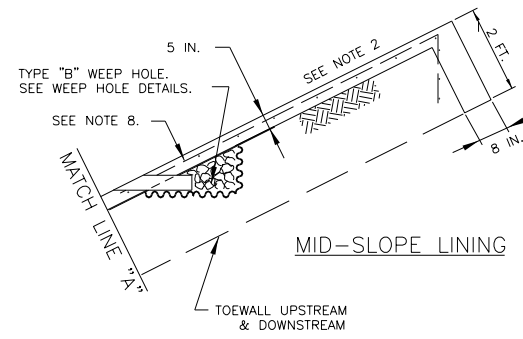
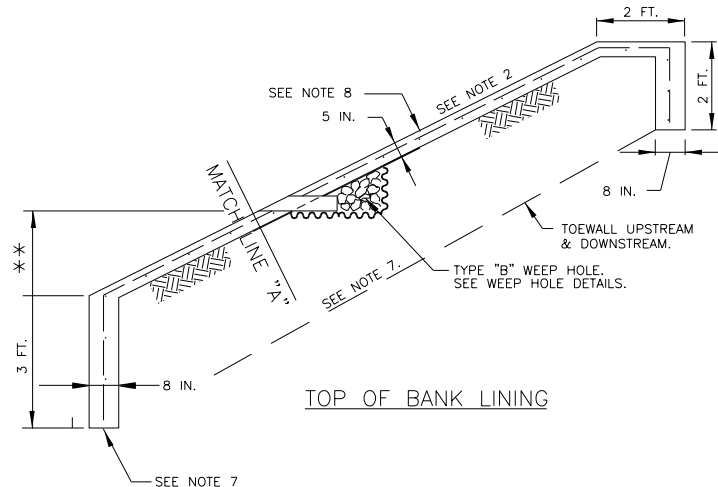


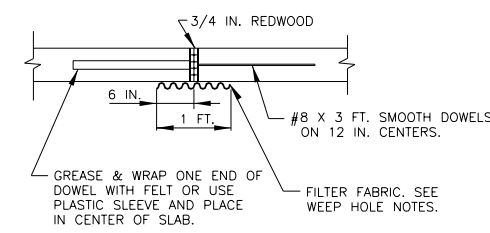
TYPICAL TRAPEZOIDAL CHANNEL LINING



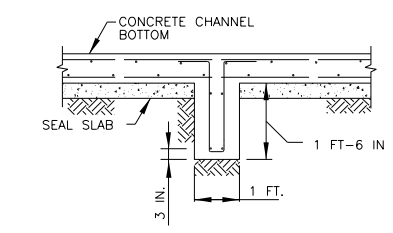
** 1/3 H MAXIMUM OR AS SHOWN ELSEWHERE ON PLANS AS RECOMMENDED BY GEOTECHNICAL REPORT.



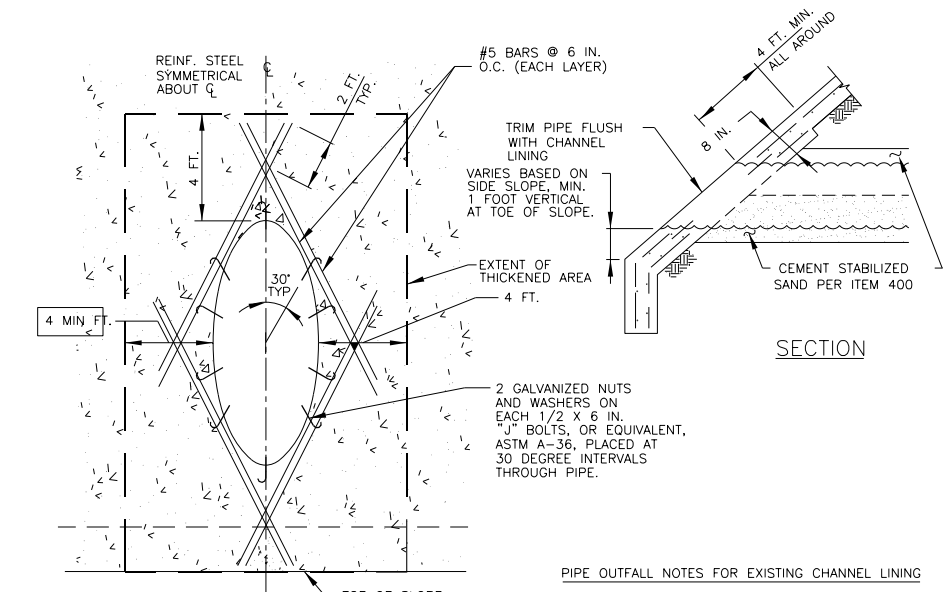
TYPICAL CHANNEL LINING DETAIL



EXPANSION JOINT



GRADE BEAM DETAIL (SEE NOTE 4)

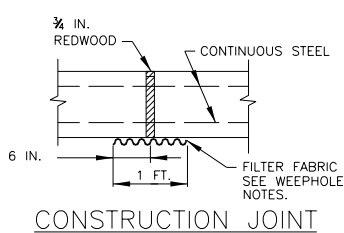


PIPE OUTFALL DETAILS (FOR OUTFALLS 24-42 INCH DIA.)

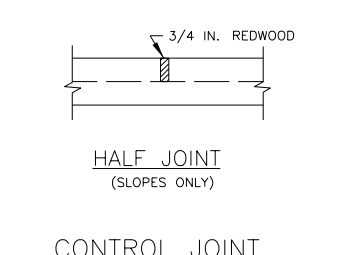
PIPE OUTFALL NOTES FOR EXISTING CHANNEL LINING
 1. WHEN PLACING THROUGH EXISTING CHANNEL LINING, SAW-CUT 1 INCH AND REMOVE 4 FEET ALL AROUND.
 2. EXPOSE A MIN. OF 18 INCHES OF STEEL.

(A) THESE ARE GENERAL DETAILS AND NOTES. IF THERE ARE ANY DISCREPANCIES BETWEEN THIS STANDARD AND THE DETAILED SEALED DRAINAGE PLANS, THE SEALED PLANS WILL OVERRIDE.
 (B) DESIGNER TO CONSULT WITH DISTRICT ENVIRONMENTAL SECTION TO DETERMINE IF OUTFALL IS OR IS NOT JURISDICTIONAL. IF JURISDICTIONAL, REQUEST ORDINARY HIGH WATER ELEVATION AND CORP OF ENGINEER'S PERMIT FROM ENVIRONMENTAL SECTION FOR ANY WORK BELOW ORDINARY HIGH WATER ELEVATION.

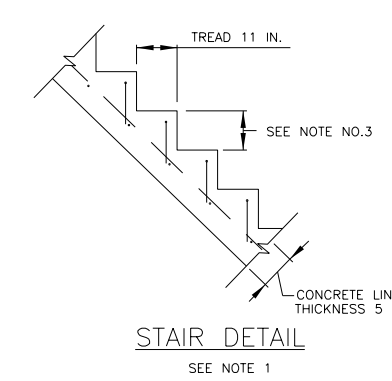
- GENERAL NOTES:
- TO BE PAID AS ITEM 420-6132 CL A CONC (STEPS.)
 - SEE SIDE SLOPE DETAILS ELSEWHERE ON PLANS.
 - RISE DIMENSION VARIES AS A FUNCTION OF SIDE SLOPE.
 - INSTALL STRUCTURAL CONCRETE GRADE BEAMS TRANSVERSLY AT 20 FOOT MAXIMUM CENTERS ON CONCRETE LINED CHANNELS WITH BOTTOM WIDTHS EQUAL TO OR GREATER THAN 20 FEET, GRADE BEAM TO BE PAID AS ITEM 420-6133 CL A CONC. (CHANNEL LINING.)
 - JOINTS:
 - PLACE CONSTRUCTION JOINTS IN CONCRETE LOW-FLOW AND TRAPEZOIDAL BOTTOM SECTIONS AT 20 FEET MINIMUM, 60 FEET MAXIMUM, SPACING CONTINUOUSLY THROUGH CHANNEL LINING.
 - PLACE EXPANSION JOINTS IN CONCRETE LOW-FLOW AND TRAPEZOIDAL BOTTOM SECTIONS AT 60 FEET MAXIMUM SPACING CONTINUOUSLY THROUGH CHANNEL LINING.
 - PLACE CONTROL JOINT ON SLOPES AT 20 FOOT SPACING.
 - DELETE 2 FOOT FLAT EDGE WHEN LINING IS BELOW TOP OF BANK. SEE MID-SLOPE LINING DETAIL.
 - UPSTREAM AND DOWNSTREAM TOE WALL 3 FOOT MINIMUM DEPTH AT BOTTOM OF SLOPE AND 8 INCHES THICK.
 - #4 AT 12 IN. O.C. BOTH DIRECTIONS MIN. OR EQUIVALENT WELDED WIRE FABRIC.



CONSTRUCTION JOINT

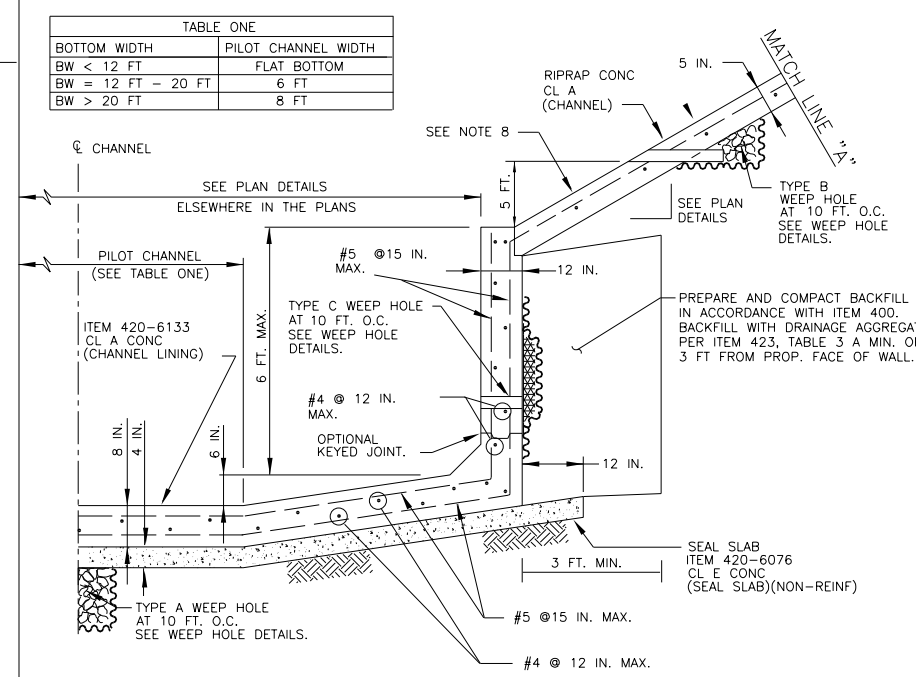


HALF JOINT (SLOPES ONLY)
CONTROL JOINT



STAIR DETAIL
SEE NOTE 1

TABLE ONE	
BOTTOM WIDTH	PILOT CHANNEL WIDTH
BW < 12 FT	FLAT BOTTOM
BW = 12 FT - 20 FT	6 FT
BW > 20 FT	8 FT



TYPICAL RECTANGULAR CONCRETE CHANNEL LINING HALF SECTION

Texas Department of Transportation
Houston District

HCFCD
CONCRETE CHANNEL LINING
DETAILS
HCFCD-CCLD (1)

FILE: STDG5.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT DEC, 2012	DIST	FED REG	PROJECT NO.	SHEET
REVISIONS 11/2013 FIX MISSPELLINGS 02/2015 2014 SPECS	HOU	6		
	COUNTY	CONTROL	SECT	JOB
				HIGHWAY