

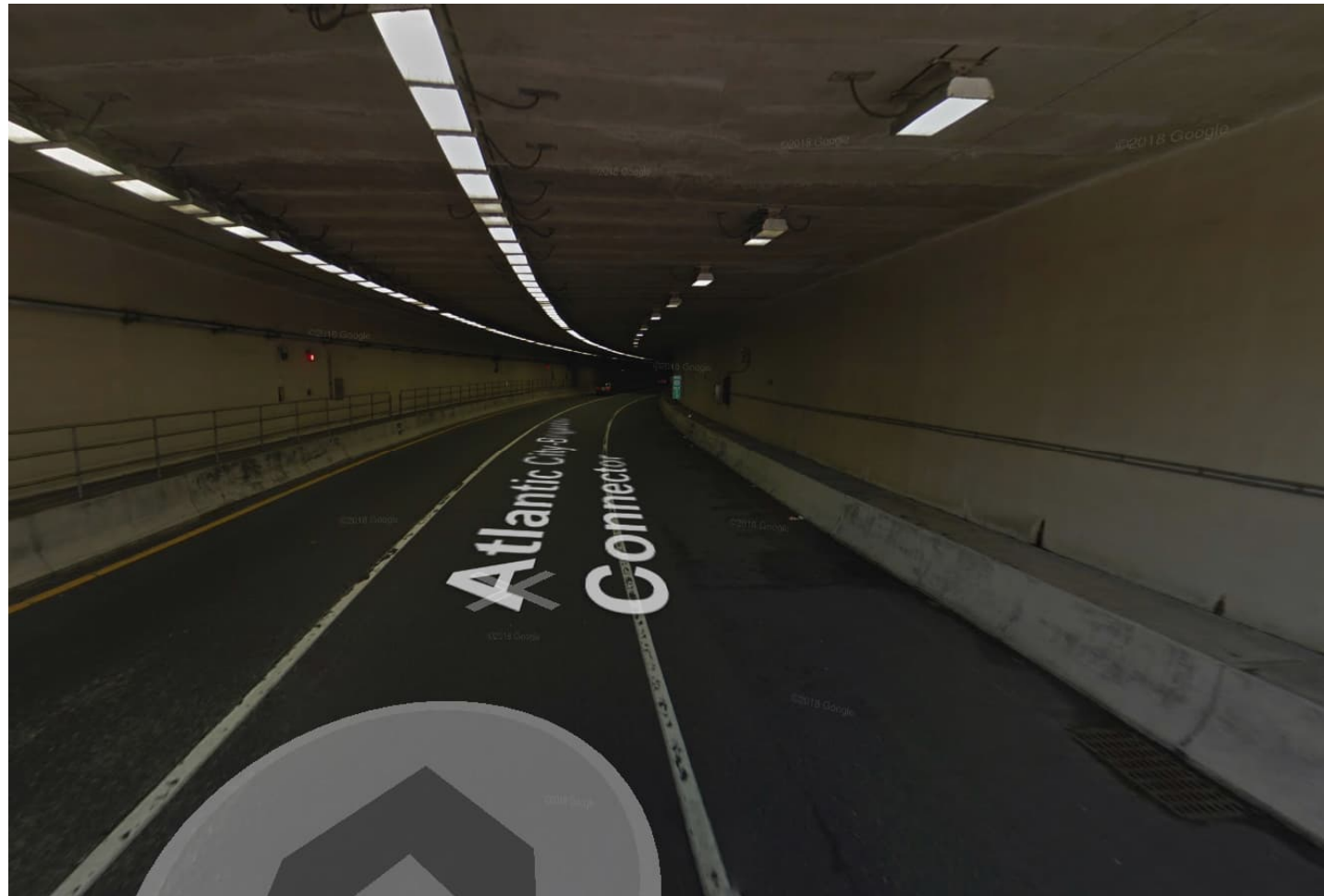
Fort Washington Way

Box Beam Concepts

ODOT BDM, Section 310.4

- “Do not suspend utilities below the bottom of the bridge superstructure or attach directly to the deck”
- Questions:
 - Would services necessary for the operation of the tunnel be considered “utilities” – or by utilities are we considering 3rd party (water, sewer, power, fiber, etc.)?
 - What is the driving consideration that led to this requirement?

Atlantic City – Brigantine Connector 200' Tunnel Along Canal



Atlantic City – Brigantine Connector Signing Opportunities at Portals



Denver C-70 Features

Lighting,
inundation system
piping,
communications,
and SCADA
sensors (all light
loads) mounted to
underside with
inserts cast into
boxes.

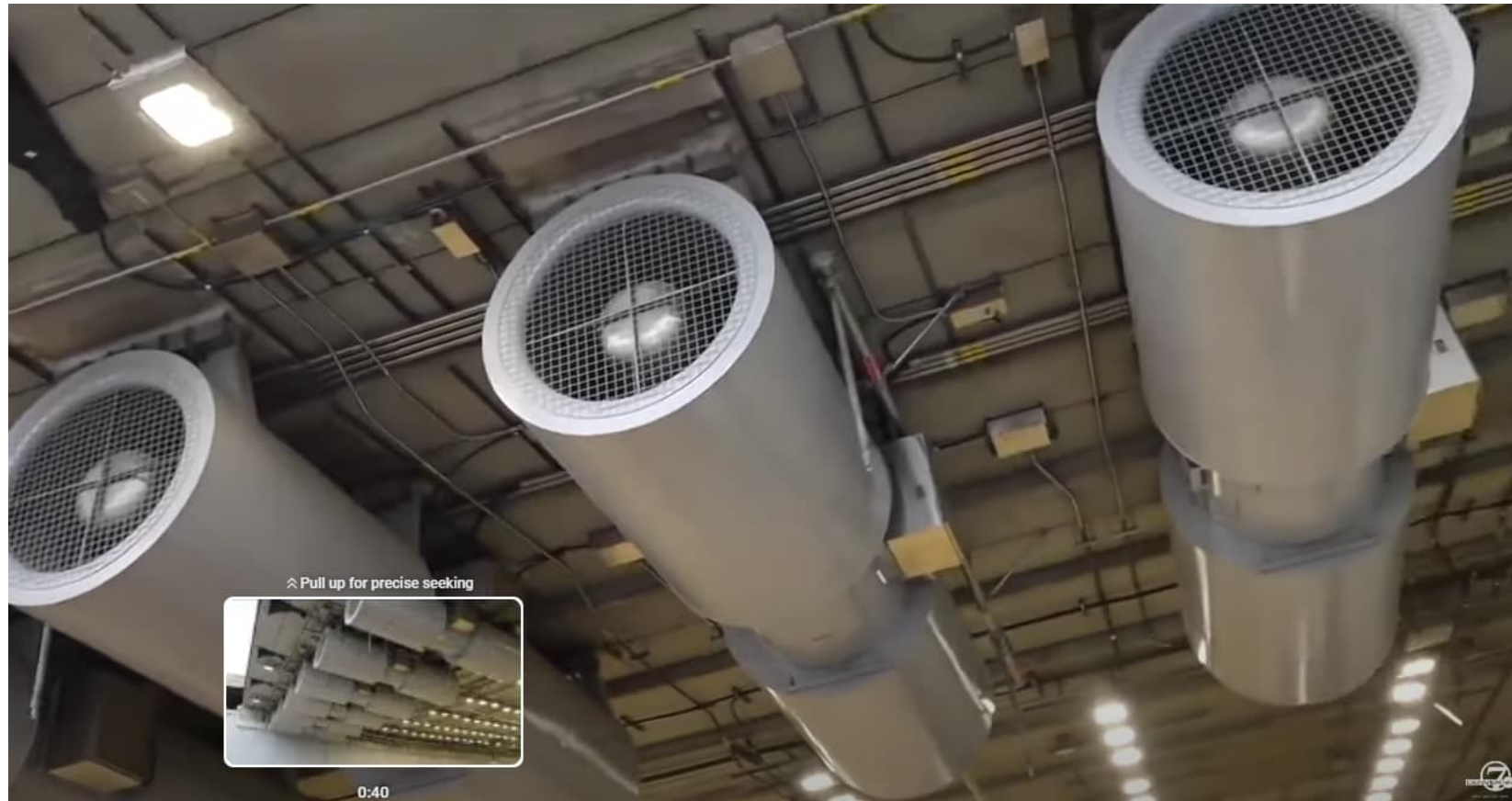


Jet Fan Placement

- Support over traffic looks to be a concern
- Questions:
 - What is the driving consideration that led to this requirement?
 - Would it be better to find a more positive means of supporting them?

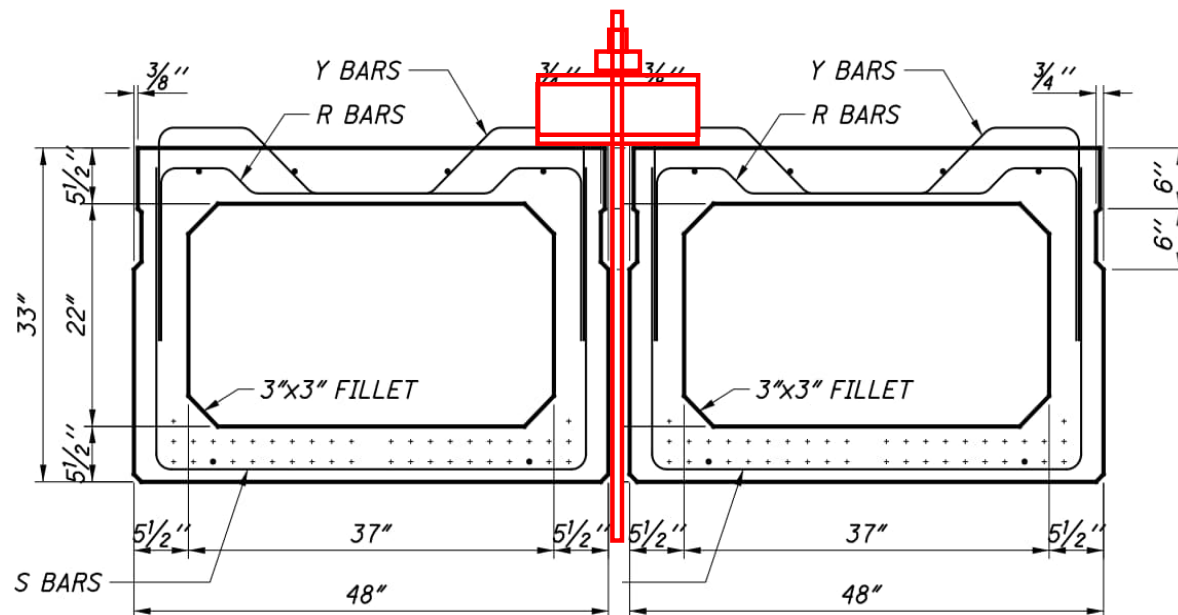
Denver C-70 Features

We would propose supporting by threadbars through PVC tubes in wider webs in custom boxes or between boxes – see next slide.



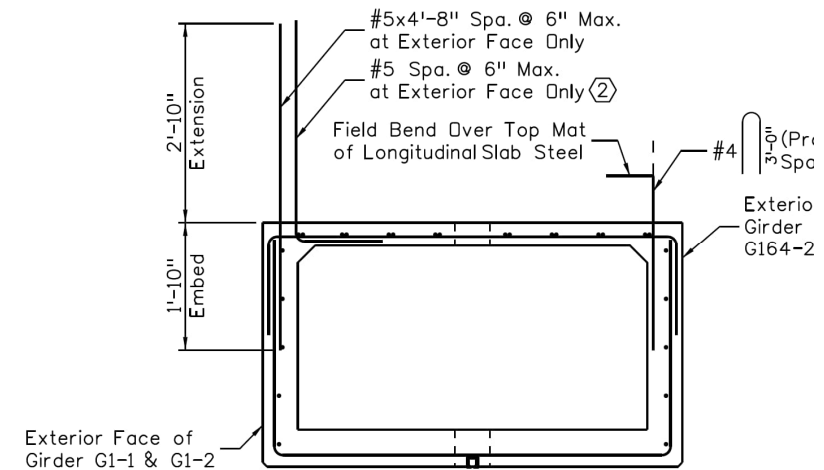
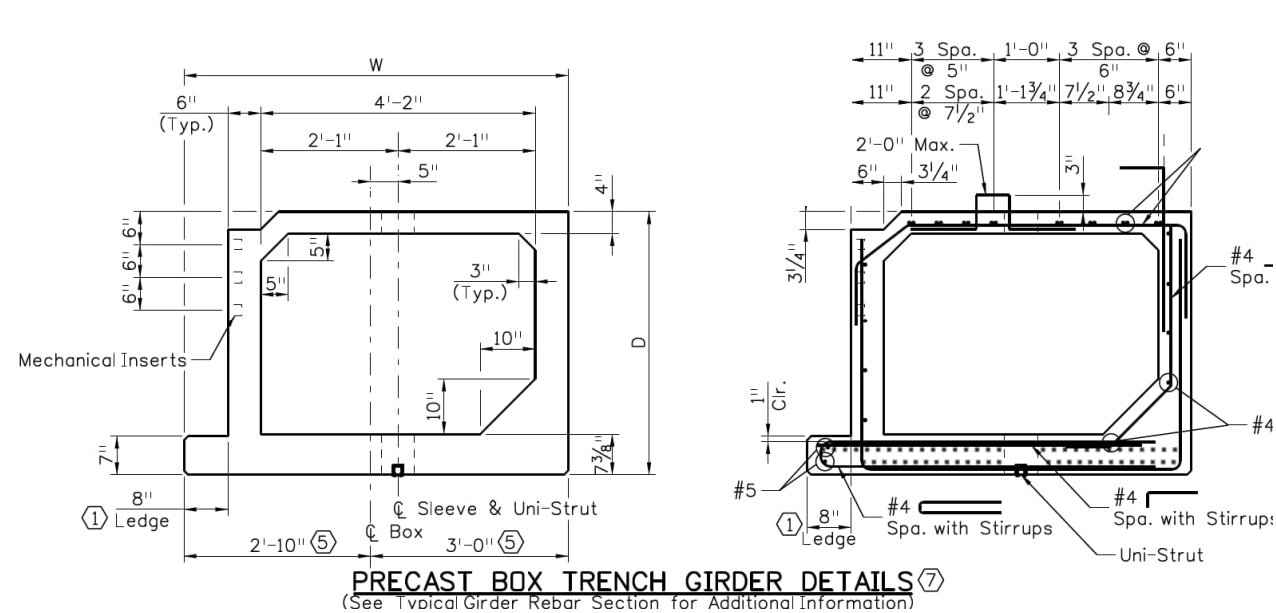
Denver C-70 Features

Double channels ABOVE boxes provide more positive support, then can be cast into the deck to mitigate risk to traffic. If threadbar is placed in PVC tubes, space can be grouted before transverse post-tensioning.



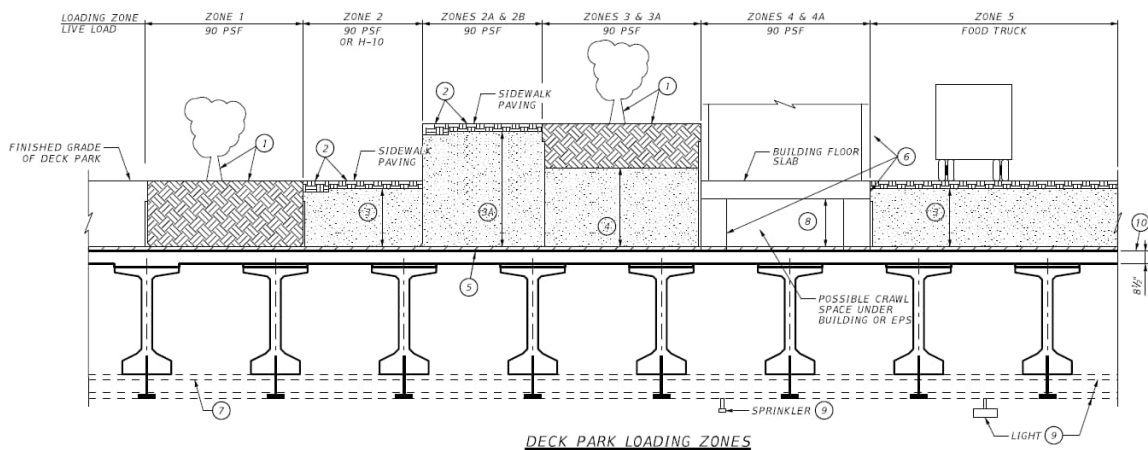
Denver C-70 Features

- Uni-Struts cast into boxes
- Portal box reinforcement

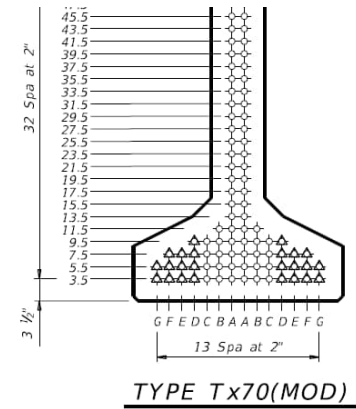
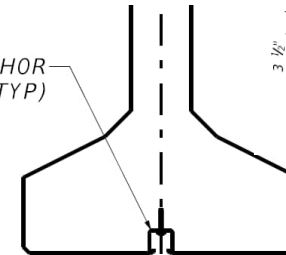


Dallas Southern Gateway

- Similar Inserts used in Bulb-Ts



EMBEDDED ANCHOR CHANNEL (TYP)



SECTION FOR CEILING PANEL FRAME ANCHOR

SCALE: NTS
REINFORCING AND STRANDS OMITTED FOR CLARITY.
SEE LE8051 - LE8055 FOR ADDITIONAL FRAME
ANCHOR DETAILS INCLUDING MATERIAL TYPE.

I-579 Urban Open Space Cap Pittsburgh, PA – Under Construction

- Short enough to avoid jet fans
- Open piers rather than walls (no safe haven needed)



I-579 Urban Open Space Cap Pittsburgh, PA - Completed



Utility Placement

- Support in boxes is a concern
- Question:
 - Can they be placed between boxes?

Dallas - Utility Crossing Concept

We would propose similar utility management where needed at existing bridges.

Similar concepts for planters – need to be sure it drains properly off one end.

