

ANNEX 8 - IHNC Lock Quantity Takeoffs

Option 1 - 2015 IHNC Quantities

02- Relocations

Account Number	Account Number Description	Quantity	Unit	Unit Cost	Account No. Cost Quantity X UC	Contingency	Project Cost
02---	RELOCATIONS						
021--	Roads, Construction Activities						
	D-1 Detour Routes						
	Site Work						
	Signage	1	LS				
	Signalization	1	LS				
	Detour Routes						
	Roadway Surfacing	1	LS				
	Maintain Detour Roads	1	LS				
	B-1 St. Claude Bridge (Low- Level Double Bascule)						
	Mob and Demob	1	LS				
	Demolition(Ramps Only)	1	LS				
	Main span foundation	1	LS				
	Main span superstructure	1	LS				
	Approach ramps foundation	1	LS				
	App'ch ramps superstru & rdwy	1	LS				
022--	Railroads, Construction Act.						
	NEW ORLEANS PUBLIC BELT						
	R-1 FLA AVE BRIDGE(RAILROAD)	1	LS				
	R-2 MAIN LINE	1	LS				
	R-3 GALVEZ MARGINAL TRACK	1	LS				
	R-4 GALVEZ NO. 3 TRACK	1	LS				
	R-5 RAILROAD MARSHALLING YD.	1	LS				
	FOC-1 FIBER OPTIC LINE	1	LS				
023--	Cemetaries, Utilities, and Structures						
	Construction Activities						
	SOUTH CENTRAL BELL						
	T-5 SPARE COONDUITS IN LOCK	1	LS				
	T-1 SUBMARINE CABLES	1	LS				
	T-4 SUBMARINE CABLES	1	LS				
	T-6 SUBMARINE CABLES	1	LS				
	T-7 SUBMARINE CABLES	1	LS				
	T-8 SUBMARINE CABLES	1	LS				
	T-9 SUBMARINE CABLES	1	LS				
	COX CABLE TV						
	T-2 CABLE TV	1	LS				
	T-3 CABLE TV 4-3/4" COAXIAL	1	LS				
	NEW ORLEANS PUBLIC SERVICE, INC						
	GAS FACILITIES						
	G-1 16" DIA GAS MAIN	1	LS				
	G-2 16" DIA GAS MAIN	1	LS				
	G-3 16" DIA GAS MAIN	1	LS				
	G-4 16" DIA GAS MAIN	1	LS				
	G-5 16" DIA GAS MAIN	1	LS				
	G-6 16" DIA GAS MAIN	1	LS				

Option 1 - 2015 IHNC Quantities
02- Relocations

NEW ORLEANS PUBLIC SERVICE, INC

ELECTRICAL FACILITIES

E-1 2-24KV FEEDERS	1	LS
E-2 2-24KV FEEDERS	1	LS
E-4 POWER CABLE	1	LS
E-5 2-24KV PRIM IN 6"CASE	1	LS
E-9 2-24KV PRIM IN 6"CASE	1	LS
E-13 2-24KV PRIM IN 6"CASE	1	LS
E-14 2-24KV PRIM IN 6"CASE	1	LS
E-15 AERIAL TRANSMISSION LIN	1	LS

NEW ORLEANS PUBLIC SERVICE, INC

COMMUNICATIONS FACILITIES

T-10 COMMUNICATION CABLES	1	LS
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NEW ORLEANS SEWAGE AND WATER BOARD

SEWER FACILITIES

S-1 8.8 MGD SEWAGE PUMP STA.	1	LS
S-2 30" DIA GRAVITY SEWER MAIN	1	LS
S-3 30" DIA GRAVITY SEWER MAIN	1	LS
S-4 66" DIA FORCED SEWER MAIN	1	LS
S-7 66" DIA FORCED SEWER MAIN	1	LS
S-5 54" DIA FORCED SEWER MAIN	1	LS
S-8 54" DIA FORCED SEWER MAIN	1	LS
S-6 SEWER PUMP STA. & 20"P/L	1	LS
S-9 FLA. AVE 45' WIDE SIPHON	1	LS
S-10 JORDAN AVE STORM DRAIN	1	LS
S-11 SEWER LIFT STA/LINES	1	LS
M-1 MISC. WORK IN STR.	1	LS

NEW ORLEANS SEWAGE AND WATER BOARD

WATER FACILITIES

W-1 1-20" DIA WATER MAIN	1	LS
W-2 1-20" DIA WATER MAIN	1	LS
W-3 1-20" DIA WATER MAIN	1	LS
W-4 1-20" DIA WATER MAIN	1	LS
W-5 48" DIA WATER MAIN	1	LS
W-6 48" DIA WATER MAIN	1	LS

NEW ORLEANS SEWAGE AND WATER BOARD

ELECTRICAL FACILITIES

E-3 POWER CABLE	LUMPSUM	LS
E-6 2-15KV 25HZ FEEDER	LUMPSUM	LS
E-7 2-15KV 25HZ FEEDER	LUMPSUM	LS
E-8 2-15KV 25HZ FEEDER	LUMPSUM	LS
E-10 2-15KV 25HZ FEEDER	LUMPSUM	LS
E-11 2-15KV 25HZ FEEDER	LUMPSUM	LS
E-12 2-15KV 25HZ FEEDER	LUMPSUM	LS

02A--

ROADS, REAL ESTATE ACTIVITIES

DETOUR ROUTES	LUMPSUM	LS
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Option 1 - 2015 IHNC Quantities

02- Relocations

	ST. CLAUDE BRIDGE	LUMPSUM	LS
02B--	RAILROADS, REAL ESTATE ACTIVITIES	LUMPSUM	LS
02C--	CEMETARIES, UTILITIES, and STRUCTURES REAL ESTATE ACTIVITIES	LUMPSUM	LS
02---	Subtotal: Relocations		
02---	Contingencies		
02---	Contingency- round off		
02---	TOTAL: RELOCATIONS		

110'x900'x-22 Sill - 2015 IHNC Quantities

05 - Lock Structure

Account Number	Account Number Description	Quantity	Unit	Unit Cost	Account No. Cost Quantity X UC	Contingency	Project Cost
05-----	LOCKS						
050001--	Mobilization & Demobilization	1	LS				
050003--	Care and Diversion of Water:						
5000302	Sitework						
	Protection Cells PS-31 Piling	940,310	SF				
	Cellular Sand Fill	72,975	CY				
	18" Thick Stone Cap	5,677	CY				
	Jet Grout	297,230	CY				
	Dewatering System	1	LS				
	Temporary Protective Dolphins (for Cofferdam)						
	Pipe 36"x9/16"	12,000	LF				
	W30X191	88,242	LB				
	C12X30	10,920	LB				
	Misc. Metals	32,750	LB				
	Energy Absorption Fenders	20	EA				
050004--	Permanent Access Road and Parking and Landscaping:	1	EA				
5000402	Site Work						
	Roadway and Parking, Asphaltic	5,000	SY				
	Metal Guardrails	900	LF				
	Semi-Compacted Fill	6,200	CY				
	Landscaping - 27 Acres	1	LS				
050009--	Buildings, Project Operations:						
5000904	Equipment Bldg.(Mason)	1	LS				
5000904	Control Houses (4)(Mason)	1	LS				
5000905	Admin.&Maint.Bldg.(Prefab)	1	LS				
5000915	HVAC Systems	1	LS				
050010--	Earthwork for Structures:						
05001003	Lock Site-Backfill						
	Granular Backfill	467,320	CY				
	Clay Backfill	65,710	CY				
05001004	Foundation Protection						
	36" Riprap	60,000	TN				
	12" Gravel Bedding	12,000	CY				
	Filter Fabric	36,000	SY				
050011--	Foundation Work						
	Piling Cutoff, Steel Sheet (PZ-22)	33,000	SF				
	Chamber Monoliths 24" PPC Piles	120,750	LF				
	Gatebay Monoliths 24" Pipe Piles (2 Monoliths)	223,920	SF				
	Storage Platform 24" PPC Piles	1,600	LF				
050057--	Lock Gates & Operating Mach.:						
05005705	Metals						
	Sector Gates (2 Sets)	1,335,000	LBS				
	Maintenance Bulkheads	1,960,000	LBS				
05005706	Timber Fenders 8"X 12" (On Gates)	2,904	LF				
05005715	Gate Machinery	1	LS				

Length (ft) 95
Number of PS-31 Sheets (for all 30 cells) 5950

There are 20 protective pile dolphins structures protecting the cofferdam.
20 structures x 4 piles each @ 150-ft long 12000

There are 20 protective pile dolphins structures protecting the cofferdam.

110'x900'x-22 Sill - 2015 IHNC Quantities

05 - Lock Structure

	Emergency Bulkhead Crane	1	LS	
	Sector Gate Rack Gear	1	LS	
	Lowering Carriage Machinery	1	LS	

500610 Conc. Floating Guidewalls

Cofferdam

(Reuse materials, both cells

shall be reused 3 times)

Piling, Steel Sheet PZ-27	26,880	SF
Wale System (5 Tiers)	350,000	LB

Guidewall

Piling, HP 14X73	10,200	LF
Precast Concrete Pontoon	2,500	CY
Concrete, In Place	1,666	CY
Sand Fill	600	CY
Pontoon Timbers(12X12)	7,800	LF
Miscellaneous Metals	135,000	LB

500610 Timber Guidewalls

Guidewalls

Treated Timber Piles	44,500	LF
12"X12" Treated Timber Fenders	6,920	LF
3"X12" Treated Timber Planks	16,680	LF

End Cells

Piling, Steel Sheets PS 27.5	73,000	SF
Concrete Cap	4,000	CY
Cellular Sand Fill	26,000	CY

050063--	Lock Structure:		
05006303	Concrete		
	Lock Chamber Monoliths	66,185	CY
	Sector Gatebay Monoliths	123,930	CY
	Storage Platform		
	12" Precast Hollow Core Slab Deck	10,904	SF
	Cast in Place Bent Cap and End Beam	200	CY
05006305	Metals		
	Wall Armor	400,000	LBS
	Floating Mooring Bits	115,000	LBS
	Miscellaneous Metals	700,000	LBS
050064--	Culvert Valves & Oper. Mach.:		
05006405	Metals		
	Culvert Roller Gates (4) A-E Est.	104,000	LBS
	Culvert Maint. Bulkhead (4) A-E Est.	88,000	LBS
	Culvert Intake Screens (4) A-E Est.	118,000	LBS
05006415	Mechanical		
	Culvert Valve Machinery	1	LS
050065--	Piping Systems:		
05006515	Mechanical		
	Wash/Fire	1	LS
050066--	Power and Lighting Systems:		
05006616	Electrical		
	Programmable Logic Controller System	1	LS
	Electrical Distribution System	1	LS
	Interior Lighting	1	LS

110'x900'x-22 Sill - 2015 IHNC Quantities

05 - Lock Structure

	Lock/Exterior Lighting	1	LS
	Grounding System	1	LS
	Camera System	1	LS
	Emergency Power	1	LS
	Traffic Signals	1	LS

050099-- Associated General Items:

0500991- Demolition of Existing Lock
(In-The-Wet Plan)

Lock Wall Demolition	1	LS
Debris Removal	1	LS
Bridge Demo. & Removal	1	LS
Guidewall & Dolphin Removal	1	LS

Lock Slab Demolition not necessary since this is a barge lock

0500992- Demolition of Existing

Facilities

Coast Guard Facility	1	LS
Private Facilities	1	LS
Tree Removal	1	LS
HTRW Treatment for Abandoned Above Ground Facilities	1	LS

0500993- Site Work

Permanent Mooring Facil.

Cells

PSA 23 Sheet Piling	168,700	SF
PSA 27.5	30,500	SF
Sand Fill	31,500	CY
Concrete Cap	21,500	CY
Timber Fenders		
18" Dia. Treated Piles	53,500	LF
12"X12" Treated Tim. Fenders	24,500	LF
3"X12" Treated Tim. Fenders	31,000	LF

05----- Subtotal: Locks

05----- Contingencies

05----- Contingency- round off

05----- TOTAL: LOCKS

Option 1 - 2015 IHNC Quantities

09 - Channels and Canals

Account Number	Account Number Description	Quantity	Unit	Unit Cost	Account No. Cost Quantity X UC	Contingency	Project Cost
09-----	CHANNELS AND CANALS						
0901---	Channels						
090101--	Mobilization, Demobilization:						
	Initial Dredging	1	LS				
	Existing Lock	1	LS				
	Discharge Pipeline	1	LS				
090113--	Traffic Control:						
9011302	Site Work						
	Dredge, New Lock Excavation	483,407	CY				
	Dredge, Bypass Channel	42,070	CY				
	Excavation	265,600	CY				
	(For Existing Lock Struc. Demo & Bypass)						
	Assistance Tugs	60	MO				
090116--	Pipeline Dredging:						
	Dredge, 3 Utility Crossings	60,000	CY				
090130--	Bank Stabilization:						
9013002	Site Work-North Bypass						
	36" Riprap	36,000	TN				
	12" Gravel Bedding	7,500	CY				
	Filter Fabric	22,000	SY				
09-----	Subtotal: Channels and Canals						
09-----	Contingencies:						
09-----	Contingency- round off						
09-----	TOTAL: CHANNELS AND CANALS						

Option 1 - 2015 IHNC Quantities

11 - Levees and Floodwalls

Account Number	Account Number Description	Quantity	Unit	Unit Cost	Account No. Cost Quantity X UC	Contingency	Project Cost
11-----	LEVEES AND FLOODWALLS						
1101---	LEVEES						
110101--	MOBILIZATION AND DEMOBILIZATION and Preparatory Work:	1	LS				
110199--	Associated General Items:						
1101991-	Floodwalls (West & East IHNC)						
	T-Wall Concrete	50,897	CY				
	18" Dia. Steel Pipe Piles	672,245	LF				
	Piling, Steel Sheet PZ-22	342,490	SF				
	Pile Tests	24	EA				
	Levee Setback						
	Reshaping	50,000	CY				
	Emb, Comp. Fill For Floodwalls	167,900	CY				
	Emb, Comp. Fill for Levee Access Roads	20,000	CY				
1101993-	DEMOLITION OF EXISTING FLOODWALL						
	Demolition Conc. Floodwall	12,627	CY				
	Extract Steel Sheet Piling	26,500	SF				
	Extract 12" Conc. Piles	2,700	LF				
	Backfill	3,200	CY				
1101994-	Utility Crossings & Sleeves						
	Trench "A"	1	LS				
	Trench "C"	1	LS				
	Trench "E"	1	LS				
11-----	Subtotal: Levees and Floodwalls						
11-----	Contingencies						
11-----	Contingency- round off						
11-----	TOTAL: LEVEES AND FLOODWALLS						

Quanties include the Tie-In T-Walls
(Tie-In with New Lock and Levees)

These items will be same for all
alternatives

height 37.25 half of new
length 5215 floodwall
length

Excavation Qtys.

IHNC Excavation Quantities

Description	New Lock Excavation & Bypass Channel Qty. (Cubic Yards, CY)	New Lock Excavation (Main Channel - DMMU's 3, 4, & 5), CY	Bypass Channel (DMMU's 6 & 7), CY	Excavation @ Existing Lock (DMMU's 9 & 10), CY	Total Excavation @ New & Existing Lock, CY
summation formula	a+b	a	b	c	a+b+c
Plan 1 - No Action	-	-	-	-	-
Plan 2 - 110 x 900 x Sill El. -22.0	453,261	347,494	105,767	265,559	718,820
Plan 3 - 110 x 1200 x Sill El. -22.0	553,885	426,207	127,678	265,559	819,444
Plan 4 - 75 x 900 x Sill El. -22.0	427,691	333,094	94,596	265,559	693,250
Plan 5 - 75 x 1200 x Sill El. -22.0	521,524	409,156	112,369	265,559	787,083

Tentatively Selected Plan

Disposition of Excavated Channel Material - For Tentatively Selected Plan (TSP) - Plan 2

Contaminated Material Barged to Venice Landfill (DMMU 5 & 7) 104,909 DMMU 7 includes 1-ft overdredge

Good Material Disposed in MS River (DMMU 3, 4, 6, 9 & 10) 613,911 DMMU 6 includes 1-ft overdredge

total exc @ new & exist lock 718,820 for backcheck

Note:
No need to calculate the 1-ft of over dredge qty for DMMU's 3, 4, & 5, because excavation occurs within the main channel. The required excavation depth for the main channel is El. -33.0, which includes the extra 1-ft for the stabilization slab.

old survey total qty	809956
new survey qty	718,820
difference	91,136
% decrease based on new surveys	11%

1-ft over dredge qty was included with DMMU 6

**IHNC Cost Quantities - For Sill Elevation of El. -22.0
For Plan 2 - 110 X 900**

*The stations for the x-sections shown are along the C/L of the new Lock & Sector Gate Structures & existing channel.
 *The excavation areas for each DMMU were determined using Microstatic
 *Changes made; Bypass Channel El. -17 (includes 3 ft of Adv. Maint. Dredging), Stations are every 100-ft

For the 900-ft Lock, Excavation would no start until approximate C/L Exist Channel Station 158+00.

EXCAVATION - C/L NEW LOCK STA. 155+00 TO STA. 171+00															Over-Depth/Dredge Quantity			
C/L Exist Channel Station	C/L Exist Channel Station	End Area (ft²)	Dist (ft)	Volume (CY)	#3, End Area (ft²)	#3, CY	#4, End Area (ft²)	#4, CY	#5, End Area (ft²)	#5, CY	#6, End Area (ft²)	#6, CY	#7, End Area (ft²)	#7, CY	#6, End Area (ft²)	#6, CY	#7, End Area (ft²)	#7, CY
23+44	155+00	0			0		0		-		0		-		0		-	
			100	0		0		0				0				0		
24+44	156+00	0			0		0		-		0		-		0		-	
			100	0		0		0				0				0		
25+44	157+00	0			0		0		-		0		-		0		-	
			100	0		0		0				0				0		
26+44	158+00	9231			4570		2616		-		1847		-		198		-	
			100	34383		17228		9548				6880				728		
27+44	159+00	9336			4733		2540		-		1868		-		195		-	
			100	34767		17406		9520				7122				719		
28+44	160+00	9438			4666		2601		-		1978		-		193		-	
			100	35124		17106		9769				7543				707		
29+44	161+00	9529			4571		2674		-		2095		-		189		-	
			100	35574		17450		9576				7846				702		
30+44	162+00	9681			4852		2497		-		2142		-		190		-	
			100	35954		18348		8878				8022				706		
31+44	163+00	9734			5056		-		2297		2190		-		191		-	
			100	35252		18422				8676		7441				713		
32+44	164+00	9302			4892		-		2388		1828		-		194		-	
			100	33644		17809				9043		6070				722		
33+44	165+00	8866			4725		-		2495		1450		-		196		-	
			100	33170		17765				8844		5846				715		
34+44	166+00	9046			4868		-		2281		1707		-		190		-	
			100	33835		18267				8091		6778				700		
35+44	167+00	9225			4996		-		2088		-		1953		-		188	
			100	34515		18183				8039				7598				694
36+44	168+00	9413			4823		-		2253		-		2150		-		187	
			100	35191		17507				8694				8307				681
37+44	169+00	9590			4631		-		2442		-		2336		-		181	
			100	35778		17522				8965				8615				676
38+44	170+00	9730			4831		-		2399		-		2316		-		184	
			100	36074		18089				8750				8559				676
39+44	171+00	9750			4937		-		2326		-		2306		-		181	
Total Excavation @ New Lock & Bypass						#3 231.102	#4 47,291	#5 69,102	#6 63,548	#7 33,080	#6 over 6,411	#7 over 2,728						

New Lock (DMMU 3, 4, & 5) 347,494

Bypass Channel (DMMU 6 & 7) 105,767

453,261 for backcheck

Disposal Methods

Contaminated Material Barged to Venice Landfill (DMMU 5 + 7 + 7 over) 104,909

Good Material Disposed in MS River (DMMU 3 + 4 + 6 + 6 over) 348,352

453,261 for backcheck

**IHNC Cost Quantities - For Sill Elevation of El. -22.0
For Plan 3 - 110 X 1200**

*The stations for the x-sections shown are along the c/l of the new Lock & Sector Gate Structures & existing channel.
*The excavation areas for each DMMU were determined using Microstation.
*Changes made; Bypass Channel El. -17 (includes 3 ft of Adv. Maint. Dredging), Stations are every 100-ft.

EXCAVATION - C/L NEW LOCK STA. 155+00 TO STA. 171+00																Over-Depth/Dredge Quantity				
	C/L Exist Channel Station	C/L Exist Channel Station	End Area (ft²)	Dist (ft)	Volume (CY)	#3, End Area (ft²)	#3, CY	#4, End Area (ft²)	#4, CY	#5, End Area (ft²)	#5, CY	#6, End Area (ft²)	#6, CY	#7, End Area (ft²)	#7, CY	#6, End Area (ft²)	#6, CY	#7, End Area (ft²)	#7, CY	
1	23+44	155+00	8830			4841		2270		-		1531		-		188		-		
				100	32996		17537		8724				6020				715			
2	24+44	156+00	8988			4629		2441		-		1720		-		198		-		
				100	33589		16730		9389				6731				739			
3	25+44	157+00	9150			4405		2629		-		1915		-		201		-		
				100	34039		16620		9713				6967				739			
4	26+44	158+00	9231			4570		2616		-		1847		-		198		-		
				100	34383		17228		9548				6880				728			
5	27+44	159+00	9336			4733		2540		-		1868		-		195		-		
				100	34767		17406		9520				7122				719			
6	28+44	160+00	9438			4666		2601		-		1978		-		193		-		
				100	35124		17106		9769				7543				707			
7	29+44	161+00	9529			4571		2674		-		2095		-		189		-		
				100	35574		17450		9576				7846				702			
8	30+44	162+00	9681			4852		2497		-		2142		-		190		-		
				100	35954		18348		8878				8022				706			
9	31+44	163+00	9734			5056		-		2297		2190		-		191		-		
				100	35252		18422				8676		7441				713			
10	32+44	164+00	9302			4892		-		2388		1828		-		194		-		
				100	33644		17809				9043		6070				722			
11	33+44	165+00	8866			4725		-		2495		1450		-		196		-		
				100	33170		17765				8844		5846				715			
12	34+44	166+00	9046			4868		-		2281		1707		-		190		-		
				100	33835		18267				8091		6778				700			
13	35+44	167+00	9225			4996		-		2088		-		1953		-		188		
				100	34515		18183				8039			7598		-			694	
14	36+44	168+00	9413			4823		-		2253		-		2150		-		187		
				100	35191		17507				8694			8307		-			681	
15	37+44	169+00	9590			4631		-		2442		-		2336		-		181		
				100	35778		17522				8965			8615		-			676	
16	38+44	170+00	9730			4831		-		2399		-		2316		-		184		
				100	36074		18089				8750			8559		-			676	
17	39+44	171+00	9750			4937		-		2326		-		2306		-		181		
							#3		#4		#5		#6		#7		#6 over		#7 over	
							281,989		75,117		69,102		83,267		33,080		8,604		2,728	
Total Excavation @ New Lock & Bypass						553,885														
New Lock (DMMU 3, 4, & 5)						426,207														
Bypass Channel (DMMU 6 & 7)						127,678														
						553,885	for backcheck					Disposal Methods								
							Contaminated Material Barged to Venice Landfill (DMMU 5 + 7 + 7 over)					104,909								
							Good Material Disposed in MS River (DMMU 3 + 4 + 6 + 6 over)					448,976								
												553,885					for backcheck			

553,885

IHNC Cost Quantities - For Sill Elevation of El. -22.0
For Plan 4 - 75 X 900

*The stations for the x-sections shown are along the c/l of the new Lock & Sector Gate Structures & existing channel.
*The excavation areas for each DMMU were determined using Microstation.
*Changes made; Bypass Channel El. -17 (includes 3 ft of Adv. Maint. Dredging), Stations are every 100-ft.

For the 900-ft Lock, Excavation would not start until approximate C/L Exist Channel Station 158+00.

EXCAVATION - C/L NEW LOCK STA. 155+00 TO STA. 171+00															Over-Depth/Dredge Quantity					
	C/L Exist Channel Station	C/L Exist Channel Station	End Area (ft²)	Dist (ft)	Volume (CY)	#3 End Area (ft²)	#3, CY	#4 End Area (ft²)	#4, CY	#5 End Area (ft²)	#5, CY	#6 End Area (ft²)	#6, CY	#7 End Area (ft²)	#7, CY	#6 End Area (ft²)	#6, CY	#7 End Area (ft²)	#7, CY	
1	23+44	155+00	0			0		0		-		0		-		0	0	-		
				100	0		0		0				0				0			
	24+44	156+00	0			0		0		-		0		-		0	0	-		
				100	0		0		0				0				0			
3	25+44	157+00	0			0		0		-		0		-		0	0	-		
				100	0		0		0				0				0			
4	26+44	158+00	8677			4606		2306		-		1565		-		200	722	-		
5				100	32333		17374		8344				5893							
	27+44	159+00	8783			4776		2200		-		1617		-		190	706	-		
6				100	32817		17494		8369				6248							
	28+44	160+00	8938			4671		2319		-		1757		-		191	702	-		
7				100	33152		17187		8569				6694							
	29+44	161+00	8964			4610		2308		-		1858		-		188	696	-		
8				100	33487		17476		8328				6987							
	30+44	162+00	9119			4827		2189		-		1915		-		188	696	-		
9				100	33850		18298		7704				7152							
	31+44	163+00	9160			5054		-		1971		1947		-		188	698	-		
10				100	33098		18396			7528			6476							
	32+44	164+00	8713			4880		-		2094		1550		-		189	706	-		
11				100	31394		17761			7900			5028							
	33+44	165+00	8240			4711		-		2172		1165		-		192	706	-		
12				100	31204		17885			7783			4830							
	34+44	166+00	8610			4947		-		2031		1443		-		189	683	-		
13				100	32017		18420			7120			5793							
	35+44	167+00	8679			5000		-		1814		-		1685		-	180			
14				100	32720		18315			7030					6694				681	
	36+44	168+00	8990			4890		-		1982		-		1930		-	188			
15				100	33443		17630			7506					7613				694	
	37+44	169+00	9069			4630		-		2071		-		2181		-	187			
16				100	33854		17507			7596					8063				687	
	38+44	170+00	9212			4824		-		2031		-		2173		-	184			
17				100	34322		18206			7369					8069				680	
	39+44	171+00	9322			5007		-		1948		-		2184		-	183			
Total Excavation @ New Lock & Bypass							427,691	#3 231,950	#4 41,313	#5 59,831	#6 55,100	#7 30,439	#6 over 6,315	#7 over 2,743	427,691					
New Lock (DMMU 3, 4, & 5)					333,094	Disposal Methods														
Bypass Channel (DMMU 6 & 7)					94,596	Contaminated Material Barged to Venice Landfill (DMMU 5 + 7 + 7 over)					93,013									
					427,691	for backcheck					Good Material Disposed in MS River (DMMU 3 + 4 + 6 + 6 over)					334,678				
											427,691					for backcheck				

**IHNC Cost Quantities - For Sill Elevation of El. -22.0
For Plan 5 - 75 X 1200**

*The stations for the x-sections shown are along the c/l of the new Lock & Sector Gate Structures & existing channel.
*The excavation areas for each DMMU were determined using Microstation.
*Changes made; Bypass Channel El. -17 (includes 3 ft of Adv. Maint. Dredging), Stations are every 100-ft.

EXCAVATION - C/L NEW LOCK STA. 155+00 TO STA. 171+00															Over-Depth/Dredge Quantity				
	C/L Exist Channel Station	C/L Exist Channel Station	End Area (ft²)	Dist (ft)	Volume (CY)	#3 End Area (ft²)	#3, CY	#4 End Area (ft²)	#4, CY	#5 End Area (ft²)	#5, CY	#6 End Area (ft²)	#6, CY	#7 End Area (ft²)	#7, CY	#6 End Area (ft²)	#6, CY	#7 End Area (ft²)	#7, CY
1	23+44	155+00	8291			4846		2015		-		1250		-		180		-	
				100	30630		17615		7713				4602				700		
2	24+44	156+00	8249			4666		2150		-		1235		-		198		-	
				100	31206		16928		8350				5283				644		
3	25+44	157+00	8602			4475		2359		-		1618		-		150		-	
				100	31998		16817		8639				5894				648		
4	26+44	158+00	8677			4606		2306		-		1565		-		200		-	
				100	32333		17374		8344				5893				722		
5	27+44	159+00	8783			4776		2200		-		1617		-		190		-	
				100	32817		17494		8369				6248				706		
6	28+44	160+00	8938			4671		2319		-		1757		-		191		-	
				100	33152		17187		8569				6694				702		
7	29+44	161+00	8964			4610		2308		-		1858		-		188		-	
				100	33487		17476		8328				6987				696		
8	30+44	162+00	9119			4827		2189		-		1915		-		188		-	
				100	33850		18298		7704				7152				696		
9	31+44	163+00	9160			5054		-		1971		1947		-		188		-	
				100	33098		18396				7528		6476				698		
10	32+44	164+00	8713			4880		-		2094		1550		-		189		-	
				100	31394		17761				7900		5028				706		
11	33+44	165+00	8240			4711		-		2172		1165		-		192		-	
				100	31204		17885				7783		4830				706		
12	34+44	166+00	8610			4947		-		2031		1443		-		189		-	
				100	32017		18420				7120		5793				683		
13	35+44	167+00	8679			5000		-		1814		-		1685		-		180	
				100	32720		18315				7030				6694				681
14	36+44	168+00	8990			4890		-		1982		-		1930		-		188	
				100	33443		17630				7506				7613				694
15	37+44	169+00	9069			4630		-		2071		-		2181		-		187	
				100	33854		17507				7596				8063				687
16	38+44	170+00	9212			4824		-		2031		-		2173		-		184	
				100	34322		18206				7369				8069				680
17	39+44	171+00	9322			5007		-		1948		-		2184		-		183	
Total Excavation @ New Lock & Bypass							521,524	#3	#4	#5	#6	#7	#6 over	#7 over					
							283,309	66,015	59,831	70,880	30,439	8,307	2,743						
New Lock (DMMU 3, 4, & 5)					409,156	Disposal Methods													
Bypass Channel (DMMU 6 & 7)					112,369	Contaminated Material Barged to Venice Landfill (DMMU 5 + 7 + 7 over)													
						93,013													
						Good Material Disposed in MS River (DMMU 3 + 4 + 6 + 6 over)													
						428,511													
						521,524 for backcheck													

521,524

IHNC Cost Quantities
For Excavation at the Existing Lock Structure - Sill El. -35.0

*The stations for the x-sections shown are along the c/l of the existing Lock & Sector Gate Structures.

*The quantities shown will be excavation required removal of the existing lock walls. The sill to remain in place.

<u>C/L Exist Channel Station</u>	<u>End Area (ft²)</u>	<u>Distance (ft)</u>	<u>Volume (cubic yards, CY)</u>	<u>Cumulative Volume (cubic yards, CY)</u>
For Excavation Area #9				
125+00	5024			
		100	20837	20837
126+00	6228			
		100	22259	43096
127+00	5792			
		100	20550	63646
128+00	5305			
		100	19050	82696
129+00	4982			
		100	18328	101024
130+00	4915			
		100	17589	118613
131+00	4583			
		100	17813	136426
132+00	5036			
		100	19519	155944
133+00	5504			
		100	17396	173341
134+00	3890			
		100	7204	180544
135+00	0			
Total Cubic Yards of Excavation for Area #9				180544
For Excavation Area #10				
125+00	1812			
		100	8783	8783
126+00	2931			
		100	10296	19080
127+00	2629			
		100	9498	28578
128+00	2500			
		100	9131	37709
129+00	2431			
		100	8893	46602
130+00	2371			
		100	8776	55378
131+00	2368			
		100	8915	64293
132+00	2446			
		100	8798	73091
133+00	2305			
		100	8096	81187
134+00	2067			
		100	3828	85015
135+00	0			
Total Cubic Yards of Excavation for Area #10				85015

Total for Both 9 &10

265,559.26

Embankment, Compacted Fill
Qtys.

Description	Length	Area	Cubic Feet	Cubic Yards
Option 1 - 110' x 1200' Sill Elevation -22.0				
At the Sector Gate From Station 24+14 to 27+00; & 36+00 to 38+90				
3-FT Thick Clay Layer Area 1	576	630	362,880	13,427
Sand Area 1	576	4783	2,755,008	101,935
Sand Area 2	576	1697	977,472	36,166
Sand Area 3	576	1500	864,000	31,968
3-FT Thick Clay Layer Area 2	576	485	279,360	10,336
Emb., Compacted Fill (for F/W)	10431	435	4,537,485	167,887
At the Lock Structure From Station 27+00 to 36+00				
3-FT Thick Clay Layer Area 1	904	832	752,128	27,829
Sand Area 1	904	7570	6,843,280	253,201
Sand Area 2	904	4231	3,824,824	141,518
Sand Area 3	904	1500	1,356,000	50,172
3-FT Thick Clay Layer Area 2	904	1045	944,680	34,953
Total Cubic Yards of Granular Fill				614,962
Total Cubic Yards of Embankment, Compacted Fill (Sector Gate & Lock				86,545
Total Cubic Yards of Embankment, Compacted Fill (For Floodwalls)				167,887

Equals the total number of **New** Floodwall on the West and East of IHNC Cai

All Areas taken from Microstation (file name H44xxxx_Updated Lock Plan) Fr
Areas are Denoted as Embankment, Compated Fill & Granular Fill X-Sections

Summary Table

	Granular Fill, CY	Emb. Comp Fill, CY
Option 1 - 110' x 1200' x Sill El. -22.0	614,962	86,545
Option 2 - 110' x 1200' x Sill El. -16.0	507,536	84,187
Option 3 - 75' x 900' x Sill El. -22.0	521,767	77,257
Option 4 - 75' x 1200' x Sill El. -22.0	683,050	99,191
Option 5 - 110' x 900' x Sill El. -22.0	467,321	65,710
Emb. Compacted Fill For Floodwalls (Will be same for all Options)	-	167,887

Description	Length	Area	Cubic Feet	Cubic Yards
Option 2 - 110' x 1200' Sill Elevation -16.0				
At the Sector Gate From Station 24+14 to 27+00; & 36+00 to 38+90				
3-FT Thick Clay Layer Area 1	576	601	346,176	12,809
Sand Area 1	576	3603	2,075,328	76,787
Sand Area 2	576	1410	812,160	30,050
Sand Area 3	576	1500	864,000	31,968
3-FT Thick Clay Layer Area 2	576	485	279,360	10,336
Emb., Compacted Fill (for F/W)	10431	435	4,537,485	167,887
At the Lock Structure From Station 27+00 to 36+00				
3-FT Thick Clay Layer 1	904	780	705,120	26,089
Sand 1	904	5983	5,408,632	200,119
Sand 2	904	3541	3,201,064	118,439
Sand 3	904	1500	1,356,000	50,172
3-FT Thick Clay Layer 2	904	1045	944,680	34,953
Total Cubic Yards of Granular Fill				507,536
Total Cubic Yards of Embankment, Compacted Fill (Sector Gate & Lock)				84,187

Description	Length	Area	Cubic Feet	Cubic Yards
Option 3 - 75' x 900' Sill Elevation -22.0				
Lock Sector Gate will start at approximate Station 27+00				
3-FT Thick Clay Layer Area 1	576	682	392,832	14,535
Sand Area 1	576	5486	3,159,936	116,918
Sand Area 2	576	2260	1,301,760	48,165
Sand Area 3	576	1500	864,000	31,968
3-FT Thick Clay Layer Area 2	576	871	501,696	18,563
Emb., Compacted Fill (for F/W)	10431	435	4,537,485	167,887
The total length of the Lock will decrease by 300-ft				
3-FT Thick Clay Layer Area 1	604	883	533,332	19,733
Sand Area 1	604	8235	4,973,940	184,036
Sand Area 2	604	4795	2,896,180	107,159
Sand Area 3	604	1500	906,000	33,522
3-FT Thick Clay Layer Area 2	604	1093	660,172	24,426
Total Cubic Yards of Granular Fill				521,767
Total Cubic Yards of Embankment, Compacted Fill (Sector Gate & Lock)				77,257

<u>Description</u>	<u>Length</u>	<u>Area</u>	<u>Cubic Feet</u>	<u>Cubic Yards</u>
Option 4 - 75' x 1200' Sill Elevation -22.0				
At the Sector Gate From Station 24+14 to 27+00; & 36+00 to 38+90				
3-FT Thick Clay Layer Area 1	576	682	392,832	14,535
Sand Area 1	576	5486	3,159,936	116,918
Sand Area 2	576	2260	1,301,760	48,165
Sand Area 3	576	1500	864,000	31,968
3-FT Thick Clay Layer Area 2	576	871	501,696	18,563
Emb., Compacted Fill (for F/W)	10431	435	4,537,485	167,887
At the Lock Structure From Station 27+00 to 36+00				
3-FT Thick Clay Layer Area 1	904	883	798,232	29,535
Sand Area 1	904	8235	7,444,440	275,444
Sand Area 2	904	4795	4,334,680	160,383
Sand Area 3	904	1500	1,356,000	50,172
3-FT Thick Clay Layer Area 2	904	1093	988,072	36,559
Total Cubic Yards of Granular Fill				683,050
Total Cubic Yards of Embankment, Compacted Fill (Sector Gate & Lock)				99,191

<u>Description</u>	<u>Length</u>	<u>Area</u>	<u>Cubic Feet</u>	<u>Cubic Yards</u>
Option 5 - 110' x 900' Sill Elevation -22.0				
Lock Sector Gate will start at approximate Station 27+00				
3-FT Thick Clay Layer Area 1	576	630	362,880	13,427
Sand Area 1	576	4783	2,755,008	101,935
Sand Area 2	576	1697	977,472	36,166
Sand Area 3	576	1500	864,000	31,968
3-FT Thick Clay Layer Area 2	576	485	279,360	10,336
Emb., Compacted Fill (for F/W)	10431	435	4,537,485	167,887
The total length of the Lock will decrease by 300-ft				
3-FT Thick Clay Layer 1	604	832	502,528	18,594
Sand 1	604	7570	4,572,280	169,174
Sand 2	604	4231	2,555,524	94,554
Sand 3	604	1500	906,000	33,522
3-FT Thick Clay Layer 2	604	1045	631,180	23,354
Total Cubic Yards of Granular Fill				467,321
Total Cubic Yards of Embankment, Compacted Fill (Sector Gate & Lock)				65,710

Cofferdam & Jet Grout Qtys.

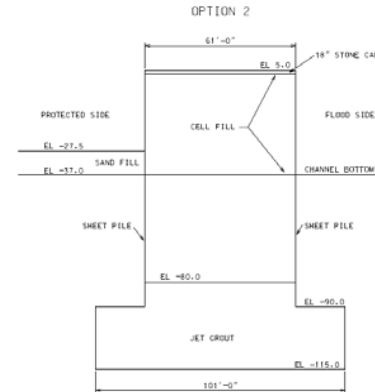
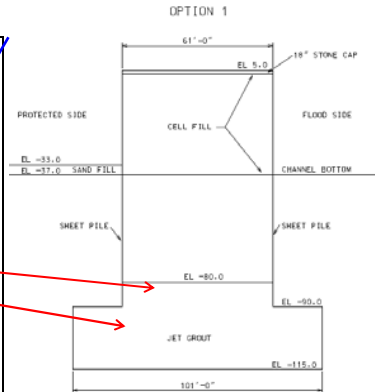
Design by MVN, ED-F

IHNC Cofferdam Quantities

The cofferdam will consist of sheetpile, jet grout, cell fill (crushed stone, sand, etc.)

Check actual length of cell in Microstation - From Dawn Layout

Option 1 - 110' x 1200' x Sill EL. -22						
Option 2 - 110' x 1200' x Sill EL. -16						
Item		Area	Height	# of Cells	CF	CY
1	Fill Material inside of Cell - Sand Fill	1390	40.5	34	56295	2085
					Total for all Cells	70890
		Length/Cell	# of Cells	LF	Height	SF
2	PS-31 Sheetpile	282.8	34	9615.2	95	913444
	# piles per Cell	164	Total # of PS-31 piles	576		
		Total Area	height	CF	CY	
3	Jet Grout Area 1	2922.5	10	29225	1081.3	
	Jet Grout Area 2	8011.85	25	200296.25	7411.0	
			Total Per One Cell	8492.3		
			There will be 34 Cells	288,738		
		Total Area	height	CF	CY	
4	18" Stone Cap	2922.5	1.5	4383.75	162.2	
			There will be 34 Cells	5,515		
Option 3 - 75' x 900' x Sill EL. -22						
		Area	Height	# of Cells	CF	CY
1	Fill Material inside of Cell - Sand Fill	1390	40.5	30	56295	2085
					Total for all Cells	62550
		Length/Cell	# of Cells	LF	Height	SF
2	PS-31 Sheetpile	282.8	30	8484	95	805980
	# piles per Cell	164	Total # of PS-31 piles	4920		
		Total Area	height	CF	CY	
3	Jet Grout Area 1	2922.5	10	29225	1081.3	
	Jet Grout Area 2	8011.85	25	200296.25	7411.0	
			Total Per One Cell	8492.3		
			There will be 30 Cells	254,769		
		Total Area	height	CF	CY	
4	18" Stone Cap	2922.5	1.5	4383.75	162.2	
			There will be 30 Cells	4,866		
Option 4 - 75' x 1200' x Sill EL. -22						
		Area	Height	# of Cells	CF	CY
1	Fill Material inside of Cell - Sand Fill	1390	40.5	30	56295	2085
					Total for all Cells	62550
		Length/Cell	# of Cells	LF	Height	SF
2	PS-31 Sheetpile	282.8	30	8484	95	805980
	# piles per Cell	164	Total # of PS-31 piles	4920		
		Total Area	height	CF	CY	
3	Jet Grout Area 1	2922.5	10	29225	1081.3	
	Jet Grout Area 2	8011.85	25	200296.25	7411.0	
			Total Per One Cell	8492.3		
			There will be 30 Cells	254,769		
		Total Area	height	CF	CY	
4	18" Stone Cap	2922.5	1.5	4383.75	162.2	
			There will be 30 Cells	4,866		
Option 5 - 110' x 900' x Sill EL. -22						
		Area	Height	# of Cells	CF	CY
1	Fill Material inside of Cell - Sand Fill	1390	40.5	30	56295	2085
					Total for all Cells	62550
		Length/Cell	# of Cells	LF	Height	SF
2	PS-31 Sheetpile	282.8	30	8484	95	805980
	# piles per Cell	164	Total # of PS-31 piles	4920		
		Total Area	height	CF	CY	
3	Jet Grout Area 1	2922.5	10	29225	1081.3	
	Jet Grout Area 2	8011.85	25	200296.25	7411.0	
			Total Per One Cell	8492.3		
			There will be 30 Cells	254,769		
		Total Area	height	CF	CY	
4	18" Stone Cap	2922.5	1.5	4383.75	162.2	
			There will be 30 Cells	4,866		



Protective Pile Bents (are on the side of the cofferdam)			
	18		
4 piles each at 100-ft			
# of piles	72	pile length	100
			7200

NOTE: **Option 5 has been selected as the Tentatively Selected Plan (TSP)

SAND Fill for Cofferdam - Lock and Sector Gate

[illegible]

SAND Fill for Cofferdam - Lock and Sector Gate

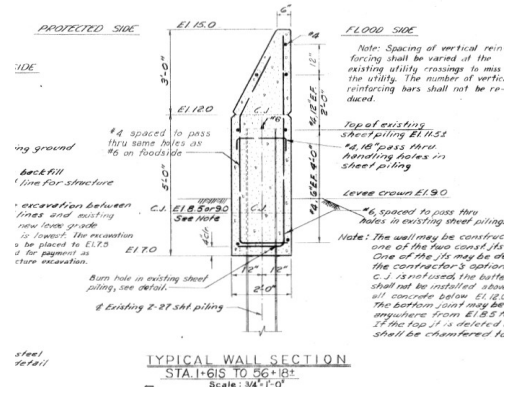
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FLOODWALL DEMOLITION

	Start Station	End Station	Slab Area	Base Slab Area	Stem Area	Length	CF	CY
Existing T-Walls- West IHNC	30+24	38+36	3	22.5	13	812.34	31275	1157
	38+36	52+97	3	22.5	13	1461	56249	2081
	52+97	55+44	3	22.5	13	247	9510	352
	55+44	59+98	3	22.5	13	454	17479	647
	59+98	64+11	3	22.5	13	413	15901	588
	64+11	70+21	3	22.5	13	610	23485	869
	70+21	70+82	3	22.5	13	61	2349	87
Total Floodwall Demolition Length, LF						4058.34		
Total Demolitions of Floodwall, CY								5781

	Start Station	End Station	Slab Area	Base Slab Area	Stem Area	Length	CF	CY
Existing I-Walls- Northeast IHNC	0	16+08	0	0	13.75	1608	22110	818
Existing T-Walls- Northeast IHNC	0	22+00	4	36	27	2200	147400	5454
Total Floodwall Demolition Length, LF						3808		
Total Demolitions of Floodwall, CY								6272
Total both sides						7866.34		

	Start Station	End Station	Area	Length	CF	CY
Scour Pad	16+08	22+00	7.05	2200	15510	574
Total Demolitions of Scour Pad, CY						574



Lock Qtys.

Qtys Prorated using existing Lock from the 1997 & 2007 Report

1200 ft Cast-in-Place Concrete Chamber

DESIGN WATER ELEVATIONS

#	Condition	River Side (ft NAVD 88)	Canal Side (ft NAVD 88)	Head (ft)
2	Operation, Maximum Direct Head	17.3	-0.8	18.1
4	Unusual Oper., Max. Dir. Head+ FB +SS	24.1	-2.6	26.7

DESIGN FACTORS

Load Case #	Condition	
2	Operation, Maximum Direct Head	1
4	Unusual Oper., Max. Dir. Head+ FB +SS	1.33

Pile Capacity Factor of Safety	2
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CONCRETE MONOLITH DETAILS

Base Bottom Elevation (ft NAVD88)	-32
Sill Elevation (ft NAVD88)	-22
Wall Area width (ft)	26.5
Number of Piles under Wall Section	4
Number of Piles under Chamber Section	10
Number of Rows Longitudinally	69
Spacing of Piles in Longitudinal Direction (ft)	10
Top of Wall Elevation (ft)	24.5
Thickness of Deck (ft)	2
Thickness of Wall at Top (ft)	4
Thickness of Wall at Bottom (ft)	6
Thickness of Wall at Fill Elevation (ft)	21.04166667
Top of Culvert Area Elevation (ft NAVD88)	-1.5
Culvert Width (ft)	14.5
Culvert Height (ft)	14.5
Top of Fill Elevation (ft NAVD88)	5
Chamber Width (ft)	110
Chamber Length (ft)	685.333

Concrete Areas

Gross Area (sq. ft.) from CADD	3028
Culvert Area (sq. ft.) One Culverts	210.25
Net Concrete Area	2607.5
Wall Section Only (sq. ft.) One Side	753.75
Chamber Area (sq. ft.)	1100

Soil Area above Culvert	
Area (sq. ft.)	135.0104167

Water Density (k/ft^3)	0.0624
Concrete Density (k/ft^3)	0.15
Soil Density (k/ft^3)	0.11

WEIGHT OF WALL SECTION (10-FT SECTION)

Concrete Weight (kips)	1130.625
Weight of Water (kips)	131.196
Weight of Soil (kips)	148.5114583
TOTAL	1410.332458

WEIGHT OF CHAMBER SECTION (10-FT SECTION)

Concrete Weight (kips)	1650
------------------------	------

WEIGHT OF WATER IN CHAMBER

2 Operation, Maximum Direct Head	2697.552
4 Unusual Oper., Max. Dir. Head+ FB +SS	3164.304

PILE LOADING FOR WALL SECTION

Load Case #	Condition	
2	Operation, Maximum Direct Head	
	Uplift (kips/FT)	19.4688
	Uplift (kips) under wall	515.9232

Net Weight (kips) under wall	894.4092583
Load Per Pile (kips) under wall	223.6023146
Load Per Pile (tons)	111.8011573

Load Case #	Condition
4	Unusual Oper., Max. Dir. Head+ FB +SS

Uplift (kips/FT)	18.3456
Uplift (kips) under wall	486.1584
Net Weight (kips) under wall	924.1740583
Load Per Pile (kips) under wall	231.0435146
Load Per Pile (tons)	115.5217573

Maximum Pile Load (kips)	231.0435146
Maximum Pile Load with FOS (kips)	462.0870292
Maximum Pile Load with FOS (tons)	231.0435146

Length of Piles (ft)	100
----------------------	-----

Tip Piles at -131 for 230 Ton Capacity, top of piles at -31

PILE LOADING FOR CHAMBER SECTION

2 Operation, Maximum Direct Head

Weight of Concrete (kips)	1650
Weight of Water (kips)	2697.552
Uplift (k/ft)	19.4688
Uplift (kips)	2141.568
Net Weight (kips)	2205.984
Load Per Pile (kips)	220.5984
Load Per Pile (tons)	110.2992

4 Unusual Oper., Max. Dir. Head+ FB +SS

Weight of Concrete (kips)	1650
Weight of Water (kips)	3164.304
Uplift (k/ft)	18.3456
Uplift (kips)	2018.016
Net Weight (kips)	2796.288
Load Per Pile (kips) w 133% OS	209.7740435
Load Per Pile (tons)	104.8870218

Maximum Pile Load (kips)	220.5984
Maximum Pile Load with FOS=2.0 (kips)	441.1968
Maximum Pile Load with FOS=2.0 (tons)	220.5984

Length of Piles (ft)	95
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Tip Piles at -126 for 220 Ton Capacity, top of piles at -31

QUANTITIES

Concrete (yd^3)	66185
Wall Area Piling (LF)	55200
Chamber Area Piling (LF)	65550

552 100' long 24" PPC piles
690 95' long 24" PPC piles

Sector Gate Qtys.

Qtys Prorated using existing qtys from the 2006 Report

- From 2006 CIP Evaluation, weight of gates = 2,128,000 lbs.
for gate 110' wide w/ top @ El 23.0 & Sill -40.0

1.) Determine 110' gate w/-22 sill

- Prorate quantities based on hydrostatic load on gates
Use Max. Direct Head Load Case of El. 17.3 R/S & -6.8 L/S

$$\text{Load from 2006} = (57.3)^2(0.5)(63 \text{pcf}) - (39.2)^2(0.5)(63 \text{pcf}) \\ = 55 \text{ h.ps/ft} \times 110' = 6052 \text{ k}$$

$$\text{Load for 110' w/-22} = (39.3)^2(0.5)(63 \text{pcf}) - (21.2)^2(0.5)(63 \text{pcf}) \\ = 34.5 \text{ h.ps/ft} \times 110' = 3795 \text{ k}$$

$$\text{Ratio} = 3795/6052 = .627$$

2.) Determine 110' gate w/-16 sill

$$\text{Load for 110' w/-16} = (33.3)^2(0.5)(63 \text{pcf}) - (15.2)^2(0.5)(63 \text{pcf}) \\ = 27.65 \text{ h.ps/ft} \times 110' = 3041 \text{ k}$$

$$\text{Ratio} = 3041/6052 = .502$$

3.) Determine 75' gate w/-22 sill

$$\text{Load for 75' w/-22} = 34.5 \text{ h.ps/ft} \times 75' = 2587 \text{ k}$$

$$\text{Ratio} = 2587/6052 = .427$$

Gate Weights

$$110' \times -22 \text{ sill} = 1,335,000 \text{ lbs}$$

$$110' \times -16 \text{ sill} = 1,068,000 \text{ lbs}$$

$$75' \times -22 \text{ sill} = 908,000 \text{ lbs}$$

10/26/2015

Bulkhead Gate Qtys.

Qtys Prorated using existing qtys from the 2006 Report

IHNC Lock Replacement GRR Quantity Take-offs

Bulkheads

- 1140 sill alternative studied in 2005/2006 utilized

7, lower bulkheads (5' high) 150 hips - 58' head
 & 4, lower bulkheads (6.25' high) 140 hips (25' head)

- Revise lower bulkheads to 40' head instead of 58' head

Prorate by head $40'/58' \approx 0.7$, = 105 hips

- 110' x -22 sill

Use 4 upper bulkheads = 560 hips

Use 4 lower bulkheads = 420 hips

980 hips $\times 2 = 1,960 \text{ hips}$

- 110' x -16 sill

Use 4 upper bulkheads = 560 hips

Use 3 lower bulkheads = 315 hips

875 hips $\times 2 = 1,750 \text{ hips}$

- 75' x -22 sill

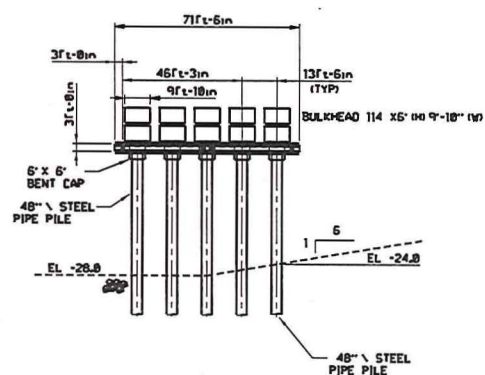
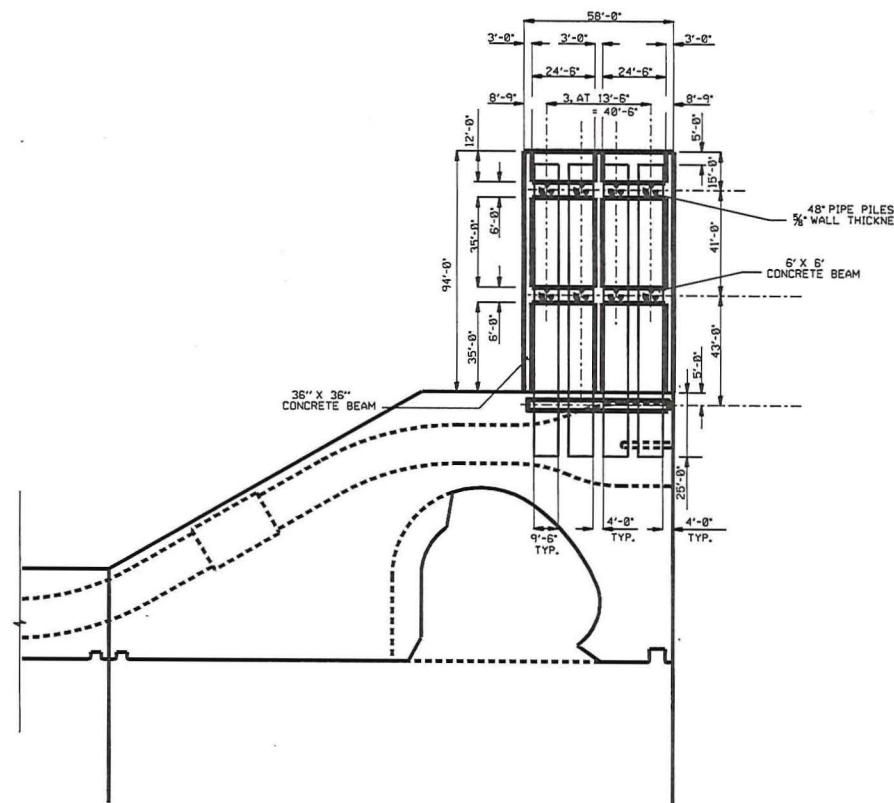
Prorate by max moment ratio = $75^2/110^2 \approx 0.5$

= $980 \text{ hips} \times 0.5 = 490 \text{ hips} \times 2 = 980 \text{ hips}$

10/26/2015

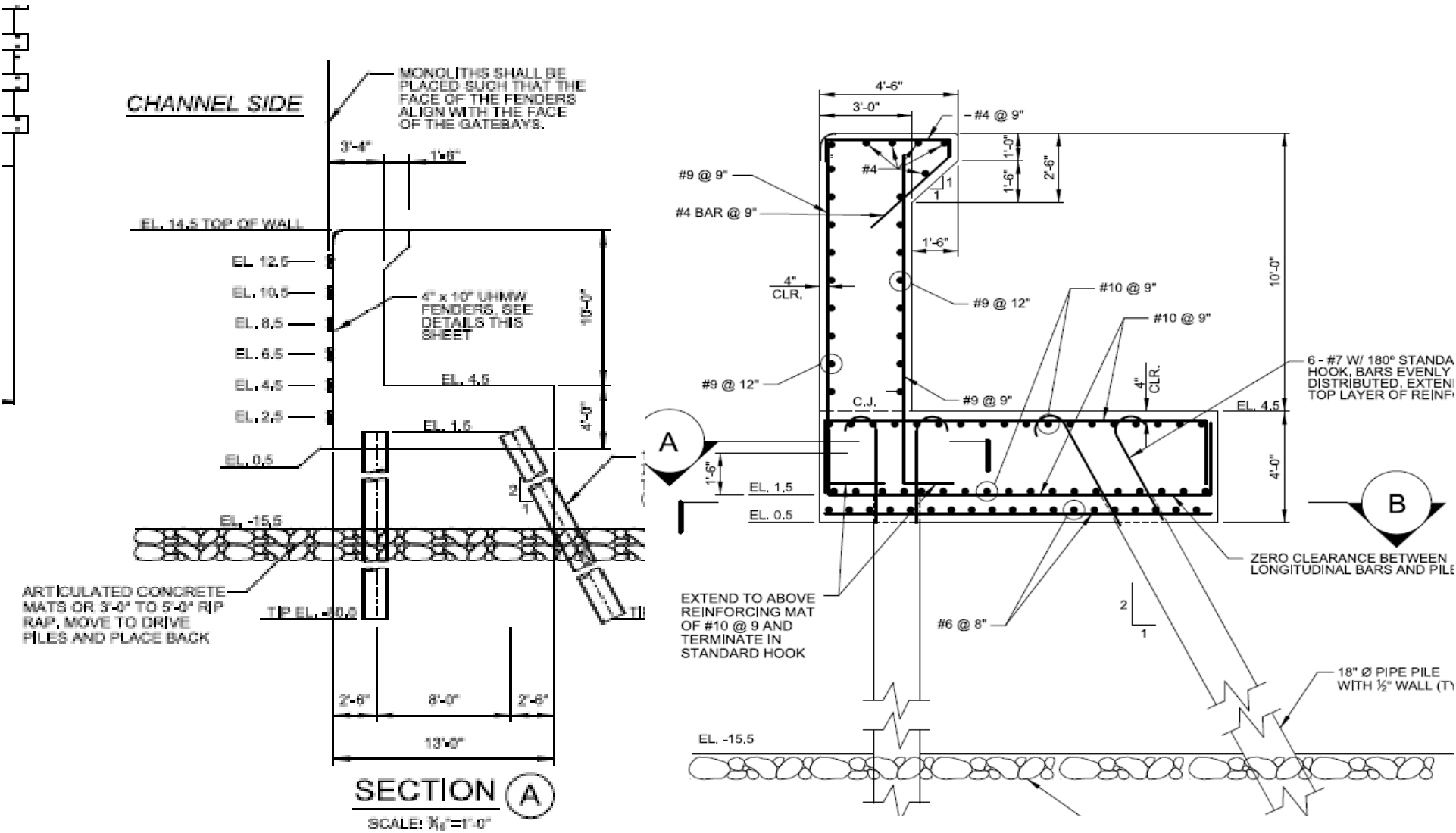
Storage Platform Qtys.

- Use previous designs from 2006 CIP Study (See Attached Sheet) as a guide
- 12" Precast Hollow Core Slab deck = $58' \times 94' \times 2 =$
 $\underline{= 10,904 \text{ SF}}$
- Switch to 24" PPC Piles instead of 48" P.p.c.
Assume 10, 100' long 24" PPC Piles
 $\underline{= 1,600 \text{ LF}}$
- Assume 3' x 3' bent Cap & end Beam
 $\underline{= (94' + 94' + 58' + 58') \times 3' \times 3' / 27 \times 2 = 200 \text{ CY}}$



Fixed Concrete Guidewall & Pier Qtys.

Fixed Concrete Guidewalls - On Lakeside of the Lock - Taken from Bayou Beouf Lock Design



Permanent Concrete Guidewalls						
	Width	Height	Length	CF	CY	
1) Concrete Wall	3.33	10.00	80.00	2666.64	98.76	
2) Concrete Base	13.00	4.00	80.00	4160.00	154.07	
3) Concrete Key at TOW	2.00	2.50	80.00	400.00	14.81	
4) 18" Diameter Pipe Pile				Total Length		
Vertical	11.00		100.00	1,100.00		
Batter	11.00		120.00	1,320.00		
	each	len	total	2420.00		# of
6) 4" X 10" UHMW Fenders	54.00	85.00	4590.00			monoliths
6 of these				Total Concrete (CY)	267.65	9
				Total Pipe Length (ft)	2,420.00	9
				*Total Steel (Tons)	218.61	
				*218.61 already has the 9 monoliths in it from below		
Resteel						
wall		length	weight/bar	Total weight (lbs)		
#4 bars top inside	5	80	0.668	267.20		
#4 bars top hook	107	10	0.668	712.53		
#9 Bars vertical	213	16	3.4	11,605.33		
#9 Bars inside	18	80	3.4	4,896.00		
Base slab						
#6 bottom	119	13	1.502	2,331.46		
#6 top	19	80	1.502	2,283.04		
#7 hooks	132	8	2.044	2,158.46		
#10 inside	36	80	4.303	12,392.64		
#10 outside	213	13	4.303	11,933.65		
				48,580.33	lbs	
			9 monoliths total	437,222.94	lbs	
				218.61	TON	

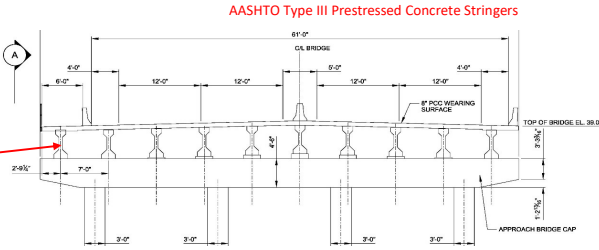
2024 - MOORING CELL QUANTITIES

Bridge Quantities

	needed for span operation to save fuel. The smaller generator provides power to the "always on" loads like air conditioning, lighting, fire alarms, CCTV, and communications.						
Traffic Control Equipment							
Bridge Lighting							
Control House	During the PD&E Study extensive architectural design of the proposed control house was performed. The community was asked to choose the aesthetic features of the control house. Thus, the architectural design of the control house was determined prior to the design phase. The location of the control house was determined during the PD&E Study to be detached from the adjacent bascule pier, but have a common foundation with the pier. Location of the control house was determined to be on the northeast side of the bridge to maximize visibility of the river and approach roadways, and minimize ROW takings. A closed circuit television (CCTV) system was implemented to provide redundant observation in addition to the unobstructed view corridors provided by the second story location of the control room.						

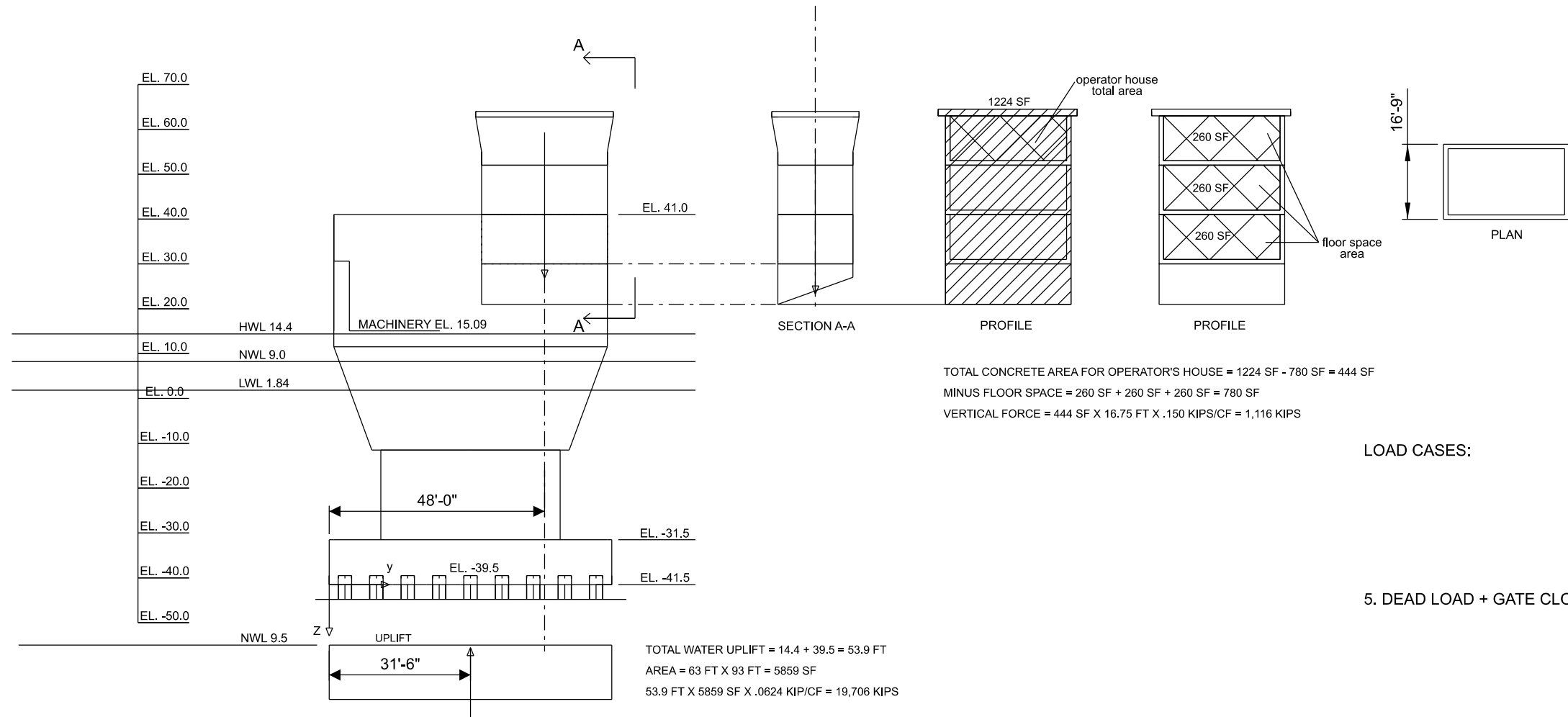
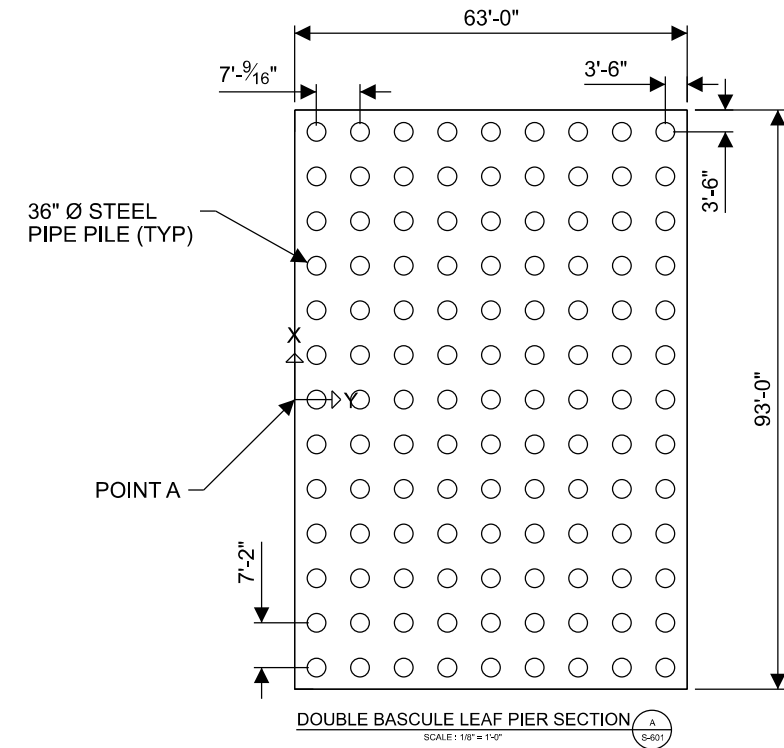
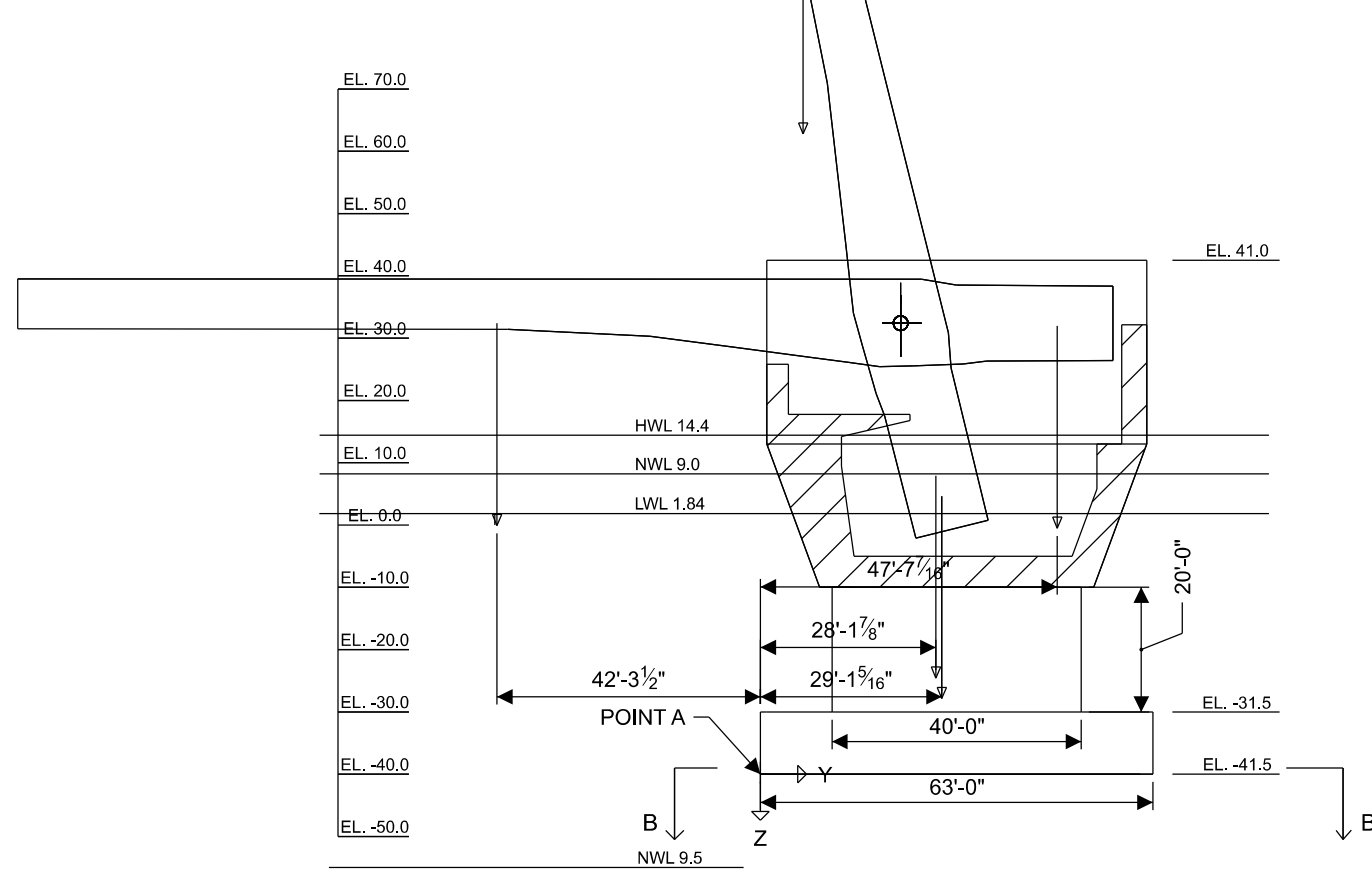
Approach Piers						
Cap	Area (ft²)	Width (ft)	Number of Bents	Total CY		
	309.16	3.5	27	1,082		
Columns	Depth (ft)	Width (ft)	Height (ft)	# Columns/Bent	Number of Bents	Total CY
	3	3	25	4	9	300
	3	3	15	4	18	360
	Assume the total height of all piers will be 25-ft.					660
Base Slab	Depth (ft)	Width (ft)	Length (ft)	Number of Bents	Total CY	
A6	5	10.5	64	27	3,360	
6" Stabilization Slab	0.5	12.5	66	27	413	
18" Dia. Pipe Piles	# of Piles	Length	Number of Bents	Total Length		
	18	105	27	51,030		

Decking, Barriers and Girders				
7" Concrete Decking	Width (ft)	Total Bridge Span (ft)	Thickness (in)	Total CY
	70.00	2160	7	3,267
Middle Jersey Barrier	Area (ft²)	Total Bridge Span (ft)		Total CY
	2.5	2160		200
F-Shaped Jersey Barrier (Total of 2)	Area (ft²)	Total Bridge Span (ft)		Total CY
	2.7	2160		216
Type III Prestressed Concrete Stringers	Span Length (ft)			
	80			
	Total 26 spans = 260 girders			
Guardrail	Total LF			
1-1/2" Dia. Pipe	2160			

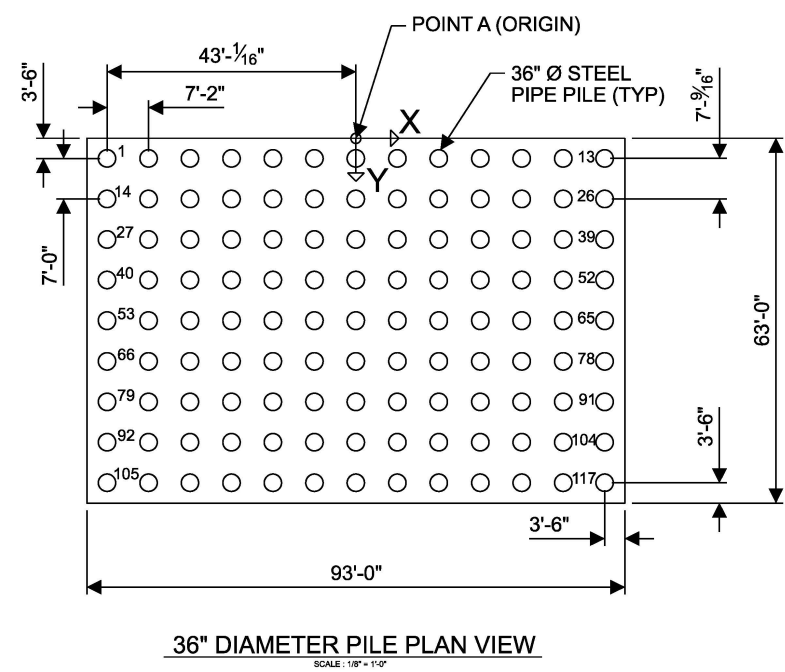


PZ-40 Retaining Wall Sheetpile	Height (ft)	Length (ft)	Total SF
East IHNC	100	1100	110000
West IHNC	100	700	70000
Total			180,000

Temporary Retaining Retaining Structures (TRS)			
(For Bridge Piers)			
Assume PZ-35 Sheetpile	Length	Height (Tip El.)	Square Ft (SF)
Pier 1 - Double			
PZ-35 Sheetpile	103	100	10300
24" Dia. Corner Pipe Strut	100		
Pier 2 - Single			
PZ-35 Sheetpile	103	70	7210
24" Dia. Corner Pipe Strut	100		
Pier 3 - Single			
PZ-35 Sheetpile	103	70	7210
24" Dia. Corner Pipe Strut	100		
		Total Square Footage	24,720



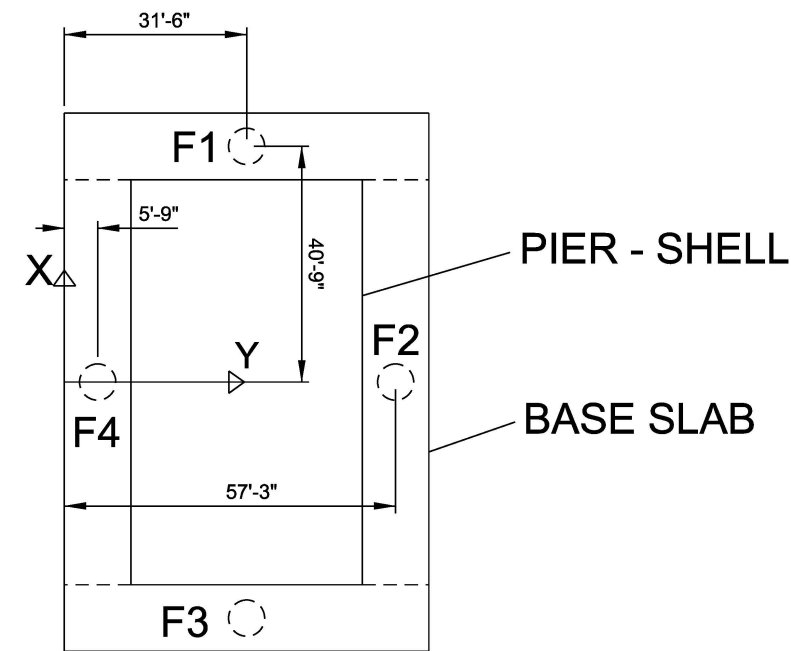
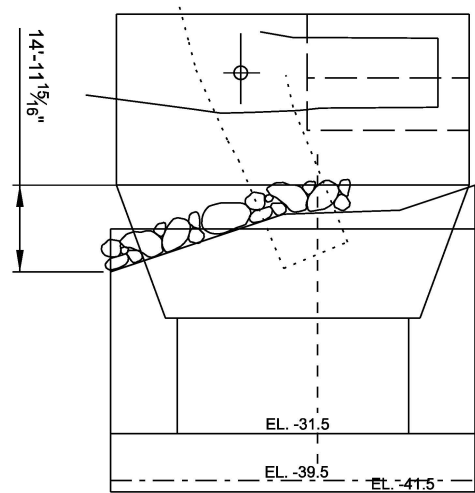
BASE SLAB - PILE LAYOUT FOR CPGA - 4.30.2024



1	2	3	4	5	6	7	8	9	10	11	12	13		Row	1
14	15	16	17	18	19	20	21	22	23	24	25	26		Row	2
27	28	29	30	31	32	33	34	35	36	37	38	39		Row	3
40	41	42	43	44	45	46	47	48	49	50	51	52		Row	4
53	54	55	56	57	58	59	60	61	62	63	64	65		Row	5
66	67	68	69	70	71	72	73	74	75	76	77	78		Row	6
79	80	81	82	83	84	85	86	87	88	89	90	91		Row	7
92	93	94	95	96	97	98	99	100	101	102	103	104		Row	8
105	106	107	108	109	110	111	112	113	114	115	116	117		Row	9

	X	Y	Z
1	-43.0625	3.5	0
14	-43.0625	10.5	0
27	-43.0625	17.5	0
40	-43.0625	24.5	0
53	-43.0625	31.5	0
66	-43.0625	38.5	0
79	-43.0625	45.5	0
92	-43.0625	52.5	0
105	-43.0625	59.5	0

SOIL LOADS OVER BASE SLAB - BRIDGE PIER



Main Bascule Bridge Pier											
	Pile size		Row	# of Piles	TOB	BOB	TOP	Pile Tip	Batter	Length of Pile	Total Length of Pier
Pier 1	36" dia pipe pile w/ 1/2" W.T.		1	13	-31.5	-41.5	-40	-180	1	140	1,820.00
			2	13	-31.5	-41.5	-40	-180	1	140	1,820.00
			3	13	-31.5	-41.5	-40	-180	1	140	1,820.00
			4	13	-31.5	-41.5	-40	-180	1	140	1,820.00
			5	13	-31.5	-41.5	-40	-180	1	140	1,820.00
			6	13	-31.5	-41.5	-40	-180	1	140	1,820.00
			7	13	-31.5	-41.5	-40	-180	1	140	1,820.00
			8	13	-31.5	-41.5	-40	-180	1	140	1,820.00
			9	13	-31.5	-41.5	-40	-180	1	140	1,820.00
				117							16,380.00
Pier 2	36" dia pipe pile w/ 1/2" W.T.		1	13	-31.5	-41.5	-40	-180	1	140	1,820.00
			2	13	-31.5	-41.5	-40	-180	1	140	1,820.00
			3	13	-31.5	-41.5	-40	-180	1	140	1,820.00
			4	13	-31.5	-41.5	-40	-180	1	140	1,820.00
			5	13	-31.5	-41.5	-40	-180	1	140	1,820.00
			6	13	-31.5	-41.5	-40	-180	1	140	1,820.00
			7	13	-31.5	-41.5	-40	-180	1	140	1,820.00
			8	13	-31.5	-41.5	-40	-180	1	140	1,820.00
			9	13	-31.5	-41.5	-40	-180	1	140	1,820.00
				117							16,380.00

234

32,760.00

Weight for Main Channel Gate Leafs

Using The Book Method:			Calculated from the 1997 Report Members Included within Drawing						
W	$300 + L + 22B + (1/15) * B * L (1 + (1/100)L)$		Structural Members						
L	195	from c/l of trunnion to c/l of trunnion	Built Up I-Beams from Plates	Area (sq. ft)	Unit Weight (#/CF)	Length (ft)	# of Members	Total Weight	
B	70		I1	0.22	490	97	3	31,369.80	
W	4719.5		I2	0.77	490	97	12	439,177.20	
FOR THE ENDS	707.925		I3	3.5	490	97	3	499,065.00	
Total (# per LF)	5427.425	# per LF of Bascule Gate	I4	1	490	30	6	88,200.00	
Total	529,173.94	Per gate leaf (195/2)						Add an extra 10% for Plates, Etc.	1,057,812.00
Total (kips)	529.17							3%	31,734.36
								Total (lbs)	1,089,546.36
								Reduced by 25%	817,159.77
								Total (kips)	817.16
								Total (tons)	409

Reduce total weight by 25% due to the flared gate geometry

Weight for Temporary Bypass Gate Leafs

Using The Book Method:			Calculated from the 1997 Report Members Included within Drawing						
W	$300 + L + 22B + (1/15) * B * L (1 + (1/100)L)$		Structural Members						
L	195	from c/l of trunnion to c/l of trunnion	Built Up I-Beams from Plates	Area (sq. ft)	Unit Weight (#/CF)	Length (ft)	# of Members	Total Weight	
B	70		I1	0.22	490	66.67	3	21,561.08	
W	4719.5		I2	0.77	490	66.67	12	301,855.09	
FOR THE ENDS	707.925		I3	3.5	490	66.67	3	343,017.15	
Total (# per LF)	5427.425	# per LF of Bascule Gate	I4	1	490	30	6	88,200.00	
Total	529,173.94	Per gate leaf (195/2)						Add an extra 10% for Plates, Etc.	754,633.32
Total (kips)	529.17							3%	22,639.00
								Total (lbs)	777,272.32
								Reduced by 25%	582,954.24
								Total (kips)	582.95
								Total (tons)	291

Reduce total weight by 25% due to the flared gate geometry

2024 - IHNC QUANTITY UPDATES

- RIPRAP & BEDDING MATERIAL
- FIXED CONCRETE GUIDEWALLS
- FLOATING CONCRETE GUIDEWALLS
- BULLNOSE DOLPHIN STRUCTURES
- MOORING CELLS
- COFFERDAM SAND AND BEDDING MATERIAL
- BRIDGE PIER PIPE PILES (18" TO 36" DIA.)

RipRAP Quantity

		Area (SF)	Depth (FT)	CF	CY	TONS (2200)	TONS (50)	TONS (Bedding)
1	RipRap West side near Exist Lock							
	Assume R-2200	62,000.00	4.50	279,000.00	10,333.33	15,500.00		
	Assume R-50	62,000.00	1.00	62,000.00	2,296.30		3,444.44	
	Bedding #1 (crushed stone)	62,000.00	0.50	31,000.00	1,148.15			1,722.22
	Seperator Fabric	62,000.00	6,888.20	square yards				
2	RipRap West side near New Lock							
	Assume R-2200	188,800.00	4.50	849,600.00	31,466.67	47,200.00		
	Assume R-50	188,800.00	1.00	188,800.00	6,992.59		10,488.89	
	Bedding #1 (crushed stone)	188,800.00	0.50	94,400.00	3,496.30			5,244.44
	Seperator Fabric	188,800.00	20,975.68	square yards				
3	RipRap at N. Claiborne Levee							
	Assume R-2200	62,000.00	4.50	279,000.00	10,333.33	15,500.00		
	Assume R-50	62,000.00	1.00	62,000.00	2,296.30		3,444.44	
	Bedding #1 (crushed stone)	62,000.00	0.50	31,000.00	1,148.15			1,722.22
	Seperator Fabric	62,000.00	6,888.20	square yards				
4	RipRap at St. Claude Levee							
	Assume R-2200	188,800.00	4.50	849,600.00	31,466.67	47,200.00		
	Assume R-50	188,800.00	1.00	188,800.00	6,992.59		10,488.89	
	Bedding #1 (crushed stone)	188,800.00	0.50	94,400.00	3,496.30			5,244.44
	Seperator Fabric	188,800.00	20,975.68	square yards				
5	RipRap At Sector Gates (South)							
	Assume R-2200	210,000.00	4.50	945,000.00	35,000.00	52,500.00		
	Assume R-50	210,000.00	1.00	210,000.00	7,777.78		11,666.67	
	Bedding #1 (crushed stone)	210,000.00	0.50	105,000.00	3,888.89			5,833.33
	Seperator Fabric	210,000.00	23,331.00	square yards				
6	RipRap At Sector Gates (North)							
	Assume R-2200	300,000.00	4.50	1,350,000.00	50,000.00	75,000.00		
	Assume R-50	300,000.00	1.00	300,000.00	11,111.11		16,666.67	
	Bedding #1 (crushed stone)	300,000.00	0.50	150,000.00	5,555.56			8,333.33
	Seperator Fabric	300,000.00	33,330.00	square yards				
				Totals:				
				Riprap R-2200		252,900.00		
				Riprap R-50			56,200.00	
				Bedding #1 (crushed stone)				28,100.00
				Seperator Fabric		112,388.76	square yards	

STANDARD RIPRAP GRADATIONS Limits of Stone Weight, Pounds (Design Specific Weight 155 Pounds per Cubic Foot)														
		Gradations Normally Produced Mechanically (Ranges in Pounds)						Gradations Normally Requiring Special Handling (Ranges in Pounds)						
High Turbulent Flow														
Layer Thickness, Inches		12	15	18	21	24	30	36	42	48	54	63	72	81
Average Velocity, fps		5.3	5.9	6.6	7.1	7.5	8.1	9.1	9.75	10.4	11.1	12	12.75	13.6
Low Turbulent Flow														
Layer Thickness, Inches		----	----	12	14	16	20	24	28	32	36	42	48	54
Average Velocity, fps		----	----	9.3	9.9	10.4	11.7	12.7	13.6	14.5	15.5	16.8		
Percent Lighter by Weight														
100		25-10	50-20	90-40	140-60	200-80	400-160	650-260	1000-400	1500-600	2200-900	3500-1400	5000-2000	7400-3000
50		10-5	20-10	40-20	60-30	80-40	160-80	280-130	430-200	650-300	930-400	1500-700	2200-1000	3100-1500
15		5-2	10-5	20-5	30-10	40-10	80-30	130-40	210-60	330-100	460-130	700-200	1100-300	1500-500
Riprap Designation		R-25	R-50	R-90	R-140	R-200	R-400	R-650	R-1000	R-1500	R-2200	R-3500	R-5000	R-7400
Recommended Sample Size (Min)		15 Tons, (< R-500)						25 Tons (R-500 to R-2200)				50 Tons (> R-2200)		
Bedding or Filter	Clay Foundation	6 Inches Bedding Stone No. 1				9 Inches Bedding Stone No. 2			12 Inches Riprap, R-50 or R-90 Over 6 Inches Bedding Stone #1					
	Pervious Foundation	Engineering Fabric (See Note 4)				9 Inches Filter Stone Over Engineering Fabric (See Note 4)			12 Inches Riprap, R-50 or R-90 Over Engineering Fabric (See Note 4)					

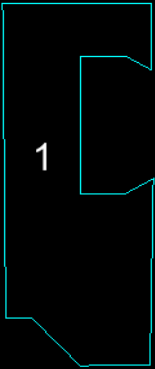
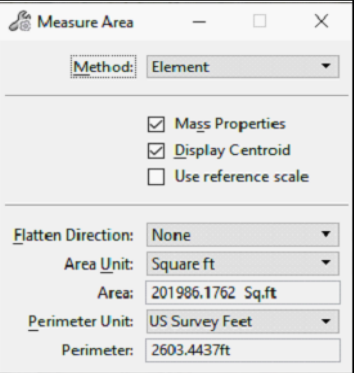
STANDARD BEDDING AND FILTER STONE GRADATIONS Permissible Limits, Percent by Weight, Passing					
Bedding Stone No. 1 (Gravel or Crushed)		Bedding Stone No. 2 (Crushed Stone)		Filter Stone (Crushed Stone)	
U.S. Std Sieve	Percent Passing	U.S. Std Sieve	Percent Passing	U.S. Std Sieve	Percent Passing
----	----	6 in	100	6 in	100
4 in	100	4 in	45-100	4 in	45-100
3 in	70-100	3 in	29-100	3 in	29-100
2 in	25-100	----	----	2 in	8-48
1 in	5-70	1 in	0-48	1 in	0-20
1/2 in	0-30	1/2 in	0-32	1/2 in	0-5
No. 4	0-5	----	----	----	----
----	----	No. 8	0-10	----	----

Notes:

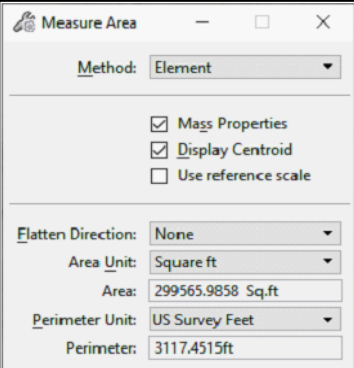
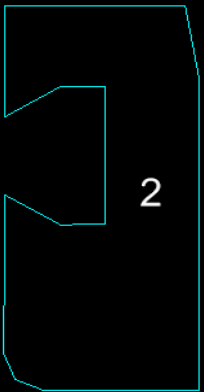
- These gradations do not apply in locations where seepage conditions are critical.
- Every effort should be made to minimize ther number of different gradations on a project.
- Riprap table adapted from CE LMVD Report on Standardization of Riprap Gradation, November 1981, revised May 1996.
- If Engineering Fabric is not used it shall be replaced by 6 inches Sand "A", 6 inches Gravel "C" and 9 inches Filter Stone Ref Section 02380

Version 2, April 7, 2003

RIP RAP AREAS AT NEW LOCK



Area 1 = 202,000 SF



Area 2 = 300,000 SF

Concrete

Item

Prep

23.9381

Construction Item:	Estimated		
	Duration (hrs)	Days	Sheet Ref:
Unloading Pipe Piles			
Driving Pipe Piles	13	2	0005-End Cell
Unloading Sheet Piles	140	14	0005-End Cell
Driving Sheet Piles	43	5	0005-End Cell Sheet Pile
Driving Template	#REF!	5	0005-End Cell Sheet Pile
Place Stone at Bottom of Dolphin	#REF!	2	0005-End Cell Sheet Pile
Place Concrete for Cap	40	4	0005-End Cell Const
Place Top 22 of Concrete for Dolphin	20	2	0005-End Cell Const
Place Welded Studs	80	8	0005-End Cell Const
Place Stone at Top of Dolphin:	7	1	0005-End Cell Const
Place Filler Plates:	30	3	0005-End Cell Const
Place Steel Straps:	157	10	0005-End Cell Const
Furnish and Install Ladder:	157	10	0005-End Cell Const
Dolphin Painting:	5	1	0005-End Cell Const
	30	3	
Total Hours			
	#REF!	70	Days

EMBANKMENT, COMPACTED FILL (New Levee Quantity)

East Side of IHNC Levee								
				Area (SF)	Len (FT)	CF	CY	TONS
St. Claude			Embankment, Compacted Fill	1,313.00	1,600.00	2,100,800.00	77,807.41	
			1st lift to Elev. 22.5					
			Embankment, Compacted Fill	250.00	1,600.00	400,000.00	14,814.81	
			Assume 2-ft of Settlement					
				CF - Volume	# of Rows			
Area 1	3-ft*40.5-ft*110-ft	Under Levee	Deep Soil Mixing	13,365.00	200.00	2,673,000.00	99,007.92	
	Grout Columns spacing is 8-ft. 1600-ft divided by 8-ft = 200 rows							
N. Claiborne			Embankment, Compacted Fill	1,032.00	1,600.00	1,651,200.00	61,155.56	
			1st lift to Elev. 17.5					
			Embankment, Compacted Fill	822.00	1,600.00	1,315,200.00	48,711.11	
			2nd lift to Elev. 22.5					
			Embankment, Compacted Fill	400.00	1,600.00	640,000.00	23,703.70	
			Assume 2-ft of Settlement					
				CF - Volume	# of Rows			
Area 1	3-ft*50-ft*65-ft	Under Levee	Deep Soil Mixing	9,750.00	200.00	1,950,000.00	72,228.00	
	Grout Columns spacing is 8-ft. 1600-ft divided by 8-ft = 200 rows							
						SF	SY	
			Geotextile Reinforcement	80.00	1,600.00	128,000.00	14,220.80	
							CY	
						subtotal	226,192.59	
						10% Extra	22,619.26	
						Embankment, Compacted Fill	248,811.85	

77,807.41
14,814.81
61,155.56
48,711.11

CY			
Emb. Compacted Fill - Levee Reshaping	50,000.00	241,100.00	Previous - 2019 Estimate
Emb. Compacted Fill - Floodwalls	167,900.00		
Emb. Compacted Fill - Levee Access Roads	20,000.00		
Emb. Compacted Fill - Backfill	3,200.00		
Emb. Compacted Fill - For New Levee (St. Claude and N. Claiborne)	248,811.85	489,911.85	New - 2024 Estimate

Say 500,000

Sheet Piling PZ-22
Remove Piles
Unloading Piling
Driving Sheetpile
PZ 22 Material Price (includes delivery)
Paint Piles, Coal-Tar Epoxy

Pile Tests
Pile test Setup
Tension/Compression Tests

Levee Setback
Reshaping

Labor ID: NOLL2017 EQ ID: EP16R08

Currency in US dollars

342,490.0000	SF	414,774.67
5,700.0000	EA	225,867.21
342,490.0000	SF	714,857.03
7,534,780.0000	LB	11,032,403.92
256,500.0000	SFC	1,097,434.83
1.0000	LS	260,558.35
24.0000	EA	1,459,126.75
50,000.0000	CY	118,305.48

TRACES MII Version 4.0

Print Date Sat 27 July 2019
Eff. Date 6/6/2019

U.S. Army Corps of Engineers
Project IHNCSD: Inner Harbor Navigation Canal Lock Replacement - Shallow Draft
New Report

Time 13:08:43
New Section Page 16

Compacted Embankment Fill For Floodwalls
Embankment
Compacted Embankment Fill for Levee Access Roads
Embankment
Demolition of Existing Floodwall
Demolition of Concrete Floodwall
Building demolition, commercial building, reinforced concrete, with pneumatic tools, includes 20 mile haul, excludes foundation demolition, dump fees
Landfill Disposal Fee
Extract Steel Sheet Piling
Remove Sheet Piles (Landbased)
Unloading Sheet Piles (Landbased)
Extract 12" Concrete Piles
Concrete Pile Loading (Landbased)
Precast Concrete Pile Removal (Landbased)
Backfill

Description

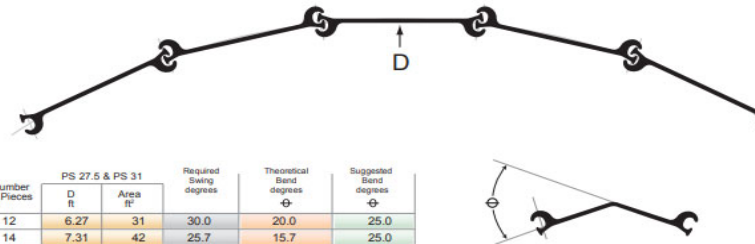
Quantity	UOM	ProjectCost
167,900.0000	CY	5,245,022.52
20,000.0000	CY	624,779.34
12,627.0000	CY	251,183.41
12,627.0000	CY	84,038.26
26,500.0000	SF	32,092.99
662.5000	EA	28,252.11
36.0000	EA	3,260.64
2,700.0000	VLF	25,941.42

Circular Mooring Cells - Taken from Previous NOV-14 Project along MS River

[illegible]

GERDAU SHEET PILING

DIAMETERS AND AREAS OF CIRCULAR CELLS USING PS 27.5 AND PS 3



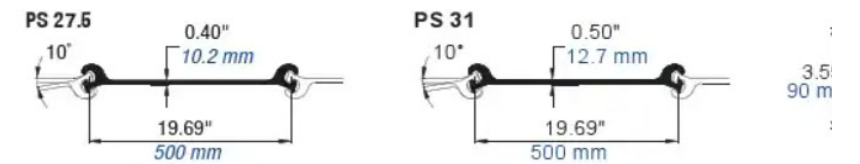
Number of Pieces	PS 27.5 & PS 31		Required Bending degrees	Theoretical Bend degrees		Suggested Bend degrees	
	D ft	Area ft²		↕	↕	↕	↕
12	6.27	31	30.0	20.0	25.0	25.0	
14	7.31	42	25.7	15.7	25.0	25.0	
16	8.36	55	22.5	12.5	20.0	20.0	
18	9.40	69	20.0	10.0	15.0	15.0	
20	10.45	86	18.0	8.0	15.0	15.0	
22	11.49	104	16.4	6.4	15.0	15.0	
24	12.53	123	15.0	5.0	10.0	10.0	
26	13.58	145	13.8	3.6	10.0	10.0	
28	14.62	168	12.6	2.9	10.0	10.0	
30	15.67	193	12.0	2.0	10.0	10.0	
32	16.71	219	11.3	1.3	10.0	10.0	
34	17.76	248	10.6	0.6	10.0	10.0	
36	18.80	278	10.0				
38	19.85	309	9.5				
40	20.89	343	9.0				
42	21.94	378	8.6				
44	22.98	415	8.2				
46	24.03	453	7.8				
48	25.07	494	7.5				
50	26.11	536	7.2				
52	27.16	579	6.9				
54	28.20	625	6.7				
56	29.25	672	6.4				
58	30.29	721	6.2				
60	31.34	771	6.0				
62	32.38	824	5.8				
64	33.43	878	5.6				
66	34.47	933	5.5				
68	35.52	999	5.3				
70	36.56	1050	5.1				
72	37.61	1111	5.0				
74	38.65	1172	4.9				
76	39.69	1238	4.7				
78	40.74	1304	4.6				
80	41.78	1371	4.5				

All dimensions given are nominal.

Small cells constructed with bent w
piles must have half of the piles ber
the fingers inside and half with the
fingers outside.

PS 27.5 and PS 31 when properly interlocked, are designed to provide swing up to 10 degrees (in either direction) for lengths up to 70 feet (21 meters). The ability to obtain a full 1 degree swing decreases with length because of the difficulty in handling the longer pieces. For lengths over 70 feet (21 meters), it is necessary to anticipate a reduction in obtainable swing of 1.5 degrees for each 10 feet (3 meters) increase in length.

PS (FLAT SHEET) PILING PROPERTIES



Section	Nominal Width	Depth (Height)	Wall Depth (Height)	Web Thickness	Per Single Section							Area
	Area	Weight	Moment of Inertia	Section Modulus	Total Surface Area	Nominal Coating Area	Area					
	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. ² (cm ²)	lbs/ft (kg/m)	in. ⁴ (cm ⁴)	in. ³ (cm ³)	ft ² /ft (m ² /m)	ft ² /ft (m ² /m)	in. ² /ft (cm ² /m)	
PS 27.5	19.69	2.83	3.55	0.40	13.28	46.1	5.0	3.2	4.50	3.64	8.08	
	500	72	90	10.2	85.5	67.1	207	52	1.37	1.11	171.4	
PS 31	19.69	2.83	3.55	0.50	14.96	50.9	5.0	3.2	4.50	3.64	9.11	
	500	72	90	12.7	96.5	75.7	207	52	1.37	1.11	162.4	

*Both sides of sheet; excludes interior of interlock.

All listed dimensions are nominal. Due to roll thickness is common. Permitted variations for

<u>Len of 31 (inc.en of 31 (ft</u>	<u># of Pieces</u>	<u>Total Length</u>
19.69 1.640833	80	131.2666667
<u>Area</u>		
41.75		
34.75		

Superstructure					
	Description	Quantity	Unit	Unit Price	Total Cost
1	Prosecution of Work - Initial Schedule		LS		\$ 100,000.00
2	Prosecution of Work - Monthly Update	24.00	EA		\$ 1,000.00
3	Structural Concrete Piers		LS		\$ 3,150,000.00
4	Operator House & Service Building		LS		\$ 714,000.00
5	Structural Concrete Wearing Surface on Bridges		LS		\$ 125,000.00
6	Structural Concrete Roadway and Sidewalk, Slab Concrete Bridges		LS		\$ 1.00
7	Silica Fume Additive		LS		\$ 60,000.00
8	Drainage System (Downspouts, throughs, etc.)		LS		\$ 290,000.00
9	Epoxy Coated Reinforced Structural Fabrication and Delivery		LS		\$ 350,000.00
10	Epoxy Coated Reinforced Structural Placing		LS		\$ 150,000.00
11	Mechanical / Welded Splice		LS		\$ 100,000.00
12	Structural Steel Fabrication and Delivery		LS		\$ 6,200,000.00
13	Structural Steel Erection		LS		\$ 600,000.00
14	Roadway Grid Deck/Open, and Partly Concrete Filled		LS		\$ 990,000.00
15	Orthotropic Sidewalk Deck		LS		\$ 105,000.00
16	Permanent Steel Barrier	1,026.00	LF		\$ 260.00
17	2 Ton Trolley & Crane Rail System (1 Per Truss Structure)		LS		\$ 30,000.00
18	Shop Coating of Structural Steel		LS		\$ 130,000.00
19	Field Repair of Damage Coating		LS		\$ 50,000.00
20	1'-10" Bridge Railing	362.00	LF		\$ 15.00
21	4'-2" Bridge Railing	315.00	LF		\$ 25.00
22	Curing Box, Concrete Cylinder	3.00	EA		\$ 506.00
23	Exp Dev. - Compression Seal		LS		\$ 8,000.00
24	Prestressed Structural Concrete Box Beam		LS		\$ 200,000.00
25	Water Line System		LS		\$ 400,000.00
26	Conduit & Wiring System		LS		\$ 500,000.00
27	Highway Lighting		LS		\$ 150,000.00
28	Navigational Lights		LS		\$ 25,000.00
29	Navigational Signs		LS		\$ 1,000.00
30	Traffic Signals and Gates		LS		\$ 250,000.00
31	Engine - Generator System		LS		\$ 100,000.00
32	Submarine Cable, Supply and Delivery		LS		\$ 230,000.00
33	Submarine Cable, Installed		LS		\$ 350,000.00
34	Bridge Electrical and Control System		LS		\$ 800,000.00
35	Mobilization		LS		\$ 2,500,000.00
36	On the Job Training	11,000.00	MH		\$ 3.00
37	Generator & Switchgear Enclosures		LS		\$ 20,000.00
38	Bridge Operating Machinery		LS		\$ 5,200,000.00
39	Prevention Scrg. (plastic galvanized and Exp. Metal)		LS		\$ 120,000.00
40	Counterweight Balance Bars	4,522.00	EA		\$ 115.00
41	Counterweight Castings		LS		\$ 1,100,000.00
42	Counterweight Concrete	1,100.00	LS		\$ 200,000.00

Substructure					
	Description	Quantity	Unit	Unit Price	Total Cost
1	Prosecution of Work - Initial Schedule	1.00	LS	\$ 100,000.00	\$ 100,000.00
2	Prosecution of Work - Monthly Update	20.00	EA	\$ 1,000.00	\$ 20,000.00
3	Structural Earth Excavation - Piers	13,800.00	CY	\$ 25.00	\$ 345,000.00
4	Timber Pile Treated	730.00	LF	\$ 25.00	\$ 18,250.00
5	Pile Protective Coating	774,000.00	LS	\$ 10,000.00	\$ 10,000.00
6	Steel Pipe Piles, Delivered	3,500.00	LF	\$ 55.00	\$ 192,500.00
7	Steel Pipe Piles, in Place	3,500.00	LF	\$ 20.00	\$ 70,000.00
8	Pile Tips Pipe Piles	46.00	EA	\$ 350.00	\$ 16,100.00
9	Pile Splices Pipe Piles	46.00	EA	\$ 400.00	\$ 18,400.00
10	Pile Driving Equipment Mobilization, Pipe Piles	1.00	LS	\$ 5,000.00	\$ 5,000.00
11	Mechanical Welded Splice	3,624.00	EA	\$ 50.00	\$ 181,200.00
12	Fender System	678,000.00	LS	\$ 1,000,000.00	\$ 1,000,000.00
13	Temporary Fender System	36,800.00	LS	\$ 400,000.00	\$ 400,000.00
14	Cofferdam North Bascule Pier	1.00	LS	\$ 900,000.00	\$ 900,000.00
15	Cofferdam South Bascule Pier	1.00	LS	\$ 600,000.00	\$ 600,000.00
16	Curing Box for Concrete Cylinders	2.00	EA	\$ 1,500.00	\$ 3,000.00
17	Granite Masonry	6,370.00	SF	\$ 37.00	\$ 235,690.00
18	Temporary Navigation Lights	1.00	LS	\$ 5,000.00	\$ 5,000.00
19	Testing Facilities - Concrete	1.00	LS	\$ 5,000.00	\$ 5,000.00
20	Type I Barricade	20.00	EA	\$ 50.00	\$ 1,000.00
21	Drum	20.00	EA	\$ 35.00	\$ 700.00
22	Cone	20.00	EA	\$ 25.00	\$ 500.00
23	Construction Signs	700.00	SF	\$ 35.00	\$ 24,500.00
24	Maintenance of Traffic Control Devices	600.00	LS	\$ 1,000.00	\$ 10,000.00
25	Flagger	1,000.00	MH	\$ 10.00	\$ 10,000.00
26	Boom Supported Floating Silt Fence	1,000.00	LF	\$ 32.00	\$ 32,000.00
27	Mobilization	1.00	LS	\$ 116,400.00	\$ 1,164,000.00
28	On the Job Training	14,000.00	MH	\$ 0.80	\$ 11,200.00
29	Static Load Test	2.00	EA	\$ 65,000.00	\$ 130,000.00
30	Dynamic Loading Test	14.00	EA	\$ 29,000.00	\$ 40,600.00
31	Steel H-Beam Piles 117 LB/Ft., Delivered	33,000.00	LF	\$ 23.00	\$ 759,000.00
32	Steel H-Beam Piles 117 LB/Ft., in Place	33,000.00	LF	\$ 4.00	\$ 132,000.00
33	Pile Tips H-Piles	462.00	EA	\$ 70.00	\$ 32,340.00
34	Pile Splices H-Piles	462.00	EA	\$ 425.00	\$ 196,350.00
35	Pile Driving Equipment Mobilization, H-Piles	1.00	LS	\$ 2,400,000.00	\$ 2,400,000.00
36	Structural Concrete Piers	13,482.00	LS	\$ 1,275,400.00	\$ 1,275,400.00
37	Structural Concrete Piers (Placed Under Water)	14,364.00	CY	\$ 100.00	\$ 1,436,400.00
38	Epoxy Coated Reinforcing Steel, Fabricated and Delivered	147,400.00	LB	\$ 0.30	\$ 44,220.00
39	Epoxy Coated Reinforcing Steel Placing	147,400.00	LB	\$ 0.15	\$ 22,110.00
40	Ostberg Cell Load Test	2.00	EA		
41	7 foot Diameter Drilled Shaft	3,114.00	LF		
42	Rock Socket	288.00	LF		
43	Exploratory Drilling	540.00	LF		
44	Structural Concrete Piers	13,405.00	LS		
45	Structural Concrete Piers (Placed Under Water)	12,979.00	LB		
46	Epoxy Coated Reinforcing Steel, Fabricated and Delivered	1,565,700.00	LB		
47	Epoxy Coated Reinforcing Steel Placing	1,565,700.00	LB		



THE Construction Building

The Dunlap Corporation • Specializing in Insurance & Bonding

Bid Date: **APRIL 27, 1995**
 Location: **PORTLAND - SOUTH PORTLAND**
 Project: **CONSTRUCTION OF BASCULE SUPERSTRUCTURE FOR THE PORTLAND BRIDGE (SO CALLED MILLION DOLLAR BRIDGE) THAT CARRIES ROUTE 77 ACROSS THE FORE RIVER; MFAP #DP1-0088(005); PIN #116.21**

APRIL 27, 1995
PORTLAND - SOUTH PORTLAND

CONSTRUCTION OF BASCULE SUPERSTRUCTURE FOR THE PORTLAND BRIDGE (SO CALLED MILLION DOLLAR BRIDGE) THAT CARRIES ROUTE 77 ACROSS THE FORE RIVER; MFAP #DP1-0088(005); PIN #116.21

OPEN: HOLIDAY INN BY T
AT 2 PM
BID GUAR: 5% COMPL:

1a	Prosecution of Work - Initial Sch.	108.51	100,000	15,000
2a	Prosecution of Work-Monthly Update	108.52	100,000	2,000
1a	Strt.Concr.Piers	502.239	2,350,000	2,350,000
1a	Operator House & Service Bldg.	502.2391	8,125,000	4,000,000
1a	Strt.Concr.Wear.Surf.On Bridges	502.29	125,000	20,000
1a	Strt.Concr.Rdw.&Sdwk.Slb.Concr.Brgs	502.422	100,000	100,000
1a	Silica Fume Additive	502.4719	10,000	10,000
1a	Drng.Syst.(Downspouts,Throughs,Etc)	502.704	200,000	120,000
1a	Epoxy Coated Reinf.Stl.Fab.& Del.	503.141	350,000	250,000
1a	Epoxy Coated Reinf.Stl.Placing	503.151	100,000	3,000
1a	Mechanical/Welded Splice	503.171	6,200,000	100,000
1a	Strt.Stl.Fab.& Del.	504.70	6,000,000	4,000,000
1a	Strt.Stl.Erection	504.71	500,000	750,000
1a	Rdw.Gr.Dck./Open,Prt.Fild.&Filled	504.8116	405,000	1,100,000
1a	Orthotropic Sdwk.Deck	504.8117	105,000	750,000
1a	Permanent Steel Barrier	504.8118	250	250
1a	2 Ton Trly.&Cr.Rl.Sys.(1 Per Tr.St)	504.87	30,000	30,000
1a	Shop Coating of Strt.Steel	506.30	130,000	0,000,000
1a	Field Repair of Damage Coating	506.31	50,000	120,000
1a	1" 10" Bridge Railing	507.212	15	550
1a	4" 2" Bridge Railing	507.213	550	550
1a	Curling Box,Concr.Cyl.	514.06	500	1500
1a	Exp.Dev.-Concr.Seal	520.221	3000	35,000
1a	Prestressed Strt.Concr.Box Beam	535.02	200,000	115,000
1a	Water Line System	625.01	400,000	100,000

continued

PORTLAND-SOUTH PORTLAND

A SERVICE OF
Dunlap
 INSURANCE & BONDING

Auburn • Augusta • Bangor • Gray • Portland
 How to be used for estimating purposes.
 Every effort is made to make this service accurate and complete, but no express assumes responsibility for errors and omissions.

LINE # / ITEM # / ALTERNATE	DESCRIPTION	QUANTITY	UNIT PRICE	AMOUNT	UNIT
SECTION 0001 BRIDGE ITEMS					
0010 100.51	PROSECUTION OF WORK - INITIAL SCHEDULE	1	100000.00000	100000.00	1
0020 100.52	PROSECUTION OF WORK - MONTHLY UPDATE	10.0000	1000.00000	9000.00	1
0030 100.10	STRUCTURAL EARTH EXCAVATION - PILES	13860.000	25.00000	345000.00	1
0040 501.20	720.000 LF	25.00000	18250.00		
0050 501.25	77400.000 LS	10000.00000	10000.00	10000.00	110
0060 501.70	3500.000 LF	55.00000	192500.00		
0070 501.701	3500.000 LF	20.00000	70000.00		
LOCATION : PORTLAND					
SOUTH PORTLAND					
CONTRACT ID : 000116.20					
SECTION 0002 BRIDGE ITEMS					
0080 501.20	46.000 EA	350.00000	16100.00		
0090 501.91	46.000 EA	400.00000	18400.00		
0100 501.92	5000.00000	5000.00	5000.00		
PIPE DRIVING EQUIPMENT MOBILIZATION.					
0110 503.17	3624.000 EA	50.00000	181200.00		
0120 504.50	678000.000 LS	1000000.00000	1000000.00	1000000.00	1000000.00
0130 504.55	16800.000 LS	400000.00000	600000.00		
0140 511.07	900000.00000	500000.00	500000.00		
COFFERDAM: NORTH BASCULE PIER					
0150 514.06	2.000 EA	1500.00000	3000.00		
CURING BOX FOR CONCRETE CYLINDERS					
0160 515.30	6370.000 SF	37.00000	235600.00		
GRANITE MASONRY.					
0180 438.021	LUMP	5000.00000	5000.00		
TEMPORARY NAVIGATION LIGHTS					
0190 451.07	LUMP	5000.00000	5000.00		
TESTING FACILITIES-CONCRETE					
0200 452.31	20.000 EA	50.00000	1000.00		
TYPE I BARRICADE					
0210 452.33	20.000 EA	35.00000	700.00		
DRAWN					
0220 452.34	20.000 EA	25.00000	500.00		
CONE					
0230 452.35	700.000 SF	35.00000	24500.00		
CONSTRUCTION SIGNS					
0240 452.361	600.000 LS	10000.00000	10000.00		
MAINTENANCE OF TRAFFIC CONTROL DEVICES					
0250 452.38	1000.000 MH	10.00000	10000.00		
FLAGGER					
0260 456.64	1000.000 LF	32.00000	32000.00		
ROOM SUPPORTED FLOATING SILT FENCE					
0270 459.10	LUMP	1140000.00000	1140000.00		
MOBILIZATION					
0280 460.22	14000.000 MH	0.80000	11200.00		
TEMPORARY PAINTING (STR)					

APRIL 27, 1965		PAGE TWO	
(005) - P/M #116-21			
is	Conduit & Wiring System	626.211	500,000 450,000
is	Highway Lighting	634.16	150,000 135,000
is	Navigation Lights	638.02	25,000 27,000
is	Navigation Signs	638.012	1,000 2,000
is	Trar. Signals & Gates	643.01	250,000 275,000
is	Engine Generator System	655.01	120,000 115,000
is	Submarine Cable, Supplied & Del.	655.2051	230,000 280,000
is	Submarine Cable, Installed	655.2052	350,000 350,000
is	Bridge Electrical & Control System	655.3001	255,000 1,000,000
is	Mobilization	659.10	4,500,000 7,000,000
mh	On-The-Job Training	660.21	5
is	Generator & Switchgear Enclosures	815.321	50,000 10,000
is	Bridge Operating Machinery	860.10	5,200,000 5,500,000
is	Prvtn. Serng. (Plcto. Glzg. & Exp. Mtl)	870.10	120,000 0,000
aa	Counterweight Balance Bars	880.10	115 0.5
is	Counterweight Castings	880.11	1,100,000 1,000,000
is	Counterweight Concrete	880.112	740,000 175,000
TOTALS		25,371,596 ⁰⁰	26,641,370 ⁰⁰

LOCATION : PORTLAND SOUTH PORTLAND		TABULATION OF BID	
		CONTRACT ID : 000116.20	

[1] ITEM # / ALTERNATE		[2] UNIT PRICE	[3] AMOUNT
ITEM DESCRIPTION	QUANTITY		
SECTION TOTALS			\$ 5,379,040.00
SECTION 0002 R-PILE ALTERNATIVE			
490 501.225	2.000 EA	65000.00000	130000.00
STEEL LOADING TEST			
490 501.231	14.000 EA	2900.00000	40600.00
DYNAMIC LOADING TEST			
490 501.54	35000.000 LF	13.00000	795000.00
STEEL R-BEAM FILES 117 LBS/FT.			
DELIVERED			
490 501.541	33000.000 LF	4.00000	132000.00
STEEL R-BEAM FILES 117 LBS/FT. IN PLACE			
490 501.55	462.000 EA	70.00000	32340.00
PILE TIPS R-PILES			
490 501.91	462.000 EA	4.250000	196350.00
PILE SPLICES R-PILES			
490 501.92	LUMP	2400000.0000	2400000.00
PILE DRIVING EQUIPMENT MOBILIZATION -			
R-PILES			
490 502.129	13482.000 LS	1275400.00000	1725400.00
STRUCTURAL CONCRETE PIERS			
490 502.24	14364.000 CY	100.00000	1436400.00
STRUCTURAL CONCRETE PIERS (PLACED UNDER WATER)			
490 502.14	1474000.000 LB	0.30000	442200.00
EPOXY COATED REINFORCING STEEL, FABRICATED AND DELIVERED			
490 503.15	1474000.000 LB	0.15000	221100.00
EPOXY COATED REINFORCING STEEL PLACING			
SECTION TOTALS			\$ 7,065,340.00
SECTION 0003 DRILLED SHAFT ALTERNATE			
0400 501.232	2.000 EA		
OSTERBERG CELL LOAD TEST			

Historical Cost for Pay Items - LADOTD

SAND FILL & BEDDNG MATERIAL for Cofferdam - Lock and Sector Gate

	<u>Material</u>		<u>Total Linear Feet</u>	<u>Area</u>	<u>Thickness</u>	<u>CF</u>	<u>CY</u>		<u>Notes</u>					
	Sand, Granular Material			678,477.68	2.00	1,356,955.36	50,257.61							
			<u>Total Linear Feet</u>	<u>Thickness</u>	<u>Width</u>	<u>CF</u>	<u>CY</u>	<u>Tons</u>						
Bedding Stone for Access Roads	A	80.00	1.00	32.00	2,560.00	94.81	142.22	Road Width is for two dump trucks to pass during concurrent operatons						
	B	1,781.00	1.00	32.00	56,992.00	2,110.81	3,166.22	Assumes crushed stone surfacing will be required from sand barge, to cofferdam						
	C	532.00	1.00	32.00	17,024.00	630.52	945.78							
	D	58.00	1.00	32.00	1,856.00	68.74	103.11							
	E	1,110.00	1.00	32.00	35,520.00	1,315.56	1,973.33							
	F	106.00	1.00	32.00	3,392.00	125.63	188.44							
	G	500.00	1.00	32.00	16,000.00	592.59	888.89							
	H	240.00	1.00	32.00	7,680.00	284.44	426.67							
	I	1,271.00	1.00	32.00	40,672.00	1,506.37	2,259.56							
	Totals	5,678.00					10,094.22							
						<u>SF</u>	<u>SY</u>							
	Separator Geotextile	5,678.00		32.00	181,696.00	20,186.43								

THESE QUANTITIES IS FOR ACCESS INTO THE COFFERDAM AND TO PROVIDE A SMOOTH WORKING SURFACE AFTER DEWATERING & EXCAVATION.

Main Bascule Bridge Pier - PIPE PILE QUANTITY											
	Pile size		Row	# of Piles	TOB	BOB	TOP	Pile Tip	Batter	Length of Pile	Total Length of Pier
Pier 1	36" dia pipe pile w/ 1/2" W.T.		1	13	-31.5	-41.5	-40	-180	1	140	1,820.00
			2	13	-31.5	-41.5	-40	-180	1	140	1,820.00
			3	13	-31.5	-41.5	-40	-180	1	140	1,820.00
			4	13	-31.5	-41.5	-40	-180	1	140	1,820.00
			5	13	-31.5	-41.5	-40	-180	1	140	1,820.00
			6	13	-31.5	-41.5	-40	-180	1	140	1,820.00
			7	13	-31.5	-41.5	-40	-180	1	140	1,820.00
			8	13	-31.5	-41.5	-40	-180	1	140	1,820.00
			9	13	-31.5	-41.5	-40	-180	1	140	1,820.00
				117							16,380.00
Pier 2	36" dia pipe pile w/ 1/2" W.T.		1	13	-31.5	-41.5	-40	-180	1	140	1,820.00
			2	13	-31.5	-41.5	-40	-180	1	140	1,820.00
			3	13	-31.5	-41.5	-40	-180	1	140	1,820.00
			4	13	-31.5	-41.5	-40	-180	1	140	1,820.00
			5	13	-31.5	-41.5	-40	-180	1	140	1,820.00
			6	13	-31.5	-41.5	-40	-180	1	140	1,820.00
			7	13	-31.5	-41.5	-40	-180	1	140	1,820.00
			8	13	-31.5	-41.5	-40	-180	1	140	1,820.00
			9	13	-31.5	-41.5	-40	-180	1	140	1,820.00
				117							16,380.00

234

32,760.00

T-Wall Qtys.

Design Prorated using example floodwall from WBV-MRL project subject to high barge impact

Floodwall Qty

Tremie Stab. Slab	0.5	20	40	400	14.8				
Total Concrete Cubic Yards Per Monolith					194.62				
Number of Floodwall Monoliths					159	old qty			
Total					30,944.58	22,211.10	8,733		

18" Dia. Steel Pipe Pile Quantity						
Batter	vert. len	horz. len	Len	# of Piles	Overall Len	
Flood Side	3	132.25	44.08	139.40	8	1115.23
Protected Side	3	132.25	44.08	139.40	8	1115.23
Protected Side	3	132.25	44.08	139.40	8	1115.23
18" Dia Pipe Pile Length/Per 1 Monolith					3345.69	
Number of Floodwall Monoliths					150	old qty
Total					503,108.10	371,200.70

PZ-22 Sheetpile	Length	Height	SF	SY		
	6015	49.75	299,246.25	33,246.26	24,003.16	9,243

Total Lengths From Microstation Drawings

Assumes start of sheetpile at El. 4.75
Bottom of sheetpile is El. -45.0

West Side:	East Side:
Length from Microstation	4450
	1565
	4450
	1565

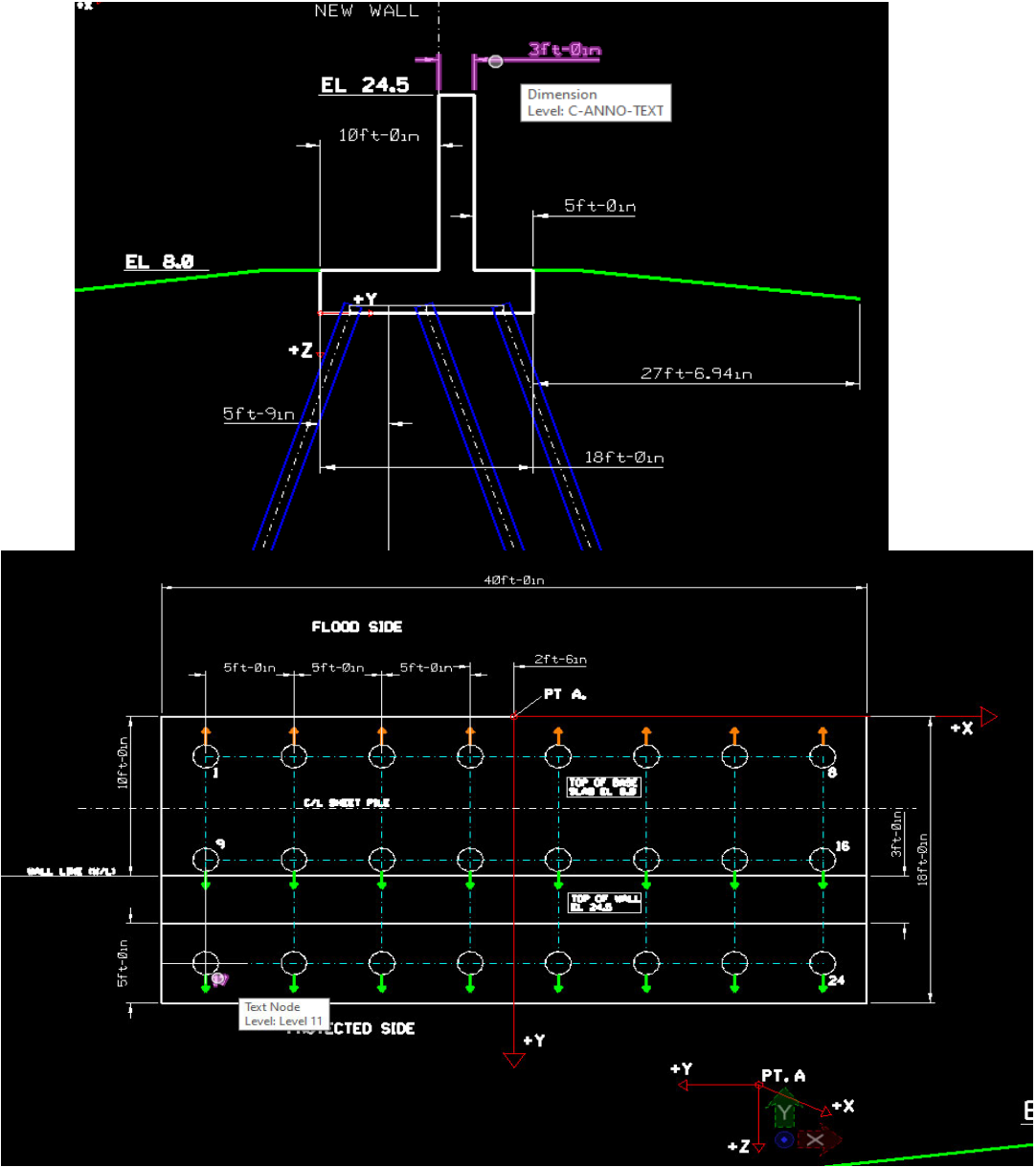
Total Both East and West Side, North & South of the Exist Lock, LF

6015

Total # of Mono per 40-ft Sections

150

728	250
90	950
1092	0
116	0
375	0
375	0
246	0
28	0
273	1200
194	
211	
1080	
341	
5149	



3 Pile Rows - All other T-Walls

FLOODWALL SECTION Under St. Claude

T-Wall Quantity					
	Height or Thickness (ft)	Width (ft)	Length (ft)	CF	CY
Concrete					
Stem	22.5	3	40	2700	99.9
Base Slab	4	23	40	3680	136.16
Tremie Stab. Slab	0.33	23	40	303.6	11.2332
Total Concrete Cubic Yards Per Monolith					247.2932
Number of Floodwall Monoliths					8
Total					1978

18" Dia. Steel Pipe Pile Quantity						
Batter	vert. len	horz. len	Len	# of Piles	Overall Len	
Flood Side	3	130	43.33	137.03	8	1096.26
Flood Side	3	130	43.33	137.03	8	1096.26
Protected Side	3	130	43.33	137.03	8	1096.26
Protected Side	3	130	43.33	137.03	8	1096.26

18" Dia Pipe Pile Length/Per 1 Monolith 4385.03
 Number of Floodwall Monoliths 8
 Total 35080

	Length	Height	SF	SY
PZ-22 Sheetpile	320	45	14400	1600

Total Lengths From Microstation Drawings

	West Side:	East Side:
Length from Microstation	0	0

Total Both East and West Side, North & South of the Exist Lock, LF 320

Total # of Mono per 40-ft Sections 8

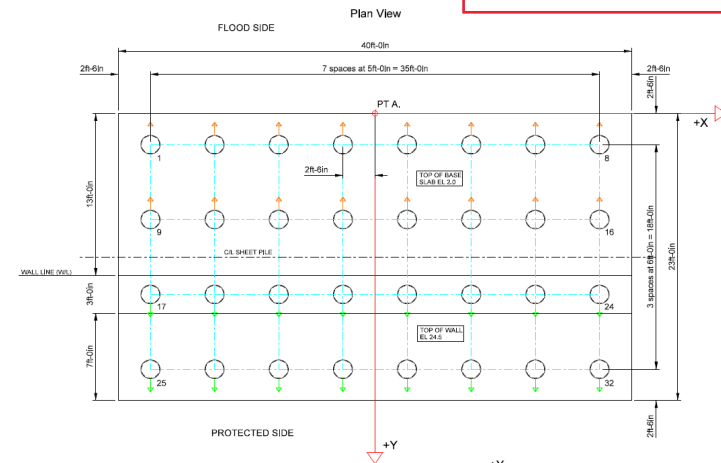
Assumes start of sheetpile at El. -2.75
 Bottom of sheetpile is El. -30.0

2..5

4 Pile Rows - T-Walls on East side under St. Claude

23-ft Wide, 22.5-ft Tall
 T-Wall Monolith

Floodwall Qty



23-ft Wide, 22.5-ft Tall
 T-Wall Monolith

X-SECTION

