



New England Wind 2 Connector

Analysis to Support Petition Before the Energy Facilities Siting Board

Docket #EFSB 22-06

Volume II: Attachments

November 1, 2022

Submitted by
Commonwealth Wind, LLC
125 High Street, 6th Floor
Boston, MA 02110

Submitted to
Energy Facilities Siting Board
One South Station
Boston, MA 02114

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In Association with
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Public Archaeology Laboratory

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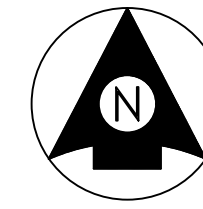
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Onshore 275-kV Transmission Route 6 Crossing



NEW ENGLAND WIND 2 CONNECTOR ONSHORE 275 kV TRANSMISSION ROUTE 6 CROSSING

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LOCATION MAP
SCALE: 1" = 10,000'

REV.	DATE	REVISION DESCRIPTION	STATUS	DRAWN	CHKD	APPRVD
C	2022-09-21	ISSUED FOR STATE PERMITTING	IFI	RN	MD	KEF
B	2022-08-25	ISSUED FOR CLIENT REVIEW	IFCR	RN	MD	KEF
A	2022-06-01	PRELIMINARY	IFR	RN	JDT	KEF

CONTRACTOR:

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Quincy, MA U.S.A. 02169-0982

CLIENT:

125 High Street
Boston, MA 02110

PROJECT:

NEW ENGLAND WIND 2 CONNECTOR

TITLE:

ROUTE 6 CROSSING
COVER PAGE

DOCID:

CWW-OCP-STC-DW-0006

SHEET 1 OF 6	DWG. NO.	SCALE AS SHOWN	FORMAT/SIZE ANSI D	REV. C
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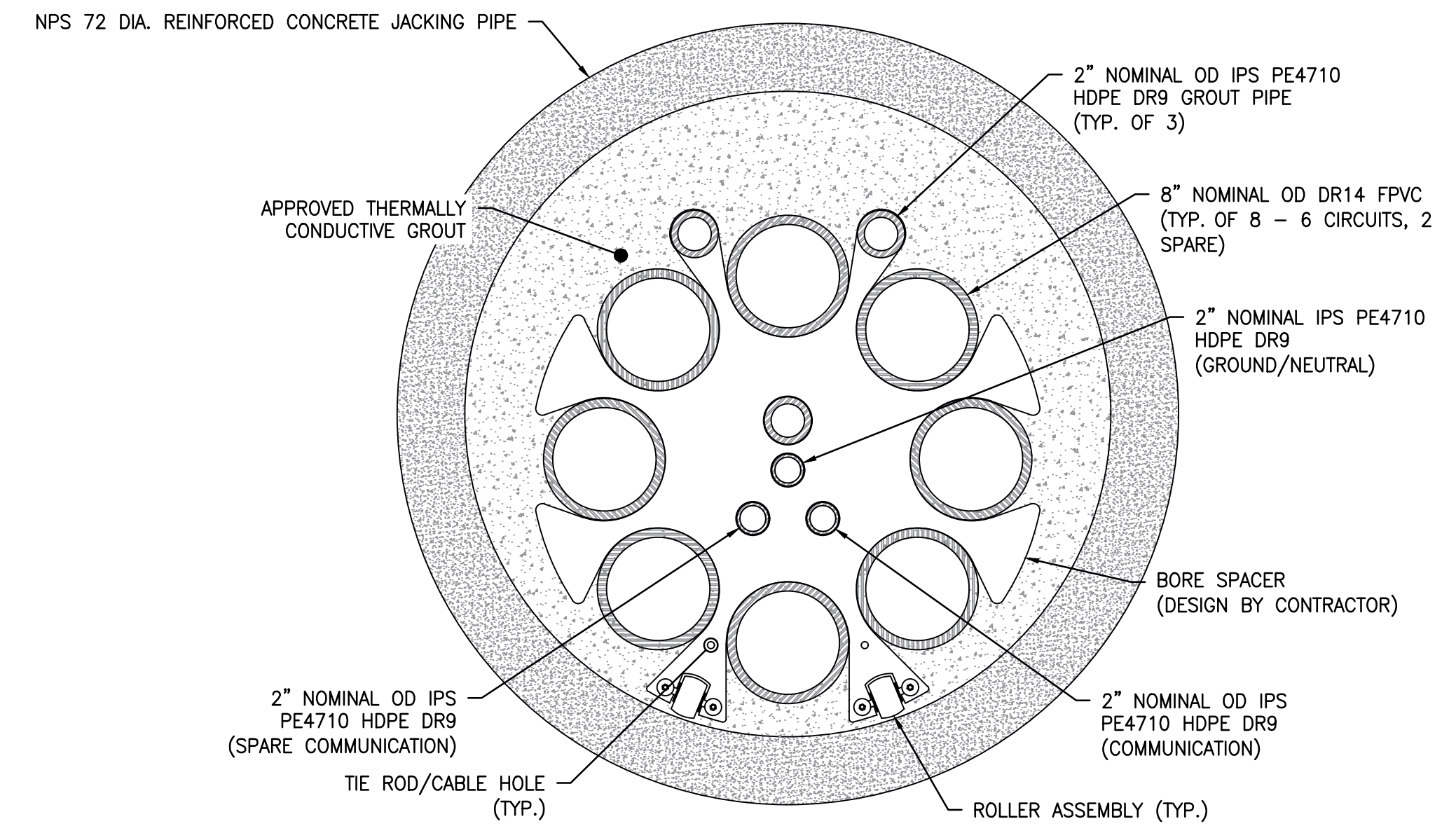
ALL UNITS SHOWN ARE 'ENGLISH UNITS' (FEET AND INCHES)

THIS PLAN SET IS PRELIMINARY AND HAS BEEN ISSUED FOR PERMITTING PURPOSES ONLY; AND, IS NOT INTENDED FOR CONSTRUCTION PURPOSES.

GENERAL NOTES

1. UNLESS OTHERWISE NOTED:
 - 1.1. DIMENSIONS ARE IN FEET.
 - 1.2. CHAINAGES ARE MEASURED ALONG A LEVEL PLAN OF TUNNEL PATH.
 - 1.3. DATUM FOR ALL LAND BASED ELEVATIONS IS NORTH AMERICAN VERTICAL DATUM 1988 (NAVD88).
 - 1.4. THE HORIZONTAL REFERENCE DATUM IS NORTH AMERICAN DATUM OF 1983 (NAD83).
 - 1.5. EXISTING TOPOGRAPHY IS TAKEN FROM 2016 USGS COASTAL NATIONAL ELEVATION DATABASE (CoNED) LIDAR DATA. TOPOGRAPHY TO BE CONFIRMED WITH A FIELD SURVEY.
2. UNLESS OTHERWISE NOTED, THE DESIGN CONFORMS TO THE LATEST VERSION OF REFERENCED CODES AND STANDARDS IN EFFECT AT THE TIME OF DESIGN (AUGUST 24, 2022).
3. CONSTRUCTION TO COMPLY WITH THE PROJECT'S APPLICABLE TRENCHLESS INSTALLATION SPECIFICATIONS, CROSSING AGREEMENTS, PROJECT CONSTRUCTION SPECIFICATIONS, AND FEDERAL, STATE AND MUNICIPAL REGULATIONS. REQUIREMENTS THAT THE CONTRACTOR CONSIDERS TO BE CONFLICTING SHALL BE REVIEWED BY THE PROJECT'S AUTHORIZED REPRESENTATIVE. HARD COPIES OF CROSSING AGREEMENT AND CONTRACT DOCUMENTS SHALL BE ON SITE DURING CONSTRUCTION.
4. BEFORE INITIATING CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL CALL DIGSAFE AT 811 AND ALSO VERIFY THE FIELD SURVEY DATA, TOPOGRAPHY AND LOCATION OF ALL EXISTING UTILITIES.
5. CONSTRUCTION ACTIVITIES SHALL BE PERFORMED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND TRENCHLESS TECHNOLOGY EXECUTION PLAN.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREVENTING DAMAGE TO ADJACENT STRUCTURES OR FACILITIES (ABOVE OR BELOW GROUND) DUE TO TRENCHLESS TECHNOLOGY OPERATIONS.
7. THE TUNNEL SHALL FOLLOW THE PATH SHOWN ON THE DRAWINGS WITH THE FOLLOWING REQUIREMENTS AND TOLERANCES IN ORDER OF PRECEDENCE:
 - 7.1. THE FINAL INSTALLATION SHALL BE ENTIRELY WITHIN THE APPROVED RIGHT OF WAY.
 - 7.2. UNDERGROUND FACILITIES ARE PROTECTED AT ALL STAGES OF INSTALLATION, AND THE FINAL INSTALLATION IS WITHIN THE PERMISSIBLE DRILL ZONE AS DETERMINED BY THE GEOTECHNICAL SUB-SURFACE INVESTIGATIONS.
 - 7.3. THE MAXIMUM HORIZONTAL VARIANCE IN POSITION OF THE INSTALLED DRILL PATH SHALL BE 3.0 FEET FROM THE PLANNED DRILL PATH SHOWN PROVIDED THE DRILL PATH REMAINS A MINIMUM OF 5 FEET FROM THE EDGE OF THE DESIGNATED RIGHT-OR-WAY. THE MAXIMUM VERTICAL DEVIATION SHALL BE 0.0 FT SHALLOWER TO 3 FEET DEEPER THAN THE PLANNED DRILL PATH, TO A MAXIMUM 25 FEET OF COVER OVER THE CASING PIPE. ANY DEVIATIONS BEYOND THESE LIMITS SHALL BE IMMEDIATELY CORRECTED OR SUBMITTED TO THE OWNER FOR APPROVAL.
8. THIS CROSSING IS TO BE INSTALLED USING THE PIPE JACKING/SLURRY MICROTUNNELLING METHOD/OR DIRECT PIPE.
9. THE POSITION OF THE PIPELINE (AS-BUILT) SHALL BE MEASURED AND CALCULATED AT A MINIMUM AFTER EACH PIPE SEGMENT DRILLED.
10. THE FOLLOWING DATA SHALL BE TABULATED FOR EACH AS-BUILT SURVEY POINT RELATIVE TO THE PLANNED TUNNEL PATH:
 - 10.1. HORIZONTAL DISTANCE FROM THE ENTRY POINT
 - 10.2. LATERAL POSITION FROM CENTRE LINE
 - 10.3. TRUE VERTICAL DEPTH FROM ENTRY POINT
 - 10.4. INCLINATION ANGLE
 - 10.5. AZIMUTH ANGLE
 - 10.6. DISTANCE ALONG DRILLED PATH
11. THE CONTRACTOR SHALL CONDUCT A SUFFICIENT NUMBER OF CONTROL SURVEYS TO MAINTAIN THE REQUIRED POSITIONAL TOLERANCES.
12. DRILLING FLUID AND SURFACE RUNOFF FROM THE WORKSPACE SHALL BE CONTAINED TO PREVENT ITS MIGRATION FROM THE WORKSPACE.
13. THE CONTRACTOR SHALL ESTABLISH AND MAINTAIN MAXIMUM AND MINIMUM SLURRY AND LUBRICATION FLUID PRESSURE LIMITS TO AVOID FLUID RELEASE AND OVER-EXCAVATION.
14. DRILLING FLUID AND CUTTINGS SHALL BE MANAGED AND DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS.
15. ENGINEERED DRILLING FLUID PLAN MUST BE IMPLEMENTED IN THE FIELD WITH PROPOSED EQUIPMENT.
16. ENGINEERED DRILLING FLUID PLAN MUST BE APPROVED AND ACCEPTED PRIOR TO COMMENCING DRILLING. IMPLEMENTATION OF THE APPROVED PLAN WITH PROPOSED EQUIPMENT IS REQUIRED.
17. SPECIFICATIONS FOR PROPOSED EQUIPMENT FOR ANNULAR PRESSURE MONITORING, DOWNHOLE SURVEY, SURFACE TRACKING, AND ELECTRONIC DRILL RECORDING SHALL BE REVIEWED AND APPROVED BY THE PROJECT'S AUTHORIZED REPRESENTATIVE AND INSPECTED BEFORE DRILLING ACTIVITIES COMMENCE.
18. DURING CONSTRUCTION THE AREA SURROUNDING THE DRILL PATH SHALL BE MONITORED FOR FLUID RELEASE TO GROUND SURFACE. FLUID RELEASES SHALL BE REPORTED IMMEDIATELY ACCORDING TO THE EMERGENCY RESPONSE PLAN AND AS REQUIRED BY REGULATIONS AND PERMITS.
19. THE LOCATION AND DEPTH OF EXISTING UTILITIES TO BE DETERMINED PRIOR TO CONSTRUCTION.
20. THE MINIMUM PUSH RATING FOR THE PIPE JACKING FRAME SHALL BE 250 TONNES.
21. CROSSING WORKS SHALL ADHERE TO ALL REGULATORY AND PERMIT REQUIREMENTS.
22. SETTLEMENT MONITORING SHALL BE CONDUCTED AS REQUIRED BY CROSSING AGREEMENTS AND PERMITS.
23. CONTRACTOR SHALL SERVE AS ENGINEER OF RECORD FOR THE TRENCHLESS INSTALLATION. ENGINEERING AND DESIGN PRODUCTS, AS WELL AS AS-BUILT DATA, SHALL BE SEALED BY THE CONTRACTOR'S PROFESSIONAL ENGINEER REGISTERED IN THE COMMONWEALTH OF MASSACHUSETTS.
24. DEWATERING ACTIVITIES SHALL BE CONDUCTED IN A MANNER AS TO MINIMIZE THE DISCHARGE OF POLLUTANTS FROM DEWATERING OPERATIONS. DEWATERING ACTIVITIES SHALL BE CONDUCTED IN ACCORDANCE WITH PROJECT PERMITS AND APPROVALS INCLUDING THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) CONSTRUCTION GENERAL PERMIT (CGP) FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES.
25. SHAFTS ARE TO BE BACKFILLED USING AN APPROVED PROCEDURE, AND THE SURFACE RESTORED TO FINAL GRADE FOLLOWING COMPLETION OF THE TUNNELS.

DETAILS



SECTION A
NOT TO SCALE

ALL UNITS SHOWN ARE 'ENGLISH UNITS' (FEET AND INCHES)

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C	2022-09-21	ISSUED FOR STATE PERMITTING	IFI	RN	MD	KEF
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CONTRACTOR:

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CLIENT:

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Boston, MA 02110

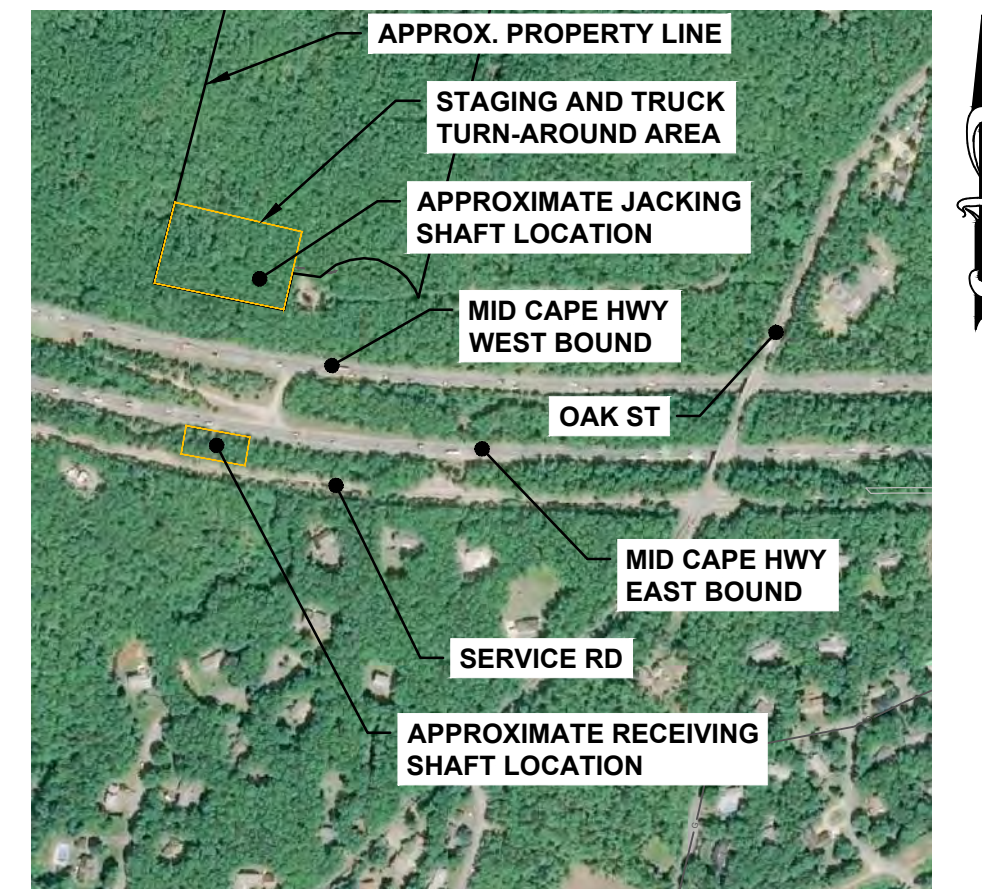
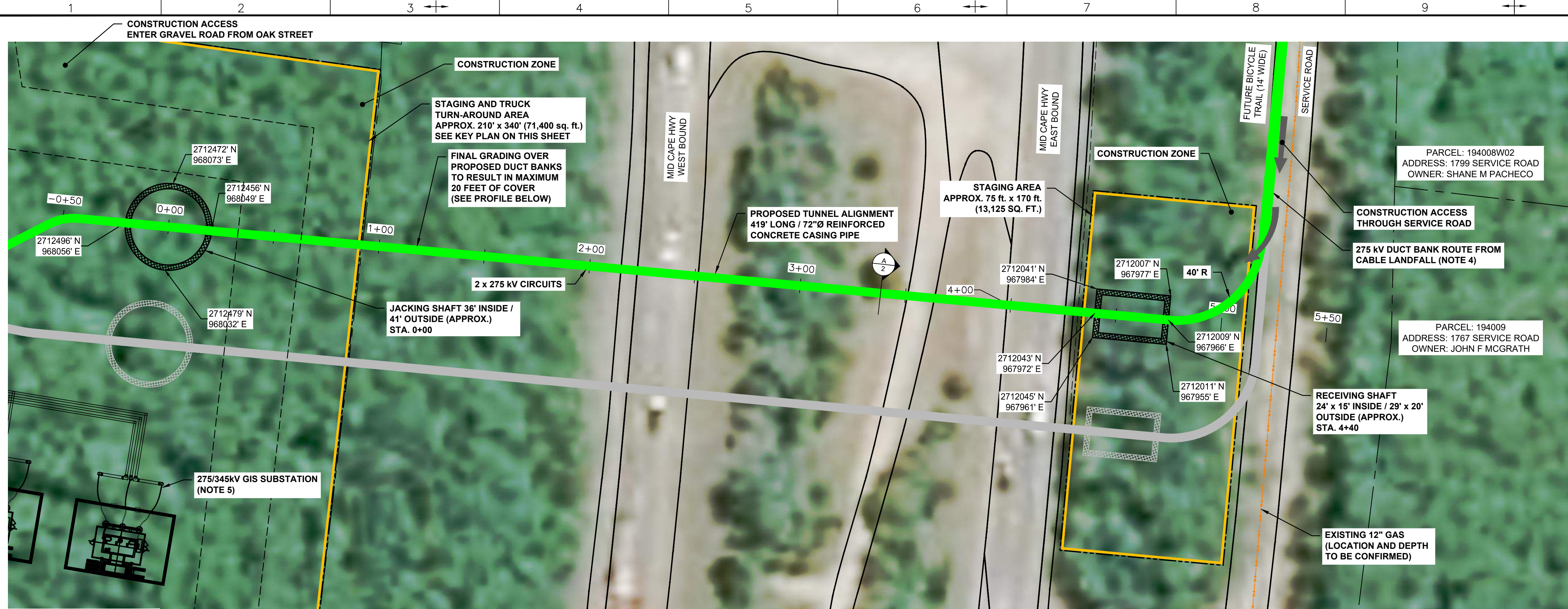
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TITLE: ROUTE 6 CROSSING
GENERAL NOTES AND DETAILS

DOCID: CWW-OCF-STC-DW-0006

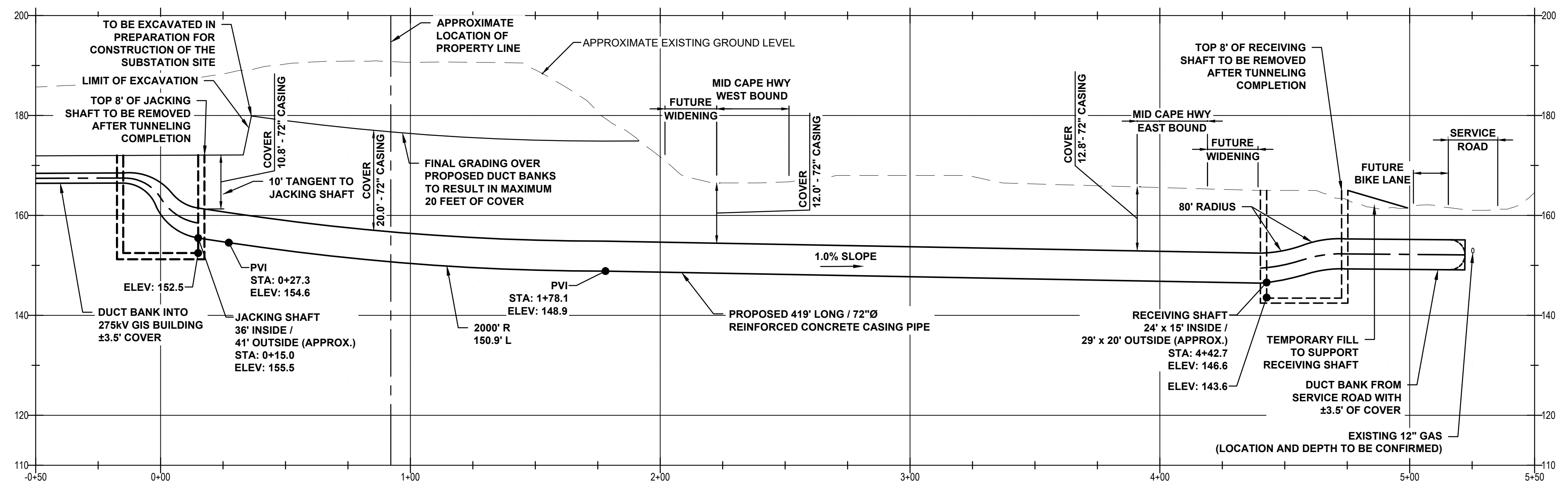
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 by: rathnagiri.robert



PLAN
1" = 30'

- NOTES:**
1. DRAWING SUBJECT TO CHANGE BASED ON FINAL SUBSTATION ELEVATION AND ELECTRICAL AMPACITY/EMF EVALUATION
 2. AFTER DUCT BANK IS CONSTRUCTED AND CONNECTED TO CONDUIT IN CASING PIPE, JACKING SHAFT TO BE REMOVED AND/OR BACKFILLED TO FINISH GRADE.
 3. PVI - POINT OF VERTICAL INTERSECTION
 4. SEE DRAWING SET CWW-OCF-STC-DW-0001 FOR DETAILS OF INTERFACING 275kV DUCT BANK
 5. SEE DRAWING SET CWW-OSP-STC-DW-0003 FOR DETAILS OF 275/345kV GIS SUBSTATION



PROFILES
H 1" = 30'
V 1" = 15'

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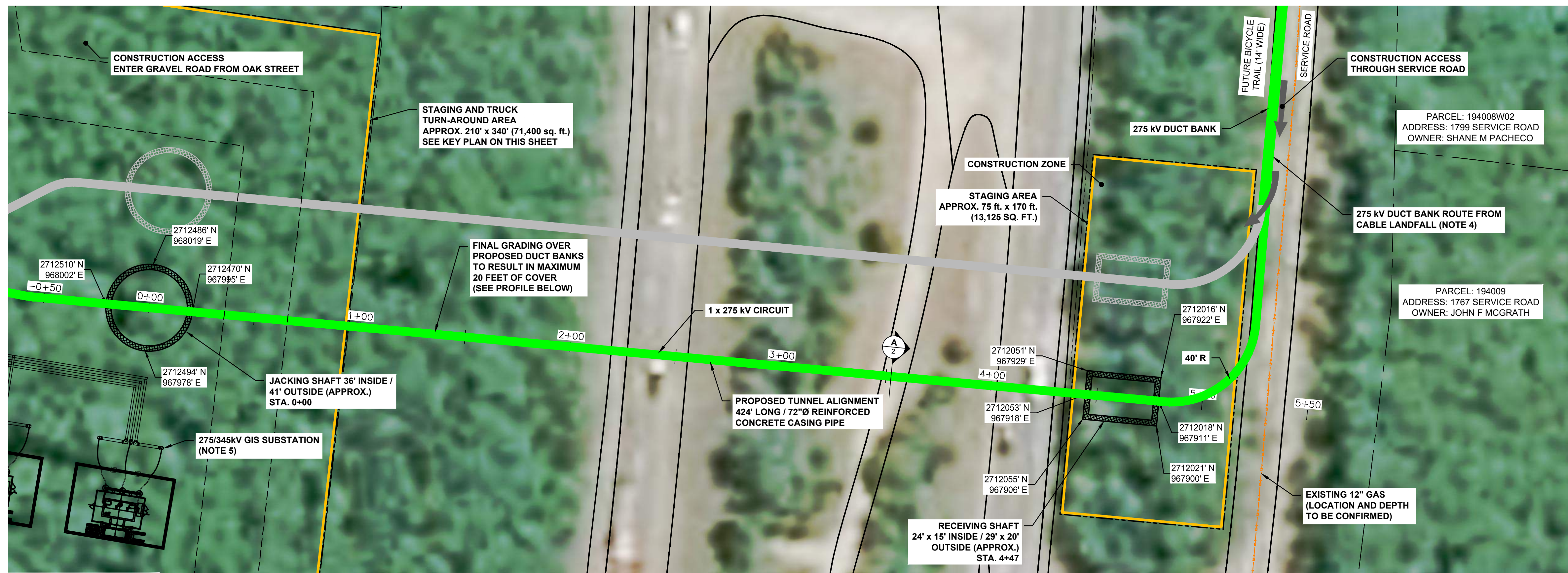
CLIENT: **AVANGRID** and **Offshore Wind**
125 High Street
Boston, MA 02110

PROJECT: **NEW ENGLAND WIND 2 CONNECTOR**

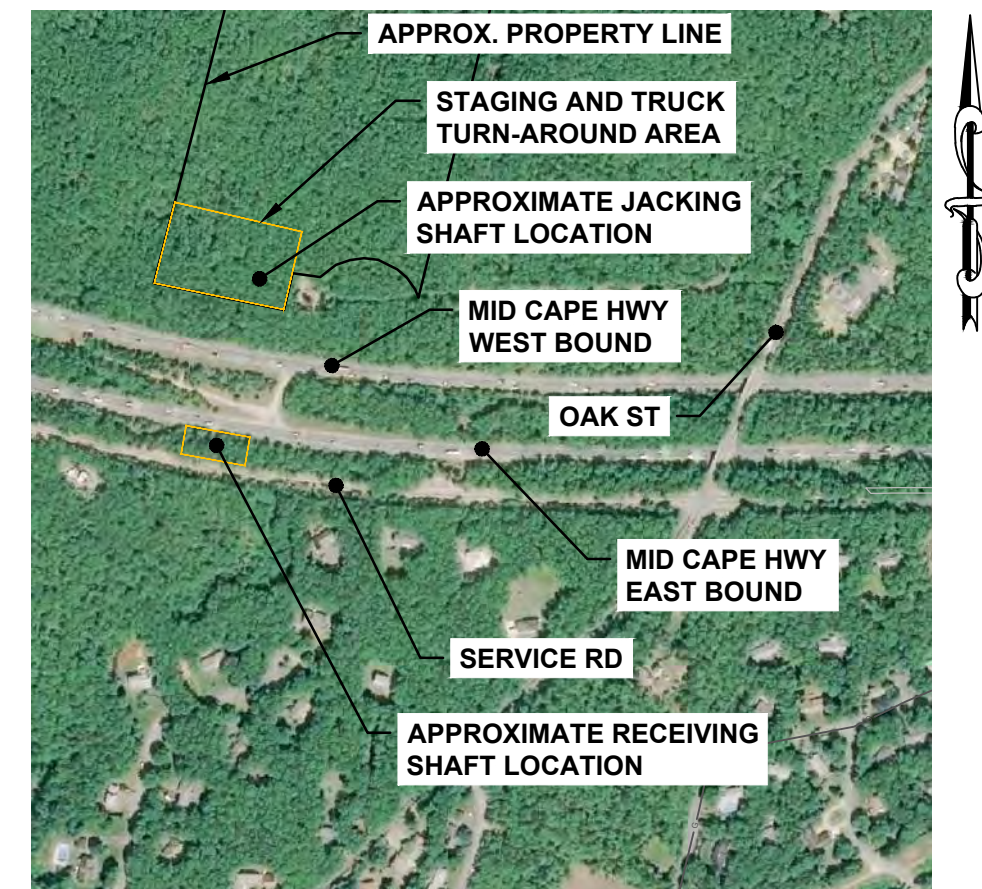
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DOCID: **CWW-OCF-STC-DW-0006**

SHEET 3 OF 6 DWG. NO. SCALE AS SHOWN FORMAT/SIZE ANSI D REV. C

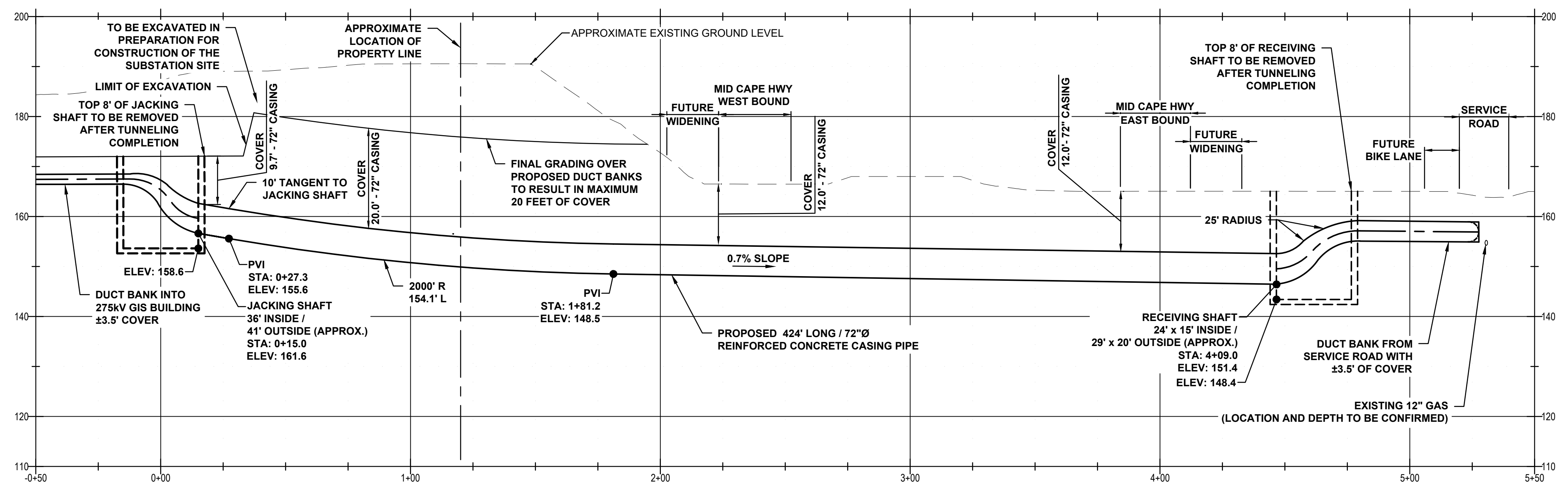


PLAN
1" = 30'



KEY PLAN
1"=500'

- NOTES:**
- DRAWING SUBJECT TO CHANGE BASED ON FINAL SUBSTATION ELEVATION AND ELECTRICAL AMPACITY/EMF EVALUATION AFTER DUCT BANK IS CONSTRUCTED AND CONNECTED TO CONDUIT IN CASING PIPE, JACKING SHAFT TO BE REMOVED AND/OR BACKFILLED TO FINISH GRADE.
 - PVI - POINT OF VERTICAL INTERSECTION
 - SEE DRAWING SET CWW-OCF-STC-DW-0001 FOR DETAILS OF INTERFACING 275KV DUCT BANK
 - SEE DRAWING SET CWW-OSP-STC-DW-0003 FOR DETAILS OF 275/345KV GIS SUBSTATION



PROFILES
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V 1" = 15'

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CONTRACTOR:

Stantec Consulting Services Inc.
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CLIENT:

125 High Street
Boston, MA 02110

PROJECT: NEW ENGLAND WIND 2 CONNECTOR

TITLE: ROUTE 6 CROSSING - TUNNEL ALIGNMENT 2
PLAN AND PROFILE

DOCID: CWW-OCF-STC-DW-0006

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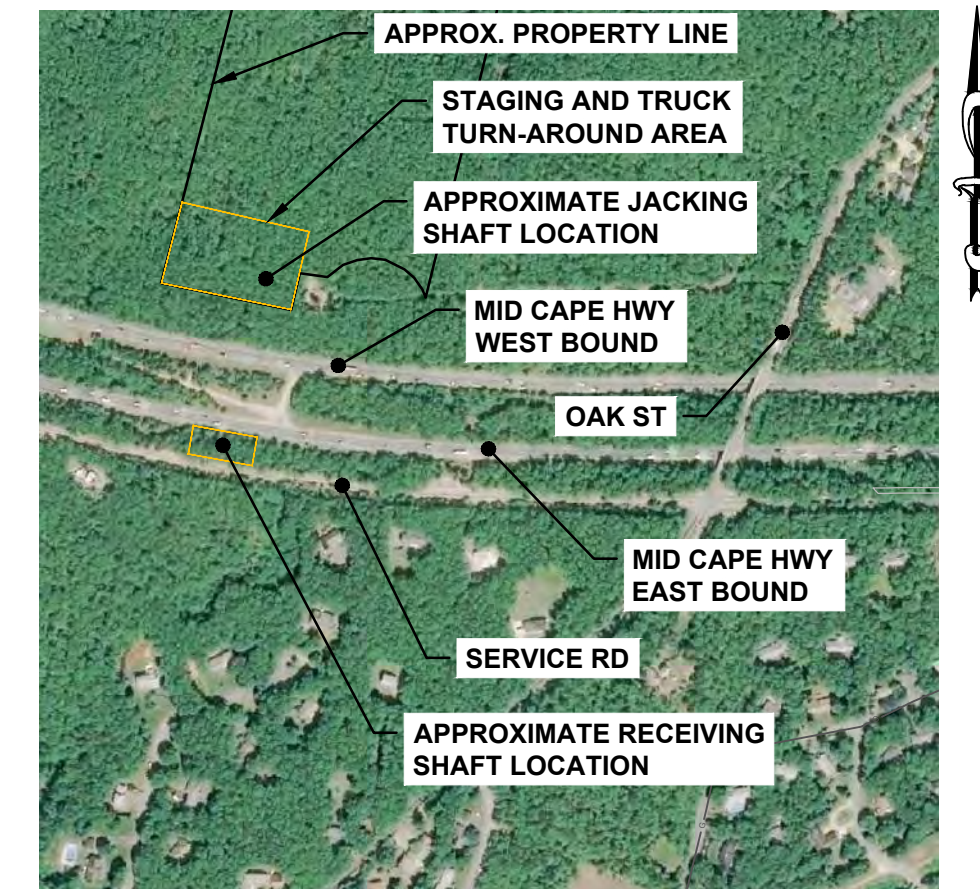
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**JACKING SHAFT 1
CONSTRUCTION STAGING PLAN**
1" = 20'



**RECEIVING SHAFT 1
CONSTRUCTION STAGING PLAN**
1" = 20'



KEY PLAN
1" = 500'

- NOTES:**
1. DRAWING SUBJECT TO CHANGE BASED ON FINAL SUBSTATION ELEVATION AND ELECTRICAL AMPACITY/EMF EVALUATION
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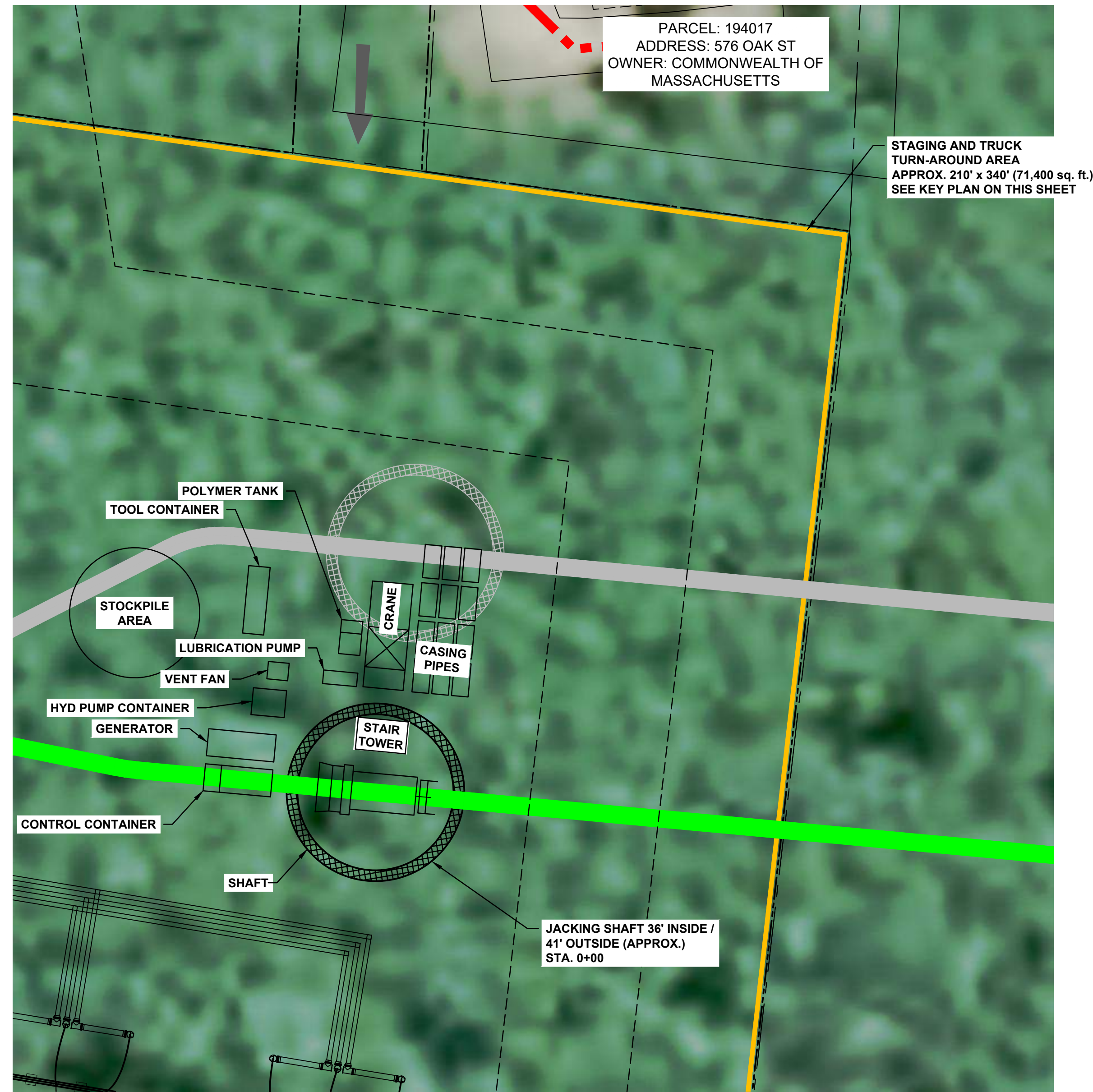
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NEW ENGLAND WIND 2 CONNECTOR

TITLE:
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CONSTRUCTION STAGING

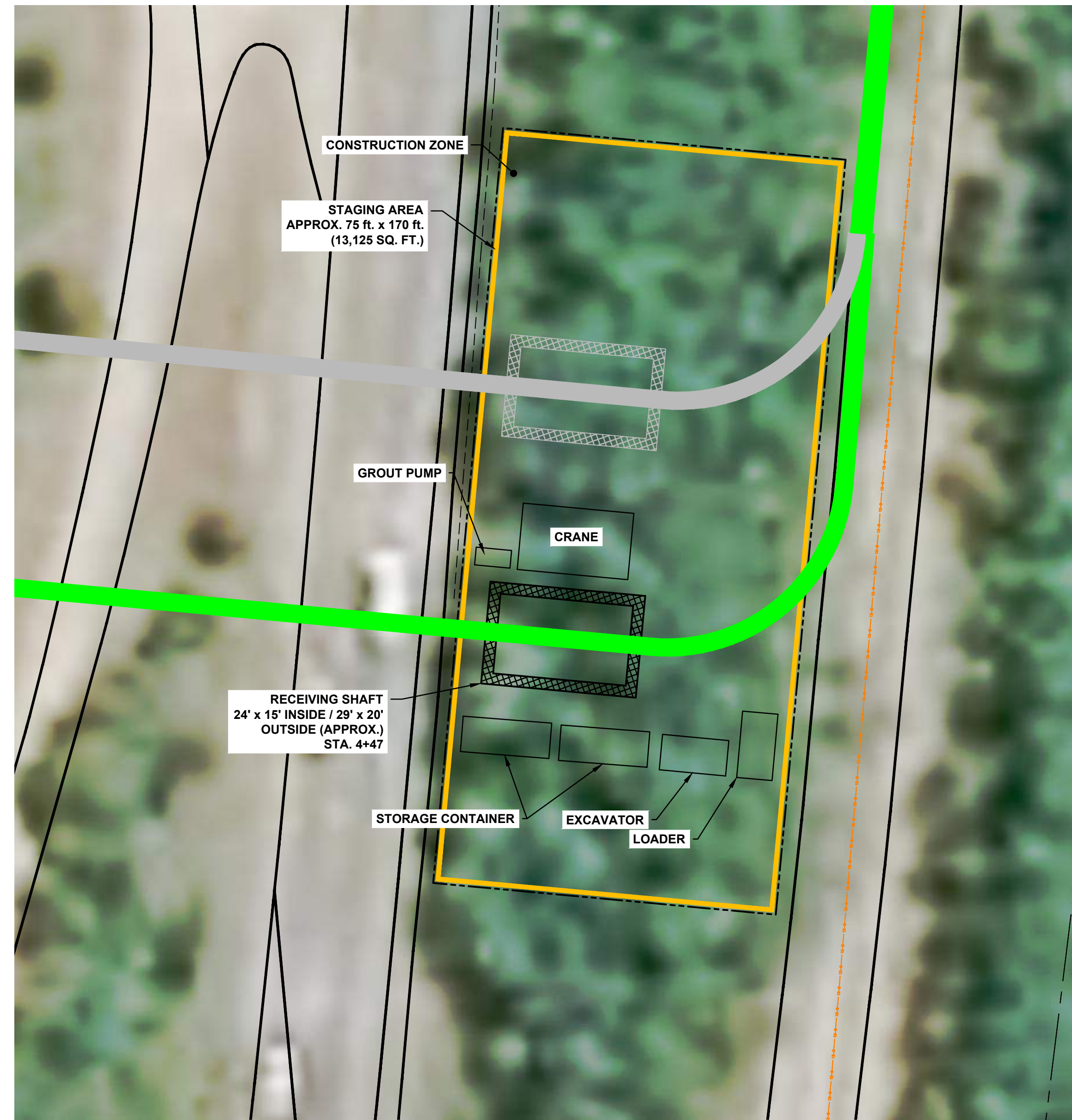
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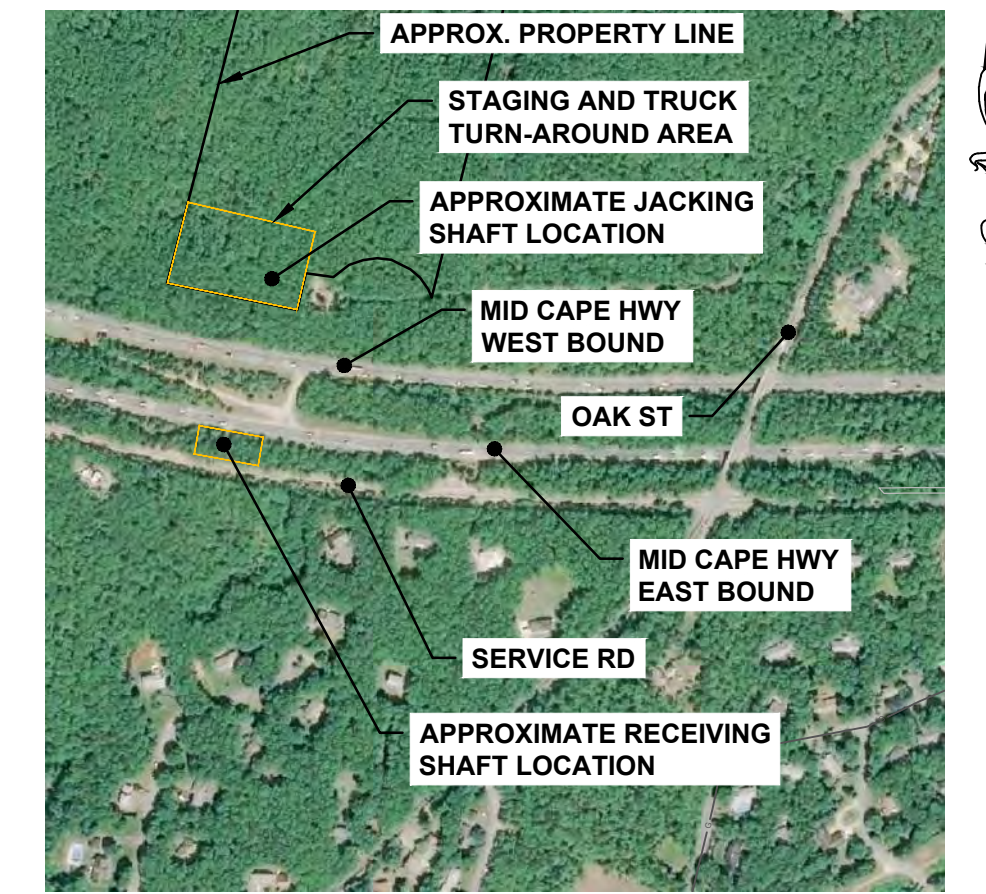
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**JACKING SHAFT 2
CONSTRUCTION STAGING PLAN**
1"=20'



**RECEIVING SHAFT 2
CONSTRUCTION STAGING PLAN**
1"=20'



KEY PLAN
1"=500'

- NOTES:**
- DRAWING SUBJECT TO CHANGE BASED ON FINAL SUBSTATION ELEVATION AND ELECTRICAL AMPACITY/EMF EVALUATION
 - AFTER DUCT BANK IS CONSTRUCTED AND CONNECTED TO CONDUIT IN CASING PIPE, JACKING SHAFT TO BE REMOVED AND/OR BACKFILLED TO FINISH GRADE.

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TITLE:
ROUTE 6 CROSSING - TUNNEL ALIGNMENT 2
CONSTRUCTION STAGING

DOCID:
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SHEET	DWG. NO.	SCALE	FORMAT/SIZE	REV.
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Attachment B4

275/345 kV GIS Substation



NEW ENGLAND WIND 2 CONNECTOR 275/345 KV GIS SUBSTATION

INDEX OF SHEETS

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1	COVER SHEET
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4	EXISTING SUBCATCHMENT AREAS
5	PROPOSED EQUIPMENT LAYOUT
6	PROPOSED GRADING AND DRAINAGE PLAN
7	PROPOSED SUBCATCHMENT AREAS
8	TYPICAL DETAIL SHEET



LOCUS MAP
N.T.S.



REV.	DATE	REVISION DESCRIPTION	STATUS	DRAWN	CHKD	APPRVD
C	2022-10-26	ISSUED FOR STATE PERMITTING	IFI	MDC	JDT	KEF
B	2022-09-28	ISSUED FOR STATE PERMITTING	IFI	DRM	JDT	KEF
A	2022-09-14	ISSUED FOR CLIENT REVIEW	IFCR	DRM	JDT	KEF

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CLIENT:

 125 High Street
 Boston, MA 02110

PROJECT:
 NEW ENGLAND WIND 2 CONNECTOR

TITLE:
 275/345 KV GIS SUBSTATION
 COVER SHEET

DOCID:
 CWW-OSP-STC-DW-0003

SHEET 1 OF 8	DWG. NO. SHEET - 1	SCALE AS SHOWN	FORMAT/SIZE ANSI D	REV. C
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 by: carol mathew

SEDIMENTATION AND EROSION CONTROL NOTES

IT IS THE INTENT OF THE CONTRACT PLANS AND DETAILS TO CONTROL EROSION AND SEDIMENTATION IN ALL PORTIONS OF THE SITE. THE CONTRACTOR IS TO IMPLEMENT THE EROSION AND SEDIMENTATION CONTROLS INDICATED ON THE PLANS, IN ACCORDANCE WITH THE FOLLOWING NOTES, BUT IS ALERTED TO THE FACT THAT ADDITIONAL MEASURES MAY BE REQUIRED TO COMPLY WITH THIS INTENT, AS FIELD CONDITIONS MAY WARRANT. SHOULD SUCH MEASURES BE DETERMINED TO BE REQUIRED OR ORDERED BY THE ENGINEER, THEY ARE TO BE IMPLEMENTED IMMEDIATELY. IN ADDITION, THE CONTRACTOR SHALL PREPARE AND SUBMIT FOR ENGINEER'S REVIEW A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) AND FILE A NOTICE OF INTENT WITH THE U.S. EPA AS REQUIRED UNDER THE NPDES CONSTRUCTION GENERAL PERMIT PROGRAM.

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING EROSION CONTROL MEASURES IN ORDER TO PREVENT THE OFF-SITE TRACKING OF EARTH, SEDIMENT, AND DEBRIS; AND FOR GENERALLY CONTROLLING THE EROSION AND SEDIMENT TRANSPORT DURING THE CONSTRUCTION PROCESS. SITE SPECIFIC CONDITIONS MAY REQUIRE MODIFICATIONS IN THE FIELD, BUT THE CONTRACTOR MUST ENSURE THAT THAT MEASURES IMPLEMENTED IN THE FIELD MEET THE MINIMUM REQUIREMENTS OF THESE PLANS.
- ALL WORK SHALL BE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, THE PROVISIONS OF ALL APPLICABLE PERMITS AND APPROVALS ISSUED BY LOCAL, STATE & FEDERAL REGULATION FOR ACTIVITIES INVOLVING WETLANDS, WATERCOURSES AND/OR EROSION CONTROLS. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE MASSACHUSETTS EROSION AND SEDIMENT CONTROL GUIDELINES FOR URBAN AND SUBURBAN AREAS, MAY 2003.
- THE CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION OF SILT FENCES, EARTH DIKES, TEMPORARY SETTLING BASINS, CHECK DAMS AND TEMPORARY SEDIMENT BASINS. SUCH PRACTICES DIVERT FLOWS FROM EXPOSED SOILS, LIMIT RUNOFF AND THE DISCHARGE OF POLLUTANTS FROM EXPOSED AREAS OF THE SITE TO THE DEGREE ATTAINABLE. TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF ANY SITE WORK, SHALL BE MAINTAINED DURING CONSTRUCTION, AND SHALL REMAIN IN PLACE UNTIL ALL SITE WORK IS COMPLETED AND GROUND COVER IS ESTABLISHED (AT LEAST 75% UNIFORM COVERAGE BY NEW SEEDLINGS).
- IN GENERAL, WORK REQUIRING EROSION CONTROL INCLUDES EXCAVATIONS, FILLS, RETAINING WALLS, DRAINAGE, ROUGH AND FINISH GRADING, AND STOCKPILING OF EARTH.
- AREAS SUBJECT TO EROSION SHALL BE MINIMIZED IN TERMS OF TIME AND AREA. DO NOT DISTURB VEGETATION AND TOPSOIL BEYOND THE PROPOSED LIMIT OF SILT FENCE ACTIVITIES.
- EROSION CONTROL MEASURE SHALL BE INCORPORATED IN THE SEQUENCE OF CONSTRUCTION TO PREVENT SEDIMENT LADEN WATER FROM LEAVING THE SITE.
- EARTHWORK ACTIVITY SHALL BE PERFORMED IN A MANNER SUCH THAT RUNOFF IS DIRECTED TO TEMPORARY DRAINAGE SWALES AND SEDIMENTATION BASINS. IN NO CASE SHALL RUNOFF FROM ROADWAYS OR OTHER AREAS, UPGRADED FROM EMBANKMENTS, BE ALLOWED TO RUN DOWN ANY CUT OR FILL SLOPE, WITHOUT THE APPROVAL OF THE ENGINEER.
- THE CONTRACTOR SHALL, AT ALL TIMES, HAVE A STOCKPILE OF HAY BALES, SILT FENCE, CRUSHED STONE, AND CATCH BASIN FILTER BAGS ADEQUATE TO REINFORCE/REPLACE EROSION AND SEDIMENT CONTROLS AS NEEDED.
- ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE MAINTAINED IN EFFECTIVE CONDITION THROUGHOUT THE CONSTRUCTION PERIOD SO THAT ALL AREAS ARE STABILIZED TO PREVENT THE MOVEMENT OF SOIL, SILT, SEDIMENT AND DEBRIS INTO DRAINAGE SYSTEMS OR WATERWAYS ON AND NEAR CONSTRUCTION ACTIVITY. THE CONTRACTOR SHALL INSPECT THE EROSION CONTROLS DAILY AND CLEAN ACCUMULATED MATERIALS FROM BEHIND THEM, AS NECESSARY. ALL EROSION AND SEDIMENTATION CONTROL MEASURES FOUND TO BE IN NEED OF REPAIR OR REPLACEMENT SHALL BE IMMEDIATELY CORRECTED, SO AS TO MAINTAIN THE INTEGRITY OF THE EROSION AND SEDIMENTATION CONTROL SYSTEM.
- IN ORDER TO MINIMIZE EROSION AND SEDIMENT RUNOFF FROM THE SITE, THE CONTRACTOR SHOULD MAINTAIN EXISTING VEGETATION WHERE POSSIBLE AND STABILIZE THE DISTURBED PORTIONS OF THE SITE AS QUICKLY AS POSSIBLE. THE CONTRACTOR SHALL PHASE CONSTRUCTION TO MINIMIZE THE AREA OF DISTURBED EARTH OPEN TO THE ELEMENTS AT ANY GIVEN TIME. THIS SHALL BE ACHIEVED BY THE FOLLOWING METHODS OR OTHER BEST MANAGEMENT PRACTICES (BMP's):
 - LOAMING AND SEEDING CUT SLOPES IMMEDIATELY UPON COMPLETION OF SUBGRADE PREPARATION, AND SECURING SUCH NEWLY ESTABLISHED SLOPES WITH EROSION CONTROL NETTING AND/OR MULCH.
 - PLACING AND COMPACTING PAVEMENT GRAVEL BASE AND SUB-BASE IMMEDIATELY UPON COMPLETION OF SUBGRADE PREPARATION.
 - LIMITING STRIPPING AND STOCKPILING OF LOAM TO AREAS SLATED FOR IMMEDIATE CONSTRUCTION AND STABILIZATION (I.E. PLACEMENT OF GRAVELS, LOAM AND SEED, EROSION CONTROL MATTING).
- THE CONTRACTOR MUST ALSO ANTICIPATE INCREASED RUNOFF FROM STEEPER SLOPES AND DURING HIGH GROUNDWATER CONDITIONS. THIS MAY OCCUR DURING THE WET SEASON (TYPICALLY MARCH THROUGH APRIL) OR AFTER SIGNIFICANT PRECIPITATION EVENTS.
- SEDIMENT REMOVED FROM CONTROL STRUCTURES SHALL BE DISPOSED OF LEGALLY OFF SITE. NO EQUIPMENT OR MATERIAL OF ANY KIND SHALL BE STOCKPILED OR DEPOSITED IN ANY REGULATED AREA, UNLESS SPECIFICALLY SHOWN ON THE CONTRACT PLANS OR AUTHORIZED BY PROJECT PERMITS/APPROVALS.
- STOCKPILED SOIL SHALL BE SURROUNDED WITH SILTATION FENCES TO PREVENT AND CONTROL SILTATION AND EROSION. STOCKPILES THAT WILL REMAIN EXPOSED FOR MORE THAN 30 DAYS, SHALL BE STABILIZED WITH MULCH OR SEEDED FOR TEMPORARY VEGETATIVE COVER.
- TEMPORARY STORAGE OF MATERIALS ON-SITE SHALL BE LOCATED GREATER THAN 100-FEET FROM WETLAND AREAS, AND AS APPROVED BY THE ENGINEER. THERE SHALL BE NO LONG-TERM STORAGE OF MATERIAL ON-SITE OR ON-ROUTE. MATERIAL NOT USED ON-SITE OR ON-ROUTE SHALL BE TRUCKED TO AN ACCEPTABLE OFF-SITE DISPOSAL LOCATION.
- ALL DISTURBED SURFACES SHALL BE STABILIZED WITHIN 14 DAYS AFTER CONSTRUCTION IN ANY PORTION OF THE SITE THAT HAS BEEN COMPLETED OR WHERE CONSTRUCTION HAS TEMPORARILY CEASED.
- ALL AREAS OF DISTURBANCE MUST HAVE TEMPORARY OR FINAL STABILIZATION WITH MULCH OR MULCH NETTING, OR SEEDED FOR TEMPORARY VEGETATIVE COVER, WITHIN 14 DAYS OF THE INITIAL DISTURBANCE. AFTER THIS TIME, ANY DISTURBANCE IN THE AREA MUST BE STABILIZED AT THE END OF EACH WORK DAY. THE FOLLOWING EXCEPTIONS APPLY:
 - STABILIZATION IS NOT REQUIRED IF WORK IS TO CONTINUE IN THE AREA WITHIN THE NEXT 24 HOURS AND THERE IS NO PRECIPITATION FORECAST FOR THE NEXT 24 HOURS.
 - STABILIZATION IS NOT REQUIRED IF THE WORK IS OCCURRING IN A SELF-CONTAINED EXCAVATION WITH A DEPTH OF 2 FEET OR GREATER.
- CULVERT/PIPE INLETS AND OUTFALLS SHALL BE STABILIZED WITH STONE FOR PIPE ENDS OR OTHER APPROVED PERMANENT EROSION CONTROL MEASURES, IMMEDIATELY FOLLOWING PIPE INSTALLATION.
- THERE SHALL BE NO DIRECT DISCHARGE FROM ANY REQUIRED DEWATERING OPERATIONS INTO ANY WETLAND, WATERCOURSE, OR DRAINAGE SYSTEM AND THEN ONLY AS ALLOWED BY REGULATORY PERMITS. ANY DEWATERING DISCHARGE CONTAINING SETTLEABLE SOLIDS (SEDIMENTS) SHALL BE PASSED THROUGH A SEDIMENTATION CONTROL BASIN, FRACTIONATION TANK OR SIMILAR TREATMENT, APPROVED BY THE ENGINEER, TO REMOVE THESE SOLIDS. CONTRACTOR SHALL MAINTAIN SAID SEDIMENT CONTROL DEVICES THROUGHOUT THE ENTIRE DEWATERING OPERATION AND SHALL CEASE DEWATERING, IF DEFICIENCIES ARE NOTED, UNTIL THE DEFICIENCIES ARE CORRECTED.
- THE CONTRACTOR SHALL INSPECT ALL PORTIONS OF THE SITE IN ANTICIPATION OF RAINFALL EVENTS TO DETERMINE IF SITE GRADING IS SUFFICIENT TO PREVENT EROSION OF SLOPES AND/OR THE TRANSPORTATION OF SEDIMENTS TO WETLANDS OR WATERCOURSES, WITHIN THE PROJECT LIMITS. SHOULD ADDITIONAL MEASURES BE REQUIRED, THEY ARE TO BE IMPLEMENTED IMMEDIATELY. IN NO CASE SHALL THE INSTALLATION OF ADDITIONAL MEASURES, NECESSARY TO PROTECT SLOPES WITHIN THE PROJECT LIMITS, BE DELAYED BEYOND THE COMMENCEMENT OF PRECIPITATION.
- EROSION CONTROL MEASURES SHALL BE INSPECTED EVERY WEEK, DURING AND AFTER EVERY RAIN EVENT GREATER THAN 0.25 INCHES. ANY NECESSARY REPLACEMENT OF REPAIR SHALL BE PERFORMED PROMPTLY BY THE CONTRACTOR
- ALL DISTURBED EARTH SLOPES SHALL BE STABILIZED WITH PERMANENT VEGETATIVE COVER AS SOON AS POSSIBLE. DISTURBED AREAS, THAT ARE NOT SUBJECT TO CONSTRUCTION TRAFFIC, SHALL RECEIVE A PERMANENT OR TEMPORARY

- VEGETATIVE COVER AS SOON AS FINAL CONTOURS ARE ESTABLISHED. IF THE SEASON PREVENTS THE ESTABLISHMENT OF A VEGETATIVE COVER, DISTURBED AREAS SHALL BE THOROUGHLY MULCHED. MULCHED AREAS SHALL BE SEEDED AS SOON AS WEATHER CONDITIONS ALLOW.
- ALL SLOPES STEEPER THAN 2H:1V SHALL BE COVERED WITH MODIFIED ROCKFILL AND AN APPROVED EROSION CONTROL MATTING.
 - CONTRACTOR SHALL REMOVE ALL SEDIMENTATION CONTROL SYSTEMS, REMOVE ALL ACCUMULATED SEDIMENTS, AND SEED THE DISTURBED AREAS, WHEN THE CONTROL SYSTEMS ARE NO LONGER REQUIRED. CONTRACTOR SHALL REQUEST AND RECEIVE PERMISSION FROM THE ENGINEER PRIOR TO REMOVING ANY CONTROL SYSTEM.
 - THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL SILT AND DEBRIS RESULTING FROM CONSTRUCTION OPERATIONS FROM EACH DRAINAGE STRUCTURE UPON COMPLETION OF THE PROJECT.
 - OBJECTS AND/OR AREAS DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AND ELEVATION.
 - ALL DISTURBED AREAS NOT OCCUPIED BY PAVEMENT, CRUSHED GRAVEL, CRUSHED STONE OR RIPRAP SHALL BE COVERED WITH 4" (MIN.) OF LOAM AND SEED.
 - PERMANENT SEEDING SHALL OCCUR BETWEEN MARCH 1 AND JUNE 15, OR BETWEEN AUGUST 15 AND OCTOBER 15.

GENERAL CONSTRUCTION NOTES

- THE LOCATION OF ALL UNDERGROUND UTILITIES SHOWN ON THIS PLAN SET SHALL BE CONSIDERED APPROXIMATE. THEREFORE, PRIOR TO THE START OF ANY WORK ON THE SITE, THE CONTRACTOR SHALL NOTIFY ALL APPROPRIATE AGENCIES AND UTILITY COMPANIES, AND VERIFY THE ACTUAL LOCATION OF ALL UTILITIES SHOWN OR NOT SHOWN ON THIS PLAN. CONTACT DIG-SAFE AT 188-344-7233 (1-888-DIG-SAFE) AT LEAST 72 HOURS PRIOR TO THE START OF EXCAVATING.
- THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, AND PROCEDURES; AND FOR THE SAFETY PRECAUTIONS AND PROGRAMS REQUIRED FOR THE WORK UNDER THIS CONTRACT. THE CONTRACT DOCUMENTS DO NOT INCLUDE THE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY AND THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR PROVIDING ALL SAFETY BARRIERS, WARNING FLASHERS, STEEL PLATES FOR COVERING TRENCHES AND EXCAVATIONS, AS REQUIRED FOR THE PROTECTION OF WORKERS AND THE PUBLIC. COMPLY WITH OSHA REGULATIONS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING ALL NECESSARY CONSTRUCTION PERMITS REQUIRED FOR THIS PROJECT.
- PRIOR TO CONSTRUCTION, CONSTRUCTION FENCE OR OTHER SUITABLE FORM OF DEMARCATION SHALL BE INSTALLED AT THE LIMITS OF THE AREAS TO BE DISTURBED.
- PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL DESIGNATE A STAGING AREA FOR STORAGE OF CONSTRUCTION EQUIPMENT AND MATERIALS, AND SUCH AREA SHALL BE PRE-APPROVED BY TOWN OR OWNERS ENGINEER.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DEVELOP A CONSTRUCTION PHASING PLAN AND THAT EROSION CONTROL MEASURES ARE INSTALLED AND MAINTAINED. (SEE EROSION CONTROL NOTES.)
- WORK WITHIN PUBLIC WAYS, INCLUDING THE DEEDED ACCESS ROAD, SHALL COMPLY WITH APPLICABLE MUNICIPAL AND STATE REQUIREMENTS.
- PRIOR TO COMMENCING CONSTRUCTION, THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR MAKING ALL NECESSARY ARRANGEMENTS AND FOR PERFORMING ANY NECESSARY WORK INVOLVED IN CONNECTION WITH THE DISCONTINUANCE OR JURISDICTION OF THE UTILITY COMPANIES, SUCH AS ELECTRICITY, TELEPHONE, CABLE OR FIBER OPTIC, WATER, AND SEWER SYSTEMS, OR ANY SYSTEMS WHICH WILL BE IMPACTED BY THE WORK TO BE PERFORMED PER THE PLANS.
- UNLESS OTHERWISE NOTED OR APPROVED BY THE ENGINEER, THE CONTRACTOR SHALL MAINTAIN ALL EXISTING UTILITIES.
- THE CONTRACTOR SHALL EXERCISE EXTREME CARE WHEN EXCAVATING AND BACKFILLING IN THE VICINITY OF EXISTING UTILITIES, INCLUDING BUT NOT LIMITED TO SHORING AND THE USE OF HAND EXCAVATION WHERE APPROPRIATE.
- ALL EXISTING PIPING AND STRUCTURES EXPOSED DURING EXCAVATION SHALL BE ADEQUATELY SUPPORTED, BRACED, OR OTHERWISE PROTECTED DURING CONSTRUCTION ACTIVITIES IN ACCORDANCE WITH THE REQUIREMENTS OF ALL GOVERNING CODES AND REGULATIONS.
- WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION, AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION OF THE CONFLICT.
- NO CHANGES ARE TO BE MADE UNLESS AUTHORIZED BY THE DESIGN ENGINEER.
- THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL SAFETY CODES, REGULATIONS, LEGAL REQUIREMENTS, AND PERMIT CONDITIONS.
- CONSTRUCTION SEQUENCE SHALL BE COORDINATED TO MINIMIZE DISTURBANCE OF EXISTING CONDITIONS.
- IF REQUIRED BY THE CONTRACTOR, OVERHEAD LINES SHALL BE RELOCATED BY THE UTILITY COMPANY AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL TAKE ADEQUATE PRECAUTIONS TO PROTECT EXISTING RAILROAD TRACKS, ALL RETAINING WALLS, WALKS, STREETS, PAVEMENTS, HIGHWAY GUARDS, CURBING, EDGING, TREES, AND PLANTINGS ON OR OFF THE PREMISES OF THE WORK, AND SHALL REPAIR AND REPLACE OR OTHERWISE MAKE GOOD AT CONTRACTOR'S OWN EXPENSE ANY ITEMS DAMAGED AS A RESULT OF THE CONTRACTOR'S WORK.
- THE CONTRACTOR SHALL REMOVE FROM THE PROJECT SITE ALL CONSTRUCTION DEBRIS, STUMPS, RUBBISH AND DEBRIS FOUND THEREON. STORAGE OF SUCH MATERIALS ON THE PROJECT SITE OR ROUTE WILL NOT BE PERMITTED. ALL MATERIALS TO BE REMOVED AND DISPOSED SHALL BE DISPOSED IN ACCORDANCE WITH ALL APPLICABLE CODES AND REGULATIONS. THE CONTRACTOR SHALL LEAVE THE PROJECT SITE IN SAFE, CLEAN AND LEVEL CONDITION.
- ALL SURFACES DISTURBED BY THIS WORK SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AS DETAILED OR AS SPECIFIED BY THE ENGINEER.
- ALL MANHOLES AND, DRAINAGE STRUCTURES, OR VAULT STRUCTURES SHALL HAVE THEIR RIMS SET TO FINISHED GRADE REGARDLESS OF ANY ELEVATIONS OTHERWISE SHOWN, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
- ALL WORK SHALL COMPLY WITH THE PROJECT'S REGULATORY PERMITS AND AGREEMENTS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR SPECIFYING HOW TO "REPAIR, REPLACE, PROTECT, AND MAINTAIN" ALL EXISTING ABOVE GROUND AND UNDERGROUND UTILITIES DURING CONSTRUCTION. THIS SHALL INCLUDE SHOP DRAWING SUBMITTALS TO THE PROJECT ENGINEER.
- UTILITY TRENCHES THAT REQUIRE REPAIRS AND/OR REPLACEMENT OF EXPOSED UNDERGROUND UTILITIES MAY NOT BE BACKFILLED UNTIL THE COMPLETED UTILITY WORK HAS BEEN INSPECTED AND APPROVED BY THE APPROPRIATE UTILITY INSPECTOR.
- THE CONTRACTOR IS RESPONSIBLE FOR DUST CONTROL. DUST CONTROL SHALL INCLUDE THE WATERING AND APPLICATION OF CALCIUM AS NECESSARY FOR ALL SURFACES AND SWEEPING AT THE INTERSECTION OF OAK STREET.
- DURING CONSTRUCTION, TRENCHES ARE NOT TO BE LEFT IN A CONDITION THAT WOULD DIRECT RUNOFF AROUND TREATMENT AND DETENTION FACILITIES.
- ALL SITE WORK SHOULD BE SECURED AT THE END OF THE WORK DAY TO REDUCE EROSION AND SEDIMENT PROBLEMS. THIS INCLUDES AS APPLICABLE, COVERING STOCKPILES OF SEDIMENT, INSTALLING TEMPORARILY VEGETATION OR BY USING GEOTEXTILES TO COVER DISTURBED AREAS WITH STEEPER SLOPES.
- DEWATERING OPERATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE U.S. EPA NPDES PHASE 1 CONSTRUCTION ACTIVITY GENERAL PERMIT FOR CONSTRUCTION SITES THAT ARE GREATER THAN 1 ACRE.
- EXCESS MATERIAL SHALL BE STOCKPILED AT A PROPER UPLAND LOCATION. STOCKPILES ARE TO BE CONSTRUCTED IN

- ACCORDANCE WITH GOOD ENGINEERING PRACTICE AND PERIODIC INSPECTIONS SHALL BE PREFORMED FOR SLOPE STABILITY. STOCKPILES ARE TO BE PROPERLY SECURED TO PREVENT EROSION AND SEDIMENT RUNOFF.
- CLEARING AND GRUBBING - GRUB AND REMOVE STUMPS ROOTS TO A DEPTH OF 24 INCHES BELOW SITE SUBGRADE OR EXISTING GROUND, STRIP AVAILABLE TOPSOIL AND STOCKPILE FOR USE WITHIN THE PROJECT PERIMETER.
 - EXCAVATION - COMPLETELY REMOVE ANY PEAT OR OTHER ORGANIC MATERIALS AND REPLACE WITH APPROVED FILL MATERIALS AND COMPACT.
 - MATERIALS - FILL MATERIAL SHALL BE SUITABLE EXISTING MATERIAL OBTAINED FROM EXCAVATIONS OR BORROW FROM OFF SITE SOURCES, AND SHALL BE GRANULAR SOILS FREE FROM ROOTS, ORGANIC MATERIAL, RUBBISH, STONES OVER 6" IN DIAMETER AND FROZEN SOIL. FILLS SHALL NOT BE CONSTRUCTED WITH MATERIAL FROM ROCK EXCAVATION.
 - COMPACTION - PLACE FILL MATERIAL IN SUCCESSIVE HORIZONTAL LAYERS 8 TO 12 INCHES IN LOOSE DEPTH AND COMPACT WITH APPROVED EQUIPMENT TO AT LEAST 95% OF LABORATORY MAXIMUM DENSITY (ASTM D 1557 METHOD D). COMPLETELY COMPACT EACH LAYER BEFORE PLACING THE NEXT LAYER. DO NOT PLACE, SPREAD OR COMPACT FILL MATERIAL WHILE GROUND OR FILL MATERIAL IS FROZEN OR PARTIALLY THAWED AND DURING UNFAVORABLE WEATHER CONDITIONS. FILL MATERIAL WHICH HAS AN EXCESSIVE MOISTURE CONTENT SHALL NOT BE COMPACTED UNTIL THE MATERIAL HAS BEEN AERATED BY GRADING, HARROWING OR OTHER METHODS TO REMOVE EXCESS MOISTURE.

ALL UNITS SHOWN ARE 'ENGLISH UNITS' (FEET AND INCHES)

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C	2022-10-26	ISSUED FOR STATE PERMITTING	IFI	MDC	JDT	KEF
B	2022-09-28	ISSUED FOR STATE PERMITTING	IFI	DRM	JDT	KEF
A	2022-09-14	ISSUED FOR CLIENT REVIEW	IFCR	DRM	JDT	KEF
REV.	DATE	REVISION DESCRIPTION	STATUS	DRAWN	CHKD	APPRVD

CONTRACTOR:



Stantec Consulting Services Inc.
400 Crown Colony Drive Suite 200
Quincy, MA U.S.A. 02169-0962

CLIENT:



125 High Street
Boston, MA 02110

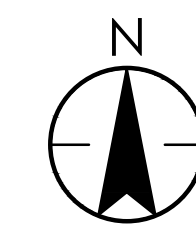
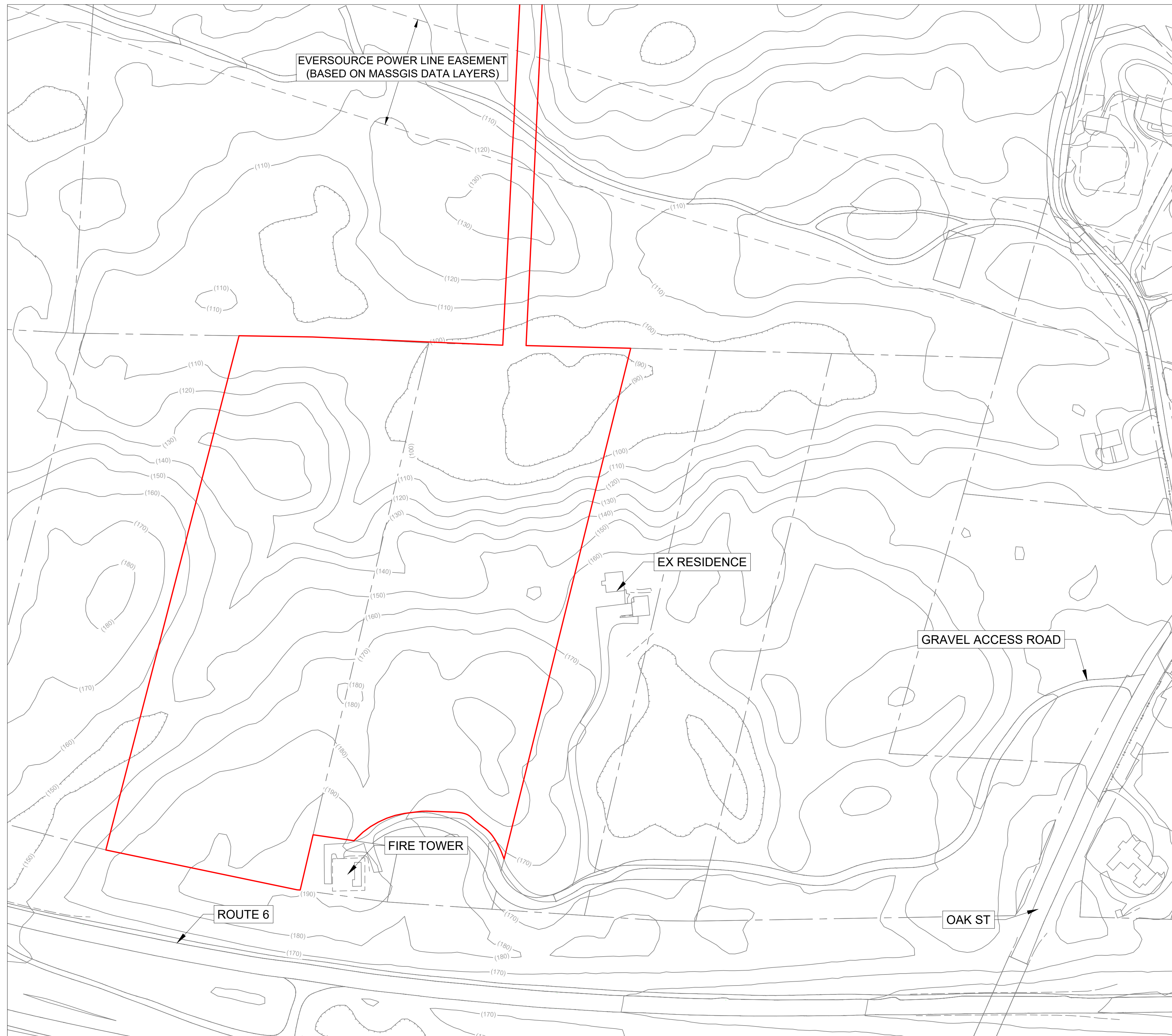
PROJECT: NEW ENGLAND WIND 2 CONNECTOR

TITLE: 275/345 KV GIS SUBSTATION GENERAL NOTES

DOCID: CWW-OSP-STC-DW-0003

SHEET 2 OF 8	DWG. NO. SHEET - 2	SCALE AS SHOWN	FORMAT/SIZE ANSI D	REV. C
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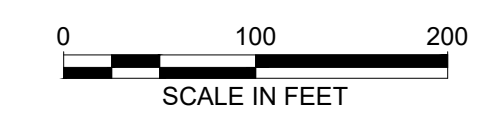
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by: caward_mothnew



- NOTES:
- THE EXTENTS OF THE SITE ARE NOT WITHIN AN INTERIM WELLHEAD PROTECTION AREA (IWPA).
 - ACCORDING TO THE FLOOD RATE INSURANCE MAP FOR BARNSTABLE COUNTY MASSACHUSETTS PANEL 562 MAP NUMBER 25001C0561J WITH THE EFFECTIVE DATE OF JULY 16, 2014 THE ENTIRE SITE IS WITHIN FLOOD ZONE X (AREAS DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN).
 - PROPERTY LINES ARE FROM GIS DATA.
 - EXISTING TOPOGRAPHY IS TAKEN FROM 2016 USGS COASTAL NATIONAL ELEVATION DATABASE (CoNED) LIDAR DATA. TOPOGRAPHY TO BE CONFIRMED WITH A FIELD SURVEY.
 - ACCORDING TO MASSGIS THE SITE IS NOT WITHIN THE NATURAL HERITAGE AND ENDANGERED SPECIES PROGRAM (NHESP) PRIORITY HABITATS OF RARE WILDLIFE OR THE NHESP ESTIMATED HABITATS OF RARE WILDLIFE.
 - ACCORDING TO MASSGIS THERE ARE NO CERTIFIED VERNAL POOLS OR POTENTIAL VERNAL POOLS LOCATED ON THE PROJECT SITE.
 - ACCORDING TO MASSGIS THERE ARE NO WETLANDS LOCATED WITHIN THE SITE OR WITHIN 100FT OF THE AREA TO BE REDEVELOPED.
 - ACCORDING TO MASSGIS THE SITE IS NOT LOCATED WITHIN AN AREA OF CRITICAL ENVIRONMENTAL CONCERN.
 - SOILS IN THE SITE AREA (PER NATURAL RESOURCES CONSERVATION SERVICE) ARE 493D "PLYMOUTH-BARNSTABLE-NANTUCKET COMPLEX" AND 494C "PLYMOUTH-BARNSTABLE COMPLEX"; BOTH WITHIN HYDROLOGIC SOIL GROUP "A".
 - THE SITE COMPRISES THE FOLLOWING PROPERTIES FROM THE TOWN OF BARNSTABLE ASSESSORS MAP BOOK:

OWNER: DIRICO, FRANK
 BOOK/PAGE 10267/0043
 ASSESSORS MAP 195
 PARCEL 005

OWNER: DIRICO, FRANK
 BOOK/PAGE 4216/0157
 ASSESSORS MAP 195
 PARCEL 006



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CONTRACTOR:

Stantec Consulting Services Inc.
 400 Crown Colony Drive Suite 200
 Quincy, MA U.S.A. 02169-0962

CLIENT:

125 High Street
 Boston, MA 02110

PROJECT:

NEW ENGLAND WIND 2 CONNECTOR

TITLE:

275/345 KV GIS SUBSTATION
 EXISTING CONDITIONS PLAN

DOCID:

CWW-OSP-STC-DW-0003

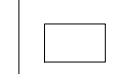



SHEET 3 OF 8	DWG. NO. SHEET - 3	SCALE AS SHOWN	FORMAT/SIZE ANSI D	REV. C
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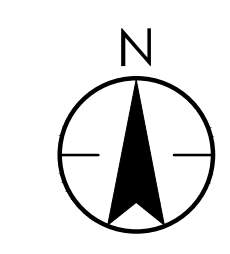
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 by: carol mathew

LEGEND

-  WOODS/BRUSH
-  TIME OF CONCENTRATION LINE
-  SUBCATCHMENT AREA BOUNDARY
-  NRCS SOIL BOUNDARY



REV.	DATE	REVISION DESCRIPTION	STATUS	DRAWN	CHKD	APPRVD
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CONTRACTOR:



Stantec Consulting Services Inc.
400 Crown Colony Drive Suite 200
Quincy, MA U.S.A. 02169-0982

CLIENT:



125 High Street
Boston, MA 02110

PROJECT: NEW ENGLAND WIND 2 CONNECTOR

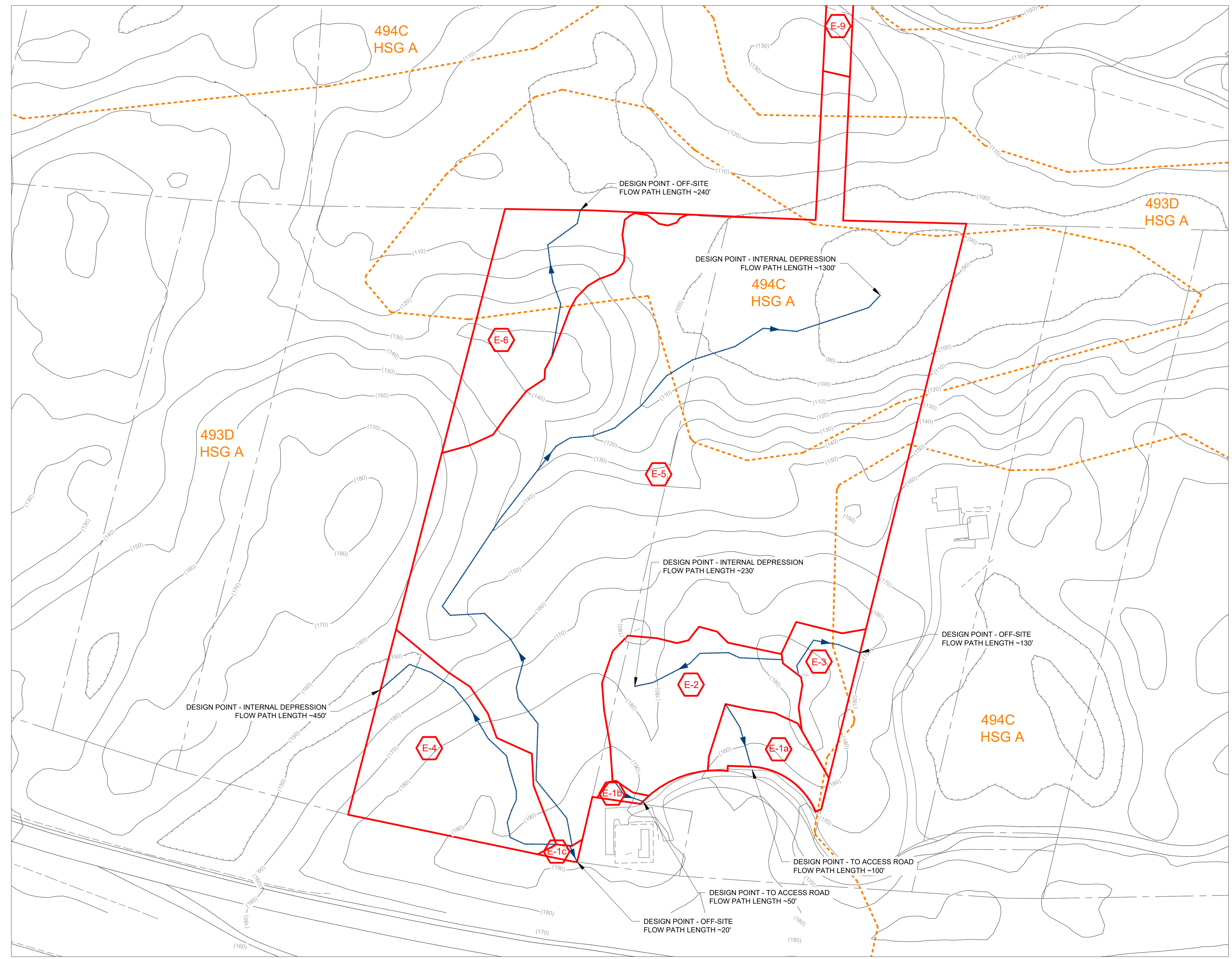
TITLE: 275/345 KV GIS SUBSTATION EXISTING SUBCATCHMENT AREAS

DOCID: CWW-OSP-STC-DW-0003

SHEET 4 OF 8	DWG. NO. SHEET - 4	SCALE AS SHOWN	FORMAT/SIZE ANSI D	REV. C
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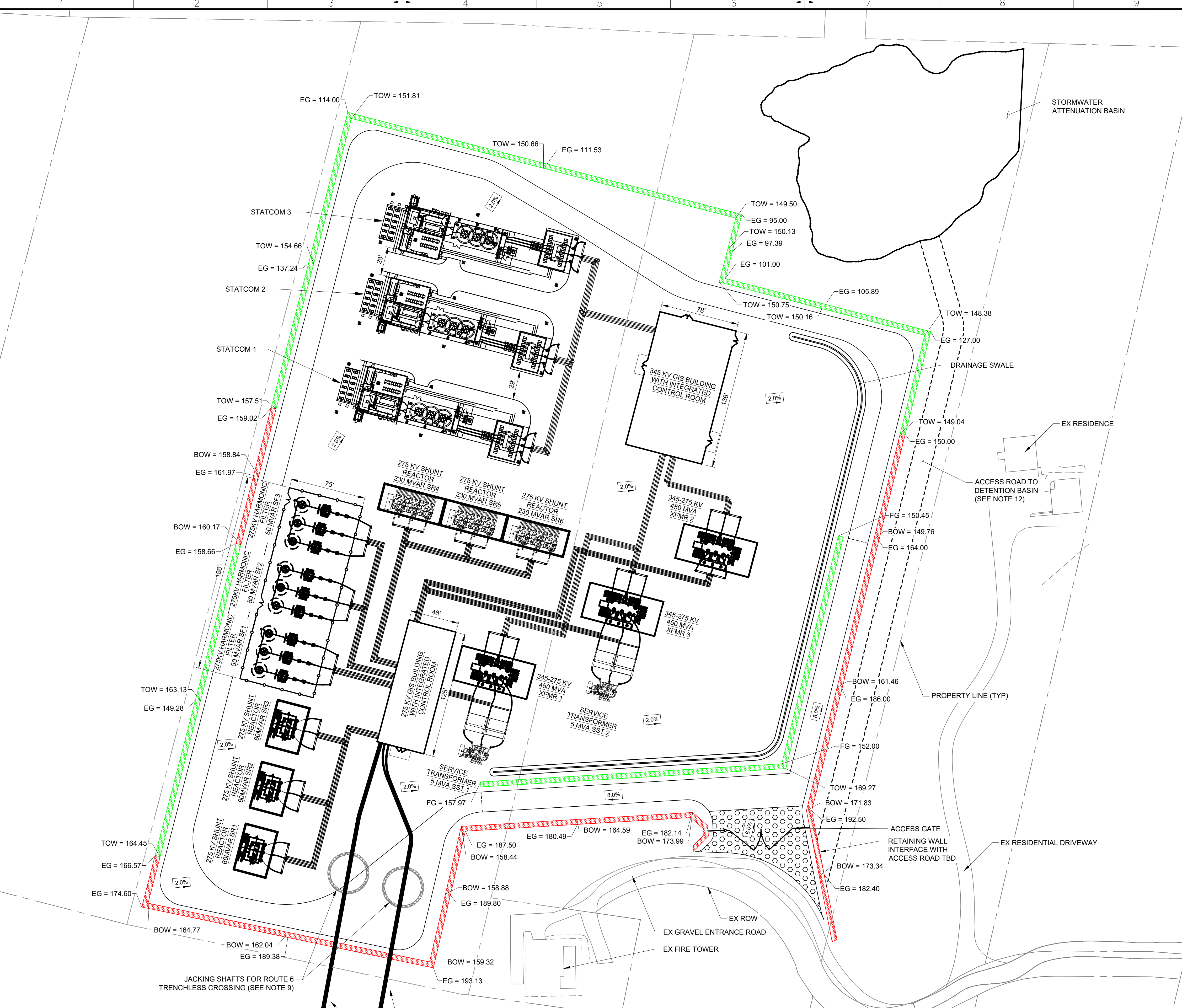
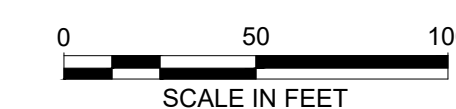
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 2022/10/26 7:41:05 AM
 by: carol.mathew

NOTES:

1. THE SITE AREA IS APPROXIMATELY 15.2 ACRES.
2. PROPERTY LINES ARE FROM GIS DATA.
3. INTERIOR GRADING IS INDICATIVE ONLY AND MAY BE FURTHER OPTIMIZED AROUND BUILDINGS AND EQUIPMENT.
4. EQUIPMENT SIZES ARE PRELIMINARY AND SUBJECT TO CHANGE.
5. GAS INSULATED BUS (GIB) IS ONLY SHOWN FOR PRELIMINARY ROUTES, AIR BUSHINGS ARE NOT SHOWN FOR CLARITY.
6. OEM TO DESIGN BUILDING TO MAXIMUM 30' HEIGHT; ADD FOOTPRINT OR BASEMENT AS NEEDED.
7. EQUIPMENT CONTAINING DIELECTRIC FLUIDS SHALL BE FITTED WITH A CONTAINMENT SYSTEM SIZED FOR 110% OF THE DIELECTRIC FLUID VOLUME PLUS VOLUME FOR A RAINFALL EVENT. REFER TO SHEET 8, DETAILS 3 AND 5 FOR CRITERIA AND TYPICAL DETAILS.
8. OVERHEAD STATIC WIRES NOT SHOWN FOR CLARITY.
9. JACKING SHAFTS FOR ROUTE 6 TRENCHLESS CROSSING TO BE REMOVED TO BELOW FINISHED GRADE AND BACKFILLED FOLLOWING CONSTRUCTION. REFER TO DRAWING CWW-OSP-STC-DW-0006.
10. SUBSTATION RING ROAD TO BE CONSTRUCTED OF GRAVEL (UNPAVED).
11. GRADING OF ACCESS ROAD TO DETENTION BASIN TO BE CONFIRMED DURING FUTURE DESIGN PHASES.
12. THE 345 KV INTERCONNECTION ROUTE IS TO BE DETERMINED.



LEGEND

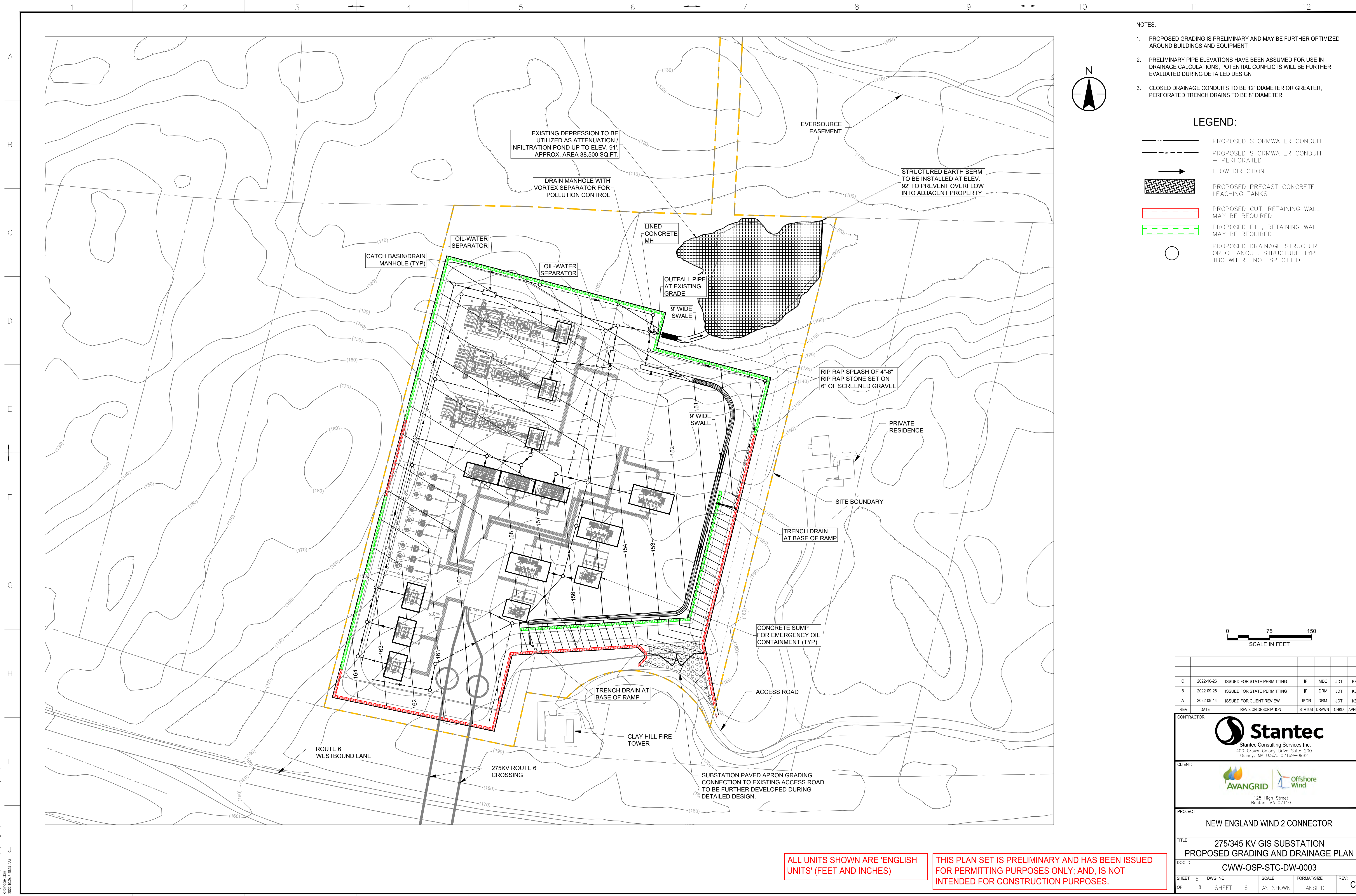
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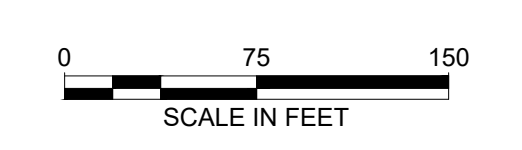
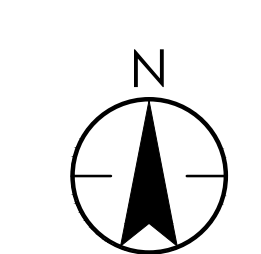
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CONTRACTOR: Stantec Consulting Services Inc. 400 Crown Colony Drive Suite 200 Quincy, MA U.S.A. 02169-0962									
CLIENT: AVANGRID Offshore Wind 125 High Street Boston, MA 02110									
PROJECT: NEW ENGLAND WIND 2 CONNECTOR									
TITLE: 275/345 KV GIS SUBSTATION PROPOSED EQUIPMENT LAYOUT									
DOCID: CWW-OSP-STC-DW-0003									
SHEET 5 OF 8	DWG. NO. SHEET - 5	SCALE AS SHOWN	FORMAT/SIZE ANSI D	REV. C					

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- NOTES:**
1. PROPOSED GRADING IS PRELIMINARY AND MAY BE FURTHER OPTIMIZED AROUND BUILDINGS AND EQUIPMENT
 2. PRELIMINARY PIPE ELEVATIONS HAVE BEEN ASSUMED FOR USE IN DRAINAGE CALCULATIONS, POTENTIAL CONFLICTS WILL BE FURTHER EVALUATED DURING DETAILED DESIGN
 3. CLOSED DRAINAGE CONDUITS TO BE 12" DIAMETER OR GREATER, PERFORATED TRENCH DRAINS TO BE 8" DIAMETER

- LEGEND:**
- PROPOSED STORMWATER CONDUIT
 - - - PROPOSED STORMWATER CONDUIT - PERFORATED
 - FLOW DIRECTION
 - [Hatched Box] PROPOSED PRECAST CONCRETE LEACHING TANKS
 - [Red Dashed Box] PROPOSED CUT, RETAINING WALL MAY BE REQUIRED
 - [Green Dashed Box] PROPOSED FILL, RETAINING WALL MAY BE REQUIRED
 - PROPOSED DRAINAGE STRUCTURE OR CLEANOUT. STRUCTURE TYPE TBC WHERE NOT SPECIFIED



REV.	DATE	REVISION DESCRIPTION	STATUS	DRAWN	CHKD	APPRVD
C	2022-10-26	ISSUED FOR STATE PERMITTING	IFI	MDC	JDT	KEF
B	2022-09-28	ISSUED FOR STATE PERMITTING	IFI	DRM	JDT	KEF
A	2022-09-14	ISSUED FOR CLIENT REVIEW	IFCR	DRM	JDT	KEF

CONTRACTOR:

Stantec Consulting Services Inc.
400 Crown Colony Drive Suite 200
Quincy, MA U.S.A. 02169-0982

CLIENT:

125 High Street
Boston, MA 02110

PROJECT: NEW ENGLAND WIND 2 CONNECTOR

TITLE: 275/345 KV GIS SUBSTATION PROPOSED GRADING AND DRAINAGE PLAN

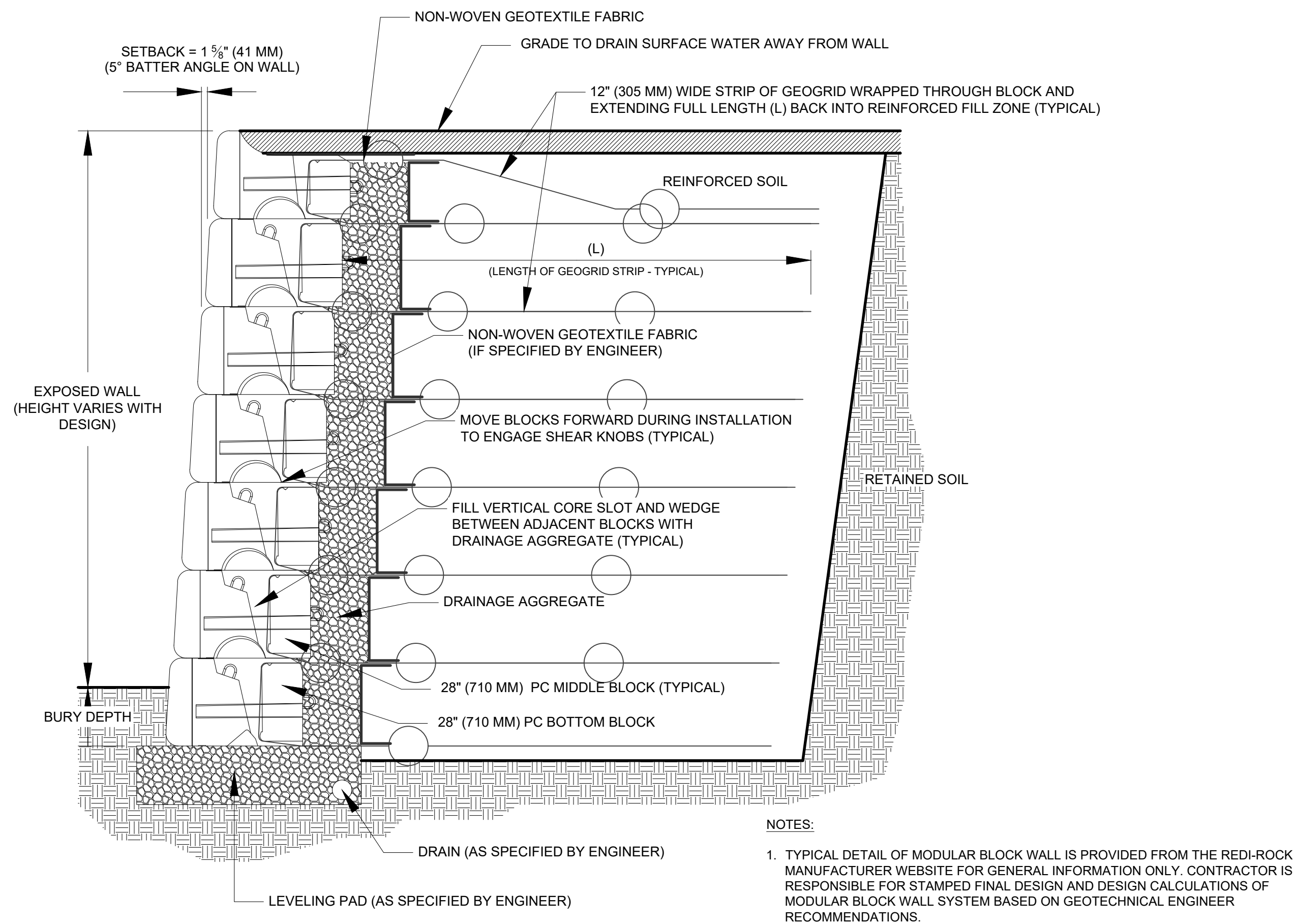
DOCID: CWW-OSP-STC-DW-0003

SHEET 6 OF 8	DWG. NO. SHEET - 6	SCALE AS SHOWN	FORMAT/SIZE ANSI D	REV. C
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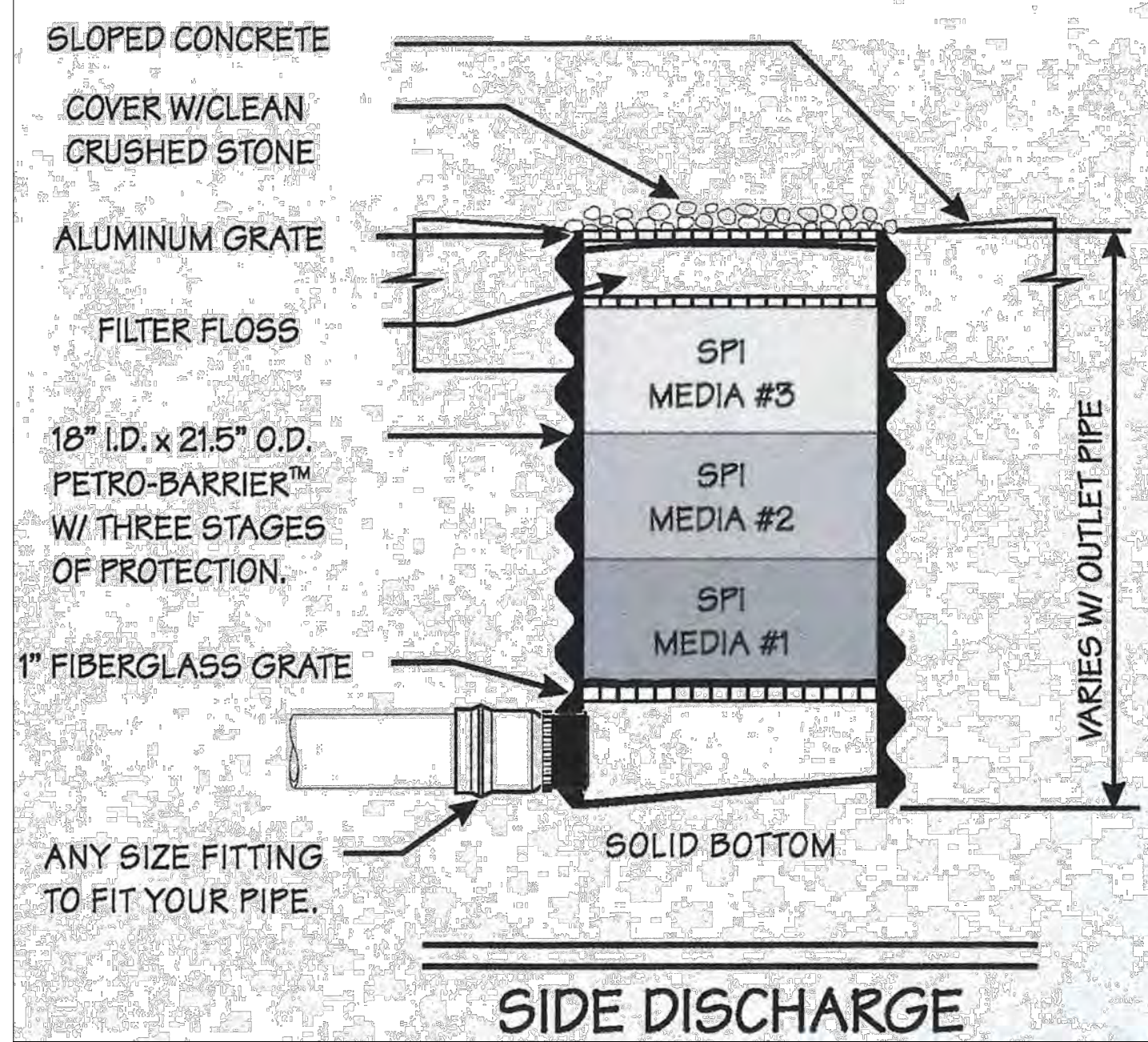
ALL UNITS SHOWN ARE 'ENGLISH UNITS' (FEET AND INCHES)

THIS PLAN SET IS PRELIMINARY AND HAS BEEN ISSUED FOR PERMITTING PURPOSES ONLY; AND, IS NOT INTENDED FOR CONSTRUCTION PURPOSES.

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 by: carol mathew

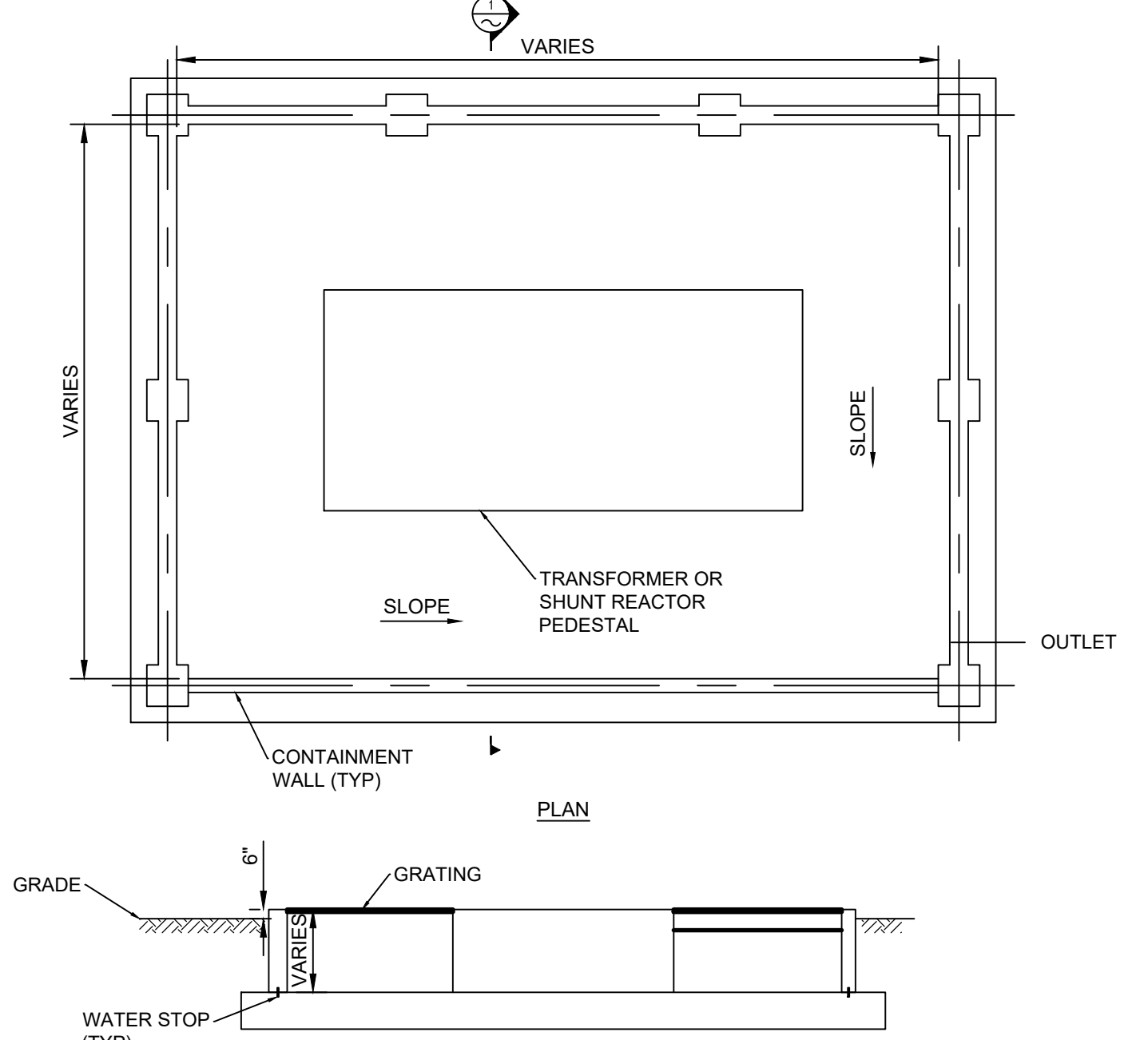


1 REINFORCED CONCRETE MODULAR RETAINING WALL
NOT TO SCALE



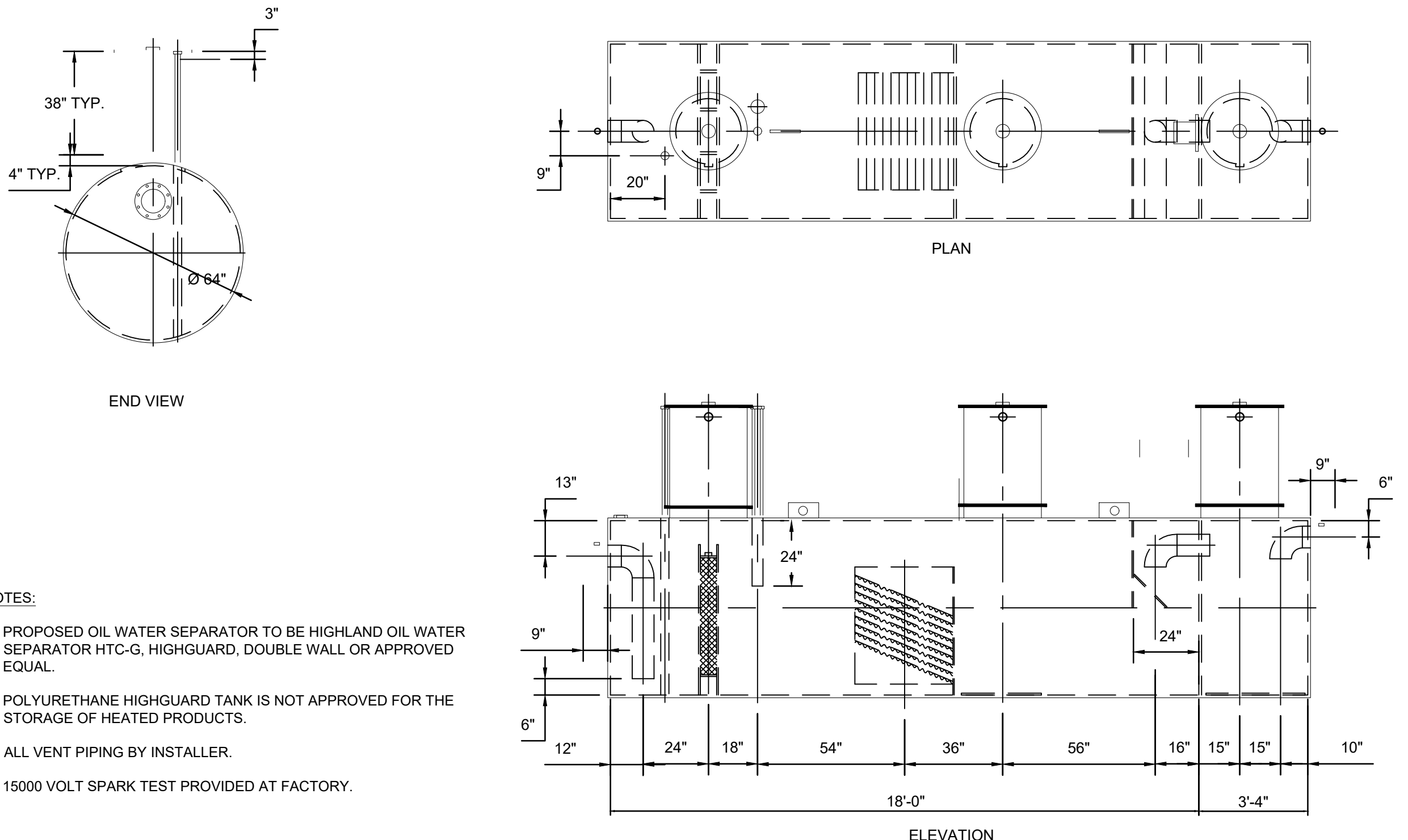
- NOTES:
- PETRO-BARRIER TO BE MANUFACTURED BY SOLIDIFICATION PRODUCTS INTERNATIONAL INC.
 - PETRO-BARRIERS TO BE LOCATED UNDERNEATH THE DRAINAGE OUTLET AT ALL CONTAINMENT AREAS. CONTAINMENT AREAS MUST BE SWEEPED CLEAN BEFORE THE INSTALLATION OF THE PETRO-BARRIERS TO ENSURE THEY DO NOT BECOME CLOGGED DURING THE FIRST PRECIPITATION EVENT.
 - PETRO BARRIERS TO BE INSPECTED AFTER EACH RAIN EVENT OVER 1" IN DEPTH.

2 CONTAINMENT AREA PETRO-BARRIER (TYP.)
NOT TO SCALE



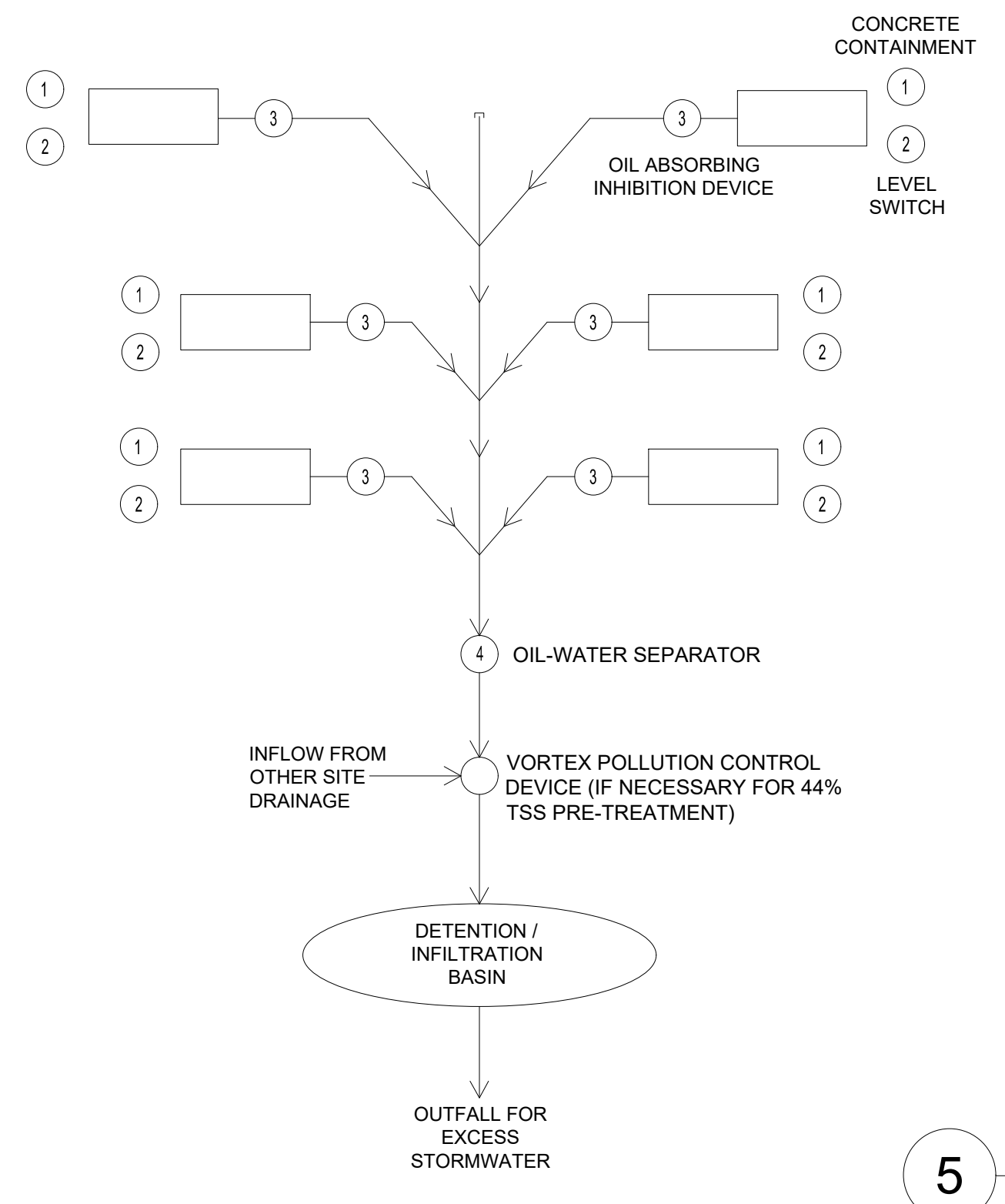
- NOTES:
- SEE DETAIL 5 FOR CONTAINMENT SIZING CRITERIA

3 TYPICAL ELECTRICAL EQUIPMENT CONTAINMENT
NOT TO SCALE



- NOTES:
- PROPOSED OIL WATER SEPARATOR TO BE HIGHLAND OIL WATER SEPARATOR HTC-G, HIGHGUARD, DOUBLE WALL OR APPROVED EQUAL.
 - POLYURETHANE HIGHGUARD TANK IS NOT APPROVED FOR THE STORAGE OF HEATED PRODUCTS.
 - ALL VENT PIPING BY INSTALLER.
 - 15000 VOLT SPARK TEST PROVIDED AT FACTORY.

4 OIL WATER SEPARATOR
NOT TO SCALE



- NOTES:
- NOT ALL CONTAINMENT AREAS ARE DEPICTED - THERE ARE 14 IN TOTAL FOR THE CLAY HILL SUBSTATION SITE.
 - SOME SUBSTATION EQUIPMENT (TRANSFORMERS AND OIL FILLED REACTORS) WILL CONTAIN DIELECTRIC FLUID (A TYPE OF OIL). SUCH EQUIPMENT WILL BE PLACED WITHIN SECONDARY CONTAINMENT STRUCTURES SIZED TO CONTAIN 110% OF THE DIELECTRIC FLUID VOLUME WITHIN THE EQUIPMENT, PLUS PROVIDE AN ADDITIONAL 30-INCHES OF EQUIVALENT STORAGE VOLUME TO MEET THE PROBABLE MAXIMUM PRECIPITATION (PMP) RAINFALL EVENT AS DEFINED BY THE TOWN OF BARNSTABLE.
 - ALL OTHER SUBSTATION EQUIPMENT CONTAINING DIELECTRIC FLUID (E.G. CAPACITORS) WILL BE PLACED WITHIN SECONDARY CONTAINMENT STRUCTURES SIZED TO CONTAIN 110% OF THE DIELECTRIC FLUID VOLUME WITHIN THE EQUIPMENT PLUS AN ADDITIONAL 8.2 INCHES OF EQUIVALENT STORAGE FOR THE 50-YEAR 24-HOUR RAINFALL EVENT. THIS DESIGN STORM EVENT AND PRECIPITATION DEPTH WAS PROVIDED AS PART OF OUTPUT FROM THE RESILIENT MASSACHUSETTS ACTION TEAM (RMAT) CLIMATE RESILIENCE DESIGN STANDARDS TOOL.
 - EACH SUMP (ITEM 2) SHALL HAVE A LEVEL SWITCH TO INDICATE HIGH LEVEL IN SUMP REPRESENTING OIL SPILL OR BLOCKED OIL INHIBITION DEVICE (ITEM 3).
 - ITEM 3 REPRESENTS OIL ABSORBING INHIBITION DEVICE. CONSISTS OF OIL ABSORBENT RESIN THAT SWELLS AND BLOCKS OIL WHILE ALLOWING WATER TO PASS. SEE PETRO-BARRIER DETAIL ON SHEET 8.
 - ITEM 4 IS FINAL OIL-WATER SEPARATOR TO REMOVE OIL SHEEN IF ANY.

5 SUBSTATION CONTAINMENT AREA DRAINAGE SCHEMATIC
NOT TO SCALE

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CLIENT: **AVANGRID** Offshore Wind
125 High Street
Boston, MA 02110

PROJECT: **NEW ENGLAND WIND 2 CONNECTOR**

TITLE: **275/345 KV GIS SUBSTATION TYPICAL DETAIL SHEET**

DOCID: **CWW-OSP-STC-DW-0003**

SHEET 8 OF 8 DWG. NO. SHEET - 8 SCALE AS SHOWN FORMAT/SIZE ANSI D REV. C