

February 20, 2008 Project Update



LA 1 Bridge Project





Project Location

Port Fourchon, LA



Deep Water Facts

- The Gulf of Mexico provides U.S. with 27% of its domestic oil supply.
- Only 16 deepwater projects in production in 1997; 51 by the end of 2001; 13 added in 2002; another 150 prospective programs as of 2003. Production is still not near its peak.
- Since 1995, Deepwater Oil production has risen 500% and Gas 550%.
- 59% of all Gulf Oil now comes from deepwater, (325mb in 2001).
- MMS est.'s deepwater has reserve of 71bb of oil, of which 56bb remains to be discovered.
 - Shallow water has only 15bb remaining to be discovered.

Purpose and Need



Energy Corridor

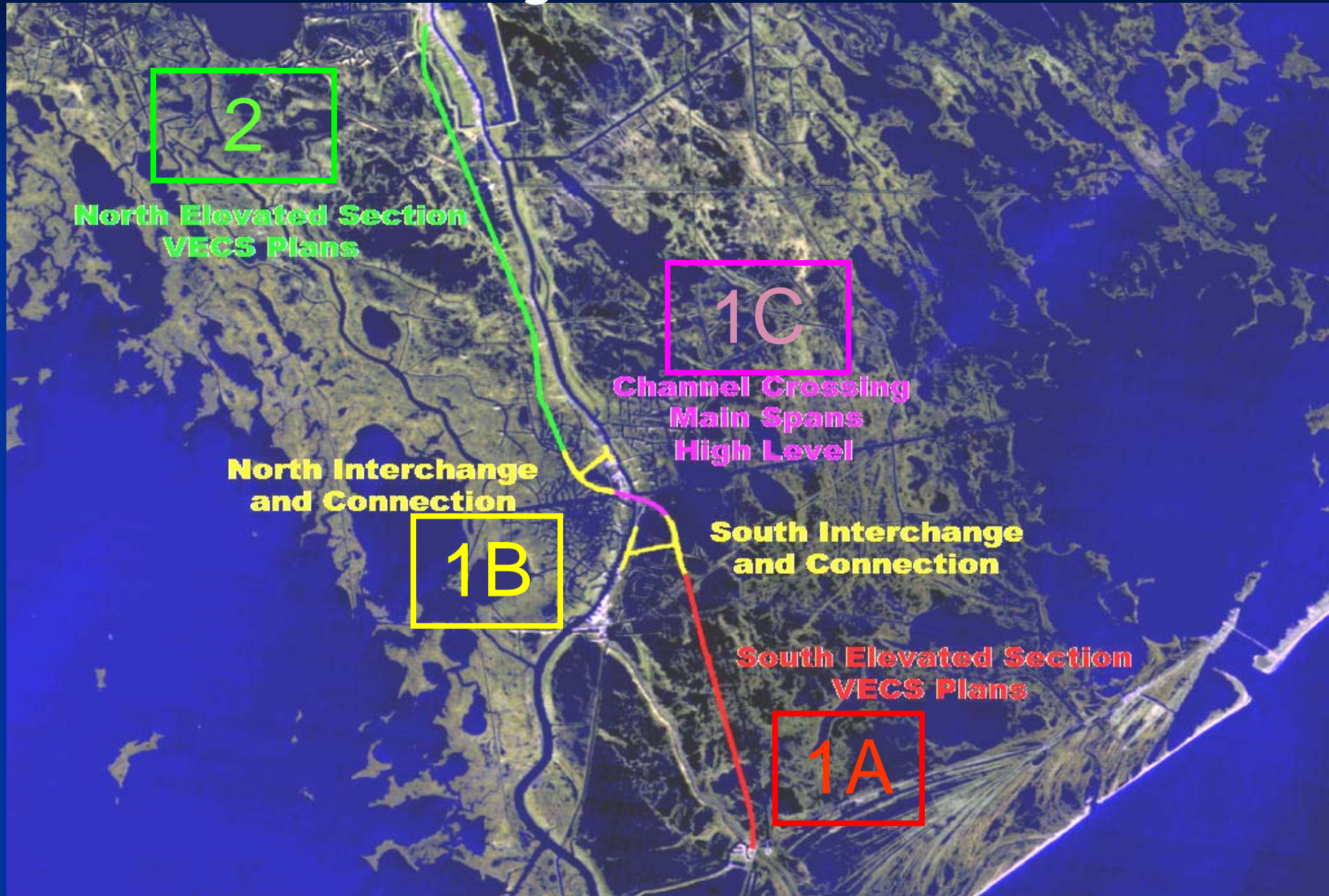
"Port Fourchon's importance to our Nation's Energy Infrastructure is significant. Louisiana Highway 1 (LA1), the main land-based mode of transport to and from the port, is also vital," Thomas R. Kitsos, Acting Director, MMS

- Port is support base for shallow and deep water off shore activities.
- Intermodal capabilities.
- 6000 workers per week fly by helicopter to offshore facilities.
- Constitutional Amendment #8 2003 removed Ad Valorem Tax. Rig Repair (Billion / year) business.

Purpose and Need



Project Overview



2

**North Elevated Section
VECS Plans**

1C

**Channel Crossing
Main Spans
High Level**

**North Interchange
and Connection**

1B

**South Interchange
and Connection**

**South Elevated Section
VECS Plans**

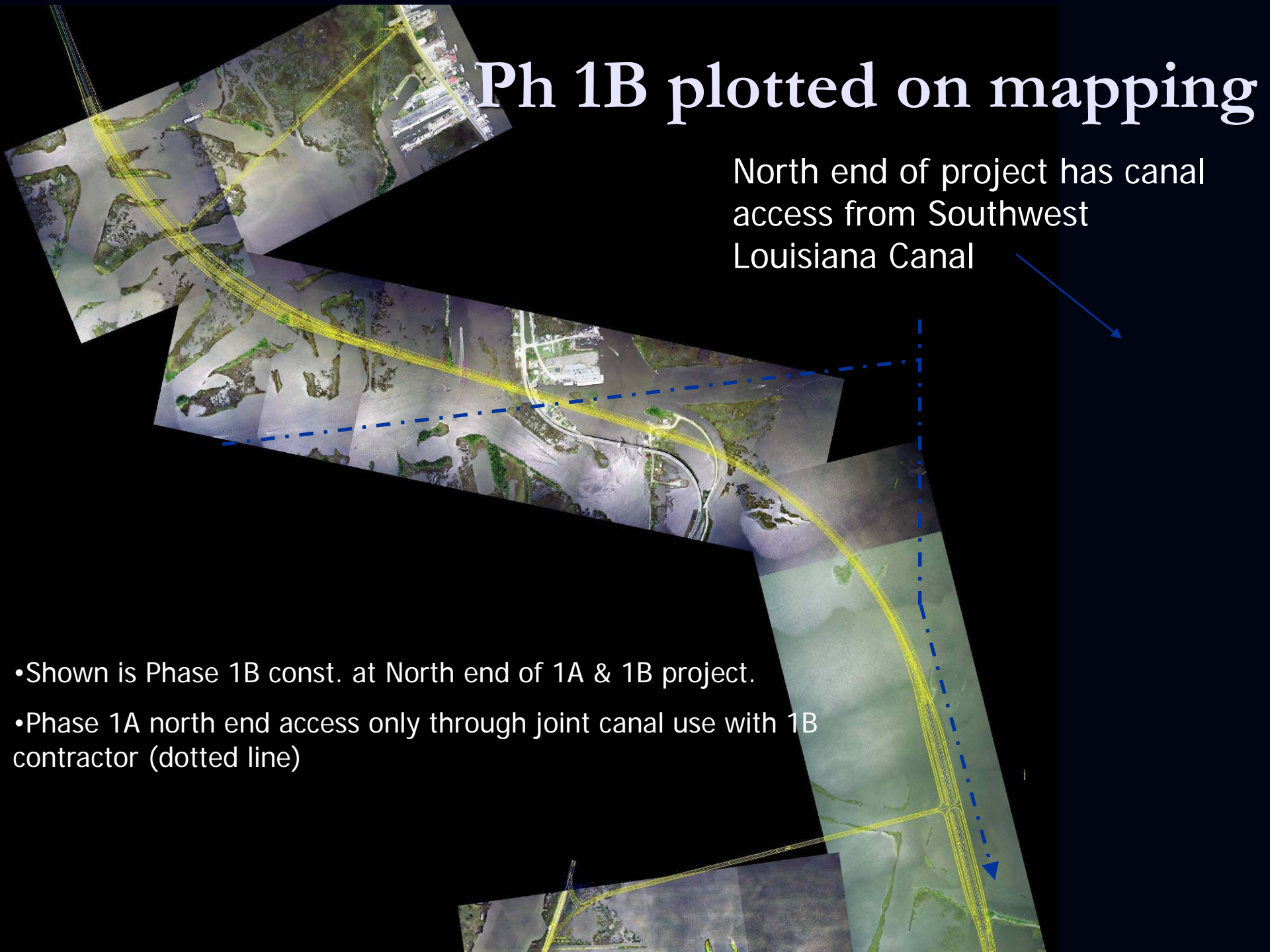
1A

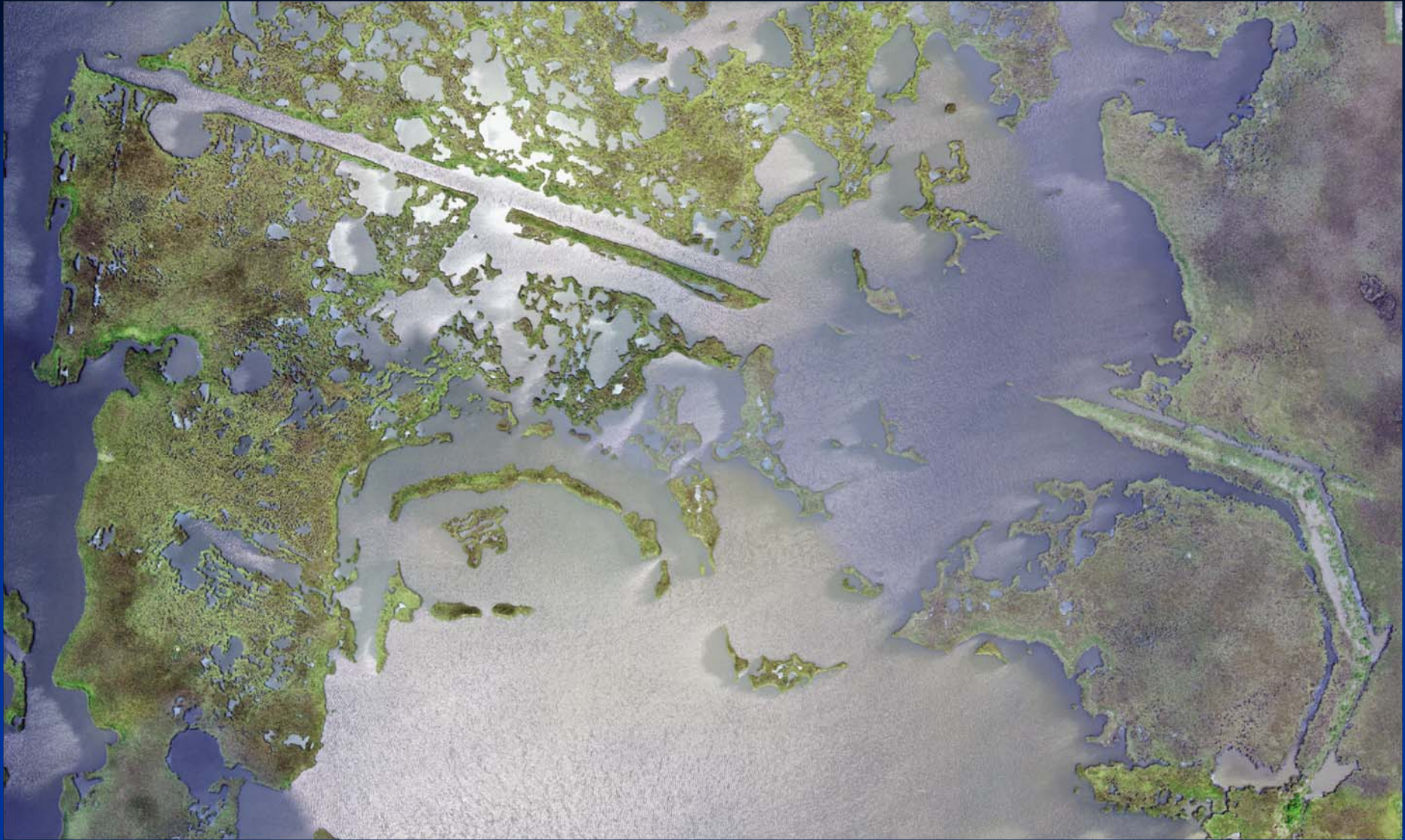
■ Phase 1C

Ph 1B plotted on mapping

North end of project has canal access from Southwest Louisiana Canal

- Shown is Phase 1B const. at North end of 1A & 1B project.
- Phase 1A north end access only through joint canal use with 1B contractor (dotted line)





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Legend

- Major Pipelines
- Existing Access
- Potential Permanent Fill
- Potential Temporary Fill
- Construction Canal
- Staging Areas



46' X 62' Main Pier 2 Constr. Progress



08/28/2007

Pier 3 Concreting Operations



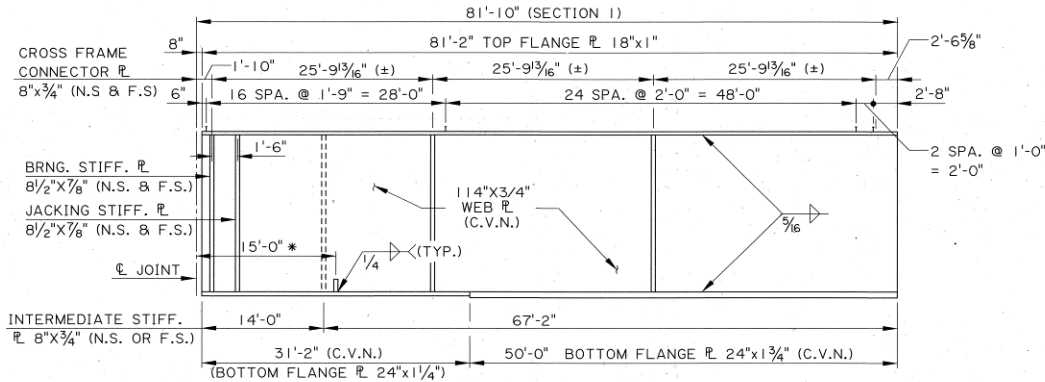
08/28/2007

Pier 3 Concreting Operations



Pier 4 Concreting Operations



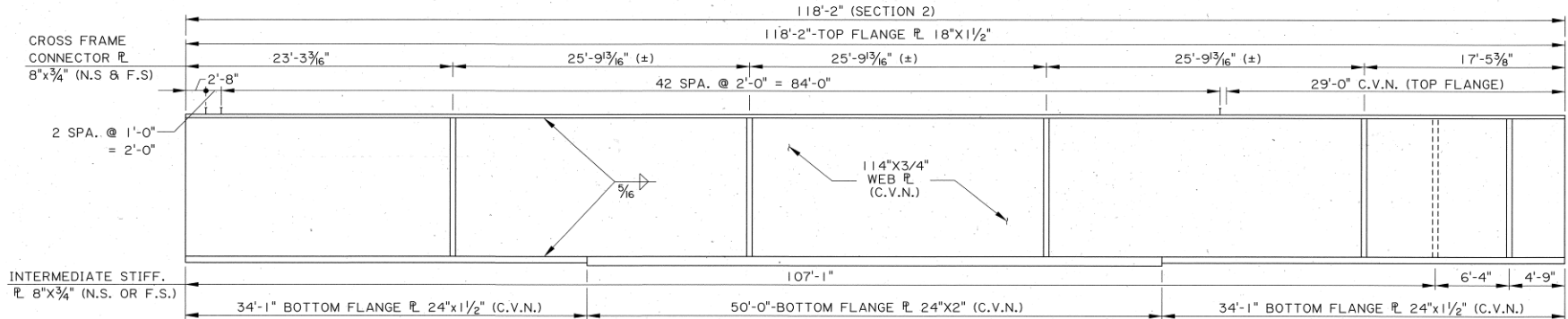


* - SEE NOTE 4

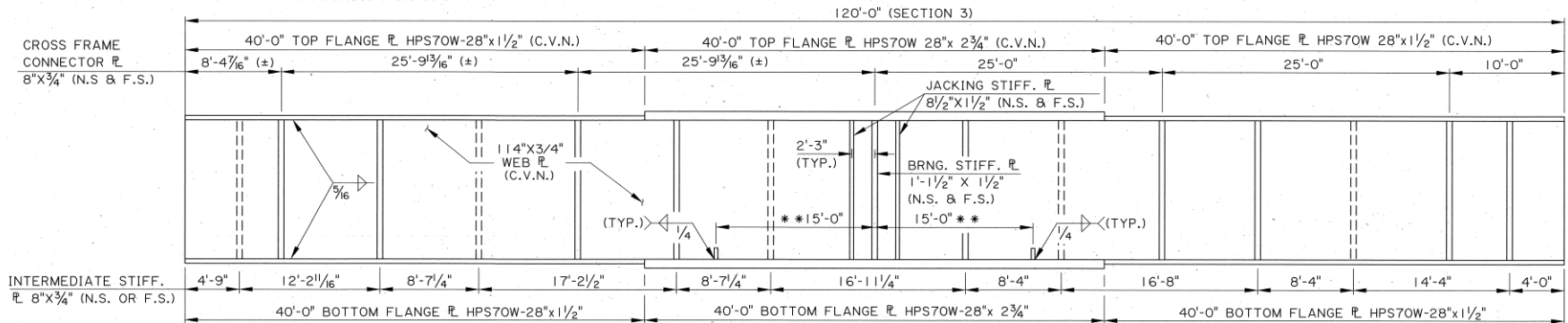
ELEVATION GIRDER SECTION - 1
(TYPICAL INTERIOR GIRDER SHOWN EXTERIOR SIMILAR)
(GIRDER SECTION 9 OPPOSITE HAND)

NOTES:

1. ALL STEEL TO INCLUDE CROSS PLATES SHALL BE A709, GRA NOTED.
2. STRUCTURAL STEEL IN FLANGE IN THE PLANS SHALL BE ASTM
3. PAINT FROM THE ENDS OF THE 1'-4" AND TO INCLUDE DIAPHRAGM ASSEMBLIES FOR A DISTANCE WITH SECTION 811 OF THE LOCAL SPECIFICATION FOR ROAD AND
4. PROVIDE 3/8" X 5" X 11 1/8" DRILL EXTERIOR GIRDERS.
5. PROVIDE 3/8" X 5" X 13 3/8" DRILL EXTERIOR GIRDERS.



ELEVATION GIRDER SECTION - 2
(TYPICAL INTERIOR GIRDER SHOWN EXTERIOR SIMILAR)
(GIRDER SECTION 8 OPPOSITE HAND)



ELEVATION GIRDER SECTION - 3
(TYPICAL INTERIOR GIRDER SHOWN EXTERIOR SIMILAR)
(GIRDER SECTION 7 OPPOSITE HAND)

** - SEE NOTE 5

■ Phase 1B



South Connector Start-up



South Connector Constr. Progress



05/09/2007

South Connector May 2007





South Connector Feb 2008



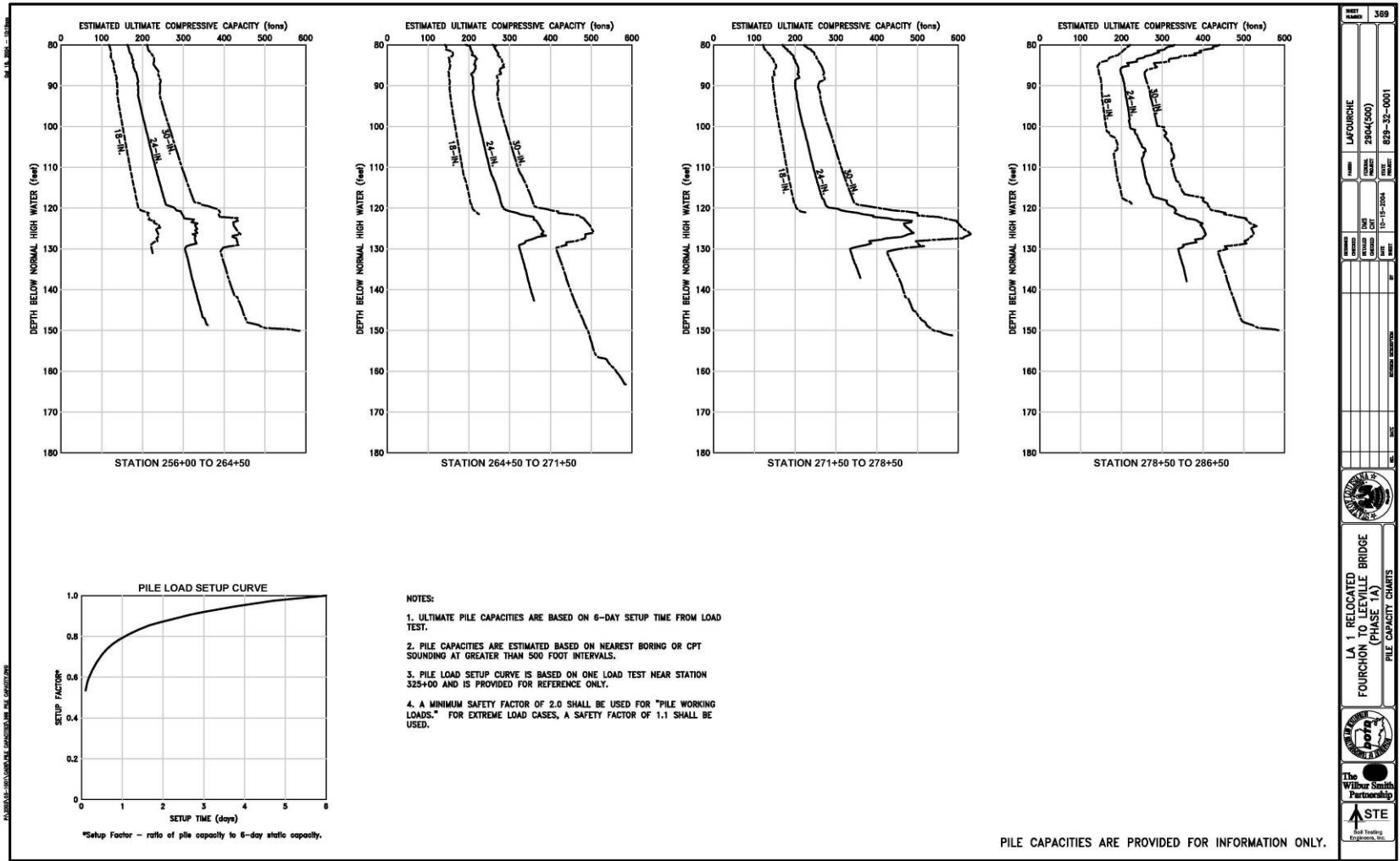


South Connector Constr. Progress



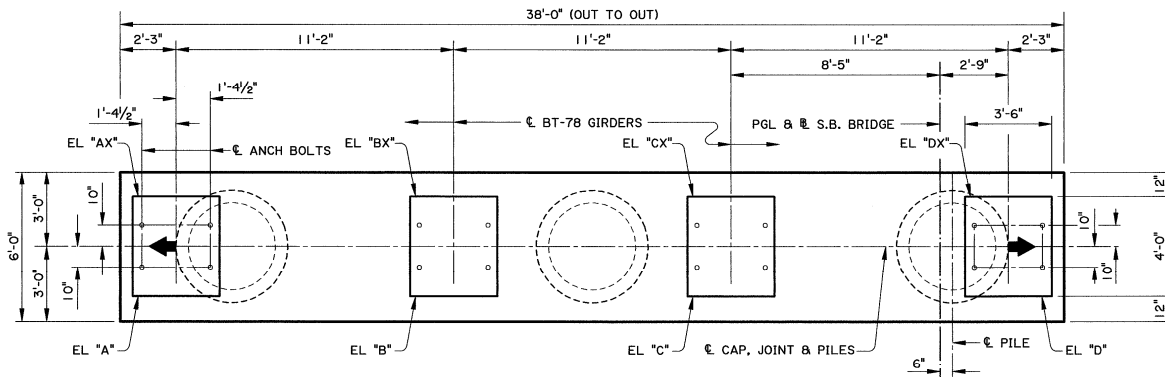
South Connector Constr. Progress

Ph 1A Plans embody pile charts to encourage value engineering





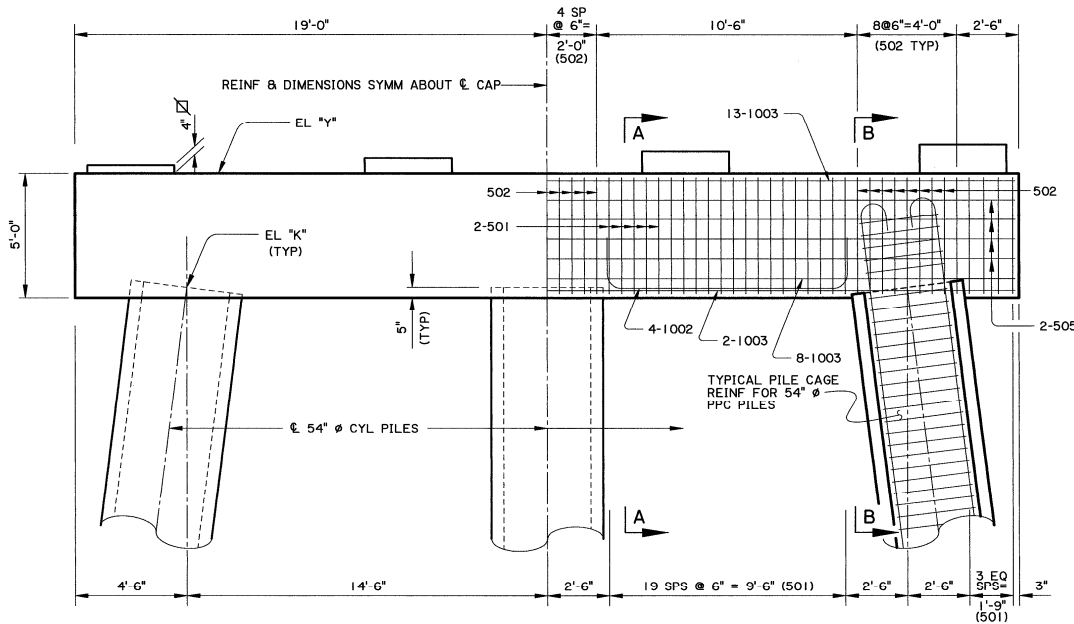
Prefabricated Pile Splice - piles to 170 ft.



PLAN - PILE BENT - P1

(EXPANSION BENT SHOWN - RISER TYPE R1)
 (SCALE 3/8" = 1 FT)

INFORMATIONAL ONLY - RISER AND CAP ELEVATIONS BASED ON LOW RISER OF 4" TALL.



ELEVATION - PILE BENT - P1

(SCALE 3/8" = 1 FT)



North Connector in area of ORT (toll) plaza (20 ft. CIP slabs changed to Precast)



VE 'd Precast Slab Units on Connectors



**North Connector in area of ORT plaza
(February 2008)**

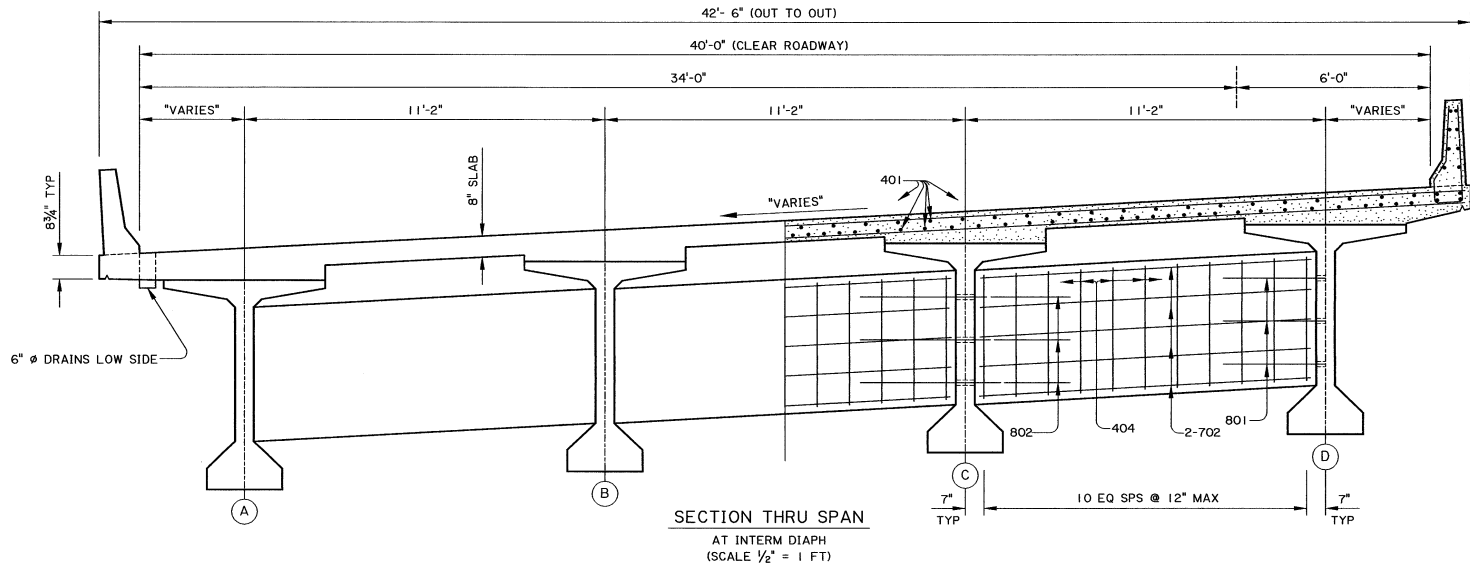
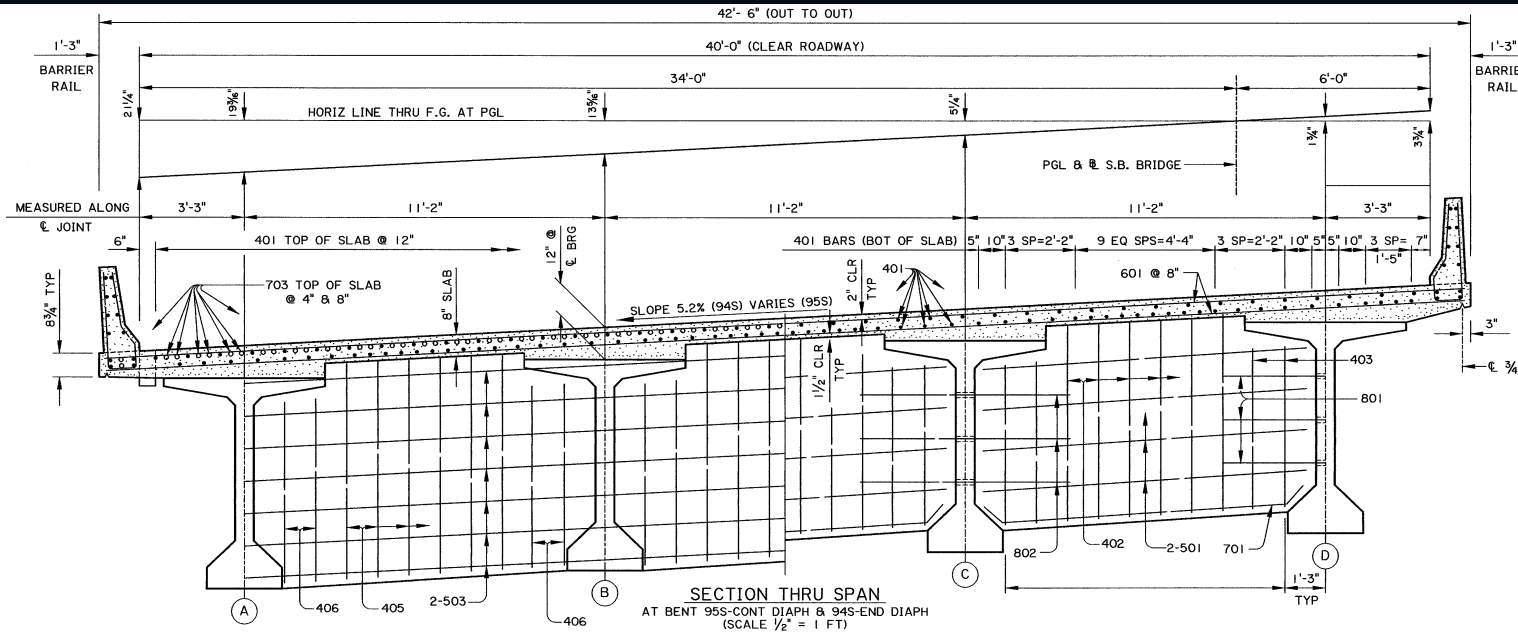


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Structures Design Approach Spans Ph 1B

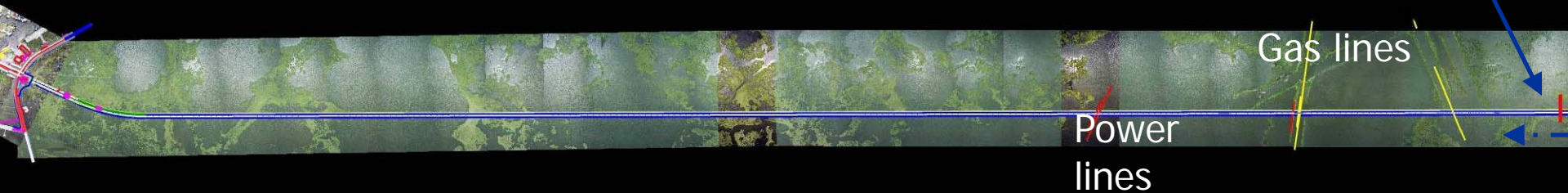
■ Phase 1A

Rendering prepared for public. South beginning of bridge at completion (Phase 1A project)



Ph 1A plotted on mapping

- Phase 1B is concurrent at North end of project. North end access from joint use of canals dredged for Phase 1B



- Phase 1A Bridge Length = 26,544 ft.
- Phase 1A Bridge Deck Area = 1,141,484 sq ft.
- Top Down Construction req'd throughout
- Intersection road length = 2,000 ft approx

Environmental Constraints Governed Construction procedure

- **Top Down or End on construction** will be utilized for length of the Phase 1A and Phase 2 bridges on this project.
- Project designed to minimize impacts to vegetated marsh. Also Ph 1B canal dredging must supply restoration of acreage loss (new wetlands) and was part of project.
- Scupper discharge pipes on the entire of the elevated highway will include additional length so as to not preclude the attachment of a highway runoff collection system, should future research indicate the need for such a system.
- Staging areas have been selected that will provide the opportunity to restore and create marsh upon completion of construction- even during construction these fill areas will provide some buffer benefits.
- All pre-construction field work must be non-damaging to the environment.



VECS Bidding

Value Engineered Context Sensitive

- Each bridge Alternate is fully engineered but some elements of the bridge will require contractor submittals of placement drawings.
- The contractor will select one of two (2) Alternates for the short bridge approach and one of six (6) bridge Alternates for the longer tangent bridge.
- It is a conventional quantity-based bid. Contractor must be prepared to build the Alternate proposed for the price proposed.
- After a low bid is selected, the contractor may then make a Value-Engineered proposal, with the Value Engr'g savings governed by the DOTD's standard clause.

Six Primary Bridge Plan Alternates

- Alt. 1L and 1S (Short span)

Precast voided box slab at 40 ft.

- Alt. 2L and 2S (Medium span)

AASHTO Type III at 65 ft. span

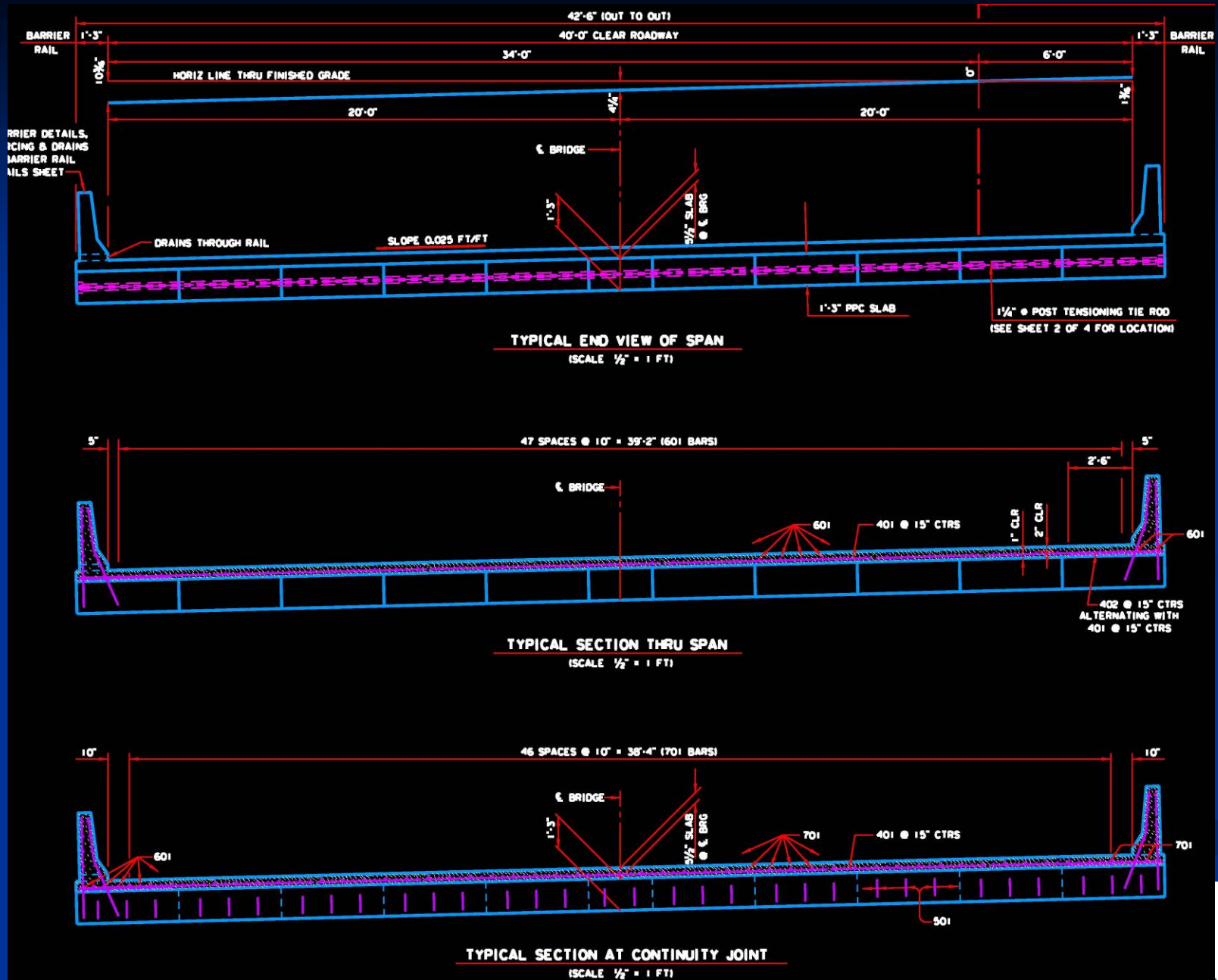
- Alt. 3L and 3S (“Long” span)

AASHTO BT 63 at 95 ft. span

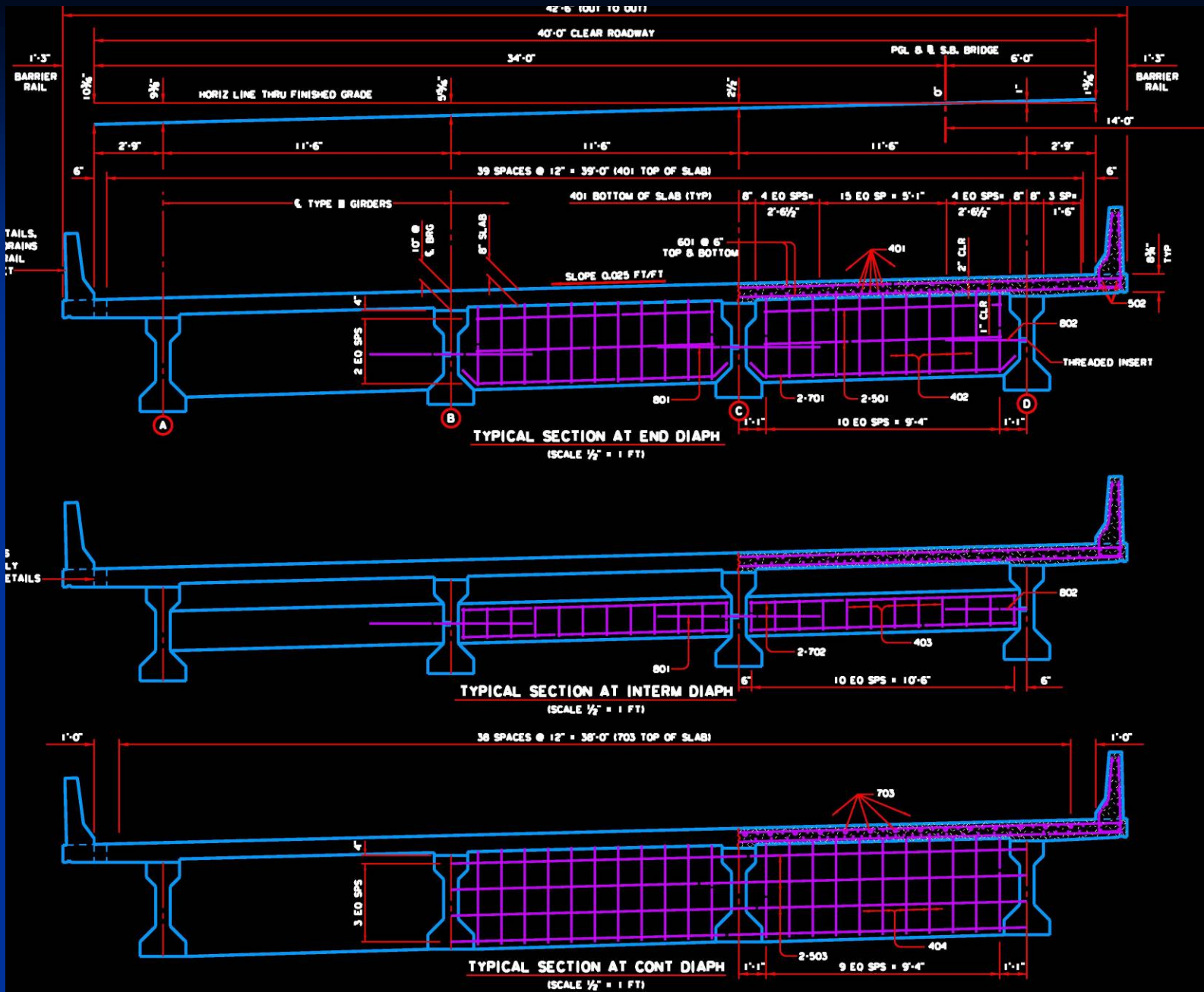
Alt AL and AS low-level spans



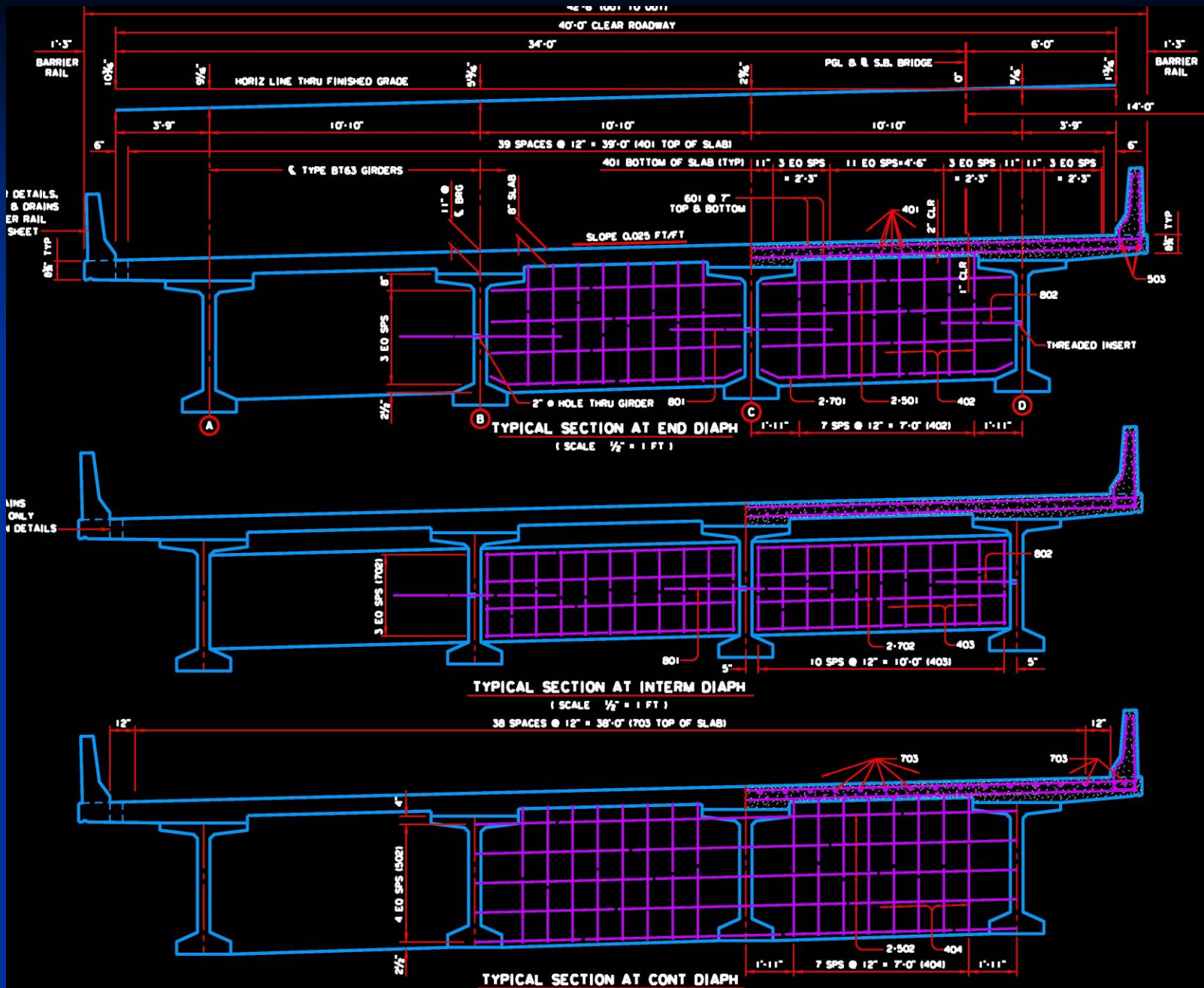
Alternate 1L, 1S - 40' span



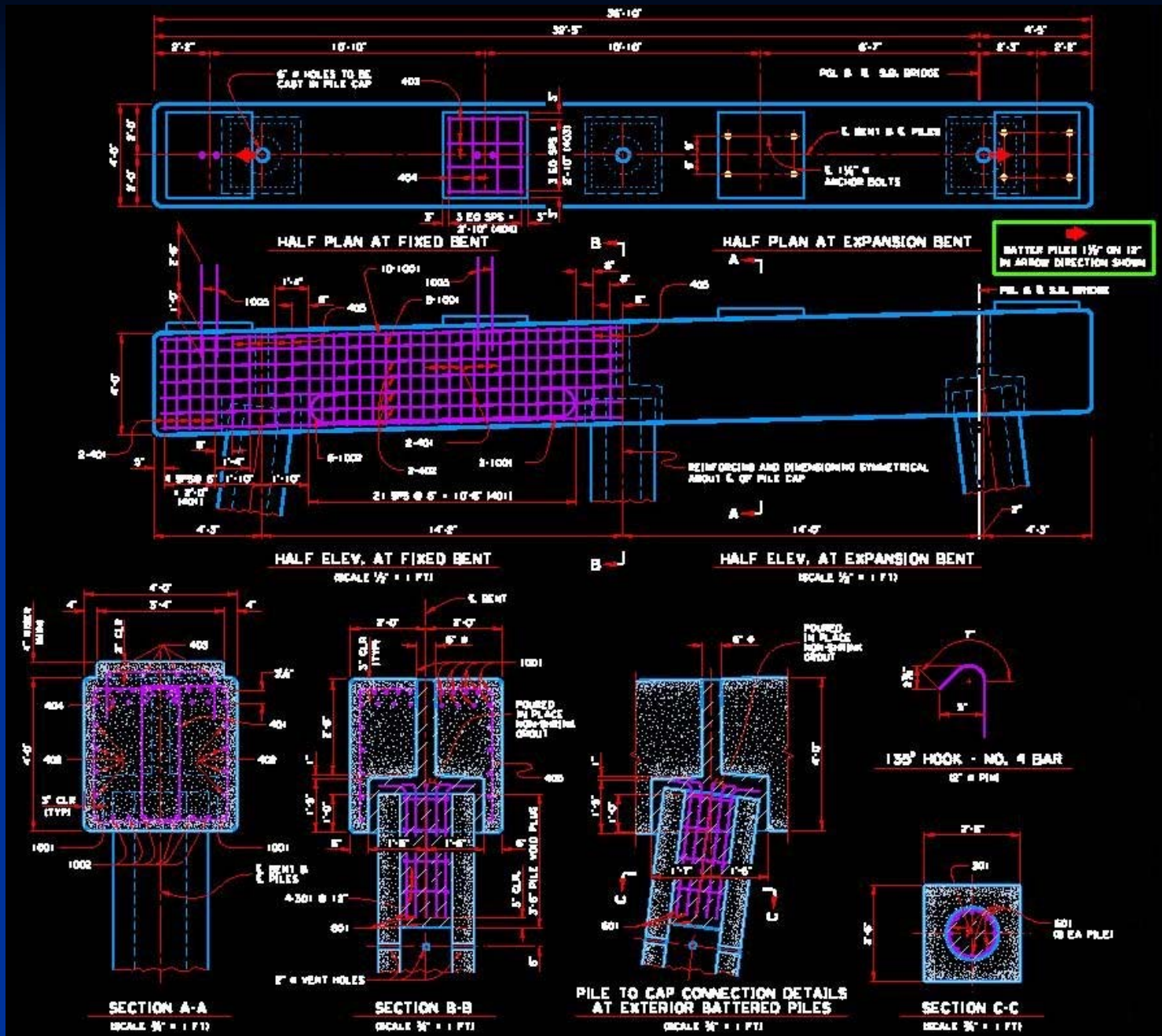
Alternate 2L,2S - 65' span

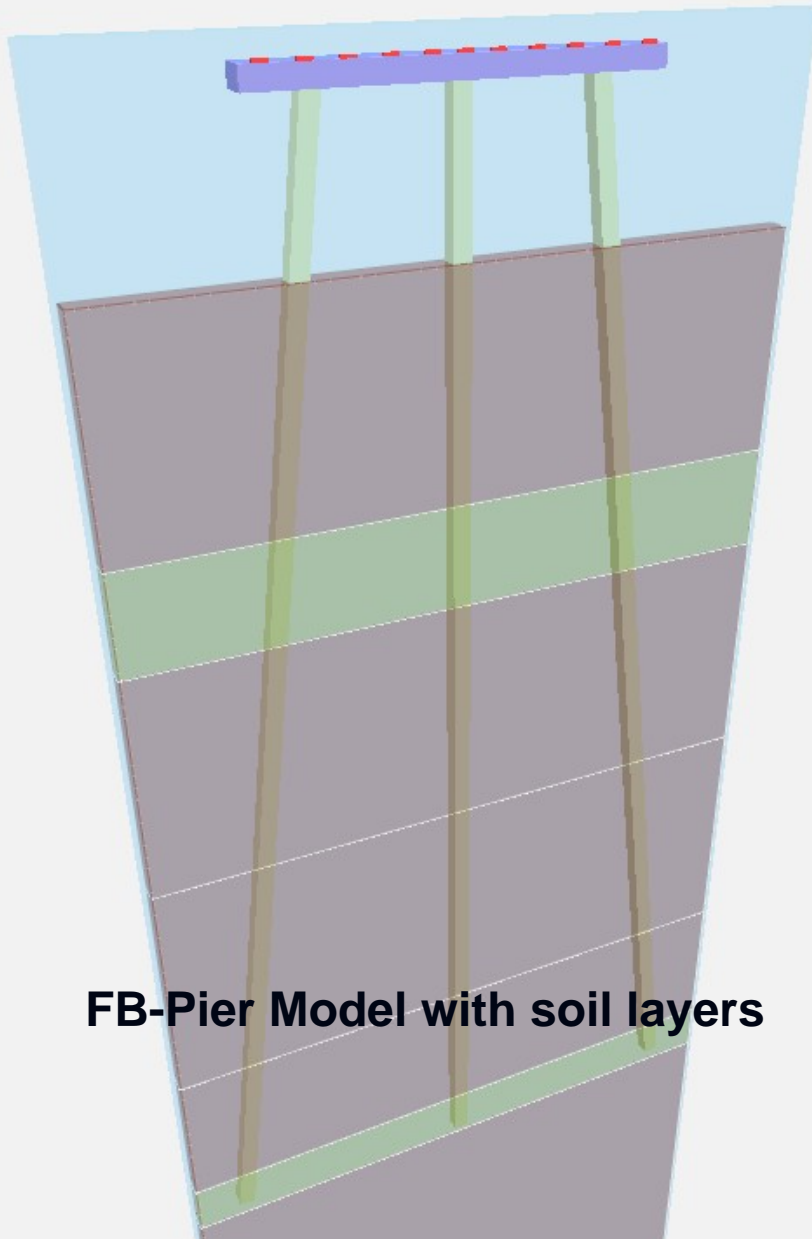


Alternate 3 - 95' span

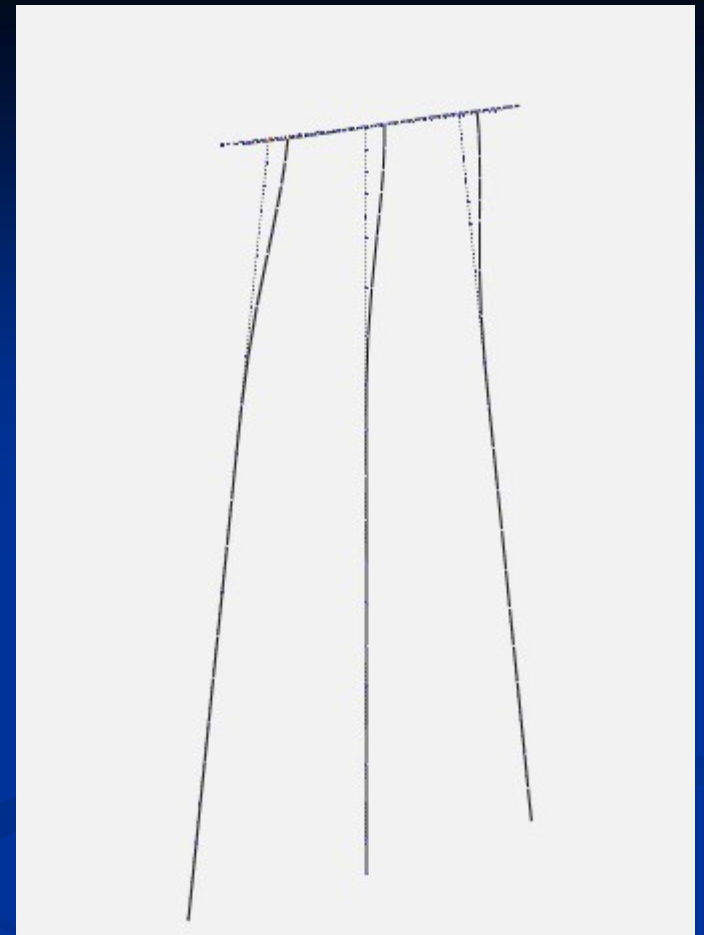


Alternate 3 - 95' span





FB-Pier Model with soil layers



FB-Pier Modeling

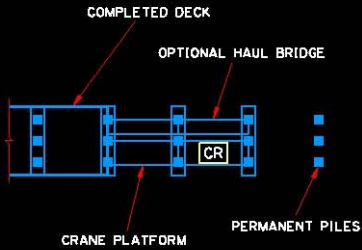
**Included non-linear soils-structure-
interaction**



Modified Top-Down Advancing Trestle

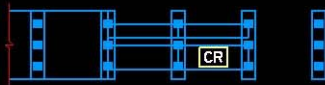
Top-Down schematics

SCHEMATIC OF TYPICAL TOP-DOWN CONSTRUCTION

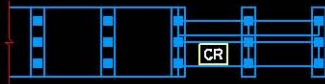


CR CRANE
■ PERMANENT PILES

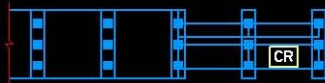
STEP 1
CRANE, CR, DRIVES PILES & SETS SLABS FOR HAUL BRIDGE (OPTIONAL).



STEP 2
PLACE CAP & GROUT IN PLACE.

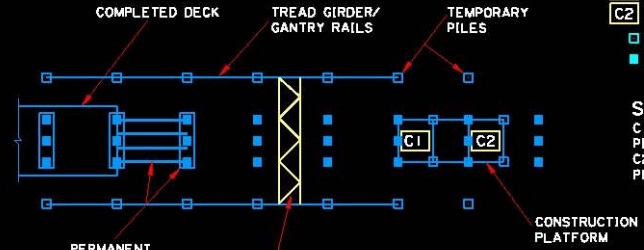


STEP 3
ADVANCE CRANE PLATFORM, PLACE SUPERSTRUCTURE IN BACK SPAN.



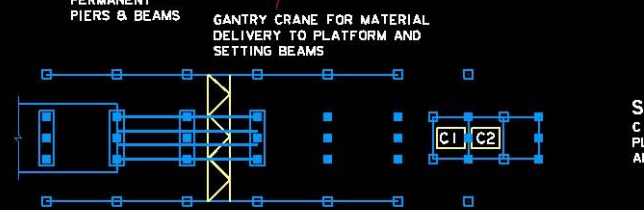
STEP 4
ADVANCE CRANE. REPEAT STEP 1.

SCHEMATIC OF TYPICAL "MODIFIED" TOP-DOWN CONSTRUCTION

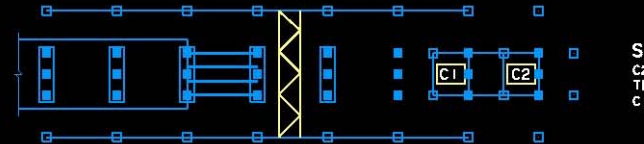


C1 CRANE 1
C2 CRANE 2
□ TEMPORARY PILES
■ PERMANENT PILES

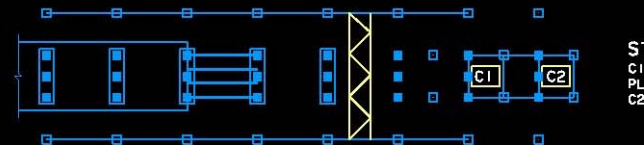
STEP 1
C1 REMOVES TEMPORARY PILES FROM BACK SPAN, C2 DRIVES PERMANENT PILES.



STEP 2
C1 ADVANCES. PLATFORM IS ADVANCED AHEAD OF C2.



STEP 3
C2 ADVANCES & DRIVES TEMPORARY PILES, C1 LAYS GANTRY RAILS.



STEP 4
C1 ADVANCES. PLATFORM ADVANCES. C2 ADVANCES.

AS DECK SECTIONS ARE COMPLETED, GANTRY RAILS & TEMPORARY PILES FURTHER BACK OF LEADING BRIDGE EDGE ARE REMOVED, AND REUSED AT LEADING EDGE. THE FINISHED STRUCTURE IS USED TO DELIVER MATERIALS.

STEP 5
REPEAT STEP 1.

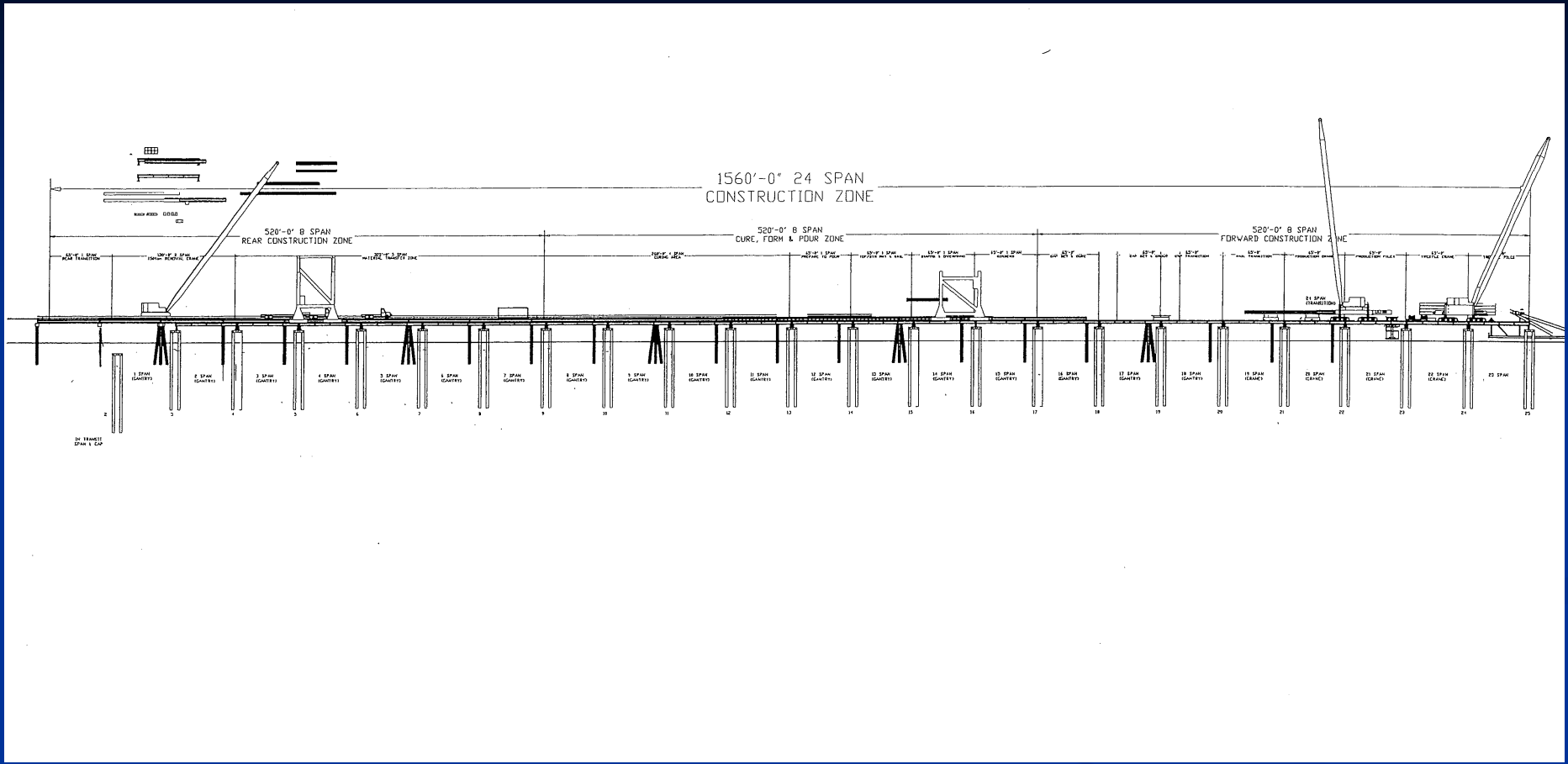
GANTRY CRANE(S) ARE USED TO:
SET CAPS
SET BEAMS
DELIVER PILES
DELIVER REINFORCING AND CONCRETE

Animation of Modified Top-Down Bridge Erection

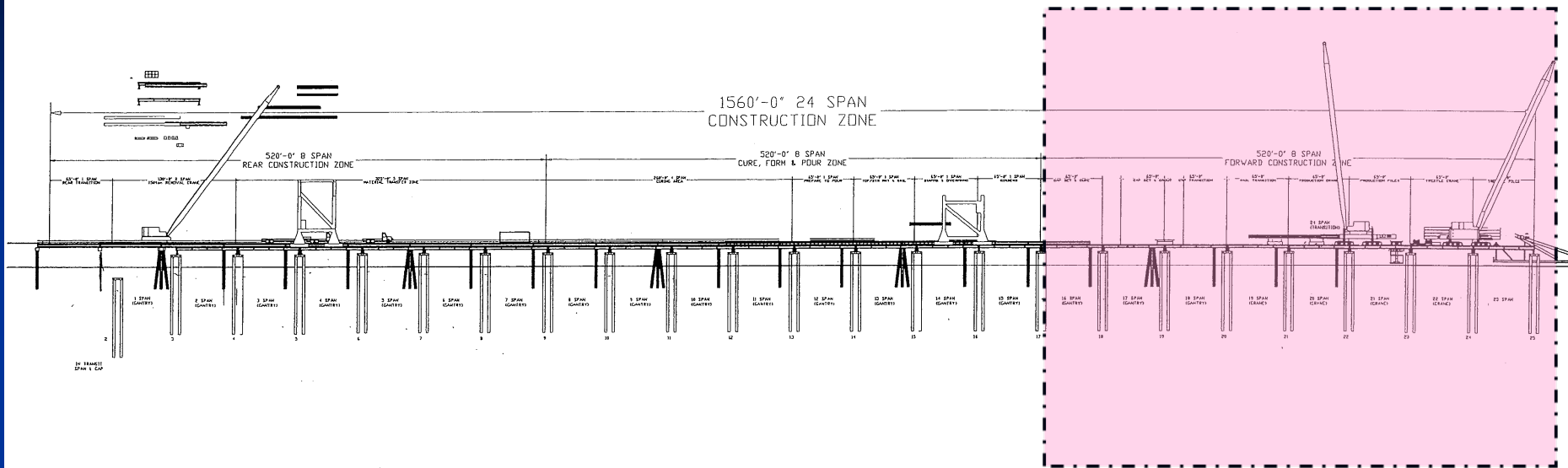




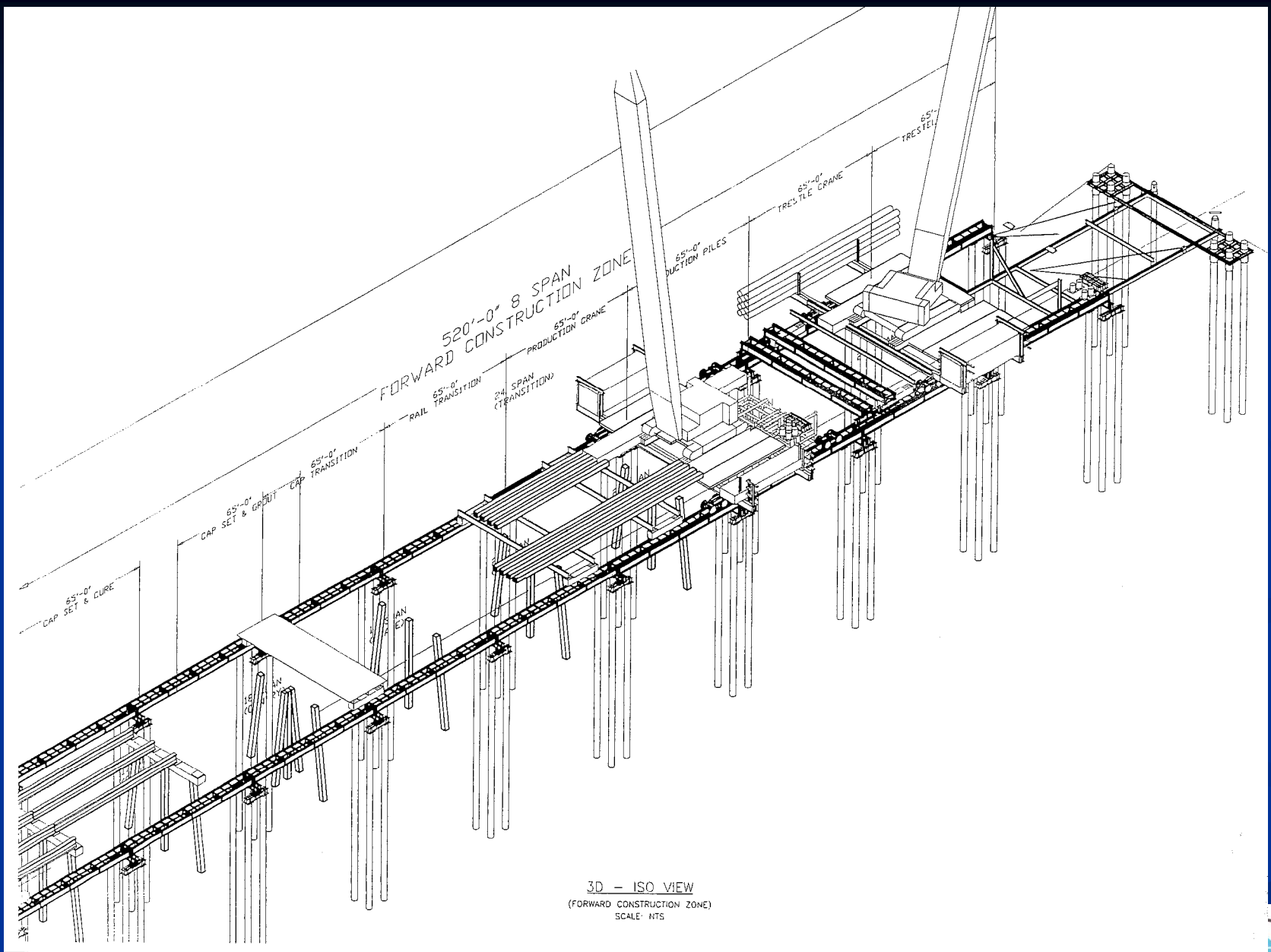
Modified Top-Down Advancing Trestle



Modified Top-Down Advancing Trestle



Modified Top-Down Advancing Trestle



3D - ISO VIEW
 (FORWARD CONSTRUCTION ZONE)
 SCALE: NTS

Advancing Trestle -Fwd Construction Zone



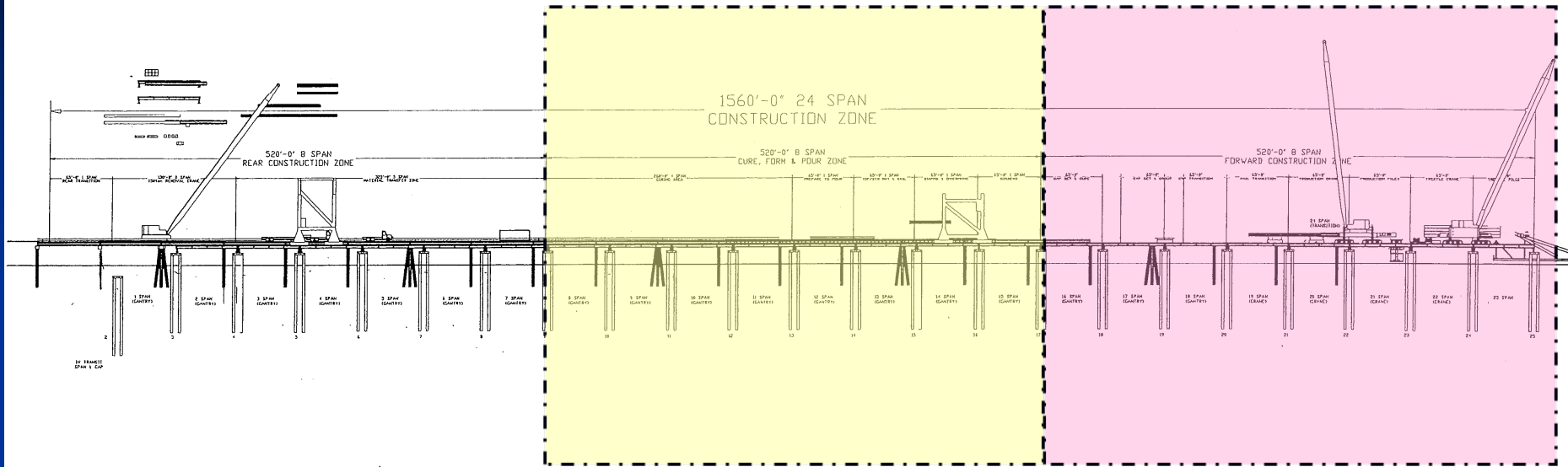
Modified Top-Down Advancing Trestle

Modified Top-Down Advancing Trestle

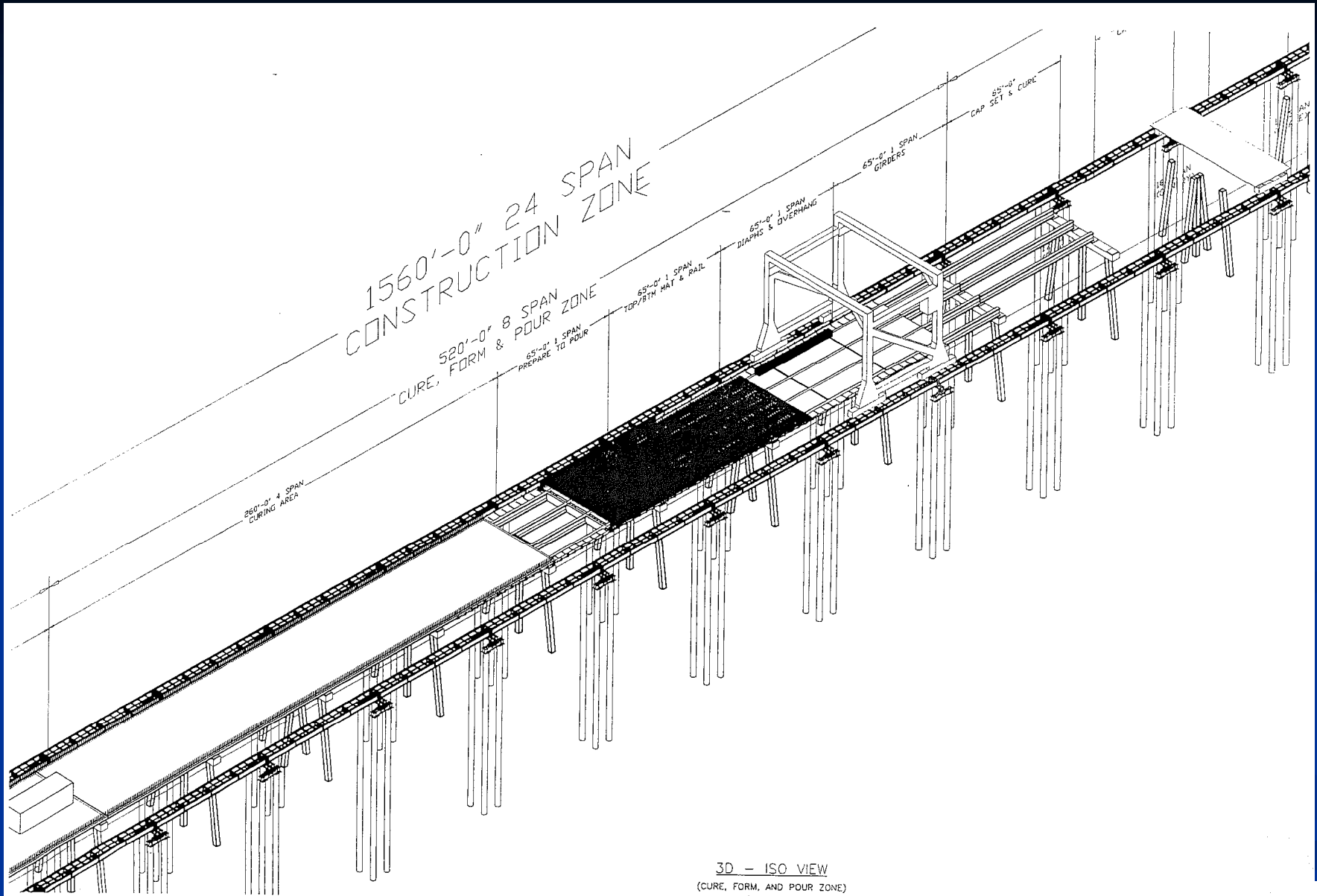


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Modified Top-Down Advancing Trestle



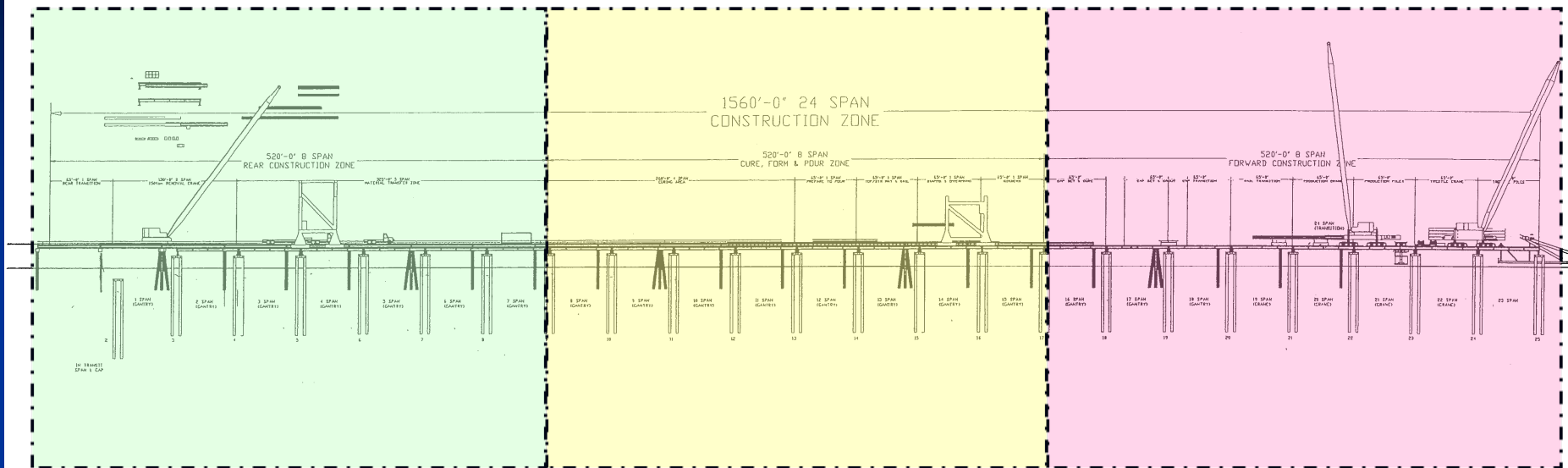
3D - ISO VIEW
 (CURE, FORM, AND POUR ZONE)
 SCALE: NTS

Advancing Trestle -Pour Construction Zone

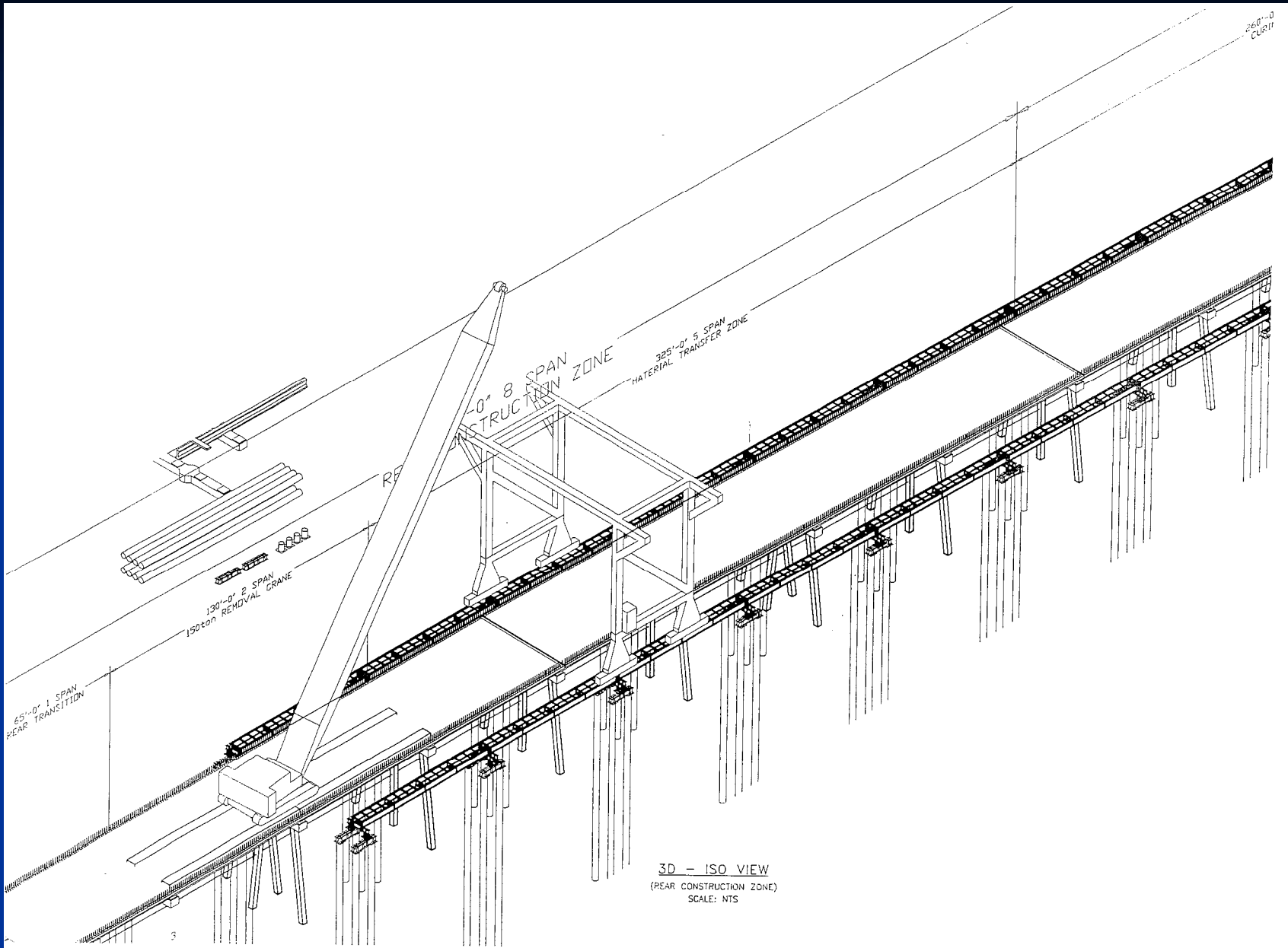




Modified Top-Down Advancing Trestle



Modified Top-Down Advancing Trestle



Advancing Trestle -Rear Construction Zone



Modified Top-Down Advancing Trestle



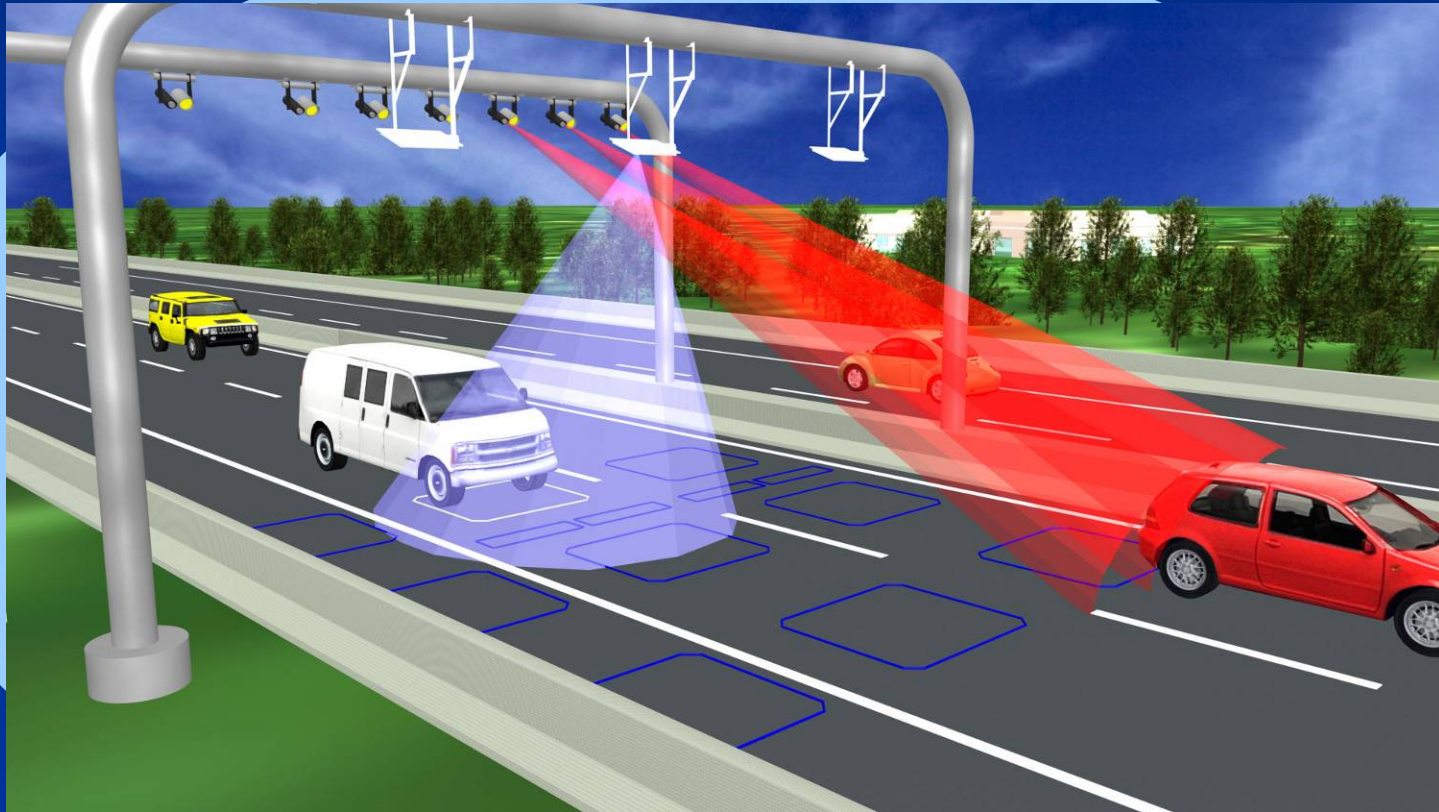
Phase 1B in distance – Feb 2008



Modified Top-Down Advancing Trestle

■ Phase 1D

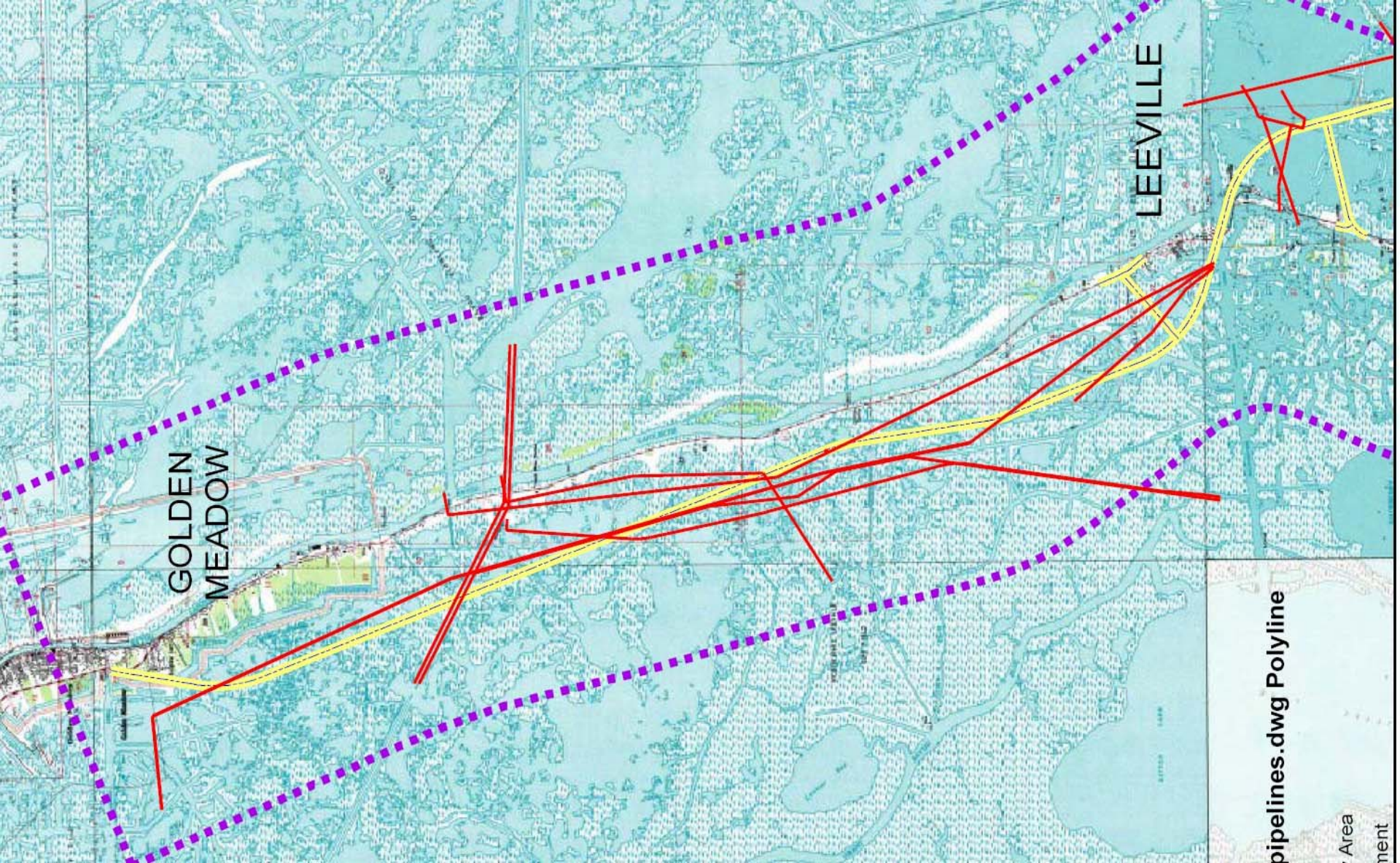
Toll system used after detailed studies was Open Road Tolling (ORT)



Graphic Slide by ETCC of Houston, TX

■ Phase 2

Phase 2 issues



End