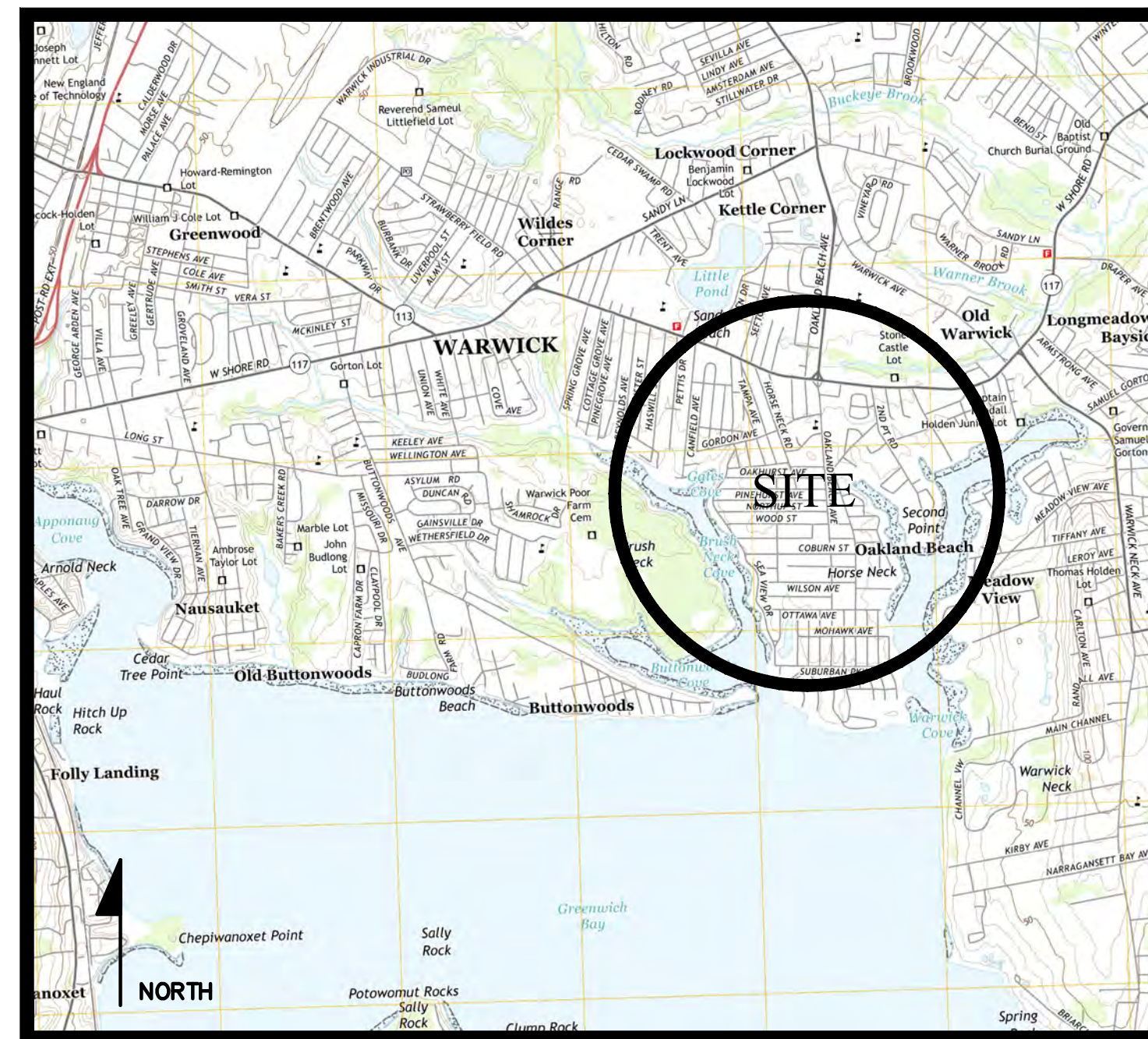


CITY OF WARWICK, RHODE ISLAND

OAKLAND BEACH FORCE MAIN

REHABILITATION

CONTRACT NO. XX



LOCUS MAP
NOT TO SCALE



FRANK J. PICOZZI, MAYOR

WARWICK SEWER AUTHORITY

125 ARTHUR W. DIVINE BOULEVARD
WARWICK, RHODE ISLAND 02886

WARWICK SEWER AUTHORITY BOARD

GARY C. JARVIS, CHAIRMAN
 PETER T. GINAITT GARY P. MARINO
 THOMAS H. CHADRONET CARLO E. PISATURO, JR.
 SCOTT GOODINSON SCOTT PHILLIPS

BETTYANNE ROGERS, EXECUTIVE DIRECTOR

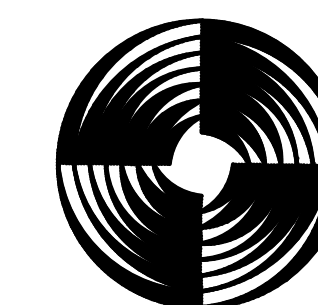
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PROGRESS PRINT

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PREPARED BY:



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GENERAL CONSTRUCTION NOTES:

- AN APPROVED SET OF PLANS AND ALL APPLICABLE PERMITS MUST BE AVAILABLE AT THE CONSTRUCTION SITE TRAILER AT ALL TIMES. DEVIATIONS OR CHANGES WILL NOT BE ALLOWED UNLESS BY WRITTEN APPROVAL FROM THE ENGINEER.
- CONSTRUCTION OPERATIONS SHALL NOT COMMENCE UNTIL ALL APPROVALS HAVE BEEN SECURED. REQUIRED PERMITS/APPROVALS FOR THE PROJECT INCLUDE BUT NOT LIMITED TO THE FOLLOWING: RIDOT UTILITY PERMIT AND RIDEM ORDER OF APPROVAL.
- ALL IMPROVEMENTS INDICATED HEREON MUST COMPLY WITH THE 'AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG)'. NOTE THAT THE DETAIL CONTAINED WITHIN THIS PLAN MAY NOT SHOW THE DETAIL NECESSARY TO CONSTRUCT WALKWAYS, RAMPS TO COMPLY WITH THE ADAAG REQUIREMENTS BUT THE CONTRACTOR IS RESPONSIBLE TO PROVIDE THE LEVEL OF CARE NECESSARY TO BE CERTAIN THAT THE CONSTRUCTED PRODUCT MEETS THESE STANDARDS.
- THE CONTRACTOR MUST RETAIN THE SERVICES OF A REGISTERED LAND SURVEYOR IN THE STATE OF RHODE ISLAND TO LAYOUT ON THE GROUND ALL NEW ELEMENTS OF WORK. IF ANY WORK IS INSTALLED PRIOR TO THE ABOVE REQUIREMENT AND IF ANY WORK IS NOT SATISFACTORY TO THE ENGINEER, THE CONTRACTOR MUST REPLACE THE WORK AT NO ADDITIONAL COST TO THE OWNER.
- THE CONTRACTOR SHALL VERIFY THE PROPOSED LAYOUT WITH ITS RELATIONSHIP TO THE EXISTING SITE SURVEY. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, SITE CONDITIONS AND MATERIAL SPECIFICATIONS AND SHALL NOTIFY THE OWNER AND ENGINEER OF ANY ERRORS, OMISSIONS OR DISCREPANCIES BEFORE COMMENCING, INSTALLING OR PROCEEDING WITH WORK.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES AND TO TAKE WHATEVER NECESSARY MEASURES NEEDED TO PROVIDE FOR THEIR PROTECTION. THE ENGINEER HAS DILIGENTLY ATTEMPTED TO LOCATE AND INDICATE ALL EXISTING UNDERGROUND UTILITIES AND FACILITIES ON THE DRAWINGS; HOWEVER, THE INFORMATION SHOWN IS FOR THE CONTRACTOR'S CONVENIENCE ONLY. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE LOCATIONS OF UTILITIES SHOWN OR NOT SHOWN. THE CONTRACTOR SHALL MAKE EXPLORATORY EXCAVATIONS AND LOCATE ANY EXISTING UTILITIES SUFFICIENTLY AHEAD OF CONSTRUCTION, VERIFY ALL DIMENSIONS, SITE CONDITIONS AND MATERIALS. THE CONTRACTOR MUST CONTACT THE LOCAL UTILITY COMPANIES FOR EXACT LOCATION OF UTILITIES PRIOR TO THE START OF ANY CONSTRUCTION AND SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES BEFORE START OF ANY WORK. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR AND REPLACE ANY AND ALL DAMAGE MADE TO UTILITIES BY THE CONTRACTOR.
- THE CONTRACTOR MUST NOTIFY OPERATORS WHO MAINTAIN UNDERGROUND UTILITIES IN THE AREA OF PROPOSED CONSTRUCTION, EXCAVATION OR BLASTING AT LEAST THREE WORKING DAYS, BUT NOT MORE THAN TEN WORKING DAYS PRIOR TO THE START OF ANY CONSTRUCTION, EXCAVATION OR BLASTING. ALL WATER, SEWER, GAS AND ALL OTHER UTILITIES MUST BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION.
- METHODS AND MATERIALS USED IN THE CONSTRUCTION OF IMPROVEMENTS SHALL CONFORM TO THE CURRENT CONSTRUCTION STANDARDS AND SPECIFICATIONS FOR THE CITY OF WARWICK AND THE STATE OF RHODE ISLAND DEPARTMENT OF TRANSPORTATION, THE STATE OF RHODE ISLAND STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2004 EDITION, AS AMENDED, AND THE RHODE ISLAND STANDARD DETAILS ARE MADE A PART HEREOF, AS IF ATTACHED HERETO.
- THE CONTRACTOR IS RESPONSIBLE FOR REPLACING ANY PAVEMENT, DRIVEWAYS, SIDEWALKS, WALL, CURBS, ETC. DAMAGED DURING CONSTRUCTION WITH MATCHING MATERIALS.
- THE CONTRACTOR AGREES THAT HE WILL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE PROJECT SITE CONDITIONS THROUGHOUT CONSTRUCTION, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER AND THE ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED IN CONJUNCTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT.
- ALL MATERIALS USED FOR CONSTRUCTION MUST BE NEW AND FREE OF DEFECTS. USED OR SALVAGED MATERIAL WILL NOT BE ALLOWED UNLESS WRITTEN APPROVAL FROM THE OWNER IS OBTAINED BY THE CONTRACTOR.
- NECESSARY BARRICADES, LIGHTS, SIGNS AND OTHER TRAFFIC CONTROL METHODS AS MAY BE NECESSARY FOR THE PROTECTION AND SAFETY OF THE PUBLIC MUST BE PROVIDED AND MAINTAINED THROUGHOUT CONSTRUCTION BY THE CONTRACTOR.
- ALL RI HIGHWAY BOUNDS AND PERMANENT SURVEY MARKERS SHALL BE PROTECTED THROUGHOUT CONSTRUCTION.
- PRIOR TO THE START OF CONSTRUCTION THE CONTRACTOR IS REQUIRED TO DEVELOP AND IMPLEMENT A PLAN FOR THE TEMPORARY CONTROL OF VEHICULAR AND PEDESTRIAN TRAFFIC FOR WORK WITHIN PUBLIC STREET RIGHT-OF-WAY THROUGHOUT THE PROJECT CORRIDOR. THE CONTRACTOR SHALL OBTAIN APPROVAL OF SAID PLAN FROM APPROPRIATE STATE AND COMMUNITY PUBLIC SAFETY OFFICIALS (ALL TRAFFIC CONTROL SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES 2009 INCLUDING ALL REVISIONS).
- ANY ROCK EXCAVATION SHALL BE ACHIEVED BY MECHANICAL MEANS UNLESS OTHERWISE DIRECTED BY THE OWNER AND ENGINEER. NO ROCK EXCAVATION SHALL BE DONE ON SUNDAY, ON WEEKDAYS AND SATURDAYS ROCK EXCAVATION SHALL NOT BE UNDERTAKEN BETWEEN THE HOURS OF 6:00 P.M. AND 7:00 A.M.
- RELOCATION OF ANY UTILITIES SHALL BE AT THE OWNERS EXPENSE AND COMPLETED WITH THE UTILITY WORK. THE OWNER SHALL BE NOTIFIED AS TO THE RELOCATIONS REQUIRED PRIOR TO THE START OF CONSTRUCTION.
- THE CONTRACTOR SHALL CONFINE HIS OPERATIONS AND ACTIVITIES FOR CONSTRUCTION PURPOSES WITHIN THE STREET LINES, EASEMENTS AND/OR RIGHTS-OF-WAY ACROSS PRIVATE PROPERTY AS SHOWN ON THE DRAWINGS.
- ALL PROPERTY LINES INDICATED ARE APPROXIMATE ONLY AND BASED SOLELY ON CITY ASSESSORS MAPS. ANY REQUIRED EASEMENTS AND/OR RIGHTS OF ACCESS SHALL BE OBTAINED BY THE CITY OF WARWICK.
- AS NOTED ON FEMA FLOOD INSURANCE RATE MAPS FOR KENT COUNTY, RHODE ISLAND, NUMBERS 44003C0134H AND 44003C0142H, DATED SEPTEMBER 18, 2013, THE PROJECT LIES WITHIN ZONE X, AND INCLUDES AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN, AS WELL AS AN AREA DETERMINED TO BE WITHIN THE 0.2% ANNUAL CHANCE FLOODPLAIN.
- IN ALL LOCATIONS, PRE-CONSTRUCTION CONTOURS (EXISTING SURFACE GRADES) SHALL BE RESTORED IMMEDIATELY FOLLOWING INSTALLATION.
- ALL EXCESS SOIL, ROCKS, STUMPS AND OTHER DEBRIS SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN AN APPROPRIATE UPLAND LOCATION, OUTSIDE OF ALL REGULATED FRESHWATER WETLAND AREAS.
- ANY EXCAVATION WITHIN EXISTING PAVED AREAS SHALL BE SAW CUT.

GENERAL UTILITY NOTES:

- THE CONTRACTOR SHALL NOTIFY DIG-SAFE (1-888-344-7233) AND ALL LOCAL AUTHORITIES & UTILITY COMPANIES TO VERIFY LOCATIONS OF UTILITIES WITHIN THE AREA 72 HOURS PRIOR TO BEGINNING ANY EXCAVATION OR DEMOLITION FOR THE PURPOSE OF COORDINATING THE MARKING OF UNDERGROUND UTILITIES. LOCATION AND DEPTHS OF EXISTING UTILITIES SHOWN ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY, LOCATE AND PROTECT EXISTING UTILITIES IN THE FIELD WHETHER OR NOT SHOWN ON THE DRAWINGS.
- THE CONTRACTOR SHALL COORDINATE LOCATION AND INSTALLATION OF ALL UNDERGROUND UTILITIES AND APPURTENANCES TO MINIMIZE DISTURBANCE OF CURBING, PAVING AND COMPACTED SUBGRADE. THE CONTRACTOR SHALL NOTIFY THE TOWN ENGINEER & ALL LOCAL UTILITY COMPANIES 48 HOURS BEFORE EACH PHASE OF CONSTRUCTION. THE CONTRACTOR SHALL IMMEDIATELY INFORM THE ENGINEER OF ANY DISCREPANCIES OR ERRORS DISCOVERED IN THE PLANS.
- MINIMUM CLEARANCES UNDER OVERHEAD UTILITIES MUST BE MAINTAINED AS REQUIRED BY UTILITY COMPANY REQUIREMENTS. SHOULD THE RELOCATION OF ANY OVERHEAD UTILITY BECOME NECESSARY DURING CONSTRUCTION OPERATIONS, THE CONTRACTOR SHALL COORDINATE WITH THE APPROPRIATE UTILITY COMPANY AND SHALL COMPLETE THE WORK AT NO ADDITIONAL COST TO THE OWNER.
- BEDDING REQUIREMENTS SPECIFIED HEREIN ARE TO BE CONSIDERED AS MINIMUMS FOR RELATIVELY DRY, STABLE EARTH CONDITIONS. ADDITIONAL BEDDING SHALL BE REQUIRED FOR ROCK TRENCHES AND WET AREA. THE CONTRACTOR SHALL HAVE THE RESPONSIBILITY TO PROVIDE SUCH ADDITIONAL BEDDING AS MAY BE REQUIRED TO PROPERLY CONSTRUCT THE WORK.
- THE CONTRACTOR SHALL REMOVE ANY ABANDONED FOUNDATIONS, UTILITY STRUCTURES, BURIED DEBRIS ETC. WHICH INTERFERE WITH THE INSTALLATION OF THE UTILITY WORK. ALL SUCH STRUCTURES SHALL BE COMPLETELY REMOVED AND THE EXCAVATED AREA SHALL BE BACKFILLED WITH COMPACTED GRAVEL IN 6" LIFTS TO 95% COMPACTION TO 6" BELOW THE BOTTOM OF THE UTILITY AND PIPE.
- COMPACTION OF THE BACKFILL OF ALL TRENCHES SHALL BE COMPACTED TO THE DENSITY OF 95% OF THE THEORETICAL MAXIMUM DRY DENSITY (ASTM D698). BACKFILL MATERIAL SHALL BE FREE FROM ROOTS, STUMPS OR OTHER FOREIGN DEBRIS AND SHALL BE PLACED IN LIFTS NOT TO EXCEED ONE FOOT IN COMPACTED FILL THICKNESS. CORRECTION OF ANY TRENCH SETTLEMENT WITHIN A YEAR FROM THE DATE OF PROJECT APPROVAL WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- ALL PIPING LAYOUT INDICATED ON THESE PLANS IS DIAGRAMMATIC ONLY AND DOES NOT NECESSARILY SHOW ALL THE REQUIRED FITTINGS FOR LINING/BYPASS OPERATIONS. THE CONTRACTOR SHALL PROVIDE ALL REQUIRED FITTINGS TO PROPERLY EXECUTE LINING/BYPASS OPERATIONS BASED UPON FIELD CONDITIONS.
- ALL PIPES UNDER THIS CONTRACT ARE DESIGNED USING TRENCH WIDTHS AS SHOWN ON THE DRAWINGS. DEVIATION FROM THESE WIDTHS BY THE CONTRACTOR MAY NECESSITATE CHANGES IN PIPE CLASSIFICATION. SUCH CHANGES SHALL BE MADE AT NO ADDITIONAL COST TO THE OWNER. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IF THE DESIGN TRENCH WIDTHS ARE EXCEEDED OR PLANNED TO BE EXCEEDED.
- SEWERS SHALL BE SEPARATED HORIZONTALLY BY AT LEAST 10 FEET FROM ALL WATER LINES. PROVIDING 18 INCH VERTICAL SEPARATION BETWEEN THE CROWN OF THE SEWER PIPE AND THE INVERT OF THE WATER LINE SHALL ONLY BE AN ACCEPTABLE ALTERNATIVE IN LOCATIONS WHERE 10 FOOT HORIZONTAL SEPARATION IS NOT POSSIBLE. WHENEVER SEWER PIPES MUST CROSS WATER LINES, THE CROWN OF THE SEWER PIPE SHALL BE LAID AT LEAST 18 INCHES BELOW THE INVERT OF THE WATER LINE. IN CASES WHERE THIS IS NOT POSSIBLE THE FOLLOWING ALTERNATIVES MAY BE PROVIDED AT THE DISCRETION OF THE ENGINEER, THE OWNER, AND THE KENT COUNTY WATER AUTHORITY:
 - ENCASEMENT OF THE SEWER PIPELINE WITHIN A CARRIER PIPE (SEE DETAIL) FOR AT LEAST 10 FEET EITHER SIDE OF THE CROSSING OR AREA NOT COMPLYING WITH THE MINIMUM HORIZONTAL AND VERTICAL SEPARATION, OR
 - THE DESIGN AND CONSTRUCTION OF THE SEWER MUST MEET THE REQUIREMENTS APPLICABLE TO WATER LINES (ANY AWWA-APPROVED MATERIAL FOR POTABLE WATER CONVEYANCE) FOR AT LEAST 10 FEET EITHER SIDE OF THE CROSSING OR AREA NOT COMPLYING WITH THE MINIMUM HORIZONTAL AND VERTICAL SEPARATION, AND PRESSURE TESTED IN ACCORDANCE WITH AWWA SPECIFICATIONS, OR
 - THE ENGINEER MAY DIRECT THE CONTRACTOR TO RELOCATE THE SEWER AND/OR THE WATER LINE.
- PROPOSED RIM ELEVATIONS ARE APPROXIMATE AND SHALL BE VERIFIED FOR THEIR RELATIONSHIP TO EXISTING PAVEMENT GRADES AND CROSS SLOPES. CONTRACTOR SHALL ADJUST RIM ELEVATIONS AS REQUIRED TO PROVIDE SMOOTH DRIVING SURFACES IN CONJUNCTION WITH SPECIFIED OVERLAY REQUIREMENTS.
- EXISTING SEWER SERVICES THROUGHOUT THE PROJECT CORRIDOR SHALL BE MAINTAINED TO THE MAXIMUM EXTENT PRACTICABLE. WHERE EXISTING SERVICES TO RESIDENCES, BUSINESSES OR OTHER FACILITIES MUST BE TEMPORARILY SHUT DOWN, THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE WARWICK SEWER AUTHORITY AND SHALL PROVIDE THE REQUIRED NOTIFICATION TO THE PROPERTY OWNER.
- THE CONTRACTOR SHALL NOT BLOCK OR DISRUPT ANY SECTION OF ACTIVE SEWER MAIN THAT IS NOT INCLUDED IN THE WORK PROPOSED BY THIS PROJECT. SHOULD ADDITIONAL BYPASS OPERATIONS BECOME NECESSARY, THE CONTRACTOR SHALL COORDINATE WITH THE WARWICK SEWER AUTHORITY.

GENERAL GRADING & DRAINAGE NOTES:

- THE MAXIMUM RUNNING SLOPE ALONG ANY SIDEWALK SHALL BE 5%. THE MAXIMUM CROSS SLOPE ACROSS ANY SIDEWALK SHALL BE 2%.
- ALL GRATES AND COVERS IN PAVED AREAS SHALL BE FLUSH WITH PAVEMENT, AND SHALL HAVE TRAFFIC BEARING RING & COVERS. MANHOLES IN UNPAVED AREAS SHALL BE 3" ABOVE FINISH GRADE.
- CONTRACTOR SHALL ADJUST AND/OR CUT EXISTING PAVEMENT AS NECESSARY TO ASSURE A SMOOTH FIT AND CONTINUOUS GRADE.
- ALL UNSURFACED AREAS DISTURBED BY CONSTRUCTION OPERATIONS SHALL RECEIVE 4 INCHES OF TOPSOIL. CONTRACTOR SHALL APPLY STABILIZATION FABRIC TO ALL SLOPES 3H:1V OR STEEPER. CONTRACTOR SHALL GRASS DISTURBED AREAS IN ACCORDANCE WITH THE CITY OF WARWICK SPECIFICATIONS UNTIL A HEALTHY STAND OF GRASS IS OBTAINED.

SOIL EROSION & SEDIMENT CONTROL NOTES:

- DISTURBANCE OF SOIL SURFACES IS REGULATED BY STATE LAW. ALL WORK SHALL COMPLY WITH THE FOLLOWING CRITERIA TO PREVENT OR MINIMIZE SOIL EROSION. THE INSTALLATION AND MAINTENANCE OF EROSION CONTROL DEVICES IS THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL USE THE "STATE OF RHODE ISLAND SOIL EROSION AND SEDIMENT CONTROL HANDBOOK", 2014, AS AMENDED, AS A GUIDE IN CONSTRUCTING THE EROSION AND SEDIMENT CONTROLS INDICATED ON THESE PLANS. THE GUIDELINES MAY BE OBTAINED FROM R.I. DEPARTMENT OF ENVIRONMENTAL MANAGEMENT (RIDEM). THIS PUBLICATION SHALL BE A PART OF THIS PLAN.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CLEAN ROADS, ALLAY DUST, AND TAKE WHATEVER MEASURES NECESSARY TO ENSURE THAT ALL ROADS ARE MAINTAINED IN A CLEAN, MUD AND DUST FREE CONDITION AT ALL TIMES.
- THE CONTRACTOR IS RESPONSIBLE FOR TIMELY INSTALLATION, INSPECTION, REPAIR OR REPLACEMENT OF EROSION CONTROL DEVICES TO ENSURE PROPER OPERATION.
- THE CONTRACTOR SHALL INSPECT AND REPAIR EROSION & SEDIMENT CONTROL DEVICES AT THE END OF EACH WORKING DAY AND AFTER EACH STORM.
- THE CONTRACTOR SHALL RESTORE DISTURBED AREAS AS CLOSELY AS POSSIBLE TO THEIR ORIGINAL NATURAL STATE. ALL DISTURBED AREAS NOT COVERED BY BUILDINGS, PAVEMENT OR OTHER GROUND COVER SHALL BE PLANTED WITH GRASS ON FOUR INCH (4") THICKNESS OF TOPSOIL. IF SEEDING CANNOT BE COMPLETED IMMEDIATELY, DISTURBED AREAS SHALL BE STABILIZED WITH A SPREAD HAY MULCH (APPROPRIATELY ANCHORED) OR EROSION CONTROL MATTING.
- SEEDING: BETWEEN MARCH 15 TO MAY 31 AND AUGUST 15 TO OCTOBER 15. SEEDING SHALL BE DONE IN ACCORDANCE WITH THE FOLLOWING SEEDING AND STABILIZATION DIRECTIVES:
 - ALL DISTURBED SURFACES TO BE SEEDED WITHIN REGULATED FRESHWATER WETLAND AREAS SHALL BE LOAMED AND SEEDED WITH RIDOT TYPE 5 WETLAND SEED MIX IN ACCORDANCE WITH RIDOT STANDARD SPECIFICATION SECTION L02 "SEEDING". SEED MIX SHALL CONFORM TO NEW ENGLAND WETLAND PLANTS "NEW ENGLAND WETMIX."
 - ALL OTHER DISTURBED SURFACES TO BE SEEDED SHALL BE LOAMED AND SEEDED WITH RIDOT TYPE 2 RESIDENTIAL SEED MIX IN ACCORDANCE WITH RIDOT STANDARD SPECIFICATION SECTION L02 "SEEDING".
- ANY EXISTING STORMWATER DRAINAGE STRUCTURES WHICH MAY BE SUBJECT TO SEDIMENTATION PROCESSES, INCLUDING CATCH BASINS (GRATES), INLET/OUTLET STRUCTURES, AND OUTFALL AREAS SHALL BE PROTECTED WITH SILT SACK SEDIMENT TRAPS THROUGHOUT THE ENTIRE CONSTRUCTION PERIOD.
- ALL TEMPORARY SOIL STOCKPILE AREAS AND TRENCH EXCAVATION SPOILS SHALL BE PROTECTED WITH A ROW OF STAKED HAYBALES AND/OR SILT FENCE AND WITH A SPREAD HAY MULCH AND WOVEN NETTING WHEN LEFT EXPOSED FOR LONG PERIODS OF TIME. ANY SUCH STOCKPILE AREAS SHALL BE PLACED IN AN APPROPRIATE UPLAND LOCATION AND COMPLETELY REMOVED PRIOR TO PROJECT CLOSE-OUT.
- THE EROSION CONTROL MEASURES SHOWN SHOULD BE CONSIDERED MINIMUM STANDARDS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CLEAN ROADS, ALLAY DUST, AND TAKE WHATEVER MEASURES ARE NECESSARY TO ENSURE THAT THE SITE AND ALL ADJACENT PROPERTIES ARE MAINTAINED IN A CLEAN, MUD AND DUST FREE CONDITION AT ALL TIMES.
- DEWATERING SHALL BE PERFORMED AS NECESSARY DURING TRENCH EXCAVATION & SEWER STRUCTURE/PIPE INSTALLATION PROCEDURES. DISCHARGE SHALL BE PUMPED INTO AN APPROPRIATELY CONSTRUCTED TEMPORARY FILTER FABRIC/STAKED HAYBALE DEWATERING BASIN OR FILTER BAG TO BE LOCATED OUTSIDE OF BIOLOGICAL/PHYSICAL WETLAND LIMITS. DEWATERING PRACTICES SHALL BE ADEQUATELY MAINTAINED BY THE CONTRACTOR ON A REGULAR BASIS. ACCUMULATED SANDS AND SEDIMENTS SHALL BE REMOVED AS NEEDED AND PROPERLY DISPOSED OF. THE ENTIRE STRUCTURE SHALL BE REMOVED UPON COMPLETION OF ITS USE IN A PARTICULAR AREA.

CURED-IN-PLACE PIPE INSTALLATION NOTES:

- THE CURED-IN-PLACE PIPE (CIPP) REHABILITATION METHODOLOGY AND WORK SEQUENCE INDICATED ON THE PLANS IS DIAGRAMMATIC AND INTENDED FOR GENERAL GUIDANCE ONLY. THE CONTRACTOR SHALL DEVELOP A DETAILED CIPP OPERATIONS PLAN IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, WHICH MAY OFFER DIFFERING METHODOLOGY/SEQUENCING IF DEEMED ACCEPTABLE BY THE ENGINEER AND THE WARWICK SEWER AUTHORITY.
- APPROXIMATE LOCATIONS OF ALL KNOWN SERVICE CONNECTIONS TO THE EXISTING FORCE MAIN ARE SHOWN ON THE PLANS. THE CIPP OPERATIONS PLAN SUBMITTED BY THE CONTRACTOR MUST DETAIL SPECIFIC PROCEDURES FOR LINING OPERATIONS THROUGH THE EXISTING MAIN WHERE EXISTING SERVICE CONNECTIONS ARE PRESENT, INCLUDING ESTIMATED TIME FRAMES FOR SHUTDOWNS OF SERVICES IF NECESSARY.

TEMPORARY BYPASS PUMPING NOTES:

- THE METHODOLOGY AND ROUTING OF ALL PROPOSED BYPASS PUMPING INDICATED ON THE PLANS IS DIAGRAMMATIC AND INTENDED FOR GENERAL GUIDANCE ONLY. THE CONTRACTOR SHALL DEVELOP A DETAILED TEMPORARY BYPASS PUMPING PLAN IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, WHICH MAY OFFER DIFFERING METHODOLOGY/ROUTING IF DEEMED ACCEPTABLE BY THE ENGINEER AND THE WARWICK SEWER AUTHORITY. THE CONTRACTOR IS REQUIRED TO EFFECTIVELY COORDINATE THE SCHEDULE OF EACH BYPASS PUMPING PHASE AND ALL ASSOCIATED PUMP STATION SHUT-DOWN TIMES AND DURATIONS WITH THE WARWICK SEWER AUTHORITY THROUGHOUT THE DURATION OF THE PROJECT.
- THE NUMBER OF BYPASS PUMPING PHASES SHOWN ON THE PLANS IS CONSIDERED BY THE OWNER TO BE THE MAXIMUM NUMBER OF ALLOWABLE PHASES. THE CONTRACTOR IS ENCOURAGED BY THE OWNER TO SUBMIT A DESIGN CONFORMING TO THE REQUIREMENTS OF THE PROJECT SPECIFICATIONS THAT REDUCES THE NUMBER OF BYPASS PHASES BELOW THE NUMBER SHOWN ON THE PLANS.
- THE CONTRACTOR SHALL KEEP A MINIMUM OF FIVE (5) STAINLESS STEEL WRAP-AROUND PIPE REPAIR SLEEVES ON-SITE AT ALL TIMES FOR EMERGENCY REPAIR OF EITHER THE EXISTING FORCE MAIN OR TEMPORARY BYPASS PIPING. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT THE REPAIR SLEEVES HELD ON-SITE ARE QUICKLY ACCESSIBLE DURING ALL PROJECT PHASES. MEET REQUIRED PRESSURE RATINGS AND ARE MATERIALLY COMPATIBLE WITH THE EXISTING FORCE MAIN AND BYPASS PIPING. ANY UNUSED WRAP-AROUND PIPE REPAIR SLEEVES REMAINING UPON COMPLETION OF THE PROJECT SHALL BECOME THE PROPERTY OF THE WARWICK SEWER AUTHORITY.

SITE LEGEND

EXISTING	NEW	DESCRIPTION
— C —	— C —	CENTERLINE (LAYOUT)
— D —	— D —	STORM DRAIN
— E —	— E —	ELECTRIC (UNDERGROUND)
— F —	— F —	FIRE SERVICE
— FD —	— FD —	FOOTING DRAIN
— G —	— G —	GAS
— OHW —	— OHW —	OVERHEAD WIRE
— S —	— S —	PROPERTY LINE
— SL —	— SL —	SANITARY SEWER
— T —	— T —	SITE LIGHTING SERVICE
— W —	— W —	TELEPHONE
— AW —	— W —	WATER
— 64 —	— 64 —	ABANDONED WATER LINE
— x64.0 —	— 64 —	CONTOUR
— x64.0(BC) —	— x64.00(BC) —	SPOT GRADE
— x64.5(TC) —	— x64.00(BC) —	SPOT GRADE (BOT. OF CURB)
— 64.5(BW) —	— x64.50(TC) —	SPOT GRADE (TOP OF CURB)
— 64.5(TW) —	— 64.50(BW) —	SPOT GRADE (BOT. OF WALL)
— BCC —	— 64.50(TW) —	SPOT GRADE (TOP OF WALL)
— CCB —	— BCC —	BITUMINOUS CONC. CURB
— PCC —	— CCB —	CAPE COD BERM
— PCSMC —	— PCC —	PRECAST CONC. CURB
— SGC —	— PCSMC —	PRECAST SLOPED MOUNT. CURB
— VGC —	— SGC —	SLOPED GRANITE CURB
— CB —	— VGC —	VERTICAL GRANITE CURB
— CB(DC) —	— CB#1 —	CHAINLINK FENCE (CLF)
— CTB —	— CBDG#1 —	STOCKADE FENCE (STKF)
— DMH —	— CTB —	BORING LOCATION
— FES —	— DMH —	CATCH BASIN
— G —	— FES —	DOUBLE GRATE CATCH BASIN
— H ₂ O —	— G —	CONCRETE THRUST BLOCK
— H ₂ O —	— H ₂ O —	DRAIN MANHOLE
— GV —	— H ₂ O —	FLARED END STRUCTURE
— LP —	— GV —	SEWER MANHOLE
— PIV —	— LP —	WATER SERVICE
— SEV —	— PIV —	UTILITY POLE
— TP —	— SEV —	FIRE HYDRANT
— FDC —	— TP —	GATE VALVE AND CURB BOX
— PIV —	— FDC —	HANDICAP SYMBOL (PRKG. SPACE)
— EMH —	— PIV —	SIGN
— TMH —	— EMH —	WETLAND
— T —	— TMH —	SOIL EVALUATION LOCATION
— GEN —	— T —	TEST PIT LOCATION
— GCO —	— GEN —	FIRE DEPARTMENT CONNECTION
— LP —	— GCO —	POST INDICATOR VALVE (PIV)
— PIV —	— LP —	ELECTRIC MANHOLE (EMH)
— SEV —	— PIV —	TELEPHONE MANHOLE (TMH)
— TP —	— SEV —	TRANSFORMER PAD
— FDC —	— TP —	GENERATOR PAD
— PIV —	— FDC —	GROUND CLEANOUT
— EMH —	— PIV —	SIGHT LIGHT POLE
— TMH —	— EMH —	TRAFFIC FLOW DIRECTION
— T —	— TMH —	
— GEN —	— T —	
— GCO —	— GEN —	
— LP —	— GCO —	
— PIV —	— LP —	
— SEV —	— PIV —	
— TP —	— SEV —	
— FDC —	— TP —	
— PIV —	— FDC —	
— EMH —	— PIV —	
— TMH —	— EMH —	
— T —	— TMH —	
— GEN —	— T —	
— GCO —	— GEN —	
— LP —	— GCO —	
— PIV —	— LP —	
— SEV —	— PIV —	
— TP —	— SEV —	
— FDC —	— TP —	
— PIV —	— FDC —	
— EMH —	— PIV —	
— TMH —	— EMH —	
— T —	— TMH —	
— GEN —	— T —	
— GCO —	— GEN —	
— LP —	— GCO —	
— PIV —	— LP —	
— SEV —	— PIV —	
— TP —	— SEV —	
— FDC —	— TP —	
— PIV —	— FDC —	
— EMH —	— PIV —	
— TMH —	— EMH —	
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— LP —	— GCO —	
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— SEV —	— PIV —	
— TP —	— SEV —	
— FDC —	— TP —	
— PIV —	— FDC —	
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— LP —	— GCO —	
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— FDC —	— TP —	
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— SEV —	— PIV —	
— TP —	— SEV —	
— FDC —	— TP —	
— PIV —	— FDC —	
— EMH —	— PIV —	
— TMH —	— EMH —	
— T —	— TMH —	
— GEN —	— T —	
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— SEV —	— PIV —	
— TP —	— SEV —	
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— GEN —	— T —	
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— LP —	— GCO —	
— PIV —	— LP —	
— SEV —	— PIV —	
— TP —	— SEV —	
— FDC —	— TP —	
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— EMH —	— PIV —	
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— LP —	— GCO —	
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— SEV —	— PIV —	
— TP —	— SEV —	
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— PIV —	— FDC —	
— EMH —	— PIV —	
— TMH —	— EMH —	
— T —	— TMH —	
— GEN —	— T —	
— GCO —	— GEN —	
— LP —	— GCO —	
— PIV —	— LP —	
— SEV —	— PIV —	
— TP —	— SEV —	
— FDC —	— TP —	
— PIV —	— FDC —	
— EMH —	— PIV —	
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— GEN —	— T —	
— GCO —	— GEN —	
— LP —	— GCO —	
— PIV —	— LP —	
— SEV —	— PIV —	
— TP —	— SEV —	
— FDC —	— TP —	
— PIV —	— FDC —	
— EMH —	— PIV —	
— TMH —	— EMH —	
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L:\7279-00 Oakland Beach (WSA) - Warwick, RI\01-Current\7279-00-Base.dwg 02/17/2022, revisions 16:49



1" = 250' 0 125 250 500 1,000 1,500 feet

KEY PLAN

FOR
**OAKLAND BEACH FORCE MAIN
 REHABILITATION**
 SITUATED AT
**OAKLAND BEACH
 WARWICK, RI**
 PREPARED FOR
WARWICK SEWER AUTHORITY

NO.	REVISION	BY	DATE

GAROFALO

GAROFALO & ASSOCIATES, INC.
 CIVIL & STRUCTURAL ENGINEERS/SURVEYORS
 LAND PLANNERS/ENVIRONMENTAL SCIENTISTS

85 CORLISS STREET
 P.O. BOX 6145
 PROVIDENCE, RI 02940
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DWG. NO. 7279-00-Warwick.dwg	CHECK BY S.S.H.
SCALE: AS SHOWN	APPROVED S.B.G.
	DATE: OCTOBER 22, 2021

SHEET

3

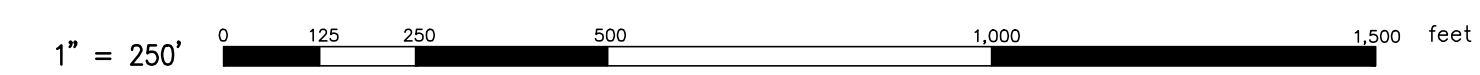
3 OF 22 SHEETS

L:\7279-00 Oakland Beach (WSA) - Warwick, RI\01-Current\7279-00-Base.dwg 02/17/2022, reviewer: 16:50



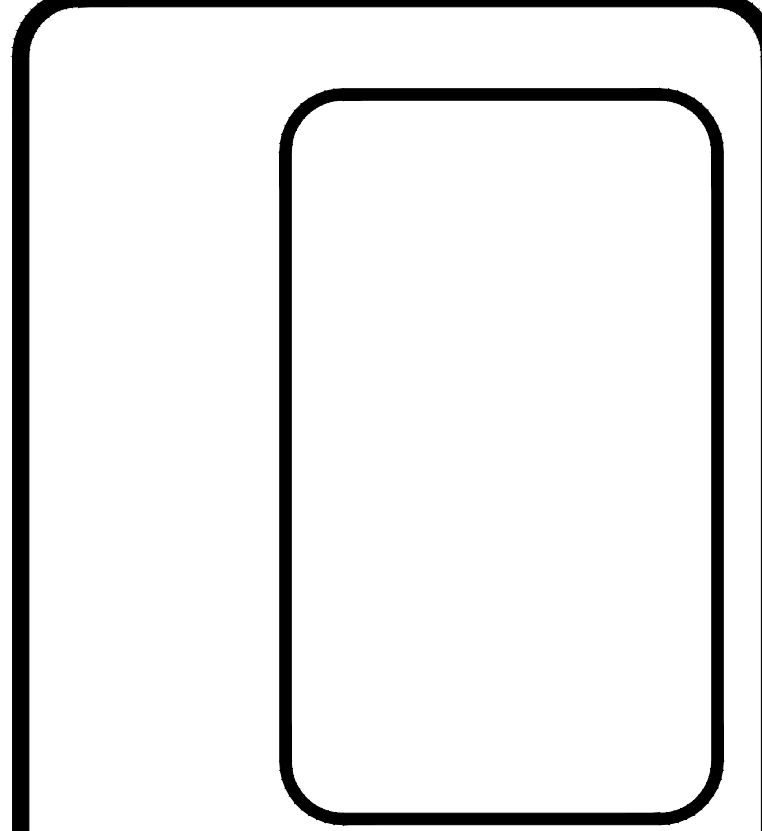
CIPP RELINING			TEMPORARY BYPASS PUMPING		
PHASE	LEGEND	LENGTH (FT)	PHASE	LEGEND	LENGTH (FT)
1		2,340±	1		2,330±
2		2,330±	2		2,340±
3		2,280±	3		2,300±
4		1,440±	4		1,950±

STRUCTURE LEGEND	
	PROPOSED ACCESS MANHOLE
	EXISTING FORCE MAIN CLEANOUT MANHOLE
	EXISTING FORCE MAIN AIR RELEASE MANHOLE
	EXISTING SEWER INTERCEPTOR MANHOLE
	EXISTING SEWER GRAVITY MANHOLE



OVERALL PLAN
FOR
**OAKLAND BEACH FORCE MAIN
REHABILITATION**
SITUATED AT
**OAKLAND BEACH
WARWICK, RI**
PREPARED FOR
WARWICK SEWER AUTHORITY

NO.	REVISION	BY	DATE



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SCALE: 1"=250'	APPROVED S.B.G.
	DATE: OCTOBER 22, 2021

SHEET

4

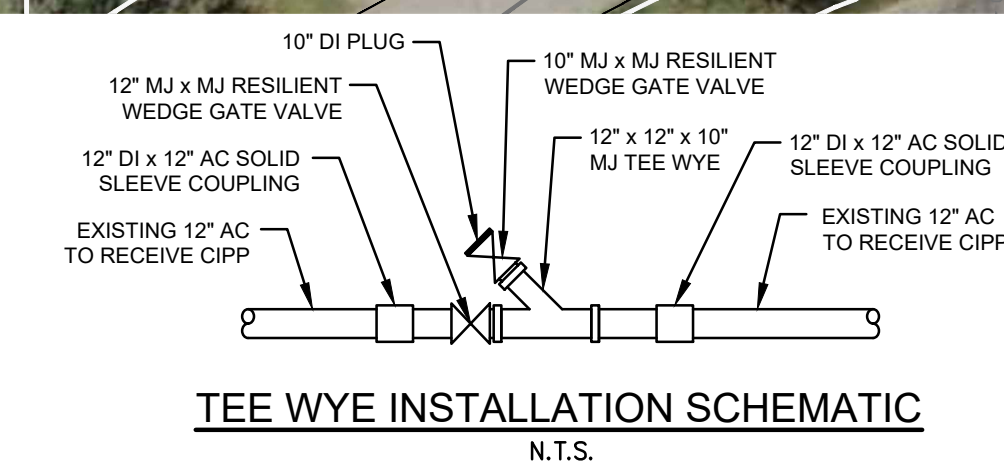
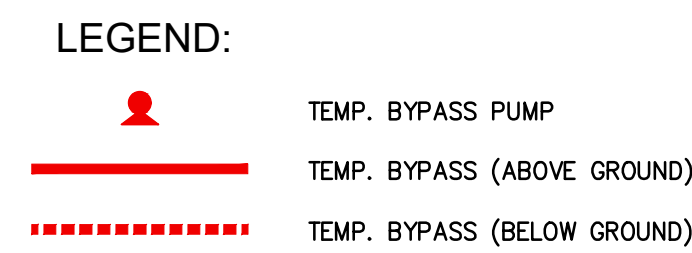
4 OF 22 SHEETS

PHASE-1 SEQUENCE OF WORK:

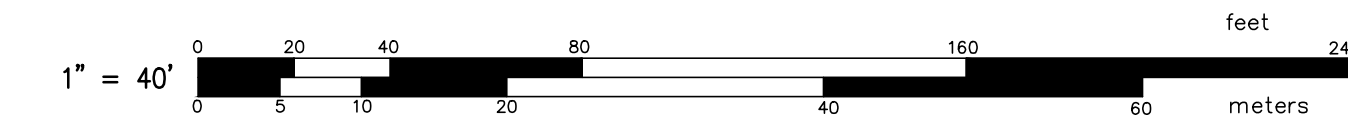
- 1. INSTALL & INITIATE TEMP. BYPASS FROM PUMP STATION WET WELL TO ACCESS POINT-5.
- 2. CIPP LINING OPERATIONS
 - 2A. PUMP STATION DISCHARGE TO ACCESS POINT-1.
 - 2B. ACCESS POINT-1 TO NEW TEE WYE, AND NEW TEE WYE TO ACCESS POINT-2
 - 2C. ACCESS POINT-2 TO ACCESS POINT-3
 - 2D. ACCESS POINT-3 TO ACCESS POINT-4
 - 2E. ACCESS POINT-4 TO ACCESS POINT-5
- 3. REJOIN PIPE WITHIN STRUCTURES
 - 3A. ACCESS POINT-1
 - 3B. ACCESS POINT-2
 - 3C. ACCESS POINT-3
 - 3D. ACCESS POINT-4
- 4. REJOIN PIPE WITHIN ACCESS POINT-5 AND RESUME FLOW



PHASE-1 RELINING LENGTHS		
ACCESS POINT #		LENGTH (FT)
PUMP STATION	1	20±
1	2	866±
2	3	887±
3	4	539±
4	5	24±

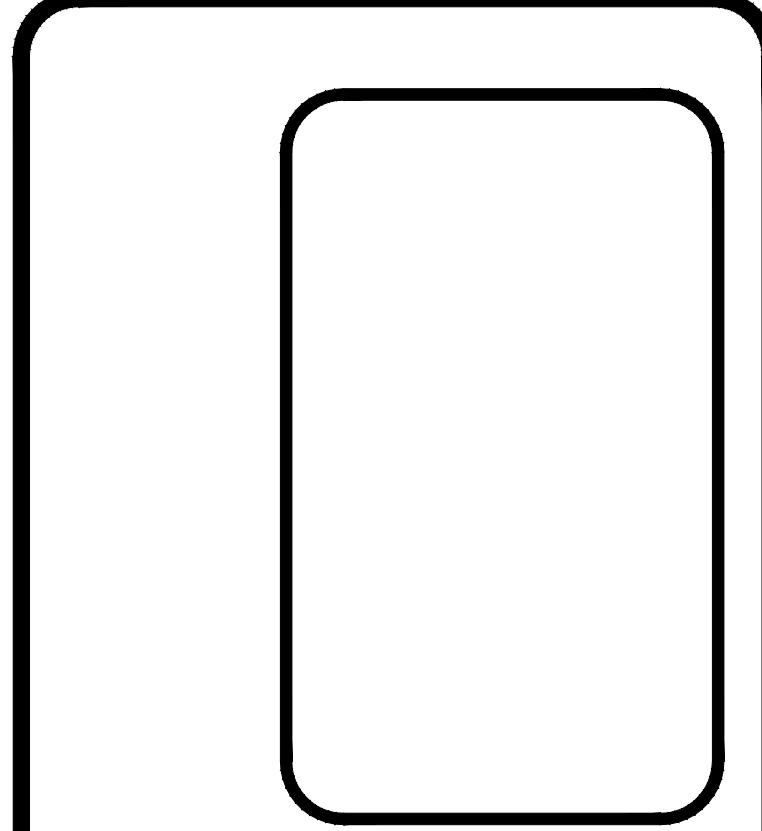


- NOTES:**
- TEE WYE INSTALLATION INTENDED FOR FUTURE CONNECTION TO RELOCATED OAKLAND BEACH PUMP STATION (BY OTHERS).
 - TEE WYE INSTALLATION LOCATION AND SCHEMATIC PROVIDED BY OTHERS.
 - CIPP LINING SHALL NOT EXTEND THROUGH NEW DUCTILE IRON TEE.
 - CIPP END TERMINATION METHOD AND FITTINGS SHALL CONFORM TO SECTION 250.08 OF THE PROJECT CONSTRUCTION SPECIFICATIONS.
 - IF CONDITION OF EXISTING AC FORCE MAIN IS FOUND BY THE CONTRACTOR TO BE UNSUITABLE FOR THE INDICATED METHOD OF CONNECTION TO DUCTILE IRON PIPING COMPONENTS, THE CONTRACTOR MAY UTILIZE THE 'ALTERNATIVE METHOD FOR CONNECTION BETWEEN AC AND DI PIPE WITHIN ACCESS POINTS' AS DETAILED ON CONSTRUCTION DETAILS-4, WITH APPROVAL OF ENGINEER AND AT NO ADDITIONAL EXPENSE TO OWNER.



CIPP PHASE-1 (PLAN 1)
SUBURBAN PARKWAY & OAKLAND BEACH AVENUE
OAKLAND BEACH FORCE MAIN REHABILITATION
 SITUATED AT
OAKLAND BEACH WARWICK, RI
 PREPARED FOR
WARWICK SEWER AUTHORITY

NO.	REVISION	BY	DATE



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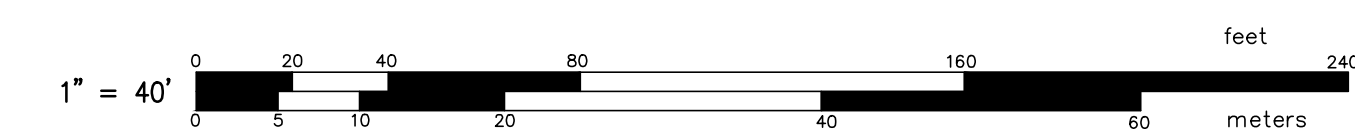
PHASE-1 SEQUENCE OF WORK:

- 1 INSTALL & INITIATE TEMP. BYPASS FROM PUMP STATION WET WELL TO ACCESS POINT-5.
- 2 CIPP LINING OPERATIONS
 - 2A PUMP STATION DISCHARGE TO ACCESS POINT-1.
 - 2B ACCESS POINT-1 TO ACCESS POINT-2
 - 2C ACCESS POINT-2 TO ACCESS POINT-3
 - 2D ACCESS POINT-3 TO ACCESS POINT-4
 - 2E ACCESS POINT-4 TO ACCESS POINT-5
- 3 REJOIN PIPE WITHIN STRUCTURES
 - 3A ACCESS POINT-1
 - 3B ACCESS POINT-2
 - 3C ACCESS POINT-3
 - 3D ACCESS POINT-4
- 4 REJOIN PIPE WITHIN ACCESS POINT-5 AND RESUME FLOW



PHASE-1 RELINING LENGTHS		
ACCESS POINT #		LENGTH (FT)
BEGIN	END	
PUMP STATION	1	17±
1	2	866±
2	3	887±
3	4	539±
4	5	30±

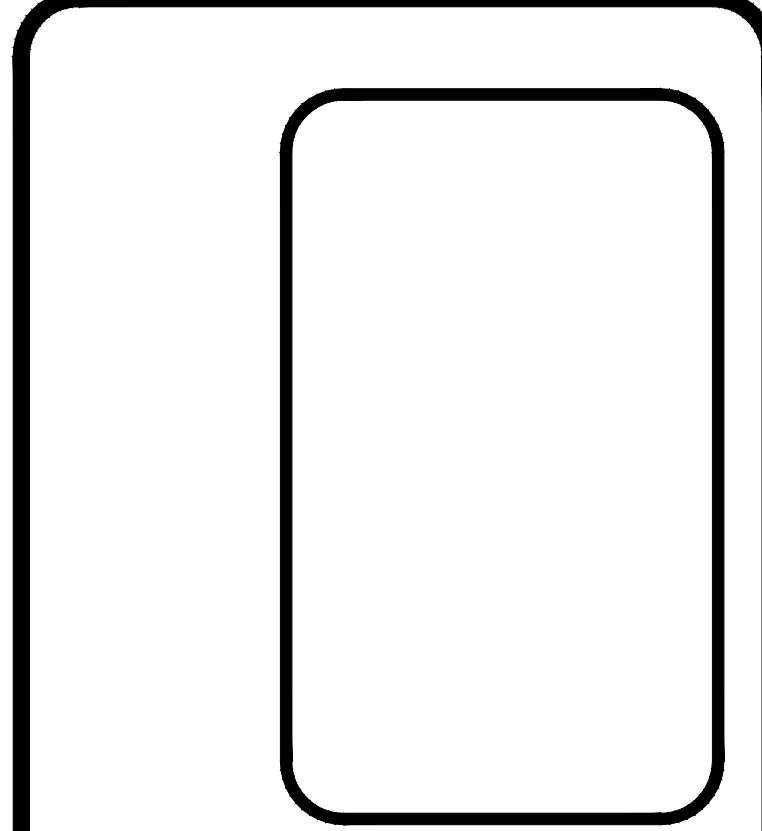
LEGEND:
 TEMP. BYPASS (ABOVE GROUND)
 TEMP. BYPASS (BELOW GROUND)



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CIPP PHASE-1 (PLAN 2)
 OAKLAND BEACH AVENUE
 FOR
 OAKLAND BEACH FORCE MAIN
 REHABILITATION
 SITUATED AT
 OAKLAND BEACH
 WARWICK, RI
 PREPARED FOR
 WARWICK SEWER AUTHORITY

NO.	REVISION	BY	DATE



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6

6 OF 22 SHEETS