		WITHIN 200'	OF SITE		
<u>LOT</u>	<u>BLOCK</u>	PROPERTY LOCATION	OWNERS NAME & ADDRESS		
30	<i>516.02</i>	59 WILLOCKS DRIVE	SUMMER FIELDS @ FRANKLIN, LLC 929 ROUTE 202 RARITAN, NJ 08869		
7.07	516.01	601 RANDOLPH ROAD	BRIDGE POINT SOMERSET, LLC ONE GATEHALL DRIVE SUITE 201 PARSIPPANY, NJ 07054		
2.01	517.01	650 RANDOLPH ROAD	CITGEN REALTY, LLC 2 TOWER CENTER BOULEVARD SUITE 1101 EAST BRUNSWICK, NJ 08816		
6.05	516.01	801 RANDOLPH ROAD	HOUSE FOODS HOLDING USA INC 7351 ORANGEWOOD AVENUE GARDEN GROVE, CA 92841		
2.13	517.04	850 RANDOLPH ROAD	HDG MANAGEMENT LLC 850 RANDOLPH ROAD SOMERSET, NJ 08873		
29	516.02	57 WILLOCKS CIRCLE	JENKINS, LESTER JR. & MELISSA 57 WILLOCKS CIRCLE SOMERSET, NJ 08873		
4.16	516.01	RUTGERS BOULEVARD	SUMMERFIELDS 360 LLC 929 ROUTE 202 RARITAN, NJ 08869		
4	515	550 WESTON CANAL ROAD	STATE OF NJ DEPARTMENT OF NJ STATE PARK SERVICE BOX 404-501 E. STATE STREET TRENTON, NJ 08625		
6.01	516.01	WESTON CANAL ROAD	PILLAR OF FIRE WESTON CANAL ROAD ZAREPHATH, NJ 08890		
16	516.02	31 WILLOCKS CIRCLE	AWANA, VIVEK & RADHA 31 WILLOCKS CIRCLE SOMERSET, NJ 08873		
17	516.02	33 WILLOCKS CIRCLE	GAVREL, CHRISTOPHE & SO, JOANNA 33 WILLOCKS CIRCLE SOMERSET, NJ 08873		
20	516.02	39 WILLOCKS CIRCLE	AGRAWAL, MANOJKUMAR 39 WILLOCKS CIRCLE SOMERSET, NJ 08873		
18	516.02	35 WILLOCKS CIRCLE	AMIN, SHITAL A. & AMISH V. 35 WILLOCKS DRIVE SOMERSET, NJ 08873		
21	516.02	41 WILLOCKS CIRCLE	LEE, CHU-CHAN & AMY C & LEE J 41 WILLOCKS CIRCLE SOMERSET, NJ 08873		
26	516.02	51 WILLOCKS CIRCLE	YADAV, SATYA & KUSUM 51 WILLOCKS CIRCLE SOMERSET, NJ 08873		
23	516.02	45 WILLOCKS CIRCLE	MAJUMDER, ANIRBAN 45 WILLOCKS CIRCLE SOMERSET, NJ 08873		
25	516.02	49 WILLOCKS CIRCLE	GARG, ANKUR & SHIKHA 49 WILLOCKS CIRCLE SOMERSET, NJ 08873		
24	516.02	47 WILLOCKS CIRCLE	JOHNSON, DAVID & ANTONINA NOVIKOVA 47 WILLOCKS DRIVE SOMERSET, NJ 08873		
27	516.02	53 WILLOCKS CIRCLE	CHUNG, WEN—I & KUEICHEN 53 WILLOCKS CIRCLE SOMERSET, NJ 08873		
4.09	516.01	43 SCHOOL HOUSE ROAD	SUMMERFIELDS AT FRANKLIN LLC 929 ROUTE 202 RARITAN, NJ 08869		

CERTIFIED LIST OF UTILITY CONTACTS

20 Grove Street, P.O. Box 3000 Somerville, NJ 08876 Margurite Prenderville-Construction Department 275 Centenial Avenue PISCATAWAY, NJ 08854

4.14 516.01 RUTGERS BOULEVARD

28 516.02 55 WILLOCKS CIRCLE

22 516.02 43 WILLOCKS CIRCLE

4.17 516.01 WESTON CANAL ROAD

6.01 516.01 WESTON CANAL ROAD

4.03 516.01 545 WESTON CANAL ROAD

4.03 516.01 545 WESTON CANAL ROAD

1025 Laurel Oak Road Voorhees, NJ 08043 Township of Franklin, Township Clerk Someret, NJ 08873

Township of Piscataway, Township Clerk

NJ-American Water Company INC.

Donna Short, GIS Supervisor

Piscataway, NJ 08854

Sunoco Pipeline LP/Right of Way Dept. 525 Fritztown Road Sinking Spring, PA 19608 Delaware & Raritan Canal Commission Prallsville Mills P.O. Box 539 Stockton, NJ 08559-0539

37 WILLOCKS CIRCLE SOMERSET, NJ 08873

55 WILLOCKS CIRCLE SOMERSET, NJ 08873

43 WILLOCKS CIRCLE SOMERSET, NJ 08873

SELODY, KENNETH & LUBA

545 WESTON CANAL ROAD SOMERSET, NJ 08873

TOWNSHIP OF FRANKLIN

SELODY, KENNETH & LUBA

545 WESTON CANAL ROAD SOMERSET, NJ 08873

Public Service Electric & Gas

1200 Mountain Avenue

Middlesex, NJ 08846

475 DEMOTT LA SOMERSET, NJ 08873

PILLAR OF FIRE WESTON CANAL ROAD

929 ROUTE 202 RARITAN, NJ 08869

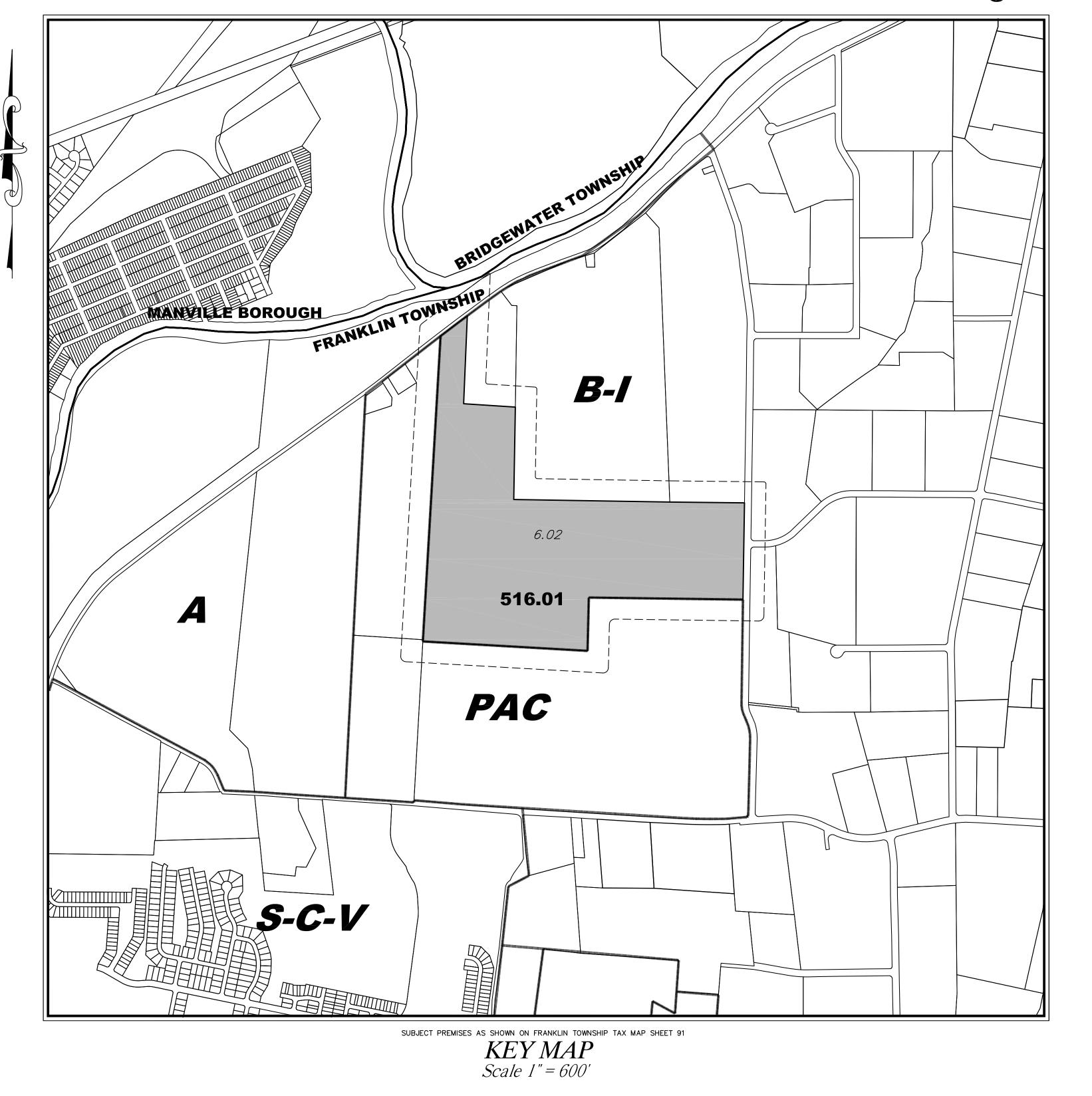
SUMMERFIELDS AT FRANKLIN LLC

PATEL, THAKORBHAI D. & URMILABEN

Borough of Bound Brook, Borough Clerk 230 Ĥamilton Street Bound Brook, NJ 08805 Borough of Middlesex, Borough Clerk

NEW JERSEY AMERICAN WATER SOLAR ARRAY PROJECT PRELIMINARY & FINAL SITE PLAN 701 RANDOLPH ROAD LOT 6.02 BLOCK 516.01

FRANKLIN TOWNSHIP SOMERSET COUNTY NEW JERSEY



SOMERSET COUNTY ACCEPTANCE STAMP

THESE PLANS ARE NOT ACCEPTED FOR CONSTRUCTION UNLESS THIS BLOCK IS STAMPED AND SIGNED BY A STAFF MEMBER OF THE SOMERSET COUNTY ENGINEERING DIVISION. ACCEPTANCE OF THES PLANS EXPIRES TWO (2) YEARS FROM THE STAMPED DATE. DRAWING LIST

SHTS. DESCRIPTION

1 COVER SHEET

2 TOPOGRAPHIC SURVEY -NW

3 TOPOGRAPHIC SURVEY-SW

4 TOPOGRAPHIC SURVEY-EAST

5 HORIZONTAL CONTROL PLAN-NW

6 HORIZONTAL CONTROL PLAN-SW 7 HORIZONTAL CONTROL PLAN-EAST

8 CONSTRUCTION DETAILS

9 CONSTRUCTION DETAILS

ZONE DATA

ZONE "B-I" BUSINESS AND INDUSTRY DISTRICT EXISTING USE: WATER TREATMENT FACILITY PROPOSED USE: WATER TREATMENT FACILITY APEA LOT 6.02 BLOCK 516.01 - 4.208.188 S.E. OR 08.673 ACRES

TOTAL TRACT AREA LOT 6.02 BL	OCK 516.01 = 4	,298,188 S.F. O	R 98.673 ACRE		
SCHEDULE OF BULK REQUIREMENTS					
DESCRIPTION	REQUIRED	EXISTING	PROPOSED		
INTERIOR LOT					
MIN. LOT AREA	2 ACRES	98.673 ACRES	98.673 ACRES		
MIN. LOT FRONTAGE	150 Ft	321.62 Ft	321.62 Ft		
PRIMARY STRUCTURE					
MIN. FRONT YARD SETBACK	50 Ft	76.3 FT	76.3 FT		
MIN. SIDE YARD SETBACK	10 Ft	71.03 FT	71.03 FT		
MIN. TOTAL 2 SIDE YARDS	50 Ft	645 FT	645 FT		
MIN. REAR YARD SETBACK	25 Ft	767 FT	767 FT		
MAX BUILDING HEIGHT	5 STORIES or 65 FT	<65 FT	<65 FT		
MAX. LOT COVERAGE	50%	6.0%	6.0%		
MAX. IMPERVIOUS COVERAGE	60%	12.7%	12.7%		
MAX. FLOOR AREA RATIO	0.5	0.06	0.06		
ACCESSORY BUILDING					
MIN. SIDE YARD	20 Ft	52.70 Ft	52.70 Ft		
MIN. REAR YARD	25 Ft	219 Ft	51.8 Ft		

OWNER

APPLICANT

Elizabethtown Water-Attn Tax Dept. CANAL ROAD SOLAR PARTNERS, LLC P.O. Box 2738 4500 Lena Drive **Camden, N.J. 08101** Mechanicsburg, PA 17055

COVERSHEET

NEW JERSEY AMERICAN WATER SOLAR ARRAY PROJECT LOT 6.02 BLOCK 516.01 SOMERSET COUNTY FRANKLIN TOWNSHIP **NEW JERSEY**

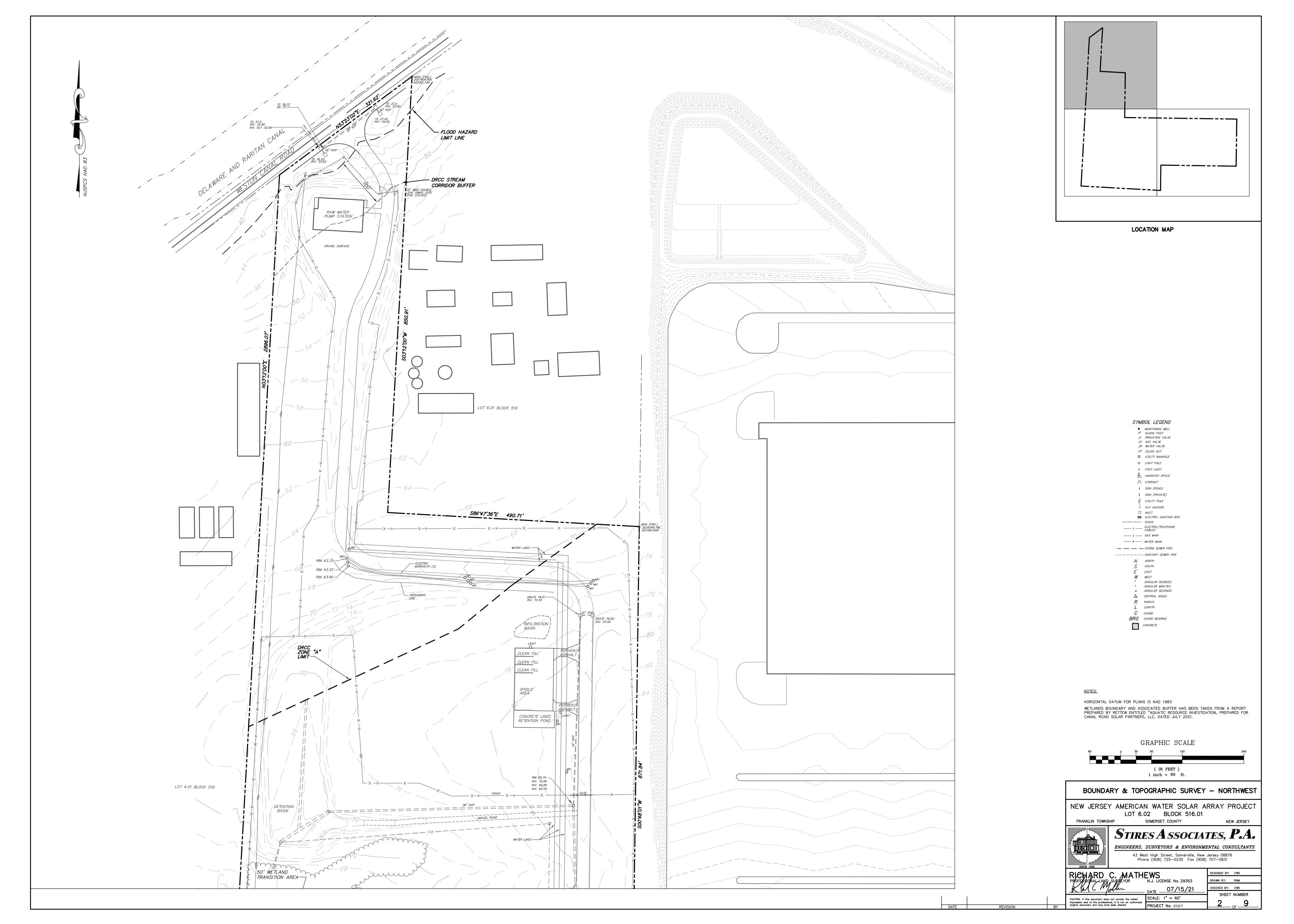


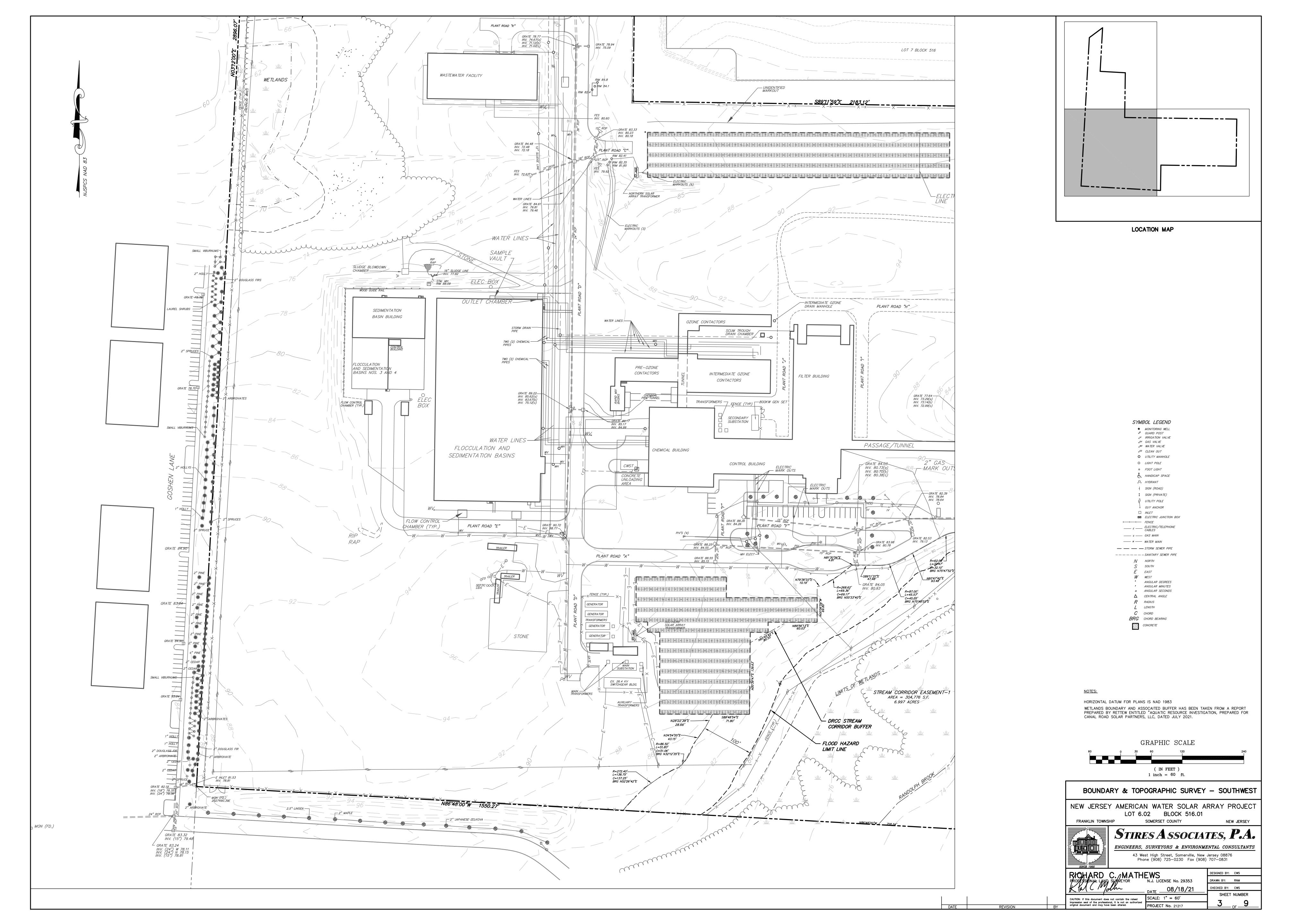
Stires Associates, P.A. ENGINEERS, SURVEYORS & ENVIRONMENTAL CONSULTANTS

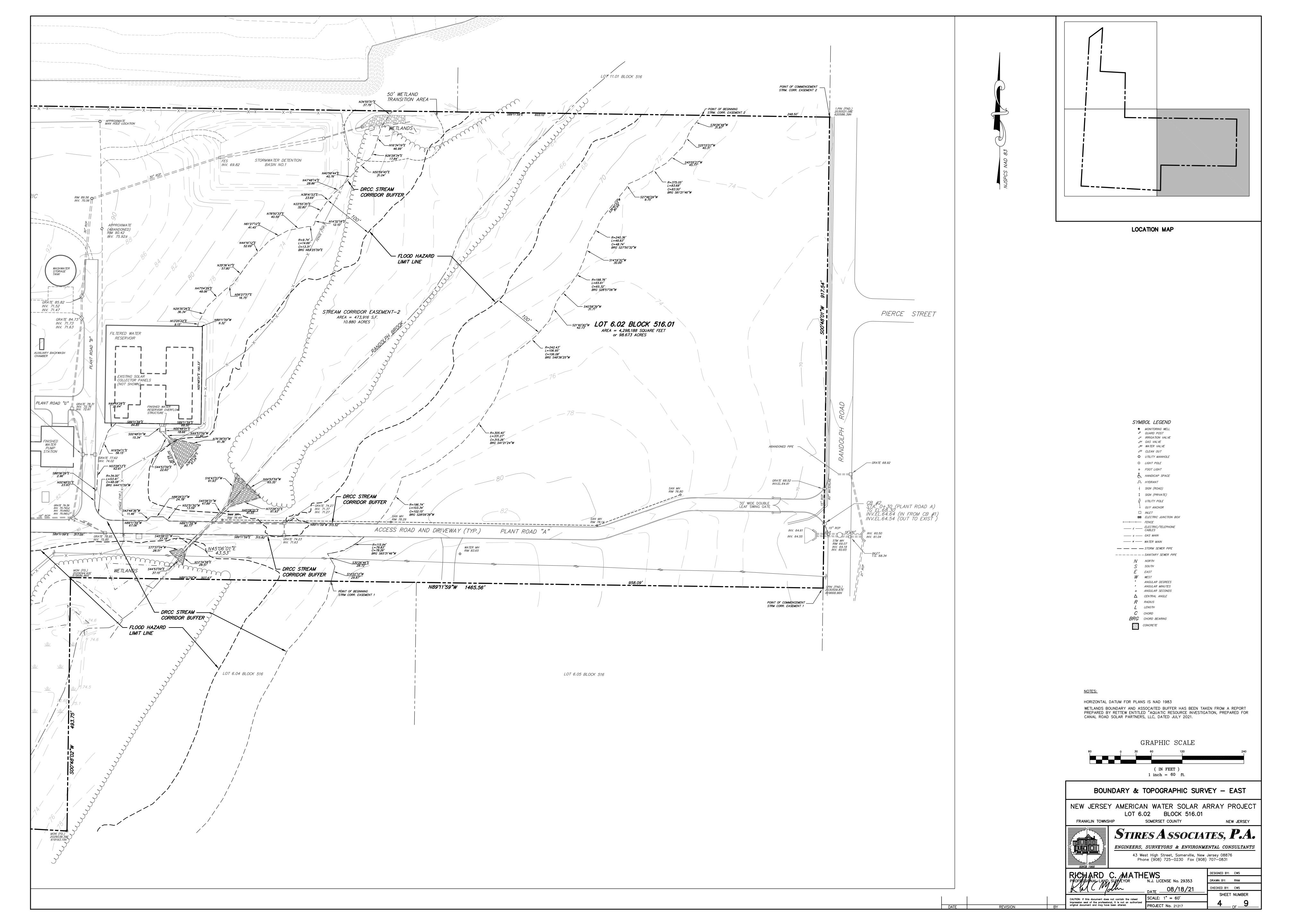
> 43 West High Street, Somerville, New Jersey 08876 Phone (908) 725-0230 Fax (908) 707-0831

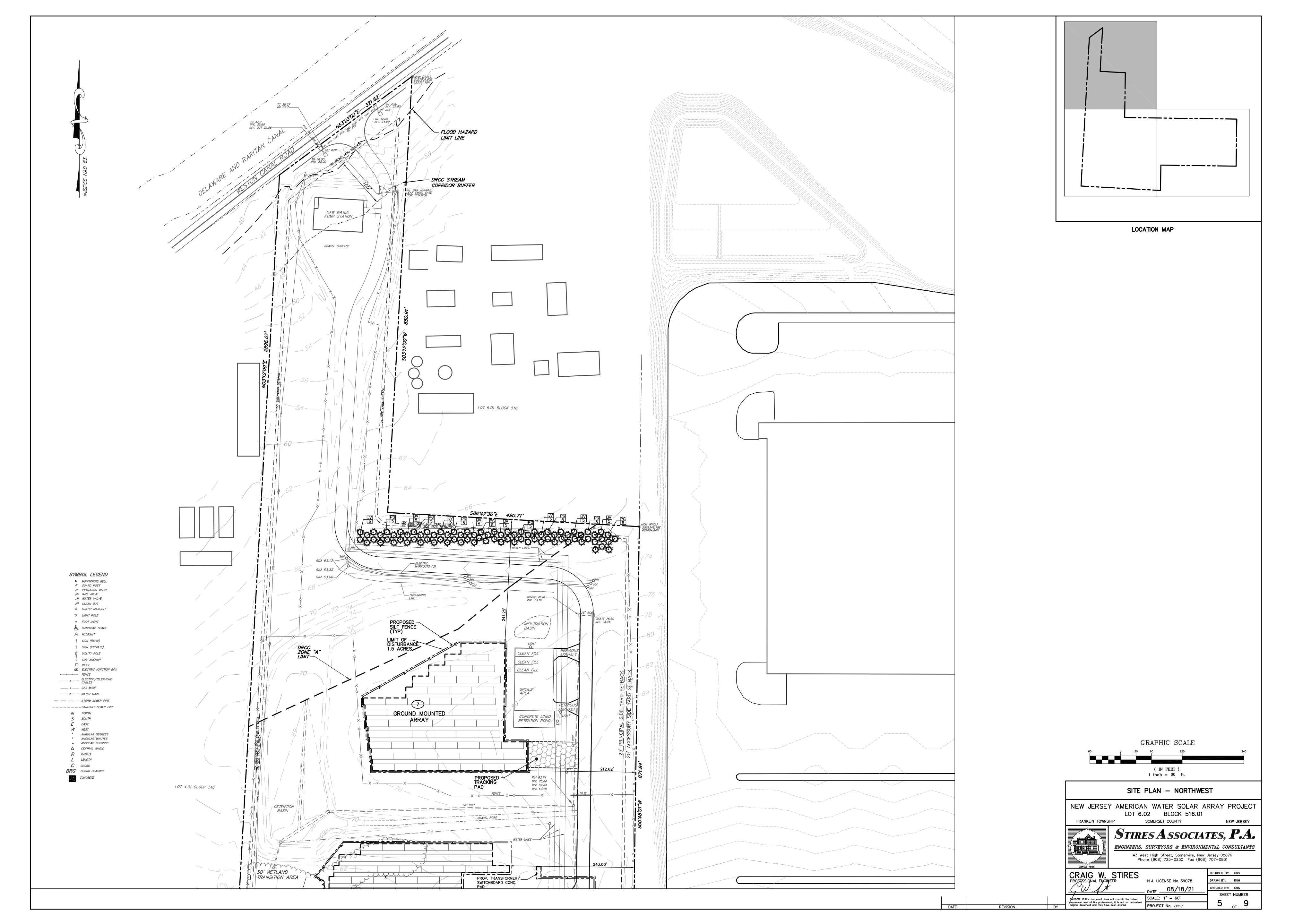
CRAIG W. STIRES N.J. LICENSE No. 39078 DRAWN BY: RNM DATE 08/18/21 HECKED BY: CWS SHEET NUMBER SCALE: NTS OAUTION: If this document does not contain the raised Impression seal of the professional, it is not an authorized original document and may have been altered.

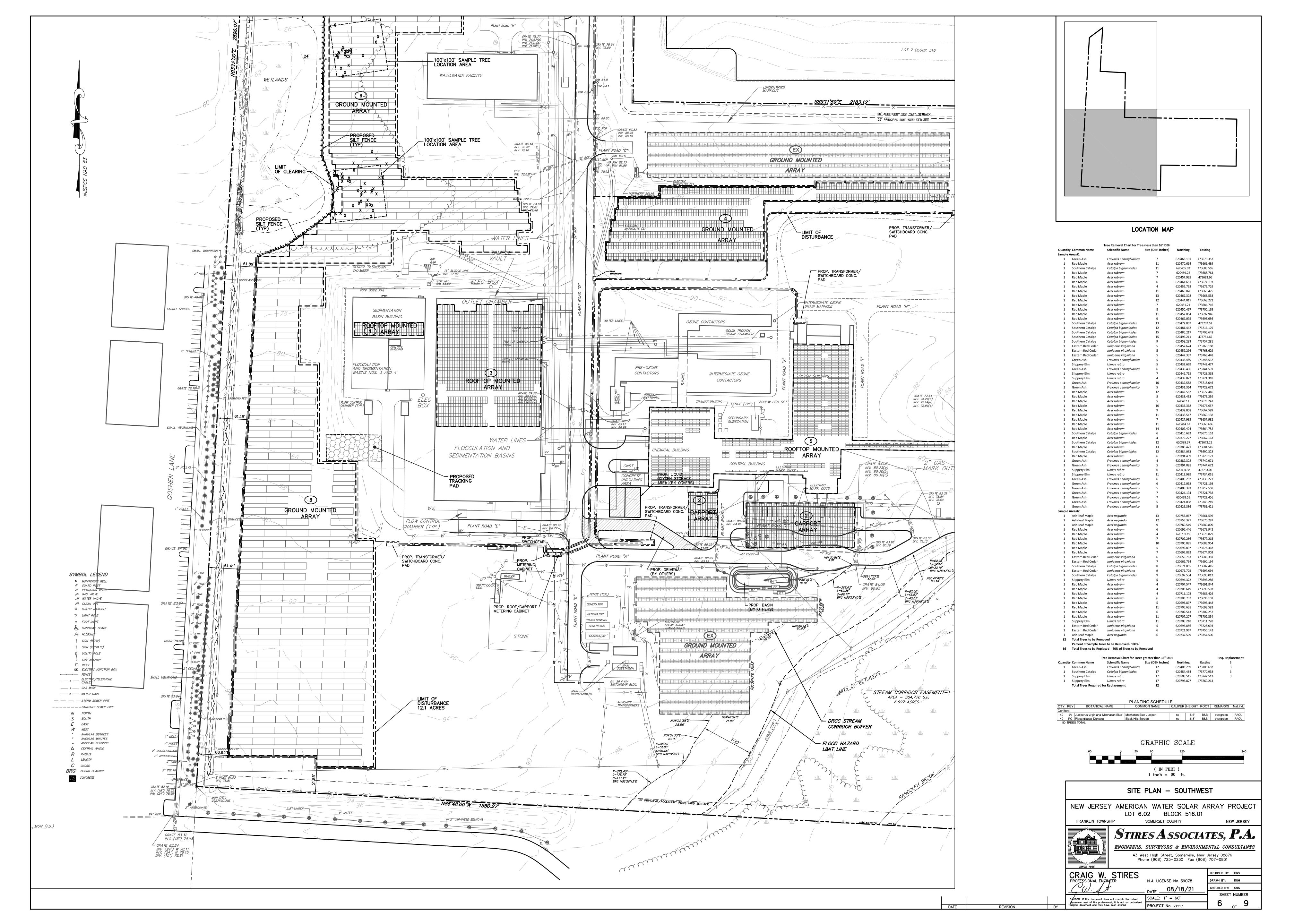
PROJECT No. 21217

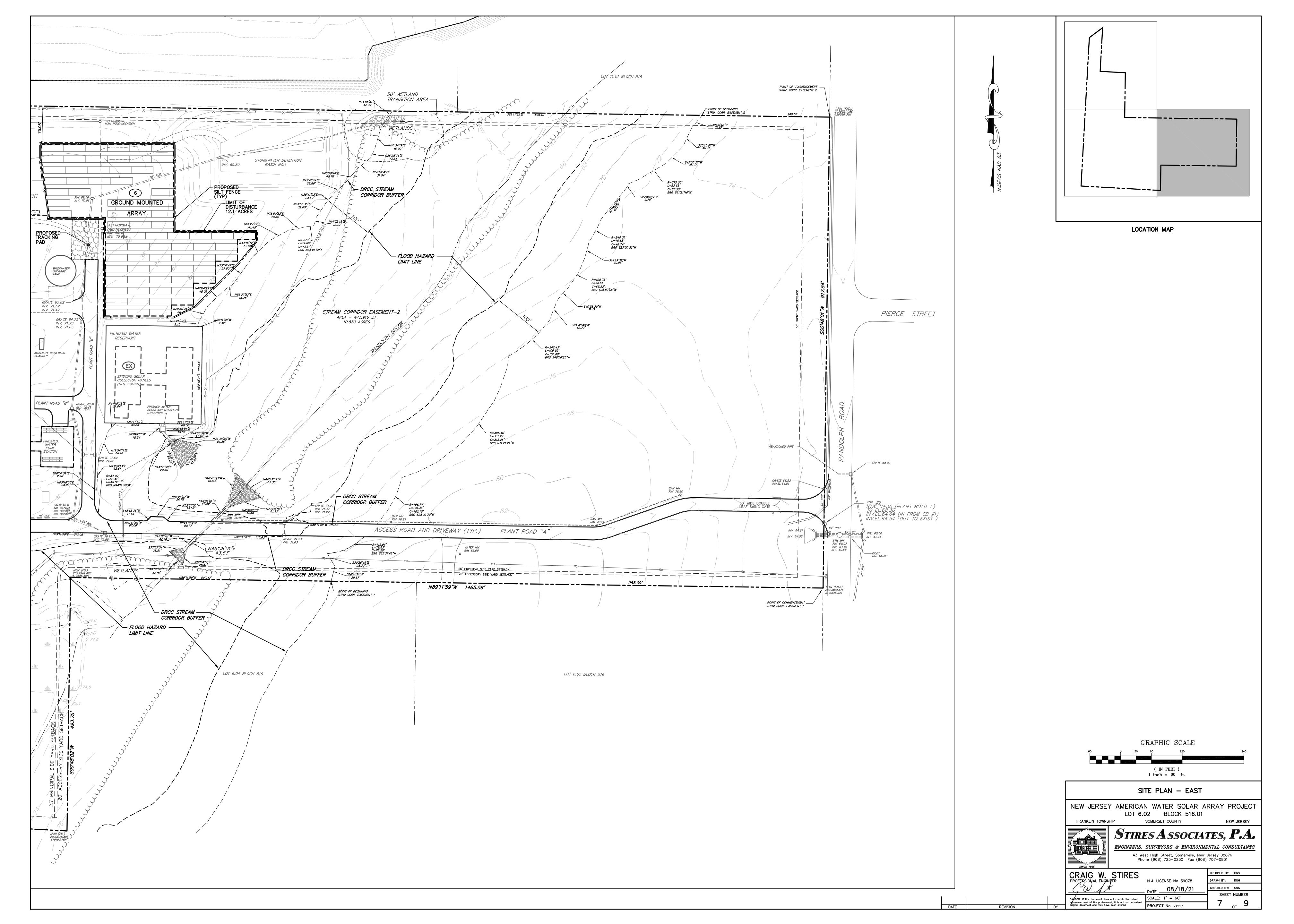


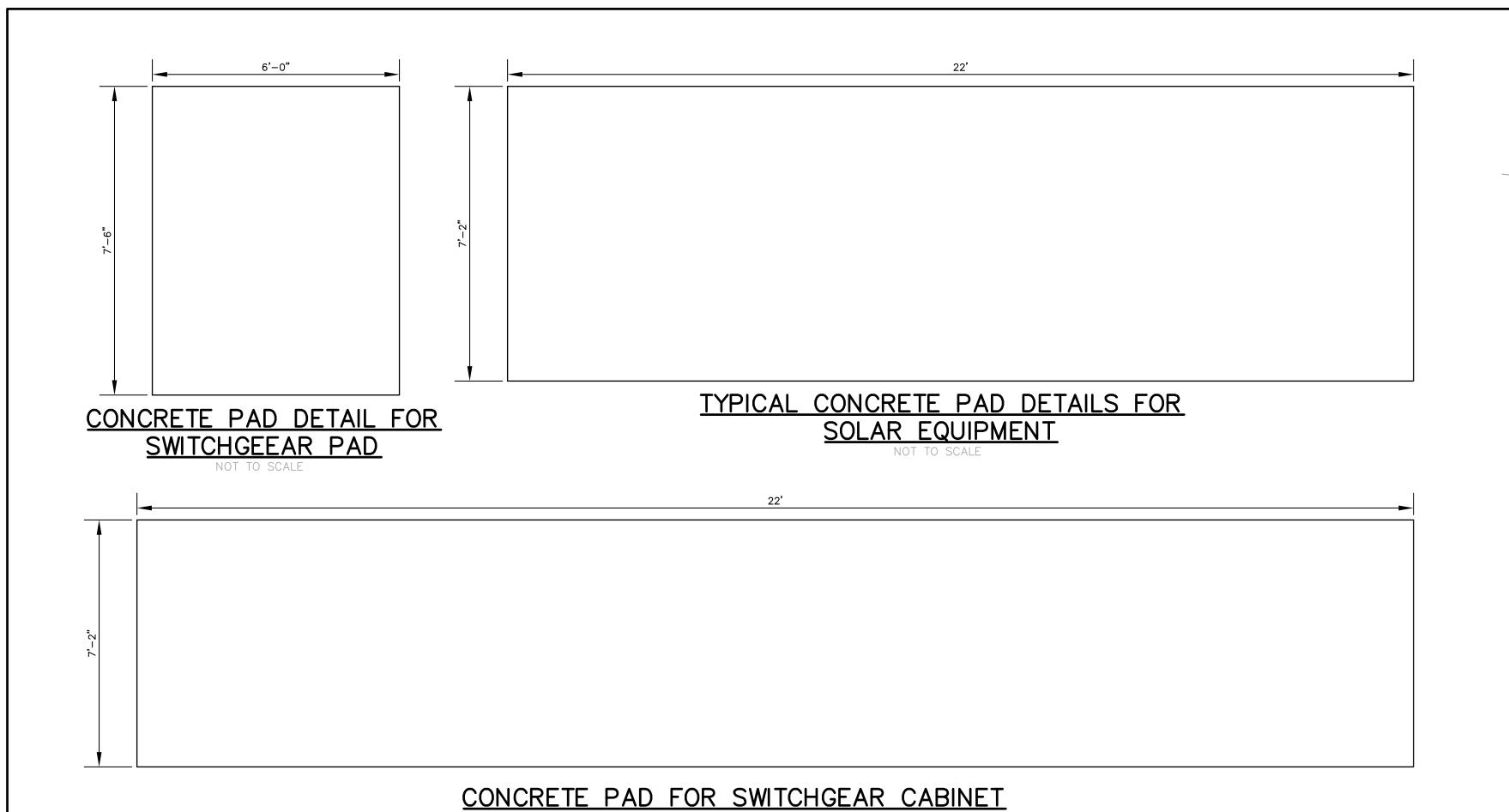












92'-10 15/16"± TOTAL ARRAY PROJECTED WIDTH_

93-0 7/16"± TOTAL ARRAY LENGTH IN PORTRAIT ORIENTATION

- EXISTING GRADE

STEEL COLUMN

EFUSALREMEDY PROCEDURE NOTES ON SHEET S

ZPURLINS #1 & #MH AVE RAISED MODULE MOUNTING SLOTS. (REE FA/305) ZPURUNS#2 & #3HAVE FLAT MODULE MOUNTING BLOTS, REF. F6/6/G601

OTHERS (TYP.)

- STEEL PURLIN PER

COMPONENT SCHEDULE ON COMPONENT PLAN SHEET(S) 8" CONCRETE EQUIPMENT PAD DETAIL

¬8" CONCRETE; MIN.

NOTE:

1. PAD LENGTH AND WIDTH AS SHOWN ON PLANS.

2. PAD SHALL EXTEND 4" BEYOND EQUIPMENT EDGE, TYPICAL ALL SIDES.

COMPRESSIVE STRENGTH

OF 4,000 PSI @ 28 DAYS

г#5 REBAR AT 12" О.С.

FINISHED GRADE

COMPACTED

SUBGRADE

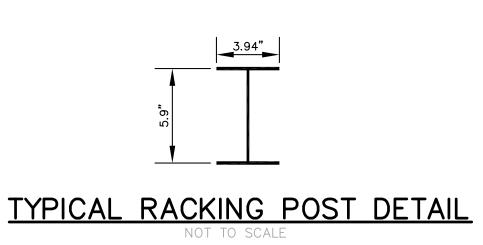
~ EXISTING

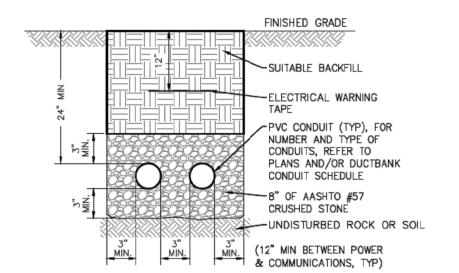
SUBGRADE

TOP & BOTTOM E.W.

1" ROLLED EDGE (TYP

ALL EXPOSED EDGES) -





NOTES:

1. RESTORE SITE TO EXISTING CONDITION. TYPICAL DIRECT BURIED ELECTRICAL
TRENCH DETAIL NOT TO SCALE

COLD WEATHER CONCRETE RESTRICTIONS

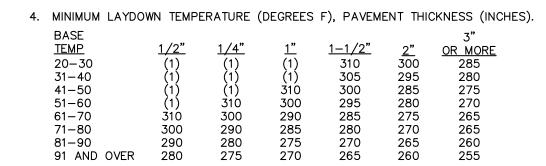
DURING THE COLD WEATHER MONTHS FRANKLIN TOWNSHIP ENGINEERING WILL ENFORCE THE FOLLOWING REGULATIONS TAKEN FROM ACI, PCA AND N.J. STATE

- 1. NO CONCRETE SHALL BE PLACED UNLESS THE AMBIENT TEMPERATURE IS 40 DEGREES F, ON A RISING THERMOMETER OR IF THE INTERIOR OF THE FORMS AND ANY SURFACE ADJACENT TO THE
- NEW CONCRETE ARE PREHEATED TO THAT TEMPERATURE OR HIGHER. 2. HEATING OF FORMS SHALL BE BY FORCED AIR OR RADIATION. NO OPEN FLAME HEATING WILL BE
- 3. THE MINIMUM TEMPERATURE OF FRESH CONCRETE AS PLACED AND MAINTAINED SHALL BE 55
- 4. THE DURATION OF RECOMMENDED CONCRETE TEMPERATURES SHALL BE SIX (6) DAYS FOR CONVENTIONAL CONCRETE AND THREE (3) DAYS FOR HIGH-EARLY-STRENGTH CONCRETE.
- 5. CALCIUM CHLORIDE IS NOT ALLOWED AS A CONCRETE ACCELERATOR. ACCEL-GUARD 80 IS
- 6. ADEQUATE ACCEPTABLE INSULATING MATERIALS SHALL BE PROVIDED TO MAINTAIN THE RECOMMENDED TEMPERATURE. BLANKETS, OR DRY SALT HAY COVERED WITH TARPAULINS OR POLYETYLENE FILM ARE ACCEPTABLE.

COLD WEATHER PAVING RESTRICTIONS

DURING THE COLD WEATHER MONTHS FRANKLIN TOWNSHIP ENGINEERING WILL ENFORCE THE FOLLOWING REGULATIONS TAKEN FROM N.J. STATE STANDARDS.

- 1. THE SURFACE UPON WHICH THE BITUMINOUS CONCRETE IS TO BE PLACED SHALL BE CLEAN OF ALL FOREIGN AND LOOSE MATERIAL, DRY AND FREE FROM ICE WHEN THE PAVING OPERATIONS ARE ABOUT TO START AND SHALL BE MAINTAINED IN THAT CONDITION.
- 2. BITUMINOUS CONCRETE MIXTURES SHALL BE PLACED WHEN THE COMBINATIONS OF LAYDOWN AND BASE SURFACE TEMPERATURES ARE WITHIN THE LIMITS SHOWN IN THE TABLE BELOW, WHEN THE
- WEATHER IS NOT RAINY, AND WHEN THE ROADBED IS IN SATISFACTORY CONDITION. 3. TEMPERATURE TESTING EQUIPMENT SHALL BE SUPPLIED BY THE CONTRACTOR. LAYDOWN TEMPERATURE WILL BE MEASURED IN THE RECEIVING HOPPER OF THE PAVER.



TRENCH NOTES

91 AND OVER

(1) - NO PAVING PERMITTED

- 1. ALL TRENCHES OR DITCHES WHICH CROSS AND EXISTING STREET OR WHICH ARE DUG FOR SEWERS, WATER MAINS, GAS MAINS OR OTHER UTILITIES, INCLUDING THE SERVICE CONNECTIONS FOR THESE UTILITIES, SHALL BE FILLED WITH QUARRY PROCESS STONE. THE STONE SHALL BE PLACED IN LAYERS NOT EXCEEDING TWELVE (12) INCHES IN DEPTH AND SHALL BE WITH WATER AND MECHANICALLY COMPACTED. ALL SOFT SPOTS AND DEPRESSIONS IN THE SURFACE, WHICH HAS BEEN GRADED, WILL BE REMOVED AND FILLED WITH STONE OF A SIZE TO BE DETERMINED BY THE TOWNSHIP ENGINEER. ALL TRENCHES WHICH ARE DUG IN A FUTURE STREET OR EXISTING R.O.W., ON WHICH NO SUBBASE OR PAVEMENT HAS BEEN CONSTRUCTED SHALL BE BACKFILLED AS INDICATED ABOVE OR MAY BE BACKFILLED WITH SUITABLE ON-SITE EXCAVATED MATERIALS OR IMPORTED FILL.
- 2. PRIOR TO USING ANY ON-SITE AND/OR IMPORTED SOIL MATERIALS THE CONTRACTOR OR ANY INDIVIDUAL OR FIRM SHALL EMPLOY A RECOGNIZED SOILS LABORATORY TO SECURE SOIL SAMPLES, PERFORM NECESSARY LABORATORY ANALYSIS AND ESTABLISH THE COMPACTION AND OTHER CRITERIA NECESSARY FOR THE PROPER PLACEMENT OF THE BACKFILL. A REPORT OF LABORATORY FINDINGS, INCLUDING THE COMPACTION SPECIFICATIONS, SHALL BE SUBMITTED TO THE TOWNSHIP ENGINEER FOR REVIEW AND APPROVAL PRIOR TO COMMENCING ANY BACKFILL OPERATIONS USING ON-SITE AND/OR IMPORTED SOIL MATERIALS.
- 3. DURING THE BACKFILLING OPERATIONS, THE CONTRACTOR OR ANY INDIVIDUAL OR FIRM ENGAGED IN BACKFILLING OPERATIONS SHALL EMPLOY A PROFESSIONAL ENGINEER, LICENSED IN THE STATE OF NEW JERSEY, OR HIS REPRESENTATIVE, WHO IS REGULARLY ENGAGED IN THE PRACTICE OF GEOTECHNICAL ENGINEERING AND WHO IS TRAINED IN SOIL MECHANICS, TO OBSERVE THE PLACEMENT OF THE BACKFILL. THE SOILS ENGINEER SHALL FILE DAILY REPORTS WITH THE TOWNSHIP ENGINEER INDICATING THE RESULTS OF THE COMPACTION AND UPON THE CONCLUSION OF THE PROJECT FILE A FINAL CERTIFICATION INDICATING THAT THE BACKFILL MATERIAL HAS BEEN PLACED AND COMPACTED IN ACCORDANCE WITH THE RECOMMENDATIONS CONTAINED IN THE APPROVED LABORATORY REPORT.
- 4. BACKFILL IN TRENCHES IN FIELD OR LAWN AREAS SHALL COMPLY WITH THE REQUIREMENTS FOR ON-SITE OR IMPORTED SOIL MATERIALS, AS INDICATED ABOVE.

FRANKLIN TOWNSHIP ENGINEERING DEPARTMENT STANDARD NOTES ALL MATERIALS, WORKMANSHIP AND CONSTRUCTION FOR SITE IMPROVEMENTS SHOWN HEREON SHALL BE IN ACCORDANCE WITH THE FOLLOWING, AS APPLICABLE:

- A. NEW JERSEY DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION".
- B. CURRENT PREVAILING MUNICIPAL AND/OR COUNTY SPECIFICATIONS, STANDARDS AND REQUIREMENTS.
- C. CURRENT PREVAILING UTILITY COMPANY/AUTHORITY SPECIFICATIONS, STANDARDS AND REQUIREMENTS.
- D. STATE OF NEW JERSEY B.O.C.A. CODE AND BARRIER-FREE DESIGN REGULATIONS AS CURRENTLY
- E. CURRENT ANSI/AWWA STANDARDS, SPECIFICATIONS AND REQUIREMENTS FOR THE WATER SUPPLY
- F. NfiPA 24-92 FOR FIRE SPRINKLER LINES THAT APPLY FOR INSTALLATION AND TESTING.

GENERAL NOTES

- 1. AS-BUILT PLANS OF THE ENTIRE SITE, PREPARED BY A NEW JERSEY LICENSED LAND SURVEYOR IN ACCORDANCE WITH TOWNSHIP REQUIREMENTS, ARE TO BE PROVIDED TO THE TOWNSHIP PRIOR TO RELEASE OF THE PERFORMANCE BOND.
- 2. NO SOIL CAN BE IMPORTED TO OR REMOVED FROM THE SITE UNTIL A SOIL IMPORTATION OR EXPORTATION PERMIT IS OBTAINED FROM THE ENGINEERING DEPARTMENT.
- 3. THE SUBGRADE OF ALL STREETS AND PARKING AREAS MUST BE PROOF-ROLLED USING A TRI-AXLE TANDEM DUMP TRUCK WITH A MINIMUM CERTIFIED WEIGHT OF 70,000 LBS. FULLY LOADED. THE PROOF ROLL IS TO BE CONDUCTED UNDER THE DIRECT SUPERVISION OF THE TOWNSHIP ENGINEER OR HIS REPRESENTATIVE.
- 4. CONSTRUCTION CASTINGS SHALL BE OF UNITED STATES MANUFACTURER AND NJDOT APPROVED. IF OTHER THAN CAMPBELL, NEENAH, BRIDGESTATE, EMPORIA, QUIRIN OR EAST JORDAN IRONWORKS DASTINGS ARE PLANNED TO BE USED, COMPLETE DATA MUST BE SUBMITTED INCLUDING, BUT NOT LIMITED TO, AN AFFIDAVIT CERTIFYING THAT THE CASTINGS WERE MADE IN THE U.S.; LOAD CAPACITY BASED ON THE STANDARD HIGHWAY LOADING; WEIGHTS AND CONFIGURATIONS OF THE CASTINGS AND METALLURGICAL ANALYSIS. ALL GRATES ARE TO BE "BICYCLE SAFE".

CONSTRUCTION DETAILS

NEW JERSEY AMERICAN WATER SOLAR ARRAY PROJECT LOT 6.02 BLOCK 516.01 FRANKLIN TOWNSHIP SOMERSET COUNTY **NEW JERSEY**





43 West High Street, Somerville, New Jersey 08876 Phone (908) 725-0230 Fax (908) 707-0831

N.J. LICENSE No. 39078

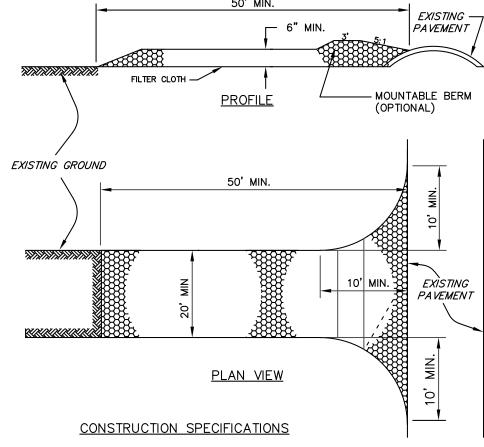
CRAIG W. STIRES

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- DATE <u>08/18/21</u> IECKED BY: CWS SHEET NUMBER SCALE: NTS PROJECT No. 21217

DESIGNED BY: CWS DRAWN BY: RNM



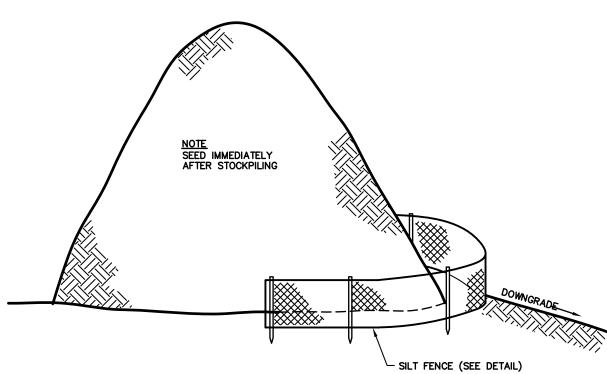


- 1. THE EXISTING GRAVEL TRACKING PAD SHALL BE REDRESSED AND SUPPLEMENTED AS REQUIRED TO CONFORM WITH THE CURRENT SOIL EROSION AND SEDIMENT CONTROL
- STONE SIZE USE 2" STONE, OR RECYCLED CONCRETE EQUIVALENT. 3. LENGTH - AS REQUIRED, BUT NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE
- LOT WHERE 30 FOOT MINIMUM LENGTH WOULD APPLY.) 4 THICKNESS - NOT LESS THAN SIX (6) INCHES 5. WIDTH - TEN (10) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT
- POINTS WHERE INGRESS OR EGRESS OCCURS. 6. FILTER CLOTH - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE. FILTER WILL NOT BE REQUIRED ON A SINGLE FAMILY RESIDENCE LOT

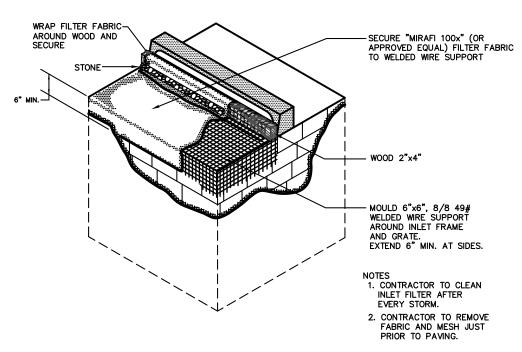
STANDARDS

- 7. SURFACE WATER ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCE SHALL BE PIPED ACROSS ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
- 8. MAINTENANCE THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS—OF—WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST
- BE REMOVED IMMEDIATELY. 9. WASHING - WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING
- 10. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

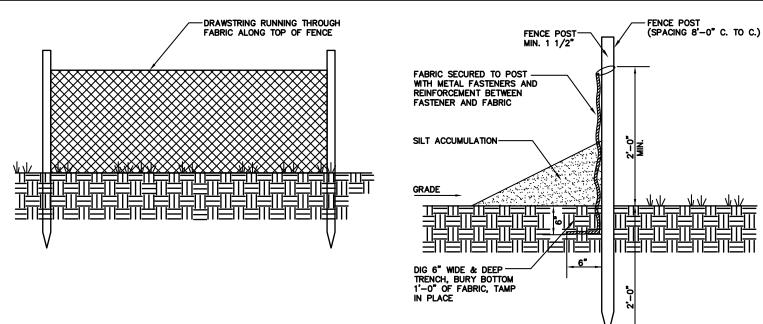




TOPSOIL STOCKPILE



INLET FILTER DETAIL

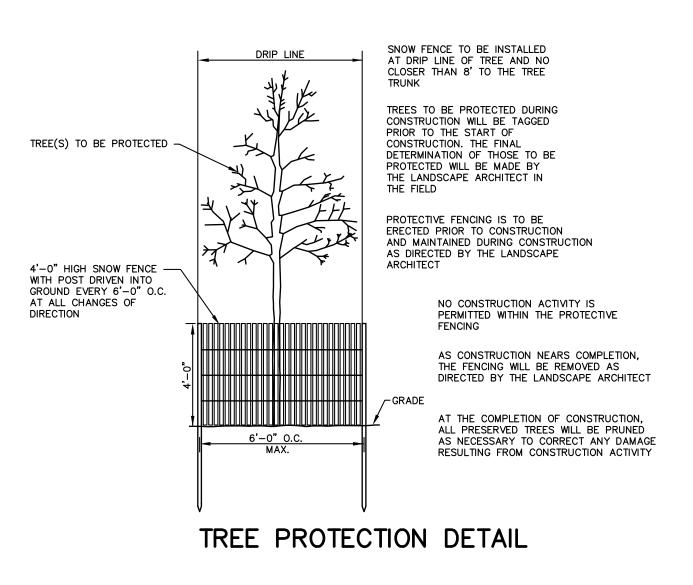


REQUIREMENTS FOR SILT FENCE:

1. FENCE POST SHALL BE SPACED 8 FEET CENTER-TO-CENTER OR CLOSER. THEY SHALL EXTEND AT LEAST 2 FEET INTO THE GROUND AND EXTEND AT LEAST 2 FEET ABOVE GROUND. POSTS SHALL BE CONSTRUCTED OF HARDWOOD WITH A MINIMUM DIAMETER THICKNESS 2. A METAL FENCE WITH 6" OR SMALLER OPENINGS AND AT LEAST 2 FEET HIGH MAY BE UTILIZED., FASTENED T THE FENCE POSTS, TO PROVIDE REINFORCEMENT AND SUPPORT RO RHE GEOTEXTILE FABRIC WHERE SPACE FOR OTHER PRACTICES IS LIMITED AND HEAVY SEDIMENT LOADING IS EXPECTED.

3. A GEOTEXTILE FABRIC, RECOMMENDED FOR SUCH USE BY THE MANUFACTURER, SHALL BE BURIED AT LEAST 6" DEEP IN THE GROUND. THE FABRIC SHALL EXTEND AT LEAST 2 FEET ABOVE THE GROUND. THE FABRIC MUST BE SECURELY FASTENED TO THE POSTS USING A SYSTEM CONSISTING OF METAL FASTENERS (NAIL OR STAPLES) AND A HIGH STRENGTH REINFORCEMENT MATERIAL (NYLON WEBBING, GROMMETS, WASHERS ETC.) PLACED BETWEEN THE FASTENERS AND THE GEOTEXTILE FABRIC. THE FASTENING SYSTEM SHALL RESISTS TEARING AWAY FROM THE POST. THE FABRIC SHALL ALL INCORPORATE A DRAWSTRING IN THE TOP PORTION OF THE FENCE FOR ADDED

SILT FENCE DETAIL



SOIL COMPACTION TESTING REQUIREMENTS

Soil Management and Preparation

- 1. Subgrade soils prior to the application of topsoil shall be free of excessive compaction to a depth of 6.0 inches to enhance the establishment of permanent vegetative cover. 2. These notes address the potential for excessive soil compaction in light of the intended land use,
- testing for excessive soil compaction where permanent vegetation is to be established and mitigation of excessive soil compaction when appropriate.
- 3. Due to use or setting, certain disturbed areas will not require compaction remediation including, but not limited to the following:
- Within 20 feet of building foundations with basements, 12 feet from slab or crawl space construction. Where soils or gravel surfaces will be required to support post-construction vehicular traffic loads such as
 - roads, parking lots and driveways (including gravel surfaces), bicycle paths or pedestrian walkways (sidewalks etc)
- Airports, railways or other transportation facilities Areas requiring industry or government specified soil designs, including golf courses, landfills wetland
- restoration, septic disposal fields, wet/lined ponds, etc. Areas governed or regulated by other local, state or federal regulations which dictate soil conditions Brownfields (capped uses), urban redevelopment areas, in-fill areas, recycling yards, junk yards, and
- Slopes determined to be inappropriate for safe operation of equipment Portions of a site where no heavy equipment travel or other disturbance has taken place
- Areas receiving temporary vegetative stabilization in accordance with the Standard. Where the area available for remediation practices is 500 square feet or less in size.
- Locations containing shallow (close to the surface) bedrock conditions.
- 4. Areas of the site which are subject to compaction testing and/or mitigation are graphically denoted on the
- certified soil erosion control plan 5. Soil compaction remediation or testing to prove remediation is not necessary will be required in areas where permanent vegetation is to be established that are not otherwise exempted above. Testing method shall be selected, and soil compaction testing shall be performed by, the contractor or other project owner's representative (e.g. engineer). A minimum of two (2) tests shall be performed for projects with an overall limit of disturbance of up to one (1) acre and at a rate of two (2) tests per acre of the overall limit of disturbance for larger areas which shall be evenly distributed over the area of disturbance subject to testing. Tests shall be
- performed in areas representative of the construction activity prevailing in the area. In the event this testing indicates compaction in excess of the maximum thresholds indicated for the testing method, the contractor/owner shall have the option to perform compaction mitigation over the entire disturbed area (excluding exempt areas) or to perform additional testing to establish the limits of excessive compaction whereupon only the excessively compacted areas would require compaction mitigation.
- 6. Soil compaction testing is not required if/when subsoil compaction remediation (scarification/tillage (6" minimum proposed as part of the sequence of construction. 7. Soil Test Method Options
- a. Probing Wire Test Method This test shall be conducted with a firm wire (15-1/2 gauge steel wire - e.g. survey marker flag, straight wire stock, etc.), 18 to 21 inches in length, with 6" inches from one end visibly marked on the wire. Conduct wire flag test by holding the wire flag near the flag end and push it vertically into the soil at several different locations in the field to the lesser of a 6 inch depth or the depth at which it bends due to resistance in the soil. Record the depth at which it bends due to resistance in the soil. The wire should penetrate without bending or deforming at least 6" into the ground by hand, without the use of tools. If penetration fails and an obstruction is suspected (rocks, root, debris, etc.) the test can be repeated in the same general area. If the test is successful the soil is not excessively compacted. If the wire is difficult to

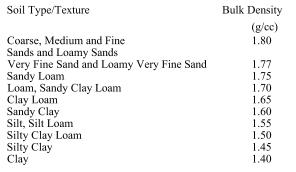
insert (wire bends or deforms prior to reaching 6 inches in depth) the soil may be excessively compacted and compaction mitigation or further testing via method 3 or 4 below is required, the choice of which is at

the contractor/owner's discretion. b. Handheld Soil Penetrometer Test Method

- This test shall be conducted based on the Standard Operation Procedure (SOP) #RCE2010-001, prepared by the Rutgers Cooperative Extension, Implemented June 1, 2010, last revised February 28, 2011. A result of less than or equal to 300 psi shall be considered passing. If the result is greater than 300 psi the soil may be excessively compacted and compaction mitigation or further testing via method 3 or 4 below is required, the choice of which is at the contractor/owner's discretion.
- c. Tube Bulk Density Test Method This test shall be certified by a New Jersey Licensed Professional Engineer utilizing only undisturbed samples (reconstitution of the sample not permitted) collected utilizing the procedure for Soil Bulk Density Tests as described in the USDA NRCS Soil Quality Test Kit Guide, Section 1-4, July 2001. When the texture of the soil to be tested is a sand or loamy sand and lack of soil cohesion or the presence of large

amounts of coarse fragments, roots or worm channels prevent the taking of undisturbed samples, this test

- Where the results of replicate tests differ by more than ten percent (10%), the samples shall be examined for
- the following defects: - Cracks, worm channels, large root channels or poor soil tube contact within the samples;
- Large pieces of gravel, roots or other foreign objects - Smearing or compaction of the upper or lower surface of the samples
- If any of the defects described in 3 (i-iii) above are found, the defective core(s) shall be discarded and the test repeated using a new replicate sample for each defective replicate sample. The bulk density (defined as the weight of dry soil per volume) results shall be compared with the Maximum Dry Bulk Densities in Table 19-1. A result of less than or equal to the applicable maximum bulk density shall be considered passing. If the result is greater than the maximum bulk density the soil shall be considered excessively compacted and
- compaction mitigation is required. d. Nuclear Density Test Method
- gauge certified inspector pursuant to ASTM D6938 . The bulk density measurement results shall be compared with the Maximum Dry Bulk Densities in Table 19-1. A result of less than or equal to the applicable maximum bulk density shall be considered passing. If the result is greater than the maximum
- bulk density the soil shall be considered excessively compacted and compaction mitigation is required. Table 19-1 – Maximum Dry Bulk Densities (grams/cubic centimeter) by soil type Soil Type/Texture **Bulk Density**



Source: USDA Natural Resource Conservation Service, Soil Quality Information Sheet, Soil Quality Resource Concerns: Compaction, April 1996

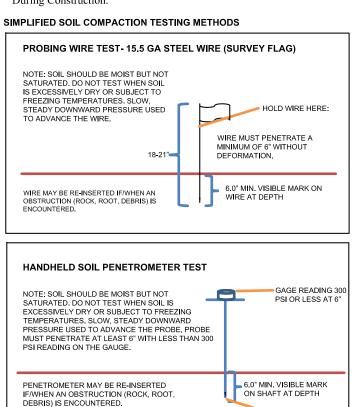
e. Additional testing methods which comform to ASTM standards and specificaitons, and which produce a dry weight, soil bulk density measurement may be allowed subject to District approval.

8. Procedures for Soil Compaction Mitigation

If subgrade soils are determined to be excessively compacted by testing, as identified above, procedures shall be used to mitigate excessive soil compaction prior to placement of topsoil and establishment of permanent vegetative cover. Restoration of compacted soils shall be through deep scarification/tillage (6" minimum depth) where there is no danger to underground utilities (cables, irrigation systems, etc.) or in the alternative, another method as specified by a New Jersey Licensed Professional Engineer. **Installation Requirements**

- Timber, logs, brush, rubbish, rocks, stumps and vegetative matter which will interfere with the grading operation or affect the planned stability or fill areas shall be removed and disposed of according to the
- Topsoil is to be stripped and stockpiled in amounts necessary to complete finish grading of all exposed areas requiring topsoil. Fill material is to be free of brush, rubbish, timber, logs, vegetative matter and stumps in amounts that will
- be detrimental to constructing stable fills. All structural fills shall be compacted as determined by structural engineering requirements for their intended purpose and as required to reduce slipping, erosion or excessive saturation. All disturbed areas shall be left with a neat and finished appearance and shall be protected from erosion.
- Trees to be retained shall be protected if necessary in accordance with the Standard for Tree Protection During Construction.

TIP FOR SOIL TYPE



SOMERSET UNION SOIL CONSERVATION DISTRICT SOIL EROSION AND SEDIMENT CONTROL NOTES

ACCORDANCE WITH THE NEW JERSEY STANDARDS. SEE NOTE 21 BELOW.

- 1. ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE INSTALLED IN ACCORDANCE WITH THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY, AND WILL BE IN PLACE PRIOR TO ANY MAJOR SOIL DISTURBANCE, OR IN THEIR PROPER SEQUENCE AND MAINTAINED UNTIL PERMANENT PROTECTION IS ESTABLISHED.
- 2. ANY DISTURBED AREA THAT WILL BE LEFT EXPOSED FOR MORE THAN THIRTY (30) DAYS AND NOT SUBJECT TO CONSTRUCTION TRAFFIC SHALL IMMEDIATELY RECEIVE A TEMPORARY SEEDING. IF THE SEASON PROHIBITS TEMPORARY SEEDING, THE DISTURBED AREAS WILL BE MULCHED WITH STRAW OR HAY AND TACKED IN
- 3. PERMANENT VEGETATION IS TO BE ESTABLISHED ON EXPOSED AREAS WITHIN TEN (10) DAYS AFTER FINAL GRADING. MULCH IS TO BE USED FOR PROTECTION UNTIL VEGETATION IS ESTABLISHED. SEE NOTE 22 BELOW.
- 4. IMMEDIATELY FOLLOWING INITIAL DISTURBANCE OR ROUGH GRADING. ALL CRITICAL AREAS (STEEP SLOPES, SANDY
- SOILS, WET CONDITIONS) SUBJECT TO EROSION WILL RECEIVE A TEMPORARY SEEDING IN ACCORDANCE WITH NOTE
- 5. TEMPORARY DIVERSION BERMS ARE TO BE INSTALLED ON ALL CLEARED ROADWAYS AND EASEMENT AREAS. SEE THE DIVERSION DETAIL.
- 6. PERMANENT SEEDING AND STABILIZATION TO BE IN ACCORDANCE WITH THE "STANDARDS FOR PERMANENT
- VEGETATIVE COVER FOR SOIL STABILIZATION COVER". SPECIFIED RATES AND LOCATIONS SHALL BE ON THE APPROVED SOIL EROSION AND SEDIMENT CONTROL PLAN.
- 7. THE SITE SHALL AT ALL TIMES BE GRADED AND MAINTAINED SO THAT ALL STORMWATER RUNOFF IS DIVERTED TO SOIL EROSION AND SEDIMENT CONTROL FACILITIES.
- 8. ALL SEDIMENTATION STRUCTURES (SILT FENCE, INLET FILTERS, AND SEDIMENT BASINS) WILL BE INSPECTED AND
- 9. STOCKPILES SHALL NOT BE LOCATED WITHIN 50' OF A FLOODPLAIN, SLOPE, DRAINAGE FACILITY, OR ROADWAY. ALL STOCKPILES BASES SHALL HAVE A SILT FENCE PROPERLY ENTRENCHED AT THE TOE OF SLOPE.
- 10. A STABILIZED CONSTRUCTION ACCESS WILL BE INSTALLED, WHENEVER AN EARTHEN ROAD INTERSECTS WITH A
- PAVED ROAD. SEE THE STABILIZED CONSTRUCTION ACCESS DETAIL AND CHART FOR DIMENSIONS. 11. ALL NEW ROADWAYS WILL BE TREATED WITH SUITABLE SUBBASE UPON ESTABLISHMENT OF FINAL GRADE
- 12. PAVED ROADWAYS MUST BE KEPT CLEAN AT ALL TIMES.
- 13. BEFORE DISCHARGE POINTS BECOME OPERATIONAL, ALL STORM DRAINAGE OUTLETS WILL BE STABILIZED AS
- 14. ALL DEWATERING OPERATIONS MUST BE DISCHARGED DIRECTLY INTO A SEDIMENT FILTER AREA. THE FILTER SHOULD BE COMPOSED OF A FABRIC OR APPROVED MATERIAL. SEE THE DEWATERING DETAIL.
- 15. ALL SEDIMENT BASINS WILL BE CLEANED WHEN THE CAPACITY HAS BEEN REDUCED BY 50%. A CLEAN OUT
- ELEVATION WILL BE IDENTIFIED ON THE PLAN AND A MARKER INSTALLED ON THE SITE. 16. DURING AND AFTER CONSTRUCTION, THE APPLICANT WILL BE RESPONSIBLE FOR THE MAINTENANCE AND UPKEEP
- OF THE DRAINAGE STRUCTURES, VEGETATION COVER, AND ANY OTHER MEASURES DEEMED APPROPRIATE BY THE DISTRICT. SAID RESPONSIBILITY WILL END WHEN COMPLETED WORK IS APPROVED BY THE SOMERSET-UNION SOIL
- DISTURBANCE AREA WHICH ARE DESIGNATED TO REMAIN AFTER CONSTRUCTION ARE TO BE PROTECTED WITH TREE PROTECTION DEVICES. SEE THE TREE PROTECTION DETAIL.

17. ALL TREES OUTSIDE THE DISTURBANCE LIMIT INDICATED ON THE SUBJECT PLAN OR THOSE TREES WITHIN THE

- 18. THE SOMERSET COUNTY SOIL CONSERVATION DISTRICT MAY REQUEST ADDITIONAL MEASURES TO MINIMIZE ON SITE OR OFF SITE EROSION PROBLEMS DURING CONSTRUCTION.
- 19. THE SOMERSET COUNTY SOIL CONSERVATION DISTRICT MUST BE NOTIFIED, IN WRITING, AT LEAST 72 HOURS PRIOR TO ANY LAND DISTURBANCE, AND A PRE-CONSTRUCTION MEETING HELD.
- 20. CONTRACTOR TO SET UP A MEETING WITH THE INSPECTOR FOR PERIODIC INSPECTIONS OF THE TEMPORARY SEDIMENT BASIN PRIOR TO AND DURING ITS CONSTRUCTION.
- 21. TOPSOIL STOCKPILE PROTECTION A) APPLY GROUND LIMESTONE AT A RATE OF 90 LBS PER 1000 SQ. FT.
- B) APPLY FERTILIZER (10-20-10) AT A RATE OF 11 LBS. PER 1000 SQ. FT.
- C) APPLY PERENNIAL RYEGRASS SEED AT 1 LB. PER 1000 SQ. FT. AND ANNUAL RYEGRASS AT 1 LB. PER 1000
- D) MULCH STOCKPILE WITH STRAW OR HAY AT A RATE OF 90 LBS. PER 1000 SQ. FT. E) APPLY A LIQUID MULCH BINDER OR TACK TO STRAW OR HAY MULCH.
- F) PROPERTY ENTRENCH A SILT FENCE AT THE BOTTOM OF THE STOCKPILE.
- 22. TEMPORARY STABILIZATION SPECIFICATIONS A) APPLY GROUND LIMESTONE AT A RATE OF 90 LBS PER 1000 SQ. FT.
- B) APPLY FERTILIZER (10-20-10) AT A RATE OF 11 LBS. PER 1000 SQ. FT.
- C) APPLY PERENNIAL RYEGRASS SEED AT 1 LB. PER 1000 SQ. FT. AND ANNUAL RYEGRASS AT 1 LB. PER 1000
- D) MULCH STOCKPILE WITH STRAW OR HAY AT A RATE OF 90 LBS. PER 1000 SQ. FT.
- E) APPLY A LIQUID MULCH BINDER OR TACK TO STRAW OR HAY MULCH.
- 23. PERMANENT STABILIZATION SPECIFICATIONS
- A) APPLY TOPSOIL TO A DEPTH OF 5 INCHES (UNSETTLED). B) APPLY GROUND LIMESTONE AT A RATE OF 90 LBS PER 1000 SQ. FT. AND WORK FOUR INCHES INTO SOIL.
- C) APPLY FERTILIZER (10-20-10) AT A OF RATE 11 LBS. PER 1000 SQ. FT.
- D) APPLY HARD FESCUE SEED AT 2.7 LBS. PER 1000 SQ. FT. AND CREEPING RED FESCUE SEED AT 0.7 LBS PER 1000 SQ. FT. AND PERENNIAL RYEGRASS SEED AT 0.25 LBS PER 1000 SQ. FT.
- E) MULCH STOCKPILE WITH STRAW OR HAY AT A RATE OF 90 LBS. PER 1000 SQ. FT. F) APPLY A LIQUID MULCH BINDER OR TACK TO STRAW OR HAY MULCH.
- *NOTE: 72 HOURS PRIOR TO ANY SOIL DISTURBANCE, NOTICE IN WRITING, SHALL BE GIVEN TO THE SOMERSET UNION SOIL CONSERVATION DISTRICT.

CONSTRUCTION DETAILS

NEW JERSEY AMERICAN WATER SOLAR ARRAY PROJECT LOT 6.02 BLOCK 516.01

SOMERSET COUNTY



FRANKLIN TOWNSHIP



NEW JERSEY

SHEET NUMBER

CRAIG W. STIRES

N.J. LICENSE No. 39078 - DATE 08/18/21 ECKED BY: CWS

Phone (908) 725-0230 Fax (908) 707-0831

SCALE: NTS CAUTION: If this document does not contain the raised

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