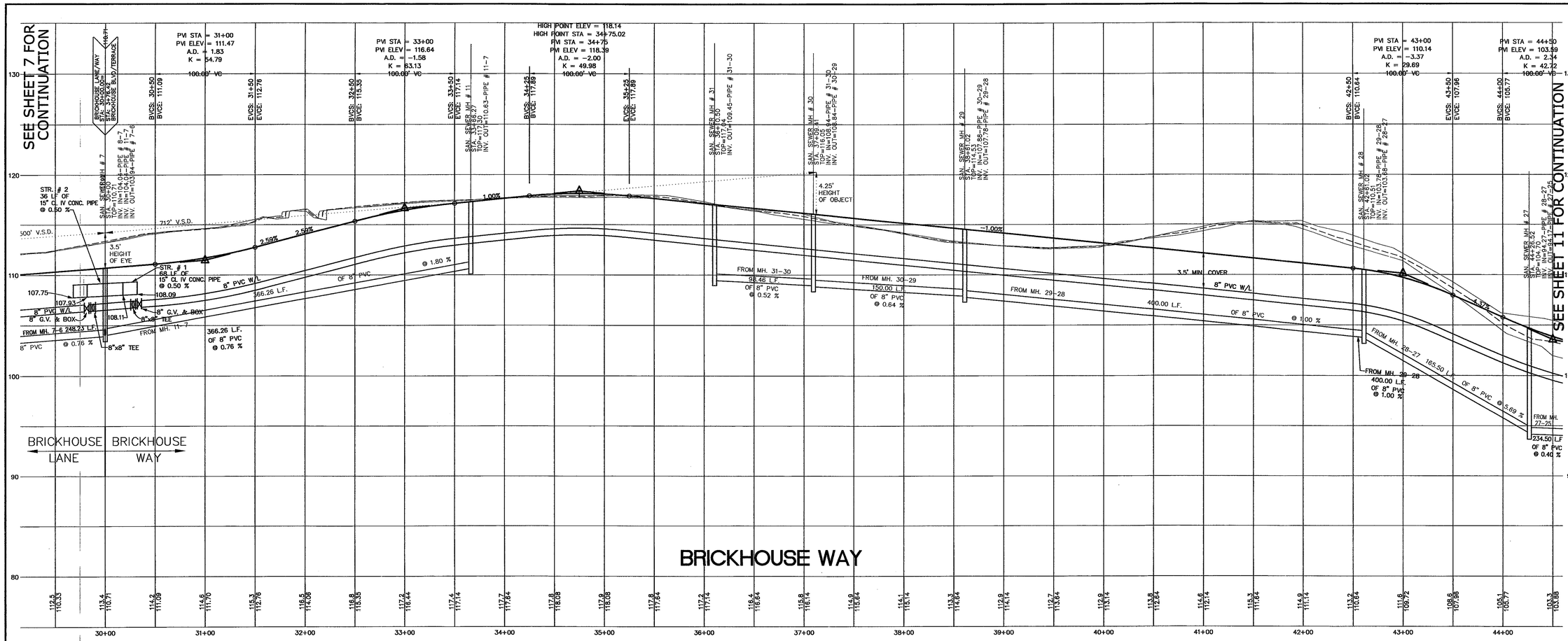

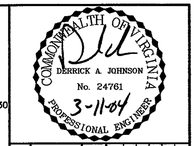

VIRGINIA | NORTH CAROLINA | WEST VIRGINIA

THIS DRAWING PREPARED AT THE
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YOUR VISION ACHIEVED THROUGH OURS.

Site Development | Residential | Infrastructure | Technology

REVISION DESCRIPTION

DATE	
10-27-2003	COUNTY & VDOT COMMENTS
01-15-2004	COUNTY & VDOT COMMENTS
02-20-2004	COUNTY & VDOT COMMENTS

DATE 07-10-2003

DRAWN BY L. GILLIAM

DESIGNED BY D. JOHNSON

CHECKED BY D. JOHNSON

SCALE H: 1"=50' V: 1"=5'

TIMMONS GROUP

BRICKHOUSE LANDING SUBDIVISION

BLAND DISTRICT * PRINCE GEORGE COUNTY, VIRGINIA

PROFILES

JOB NO. 20823

SHEET NO. 10

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KEY

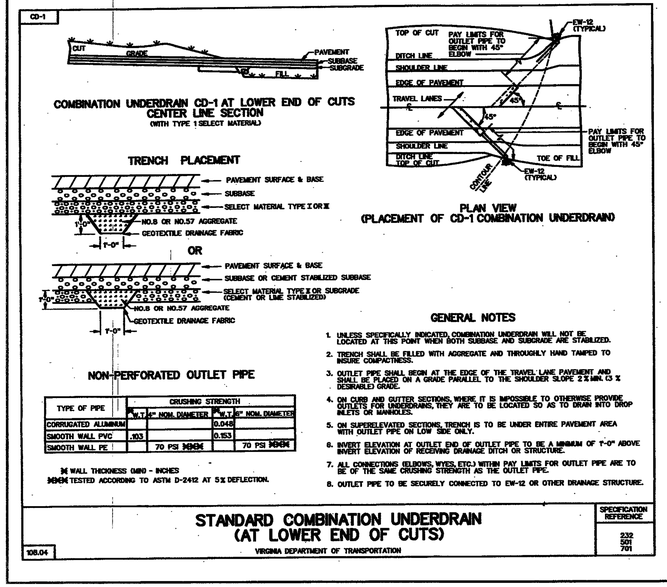
LEGEND:

- 25' LEFT EXIST. GROUND @ C/L
- 25' RIGHT ROAD GRADE @ C/L

SCALE:

HORIZONTAL: 1"=50'
VERTICAL: 1"=5'

CD-1



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 0.080 - 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.

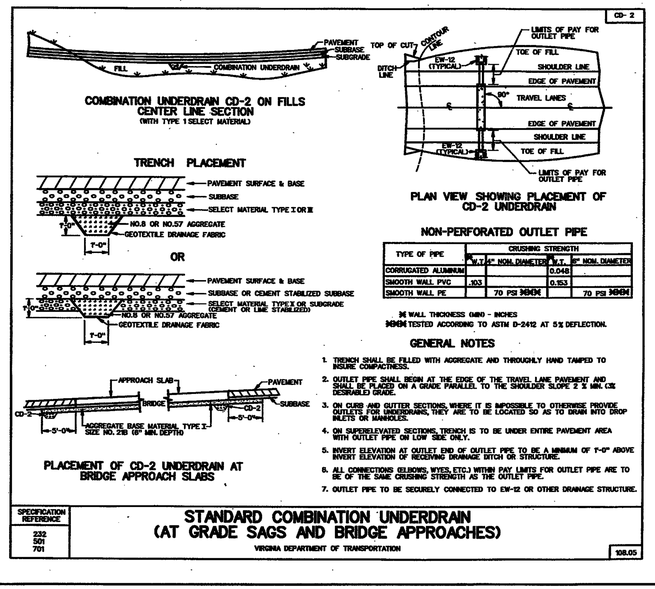
STANDARD COMBINATION UNDERDRAIN (AT LOWER END OF CUTS)

VIRGINIA DEPARTMENT OF TRANSPORTATION

108.04

SPECIFICATION REFERENCE: 232, 501, 701

CD- 2



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 0.080 - INCHES
✱✱✱ TESTED ACCORDING TO ASTM D-2412 AT 5% DEFLECTION.

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.

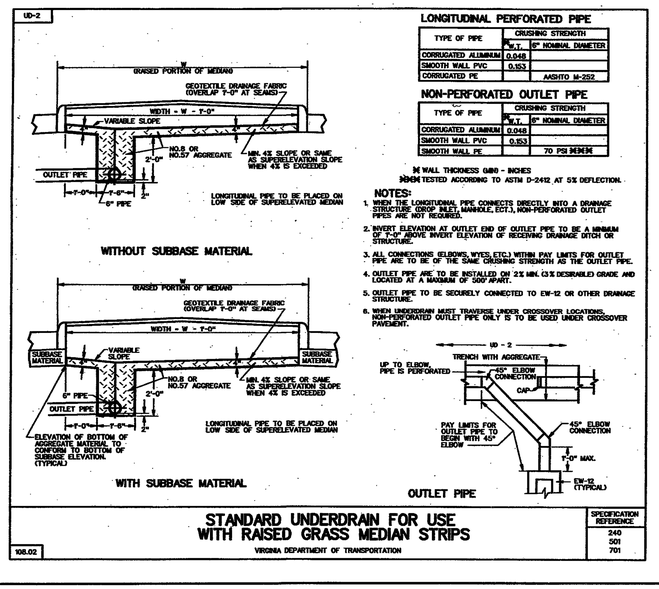
STANDARD COMBINATION UNDERDRAIN (AT GRADE SAGS AND BRIDGE APPROACHES)

VIRGINIA DEPARTMENT OF TRANSPORTATION

108.05

SPECIFICATION REFERENCE: 232, 501, 701

UD-2



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 0.080 - 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.

STANDARD UNDERDRAIN FOR USE WITH RAISED GRASS MEDIAN STRIPS

VIRGINIA DEPARTMENT OF TRANSPORTATION

108.02

SPECIFICATION REFERENCE: 240, 501, 701