Arlington County Department of Environmental Services DES

Construction Standard Details

2020



SEPTEMBER 2020 SECTION 00001 - 1

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JULY 2020 SECTION 00001 - 2

ARLINGTON COUNTY CONSTRUCTION STANDARD DETAILS

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JULY 2020 TOC - 1

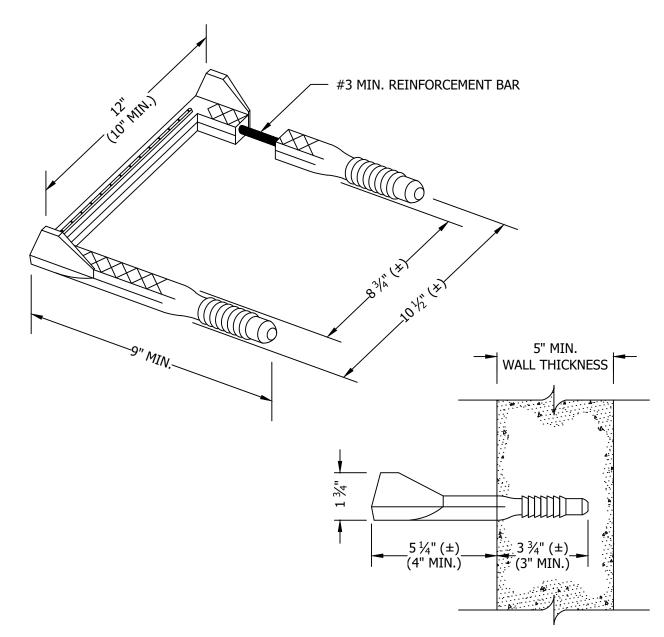
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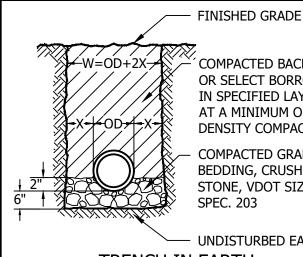
END OF TOC

JULY 2020 TOC - 3



- 1. MANHOLE STEPS SHALL BE MADE OF POLYPROPYLENE PLASTIC OR RUBBER REINFORCED WITH A #3 MINIMUM REINFORCEMENT BAR, AS MANUFACTURED BY M.A. INDUSTRIES; DELTA PIPE PRODUCTS INC.; AMERICAN STEP COMPANY, INC.; OR APPROVAL EQUAL.
- 2. PLACE STEPS AT A MAXIMUM SPACING OF 16" O.C.
- 3. PLACE THE BOTTOM STEP AT LEAST 12" ABOVE THE TOP OF PIPE OR AS INDICATED ON APPROPRIATE DRAWINGS. IN NO CASE SHALL STEPS BE LOCATED BELOW TOP OF PIPE.
- 4. STEPS SHALL BE POSITIONED IN VERTICAL ALIGNMENT OVER THE BENCH.
- 5. IN PRECAST UNITS, STEPS MAY BE CAST IN PLACE, MORTARED INTO HOLES PROVIDED BY THE FABRICATOR, OR DRIVEN.
- 6. ALL STEPS SHALL WITHSTAND A MINIMUM VERTICAL LOAD OF 800 LBS AND A HORIZONTAL PULL OUT LOAD OF 400 LBS.
- 7. WHEN NECESSARY, 6"X6" STEPS SHALL BE NOTCHED IN THE PAVED INVERT IN LIEU OF STANDARD MANHOLE STEPS.

	STANDARD MANHOLE STEPS		
ARLINGTON VIRGINIA	ARLINGTON COUNTY, VIRGINIA DEPARTMENT OF ENVIRONMENTAL SERVICES	ISSUED DRAWI M -	9/14/2020 NG NO. 2.0



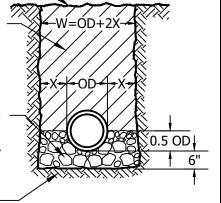
COMPACTED BACKFILL OR SELECT BORROW IN SPECIFIED LAYERS AT A MINIMUM OF 95% **DENSITY COMPACTION**

BEDDING, CRUSHED STONE, VDOT SIZE #57, SPEC. 203

COMPACTED BACKFILL OR SELECT BORROW IN SPECIFIED LAYERS AT A MINIMUM OF 95% DENSITY COMPACTION

FINISHED GRADE

COMPACTED GRANULAR COMPACTED GRANULAR BEDDING, CRUSHED STONE, VDOT SIZE #57, SPEC. 203

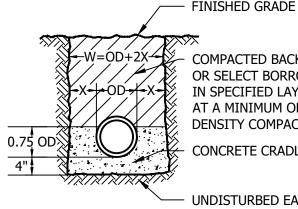


UNDISTURBED EARTH

TRENCH IN EARTH (STD. CONDITION) UNDISTURBED EARTH

FINISHED GRADE -

TRENCH IN ROCK OR UNFAVORABLE SOIL CONDITION



COMPACTED BACKFILL OR SELECT BORROW IN SPECIFIED LAYERS AT A MINIMUM OF 95% **DENSITY COMPACTION**

CONCRETE CRADLE

COMPACTED BACKFILL OR SELECT BORROW IN SPECIFIED LAYERS AT A MINIMUM OF 95% **DENSITY COMPACTION**

CONCRETE **ENCASEMENT** 6" MIN.

UNDISTURBED EARTH

UNDISTURBED EARTH

CONCRETE CRADLE

CONCRETE ENCASEMENT

TABLE 3			
PIPE SIZE	<u>X</u>		
12" & LESS	**		
12" - 30"	12"		
33" - 42"	15"		
48" & LARGER	18"		
** TRENCH WIDTH (W) SHALL BE 3'-0" MAX.			

WIDTH OF TRENCH (W) = OD+2X WHERE X IS DISTANCE FROM OUTSIDE OF PIPE TO EDGE OF

TRENCH

NOTES:

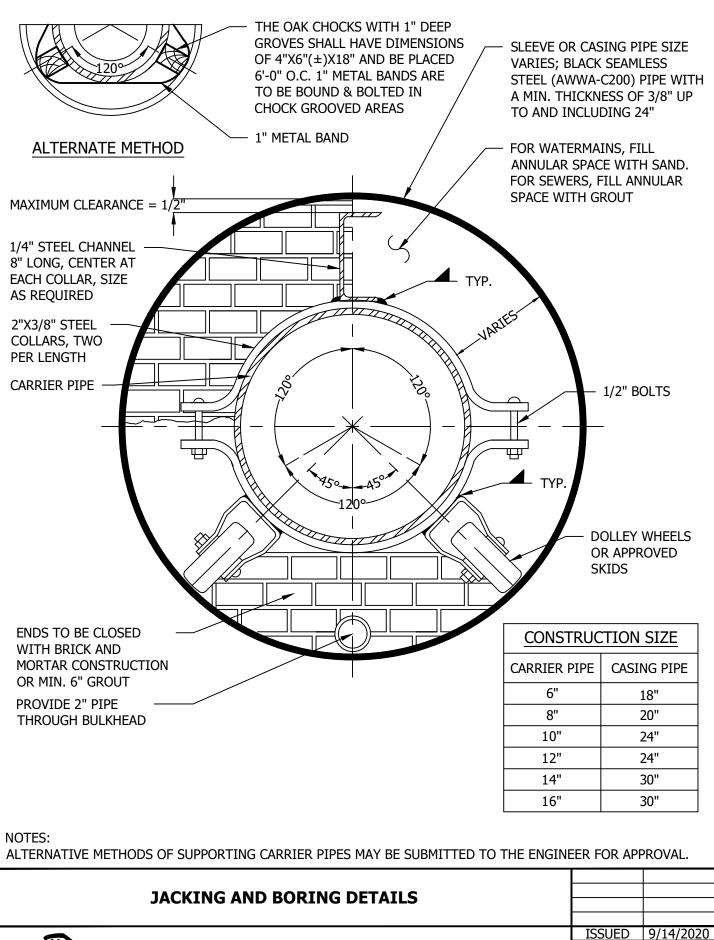
- CONCRETE FOR CRADLES AND ENCASEMENTS TO HAVE f'c = 3,000 PSI AT 28 DAYS. 1.
- 2. POUR CONCRETE AGAINST UNDISTURBED EARTH.
- FOR CONTINUOUS CONDUIT IN TRENCH CONDITIONS THE WIDTH OF TRENCH (W) SHALL BE OD+2X (MAX.). 3.
- THE WIDTH OF TRENCH FOR ALL OTHER PIPE DIAMETERS SHALL BE ACCORDING TO TABLE 3. 4.
- 5. FOR PAVEMENT RESTORATION SEE M-6.0.

PIPE AND BEDDING DETAILS FOR TRENCH CONDITIONS



ARLINGTON COUNTY, VIRGINIA DEPARTMENT OF ENVIRONMENTAL SERVICES ISSUED 9/14/2020 DRAWING NO.

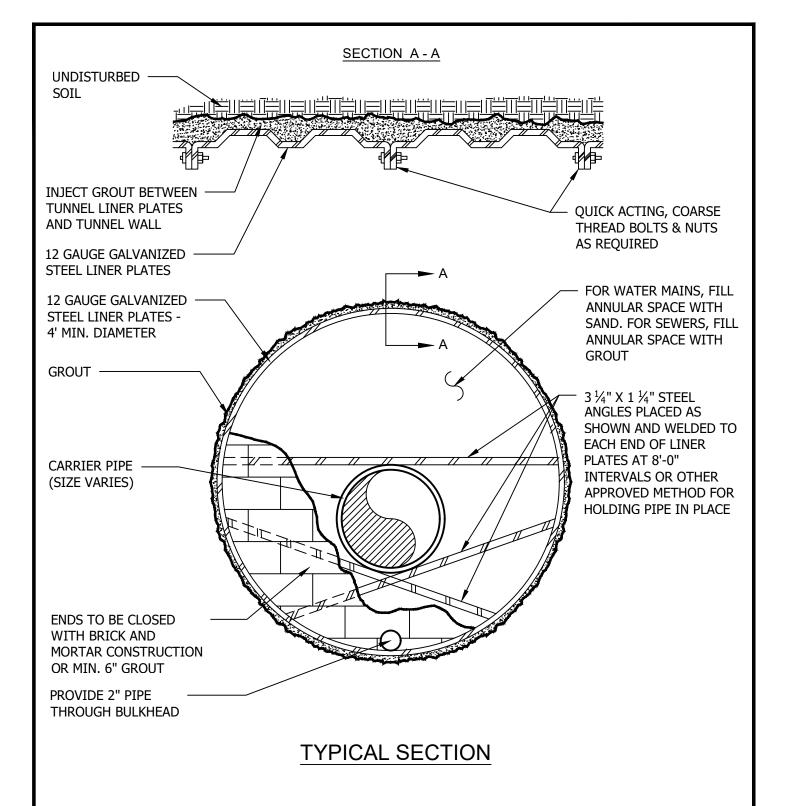
M-3.0



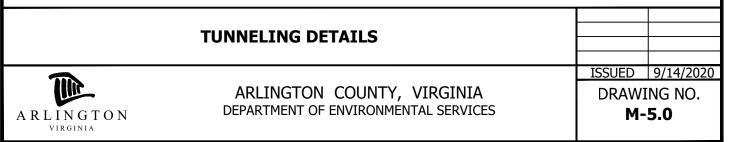
ARLINGTON COUNTY, VIRGINIA
DEPARTMENT OF ENVIRONMENTAL SERVICES

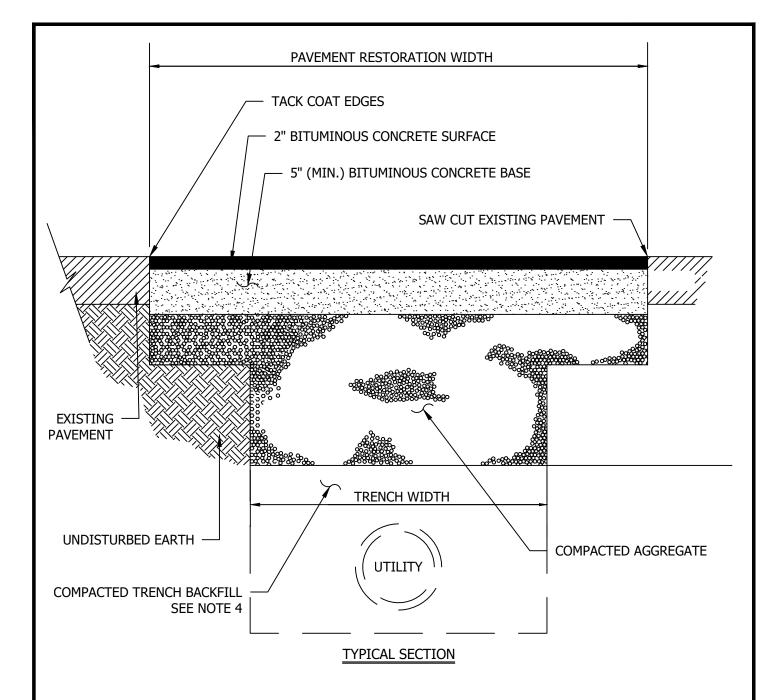
ISSUED 9/14/2020
DRAWING NO.

M-4.0



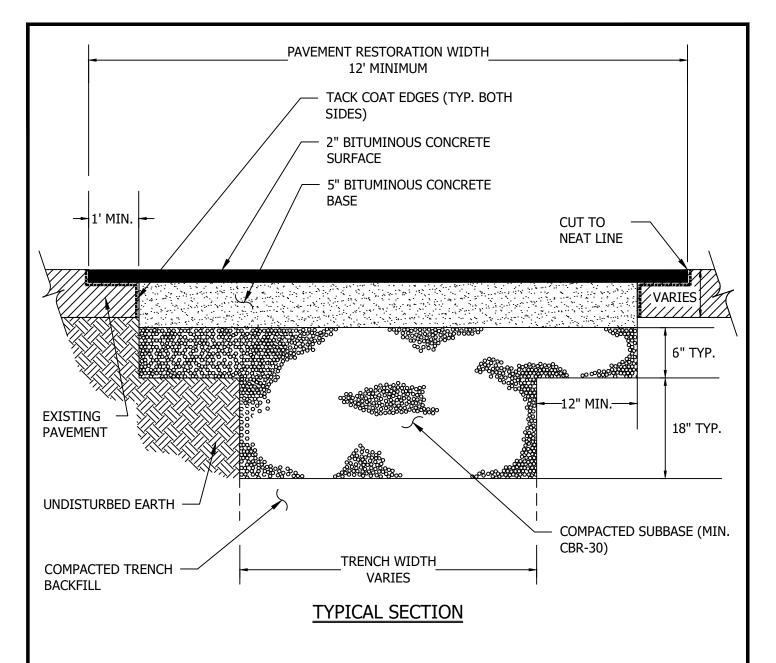
- 1. BLACK STEEL LINER PLATES WILL BE ALLOWED FOR CONDITIONS WHERE PIPE WILL BE FULLY GROUTED IN PLACE.
- 2. PROVIDE 6" MINIMUM CLEARANCE BETWEEN TOP AND BOTTOM OF CARRIER PIPE AND TUNNEL LINER PLATES.





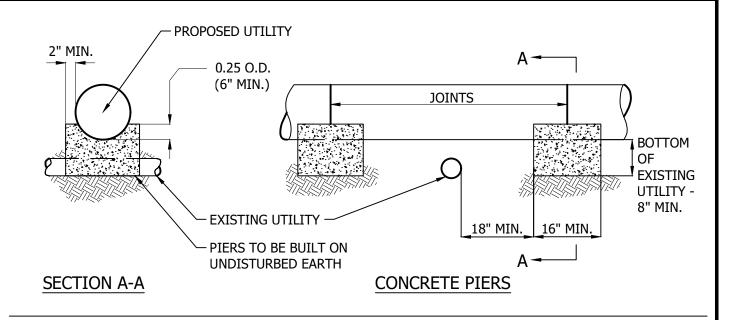
- 1. WHEN THE DISTANCE FROM THE EDGE OF EXISTING PAVEMENT TO THE EDGE OF THE PAVEMENT RESTORATION PAYMENT WIDTH IS 3' OR LESS THEN THE ADDITIONAL PAVEMENT SHALL BE REMOVED AND REPLACED BACK TO THE EDGE.
- 2. THICKNESS OF BASE MAY BE REDUCED TO 3" WHEN PATCH IS BEING MADE IN PAVEMENTS OF SURFACE TREATED GRAVEL, AND DIRECTED BY THE PROJECT OFFICER.
- 3. WHEN WIDENING OR PATCHING A STREET WITH ASPHALT, A NEAT, CLEAN JOINT OF AT LEAST ONE (1) INCH IN DEPTH BETWEEN OLD AND NEW PAVEMENT SHALL BE PROVIDED FOR TOPPING SO AS TO ELIMINATE THE NEED FOR FEATHERING OF THE OVERLAY.
- 4. FOR TRENCH AND BEDDING DETAILS, SEE DRAWING No. M-3.0.

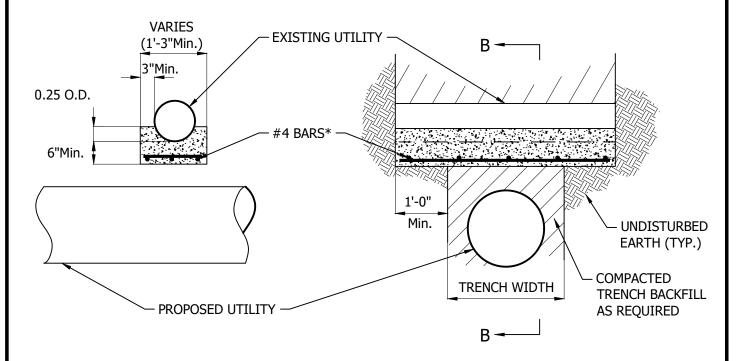
STANDARD PAVEMENT RESTORATION FOR UTILITY CUTS			
		ISSUED	9/14/2020
ARLINGTON VIRGINIA	ARLINGTON COUNTY, VIRGINIA DEPARTMENT OF ENVIRONMENTAL SERVICES		NG NO. 6.0



- 1. THIS DETAIL SHALL BE REQUIRED ON UTILITY CUTS IN COUNTY STREETS PAVED WITHIN 5 YEARS OF DATE OF ISSUANCE OF PERMIT.
- 2. WHERE PRACTICAL, LIMITS OF 12 FOOT WIDE OVERLAY SHALL CORRESPOND WITH TRAVEL LANES AS DIRECTED BY THE PROJECT OFFICER.
- 3. WHEN THE DISTANCE FROM THE EDGE OF EXISTING PAVEMENT TO THE EDGE OF THE PAVEMENT RESTORATION IS 3' OR LESS, THE ADDITIONAL PAVEMENT SHALL BE REMOVED AND REPLACED BACK TO THE EDGE.
- 4. THICKNESS OF BASE MAY BE REDUCED TO 3" WHEN PATCH IS BEING MADE IN PAVEMENTS OF SURFACE TREATED GRAVEL, AND AS DIRECTED BY THE PROJECT OFFICER.
- 5. WHEN WIDENING OR PATCHING A STREET WITH ASPHALT, A NEAT, CLEAN JOINT OF AT LEAST ONE (1) INCH IN DEPTH BETWEEN OLD AND NEW PAVEMENT SHALL BE PROVIDED FOR TOPPING SO AS TO ELIMINATE THE NEED FOR FEATHERING OF THE OVERLAY.
- 6. FOR TRENCH AND BEDDING DETAILS, SEE DRAWING No. M-3.0.







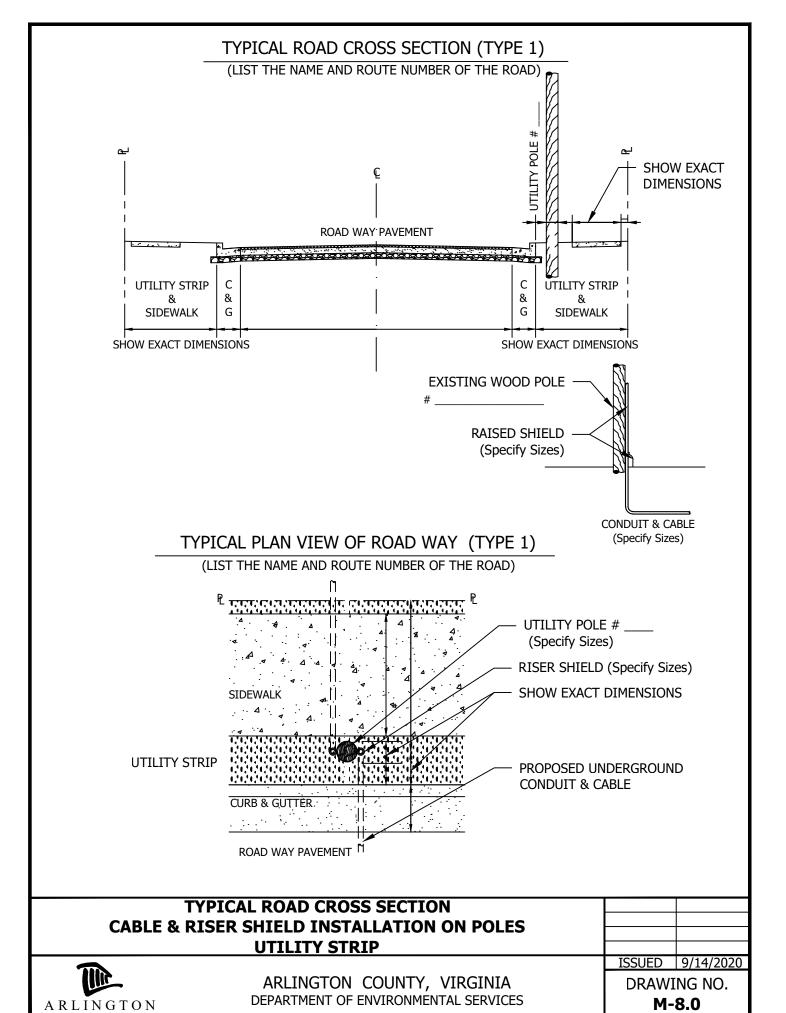
SECTION B-B

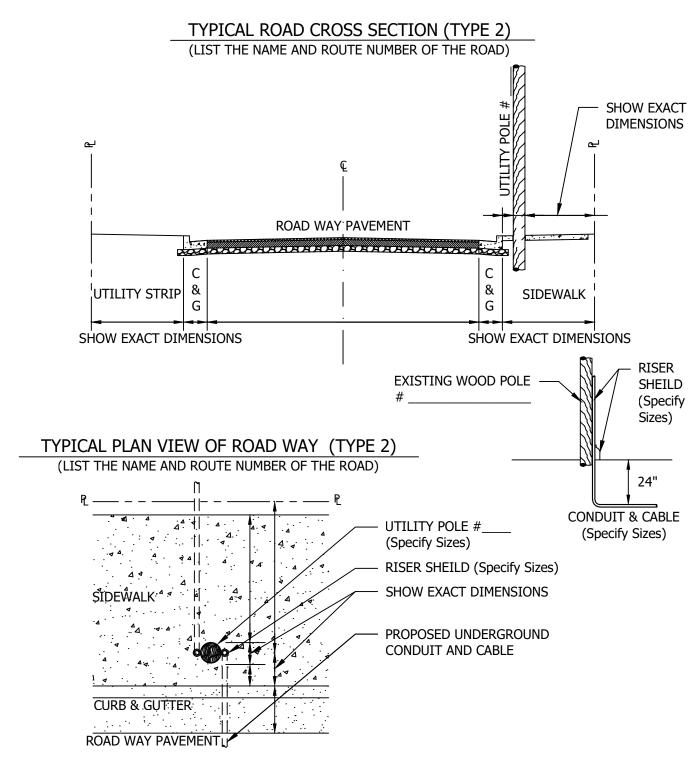
REINFORCED CONCRETE CRADLE

*REBARS: LONGITUDINAL - 6" O.C. (3 BARS MIN.) TRANSVERSE - 18" O.C.

- 1. ALL CONCRETE SHALL BE CLASS A3.
- 2. FOR NONREINFORCED CRADLE DETAIL AND OTHER NOTES AND DIMENSIONS NOT SHOWN SEE DRAWING M-3.0.

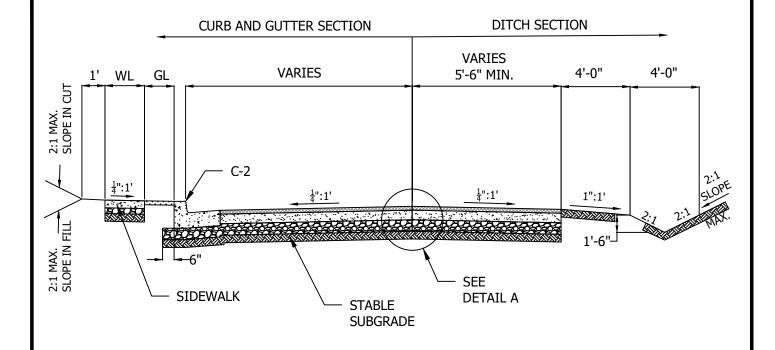
CONCRETE PIER AND REINFORCED CONRETE CRADLE DETAILS FOR UTILITY CROSSINGS			
		ISSUED	9/14/2020
ARLINGTON VIRGINIA	ARLINGTON COUNTY, VIRGINIA DEPARTMENT OF ENVIRONMENTAL SERVICES	DRAW]	ING NO. 7.0

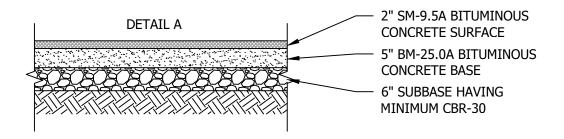




- 1. RISER SHIELD TO BE INSTALLED TO LEFT OR RIGHT SIDE OF POLE, AWAY FROM PEDESTRIAN TRAFFIC.
- APPLICANT SHALL DRAW ALL RIDERS, TURNED-UP CONDUIT AND CABLES IN PROPOSED LOCATION AND TO SCALE.
- 3. NO RISER SHIELDS ALLOWED IN CLEAR SIDEWALK AREA.

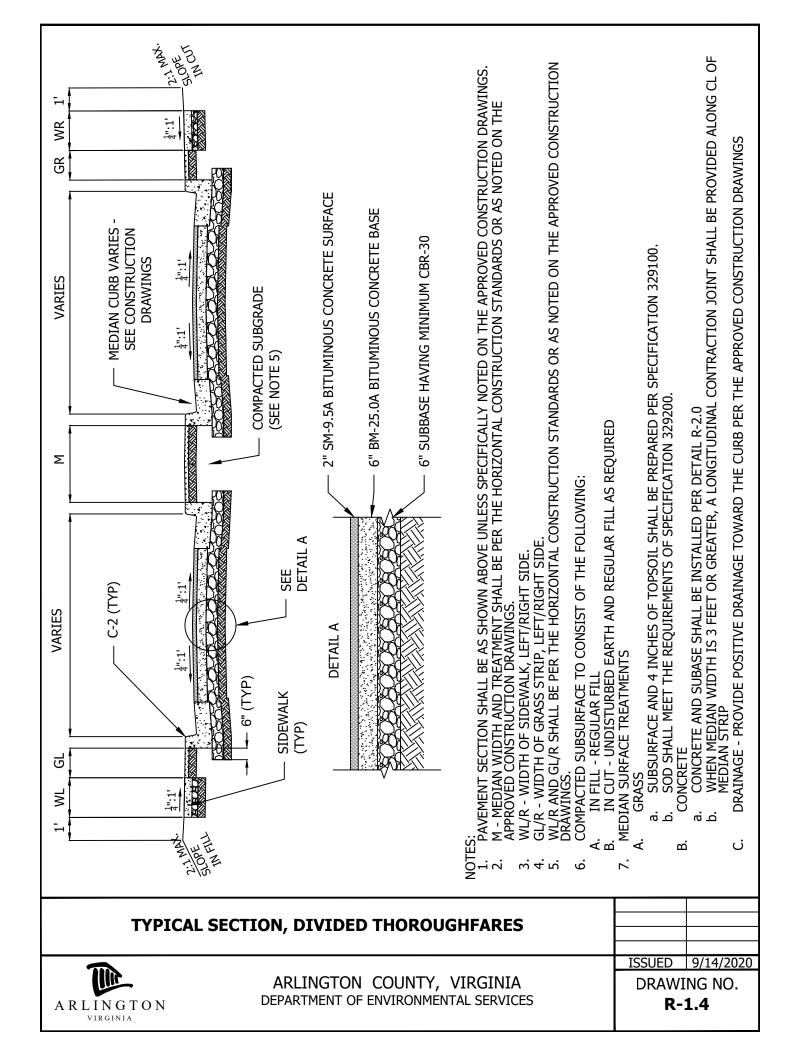
TYPICAL ROAD CROSS SECTION CABLE & RISER SHIELD INSTALLATION				
	NO UTILITY STRIP			
			ISSUED	9/14/2020
ARLINGTON	ARLINGTON COUNTY, VIRGINIA DEPARTMENT OF ENVIRONMENTAL SERVICES			ING NO. - 8.1

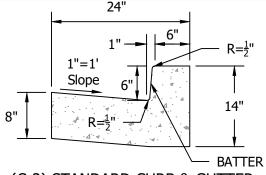




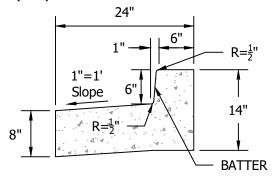
- 1. PAVEMENT SECTION SHALL BE AS SHOWN ABOVE UNLESS SPECIFICALLY NOTED ON THE APPROVED CONSTRUCTION DRAWINGS.
- 2. WHEN THERE IS A DIFFERENCE IN ELEVATION BETWEEN THE RIGHT SIDE AND LEFT SIDE CURB & GUTTER, THE CROWN OF THE STREET SHALL BE NO CLOSER THAN 8' FROM THE EDGE OF THE GUTTER ON THE HIGH SIDE.
- 3. WL/R WIDTH OF SIDEWALK, LEFT/RIGHT SIDE.
- 4. GL/R WIDTH OF GRASS STRIP, LEFT/RIGHT SIDE.
- 5. WL/R AND GL/R SHALL BE PER THE HORIZONTAL CONSTRUCTION STANDARDS OR AS NOTED ON THE APPROVED CONSTRUCTION DRAWINGS.

TYPICAL SECTIONS LOCAL RESIDENTIAL STREETS			
		ISSUED	9/14/2020
ARLINGTON VIRGINIA			NG NO. 1.1

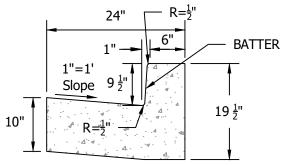




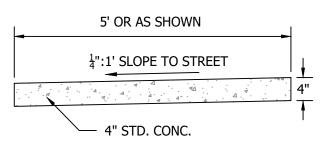
(C-2) STANDARD CURB & GUTTER



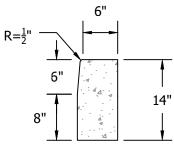
(C-2R) STANDARD REVERSE PITCH CURB & GUTTER



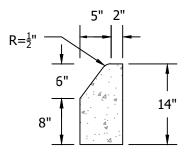
(C-4) STANDARD CURB & GUTTER FOR TRANSIT STATION



STANDARD CONCRETE SIDEWALK



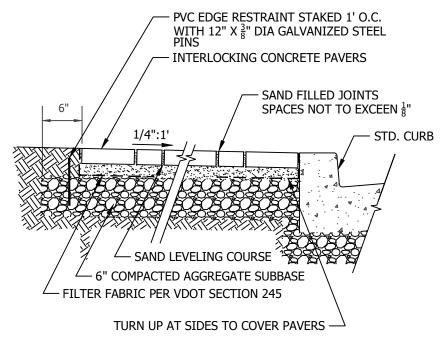
(C-3) STANDARD HEADER CURB



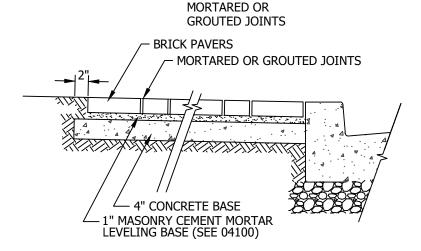
(C-5) ALTERNATE CURB FOR MEDIANS

- 1. SECTION C-3 IS TO BE USED ONLY WITH RIGID TYPE PAVEMENT UNLESS OTHERWISE DIRECTED IN WRITING OR WHEN SHOWN ON APPROVED PLANS.
- 2. EXPANSION JOINTS IN HEADER CURB AND STANDARD CURB AND GUTTER SHALL BE 40' APART OR AT EXPANSION JOINTS IN CONCRETE PAVEMENT.
- 3. EXPANSION JOINTS MAY BE OMITTED IF 1/8" JOINTS ARE PLACED EVERY 10' OF LESS
- 4. EXPANSION JOINTS IN THE SIDEWALK SHALL BE 40' APART. IF ADJACENT TO CONCRETE CURB, EXPANSION JOINTS SHALL MATCH JOINT OF CURB. AN EXPANSION JOINT SHALL BE PLACED BETWEEN CURB AND SIDEWALK.
- 5. SEE DRAWING R-2.2 FOR DETAIL OF SIDEWALK STRESS COLUMN TO BE PLACED UNDER SIDEWALK WHEN PLACED ADJACENT TO BACK OF CURB.
- SEE ARLINGTON COUNTY SPECIFICATION SECTIONS 02611 AND 03100 FOR MATERIAL SPECS.
- 7. PROVIDE 6" MINIMUM AGGREGATE BASE HAVING CBR-30 UNDER CURB AND GUTTER.
- 8. PROVIDE 3" MINIMUM AGGREGATE BASE HAVING CBR-30 UNDER SIDEWALK
- WHENEVER CURB ABUTTS RIGID PAVEMENT, PROVIDE LONGITUDINAL JOINT PER VDOT PR-2.
- SECTION C-5 TO BE USED WHEN BICYCLE LANE RUNS ALONG A MEDIAN.

CONCRETE CURB & GUTTER AND SIDEWALK ISSUED 9/14/2020 ARLINGTON COUNTY, VIRGINIA DEPARTMENT OF ENVIRONMENTAL SERVICES R-2.0



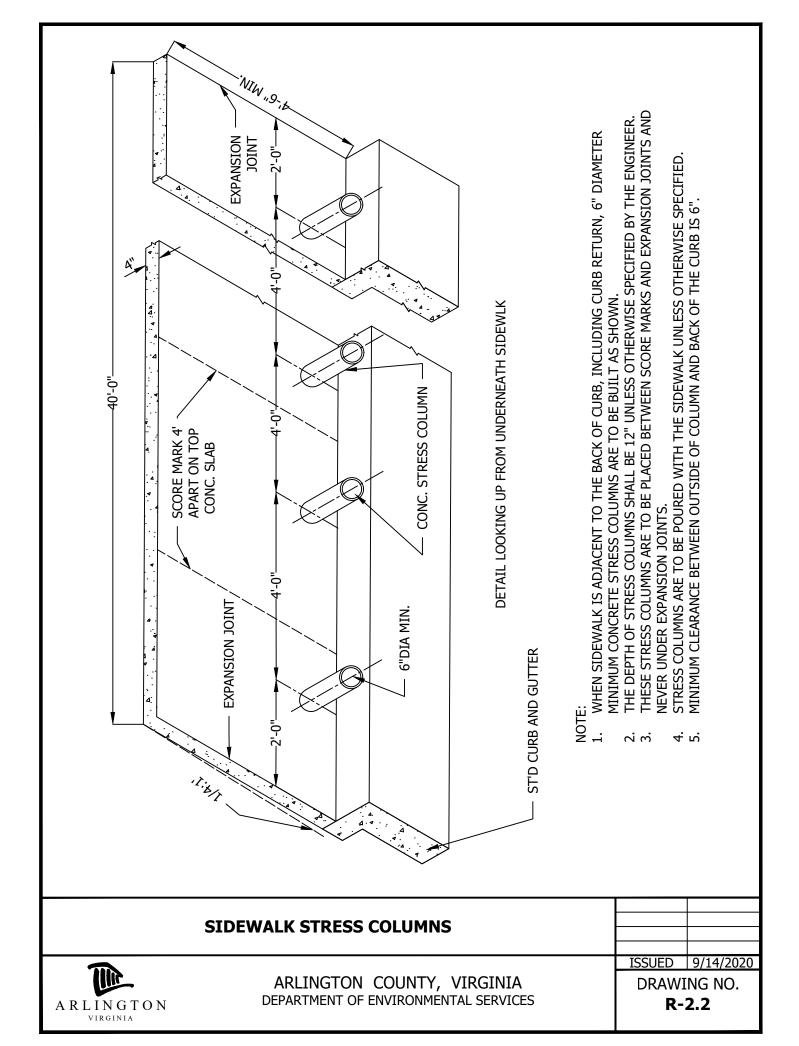
STANDARD INTERLOCKING CONCRETE PAVERS

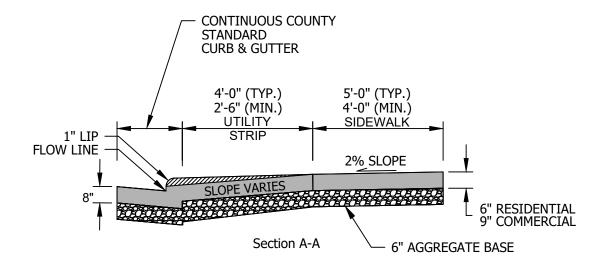


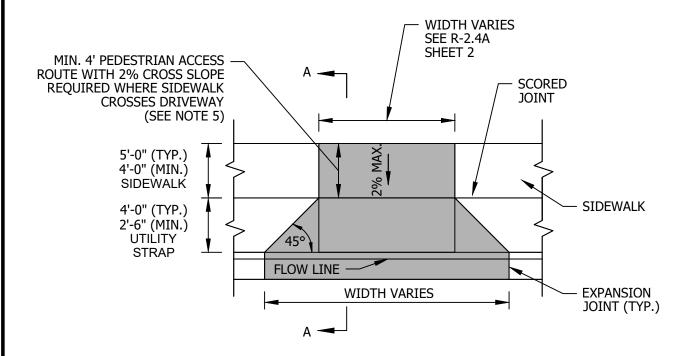
ALTERNATE BRICK PAVERS

- 1. REFER TO SECTION 02611 AND SECTION 02612 OF THE SPECIFICATIONS FOR INTERLOCKING CONCRETE PAVERS AND BRICK PAVERS AND OTHER RELATED MATERIALS SHOWN ON SIDEWALK APPLICATIONS.
- 2. ALL BRICK SHALL MEET ASTM SPECIFICATIONS C-902-78.
- 3. FOR DRIVEWAY APPLICATION SEE DRAWING R-2.4 AND RELATED SPECS.

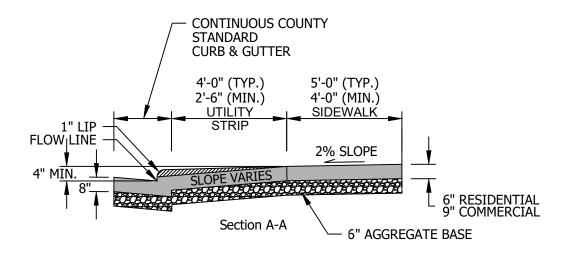
INTERLOCKING CONCRETE AND BRICK PAVERS			
FOR SIDEWALK APPLICATION			
ARLINGTON VIRGINIA	ARLINGTON COUNTY, VIRGINIA DEPARTMENT OF ENVIRONMENTAL SERVICES		9/14/2020 NG NO. 2.1

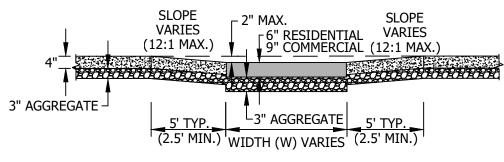




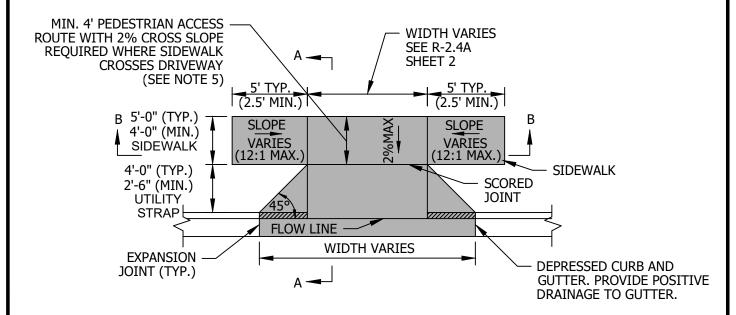


CONCRETE DRIVEWAY ENTRANCE ISSUED 9/14/2020 ARLINGTON COUNTY, VIRGINIA DEPARTMENT OF ENVIRONMENTAL SERVICES R-2.4A





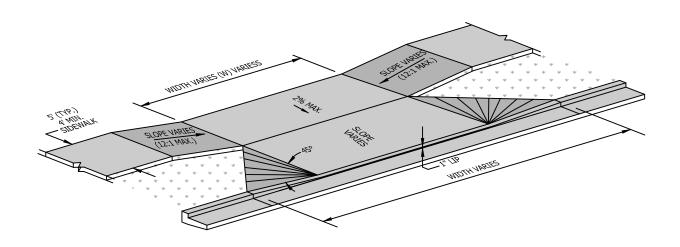
Section B-B



CONCRETE DRIVEWAY ENTRANCE (DEPRESSED) ISSUED 9/14/2020 ARLINGTON COUNTY, VIRGINIA DEPARTMENT OF ENVIRONMENTAL SERVICES R-2.4B

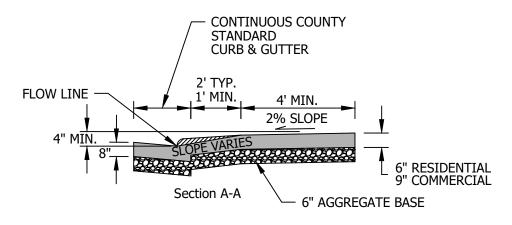
VIRGINIA

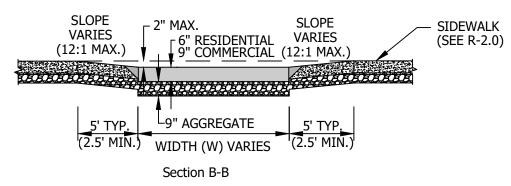
SHEET 1 OF 2

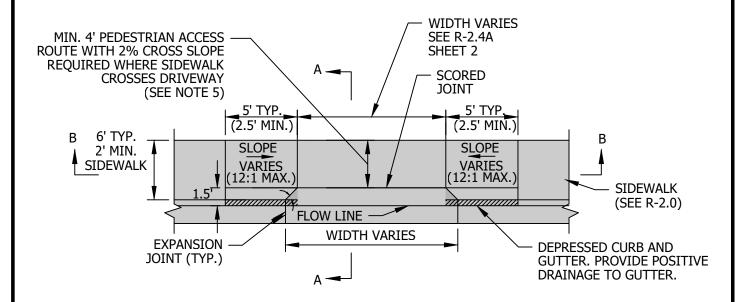


- 1. WHEN DRIVEWAY WIDTH EXCEEDS 16' A $\frac{3}{4}$ " MIN. DEPTH SCORED JOINT SHALL BE PLACED ON CENTERLINE OF DRIVEWAY ENTRANCE OR EVERY 10'.
- 2. CONCRETE DRIVEWAY ENTRANCE SHALL BE POURED MONOLITHICALLY.
- 3. FOR GRAVEL DRIVEWAY, 4' OF 4" THICK ASPHALT SHALL BE PLACED AT BACK OF THE CONCRETE APRON FOR THE WIDTH OF THE DRIVE.
- PROVIDE 6" MINIMUM AGGREGATE BASE HAVING MINIMUM CBR-30 UNDER DRIVEWAY ENTRANCE.
- 5. OWNER SHALL DEDICATE ALL PERMANENT EASEMENTS NECESSARY TO PROVIDE ADA COMPLIANT DRIVEWAY ENTRANCE AND SIDEWALK IF EXISTING OR PROPOSED SIDEWALK INTERSECTS DRIVEWAY.
- 6. OWNER/DEVELOPER SHALL SUBMIT HYDRAULIC CALCULATIONS TO VERIFY THAT 10 YR. STORM RUNOFF WILL BE RETAINED WITHIN THE GUTTER AND WILL NOT OVERTOP DEPRESSED DRIVEWAY/PEDESTRIAN ACCESS ROUTE. OVERLAND RELIEF AWAY FROM STRUCTURES SHALL BE DEMONSTRATED FOR STORMS IN EXCESS OF 10 YRS.
- 7. DETAIL R-2.4B SHALL ONLY BE USED WHEN R-2.4A WOULD INHIBIT VEHICULAR USE OF THE DRIVEWAY.

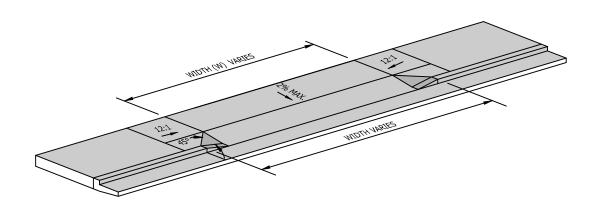
CONCRETE D	DRIVEWAY ENTRANCE (DEPRESSED)		
ARLINGTON VIRGINIA	ARLINGTON COUNTY, VIRGINIA DEPARTMENT OF ENVIRONMENTAL SERVICES	R-2	9/14/2020 ING NO. 2.4B 2 OF 2





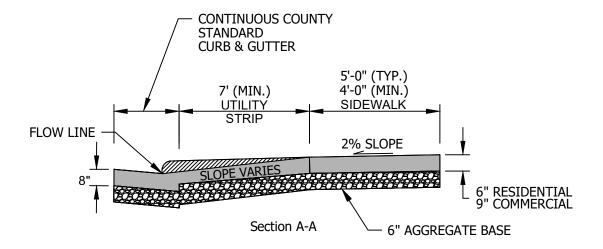


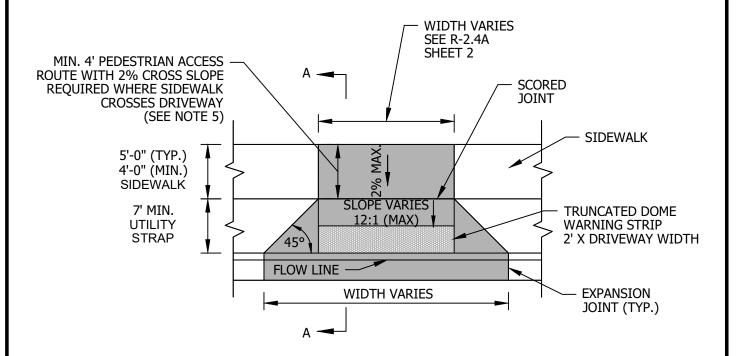
CONCRETE DRIVEWAY ENTRANCE (MOUNTABLE CURB) ISSUED 9/14/2020 ARLINGTON COUNTY, VIRGINIA DEPARTMENT OF ENVIRONMENTAL SERVICES VIRGINIA R-2.4C SHEET 1 OF 2



- 1. WHEN DRIVEWAY WIDTH EXCEEDS 16' A 3/4" MIN. DEPTH SCORED JOINT SHALL BE PLACED ON CENTERLINE OF DRIVEWAY ENTRANCE OR EVERY 10'.
- 2. CONCRETE DRIVEWAY ENTRANCE SHALL BE POURED MONOLITHICALLY.
- 3. FOR GRAVEL DRIVEWAY, 4' OF 4" THICK ASPHALT SHALL BE PLACED AT BACK OF THE CONCRETE APRON FOR THE WIDTH OF THE DRIVE.
- 4. PROVIDE 6" MINIMUM AGGREGATE BASE HAVING MINIMUM CBR-30 UNDER DRIVEWAY ENTRANCE.
- 5. OWNER SHALL DEDICATE ALL PERMANENT EASEMENTS NECESSARY TO PROVIDE ADA COMPLIANT DRIVEWAY ENTRANCE AND SIDEWALK IF EXISTING OR PROPOSED SIDEWALK INTERSECTS DRIVEWAY.
- 6. OWNER/DEVELOPER SHALL SUBMIT HYDRAULIC CALCULATIONS TO VERIFY THAT 10 YR. STORM RUNOFF WILL BE RETAINED WITHIN THE GUTTER AND WILL NOT OVERTOP DEPRESSED DRIVEWAY/PEDESTRIAN ACCESS ROUTE. OVERLAND RELIEF AWAY FROM STRUCTURES SHALL BE DEMONSTRATED FOR STORMS IN EXCESS OF 10 YRS.
- 7. DETAIL R-2.4C SHALL ONLY BE USED WHEN R-2.4A OR R-2.4B WOULD INHIBIT VEHICULAR USE OF THE DRIVEWAY.

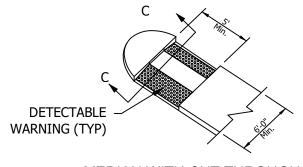
CONCRETE DRIVEWAY ENTRANCE (MOUNTABLE CURB)			
CONCRETE DRIVEWAT ENTRANCE (MOONTABLE CORB)			
		ISSUED	9/14/2020
ARLINGTON VIRGINIA	ARLINGTON COUNTY, VIRGINIA DEPARTMENT OF ENVIRONMENTAL SERVICES	R-2	ING NO. 2.4C 2 OF 2



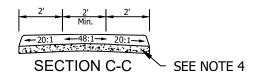


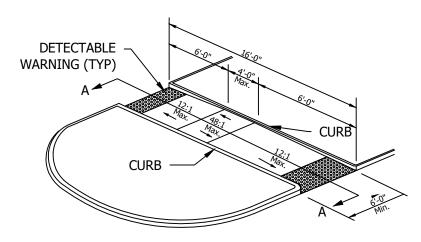
- FOR ADDITIONAL DRIVEWAY DETAILS SEE DRAWING R-2.4A, B, C NO LIP SHALL BE CONSTRUCTED AT FOOT OF DRIVEWAY/RAMP
- ż. 3.
- ONLY TO BE USED ON NEIGHBORHOOD MINOR (RESIDENTIAL) STREETS PENDING APPROVAL BY TE&O

COMBINATION DRIVEWAY ENTRANCE/CURB RAMP ISSUED 9/14/2020 ARLINGTON COUNTY, VIRGINIA DRAWING NO. DEPARTMENT OF ENVIRONMENTAL SERVICES R-2.4D ARLINGTON VIRGINIA

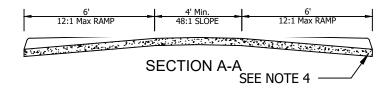


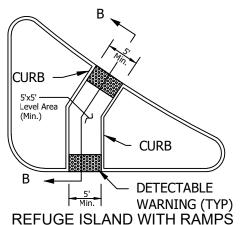
MEDIAN WITH CUT THROUGH TYPE M2



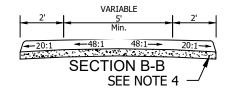


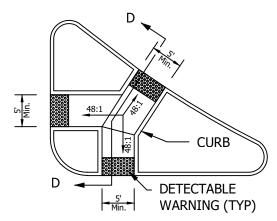
MEDIAN WITH RAMP TYPE M1



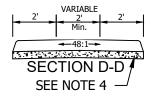


REFUGE ISLAND WITH RAMPS
TYPE RI1



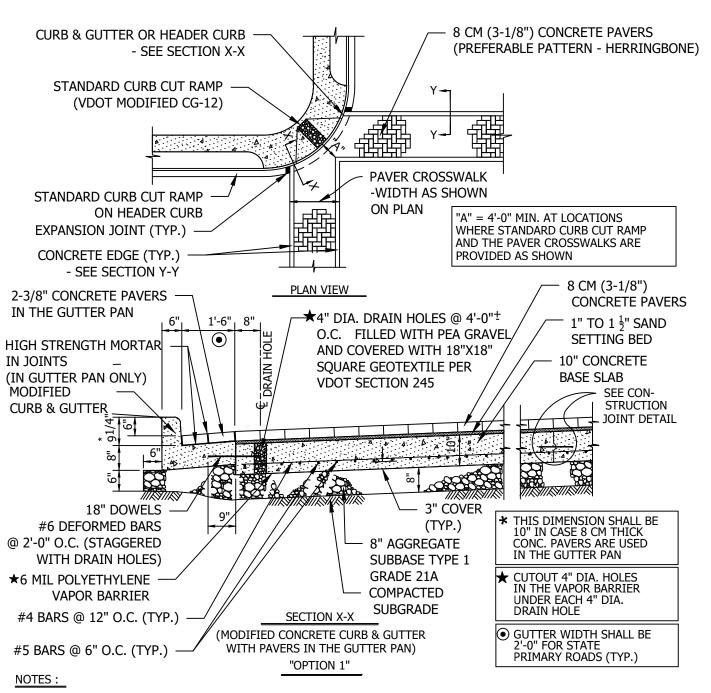


REFUGE ISLAND CUT-THROUGH TYPE RI2

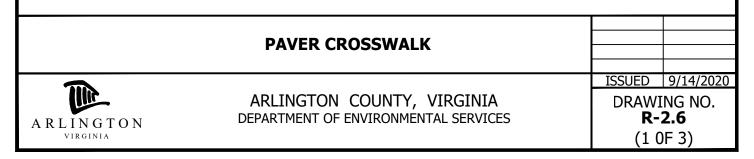


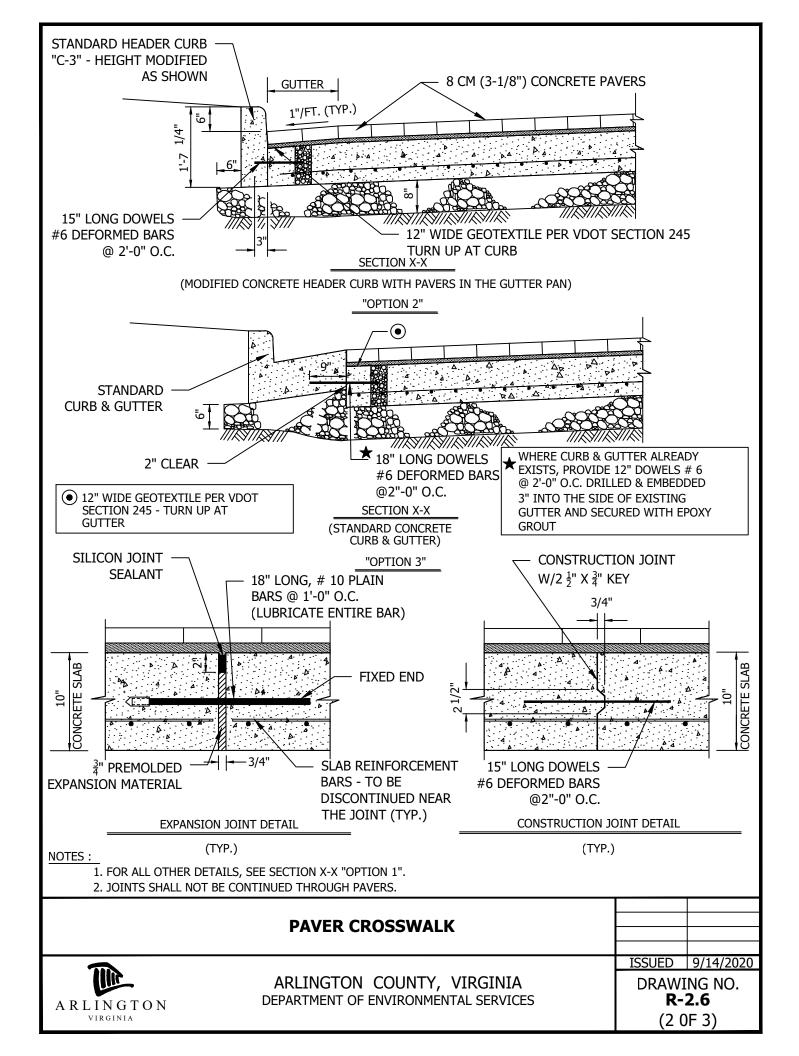
- 1. CURB SHALL BE SHAPED TO MATCH THE FACE OF ROADWAY CURB.
- 2. SEE ROADWAY PLANS FOR MEDIAN AND REFUGE ISLAND DIMENSIONS.
- 3. RAMPS AND CUT THROUGH'S SHALL BE ALIGNED WITH CROSSWALKS.
- 4. SEE DETAIL R-2.0 FOR CONCRETE SIDEWALK NOTES AND DETAIL.

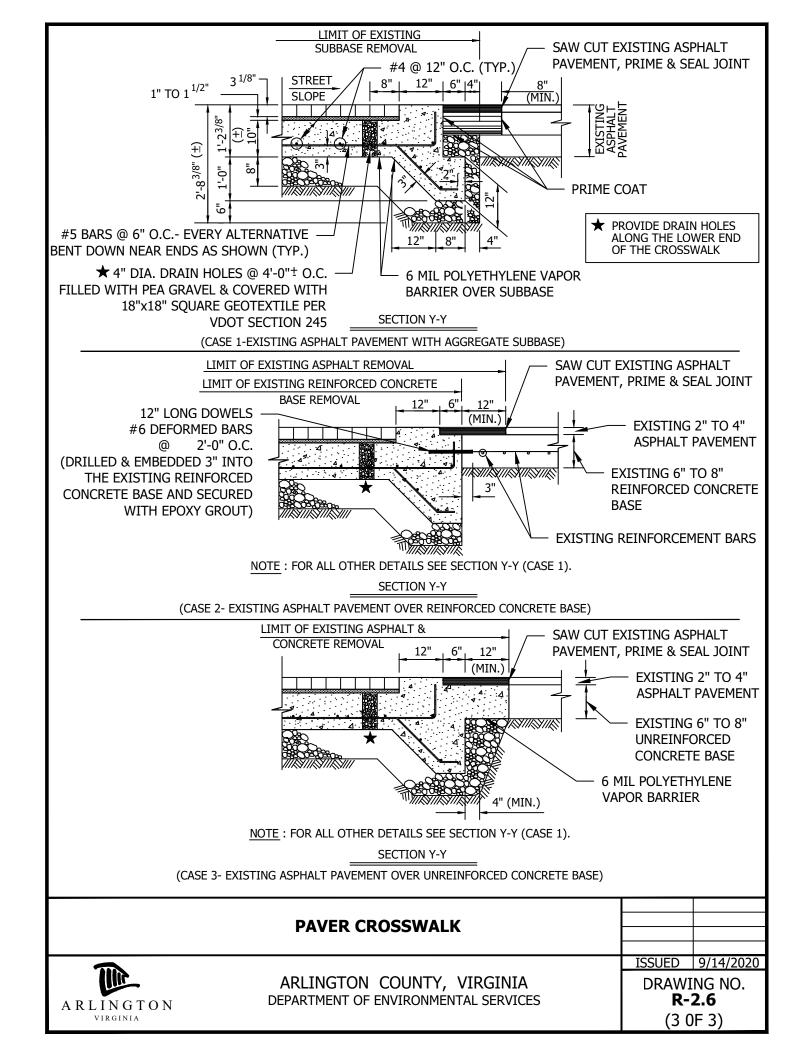
DETECTABLE WARNING SURFACE MEDIAN AND REFUGE ISLAND APPLICATIONS		
ARLINGTON	ARLINGTON COUNTY, VIRGINIA DEPARTMENT OF ENVIRONMENTAL SERVICES	9/14/2020 /ING NO. - 2.5

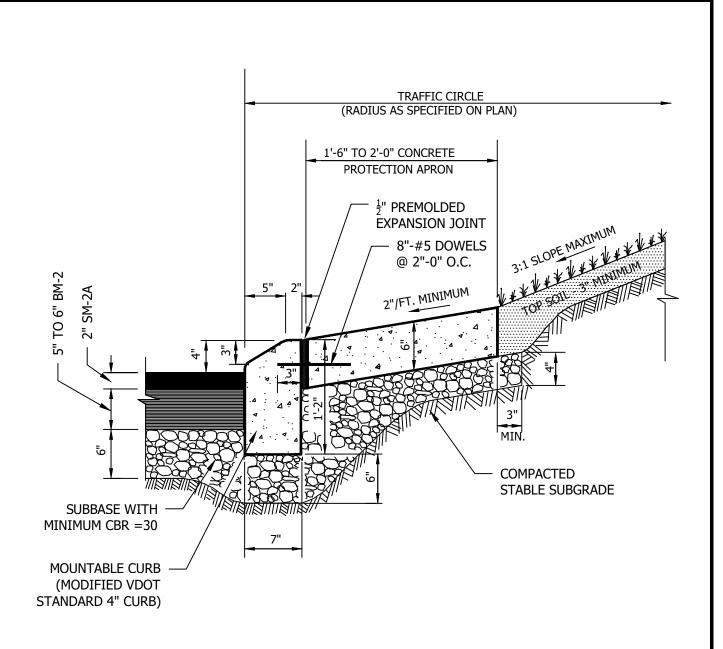


- 1. FOR CROSSWALKS 30 FEET AND LONGER, PROVIDE ONE EXPANSION JOINT LOCATED ALONG THE TRAFFIC LANE EDGE, CLOSEST AND PARALLEL TO THE STREET CENTERLINE.
- 2. THE BOTTOM AND THE TOP OF THE 10" CONCRETE BASE SLAB SHALL FOLLOW THE SAME LONGITUDINAL AND CROSS SLOPES AS REQUIRED FOR THE PAVEMENT SURFACE ON THE TOP.
- 3. THE TOP OF THE 10" CONCRETE BASE SLAB SHALL BE FINISHED SMOOTH WITH STRICT ELEVATION CONTROL TO ACHIEVE A UNIFORM THICKNESS OF THE SAND BED UNDER THE PROPOSED CONCRETE PAVERS AND ALSO FOR THE PROPER SUB-SURFACE FLOW THROUGH THE SAND BED TOWARD THE 4" DIA. DRAIN HOLES.
- 4. TO PROVIDE A SMOOTH RIDE, MILL AND PAVE STREET 20 FEET FROM THE CONCRETE EDGE OF THE CROSSWALK. IN ADDITION, AT AN INTERSECTION WHERE PAVER CROSSWALKS ARE PROVIDED ACROSS ALL APPROACHES, MILL AND PAVE THE ENTIRE ENCLOSED AREA IN BETWEEN THESE CROSSWALKS.



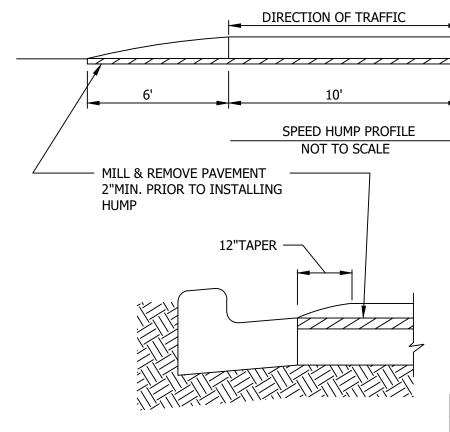






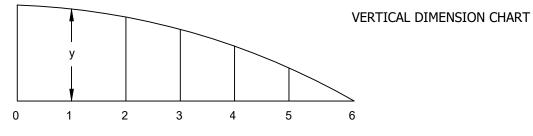
- 1. WHERE EXISTING PAVEMENT IS REMOVED TO INSTALL THE PROPOSED TRAFFIC CIRCLE, THE ENTIRE AREA UNDER THE CIRCLE SHALL BE EXCAVATED AT LEAST 6" INTO THE ORIGINAL SOIL, REPLACED WITH ACCEPTABLE BACKFILL MATERIAL TO THE DESIRED DEPTH, AND COMPACTED TO PROVIDE STABLE SUBGRADE.
- 2. THE PAVEMENT AROUND THE PROPOSED TRAFFIC CIRCLE SHALL BE REGRADED, IF REQUIRED, TO DRAIN AWAY FROM THE CURB.
- 3. LOW GROWING BUSHES AND GRASS MAY BE PLANTED INSIDE THE PROPOSED CIRCLE. NO TREE SHALL BE PLANTED INSIDE THE PROPOSED CIRCLE WHERE UTILITIES ARE PASSING UNDER.

	MOUNTABLE CURB DETAIL AT TRAFFIC CIRCLE		
ARLINGTON VIRGINIA	ARLINGTON COUNTY, VIRGINIA DEPARTMENT OF ENVIRONMENTAL SERVICES	ISSUED 9/14/2020 DRAWING NO. R-2.7	



x(ft.)	y(ft.) - inches
0	0.25 - 3.0
1	0.243 - 2.92
2	0.222 - 2.92
3	0.188 - 2.25
4	0.139 - 1.67
5	0.077 - 0.92
6	0.0 - 0.0

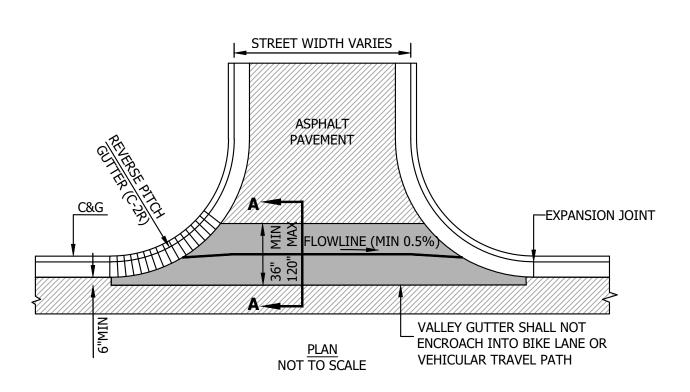
6'

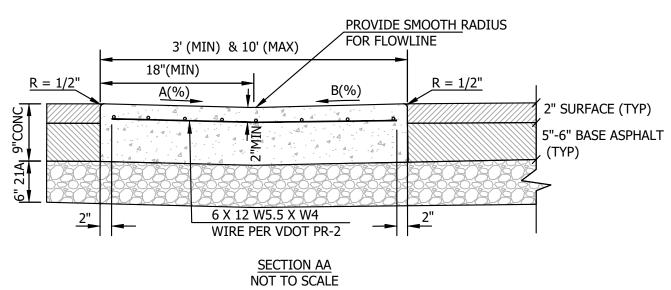


APPROACH ARC DETAIL

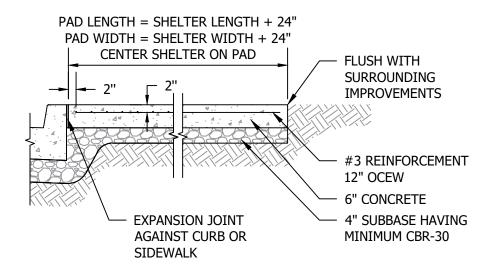
SEE VERTICAL DIMENSION CHART
NOT TO SCALE

FLAT TOP PROFILE SPEED HUMP ISSUED 9/14/2020 ARLINGTON COUNTY, VIRGINIA DEPARTMENT OF ENVIRONMENTAL SERVICES R-2.8



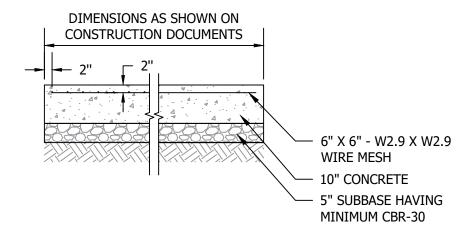


- 1. PLACE PREMOLDED FILLER AGAINST VERTICAL FACE WHERE VALLEY GUTTER ABUTS CONCRETE.
- 2. GRADE BREAK SHALL NOT EXCEED 12% ($|A| + |B| \le 12\%$).
- 3. DESIGNER SHALL ENSURE THAT ANY PORTION OF VALLEY GUTTER WITHIN A MARKED OR UNMARKED CROSSWALK COMPLIES WITH RELEVANT ADA STANDARDS.



CROSS-SECTION

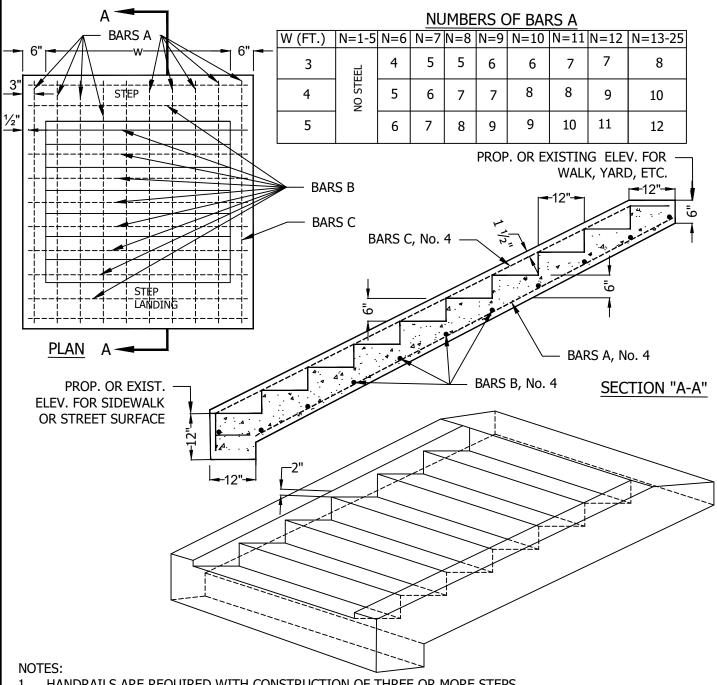
BUS SHELTER PAD ISSUED 9/14/2020 ARLINGTON COUNTY, VIRGINIA DEPARTMENT OF ENVIRONMENTAL SERVICES R-2.10



CROSS-SECTION

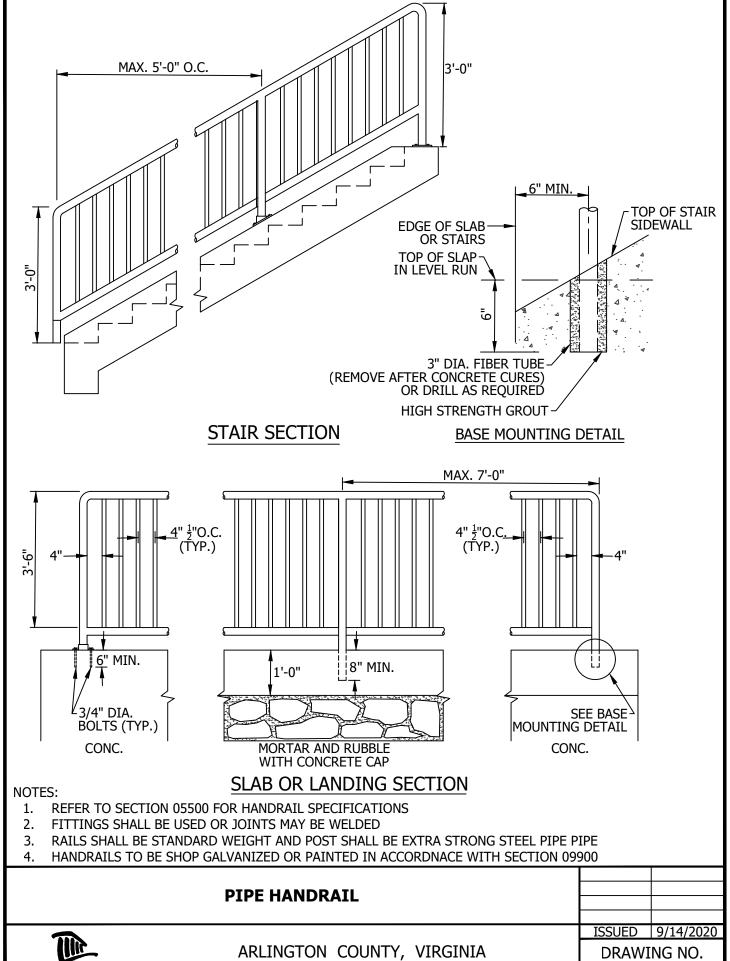
BUS STOP PAD





- 1. HANDRAILS ARE REQUIRED WITH CONSTRUCTION OF THREE OR MORE STEPS.
- 2. THESE STEPS SHALL BE USED ONLY IN CUTS OR AGAINST UNDISTURBED EARTH.
- 3. REINFORCING BARS SHALL BE USED IN INSTALLATION OF 6 OR MORE STEPS.
- W-INDICATES CLEAR WIDTH OF STEPS IN FEET BETWEEN SIDEWALLS.
- 5. N-INDICATES NUMBER OF STEPS IN INSTALLATION EXCLUSIVE OF LANDING.
- 6. LA-INDICATES LENGTH OF BAR A, IN INCHES. LA = 13.416N + 8".
- 7. LB-INDICATES LENGTH OF BAR B, IN INCHES. LB = 12W + 9".
- 8. LC-INDICATES LENGTH OF BAR C, IN INCHES. LC = 13.038N + 18".
- 9. SPACING OF BARS A, IN INCHES = 80/N WHERE N IS THE NUMBER OF STEPS.
- 10. SPACING OF BAR B = ONE UNDER EACH STEP AND TWO UNDER LANDING AS SHOWN.
- 11. DETAILS OF STEPS TO BE PLACED ON SLOPES OTHER THAN 2:1 WILL BE SHOWN ON ENG. PLAN.

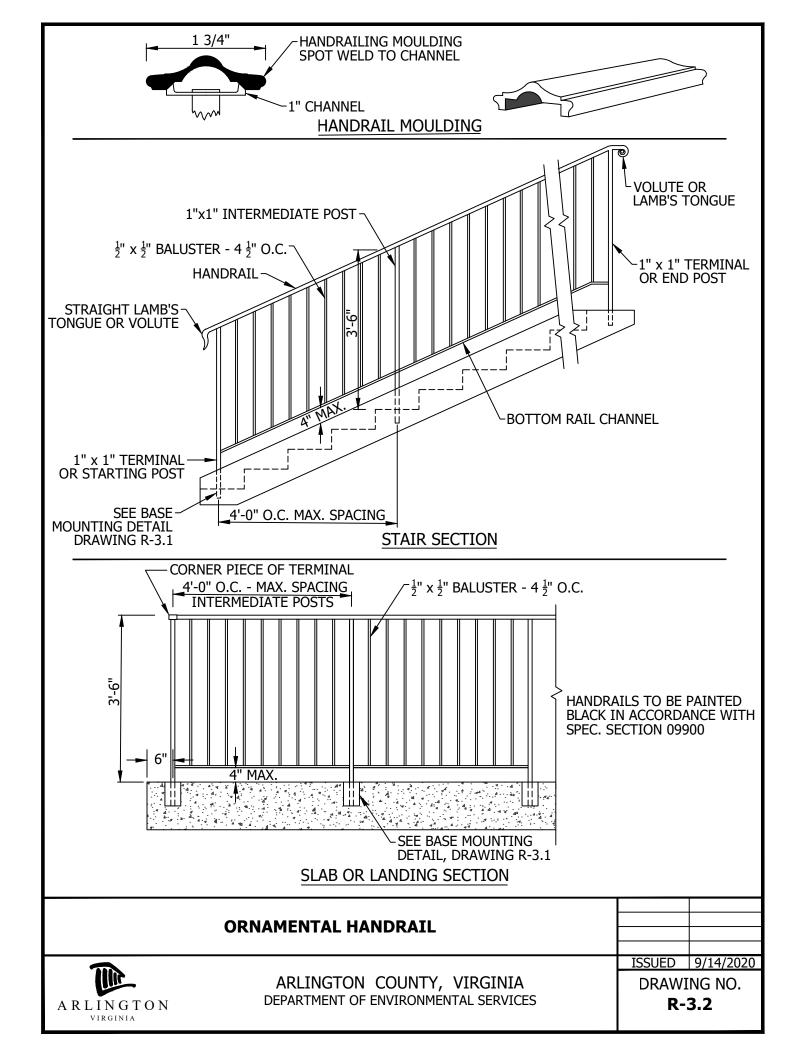
CONCRETE STEPS ON 2:1 SLOPE ISSUED 9/14/2020 ARLINGTON COUNTY, VIRGINIA DEPARTMENT OF ENVIRONMENTAL SERVICES R-3.0

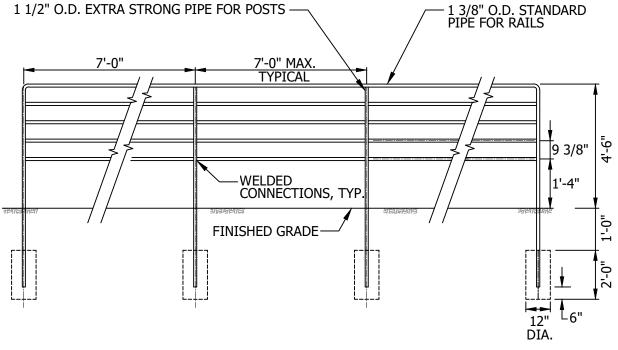


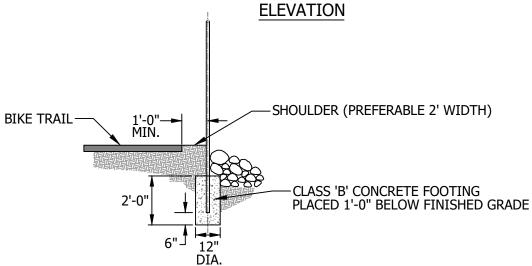


DEPARTMENT OF ENVIRONMENTAL SERVICES

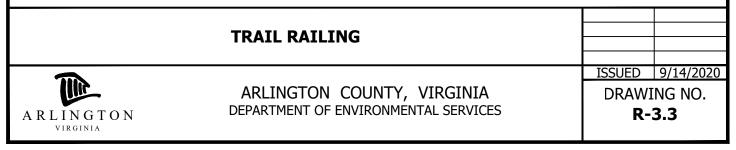
R-3.1



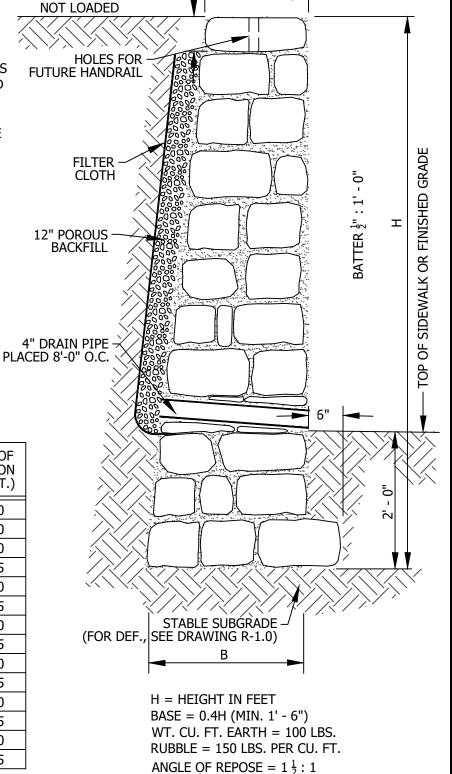




- 1. ALL PIPES USED FOR RAILING SHALL BE PAINTED BLACK STEEL.
- 2. PIPES SHALL BE WASHED WITH PAINT THINNER PRIOR TO PAINTING, THEN COATED WITH PRIMER EQUAL TO #1214 SILATHANE AS MANUFACTURER BY BRUNING AND FINISHED WITH BROWN GLOSS EQUAL TO #1230 SILATHANE AS MANUFACTURER BY BRUNING.
- 3. RAILING SHALL BE PAINTED PRIOR TO INSTALLATION.



- 1. HOLES ARE TO BE LEFT IN THE TOP OF THE WALL, 15" DEEP FOR FUTURE HANDRAIL. MAXIMUM SPACING FOR HOLES IS 10' ON CENTERS. (6' ON CENTERS FOR WALLS CONSTRUCTED ON A RADIUS.) WHERE HANDRAILS ARE NOT INSTALLED WITH WALL, HOLES ARE TO BE FILLED WITH SAND AND COVERED WITH 1" OF CEMENT MORTAR.
- 2. DEPTH OF WALL IN GROUND TO BE DETERMINED BY EXISTING FIELD CONDITIONS. DEPTH TO BE NOT LESS THAN 2'-0".



1' - 6"

HEIGHT OF WALL "H" IN FT.	THICKNESS AT BASE "B"= 0.4H	AREA OF SECTION (SQ. FT.)
2	1' - 6"	3.50
3	1' - 6"	5.00
4	1' - 7 1/4"	6.70
5	2' - 0"	9.25
6	2' - 4 3/4"	12.20
7	2' - 9 1/2"	15.55
8	3' - 2 1/2"	19.30
9	3' - 7 1/4"	23.45
10	4' - 0"	28.00
11	4' - 4 3/4"	32.95
12	4' - 9 1/2"	38.30
13	5' - 2 1/2"	44.05
14	5' - 7 1/4"	50.20
15	6' - 0"	55.75

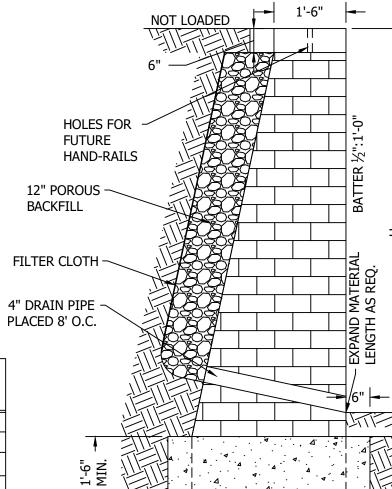
MORTAR RUBBLE RETAINING WALL LEVEL BACKFILL



ARLINGTON COUNTY, VIRGINIA
DEPARTMENT OF ENVIRONMENTAL SERVICES

ISSUED 9/14/2020 DRAWING NO.

R-4.0



TOP OF SIDEWALK OR FINISHED GRADE

HEIGHT	THICKNESS	AREA OF
OF WALL	AT BASE	SECTION
"H" IN FT.	"B" = 0.4H	(SQ. FT.)*
2	1'-6"	3.00
3	1'-6"	4.50
4	1'-7 1/4"	6.20
5	2'-0"	8.75
6	2'-4 3/4"	11.70
7	2'-9 ½"	15.05
8	3'-2 ½"	18.80
9	3'-7 1/4"	22.95
10	4'-0"	27.50
11	4'-4 ¾"	32.45
12	4'-9 ½"	37.80
13	5'-2 ½"	43.55
14	5'-7 1/4"	49.70
15	6'-0"	55.25

STABLE SUBGRADE (FOR DEFINITION, SEE DRAWING R-1.0) H = HEIGHT IN FEET BASE = 0.4H (MIN. 1'-6") WT. CU. FT. EARTH = 100 LBS. RUBBLE = 150 LBS. PER CU. FT. $ANGLE OF REPOSE = 1\frac{1}{2}:1$

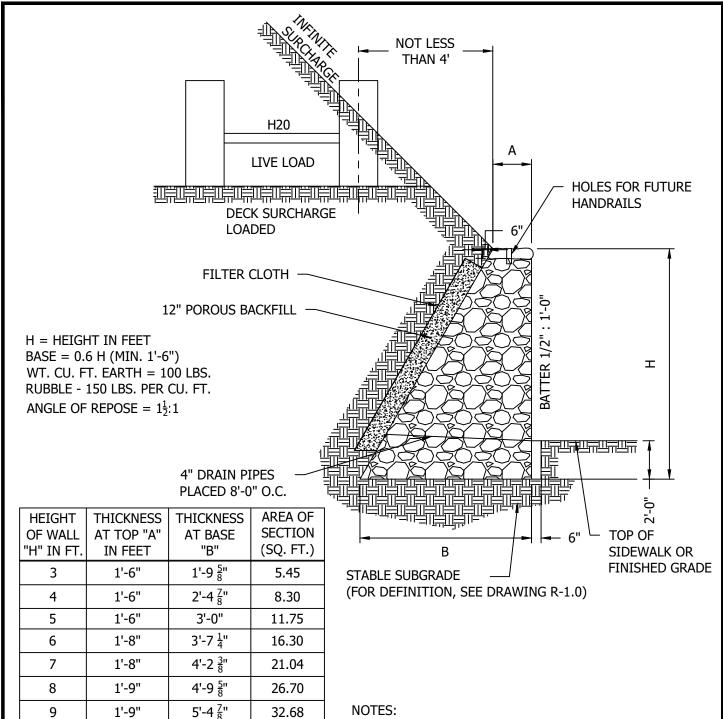
NOTES:

- 1. BASE MAY BE CLASS A3 CONCRETE.
- BOTTOM COURSE OF STONES SHALL BE KEYED INTO CONCRETE BASE OR TIE BARS, PLACES AS DIRECTED BY THE ENGINEER.

*EXCLUDING CONCRETE BASE

3. FOR ADDITIONAL NOTES AND DIMENSIONS, SEE DRAWING R-4.0.

MORTAR RUBBLE RETAINING WALL WITH CONCRETE BASE, LEVEL BACKFILL ISSUED 9/14/2020 ARLINGTON COUNTY, VIRGINIA DEPARTMENT OF ENVIRONMENTAL SERVICES R-4.1



FOR ADDITIONAL NOTES AND DRAWINGS, SEE DRAWING R-4.0

MORTAR RUBBLE RETAINING WALL WITH INFINITE SURCHARGE OR DECK SURCHARGE

39.67

46.89

55.21

63.67

73.30

83.00



10

11

12

13 14

15

1'-10"

1'-10"

1'-11"

1'-11"

2'-0"

2'-0"

6'-0"

 $6'-7\frac{1}{4}"$

7'-2 ³/₈"

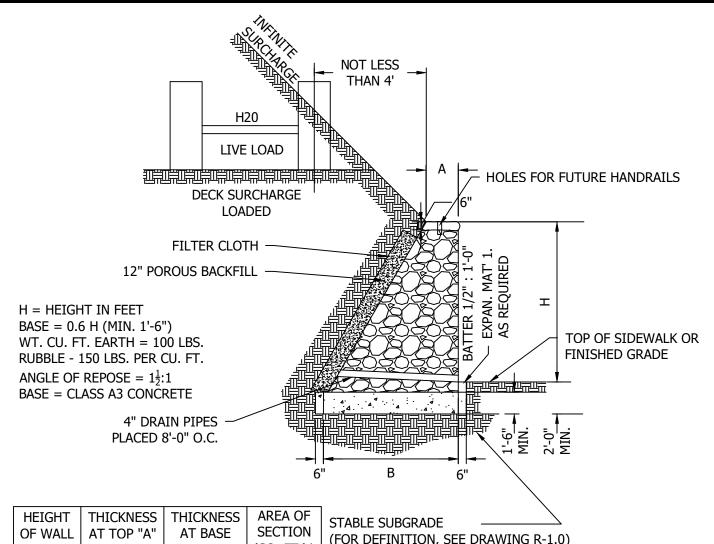
7'-9 등"

 $8'-4\frac{7}{8}$ "

9'-0"

ARLINGTON COUNTY, VIRGINIA DEPARTMENT OF ENVIRONMENTAL SERVICES ISSUED 9/14/2020 DRAWING NO.

R-4.2



HEIGHT OF WALL "H" IN FT.	THICKNESS AT TOP "A" IN FEET	THICKNESS AT BASE "B" = .6H	AREA OF SECTION (SQ. FT.)*
3	1'-6"	1'-9 ⁵ / ₈ "	5.45
4	1'-6"	2'-4 ⁷ / ₈ "	8.30
5	1'-6"	3'-0"	11.75
6	1'-8"	3'-7 ½"	16.30
7	1'-8"	4'-2 ³ / ₈ "	21.04
8	1'-9"	4'-9 ⁵ / ₈ "	26.70
9	1'-9"	5'-4 ⁷ / ₈ "	32.68
10	1'-10"	6'-0"	39.67
11	1'-10"	6'-7 ¹ / ₄ "	46.89
12	1'-11"	7'-2 ³ "	55.21
13	1'-11"	7'-9 ⁵ 8"	63.67
14	2'-0"	8'-4 ⁷ / ₈ "	73.30
15	2'-0"	9'-0"	83.00

(FOR DEFINITION, SEE DRAWING R-1.0)

*EXCLUDING CONCRETE BASE

NOTES:

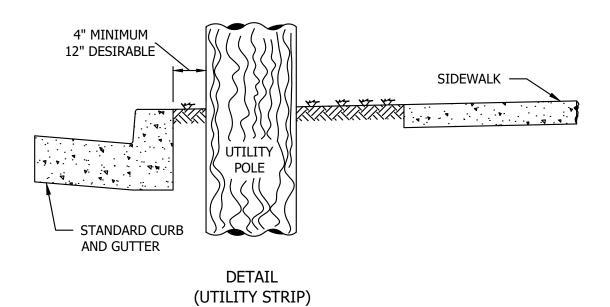
- BOTTOM COURSE OF STONES SHALL BE KEYED INTO CONCRETE BASE OR TIE BARS, PLACED AS DIRECTED BY THE ENGINEER.
- FOR ADDITIONAL NOTES AND DIMENSIONS, SEE DRAWING R-4.1.

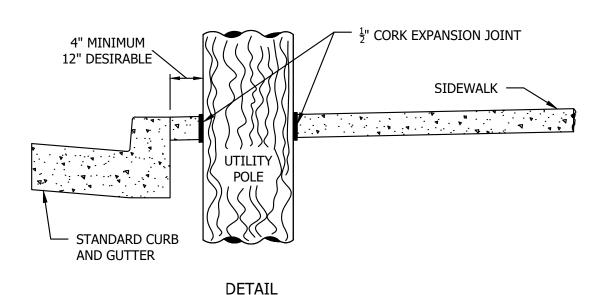
MORTAR RUBBLE RETAINING WALL WITH CONCRETE BASE AND INFINITE SURCHARGE OR DECK SURCHARGE



ARLINGTON COUNTY, VIRGINIA DEPARTMENT OF ENVIRONMENTAL SERVICES ISSUED 9/14/2020 DRAWING NO.

R-4.3

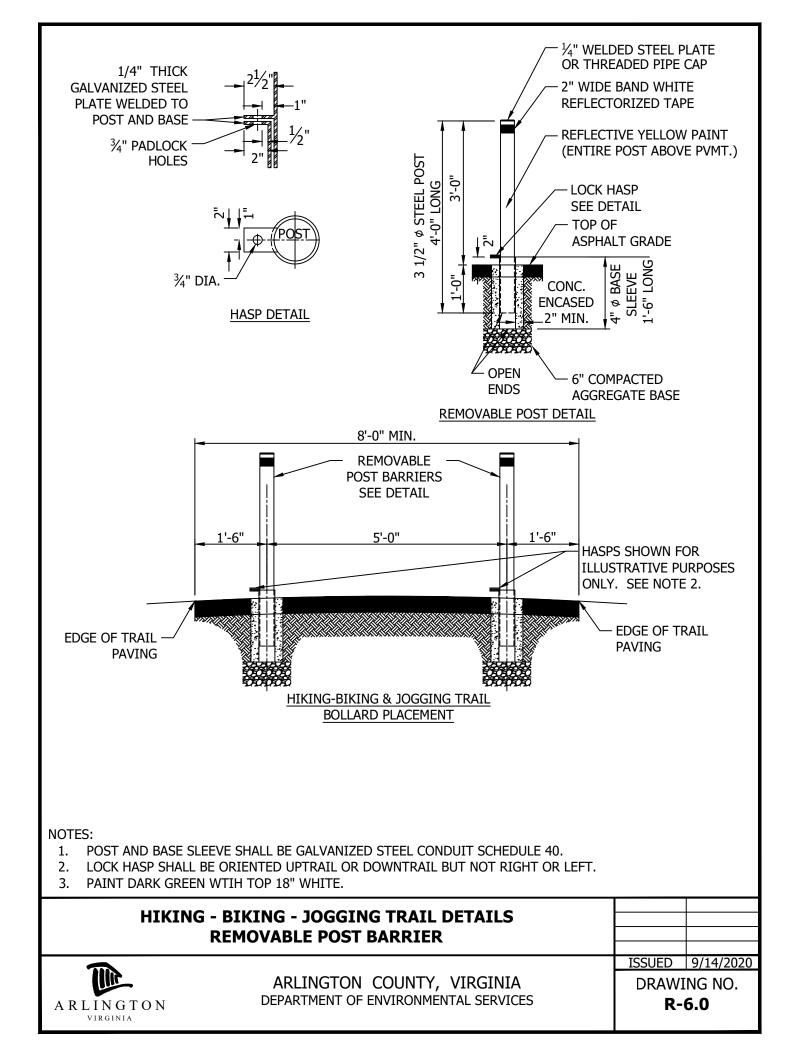


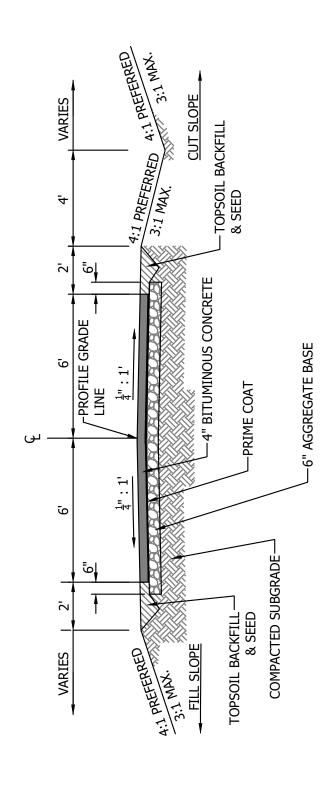


(NO UTILITY STRIP)

- 1. WHEN POLE IS TO BE LOCATED IN SIDEWALK ADJACENT TO CURB, THE SIDEWALK SHALL BE A MINIMUM OF 4' 6" WIDE.
- 2. WHEN CONCRETE SIDEWALK IS POURED AROUND GUY WIRE, THE GUY WIRE SHALL BE SLEEVED THROUGH SIDEWALK.

UTILITY POLE LOCATION			
UTILITY POLE LOCATION			
		ISSUED	9/14/2020
ARLINGTON	ARLINGTON COUNTY, VIRGINIA DEPARTMENT OF ENVIRONMENTAL SERVICES	DRAWING NO. R-5.0	





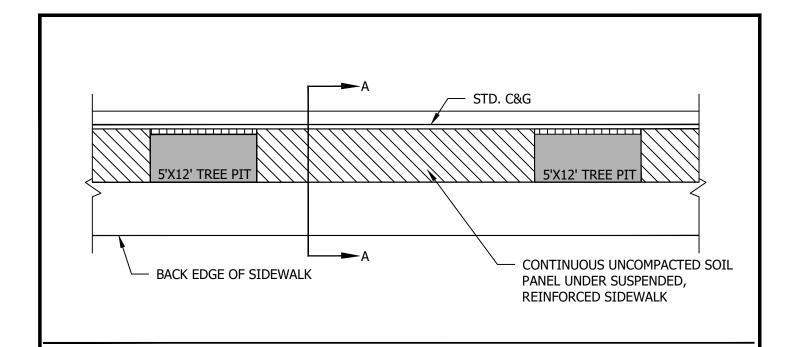
TYPICAL SECTION
HIKING - BIKING - JOGGING TRAIL

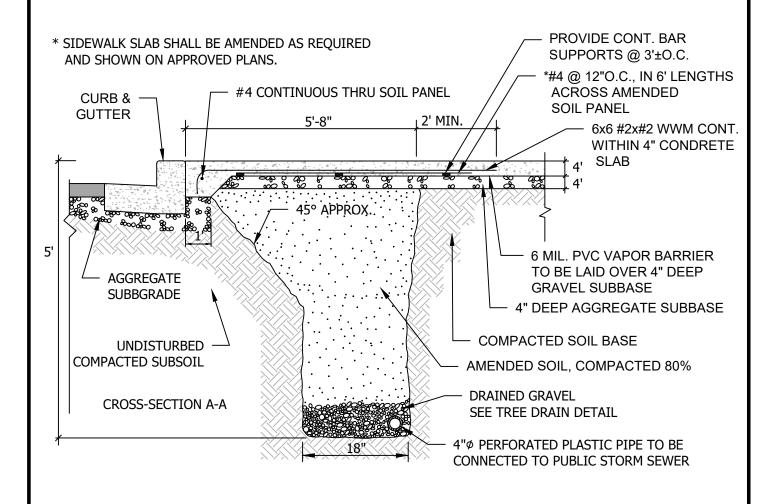


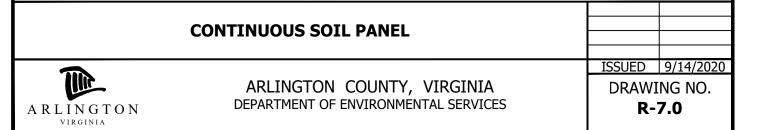
ARLINGTON COUNTY, VIRGINIA DEPARTMENT OF ENVIRONMENTAL SERVICES

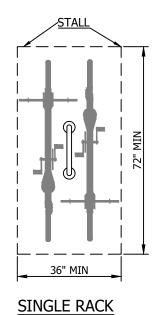
ISSUED 9/14/2020 DRAWING NO.

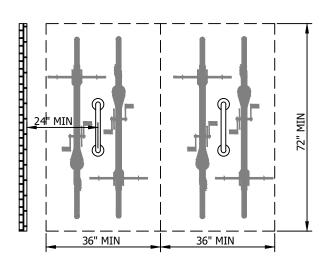
R-6.1



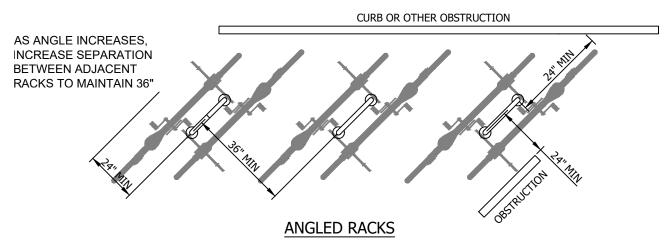


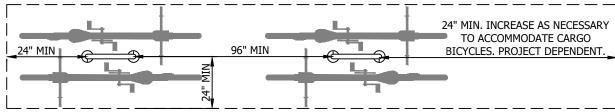






SIDE BY SIDE RACKS

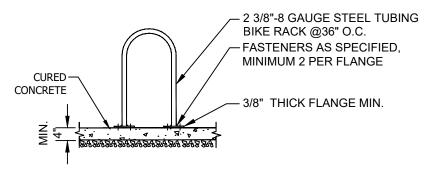




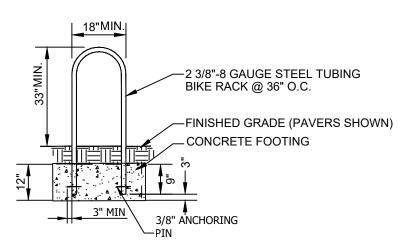
END TO END RACKS

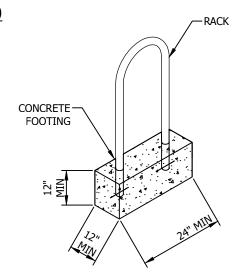
- 1. FOR LAYOUT PURPOSES, EACH BICYCLE RACK SHALL BE CENTERED IN A "STALL" OF MINIMUM DIMENSION 36" X 72".
- 2. IF MULTIPLE RACKS ARE ANGLED OR SKEWED, CENTER-TO-CENTER SEPARATION BETWEEN PARALLEL RACKS MUST BE INCREASED TO MAINTAIN THE MINIMUM 36" X 72" CLEAR "STALL" AREA AT EACH RACK.
- 3. MINIMUM 24" CLEARANCE IS NEEDED FROM WALL OR OTHER OBSTRUCTIONS.

BICYCLE RACK LAYOUT			
		ISSUED	9/14/2020
ARLINGTON COUNTY, VIRGINIA		DRAWING NO.	
A R L I N G T O N VIRGINIA DEPARTMENT OF ENVIRONMENTAL SERVICES		R-8	8.2

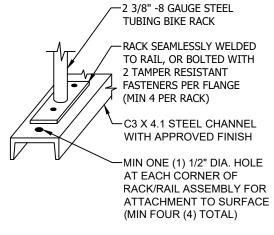


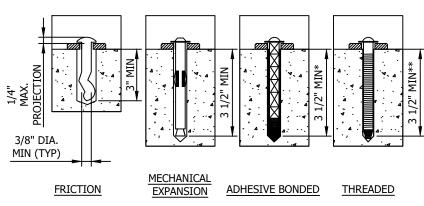
FLANGE MOUNT FLUSH (TYPICAL INSTALLATION)





IN-GROUND RACK INSTALLATION



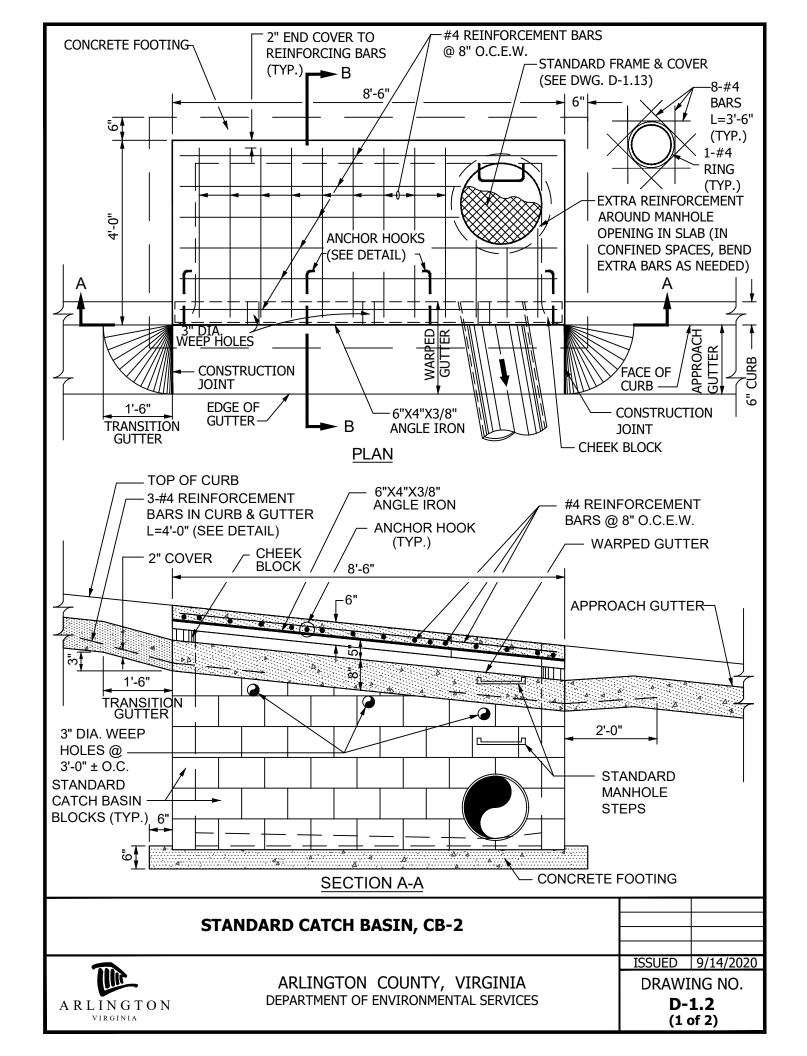


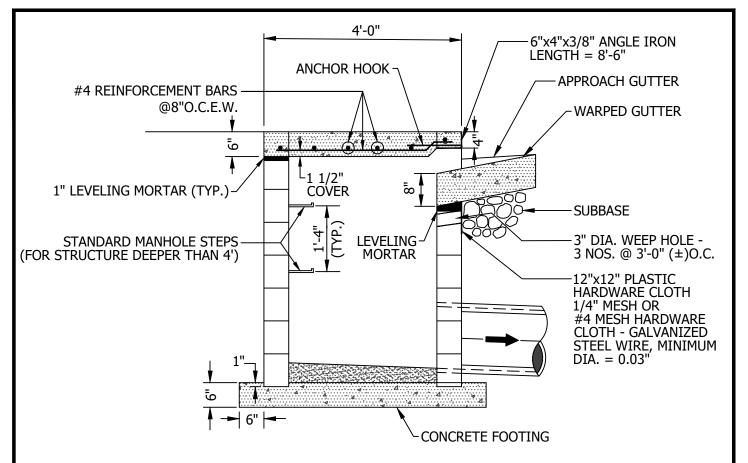
- * MIN 3 1/2" FOR ADHESIVE BONDED ANCHOR IN CONCRETE. MIN 6" FOR ADHESIVE BONDED ANCHOR IN ASPHALT.
- **THREADED FASTENERS IN CONCRETE SHALL BE TYPE 304 STAINLESS STEEL WITH CARBON-STEEL LEAD THREADS

INSTALLATION ON RAILS

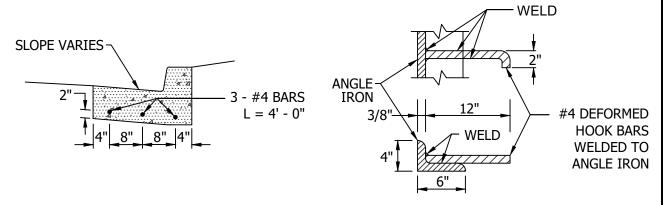
ANCHOR DETAILS

BICYCLE RACK INSTALLATION ISSUED 9/14/2020 ARLINGTON COUNTY, VIRGINIA DEPARTMENT OF ENVIRONMENTAL SERVICES R-8.3





SECTION B-B



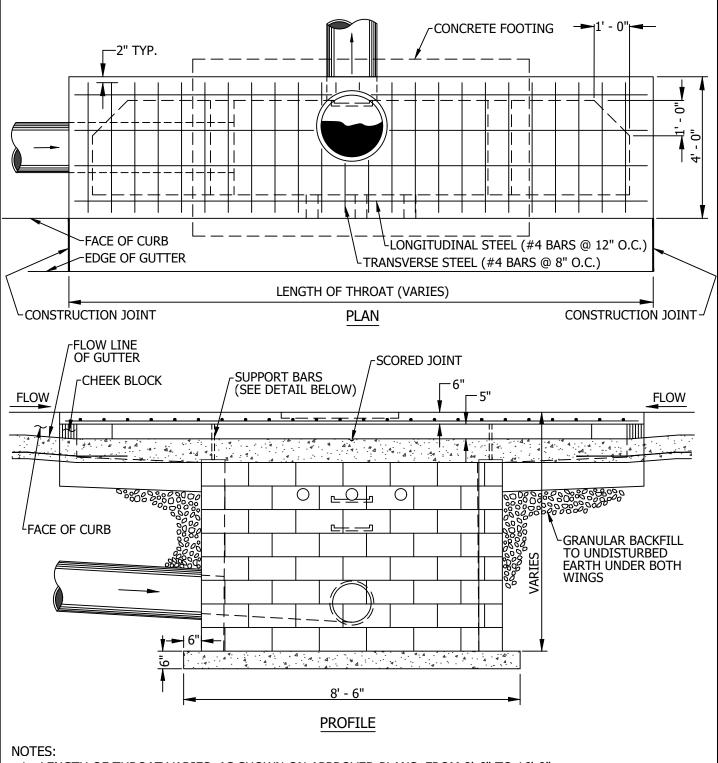
DETAIL OF REINFORCEMENT BARS IN CURB & GUTTER

DETAIL OF ANCHOR HOOK

NOTES:

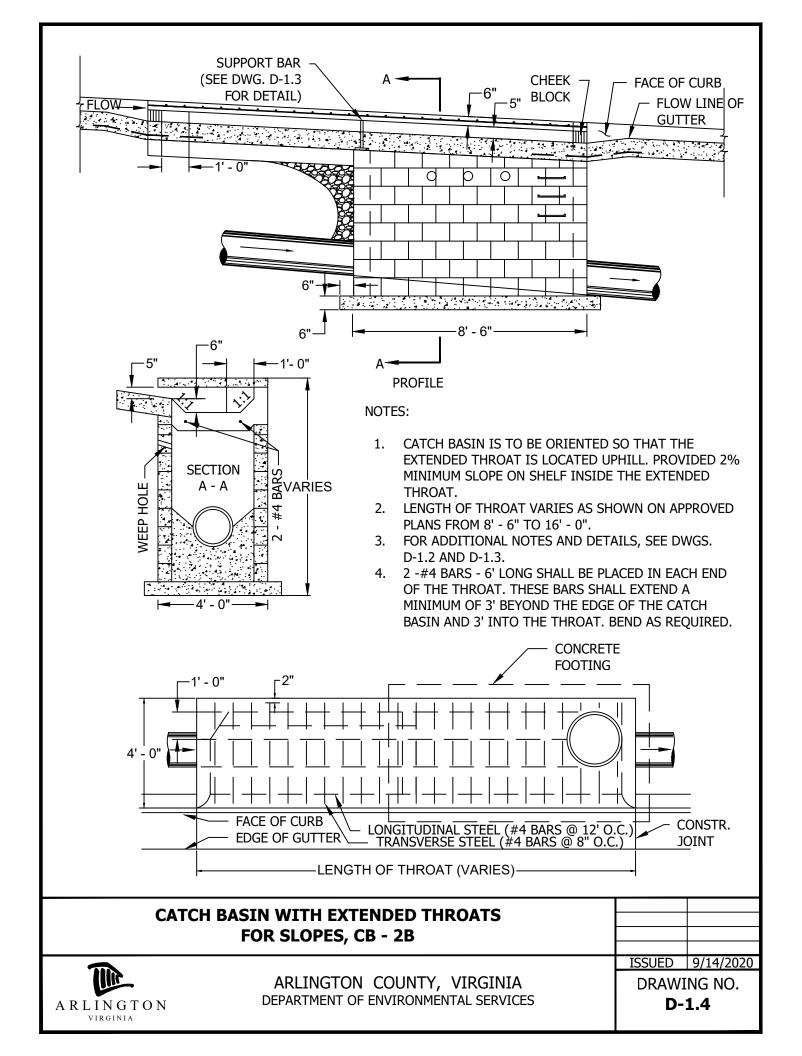
- 1. THE CROSS SLOPE ON THE TOP SLAB SHALL MATCH SLOPE ON THE ADJOINING EXISTING OR PROPOSED SIDEWALK.
- 2. ENSURE THE PROVISION OF AN EXPANSION JOINT THROUGH THE CURB & GUTTER AND SIDEWALK WITHIN 5'-0" MINIMUM TO 10'-0" MAXIMUM FROM THE OUTER FACE OF THE CATCH BASIN, ONE ON EACH SIDE (TOTAL 2 JOINTS).

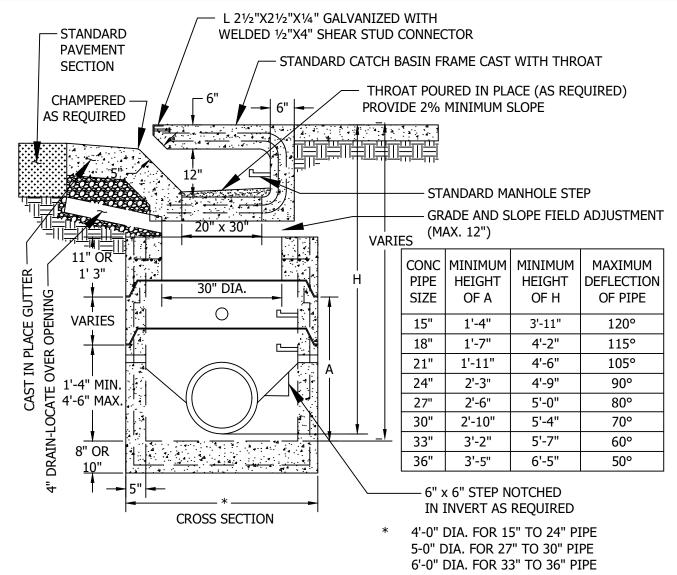
STANDARD CATCH BASIN, CB-2 ISSUED 9/14/2020 ARLINGTON COUNTY, VIRGINIA DEPARTMENT OF ENVIRONMENTAL SERVICES D-1.2 (2 of 2)



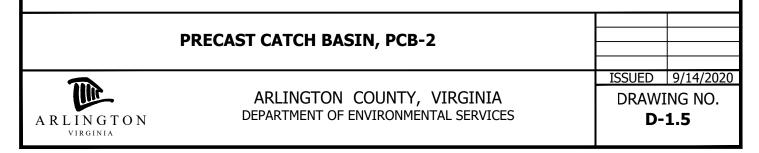
- 1. LENGTH OF THROAT VARIES, AS SHOWN ON APPROVED PLANS, FROM 8'-6" TO 16'-0".
- 2. FOR ADDITIONAL NOTES AND DETAILS, SEE DRAWINGS D-1.1 AND D-1.2.
- 3. PROVIDE 2% MINIMUM SLOPE ON SHELF INSIDE EACH EXTENDED THROAT (SEE DRAWING D-1.4 FOR THROAT SHELF DETAIL).
- 4. 2 -#4 BARS 6' LONG SHALL BE PLACED IN EACH END OF THE THROAT. THESE BARS SHALL EXTEND A MINIMUM OF 3' BEYOND THE EDGE OF THE CATCH BASIN AND 3' INTO THE THROAT. BEND AS REQUIRED.

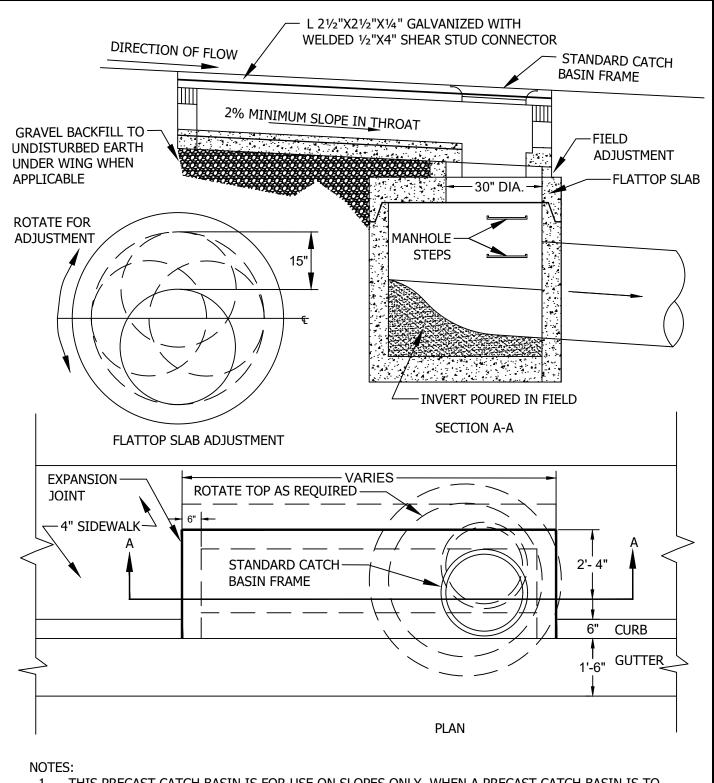
CATCH BASIN WITH EXTENDED THROATS FOR SAGS, CB-2A		
ARLINGTON VIRGINIA	ARLINGTON COUNTY, VIRGINIA DEPARTMENT OF ENVIRONMENTAL SERVICES	9/14/2020 ING NO. 1.3





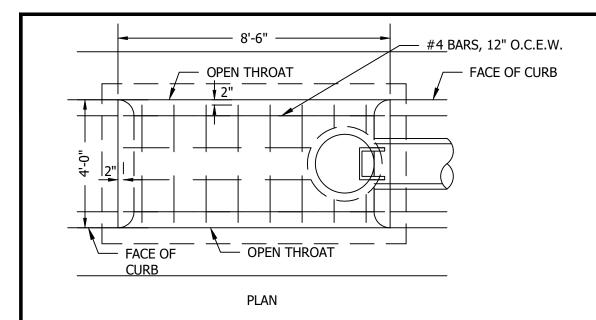
- 1. PRECAST CATCH BASINS SHALL MEET ALL REQUIREMENTS OF ASTM C-478 OR AASHTO M199.
- REINFORCING SHALL MEET ASTM A-615 FOR BARS AND A-497 FOR WELDED WIRE FABRIC.
- 3. TWO LIFT HOLES FOR HANDLING PURPOSES TO BE PROVIDED 180° APART OR APPROVED EQUAL FOR EACH UNIT.
- 4. FLATTOP SECTION MAY BE SPECIFIED WITH CIRCULAR HOLE WHEN MAJOR ADJUSTMENT IS NECESSARY IN ALIGNMENT. SEE DRAWING D-1.6.
- 5. PIPE OPENING SHALL INCLUDE 4" MINIMUM CLEARANCE AND 8" MAXIMUM CLEARANCE.
- PRECAST BASE SECTIONS SHALL BE 48" DIAMETER FOR PIPE SIZES THROUGH 36".
- 7. CONCRETE TO BE CLASS "A4". JOINTS TO BE TONGUE AND GROOVE AND/OR O-RING.
- FOR CATCH BASINS ON SLOPES THE EXTENDED THROAT SHALL BE TO THE UPHILL SIDE ON A
 MINIMUM SLOPE OF 2%, AND FOR SAGS THE THROAT IS TO BE EXTENDED EQUALLY TO BOTH SIDES
 WITH BASIN SITUATED IN THE MIDDLE. LENGTH OF THROAT, L, VARIES FROM 8'-6" TO 20'-0" AS
 SPECIFIED.
- 9. DIMENSIONS SHOWN ARE MINIMUM. ACTUAL DIMENSIONS MAY VARY WITH MANUFACTURER.
- 10. STEP FOR HANDHOLD TO BE PROVIDED IN BACK OF THROAT DIRECTLY OVER ACCESS OPENING.
- 11. SEE DRAWING D-1.7 AND D-1.8 FOR ADDITIONAL NOTES AND DETAILS.

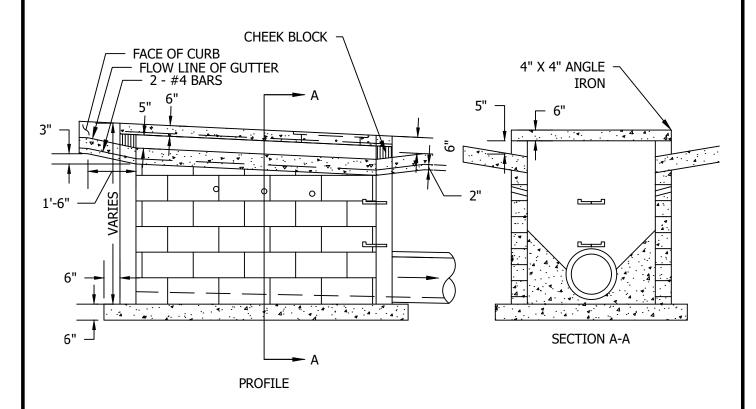




1. THIS PRECAST CATCH BASIN IS FOR USE ON SLOPES ONLY. WHEN A PRECAST CATCH BASIN IS TO BE USED IN SAGS, THE THROAT SHALL BE EXTENDED EQUALLY TO THE LEFT AND RIGHT WITH THE SUMP LOCATED IN THE MIDDLE. FOR ADDITIONAL NOTES, SEE DWG. D-1.5

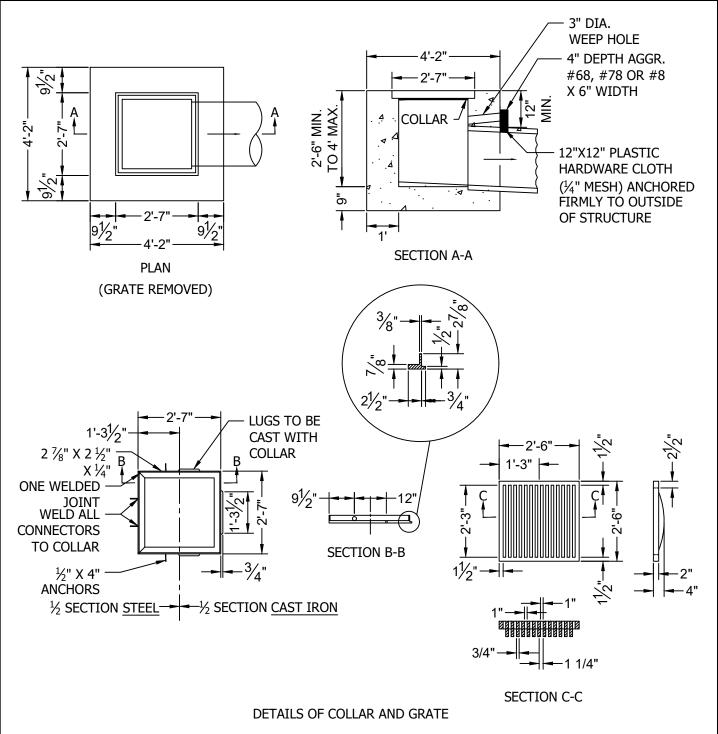
DETAILS FOR PRECAST CATCH BASIN, PCB - 2 ISSUED 9/14/2020 ARLINGTON COUNTY, VIRGINIA DEPARTMENT OF ENVIRONMENTAL SERVICES D-1.6





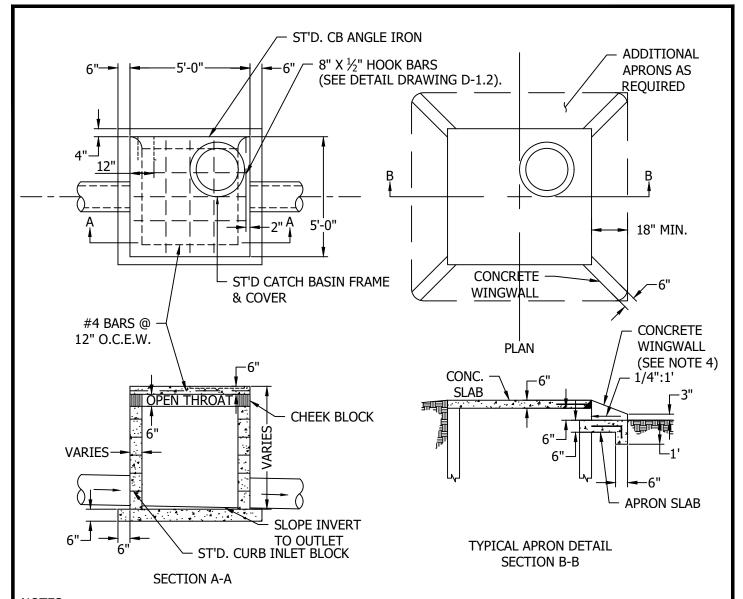
- 1. THIS STANDARD MAY BE USED WITH THE APPROVAL OF THE ENGINEER WHEN SHOWN ON APPROVED PLANS.
- 2. FOR ADITIONAL NOTES, SEE DRAWINGS D-1.1 AND D-1.2

CATCH BASIN WITH DOUBLE THROAT, CB-4			
			9/14/2020
ARLINGTON VIRGINIA	ARLINGTON COUNTY, VIRGINIA DEPARTMENT OF ENVIRONMENTAL SERVICES		ING NO. 1.8

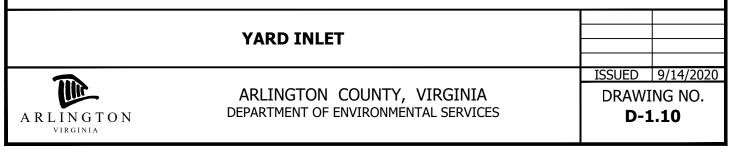


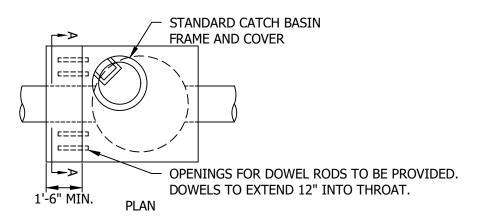
- 1. INVERT OF INLET TO BE AS SHOWN ON PLANS.
- 2. THIS ITEM MAY BE PRECAST OR CAST IN PLACE.
- 3. GRATE INLET TO BE ADA COMPLIANT WHEN USED IN A PEDESTRIAN TRAFFIC AREA. GRATE VANES TO BE ORIENTED PERPENDICULAR TO BICYCLE TRAFFIC.

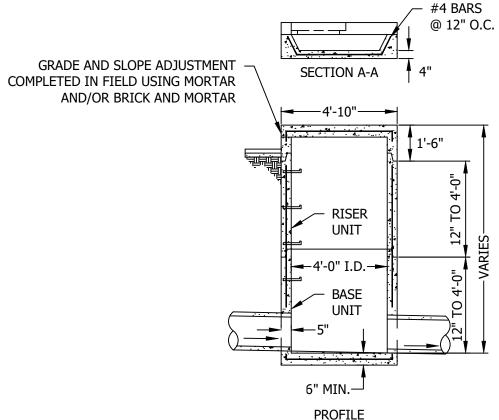
	NONROADWAY SHALLOW GRATE INLET 15" TO 24" PIPE MAXIMUM		
ARLINGTON VIRGINIA	ARLINGTON COUNTY, VIRGINIA DEPARTMENT OF ENVIRONMENTAL SERVICES		9/14/2020 ING NO. 1.9



- 1. CONCRETE APRONS TO BE BUILT ON ALL YARD INLETS.
- 2. REINFORCING FOR APRONS SHALL BE 6" X 6" NO. 6 WELDED FABRIC.
- 3. LENGTH OF APRON MAY BE INCREASED TO 3'-0" IF WARRANTED BY FIELD CONDITIONS AND SHOWN ON APPROVED PLANS.
- 4. CONCRETE WING WALLS AS SHOWN ABOVE SHALL BE REQUIRED TO RETAIN CUT SLOPES ALONG THE EDGE OF EACH APRON OR COMBINATION OF APRONS AS REQUIRED. WHEN APRONS ARE ON ADJACENT SIDES OF INLET THE CORNERS OF THE APRON SHALL HAVE 1'-6" RADII AND THE WINGWALL AT THE CORNER SHALL BE OMITTED.
- 5. YARD INLETS DEEPER THAN 4' SHALL HAVE STEPS PLACED AS SHOWN
- 6. DIMENSIONS OF YARD INLETS SHOWN ARE FOR PIPE SIZES UP TO AND INCLUDING 33" PIPE, WHILE PROVIDING A MINIMUM OF 6" CLEARANCE WHEN POSSIBLE FROM INSIDE WALL OF STRUCTURE TO O.D. OF PIPE. INLETS FOR PIPES GREATER THAN 33" SHALL REQUIRE A SPECIAL DESIGN.
- 7. SYMMETRICAL CHANNELS SHALL BE FORMED IN THE INVERT OF THE BOX FROM THE INLET PIPE TO THE OUTLET PIPE PER DRAWING D-2.1 FOR PAVING OF INVERT. SEE NOTE 5, DRAWING 1.1.
- 8. PROVIDE STANDARD 4" X 4" X 3/8" ANGLE IRON FOR FULL LENGTH OF THROAT.
- 9. THE INSIDE WALLS, AS THEY ARE LAID, SHALL BE PARGETED WITH MORTAR A MINIMUM OF 1/2" THICK.

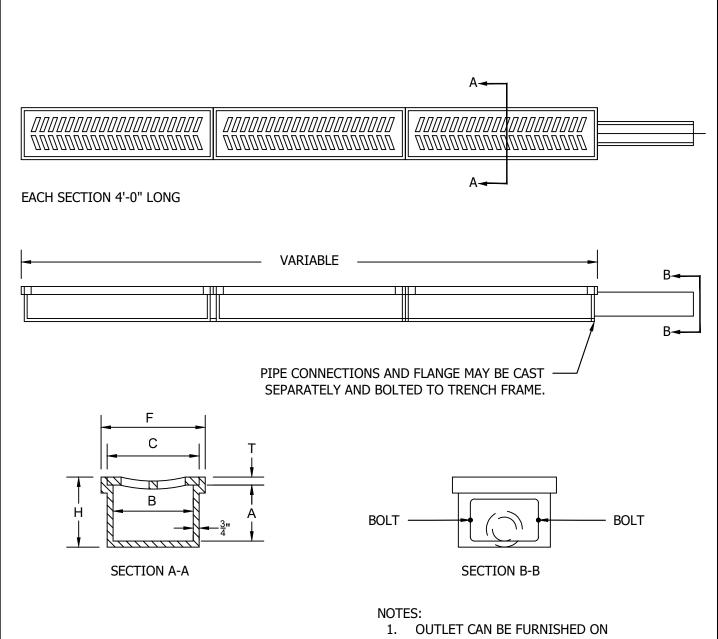






- 1. DESIGN SHALL BE IN ACCORDANCE WITH ASTM-C478
- 2. PRECAST CONCRETE TO BE CLASS "A4"
- 3. REINFORCING STEEL SHALL BE IN ACCORDANCE WITH ASTM-A497 (WIRE FABRIC) AND ASTM-A615 (REINFORCING BARS).
- 4. JOINTS SHALL BE TONGUE AND GROOVE AND/OR O-RING.
- 5. STEPS SHALL BE PROVIDED UNLESS OTHERWISE SPECIFIED FOR DEPTHS OVER 4'-0" AT 1'-4" O.C.
- 6. TWO LIFT HOLES FOR HANDLING PURPOSES SHALL BE PROVIDED FOR EACH UNIT 180° APART OR AN APPROVED ALTERNATE METHOD.
- 7. INLET INVERTS SHALL BE CONSTRUCTED IN TEH FIELD AS REQUIRED.
- 8. PIPE OPENINGS SHALL BE PROVIDED AS REQUIRED.
- 9. THE APRON SHOWN ABOVE IS TYPICAL. FOUR INCH CONCRETE CLASS A3, OR ASPHALT APRONS SHALL BE REQUIRED (MIN. 1'-6") IN FRONT OF ALL THROAT OPENINGS.

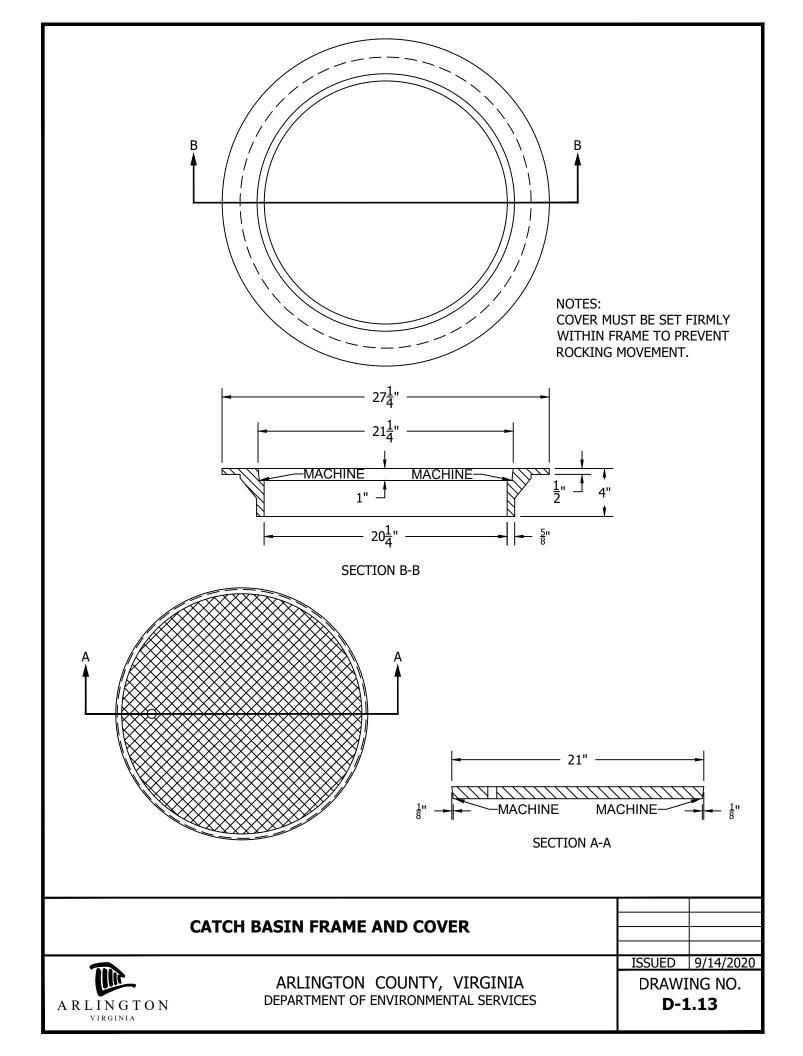
PRECAST YARD INLET ISSUED 9/14/2020 ARLINGTON COUNTY, VIRGINIA DEPARTMENT OF ENVIRONMENTAL SERVICES D-1.11

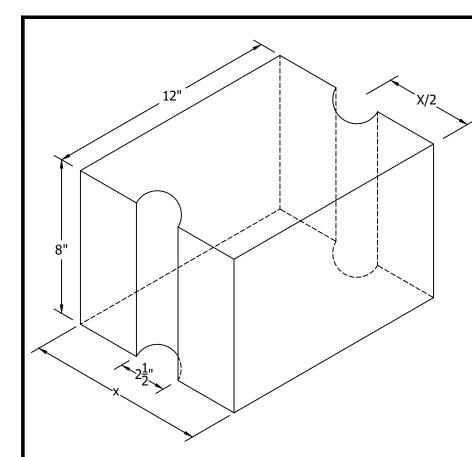


EITHER SIDE OR BOTTOM.

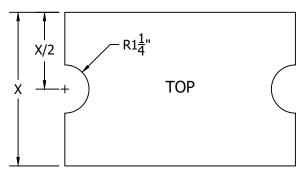
- TRENCH DIMENSION AND TYPE (CONCRETE OR STEEL) AS SHOWN ON CONSTRUCTION DRAWINGS 1.
- GRATE STRUCTURAL STEEL TO MEET REQUIREMENTS OF ASTM-A48 WITH A MINIMUM THICKNESS OF 1 $\frac{1}{2}$ ".
- GRATE PATTERN TO VANES TO BE PERPENDICULAR TO BICYCLE TRAFFIC 3.
- GRATE PATTERN TO BE ADA COMPLIANT IN HEAVY PEDESTRIAN AREA
- DRAINAGE OUTFALL TO STORM STRUCTURES ONLY.
- NO FIELD CONNECTIONS ARE ALLOWED.
- MINIMUM BOTTOM SLOPE OF 2.00%.

DRIVEWAY GRATE			
	ISSUED	9/14/2020	
ARLINGTON VIRGINIA	ARLINGTON COUNTY, VIRGINIA DEPARTMENT OF ENVIRONMENTAL SERVICES		NG NO.



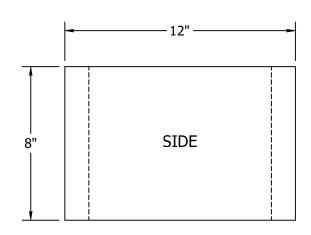


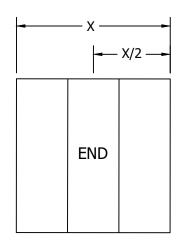
DEPTH OF STRUCTURE	DIMENSION X
LESS THAN 6'	0'-6"
6' TO 12'	0'-8"
GREATER THAN 12"	12"



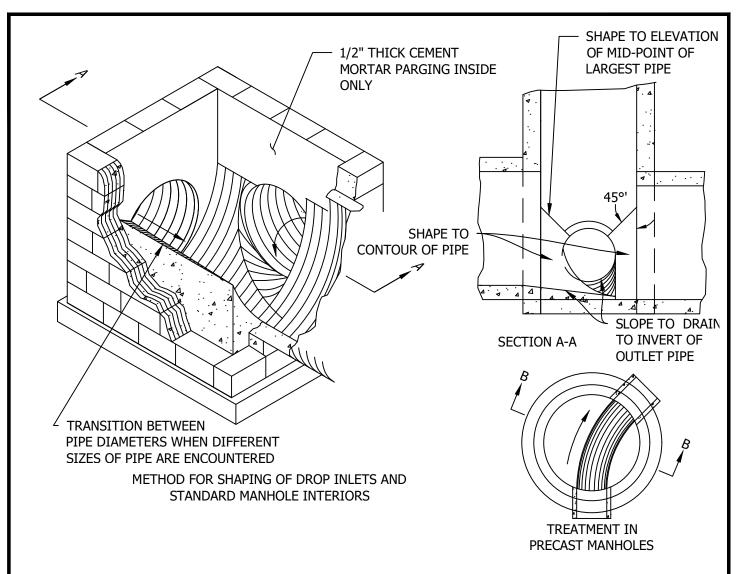


- 1. BLOCKS SHALL BE OF CLASS A3 CONCRETE.
- 2. BLOCKS SHALL BE PLACED IN AN UPRIGHT POSITION ONLY.
- 3. $\frac{1}{4}$ " MORTAR JOINT SHALL BE PROVIDED BETWEEN THE SURFACES OF ALL BLOCKS.
- 4. KEYWAYS SHALL BE COMPLETELY FILLED WITH MORTAR.
- MORTAR SHALL CONFORM TO SECTION 04100.

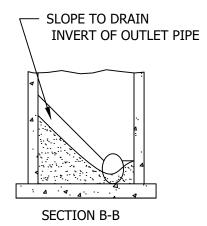




MANHOLE AND CATCH BASIN BLOCK ISSUED 9/14/2020 ARLINGTON COUNTY, VIRGINIA DEPARTMENT OF ENVIRONMENTAL SERVICES D-2.0



- SHAPING OF MANHOLE AND INLET INVERTS IN ACCORDANCE WITH THIS DRAWING IS TO APPLY TO THOSE STRUCTURES SPECIFIED ON PLANS. THE COST OF FURNISHING AND PLACING ALL MATERIALS IS TO BE INCLUDED IN THE PRICE BID FOR THE PARTICULAR CATCH BASIN OR MANHOLE COMPLETE.
- 2. MANHOLE OR CATCH BASIN IS TO BE FORMED AND CONSTRUCTED IN ACCORDANCE WITH THE APPLICABLE STANDARD OR SPECIAL DRAWING. THE INVERT SHAPING AS DETAILLD HEREON IS TO CONSIST OF A PORTLAND CEMENT CONCRETE MIX CONFORMING TO CLASS A3, EXCEPT THAT 25% OF COARD AGGREGATE MAY BE UP TO 4" IN DIAMETER AND CONSIST OF STONE, BROKEN BRICK, BROKEN CONCRETE, OR BROKEN CONCRETE BLOCK. THE SURFACE SHALL BE LEFT SMOOTH BY MEANS OF HAND TROWELLING. NONE OF THE OF THE COARSE AGGREGATE SHALL REMAIN EXPOSED.
- 3. DETAILS OF INVERT SHAPING AS SHOWN HEREON ARE FOR EXAMPLE PURPOSES ONLY. EACH MANHOLE OR CATCH BASIN IS TO BE SHAPED INDIVIDUALLY TO BEST FIT THE PARTICULAR INLET AND OUTLET CONFIGURATION AND FLOW LINES.



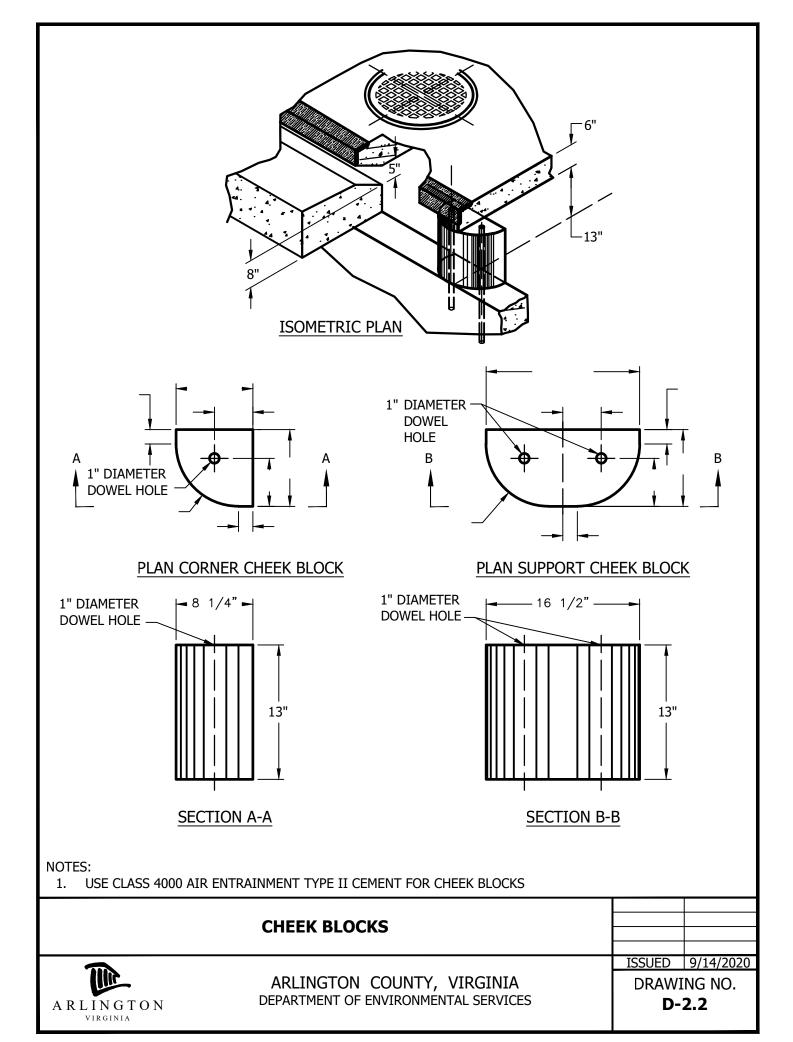
METHOD FOR SHAPING MANHOLE AND BASIN INVERTS

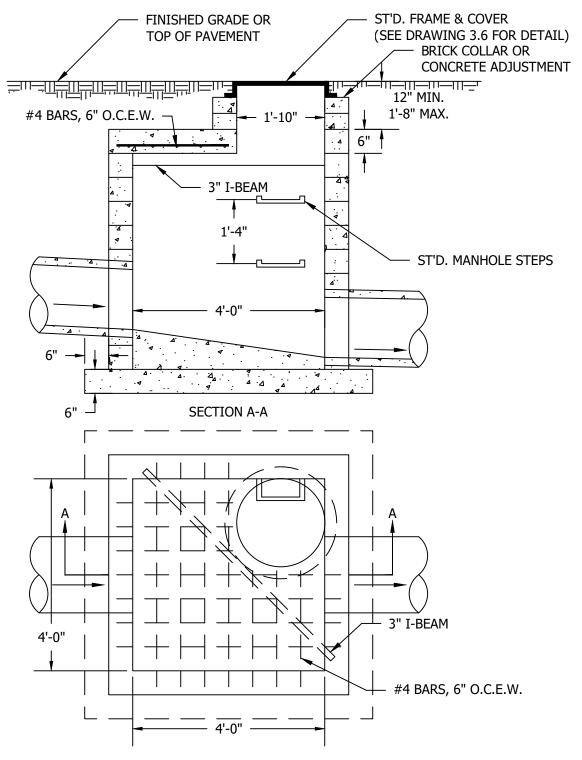


ARLINGTON COUNTY, VIRGINIA
DEPARTMENT OF ENVIRONMENTAL SERVICES

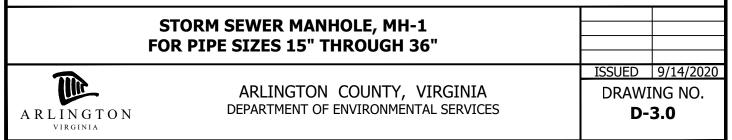
ISSUED 9/14/2020 DRAWING NO.

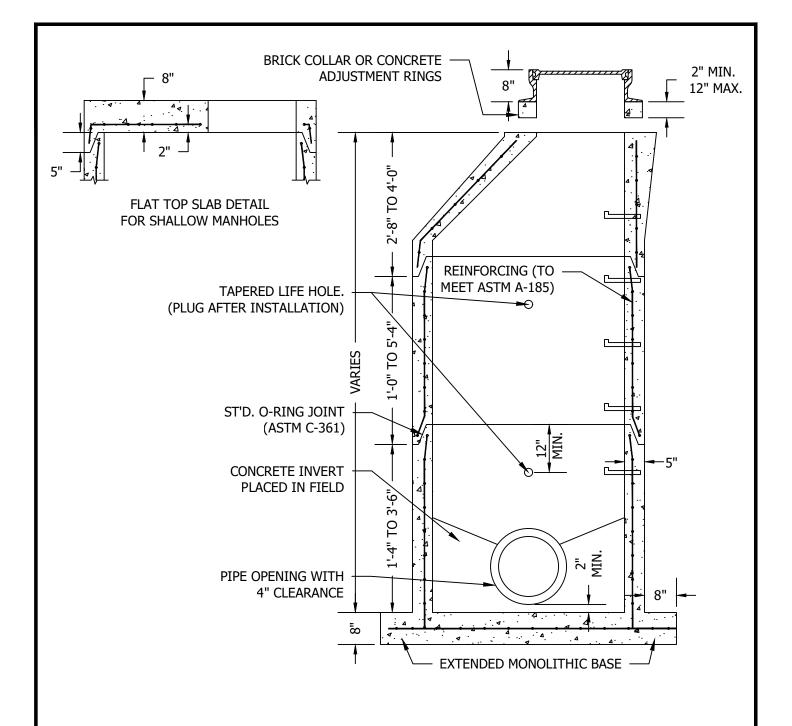
D-2.1



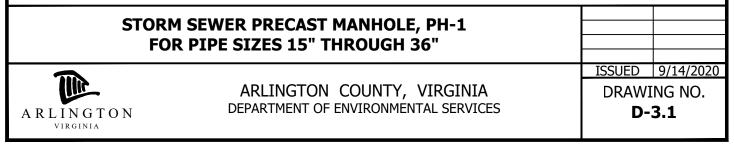


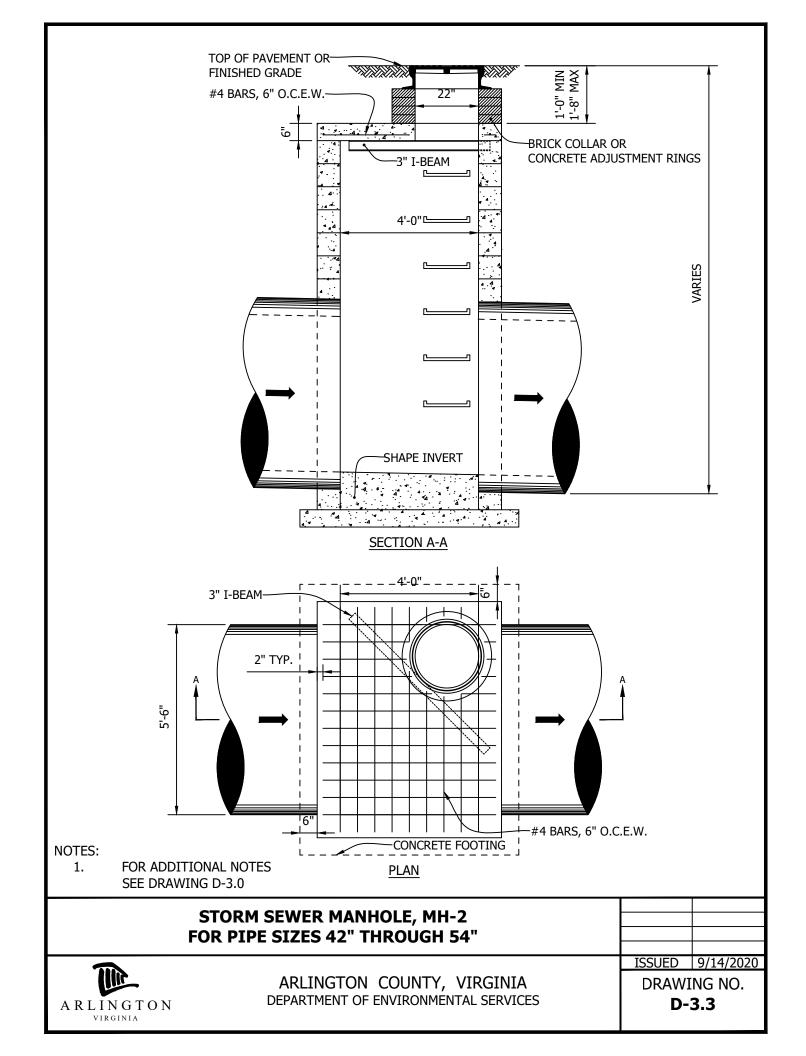
- 1. EXPOSED MANHOLE FRAME, LID, GRATES AND BEAMS TO BE FIELD PAINTED WITH BLACK ASPHALTIC PAINT.
- 2. PROVIDE 1 1/2" OF COVER FOR ALL REINFORCING STEEL.
- 3. EACH MANHOLE INVERT SHALL BE INDIVIDUALLY SHAPED TO PROVIDE A SMOOTH FLOW LINE THROUGH MANHOLE. (SEE DRAWING D-2.1 AND NOTE 5 ON DRAWING D-1.1).
- 4. MANHOLES DEEPER THAN 4'-0" SHALL HAVE STEPS 1'-4" O.C. (SEE DRAWING M-2.0).
- 5. FOR DETAILS OF MANHOLE BLOCK, SEE DRAWING D-2.0.

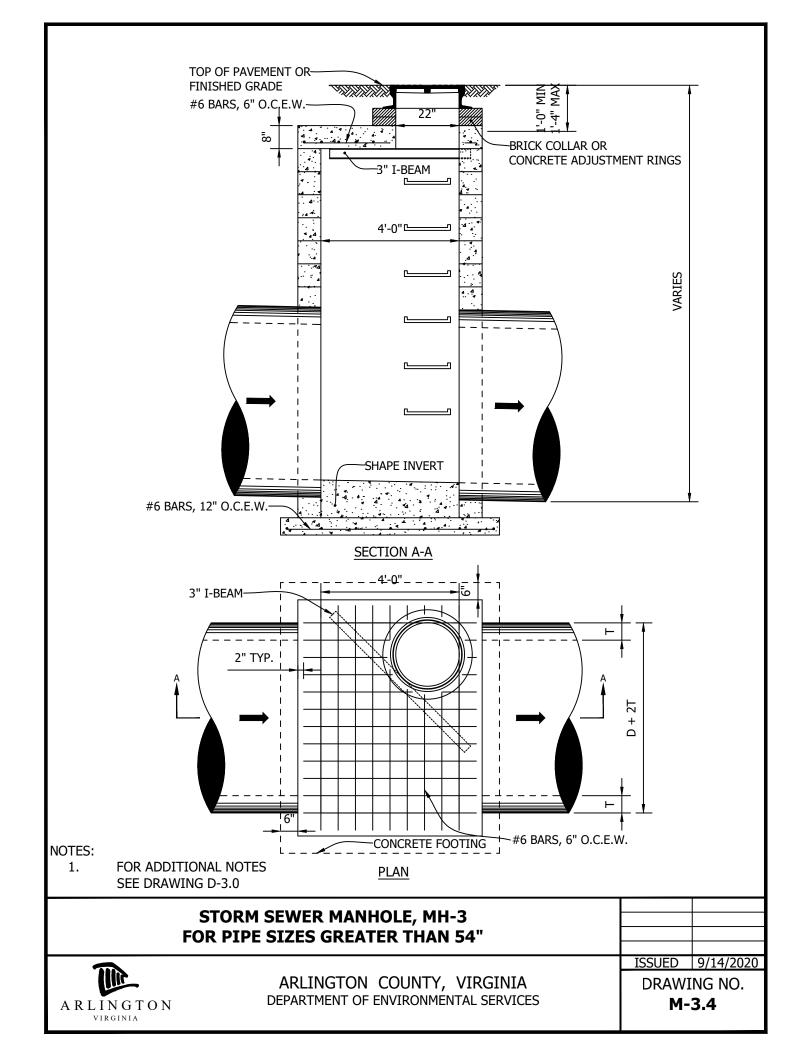


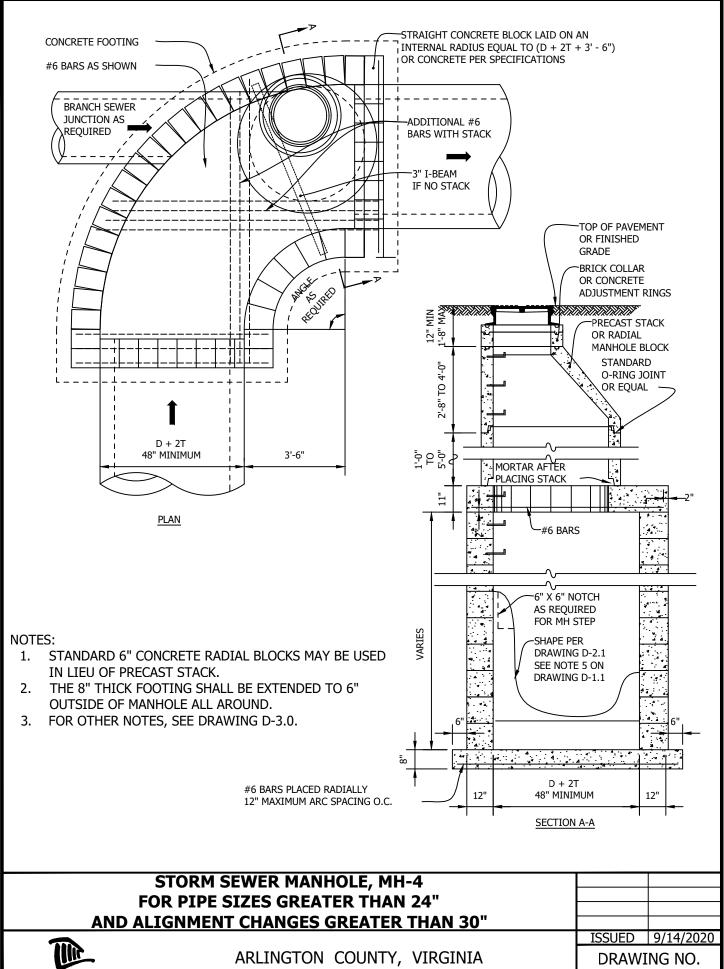


- 1. MANHOLE SHALL MEET ALL REQUIREMENT OF ASTM C-478.
- 2. RISER AND/OR ECCENTRIC CONE SECTION MAY BE REPLACED WITH ALTERNATE "FLAT TOP SLAB" FOR USE IN SHALLOW MANHOLES.
- 3. OTHER COMBINATIONS OF RISER AND TAPER SECTIONS MAY BE USED AS APPROVED BY THE PROJECT OFFICER, TO ACHIEVE REQUIRED HEIGHT.
- 4. TONGUE AND GROOVE JOINT SEALER MAY BE USED IN LIEU OF "O-RING JOINT."





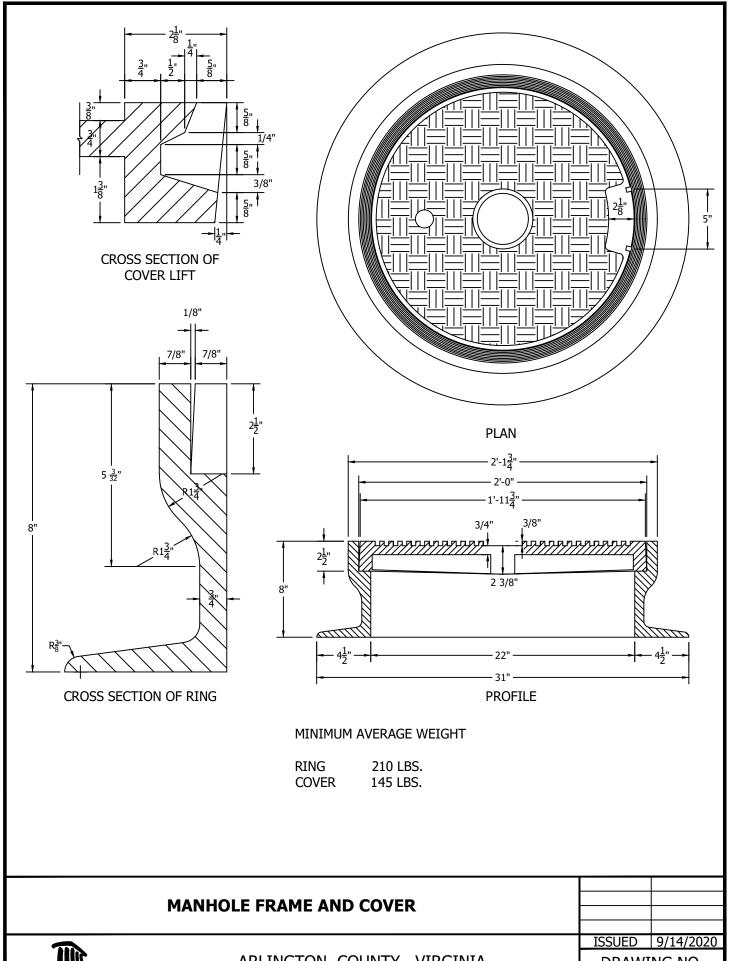


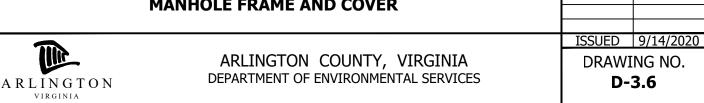


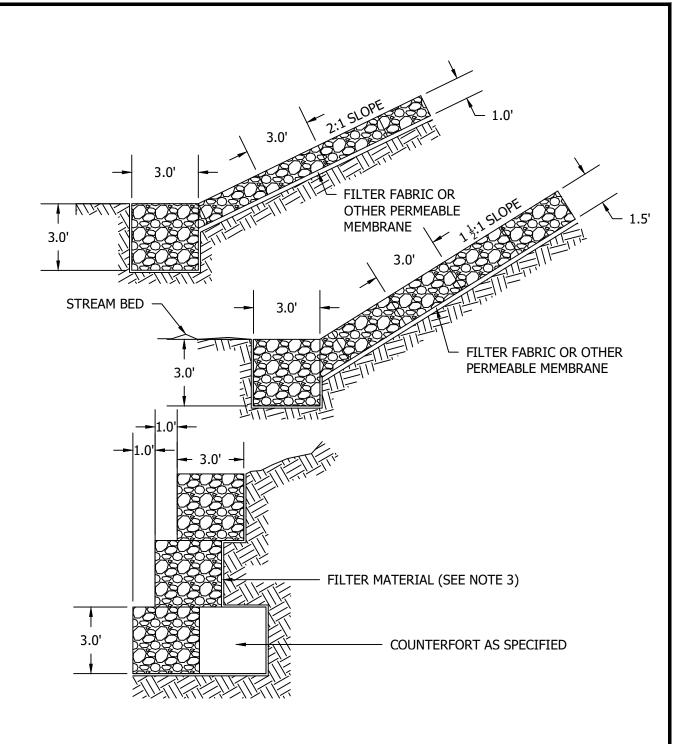


DEPARTMENT OF ENVIRONMENTAL SERVICES

D-3.5

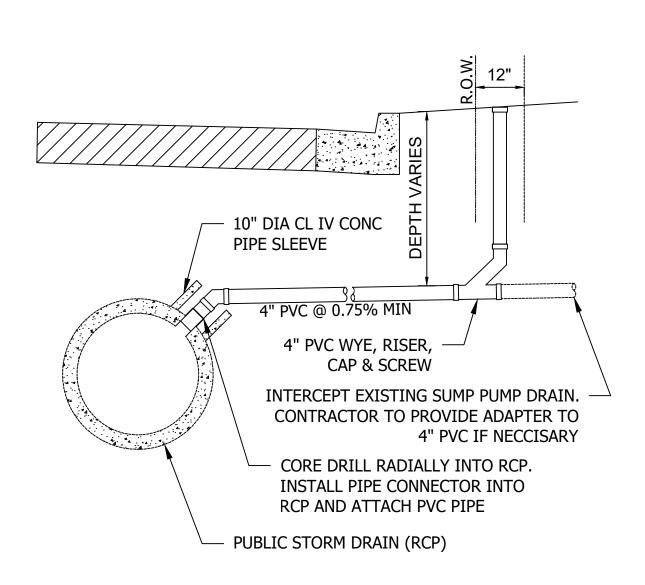






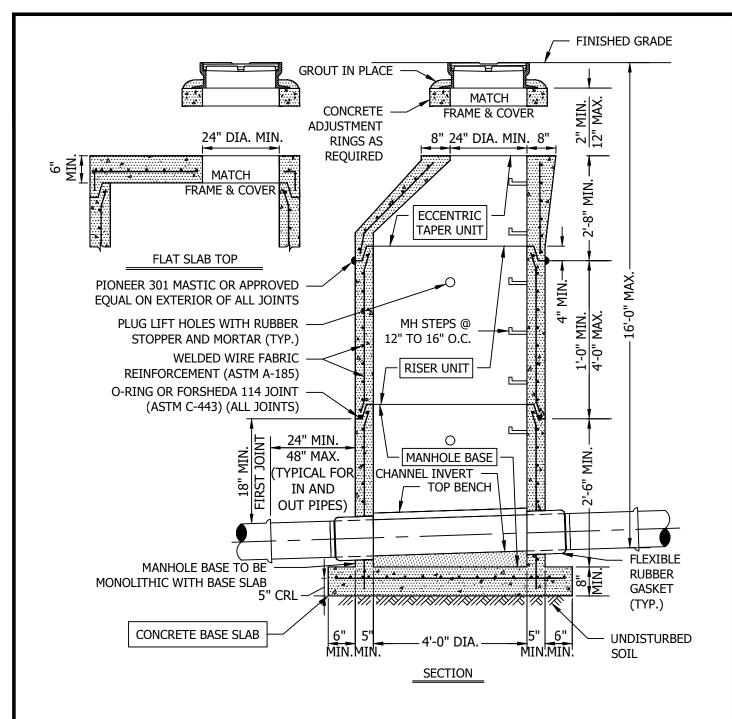
- 1. STONE FILL SIZE SHALL RANGE FROM 4" MINIMUM TO 8" MAXIMUM WITH BOTH MEASURED AT THE LONGEST DIMENSION
- 2. WIRE MESH TO BE UNIFORMLY HEXAGONAL PATTERN, WOVEN IN A TRIPLE TWIST PATTERN PVC COATED OR GALVANIZED AS SPECIFIED
- 3. FILTER MATERIAL SHALL AS PER VDOT SECTION 245—GEOSYNTHETICS AND LOW PERMEABILITY LINERS
- 4. FOR ADDITIONAL INFORMATION SEE SPECIFICATION 02211.

CARTON REVETAENT		
	GABION REVETMENT	
ARLINGTON VIRGINIA	ARLINGTON COUNTY, VIRGINIA DEPARTMENT OF ENVIRONMENTAL SERVICES	9/14/2020 ING NO. 4.0

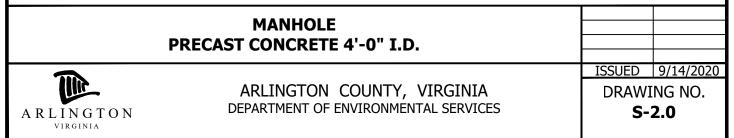


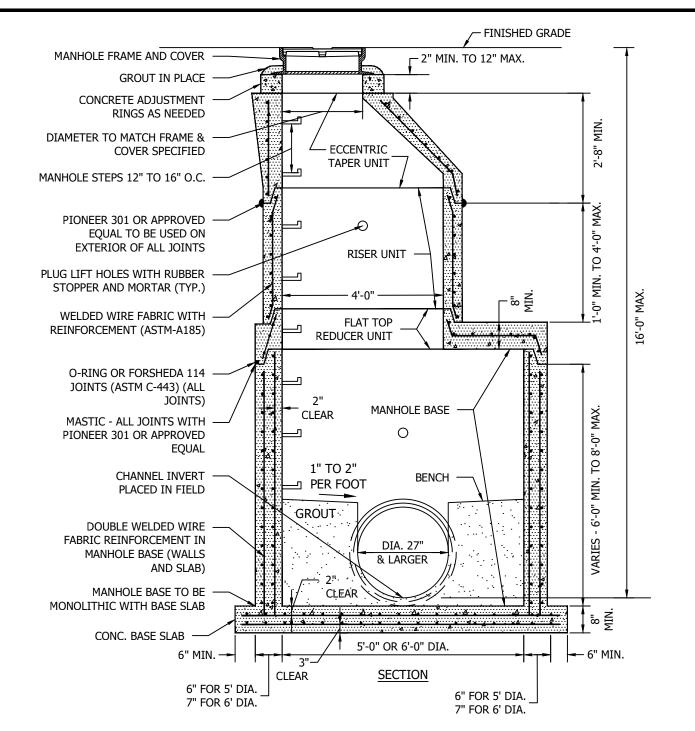
- CONTRACTOR MUST GET PERMISSION FROM DES-DEVELOPMENT SERVICES TO CONNECT PRIVATE SUMP PUMP DRAINS DIRECTLY TO PUBLIC STORM DRAINS.
- 2. A SPECIAL PERMIT IS REQUIRED FOR THIS CONNECTION.
- INSPECTION OF THE CONNECTION WILL BE PEFORMED BY ARLINGTON COUNTY, INSPECTION SERVICES
 DIVISION.

SUMP PUMP CONNECTION TO MAIN			
ARLINGTON VIRGINIA	ARLINGTON COUNTY, VIRGINIA DEPARTMENT OF ENVIRONMENTAL SERVICES	ISSUED 9/14/2020 DRAWING NO. D-5.0	

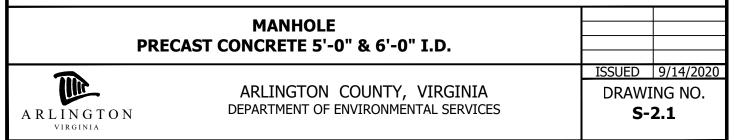


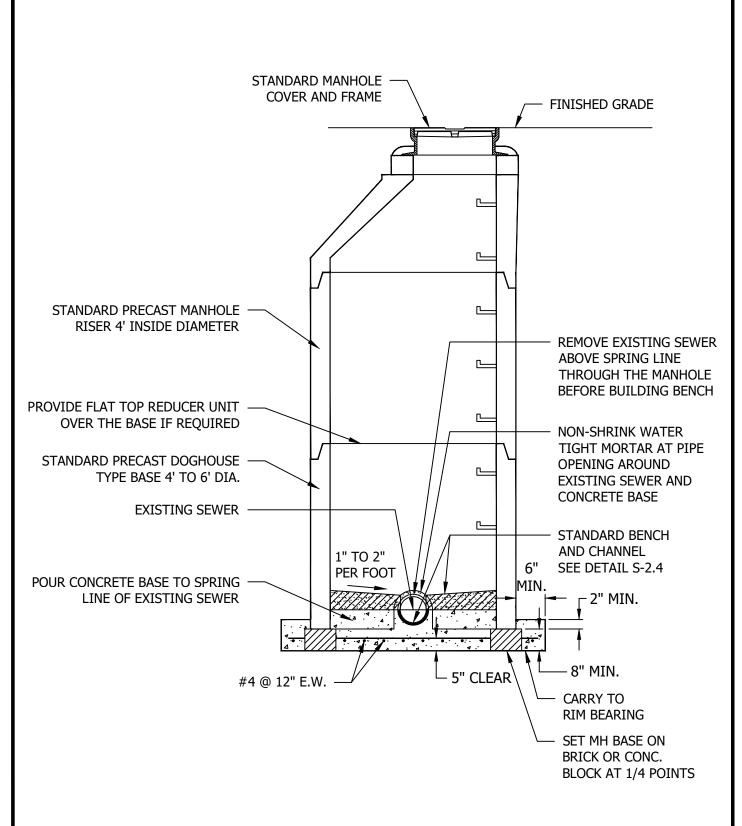
- 1. PRECAST CONCRETE SHALL BE MINIMUM VDOT CLASS A-4 AND POURED CONCRETE SHALL BE MINIMUM VDOT CLASS A-3.
- 2. PRECAST REINFORCED CONCRETE MANHOLE SECTION SHALL CONFORM TO A.S.T.M. C-478.
- 3. USE 4'-0" I.D. MANHOLES FOR 24" AND SMALL SEWER PIPES UNLESS INDICATED OTHERWISE.
- 4. SEE DRAWINGS NO. S-2.4 FOR CHANNEL AND FOUNDATION DETAILS.
- 5. FLAT SLAB TOPS SHALL BE USED ONLY WHEN APPROVED BY COUNTY.
- 6. FOR GROUTING OF CHANNEL INVERTS SEE DRAWING NO. S-2.1.
- 7. FOR MANHOLES DEEPER THAN 16 FET, DESIGN CALCULATIONS SHALL BE SUBMITTED TO THE COUNTY FOR APPROVAL.





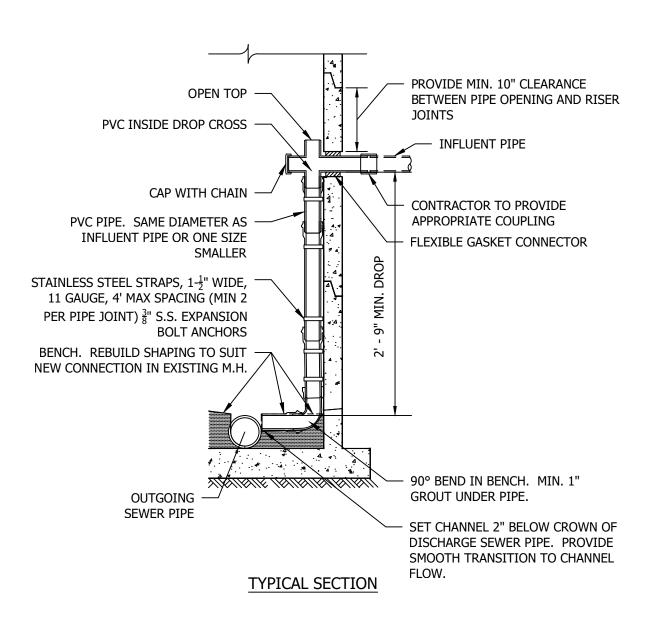
- 1. PRECAST CONC. SHALL BE MIN. CLASS A-4 (VDOT) & POURED CONC. SHALL BE MIN. CLASS A-3 (VDOT).
- 2. PRECAST REINFORCED CONCRETE MANHOLE SECTIONS SHALL CONFIRM TO ASTM C-478.
- 3. FOR SHALLOW MANHOLES, USE FLAT TOP SLAB.
- 4. USE 5' OR 6' I.D. MANHOLE WITH 36" FRAME & COVER FOR 27" AND LARGER SEWERS.
- 5. SEE 4' I.D. MANHOLE DETAIL FOR DETAILS NOT SHOWN.
- 6. SEE S-2.4 FOR FOUNDATION AND CHANNEL DETAILS.
- 7. FOR MANHOLES DEEPER THAN 16' AND FOR LARGER THAN 6' I.D., DESIGN CALCULATIONS SHALL BE SUBMITTED TO THE COUNTY FOR APPROVAL.





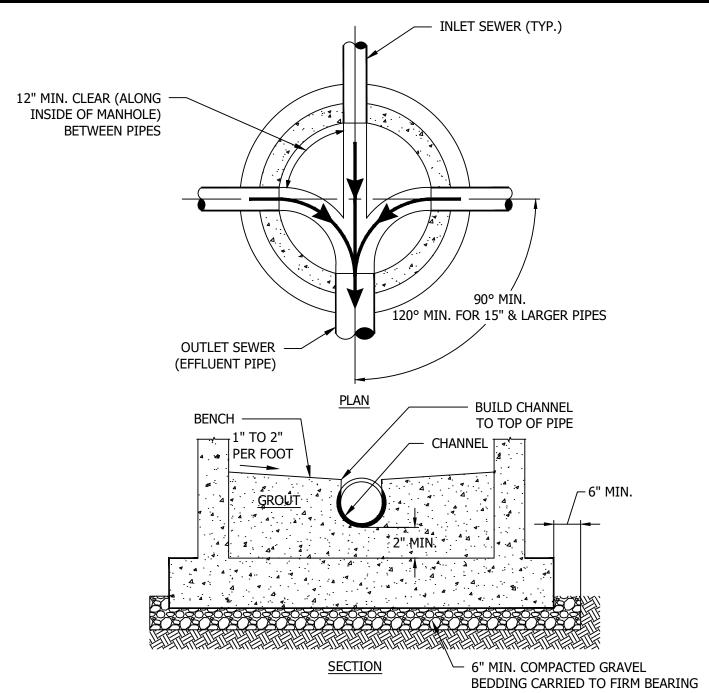
1. FOR NOTES AND OTHER DETAILS SEE DRAWINGS S-2.0 AND S-2.1

MANHOLE CONSTRUCT OVER EXISTING SEWER ISSUED 9/14/2020 ARLINGTON COUNTY, VIRGINIA DEPARTMENT OF ENVIRONMENTAL SERVICES S-2.2

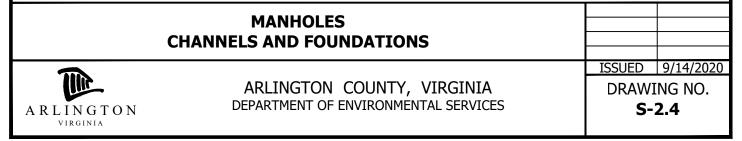


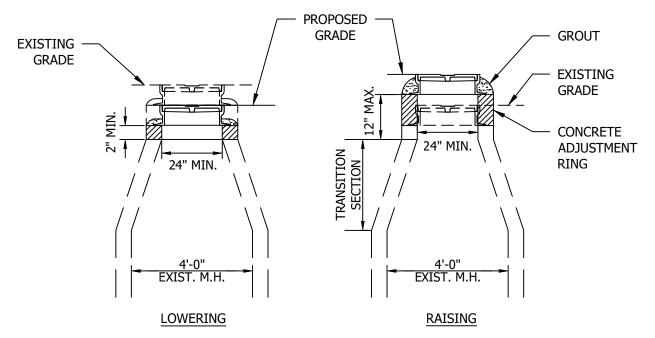
- 1. FOR MANHOLE DIMENSIONS AND OTHER DETAILS SEE DRAWING NO. S-2.0 AND S-2.1.
- 2. MINIMUM MANHOLE SIZE FOR DROP CONNECTION IS 60".
- 3. ONLY ONE INSIDE DROP CONNECTION PER MANHOLE UNLESS OTHERWISE INDICATED ON DRAWINGS.
- 4. DROP CONNECTION SHALL NOT INTERFERE WITH STEPS. IF NECESSARY, MANHOLE FRAME, COVER, CONE SECITON AND STEPS SHALL BE REMOVED AND PLACED TO ALLOW UNOBSTRUCTED ENTRY AND EXIT.

	WITH INSIDE DROP CONNECTION	ISSUED	9/14/2020
ARLINGTON VIRGINIA	ARLINGTON COUNTY, VIRGINIA DEPARTMENT OF ENVIRONMENTAL SERVICES		NG NO. 2.3



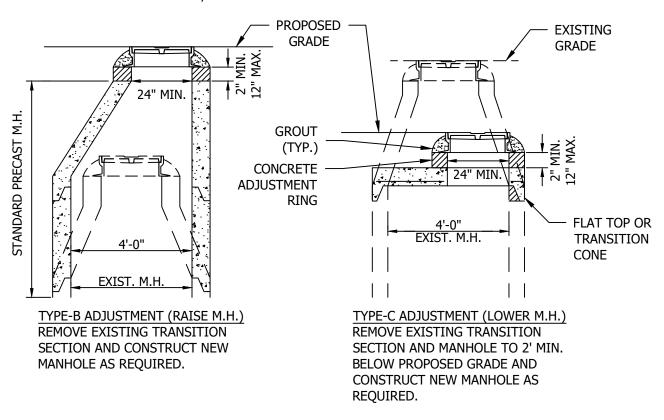
- 1. MAXIMUM ALLOWABLE FALL FROM INLET SEWER TO OUTLET SEWER IS 12".
- 2. MAXIMUM NUMBER OF ALLOWABLE INLET SEWERS PER MANHOLE IS 3.
- 3. INVERT CHANNELS IN TERMINAL MANHOLES MUST BE CONSTRUCTED IN THE SAME WIDTH AS THE EFFLUENT PIPE FOR THE FULL WIDTH OF THE MANHOLES. THIS INCLUDES MANHOLES WITH LATERALS.
- 4. CHANNEL WIDTH SHALL MATCH INSIDE DIAMETER OF INLET AND OUTLET PIPES.
- 5. GROUT FOR BENCHES AND CHANNELS SHALL CONSIST OF VDOT CLASS A-3 HYDRAULIC CEMENT CONCRETE MIX. THE SURFACE OF CHANNELS SHALL BE HAND TOWELED SMOOTH WITH NO COURSE AGGREGATE EXPOSED. THE BENCHES SHALL HAVE A LIGHT BROOM FINISH.
- 6. INVERT SLOPE IN THE CHANNEL WILL BE THE SAME AS PROVIDED FOR THE OUTLET SEWER BUT NOT LESS THAN 2% FOR THE INTERMEDIATE MANHOLES & 8.33% FOR THE TERMINAL MANHOLES.





TYPE-A ADJUSTMENT (FRAME & COVER ONLY) RAISE OR LOWER FRAME AND COVER SUCH THAT HEIGHT OF 2' NECK SECTION, EXCLUDING FRAME AND COVER DOES NOT EXCEED 12" MAXIMUM OR 2" MINIMUM

EXCLUDING FRAME AND COVER, DOES NOT EXCEED 12" MAXIMUM OR 2" MINIMUM. IF RANGE IS EXCEEDED, USE TYPE-B OR TYPE-C ADJUSTMENT.



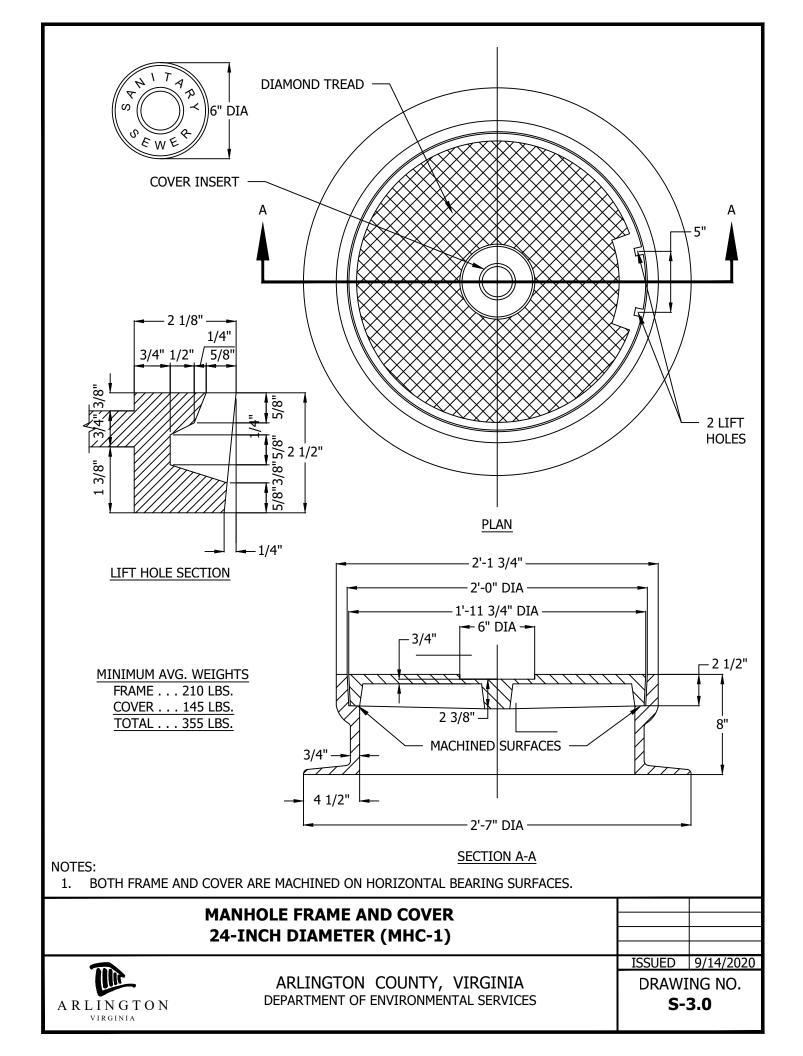
MANHOLES ADJUSTMENTS TO NEW GRADES

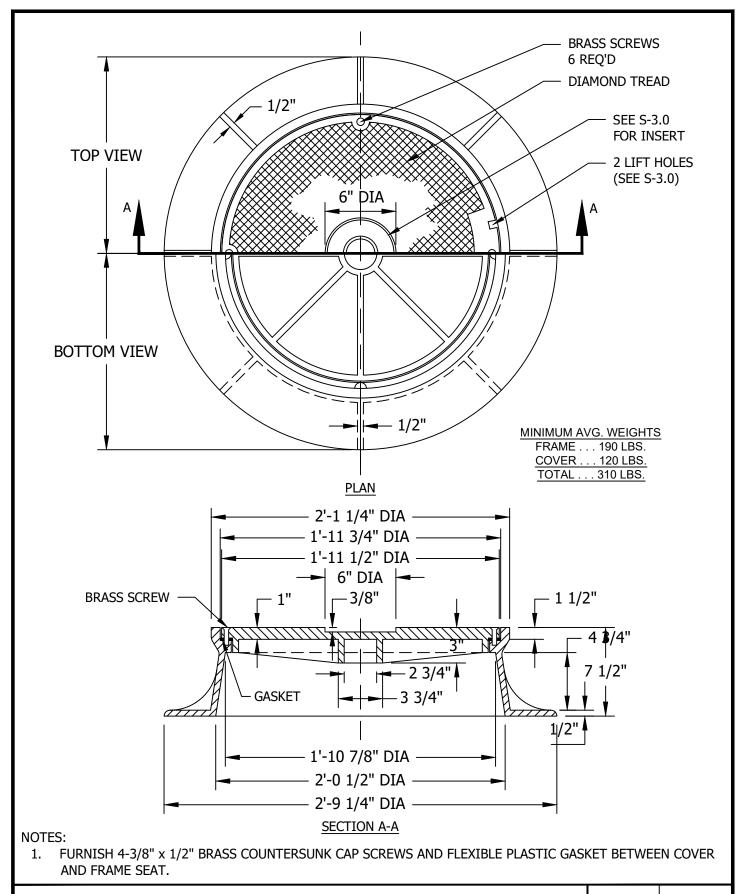


ARLINGTON COUNTY, VIRGINIA
DEPARTMENT OF ENVIRONMENTAL SERVICES

ISSUED 9/14/2020 DRAWING NO.

S-2.5



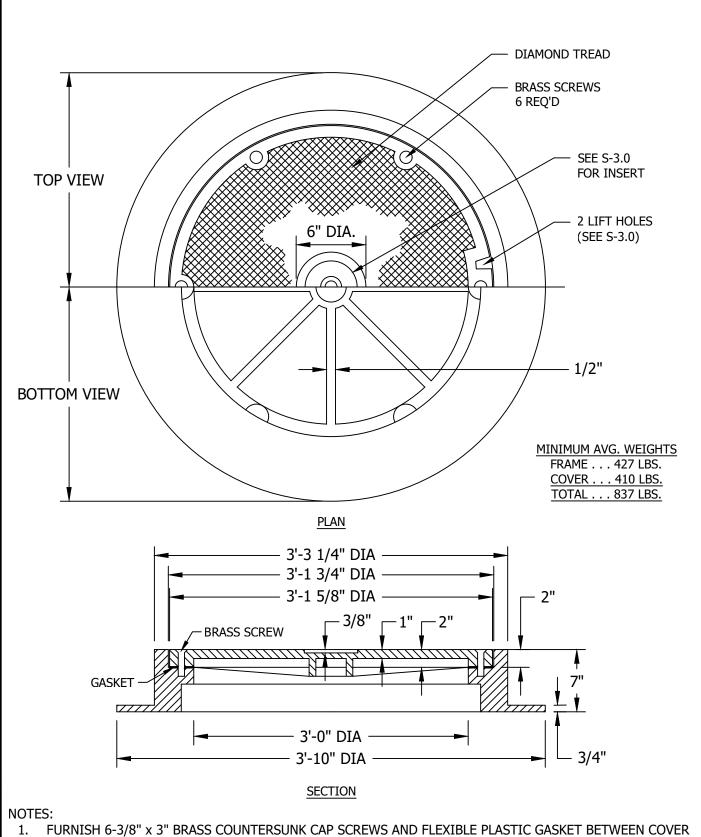


MANHOLE FRAME AND COVER 24-INCH BOLTED (MHC-2)



ARLINGTON COUNTY, VIRGINIA
DEPARTMENT OF ENVIRONMENTAL SERVICES

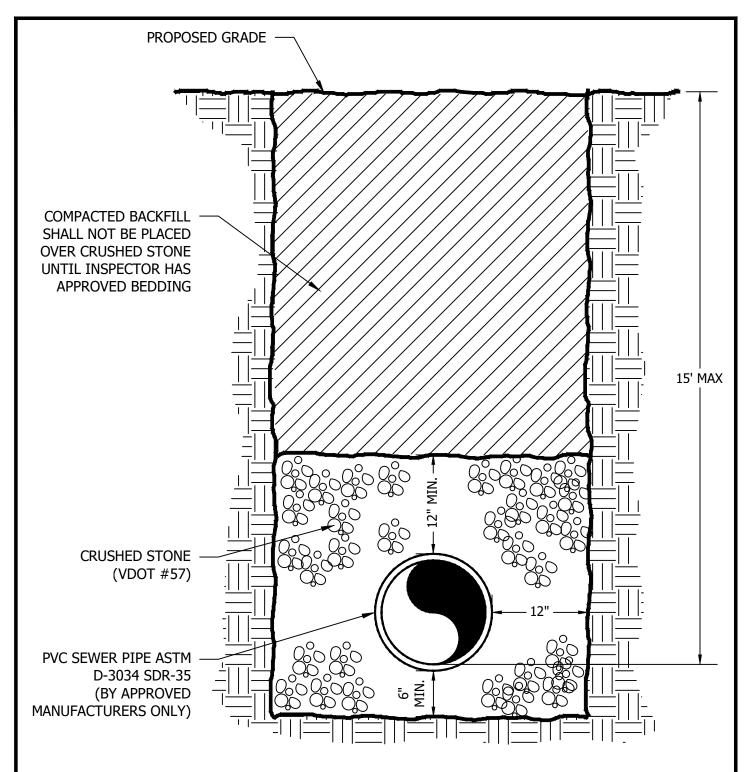
DRAWING NO. **S-3.1**



 FURNISH 6-3/8" x 3" BRASS COUNTERSUNK CAP SCREWS AND FLEXIBLE PLASTIC GASKET BETWEEN COVER AND FRAME SEAT.

MANHOLE FRAME AND COVER 36-INCH BOLTED (MHC-3) ISSUED 9/14/2020 ARLINGTON COUNTY, VIRGINIA DEPARTMENT OF ENVIRONMENTAL SERVICES S-3.2





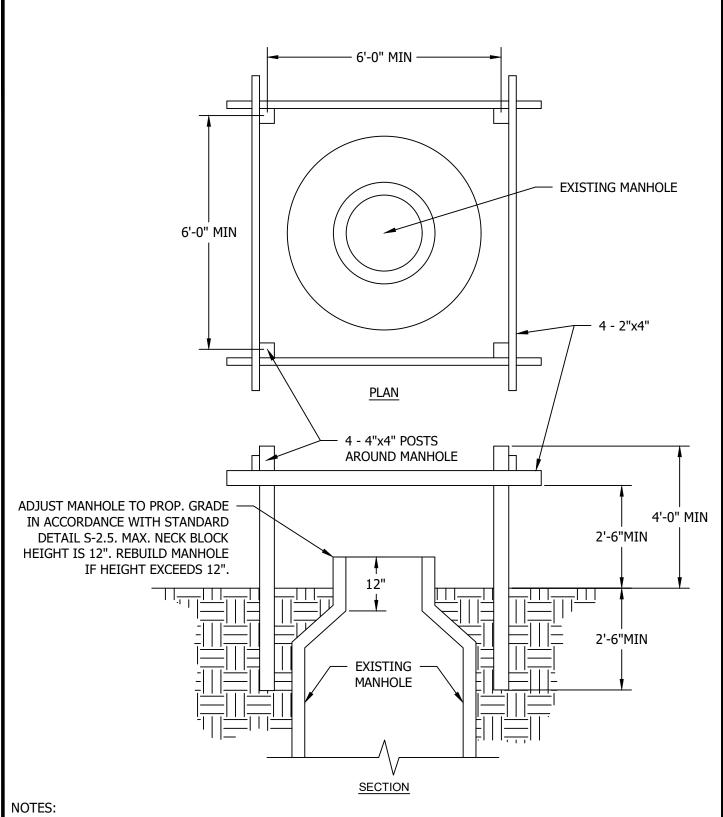
- 1. PVC PIPE SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D-2321-83A AND AS DESCRIBED IN THE SPECIFICATIONS.
- 2. CONTRACTOR SHALL PERFORM DEFLECTION TESTS UTILIZING AN APPROVED GO/NO-GO MULTIARM MANDREL WHICH MEETS ASTM D-3034 DIMENSIONS FOR 7 1/2% DEFLECTION LIMIT.
- 3. CONTRACTOR SHALL SCHEDULE WORK AND PROVIDE SAFE ACCESS TO THE SEWER TO ALLOW TIMELY INSPECTION BY THE COUNTY.

ARLINGTON VIRGINIA	ARLINGTON COUNTY, VIRGINIA DEPARTMENT OF ENVIRONMENTAL SERVICES	9/14/2020 ING NO. 4.0

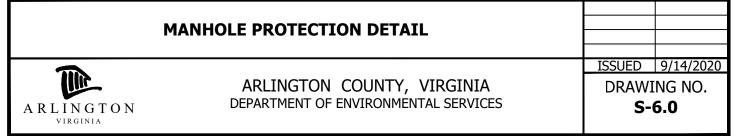
MAXIMUM ALLOWABLE DEPTH OF BACKFILL TO INVERT OF PIPE							
PIPE	DUCTILE IRON	REINFORCE	CONCRETE				
DIAMETER	CLASS 52	CLASS IV	CLASS V				
8"	NO LIMIT	NA	NA				
12"	30'	16'	24'				
15" 16"	25'	18'	30'				
18"	22'	21'	36'				
20" 21"	20'	24'	40'				
24" 27"	17'	26'	40'				
30" AND UP	18'	24'	33'				

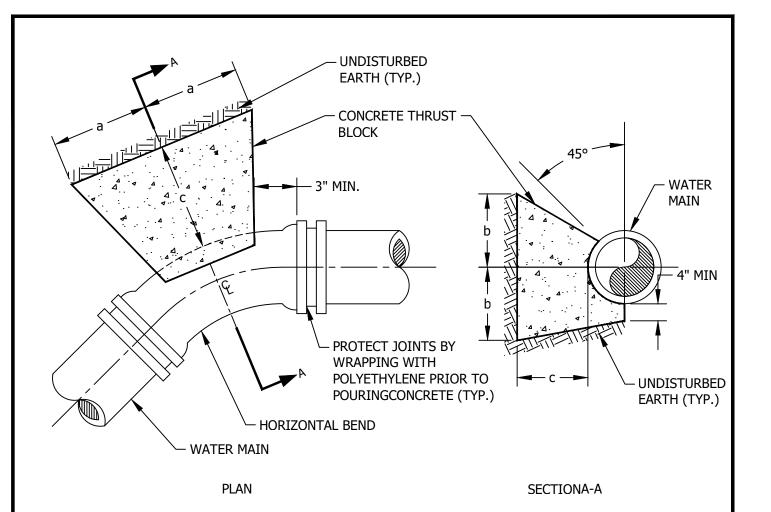
- 1. NA = NOT AVAILABLE IN THIS SIZE.
- 2. THIS TABLE IS BASED ON A STANDARD BEDDING (SEE PIPE BEDDING DETAIL DWG M-3.0) AND BACKFILL W = 120 POUNDS PER CUBIC FOOT.
- 3. FOR OTHER SIZES OF PIPE AND OTHER CONDITIONS NOT COVERED BY THIS TABLE, DESIGN CALCULATIONS FOR ALLOWABLE DEPTH OF BACKFILL SHALL BE SUBMITTED TO THE COUNTY FOR APPROVAL.
- 4. FOR PVC PIPE (SDR 35) MAXIMUM ALLOWABLE DEPTH OF BACKFILL SHALL BE 15 FEET FOR ALL SIZES. SEE DWG S-4.0.

	FOR SANITARY SEWERS	ISSUED	9/14/2020
ARLINGTON VIRGINIA	ARLINGTON COUNTY, VIRGINIA DEPARTMENT OF ENVIRONMENTAL SERVICES		NG NO. 5.0



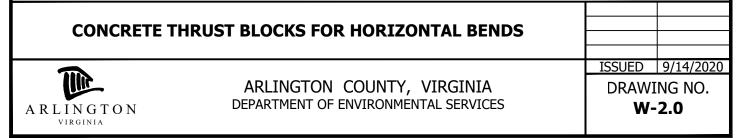
- 1. ALL SANITARY MANHOLES ARE TO REMAIN ACCESSIBLE AND PROTECTED DURING CONSTRUCTION PHASE.
- 2. THIS DETAIL IS TO BE USED ON ALL EXISTING AND NEW SANITARY MANHOLES PRIOR TO STARTING EXAVACATION OR GRADING.

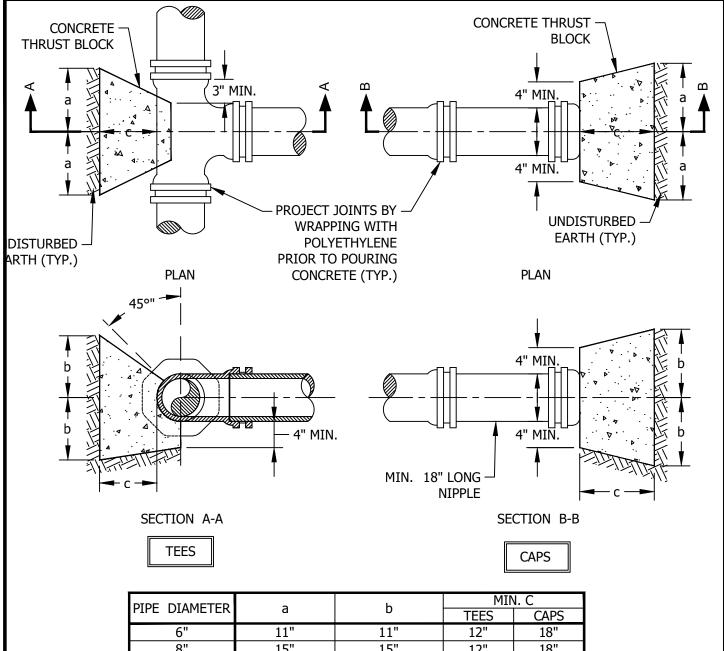




PIPE	HORIZONTAL BEND								MIN.
DIA.	11 1/4°	11 1/4° (1/32) 22 1/2° (1/16) 45° (1/8) 90° (1/4)					С		
	а	b	a	b	a	b	а	b	
6"	5"	7"	7"	7"	11"	9"	15"	12"	18"
8"	7"	8"	11"	9"	14"	12"	20"	16"	18"
12"	10"	10"	16"	12"	23"	16"	36"	20"	18"
16"	12"	14"	20"	16"	32"	20"	48"	24"	24"

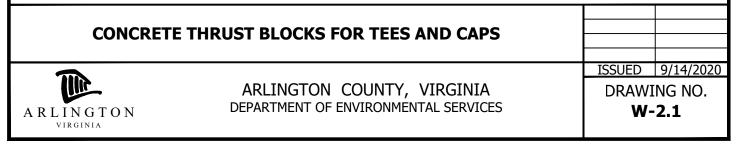
- 1. ALL BEARING SURFACES FOR CONCRETE BLOCKING SHALL BE UNDISTURBED EARTH WITH A MINIMUM BEARING VALUE OF 2,000 PSF. THE MINIMUM THICKNESS OF UNDISTURBED EARTH BEHIND THE BLOCKING SHALL BE 5 FEET.
- 2. BLOCKING SHOWN IS FOR A MAXIMUM STATIC PRESSURE OF 120 PSI PLUS WATER HAMMER ALLOWANCE OF 120 PSI.
- 3. FORM THE NON-BEARING SIDES OF THRUST BLOCKS BY USING PROPER FORMWORK.
- 4. SPECIAL BLOCKING DESIGN SHALL BE REQUIRED FOR CONDITIONS AND SIZES OTHER THAN THOSE INDICATED ON THIS SHEET.

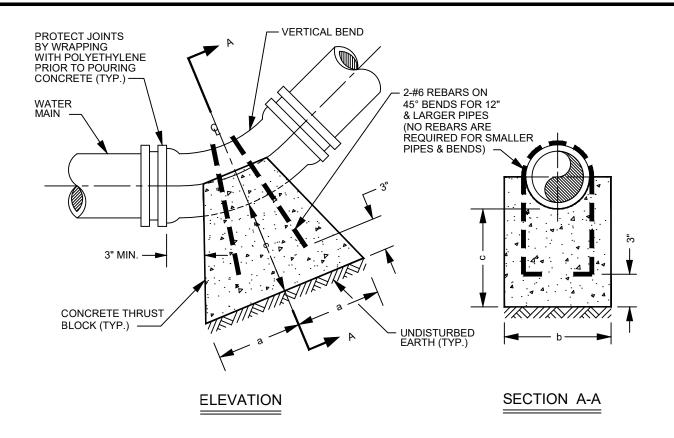




DIDE DIAMETED	2	h	MIN. C		
PIPE DIAMETER	a	U	TEES	CAPS	
6"	11"	11"	12"	18"	
8"	15"	15"	12"	18"	
12"	24"	20"	18"	18"	
16"	33"	24"	24"	24"	

- ALL BEARING SURFACES FOR CONCRETE BLOCKING SHALL BE UNDISTURBED EARTH WITH A MINIMUM BEARING VALUE OF 2,000 PSF. THE MINIMUM THICKNESS OF UNDISTURBED EARTH BEHIND THE BLOCKING SHALL BE 5 FEET.
- 2. BLOCKING SHOWN IS FOR A MAXIMUM STATIC PRESSURE OF 120 PSI PLUS WATER HAMMER ALLOWANCE OF 120 PSI. SPECIAL BLOCKING DESIGN SHALL BE REQUIRED FOR CONDITIONS AND SIZES OTHER THAN THOSE INDICATED ON THIS SHEET
- 3. FORM THE NON-BEARING SIDES OF THRUST BLOCKS BY USING PROPER FORMWORK.
- THE BLOCKS FOR THE TEES SHALL BE SIZED ACCORDING TO THE DIAMETER OF THE BRANCH MAIN. 4.

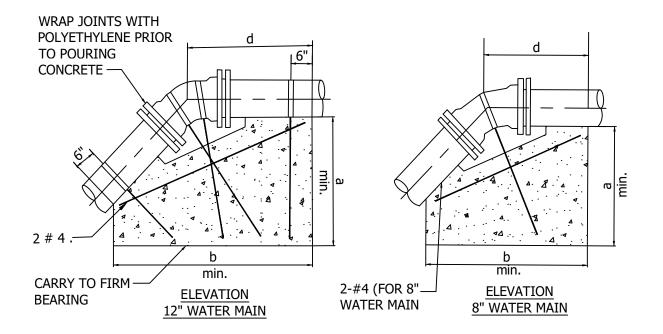


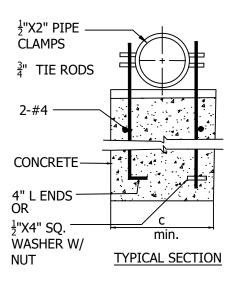


	LOWER VERTICAL BEND									
PIPE DIA.	11 1/4° (1/32)			22 1/2° (1/16)			45° (1/8)			
	а	b	С	а	b	С	а	b	С	
6"	3"	14"	9"	3"	14"	9"	6"	14"	9"	
8"	3"	16"	9"	5"	16"	9"	9"	16"	9"	
12"	4"	20"	9"	8"	20"	9"	14"	22"	14"	
16"	6"	24"	9"	11"	24"	11"	19"	26"	19"	

- 1. ALL BEARING SURFACES FOR CONCRETE BLOCKING SHALL BE UNDISTURBED EARTH WITH A MINIMUM BEARING VALUE OF 2,000 PSF. THE MINIMUM THICKNESS OF UNDISTURBED EARTH BENEATH THE BLOCKING SHALL BE 5 FEET.
- 2. BLOCKING SHOWN IS FOR A MAXIMUM STATIC PRESSURE OF 120 PSI PLUS WATER HAMMER ALLOWANCE OF 120 PSI. SPECIAL BLOCKING DESIGN SHALL BE REQUIRED FOR CONDITIONS AND SIZES OTHER THAN THOSE INDICATED ON THIS SHEET.
- 3. FORM THE NON-BEARING SIDES OF THRUST BLOCKS BY USING PROPER FORMWORK.
- 4. PAINT ALL EXPOSED STEEL WITH TWO COATS OF ASPHALT PAINT.

	FOR LOWER VERTICAL BENDS	ISSUED	9/14/2020
ARLINGTON VIRGINIA	ARLINGTON COUNTY, VIRGINIA DEPARTMENT OF ENVIRONMENTAL SERVICES		NG NO. 2.2

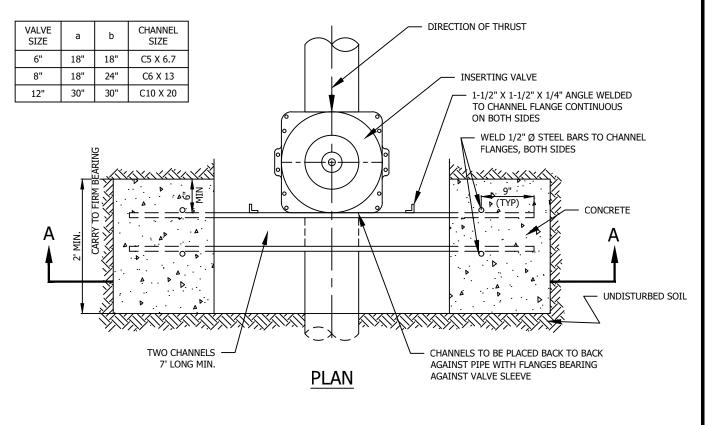


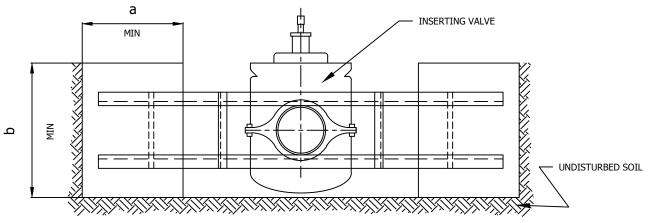


	11-1/4° BEND			22-1/2° BEND			45° BEND		
	6"	8"	12"	6"	8"	12"	6"	8"	12"
a	21"	27"	36"	30"	39"	48"	42"	48"	60"
b	27"	36"	51"	36"	54"	78"	42"	54"	84"
С	30"	30"	36"	30"	30"	36"	30"	30"	36"
d	15"	21"	27"	21"	30"	42"	27"	36"	48"

- BLOCKING SHOWN IS FOR MAXIMUM STATIC PRESSURE OF 120 PSI PLUS WATER HAMMER ALLOWANCE OF 120 PSI. SPECIAL BLOCKING SHALL BE DESIGNED FOR SIZES AND CONDITIONS OTHER THAN THOSE INDICATED.
- 2. PAINT ALL EXPOSED STEEL WITH 2 COATS OF ASPHALT PAINT
- 3. FORM SIDES OF THRUST BLOCKS.

	CONCRETE THRUST BLOCKS					
	UPPER VERTICAL BENDS					
		ISSUED	9/14/2020			
ARLINGTON COUNTY, VIRGINIA		DRAW:	ING NO.			
ARLINGTON	DEPARTMENT OF ENVIRONMENTAL SERVICES	W-	-2.3			



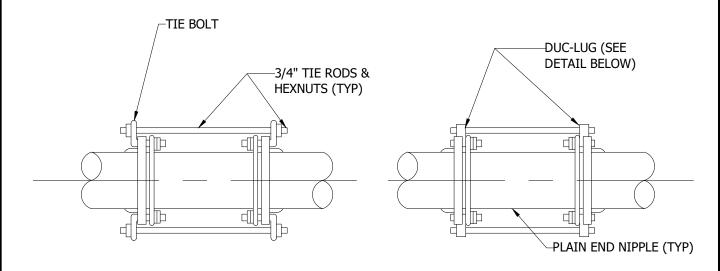


SECTION A - A

NOTES:

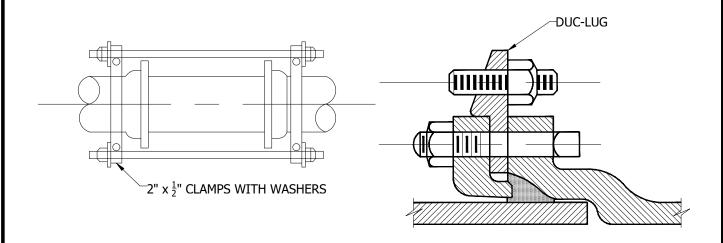
- ALL BEARING SURFACES FOR CONCRETE BLOCKING SHALL BE UNDISTURBED EARTH WITH A MINIMUM BEARING VALUE OF 2000 PSF. THE MINIMUM THICKNESS OF UNDISTURBED EARTH BEHIND THE BLOCKING SHALL BE 5 FEET.
- 2. BLOCKING IS SHOWN FOR MAXIMUM STATIC PRESSURE OF 120 PSI PLUS WATER HAMMER ALLOWANCE OF 120 PSI. SPECIAL BLOCKING SHALL BE DESIGNED FOR OTHER THAN THOSE INDICATED ON THE PLANS.
- PAINT ALL EXPOSED METAL WITH TWO COATS OF ASPHALT PAINT.

CONCRETE THRUST BLOCKS INSERTING VALVES ISSUED 9/14/2020 ARLINGTON COUNTY, VIRGINIA DEPARTMENT OF ENVIRONMENTAL SERVICES W-2.4



TIE BOLT TYPE





SOCKET CLAMP TYPE

- 1. PAINT ALL EXPOSED STEEL WITH TWO COATS OF ASPHALT PAINT.
- 2. POSITIVE LOCK TYPE RESTRAINED JOINTS MAY BE USED IF APPROVAL BY WATER , SEWER & STREETS DIVISION.
- SOCKET CLAMPS MAY BE USED ONLY FOR TIES TO EXISTING 8" & SMALLER POURED JOINTS.

DUC-LUG DETAIL

PIPE SIZE	NO. OF TIE RODS
6"	2
8"	2
12"	4
14"	5
16"	6
20"	7

RESTRAINED JOINT DETAIL

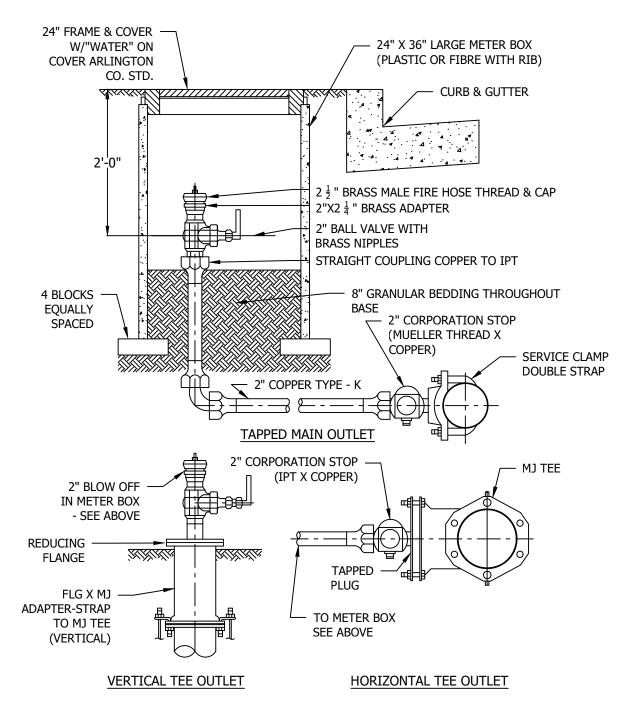


NOTE:

ARLINGTON COUNTY, VIRGINIA
DEPARTMENT OF ENVIRONMENTAL SERVICES

ISSUED 9/14/2020 DRAWING NO.

W-3.0



LEGEND:

FLG = Flanged

IPT = Iron pipe thread

NRS = Non rising stem

MJ = Mechanical joint

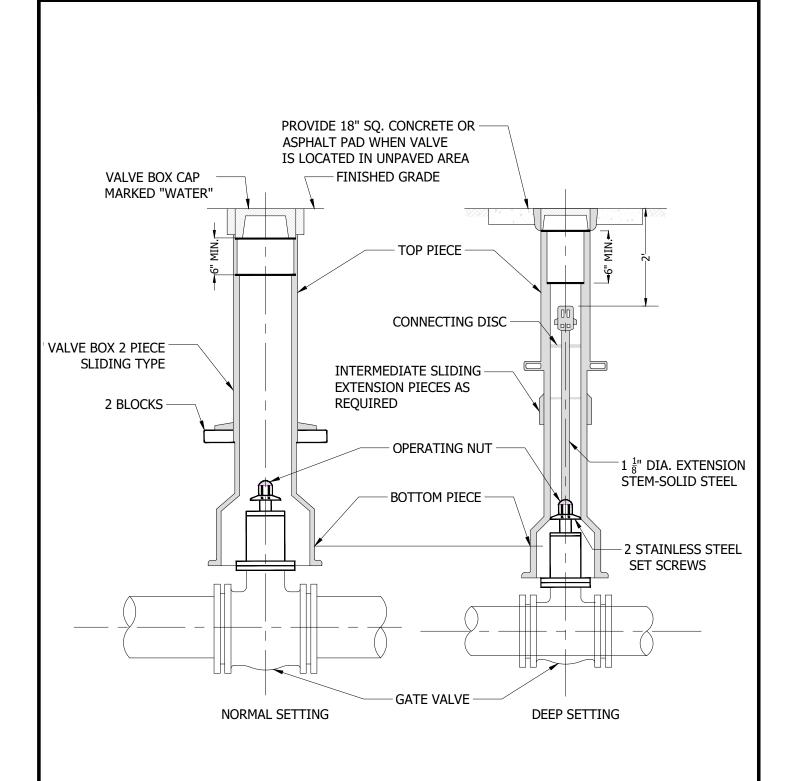
BLOWOFF DETAILS



ARLINGTON COUNTY, VIRGINIA
DEPARTMENT OF ENVIRONMENTAL SERVICES

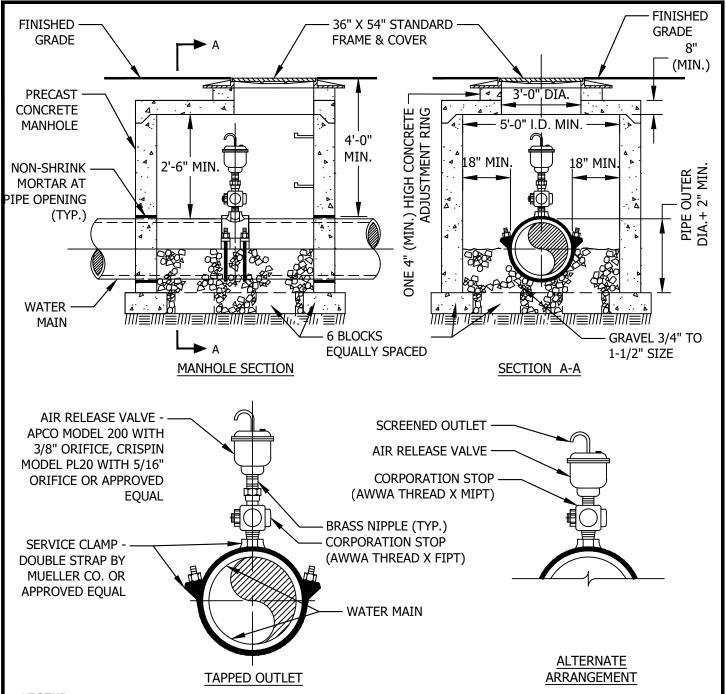
ISSUED | 9/14/2020 DRAWING NO.

W-4.0



- 1. PROVIDE EXTENSION STEM WHEN OPERATING NUT IS OVER 5 FEET DEEP.
- 2. VALVES SHALL BE STRAPPED TO ADJACENT FITTINGS UNLESS DIRECTED OTHERWISE.

	GATE VALVE SETTING		
		ISSUED	9/14/2020
	ARLINGTON COUNTY, VIRGINIA DEPARTMENT OF ENVIRONMENTAL SERVICES	DRAWING NO.	
ARLINGTON VIRGINIA		W-	-5.0



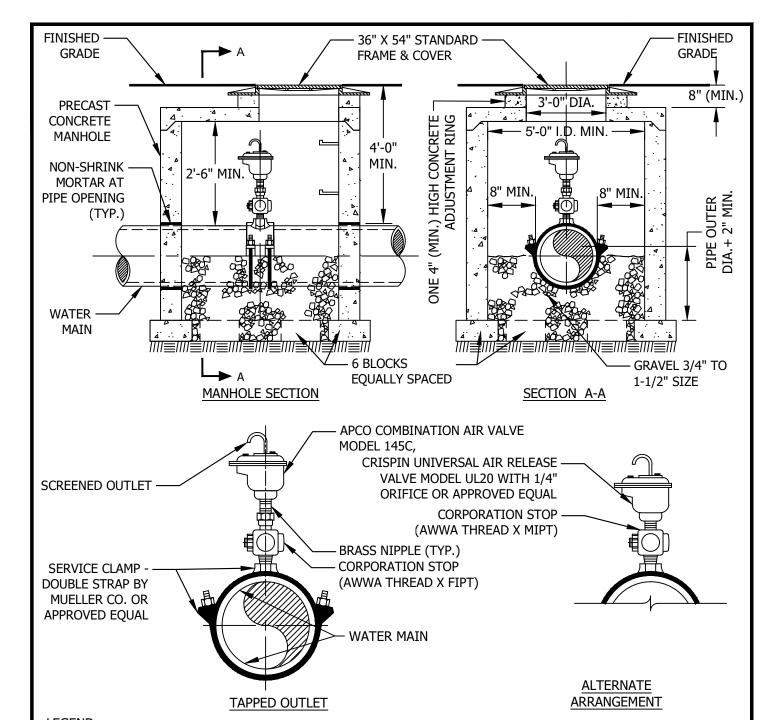
LEGEND:

FIPT = FEMALE IRON THREAD
MIPT = MALE IRON PIPE THREAD

NOTES:

- AIR RELEASE VALVE AND PIPING SHALL BE 2-INCH UNLESS INDICATED OTHERWISE.
- 2. AIR RELEASE VALVE SHALL NOT BE LOCATED IN AN AREA SUBJECT TO FLOODING OR HIGH WATER TABLE. SPECIAL VENT PIPING AND SUMP PUMP WILL BE REQUIRED WHERE SUCH LOCATION CANNOT BE AVOIDED.
- 3. TO PROTECT FROM FREEZING, A 4' X 4' X 3/32" THICK MINICEL CROSS LINKED POLYETHYLENE PIT INSULATING BLANKET BY FORD METER BOX CO. OR APPROVED EQUAL SHALL BE WRAPPED AROUND THE AIR RELEASE VALVE.

AIR RELEASE VALVE ISSUED 9/14/2020 ARLINGTON COUNTY, VIRGINIA DEPARTMENT OF ENVIRONMENTAL SERVICES DRAWING NO. W-6.0



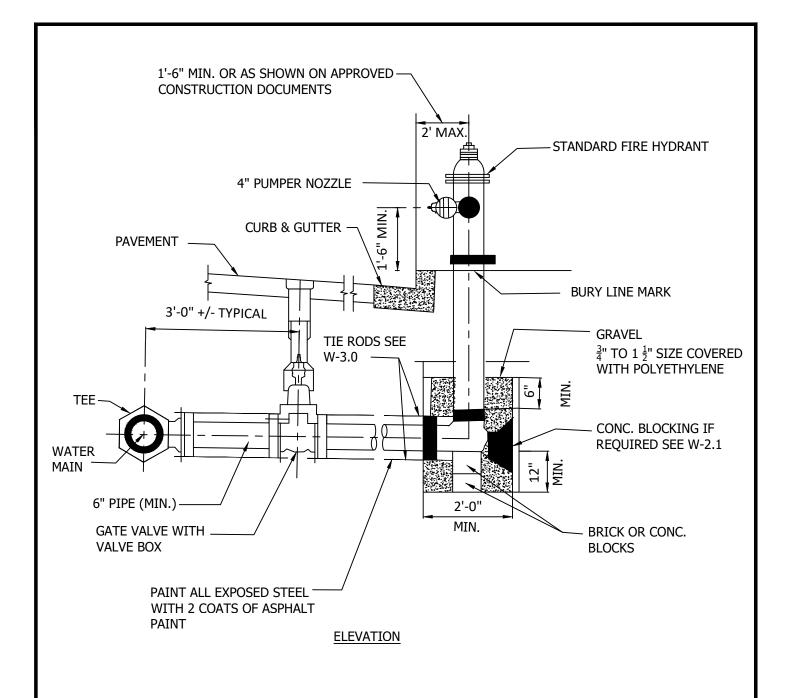
LEGEND:

FIPT= FEMALE IRON THREAD MIPT= MALE IRON PIPE THREAD

NOTES:

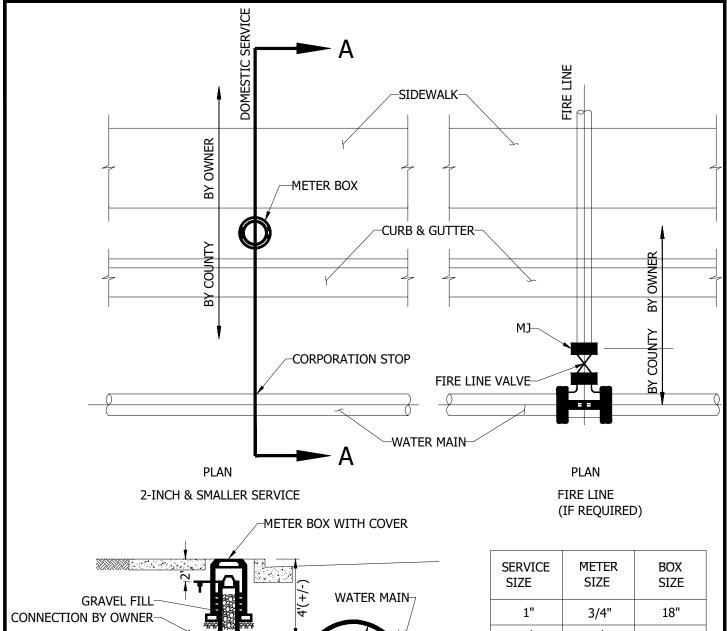
- 1. AIR AND VACUUM VALVE AND PIPING SHALL BE 2-INCH UNLESS INDICATED OTHERWISE.
- 2. AIR AND VACUUM VALVE SHALL NOT BE LOCATED IN AN AREA SUBJECT TO FLOODING OR HIGH WATER TABLE. SPECIAL VENT PIPING AND SUMP PUMP WILL BE REQUIRED WHERE SUCH LOCATION CANNOT BE AVOIDED.
- TO PROTECT FROM FREEZING, A 4' X 4' X 3/32" THICK MINICEL CROSS LINKED POLYETHYLENE PIT INSULATING BLANKET BY FORD METER BOX CO. OR APPROVED EQUAL SHALL BE WRAPPED AROUND THE AIR RELEASE VALVE.

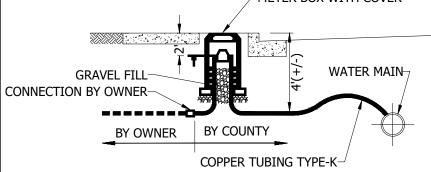
ARLINGTON DEPARTMENT OF ENVIRONMENTAL SERVICES ARLINGTON DEPARTMENT OF ENVIRONMENTAL SERVICES ISSUED 9/14/2020 DRAWING NO. W-6.1



- 1. ALL VALVES AND FIRE HYDRANTS SHALL BE STRAPPED TO MAIN UNLESS DIRECTED OTHERWISE.
- 2 PROVIDE VERTICAL OFFSETS OR BENDS AS REQUIRED TO SET HYDRANTS AT PROPER GRADE.
- 3 MAXIMUM BURY DEPTH OF FIRE HYDRANT IS 6' UNLESS APPROVED OTHERWISE.

FIRE HYDRANT SETTING			
	TIRE HIDRAIN SETTING		
		ISSUED	9/14/2020
	ARLINGTON COUNTY, VIRGINIA		ING NO.
ARLINGTON VIRGINIA	DEPARTMENT OF ENVIRONMENTAL SERVICES	W-	7.0





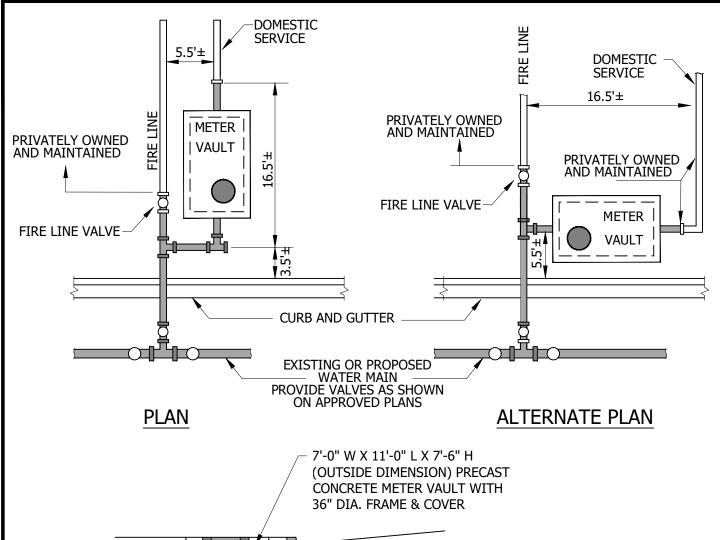
SERVICE SIZE	METER SIZE	BOX SIZE
1"	3/4"	18"
1 ½"	1 ½"	24"
2"	2"	36"

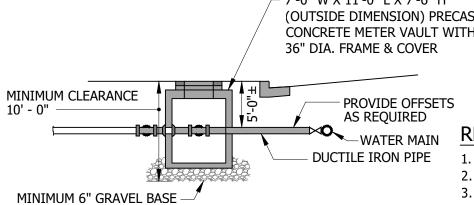
SECTION A-A

LEGEND MJ - MECHANICAL JOINT

- SERVICES WILL BE INSTALLED AFTER ALL FEES HAVE BEEN PAID AND ALL SITE CONDITIONS FOR SETTING THE METER HAVE BEEN MET.
- THE PROPERTY OWNER'S PLUMBER SHALL BE RESPONSIBLE FOR CONNECTING TO THE COUNTY METER INSTALLATION. PLUMBER SHALL NOT ENTER METER BOX.

WATER SERVICE CONNECTIONS 2-INCH AND SMALLER			7/01/2020 N & DATE
ARLINGTON VIRGINIA	ARLINGTON COUNTY, VIRGINIA DEPARTMENT OF ENVIRONMENTAL SERVICES		NG NO. 8.0





REFERENCE DRAWINGS

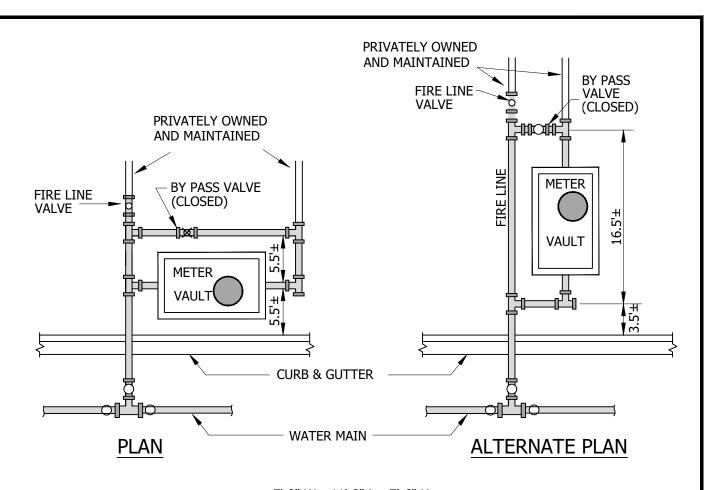
- 1. VAULT W-8.3
- 2. PIPING W-9.3 & W-9.4
- FRAME & COVER W-9.9

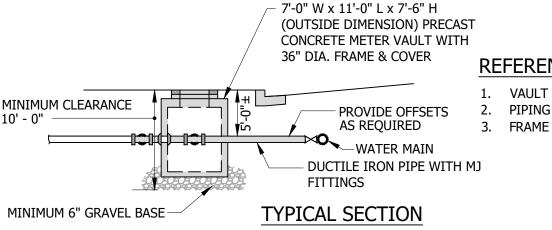
NOTES:

TYPICAL SECTION

- 1. METER WILL BE INSTALLED BY COUNTY AFTER ALL FEES HAVE BEEN PAID AND ALL SITE CONDITIONS FOR SETTING THE METER HAVE BEEN MET.
- 2. THE DEVELOPER SHALL BE RESPONSIBLE FOR INSTALLING VAULT AND PIPING EXCEPT COUNTY PORTION AS OUTLINED IN DRAWING W-9.3 & W-9.4.
- 3. FIRE LINE AND FIRE LINE VALVE WILL BE OMITTED IF NO FIRE LINE IS REQUIRED.
- 4. SEPARATE FIRE LINE INSTALLATION SHALL BE SIMILAR TO THE ONE SHOWN IN W- 8.0.
- 5. ALTERNATE PIPING CONFIGURATION WILL BE INSTALLED AS NECESSARY FOR SPECIAL SITUATIONS AS APPROVED.
- A PERMANENT CLEAR SPACE 20' X 15' X 10' DEEP SHALL BE PROVIDED BEHIND THE CURB FOR WATER METER VAULT.







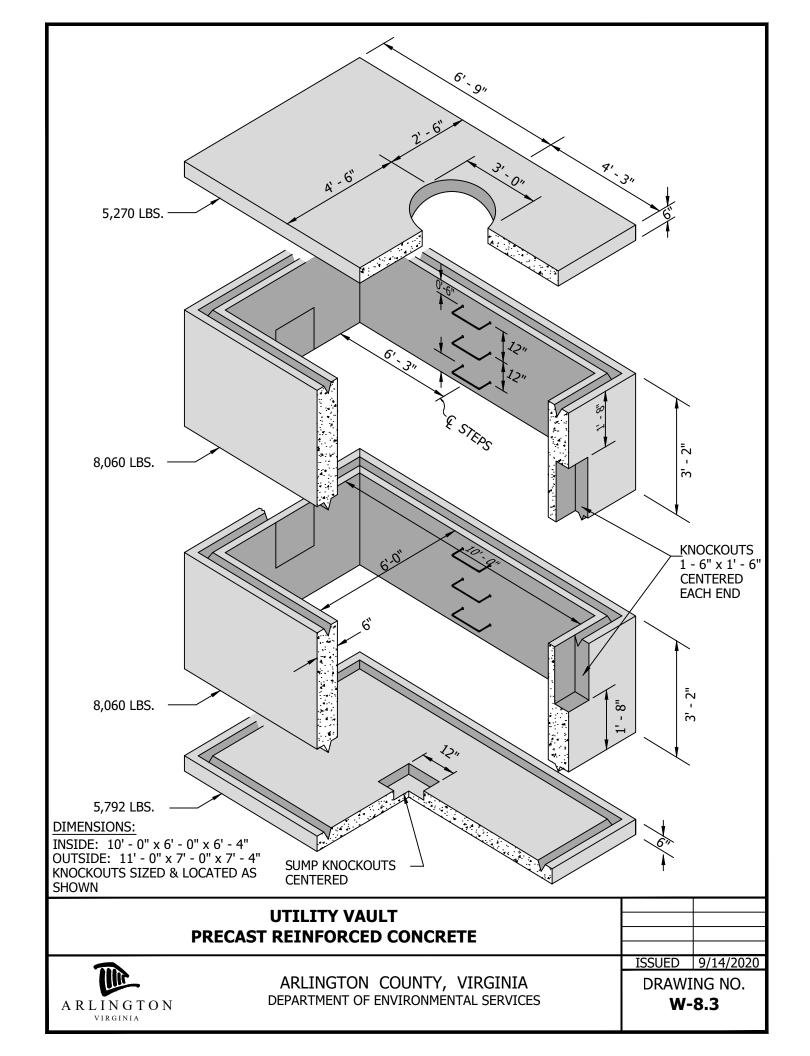
REFERENCE DRAWINGS

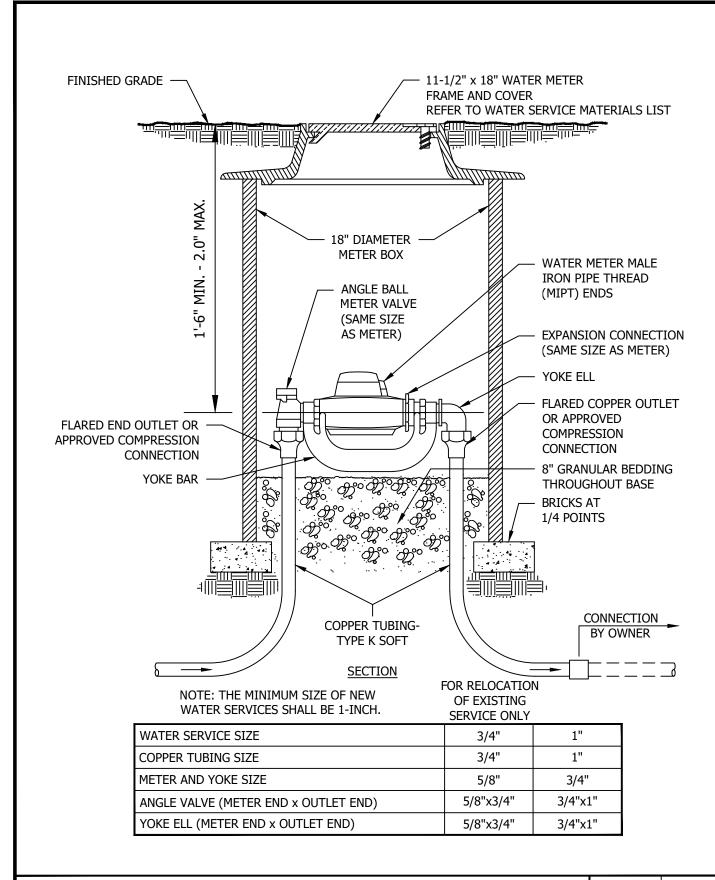
- **VAULT W-8.3**
- PIPING W-9.5 & W-9.6
- FRAME & COVER W-9.9

NOTES:

- METER WILL BE INSTALLED BY COUNTY AFTER ALL FEES HAVE BEEN PAID AND ALL SITE CONDITIONS FOR SETTING THE METER HAVE BEEN MET.
- THE DEVELOPER SHALL BE RESPONSIBLE FOR INSTALLING VAULT AND PIPING EXCEPT COUNTY PORTION AS 2. OUTLINED IN DRAWING W-9.5 & W-9.6.
- FIRE LINE AND FIRE LINE VALVE WILL BE OMITTED IF NO FIRE LINE IS REQUIRED. 3.
- SEPARATE FIRE LINE INSTALLATION SHALL BE SIMILAR TO THE ONE SHOWN IN W-8.0.
- ALTERNATE PIPING CONFIGURATION WILL BE INSTALLED AS NECESSARY FOR SPECIAL SITUATIONS AS APPROVED.
- A PERMANENT CLEAR SPACE 25' X 20' X 10' DEEP SHALL BE PROVIDED BEHIND THE CURB FOR WATER METER VAULT AND BY PASS.

WATER SERVICE CONNECTIONS **6 INCH AND 8 INCH BY DEVELOPER** ISSUED 9/14/2020 ARLINGTON COUNTY, VIRGINIA DRAWING NO. DEPARTMENT OF ENVIRONMENTAL SERVICES M-8.2 ARLINGTON VIRGINIA



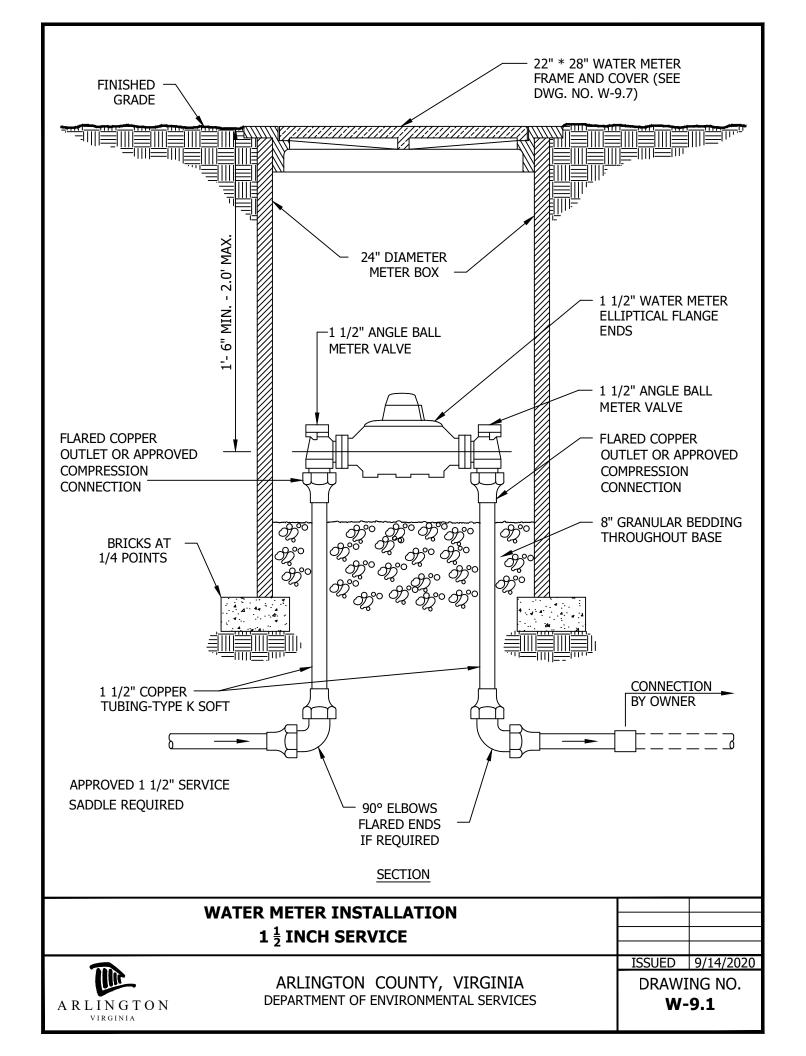


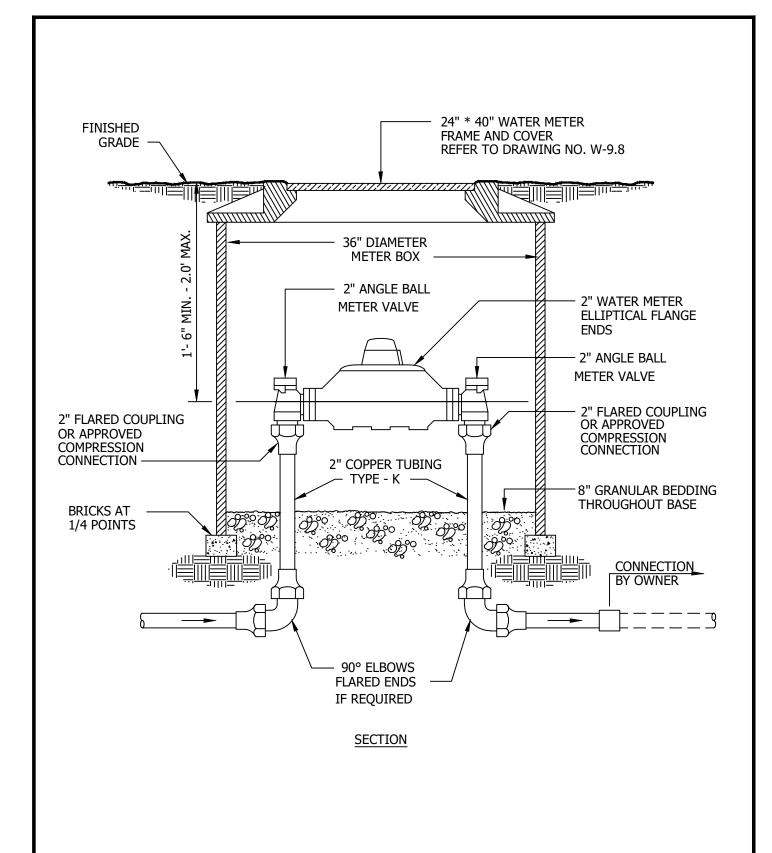
WATER MET	ER INST	ALLATION
3/4-INCH AND	1-INCH	SERVICE



ARLINGTON COUNTY, VIRGINIA
DEPARTMENT OF ENVIRONMENTAL SERVICES

DRAWING NO. **W-9.0**





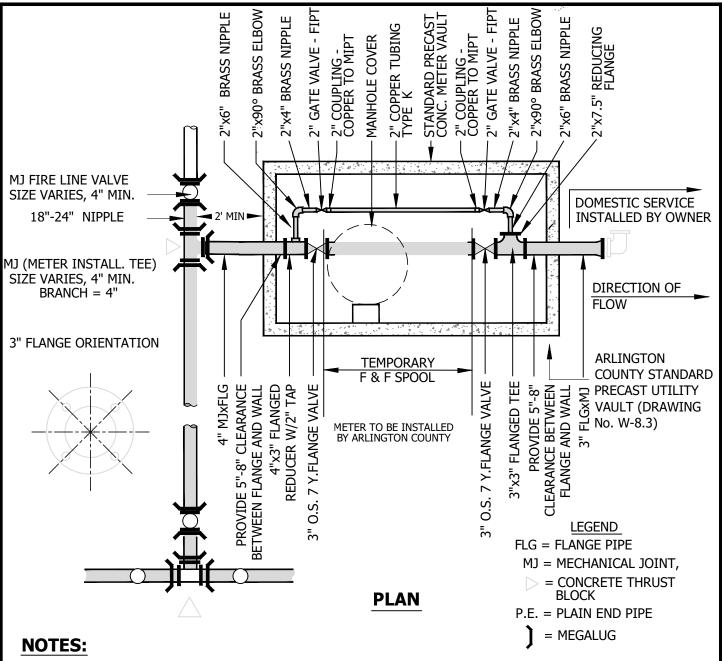
APPROVED 2" SERVICE SADDLE REQUIRED

WATER METER INSTALLATION **2 INCH SERVICE** ISSUED 7/1/2020 ARLINGTON COUNTY, VIRGINIA DRAWING NO.

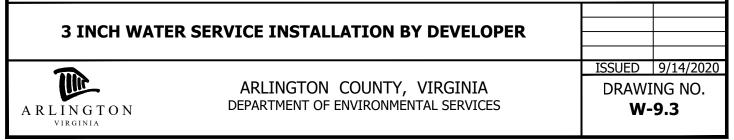
ARLINGTON VIRGINIA

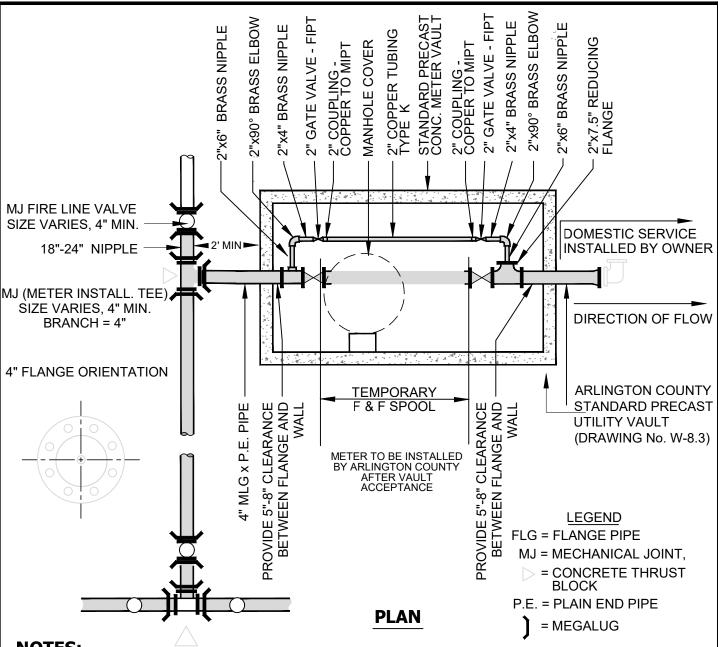
DEPARTMENT OF ENVIRONMENTAL SERVICES

W-9.2

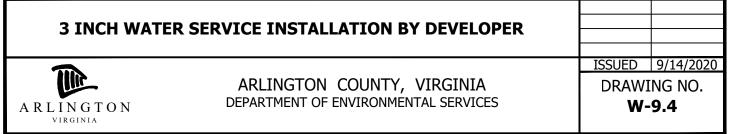


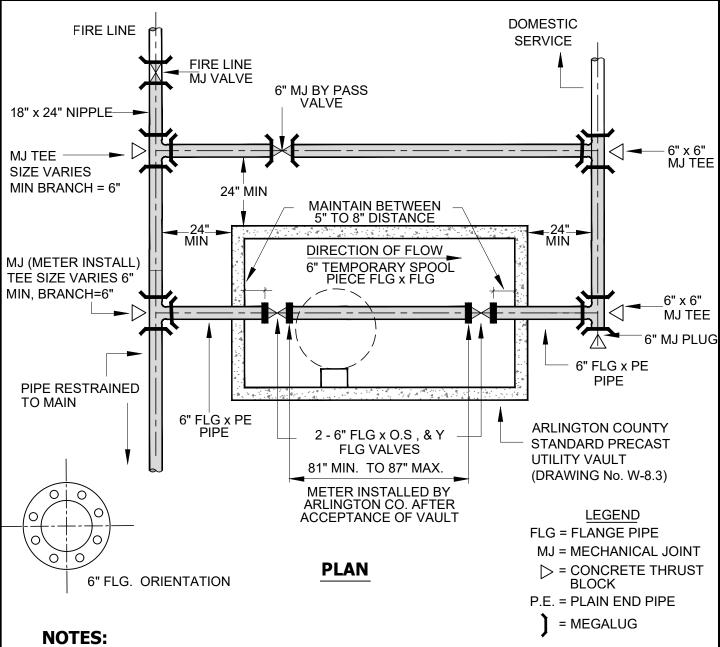
- 1. FOR OTHER WATER SERVICE DETAILS SEE DRAWING NO. W-8.1, W-8.3 AND W-9.9.
- 2. PIPE DIAMETER FROM MAIN TO METER INSTALLATION TEE AND FIRE LINE VALVE SHALL BE A MINIMUM OF 4".
- 3. ALL BURIED PIPE AND FITTINGS 3" AND LARGER, SHALL BE DUCTILE IRON WITH POLYETHYLENE ENCASEMENT (8-MILS).
- 4. PROVIDE THRUST RESTRAINTS FOR ALL PIPES, VALVES AND FITTINGS. THRUST RESTRAINT SHALL INCLUDE BOTH CONCRETE THRUST BLOCKS, AS PER DRAWING No. W-2.0, W-2.1 AND W-2.2 AS WELL AS JOINT RESTRAINTS SUCH AS MEGALUGS.
- 5. WHEN LOOKING IN THE DIRECTION OF FLOW, VAULT STEPS SHALL BE LOCATED ON THE RIGHT HAND SIDE OF VAULT.
- CONTRACTOR TO TEMPORARILY FURNISH AND INSTALL A 3" FLG x FLG SPOOL SECTION OF PIPE INSIDE THE VAULT TO FACILITATE CONTRACTOR'S HYDROSTATIC TESTING AND ASSURE PROPER ALIGNMENT OF FLANGES FOR FUTURE METER INSTALLATION.





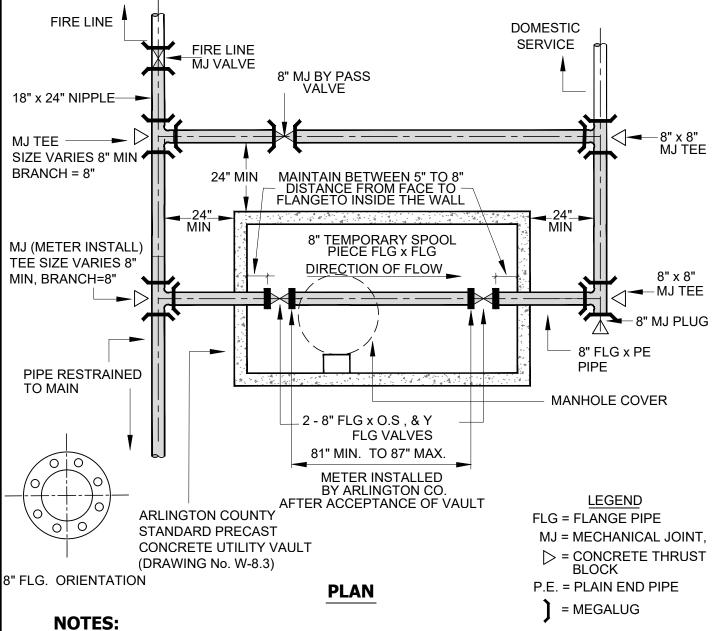
- FOR OTHER WATER SERVICE DETAILS SEE DRAWING NO. W-8.1, W-8.3 AND W-9.9.
- PIPE DIAMETER FROM MAIN TO METER INSTALLATION TEE AND FIRE LINE VALVE SHALL BE A MINIMUM OF 4".
- 3. ALL BURIED PIPES AND FITTINGS 3" AND LARGER SHALL BE DUCTILE IRON WITH POLYETHYLENE ENCASEMENT (8-MILS).
- 4. PROVIDE THRUST RESTRAINTS FOR ALL PIPES, VALVES AND FITTINGS. THRUST RESTRAINT SHALL INCLUDE BOTH CONCRETE THRUST BLOCKS AS PER DRAWING No. W-2.0, W-2.1 AND W-2.2, AS WELL AS JOINT RESTRAINTS SUCH AS MEGALUGS.
- 5. WHEN LOOKING IN THE DIRECTION OF FLOW, VAULT STEPS SHALL BE LOCATED ON THE RIGHT HAND SIDE OF VAULT.
- 6. CONTRACTOR TO TEMPORARILY FURNISH AND INSTALL A 3" FLG x FLG SPOOL SECTION OF PIPE INSIDE THE VAULT TO FACILITATE CONTRACTOR'S HYDROSTATIC TESTING AND ASSURE PROPER ALIGNMENT OF FLANGES FOR FUTURE METER INSTALLATION.





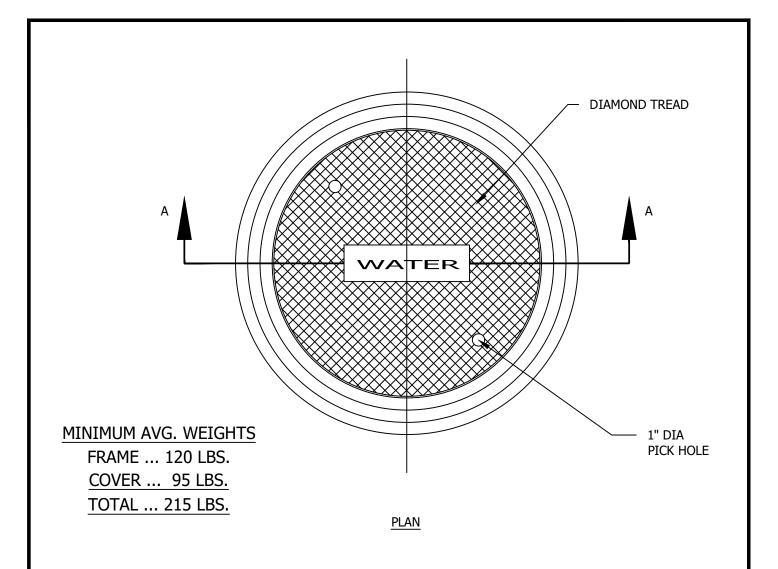
- 140 I LS.
- FOR OTHER WATER UTILITY VAULT DETAILS SEE DRAWING No. W-8.2, W-8.3 AND W-9.9.
- 2. O S & Y VALVE REQUIREMENTS: REFER TO SECTION 02550, PART 2.4-C OF THE ARLINGTON COUNTY CONSTRUCTION STANDARDS SPECIFICATIONS.
- 3. ALL BURIED PIPE AND FITTING SHALL BE DUCTILE IRON WITH POLYETHYLENE ENCASEMENT.
- 4. PROVIDE THRUST RESTRAINT FOR ALL PIPES, VALVES AND FITTINGS. THRUST RESTRAINT SHALL INCLUDE BOTH CONCRETE THRUST BLOCKS, AS PER DRAWINGS No. W-2.0, W-2.1 AND W-2.2 AS WELL AS JOINT RESTRAINT SUCH AS MEGALUGS.
- 5. WHEN LOOKING IN THE DIRECTION OF FLOW, VAULT STEPS SHALL BE LOCATED ON THE RIGHT HAND SIDE OF VAULT.
- 6. CONTRACTOR TO TEMPORARY FURNISH AND INSTALL A 6" FLG x FLG SPOOL SECTION OF PIPE INSIDE THE VAULT TO FACILITATE CONTRACTOR'S HYDROSTATIC TESTING AND TO ASSURE PROPER ALIGNMENT OF FLANGES FOR FUTURE METER INSTALLATION.

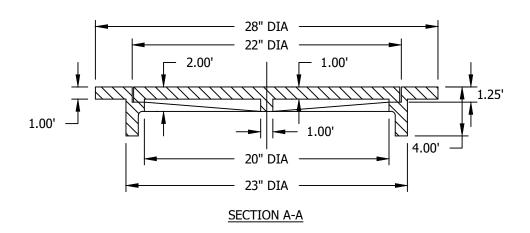




- FOR OTHER WATER UTILITY VAULT DETAILS SEE DRAWING No. W-8.2, W-8.3 AND W-9.9
- O S & Y VALVE REQUIREMENTS: REFER TO SECTION 02550, PART 2.4-C OF THE ARLINGTON COUNTY CONSTRUCTION STANDARDS SPECIFICATIONS.
- ALL BURIED PIPE AND FITTING SHALL BE DUCTILE IRON WITH POLYETHYLENE 3. ENCASEMENT.
- PROVIDE THRUST RESTRAINT FOR ALL PIPE, VALVES AND FITTINGS. THRUST RESTRAINT SHALL INCLUDE BOTH CONCRETE THRUST BLOCKS. AS PER DRAWINGS No. W-2.0, W-2.1 AND W-2.2 AS WELL AS JOINT RESTRAINT SUCH AS MEGALUGS.
- WHEN LOOKING IN THE DIRECTION OF FLOW, VAULT STEPS SHALL BE LOCATED ON THE RIGHT HAND SIDE OF VAULT.
- CONTRACTOR TO TEMPORARY FURNISH AND INSTALL A 8" FLG x FLG SPOOL SECTION OF PIPE INSIDE THE VAULT TO FACILITATE CONTRACTOR'S HYDROSTATIC TESTING AND TO ASSURE PROPER ALIGNMENT OF FLANGES FOR FUTURE METER INSTALLATION.

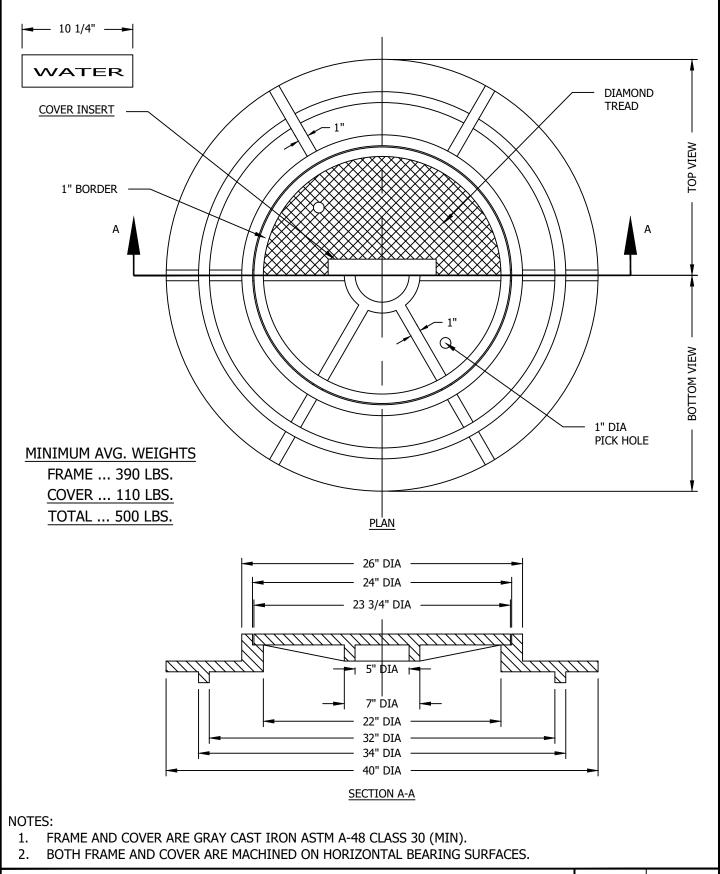




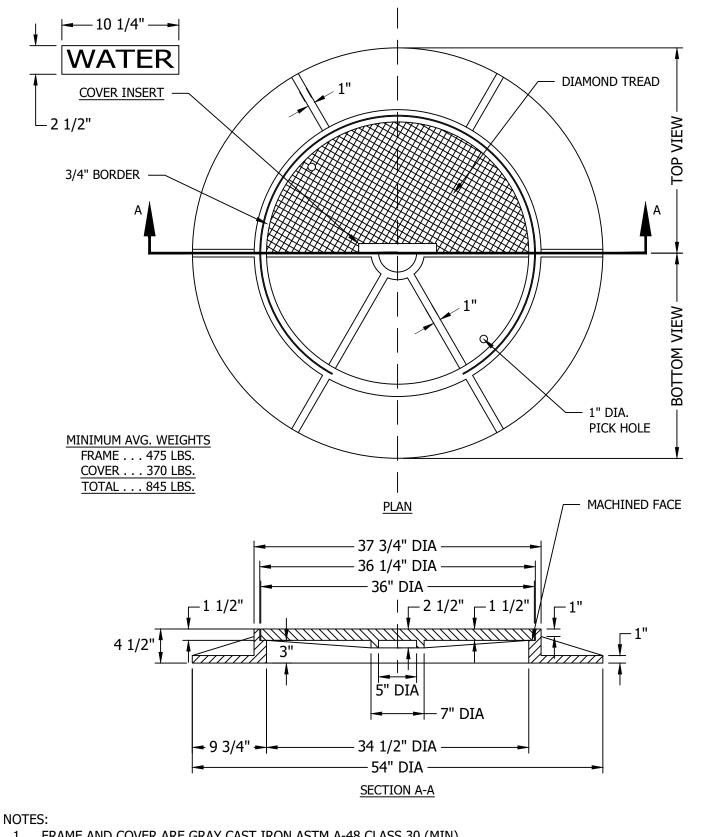


1. FRAME AND COVER ARE GRAY CAST IRON ASTM A-48 CLASS 30 (MIN).

22"x28" FRAME AND COVER FOR 24" I.D. WATER METER BOX			
		ISSUED	9/14/2020
ARLINGTON VIRGINIA	ARLINGTON COUNTY, VIRGINIA DEPARTMENT OF ENVIRONMENTAL SERVICES	DRAWI	, ,



24"x40" FRAME AND COVER FOR 36" I.D. WATER METER BOX ISSUED 9/14/2020 ARLINGTON COUNTY, VIRGINIA DEPARTMENT OF ENVIRONMENTAL SERVICES W-9.8



- FRAME AND COVER ARE GRAY CAST IRON ASTM A-48 CLASS 30 (MIN).
- BOTH FRAME AND COVER ARE MACHINED ON HORIZONTAL BEARING SURFACES.

36"x54" FRAME AND COVER FOR CONCRETE WATER METER VAULT ISSUED 9/14/2020 ARLINGTON COUNTY, VIRGINIA DRAWING NO. DEPARTMENT OF ENVIRONMENTAL SERVICES W-9.9 ARLINGTON

ARLINGTON COUNTY WATER METERS				
SERVICE SIZE	METER SIZE	METER TYPE	NORMAL OPERATING RANGE (GPM)	MAXIMUM CONTINUOUS FLOW (GPM)
3/4"	5/8"	DISC	0.50-30	15
1"	3/4"	DISC	0.50-30	15
1 1/4"	1"	DISC	0.75-50	25
1 1/2"	1 1/2"	DISC	1.25-100	50
2"	2"	DISC	2-160	80
3"	3"	TURBO COMPOUND	0.50-450	350
4"	4"	TURBO COMPOUND	0.75-1250	1000
6"	6"	TURBO	20-2650	1750
8"	8"	TURBO	35-3100	2000

WATER	METER
FACT S	SHEET



ARLINGTON COUNTY, VIRGINIA DEPARTMENT OF ENVIRONMENTAL SERVICES

ISSUED 9/14/2020 DRAWING NO. **W-10.0**