

**Tennessee Valley Authority
Regulatory Submittal for Kingston Fossil Plant**

Documents submitted:
Intake Channel Causeway Removal Work Plan
RAWP - 094

Date Submitted:
05/24/2011

Submitted to whom
Leo Francendese, EPA

Concurrence

Received Not Applicable

TVA

Steve McCracken
Kathryn Nash
Ben Obrien *Bob*
Michelle Cagley *mc*

Received Not Applicable

Jacobs

Jack Howard
Darrell Guinn

Approvals

TVA *Kathryn Nash*

Date 5/24/11

EPA _____

Date _____

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- Barbara Scott, TDEC
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- John Dizer, TVA
- Craig Zeller, EPA
- Dennis Yankee, TVA
- Kathryn Nash, TVA
- Cynthia Anderson, TVA
- Steve McCracken, TVA
- EDM
- Jack Howard, Jacobs
- Michelle Cagley, TVA
- Greg Signer, TVA
- KIF Incident Document Control
- Katie Kline, TVA
- Robert Pullen, Jacobs



Document No. RAWP-094

**Kingston Ash Recovery Project
Time-Critical Removal Action**

Intake Channel Causeway Removal Work Plan

**Prepared by:
Jacobs**

for the Tennessee Valley Authority

Revision	Description	Date
00	Issued for TVA Review	May 9, 2011
01	Revised to include sediment sampling data	May 23, 2011

1 PURPOSE

As part of the overall Risk Mitigation Plan for Dike C at the Kingston Fossil Plant, the majority of the length of Dike C has received additional buttressing as described in the draft *Design Report for Dike C Buttress* dated September 3, 2010, by Stantec Consulting Services Inc. (Stantec).

Based on the challenges of constructing a conventional buttress at the location of the Stilling Basin Diffuser and Peninsula Bridge structures, TVA has opted to remove the bridge structure and widen the flow channel at the structure to maintain hydraulic capacity through this location and allow the construction of a conventional buttress of that section. This Work Plan addresses the methodology planned for the removal of the causeway.

2 DESIGN

Design drawings for work covered in this Work Plan are included in Stantec Removal Design Package, Dike C Buttress Stage 1 – Segment ‘B’, Work Plan 5 (KIF-110028-WP-5), drawing numbers 10W229-91 thru 10W229-106.

3 CONSTRUCTION/OPERATIONS

The existing bridge causeway shall be removed to the limits and grades as shown on the drawings. To minimize the water velocity through this section of the Intake Channel, the causeway removal shall be performed prior to placement of the filter materials or the rock fill buttress as described herein and as shown on the drawings. The causeway material shall be removed once the bridge removal has been completed, with all causeway material removal to occur from south of the causeway excavation. The materials that are likely to be encountered during the causeway removal include clay, silt, sand, gravel, rock fill, and concrete rubble.

Appropriate BMP's, including turbidity curtains, will be utilized and in place prior to beginning excavation. Turbidity curtains will be in place through the duration of the channel excavation and Segment B buttress operations. Turbidity will be visually monitored and in the event sustained color change is observed downstream of the turbidity curtains, work will be stopped and additional curtains will be installed and monitored for effectiveness. Sediment sampling was conducted upstream and downstream of the causeway, results indicate no Cs-137 was present above the interagency work group action level of 11 pCi/g. Some ash mixed with sediment is present both upstream and downstream of the causeway, but ash movement will be contained by the turbidity curtains.

All work will be performed from land using access to the causeway from the south. An estimated 6,000 cubic yards of material will be removed using an excavator to widen the channel. Material will be excavated and loaded into articulating haul trucks and transported to an area that was previously prepared as a temporary ash storage area on the peninsula (see attached aerial photo for location). The material will be spread out over the area in a manner to allow positive drainage to drain to the existing sediment trap before draining to an existing sediment pond. Existing rock check dam and silt fences are in place prior to runoff eventually discharging to the Emory River.

4 SCHEDULE

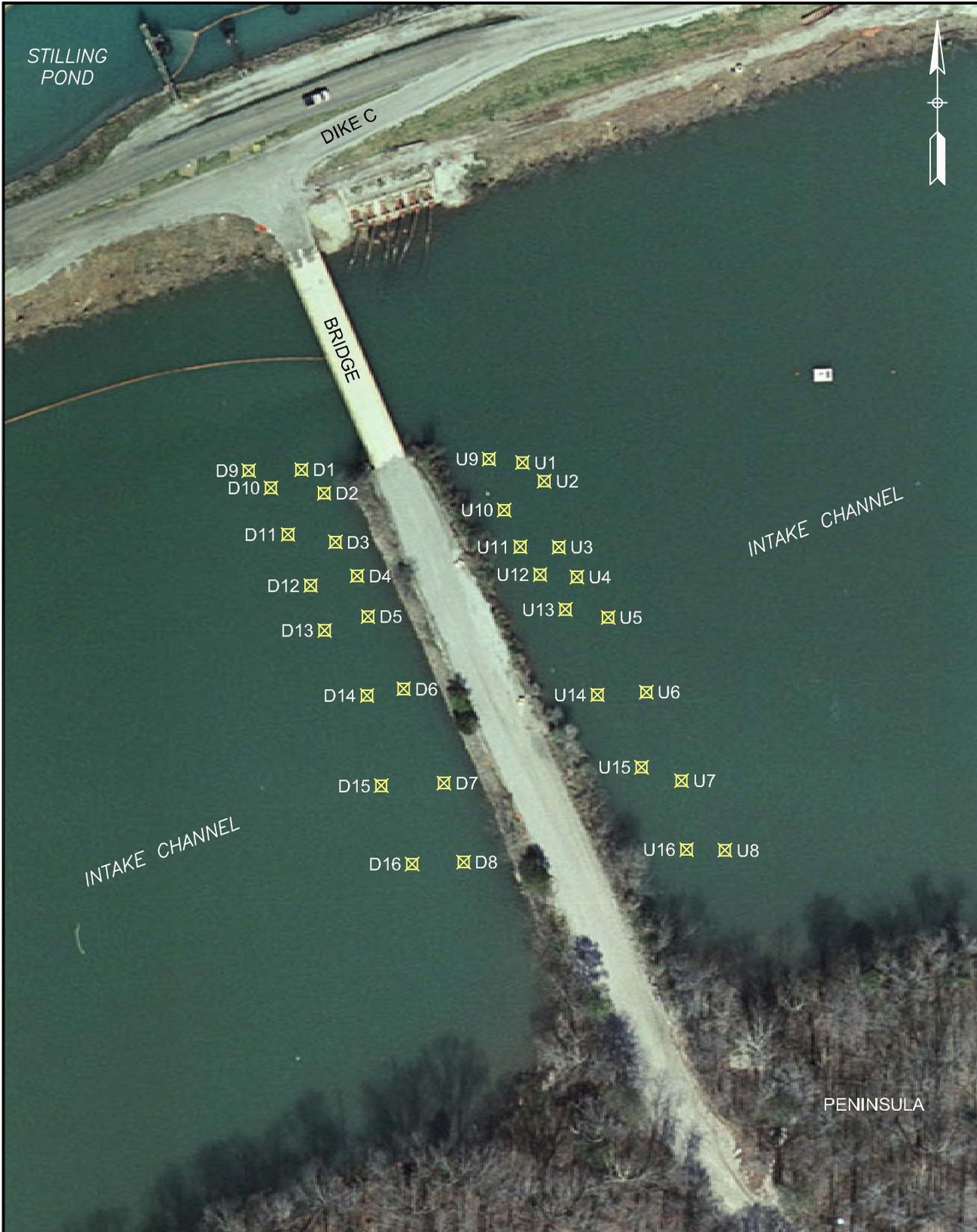
This work is scheduled to begin following the Intake Channel bridge demolition and removal.

5 WASTE MANAGEMENT

The causeway material will be spread across the area previously prepared for temporary ash storage and will be inspected and seeded in the same manner as required by the *Site Storm Water Management Plan, Revision 1*, Document No. EPA-AO-002 for permanent seeding once completed. Material that is predominantly riprap or larger would be used as bank stabilization to this area where slopes are currently exposed (southeastern corner of the area).

6 HEALTH AND SAFETY

The activities described in this Work Plan will follow the *Site Wide Health and Safety Plan for the TVA Kingston Fossil Plant Ash Release, Revision 5*, Document No. EPA-AO-003. Any operations requiring TVA Diving Services following all TVA diving protocols. All personnel, vehicles, and equipment will be subject to decontamination requirements as listed in the Site Wide Health and Safety Plan prior to leaving the site.



I:\0002_ENGINEERING\Civil\Report Graphics\Intake Channel Sediment\177_Intake Channel Sediment Sampling Locations.dwg May 23 2011 4:48:10

LEGEND:

☒ SEDIMENT SAMPLE LOCATION

DATE OF AERIAL: MARCH 16, 2011



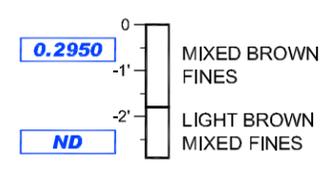
**KIF INTAKE CHANNEL MODIFICATION
SEDIMENT SAMPLING LOCATIONS**

TENNESSEE VALLEY AUTHORITY

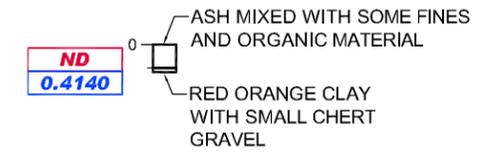
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PHASE: Sediment Sampling

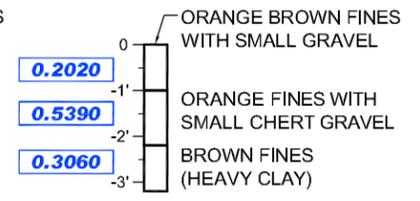
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CORE DEPTH: 2.9 FT



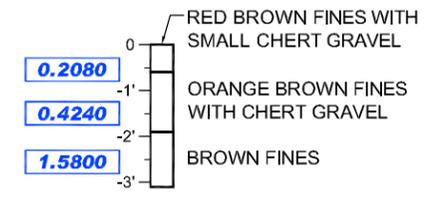
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CORE DEPTH: 10.8 FT



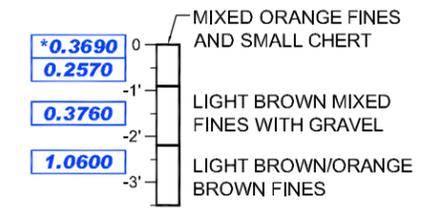
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CORE DEPTH: 9.1 FT



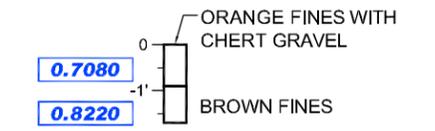
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CORE DEPTH: 8.9 FT



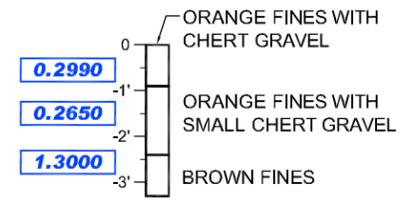
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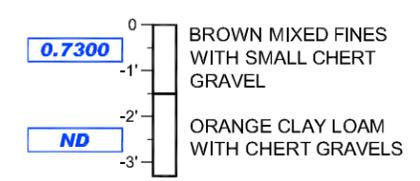
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CORE DEPTH: 7.7 FT



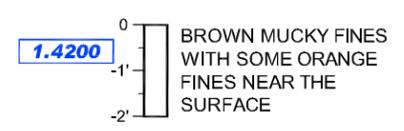
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CORE DEPTH: 9.9 FT



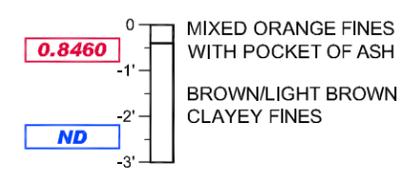
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CORE DEPTH: 11.5 FT



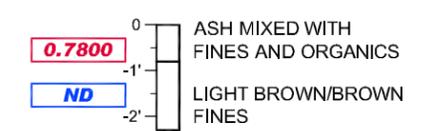
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CORE DEPTH: 11.4 FT



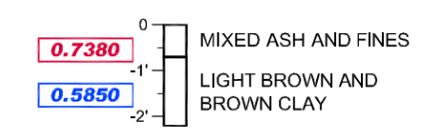
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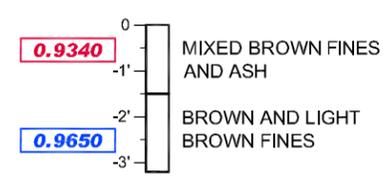
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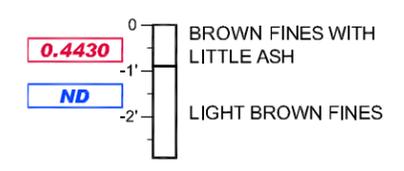
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CORE DEPTH: 2.3 FT



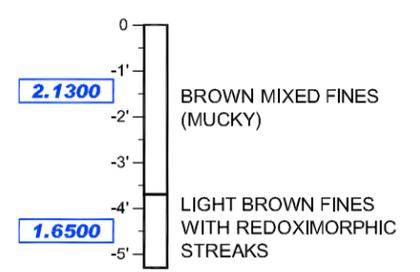
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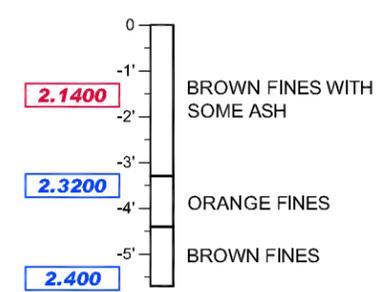
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CORE DEPTH: 2.9 FT



INTAKE_D15
WATER DEPTH: 14.6 FT
CORE DEPTH: 5.3 FT



INTAKE_D16
WATER DEPTH: 14.1 FT
CORE DEPTH: 5.7 FT

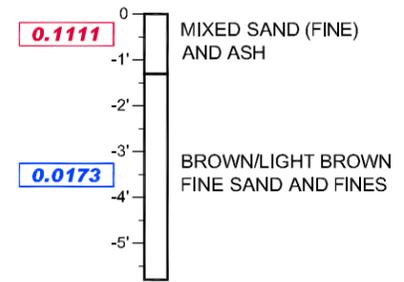


LEGEND:
X.X = ASH/SEDIMENT MIX
Y.Y = SEDIMENT
 ND = <MINIMUM DETECTABLE ACTIVITY
 * = FIELD DUPLICATE
NOTE:
 All CESIUM 137 RESULTS ARE IN pCi/g

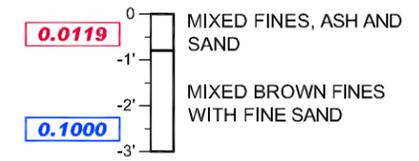
KIF INTAKE CHANNEL MODIFICATION SEDIMENT SAMPLING DOWNSTREAM BORING LOGS	
TENNESSEE VALLEY AUTHORITY	
DATE: 23 May 2011	PHASE: Sediment Sampling

I:\0002_ENGINEERING\Civil\Report_Graphics\Intake_Channel_Sediment_Sampling_Locations.dwg May 23, 2011 - Apararao

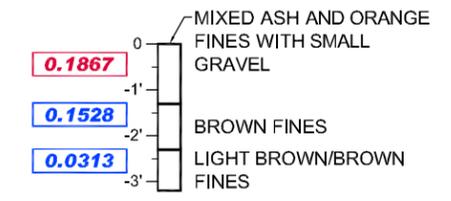
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CORE DEPTH: 5.8 FT



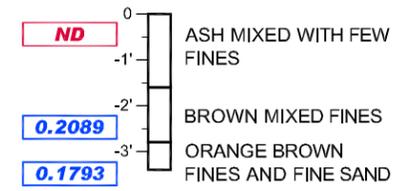
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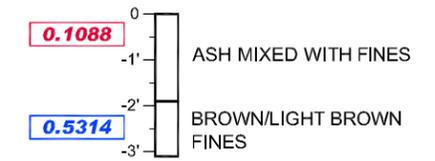
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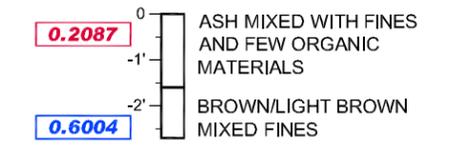
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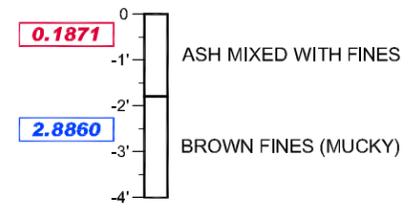
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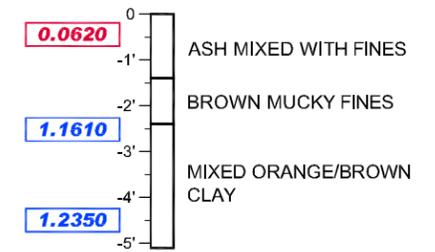
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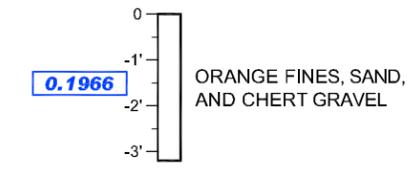
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CORE DEPTH: 4.0 FT



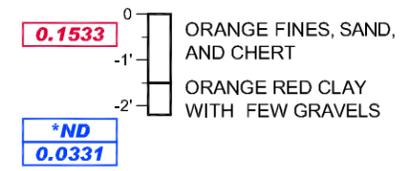
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CORE DEPTH: 5.1 FT



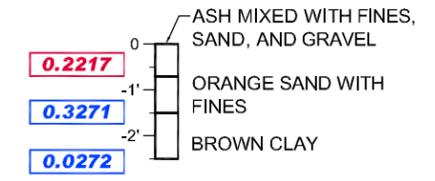
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CORE DEPTH: 3.2 FT



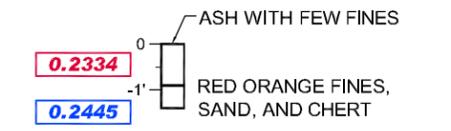
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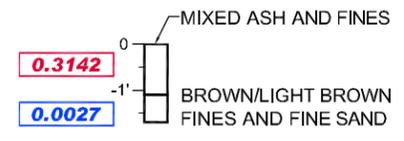
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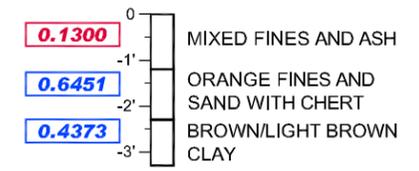
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WATER DEPTH: 10.5 FT
CORE DEPTH: 1.4 FT



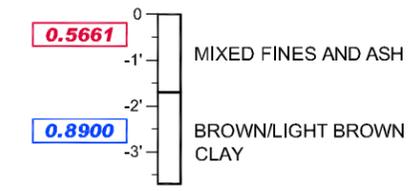
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CORE DEPTH: 1.7 FT



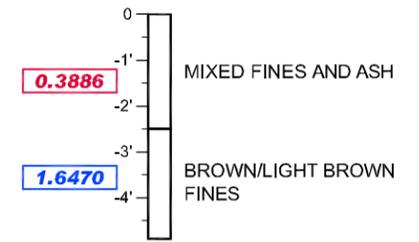
INTAKE_U14
WATER DEPTH: 7.6 FT
CORE DEPTH: 3.3 FT



INTAKE_U15
WATER DEPTH: 6.5 FT
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INTAKE_U16
WATER DEPTH: 8.4 FT
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 ND = <MINIMUM DETECTABLE ACTIVITY
 * = FIELD DUPLICATE

NOTE:
 All CESIUM 137 RESULTS ARE IN pCi/g

KIF INTAKE CHANNEL MODIFICATION SEDIMENT SAMPLING UPSTREAM BORING LOGS TENNESSEE VALLEY AUTHORITY	
DATE: 23 May 2011	PHASE: Sediment Sampling

A

B

C

D

E

F

G

H

A

B

C

D

E

F

PLANS FOR CONSTRUCTION

DIFFUSER REPLACEMENT PROJECT

STILLING POND

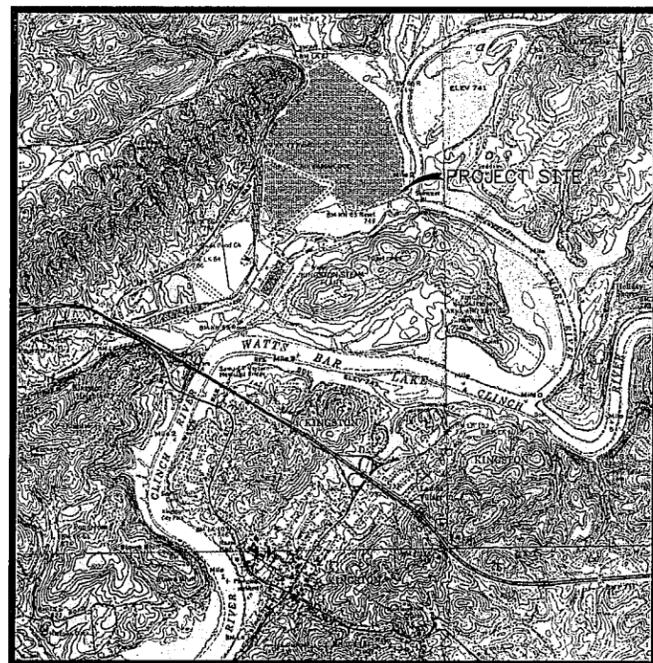
WORK PLAN # (KIF-XXXXXX-WP-X)

KINGSTON FOSSIL PLANT

HARRIMAN, ROANE COUNTY, TENNESSEE

PREPARED FOR

TENNESSEE VALLEY AUTHORITY



VICINITY MAP
 1000 0 2000 4000 FEET
 GRAPHIC SCALE

PREPARED BY



Stantec Consulting Services Inc.
 1859 Bowles Ave., Ste 250
 St. Louis, Missouri
 63026-1944
 Tel. 636.343.3880
 Fax 636.343.3554
 www.stantec.com

INDEX OF SHEETS

XXWXXX-01	COVER SHEET
XXWXXX-02	GENERAL NOTES
XXWXXX-03	EXISTING CONDITIONS & BASELINES
XXWXXX-04	PLAN - DIFFUSER REPLACEMENT
XXWXXX-05	DETAILS - SIPHON SPILLWAYS
XXWXXX-06	DETAILS - SIPHON SPILLWAYS
XXWXXX-07	DETAILS - DIFFUSER REPLACEMENT

ISSUED FOR REVIEW
NOT FOR CONSTRUCTION

FOR SUPPORTING DESIGN CALCULATIONS SEE FPGKIFFESCDO0030020110002	
SCALE: NONE EXCEPT AS NOTED	
YARD STILLING POND	
DIFFUSER REPLACEMENT PROJECT	
COVER SHEET	
WORK PLAN XX (KIF-XXXXXX-WP-XX)	
DESIGNED BY L.A. PERKINS	DRAWN BY T.M. MYERS
CHECKED BY M.A. HOY	SUPERVISED BY M.A. HOY
REVIEWED BY	APPROVED BY
ISSUED BY	
KINGSTON FOSSIL PLANT	
TENNESSEE VALLEY AUTHORITY	
FOSSIL AND HYDRO ENGINEERING	
AUTOCAD R 2000	DATE 36 C XXWXXX-01 R 0

STANTEC	0
TASK COMPLETED BY:	REV NO.

PLOT FACTOR:1
 W_TVA
 C.A.D. DRAWING
 DO NOT ALTER MANUALLY

PLOT DATE: 04/23/2011 10:58:43 AM
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GENERAL NOTES

SUMMARY OF WORK

THE WORK DESCRIBED IN THIS DRAWING SET WILL BE PERFORMED IN THE STILLING POND AND PLANT INTAKE CHANNEL AT THE TENNESSEE VALLEY AUTHORITY (TVA) KINGSTON FOSSIL PLANT (KIF). WORK INCLUDES INSTALLATION OF SIPHON SPILLWAYS TO MAINTAIN THE TYPICAL DAILY PROCESS FLOW FROM THE PLANT WHILE THE EXISTING SPILLWAYS ARE DEACTIVATED TO ALLOW FOR REPLACEMENT OF THE EXISTING SPILLWAY DIFFUSERS.

1.0 GENERAL PROVISIONS

1.1 THE ATTACHED PLANS, TECHNICAL SPECIFICATIONS AND QUALITY CONTROL PLAN WERE PREPARED BY STANTEC CONSULTING SERVICES INC. (STANTEC). FOR THE CONSTRUCTION ASPECTS SHOWN HEREIN THE TENNESSEE VALLEY AUTHORITY (TVA) IS THE OWNER AND STANTEC IS THE ENGINEER. THE CONTRACTOR SHALL BE RETAINED UNDER CONTRACT BY THE OWNER.

1.2 THE CONTRACTOR SHALL CONFINE ALL SPECIFIC WORK ACTIVITIES TO THE AREA DEFINED BY THE PLANS OR APPROVED BY THE OWNER. ACCESS INTO THE WORK AREA FOR DELIVERY OF EQUIPMENT, MATERIALS AND WORKFORCE SHALL BE REVIEWED DAILY BY THE CONTRACTOR, AND CONTROLLED AS NEEDED TO PREVENT ANY DAMAGE TO THE CREST AND SLOPES OF THE DIKES SURROUNDING THE ASH POND.

1.3 THE CONTRACTOR SHALL COORDINATE WITH THE OWNER TO DETERMINE THE LOCATION AND AREA FOR EQUIPMENT OR MATERIAL STORAGE AND FOR OTHER CONSTRUCTION LAY DOWN ACTIVITY.

1.4 WHENEVER REFERENCE IS MADE TO TENNESSEE DEPARTMENT OF TRANSPORTATION (TDOT) STANDARD SPECIFICATIONS, AMERICAN CONCRETE INSTITUTE (ACI), AMERICAN SOCIETY OF TESTING AND MATERIALS (ASTM) AND OTHER PUBLISHED STANDARDS OR SPECIFICATIONS, IT SHALL MEAN THE LATEST VERSION IN ITS ENTIRETY.

1.5 ACCEPTABLE CONSTRUCTION TOLERANCES FROM PLAN DIMENSIONS, ELEVATIONS, AND GRADES SHALL BE AS FOLLOWS: -EXCAVATIONS AND FINAL GRADES FOR EARTH SURFACES AND SLOPES: ± 0.25 FEET (FT) -RIPRAP: FINAL GRADE ±0.5 FT. THICKNESS ZERO TO +0.5 FT -FINAL GRADE TOP OF DAM: ZERO TO +0.25 FT -MEASUREMENTS WITHIN 0.5 INCHES OF PLAN DIMENSIONS -SIPHON PIPES AND APPURTENANCES: ±0.10 FT OF PLAN ELEVATION -DIFFUSER PIPES: ±2 FT OF DESIGNATED ALIGNMENT

1.6 NO DEVIATIONS FROM THE PLANS OR APPROVED SHOP DRAWINGS SHALL BE MADE WITHOUT PRIOR APPROVAL FROM THE ENGINEER. THE CONTRACTOR SHALL MAINTAIN A RECORD OF ALL DEVIATIONS IN LOCATION OR ELEVATION OF ANY INSTALLATION FROM THAT SHOWN ON THE PLANS, AND ANY DEVIATIONS IN INSTALLATIONS FROM APPROVED SHOP DRAWINGS. AT COMPLETION OF THE PROJECT A SET OF RECORD DRAWINGS WILL BE PREPARED BY THE CONSTRUCTION QUALITY ASSURANCE (CQA) REPRESENTATIVE BASED ON THE AS-BUILT RECORD PROVIDED BY THE CONTRACTOR. THE CONTRACTOR SHALL COOPERATE FULLY AND ASSIST WITH PREPARATION OF THE FINAL RECORD DRAWINGS.

2.0 SITE CONDITIONS

2.1 TOPOGRAPHIC INFORMATION: UNLESS OTHERWISE INDICATED, THESE DRAWINGS WERE COMPILED USING SURVEY INFORMATION PROVIDED BY TVA. AUTOCAD DRAWING '1-24-11 POINTS.DWG' AND LIDAR DATA FROM A SURVEY PERFORMED IN APRIL OF 2009 BY TUCK MAPPING SOLUTIONS, INC WERE UTILIZED. HORIZONTAL COORDINATES ARE REFERENCED TO TENNESSEE STATE PLANE COORDINATE SYSTEM, NAD 27. ELEVATIONS ARE BASED ON NGVD 29. TOPOGRAPHIC INFORMATION SHOWN IN THE DRAWINGS IS DATED AND DOES NOT REFLECT CHANGES SINCE THE TIME OF AERIAL PHOTOGRAPHY. AREAS OF HYDROGRAPHIC SURVEYING MAY NOT REFLECT CURRENT CONDITIONS AS THE UNDERWATER SURFACE CONSTANTLY CHANGES.

2.2 THE CONTRACTOR SHALL NOTIFY KIF PLANT PERSONNEL 48 HOURS IN ADVANCE OF RAISED DIKE ACCESS ROAD CUTTING TO ALLOW FOR COORDINATION OF ALTERNATIVE TRAFFIC ROUTES.

2.3 VEHICULAR ACCESS TO THE SITE SHALL BE DETERMINED BY TVA. NO CONSTRUCTION ACTIVITIES SHALL BE PERFORMED THAT CAUSE AN INTERFERENCE WITH THROUGH TRAFFIC DURING CONSTRUCTION. CONTRACTOR SHALL PROVIDE APPROVED SIGNAGE, BARRIERS AND TRAFFIC SAFETY PERSONNEL RESPONSIBLE FOR DIRECTING CONSTRUCTION AND PLANT TRAFFIC AT ALL POINTS OF INGRESS AND EGRESS.

2.4 CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING UTILITIES PRIOR TO COMMENCEMENT OF WORK. UTILITIES AND INSTRUMENTATION SHOWN ON THE ATTACHED PLANS SHALL BE CONSIDERED APPROXIMATE AND DO NOT COVER ALL EXISTING UTILITIES IN THE AREA. CONTRACTOR SHALL EXERCISE EXTREME CAUTION DURING EXCAVATION. SHOULD PIPING OR OTHER UTILITIES THAT ARE NOT SHOWN ON THE DRAWINGS BE ENCOUNTERED, CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY, WHO WILL IN TURN NOTIFY TVA PLANT PERSONNEL IMMEDIATELY. WHERE APPLICABLE, THE CONTRACTOR SHALL PROVIDE NECESSARY MEASURES TO PROTECT UTILITIES FROM DAMAGE DUE TO CONTRACTORS WORK.

2.5 CONTRACTOR SHALL BE RESPONSIBLE FOR THE HEALTH AND SAFETY OF ITS PERSONNEL AND SHALL MEET ALL APPLICABLE LOCAL, STATE, AND FEDERAL SAFETY REGULATIONS INCLUDING BUT NOT LIMITED TO OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) STANDARDS AND TVA SAFETY REQUIREMENTS.

2.6 THE CONTRACTOR IS RESPONSIBLE FOR SITE DRAINAGE THROUGHOUT CONSTRUCTION AND SHALL INSTALL TEMPORARY DRAINAGE STRUCTURES OR PUMP WATER AS NECESSARY TO PREVENT INTERFERENCE WITH THE WORK.

3.0 SURVEY

3.1 STAKING: THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SURVEYING AND STAKING NECESSARY FOR LAYOUT AND CONSTRUCTION OF THE PROJECT. STAKING SHALL BE PERFORMED BY OR UNDER THE DIRECTION OF A LICENSED LAND SURVEYOR.

3.2 CONTROL: A GLOBAL POSITIONING SYSTEM (GPS) BASE STATION HAS BEEN ESTABLISHED AND TRANSFORMATION PARAMETERS DETERMINED BY TVA USING SELECTED SURVEY CONTROL MONUMENTS. CONTACT WITH TVA SURVEYING DEPARTMENT (423)751-8416 OR (423)751-2571 SHALL BE MADE BEFORE ANY SURVEY OR CONSTRUCTION WORK IS COMMENCED. BASE STATION FREQUENCIES AND TRANSFORMATION PARAMETERS WILL BE PROVIDED TO THE CONTRACTOR FOR USE IN CONSTRUCTION ACTIVITIES AT THE SITE. PREVIOUSLY USED OR ESTABLISHED CONTROL POINTS AND MONUMENTS SHALL NOT BE USED BY THE CONTRACTOR WITHOUT PRIOR APPROVAL BY TVA SURVEYING DEPARTMENT.

3.3 CONTRACTOR SHALL EMPLOY A COMPETENT SURVEYOR LICENSED IN THE STATE OF TENNESSEE TO ESTABLISH OR CONFIRM ALL LINES, ELEVATIONS, REFERENCE MARKS, ETC. NEEDED BY THE CONTRACTOR DURING CONSTRUCTION. THE QUANTITIES OF MATERIALS PRESENTED HERE AND IN THE BID SCHEDULE SHALL BE CONSIDERED APPROXIMATE AND ARE SUBJECT TO CHANGE BASED ON FIELD CONDITIONS.

4.0 EROSION PREVENTION AND SEDIMENT CONTROL (EPSC)

4.1 THE CONTRACTOR SHALL EXERCISE EVERY REASONABLE PRECAUTION AT ALL TIMES TO MINIMIZE SOIL EROSION AND PREVENT WATER POLLUTION BY DEPOSITION OF SEDIMENT INTO THE EMORY RIVER. EROSION PREVENTION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED AND MAINTAINED IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS.

4.2 PRIOR TO BEGINNING CLEARING, GRUBBING, AND TOPSOIL STRIPPING ACTIVITIES, EROSION PREVENTION AND SEDIMENT CONTROL (EPSC) BEST MANAGEMENT PRACTICES (BMP'S) SHALL BE INSTALLED IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. ANY MODIFICATIONS OF EPSC MEASUREMENTS MUST BE REVIEWED AND APPROVED BY THE ENGINEER. IF DEEMED NECESSARY BY THE ENGINEER, ADDITIONAL EPSC BMP'S SHALL BE INSTALLED.

4.3 EPSC BMP'S SHALL BE MAINTAINED AT ALL TIMES IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. ANY DEFICIENCIES IDENTIFIED BY THE ENGINEER DURING INSPECTIONS SHALL BE REMEDIATED IMMEDIATELY.

4.4 ACTIONS SHALL BE TAKEN TO MINIMIZE THE TRACKING OF MUD AND SOIL FROM THE PROJECT AREA ONTO THE EXISTING PLANT ACCESS ROAD. SOIL TRACKED ONTO THE ROADWAY SHALL BE REMOVED DAILY.

4.5 WHERE CONSTRUCTION OR LAND-DISTURBING ACTIVITIES HAVE TEMPORARILY CEASED ON ANY PORTION OF THE PROJECT SITE, TEMPORARY SITE STABILIZATION MEASURES SHALL BE IMPLEMENTED AS SOON AS PRACTICABLE, BUT NO LATER THAN 15 CALENDAR DAYS AFTER THE ACTIVITY HAS CEASED.

4.6 SEEDING, MULCHING, AND FERTILIZATION OF DISTURBED AREAS SHALL BE IMPLEMENTED IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.

5.0 EARTHWORK

5.1 MATERIAL SPECIFICATIONS FOR STRUCTURAL FILL, AGGREGATE, PIPE AND OTHER CONSTRUCTION MATERIALS ARE DEFINED IN THE TECHNICAL SPECIFICATIONS UNLESS NOTED OTHERWISE.

5.2 TEMPORARY EXCAVATIONS SHALL BE PREPARED IN ACCORDANCE WITH OSHA STANDARDS. STABILITY OF EXCAVATION SLOPES IS THE RESPONSIBILITY OF THE CONTRACTOR.

5.3 NO MATERIAL SHALL BE PLACED IN ANY SECTION OF THE EMBANKMENT UNTIL THE FOUNDATION FOR THAT SECTION HAS BEEN APPROVED BY THE ENGINEER OR CQA REPRESENTATIVE. THE CONTRACTOR SHALL KEEP THE FOUNDATION AND SUBGRADE FREE FROM WATER OR UNACCEPTABLE MATERIALS AFTER FILL OPERATIONS HAVE STARTED.

5.4 MATERIAL THAT IS PLACED ADJACENT TO AND LESS THAN 2 FT ABOVE THE TOP OF SIPHON PIPES SHALL BE COMPACTED USING HAND-DIRECTED COMPACTORS (JUMPING JACK TYPE COMPACTOR/RAMMER) WITH A MAXIMUM LIFT THICKNESS OF 4-INCHES.

6.0 SIPHON SPILLWAY OPERATION

6.1 THE SIPHON SPILLWAYS SHALL BE INSTALLED AND OPERATED TO MAINTAIN THE TYPICAL DAILY PROCESS FLOW DURING EXISTING SPILLWAY DIFFUSER REPLACEMENT.

6.2 FOLLOWING CLOSURE OF THE BUTTERFLY VALVES TO TEMPORARILY DEACTIVATE THE EXISTING SPILLWAYS FOR DIFFUSER REPLACEMENT (REFER SECTION 8.0 (SEQUENCE OF CONSTRUCTION) OF THESE GENERAL NOTES), THE CONTRACTOR SHALL ASSESS ANY LEAKAGE FROM THE VALVES OR PIPES. IF SIGNIFICANT LEAKAGE IS PRESENT, THE CONTRACTOR MAY TEMPORARILY DRAW DOWN THE POOL TO A MINIMUM ELEVATION OF 754 FT UPON APPROVAL FROM THE OWNER OR ENGINEER.

6.3 THE CONTRACTOR SHALL INSTALL A STAFF GAGE WITH ALTERNATING MARKS AT 0.1 FT INCREMENTS AND WHOLE FOOT CALL-OUTS. THE CONTRACTOR SHALL MONITOR THE GAGE AND REGULATE THE SIPHON FLOWS TO MAINTAIN THE POND ELEVATION DURING DIFFUSER REPLACEMENT.

6.3 THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING, PERIODICALLY PRIMING (INCLUDING RENTAL OR PURCHASE OF A GODWIN DRI-PRIME PUMP, OR APPROVED EQUAL), MAINTAINING AND REGULATING THE FLOW OF THE SIPHONS IN A MANNER THAT ENSURES SAFETY AND STABILITY OF THE ASH POND DIKES AT ALL TIMES DURING CONSTRUCTION. IF POOL LOWERING IS REQUIRED, THE CONTRACTOR SHALL IMMEDIATELY HALT POOL LOWERING IF ANY SIGN OF INTERIOR PERIMETER SLOPE INSTABILITY IS NOTED.

6.4 IF POOL LOWERING IS REQUIRED, DRAWDOWN (USING SIPHONS) WILL RESULT IN A DECREASED POND SURFACE AREA DURING CONSTRUCTION. THIS DECREASED SURFACE AREA MAY AFFECT SETTLING TIMES. THE OWNER SHALL BE RESPONSIBLE FOR MITIGATING ANY ADVERSE IMPACTS TO TOTAL SUSPENDED SOLID (TSS) LEVELS.

6.5 THE OUTLETS OF THE EXISTING SPILLWAYS ARE A NPDES PERMITTED DISCHARGE. DURING CONSTRUCTION, WORK IN THE ASH POND MAY CAUSE CHANGES IN PERMITTED EFFLUENT CHARACTERISTICS. THE OWNER SHALL BE RESPONSIBLE FOR MITIGATING EFFECTS OF POOL DRAWDOWN ON PH, TSS, AND DIKE STABILITY.

6.6 THE ROUTINE HANDLING AND OPERATIONS (RHO&M) PROGRAM MANAGER MUST BE NOTIFIED BEFORE CHANGES IN POOL LEVEL OCCUR.

6.7 THE CONTRACTOR SHALL VERIFY NO CENOSPHERES ARE PRESENT NEAR SIPHONS PRIOR TO ACTIVATION.

7.0 DIFFUSER REPLACEMENT

7.1 THE CONTRACTOR SHALL PROVIDE A DETAILED WORK PLAN FOR THE REMOVAL AND REPLACEMENT OF THE DIFFUSER PIPES TO THE ENGINEER AT LEAST 15 DAYS PRIOR TO BEGINNING WORK. THE DETAILED WORKPLAN SHALL INCLUDE THE METHOD USED TO REMOVE THE EXISTING DIFFUSER PIPES AND INSTALL THE NEW HDPE DIFFUSER PIPES. THE FLOAT AND SINK METHOD SHALL BE USED TO INSTALL THE DIFFUSER PIPES. BALLAST WEIGHTS SHALL BE SECURED TO PIPE ON LAND. PIPE ENDS SHALL BE PLUGGED AND PIPE SHALL BE FLOATED INTO PLACE ALONG PROPOSED ALIGNMENT. PIPE SHALL BE SLOWLY FILLED WITH WATER SUCH THAT A CONTROLLED SINKING OCCURS.

7.2 ANY HARDWARE USED FOR ATTACHMENT OF BALLAST WEIGHTS TO DIFFUSER PIPE SHALL BE STAINLESS STEEL OR GALVANIZED.

7.3 DIVERS SHALL VERIFY INSTALLED HDPE PIPE IS NOT RESTING ON ANY ROCKS, DEBRIS OR MATERIAL THAT COULD CAUSE DAMAGE TO THE PIPE.

7.4 DURING INSTALLATION, HDPE PIPE BENDS SHALL HAVE A MINIMUM RADIUS OF 30 FT.

8.0 SEQUENCE OF CONSTRUCTION

8.1 PRIOR TO THE COMMENCEMENT OF WORK, CONTRACTOR SHALL VERIFY BUTTRESS CONSTRUCTION HAS BEEN COMPLETED FROM APPROXIMATE STATION 124+00 TO 128+00 (BY OTHERS) TO ALLOW FOR SIPHON INSTALLATION. CONTRACTOR SHALL ALSO VERIFY THAT THE CAUSEWAY HAS BEEN MODIFIED (BY OTHERS) AS SHOWN ON THE PLANS.

8.2 INSTALL SIPHON SPILLWAYS IN ACCORDANCE WITH THE CONSTRUCTION PLANS AND TECHNICAL SPECIFICATIONS.

8.3 ACTIVATE THE SIPHONS. CONTRACTOR SHALL MONITOR AND ADJUST SIPHON VALVES TO MAINTAIN THE TYPICAL DAILY PROCESS FLOW FROM THE PLANT.

8.4 CLOSE BUTTERFLY VALVES AT THE EXISTING SPILLWAY OUTLET HEADWALL TO RESTRICT FLOW THROUGH THE EXISTING DIFFUSER PIPES. IF SIGNIFICANT LEAKAGE OCCURS, CONTRACTOR MAY DRAWDOWN THE STILLING POND WATER SURFACE ELEVATION TO 754 FT USING THE SIPHON SPILLWAYS UPON APPROVAL FROM THE OWNER OR ENGINEER.

8.5 REMOVE EXISTING SPILLWAY DIFFUSERS. CONTRACTOR SHALL SUBMIT A DETAILED WORKPLAN AT LEAST 15 DAYS PRIOR TO DIFFUSER REMOVAL.

8.6 REMAINING PORTION OF SEGMENT B OF DIKE C BUTTRESS TO BE CONSTRUCTED BY OTHERS.

8.7 INSTALL NEW 24-INCH HDPE DIFFUSER PIPES AS SHOWN ON THE PLANS AND IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS. CONTRACTOR SHALL SUBMIT A DETAILED WORKPLAN AT LEAST 15 DAYS PRIOR TO DIFFUSER REPLACEMENT.

8.8 FOLLOWING INSTALLATION, CONTRACTOR SHALL VERIFY THE FOLLOWING: -ALIGNMENT OF INSTALLED DIFFUSER PIPES; -BALLASTS SECURING THE DIFFUSER PIPE ARE PROPERLY SITTING ON THE BOTTOM CONTOUR AND THE PIPE IS NOT FORCED TO BRIDGE ANY CHANGES IN ELEVATION; -PIPE IS NOT RESTING ON ANY ROCKS, DEBRIS OR MATERIAL THAT COULD CAUSE DAMAGE; AND -ALL TEMPORARY MATERIALS AND EQUIPMENT USED DURING INSTALLATION HAVE BEEN REMOVED.

8.9 OPEN BUTTERFLY VALVES TO ALLOW FLOW THROUGH THE NEW DIFFUSER PIPES. VERIFY THAT THE EXISTING SPILLWAYS ARE OPERATING CORRECTLY AND THERE ARE NO LEAKS IN THE NEW DIFFUSER PIPES.

8.10 UPON APPROVAL FROM THE OWNER, CLOSE SIPHON SPILLWAY VALVES.

8.11 CLEANUP SITE.

9.0 CONSTRUCTION DOCUMENTATION

9.1 CONSTRUCTION OBSERVATION AND TESTING: THE OWNER OR DESIGNATED CQA REPRESENTATIVE SHALL PROVIDE QUALITY ASSURANCE CONTROL TESTING AND SHALL OBSERVE AND DOCUMENT CONSTRUCTION ACTIVITIES.

9.2 DAILY REPORT: THE CONTRACTOR SITE FOREMAN OR CQA REPRESENTATIVE SHALL COMPLETE A DAILY ACTIVITIES REPORT FOR EACH DAY IN WHICH ANY CONSTRUCTION ACTIVITY OCCURS. THIS REPORT SHALL DOCUMENT THE EQUIPMENT AND PERSONNEL ACTIVE ON SITE (WITH RELEVANT TIMES NOTED) AND IT SHALL PROVIDE A GENERAL DESCRIPTION OF THE CONSTRUCTION ACTIVITIES PERFORMED DURING THE DAY. IT SHALL ALSO INCLUDE A DESCRIPTION OF ONGOING CONSTRUCTION PROGRESS. DISCUSSIONS OF INCIDENT WEATHER, EQUIPMENT BREAKDOWNS AND ANY DAMAGE, SAFETY, ENVIRONMENTAL, ETC. INCIDENTS WHICH OCCUR SHALL BE PROVIDED. THE CONTRACTOR SHALL PROVIDE HIS OWN FORMAT FOR THIS REPORT, SUBJECT TO ENGINEER APPROVAL. IT IS EXPECTED THAT THIS REPORT SHALL BE SUBMITTED BY THE CONTRACTOR TO THE ENGINEER OR CQA REPRESENTATIVE BY NOON ON THE NEXT BUSINESS DAY FOLLOWING THE DAY WITHIN WHICH THE REPORT COVERS.

9.3 RECORD DRAWINGS: THE CONTRACTOR SHALL MAINTAIN A CLEAN SET OF CONSTRUCTION PLANS AT THE PROJECT SITE. THIS SET OF PLANS SHALL BE USED ONLY FOR RECORDING CONSTRUCTION ACTIVITY AS IT OCCURS. ALL ITEMS INSTALLED INTO THE WORK SHALL BE NOTED AND ANY VARIATION IN MATERIAL SPECIFICATIONS, DETAILS, ELEVATIONS, OR HORIZONTAL LOCATIONS SHALL BE NOTED ON THE PLAN SET WITH RED MARKINGS. TO THE EXTENT NECESSARY, THE CONTRACTOR SHALL ENGAGE A QUALIFIED SURVEYOR TO ESTABLISH THE "AS-BUILT" LOCATION OF ALL PIPES, DRAINS, STRUCTURES, EMBANKMENT ZONE LIMITS, ETC. EACH ITEM'S POSITION SHALL BE DULY NOTED ON THIS "RED-LINE" PLAN SET. THE INFORMATION SHALL BE RECORDED WITH SUFFICIENT ACCURACY AND CLARITY TO BE UNDERSTOOD AND RELIED UPON. AT THE COMPLETION OF THE CONSTRUCTION PROCESS, THIS "RED-LINE" PLAN SET SHALL BE PROVIDED TO THE ENGINEER FOR USE IN DEVELOPING THE RECORD DRAWINGS FOR THE PROJECT. THE INFORMATION ON THE "RED-LINE" DRAWING SET SHALL BE KEPT CURRENT AT ALL TIMES AND SHALL BE AVAILABLE BY THE OWNER OR ENGINEER AT ANY TIME. THE CONTRACTOR SHALL SUBMIT THE "RED-LINE" AS-BUILT SET OF DRAWINGS TO THE CQA REPRESENTATIVE WITHIN FIVE WORKING DAYS OF COMPLETION AND ACCEPTANCE OF THE WORK DESCRIBED IN THIS WORK PACKAGE.

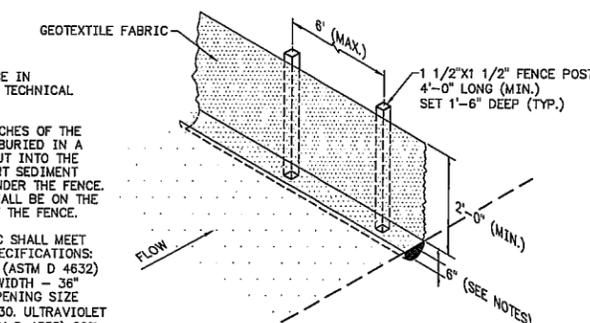
9.4 CONSTRUCTION CERTIFICATION REPORT: THE CQA REPRESENTATIVE SHALL PREPARE AND SUBMIT A CONSTRUCTION CERTIFICATION REPORT IN ACCORDANCE WITH TVA'S MASTER PROGRAMMATIC DOCUMENTS WITHIN TWO WEEKS FOLLOWING COMPLETION OF CONSTRUCTION.

MATERIAL	SPECIFICATION	REQUIREMENTS	CONSTRUCTION QUALITY CONTROL PRODUCT SUBMITTALS			
			(FIO)/(EA)	MINIMUM FREQUENCY	SUBMITTAL DATE	APPROVAL DATE
CONCRETE						
BALLAST WEIGHTS	03 40 00	SHOP DRAWINGS OF THE PROPOSED PRE-CAST BALLAST WEIGHTS CERTIFIED TEST RESULTS FROM MANUFACTURER SHOWING THAT CONCRETE MEETS OR EXCEEDS ALL SPECIFICATIONS DESIGN MIX SUBMITTAL AND SUPPLIER CERTIFICATION VERIFYING MIX MEETS SPECIFICATIONS (IF NON-COMMERCIAL GROUT MIX IS USED)	EA	15 DAYS PRIOR TO FABRICATION		
NON-SHRINK (EXPANSIVE) GROUT	03 60 00	PASSING RESULTS OF STRENGTH AND EXPANSION TESTS SUBMITTED BY CQA REPRESENTATIVE (IF NON-COMMERCIAL GROUT MIX IS USED) DELIVERY SLIPS CERTIFYING CONTENTS OF EACH BATCH NOTING TIME OF DELIVERY.	FIO	15 DAYS PRIOR TO BEGINNING WORK	1/BATCH	
EARTHWORK						
SITE PREPARATION	31 10 00	SITE SAFETY PLAN FOR APPROVAL BY TVA SAFETY PROFESSIONAL	FIO	PRIOR TO BEGINNING WORK		
BACKFILL AND EMBANKMENT	31 23 00	MATERIAL CLASSIFICATION OR SAMPLES FOR TESTING FROM EACH REPRESENTATIVE BORROW SOURCE	EA	1/SUPPLIER/SOURCE		
STONE AND RIPRAP	31 37 00	CERTIFICATION INDICATING THE SOURCE OF STONE SURFACING IS AN "APPROVED SOURCE" (APL) PER TDOT SECTION 708. GRADATION CURVE FOR THE MATERIAL AND CERTIFICATION THAT THE MATERIAL MEETS THE SPECIFICATIONS IN THE TECHNICAL SPECIFICATIONS.	FIO	1/SUPPLIER/SOURCE		
EXTERIOR IMPROVEMENTS						
TURF AND GRASSES	32 92 00	CERTIFICATION OF GRASS SEED MATERIAL TEST REPORTS FOR STANDARDIZED ASTM D 5388 MAINTENANCE INSTRUCTIONS	FIO	1/SUPPLIER		
UTILITIES						
SIPHON SPILLWAYS	33 10 00	SUPPLIER SPECIFICATIONS FOR THE VALVES AND FLOAT BALLS RESULTS OF PASSING PRESSURE TEST FOR EACH PIPE RUN	FIO	1/SUPPLIER	1/PIPE RUN	
DIFFUSER REPLACEMENT	33 20 00	DETAILED WORKPLAN FOR THE REMOVAL OF THE EXISTING SPILLWAY DIFFUSERS AND INSTALLATION OF NEW SPILLWAY DIFFUSERS RESULTS OF PASSING PRESSURE TEST FOR EACH PIPE RUN	EA	15 DAYS PRIOR TO BEGINNING WORK	1/PIPE RUN	
HDPE PIPE	33 40 00	MANUFACTURER CERTIFICATION THAT THE PIPE AND EACH FITTING COMPLES WITH THE TECHNICAL SPECIFICATIONS	FIO	1/SUPPLIER		

(1) FIO = FOR INFORMATION ONLY; EA = ENGINEER APPROVAL

NOTES:

- INSTALL SILT FENCE IN ACCORDANCE WITH TECHNICAL SPECIFICATIONS.
- THE BOTTOM 12 INCHES OF THE FABRIC SHALL BE BURIED IN A 6-INCH TRENCH CUT INTO THE GROUND TO PREVENT SEDIMENT FROM ESCAPING UNDER THE FENCE. ALL EARTHWORK SHALL BE ON THE UPSTREAM SIDE OF THE FENCE.
- GEOTEXTILE FABRIC SHALL MEET THE FOLLOWING SPECIFICATIONS: TENSILE STRENGTH (ASTM D 4632) - 100 LBS. MIN., WIDTH - 36" MIN., APPARENT OPENING SIZE (ASTM D4751) NO. 30. ULTRAVIOLET DEGRADATION (ASTM D 4355) 80% STRENGTH RETAINED. ELONGATION OF 40% MAX. (ASTM D 4632).



**ISSUED FOR REVIEW
NOT FOR CONSTRUCTION**

FOR SUPPORTING DESIGN CALCULATIONS SEE FPGKIFFESC0X0003002010002		R - - - - -									
ISSUED FOR REVIEW - ISSUED FOR CONSTRUCTION		R O - - - - -									
REV	DATE	BY	CHK	CHK	CHK	CHK	CHK	CHK	CHK	CHK	CHK
SCALE: NONE EXCEPT AS NOTED											
YARD STILLING POND DIFFUSER REPLACEMENT PROJECT GENERAL NOTES WORK PLAN XX (KIF-XXXXXX-WP-XX)											
DESIGNED BY	DRAWN BY	CHECKED BY	SUPERVISED BY	REVIEWED BY	APPROVED BY	ISSUED BY					
L.S. PERKINS	T.M. AYERS	M.A. HOY	M.A. HOY								
KINGSTON FOSSIL PLANT TENNESSEE VALLEY AUTHORITY FOSSIL AND HYDRO ENGINEERING											
AUTOCAD R 2000	DATE	36	C	XXWXXX-02	R 0						

STATION	BASELINE	NORTHING	EASTING
100+00	A	554,363.86	2,440,447.77
140+00	A	555,379.31	2,442,781.47
13+60	B	554,094.87	2,442,536.76
20+00	B	553,752.84	2,442,749.45
21+72.07	C	554,031.98	2,442,490.98
22+28.24	C	553,853.44	2,442,525.66
23+93.08	C	553,809.73	2,442,542.12
24+50	C	553,645.15	2,442,533.00
	C	553,598.18	2,442,555.13

BASELINE CURVE DATA

<p>① P.I. STA. = 108+20.74 NORTHING = 553,819.18 EASTING = 2,441,091.71 Δ = 13°20'06" R = 974.68' T = 113.94' L = 228.85' E = 6.64' P.C. STA. = 107+06.80 P.T. STA. = 109+33.65</p>	<p>② P.I. STA. = 112+99.93 NORTHING = 553,591.92 EASTING = 2,441,514.77 Δ = 46°19'10" R = 479.84' T = 205.26' L = 387.92' E = 42.06' P.C. STA. = 110+94.67 P.T. STA. = 114+82.59</p>
<p>③ P.I. STA. = 126+71.85 NORTHING = 554,024.61 EASTING = 2,442,840.47 Δ = 71°45'50" R = 182.94' T = 132.33' L = 229.13' E = 42.85' P.C. STA. = 125+39.52 P.T. STA. = 127+68.65</p>	<p>④ P.I. STA. = 138+12.12 NORTHING = 555,200.41 EASTING = 2,442,843.77 Δ = 19°21'32" R = 479.84' T = 81.84' L = 162.13' E = 6.93' P.C. STA. = 137+30.28 P.T. STA. = 136+92.41</p>

INSTRUMENTATION LEGEND

- STN-1 SLOPE INCLINOMETER (SI)
- STN-2 PIEZOMETER (PZ)
- STN-3 SETTLEMENT PLATFORM (SP)

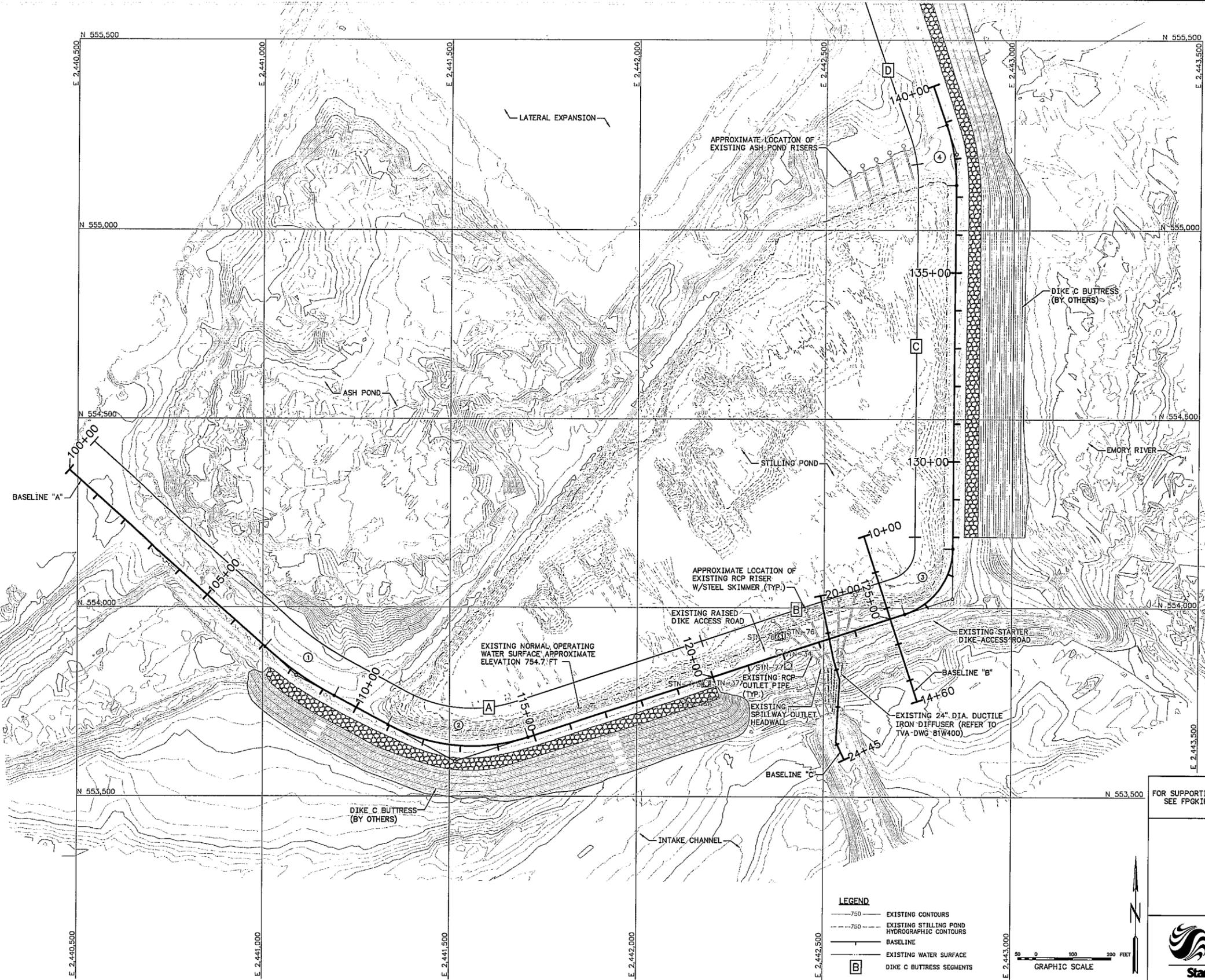
MAPPING NOTE:

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3. DIKE C BUTTRESS AS DEPICTED REPRESENTS THE PROPOSED DESIGN (BY OTHERS), NOT AN AS-BUILT CONFIGURATION.
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SURVEY CONTROL NOTE:

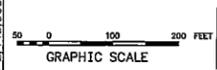
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LEGEND

- EXISTING CONTOURS
- EXISTING STILLING POND HYDROGRAPHIC CONTOURS
- BASELINE
- EXISTING WATER SURFACE
- DIKE C BUTTRESS SEGMENTS



FOR SUPPORTING DESIGN CALCULATIONS
SEE FPGKIFFCSDX00030020110002

REV.	DATE	BY	CHKD.	APPD.	ISSD.	PROJECT	AS CONV.	15

SCALE: 1"=100'
EXCEPT AS NOTED

**YARD STILLING POND
DIFFUSER REPLACEMENT PROJECT
EXISTING CONDITIONS & BASELINES
WORK PLAN XX (KIF-XXXXXX-WP-XX)**

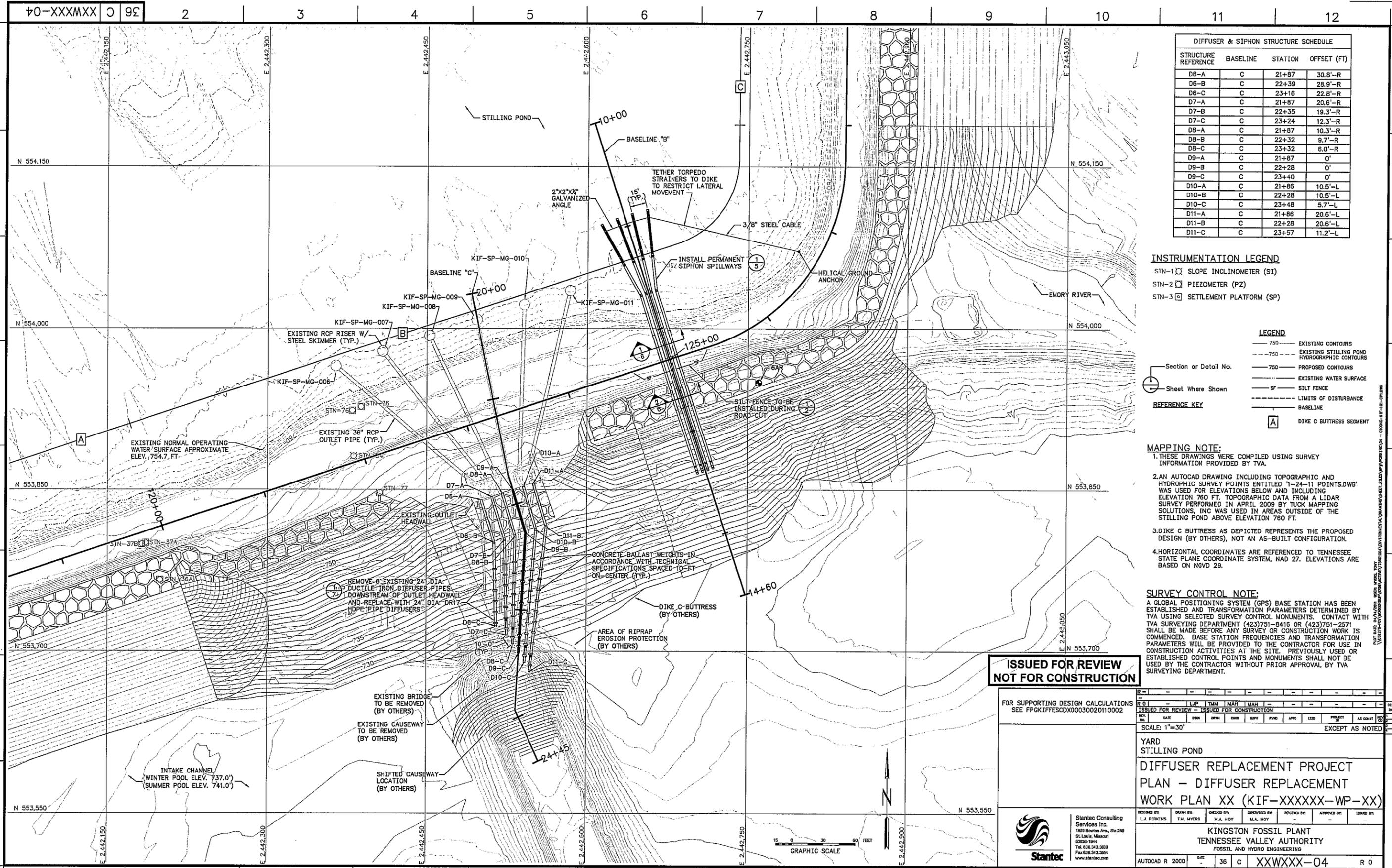
DESIGNED BY	DRAWN BY	CHECKED BY	SUPERVISED BY	REVIEWED BY	APPROVED BY	ISSUED BY
L.J. PERKINS	T.M. MYERS	M.A. HOY	M.A. HOY			

**KINGSTON FOSSIL PLANT
TENNESSEE VALLEY AUTHORITY
FOSSIL AND HYDRO ENGINEERING**

AUTOCAD R 2000 DATE: 36 C XXWXXX-03 R 0

STANTEC 0
TASK COMPLETED BY: REV NO.

PLOT FACTOR: 100
W_TVA C.A.D. DRAWING
DO NOT ALTER MANUALLY



DIFFUSER & SIPHON STRUCTURE SCHEDULE			
STRUCTURE REFERENCE	BASELINE	STATION	OFFSET (FT)
D6-A	C	21+87	30.8'-R
D6-B	C	22+39	28.9'-R
D6-C	C	23+16	22.8'-R
D7-A	C	21+87	20.6'-R
D7-B	C	22+35	19.3'-R
D7-C	C	23+24	12.3'-R
D8-A	C	21+87	10.3'-R
D8-B	C	22+32	9.7'-R
D8-C	C	23+32	6.0'-R
D9-A	C	21+87	0'
D9-B	C	22+28	0'
D9-C	C	23+40	0'
D10-A	C	21+86	10.5'-L
D10-B	C	22+28	10.5'-L
D10-C	C	23+48	5.7'-L
D11-A	C	21+86	20.6'-L
D11-B	C	22+28	20.6'-L
D11-C	C	23+57	11.2'-L

INSTRUMENTATION LEGEND
 STN-1 SLOPE INCLINOMETER (SI)
 STN-2 PIEZOMETER (PZ)
 STN-3 SETTLEMENT PLATFORM (SP)

LEGEND
 --- 750 --- EXISTING CONTOURS
 --- 750 --- EXISTING STILLING POND HYDROGRAPHIC CONTOURS
 --- 750 --- PROPOSED CONTOURS
 --- --- EXISTING WATER SURFACE
 --- SF --- SILT FENCE
 --- --- LIMITS OF DISTURBANCE
 --- --- BASELINE
 [A] DIKE C BUTTRESS SEGMENT

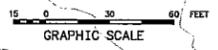
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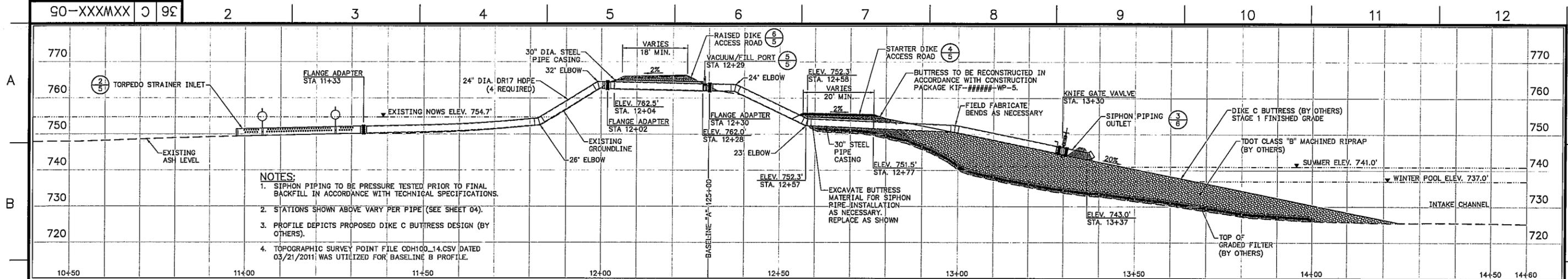
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FOR SUPPORTING DESIGN CALCULATIONS
 SEE FPGKIFFESCDX00030020110002

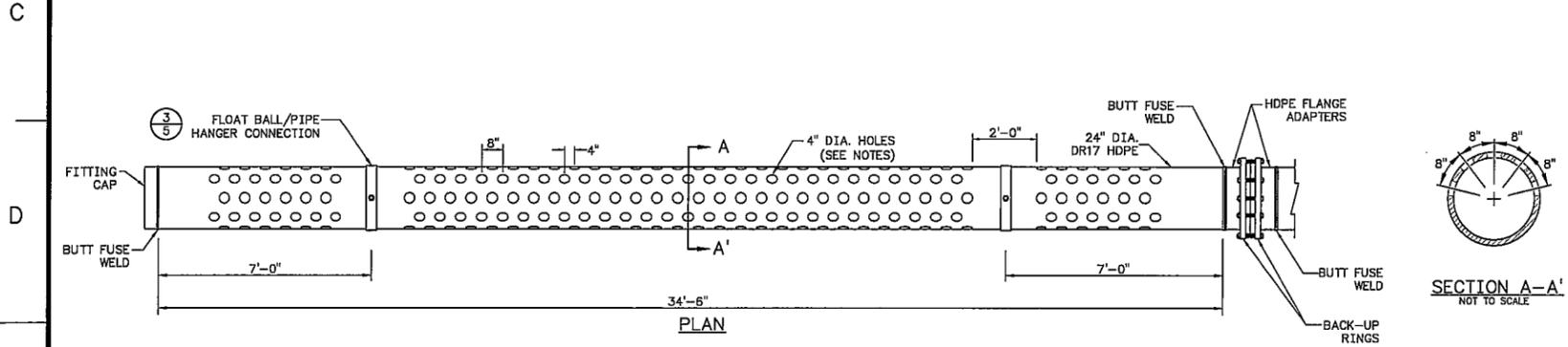
SCALE: 1"=30'		EXCEPT AS NOTED	
YARD STILLING POND			
DIFFUSER REPLACEMENT PROJECT			
PLAN - DIFFUSER REPLACEMENT			
WORK PLAN XX (KIF-XXXXXX-WP-XX)			
DESIGNED BY L.J. PERKINS	DRAWN BY T.M. MYERS	CHECKED BY M.A. HOY	APPROVED BY M.A. HOY
KINGSTON FOSSIL PLANT TENNESSEE VALLEY AUTHORITY FOSSIL AND HYDRO ENGINEERING			
AUTOCAD R 2000	DATE 36 C	XXWXXX-04	R 0





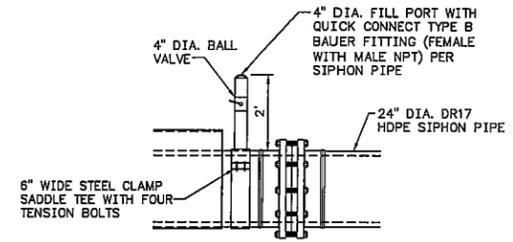
- NOTES:**
- SIPHON PIPING TO BE PRESSURE TESTED PRIOR TO FINAL BACKFILL IN ACCORDANCE WITH TECHNICAL SPECIFICATIONS.
 - STATIONS SHOWN ABOVE VARY PER PIPE (SEE SHEET 04).
 - PROFILE DEPICTS PROPOSED DIKE C BUTTRESS DESIGN (BY OTHERS).
 - TOPOGRAPHIC SURVEY POINT FILE ODH100_14.CSV DATED 03/21/2011 WAS UTILIZED FOR BASELINE B PROFILE.

1 PROFILE - BASELINE B
SCALE: 1"=10'

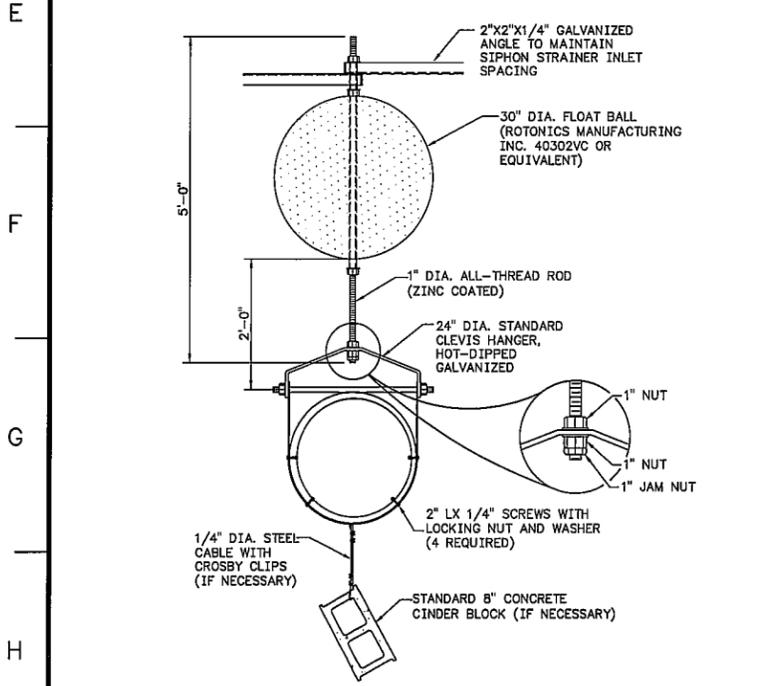


2 DETAIL - TORPEDO STRAINER INLET
SCALE: 1/2"=1'-0"

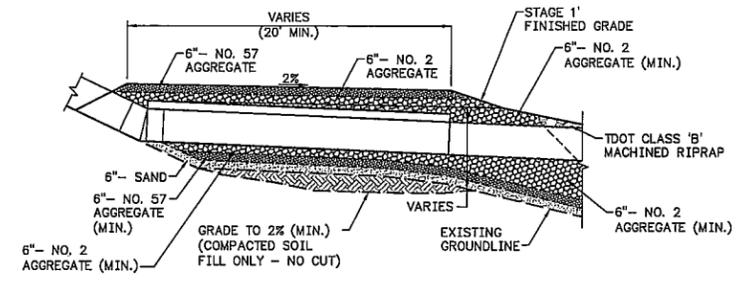
- NOTES:**
- HOLES WILL BE ON TOP HALF OF PIPE ONLY.
 - 4" DIA. HOLES AT 8" CENTER TO CENTER.
 - 200 HOLES PER STRAINER (5 ROWS WITH 40 HOLES EACH).
 - ROWS ARE TO BE 8" APART CENTER TO CENTER, AND THE HOLES WILL BE OFFSET BY 4".
 - PROVIDE 2 FOOT LENGTH WITHOUT HOLES AT 7 FEET FROM EACH END FOR FLOAT BALL HANGERS.



5 DETAIL - VACUUM/FILL PORT
SCALE: NOT TO SCALE

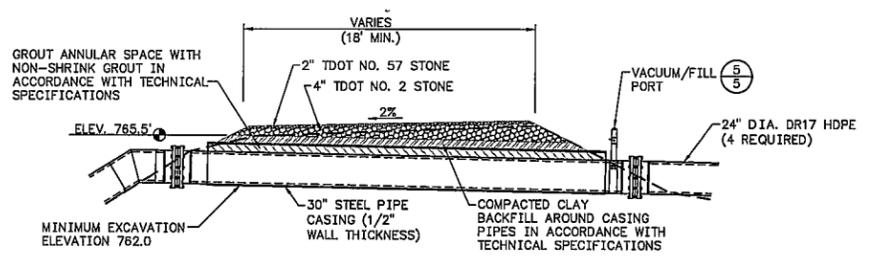


3 DETAIL - FLOAT BALL/PIPE HANGER CONNECTION
SCALE: 1"=1'-0"



- NOTES:**
- BUTTRESS MATERIAL AND ACCESS ROAD TO BE CONSTRUCTED BY OTHERS.
 - THE MINIMUM COVER THICKNESS FROM ROAD SURFACE TO TOP OF SAND FILTER IS 36-INCHES.
 - PLACE NO. 2 AGGREGATE AND NO. 57 AGGREGATE ON RIPRAP OR NO. 2 AGGREGATE AS APPLICABLE TO FORM A REVERSE FILTER FOR ROAD SURFACE.
 - REMOVE AGGREGATE CONTAMINATED WITH ASH AS DIRECTED BY THE QC MANAGER.

4 DETAIL - STARTER DIKE ACCESS ROAD
SCALE: 1/4"=1'-0"



6 DETAIL - RAISED DIKE ACCESS ROAD
SCALE: 1/4"=1'-0"

**ISSUED FOR REVIEW
NOT FOR CONSTRUCTION**

FOR SUPPORTING DESIGN CALCULATIONS SEE FPGKIFFCSDX00030020110002		<table border="1"> <tr> <th>REV</th> <th>DATE</th> <th>ISSUED FOR REVIEW</th> <th>ISSUED FOR CONSTRUCTION</th> <th>DESIGN</th> <th>DRAWN</th> <th>CHECKED</th> <th>SUPV</th> <th>REVD</th> <th>APPR</th> <th>ESD</th> <th>PROJECT</th> <th>AS CONST</th> <th>INTERFACE</th> </tr> <tr> <td> </td> </tr> </table>										REV	DATE	ISSUED FOR REVIEW	ISSUED FOR CONSTRUCTION	DESIGN	DRAWN	CHECKED	SUPV	REVD	APPR	ESD	PROJECT	AS CONST	INTERFACE														
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SCALE: AS SHOWN EXCEPT AS NOTED																																							
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DETAILS - SIPHON SPILLWAYS																																							
WORK PLAN XX (KIF-XXXXXX-WP-XX)																																							
DESIGNED BY	DRAWN BY	CHECKED BY	SUPERVISED BY	REVIEWED BY	APPROVED BY	ISSUED BY	KINGSTON FOSSIL PLANT TENNESSEE VALLEY AUTHORITY FOSSIL AND HYDRO ENGINEERING																																
L.L. PERKINS	T.M. MYERS	M.A. HOY	M.A. HOY				AUTOCAD R 2000 DATE: 36 C XXWXXX-05 R 0																																

SECTION OR DETAIL NO.
SHEET WHERE SHOWN
REFERENCE KEY

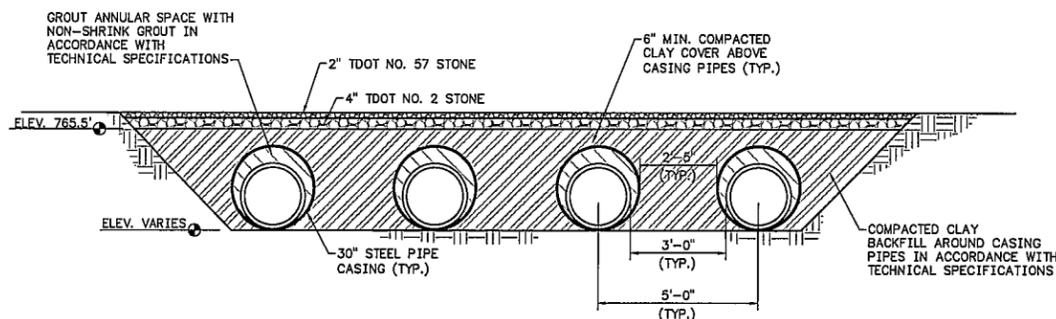
LEGEND
NOWS = NORMAL OPERATING WATER SURFACE

STANTEC 0
TASK COMPLETED BY: REV NO.

PLOT FACTOR: 10
W_TVA C.A.D. DRAWING
DO NOT ALTER MANUALLY

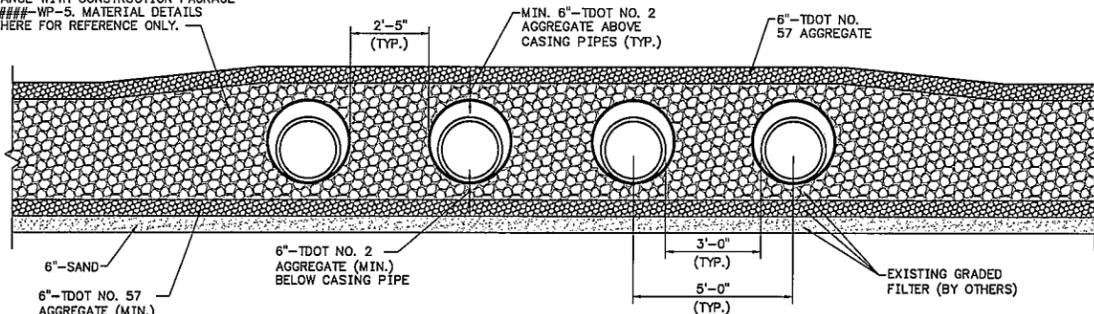
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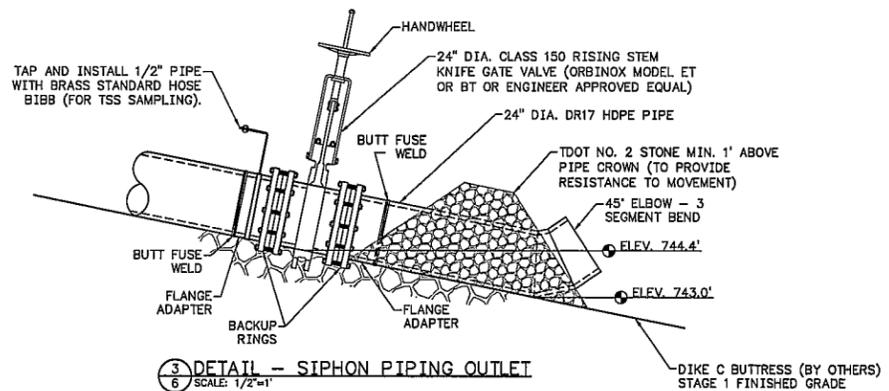


SECTION 1 - RAISED DIKE ACCESS ROAD
SCALE: 1/2"=1'

REMOVE BUTTRESS MATERIAL AS REQUIRED FOR SIPHON PIPE INSTALLATION. FOLLOWING SIPHON PIPE INSTALLATION, BUTTRESS TO BE RECONSTRUCTED IN ACCORDANCE WITH CONSTRUCTION PACKAGE KIF-#####-WP-5. MATERIAL DETAILS SHOWN HERE FOR REFERENCE ONLY.



SECTION 2 - STARTER DIKE ACCESS ROAD
SCALE: 1/2"=1'



DETAIL 3 - SIPHON PIPING OUTLET
SCALE: 1/2"=1'

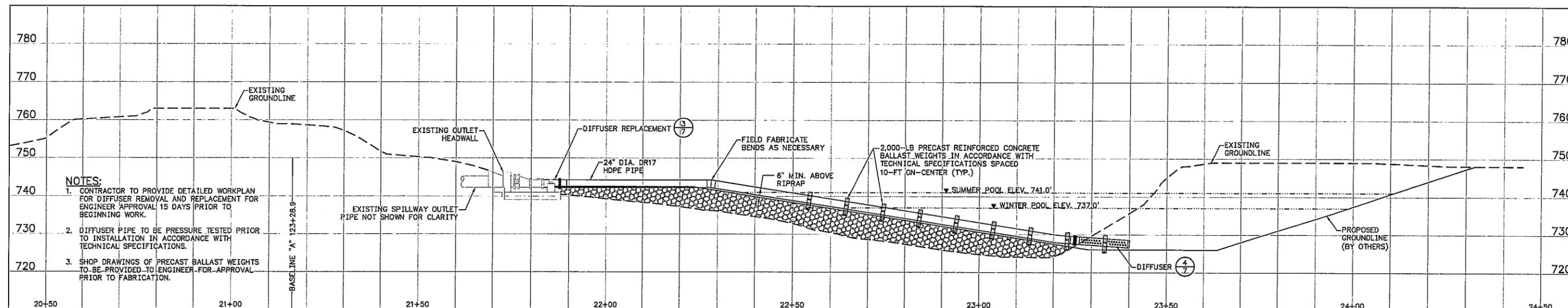
**ISSUED FOR REVIEW
NOT FOR CONSTRUCTION**

FOR SUPPORTING DESIGN CALCULATIONS SEE FPGKIFFESCDX00030020110002		<table border="1"> <tr> <td>R</td><td>0</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td> </tr> <tr> <td>ISSUED FOR REVIEW</td><td>ISSUED FOR CONSTRUCTION</td><td colspan="10"></td> </tr> <tr> <td>REV</td><td>DATE</td><td>DSH</td><td>DRN</td><td>CHD</td><td>SRV</td><td>RVD</td><td>APP</td><td>ISS</td><td>PROJ</td><td>AS</td><td>CON</td> </tr> </table>										R	0	-	-	-	-	-	-	-	-	-	-	ISSUED FOR REVIEW	ISSUED FOR CONSTRUCTION											REV	DATE	DSH	DRN	CHD	SRV	RVD	APP	ISS	PROJ	AS	CON
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Stantec Consulting Services Inc. 1858 Bowles Ave., Ste 200 St. Louis, Missouri 63026-1944 Tel: 636.343.3880 Fax: 636.343.3554 www.stantec.com		DESIGNED BY: L.A. PERKINS		DRAWN BY: T.M. MYERS		CHECKED BY: M.A. HOY		SUPERVISED BY: M.A. HOY		REVIEWED BY: -		APPROVED BY: -		ISSUED BY: -																																	
		KINGSTON FOSSIL PLANT TENNESSEE VALLEY AUTHORITY FOSSIL AND HYDRO ENGINEERING																																													
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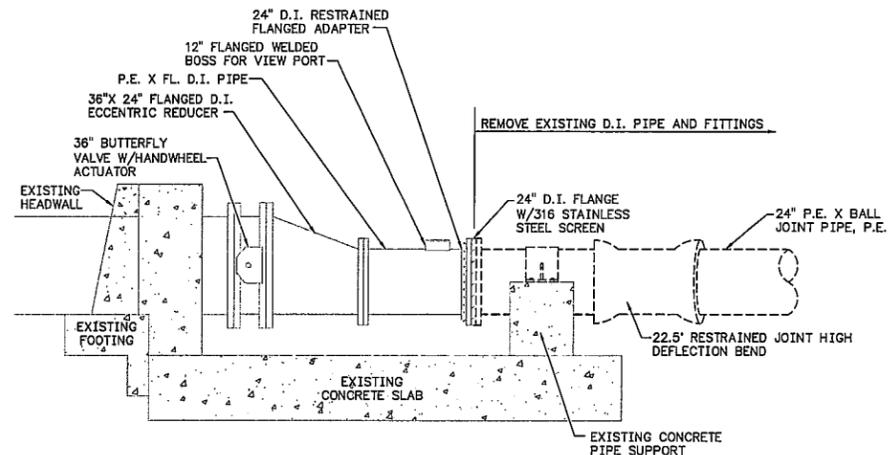
C



1 PROFILE - BASELINE C
 SCALE: 1"=10'

D

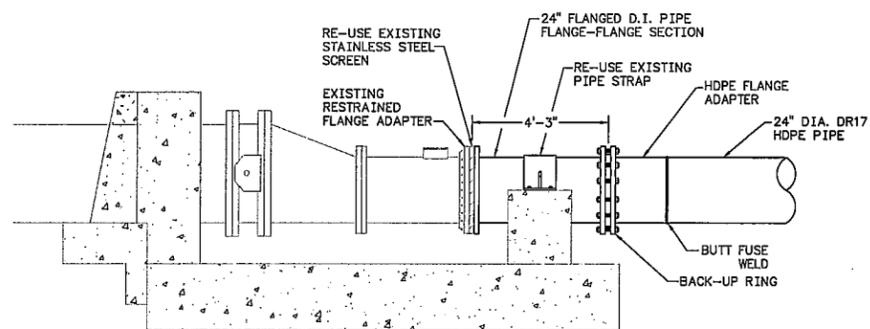
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2 DETAIL - EXISTING DIFFUSER PIPE REMOVAL
 SCALE: 1/2"=1'

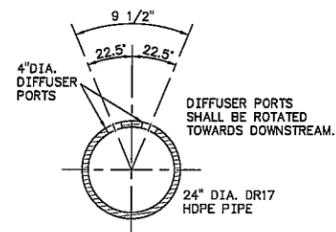
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G

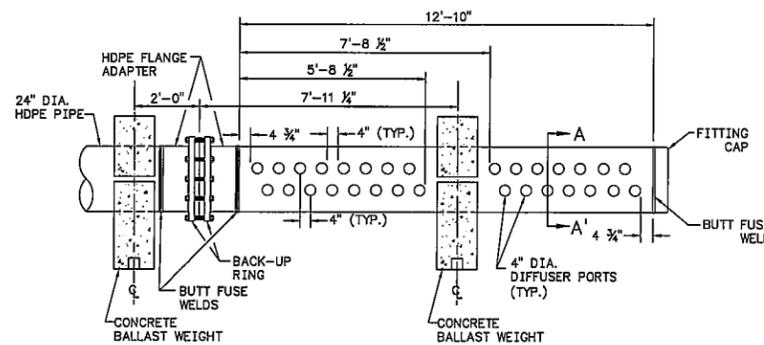


3 DETAIL - DIFFUSER REPLACEMENT
 SCALE: 1/2"=1'

H



SECTION A-A' - DIFFUSER HOLE ORIENTATION



ELEVATION VIEW

4 DETAIL - DIFFUSER
 SCALE: 1/2"=1'

NOTE:
 1. CONTRACTOR SHALL ASSESS CONDITION OF EXISTING DIFFUSER UPON REMOVAL. IF EXISTING DIFFUSER IS IN ADEQUATE CONDITION, IT MAY BE RE-USED UPON APPROVAL FROM THE ENGINEER.

SECTION OR DETAIL NO.
 SHEET WHERE SHOWN
 REFERENCE KEY

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FOR SUPPORTING DESIGN CALCULATIONS SEE FPGKIFFESCDX00030020110002		R - - - - -	
R.O. - - - - -		L.P. T.M. M.A.H. M.A.H. - - - - -	
ISSUED FOR REVIEW - ISSUED FOR CONSTRUCTION		SCALE: AS SHOWN EXCEPT AS NOTED	
YARD STILLING POND		DIFFUSER REPLACEMENT PROJECT	
DETAILS - DIFFUSER REPLACEMENT		WORK PLAN XX (KIF-XXXXXX-WP-XX)	
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KINGSTON FOSSIL PLANT TENNESSEE VALLEY AUTHORITY FOSSIL AND HYDRO ENGINEERING			
AUTOCAD R 2000	DATE 36	C	XXWXXX-07 R 0

STANTEC 0
 TASK COMPLETED BY: REV NO.

PLOT FACTOR: 10
 W_TVA C.A.D. DRAWING
 DO NOT ALTER MANUALLY