

LAUREL HILLS DAM SPILLWAY UPGRADE PROJECT

CITY OF RALEIGH PROJECT NUMBER SM2012-0004

prepared for:



DRAFT

CITY OF RALEIGH
 PUBLIC WORKS DEPARTMENT
 STORMWATER UTILITY DIVISION
 RALEIGH, NORTH CAROLINA

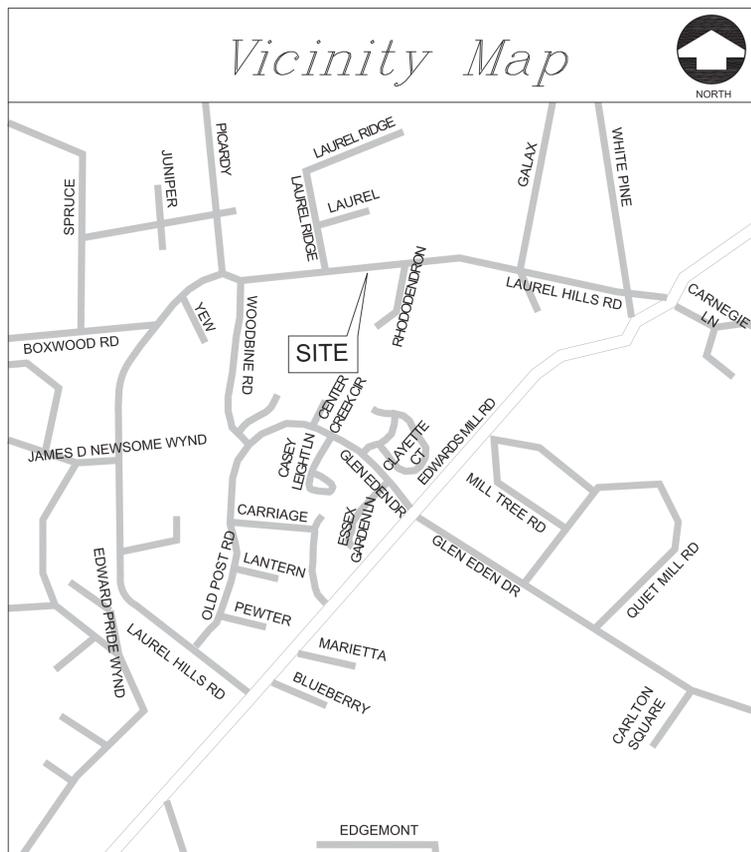
AMEC JOB # 6472-12-1221
 VERONICA HIGH, CITY OF RALEIGH PROJECT ENGINEER
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 RALEIGH, NORTH CAROLINA 27602
 (919) 996-3940

prepared by:
 AMEC Environment & Infrastructure, Inc.
 Durham, North Carolina

These Plans are supplemented by separate Construction Specifications

<p>Public Sewer Collection / Extension System</p> <p>The City of Raleigh consents to the connection and extension of the City's public sewer system as shown on this plan. The material and construction methods used for this project shall conform to the standard and specification of the City's Public Utilities Handbook.</p> <p>City of Raleigh Public Utilities Department Permit # _____ Authorization to Construct _____ Date _____</p>	<p>Public Water Distribution / Extension System</p> <p>The City of Raleigh consents to the connection and extension of the City's public water system as shown on this plan. The material and construction methods used for this project shall conform to the standard and specification of the City's Public Utilities Handbook.</p> <p>City of Raleigh Public Utilities Department Permit # _____ Authorization to Construct _____ Date _____</p>
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NC DAM ID NO: WAKE-318



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PUBLIC IMPROVEMENT QUANTITIES:

PUBLIC WATER	207	(LF)
PUBLIC SEWER	539	(LF)
PUBLIC STREET	427	(LF)
PUBLIC SIDEWALK	854	(LF)

NOTES:

1. WATER SHALL NOT BE IMPOUNDED PRIOR TO ISSUANCE OF APPROVAL FROM THE DIVISION OF LAND RESOURCES.
2. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL CITY OF RALEIGH STANDARD AND SPECIFICATIONS AND NCDOT IF APPLICABLE.

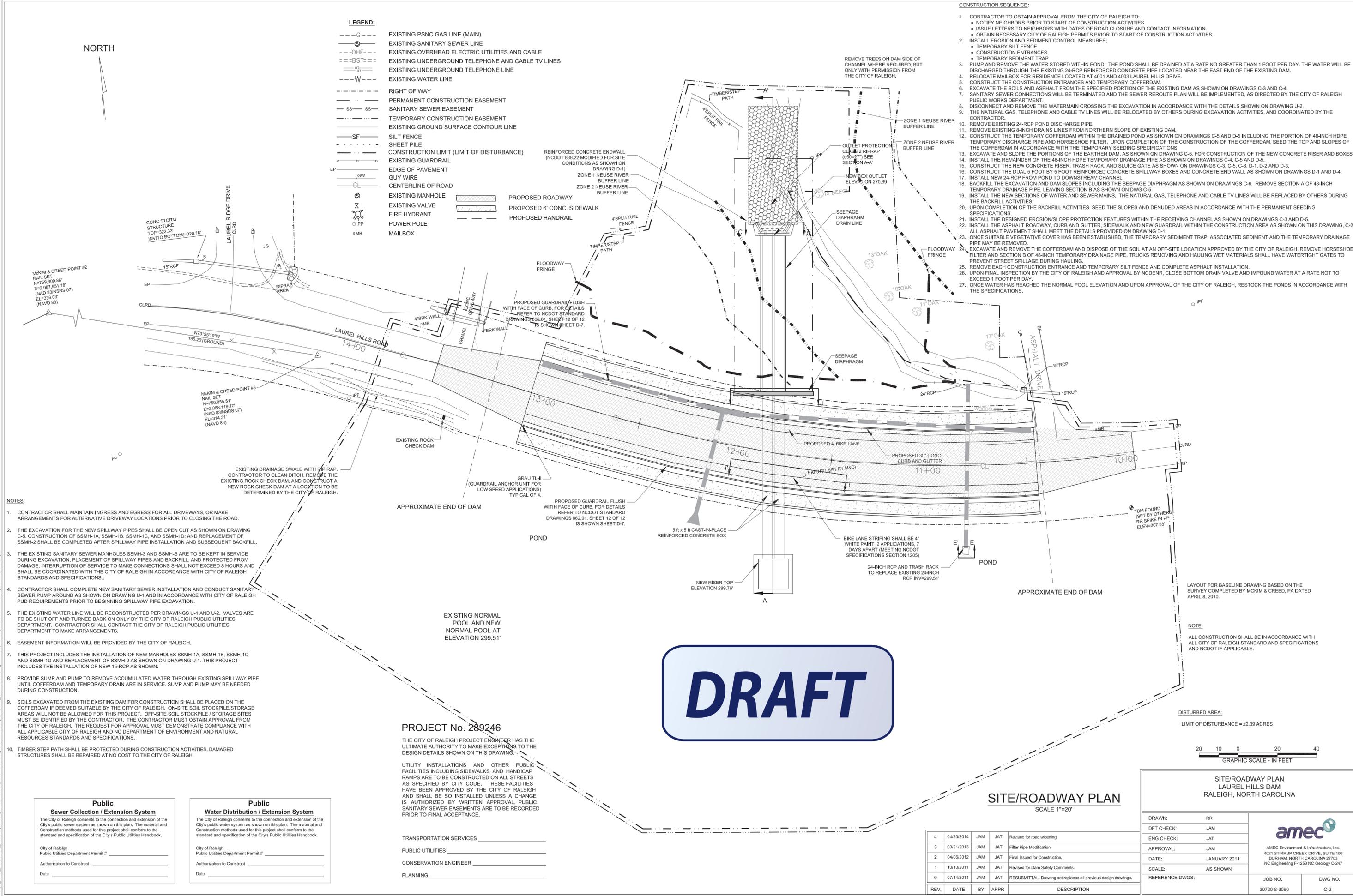
J. RUSSELL ALLEN
 City Manager

NANCY MCFARLANE
 Mayor

NORTH

- LEGEND:**
- G --- EXISTING PSNC GAS LINE (MAIN)
 - S --- EXISTING SANITARY SEWER LINE
 - OHE --- EXISTING OVERHEAD ELECTRIC UTILITIES AND CABLE
 - BST --- EXISTING UNDERGROUND TELEPHONE AND CABLE TV LINES
 - UT --- EXISTING UNDERGROUND TELEPHONE LINE
 - W --- EXISTING WATER LINE
 - --- RIGHT OF WAY
 - SS --- PERMANENT CONSTRUCTION EASEMENT
 - SS --- SANITARY SEWER EASEMENT
 - --- TEMPORARY CONSTRUCTION EASEMENT
 - --- EXISTING GROUND SURFACE CONTOUR LINE
 - SF --- SILT FENCE
 - --- SHEET PILE
 - --- CONSTRUCTION LIMIT (LIMIT OF DISTURBANCE)
 - --- EXISTING GUARDRAIL
 - EP --- EDGE OF PAVEMENT
 - GW --- GUY WIRE
 - CL --- CENTERLINE OF ROAD
 - --- EXISTING VALVE
 - --- FIRE HYDRANT
 - --- POWER POLE
 - MB --- MAILBOX
 - --- PROPOSED ROADWAY
 - --- PROPOSED 6' CONC. SIDEWALK
 - --- PROPOSED HANDRAIL

- CONSTRUCTION SEQUENCE:**
- CONTRACTOR TO OBTAIN APPROVAL FROM THE CITY OF RALEIGH TO:
 - NOTIFY NEIGHBORS PRIOR TO START OF CONSTRUCTION ACTIVITIES.
 - ISSUE LETTERS TO NEIGHBORS WITH DATES OF ROAD CLOSURE AND CONTACT INFORMATION.
 - OBTAIN NECESSARY CITY OF RALEIGH PERMITS PRIOR TO START OF CONSTRUCTION ACTIVITIES.
 - INSTALL EROSION AND SEDIMENT CONTROL MEASURES:
 - TEMPORARY SILT FENCE
 - CONSTRUCTION ENTRANCES
 - TEMPORARY SEDIMENT TRAP
 - PUMP AND REMOVE THE WATER STORED WITHIN POND. THE POND SHALL BE DRAINED AT A RATE NO GREATER THAN 1 FOOT PER DAY. THE WATER WILL BE DISCHARGED THROUGH THE EXISTING 24-RCP REINFORCED CONCRETE PIPE LOCATED NEAR THE EAST END OF THE EXISTING DAM.
 - RELOCATE MAILBOX FOR RESIDENCE LOCATED AT 4001 AND 4003 LAUREL HILLS DRIVE.
 - CONSTRUCT THE CONSTRUCTION ENTRANCES AND TEMPORARY COFFERDAM.
 - EXCAVATE THE SOILS AND ASPHALT FROM THE SPECIFIED PORTION OF THE EXISTING DAM AS SHOWN ON DRAWINGS C-3 AND C-4.
 - SANITARY SEWER CONNECTIONS WILL BE TERMINATED AND THE SEWER REROUTE PLAN WILL BE IMPLEMENTED, AS DIRECTED BY THE CITY OF RALEIGH PUBLIC WORKS DEPARTMENT.
 - DISCONNECT AND REMOVE THE WATERMAIN CROSSING THE EXCAVATION IN ACCORDANCE WITH THE DETAILS SHOWN ON DRAWING U-2.
 - THE NATURAL GAS, TELEPHONE AND CABLE TV LINES WILL BE RELOCATED BY OTHERS DURING EXCAVATION ACTIVITIES, AND COORDINATED BY THE CONTRACTOR.
 - REMOVE EXISTING 24-RCP POND DISCHARGE PIPE.
 - REMOVE EXISTING 8-INCH DRAIN LINES FROM NORTHERN SLOPE OF EXISTING DAM.
 - CONSTRUCT THE TEMPORARY COFFERDAM WITHIN THE DRAINED POND AS SHOWN ON DRAWINGS C-5 AND D-5 INCLUDING THE PORTION OF 48-INCH HDPE TEMPORARY DISCHARGE PIPE AND HORSESHOE FILTER. UPON COMPLETION OF THE CONSTRUCTION OF THE COFFERDAM, SEED THE TOP AND SLOPES OF THE COFFERDAM IN ACCORDANCE WITH THE TEMPORARY SEEDING SPECIFICATIONS.
 - EXCAVATE AND SLOPE THE PORTIONS OF THE EARTHEN DAM, AS SHOWN ON DRAWINGS C-5, FOR CONSTRUCTION OF THE NEW CONCRETE RISER AND BOXES.
 - INSTALL THE REMAINDER OF THE 48-INCH HDPE TEMPORARY DRAINAGE PIPE AS SHOWN ON DRAWINGS C-4, C-5 AND D-5.
 - CONSTRUCT THE NEW CONCRETE RISER, TRASH RACK, AND SLUICE GATE AS SHOWN ON DRAWINGS C-3, C-5, C-6, D-1, D-2 AND D-3.
 - CONSTRUCT THE DUAL 5 FOOT BY 5 FOOT REINFORCED CONCRETE SPILLWAY BOXES AND CONCRETE END WALL AS SHOWN ON DRAWINGS D-1 AND D-4.
 - INSTALL NEW 24-RCP FROM POND TO DOWNSTREAM CHANNEL.
 - BACKFILL THE EXCAVATION AND DAM SLOPES INCLUDING THE SEEPAGE DIAPHRAGM AS SHOWN ON DRAWINGS C-6. REMOVE SECTION A OF 48-INCH TEMPORARY DRAINAGE PIPE, LEAVING SECTION B AS SHOWN ON DWG C-5.
 - INSTALL THE NEW SECTIONS OF WATER AND SEWER MAINS. THE NATURAL GAS, TELEPHONE AND CABLE TV LINES WILL BE REPLACED BY OTHERS DURING THE BACKFILL ACTIVITIES.
 - UPON COMPLETION OF THE BACKFILL ACTIVITIES, SEED THE SLOPES AND DENUDED AREAS IN ACCORDANCE WITH THE PERMANENT SEEDING SPECIFICATIONS.
 - INSTALL THE DESIGNED EROSION/SLOPE PROTECTION FEATURES WITHIN THE RECEIVING CHANNEL AS SHOWN ON DRAWINGS C-3 AND D-5.
 - INSTALL THE ASPHALT ROADWAY, CURB AND GUTTER, SIDEWALK AND NEW GUARDRAIL WITHIN THE CONSTRUCTION AREA AS SHOWN ON THIS DRAWING, C-2. ALL ASPHALT PAVEMENT SHALL MEET THE DETAILS PROVIDED ON DRAWING D-1.
 - ONCE SUITABLE VEGETATIVE COVER HAS BEEN ESTABLISHED, THE TEMPORARY SEDIMENT TRAP, ASSOCIATED SEDIMENT AND THE TEMPORARY DRAINAGE PIPE MAY BE REMOVED.
 - EXCAVATE AND REMOVE THE COFFERDAM AND DISPOSE OF THE SOIL AT AN OFF-SITE LOCATION APPROVED BY THE CITY OF RALEIGH. REMOVE HORSESHOE FILTER AND SECTION B OF 48-INCH TEMPORARY DRAINAGE PIPE. TRUCKS REMOVING AND HAULING WET MATERIALS SHALL HAVE WATERTIGHT GATES TO PREVENT STREET SPILLAGE DURING HAULING.
 - REMOVE EACH CONSTRUCTION ENTRANCE AND TEMPORARY SILT FENCE AND COMPLETE ASPHALT INSTALLATION.
 - UPON FINAL INSPECTION BY THE CITY OF RALEIGH AND APPROVAL BY NCDENR, CLOSE BOTTOM DRAIN VALVE AND IMPOUND WATER AT A RATE NOT TO EXCEED 1 FOOT PER DAY.
 - ONCE WATER HAS REACHED THE NORMAL POOL ELEVATION AND UPON APPROVAL OF THE CITY OF RALEIGH, RESTOCK THE PONDS IN ACCORDANCE WITH THE SPECIFICATIONS.



- NOTES:**
- CONTRACTOR SHALL MAINTAIN INGRESS AND EGRESS FOR ALL DRIVEWAYS, OR MAKE ARRANGEMENTS FOR ALTERNATIVE DRIVEWAY LOCATIONS PRIOR TO CLOSING THE ROAD.
 - THE EXCAVATION FOR THE NEW SPILLWAY PIPES SHALL BE OPEN CUT AS SHOWN ON DRAWING C-5. CONSTRUCTION OF SSMH-1A, SSMH-1B, SSMH-1C, AND SSMH-1D; AND REPLACEMENT OF SSMH-2 SHALL BE COMPLETED AFTER SPILLWAY PIPE INSTALLATION AND SUBSEQUENT BACKFILL.
 - THE EXISTING SANITARY SEWER MANHOLES SSMH-3 AND SSMH-B ARE TO BE KEPT IN SERVICE DURING EXCAVATION. PLACEMENT OF SPILLWAY PIPES AND BACKFILL, AND PROTECTED FROM DAMAGE. INTERRUPTION OF SERVICE TO MAKE CONNECTIONS SHALL NOT EXCEED 8 HOURS AND SHALL BE COORDINATED WITH THE CITY OF RALEIGH IN ACCORDANCE WITH CITY OF RALEIGH STANDARDS AND SPECIFICATIONS.
 - CONTRACTOR SHALL COMPLETE NEW SANITARY SEWER INSTALLATION AND CONDUCT SANITARY SEWER PUMP AROUND AS SHOWN ON DRAWING U-1 AND IN ACCORDANCE WITH CITY OF RALEIGH PUD REQUIREMENTS PRIOR TO BEGINNING SPILLWAY PIPE EXCAVATION.
 - THE EXISTING WATER LINE WILL BE RECONSTRUCTED PER DRAWINGS U-1 AND U-2. VALVES ARE TO BE SHUT OFF AND TURNED BACK ON ONLY BY THE CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT. CONTRACTOR SHALL CONTACT THE CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT TO MAKE ARRANGEMENTS.
 - EASEMENT INFORMATION WILL BE PROVIDED BY THE CITY OF RALEIGH.
 - THIS PROJECT INCLUDES THE INSTALLATION OF NEW MANHOLES SSMH-1A, SSMH-1B, SSMH-1C AND SSMH-1D AND REPLACEMENT OF SSMH-2 AS SHOWN ON DRAWING U-1. THIS PROJECT INCLUDES THE INSTALLATION OF NEW 15-RCP AS SHOWN.
 - PROVIDE SUMP AND PUMP TO REMOVE ACCUMULATED WATER THROUGH EXISTING SPILLWAY PIPE UNTIL COFFERDAM AND TEMPORARY DRAIN ARE IN SERVICE. SUMP AND PUMP MAY BE NEEDED DURING CONSTRUCTION.
 - SOILS EXCAVATED FROM THE EXISTING DAM FOR CONSTRUCTION SHALL BE PLACED ON THE COFFERDAM IF DEEMED SUITABLE BY THE CITY OF RALEIGH. ON-SITE SOIL STOCKPILE/STORAGE AREAS WILL NOT BE ALLOWED FOR THIS PROJECT. OFF-SITE SOIL STOCKPILE/STORAGE SITES MUST BE IDENTIFIED BY THE CONTRACTOR. THE CONTRACTOR MUST OBTAIN APPROVAL FROM THE CITY OF RALEIGH. THE REQUEST FOR APPROVAL MUST DEMONSTRATE COMPLIANCE WITH ALL APPLICABLE CITY OF RALEIGH AND NC DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES STANDARDS AND SPECIFICATIONS.
 - TIMBER STEP PATH SHALL BE PROTECTED DURING CONSTRUCTION ACTIVITIES. DAMAGED STRUCTURES SHALL BE REPAIRED AT NO COST TO THE CITY OF RALEIGH.

LAYOUT FOR BASELINE DRAWING BASED ON THE SURVEY COMPLETED BY MCKIM & CREED, PA DATED APRIL 8, 2010.

NOTE:
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DISTURBED AREA:
LIMIT OF DISTURBANCE = ±2.39 ACRES

20 10 0 20 40
GRAPHIC SCALE - IN FEET

PROJECT No. 289246

THE CITY OF RALEIGH PROJECT ENGINEER HAS THE ULTIMATE AUTHORITY TO MAKE EXCEPTIONS TO THE DESIGN DETAILS SHOWN ON THIS DRAWING.

UTILITY INSTALLATIONS AND OTHER PUBLIC FACILITIES INCLUDING SIDEWALKS AND HANDICAP RAMPS ARE TO BE CONSTRUCTED ON ALL STREETS AS SPECIFIED BY CITY CODE. THESE FACILITIES HAVE BEEN APPROVED BY THE CITY OF RALEIGH AND SHALL BE SO INSTALLED UNLESS A CHANGE IS AUTHORIZED BY WRITTEN APPROVAL. PUBLIC SANITARY SEWER EASEMENTS ARE TO BE RECORDED PRIOR TO FINAL ACCEPTANCE.

TRANSPORTATION SERVICES _____
PUBLIC UTILITIES _____
CONSERVATION ENGINEER _____
PLANNING _____

DRAFT

SITE/ROADWAY PLAN
SCALE 1"=20'

SITE/ROADWAY PLAN
LAUREL HILLS DAM
RALEIGH, NORTH CAROLINA

DRAWN:	RR
DFT CHECK:	JAM
ENG CHECK:	JAT
APPROVAL:	JAM
DATE:	JANUARY 2011
SCALE:	AS SHOWN
REFERENCE DWGS:	

amec

AMEC Environment & Infrastructure, Inc.
4021 STRIPP CREEK DRIVE, SUITE 100
DURHAM, NORTH CAROLINA 27703
NC Engineering F-1253 NC Geology C-247

JOB NO.	30720-S-3090
DWG NO.	C-2

REV.	DATE	BY	APPR	DESCRIPTION
4	04/30/2014	JAM	JAT	Revised for road widening
3	03/21/2013	JAM	JAT	Filter Pipe Modification.
2	04/06/2012	JAM	JAT	Final Issued for Construction.
1	10/10/2011	JAM	JAT	Revised for Dam Safety Comments.
0	07/14/2011	JAM	JAT	RESUBMITTAL - Drawing set replaces all previous design drawings.

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City of Raleigh
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