

PRELIMINARY HYDRAULIC FIELD VISIT CHECKLIST

1. MEASUREMENTS OF BRIDGE/CULVERT, WATERWAY, APPROACHES

- Soundings for bridge opening, incl. bridge seats, low chord, toe of abutment, natural ground, tops of banks, water's edge, water surface elevation
- Measure/locate each span
- Measure size of culvert opening(s) (width x height)
- Measure cover over pipe/culvert
- Measure skew of structure
- Plot location of channel and tops of banks relative to structure
- Note abutment type and condition
- Note any evidence of scour/erosion/bank instability; for culverts, also note the following:
 - Scour hole at outlet (depth, length, width)
 - Is invert perched? If so, measure how much
- Note bed material and condition
- Review existing land use for determination of Manning roughness coefficient values
- Determine approximate location/elevation for roadway overtopping
- Note any identifiable migration of stream
- Identify and sketch potential stream relocations
- Note condition of existing bridge/box culvert (cracks, spalling, etc)
- Measure normal depth of water (beyond influence of existing structure), recent high water, Ordinary High Water (OHW – mud or vegetation line)
- Note signs of high water and elevation
- Note if flow is confined to a single barrel (if culvert is multi-barrel)
- Measure width of channel (base, water's edge to water's edge, top of bank to top of bank) and plot channel alignment/skew relative to structure (at approximate crossing location if new location)
- Note debris potential
- Note and locate as appropriate anything that may affect proposed structure (remnant piers, etc.)
- Note whether USGS stream gage is attached to or near bridge
- Note utilities concerns (overhead, attached to structure, adjacent to roadway, etc.)

2. NEARBY PROPERTY, STRUCTURES, ETC. AFFECTED

- Note any structures upstream that may be in the floodplain
- Note nearby utilities
- Note potential environmentally sensitive areas (including wetlands, parks, ponds, lakes, reservoirs)
- Note Right-of-Way acquisition concerns (especially for recommended alignment)
- Measurements of building offsets, driveway location, etc. if directly adjacent to bridge/culvert
- Describe floodplain characteristics upstream and downstream

3. PHOTOGRAPHICAL INFORMATION

- Upstream channel and banks
- Downstream channel and banks
- Bridge face showing approaches
- Left and right approach alignments
- Abutments and typical interior bent
- Any special conditions that warrant a photograph
- Document/label photos taken in field notes for identification purposes

4. FIELD NOTES/DELIVERABLES

- Date and note personnel on field notes
- Plan view sketch at 1"=50' scale (or other convenient scale)
Plan view sketch should include ex. structure/bents (incl. remnant piles, if applicable), channel alignment with water's edge and tops of banks, and include road, and any pertinent adjacent features (building, drive, woods line, utilities, ditch, pipe etc.), North arrow and flow direction. After field visit, proposed structure should be added at appropriate skew and include preliminary span arrangement.
- Profile view at 1"=10' scale (or other convenient scale).
Profile view should include ex. structure/bents, WE & TB, etc. After the field visit, prop. structure should be added and include preliminary superstructure and span arrangement.
- Record of historical flooding information from locals (w/name, address, phone no., years in residence): ever overtopped, highest level reached, flooding frequency etc.
- Show recommendation for replacement or for new structure
- Note any advantages or disadvantages with respect to various alternatives
- Note recommendation for proposed structure/road alignment, and temp. on-site detour
- Record of photographic information

Obtained from Routine Inspection Report:

- Superstructure type and depth (top of deck to low chord)
- Substructure type
- Year built
- Clear roadway width
- Overall (out to out) bridge deck width
- Note bridge sounding data for historical migration of streambed or developing scour
- Review photos and notes about debris
- Note any maintenance performed due to scour