



October 10, 2022

Attorney Melanie Bachman
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

RE: Petition #1469 -- LSE Indus LLC Petition for a Declaratory Ruling that No Certificate of Environmental Compatibility and Public Need is Required for the Construction, Operation and Maintenance of Solar Photovoltaic Facility in North Canaan, Connecticut

Dear Attorney Bachman:

In accordance with the Council's decision dated January 28, 2022 (the "Approval"), petitioner LSE Indus LLC ("Lodestar") submits the following in accordance with the Council's Approval, condition #5. Please let me know if you have any questions.

Lodestar is re-submitting the revised plans for Council staff approval of minor changes in site layout, attached hereto as Exhibit 1, previously submitted on August 2, 2022. Please note that the changes include revisions to the detention basins and the addition of drip edge protection as requested by the Department of Energy and Environmental Protection's ("DEEP") stormwater division as part of Lodestar's general stormwater permit process. As a result of the stormwater design revisions, the overall development area has incurred a reduction of .29 acres.

In addition, Lodestar is re-submitting the specifications for ZNShine, Item/Model Number: ZXM7-SHLDD144 Module Size: 540 as Exhibit 2, the modules Lodestar proposes to use for the Project. Also included in Exhibit 2 is a copy of the passing TCLP test results from the manufacturer, verifying that the panels comply with TCLP requirements. Based on the proposed panel model change, the total panel count for the Project will be reduced from the originally-proposed 5,902 panels to 4,966 panels.

Given these minor changes that result in less overall impact in the Site Plans and the passing TCLP testing of the proposed panels, Lodestar respectfully requests Council approval of these changes.

Please contact me directly if you have any questions.

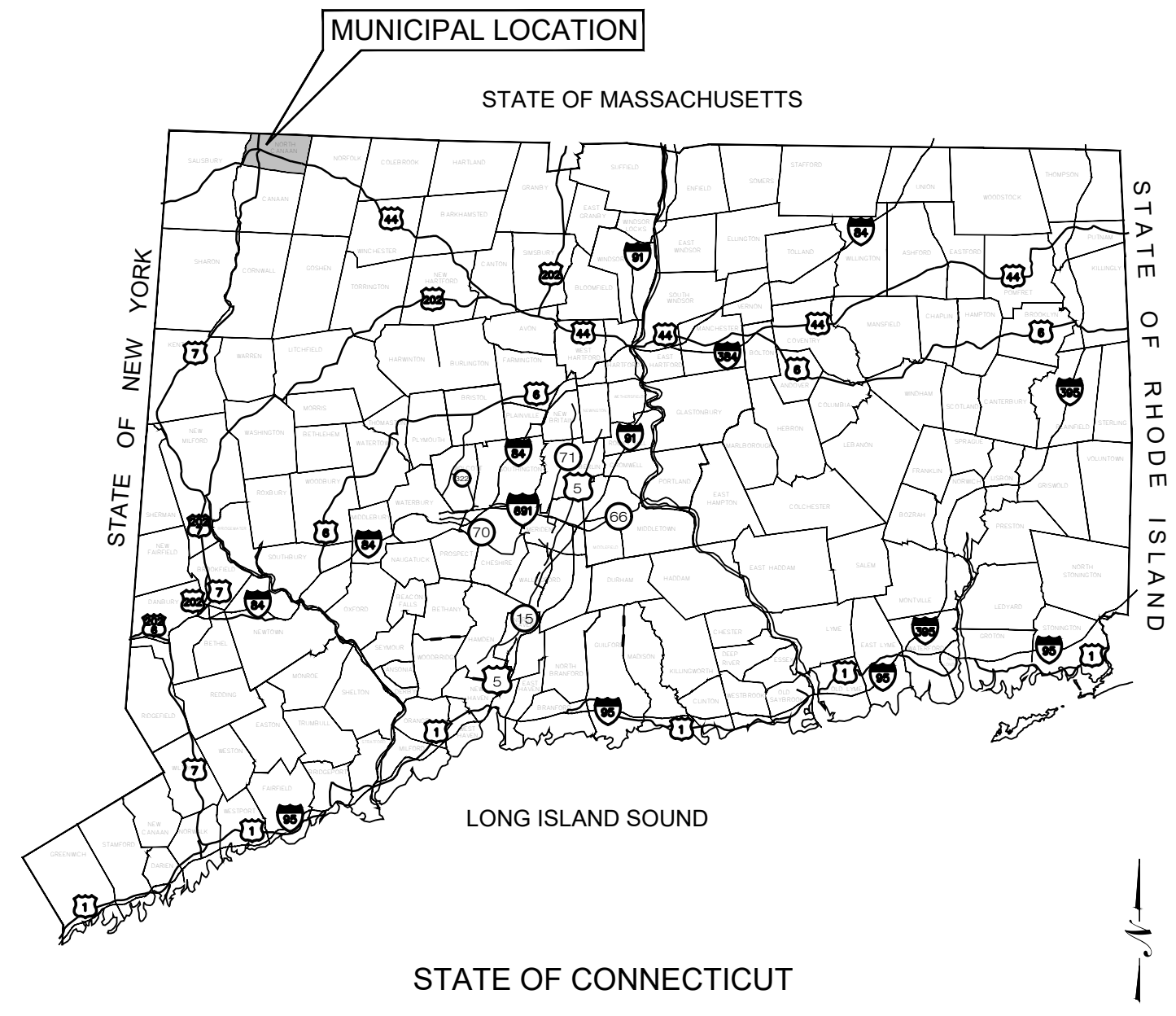
Sincerely,

Carrie Larson Ortolano

Carrie Larson Ortolano

Enclosures

EXHIBIT 1
Revised Site Plans



LSE INDUS LLC

"BUNCE 1 SOLAR FACILITY"

81 EAST MAIN ST NORTH CANAAN, CT

LSE INDUS LLC
40 TOWER LANE, SUITE 201
AVON, CT 06001



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

PERMIT SET

NO	DATE	REVISION
0	10/19/21	FOR REVIEW: KAM
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5		
6		

LIST OF DRAWINGS

- T-1 TITLE SHEET & INDEX
- 1 OF 1 PROPERTY & TOPOGRAPHIC SURVEY PROVIDED BY MARTIN SURVEYING ASSOCIATES, LLC
- GN-1 GENERAL NOTES
- OP-1 OVERALL LOCUS MAP
- EC-1 SEDIMENTATION & EROSION CONTROL NOTES
- EC-2 SEDIMENTATION & EROSION CONTROL DETAILS
- EC-3 PHASE 1 SEDIMENTATION & EROSION CONTROL PLAN
- EC-4 PHASE 1 SEDIMENTATION & EROSION CONTROL PLAN
- EC-5 PHASE 2 SEDIMENTATION & EROSION CONTROL PLAN
- EC-6 PHASE 2 SEDIMENTATION & EROSION CONTROL PLAN
- GD-1 FINAL GRADING & DRAINAGE PLAN
- GD-2 FINAL GRADING & DRAINAGE PLAN
- SP-1 SITE & UTILITY PLAN
- SP-2 SITE & UTILITY PLAN
- DN-1 SITE DETAILS
- DN-2 SITE DETAILS

SITE INFORMATION

SITE NAME: "BUNCE 1 SOLAR FACILITY"
 LOCATION: 81 EAST MAIN ST
NORTH CANAAN, CT
 SITE TYPE/DESCRIPTION: ADD (4) GROUND MOUNTED SOLAR PANEL ARRAYS W/ ASSOCIATED EQUIPMENT, GRAVEL ACCESS ROAD, AND STORMWATER MANAGEMENT.
 PROPERTY OWNER: JOHN BUNCE
81 EAST MAIN ST
NORTH CANAAN, CT
 APPLICANT: LSE INDUS LLC
40 TOWER LANE, SUITE 201
AVON, CT 06001
 ENGINEER CONTACT: KEVIN A. MCCAFFERY, P.E.
(860) 663-1697 x228
 LATITUDE: 42°1'18.16" N
LONGITUDE: 73°18'46.48" W
 MBLU: 16-50-0
ZONE: R-25
 TOTAL SITE ACREAGE: 67.41± AC.
TOTAL DISTURBED AREA: 11.33± AC.
 APPROX. VOLUME OF CUT: 3,419± CY
APPROX. VOLUME OF FILL: 2,845± CY
APPROX. NET VOLUME: 574± CY OF CUT

USGS TOPOGRAPHIC MAP



SCALE: 1" = 2000'± SOURCE: NRCS LITCHFIELD CT DIGITAL RASTER GRAPHIC COUNTY MOSAIC, 2001

DESIGN PROFESSIONAL OF RECORD

PROF: KEVIN A. MCCAFFERY, P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION, P.C.
ADD: 567 VAUXHALL STREET
EXTENSION - SUITE 311
WATERFORD, CT 06385

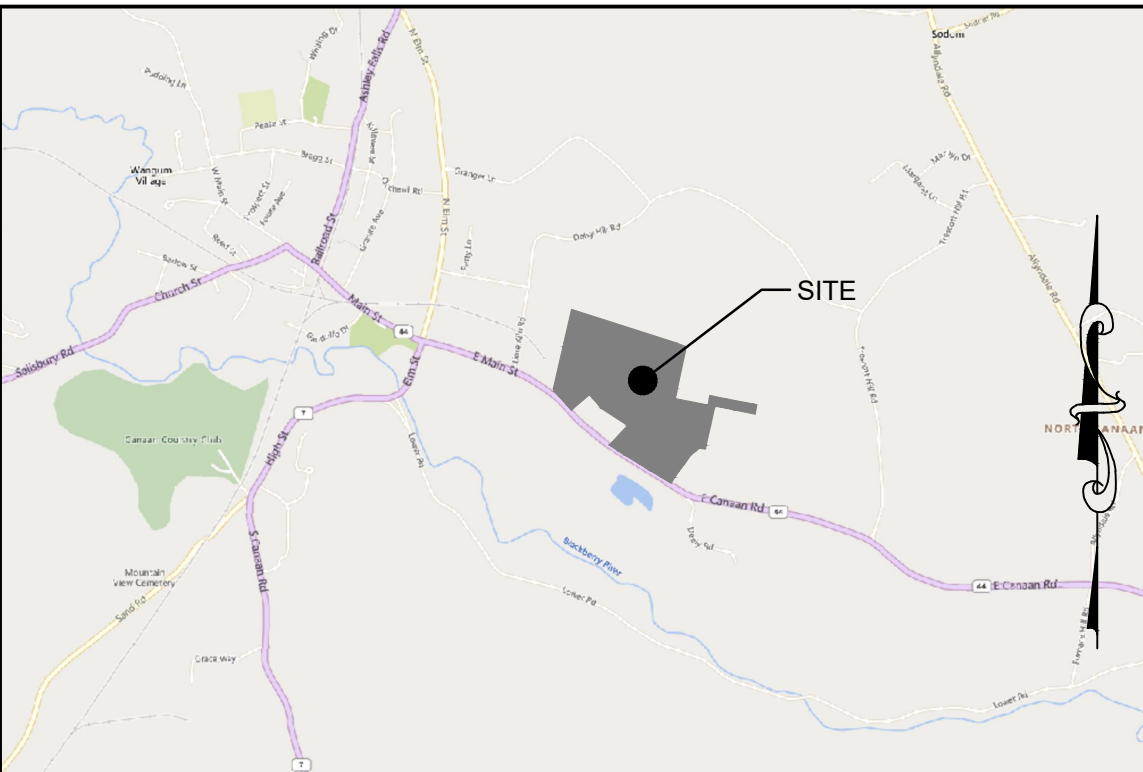
OWNER: JOHN BUNCE
ADDRESS: 81 EAST MAIN ST
NORTH CANAAN, CT

BUNCE 1 SOLAR FACILITY

SITE: 81 EAST MAIN ST
ADDRESS: NORTH CANAAN, CT
APT FILING NUMBER: CT606140
DRAWN BY: JT
DATE: 10/19/21 CHECKED BY: KAM

SHEET TITLE:
TITLE SHEET & INDEX

SHEET NUMBER:
T-1



SITE LOCATION MAP (NOT TO SCALE)

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 AN PROPERTY/BOUNDARY & 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 OPINION/DETERMINATION DEPICTED HEREON IS FIRST SURVEY AND CONFORMS TO A CLASS A-2 ACCURACY.
- THE FEATURES DEPICTED AND NOTED HEREON ARE THE RESULT OF A FIELD SURVEY CONDUCTED IN FEBRUARY AND MARCH, 2021.
- THE GROUND RELIEF CONTOURS DEPICTED HEREON ARE BASED UPON THE LIDAR FLIGHT OF 2016 DATA SET CONDUCTED BY THE STATE OF CONNECTICUT AVAILABLE AT CT.ECO.UCONN.EDU. LIDAR ELEVATION WERE FIELD VERIFIED AT VARIOUS LOCATIONS THROUGHOUT THE SUBJECT PARCEL. CERTAIN AREAS WERE REVISED WITH A CONVENTIONAL FIELD SURVEY CONDUCTED ON SEPTEMBER 3, 2021.
- THE WETLANDS DEPICTED HEREON WERE FIELD LOCATED WHILE CONDUCTING THE FIELD SURVEY AND HAVE BEEN DELINEATED BY ALL-POINTS TECHNOLOGY CORPORATION.

MAP NOTES (CONTINUED):

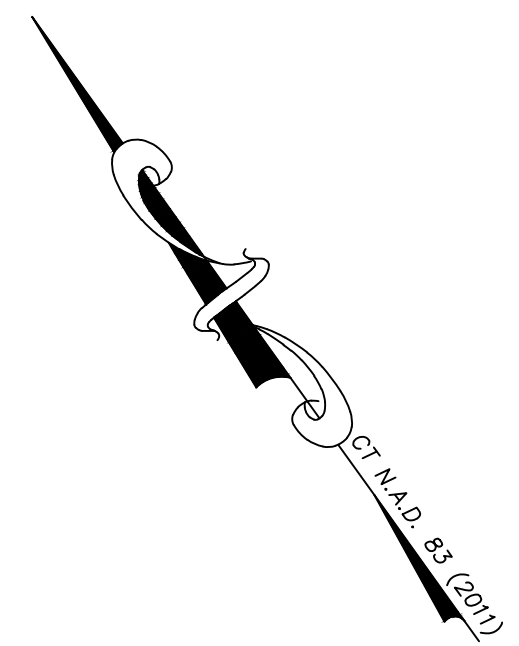
- THE NORTH ARROW AND BEARINGS ARE BASED UPON THE CONNECTICUT STATE COORDINATE SYSTEM N.A.D. 1983 (2011). THE ELEVATIONS ARE BASED UPON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) USING GEOID 12B. COORDINATES AND ELEVATIONS WERE DETERMINED FROM RTK GPS OBSERVATIONS MADE ON FEBRUARY 15, 2021, USING THE CT DOT RTK NETWORK KNOWN AS ACORN (MASH BASE), HAVING THE FOLLOWING VALUES:
 LATITUDE = N 42° 08' 25.75395"
 LONGITUDE = W 73° 21' 51.06342"
 ELLIPSOID HEIGHT = 175.592
- UNDERGROUND UTILITIES, STRUCTURES AND FACILITY LOCATIONS DEPICTED AND NOTED HEREON ARE BASED UPON OBSERVABLE SURFACE 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.

MAP NOTES (CONTINUED):

- PARCEL IS SUBJECT TO RIGHT OF WAY AND EASEMENT TO THE AMERICAN TELEPHONE AND TELEGRAPH COMPANY AS DESCRIBED IN VOLUME 34 AT PAGE 415 AND TO A SECOND EASEMENT GRANTED TO SAID AMERICAN TELEPHONE AND TELEGRAPH COMPANY DATED MARCH 20, 1973 AND RECORDED MAY 24, 24, 1973 IN THE NORTH CANAAN LAND RECORDS. REFERENCE IS MADE TO A RIGHT TO CONSTRUCT AND MAINTAIN A TURNAROUND HAVING A 25 FEET RADIUS AS CENTERED ON A MANHOLE TO BE CONSTRUCTED. THIS SURVEY WAS CONDUCTED DURING THE WINTER MONTHS WITH SIGNIFICANT SNOW COVER. NO MANHOLE WAS FOUND AS OF THE FIELD SURVEY. SAID 25 FEET RADIUS IS NOT DEPICTED HEREON.

MAP REFERENCES:

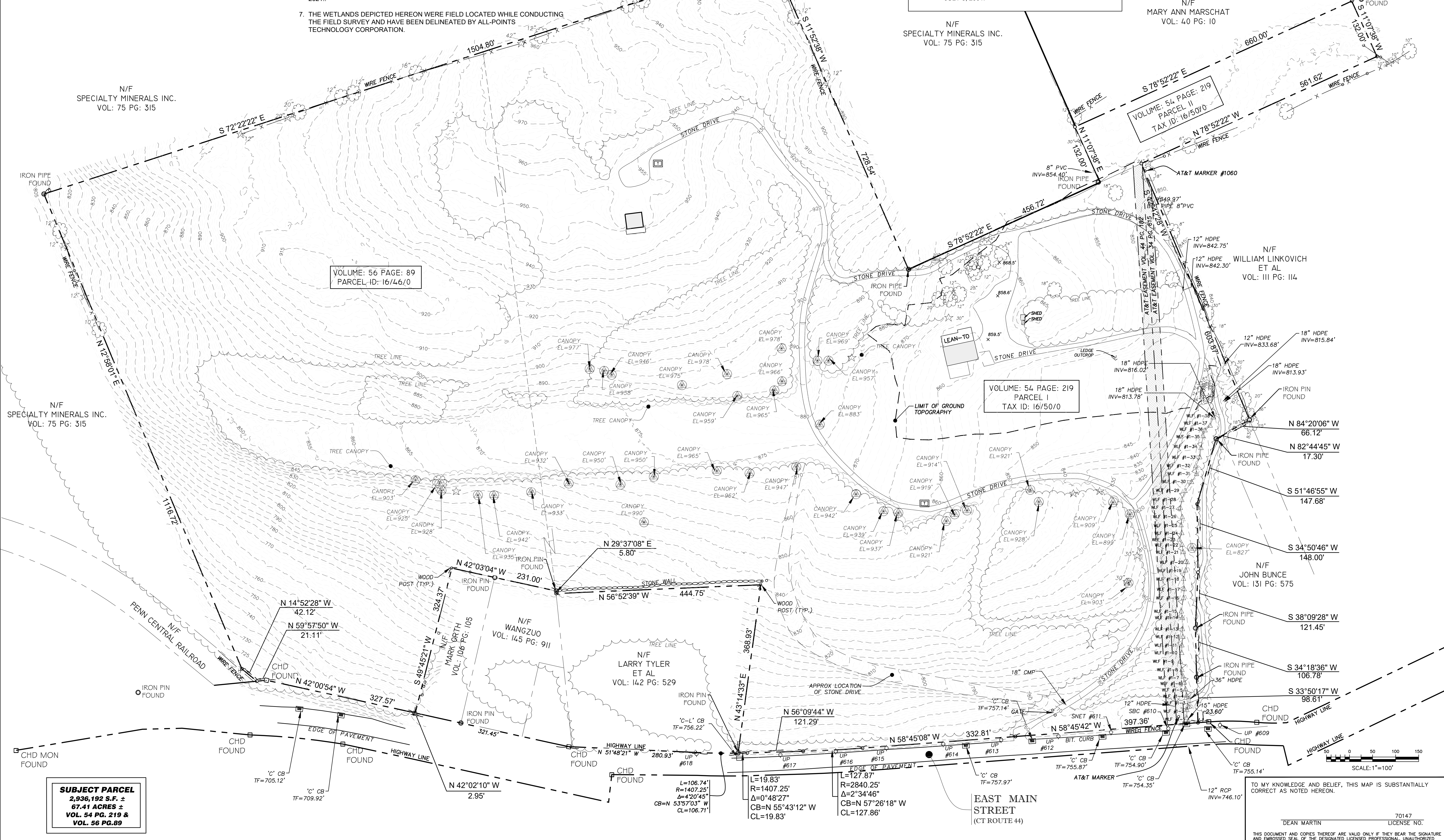
- "RIGHT OF WAY MAP TOWN OF NORTH CANAAN NORFOLK-CANAAN ROAD FROM THE R.R. UNDERPASS EASTERLY ABOUT 4,400 FEET ROUTE U.S. 44" (SHEETS 1 THROUGH 3). SCALE: 1"=40'; DATED: FEBRUARY 20, 1948; BY: CONNECTICUT STATE HIGHWAY DEPARTMENT.
- "MAP OF LAND OF ELMER G. MORCK & RALPH MORCK VOL. 36 PG. 359 U.S. ROUTE 44 NORTH CANAAN, CONNECTICUT." SCALE: 1"=30'; BY: DR. GEORGE D. ADOTTE, DATED: NOVEMBER 26, 1984.
- "MAP PREPARED FOR ELSIE ROSE GHI #107 EAST CANAAN ROAD - ROUTE 44 NORTH CANAAN, CONNECTICUT." SCALE: 1"=50'; BY: MATHIAS M. KIEFER, DATED: JULY 5, 2001.



LEGEND:

○ IRON PIN (FOUND)	▲ SIGN
● Rebar/Drill Hole (To Be Set)	○ POST
□ MONUMENT (FOUND)	☆ LIGHT POLE
⊙ MANHOLE	⚡ UTILITY POLE
⊕ DRAINAGE MANHOLE	⚓ WATER GATE
⊕ SANITARY MANHOLE	⚙ WATER METER
⊕ ELEC. MANHOLE	⚙ GAS VALVE
⊕ TELE. MANHOLE	⚙ GAS METER
⊕ "C" CATCH BASIN	⚙ TRANSFORMER
□ "C-L" CATCH BASIN	⚙ ELEC. METER
⊕ DECIDUOUS TREES	⚙ MAIL BOX
☆ EVERGREEN TREES	□ HAND HOLE
⊕ SHRUB/BUSH	□ BUTTON BOX
⊕ FLAG POLE	□ A.C. UNIT
⊕ TRAFFIC CONTROL BOX	⚡ TRAFFIC LIGHT POLE

---	BOUNDARY LINE
---	GUARD RAIL
---	UNDERGROUND PIPING (San., Strm.)
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



SUBJECT PARCEL
 2,936.192 S.F. ±
 67.41 ACRES ±
 VOL. 54 PG. 219 &
 VOL. 56 PG. 89

TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

DEAN MARTIN
 70147
 LICENSE NO.



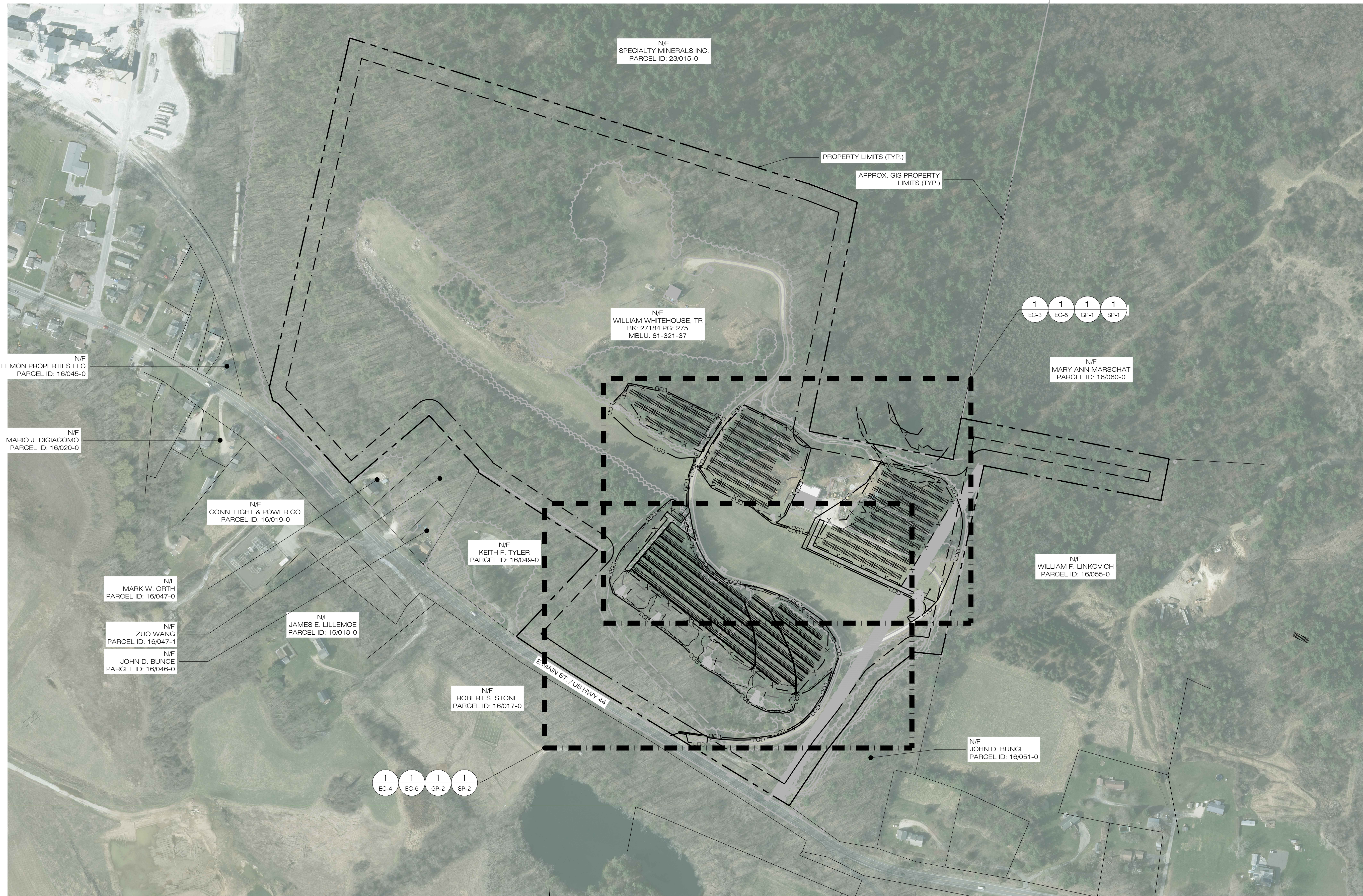
REVISIONS:
 9/7/21 REVISED CONTOURS

PROPERTY & TOPOGRAPHIC SURVEY
LAND OF JOHN BUNCE
81 EAST MAIN STREET
NORTH CANAAN, CONNECTICUT

MSA PROJECT NO:
 SCALE: 1"=100'
 DATE: 4/6/2021

DRAWN BY: G.S.D.
 CHECKED BY: D.G.M.

SHEET:
 1 OF 1



LSE INDUS LLC
 40 TOWER LANE, SUITE 201
 AVON, CT 06001

ALL-POINTS
 TECHNOLOGY CORPORATION
 567 VAUXHALL STREET EXTENSION - SUITE 311
 WATERFORD, CT 06385 PHONE: (860)-663-1697
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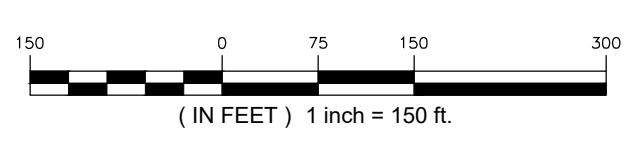
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 ADD: 567 VAUXHALL STREET EXTENSION - SUITE 311 WATERFORD, CT 06385
 OWNER: JOHN BUNCE
 ADDRESS: 81 EAST MAIN ST NORTH CANAAN, CT

BUNCE 1 SOLAR FACILITY
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SHEET TITLE:
OVERALL LOCUS MAP

SHEET NUMBER:
OP-1

OVERALL LOCUS MAP
 SCALE: 1" = 150'-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 NORTH CANAAN, 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 EXITING.
- 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 HYDROSEEDING 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.
- THE SITE WAS DESIGNED TO COMPLY WITH FEDERAL, STATE, AND, IF APPLICABLE, LOCAL STANDARDS, PLUS CURRENT ACCEPTED PRACTICES FOR THE INDUSTRY. ADDITIONAL CONTROLS AND ACTIVITIES MAY BE DEEMED NECESSARY BY THE SWPCP MONITOR DURING CONSTRUCTION AS A RESULT OF UNFORESEEN CONDITIONS AND/OR MEANS AND METHODS. SUCH ITEMS MAY INCLUDE, BUT ARE NOT LIMITED TO: ADDITIONAL FOREBAYS, BASINS, OR UPSTREAM STRUCTURAL CONTROLS, THE USE OF FLOCCULANTS OF FLOCK LOGS TO DECREASE SEDIMENT, DISCHARGE MANAGEMENT SUCH AS ADDITIONAL ARMORING AND FILTERING MEASURES (I.E. STRAW BALES, WATTLES, ETC.), AND HYDROSEEDING WITH RAPIDLY GERMINATING SEED.
- SEEDING MIXTURES SHALL BE ERNST SOLAR FARM SEED MIX (ERNMX-186) DURING CONSTRUCTION AND ERNST FUZZ & BUZZ MIX (ERNMX-147) FOR FINAL STABILIZATION (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 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 11.33± ACRES OF EXISTING LOT.

THE PROPOSED PROJECT INVOLVES THE FOLLOWING CONSTRUCTION:

 - CLEARING, GRUBBING, AND GRADING OF EXISTING LOT.
 - CONSTRUCTION OF 4,966 GROUND MOUNTED SOLAR PANELS AND ASSOCIATED EQUIPMENT.
 - THE STABILIZATION OF DISTURBED AREAS WITH PERMANENT VEGETATIVE TREATMENTS.
- FOR THIS PROJECT, THERE ARE APPROXIMATELY 11.33± 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 20, JUN 9, 2020), CONTAINS TYPE 61B, 73C, 90B, AND 90D (HYDROLOGIC SOIL GROUP B), AND 49B (HYDROLOGIC SOIL GROUP C). A GEOTECHNICAL ENGINEERING REPORT HAS NOT BEEN COMPLETED.
- 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 NORTH CANAAN 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 OCTOBER 2021, REVISED FEBRUARY 2022.
 - SWPCP DATED OCTOBER 2021, REVISED FEBRUARY 2022.

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 OWNERS 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 811, 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 PERMANENT GRASSED STORMWATER MANAGEMENT BASINS B-1B, B-1C, B-1D, B-1E, B-2, B-3, AND B-4. UPON COMPLETION OF THE INSTALLATION AND STABILIZATION OF THE BASINS, PHASE 2 WORK UP GRADIENT CAN PROCEED.

PHASE 2

- UPON COMPLETION OF THE INSTALLATION OF EACH OF THE PERMANENT GRASSED STORMWATER MANAGEMENT BASINS AND REQUIRED PERIMETER CONTROLS, THE AREAS UPSTREAM 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.

FINAL GRADING & DRAINAGE PLAN (PHASE 3)

- INSTALL CONCRETE EQUIPMENT PADS.
- INSTALL ELECTRICAL CONDUITS.
- INSTALL RACKING POSTS FOR GROUND MOUNTED SOLAR PANELS.
- INSTALL GRAVEL DRIP EDGE PROTECTION.
- INSTALL REMAINDER OF RACKING AND 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. FINAL STABILIZATION SEEDING SHALL BE ERNST FUZZ & BUZZ MIX OR APPROVED EQUAL.
- AFTER THE SITE IS DEEMED TO HAVE ACHIEVED FINAL STABILIZATION AND WITH THE APPROVAL OF THE PERMITTEE, REMOVE PERIMETER EROSION AND SEDIMENTATION CONTROLS AND CLEAN PERMANENT STORMWATER GRASS LINED BASINS. ANY AREAS DISTURBED DURING CLEAN UP SHALL BE PERMANENTLY SEEDED.
- THE SITE SHALL BE MONITORED ONCE A MONTH FOR TWO FULL GROWING SEASONS (APRIL - OCTOBER).
- ISSUE NOTICE OF TERMINATION UPON COMPLETION OF MONITORING REQUIRED PER CT DEEP CONSTRUCTION GP APPENDIX I.

LSE INDUS LLC
40 TOWER LANE, SUITE 201
AVON, CT 06001



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

PERMIT SET

NO	DATE	REVISION
0	10/19/21	FOR REVIEW: KAM
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5		
6		

DESIGN PROFESSIONAL OF RECORD

PROF. KEVIN A. MCCAFFERY, P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION, P.C.
ADD: 567 VAUXHALL STREET EXTENSION - SUITE 311 WATERFORD, CT 06385

OWNER: JOHN BUNCE

ADDRESS: 81 EAST MAIN ST NORTH CANAAN, CT

BUNCE 1 SOLAR FACILITY

SITE ADDRESS: 81 EAST MAIN ST NORTH CANAAN, CT

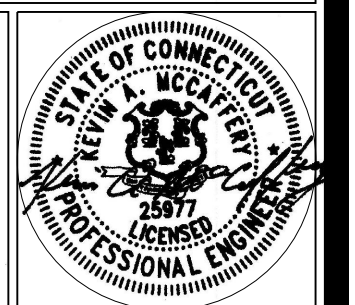
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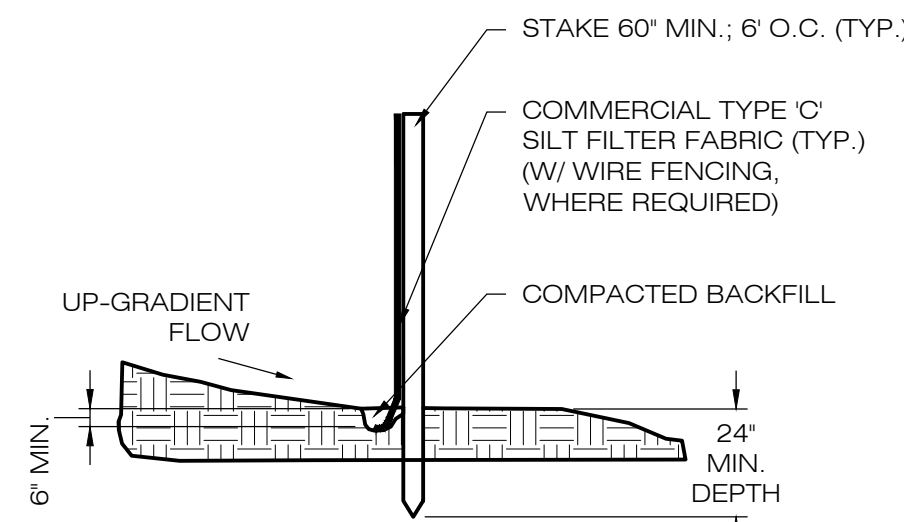
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SHEET TITLE: SEDIMENTATION & EROSION CONTROL NOTES

SHEET NUMBER:

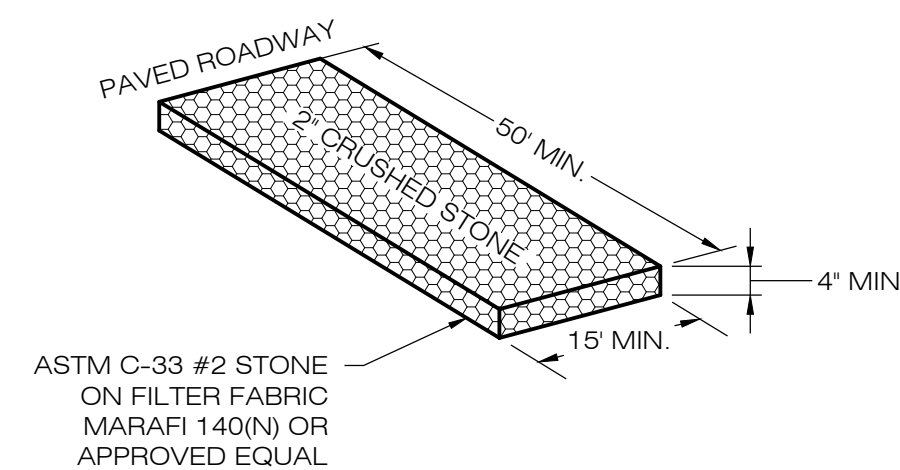
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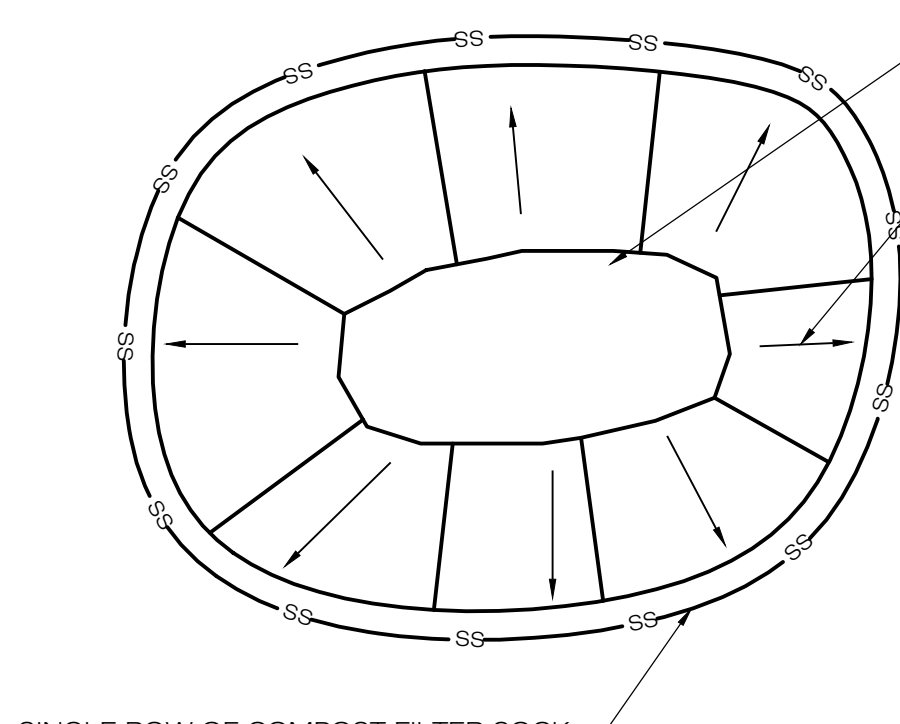
NOTE:
SILT FENCE SHALL BE LAPPED ONLY
WHEN NECESSARY PER THE
MANUFACTURER RECOMMENDATIONS.

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



ASTM C-33 #2 STONE
ON FILTER FABRIC
MARAFI 140(N) OR
APPROVED EQUAL

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

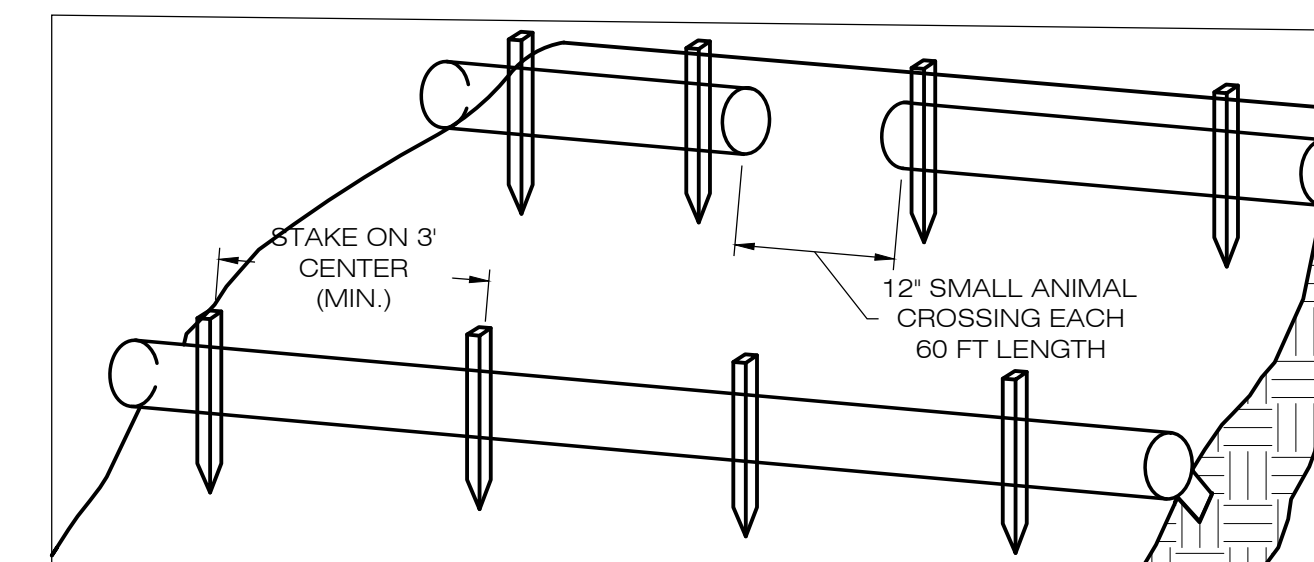


SOIL/AGGREGATE STOCKPILE OF EXISTING
SITE MATERIAL TO BE REUSED AND/OR NEW
MATERIAL TO BE INSTALLED IN THE WORK

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.

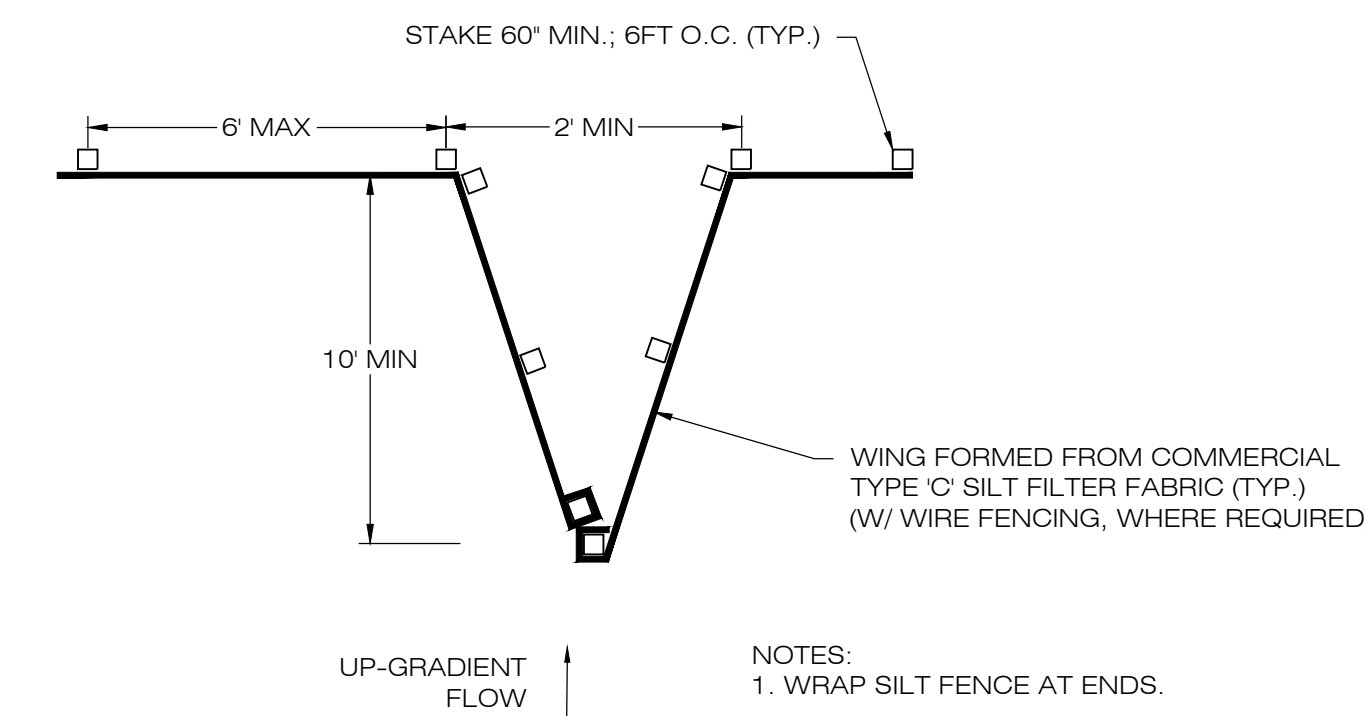
3 MATERIALS STOCKPILE DETAIL
SCALE : N.T.S.



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 UP SLOPE 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 UPHILL 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.

**COMPOST FILTER SOCK
SEDIMENTATION CONTROL BARRIER**

4 SCALE : N.T.S.



- NOTES:
1. WRAP SILT FENCE AT ENDS.
 2. NO JOINING FENCE SECTIONS SHALL BE INSTALLED WITHIN 30 FEET OF WING.

5 SILT FENCE WING DETAIL
SCALE : N.T.S.

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NORTH CANAAN, CT

BUNCE 1 SOLAR FACILITY

SITE: 81 EAST MAIN ST
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APT FILING NUMBER: CT606140

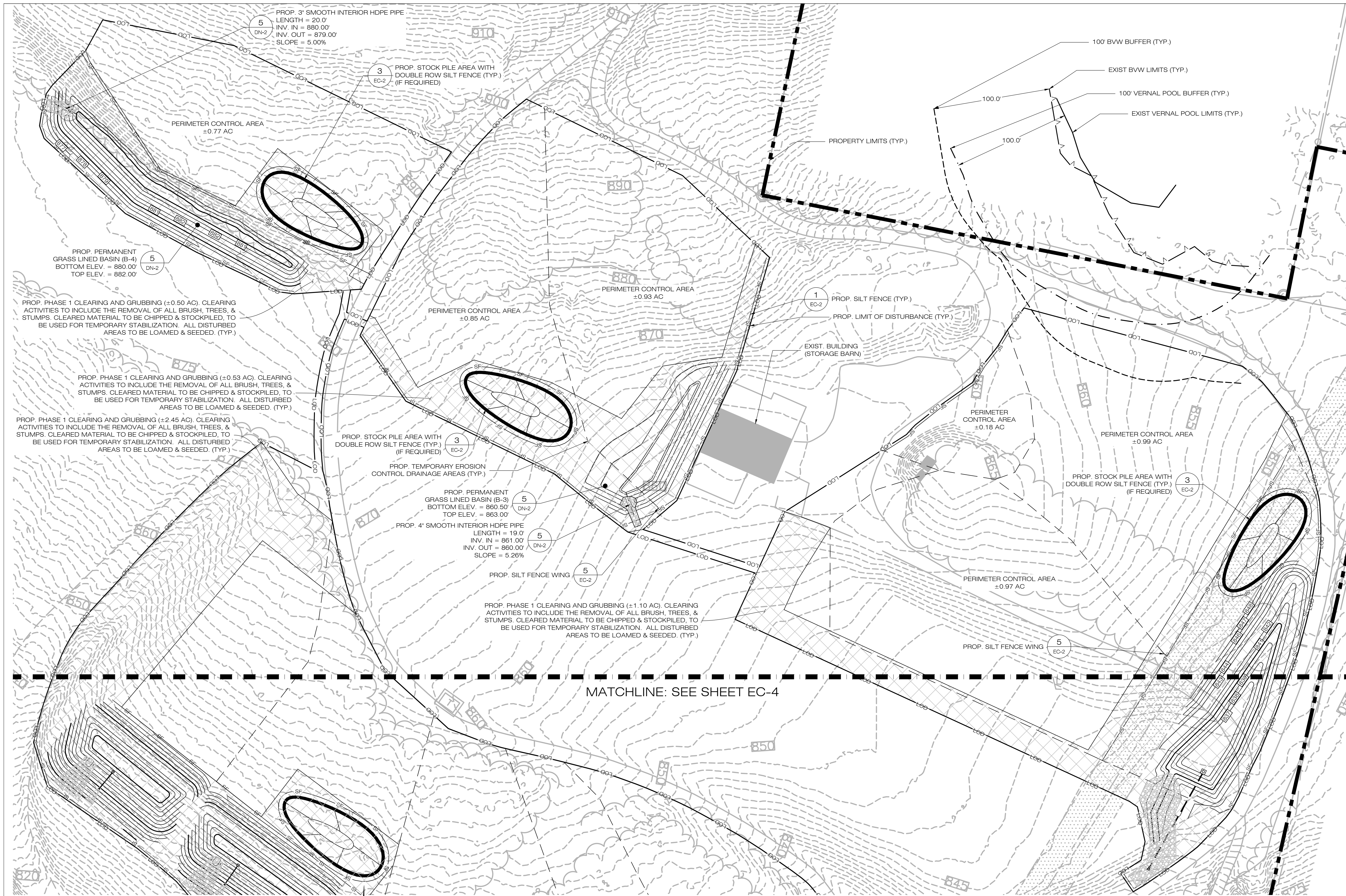
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SHEET TITLE:
**SEDIMENTATION &
EROSION CONTROL
DETAILS**

SHEET NUMBER:

EC-2





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SHEET TITLE:
 PHASE 1
 SEDIMENTATION &
 EROSION CONTROL PLAN

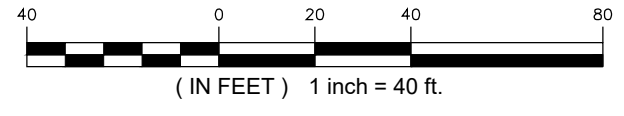
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 EC-3



PHASE 1 CLEARING LEGEND

CLEARING AND GRUBBING	
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1 PHASE 1 - SEDIMENTATION & EROSION CONTROL PLAN
 SCALE: 1" = 40'-0"



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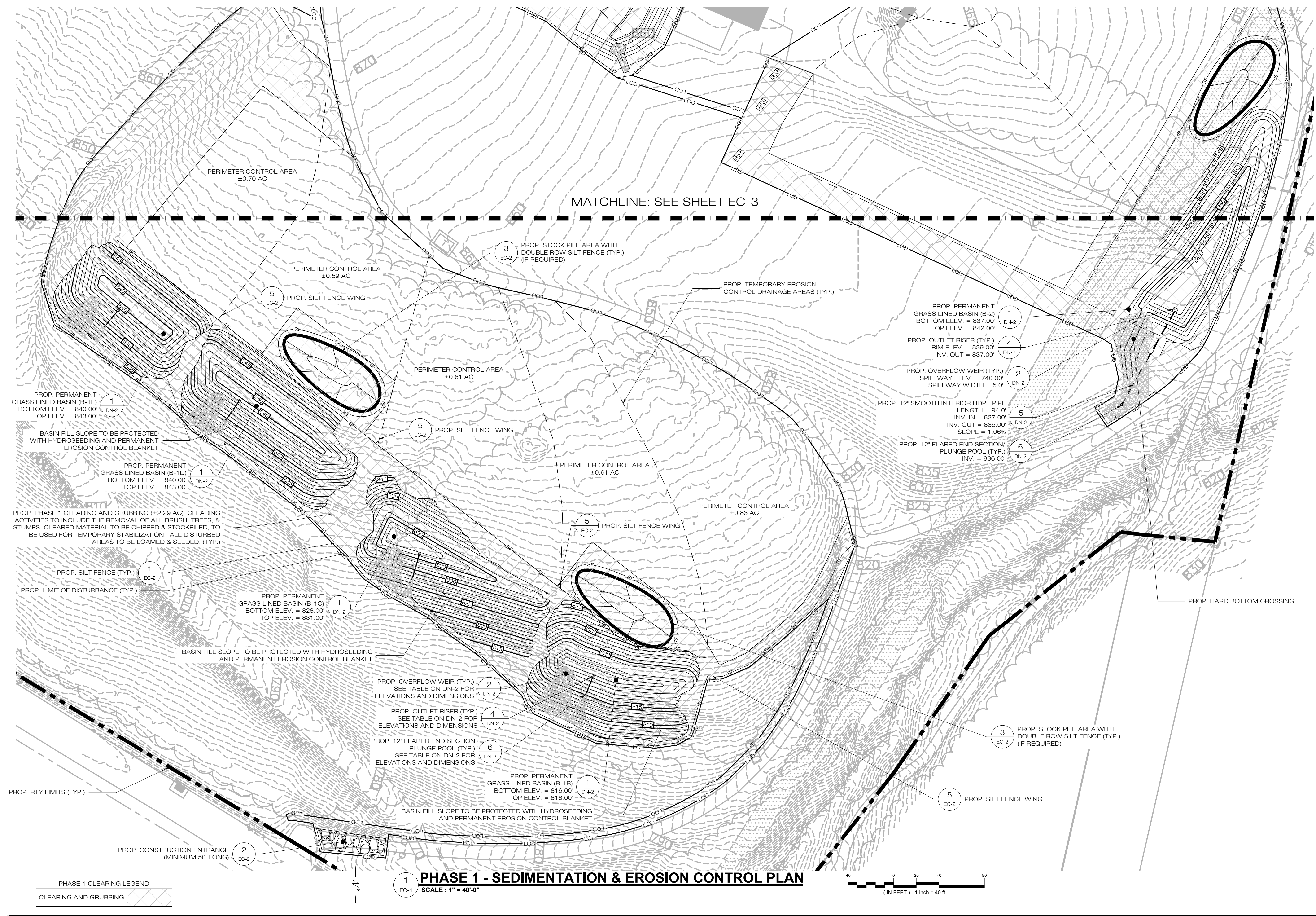
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SHEET TITLE:
 PHASE 1
 SEDIMENTATION &
 EROSION CONTROL PLAN

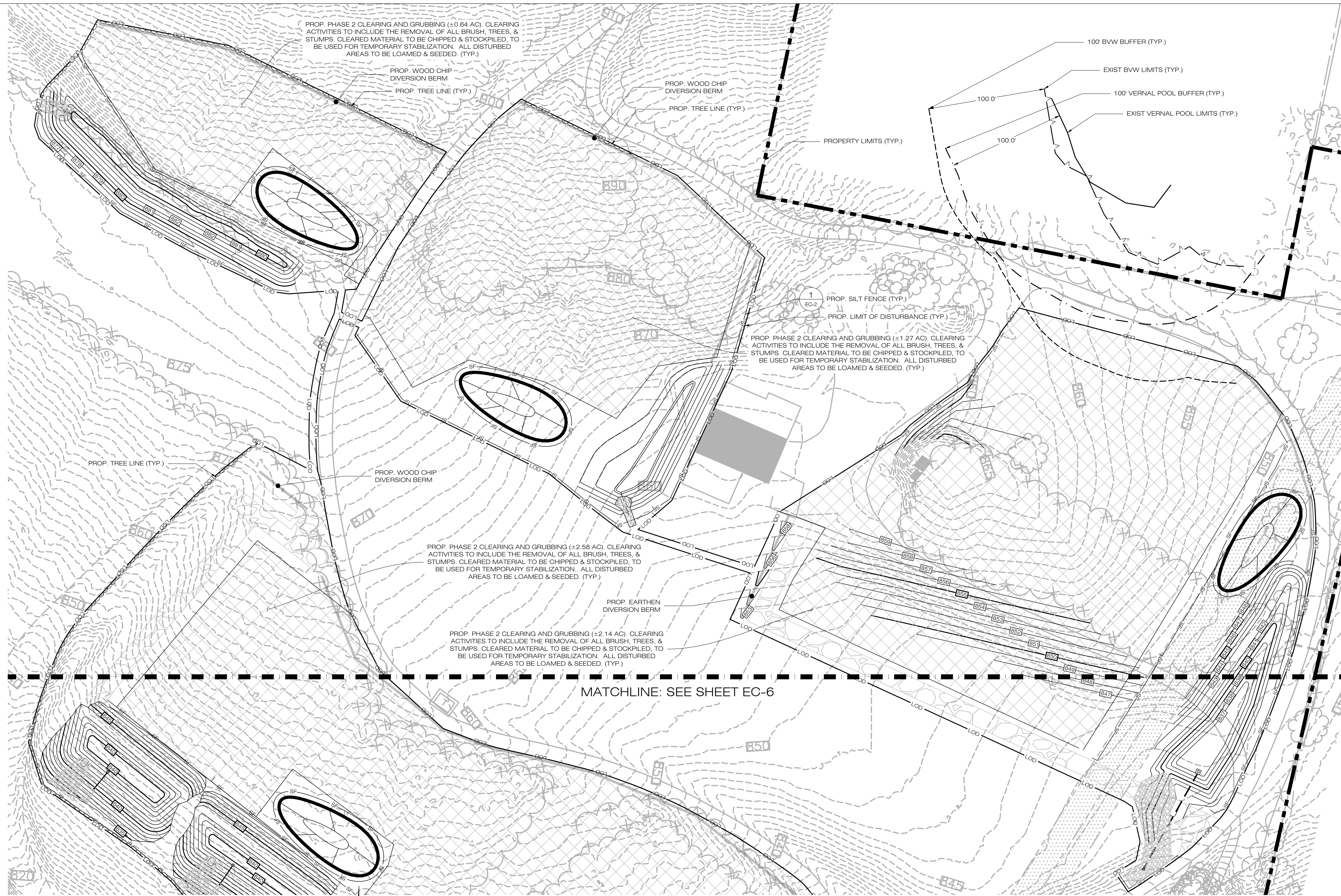
SHEET NUMBER:
 EC-4



PHASE 1 CLEARING LEGEND

CLEARING AND GRUBBING	
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PHASE 1 - SEDIMENTATION & EROSION CONTROL PLAN
 SCALE: 1" = 40'-0"



PROP. PHASE 2 CLEARING AND GRUBBING (±0.64 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.)

PROP. WOOD CHIP DIVERSION BERM
PROP. TREE LINE (TYP.)

PROP. WOOD CHIP DIVERSION BERM
PROP. TREE LINE (TYP.)

PROPERTY LIMITS (TYP.)

100' BVW BUFFER (TYP.)

EXIST BVW LIMITS (TYP.)

100' VERNAL POOL BUFFER (TYP.)

EXIST VERNAL POOL LIMITS (TYP.)

1
EC-2
PROP. SILT FENCE (TYP.)
PROP. LIMIT OF DISTURBANCE (TYP.)

PROP. PHASE 2 CLEARING AND GRUBBING (±1.27 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.)

PROP. TREE LINE (TYP.)

PROP. WOOD CHIP DIVERSION BERM

PROP. PHASE 2 CLEARING AND GRUBBING (±2.58 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.)

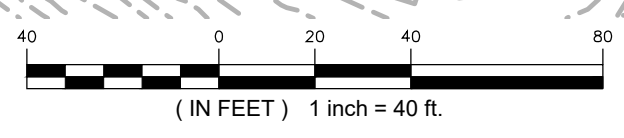
PROP. EARTHEN DIVERSION BERM

PROP. PHASE 2 CLEARING AND GRUBBING (±2.14 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.)

MATCHLINE: SEE SHEET EC-6

PHASE 2 CLEARING LEGEND	
CLEARING AND GRUBBING	[Symbol]

1
EC-5
PHASE 2 - SEDIMENTATION & EROSION CONTROL PLAN
SCALE: 1" = 40'-0"



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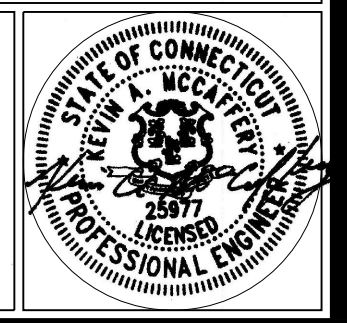
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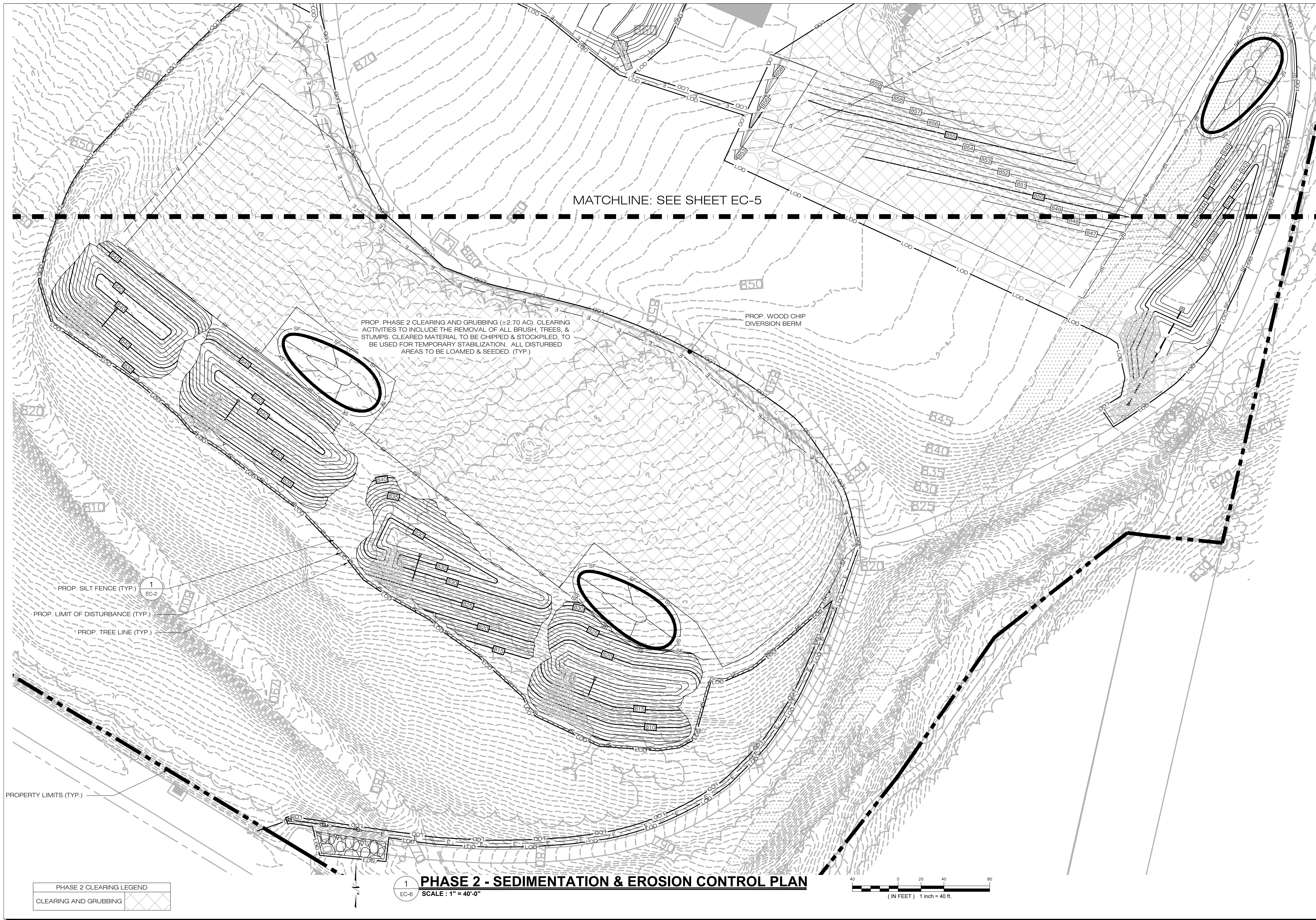
DESIGN PROFESSIONAL OF RECORD
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COMP: ALL-POINTS TECHNOLOGY CORPORATION, P.C.
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BUNCE 1 SOLAR FACILITY
SITE: 81 EAST MAIN ST
ADDRESS: NORTH CANAAN, CT
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SHEET TITLE:
**PHASE 2
SEDIMENTATION &
EROSION CONTROL PLAN**

SHEET NUMBER:
EC-5





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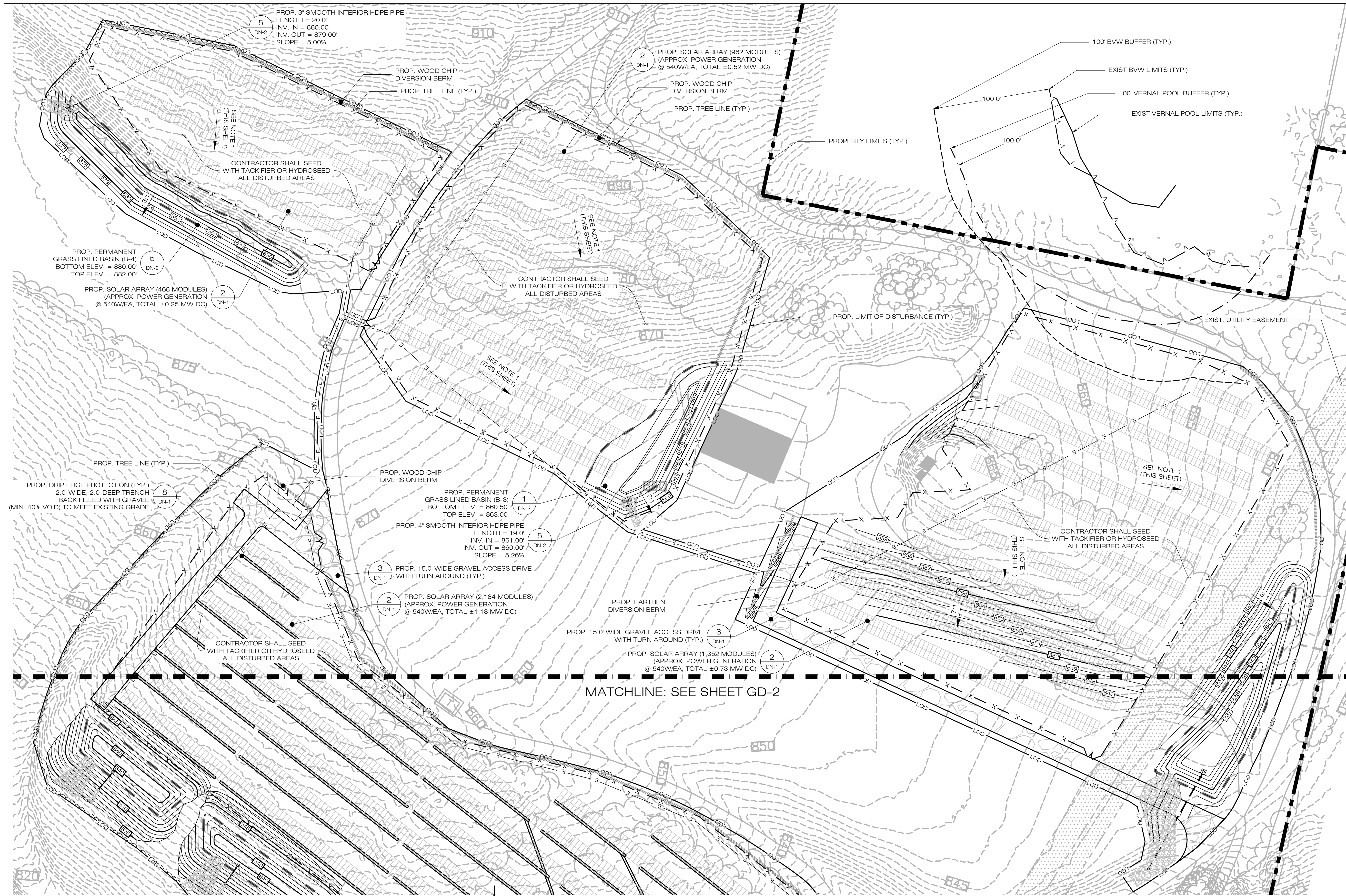
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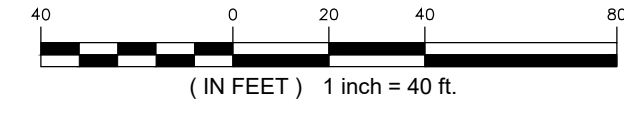
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**PHASE 2
SEDIMENTATION &
EROSION CONTROL PLAN**

SHEET NUMBER:
EC-6



NOTES:
 1. GRADE/SHAPE AREA TO MAINTAIN EXIST. DRAINAGE PATTERNS
 2. CONTRACTOR SHALL CLEAN PERMANENT GRASS LINED BASINS OF SEDIMENT GENERATED DURING CONSTRUCTION AND RESTABILIZE AS NEEDED

1 FINAL GRADING & DRAINAGE PLAN
 GD-1 SCALE: 1" = 40'-0"



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SHEET NUMBER:
GD-1

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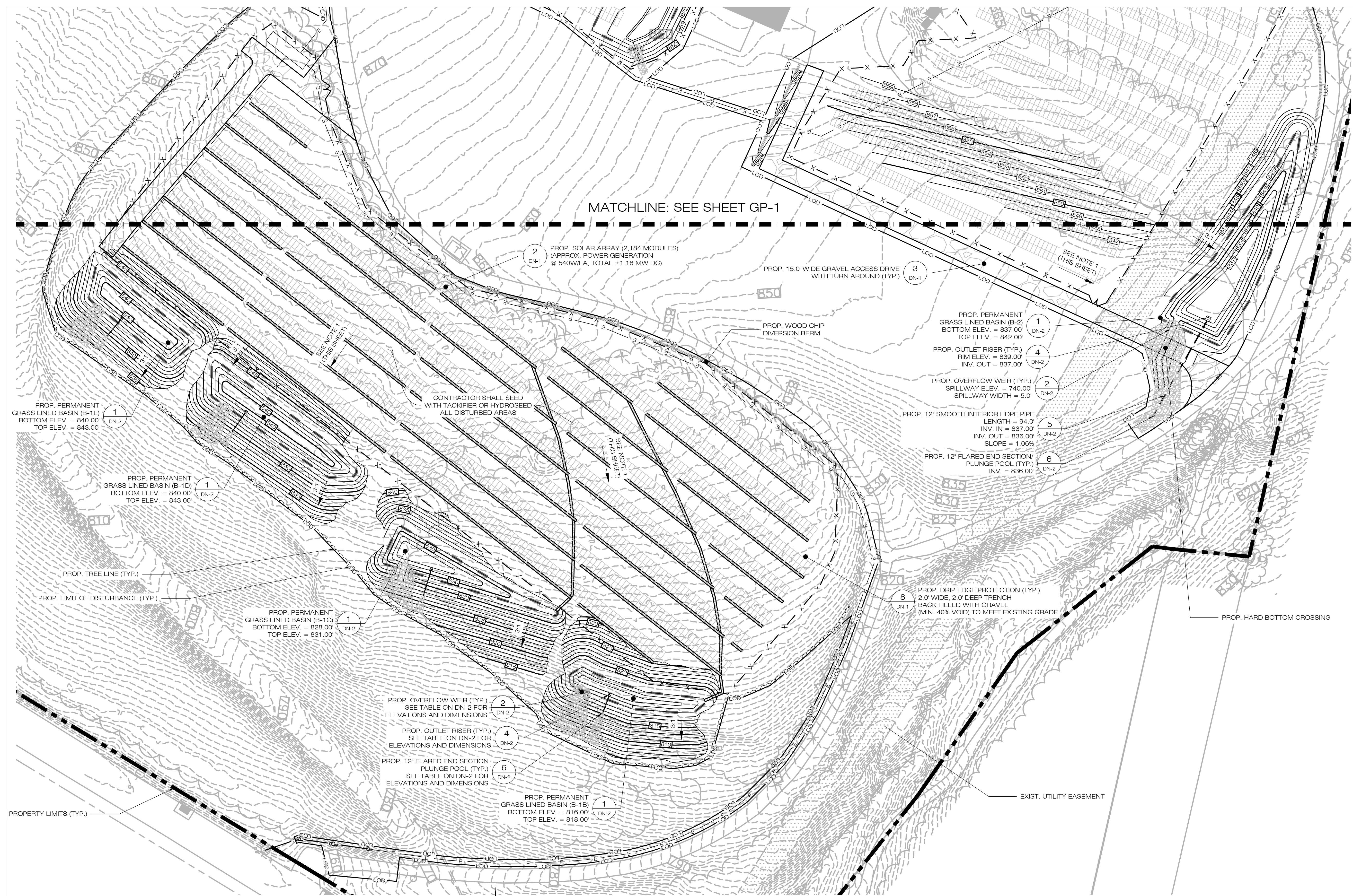
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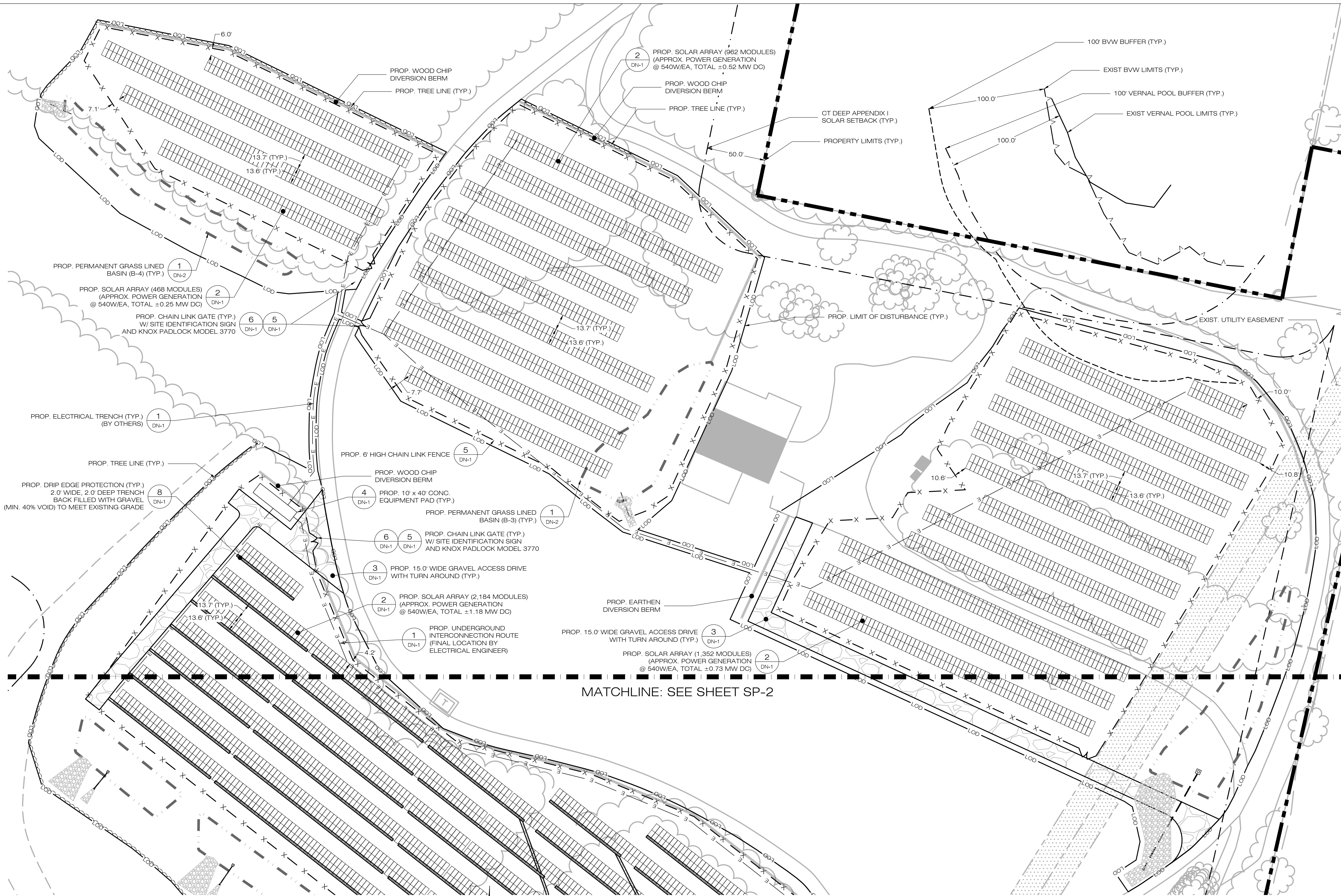
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GD-2

NOTES:
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 2. CONTRACTOR SHALL CLEAN PERMANENT GRASS LINED BASINS OF SEDIMENT GENERATED DURING CONSTRUCTION AND RESTABILIZE AS NEEDED

1 FINAL GRADING & DRAINAGE PLAN
 GD-2 SCALE: 1" = 40'-0"





NOTES:
 1. DISTANCE BETWEEN MODULES AND FENCE LINE VARIES. CONTRACTOR TO REFERENCE RACKING DESIGN FOR FINAL INSTALLATION.

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

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 OWNER: JOHN BUNCE
 ADDRESS: 81 EAST MAIN ST NORTH CANAAN, CT

BUNCE 1 SOLAR FACILITY
 SITE: 81 EAST MAIN ST
 ADDRESS: NORTH CANAAN, CT
 APT FILING NUMBER: CT606140
 DATE: 10/19/21
 DRAWN BY: JT
 CHECKED BY: KAM

SHEET TITLE:
SITE & UTILITY PLAN

SHEET NUMBER:
SP-1

LSE INDUS LLC
 40 TOWER LANE, SUITE 201
 AVON, CT 06001

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

PERMIT SET

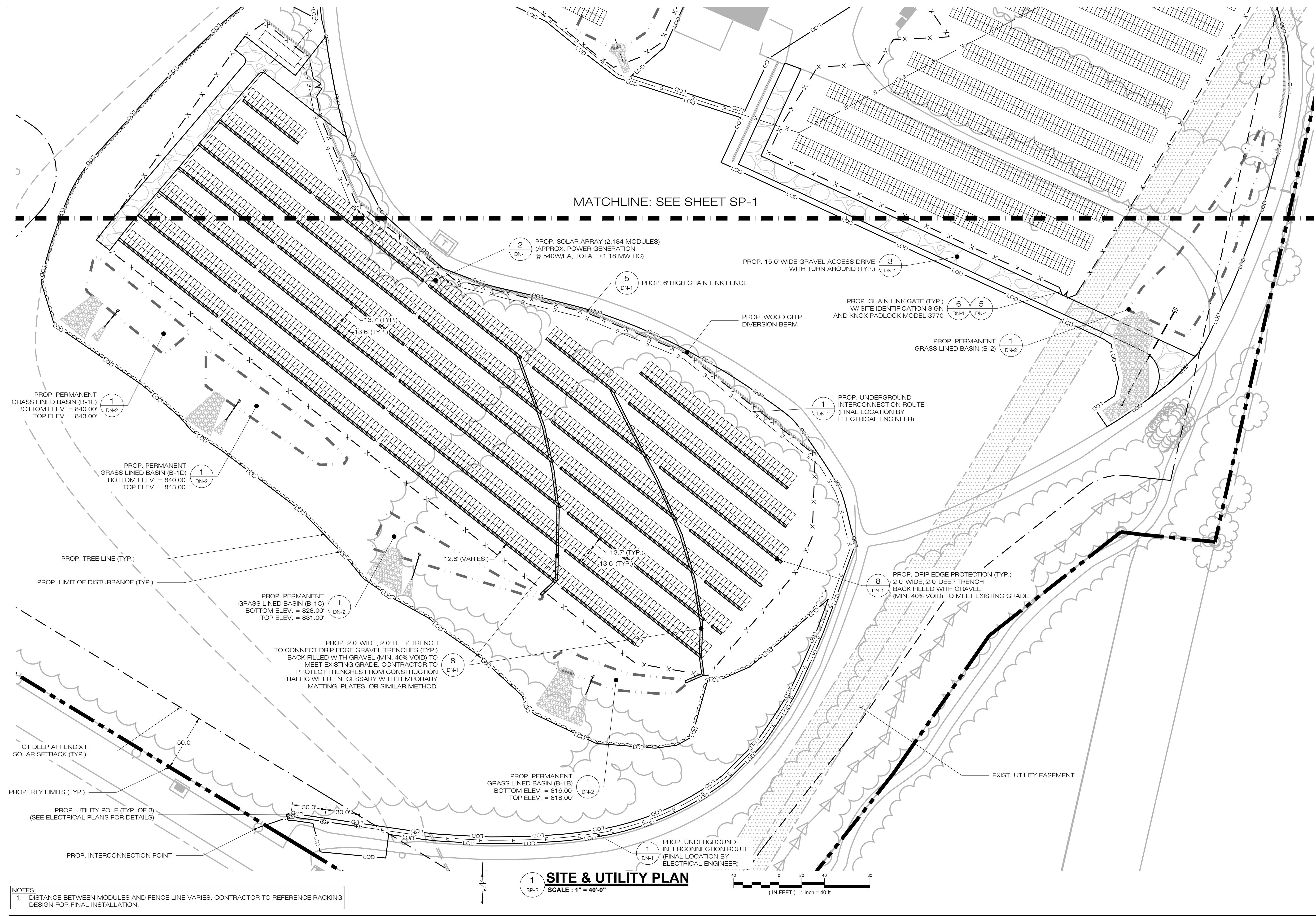
NO	DATE	REVISION
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1	02/16/22	FOR REVIEW: KAM
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3	08/02/22	FOR REVIEW: KAM
4		
5		
6		

DESIGN PROFESSIONAL OF RECORD
 PROF: KEVIN A. MCCAFFERY, P.E.
 COMP: ALL-POINTS TECHNOLOGY CORPORATION, P.C.
 ADD: 567 VAUXHALL STREET EXTENSION - SUITE 311 WATERFORD, CT 06385
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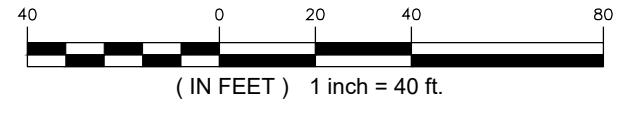
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SITE & UTILITY PLAN

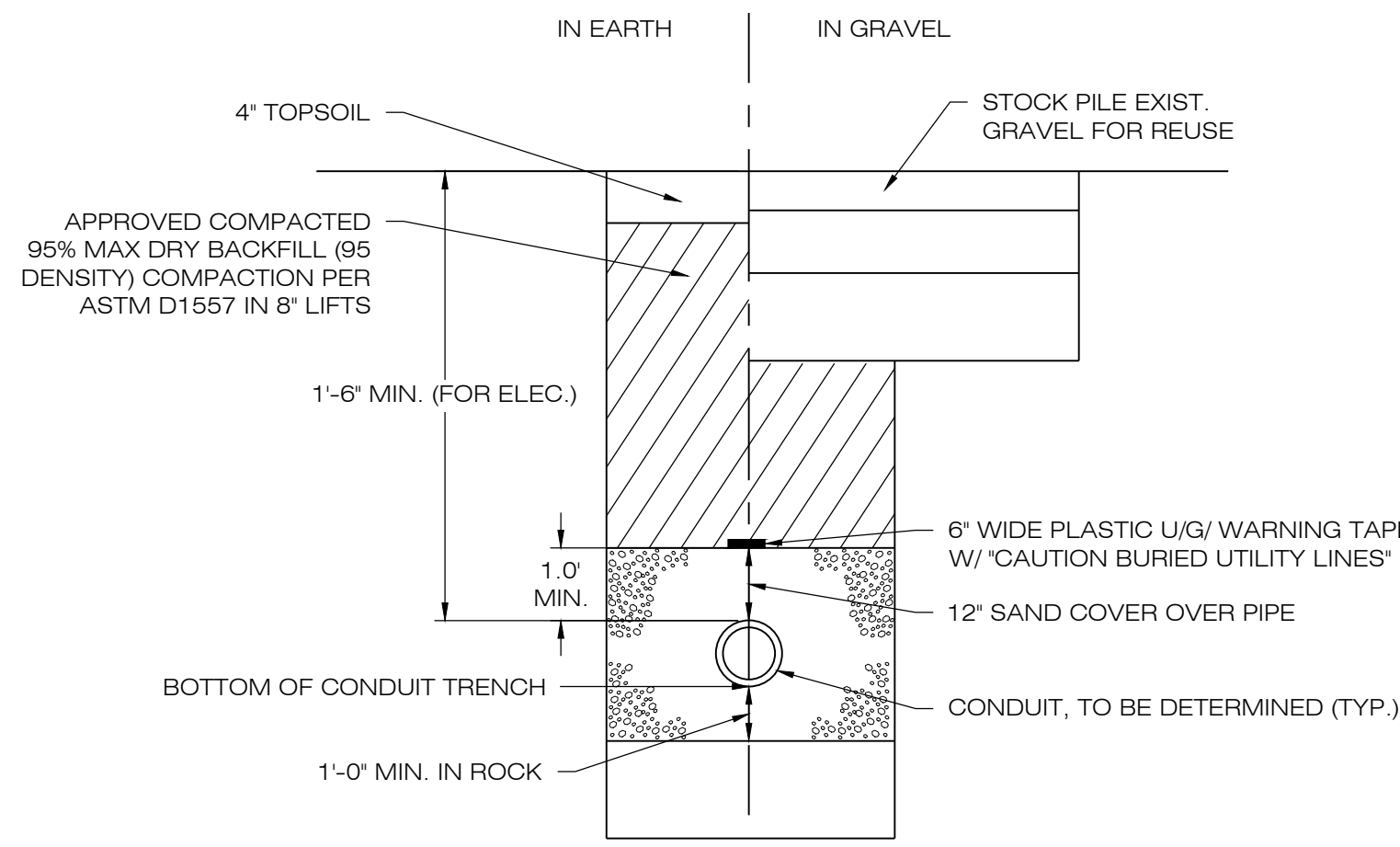
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SP-2



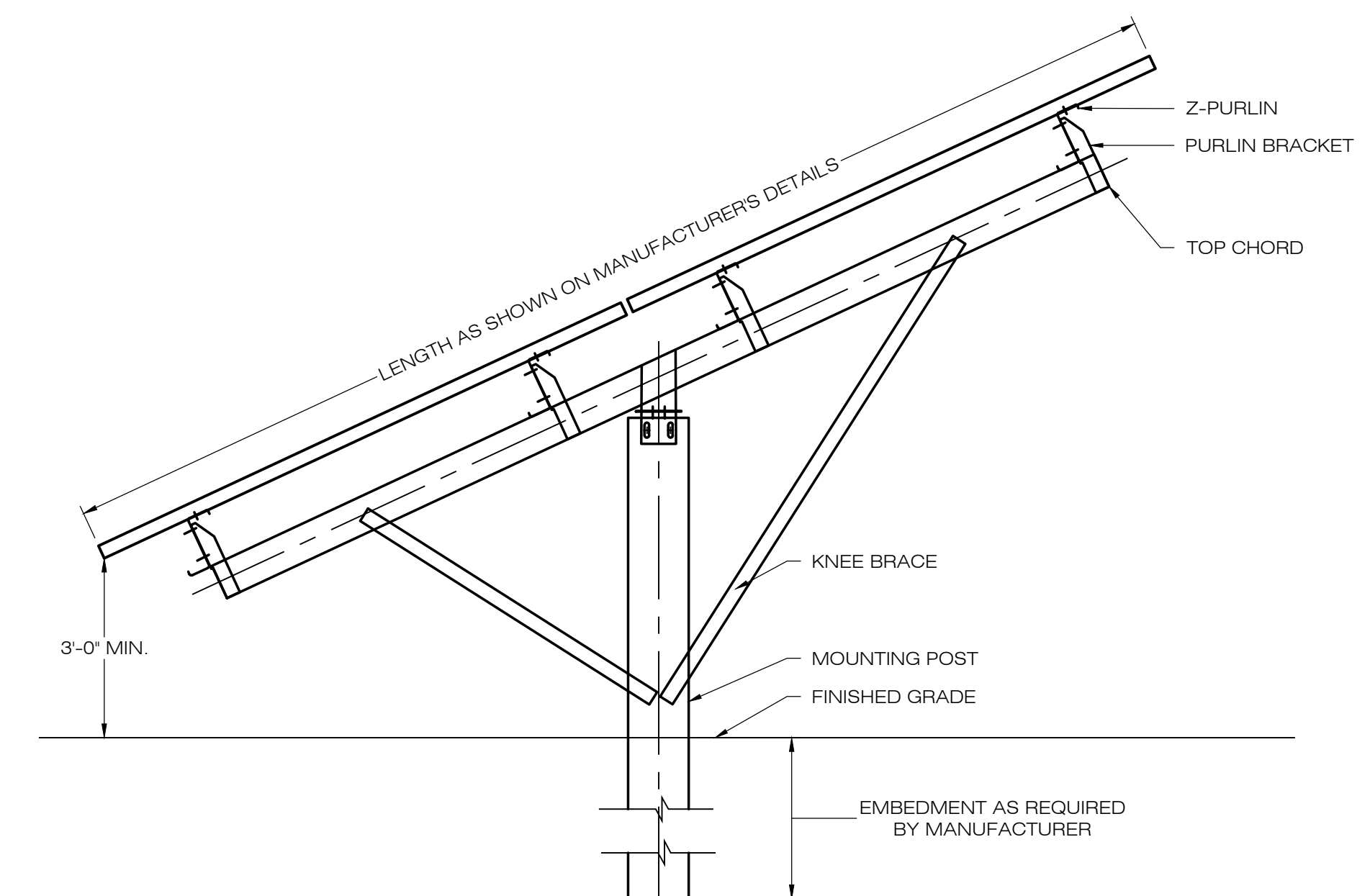
NOTES:
 1. DISTANCE BETWEEN MODULES AND FENCE LINE VARIES. CONTRACTOR TO REFERENCE RACKING DESIGN FOR FINAL INSTALLATION.

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



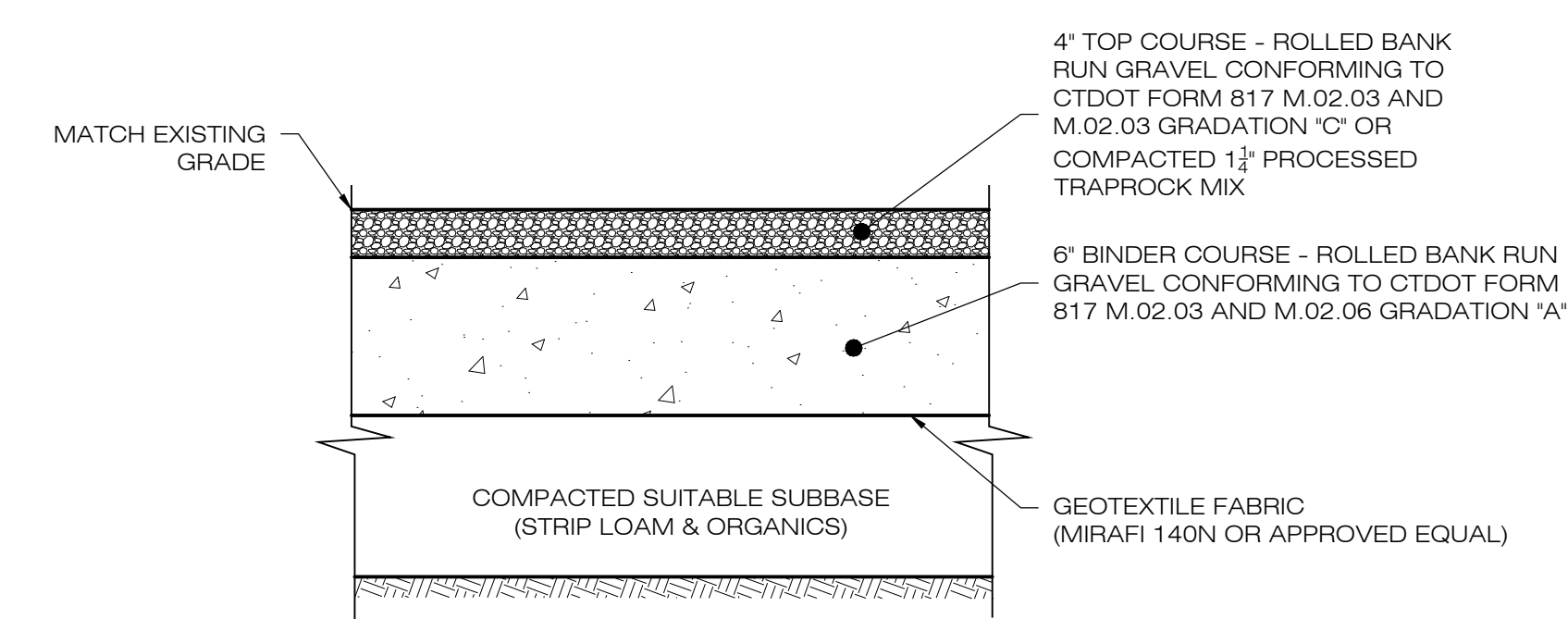


1 ELECTRICAL TRENCH DETAIL
SCALE : N.T.S.



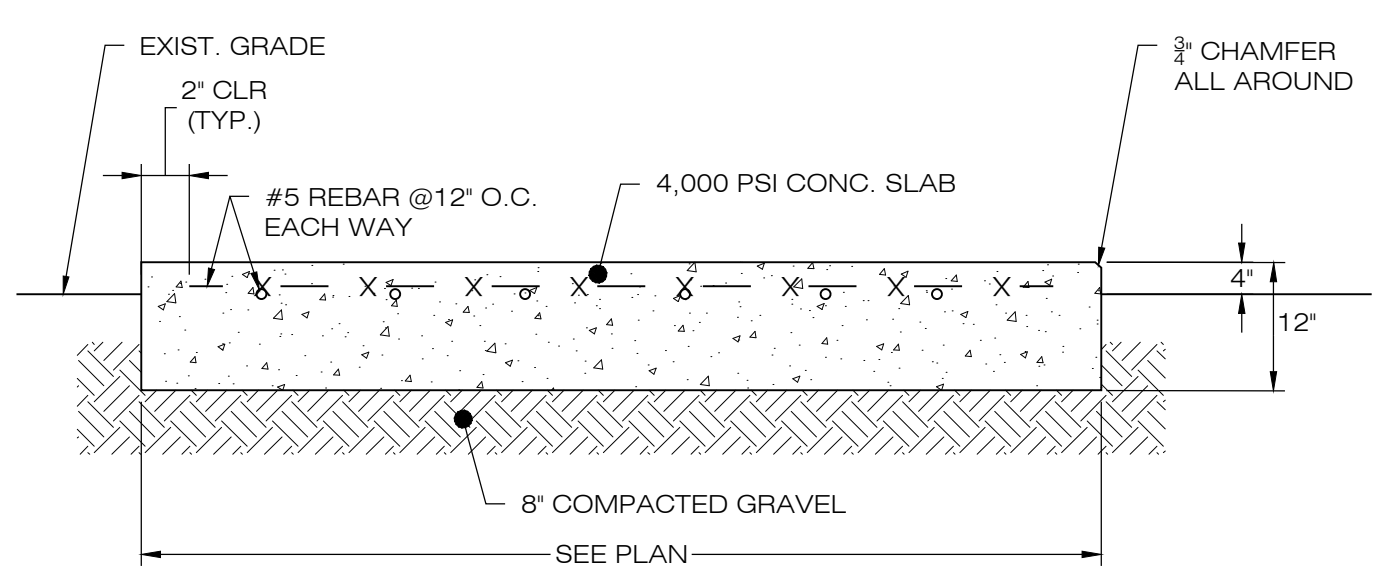
NOTES:
SEE MANUFACTURER'S DETAIL SHEETS FOR ADDITIONAL INFORMATION REGARDING RACKING SYSTEM REQUIREMENTS AND INSTALLATION PROCEDURES. RACKING SYSTEM TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.

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

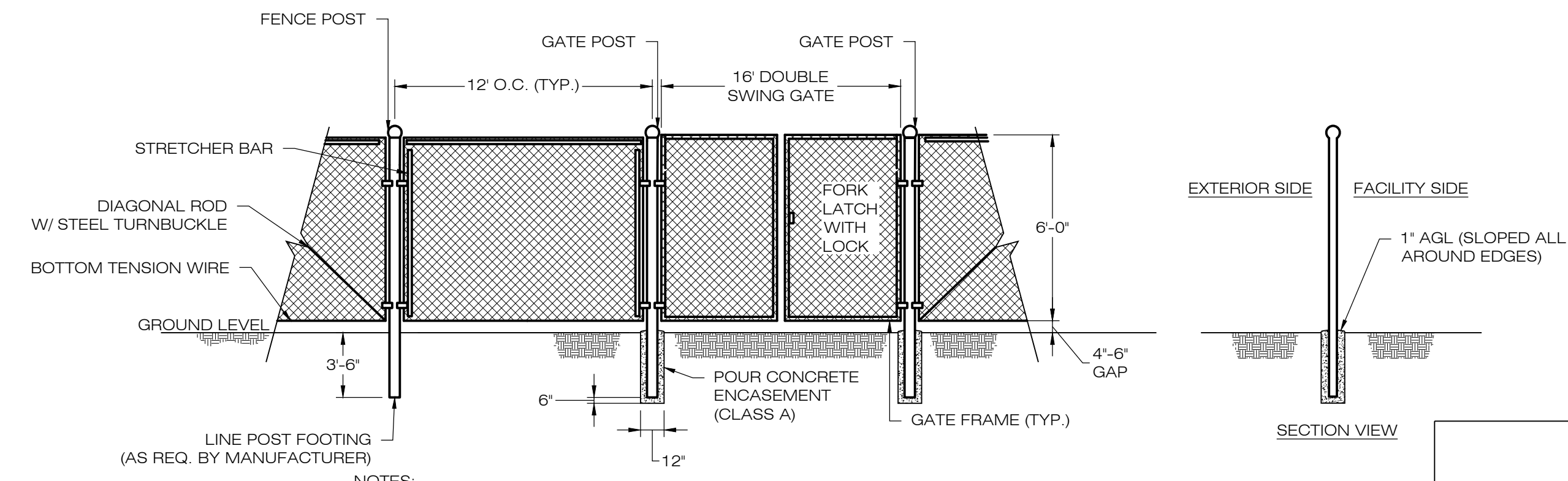


NOTES:
1. SUBBASE MAY CONSIST OF NATIVE MATERIALS IF FOUND ACCEPTABLE BY THE ENGINEER. SUBBASE TO BE COMPACTED TO 95% MAX DRY DENSITY.
2. SUBBASE IS TO BE FREE FROM DEBRIS AND UNSUITABLE MATERIALS.

3 GRAVEL ACCESS DRIVE SECTION
SCALE : N.T.S.

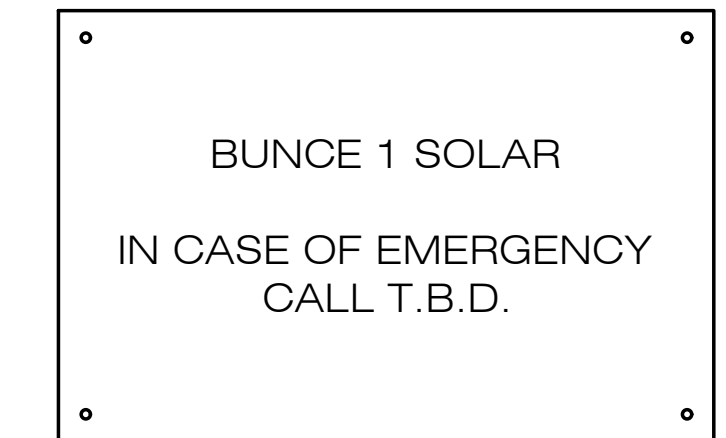


4 CONCRETE EQUIPMENT PAD
SCALE : N.T.S.



NOTES:
PROPOSED FENCING TO MEET NEC REQUIREMENTS. ANY PROPOSED CHANGE MUST BE SUBMITTED AND APPROVED BY OWNER.

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



NOTES:
EMERGENCY CALL NUMBER TO BE PROVIDED ONCE DETERMINED.

6 NOTIFICATION SIGN DETAIL
SCALE : N.T.S.

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

Date: March 01, 2021

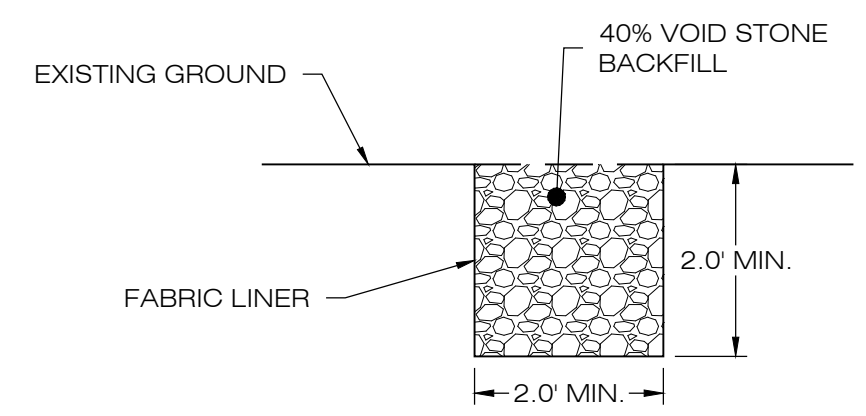
Ernst Solar Farm Seed Mix - ERNMX-186

Botanical Name	Common Name	Price/lb
45.50 % <i>Festuca rubra</i>	Creeping Red Fescue	2.20
15.00 % <i>Festuca ovina</i> var. <i>duriuscula</i> , 'Jetty'	Hard Fescue, 'Jetty'	3.52
15.00 % <i>Festuca ovina</i> var. <i>duriuscula</i> , 'Gladiator'	Hard Fescue, 'Gladiator'	3.52
10.00 % <i>Festuca rubra</i> ssp. <i>commutata</i>	Chewings Fescue	2.70
5.00 % <i>Poa pratensis</i> , 'Selway'	Kentucky Bluegrass, 'Selway'	3.08
5.00 % <i>Poa pratensis</i> , 'Appalachian'	Kentucky Bluegrass, 'Appalachian'	3.08
4.50 % <i>Trifolium repens</i> , 'Dutch'	White Clover, 'Dutch'	4.84

100.00 % Mix Price/lb Bulk: \$2.85

Seeding Rate: 6 lb per 1,000 sq ft
Lawn & Turfgrass Sites; Solar Sites

Provide a 2' clearance between the ground and the solar panels. 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.



8 GRAVEL DRIP EDGE PROTECTION DETAIL
SCALE : N.T.S.

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

Date: July 12, 2022

Fuzz & Buzz Mix - Premium - ERNMX-147

Botanical Name	Common Name	Price/Lb
21.40 % <i>Lolium perenne</i> , 'Crave', Tetraploid	Perennial Ryegrass, 'Crave', Tetraploid	4.20
17.00 % <i>Dactylis glomerata</i> , Potomac	Orchardgrass, Potomac	4.32
15.00 % <i>Poa pratensis</i> , 'Ginger'	Kentucky Bluegrass, 'Ginger' (pasture type)	5.52
12.00 % <i>Bromus biebersteinii</i> , 'Fleet'	Meadow Brome, 'Fleet'	8.64
5.40 % <i>Trifolium hybridum</i>	Alsike Clover	3.90
5.00 % <i>Agropyron trachycaulum</i>	Slender Wheatgrass	8.40
5.00 % <i>Festuca elatior</i> x <i>Lolium perenne</i> , Duo	Festulolium, 'Duo'	3.60
4.90 % <i>Trifolium incarnatum</i> , Variety Not Stated	Crimson Clover, Variety Not Stated	3.00
4.50 % <i>Trifolium pratense</i> , Medium, Variety Not Stated	Red Clover, Medium, Variety Not Stated	5.40
2.50 % <i>Butelousa curtipendula</i> , Butte	Sideoats Gramma, Butts	15.95
2.00 % <i>Lotus corniculatus</i> , 'Leo'	Bird's Foot Trefoil, 'Leo'	9.60
1.00 % <i>Linum perenne</i>	Perennial Blue Flax	48.00
0.80 % <i>Chamaecrista fasciculata</i> , PA Ecotype	Partridge Pea, PA Ecotype	7.20
0.60 % <i>Cichorium intybus</i>	Blue Chicory	19.20
0.50 % <i>Aster oblongifolius</i> , PA Ecotype	Aromatic Aster, PA Ecotype	336.00
0.50 % <i>Chrysanthemum leucanthemum</i>	Oxeye Daisy	38.40
0.40 % <i>Coreopsis lanceolata</i>	Lanceleaf Coreopsis	28.80
0.40 % <i>Tradescantia ohioensis</i> , PA Ecotype	Ohio Spiderwort, PA Ecotype	192.00
0.40 % <i>Zizia aurea</i> , PA Ecotype	Golden Alexanders, PA Ecotype	96.00
0.30 % <i>Aster prenanthoides</i> , PA Ecotype	Zigzag Aster, PA Ecotype	432.00
0.30 % <i>Solidago nemoralis</i> , PA Ecotype	Gray Goldenrod, PA Ecotype	264.00
0.10 % <i>Asclepias syriaca</i> , PA Ecotype	Common Milkweed, PA Ecotype	96.00

100.00 % Mix Price/lb Bulk: \$11.27

Seeding Rate: Expect to apply about 42 lbs per acre with a cover crop of annual ryegrass at 12 lbs/acre.
Forage & Pasture Sites; Solar Sites

9 FUZZ & BUZZ MIX
SCALE : N.T.S.

7 SOLAR FARM MIX
SCALE : N.T.S.

LSE INDUS LLC
40 TOWER LANE, SUITE 201
AVON, CT 06001

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PERMIT SET

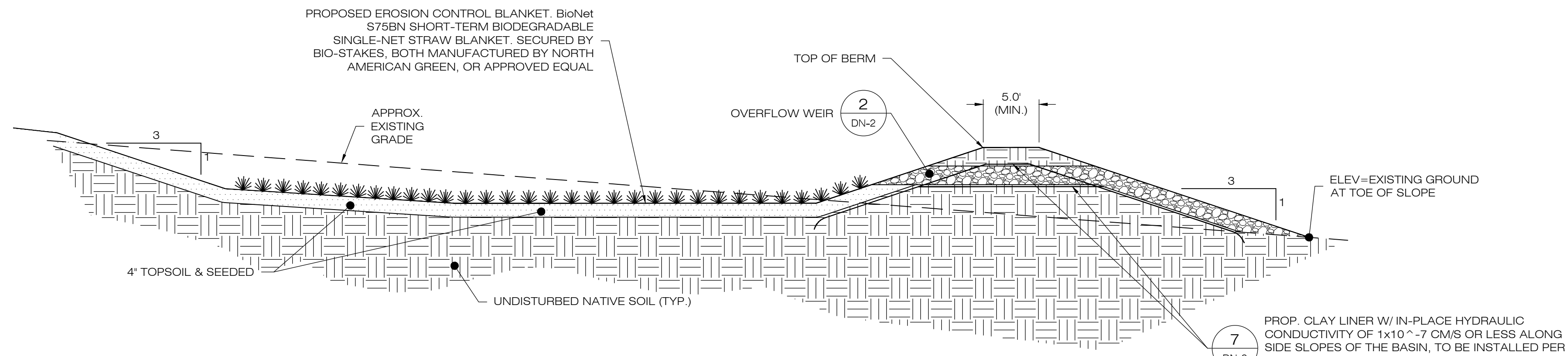
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DESIGN PROFESSIONAL OF RECORD
PROF: KEVIN A. MCCAFFERY, P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION, P.C.
ADD: 567 VAUXHALL STREET
EXTENSION - SUITE 311
WATERFORD, CT 06385
OWNER: JOHN BUNCE
ADDRESS: 81 EAST MAIN ST
NORTH CANAAN, CT

BUNCE 1 SOLAR FACILITY
SITE: 81 EAST MAIN ST
ADDRESS: NORTH CANAAN, CT
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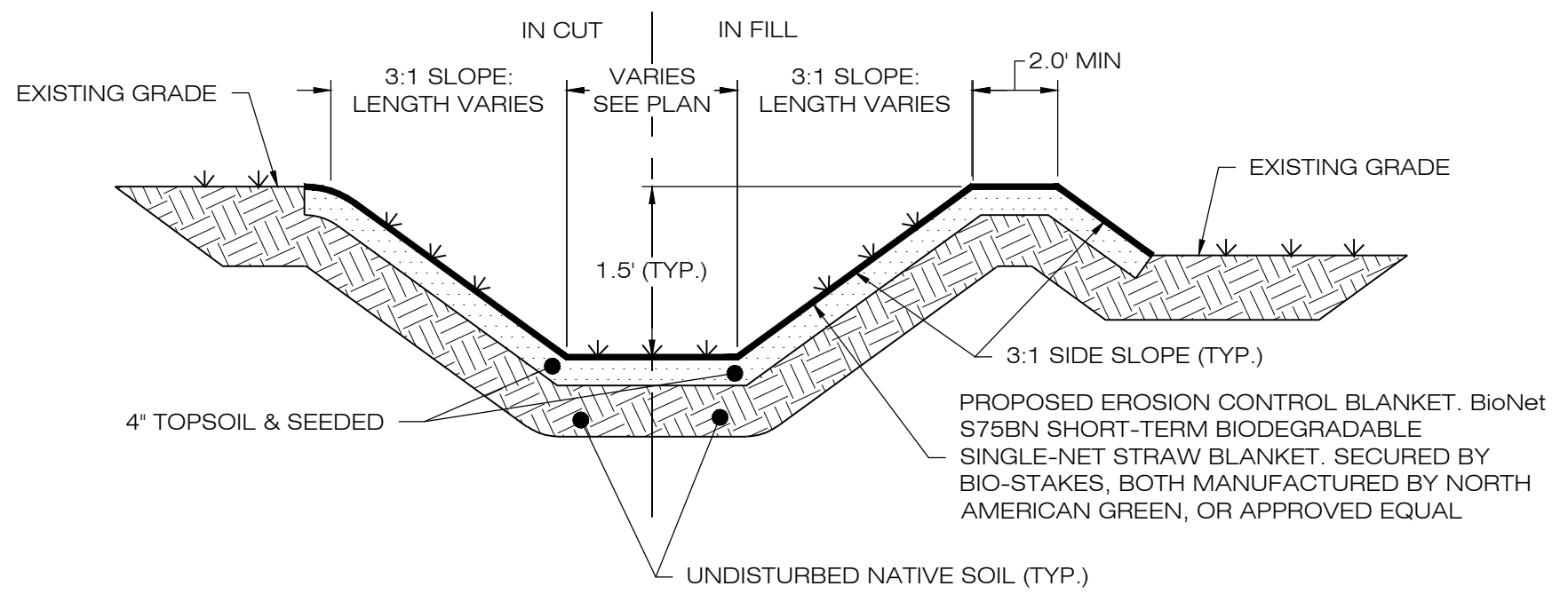
SHEET TITLE:
SITE DETAILS

SHEET NUMBER:
DN-1



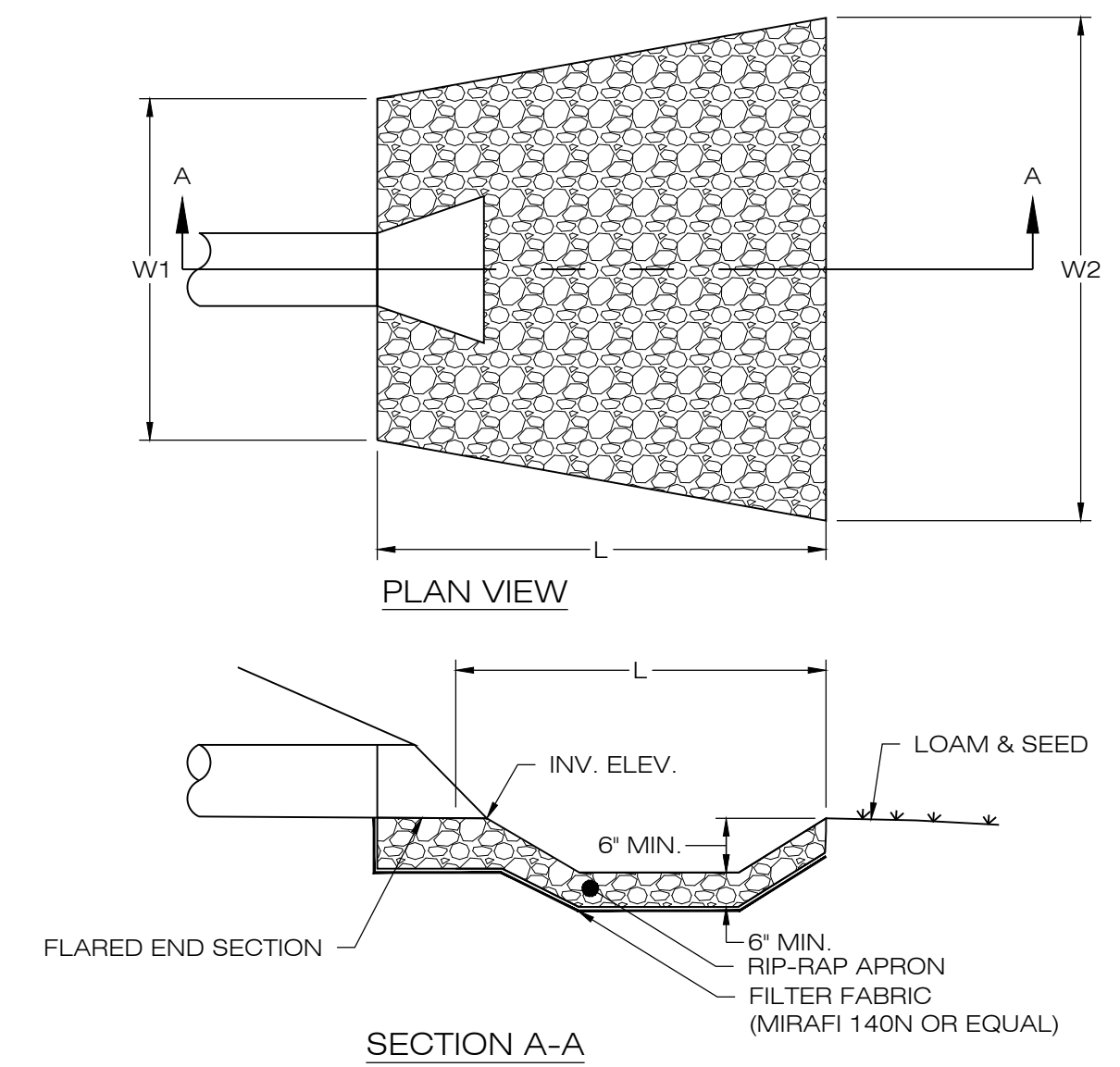
- NOTES:
- SEED MIX TO BE NEW ENGLAND EROSION CONTROL/ RESTORATION MIX FOR MOIST SITES ON THE BOTTOM OF THE BASIN AND NEW ENGLAND EROSION/RESTORATION MIX FOR DRY SITES ON THE SIDE SLOPES.
 - FOR CONVERTING TEMPORARY SEDIMENT BASIN TO INFILTRATION BASIN, REMOVE BAFFLES, CLEAN OUT SEDIMENT, RESHAPE AS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

1 GRASS LINED BASIN
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.
 - IF DEPTH VARIES FROM 1.5', SEE PLAN CALLOUTS.

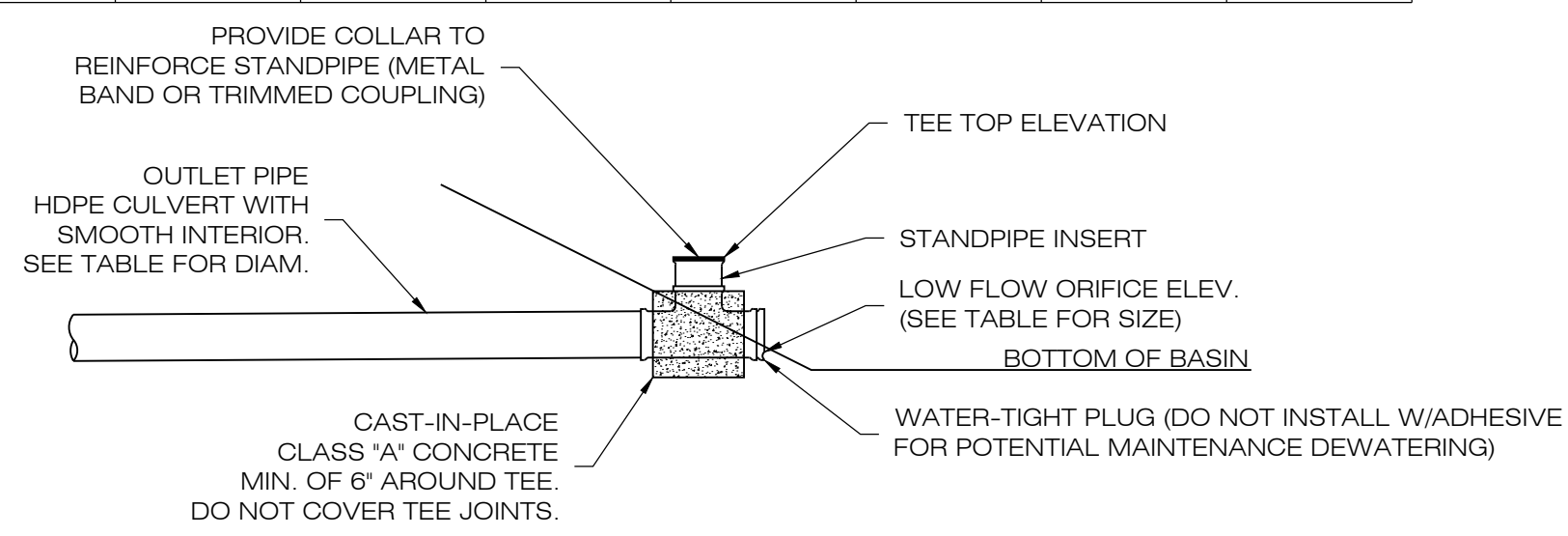
3 GRASS LINED SWALE
SCALE: N.T.S.



6 FLARED END SECTION
SCALE: N.T.S.

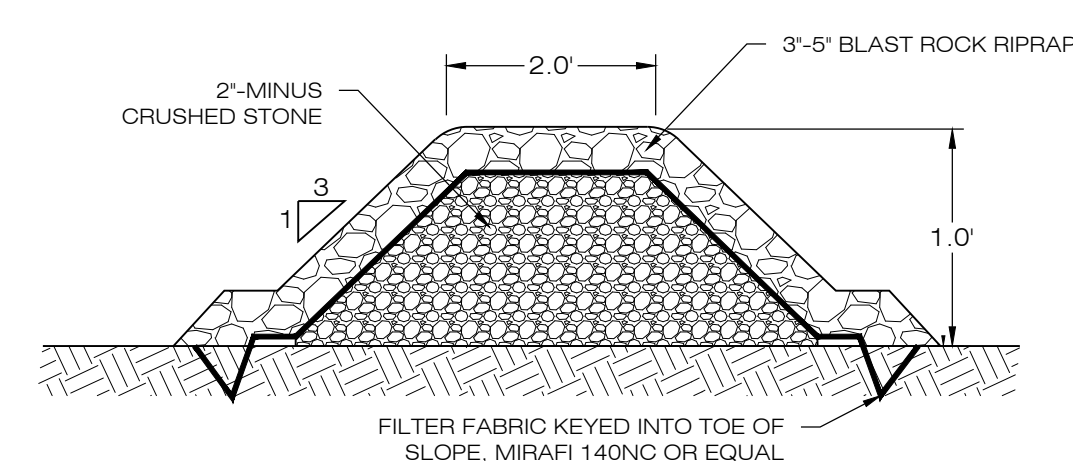
HDPE OUTLET PIPE SIZING TABLE

BASIN	STANDPIPE TEE TOP ELEV. (FT)	STANDPIPE DIAMETER (IN)	LOW FLOW ORIFICE ELEV. (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-1B	816.50'	6"	816.00' (DIA = 1.0')	6"	16.5'	6.06%	816.00'	815.00'
B-1C	828.50'	6"	828.00' (DIA = 1.0')	6"	22.5'	4.44%	828.00'	827.00'
B-1D	841.00'	4"	840.00' (DIA = 1.0')	6"	19.5'	2.56%	840.00'	838.50'
B-1E	841.50'	4"	840.00' (DIA = 1.0')	6"	18.0'	2.78%	840.00'	839.50'
B-2	839.00'	8"	837.00' (DIA = 3.0')	12"	94.0'	1.06%	837.00'	836.00'
B-3	N/A	N/A	N/A	4"	21.0'	2.38%	860.50'	860.00'
B-4	N/A	N/A	N/A	3"	20.0'	5.00%	880.00'	879.00'



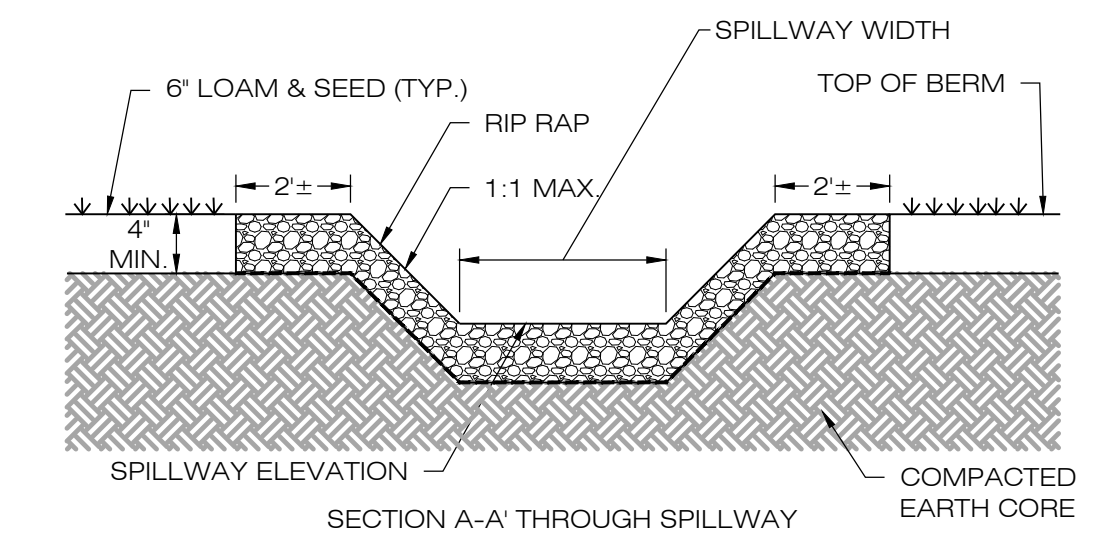
- NOTES:
- TEE TO BE ADS ADVANEDGE (TM) FABRICATED TEE OR APPROVED EQUAL. CONTRACTOR TO MODIFY TEE AS NEEDED.
 - CONVERT TEMPORARY SEDIMENT BASIN RISER TO FINAL BASIN OUTLET RISER.

4 OUTLET RISER
SCALE: N.T.S.



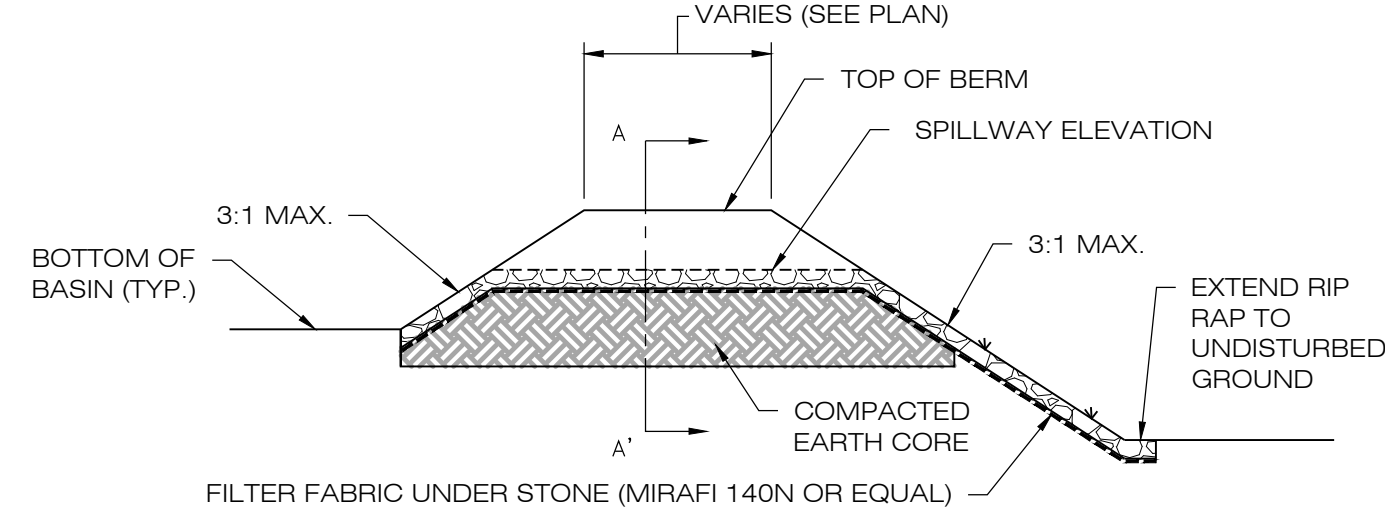
- NOTES:
- STONE SHALL BE PLACED MECHANICALLY OR BY HAND. STONE SHALL NOT BE DUMPED DIRECTLY INTO SWALE.
 - SEE GRADING AND DRAINAGE PLAN.

7 STONE CHECK DAM
SCALE: N.T.S.

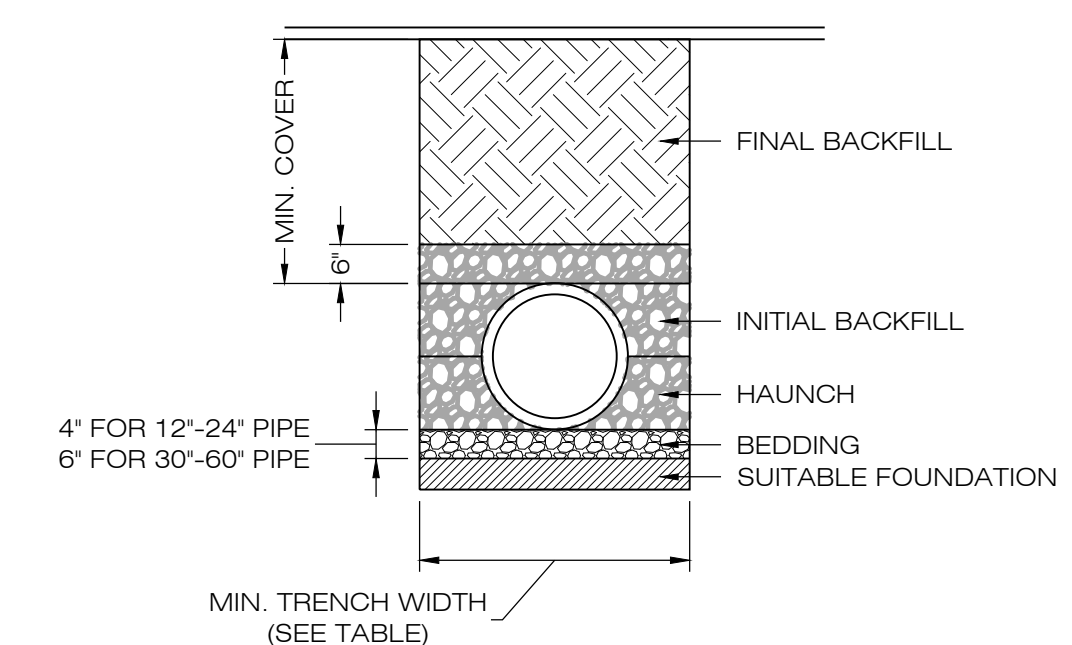


BASIN WEIR DETAILS

BASIN	SPILLWAY ELEV.	SPILLWAY WIDTH
B-1B	817.00'	5.0'
B-1C	829.00'	5.0'
B-1D	842.50'	5.0'
B-1E	842.50'	5.0'
B-2	817.00'	5.0'
B-3	817.00'	5.0'
B-4	817.00'	5.0'



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

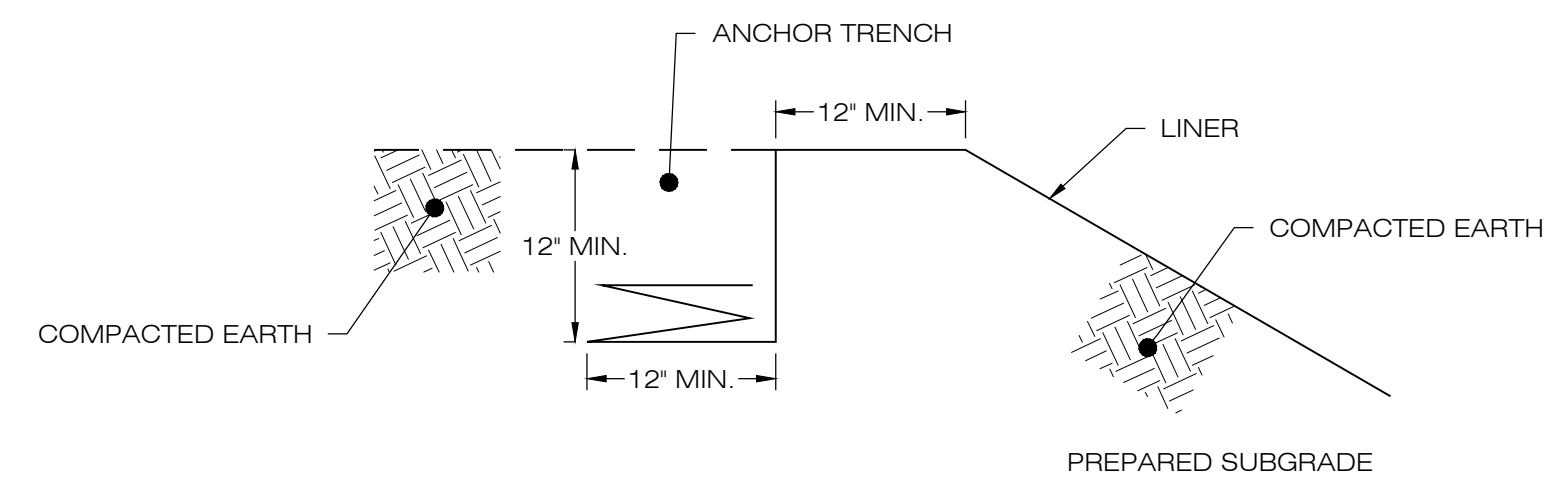


RECOMMENDED MIN. TRENCH WIDTH

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 EDITION.
 - 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 FLOTATION. 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
SCALE: N.T.S.



8 LINER ANCHOR DETAIL
SCALE: N.T.S.

LSE INDUS LLC
40 TOWER LANE, SUITE 201
AVON, CT 06001

ALL-POINTS TECHNOLOGY CORPORATION

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DESIGN PROFESSIONAL OF RECORD

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APT FILING NUMBER: CT606140

DATE: 10/19/21 DRAWN BY: JT CHECKED BY: KAM

SHEET TITLE: **SITE DETAILS**

SHEET NUMBER: **DN-2**

STATE OF CONNECTICUT
KEVIN A. MCCAFFERY
P.E.
LICENSED PROFESSIONAL ENGINEER

EXHIBIT 2
Module Specifications and TCLP testing results

ZXM7-SHLDD144 Series ZNSHINESOLAR

Znshinesolar 10BB HALF-CELL Bifacial Light-Weight Double Glass Monocrystalline PERC PV Module

525W | 530W | 535W | 540W | 545W | 550W



Excellent cells efficiency

MBB technology decreases the distance between busbar and finger grid line which is benefit to power increase.



Better Weak Illumination Response

More power output in weak light condition, such as haze, cloudy, and early morning.



Anti PID

Ensured PID resistance through the quality control of cell manufacturing process and raw materials.



Adapt To Harsh Outdoor Environment

Resistant to harsh environments such as salt, ammonia, sand, high temperature and high humidity environment.



TIER 1

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



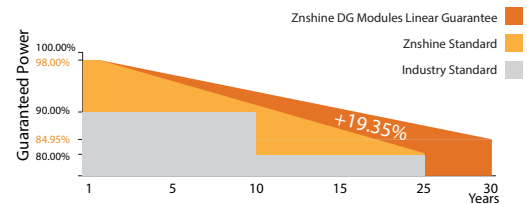
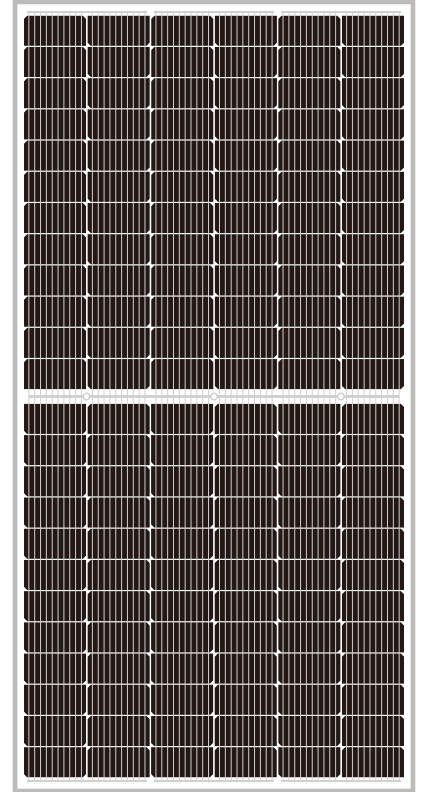
Excellent Quality Management System

Warranted reliability and stringent quality assurances well beyond certified requirements.



Bifacial Technology

Up to 25% additional power gain from back side depending on albedo.



12 years product guarantee
30 years output guarantee



0.45% annual degradation
over 30 years



IEC61215/IEC61730/IEC61701/IEC62716/UL61730

ISO 9001: Quality Management System

ISO 14001: Environmental Management System

ISO45001: Occupational Health and Safety Management System

Founded in 1988, ZNShine solar is a world's leading high-tech PV module manufacturer. With the state-of-the-art production lines, the company boasts module capacity of 6GW. Bloomberg has listed ZNShine as a global Tier 1 PV module maker. Today Znshine has distributed its sales to more than 60 countries around the globe.

www.znshinesolar.com

TÜV Rheinland (Shanghai) Co., Ltd.

ZNshine Solar Module TCLP Report

Commissioned Test

Client: ZNSHINE PV-TECH Co., Ltd.

Report No.: CN227VOX 001

September 2022

TÜV Rheinland (Shanghai) Co., Ltd.

B1-13F No. 177, Lane 777 West Guangzhong Road
Jing'an District, Shanghai, P.R.China

www.tuv.com/solar

Please contact: Allen Qian
Phone: +86 21 6081 4897
Email: Allen.Qian@tuv.com

Rev No.	Rev. Date	Content/Changes	Prepared/revised	Checked/released
1	30 September 2022	Formal Report	Allen Qian	Shangshang Ju

X *Allen Qian*

Inspector

X *Shangshang Ju*

Reviewer

Disclaimer

TÜV Rheinland has prepared this document solely for the project referred to in this report on behalf of the Client based on the hereto related appointment letter ("Agreement"). This report is, in all cases, subject to the terms and conditions set forth herein and in the Agreement, in particular exclusions on liability.

This report is a review covering technical aspects of the project based on information provided by the Client. It shall not be relied upon as an alternative to a legal or financial assessment particularly since it is not intended to constitute any guarantee of the financial performance of the project. Also, the report should not be relied upon or used for any other project without an independent check being carried out as to its suitability. Any other use requires the prior written consent of TÜV Rheinland. Publication or dissemination of extracts, appraisals or any other revision and adaptation hereof, in particular for advertising purposes, requires the prior written consent of TÜV Rheinland.

TÜV Rheinland has assumed and relied upon the accuracy and completeness of the information obtained from Client for the purpose of rendering the report. No representation or warranty, express or implied, is or will be made in relation to the accuracy or completeness of such Client information or that the use of this report will lead to any particular outcome or result. TÜV Rheinland accepts no responsibility or liability for the consequences of this report being used for a purpose other than the purposes for which it was commissioned and TÜV Rheinland accepts no responsibility or liability for this report to any party other than the Client as set forth in the Agreement.

Client:	ZNSHINE PV-TECH Co., Ltd.
Quotation No.:	245782345
Order No.:	244446750
Order Date:	31.08.2022

List of Contents

1. Executive Summary.....	6
2. Results	7
3. Equipment List.....	8

List of Abbreviations

ND: Not detected

µg/L: Microgram per liter

mg/L: Milligrams per liter

TCLP: Toxicity Characteristic Leaching Procedure

TUV: TÜV Rheinland (Shanghai) Co., Ltd.

J-Box: Junction-Box

1. Executive Summary

General Information	
Client	ZNSHINE PV-TECH Co., Ltd.
Project Name	ZNshine Solar Module TCLP
Product Specification	ZNshine Solar Photovoltaic Module: ZXM7-SHLDD144-XXX/M, ZXM6-NHLDD144-XXX/M
Detail of sample	<ol style="list-style-type: none"> 1. A section of the laminate, including the glass superstrate and substrate (top and bottom), the encapsulant, the cell and the interconnect wires (aka ribbons) 2. A section of the aluminum frame with the adhesive used to adhere the frame to the laminate 3. A complete junction box assembly, including the adhesive used to adhere the assembly to the substrate, the junction box, diodes, cables, connectors and potting compound.
Test Details	
Scope of work	TCLP
Test Period	22.09.2022 - 28.09.2022
Laboratory	TÜV Building III, No.177, Lane 777, West Guangzhong Road Jingan District, Shanghai, China
Reference Standards	For Arsenic, Mercury, Selenium: HJ/T 300-2007; HJ694-2014
	For Barium, Cadmium, Chromium, Lead, Silver: HJ/T 300-2007; HJ776-2015
Result	<ol style="list-style-type: none"> 1. Arsenic was found in Laminate, Frame, J-box. 2. Barium was found in frame. 3. Mercury was found in J-box. 4. Other elements were not found. <p>Note: Refer to table 1 for data Detail in next page.</p>

2. Results

Table 1:

Metal	Results			Threshold	Unit
	Laminate	Frame	J-box		
Arsenic	1.0	1.4	1.0	0.3	µg/L
Barium	ND	0.03	ND	0.01	mg/L
Cadmium	ND	ND	ND	0.05	mg/L
Chromium	ND	ND	ND	0.03	mg/L
Lead	ND	ND	ND	0.1	mg/L
Mercury	ND	ND	0.08	0.04	µg/L
Selenium	ND	ND	ND	0.4	µg/L
Silver	ND	ND	ND	0.03	mg/L

Remark: ND: Not detected.

Reference Standards: For Arsenic, Mercury, Selenium: HJ/T 300-2007; HJ694-2014

Reference Standards: For Barium, Cadmium, Chromium, Lead, Silver: HJ/T 300-2007; HJ776-2015

3. Equipment List

Table 2:

Equipment name	Equipment Type	Equipment number
Atomic fluorescence photometer	AFS8510	F-004-01
Inductively coupled plasma emission spectrometer	Icap6000	Icap6000

End of the report