

MAY 7 1984

PLAN NOTES  
FOR  
PRECAST REINFORCED CONCRETE BOX SECTIONS

CALC BY W.A.C.	OHIO	37
DATE 9-27-84		52
CHKD BY B.E.B.	LAK 283-4.13	
DATE 10-4-84		

REFERENCE SHALL BE MADE TO SUPPLEMENTAL SPECIFICATION: 955 DATED 6/3/78.

DESIGN SPECIFICATIONS: THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1983 AND THE OHIO "SUPPLEMENT" TO THESE SPECIFICATIONS.

DESIGN LOADING: HS20-44.

DESIGN STRESSES: CONCRETE CLASS C - UNIT STRESS 1333 P.S.I.

REINFORCING STEEL ASTM A615, A616, OR A617.

GRADE 40 OR 60 - UNIT STRESS 20,000 P.S.I.

EXISTING STRUCTURE VERIFICATION: DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND/OR FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05 AND 105.02.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

REMOVAL OF EXISTING STRUCTURE: WHEN NO LONGER NEEDED TO MAINTAIN TRAFFIC THE EXISTING STRUCTURE SHALL BE REMOVED. THE EXISTING SUPERSTRUCTURE AND APPROACH SLAB SHALL BE REMOVED AND THE EXISTING ABUTMENTS AND WINGWALLS SHALL BE REMOVED TO ELEV. 583.00<sup>±</sup> EVERYWHERE EXCEPT AT THE SOUTHEAST CORNER OF THE SOUTHEAST WINGWALL, AS INDICATED ON SHEET 1/5, WHERE THE CONCRETE SHALL BE REMOVED TO ELEV. 571.30<sup>±</sup>. FOR PAY ITEM 202 SEE SHEET 6.

FOUNDATION BEARING PRESSURE: CULVERT HEADWALL FOOTINGS, AS DESIGNED, PRODUCE A MAXIMUM BEARING PRESSURE OF 1.5 TONS PER SQUARE FOOT.

MAINTENANCE OF TRAFFIC: SEE "TRAFFIC CONTROL PLAN" PORTION OF THESE PLANS.

UTILITY LINES: ALL EXPENSE INVOLVED IN RELOCATING (INSTALLING) THE AFFECTED UTILITY LINES SHALL BE BORNE BY THE OWNER(S). THE CONTRACTOR AND OWNER(S) ARE REQUESTED TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.

REINFORCING BAR LAP SPLICE LENGTH: UNLESS OTHERWISE SHOWN, THE MINIMUM REINFORCING SPLICE LENGTHS SHALL BE:

BAR SIZE	MINIMUM LAP LENGTH
5	1'-8"
7	2'-6"
9	4'-2"

DESCRIPTION

THIS ITEM SHALL CONSIST OF FURNISHING AND CONSTRUCTING PRECAST REINFORCED CONCRETE BOX SECTIONS AS PER SUPPLEMENTAL SPECIFICATION 955 AT THE LOCATION INDICATED.

MATERIALS

MATERIAL FOR THE PRECAST REINFORCED CONCRETE BOX SECTIONS SHALL BE IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 955. GRANULAR BEDDING AND BACKFILL MATERIAL SHALL MEET THE REQUIREMENTS OF 603.02 AND FILL MATERIAL, WHEN SPECIFIED, SHALL BE IN ACCORDANCE WITH 203.

INSTALLATION

THE STRUCTURE SHALL BE INSTALLED IN ACCORDANCE WITH SPECIFICATIONS FOR TYPE A CONDUITS, SECTION 603 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS, STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, EXCEPT AS MODIFIED HEREIN.

603.03

WHERE THE BOX SECTION IS TO BE PLACED IN A TRENCH, A MINIMUM TRENCH WIDTH OF 2 FEET ON EACH SIDE OF THE BOX SECTION SHALL BE REQUIRED. WHERE THE BOX SECTION IS TO BE PLACED WITHIN AN EMBANKMENT OR THE BOX SECTION IS ABOVE THE EXISTING GROUND, THE REQUIREMENT THAT THE EMBANKMENT SHALL BE CONSTRUCTED AT LEAST TO THE SPRINGLINE BEFORE TRENCHING IS WAIVED.

603.04

THE BEDDING SHALL CONSIST OF A BED OF GRANULAR MATERIAL HAVING A THICKNESS OF AT LEAST 6 INCHES BELOW THE BOTTOM OF THE BOX SECTION AND EXTENDING 2 FEET ON EACH SIDE OF THE BOX SECTION.

603.06

THE JOINTS SHALL BE SEALED WITH A FLEXIBLE PLASTIC MATERIAL CONFORMING TO AASHTO M-198 TYPE B. THE CROSS SECTION OF THE JOINT SEALING MATERIAL SHALL HAVE A MINIMUM HEIGHT OF TWICE THE ANNULAR SPACE OF THE JOINT AND A MINIMUM WIDTH OF 150% THE HEIGHT. THE CONCRETE JOINT SHALL BE PRIMED WITH A PRIMER AS RECOMMENDED BY THE MANUFACTURER BEFORE INSTALLATION. BOX SECTIONS SHALL BE FORCED TO A MAXIMUM OF 1/2" GAP BETWEEN SECTIONS. THE EXTERIOR JOINT GAP ON THE TOP OF THE BOX SHALL BE FILLED WITH PORTLAND CEMENT MORTAR.

SHEAR CONNECTORS AS SPECIFIED AND ILLUSTRATED ON SUPPLEMENTAL SPECIFICATION 955 ARE NOT REQUIRED.

THE UPSTREAM END SHALL BE A RECESSED TYPE JOINT.

603.8

WHEN THE TOP OF THE TRENCH IS ABOVE THE TOP OF THE BOX, BACKFILLING SHALL BE IN ACCORDANCE WITH TYPE A OF TYPE B CONDUIT. WHEN THE TOP OF THE BOX SECTION IS ABOVE THE TOP OF THE TRENCH, GRANULAR MATERIAL SHALL BE PLACED AND COMPACTED TO A MINIMUM DEPTH OF 2 FEET OVER THE TOP OF THE BOX SECTIONS (WHERE APPLICABLE) AND FOR A WIDTH OF 4 FEET ON EACH SIDE OF THE BOX SECTION OR AS DIRECTED BY THE ENGINEER. THE REMAINDER OF THE ADJACENT EMBANKMENT MATERIAL SHALL BE FURNISHED, PLACED, AND PAID FOR IN ACCORDANCE WITH 203. BACKFILL AND FILL MATERIAL SHALL BE PLACED UNIFORMLY ON BOTH SIDES OF THE BOX SECTION.

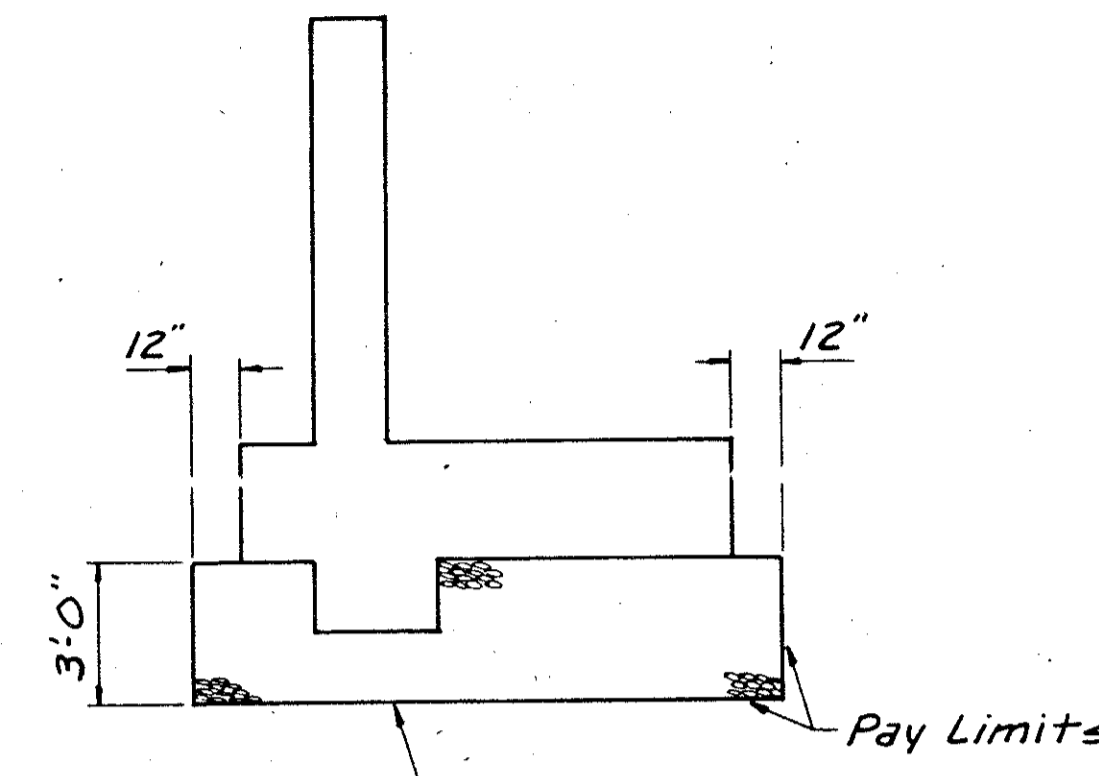
FILL MATERIAL AT THE SIDES OF THE BOX SECTIONS MAY BE COMPACTED BY HEAVY COMPACTION EQUIPMENT.

BASIS FOR PAYMENT

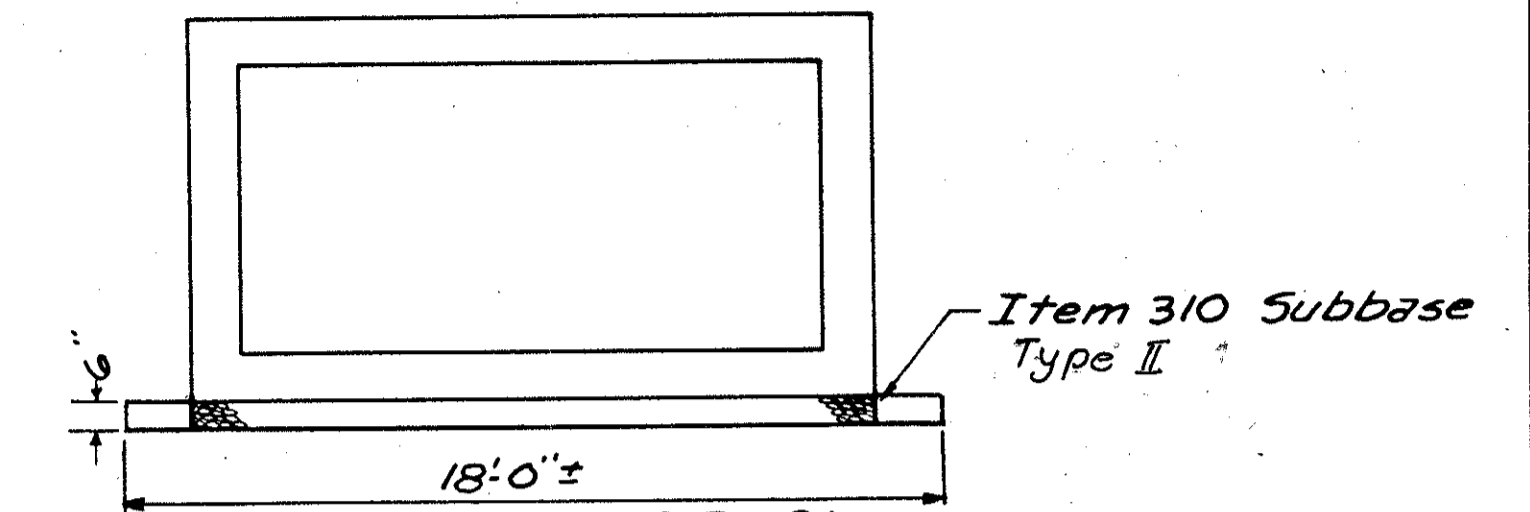
PAYMENT SHALL BE MADE AT THE CONTRACT UNIT PRICE FOR:

ITEM	UNIT	DESCRIPTION
603	LINEAR FOOT SPAN' X RISE'	PRECAST REINFORCED CONCRETE BOX SECTIONS (AS PER SS 955) C-789 TABLE 1 AS PER PLAN (DESIGN EARTH COVER 2 FT)

PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIAL, LABOR AND EQUIPMENT NECESSARY TO COMPLETE THE INSTALLATION.



Item 310 Subbase Type II To Be Placed On Entire Width Of Excavation. Remove 3'-0" Of Unsuitable Material Below The Footings As Necessary.  
OUTLET HEADWALL SUBBASE DETAIL  
NO SCALE

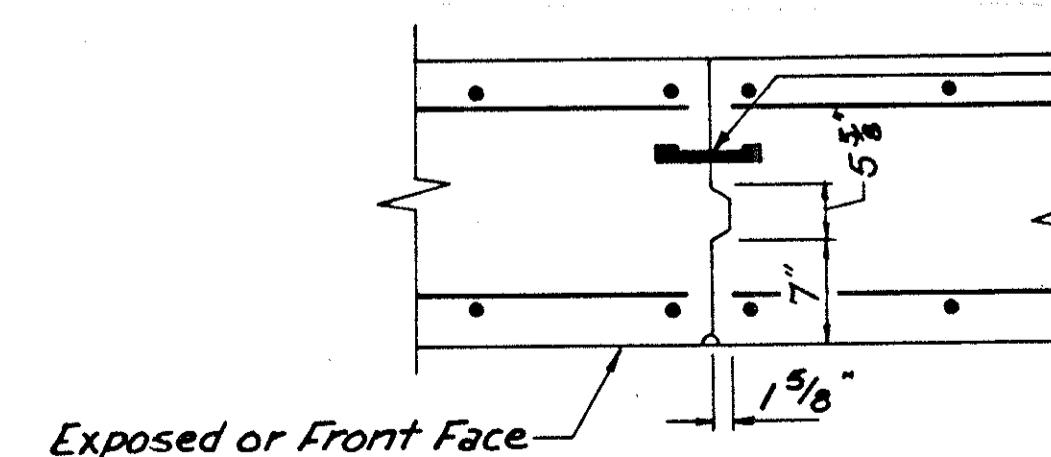


BOX CULVERT BEDDING DETAIL

ESTIMATED QUANTITIES						
Item	Total	Unit	Description	Inlet Headwall	Outlet Headwall	Box Culvert
310	124	Cu. Yd.	Subbase Type II		82	42
503	Lump	Sum	Coffer dams, Cribs And Sheeting			Lump
503	740	Cu. Yd.	Unclassified Excavation			740
509	21089	Lb.	Reinforcing Steel	13665	7424	
511	100	Cu. Yd.	Class C Concrete, Headwall Above Footings	67	33	
511	157	Cu. Yd.	Class C Concrete, Footings	83	74	
516	53	Lin. Ft.	P.V.C. Waterstop As Per Plan**	34	19	
518	69	Cu. Yd.	Porous Backfill	41	28	
601	113	Cu. Yd.	Rock Channel Protection, Type B w/Filter*	45	49	
603	109	Lin. Ft.	Precast Reinforced Concrete Box Sections (12' Span x 6' Rise)***			109

\*\* See Contraction Joint Detail This Sheet.

\*\*\* The Precast Reinforced Concrete Box Sections Shall Be As Per Supplemental Specification 955, Conforming To ASTM C 789 Table 1, As Per Plan, With Design Earth Cover - 2 Ft. See Plan Notes For Precast Reinforced Concrete Box Sections On Sheet 2/5.



CONTRACTION JOINT DETAIL  
NO SCALE

Waterstop Shall be P.V.C. Serrated Type Without Center Bulb, Not Less Than 6" Wide And 3/8" Thick; Serviced/Durajoint No. 13, Lexuco, Vinyltex, or Equal. All joint shall be spliced in accordance with Manufacturers Requirements.

Burgess & Niple, Limited		bn		2/5	
Engineers and Architects					
GENERAL NOTES, ESTIMATED QUANTITIES & DETAILS					
LAK - 283 - 0419					
OVER UNNAMED STREAM					
LAKE COUNTY				STA. 146+38	
DESIGNED	DRAWN	TRAC'D	CHECKED	REVIEWED DATE	REVISED
W.A.C.	B.J.T.	B.J.T.			