

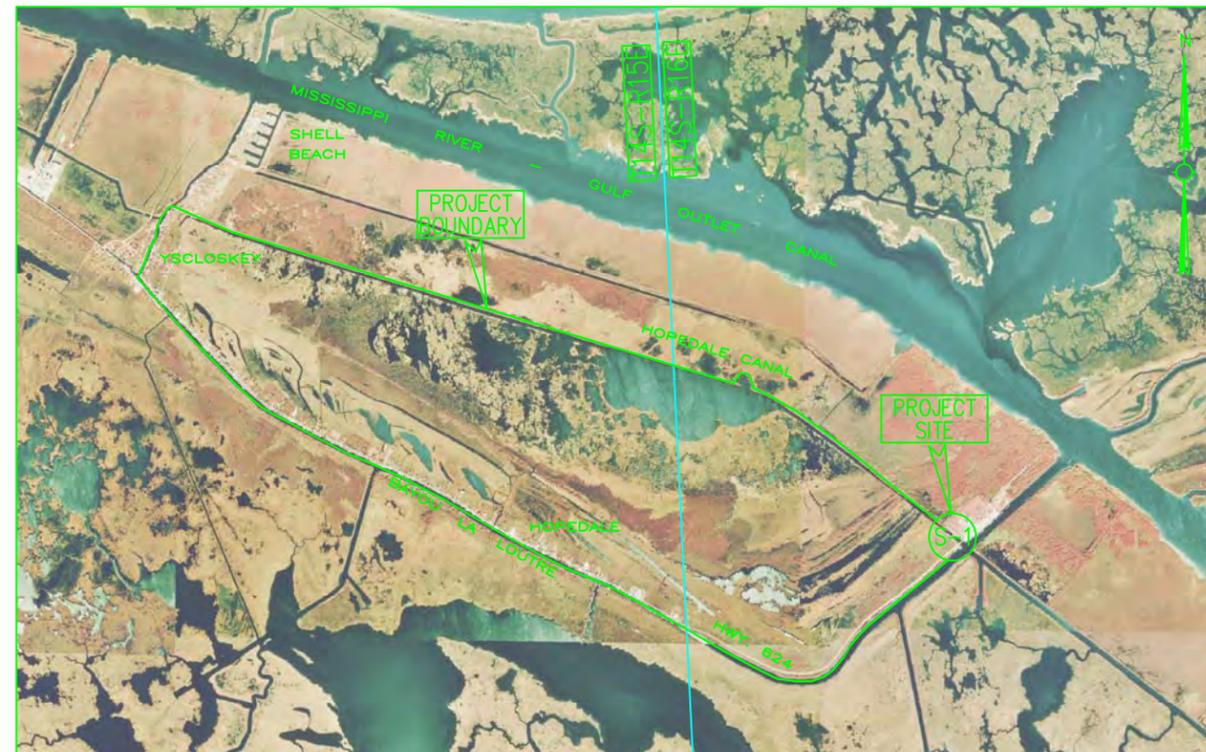
STATE OF LOUISIANA  
DEPARTMENT OF NATURAL RESOURCES AND THE  
U.S. DEPARTMENT OF COMMERCE – NATIONAL  
OCEANIC AND ATMOSPHERIC ADMINISTRATION  
**CONSTRUCTION PLANS**

HOPEDALE HYDROLOGIC RESTORATION PO-24

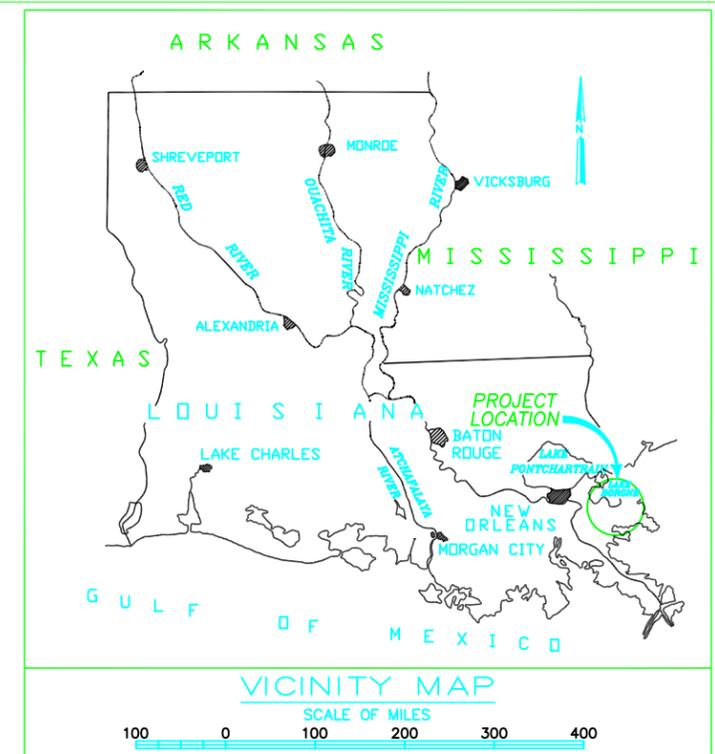
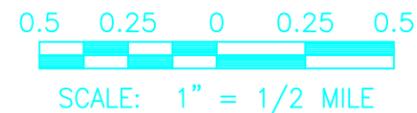
ENGINEERING SERVICES  
DNR CONTRACT NO. 2503-00-36

VILLAGE OF HOPEDALE  
ST. BERNARD PARISH, LOUISIANA

INDEX TO DRAWINGS	
DRAWING NO.	DESCRIPTION
1	TITLE SHEET, VICINITY MAP AND DRAWING INDEX
2	GENERAL NOTES
3	QUANTITY SHEET
4	TYPICAL DETAILS
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8	S-1 STRUCTURE ELEVATION
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13	S-1 STRUCTURE WALKWAY DETAILS
14	S-1 STRUCTURE WALKWAY RAMP DETAILS
15	S-1 STRUCTURE GUARD RAIL SIGN DETAILS
16	S-1 STRUCTURE FENCE DETAILS



**LAYOUT MAP**



APPROVED:

DEPT. OF NATURAL RESOURCES \_\_\_\_\_ DATE \_\_\_\_\_  
STATE OF LOUISIANA

RECOMMENDED FOR APPROVAL:

EMMETT J. MAYER, JR. \_\_\_\_\_ DATE \_\_\_\_\_  
BROWN, CUNNINGHAM & GANNUCH, INC.  
CONSULTING ENGINEERS

NO.	DATE	REVISION	APPROVED



LOUISIANA  
DEPARTMENT OF  
NATURAL RESOURCES  
COASTAL RESTORATION DIVISION

**BCG** Brown Cunningham Gannuch  
ENGINEERS • ARCHITECTS • CONSULTANTS  
9256 INTERLINE AVE. BATON ROUGE, LA



NATIONAL OCEANIC AND  
ATMOSPHERIC ADMINISTRATION

HOPEDALE HYDROLOGIC  
RESTORATION PO-24  
TITLE SHEET, VICINITY MAP  
AND DRAWING INDEX

DATE: JULY 2003

DRAWING NO.: 1

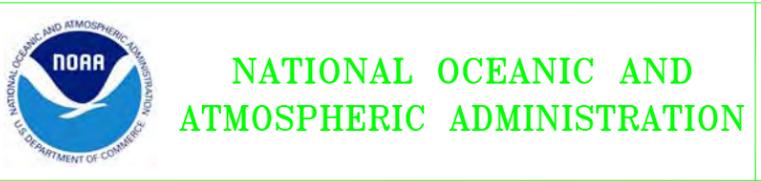
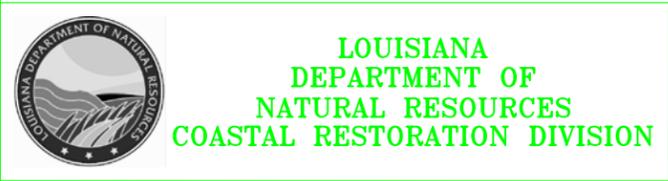
GENERAL NOTES:

1. UTILITIES HAVE BEEN DEPICTED ON THE SITE PLAN DRAWINGS TO THE EXTENT MADE KNOWN AT THE TIME OF THE FIELD SURVEYS. OTHER UTILITIES ARE SUSPECTED TO EXIST AT THE PROJECT SITES (PARTICULARLY ALONG HWY. 624). IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD LOCATE ALL UTILITIES (EITHER DEPICTED ON THE PLAN SHEETS OR NOT) PRIOR TO ANY CONSTRUCTION ACTIVITY AT THE PROJECT SITE.
2. CONSTRUCTION OF THE CONTROL STRUCTURE IS TO BE IN THE DRY. CONTRACTOR SHALL SUBMIT A DETAILED PLAN OF THE INTENDED DEWATERING OF THE EXISTING CANAL IN ACCORDANCE WITH TECHNICAL SPECIFICATION TS-18. THE DEWATERING PLAN SHALL INCLUDE MEANS OF PLUGGING THE CANALS (EARTHEN OR ROCK PLUGS, COFFERDAM, ECT.) AS WELL AS INTENDED MEANS TO MAINTAIN SAFE GROUNDWATER LEVELS WITHIN THE BED OF THE DEWATERED CANAL DURING CONSTRUCTION. THE DETAILED DEWATERING PLAN IS FOR REVIEW ONLY. DEWATERING IS THE RESPONSIBILITY OF CONTRACTOR.
3. CONTRACTOR SHALL MAINTAIN THE WATER LEVELS IN THE TRAPPED MARSHES ON THE WETLAND SIDE OF THE DEWATERED EXCAVATION VIA BY-PASS PUMP AND/OR GRAVITY BY-PASS CULVERT SUCH THAT THE WATER SURFACE ELEVATION IN THE TRAPPED MARSH DOES NOT EXCEED ELEVATION 1.5 FEET NAVD. SEE TECHNICAL SPECIFICATION TS-20 (AS AMMENDED) FOR ADDITIONAL DEWATERING PROVISIONS AND REQUIREMENTS.
4. ALL ELEVATIONS DEPICTED ON THE PLANS ARE N.A.V.D. - 1988.
5. ACCESS TO ALL EXISTING DRIVEWAYS SHALL BE MAINTAINED BY THE CONTRACTOR AT ALL TIMES DURING THE CONSTRUCTION (NO DIRECT PAY).
6. VEHICLES SHALL BE KEPT AWAY FROM EXISTING VEGETATED WETLANDS. THE CONTRACTOR WILL BE RESPONSIBLE FOR RETURNING ANY DISTURBED WETLANDS TO PRE-PROJECT CONDITIONS AT HIS EXPENSE. CONTRACTOR SHALL EXERCISE CAUTION WHEN OPERATING EQUIPMENT NEAR EXISTING STRUCTURES NOT DESIGNATED TO BE REMOVED. ALL HEAVY EQUIPMENT SHALL BE MAINTAINED AT A SAFE OPERATING DISTANCE FROM THE TOP BANKS OF THE EXISTING CANAL.
7. STRUCTURAL METALWORK - UNLESS INDICATED IN THE PLANS, ALL STRUCTURAL METAL WORK SHALL BE STRUCTURAL CARBON STEEL GRADE A36. DETAILED ERECTION DRAWINGS OUTLINING COMPLETE PROCEDURES ALONG WITH THE EQUIPMENT TO BE USED FOR ERECTION SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. ALL CARBON STEEL SHALL RECEIVE A COAL TAR EPOXY-POLYAMIDE COATING IN ACCORDANCE WITH THE PROVISIONS OF TECHNICAL SPECIFICATION TS-18 PAINTING AND PROTECTIVE COATINGS.
8. ALL METAL COATINGS DAMAGED DURING THE PROJECT CONSTRUCTION SHALL BE FIELD REPAIRED IN ACCORDANCE WITH THE PROVISIONS OF TECHNICAL SPECIFICATION TS-18 PAINTING AND PROTECTIVE COATINGS.
9. WELDING OF ALL STRUCTURAL STEEL AND STEEL PIPES SHALL CONFORM TO TECHNICAL SPECIFICATION TS-19 WELDING.

10. GALVANIZED STEEL - ALL MISCELLANEOUS HARDWARE WHICH IS SPECIFIED TO BE GALVANIZED SHALL BE COATED IN ACCORDANCE WITH ASTM A 153. ALL STRUCTURAL STEEL SHAPES WHICH ARE SPECIFIED TO BE GALVANIZED SHALL BE COATED IN CONFORMANCE WITH ASTM A 123 AFTER FABRICATION. DAMAGED GALVANIZED COATS SHALL BE REPAIRED WITH COLD APPLIED, ZINC RICH, ORGANIC PAINT, FROM THE LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT APPROVED QUALIFIED PRODUCTS LIST.
11. BOLTED CONNECTIONS - ALL FIELD CONNECTIONS SHALL BE MADE WITH STAINLESS STEEL BOLTS CONFORMING TO ASTM F 593. BOLT SPACING SHALL BE IN ACCORDANCE WITH DESIGN DRAWINGS, SHOP DRAWINGS, AND THE REQUIREMENTS OF DESIGN SPECIFICATIONS. UNLESS OTHERWISE SHOWN, BOLTED CONNECTIONS SHALL BE MADE WITH 3/4 INCH DIAMETER HIGH STRENGTH BOLTS. ONE WASHER WILL BE REQUIRED BENEATH THE TURNING ELEMENT. BOLTED CONNECTIONS ARE DESIGNED AS FRICTION TYPE. THREADS SHALL BE COATED WITH A NEVER SIEZE LUBRICANT SUCH AS "DOW CORNING" MOLYCOTE GN (PASTE) OR EQUAL PRIOR TO THREADING THE NUT.
12. WALL THICKNESS OF 24 INCH DIAMETER STEEL PIPE PILES SHALL BE 3/4". WALL THICKNESS OF 12 INCH DIAMETER STEEL PIPE PILES SHALL BE 1/2".
13. SILT FENCING SHALL BE PLACED AT THE SITE TO MINIMIZE TURBIDITY IN THE CANAL AND MINIMIZE LOSS OF SILT FROM THE SITE IN ACCORDANCE WITH TECHNICAL SPECIFICATION TS-4 TEMPORARY EROSION CONTROL AND AS DIRECTED BY THE ENGINEER. FOR BIDDING PURPOSES, A QUANTITY OF 500 LINEAR FEET OF SILT FENCING HAS BEEN ASSUMED. A TEMPORARY STONE CONSTRUCTION ENTRANCE SHALL BE PROVIDED BY THE CONTRACTOR IN ACCORDANCE WITH TECHNICAL SPECIFICATION TS-4 TEMPORARY EROSION CONTROL TO MINIMIZE TRACKING OF MUD ONTO HWY. 624.
14. ALL DISTURBED AREAS, EXCLUDING CANAL AREAS BELOW NORMAL WATER LEVELS (ELEVATION 0), SHALL BE SEEDED AND FERTILIZED IN ACCORDANCE TECHNICAL SPECIFICATIONS TS-7 SEEDING AND TS-8 FERTILIZING. FOR BIDDING PURPOSES, QUANTITIES OF 15 POUNDS OF SEED AND 500 POUNDS OF FERTILIZER HAVE BEEN ASSUMED.

1

1	8/25/03	PER ADDENDUM NO. 1	DTD
NO.	DATE	REVISION	APPROVED



HOPEDALE HYDROLOGIC RESTORATION P0-24  
 GENERAL NOTES  
 DATE: JULY 2003 DRAWING NO.: 2

## SUMMARY OF ESTIMATED QUANTITIES

ITEM NO.	ITEM	UNIT	QUANTITY
201-01	CLEARING AND GRUBBING	LUMP SUM	LUMP SUM
202-01	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	LUMP SUM	LUMP SUM
203-06	EXCAVATION AND EMBANKMENT	LUMP SUM	LUMP SUM
204-06	TEMPORARY SILT FENCING	LINEAR FOOT	500
204-07	TEMPORARY STONE CONSTRUCTION ENTRANCE	EACH	1
705-03-C	SINGLE SWINGING WALK GATES	EACH	1
705-06-B	CHAIN LINK FENCE (5-FOOT HEIGHT)	LINEAR FOOT	45
705-06-D	CHAIN LINK FENCE (7-FOOT HEIGHT)	LINEAR FOOT	90
711-03-A	RIPRAP (2 LB.)	TON	1100.0
711-03-D	RIPRAP (55 LB.)	TON	1600.0
711-04	GEOTEXTILE FABRIC	SQUARE YARD	1930
717-01	SEEDING	POUND	15
718-01	FERTILIZER	POUND	500
727-01	MOBILIZATION	LUMP SUM	LUMP SUM
729-01	SIGN (TYPE D)	SQUARE FOOT	60
732-01-A	PLASTIC PAVEMENT STRIPING (4" WIDTH)	LINEAR FOOT	1150
740-01	CONSTRUCTION LAYOUT	LUMP SUM	LUMP SUM
803-03	STEEL SHEET PILE WALL	SQUARE FOOT	3460
804-03-A	STEEL PIPE PILES (24" DIA., 3/4" WALL THICKNESS)	LINEAR FOOT	384
804-03-B	STEEL PIPE PILES (12" DIA., 1/2" WALL THICKNESS)	LINEAR FOOT	360
807-06	STRUCTURAL METALWORK	LUMP SUM	LUMP SUM
808-01	STEEL GRID FLOORING	SQUARE FOOT	345
810-03	PIPE RAILING	LINEAR FOOT	94
S-001	DEWATERING	LUMP SUM	LUMP SUM
S-002	ALUMINUM SLIDE GATE (2'X7' RECTANGULAR)	EACH	2
S-003	ALUMINUM COMBINATION GATE (84" DIAMETER)	EACH	3
S-004	GASOLINE POWERED PORTABLE ACTUATOR	EACH	1

NO.	DATE	REVISION	APPROVED



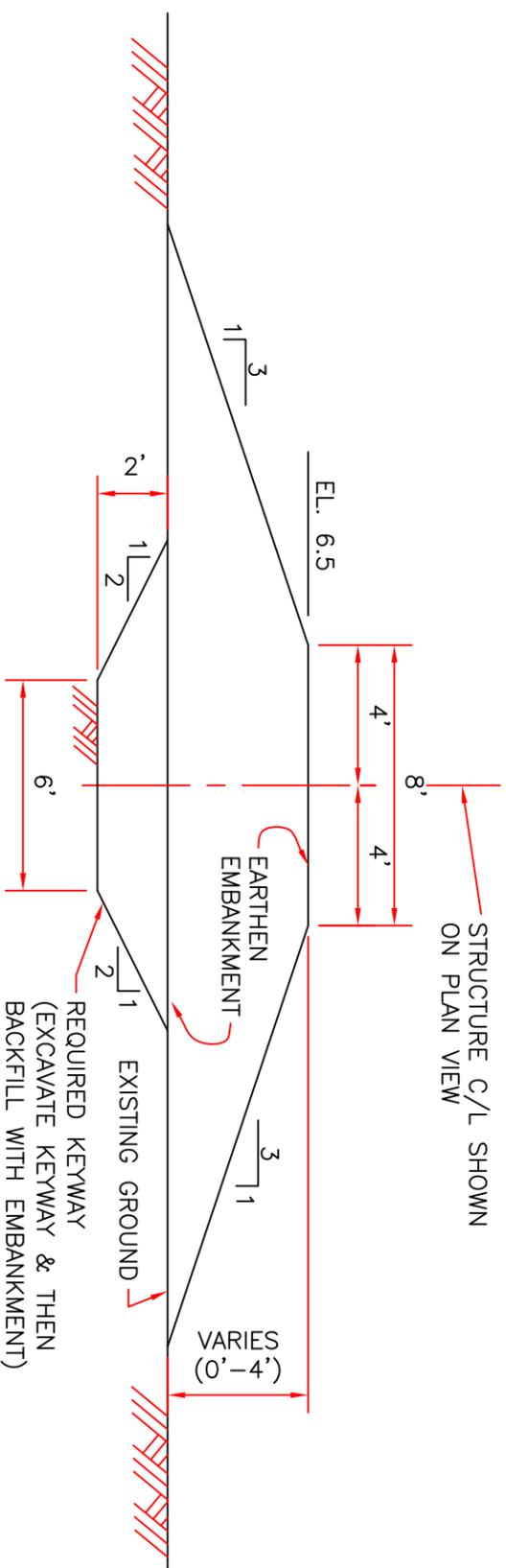
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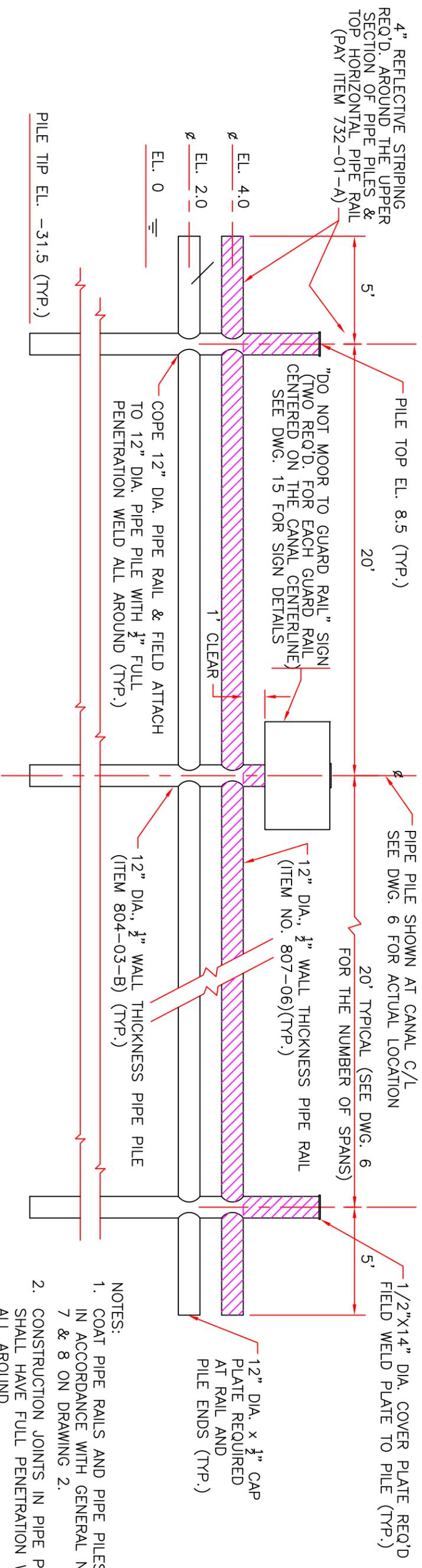
**NATIONAL OCEANIC AND  
ATMOSPHERIC ADMINISTRATION**

HOPEDALE HYDROLOGIC  
RESTORATION P0-24  
SUMMARY OF ESTIMATED QUANTITIES  
DATE: JULY 2003      DRAWING NO.: 3

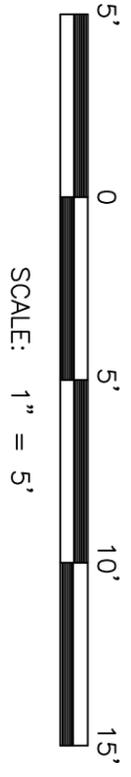


**TYPICAL SECTION**  
EARTHEN LEVEE (S-1 SITE)

- NOTES:
1. ALL MATERIAL SHALL BE HAULED IN FROM APPROVED SOURCE.
  2. EMBANKMENT SHALL BE SEEDED & FERTILIZED WITHIN 72 HOURS OF CONSTRUCTION. IF EMBANKMENT IS PARTIALLY COMPLETED FOR MORE THAN 72 HOURS, IT SHALL BE SEEDED & FERTILIZED.



**NEW GUARD RAIL DETAIL**  
(2 REQUIRED)



- NOTES:
1. COAT PIPE RAILS AND PIPE PILES IN ACCORDANCE WITH GENERAL NOTES 7 & 8 ON DRAWING 2.
  2. CONSTRUCTION JOINTS IN PIPE PILES SHALL HAVE FULL PENETRATION WELD ALL AROUND.
  3. SIGN MOUNTING & PILE COVER PLATES SHALL BE INCLUDED UNDER PAY ITEM 807-06 STRUCTURAL METALWORK.

NO.	DATE	REVISION	APPROVED

HOPEDALE HYDROLOGIC RESTORATION P0-24  
TYPICAL DETAILS



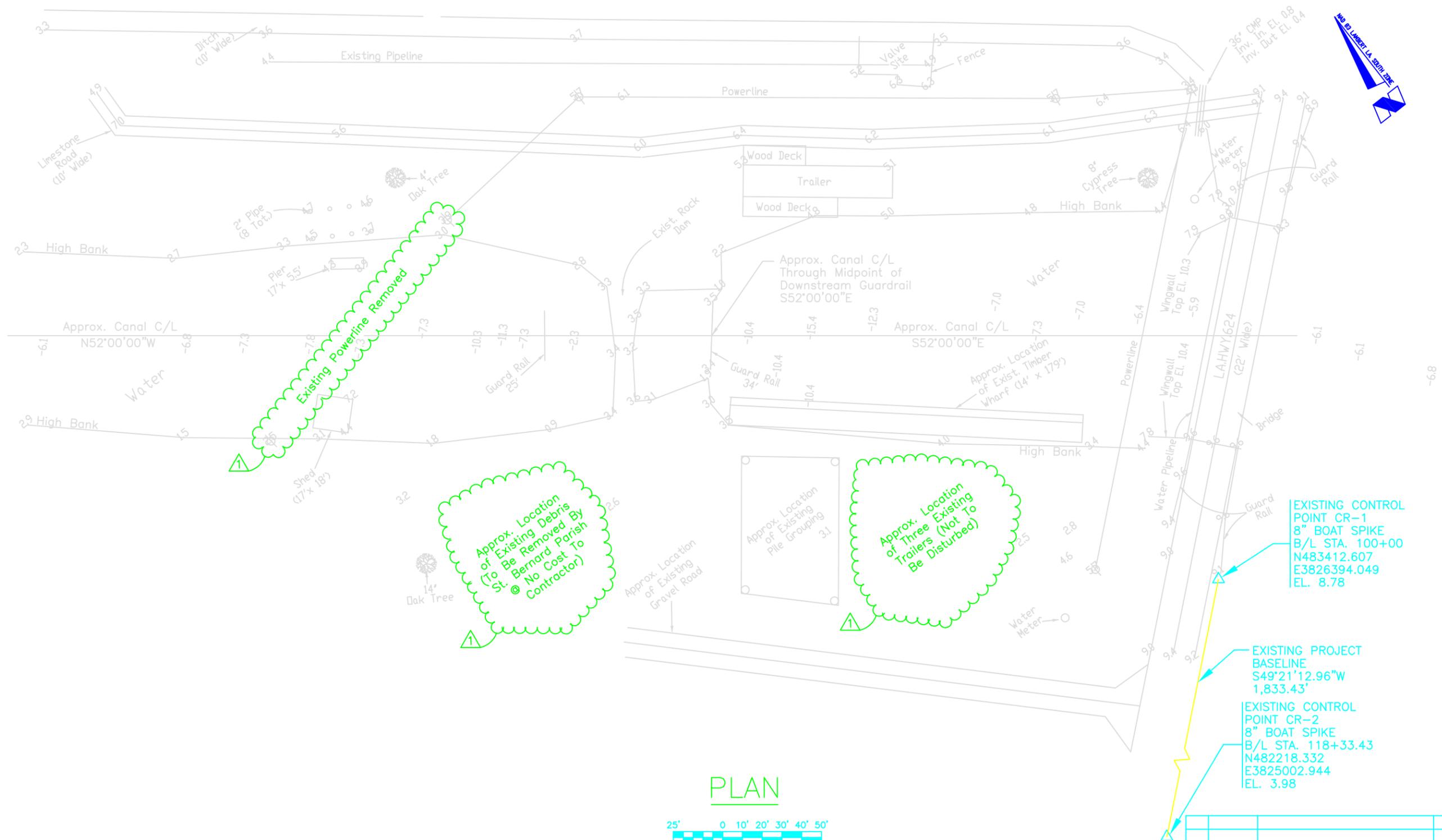
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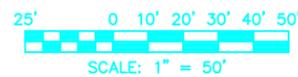


NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

DATE: JULY 2003 DRAWING NO.: 4



PLAN



EXISTING CONTROL POINT CR-1  
8" BOAT SPIKE  
B/L STA. 100+00  
N483412.607  
E3826394.049  
EL. 8.78

EXISTING PROJECT BASELINE  
S49°21'12.96"W  
1,833.43'

EXISTING CONTROL POINT CR-2  
8" BOAT SPIKE  
B/L STA. 118+33.43  
N482218.332  
E3825002.944  
EL. 3.98

NO.	DATE	REVISION	APPROVED
1	8/25/03	NEW SITE CONDITIONS ADDED	DTD



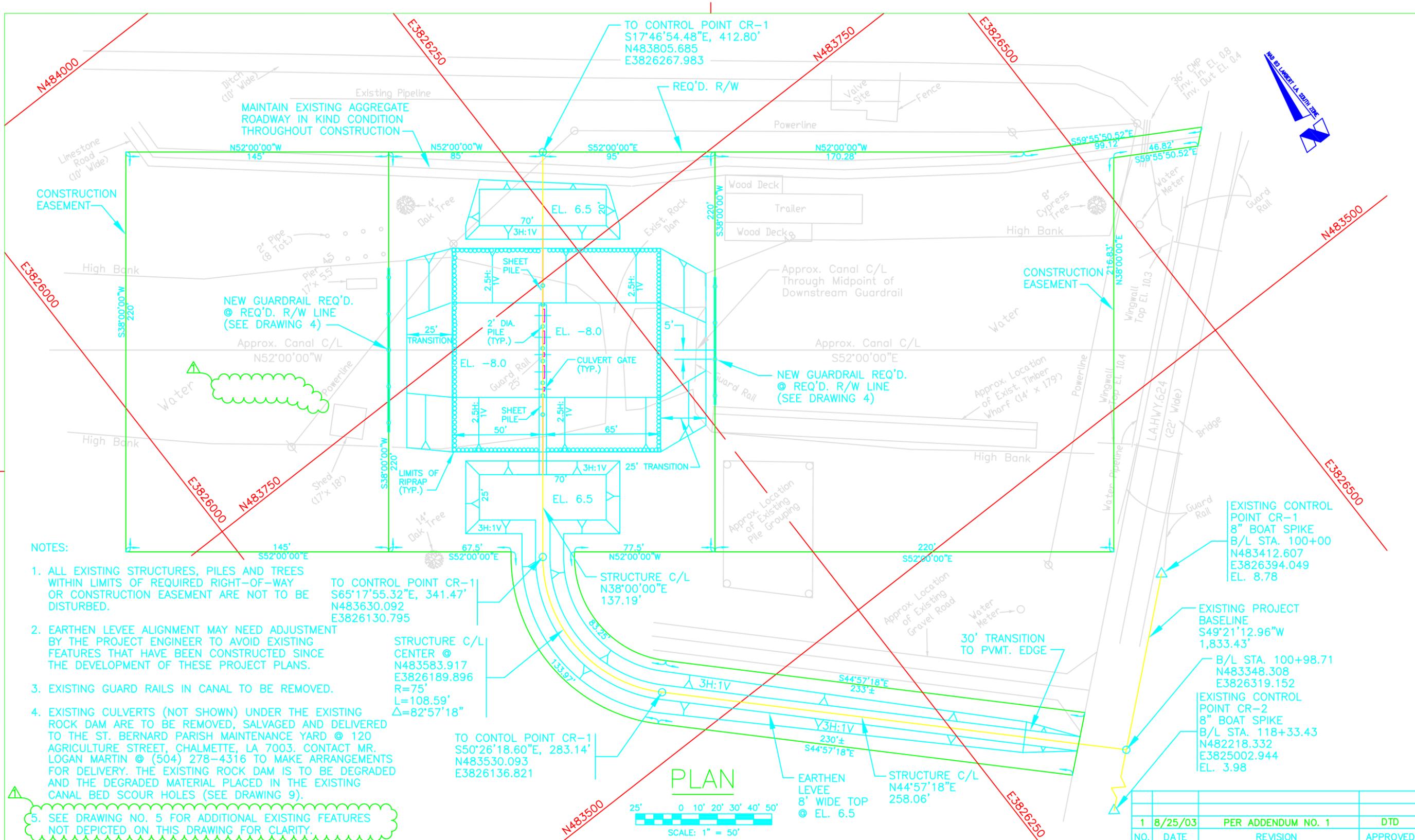
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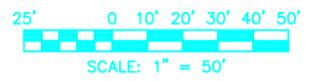
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

HOPEDALE HYDROLOGIC RESTORATION P0-24  
S-1 STRUCTURE EXISTING SITE PLAN  
DATE: AUGUST 2003 DRAWING NO.: 5



**NOTES:**

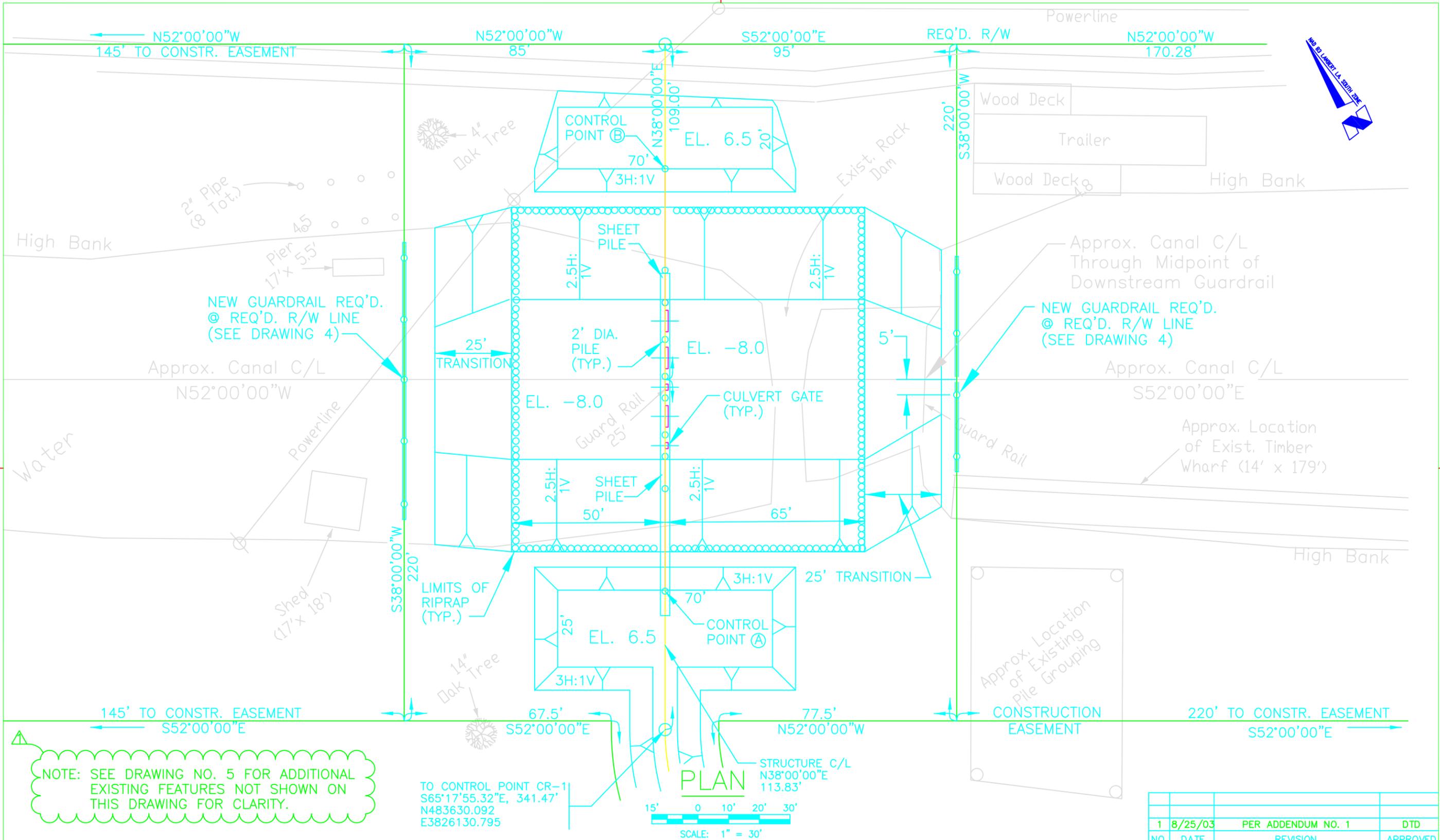
1. ALL EXISTING STRUCTURES, PILES AND TREES WITHIN LIMITS OF REQUIRED RIGHT-OF-WAY OR CONSTRUCTION EASEMENT ARE NOT TO BE DISTURBED.
2. EARTHEN LEVEE ALIGNMENT MAY NEED ADJUSTMENT BY THE PROJECT ENGINEER TO AVOID EXISTING FEATURES THAT HAVE BEEN CONSTRUCTED SINCE THE DEVELOPMENT OF THESE PROJECT PLANS.
3. EXISTING GUARD RAILS IN CANAL TO BE REMOVED.
4. EXISTING CULVERTS (NOT SHOWN) UNDER THE EXISTING ROCK DAM ARE TO BE REMOVED, SALVAGED AND DELIVERED TO THE ST. BERNARD PARISH MAINTENANCE YARD @ 120 AGRICULTURE STREET, CHALMETTE, LA 7003. CONTACT MR. LOGAN MARTIN @ (504) 278-4316 TO MAKE ARRANGEMENTS FOR DELIVERY. THE EXISTING ROCK DAM IS TO BE DEGRADED AND THE DEGRADED MATERIAL PLACED IN THE EXISTING CANAL BED SCOUR HOLES (SEE DRAWING 9).
5. SEE DRAWING NO. 5 FOR ADDITIONAL EXISTING FEATURES NOT DEPICTED ON THIS DRAWING FOR CLARITY.



NO.	DATE	REVISION	APPROVED
1	8/25/03	PER ADDENDUM NO. 1	DTD



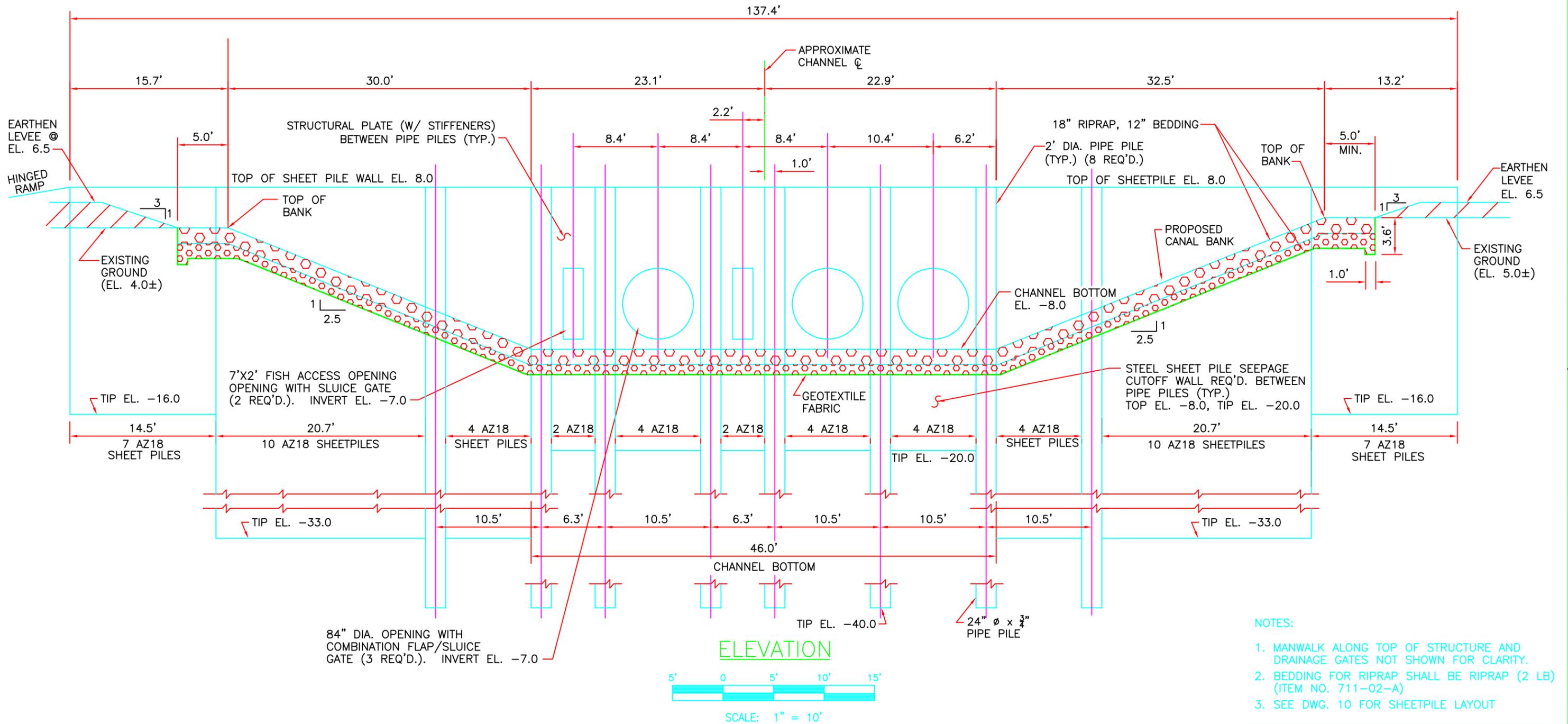
HOPEDALE HYDROLOGIC RESTORATION P0-24  
**S-1 STRUCTURE SITE PLAN**  
 DATE: JULY 2003 DRAWING NO.: 6



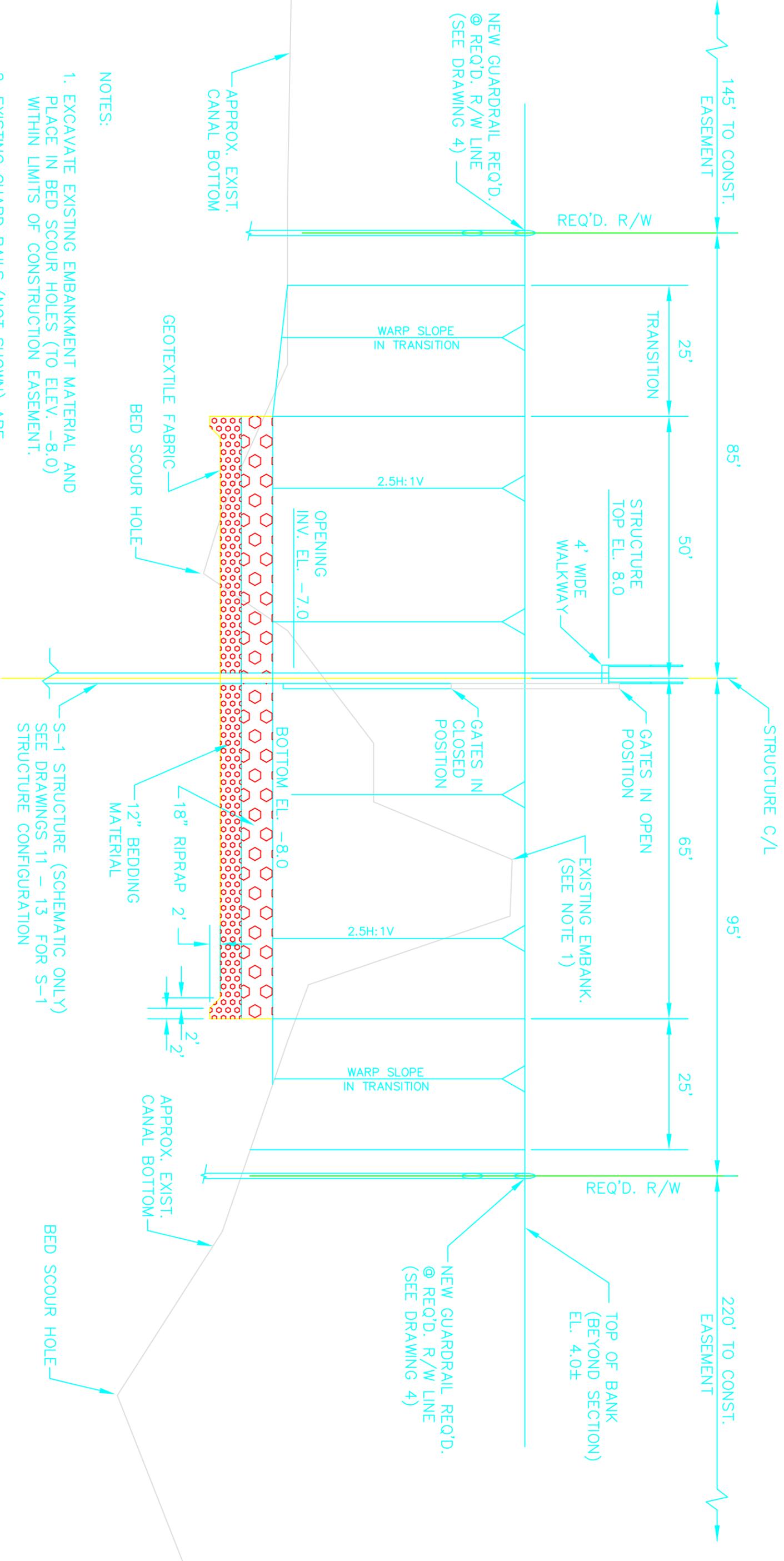
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1	8/25/03	PER ADDENDUM NO. 1	DTD



HOPEDALE HYDROLOGIC RESTORATION P0-24  
S-1 STRUCTURE DETAILED SITE PLAN  
DATE: JULY 2003 DRAWING NO.: 7



NO.	DATE	REVISION	APPROVED



**NOTES:**

1. EXCAVATE EXISTING EMBANKMENT MATERIAL AND PLACE IN BED SCOUR HOLES (TO ELEV. -8.0) WITHIN LIMITS OF CONSTRUCTION EASEMENT.
2. EXISTING GUARD RAILS (NOT SHOWN) ARE TO BE REMOVED.
3. SEE DRAWINGS 12 - 13 FOR GATE & WALKWAY DETAILS.
4. BEDDING MATERIAL FOR RIPRAP SHALL BE: RIPRAP (2 LB.) (ITEM NO. 711-02-A).

**C/L PROFILE**

HOR. SCALE: 1" = 20'  
 VER. SCALE: 1" = 5'

NO.	DATE	REVISION	APPROVED

HOPEDALE HYDROLOGIC RESTORATION P0-24

S-1 STRUCTURE PROFILE

DATE: JULY 2003

DRAWING NO.: 9

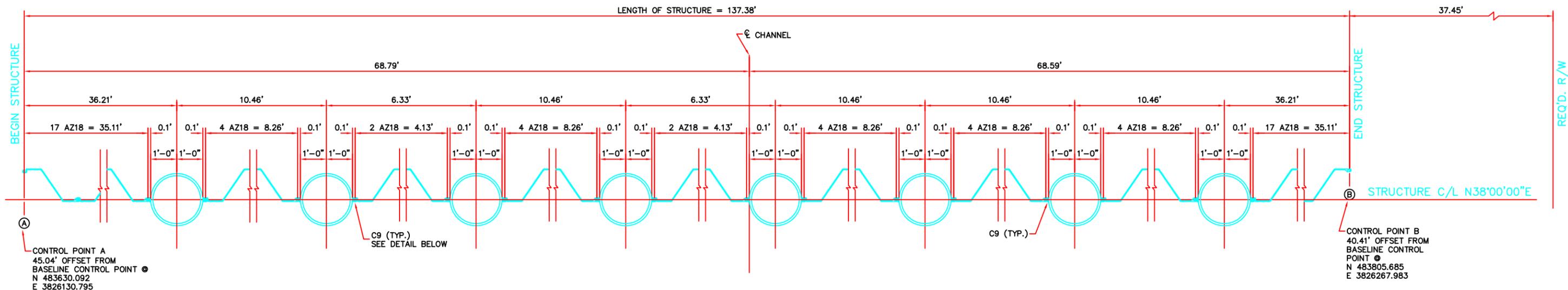


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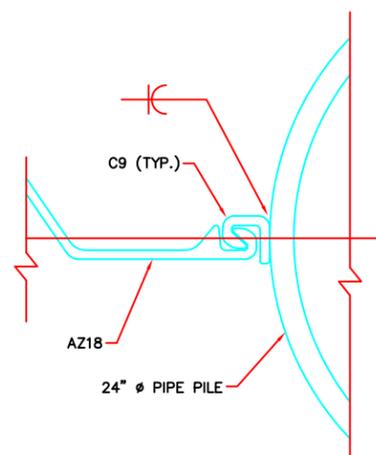


NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION



**SHEETPILE AND PIPE PILE LAYOUT**

SCALE: 1/4" = 1'-0"



**C-9 DETAIL**

SCALE: 1 1/2" = 1'-0"

**NOTES:**

1. SEE DWG. 9 FOR SHEETPILE ELEVATIONS
2. SEE DWG. 7 FOR BASELINE CONTROL POINT LOCATIONS

NO.	DATE	REVISION	APPROVED



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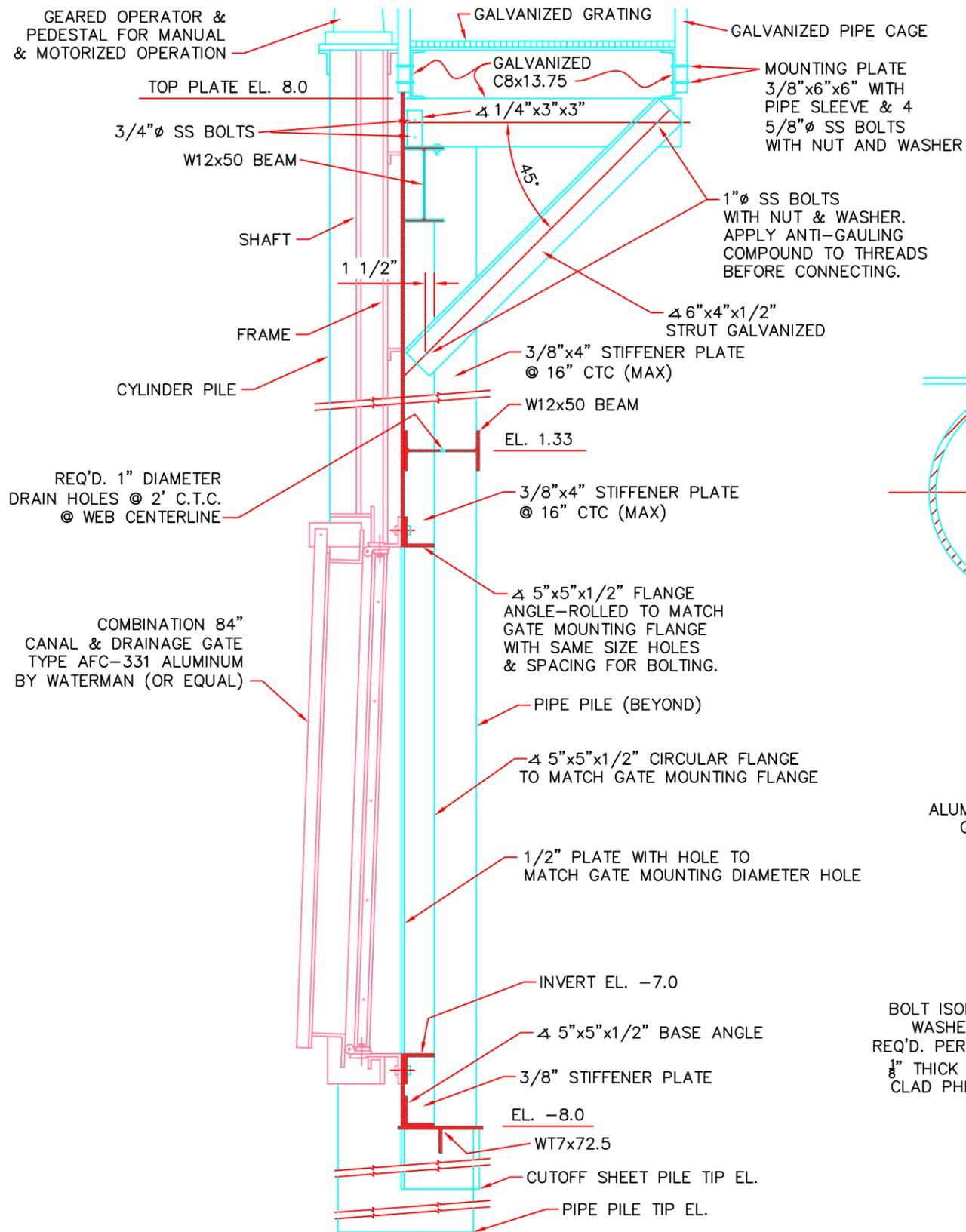


**NATIONAL OCEANIC AND  
ATMOSPHERIC ADMINISTRATION**

**HOPEDALE HYDROLOGIC  
RESTORATION PO-24  
S-1 STRUCTURE SHEETPILE  
& PIPE PILE LAYOUT**

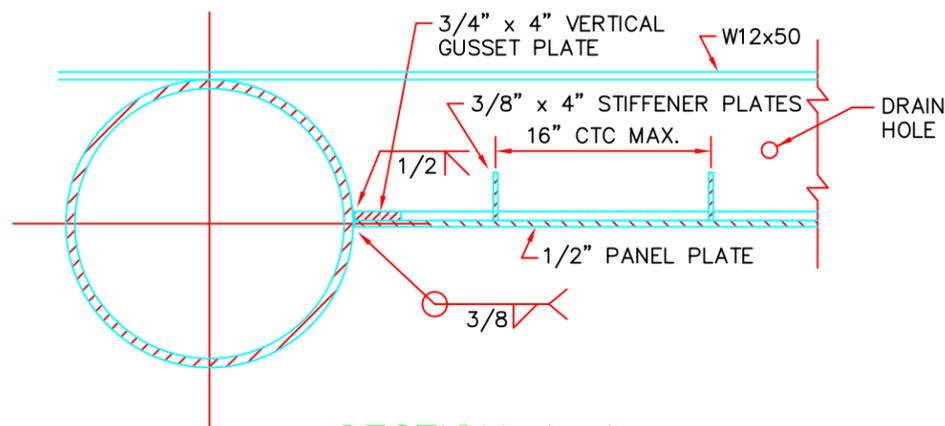
DATE: JULY 2003

DRAWING NO.: 10



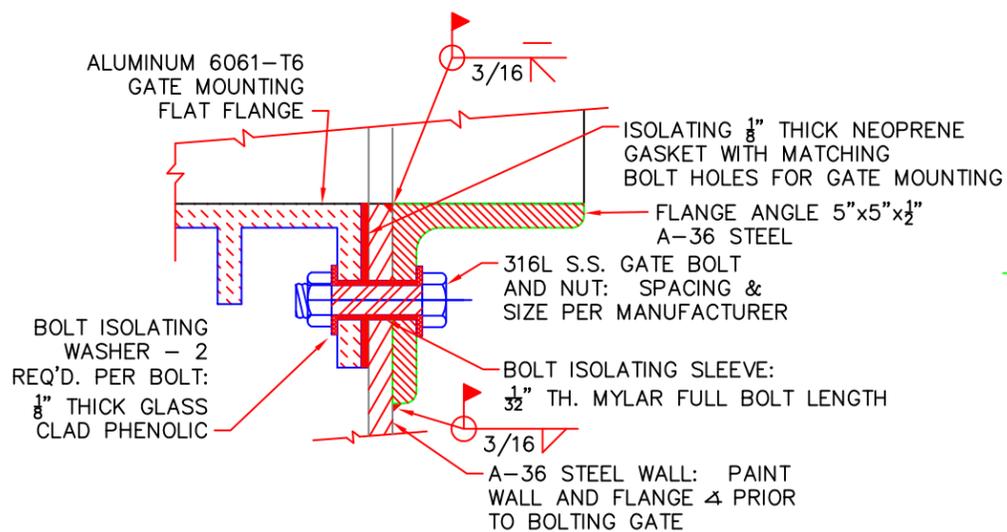
**SECTION THRU 84 INCH GATE**

SCALE: 1/2" = 1'-0"



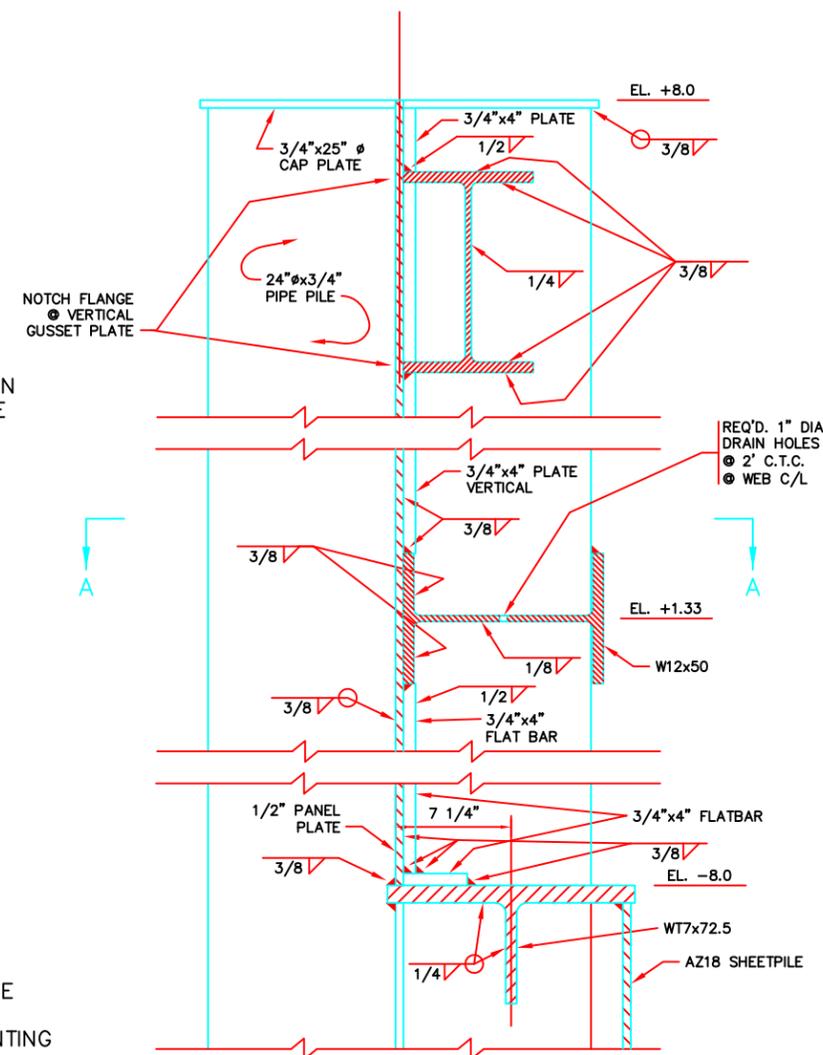
**SECTION A-A**

SCALE: 3/4" = 1'-0"



**GATE DETAIL 2**

BOLT ISOLATION CONNECTION  
SCALE: 3" = 1'-0"



**PIPE PILE - PANEL CONNECTIONS**

SCALE: 1" = 1'-0"

**NOTES:**

1. ALL STAINLESS STEEL FASTENERS:  
BOLT: A-193-B8 STEEL  
NUT: A-194
2. ALTERNATIVE SECTION A-A CONNECTIONS WILL BE CONSIDERED IF SHOP DRAWINGS OF THE CONNECTION DETAILS, CERTIFIED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF LOUISIANA, ARE SUBMITTED.

NO.	DATE	REVISION	APPROVED



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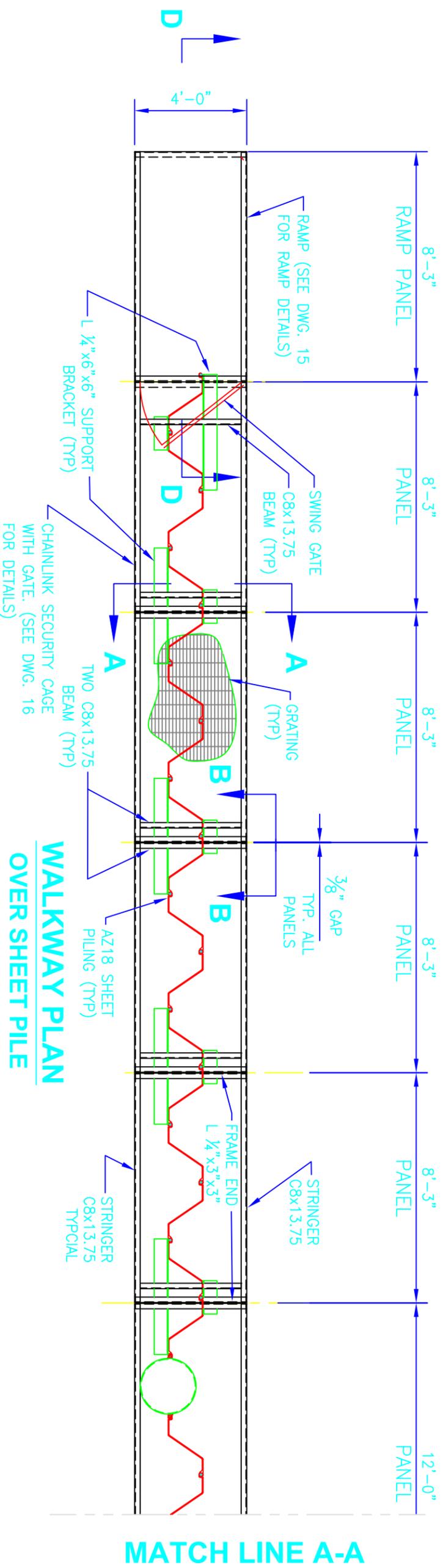
**NATIONAL OCEANIC AND  
ATMOSPHERIC ADMINISTRATION**

**HOPEDALE HYDROLOGIC  
RESTORATION P0-24**

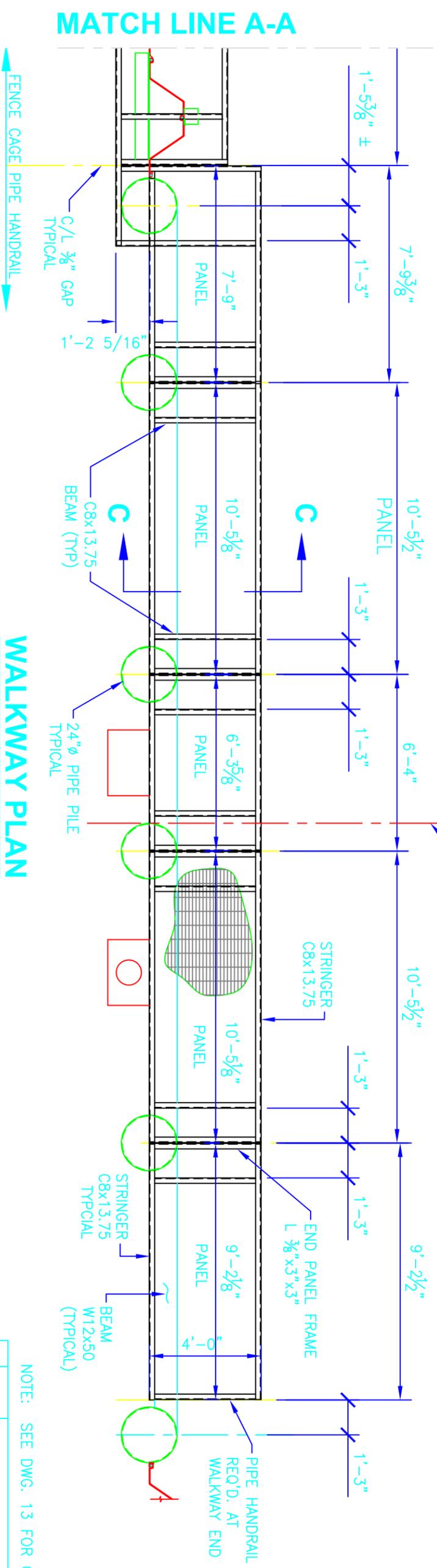
**S-1 STRUCTURE DETAILS**

DATE: JULY 2003

DRAWING NO.: 11



MATCH LINE A-A



MATCH LINE A-A

**WALKWAY PLAN  
OVER GATES**

SCALE: 1/4"=1'-0"

NOTE: SEE DWG. 13 FOR CUT SECTIONS.

NO.	DATE	REVISION	APPROVED



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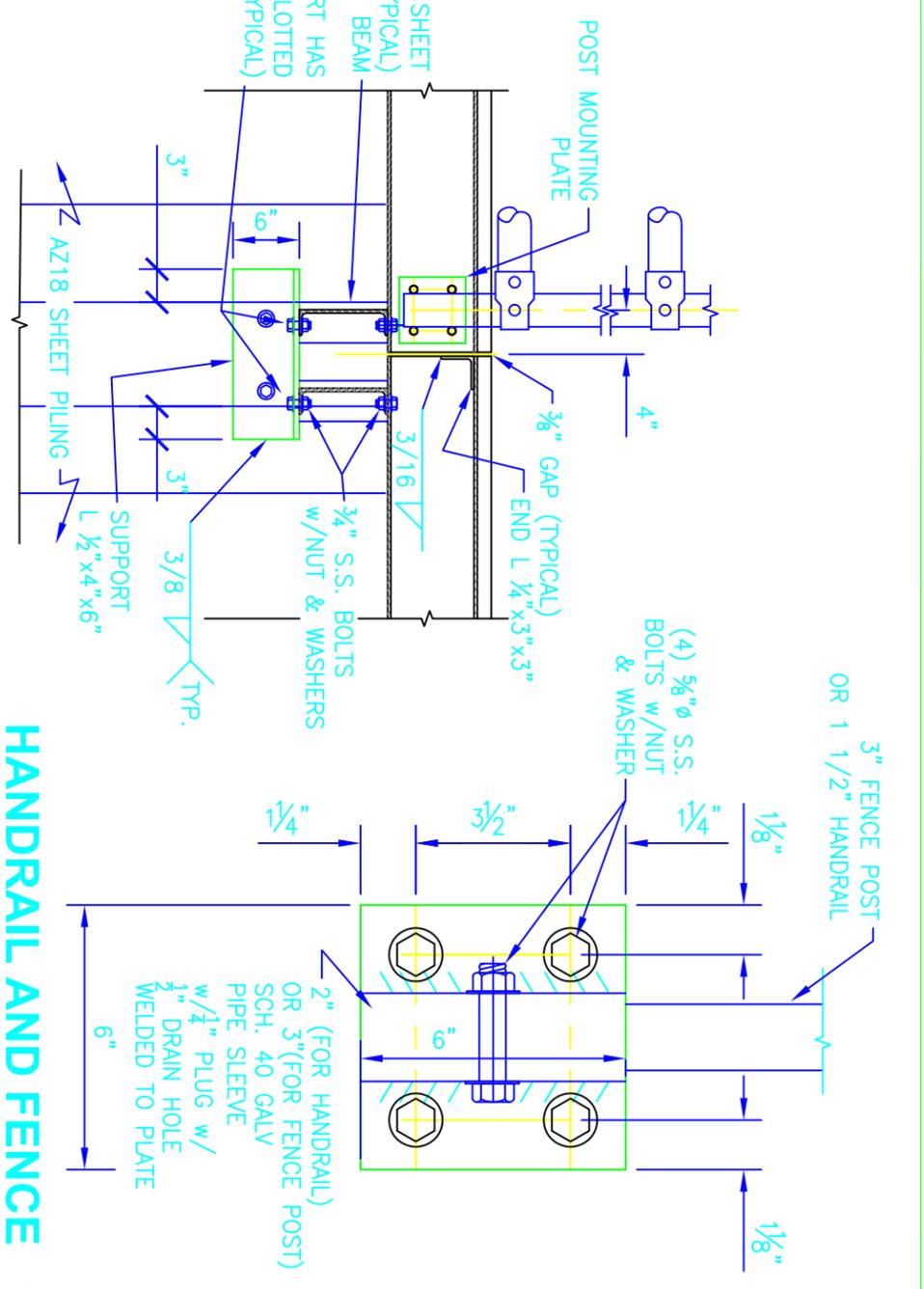
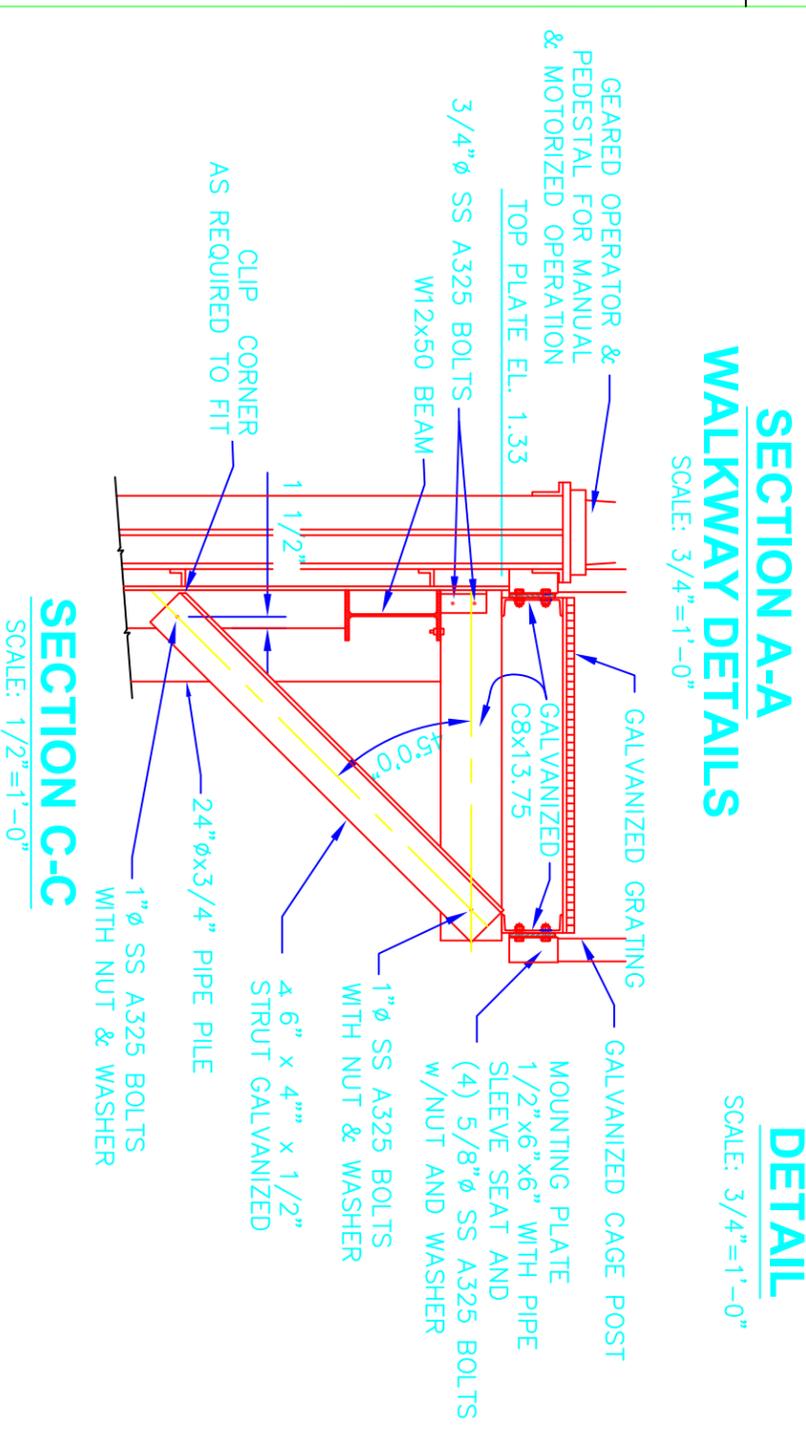
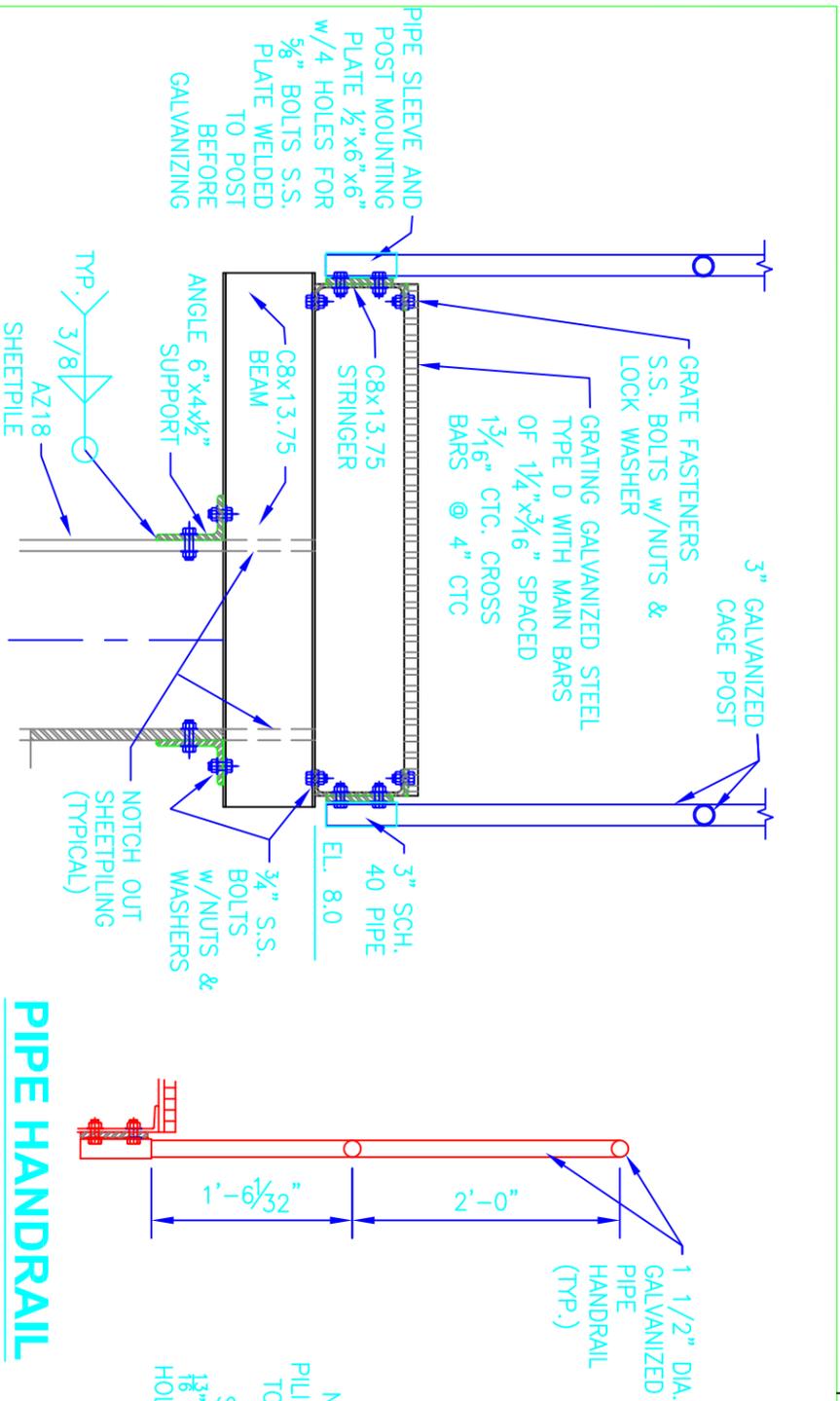


NATIONAL OCEANIC AND  
ATMOSPHERIC ADMINISTRATION

DATE: JULY 2003	DRAWING NO.: 12
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HOPEDALE HYDROLOGIC  
RESTORATION P0-24

S-1 STRUCTURE  
WALKWAY PLAN



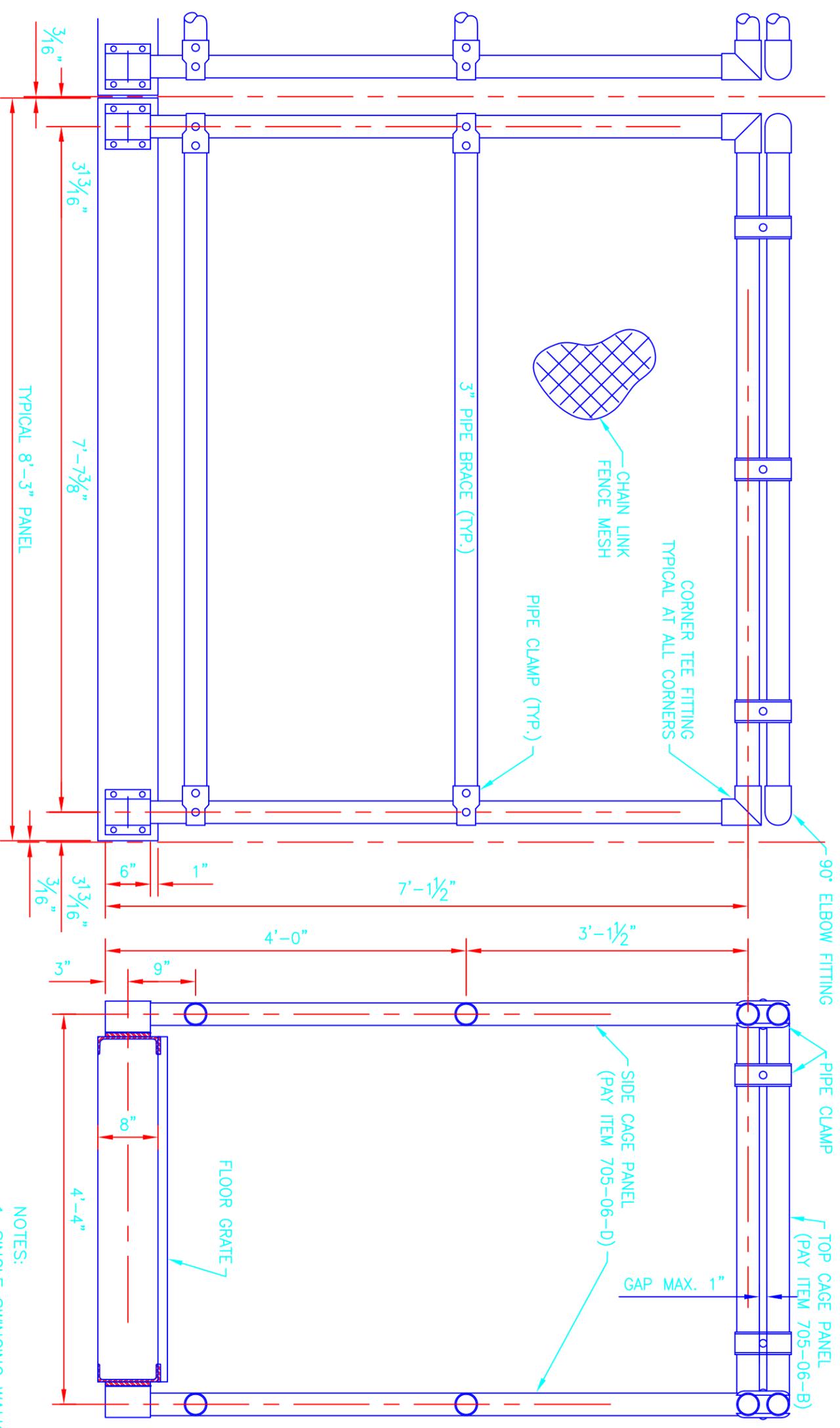
**NOTES:**

1. 3" CAGE POST AND RAILS ARE MADE FROM HYP 40 FENCE PIPE WITH ACTUAL O.D. = 2.875", THICKNESS 0.16" & MINIMUM YIELD STRESS OF 55,000 PSI STEEL ACCORDING TO ASTM F1043. ALL PIPING FOR FRAMES SHALL BE HOT-DIPPED GALVANIZED AFTER ALL WELDING & FABRICATION.
2. FABRIC SHALL BE WOVEN FROM SMOOTH-SEAL GALVANIZED ZINC WIRE. THE ZINC COATING SHALL BE A MINIMUM OF 1.2 oz. OF PURE ZINC PER SQ. FOOT OF WIRE SURFACE IN ACCORDANCE WITH ASTM A-641-91. MESH SHALL BE 2", IN 9 GAUGE. THERE SHALL BE A UNIFORM DIAMOND SQUARE MESH OF 2" BETWEEN THE PARALLEL SIDES AFTER WEAVING #9 GAUGE WIRE INTO CHAINLINK FABRIC. ALL FABRIC ENDS SHALL BE KNUCKLED FOR SAFETY. ALL FABRIC SHALL BE FITTED TO THE PIPE FRAME. FABRIC SHALL BE STRETCHED TAUT TO THE INSIDE OF THE CENTER LINE OF THE PIPE FRAME UNDER TENSION. FABRIC SHALL BE LACED WITH #3 GAUGE WIRE AT EACH INTERSECTION TO THE PIPE FRAME SO THAT THE FABRIC REMAINS TIGHT. THERE SHALL BE THE WIRES SECURED TO ALL VERTICAL BRACES.
3. CLAMPS & FITTINGS SHALL BE MADE FROM CAST IRON, IN ACCORDANCE WITH ASTM A-47-77, OR ALUMINUM ALLOY #43.
4. ALL EXTERIOR FRAMEWORK SHALL BE MADE FROM SUPER GATORSHIELD ASTM A500 STRUCTURAL GRADE STEEL TUBING, 2.875" PIPE SIZE O.D. MESH SHALL BE 2" IN 9 GAUGE WIRE STRETCHED TIGHT AND ATTACHED TO EVERY INTERSECTION WITH #13 GAUGE LACING WIRE SO THAT THE FABRIC REMAINS TIGHT. HORIZONTAL BRACING SHALL BE PLACED OUTSIDE FABRIC FOR RIGID SUPPORT. GATE HINGES ARE FACTORY INSTALLED AND SET BUT CAN BE FIELD ADJUSTED IF EVER NECESSARY.
5. GATE SHALL HAVE LATCH WITH KEYS LOCK.
6. SEE DWG. 12 FOR LOCATION OF CUT SECTIONS

NO.	DATE	REVISION	APPROVED







- NOTES:
1. SINGLE SWINGING WALK GATE W/SECURITY LOCK (PAY ITEM 705-03-C) REQUIRED AT LAND SIDE END PANEL OF WALKWAY SECURITY CAGE.
  2. TOP & SIDE CAGE PANELS SHALL INCLUDE MESH, CLAMPS, BRACES, TEE & ELBOW FITTINGS, PIPE MOUNTING BRACKETS AND ALL HARDWARE.

## WALKWAY SECURITY CAGE

SCALE: 3/4" = 1'-0"

NO.	DATE	REVISION	APPROVED



LOUISIANA  
DEPARTMENT OF  
NATURAL RESOURCES  
COASTAL RESTORATION DIVISION

**BC**  
Brown Cunningham Gannuch  
ENGINEERS • ARCHITECTS • CONSULTANTS  
9236 INTERLINE AVE.  
BATON ROUGE, LA



NATIONAL OCEANIC AND  
ATMOSPHERIC ADMINISTRATION

DATE: JULY 2003	DRAWING NO.:	16
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HOPEDALE HYDROLOGIC  
RESTORATION P0-24  
S-1 STRUCTURE  
FENCE DETAILS