

INSTALLATION CHECKLIST

STATE: _____ PROJECT: _____

DATE: _____ LOCATION: _____

- The Leaveout (specified area of open space in the pavement) around the posts is reserved and filled with state/specifying agency approved backfill material that will not prevent movement, for any posts installed in rigid pavement such as any thickness of concrete or asphalt.
- The finished Guardrail height is approximately 27³/₄" above the finished grade, or as the state/specifying agency plans indicate.
- Any site grading needed was completed, before the start of the installation of the ET-PLUS™ systems.
- The steel tubes or post plates (ears) to the HBA™ Bottom Posts do not protrude more than 4" (100 mm) above the finished grade measured by the American Association of State Highway and Transportation Officials ("AASHTO") 5' (1.5 m) cord method. Site grading may be necessary to meet this requirement.
- The ³/₄" bolts connecting the tops of the HBA™ Bottom Posts to the bottoms of the HBA™ Top Posts are tightened to a snug position. The designer does not recommend a torque requirement for the HBA field assembly.
- The ⁵/₈" bolts connecting the tops of the HBA™ Bottom Posts to the bottoms of the HBA™ Top Posts are tightened to a snug position. The designer does not recommend a torque requirement for the HBA field assembly.
- The bolts at the top of the steel tubes are not over tightened. The walls of the steel tubes are not collapsed.
- If an angle strut was utilized, the bolts connecting the angle strut are HIGH STRENGTH.
- The ET-PLUS™ Extruder (Head) is pushed as far as it will go on the rail panel, ensuring the panels fully engage with the channel chute.
- The two bolts holding the ET-PLUS™ Extruder (Head) to **Post 1** are snug and the Extruder channel chute is approximately parallel to the finished grade.
- The Cable Anchor Bracket is locked into place, by pulling the bracket towards the impact end of the unit, making sure the hooks/lugs are well seated into the square holes.
- The shank portion of the anchor cable **MUST BE** positioned vertically, up flush against the bottom web of the top section of the HBA post. The shank portion of the cable **MUST** also be centered horizontally so that the bearing plate bears uniformly on both flanges of **Post 1**.
- Any grout, backfill, or other materials (such as concrete, asphalt, or soil) must be low enough so as not to obstruct, constrain, or otherwise engage the bearing plate.
- The Hex Nuts on the cable ends are tighten, until the cable is taut. The cable is considered taut, when it does not deflect more than 1 inch when pressure is applied by hand in an up or down direction.
- The Bearing Plate (PN-782G) is placed on the impact side of **Post 1** where the cable extends through the post. The cable bearing plate **MUST BE** oriented with the "long" dimension turned up. The hole in the bearing plate is off center (in the vertical direction), 5" (125 mm) from one edge and 3" (75 mm) from the opposite edge.
- The top surfaces of any grout or other backfill placed in the mowstrip "leave out" must be low enough so that it does not engage the bearing plate or otherwise obstruct/constrain the 3/8" shear bolts or the 3/4" hinge bolts of the HBA Post
- Any wood offset blocks used have been toe nailed to the wood posts.
- If backfilled, the backfill material around the posts is properly compacted.
- Each HBA™ post has two bolts on either side of the post with the larger bolt downstream of the smaller bolt (away from the impact head).
- The SYTP™ holes are at the finished grade.
- The CRT post has two 3¹/₂" (90 mm) breakaway holes (checked prior to installation). They are located parallel to the roadway with the top hole located approximately at the finished grade.
- The tube bolts are installed with the nuts on the pavement side of the tube for ease of future removal.
- The rail panels are lapped correctly and not attached to the posts at locations identified for the system installed.
- The reflective sheeting is correctly positioned on the Extruder face.
- Ensure that this installation conforms with the guidance provided by the AASHTO Roadside Design Guide, including, but not limited to, those regarding placement on curbs.