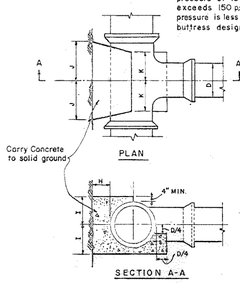
Notes:
1. All concrete **shall be Mix No. 1.**
2. Buttress dimensions shown are minimum. Dimensions are based upon soil bearing pressure of 3000 p.s.f. and static water pressure of 150 p.s.i. Where pressure exceeds 150 psi. or where soil bearing pressure is less than 3000 p.s.f. special buttress design is required.



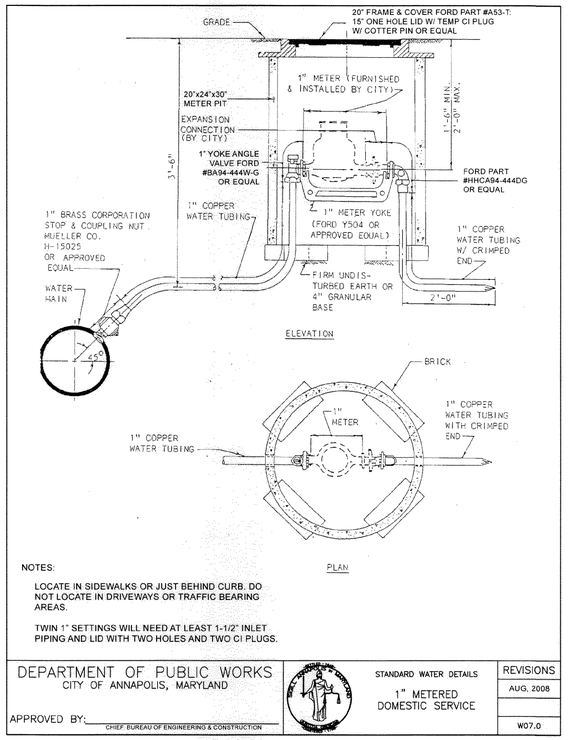
BUTTRESS FOR TEES								
	SIZE OF BRANCH							
D	6"	8"	10"	12"	16"	20"	24"	30"	36"
H	8"	9"	10"	1'-0"	1'-2"	1'-4"	1'-6"	1'-9"	2'-0"
I	8"	10"	1'-0"	1'-3"	1'-8"	2'-1"	2'-6"	3'-1"	3'-9"
J	7"	9"	1'-0"	1'-2"	1'-6"	1'-11"	2'-4"	2'-10"	3'-5"
K	6"	8"	8"	8"	10"	1'-2"	1'-4"	1'-6"	1'-10"
K*	5"	5"	5"	5"					

K* FOR COMPACT FITTINGS

BUTTRESS FOR TEES

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED: CHIEF ENGINEER; DESIGN ENGINEER; DATE: 6/5/84	STANDARD WATER DETAILS BUTTRESS FOR TEES	REVISED 5/6/88; 10 / 95	W 2

Published: 01/01 Revised:

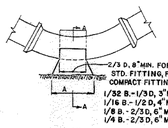


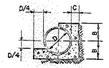
NOTES:

LOCATE IN SIDEWALKS OR JUST BEHIND CURB. DO NOT LOCATE IN DRIVEWAYS OR TRAFFIC BEARING AREAS.

TWIN 1" SETTINGS WILL NEED AT LEAST 1-1/2" INLET PIPING AND LID WITH TWO HOLES AND TWO CI PLUGS.

DEPARTMENT OF PUBLIC WORKS CITY OF ANNAPOLIS, MARYLAND APPROVED BY: CHIEF, BUREAU OF ENGINEERING & CONSTRUCTION	STANDARD WATER DETAILS 1" METERED DOMESTIC SERVICE	REVISIONS AUG. 2008 W07.0

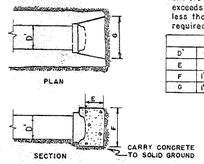




BUTTRESS FOR HORIZONTAL BENDS									
BEND		6"	8"	10"	12"	16"	20"	24"	30"	36"
1/64	A						1'-6"	2'-0"	2'-6"	3'-0"
	B						10"	1'-0"	1'-3"	1'-6"
	C						10"	1'-0"	1'-1"	1'-2"
1/32	A	6"	9"	10"	1'-0"	1'-4"	1'-8"	2'-0"	2'-6"	3'-0"
	B	7"	8"	9"	10"	1'-0"	1'-2"	1'-4"	1'-7"	1'-8"
	C	7"	7"	8"	8"	9"	10"	1'-0"	1'-1"	1'-2"
1/16	A	9"	1'-0"	1'-6"	1'-9"	2'-3"	3'-0"	3'-6"	4'-2"	5'-4"
	B	7"	8"	9"	10"	1'-0"	1'-2"	1'-4"	1'-7"	2'-0"
	C	8"	9"	10"	11"	1'-2"	1'-4"	1'-6"	1'-9"	2'-0"
1/8	A	1'-3"	1'-8"	2'-1"	2'-6"	3'-4"	4'-2"	5'-0"	6'-3"	7'-6"
	B	7"	8"	9"	11"	1'-3"	1'-6"	1'-8"	2'-0"	2'-4"
	C	8"	9"	10"	11"	1'-2"	1'-4"	1'-9"	2'-3"	2'-8"
1/4	A	2'-0"	2'-6"	3'-0"	3'-6"	5'-0"	SPECIAL DESIGN			
	B	0'-6"	0'-9"	1'-0"	1'-3"	1'-9"				
	C	1'-10"	1'-9"	1'-8"	1'-7"	1'-5"				

BUTTRESS FOR HORIZONTAL BENDS

Notes
1.) All concrete shall be Mix No. 1.
2.) Buttress dimensions shown are minimum. Dimensions are based upon soil bearing pressure of 3000 p.s.f. and static water pressure of 150 p.s.i. Where pressure exceeds 150 psi. or where soil bearing pressure is less than 3000 p.s.f. special buttress design is required.

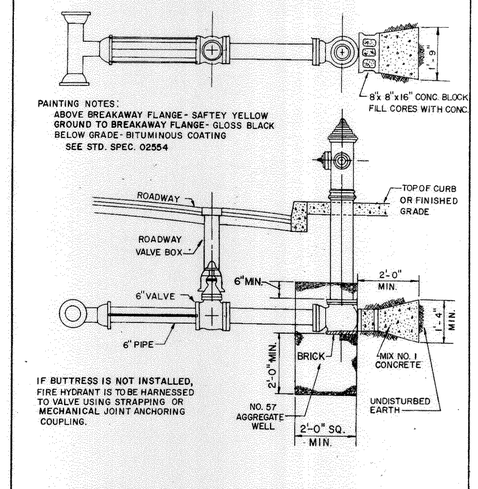


BUTTRESS FOR CAPS								
D'	6"	8"	10"	12"	16"	20"	24"	30"	36"
E	6"	8"	8"	10"	1'-0"	1'-4"	1'-8"	2'-0"	2'-0"
F	1'-0"	1'-4"	1'-6"	2'-0"	2'-8"	3'-3"	4'-0"	4'-9"	5'-9"
G	1'-8"	1'-11"	2'-5"	2'-10"	3'-9"	4'-9"	5'-8"	6'-8"	8'-10"

BUTTRESS FOR CAPS AND PLUGS

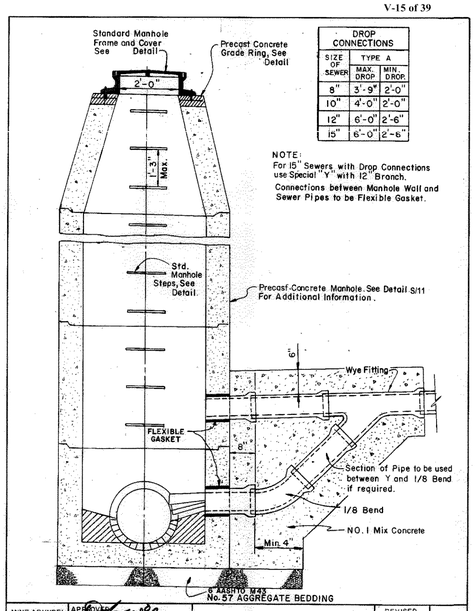
ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED: CHIEF ENGINEER; DESIGN ENGINEER; DATE: 6/5/84	STANDARD WATER DETAILS BUTTRESSES FOR CAPS AND HORIZONTAL BENDS	REVISED 5/6/88; 10 / 95	W 3

Published: 01/01 Revised:



ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED: CHIEF ENGINEER; DESIGN ENGINEER; DATE: 6/5/84	STANDARD WATER DETAILS STANDARD INSTALLATION OF FIRE HYDRANTS.	REVISED 5/6/88; 10 / 95	W 15

Published: 01/01 Revised:

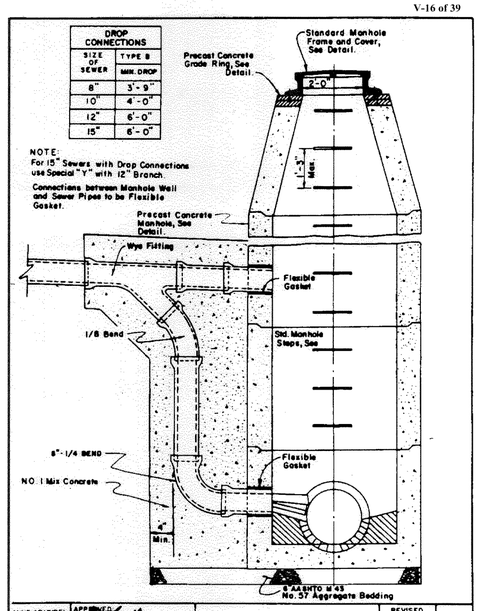


DROP CONNECTIONS	
SIZE OF SEWER	TYPE A MAX. DROP	TYPE A MIN. DROP
8"	3'-9"	2'-0"
10"	4'-0"	2'-0"
12"	6'-0"	2'-6"
15"	6'-0"	2'-6"

NOTE:
For 15" Sewers with Drop Connections use Special "Y" with 12" Branch.
Connections between Manhole Wall and Sewer Pipes to be Flexible Gasket.

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED: CHIEF ENGINEER; DESIGN ENGINEER; DATE: 6/5/84	STANDARD SANITARY SEWER DETAILS DROP MANHOLE TYPE "A"	REVISED 11-9-84; 5/6/88; 10 / 95	S 13

Published: 01/01 Revised:

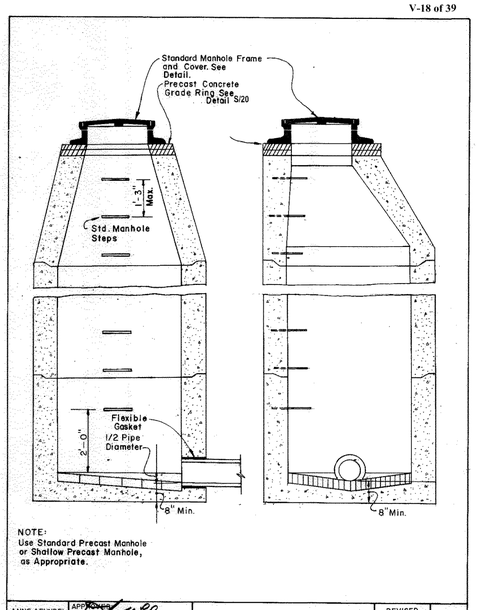


DROP CONNECTIONS	
SIZE OF SEWER	TYPE B MIN. DROP
8"	3'-9"
10"	4'-0"
12"	6'-0"
15"	6'-0"

NOTE:
For 15" Sewers with Drop Connections use Special "Y" with 12" Branch.
Connections between Manhole Wall and Sewer Pipes to be Flexible Gasket.

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED: CHIEF ENGINEER; DESIGN ENGINEER; DATE: 6/5/84	STANDARD SANITARY SEWER DETAILS DROP MANHOLE TYPE "B"	REVISED 11-9-84; 5/6/88; 10 / 95	S 14

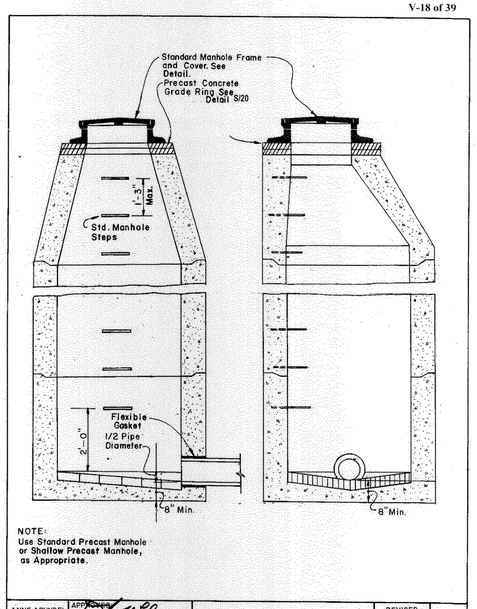
Published: 01/01 Revised:



NOTE:
Use Standard Precast Manhole or Shallow Precast Manhole, as Appropriate.

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED: CHIEF ENGINEER; DESIGN ENGINEER; DATE: 6/5/84	STANDARD SANITARY SEWER DETAILS TERMINAL MANHOLE	REVISED 5/6/88; 10 / 95	S 16

Published: 01/01 Revised:



NOTE:
Use Standard Precast Manhole or Shallow Precast Manhole, as Appropriate.

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED: CHIEF ENGINEER; DESIGN ENGINEER; DATE: 6/5/84	STANDARD SANITARY SEWER DETAILS TERMINAL MANHOLE	REVISED 5/6/88; 10 / 95	S 16

Published: 01/01 Revised:

NO.	DATE	REVISION	BY

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McLaren Technical Services, Inc.
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PROJECT
ARIS T. ALLEN BOULEVARD
RESIDENTIAL PLANNED DEVELOPMENT
PART 1 - LOTS 26 - 31, 47 & 48
TAX MAP/GRID: 51/E/8 — 6TH ELECTION DISTRICT — CITY OF ANNAPOLIS, MARYLAND

STATE OF MARYLAND — PIERO VAN MEULLER No. 21875 — REGISTERED PROFESSIONAL ENGINEER
PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
License No.: 21875 Expiration Date: 2/12/16

SHEET TITLE
GRADING PERMIT NO: GRD 14 - 0006
SITE DETAILS

PROJECT NO.	130003.01
SCALE	AS SHOWN
DATE	5/30/2014
DRAWN BY	JDS/CLW
CHECKED BY	PVM/TJC
DRAWING NO.	C16.20

41 OF 66 SHTS

THESE PLANS ARE BASED UPON PLANS TITLED 'ARIS ALLEN BOULEVARD, LLC MIXED RESIDENTIAL' CREATED BY BOWMAN CONSULTING, PORTIONS OF WHICH ARE USED HEREIN.

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FILE NAME: P:\Proj130\130003.01 Aris T. Allen Property\10_Dwgs\CAD3\Working\C16.20 SITE DETAILS.dwg PLOT TIME: Mon, 02 Jun 2014 - 1:16pm LAST SAVE: Fri, 30 May 2014 - 3:08pm BY: JSlaley