



HAWAII RAIL TRANSIT PROJECT: *PHASE 3*

HONOLULU, HI

SDI Scope

Precast & Cast-in-Place Post-tensioning Strand and Duct Supply

Contractor

Shimmick-Taylor-Granite Joint Venture (STGJV)

Owner

HART

Location



Note SDI's Corrugated PT Duct (white) running both longitudinally and horizontally in this form for a precast segment of the train's elevated guideway.

The Project

The Hawaii Rail Transit System, an elevated track stretching over 20 miles from Kapolei to Ala Moana Center, will provide transportation for Hawaiian residents and tourists alike. The steel-on-steel track technology installs over precast and cast-in-place segments to form the elevated track system (a proven, reliable design which removes the train from vehicular traffic and avoids the costs and issues that mount with boring). HART expects its first segments to open to the public in 2021. With Phases 1 and 2 complete, construction proceeds on Phase 3, the Airport section east from Aloha Stadium to Middle Street.

SDI'S SUPPLY AND PT DUCT DIFFERENCE

SDI supplied all of the post-tensioning material required for the phases 1–3 of the project. Nearly 5 million feet of strand were supplied in phase 3, including longitudinal, transverse, draped, span, and bar post-tensioning anchorage systems (over 3 million lbs. of steel supplied in total).

SDI also provided 347,000 ft of Corrugated Plastic PT Duct, produced in-house. Newly designed SDI ducts are easier to install than others on the market, yet still exceed all strength and use specification requirements (SDI's duct features fewer coupling parts to assemble and a more intuitive design producing a faster, more reliable installation process). SDI also supplied the project's HDPE and corrugated steel duct.



SDI's duct is visible here, and soon these precast segments will be lifted and tensioned together with post-tensioning strand (also supplied by SDI).

PROJECT HIGHLIGHTS

Anchorage System Types:

- 4.6A Anchorages; 11,355 count
- 12.6-PC Anchorages; 1,098 count
- 19.6-PC Anchorages; 3,278 count
- 27.6-PC Anchorages; 60 count

Elevated rail transit systems are typically faster, safer, and more cost-effective than other mass transit solutions because the train does not cross paths with cars or pedestrians (nor does it incur the heavy cost or environmental concerns of underground boring).

HART increased the scope of application of SDI's plastic duct beyond the original contract (replacing some galvanized steel pipe duct) for several reasons:

- SDI's duct showed excellent strength and durability
- SDI's duct fit better in tight radius zones than galvanized steel duct
- SDI's duct cost less than galvanized steel duct



Precast segment of the elevated guideway being lifted into place. Post-tensioning will then be applied.