

INTRODUCTION

Highway road culverts with limited right-of-way normally have a headwall at each end to retain the road embankment. Historically, these headwalls were poured-in-place concrete structures. However, a more readily constructible and cost-effective modular option has been advancing through municipal maintenance divisions . . . the Aluminum Structural Plate Welded Headwall.

Aluminum structural plate welded headwalls (ASPWH) are durable, flexible, and cost-effective. With no rebar schedules, mix specifications, pours, frequent testing, cure times, et al., aluminum structural plate headwalls are an excellent alternative to rigid, cumbersome, and costly concrete options.

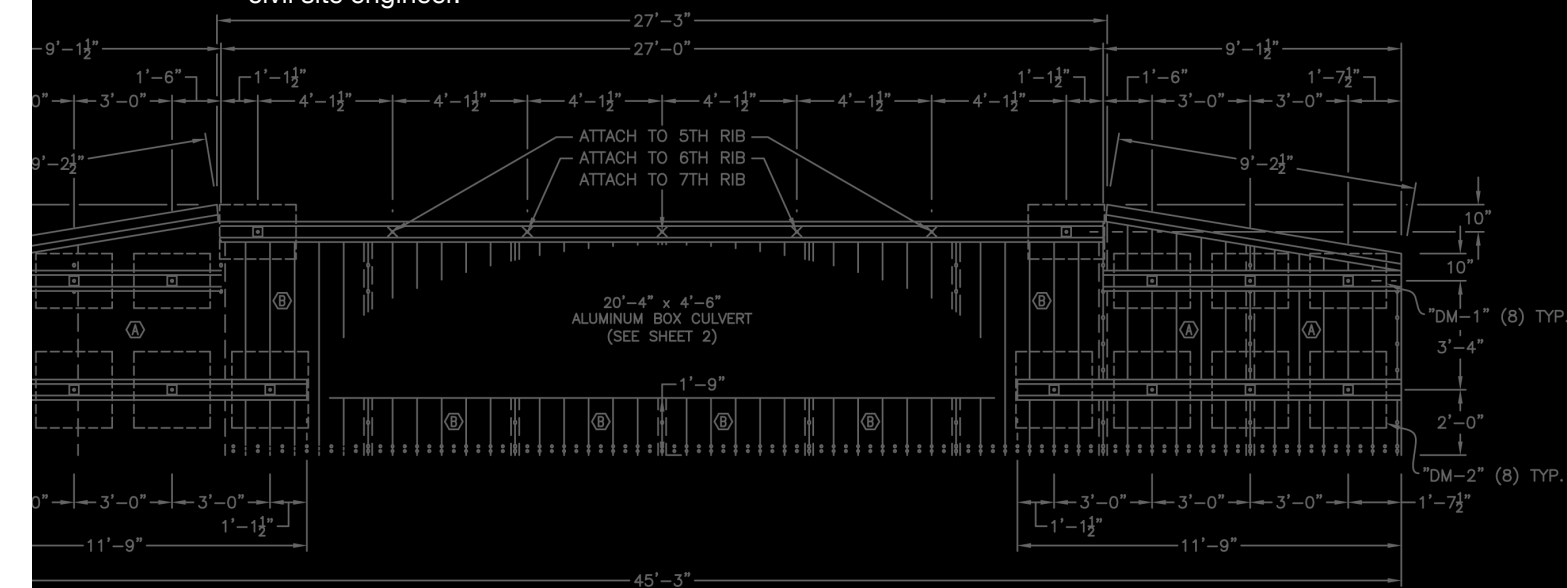
Lane offers a complete turnkey approach for the ASPWH product, including certified professional engineering design, fabrication and assembly drawings, product fabrication, delivery, and installation supervision. Prebid/construction field scoping is also available.

The program works well for municipal material bids and provides efficiency to the civil site engineer.



ABOUT **ASPWH**

- Excellent strength and corrosive resistance properties
- Engineered as an anchored retaining wall, fully integrated with the culvert
- Flexible and lightweight materials can be managed with typical construction equipment
- Conducive to one-piece, drop-in installations to minimize road closures
- Especially suited to accommodate culverts skewed to the roadway
- An Accelerated Bridge Construction (ABC) Technology





BRIDGE **MAINTENANCE**

Lane's innovative bridge maintenance replacement program achieves desired economy by minimizing design and construction costs and employing a specialty bridge material virtually unknown by many of today's designers – aluminum structural plate.

ASPWH: An Accelerated Bridge Construction (ABC) Technology

LANE ALUMINUM STRUCTURAL PLATE WELDED HEADWALLS

HS-20	8.0k	32.0k
HS-25	10.0k	40.0k

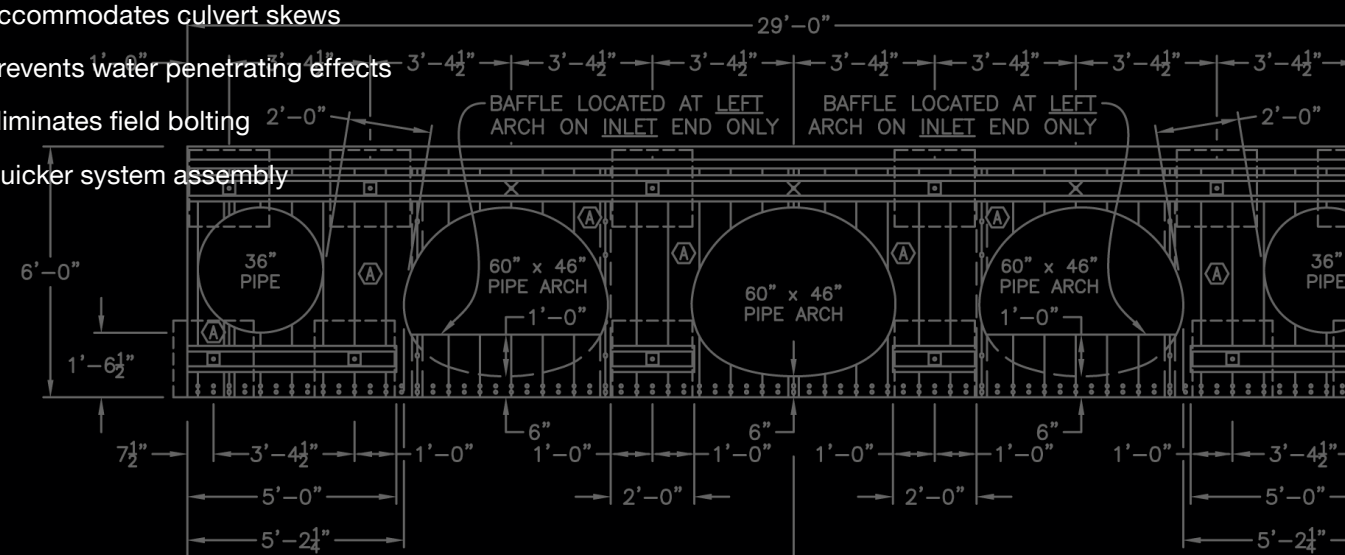
THE ALUMINUM HEADWALL **ADVANTAGE**

Lane's welded aluminum headwall structures are engineered for standard highway truck loadings (e.g., HS20, HS25, HL93), and the durability of pure aluminum also provides the ability to withstand harsh environments and site conditions. These systems, given the state-of-the-art manufacturing and professional fabrication, are engineered to exceed design expectations.

The headwall opening is fabricated to match the culvert shape and size and the pieces are fully welded together. In essence, the headwall is fully integrated with a culvert stub. The integrated headwall-culvert component becomes especially conducive to accommodating culvert crossings skewed to the roadway alignment.

WHY WELDED HEADWALLS VS BOLTED

- Increased structural rigidity
- Accommodates culvert skews
- Prevents water penetrating effects
- Eliminates field bolting
- Quicker system assembly



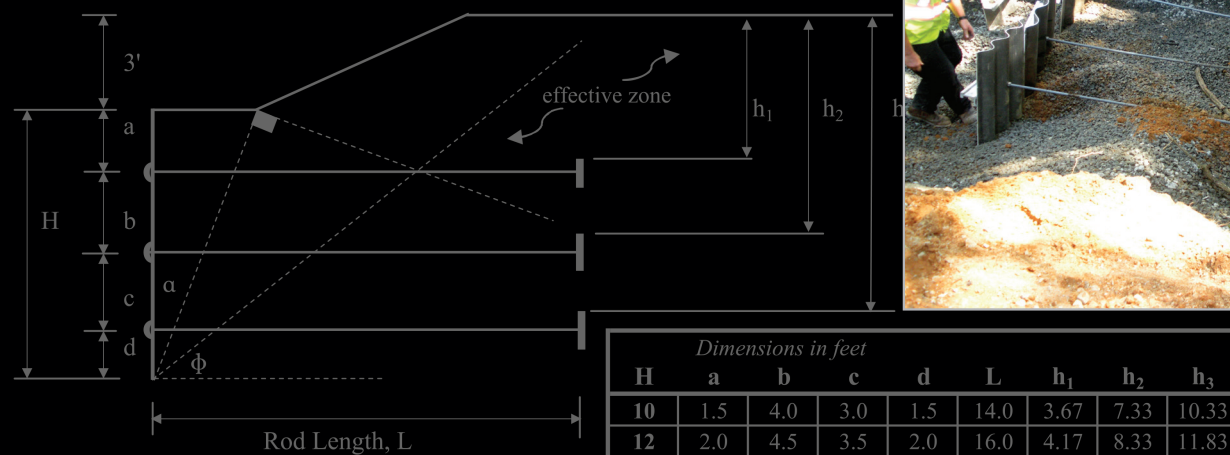
ANCHORING HEADWALLS

Aluminum structural plate headwalls are anchored from the wale beams into the effective zone as shown with deadman anchors. Active and passive lateral earth pressures are assessed to ensure sufficient pull-out resistance of the anchors and the wale beams are checked to ensure adequate capacity to support the deadman anchors without exceeding deflection limits. The structural plate check involves evaluating the moments developed from the active lateral earth pressure distributed along the height of the wall proper.

WHY CHOOSE ASPWH?

Flexible aluminum headwalls provide a number of advantages over concrete.

- Accommodates Skewed Alignments
- Manufacturer Designed
- Installation Supervision
- Minimized Road Closures
- Conducive to Municipal Forces/Equipment
- Rapid Installation



THE LANE DIFFERENCE

- Utilizing trained and experienced craftsman for a first-rate fabrication
- Being completely involved in each phase of the project
- Providing professional engineering services and related drawings
- Performing installation supervision services
- Providing as-needed field services to ensure timely project completion