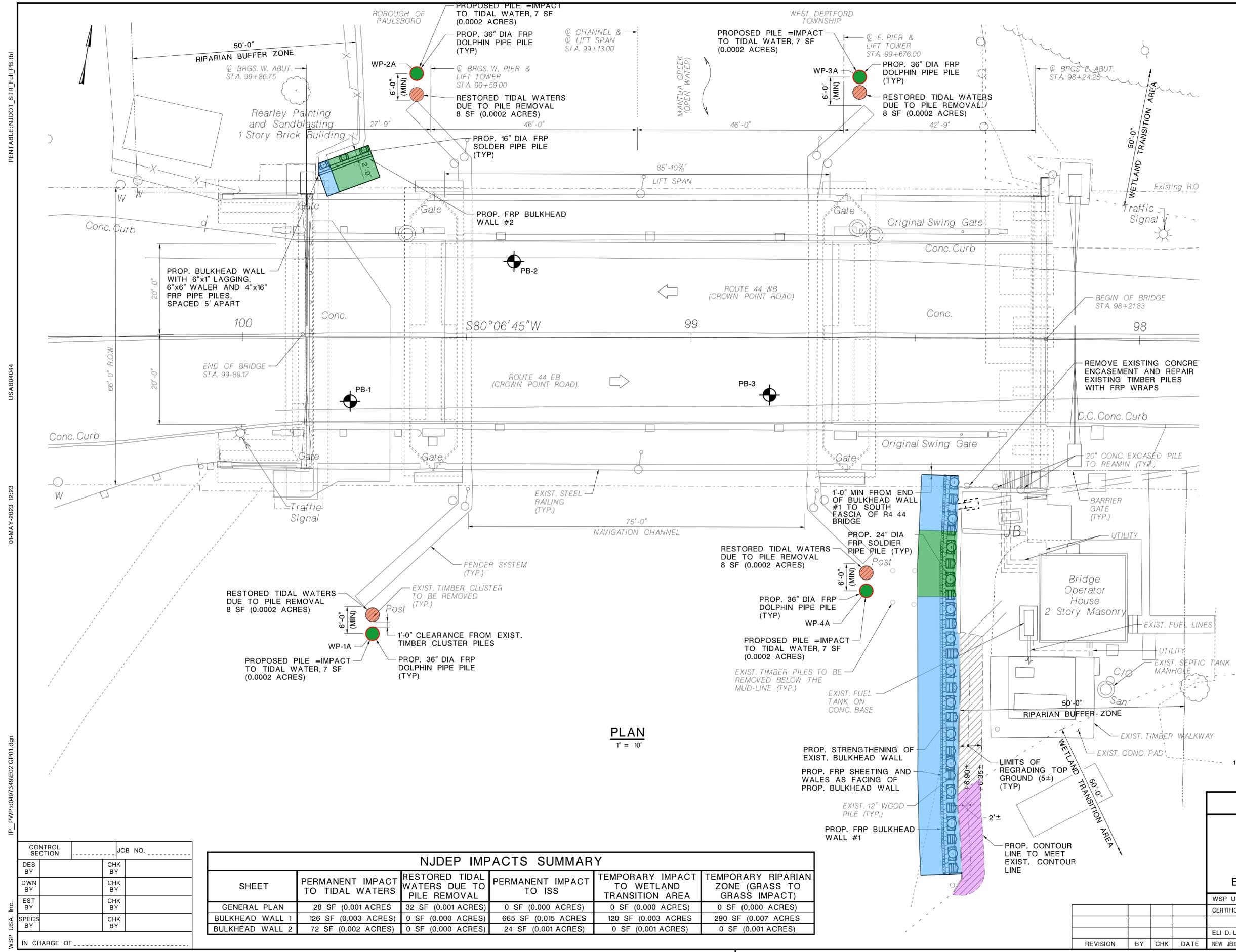




STATE	FEDERAL PROJECT NO.	SHEET	TOTAL SHEETS
NJ			
STRUCTURE NO. 0806-151			
NJ ROUTE 44 OVER MANTUA CREEK			



**NOTES:**  
 IMPACTS RELATED TO BULKHEAD REHABILITATION QUANTIFIED ON SHEETS BULKHEAD WALL DETAILS 1 AND BULKHEAD WALL DETAILS 2

- LEGEND:**
- PERMANENT IMPACT TO ISS
  - PERMANENT IMPACT TO TIDAL WATERS
  - RESTORED TIDAL WATERS DUE TO PILE REMOVAL
  - TEMPORARY IMPACT TO WETLANDS TRANSITION AREA
  - TEMPORARY RIPARIAN ZONE (GRASS TO GRASS IMPACT)
  - TEMPORARY RIPARIAN AREA
  - WETLAND TRANSITION AREA



**PLAN**  
 1" = 10'

NJDEP IMPACTS SUMMARY					
SHEET	PERMANENT IMPACT TO TIDAL WATERS	RESTORED TIDAL WATERS DUE TO PILE REMOVAL	PERMANENT IMPACT TO ISS	TEMPORARY IMPACT TO WETLAND TRANSITION AREA	TEMPORARY RIPARIAN ZONE (GRASS TO GRASS IMPACT)
GENERAL PLAN	28 SF (0.001 ACRES)	32 SF (0.001 ACRES)	0 SF (0.000 ACRES)	0 SF (0.000 ACRES)	0 SF (0.000 ACRES)
BULKHEAD WALL 1	126 SF (0.003 ACRES)	0 SF (0.000 ACRES)	665 SF (0.015 ACRES)	120 SF (0.003 ACRES)	290 SF (0.007 ACRES)
BULKHEAD WALL 2	72 SF (0.002 ACRES)	0 SF (0.000 ACRES)	24 SF (0.001 ACRES)	0 SF (0.001 ACRES)	0 SF (0.001 ACRES)

CONTROL SECTION	JOB NO.
DES BY	CHK BY
DWN BY	CHK BY
EST BY	CHK BY
SPECS BY	CHK BY
IN CHARGE OF	

NEW JERSEY DEPARTMENT OF TRANSPORTATION  
 BUREAU OF STRUCTURAL ENGINEERING

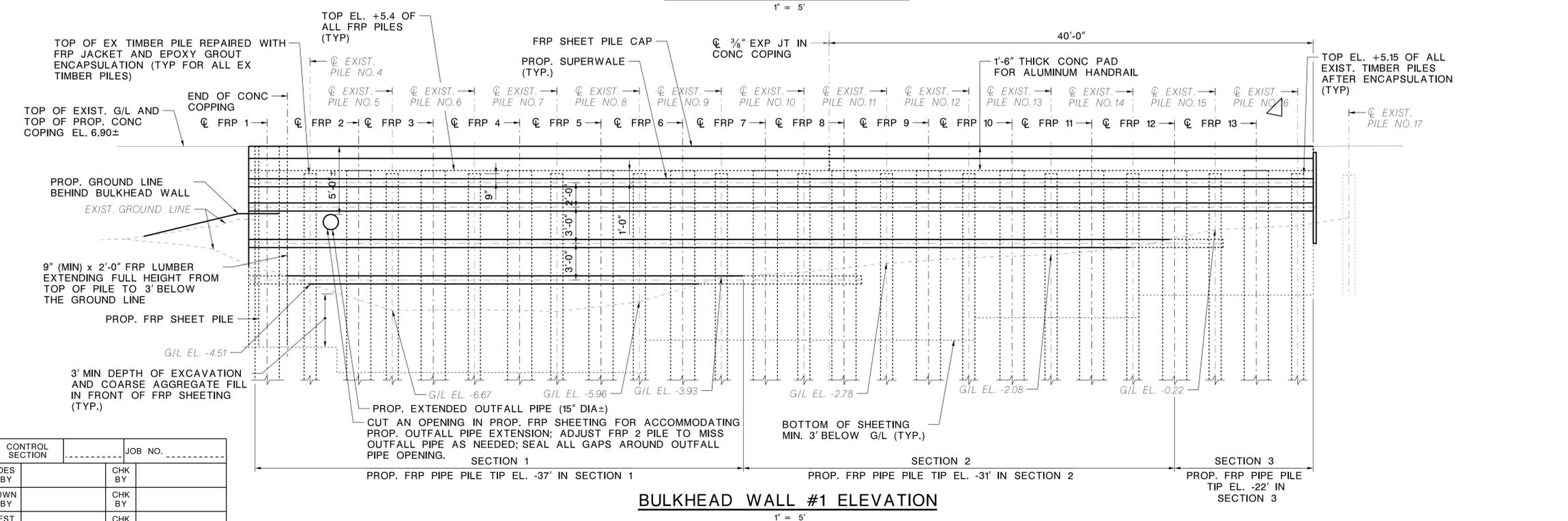
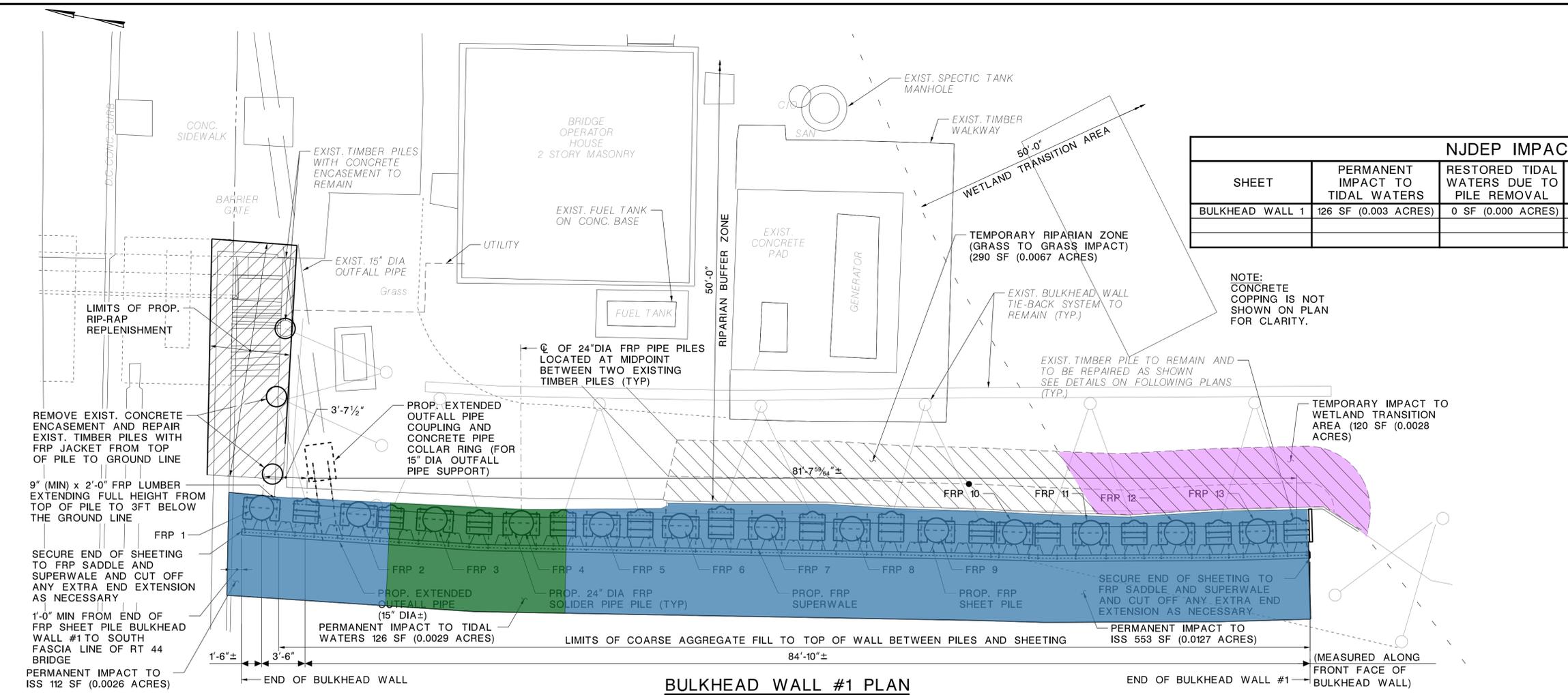
**GENERAL PLAN**

MAINTENANCE NJ-44 MANTUA CREEK  
 BULKHEAD REPAIR CONTRACT NO. DP 23414

WSP USA Inc.	SCALE: AS SHOWN
CERTIFICATION OF AUTHORIZATION NO. 24GA28029800	
ELI D. LAMBERT III	ENV SHEET NO. E2 OF B14
NEW JERSEY PROFESSIONAL ENGINEER LICENSE NO. 24GE03631700	

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 WSP USA Inc.

NJDEP IMPACTS SUMMARY					
SHEET	PERMANENT IMPACT TO TIDAL WATERS	RESTORED TIDAL WATERS DUE TO PILE REMOVAL	PERMANENT IMPACT TO ISS	TEMPORARY IMPACT TO WETLAND TRANSITION AREA	TEMPORARY RIPARIAN ZONE (GRASS TO GRASS IMPACT)
BULKHEAD WALL 1	126 SF (0.003 ACRES)	0 SF (0.000 ACRES)	665 SF (0.015 ACRES)	120 SF (0.003 ACRES)	290 SF (0.007 ACRES)



- LEGEND:**
- PERMANENT IMPACT TO ISS
  - PERMANENT IMPACT TO TIDAL WATERS
  - RESTORED TIDAL WATERS DUE TO PILE REMOVAL
  - TEMPORARY IMPACT TO WETLANDS TRANSITION AREA
  - TEMPORARY RIPARIAN ZONE (GRASS TO GRASS IMPACT)
  - TEMPORARY RIPARIAN AREA
  - WETLAND TRANSITION AREA

NEW JERSEY DEPARTMENT OF TRANSPORTATION  
BUREAU OF STRUCTURAL ENGINEERING

## BULKHEAD WALL DETAILS - 1

MAINTENANCE NJ-44 MANTUA CREEK  
BULKHEAD REPAIR CONTRACT NO. DP 23414

WSP USA Inc.		SCALE: AS SHOWN
CERTIFICATION OF AUTHORIZATION NO. 24GA28029800		
ELI D. LAMBERT III		ENV SHEET NO. <u>E3</u> OF <u>B14</u>
NEW JERSEY PROFESSIONAL ENGINEER LICENSE NO. 24GE03631700		

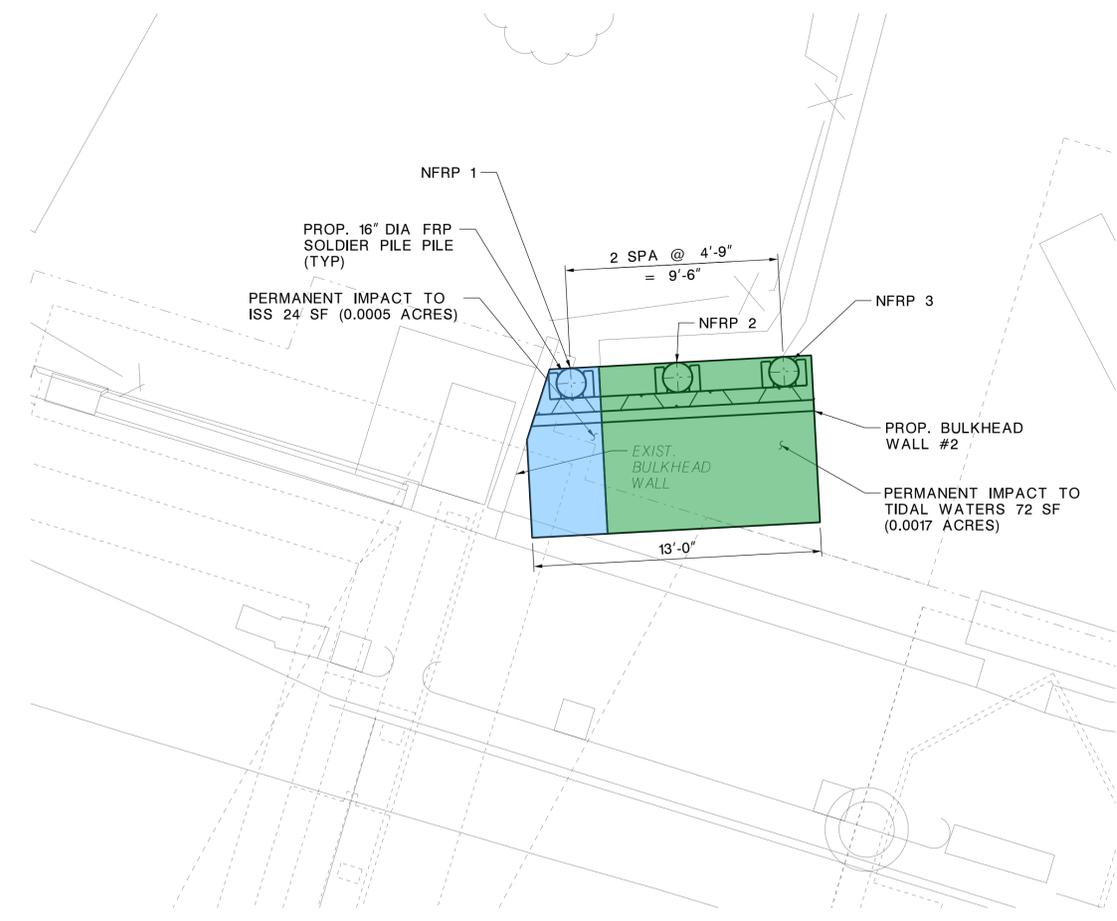
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 WSP USA Inc.

CONTROL SECTION	JOB NO.
DES BY	CHK BY
DWN BY	CHK BY
EST BY	CHK BY
SPECS BY	CHK BY
IN CHARGE OF	

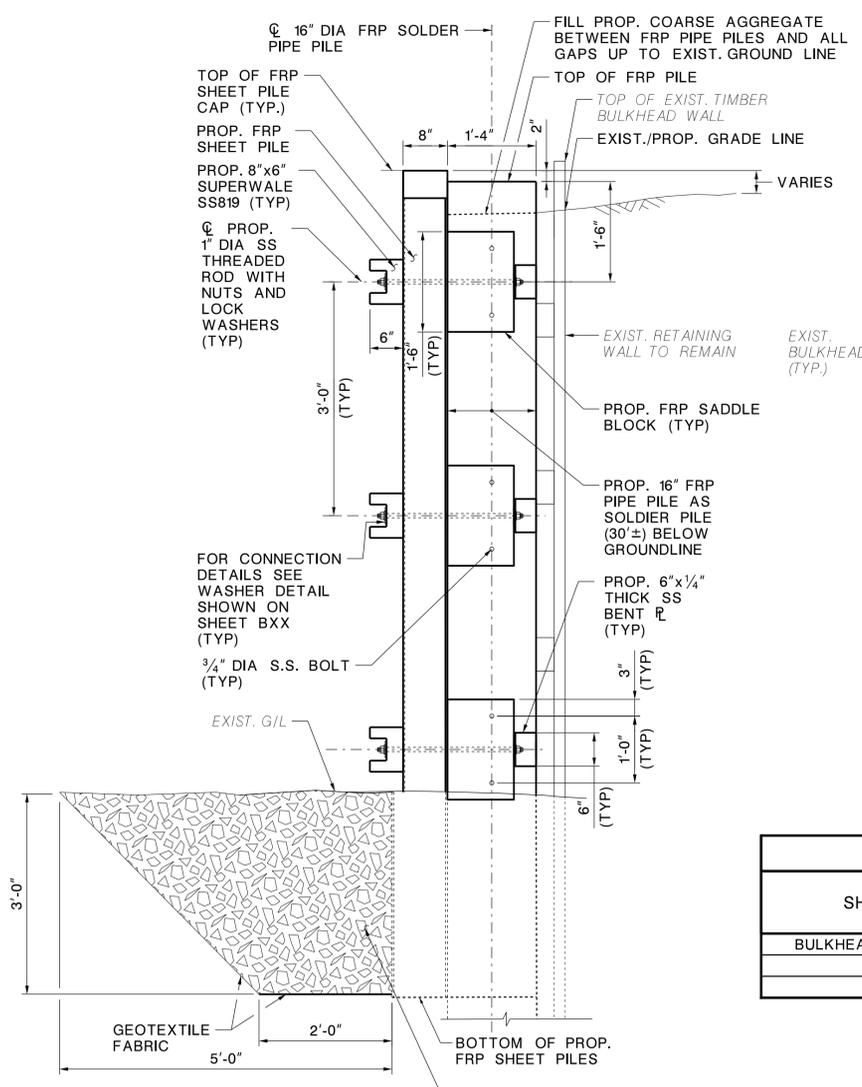
REVISION	BY	CHK	DATE



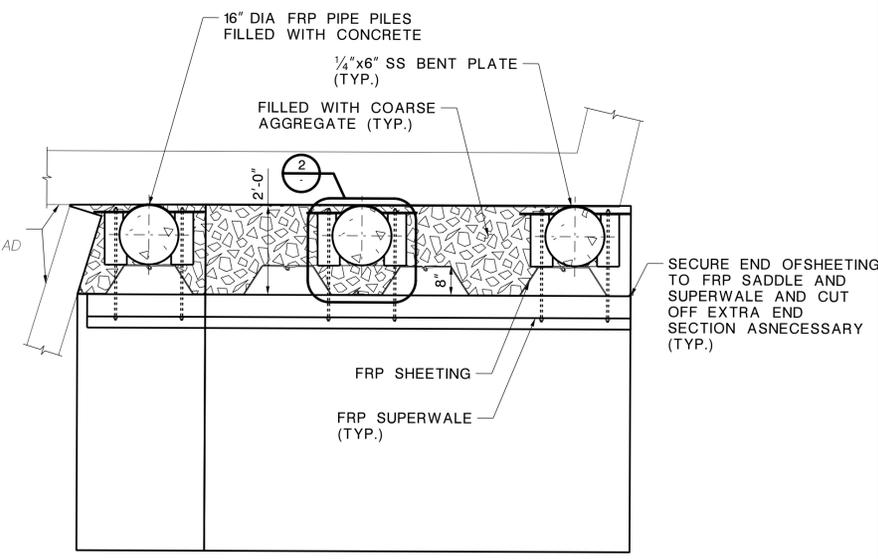
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 WSP USA Inc.



**BULKHEAD WALL #2 PLAN**  
1" = 5'

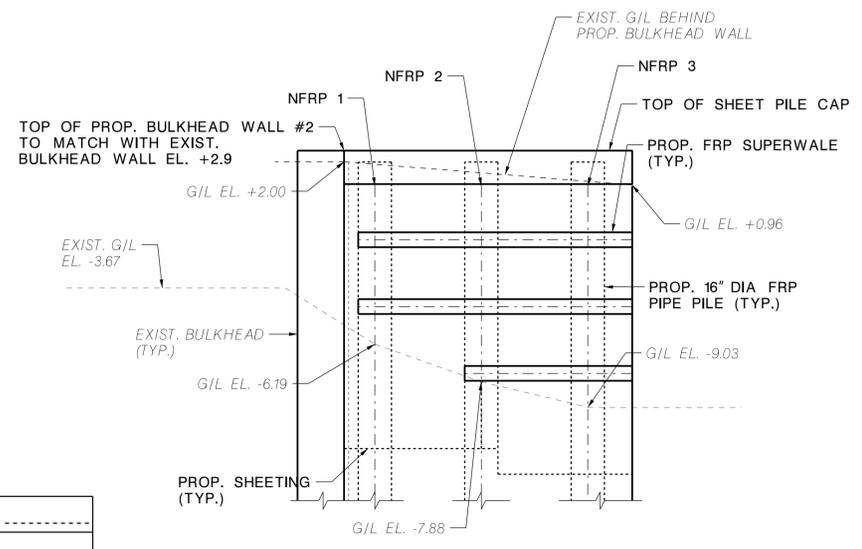


**SECTION AA**  
3/4" = 1'-0"



**BULKHEAD WALL #2 PLAN**  
1/2" = 1'-0"

NJDEP IMPACTS SUMMARY			
SHEET	PERMANENT IMPACT TO TIDAL WATERS	RESTORED TIDAL WATERS DUE TO PILE REMOVAL	PERMANENT IMPACT TO ISS
BULKHEAD WALL 2	72 SF (0.002 ACRES)	0 SF (0.000 ACRES)	24 SF (0.001 ACRES)



**BULKHEAD WALL #2 ELEVATION**  
1" = 5'

- LEGEND:**
- PERMANENT IMPACT TO ISS
  - PERMANENT IMPACT TO TIDAL WATERS
  - RESTORED TIDAL WATERS DUE TO PILE REMOVAL

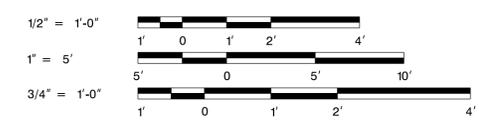
CONTROL SECTION	JOB NO.
DES BY	CHK BY
DWN BY	CHK BY
EST BY	CHK BY
SPECS BY	CHK BY
IN CHARGE OF	

NEW JERSEY DEPARTMENT OF TRANSPORTATION  
 BUREAU OF STRUCTURAL ENGINEERING

**BULKHEAD WALL DETAILS - 2**

MAINTENANCE NJ-44 MANTUA CREEK  
 BULKHEAD REPAIR CONTRACT NO. DP 23414

WSP USA Inc.	SCALE: AS SHOWN
CERTIFICATION OF AUTHORIZATION NO. 24GA28029800	
ELI D. LAMBERT III	ENV SHEET NO. <u>E4</u> OF <u>B14</u>
NEW JERSEY PROFESSIONAL ENGINEER LICENSE NO. 24GE03631700	



REVISION	BY	CHK	DATE

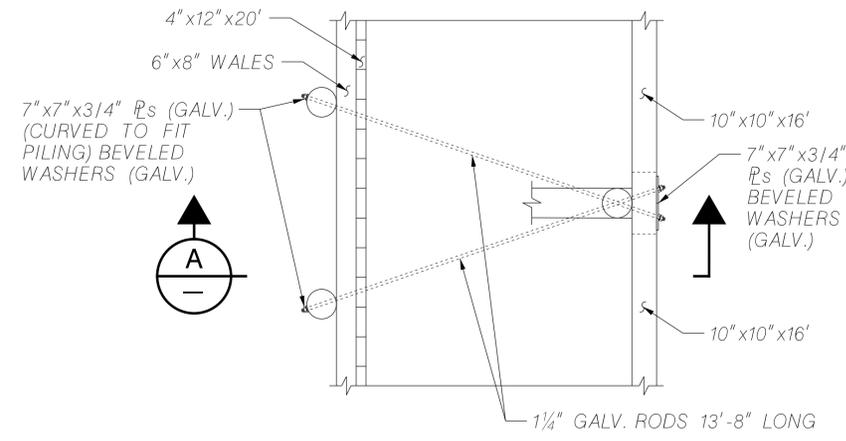
STATE	FEDERAL PROJECT NO.	SHEET	TOTAL SHEETS
NJ			
STRUCTURE NO. 0806-151			
NJ ROUTE 44 OVER MANTUA CREEK			

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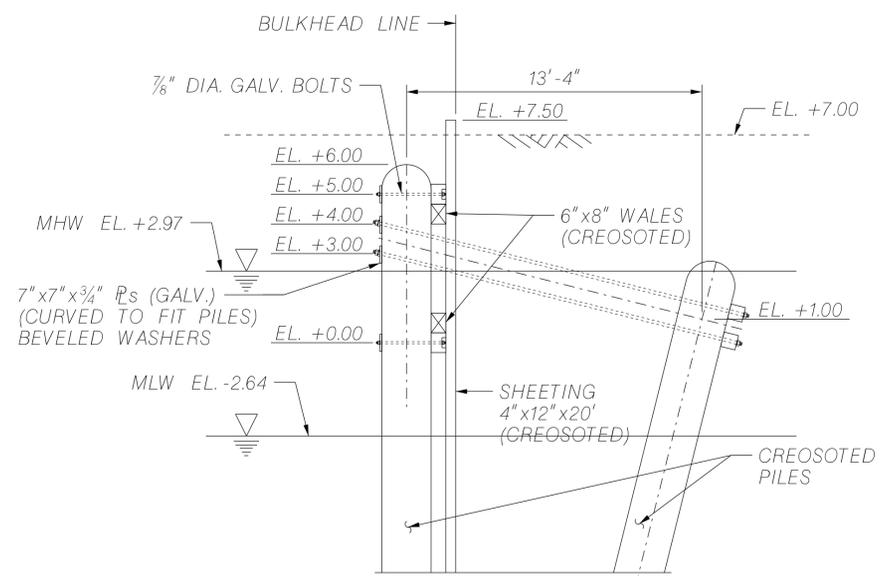
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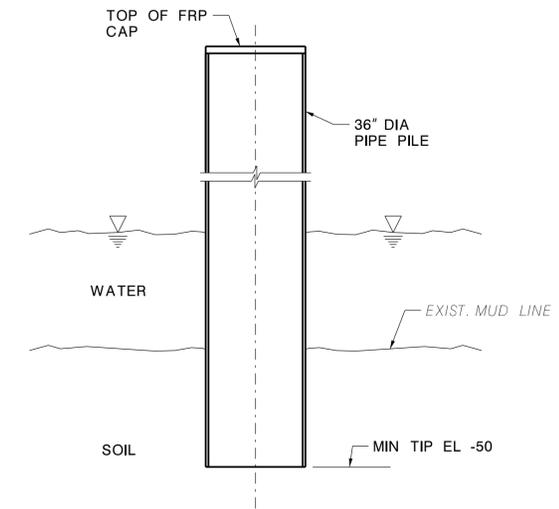
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WSP USA Inc.



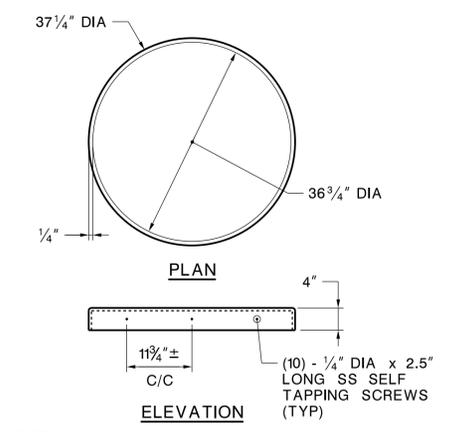
**TYPICAL PLAN OF EXISTING  
TIMBER BULKHEAD SYSTEM**  
1/4" = 1'-0"



**SECTION A**  
1/4" = 1'-0"



**DOLPHIN DETAIL**  
NTS



**NOTE:**  
CAP ALL HOLLOW DOLPHIN PILES, AS SHOWN IN THE PLANS AND AS DIRECTED BY THE RE AND/OR MANUFACTURER

**FRP PILE CAP DETAILS**  
NTS

**NOTES FOR DOLPHIN INSTALLATION:**

1. THE CONTRACTOR IS ALERTED TO THE PRESENCE OF VERY DENSE SAND LAYERS WHICH MUST BE ACCOUNTED FOR IN THE CONTRACTOR'S PIPE PILE INSTALLATION MEANS AND METHOD. IMPAC HAMMER, SPUDDING, JETTING, PREDRILLING, AUGERING (WITH 2 INCHES SMALLER THAN PILE DIAMETER), OR OTHER APPROVED MEANS AND METHODS SHALL BE IMPLEMENTED PRIOR TO DRIVING THE PILES TO THE REQUIRED TIP ELEVATION. DIFFICULTIES OF PILE INSTALLATION TO THE REQUIRED PILE TIP ELEVATIONS CANNOT BE USED AS THE BASIS FOR ADDITIONAL PAYMENT OR A DELAY TO THE CONSTRUCTION SCHEDULE.
2. NO ADDITIONAL PAYMENT WILL BE MADE FOR CUTTING THE TOPS OF PILES TO ACHIEVE THE PROPER TOP OF PILE ELEVATION NOR REPLACING DAMAGED PILE CUTTING TOOLS. ALL COSTS SHALL BE INCLUDED IN THE BID PRICE FOR THE APPROPRIATE POLYMER STRUCTURAL PILE PAY ITEMS.

CONTROL SECTION	JOB NO. _____		
DES BY		CHK BY	
DWN BY		CHK BY	
EST BY		CHK BY	
SPECS BY		CHK BY	
IN CHARGE OF _____			



REVISION	BY	CHK	DATE

NEW JERSEY DEPARTMENT OF TRANSPORTATION  
BUREAU OF STRUCTURAL ENGINEERING

**DOLPHIN DETAILS**

MAINTENANCE NJ-44 MANTUA CREEK  
BULKHEAD REPAIR CONTRACT NO. DP 23414

WSP USA Inc.  
CERTIFICATION OF AUTHORIZATION NO. 24GA28029800

ELI D. LAMBERT III  
NEW JERSEY PROFESSIONAL ENGINEER LICENSE NO. 24GE03631700

SCALE: AS SHOWN

ENV SHEET NO. E5 OF B14