

# Chatham Fish Pier Observation Deck Replacement

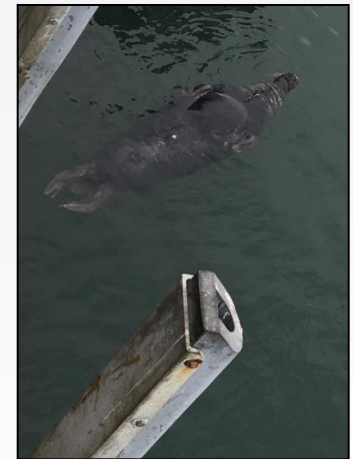
*Presentation to Board of Selectmen - Town of Chatham  
December 19, 2017*

cleengineering



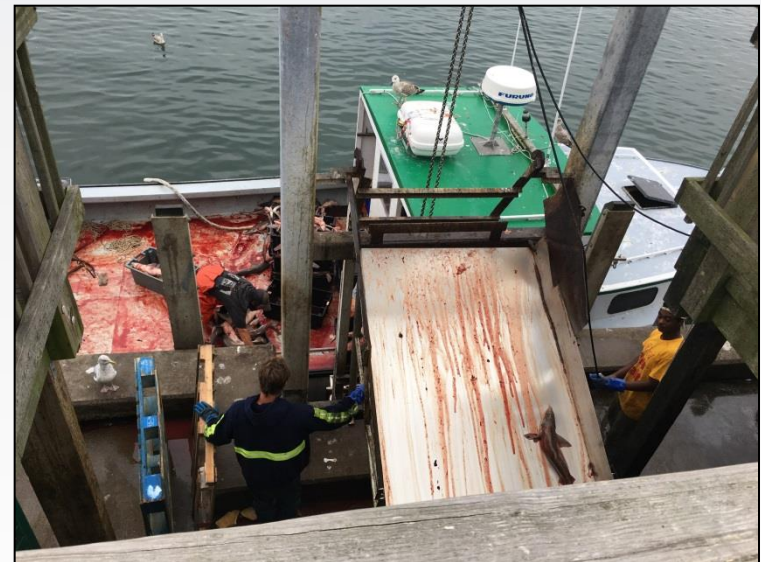
# DESIGN GOALS

- ✓ Deck to be self-supporting (Independent from Fish Packing Building)
- ✓ Comply with relevant building code requirements
  - Provide secondary means of egress for deck (south side deck expansion)
- ✓ Provide ADA handicapped access if at all possible
- ✓ Expand public viewing opportunities, especially of the South Jog
- ✓ Provide improved emergency egress of the second floor of the Fish Packing Building

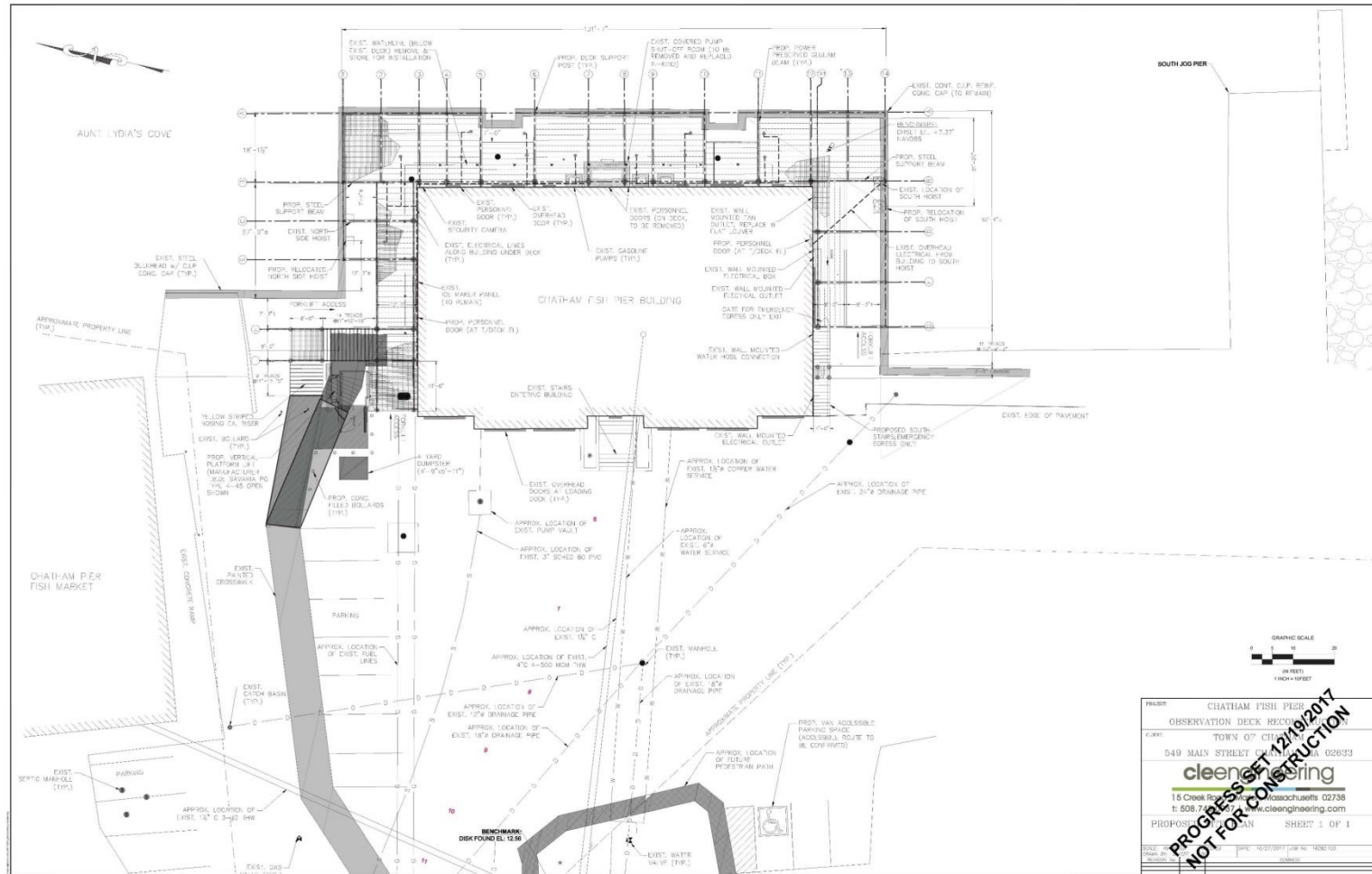


# DESIGN GOALS

- ✓ **Maintain/improve access to and operations of commercial fish areas**
- ✓ **Materials selection to maximize durability and minimize ongoing maintenance**
- ✓ **Provide watertight decking surface to reduce water/contaminant seepage onto the first level of fish offloading/packing area**



# How Design Goals are Addressed in Proposed Project



PROJECT: CHATHAM FISH PIER OBSERVATION DECK RECONSTRUCTION  
 TOWN OF CHATHAM  
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 PROPOSED BY: [Name] SHEET: 1 OF 1

**PROGRESS SET 12/10/2017  
NOT FOR CONSTRUCTION**

## DECK TO BE SELF SUPPORTING

- EXPAND EAST DECK SUPPORTS TO CAP LOG ON BULKHEAD TO REDUCE RISK OF IMPACT FROM OPERATIONS (FORKLIFTS).
- ELIMINATE DECK SUPPORT VIA BUILDING LEDGER. POSTS TO SUPPORT DECK ARE ~1.5 FEET OFF FACE OF BUILDING; REQUIRES FUEL LINE RELOCATION/REPLACEMENT
- CLEARANCE BELOW DECK IS INCREASED TO IMPROVE OPERATIONS (EXISTING TOP OF DECK EL. +20.5 FT, PROPOSED TOP OF DECK EL. +21.75 FT). INCREASED DECK ELEVATION ALSO ELIMINATES DOOR STOOP ON EAST SIDE OF BUILDING AT DECK ELEVATION.
- DESIGN PROVIDES INCREASED AREA FOR PUBLIC VIEWING

# IDEAS EVALUATED FOR ADA HANDICAPPED ACCESS



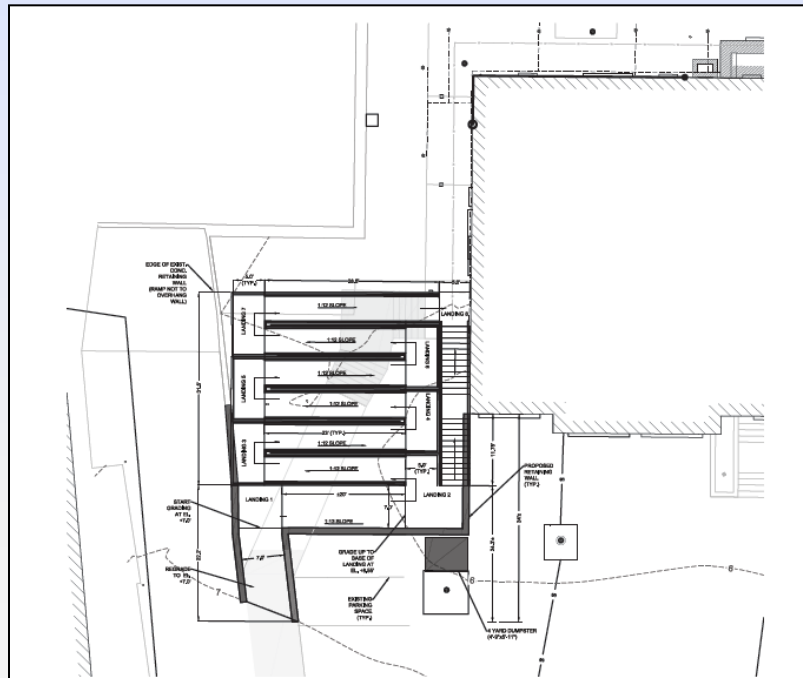
- RAMP CONFIGURATION OPTIONS

- WHARFINGER BUILDING DECK WITH VIDEO FEED

- SINGLE SPAN SKY BRIDGE

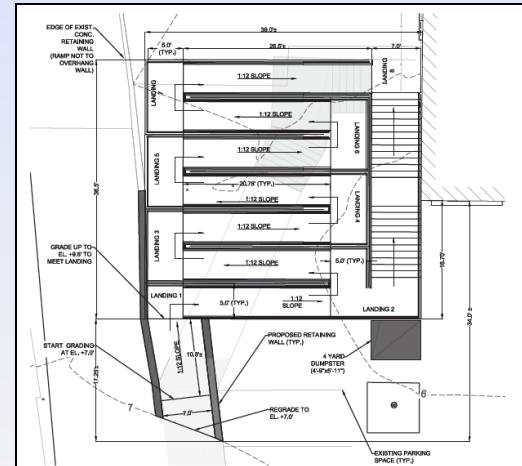
- EXTERIOR VERTICAL PLATFORM LIFT (ELEVATOR)

# ADA HANDICAPPED ACCESS – RAMP OPTIONS



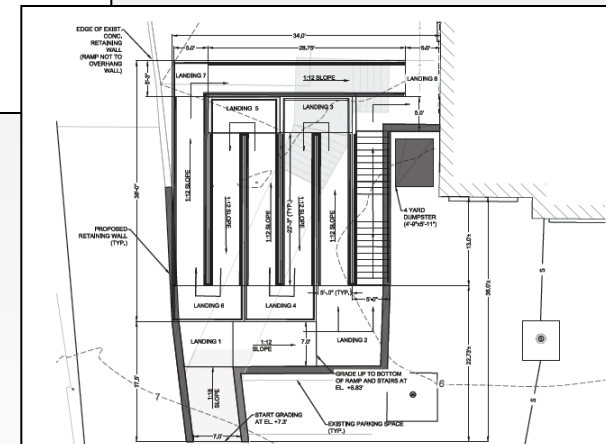
ADA RAMP ALTERNATIVE 1: 5-FOOT WIDE STAIRS & RAMP  
SCALE 1"=4'

ADA Ramp Alternative 1			
Run Number	Length	Vertical Drop @ (1:12)	Landing Elevation
P-Deck El.	-	-	20.5
8	28.4	2.4	20.5
7	23	1.9	18.1
6	23	1.9	16.2
5	23	1.9	14.3
4	23	1.9	12.4
3	23	1.9	10.5
2 (1:13 Slope)	20	1.5	8.5
1	-	Flat	7.0
Grade	-	-	7.0



ADA RAMP ALTERNATIVE 2: 7-FOOT WIDE STAIRS & RAMP  
SCALE 1"=4'

ADA Ramp Alternative 2			
Run Number	Length	Vertical Drop @ (1:12)	Landing Elevation
P-Deck El.	-	-	20.5
8	26.6	2.2	20.5
6	20.8	1.7	18.1
5	20.8	1.7	16.2
4	20.8	1.7	14.3
3	20.8	1.7	12.4
2	20.8	1.7	10.5
1	20.8	1.7	8.6
Grade	20.8	0.9	7.0
Total Change in El.	10.875	7.0	



ADA Ramp Alternative 3			
Run Number	Length	Vertical Drop @ (1:12)	Landing Elevation
P-Deck El.	-	-	20.5
8	28.25	2.4	20.5
7	22.25	1.8	18.1
6	22.25	1.8	16.2
5	22.25	1.8	14.4
4	22.25	1.8	12.6
3	22.25	1.8	10.7
2	22.25	1.8	8.9
1 (1:13 Slope)	20	1.5	7.0
Grade	20	0.8	7.0

ADA RAMP ALTERNATIVE 3: 5-FOOT WIDE STAIRS  
W/ OFFSET LANDING & RAMP  
SCALE 1"=4'

# ADA HANDICAPPED ACCESS – RAMP OPTIONS

- Ramps would require approximately (8) 20+ foot long ramp runs plus landings to achieve total change vertical rise required (approximately 15 feet), in accordance with ADA requirements for maximum slope (1V:12H) and maximum ramp run length (30 feet).
- Large area required for ramps and stairs and landings (approximately 1200 SF)
- Not considered practicable or usable for people in wheel chairs due to excessive length
- Interference with commercial operations
- Ramps not recommended by Town of Chatham, Committee for Disabled

# ADA HANDICAPPED ACCESS – EXTERIOR VERTICAL PLATFORM LIFT BY SAVARIA

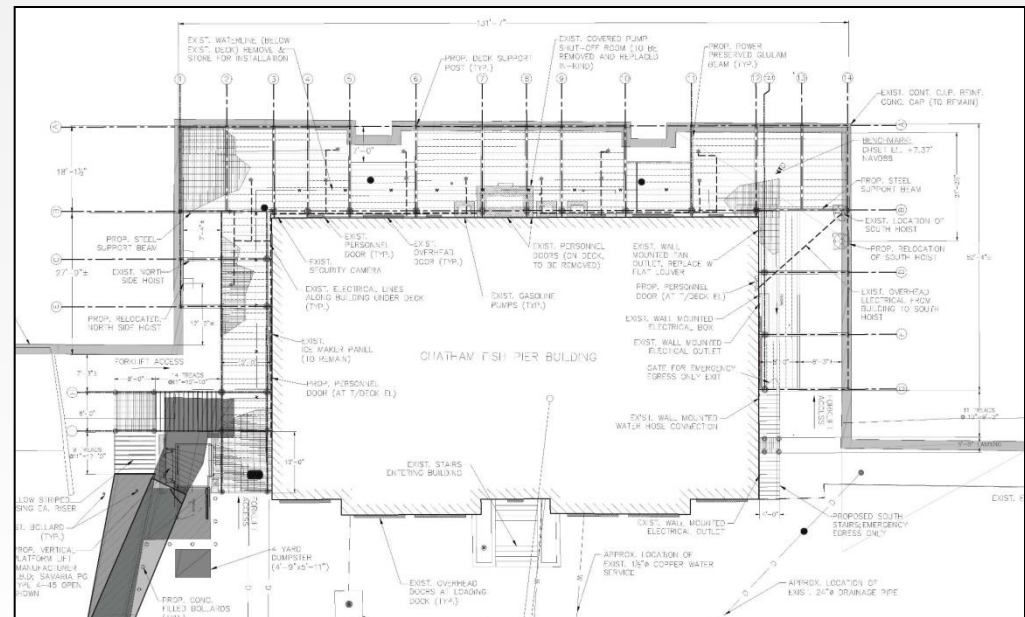


# **ADA HANDICAPPED ACCESS EXTERIOR VERTICAL PLATFORM LIFT**

- **Flexible Design with Full Range of Entrance & Exit Configurations**
- **Extensive Finish Options**
- **Emergency Back-Up Systems**
- **Easy Operation (On-Board Controls with Keyed or Keyless Option)**
- **Machine Roomless**
- **3 Year Parts Manufacturer Warranty**
  
- **Optional Equipment: Platform Gage, Top Landing Gate, Upper/Lower Landing Door, Emergency Light and Alarm, Motorized Door, Public Building Package, Outdoor Package, Weather Resistant Lock, Folding Seat, ADA-Hands Free Phone, Automatic Swing Door Operator**

# IMPROVED EMERGENCY EGRESS OF SECOND FLOOR OF FISH PACKING BUILDING

- ✓ Current egress is through mechanical / equipment room
- ✓ Expansion of Deck Areas to North, West and South
- ✓ Addition of Personnel Doors
- ✓ Deck and stairs on south side of building
- ✓ Misc. Carpentry for Personnel Doors, Removal of Hooded Vents, etc.



# MATERIAL CONSIDERATIONS

## • DECKING OPTIONS

- TREX SELECT COMPOSITE DECKING WITH DEXERDRY
- TREX SELECT COMPOSITE DECKING WITH TREX RAINESCAPE
- LUMBERROCK COMPOSITE TONGUE AND GROOVE DECKING
- VERSADECK VERSADRY ALUMINUM DECKING SYSTEM
- ADMIRAL SPACEMAKER DECKING SYSTEM

## • RAILING (COMPOSITE MATERIALS VS. TIMBER)

## • ANTHONY FOREST PRODUCTS – POWER PRESERVED GLULAM BEAMS & COLUMNS AND STAINLESS STEEL

## • MAXIMIZE DURABILITY AND MINIMIZE ONGOING MAINTENANCE

# MATERIAL CONSIDERATIONS

## Admiral SpaceMaker Decking System:



# PROPOSED RAILING DESIGN

## COMPOSITE MATERIAL CAP RAIL WITH MESH INFILL





# COST ESTIMATE

## CHATHAM FISH PIER - OBSERVATION DECK RECONSTRUCTION: BUDGET ESTIMATE

### MATERIAL ESTIMATE

Description	Units	Quantity	Cost Per Unit	Extended	Reference
Sonotube Foundations	EA	28	\$ 250.00	\$ 7,000.00	Material Only
7x7 Parallam PSL Plus Post	LF	880	\$ 20.00	\$ 17,600.00	Tru-Joist, Quote from Falmouth Lumber
7x7 Parallam PSL Plus Post	LF	88	\$ 20.00	\$ 1,760.00	Tru-Joist, Quote from Falmouth Lumber
HSS 6x6 Steel Posts	LF	80	\$ 15.00	\$ 1,200.00	Quote from Raymond Piling, ASTM A500, Grade B
7"x18" Pressured Power Beams	EA	21	\$ 650.00	\$ 13,650.00	Extrapolated from 20 foot Length Quote
7"x18" Pressured Power Beams	EA	6	\$ 325.00	\$ 1,950.00	Extrapolated from 20 foot Length Quote
W10x33 Steel Beams (CWT = Per 100 lbs)	CWT	15	\$ 70.00	\$ 1,050.00	Quote from Raymond Piling, ASTM A572 or A992
6x12 Timber Fascia Joists	LF	400	\$ 30.00	\$ 12,000.00	Use 400 LF to Cover Stair Stringers
4x12 Timber Interior Joists	LF	2500	\$ 25.00	\$ 62,500.00	
Admiral SpaceMaker Decking System	LS	1	\$ 65,000.00	\$ 65,000.00	Quote from Cape Cod Lumber as Basis then Adjusted for Rev. SF
Timber Railing	LF	500	\$ 30.00	\$ 15,000.00	Perimeter - Use 500 LF with Composite Materials
Misc. Steel Hardware for Connections	LS	1	\$ 150,000.00	\$ 150,000.00	Estimated - Stainless Steel
<b>TOTAL MATERIALS</b>				<b>\$ 348,710.00</b>	

### LABOR ESTIMATE

Description	Units	Quantity	Cost Per Unit	Extended	Reference
Install Sonotubes	EA	28	\$ 750.00	\$ 21,000.00	
Install Posts, Joists and Beams and Connections and Decking	SF	3300	\$ 75.00	\$ 247,500.00	
Install Admiral SpaceMaker Decking		w/Deck Construction		\$ -	
Install Timber Railing	LF	500	\$ 70.00	\$ 35,000.00	
<b>TOTAL LABOR</b>				<b>\$ 303,500.00</b>	

### ALLOWANCES

Description	Units	Quantity	Cost Per Unit	Extended	Reference
Demolish and Reconstruct Shed	LS	1	\$ 3,000.00	\$ 3,000.00	
Carpentry Allowable (Personnel Doors - Add and Delete, Louvers, Re-Shingle North Side and as needed )	LS	1	\$ 50,000.00	\$ 50,000.00	
Re-grade and Re-pave Non-Utility Areas	LS	1	\$ 30,000.00	\$ 30,000.00	Budget Number Includes Trenching for NOAA tide gage
Reconstruct South Side Hoist Labor + Materials	LS	1	\$ 25,000.00	\$ 25,000.00	Budget Number
V1504 Savaria Vertical Platform Lift Labor + Materials	LS	1	\$ 40,000.00	\$ 40,000.00	Quote from 101 Mobility
Fuel Line Relocation and Restoration - Labor + Materials	LS	1	\$ 150,000.00	\$ 150,000.00	Budget Number
<b>TOTAL ALLOWANCES</b>				<b>\$ 298,000.00</b>	

TOTAL COST MATERIALS + LABOR + ALLOWANCES

\$ 950,210.00

20% CONTINGENCY

\$ 190,042.00

TOTAL PRELIMINARY ESTIMATE

\$ 1,140,252.00

\$1.2 Million

QUESTIONS?