

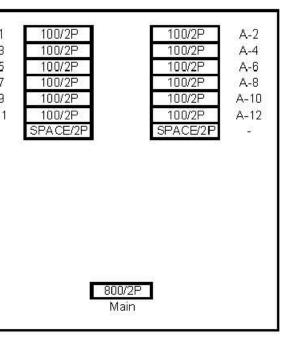
## Revised Electrical Design for Edgewater Resources - Port of Rochester Marina - Phase 1 Substation A

 Panel
 1
 120 / 240
 0
 0
 23
 0
 0
 23
 1150.0
 70%
 90%
 100%
 724.5

 Feeder
 1
 480
 575.0
 100%
 362.3

			1		Re	ceptacle Lo	ads		1				
Circuit ID	Phase	Voltage	20 A GFI	30A 120V	50A 120/240V	100A 120/240V	100A 120/208V	Total Rec.	Total Rec. Current	Load Factor	Meter Factor	Conduit Size	
A-1	-1-	120 / 240	0	0	2	0	0	2	100.0	100%	90%	-	Γ
A-2	1	120 / 240	0	0	2	0	0	2	100.0	100%	90%	- 4 - L	Γ
A-3	1	120 / 240	0	0	2	0	D	2	100.0	100%	90%	-	Г
A-4	1	120 / 240	0	0	2	0	0	2	100.0	100%	90%	-	Γ
A-5	1	120 / 240	0	0	1	0	0	1	50.0	100%	90%	-	Γ
A-6	1	120 / 240	0	0	2	0	0	2	100.0	100%	90%	-	Γ
A-7	1	120 / 240	0	0	2	0	0	2	100.0	100%	90%		Г
A-8	1	120 / 240	0	0	2	0	0	2	100.0	100%	90%		Γ
A-9	1	120 / 240	0	0	2	0	0	2	100.0	100%	90%	-	Г
A-10	1	120 / 240	0	0	2	0	D	2	100.0	100%	90%	-	Γ
A-11	1	120 / 240	0	0	2	0	0	2	100.0	100%	90%	¥	E
A 17	1	120 / 240	0	0	0	0	0	0	ກດ	100%	QN %		r

PA	NEL	A-1 A-3
Phase:	1	A-5 A-7
Voltage:	120/240	A-9 A-11
Amperage:	800	2
TVSS:	Yes - 160kA	5
GFI Monitor:	Ν	
Enclosure:	Sub	



Phase:	1
Primary Voltage:	480
Secondary Voltage:	120/240
KVA:	200
Enclosure:	Sub
Special (TP-1, etc…)	TP-1
Wire - Panel to Tra	ansformer
Substatio	n

## Revised Electrical Design for Edgewater Resources - Port of Rochester Marina - Phase Substation C

Date: 6/26/2013

					Re	e ceptacle Loa	ads			Í														
Circuit ID	Phase	Voltage	20A GFI	30A 120V	50A 120/24.0V	100A 120/240V	100A 120/208V	Total Rec.	Total Rec. Current	Load Factor	Meter Factor	Conduit Size	Conduit Fill Adj.	Effective Current	Breaker Trip	Breaker Frame	Breaker Poles	Wire Length	Wire Type	Resistance	# of Conductors	Wire Size	Ground Size	Voltage Drop %
C-1	1	120 / 240	0	0	2	0	.0.	2	100.0	100%	90%	( <del>7</del> )	100%	90.0	100	225	2	409	"G" Cable	0.077	3	#3/0	Included	2.36%
C-2	1	120 / 240	0	0	2	0	0	2	100.0	100%	90%	340	100%	90.0	100	225	2	409	"G" Cable	0.077	3	#3/0	Included	2.36%
C-3	1	120 / 240	0	0	2	0	0	2	100.0	100%	90%	-	100%	90.0	100	225	2	376	"G" Cable	0.1	3	#2/0	Included	2.82%
C-4	1	120 / 240	0	0	2	0	0	2	100.0	100%	90%	12	100%	90.0	100	225	2	360	"G" Cable	0.1	3	#2/0	Included	2.70%
C-5	1	120 / 240	0	0	1	0	0	1	50.0	100%	90%	-	100%	45.0	50	100	2	328	"G" Cable	0.19	3	#2	Included	2.34%
C-6	1	120 / 240	0	0	1	0	0	<u>ा</u>	50.0	100%	90%		100%	45.0	50	100	2	317	"G" Cable	0.19	3	#2	Included	2.26%
C-7	1	120 / 240	0	0	2	0	0	2	100.0	100%	90%	5	100%	90.0	100	225	2	280	"G" Cable	0.12	3	#1/0	Included	2.52%
C-8	1	120 / 240	0	0	2	0	0)	2	100.0	100%	90%	-	100%	90.0	100	100	2	242	"G" Cable	0.15	3	#1	Included	2.72%
C-9	1	120 / 240	0	0	2	0	0	2	100.0	100%	90%	- 20	100%	90.0	100	100	2	204	"G" Cable	0.19	3	#2	Included	2.91%
C-10	1	120 / 240	0	0	2	0	0	2	100.0	100%	90%	3	100%	90.0	100	100	2	161	"G" Cable	0.19	3	#2	Included	2.30%
C-11	1	120 / 240	0	4	0	0	0	4	60.0	100%	90%	-	100%	54.0	60	100	2	124	"G" Cable	0.49	3	#6	Included	2.73%
C-12	1	120 / 240	0	4	0	0	0	4	60.0	100%	90%	-	100%	54.0	60	100	2	86	"G" Cable	0.49	3	#6	Included	1.90%
C-13	1	120 / 240	0	4	0	0	0	4	60.0	100%	90%	(2) (2)	100%	54.0	60	100	2	48	"G" Cable	0.78	3	#8	Included	1.70%
C-14	1	120 / 240	0	4	0	0		4	60.0	100%	90%	-	100%	54.0	60	100	2	32	"G" Cable	0.78	3	#8	Included	1.13%
C-15	1	120 / 240	0	0	4	0	.0.	4	200.0	100%	90%	2	100%	180.0	200	225	2	140	"G" Cable	0.12	3	#1/0	Included	2.52%
C-16	1	120 / 240	0	0	4	Û	0	4	200.0	100%	90%	-	100%	180.0	200	225	2	247	"G" Cable	0.077	3	#3/0	Included	2.86%
C-17	1	120 / 240	0	0	2	0	0	2	100.0	100%	90%	÷	100%	90.0	100	225	2	301	"G" Cable	0.12	3	#1/0	Included	2.71%
C-18	1	120 / 240	0	0	2	0	0	2	100.0	100%	90%	-	100%	90.0	100	225	2	355	"G" Cable	0.1	3	#2/0	Included	2.66%
C-19	1	120 / 240	0	0	2	0	0	2	100.0	100%	90%	×.	100%	90.0	100	225	2	355	"G" Cable	0.1	3	#2/0	Included	2.66%
C-20	1	120 / 240	0	0	0	0	0	0	0.0	100%	90%	12	100%	0.0	100	225	2	0	"G" Cable		3		Included	0.00%
C-21	1	120 / 240	0	0	0	0	0	0	0.0	100%	90%	÷	100%	0.0	100	225	2	0	"G" Cable		3		Included	0.00%
Panel	1	120 / 240	0	16	34	0	00 C	50	1940.0	50%	90%	-	100%	873.0	1000	1200	2				Substation			)[
Feeder	1	480							970.0				100%	436.5	500	2	2			See M	DP Design She	eet		

PA	NEL	C-1 C-3	100/2P 100/2P	100/2P 100/2P	C-2 C-4	TRANSFOR	RMER
Phase:	1	C-5 C-7	50/2P 100/2P	50/2P 100/2P	C-6 C-8	Phase:	1
Voltage:	120/240	C-9 C-11	100/2P 60/2P	100/2P 60/2P	C-10 C-12	Primary Voltage:	480
Amperage:	1000	C-13 C-15	60/2P 200/2P	60/2P 200/2P	C-14 C-16	Secondary Voltage:	120/240
TVSS:	Yes - 160kA	C-17 C-19	100/2P 100/2P	100/2P 100/2P	C-18 C-20	KVA:	250
GFI Monitor:	N	C-21	100/2P	SPACE/2P	826	Enclosure:	Sub
Enclosure:	Sub					Special (TP-1, etc)	TP-1
			10	00/2P		Wire - Panel to Tra	ansformer
				Aain		Substatio	n

GENERAL NOTES:

- I. ELECTRICAL LAYOUT AND SUBSTATION TABLES ARE SCHEMATIC, CONTRACTOR TO DESIGN FINAL CIRCUITS AND SUBMIT SHOP DRAWINGS FOR APPROVAL.
- 2. FIRE PROTECTION SHALL COMPLY WITH NFP 303
- 3. ELECTRICAL SYSTEM SHALL COMPLY WITH ALL APPLICABLE ELECTRICAL CODES, INCLUDING BUT NOT LIMITED TO NEC 555.2 & 555.5. 4. EACH SLIP SHALL HAVE AN ELECTRICAL METER IN THE DOCK UTILITY STATION. THE DOCK UTILITY
- STATION MANUFACTURER SHALL DESIGN AND INSTALL COMPLETE OPERATIONAL WIRELESS TRANSMISSION METER READING AND COMPILING SYSTEM, PLACE OPERATIONAL METER SYSTEM TO RELAY INFORMATION TO A COMPUTER PROGRAM IN THE HARBORMASTER OFFICE, DESIGN, FURNISH, AND INSTALL OPERATIONAL SYSTEM COMPLETE.
- CONTRACTOR SHALL CAP AND SEAL END OF ALL SPARE CONDUITS FOR FUTURE. MAKE WATERPROOF. CONTRACTOR RESPONSIBLE FOR WIRE SIZING.
- 7. ALL ELECTRICAL CIRCUITS (FLOATING DOCKAGE SYSTEM) FOR EACH SYSTEM SHALL PROVIDE FULL LENGTH U.L. LISTED FLEXIBLE TYPE G-CG INSULATED CABLE AND CONNECTIONS AS REQUIRED.
- 8. CONTRACTOR TO PROVIDE FAULT PROTECTION WITHIN INDIVIDUAL DOCK UTILITY STATIONS AND SUBSTATIONS, AS REQUIRED, TO PREVENT STRAY CURRENT.

Breaker	Breaker	Breaker	Wire	Wire Type	Resistance	# of	Wire	Ground	Voltage
Trip	Frame	Poles	Length	wine type	a keolobarrice.	Conductors	Size	Size	Drop %
100	100	2	231	"G" Cable	0.15	3	#1	Included	2.60%
100	100	2	215	"G" Cable	0.15	3	#1	Included	2.42%
100	100	2	183	"G" Cable	0.19	3	#2	Included	2.60%
100	100	2	167	"G" Cable	0,19	3	#2	Included	2.37%
100	100	2	97	"G" Cable	0.31	3	#4	Included	1.12%
100	100	2	134	"G" Cable	0.19	3	#2	Included	1.91%
100	100	2	172	"G" Cable	0.19	3	#2	Included	2.45%
100	100	2	215	"G" Cable	0.15	3	#1	Included	2.42%
100	100	2	253	"G" Cable	0.15	3	#1	Included	2.84%
100	225	2	290	"G" Cable	0.12	3	#1/0	Included	2.61%
100	225	2	0	"G" Cable	-	3	9	Included	0.00%
100	225	2	0	"G" Cable		3	8	Included	0.00%
800	800	2		57		Substation			
400	-	2			See M	DP Design She	eet		

DISCONNECT						
Voltage:	480					
Amperage:	400					
Poles:	2					
Method:	Breaker					
Location:	MDP					
Enclosure:	NEMA 1					

	Customer:
Ed	gewater Resources
	Project:
Port	of Rochester Marina - Phase 1
	Date:
	6/26/2013
	Sheet:
	Substation A
	Design ID:
	13-001803-06

## Revised Electrical Design for Edgewater Resources - Port of Rochester Marina - Phase 1 Substation B

Date: 6/26/2013

				-	Re	ceptacle Lo	ads		5	1														
Circuit ID	Phase	Voltage	20A GFI	30A 120V	50A 120/240V	100A 120/240V	100A 120/208V	Total Rec.	Total Rec. Current	Load Factor	Meter Factor	Conduit Size	Conduit Fill Adj.	Effective Current	Breaker Trip	Breaker Frame	Breaker Poles	Wire Length	Wire Type	Resistance	# of Conductors	Wire Size	Ground Size	Voltage Drop %
B-1	1	120 / 240	0	0	2	0	0	2	100.0	100%	90%	10.00	100%	90.0	100	225	2	387	"G" Cable	0.1	3	#2/0	Included	2.90%
B-2	1	120 / 240	0	0	2	0	0	2	100.0	100%	90%	12	100%	90.0	100	225	2	376	"G" Cable	0.1	3	#2/0	Included	2.82%
B-3	<u> </u>	120 / 240	0	0	1	0	0	1	50.0	100%	90%	J. 1. 1928	100%	45.0	50	100	2	355	"G" Cable	0.19	3	#2	Included	2.53%
B-4	1	120 / 240	0	0	1	0	0	1	50.0	100%	90%	2(#)	100%	45.0	50	100	2	344	"G" Cable	0.19	3	#2	Included	2.45%
B-5		120 / 240	0	4	U	0	0	4	60.0	100%	90%	1.00	100%	54.0	60	100	2	317	"G" Cable	0.19	3	#2	Included	2.71%
B-6		120 / 240	U	4	U	U	U	4	60.0 60.0	100%	90%	-	100%	54.0	60	100	2	285	"G" Cable	0.19	3	#2	Included	2.44%
B-7 B-8		120 / 240		4	2	0	0	2	00.0 100.0	100%	90% 90%	-	100% 100%	54.0 90.0	60 100	100	2	247	"G" Cable "G" Cable	0,19	3	#Z #1	Included Included	2.11% 2.42%
B-9	1	120 / 240	0		2	0	0	2	100.0	100%	90%	-	100%	90.0	100	100	2	172	"G" Cable	0.10	3	#1 #2	Included	2.45%
B-10	1	120 / 240	n n	1 ñ	2	ñ	n n	2	100.0	100%	90%		100%	90.0	100	100	2	124	"G" Cable	0.31	3	#4	Included	2.87%
B-11	ો	120 / 240	Ō	Ō	1	Ō	Ō	1	50.0	100%	90%	-	100%	45.0	50	100	2	81	"G" Cable	0.78	3	#8	Included	2.36%
B-12	1	120 / 240	0	0	2	0	0	2	100.0	100%	90%	-	100%	90.0	100	100	2	70	"G" Cable	0.31	3	#4	Included	1.62%
B-13	()	120 / 240	0	0	2	0	0	2	100.0	100%	90%		100%	90.0	200	225	2	91	"G" Cable	0.12	3	#1/0	Included	0.82%
B-14	1	120 / 240	0	0	2	0	0	2	100.0	100%	90%		100%	90.0	200	225	2	220	"G" Cable	0.077	3	#3/0	Included	1.27%
B-15	1	120 / 240	0	0	1	0	0	1	50.0	100%	90%	500	100%	45.0	100	225	2	274	"G" Cable	0.12	3	#1/0	Included	1.23%
B-16		120 / 240	0		1	0	0	1	50.0	100%	90%	34	100%	45.0	100	225	2	328	"G" Cable	0.12	3	#1/0	Included	1.48%
B-17	1	120 / 240			1	0	U 0		50.0	100%	90%		100%	45.0	100	225	2	0	"G" Cable		3		Included	0.00%
B-18		120 / 240				U	U		U.U 1000 C	100%	90%	1	100%		100	225	2	U	"G" Cable		3 Cubatation		Included	0.00%
Panel Feeder	<u> </u>	120 / 240 480	U	1Z	24	U.	U	30	1380.0 690.0	50%	90%	-	100% 100%	621.0 310.5	800 400	800	2				Substation DP Design She	eet		

	NEL	B-1 B-3	100/2P 50/2P	100/2P 50/2P
Phase:	1	B-5 B-7	60/2P 60/2P	50/2P 60/2P 100/2P
Voltage:	120/240	B-9 B-11	100/2P 50/2P	100/2P
Amperage:	800	B-13 B-15	200/2P 100/2P	200/2P
TVSS:	Yes - 160kA	B-17	100/2P SPACE/2P	100/2P I SPACE/2P
GFI Monitor:	N	1		12 (a)
Enclosure:	Sub			

## Electrical Design for Edgewater Resources - Port of Rochester Marina - Phase 1 Substation D

Date: 4/26/2013

				51		Recep	otacles																		
Circuit ID	Phase	Ŋ	/oltage	20A GFI	30A 120V	50A 120/240V	100A 120/240V	100A 120/208V	TOTAL	Total Current	Load Factor	Meter Factor	Conduit Size	Conduit Fill Adj.	Effective Current	Breaker Trip	Breaker Frame	Breaker Poles	Wire Length	Wire Type	Resistance	# of Conductors	Wire Size	Ground Size	Voltage Drop %
D-1	3	120	/ 208	0	0	0	0	1	1	173.2	100%	90%	0 14 8	100%	155.9	100	225	3	290	"G" Cable	0.12	4	#1/0	Included	4.52%
D-2	3	120	/ 208	0	0	0	0	1	1	173.2	100%	90%	12	100%	155.9	100	225	3	274	"G" Cable	0.12	4	#1/0	Included	2.47%
D-3	3	120	/ 208	0	0	0	0	1	1	173.2	100%	90%	22	100%	155.9	100	225	3	242	"G" Cable	0.15	4	#1	included	2.72%
D-4	3	120	/ 208	0	0	0	0	1	1	173.2	100%	90%	· 12 ·	100%	155,9	100	225	3	226	"G" Cable	0.15	4	#1	Included	2.54%
Panel	3	120	/ 208	0	0	0	0	4	4	692.8	30%	90%	- 24	110%	205.8	400	400	3				Substation			
Feeder	3	0	480	ŝ						300.2				110%	156.0	175	TBD	3			Inform	nation Not Ava	ilable		

3	D-3	100/3P	100/3F
3		SPACE/3P 30/3P	SPACE/
120/208			
400	1		
Yes - 16-kA			
N	1		
Sub	1		
	400 <mark>Yes - 16-kA</mark> N	400 Yes - 16-kA N	120/208 400 Yes - 16-kA N

e 1				

/oltage:	480
Amperage:	500
<sup>o</sup> oles:	2
Method:	Breaker
ocation:	MDP
Enclosure:	NEMA 1
Wire - Trans	former to Utility

	Customer:
E	dgewater Resources
	Project:
Port	of Rochester Marina - Phase <b>1</b>
	Date:
	6/26/2013
	Sheet:
	Substation C
	De sign ID:
	13-001803-06

Phase:	1
Primary Voltage:	480
Secondary Voltage:	120/240
KVA:	200
Enclosure:	Sub
Special (TP-1, etc…)	TP-1
Wire - Panel to Tra	ansformer
Substation	า

DISCONNECT		
Voltage:	480	
Amperage:	400	
Poles:	2	
Method:	Breaker	
Location:	MDP	
Enclosure:	NEMA 1	
Wire - Trans	former to Utility	
See MDP	Design Sheet	

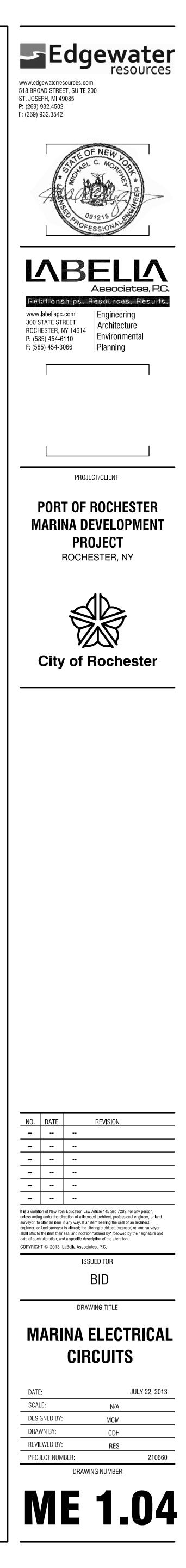
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E	dgewater Resources
	Projec <b>t</b> :
Por	t of Rochester Marina - Phase 1
	Date:
	6/26/2013
	Sheet:
	Substation B
	Design ID:
	13-001803-06

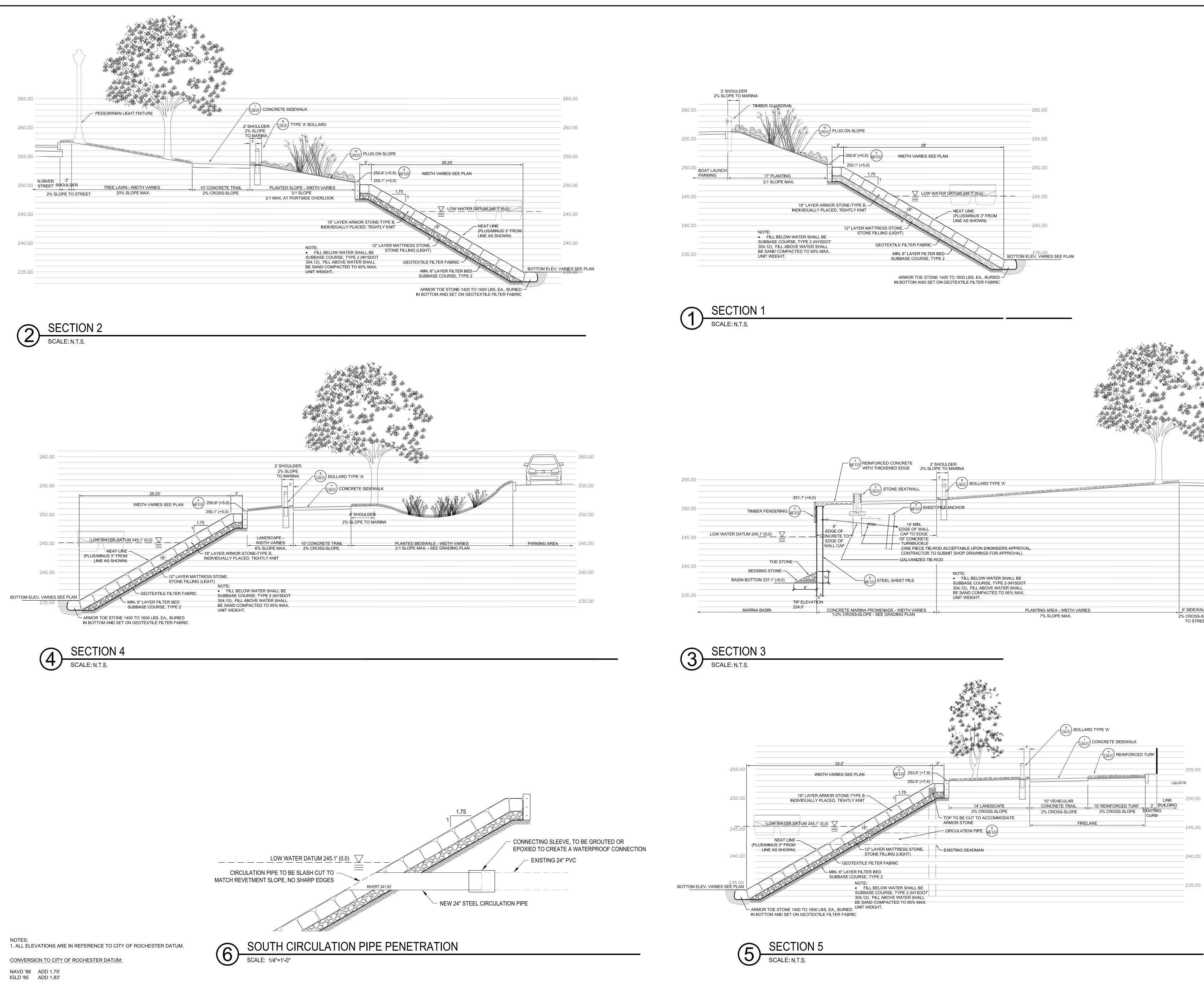
P	D-2	
Р		
'3P		

Phase:	3
Primary Voltage:	480
Secondary Voltage:	120/208
KVA:	150
Enclosure:	Sub
Special (TP-1, etc)	TP-1

Voltage:	480
Amperage:	175
Poles:	3
Method:	TBD
Location:	TBD
Enclosure:	TBD

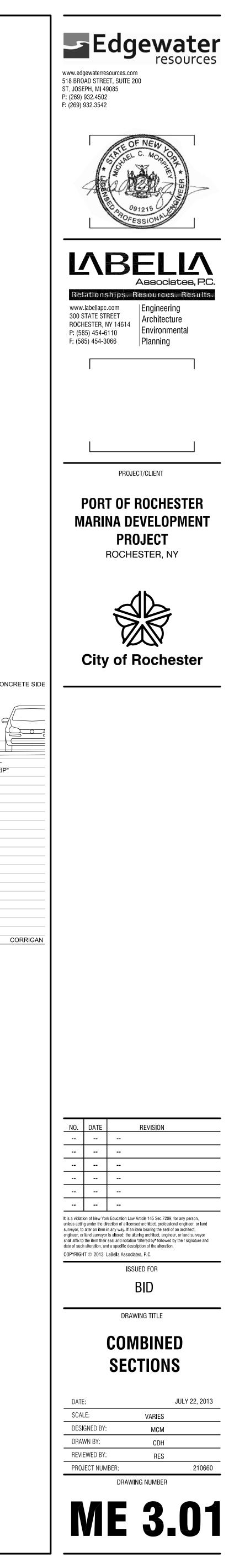
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Edgewater Resource	es
Project:	
Port of Rochester Marina -	Phase 1
Date:	
4/26/2013	
Sheet:	
Substation D	
Design ID:	
12-001803-02	

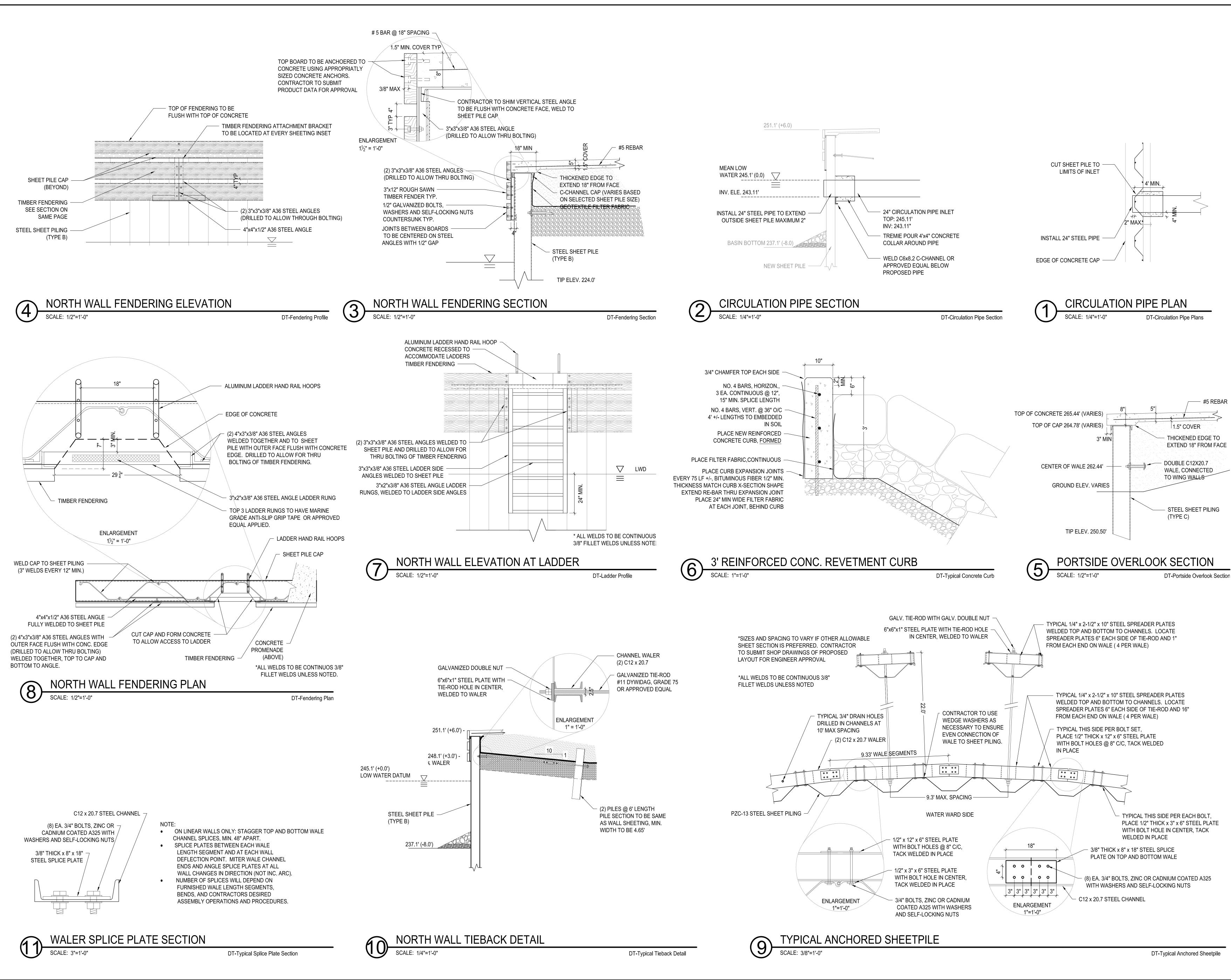


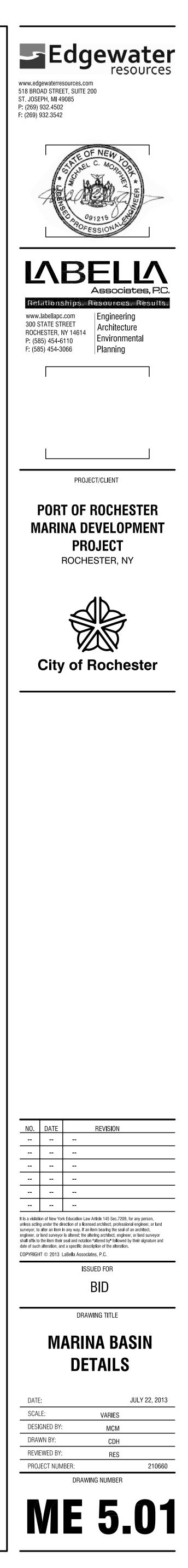


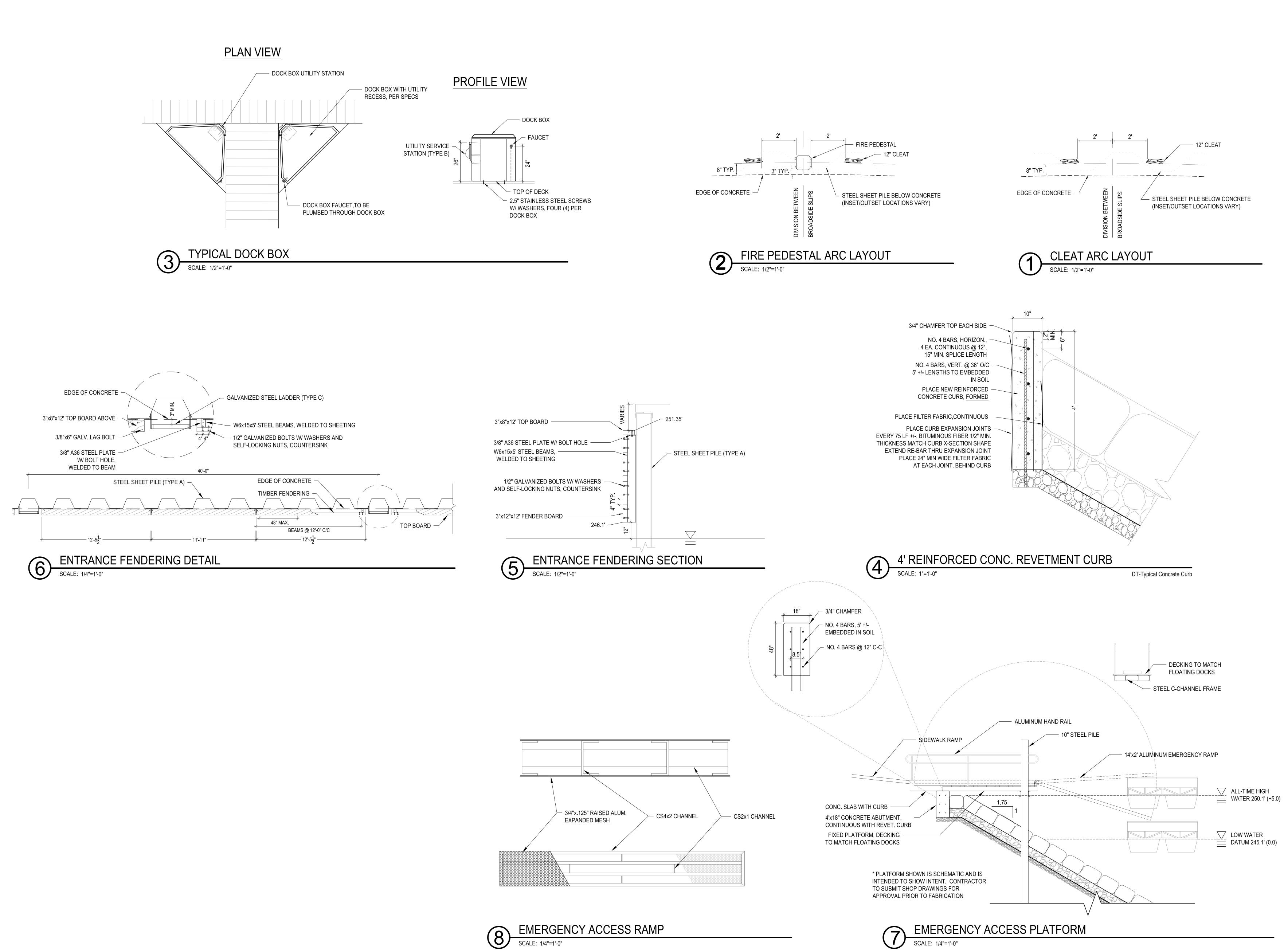


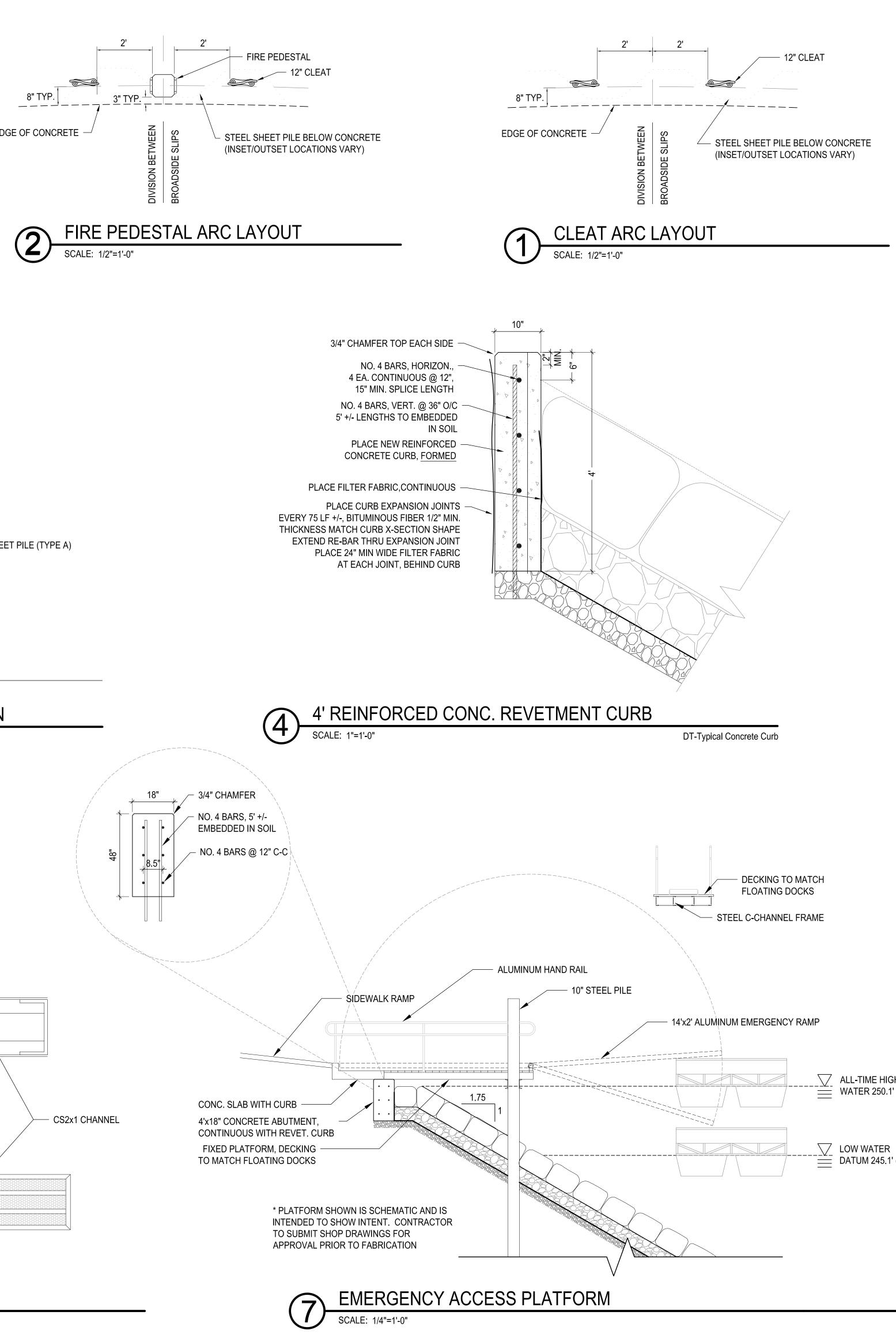
REINFORCED CONCRETE 2'S WE 5.01 REINFORCED CONCRETE 2'S WITH THICKENED EDGE 2% SLO	SHOULDER PE TO MARINA		1 LS5.0	
-			NY JAHIN TANA NY TININA ALA TANA	
5 LS5.01 STONE SEATWALL				1'-
			"SALT	T STRIP"
ME 5.01 SHEET				
(ONE PIECE TIE-R	OD ACCEPTABLE UPON ENGINEERS APPROVAL. ) SUBMIT SHOP DRAWINGS FOR APPROVAL)			
Galvanized Tie-F				
N 8	NOTE: • FILL BELOW WATER SHALL BE			
ME 5.01 STEEL SHEET PILE	SUBBASE COURSE, TYPE 2 (NYSDOT			
	304.12). FILL ABOVE WATER SHALL BE SAND COMPACTED TO 95% MAX.			
	UNIT WEIGHT.		4'-6"	
			PLANTING BED	
CONCRETE MARINA PROMENADE - WIDTH VARIES 1-2% CROSS-SLOPE - SEE GRADING PLAN	PLANTING AREA - WIDTH VARIES 7% SLOPE MAX.	6' SIDEWALK		(
		TO STREET		

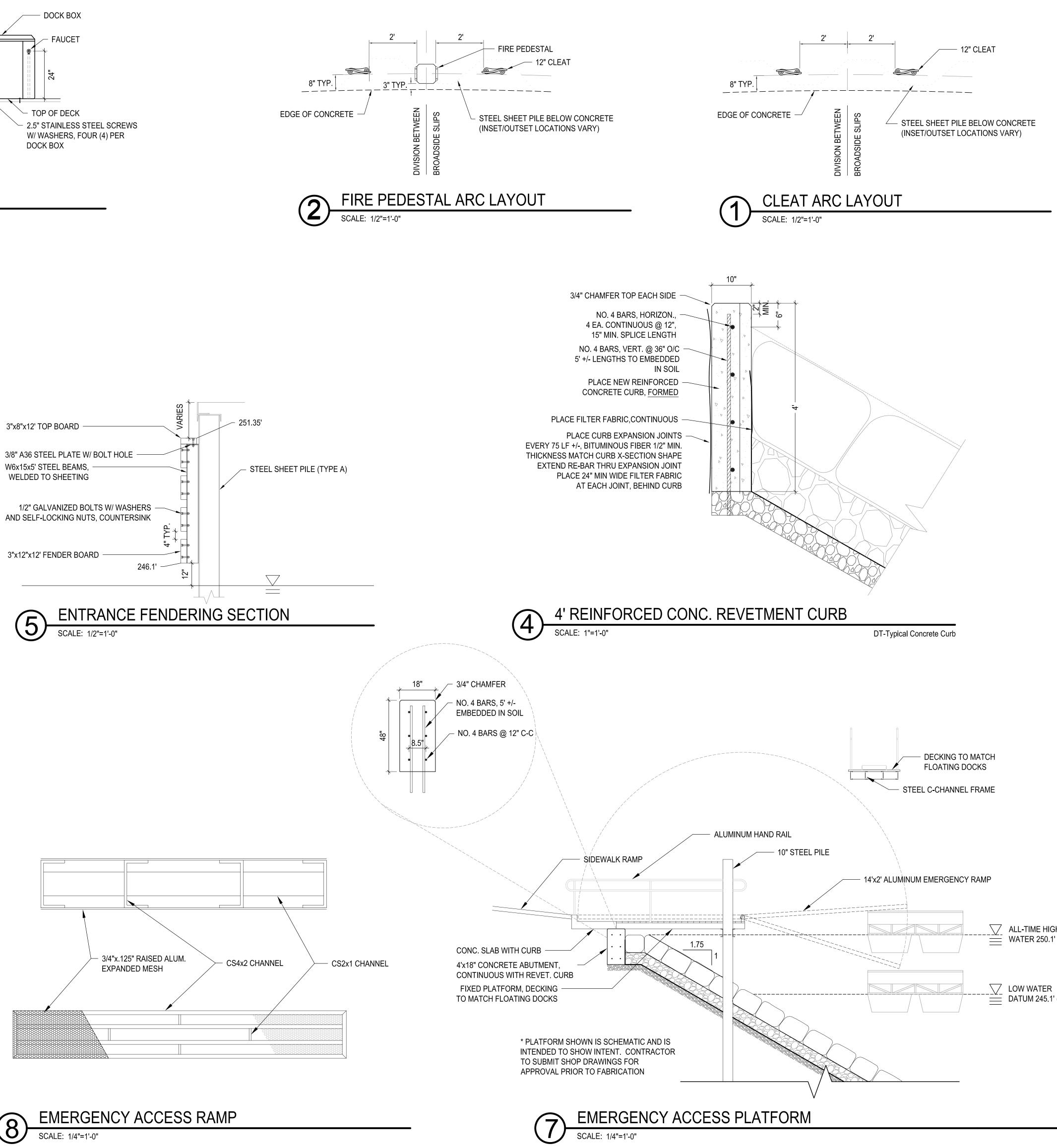


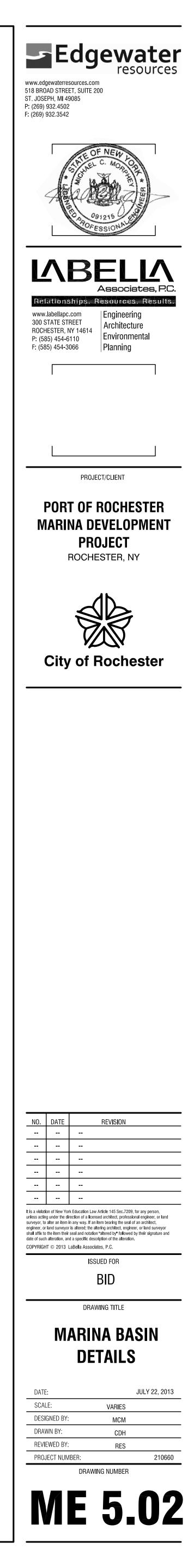


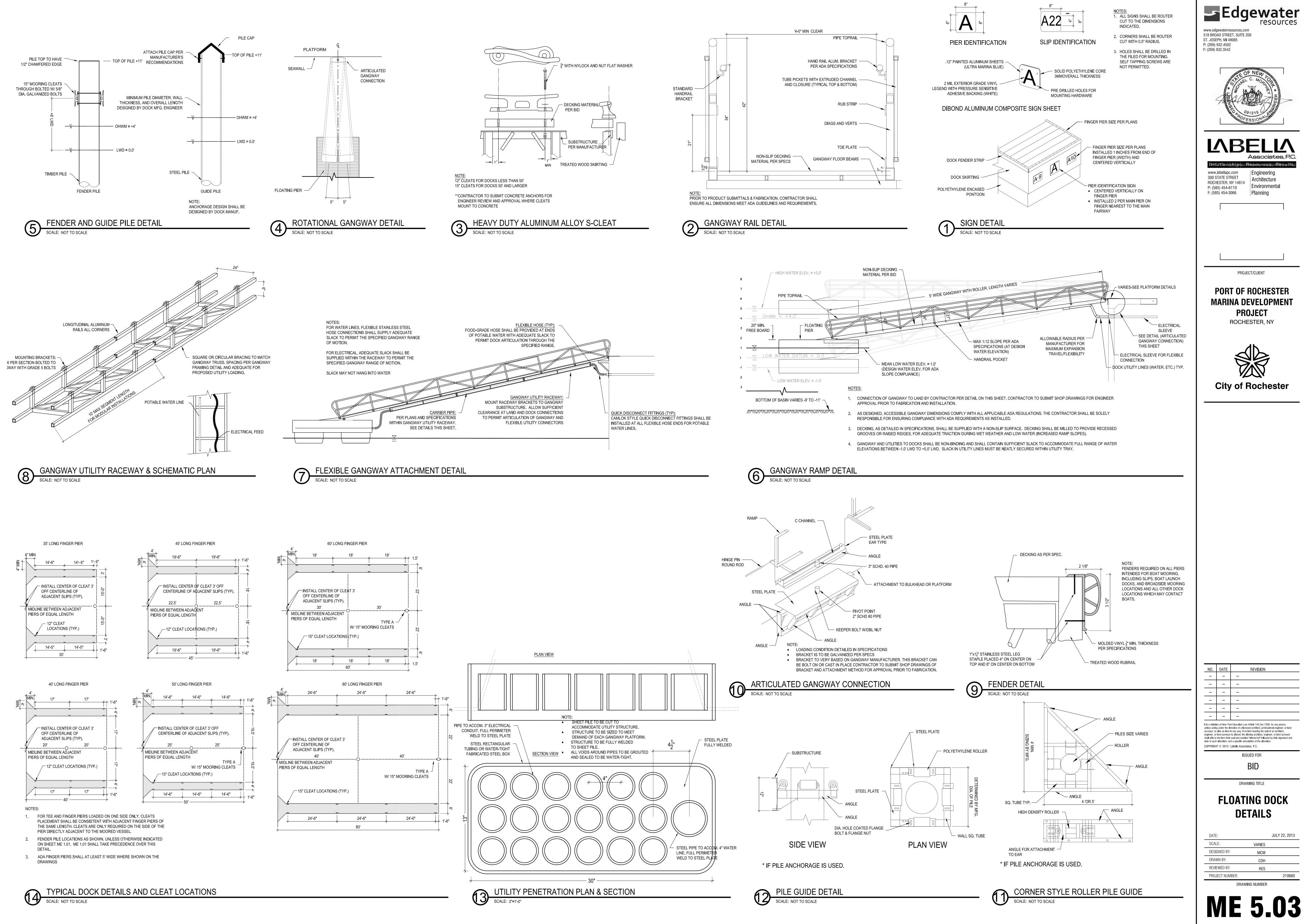


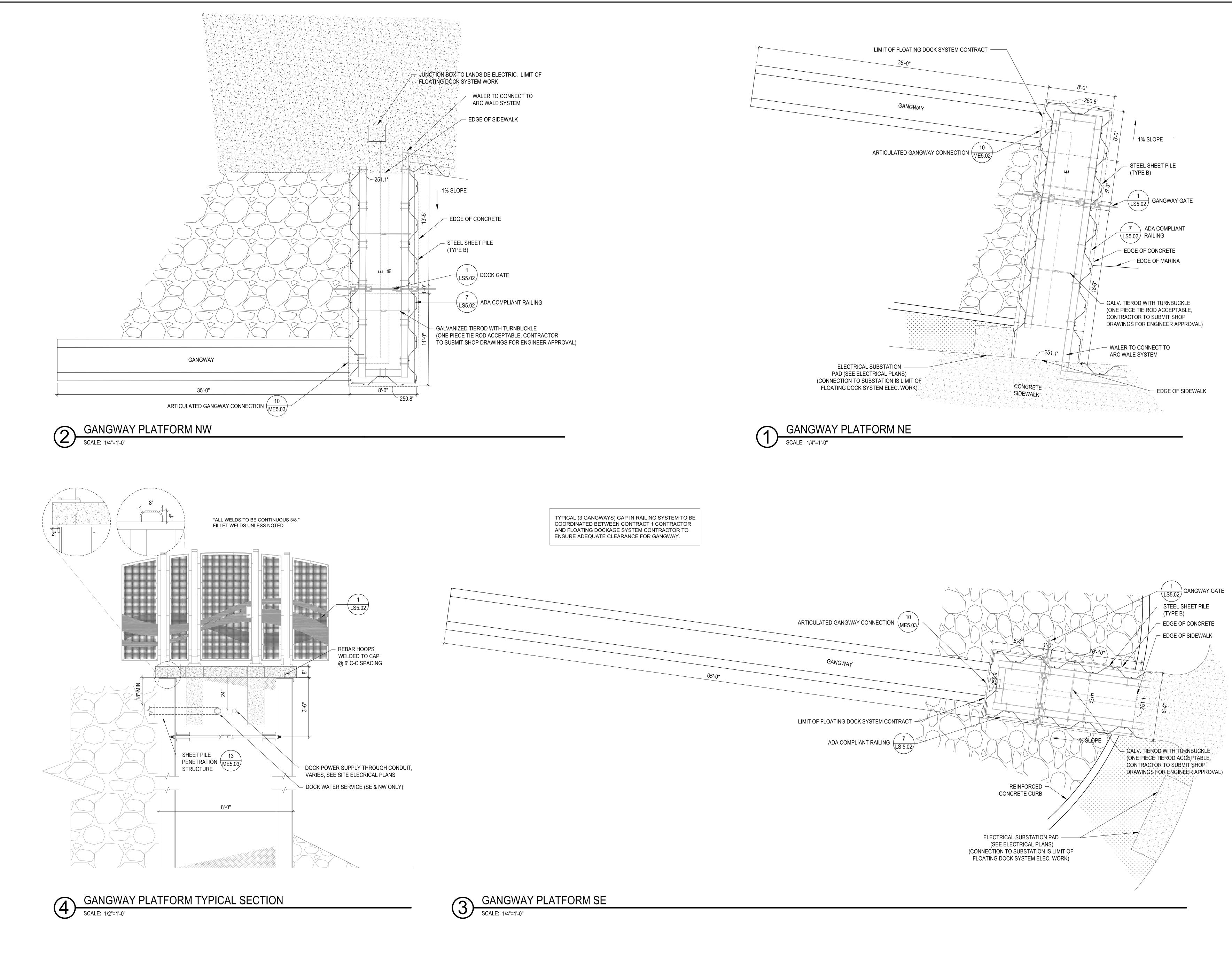


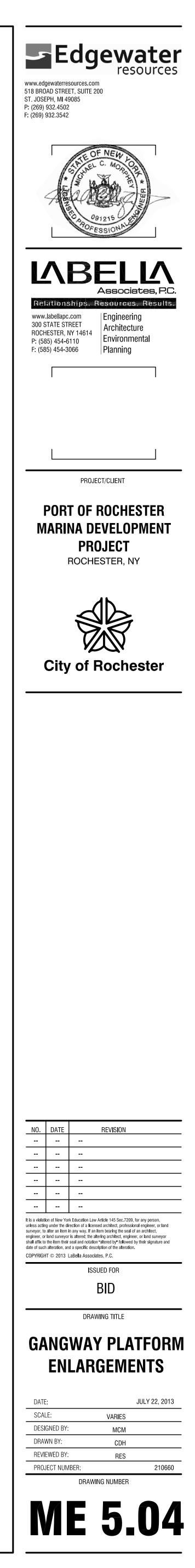


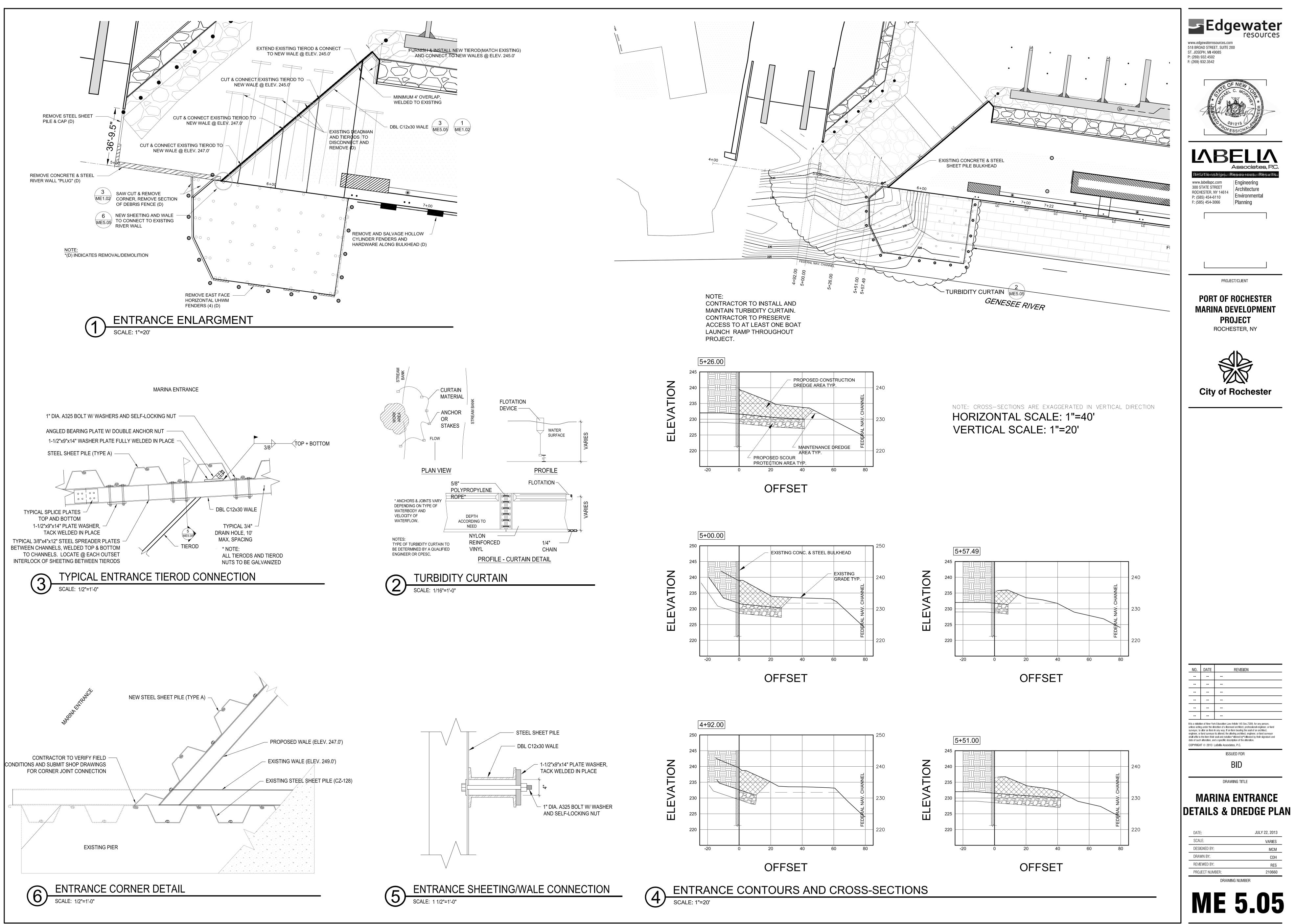


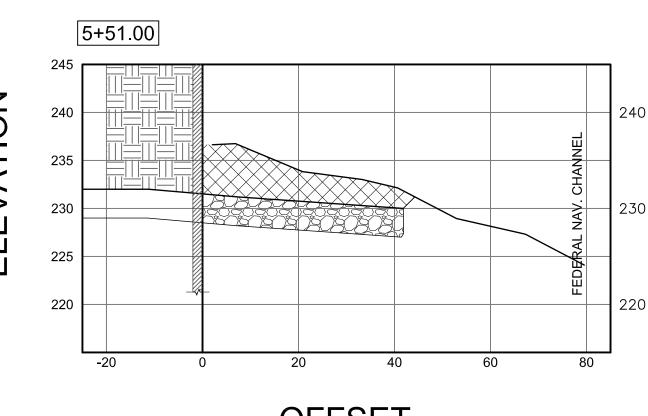


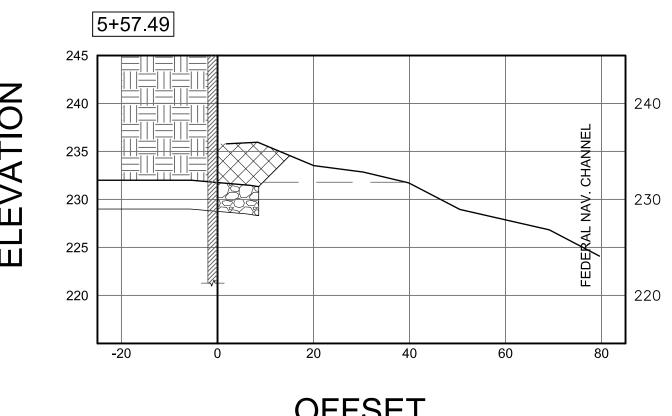


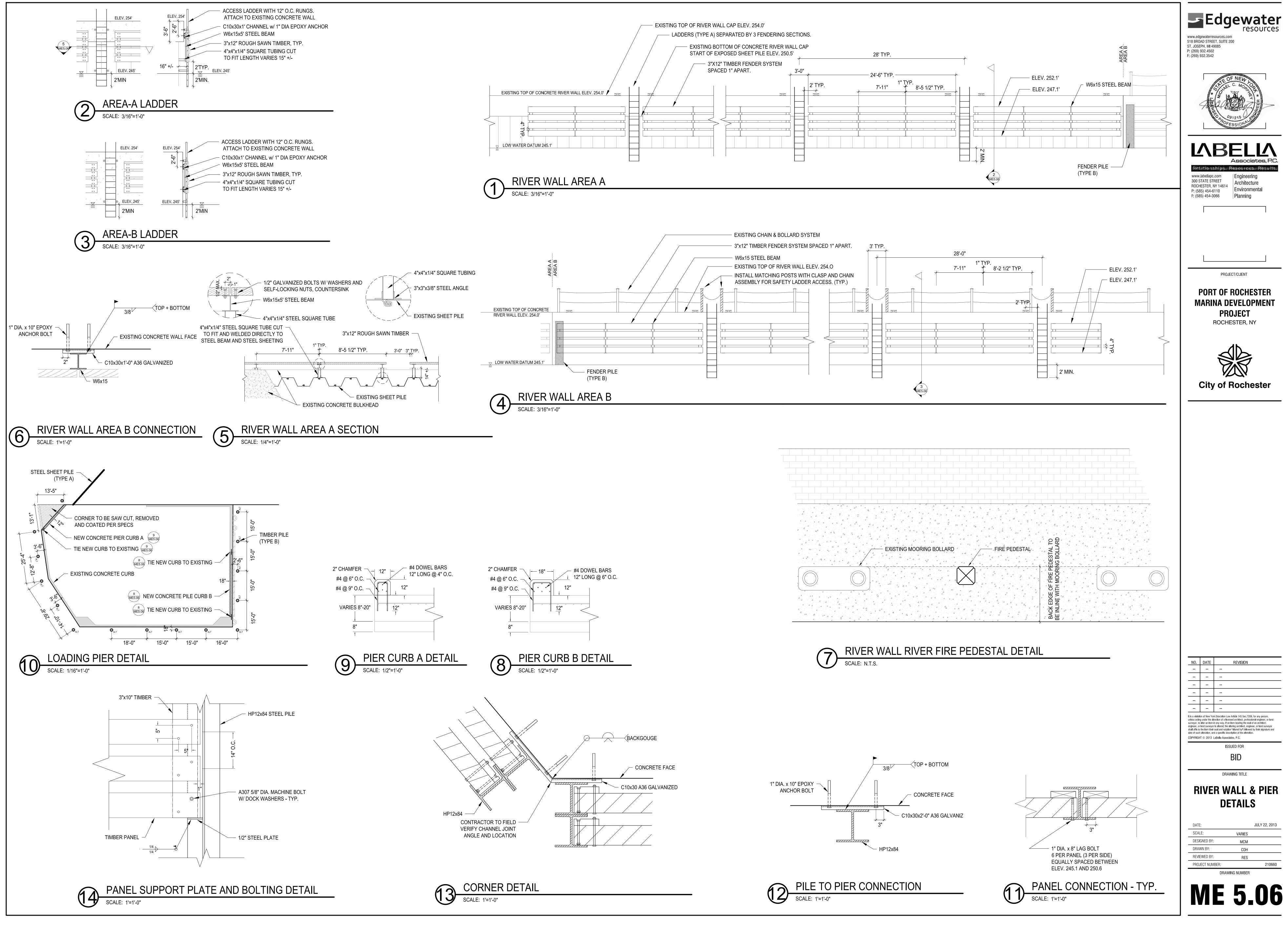


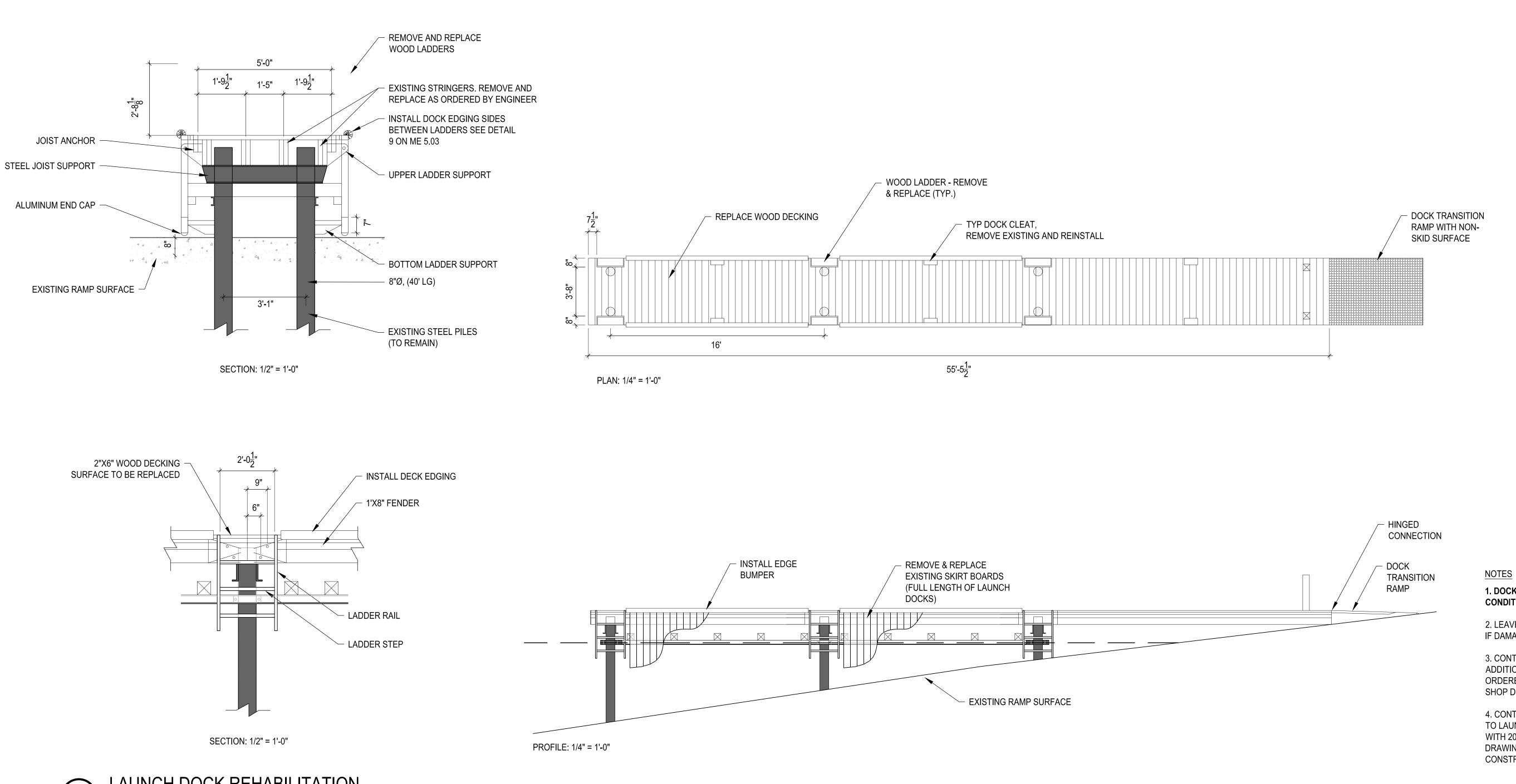














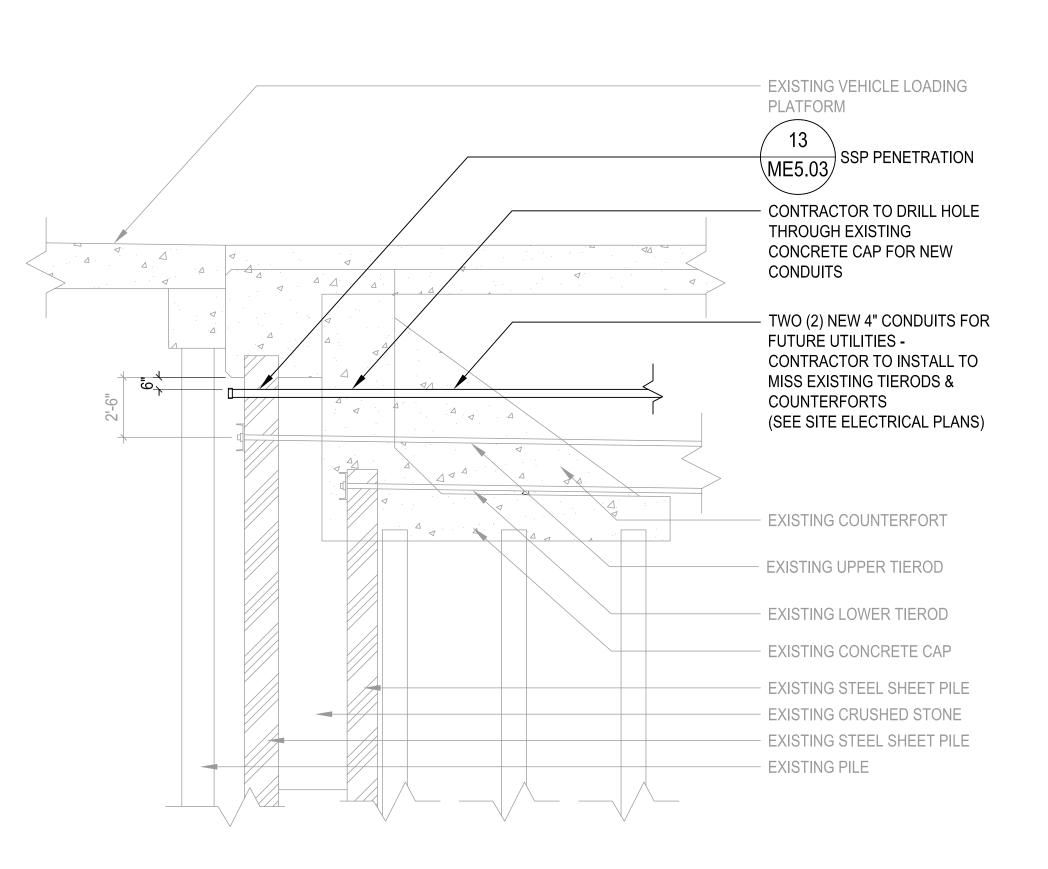
### 1. DOCK STRUCTURE IS SCHEMATIC AS SHOWN. CONTRACTOR TO VERIFY ACTUAL FIELD CONDITIONS/DIMENSIONS.

2. LEAVE ALL STEEL COMPONENTS IN PLACE, UNLESS DAMAGED. IF DAMAGED, REPLACE AS ORDERED BY ENGINEER.

3. CONTRACTOR TO REPLACE WOOD DECKING AND SKIRT BOARDS OF TWO LAUNCH DOCKS. ADDITIONALLY, CONTRACTOR TO REMOVE AND REPLACE ALL OTHER WOOD COMPONENTS AS ORDERED BY ENGINEER. CONTRACTOR TO VERIFY EXISTING DOCK STRUCTURE AND SUBMIT SHOP DRAWINGS FOR ENGINEER REVIEW AND APPROVAL.

4. CONTRACTOR TO CONSTRUCT TRANSITION RAMP FROM BOAT LAUNCH DOCK SURFACE TO LAUNCH DOCK SURFACE AT TWO LAUNCH DOCKS. TRANSITION RAMP MUST COMPLY WITH 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN AND CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR ENGINEER REVIEW AND APPROVAL. RAMP TO BE OF ALUMINUM CONSTRUCTION WITH SLIP RESISTANT SURFACE.

DT-DOCK REHAB



# UTILITY PENETRATION AT LOADING DOCK SCALE: 1/4"=1'-0"

