Hybrid Design/Build Approach for Quaywall 729

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Overview

- PSNS & IMF
- Pier B RFP
- Design/Build Constraints
- Hybrid Design/Build
- Quaywall 729
- Prescriptive Design
- Conclusion
Existing Facility Deficiencies

- **Pier B**
  - Geometry
  - Seismic
  - Utilities
- **DD #6 Mole**
  - Geometry
  - Seismic
- **Quaywall 729**
  - Seismic
  - Condition
  - Utilities
Design/Build Constraints

• Carrier arrival date fixed (schedule can not slip)
  – Develop RFP & Submit Permits
  – Bid & Award (March 2008)
  – D/B team Design Pier B, Mole Quayall, and Quaywall 729
  – Procure Materials
  – Demolish Existing (fish window control)
  – Construct In-water Structures (fish window control)

• Permits must be done by RFP team
  – Structure Environmental Impacts
  – Materials
  – Framing
  – Construction Means & Methods
Mole Quay and Quaywall 729

Won’t Cooperate with D/B Requirements

- Permitting
  - NEPA Deadlock (fill)
  - Consultation Deadlock (ESA & Tribal)
- Fill Area Impact (Mole Quaywall)
- Unknown Existing Conditions (Quaywall 729)
  - How fragile is timber substructure?
  - High risk could mean high cost
Hybrid Design/Build

• Move substructure design of Mole Quaywall and Quaywall 729 into RFP design prescriptively

• Reduces overall schedule
  – One full design of Mole Quaywall and Quaywall 729 substructure
  – Immediate procurement for contractor materials
  – Permitting: Defined design of Mole Quaywall and Quaywall 729

• Design fully vetted with customer & regulators
  – Construction Sequencing
  – Reduce D/B bidding risk by removing perceived unknowns

• D/B benefits remain
Existing Quaywall 729 – Native Beach
Existing Quaywall 729 – Timber Substructure
Existing Quaywall 729 – Counterfort Wall
Quaywall 729 – Prescriptive Construction
Quaywall 729 – Existing Substructure
Quaywall 729 – “Belt & Suspenders”
Quaywall 729 – Pilecaps and Strut
Quaywall 729 – Performance Structure
Construction – Sheetpile Wall
Construction – Strengthen Existing Pilecap
Construction – Core and Drive Piles
Conclusion – Hybrid Design/Build

• Pro
  – Advanced permitting process due to defined impact
  – Design partially complete
  – Long lead item procurement at award
  – Increase in client design confidence
  – Mitigated bid risk

• Con
  – Added complexity