GEOTECHNICAL ENGINEERING BUREAU
BRIDGE FOUNDATION INVESTIGATION CHECKLIST

PROJECT_____**DATE**_____**ENGINEER**_____

I. DEEP FOUNDATIONS

- ☐ Do all piles have adequate penetration for both scour and no scour condition? (Remember to do pile bearing analysis for scour condition.)
- ☐ For PSC piles, are sufficient test piles set up, both at end bent and intermediate bent(s)? Remember to specify the location of test piles (bent number and location, left or right).
- ☐ Is jetting or spudding of piles needed? (PSC or metal shell piles at stream crossings only.) Have you provided pre-drilling as an alternate to jetting or spudding? (If so, need SP 520.)
- ☐ Is the PDO (Plan Driving Objective) identified?
- ☐ Are H-piles points or pilot holes needed? Need to specify correct pilot hole size, backfill material, if any, and whether casing is needed to maintain the hole.
- ☐ Are cofferdams with seal concrete needed at pile footings? Is temporary shoring needed?
- ☐ For metal shell and H-piles, specify corrosion protection for pile bents at the intermediate bents.
- ☐ For drilled shafts, specify end bearing and/or side friction values.
- ☐ Is freeze bearing needed to achieve pile bearing capacity to avoid overdriving of piles? If so, specify minimum waiting time (prefer minimum of 24 hours).
- ☐ Will new foundation undermine or interfere with existing foundations?
- ☐ Is sway bracing of H-pile bents needed?

II. SHALLOW FOUNDATIONS

- ☐ Are cofferdams with seal concrete needed? Will cofferdam sheeting obtain sufficient embedment?
- ☐ Is temporary shoring needed to construct footings?
- ☐ For footings on rock, is minimum 2'- 3' key into weathered rock or 1' key in hard rock set up?
- ☐ If groundwater will be above footing elevations, is 12" of Type II Foundation Backfill material set up? (Not for spread footings at stream crossings)

III. GENERAL INFORMATION

- ☐ Has scour line been addressed? Has the possibility of river meander been looked at?
- ☐ Has need for rip-rap with fabric and any other potential erosion problems been noted?
- ☐ Note if a waiting period is needed. (Applies to pile driving only. If waiting period needed for approach slabs, address in soil survey). Also check if waiting period will be needed at the bent next to the endbent if soft soils and lateral shoving may be a problem.
- ☐ Is downdrag protection needed for piles at endbents? Is it needed for piles which are within mechanically stabilized earth walls?
- ☐ Will removal of soft soils underneath new endbents be needed? If so, include removal detail in soil survey report (may have to revise soil survey).
- ☐ Will 2:1 slopes on endfills be stable, or are flatter slopes needed?
- ☐ If endfills fall in water, need to set up rock embankment with waiting period and spread footing or use special pile driving detail with granular embankment.
- ☐ Will new embankment cause damage to the existing bridge?
- ☐ For coastal bridges with fender piles, have you provided fender pile tip recommendations?
- ☐ Have you stated that as-built data needs to be forwarded to the Geotechnical Bureau upon completion of the foundation system?

IV. FILE INFORMATION: In addition to the complete report, the following must be included in the project file:

- ☐ Original transmittal letter (from Bridge Office, State Aid, District, etc.).
- ☐ Soil classification test results (if needed to verify soil types for friction piles or for removal at endfill areas).
- ☐ Pile Bearing analysis results, from either SPILE program or static charts (needed only for friction piles)
- ☐ Field logs
- ☐ Bridge preliminary layout sheet
- ☐ BFI Checklist
- ☐ Fathometer reports (if applicable)
- ☐ Site photographs and or reconnaissance reports (if applicable)
- ☐ Previous site information, such as copies of old BFI reports, pile driving records, etc.
- ☐ Site Map