

U.S.G.S. QUADRANGL "PERTH AMBOY" & "ARTHUR KILL

(1"=2000'±)

PHILLIPS 66 CO - PROPERTY TAX S1364 1401 LOWER ROAD

CATAMOUNT PETROLEUM LTD % GULF OIL 2600 MARSHES DOC RD REAR

1540 LOWER ROAD

1901 LOWER ROAD REAR

1811 LOWER ROAD

1805 LOWER ROAD

1601 LOWER ROAD

2601 RANGE ROAD

2650 MARSHES DOCK ROAD

1959 LOWER ROAD REAR

NEW JERSEY AMERICAN WATER CO., INC.

1025 LAUREL OAK ROAD

ELIZABETHTOWN GAS COMPANY

VOORHEES, NJ 08043

GREG BALINT

520 GREEN LANE

COMCAST CABLE

800 RAHWAY AVENUE

UNION, NJ 07083

SUNOCO PIPELINE L.P.

MONTELLO COMPLEX

525 FRIZTOWN ROAD

RIGHT OF WAY DEPARTMENT

SINKING SPRING, PA 19608

UNION, NJ 07083

2650 MARSHES DOCK RD REAR

RIDGE ASSOC C/O WASTE MANAGEMENT

400 PLAZA DRIVE

400 PLAZA DRIVE

DUFF & PHELPS

ADDISON, TX 75001

1805 REALTY CO LLO 1300 LOWER ROAD

LINDEN, NJ 07036

400 PLAZA DRIVE PO BOX 1411

SECAUCUS, NJ 07094

MINE HILL, NJ 07803

2331 CITY WEST BLVD.

HOUSTON, TX 77042

1300 LOWER ROAD

PO BOX 56169

PO BOX 56169

PO BOX 56169

ELIZABETHTOWN GAS COMPANY

80 PARK PLAZA T6B

NEWARK, NJ 07102

445 GEORGES ROAD

C/O THOMAS GRABOWSKI

SUN PIPELINE COMPANY

1801 MARKET STREET

TRENTON, NJ 08625

NORTH BRUNSWICK, NJ 08902

PHILADELPHIA, PA 19103-1699

RIGHT OF WAY DEPT - 26TH FLOOR

NJ DEPARTMENT OF ENVIRONMENTAL PROTECTION

ONE ELIZABETHTOWN PLAZA, 3RD FL. EAST

PUBLIC SERVICE ELECTRIC & GAS COMPANY

MANAGER, CORPORATION PROPERTIES

LINDEN, NJ 07036

HOUSTON, TX 77256

HOUSTON, TX 77256

HOUSTON, TX 77256

BUCKEYE PIPELINE CO. LLP

80 WILLIAM STREET STE 400

WELLESLEY HILLS, MA 02481

MERCK SHARP & DOHME CORP

WS2F - 96 ONE MERCK DRIVE

WHITEHOUSE STATION, NJ 08889

MICHAEL F. STONAC, MANAGER, ENGINEERING DESIGN DONNA SHORT, GIS SUPERVISOR

BUCKEYE PIPELINE CO LP PROP TAX

BUCKEYE PIPELINE CO LP PROP TAX

106 IRON MOUNTAIN ROAD

LINDEN WAREHOUSE & DISTRIBUTION CO.

FIABILA PROPERTY LLC

PO BOX 2629

CITY OF LINDEN

PO BOX 411

SECAUCUS, NJ 07094

SECAUCUS, NJ 07094

RIDGE ASSOC C/O HARTZ MT

TEXAS EASTERN TRANS CORF

301 NORTH WOOD AVENUE

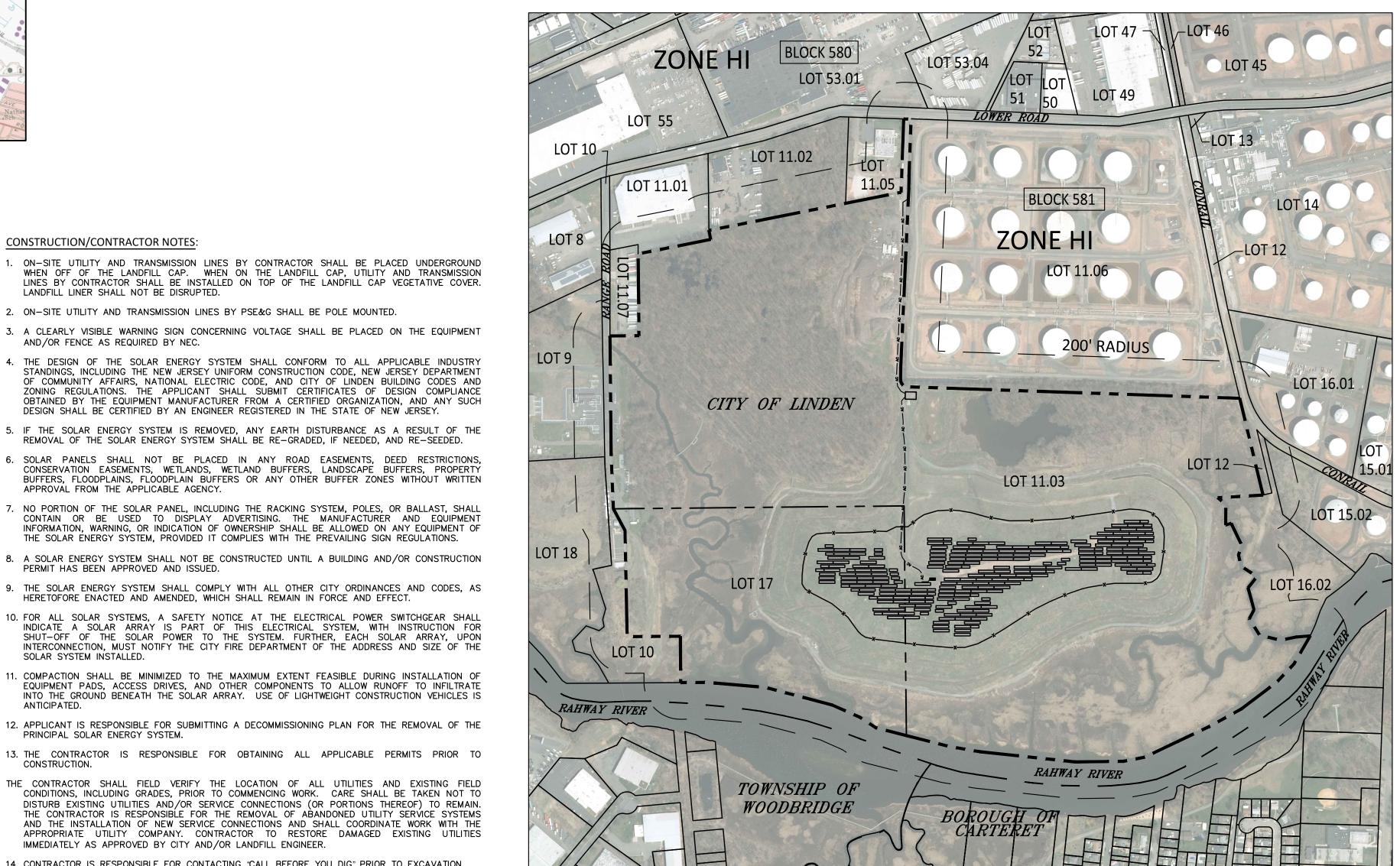
200' PROPERTY OWNER'S LIST

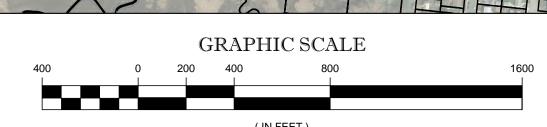
LINDEN HAWK RISE SOLAR PROJECT

LINDEN HAWK RISE SOLAR, LLC

PRELIMINARY AND FINAL MAJOR SITE PLAN

LOTS 11.03 AND 17 IN BLOCK 581 CITY OF LINDEN, UNION COUNTY, NEW JERSEY





1 inch = 400 ft.REDEVELOPMENT AREA LAND USES AND BUILDING REQUIREMENTS (ORDINANCE NO. 64-06)

THE FOLLOWING PERMITTED LAND USES AND BUILDING REQUIREMENTS SHALL BE APPLICABLE TO THE VARIOUS DEVELOPMENT PARCELS IN THE MUNICIPAL LANDFILL REDEVELOPMENT PROJECT AREA:

THE PERMITTED USE IS "NON-RESIDENTIAL" AS SHOWN ON THE ATTACHED "LAND USE PLAN MAP". THE LAND USES PERMITTED IN THE REDEVELOPMENT AREA INCLUDE RECREATIONAL AND/OR CONSERVATION USES AND LIMITED INDUSTRIAL USES, INCLUDING SOLAR ARRAY AND ENERGY STORAGE AS A PRINCIPAL PERMITTED USE. THE TOTAL LAND AREA OF THE LANDFILL IS APPROXIMATELY 174.3 ACRES, AND WITHIN THAT TOTAL AREA NO MORE 10.0 ACRES CAN BE UTILIZED FOR INDUSTRIAL PURPOSES, WITH THE EXCEPTION OF SOLAR ARRAY WHICH MAY UTILIZE 20 ACRES AND THE BALANCE OF THE AREA SHALL BE DEVOTED TO RECREATIONAL AND/OR CONSERVATION USES. (SOLAR ARRAY COMPLIES)

ADDITIONAL BUILDING REQUIREMENTS
THE FOLLOWING REQUIREMENTS SHALL BE APPLICABLE TO ALL DEVELOPMENT IN THE REDEVELOPMENT PROJECT AREA.

1. BUILDING HEIGHT REQUIREMENTS THE MAXIMUM BUILDING HEIGHT SHALL BE TWENTY-FIVE FEET. (NOT APPLICABLE)

2. FRONT SIDE AND REAR YARD SETBACK REQUIREMENTS THE MINIMUM FRONT, SIDE AND REAR YARD SETBACK SHALL EACH BE TWENTY—FIVE FEET. (NOT APPLICABLE)

3. <u>OFF-STREET PARKING REQUIREMENTS</u>
OFF-STREET PARKING SERVING THE INDUSTRIAL USES SHALL BE IN THE RATIO OF ONE OFF-STREET PARKING SPACE FOR EACH 1,000 SQUARE FEET OF GROSS FLOOR BUILDING AREA. (NOT APPLICABLE) OFF-STREET PARKING REQUIREMENTS FOR THE RECREATIONAL/CONSERVATION USES SHALL BE ESTABLISHED BY THE CITY OF LINDEN PLANNING BOARD AND

EACH OFF-STREET PARKING SPACE SHALL HAVE A MINIMUM WIDTH OF 9 FEET, A MINIMUM LENGTH OF 18 FEET AND SHALL HAVE DIRECT ACCESS TO AN AISLE THAT IS NO LESS THAN 24 FEET IN WIDTH. NO PARKING SPACE SHALL BE LOCATED IN THE FRONT YARD SETBACK AREA. (NOT APPLICABLE)

OFF-STREET LOADING REQUIREMENTS
OFF-STREET LOADING SHALL BE PROVIDED FOR ALL BUILDINGS IN ACCORDANCE WITH THE FOLLOWING SCHEDULE: ONE OFF-STREET LOADING SPACE FOR THE FIRST 10,000 SQUARE FEET OF TOTAL GROSS BUILDING FLOOR AREA. (NOT APPLICABLE)

SHALL BE DETERMINED BASED ON THE SPECIFIC RECREATIONAL/CONSERVATION USES THAT ARE PROPOSED. (NOT APPLICABLE)

• ONE ADDITIONAL OFF-STREET LOADING SPACE FOR EACH ADDITIONAL 25,000 SQUARE FEET OF TOTAL GROSS BUILDING FLOOR AREA. (NOT APPLICABLE) EACH OFF-STREET LOADING SPACE SHALL BE AT LEAST 12 FEET IN WIDTH, 50 FEET IN LENGTH AND SHALL BE SEPARATE FROM OFF-STREET PARKING FACILITIES. (NOT APPLICABLE)

- PROPERTY KNOWN AS BLOCK 581 LOT 11.03 AND 17 AS SHOWN ON THE CITY OF
- AREA LOT 11.03= 6.094.026 S.F. OR 139.900 AC. AREA LOT 17= 1,498,864 S.F. OR 34.409 AC.
- OF 6. LOCATIONS. TYPES AND SIZES ARE BASED ON ABOVE GROUND STRUCTURES EXISTING DRAWINGS AND REFERENCES, ETC. AS LISTED HEREON. NO EXCAVATIONS UTILITIES/STRUCTURES, NO WARRANTY OR GUARANTEE IS EXPRESSED OR IMPLIED THAT UNDERGROUND UTILITIES ARE IN THEIR EXACT LOCATIONS INDICATED OR FULLY COMPRISE ALL SUCH UTILITIES IN THE AREA, PRIOR TO ANY SITE EXCAVATION AL UNDERGROUND UTILITIES MUST BE VERIFIED AS TO THEIR EXACT PHYSICAL LOCATION. SIZE. DEPTH AND TYPE BY THE PROPER UTILITY COMPANIES AND/OR THEIR
- THIS PLAN IS BASED ON INFORMATION TAKEN FROM A SURVEY PREPARED IN THE FIELD BY CARROLL ENGINEERING CORPORATION IN JANUARY-FEBRUARY 2019. AS WELL AS OTHER REFERENCE MATERIALS AS LISTED HEREON.
- THE SURVEY IS PREPARED WITH REFERENCE TO A REPORT OF TITLE PREPARED BY
- EXISTING FIRM: BY GRAPHIC PLOTTING ONLY PROPERTY IS LOCATED IN SPECIAL FLOOD HAZARD ZONE AF "FLOODWAY AREAS". FLOOD HAZARD ZONE AF, FLOOD HAZARD ZONE X "OTHER FLOOD AREAS", AND IN FLOOD ZONE X "OTHER AREAS"
- PRELIMINARY FIRM: BY GRAPHIC PLOTTING ONLY PROPERTY IS LOCATED IN SPECIAL FLOOD HAZARD ZONE AE "FLOODWAY AREAS", FLOOD HAZARD ZONE AE, FLOOD HAZARD ZONE X "OTHER FLOOD AREAS", AND IN FLOOD ZONE X "OTHER AREAS",
- 8. OFFSET DIMENSIONS AS SHOWN HEREON ARE NOT TO BE USED FOR THE CONSTRUCTION OF ANY STRUCTURE, FENCE, PERMANENT ADDITION, ETC. (SHOWN ON SHEET 1 OF 6 ONLY).
- 9. BEARING SYSTEM IS N.A.D. 1983 (2011), UNITS ARE IN U.S. SURVEY FEET ESTABLISHED WITH KEYNETGPS NETWORK AND NGS MONUMENTS AA5229 AND
- 10. VERTICAL DATUM IS REFERENCED TO NAVD '88 (GEOID 12B) ESTABLISHED WITH KEYNETGPS NETWORK AND NGS MONUMENTS AA5229 AND DH2907.
- 11. A WRITTEN WAIVER AND DIRECTION NOT TO SET CORNER MARKERS HAS BEEN OBTAINED FROM THE ULTIMATE USER PURSUANT TO P.L. 2003, C.14 (N.J.S.A.
- 45: 8-36.3) AND N.J.A.C. 13: 40-5.1 (d). 12. PLANIMETRIC AND TOPOGRAPHICAL FEATURES COMPILED BY ATLANTIS AERIAL SURVEY
- CO. (AERIAL FLIGHT DATED JANUARY 01, 2020), AND SUPPLEMENTED WITH CONVENTIONAL GROUND LOCATIONS BY CARROLL ENGINEERING CORPORATION. WETLANDS BOUNDARY LIMITS AS SHOWN ON THE SURVEY ARE BASED UPON WETLANDS FIELD IDENTIFICATION MARKERS PLACED BY AMY S. GREENE
- ENVIRONMENTAL CONSULTANTS ON JANUARY 23, 2020, AND FIELD LOCATED BY CARROLL ENGINEERING ON JANUARY 31, 2020. (NOTE: AS OF THE DATE OF THIS SURVEY WETLANDS BOUNDARY LIMITS REMAIN SUBJECT TO CONFIRMATION BY
- 14. EXISTING SITE FEATURES OUTSIDE THE PROPOSED IMPROVEMENT LIMITS THAT WERE NOT VISIBLE IN THE AERIAL SURVEY WITHIN THE "OBSCURED AREAS" MAY NOT BE
- 15. THERE SHALL BE NO TREES REMOVED.
- 16. THERE SHALL BE NO DISTURBANCE TO WETLANDS OR TRANSITION AREAS.
- 18. TOTAL AREA CONTAINED WITHIN PERIMETER FENCING IS 23.33 ACRES.
- 19. PROPOSED DEVELOPMENT IS THE CONSTRUCTION OF A GROUND MOUNTED SOLAR ARRAY. NO HABITABLE BUILDINGS, EXISTING OR PROPOSED UNITS, AND FLOOR
- 20. PROPERTY LIES WITHIN THE HI (HEAVY INDUSTRIAL) ZONE.

TAX MAP SHEET NO. 120

INSURANCE RATE MAP, UNION COUNTY, NEW JERSEY, (ALL JURISDICTIONS),

2. MAP ENTITLED, "NATIONAL FLOOD INSURANCE PROGRAM, FIRM, FLOOD

- INSURANCE RATE MAP, UNION COUNTY, NEW JERSEY, (ALL JURISDICTIONS),
- MAP ENTITLED, "NATIONAL FLOOD INSURANCE PROGRAM, FIRM, FLOOD INSURANCE RATE MAP, UNION COUNTY, NEW JERSEY, (ALL JURISDICTIONS), PANEL 44 OF 49". MAP NUMBER 34039C0044G. PRELIMINARY DATE: FEBRUARY
- . MAP ENTITLED, "NATIONAL FLOOD INSURANCE PROGRAM, FIRM, FLOOD INSURANCE RATE MAP, UNION COUNTY, NEW JERSEY, (ALL JURISDICTIONS), PANEL 45 OF 49", MAP NUMBER 34039C0045G, PRELIMINARY DATE: FEBRUARY
- 6. MAP ENTITLED "FINAL PLAN FOR A PROPOSED SUBDIVISION OF LOT 1 BLOCK-581, TAX MAPS, CITY OF LINDEN, UNION CO., N.J., EXXON COMPANY-U.S.A.", PREPARED BY DONALD T. COOPER, JR., ASSOCIATES, FILED WITH THE UNION COUNTY CLERK'S OFFICE ON APRIL 22, 1983 AS MAP NO.
- 7. WETLAND DELINEATION SKETCH PROVIDED BY AMY S. GREENE ENVIRONMENTAL CONSULTANTS ON JANUARY 23, 2020.
- 8. MAP ENTITLED "BOUNDARY SURVEY OF LOT 11.03, BLOCK 581, EXXON CORPORATION, CITY OF LINDEN, UNION COUNTY, NEW JERSEY", PREPARED BY KELLER & KIRKPATRICK INC., DATED MARCH 1, 1993, SHEET 2 OF 8.
- MAP ENTITLED "AS-BUILT OF LANDFILL, GAS EXTRACTION & CONTROL SYSTEM, AS-BUILT LAYOUT, LINDEN SANITARY LANDFILL, BLOCK 581; LOTS 11.03 & 17, CITY OF LINDEN, UNION COUNTY, NEW JERSEY", PREPARED BY ICON ENGINEERING, DATED OCTOBER 31, 2011, SHEETS 1-9.
- 10. PRELIMINARY MAP ENTITLED "LINDEN LANDFILL, LOWER RD, LINDEN, NJ 07036, PRELIMINARY DELINEATION MAP", PREPARED BY CS ENERGY, DATED 05-23-2019, LAST REVISED 11-07-2019.
- 11. GIS ELECTRIC MAPPING FROM PUBLIC SERVICE ELECTRIC AND GAS CO.
- 12. GIS WATER MAPPING FROM NEW JERSEY AMERICAN WATER WEBSITE.
- 13. MAP ENTITLED, "STATE OF NEW JERSEY, DEPARTMENT OF ENVIRONMENTAL PROTECTION, BUREAU OF TIDELANDS MANAGEMENT, MAP SHOWING CONVEYANCES ON RAHWAY RIVER, CITIES OF LINDEN AND RAHWAY, UNION COUNTY, TOWNSHIP OF WOODBRIDGE, MIDDLESEX COUNTY", ATLAS SHEET NO.
- 14. MAP ENTITLED, "STATE OF NEW JERSEY, DEPARTMENT OF ENVIRONMENTAL PROTECTION, BUREAU OF TIDELANDS MANAGEMENT, MAP SHOWING CONVEYANCES ON RAHWAY RIVER AND MARSH'S CREEK, CITY OF LINDEN, COUNTY OF UNION, BOROUGH OF CARTERET, COUNTY OF MIDDLESEX", ATLAS
- 15. MAP ENTITLED, "AS-BUILT DRAWINGS, ENVIRONMENTAL IMPROVEMENTS AT THE CITY OF LINDEN LANDFILL, UNION COUNTY, NEW JERSEY", PREPARED BY SADAT

ASSOCIATES, DATED 12-15-1999.

16. MAP ENTITLED, "BOUNDARY AND TOPOGRAPHIC SURVEY, LINDEN HAWK RISE SOLAR PROJECT, BLOCK 581, LOTS 11.03 & 17, CITY OF LINDEN, COUNTY OF UNION, NEW JERSEY", PREPARED BY CARROLL ENGINEERING, DATED 4-24-2020, 6 SHEETS

UNION COUNTY PLANNING BOARD

LINDEN HAWK RISE SOLAR, LLC 2045 LINCOLN HIGHWAY EDISON, NJ 08817 CONSENT TO THE FILING OF THIS PLAN WITH THE PLANNING BOARD OF THE CITY OF LINDEN. 301 NORTH WOOD AVENUE LINDEN, NJ 07036 HEREBY ACKNOWLEDGE OWNERSHIP OF THE SUBJECT PROPERTY AS DESIGNATED.

PLANNING BOARD SUBJECT TO THE RESTRICTIONS, AGREEMENTS, AND CONDITIONS SET FORTH BY THE UNION COUNTY PLANNING BOARD." CITY OF LINDEN LAND DEVELOPMENT BOARD THIS PLAN IS HEREBY APPROVED BY THE DEVELOPMENT BOARD OF CITY OF LINDEN.

"THIS PLAN IS HEREBY APPROVED BY THE UNION COUNTY

CITY ENGINEER CERTIFICATION I HAVE CAREFULLY EXAMINED THIS PLAN AND TO THE BEST OF MY KNOWLEDGE AND BELIEF FIND IT CONFORMS

WITH MUNICIPAL ORDINANCES AND REQUIREMENTS

Call before you dig 1-800-272-1000 TO LOCATE UNDERGROUND UTILITIES THREE (3) WORKING DAYS NOTICE Dig Safely

SHEET NO. SHEET NAME EXISTING FEATURES PLAN GRADING PLAN SOIL EROSION AND SEDIMENT CONTROL PLAN SOIL EROSION AND SEDIMENT CONTROL PLAN SOIL EROSION AND SEDIMENT CONTROL NOTES AND DETAILS CONSTRUCTION DETAILS CONSTRUCTION DETAILS

> ----- Existing 4"ø SDR-13.5 gas extraction lateral — — — — EXISTING 12"Ø HDPE GAS EXTRACTION HEADER - EXISTING 10" # HDPE GAS EXTRACTION HEADER

EXISTING MANIFOLD CHAMBER W/ IDENTIFIER # TEST PIT* AND DYNAMIC CONE PENETROMETER TEST TEST PIT* TO CONFIRM PIPE DEPTH (* HAND DUG)

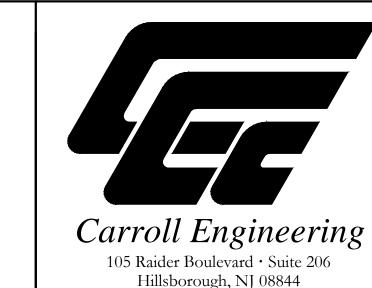
COVER SHEET

LINDEN HAWK RISE SOLAR PROJECT PRELIMINARY AND FINAL SITE PLAN BLOCK 581 - LOTS 11.03 & 17 SITUATED IN CITY OF LINDEN COUNTY OF UNION, NEW JERSEY PREPARED FOR LINDEN HAWK RISE SOLAR, LLC

2045 LINCOLN HIGHWAY

EDISON, NEW JERSEY 08817

THOMAS J. FIK PROFESSIONAL ENGINEER NJ LIC. NO. 24GE04591700 **DATE:** $\frac{6/15/2020}{}$



www.carrollengineering.com

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6-15-2020 19-5446-001 DATE: CADD FILE: SITE PLAN JOB NO: 19-5446-00 ____TJF DSG BY: TJF DWN BY: CKD BY: TJF SCALE: AS SHOWN RAWER NUMBER: 10 SHEET SHEET: Phone: (908) 874-7500 Fax: (908) 874-5762 DRAWING NUMBER Certificate of Authorization: #24GA27952100 200.4232

+10.53 SPOT GRADE ELEV. ON IMPERVIOUS SURFACE _______ TERMINUS UNKNOWN BOLLARD ELECTRIC BOX ELECTRIC MANHOLE COPYRIGHT © - 2020 CARROLL ENGINEERING CORPORATION - ALL RIGHTS RESERVED

+10.5 SPOT GRADE ELEV. CONC. CONCRETE

EGEND (NOTE: NOT ALL ITEMS MAY APPEAR ON THIS SURVEY)

V FIRE HYDRANT CLEANOUT VENT GAS METER GAS VALVE ELECTRIC METER WATER METER WATER VALVE

GUY WIRE

LIGHT POLE

UTILITY POLE & STREET LIGHT

N.J.D.O.T. JUNCTION BOX GAS WELL TO LATERAL CONNECTION GAS CLEANOUT CONNECTION (LOW POINTS) GAS CLEANOUT CONNECTION GAS ISOLATION VALVE ENCLOSURE SOIL BORING MONITORING WELL FIRE DEPARTMENT CONNECTION FLARED END SECTION TOP OF GRATE

SANITARY MANHOLE

STORM MANHOLE

J.B.

UNKNOWN MANHOLE

COUNTY/MUNICIPAL BOUNDARY LINE ----- EDGE OF WATER GUIDE RAIL _____*X*______ FENCE ----OHW----OVERHEAD WIRE -----ST-------STORM PIPE SANITARY LINE

TELEPHONE LINE

EXISTING MINOR CONTOUR

----10---- EXISTING MAJOR CONTOUR

CONSTRUCTION/CONTRACTOR NOTES:

LANDFILL LINER SHALL NOT BE DISRUPTED.

PERMIT HAS BEEN APPROVED AND ISSUED.

PRINCIPAL SOLAR ENERGY SYSTEM.

MATERIALS OFF-SITE.

GRID; ALL WIRING DIAGRAMS, ETC.

IMMEDIATELY AS APPROVED BY CITY AND/OR LANDFILL ENGINEER.

15. ALL PAVEMENT TO BE REMOVED, IF ANY, SHALL BE SAWCUT.

2. ON-SITE UTILITY AND TRANSMISSION LINES BY PSE&G SHALL BE POLE MOUNTED.

3. A CLEARLY VISIBLE WARNING SIGN CONCERNING VOLTAGE SHALL BE PLACED ON THE EQUIPMENT

DESIGN SHALL BE CERTIFIED BY AN ENGINEER REGISTERED IN THE STATE OF NEW JERSEY.

6. SOLAR PANELS SHALL NOT BE PLACED IN ANY ROAD EASEMENTS, DEED RESTRICTIONS

7. NO PORTION OF THE SOLAR PANEL, INCLUDING THE RACKING SYSTEM, POLES, OR BALLAST, SHALI

THE SOLAR ENERGY SYSTEM, PROVIDED IT COMPLIES WITH THE PREVAILING SIGN REGULATIONS.

COMPACTION SHALL BE MINIMIZED TO THE MAXIMUM EXTENT FEASIBLE DURING INSTALLATION OF

14. CONTRACTOR IS RESPONSIBLE FOR CONTACTING "CALL BEFORE YOU DIG" PRIOR TO EXCAVATION.

16. THE CONTRACTOR SHALL EMPLOY APPROPRIATE MAINTENANCE AND PROTECTION OF TRAFFIC

17. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING AND LEGALLY DISPOSING OF ALL UNSUITABLE

18. REFER TO DETAILS BY OTHERS FOR ALL INFORMATION REGARDING THE SOLAR PANEL MOUNTING

19. REFER TO PLANS BY OTHERS FOR INFORMATION REGARDING ALL ELECTRICAL LAYOUT DESIGNS,

20. IF GRADING IS REQUIRED, CONSTRUCTION AREA SHALL BE SCARIFIED AND LOOSELY GRADED.

INCLUDING BUT NOT LIMITED TO: CONNECTION OF THE SOLAR PANEL ARRAY; THE CONNECTIONS

. ANY DAMAGE TO PUBLIC OR PRIVATE PROPERTY RESULTING FROM CONTRACTOR ACTIVITY IS THE

RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION

TO PROPOSED TRANSFORMERS AND ELECTRICAL SUBSTATIONS; CONNECTIONS TO PUBLIC UTILITY

MEASURES DURING CONSTRUCTION ALONG PUBLIC RIGHT-OF-WAYS IN ACCORDANCE WITH ALL

HERETOFORE ENACTED AND AMENDED, WHICH SHALL REMAIN IN FORCE AND EFFECT.

CONSERVATION EASEMENTS, WETLANDS, WETLAND BUFFERS, LANDSCAPE BUFFERS, PROPERTY

WL FLAG #12 WETLAND FLAG & DESIGNATION △ SOW #52 STATE OPEN WATER & DESIGNATION ZONE X "OTHER FLOOD AREAS" ELECTRIC LINE

(SEE NOTE 6) ZONE AE (SEE NOTE 6)

ZONE AE "FLOODWAY AREAS" (SEE NOTE 6)

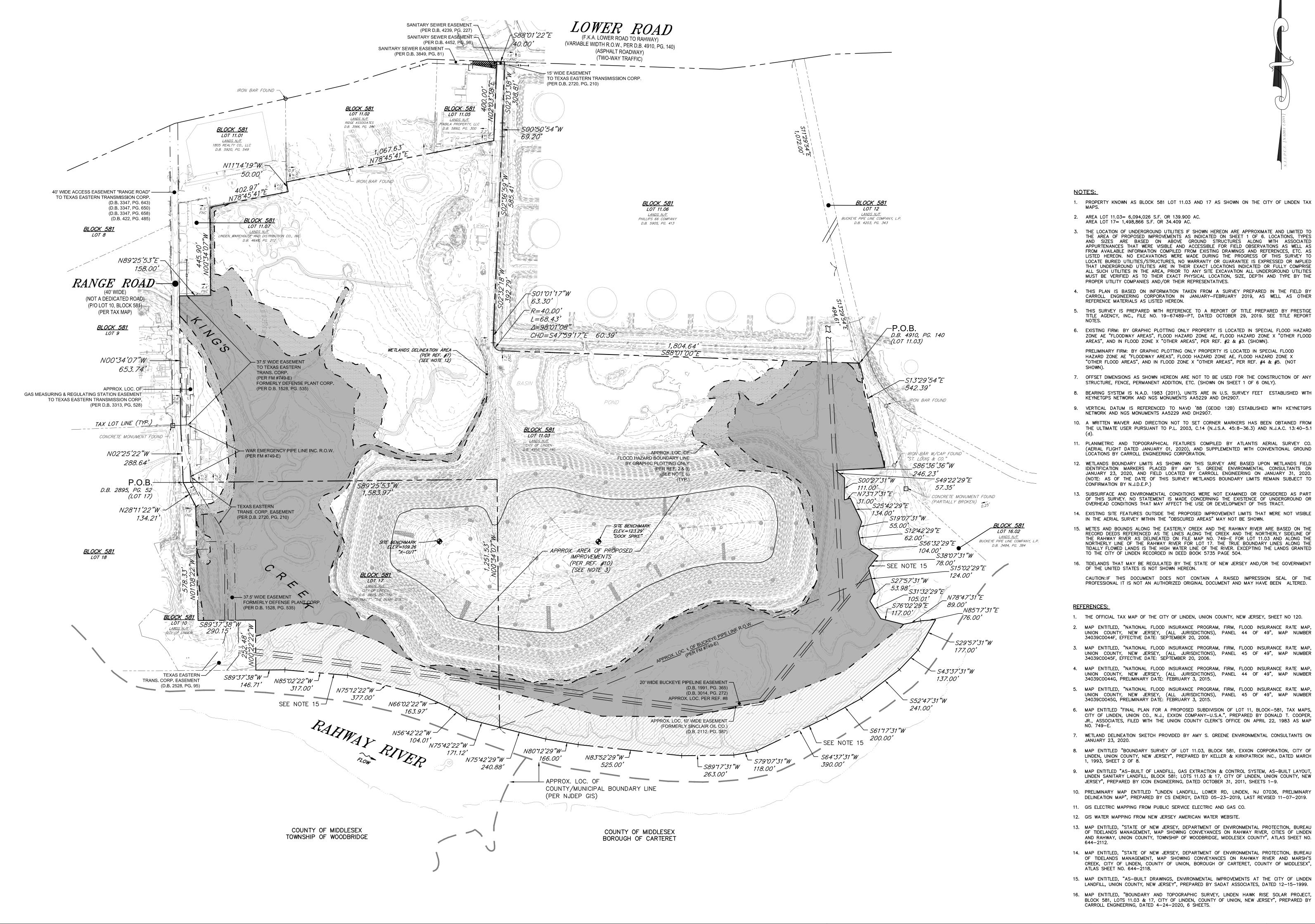
FIBER OPTIC WITNESS POST BUCKEYE PIPELINE WITNESS POST SUNOCO PIPELINE WITNESS POST SPECTRA ENERGY PIPELINE WITNESS POST POST (PER AERIAL SURVEY)

PROPOSED MINOR CONTOUR

______PROPOSED MAJOR CONTOUR

EXISTING FEMA FLOOD HAZARD BOUNDARY

NO. DATE



PROPOSED MINOR CONTOUR

FIBER OPTIC WITNESS POST

POST (PER AERIAL SURVEY)

BUCKEYE PIPELINE WITNESS POST

SUNOCO PIPELINE WITNESS POST

SPECTRA ENERGY PIPELINE WITNESS POST

_____PROPOSED MAJOR CONTOUR

WL FLAG #12 WETLAND FLAG & DESIGNATION

WETLAND DELINEATION LINE

ZONE X "OTHER FLOOD AREAS"

ZONE AE "FLOODWAY AREAS" (SEE NOTE 6)

(SEE NOTE 6)

ZONE AE (SEE NOTE 6)

EXISTING FEMA FLOOD HAZARD BOUNDARY

△ SOW #52 STATE OPEN WATER & DESIGNATION

---- EXISTING 4" Ø SDR-13.5 GAS EXTRACTION LATERAL

0 100 200

NO. DATE

EXISTING MANIFOLD CHAMBER W/ IDENTIFIER

TEST PIT* AND DYNAMIC CONE PENETROMETER TEST

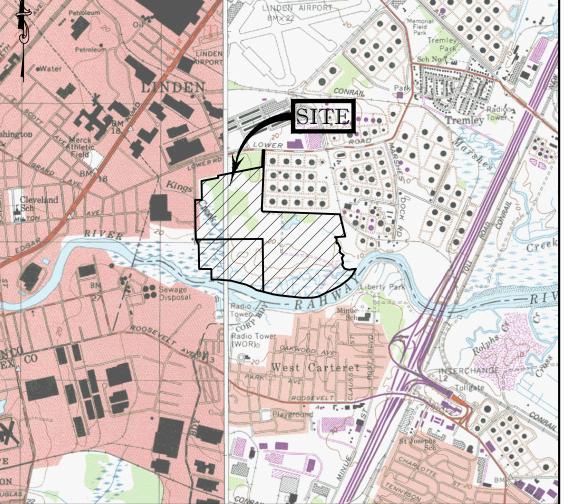
TEST PIT* TO CONFIRM PIPE DEPTH (* HAND DUG)

GRAPHIC SCALE

1 inch = 200 ft.

— — — EXISTING 12" # HDPE GAS EXTRACTION HEADER

- EXISTING 10" # HDPE GAS EXTRACTION HEADER



KEY MAP U.S.G.S. QUADRANGLE "PERTH AMBOY" & "ARTHUR KILL" (NOT TO SCALE)

TITLE REPORT NOTES THIS SURVEY DOES NOT CONSTITUTE A TITLE SEARCH BY THE SURVEYOR. ALL INFORMATION REGARDING RECORD EASEMENTS, ADJOINERS, AND OTHER DOCUMENTS THAT MIGHT AFFECT THE QUALITY OF TITLE TO TRACT SHOWN HEREON WAS GAINED FROM A TITLE REPORT PROVIDED BY PRESTIGE TITLE AGENCY, INC. FILE NO.

EXCEPTIONS APPEAR: PIPELINE EASEMENTS AS CONTAINED IN: DEED BOOK 189 PAGE 96; 189 PAGE 98;189 PAGE 99; 189 PAGE 100; 3902 PAGE 129; 342 PAGE 533 ASSIGNED IN 585 PAGE 380 - NOT DEED BOOK 670 PAGE 190 - NOT PROVIDED. DEED BOOK 1991 PAGE 365; 2112 PAGE 387 ASSIGNED IN DEED BOOK 2958 PAGE 666; DEED BOOK 2720 PAGE 210; 3014 PAGE 27

19-67489-PT, DATED OCTOBER 29, 2019, WHERE THE FOLLOWING SURVEY RELATED

DEED BOOK 2177 PAGE 1; 2329 PAGE 512; 2395 PAGE 89; 2528 PAGE 96 - NOT ON SUBJECT PROPERTY 2622 PAGE 136;; 2639 PAGE 270 - NOT PLOTTABLE. DEED BOOK 2895 PAGE 152 (LOT 17) - DEED BOOK 182 PAGE 224 - BLANKET IN NATURE; 1528 PAGE 525;1661 PAGE 497 - SHOWN; OTHERS REFERENCED ABOVE. DEED BOOK 3001 PAGE 197; 3032 PAGE 515 - NOT PLOTTABLE DEED BOOK 3365 PAGE 860;6249 PAGE 357 - NOT ON SUBJECT

DEED BOOK 3375 PAGE 806; 2131 PAGE 289 - NOT PLOTTABLE.

AB 913 PAGE 73 - ASSIGNED TO BP OIL COMPANY. DEED BOOK 342 PAGE 533 - ILLEGIBLE.
DEED BOOK 3518 PAGE 147 9; 3552 PAGE 59 - ASSIGNMENTS

EASEMENT IN DEED BOOK 3313 PAGE 528 -DOES NOT CLOSE MATHEMATICALLY. APPROXIMATE LOCATION OF GAS MEASURING AND REGULATING STATION SHOWN HEREON.

ADMINISTRATIVE CONSENT ORDER AS CONTAINED IN DEED BOOK 3798 PAGE

162 – LEGAL IN NATURE

4. EASEMENT IN DEED BOOK 3347 PAGE 643 ASSIGNED IN 3347 PAGE 650 AND 422 PAGE 485 - SHOWN.

5. LEASE AGREEMENT IN DEED BOOK 2458 PAGE 66 - NOT ON PQ.

DRAINAGE EASEMENT AS CONTAINED IN DEED BOOK 2895 PAGE 145 -EASEMENT AS CONTAINED IN DEED BOOK 3347 PAGE 658 - TEXAS

EASTERN TRANSMISSION CORP. ACCESS EASEMENT SHOWN HEREON. REVOCABLE LICENSE/LEASE AS CONTAINED IN DEED BOOK 4456 PAGE 21

TERMS AND CONDITIONS OF RIPARIAN GRANT CONTAINED IN DEED BOOK

5735 PAGE 504 - BEGINNING POINT CANNOT BE PLOTTED FROM

10. DECLARATION OF ENCUMBRANCE IN DEED BOOK 5927 PAGE 278 -LEGAL IN

11. PIPELINE EASEMENT AS CONTAINED IN DEED BOOK 6249 PAGE 349 - NOT LOCATED ON SUBJECT PREMISES.

12. SEWER EASEMENT AS CONTAINED IN DEED BOOK 1414 PAGE 496 -LOCATED IN NEW PROVIDENCE.

13. UTILITY EASEMENT IN DEED BOOK 2166 PAGE 353 - BLANKET IN NATURE. 14. RESTRICTIONS AS CONTAINED IN DEED BOOK 2211 PAGE 26 - LEGAL IN

15. EASEMENT AS CONTAINED IN DEED BOOK 1743 PAGE 85 - IS NOT ON OR

11.02 & 11.05).

DOES NOT TOUCH SURVEYED PROPERTY 16. SANITARY SEWER EASEMENT AS CONTAINED IN DEED BOOK 3829 PAGE 167; 3849 PAGE 81; 4239 PAGE 227; 4452 PAGE 98 - SHOWN HEREON (LOTS

EXISTING FEATURES PLAN

CLOSURE AND POST-CLOSURE PLAN MODIFICATION LINDEN HAWK RISE SOLAR PROJECT BLOCK 581 - LOTS 11.03 & 17 SITUATED IN CITY OF LINDEN COUNTY OF UNION, NEW JERSEY

> PREPARED FOR LINDEN HAWK RISE SOLAR, LLC 2045 LINCOLN HIGHWAY EDISON, NEW JERSEY 08817

THE AREA OF PROPOSED IMPROVEMENTS AS INDICATED ON SHEET 1 OF 6. LOCATIONS, TYPES

AND SIZES ARE BASED ON ABOVE GROUND STRUCTURES ALONG WITH ASSOCIATED

APPURTENANCES THAT WERE VISIBLE AND ACCESSIBLE FOR FIELD OBSERVATIONS AS WELL A: FROM AVAILABLE INFORMATION COMPILED FROM EXISTING DRAWINGS AND REFERENCES, ETC. A LISTED HEREON. NO EXCAVATIONS WERE MADE DURING THE PROGRESS OF THIS SURVEY

LOCATE BURIED UTILITIES/STRUCTURES, NO WARRANTY OR GUARANTEE IS EXPRESSED OR IMPLIED THAT UNDERGROUND UTILITIES ARE IN THEIR EXACT LOCATIONS INDICATED OR FULLY COMPRISI

ALL SUCH UTILITIES IN THE AREA, PRIOR TO ANY SITE EXCAVATION ALL UNDERGROUND UTILITIES

TITLE AGENCY, INC., FILE NO. 19-67489-PT, DATED OCTOBER 29, 2019. SEE TITLE REPORT

ZONE AE "FLOODWAY AREAS", FLOOD HAZARD ZONE AE, FLOOD HAZARD ZONE X "OTHER FLOOD

THE ULTIMATE USER PURSUANT TO P.L. 2003, C.14 (N.J.S.A. 45:8-36.3) AND N.J.A.C. 13:40-5.1

(AERIAL FLIGHT DATED JANUARY 01, 2020), AND SUPPLEMENTED WITH CONVENTIONAL GROUND

IDENTIFICATION MARKERS PLACED BY AMY S. GREENE ENVIRONMENTAL CONSULTANTS ON

OF THIS SURVEY. NO STATEMENT IS MADE CONCERNING THE EXISTENCE OF UNDERGROUND OR

RECORD DEEDS REFERENCED AS TIE LINES ALONG THE CREEK AND THE NORTHERLY SIDELINE OF THE RAHWAY RIVER AS DELINEATED ON FILE MAP NO. 749-E FOR LOT 11.03 AND ALONG TH

NORTHERLY LINE OF THE RAHWAY RIVER FOR LOT 17. THE TRUE BOUNDARY LINES ALONG THI

TIDALLY FLOWED LANDS IS THE HIGH WATER LINE OF THE RIVER. EXCEPTING THE LANDS GRANTED

CAUTION: IF THIS DOCUMENT DOES NOT CONTAIN A RAISED IMPRESSION SEAL OF THE

PROFESSIONAL IT IS NOT AN AUTHORIZED ORIGINAL DOCUMENT AND MAY HAVE BEEN ALTERED.

UNION COUNTY, NEW JERSEY, (ALL JURISDICTIONS), PANEL 44 OF 49", MAP NUMBER

UNION COUNTY, NEW JERSEY, (ALL JURISDICTIONS), PANEL 45 OF 49", MAP NUMBER

UNION COUNTY, NEW JERSEY, (ALL JURISDICTIONS), PANEL 44 OF 49", MAP NUMBER 34039C0044G, PRELIMINARY DATE: FEBRUARY 3, 2015.

UNION COUNTY, NEW JERSEY, (ALL JURISDICTIONS), PANEL 45 OF 49", MAP NUMBER

CITY OF LINDEN, UNION CO., N.J., EXXON COMPANY-U.S.A.", PREPARED BY DONALD T. COOPER, JR., ASSOCIATES, FILED WITH THE UNION COUNTY CLERK'S OFFICE ON APRIL 22, 1983 AS MAP

LINDEN, UNION COUNTY, NEW JERSEY", PREPARED BY KELLER & KIRKPATRICK INC., DATED MARCH

DELINEATION MAP", PREPARED BY CS ENERGY, DATED 05-23-2019, LAST REVISED 11-07-2019.

AND RAHWAY, UNION COUNTY, TOWNSHIP OF WOODBRIDGE, MIDDLESEX COUNTY", ATLAS SHEET NO.

OF TIDELANDS MANAGEMENT, MAP SHOWING CONVEYANCES ON RAHWAY RIVER AND MARSH'S CREEK, CITY OF LINDEN, COUNTY OF UNION, BOROUGH OF CARTERET, COUNTY OF MIDDLESEX",

LANDFILL, UNION COUNTY, NEW JERSEY", PREPARED BY SADAT ASSOCIATES, DATED 12-15-1999.

BLOCK 581, LOTS 11.03 & 17, CITY OF LINDEN, COUNTY OF UNION, NEW JERSEY", PREPARED BY

JERSEY", PREPARED BY ICON ENGINEERING, DATED OCTOBER 31, 2011, SHEETS 1-9.

IN THE AERIAL SURVEY WITHIN THE "OBSCURED AREAS" MAY NOT BE SHOWN.

O THE CITY OF LINDEN RECORDED IN DEED BOOK 5735 PAGE 504.

OF THE UNITED STATES IS NOT SHOWN HEREON.

34039C0044F, EFFECTIVE DATE: SEPTEMBER 20, 2006.

34039C0045F, EFFECTIVE DATE: SEPTEMBER 20, 2006.

34039C0045G, PRELIMINARY DATE: FEBRUARY 3, 2015.

ATLAS SHEET NO. 644-2118.

JANUARY 23, 2020, AND FIELD LOCATED BY CARROLL ENGINEERING ON JANUARY 31, 2020 (NOTE: AS OF THE DATE OF THIS SURVEY WETLANDS BOUNDARY LIMITS REMAIN SUBJECT TO

PRELIMINARY FIRM: BY GRAPHIC PLOTTING ONLY PROPERTY IS LOCATED IN SPECIAL FLOOD

"OTHER FLOOD AREAS", AND IN FLOOD ZONE X "OTHER AREAS", PER REF. #4 & #5. (NOT

HAZARD ZONE AE "FLOODWAY AREAS", FLOOD HAZARD ZONE AE, FLOOD HAZARD ZONE X

AREAS", AND IN FLOOD ZONE X "OTHER AREAS", PER REF. #2 & #3. (SHOWN).

STRUCTURE, FENCE, PERMANENT ADDITION, ETC. (SHOWN ON SHEET 1 OF 6 ONLY).

MUST BE VERIFIED AS TO THEIR EXACT PHYSICAL LOCATION, SIZE, DEPTH AND TYPE BY

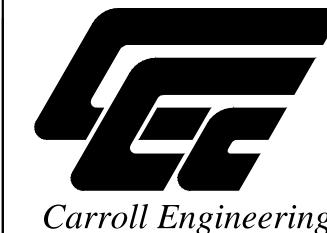
PROPER UTILITY COMPANIES AND/OR THEIR REPRESENTATIVES.

NETWORK AND NGS MONUMENTS AA5229 AND DH2907.

CONFIRMATION BY N.J.D.E.P.)

REFERENCE MATERIALS AS LISTED HEREON.

ERROL MELNICK PROFESSIONAL LAND SURVEYOR NJ LIC. NO. 24GS03401300 DATE: 5/27/2020



Carroll Engineering 105 Raider Boulevard · Suite 206 Hillsborough, NJ 08844 Phone: (908) 874-7500 Fax: (908) 874-5762 Certificate of Authorization: #24GA27952100 www.carrollengineering.com COPYRIGHT © - 2020 CARROLL ENGINEERING

5-27-2020 19-5446 EXISTING FEATURES DATE: CADD FILE: JOB NO: 19-5446-00 <u>N/A</u> DSG BY: DWN BY: JPJ EM CKD BY: SCALE: AS SHOWN DRAWER NUMBER: SHEET: OF 9 SHEET DRAWING NUMBER 200.4231

ELECTRIC BOX +10.5 SPOT GRADE ELEV. ELECTRIC MANHOLE CONC. CONCRETE COPYRIGHT © — 2020 CARROLL ENGINEERING CORPORATION — ALL RIGHTS RESERVED

_EGEND (NOTE: NOT ALL ITEMS MAY APPEAR ON THIS SURVEY)

UTILITY POLE & STREET LIGHT

UTILITY POLE

GUY WIRE

LIGHT POLE

CLEANOUT

GAS METER

GAS VALVE

ELECTRIC METER

WATER METER

WATER VALVE

BOLLARD

VENT

FIRE HYDRANT

SANITARY MANHOLE

STORM MANHOLE

SOIL BORING

TOP OF GRATE

MONITORING WELL

FLARED END SECTION

J.B.

UNKNOWN MANHOLE

N.J.D.O.T. JUNCTION BOX

GAS WELL TO LATERAL CONNECTION W/IDENTIFIER

GAS CLEANOUT CONNECTION

GAS ISOLATION VALVE ENCLOSURE

FIRE DEPARTMENT CONNECTION

GAS CLEANOUT CONNECTION (LOW POINTS)

+10.53 SPOT GRADE ELEV. ON IMPERVIOUS SURFACE ______ TERMINUS UNKNOWN

TELEPHONE LINE

----- EDGE OF WATER

-----OHW-----OVERHEAD WIRE

SANITARY LINE

ELECTRIC LINE

EXISTING MINOR CONTOUR

----10---- EXISTING MAJOR CONTOUR

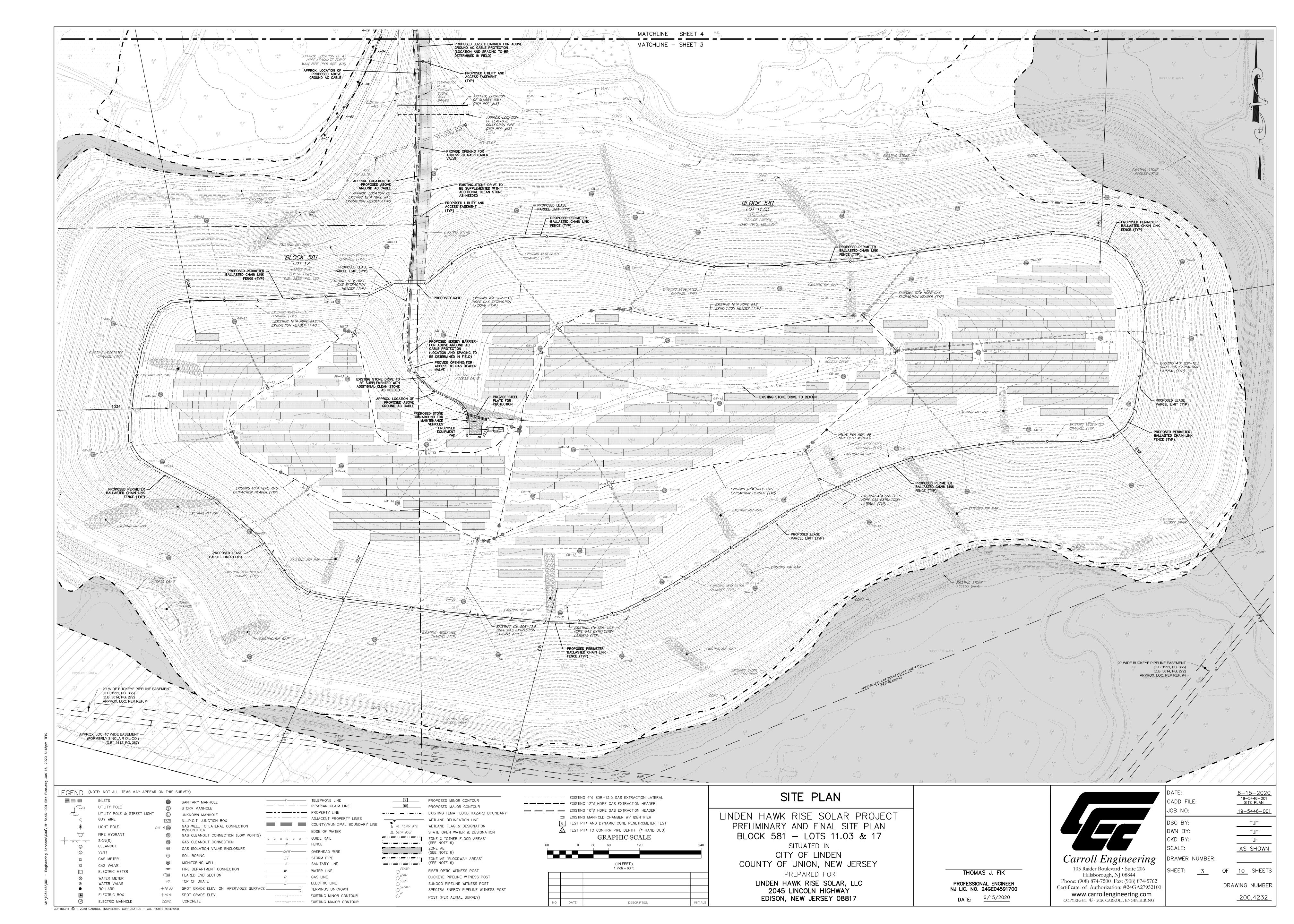
GUIDE RAIL

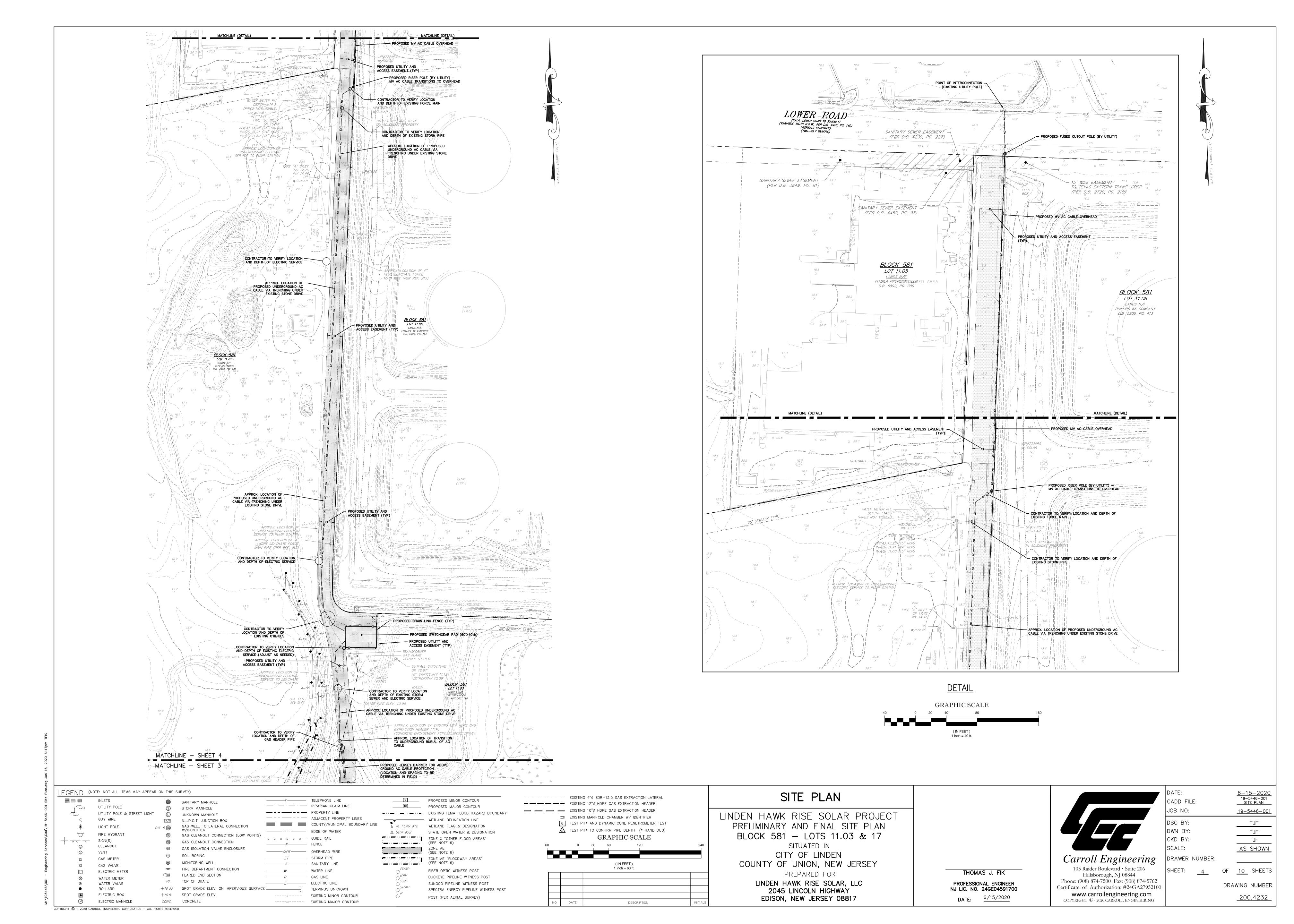
-----ST------STORM PIPE

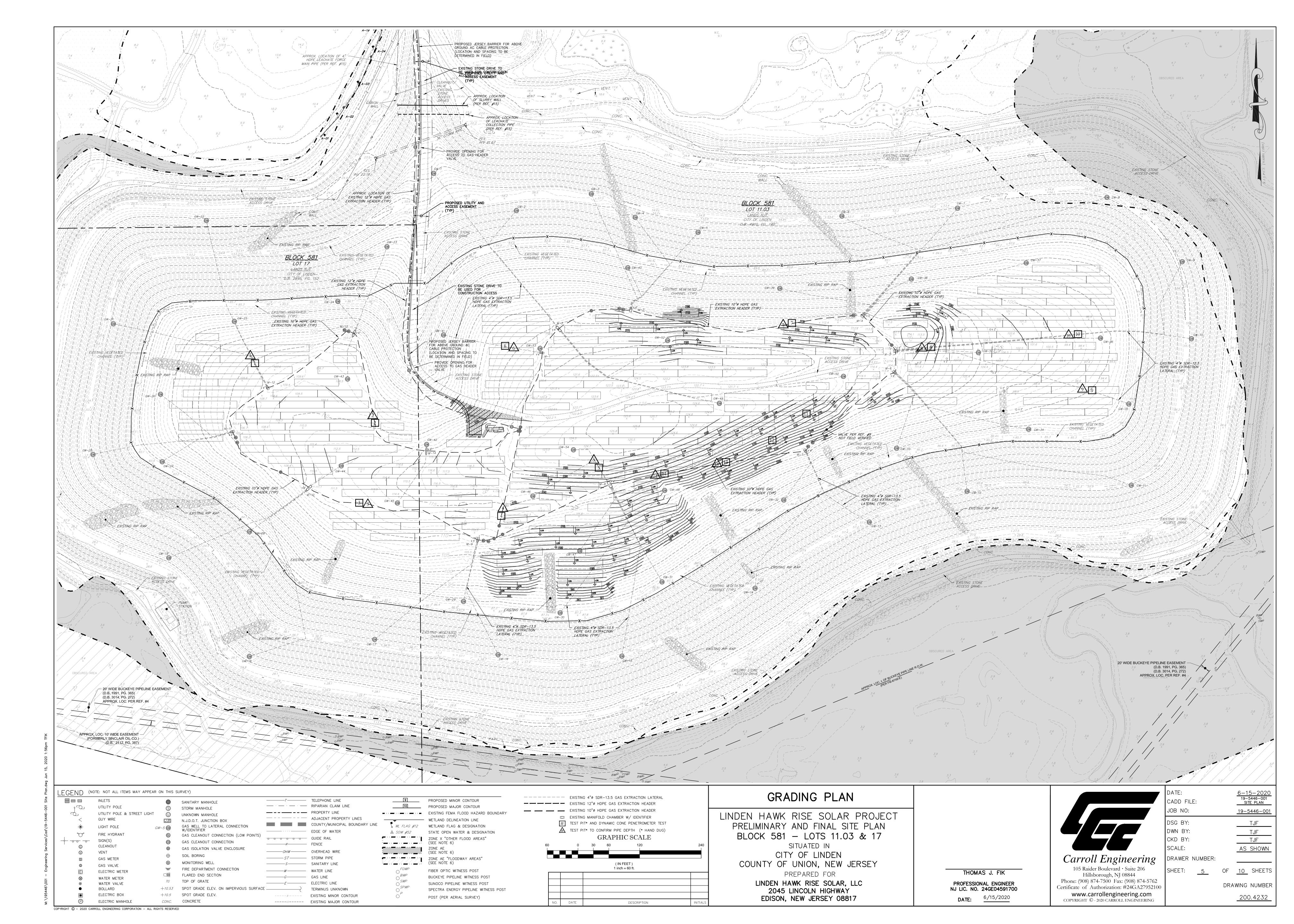
COUNTY/MUNICIPAL BOUNDARY LINE

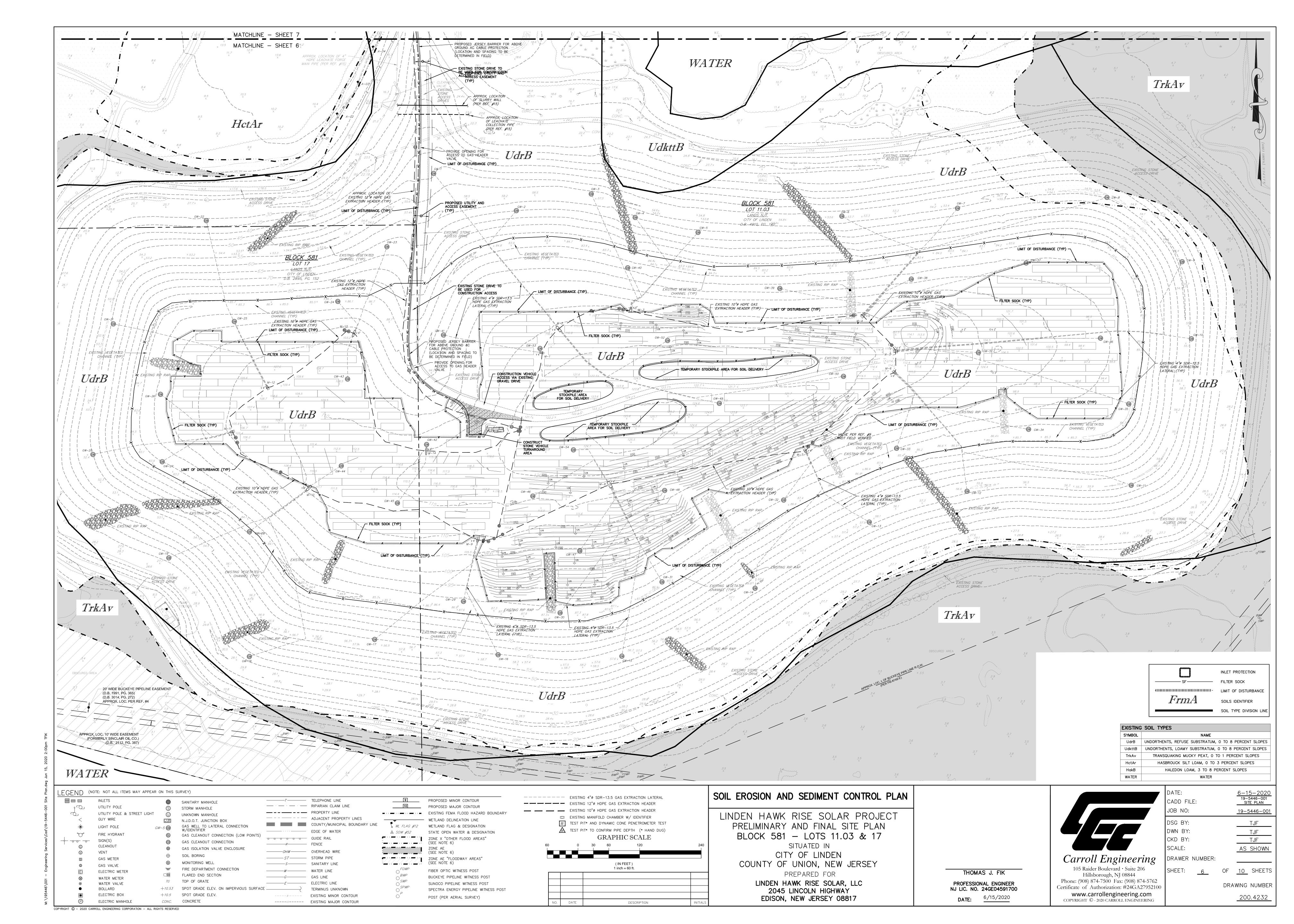
V

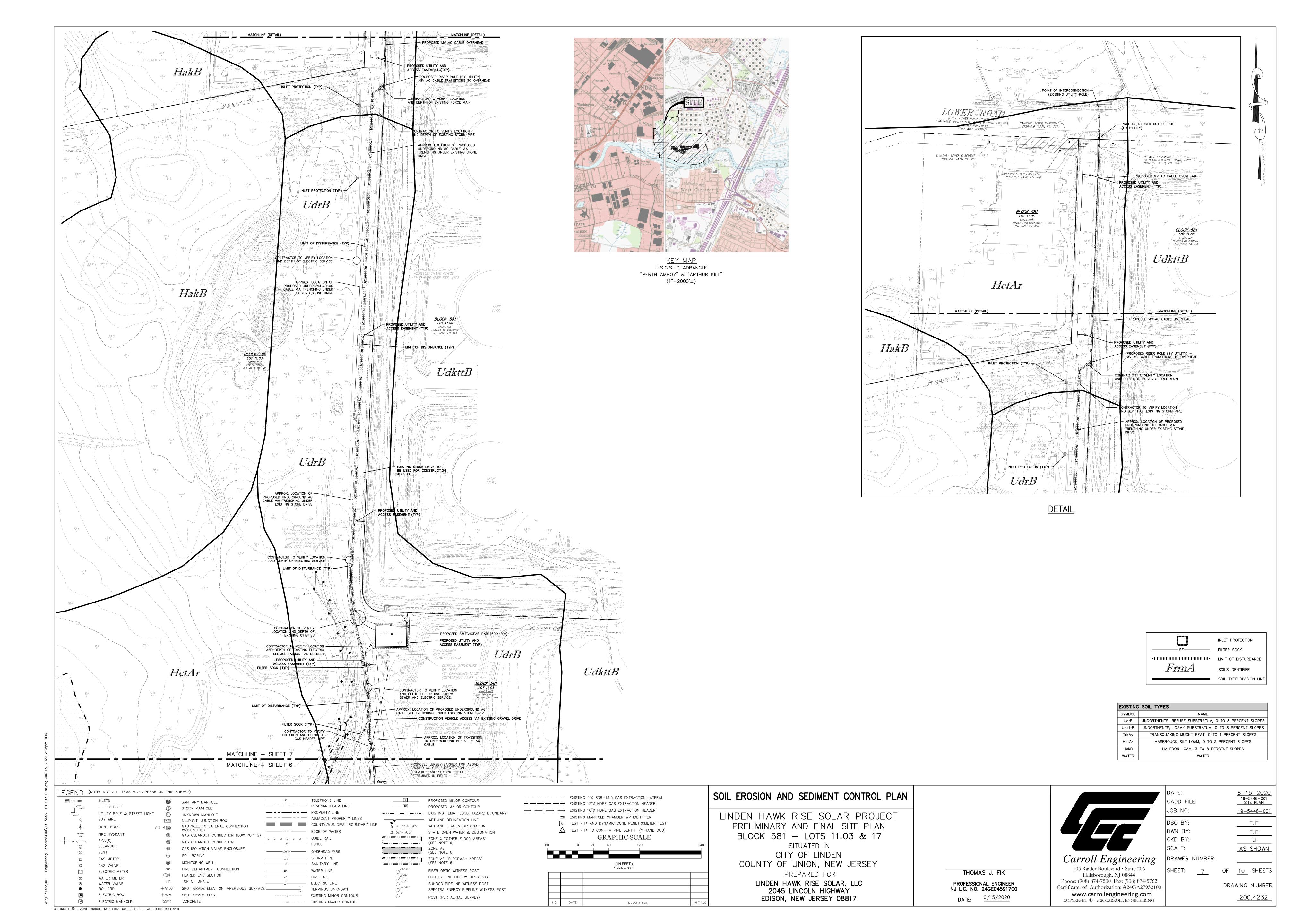
©











TO PERMANENTLY STABILIZE THE SOIL, ASSURING CONSERVATION OF SOIL AND WATER, AND TO ENHANCE THE ENVIRONMENT WATER QUALITY ENHANCEMENT

SLOWS THE OVER LAND MOVEMENT OF STORMWATER RUNOFF, INCREASES INFILTRATION AND RETAINS SOIL AND NUTRIENTS ON SITE, PROTECTING STREAMS OR OR OTHER STORMWATER CONVEYANCES.

WHERE APPLICABLE

ON EXPOSED SOILS THAT HAVE A POTENTIAL FOR CAUSING OFF-SITE ENVIRONMENTAL DAMAGE.

METHODS AND MATERIALS

A. GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING. ALL GRADING SHOULD BE DONE IN ACCORDANCE WITH STANDARDS FOR LAND GRADING, P. 19-1.

IMMEDIATELY PRIOR TO SEEDING AND TOPSOIL APPLICATION, THE SURFACE SHOULD BE SCARIFIED 6" TO 12" WHERE THERE HAS BEEN SOIL COMPACTION. THIS PRACTICE IS PERMISSIBLE ONLY WHERE THERE IS NO DANGER TO UNDERGROUND UTILITIES (CABLES, IRRIGATION SYSTEMS, ETC.).

INSTALL NEEDED EROSION CONTROL PRACTICES OR FACILITIES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENT BASINS, AND WATERWAYS. SEE STANDARDS 11 THROUGH 42.

A. APPLY GROUND LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS SUCH AS OFFERED BY RUTGERS CO-OPERATIVE EXTENSION. SOIL SAMPLE MAILERS ARE AVAILABLE FROM THE LOCAL RUTGERS COOPERATIVE EXTENSION OFFICES. FERTILIZER SHALL BE APPLIED AT THE RATE OF 500 POUNDS PER ACRE OR 11 POUNDS PER 1,000 SQUARE FEET OF 10—20—10 OR EQUIVALENT WITH 50% WATER INSOLUBLE NITROGEN UNLESS A SOIL TEST INDICATES OTHERWISE. APPLY LIMESTONE IN ACCORDANCE WITH TABLE 4-1, PG 4-2 AND THE RESULTS OF SOIL TESTING. CALCIUM CARBONATE IS THE EQUIVALENT AND STANDARD FOR MEASURING THE ABILITY OF LIMING MATERIALS TO NEUTRALIZE SOIL ACIDITY AND SUPPLY CALCIUM AND MAGNESIUM TO GRASSES AND LEGUMES. TABLE 4-1 IS A GENERAL GUIDELINE FOR LIMESTONE APPLICATION RATES.

TABLE 4-1	
PPLICATION RATE BY S	SOIL TEXTURE
TONS/ACRE	LBS./1000 SQ. FT.
3	135
2	90
1	45
	PPLICATION RATE BY

 $^{
m I}$ pulverized dolomitic limestone is preferred for most soils south of the New Brunswick-trenton line B. WORK LIME AND FERTILIZER INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH A DISC, SPRINGTOOTH HARROW, OR OTHER SUITABLE EQUIPMENT. THE FINAL HARROWING OR DISC ING OPERATION SHOULD BE ON THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLE UNIFORM SEEDBED IS PREPARED.

IMMEDIATELY PRIOR TO SEEDING, THE SURFACE SHOULD BE SCARIFIED 6" TO 12" WHERE THERE HAS BEEN SOIL THIS PRACTICE IS PERMISSIBLE ONLY WHERE THERE IS NO DANGER TO UNDERGROUND COMPACTION. UTILITIES (CABLES, IRRIGATION SYSTEMS, ETC.).

D. HIGH ACID PRODUCING SOIL. SOILS HAVING A PH OF 4 OR LESS OR CONTAINING IRON SULFIDE SHALL BE COVERED WITH A MINIMUM OF 12 INCHES OF SOIL HAVING A PH OF 5 OR MORE BEFORE INITIATING SEEDBED PREPARATION. SEE STANDARD FOR MANAGEMENT OF HIGH ACID PRODUCING SOILS, PG. 1-1.

A. SELECT A MIXTURE FROM TABLE 4-3 (PG. 4-7) OR USE MIXTURE RECOMMENDED BY RUTGERS COOPERATIVE EXTENSION OR NATURAL RESOURCES CONSERVATION SERVICE WHICH IS APPROVED BY THE SOIL CONSERVATION DISTRICT. SEED GERMINATION SHALL HAVE BEEN TESTED WITHIN 12 MONTHS OF THE PLANTING DATE. NO SEED SHALL BE ACCEPTED WITH A GERMINATION TEST DATE MORE THAT 12 MONTHS OLD UNLESS RETESTED. 1. SEEDING RATES SPECIFIED ARE REQUIRED WHEN A REPORT OF COMPLIANCE IS REQUESTED PRIOR TO ACTUAL

ESTABLISHMENT OF PERMANENT VEGETATION. UP TO 50% REDUCTION IN RATES MAY BE USED WHEN PERMANENT VEGETATION IS ESTABLISHED PRIOR TO A REPORT OF COMPLIANCE INSPECTION. THESE RATES APPLY TO ALL METHODS OF SEEDING. ESTABLISHING PERMANENT VEGETATION MEANS 80% VEGETATIVE COVERAGE WITH THE SPECIFIED SEED MIXTURE FOR THE SEEDED AREA AND MOWED ONCE.

2. WARM SEASON MIXTURES ARE GRASSES AND LEGUMES WHICH MAXIMIZE GROWTH AT HIGH TEMPERATURES, GENERALLY 85° F AND ABOVE. SEE TABLE 4-3 (PG.4-7), MIXTURES 1 TO 7. PLANTING RATES FOR WARM SEASON GRASSES SHALL BE THE AMOUNT OF PURE LIVE SEED (PLS) AS DETERMINED BY GERMINATION TESTING RESULTS. 3. COOL SEASON MIXTURES ARE GRASSES AND LEGUMES WHICH MAXIMIZE GROWTH AT TEMPERATURES BELOW 85°F.

MANY GRASSES BECOME ACTIVE AT 65°F. SEE TABLE 3, MIXTURES 8-20. ADJUSTMENT OF PLANTING RATES TO

COMPENSATE FOR THE AMOUNT OF PURE LIVE SEED IS NOT REQUIRED FOR COOL SEASON GRASSES B. CONVENTIONAL SEEDING IS PERFORMED BY APPLYING SEED UNIFORMLY BY HAND, CYCLONE (CENTRIFUGAL) SEEDER DROP SEEDER, DRILL OR CULTIPACKER SEEDER. EXCEPT FOR DRILLED, HYDROSEEDED OR CULTIPACKED SEEDINGS, SEED SHALL BE INCORPORATED INTO THE SOIL WITHIN 24 HOURS OF SEEDBED PREPARATION TO A DEPTH OF 1/4 TO 1/2

INCH, BY RAKING OR DRAGGING. DEPTH OF SEED PLACEMENT MAY BE 1/4 INCH DEEPER ON COARSE TEXTURED SOIL. C. HYDROSEEDING IS A BROADCAST SEEDING METHOD USUALLY INVOLVING A TRUCK OR TRAILER MOUNTED TANK, WITH HYDROSEEDING AN AGITATION SYSTEM AND HYDRAULIC PUMP FOR MIXING SEED. WATER AND FERTILIZER AND SPRAYING THE MIX ONTO THE PREPARED SEEDBED. MULCH SHALL NOT BE INCLUDED IN THE TANK WITH SEED. SHORT FIBERED MULCH MAY BE APPLIED WITH A HYDROSEEDER FOLLOWING SEEDING. (ALSO SEE SECTION IV MULCHING BELOW) HYDROSEEDING IS NOT A PREFERRED SEEDING METHOD BECAUSE SEED AND FERTILIZER ARE APPLIED TO THE SURFACÉ AND NOT INCORPORATED INTO THE SOIL. POOR SEED TO SOIL CONTACT OCCURS REDUCING SEED GERMINATION AND GROWTH. HYDROSEEDING MAY BE USED FOR AREAS TOO STEEP FOR CONVENTIONAL EQUIPMENT TO TRAVERSE OR TOO

D. AFTER SEEDING, FINNING THE SOIL WITH A CORRUGATED ROLLER WILL ASSURE GOOD SEED-TO-SOIL CONTACT, RESTORE CAPILLARITY, AND IMPROVE SEEDLING EMERGENCE. THIS IS THE PREFERRED METHOD. WHEN PERFORMED ON THE CONTOUR, SHEET EROSION WILL BE MINIMIZED AND WATER CONSERVATION ON SITE WILL BE MAXIMIZED.

OBSTRUCTED WITH ROCKS, STUMPS, ETC.

MULCHING IS REQUIRED ON ALL SEEDING. MULCH WILL INSURE AGAINST EROSION BEFORE GRASS IS ESTABLISHED AND WILL PROMOTE FASTER AND EARLIER ESTABLISHMENT. THE EXISTENCE OF VEGETATION SUFFICIENT TO CONTROL SOIL EROSION SHALL BE DEEMED COMPLIANCE WITH THE MULCHING REQUIREMENT.

A. STRAW OR HAY. UNROTTED SMALL GRAIN STRAW, HAY FREE OF SEEDS, OR SALT HAY TO BE APPLIED AT THE RATE OF 1-1/2 TO 2 TONS PER ACRE (70 TO 90 POUNDS PER 1,000 SQUARE FEET), EXCEPT THAT WHERE A CRIMPER IS USED INSTEAD OF A LIQUID MULCH-BINDER (TACKIFYING OR ADHESIVE AGENT), THE RATE OF APPLICATION IS 3 TONS PER ACRE. MULCH CHOPPER-BLOWERS MUST NOT GRIND THE MULCH. HAY MULCH IS NOT RECOMMENDED FOR ESTABLISHING FINE TURF OR LAWNS DUE TO THE PRESENCE OF WEED SEED. APPLICATION. SPREAD MULCH UNIFORMLY BY HAND OR MECHANICALLY SO THAT APPROXIMATELY 85% OF THE SOIL SURFACE WILL BE COVERED. FOR UNIFORM DISTRIBUTION OF HAND-SPREAD MULCH, DIVIDE AREA INTO

ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS, DEPENDING UPON THE SIZE OF THE AREA, STEEPNESS AND 1. PEG AND TWINE. DRIVE 8 TO 10 INCH WOODEN PEGS TO WITHIN 2 TO 3 INCHES OF THE SOIL SURFACE EVERY 4

APPROXIMATELY 1,000 SQUARE FEET SECTIONS AND DISTRIBUTE 70 TO 90 POUNDS WITHIN EACH SECTION.

AROUND EACH PEG WITH TWO OR MORE ROUND TURNS. 2. MULCH NETTINGS - STAPLE PAPER, JUTE, COTTON, OR PLASTIC NETTINGS TO THE SOIL SURFACE. USE A

FEET IN ALL DIRECTIONS. STAKES MAY BE DRIVEN BEFORE OR AFTER APPLYING MULCH. SECURE MULCH TO SOIL

SURFACE BY STRETCHING TWINE BETWEEN PEGS IN A CRIS-CROSS AND A SQUARE PATTERN. SECURE TWINE

DEGRADABLE NETTING IN AREAS TO BE MOWED. 3. CRIMPER (MULCH ANCHORING COULTER TOOL) - A TRACTOR-DRAWN IMPLEMENT, SOMEWHAT LIKE A DISC HARROW. ESPECIALLY DESIGNED TO PUSH OR CUT SOME OF THE BROADCAST LONG FIBER MULCH 3 TO 4 INCHES INTO THE SOIL SO AS TO ANCHOR IT AND LEAVE PART STANDING UPRIGHT. THIS TECHNIQUE IS LIMITED TO AREAS TRAVERSABLE BY A TRACTOR, WHICH MUST OPERATE ON THE CONTOUR OF SLOPES. STRAW MULCH RATE

4. LIQUID MULCH - BINDERS - MAY BE USED TO ANCHOR SALT HAY, HAY OR STRAW MULCH.

MUST BE 3 TONS PER ACRE. NO TACKIFYING OR ADHESIVE AGENT IS REQUIRED.

a. APPLICATIONS SHOULD BE HEAVIER AT EDGES WHERE WIND MAY CATCH THE MULCH, IN VALLEYS, AND AT CRESTS OF BANKS. THE REMINDER OF THE AREA SHOULD BE UNIFORM IN APPEARANCE. b. USE ONE OF THE FOLLOWING:

(1) EMULSIFIED ASPHALT - (SS-1, CSS-1, CMS-2, MS-2, RS-1, RS-2, CRS-1, AND CRS-2). APPLY 0.04 GAL./SQ./YD. OR 194 GAL./ACRE ON FLAT AREAS AND ON SLOPES LESS THAN 8 FEET OR MORE HIGH, USE 0.075 GAL./SQ. YD. OR 363 GAL./ACRE. THESE MATERIALS MAY BE DIFFICULT TO APPLY UNIFORMLY AND WILL DISCOLOR SURFACES.

(2) ORGANIC AND VEGETABLE BASED BINDERS - NATURALLY OCCURRING, POWDER BASED, HYDROPHILIC MATERIALS WHEN MIXED WITH WATER FORMULATES A GEL AND WHEN APPLIED TO MULCH UNDER SATISFACTORY CURING CONDITIONS WILL FORM MEMBRANED NETWORKS OF INSOLUBLE POLYMERS. THE VEGETABLE GEL SHALL BE PHYSIOLOGICALLY HARMLESS AND NOT RESULT IN A PHYTOXIC EFFECT OR IMPEDE GROWTH OF TURFGRASS. USE AT RATES AND WEATHER CONDITIONS AS RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH MATERIALS. MANY NEW PRODUCTS ARE AVAILABLE, SOME OF WHICH MAY NEED FURTHER EVALUATION FOR USE IN THIS STATE.

(3) SYNTHETIC BINDERS - HIGH POLYMER SYNTHETIC EMULSION, MISCIBLE WITH WATER WHEN DILUTED AND FOLLOWING APPLICATION TO MULCH, DRYING AND CURING SHALL NO LONGER BE SOLUBLE OR DISPERSIBLE IN WATER. IT SHALL BE APPLIED AT RATES RECOMMENDED BY THE MANUFACTURER AND REMAIN TACKY UNTIL GERMINATION OF GRASS.

NOTE: ALL NAMES GIVEN ABOVE ARE REGISTERED TRADE NAMES. THIS DOES NOT CONSTITUTE A RECOMMENDATION OF THESE PRODUCT TO THE EXCLUSION OF OTHER PRODUCTS.

ESTABLISHMENT OF PERMANENT VEGETATIVE COVER ON EXPOSED SOILS WHERE PERENNIAL VEGETATION IS NEEDED FOR LONG B. WOOD-FIBER OR PAPER-FIBER MULCH - SHALL BE MADE FROM WOOD, PLANT FIBERS OR PAPER CONTAINING NO GROWTH OR GERMINATION INHIBITING MATERIALS, USED AT THE RATE OF 1.500 POUNDS PER ACRE (OR AS RECOMMENDED BY THE PRODUCT MANUFACTURER) AND MAY BE APPLIED BY A HYDROSEEDER. THIS MULCH SHALL NOT BE MIXED IN THE TANK WITH SEED. USE IS LIMITED TO FLATTER SLOPES AND DURING OPTIMUM SEEDING

> C. PELLETIZED MULCH - COMPRESSED AND EXTRUDED PAPER AND/OR WOOD FIBER PRODUCT, WHICH MAY CONTAIN CO-POLYMERS, TACKIFIERS, FERTILIZERS AND COLORING AGENTS. THE DRY PELLETS, WHEN APPLIED TO A SEEDED AREA AND WATERED, FORMA MULCH MAT. PELLETIZED MULCH SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. MULCH MAY BE APPLIED BY HAND OR MECHANICAL SPREADER AT THE RATE OF 60-75 LBS/1,000 SQUARE FEET AND ACTIVATED WITH 0.2 TO 0.4 INCHES OF WATER. THIS MATERIAL HAS BEEN FOUND TO BE BENEFICIAL FOR USE ON SMALL LAWN OR RENOVATION AREAS, SEEDED AREAS WHERE WEED-SEED FREE MULCH IS DESIRED OR ON SITES WHERE STRAW MULCH AND TACKIFIER AGENT ARE NOT PRACTICAL OR

APPLYING THE FULL 0.2 TO 0.4 INCHES OF WATER AFTER SPREADING PELLETIZED MULCH ON THE SEED BED IS EXTREMELY IMPORTANT FOR IMPORTANT FOR SUFFICIENT ACTIVATION AND EXPANSION OF THE MULCH TO PROVIDE SOIL COVERAGE.

5. IRRIGATION (WHERE FEASIBLE) IF SOIL MOISTURE IS DEFICIENT, AND MULCH IS NOT USED, SUPPLY NEW SEEDINGS WITH ADEQUATE WATER (A MINIMUM OF 1/4 INCH TWICE A DAY UNTIL VEGETATION IS WELT ESTABLISHED). THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE IN ABNORMALLY DRY OR

TOPDRESSING SINCE SLOW RELEASE NITROGEN FERTILIZER (WATER INSOLUBLE) IS PRESCRIBED IN SECTION II. A. SEEDBED PREPARATION IN THIS STANDARD, NO FOLLOW-UP OF TOPDRESSING IS MANDATORY. AN EXCEPTION MAY BE MADE WHERE GROSS NITROGEN DEFICIENCY EXISTS TO THE EXTENT THAT TURF FAILURE MAY DEVELOP. IN THAT INSTANCE, TOPDRESS WITH 10-10-10 OR EQUIVALENT AT 400 POUNDS PER ACE OR 10 POUNDS PER 1,000 SQUARE FEET.

ESTABLISHING PERMANENT VEGETATIVE STABILIZATION THE QUALITY OF PERMANENT VEGETATION RESTS WITH THE CONTRACTOR. THE TIMING OF SEEDING, PREPARING THE SEEDBED, APPLYING NUTRIENTS, MULCH AND OTHER MANAGEMENT ARE ESSENTIAL. THE SEED APPLICATION RATES IN TABLE 4-3 (PG. 4-7) ARE REQUIRED WHEN A REPORT OF COMPLIANCE IS REQUESTED PRIOR TO ACTUAL ESTABLISHMENT OF PERMANENT VEGETATION. UP TO 50% REDUCTION IN APPLICATION RATES MAY BE USED WHEN PERMANENT VEGETATION IS ESTABLISHED PRIOR TO REQUESTING A REPORT OF COMPLIANCE FROM THE DISTRICT. THESE RATES APPLY TO ALL METHODS OF

ESTABLISHING PERMANENT VEGETATION MEANS 80% VEGETATIVE COVER (OF THE SEEDED SPECIES) AND MOWED

TABLE 4-2 PERMANENT STABILIZATION MIXTURES FOR VARIOUS USES

	PLANTING MIXTUR	(SEE TABLE 4-3)	
APPLICATION	EXCESSIVELY DRAINED	WELL TO MODERATELY DRAINED	SOMEWHAT POORLY TO POORLY DRAINED
RESIDENTIAL/COMMERCIAL LOTS	12, 14, 17	12, 14, 15, 16, 17	18
POND AND CHANNEL BANKS, DIKES, BERMS, DAMS	2, 7, 8, 12	7, 8, 9, 10, 11, 17	2, 10, 18, 19
DRAINAGE DITCHES, SWALES, DETENTION BASINS	2, 11, 13	2, 9, 11, 13, 14, 19	2, 10, 18, 19
FILTER STRIPS	14	13, 14	13, 14
GRASSED WATERWAY, SPILLWAYS	2, 3, 11, 12, 14	8, 9 11, 12, 13, 14	2, 11, 13, 14
RECREATION AREAS, ATHLETIC FIELDS	7, 14, 17, 20	14, 15, 16, 17, 20	18
SPECIAL PROBLEM SITES STEEP SLOPES AND BANK, ROADSIDES, BORROW AREAS	2, 3, 6, 8	2, 3, 7, 9, 10, 11, 12, 17, 20	2, 11, 12, 13, 14 2, 10
SAND AND GRAVEL PITS, SANITARY LANDFILLS	1, 2, 3, 4, 5, 6, 21	1, 2, 3, 4, 5, 6, 10, 17, 20	2, 10
DREDGED MATERIAL, SPOILBANKS, BORROW AREAS	2, 3, 6, 20	2, 3, 6, 11	2, 10, 21a, 23a,b,c,c
STREAMBANKS AND SHORELINES ²	2, 10, 22, 23a	2, 10, 21b, 22, 23a, 23b	10, 11, 19
UTILITY RIGHTS-OF-WAY	3, 9, 20	3, 9	

REFER TO SOIL SURVEYS FOR DRAINAGE DESCRIPTIONS. REFER TO SOIL BIOENGINEERING STANDARD FOR ADDITIONAL SEED MIXTURES SEE APPENDIX E FOR DESCRIPTION OF TURF GRASSES AND CULTIVARS

		BLE	4-3	PERMA	NENI V						IES AN	D PLAN	ITING DATES ¹	
	2	SI MITINO				A =	PLAN Optim Accepto	ITING D. Ial Plan able Plo	ATES ting per anting p	riod eriod				
SEED MIXTURE PLANTING RATE 3				PLANT HARDINESS ZONES (see Figure 4-1)										
				Zone 5b, 6a		Zone 6b		Zone 7a, 7b		Maintenance	Remarks			
۱ s	WARM SEASON SEED MIXTURES	lbs/ acre	lbs/ 1000 sq. ft.	3/15- 5/31	6/1- 7/31	8/1- 10/31	3/1- 4/30	5/1- 8/14	8/15- 11/15	2/1- 4/30	5/1- 8/14	8/15- 11/30	Level <u>4</u>	
١.	SWITCHGRASS AND/OR COASTAL PANICGRASS PLUS SERECIA LESPEDEZA OR FLATPEA	15 15 20 20	.35 .35 .45 .45	0			0			0			C-D	SERECIA LESPEDEZA NOT ADAPTED TO ZONE 5
2.	DEERTONGUE OR SWITCHGRASS REDTOP PLUS BIRDSFOOT TREFOIL	15 20 1 10	.35 .45 .1 .23	0			0			0			C-D	USE DEERTONGUE IF PH<4.0. SWITCHGRASS IS SUPERIOR WILDLI PLANT. USE FOR WATERWAYS. RE PROVIDES QUICK COVER. BIRDSFO NOT ADAPTED TO ZONE 6B, 7A,
3.	WEEPING LOVEGRASS FLATPEA OR SERECIA LESPEDEZA	3 25 25	.10 .60 .60	0	А		0	А		0	А		C-D	FLATPEA SUPPRESSES INVADING WOODY VEGETATION.
4.	SWITCHGRASS DEERTONGUE LITTLE BLUESTEM SHEEP FESCUE PLUS PARTRIDGE PEA	15 10 20 20 10	.35 .25 .45 .45 .25	0			0			0			C-D	PINELANDS MIXTURE.
5.	SWITCHGRASS BIG BLUSTEM LITTLE BLUESTEM SAND LOVEGRASS COASTAL PANICGRASS	10 5 5 4 10	.25 .10 .10 .10 .10	0			0			0			C-D	NATIVE WARM SEASON MIXTURE.
ŝ.	BERMUDAGRASS ZOYSIAGRASS (SEED) ZOYSIAGRASS (SPRIGS)	15 30	0.35 0.70	0			0			0			A-D	BERMUDAGRASS HAS SUPERIOR SALT TOLERANCE. ZOYSIA HAS GREATER WEAR TOLERANCE.
7.	DEERTONGUE WEEPING LOVEGRASS SERECIA LESPEDEZA	20 3 25	.45 .10 .60	0	А	Before 8/30	0	А	Before 9/15	0	А	Before 9/30	C-D	USE THIS MIX IF PH<4.5 AND TOXIC METALS PRESENT
SE	COOL SEASON SEED MIXTURES													
3.	FINE FESCUE (BLEND) HARD FESCUE STRONG CREEPING RED FESCUE KENTUCKY BLUEGRASS PERENNIAL RYEGRASS PLUS WHITE CLOVER	75 10 10 5	2.1 .25 .25 .10	0	А	0	0	А	0	0	А	0	B-D	GENERAL LOW MAINTENANCE MIXTURE.
9.	STRONG CREEPING RED FESCUE KENTUCKY BLUEGRASS PERENNIAL RYEGRASS OR REDTOP PLUS WHITE CLOVER	60 40 10 3 5	1.4 .92 .25 .10	0	А	0	0	А	0	0	А	0	B-D	SUITABLE WATERWAY MIX. CANADA BLUEGRASS MORE DROUGHT TOLERANT. USE REDTOP FOR INCREASED DROUGHT TOLERANCE.
10.	TALL FESCUE (TURF—TYPE) OR STRONG CREEPING RED FESCUE OR PERENNIAL RYEGRASS PLUS CROWNVETCH OR FLATPEA	20 20 20 25 25	.45 .45 .45 .60	0	А	0	0	А	0	0	А	0	B-D	TALL FESCUE BEST SELECTED FO DROUGHTY CONDITIONS. USE CREEPING RED FESCUE IN HEAVY SHADE. USE FLATPEA TO SUPPRESS WOODY VEGETATION.
11.	DEERTONGUE REDTOP WILD RYE (ELYMUS) SWITCHGRASS	20 2 15 25	.45 .05 .35 .60	0			0			0			C-D	NATIVE WET MIX.
12.	TALL FESCUE (TURF—TYPE) REDTOP OR PERENNIAL RYEGRASS BIRDSFOOT TREFOIL OR WHITE CLOVER	50 5 5 10 5	1.1 .10 .10 .25 .10	0	А	0	0	А	0	0	А	0	C-D	BIRDSFOOT TREFOIL IS BEST ADAPTED TO ZONE 5.
13.	REED CANARYGRASS KENTUCKY BLUEGRASS TURF-TYPE TALL FESCUE	25 60	0.60	0	А	0	0	А	0	0	А	0	C-D	FILTER STRIP USE FOR NUTRIENT UPTAKE.
14.	TURF-TYPE TALL FESCUE (BLEND OF 3 CULTIVARS)	150	3.5	0	Α	0	0	А	0	0	Α	0	C-D	USE IN MANAGED FILTER STRIP FOR NUTRIENT UPTAKE.
15.	HARD FESCUE PERENNIAL RYEGRASS KENTUCKY BLUEGRASS (BLEND)	120 30 40	2.7 0.7 0.9	0	Α	0	0	Α	0	0	А	0	A-C	GENERAL LAWN/RECREATION.
16.	TALL FESCUE KENTUCKY BLUEGASS (BLEND) PERENNIAL RYEGRASS (BLEND)	160 20 20	3.7 0.50 0.50	0	А	0	0	А	0	0	А	0	А-В	ATHLETIC FIELD/MIX 3 CULTIVARS OF KENTUCKY BLUEGRASS.
17.	HARD FESCUE CREEPING FESCUE PERENNIAL RYEGRASS	120 30 10	2.7 0.7 .25	0	А	0	0	А	0	0	А	0	C-D	LOW MAINTENANCE FINE FESCUE LAWN MIX.
18.	ROUGH BLUEGRASS STRONG CREEPING RED FESCUE	90 50	2.0 1.2	0	Α	0	0	Α	0	0	Α	0	C-D	MOIST SHADE
19.	CREEPING BENTGRASS CREEPING RED FESCUE ALKALI SALTGRASS	25 40 40	0.60 0.92 0.92	0	А	0	0	А	0	0	А	0	B-D	USE BENTGRASS UNDER WETTER CONDITIONS. SALTGRASS WILL OF PERSIST UNDER SALINE CONDITION
20.	HARD OR SHEEPS FESCUE N.E. WILDFLOWER MIXTURE	25 12	0.60 0.35	0	Α	0	0	Α	0	0	А	0	C-D	REGIONAL WILDFLOWER MIX. HYDROSEEDING NOT RECOMMEND
21.	A. SMOOTH CORDGRASS B. SALTMEADOW CORDGRASS	veg. veg.					0	Before July 1		0	Before July 1		D	PLANTED IN THE INTERTIDAL ZO PLANTED ABOVE MEAN HIGH TIE
22.	AMERICAN BEACHGRASS COASTAL PANICGRASS	veg. 20	.45				Before April 1			0			D	COASTAL PANICGRASS MAY BE INTERSEEDED BETWEEN ROWS OF BEACHGRASS.
23.	A. PURPLEOSIER WILLOW B. DWARF WILLOW C. REDOSIER DOGWOOD D. SILKY DOGWOOD	veg. veg. veg. veg.		Before May 10			Before May 10			Before May 1			D	ALSO REFER TO CHAPTERS 16 AND 18 OF ENGINEERING FIELD HANDBOOK (USDA-NRCS)
		i .	1						1		1		1	i .

FOOTNOTES:

SEE APPENDIX B FOR DESCRIPTIONS OF TURF GRASS MIXTURES AND CULTIVARS. THE ACTUAL AMOUNT OF WARM SEASON GRASS MIXTURE USED IN TABLE 3 (SEED MIX 1-7) SHALL BE ADJUSTED TO REFLECT THE AMOUNT OF PURE LIVE SEED (PLS) AS DETERMINED BY GERMINATION TESTING RESULTS. NO ADJUSTMENT IS REQUIRED FOR COOL SEASON GRASSES (SEED MIXTURES

SEEDING MIXTURES AND/OR RATES NOT LISTED ABOVE MAY BE USED IF RECOMMENDED BY THE LOCAL SOIL CONSERVATION DISTRICT, NATURAL RESOURCES CONSERVATION SERVICE; RECOMMENDATIONS OF RUTGERS COOPERATIVE EXTENSION MAY BE USED IF APPROVED BY THE SOIL CONSERVATION DISTRICT. LEGUMES (FLATPEA, CROWNVETCH, TREFOIL, LESPEDEZA) SHOULD BE MIXED

SEEDING RATES SPECIFIED ARE REQUIRED WHEN A REPORT OF COMPLIANCE IS REQUESTED PRIOR TO ACTUAL ESTABLISHMENT OFFERMANENT VEGETATION. UP TO 50% REDUCTION IN RATES MAY BE USED WHEN PERMANENT VEGETATION IS ESTABLISHED PRIOR TO A REPORT OF COMPLIANCE INSPECTION. THESE RATES APPLY TO ALL METHODS OF SEEDING. ESTABLISHING PERMANENT VEGETATION MEANS 80% VEGETATIVE COVERAGE OF THE SEEDED AREA AND MOWED ONCE. GRASS SEED MIXTURE CHECKED BY HE STATE SEED ANALYST, NEW JERSEY DEPARTMENT OF AGRICULTURE, TRENTON, NEW JERSEY, WILL ASSURE THE PURCHASER THAT THE MIXTURE OBTAINED IS THE MIXTURE ORDERED, PURSUANT TO THE N.J. STATE SEED LAW, N.J.S.A. 4:8-17.13 ET. SEQ.

0 = OPTIMAL PLANTING PERIODA = ACCEPTABLE PLANTING PERIOD 4. MAINTENANCE LEVEL:

A: INTENSIVE MOWING, (2-4 DAYS), FERTILIZATION, LIME, PEST CONTROL AND IRRIGATION (EXAMPLES - HIGH MAINTENANCE LAWNS, COMMERCIAL AND RECREATION AREAS, PUBLIC FACILITIES).

B: FREQUENT MOWING, (4-7 DAYS), OCCASIONAL FERTILIZATION, LIME AND WEED CONTROL (EXAMPLES - HOME LAWNS, COMMERCIAL SITES, SCHOOL SITES).

C: PERIODIC MOWING (7-14 DAYS), OCCASIONAL FERTILIZATION AND LIME (EXAMPLES - HOME LAWNS, PARKS).

D: INFREQUENT OR NO MOWING, FERTILIZATION AND LIME THE FIRST YEAR OF ESTABLISHMENT (EXAMPLES - ROADSIDES, RECREATION AREAS, PUBLIC OPEN SPACES).

<u>STANDARD FOR TEMPORARY VEGETATIVE COVER FOR SOIL STABILIZATION</u>

ESTABLISHMENT OF TEMPORARY VEGETATIVE COVER ON SOILS EXPOSED FOR PERIODS OF TWO TO 6 MONTHS WHICH ARE NOT BEING THE CONTROL OF DUST ON CONSTRUCTION SITES AND ROADS. GRADED, NOT UNDER ACTIVE CONSTRUCTION OR NOR SCHEDULED FOR PERMANENT SEEDING WITHIN 60 DAYS.

PROVIDES TEMPORARY PROTECTION AGAINST THE IMPACTS OF WIND AND RAIN, SLOWS THE OVER LAND MOVEMENT OF STORMWATER RUNOFF, INCREASES INFILTRATION AND RETAINS SOIL AND NUTRIENTS ON SITE, PROTECTING STREAMS OR OTHER STORMWATER

WHERE APPLICABLE

ON EXPOSED SOILS THAT HAVE THE POTENTIAL FOR CAUSING OFF-SITE ENVIRONMENTAL DAMAGE.

A. GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING MULCH APPLICATION, AND MULCH ANCHORING. ALL GRADING SHOULD BE DONE IN ACCORDANCE WITH STANDARDS FOR LAND

B. INSTALL NEEDED EROSION CONTROL PRACTICES OR FACILITIES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENT BASINS, AND WATERWAYS. SEE STANDARDS 11 THROUGH 42.

C. IMMEDIATELY PRIOR TO SEEDING, THE SURFACE SHOULD BE SCARIFIED 6" TO 12" WHERE THERE HAS BEEN SOIL COMPACTION. THIS PRACTICE IS PERMISSIBLE ONLY WHERE IS NO DANGER TO UNDERGROUND UTILITIES (CABLES, IRRIGATION SYSTEMS, ETC.)

A. APPLY GROUND LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS SUCH AS OFFERED BY RUTGERS CO-OPERATIVE EXTENSION. SOIL SAMPLE MAILERS ARE AVAILABLE FROM THE LOCAL RUTGERS COOPERATIVE EXTENSION OFFICES. FERTILIZER SHALL BE APPLIED AT THE RATE OF 500 POUNDS PER ACRE OR 11 POUNDS PER 1,000 SQUARE FEET OF 10-20-10 OR EQUIVALENT WITH 50% WATER INSOLUBLE NITROGEN UNLESS A SOIL TEST INDICATES OTHERWISE. APPLY LIMESTONE AT THE RATE OF 2 TONS/ACRE UNLESS SOIL TESTING INDICATES OTHERWISE. CALCIUM CARBONATE IS THE EQUIVALENT AND STANDARD FOR MEASURING THE ABILITY OF LIMING MATERIALS TO NEUTRALIZE SOIL ACIDITY AND SUPPLY CALCIUM AND MAGNESIUM TO GRASSES AND LEGUMES. TABLE 7-1 IS A GENERAL GUIDELINE FOR LIMESTONE APPLICATION.

	TABLE 7-1	
LIMESTONE A	PPLICATION RATE BY S	SOIL TEXTURE
SOIL TEXTURE	TONS/ACRE	LBS./1000 SQ. FT.
CLAY, CLAY LOAM, AND HIGH ORGANIC SOIL	3	135
SANDY LOAM, LOAM, SILT LOAM	2	90
LOAMY SAND, SAND	1	45

B. WORK LIME AND FERTILIZER INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH A DISC, SPRINGTOOTH HARROW, OR OTHER SUITABLE EQUIPMENT. THE FINAL HARROWING OR DISCING OPERATION SHOULD BE ON THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLE UNIFORM SEEDBED IS PREPARED. C. INSPECT SEEDBED JUST BEFORE SEEDING. IF TRAFFIC HAS LEFT THE SOIL COMPACTED, THE AREA MUST BE RETILLED IN

PULVERIZED DOLOMITIC LIMESTONE IS PREFERRED FOR MOST SOILS SOUTH OF THE NEW BRUNSWICK-TRENTON LINE.

D. SOILS HIGH IN SULFIDES OR HAVING A PH OF 4 OR LESS REFER TO STANDARD FOR MANAGEMENT OF HIGH ACID PRODUCING

A. SELECT SEED FROM RECOMMENDATIONS IN TABLE 7-2.

TABLE 7-2 TEMPORARY VEGETATIVE STABILIZATION GRASSES, SEEDING RATES, DATES AND DEPTH

SEED SELECTIONS	SEEDING RATES 1		OF Based	OPTIMUM SEED DEPTH ⁴		
32220110113	Per Acre	Per 1000 Sq. Ft.	Zone 5b, 6a	Zone 6b	Zone 7a, 7b	(inches)
COOL SEASON GRASSES	•					
1. PERENNIAL RYEGRASS	100	1.0	3/15-6/1 8/1-9/15	3/1-5/15 8/15-10/1	2/15-5/1 8/15-10/15	0.5
2. SPRING OATS	86	2.0	3/15-6/1 8/1-9/15	3/1-5/15 8/15-10/1	2/15-5/1 8/15-10/15	1.0
3. WINTER BARLEY	96	2.2	8/1-9/15	8/15-10/1	8/15-10/15	1.0
4. WINTER CEREAL RYE	112	2.8	8/1-11/1	8/1-11/15	8/1-12/15	1.0
WARM SEASON GRASSES	•					
5. PEARL MILLET	20	0.5	6/1-8/1	5/15-8/15	5/1-9/1	1.0
6. MILLET (GERMAN OR HUNGARIAN)	30	0.7	6/1-8/1	5/15-8/15	5/1-9/1	1.0
7. WEEPING LOVEGRASS	5	0.2	6/1-8/1	5/15-8/15	5/1-9/1	0.25

A GERMINATION TEST RESULT. NO ADJUSTMENT IS REQUIRED FOR COOL SEASON GRASSES. THROUGHOUT SUMMER IF SOIL MOISTURE IS ADEQUATE OR SEEDED AREA CAN BE IRRIGATED ZONE (SEE FIGURE 7-1, PG. 7-4.)

B. CONVENTIONAL SEEDING IS PERFORMED BY APPLYING SEED UNIFORMLY BY HAND, CYCLONE (CENTRIFUGAL) SEEDER, DROP SEEDER, DRILL OR CULTIPACKER SEEDER. EXCEPT FOR DRILLED, HYDROSEEDED OR CULTIPACKED SEEDINGS, SEED SHALL BE INCORPORATED INTO THE SOIL WITHIN 24 HOURS OF SEEDBED PREPARATION TO A DEPTH OF 1/4 TO 1/2 INCH, BY RAKING OR DRAGGING. DEPTH OF SEED PLACEMENT MAY BE 1/4 INCH DEEPER ON COARSE TEXTURED SOIL.

C. HYDROSEEDING IS A BROADCAST SEEDING METHOD USUALLY INVOLVING A TRUCK OR TRAILER MOUNTED TANK, WITH HYDROSEEDING AN AGITATION SYSTEM AND HYDRAULIC PUMP FOR MIXING SEED, WATER AND FERTILIZER AND SPRAYING THE MIX ONTO THE PREPARED SEEDBED. MULCH SHALL NOT BE INCLUDED IN THE TANK WITH SEED. SHORT FIBERED MULCH MAY BE APPLIED WITH A HYDROSEEDER FOLLOWING EDING. (ALSO SEE SECTION IV MULCHING BELOW) HYDROSEEDING IS NOT A PREFERRED SEEDING METHOD BECAUSE SEED AND FERTILIZER ARE APPLIED TO THE SURFACE AND NOT INCORPORATED INTO THE SOIL POOR SEED TO SOIL CONTACT OCCURS REDUCING SEED GERMINATION AND GROWTH. HYDROSEEDING MA BE USED FOR AREAS TOO STEEP FOR CONVENTIONAL EQUIPMENT TO TRAVERSE OR TOO OBSTRUCTED WITH

D. AFTER SEEDING, FINNING THE SOIL WITH A CORRUGATED ROLLER WILL ASSURE GOOD SEED-TO-SOIL CONTACT, RESTORE CAPILLARITY, AND IMPROVE SEEDLING EMERGENCE. THIS IS THE PREFERRED METHOL WHEN PERFORMED ON THE CONTOUR, SHEET EROSION WILL BE MINIMIZED AND WATER CONSERVATION ON

4. MULCHING (SEE SECTION UNDER <u>STANDARD FOR PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION</u> ON THIS SHEET)

DUST CONTROL

TO PREVENT BLOWING AND MOVEMENT OF DUST FROM EXPOSED SOIL SURFACES, REDUCED TO TEMPORARILY STABILIZE THE SOIL AND REDUCE DAMAGE FROM WIND AND WATER EROSION UNTIL PERMANENT STABILIZATION IS ON-SITE AND OFF-SITE DAMAGE AND HEALTH HAZARDS AND IMPROVE TRAFFIC SAFETY. CONDITION WHERE PRACTICE APPLIES

THIS PRACTICE IS APPLICABLE TO AREAS SUBJECT TO DUST BLOWING AND MOVEMENT WHERE ON-SITE AND OFF-SITE DAMAGE IS LIKELY WITHOUT TREATMENT. CONSULT WITH LOCAL MUNICIPAL ORDINANCES ON ANY RESTRICTIONS.

<u>DEFINITION</u>

WATER QUALITY ENHANCEMENT SEDIMENTS DEPOSITED AS "DUST" ARE OFTEN FINE COLLOIDAL MATERIAL WHICH IS EXTREMELY

DIFFICULT TO REMOVE FROM WATER ONCE IT BECOMES SUSPENDED. USE OF THIS STANDARD

WILL HELP TO CONTROL THE GENERATION OF DUST FROM CONSTRUCTION SITES AND SUBSEQUENT BLOWING AND DEPOSITION INTO LOCAL SURFACE WATER RESOURCES. PLANNING CRITERIA

THE FOLLOWING METHODS SHOULD BE CONSIDERED FOR CONTROLLING DUST:

MULCHES - SEE STANDARD OF STABILIZATION WITH MULCHES ONLY, PG. 5-1 <u>VEGETATIVE COVER</u> — SEE STANDARD FOR: TEMPORARY VEGETATIVE COVER, PG. 7-1, PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION, PG. 4-1 AND PERMANENT

STABILIZATION WITH SOD, PG. 6-1 <u>SPRAY-ON_ADHESIVES</u> - ON MINERAL SOILS (NOT EFFECTIVE ON MUCK SOILS). KEEP TRAFFIC OFF THESE AREAS.

TABLE 16-1 DUST CONTROL MATERIALS

MATERIAL	WATER DILUTION	TYPE OF NOZZLE	APPLY GALLONS/ACRE
ANIONIC ASPHALT EMULSION	7:1	COARSE SPRAY	1200
LATEX EMULSION	12.5:1	FINE SPRAY	235
RESIN IN WATER	4: 1	FINE SPRAY	300
POLYACRYLAMIDE (PAM) — SPRAY ON POLYACRYLAMIDE (PAM) — DRY SPREAD	INSTRUCT ADDITIVE AND PRE	CCORDING TO MANUFATIONS. MAY ALSO BE TO SEDIMENT BASINS CIPITATE SUSPENDED BASIN STANDARD, P	USED AS AN TO FLOCCULATE COLLOIDS. SEE
ACIDULATED SOY BEAN SOAP STICK	NONE	COARSE SPRAY	1200
	<u> </u>		<u> </u>

TILLAGE - TO ROUGHEN SURFACE AND BRING CLODS TO THE SURFACE. THIS IS A TEMPORARY EMERGENCY MEASURE WHICH SHOULD BE USED BEFORE SOIL BLOWING STARTS. BEGIN PLOWING ON WINDWARD SITE OF SITE. CHISEL-TYPE PLOWS SPACED ABOUT INCHES APART AND SPRING-TOOTHED HARROWS ARE EXAMPLES OF EQUIPMENT WHICH MAY PRODUCE THE DESIRED EFFECT.

<u>SPRINKLING</u> - SITE IS SPRINKLED UNTIL THE SURFACE IS WET.

BARRIERS - SOLID BOARD FENCES, SNOW FENCES, BURLAP FENCES, CRATE WALLS, BALES F HAY AND SIMILAR MATERIAL CAN BE USED TO CONTROL AIR CURRENTS AND SOIL

<u>CALCIUM CHLORIDE</u> - SHALL BE IN THE FORM OF LOOSE, DRY GRANULES OR FLAKES FINE ENOUGH TO FEED THROUGH COMMONLY USED SPREADERS AT A RATE THAT WILL KEEP SURFACE MOIST BUT NOT CAUSE POLLUTION OR PLANT DAMAGE. - IF USED ON STEEPER SLOPES, THEN USE OTHER PRACTICES TO PREVENT WASHING INTO STREAMS OR ACCUMULATION AROUND PLANTS. NOT TO BE USED ON THE LANDFILL

STONE - COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL.

CONSTRUCTION SEQUENCE (SUBJECT TO CHANGE)

1. CONTACT SOMERSET-UNION SOIL CONSERVATION DISTRICT 72 HOURS PRIOR TO START OF

2. INSTALL FILTER SOCK AND INLET PROTECTION PER PLANS. - 5 DAYS 3. MOBILIZE EQUIPMENT AND PREPARE STAGING AREA. - 5 DAYS

4. INSTALL STONE TO EXISTING DRIVE AS NEEDED TO PROVIDE SUFFICIENT SUPPORT FOR HAUL TRUCKS. EXISTING STONE DRIVE TO BE USED AS CONSTRUCTION ACCESS. CHECK AND MAINTAIN . 10.0% FESTUCA RUBRA SSP. COMMUTATA (CHEWINGS FESCUE)

5. IMPORT CLEAN FILL TO LANDFILL USING EXISTING STONE DRIVE AND DISTRIBUTE ON LANDFILL USING LIGHTWEIGHT MACHINERY. CHECK AND MAINTAIN FILTER SOCK. - 20 DAYS

6. AREAS RECEIVING CLEAN FILL THAT WILL BE LEFT EXPOSED MORE THAN THIRTY (30) DAYS WILL IMMEDIATELY RECEIVE SEEDING. - 5 DAYS

7. INSTALL SOLAR ARRAY, AC FEED CONDUITS ABOVE AND BELOW GRADE, AND SWITCHGEAR PAD. INSTALL ELECTRICAL EQUIPMENT. CHECK AND MAINTAIN FILTER SOCK. USE CAUTION NEAR GAS 8. COORDINATE INSTALLATION OF NEW POLES AND INTERCONNECTION WITH PSEG. - 15 DAYS

9. SCARIFY HEAVILY USED COMPACTED AREAS AND AVOID DISTURBANCE TO LINER. APPLY PERMANENT SEEDING TO ENSURE VEGETATIVE COVER IS ESTABLISHED. - 10 DAYS

10. INSTALL BALLAST SECURITY FENCE AND GATES. - 10 DAYS 11. REMOVE ALL EROSION CONTROL DEVICES ONCE SITE IS STABILIZED. - 5 DAYS DURATION OF PROJECT (SUBJECT TO CHANGE) - 4 MONTHS*

* CONSTRUCTION ACTIVITIES ARE EXPECTED TO OVERLAP EACH OTHER

SOMERSET - UNION SOIL CONSERVATION DISTRICT

1. ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES TO BE INSTALLED PRIOR TO ANY MAJOR SOIL DISTURBANCE, OR IN THEIR PROPER SEQUENCE, AND MAINTAINED UNTIL PERMANENT PROTECTION IS NY DISTURBED AREAS THAT WILL BE LEFT EXPOSED MORE THAN 30 DAYS, AND NOT SUBJECT TO CONSTRUCTION TRAFFIC, WILL IMMEDIATELY RECEIVE A TEMPORARY SEEDING. IF THE SEASON PREVENTS THE ESTABLISHMENT OF A TEMPORARY COVER, THE DISTURBED AREAS WILL BE MULCHED WITH STRAW, OR

SOIL EROSION AND SEDIMENT CONTROL NOTES

3. PERMANENT VEGETATION TO BE SEEDED OR SODDED ON ALL EXPOSED AREAS WITHIN TEN (10) DAYS AFTER FINAL GRADING. MULCH TO BE USED FOR PROTECTION UNTIL SEEDING IS ESTABLISHED.

4. ALL WORK TO BE DONE IN ACCORDANCE WITH THE STANDARDS FOR SOIL EROSION AND SEDIMENT

5. A SUB-BASE COURSE WILL BE APPLIED IMMEDIATELY FOLLOWING ROUGH GRADING AND INSTALLATION OF IMPROVEMENTS IN ORDER TO STABILIZE STREETS, ROADS, DRIVEWAYS AND PARKING AREAS. IN AREAS WHERE NO UTILITIES ARE PRESENT, THE SUBBASE SHALL BE INSTALLED WITHIN 15 DAYS OF THE 6. IMMEDIATELY FOLLOWING INITIAL DISTURBANCE OR ROUGH GRADING, ALL CRITICAL AREAS SUBJECT TO EROSION (I.E. STEEP SLOPES AND ROADWAY EMBANKMENTS) WILL RECEIVE A TEMPORARY SEEDING IN COMBINATION WITH STRAW MULCH OR A SUITABLE EQUIVALENT, AT A RATE OF TWO (2) TONS PER ACRE,

7. ANY STEEP SLOPES RECEIVING PIPELINE INSTALLATION WILL BE BACKFILLED AND STABILIZED DAILY, AS THE INSTALLATION PROCEEDS (I.E. SLOPES GREATER THAN 3:1).

8. TRAFFIC CONTROL STANDARDS REQUIRE THE INSTALLATION OF A 50 FT. X 30 FT. X 1.0 FT. PAD OF 1.5" 2" STONE, AT ALL CONSTRUCTION DRIVEWAYS IMMEDIATELY AFTER INITIAL SITE DISTURBANCE.

9. IN ACCORDANCE WITH THE STANDARD FOR PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION, ANY SOIL HAVING A PH OF 4 OR LESS OR CONTAINING IRON SULFIDES SHALL BE COVERED WITH A MINIMUM OF 12 INCHES OF SOIL HAVING A PH OF 5 OR MORE PRIOR TO SEEDBED PREPARATION.

10. THE LOCAL COUNTY SOIL CONSERVATION DISTRICT SHALL BE NOTIFIED IN WRITING 72 HOURS OF ANY 11. AT THE TIME WHEN THE SITE PREPARATION FOR PERMANENT VEGETATIVE STABILIZATION IS ACCOMPLISHED, ANY SOIL THAT WILL NOT PROVIDE A SUITABLE ENVIRONMENT TO SUPPORT ADEQUATE VEGETATIVE GROUND COVER, SHALL BE REMOVED OR TREATED IN SUCH A WAY THAT WILL PERMANENTLY ADJUST THE SOIL CONDITIONS AND RENDER IT SUITABLE FOR VEGETATIVE GROUND COVER. IF THE REMOVAL OR TREATMENT OF THE SOIL WILL NOT PROVIDE SUITABLE CONDITIONS, NON-VEGETATIVE MEANS OF PERMANENT AROUND STABILIZATION WILL HAVE TO BE EMPLOYED.

12. IN THAT N.J.S.A. 4:24 — 39 ET. SEQ. REQUIRES THAT NO CERTIFICATES OF OCCUPANCY BE ISSUED BEFORE THE PROVISIONS OF THE CERTIFIED PLAN FOR SOIL EROSION AND SEDIMENT CONTROL HAVE BEEN

COMPLIED WITH FOR PERMANENT MEASURES, ALL SITE WORK FOR SITE PLANS AND ALL WORK AROUND INDIVIDUAL LOTS IN SUBDIVISIONS WILL HAVE TO BE COMPLETED PRIOR TO THE DISTRICT ISSUING A REPORT OF COMPLIANCE FOR THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY BY THE MUNICIPALITY. 13. CONDUIT OUTLET PROTECTION MUST BE INSTALLED AT ALL REQUIRED OUTFALLS PRIOR TO THE DRAINAGE SYSTEMS BECOMING OPERATIONAL.

14. ANY CHANGES TO THE CERTIFIED SOIL EROSION AND SEDIMENT CONTROL PLANS WILL REQUIRE THE SUBMISSION OF REVISED SOIL EROSION AND SEDIMENT CONTROL PLANS TO THE DISTRICT FOR RE—CERTIFICATION. THE REVISED PLANS MUST MEET ALL CURRENT STATE SOIL EROSION AND SEDIMENT

15. SOIL EROSION CONTROL MEASURES APPLY TO CONSTRUCTION ON INDIVIDUAL LOTS. THESE MEASURES SHALL APPLY TO SUBSEQUENT OWNERS IF TITLE IS CONVEYED.

16. MAINTENANCE OF SOIL EROSION AND SEDIMENT CONTROL MEASURES DURING CONSTRUCTION WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND/OR OWNER. AFTER COMPLETION OF PROJECT, THE RESPONSIBILITY WILL BE THAT OF THE OWNER AND/OR HOMEOWNER.

17. MULCHING, SPRINKLING, TILLAGE, STONE AND/OR BARRIERS SHALL BE USED TO CONTROL DUST ON SITE. FIELD CONDITIONS WILL CONTROL WHICH METHOD OR METHODS ARE APPLICABLE. FOR FURTHER INFORMATION CONSULT THE "STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY."

SOMERSET - UNION SOMERSET COUNTY 4-H CENTER 308 MILLTOWN ROAD BRIDGEWATER, NJ 08807 908-526-2701

SOLAR FACILITY SEED MIX

("ERNST SOLAR FARM SEED MIX" - ERNMX-186, OR APPROVED EQUAL)

• 50.0% FESTUCA RUBRA (CREEPING RED FESCUE)

• 15.0% FESTUCA BREVIPILA, 'CHARIOT' (HARD FESCUE, 'CHARIOT') 15.0% FESTUCA BREVIPILA, 'HARPOON' (HARD FESCUE, 'HARPOON')

• 5.0% POA PRATENSIS, 'MOONSTRUCK' (KENTUCKY BLUEGRASS,

'MOONSTRUCK') 5.0% POA PRATENSIS, 'SHAMROCK' (KENTUCKY BLUEGRASS, 'SHAMROCK')

GENERAL PRODUCT INFORMATION: PROVIDES 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

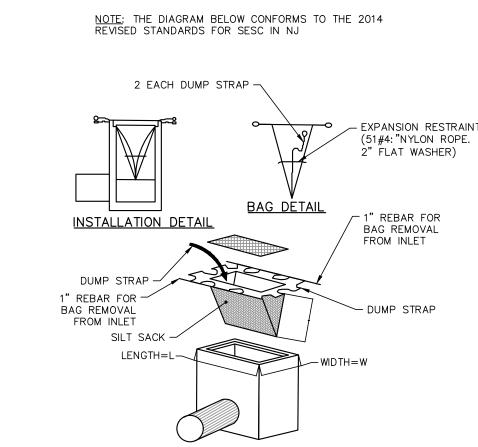
THE FORMULA MAY CHANGE, THE GUIDING PHILOSOPHY AND FUNCTION OF THE MIX WILL NOT.

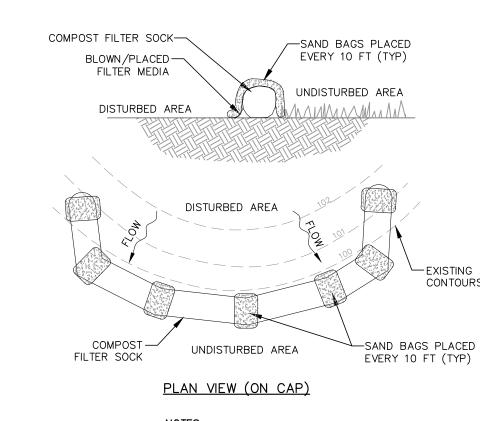
HEIGHT: 1.0 - 3.0 FT

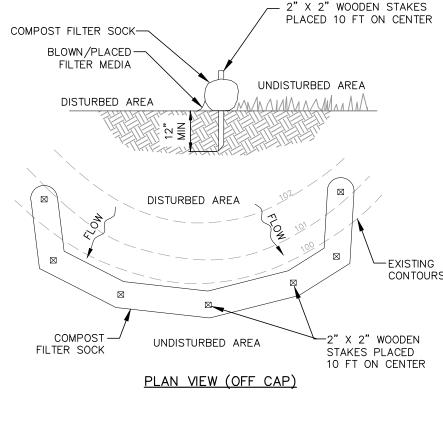
SEEDING RATE: 6 LB PER 1,000 SQ F

STOCKPILE TOP AND SIDES TO BE STABILIZED IMMEDIATELY WITH TEMPORARY SEED, FERTILIZER, AND LIME, ETC., AS SPECIFIED HEREON. SILT SOCK ON DOWNSLOPE SIDE OF STOCKPILE

STOCKPILE-TYPICAL SECTION







IMPEDE STORM FLOW OR DRAINAGE.

THOMAS J. FIK

PROFESSIONAL ENGINEER

NJ LIC. NO. 24GE04591700

DATE: $\frac{6/15/2020}{}$

<u>GENERAL DESIGN CRITERIA IN ACCORDANCE WITH CHAPTER 23 (STANDARD FOR SEDIMENT BARRIERS) OF THE STANDARDS FOR SOIL</u> <u>EROSION AND SEDIMENT CONTROL OF NEW JERSEY</u>

2. THE SLOPE OF THE CONTRIBUTING DRAINAGE AREA FOR AT LEAST 30 FEET ADJACENT TO THE BARRIER SHALL NOT EXCEED 5%. 3. THE BARRIER SHALL BE CONSTRUCTED SO WATER CANNOT BYPASS THE BARRIER AROUND THE ENDS. 4. INSPECTION SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.

1. CONTRIBUTING DRAINAGE AREA IS LESS THAN 1 ACRE AND THE LENGTH OF SLOPE ABOVE THE BARRIER IS LESS THAN 150 FEET.

5. THE BARRIER SHALL BE REMOVED WHEN THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED SO AS NOT TO BLOCK OR

6. SEDIMENT SHALL BE REMOVED FROM THE UPSTREAM FACE OF THE BARRIER WHEN IT HAS REACHED A DEPTH OF ½ THE BARRIER 7. REPAIR OR REPLACE BARRIER (FABRIC, POSTS, BALES ETC.) WHEN DAMAGED.

8. BARRIERS SHALL BE INSPECTED DAILY FOR SIGNS OF DETERIORATION AND SEDIMENT REMOVAL

GEND	(NOTE: NOT	ALL ITEMS	MAY	APPEAR	ON	THIS	SURVEY)
	INLETS						SANIT
	UTILITY	POLE				S	STORM

©

BOLLARD

ELECTRIC BOX

FLECTRIC MANHOL

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RM MANHOLE UTILITY POLE & STREET LIGHT UNKNOWN MANHOLE GUY WIRE J.B. N.J.D.O.T. JUNCTION BOX GAS WELL TO LATERAL CONNECTION LIGHT POLE ----- EDGE OF WATER FIRE HYDRANT GAS CLEANOUT CONNECTION (LOW POINTS) GUIDE RAIL SIGN(S) 000 GAS CLEANOUT CONNECTION CLEANOUT GAS ISOLATION VALVE ENCLOSURE ----OHW----OVERHEAD WIRE VENT SOIL BORING GAS METER MONITORING WELL SANITARY LINE GAS VALVE FIRE DEPARTMENT CONNECTION ELECTRIC METER FLARED END SECTION WATER METER TOP OF GRATE ELECTRIC LINE WATER VALVE

+10.5 SPOT GRADE ELEV.

CONC. CONCRETE

+10.53 SPOT GRADE ELEV. ON IMPERVIOUS SURFACE _______ TERMINUS UNKNOWN

TELEPHONE LINE COUNTY/MUNICIPAL BOUNDARY LINE

EXISTING MINOR CONTOUR

----10---- EXISTING MAJOR CONTOUR

PROPOSED MINOR CONTOUR ______PROPOSED MAJOR CONTOUR EXISTING FEMA FLOOD HAZARD BOUNDARY WETLAND DELINEATION LINE WL FLAG #12 WETLAND FLAG & DESIGNATION △ SOW #52 STATE OPEN WATER & DESIGNATION ZONE X "OTHER FLOOD AREAS" (SEE NOTE 6) ZONE AE (SEE NOTE 6) ZONE AE "FLOODWAY AREAS" (SEE NOTE 6)

————————— EXISTING 4"Ø SDR-13.5 GAS EXTRACTION LATERAL — — — EXISTING 12" # HDPE GAS EXTRACTION HEADER

FIBER OPTIC WITNESS POST BUCKEYE PIPELINE WITNESS POST SUNOCO PIPELINE WITNESS POST SPECTRA ENERGY PIPELINE WITNESS POST POST (PER AERIAL SURVEY)

EXISTING 10" # HDPE GAS EXTRACTION HEADER ☐ EXISTING MANIFOLD CHAMBER W/ IDENTIFIER # TEST PIT* AND DYNAMIC CONE PENETROMETER TEST \bigoplus TEST PIT* TO CONFIRM PIPE DEPTH (* HAND DUG) GRAPHIC SCALE 0 30 60 120 (IN FEET) 1 inch = 60 ft.

NO. DATE

SOIL EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

LINDEN HAWK RISE SOLAR PROJECT PRELIMINARY AND FINAL SITE PLAN BLOCK 581 - LOTS 11.03 & 17 SITUATED IN CITY OF LINDEN COUNTY OF UNION, NEW JERSEY

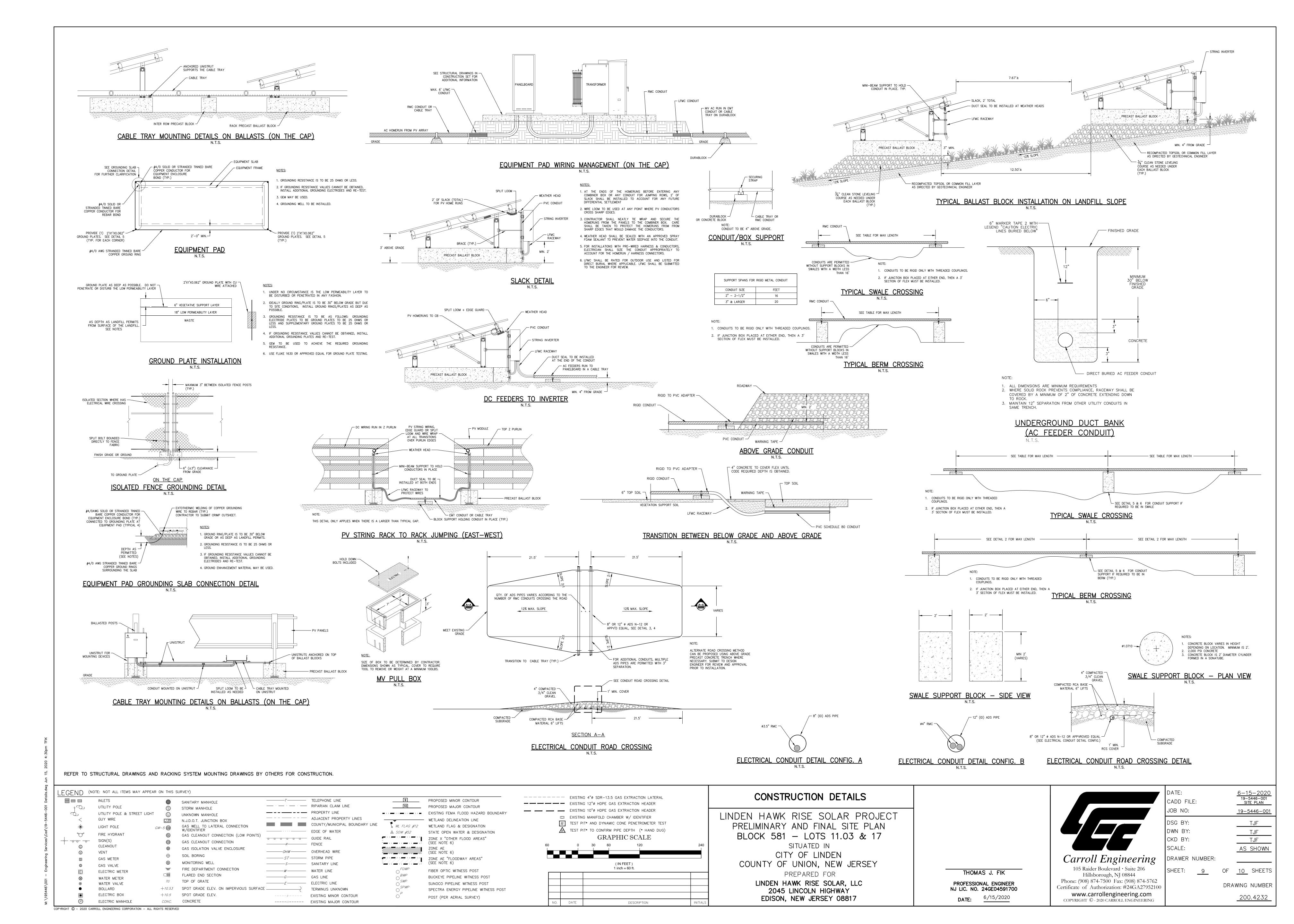
> PREPARED FOR LINDEN HAWK RISE SOLAR, LLC 2045 LINCOLN HIGHWAY EDISON, NEW JERSEY 08817

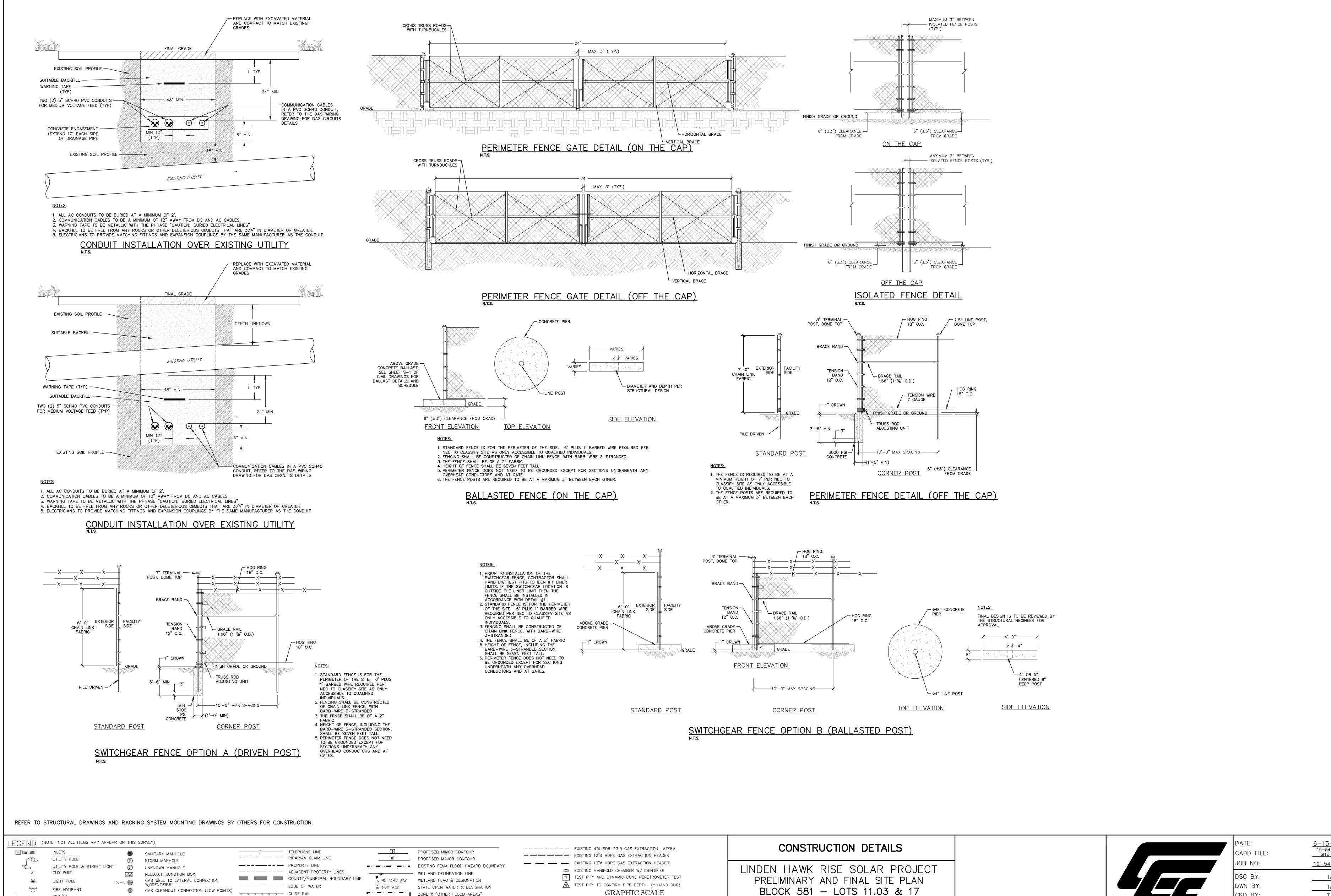


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6-15-2020 19-5446-001 CADD FILE: SITE PLAN JOB NO: 19-5446-00 ____TJF DSG BY: TJF DWN BY: CKD BY: TJF SCALE: AS SHOWN RAWER NUMBER: 10 SHEETS SHEET: _8_ DRAWING NUMBER 200.4232

DATE:





GRAPHIC SCALE

(IN FEET)

1 inch = 60 ft.

0 30 60 120

NO. DATE

ZONE X "OTHER FLOOD AREAS"

(SEE NOTE 6)

ZONE AE "FLOODWAY AREAS" (SEE NOTE 6)

FIBER OPTIC WITNESS POST

POST (PER AERIAL SURVEY)

BUCKEYE PIPELINE WITNESS POST

SUNOCO PIPELINE WITNESS POST

SPECTRA ENERGY PIPELINE WITNESS POST

ZONE AE (SEE NOTE 6)

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CLEANOUT

GAS METER

GAS VALVE

ELECTRIC METER

WATER METER

WATER VALVE

ELECTRIC BOX

BOLLARD

VENT

GAS CLEANOUT CONNECTION (LOW POINTS)

+10.53 SPOT GRADE ELEV. ON IMPERVIOUS SURFACE ______ TERMINUS UNKNOWN

GAS CLEANOUT CONNECTION

GAS ISOLATION VALVE ENCLOSURE

FIRE DEPARTMENT CONNECTION

SOIL BORING

FLARED END SECTION

TOP OF GRATE

+10.5 SPOT GRADE ELEV.

MONITORING WELL

GUIDE RAIL

-----ST------STORM PIPE

ELECTRIC LINE

----g---- EXISTING MINOR CONTOUR

----- EXISTING MAJOR CONTOUR

----OHW----OVERHEAD WIRE

THOMAS J. FIK

SITUATED IN

CITY OF LINDEN

COUNTY OF UNION, NEW JERSEY

PREPARED FOR

LINDEN HAWK RISE SOLAR, LLC

2045 LINCOLN HIGHWAY

EDISON, NEW JERSEY 08817

PROFESSIONAL ENGINEER NJ LIC. NO. 24GE04591700 **DATE:** $\frac{6/15/2020}{}$

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6-15-2020 19-5446-001 SITE PLAN 19-5446-00 ____TJF_ DWN BY: TJF TJF CKD BY: SCALE: AS SHOWN DRAWER NUMBER: SHEET: OF 10 SHEETS DRAWING NUMBER

200.4232