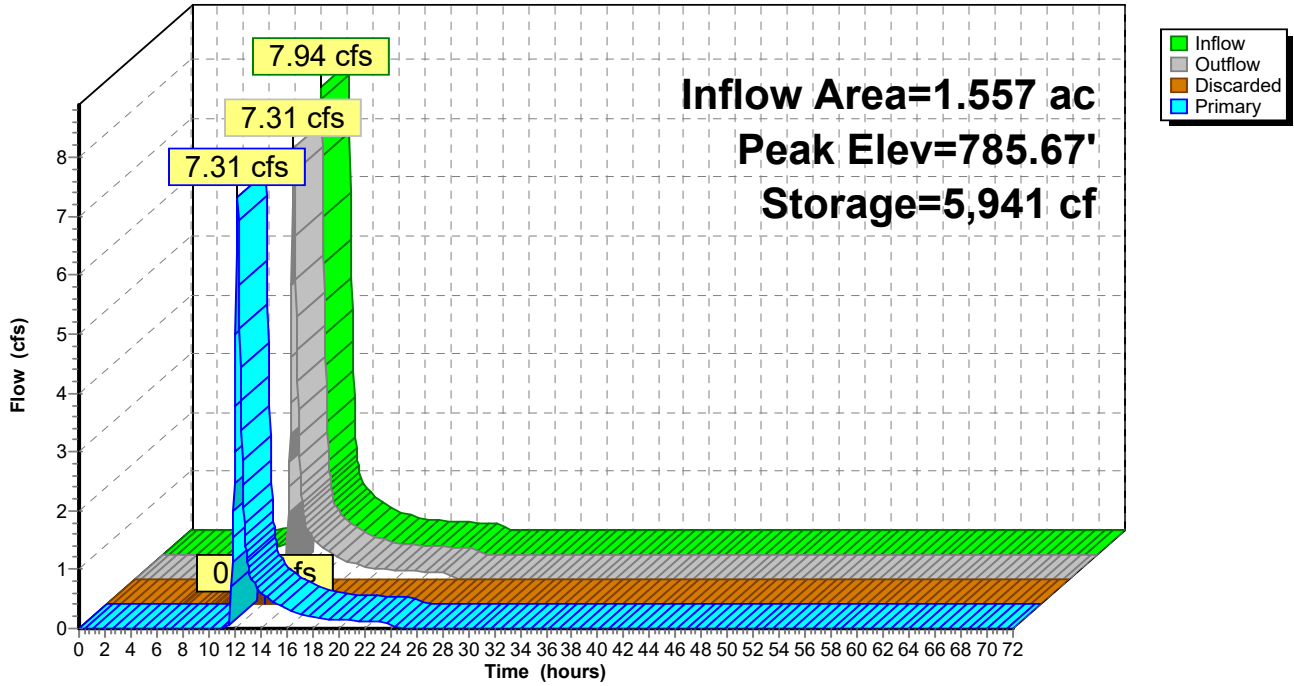
Device	Routing	Invert	Outlet Devices
#1	Discarded	783.00'	0.054 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 779.50'
#2	Primary	785.00'	5.0' long x 22.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.01 cfs @ 12.23 hrs HW=785.66' (Free Discharge)
 ↑1=Exfiltration (Controls 0.01 cfs)

Primary OutFlow Max=7.23 cfs @ 12.23 hrs HW=785.66' TW=0.00' (Dynamic Tailwater)
 ↑2=Broad-Crested Rectangular Weir (Weir Controls 7.23 cfs @ 2.18 fps)

Pond B-1: B-1

Hydrograph



Summary for Pond B-2: B-2

Inflow Area = 4.697 ac, 0.00% Impervious, Inflow Depth = 5.23" for 50 YR event
 Inflow = 25.29 cfs @ 12.13 hrs, Volume= 2.047 af
 Outflow = 12.42 cfs @ 12.35 hrs, Volume= 1.557 af, Atten= 51%, Lag= 13.4 min
 Discarded = 0.02 cfs @ 12.35 hrs, Volume= 0.079 af
 Primary = 12.40 cfs @ 12.35 hrs, Volume= 1.478 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 782.46' @ 12.35 hrs Surf.Area= 13,695 sf Storage= 35,937 cf

Plug-Flow detention time= 235.0 min calculated for 1.557 af (76% of inflow)
 Center-of-Mass det. time= 150.8 min (963.6 - 812.8)

Volume	Invert	Avail.Storage	Storage Description
#1	779.00'	43,605 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
779.00	7,183	0	0
780.00	8,991	8,087	8,087
781.00	10,859	9,925	18,012
782.00	12,782	11,821	29,833
783.00	14,762	13,772	43,605

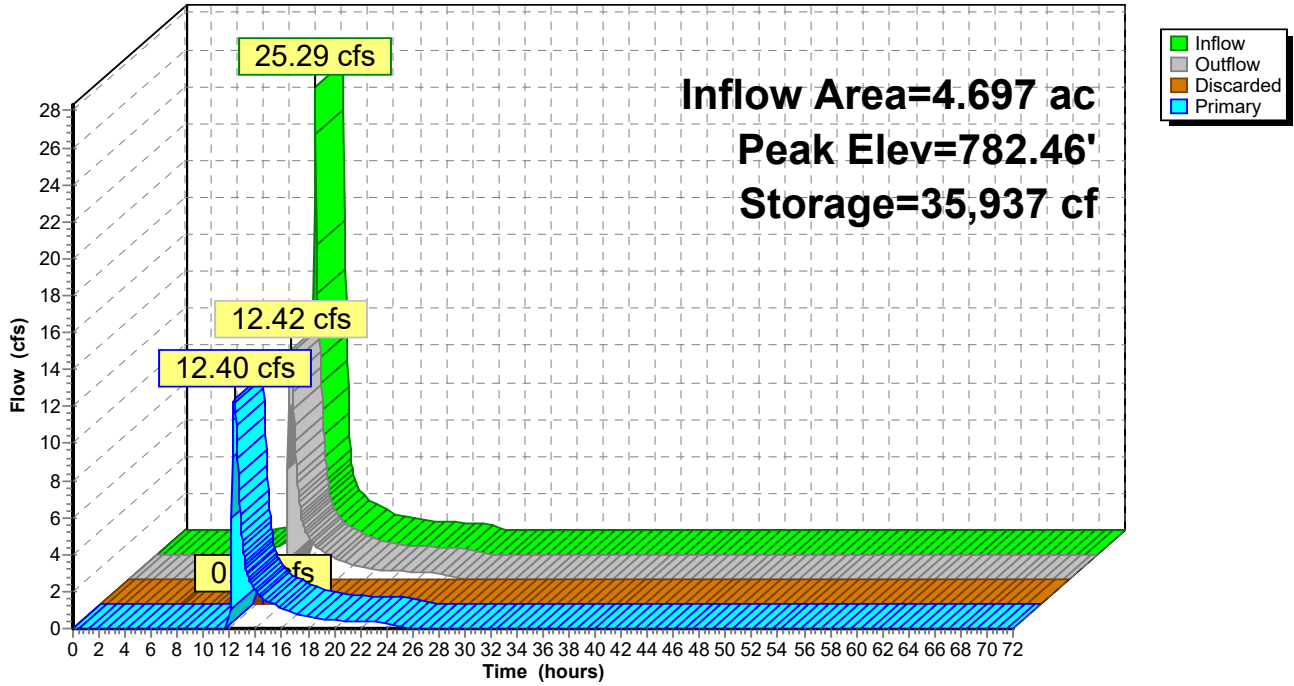
Device	Routing	Invert	Outlet Devices
#1	Discarded	779.00'	0.047 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 768.00'
#2	Primary	781.50'	5.0' long x 22.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.02 cfs @ 12.35 hrs HW=782.46' (Free Discharge)
 ↑1=Exfiltration (Controls 0.02 cfs)

Primary OutFlow Max=12.40 cfs @ 12.35 hrs HW=782.46' TW=0.00' (Dynamic Tailwater)
 ↑2=Broad-Crested Rectangular Weir (Weir Controls 12.40 cfs @ 2.58 fps)

Pond B-2: B-2

Hydrograph



Summary for Pond B-3: B-3

[62] Hint: Exceeded Reach SW-3 OUTLET depth by 0.92' @ 12.35 hrs

Inflow Area = 5.616 ac, 0.00% Impervious, Inflow Depth = 5.34" for 50 YR event
 Inflow = 30.05 cfs @ 12.15 hrs, Volume= 2.501 af
 Outflow = 18.91 cfs @ 12.30 hrs, Volume= 2.493 af, Atten= 37%, Lag= 9.2 min
 Discarded = 0.06 cfs @ 12.30 hrs, Volume= 0.248 af
 Primary = 18.84 cfs @ 12.30 hrs, Volume= 2.245 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 780.01' @ 12.30 hrs Surf.Area= 13,509 sf Storage= 34,689 cf

Plug-Flow detention time= 229.5 min calculated for 2.493 af (100% of inflow)
 Center-of-Mass det. time= 227.3 min (1,040.0 - 812.7)

Volume	Invert	Avail.Storage	Storage Description
#1	777.00'	48,687 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
777.00	9,581	0	0
778.00	10,827	10,204	10,204
779.00	12,129	11,478	21,682
780.00	13,488	12,809	34,491
781.00	14,904	14,196	48,687

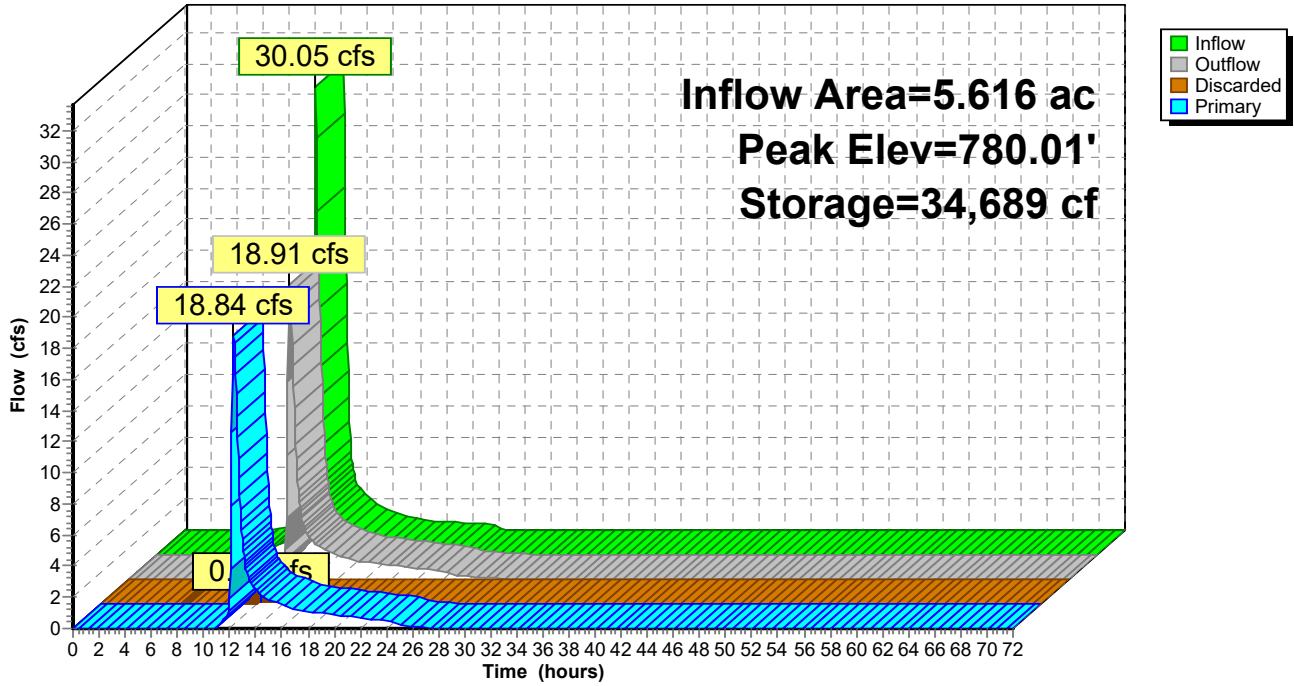
Device	Routing	Invert	Outlet Devices
#1	Discarded	777.00'	0.186 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 750.00'
#2	Primary	776.50'	12.0" Round Culvert L= 37.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 776.50' / 776.00' S= 0.0135 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	777.70'	12.0" W x 3.0" H Vert. Oriface/Grate C= 0.600
#4	Device 2	778.60'	12.0" Vert. Oriface/Grate C= 0.600
#5	Primary	779.00'	5.0' long x 22.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.06 cfs @ 12.30 hrs HW=780.01' (Free Discharge)
 ↳ **1=Exfiltration** (Controls 0.06 cfs)

Primary OutFlow Max=18.84 cfs @ 12.30 hrs HW=780.01' TW=0.00' (Dynamic Tailwater)
 ↳ **2=Culvert** (Passes 5.40 cfs of 6.57 cfs potential flow)
 ↳ ↳ **3=Oriface/Grate** (Orifice Controls 1.78 cfs @ 7.12 fps)
 ↳ ↳ **4=Oriface/Grate** (Orifice Controls 3.62 cfs @ 4.60 fps)
 ↳ ↳ **5=Broad-Crested Rectangular Weir** (Weir Controls 13.44 cfs @ 2.65 fps)

Pond B-3: B-3

Hydrograph



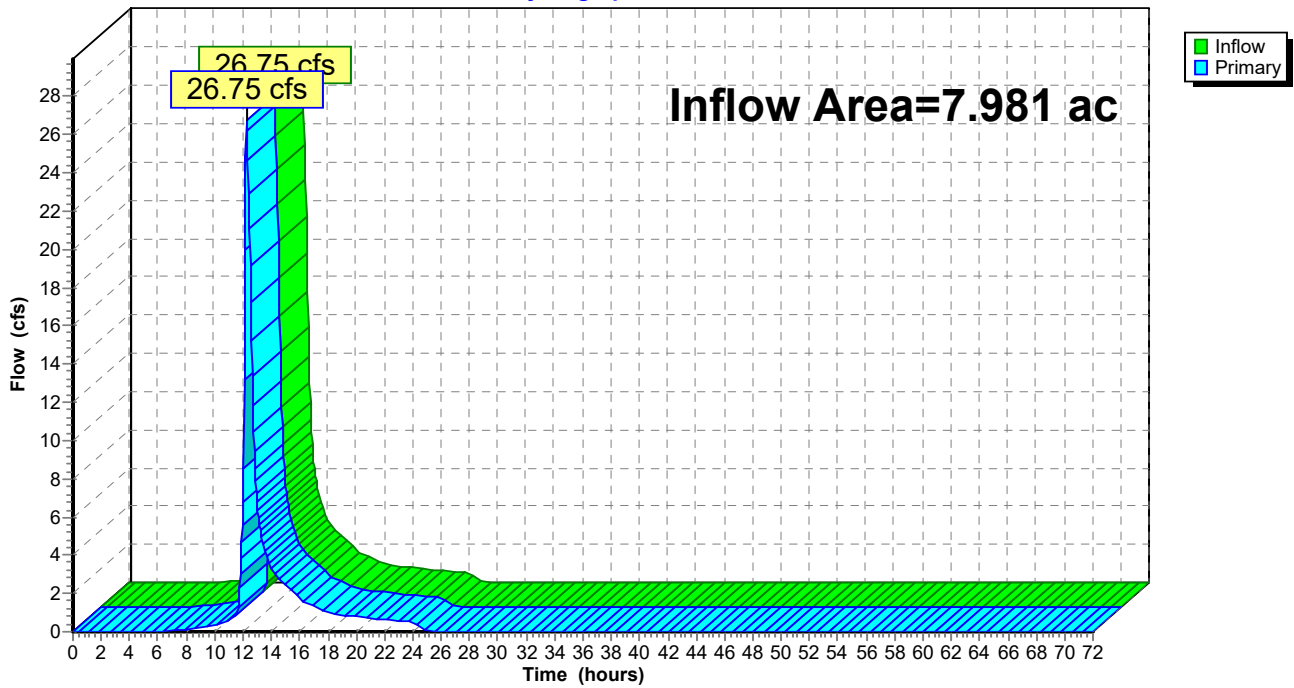
Summary for Link AP-1: AP-1

Inflow Area = 7.981 ac, 2.49% Impervious, Inflow Depth = 4.37" for 50 YR event
Inflow = 26.75 cfs @ 12.26 hrs, Volume= 2.908 af
Primary = 26.75 cfs @ 12.26 hrs, Volume= 2.908 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link AP-1: AP-1

Hydrograph



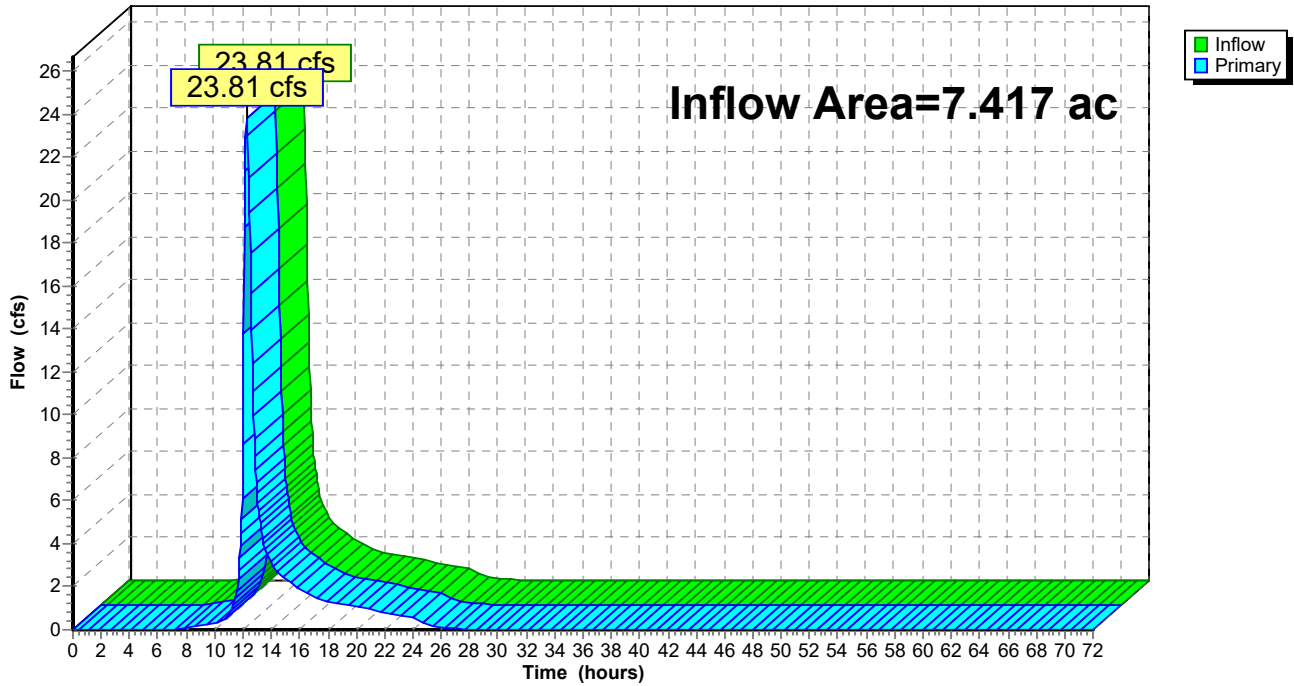
Summary for Link AP-2: AP-2

Inflow Area = 7.417 ac, 0.00% Impervious, Inflow Depth = 4.93" for 50 YR event
Inflow = 23.81 cfs @ 12.26 hrs, Volume= 3.047 af
Primary = 23.81 cfs @ 12.26 hrs, Volume= 3.047 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link AP-2: AP-2

Hydrograph



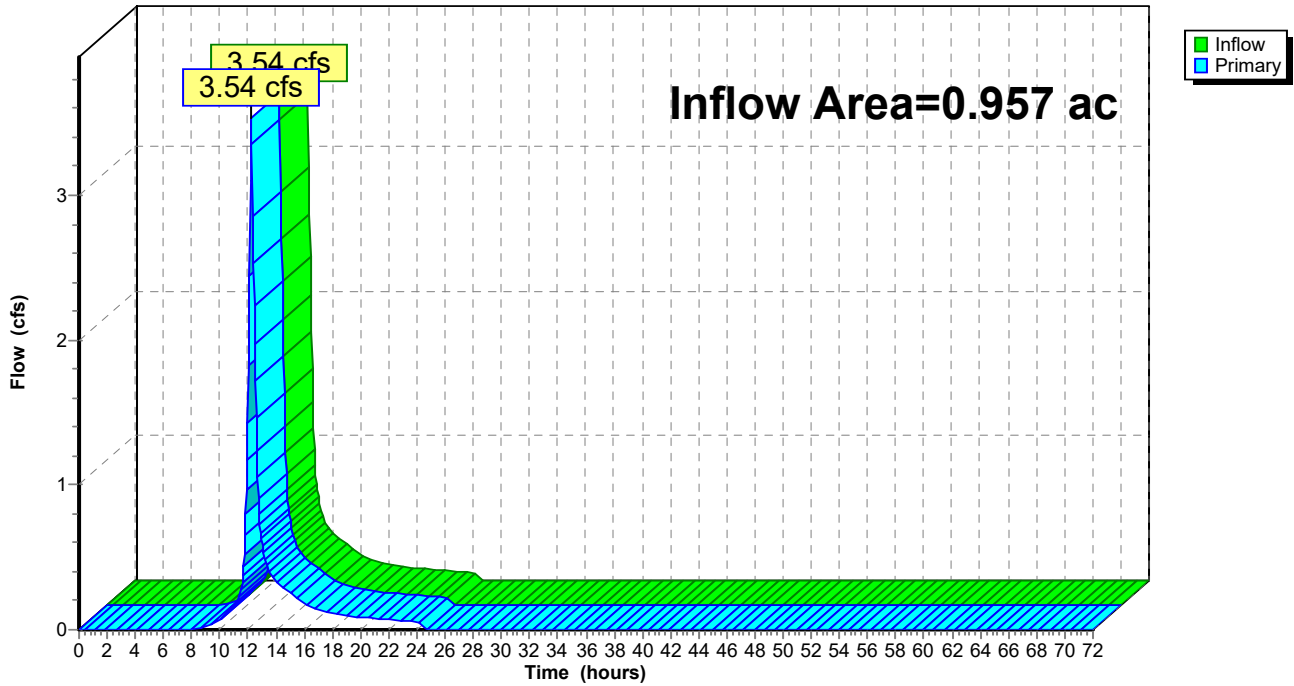
Summary for Link AP-3: AP-3

Inflow Area = 0.957 ac, 0.00% Impervious, Inflow Depth = 4.31" for 50 YR event
Inflow = 3.54 cfs @ 12.22 hrs, Volume= 0.343 af
Primary = 3.54 cfs @ 12.22 hrs, Volume= 0.343 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link AP-3: AP-3

Hydrograph



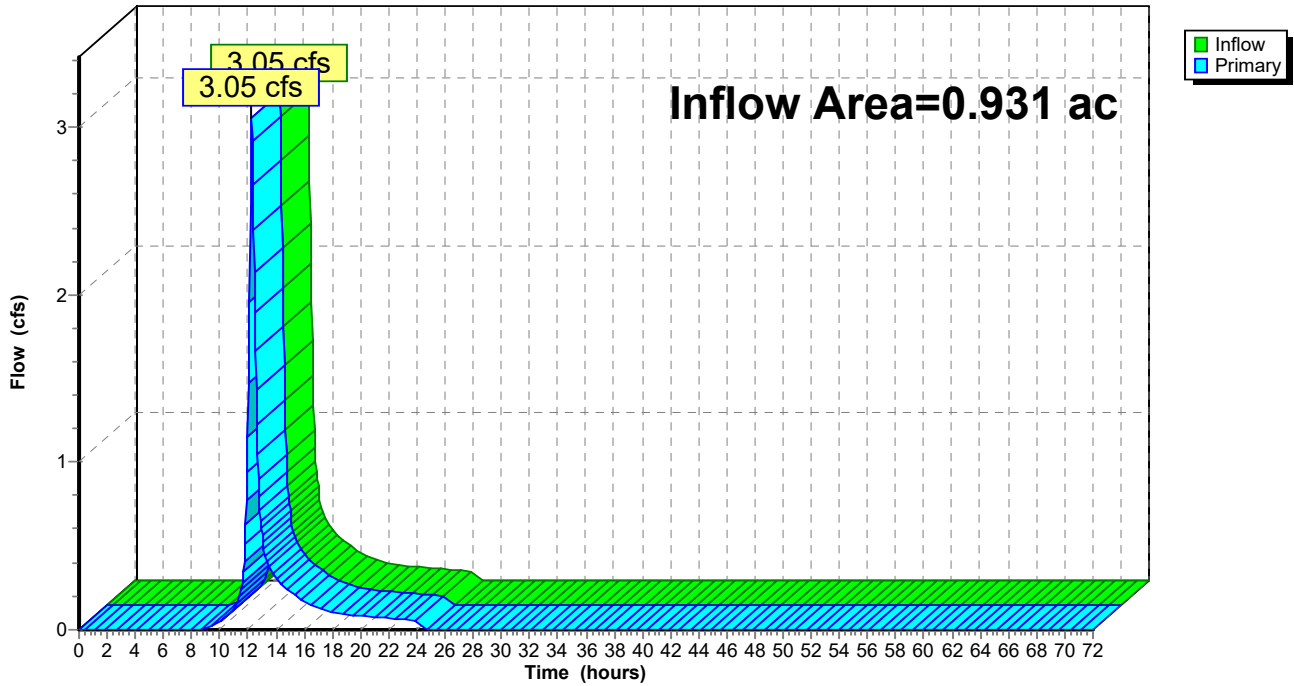
Summary for Link AP-4: AP-4

Inflow Area = 0.931 ac, 0.00% Impervious, Inflow Depth = 3.97" for 50 YR event
Inflow = 3.05 cfs @ 12.25 hrs, Volume= 0.308 af
Primary = 3.05 cfs @ 12.25 hrs, Volume= 0.308 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link AP-4: AP-4

Hydrograph



Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment PDA-1A: PDA-1A	Runoff Area=1.727 ac 11.23% Impervious Runoff Depth=6.71" Flow Length=417' Tc=15.9 min CN=81 Runoff=9.81 cfs 0.966 af
Subcatchment PDA-1B: PDA-1B	Runoff Area=1.557 ac 0.32% Impervious Runoff Depth=6.46" Flow Length=445' Tc=12.5 min CN=79 Runoff=9.34 cfs 0.839 af
Subcatchment PDA-2: PDA-2	Runoff Area=4.697 ac 0.00% Impervious Runoff Depth=6.22" Flow Length=352' Tc=9.0 min CN=77 Runoff=29.91 cfs 2.434 af
Subcatchment PDA-3A: PDA-3A	Runoff Area=2.735 ac 0.00% Impervious Runoff Depth=6.34" Flow Length=481' Tc=11.3 min CN=78 Runoff=16.71 cfs 1.445 af
Subcatchment PDA-3B: PDA-3	Runoff Area=2.881 ac 0.00% Impervious Runoff Depth=6.34" Flow Length=300' Slope=0.1100 '/' Tc=8.3 min CN=78 Runoff=19.24 cfs 1.522 af
Subcatchment PDA-3C: PDA-3C	Runoff Area=1.801 ac 0.00% Impervious Runoff Depth=6.34" Tc=6.0 min CN=78 Runoff=12.89 cfs 0.952 af
Subcatchment PDA-4: PDA-4	Runoff Area=0.957 ac 0.00% Impervious Runoff Depth=5.23" Flow Length=445' Tc=16.2 min CN=69 Runoff=4.30 cfs 0.417 af
Subcatchment PDA-5: PDA-5	Runoff Area=0.931 ac 0.00% Impervious Runoff Depth=4.86" Flow Length=475' Tc=17.6 min CN=66 Runoff=3.75 cfs 0.377 af
Reach SW-3: SW-3	Avg. Flow Depth=0.88' Max Vel=4.61 fps Inflow=19.24 cfs 1.522 af n=0.030 L=380.0' S=0.0197 '/' Capacity=118.09 cfs Outflow=18.85 cfs 1.522 af
Pond B-1: B-1	Peak Elev=785.75' Storage=6,211 cf Inflow=9.34 cfs 0.839 af Discarded=0.01 cfs 0.024 af Primary=8.66 cfs 0.740 af Outflow=8.66 cfs 0.764 af
Pond B-2: B-2	Peak Elev=782.71' Storage=39,342 cf Inflow=29.91 cfs 2.434 af Discarded=0.02 cfs 0.079 af Primary=17.47 cfs 1.864 af Outflow=17.49 cfs 1.944 af
Pond B-3: B-3	Peak Elev=780.24' Storage=37,810 cf Inflow=35.46 cfs 2.968 af Discarded=0.07 cfs 0.251 af Primary=24.21 cfs 2.707 af Outflow=24.27 cfs 2.958 af
Link AP-1: AP-1	Inflow=35.29 cfs 3.570 af Primary=35.29 cfs 3.570 af
Link AP-2: AP-2	Inflow=30.36 cfs 3.658 af Primary=30.36 cfs 3.658 af
Link AP-3: AP-3	Inflow=4.30 cfs 0.417 af Primary=4.30 cfs 0.417 af
Link AP-4: AP-4	Inflow=3.75 cfs 0.377 af Primary=3.75 cfs 0.377 af

CT590240_Watertown - PR - Rev0

Type III 24-hr 100 YR Rainfall=9.02"

Prepared by {enter your company name here}

Printed 6/15/2020

HydroCAD® 10.00-22 s/n 07402 © 2018 HydroCAD Software Solutions LLC

Page 70

Total Runoff Area = 17.286 ac Runoff Volume = 8.951 af Average Runoff Depth = 6.21"
98.85% Pervious = 17.087 ac 1.15% Impervious = 0.199 ac

Summary for Subcatchment PDA-1A: PDA-1A

Runoff = 9.81 cfs @ 12.21 hrs, Volume= 0.966 af, Depth= 6.71"

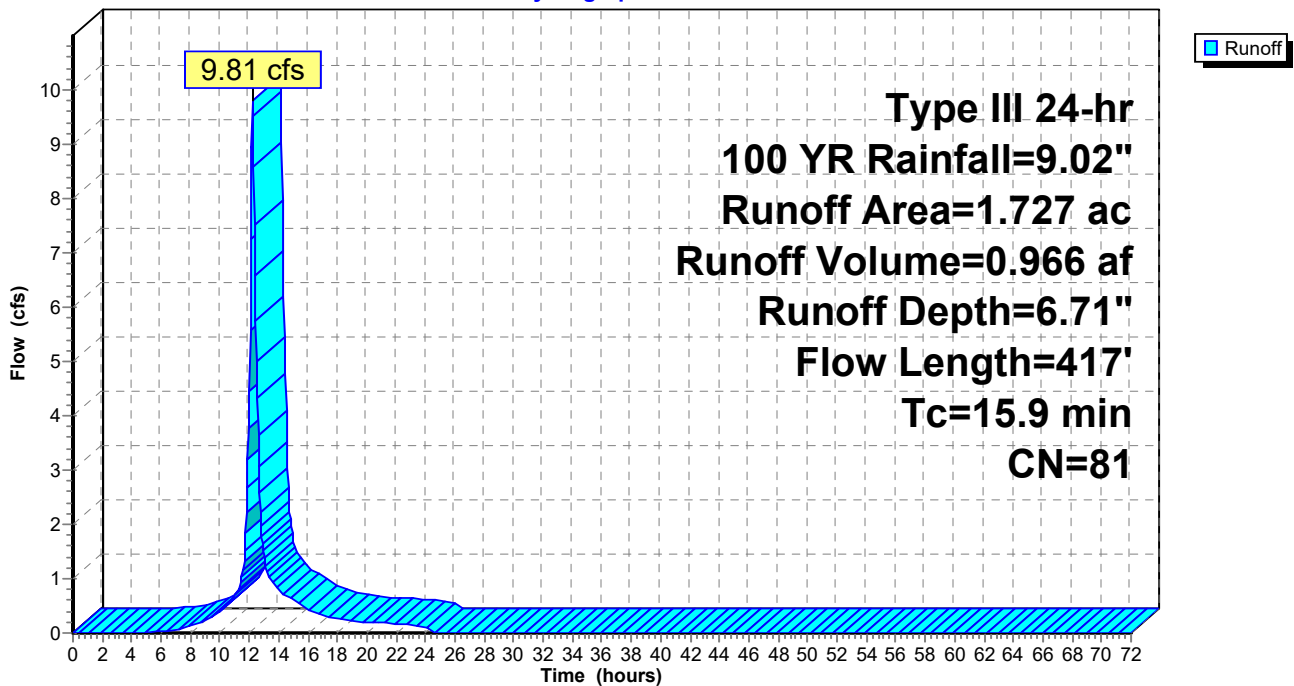
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 YR Rainfall=9.02"

Area (ac)	CN	Description
0.671	79	50-75% Grass cover, Fair, HSG C
0.194	98	Paved parking, HSG C
0.826	78	Meadow, non-grazed, HSG D
0.036	91	Gravel roads, HSG D
1.727	81	Weighted Average
1.533		88.77% Pervious Area
0.194		11.23% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0200	0.12		Sheet Flow, A-B Grass: Dense n= 0.240 P2= 3.55"
2.2	247	0.0688	1.84		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
0.2	70	0.0714	5.42		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
15.9	417	Total			

Subcatchment PDA-1A: PDA-1A

Hydrograph



Summary for Subcatchment PDA-1B: PDA-1B

Runoff = 9.34 cfs @ 12.17 hrs, Volume= 0.839 af, Depth= 6.46"

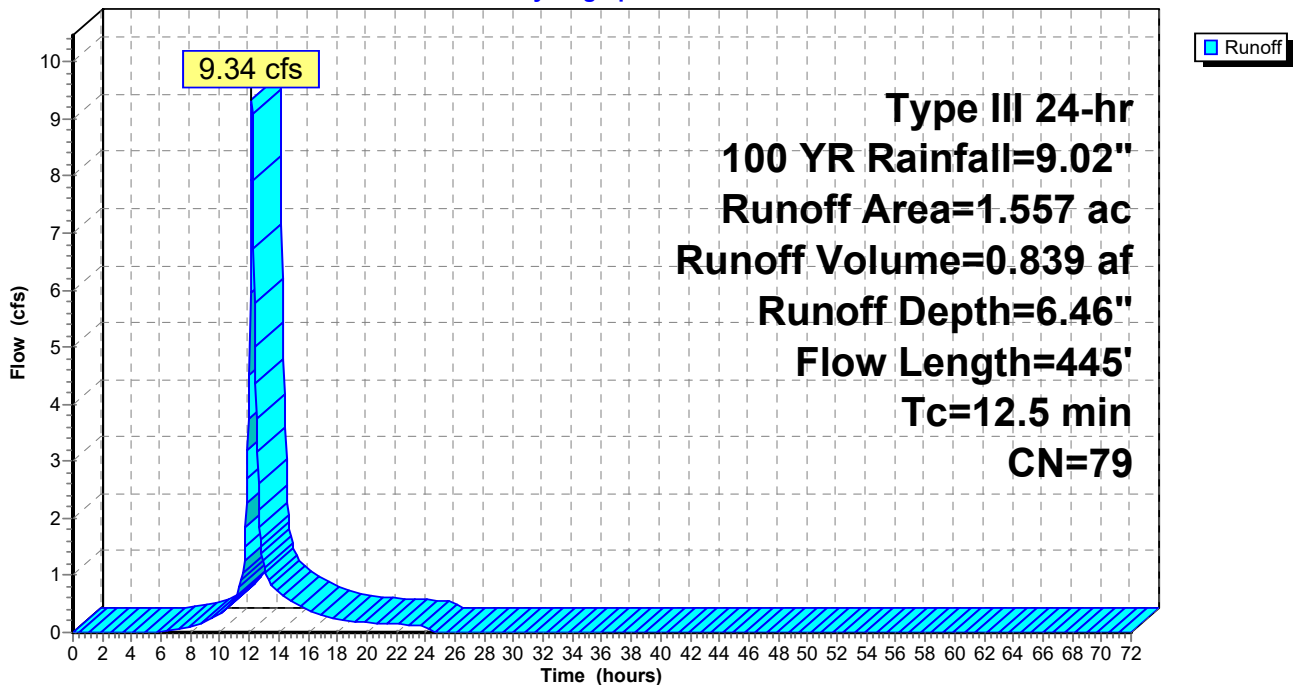
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100 YR Rainfall=9.02"

Area (ac)	CN	Description
0.005	98	Paved parking, HSG D
1.416	78	Meadow, non-grazed, HSG D
0.136	91	Gravel roads, HSG D
1.557	79	Weighted Average
1.552		99.68% Pervious Area
0.005		0.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.0550	0.18		Sheet Flow, A-B Grass: Dense n= 0.240 P2= 3.55"
2.3	189	0.0370	1.35		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
1.2	156	0.0962	2.17		Shallow Concentrated Flow, C-D Short Grass Pasture Kv= 7.0 fps
12.5	445	Total			

Subcatchment PDA-1B: PDA-1B

Hydrograph



Summary for Subcatchment PDA-2: PDA-2

Runoff = 29.91 cfs @ 12.13 hrs, Volume= 2.434 af, Depth= 6.22"

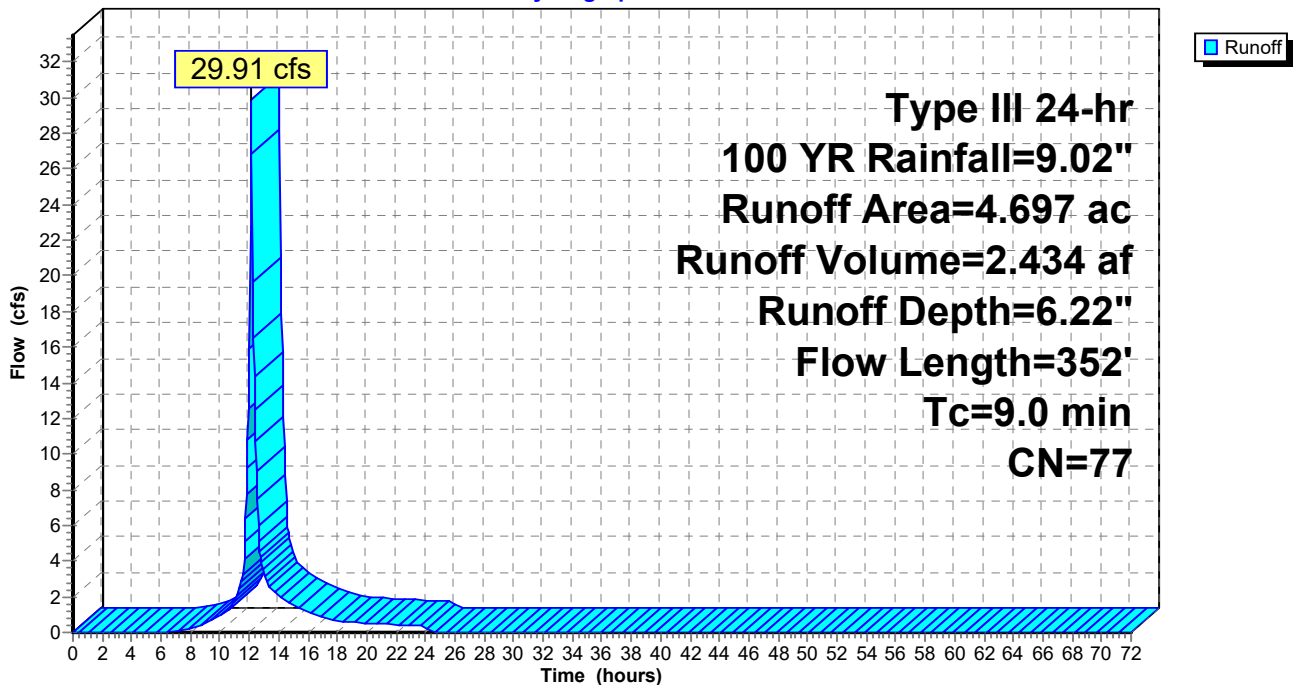
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100 YR Rainfall=9.02"

Area (ac)	CN	Description
0.434	65	Brush, Good, HSG C
0.032	73	Brush, Good, HSG D
4.075	78	Meadow, non-grazed, HSG D
0.156	91	Gravel roads, HSG D
4.697	77	Weighted Average
4.697		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	100	0.1000	0.23		Sheet Flow, A-B Grass: Dense n= 0.240 P2= 3.55"
1.9	252	0.1032	2.25		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
9.0	352	Total			

Subcatchment PDA-2: PDA-2

Hydrograph



Summary for Subcatchment PDA-3A: PDA-3A

Runoff = 16.71 cfs @ 12.16 hrs, Volume= 1.445 af, Depth= 6.34"

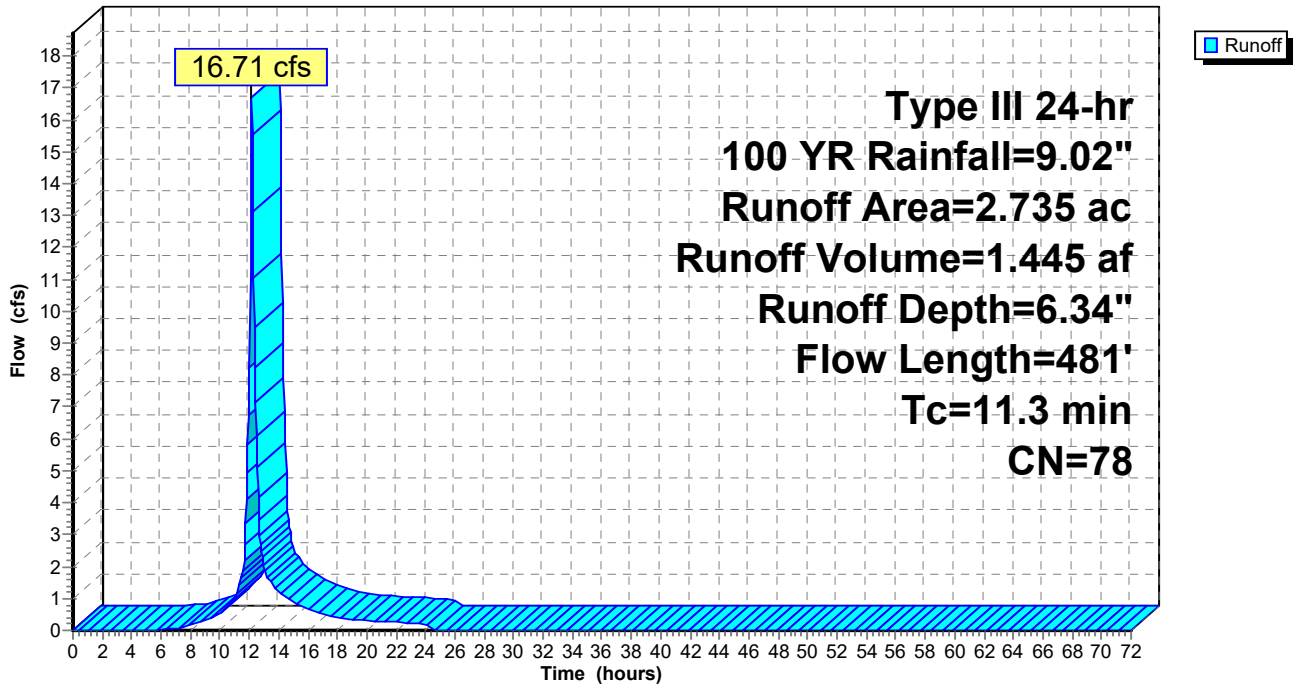
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100 YR Rainfall=9.02"

Area (ac)	CN	Description
2.705	78	Meadow, non-grazed, HSG D
0.030	91	Gravel roads, HSG D
2.735	78	Weighted Average
2.735		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.8	100	0.0800	0.21		Sheet Flow, A-B Grass: Dense n= 0.240 P2= 3.55"
3.5	381	0.0656	1.79		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
11.3	481	Total			

Subcatchment PDA-3A: PDA-3A

Hydrograph



Summary for Subcatchment PDA-3B: PDA-3

Runoff = 19.24 cfs @ 12.12 hrs, Volume= 1.522 af, Depth= 6.34"

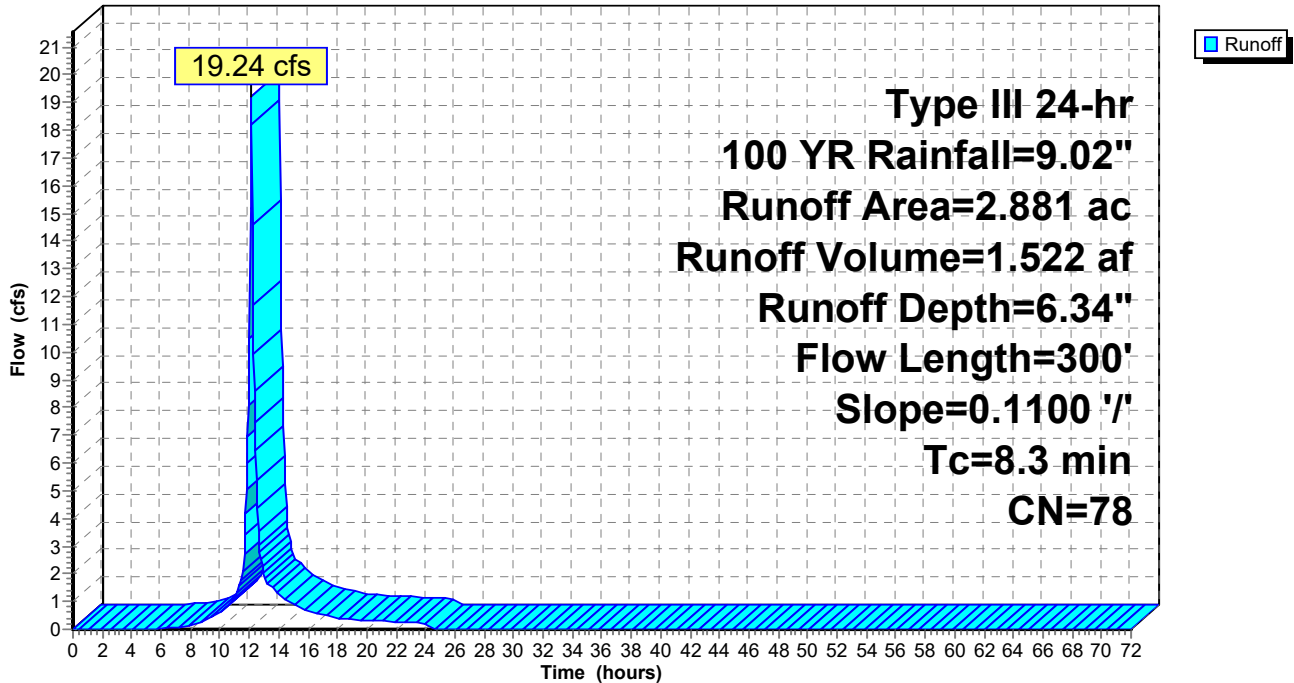
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100 YR Rainfall=9.02"

Area (ac)	CN	Description
2.881	78	Meadow, non-grazed, HSG D
2.881		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	100	0.1100	0.24		Sheet Flow, A-B Grass: Dense n= 0.240 P2= 3.55"
1.4	200	0.1100	2.32		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
8.3	300	Total			

Subcatchment PDA-3B: PDA-3

Hydrograph



Summary for Subcatchment PDA-3C: PDA-3C

Runoff = 12.89 cfs @ 12.09 hrs, Volume= 0.952 af, Depth= 6.34"

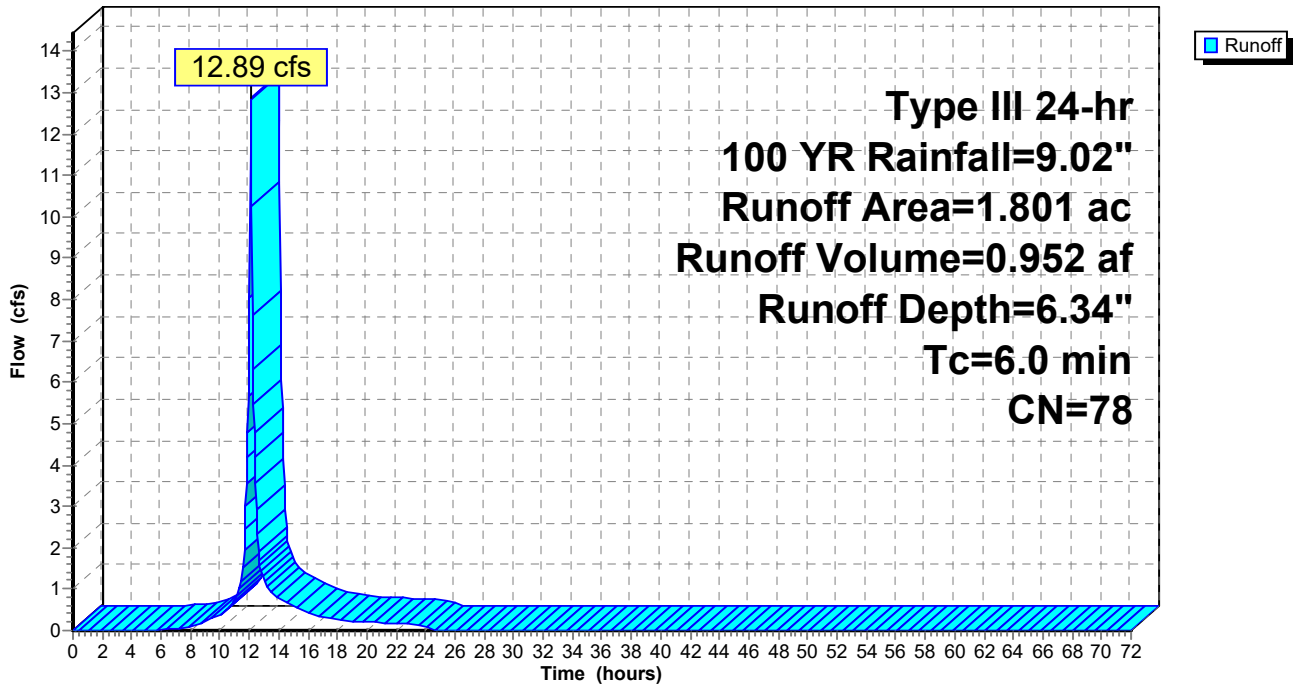
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100 YR Rainfall=9.02"

Area (ac)	CN	Description
0.111	65	Brush, Good, HSG C
0.421	83	Brush, Poor, HSG D
1.269	78	Meadow, non-grazed, HSG D
1.801	78	Weighted Average
1.801		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment PDA-3C: PDA-3C

Hydrograph



Summary for Subcatchment PDA-4: PDA-4

Runoff = 4.30 cfs @ 12.22 hrs, Volume= 0.417 af, Depth= 5.23"

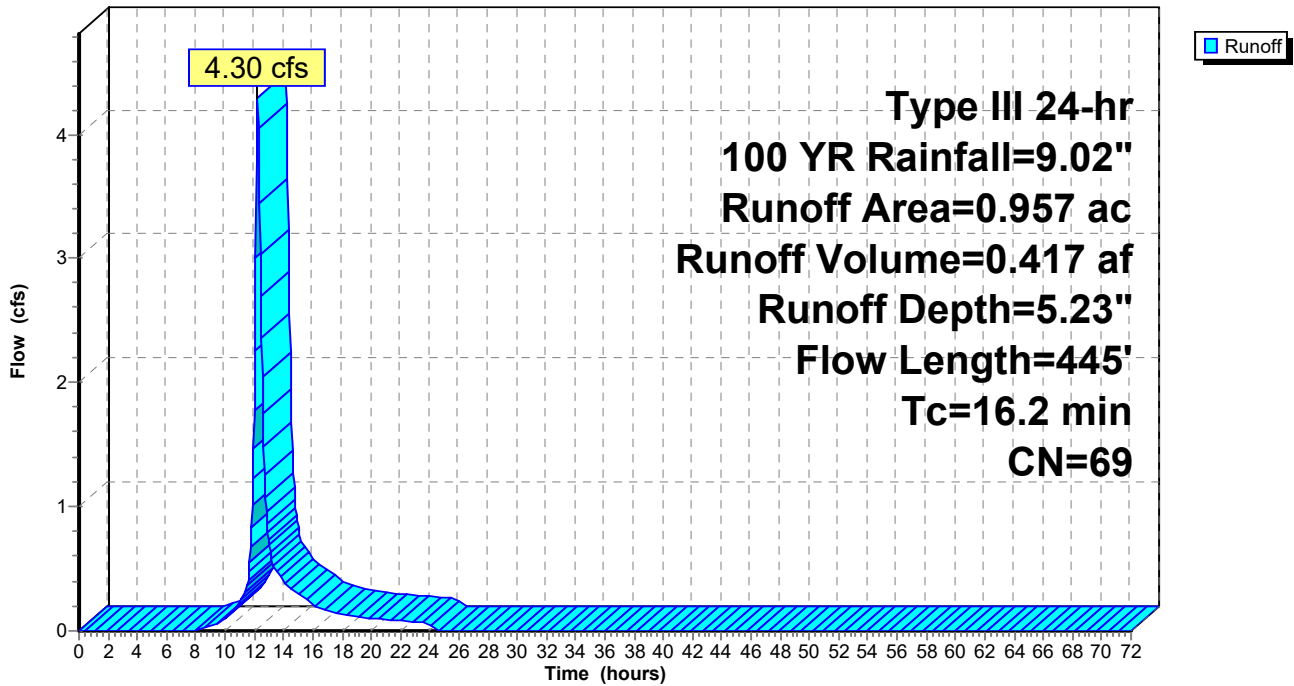
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100 YR Rainfall=9.02"

Area (ac)	CN	Description
0.546	65	Brush, Good, HSG C
0.365	73	Brush, Good, HSG D
0.046	78	Meadow, non-grazed, HSG D
0.957	69	Weighted Average
0.957		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	100	0.0750	0.14		Sheet Flow, A-B Woods: Light underbrush n= 0.400 P2= 3.55"
4.2	345	0.0754	1.37		Shallow Concentrated Flow, B-C Woodland Kv= 5.0 fps
16.2	445	Total			

Subcatchment PDA-4: PDA-4

Hydrograph



Summary for Subcatchment PDA-5: PDA-5

Runoff = 3.75 cfs @ 12.25 hrs, Volume= 0.377 af, Depth= 4.86"

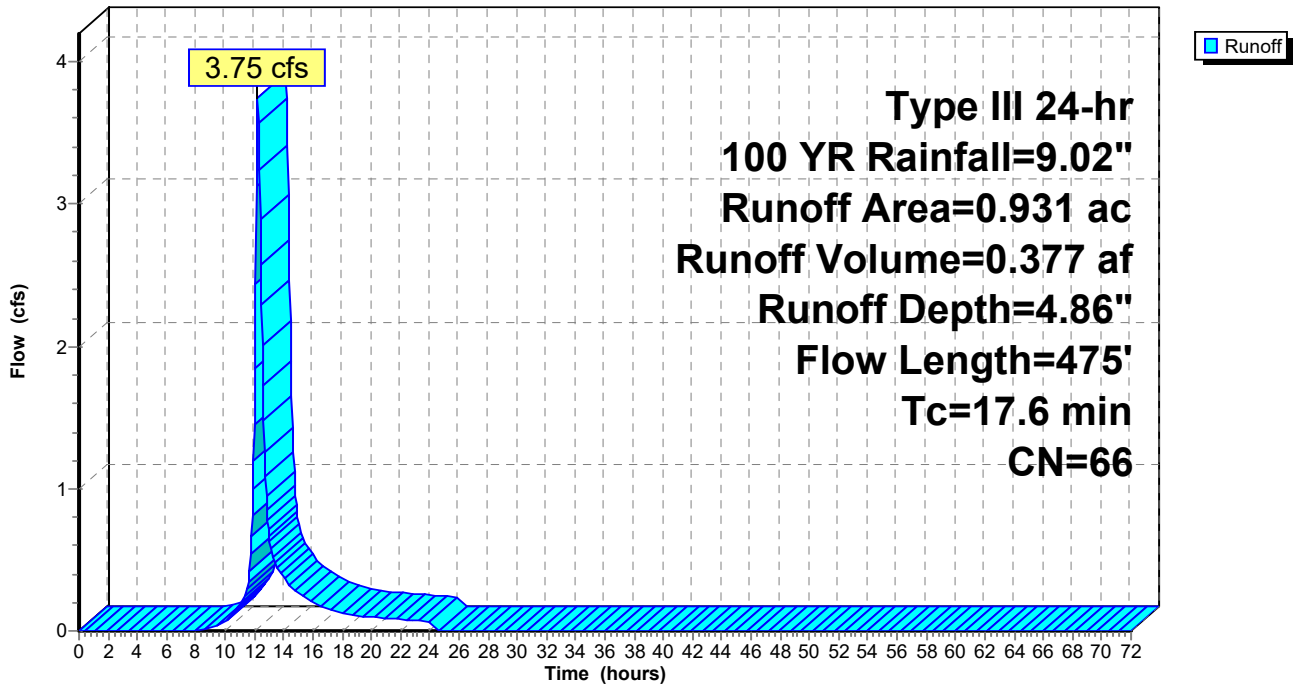
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 YR Rainfall=9.02"

Area (ac)	CN	Description
0.836	65	Brush, Good, HSG C
0.088	73	Brush, Good, HSG D
0.007	78	Meadow, non-grazed, HSG D
0.931	66	Weighted Average
0.931		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	100	0.0600	0.13		Sheet Flow, A-B Woods: Light underbrush n= 0.400 P2= 3.55"
4.5	375	0.0787	1.40		Shallow Concentrated Flow, B-C Woodland Kv= 5.0 fps
17.6	475	Total			

Subcatchment PDA-5: PDA-5

Hydrograph



Summary for Reach SW-3: SW-3

Inflow Area = 2.881 ac, 0.00% Impervious, Inflow Depth = 6.34" for 100 YR event
 Inflow = 19.24 cfs @ 12.12 hrs, Volume= 1.522 af
 Outflow = 18.85 cfs @ 12.14 hrs, Volume= 1.522 af, Atten= 2%, Lag= 1.3 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Max. Velocity= 4.61 fps, Min. Travel Time= 1.4 min
 Avg. Velocity = 1.54 fps, Avg. Travel Time= 4.1 min

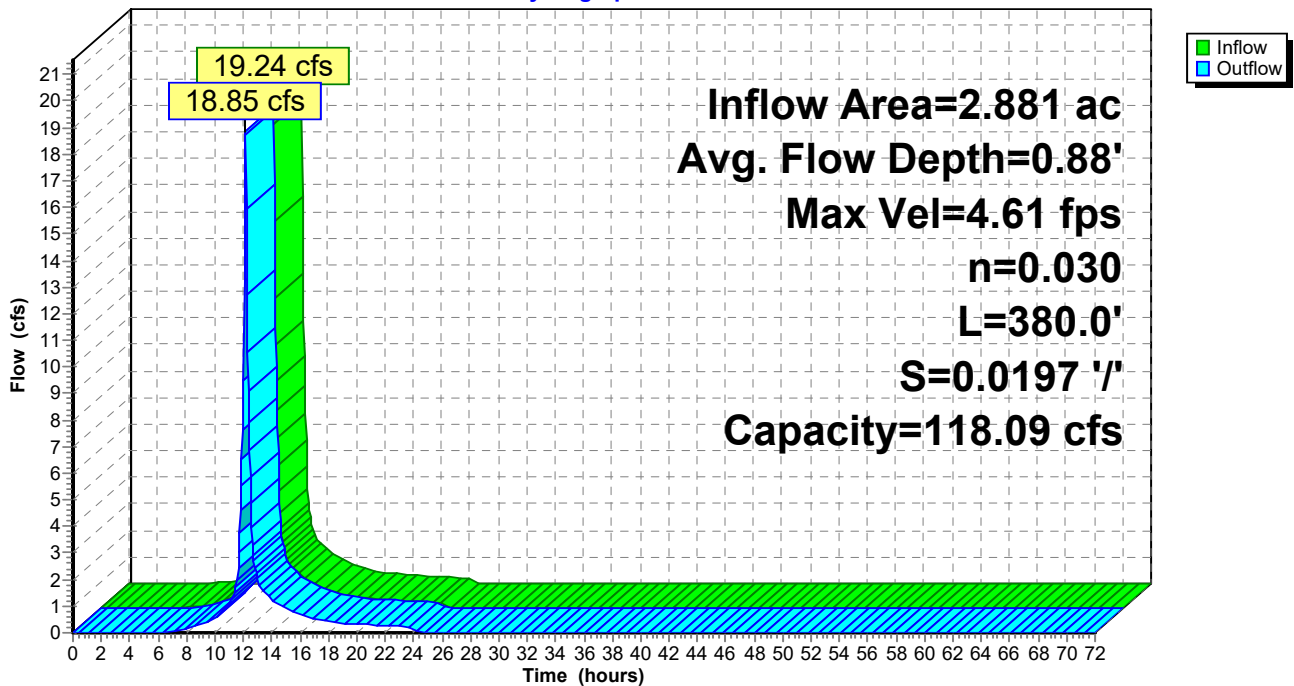
Peak Storage= 1,553 cf @ 12.14 hrs
 Average Depth at Peak Storage= 0.88'
 Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 118.09 cfs

2.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
 Side Slope Z-value= 3.0 '/' Top Width= 14.00'
 Length= 380.0' Slope= 0.0197 '/'
 Inlet Invert= 786.00', Outlet Invert= 778.50'



Reach SW-3: SW-3

Hydrograph



Summary for Pond B-1: B-1

Inflow Area = 1.557 ac, 0.32% Impervious, Inflow Depth = 6.46" for 100 YR event
 Inflow = 9.34 cfs @ 12.17 hrs, Volume= 0.839 af
 Outflow = 8.66 cfs @ 12.22 hrs, Volume= 0.764 af, Atten= 7%, Lag= 3.2 min
 Discarded = 0.01 cfs @ 12.22 hrs, Volume= 0.024 af
 Primary = 8.66 cfs @ 12.22 hrs, Volume= 0.740 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 785.75' @ 12.22 hrs Surf.Area= 3,221 sf Storage= 6,211 cf

Plug-Flow detention time= 124.5 min calculated for 0.764 af (91% of inflow)
 Center-of-Mass det. time= 79.9 min (886.6 - 806.7)

Volume	Invert	Avail.Storage	Storage Description
#1	783.00'	10,833 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
783.00	1,359	0	0
784.00	1,984	1,672	1,672
785.00	2,666	2,325	3,997
786.00	3,404	3,035	7,032
787.00	4,199	3,802	10,833

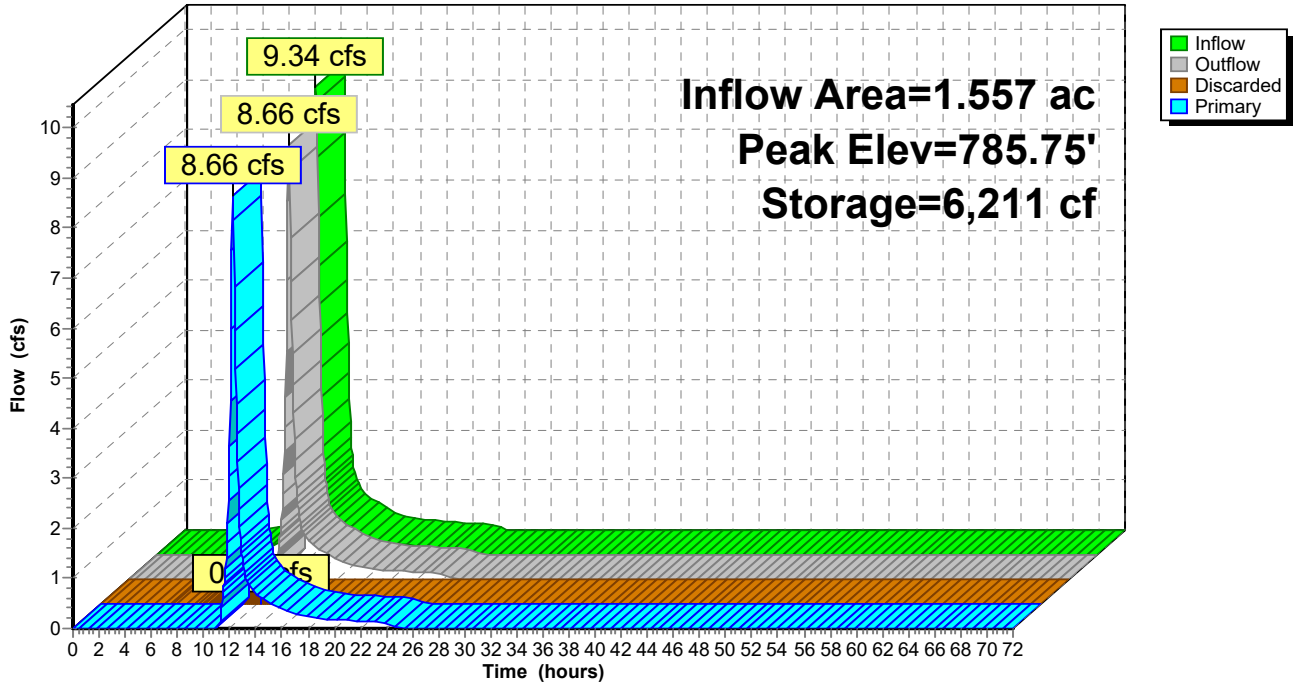
Device	Routing	Invert	Outlet Devices
#1	Discarded	783.00'	0.054 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 779.50'
#2	Primary	785.00'	5.0' long x 22.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.01 cfs @ 12.22 hrs HW=785.74' (Free Discharge)
 ↑1=Exfiltration (Controls 0.01 cfs)

Primary OutFlow Max=8.53 cfs @ 12.22 hrs HW=785.74' TW=0.00' (Dynamic Tailwater)
 ↑2=Broad-Crested Rectangular Weir (Weir Controls 8.53 cfs @ 2.29 fps)

Pond B-1: B-1

Hydrograph



Summary for Pond B-2: B-2

Inflow Area = 4.697 ac, 0.00% Impervious, Inflow Depth = 6.22" for 100 YR event
 Inflow = 29.91 cfs @ 12.13 hrs, Volume= 2.434 af
 Outflow = 17.49 cfs @ 12.29 hrs, Volume= 1.944 af, Atten= 42%, Lag= 9.8 min
 Discarded = 0.02 cfs @ 12.29 hrs, Volume= 0.079 af
 Primary = 17.47 cfs @ 12.29 hrs, Volume= 1.864 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 782.71' @ 12.29 hrs Surf.Area= 14,179 sf Storage= 39,342 cf

Plug-Flow detention time= 204.2 min calculated for 1.944 af (80% of inflow)
 Center-of-Mass det. time= 127.9 min (935.7 - 807.9)

Volume	Invert	Avail.Storage	Storage Description
#1	779.00'	43,605 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
779.00	7,183	0	0
780.00	8,991	8,087	8,087
781.00	10,859	9,925	18,012
782.00	12,782	11,821	29,833
783.00	14,762	13,772	43,605

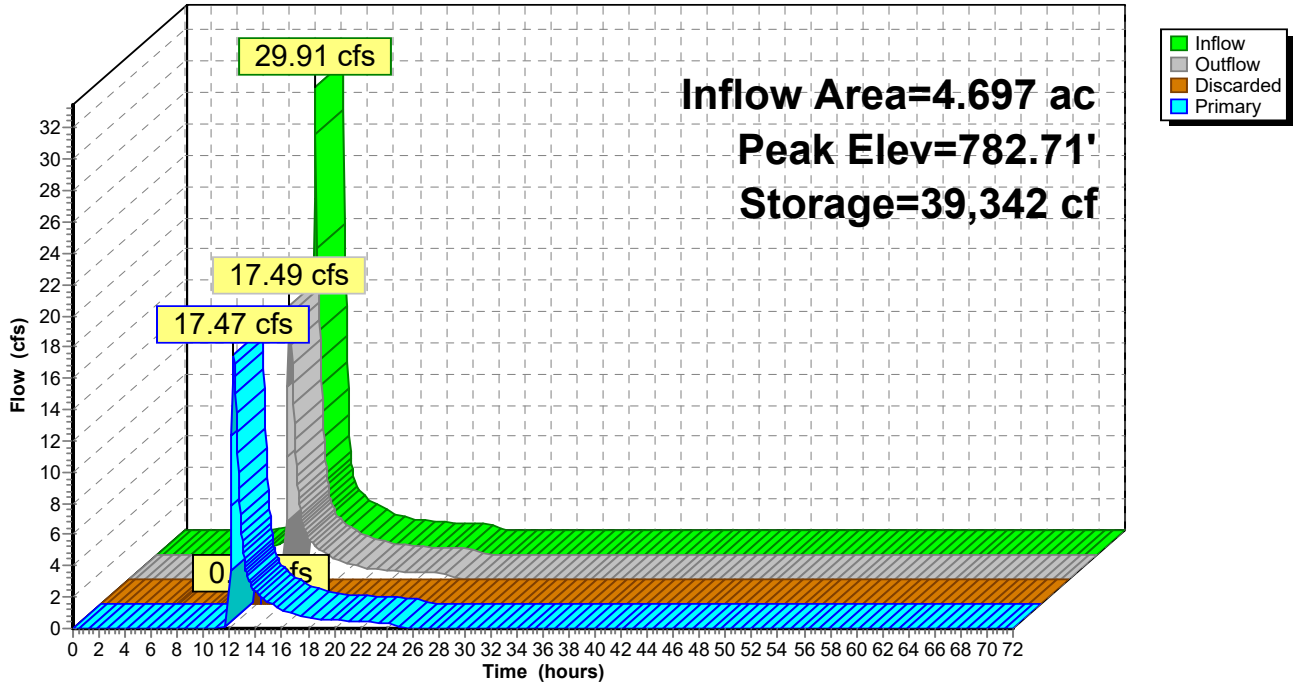
Device	Routing	Invert	Outlet Devices
#1	Discarded	779.00'	0.047 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 768.00'
#2	Primary	781.50'	5.0' long x 22.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.02 cfs @ 12.29 hrs HW=782.70' (Free Discharge)
 ↑1=Exfiltration (Controls 0.02 cfs)

Primary OutFlow Max=17.41 cfs @ 12.29 hrs HW=782.70' TW=0.00' (Dynamic Tailwater)
 ↑2=Broad-Crested Rectangular Weir (Weir Controls 17.41 cfs @ 2.90 fps)

Pond B-2: B-2

Hydrograph



Summary for Pond B-3: B-3

[62] Hint: Exceeded Reach SW-3 OUTLET depth by 1.07' @ 12.35 hrs

Inflow Area = 5.616 ac, 0.00% Impervious, Inflow Depth = 6.34" for 100 YR event
 Inflow = 35.46 cfs @ 12.15 hrs, Volume= 2.968 af
 Outflow = 24.27 cfs @ 12.27 hrs, Volume= 2.958 af, Atten= 32%, Lag= 7.6 min
 Discarded = 0.07 cfs @ 12.27 hrs, Volume= 0.251 af
 Primary = 24.21 cfs @ 12.27 hrs, Volume= 2.707 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 780.24' @ 12.27 hrs Surf.Area= 13,832 sf Storage= 37,810 cf

Plug-Flow detention time= 200.4 min calculated for 2.956 af (100% of inflow)
 Center-of-Mass det. time= 200.2 min (1,007.9 - 807.8)

Volume	Invert	Avail.Storage	Storage Description
#1	777.00'	48,687 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
777.00	9,581	0	0
778.00	10,827	10,204	10,204
779.00	12,129	11,478	21,682
780.00	13,488	12,809	34,491
781.00	14,904	14,196	48,687

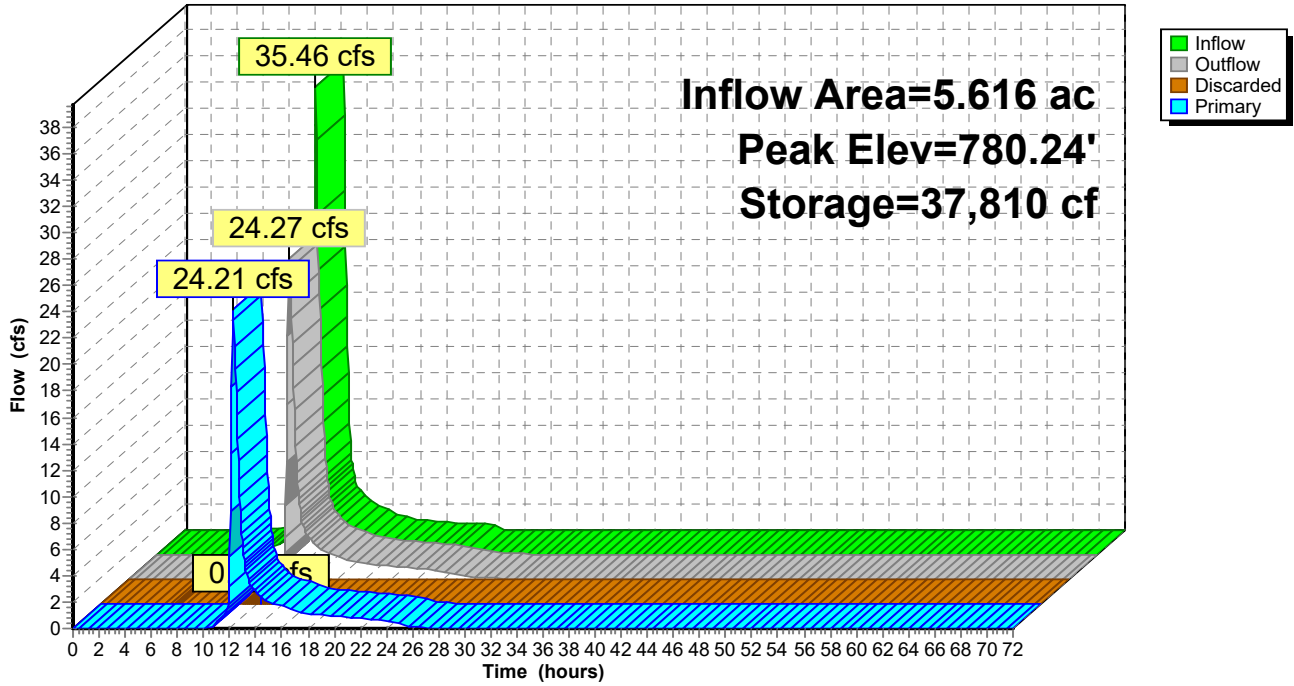
Device	Routing	Invert	Outlet Devices
#1	Discarded	777.00'	0.186 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 750.00'
#2	Primary	776.50'	12.0" Round Culvert L= 37.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 776.50' / 776.00' S= 0.0135 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	777.70'	12.0" W x 3.0" H Vert. Oriface/Grate C= 0.600
#4	Device 2	778.60'	12.0" Vert. Oriface/Grate C= 0.600
#5	Primary	779.00'	5.0' long x 22.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.07 cfs @ 12.27 hrs HW=780.23' (Free Discharge)
 ↳ **1=Exfiltration** (Controls 0.07 cfs)

Primary OutFlow Max=23.98 cfs @ 12.27 hrs HW=780.23' TW=0.00' (Dynamic Tailwater)
 ↳ **2=Culvert** (Passes 5.89 cfs of 6.80 cfs potential flow)
 ↳ ↳ **3=Oriface/Grate** (Orifice Controls 1.87 cfs @ 7.47 fps)
 ↳ ↳ **4=Oriface/Grate** (Orifice Controls 4.03 cfs @ 5.13 fps)
 ↳ ↳ **5=Broad-Crested Rectangular Weir** (Weir Controls 18.09 cfs @ 2.93 fps)

Pond B-3: B-3

Hydrograph



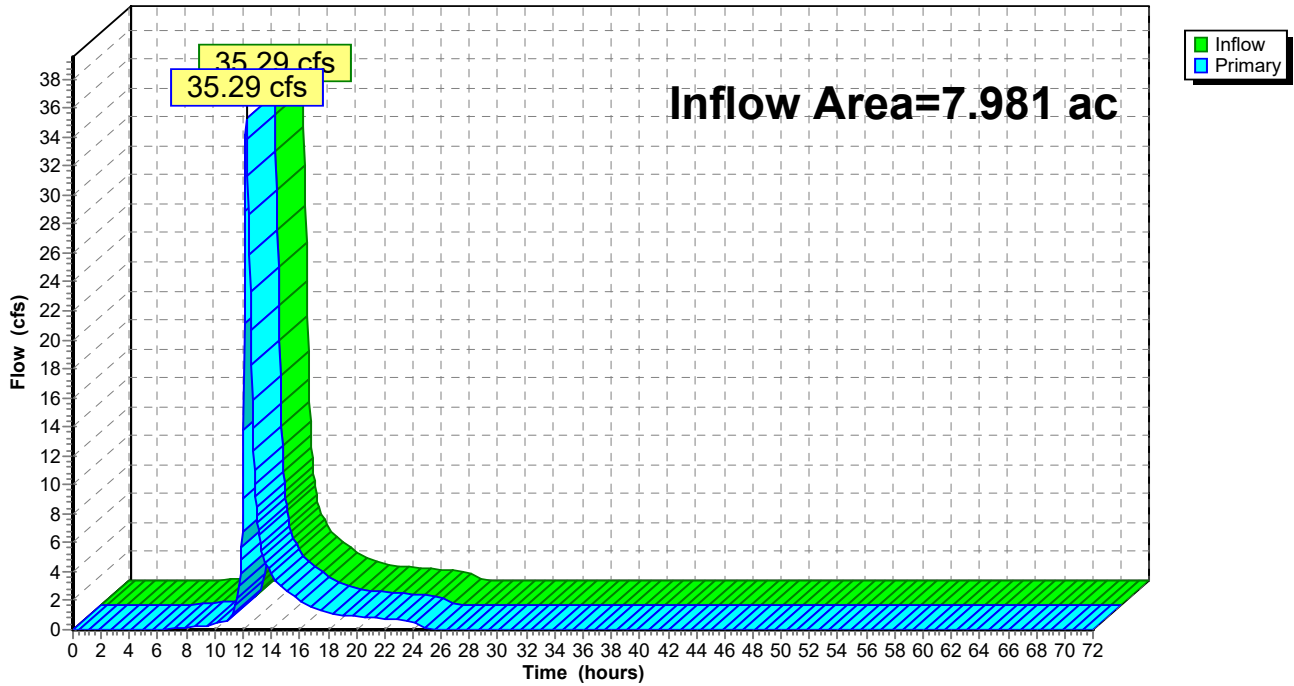
Summary for Link AP-1: AP-1

Inflow Area = 7.981 ac, 2.49% Impervious, Inflow Depth = 5.37" for 100 YR event
Inflow = 35.29 cfs @ 12.25 hrs, Volume= 3.570 af
Primary = 35.29 cfs @ 12.25 hrs, Volume= 3.570 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link AP-1: AP-1

Hydrograph



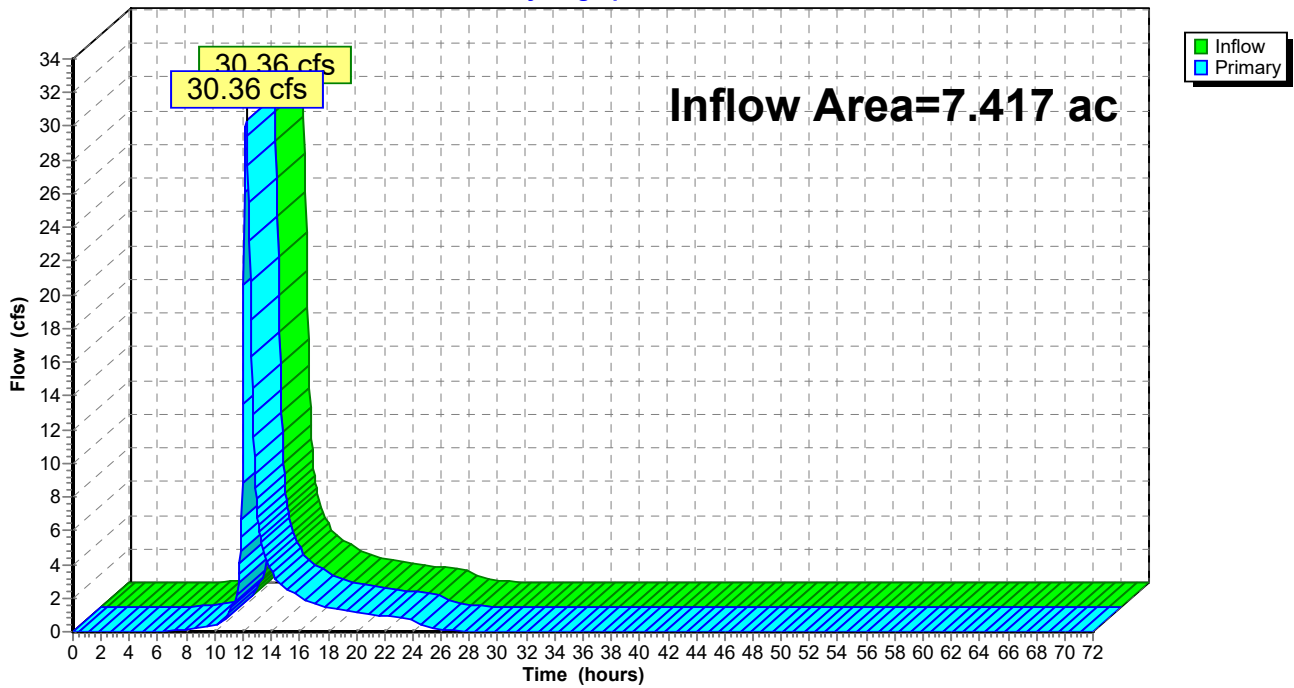
Summary for Link AP-2: AP-2

Inflow Area = 7.417 ac, 0.00% Impervious, Inflow Depth = 5.92" for 100 YR event
Inflow = 30.36 cfs @ 12.24 hrs, Volume= 3.658 af
Primary = 30.36 cfs @ 12.24 hrs, Volume= 3.658 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link AP-2: AP-2

Hydrograph



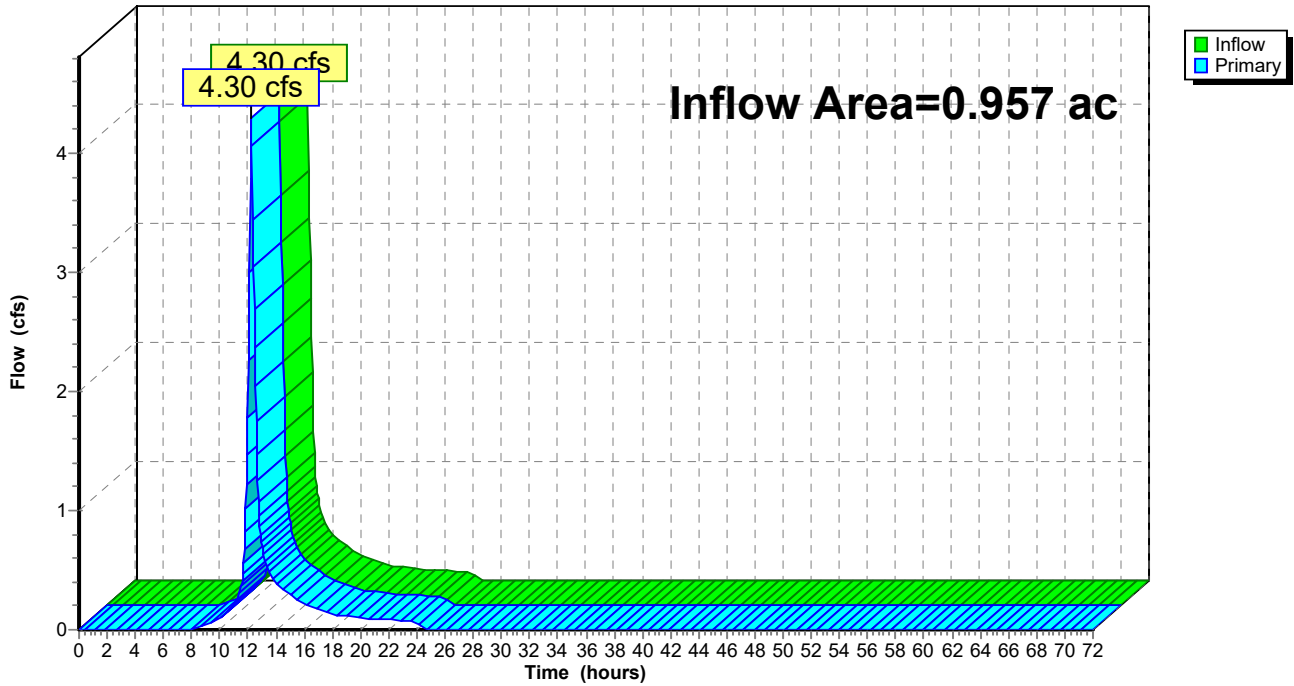
Summary for Link AP-3: AP-3

Inflow Area = 0.957 ac, 0.00% Impervious, Inflow Depth = 5.23" for 100 YR event
Inflow = 4.30 cfs @ 12.22 hrs, Volume= 0.417 af
Primary = 4.30 cfs @ 12.22 hrs, Volume= 0.417 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link AP-3: AP-3

Hydrograph



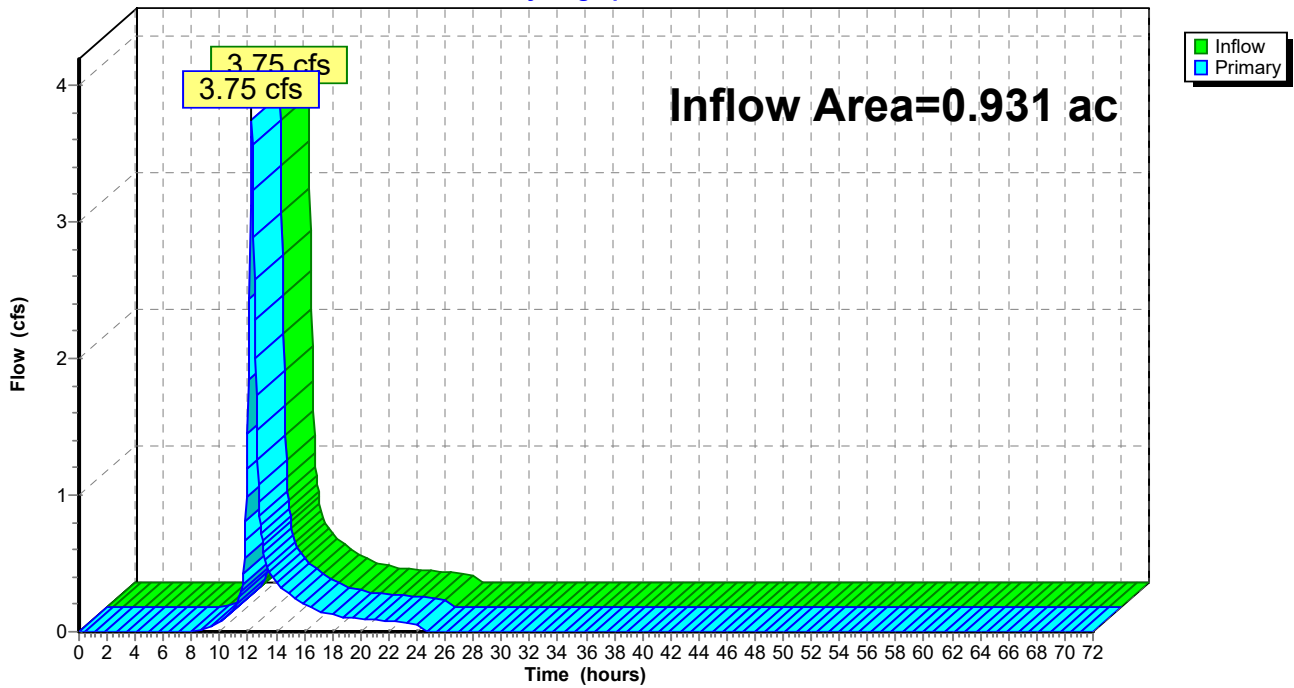
Summary for Link AP-4: AP-4

Inflow Area = 0.931 ac, 0.00% Impervious, Inflow Depth = 4.86" for 100 YR event
Inflow = 3.75 cfs @ 12.25 hrs, Volume= 0.377 af
Primary = 3.75 cfs @ 12.25 hrs, Volume= 0.377 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link AP-4: AP-4

Hydrograph



APPENDIX D: NOAA ATLAS 14 PRECIPITATION FREQUENCY TABLE



NOAA Atlas 14, Volume 10, Version 3
Location name: Watertown, Connecticut, USA*
Latitude: 41.6132°, Longitude: -73.1534°
Elevation: 759.55 ft**



* source: ESRI Maps
 ** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sandra Pavlovic, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Orlan Wilhite

NOAA, National Weather Service, Silver Spring, Maryland

[PF_tabular](#) | [PF_graphical](#) | [Maps & aeriels](#)

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.363 (0.276-0.477)	0.431 (0.327-0.567)	0.542 (0.410-0.715)	0.634 (0.477-0.841)	0.760 (0.555-1.05)	0.856 (0.615-1.20)	0.955 (0.666-1.38)	1.06 (0.710-1.58)	1.21 (0.779-1.85)	1.32 (0.835-2.06)
10-min	0.514 (0.390-0.676)	0.610 (0.463-0.803)	0.767 (0.580-1.01)	0.897 (0.675-1.19)	1.08 (0.787-1.48)	1.21 (0.870-1.70)	1.35 (0.944-1.96)	1.50 (1.00-2.23)	1.71 (1.10-2.62)	1.87 (1.18-2.92)
15-min	0.605 (0.459-0.795)	0.718 (0.545-0.944)	0.902 (0.682-1.19)	1.06 (0.794-1.40)	1.27 (0.925-1.74)	1.43 (1.02-2.00)	1.59 (1.11-2.30)	1.77 (1.18-2.62)	2.01 (1.30-3.08)	2.20 (1.39-3.44)
30-min	0.823 (0.625-1.08)	0.976 (0.740-1.28)	1.23 (0.928-1.62)	1.44 (1.08-1.90)	1.72 (1.26-2.37)	1.94 (1.39-2.72)	2.16 (1.51-3.13)	2.40 (1.61-3.57)	2.73 (1.77-4.19)	2.99 (1.90-4.68)
60-min	1.04 (0.790-1.37)	1.23 (0.936-1.62)	1.55 (1.17-2.05)	1.82 (1.37-2.41)	2.18 (1.59-3.00)	2.46 (1.76-3.44)	2.74 (1.91-3.96)	3.04 (2.03-4.52)	3.46 (2.24-5.31)	3.79 (2.40-5.92)
2-hr	1.38 (1.05-1.80)	1.61 (1.23-2.11)	2.01 (1.53-2.63)	2.33 (1.76-3.07)	2.78 (2.04-3.80)	3.12 (2.25-4.35)	3.47 (2.43-4.99)	3.84 (2.58-5.67)	4.36 (2.83-6.65)	4.77 (3.03-7.42)
3-hr	1.60 (1.23-2.08)	1.88 (1.44-2.44)	2.33 (1.78-3.05)	2.71 (2.06-3.56)	3.23 (2.38-4.41)	3.62 (2.62-5.04)	4.03 (2.84-5.80)	4.47 (3.01-6.59)	5.10 (3.32-7.77)	5.60 (3.56-8.70)
6-hr	2.01 (1.55-2.60)	2.39 (1.84-3.10)	3.02 (2.32-3.92)	3.53 (2.70-4.61)	4.25 (3.15-5.78)	4.78 (3.49-6.64)	5.34 (3.80-7.70)	5.99 (4.04-8.79)	6.94 (4.52-10.5)	7.73 (4.93-11.9)
12-hr	2.44 (1.90-3.14)	2.98 (2.31-3.84)	3.86 (2.98-4.98)	4.59 (3.52-5.95)	5.59 (4.18-7.60)	6.33 (4.66-8.80)	7.13 (5.14-10.3)	8.10 (5.49-11.8)	9.58 (6.26-14.5)	10.8 (6.94-16.7)
24-hr	2.85 (2.22-3.64)	3.55 (2.77-4.54)	4.71 (3.66-6.04)	5.67 (4.38-7.31)	6.99 (5.27-9.48)	7.95 (5.91-11.1)	9.02 (6.57-13.1)	10.4 (7.04-15.1)	12.5 (8.18-18.8)	14.3 (9.21-21.9)
2-day	3.22 (2.53-4.08)	4.07 (3.19-5.17)	5.47 (4.28-6.97)	6.64 (5.16-8.50)	8.23 (6.26-11.1)	9.40 (7.04-13.0)	10.7 (7.88-15.6)	12.4 (8.45-18.0)	15.2 (9.96-22.7)	17.6 (11.3-26.8)
3-day	3.50 (2.76-4.42)	4.44 (3.49-5.62)	5.98 (4.69-7.59)	7.25 (5.66-9.25)	9.00 (6.87-12.2)	10.3 (7.73-14.2)	11.7 (8.66-17.0)	13.6 (9.28-19.6)	16.7 (11.0-24.9)	19.4 (12.5-29.5)
4-day	3.76 (2.97-4.74)	4.76 (3.75-6.00)	6.39 (5.03-8.09)	7.75 (6.06-9.86)	9.61 (7.35-12.9)	11.0 (8.26-15.2)	12.5 (9.26-18.1)	14.5 (9.91-20.9)	17.8 (11.7-26.5)	20.7 (13.4-31.4)
7-day	4.47 (3.55-5.61)	5.59 (4.43-7.02)	7.42 (5.87-9.35)	8.94 (7.03-11.3)	11.0 (8.46-14.7)	12.6 (9.48-17.2)	14.2 (10.6-20.5)	16.4 (11.3-23.6)	20.0 (13.2-29.6)	23.1 (15.0-34.9)
10-day	5.19 (4.14-6.49)	6.37 (5.07-7.97)	8.30 (6.58-10.4)	9.90 (7.81-12.5)	12.1 (9.29-16.1)	13.7 (10.4-18.7)	15.5 (11.5-22.1)	17.7 (12.2-25.4)	21.3 (14.1-31.5)	24.4 (15.8-36.8)
20-day	7.46 (5.98-9.26)	8.69 (6.96-10.8)	10.7 (8.55-13.4)	12.4 (9.82-15.5)	14.7 (11.3-19.3)	16.4 (12.4-22.0)	18.2 (13.4-25.5)	20.4 (14.1-29.0)	23.7 (15.8-34.9)	26.5 (17.3-39.8)
30-day	9.35 (7.52-11.6)	10.6 (8.52-13.1)	12.7 (10.1-15.7)	14.4 (11.4-17.9)	16.7 (12.9-21.7)	18.5 (13.9-24.6)	20.3 (14.9-28.0)	22.4 (15.6-31.7)	25.4 (17.0-37.2)	27.9 (18.2-41.7)
45-day	11.7 (9.43-14.4)	13.0 (10.5-16.0)	15.1 (12.1-18.7)	16.8 (13.4-20.9)	19.2 (14.9-24.9)	21.1 (15.9-27.8)	22.9 (16.8-31.3)	24.9 (17.4-35.1)	27.7 (18.5-40.3)	29.8 (19.5-44.4)
60-day	13.6 (11.0-16.7)	14.9 (12.1-18.4)	17.1 (13.8-21.1)	18.9 (15.2-23.5)	21.4 (16.6-27.5)	23.3 (17.6-30.6)	25.3 (18.4-34.2)	27.2 (19.0-38.1)	29.7 (20.0-43.2)	31.7 (20.7-47.1)

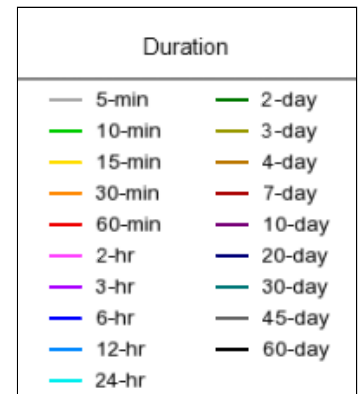
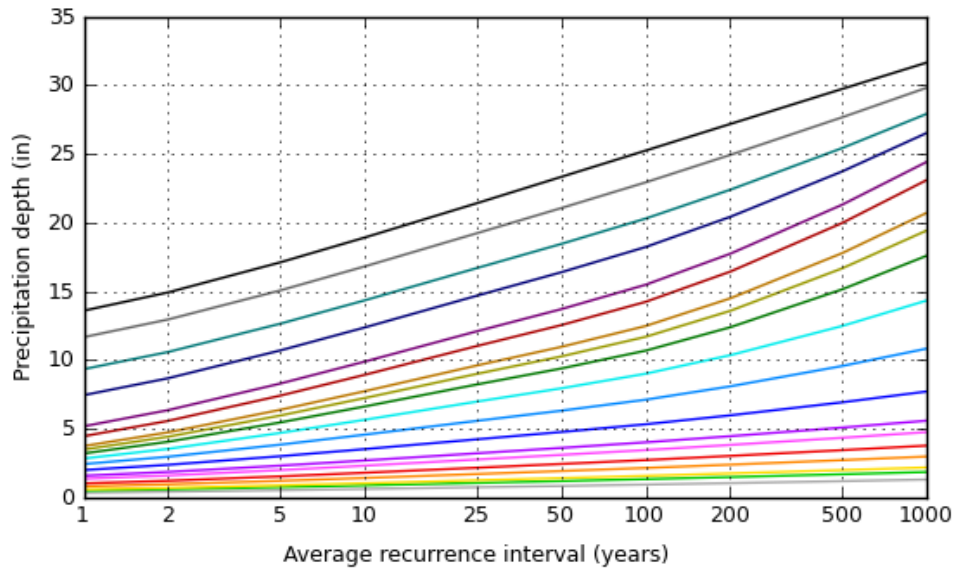
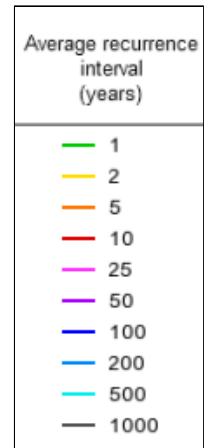
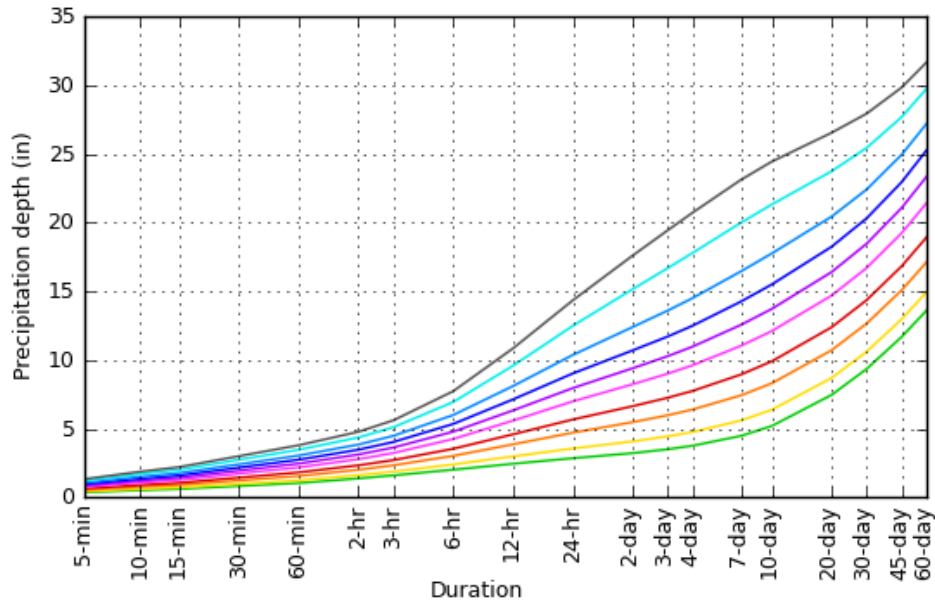
¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values. Please refer to NOAA Atlas 14 document for more information.

[Back to Top](#)

PF graphical

PDS-based depth-duration-frequency (DDF) curves

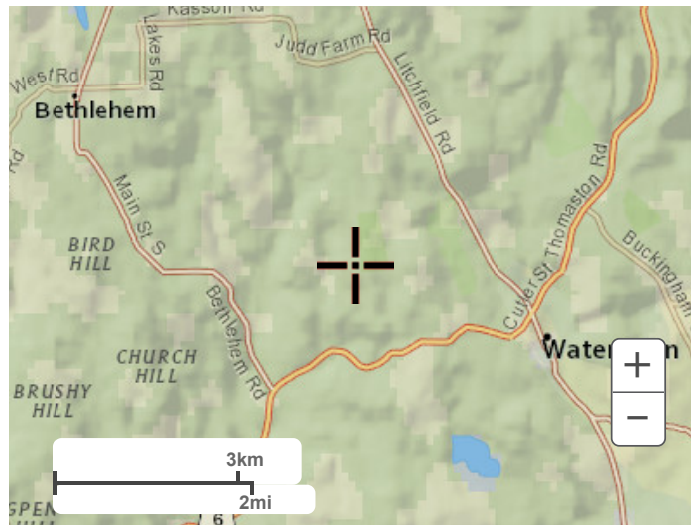
Latitude: 41.6132°, Longitude: -73.1534°



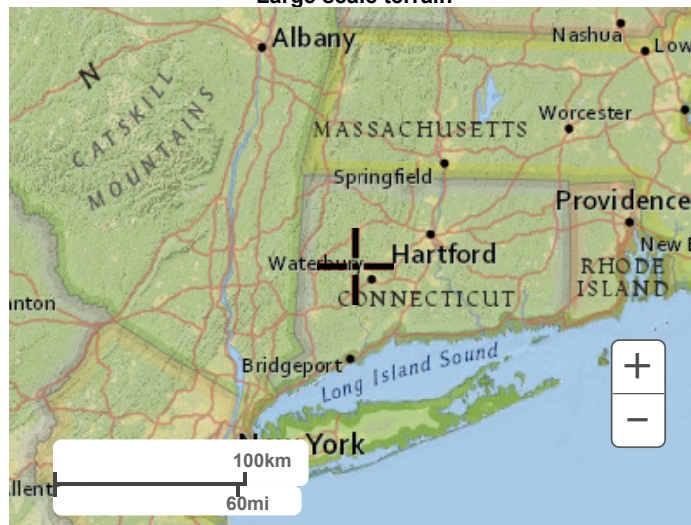
[Back to Top](#)

Maps & aerials

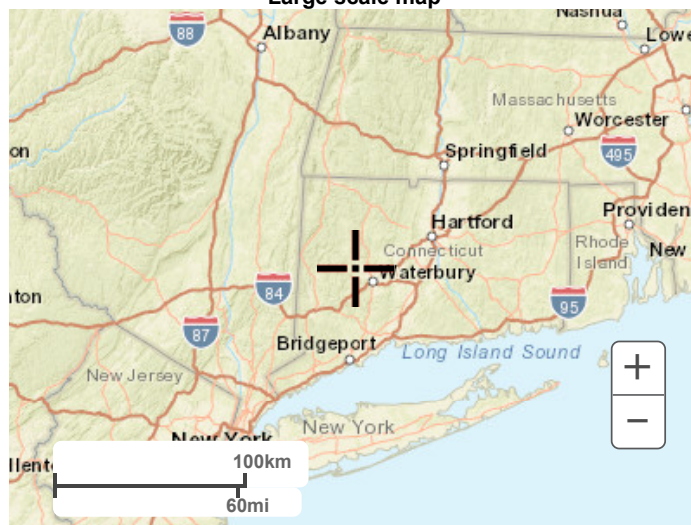
Small scale terrain



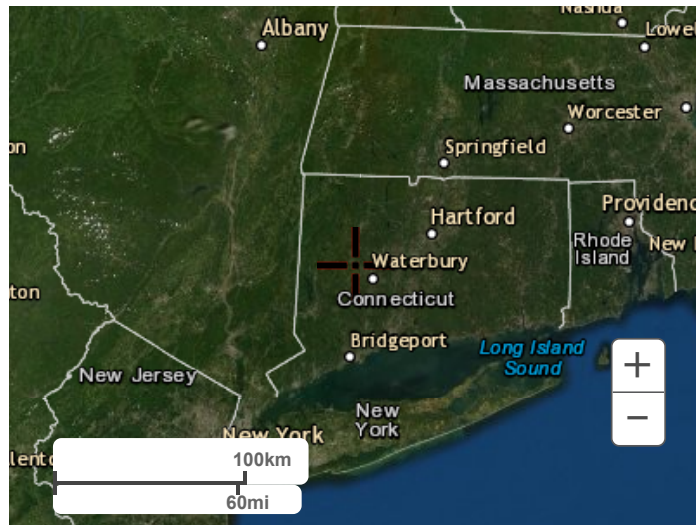
Large scale terrain



Large scale map



Large scale aerial



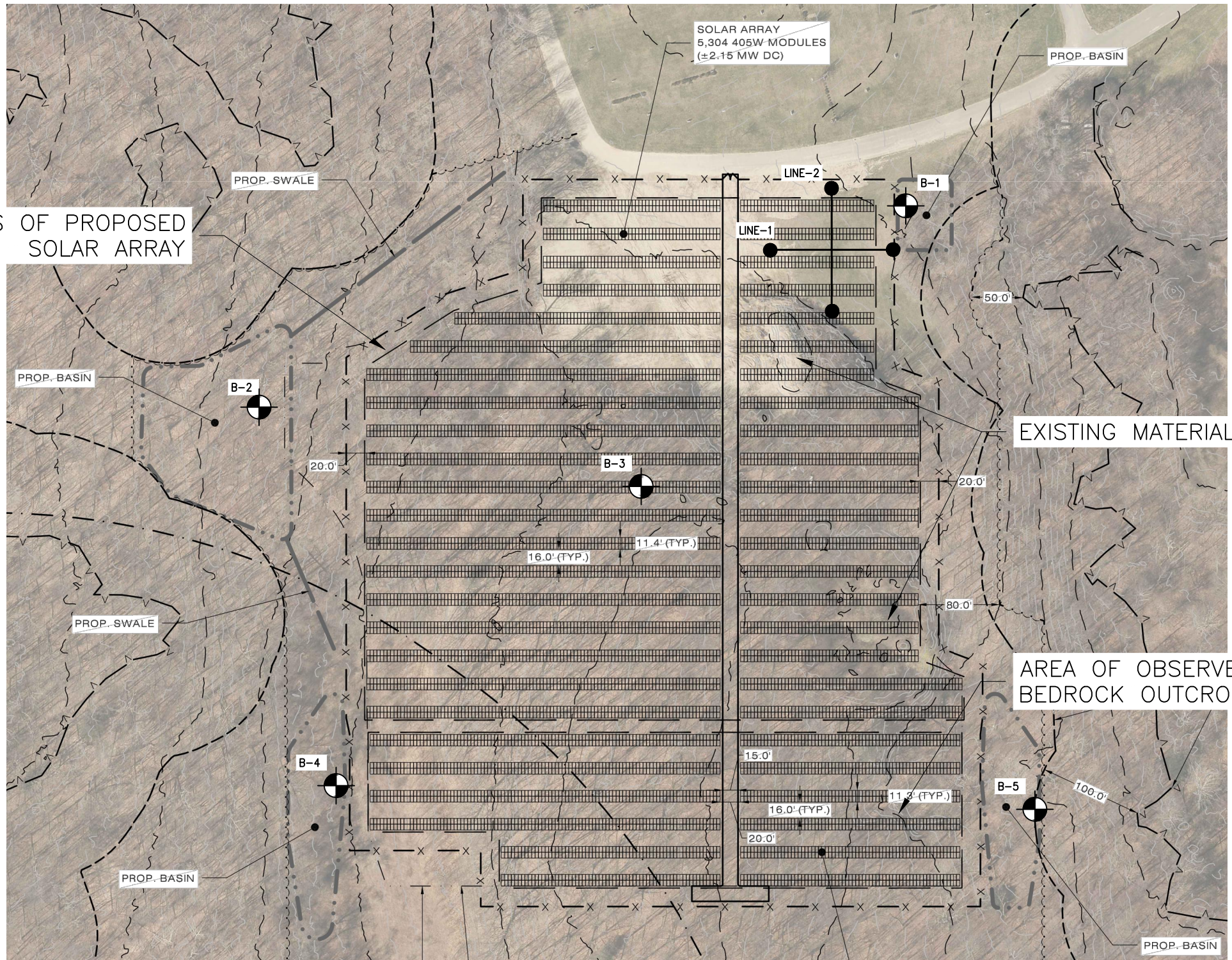
[Back to Top](#)

[US Department of Commerce](#)
[National Oceanic and Atmospheric Administration](#)
[National Weather Service](#)
[National Water Center](#)
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

[Disclaimer](#)

APPENDIX E: TEST PIT LOCATION SKETCH

G:\My Drive\DTE Root Drive\Client Folders (new)\0032 - All-Points Technology\033 - Watertown Solar One, Platt Road, Watertown\0032-033.00 AREA AND SITE PLAN.dwg Raymond Janeiro 5/13/2020 9:34 PM



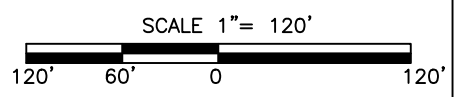
LEGEND

B-1 TEST BORING NO. AND APPROX. LOCATION

LINE-1 RESISTIVITY TEST LOCATION (TYP.)

- NOTES:**
- 1) BASE MAP DEVELOPED FROM AN ELECTRONIC FILE PREPARED BY ALL-POINTS TECHNOLOGY, ENTITLED "PRELIMINARY CONCEPT PLAN, WATERTOWN SOLAR ONE, PLATT ROAD, WATERTOWN, CT", DATED APRIL 13, 2020. ORIGINAL SCALE 1"=80'.
 - 2) BORINGS WERE COMPLETED BY GENERAL BORINGS, INC. AND OBSERVED BY DOWN TO EARTH CONSULTING, LLC.
 - 3) RESISTIVITY TESTING WAS PERFORMED ON MAY 8, 2020 BY DOWN TO EARTH CONSULTING, LLC.
 - 4) THE LOCATIONS OF THE EXPLORATIONS WERE DETERMINED BY TAPING AND VISUAL ESTIMATES FROM EXISTING SITE FEATURES. THESE LOCATIONS SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.

DESIGNED BY					
DRAWN BY	ARB				
CHECKED BY	RPJ				
APPROVED BY	RPJ				
	NO.	DATE	DRWN.	CHKD	APPVD
	REVISIONS				



DOWN TO EARTH CONSULTING, LLC
 GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING
 122 CHURCH STREET
 NAUGATUCK, CONNECTICUT 06770

PROJECT **WATERTOWN SOLAR ONE
 PLATT ROAD
 WATERTOWN, CONNECTICUT**

DWG. TITLE **SITE AND EXPLORATION
 LOCATION PLAN**

FILE NO.	0032-033.00
SCALE	DATE
AS NOTED	5/13/20
FIGURE NO.	2

Table 1
Kozeny - Carman Analyses
to Estimate Hydraulic Conductivity

Watertown Solar One
Watertown, Connecticut
Project Number: 0032-033.00

Test Boring No.	Sample No.	Sample Depth (ft.)	D ₁₀ (mm)	Descriptive Density	Est. Relative Density (%)	in-situ void ratio e	in-situ porosity n	Coefficient of Permability k (cm/sec)	Coefficient of Permability k (ft/day)
B-1	S-2	2'-4'	0.01	Medium Dense	50	0.495	0.33	3.81E-05	1.08E-01
B-2	S-3	5'-7'	0.02	Dense	80	0.282	0.22	3.29E-05	9.32E-02
B-4	S-3	5'-7'	0.002	Dense	75	0.318	0.24	4.57E-07	1.29E-03
B-5	S-3	5'-6.8'	0.04	Dense	80	0.282	0.22	1.32E-04	3.73E-01

SPT (bl/ft)	Descriptive Density	Relative Density
		(%)
0 to 4	Very loose	0 to 15
4 to 10	Loose	15 to 35
10 to 30	Medium Dense	35 to 65
30 to 50	Dense	65 to 85
50 +	Very dense	85 to 100

e _{min}	e _{max}
0.14	0.85

APPENDIX F: WATER QUALITY VOLUME CALCULATIONS

WATER QUALITY VOLUME CALCULATIONS
FOR
WATERTOWN SOLAR ONE, LLC
HINMAN ROAD & PLATT ROAD, WATERTOWN, CT

$$WQV = \frac{(1)(R)(A)}{12}$$

$$V = WQV + ((P)(A_b)/12)$$

where: WQV = water quality volume (ac-ft)
 R = volumetric runoff coefficient
= 0.05+0.009(I)
 I = percent impervious cover
 A = site area in acres

V =required basin storage volume (ac-ft)
 WQV =Water Quality Volume (ac-ft)
 P = design water quality precipitation (in)
 A_b =basin surface area (ac)

	Area (ac)	Pervious (ac)	Imperv. (ac)	I	R	WQV (ac-ft)	P (in)	Ab (ac)	V (ac-ft)	Total V Req. (cf)	V Provided (cf)
Overall Site	11.05	8.18	2.86	26%	0.28	0.26	n/a	n/a	n/a	11,363.24	-
Basin 1	1.73	0.53	1.20	69%	0.68	0.10	1	0.266531	0.12	5,201.10	1,672.00
Basin 2	4.70	4.23	0.47	10%	0.14	0.05	1	0.266531	0.08	3,352.59	8,087.00
Basin 3	2.74	1.54	1.20	44%	0.44	0.10	1	0.266531	0.12	5,369.70	7,012.00
Overall Basins	9.16	6.30	2.86	31%	0.33	0.25	1	0.266531	0.28	11,988.37	16,771.00

Overall Total V Required = 11,988.37 cf

Overall Total V Provided = 16,771.00 cf

CT590240_Watertown - PR - Rev0

Type III 24-hr 100 YR Rainfall=9.02"

Prepared by {enter your company name here}

Printed 6/15/2020

HydroCAD® 10.00-22 s/n 07402 © 2018 HydroCAD Software Solutions LLC

Stage-Area-Storage for Pond 1P: B-1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
783.00	1,359	0	785.65	3,146	5,885
783.05	1,390	69	785.70	3,183	6,044
783.10	1,422	139	785.75	3,220	6,204
783.15	1,453	211	785.80	3,256	6,365
783.20	1,484	284	785.85	3,293	6,529
783.25	1,515	359	785.90	3,330	6,695
783.30	1,546	436	785.95	3,367	6,862
783.35	1,578	514	786.00	3,404	7,032
783.40	1,609	594	786.05	3,444	7,203
783.45	1,640	675	786.10	3,484	7,376
783.50	1,672	758	786.15	3,523	7,551
783.55	1,703	842	786.20	3,563	7,728
783.60	1,734	928	786.25	3,603	7,907
783.65	1,765	1,015	786.30	3,642	8,088
783.70	1,797	1,104	786.35	3,682	8,272
783.75	1,828	1,195	786.40	3,722	8,457
783.80	1,859	1,287	786.45	3,762	8,644
783.85	1,890	1,381	786.50	3,802	8,833
783.90	1,921	1,476	786.55	3,841	9,024
783.95	1,953	1,573	786.60	3,881	9,217
784.00	1,984	1,672	786.65	3,921	9,412
784.05	2,018	1,772	786.70	3,961	9,609
784.10	2,052	1,873	786.75	4,000	9,808
784.15	2,086	1,977	786.80	4,040	10,009
784.20	2,120	2,082	786.85	4,080	10,212
784.25	2,155	2,189	786.90	4,119	10,417
784.30	2,189	2,297	786.95	4,159	10,624
784.35	2,223	2,408	787.00	4,199	10,833
784.40	2,257	2,520			
784.45	2,291	2,633			
784.50	2,325	2,749			
784.55	2,359	2,866			
784.60	2,393	2,985			
784.65	2,427	3,105			
784.70	2,461	3,227			
784.75	2,496	3,351			
784.80	2,530	3,477			
784.85	2,564	3,604			
784.90	2,598	3,733			
784.95	2,632	3,864			
785.00	2,666	3,997			
785.05	2,703	4,131			
785.10	2,740	4,267			
785.15	2,777	4,405			
785.20	2,814	4,544			
785.25	2,851	4,686			
785.30	2,887	4,830			
785.35	2,924	4,975			
785.40	2,961	5,122			
785.45	2,998	5,271			
785.50	3,035	5,422			
785.55	3,072	5,574			
785.60	3,109	5,729			

W.Q.V.
ELEV.

Stage-Area-Storage for Pond 8P: B-2

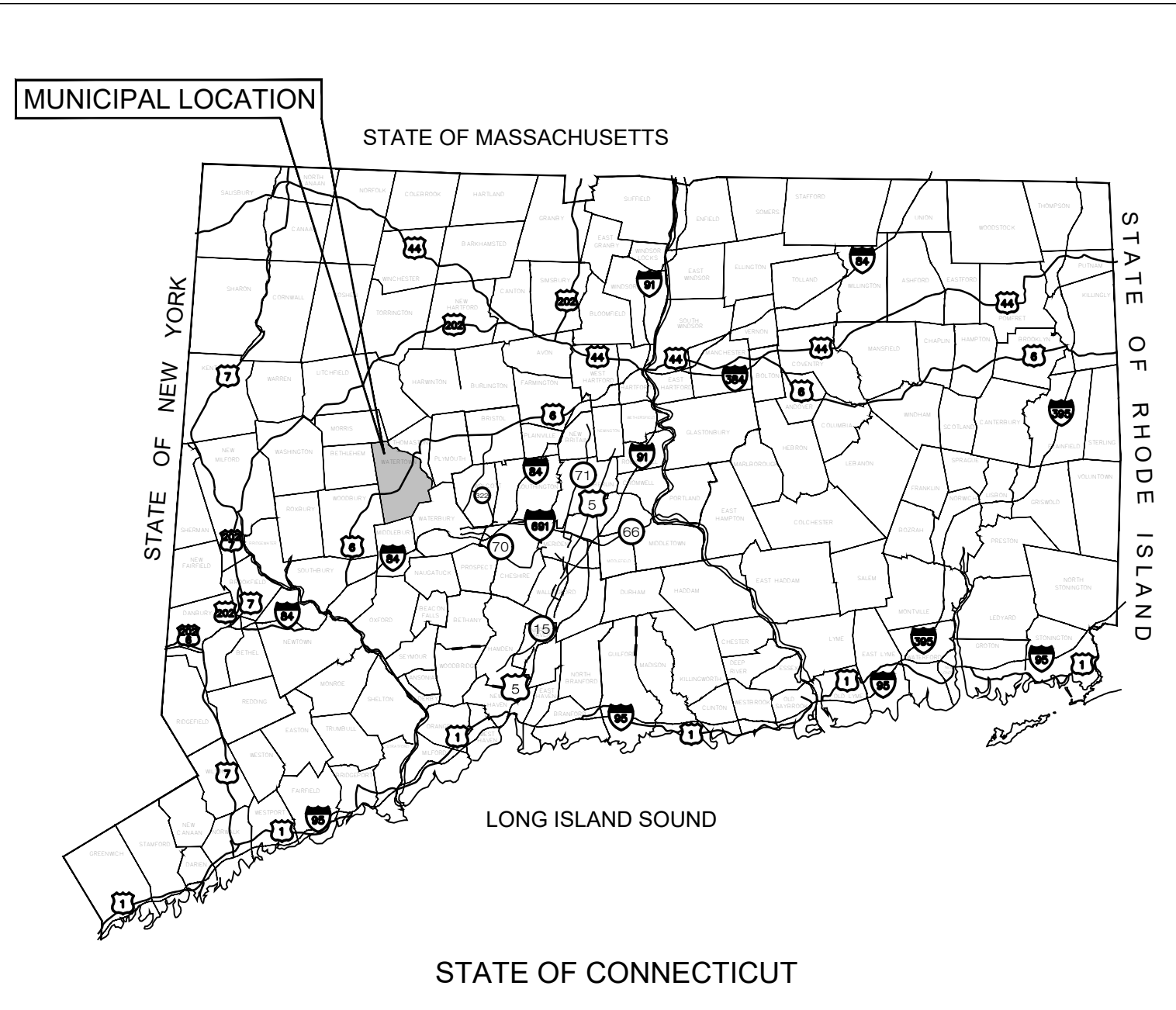
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
779.00	7,183	0	781.65	12,109	25,477
779.05	7,273	361	781.70	12,205	26,084
779.10	7,364	727	781.75	12,301	26,697
779.15	7,454	1,098	781.80	12,397	27,315
779.20	7,545	1,473	781.85	12,494	27,937
779.25	7,635	1,852	781.90	12,590	28,564
779.30	7,725	2,236	781.95	12,686	29,196
779.35	7,816	2,625	782.00	12,782	29,833
779.40	7,906	3,018	782.05	12,881	30,474
779.45	7,997	3,415	782.10	12,980	31,121
779.50	8,087	3,818	782.15	13,079	31,772
779.55	8,177	4,224	782.20	13,178	32,429
779.60	8,268	4,635	782.25	13,277	33,090
779.65	8,358	5,051	782.30	13,376	33,756
779.70	8,449	5,471	782.35	13,475	34,427
779.75	8,539	5,896	782.40	13,574	35,104
779.80	8,629	6,325	782.45	13,673	35,785
779.85	8,720	6,759	782.50	13,772	36,471
779.90	8,810	7,197	782.55	13,871	37,162
779.95	8,901	7,640	782.60	13,970	37,858
780.00	8,991	8,087	782.65	14,069	38,559
780.05	9,084	8,539	782.70	14,168	39,265
780.10	9,178	8,995	782.75	14,267	39,976
780.15	9,271	9,457	782.80	14,366	40,692
780.20	9,365	9,923	782.85	14,465	41,412
780.25	9,458	10,393	782.90	14,564	42,138
780.30	9,551	10,868	782.95	14,663	42,869
780.35	9,645	11,348	783.00	14,762	43,605
780.40	9,738	11,833			
780.45	9,832	12,322			
780.50	9,925	12,816			
780.55	10,018	13,315			
780.60	10,112	13,818			
780.65	10,205	14,326			
780.70	10,299	14,838			
780.75	10,392	15,356			
780.80	10,485	15,878			
780.85	10,579	16,404			
780.90	10,672	16,935			
780.95	10,766	17,471			
781.00	10,859	18,012			
781.05	10,955	18,557			
781.10	11,051	19,108			
781.15	11,147	19,662			
781.20	11,244	20,222			
781.25	11,340	20,787			
781.30	11,436	21,356			
781.35	11,532	21,930			
781.40	11,628	22,509			
781.45	11,724	23,093			
781.50	11,821	23,682			
781.55	11,917	24,275			
781.60	12,013	24,874			

W.Q.V.
ELEV.

Stage-Area-Storage for Pond 2P: B-3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
777.00	9,581	0	779.65	13,012	29,853
777.05	9,643	481	779.70	13,080	30,505
777.10	9,706	964	779.75	13,148	31,161
777.15	9,768	1,451	779.80	13,216	31,820
777.20	9,830	1,941	779.85	13,284	32,483
777.25	9,893	2,434	779.90	13,352	33,148
777.30	9,955	2,930	779.95	13,420	33,818
777.35	10,017	3,430	780.00	13,488	34,491
777.40	10,079	3,932	780.05	13,559	35,167
777.45	10,142	4,438	780.10	13,630	35,846
777.50	10,204	4,946	780.15	13,700	36,530
777.55	10,266	5,458	780.20	13,771	37,216
777.60	10,329	5,973	780.25	13,842	37,907
777.65	10,391	6,491	780.30	13,913	38,601
W.Q.V. ELEV. 777.70	10,453	7,012	780.35	13,984	39,298
777.75	10,516	7,536	780.40	14,054	39,999
777.80	10,578	8,064	780.45	14,125	40,703
777.85	10,640	8,594	780.50	14,196	41,412
777.90	10,702	9,128	780.55	14,267	42,123
777.95	10,765	9,664	780.60	14,338	42,838
TSB-3 WET VOLUME ELEV. 778.00	10,827	10,204	780.65	14,408	43,557
778.05	10,892	10,747	780.70	14,479	44,279
778.10	10,957	11,293	780.75	14,550	45,005
778.15	11,022	11,843	780.80	14,621	45,734
778.20	11,087	12,395	780.85	14,692	46,467
778.25	11,153	12,951	780.90	14,762	47,203
778.30	11,218	13,511	780.95	14,833	47,943
778.35	11,283	14,073	781.00	14,904	48,687
778.40	11,348	14,639			
778.45	11,413	15,208			
778.50	11,478	15,780			
778.55	11,543	16,356			
778.60	11,608	16,935			
778.65	11,673	17,517			
778.70	11,738	18,102			
778.75	11,804	18,690			
778.80	11,869	19,282			
778.85	11,934	19,877			
TSB-3 DRY VOLUME ELEV. 778.90	11,999	20,476			
778.95	12,064	21,077			
779.00	12,129	21,682			
779.05	12,197	22,290			
779.10	12,265	22,902			
779.15	12,333	23,517			
779.20	12,401	24,135			
779.25	12,469	24,757			
779.30	12,537	25,382			
779.35	12,605	26,010			
779.40	12,673	26,642			
779.45	12,741	27,278			
779.50	12,809	27,916			
779.55	12,876	28,558			
779.60	12,944	29,204			

ATTACHMENT D
Design Plans



WATERTOWN SOLAR ONE, LLC

"WATERTOWN SOLAR ONE, LLC"

HINMAN ROAD & PLATT ROAD

WATERTOWN, CT 06795

PERMITTING PLAN SET

JUNE 30, 2020

WATERTOWN SOLAR ONE, LLC
 150 TRUMBULL STREET
 4TH FLOOR
 HARTFORD, CT, 06103

ALL-POINTS TECHNOLOGY CORPORATION
 567 VAUXHAUL STREET EXTENSION - SUITE 311
 WATERFORD, CT 06385 PHONE: (860)-663-1697
 WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

CSC PERMIT SET		
NO	DATE	REVISION
0	06/30/20	FOR CLIENT REVIEW
1	07/06/20	CSC SUBMISSION
2		
3		
4		
5		
6		

DESIGN PROFESSIONAL OF RECORD
 PROF: BRADLEY J. PARSONS, P.E.
 COMP: ALL-POINTS TECHNOLOGY CORPORATION
 ADD: 567 VAUXHAUL STREET EXTENSION - SUITE 311
 WATERFORD, CT 06385
 OWNER: CATHOLIC CEMETERIES
 ADDRESS: 669 PLATT ROAD
 WATERTOWN, CT 06795

WATERTOWN SOLAR ONE, LLC
 SITE HINMAN ROAD & PLATT ROAD
 ADDRESS: WATERTOWN, CT 06795
 APT FILING NUMBER: CT590240
 DRAWN BY: CSH
 DATE: 06/30/20 CHECKED BY: BJP

SHEET TITLE:
TITLE SHEET & INDEX

SHEET NUMBER:
T-1

LIST OF DRAWINGS

- T-1 TITLE SHEET & INDEX
- 1 & 2 OF 2 PROPERTY AND TOPOGRAPHIC SURVEY
- GN-1 GENERAL NOTES
- GN-2 ENVIRONMENTAL NOTES RESOURCE PROTECTION MEASURES
- OP-0 OVERALL LOCUS MAP
- OP-1 PARTIAL SITE PLAN
- EC-1 SEDIMENTATION & EROSION CONTROL NOTES
- EC-2 SEDIMENTATION & EROSION CONTROL DETAILS
- EC-3 TO EC-5 PHASE 1 SEDIMENTATION & EROSION CONTROL PLANS
- EC-6 TO EC-8 PHASE 2 SEDIMENTATION & EROSION CONTROL PLANS
- EC-9 TO EC-11 PHASE 3 FINAL GRADING & DRAINAGE PLANS
- SP-1 TO SP-3 SITE & UTILITY PLANS
- DN-1 SITE DETAILS
- DN-2 SITE DETAILS

SITE INFORMATION

SITE NAME: "WATERTOWN SOLAR ONE, LLC"
 LOCATION: HINMAN ROAD & PLATT ROAD
 WATERTOWN, CT 06795

SITE TYPE/DESCRIPTION: ADD (1) GROUND MOUNTED SOLAR PANEL ARRAY W/ ASSOCIATED EQUIPMENT, GRAVEL ACCESS ROAD, AND STORMWATER MANAGEMENT.

PROPERTY OWNER: CATHOLIC CEMETERIES
 669 PLATT ROAD
 WATERTOWN, CT 06795

APPLICANT: WATERTOWN SOLAR ONE, LLC
 150 TRUMBULL STREET, 4TH FLOOR
 HARTFORD, CT 06103

ENGINEER CONTACT: BRADLEY J. PARSONS, P.E.
 (860) 663-1697 x208

LATITUDE: 41°36'51.98" N
 LONGITUDE: 73°09'01.63" W
 ELEVATION: 800± AMSL

MBLU: 59-9-2 & 67-9-3
 ZONE: R-70
 EXISTING LAND USE: RESIDENTIAL - CEMETERY
 PROPOSED LAND USE: COMMUNICATIONS, TRANSPORTATION AND PUBLIC UTILITY USES
 - LARGE SCALE GROUND MOUNTED SOLAR PHOTOVOLTAIC INSTALLATIONS

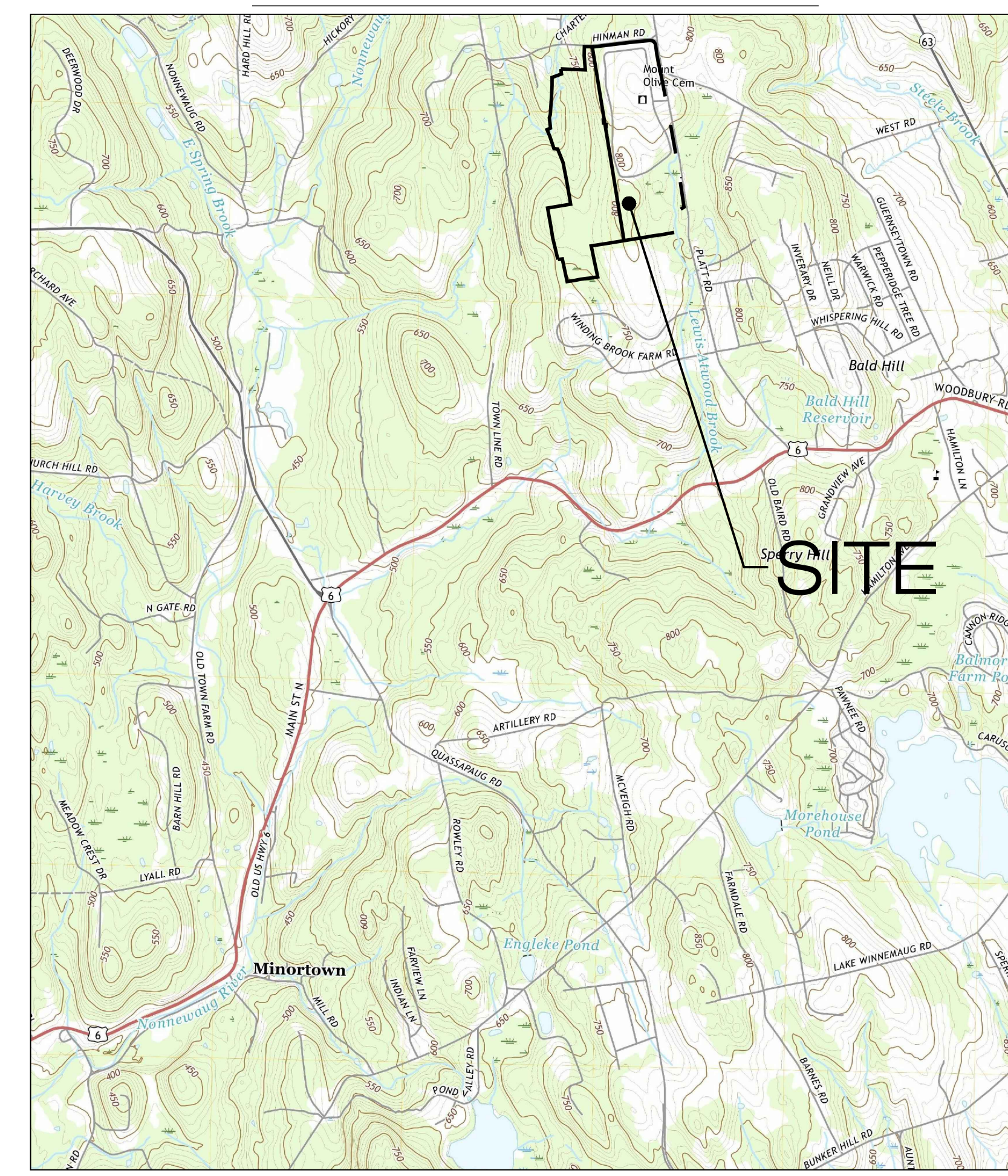
TOTAL SITE ACERAGE: 154.3± AC.
 TOTAL DISTURBED AREA: 16.70± AC.

PROP. SITE GRADING
 APPROX. VOLUME OF CUT : 14,015± CY
 APPROX. VOLUME OF FILL: 14,015± CY

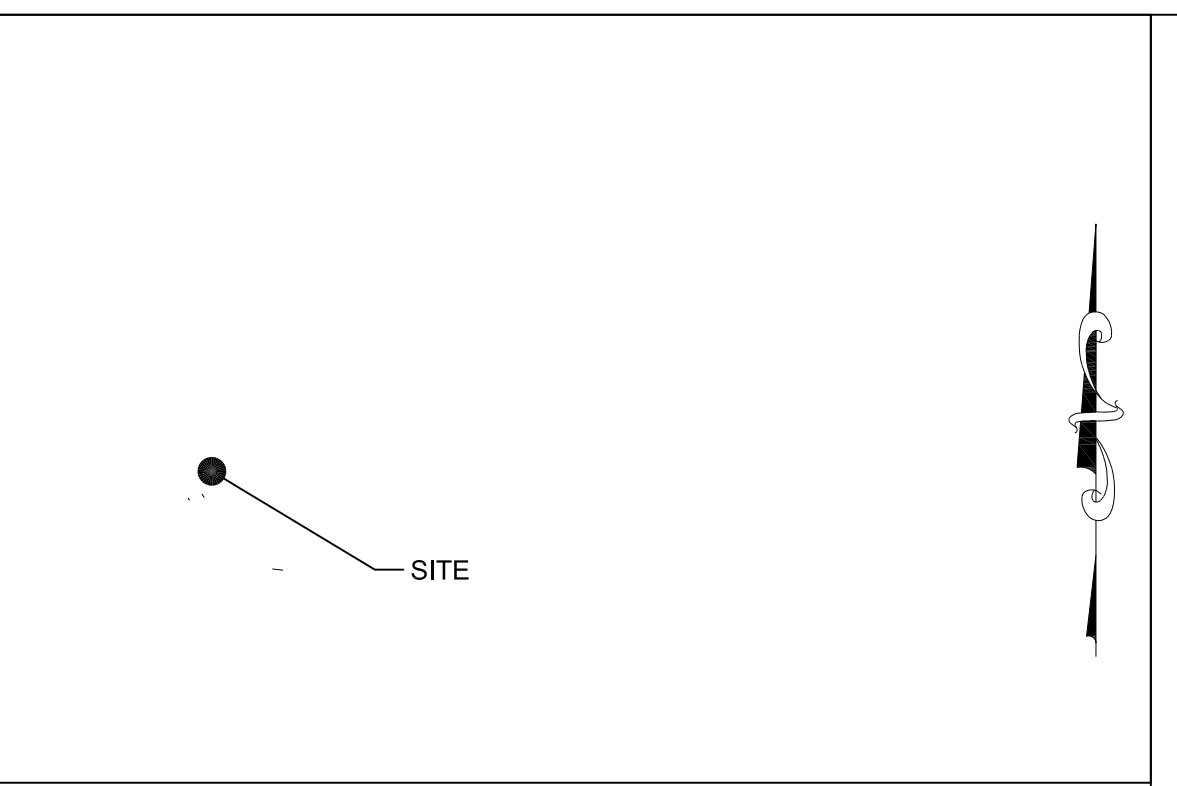
APPROX. OVERALL NET VOLUME: 0± CY OF FILL

PROP. GRAVEL ACCESS ROAD: 940± LINEAR FEET
 PROP. FILTER SOCK: 7,950± LINEAR FEET
 TREE CLEARING AREA: 14.16± ACRE
 IMPERVIOUS AREA: 15,817± SQUARE FEET

USGS TOPOGRAPHIC MAP



SCALE : 1" = 2000± SOURCE: USGS 7.5 BRISTOL QUADRANGLE, CT 2012



- LEGEND:**
- IRON PIN (FOUND)
 - Rebar/Drill Hole (To Be Set)
 - MONUMENT (FOUND)
 - ⊙ MANHOLE
 - ⊕ DRAINAGE MANHOLE
 - ⊕ SANITARY MANHOLE
 - ⊕ ELEC. MANHOLE
 - ⊕ TELE. MANHOLE
 - "C" CATCH BASIN
 - "C-L" CATCH BASIN
 - ☆ EVERGREEN TREES
 - ☀ SHRUB/BUSH
 - ⊕ FLAG POLE
 - ⊕ TRAFFIC CONTROL BOX
 - △ SIGN
 - POST (To Be Set)
 - ⊕ LIGHT POLE
 - ⊕ GUY ANCHOR
 - ⊕ UTILITY POLE
 - ⊕ WATER GATE
 - ⊕ WATER METER
 - ⊕ GAS VALVE
 - ⊕ GAS METER
 - ⊕ TRANSFORMER
 - ⊕ ELEC. METER
 - ⊕ MAIL BOX
 - HAND HOLE
 - ⊕ BUTTON BOX
 - ⊕ A.C. UNIT
 - ⊕ TRAFFIC LIGHT POLE
- MAP NOTES:**
- THIS MAP AND SURVEY HAVE BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300b-1 THROUGH 20-300b-20 AND "THE MINIMUM STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" ADOPTED JUNE 21, 1996; AMENDED OCTOBER 26, 2018.
 - THE TYPE OF SURVEY PERFORMED AND THE MAPPED FEATURES DEPICTED HEREON ARE IN ACCORDANCE WITH THE REQUIREMENTS OF A PROPERTY AND TOPOGRAPHIC SURVEY.
 - THE HORIZONTAL BASELINE CONFORMS TO A CLASS A-2 ACCURACY. THE VERTICAL BASELINE CONFORMS TO A CLASS V-2 ACCURACY. THE TOPOGRAPHIC FEATURES CONFORM TO A CLASS T-2 ACCURACY.
 - THE PROPERTY/BOUNDARY LINES DEPICTED HEREON CONFORM TO A CLASS D' AND HAVE BEEN COMPILED FROM RECORD MAPS, LIMITED RESEARCH, AND LIMITED FIELD MEASUREMENTS. IT IS NOT TO BE CONSTRUED AS HAVING BEEN OBTAINED AS THE RESULT OF A FIELD SURVEY AND IS SUBJECT TO SUCH CHANGE AS AN ACCURATE FIELD SURVEY MAY DISCLOSE.
 - ACCESS TO PUBLIC RECORDS HAS BEEN LIMITED DUE TO THE COVID-19 PANDEMIC OF 2020. FURTHER RESEARCH AND A RE-EVALUATION OF THE BOUNDARY/PROPERTY LINES DEPICTED HEREON IS RECOMMENDED AT A LATER DATE WHEN SAID RECORDS BECOME AVAILABLE.
 - THE GROUND RELIEF CONTOURS AND SPOT ELEVATIONS DEPICTED HEREON ARE BASED UPON THE ORTHOPHOTOGRAPHY LIDAR DATA SET OF 2016 BY THE STATE OF CONNECTICUT AVAILABLE AT CTECO.UCONN.EDU
 - THE NORTH ARROW AND BEARINGS ARE BASED UPON THE CONNECTICUT STATE COORDINATE SYSTEM N.A.D. 1983 (2011). THE ELEVATIONS ARE BASED UPON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) USING GEOID 12B. COORDINATES AND ELEVATIONS WERE DETERMINED FROM RTK GPS OBSERVATIONS MADE ON MARCH 9, 2020, USING THE CT DOT RTK NETWORK KNOWN AS ACORN (CTBR BASE), HAVING THE FOLLOWING VALUES:
 LATITUDE = N 41° 29' 49.86427"
 LONGITUDE = W 73° 25' 05.67391"
 ELLIPSOID HEIGHT = 53.32M
 - UNDERGROUND UTILITIES, STRUCTURES AND FACILITY LOCATIONS DEPICTED AND NOTED HEREON ARE BASED UPON OBSERVABLE EVIDENCE WHILE CONDUCTING THE FIELD SURVEY. THESE LOCATIONS MUST BE CONSIDERED AS APPROXIMATE IN NATURE. ADDITIONALLY, OTHER SUCH FEATURES MAY EXIST ON THE SITE, THE EXISTENCE WHICH IS UNKNOWN TO MARTIN SURVEYING ASSOCIATES, LLC. ALL CONTRACTORS ARE REQUIRED TO CONTACT CALL-BEFORE-YOU-DIG AT 1-800-922-4455 FOR LOCATION AND OR STAKEOUT OF ANY UTILITY PRIOR TO ANY EXCAVATION.
 - THE WETLANDS DEPICTED HEREON ARE BASED UPON A DELINEATION CONDUCTED ON NOVEMBER 16, 2019 AND NOVEMBER 19, 2019 BY ALL-POINTS TECHNOLOGY CORPORATION.
- MAP REFERENCES:**
- "RECORD SUBDIVISION MAP, SCHIENDA FARM SUBDIVISION, HINMAN ROAD, WATERTOWN, CONNECTICUT" (SHEET 1 OF 5) SCALE: 1"=100'; DATED: JUNE 22, 2016; BY: ROBERT GREEN ASSOCIATES, LLC.
 - "PROPERTY SURVEY, MAP SHOWING REVISION TO LOT LINE, LANDED OWNED BY JOSEPH SCHIENDA AND LAND OWNED BY JOSEPH L. AND ROBERTA S. SCHIENDA, HINMAN ROAD, WATERTOWN, CONNECTICUT" (SHEET 2 OF 2) SCALE: 1"=100'; DATED: APRIL 25, 2014; BY ROBERT GREEN ASSOCIATES, LLC.
- *SEE NOTE 5

PROPERTY AND TOPOGRAPHIC SURVEY
LAND OF
CATHOLIC CEMETERIES ASSOCIATION OF THE
ARCHDIOCESE OF HARTFORD, INC.
PREPARED FOR
WATERTOWN SOLAR ONE, LLC
HINMAN ROAD & PLATT ROAD
WATERTOWN, CONNECTICUT

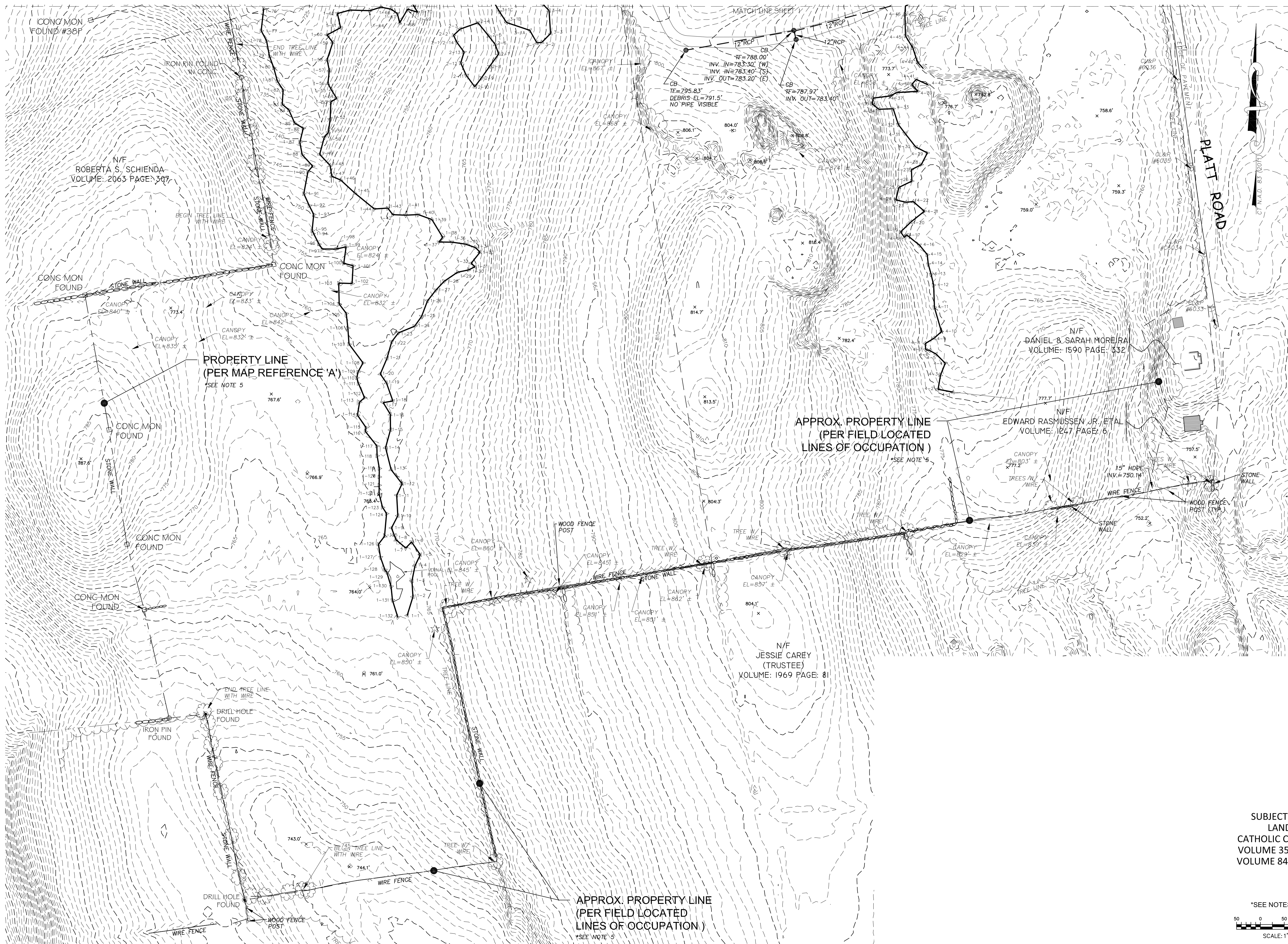
SUBJECT PARCEL
LAND OF
CATHOLIC CEMETERIES
VOLUME 350 PAGE: 54
VOLUME 846 PAGE 191

MSA PROJECT NO: 20-016
 SCALE: 1"=100'
 DATE: 4/13/2020
 DRAWN BY: G.S.D.
 CHECKED BY: D.G.M.
 SHEET:

1 OF 2

TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.
 DEAN MARTIN
 70147
 LICENSE NO.

THIS DOCUMENT AND COPIES THEREOF ARE VALID ONLY IF THEY BEAR THE SIGNATURE AND EMBOSSED SEAL OF THE DESIGNATED LICENSED PROFESSIONAL UNAUTHORIZED ALTERATIONS TO THIS PLAN RENDER THE DECLARATION HEREON NULL AND VOID.



- LEGEND:**
- IRON PIN (FOUND) △ SIGN
 - Rebar/Drill Hole (To Be Set) ○ POST
 - MONUMENT (FOUND) ✕ LIGHT POLE
 - ⊙ MANHOLE ✕ GUY ANCHOR
 - ⊕ DRAINAGE MANHOLE ✕ UTILITY POLE
 - ⊕ SANITARY MANHOLE WC WATER GATE
 - ⊕ ELEC. MANHOLE WC WATER METER
 - ⊕ TELE. MANHOLE GY GAS VALVE
 - "C" CATCH BASIN GY GAS METER
 - "C-L" CATCH BASIN ELEC. METER
 - DECIDUOUS TREES ✕ TRANSFORMER
 - ★ EVERGREEN TREES ✕ MAIL BOX
 - ☀ SHRUB/BUSH □ HAND HOLE
 - FLAG POLE □ BUTTON BOX
 - ⊕ A.C. UNIT ○ A.C. UNIT
 - ⊕ TRAFFIC CONTROL BOX ✕ TRAFFIC LIGHT POLE
-
- BOUNDARY LINE
 - GUARD RAIL
 - UNDERGROUND PIPING (San.,Stm.)
 - G U/G GAS LINE
 - E U/G ELEC. LINE
 - W WATER LINE
 - OVERHEAD UTILITIES
 - T U/G TELE. LINE
 - CHAIN LINK FENCE
 - TREE LINE

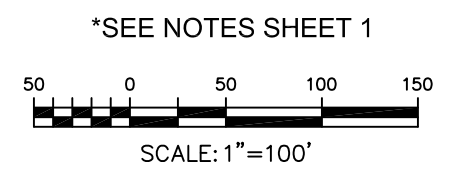
M
martin
Surveying Associates, LLC

201 CHRISTIAN LANE BERLIN, CT 06037
860-832-9328 860-357-4604 (FAX)

REVISIONS:

**PROPERTY AND TOPOGRAPHIC SURVEY
LAND OF
CATHOLIC CEMETERIES ASSOCIATION OF THE
ARCHDIOCESE OF HARTFORD, INC.
PREPARE FOR
WATERTOWN SOLAR ONE, LLC
HINMAN ROAD & PLATT ROAD
WATERTOWN, CONNECTICUT**

SUBJECT PARCEL
LAND OF
CATHOLIC CEMETERIES ASSOCIATION OF THE
VOLUME 350 PAGE: 54
VOLUME 846 PAGE 191



TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

70147
DEAN MARTIN LICENSE NO.

THIS DOCUMENT AND COPIES THEREOF ARE VALID ONLY IF THEY BEAR THE SIGNATURE AND EMBOSSED SEAL OF THE DESIGNATED LICENSED PROFESSIONAL. UNAUTHORIZED ALTERATIONS TO THIS PLAN RENDER THE DECLARATION HEREON NULL AND VOID.

MSA PROJECT NO: 20-016	
SCALE: 1"=100'	DRAWN BY: G.S.D.
DATE: 4/13/2020	CHECKED BY: D.G.M.
SHEET:	
2 OF 2	

GENERAL NOTES

- ALL CONSTRUCTION SHALL COMPLY WITH PROJECT DEVELOPER STANDARDS, TOWN OF WATERTOWN STANDARDS, CONNECTICUT DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS IN THE ABOVE REFERENCED INCREASING HIERARCHY. IF SPECIFICATIONS ARE IN CONFLICT, THE MORE STRINGENT SPECIFICATION SHALL APPLY.
- IF NO PROJECT CONSTRUCTION SPECIFICATION PACKAGE IS PROVIDED BY THE PROJECT DEVELOPER OR THEIR REPRESENTATIVE, THE CONTRACTOR SHALL COMPLY WITH THE MANUFACTURE, TOWN OF WATERTOWN, OR CONNECTICUT DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, AND BE IN ACCORDANCE WITH ALL APPLICABLE OSHA, FEDERAL, STATE AND LOCAL REGULATIONS.
- THE PROJECT DEVELOPER IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS REQUIRED BY GOVERNMENT AGENCIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL OBTAIN ALL TOWN OF WATERTOWN CONSTRUCTION PERMITS. THE CONTRACTOR SHALL POST ALL BONDS, PAY ALL FEES, PROVIDE PROOF OF INSURANCE AND PROVIDE TRAFFIC CONTROL NECESSARY FOR THIS WORK.
- REFER TO PLANS, DETAILS AND REPORTS PREPARED BY ALL-POINTS TECHNOLOGY CORPORATION FOR ADDITIONAL INFORMATION. THE CONTRACTOR SHALL VERIFY ALL SITE CONDITIONS IN THE FIELD AND CONTACT THE PROJECT DEVELOPER IF THERE ARE ANY QUESTIONS OR CONFLICTS REGARDING THE CONSTRUCTION DOCUMENTS AND/OR FIELD CONDITIONS SO THAT APPROPRIATE REVISIONS CAN BE MADE PRIOR TO BIDDING/CONSTRUCTION. ANY CONFLICT BETWEEN THE DRAWINGS AND SPECIFICATIONS SHALL BE CONFIRMED WITH THE PROJECT DEVELOPERS CONSTRUCTION MANAGER PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF ALL PRODUCTS, MATERIALS PER PLANS AND SPECIFICATIONS TO THE PROJECT DEVELOPER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION OR DELIVERY TO THE SITE. ALLOW A MINIMUM OF 14 WORKING DAYS FOR REVIEW.
- SHOULD ANY UNKNOWN OR INCORRECTLY LOCATED EXISTING PIPING OR OTHER UTILITY BE UNCOVERED DURING EXCAVATION, CONSULT THE PROJECT DEVELOPER IMMEDIATELY FOR DIRECTIONS BEFORE PROCEEDING FURTHER WITH WORK IN THIS AREA.
- DO NOT INTERRUPT EXISTING UTILITIES SERVICING FACILITIES OCCUPIED AND USED BY THE PROJECT DEVELOPER OR OTHERS DURING OCCUPIED HOURS, EXCEPT WHEN SUCH INTERRUPTIONS HAVE BEEN AUTHORIZED IN WRITING BY THE PROJECT DEVELOPER AND THE LOCAL MUNICIPALITY. INTERRUPTIONS SHALL ONLY OCCUR AFTER ACCEPTABLE TEMPORARY SERVICE HAS BEEN PROVIDED.
- THE CONTRACT LIMIT IS THE PROPERTY LINE UNLESS OTHERWISE SPECIFIED OR SHOWN ON THE CONTRACT DRAWINGS.
- THE CONTRACTOR SHALL ABIDE BY ALL OSHA, FEDERAL, STATE AND LOCAL REGULATIONS WHEN OPERATING CRANES, BOOMS, HOISTS, ETC. IN CLOSE PROXIMITY TO OVERHEAD ELECTRIC LINES. IF CONTRACTOR MUST OPERATE EQUIPMENT CLOSE TO ELECTRIC LINES, CONTACT POWER COMPANY TO MAKE ARRANGEMENTS FOR PROPER SAFEGUARDS. ANY UTILITY COMPANY FEES SHALL BE PAID FOR BY THE CONTRACTOR.
- THE CONTRACTOR SHALL COMPLY WITH OSHA CFR 29 PART 1926 FOR EXCAVATION TRENCHING AND TRENCH PROTECTION REQUIREMENTS.
- THE ENGINEER IS NOT RESPONSIBLE FOR SITE SAFETY MEASURES TO BE EMPLOYED DURING CONSTRUCTION. THE ENGINEER HAS NO CONTRACTUAL DUTY TO CONTROL THE SAFEST METHODS OR MEANS OF THE WORK, JOB SITE RESPONSIBILITIES, SUPERVISION OF PERSONNEL OR TO SUPERVISE SAFETY AND DO NOT VOLUNTARILY ASSUME ANY SUCH DUTY OR RESPONSIBILITY.
- THE CONTRACTOR SHALL RESTORE ANY DRAINAGE STRUCTURE, PIPE, CONDUIT, PAVEMENT, CURBING, SIDEWALKS, LANDSCAPED AREAS OR SIGNAGE DISTURBED DURING CONSTRUCTION TO THEIR ORIGINAL CONDITION OR BETTER, AS APPROVED BY THE PROJECT DEVELOPER OR TOWN OF WATERTOWN.
- THE CONTRACTOR SHALL PROVIDE AS-BUILT RECORDS OF ALL CONSTRUCTION (INCLUDING UNDERGROUND UTILITIES) TO THE PROJECT DEVELOPER AT THE END OF CONSTRUCTION.
- ALTERNATIVE METHODS AND PRODUCTS, OTHER THAN THOSE SPECIFIED, MAY BE USED IF REVIEWED AND APPROVED BY THE PROJECT DEVELOPER, ENGINEER, AND APPROPRIATE REGULATORY AGENCY PRIOR TO INSTALLATION DURING THE BIDDING/CONSTRUCTION PROCESS.
- INFORMATION ON EXISTING UTILITIES AND STORM DRAINAGE SYSTEMS HAS BEEN COMPILED FROM AVAILABLE INFORMATION INCLUDING UTILITY PROVIDER AND MUNICIPAL RECORD MAPS AND/OR FIELD SURVEY AND IS NOT GUARANTEED CORRECT OR COMPLETE. UTILITIES AND STORM DRAINAGE SYSTEMS ARE SHOWN TO ALERT THE CONTRACTOR TO THEIR PRESENCE AND THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL LOCATIONS AND ELEVATIONS OF ALL UTILITIES AND STORM DRAINAGE SYSTEMS INCLUDING SERVICES. PRIOR TO DEMOLITION OR CONSTRUCTION, THE CONTRACTOR SHALL CONTACT "DIG SAFE" 72 HOURS BEFORE COMMENCEMENT OF WORK AT "811" AND VERIFY ALL UTILITY AND STORM DRAINAGE SYSTEM LOCATIONS.
- NO CONSTRUCTION OR DEMOLITION SHALL BEGIN UNTIL APPROVAL OF THE FINAL PLANS IS GRANTED BY ALL GOVERNING AND REGULATORY AGENCIES.

SITE PLAN NOTES

- THE SURVEY WAS PROVIDED BY MARTIN SURVEYING ASSOCIATES, LLC DATED 04/13/20.
- THERE ARE WETLAND AREAS LOCATED ON THE SITE AS INDICATED ON THE PLANS. WETLAND AREA BOUNDARIES WERE FLAGGED AND LOCATED BY ALL POINTS TECHNOLOGY, IN NOVEMBER 2019.
- THERE WILL BE GRADING ON SITE FOR THE INSTALLATION OF STORMWATER MANAGEMENT FEATURES.
- THE CONTRACTOR SHALL FOLLOW THE RECOMMENDED SEQUENCE OF CONSTRUCTION NOTES PROVIDED ON THE EROSION CONTROL PLAN OR SUBMIT AN ALTERNATE PLAN FOR APPROVAL BY THE ENGINEER AND/OR PERMITTING AGENCIES PRIOR TO THE START CONSTRUCTION. ALLOW A MINIMUM OF 14 WORKING DAYS FOR REVIEW.
- PROPER CONSTRUCTION PROCEDURES SHALL BE FOLLOWED ON ALL IMPROVEMENTS WITHIN THIS PARCEL SO AS TO PREVENT THE SILTING OF ANY WATERCOURSE OR BVWS IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS. IN ADDITION, THE CONTRACTOR SHALL ADHERE TO "EROSION CONTROL PLAN" CONTAINED HEREIN. THE CONTRACTOR SHALL BE RESPONSIBLE TO POST ALL BONDS AS REQUIRED BY GOVERNMENT AGENCIES WHICH WOULD GUARANTEE THE PROPER IMPLEMENTATION OF THE PLAN.
- ALL SITE WORK, MATERIALS OF CONSTRUCTION, AND CONSTRUCTION METHODS FOR EARTHWORK AND STORM DRAINAGE WORK, SHALL CONFORM TO THE SPECIFICATIONS AND DETAILS AND APPLICABLE SECTIONS OF THE PROJECT SPECIFICATIONS MANUAL. OTHERWISE THIS WORK SHALL CONFORM TO THE STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION AND PROJECT GEOTECHNICAL REPORT IF THERE IS NO PROJECT SPECIFICATIONS MANUAL. ALL FILL MATERIAL UNDER STRUCTURES AND PAVED AREAS SHALL BE PER THE ABOVE STATED APPLICABLE SPECIFICATIONS, AND/OR PROJECT GEOTECHNICAL REPORT, AND SHALL BE PLACED IN ACCORDANCE WITH THE APPLICABLE SPECIFICATIONS UNDER THE SUPERVISION OF A QUALIFIED PROFESSIONAL ENGINEER. MATERIAL SHALL BE COMPACTED IN 8' LIFTS TO 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D 1557 AT 95% PERCENT OF OPTIMUM MOISTURE CONTENT.
- ALL DISTURBANCE INCURRED TO PUBLIC, MUNICIPAL, COUNTY, STATE PROPERTY DUE TO CONSTRUCTION SHALL BE RESTORED TO ITS PREVIOUS CONDITION OR BETTER, TO THE SATISFACTION OF THE TOWN OF WATERTOWN AND STATE OF CONNECTICUT.
- IF IMPACTED OR CONTAMINATED SOIL IS ENCOUNTERED BY THE CONTRACTOR, THE CONTRACTOR SHALL SUSPEND EXCAVATION WORK OF IMPACTED SOIL AND NOTIFY THE PROJECT DEVELOPER AND/OR PROJECT DEVELOPERS ENVIRONMENTAL CONSULTANT PRIOR TO PROCEEDING WITH FURTHER WORK IN THE IMPACTED SOIL LOCATION UNTIL FURTHER INSTRUCTED BY THE PROJECT DEVELOPER AND/OR PROJECT DEVELOPERS ENVIRONMENTAL CONSULTANT.

UTILITY NOTES

- CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE TOWN OF WATERTOWN TO SECURE CONSTRUCTION PERMITS AND FOR PAYMENT OF FEES FOR STREET CUTS AND CONNECTIONS TO EXISTING UTILITIES.
- REFER TO DRAWINGS BY PROJECT DEVELOPER FOR THE ONSITE ELECTRICAL DRAWINGS AND INTERCONNECTION TO EXISTING ELECTRICAL GRID. SITE CONTRACTOR SHALL SUPPLY AND INSTALL PIPE ADAPTERS AS NECESSARY AT BUILDING CONNECTION POINT OR AT EXISTING UTILITY OR PIPE CONNECTION POINT. THESE DETAILS ARE NOT INCLUDED IN THESE PLANS.
- UTILITY LOCATIONS AND PENETRATIONS ARE SHOWN FOR THE CONTRACTORS INFORMATION AND SHALL BE VERIFIED WITH THE ELECTRICAL ENGINEER AND THE PROJECT DEVELOPERS CONSTRUCTION MANAGER PRIOR TO THE START OF CONSTRUCTION.
- THE CONTRACTOR SHALL VISIT THE SITE AND VERIFY THE ELEVATION AND LOCATION OF ALL UTILITIES BY VARIOUS MEANS PRIOR TO BEGINNING ANY EXCAVATION. TEST PITS SHALL BE DUG AT ALL LOCATIONS WHERE PROP. SANITARY SEWERS AND WHERE PROP. STORM PIPING WILL CROSS EXISTING UTILITIES, AND THE HORIZONTAL AND VERTICAL LOCATIONS OF THE UTILITIES SHALL BE DETERMINED. THE CONTRACTOR SHALL CONTACT THE PROJECT DEVELOPER IN THE EVENT OF ANY DISCOVERED OR UNFORESEEN CONFLICTS BETWEEN EXISTING AND PROPOSED SANITARY SEWERS, STORM PIPING AND UTILITIES SO THAT AN APPROPRIATE MODIFICATION MAY BE MADE.
- UTILITY CONNECTION DESIGN AS REFLECTED ON THE PLAN MAY CHANGE SUBJECT TO UTILITY PROVIDER AND GOVERNING AUTHORITY STAFF REVIEW.
- THE CONTRACTOR SHALL ENSURE THAT ALL UTILITY PROVIDERS AND GOVERNING AUTHORITY STANDARDS FOR MATERIALS AND CONSTRUCTION METHODS ARE MET. THE CONTRACTOR SHALL PERFORM PROPER COORDINATION WITH THE RESPECTIVE UTILITY PROVIDER.
- THE CONTRACTOR SHALL ARRANGE FOR AND COORDINATE WITH THE RESPECTIVE UTILITY PROVIDERS FOR SERVICE INSTALLATIONS AND CONNECTIONS. THE CONTRACTOR SHALL COORDINATE WORK TO BE PERFORMED BY THE VARIOUS UTILITY PROVIDERS AND SHALL PAY ALL FEES FOR CONNECTIONS, DISCONNECTIONS, RELOCATIONS, INSPECTIONS, AND DEMOLITION UNLESS OTHERWISE STATED IN THE PROJECT SPECIFICATIONS MANUAL AND/OR GENERAL CONDITIONS OF THE CONTRACT.
- ALL EXISTING PAVEMENT WHERE UTILITY PIPING IS TO BE INSTALLED SHALL BE SAW CUT. AFTER UTILITY INSTALLATION IS COMPLETED, THE CONTRACTOR SHALL INSTALL TEMPORARY AND/OR PERMANENT PAVEMENT REPAIR AS DETAILED ON THE DRAWINGS OR AS REQUIRED BY THE TOWN OF WATERTOWN.
- ALL PIPES SHALL BE LAID ON STRAIGHT ALIGNMENTS AND EVEN GRADES USING A PIPE LASER OR OTHER ACCURATE METHOD.
- RELOCATION OF UTILITY PROVIDER FACILITIES, SUCH AS POLES, SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE UTILITY PROVIDER.
- THE CONTRACTOR SHALL COMPACT PIPE BACKFILL IN 8' LIFTS ACCORDING TO THE PIPE BEDDING DETAILS. TRENCH BOTTOM SHALL BE STABLE IN HIGH GROUNDWATER AREAS. A PIPE FOUNDATION SHALL BE USED PER THE TRENCH DETAILS AND IN AREAS OF ROCK EXCAVATION.
- CONTRACTOR TO PROVIDE STEEL SLEEVES AND ANNULAR SPACE SAND FILL FOR UTILITY PIPE AND CONDUIT CONNECTIONS UNDER FOOTINGS.
- ALL UTILITY CONSTRUCTION IS SUBJECT TO INSPECTION FOR APPROVAL PRIOR TO BACKFILLING, IN ACCORDANCE WITH THE APPROPRIATE UTILITY PROVIDER REQUIREMENTS.
- A ONE-FOOT MINIMUM VERTICAL CLEARANCE BETWEEN WATER, GAS, ELECTRICAL, AND TELEPHONE LINES AND STORM PIPING SHALL BE PROVIDED. A SIX-INCH MINIMUM CLEARANCE SHALL BE MAINTAINED BETWEEN STORM PIPING AND SANITARY SEWER. A 6-INCH TO 18-INCH VERTICAL CLEARANCE BETWEEN SANITARY SEWER PIPING AND STORM PIPING SHALL REQUIRE CONCRETE ENCASEMENT OF THE PROP. SANITARY PIPING.
- THE CONTRACTOR SHALL RESTORE ANY UTILITY STRUCTURE, PIPE, CONDUIT, PAVEMENT, CURBING, SIDEWALKS, DRAINAGE STRUCTURE, SWALE OR LANDSCAPED AREAS DISTURBED DURING CONSTRUCTION, TO THEIR ORIGINAL CONDITION OR BETTER TO THE SATISFACTION OF THE PROJECT DEVELOPER AND TOWN OF WATERTOWN.
- INFORMATION ON EXISTING UTILITIES AND STORM DRAINAGE HAS BEEN COMPILED FROM AVAILABLE INFORMATION INCLUDING UTILITY PROVIDER AND MUNICIPAL RECORD MAPS AND/OR FIELD SURVEY, AND IS NOT GUARANTEED CORRECT OR COMPLETE. UTILITIES AND STORM DRAINAGE ARE SHOWN TO ALERT THE CONTRACTOR TO THEIR PRESENCE. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL LOCATIONS AND ELEVATIONS OF ALL UTILITIES AND STORM DRAINAGE INCLUDING SERVICES. CONTACT "DIG SAFE" AT 811 72 HOURS PRIOR TO CONSTRUCTION AND VERIFY ALL UNDERGROUND AND OVERHEAD UTILITY AND STORM DRAINAGE LOCATIONS. THE CONTRACTOR SHALL EMPLOY THE USE OF A UTILITY LOCATING COMPANY TO PROVIDE SUBSURFACE UTILITY ENGINEERING CONSISTING OF DESIGNATING UTILITIES AND STORM PIPING ON PRIVATE PROPERTY WITHIN THE CONTRACT LIMIT AND CONSISTING OF DESIGNATING AND LOCATING WHERE PROP. UTILITIES AND STORM PIPING CROSS EXISTING UTILITIES AND STORM PIPING WITHIN THE CONTRACT LIMITS.
- THE CONTRACTOR SHALL ARRANGE AND COORDINATE WITH UTILITY PROVIDERS FOR WORK TO BE PERFORMED BY UTILITY PROVIDERS. THE CONTRACTOR SHALL PAY ALL UTILITY FEES UNLESS OTHERWISE STATED IN THE PROJECT SPECIFICATION MANUAL AND GENERAL CONDITIONS, AND REPAIR PAVEMENTS AS NECESSARY.
- ELECTRIC DRAWINGS AND REQUIREMENTS ARE NOT INCLUDED AS PART OF THIS DRAWING SET AND SHOULD BE OBTAINED FROM THE PROJECT DEVELOPER.
- ALTERNATIVE METHODS AND PRODUCTS OTHER THAN THOSE SPECIFIED MAY BE USED IF REVIEWED AND APPROVED BY THE PROJECT DEVELOPER, ENGINEER, AND APPROPRIATE REGULATORY AGENCIES PRIOR TO INSTALLATION.
- THE CONTRACTOR SHALL MAINTAIN ALL FLOWS AND UTILITY CONNECTIONS TO EXISTING BUILDINGS WITHOUT INTERRUPTION UNLESS/UNTIL AUTHORIZED TO DISCONNECT BY THE PROJECT DEVELOPER, TOWN OF WATERTOWN, UTILITY PROVIDERS AND GOVERNING AUTHORITIES.

GENERAL LEGEND		
	EXISTING	PROPOSED
PROPERTY LINE	=====	
BUILDING SETBACK	-----	
SOLAR SETBACK	-----	
EASEMENT	=====	
TREE LINE	~~~~~	~~~~~
WETLAND	~~~~~	
WETLAND BUFFER	-----	
VERNAL POOL	=====	
VERNAL POOL BUFFER	-----	
WATERCOURSE	=====	
WATERCOURSE BUFFER	-----	
MAJOR CONTOUR	-----	=====
MINOR CONTOUR	-----	=====
UNDERGROUND ELECTRIC		--- E --- E ---
OVERHEAD ELECTRIC		--- OH --- OH ---
GAS LINE		--- G --- G ---
WATER LINE		--- W --- W ---
BASIN		--->--->--->--->---
SWALE		--->--->--->---
FENCE		--- X --- X --- X ---
LIMIT OF DISTURBANCE		--- LOD ---
LIMIT OF CLEARING AND GRUBBING		--- LCG ---
FILTER SOCK		--- FS --- FS ---
SILT FENCE		--- SF --- SF ---
BAFFLE		--- --- --- ---

WATERTOWN SOLAR ONE, LLC
150 TRUMBULL STREET
4TH FLOOR
HARTFORD, CT, 06103



567 VAUXHAUL STREET EXTENSION - SUITE 311
 WATERFORD, CT 06385 PHONE: (860)-663-1697
 WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

CSC PERMIT SET

NO	DATE	REVISION
0	06/30/20	FOR CLIENT REVIEW
1	07/06/20	CSC SUBMISSION
2		
3		
4		
5		
6		

DESIGN PROFESSIONAL OF RECORD

PROF. BRADLEY J. PARSONS, P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION
ADD: 567 VAUXHAUL STREET
EXTENSION - SUITE 311
WATERFORD, CT 06385

OWNER: CATHOLIC CEMETERIES
ADDRESS: 669 PLATT ROAD
WATERTOWN, CT 06795

WATERTOWN SOLAR ONE, LLC

SITE HINMAN ROAD & PLATT ROAD
ADDRESS: WATERTOWN, CT 06795

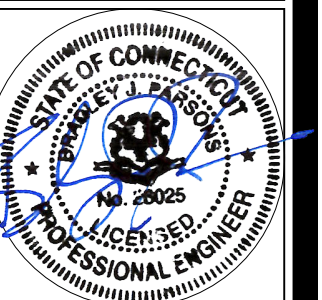
APT FILING NUMBER: CT590240

DRAWN BY: CSH
DATE: 06/30/20 **CHECKED BY: BJP**

SHEET TITLE:
GENERAL NOTES

SHEET NUMBER:

GN-1



ENVIRONMENTAL NOTES

RESOURCE PROTECTION PLAN

ENVIRONMENTAL NOTES

RESOURCE PROTECTION PLAN

AS A RESULT OF THE PROPOSED DEVELOPMENTS LOCATION IN THE VICINITY OF WETLANDS AND VERNAL POOL HABITATS, THE FOLLOWING BEST MANAGEMENT PRACTICES ("BMPs") ARE RECOMMENDED TO AVOID UNINTENTIONAL IMPACT TO WETLAND HABITATS OR MORTALITY TO VERNAL POOL HERPETOFAUNA (I.E., SPOTTED SALAMANDER, WOOD FROG, TURTLES, ETC.) DURING CONSTRUCTION ACTIVITIES. THIS PLAN INCLUDES ELEMENTS THAT WILL PROTECT HERPETOFAUNA SHOULD CONSTRUCTION ACTIVITIES OCCUR DURING PEAK AMPHIBIAN MOVEMENT PERIODS (EARLY SPRING BREEDING [MARCH 1ST TO MAY 15TH] AND LATE SUMMER DISPERSAL [JULY 15TH TO SEPTEMBER 15TH]) AS WELL AS WETLANDS REGARDLESS OF THE TIME OF YEAR. COMPLETE DETAILS OF THE RECOMMENDED BMPs ARE PROVIDED BELOW, WHICH WILL BE INCORPORATED INTO THE CONSTRUCTION DRAWINGS TO ENSURE THE CONTRACTOR IS FULLY AWARE OF THE PROJECT'S ENVIRONMENTALLY SENSITIVE SETTING.

A WETLAND SCIENTIST FROM ALL-POINTS TECHNOLOGY CORP. ("APT") EXPERIENCED IN COMPLIANCE MONITORING OF CONSTRUCTION ACTIVITIES WILL SERVE AS THE ENVIRONMENTAL MONITOR FOR THIS PROJECT TO ENSURE THAT THE FOLLOWING BMPs ARE IMPLEMENTED PROPERLY. THE PROPOSED RESOURCE PROTECTION PROGRAM CONSISTS OF SEVERAL COMPONENTS INCLUDING: ISOLATION OF THE PROJECT PERIMETER; PERIODIC INSPECTION AND MAINTENANCE OF EROSION CONTROLS AND ISOLATION STRUCTURES; HERPETOFAUNA SWEEPS; EDUCATION OF ALL CONTRACTORS AND SUB-CONTRACTORS PRIOR TO INITIATION OF WORK ON THE SITE; PROTECTIVE MEASURES; AND, REPORTING.

1. EROSION AND SEDIMENTATION CONTROLS

- PLASTIC NETTING WITH LARGE MESH OPENINGS (> ¼") USED IN A VARIETY OF EROSION CONTROL PRODUCTS (I.E., EROSION CONTROL BLANKETS, FIBER ROLLS [WATTLES], REINFORCED SILT FENCE) HAS BEEN FOUND TO ENTANGLE WILDLIFE, INCLUDING REPTILES, AMPHIBIANS, BIRDS AND SMALL MAMMALS. NO PERMANENT EROSION CONTROL PRODUCTS OR REINFORCED SILT FENCE WILL BE USED ON THE PROJECT. TEMPORARY EROSION CONTROL PRODUCTS THAT WILL BE EXPOSED AT THE GROUND SURFACE REPRESENT A POTENTIAL FOR WILDLIFE ENTANGLEMENT WILL USE EITHER EROSION CONTROL BLANKETS AND FIBER ROLLS COMPOSED OF PROCESSED FIBERS MECHANICALLY BOUND TOGETHER TO FORM A CONTINUOUS MATRIX (NETLESS) OR NETTING WITH A MESH SIZE <¼" SUCH AS THAT TYPICALLY USED IN COMPOST FILTER SOCKS TO AVOID/MINIMIZE WILDLIFE ENTANGLEMENT.
- INSTALLATION OF EROSION AND SEDIMENTATION CONTROLS, REQUIRED FOR EROSION CONTROL COMPLIANCE AND CREATION OF A BARRIER TO POSSIBLE MIGRATING/DISPERSING HERPETOFAUNA, SHALL BE PERFORMED BY THE CONTRACTOR FOLLOWING CLEARING ACTIVITIES AND PRIOR TO ANY EARTHWORK. THE ENVIRONMENTAL MONITOR WILL INSPECT THE WORK ZONE AREA PRIOR TO AND FOLLOWING EROSION CONTROL BARRIER INSTALLATION TO ENSURE THE AREA IS FREE OF HERPETOFAUNA AND SATISFACTORILY INSTALLED. THE INTENT OF THE BARRIER IS TO SEGREGATE THE MAJORITY OF THE WORK ZONE FROM MIGRATING/DISPERSING HERPETOFAUNA. OFTENTIMES COMPLETE ISOLATION OF A WORK ZONE IS NOT FEASIBLE DUE TO ACCESSIBILITY NEEDS AND LOCATIONS OF STAGING/MATERIAL STORAGE AREAS, ETC. IN THOSE CIRCUMSTANCES, THE BARRIERS WILL BE POSITIONED TO DEFLECT MIGRATING/DISPERSAL ROUTES AWAY FROM THE WORK ZONE TO MINIMIZE POTENTIAL ENCOUNTERS WITH HERPETOFAUNA.
- IF A STAGING AREA FOR EQUIPMENT, VEHICLES OR CONSTRUCTION MATERIALS IS REQUIRED FOR THIS PROJECT, SUCH AREA(S) SHALL BE LOCATED OUTSIDE OF ANY WETLAND RESOURCE BUFFER ZONE AND SURROUNDED BY SILT FENCE TO ISOLATE THE AREA FROM POSSIBLE MIGRATING HERPETOFAUNA.
- ALL EROSION CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS OF COMPLETION OF WORK AND PERMANENT STABILIZATION OF SITE SOILS SO THAT HERPETOFAUNA MOVEMENTS BETWEEN UPLANDS AND WETLANDS ARE NOT RESTRICTED.

2. CONTRACTOR EDUCATION:

- PRIOR TO WORK ON SITE AND INITIAL DEPLOYMENT/MOBILIZATION OF EQUIPMENT AND MATERIALS, THE CONTRACTOR SHALL ATTEND AN EDUCATIONAL SESSION AT THE PRE-CONSTRUCTION MEETING WITH THE ENVIRONMENTAL MONITOR. THIS ORIENTATION AND EDUCATIONAL SESSION WILL CONSIST OF INFORMATION SUCH AS, BUT NOT LIMITED TO: REPRESENTATIVE PHOTOGRAPHS OF TYPICAL HERPETOFAUNA THAT MAY BE ENCOUNTERED, RARE THAT COULD BE ENCOUNTERED (IF POSSIBLE), TYPICAL SPECIES BEHAVIOR, AND PROPER PROCEDURES TO PROTECT SUCH SPECIES IF THEY ARE ENCOUNTERED. THE MEETING WILL FURTHER EMPHASIZE THE NON-AGGRESSIVE NATURE OF THESE SPECIES, THE ABSENCE OF NEED TO DESTROY SUCH ANIMALS AND THE NEED TO FOLLOW PROTECTIVE MEASURES AS DESCRIBED IN SECTION 4 BELOW. THE CONTRACTOR WILL DESIGNATE ONE OF ITS WORKERS AS THE "PROJECT MONITOR", WHO WILL RECEIVE MORE INTENSE TRAINING ON THE IDENTIFICATION AND PROPER HANDLING OF HERPETOFAUNA.
- THE PROJECT MONITOR WILL BE RESPONSIBLE FOR THE DAILY "SWEEPS" FOR HERPETOFAUNA WITHIN THE WORK ZONE EACH MORNING, DURING ANY AND ALL TRANSPORTATION OF VEHICLES ALONG THE ACCESS DRIVE, AND FOR ANY GROUND DISTURBANCE WORK. THIS INDIVIDUAL WILL RECEIVE MORE INTENSE TRAINING FROM THE ENVIRONMENTAL MONITOR ON THE IDENTIFICATION AND PROTECTION OF HERPETOFAUNA IN ORDER TO PERFORM SWEEPS. ANY HERPETOFAUNA DISCOVERED WILL BE REPORTED TO THE ENVIRONMENTAL MONITOR, PHOTOGRAPHED IF POSSIBLE, AND RELOCATED OUTSIDE THE WORK ZONE IN THE GENERAL DIRECTION THE ANIMAL WAS ORIENTED.
- THE ENVIRONMENTAL MONITOR WILL ALSO POST CAUTION SIGNS THROUGHOUT THE PROJECT SITE AND MAINTAIN THEM FOR THE DURATION OF CONSTRUCTION TO PROVIDE NOTICE OF THE ENVIRONMENTALLY SENSITIVE NATURE OF THE WORK AREA. THE POTENTIAL FOR ENCOUNTERING VARIOUS AMPHIBIANS AND REPTILES AND PRECAUTIONS TO BE TAKEN TO AVOID INJURY TO OR MORTALITY OF THESE ANIMALS.
- THE CONTRACTOR WILL BE PROVIDED WITH THE ENVIRONMENTAL MONITOR'S CELL PHONE AND EMAIL CONTACT INFORMATION TO IMMEDIATELY REPORT ANY ENCOUNTERS WITH HERPETOFAUNA.

3. PETROLEUM MATERIALS STORAGE AND SPILL PREVENTION

- CERTAIN PRECAUTIONS ARE NECESSARY TO STORE PETROLEUM MATERIALS, REFUEL AND CONTAIN AND PROPERLY CLEAN UP ANY INADVERTENT FUEL OR PETROLEUM (I.E., OIL, HYDRAULIC FLUID, ETC.) SPILL DUE TO THE PROJECT'S LOCATION IN PROXIMITY TO SENSITIVE WETLAND RESOURCES.
- A SPILL CONTAINMENT KIT CONSISTING OF A SUFFICIENT SUPPLY OF ABSORBENT PADS AND ABSORBENT MATERIAL WILL BE MAINTAINED BY THE CONTRACTOR AT THE CONSTRUCTION SITE THROUGHOUT THE DURATION OF THE PROJECT. IN ADDITION, A WASTE DRUM WILL BE KEPT ON SITE TO CONTAIN ANY USED ABSORBENT PADS/MATERIAL FOR PROPER AND TIMELY DISPOSAL OFF SITE IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL LAWS.
- THE FOLLOWING PETROLEUM AND HAZARDOUS MATERIALS STORAGE AND REFUELING RESTRICTIONS AND SPILL RESPONSE PROCEDURES WILL BE ADHERED TO BY THE CONTRACTOR.
 - PETROLEUM AND HAZARDOUS MATERIALS STORAGE AND REFUELING
 - REFUELING OF VEHICLES OR MACHINERY SHALL TAKE PLACE ON AN IMPERVIOUS PAD WITH SECONDARY CONTAINMENT DESIGNED TO CONTAIN FUELS.
 - ANY REFUELING DRUMS/TANKS OR HAZARDOUS MATERIALS THAT MUST BE KEPT ON SITE SHALL BE STORED ON AN IMPERVIOUS SURFACE UTILIZING SECONDARY CONTAINMENT A MINIMUM OF 100 FEET FROM WETLANDS OR WATERCOURSES.
 - INITIAL SPILL RESPONSE PROCEDURES
 - STOP OPERATIONS AND SHUT OFF EQUIPMENT.
 - REMOVE ANY SOURCES OF SPARK OR FLAME.
 - CONTAIN THE SOURCE OF THE SPILL.
 - DETERMINE THE APPROXIMATE VOLUME OF THE SPILL.
 - IDENTIFY THE LOCATION OF NATURAL FLOW PATHS TO PREVENT THE RELEASE OF THE SPILL TO SENSITIVE NEARBY WATERWAYS OR WETLANDS.
 - ENSURE THAT FELLOW WORKERS ARE NOTIFIED OF THE SPILL.
 - SPILL CLEAN UP & CONTAINMENT
 - OBTAIN SPILL RESPONSE MATERIALS FROM THE ON-SITE SPILL RESPONSE KIT. PLACE ABSORBENT MATERIALS DIRECTLY ON THE RELEASE AREA.
 - LIMIT THE SPREAD OF THE SPILL BY PLACING ABSORBENT MATERIALS AROUND THE PERIMETER OF THE SPILL.
 - ISOLATE AND ELIMINATE THE SPILL SOURCE.
 - CONTACT THE APPROPRIATE LOCAL, STATE AND/OR FEDERAL AGENCIES, AS NECESSARY.
 - CONTACT A DISPOSAL COMPANY TO PROPERLY DISPOSE OF CONTAMINATED MATERIALS.
 - REPORTING
 - COMPLETE AN INCIDENT REPORT.
 - SUBMIT A COMPLETED INCIDENT REPORT TO LOCAL, STATE AND FEDERAL AGENCIES, AS REQUIRED.

4. PROTECTIVE MEASURES

- A THOROUGH COVER SEARCH OF THE CONSTRUCTION AREA WILL BE PERFORMED BY THE ENVIRONMENTAL MONITOR FOR HERPETOFAUNA PRIOR TO AND FOLLOWING INSTALLATION OF EROSION CONTROL MEASURES/SILT FENCING BARRIERS TO REMOVE ANY SPECIES FROM THE WORK ZONE PRIOR TO THE INITIATION OF CONSTRUCTION ACTIVITIES. ANY HERPETOFAUNA DISCOVERED WOULD BE RELOCATED OUTSIDE THE WORK ZONE IN THE GENERAL DIRECTION THE ANIMAL WAS ORIENTED. PERIODIC INSPECTIONS WILL BE PERFORMED BY THE ENVIRONMENTAL MONITOR THROUGHOUT THE DURATION OF CONSTRUCTION.
- THE CONTRACTOR'S PROJECT MONITOR WILL INSPECT THE WORK AREA EACH MORNING AND ESCORT INITIAL VEHICLE ACCESS INTO THE SITE EACH MORNING ALONG THE ACCESS DRIVE TO VISUALLY INSPECT FOR ANY HERPETOFAUNA. ANY HERPETOFAUNA DISCOVERED WOULD BE RELOCATED OUTSIDE THE WORK ZONE IN THE GENERAL DIRECTION THE ANIMAL WAS ORIENTED.
- ANY HERPETOFAUNA REQUIRING RELOCATION OUT OF THE WORK ZONE WILL BE CAPTURED WITH THE USE OF A NET OR CLEAN PLASTIC BAG THAT HAS BEEN MOISTENED WITH CLEAN WATER FOR CAREFUL HANDLING AND PLACEMENT OUT OF THE WORK ZONE IN THE GENERAL DIRECTION IT WAS OBSERVED HEADING.
- ANY STORMWATER MANAGEMENT FEATURES, RUTS OR ARTIFICIAL DEPRESSIONS THAT COULD HOLD WATER CREATED INTENTIONALLY OR UNINTENTIONALLY BY SITE CLEARING/CONSTRUCTION ACTIVITIES WILL BE PROPERLY FILLED IN AND PERMANENTLY STABILIZED WITH VEGETATION TO AVOID THE CREATION OF VERNAL POOL "DECOY POOLS" THAT COULD INTERCEPT AMPHIBIANS MOVING TOWARD THE VERNAL POOL. STORMWATER MANAGEMENT FEATURES SUCH AS LEVEL SPREADERS WILL BE CAREFULLY REVIEWED IN THE FIELD TO ENSURE THAT STANDING WATER DOES NOT ENDURE FOR MORE THAN A 24-HOUR PERIOD TO AVOID CREATION OF DECOY POOLS AND MAY BE SUBJECT TO FIELD DESIGN CHANGES. ANY SUCH PROPOSED DESIGN CHANGES WILL BE REVIEWED BY THE DESIGN ENGINEER TO ENSURE STORMWATER MANAGEMENT FUNCTIONS ARE MAINTAINED.

REPORTING

- INSPECTION REPORTS (BRIEF NARRATIVE AND APPLICABLE PHOTOS) WILL BE PREPARED BY THE ENVIRONMENTAL MONITOR DOCUMENTING EACH INSPECTION AND SUBMITTED TO THE PERMITTEE FOR COMPLIANCE VERIFICATION. ANY NON-COMPLIANCE OBSERVATIONS OF EROSION CONTROL MEASURES OR EVIDENCE OF EROSION OR SEDIMENT RELEASE WILL BE IMMEDIATELY REPORTED TO THE PERMITTEE AND ITS CONTRACTOR AND INCLUDED IN THE REPORTS.
- ANY INCIDENTS OF RELEASE OF SEDIMENT OR OTHER MATERIALS INTO WETLAND RESOURCE AREAS SHALL BE REPORTED BY THE PERMITTEE WITHIN 24 HOURS TO THE PERMITTEE.
- ANY OBSERVATIONS OF RARE SPECIES WILL BE REPORTED TO THE CONNECTICUT DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION'S NATURAL DIVERSITY DATA BASE PROGRAM.
- FOLLOWING COMPLETION OF THE PROJECT, A SUMMARY REPORT WILL BE PREPARED BY THE ENVIRONMENTAL MONITOR DOCUMENTING COMPLIANCE WITH THE RESOURCE PROTECTION PLAN AND SUBMITTED TO THE PERMITTEE, WHO SHALL SUBMIT A COPY TO THE CONNECTICUT SITING COUNCIL.

WATERTOWN SOLAR ONE, LLC
150 TRUMBULL STREET
4TH FLOOR
HARTFORD, CT, 06103



567 VAUXHAUL STREET EXTENSION - SUITE 311
WATERFORD, CT 06385 PHONE: (860)-663-1697
WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

CSC PERMIT SET

NO	DATE	REVISION
0	06/30/20	FOR CLIENT REVIEW
1	07/06/20	CSC SUBMISSION
2		
3		
4		
5		
6		

DESIGN PROFESSIONAL OF RECORD

PROF: BRADLEY J. PARSONS, P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION
ADD: 567 VAUXHAUL STREET
EXTENSION - SUITE 311
WATERFORD, CT 06385

OWNER: CATHOLIC CEMETERIES
ADDRESS: 669 PLATT ROAD
WATERTOWN, CT 06795

WATERTOWN SOLAR ONE, LLC

SITE HINMAN ROAD & PLATT ROAD
ADDRESS: WATERTOWN, CT 06795

APT FILING NUMBER: CT590240

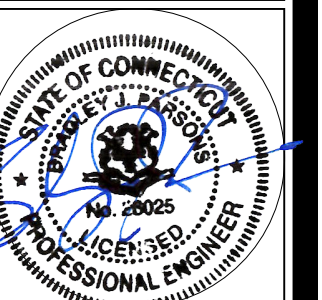
	DRAWN BY: CSH
DATE: 06/30/20	CHECKED BY: BJP

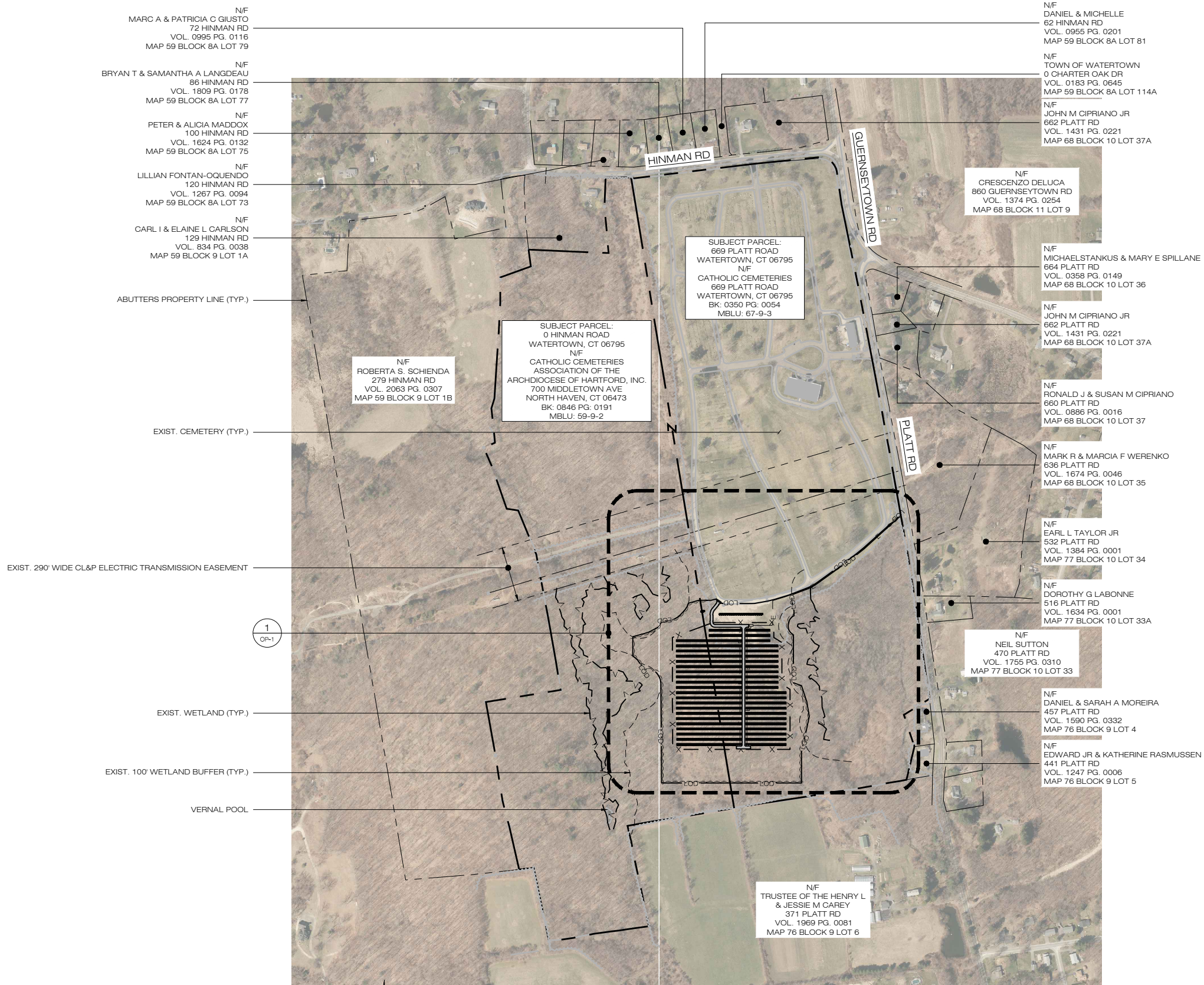
SHEET TITLE:

GENERAL NOTES

SHEET NUMBER:

GN-2





N/F
MARC A & PATRICIA C GIUSTO
72 HINMAN RD
VOL. 0995 PG. 0116
MAP 59 BLOCK 8A LOT 79

N/F
BRYAN T & SAMANTHA A LANGDEAU
86 HINMAN RD
VOL. 1809 PG. 0178
MAP 59 BLOCK 8A LOT 77

N/F
PETER & ALICIA MADDOX
100 HINMAN RD
VOL. 1624 PG. 0132
MAP 59 BLOCK 8A LOT 75

N/F
LILLIAN FONTAN-OQUENDO
120 HINMAN RD
VOL. 1267 PG. 0094
MAP 59 BLOCK 8A LOT 73

N/F
CARL I & ELAINE L CARLSON
129 HINMAN RD
VOL. 834 PG. 0038
MAP 59 BLOCK 9 LOT 1A

ABUTTERS PROPERTY LINE (TYP.)

N/F
ROBERTA S. SCHIENDA
279 HINMAN RD
VOL. 2063 PG. 0307
MAP 59 BLOCK 9 LOT 1B

EXIST. CEMETERY (TYP.)

EXIST. 290' WIDE CL&P ELECTRIC TRANSMISSION EASEMENT

1
OP-1

EXIST. WETLAND (TYP.)

EXIST. 100' WETLAND BUFFER (TYP.)

VERNAL POOL

N/F
DANIEL & MICHELLE
62 HINMAN RD
VOL. 0955 PG. 0201
MAP 59 BLOCK 8A LOT 81

N/F
TOWN OF WATERTOWN
0 CHARTER OAK DR
VOL. 0183 PG. 0645
MAP 59 BLOCK 8A LOT 114A

N/F
JOHN M CIPRIANO JR
662 PLATT RD
VOL. 1431 PG. 0221
MAP 68 BLOCK 10 LOT 37A

N/F
CRESCENZO DELUCA
860 GUERNSEYTOWN RD
VOL. 1374 PG. 0254
MAP 68 BLOCK 11 LOT 9

N/F
MICHAELSTANKUS & MARY E SPILLANE
654 PLATT RD
VOL. 0358 PG. 0149
MAP 68 BLOCK 10 LOT 36

N/F
JOHN M CIPRIANO JR
662 PLATT RD
VOL. 1431 PG. 0221
MAP 68 BLOCK 10 LOT 37A

N/F
RONALD J & SUSAN M CIPRIANO
660 PLATT RD
VOL. 0886 PG. 0016
MAP 68 BLOCK 10 LOT 37

N/F
MARK R & MARCIA F WERENKO
636 PLATT RD
VOL. 1674 PG. 0046
MAP 68 BLOCK 10 LOT 35

N/F
EARL L TAYLOR JR
532 PLATT RD
VOL. 1384 PG. 0001
MAP 77 BLOCK 10 LOT 34

N/F
DOROTHY G LABONNE
516 PLATT RD
VOL. 1634 PG. 0001
MAP 77 BLOCK 10 LOT 33A

N/F
NEIL SUTTON
470 PLATT RD
VOL. 1755 PG. 0310
MAP 77 BLOCK 10 LOT 33

N/F
DANIEL & SARAH A MOREIRA
457 PLATT RD
VOL. 1590 PG. 0332
MAP 76 BLOCK 9 LOT 4

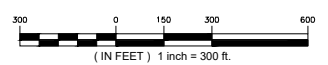
N/F
EDWARD JR & KATHERINE RASMUSSEN
441 PLATT RD
VOL. 1247 PG. 0006
MAP 76 BLOCK 9 LOT 5

SUBJECT PARCEL:
669 PLATT ROAD
WATERTOWN, CT 06795
N/F
CATHOLIC CEMETERIES
669 PLATT ROAD
WATERTOWN, CT 06795
BK: 0350 PG. 0054
MBLU: 67-9-3

SUBJECT PARCEL:
0 HINMAN ROAD
WATERTOWN, CT 06795
N/F
CATHOLIC CEMETERIES
ASSOCIATION OF THE
ARCHDIOCESE OF HARTFORD, INC.
700 MIDDLETOWN AVE
NORTH HAVEN, CT 06473
BK: 0846 PG. 0191
MBLU: 59-9-2

N/F
TRUSTEE OF THE HENRY L
& JESSIE M CAREY
371 PLATT RD
VOL. 1969 PG. 0081
MAP 76 BLOCK 9 LOT 6

1
OP-0
OVERALL LOCUS MAP
SCALE: 1" = 300'-0"



WATERTOWN SOLAR ONE, LLC
150 TRUMBULL STREET
4TH FLOOR
HARTFORD, CT, 06103



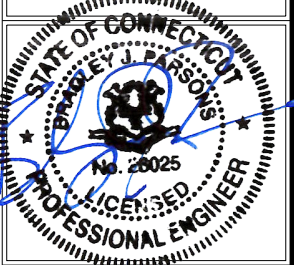
567 VAUXHAUL STREET EXTENSION - SUITE 311
WATERFORD, CT 06385 PHONE: (860)-663-1697
WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

CSC PERMIT SET

NO	DATE	REVISION
0	06/30/20	FOR CLIENT REVIEW
1	07/06/20	CSC SUBMISSION
2		
3		
4		
5		
6		

DESIGN PROFESSIONAL OF RECORD
PROF: BRADLEY J. PARSONS P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION
ADD: 567 VAUXHAUL STREET
EXTENSION - SUITE 311
WATERFORD, CT 06385

OWNER: CATHOLIC CEMETERIES
ADDRESS: 669 PLATT ROAD
WATERTOWN, CT 06795



WATERTOWN SOLAR ONE, LLC

SITE: HINMAN ROAD & PLATT ROAD
ADDRESS: WATERTOWN, CT 06795

APT FILING NUMBER: CT590240

DRAWN BY: CSH
DATE: 06/30/20
CHECKED BY: BJP

SHEET TITLE:
OVERALL LOCUS MAP

SHEET NUMBER:
OP-0

WATERTOWN SOLAR ONE, LLC
 150 TRUMBULL STREET
 4TH FLOOR
 HARTFORD, CT, 06103

ALL-POINTS TECHNOLOGY CORPORATION
 567 VAUXHAUL STREET EXTENSION - SUITE 311
 WATERFORD, CT 06385 PHONE: (860)-663-1697
 WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

CSC PERMIT SET

NO	DATE	REVISION
0	06/30/20	FOR CLIENT REVIEW
1	07/06/20	CSC SUBMISSION
2		
3		
4		
5		
6		

DESIGN PROFESSIONAL OF RECORD
 PROF: BRADLEY J. PARSONS P.E.
 COMP: ALL-POINTS TECHNOLOGY CORPORATION
 ADD: 567 VAUXHAUL STREET EXTENSION - SUITE 311
 WATERFORD, CT 06385
 OWNER: CATHOLIC CEMETERIES
 ADDRESS: 669 PLATT ROAD
 WATERTOWN, CT 06795



WATERTOWN SOLAR ONE, LLC
 SITE HINMAN ROAD & PLATT ROAD
 ADDRESS: WATERTOWN, CT 06795
 APT FILING NUMBER: CT590240
 DRAWN BY: CSH
 DATE: 06/30/20 CHECKED BY: BJP

SHEET TITLE:
PARTIAL SITE PLAN

SHEET NUMBER:
OP-1

EXIST. 290' WIDE CL&P ELECTRIC TRANSMISSION EASEMENT

EXIST. TREE LINE (TYP.)

EXIST. PAVED CEMETERY ACCESS DRIVE (TYP.)

PROP. GRASS BERM LIMITS (TYP.)

PROP. LIMITS OF DISTURBANCE

PROP. SHADING LIMIT (TYP.)

PROP. STORMWATER BASIN (TYP.)

PROP. SOLAR ARRAY (5,616 MODULES)
 (APPROX. POWER GENERATION @390W/EA, TOTAL ±2.19 MW DC)

PROP. GRAVEL ACCESS DRIVE (TYP.)

PROP. FENCE (TYP.)

PROP. STORMWATER GRASS SWALE (TYP.)

PROP. SOLAR ARRAY (1,560 MODULES)
 (APPROX. POWER GENERATION @380W/EA, TOTAL ±0.59 MW DC)

EXIST. WETLAND (TYP.)

EXIST. 100' WETLAND BUFFER (TYP.)

PROP. CLEARING LIMITS (TYP.)

VERNAL POOL

EXIST. UTILITY POLE (CL&P #C6040)

EXIST. CEMETERY (TYP.)

PROP. ELECTRICAL TRENCH TO ELECTRICAL INTERCONNECTION POINT (TYP.)

PROP. GRASS BERM LIMITS (TYP.)

PROP. STORMWATER BASIN (TYP.)

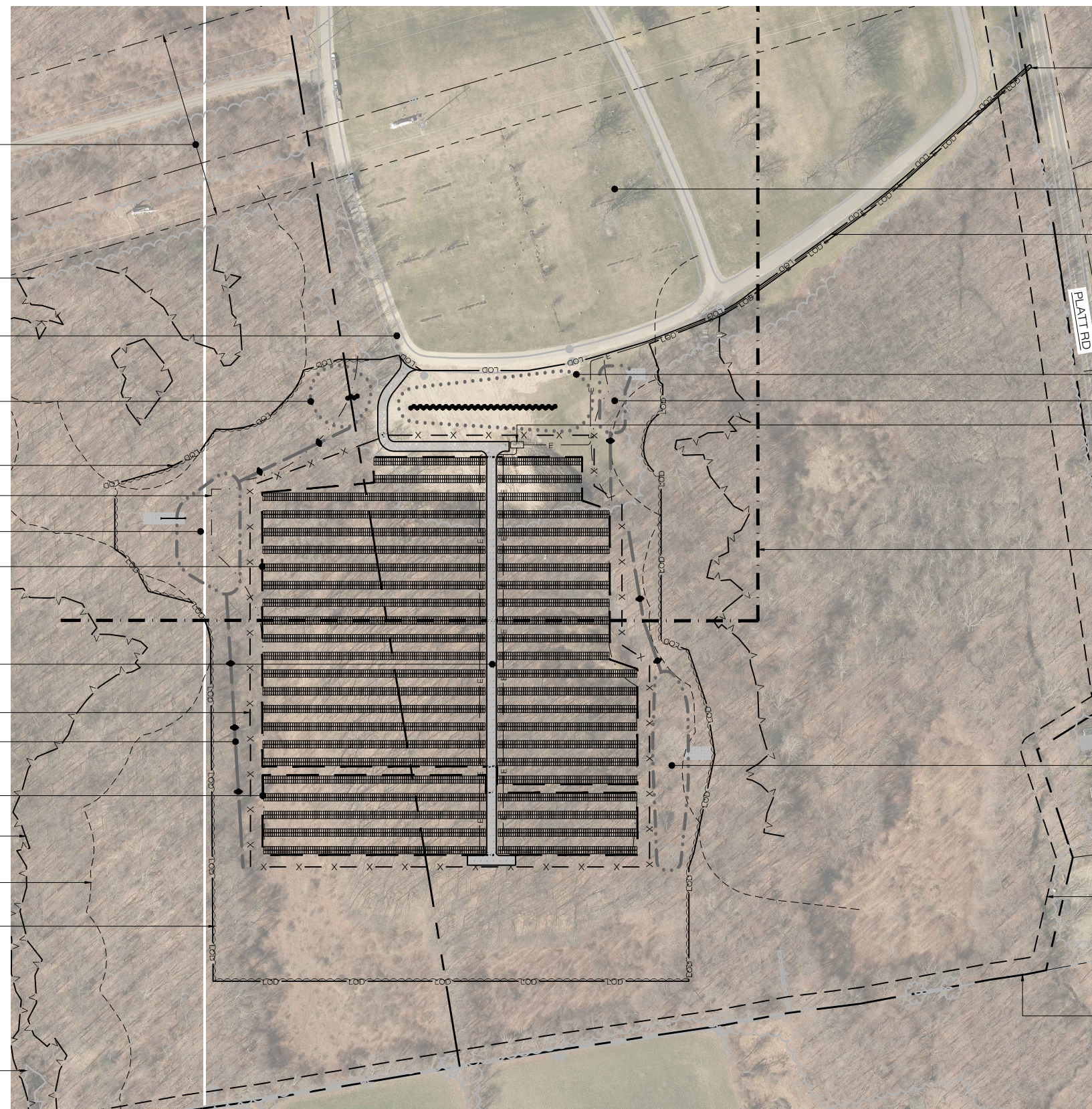
PROP. CONCRETE ELECTRICAL EQUIPMENT PAD

MATCHLINE - FOR 40 SCALE SHEETS

PROP. STORMWATER BASIN (TYP.)

ZONING BUILDING SETBACK LINE (TYP.)

PROPERTY LINE (TYP.)



1 PARTIAL SITE PLAN
 OP-1 SCALE: 1" = 100'-0"



EROSION CONTROL NOTES

EROSION AND SEDIMENT CONTROL PLAN NOTES

- THE CONTRACTOR SHALL CONSTRUCT ALL SEDIMENT AND EROSION CONTROLS IN ACCORDANCE WITH THE 2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL, LATEST EDITION, IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, AND AS DIRECTED BY THE TOWN OF WATERTOWN, PERMITTEE, AND/OR SWPCP MONITOR. ALL PERIMETER SEDIMENTATION AND EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE START OF CLEARING AND GRUBBING AND DEMOLITION OPERATIONS.
- THESE DRAWINGS ARE ONLY INTENDED TO DESCRIBE THE SEDIMENT AND EROSION CONTROL MEASURES FOR THIS SITE. SEE CONSTRUCTION SEQUENCE FOR ADDITIONAL INFORMATION. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHOWN ON THE EROSION & SEDIMENT CONTROL PLAN ARE SHOWN AS REQUIRED BY THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT ALL EROSION CONTROL MEASURES ARE CONFIGURED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION OF SOILS AND PREVENT THE TRANSPORT OF SEDIMENTS AND OTHER POLLUTANTS TO STORM DRAINAGE SYSTEMS AND/OR WATERCOURSES. ACTUAL SITE CONDITIONS OR SEASONAL AND CLIMATIC CONDITIONS MAY WARRANT ADDITIONAL CONTROLS OR CONFIGURATIONS, AS REQUIRED, AND AS DIRECTED BY THE PERMITTEE AND/OR SWPCP MONITOR. REFER TO SITE PLAN FOR GENERAL INFORMATION AND OTHER CONTRACT PLANS FOR APPROPRIATE INFORMATION.
- A BOND OR LETTER OF CREDIT MAY BE REQUIRED TO BE POSTED WITH THE GOVERNING AUTHORITY FOR THE EROSION CONTROL INSTALLATION AND MAINTENANCE.
- THE CONTRACTOR SHALL APPLY THE MINIMUM EROSION & SEDIMENT CONTROL MEASURES SHOWN ON THE PLAN IN CONJUNCTION WITH CONSTRUCTION SEQUENCING, SUCH THAT ALL ACTIVE WORK ZONES ARE PROTECTED. ADDITIONAL AND/OR ALTERNATIVE SEDIMENT AND EROSION CONTROL MEASURES MAY BE INSTALLED DURING THE CONSTRUCTION PERIOD IF FOUND NECESSARY BY THE CONTRACTOR, OWNER, SITE ENGINEER, MUNICIPAL OFFICIALS, OR ANY GOVERNING AGENCY. THE CONTRACTOR SHALL CONTACT THE OWNER AND APPROPRIATE GOVERNING AGENCIES FOR APPROVAL IF ALTERNATIVE CONTROLS OTHER THAN THOSE SHOWN ON THE PLANS ARE PROPOSED BY THE CONTRACTOR.
- THE CONTRACTOR SHALL TAKE EXTREME CARE DURING CONSTRUCTION SO AS NOT TO DISTURB UNPROTECTED WETLAND AREAS OR INSTALLED SEDIMENTATION AND EROSION CONTROL MEASURES. THE CONTRACTOR SHALL INSPECT ALL SEDIMENT AND EROSION CONTROLS WEEKLY AND WITHIN 24 HOURS OF A STORM WITH A RAINFALL AMOUNT OF 0.25 INCHES OR GREATER TO VERIFY THAT THE CONTROLS ARE OPERATING PROPERLY AND MAKE REPAIRS AS NECESSARY IN A TIMELY MANNER.
- THE CONTRACTOR SHALL KEEP A SUPPLY OF EROSION CONTROL MATERIAL (SILT FENCE, COMPOST FILTER SOCK, EROSION CONTROL BLANKET, ETC.) ON-SITE FOR PERIODIC MAINTENANCE AND EMERGENCY REPAIRS.
- ALL FILL MATERIAL PLACED ADJACENT TO ANY WETLAND AREA SHALL BE GOOD QUALITY, WITH LESS THAN 5% FINES PASSING THROUGH A #200 SIEVE (BANK RUN), SHALL BE PLACED IN MAXIMUM ONE FOOT LIFTS, AND SHALL BE COMPACTED TO 95% MAX. DRY DENSITY MODIFIED PROCTOR OR AS SPECIFIED IN THE CONTRACT SPECIFICATIONS.
- PROTECT EXISTING TREES THAT ARE TO BE SAVED BY FENCING, ORANGE SAFETY FENCE, CONSTRUCTION TAPE, OR EQUIVALENT FENCING/TAPE. ANY LIMB TRIMMING SHOULD BE DONE AFTER CONSULTATION WITH AN ARBORIST AND BEFORE CONSTRUCTION BEGINS IN THAT AREA; FENCING SHALL BE MAINTAINED AND REPAIRED DURING CONSTRUCTION.
- CONSTRUCTION ENTRANCES (ANTI-TRACKING PADS) SHALL BE INSTALLED PRIOR TO ANY SITE EXCAVATION OR CONSTRUCTION ACTIVITY AND SHALL BE MAINTAINED THROUGHOUT THE DURATION OF ALL CONSTRUCTION IF REQUIRED. THE LOCATION OF THE TRACKING PADS MAY CHANGE AS VARIOUS PHASES OF CONSTRUCTION ARE COMPLETED. CONTRACTOR SHALL ENSURE THAT ALL VEHICLES EXITING THE SITE ARE PASSING OVER THE ANTI-TRACKING PADS PRIOR TO EXISTING.
- ALL CONSTRUCTION SHALL BE CONTAINED WITHIN THE LIMIT OF DISTURBANCE, WHICH SHALL BE MARKED WITH SILT FENCE, SAFETY FENCE, HAY BALES, RIBBONS, OR OTHER MEANS PRIOR TO CLEARING. CONSTRUCTION ACTIVITY SHALL REMAIN ON THE UPHILL SIDE OF THE SEDIMENT BARRIER UNLESS WORK IS SPECIFICALLY CALLED FOR ON THE DOWNHILL SIDE OF THE BARRIER.
- NO CUT OR FILL SLOPES SHALL EXCEED 2:1 EXCEPT WHERE STABILIZED BY ROCK FACED EMBANKMENTS OR EROSION CONTROL BLANKETS. ALL SLOPES SHALL BE SEEDED AND BANKS WILL BE STABILIZED IMMEDIATELY UPON COMPLETION OF FINAL GRADING UNTIL TURF IS ESTABLISHED.
- DIRECT ALL DEWATERING PUMP DISCHARGE TO A SEDIMENT CONTROL DEVICE CONFORMING TO THE GUIDELINES WITHIN THE APPROVED LIMIT OF DISTURBANCE IF REQUIRED. DISCHARGE TO STORM DRAINS OR SURFACE WATERS FROM SEDIMENT CONTROLS SHALL BE CLEAR AND APPROVED BY THE PERMITTEE OR MUNICIPALITY.
- THE CONTRACTOR SHALL MAINTAIN A CLEAN CONSTRUCTION SITE AND SHALL NOT ALLOW THE ACCUMULATION OF RUBBISH OR CONSTRUCTION DEBRIS ON THE SITE. PROPER SANITARY DEVICES SHALL BE MAINTAINED ON-SITE AT ALL TIMES AND SECURED APPROPRIATELY. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO AVOID THE SPILLAGE OF FUEL OR OTHER POLLUTANTS ON THE CONSTRUCTION SITE AND SHALL ADHERE TO ALL APPLICABLE POLICIES AND REGULATIONS RELATED TO SPILL PREVENTION AND RESPONSE/CONTAINMENT.
- MINIMIZE LAND DISTURBANCES. SEED AND MULCH DISTURBED AREAS WITH TEMPORARY MIX AS SOON AS PRACTICABLE (2 WEEK MAXIMUM UNSTABILIZED PERIOD) USING PERENNIAL RYEGRASS AT 40 LBS PER ACRE. MULCH ALL CUT AND FILL SLOPES AND SWALES WITH LOOSE HAY AT A RATE OF 2 TONS PER ACRE. IF NECESSARY, REPLACE LOOSE HAY ON SLOPES WITH EROSION CONTROL BLANKETS OR JUTE CLOTH. MODERATELY GRADED AREAS, ISLANDS, AND TEMPORARY CONSTRUCTION STAGING AREAS MAY BE HYDROSEEDDED WITH TACKIFIER.
- SWEEP AFFECTED PORTIONS OF OFF SITE ROADS ONE OR MORE TIMES A DAY (OR LESS FREQUENTLY IF TRACKING IS NOT A PROBLEM) DURING CONSTRUCTION. FOR DUST CONTROL, PERIODICALLY MOISTEN EXPOSED SOIL SURFACES WITH WATER ON UNPAVED TRAVELWAYS TO KEEP THE TRAVELWAYS DAMP. CALCIUM CHLORIDE MAY ALSO BE APPLIED TO ACCESS ROADS. DUMP TRUCK LOADS EXITING THE SITE SHALL BE COVERED.
- VEGETATIVE ESTABLISHMENT SHALL OCCUR ON ALL DISTURBED SOIL, UNLESS THE AREA IS UNDER ACTIVE CONSTRUCTION, IT IS COVERED IN STONE OR SCHEDULED FOR PAVING WITHIN 30 DAYS. TEMPORARY SEEDING OR NON-LIVING SOIL PROTECTION OF ALL EXPOSED SOILS AND SLOPES SHALL BE INITIATED WITHIN THE FIRST 7 DAYS OF SUSPENDING WORK IN AREAS TO BE LEFT LONGER THAN 30 DAYS.
- MAINTAIN ALL PERMANENT AND TEMPORARY SEDIMENT CONTROL DEVICES IN EFFECTIVE CONDITION THROUGHOUT THE CONSTRUCTION PERIOD. UPON COMPLETION OF WORK SWEEP CONCRETE PADS, CLEAN THE STORMWATER MANAGEMENT SYSTEMS AND REMOVE ALL TEMPORARY SEDIMENT CONTROLS ONCE THE SITE IS FULLY STABILIZED AND APPROVAL HAS BEEN RECEIVED FROM PERMITTEE OR THE MUNICIPALITY.
- SEEDING MIXTURES SHALL BE NEW ENGLAND SEMI-SHADE GRASS AND FORBS MIX (SEE SITE DETAILS SHEET DN-1), OR APPROVED EQUAL BY OWNER.

CONSTRUCTION OPERATION AND MAINTENANCE PLAN - BY CONTRACTOR		
E&S MEASURE	INSPECTION SCHEDULE	MAINTENANCE REQUIRED
CONSTRUCTION ENTRANCE	DAILY	PLACE ADDITIONAL STONE, EXTEND THE LENGTH OR REMOVE AND REPLACE THE STONE. CLEAN PAVED SURFACES OF TRACKED SEDIMENT.
COMPOST FILTER SOCK	WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.25"	REPAIR/REPLACE WHEN FAILURE OR DETERIORATION IS OBSERVED.
SILT FENCE	WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.25"	REPAIR/REPLACE WHEN FAILURE OR DETERIORATION IS OBSERVED. REMOVE SILT WHEN IT REACHES 1/2 THE HEIGHT OF THE FENCE.
TOPSOIL/BORROW STOCKPILES	DAILY	REPAIR/REPLACE SEDIMENT BARRIERS AS NECESSARY.
TEMPORARY SEDIMENT BASIN (W/ BAFFLES)	WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.5"	REMOVE SEDIMENT ONCE IT HAS ACCUMULATED TO ONE HALF OF MINIMUM REQUIRED VOLUME OF THE WET STORAGE, DEWATERING AS NEEDED. RESTORE TRAP TO ORIGINAL DIMENSIONS. REPAIR/REPLACE BAFFLES WHEN FAILURE OR DETERIORATION IS OBSERVED.
TEMPORARY SEDIMENT TRAP (W/ BAFFLES)	WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.5"	REMOVE SEDIMENT ONCE IT HAS ACCUMULATED TO ONE HALF OF MINIMUM REQUIRED VOLUME OF THE WET STORAGE, DEWATERING AS NEEDED. RESTORE TRAP TO ORIGINAL DIMENSIONS. REPAIR/REPLACE BAFFLES WHEN FAILURE OR DETERIORATION IS OBSERVED.
TEMPORARY SOIL PROTECTION	WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.25"	REPAIR ERODED OR BARE AREAS IMMEDIATELY. RESEED AND MULCH.

SEDIMENT & EROSION CONTROL NARRATIVE

- THE PROJECT INVOLVES THE CONSTRUCTION OF A GROUND MOUNTED SOLAR PANEL FACILITY WITH ASSOCIATED EQUIPMENT, INCLUDING THE CLEARING, GRUBBING AND GRADING OF APPROXIMATELY 16.70± ACRES OF EXISTING LOT.

THE PROPOSED PROJECT INVOLVES THE FOLLOWING CONSTRUCTION:

- CLEARING, GRUBBING, AND GRADING OF EXISTING LOT.
 - CONSTRUCTION OF 7,176 GROUND MOUNTED SOLAR PANELS AND ASSOCIATED EQUIPMENT.
 - THE STABILIZATION OF DISTURBED AREAS WITH PERMANENT VEGETATIVE TREATMENTS.
- FOR THIS PROJECT, THERE ARE APPROXIMATELY 16.70± ACRE OF THE SITE BEING DISTURBED WITH NEGLIGIBLE INCREASE IN THE IMPERVIOUS AREA OF THE SITE, AS ALL ACCESS THROUGH THE SITE WILL BE GRAVEL. IMPERVIOUS AREAS ARE LIMITED TO THE CONCRETE PADS FOR ELECTRICAL EQUIPMENT.
 - THE PROJECT SITE, AS MAPPED IN THE SOIL SURVEY OF STATE OF CONNECTICUT (NRCS, VERSION 18, DEC 6, 2018), CONTAINS TYPE 84B, AND 84C (HYDROLOGIC SOIL GROUP C), AND 45B, 46B AND 3 (HYDROLOGIC SOIL GROUP D) SOILS. ADDITIONAL INFORMATION CAN BE FOUND IN THE GEOTECHNICAL ENGINEERING REPORT BY DOWN TO EARTH CONSULTING, LLC, DATED MAY 2020.
 - IT IS ANTICIPATED THAT CONSTRUCTION WILL BE COMPLETED IN APPROXIMATELY 3-4 MONTHS.
 - REFER TO THE CONSTRUCTION SEQUENCING AND EROSION AND SEDIMENTATION NOTES FOR INFORMATION REGARDING SEQUENCING OF MAJOR OPERATIONS IN THE ON-SITE CONSTRUCTION PHASES.
 - STORMWATER MANAGEMENT DESIGN CRITERIA UTILIZES THE APPLICABLE SECTIONS OF THE 2004 CONNECTICUT STORMWATER QUALITY MANUAL AND THE TOWN OF WATERTOWN STANDARDS, TO THE EXTENT POSSIBLE AND PRACTICABLE FOR THIS PROJECT ON THIS SITE. EROSION AND SEDIMENTATION MEASURES ARE BASED UPON ENGINEERING PRACTICE, JUDGEMENT AND THE APPLICABLE SECTIONS OF THE CONNECTICUT EROSION AND SEDIMENT CONTROL GUIDELINES FOR URBAN AND SUBURBAN AREAS, LATEST EDITION.
 - DETAILS FOR THE TYPICAL STORMWATER MANAGEMENT AND EROSION AND SEDIMENTATION MEASURES ARE SHOWN ON THE PLAN SHEETS OR PROVIDED AS SEPARATE SUPPORT DOCUMENTATION FOR REVIEW IN THIS PLAN.
 - CONSERVATION PRACTICES TO BE USED DURING CONSTRUCTION:
 - STAGED CONSTRUCTION;
 - MINIMIZE THE DISTURBED AREAS TO THE EXTENT PRACTICABLE DURING CONSTRUCTION;
 - STABILIZE DISTURBED AREAS WITH TEMPORARY OR PERMANENT MEASURES AS SOON AS POSSIBLE, BUT NO LATER THAN 7-DAYS FOLLOWING DISTURBANCE;
 - MINIMIZE IMPERVIOUS AREAS;
 - UTILIZE APPROPRIATE CONSTRUCTION EROSION AND SEDIMENTATION MEASURES.
 - THE FOLLOWING SEPARATE DOCUMENTS ARE TO BE CONSIDERED A PART OF THE EROSION AND SEDIMENTATION PLAN:
 - STORMWATER MANAGEMENT REPORT DATED JULY, 2020.
 - SWPCP DATED JULY, 2020

SUGGESTED CONSTRUCTION SEQUENCE

THE FOLLOWING SUGGESTED SEQUENCE OF CONSTRUCTION ACTIVITIES IS PROJECTED BASED UPON ENGINEERING JUDGEMENT AND BEST MANAGEMENT PRACTICES. THE CONTRACTOR MAY ELECT TO ALTER THE SEQUENCING TO BEST MEET THE CONSTRUCTION SCHEDULE, THE EXISTING SITE ACTIVITIES AND WEATHER CONDITIONS. SHOULD THE CONTRACTOR ALTER THE CONSTRUCTION SEQUENCE OR ANY EROSION AND SEDIMENTATION CONTROL MEASURES THEY SHALL MODIFY THE STORMWATER POLLUTION CONTROL PLAN ("SWPCP") AS REQUIRED BY THE GENERAL PERMIT. MAJOR CHANGES IN SEQUENCING AND/OR METHODS MAY REQUIRE REGULATORY APPROVAL PRIOR TO IMPLEMENTATION.

- THE CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING. PHYSICALLY FLAG THE LIMITS OF DISTURBANCE IN THE FIELD AS NECESSARY TO FACILITATE THE PRE-CONSTRUCTION MEETING.
- CONDUCT A PRE-CONSTRUCTION MEETING TO DISCUSS THE PROPOSED WORK AND EROSION AND SEDIMENTATION CONTROL MEASURES. THE MEETING SHOULD BE ATTENDED BY THE OWNER, THE OWNER REPRESENTATIVE(S), THE GENERAL CONTRACTOR, DESIGNATED SUB-CONTRACTORS AND THE PERSON, OR PERSONS, RESPONSIBLE FOR THE IMPLEMENTATION, OPERATION, MONITORING AND MAINTENANCE OF THE EROSION AND SEDIMENTATION MEASURES. THE CONSTRUCTION PROCEDURES FOR THE ENTIRE PROJECT SHALL BE REVIEWED AT THIS MEETING.

- NOTIFY CALL BEFORE YOU DIG AT 1-800-922-4455, AS REQUIRED, PRIOR TO THE START OF CONSTRUCTION.

PHASE 1

- REMOVE EXISTING IMPEDIMENTS AS NECESSARY AND PROVIDE MINIMAL CLEARING AND GRUBBING TO INSTALL THE REQUIRED CONSTRUCTION ENTRANCES.
- CLEAR ONLY AS NEEDED TO INSTALL THE PERIMETER EROSION AND SEDIMENTATION CONTROL MEASURES AND, IF APPLICABLE, TREE PROTECTION. ALL WETLAND AREAS SHALL BE PROTECTED BEFORE MAJOR CONSTRUCTION BEGINS.
- INSTALL PERIMETER EROSION CONTROL.
- INSTALL EROSION CONTROL BELOW EQUIPMENT AREA AND INSTALL CONCRETE EQUIPMENT PADS AND CONDUITS PROTECTED BY THESE CONTROLS.
- INSTALL TEMPORARY SEDIMENT TRAP 1 AND ASSOCIATED SWALES. UPON COMPLETION INSTALLATION AND STABILIZATION OF THE BASIN AND SWALES PHASE 2 WORK UP GRADIENT CAN PROCEED.
- INSTALL TEMPORARY SEDIMENT TRAP 2 AND ASSOCIATED SWALES. UPON COMPLETION INSTALLATION AND STABILIZATION OF THE BASIN AND SWALES PHASE 2 WORK UP GRADIENT CAN PROCEED.
- INSTALL TEMPORARY SEDIMENT BASIN 3 AND ASSOCIATED SWALES. UPON COMPLETION INSTALLATION AND STABILIZATION OF THE BASIN AND SWALES PHASE 2 WORK UP GRADIENT CAN PROCEED.

PHASE 2

- UPON COMPLETION OF THE INSTALLATION EACH OF THE TEMPORARY SEDIMENT BASINS, THE AREA ABOVE THE BASIN CAN HAVE THE REMAINING ARRAY AREA CLEARING AND GRUBBING COMPLETED AS REQUIRED. REMOVE CUT WOOD AND STOCKPILE FOR FUTURE USE OR REMOVE OFF-SITE. REMOVE AND DISPOSE OF DEMOLITION DEBRIS OFF-SITE IN ACCORDANCE WITH APPLICABLE LAWS.
- TEMPORARILY SEED DISTURBED AREAS NOT UNDER CONSTRUCTION FOR THIRTY (30) DAYS OR MORE.
- INSTALL REMAINING ELECTRICAL CONDUIT.
- INSTALL RACKING POSTS FOR GROUND MOUNTED SOLAR PANELS
- INSTALL GROUND MOUNTED SOLAR PANELS AND COMPLETE ELECTRICAL INSTALLATION.
- AFTER SUBSTANTIAL COMPLETION OF THE INSTALLATION OF THE SOLAR PANELS, COMPLETE REMAINING SITE WORK, INCLUDING ANY REQUIRED LANDSCAPE SCREENING, AND STABILIZE ALL DISTURBED AREAS.
- FINE GRADE, RAKE, SEED AND MULCH ALL REMAINING DISTURBED AREAS.
- AFTER THE SITE IS STABILIZED AND WITH THE APPROVAL OF THE PERMITTEE AND TOWN OF WATERTOWN AGENT, REMOVE PERIMETER EROSION AND SEDIMENTATION CONTROLS.

WATERTOWN SOLAR ONE, LLC
150 TRUMBULL STREET
4TH FLOOR
HARTFORD, CT, 06103



567 VAUXHAUL STREET EXTENSION - SUITE 311
 WATERFORD, CT 06385 PHONE: (860)-663-1697
 WWW.ALLPOINTS TECH.COM FAX: (860)-663-0935

CSC PERMIT SET

NO	DATE	REVISION
0	06/30/20	FOR CLIENT REVIEW
1	07/06/20	CSC SUBMISSION
2		
3		
4		
5		
6		

DESIGN PROFESSIONAL OF RECORD

PROF: BRADLEY J. PARSONS P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION
ADD: 567 VAUXHAUL STREET
EXTENSION - SUITE 311
WATERFORD, CT 06385

OWNER: CATHOLIC CEMETERIES
ADDRESS: 669 PLATT ROAD
WATERTOWN, CT 06795

WATERTOWN SOLAR ONE, LLC

SITE HINMAN ROAD & PLATT ROAD
ADDRESS: WATERTOWN, CT 06795

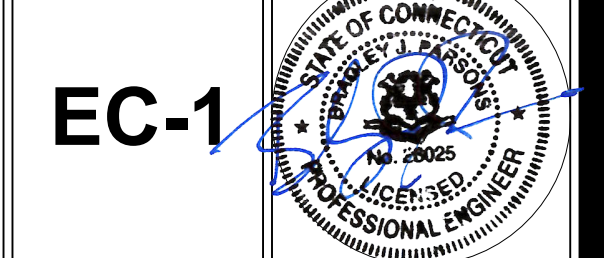
APT FILING NUMBER: CT590240

DRAWN BY: CSH
DATE: 06/30/20 **CHECKED BY: BJP**

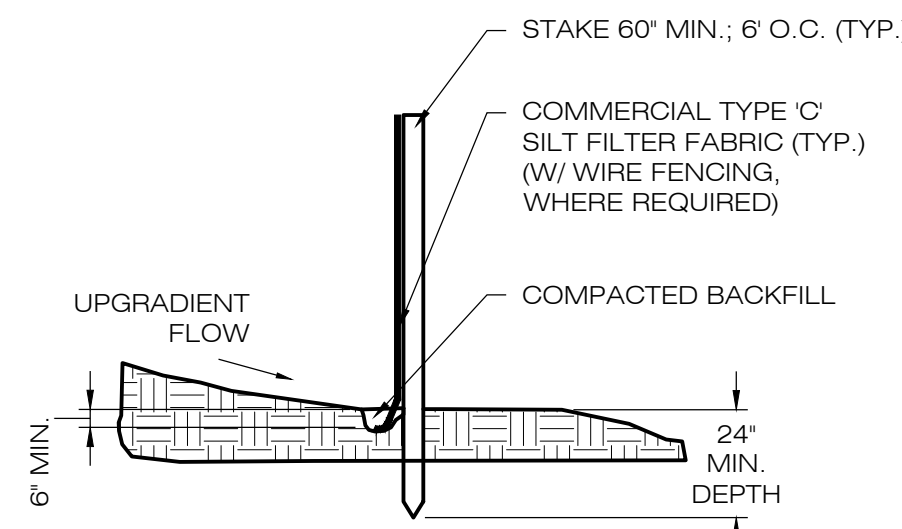
SHEET TITLE:

SEDIMENTATION & EROSION CONTROL NOTES

SHEET NUMBER:

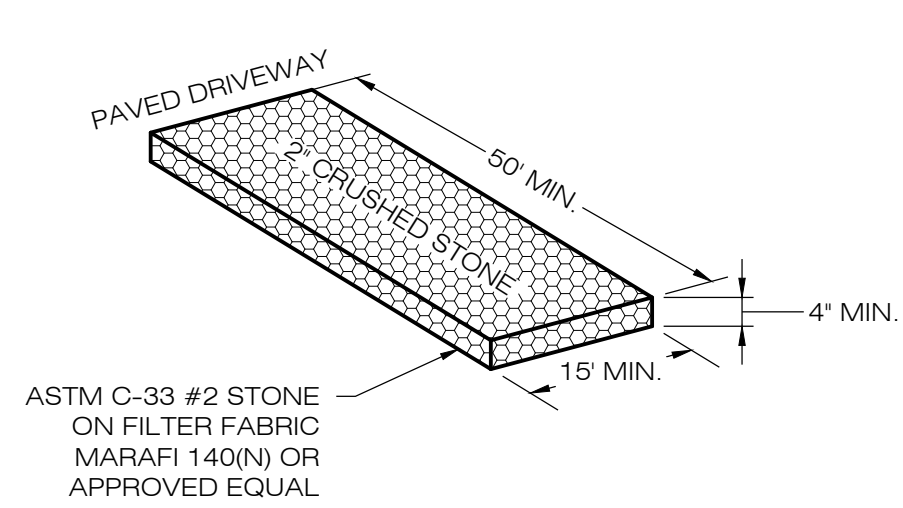


EC-1

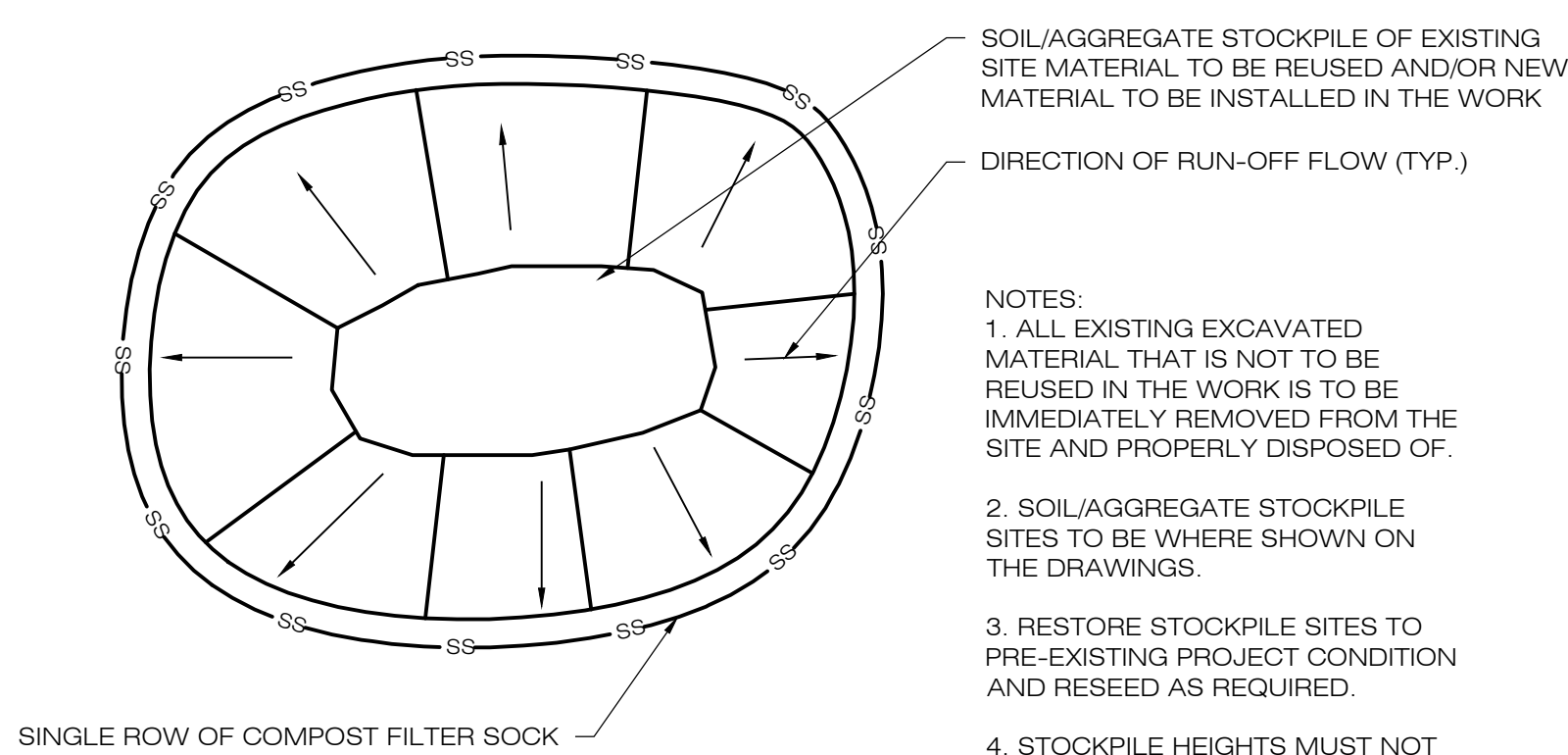


NOTE:
SILT FENCE SHALL BE LAPPED ONLY
WHEN NECESSARY PER THE
MANUFACTURER RECOMMENDATIONS.

1 SILT FENCE DETAIL
SCALE : N.T.S.



2 CONSTRUCTION ENTRANCE DETAIL
SCALE : N.T.S.



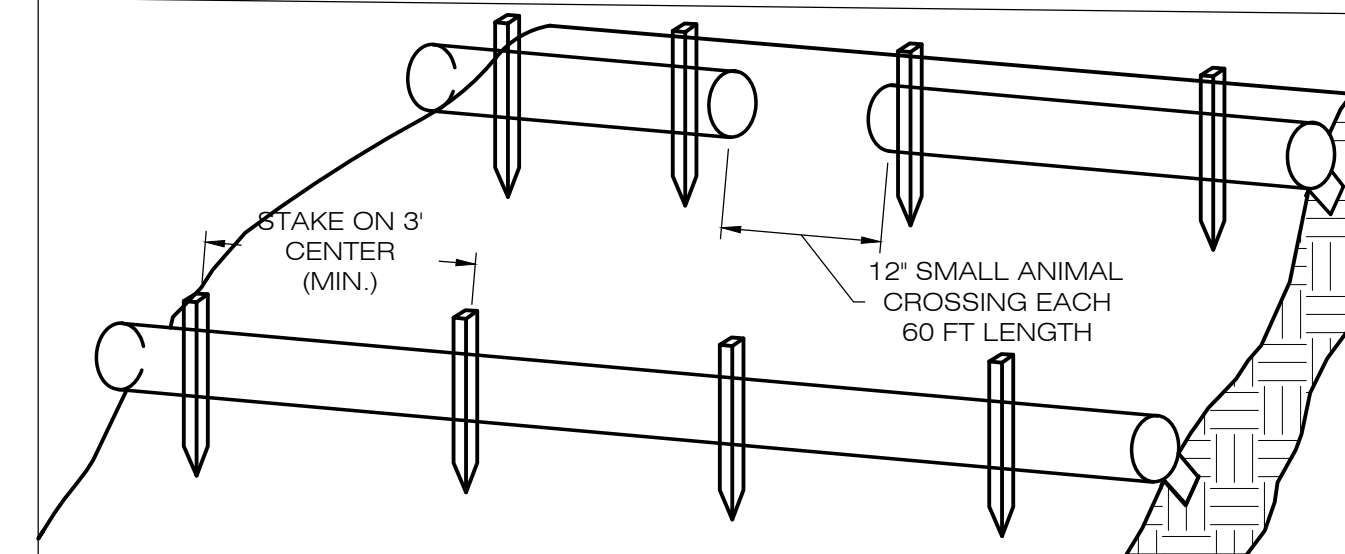
SOIL/AGGREGATE STOCKPILE OF EXISTING
SITE MATERIAL TO BE REUSED AND/OR NEW
MATERIAL TO BE INSTALLED IN THE WORK

DIRECTION OF RUN-OFF FLOW (TYP.)

NOTES:
1. ALL EXISTING EXCAVATED
MATERIAL THAT IS NOT TO BE
REUSED IN THE WORK IS TO BE
IMMEDIATELY REMOVED FROM THE
SITE AND PROPERLY DISPOSED OF.
2. SOIL/AGGREGATE STOCKPILE
SITES TO BE WHERE SHOWN ON
THE DRAWINGS.
3. RESTORE STOCKPILE SITES TO
PRE-EXISTING PROJECT CONDITION
AND RESEED AS REQUIRED.
4. STOCKPILE HEIGHTS MUST NOT
EXCEED 35'. STOCKPILE SLOPES
MUST BE 2:1 OR FLATTER.

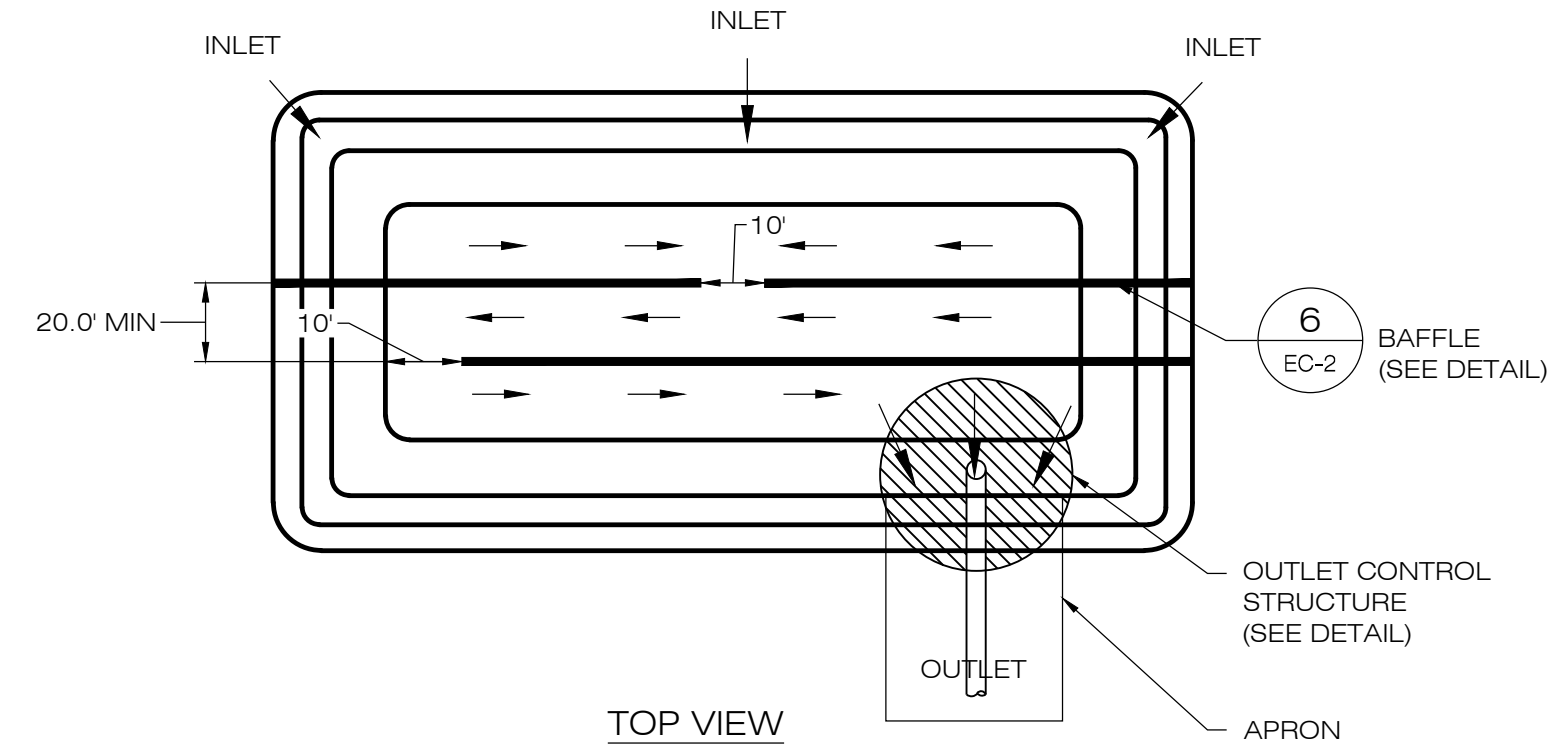
SINGLE ROW OF COMPOST FILTER SOCK

3 MATERIALS STOCKPILE DETAIL
SCALE : N.T.S.

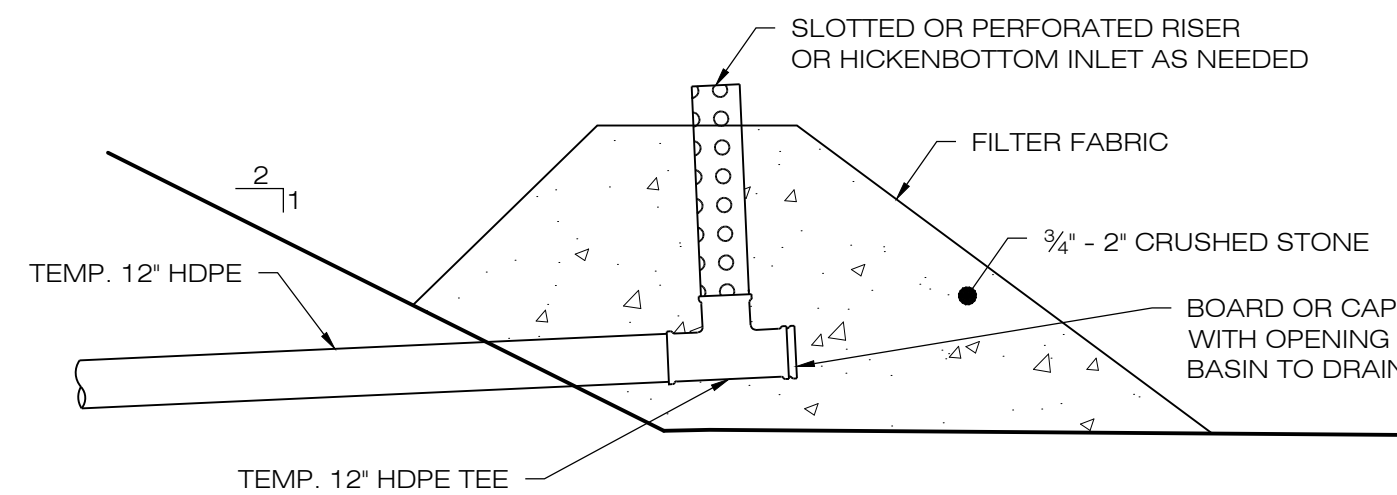


1. BEGIN AT THE LOCATION WHERE THE SOCK IS TO BE INSTALLED BY EXCAVATING A 2'-3" (5-7.5 CM) DEEP X 9" (22.9 CM) WIDE TRENCH ALONG THE CONTOUR OF THE SLOPE. EXCAVATED SOIL SHOULD BE PLACED UPSLOPE FROM THE ANCHOR TRENCH.
2. PLACE THE SOCK IN THE TRENCH SO THAT IT CONTOURS TO THE SOIL SURFACE. COMPACT SOIL FROM THE EXCAVATED TRENCH AGAINST THE SOCK ON THE UPSLOPE SIDE. SOCKS SHALL BE INSTALLED IN 60 FT CONTINUOUS LENGTHS WITH ADJACENT SOCKS TIGHTLY ABUT. EVERY 60 FT THE SOCK ROW SHALL BE SPACED 12 INCHES CLEAR, END TO END, FOR AMPHIBIAN AND REPTILE TRAVEL. THE OPEN SPACES SHALL BE STAGGERED MID LENGTH OF THE NEXT DOWN GRADIENT SOCK.
3. SECURE THE SOCK WITH 18-24" (45-7.61 CM) STAKES EVERY 3'-4" (0.9 - 1.2 M) AND WITH A STAKE ON EACH END. STAKES SHOULD BE DRIVEN THROUGH THE MIDDLE OF THE SOCK LEAVING AT LEAST 2'-3" (5-7.5 CM) OF STAKE EXTENDING ABOVE THE SOCK. STAKES SHOULD BE DRIVEN PERPENDICULAR TO THE SLOPE FACE.

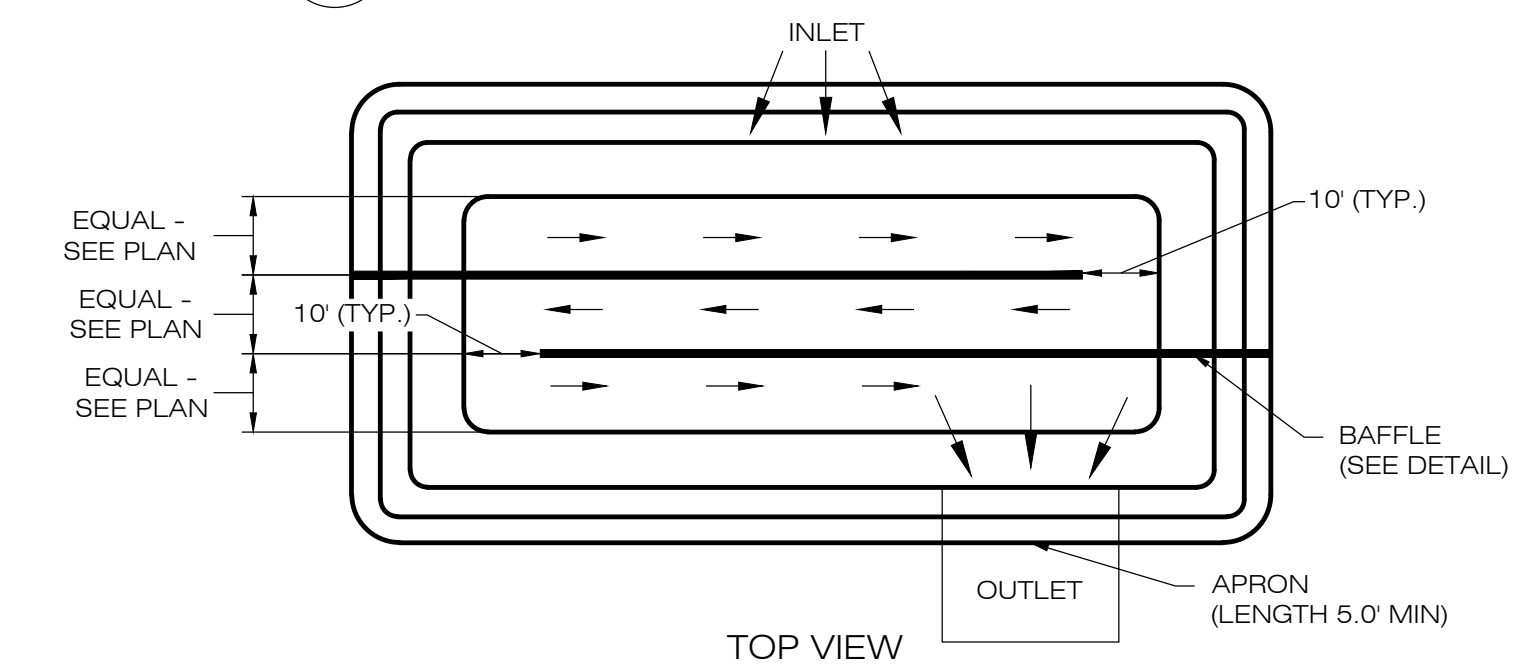
4 COMPOST FILTER SOCK SEDIMENTATION CONTROL BARRIER
SCALE : N.T.S.



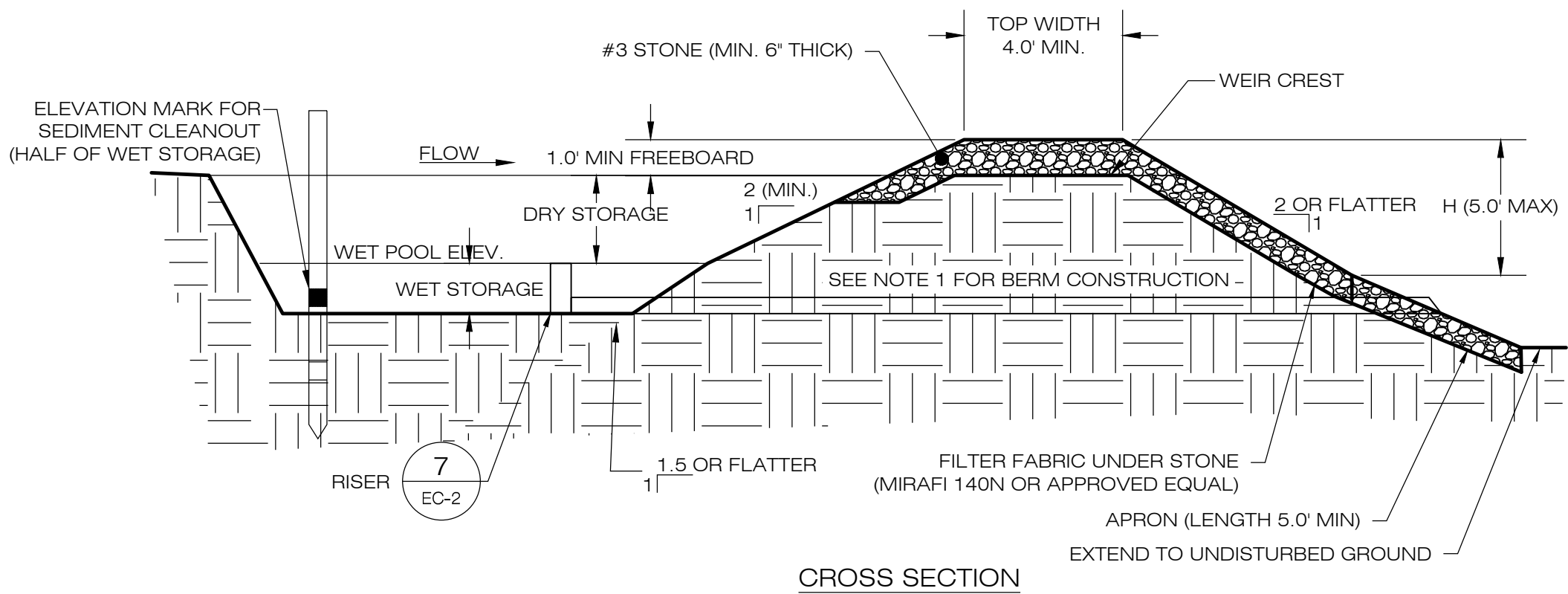
TOP VIEW



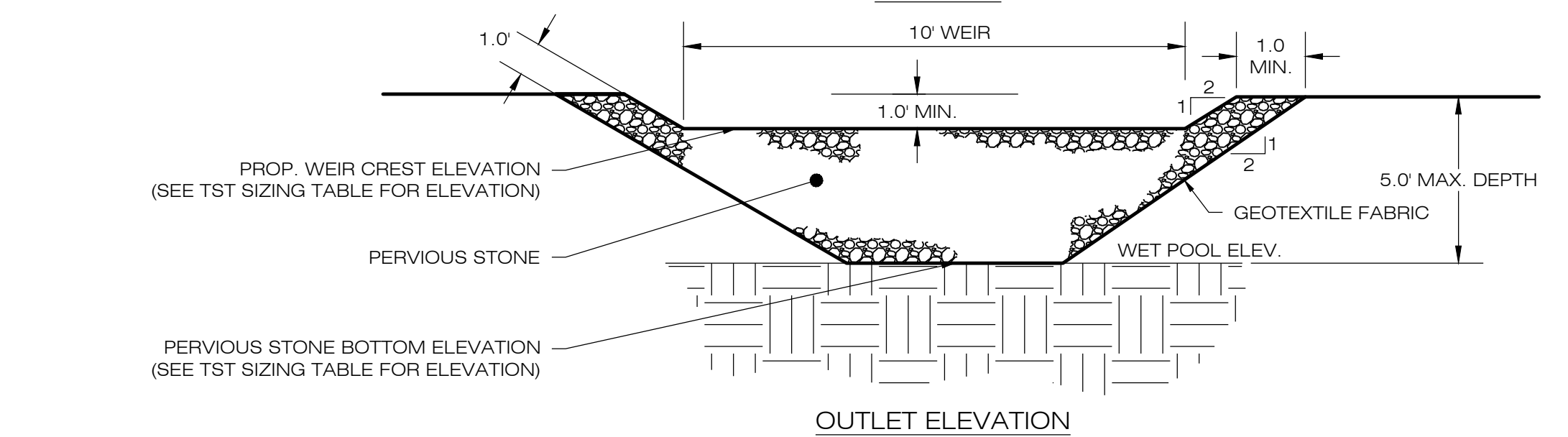
7 RISER DETAIL
SCALE : N.T.S.



TOP VIEW



CROSS SECTION

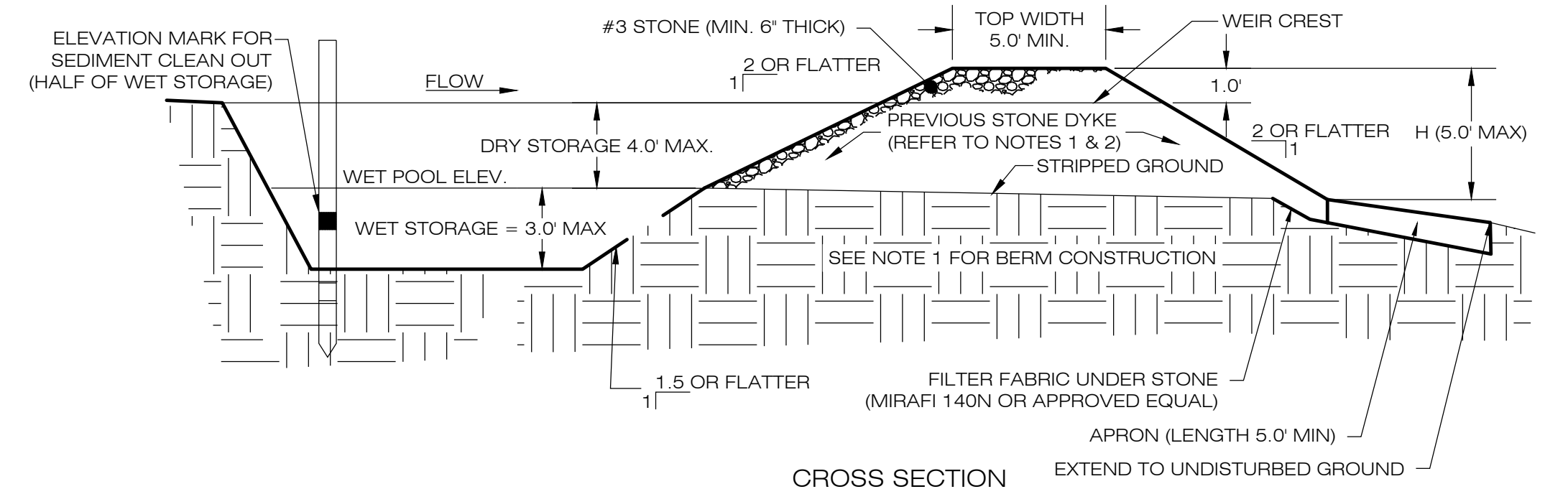


OUTLET ELEVATION

NOTES:
1. CONSTRUCT TEMPORARY SEDIMENT BASIN BERMS AND SIDEWALLS PER THE INFILTRATION BASIN DETAIL.
2. SEDIMENT BAFFLES SHALL BE INSTALLED AS SHOWN ON EC-3 & EC-4.
3. SEE TSB SIZING TABLE FOR WET AND DRY STORAGE VOLUMES.

5 TEMPORARY SEDIMENT BASIN
SCALE : N.T.S.

TEMPORARY SEDIMENT BASIN SIZING TABLE										
NAME	DRAINAGE AREA (AC)	REQ. DRY VOLUME (CF)	REQ. WET VOLUME (CF)	PROP. BTM. ELEV. (FT)	PROP. OUTLET RIM ELEV. (FT)	PROP. WEIR CREST ELEV. (FT)	PROP. TOP ELEV. (FT)	WET VOL. PROVIDED (CF)	DRY VOL. PROVIDED (CF)	TOTAL VOL. PROVIDED (CF)
TSB-3	5.617	4,494	8,987	777.00	778.60	779.00	781.00	11,293	10,389	21,682

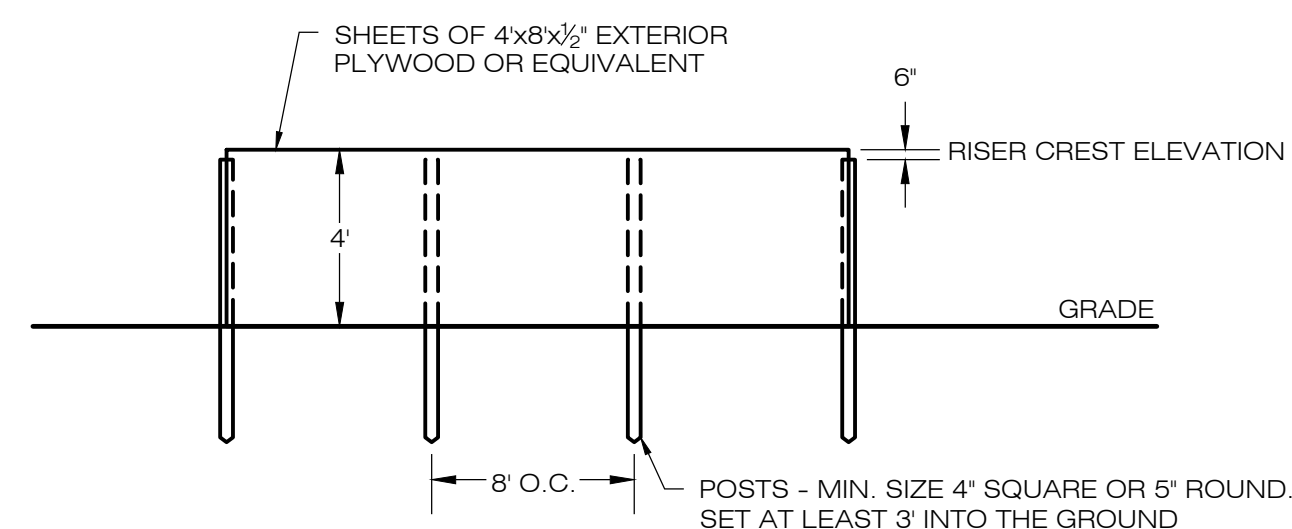


CROSS SECTION

NOTES:
1. CONSTRUCT TEMPORARY SEDIMENT TRAP BERMS AND SIDEWALLS PER THE INFILTRATION BASIN DETAIL.
2. PERVIOUS STONE DIKE SHALL BE CONSTRUCTED OF CT DOT MODIFIED RIP-RAP WITH #3 STONE ON FACE.
3. SEDIMENT TRAP BAFFLES SHALL BE INSTALLED AS SHOWN ON EC-3 AND EC-4.
4. SEE TSB SIZING TABLE FOR WET AND DRY STORAGE VOLUMES.

8 TEMPORARY SEDIMENT TRAP
SCALE : N.T.S.

TEMPORARY SEDIMENT BASIN SIZING TABLE										
NAME	DRAINAGE AREA (AC)	SEDIMENT VOLUME/ACRE AREA (CY)	REQ. VOLUME (CY)	REQ. WET VOLUME (CY)	PROP. BTM. ELEV. (FT)	PROP. STONE DIKE BTM. ELEV. (FT)	PROP. WEIR CREST ELEV. (FT)	PROP. TOP ELEV. (FT)	WET VOL. PROVIDED (CY)	TOTAL VOL. PROVIDED (CY)
TST-1	1.38	134 CYD	185	93	783.00	785.00	786.00	787.00	148	197
TST-2	3.83	134 CYD	514	257	779.00	781.50	782.50	783.50	475	818



6 SEDIMENT TRAP BAFFLE
SCALE : N.T.S.

WATERTOWN SOLAR ONE, LLC
150 TRUMBULL STREET
4TH FLOOR
HARTFORD, CT, 06103

ALL-POINTS TECHNOLOGY CORPORATION

567 VAUXHAUL STREET EXTENSION - SUITE 311
WATERFORD, CT 06385 PHONE: (860)-663-1697
WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

CSC PERMIT SET

NO	DATE	REVISION
0	06/30/20	FOR CLIENT REVIEW
1	07/06/20	CSC SUBMISSION
2		
3		
4		
5		
6		

DESIGN PROFESSIONAL OF RECORD

PROF. BRADLEY J. PARSONS, P.E.
COMP. ALL-POINTS TECHNOLOGY CORPORATION
ADD: 567 VAUXHAUL STREET
EXTENSION - SUITE 311
WATERFORD, CT 06385

OWNER: CATHOLIC CEMETERIES
ADDRESS: 669 PLATT ROAD
WATERTOWN, CT 06795

WATERTOWN SOLAR ONE, LLC

SITE HINMAN ROAD & PLATT ROAD
ADDRESS: WATERTOWN, CT 06795

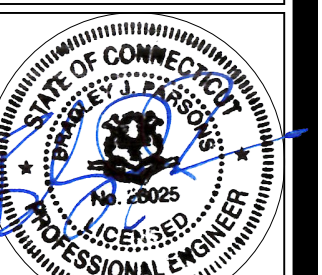
APT FILING NUMBER: CT590240

DATE: 06/30/20 DRAWN BY: CSH
CHECKED BY: BJP

SHEET TITLE:
SEDIMENTATION & EROSION CONTROL DETAILS

SHEET NUMBER:

EC-2



WATERTOWN SOLAR ONE, LLC
 150 TRUMBULL STREET
 4TH FLOOR
 HARTFORD, CT, 06103



567 VAUXHAUL STREET EXTENSION - SUITE 311
 WATERFORD, CT 06385 PHONE: (860)-663-1697
 WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

CSC PERMIT SET

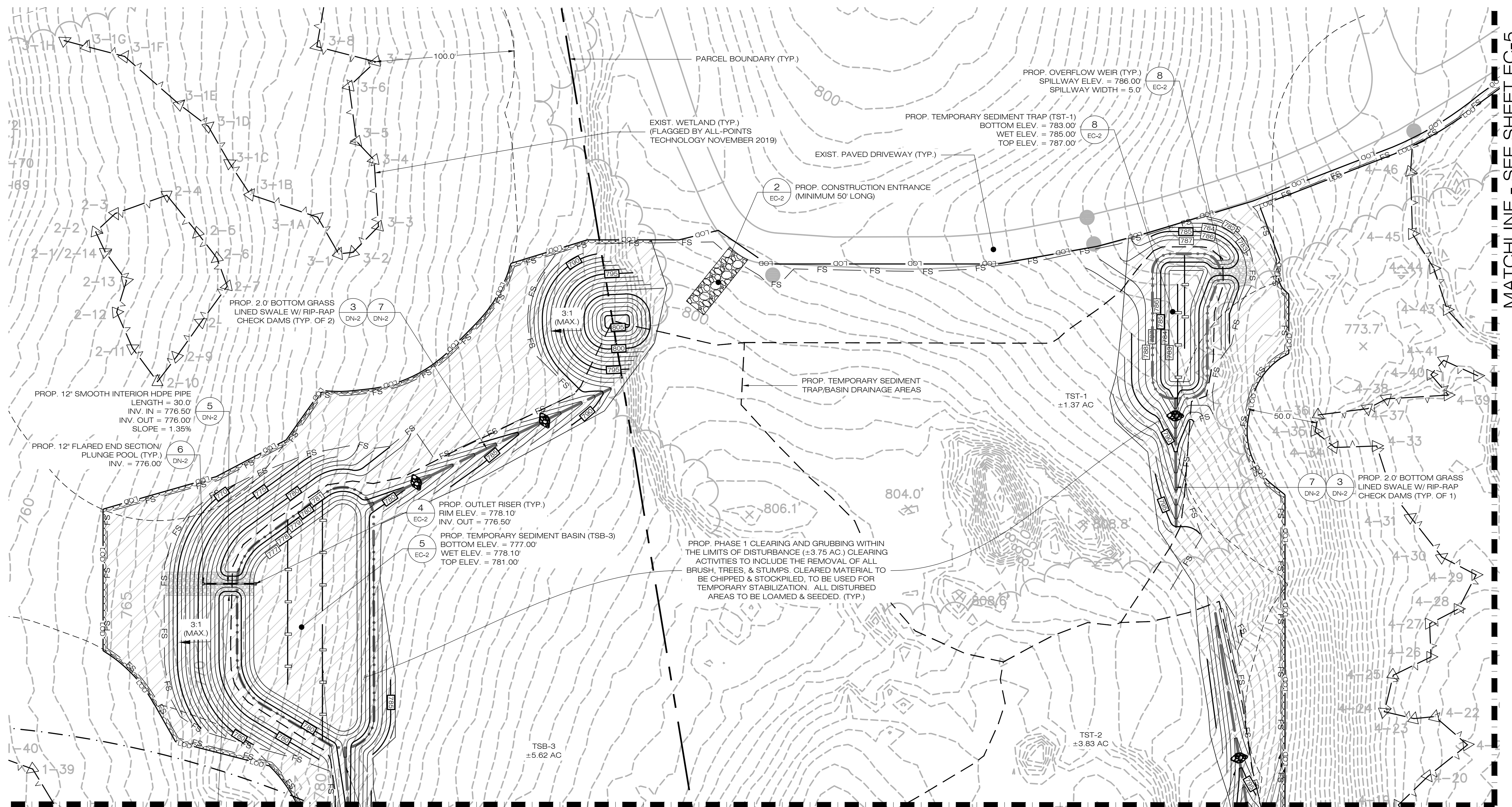
NO	DATE	REVISION
0	06/30/20	FOR CLIENT REVIEW
1	07/06/20	CSC SUBMISSION
2		
3		
4		
5		
6		

DESIGN PROFESSIONAL OF RECORD
 PROF: BRADLEY J. PARSONS, P.E.
 COMP: ALL-POINTS TECHNOLOGY CORPORATION
 ADD: 567 VAUXHAUL STREET
 EXTENSION - SUITE 311
 WATERFORD, CT 06385
 OWNER: CATHOLIC CEMETERIES
 ADDRESS: 669 PLATT ROAD
 WATERTOWN, CT 06795

WATERTOWN SOLAR ONE, LLC
 SITE: HINMAN ROAD & PLATT ROAD
 ADDRESS: WATERTOWN, CT 06795
 APT FILING NUMBER: CT590240
 DRAWN BY: CSH
 DATE: 06/30/20 CHECKED BY: BJP

SHEET TITLE:
**PHASE 1
 SEDIMENTATION &
 EROSION CONTROL PLAN**

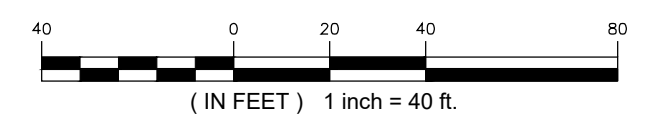
SHEET NUMBER:
EC-3



MATCHLINE - SEE SHEET EC-5

MATCHLINE - SEE SHEET EC-4

1 PHASE 1 - SEDIMENTATION & EROSION CONTROL PLAN
 EC-3 SCALE: 1" = 40'-0"



EXIST. WETLAND (TYP.)
(FLAGGED BY ALL-POINTS
TECHNOLOGY NOVEMBER 2019)

MATCHLINE - SEE SHEET EC-3

7 3
DN-2 DN-2 PROP. 2.0' BOTTOM GRASS
LINED SWALE W/ RIP-RAP
CHECK DAMS (TYP. OF 1)

6 5
EC-2 EC-2 PROP. SEDIMENT BAFFLE (TYP.)
(SEE DETAIL FOR LAYOUT
DIMENSIONS)

7 3
DN-2 DN-2 PROP. 2.0' BOTTOM GRASS
LINED SWALE W/ RIP-RAP
CHECK DAMS (TYP. OF 3)

750' CRITICAL TERRESTRIAL HABITAT
TO VERNAL POOL

TSB-3
±5.62 AC

PARCEL BOUNDARY (TYP.)

TST-2
±3.83 AC

PROP. PHASE 1 CLEARING AND GRUBBING WITHIN THE LIMITS OF
DISTURBANCE (±3.75 AC.) CLEARING ACTIVITIES TO INCLUDE
THE REMOVAL OF ALL BRUSH, TREES, & STUMPS. CLEARED
MATERIAL TO BE CHIPPED & STOCKPILED, TO BE USED FOR
TEMPORARY STABILIZATION. ALL DISTURBED AREAS TO BE
LOAMED & SEEDED. (TYP.)

PROP. TEMPORARY SEDIMENT
TRAP/BASIN DRAINAGE AREAS

8
EC-2 PROP. OVERFLOW WEIR (TYP.)
SPILLWAY ELEV. = 782.50
SPILLWAY WIDTH = 5.0'

8
EC-2 PROP. TEMPORARY SEDIMENT TRAP (TST-2)
BOTTOM ELEV. = 779.00
WET ELEV. = 781.50
TOP ELEV. = 783.50

PROP. PHASE 1 CLEARING ONLY (2.83± AC.)
CLEARING ACTIVITIES TO INCLUDE THE REMOVAL
OF ALL BRUSH & TREES. ALL STUMPS TO REMAIN. CLEARED
MATERIAL TO BE CHIPPED & STOCKPILED, TO BE USED
FOR TEMPORARY STABILIZATION. (TYP.)

4
EC-2 PROP. 18" COMPOST FILTER SOCK (TYP.)

PROP. CLEARING LIMITS (TYP.)

PROP. LIMIT OF DISTURBANCE (TYP.)

**WATERTOWN SOLAR
ONE, LLC**
150 TRUMBULL STREET
4TH FLOOR
HARTFORD, CT, 06103



567 VAUXHAUL STREET EXTENSION - SUITE 311
WATERFORD, CT 06385 PHONE: (860)-663-1697
WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

CSC PERMIT SET

NO	DATE	REVISION
0	06/30/20	FOR CLIENT REVIEW
1	07/06/20	CSC SUBMISSION
2		
3		
4		
5		
6		

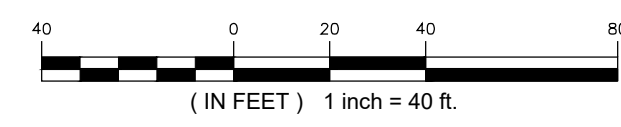
DESIGN PROFESSIONAL OF RECORD
PROF: BRADLEY J. PARSONS, P.E.
COMP: ALL-POINTS TECHNOLOGY
CORPORATION
ADD: 567 VAUXHAUL STREET
EXTENSION - SUITE 311
WATERFORD, CT 06385
OWNER: CATHOLIC CEMETERIES
ADDRESS: 669 PLATT ROAD
WATERTOWN, CT 06795

WATERTOWN SOLAR ONE, LLC
SITE HINMAN ROAD & PLATT ROAD
ADDRESS: WATERTOWN, CT 06795
APT FILING NUMBER: CT590240
DRAWN BY: CSH
DATE: 06/30/20 CHECKED BY: BJP

SHEET TITLE:
**PHASE 1
SEDIMENTATION &
EROSION CONTROL PLAN**

SHEET NUMBER:
EC-4

1 PHASE 1 - SEDIMENTATION & EROSION CONTROL PLAN
EC-4 SCALE: 1" = 40'-0"



WATERTOWN SOLAR ONE, LLC
 150 TRUMBULL STREET
 4TH FLOOR
 HARTFORD, CT, 06103



567 VAUXHAUL STREET EXTENSION - SUITE 311
 WATERFORD, CT 06385 PHONE: (860)-663-1697
 WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

CSC PERMIT SET

NO	DATE	REVISION
0	06/30/20	FOR CLIENT REVIEW
1	07/06/20	CSC SUBMISSION
2		
3		
4		
5		
6		

DESIGN PROFESSIONAL OF RECORD

PROF: BRADLEY J. PARSONS, P.E.
 COMP: ALL-POINTS TECHNOLOGY CORPORATION
 ADD: 567 VAUXHAUL STREET
 EXTENSION - SUITE 311
 WATERFORD, CT 06385

OWNER: CATHOLIC CEMETERIES
 ADDRESS: 669 PLATT ROAD
 WATERTOWN, CT 06795

WATERTOWN SOLAR ONE, LLC

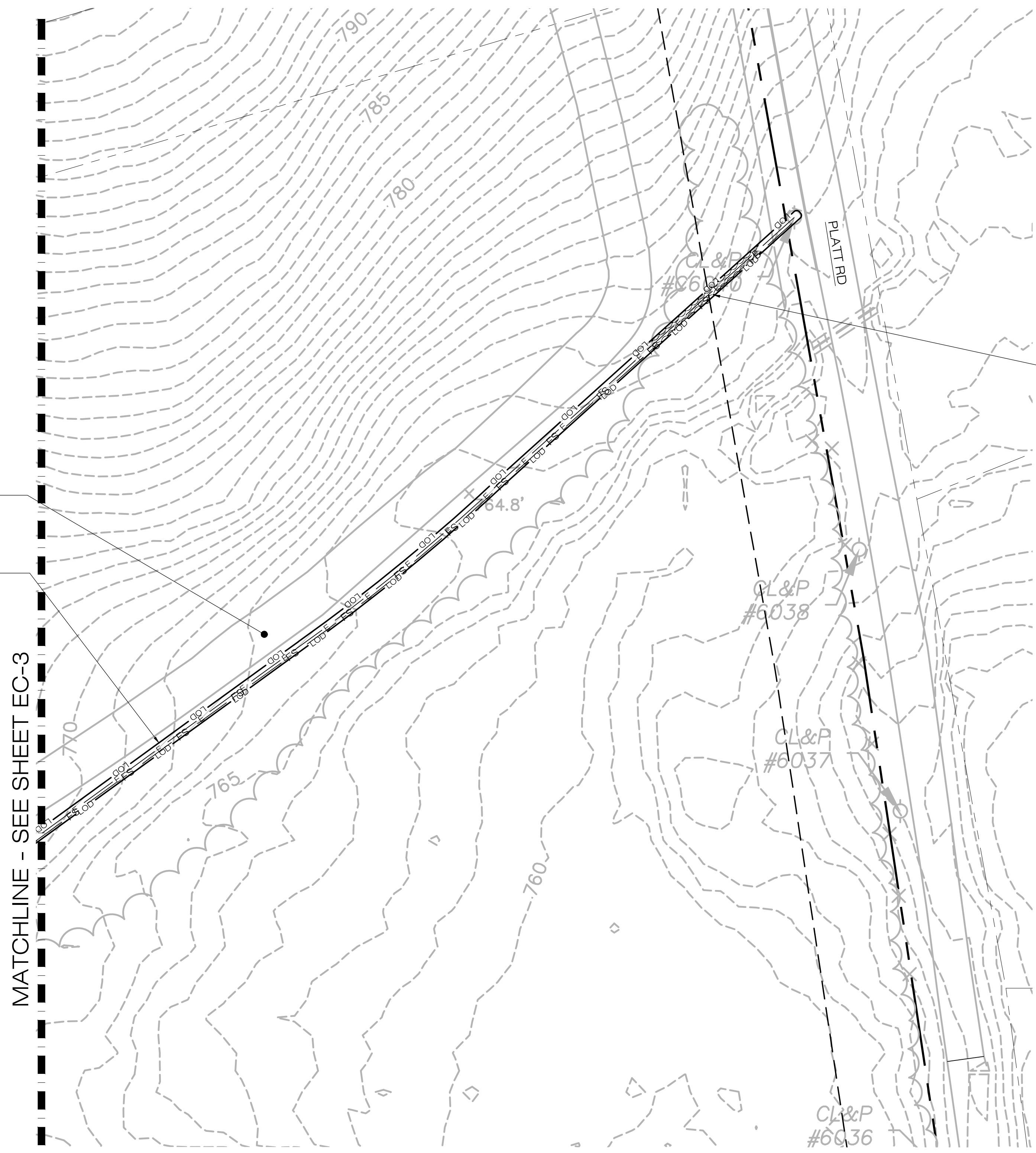
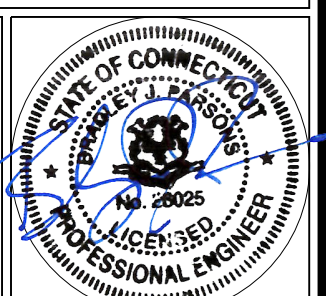
SITE: HINMAN ROAD & PLATT ROAD
 ADDRESS: WATERTOWN, CT 06795

APT FILING NUMBER: CT590240

DRAWN BY: CSH
 DATE: 06/30/20 CHECKED BY: BJP

SHEET TITLE:
**PHASE 1
 SEDIMENTATION &
 EROSION CONTROL PLAN**

SHEET NUMBER:
EC-5

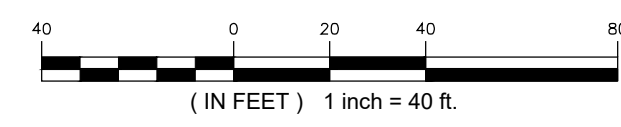


PROP. CLEARING LIMITS AS REQUIRED FOR
 PROP. ELECTRICAL TRENCH (TYP.)

EXIST. PAVED DRIVEWAY (TYP.)
 PROP. LIMIT OF DISTURBANCE (TYP.)

MATCHLINE - SEE SHEET EC-3

1 PHASE 1 - SEDIMENTATION & EROSION CONTROL PLAN
 EC-5 SCALE: 1" = 40'-0"



WATERTOWN SOLAR ONE, LLC
 150 TRUMBULL STREET
 4TH FLOOR
 HARTFORD, CT, 06103



567 VAUXHAUL STREET EXTENSION - SUITE 311
 WATERFORD, CT 06385 PHONE: (860)-663-1697
 WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

CSC PERMIT SET

NO	DATE	REVISION
0	06/30/20	FOR CLIENT REVIEW
1	07/06/20	CSC SUBMISSION
2		
3		
4		
5		
6		

DESIGN PROFESSIONAL OF RECORD
 PROF: BRADLEY J. PARSONS, P.E.
 COMP: ALL-POINTS TECHNOLOGY CORPORATION
 ADD: 567 VAUXHAUL STREET
 EXTENSION - SUITE 311
 WATERFORD, CT 06385

OWNER: CATHOLIC CEMETERIES
 ADDRESS: 669 PLATT ROAD
 WATERTOWN, CT 06795

WATERTOWN SOLAR ONE, LLC

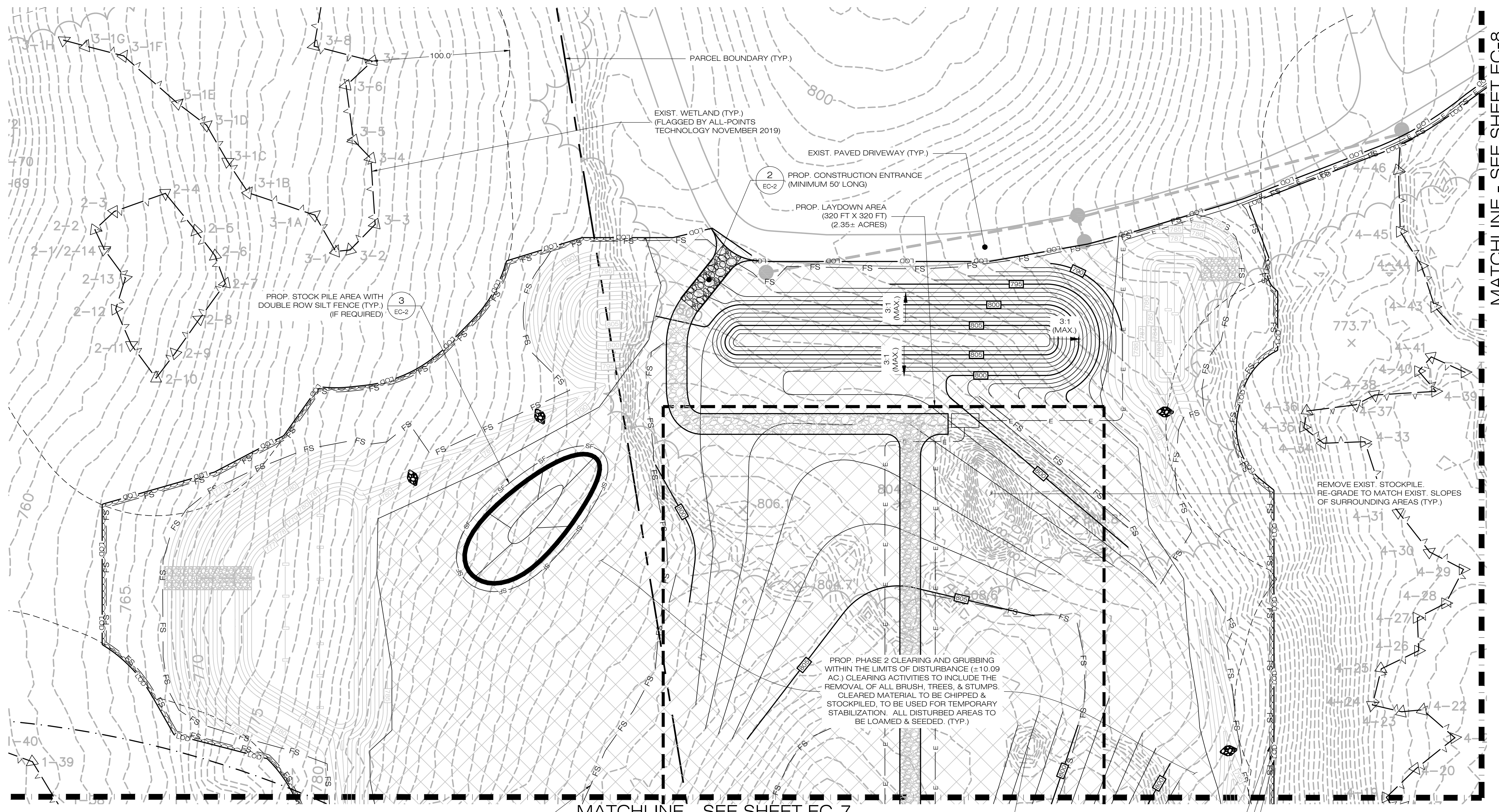
SITE HINMAN ROAD & PLATT ROAD
ADDRESS: WATERTOWN, CT 06795

APT FILING NUMBER: CT590240

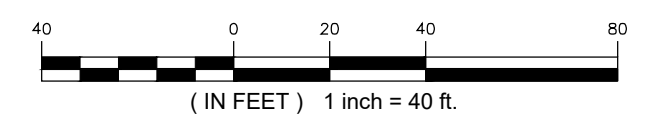
DRAWN BY: CSH
CHECKED BY: BJP
DATE: 06/30/20

SHEET TITLE:
**PHASE 2
 SEDIMENTATION &
 EROSION CONTROL PLAN**

SHEET NUMBER:
EC-6



1 PHASE 2 - SEDIMENTATION & EROSION CONTROL PLAN
 EC-6 SCALE: 1" = 40'-0"



MATCHLINE - SEE SHEET EC-8

MATCHLINE - SEE SHEET EC-7

WATERTOWN SOLAR ONE, LLC
150 TRUMBULL STREET
4TH FLOOR
HARTFORD, CT, 06103



567 VAUXHAUL STREET EXTENSION - SUITE 311
 WATERFORD, CT 06385 PHONE: (860)-663-1697
 WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

CSC PERMIT SET

NO	DATE	REVISION
0	06/30/20	FOR CLIENT REVIEW
1	07/06/20	CSC SUBMISSION
2		
3		
4		
5		
6		

DESIGN PROFESSIONAL OF RECORD

PROF: BRADLEY J. PARSONS, P.E.
 COMP: ALL-POINTS TECHNOLOGY CORPORATION
 ADD: 567 VAUXHAUL STREET
 EXTENSION - SUITE 311
 WATERFORD, CT 06385

OWNER: CATHOLIC CEMETERIES
 ADDRESS: 669 PLATT ROAD
 WATERTOWN, CT 06795

WATERTOWN SOLAR ONE, LLC

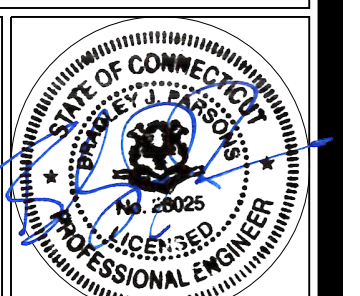
SITE: HINMAN ROAD & PLATT ROAD
 ADDRESS: WATERTOWN, CT 06795

APT FILING NUMBER: CT590240

DATE: 06/30/20
 DRAWN BY: CSH
 CHECKED BY: BJP

SHEET TITLE:
**PHASE 2
 SEDIMENTATION &
 EROSION CONTROL PLAN**

SHEET NUMBER:
EC-7



REMOVE EXIST. STOCKPILE. RE-GRADE TO MATCH EXIST. SLOPES OF SURROUNDING AREAS (TYP.)

MATCHLINE - SEE SHEET EC-6

EXIST. WETLAND (TYP.) (FLAGGED BY ALL-POINTS TECHNOLOGY NOVEMBER 2019)

750' CRITICAL TERRESTRIAL HABITAT TO VERNAL POOL

PROP. PHASE 2 CLEARING AND GRUBBING WITHIN THE LIMITS OF DISTURBANCE (±10.09 AC.) CLEARING ACTIVITIES TO INCLUDE THE REMOVAL OF ALL BRUSH, TREES, & STUMPS. CLEARED MATERIAL TO BE CHIPPED & STOCKPILED. TO BE USED FOR TEMPORARY STABILIZATION. ALL DISTURBED AREAS TO BE LOAMED & SEEDED. (TYP.)

3 EC-2 PROP. STOCK PILE AREA WITH DOUBLE ROW SILT FENCE (TYP.) (IF REQUIRED)

4 EC-2 PROP. STRAW WATTLE (TYP.) (TO BE PLACED ON CONTOUR APPROX. HALFWAY DOWN SLOPE) REMOVE AND REPLACE AS REQ. DURING CONSTRUCTION

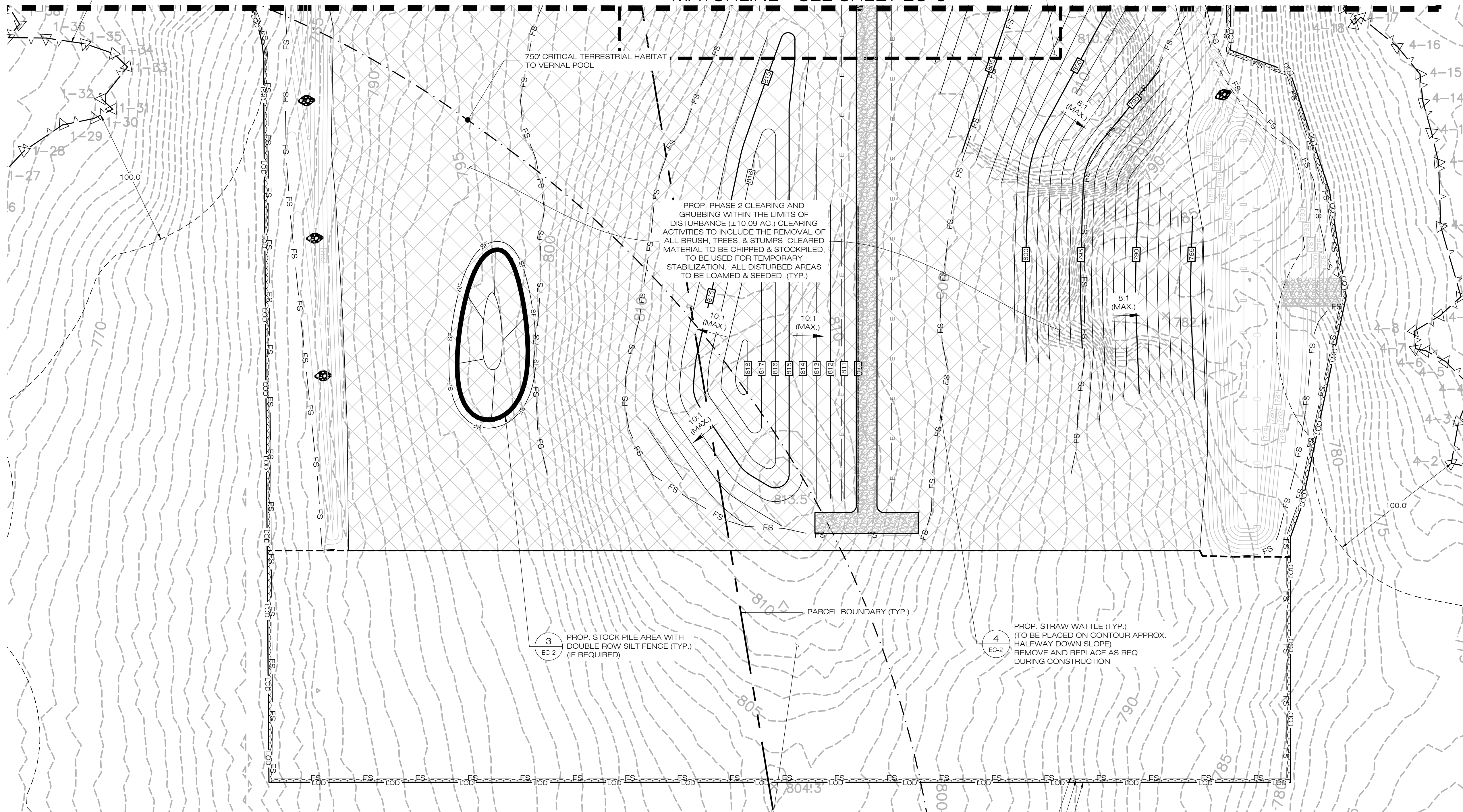
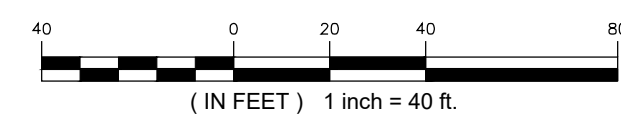
PROP. TREE CUTTING ONLY. STUMPS TO REMAIN (TYP.)

PROP. 18" COMPOST FILTER SOCK (TYP.)

PROP. CLEARING LIMITS (TYP.)

PROP. LIMIT OF DISTURBANCE (TYP.)

1 PHASE 2 - SEDIMENTATION & EROSION CONTROL PLAN
 EC-7 SCALE: 1" = 40'-0"



WATERTOWN SOLAR ONE, LLC
 150 TRUMBULL STREET
 4TH FLOOR
 HARTFORD, CT, 06103



567 VAUXHAUL STREET EXTENSION - SUITE 311
 WATERFORD, CT 06385 PHONE: (860)-663-1697
 WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

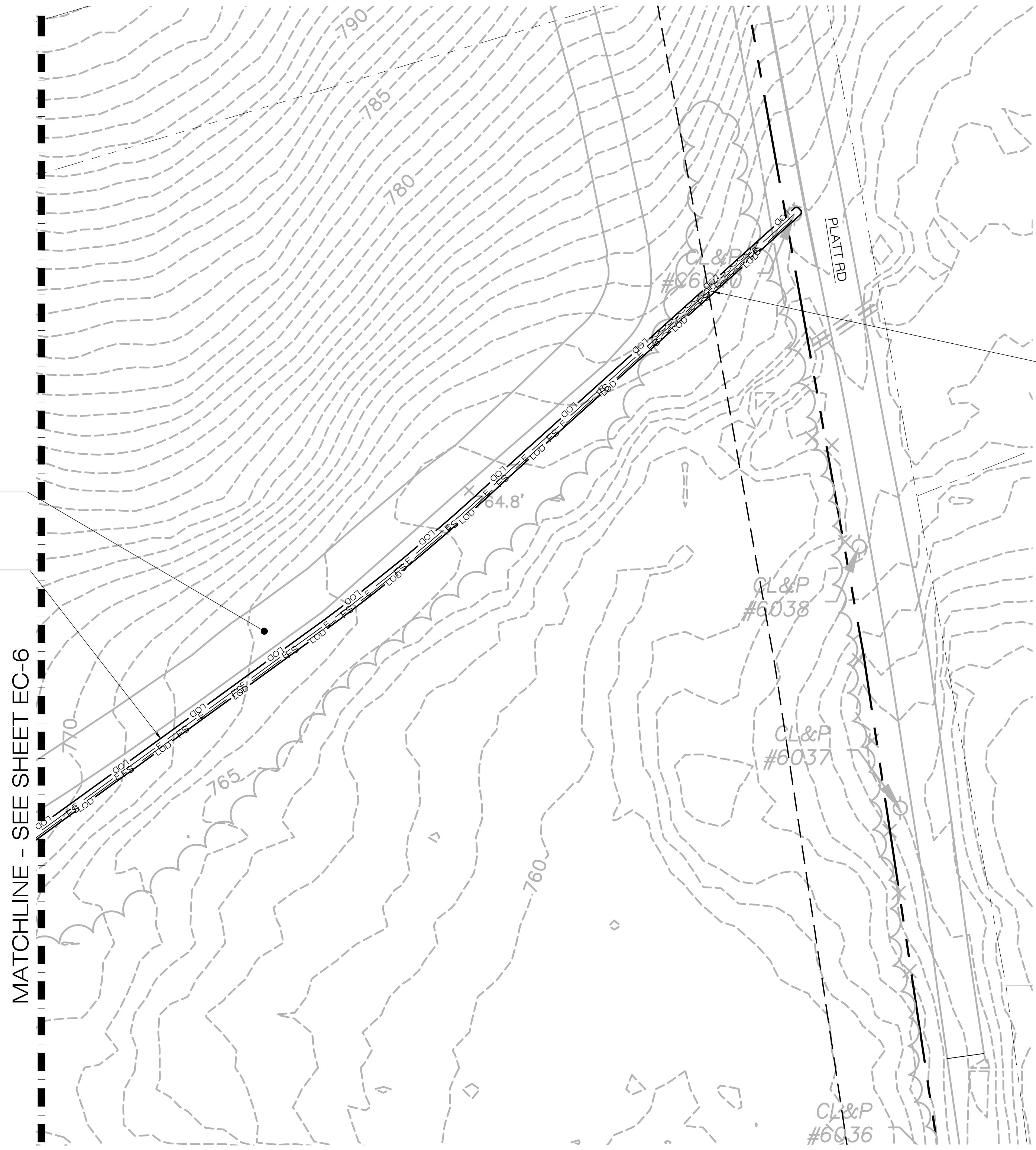
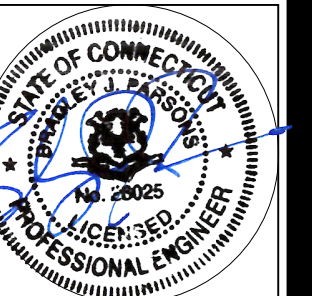
CSC PERMIT SET		
NO	DATE	REVISION
0	06/30/20	FOR CLIENT REVIEW
1	07/06/20	CSC SUBMISSION
2		
3		
4		
5		
6		

DESIGN PROFESSIONAL OF RECORD
 PROF: BRADLEY J. PARSONS P.E.
 COMP: ALL-POINTS TECHNOLOGY CORPORATION
 ADD: 567 VAUXHAUL STREET EXTENSION - SUITE 311 WATERFORD, CT 06385
 OWNER: CATHOLIC CEMETERIES
 ADDRESS: 669 PLATT ROAD WATERFORD, CT 06795

WATERTOWN SOLAR ONE, LLC
 SITE HINMAN ROAD & PLATT ROAD
 ADDRESS: WATERFORD, CT 06795
 APT FILING NUMBER: CT590240
 DRAWN BY: CSH
 DATE: 06/30/20 CHECKED BY: BJP

SHEET TITLE:
**PHASE 2
 SEDIMENTATION &
 EROSION CONTROL PLAN**

SHEET NUMBER:
EC-8

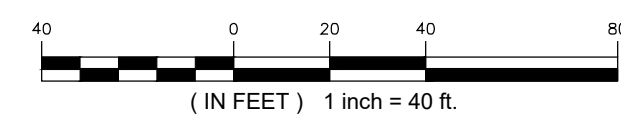


PROP. CLEARING LIMITS AS REQUIRED FOR PROP. ELECTRICAL TRENCH (TYP.)

EXIST. PAVED DRIVEWAY (TYP.)
 PROP. LIMIT OF DISTURBANCE (TYP.)

MATCHLINE - SEE SHEET EC-6

1 PHASE 2 - SEDIMENTATION & EROSION CONTROL PLAN
 EC-8 SCALE: 1" = 40'-0"



WATERTOWN SOLAR ONE, LLC
 150 TRUMBULL STREET
 4TH FLOOR
 HARTFORD, CT, 06103



567 VAUXHAUL STREET EXTENSION - SUITE 311
 WATERFORD, CT 06385 PHONE: (860)-663-1697
 WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

CSC PERMIT SET

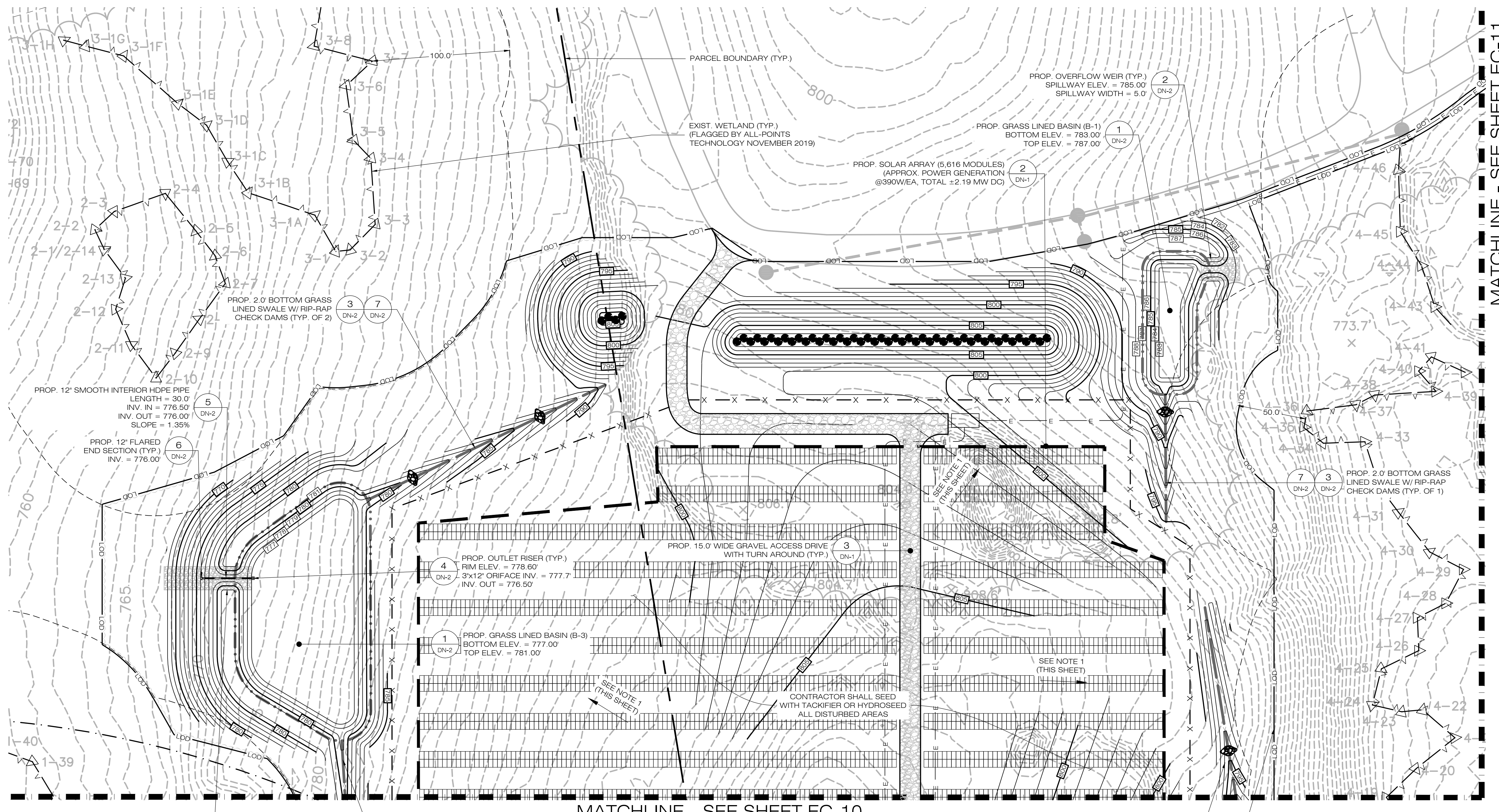
NO	DATE	REVISION
0	06/30/20	FOR CLIENT REVIEW
1	07/06/20	CSC SUBMISSION
2		
3		
4		
5		
6		

DESIGN PROFESSIONAL OF RECORD
 PROF: BRADLEY J. PARSONS, P.E.
 COMP: ALL-POINTS TECHNOLOGY CORPORATION
 ADD: 567 VAUXHAUL STREET
 EXTENSION - SUITE 311
 WATERFORD, CT 06385
 OWNER: CATHOLIC CEMETERIES
 ADDRESS: 669 PLATT ROAD
 WATERTOWN, CT 06795

WATERTOWN SOLAR ONE, LLC
 SITE: HINMAN ROAD & PLATT ROAD
 ADDRESS: WATERTOWN, CT 06795
 APT FILING NUMBER: CT590240
 DRAWN BY: CSH
 DATE: 06/30/20 CHECKED BY: BJP

SHEET TITLE:
**PHASE 3
 FINAL GRADING &
 DRAINAGE PLAN**

SHEET NUMBER:
EC-9

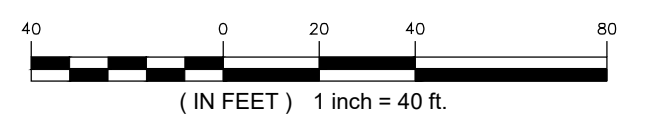


MATCHLINE - SEE SHEET EC-11

MATCHLINE - SEE SHEET EC-10

- NOTES:**
- GRADE/SHAPE AREA TO MAINTAIN EXIST. DRAINAGE PATTERNS.
 - CONTRACTOR SHALL REMOVE ALL BAFFLES AND SEDIMENT BASINS AND SWALES.
 - CONTRACTOR SHALL REPLACE TEMPORARY SEDIMENT BASIN OUTLET WITH GRAVEL OVERFLOW WEIR UPON THE SITE OR DRAINAGE AREA BEING DEEMED STABILIZED PER THE SWPCP.
 - CONTRACTOR SHALL MODIFY/REPLACE THE TEMPORARY SEDIMENT BASIN RISER AS NEEDED UPON THE SITE OR DRAINAGE AREA BEING DEEMED STABILIZED PER THE SWPCP.

1 PHASE 3 - FINAL GRADING & DRAINAGE PLAN
 EC-9 SCALE: 1" = 40'-0"



WATERTOWN SOLAR ONE, LLC
150 TRUMBULL STREET
4TH FLOOR
HARTFORD, CT, 06103

ALL-POINTS TECHNOLOGY CORPORATION
 567 VAUXHAUL STREET EXTENSION - SUITE 311
 WATERFORD, CT 06385 PHONE: (860)-663-1697
 WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

CSC PERMIT SET


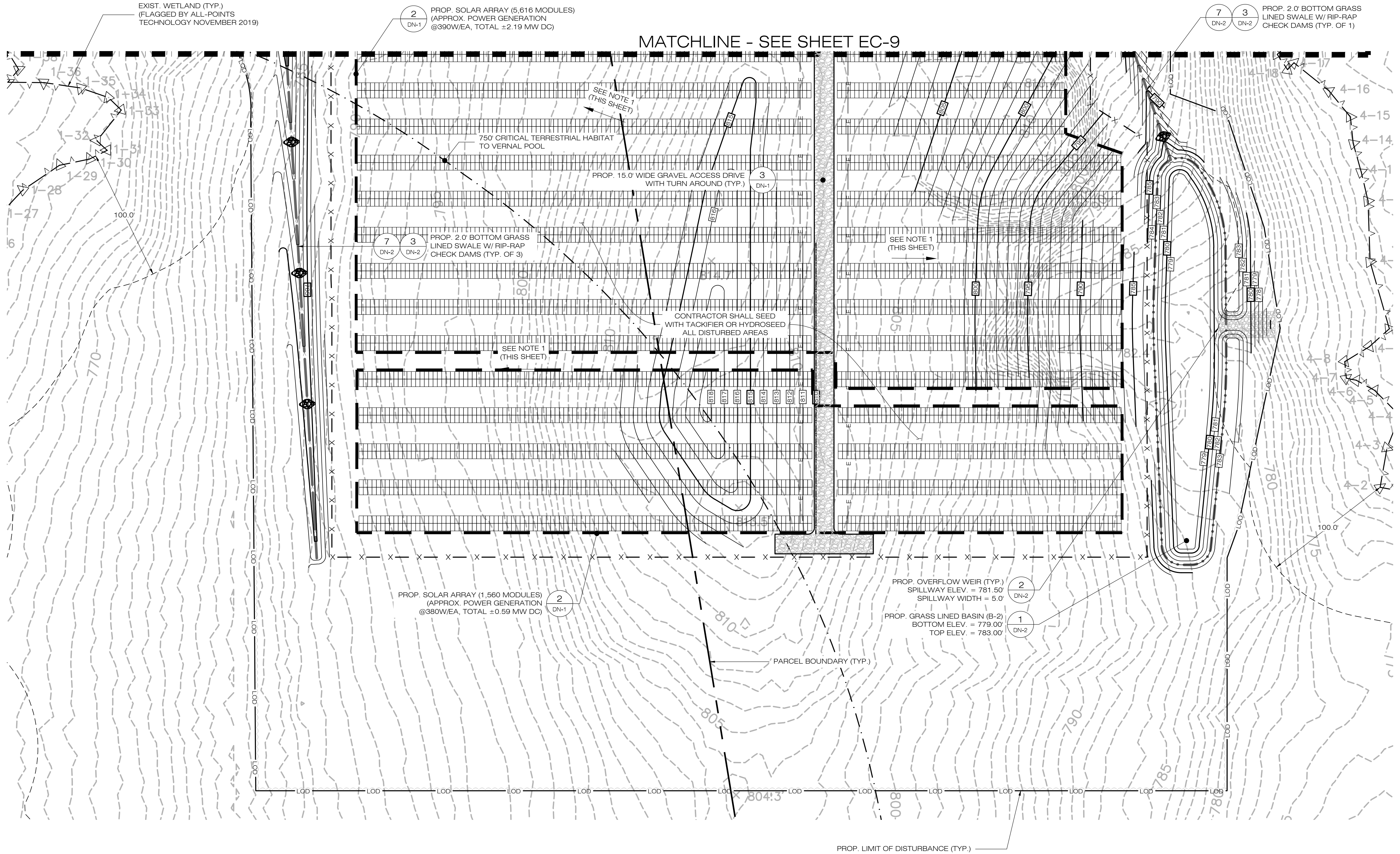
NO	DATE	REVISION
0	06/30/20	FOR CLIENT REVIEW
1	07/06/20	CSC SUBMISSION
2		
3		
4		
5		
6		

DESIGN PROFESSIONAL OF RECORD
 PROF: BRADLEY J. PARSONS, P.E.
 COMP: ALL-POINTS TECHNOLOGY CORPORATION
 ADD: 567 VAUXHAUL STREET
 EXTENSION - SUITE 311
 WATERFORD, CT 06385
 OWNER: CATHOLIC CEMETERIES
 ADDRESS: 669 PLATT ROAD
 WATERTOWN, CT 06795

WATERTOWN SOLAR ONE, LLC
 SITE HINMAN ROAD & PLATT ROAD
 ADDRESS: WATERTOWN, CT 06795
 APT FILING NUMBER: CT590240
 DRAWN BY: CSH
 DATE: 06/30/20 CHECKED BY: BJP

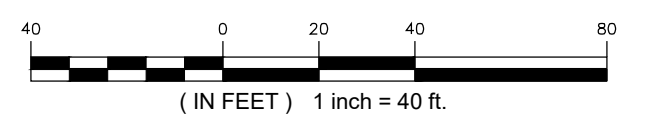
SHEET TITLE:
**PHASE 3
 FINAL GRADING &
 DRAINAGE PLAN**

SHEET NUMBER:
EC-10

- NOTES:**
- GRADE/SHAPE AREA TO MAINTAIN EXIST. DRAINAGE PATTERNS.
 - CONTRACTOR SHALL REMOVE ALL BAFFLES AND SEDIMENT BASINS AND SWALES.
 - CONTRACTOR SHALL REPLACE TEMPORARY SEDIMENT BASIN OUTLET WITH GRAVEL OVERFLOW WEIR UPON THE SITE OR DRAINAGE AREA BEING DEEMED STABILIZED PER THE SWPCP.
 - CONTRACTOR SHALL MODIFY/REPLACE THE TEMPORARY SEDIMENT BASIN RISER AS NEEDED UPON THE SITE OR DRAINAGE AREA BEING DEEMED STABILIZED PER THE SWPCP.

1 PHASE 3 - FINAL GRADING & DRAINAGE PLAN
 EC-10 SCALE: 1" = 40'-0"



WATERTOWN SOLAR ONE, LLC
 150 TRUMBULL STREET
 4TH FLOOR
 HARTFORD, CT, 06103



567 VAUXHAUL STREET EXTENSION - SUITE 311
 WATERFORD, CT 06385 PHONE: (860)-663-1697
 WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

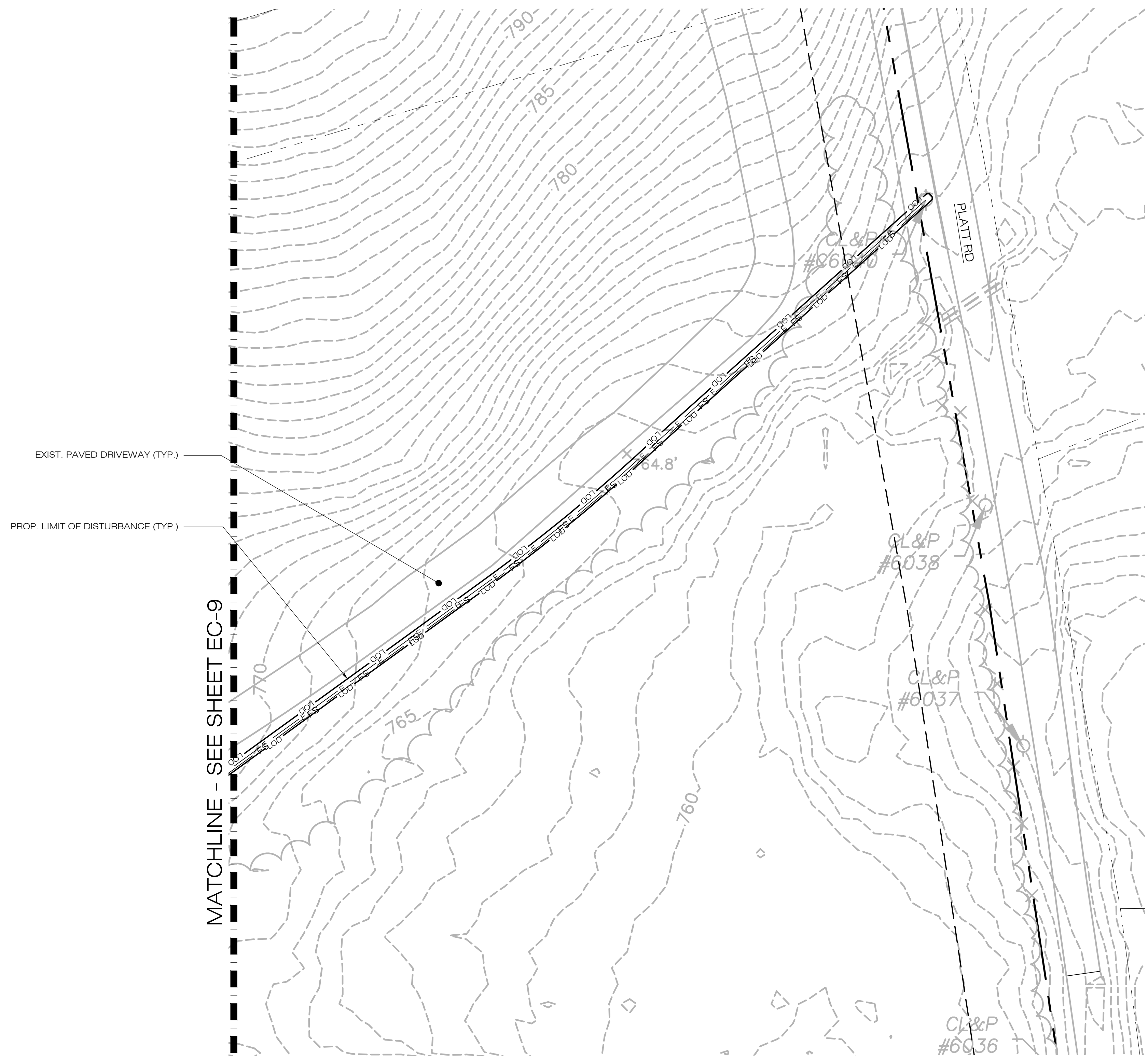
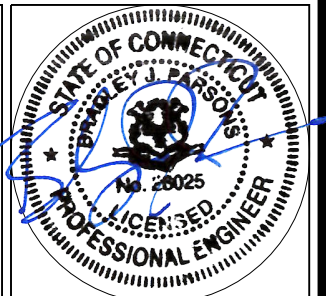
CSC PERMIT SET		
NO	DATE	REVISION
0	06/30/20	FOR CLIENT REVIEW
1	07/06/20	CSC SUBMISSION
2		
3		
4		
5		
6		

DESIGN PROFESSIONAL OF RECORD
 PROF: BRADLEY J. PARSONS, P.E.
 COMP: ALL-POINTS TECHNOLOGY CORPORATION
 ADD: 567 VAUXHAUL STREET
 EXTENSION - SUITE 311
 WATERFORD, CT 06385
 OWNER: CATHOLIC CEMETERIES
 ADDRESS: 669 PLATT ROAD
 WATERTOWN, CT 06795

WATERTOWN SOLAR ONE, LLC
 SITE: HINMAN ROAD & PLATT ROAD
 ADDRESS: WATERTOWN, CT 06795
 APT FILING NUMBER: CT590240
 DRAWN BY: CSH
 DATE: 06/30/20 CHECKED BY: BJP

SHEET TITLE:
**PHASE 3
 FINAL GRADING &
 DRAINAGE PLAN**

SHEET NUMBER:
EC-11



1 PHASE 3 - FINAL GRADING & DRAINAGE PLAN
 SCALE: 1" = 40'-0"
 (IN FEET) 1 inch = 40 ft.

WATERTOWN SOLAR ONE, LLC
 150 TRUMBULL STREET
 4TH FLOOR
 HARTFORD, CT, 06103

ALL-POINTS TECHNOLOGY CORPORATION
 567 VAUXHAUL STREET EXTENSION - SUITE 311
 WATERFORD, CT 06385 PHONE: (860)-663-1697
 WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

CSC PERMIT SET

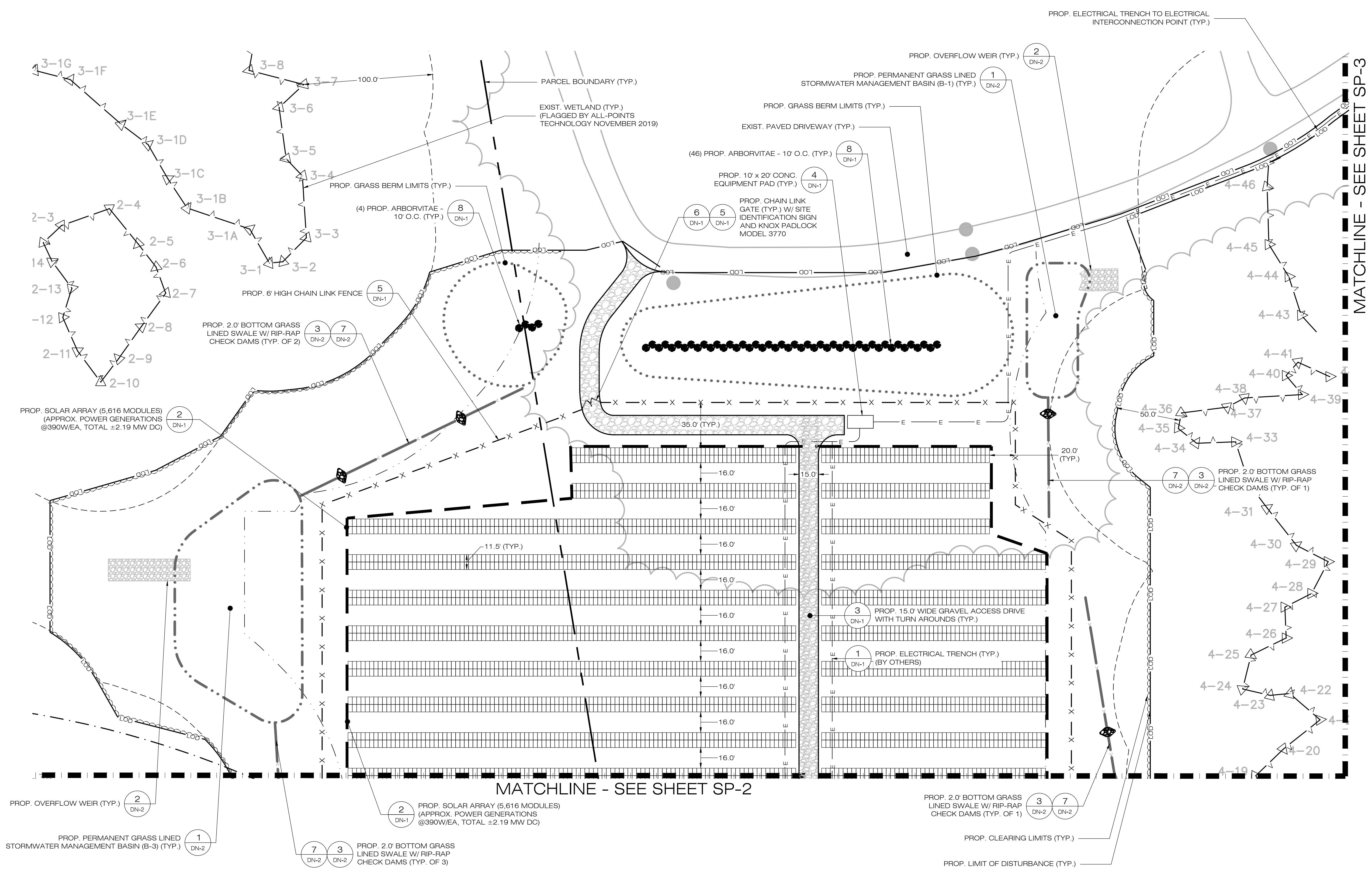
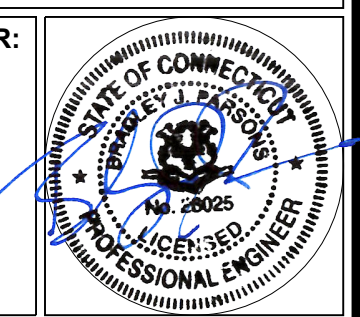
NO	DATE	REVISION
0	06/30/20	FOR CLIENT REVIEW
1	07/06/20	CSC SUBMISSION
2		
3		
4		
5		
6		

DESIGN PROFESSIONAL OF RECORD
 PROF: BRADLEY J. PARSONS, P.E.
 COMP: ALL-POINTS TECHNOLOGY CORPORATION
 ADD: 567 VAUXHAUL STREET
 EXTENSION - SUITE 311
 WATERFORD, CT 06385
 OWNER: CATHOLIC CEMETERIES
 ADDRESS: 669 PLATT ROAD
 WATERTOWN, CT 06795

WATERTOWN SOLAR ONE, LLC
 SITE HINMAN ROAD & PLATT ROAD
 ADDRESS: WATERTOWN, CT 06795
 APT FILING NUMBER: CT590240
 DRAWN BY: CSH
 DATE: 06/30/20 CHECKED BY: BJP

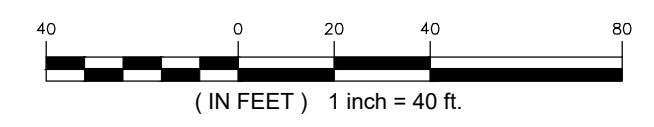
SHEET TITLE:
 SITE & UTILITY PLAN

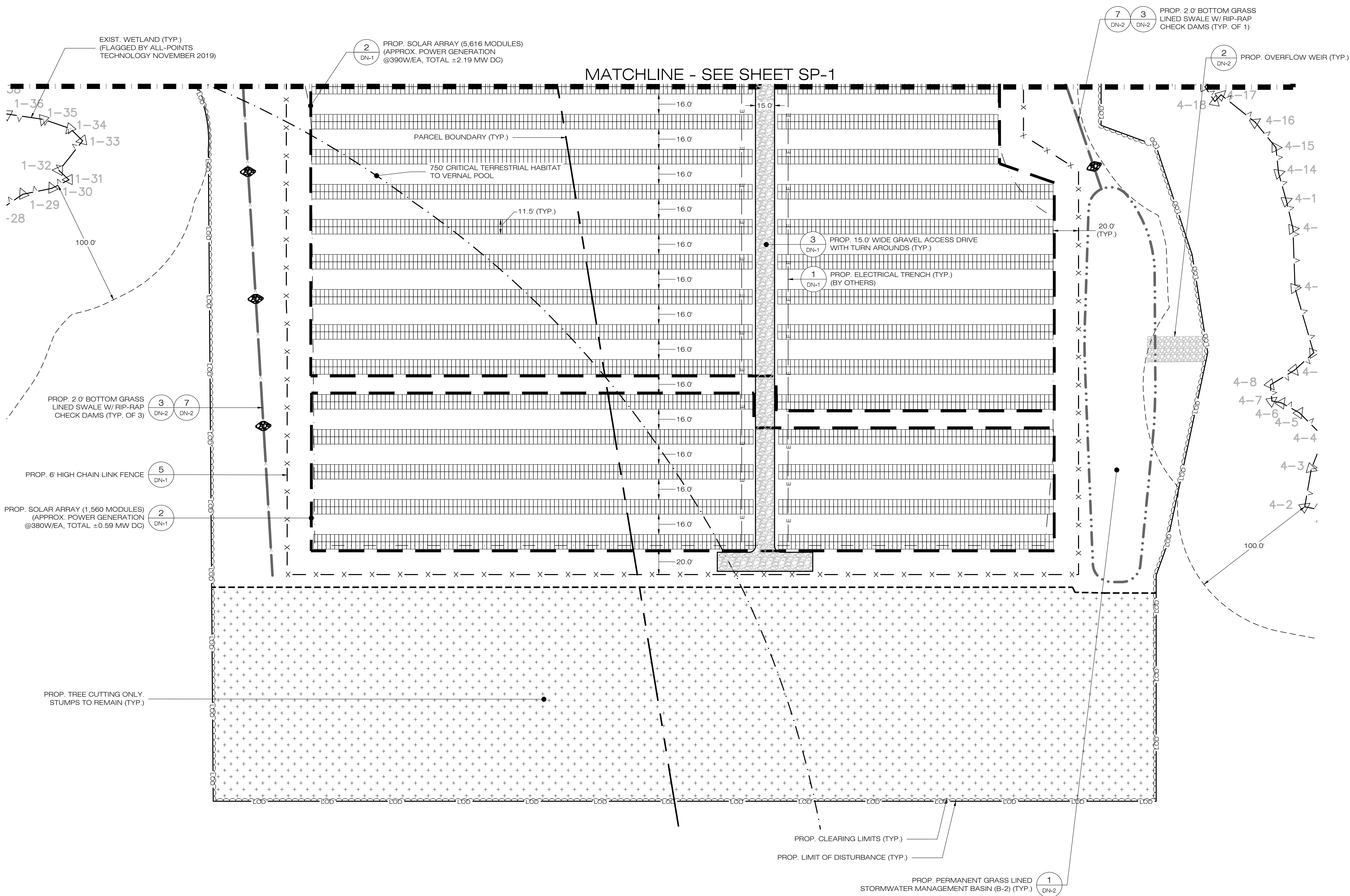
SHEET NUMBER:
 SP-1



MATCHLINE - SEE SHEET SP-2

1 SITE & UTILITY PLAN
 SP-1 SCALE: 1" = 40'-0"





WATERTOWN SOLAR ONE, LLC
 150 TRUMBULL STREET
 4TH FLOOR
 HARTFORD, CT, 06103

ALL-POINTS TECHNOLOGY CORPORATION
 567 VAUXHAUL STREET EXTENSION - SUITE 311
 WATERFORD, CT 06385 PHONE: (860)-663-1697
 WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

CSC PERMIT SET

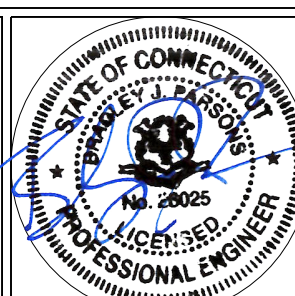
NO	DATE	REVISION
0	06/30/20	FOR CLIENT REVIEW
1	07/06/20	CSC SUBMISSION
2		
3		
4		
5		
6		

DESIGN PROFESSIONAL OF RECORD
 PROF: BRADLEY J. PARSONS P.E.
 COMP: ALL-POINTS TECHNOLOGY CORPORATION
 ADD: 567 VAUXHAUL STREET EXTENSION - SUITE 311
 WATERFORD, CT 06385
 OWNER: CATHOLIC CEMETERIES
 ADDRESS: 669 PLATT ROAD
 WATERFORD, CT 06795

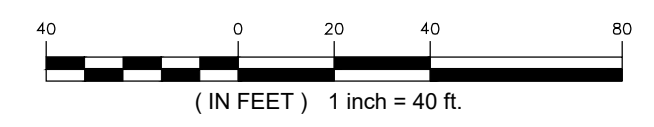
WATERTOWN SOLAR ONE, LLC
 SITE HINMAN ROAD & PLATT ROAD
 ADDRESS: WATERFORD, CT 06795
 APT FILING NUMBER: CT590240
 DRAWN BY: CSH
 DATE: 06/30/20 CHECKED BY: BJP

SHEET TITLE:
 SITE & UTILITY PLAN

SHEET NUMBER:
 SP-2



1 SITE & UTILITY PLAN
 SP-2 SCALE: 1" = 40'-0"



WATERTOWN SOLAR ONE, LLC
 150 TRUMBULL STREET
 4TH FLOOR
 HARTFORD, CT, 06103



567 VAUXHAUL STREET EXTENSION - SUITE 311
 WATERFORD, CT 06385 PHONE: (860)-663-1697
 WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

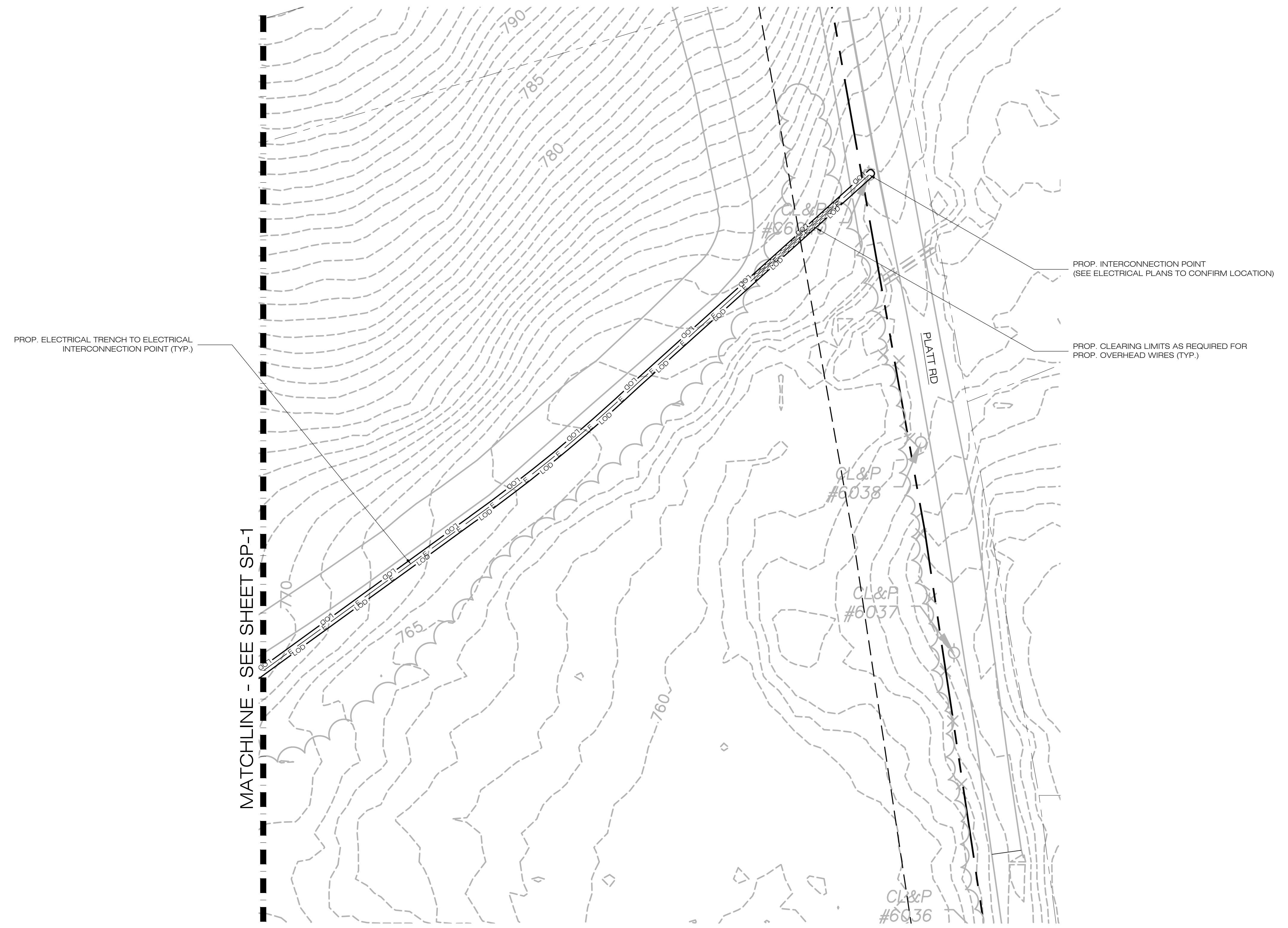
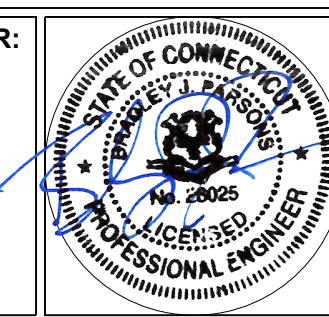
CSC PERMIT SET		
NO	DATE	REVISION
0	06/30/20	FOR CLIENT REVIEW
1	07/06/20	CSC SUBMISSION
2		
3		
4		
5		
6		

DESIGN PROFESSIONAL OF RECORD
 PROF: BRADLEY J. PARSONS P.E.
 COMP: ALL-POINTS TECHNOLOGY CORPORATION
 ADD: 567 VAUXHAUL STREET
 EXTENSION - SUITE 311
 WATERFORD, CT 06385
 OWNER: CATHOLIC CEMETERIES
 ADDRESS: 669 PLATT ROAD
 WATERTOWN, CT 06795

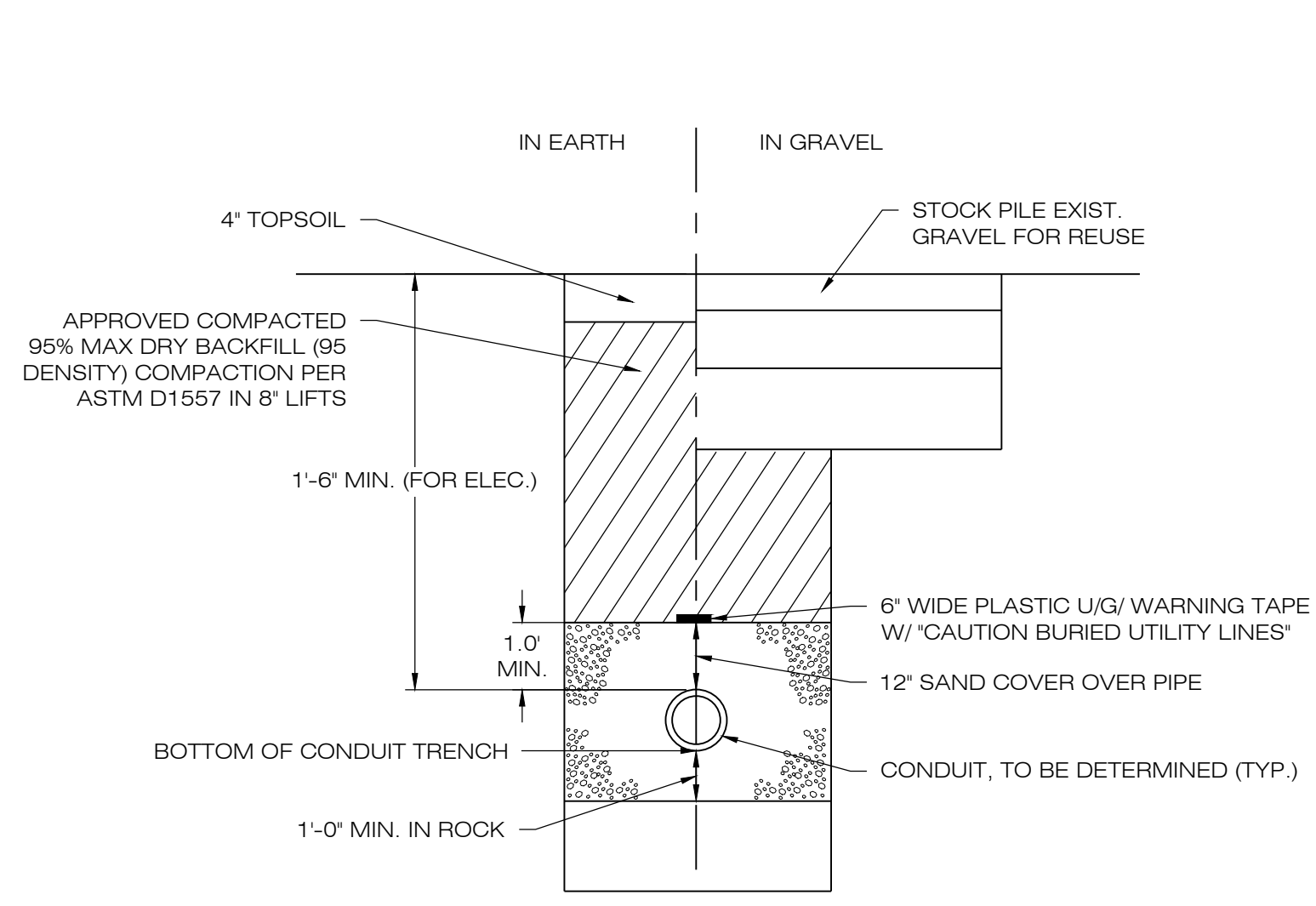
WATERTOWN SOLAR ONE, LLC
 SITE HINMAN ROAD & PLATT ROAD
 ADDRESS: WATERTOWN, CT 06795
 APT FILING NUMBER: CT590240
 DRAWN BY: CSH
 DATE: 06/30/20 CHECKED BY: BJP

SHEET TITLE:
SITE & UTILITY PLAN

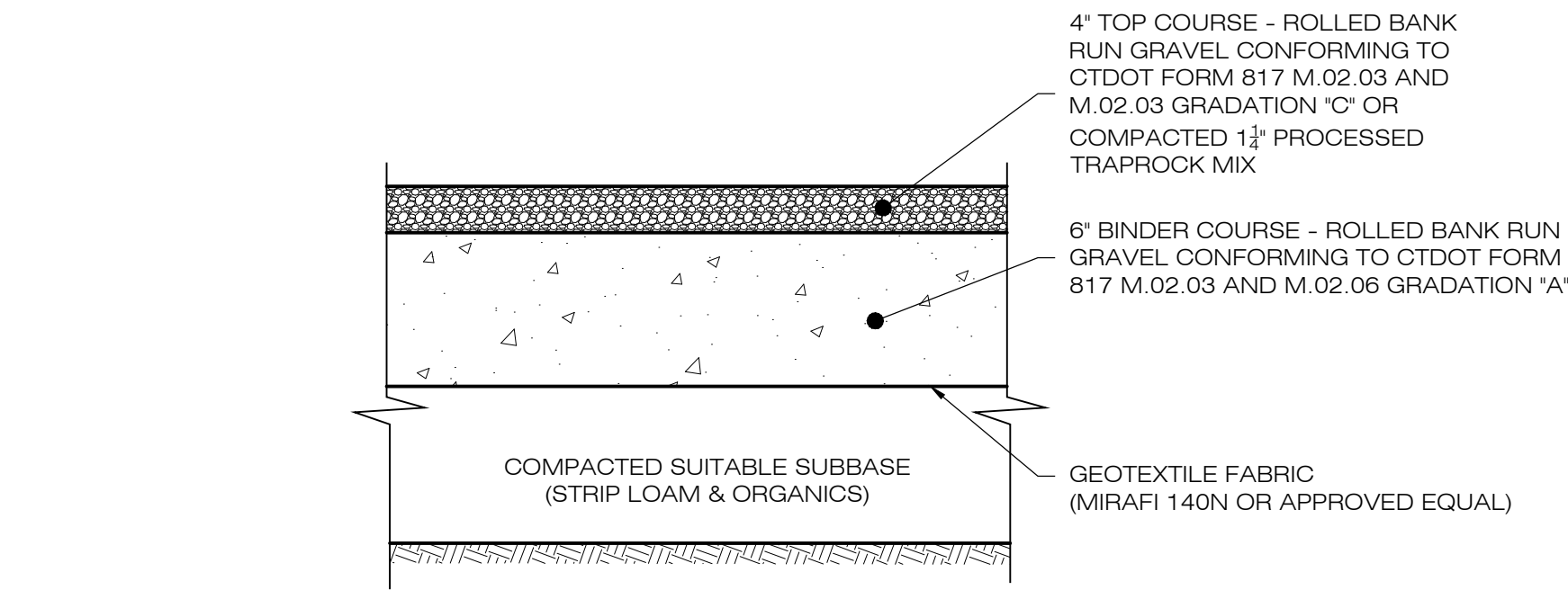
SHEET NUMBER:
SP-3



1
 SP-3
SITE & UTILITY PLAN
 SCALE: 1" = 40'-0"

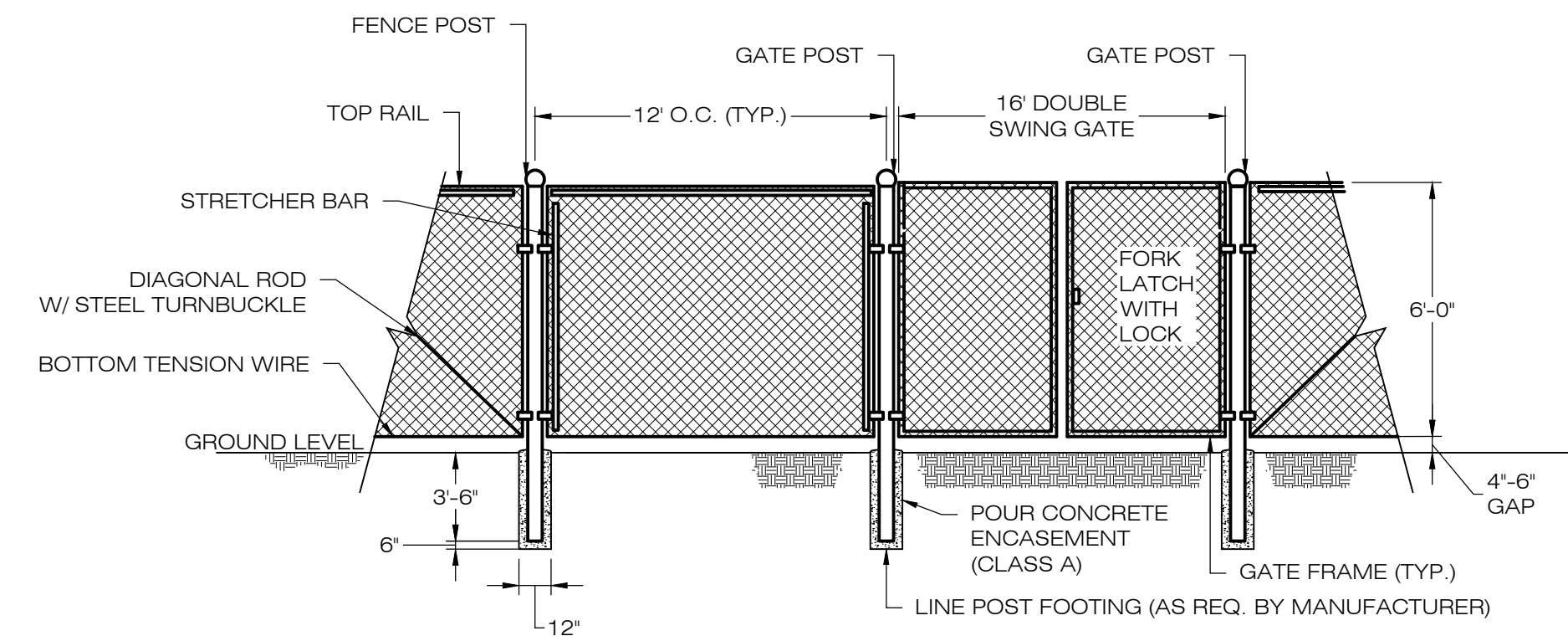


1 ELECTRICAL TRENCH DETAIL
DN-1 SCALE : N.T.S.

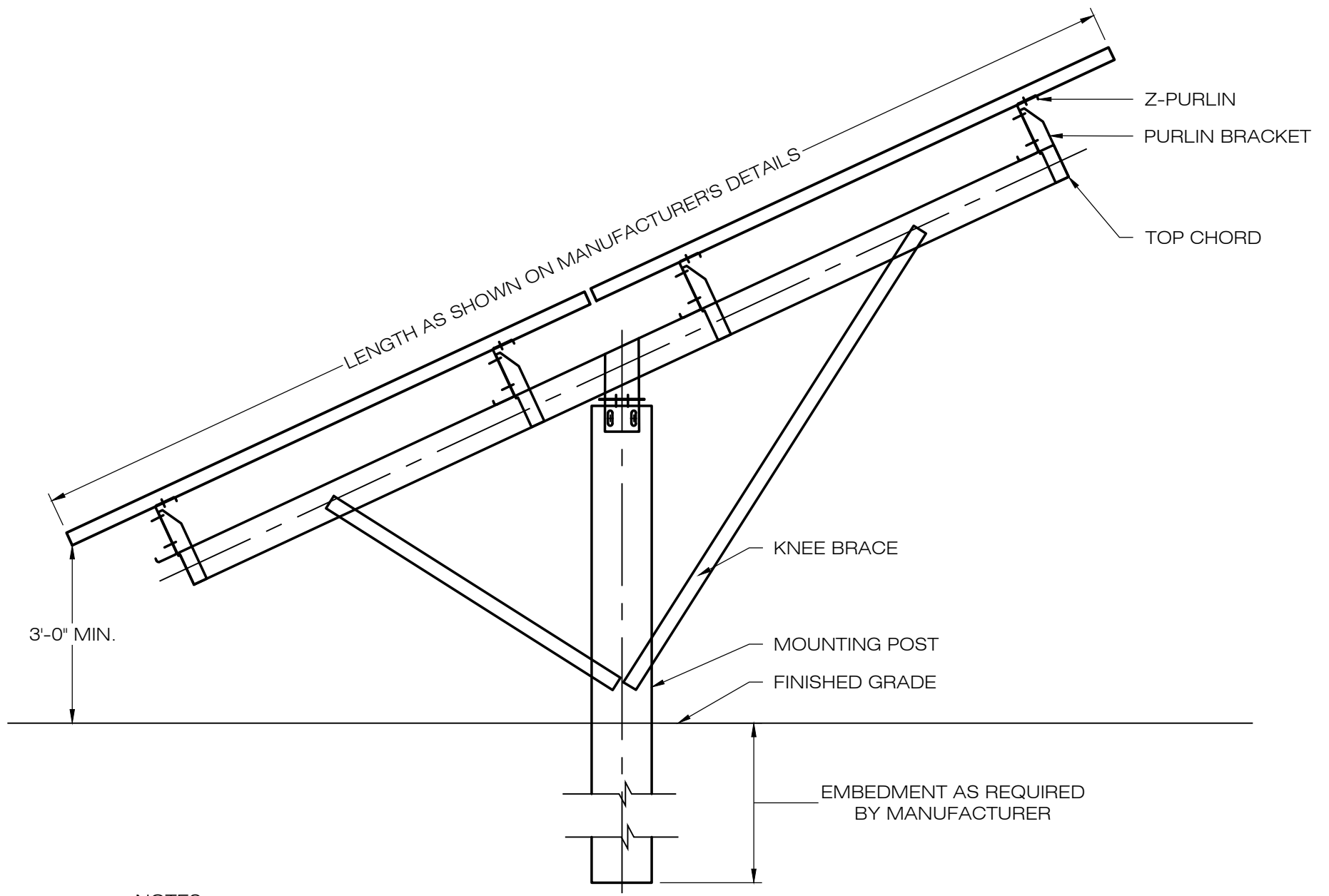


NOTES:
1. SUBBASE MAY CONSIST OF NATIVE MATERIALS IF FOUND ACCEPTABLE BY THE ENGINEER. SUBBASE TO BE COMPACTED TO 95% MAX DRY DENSITY.
2. SUBBASE IS TO BE FREE FROM DEBRIS AND UNSUITABLE MATERIALS.

3 GRAVEL ACCESS DRIVE SECTION
DN-1 SCALE : N.T.S.

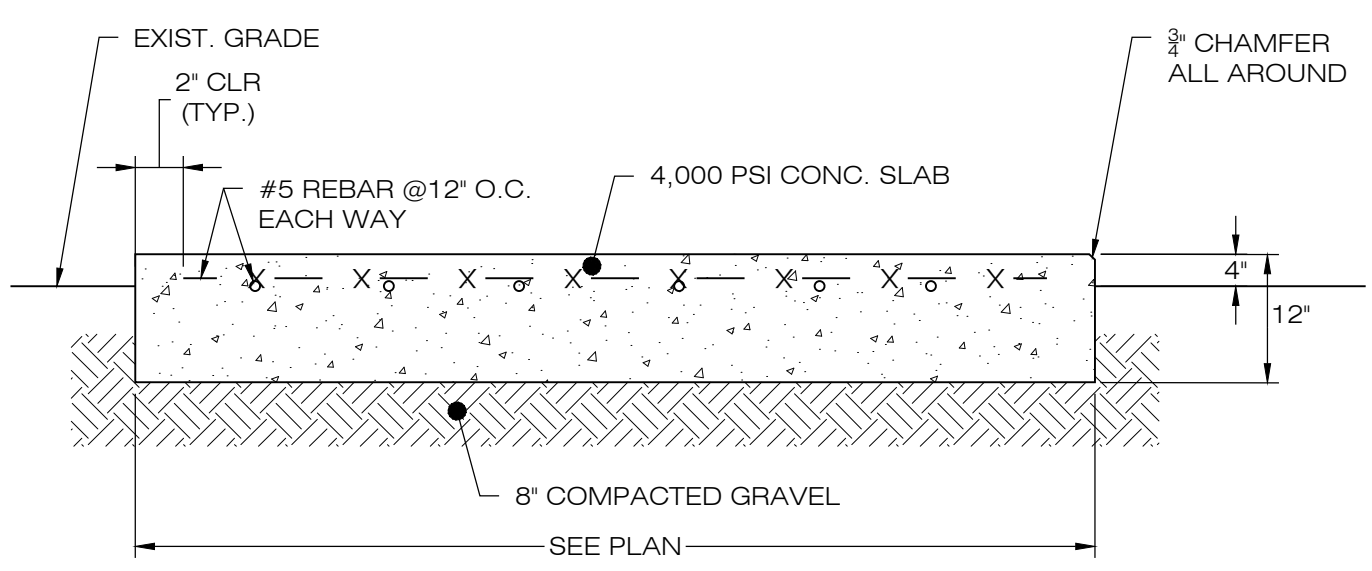


5 CHAIN-LINK FENCE & GATE DETAIL
DN-1 SCALE : N.T.S.

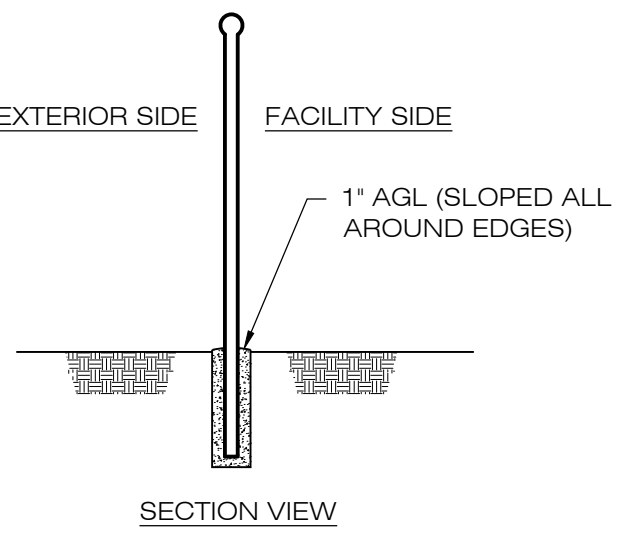


NOTES:
SEE MANUFACTURERS DETAIL SHEETS FOR ADDITIONAL INFORMATION REGARDING RACKING SYSTEM REQUIREMENTS AND INSTALLATION PROCEDURES. RACKING SYSTEM TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS REQUIREMENTS.

2 TYPICAL POST MOUNTED RACKING SYSTEM
DN-1 SCALE : N.T.S.

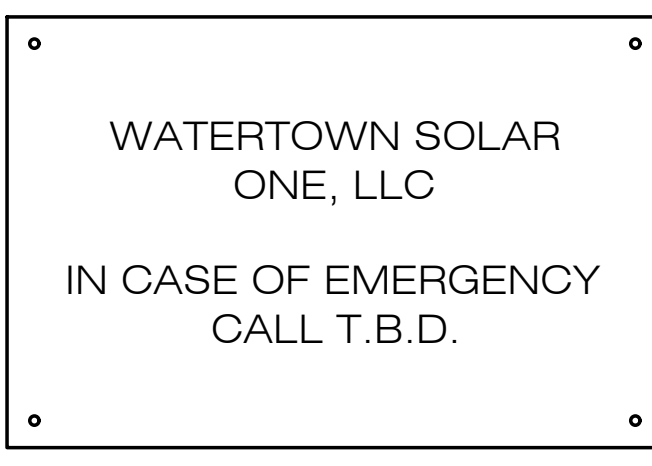


4 CONCRETE EQUIPMENT PAD
DN-1 SCALE : N.T.S.



NOTES:
EMERGENCY CALL NUMBER TO BE PROVIDED ONCE DETERMINED.

6 NOTIFICATION SIGN DETAIL
DN-1 SCALE : N.T.S.



Ernst Conservation Seeds
8884 Mercer Pike
Meadville, PA 16335
(800) 873-3321 Fax (814) 336-5191
www.ernstseed.com

Date: June 28, 2020

Showy Northeast Native Wildflower Mix - ERNMX-153-1

Botanical Name	Common Name	Price/lb
20.10 % <i>Echinacea purpurea</i>	Purple Coneflower	39.60
12.00 % <i>Coreopsis lanceolata</i>	Lanceleaf Coreopsis	26.40
12.00 % <i>Rudbeckia hirta</i> , Coastal Plain NC Ecotype	Blackeyed Susan, Coastal Plain NC Ecotype	22.00
10.00 % <i>Chamaecrista fasciculata</i> , PA Ecotype	Partridge Pea, PA Ecotype	6.60
7.00 % <i>Heliopsis helianthoides</i> , PA Ecotype	Oxeye Sunflower, PA Ecotype	30.80
6.40 % <i>Tradescantia ohiensis</i> , PA Ecotype	Ohio Spiderwort, PA Ecotype	231.00
5.00 % <i>Liatris spicata</i>	Marsh Blazing Star	231.00
3.50 % <i>Aster oblongifolius</i> , PA Ecotype	Aromatic Aster, PA Ecotype	396.00
3.50 % <i>Aster prenanthoides</i> , PA Ecotype	Zigzag Aster, PA Ecotype	396.00
3.00 % <i>Zizia aurea</i> , PA Ecotype	Golden Alexanders, PA Ecotype	264.00
2.00 % <i>Aster laevis</i> , NY Ecotype	Smooth Blue Aster, NY Ecotype	396.00
2.00 % <i>Aster novae-angliae</i> , PA Ecotype	New England Aster, PA Ecotype	396.00
2.00 % <i>Baptisia australis</i> , Southern WV Ecotype	Blue False Indigo, Southern WV Ecotype	88.00
1.50 % <i>Asclepias tuberosa</i>	Butterfly Milkweed	396.00
1.50 % <i>Pycnanthemum tenuifolium</i>	Narrowleaf Mountainmint	154.00
1.50 % <i>Senna hebecarpa</i> , VA & WV Ecotype	Wild Senna, VA & WV Ecotype	26.40
1.20 % <i>Monarda fistulosa</i> , Fort Indiantown Gap-PA Ecotype	Wild Bergamot, Fort Indiantown Gap-PA Ecotype	105.60
1.10 % <i>Solidago nemoralis</i> , PA Ecotype	Gray Goldenrod, PA Ecotype	396.00
1.00 % <i>Eupatorium coelestinum</i> , VA Ecotype	Mistflower, VA Ecotype	281.60
1.00 % <i>Geum canadense</i> , PA Ecotype	White Avena, PA Ecotype	176.00
1.00 % <i>Penstemon digitalis</i> , PA Ecotype	Tall White Beardtongue, PA Ecotype	176.00
0.60 % <i>Coreopsis tripteris</i> , PA Ecotype	Tall Coreopsis, PA Ecotype	308.00
0.50 % <i>Senna marilandica</i>	Maryland Senna	26.40
0.20 % <i>Oenothera fruticosa</i> var. <i>fruticosa</i>	Sundrops	330.00
0.20 % <i>Solidago odora</i> , PA Ecotype	Licorice Scented Goldenrod, PA Ecotype	352.00
0.10 % <i>Penstemon hirsutus</i>	Hairy Beardtongue	440.00
0.10 % <i>Rudbeckia fulgida</i> var. <i>fulgida</i> , Northern VA Ecotype	Orange Coneflower, Northern VA Ecotype	352.00

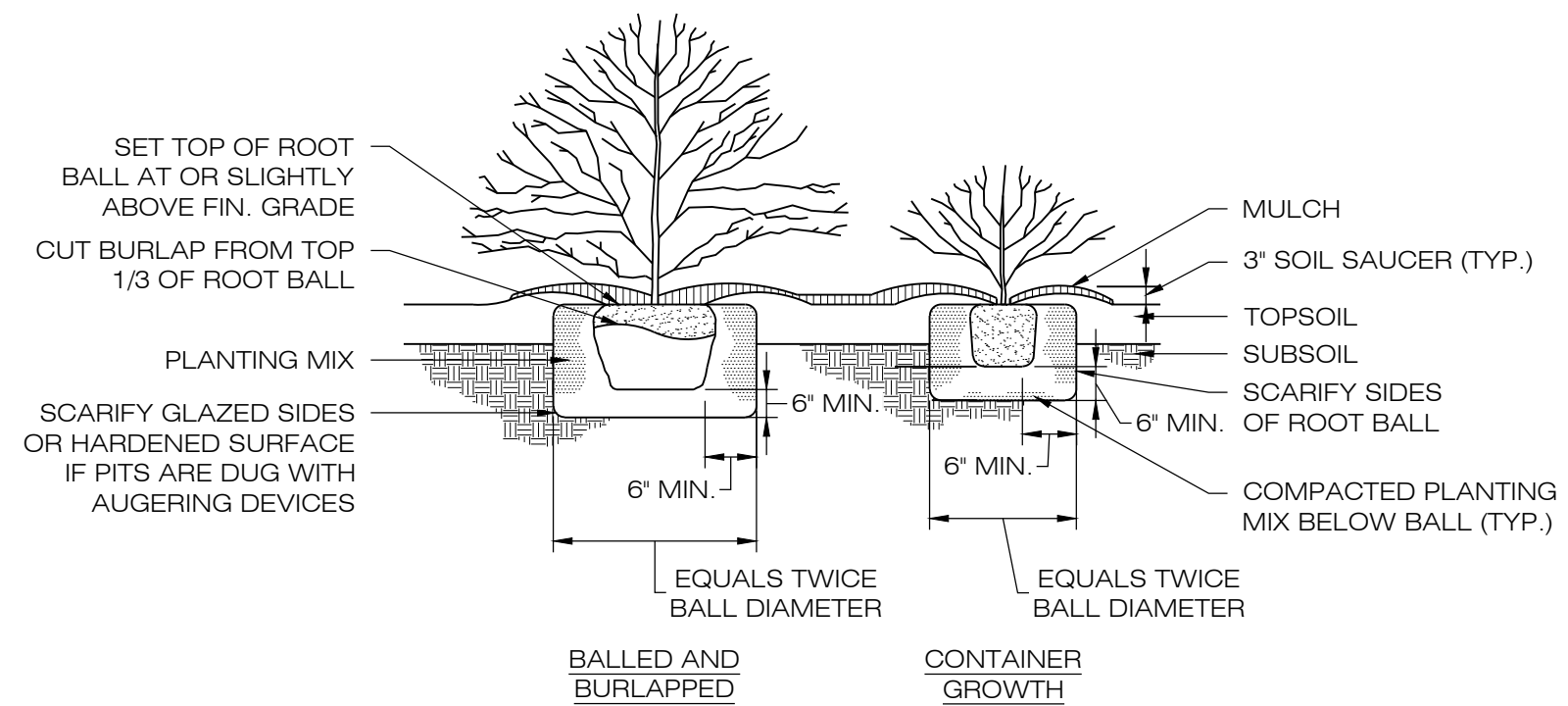
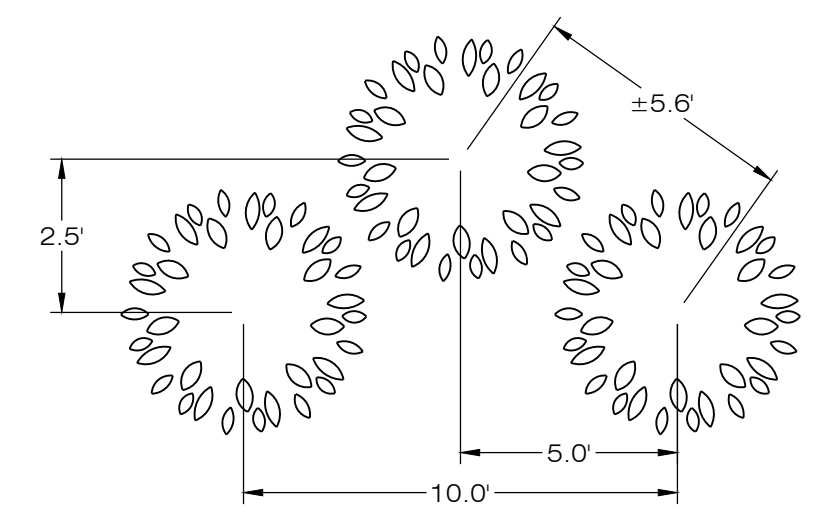
100.00 % **Mix Price/lb Bulk: \$120.90**

Seeding Rate: 5-10 lb per acre with 20 lb per acre of a cover crop (grain oats, Jan 1-Aug 1; grain rye, Aug 1-Jan 1)

Pollinator Favorites; Uplands & Meadows

Contains the showiest native forbs common in the Northeast. Excellent for wildlife food and shelter, including pollinators. Mix formulations are subject to change without notice depending on the availability of existing and new products. While the formula may change, the guiding philosophy and function of the mix will not.

7 SEMI-SHADE MIX
DN-1 SCALE : N.T.S.



NOTES:
IN AREAS OF MASS PLANTINGS, CONTINUOUSLY EXCAVATE AND MULCH ENTIRE BED..

8 TYPICAL PLANTING DETAIL
DN-1 SCALE : N.T.S.

WATERTOWN SOLAR ONE, LLC
150 TRUMBULL STREET
4TH FLOOR
HARTFORD, CT, 06103



567 VAUXHAUL STREET EXTENSION - SUITE 311
WATERFORD, CT 06385 PHONE: (860)-663-1697
WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

CSC PERMIT SET

NO	DATE	REVISION
0	06/30/20	FOR CLIENT REVIEW
1	07/06/20	CSC SUBMISSION
2		
3		
4		
5		
6		

DESIGN PROFESSIONAL OF RECORD

PROF. BRADLEY J. PARSONS, P.E.
COMP. ALL-POINTS TECHNOLOGY CORPORATION
ADD: 567 VAUXHAUL STREET
EXTENSION - SUITE 311
WATERFORD, CT 06385

OWNER: CATHOLIC CEMETERIES
ADDRESS: 669 PLATT ROAD
WATERTOWN, CT 06795

WATERTOWN SOLAR ONE, LLC

SITE HINMAN ROAD & PLATT ROAD
ADDRESS: WATERTOWN, CT 06795

APT FILING NUMBER: CT590240

DATE: 06/30/20 DRAWN BY: CSH
CHECKED BY: BJP

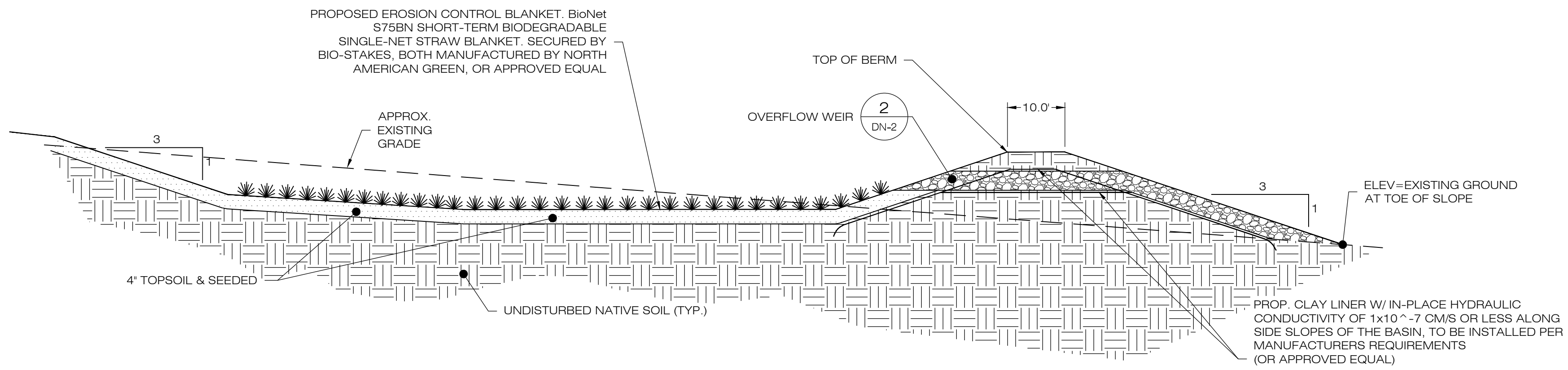
SITE DETAILS

SHEET NUMBER:
DN-1

WATERTOWN SOLAR ONE, LLC
150 TRUMBULL STREET
4TH FLOOR
HARTFORD, CT, 06103

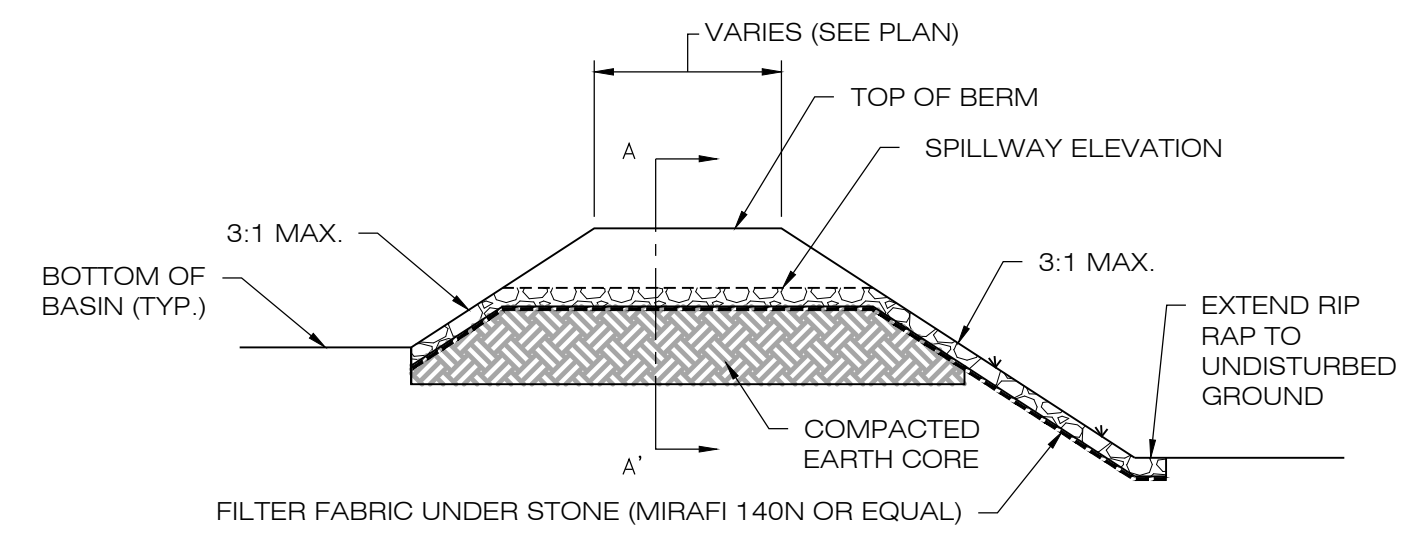
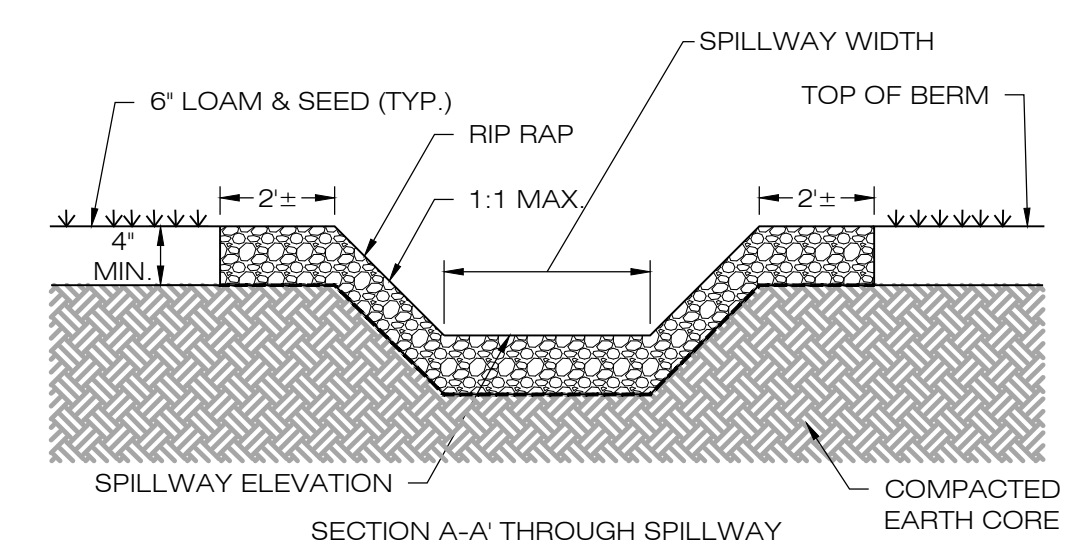


567 VAUXHAUL STREET EXTENSION - SUITE 311
 WATERFORD, CT 06385 PHONE: (860)-663-1697
 WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935



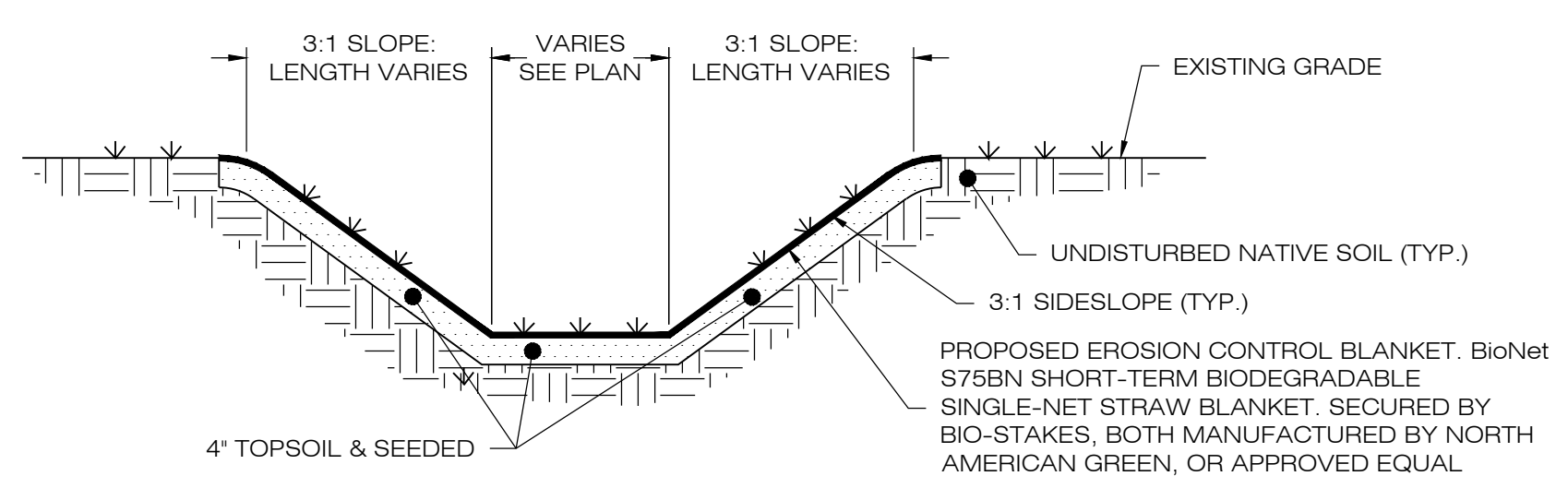
- NOTES:
- SEED MIX TO BE NEW ENGLAND EROSION CONTROL/ RESTORATION MIX FOR MOIST SITES ON THE BOTTOM OF THE BASIN AND NEW ENGLAND EROSION/RESTORATION MIX FOR DRY SITES ON THE SIDE SLOPES.
 - FOR CONVERTING TSB TO INFILTRATION BASIN, REMOVE BAFFLES, CLEAN OUT SEDIMENT, RESHAPE AS REQUIRED.
 - INSPECT AND CLEAN PIPES.

1 GRASS LINED BASIN
 DN-2 SCALE: N.T.S.



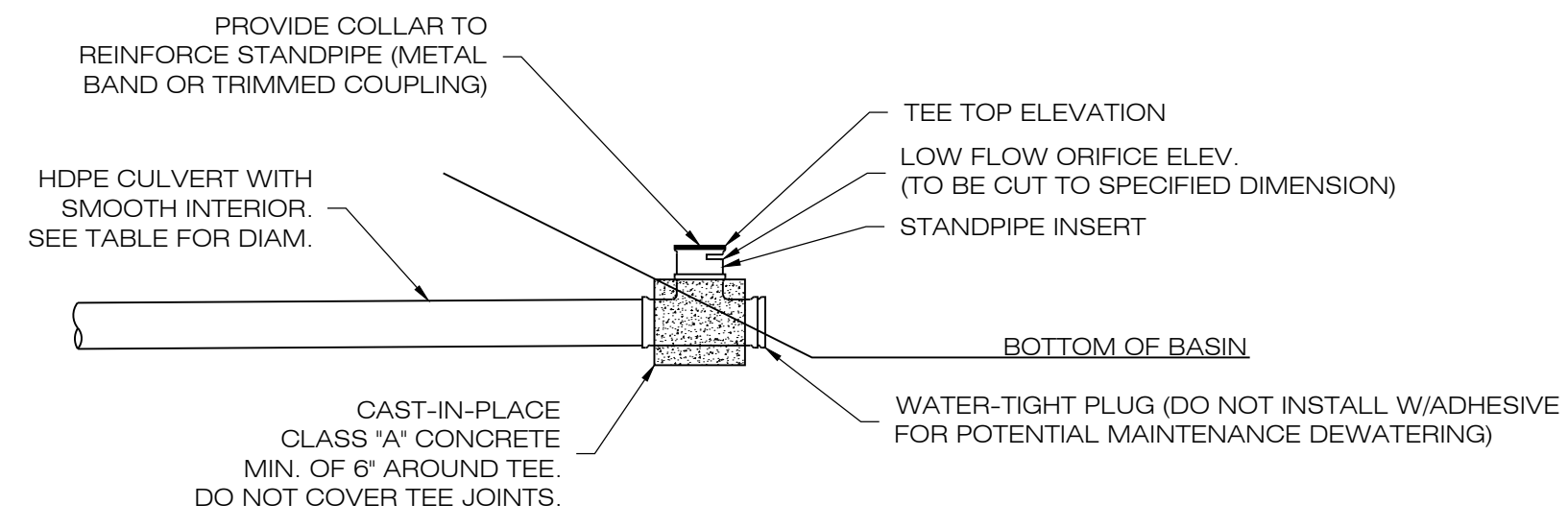
2 OVERFLOW WEIR DETAIL
 DN-2 SCALE: N.T.S.

HDPE OUTLET RISER SIZING TABLE								
BASIN	TEE TOP ELEV. (FT)	LOW FLOW ORIFICE ELEV. (FT)	LOW FLOW ORIFICE DIMENSION (FT)	OUTLET PIPE SIZE (IN.)	OUTLET PIPE LENGTH (FT)	OUTLET PIPE SLOPE (%)	OUTLET PIPE INV. ELEV. AT STRUCTURE (FT)	OUTLET PIPE INV. AT OUTFALL (FT)
B-3	778.60	777.70	WIDTH = 12.0' HEIGHT = 3.0'	12	37.0	1.35	776.50	776.00



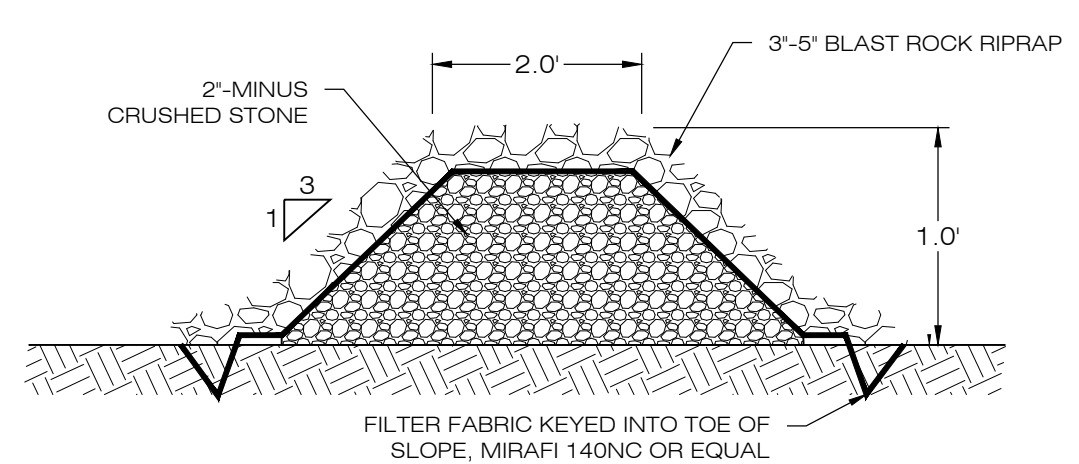
- NOTES:
- SEED MIX TO BE NEW ENGLAND EROSION CONTROL/ RESTORATION MIX FOR MOIST SITES ON THE BOTTOM OF THE BASIN AND NEW ENGLAND EROSION/RESTORATION MIX FOR DRY SITES ON THE SIDE SLOPES.

3 GRASS LINED SWALE
 DN-2 SCALE: N.T.S.



- NOTES:
- TEE TO BE ADS ADVANEDGE (TM) FABRICATED TEE OR APPROVED EQUAL. CONTRACTOR TO MODIFY TEE AS NEEDED.

4 OUTLET RISER
 DN-2 SCALE: N.T.S.



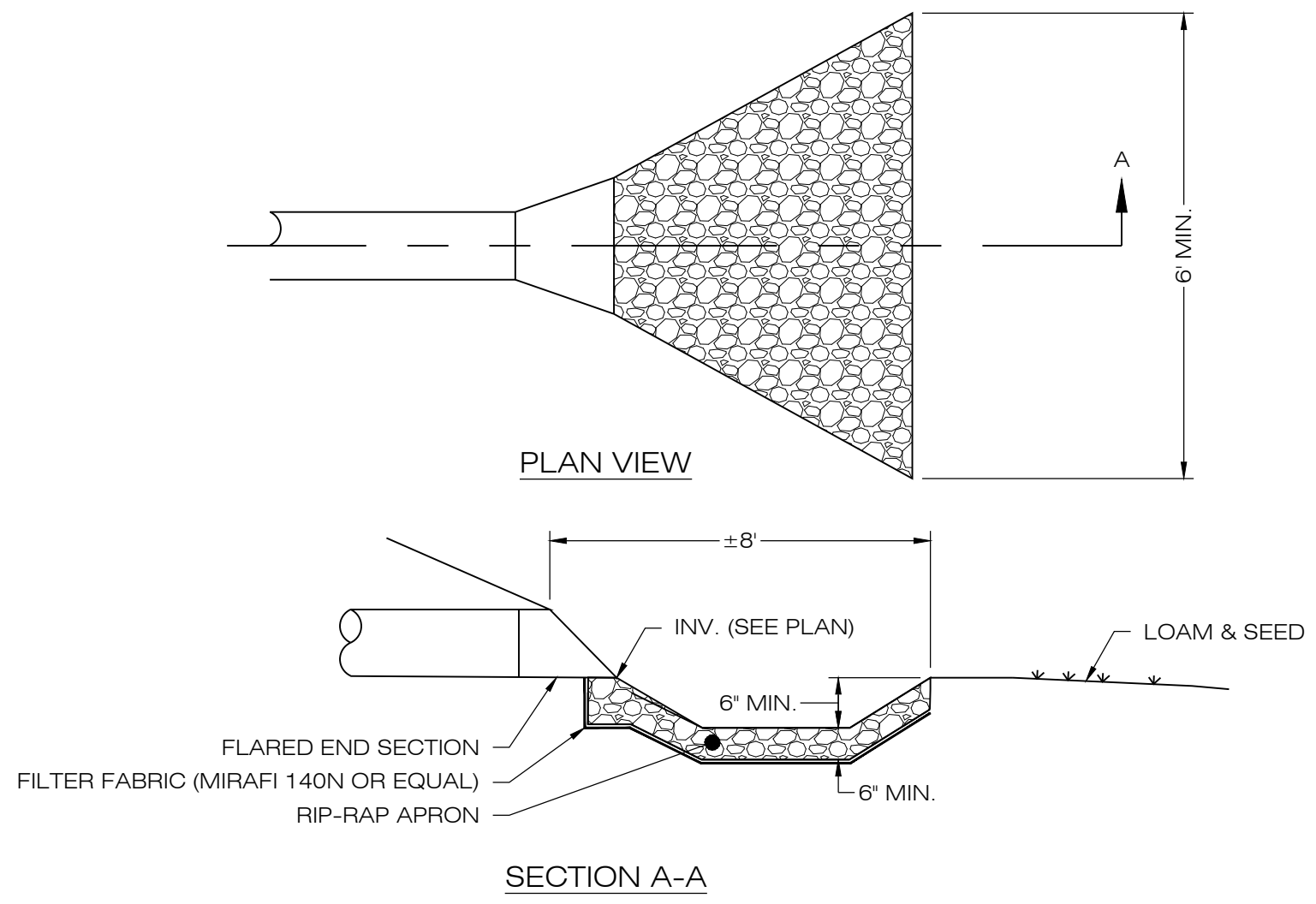
- NOTES:
- STONE SHALL BE PLACED MECHANICALLY OR BY HAND. STONE SHALL NOT BE DUMPED DIRECTLY INTO FOREBAY. SEE GRADING AND DRAINAGE PLAN.

7 STONE CHECK DAM
 DN-2 SCALE: N.T.S.

RECOMMENDED MIN. TRENCH WIDTH		
PIPE DIA.	MIN. TRENCH WIDTH	
6"	23'	
8"	26'	
10"	28'	
12"	30'	
15"	34'	
18"	39'	
24"	48'	
30"	56'	
36"	64'	
48"	80'	
60"	96'	

- NOTES:
- ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST ADDITION.
 - MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.
 - FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.
 - BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100mm-600mm); 6" (150mm) FOR 30"-60" (750mm-900mm).
 - INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III IN THE PIPE ZONE EXTENDING NOT LESS THAN 6' ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.
 - MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOATATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" UP TO 48" DIAMETER PIPE AND 24" OF COVER FOR 54"-60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.

5 HDPE STORM DRAINAGE TRENCH DETAIL
 DN-2 SCALE: N.T.S.



6 FLARED END SECTION/PLUNGE POOL
 DN-2 SCALE: N.T.S.

CSC PERMIT SET

NO	DATE	REVISION
0	06/30/20	FOR CLIENT REVIEW
1	07/06/20	CSC SUBMISSION
2		
3		
4		
5		
6		

DESIGN PROFESSIONAL OF RECORD

PROF. BRADLEY J. PARSONS, P.E.
 COMP. ALL-POINTS TECHNOLOGY CORPORATION
 ADD: 567 VAUXHAUL STREET
 EXTENSION - SUITE 311
 WATERFORD, CT 06385

OWNER: CATHOLIC CEMETERIES
 ADDRESS: 669 PLATT ROAD
 WATERTOWN, CT 06795

WATERTOWN SOLAR ONE, LLC

SITE: HINMAN ROAD & PLATT ROAD
 ADDRESS: WATERTOWN, CT 06795

APT FILING NUMBER: CT590240

DATE: 06/30/20

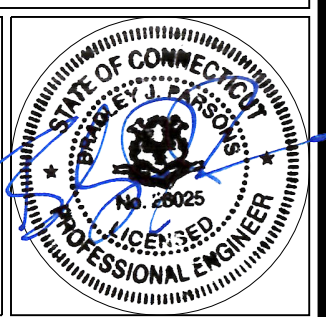
DRAWN BY: CSH
 CHECKED BY: BJP

SHEET TITLE:

SITE DETAILS

SHEET NUMBER:

DN-2



ATTACHMENT E
Stormwater Monitoring Report Form

General Information					
Name of Project	Watertown Solar One, LLC			Inspection Date	
Inspector Name, Title & Contact Information					
Inspector Qualifications					
Present Phase of Construction					
Inspection Location (if multiple inspections are required, specify location where this inspection is being conducted)					
<p>Inspection Frequency <i>(Note: you may be subject to different inspection frequencies in different areas of the site. Check all that apply.)</i></p> <p>Standard Frequency: <input type="checkbox"/> Weekly <input type="checkbox"/> Within 24 hours of the end of a storm that generates a discharge</p> <p>Reduced Frequency:</p> <p>- <input type="checkbox"/> Once per month (for stabilized areas)</p>					
<p>Date of last rainfall:</p> <p>Total rainfall amount:</p>					
<p>Current Weather Conditions:</p>					

Condition and Effectiveness of Erosion and Sediment (E&S) Controls

(see reverse for instructions)

Type/Location of E&S Control [Add an additional sheet if necessary]	Repairs or Other Maintenance Needed?*	Corrective Action Required?*	Notes
1. Sediment Traps	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
2. Sediment Basins	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
3. Diversion Ditches	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
4. Perimeter Control	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
5. Surface Stabilization	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
6. Construction Entrance	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
7. Soil Stockpile Areas	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
8. Natural Depression	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	

* **Note:** The permit differentiates between conditions requiring repairs and maintenance, and those requiring corrective action. The permit requires maintenance in order to keep controls in effective operating condition and requires repairs if controls are not operating as intended. Corrective actions are triggered only for specific, more serious conditions, which include: 1) A required stormwater control was never installed, was installed incorrectly, or not in accordance with the requirements in the Guidelines; 2) You become aware that the stormwater controls you have installed and are maintaining are not effective enough for the discharge to meet applicable water quality standards or applicable requirements; 3) A prohibited discharge is occurring or has occurred; or 4) Corrective actions are required as a result of a permit violation found during an inspection. If a condition on your site requires a corrective action, engineered corrective actions shall be implemented within 7 days of the inspection.

Condition and Effectiveness of Pollution Prevention (Good Housekeeping) Practices (see reverse for instructions)			
Type/Location of PP Practices [Add an additional sheet if necessary]	Repairs or Other Maintenance Needed?*	Corrective Action Required?*	Notes
1. Storage of Construction Materials	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
2. Oil/Gas/Chemicals	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
3. Haz/Toxic Waste	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
4. Construction Waste	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
5. Sanitary Waste	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
6. Offsite Vehicle Tracking	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
7.	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
8.	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	

* **Note:** The permit differentiates between conditions requiring repairs and maintenance, and those requiring corrective action. The permit requires maintenance in order to keep controls in effective operating condition and requires repairs if controls are not operating as intended. Corrective actions are triggered only for specific, more serious conditions, which include: 1) A required stormwater control was never installed, was installed incorrectly, or not in accordance with the requirements in the Guidelines; 2) You become aware that the stormwater controls you have installed and are maintaining are not effective enough for the discharge to meet applicable water quality standards or applicable requirements; 3) A prohibited discharge is occurring or has occurred; or 4) Corrective actions are required as a result of a permit violation found during an inspection. If a condition on your site requires a corrective action, engineered corrective actions shall be implemented within 7 days of the inspection.

Stabilization of Exposed Soil			
Stabilization Area [Add an additional sheet if necessary]	Stabilization Method	Have Stabilization Been Initiated?	Notes
1. Interior (Solar Array)		<input type="checkbox"/> YES <input type="checkbox"/> NO If yes, provide date: 04/2019	
2. Soil Stockpile		<input type="checkbox"/> YES <input type="checkbox"/> NO If yes, provide date: 05/29/2019	
3.		<input type="checkbox"/> YES <input type="checkbox"/> NO If yes, provide date: 5	
4.		<input type="checkbox"/> YES <input type="checkbox"/> NO If yes, provide date:	
5.		<input type="checkbox"/> YES <input type="checkbox"/> NO If yes, provide date:	

Instructions for Filling Out the “Stabilization of Exposed Soil” Table

Stabilization Area

List all areas where soil stabilization is required to begin because construction work in that area has permanently stopped or temporarily stopped, and all areas where stabilization has been implemented.

Stabilization Method

For each area, specify the method of stabilization (e.g., hydroseed, sod, planted vegetation, erosion control blanket, mulch, rock).

Have You Initiated Stabilization

For each area, indicate whether stabilization has been initiated.

Notes

For each area where stabilization has been initiated, describe the progress that has been made, and what additional actions are necessary to complete stabilization. Note the effectiveness of stabilization in preventing erosion. If stabilization has been initiated but not completed, make a note of the date it is to be completed. If stabilization has been completed, make a note of the date it was completed. If stabilization has not yet been initiated, make a note of the date it is to be initiated, and the date it is to be completed.

Description of Discharges	
Was a stormwater discharge or other discharge occurring from any part of your site at the time of the inspection? <input type="checkbox"/> Yes <input type="checkbox"/> No If "yes", provide the following information for each point of discharge:	
Discharge Location [Add an additional sheet if necessary]	Observations
1.	Describe the discharge:
	At points of discharge and the channels and banks of surface waters in the immediate vicinity, are there any visible signs of erosion and/or sediment accumulation that can be attributed to your discharge? <input type="checkbox"/> Yes <input type="checkbox"/> No
	If yes, describe what you see, specify the location(s) where these conditions were found, and indicate whether modification, maintenance, or corrective action is needed to resolve the issue:
2.	Describe the discharge:
	At points of discharge and the channels and banks of surface waters in the immediate vicinity, are there any visible signs of erosion and/or sediment accumulation that can be attributed to your discharge? <input type="checkbox"/> Yes <input type="checkbox"/> No
	If yes, describe what you see, specify the location(s) where these conditions were found, and indicate whether modification, maintenance, or corrective action is needed to resolve the issue:
3.	Describe the discharge:
	At points of discharge and the channels and banks of surface waters in the immediate vicinity, are there any visible signs of erosion and/or sediment accumulation that can be attributed to your discharge? <input type="checkbox"/> Yes <input type="checkbox"/> No
	If yes, describe what you see, specify the location(s) where these conditions were found, and indicate whether modification, maintenance, or corrective action is needed to resolve the issue:
4.	Describe the discharge:
	At points of discharge and the channels and banks of surface waters in the immediate vicinity, are there any visible signs of erosion and/or sediment accumulation that can be attributed to your discharge? <input type="checkbox"/> Yes <input type="checkbox"/> No
	If yes, describe what you see, specify the location(s) where these conditions were found, and indicate whether modification, maintenance, or corrective action is needed to resolve the issue:

Summary

The Site is: In Compliance Out of Compliance

with the terms and conditions of the SWPCP and General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities.

Describe remedial actions required to bring the Site back into compliance (Refer to Corrective Action Log Form):

Describe interim measures required to minimize the potential for the discharge of pollutants from the Site:

Notes:

Non-engineered corrective actions (as identified in the Guidelines) shall be implemented on site within 24 hours and incorporated into a revised SWPCP within three (3) calendar days of the date of inspection unless another schedule is specified in the Guidelines.

Engineered corrective actions (as identified in the Guidelines) shall be implemented on site within seven (7) days and incorporated into a revised SWPCP within ten (10) days of the date of inspection unless another schedule is specified in the Guidelines or is approved by DEEP.

Section B – Corrective Action Progress			
(Complete this section no later than 7 calendar days after discovering the condition that triggered corrective action)			
Stormwater Control Modifications to be Implemented to Correct the Problem			
List of Stormwater Control Modification(s) Needed to Correct Problem (Add an additional sheet if necessary)	Date of Completion	SWPCP Update Necessary?	Notes
1.		<input type="checkbox"/> Yes <input type="checkbox"/> No If yes, provide date SWPCP modified:	
2.		<input type="checkbox"/> Yes <input type="checkbox"/> No If yes, provide date SWPCP modified:	
3.		<input type="checkbox"/> Yes <input type="checkbox"/> No If yes, provide date SWPCP modified:	
4.		<input type="checkbox"/> Yes <input type="checkbox"/> No If yes, provide date SWPCP modified:	
5.		<input type="checkbox"/> Yes <input type="checkbox"/> No If yes, provide date SWPCP modified:	
6.		<input type="checkbox"/> Yes <input type="checkbox"/> No If yes, provide date SWPCP modified:	
7.			

Stormwater Construction Site Inspection Report

CERTIFICATION STATEMENT

“I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that a false statement made in this document or its attachments may be punishable as a criminal offense, in accordance with Section 22a-6 of the General Statutes, pursuant to Section 53a-157b of the General Statutes, and in accordance with any other applicable statute.”

Inspector:

SIGNATURE: _____

PRINTED NAME: _____

TITLE: _____

AFFILIATION: _____

ADDRESS: _____

PHONE: _____

DATE: _____

Permittee or his/her authorized representative:

SIGNATURE: _____

PRINTED NAME: _____

TITLE: _____

AFFILIATION: _____

ADDRESS: _____

PHONE: _____

DATE: _____

ATTACHMENT F
Notice of Termination Form



General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities

Notice of Termination Form

Please complete and submit this form in accordance with the general permit (DEP-PED-GP-015) in order to ensure the proper handling of your termination. Print or type unless otherwise noted.

Note: Ensure that for commercial and industrial facilities, registrations under the *General Permit for the Discharge of Stormwater Associated with Industrial Activity* (DEP-PED-GP-014) or the *General Permit for the Discharge of Stormwater from Commercial Activities* (DEP-PED-GP-004) have been filed where applicable. For questions about the applicability of these general permits, please call the Department at 860-424-3018.

Part I: Registrant Information

1. Permit number: GSN			
2. Fill in the name of the registrant(s) as indicated on the registration certificate: Registrant:			
3. Site Address: City/Town: _____ State: _____ Zip Code: _____			
4. Date all storm drainage structures were cleaned of construction sediment: Date of Completion of Construction: Date of Last Inspection (must be at least three months after final stabilization pursuant to Section 6(b)(6)(D) of the general permit):			
5. Check the post-construction activities at the site (check all that apply):			
<input type="checkbox"/> Industrial	<input type="checkbox"/> Residential	<input type="checkbox"/> Commercial	<input type="checkbox"/> Capped Landfill
<input type="checkbox"/> Other (describe): _____			

Part II: Certification

"I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that a false statement made in this document or its attachments may be punishable as a criminal offense, in accordance with Section 22a-6 of the Connecticut General Statutes, pursuant to Section 53a-157b of the Connecticut General Statutes, and in accordance with any other applicable statute."	
_____ Signature of Permittee	_____ Date
_____ Name of Permittee (print or type)	_____ Title (if applicable)

Note: Please submit this Notice of Termination Form to:

STORMWATER PERMIT COORDINATOR
BUREAU OF WATER MANAGEMENT
DEPARTMENT OF ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127



Bureau of Materials Management and Compliance Assurance

Notice of Permit Authorization

December, 23 2020

Bryan Fitzgerald
WATERTOWN SOLAR ONE, LLC
150 Trumbull St
Hartford, CT 06103-2446

Subject: General Permit Registration for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities
Application NO.: 202008217

Bryan Fitzgerald:

The Department of Energy and Environmental Protection, Water Permitting and Enforcement Division of the Bureau of Materials Management and Compliance Assurance, has completed the review of the Watertown Solar One, LLC (located at 669 Platt Road, Watertown) registration for the **General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities, effective 10/1/13 (general permit)**. The project is compliant with the requirements of the general permit and the discharge(s) associated with this project is (are) authorized to commence as of the date of this letter. Permit No. GSN003605 has been assigned to authorize the stormwater discharge(s) from this project.

Questions can be emailed to deep.stormwater@ct.gov.