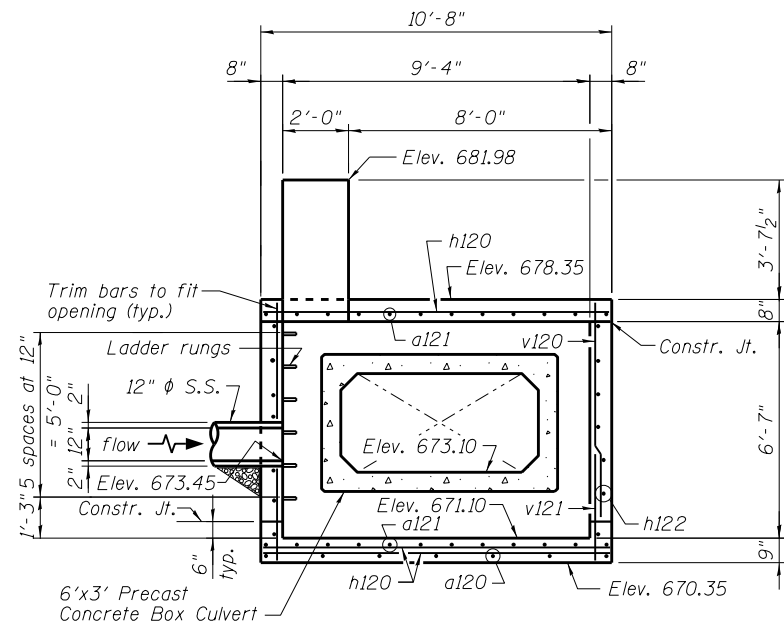
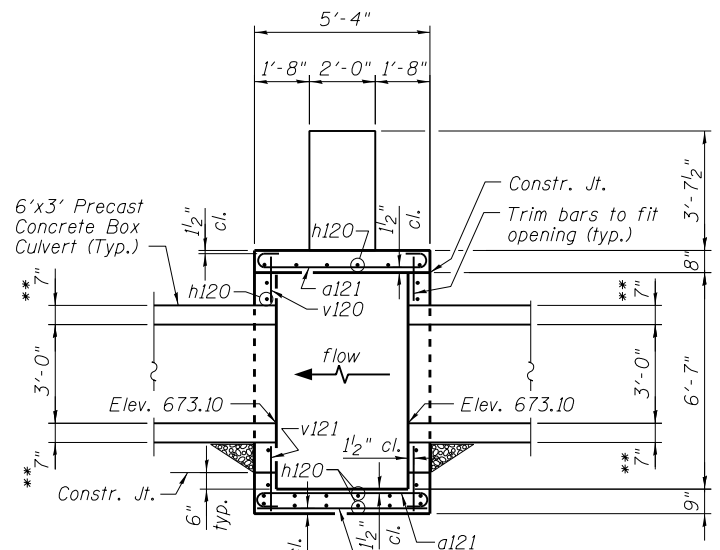


Notes:  
 Bars indicated thus 12x4-#5 etc. indicates 12 lines of bars with 4 lengths per line.  
 Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.



SECTION A-A

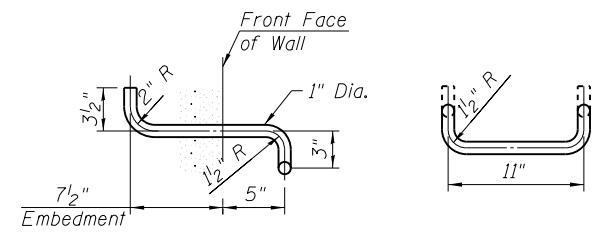


SECTION B-B

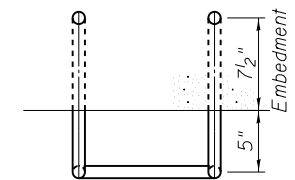
\*\*Dimensions to be verified with precast concrete box culvert manufacturer.

**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a120	7	#5	5'-0"	—
a121	25	#5	6'-3"	⌋
h120	40	#5	10'-4"	—
h121	8	#5	2'-9"	⌋
h122	18	#5	5'-1"	—
h123	8	#5	3'-0"	—
v120	42	#5	6'-6"	—
v121	42	#5	2'-4"	—
Structure Excavation			Cu. Yd.	62
Concrete Structures			Cu. Yd.	6.2
Reinforcement Bars			Pound	1,170



SIDE VIEW FRONT VIEW  
 TYPE Z LADDER RUNG ELEVATIONS



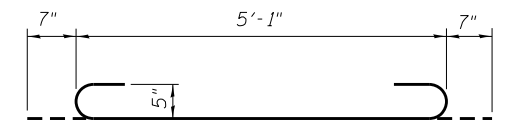
TYPE Z LADDER RUNG PLAN

- The ladder rungs shall be aluminum, conforming to ASTM B361-Alloy 6061-T6 or shall be ductile iron. Aluminum ladder rungs shall receive a heavy coat of bituminous paint or cold applied asphaltic mastic for the portion embedded in concrete. The coating must extend beyond the embedment at least two inches.
- The contractor may submit an alternative ladder rung detail for Engineer's approval.

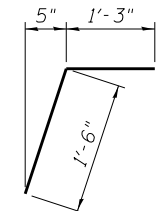
**DESIGN STRESSES**

$f_y = 60,000 \text{ psi}$   
 $f'_c = 3,500 \text{ psi}$

Note: All costs for compacted subbase or CLSM, ladder rungs and all other appurtenances required to complete this work shall be included in the item "Concrete Structures."



BAR a121



BAR h121