

GENERAL NOTES

GENERAL PROVISIONS

- The Contractor shall confine all specific work activities to the area defined by the plans or approved by the owner (Tennessee Valley Authority). 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. If equipment or material hauling causes damage, the damage shall be immediately repaired by the Contractor, and the methods for hauling shall be altered to prevent further damage. Except as shown on these plans the contractor shall avoid making excavations into the dike without the approval of the owner or the engineer (Stantec). During construction the contractor is responsible for precautions required to protect the integrity of the dikes, existing spillway system and appurtenances needed for the safe operation of the ash pond.
- 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.
- Whenever reference is made to Tennessee Department of Transportation (TDOT) Standard Specifications, American Concrete Institute (ACI), American Water Works Association American Society of Testing and Materials (ASTM) and other published standards or specifications, it shall mean the latest version in its entirety.
- The Contractor shall secure the latest edition of TDOT Standard Specifications when performing work which is prescribed herein. Copies may be obtained from:
State of Tennessee
Department of Transportation
Suite 700, James K Polk Building
505 Deaderick Street
Nashville, Tennessee 37243-0345
- Horizontal and vertical survey control points for construction staking shall be the responsibility of the owner. The Contractor shall be responsible for all surveying and staking necessary for layout and construction of the project.
- 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
 - Riprap: final grade ± 0.5 feet, thickness zero to + 0.5 feet
 - Final grade top of dike: zero to + 0.25 feet
 - Precast concrete spillway structures: ± 0.10 feet, and all structures within $\frac{1}{2}$ " of same elevation. all other measurements within $\frac{1}{2}$ " of plan dimensions.
 - Stop Logs: all within $\frac{1}{2}$ " of same elevation and no more than $\frac{1}{8}$ " variation (levelness) across a single stop log.
 - Pipes and appurtenances: ± 0.10 feet of plan elevation.
- No deviations from the plans or approved shop drawings shall be made without prior approval from the Engineer. The Contractor shall keep 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 plan set of final record drawings shall be prepared by the Engineer to ensure that the owner has a permanent record of the project as it was constructed. The Contractor shall cooperate fully and assist with preparation of the Final Record Drawings.

SITWORK

- The Contractor shall exercise every reasonable precaution at all times to minimize soil erosion and prevent water pollution by deposition of sediment into Kentucky Lake. Prior to beginning clearing, grubbing, and topsoil stripping activities, the contractor shall install silt fence as shown on the plans. Silt fence shall be inspected every 7 days and within 24 hours of a precipitation event that produces $\frac{1}{2}$ inch or more of rainfall. If the fence fabric is undermined, torn, or in any way becomes ineffective it shall be immediately repaired or replaced.
- Areas which will be excavated or used for embankment shall be cleared of trees, stumps, brush, projecting roots, weeds, logs and other protruding obstructions. All trees, stumps, brush, projecting roots, weeds, logs, and protruding obstructions shall be cut to within 3 inches of existing ground. The area shall be grubbed to a depth of 6 inches to remove grass, roots and other organic material. If encountered, topsoil shall be stripped to a depth of 4 inches. All cleared and grubbed material shall be removed from the site and disposed of at an approved disposal site and in accordance with applicable local landfill regulations. Topsoil shall be stored at a designated location on the site to be used for final topdressing.
- Prior to placing embankment against the outside slope of the dike, the bottom shall be benched level to provide a level surface to begin the embankment. Sloping surfaces against which embankment or backfill material will be placed shall be destroyed by stepping or serrating, to enhance bonding and prevent wedging action during compaction.
- Excavated materials from offsite borrow sources that will be placed as embankment material against either the outside slope of the dike, or to backfill excavations within the dike, shall consist primarily of clay materials that, in the opinion of the Engineer, are suitable for dam construction. Unless otherwise permitted, embankment materials shall exhibit a classification of cl, cl-mi, cl-ch, or ch in accordance with ASTM D-2487. The material shall be free of organic matter, topsoil, rubbish, debris, waste materials, and rock pieces greater than 3 inches (maximum dimension) in size, and shall be at a moisture content that is suitable for acceptable compaction.
- Embankment materials shall be placed and spread in horizontal lifts that do not exceed 8 inches in thickness (loose measure). Each lift shall be thoroughly compacted to achieve a minimum density of 98% of its maximum dry density as determined by ASTM D-698. The moisture content during compaction shall be within a range of +2 to -3 percent of the optimum moisture content as determined by ASTM D-698. field compaction tests, by the Engineer, shall be performed on each lift or to verify that specified levels of compaction are achieved.
- Material that is placed adjacent to and less than 3 feet above the top of spillway pipes shall be compacted using hand-directed compactors ("jumping jack" type compactor/rammer).
- Final embankment surfaces shall be finished to a relatively smooth and compact surface. Seedbed preparation, fertilizing, seeding, mulching, and protecting earth surfaces shall be performed in accordance with the applicable subsections of sections 801 and 918 of the TDOT Standard Specifications. Group "c" seed mixture shall be used.
- Within the Construction area, the final top of dike shall be surfaced across the entire crest width using a 6-inch layer of compacted mineral aggregate base (Type B) in accordance with section 303 of the TDOT Standard Specifications.
- Riprap and grouted riprap shall be machined riprap in accordance with section 709 of the TDOT Standard Specifications. Class B shall be used.

PRECAST SPILLWAY INLET STRUCTURES

- Precast concrete spillway inlet structures shall be Sherman Dixie Standard Type I TVA spillway inlets or approved equal. Precast structures shall conform to ASTM C-913. Each structure shall be cast as a single unit with suitable lifting lugs or holes designed and located so that the structure can be lifted and placed into its final position against the sidewall of the adjacent structure.
- The Contractor shall provide two (2) sets of shop drawings of inlet structures for the Engineer's review and approval.
- Each structure shall be delivered on-site with stop log guides installed by casting integrally in the structure. The installation will have been checked to insure that the guides are properly aligned and the stop logs can be installed and removed without binding.
- Each structure shall be delivered with a $\frac{5}{8}$ " thick steel plate mounted on the interior rear wall of the structure. The plate will have been fabricated for the attachment of a 30-inch dr 17 HDPE outlet pipe using a standard flange adapter/ductile iron flange back-up ring with bolts. The steel plate shall be fabricated using ASTM A-36 steel, and shall be coated the same as structural steel for skimmers.
- Unless noted otherwise on the plans, anchor bolts shall be galvanized steel expansion-type concrete anchors that are installed into holes drilled after the unit is cast. The minimum size shall be $\frac{3}{4}$ " diameter and minimum embedment shall be 6 inches. Drill holes shall be thoroughly cleaned prior to installing anchors and all anchors shall be installed per manufacturer's directions.

CAST-IN-PLACE CONCRETE

- Cast-in-Place reinforced concrete shall comply with all applicable subsections of section 604 - concrete structures of the TDOT Standard Specifications and ACI 305 - hot weather concreting. Class a concrete shall be used.
- Steel reinforcement shall consist of deformed steel bars meeting the requirements of ASTM A-615, Grade 60. Unless otherwise noted, reinforcing steel placement and cover shall conform to ACI 318.
- Exposed edges shall be chamfered $\frac{3}{4}$ ". Exposed, formed surfaces shall receive a Class 1, ordinary surface finish. Exposed, unformed (horizontal surfaces) shall receive a Class 3, float finish, surfaces.

STOP LOGS

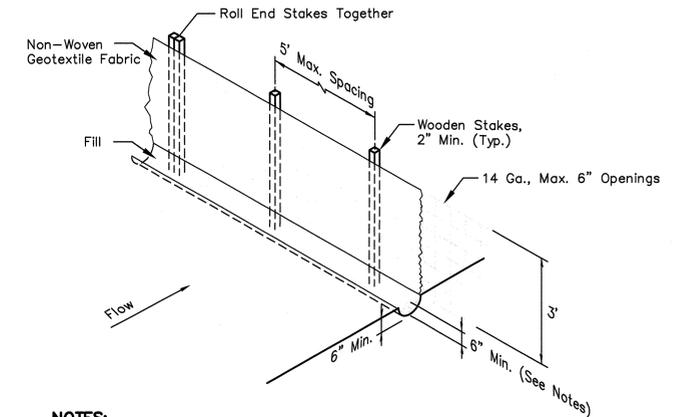
- Stop Logs and guide frame shown on these plans are for conceptual purpose. The Contractor will be required to furnish fiberglass reinforced plastic (frp) stop logs designed to withstand a maximum differential head of 6 feet.
- Stop Log leak rate shall be in accordance with AWWA C563 during the warranty period (2 years).
- The Stop Log supplier shall provide two sets of shop drawings for approval prior to fabrication. The Contractor shall be responsible for verifying dimensions.

HDPE PIPE

- High Density Polyethylene Pipe (HDPE) and fittings shall meet the requirements of ASTM D 3350 "specification for polyethylene plastic pipe and fittings materials" DR 17.
- Joints shall be butt fused joints which meet the requirements ASTM D 3261 "Standard Specification for butt heat fusion polyethylene (PE) plastic fittings for polyethylene plastic pipe and tubing".

STEEL SKIMMER STRUCTURES

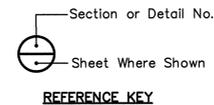
- Structural steel members shall meet the requirements of ASTM A 36. Corrugated steel sheets shall meet the requirements of ASTM A 929.
- All structural steel shall be coated with an epoxy zinc rich primer and coal tar epoxy paint (two coats). Application of coatings and preparation of steel shall be in accordance with the coating manufacturer's specifications.



NOTES:

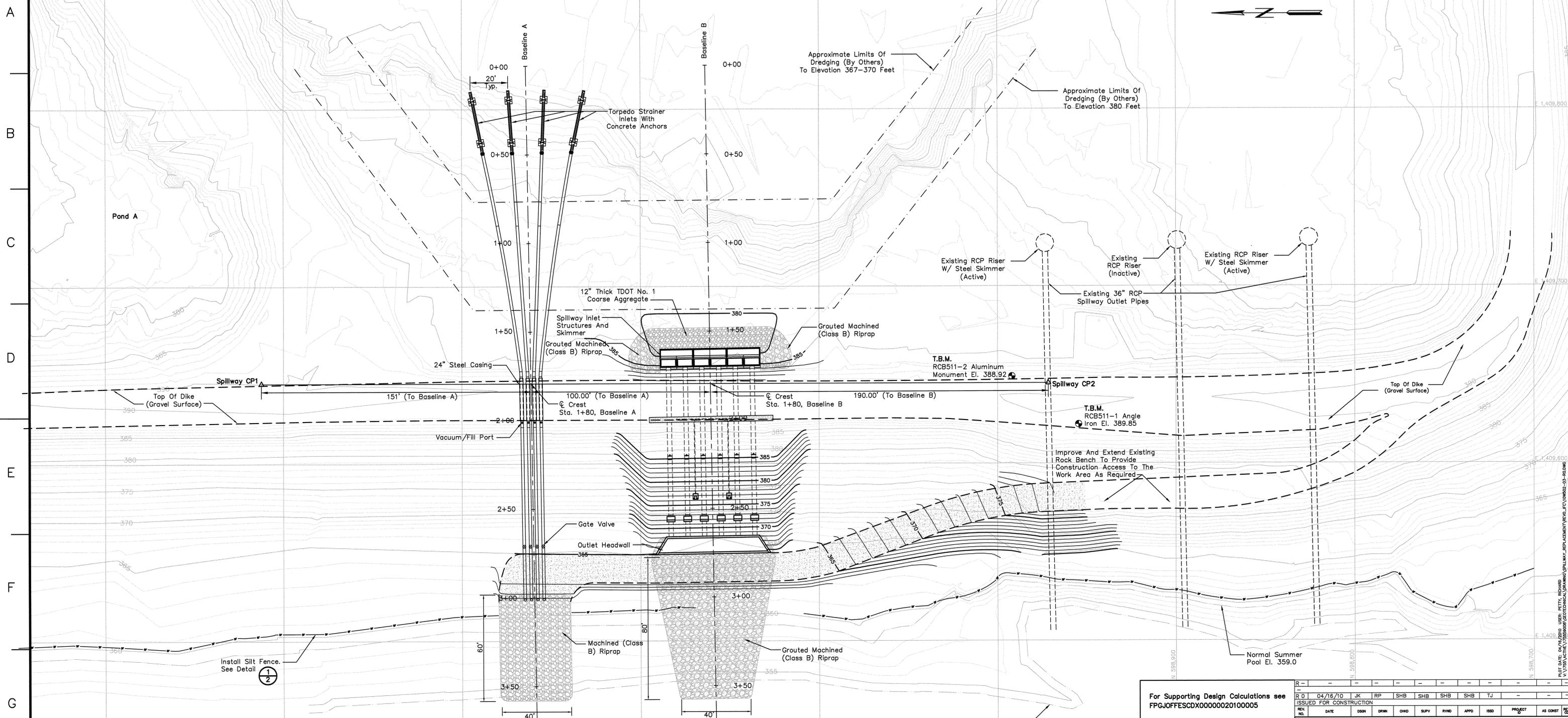
- All Earthwork Activity Shall Be Located Uphill Of Silt Fence.
- Silt Fence Shall Be Installed Across Slopes On The Contour Line.
- Attach Filter Fabric To Wooden Stakes With Staples, Hogrings Or Other Materials Approved By The Engineer.
- Wooden Stakes Shall Be Installed On The Downhill Side Of Filter Fabric.
- Bury The Bottom 12 Inches Of Filter Fabric In A 6"x6" Trench (To Prevent Sediment From Escaping Under The Fence) And Back Fill With Soil.
- Join Silt Fence Sections By Rolling End Stakes Together To Create An Unbroken Sediment Barrier.

1 DETAIL - SILT FENCE
2 SCALE: N.T.S.



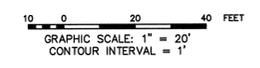
ISSUED FOR CONSTRUCTION

For Supporting Design Calculations see FPGJOFFESCXD00000020100005		R - - - - -										
REV. NO.		ISSUED FOR CONSTRUCTION										
SCALE: NONE		EXCEPT AS NOTED										
YARD ASH DISPOSAL AREA NO. 2		SPILLWAY REPLACEMENT PROJECT										
GENERAL NOTES		WORK PLAN 3 (JOF-090515-WP-3)										
DESIGNED BY: J. KOPP	DRAWN BY: R. PETTY	CHECKED BY: S. BICKEL	SUPERVISED BY: S. BICKEL	REVIEWED BY: S. BICKEL	APPROVED BY: S. BICKEL	ISSUED BY: T. JOHNSON	JOHNSONVILLE FOSSIL PLANT TENNESSEE VALLEY AUTHORITY FOSSIL AND HYDRO ENGINEERING				AUTOCAD R 2000	
DATE 04/16/10		30		C		10W502-02		R 0				



PLAN - SPILLWAY SIPHON AND PERMANENT SPILLWAY SYSTEM
SCALE: 1" = 20'

ISSUED FOR CONSTRUCTION

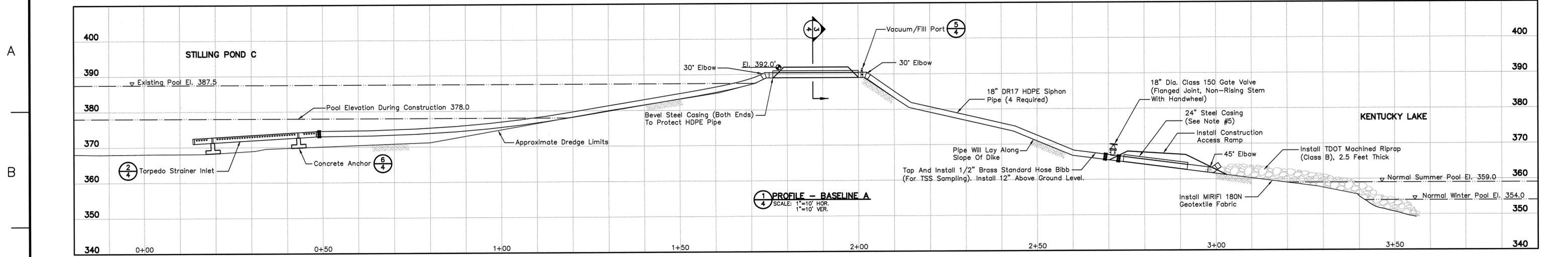


Section or Detail No.
 Sheet Where Shown
 REFERENCE KEY

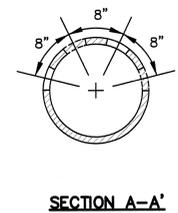
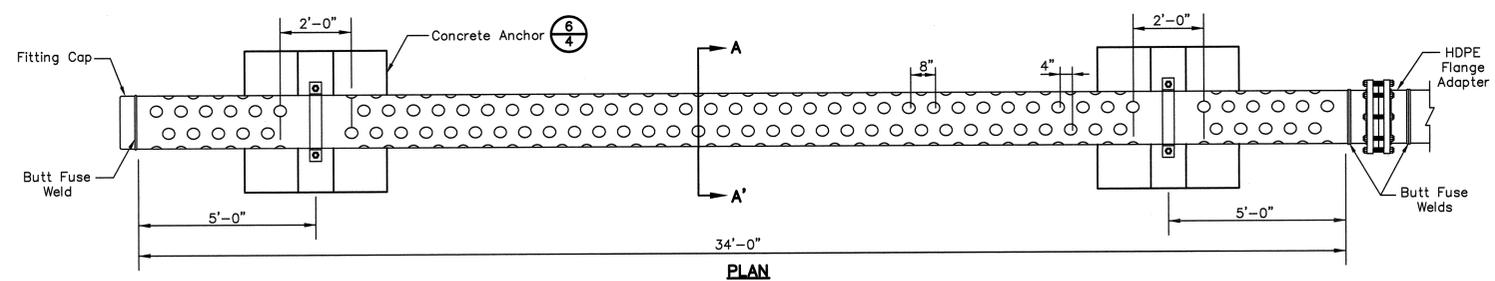
For Supporting Design Calculations see
FPGJOFFESCDX0000020100005

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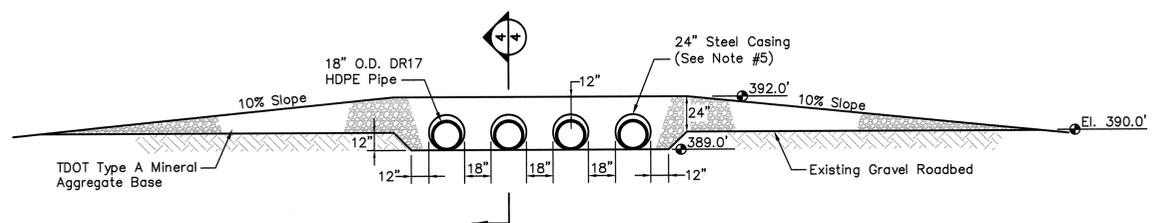
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R	0	04/16/10	JK	RP	SHB	SHB	SHB	SHB	TJ			SPILLWAY
YARD ASH DISPOSAL AREA NO. 2 SPILLWAY REPLACEMENT PROJECT SPILLWAY & SIPHON PLAN WORK PLAN 3 (JOF-090515-WP-3)												
DESIGNED BY:	DRAWN BY:	CHECKED BY:	SUPERVISED BY:	REVIEWED BY:	APPROVED BY:	ISSUED BY:						
J. KOPP	R. PETTY	S. BICKEL	S. BICKEL	S. BICKEL	S. BICKEL	T. JOHNSON						
JOHNSONVILLE FOSSIL PLANT TENNESSEE VALLEY AUTHORITY FOSSIL AND HYDRO ENGINEERING												
AUTOCAD R 2000	DATE	30	C	10W502-03	R 0							
PLOT FACTOR: XX W_TVA												



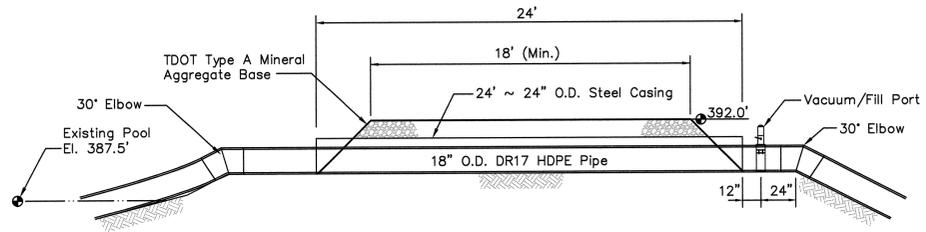
- NOTES:**
- The Siphon System Shall Be Installed And Operated For The New Spillway Installation. The Contractor Shall Be Responsible For Installing, Periodically Priming, Maintaining And Regulating The Flow Of The Siphon In A Manner That Ensures Safety And Stability Of The Ash Pond Dikes At All Times During Construction. At A Minimum The Contractor Will Not Reduce The Pool Level More Than 1 Foot Per Day During Drawdown And Will Immediately Halt Pool Lowering If Any Sign Of Slope Instability Is Noted.
 - The Contractor Shall Install A Staff Gage With Alternating Marks At 0.1' Increments And Whole Foot Call-Outs. The Contractor Shall Monitor The Gage And Regulate The Siphon Flows To Maintain The Pond At Elevation 378.0 Feet (±0.5' Feet) During Construction Of The New Permanent Spillway.
 - Each Anchor Shall Be Placed Into Position By Divers. If Excessive Settling Of An Anchor Occurs, The Contractor Shall Readjust The Anchor, And Take Extra Measures For Support Or Excavate Ash From Beneath (And 4 Feet On Either Side) The Strainer, To Ensure That The Bottom Of The Torpedo Strainer Inlet Is At Least 2.5 Feet Above The Bottom Of The Ash Pond.
 - Install MIRIFI 180N Geotextile Fabric Or Approved Equal, Beneath Riprap.
 - Steel Casing Pipe Shall Conform To ASTM A252 Standard Specification For Welded And Seamless Pipe. It Shall Be Adequate To Support All Construction Equipment And Loads. The Minimum Wall Thickness Shall Be 1/2-inch. Each End Shall Be Beveled And Ground Smooth So As To Prevent Damage To The HDPE Carrier.



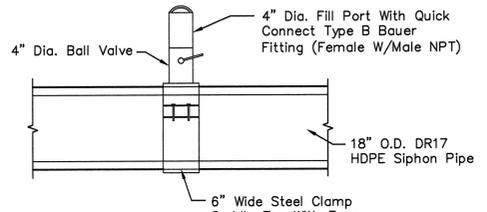
- NOTES:**
- Holes Will Be On Top Half Of Pipe Only.
 - 4" Diam. Holes At 8" Center To Center.
 - 168 Holes Per Strainer (4 Rows With 42 Holes Each).
 - Rows Are To Be 8" Apart Center To Center, And The Holes Will Be Offset By 4".
 - Provide 2 Foot Length W/O Holes At 5 Feet From Each End For Concrete Anchors.



3 SECTION - DIKE ACCESS ROAD
SCALE: 1/4"=1'-0"

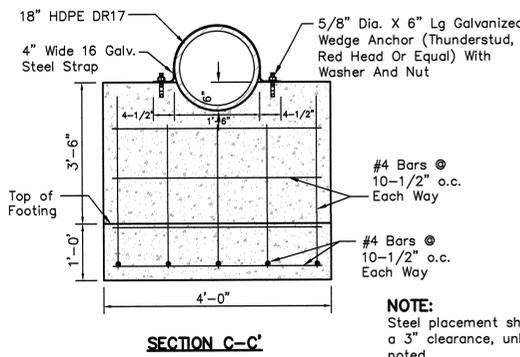
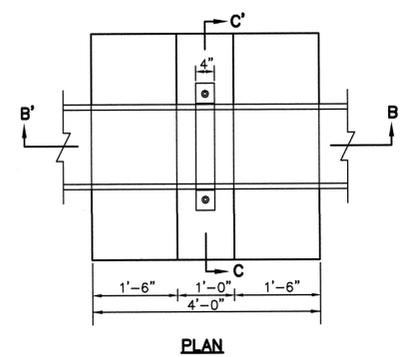


4 SECTION - DIKE ACCESS ROAD
SCALE: 1/4"=1'-0"

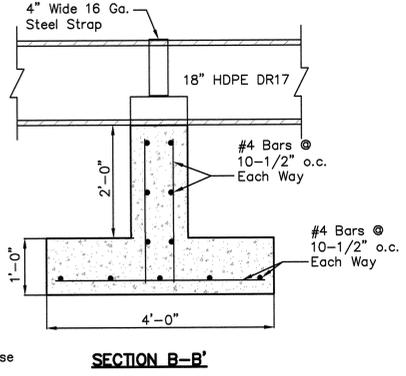


Note: The Vacuum/Fill Port Will Be Used To Prime The Siphons. Additional Fill Ports May Be Installed At The Contractor's Discretion.

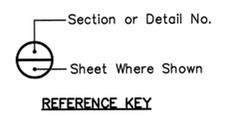
5 DETAIL - VACUUM/FILL PORT
SCALE: 1"=1'-0"



6 DETAIL - CONCRETE ANCHOR
SCALE: 1"=1'-0"



SECTION B-B



ISSUED FOR CONSTRUCTION

For Supporting Design Calculations see FPGJOFESCDX0000020100005

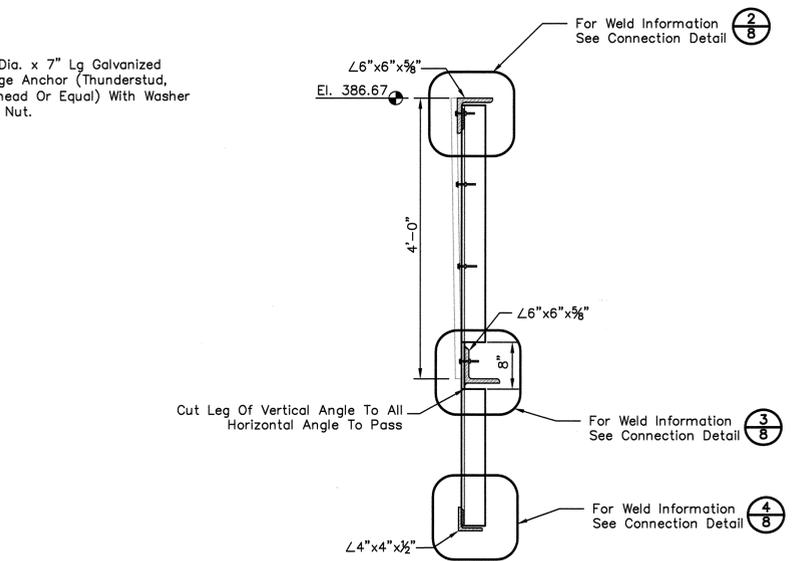
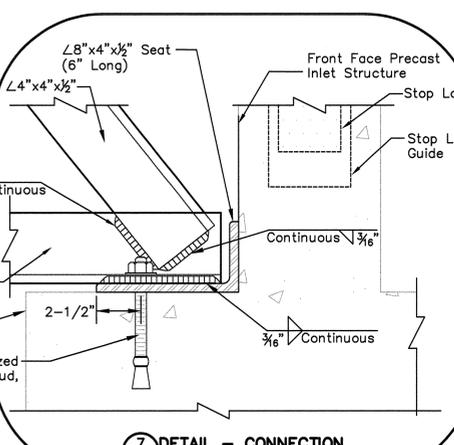
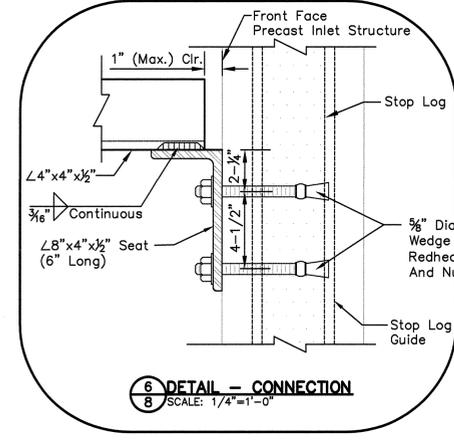
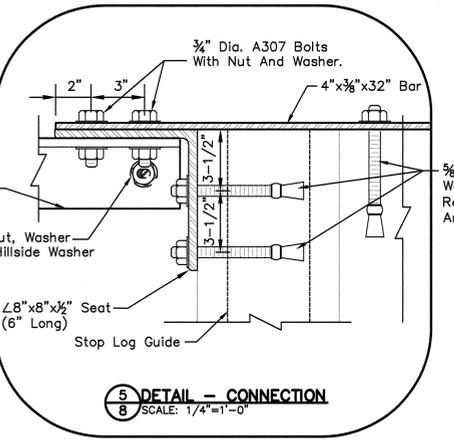
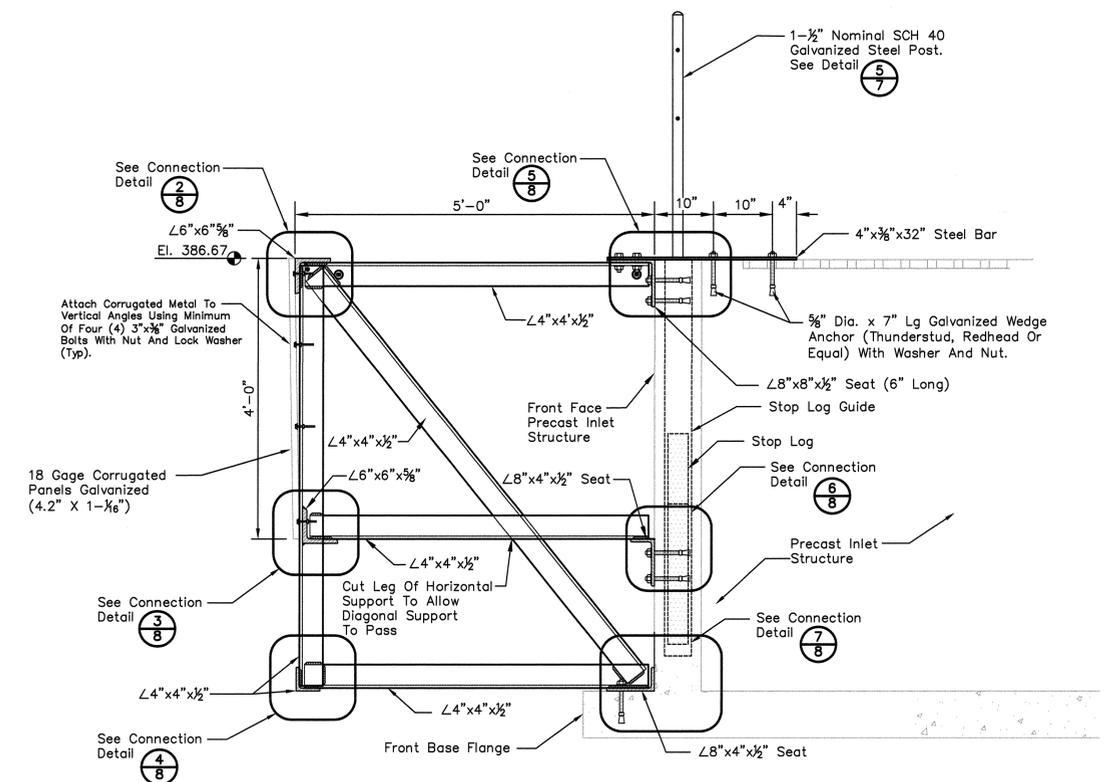
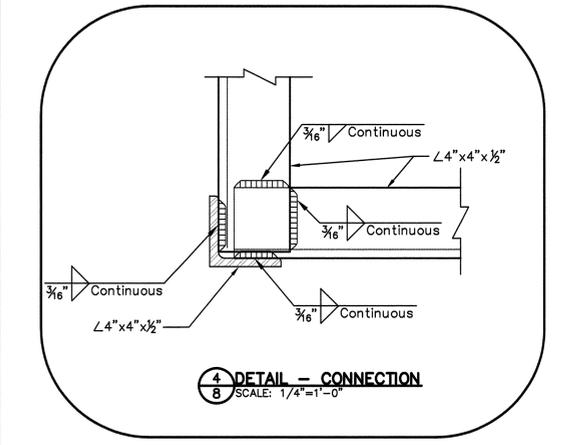
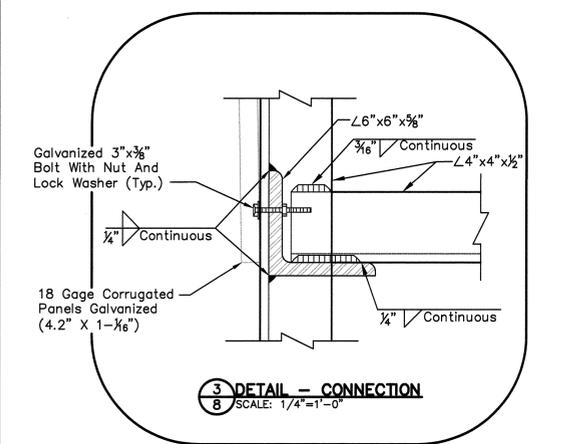
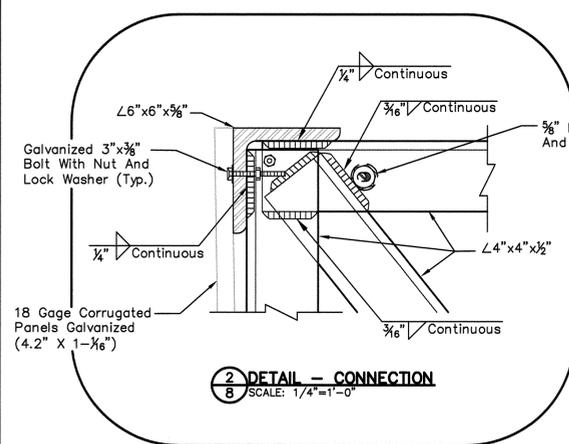
YARD ASH DISPOSAL POND AREA NO. 2
SPILLWAY REPLACEMENT PROJECT
SIPHON PROFILE AND DETAILS
WORK PLAN 3 (JOF-090515-WP-3)

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DATE: 04/16/10
SCALE: AS SHOWN
AUTOCAD R 2000
PLOT FACTOR: XX
W_TVA
C.A.D. DRAWING
DO NOT ALTER MANUALLY

A
B
C
D
E
F
G
H



- NOTES:**
- Preparation Of Base Metal Prior To Welding Shall Be Performed In Accordance With AWS D1.1.
 - All Welding Shall Be Done By The Shielded Metal Arc Welding (SMAW) Process.
 - The Details Shown Shall Be Used To Construct All Parts Of The Steel Skimmer Frame, But The Segs Of The Angle Supports For Alternating Frames Shall Oppose One Another Directionally (Mirror Image) As Shown On The Plan View.

Section or Detail No.
Sheet Where Shown

REFERENCE KEY

For Supporting Design Calculations see FPGJOFFESCDX00000020100005

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JOHNSONVILLE FOSSIL PLANT
TENNESSEE VALLEY AUTHORITY
FOSSIL AND HYDRO ENGINEERING

DATE	04/16/10	30	C	10W502-08	R 0
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