
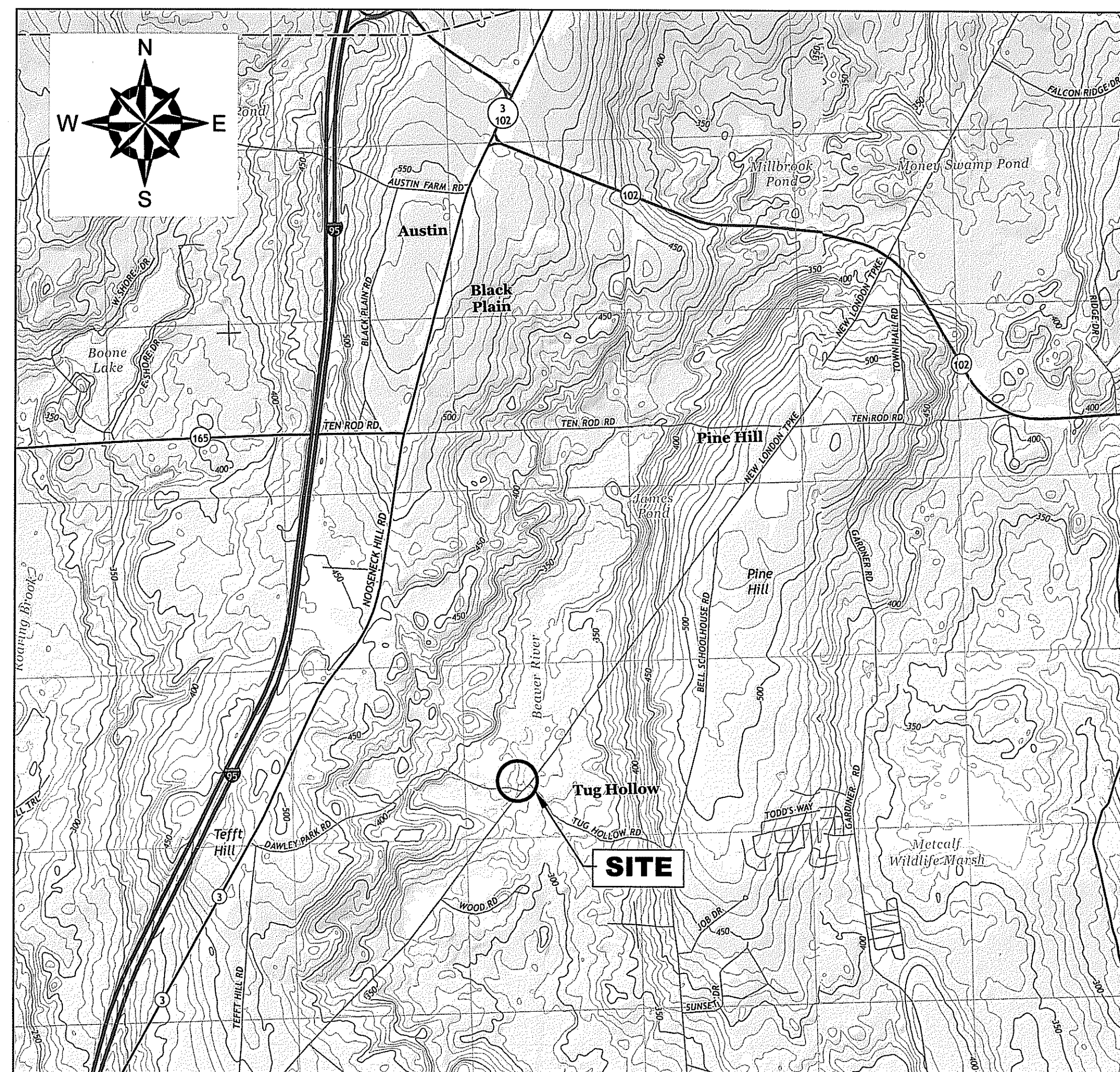


TUG HOLLOW DAM REPAIRS RICHMOND, RHODE ISLAND

JANUARY, 2017

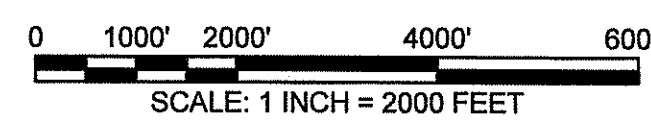
PREPARED FOR:
JAMES POND REALTY COMPANY, LLC
 90 ELM STREET
 PROVIDENCE, RHODE ISLAND

PREPARED BY:
 **GZA GEOENVIRONMENTAL, INC.**
 530 BROADWAY
 PROVIDENCE, RHODE ISLAND 02909



PROJECT LOCUS MAP

SOURCE: USGSSTORE.GOV



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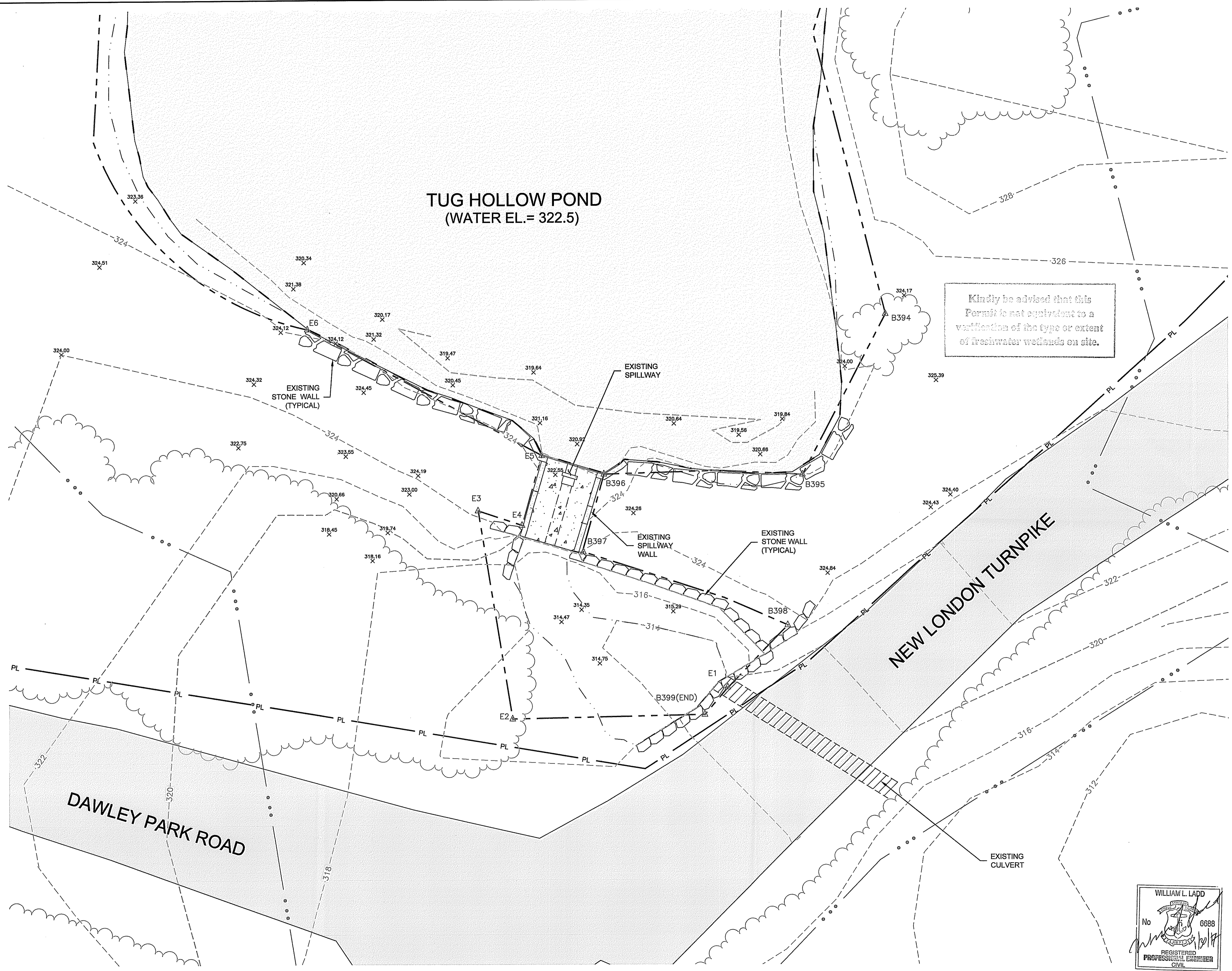
SHEET INDEX	
SHEET#	SHEET TITLE
CO	COVER, LOCUS AND INDEX OF DRAWINGS
C1	EXISTING CONDITIONS
C2	PROPOSED REPAIRS AND SEDIMENTATION AND EROSION CONTROL PLAN
C3	SPILLWAY REPAIRS AND NOTES

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF WATER RESOURCES
 FRESHWATER WETLANDS PROGRAM
 APPROVED WITH CONDITIONS
 AS SPECIFIED IN THE LETTER OF APPROVAL
 DATED MAR 06 2017 FILE # 17-0022
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WILLIAM L. LADD
 No. 6888
 REGISTERED PROFESSIONAL ENGINEER
 CIVIL

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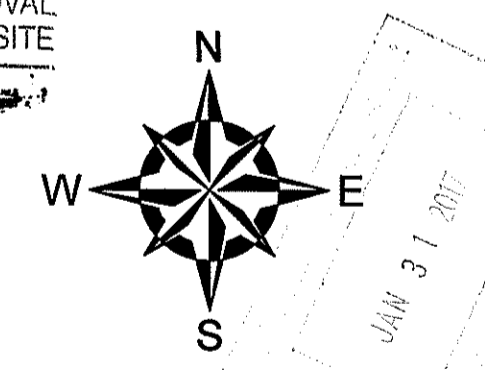
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- GENERAL NOTES**
- BASE MAP DEVELOPED FROM EXISTING SITE FEATURES APPROXIMATELY DETERMINED BY THE FOLLOWING:
 - THE LOCATION OF SELECT SITE FEATURES WERE APPROXIMATELY DETERMINED USING A TOPCON 235W AND LEICA G15 GPS BY GZA PERSONNEL DURING A LIMITED SITE VISIT ON 09-28-2016.
 - SERVICE IMAGES ARE PROVIDED FOR ILLUSTRATION PURPOSES ONLY AND ARE NOT CONSIDERED A LAND SURVEY. THESE LOCATIONS SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.
 - THE ELEVATIONS ARE REFERENCED TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)
 - HORIZONTAL DATUM OF 1983 (NAD83) RHODE ISLAND STATE PLANE, US FEET.

- LEGEND**
- - - - -122- - - - - EXISTING CONTOURS MINOR
 - - - - -130- - - - - EXISTING CONTOURS MAJOR
 - PL - - - - - PROPERTY LINE
 - B132 - - - - - WETLAND FLAG LINE
 - B133 - - - - - WETLAND FLAG LINE
 - — — — — EXISTING EDGE OF WATER
 - - - - - EXISTING RIVER/ STREAM EDGE
 - · · · · 50' WETLAND BUFFER
 - ~ ~ ~ ~ ~ EXISTING TREE LINE
 - X 349.57 EXISTING SPOT GRADE
 - EXISTING TREE
 - ▭ EXISTING ASPHALT ROADWAY

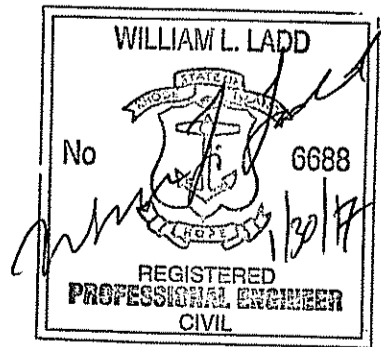
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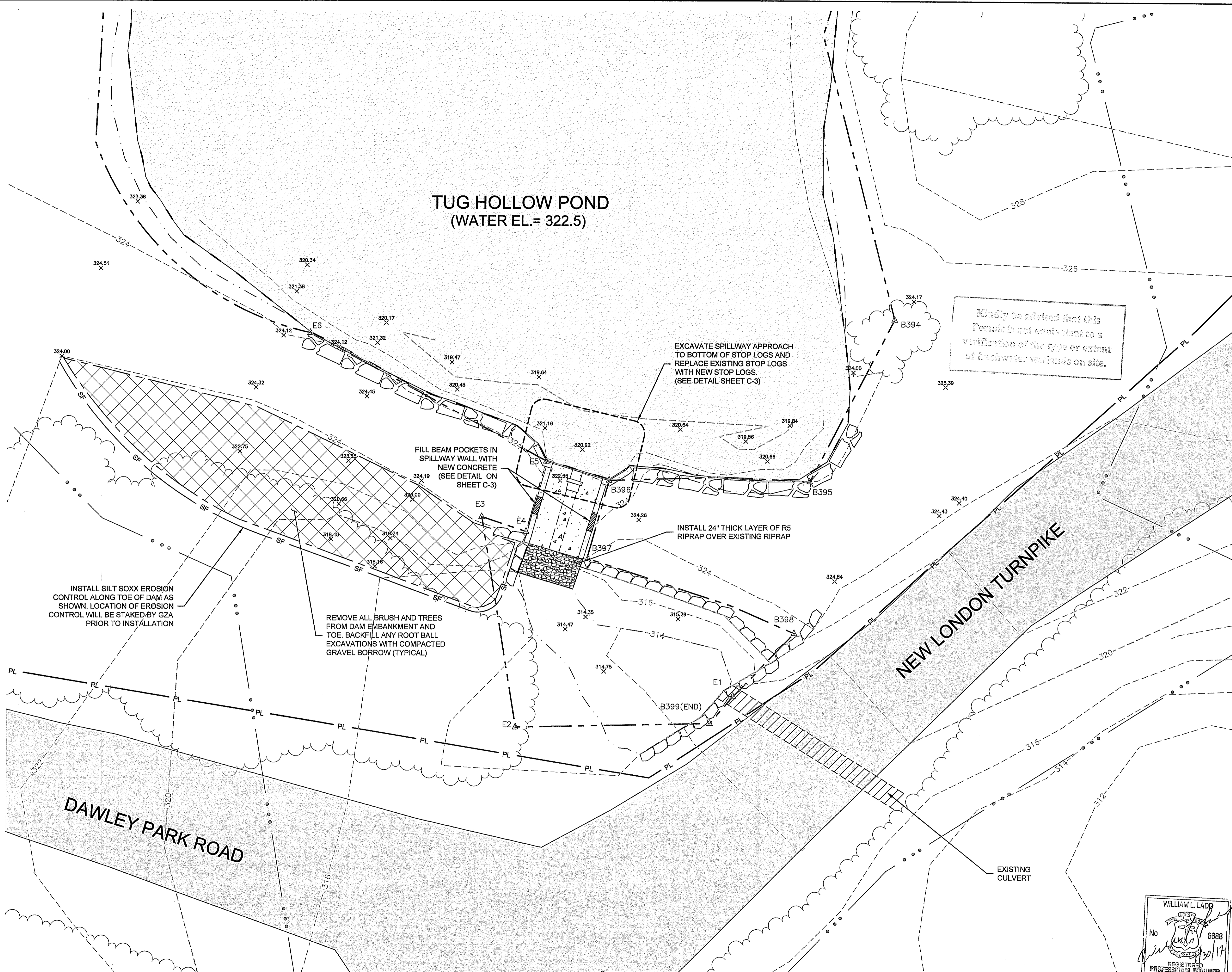
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<p>TUG HOLLOW POND DAM REPAIRS TUG HOLLOW ROAD EXETER, RHODE ISLAND</p>	
<p>EXISTING CONDITIONS</p>	
<p>PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com</p>	<p>PREPARED FOR: JAMES POND REALTY COMPANY, LLC 90 ELM STREET PROVIDENCE, RHODE ISLAND</p>
<p>PROJ MGR: WLL DESIGNED BY: WLL DATE: JANUARY, 2017</p>	<p>REVIEWED BY: ES DRAWN BY: CRD PROJECT NO: 34113.03</p>
<p>CHECKED BY: MEA SCALE: AS NOTED REVISION NO: 0</p>	<p>SHEET C1 SHEET NO. C1 OF 4</p>



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CONTROL OF WATER :

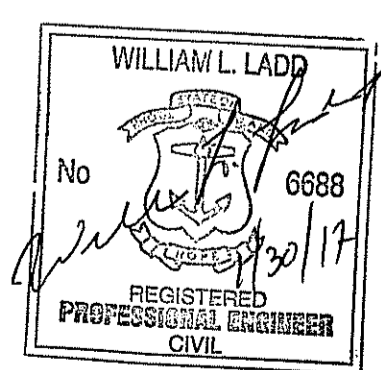
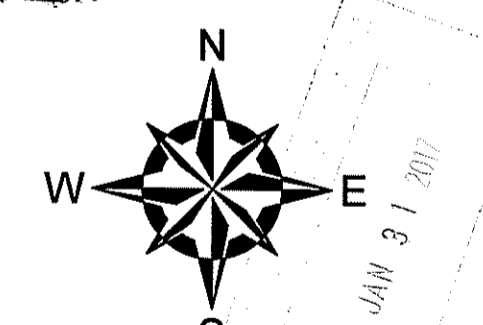
1. ALL WORK SHALL BE PERFORMED DURING THE LOW FLOW PERIOD FROM JULY 15 TO OCTOBER 31 OR AS OTHERWISE REQUIRED BY THE PERMITTING AGENCIES.
2. THE IMPOUNDMENT SHALL BE DRAWN DOWN A MAXIMUM OF 2 FEET BELOW THE SPILLWAY CREST TO ELEVATION 320.5 FEET PRIOR TO PERFORMING THE WORK.
3. INSTALL A SAND BAG COFFERDAM AROUND THE UPSTREAM SIDE OF THE SPILLWAY. IT IS ANTICIPATED THAT INFLOW WILL BE LOW ENOUGH THAT THE EXCAVATION OF THE APPROACH AND REPLACEMENT OF THE STOP LOGS CAN BE COMPLETED PRIOR TO OVERTOPPING OF THE COFFERDAM, AND THAT BYPASS FLOW MEASURES WILL NOT BE REQUIRED.
4. ANY DEWATERING, IF REQUIRED, SHALL BE ROUTED THROUGH A SILT SACK GEOTEXTILE BAG TO REMOVE SEDIMENTS. THE SILT SACK SHALL BE LOCATED IN AN UPLAND AREA, WITH THE DISCHARGE ROUTED TO THE OUTLET STREAM OR POND IN A NON-EROSIVE MANNER.
5. REMOVE THE SAND BAG COFFERDAM UPON COMPLETION OF THE SPILLWAY WORK

GENERAL NOTES

1. REPAIRS TO TUG HOLLOW DAM WILL CONSIST OF THE FOLLOWING:
 - CLEAR VEGETATION FROM DOWNSTREAM SLOPE AND TOE OF DAM ON WEST SIDE OF SPILLWAY
 - EXCAVATE ACCUMULATED SEDIMENTS FROM THE SPILLWAY APPROACH TO THE BOTTOM OF THE STOP LOGS AT ELEVATION 318 FEET.
 - FILL THE BEAM POCKETS IN EACH SPILLWAY WALL WITH NEW CONCRETE.
 - PLACE 24 INCHES OF R5 RIPRAP AT THE SPILLWAY DISCHARGE TO SUPPLEMENT EXISTING RIPRAP.
2. INSTALL EROSION CONTROL ALONG DOWNSTREAM TOE OF WEST SIDE OF DAM PRIOR TO ANY VEGETATION CLEARING.
3. CLEAR ALL BRUSH AND TREES FROM THE DOWNSTREAM SIDE OF THE WEST EMBANKMENT AND TO TEN FEET BEYOND THE TOE OF THE EMBANKMENT. EXCAVATE ROOT BALLS OF TREES LARGER THAN 6 INCHES IN DIAMETER AND BACKFILL WITH COMPACTED GRAVEL BORROW. ALL EXCAVATION AND BACKFILL OF ROOT BALLS SHALL BE PERFORMED UNDER THE OBSERVATION OF GZA.
4. ALL DISTURBED AREAS SHALL BE GRADED LEVEL AND LOAMED AND SEEDED.
5. EXCAVATE ACCUMULATED SEDIMENTS FROM SPILLWAY APPROACH AREA TO ELEVATION 318 FEET AND DISPOSE AT AN UPLAND AREAS SUITABLE TO THE OWNER.
6. REPLACE EXISTING STOPLOGS WITH NEW 4X6 PT SYP (PRESSURE TREATED SOUTHERN YELLOW PINE) STOP LOGS. PROVIDE PT SYP CHOCKS TO MAINTAIN TIGHT FIT IN THE CONCRETE SLOTS.
7. FILL THE BEAM POCKETS IN EACH SPILLWAY WALL WITH NEW CONCRETE WITH A 28-DAY COMPRESSIVE STRENGTH OF 4,000 PSI WITH A MAXIMUM AGGREGATE SIZE OF 3/4-INCH. CONCRETE SHALL HAVE 4 TO 6 PERCENT AIR ENTRAINMENT, AND A SLUMP OF 4 INCHES (PLUS OR MINUS ONE INCH). PRIOR TO PLACING THE CONCRETE, DRILL AND GROUT 12-INCH LONG #4 DOWELS INTO THE EXISTING CONCRETE.
8. PLACE 24 INCHES OF NEW R5 RIPRAP OVER THE EXISTING RIPRAP BELOW THE DOWNSTREAM END OF THE SPILLWAY. THE R5 RIPRAP SHALL MEET THE REQUIREMENTS OF RIDOT STANDARD SPECIFICATIONS SECTION M.10.03.2 R5 RIPRAP, WITH 100 PERCENT PASSING 20 INCHES, 0-50 PERCENT PASSING 10 INCHES, AND 0-15 PERCENT PASSING 6 INCHES.

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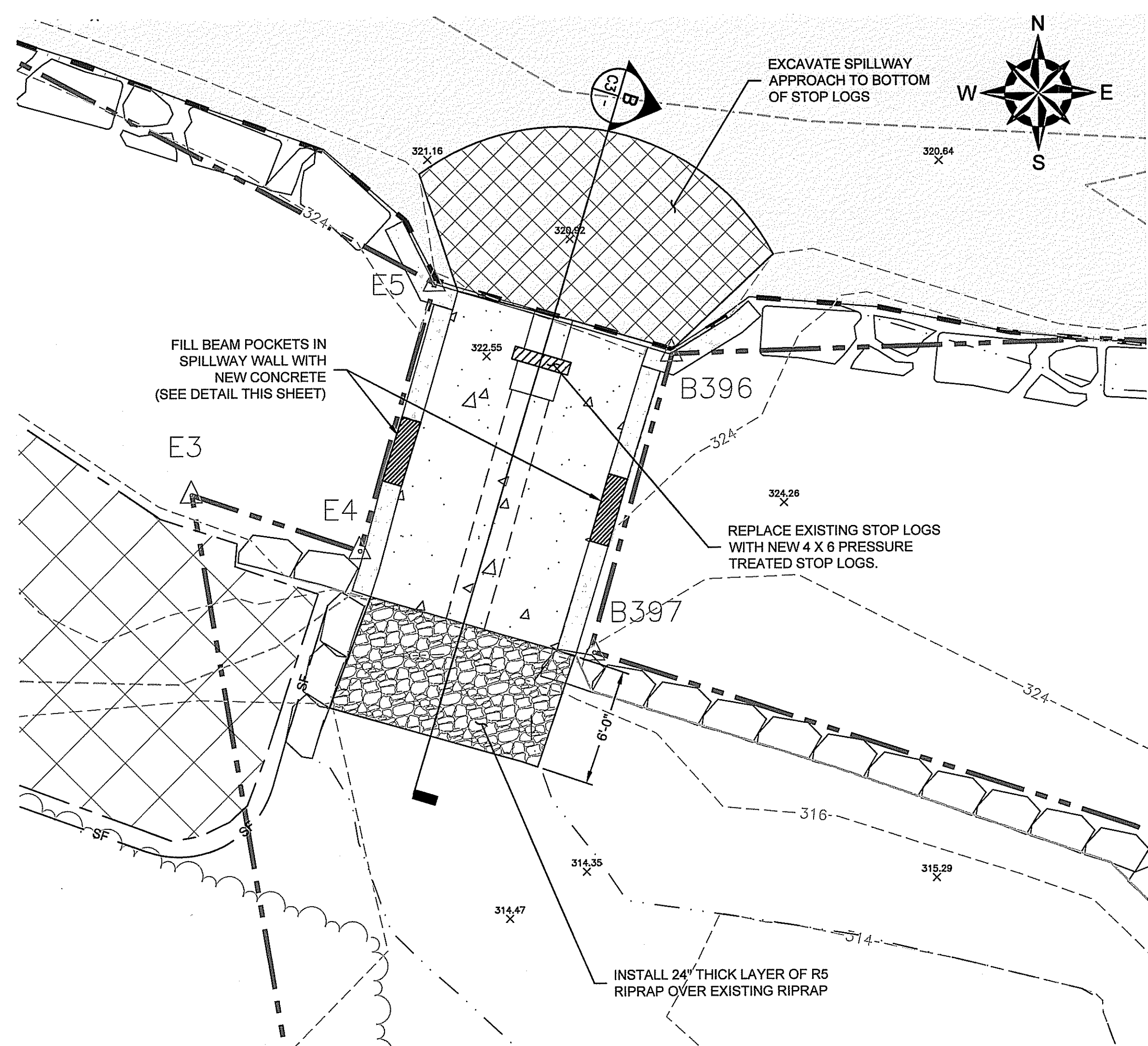
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TUG HOLLOW POND DAM REPAIRS
TUG HOLLOW ROAD
EXETER, RHODE ISLAND

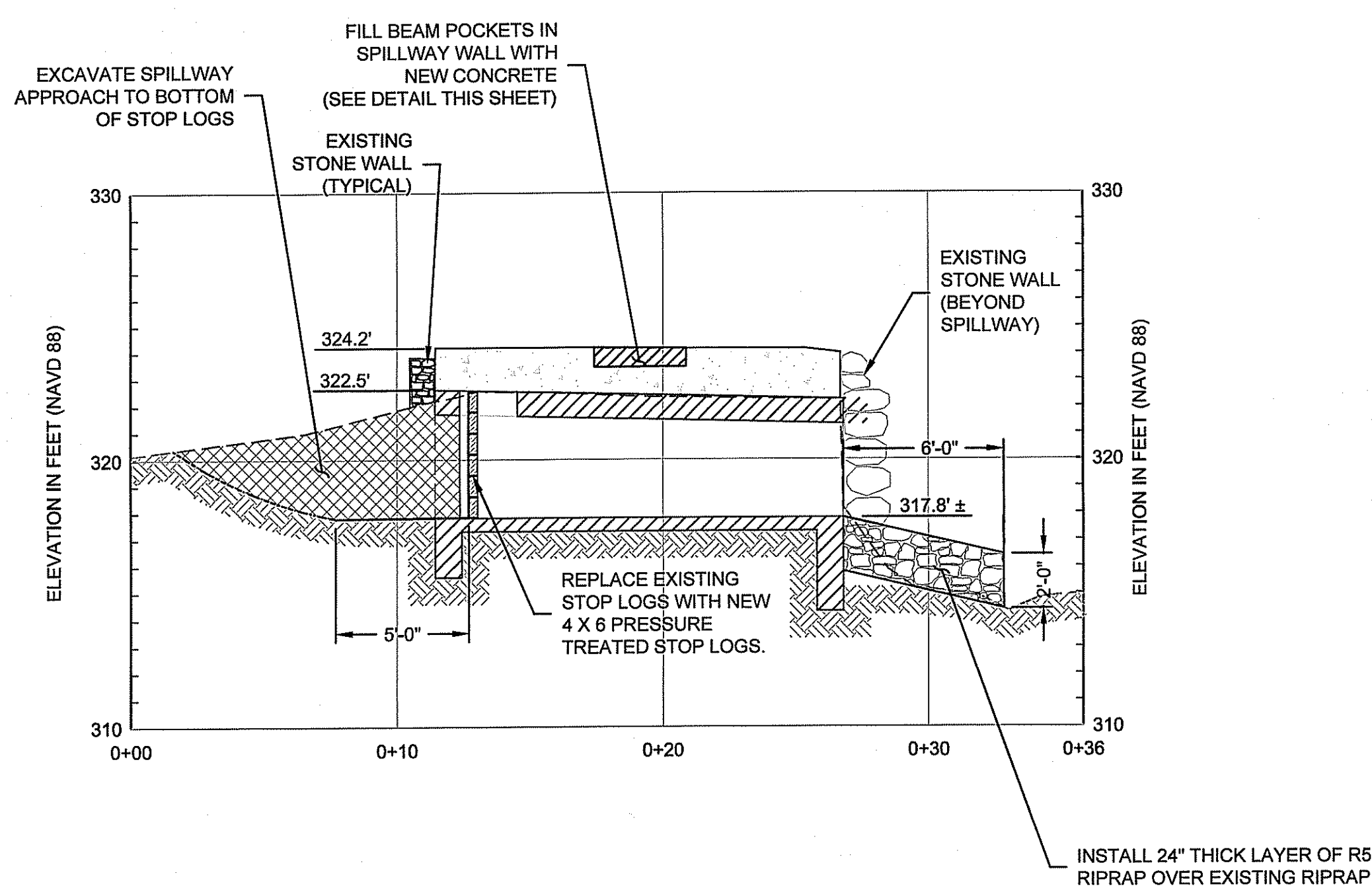
PROPOSED REPAIRS AND SEDIMENTATION AND EROSION CONTROL PLAN

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com	PREPARED FOR: JAMES POND REALTY COMPANY, LLC 90 ELM STREET PROVIDENCE, RHODE ISLAND
PROJ MGR: WLL DESIGNED BY: WLL DATE: JANUARY, 2017	REVIEWED BY: ES DRAWN BY: CRD PROJECT NO: 34113.03
CHECKED BY: MEA SCALE: AS NOTED REVISION NO: 0	SHEET C2 SHEET NO. C2 OF 4

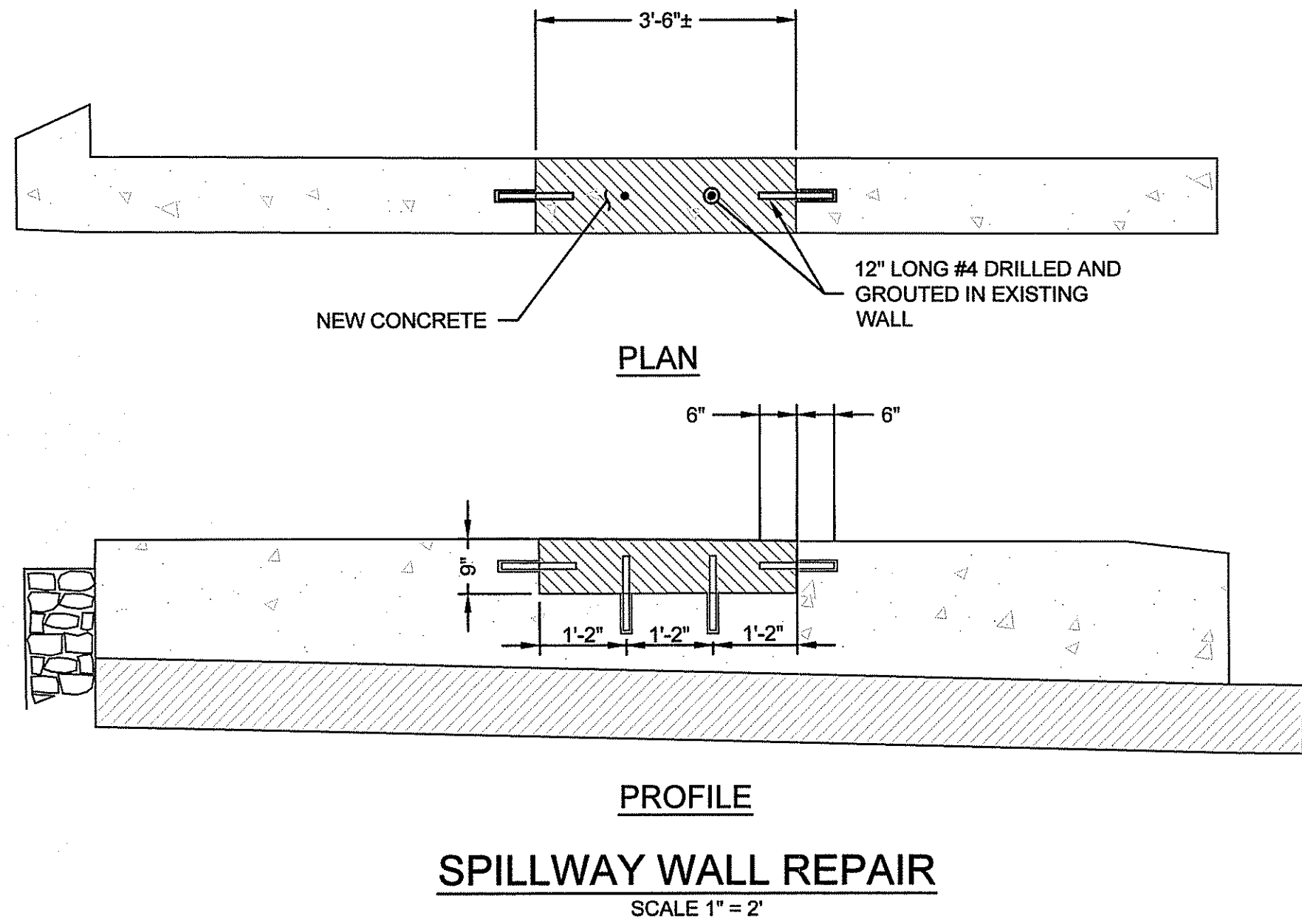
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SPILLWAY REPAIR PLAN
SCALE IN FEET 1" = 5'

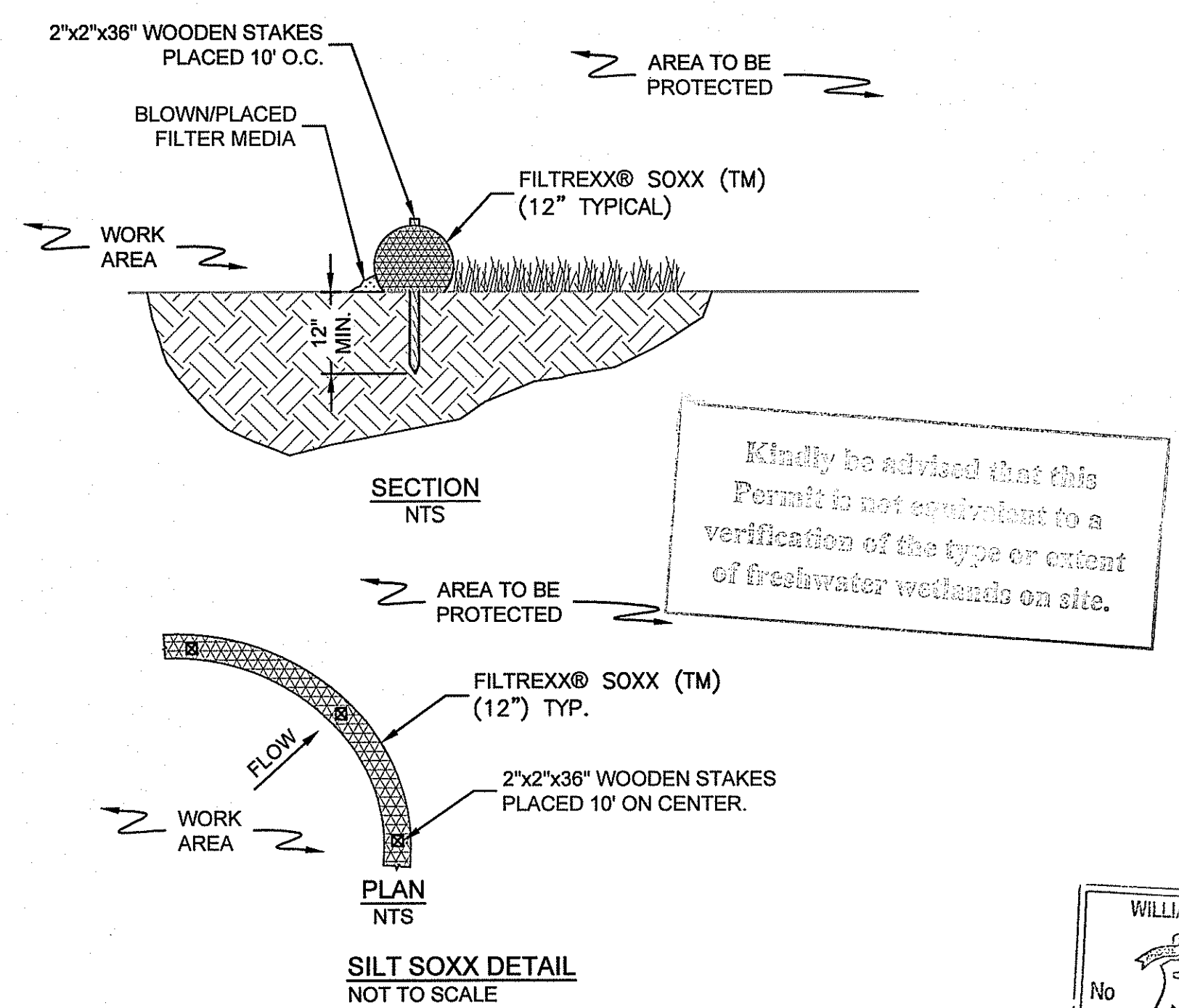


SPILLWAY SECTION
VERTICAL SCALE IN FEET
HORIZONTAL SCALE IN FEET



SPILLWAY WALL REPAIR
SCALE 1" = 2'

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OFFICE OF WATER RESOURCES
PROTECTION AND RESTORATION PROGRAM
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DATED MAR 06 2017 FILE # 17-0022
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Michael D. ...



- NOTES:**
1. PRODUCT TO BE FILTREXX SILT SOXX OR APPROVED EQUAL
 2. ALL MATERIAL TO MEET FILTREXX SPECIFICATIONS.
 3. FILTER MEDIA FILL TO MEET APPLICATION REQUIREMENTS.
 4. COMPOST MATERIAL TO BE DISPERSED ON SITE AS DETERMINED.
 5. SILT SOXX TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION GUIDELINES.

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WILLIAM L. LADD
No. 6688
REGISTERED PROFESSIONAL ENGINEER
CIVIL

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GENERAL NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING ALL TEMPORARY SEDIMENTATION AND EROSION CONTROL SYSTEMS.
2. PRIOR TO ROUGH GRADING, TEMPORARY SILT SOXX SHALL BE PLACED AT THE LIMITS OF CONSTRUCTION.
3. ALL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE PERIODICALLY MAINTAINED ON A REGULAR BASIS DURING CONSTRUCTION, AND PROMPTLY FOLLOWING STORM EVENTS OR PERIODS OF RAINFALL.
4. EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSTALLED IN ACCORDANCE TO MANUFACTURER'S INSTALLATION GUIDELINES.
5. EROSION AND SEDIMENT CONTROLS SHALL BE IMPLEMENTED AND MAINTAINED IN ACCORDANCE WITH THE RIDEM'S RHODE ISLAND EROSION AND SEDIMENT CONTROL HANDBOOK (REVISED AUGUST 2014)

EROSION AND SOIL STABILIZATION PROGRAM:

1. TEMPORARY TREATMENTS FOR GRASS OR LANDSCAPING AREAS SHALL CONSIST OF A HAY, STRAW, FIBER MULCH OR PROTECTIVE COVERS SUCH AS FABRIC MATS.
2. ALL TEMPORARY EROSION CONTROLS SHALL REMAIN IN PLACE UNTIL AN ACCEPTABLE STAND OF GRASS OR APPROVED GROUND COVER IS ESTABLISHED.
3. NORMAL ACCEPTABLE SEASONAL SEEDING DATES ARE APRIL 1ST THROUGH JUNE 1ST AND SEPTEMBER 1ST THROUGH OCTOBER 15TH.
4. TOPSOIL SHALL HAVE A SANDY LOAM TEXTURE RELATIVELY FREE OF SUBSOIL MATERIAL, STONES, ROOTS, LUMPS, TREE LIMBS, TRASH OR DEBRIS AND SHALL CONFORM WITH RIDOT STANDARD SPECIFICATIONS.
5. THE SEED MIX SHALL BE INOCULATED WITHIN 24 HOURS OF APPLICATION WITH APPROPRIATE INOCULUM FOR EACH VARIETY. LIME AND FERTILIZER SHALL BE APPLIED TO UPGRADE EXISTING CONDITIONS AS NECESSARY. THE SEED MIX FOR OPEN NATURAL AREAS SHALL CONSIST OF 70% CREEPING RED FESCUE, 5% ASTORIA BENTGRASS, 15% BIRDSFOOT TREFFOIL, 10% PERENNIAL RYEGRASS AND SHALL BE APPLIED AT A RATE OF 100 POUNDS PER ACRE. LAWN AREAS SHALL BE SEEDED IN ACCORDANCE WITH SPECIFICATIONS.
6. THE CONTRACTOR MUST REPAIR AND/OR RESEED ANY AREAS THAT DO NOT DEVELOP WITHIN ONE YEAR OF PLANTING.
7. ALL FILL SHALL BE CLEAN AND THOROUGHLY COMPACTED UPON PLACEMENT IN CONFORMANCE WITH RIDOT STANDARD SPECIFICATIONS.
8. DENUEDED SLOPES SHALL NOT REMAIN EXPOSED FOR MORE THAN 15 DAYS. SLOPES NOT PROTECTED BY SEEDING PRIOR TO OCTOBER 15TH SHALL BE PROTECTED USING OTHER TEMPORARY MEANS SUCH AS HAY, STRAW, FIBER MULCH, OR PROTECTIVE MATS OR BURLAP OR FIBERGLASS NETTING AS DIRECTED BY THE ENGINEER. THESE TEMPORARILY STABILIZED SLOPES SHALL BE SEEDED UPON COMMENCEMENT OF THE NEXT FOLLOWING PLANTING SEASON.
9. HAY AND STRAW APPLICATIONS SHALL BE IN THE AMOUNT OF 2000 POUNDS PER ACRE.

SEDIMENTATION CONTROL PROGRAM:

1. SILT SOXX ARE TO BE INSTALLED PRIOR TO CONSTRUCTION AND SHALL BE MAINTAINED ON A REGULAR BASIS. IN ADDITION TO THE LINE OF SOXX AT THE LIMIT OF CONSTRUCTION, TEMPORARY BARRIERS SHALL BE CONSTRUCTED AT THE TOE OF ALL DISTURBED (CUT OR FILL) SLOPES UNTIL VEGETATIVE COVER HAS BEEN ESTABLISHED.
2. CARE SHALL BE TAKEN NOT TO PLACE REMOVED SEDIMENTS WITHIN THE PATH OF THE EXISTING, NEWLY CREATED OR PROPOSED AREAS THAT ARE OR MAY BE SUBJECTED TO STORM WATER FLOW.
3. ALL DISTURBED AREAS THAT ARE SUBJECT TO EROSION, EITHER NEWLY FILLED OR EXCAVATED, OR TEMPORARY STOCKPILE AREAS ARE TO BE PROTECTED. ACCEPTABLE METHODS OF PROTECTION ARE SEEDING WITH FIBER MULCH PROTECTION.
4. DURING CONSTRUCTION THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ADEQUATE DRAINAGE FLOW DURING STORMS AND PERIODS OF RAINFALL.
5. SEDIMENTATION CONTROL DEVICES SHALL BE INSPECTED AND MAINTAINED PROMPTLY AFTER EACH RAINFALL.
6. ADDITIONAL SEDIMENT CONTROL MEASURES SHALL BE PLACED AS CONDITIONS WARRANT OR AS DIRECTED BY THE ENGINEER, SITE INSPECTOR, LOCAL OR STATE ENVIRONMENTAL OFFICIAL.
7. IF TRACKING OF SOIL IS OBSERVED ON PAVEMENT, THE CONTRACTOR SHALL DEPLOY A MECHANICAL SWEEPER WITH A VACUUM COLLECTION TO REMOVE THE SOILS FROM ALL PAVED SURFACES.
8. SOILS SHALL BE MANUALLY REMOVED FROM CONSTRUCTION VEHICLE TIRES PRIOR TO LEAVING THE SITE.
9. ACCUMULATED SEDIMENTS SHALL BE SPREAD ONSITE IF A LOCATION APPROVED BY THE OWNER OR DISPOSED OFF SITE IN ACCORDANCE WITH STATE, FEDERAL, AND LOCAL GUIDELINES.
10. ACCUMULATED SEDIMENT SHALL BE REMOVED FROM THE UP GRADIENT SIDE OF ALL SILT SOXXES WHEN THE SEDIMENT HEIGHT HAS REACHED 2/3 OF OVERALL HEIGHT OF THE SILT SOXX. ALTERNATIVELY, ADDITIONAL SILT SOXXS CAN BE INSTALLED/STACKED ON TOP OF EACH SECTION TO EXTEND THE SILT SOXX HEIGHT. REGARDLESS, SILT SOXXS SHALL BE MAINTAINED BY THE CONTRACTOR IN ACCORDANCE WITH THE MATERIAL MANUFACTURER'S GUIDELINES.

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TUG HOLLOW POND DAM REPAIRS
TUG HOLLOW ROAD
EXETER, RHODE ISLAND

SPILLWAY REPAIRS AND NOTES

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REVIEWED BY: ES	DRAWN BY: CRD	PROJECT NO. 34113.03
CHECKED BY: MEA	SCALE: AS NOTED	REVISION NO. 0
SHEET	C3	SHEET NO. C3 OF 4