

TYPICAL CONCRETE DRAINAGE PIPE TRENCH DETAIL

(36"-72" RCP) AND [42"-96" RCPA]

N.T.S.

(RCP) & [RCPA] MINIMUM *** BEDDING THICKNESS (in.)

PIPE SIZE (RCP) (RCPA)	BEDDING LAYER	UNDISTURBED SUBGRADE NET ALLOWABLE SOIL BEARING CAPACITY (psf.)				
		300-400	401-500	501-600	601-700	>700
(36" & 42")	(1)	20"	18"	16"	14"	12"
	(2)	8"	8"	8"	8"	8"
TOTAL THICKNESS		28"	26"	24"	22"	20"
(48" & 54")	(1)	22"	20"	18"	14"	12"
	(2)	10"	10"	10"	10"	10"
TOTAL THICKNESS		32"	30"	28"	24"	22"
(60" & 72")	(1)	34"	30"	26"	16"	14"
	(2)	10"	10"	10"	10"	10"
TOTAL THICKNESS		44"	40"	36"	26"	24"

NOTES:

- SIDE BEDDING WIDTH MAY BE REDUCED WITH ST BERNARD'S PARISH PROJECT ENGINEER'S APPROVAL.
- THE DEPARTMENT OF ENGINEERING RESERVES THE RIGHT TO MODIFY PIPE BEDDING REQUIREMENTS IN ACCORDANCE WITH EXISTING FIELD CONDITIONS ENCOUNTERED DURING CONSTRUCTION.
- TRENCH SAFETY IS THE RESPONSIBILITY OF THE CONTRACTOR. THE PARISH OR ITS REPRESENTATIVES RESERVE THE RIGHT TO REQUIRE THE CONTRACTOR TO MODIFY ANY PORTIONS OF SHORING SYSTEM DEEMED UNSAFE, BUT THE FINAL RESPONSIBILITY FOR THE WORKER'S SAFETY REMAINS WITH THE CONTRACTOR. TRENCH DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST OSHA STANDARDS AND REQUIREMENTS.
- TIMBER SHEETING, IF USED, MUST REMAIN IN PLACE AND BE CUT OFF A MINIMUM OF 3 FEET BELOW FINISHED GRADE.
- ALL CONCRETE PIPE SHALL BE A.S.T.M. C-76 (RCP) AND A.S.T.M. C-506 (RCPA), CLASS III, WALL B, REINFORCED CONCRETE PIPE WITH TYPE 2 JOINTS.
- THE CONTRACTOR MUST REVIEW ALL DETAILS AND CHARTS INCLUDED ON THIS STANDARD DRAWING SHEET PRIOR TO BIDDING. FOR PIPES 36" AND LARGER, THE TRENCH DESIGN AND BEDDING THICKNESSES WILL VARY DEPENDING ON THE "UNDISTURBED SUBGRADE NET ALLOWABLE SOIL BEARING CAPACITY" VALUE. THE "DESCRIPTION SECTION" OF "TECHNICAL SPECIFICATIONS" FOR "CULVERTS AND STORM DRAINS" MUST REFERENCE THIS ST BERNARD STANDARD DRAWING AND MUST PROVIDE THE "UNDISTURBED SUBGRADE NET ALLOWABLE SOIL BEARING CAPACITY" VALUE.
- WHERE GROUND WATER OR AN UNSTABLE TRENCH BOTTOM EXISTS, THE TRENCH BOTTOM SHALL BE STABILIZED (ASTM D2321) TO PROVIDE A WORKING PLATFORM. REMOVE MUCK OR OTHER SOFT MATERIAL, TREE ROOTS, AND/OR ANY OTHER UNDESIRABLE MATERIAL FROM THE TRENCH BOTTOM TO A DEPTH NECESSARY TO ESTABLISH A FIRM FOUNDATION.
- GEOTECHNICAL REPORT'S RECOMMENDATIONS FOR PIPE BEDDING, IF MORE STRINGENT, SHALL SUPERSEDE THESE MINIMUM THICKNESSES.

LEGEND:
 (1) BEDDING LAYER
 (RCP) REINFORCED CONCRETE CIRCULAR (ROUND) PIPE.
 [RCPA] REINFORCED CONCRETE ARCH PIPE

NOTES:

- WHERE GROUND WATER OR UNSTABLE TRENCH BOTTOM EXISTS, TRENCH BOTTOM SHALL BE STABILIZED (ASTM D2321) TO PROVIDE A WORKING PLATFORM.
- TRENCH DETAIL SHOWN WILL BE MIN. REQUIREMENTS TO SAFEGUARD THE INTEGRITY OF THE DRAIN LINE INSTALLATION AT HEREIN-SPECIFIED DEPTHS. THE CONTRACTOR SHALL PROVIDE SUFFICIENT SHEETING AND BRACING TO PROVIDE SAFE WORKING CONDITIONS FOR HIS WORKMEN.
- 18" REQ'D CLASS D GEOTEXTILE FABRIC OVER TOP OF CLASS II BASE (TYP.)

NOTES:

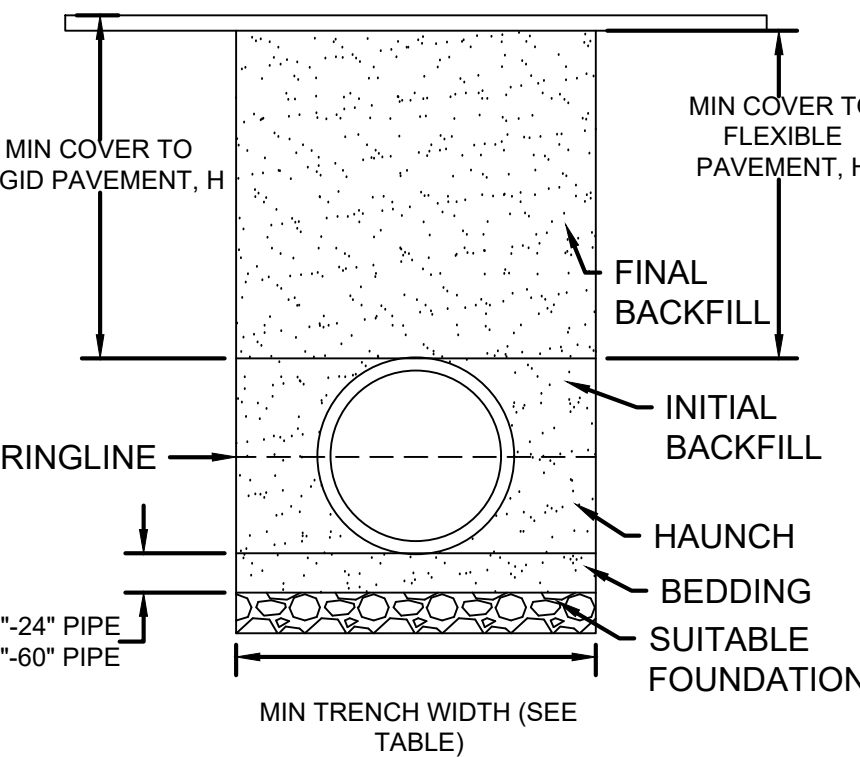
- * COMPACTED SAND, ASTM 2321 CLASS II (SW OR SP) MIN. DENSITY 97% STANDARD PROCTOR (ASTM D1557) 2' MAX. LAYERS.
- ** PROVIDE BELL HOLES AT EACH JOINT.
- *** COMPACTED SAND, ASTM 2321 CLASS II (SW OR SP) MIN. DENSITY 95% STANDARD PROCTOR (ASTM D1557) 2' MAX. LAYERS.
- **** COMPACTED CLASS II BASE COURSE (610 LIMESTONE) MIN. DENSITY 95% STANDARD PROCTOR (ASTM D1557)

PIPE BEDDING LIMESTONE

57 LIMESTONE		
U.S. SIEVE	METRIC SIEVE	PERCENT PASSING
1 1/2"	37.5 mm	100
1"	25 mm	95-100
1/2"	12.5 mm	25-60
#4	4.75 mm	0-10
#8	2.36 mm	0-5

MODIFIED 610 LIMESTONE

U.S. SIEVE	METRIC SIEVE	PERCENT PASSING
1 1/2"	37.5 mm	100
1"	25 mm	90-100
3/4"	19 mm	70-100
1/2"	12.5 mm	60-90
3/8"	9.5 mm	50-80
#4	4.75 mm	35-65
#40	425 μ m	12-32
#200	75 μ m	5-12



HP STORM TRENCH DETAIL

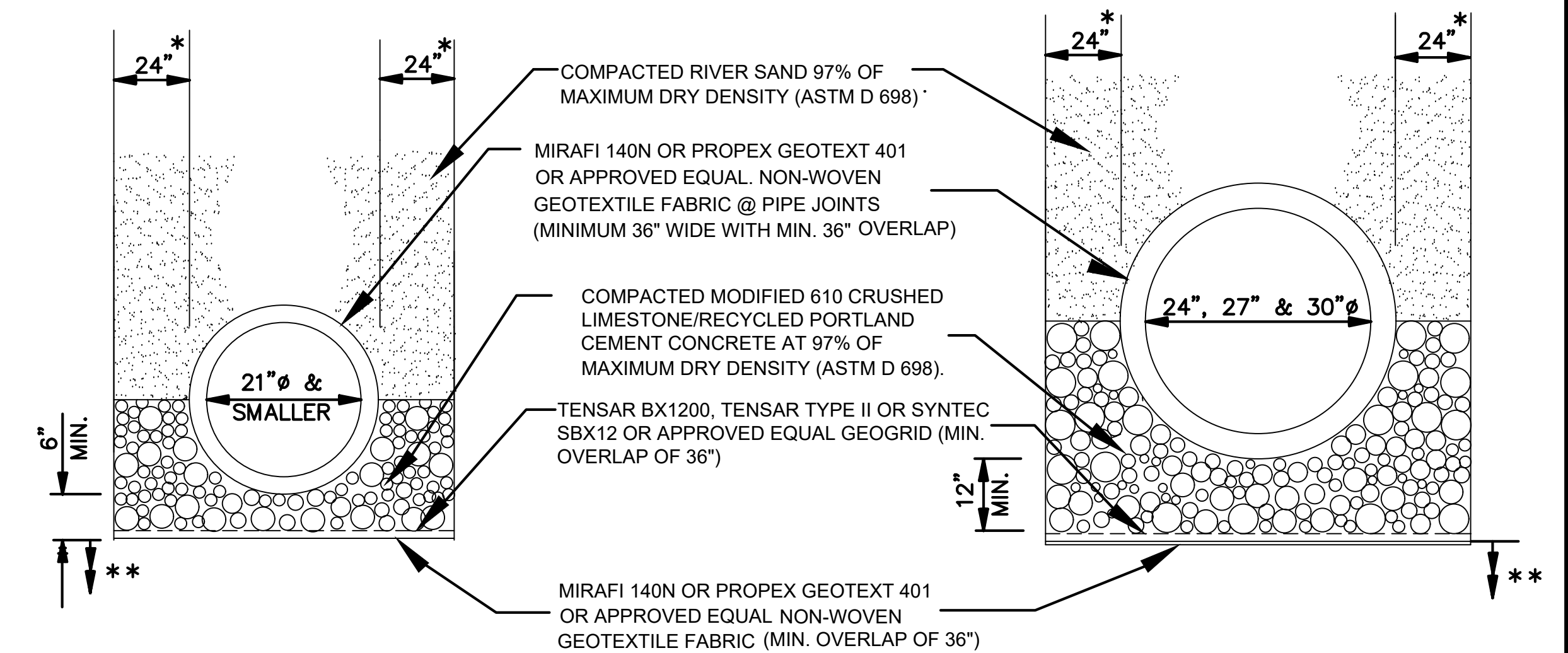
MINIMUM RECOMMENDED COVER BASED ON VEHICLE LOADING CONDITIONS

PIPE DIAM.	SURFACE LIVE LOADING CONDITIONS	
	H-25	HEAVY CONSTRUCTION (75T AXLE LOAD)*
12" - 48"	12"	48"
60"	24"	60"

VEHICLES IN EXCESS OF 75T MAY REQUIRE ADDITIONAL COVER

RECOMMENDED MINIMUM TRENCH WIDTHS

PIPE DIAM.	MIN. TRENCH WIDTH
12"	30"
15"	34"
18"	39"
24"	48"
30"	56"
36"	64"
42"	72"
48"	80"
60"	96"



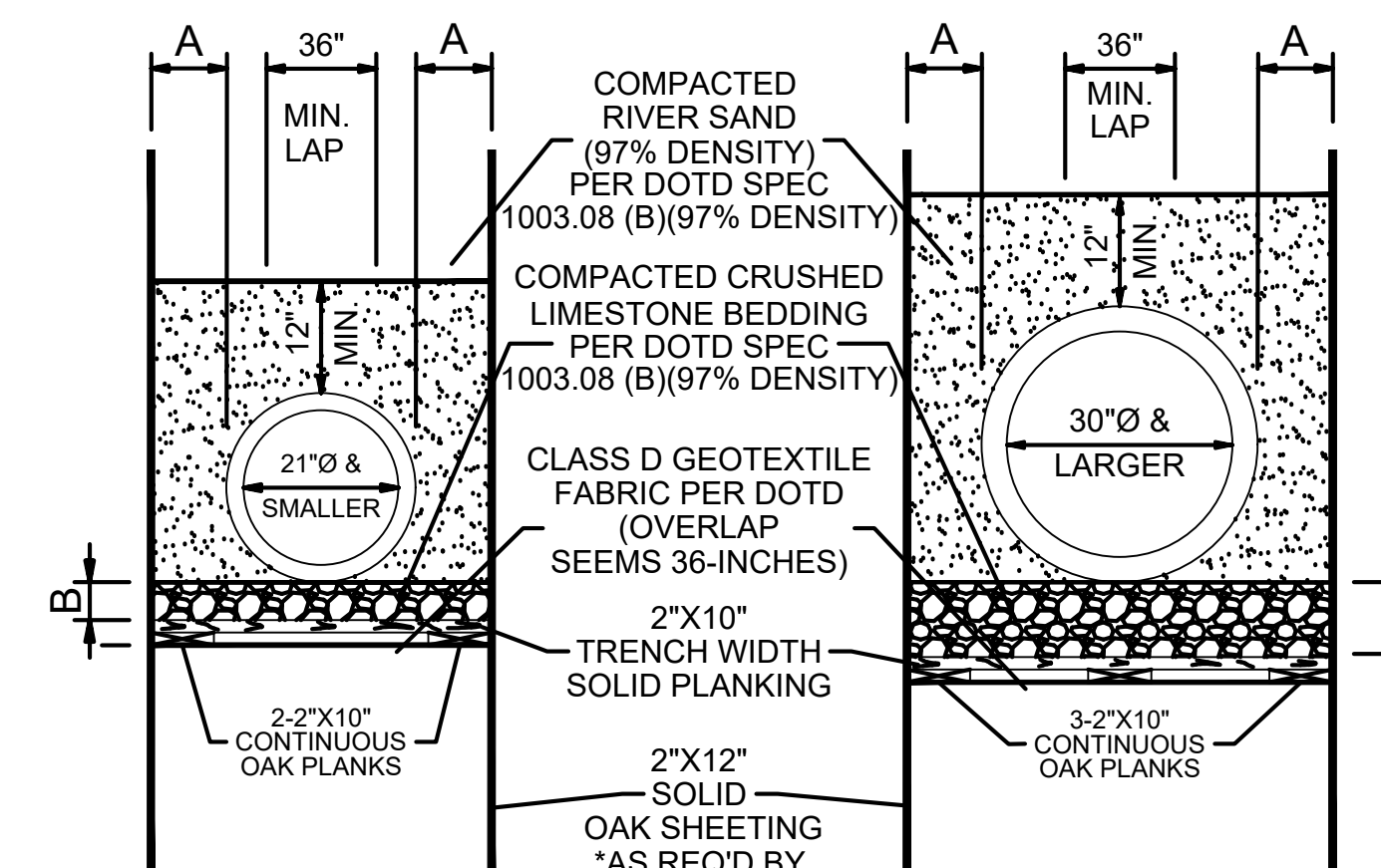
SMALL (RCP) & [RCPA] PIPE TRENCH DETAILS

N.T.S.

NOTES:

- ALL PIPES SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS." LATEST ADDITION, WITH THE EXCEPTION THAT THE INITIAL BACKFILL MAY EXTEND TO THE CROWN OF THE PIPE. SOIL CLASSIFICATIONS ARE PER THE LATEST VERSION OF ASTM D2321. CLASS IVB MATERIALS (MH, CH) AS DEFINED IN PREVIOUS VERSIONS OF ASTM D2321 ARE NOT APPROPRIATE BACKFILL MATERIAL.
- MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.

PIPE DIA.	DIMENSION 'A' MIN.	DIMENSION 'B' MIN.
15	6"	12"
18	6"	12"
21	6"	12"
24	6"	12"
30	12"	12"
36	12"	12"
42	12"	18"
48	12"	18"
54	15"	18"
60	18"	24"
66	18"	24"
72	18"	24"



CIRCULAR PIPE DRAIN LINES

DRAIN LINE BEDDING AND BACKFILL DETAILS FOR RCP & RCPA
N.T.S.

DRAIN LINE BEDDING NOTES:

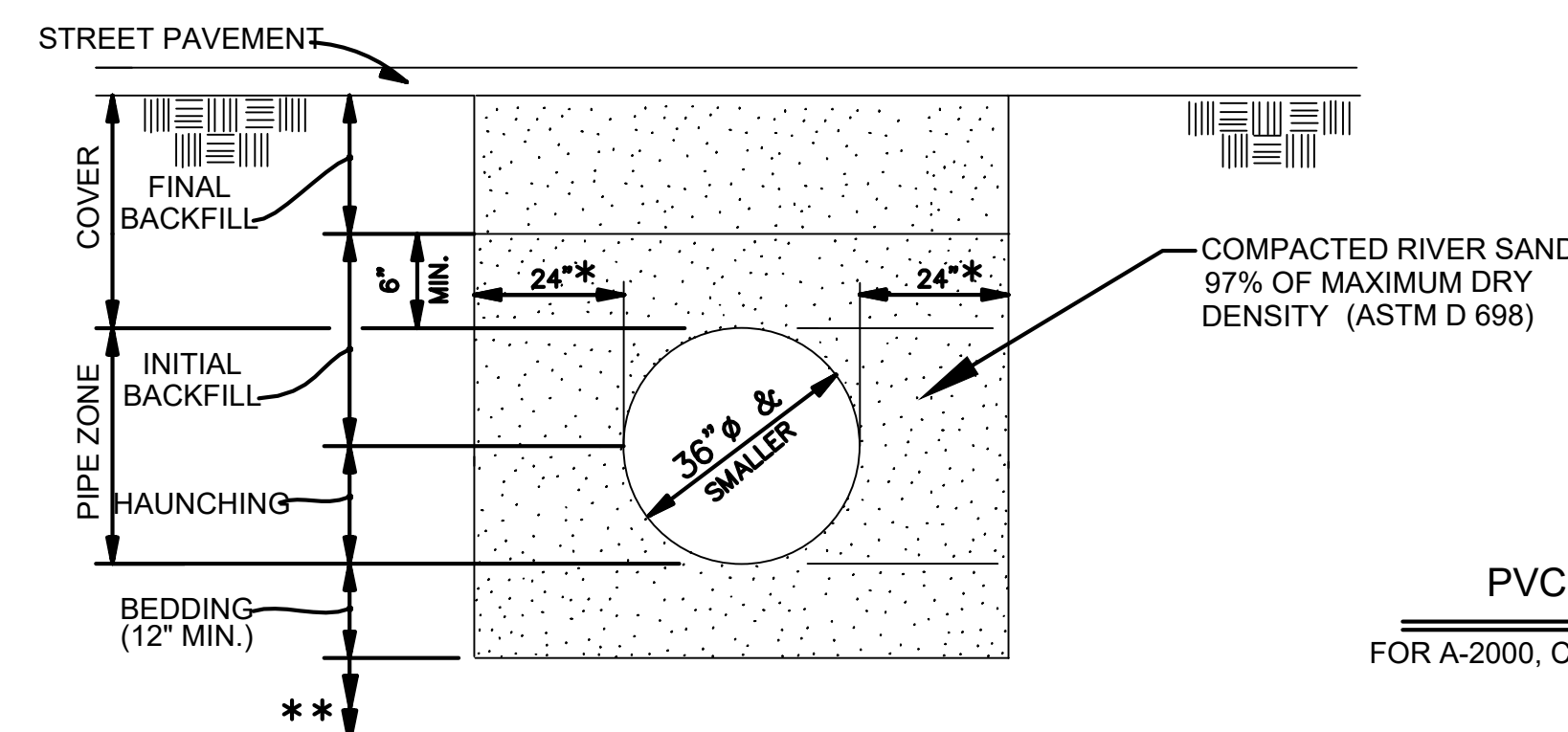
THE DEPARTMENT OF PUBLIC WORKS RESERVES THE RIGHT TO MODIFY PIPE BEDDING REQUIREMENTS IN ACCORDANCE WITH EXISTING FIELD CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

ALL CONCRETE PIPE SHALL BE A.S.T.M. C-76 CLASS III, WALL B, REINFORCED CONCRETE PIPE WITH TYPE 2 JOINT, AND WRAPPED WITH AN 36" PLASTIC FILTER CLOTH (D.O.T.D. SPEC. 1019) CENTERED ON THE JOINT AND LAPPED 36". REJECT PIPE, COMMONLY CALLED "SECONDS", WILL NOT BE ACCEPTABLE. (N.D.P.)

MINIMUM COVER REQUIREMENTS TO BE 12" FOR DRAIN LINES LOCATED WITHIN ROADWAY AND 18" FOR DRAIN LINES LOCATED OUTSIDE OF ROADWAY.

SHEETING IS AT THE OPTION OF THE CONTRACTOR. NO TIMBER SHEETING IS TO BE PULLED FROM THE GROUND. TIMBER SHEETING, WHEN USED, SHALL BE CUT OFF TO A MINIMUM OF 3' BELOW GRADE AND LEFT IN PLACE.

JOINT SHALL BE WRAPPED WITH A 36" WIDE GEOTEXTILE FABRIC (D.O.T.D. SPEC. 1019) CENTERED ON THE JOINT AND LAPPED 36". REJECT PIPE, COMMONLY CALLED "SECONDS", WILL NOT BE ACCEPTABLE. (N.D.P.)



PVC PIPE DRAIN LINE STANDARD TRENCH DETAIL

FOR A-2000, CORR-21, AND ULTRA CORR PVC PIPE (ASTM F-794 AND ASTM D2321) N.T.S.

MIN. COVER (PVC PIPE)	PAVEMENT TYPE
12"	CONCRETE
18"	ASPHALT
24"	NON-PAVED

PROJECT NAME :

PROJECT NUMBER:



DATE	12.06.2021
DRAWN BY	MF/AR
SCALE:	NTS
FILENAME:	S:\Public Works Shared\St. Bernard Standard Details

ST. BERNARD PARISH GOVERNMENT
 STANDARD DETAIL PLANS
 DRAIN LINE BEDDING AND BACKFILL DETAILS

APPROVED BY	DRAWING NUMBER
DATE	SD - 8
THIS DOCUMENT WILL BE CONSIDERED A COPY ONLY, UNLESS EMBOSSED BY A REGISTERED ENGINEER'S SEAL.	
SHEET 8 OF 13	