GENERAL NOTES

1. *THE VIRGINIA DEPARTMENT OF TRANSPORTATION 2007 ROAD AND BRIDGE SPECIFICATIONS AND THE 2008 ROAD AND BRIDGE STANDARDS SHALL GOVERN THE FOLLOWING:*
   - *A. POURING, CURING, FORMS, WORKMANSHIP, ETC. OF ALL CONCRETE USED ON THIS PROJECT.*
   - *B. STABILIZED BASE COURSE MATERIAL.*
   - *C. MATERIALS AND INSTALLATION OF ALL PIPE CULVERTS.*
2. *THE VDOT APPROVAL OF THESE PLANS WILL EXPIRE FIVE (5) YEARS FROM DATE OF APPROVAL.*
3. *OWNER WILL FURNISH SURVEY CONTROL OFF SET HUBS FOR ALL ROADS AND EASEMENTS FOR ALIGNMENT AND GRADE. ROADS WILL BE STAKED ON ONLY ONE SIDE. REPLACEMENT OF THESE HUBS AND ANY OTHER STAKING WILL BE DONE BY THE CONTRACTOR AT HIS EXPENSE. THE CONTRACTOR SHALL INSPECT THE CONTROL STAKING MENTIONED ABOVE AND VERIFY BEFORE CONSTRUCTION.*
4. *ALL GRADE STAKES DESTROYED BY THE CONTRACTOR, SHALL BE REPLACED AT HIS EXPENSE.*
5. *IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PRESERVE THE EXISTING RIGHT OF WAY STONES. ANY MARKERS DAMAGED SHALL BE REPLACED AT HIS EXPENSE.*
6. *CLEARING AND GRUBBING SHALL BE COMPLETE WITHIN THE RIGHT OF WAYS AS INDICATED ON LAYOUT PLAN.*
7. *ALL DRAINAGE EASEMENTS TO BE CLEARED, GRUBBED, AND GRADED TO CONTAIN WATER FROM PIPE CULVERTS AND TO EXTEND TO A NATURAL WATERCOURSE.*
8. *EXCESS EXCAVATION TO BE DISPOSED OF AS DIRECTED BY THE ENGINEER.*
9. *ALL FILLETS AT INTERSECTIONS TO HAVE 35' RADII UNLESS OTHERWISE NOTED.*
10. *GRADE LINES ON PROFILES DENOTE FINISHED GRADE OF CENTER LINE OF ROAD.*
11. *BASE MUST BE APPROVED BY VDOT FOR DEPTH, TEMPLATE, AND COMPACTION BEFORE SURFACE TREATMENT IS APPLIED.*
12. *SLOPE EASEMENTS FOR FILL SLOPES ARE REQUIRED WHERE SLOPES EXCEED PROPOSED RIGHT-OF-WAY LIMITS SHOWN.*
13. *PERMIT TO TIE INTO EXISTING ROADS, SHALL BE OBTAINED FROM RESIDENT ENGINEER PRIOR TO ROAD CONSTRUCTION.*
14. *ALL UTILITIES TO BE IN PLACE PRIOR TO LAYING BASE MATERIAL.*
15. *NO STRUCTURE SHALL BE CONSTRUCTED ON STATE MAINATAINED RIGHTS OF WAY UNLESS SAID STRUCTURES ARE SHOWN ON ROAD CONSTRUCTION PLANS APPROVED BY VDOT OR SUCH STRUCTURES ARE COVERED BY A VDOT LAND USE PERMIT (OR BY A LETTER OF INTENT FROM THE RESIDENT ENGINEER TO ISSUE SAID PERMIT AT THE TIME OF STATE ACCEPTANCE).*

PRINCE GEORGE COUNTY
DEPARTMENT OF PUBLIC UTILITIES

NOTES:

1. ALL MATERIALS FOR SEWER AND WATER SYSTEMS SHOWN SHALL BE SUPPLIED AND INSTALLED IN ACCORDANCE WITH THE LATEST SPECIFICATIONS OF PRINCE GEORGE COUNTY APPLICABLE AT THE TIME OF NOTICE TO PROCEED.
2. FOR SEWER AND WATER INSTALLATION WITHIN EXISTING VDOT R/W; UTILITY CONTRACTORS MUST NOTIFY VDOT WHEN INSTALLATION BEGINS SO THAT DENSITY CAN BE TESTED ON TRENCH BACKFILL (95% ASTM. D-698 @ OPTIMUM MOISTURE ± 2%).
3. THE INSTALLATION OF A SEWER BACKFLOW DEVICE IS REQUIRED FOR ALL SERVICE CONNECTIONS WHERE THE FINISHED FLOOR ELEVATION IS LOWER THAN THE NEAREST DOWNGRADE AND/OR UPGRADE MANHOLE TOP ELEVATIONS. THIS DEVICE WILL BE INSPECTED BY THE BUILDING INSPECTION DEPARTMENT.
4. ALL WATER SERVICE CONNECTIONS BELOW THE ELEVATION CONTOUR OR WHERE THE PRESSURE IS GREATER THAN 80 P.S.I. WILL REQUIRE INDIVIDUAL PRESSURE REGULATORS AS REQUIRED BY BOCA CODE.
5. VERTICAL DATUM IS BASED ON MEAN SEA LEVEL (USC & GS DATUM). HORIZONTAL CONTROLS ARE BASED ON VIRGINIA STATE PLANE COORDINATE GRID, SOUTH ZONE, NORTH AMERICAN DATUM OF 1983 (NAD 83).
6. CONTRACTOR SHALL PROPERLY NOTIFY ALL PROPERTY OWNERS TWO (2) WEEKS PRIOR TO THE START OF ANY CONSTRUCTION (INCLUDING LAND CLEARING). NOTIFICATION SHALL BE IN THE FORM OF A LETTER SIMILAR TO THE "SAMPLE" REFLECTED IN THE COUNTY'S LATEST WATER AND SEWER SPECIFICATIONS (NOT-1).

DATE JAN. 2008	STANDARD SEWER AND WATER NOTES	DRWG. NO. DES-2
REVISIONS		

PRINCE GEORGE COUNTY
DEPARTMENT OF PUBLIC UTILITIES

NOTES CONT:

13. THE ENGINEER WILL CERTIFY THAT THE ROADS ARE WITHIN 6-INCHES OF SUBGRADE BEFORE WATERLINE CONSTRUCTION CAN BEGIN.
14. FOR SEWER AND WATER INSTALLATION WITHIN EXISTING VDOT R/W; UTILITY CONTRACTORS SHALL NOTIFY VDOT 48 HOURS IN ADVANCE WHEN INSTALLATION BEGINS SO THAT DENSITY CAN BE TESTED (95% @ OPTIMUM MOISTURE + 20%)
15. CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES SHOWN ON THE PLANSIN AREAS OF CONSTRUCTION PRIOR TO STARTING THE WORK. CONTACT ENGINEER IMMEDIATELY, IF: LOCATION OR ELEVATION IS DIFFERENT FROM THAT SHOWN ON THE PLAN, OR IF: THERE APPEARS TO BE A CONFLICT, AND UPON DISCOVERY OF ANY UTILITY NOT SHOWN ON THE PLAN CALL MISS UTILITY OF VIRGINIA AT 1-800-552-7001 (TOLL FREE)
16. THE INSTALLATION OF A BACKFLOW DEVICE IS REQUIRED IN ALL HOUSES WHERE THE FINISHED FLOOR ELEVATION IS LOWER THAN THE TOP UPGRADE MANHOLE. THIS DEVICE WILL BE INSPECTED BY THE COUNTY BUILDING INSPECTOR.
17. INDIVIDUAL WATER SERVICES SHALL BE 3/4"
18. ALL WATERLINE VALVES MUST BE LOCATED ON THE TEE OR CROSS WHEN APPLICABLE.
19. ALL MANHOLES IN UTILITY EASEMENTS ARE TO HAVE THE CONCRETE SECTION EXTENDED ONE FOOT ABOVE THE GROUND OR DETAIL MAN-2B SHALL BE USED
20. A SMOOTH TRANSITION OF A DROP MANHOLE MUST BE PROVIDED FOR EACH LATERAL OR SANITARY SEWER ENTERING A SANITARY MANHOLE
21. ALL FIRE HYDRANTS SHALL BE O.S.H.A. RED IN COLOR.
22. METER BOXES PROVIDED SHALL BE CAST IRON 12"x18"x24" HIGH WITH CAST IRON LIDS. THE METER ASSEMBLIES ARE TO BE SUPPLIED WITH NEPTUNE PROREAD ENCODERS AND R900I PIT MIU (RF) ATTACHED TO THE LID. METERS ARE TO BE COMPATIBLE WITH THE PROPOSED SYSTEM. A WAND TYPE VISUAL READER COMPATIBLE WITH THE PROREAD SYSTEM WILL BE SUPPLIED TO THE UTILITY DEPARTMENT WITH THE WATER METERS.
23. ALL SANITARY SEWER LATERALS THAT ARE INSTALLED OUTSIDE OF THE R/W ARE TO HAVE THE CLEANOUT INSTALLED AT THE EDGE OF THE EASEMENT. A CARSONITE MARKER SHALL ALSO BE INSTALLED TO INDICATE THEIR LOCATION.
24. ALL HYDRANTS AND BENDS SHALL BE EQUIPPED WITH MEGA LUGS, KICKERS AND THRUST BLOCKS.
25. PRESSURE REDUCING VALVES SHALL BE USED ON LOTS WHERE THE STATIC PRESSURE IN THE SYSTEM EXCEEDS 80 PSI. FOR SECTION SIX PRESSURE REDUCING VALVES WILL NOT BE USED ON INDIVIDUAL LOTS.
26. CLEANOUTS ARE TO BE INSTALLED ON ALL SANITARY LATERALS IN ACCORDANCE WITH PRINCE GEORGE COUNTY SPECIFICATIONS. THESE CLEANOUTS SHOULD BE INSTALLED AT THE EDGE OF THE R/W.

JAN. 2008	STANDARD SEWER AND WATER NOTES	DRWG. NO. DES-2 SHEET 2 OF 3
REVISIONS		

PRINCE GEORGE COUNTY
DEPARTMENT OF PUBLIC UTILITIES

NOTES CONT:

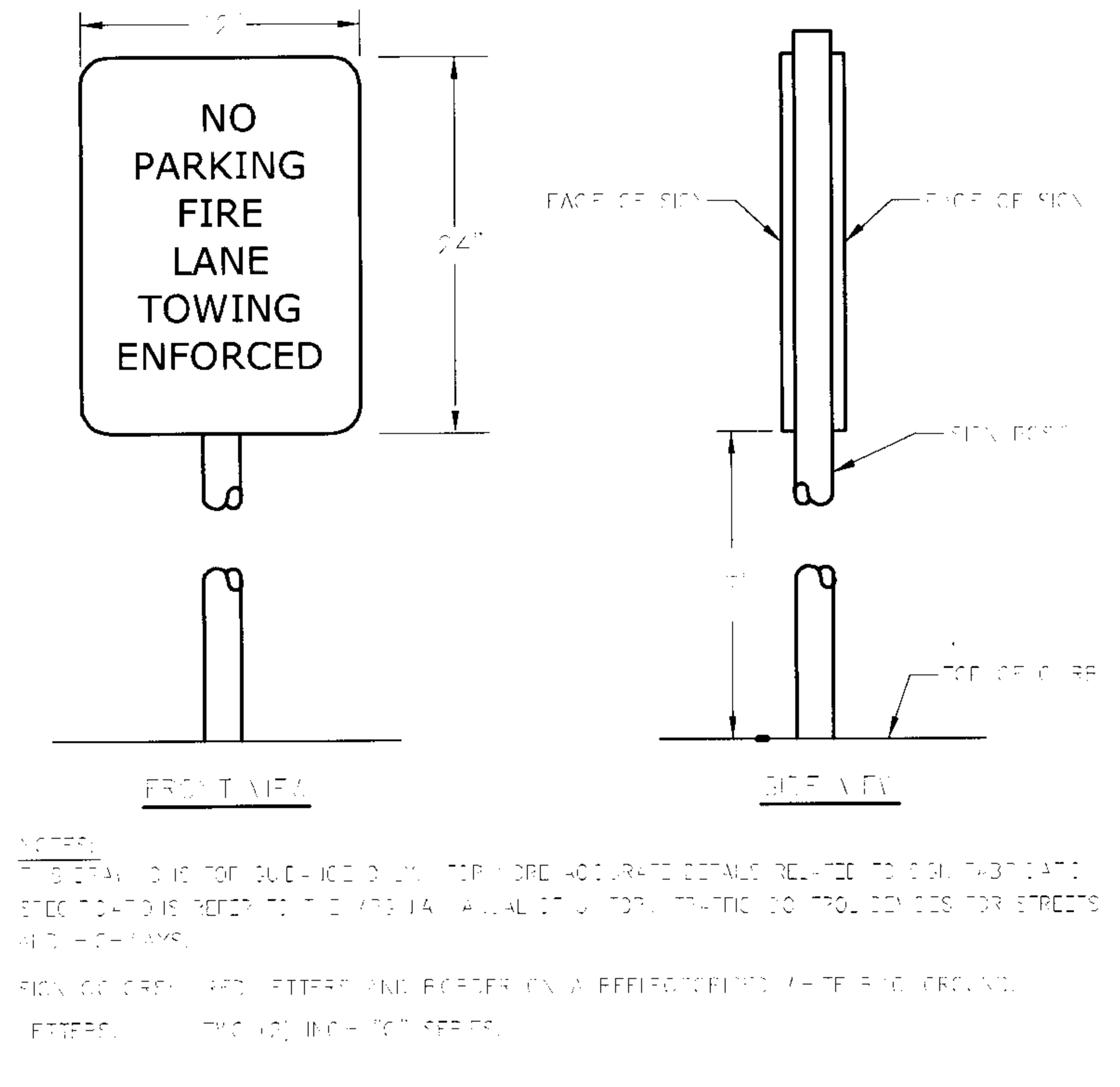
27. UTILITY INSPECTOR SHALL BE CONTACTED BEFORE INDIVIDUAL SERVICE CONNECTIONS ARE COVERED.
28. ALL MANHOLES WITHIN 1,000 FEET OF A FORCE MAIN DISCHARGE SHALL BE COATED AS REQUIRED IN THE LATEST COUNTY SPECIFICATIONS.
29. ALL INDIVIDUAL WATER AND SEWER CONNECTIONS SHALL BE MADE USING DOUBLE BANDED, STAINLESS STEEL, EPOXY COATED SADDLES.
30. A 'W' AND 'S' SHALL BE STAMPED IN THE CURB WHILE THE CONCRETE IS STILL WET. THESE MARKS SHALL INDICATE THE ACTUAL LOCATION OF THE WATER AND SEWER CONNECTIONS FOR EACH LOT.
31. ALL MANHOLES SHALL BE SEALED AT THE JOINTS WITH AN EXTERNAL RUBBER SLEEVE SIMILAR TO THE INFI-SHIELD SEAL WRAP AS MANUFACTURED BY SEALING SYSTEMS, INC. THE SEAL SHALL BE MADE OF EPDM (ETHYLENE PROPYLENE DIENE MONOMER) RUBBER WITH A MINIMUM THICKNESS OF 65 MILS. EACH UNIT SHALL HAVE A 2-INCH WIDE MASTIC STRIP ON THE TOP AND BOTTOM EDGE OF THE RUBBER WRAP. THE MASTIC SHALL BE NON-HARDENING BUTYL RUBBER SEALANT, WITH A MINIMUM THICKNESS OF 125 MILS.
32. THE BOXES FOR THE SEWER CONNECTIONS MUST BE MARKED AS SEWER CONNECTIONS RATHER THAN WATER METER.
33. ALL GATE VALVE BOXES LOCATED OUTSIDE THE PAVEMENT NEED TO BE ENCLOSED IN A 12"x12"x6" CONCRETE ENLOSURE.

DATE JAN. 2008	STANDARD SEWER AND WATER NOTES	DRWG. NO. DES-2 SHEET 3 OF 3
REVISIONS		

THE CONTRACTOR SHALL CALL "MISS UTILITY" 48 HOURS PRIOR TO THE START OF EXCAVATION. CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES SHOWN ON PLANS IN AREAS OF CONSTRUCTION PRIOR TO STARTING WORK. CONTACT THE ENGINEER IMMEDIATELY IF THE LOCATION OR ELEVATION IS DIFFERENT FROM THAT SHOWN ON THE PLAN, IF THERE APPEARS TO BE A CONFLICT, AND/OR UPON DISCOVERY OF ANY UTILITY NOT SHOWN ON PLAN. THE DEVELOPER SHALL BE RESPONSIBLE FOR THE RELOCATION OF ANY UTILITY WITHIN THE EXISTING AND/OR RIGHT OF WAY REQUIRED BY THE DEVELOPMENT. CONTACT MISS UTILITY OF VIRGINIA: 1-800-552-7001 (TOLL FREE)

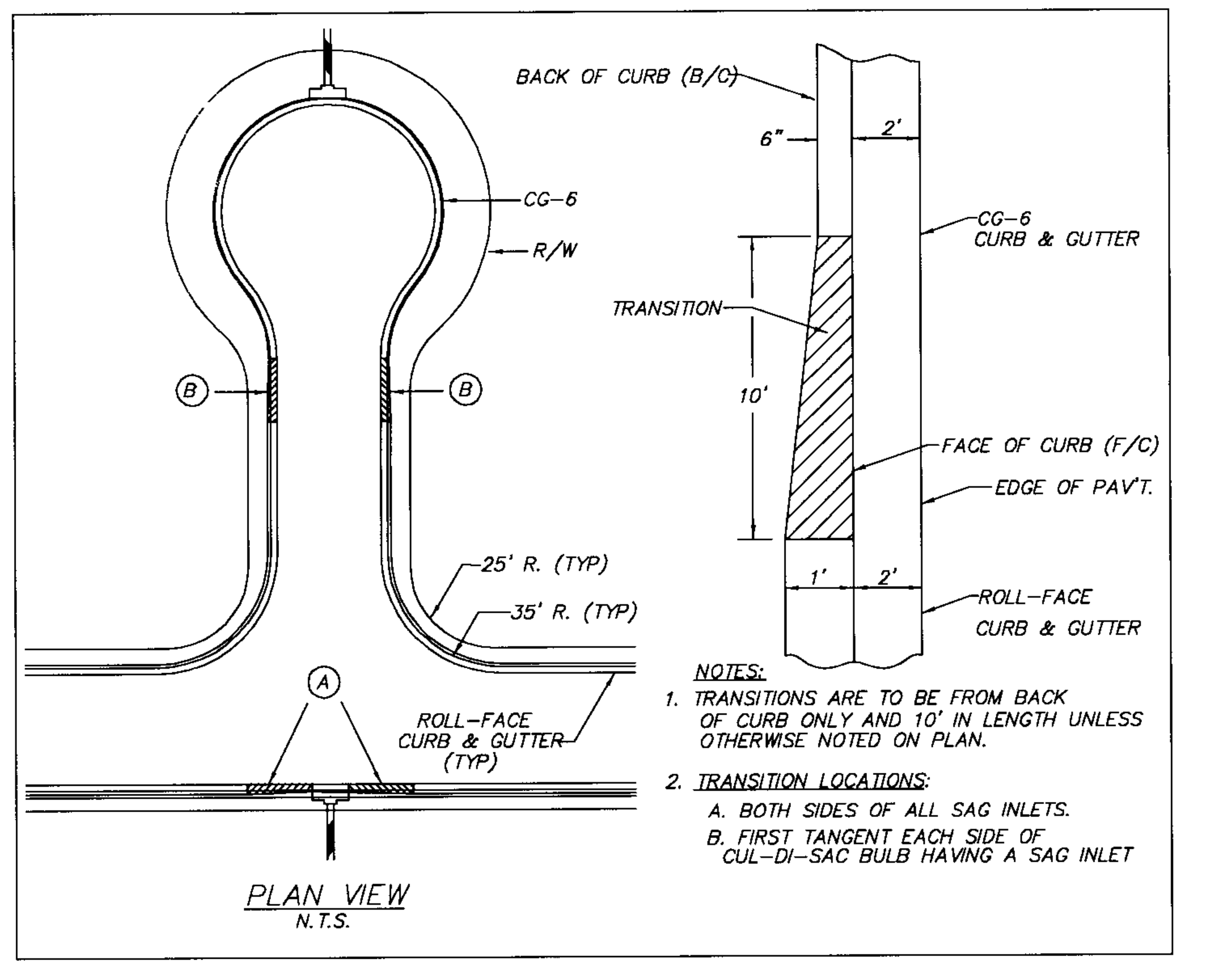
I, WE HEREBY CERTIFY THAT THE LOT LINES, LOT NUMBERS, BLOCK NUMBERS AND THE STREET NAMES SHOWN ON THESE PLANS ARE IDENTICAL TO THOSE SHOWN ON THE OFFICIAL RECORDED PLAT, AND NO CHANGES WILL BE MADE WITHOUT PRIOR APPROVAL FROM THE UTILITY DEPARTMENT. IF ANY CHANGES ARE APPROVED, REVISED WATER AND/OR SEWER PLANS WILL BE SUBMITTED WITHIN 48 HOURS AFTER APPROVAL.

SIGNATURE: ______________________


NO PARKING FIRE LANE TOWING ENFORCED
24"
FACE OF SIGN
FRONT VIEW
SIDE VIEW

FIRE LANE SIGN

NO SCALE


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

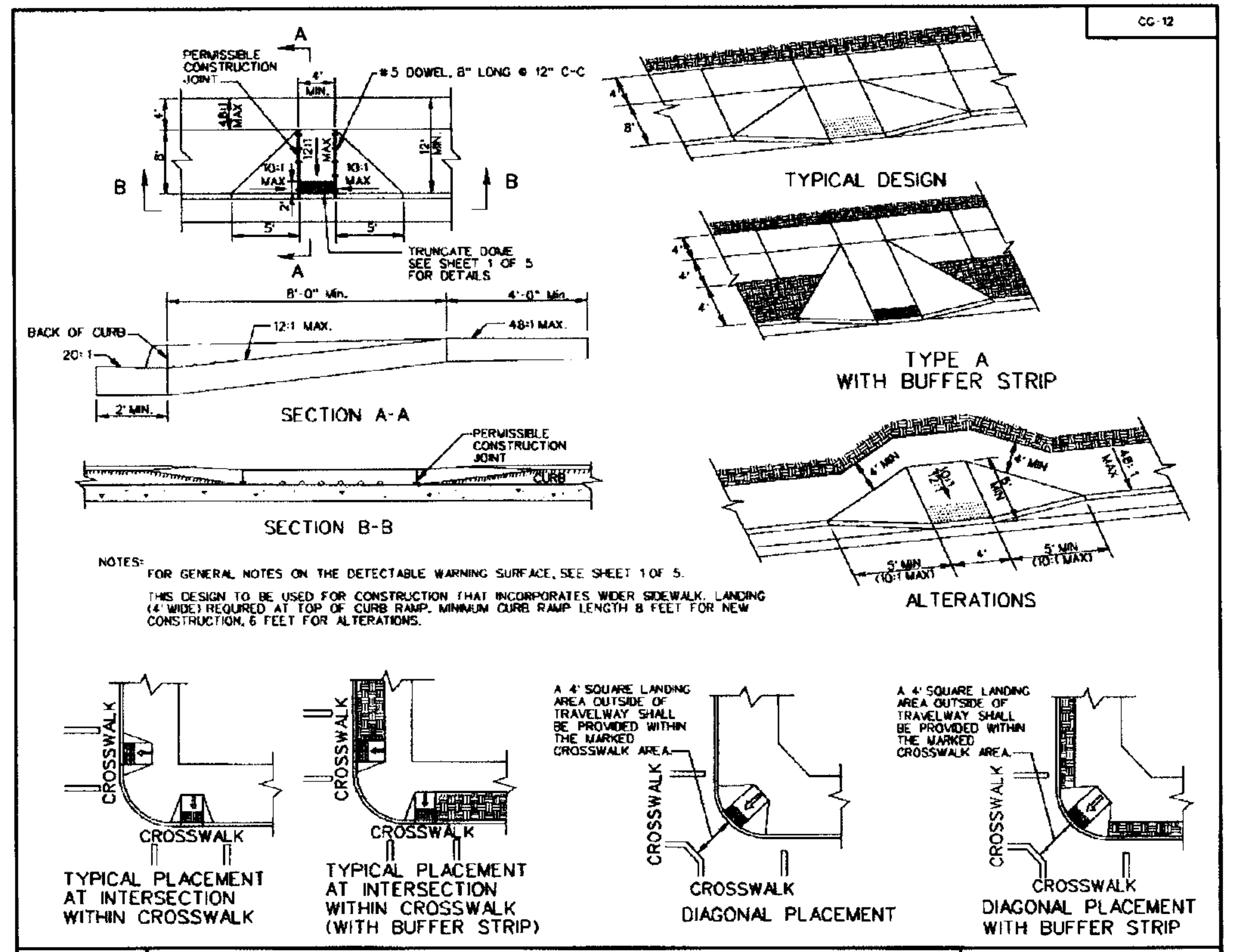
PLAN VIEW

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-DI-SAC BULB HAVING A SAG INLET*

CG-12


A
PERMISSIBLE CONSTRUCTION JOINT
#5 DOWEL, 8" LONG @ 12" C-C
4' MIN.
48:1 MAX
12:1 MAX
10:1 MAX
12' MIN.
B
5'
TRUNCATE DOME SEE SHEET 1 OF 5 FOR DETAILS
8'-0" Min.
4'-0" Min.
BACK OF CURB
20:1
12:1 MAX.
48:1 MAX.
2' MIN.
SECTION A-A
SECTION B-B
CURB
TYPICAL DESIGN
TYPE A WITH BUFFER STRIP
4' MIN
5' MIN (10:1 MAX)
ALTERATIONS
CROSSWALK
TYPICAL PLACEMENT AT INTERSECTION WITHIN CROSSWALK
TYPICAL PLACEMENT AT INTERSECTION WITHIN CROSSWALK (WITH BUFFER STRIP)
A 4' SQUARE LANDING AREA OUTSIDE OF TRAVELWAY SHALL BE PROVIDED WITHIN THE MARKED CROSSWALK AREA.
DIAGONAL PLACEMENT
DIAGONAL PLACEMENT WITH BUFFER STRIP

NOTES:
FOR GENERAL NOTES ON THE DETECTABLE WARNING SURFACE, SEE SHEET 1 OF 5.

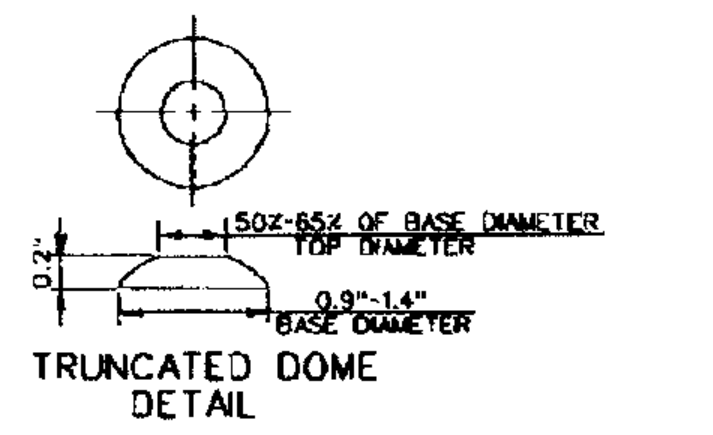
THIS DESIGN TO BE USED FOR CONSTRUCTION THAT INCORPORATES WIDER SIDEWALK. LANDING (4' WIDE) REQUIRED AT TOP OF CURB RAMP. MINIMUM CURB RAMP LENGTH 8 FEET FOR NEW CONSTRUCTION, 6 FEET FOR ALTERATIONS.

SPECIFICATION REFERENCE	CG-12 DETECTABLE WARNING SURFACE	VDOT ROAD AND BRIDGE STANDARDS	
105 502	TYPE A (PERPENDICULAR) APPLICATION VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE 10/09	SHEET 2 OF 5 203.06

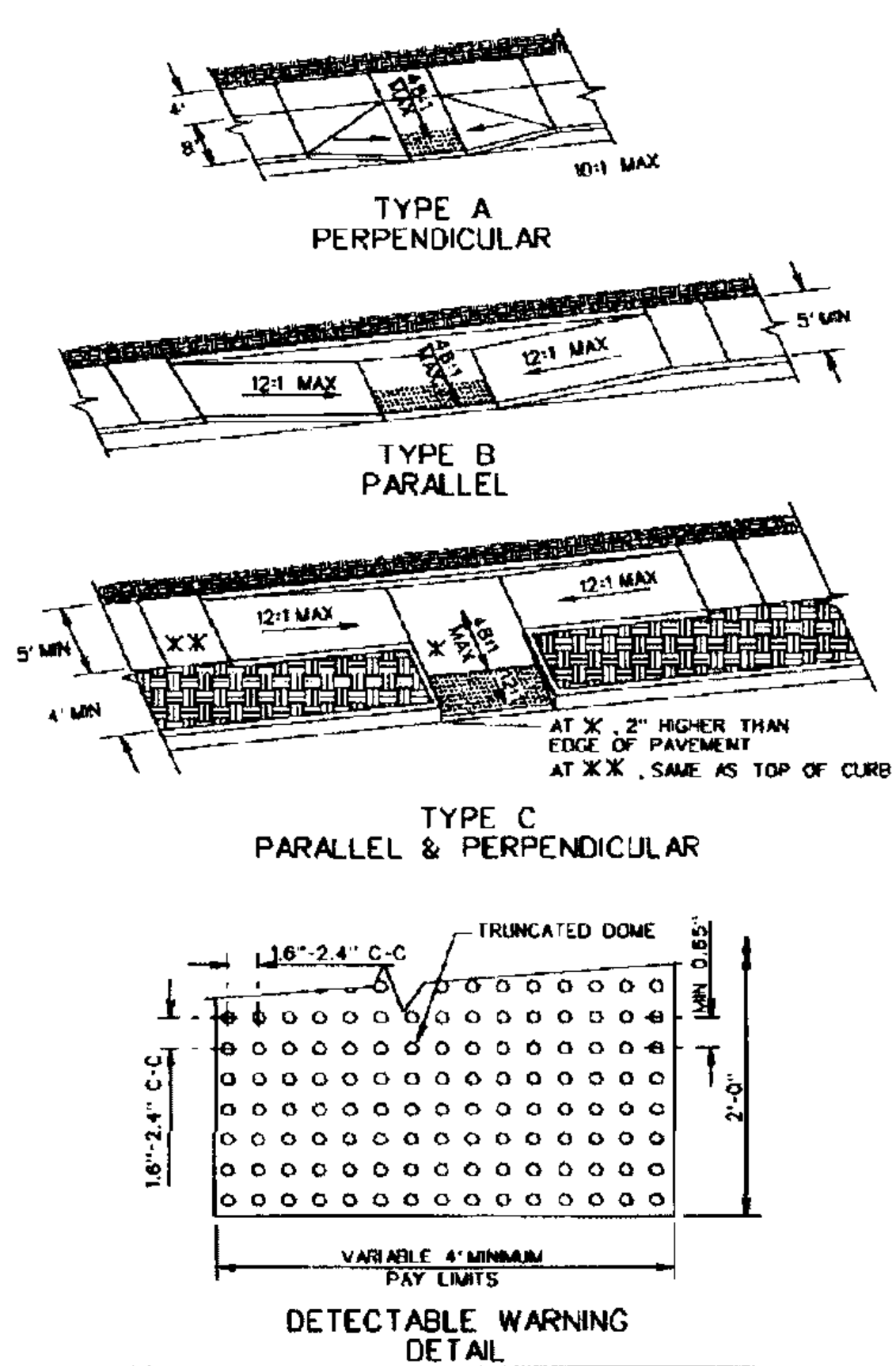
CG-12

GENERAL NOTES:

1. THE DETECTABLE WARNING SHALL BE PROVIDED BY TRUNCATED DOMES.
2. DETECTABLE WARNING TO BE CLASS A-3 CONCRETE (CLASS A-4 IF PRECAST) WITH SLIP RESISTANT INTEGRAL SURFACE COVERING THE FULL WIDTH OF THE RAMP FLOOR BY 2 FOOT IN LENGTH IN THE DIRECTION OF PEDESTRIAN TRAVEL. OTHER TYPES OF MATERIAL WITH THE TRUNCATED DOMES DETECTABLE WARNING MAY BE USED WITH THE APPROVAL OF THE ENGINEER.
3. SLOPING SIDES OF CURB RAMP MAY BE POURED MONOLITHICALLY WITH RAMP FLOOR OR BY USING PERMISSIBLE CONSTRUCTION JOINT WITH REQUIRED BARS.
4. 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.
5. 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".
6. CURB / CURB AND GUTTER SLOPE TRANSITIONS ADJACENT TO CURB RAMPS ARE INCLUDED IN PAYMENT FOR CURB / CURB AND GUTTER.
7. 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 ACCESSIBLE 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. ACCESSIBLE ROUTES PROVIDE A CONTINUOUS UNOBSTRUCTED, STABLE, FIRM AND SLIP RESISTANT PATH CONNECTING ALL ACCESSIBLE ELEMENTS OF A FACILITY THAT CAN BE APPROACHED, ENTERED AND USED BY PEDESTRIANS.
8. RAMPS MAY BE PLACED ON RADIAL OR TANGENTIAL SECTIONS PROVIDED THAT THE CURB OPENING IS PLACED WITHIN THE LIMITS OF THE CROSSWALK AND THAT THE SLOPE AT THE CONNECTION OF THE CURB OPENING IS PERPENDICULAR TO THE CURB.
9. TYPICAL CONCRETE SIDEWALK IS 4" THICK. WHEN THE ENTRANCE RADII CANNOT ACCOMMODATE THE TURNING REQUIREMENTS OF ANTICIPATED HEAVY TRUCK TRAFFIC, REFER TO STANDARD CG-13, COMMERCIAL ENTRANCE (HEAVY TRUCK TRAFFIC) FOR CONCRETE DEPTH.
10. WHEN CURB RAMPS ARE USED IN CONJUNCTION WITH A SHARED USE PATH, THE MINIMUM WIDTH SHALL BE THE WIDTH OF THE SHARED USE PATH.
11. WHEN ONLY ONE CURB RAMP IS PROVIDED FOR TWO CROSSINGS (DIAGONAL), A 4' x 4' LANDING AREA SHALL BE PROVIDED TO MANEUVER A WHEELCHAIR INTO THE CROSSWALK WITHOUT GOING INTO THE TRAVELWAY. THIS 4' x 4' LANDING AREA MAY INCLUDE THE GUTTER PAN.

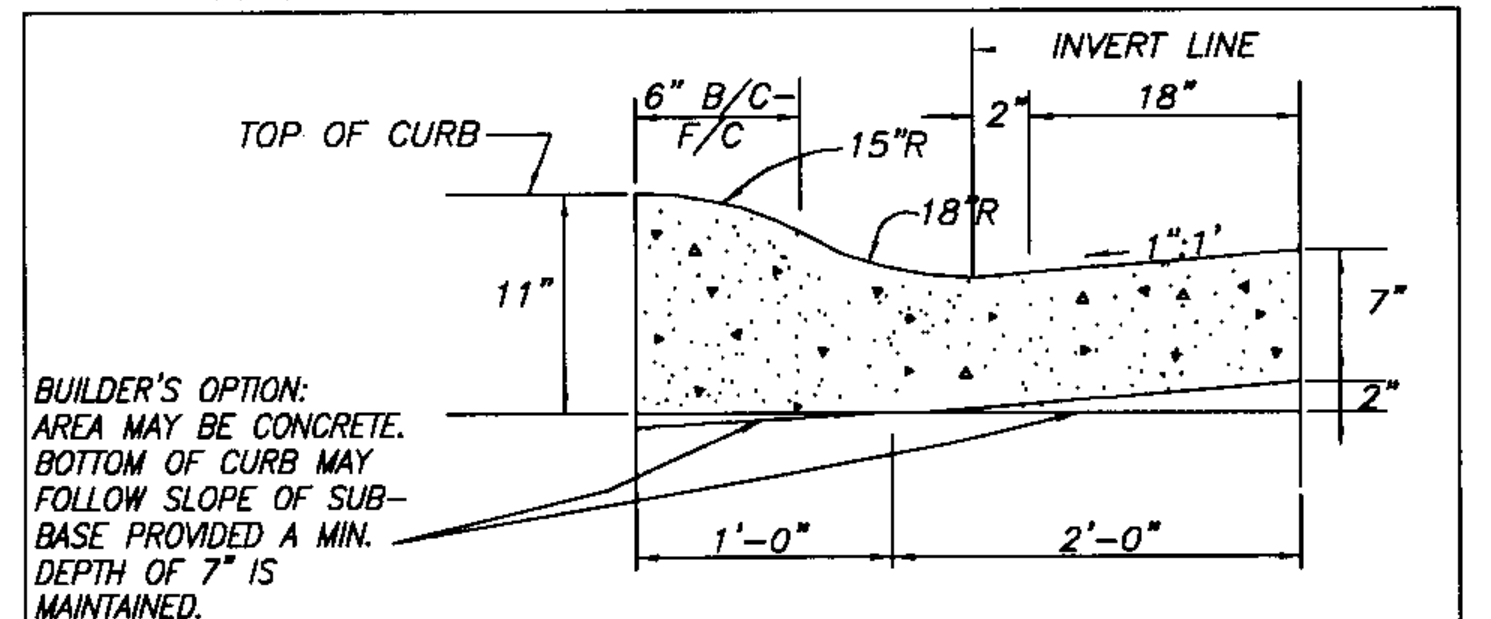

0.2"
50%-65% OF BASE DIAMETER TOP DIAMETER
0.9"-1.4" BASE DIAMETER

TRUNCATED DOME DETAIL


4'
8'
48:1 MAX
10:1 MAX
TYPE A PERPENDICULAR
12:1 MAX
5' MIN
TYPE B PARALLEL
4' MIN
✱
✱✱
AT ✱, 2" HIGHER THAN EDGE OF PAVEMENT
AT ✱✱, SAME AS TOP OF CURB
TYPE C PARALLEL & PERPENDICULAR
TRUNCATED DOME
1.6"-2.4" C-C
MIN 0.65"
2'-0"
VARIABLE 4' MINIMUM PAY LIMITS

DETECTABLE WARNING DETAIL

VDOT ROAD AND BRIDGE STANDARDS		CG-12 DETECTABLE WARNING SURFACE	SPECIFICATION REFERENCE
SHEET 1 OF 5 203.05	REVISION DATE 10/09	(GENERAL NOTES) VIRGINIA DEPARTMENT OF TRANSPORTATION	105 502


TOP OF CURB
6" B/C
F/C
15"R
18"R
INVERT LINE
2"
18"
1":1'
11"
7"
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 ROLLFACE CURB

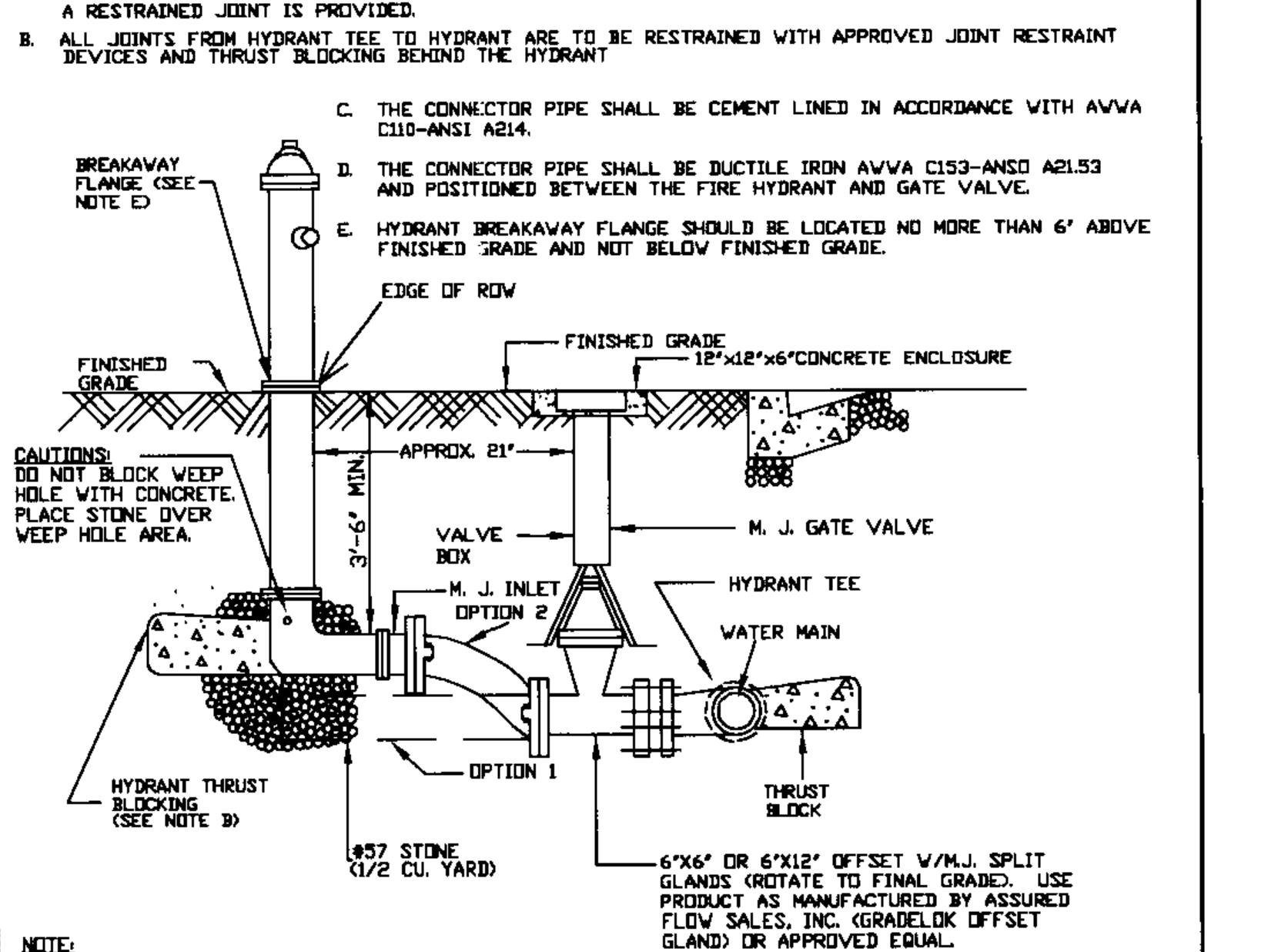
NO SCALE

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

PRINCE GEORGE COUNTY
DEPARTMENT OF PUBLIC UTILITIES

OPTION 1: IF GRADE ADJUSTMENT IS NOT REQUIRED:
- A. CONNECTOR PIPE MAY BE APPROVED D.I. OR P.V.C. PIPE.
- B. ALL JOINTS FROM HYDRANT TEE TO HYDRANT ARE TO BE RESTRAINED WITH APPROVED JOINT RESTRAINT DEVICES AND THRUST BLOCKING BEHIND THE HYDRANT

OPTION 2: IF GRADE ADJUSTMENT IS REQUIRED:
- A. THE CONNECTOR PIPE SHALL BE OF THE OFFSET DESIGN SO THAT THE FIRE HYDRANT CAN BE ADJUSTED TO ENSURE PLACEMENT AT THE PROPER GRADE. WHEN THE CONNECTOR PIPE IS THE OFFSET DESIGN IT SHALL HAVE AN ANCHORING FEATURE AT BOTH ENDS SO THAT WHEN USED WITH M.J. SPLIT GLANDS A RESTRAINED JOINT IS PROVIDED.
- B. ALL JOINTS FROM HYDRANT TEE TO HYDRANT ARE TO BE RESTRAINED WITH APPROVED JOINT RESTRAINT DEVICES AND THRUST BLOCKING BEHIND THE HYDRANT
- C. THE CONNECTOR PIPE SHALL BE CEMENT LINED IN ACCORDANCE WITH AWWA C110-ANSI A214.
- D. THE CONNECTOR PIPE SHALL BE DUCTILE IRON AWWA C153-ANSI A21.53 AND POSITIONED BETWEEN THE FIRE HYDRANT AND GATE VALVE.
- E. HYDRANT BREAKAWAY FLANGE SHOULD BE LOCATED NO MORE THAN 6" ABOVE FINISHED GRADE AND NOT BELOW FINISHED GRADE.

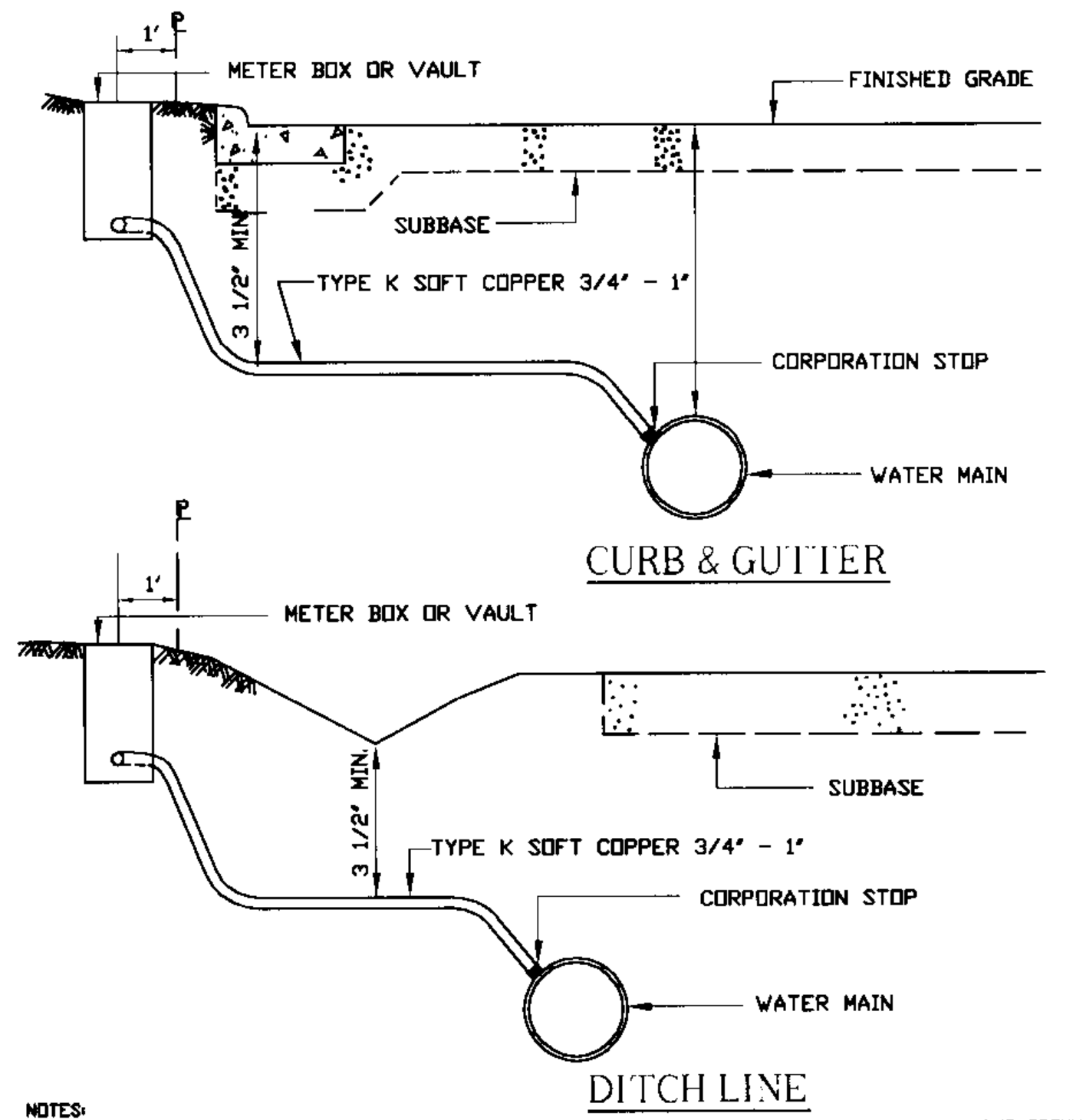

BREAKAWAY FLANGE (SEE NOTE E)
EDGE OF ROW
FINISHED GRADE
12"x12"x6"CONCRETE ENCLOSURE
APPROX. 21"
3'-6" MIN.
VALVE BOX
M. J. GATE VALVE
M. J. INLET OPTION 2
HYDRANT TEE
WATER MAIN
OPTION 1
HYDRANT THRUST BLOCKING (SEE NOTE B)
THRUST BLOCK
#57 STONE (1/2 CU. YARD)
6"X6" OR 6"X12" OFFSET W/M.J. SPLIT GLANDS (ROTATE TO FINAL GRADE). USE PRODUCT AS MANUFACTURED BY ASSURED FLOW SALES, INC. (GRADELOK OFFSET GLAND) OR APPROVED EQUAL.

CAUTIONS: DO NOT BLOCK WEEP HOLE WITH CONCRETE. PLACE STONE OVER WEEP HOLE AREA.

NOTE:
(A). HYDRANT ISOLATION VALVE TO BE LOCATED AS CLOSE TO THE HYDRANT AS POSSIBLE
(B) MINIMUM COVER AT DITCH MUST BE 3'6" OR GREATER.

DATE JAN. 2008	TYPICAL FIRE HYDRANT DETAIL	DRWG. NO. FIR-2
REVISIONS		

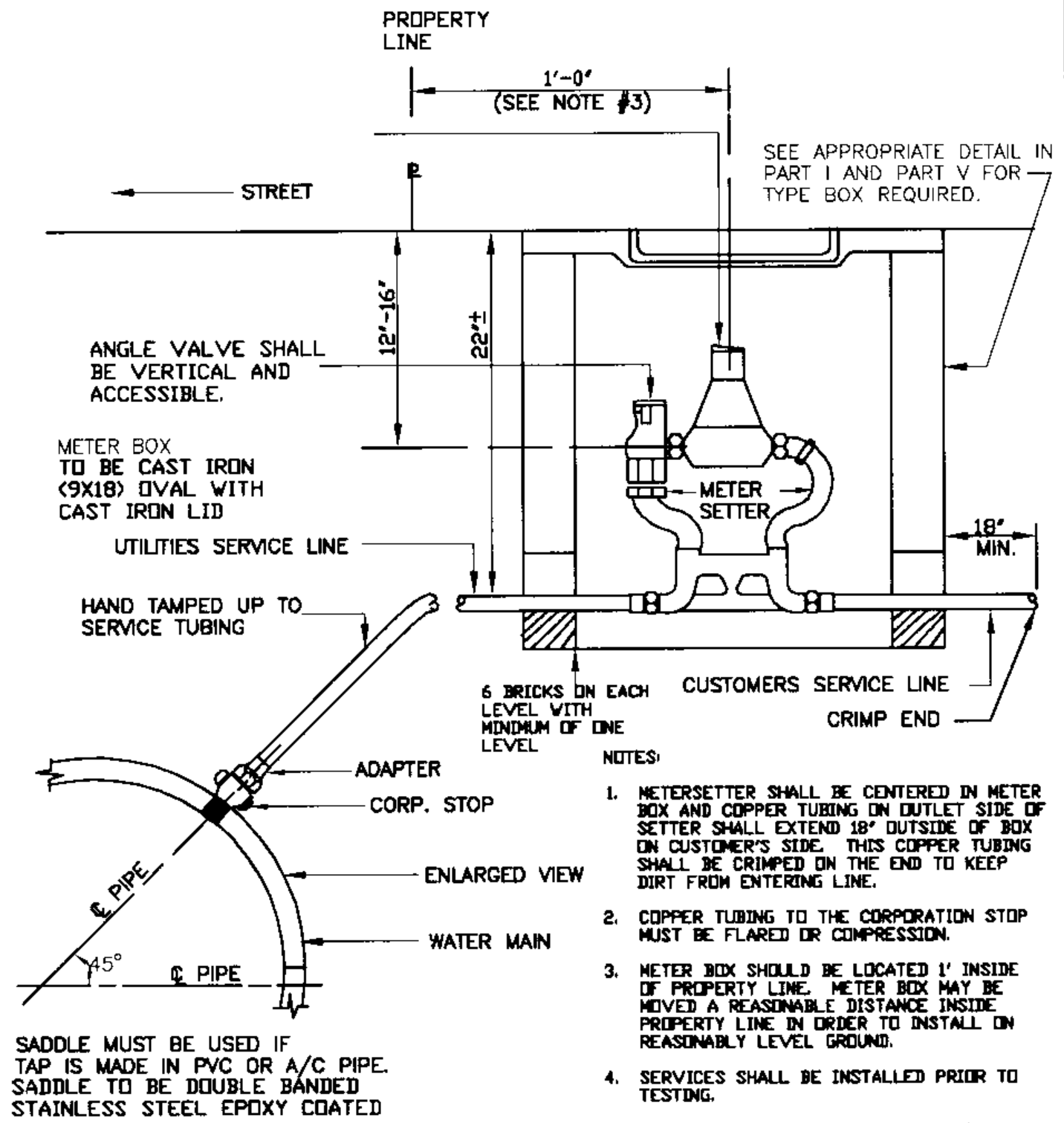
PRINCE GEORGE COUNTY
DEPARTMENT OF PUBLIC UTILITIES


1'
METER BOX OR VAULT
FINISHED GRADE
SUBBASE
3 1/2' MIN.
TYPE K SOFT COPPER 3/4" - 1"
CORPORATION STOP
WATER MAIN
CURB & GUTTER
DITCH LINE

NOTES:
1. 1 1/2" - 2" TAPS SHOULD BE MADE AT THE SPRING LINE OF THE MAIN LINE.
2. SADDLE MUST BE USED IF TAP IS MADE IN PVC OR A/C PIPE.
3. SADDLES TO BE DOUBLE BANDED EPOXY COATED STAINLESS STEEL.

DATE JAN. 2008	WATER SERVICE INSTALLATION DETAIL	DRWG. NO. MET-2
REVISIONS		

PRINCE GEORGE COUNTY
DEPARTMENT OF PUBLIC UTILITIES

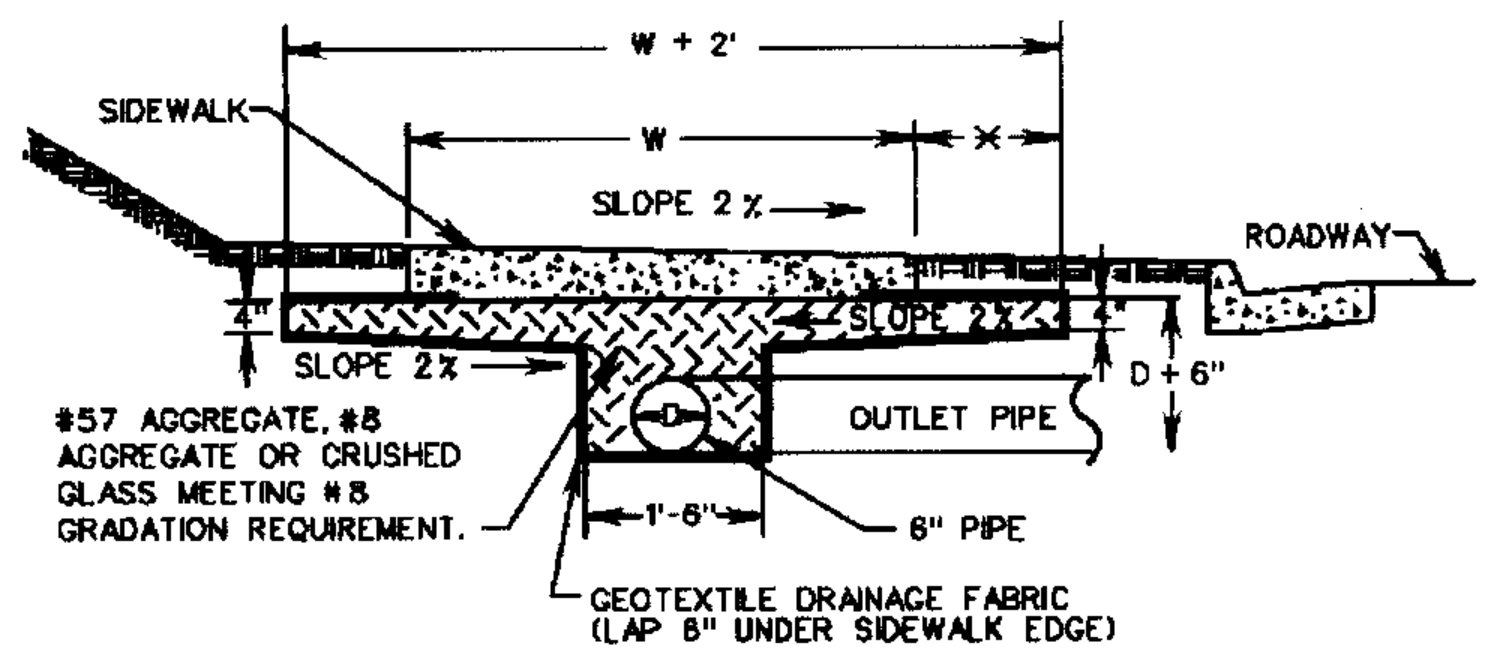

PROPERTY LINE
1'-0" (SEE NOTE #3)
SEE APPROPRIATE DETAIL IN PART I AND PART V FOR TYPE BOX REQUIRED.
STREET
12"-16"
22"±
ANGLE VALVE SHALL BE VERTICAL AND ACCESSIBLE.
METER BOX TO BE CAST IRON (9X18) OVAL WITH CAST IRON LID
METER SETTER
18" MIN.
UTILITIES SERVICE LINE
HAND TAMPED UP TO SERVICE TUBING
6 BRICKS ON EACH LEVEL WITH MINIMUM OF ONE LEVEL
CUSTOMERS SERVICE LINE
CRIMP END
ADAPTER
CORP. STOP
ENLARGED VIEW
WATER MAIN
℄ PIPE
45°

SADDLE MUST BE USED IF TAP IS MADE IN PVC OR A/C PIPE. SADDLE TO BE DOUBLE BANDED STAINLESS STEEL EPOXY COATED

NOTES:
1. METERSETTER SHALL BE CENTERED IN METER BOX AND COPPER TUBING ON OUTLET SIDE OF SETTER SHALL EXTEND 18" OUTSIDE OF BOX ON CUSTOMER'S SIDE. THIS COPPER TUBING SHALL BE CRIMPED ON THE END TO KEEP DIRT FROM ENTERING LINE.
2. COPPER TUBING TO THE CORPORATION STOP MUST BE FLARED OR COMPRESSION.
3. METER BOX SHOULD BE LOCATED 1' INSIDE OF PROPERTY LINE. METER BOX MAY BE MOVED A REASONABLE DISTANCE INSIDE PROPERTY LINE IN ORDER TO INSTALL ON REASONABLY LEVEL GROUND.
4. SERVICES SHALL BE INSTALLED PRIOR TO TESTING.
5. BYPASS SHALL NOT BE ALLOWED FOR 1" RESIDENTIAL AND IRRIGATION METERS.

DATE JAN. 2008	TYPICAL WATER METER CONNECTION FOR 3/4" SERVICE (5/8" METERS)	DRWG. NO. MET-1
REVISIONS		

UD-3


W + 2'
SIDEWALK
W
✱
SLOPE 2%
ROADWAY
4"
SLOPE 2%
D + 6"
OUTLET PIPE
1'-6"
6" PIPE

#57 AGGREGATE, #8 AGGREGATE OR CRUSHED GLASS MEETING #8 GRADATION REQUIREMENT.

GEOTEXTILE DRAINAGE FABRIC (LAP 6" UNDER SIDEWALK EDGE)

✱ THIS PORTION TO BE DELETED WHEN SIDEWALK IS ADJACENT TO CURB OR CURB AND GUTTER WITH NO BUFFER STRIP.

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.
5. OUTLET PIPE TO BE SECURELY CONNECTED TO EW-12OR OTHER DRAINAGE STRUCTURE.
6. SIDEWALK UNDERDRAIN IS TO BE USED WHEN THE SIDEWALK LONGITUDINAL GRADIENT IS 3% OR MORE AND WHEN THE UNDERLYING SOIL HAS 34% OR MORE PASSING THE NO. 200 SIEVE, AND HAS A PI OF 13 OR LESS, AND THE AREA HAS A HISTORY OF SIDEWALK UNDERMINING.
7. SIDEWALK UNDERDRAINS SHOULD BE TIED INTO THE STORM SEWER SYSTEM AT POINTS APPROXIMATLEY A CITY BLOCK APART. UNDERDRAIN RUNS MUST NOT EXCEED 1,000 FEET IN LENGTH WITHOUT DISCHARGING INTO THE STORM DRAIN SYSTEM OR INTO AN OPEN DRAIN.
8. WITHIN THE LIMITS OF A COMMERCIAL ENTRANCE, NON-PERFORATED PIPE SHALL BE UTILIZED IN LIEU OF PERFORATED PIPE.

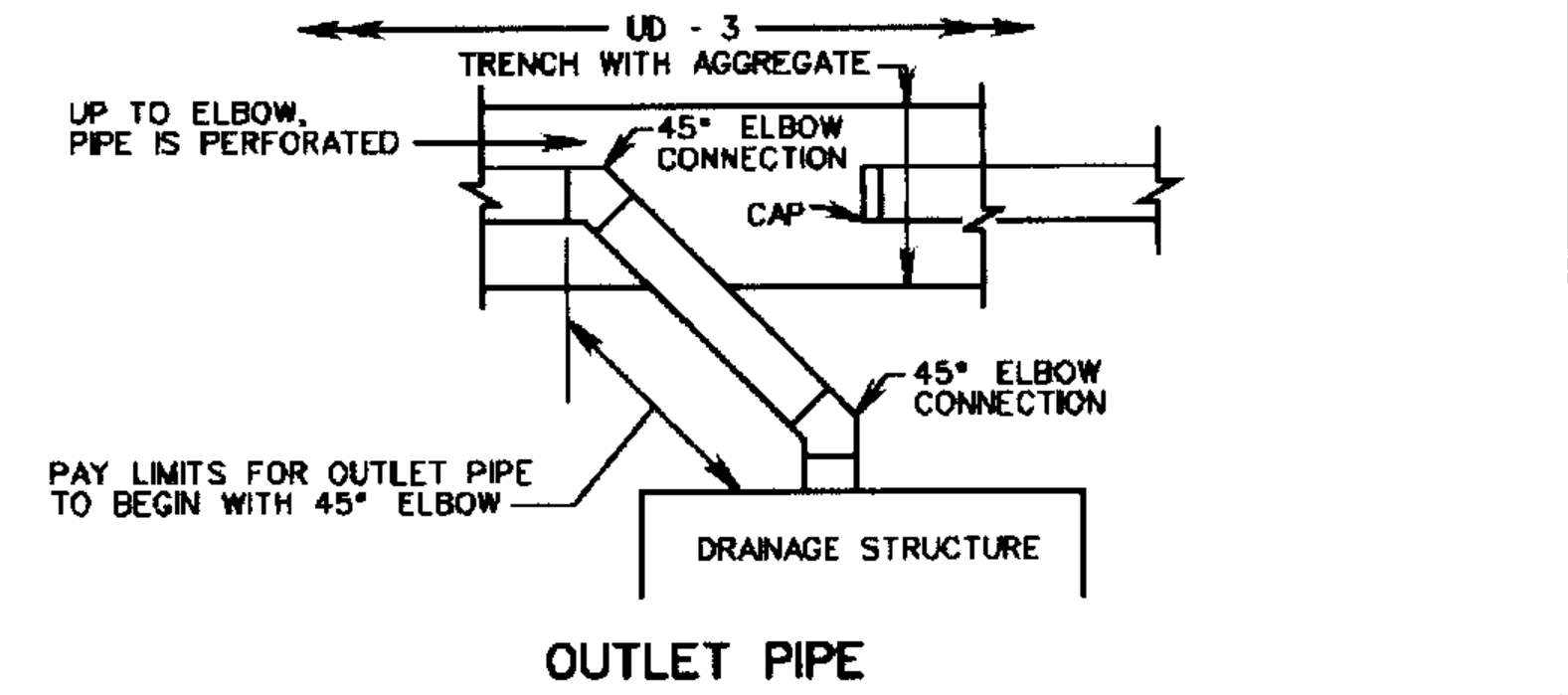
LONGITUDINAL PERFORATED PIPE

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

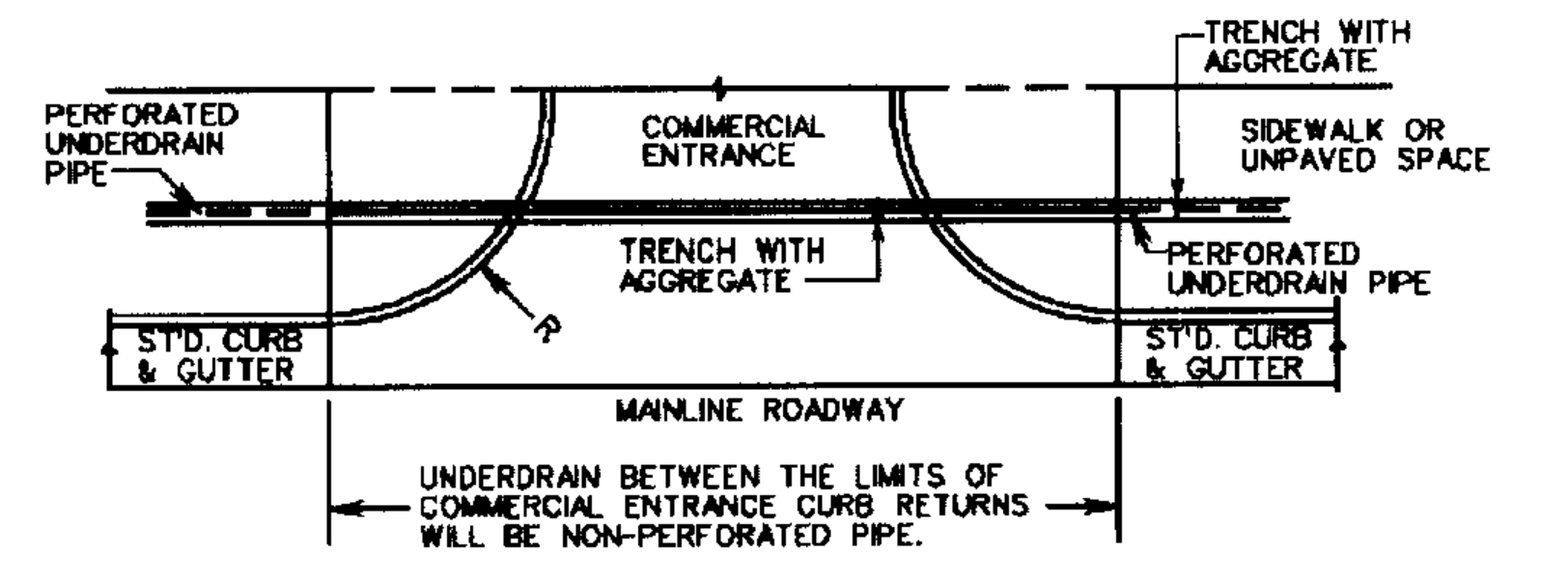
NON-PERFORATED PIPE FOR USE UNDER COMMERCIAL ENTRANCES AND FOR OUTLETS

TYPE OF PIPE	CRUSHING STRENGTH	
	✱ W.T.	6" NOMINAL DIAMETER
SMOOTH WALL PVC	0.153	
SMOOTH WALL PE		70 PSI ✱✱✱

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

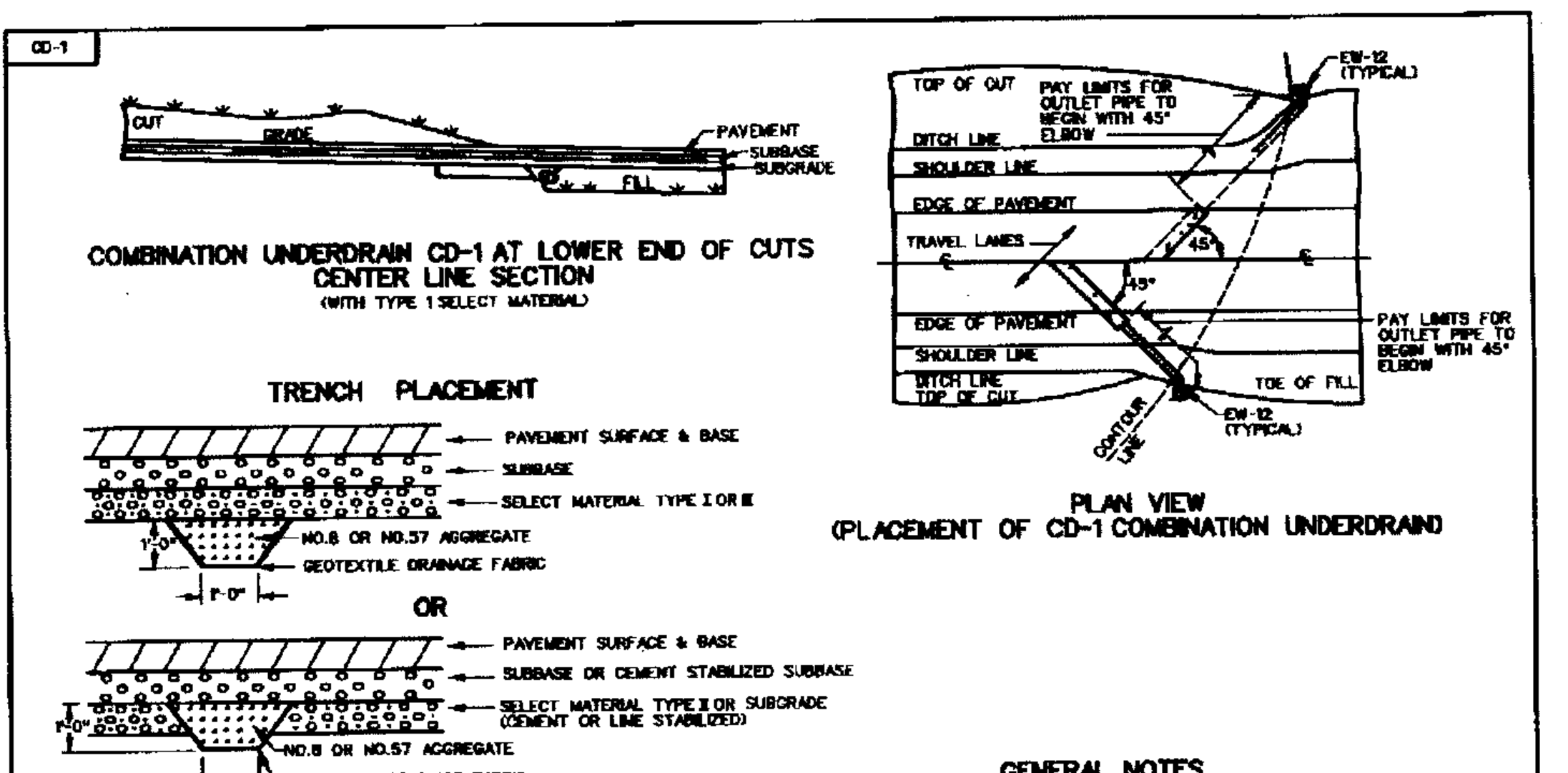

UD - 3
TRENCH WITH AGGREGATE
UP TO ELBOW, PIPE IS PERFORATED
45° ELBOW CONNECTION
CAP
PAY LIMITS FOR OUTLET PIPE TO BEGIN WITH 45° ELBOW
DRAINAGE STRUCTURE

OUTLET PIPE


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

SPECIFICATION REFERENCE	STANDARD SIDEWALK UNDERDRAIN	REV 8/07
232 501 701	VIRGINIA DEPARTMENT OF TRANSPORTATION	108.03

CD-1


CUT
GRADE
FILL
PAVEMENT
SUBBASE
SUBGRADE
PAVEMENT SURFACE & BASE
SUBBASE
SELECT MATERIAL TYPE I OR II
1'-0"
NO.8 OR NO.57 AGGREGATE
GEOTEXTILE DRAINAGE FABRIC
OR
SUBBASE OR CEMENT STABILIZED SUBBASE
SELECT MATERIAL TYPE II OR SUBGRADE (CEMENT OR LIME STABILIZED)
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

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.	8" NOM. DIAMETER
CORRUGATED ALUMINUM			0.048	
SMOOTH WALL PVC	.103		0.153	
SMOOTH WALL PE		70 PSI ✱✱✱		70 PSI ✱✱✱

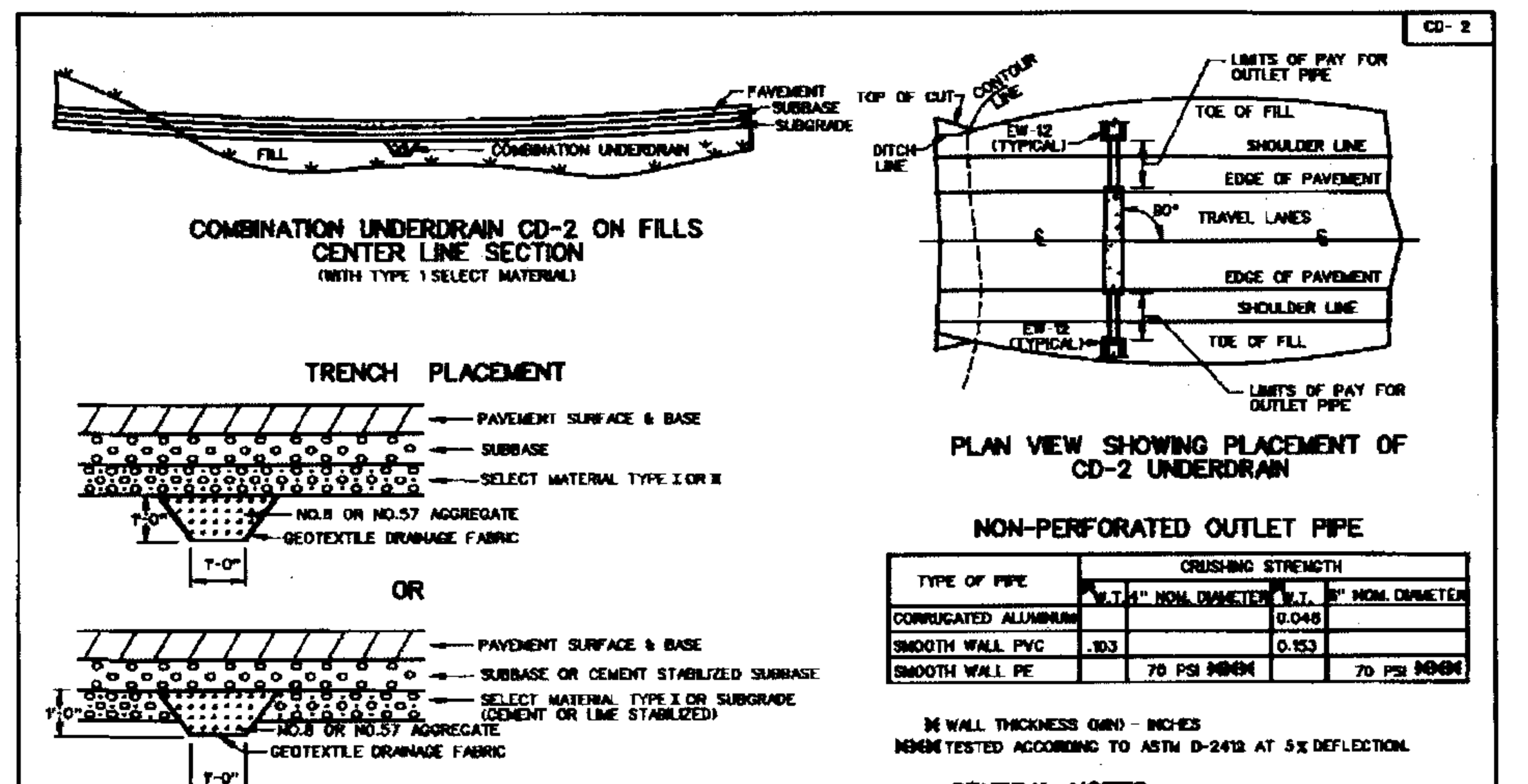
✱ WALL THICKNESS (MIN) - INCHES
✱✱✱ TESTED ACCORDING TO ASTM D-2412 AT 5% DEFLECTION.

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.

108.04	STANDARD COMBINATION UNDERDRAIN (AT LOWER END OF CUTS) VIRGINIA DEPARTMENT OF TRANSPORTATION	SPECIFICATION REFERENCE 232 501 701

CD-2


PAVEMENT
SUBBASE
SUBGRADE
FILL
COMBINATION UNDERDRAIN
PAVEMENT SURFACE & BASE
SUBBASE
SELECT MATERIAL TYPE I OR II
1'-0"
NO.8 OR NO.57 AGGREGATE
GEOTEXTILE DRAINAGE FABRIC
OR
SUBBASE OR CEMENT STABILIZED SUBBASE
SELECT MATERIAL TYPE I OR SUBGRADE (CEMENT OR LIME STABILIZED)
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

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

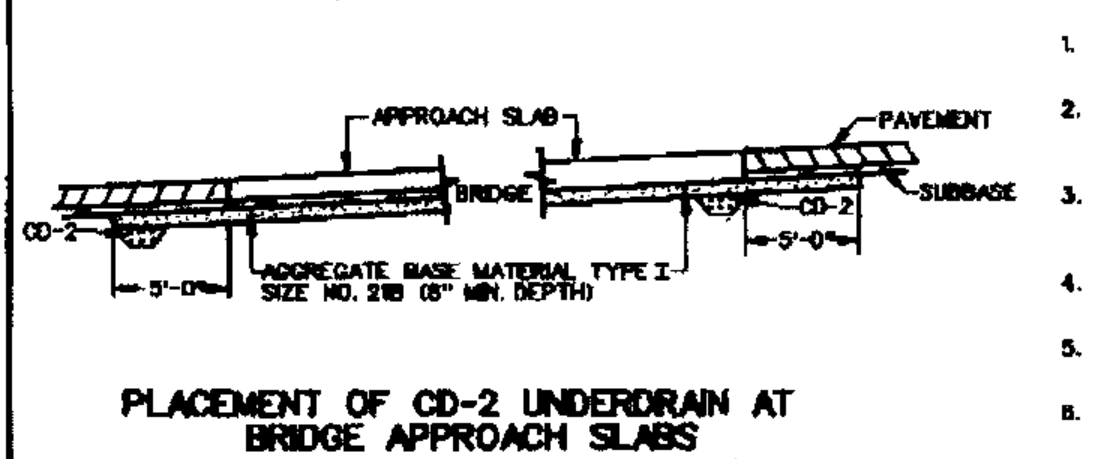
TRENCH PLACEMENT

PLAN VIEW SHOWING PLACEMENT OF CD-2 UNDERDRAIN

NON-PERFORATED OUTLET PIPE

TYPE OF PIPE	CRUSHING STRENGTH			
	✱W.T.	4" NOM. DIAMETER	✱W.T.	8" 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 (8" 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

COMMONWEALTH OF VIRGINIA
KATHLEEN N. HALPAUS
Lic. No. 45244
5/6/10
PROFESSIONAL ENGINEER

YOUR VISION ACHIEVED THROUGH OURS.

THIS DRAWING PREPARED AT THE
TRI-CITIES OFFICE
4260 Crossings Blvd | Prince George, VA 23875
TEL 804.458.8685 FAX 804.751.0798 www.timmons.com

Site Development | Residential | Infrastructure | Technology

DATE	REVISION DESCRIPTION
5-6-10	*COUNTY COMMENTS*

DATE	*23 DEC 2009*
DRAWN BY	*R. ROBBINS*
DESIGNED BY	*K. HALPAUS*
CHECKED BY	*D. JOHNSON*
SCALE	*NONE*

TIMMONS GROUP

THE MEADOWS AT PRINCE GEORGE - SECTION 6

BLAND DISTRICT - PRINCE GEORGE COUNTY - VIRGINIA

NOTES AND DETAILS

JOB NO.	SHEET NO.
28124	*C1.1*

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