Session 4: Pre-Installation Considerations
Course Topics

- Session 3 – Guardrail Design and Site-specific Installation Considerations
- Session 4 – Pre-Installation Considerations
Session 4 Objectives

- Review project plans & specifications
- Visit jobsite
- Schedule manpower and equipment
- Identify personnel safety needs
Session 4 Outline

- Preliminary Project Analysis – Contractor
- Pre-installation Review – “Review Team”
- Job Site Analysis
- Vehicle and Equipment Analysis
- Project Personnel Safety Analysis
Preliminary Project Analysis

- Receive, read, understand, and complete the contract or work order.

- Mark project plans to include estimating notes and installation ideas to complete the project within estimate and on time.

- Do a value engineering analysis of existing bid items. Notify engineer of possible changes to evaluate.

- If acting as a subcontractor, call the prime contractor to coordinate scheduling.
The following is an example of a **Pre-installation Review** that one State has done. Delaware may want to consider a similar program.

See Technical Brief # 2.
Pre-installation Review Guidelines

A pre-installation review is performed to ensure an optimal installation.

These reviews are conducted on all interstate, expressway and/or other projects where federal oversight is being done.
The “review team” would consist of the PennDOT Inspector-in-Charge, District guardrail Mentor, FHWA Representative and Contractor’s Representative.

Prior to the review the contractor must place temporary markers to indicate the locations of all permanent traffic barrier and end treatments.
Pre-installation Review Guidelines

Reviews will look at the following items:

- Barrier Length of need
- End terminal/crash cushion selection
- Slopes and grading
- Miscellaneous – existing barriers to be removed, other locations within the project limits that need to be addressed, areas where barriers can be reduced or eliminated.
Pre-installation Review Follow-Up

- Revisions made through existing procedures.
- Information transmitted to design as lessons learned.
- Summaries annually for statewide action.
Job Site Analysis: Site Visit

- Check for **existing conditions** that may cause potential problems for field crews:
  - Culverts – check fill depth
  - Bridges – check for correctly formed wing walls (including correct pattern & depth for inserts).
  - Curbing/sidewalk -
    - Ask whether to take grade from roadway or from curb/sidewalk.
    - Discuss liability for repair of sidewalk after post installation.
Job Site Analysis: Site Visit

- Paved slopes
  - Saw through paving before driving posts and patch after posts are driven with in-kind material.

- Ditches/Slopes
  - Verify correct lateral placement

- Site Grading
  - Verify adequate recovery area exists.

- A minimum of 3 working days before starting project, call the utility locator.
Job Site Analysis

- Other Critical / Last Minute Details:
  - Ensure proper traffic control will be provided.
  - Be aware of local labor service for employment if additional personnel is needed.
  - If material is taken from inventory, load now. If material requirements change, notify material supplier and confirm delivery date, time, location.
  - Let the prime contractor know you are mobilizing.
Vehicle and Equipment Analysis

- **Vehicles**
  - Crew truck with capability to transport men, material, and tools.
  - 2-5 ton flat bed material hauler capable to pull a trailer.
  - Large rotating amber beacon or strobe lights mounted to each vehicle and clearly visible for 360-degrees around the vehicle (all vehicles including construction equipment)

Note that the road is closed as there is no traffic control.
Vehicle and Equipment Analysis

- Primary Equipment
  - 25-ton, 25-ft trailer to haul material and or equipment.
  - Remote from operating station drop hammer or vibratory post driver.
    - Other attachments: post puller, pressure auger, down hole hammer rock drill. Usually mounted on a 2-ton truck.
  - Arrow board, channelizing devices, truck mounted attenuator and temporary traffic control signs.
Vehicle and Equipment Analysis

- Specialized Equipment
  - Backhoe
  - Skid steer
  - Forklift
  - Knuckle boom truck
  - Grass trimmer

- All vehicles and equipment are subject to scheduled inspection and maintenance procedures and documentation.
Project Personnel Safety Analysis

5 Areas

- Personal Protective Equipment
- Personnel Safety Procedures
- Identification of Procedures for Hazardous Materials
- Crew Briefing
- Verification of Special Skills Certification
Project Personnel Safety Analysis:
Personal Protective Equipment

- **Mandatory safety equipment**
  (unless otherwise directed by local agency)
  - Head protection (hard hats)
  - Eye protection (safety glasses)
  - Foot protection (safety toe / composite)
  - High visibility safety apparel (retroreflective vests)
  - First aid kit in all crew trucks & all company locations

- **Optional safety equipment**
  - Hand protection (gloves)
  - Weather-related clothing (rain suit)

- Pre-hire, annual, and/or random drug testing?

- Equipment operation

- Emergency procedures
  - Locate nearest hospital

- Evacuation plans

- Accident reporting
  - Notification of insurance
  - Report injuries
Project Personnel Safety Analysis: Hazardous Materials

- Identification of and procedures for Hazardous Materials
  - Receiving and transporting of Hazardous Materials: galvanized material, gasoline, diesel, hydraulic fluid, antifreeze, explosives and caps.
  - Schedule and amount of explosives (if used).
  - Documentation of inventory.
  - Material Safety Data Sheets (MSDS) / discuss with crew.
Project Personnel Safety Analysis: Crew Briefing

- Crew briefing
  - Plans
  - Estimate notes and installation ideas
  - Jobsite conditions
  - Pre-trip inspection of equipment/loaded material
  - Review reporting procedures
  - Daily safety briefing
  - Confirm crew understands by asking questions
Project Personnel Safety Analysis: Special Skills Certification

Verification of special skills certifications

- Contractor’s license
- Certified Installer certification (required by some DOTs)
- CDL license
- Equipment Operator license/certifications
  - company post driving training
  - fork lift training
  - backhoe training
  - skid steer training
- Traffic control flagging certification
Session 4 Outcomes

- Interpret Plans and Specifications.
- Visit Installation Site(s).
- Schedule Manpower & Equipment Needed.
- Ensure Adequate and Proper Safety Measures are Followed.