

Bridge Layout

Session 2



WisDOT Bridge Construction Inspection Training - 2020

2-1

Session 2 – Learning Outcomes

Upon completion of this session participants will be able to:

- Identify the steps required to layout bridge components
- Understand the techniques used to stake bridge substructures
- Perform basic checks for bridge layout

*Note that the layout of piles and beam seats will be covered later in this training.



2-2

Substructure Layout

- Contractor Staking Guidance
- Benchmarks
- Centerline of Roadway/Bridge
- Centerline of Substructure Units
- Centerline of Wingwalls



2-3

Layout Tools

- Plans
- Your Eyes
- Tape Measures
- Level
- String Line
- Stakes
- Common Sense
 - If it looks wrong, it probably is



2-4

Surveying for the New Bridge



2-5

Set New Benchmarks

Know where the BMs are and note them in your plan set.



2-6

Roadway Centerline Layout



2-7

Stake the Offsets

Commonly 50' to 100' laterally from centerlines of substructures.



2-8

Pier Layout w/ Elevation Checking



2-9

Cofferdam Layout – If Necessary



2 - 10

Pier Pile Layout



2 - 11

Abutment Layout



2 - 12

Abutment Layout

Excavation and site conditions can make visualization difficult.



2-13

Abutment Piling Layout



2-14

Wing Wall Layout



2-15

Check Layout vs Utility Locations

Look vs plans and determine whether additional or missing utilities are in the field.



2 - 16

Checking/Rechecking the Layout


Bottom Line – If something does not look right, do not wait to bring it up.



2 - 17

Bridge Layout

EXERCISES



2 - 18

