

ASHE/ PennDOT District 9 Workshop

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Contract Completion

Contract Completion

District Goal

85% of projects completed by original contract completion date.

Thresholds

Green: $\geq 85\%$

Yellow: $< 85\%$ to 75%

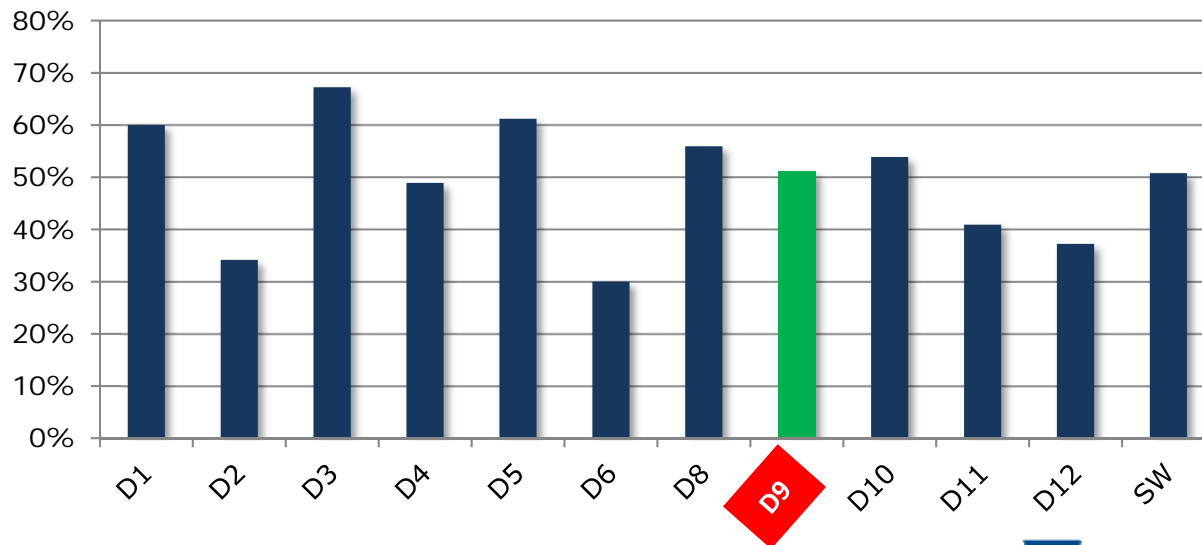
Red: $< 75\%$

Contract Completion

Performance

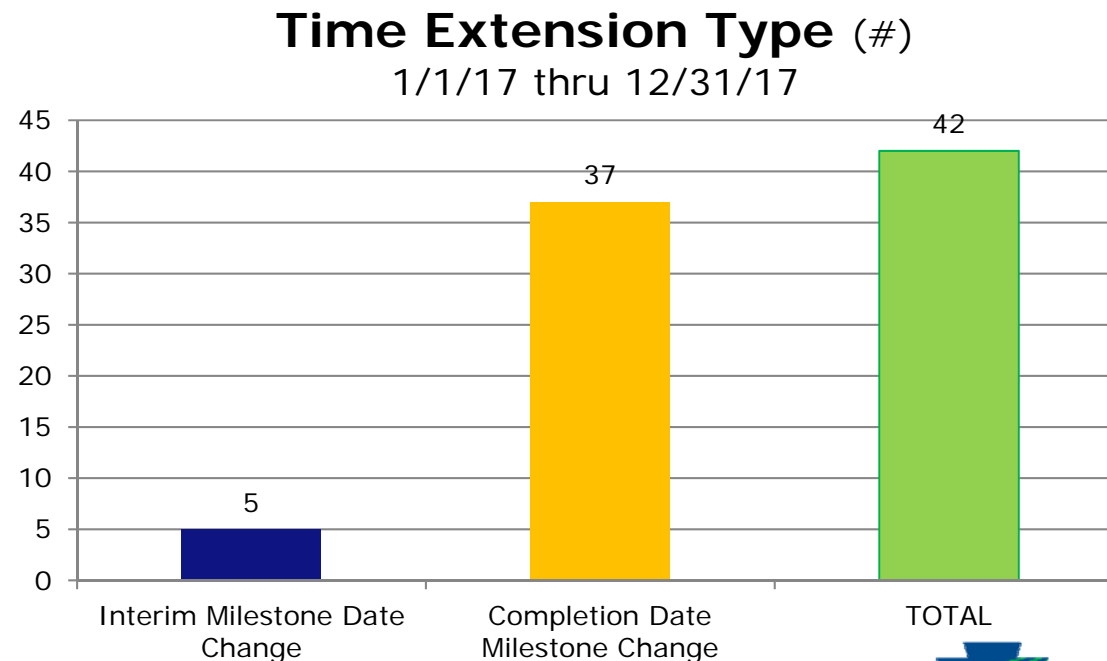
In 2017, D-9 completed 51.1% of our projects within original contract timeframes (red)

% Projects Completed by Original Completion Date
(2017)



Time Extensions

D-9 issued 42 TE's in 2017, including 5 interim milestone changes (3 of which were for US 219)



Time Extensions

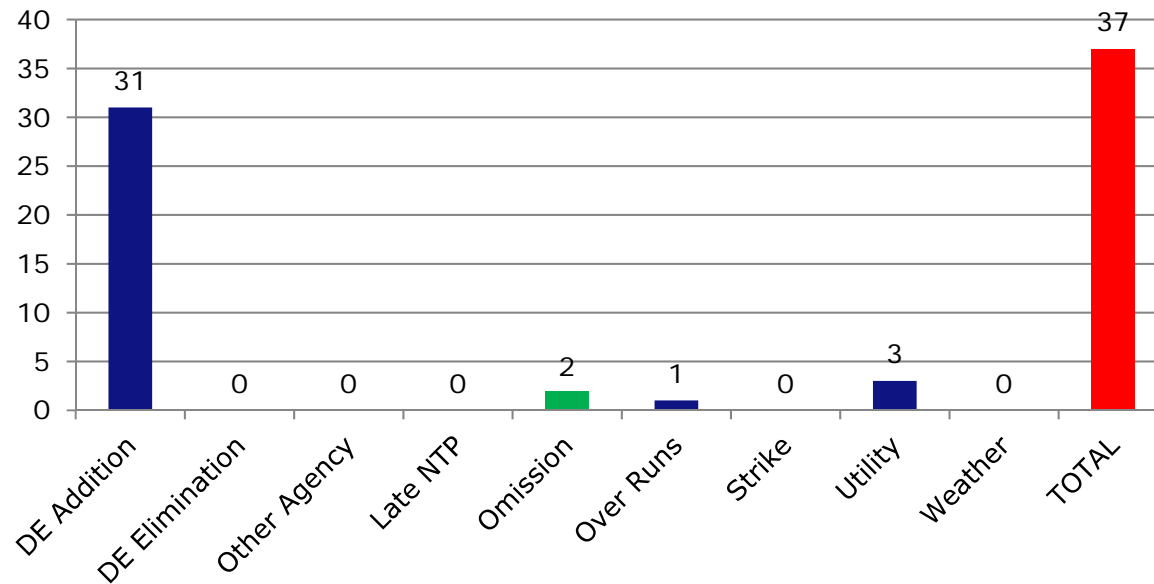
Non-Preventable vs Preventable Factors

- Non-Preventable
 - Unforeseen field conditions are encountered
 - Additional funds thru low bids, deobligations, etc. become available allowing work that was originally excluded for cost reasons
 - Non-related emergency work added to project
 - Utility delays (non-incorporated or coordinated work)
- Preventable
 - Constructability issues
 - Discrepancies in contract milestones
 - Design revisions

Time Extensions

37 Completion TEs Grouped as Follows:

Time Extension Type Factor (#)
(CY 2016 - for Project Completion Date Milestone TEs)



Time Extensions

Non-Preventable Factors

- **Unforeseen Field Conditions (12)**
 - Existing Concrete Footing under Stone Abutment- 1
 - Settlement of Embankment under Abutment - 3
 - Relief of CELD's over winter months – 2
 - Department Omissions – 2
 - Department Forces not ready - 2
 - Upgraded Rest Areas to LED - 2
- **Emergency Work (2)**
 - Emergency Bridge Hit Repair – 1
 - Emergency Slide - 1
- **Utility Delay (3)**
 - Old Mill Bridge Delay – 1
 - T-407 N Br Conemaugh Rvr - Gas Delay -1
 - SR 3012- PA 756 to Scalp - Sewer Delay- 1

Time Extensions

Preventable Factors

- **Design Revisions (20)**

- Additional drainage added (inlets, lowering inlets, address existing issues) – 4
- Maintenance requested removal of wedge placed per contract plans at final inspection – 2
- Added guide rail or added additional fill to eliminate drop off issues - 3
- Additional signage and delineation requested by Traffic – 1
- Wrong sign types called out - 2
- Rumble strips or RPM's added - 2
- Substantial quantity overruns - 1
- Property owner driveway issues -2
- Additional mast arm or signs for mast arm– 2
- Water ponding issue on shoulder only 1% slope on plans - 1
- New overhead signs could not fit on existing sign structures – 1



Fiscal Management

Fiscal Management

District Goal

Final Project Amount/ Original Contract Amount $\leq 3\%$

Thresholds

Green: $\leq 3\%$

Yellow: $> 3\%$ to $< 5\%$

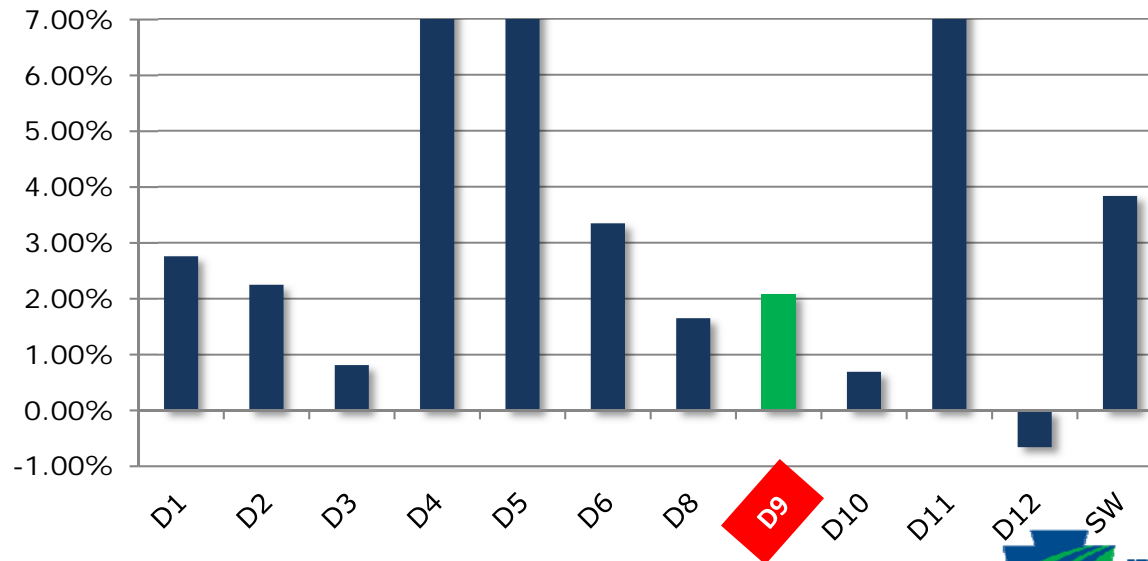
Red: $\geq 5\%$

Fiscal Management

Performance

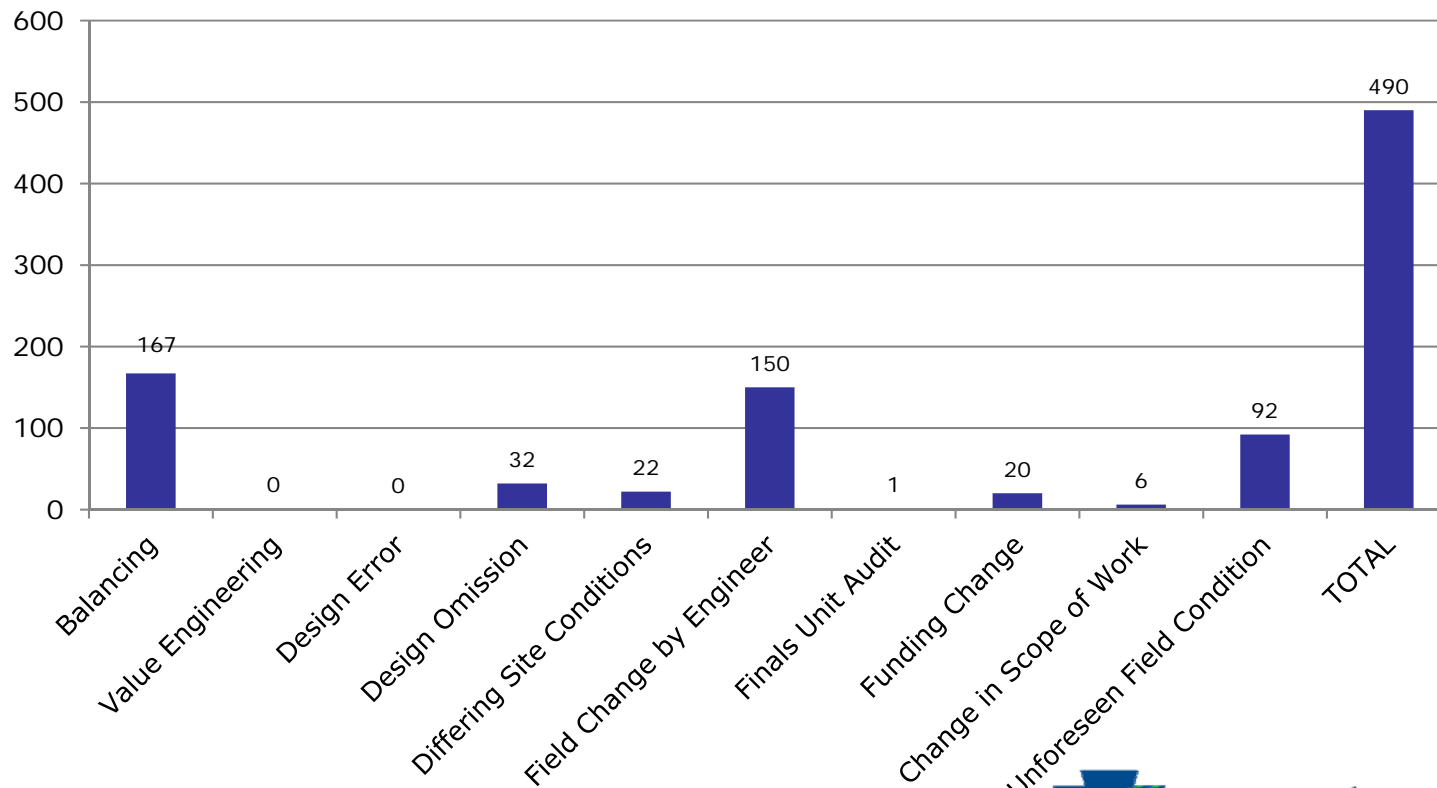
In 2017, D-9 was within +2.09% of cumulative original contract amount (Green)

Final Contract Amount vs Original Contract Amount
(2017)



Fiscal Management

Work Order Change Type (#)
(CY 2017)



Fiscal Management

Reminders:

- Make sure demo notes are carried over from Right-of-way Plans to Construction Plans.
- Verify new signs will fit on existing overhead sign structures.
- Overlay utilities (existing and relocations) and temporary signal facilities and compare to shoring and pile locations to ensure adequate work space/ clearance
- Verify bridge demolish special incorporates any environmental concerns or any special conditions.
- Verify both start detour and end detour milestones are included RULD's.
- If using a 0.65 bearing resistance factor to design piles, need to include item for Pile Dynamic Monitoring in contract.
- Add utility poles on cross sections.
- Verify adequate work space for crane set-up.

Crane Construction Issues

- Crane Set-up
 - Recommend using a 32'x32' platform when layout crane pad. This is only for outriggers, most cranes at least 44' long.
 - Outrigger mats – most crane have 4'x4' outrigger mats.
 - Most cranes will not place outriggers within 5' of top of excavations.
 - Look at grades. Cranes need to be level to pick.
 - On detours need to be able to back up next to beams next to crane.
 - Half-width can pick beams from existing bridge.

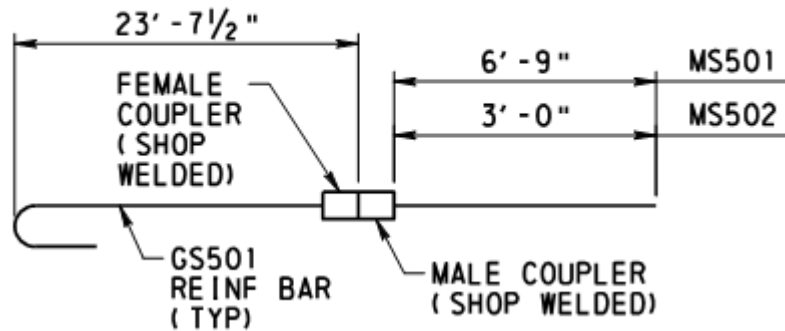
Shoring Construction Issues

- Not enough room for drilling shoring at phased construction line
 - Need to drill holes at least 12" bigger than diagonal pile dimension. Would recommend assuming 30" hole in design.
 - Excavations deeper than 12' will typically have whaler.
- Time for drilling shoring
 - Typically maximum pile spacing is 8'-0".
 - Look at core borings. Typically only get 1 hole a day in hard sandstone (RQD >70%).

Bridge Design Issue

- Showing mechanical splices on rebar.
 - Mechanical splices are a system and should be paid as each item.

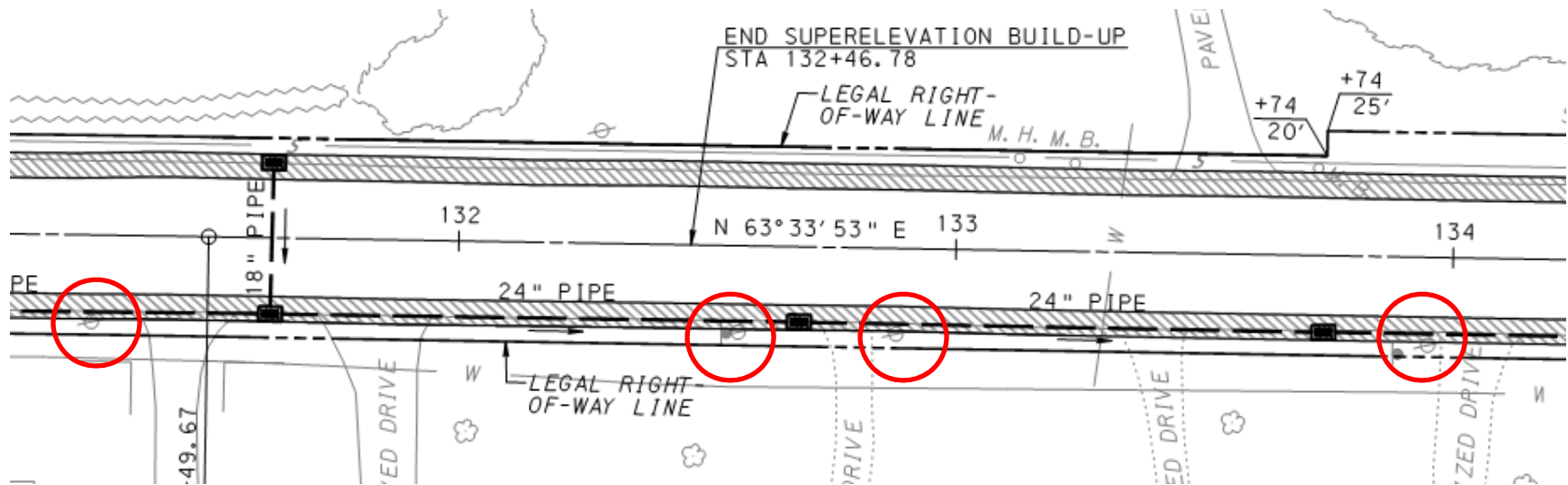
MECHANICAL SPLICE SYSTEMS GALV COATED



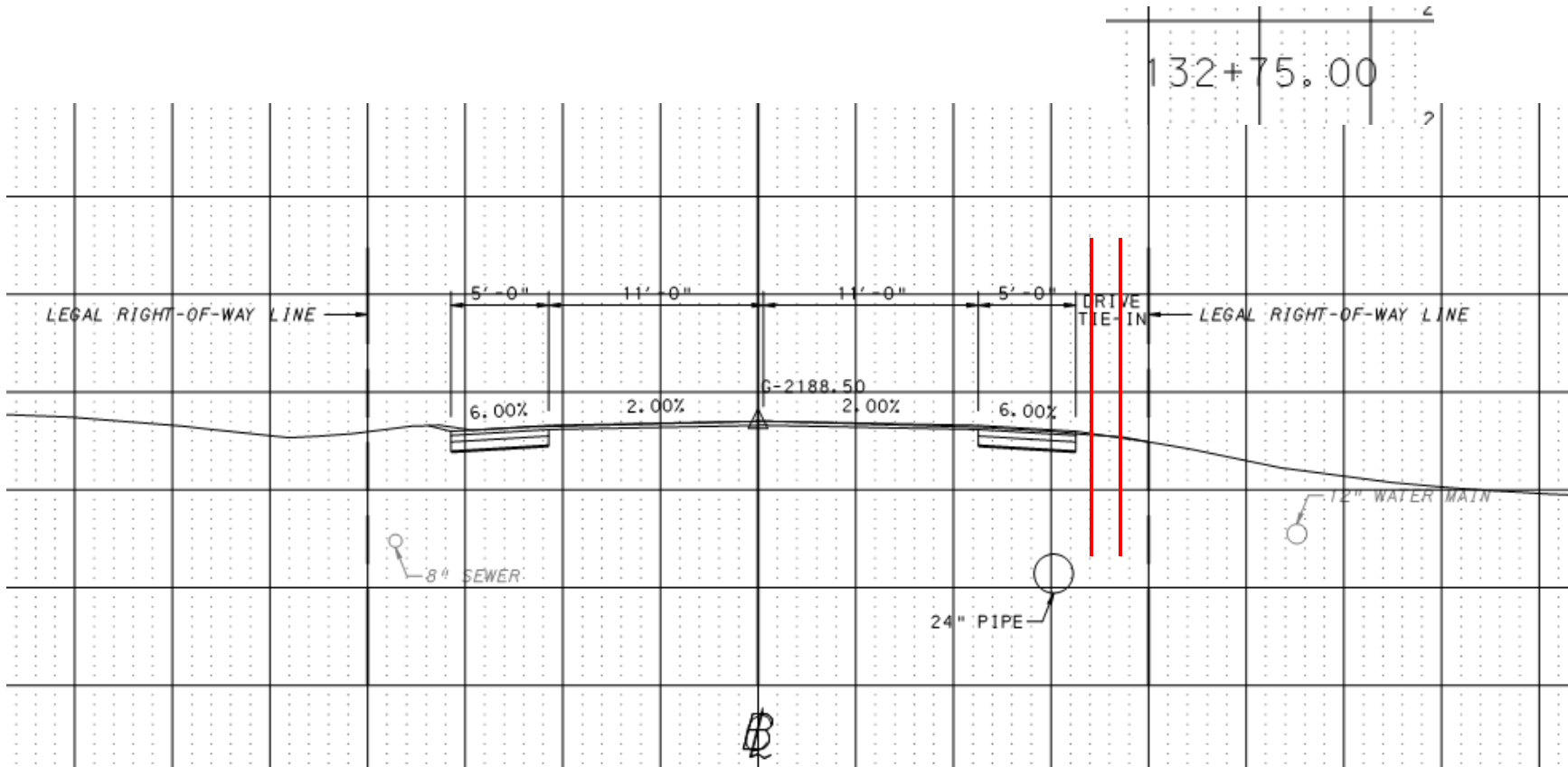
Roadway Pipe Issue

- Digging parallel drainage next to utility poles.
 - Look at size and depth of pipe. Minimum width of trench is $D_o + 4'-0"$ RC-30. Requires 6" of bedding
 - Need to show utility poles on cross sections.

Plan View of Pipe Run

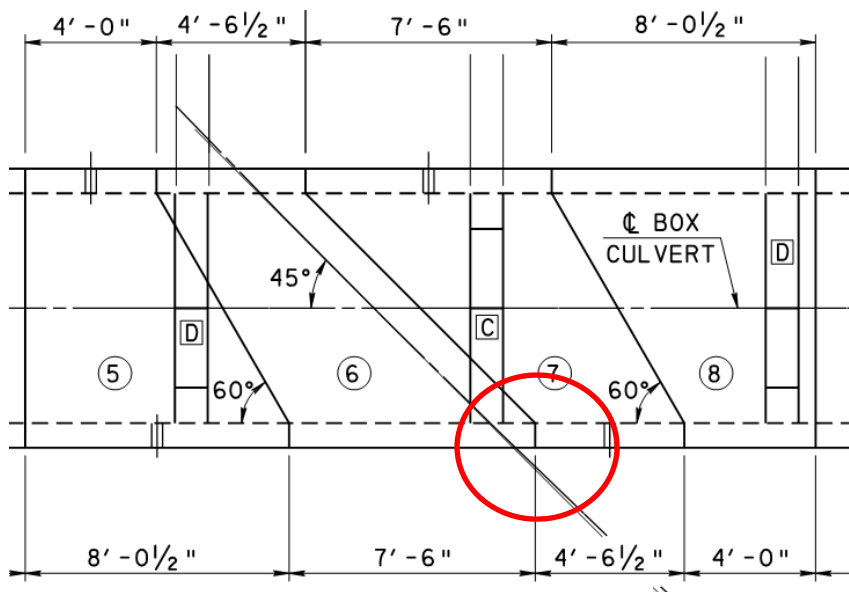


Cross Section of Pipe Run

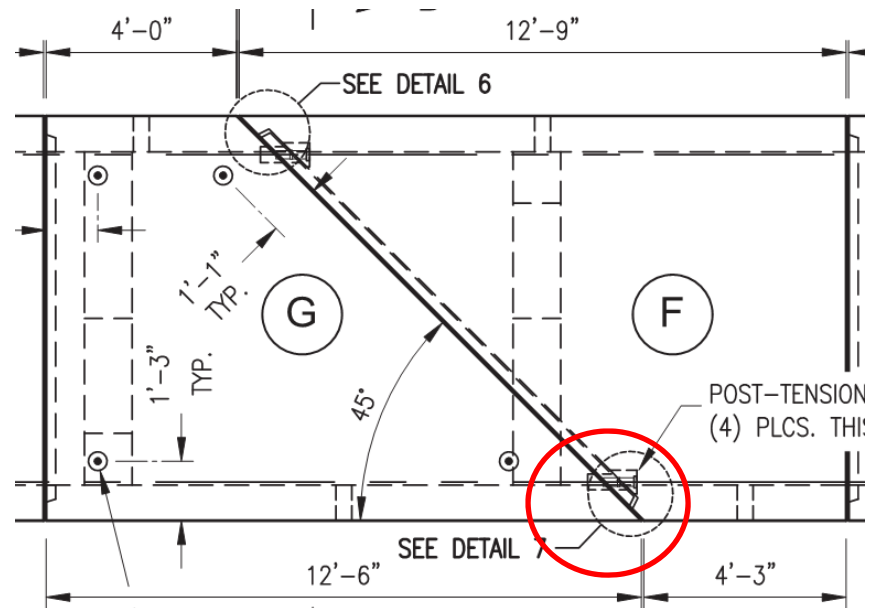


Box Culvert Shop Drawings

Design Drawings



Shop Drawings





Questions???