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BULKHEAD INSPECTION
FOR
WINDSOR PARKE
HOMEOWNERS ASSOCIATION
JACKSONVILLE, FLORIDA
FEBRUARY 20, 2009

INSPECTION SERVICES WERE REQUESTED BY THE WINDSOR PARKE HOMEOWNERS ASSOCIATION TO INSPECT 3000 LF OF RESIDENTIAL BULKHEAD ABOVE THE WATERLINE AT THE WINDSOR PARKE GOLF COURSE.

DIVERS IN THE WATER VISUALLY INSPECTED THE BULKHEAD FOR DEFECTS. ALL PILING, WALERS, PLANKING AND HARDWARE WERE INSPECTED VISUALLY FOR DEFECTS/DETERIORATION. INSPECTION STARTED AT SUTTON PARK DRIVE NORTH. THERE WERE TWO SECTIONS OF BULKHEAD INSPECTED, SECTION ONE FROM SUTTON PARK DRIVE AROUND HOLLAND PARK DRIVE, SECTION TWO AROUND HEATHFORD DRIVE AND ALESBERY DRIVE.

THE RESULTS OF INSPECTION ARE AS FOLLOWS:

SECTION ONE:

STARTS AT PILE #1 THE PILE CLOSEST TO SUTTON PARK DRIVE NORTH (ALL MEASUREMENTS FOR SECTION ONE ARE FROM PILE #1).

THE FIRST (#1) PILE AND LAST (#150) PILE OF SECTION ONE HAVE NO TIE BACKS INSTALLED.

TREE ROOTS GROWING THRU BULKHEAD FROM 133' TO 154'

FROM 157' TO 174' THERE IS A 1' DROP/SETTLEMENT IN GROUND LINE.

PILE #26 IS STARTING TO ROT AT THE TOP OF THE PILE.

FROM 396' TO 412' THE CAP BOARD IS CRACKED IN THE CENTER RUNNING LENGTHWISE.

BETWEEN 467' TO 544' IT APPEARS THAT 3 EA. DRAINS WERE INSTALLED CLOSE TO THE BULKHEAD.

BETWEEN 467' (PILE#61) AND 537' (PILE#72) BULKHEAD IS BULGING BETWEEN THE PILES A MAXIMUM OF 2".

PILE #84 IS SHOWING DRY ROT ON TOP.

BETWEEN PILE #97 AND PILE #98 THERE IS A ONE INCH BULGE IN THE BULKHEAD.

BETWEEN PILE #122 AND PILE #123 THE GROUND LINE IS VERY SOFT/FLUIDIZED, WITH THE DIVER SINKING UP TO HIS KNEES DURING THE INSPECTION.

BETWEEN PILE #129 AND PILE #130 THERE IS A DRAIN OUTFALL PIPE (PLASTIC CORRUGATED) AT THE TOP OF THE BULKHEAD IT LOOKS LIKE IT HAS BEEN HIT BY THE LAWN MOWER AND MAY BE A PROBLEM IF IT STARTS TO DRAIN ON THE GROUND OR UPLAND SIDE OF THE BULKHEAD.

AT PILE #131 (983') DRAIN OUTFALL PIPE (PLASTIC CORRUGATED) BEHIND BULKHEAD.

PILE #150 (1125') CORNER PILE, THERE IS A 2" GAP BETWEEN THE BULKHEAD'S 3"X8" BOARDS WITH THE FILTER CLOTH RIPPED AND MISSING ALLOWING FILL LOSS RESULTING IN A VOID BEHIND THE BULKHEAD MEASURING 1.5'Hx1.5'Wx1.5'D.

SECTION TWO:

STARTING AT PILE #1 CLOSEST TO HEATHFORD DRIVE (ALL MEASUREMENTS FOR SECTION TWO WILL BE FROM PILE #0, 3"X3" POST).

PILE #1 (5') HAS NO TIE BACK INSTALLED.

BETWEEN PILE #5 AND PILE#6 THE TOP WHALER IS BULGED OUT 1.5".

PILE #14(107') HAS A 2" GAP BETWEEN THE 3"X8" BOARDS THERE IS SOME FILL LOSS AND ROOT GROWTH THRU THE BULKHEAD.

PILE #15 AND PILE #16 TIE BACK BOLTS HAVE PULLED BACK INTO THE PILE BULKHEAD IS LEANING TOWARDS THE POND (13938 HEATHFORD DRIVE).

PILE #58 THE TIE BACK WAS PLACED AT AN ANGLE, IT IS NOW DISPLACED WITH THE PILE ROLLED SLIGHTLY ON THE WHALER.

PILE# 62 (461') 2" GAP BETWEEN THE 3"x8" BOARDS ON THE CORNER NO FILL
LOSS THE FILTER CLOTH IS HOLDING THE FILL.

PILE#90 THRU PILE #93, TOP OF THE BULK HEAD IS LEANING TOWARD THE POND
PILE #91 IS LEANING THE WORST (MAX 2").

PILE #109 THRU PILE #112, TOP OF BULKHEAD IS LEANING SLIGHTLY TOWARD
THE POND THERE ARE 8EA 18"x18" PAVERS PLACED NEXT TO THE BULKHEAD

PILE#117 IS STARTING TO ROT ON TOP.

PILE #118 THRU PILE #123 THE BULK HEAD IS LEANING SLIGHTLY TOWARD THE
POND AND THERE IS A DEPRESSION ON THE LAND SIDE OF THE BULKHEAD
RUNNING FROM PILE#118 TO #123.

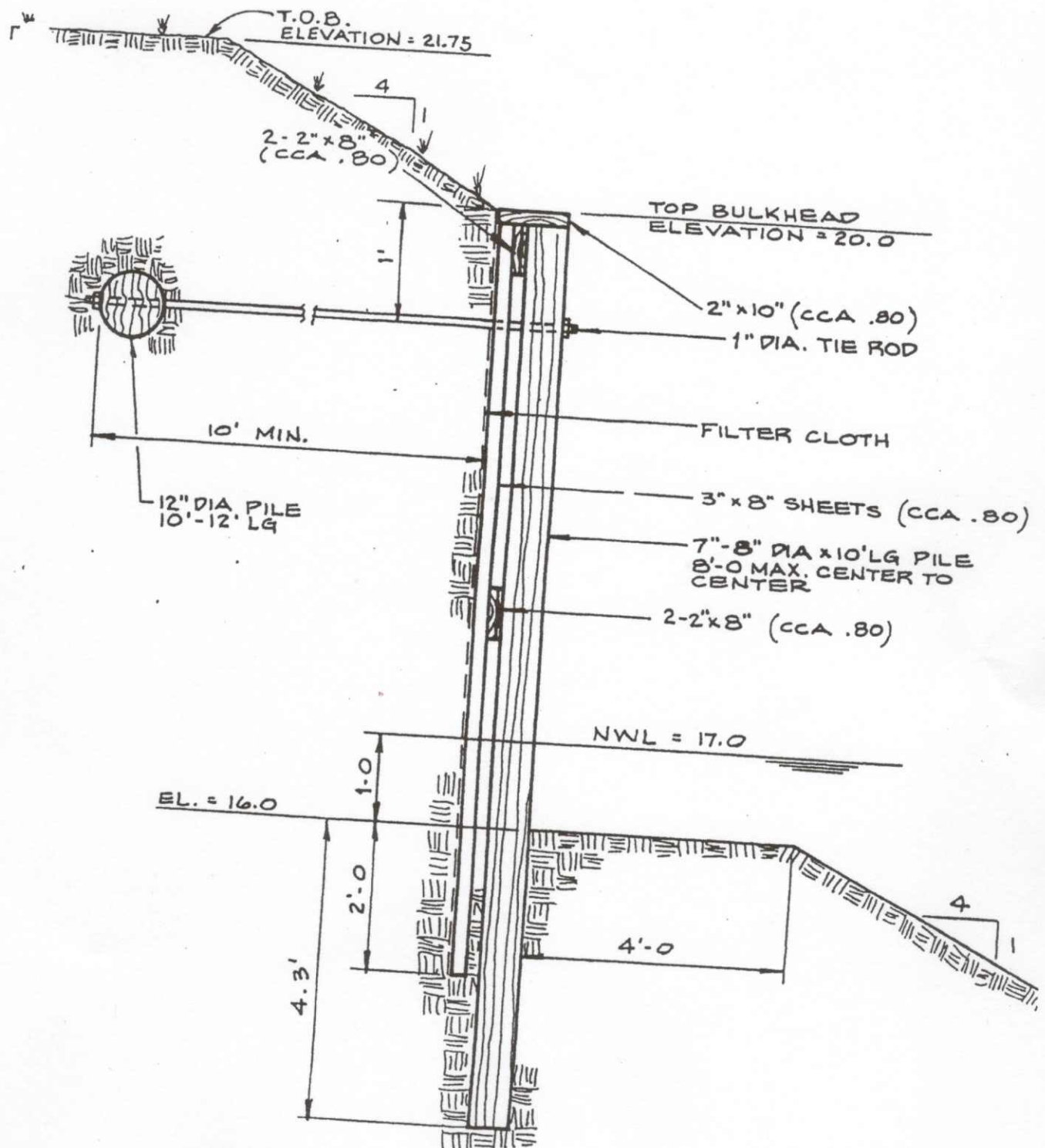
PILE #120, #122, AND#123 TIEBACKS ARE STARTING TO PULL INTO THE PILE.

FROM PILE#124 THRU PILE#132 THE BULKHEAD IS BULGING BETWEEN THE PILES
A MAXIMUM OF 2", THERE IS A DEPRESSION IN THE GRASS IN THIS AREA AS WELL.

RECOMMENDATIONS:

1. TRIM TREE ROOTS BACK FROM BULKHEAD.
2. CAP OR COAT PILE TOPS TO HALT DETERIORATION OF PILE.
3. REPLACE CRACKED AND WARPED CAP BOARDS.
4. CHECK DRAINS INSTALLED IN SECTION ONE 467' TO 544', ENSURE THEY DO
NOT DRAIN ON UPLAND SIDE OF BULKHEAD.
5. MONITOR BULGING BULKHEAD AREAS NOTED IN REPORT ON ANNUAL BASIS.
6. ENSURE THAT DRAIN OUTFALLS THAT DRAIN OVER THE TOP OF THE
BULKHEAD ARE NOT DRAINING ON THE GROUND /UPLAND SIDE OF THE
BULKHEAD.
7. REPLACE FILTER CLOTH ON SECTION ONE PILE #150 TO STOP FILL LOSS.
8. REPLACE TIE BACKS ON SECTION TWO, PILE #15 AND PILE #16.
9. MONITOR TIE BACKS ON PILES #120, 122 AND 123.
- 10) MONITOR AREAS OF BULKHEAD NEAR THE POOLS AND JACUZZIS FOR
BULGING, DEFLECTION AND SIGNS OF DISPLACEMENT. POOLS IN CLOSE
PROXIMITY TO THE BULKHEAD MAY INCREASE PRESSURE ON THE BULKHEAD
DEPENDING ON WATER LEVEL ELEVATIONS/ FLUCTUATIONS.

S. C. ANDERSON
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NOTE: FINAL BULKHEAD DESIGN TO BE SUBMITTED BY BULKHEAD CONTRACTOR ALONG WITH ENGINEERING CERTIFICATION.

APPROX 2300 LFT

PROPOSED BULKHEAD DETAIL