GENERAL NOTES

1. FEBRUARY 1, 2002 EDITION OF ROAD AND BRIDGE SPECIFICATIONS AND FEBRUARY 1, 2001 EDITION OF THE ROAD DESIGNS AND STANDARDS OF THE VIRGINIA DEPARTMENT OF HIGHWAYS 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 THREE (3) 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).

SEWER AND WATER NOTES

1. ALL MATERIALS FOR SEWER AND WATER SYSTEMS SHOWN SHALL BE SUPPLIED AND INSTALLED IN ACCORDANCE WITH THE LATEST APPLICABLE SPECIFICATION OF PRINCE GEORGE COUNTY.
2. ALL WORK SHALL BE SUBJECT TO INSPECTION BY UTILITY DEPARTMENT OFFICIALS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFICATION OF APPROPRIATE COUNTY OFFICIALS 48 HOURS PRIOR TO START OF WORK.
3. MINIMUM CLEAR COVER FOR ALL WATER PIPE SHALL BE 3.5 FEET.
4. THE UTILITY CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY HIGHWAY PERMITS AND SEND A COPY TO THE COUNTY PRIOR TO START OF CONSTRUCTION.
5. ANY LOT WITH LESS THAN 50 FEET OF FRONTAGE SHALL HAVE FRONT CORNERS OR END OF 6' CONNECTION STAKED PRIOR TO CONSTRUCTION OF A 6' SEWER SERVICE.
6. SEWER PIPE SHALL BE PVC. ALL SEWER JOINTS SHALL BE CLASS A. BEDDING SHALL BE CLASS B MINIMUM; BEDDING SHALL BE AS SHOWN IN DETAIL ON SHEET 2.
7. SEWER GRADES ARE BASED ON U.S.C. AND G. S. DATUM.
8. CONTRACTOR SHALL INSTALL 6" SEWER SERVICE CONNECTIONS TO ALL LOTS (R/W LINE OR EDGE OF EASEMENT) AS SHOWN.
9. ALL WATER SERVICES ARE TO BE COPPER, TYPE K, DRAWN TUBING.
10. THE CONTRACTOR WILL INSTALL ALL WATER CONNECTIONS AND METER BOXES.
11. FIRE HYDRANT PUMPER CONNECTIONS SHALL FACE IN THE DIRECTION OF THE ARROW.
12. THE EXACT MANHOLE TOP SHALL BE ON THE SAME GRADE AS THE FINISHED ROAD GRADE AND AS NOTED ON SEWER CUT SHEETS.
13. BACKFILL FOR ALL UTILITIES WITHIN PROPOSED SUBDIVISION STREETS SHALL BE PLACED GENERALLY IN ACCORDANCE WITH PRINCE GEORGE COUNTY SPECIFICATIONS, AND THE FOLLOWING CRITERIA: (1.) NO TRENCH SHALL BE BACKFILLED UNTIL AUTHORIZED BY THE COUNTY. MATERIALS USED FOR BACKFILL FROM THE BOTTOM OF THE TRENCH TO 12" (TWELVE INCHES) ABOVE THE PIPE SHALL BE SELECT MATERIAL, FREE FROM FROST, LARGE CLODS, STONES AND DEBRIS, AND SHALL BE THOROUGHLY AND CAREFULLY COMPACTED. 2. BACKFILL SHALL BE COMPACTED BY MECHANICAL TAMPING THROUGHOUT THE DEPTH OF THE TRENCH TO INSURE A SUITABLE SUBBASE, ACCEPTABLE TO THE ROAD ENGINEER, IF THE MATERIAL IS TAKEN FROM THE DITCH IS NOT SUITABLE FOR BACKFILLING IT SHALL BE REMOVED AND ACCEPTABLE MATERIAL USED FOR BACKFILLING THE TRENCH.
14. THE ENGINEER WILL CERTIFY THAT THE ROADS ARE WITHIN 6" OF SUBGRADE BEFORE WATERLINE CONSTRUCTION CAN BEGIN.
15. FOR SEWER AND WATER INSTALLATION WITHIN EXISTING VDOT R/W, UTILITY CONTRACTORS MUST NOTIFY VDOT WHEN INSTALLATION BEGINS SO THAT DENSITY CAN BE TESTED (95% @ OPTIMUM MOISTURE +-20%). INSPECTION OF UTILITY BACKFILL SHALL BE PROVIDED BY A THIRD PARTY INSPECTOR PER VDOT REQUIREMENTS AT THE CONTRACTOR'S EXPENSE.
16. CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES SHOWN ON THE PLANS IN AREAS OF CONSTRUCTION PRIOR TO STARTING 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. TO MISS THE UTILITY CALL "MISS UTILITY" OF CENTRAL VIRGINIA: 1-800-552-7001 (TOLL FREE).
17. THE INSTALLATION OF BACK FLOW DEVICE IS REQUIRED IN ALL HOUSES WHERE THE FINISHED FLOOR ELEVATION IS LOWER THAN UPGRADE MANHOLES. THIS DEVICE WILL BE INSPECTED BY THE COUNTY BUILDING INSPECTOR.
18. INDIVIDUAL WATER SERVICES TO BE 3/4".
19. ALL WATERLINE VALVES MUST BE LOCATED ON THE TEE OR CROSS WHEN APPLICABLE.
20. ALL MANHOLES IN UTILITY EASEMENTS ARE TO HAVE THE CONCRETE SECTION EXTENDED ONE FOOT ABOVE THE GROUND.
21. A SMOOTH TRANSITION OF DROP MANHOLE MUST BE PROVIDED FOR EACH LATERAL OR SANITARY SEWER ENTERING A SANITARY MANHOLE.
22. ALL FIRE HYDRANTS SHALL BE O.S.H.A. RED IN COLOR.
23. 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 R900 PIT MIU (RF). A WAND TYPE VISUAL READER COMPATIBLE WITH PROREAD SYSTEM WILL BE SUPPLIED TO THE UTILITY DEPARTMENT WITH THE WATER METERS.
24. FIRE HYDRANTS ARE TO BE MUELLER TYPE BE INSTALLED USING TEES.
25. ALL SANITARY LATERALS THAT ARE LOCATED OUTSIDE OF THE RIGHT OF WAY ARE TO HAVE THE CLEANOUT INSTALLED TO THE EDGE OF THE EASEMENT. A CARSONITE MARKER SHALL ALSO BE INSTALLED TO INDICATE THEIR LOCATION.
26. ALL HYDRANTS SHALL BE EQUIPPED WITH A MUELLER HYDRANT DEFENDER, SECURING THE OPERATING NUT AND IT SHALL BE SUPPLIED WITH 4 CODED KEYS THAT WILL WORK WITH THEALL NOZZLE CAPS. THE CODED LOCK/KEY COMBINATION. KEYS SHALL BE SENT DIRECTLY TO THE COUNTY ENGINEER AT PRINCE GEORGE COUNTY.
27. ALL HYDRANTS AND BENDS SHALL BE EQUIPPED WITH MEGA LUGS.

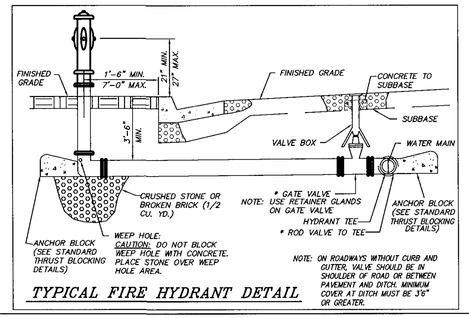
MISS UTILITY OF VIRGINIA:

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)

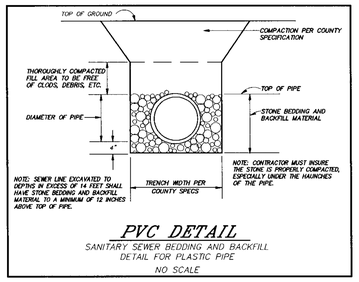
CERTIFICATION

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: Kathleen Halpaus



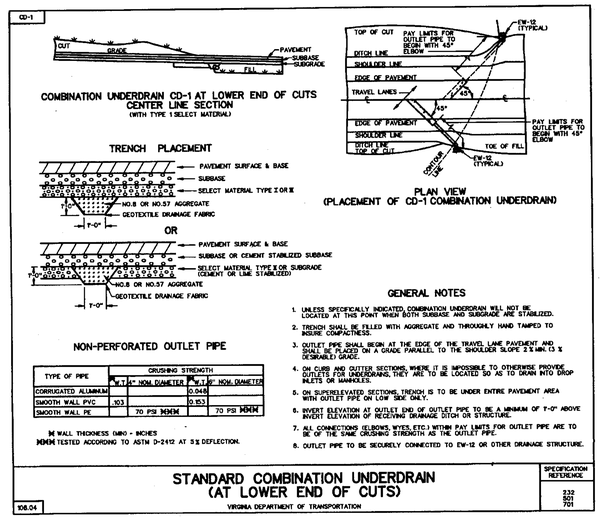
TYPICAL FIRE HYDRANT DETAIL

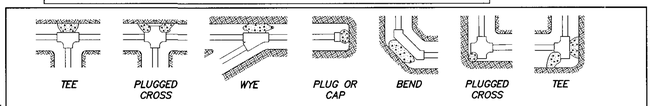


PVC DETAIL

SANITARY SEWER BEDDING AND BACKFILL DETAIL FOR PLASTIC PIPE

NO SCALE





BEARING AREA OF THRUST BLOCKS IN SQ. FT.

FITTING SIZE	TEE, WYE PLUG OR CAP	90° BEND PLUGGED CROSS	TEE PLUGGED ON RUN A_1	TEE PLUGGED ON RUN A_2	45° BEND	22-1/2° BEND	11-1/4° BEND
6	2.1	3.0	4.3	3.0	2.0	2.0	–
8	3.8	5.3	7.6	5.4	2.9	2.0	2.0
10	5.9	8.4	11.8	8.4	4.6	2.4	2.0
12	8.5	12.0	17.0	12.0	6.6	3.4	2.0
14	11.5	16.3	23.0	16.3	8.9	4.6	2.3
16	15.0	21.3	30.0	21.3	11.6	6.0	3.0
18	19.0	27.0	38.0	27.0	14.6	7.6	3.8
20	23.5	33.3	47.0	33.3	18.1	9.4	4.7
24	34.0	48.0	68.0	48.0	26.2	13.6	6.8

NOTE: ABOVE BEARING AREAS BASED ON TEST PRESSURES OF 200 PSI AND ON ALLOWABLE SOIL BEARING STRESS OF 3500 POUNDS PER SQUARE FOOT. TO COMPUTE BEARING AREAS FOR DIFFERENT TEST PRESSURES AND SOIL BEARING STRESSES, USE THE FOLLOWING EQUATION: BEARING AREA = (TEST PRESSURE / 200) x (3500 / SOIL BEARING STRESS) x (TABLE VALUE)

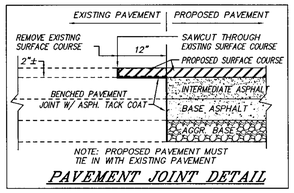
NOTES

1. CONCRETE THRUST BLOCKING TO BE POURED AGAINST UNDISTURBED EARTH.
2. KEEP CONCRETE CLEAR OF JOINT AND ACCESSORIES.
3. BEARING AREAS AND SPECIAL BLOCKING DETAILS SHOWN ON PLANS TAKE PRECEDENCE OVER BEARING AREAS AND BLOCKING DETAILS SHOWN ON THIS STANDARD DETAIL.

SIZE OF FITTING	MIN. C.Y. CONC. FOR BLOCKING
3"-8"	3/4
10"-12"	1-1/2
16"-24"	2

CONCRETE SHALL BE A-3 CONCRETE MEETING REQUIREMENTS OF ASTM C94

STANDARD THRUST BLOCKING DETAILS



PAVEMENT JOINT DETAIL

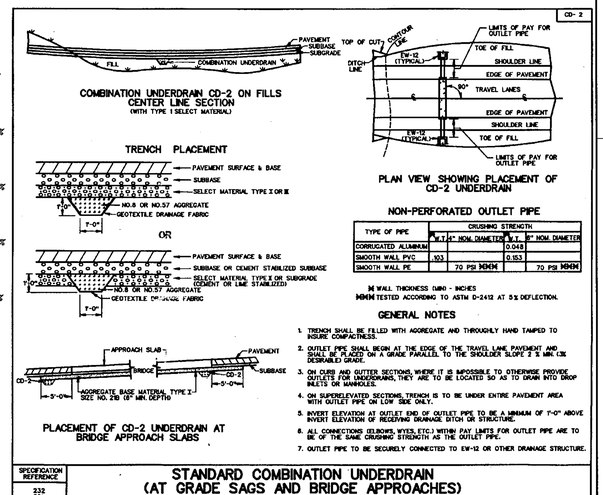
STORM SEWER SCHEDULE

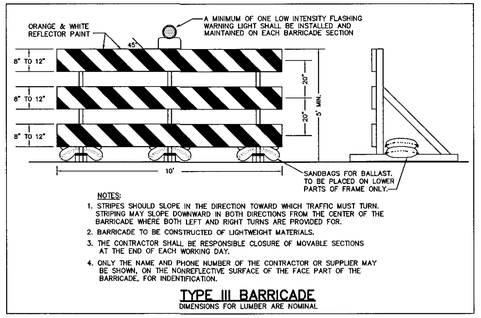
1. DI-3C, L=10', TOP=134.69, H=3.95'
2. 32.05LF OF 15" CL III CONC. PIPE @ 0.50% INV IN=130.74, INV OUT=130.58
3. DI-3C, L=6', TOP=134.69, H=4.21'
4. 121.24LF OF 18" CL III CONC. PIPE @ 0.50% INV IN=130.48, INV OUT=129.87
5. MH-1, TOP=135.44, H=5.67'
6. 290.69LF OF 18" CL III CONC. PIPE @ 1.39% INV IN=129.77, INV OUT=125.74
7. DI-3C, L=10', TOP=130.70, H=5.06'
8. 120.40LF OF 18" CL III CONC. PIPE @ 2.08% INV IN=125.64, INV OUT=123.16
9. DI-1, TOP=128.66, H=5.60'
10. 191.00LF OF 18" CL III CONC. PIPE @ 1.79% INV IN=123.06, INV OUT=119.65
11. 8.00LF OF 10" PVC. PIPE @ 0.50% INV IN=134.91, INV OUT=134.87

SANITARY SEWER SCHEDULE

LINE TABLE

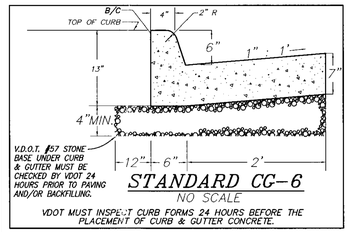
MH-MH	DIRECTION	DISTANCE
1-EX	S 21°10'48" W	129.54'
2-1	S 33°43'14" W	104.46'
3-2	S 55°34'49" W	123.04'
4-3	S 72°13'33" W	400.00'
4A-4	S 72°23'16" W	321.71'
5-1	N 63°50'08" W	346.36'
6-5	S 70°40'43" W	239.73'
7-6	S 41°48'36" W	144.87'
8-7	S 07°40'15" W	148.66'





TYPE III BARRICADE

DIMENSIONS FOR LUMBER ARE NOMINAL



STANDARD CG-6

NO SCALE

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

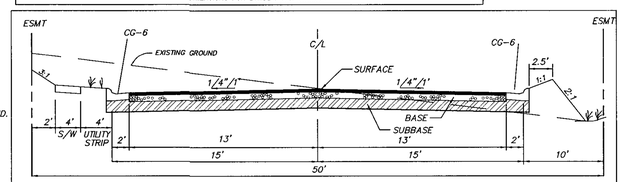
CENTERLINE DATA

LINE TABLE

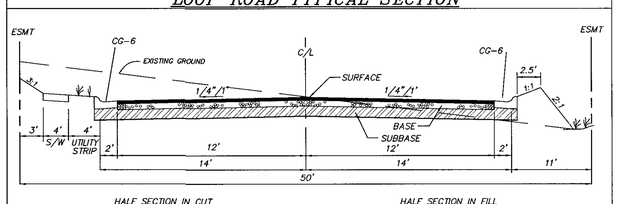
LINE	DIRECTION	DISTANCE
L1	N 21°37'19" E	189.42'
L2	S 72°23'16" W	591.20'
L3	N 17°36'44" W	91.60'
L4	S 72°23'16" W	180.27'

CURVE TABLE

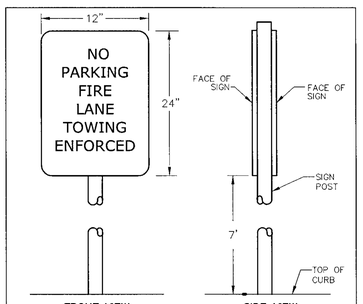
CURVE	RADIUS	LENGTH	TANGENT	DELTA	CHORD BEARING	CHORD
C1	300.00'	265.81'	142.34'	50°45'57"	S 47°00'17" W	257.20'
C2	250.00'	392.70'	250.00'	90°00'00"	N 27°23'16" E	353.55'



TINSLEY BOULEVARD - LOOP ROAD TYPICAL SECTION



ROTHERHAM CIRCLE- TYPICAL SECTION



NOTES:
THIS DRAWING IS FOR GUIDANCE ONLY. FOR MORE ACCURATE DETAILS RELATED TO SIGN FABRICATION SPECIFICATIONS REFER TO THE VIRGINIA MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS.

SIGN COLORS: RED LETTERS AND BORDER ON A REFLECTORIZED WHITE BACKGROUND.
LETTERS: TWO (2) INCH "C" SERIES.

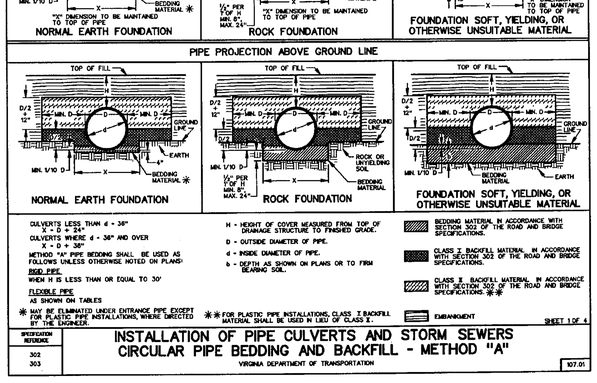
FIRE LANE SIGN

NO SCALE

ROAD CLASSIFICATIONS

ROAD STA. TO STA.	VPD	PAVEMENT DESIGN ① ② SUBBASE	BASE	SURFACE	"A" PVM'T. WIDTH (C/L - E/P)	"B" C/L - F/C	C/L - B/C	"C" R/W
TINSLEY BOULEVARD- LOOP ROAD STA. 0+00 TO STA. 8+40	700	6" 21-B	3" BM-25.0	1.5" SM-9.5A	13'	15'	15.5'	50'
TINSLEY BOULEVARD- LOOP ROAD STA. 8+40 TO STA. 9+75	260		6" 21-B	2" SM-9.5A	13'	15'	15.5'	50'
ROTHERHAM CIRCLE STA. 0+00 TO STA. 6+50	200		6" 21-B	2" SM-9.5A	12'	14'	14.5'	50'

① MINIMUM PAVEMENT DESIGN IS BASED ON A MINIMUM CBR VALUE OF 10. PAVEMENT DESIGN MAY BE REVISED DUE TO SOIL CONDITIONS AT TIME OF CONSTRUCTION.
② A TACK COAT SHALL BE APPLIED BETWEEN THE AGGREGATE BASE AND ASPHALT COURSES IN ACCORDANCE WITH V.D.O.T. STANDARDS.



COMMONWEALTH OF VIRGINIA
DERRICK A. JOHNSON
No. 24761
1-12-06
PROFESSIONAL ENGINEER

VIRGINIA | NORTH CAROLINA | WEST VIRGINIA
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Site Development | Residential | Infrastructure | Technology

REVISION DESCRIPTION	DATE
COUNTY COMMENTS	11-21-2005
COUNTY COMMENTS	1-12-06

DATE	10-10-05
DRAWN BY	K. HALPAUS
DESIGNED BY	K. HALPAUS
CHECKED BY	D. JOHNSON
SCALE	NONE

TIMMONS GROUP

TINSLEY CHARTER - SECTION 4

BLAND DISTRICT * PRINCE GEORGE COUNTY, VIRGINIA

NOTES & DETAILS

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