DEMOLITION PLANS

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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. Repair steel girder toppings.
2. Close northbound service road lanes & west lane of northbound mainline.
5. Remove steel girders on southbound segments 8, 10 & 12.
6. Remove steel girders on northbound segments 8, 10 & 12.
7. Open northbound service road lanes & east lane of northbound mainline.

**Phase 2.**
8. Close northbound service road lanes & west lane of northbound mainline.
10. Remove steel girders on southbound segments 6 & 8.
12. Remove barrier 2.
13. Open southbound service road lanes & east lane of northbound mainline.

**Phase 3.**
15. Remove steel girders 4, 6, 7.
17. Open all lanes.
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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Sawcuts

Beams

1'x3' Core Holes

SAW CUT
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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