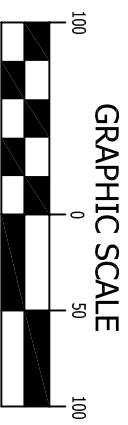


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No.	Revisions	Date	By

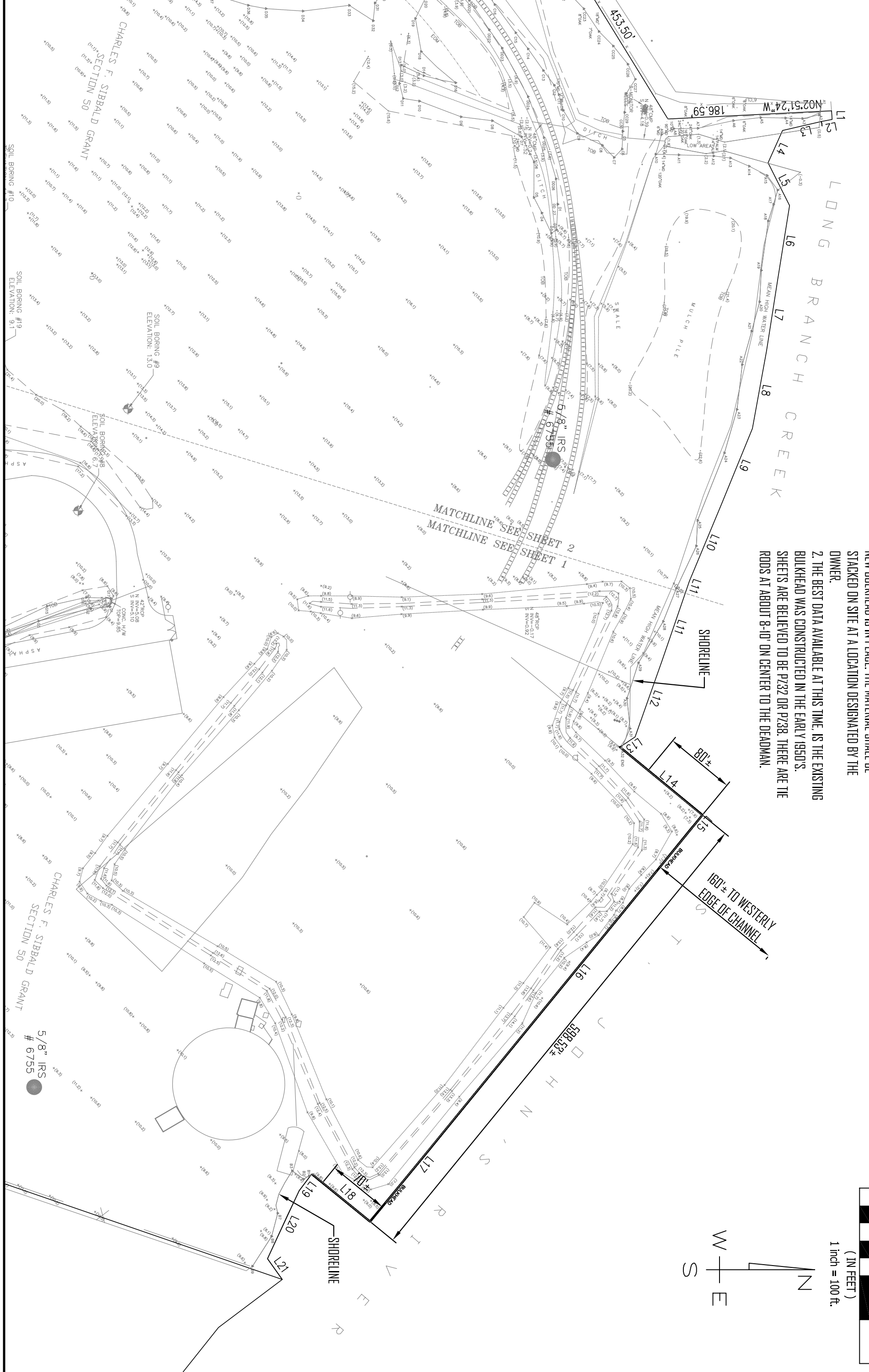
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Checked By	LR
Job	2009-103
Sheet	C1

HARBOR-RAY CONSULTANTS, LLC
 Professional Engineers
 708 Talleyrand Avenue - Jacksonville, FL 32202
 Voice: (904) 632-0034; Fax: (904) 632-0038
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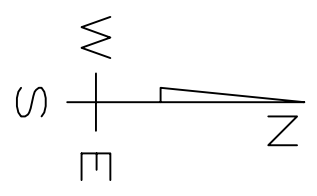
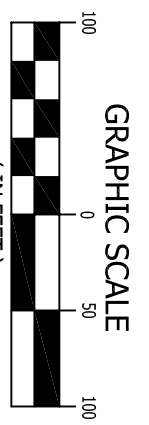
KEYSTONE INDUSTRIES ON THE ST. JOHNS RIVER
 NORTHEAST CORNER OF WIGMORE AND HUDSON STREET - JACKSONVILLE, FL

PROPOSED BULKHEAD PLAN

NOTE: THESE DRAWINGS MAY BE USED FOR ESTIMATING PURPOSES ONLY. HOWEVER THEY ARE SUBJECT TO POSSIBLE CHANGE. THEY ARE NOT TO BE USED FOR CONSTRUCTION.



- NOTES:
1. THE EXISTING BULKHEAD IS TO BE EXTRACTED AFTER THE NEW BULKHEAD IS IN PLACE. THE MATERIAL SHALL BE STACKED ON SITE AT A LOCATION DESIGNATED BY THE OWNER.
 2. THE BEST DATA AVAILABLE AT THIS TIME, IS THE EXISTING BULKHEAD WAS CONSTRUCTED IN THE EARLY 1950'S. SHEETS ARE BELIEVED TO BE P232 OR P238. THERE ARE THE ROADS AT ABOUT 8'-10' ON CENTER TO THE DEADMAN.



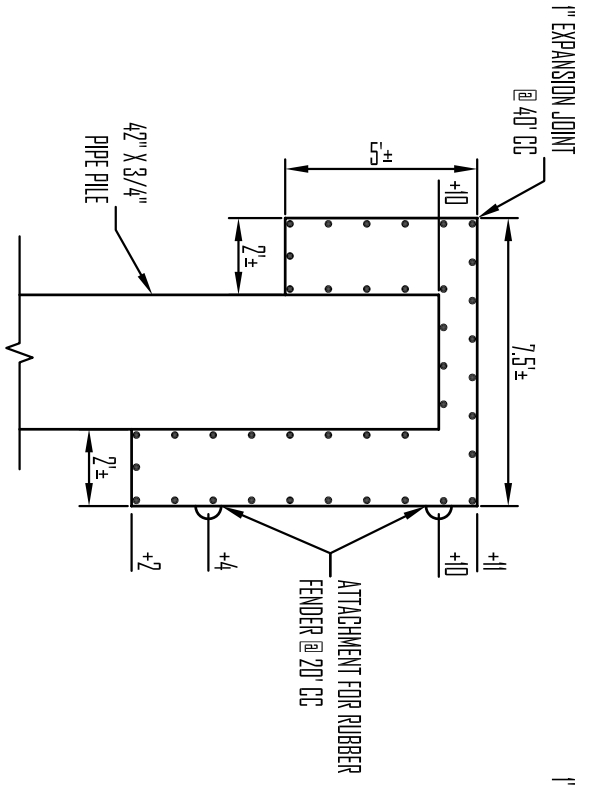
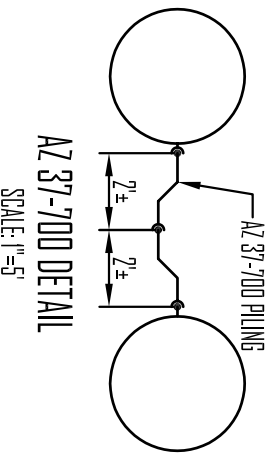
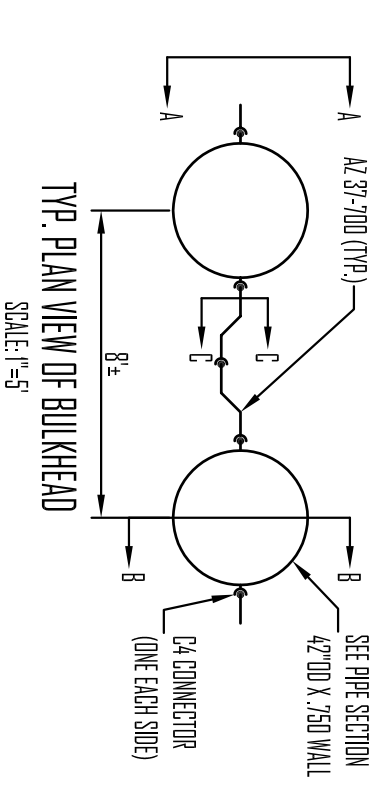
No.	Revisions	Date	By

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Job	2009-103
Sheet	C2

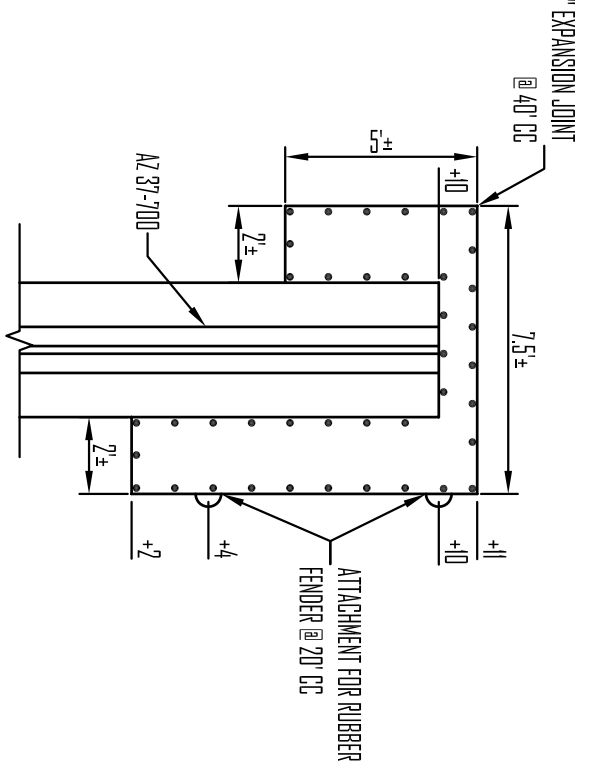
HARBOR-RAY CONSULTANTS, LLC
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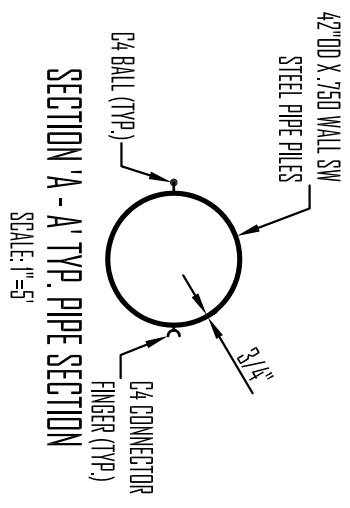
EXISTING BULKHEAD REMOVAL PLAN



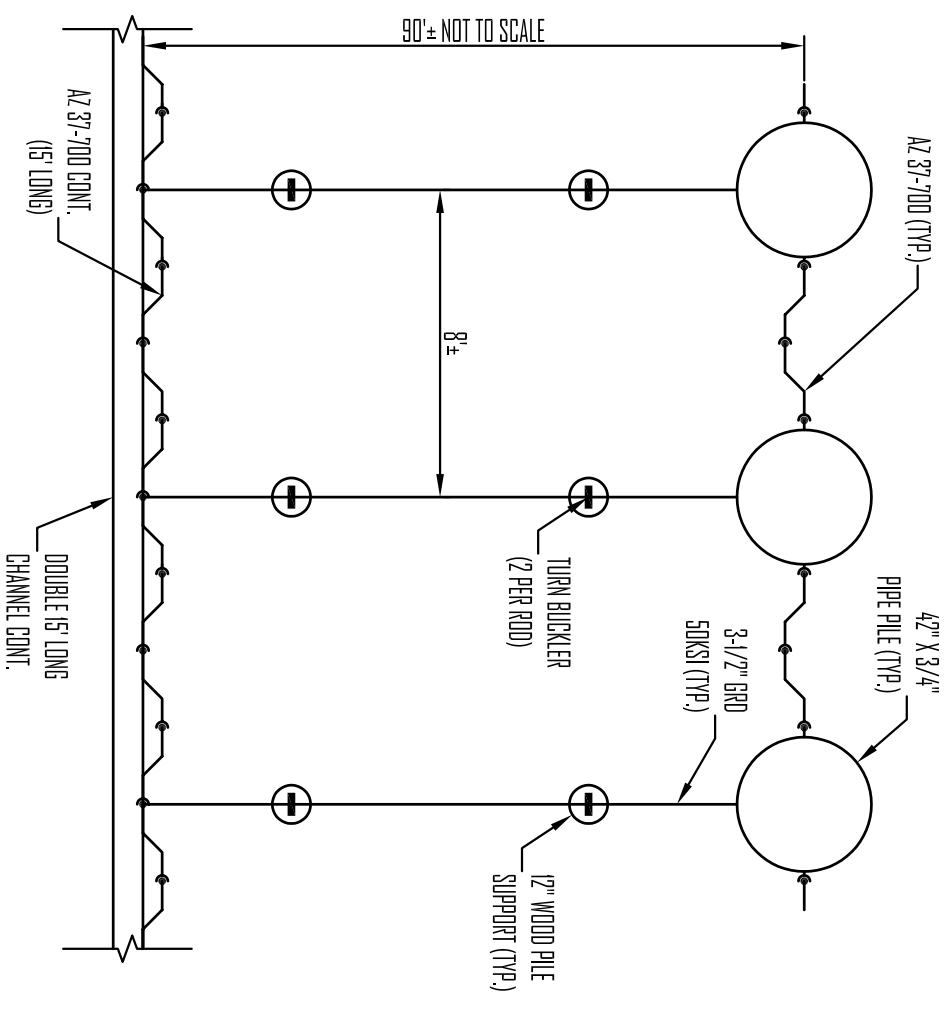
SECTION B - B' TYP. GAP @ 42" PIPE PILE
SCALE: 1"=5'



SECTION C - C' TYP. GAP @ AZ 37-700
SCALE: 1"=5'



SECTION A - A' TYP. PIPE SECTION
SCALE: 1"=5'



TYP. DEADMAN SYSTEM (CONNECT TO EACH STEEL PILE)
SCALE: 1"=5'

- NOTES:
1. ALL PILES ARE TO BE DRIVEN TO GRADE AS SHOWN.
 2. CARE SHALL BE TAKEN TO PROVIDE AS MUCH PROTECTION TO THE STEEL COATINGS AS POSSIBLE.
 3. ALL CONCRETE TO BE 5,000 PSI @ 28 DAYS.
 4. STEEL BARS TO BE STANDARD DEFORMED MATERIAL - #8 @ SCHEDULE 80.
 5. THE BUILDING CODES OF THE CITY OF JACKSONVILLE SHALL APPLY IN ALL CASES. STANDARD RULES AND REGULATIONS OF THE FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATIONS, U.S. ARMY CORPS OF ENGINEERS, AND U.S. ENVIRONMENTAL PROTECTION AGENCY.
 6. THE ENVIRONMENTAL PERMITS AS ISSUED BY THE U.S. ARMY CORPS OF ENGINEERS AND THE STATE DEPARTMENT OF ENVIRONMENTAL PROTECTION ARE AT ALL TIMES.

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KEYSTONE INDUSTRIES ON THE ST. JOHNS RIVER
NORTHEAST CORNER OF WIGMORE AND HUDSON STREET - JACKSONVILLE, FL

DETAILS AND NOTES

HARBOR-RAY CONSULTANTS, LLC

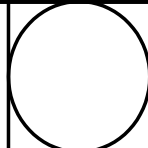
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Date	04-27-08
Scale	AS SHOWN
Drawn	WES
Checked By	LR
Job	2009-103
Sheet	C3