

STORM SEWER
 HYDRAULICALLY EQUIVALENT ROUND PIPE SIZES \varnothing
 (For Use Where Equivalent Pipe Types Are Allowed By the Plans or Specifications)

	Concrete Pipe	HDPE PIPE TYPE S Fill Hts. <= 10'	HDPE PIPE TYPE S Fill Hts. > 10'	HDPE PIPE TYPE C	CORRUGATED METAL PIPE						PVC Pipe	
						(Steel)	(Aluminum)	Spiral Rib	Structural Plate (Steel)	(Aluminum)		
Corrugations (in)					2- 2/3 x 1/2	3 x 1	5 x 1	6 x 1	ALL	6 x 2	9 x 2-1/2	
Design N Value	0.012	0.012	0.015	0.025	0.025	0.028	0.026	0.025	0.012	0.035	0.035	0.012
Pipe Sizes (in)	12	12	15	18	18				12			12
	15	15	18	24	24				15			15
	18	18	24	30	24	30			18			18
	24	24	30	36	36	36	36		24			24
	30	30	36	*42	42	42	42		30			30
	36	36	*42	*54	48	54	54	48	36	60	60	36
	42	*42	*48	*60	60	60	60	60	42	66	66	42
	48	*48	*60		66	66	66	66	48	78	78	48
	54	*54			72	78	78	72	54	84	84	
	60				84	84	84	84	60	96	96	
	66					96	90		66	102	102	
	72					102	102	96	72	114	114	
	78					108	108	108	78	120	120	
	84					120	114	114	84	132	132	
	90					126	126		90	138	138	
	96					132	132		96	150	150	
	102					144	138		102	156	156	
	108								108	168	168	
	114								114	174	174	
	120								120	180	180	
	126								126	192	192	
	132								132	198	198	
	138								138	210	210	
	144								144	216	216	
	150									228	228	
	156									234	234	
	162									246	246	
	168									252	252	
	174									264	264	
	180									270	270	


\varnothing General Notes:

- Unless otherwise noted on the plans, the pipe size given was designed with concrete pipe with an N value of 0.012. This chart provides the hydraulic equivalence as determined by Alabama Department of Transportation for pipe types based on N value and manufacturer's tolerances. Enter the chart with the concrete pipe size in the plans and read across the chart to the equivalent size for another pipe type.
- Flowlines cannot be changed to obtain cover if an equivalent sized pipe is selected. If flowline changes occur, these changes will require a redesign of the system.
- Some pipe sizes are not shown because a larger pipe size is equivalent to the concrete pipe.
- THIS CHART DOES NOT APPLY TO CROSS DRAIN OR SIDE DRAIN PIPES.
- * SEE SPECIFICATIONS FOR ALLOWED SIZES FOR STORM SEWER.

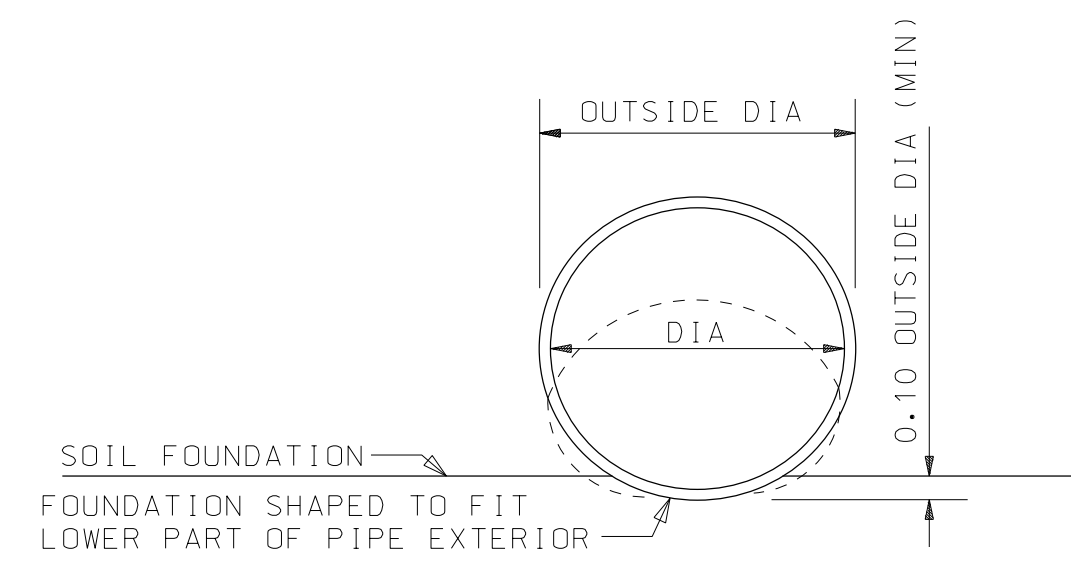
--SPECIFICATIONS--

CURRENT ALABAMA DEPARTMENT OF TRANSPORTATION

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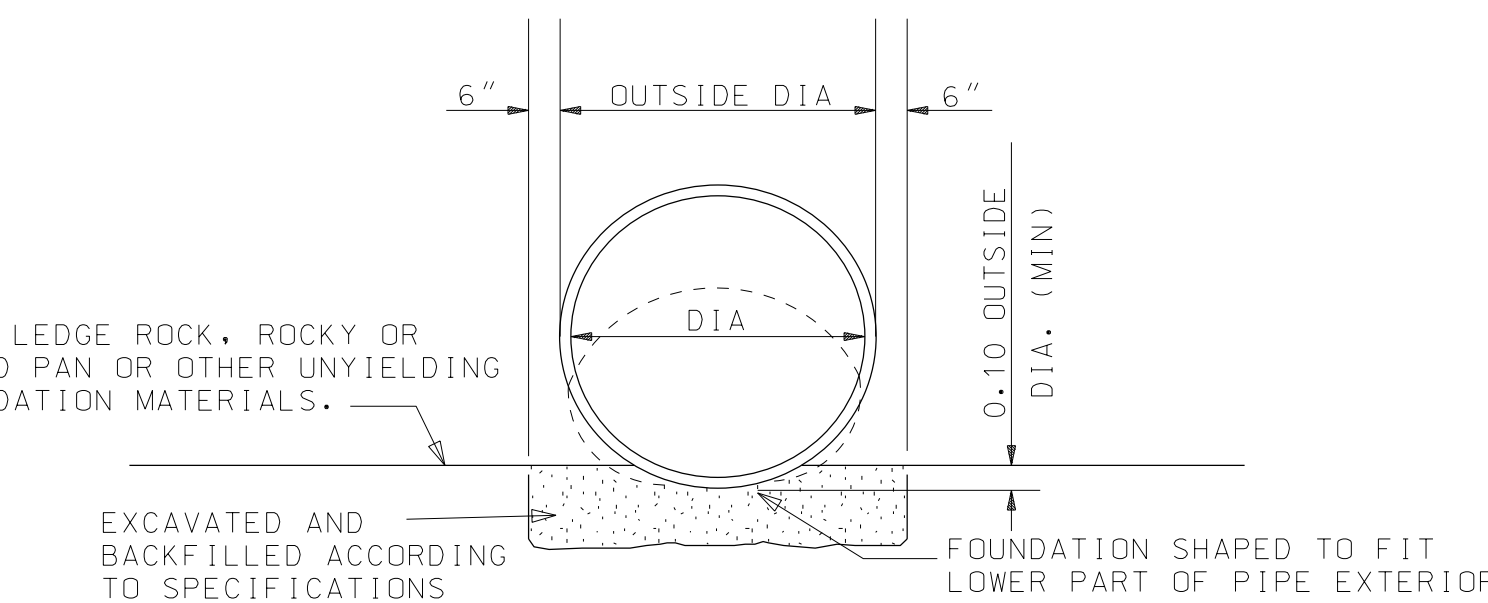
REVISIONS 1. Added Note 5 & adjusted various pipe sizes on 06-07-07 by W.W.A.	 ALABAMA DEPARTMENT OF TRANSPORTATION 1409 COLISEUM BOULEVARD MONTGOMERY, AL 36130-3050 DESIGN BUREAU SPECIAL DRAWING	INDEX NO 53001
HYDRAULICALLY EQUIVALENT ROUND PIPE (STORM SEWER)		SPECIAL DRAWING NO HEP-1
Bureau Std Engr: D.J.W. DRAWN BY: _____ DATE DRAWN: 02-03-05		

NOT TO SCALE



BEDDING ON SUITABLE MATERIAL

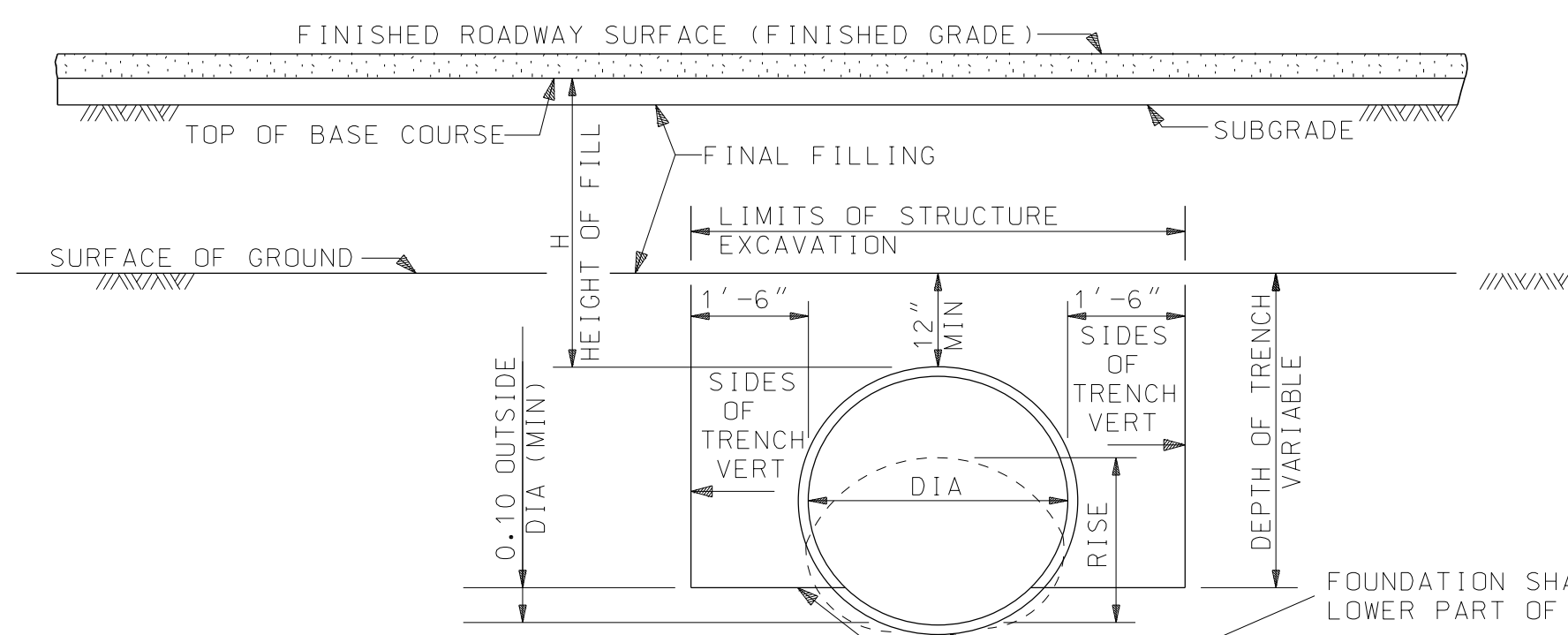
NATURAL SURFACE OF LEDGE ROCK, ROCKY OR GRAVELLY SOIL, HARD PAN OR OTHER UNYIELDING OR UNSUITABLE FOUNDATION MATERIALS.



BEDDING ON ROCK FOUNDATION OR UNSUITABLE MATERIAL

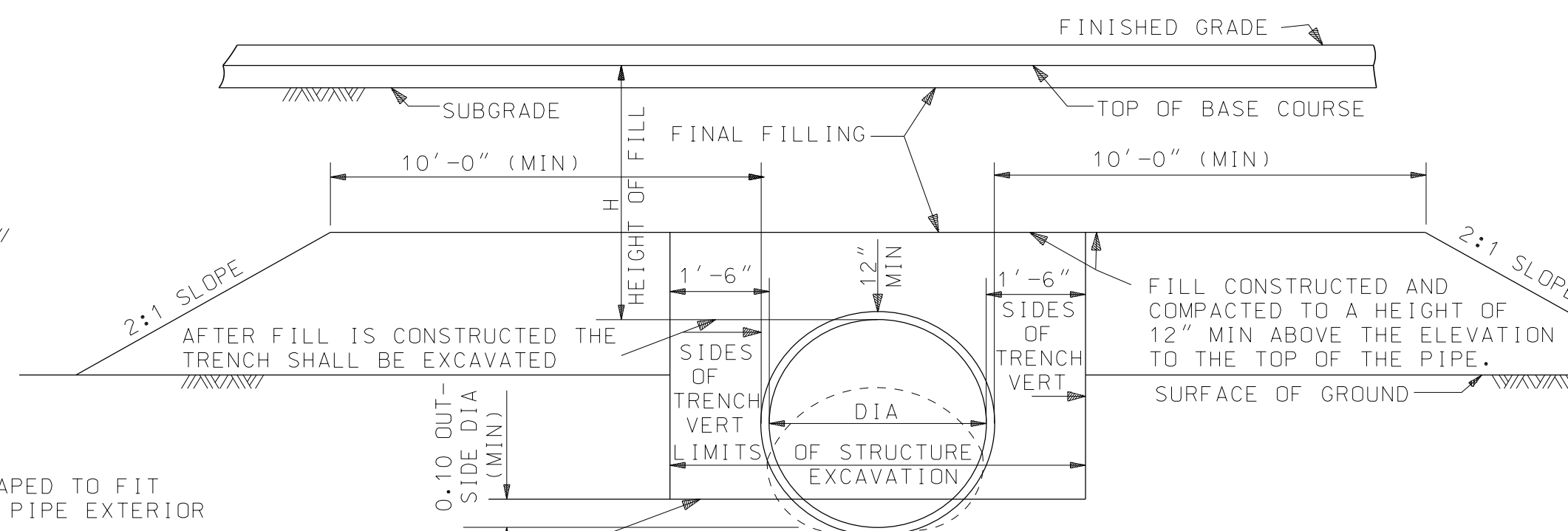
**DETAILS OF CLASS C BEDDING
POSITIVE PROJECTION**

WHERE THE GROUND SURFACE EXTENDS AT LEAST ONE FOOT (1') ABOVE THE ELEVATION OF THE TOP OF THE PIPE



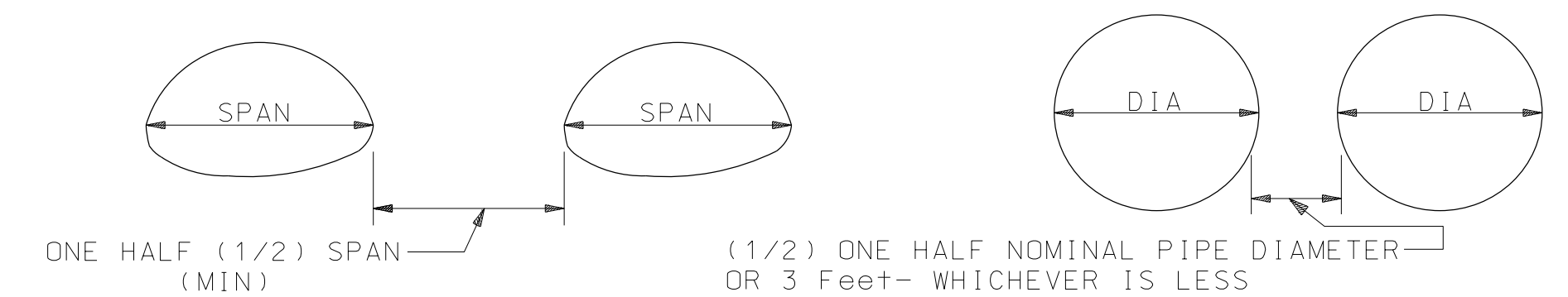
TRENCH 3'-0" WIDER ACROSS THE BOTTOM THAN THE INSIDE DIAMETER OR SPAN OF THE PIPE.

WHERE THE GROUND SURFACE IS LESS THAN ONE FOOT (1') ABOVE THE ELEVATION OF THE TOP OF THE PIPE

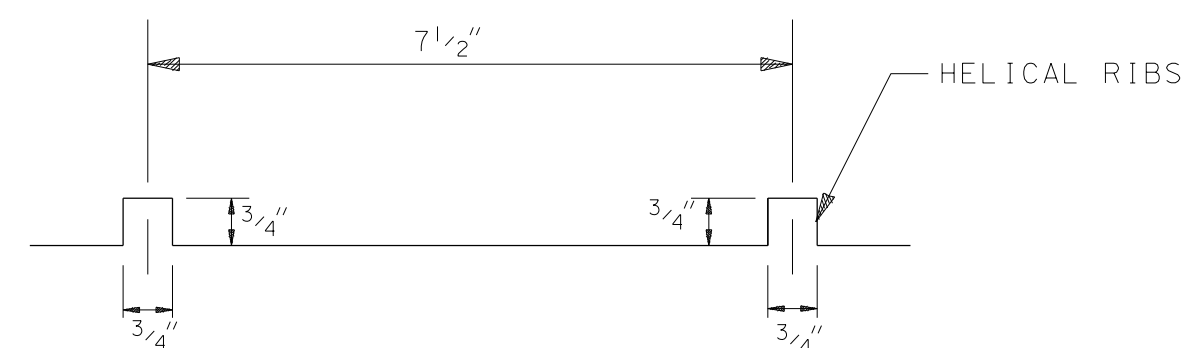


TRENCH 3'-0" WIDER ACROSS THE BOTTOM THAN THE INSIDE DIAMETER OR SPAN OF THE PIPE.

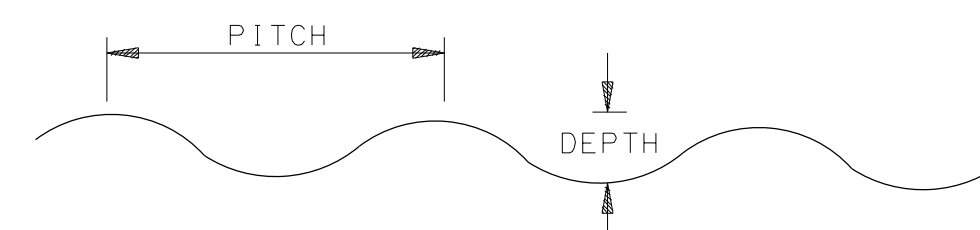
**DETAILS OF CLASS C BEDDING
NEGATIVE PROJECTION**



MULTIPLE INSTALLATIONS



TYPE OF MATERIAL	PITCH	DEPTH
CORRUGATED ALUMINUM	2 2/3"	1/2"
CORRUGATED METAL	2 2/3"	1/2"
CORRUGATED METAL	3"	1"
CORRUGATED METAL	5"	1"
HELICAL RIBBED METAL	7 1/2"	3/4"
STRUCTURAL PLATE CORR	6"	2"



DETAILS OF CORRUGATIONS

**GENERAL NOTES (ROADWAY PIPE)
CMP & RCP**

- (CMP) 1. GAUGES FOR METAL PIPE ARE MINIMUM GAUGES FOR STRUCTURAL REQUIREMENTS ONLY AND ARE INTENDED TO BE USED WHERE CORROSIVE AND ABRASIVE CONDITIONS ARE NEGLIGIBLE. HEAVIER GAUGES AND/OR PROTECTIVE COATINGS SHALL BE USED WHERE SITE INVESTIGATIONS INDICATE CORROSIVE AND/OR ABRASIVE CONDITIONS OR WHERE ANTICIPATED VELOCITIES EXCEED 5 FEET PER SECOND.
- (CMP) 2. MAXIMUM FILL HEIGHTS FOR CORRUGATED METAL ROADWAY ARCH PIPE SHALL BE BASED ON 4000 LBS BEARING PRESSURE OF THE FOUNDATION MATERIAL UNLESS ACTUAL TEST ARE MADE WHICH PROVE THE FOUNDATION MATERIAL TO HAVE HIGHER BEARING CAPACITIES.
- (RCP & CMP) 3. MAXIMUM FILL HEIGHT SHOWN IN TABLES ARE FROM TOP OF PIPE TO TOP OF BASE COURSE.
- (RCP & CMP) 4. MINIMUM FILL HEIGHTS SHOWN IN TABLES ARE FROM TOP OF PIPE TO TOP OF SUBGRADE.
- (RCP) 5. INSTALLATION (RCP): THE MIDDLE THIRD OF BEDDING MATERIAL UNDER THE PIPE SHALL BE LOOSELY PLACED, WHILE THE REMAINDER SHALL BE COMPACTED TO A MINIMUM OF 95% OF MAXIMUM DENSITY PER AASHTO T-99. SEE ALDOT SPECIFICATIONS SECTION 530.03-CLASS C BEDDING.
- (RCP) 6. CONCRETE PIPE SHALL CONFORM TO THE REQUIREMENTS OF "AASHTO LRFD CONSTRUCTION SPECIFICATIONS", SECTION 27-LATEST EDITION.
- (CMP) 7. CORRUGATED METAL PIPE SHALL CONFORM TO THE REQUIREMENTS OF "AASHTO LRFD CONSTRUCTION SPECIFICATIONS", SECTION 26-LATEST EDITION.

--SPECIFICATIONS--

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- REVISIONS
- Deleted Notes 3 & 4 and renumbered removed Pipe-Bed, Conc. Pipe sketch & replaced w/Details of Corrugations on 05-09-03 by W.W.A.
 - Added H.D.F.E. Pipe Tables & Std. Installation on 09-27-06 by W.W.A.
 - Adjusted Table 2 to current Standard Specifications on 05-23-08 by W.W.A.
 - Deleted 'IMPERFECT TRENCH' detail and Trench note & edited 'GENERAL NOTES' to coincide with CMP & RCP on 11-04-13 by J.F.1
 - Deleted Class C-I Bedding note & corrected Note 6 from '503.03' to '530.03' on 8/6/15 by L.V.S.



ALABAMA DEPARTMENT OF TRANSPORTATION
1409 COLISEUM BOULEVARD
MONTGOMERY, AL 36130-3050

DESIGN BUREAU SPECIAL DRAWING

BEDDING AND FILL HEIGHTS FOR ALL ROADWAY PIPE CULVERTS (RCP AND CMP)

Bureau Std Engr: D.J.W.
DRAWN BY: _____ DATE DRAWN: 05-26-75

SPECIAL DRAWING NO
RPC-530 (SHEET 1 OF 3)

INDEX NO
53004

NOT TO SCALE

← CORRUGATED METAL PIPE

CONCRETE PIPE →

FILL HEIGHTS FOR CORRUGATED METAL ROUND ROADWAY PIPE

PIPE DIAM. IN INCHES	AREA IN SQ. FT.	PIPE CHARACTERISTICS		MINIMUM COVER (INCHES)	MAXIMUM FILL HEIGHT IN FEET FOR METAL PIPE GAUGES BELOW				
		CORRUGATED STEEL			ALUM.	14	12	10	8
		2 2/3' x 1/2'	3' x 1" OR 5' x 1"						
15	1.2	●		12"	213	298	300+	300+	
18	1.8	●		"	177	248	300+	300+	
			●	"	80	--	--	--	
24	3.1	●		"	133	186	239	292	
			●	"	60	84	--	--	
30	5	●		"	106	149	191	234	
			●	"	48	67	--	--	
36	7	●	●	"	88	124	159	195	
			●	"	90	127	163	200	
			●	"	40	56	72	--	
42	10	●		"	75	106	137	167	
			●	"	77	108	140	172	
			●	"	--	48	62	--	
48	13	●	●	"	66	93	120	146	
			●	"	68	95	122	150	
			●	"	--	42	54	66	
54	16	●		"	56	80	104	128	
			●	"	60	84	109	133	
			●	"	--	36	48	59	
60	20	●	●	"	--	68	89	109	
			●	"	54	75	98	119	
			●	"	--	--	42	53	
66	24	●	●	"	--	58	75	93	
			●	"	49	68	88	108	
			●	"	--	--	48	80	
72	28	●	●	"	--	--	64	80	
			●	"	44	62	81	99	
			●	"	--	--	--	38	
78	33	●	●	"	--	--	--	68	
			●	"	41	58	74	92	
			●	"	--	--	--	56	
84	38	●	●	"	38	54	69	85	
			●	"	36	50	65	80	
90	44	●	●	"	33	47	61	74	
96	50	●	●	"	31	44	57	70	
102	57	●	●	24"	--	--	42	54	
108	64	●	●	"	--	--	38	50	
114	71	●	●	"	--	--	35	46	
120	79	●	●	"	--	--	35	46	

FILL HEIGHTS FOR CORRUGATED METAL AND STRUCTURAL PLATE ROADWAY ARCH PIPE

EQUIV. PIPE DIAMETER IN INCHES	CORRUGATED METAL PIPE ARCH			STRUCT. PLATE PIPE ARCH		MINIMUM GAUGE OR PLATE THICKNESS	SPAN	RISE	MINIMUM COVER (INCHES)	MAXIMUM FILL HEIGHT (FEET)		
	STEEL		ALUM.	STEEL	ALUM.					CORNER BEARING PRESSURE		
	2 2/3' x 1/2'	3' x 1" OR 5' x 1"								2 2/3' x 1/2'	6' x 2'	9' x 2 1/2'
15	●					14	17"	13"	18	13	15	--
						"	"	"	"	15	--	--
18	●		●			"	21"	15"	"	12	15	--
			●			"	"	"	"	14	--	--
24	●					"	28"	20"	"	9	15	--
						"	"	"	"	11	15	--
30	●					"	35"	24"	"	9	14	--
						"	"	"	"	9	14	--
36	●	●				"	42"	29"	"	7	13	--
		●				"	43"	27"	"	12	15	--
		●				"	42"	29"	"	7	13	--
42	●	●				"	49"	33"	"	7	12	--
		●				"	50"	31"	"	12	15	--
48	●	●				12	49"	33"	"	7	12	--
		●				"	57"	38"	"	7	12	--
54	●	●				14	58"	36"	"	12	15	--
		●				10	57"	38"	"	7	12	--
60	●	●				12	64"	43"	"	7	12	--
		●				14	65"	40"	"	12	15	--
66	●	●				10	64"	43"	"	7	12	--
		●				"	71"	47"	"	7	12	--
72	●	●				14	72"	44"	"	12	15	--
		●				8	71"	47"	"	7	12	--
		●				8	77"	52"	"	7	12	--
		●				14	73"	55"	"	15	--	--
		●				0.109"	6'-4"	4'-9"	"	15	--	--
		●				0.10"	5'-11"	5'-4"	"	15	--	--
78	●	●				8	83"	57"	"	8	13	--
		●				14	81"	59"	"	15	--	--
		●				0.109"	7'-0"	5'-1"	"	15	--	--
		●				0.10"	6'-8"	5'-7"	"	15	--	--
84	●	●				14	87"	63"	"	14	15	--
		●				0.109"	7'-8"	5'-5"	"	12	15	--
		●				0.10"	7'-4"	5'-11"	"	15	--	--
90	●	●				12	95"	67"	"	12	15	--
		●				0.109"	8'-2"	5'-9"	24	11	15	--
		●				0.10"	8'-0"	6'-2"	18	14	--	--
96	●	●				12	103"	71"	24	11	15	--
		●				0.109"	9'-4"	6'-3"	"	10	15	--
		●				0.10"	8'-7"	6'-6"	"	13	--	--
		●				12	112"	75"	"	10	15	--
		●				0.109"	9'-9"	6'-7"	"	10	15	--
		●				0.10"	9'-6"	6'-10"	"	13	--	--
102	●	●				12	117"	79"	"	10	15	--
		●				0.109"	10'-8"	6'-11"	"	9	13	--
		●				0.10"	10'-5"	7'-3"	"	12	--	--
108	●	●				10	128"	83"	"	10	14	--
		●				0.109"	11'-5"	7'-3"	"	7	12	15
		●				0.125"	11'-2"	7'-6"	"	15	--	--
114	●	●				0.109"	11'-10"	7'-7"	"	7	12	15
		●				0.125"	11'-8"	7'-10"	"	14	--	--
120	●	●				0.109"	12'-6"	7'-11"	"	6	11	15
		●				0.125"	12'-5"	8'-2"	"	13	--	--
126	●	●				0.109"	13'-5"	8'-5"	"	5	7	14
		●				0.15"	13'-1"	8'-5"	"	12	15	--
132	●	●				0.109"	14'-1"	8'-9"	"	5	11	14
		●				0.15"	13'-10"	8'-9"	"	12	15	--
138	●	●				0.138"	14'-0"	9'-8"	"	--	10	13
		●				0.175"	14'-9"	9'-2"	"	10	15	--
144	●	●				0.138"	14'-5"	10'-0"	"	--	10	13
		●				0.175"	15'-6"	9'-6"	"	10	15	--
150	●	●				0.138"	15'-4"	10'-4"	"	--	10	13
		●				0.20"	16'-2"	9'-9"	36	10	15	--
156	●	●				0.138"	15'-10"	10'-8"	24	--	9	12
		●				0.25"	16'-11"	10'-1"	36	9	14	--
162	●	●				0.138"	17'-0"	11'-2"	"	--	8	12

MAX. FILL HEIGHTS (FT.) FOR CONCRETE ROUND ROADWAY PIPE WITH CLASS C BEDDING

PIPE DIA. (IN.)	CLASS OF PIPE		
	III	IV	V
15	16	25	39
18	16	25	39
24	16	25	39
30	16	25	39
36	16	25	39
42	16	25	39
48	16	25	39
54	16	25	39
60	16	25	39
66	16	25	39
-----	-----	-----	-----
72	15	24	38
78	15	24	38
84	15	24	38
96	15	24	38
102	15	24	38

- NOTES: REINFORCED CONCRETE ROADWAY PIPE
- FOR FILL HEIGHTS GREATER THAN LISTED ABOVE, PIPE SHALL BE REFERENCED AS "SPECIAL DESIGN".
 - "SPECIAL DESIGN" RCP SHALL REQUIRE STRUCTURAL CALCULATIONS STAMPED BY REGISTERED ENGINEER BASED UPON DIRECT DESIGN ANALYSIS AND MAY UTILIZE ACPA'S "PIPECAR" DESIGN SOFTWARE.
 - THE "SPECIAL DESIGN" PIPE SUBMITTAL SHALL INCLUDE BACKFILL AND INSTALLATION DETAILS FOR THE SPECIFIC DESIGN.

MAX. FILL HEIGHTS FOR CONCRETE ELLIPTICAL OR ARCH ROADWAY PIPE

EQUIV. PIPE DIAMETER IN INCHES	ARCH PIPE	HORIZ. ELLIP.	MINIMUM COVER	CLASS III REINF. FILL HEIGHT
15"	18"x11"	N.A.	12"	14 FT.
18"	22"x14"	23"x14"	"	"
24"	29"x18"	30"x19"	"	"
30"	36"x23"	38"x24"	"	"
36"	44"x27"	45"x29"	"	"
42"	51"x31"	53"x24"	"	"
48"	59"x36"	60"x36"	"	"
54"	65"x40"	68"x43"	"	"
60"	73"x45"	76"x48"	"	"
72"	88"x54"	91"x58"	"	"

NOTE: FOR CONCRETE ARCH PIPE ONLY A SINGLE REINFORCED WALL WILL BE ALLOWED FOR PIPE WITH AN EQUIVALENT DIAMETER OF 42" OR LESS. ARCH AND ELLIPTICAL PIPE TO BE PAID FOR UNDER SAME SIZE ARCH PAY ITEMS.

FILL HEIGHTS FOR CONCRETE SIDEDRAIN PIPE

TYPE	SIZE	FILL HEIGHT
PLAIN CONC.	24" OR LESS	1.5' TO 10'
REINF. CONC. CLASS II	ALL SIZES	1.5' TO 10'

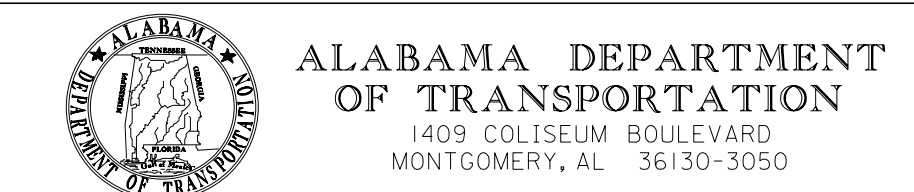
* APPLIES TO ROUND AS WELL AS ARCH AND ELLIPTICAL PIPE. FILL HEIGHTS SHOWN APPLY TO STORM SEWER PIPE AS WELL AS SIDEDRAIN PIPE.

BEDDING IS NOT REQUIRED FOR SIDEDRAIN PIPE.

--SPECIFICATIONS--
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REVISIONS
1. Changed fill height requirements for C.M. pipe to match latest AIST Standards, 10-15-96 by C.J.S.
2. Changed fill height to 14' to match LRFD on "CONCRETE ARCH ROADWAY PIPE" & edited max fill height to match LRFD on 11-05-13 by J.F.T.
3. Updated "FILL HEIGHTS FOR CORRUGATED METAL SIDEDRAIN PIPE (STEEL & ALUMINUM)" to coincide with Alabama Standard Specifications, 2012 Edition, Section 535 on Side Drain Pipe, Special Provision No. 12-1264 on 08-03-16 by J.F.T.



ALABAMA DEPARTMENT OF TRANSPORTATION
1409 COLISEUM BOULEVARD
MONTGOMERY, AL 36130-3050
DESIGN BUREAU SPECIAL DRAWING
BEDDING AND FILL HEIGHTS FOR ROADWAY PIPE CULVERTS (CMP AND RCP)

SPECIAL DRAWING NO
DRAWN BY: D.J.W. DATE DRAWN: 12-21-92
INDEX NO
RPC-530 (SHEET 2 OF 3) 53005

FILL HEIGHTS FOR STRUCTURAL PLATE ROUND ROADWAY PIPE

PIPE DIAM. IN INCHES	AREA IN SQ. FT.	CORRUGATED STRUCT. PLATE PIPE		MINIMUM COVER (INCHES)	MAXIMUM FILL HEIGHT IN FEET FOR STEEL STRUCTURAL PLATE THICKNESSES SHOWN BELOW													
		STEEL 6' x 2'	ALUM. 9' x 2 1/2'		.109"	.138"	.168"	.188"	.218"	.249"	.280"	.311"	.342"	.373"				
															.109"	.138"	.168"	.188"
60	20	●	●	12"	69	31	102	45	134	--	150	--	175	--	200	--	226	--
72	28	●	●	"	58	25	85	37	111	--	125	--	146	--	167	--	188	--
84	38	●	●	"	49	22	73	32	95	--	107	--	125	--	144	--	161	--
96	50	●	●	"	43	19	23	28	84	37	95	--	109	--	125	--	141	--
108	64	●	●	24"	38	17	57	25	74	33	83	--	97	--	111	--	125	--
120	79	●	●	"	35	15	51	22	67	30	74	--	87	--	100	--	113	--
132	95	●	●	"	32	14	46	20	61	27	67	32	79	--	91	--	102	--
144																		

REFERENCE PROJECT NO	FISCAL YEAR	SHEET NO

TABLE 2:
HIGH DENSITY CORRUGATED POLYETHYLENE PIPE
HEIGHT OF COVER
H-20 AND LIVE LOADS
(AS PER STANDARD SPECIFICATIONS)

NOMINAL DIAMETER IN	MINIMUM COVER (HEIGHT OF FILL) IN	MAXIMUM COVER (HEIGHT OF FILL) FT
12"-36"	24"	25'

TABLE 3: RECOMMENDED TRENCH WIDTH

DIAMETER	OUTSIDE DIA	TRENCH WIDTH
12"	14.45"	34"
15"	17.57"	38"
18"	21.20"	44"
24"	27.80"	54"
30"	35.10"	65"
36"	41.70"	75"

The trench width must be wide enough to accommodate compaction equipment.

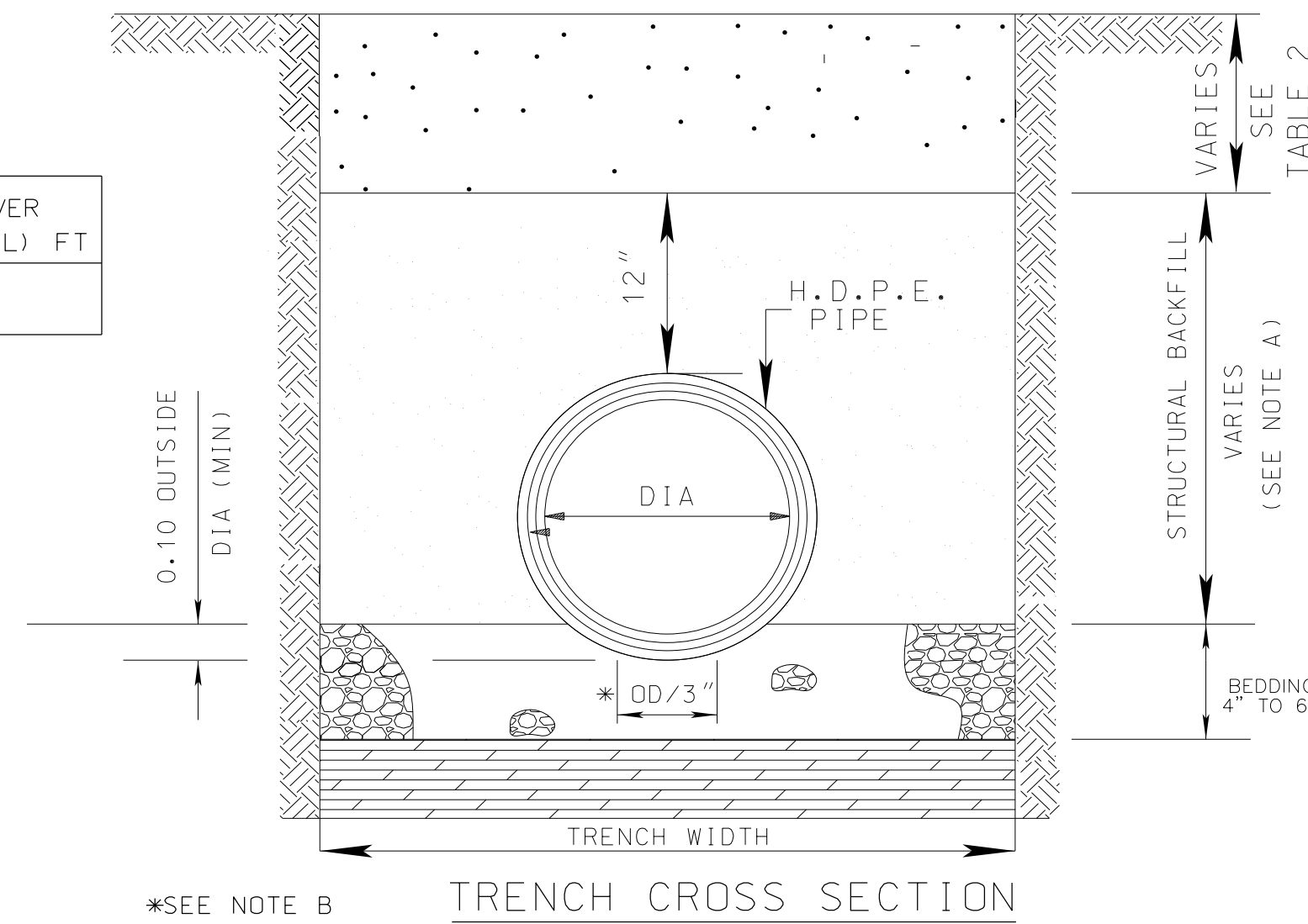


TABLE 4: MULTIPLE INSTALLATION OF
POLYETHYLENE PIPES

DIAMETER OF PIPE IN	CLEAR DISTANCES BETWEEN PIPES FT
18	1' 2"
24	1' 5"
30	1' 8"
36	1' 11"

STANDARD INSTALLATION
OF H.D.P.E. PIPE

GENERAL NOTES (H.D.P.E. PIPE)

- MATERIALS: THERMOPLASTIC PIPE: POLYETHYLENE PIPE SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 294, LATEST EDITION. BEDDING MATERIAL AND STRUCTURAL BACKFILL: SHALL MEET THE REQUIREMENTS OF AASHTO A-1, A-3, A-2-4 OR A-2-5.
- INSTALLATION: MINIMUM TRENCH WIDTHS SHALL MEET THE REQUIREMENTS OF TABLE 3. THE MIDDLE THIRD OF THE BEDDING MATERIAL UNDER THE PIPE SHOULD BE LOOSELY PLACED. WHILE THE REMAINDER SHALL BE COMPACTED TO A MINIMUM 95% OF MAXIMUM DENSITY PER AASHTO T-99. A MINIMUM OF 4 INCHES OF BEDDING SHALL BE PROVIDED PRIOR TO PLACEMENT OF THE PIPE. STRUCTURAL BACKFILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING A 6 INCH LOOSE LIFT THICKNESS AND BROUGHT UP EVENLY ON BOTH SIDES OF THE PIPE TO AN ELEVATION NOT LESS THAN 12 INCHES ABOVE THE TOP OF THE PIPE. A MINIMUM COMPACTION LEVEL OF 95% STANDARD DENSITY PER AASHTO T-99 SHALL BE ACHIEVED. MINIMUM COVER REQUIREMENT SHALL MEET THE REQUIREMENTS OF TABLE 2. FOR MULTIPLE INSTALLATION OF POLYETHYLENE PIPES, A CLEAR DISTANCE BETWEEN PIPES SHALL MEET THE REQUIREMENTS OF TABLE 4.
- CALCULATIONS FOR FILL DEPTHS ARE BASED ON PROPERTIES DEFINED IN AASHTO M294 AND CALCULATIONS IN AASHTO SEC 12 AND SEC 30.
- ANY COST OF BEDDING AND BACKFILL MATERIAL REQUIRED TO INSTALL THE H.D.P.E. PIPE IN ADDITION TO THAT SHOWN IN THE PLANS SHALL BE INCLUDED IN THE PRICE BID FOR THE PIPE.

--SPECIFICATIONS--
CURRENT ALABAMA DEPARTMENT OF TRANSPORTATION

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REVISIONS
1. Created sheet to consolidate all HDPE on one page on 11-05-13 by J.F.T.



ALABAMA DEPARTMENT
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1409 COLISEUM BOULEVARD
MONTGOMERY, AL 36130-3050

DESIGN BUREAU SPECIAL DRAWING

BEDDING AND FILL HEIGHTS FOR
ALL ROADWAY PIPE CULVERTS
(H.D.P.E. PIPE)

Bureau Std Engr: D.J.W.
DRAWN BY: _____ DATE DRAWN: 05-26-75

SPECIAL DRAWING NO

RPC-530 (SHEET 3 OF 3)

INDEX NO

53006

NOT TO SCALE