Port of Alaska – T2 Options

May 17th, 2024

T2 Independent Cost Estimate (ICE)

- MOA contracted Kelly McNutt Consulting (KMC) to provide ICE services
- Three T2 alternatives were required by the contract scope
  - Base – 69’x938’ wharf with no ship to shore (STS) container crane provisions
  - Alternate 1 – 69’x938’ wharf with waterside crane rail provisions only
  - Alternate 2 – 120’x938’ wharf with full STS container crane provisions
- ASTM Class 3 estimates with an accuracy range of -15% to +20%

Disciplines of Work

- Ground Improvements
- Slope Renovations
- Maintenance Dredging
- Existing Dock Removal
- Civil/Site Work
- Electrical
- New Wharf Construction
- Dock Utilities

KMC CONSTRUCTION CONSULTING

T2 Base Assumptions

- Scope
  - 69’x938’ wharf
  - No cost for STS crane provisions
- Schedule
  - ICE estimated at two years of construction

T2 Alternate 1 Assumptions

- Scope
  - 69’x938’ wharf
  - Includes additional cost for waterside crane rail piling, crane rail, and $500K for additional electrical requirements

- Schedule
  - ICE estimated at two years of construction

T2 Alternate 2 Assumptions

- Scope
  - 120’x938’ wharf
  - Includes additional cost for wider wharf and full STS crane provisions
    - Provisions include waterside/landside crane rail piling, crane rails, and $1M for additional electrical requirements
- Schedule
  - ICE estimated at two years of construction (2029-2030); potential third year of wharf construction (2031) will likely be needed based on experience from T1

Terminal 2 Base Bid and Alternates

Base Bid - 69'x938' Wharf - $401,028,541.79
- No Ship to Shore container crane provisions
- Three Trestles – 327'
- Deck Area – 107,478 SF (wharf and trestles)
- 72" Pipe Pile – 126 EA

Alternate 1 – 69'x938' Wharf - $422,049,615.10
- Waterside crane rail and support substructure
- Three Trestles – 327'
- Deck Area – 107,478 SF (wharf and trestles)
- 72" Pipe Pile – 149 EA

Alternate 2 – 120'x938' Wharf - $478,972,913.99
- Provisioned for Water and Landside crane rails for ship to shore container cranes.
- Three Trestles – 277'
- Deck Area – 153,424 SF (wharf and trestles)
- 72" Pipe Pile – 190 EA

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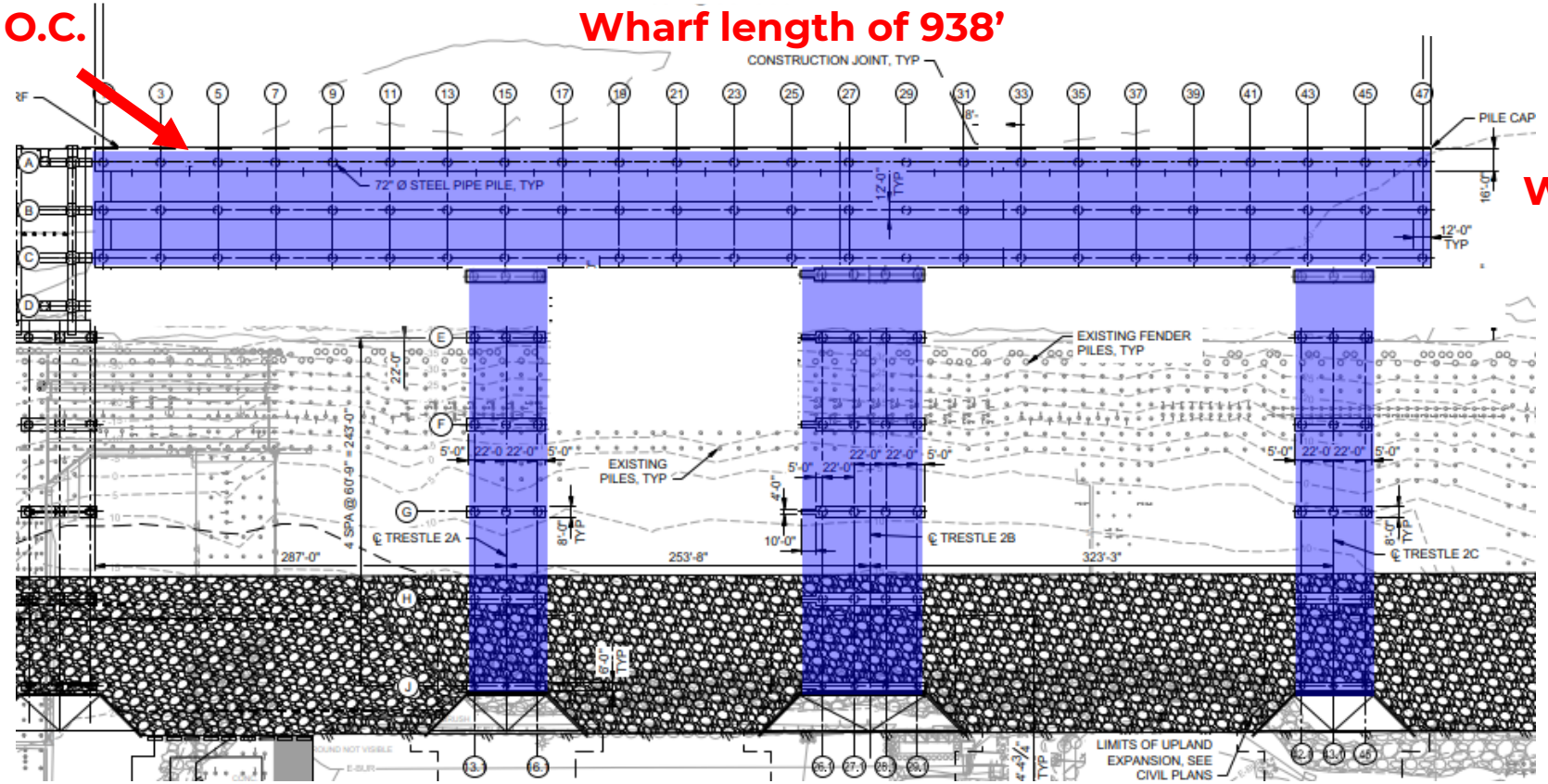
T2 Options

- T2 at 69 feet wide with no provisions for future container cranes.
- T2 at 69 feet wide with a waterside container crane rail.
- T2 at 120 feet wide with full container crane rails.
- Methods and cost to retrofit a future waterside container crane rail.
- Methods and cost to expand with a future landside container crane rail.

Baseline at 69’ wide, no crane rail

Pile spacing 40’ O.C.

Wharf length of 938’

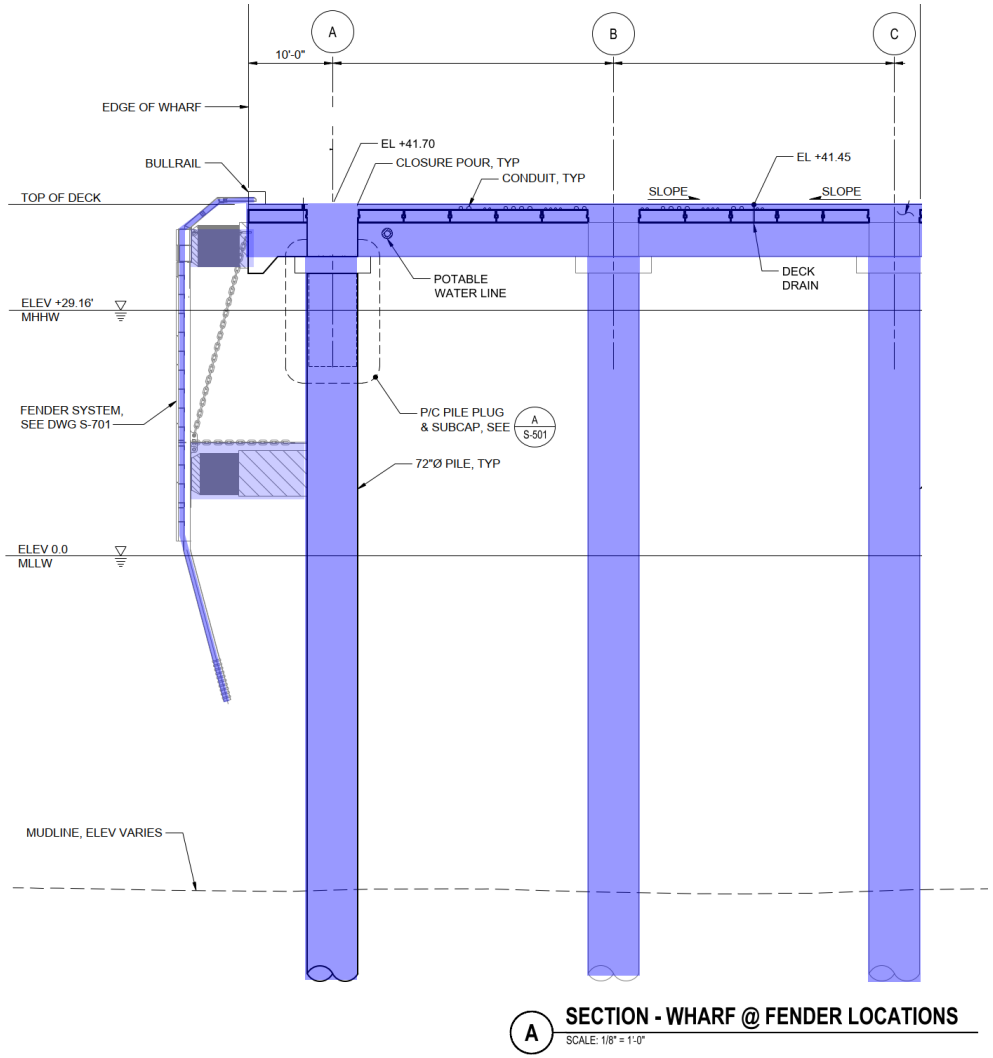


Wharf width of 69’

Baseline 69 ft, no crane rail

- Current plan without provisions for future container cranes
- Front row piling spaced at 40’ O.C.
- Cost $401M per ICE
  - ASTM Class 3 Estimate (-15% to +20%)
  - Midpoint of construction - Dec 2029

Wharf width of 69’



Additional Requirements for Cranes

- Additional piling under crane rails
- Additional power to supply cranes and in deck cable trench
- Additional hardware for crane stops and stowage

Crane Support

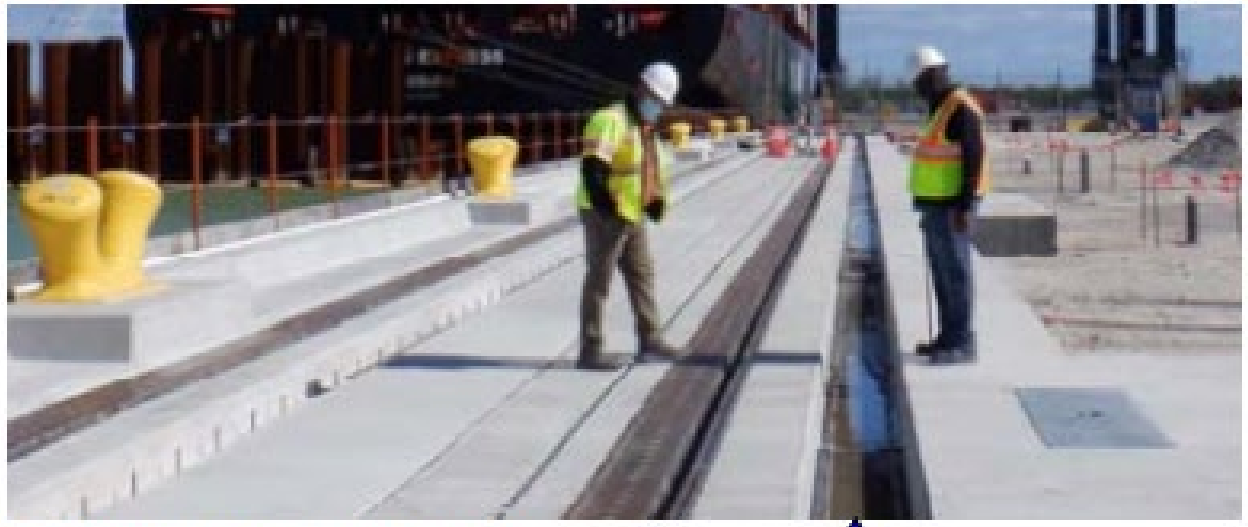
Crane tie-downs connected to large link plates anchored into wharf in wharf socket. Design loads range from 200,000 to 1,000,000 pounds

Crane stowage pin in wharf crane stowage pin socket. Design loads range from 200,000 to 650,000 pounds.

Crane wheels. Design loads range from 200,000 to 450,000 pounds per wheel depending on crane and loading condition

Rail in rail trench. AC fill typical around rail, i.e., only rail head showing. Rail trench in wharf is around 8" deep and 12" wide

Crane Power



Rail power cable trench without cover (during construction)

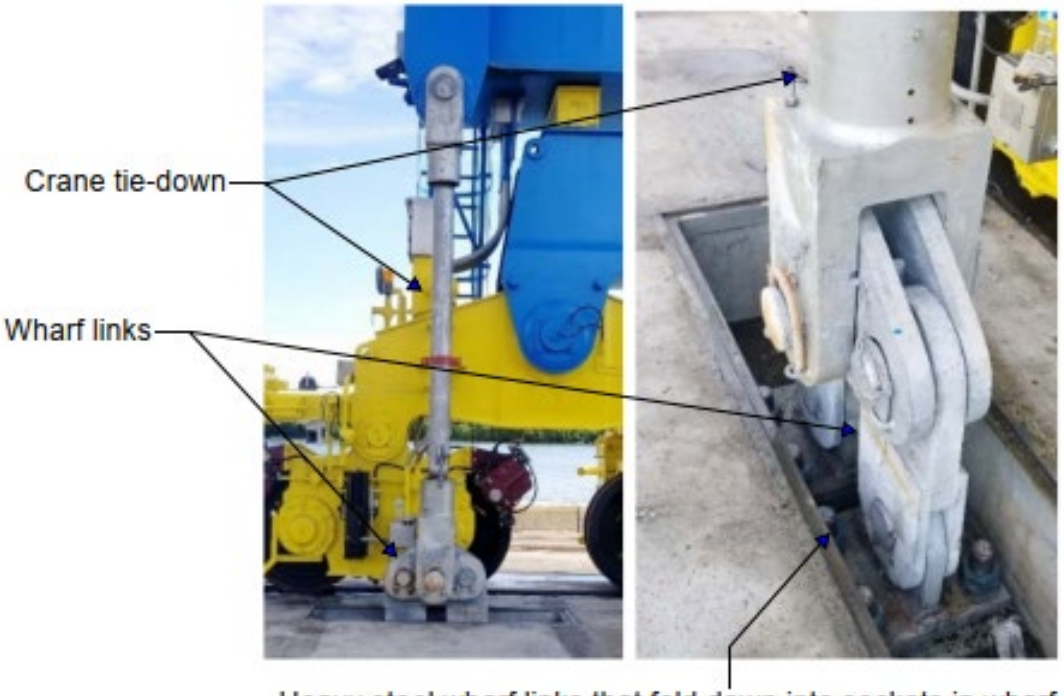
Rail trench without rail system

Power vault for connecting crane power cable to power lines from land. Photo during construction with testing occurring.

Crane Stops

Stop at rail ends to stop cranes from running off ends of rails if blown down the rails in unexpected severe wind conditions. Design loads range from 300,000 to 1,000,000 pounds per rail.

Crane Stowage



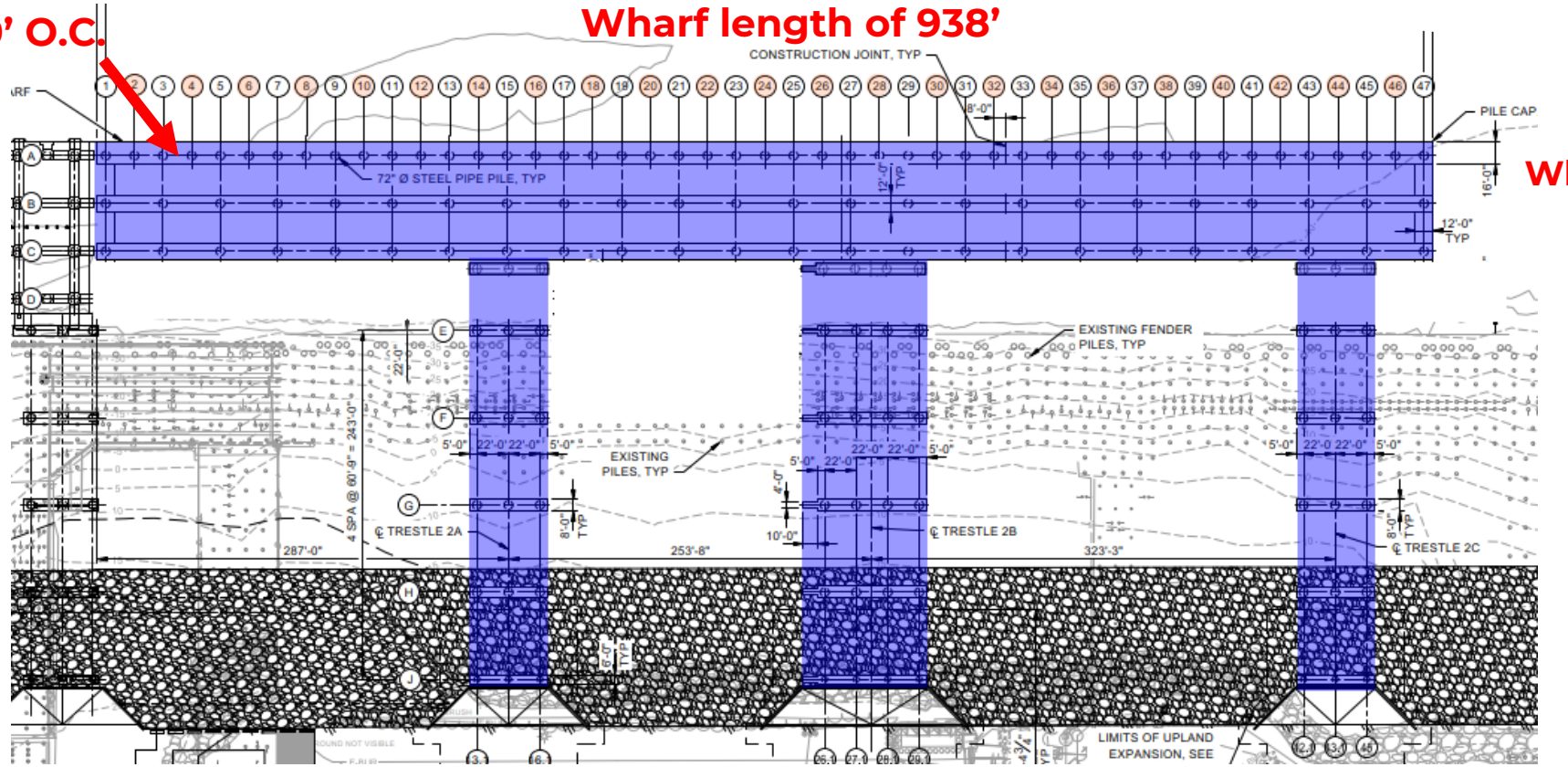
Heavy steel wharf links that fold down into sockets in wharf. Sockets dimension vary. The one shown is about 12" wide x 12" deep x 42" long. Heavy anchor rods are cast deep into crane girder.

Stowage pin socket is a heavy steel fabrication that is cast into the wharf. Socket is typically about 12" wide x 12" deep x 24" long. Anchors are cast deep into crane girder.

Baseline at 69’ wide, plus waterside crane rail

Pile spacing 20’ O.C.

Wharf length of 938’

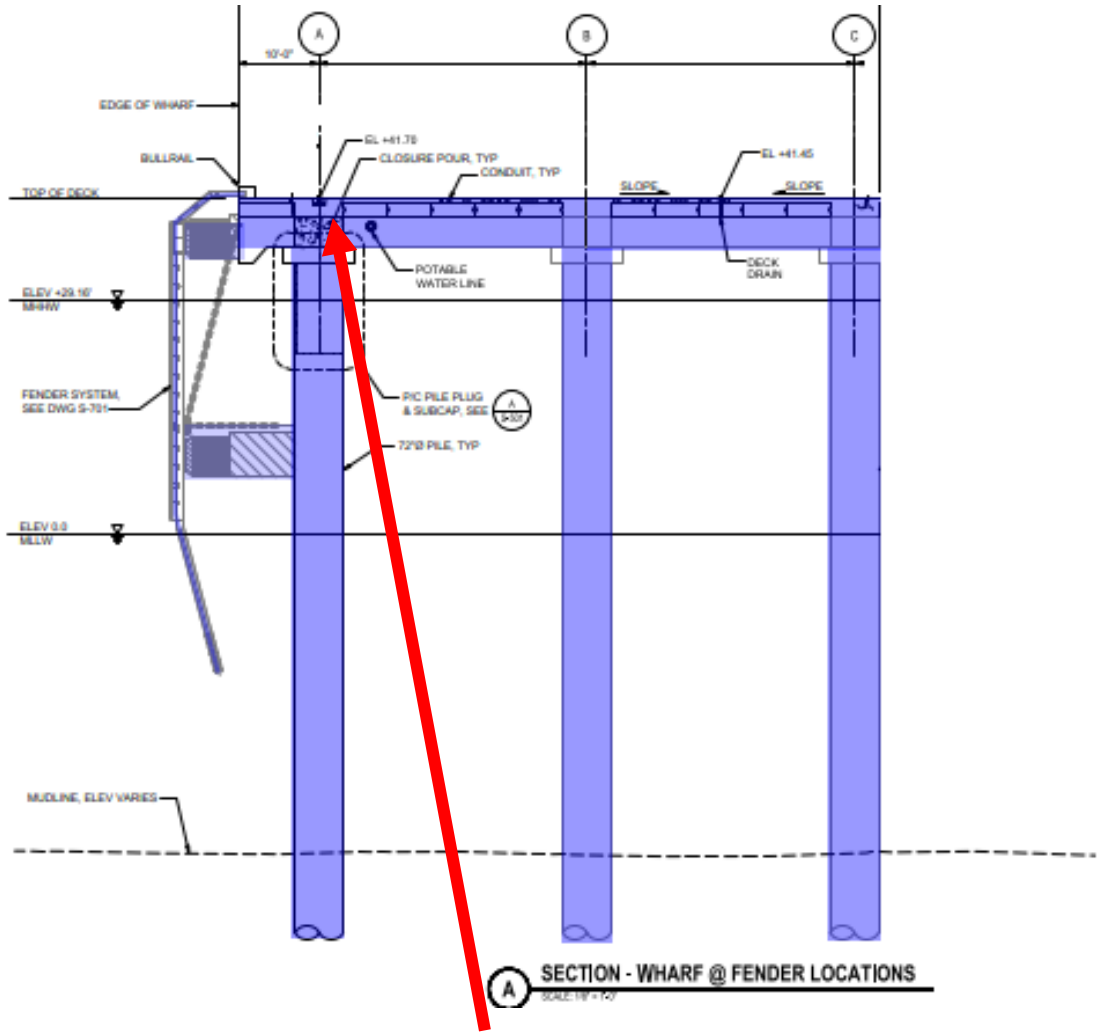


Wharf width of 69’

Baseline 69 ft, plus waterside crane rail

- Installs waterside crane rail now
- Front row piling spaced at 20’ O.C.
- Install cast in place cable trench
- Cost $422M per ICE
  - ASTM Class 3 Estimate (-15% to +20%)
  - Midpoint of construction - Dec 2029

Wharf width of 69’

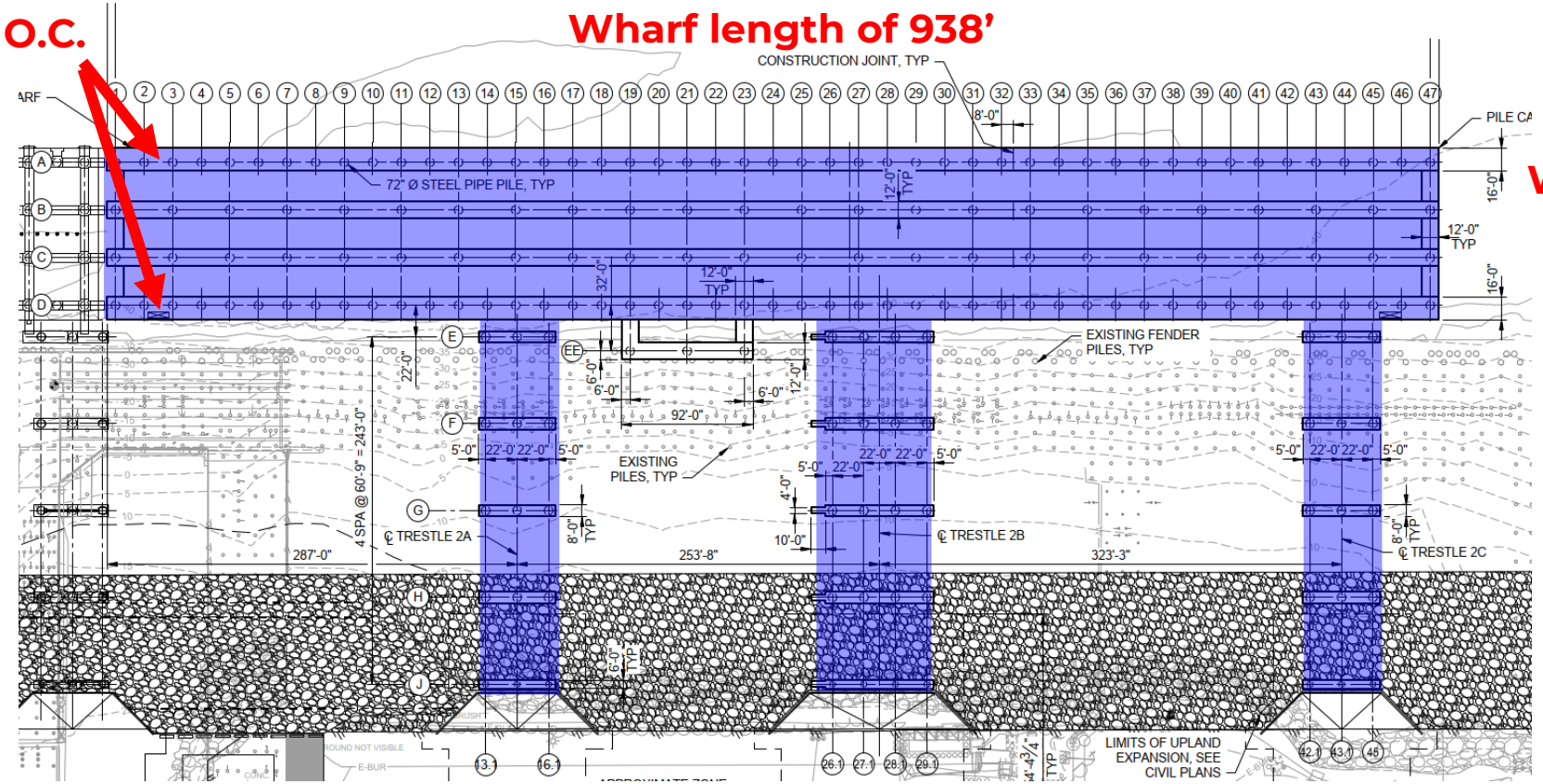


Crane rail and cable trench

T2 at 120’ wide, with crane rails

Pile spacing 20’ O.C.

Wharf length of 938’

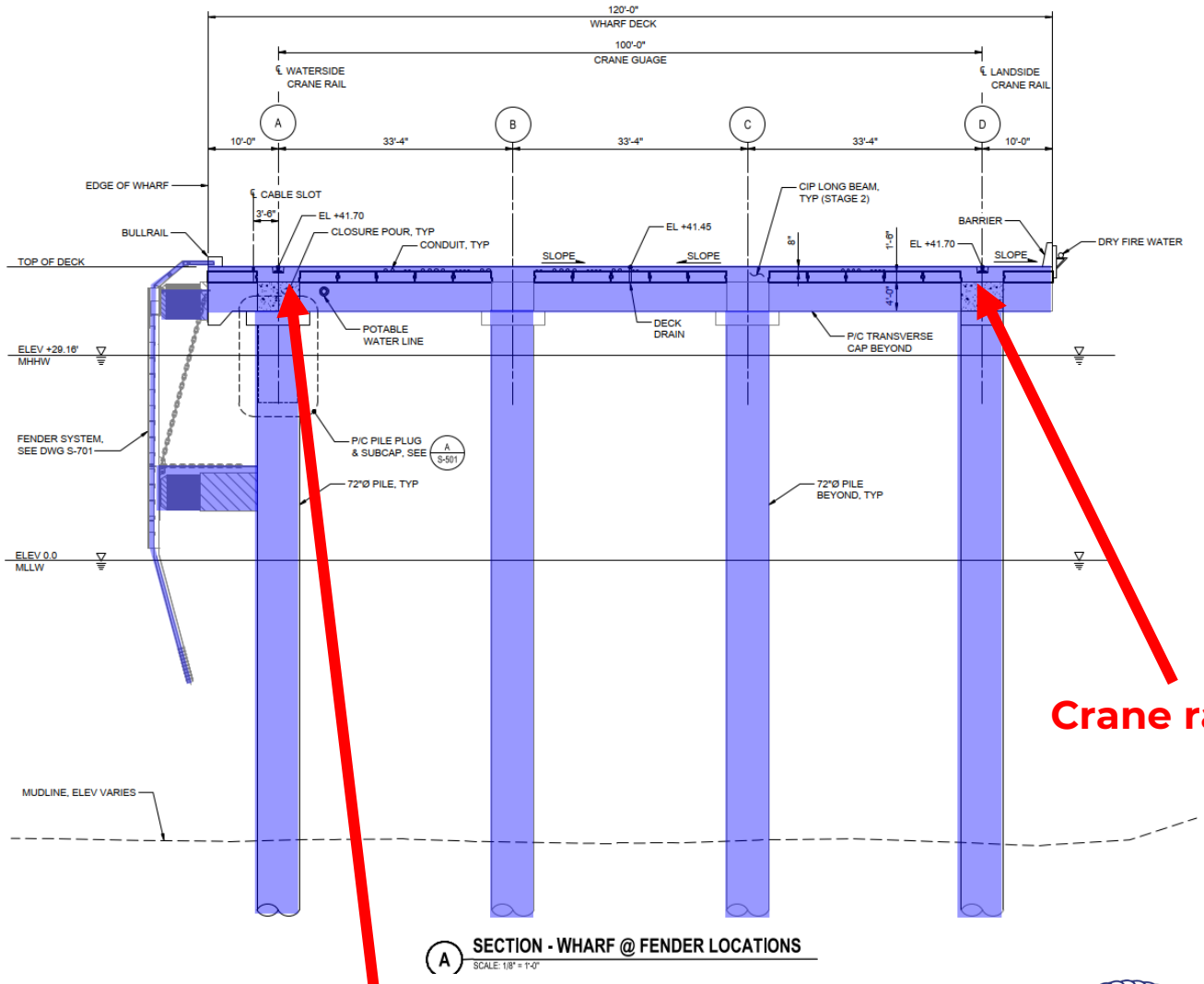


Wharf width of 120’

T2 at 120 ft with crane rails

- Installs both crane rails now
- Front and rear rows piling spaced at 20’ O.C.
- Install cast in place cable trench
- Cost $479M per ICE
  - ASTM Class 3 Estimate (-15% to +20%)
  - Midpoint of construction - Dec 2029
- Potential additional year of construction in 2031
  - Mobe/Demobe - $12M
  - Overhead - $11M
  - MMO, QC, Misc - $6M
  - Escalation adjustment - $8M
  - Midpoint of construction - Jun 2030
- Total Cost $516 M

Wharf width of 120’



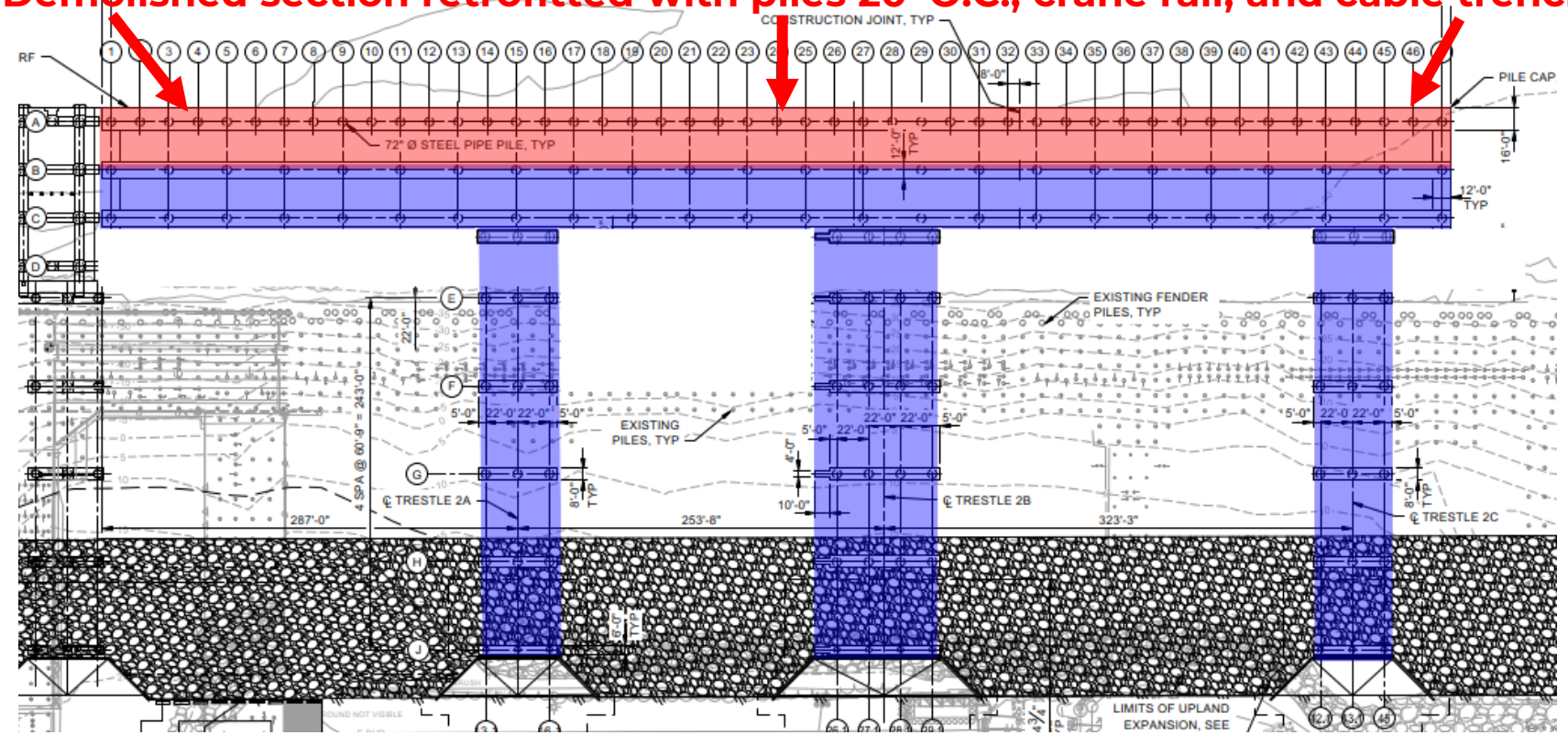
Crane rail

Crane rail and cable trench

Future Build Out Scenarios

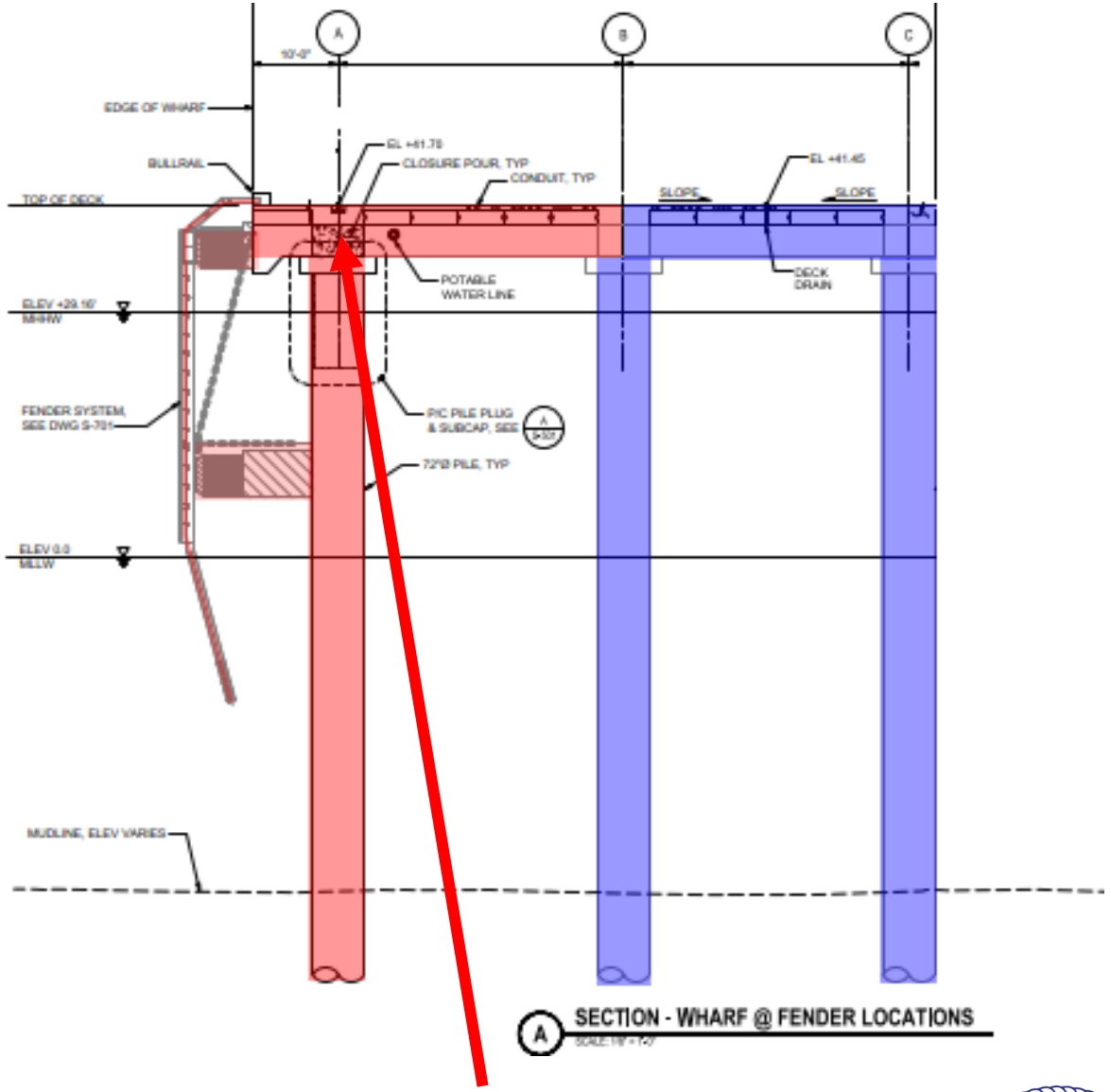
Baseline at 69’ wide, future waterside crane rail

Demolished section retrofitted with piles 20’ O.C., crane rail, and cable trench



69 ft with future crane rail

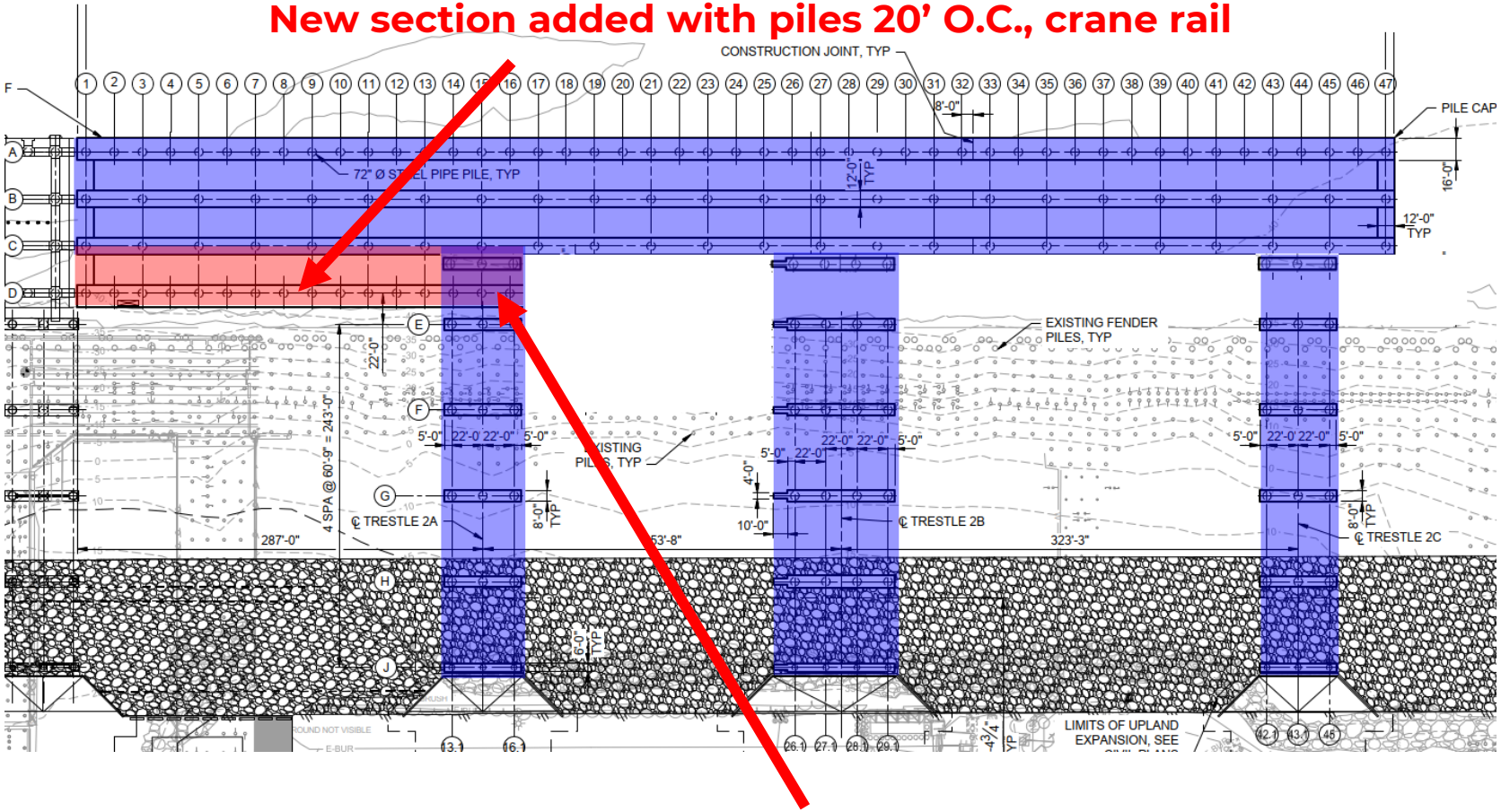
- Installs waterside crane rail in the future
- Requires demolition of deck between rows A and B
- Requires demolition of row A pile cap
- Requires removal and replacement of fender panels
- Requires shutting down the terminal to construct
- Cost $144M
  - Midpoint of construction - Dec 2029



Demolished section retrofitted with piles 20’ O.C., crane rail, and cable trench

Future Expansion to 120’ wide, Step 1

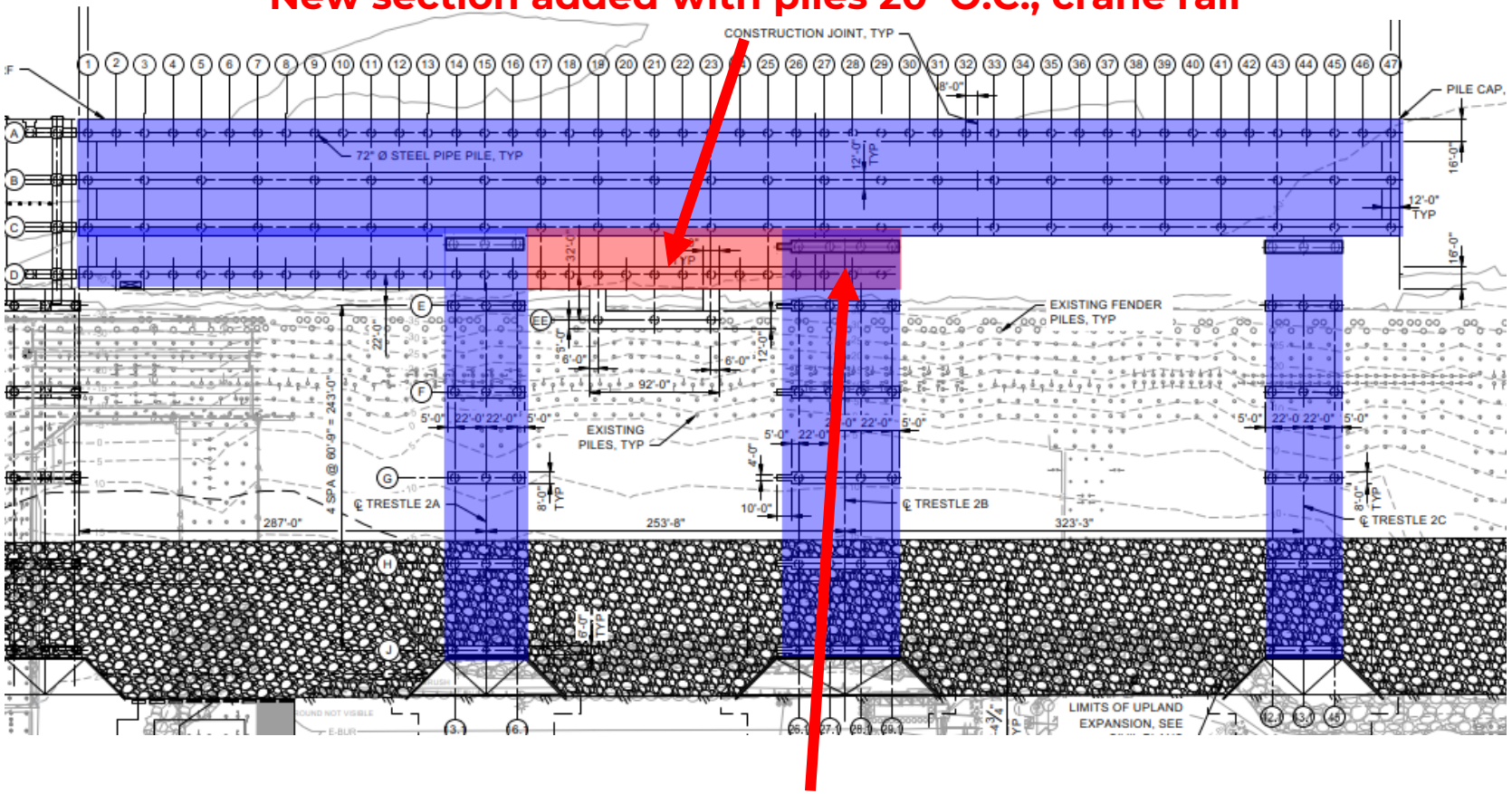
New section added with piles 20’ O.C., crane rail



Partial trestle demolition

Future Expansion to 120’ wide, Step 2

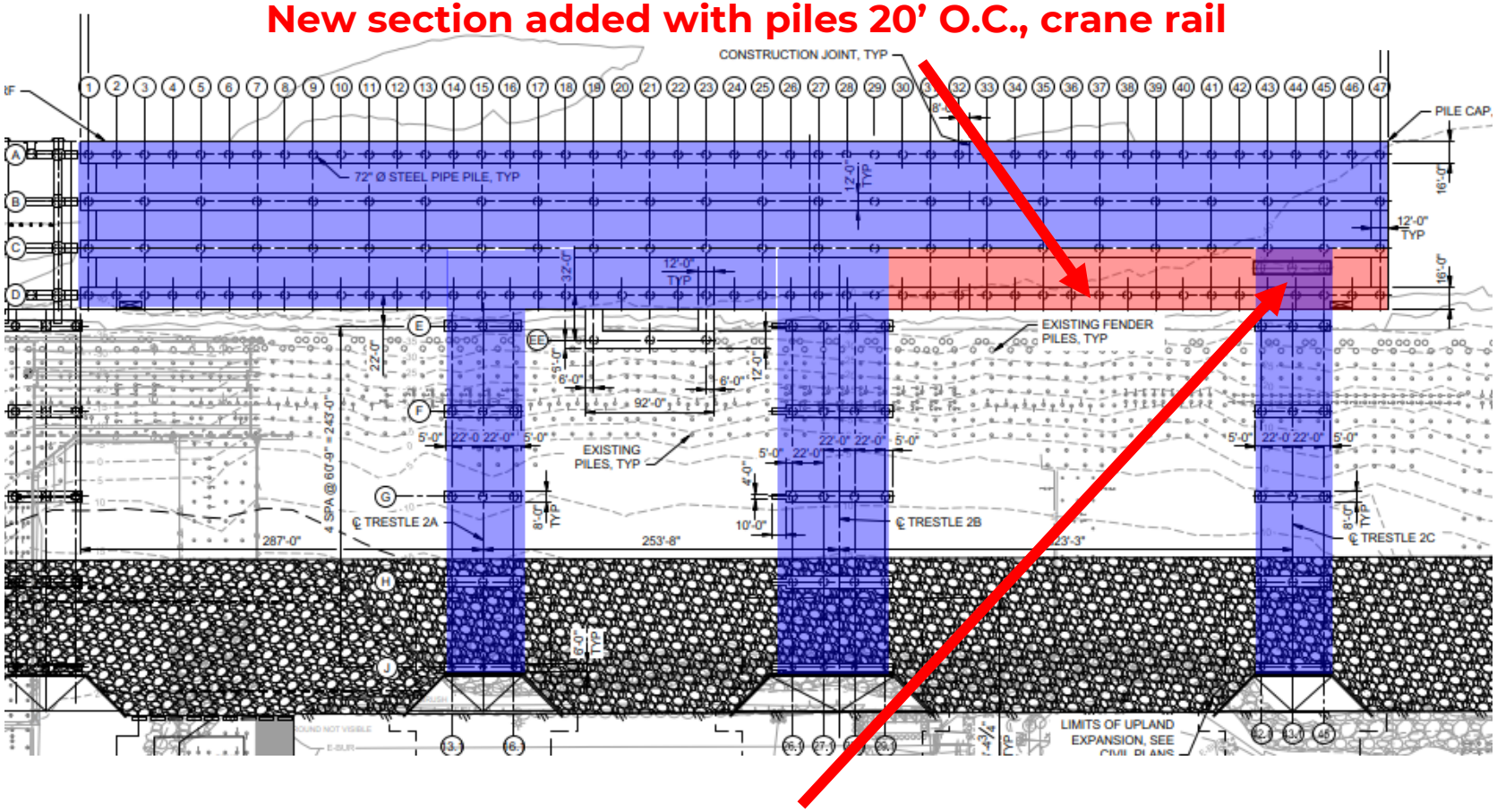
New section added with piles 20’ O.C., crane rail



Partial trestle demolition

Future Expansion to 120’ wide, Step 3

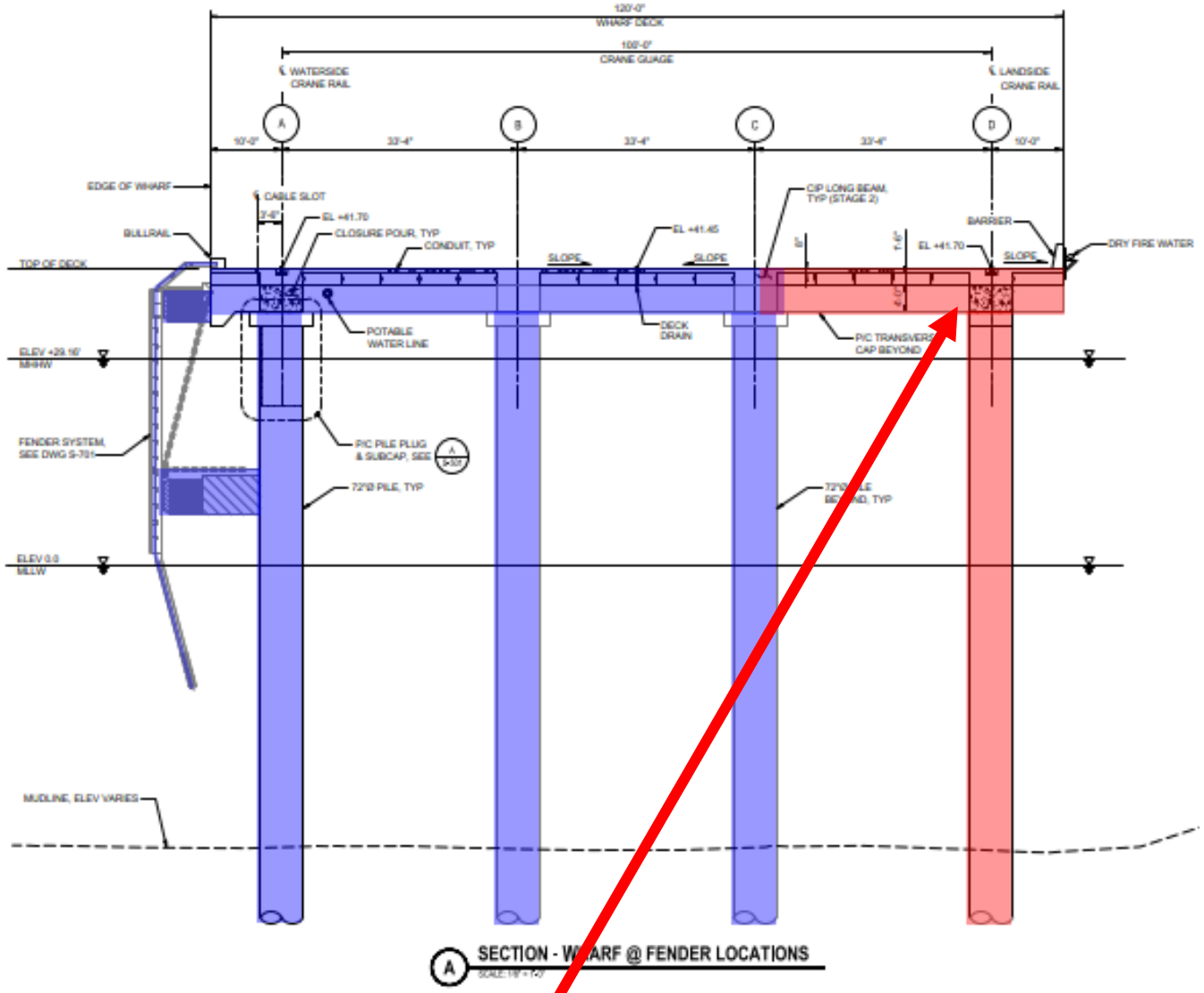
New section added with piles 20’ O.C., crane rail



Partial trestle demolition

69 ft expanded with future rail

- Installs landside crane rail in the future
- Requires partial demolition of row C pile cap for connection
- Requires partial demolition of trestles 1-3
- Requires temporary successive closures of trestles 1-3.
- Cost $174M
  - Midpoint of construction - Dec 2029



New section added with piles 20' O.C. and crane rail

Summary

Baseline at 69 ft, no crane rail		$401M
Baseline at 69 ft, plus waterside crane rail		$422M
T2 at 120 ft, with crane rails (ICE amount)		$479M
T2 at 120 ft, with crane rails (if additional season is required)		$516M

Future Build Out Scenarios:

1)	Baseline at 69 ft, no crane rail:		$401M
	Add waterside rail ($144M Escalated 20 years at 3% per annum)		$260M
	Add landside rail ($174M Escalated 20 years at 3% per annum)		$314M
		TOTAL:	**$975M**
2)	Baseline at 69 ft, plus waterside crane rail:		$422M
	Add landside rail ($174M Escalated 20 years at 3% per annum)		$314M
		TOTAL:	**$736M**