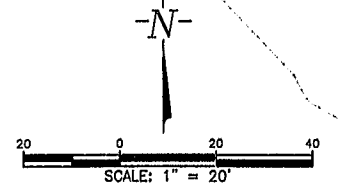


EMBANKMENT CONSTRUCTION PROCEDURES AND REQUIREMENTS.

1. INSTALL EROSION CONTROL MEASURES.
2. CLEAN ALL TOPSOIL, ORGANICS, POCKETS OF LOOSE SAND, GRAVEL, AND ANY UNSUITABLE MATERIAL ALONG THE DAM SITE.
3. SCARIFY THE CLEARED EXISTING TOP OF DAM SURFACE TO APPROXIMATELY 6" DEEP. COMPACT THE SCARIFIED GROUND BY A STATIC SHEEP'S FOOT COMPACTOR.
4. EXCAVATE TRAPEZOIDAL BREACH ALONG CENTERLINE OF PROPOSED SPILLWAY TO ALLOW FOR INSTALLATION OF THE PIPE AND CRADLE. THE SIDE SLOPES OF THE BREACH SHOULD BE NO STEEPER THAN 1:1.
5. GRADE THE DOWNSTREAM SLOPE OF THE EXISTING DAM TO A UNIFORM 2.5:1 SLOPE REMOVING STEEP OR JUTTING IRREGULARITIES IN THE REMAINING EMBANKMENT AND PROVIDING A SMOOTH SURFACE OF SOUND COMPACTED MATERIAL.
6. INSTALL TOE DRAINS. CONTRACTOR SHALL EXCAVATE TRENCH FOR THE DRAIN UNDER THE SUPERVISION OF THE PROJECT GEOTECHNICAL ENGINEER.
7. INSTALL RISER AND OUTLET CONDUIT IN ACCORDANCE WITH PLANS AND PLANS AND SPECIFICATIONS. CONSTRUCT DIAPHRAGM DRAIN PER SHEET 2.
8. BACKFILL CULVERT. COMPACTION WITHIN 3' OF WALLS OF CULVERT SHOULD BE PERFORMED WITH A PORTABLE COMPACTOR TO AVOID DAMAGE, WITH A MAXIMUM LIFT THICKNESSES OF 6" LOOSE LAYERS. THE REMAINDER OF THE BREACH MAY BE COMPACTED IN 10" LOOSE LAYERS. COMPACTION EQUIPMENT SHOULD RUN PARALLEL TO THE CULVERT. THE NEW FILL SHOULD BE TIED INTO THE EXISTING WALLS OF THE BREACH BY CUTTING VERTICAL KEYS INTO THE SLOPE FOR EACH LIFT.
9. PLACE UPSTREAM EMBANKMENT FILL. EXTEND EXISTING DRAIN PIPE AS NECESSARY TO ALLOW GROUTING PER NOTE.
10. ALL COMPACTION SHOULD BE TESTED BY THE SAND CONE METHOD (ASTM D-1586) OR EQUAL, AT A RATE OF AT LEAST ONE TEST PER DAY, PER LIFT, OR PER 5,000 SF WHICHEVER IS THE SMALLEST. THE MINIMUM COMPACTION SHOULD BE 95% OF THE MAXIMUM STANDARD PROCTOR DENSITY (ASTM D-998) TO 3' FROM THE FINAL GRADE. THE LAST 3' SHOULD BE COMPACTED TO 100% OF THE MAXIMUM STANDARD PROCTOR DENSITY. THE NEW FILL SHOULD BE TIED TO THE EXISTING EMBANKMENT BY CUTTING SMALL VERTICAL KEYS INTO THE SLOPE WITH EACH LIFT.
11. THE EMBANKMENT FILL SHOULD BE SLIGHTLY SLOPED TO PROMOTE THE DRAINAGE OF SURFACE WATER. ANY EMBANKMENT FILL MATERIAL THAT IS FROZEN OR SOFTENED BY THE SURFACE WATER OR ICE SHOULD BE REMOVED PRIOR TO THE PLACEMENT OF THE NEXT LIFT.
12. THE SURFACE OF THE EMBANKMENT SHOULD BE SEALED OFF WITH A SMOOTH DRUM ROLLER PRIOR TO A PROLONGED DELAY SUCH AS THE END OF THE WEEK OR BEFORE A FORECASTED STORM. SCARIFY THE SMOOTH SURFACE BEFORE PLACING THE NEXT LIFT.
13. THE CONSTRUCTION SITE SHOULD BE KEPT DRY AT ALL TIMES BY MEANS OF COFFER DAMS, TRENCHES, SUMPS, PUMPS AND WHATEVER EQUIPMENT OR ARRANGEMENTS ARE REQUIRED.
14. THE MOISTURE CONTENT OF THE EMBANKMENT FILL DURING PLACEMENT SHOULD BE ±3% FROM THE OPTIMUM. DRYING PROCESS MAY BE REQUIRED TO IMPROVE SOME OF THE MATERIAL.
15. THE EMBANKMENT FILL SHOULD BE PLACED AND COMPACTED IN A UNIFORM, CONTINUOUS FASHION.
16. SOUND EXISTING POND DRAIN AND PRESSURE GROUT ALONG ITS ENTIRE LENGTH.
17. INSTALL FILTER DIAPHRAGM AROUND THE OUTLET OF THE EXISTING BOTTOM DRAIN AND INSTALL OUTLET TO FREE DISCHARGE PER DETAIL 6, SHEET DM4.
18. BORE HOLES REFER TO A SOILS REPORT PREPARED BY TAI AND ASSOCIATES DATED MAY, 8 1998.
19. CALL FOR FINAL INSPECTION AND APPROVAL BEFORE CLOSING OF GATE TO IMPOUND WATER.

CONTRACTOR SHALL LEAVE BOTTOM DRAIN VALVE OPEN DURING CONSTRUCTION AND PROTECT WITH WASHED STONE PER DETAIL ON SHT. DM3.

NORMAL POOL ELEV. = 459.00
 CONSERVATION POOL = 459.50
 100 YEAR FLOOD ELEV. = 460.5
 TOP OF DAM = 462.00



APPROVED
 TEL 5/31/98
 TM 6-1-98

Samuel F. Ravelle

WR WITHERS & RAVENEL Engineering & Surveying, Inc.
 111 MacKenan Drive Cary, N.C. 27511
 919-469-3340 FAX 919-467-6008

No.	Description	Date	By
A	FOR FINAL REVIEW COMMENTS	5/13/98	GRS

**DANBURY SUBDIVISION
 DAM #2 - CARY, N.C.**

**DAM EMBANKMENT -
 GRADING AND EROSION CONTROL**

Designer W&R	Scale 1" = 20'	CAD File 97155\SHIT_DM
Drawn By ATB	Date 12/18/97	Sheet No. DM1 of 1
Checked By JEC	Job No. 97155	

K:\CAD\97\97155\SHIT_DM1 Tue May 26 16:45:53 1998 WITHERS & RAVENEL, ENGINEERING & SURVEYING, INC.