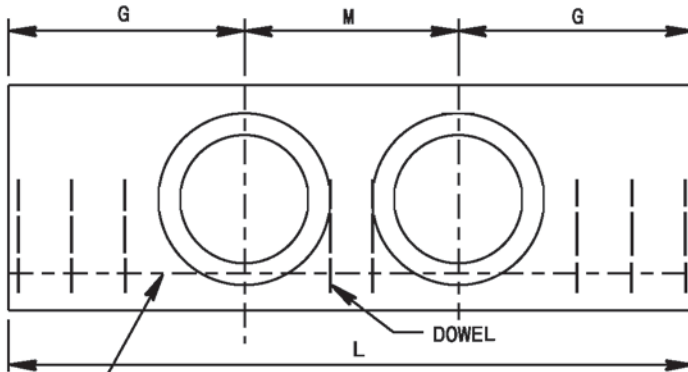
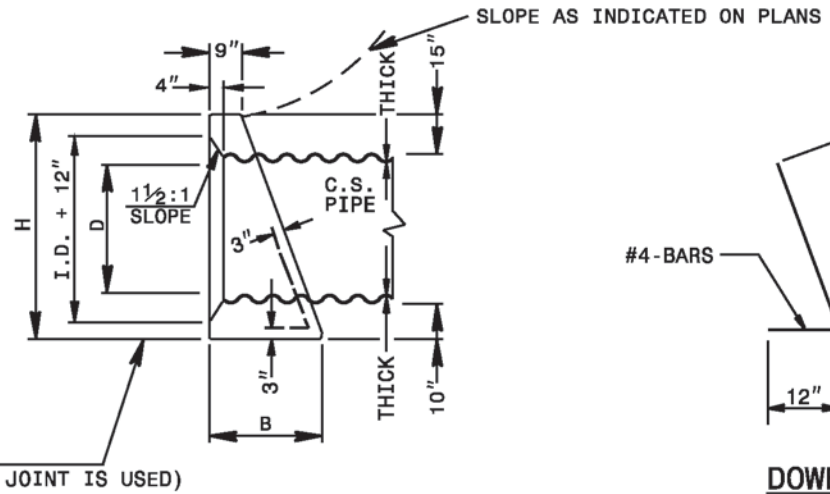


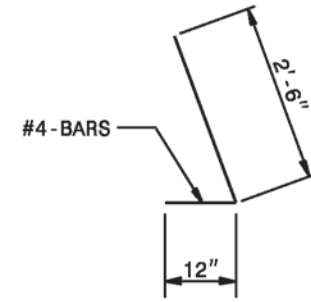
PLAN



ELEVATION



END ELEVATION

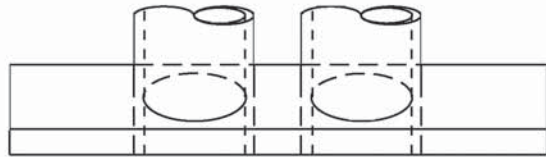


**DOWEL
BAR - "X"**

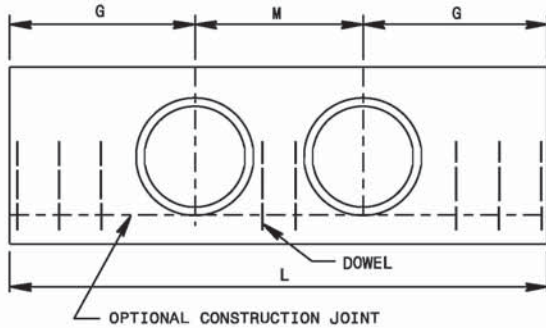
DOWELS IN ENDWALL WITH C. S. PIPE																		
LOC.	PIPE DIA.	SINGLE PIPE								DOUBLE PIPE								
		15"	18"	24"	30"	36"	42"	48"	15"	18"	24"	30"	36"	42"	48"			
	BARS	"X"	"X"	"X"	"X"	"X"	"X"	Y*	"X"	Y*	"X"	"X"	"X"	"X"	"X"	Y*	"X"	Y*
G	QTY.	2	2	3	3	4	4		5		2	2	3	3	4	4		5
M	QTY.	-	-	-	-	-	-	2	-	2	1	1	1	2	2	2	2	2
G	QTY.	2	2	3	3	4	4		5		2	2	3	3	4	4		5
TOTAL LBS.		9	9	14	14	19	53		62		12	12	16	19	23	73		85

DIMENSIONS AND CONCRETE QUANTITIES								
USING CORRUGATED STEEL PIPE								
	COMMON			SINGLE PIPE		DOUBLE PIPE		
D	H	B	G	L	YD ³	M	L	YD ³
15"	3'-4"	1'-8"	2'-6"	5'-0"	0.7	1'-11"	6'-11"	1.0
18"	3'-7"	1'-10"	2'-11"	5'-10"	1.0	2'-3"	8'-1"	1.2
24"	4'-1"	2'-1"	3'-8"	7'-4"	1.4	3'-0"	10'-4"	1.9
30"	4'-7"	2'-4"	4'-5"	8'-10"	2.0	3'-9"	12'-7"	2.7
36"	5'-1"	2'-7"	5'-2"	10'-4"	2.8	4'-6"	14'-10"	3.8
42"	5'-7"	2'-10"	5'-11"	11'-10"	3.8	5'-3"	17'-1"	5.0
48"	6'-1"	3'-1"	6'-8"	13'-4"	4.9	6'-0"	19'-4"	7.5

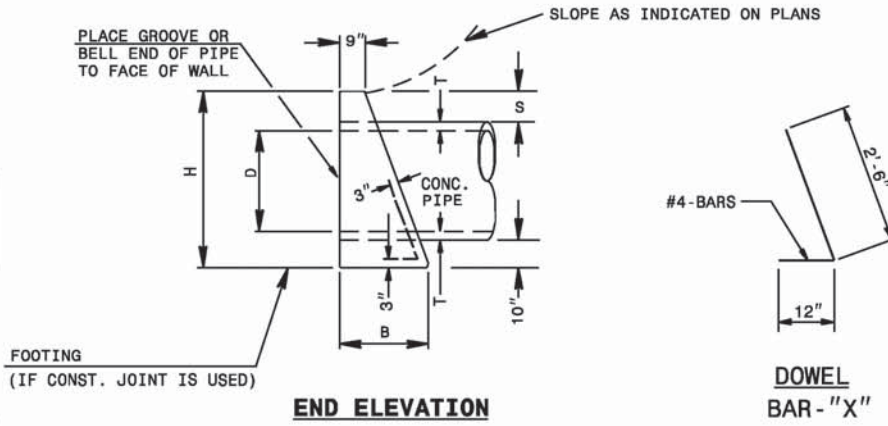
*SEE SHEET 3



PLAN



ELEVATION



END ELEVATION

DOWEL BAR - "X"

DOWELS IN ENDWALL WITH REINFORCED CONCRETE PIPE																		
LOC.	PIPE DIA.	SINGLE PIPE						DOUBLE PIPE										
		15"	18"	24"	30"	36"	42"	48"	15"	18"	24"	30"	36"	42"	48"			
	BARS	"X"	"X"	"X"	"X"	"X"	Y*	"X"	Y*	"X"	"X"	"X"	"X"	"X"	Y*	"X"	Y*	
G	QTY.	2	2	3	3	4	4		5		2	2	3	3	4	4		5
M	QTY.	-	-	-	-	-	-	2	-	2	1	1	2	2	2	2	2	3
G	QTY.	2	2	3	3	4	4		5		2	2	3	3	4	4		5
TOTAL LBS.		9	9	14	14	19	55		65		12	12	19	19	23	77		92

DIMENSIONS AND CONCRETE QUANTITIES											
USING CONCRETE PIPE											
D	COMMON DIMENSIONS					SINGLE PIPE		DOUBLE PIPE			
	H	B	G	T	S	L	YD ³	M	L	YD ³	
15"	3'-3"	1'-8"	2'-9"	2 1/4"	9 1/2"	5'-6"	0.7	2'-2"	7'-8"	1.0	
18"	3'-7"	1'-10"	3'-2"	2 1/2"	10"	6'-4"	1.0	2'-7"	8'-11"	1.3	
24"	4'-2"	2'-1"	4'-0"	3"	10"	8'-0"	1.5	3'-5"	11'-5"	2.0	
30"	5'-0"	2'-6"	4'-7"	4 1/4"	11 1/2"	9'-2"	2.3	4'-3"	13'-5"	3.1	
36"	5'-8"	2'-8"	5'-6"	4 3/4"	11 1/2"	11'-0"	3.4	5'-0"	16'-0"	4.5	
42"	6'-2"	3'-1"	6'-4"	5 1/4"	11 1/2"	12'-8"	4.5	5'-10"	18'-6"	6.0	
48"	6'-9"	3'-5"	7'-2"	5 3/4"	11 1/2"	14'-4"	6.0	6'-8"	21'-0"	8.0	

*SEE SHEET 3

STATE OF
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DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-12

ENGLISH STANDARD DRAWING FOR
**CONCRETE ENDWALL FOR SINGLE
AND DOUBLE PIPE CULVERTS**
15" THRU 48" PIPE - 90° SKEW

SHEET 3 OF 3

838.01

GENERAL NOTES:

CHAMFER ALL CORNERS 1" OR HAVE A RADIUS OF 1".

PLACE 2 #6 "Y" BARS IN THE TOP OF ALL ENDWALL FOR PIPE CULVERTS 42"
AND OVER WITH A MINIMUM OF 3" COVER AND A LENGTH OF 6" LESS THAN
ENDWALL LENGTH.

CONSTRUCT BOTTOM SLAB WITH FORMS.

DO NOT INTERPRET WALL THICKNESS (T) SHOWN FOR THE THICKNESS
ACCEPTABLE, BUT IS USED IN COMPUTING ENDWALL QUANTITIES.

WHEN THE CONTRACTOR ELECTS TO USE A CONSTRUCTION JOINT AT THE BOTTOM
OF THE PIPE, PLACE BAR "X" DOWELS IN THE BASE AS SHOWN ON PLANS.
SPACE BARS APPROXIMATELY ON 12" CENTERS UNLESS OTHERWISE DIRECTED
BY THE ENGINEER.

WHEN THE CONTRACTOR ELECTS TO USE A CONSTRUCTION JOINT AT THE BOTTOM
OF THE PIPE AND POUR THE BASE SEPARATELY LEAVE THE POUR ROUGH.

USE CLASS "B" CONCRETE.

STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-12

ENGLISH STANDARD DRAWING FOR
**CONCRETE ENDWALL FOR SINGLE
AND DOUBLE PIPE CULVERTS**
15" THRU 48" PIPE - 90° SKEW

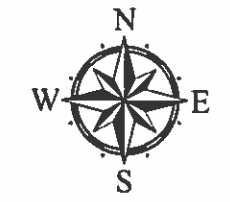
SHEET 3 OF 3

838.01



30" Culvert To Be Replaced

Onslow Beach Culvert Replacement



Legend

-  RoadCenterline
-  WaterFeature
-  StormwaterUtilitySegment



Although every effort has been made to ensure the accuracy of information, errors and conditions originating from the physical sources used to develop the database may be reflected in the data supplied. The requestor must be aware of data conditions and ultimately bear responsibility for the appropriate use of the information with respect to possible errors, original map scale, collection methodology, currency of data, and other specific conditions to certain data.

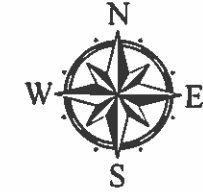
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 Prepared: May 2017



Lewis Creek Rd Culvert Replacement



Legend

- RoadCenterline
- WaterFeature
- StormwaterUtilitySegment



Dual 48" Culverts To Be Replaced

Although every effort has been made to ensure the accuracy of information, errors and conditions originating from the physical sources used to develop the database may be reflected in the data supplied. The requestor must be aware of data conditions and ultimately bear responsibility for the appropriate use of the information with respect to possible errors, original map scale, collection methodology, currency of data, and other specific conditions to certain data.

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