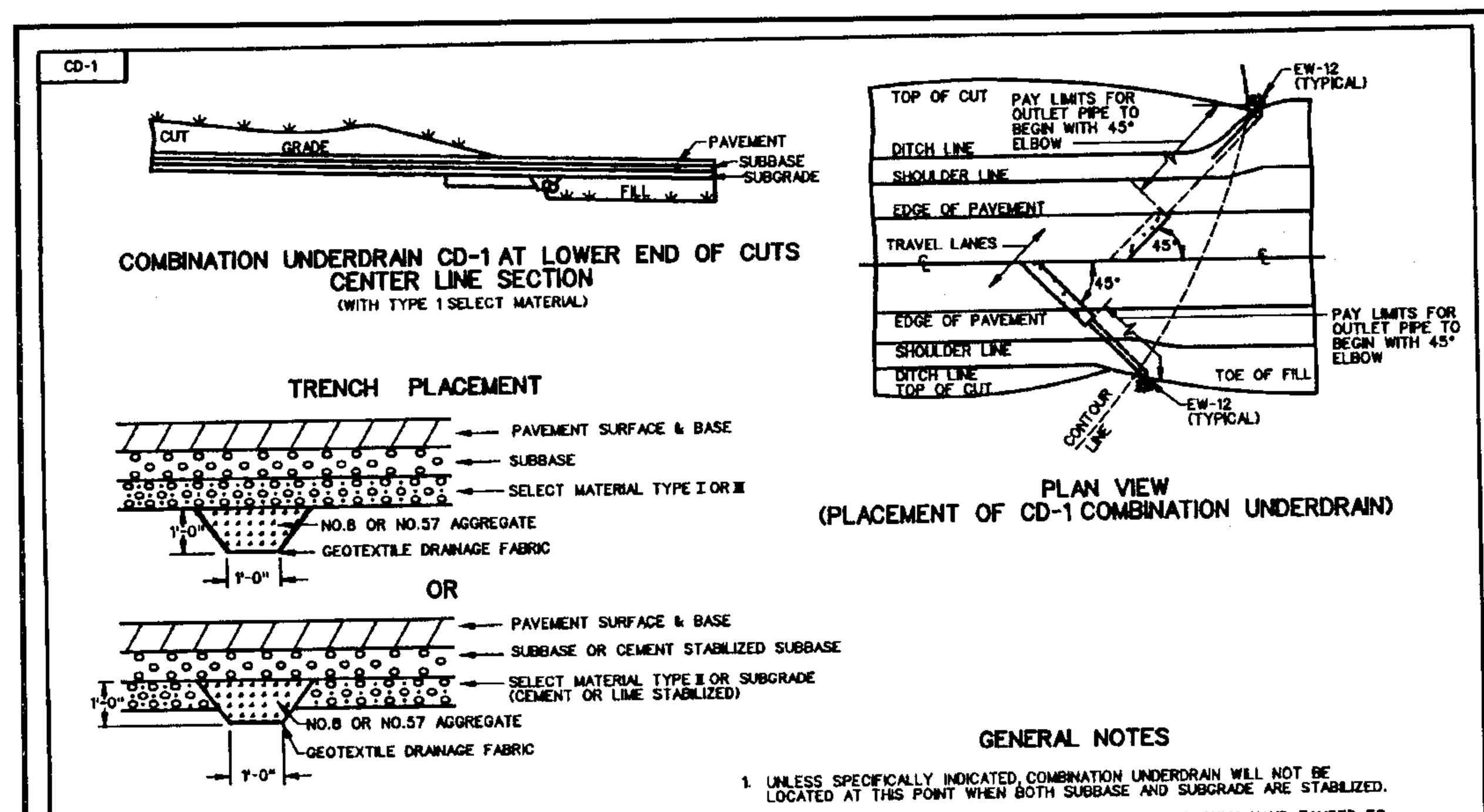
CD-1


CUT
GRADE
PAVEMENT
SUBBASE
SUBGRADE
FILL
TOP OF CUT
PAY LIMITS FOR OUTLET PIPE TO BEGIN WITH 45° ELBOW
DITCH LINE
SHOULDER LINE
EDGE OF PAVEMENT
TRAVEL LANES
45°
EW-12 (TYPICAL)
TOE OF FILL
CONTOUR LINE
PAVEMENT SURFACE & BASE
SUBBASE
SELECT MATERIAL TYPE I OR II
NO.8 OR NO.57 AGGREGATE
GEOTEXTILE DRAINAGE FABRIC
1'-0"
OR
SUBBASE OR CEMENT STABILIZED SUBBASE
SELECT MATERIAL TYPE II OR SUBGRADE (CEMENT OR LIME STABILIZED)

COMBINATION UNDERDRAIN CD-1 AT LOWER END OF CUTS CENTER LINE SECTION
(WITH TYPE 1 SELECT MATERIAL)

TRENCH PLACEMENT

PLAN VIEW
(PLACEMENT OF CD-1 COMBINATION UNDERDRAIN)

NON-PERFORATED OUTLET PIPE

TYPE OF PIPE	CRUSHING STRENGTH			
	* W.T.	4" NOM. DIAMETER	* W.T.	6" NOM. DIAMETER
CORRUGATED ALUMINUM			0.048	
SMOOTH WALL PVC	.103		0.153	
SMOOTH WALL PE		70 PSI ***		70 PSI ***

* WALL THICKNESS (MIN) - INCHES
*** TESTED ACCORDING TO ASTM D-2412 AT 5% DEFLECTION.

GENERAL NOTES

1. UNLESS SPECIFICALLY INDICATED, COMBINATION UNDERDRAIN WILL NOT BE LOCATED AT THIS POINT WHEN BOTH SUBBASE AND SUBGRADE ARE STABILIZED.
2. TRENCH SHALL BE FILLED WITH AGGREGATE AND THROUGHLY HAND TAMPED TO INSURE COMPACTNESS.
3. OUTLET PIPE SHALL BEGIN AT THE EDGE OF THE TRAVEL LANE PAVEMENT AND SHALL BE PLACED ON A GRADE PARALLEL TO THE SHOULDER SLOPE 2% MIN. (3% DESIRABLE) GRADE.
4. ON CURB AND GUTTER SECTIONS, WHERE IT IS IMPOSSIBLE TO OTHERWISE PROVIDE OUTLETS FOR UNDERDRAINS, THEY ARE TO BE LOCATED SO AS TO DRAIN INTO DROP INLETS OR MANHOLES.
5. ON SUPERELEVATED SECTIONS, TRENCH IS TO BE UNDER ENTIRE PAVEMENT AREA WITH OUTLET PIPE ON LOW SIDE ONLY.
6. INVERT ELEVATION AT OUTLET END OF OUTLET PIPE TO BE A MINIMUM OF 1'-0" ABOVE INVERT ELEVATION OF RECEIVING DRAINAGE DITCH OR STRUCTURE.
7. ALL CONNECTIONS (ELBOWS, WYES, ETC.) WITHIN PAY LIMITS FOR OUTLET PIPE ARE TO BE OF THE SAME CRUSHING STRENGTH AS THE OUTLET PIPE.
8. OUTLET PIPE TO BE SECURELY CONNECTED TO EW-12 OR OTHER DRAINAGE STRUCTURE.

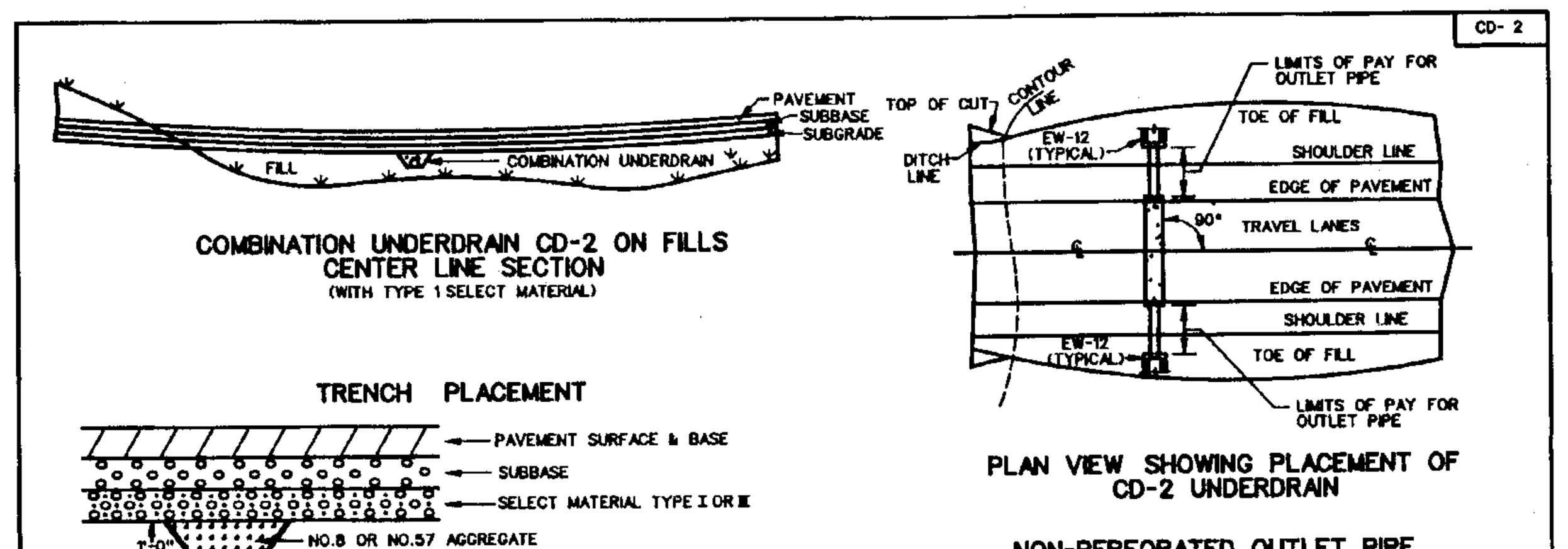
STANDARD COMBINATION UNDERDRAIN (AT LOWER END OF CUTS)

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE
232
501
701

108.04

CD- 2


PAVEMENT
SUBBASE
SUBGRADE
FILL
COMBINATION UNDERDRAIN
TOP OF CUT
CONTOUR LINE
DITCH LINE
EW-12 (TYPICAL)
LIMITS OF PAY FOR OUTLET PIPE
TOE OF FILL
SHOULDER LINE
EDGE OF PAVEMENT
90°
TRAVEL LANES
PAVEMENT SURFACE & BASE
SUBBASE
SELECT MATERIAL TYPE I OR II
NO.8 OR NO.57 AGGREGATE
GEOTEXTILE DRAINAGE FABRIC
1'-0"
OR
SUBBASE OR CEMENT STABILIZED SUBBASE
SELECT MATERIAL TYPE II OR SUBGRADE (CEMENT OR LIME STABILIZED)

COMBINATION UNDERDRAIN CD-2 ON FILLS CENTER LINE SECTION
(WITH TYPE 1 SELECT MATERIAL)

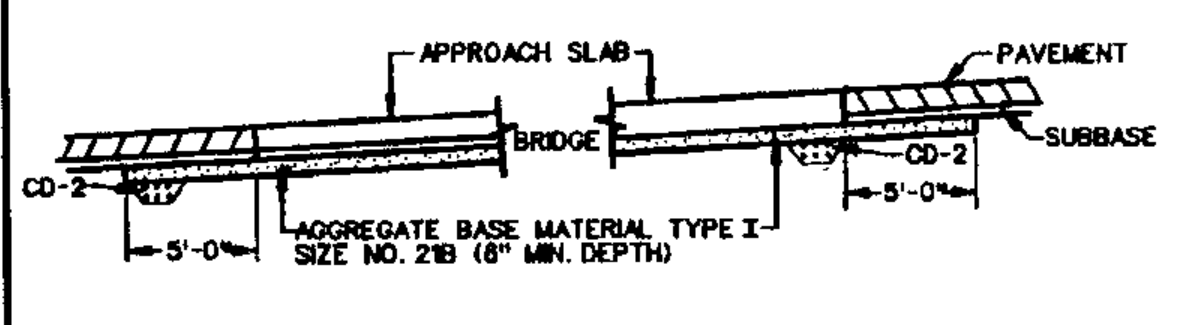
TRENCH PLACEMENT

PLAN VIEW SHOWING PLACEMENT OF CD-2 UNDERDRAIN

NON-PERFORATED OUTLET PIPE

TYPE OF PIPE	CRUSHING STRENGTH			
	* W.T.	4" NOM. DIAMETER	* W.T.	6" NOM. DIAMETER
CORRUGATED ALUMINUM			0.048	
SMOOTH WALL PVC	.103		0.153	
SMOOTH WALL PE		70 PSI ***		70 PSI ***

* WALL THICKNESS (MIN) - INCHES
*** TESTED ACCORDING TO ASTM D-2412 AT 5% DEFLECTION.


APPROACH SLAB
PAVEMENT
BRIDGE
SUBBASE
CD-2
5'-0"
AGGREGATE BASE MATERIAL TYPE I- SIZE NO. 21B (6" MIN. DEPTH)

PLACEMENT OF CD-2 UNDERDRAIN AT BRIDGE APPROACH SLABS

GENERAL NOTES

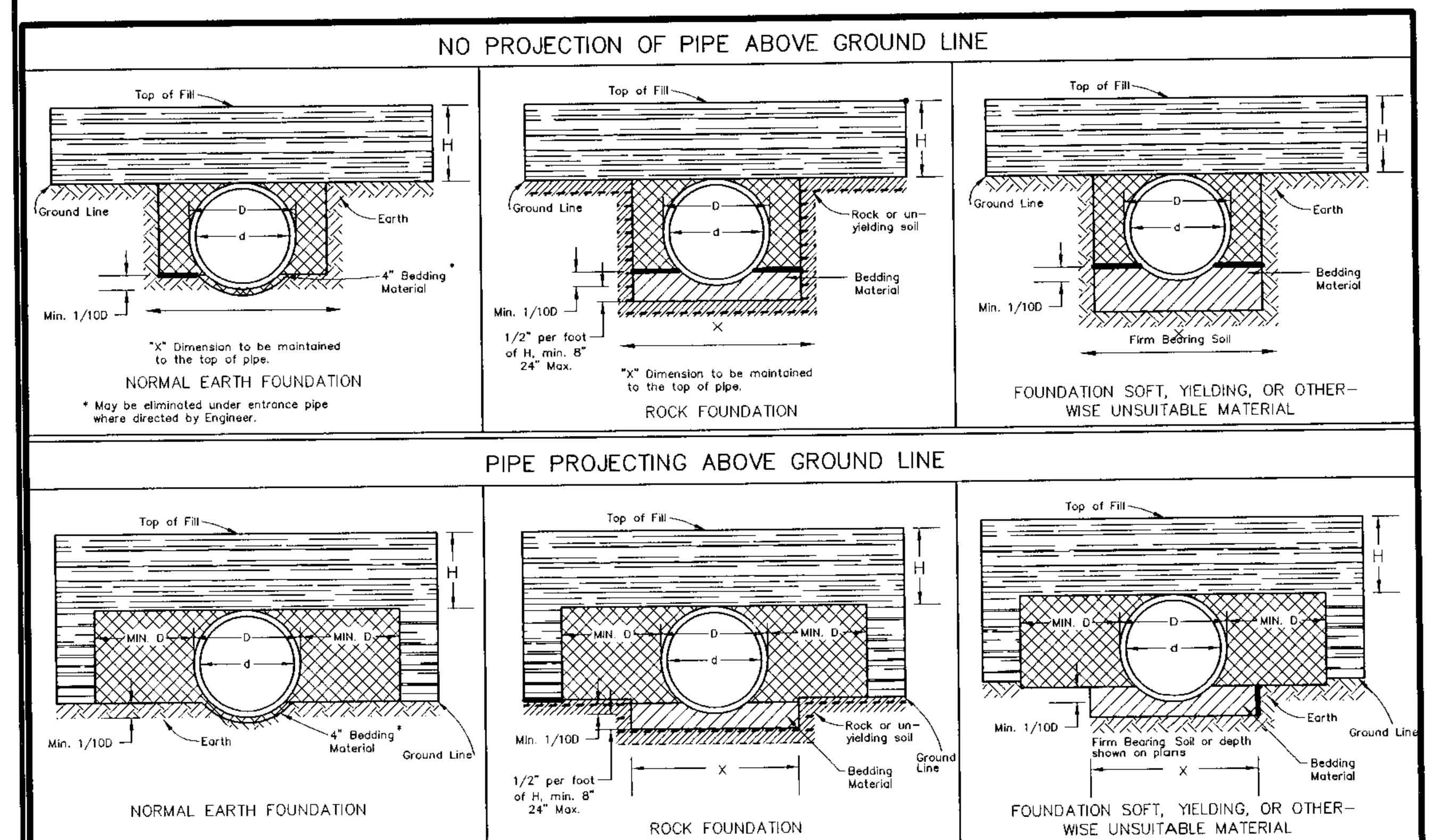
1. TRENCH SHALL BE FILLED WITH AGGREGATE AND THROUGHLY HAND TAMPED TO INSURE COMPACTNESS.
2. OUTLET PIPE SHALL BEGIN AT THE EDGE OF THE TRAVEL LANE PAVEMENT AND SHALL BE PLACED ON A GRADE PARALLEL TO THE SHOULDER SLOPE 2% MIN. (3% DESIRABLE) GRADE.
3. ON CURB AND GUTTER SECTIONS, WHERE IT IS IMPOSSIBLE TO OTHERWISE PROVIDE OUTLETS FOR UNDERDRAINS, THEY ARE TO BE LOCATED SO AS TO DRAIN INTO DROP INLETS OR MANHOLES.
4. ON SUPERELEVATED SECTIONS, TRENCH IS TO BE UNDER ENTIRE PAVEMENT AREA WITH OUTLET PIPE ON LOW SIDE ONLY.
5. INVERT ELEVATION AT OUTLET END OF OUTLET PIPE TO BE A MINIMUM OF 1'-0" ABOVE INVERT ELEVATION OF RECEIVING DRAINAGE DITCH OR STRUCTURE.
6. ALL CONNECTIONS (ELBOWS, WYES, ETC.) WITHIN PAY LIMITS FOR OUTLET PIPE ARE TO BE OF THE SAME CRUSHING STRENGTH AS THE OUTLET PIPE.
7. OUTLET PIPE TO BE SECURELY CONNECTED TO EW-12 OR OTHER DRAINAGE STRUCTURE.

SPECIFICATION REFERENCE
232
501
701

STANDARD COMBINATION UNDERDRAIN (AT GRADE SAGS AND BRIDGE APPROACHES)

VIRGINIA DEPARTMENT OF TRANSPORTATION

108.05


NO PROJECTION OF PIPE ABOVE GROUND LINE
Top of Fill
H
Ground Line
D
d
Earth
4" Bedding Material *
Min. 1/10D
Rock or unyielding soil
Bedding Material
1/2" per foot of H, min. 8" 24" Max.
X
Firm Bearing Soil
PIPE PROJECTING ABOVE GROUND LINE
MIN. D
Firm Bearing Soil or depth shown on plans

"X" Dimension to be maintained to the top of pipe.
NORMAL EARTH FOUNDATION
* May be eliminated under entrance pipe where directed by Engineer.

"X" Dimension to be maintained to the top of pipe.
ROCK FOUNDATION

FOUNDATION SOFT, YIELDING, OR OTHERWISE UNSUITABLE MATERIAL

NORMAL EARTH FOUNDATION

ROCK FOUNDATION

FOUNDATION SOFT, YIELDING, OR OTHERWISE UNSUITABLE MATERIAL

Culverts less than d=36"
x=D+24"

Culverts where d=36" and over
x=D+36"

Method "a" Pipe Bedding shall be used as follows unless otherwise noted on plans:

RIGID PIPE

Fills up to 30' (No projection of pipe above ground line)

Fills up to 30' (No projection above ground line)

FLEXIBLE PIPE

As shown on tables

H= Height of cover measured from top of drainage structure to finished grade.

▨ Bedding material in accordance with Section 302.02 of the Road and Bridge Specifications.

▩ Backfill material in accordance with Section 302.02 of the Road and Bridge Specifications.

☰ Embankment
Bedding requirements detailed under Method A, Projecting Condition, are applicable to Method B1 and B2.

INSTALLATION OF PIPE CULVERTS AND STORM SEWERS

PIPE BEDDING – METHOD "A" (FILLS UP TO 30')

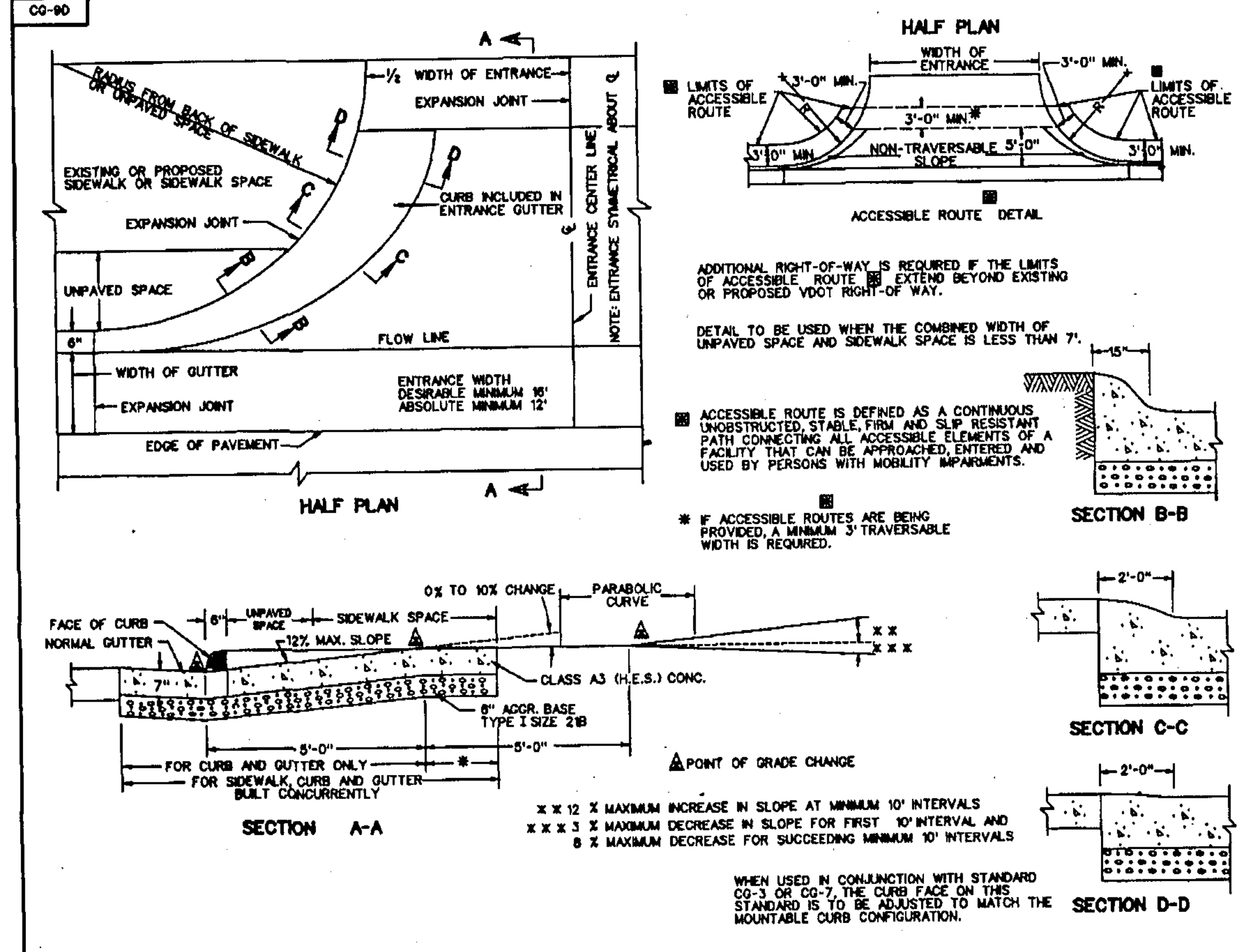
VIRGINIA DEPARTMENT OF TRANSPORATION

SHEET 1 OF 4

SPECIFICATION REFERENCE
302
303

107.01

CG-9D


A
RADIUS FROM BACK OF SIDEWALK OR UNPAVED SPACE
½ WIDTH OF ENTRANCE
EXPANSION JOINT
EXISTING OR PROPOSED SIDEWALK OR SIDEWALK SPACE
CURB INCLUDED IN ENTRANCE GUTTER
UNPAVED SPACE
6"
FLOW LINE
WIDTH OF GUTTER
ENTRANCE WIDTH DESIRABLE MINIMUM 16' ABSOLUTE MINIMUM 12'
EDGE OF PAVEMENT
ENTRANCE CENTER LINE
NOTE: ENTRANCE SYMMETRICAL ABOUT ℄
HALF PLAN
WIDTH OF ENTRANCE
3'-0" MIN.
LIMITS OF ACCESSIBLE ROUTE
NON-TRAVERSABLE SLOPE
5'-0"
ACCESSIBLE ROUTE DETAIL
15"
SECTION B-B
2'-0"
SECTION C-C
SECTION D-D
FACE OF CURB
NORMAL GUTTER
UNPAVED SPACE
SIDEWALK SPACE
12% MAX. SLOPE
0% TO 10% CHANGE
PARABOLIC CURVE
CLASS A3 (H.E.S.) CONC.
6" AGGR. BASE TYPE I SIZE 21B
7"
5'-0"
FOR CURB AND GUTTER ONLY
FOR SIDEWALK, CURB AND GUTTER BUILT CONCURRENTLY
SECTION A-A

ADDITIONAL RIGHT-OF-WAY IS REQUIRED IF THE LIMITS OF ACCESSIBLE ROUTE ▩ EXTEND BEYOND EXISTING OR PROPOSED VDOT RIGHT-OF WAY.

DETAIL TO BE USED WHEN THE COMBINED WIDTH OF UNPAVED SPACE AND SIDEWALK SPACE IS LESS THAN 7'.

▩ ACCESSIBLE ROUTE IS DEFINED AS A CONTINUOUS UNOBSTRUCTED, STABLE, FIRM AND SLIP RESISTANT PATH CONNECTING ALL ACCESSIBLE ELEMENTS OF A FACILITY THAT CAN BE APPROACHED, ENTERED AND USED BY PERSONS WITH MOBILITY IMPAIRMENTS.

▩
* IF ACCESSIBLE ROUTES ARE BEING PROVIDED, A MINIMUM 3' TRAVERSABLE WIDTH IS REQUIRED.

△ POINT OF GRADE CHANGE

x x 12 % MAXIMUM INCREASE IN SLOPE AT MINIMUM 10' INTERVALS
x x x 3 % MAXIMUM DECREASE IN SLOPE FOR FIRST 10' INTERVAL AND
8 % MAXIMUM DECREASE FOR SUCCEEDING MINIMUM 10' INTERVALS

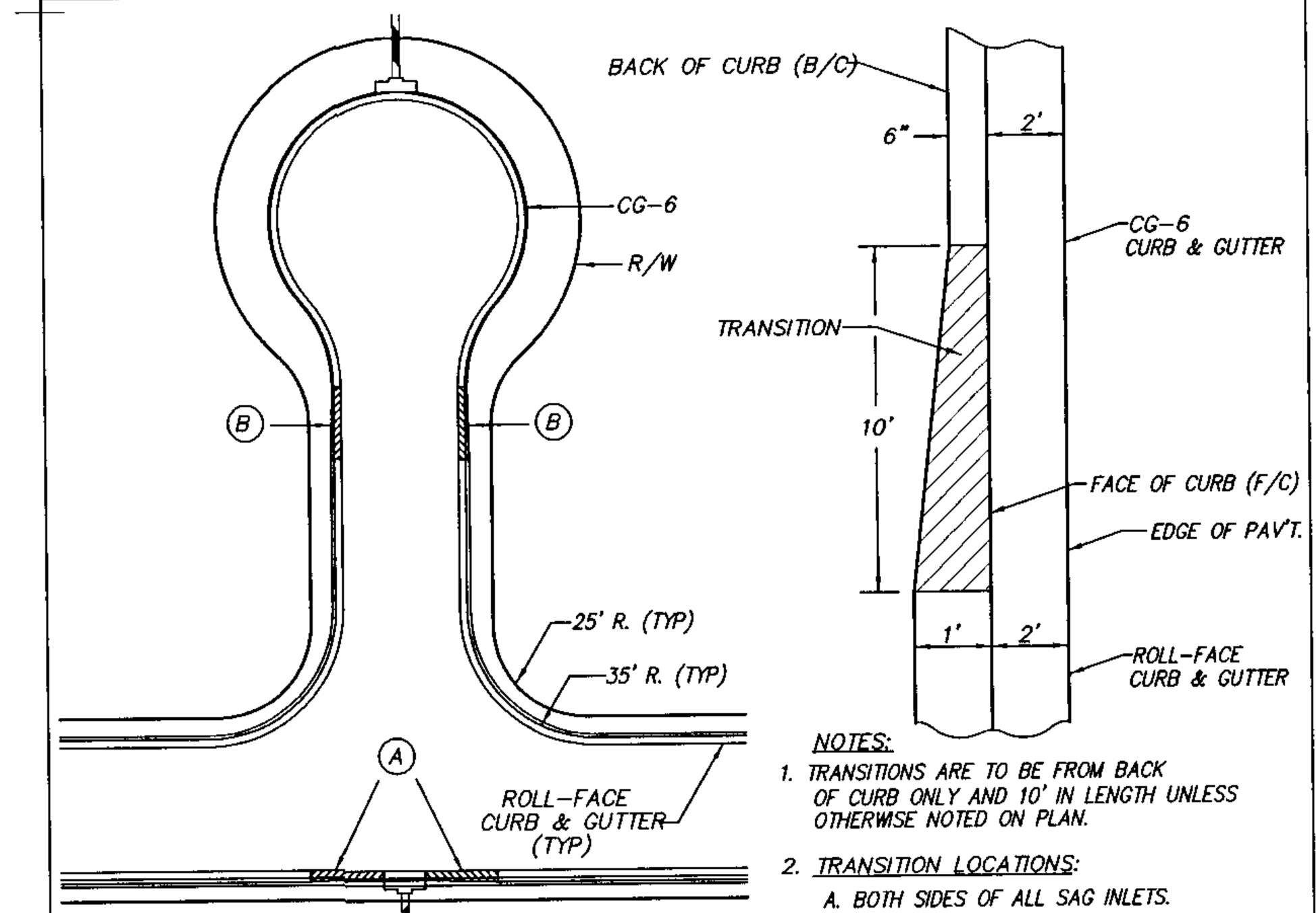
WHEN USED IN CONJUNCTION WITH STANDARD CG-3 OR CG-7, THE CURB FACE ON THIS STANDARD IS TO BE ADJUSTED TO MATCH THE MOUNTABLE CURB CONFIGURATION.

STANDARD ENTRANCE GUTTER

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE
502

203.03


BACK OF CURB (B/C)
6"
2'
CG-6
R/W
CG-6 CURB & GUTTER
TRANSITION
10'
B
FACE OF CURB (F/C)
EDGE OF PAV'T.
25' R. (TYP)
35' R. (TYP)
1'
ROLL-FACE CURB & GUTTER
A
ROLL-FACE CURB & GUTTER (TYP)

PLAN VIEW
N.T.S.

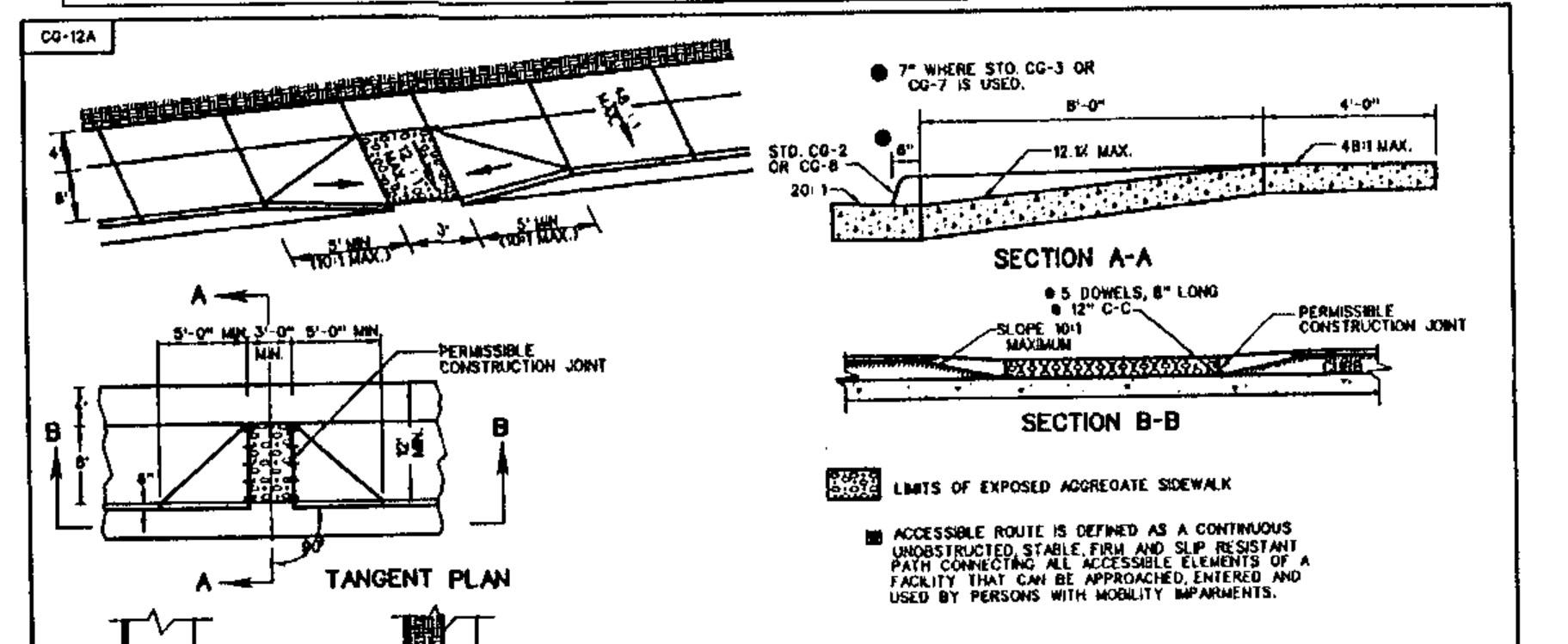
NOTES:

1. TRANSITIONS ARE TO BE FROM BACK OF CURB ONLY AND 10' IN LENGTH UNLESS OTHERWISE NOTED ON PLAN.
2. TRANSITION LOCATIONS:
   A. BOTH SIDES OF ALL SAG INLETS.
   B. FIRST TANGENT EACH SIDE OF CUL-DE-SAC BULB HAVING A SAG INLET

CURB TRANSITION

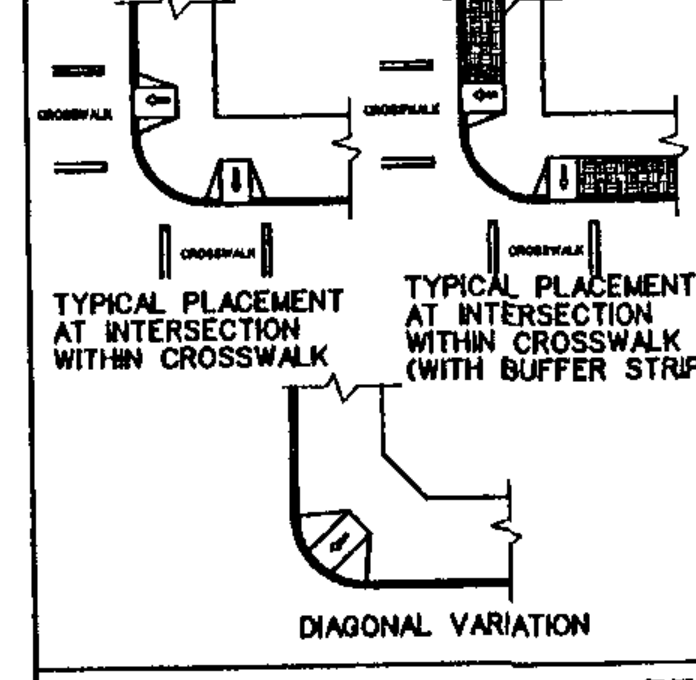
(FROM ROLL-FACE CURB TO CG-6)

CG-12A


5' MIN (10:1 MAX.)
3'
A
5'-0" MIN.
3'-0" MIN.
5'-0" MIN.
PERMISSIBLE CONSTRUCTION JOINT
B
TANGENT PLAN
7" WHERE STD. CG-3 OR CG-7 IS USED.
8'-0"
4'-0"
STD. CG-2 OR CG-6
12:1 MAX.
48:1 MAX.
20:1
SECTION A-A
#5 DOWELS, 8" LONG @ 12" C-C
SLOPE 10:1 MAXIMUM
PERMISSIBLE CONSTRUCTION JOINT
SECTION B-B

▩ LIMITS OF EXPOSED AGGREGATE SIDEWALK

▩ ACCESSIBLE ROUTE IS DEFINED AS A CONTINUOUS UNOBSTRUCTED, STABLE, FIRM AND SLIP RESISTANT PATH CONNECTING ALL ACCESSIBLE ELEMENTS OF A FACILITY THAT CAN BE APPROACHED, ENTERED AND USED BY PERSONS WITH MOBILITY IMPAIRMENTS.



TYPICAL PLACEMENT AT INTERSECTION WITHIN CROSSWALK

TYPICAL PLACEMENT AT INTERSECTION WITHIN CROSSWALK (WITH BUFFER STRIP)

DIAGONAL VARIATION

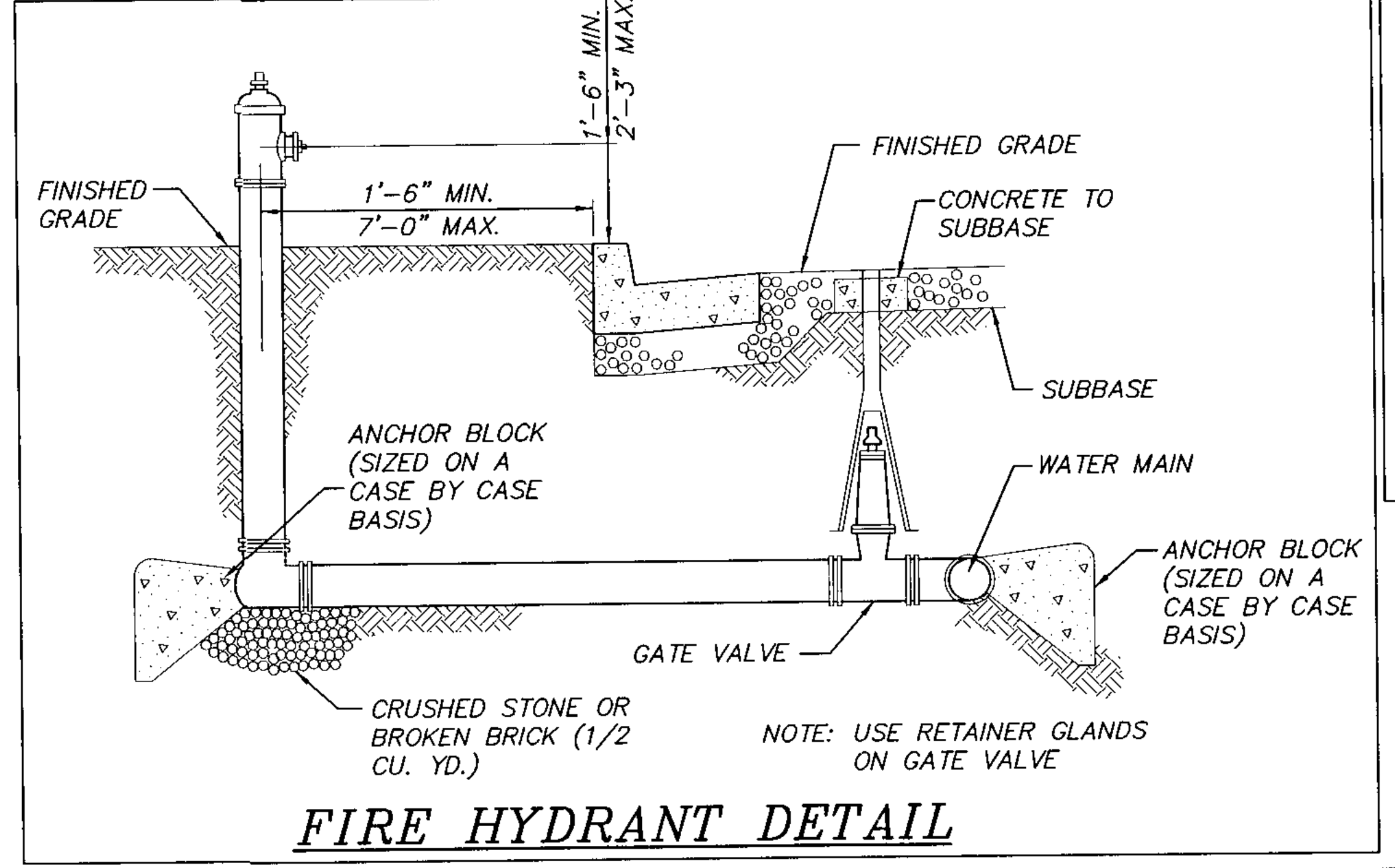
NOTES :
THIS DESIGN TO BE USED FOR CONSTRUCTION THAT INCORPORATES WIDER SIDEWALK. LANDING (48" WIDE) REQUIRED AT TOP OF CURB RAMP. MINIMUM CURB RAMP LENGTH 8 FT. FOR NEW CONSTRUCTION, 6 FT. FOR ALTERATIONS.
CURB RAMP FLOOR TO BE CLASS A-3 CONCRETE (CLASS A-4 IF PRECAST) WITH SLIP RESISTANT INTEGRAL DETECTABLE WARNING SURFACE COVERING THE ENTIRE WIDTH OF THE RAMP FLOOR (RAMP FLOOR MAY BE PRECAST OR CAST IN PLACE). THE DETECTABLE WARNING SHALL BE PROVIDED BY AN EXPOSED AGGREGATE FINISH. RAMP SHALL NOT EXCEED A MAXIMUM SLOPE OF 12:1.
SLOPING SIDES OF CURB RAMP MAY BE POURED MONOLITHICALLY WITH RAMP FLOOR OR BY USING PERMISSIBLE CONSTRUCTION JOINT WITH REQUIRED BARS.
IF RAMP FLOOR IS PRECAST, HOLES MUST BE PROVIDED FOR DOWEL BARS SO THAT ADJOINING FLARED SIDES CAN BE CAST IN PLACE AFTER PLACEMENT OF PRECAST RAMP FLOOR. PRECAST CONCRETE SHALL BE CLASS A-4.
REQUIRED BARS ARE TO BE NO. 5 X 8" PLACED 1' CENTER TO CENTER ALONG BOTH SIDES OF THE RAMP FLOOR, MID-DEPTH OF RAMP FLOOR. MINIMUM CONCRETE COVER 1½".
CURB RAMPS WILL BE MEASURED AND PAID FOR AT THE CONTRACT UNIT PRICES FOR HYDRAULIC CEMENT CONCRETE SIDEWALK AND EXPOSED AGGREGATE SIDEWALK, COMPLETE-IN-PLACE.
CURB/CURB AND GUTTER SLOPE TRANSITIONS ADJACENT TO TO CURB RAMPS ARE INCLUDED IN PAYMENT FOR CURB/CURB AND GUTTER.
WHEN USED IN CONJUNCTION WITH STANDARD CG-3 OR CG-7, THE CURB FACE ON THIS STANDARD IS TO BE ADJUSTED TO MATCH THE MOUNTABLE CURB AND CONFIGURATION.
CURB RAMPS ARE TO BE LOCATED AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. THEY ARE TO BE PROVIDED AT INTERSECTIONS WHEREVER AN ACCESSABLE ROUTE ▩ WITHIN THE RIGHT OF WAY OF A HIGHWAY FACILITY CROSSES A CURB REGARDLESS OF WHETHER SIDEWALK IS EXISTING, PROPOSED, OR NONEXISTENT. THEY MUST BE LOCATED WITHIN PEDESTRIAN CROSSWALKS AS SHOWN ON PLANS OR AS DIRECTED BY THE ENGINEER, AND SHOULD NOT BE LOCATED BEHIND VEHICLE STOP LINES. EXISTING LIGHT POLES, FIRE HYDRANTS, DROP INLETS, ETC. WILL ALSO AFFECT PLACEMENT.

PERPENDICULAR CURB RAMP (ACCESS FOR MOBILITY IMPAIRMENTS)

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE
105
502

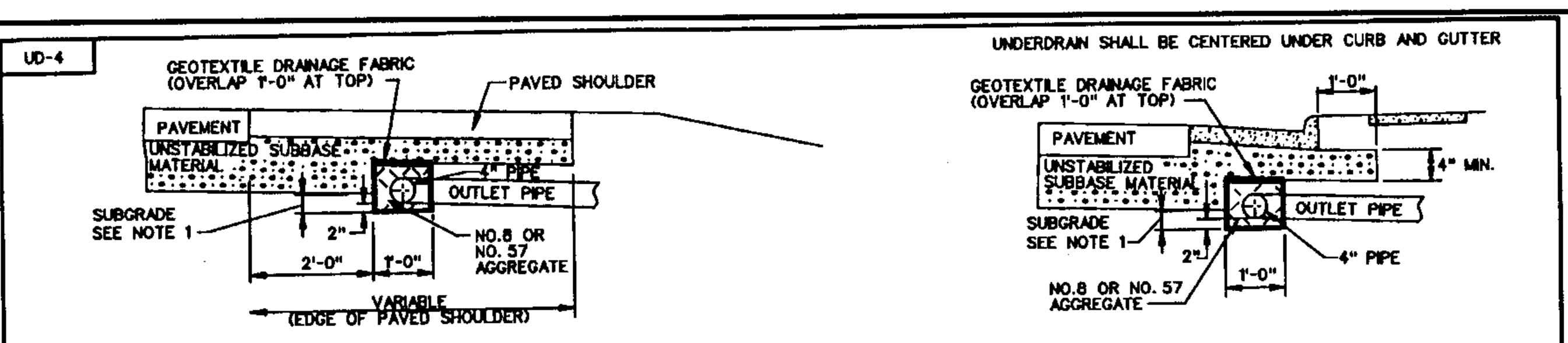
203.05


1'-6" MIN.
2'-3" MAX.
FINISHED GRADE
1'-6" MIN.
7'-0" MAX.
FINISHED GRADE
CONCRETE TO SUBBASE
SUBBASE
ANCHOR BLOCK (SIZED ON A CASE BY CASE BASIS)
WATER MAIN
ANCHOR BLOCK (SIZED ON A CASE BY CASE BASIS)
GATE VALVE
CRUSHED STONE OR BROKEN BRICK (1/2 CU. YD.)

NOTE: USE RETAINER GLANDS ON GATE VALVE

FIRE HYDRANT DETAIL

UD-4

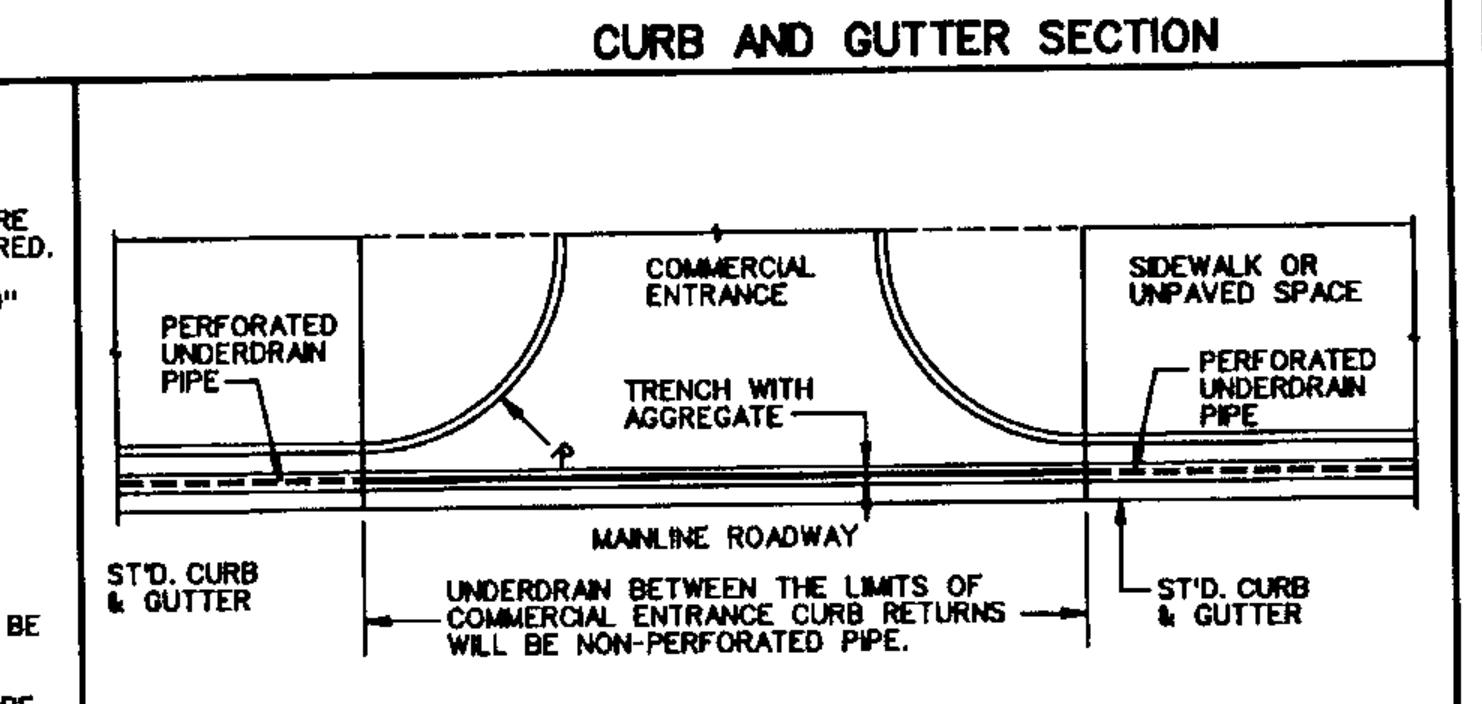

GEOTEXTILE DRAINAGE FABRIC (OVERLAP 1'-0" AT TOP)
PAVED SHOULDER
PAVEMENT
UNSTABILIZED SUBBASE MATERIAL
4" PIPE
OUTLET PIPE
SUBGRADE SEE NOTE 1
2"
2'-0"
1'-0"
NO.8 OR NO. 57 AGGREGATE
VARIABLE (EDGE OF PAVED SHOULDER)
UNDERDRAIN SHALL BE CENTERED UNDER CURB AND GUTTER
4" MIN.

PAVED SHOULDER SECTION

CURB AND GUTTER SECTION

NOTES:

1. 4" MINIMUM, PROVIDED ATTAINING MINIMUM 4" OF AGGREGATE ON TOP OF PIPE.
2. WHEN THE LONGITUDINAL PIPE CONNECTS DIRECTLY INTO A DRAINAGE STRUCTURE (DROP INLET, MANHOLE, ECT.), NON-PERFORATED OUTLET PIPES ARE NOT REQUIRED.
3. INVERT ELEVATION AT OUTLET END OF OUTLET PIPE TO BE A MINIMUM OF 1'-0" ABOVE INVERT ELEVATION OF RECEIVING DRAINAGE DITCH OR STRUCTURE.
4. ALL CONNECTIONS (ELBOWS, WYES, ETC.) WITHIN PAY LIMITS FOR OUTLET PIPE ARE TO BE OF THE SAME CRUSHING STRENGTH AS THE OUTLET PIPE.
5. OUTLET PIPES ARE TO BE INSTALLED ON 2% MIN. (3% DESIRABLE) GRADE AND LOCATED EVERY 350' MAXIMUM OR AS NOTED ON PLANS.
6. OUTLET PIPE TO BE SECURELY CONNECTED TO EW-12 OR OTHER DRAINAGE STRUCTURE.
7. WITHIN THE LIMITS OF A COMMERCIAL ENTRANCE, NON-PERFORATED PIPE SHALL BE UTILIZED IN LIEU OF PERFORATED PIPE.
8. THE LENGTH OF PIPE BETWEEN THE WYE CONNECTION AND THE EW-12 SHALL BE LIMITED TO NO MORE THAN 1'-0" TO PERMIT CAMERA INSPECTION OF THE MAIN LINE IN EITHER DIRECTION.


PERFORATED UNDERDRAIN PIPE
COMMERCIAL ENTRANCE
SIDEWALK OR UNPAVED SPACE
TRENCH WITH AGGREGATE
MAINLINE ROADWAY
ST'D. CURB & GUTTER
UNDERDRAIN BETWEEN THE LIMITS OF COMMERCIAL ENTRANCE CURB RETURNS WILL BE NON-PERFORATED PIPE.

LONGITUDINAL PERFORATED PIPE

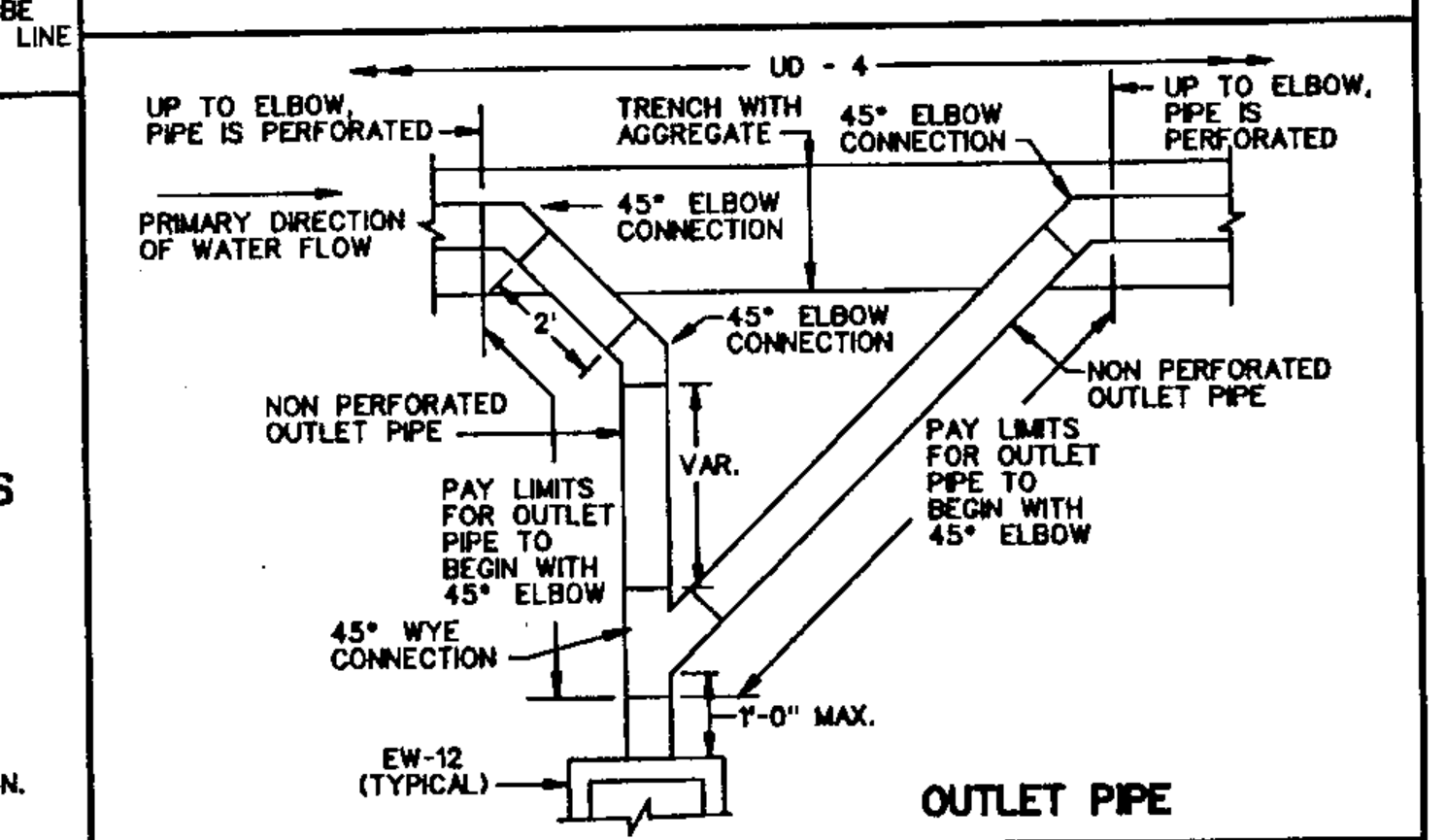
TYPE OF PIPE	CRUSHING STRENGTH	
	* W.T.	4" NOM. DIAMETER
SMOOTH WALL PVC	.103	
CORRUGATED PE		AASHTO M-252

NON-PERFORATED OUTLET PIPE FOR USE UNDER COMMERCIAL ENTRANCES AND FOR OUTLETS

TYPE OF PIPE	CRUSHING STRENGTH	
	* W.T.	4" NOM. DIAMETER
SMOOTH WALL PVC	.103	
SMOOTH WALL PE		70 PSI ***

* WALL THICKNESS (MIN) - INCHES
*** TESTED ACCORDING TO ASTM D-2412 AT 5% DEFLECTION.

SHEET 1 OF 2


UD - 4
UP TO ELBOW, PIPE IS PERFORATED
TRENCH WITH AGGREGATE
45° ELBOW CONNECTION
PRIMARY DIRECTION OF WATER FLOW
2'
NON PERFORATED OUTLET PIPE
VAR.
PAY LIMITS FOR OUTLET PIPE TO BEGIN WITH 45° ELBOW
45° WYE CONNECTION
1'-0" MAX.
EW-12 (TYPICAL)

OUTLET PIPE

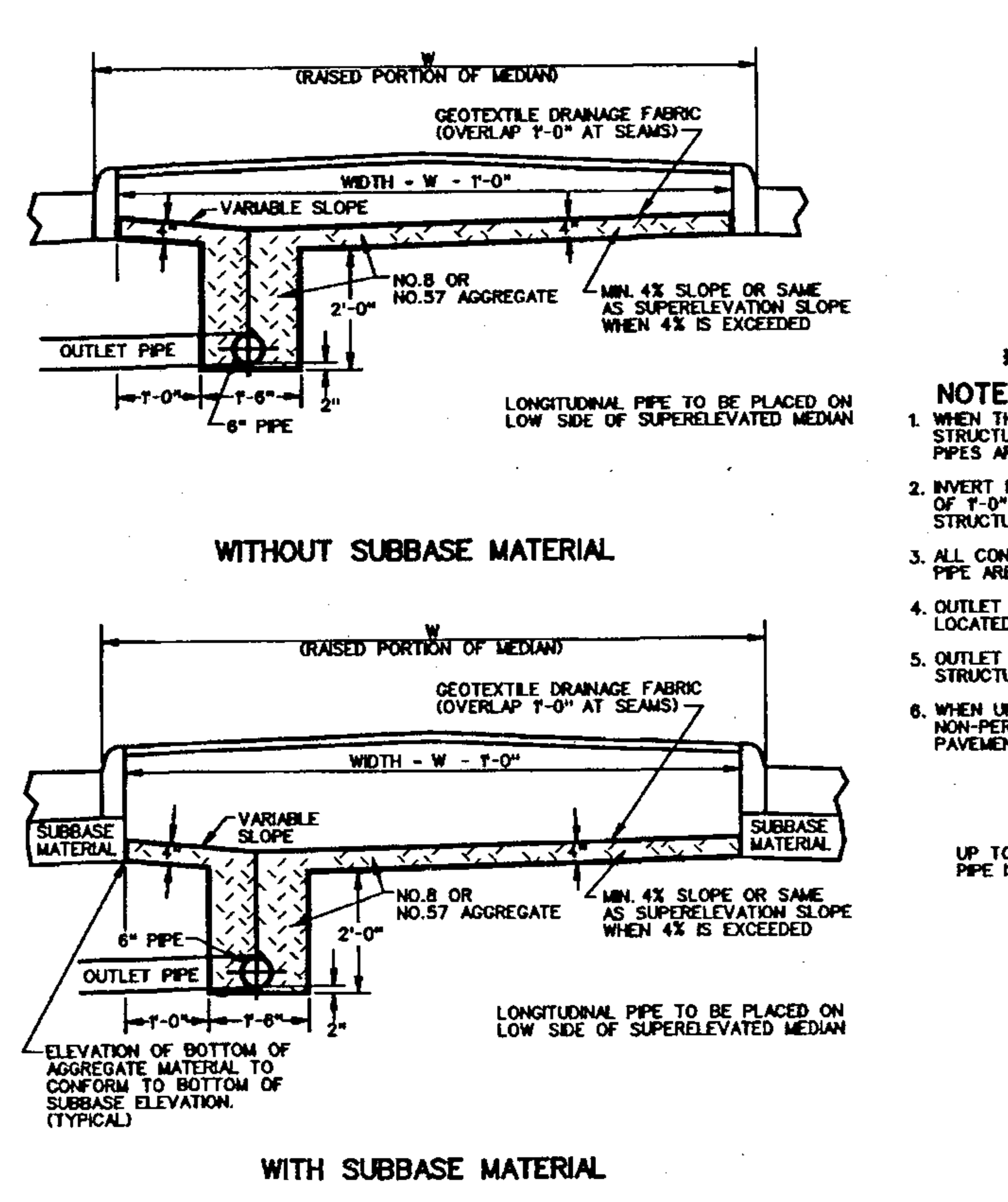
STANDARD PAVEMENT EDGEDRAIN

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE
240
258
501
701

108.06

UD-2


W (RAISED PORTION OF MEDIAN)
GEOTEXTILE DRAINAGE FABRIC (OVERLAP 1'-0" AT SEAMS)
WIDTH - W - 1'-0"
VARIABLE SLOPE
NO.8 OR NO.57 AGGREGATE
MIN. 4% SLOPE OR SAME AS SUPERELEVATION SLOPE WHEN 4% IS EXCEEDED
2'-0"
OUTLET PIPE
1'-0"
1'-6"
2"
6" PIPE
LONGITUDINAL PIPE TO BE PLACED ON LOW SIDE OF SUPERELEVATED MEDIAN
SUBBASE MATERIAL
ELEVATION OF BOTTOM OF AGGREGATE MATERIAL TO CONFORM TO BOTTOM OF SUBBASE ELEVATION. (TYPICAL)

WITHOUT SUBBASE MATERIAL

WITH SUBBASE MATERIAL

LONGITUDINAL PERFORATED PIPE

TYPE OF PIPE	CRUSHING STRENGTH	
	* W.T.	6" NOMINAL DIAMETER
CORRUGATED ALUMINUM	0.048	
SMOOTH WALL PVC	0.153	
CORRUGATED PE		AASHTO M-252

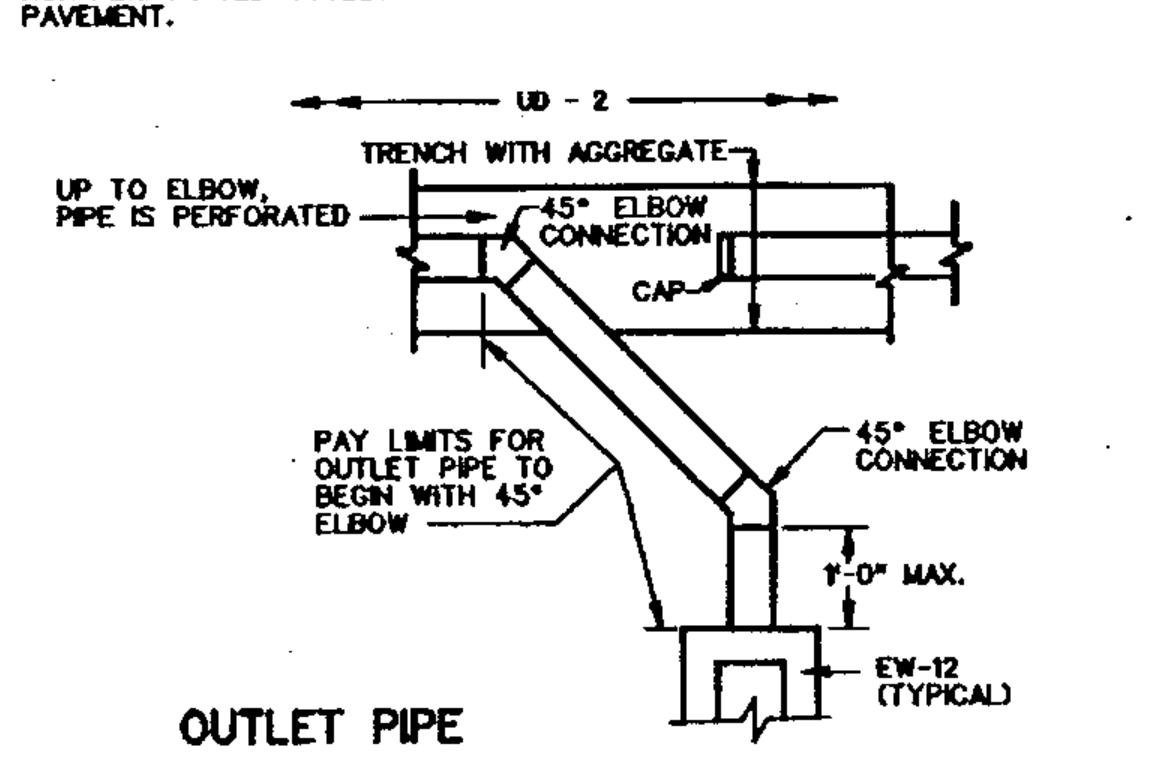
NON-PERFORATED OUTLET PIPE

TYPE OF PIPE	CRUSHING STRENGTH	
	* W.T.	6" NOMINAL DIAMETER
CORRUGATED ALUMINUM	0.048	
SMOOTH WALL PVC	0.153	
SMOOTH WALL PE		70 PSI ***

* WALL THICKNESS (MIN) - INCHES
*** TESTED ACCORDING TO ASTM D-2412 AT 5% DEFLECTION.

NOTES:

1. WHEN THE LONGITUDINAL PIPE CONNECTS DIRECTLY INTO A DRAINAGE STRUCTURE (DROP INLET, MANHOLE, ECT.), NON-PERFORATED OUTLET PIPES ARE NOT REQUIRED.
2. INVERT ELEVATION AT OUTLET END OF OUTLET PIPE TO BE A MINIMUM OF 1'-0" ABOVE INVERT ELEVATION OF RECEIVING DRAINAGE DITCH OR STRUCTURE.
3. ALL CONNECTIONS (ELBOWS, WYES, ETC.) WITHIN PAY LIMITS FOR OUTLET PIPE ARE TO BE OF THE SAME CRUSHING STRENGTH AS THE OUTLET PIPE.
4. OUTLET PIPE ARE TO BE INSTALLED ON 2% MIN. (3% DESIRABLE) GRADE AND LOCATED AT A MAXIMUM OF 500' APART.
5. OUTLET PIPE TO BE SECURELY CONNECTED TO EW-12 OR OTHER DRAINAGE STRUCTURE.
6. WHEN UNDERDRAIN MUST TRAVERSE UNDER CROSSOVER LOCATIONS, NON-PERFORATED OUTLET PIPE ONLY IS TO BE USED UNDER CROSSOVER PAVEMENT.


UD - 2
TRENCH WITH AGGREGATE
UP TO ELBOW, PIPE IS PERFORATED
45° ELBOW CONNECTION
CAP
PAY LIMITS FOR OUTLET PIPE TO BEGIN WITH 45° ELBOW
45° ELBOW CONNECTION
1'-0" MAX.
EW-12 (TYPICAL)

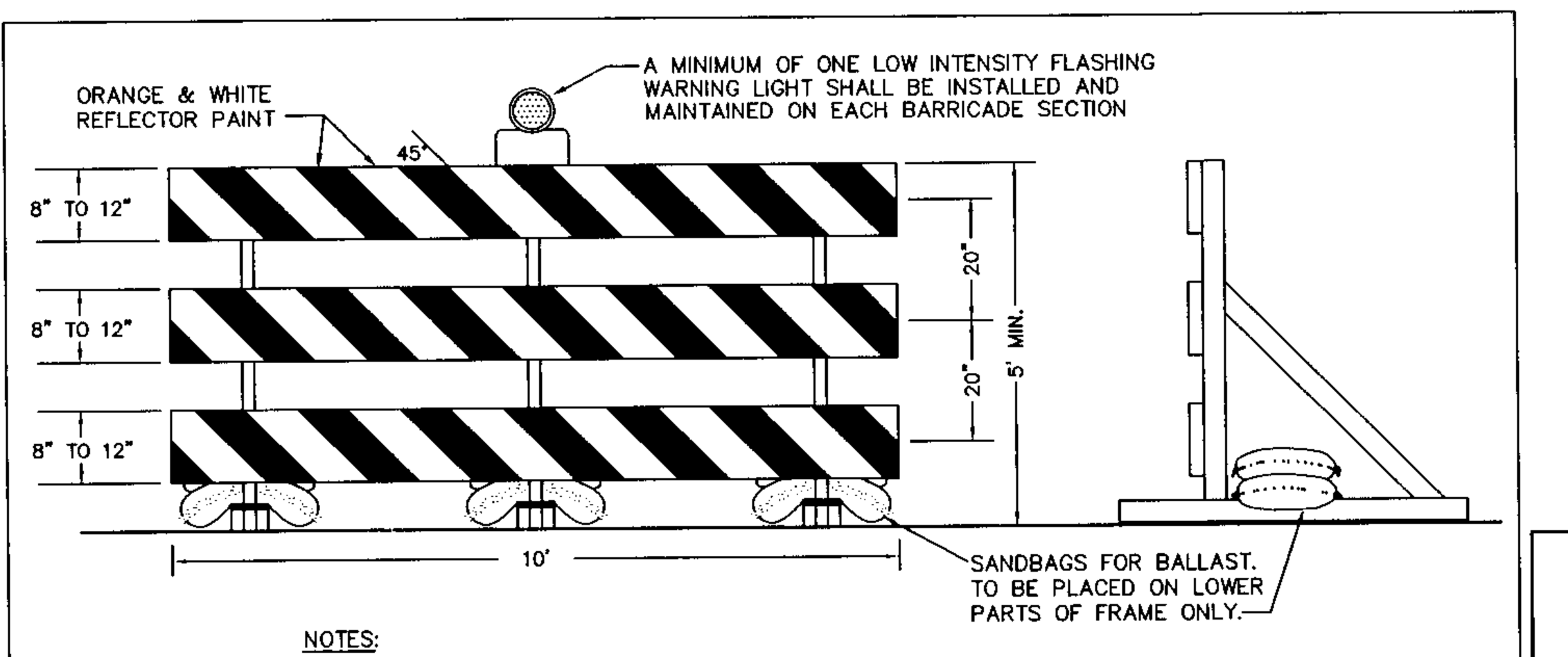
OUTLET PIPE

STANDARD UNDERDRAIN FOR USE WITH RAISED GRASS MEDIAN STRIPS

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE
240
501
701

108.02

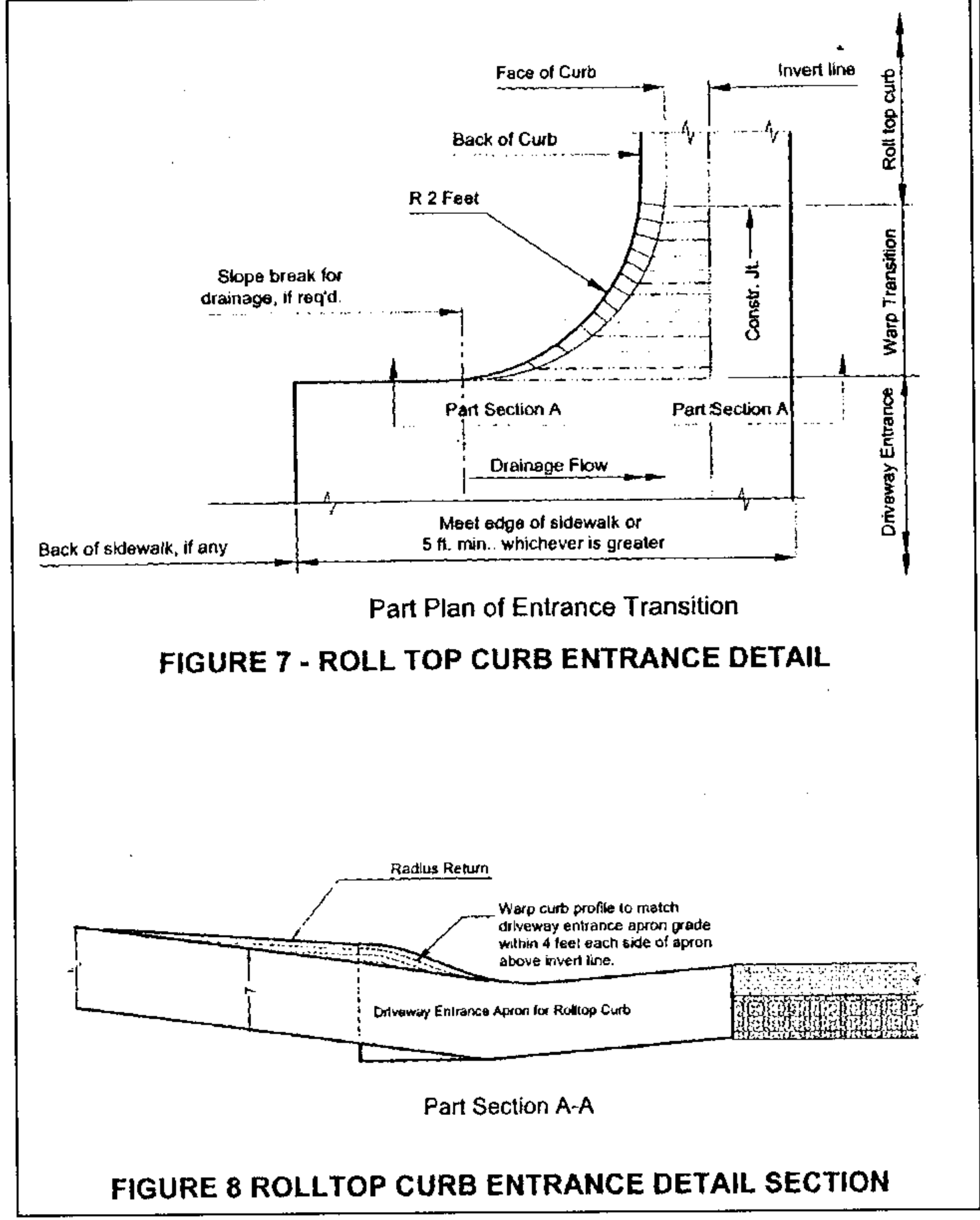

ORANGE & WHITE REFLECTOR PAINT
45°
A MINIMUM OF ONE LOW INTENSITY FLASHING WARNING LIGHT SHALL BE INSTALLED AND MAINTAINED ON EACH BARRICADE SECTION
8" TO 12"
20"
5' MIN.
10'
SANDBAGS FOR BALLAST. TO BE PLACED ON LOWER PARTS OF FRAME ONLY.

NOTES:

1. STRIPES SHOULD SLOPE IN THE DIRECTION TOWARD WHICH TRAFFIC MUST TURN. STRIPING MAY SLOPE DOWNWARD IN BOTH DIRECTIONS FROM THE CENTER OF THE BARRICADE WHERE BOTH LEFT AND RIGHT TURNS ARE PROVIDED FOR.
2. BARRICADE TO BE CONSTRUCTED OF LIGHTWEIGHT MATERIALS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE CLOSURE OF MOVABLE SECTIONS AT THE END OF EACH WORKING DAY.
4. ONLY THE NAME AND PHONE NUMBER OF THE CONTRACTOR OR SUPPLIER MAY BE SHOWN, ON THE NONREFLECTIVE SURFACE OF THE FACE PART OF THE BARRICADE, FOR INDENTIFICATION.

TYPE III BARRICADE

DIMENSIONS FOR LUMBER ARE NOMINAL

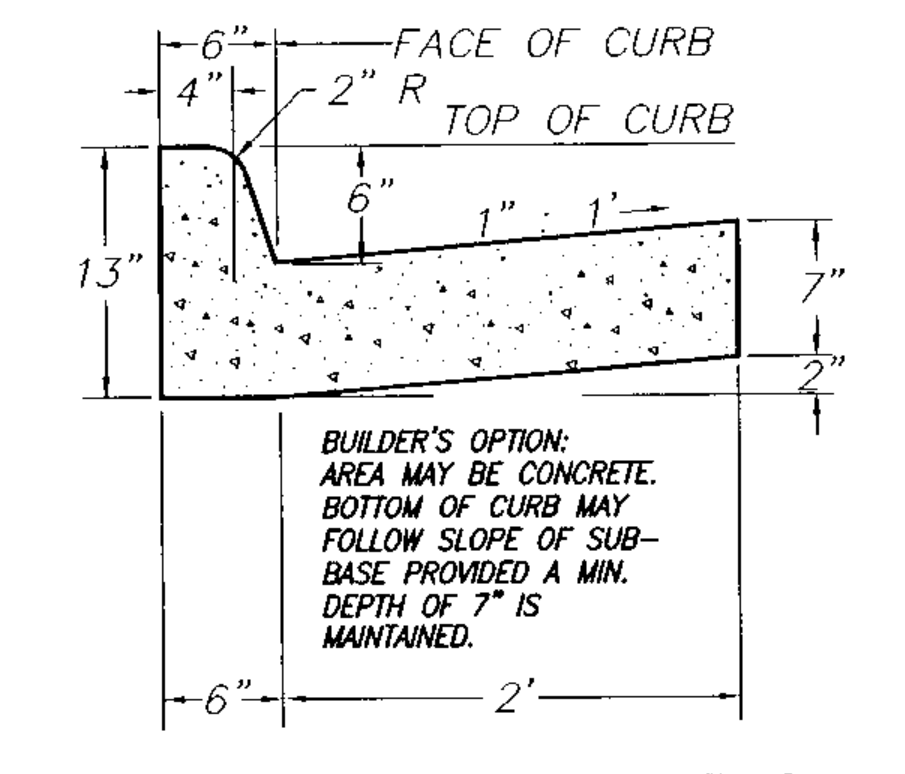

Face of Curb
Invert line
Back of Curb
Roll top curb
R 2 Feet
Slope break for drainage, if req'd.
Constr. Jt.
Warp Transition
Part Section A
Drainage Flow
Driveway Entrance
Back of sidewalk, if any
Meet edge of sidewalk or 5 ft. min., whichever is greater
Radius Return
Warp curb profile to match driveway entrance apron grade within 4 feet each side of apron above invert line.
Driveway Entrance Apron for Rolltop Curb

Part Plan of Entrance Transition

FIGURE 7 - ROLL TOP CURB ENTRANCE DETAIL

Part Section A-A

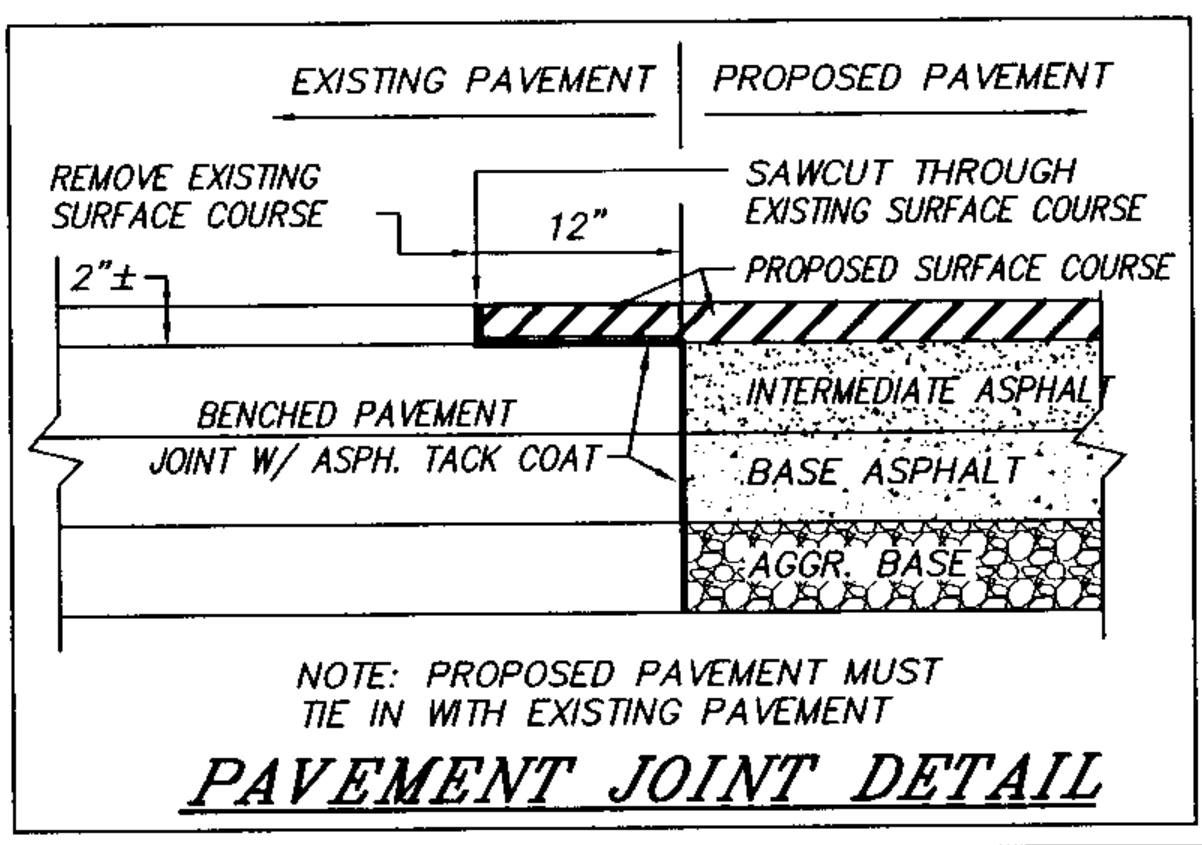
FIGURE 8 ROLLTOP CURB ENTRANCE DETAIL SECTION


6"
4"
2" R
FACE OF CURB
TOP OF CURB
6"
1" : 1'
13"
7"
2"
6"
2'

BUILDER'S OPTION: AREA MAY BE CONCRETE. BOTTOM OF CURB MAY FOLLOW SLOPE OF SUB-BASE PROVIDED A MIN. DEPTH OF 7" IS MAINTAINED.

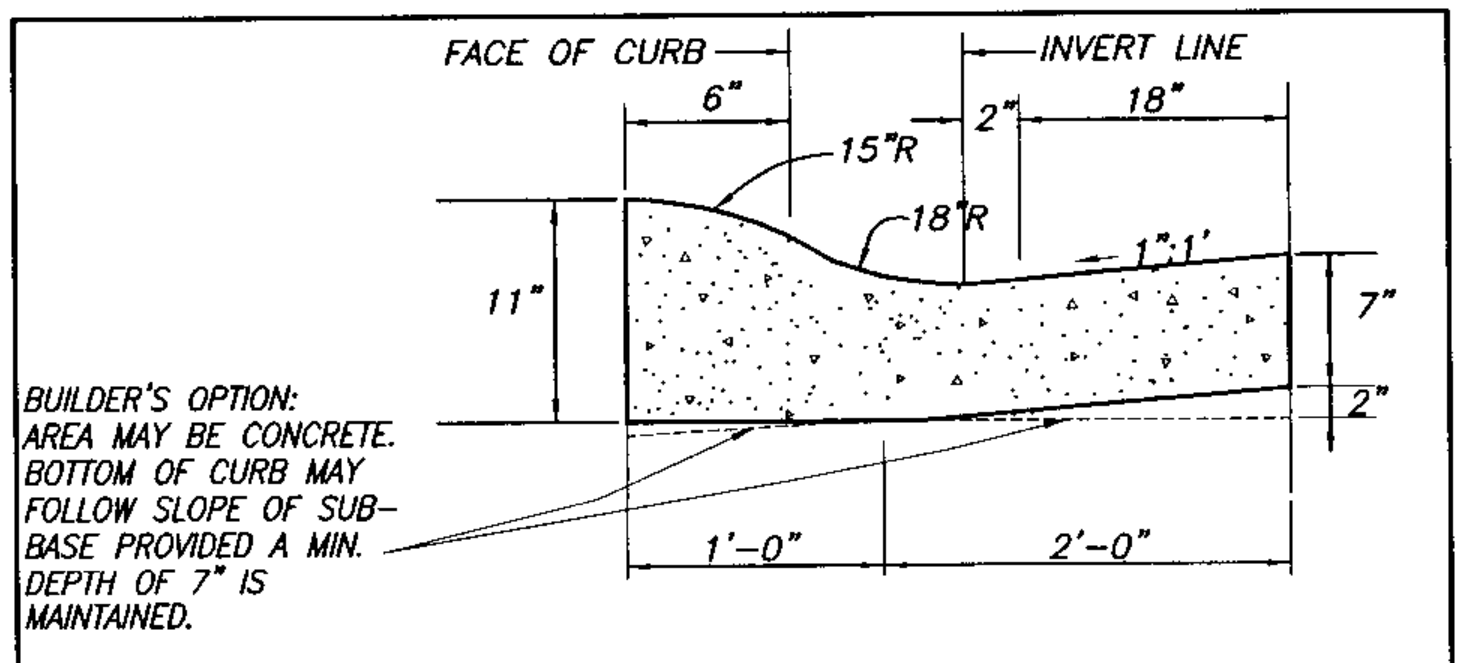
VDOT CURB STD. CG-6

NO SCALE


EXISTING PAVEMENT
PROPOSED PAVEMENT
REMOVE EXISTING SURFACE COURSE
12"
SAWCUT THROUGH EXISTING SURFACE COURSE
2"±
PROPOSED SURFACE COURSE
BENCHED PAVEMENT JOINT W/ ASPH. TACK COAT
INTERMEDIATE ASPHALT
BASE ASPHALT
AGGR. BASE

NOTE: PROPOSED PAVEMENT MUST TIE IN WITH EXISTING PAVEMENT

PAVEMENT JOINT DETAIL

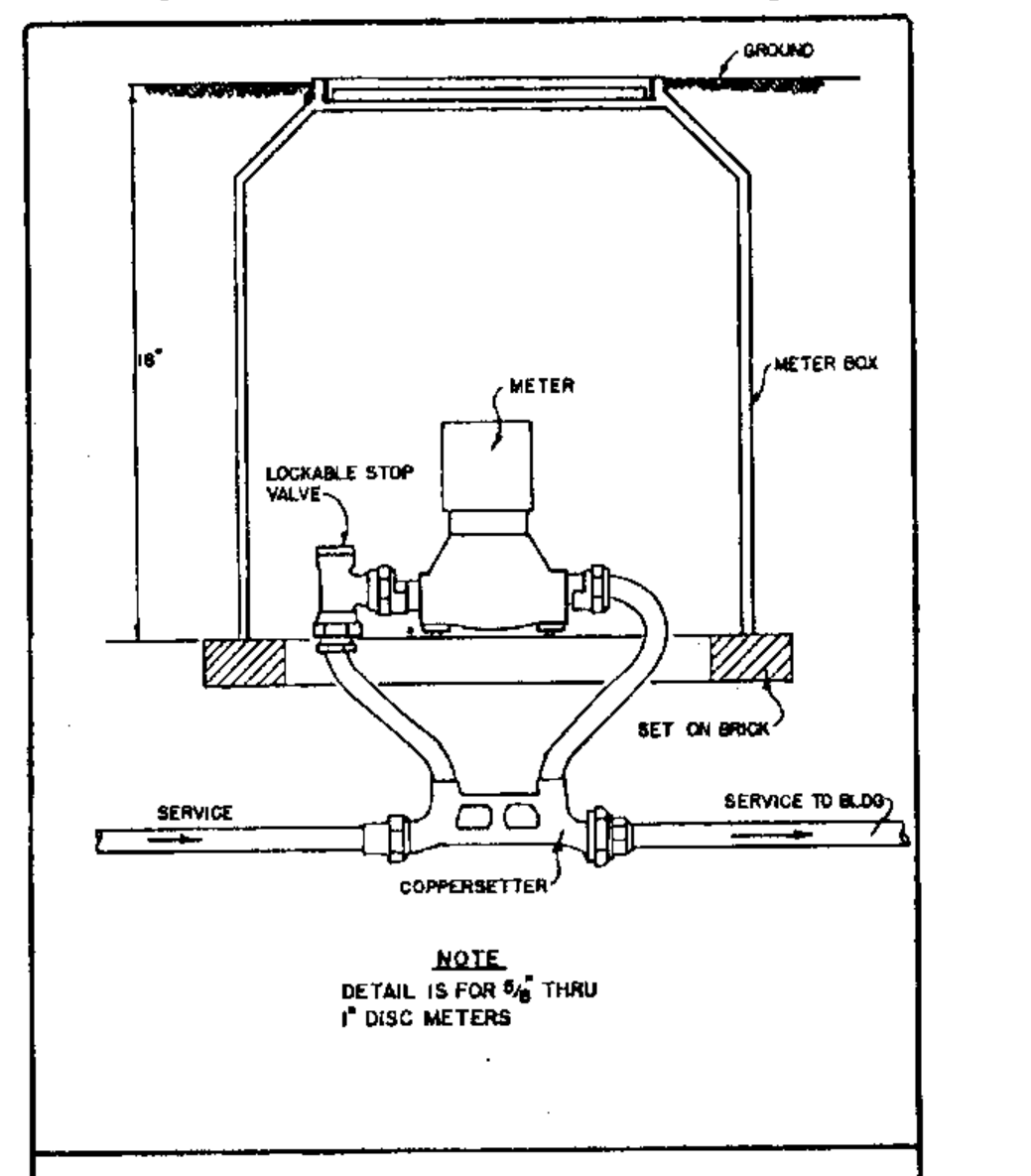

FACE OF CURB
INVERT LINE
6"
15"R
2"
18"
18"R
1":1'
11"
7"
2"
1'-0"
2'-0"

BUILDER'S OPTION: AREA MAY BE CONCRETE. BOTTOM OF CURB MAY FOLLOW SLOPE OF SUB-BASE PROVIDED A MIN. DEPTH OF 7" IS MAINTAINED.

VDOT ROLLTOP CURB

NO SCALE

VDOT MUST INSPECT CURB FORMS 24 HOURS BEFORE THE PLACEMENT OF CURB & GUTTER CONCRETE.

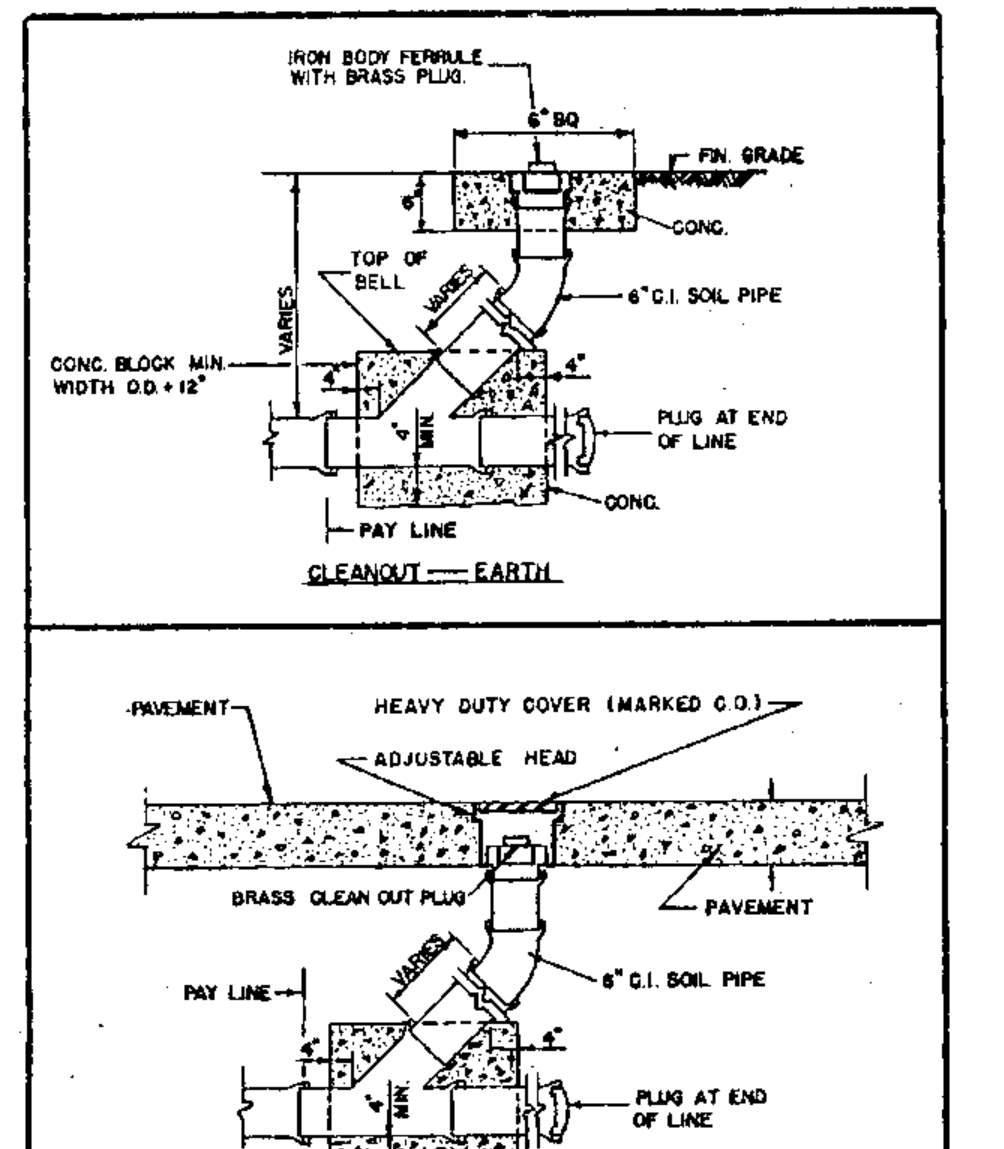

GROUND
18"
METER BOX
METER
LOCKABLE STOP VALVE
SET ON BRICK
SERVICE
SERVICE TO BLDG
COPPERSETTER

NOTE
DETAIL IS FOR 5/8" THRU 1" DISC METERS

METER SETTING

STANDARDS FOR
WATER AND WASTEWATER SYSTEMS
COUNTY OF PRINCE GEORGE
VIRGINIA

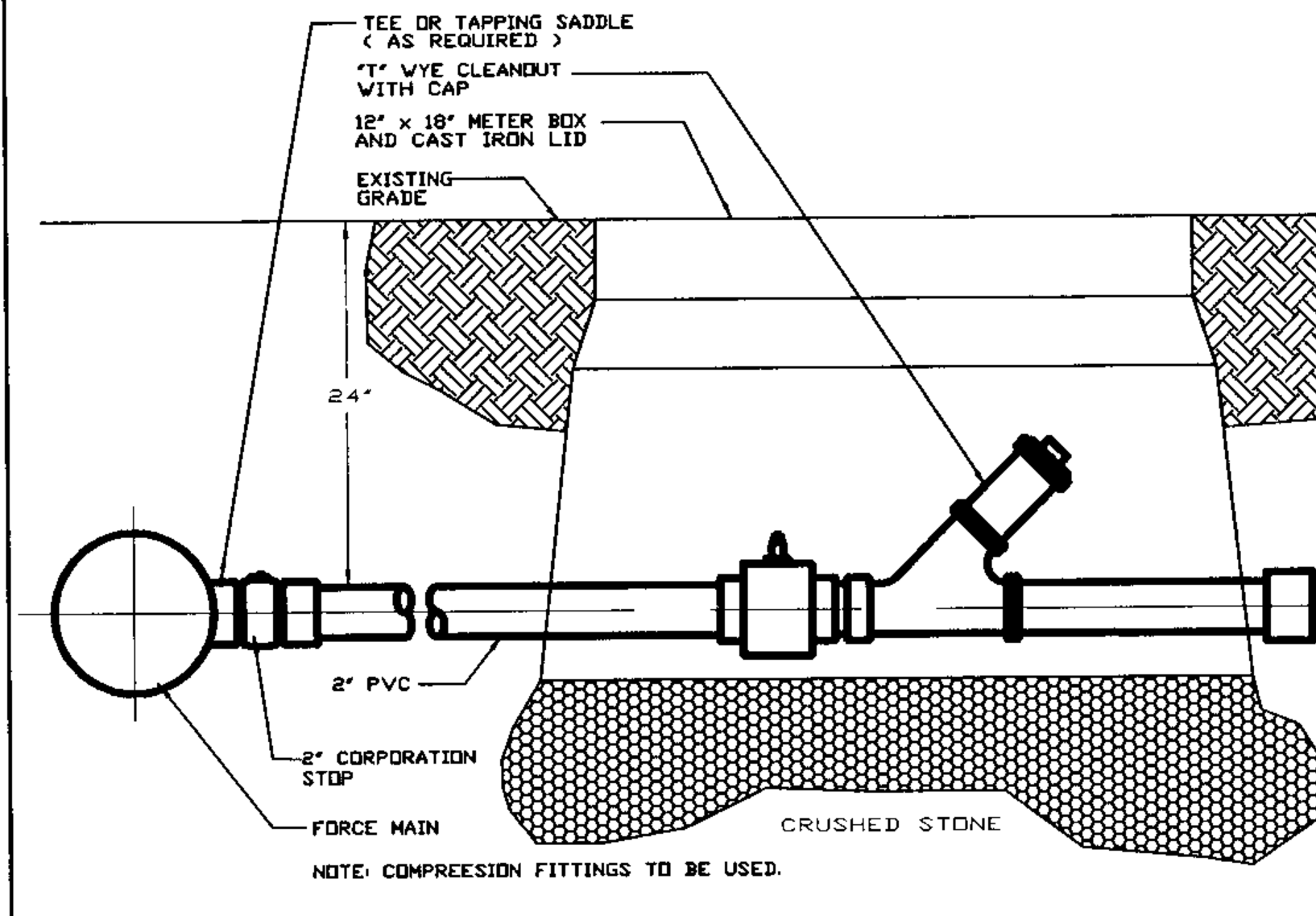
DATE 7-78
PLATE NO. 8


IRON BODY FERRULE WITH BRASS PLUG.
6" SQ
FIN. GRADE
CONC.
TOP OF BELL
VARIES
6" C.I. SOIL PIPE
CONC. BLOCK MIN. WIDTH O.D. + 12"
4"
MIN.
PLUG AT END OF LINE
PAY LINE
CLEANOUT — EARTH
PAVEMENT
HEAVY DUTY COVER (MARKED C.O.)
ADJUSTABLE HEAD
BRASS CLEAN OUT PLUG

CLEANOUTS

STANDARDS FOR
WATER AND WASTEWATER SYSTEMS
COUNTY OF PRINCE GEORGE
VIRGINIA

DATE 7-78
PLATE NO. 25


TEE OR TAPPING SADDLE (AS REQUIRED)
"T" WYE CLEANOUT WITH CAP
12" x 18" METER BOX AND CAST IRON LID
EXISTING GRADE
PROPERTY LINE
24"
2" PVC
2" CORPORATION STOP
FORCE MAIN
CRUSHED STONE
1' PIGTAIL STUB OUT WITH CAP (SERVICE TO HOUSE TO BE INSTALLED BY PLUMBER UNDER SEPARATE CONTRACT)
2" SWING CHECK VALVE STOP

NOTE: COMPREESION FITTINGS TO BE USED.

FORCE MAIN CONNECTION

NO SCALE

DERRICK A. JOHNSON
No. 24761
JANUARY 9, 2006

VIRGINIA | NORTH CAROLINA | WEST VIRGINIA

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10-10-05	COUNTY COMMENTS
11-22-05	COUNTY COMMENTS
01-09-06	COUNTY COMMENTS

DATE
11 APR 2005

DRAWN BY
K. HALPAUS

DESIGNED BY
D. JOHNSON

CHECKED BY
D. JOHNSON

SCALE
NONE

TIMMONS GROUP

THE MEADOWS @ PRINCE GEORGE - SECTION 1

BLAND DISTICT * PRINCE GEORGE COUNTY, VIRGINIA

GENERAL DETAILS

JOB NO.
21950

SHEET NO.
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