Stivers

E. F. Thomas, Director of Power Production, 716 EB-C (2)

Roy H. Dunham, Director of Engineering Design, 505 UB-K

October 2, 1973

KINGSTON STEAM PLANT - ANNUAL ASH DISPOSAL AREA INSPECTION

Attached is a report from J. P. Hillier Stivers to Frank D. Stansberry dated September 20, 1973, of the joint inspection at Kingston Steam Plant which includes recommendations for corrective work. I concur in these recommendations.

Original Signed By
F. P. Lacy

Roy H. Dunham

JPHS:BIH
Attachment
CC (Attachment):
R. G. Domer, 104 UB-K
W. W. Engle, 401 UB-K (3)
B. S. Montgomery, 401 AB-K
Power Manager's File, 630 PRB-C

Frank D. Stansberry, Head Civil Engineer (Highway and Railroad), 101 FB-K

J. P. Hillier Stivers, Civil Engineer (Highway and Railroad), 100 FB-K

September 20, 1973

KINGSTON STEAM PLANT - ANNUAL ASH DISPOSAL AREA INSPECTION

On September 6, 1973, Larry Wall, Division of Power Production, Chattanooga; L. B. Kennedy, Assistant Superintendent, Kingston Steam Plant; and I inspected the ash disposal area at Kingston Steam Plant and discussed our findings with Monette L. Butler, Plant Superintendent, Kingston Steam Plant.

The area was last inspected on September 8, 1972.

On the attached marked print of drawing 10N400, the different ash disposal areas and dikes are designated.

Change in Dikes Since Last Inspection

All dikes with the exception of the west dike of the initial area and south end of dike C were built with earth and widened with ash. The west dike of the initial area and the south end of dike C were built and widened with ash.

During the 1969 inspection, an area which eroded due to wave erosion was found on the outside toe of dike C, as shown on the print of drawing 10N400. This area was repaired in 1970 by rebuilding the toe with rockfill, and no further erosion of this area has taken place. Since 1970 the toe of dike C south of the original erosion has shown some small amounts of wave erosion, but none of any consequence until this inspection. The high flood waters and heavy rainfall of the past year have increased the erosion of the outside toe of dike C. The toe of the outside slope has eroded away leaving vertical slopes varying in height from one foot to approximately four feet. This area extends from the original (1969) erosion south to the junction of dike C with the road dike. The new erosion will have to be repaired. Although the erosion is now not serious enough to be an immediate danger to the dike, further erosion can become so; and a long delay will only add to the expense of the repair. When Watts Bar Lake is drawn to coming winter elevation, another inspection of the erosion should be made to determine the full extent of repair needed. The plant personnel will coordinate the time of inspection with the Divisions of Power Production and Engineering Design.

Frank D. Stansberry
September 20, 1973

KINGSTON STEAM PLANT - ANNUAL ASH DISPOSAL AREA INSPECTION

With the above exception, all the dikes are in good condition with the tops smooth and sloped to the inside. The vegetation on the outside slopes is good with few exceptions. The main exception is the portion of dike C that was built with heavy ash, noted on the print of drawing 10N400. Seeding of this area is not planned at this time. The other exceptions are small isolated areas that are being worked on by plant personnel.

The high flood waters carried an enormous amount of trash into the intake channel and up against the intake structure, most of which has been removed; but several large pieces were left on the intake channel slope of the road dike and should be removed.

Change in Pond Operation Since Last Inspection

There has been no basic change in the method of operation. All ash is sluiced into the initial area. Part of it is picked up with a dragline, allowed to drain, and then dry hauled to the ash disposal area adjacent to and north of the north dike where it is deposited in stages. As each stage reaches the elevation of the top of the north dike, it is covered with earth and seeded.

The ash water, carrying some light ash that was not picked up by the dragline, flows through two plant-constructed spillways and skimmers into the ash disposal area where the rest of the ash settles out. The water then goes into Watts Bar Lake through two standard spillways with standard skimmers. The only change in operation is that the dry-hauled ash, at this time, is being used to fill most of the initial area to the elevation of the top of the west and north dikes to make a construction plant area for construction of the planned new stacks.

The initial area was constructed when the plant was built, as was the road dike, with dike C being added later to complete the ash disposal area.

Condition of Spillways, Skimmers, and Outlets

The spillways, skimmers, and outlets of the initial area could not be inspected due to their location in the area with no access.

Frank D. Stansberry
September 20, 1973

KINGSTON STEAM PLANT - ANNUAL ASH DISPOSAL AREA INSPECTION

Visual inspection of skimmers and spillways of the ash disposal area showed them to be in good condition with no evidence of loss of ash into Watts Bar Lake. A new walkway has been constructed to the spillways to replace the floating walkway. This will relieve the problem of disturbing the floating fly ash around the skimmer.

The outlets of the ash disposal area were submerged and could not be inspected.

Action on Recommendations of Last Inspection

There were no recommendations on last inspection.

Recommendations

1. Rebuild, with rockfill, the toe of the outside slope of dike C where the erosion has taken place. The rebuilding is to be deferred until another joint inspection of the area can be made. This inspection is to be done at the earliest time when the elevation of Watts Bar Lake is such that a more detailed inspection can be made, approximately the middle of October. Plant personnel is to coordinate the time of inspection.

2. Remove the trash from the outside slopes of the dikes, especially the road dike.

J. P. Hillier Stivers

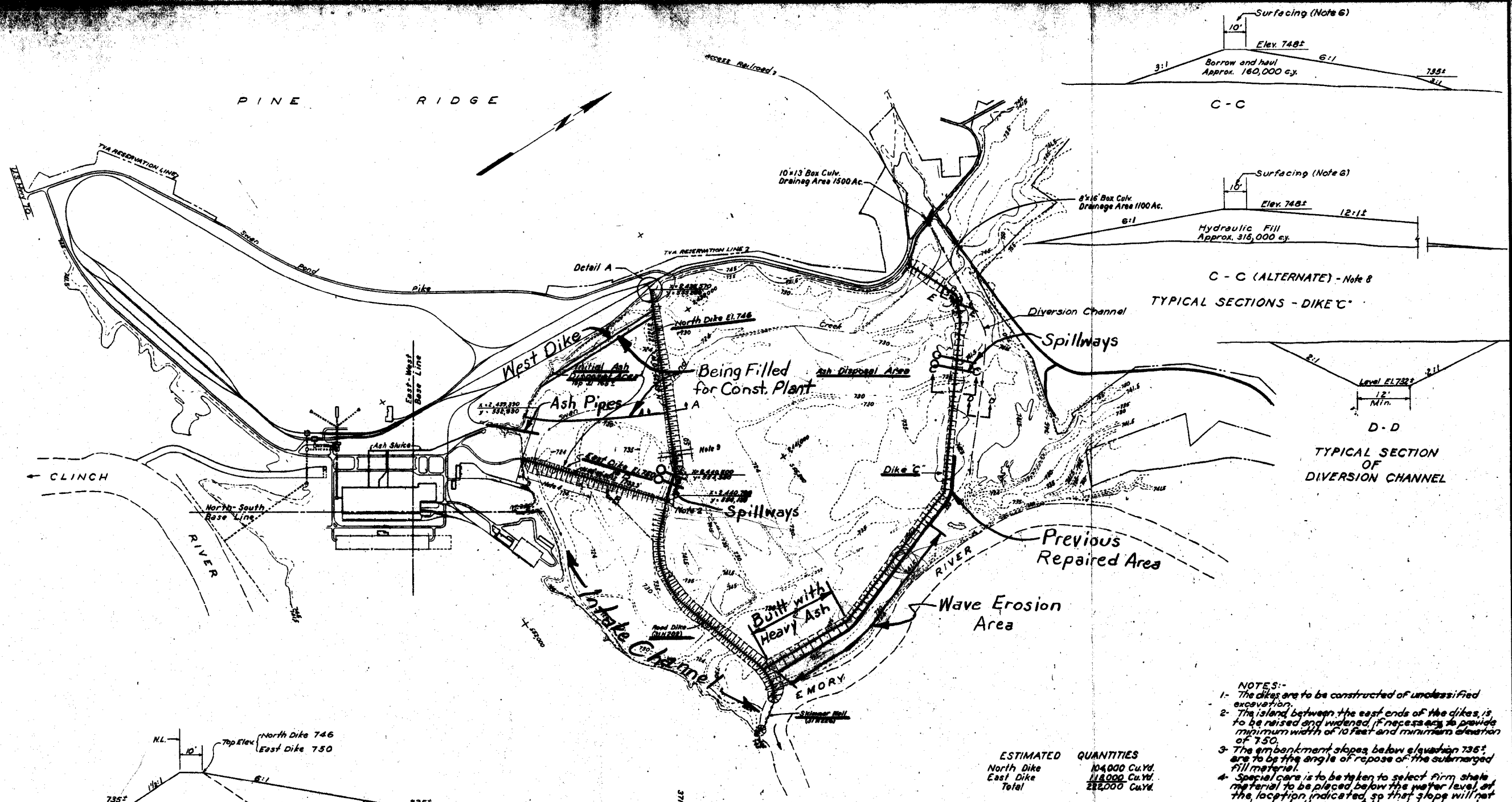
JPHS:BLH
Attachment

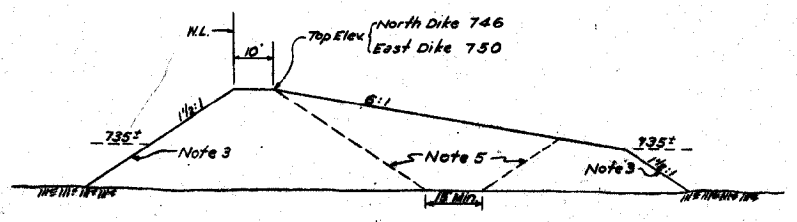
Concur: Original Signed By
E. D. Stansberry
Frank D. Stansberry

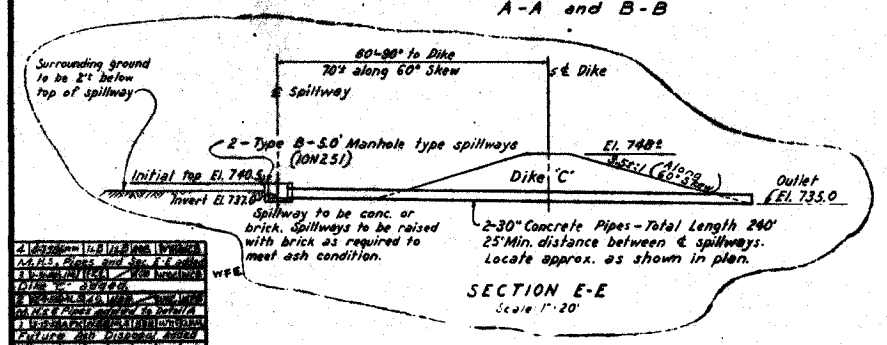
Original Signed By
W. W. Engle
W. W. Engle

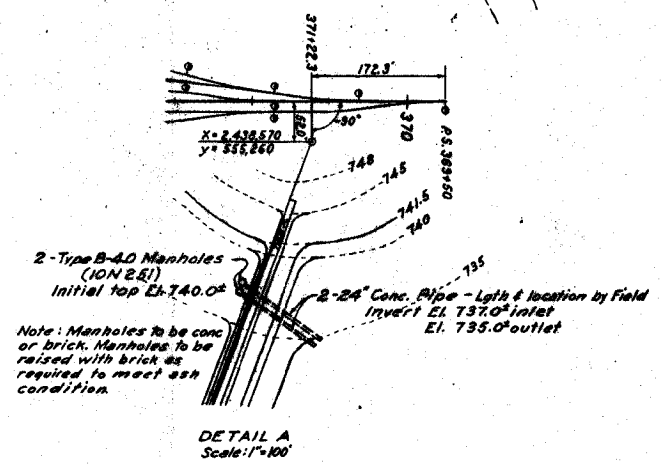
9/21/73--FDS:BLH
CC: W. W. Engle, 401 UB-K
(Attachment)

9/22/73--WWE:NCH
CC (Attachment):
R. G. Domer, 104 UB-K
Roy H. Dunham, 505 UB-K
B. S. Montgomery, 401 AB-K









ESTIMATED QUANTITIES

North Dike	104,000 Cu.Yd.
East Dike	118,000 Cu.Yd.
Total	222,000 Cu.Yd.

NOTES:-

1- The dikes are to be constructed of unclassified excavation.
2- The island between the east ends of the dikes, is to be raised and widened, if necessary, to provide minimum width of 10 feet and minimum elevation of 750.
3- The embankment slopes below elevation 735± are to be the angle of repose of the submerged fill material.
4- Special care is to be taken to select firm shale material to be placed below the water level, at the location indicated, so that slope will not extend into the area of the intake channel.
5- Insofar as it is feasible and practical the core of the east dike, as indicated, should be constructed of earth and fine material to provide a relatively impervious dam.
6- Top of Dike "C" to be surfaced with slag and ashes, 6" compacted thickness.
7- Quantities shown for Dike 'C' are net fill for section shown and do not include shrinkage etc.
8- Section C-C is the minimum section to be used. The slopes shown for the hydraulic fill section are assumed and may be steeper if material can be placed on steeper slopes.
9- Remove existing dike for minimum width of 50 ft. and to elevation 742 or lower after Dike 'C' has been completed to at least elevation 745.

Scale: 1"=500' except as noted

GENERAL

ASH DISPOSAL AREA

KINGSTON STEAM PLANT
TENNESSEE VALLEY AUTHORITY
DIVISION OF DESIGN

SUBMITTED	RECOMMENDED	APPROVED
W.N. Peloubet Jr.	O.A. Meyer	A.A. Moore
CHIEF, [illegible] BRANCH	CHIEF, [illegible] BRANCH	[illegible]