DEMOLITION PLANS

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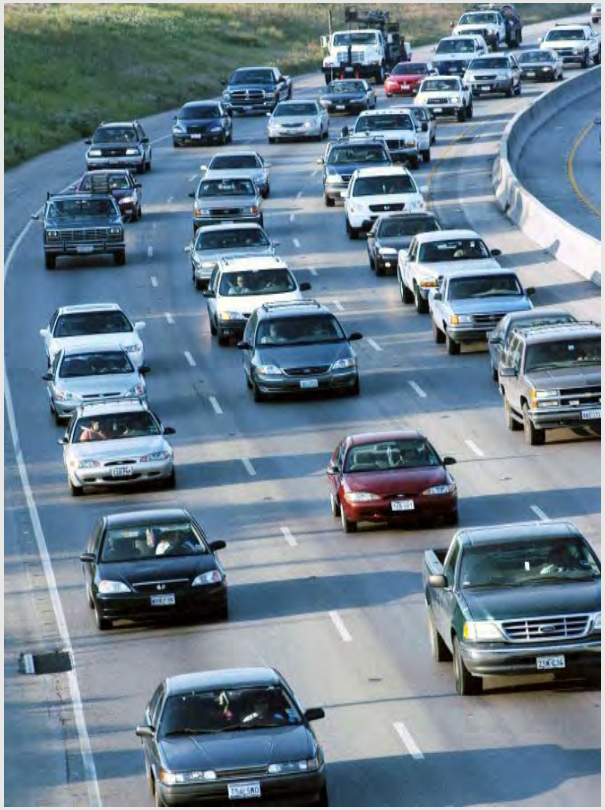

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Item 496: Removing Structures

- Construction
  - Demolition plans should include the type and location of equipment to be used, the method and sequence of removal and a narrative indicating the stability of the partially demolished structure throughout the demolition process.
- Measurement
  - Measured by each structure or by the foot.
- Payment
  - Includes plan preparation, loading, hauling, disposal, stockpiling, removal of appurtenances, excavation and backfill, equipment, labor, tools, and incidentals.

Demolition Plans: When to include?

- When is a P.E. required to sign and seal a set of demolition plans?
  - Does demo plan affect public safety?
  - Will traffic pass under bridge?
  - Does traffic return to bridge after partial demo?
- Consider providing demolition plan in the contract plans:
  - Variable depth CIP girders
  - Other bridge types where partial span demolition can create unstable structure
  - Provide at least 1 option for removal
- Ideally submit/review demolition plans 3 weeks prior to work. (Railroads may require more time to review plan.)

Demolition Plans: What to include?

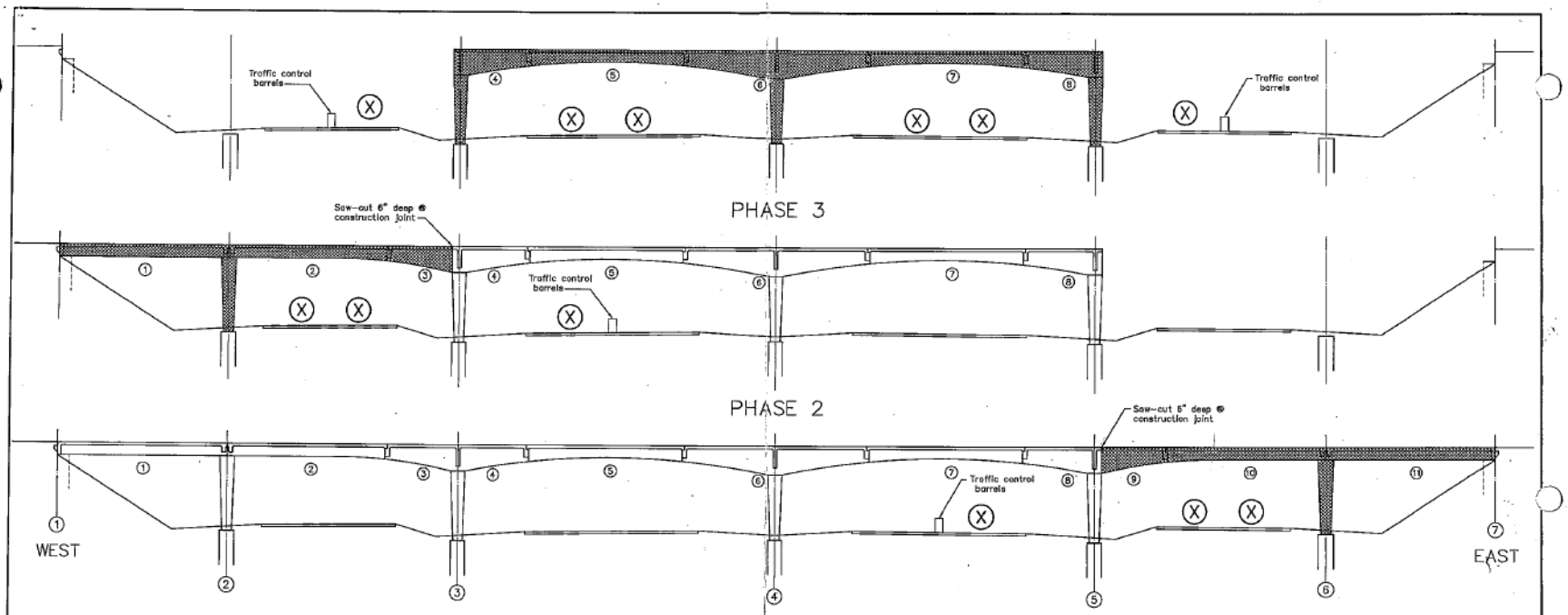
- Written description of the demolition plan.
  - Work activities, procedures and safety precautions
- Demolition sequence
  - Written account of demolition sequence
  - Details/Drawings showing phasing or removal process
- Partial demolition evaluation
  - Structural calculations or analysis at critical stages of demolition
    - Dead/live loads, reactions, wind loads, shear and moment, development lengths, bearing area, equipment loads.

Examples: FM 696 in Austin District

- Phased construction demolition
- Damage to bent cap during slab removal

Examples: Loop 256 in Tyler District

Examples: FM 2219 in Amarillo District



DEMOLITION SEQUENCE:

Phase 1

1. Remove steel bridge railing.
2. Close northbound service road lanes & east lane of northbound mainlanes.
3. Saw cut slab transversely 6" deep at the east side of Bent 5.
4. Remove slab overhang on slab segments 9, 10 & 11.
5. Remove slab between beams on slab segments 9, 10 & 11 and then remove beams on segments 9, 10 & 11.
6. Remove bent 6.
7. Open northbound service road lanes & east lane of northbound mainlanes.

Phase 2

8. Close southbound service road lanes & west lane of southbound mainlanes.
9. Saw cut slab transversely 6" deep at the west side of Bent 3.
10. Remove slab overhang on slab segments 1, 2 & 3.
11. Remove slab between beams on slab segments 1, 2 & 3 and then remove beams on segments 1, 2 & 3.
12. Remove bent 2.
13. Open northbound service road lanes & east lane of northbound mainlanes. SOUTHBOUND

Phase 3

14. Close northbound & southbound mainlanes & east lane of southbound service road lanes & west lane of northbound service road lanes.
15. Remove slab segments 4, 5, 6, 7 & 8.
16. Remove bents 3, 4, & 5
17. Open all lanes.

BAR IS ONE INCH IN LENGTH ON ORIGINAL DRAWING. CHECK SCALE AND ADJUST ACCORDINGLY.
ONE INCH

Examples: FM 2219 in Amarillo District

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Examples: Beach St. over I-30 in Fort Worth, TX

- Fire damage
- Emergency demolition required

Examples: Beach St. over I-30 in Fort Worth, TX

- Consider existing utilities

Examples: MLK over US 183

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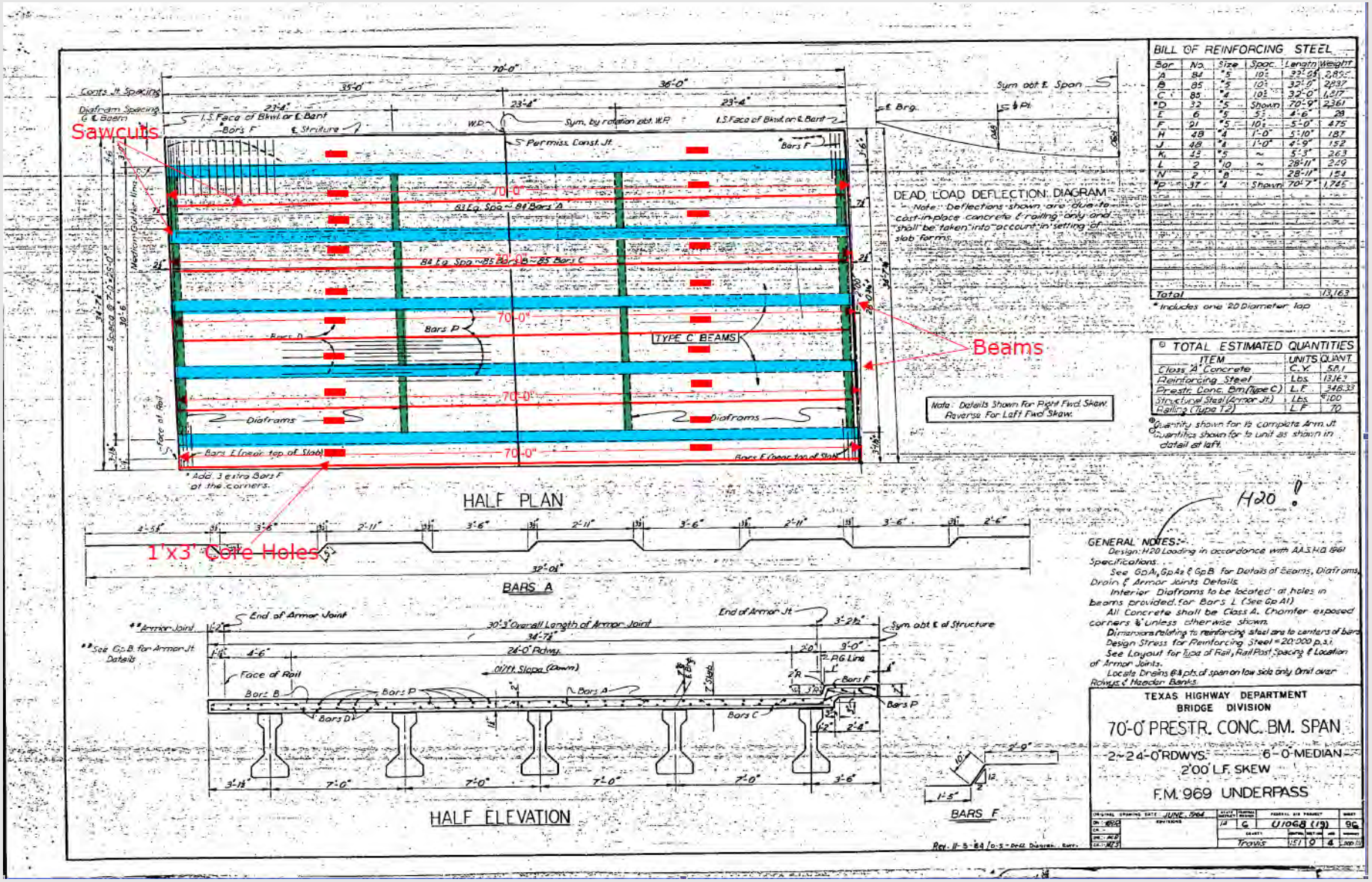
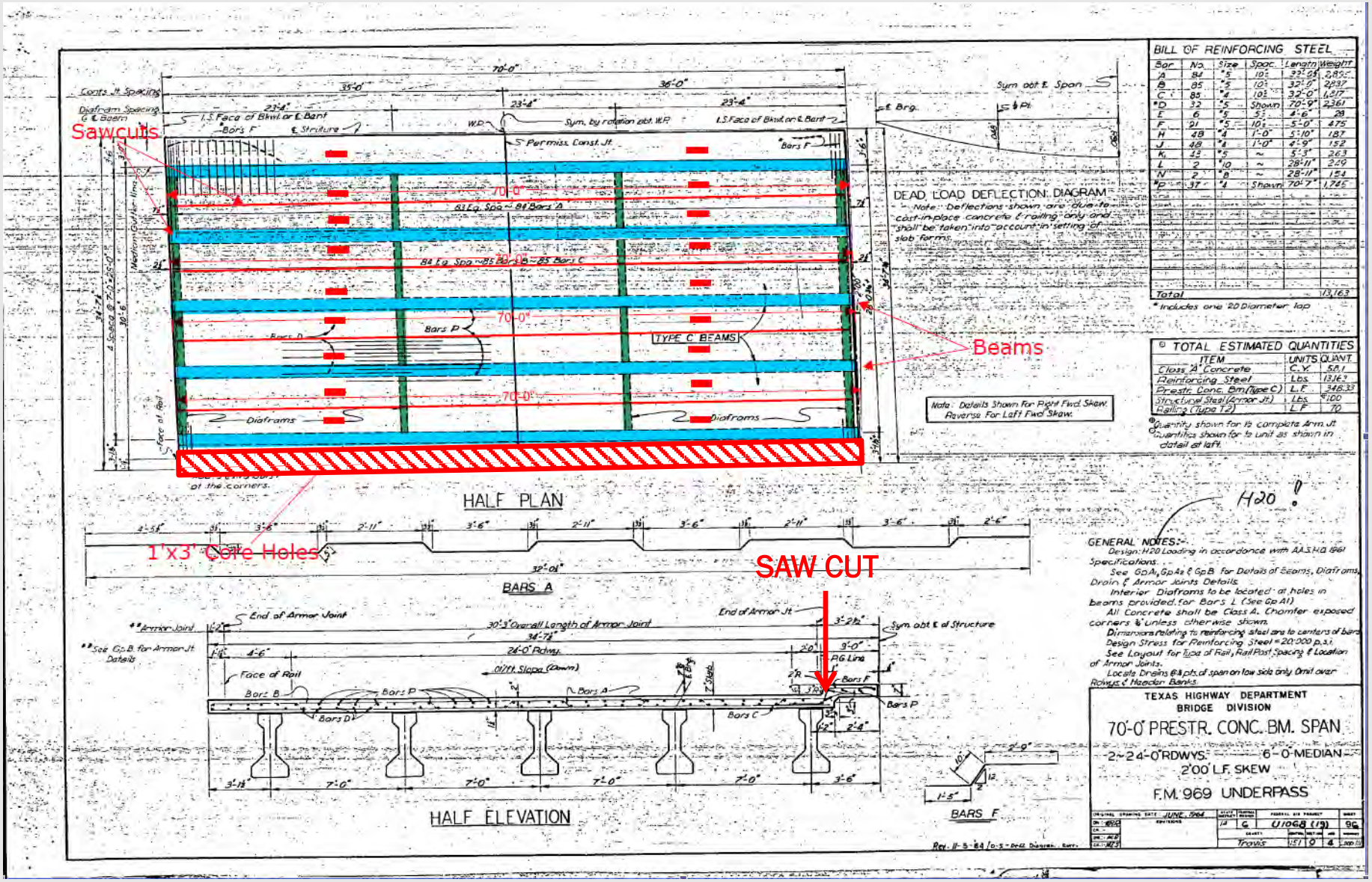


Examples: MLK over US 183



Lessons Learned

- Have a good understanding of the existing field condition.
- Consider and design for equipment loads and know how to position them.
- Pay special attention to the demolition of variable depth girders.
- Consider utilities and other appurtenances.
- Ensure that you have adequately secured sections of bridge to be removed.
- Always verify existing field conditions

QUESTIONS?

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