SPECIFICATIONS

CURB & GUTTER
ENTRANCE WAYS
TRENCHES & CUTS

Standard Notes:

1. Work shall not commence in public right-of-way before approval by an inspector and a permit is obtained.
2. Notify Construction Inspectors office at 853-2856 - 48 hours before work begins.
3. Do not pour any concrete before forms have been inspected and approved.

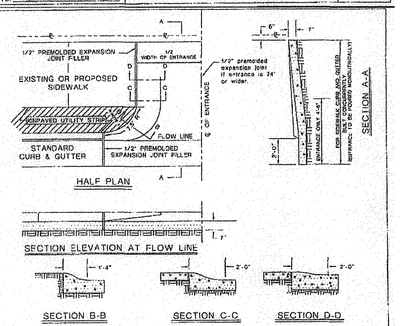
Sidewalk & Entrance Way and Curb & Gutter Notes:

1. Use only standard metal forms as approved by the Virginia Department of Transportation. (Wood forms will not be permitted)
2. Joints or score marks are to be sharp and clean without showing edges of jointing tool.
3. All radius shown shall be 1'2" unless otherwise noted for premolded expansion joints.
4. All concrete shall be Class A 3000 P.S.I.
5. Curb radius (R) is from back of curb and gutter to back of sidewalk.

OFFICE OF THE CITY ENGINEER - ROANOKE, VIRGINIA

APPROVED: City Engineer — DATE: 12-18-03

NOTES — SHEET 1 OF 9



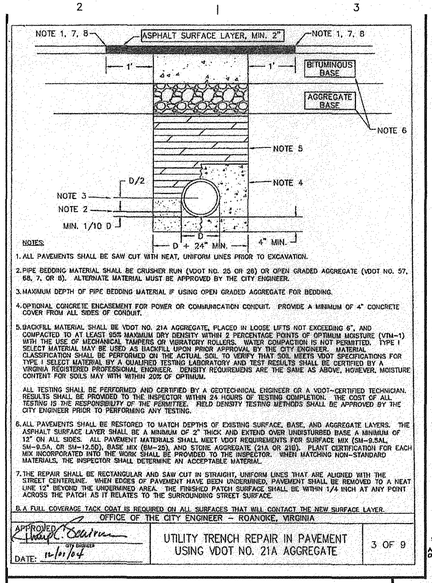
GENERAL NOTES:

1. Standard commercial "Entrance" shall have a minimum curb radius (R) of 7 1/2 feet
2. Minimum Entrance width to be 12 feet.
3. Where curb & gutter already exists both curb & gutter shall be removed. If proposed entrance falls within five (5) feet of an existing joint remove & reconstruction shall be to that joint. Any concrete removed at other than an existing joint shall be cut with a mechanical saw specifically manufactured for that purpose; this also shall apply to street pavement.
4. Where sidewalk exists or is to be constructed across driveways the thickness thereof must correspond with the thickness of the entrance.
5. Whenever "Entrance" exceeds twenty-four (24) feet in width a 1/2" premolded expansion joint filler shall be installed through the center perpendicular to flow line.
6. Finish "Entrances" shall have a "course broom finish" running parallel to flow line.
7. Curing shall be accomplished by the use of a liquid membrane seal containing white pigment applied at the rate of one (1) gallon per 150 square feet.
8. All "Entrance Ways" shall be constructed according to City of Roanoke specifications and to line and grades approved by the City Engineering Department.
9. Entrances exceeding 30 feet in width shall be approved by the City Manager.

OFFICE OF THE CITY ENGINEER - ROANOKE, VIRGINIA

APPROVED: City Engineer — DATE: 12/18/03

STANDARD CITY OF ROANOKE COMMERCIAL ENTRANCE — SHEET 6 OF 9



NOTES:

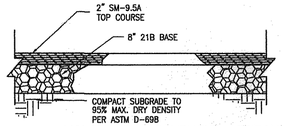
1. ALL PAVEMENTS SHALL BE SAW CUT WITH NEAT, UNIFORM LINES PRIOR TO EXCAVATION.
2. PIPE BEDDING MATERIAL SHALL BE CRUSHER RUN (VDOT NO. 25 OR 26) OR OPEN GRADED AGGREGATE (VDOT NO. 57, 68, 7, OR 8). ALTERNATE MATERIAL MUST BE APPROVED BY THE CITY ENGINEER.
3. MAXIMUM DEPTH OF PIPE BEDDING MATERIAL IF USING OPEN GRADED AGGREGATE FOR BEDDING.
4. OPTIONAL CONCRETE ENCASEMENT FOR POWER OR COMMUNICATION CONDUIT. PROVIDE A MINIMUM OF 4" CONCRETE COVER FROM ALL SIDES OF CONDUIT.
5. BACKFILL MATERIAL SHALL BE VDOT NO. 21A AGGREGATE, PLACED IN LOOSE LIFTS NOT EXCEEDING 6", AND COMPACTED TO AT LEAST 95% MAXIMUM DRY DENSITY WITHIN 2 PERCENTAGE POINTS OF OPTIMUM MOISTURE (VTM-1) WITH THE USE OF MECHANICAL TAMPERS OR VIBRATORY ROLLERS. WATER SOAKING IS NOT PERMITTED. TYPE I SELECT MATERIAL MAY BE USED AS BACKFILL WITH POND APPROVAL BY THE CITY ENGINEER. MATERIAL CLASSIFICATION SHALL BE PERFORMED ON THE ACTUAL SOIL TO VERIFY THAT SOIL MEETS VDOT SPECIFICATIONS FOR TYPE I SELECT MATERIAL BY A QUALIFIED TESTING LABORATORY AND TEST RESULTS SHALL BE CERTIFIED BY A VIRGINIA REGISTERED PROFESSIONAL ENGINEER. COMPACTION REQUIREMENTS ARE THE SAME AS ABOVE, HOWEVER, MOISTURE CONTENT FOR SOILS MAY WITHIN 20% OF OPTIMUM.

   ALL TESTING SHALL BE PERFORMED AND CERTIFIED BY A GEOTECHNICAL ENGINEER OR A VDOT-CERTIFIED TECHNICIAN. RESULTS SHALL BE PROVIDED TO THE INSPECTOR WITHIN 24 HOURS OF TESTING COMPLETION. THE COST OF ALL TESTING IS THE RESPONSIBILITY OF THE PERMITTEE. FIELD DENSITY TESTING METHODS SHALL BE APPROVED BY THE CITY ENGINEER PRIOR TO PERFORMING ANY TESTING.
6. ALL PAVEMENTS SHALL BE RESTORED TO MATCH DEPTHS OF EXISTING SURFACE, BASE, AND AGGREGATE LAYERS. THE ASPHALT SURFACE LAYER SHALL BE A MINIMUM OF 2" THICK AND EXTEND OVER UNDISTURBED BASE A MINIMUM OF 12" ON ALL SIDES. ALL PAVEMENT MATERIALS SHALL MEET VDOT REQUIREMENTS FOR SURFACE MIX (SM-9.5A, SM-9.5A, OR SM-12.5D), BASE MIX (BM-25), AND STONE AGGREGATE (21A OR 21B). PLANT CERTIFICATION FOR EACH MIX INCORPORATED INTO THE WORK SHALL BE PROVIDED TO THE INSPECTOR. WHEN MATCHING NON-STANDARD MATERIALS, THE INSPECTOR SHALL DETERMINE AN ACCEPTABLE MATERIAL.
7. THE REPAIR SHALL BE RECTANGULAR AND SAW CUT IN STRAIGHT, UNIFORM LINES THAT ARE ALIGNED WITH THE STREET CENTERLINE. WHEN EDGES OF PAVEMENT HAVE BEEN UNDERMINED, PAVEMENT SHALL BE REMOVED TO A NEAT LINE 12" BEYOND THE UNDERMINED AREA. THE FINISHED PATCH SURFACE SHALL BE WITHIN 1/4 INCH AT ANY POINT ACROSS THE PATCH AS IT RELATES TO THE SURROUNDING STREET SURFACE.
8. A FULL COVERAGE TACK COAT IS REQUIRED ON ALL SURFACES THAT WILL CONTACT THE NEW SURFACE LAYER.

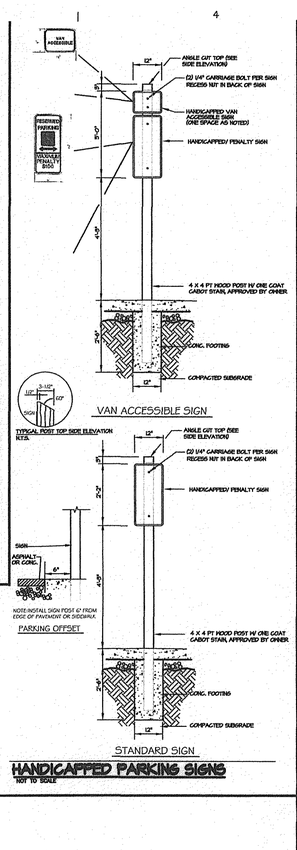
OFFICE OF THE CITY ENGINEER - ROANOKE, VIRGINIA

APPROVED: City Engineer — DATE: 12/10/04

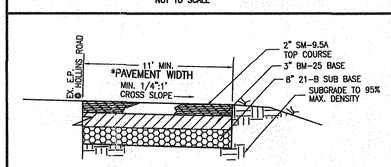
UTILITY TRENCH REPAIR IN PAVEMENT USING VDOT NO. 21A AGGREGATE — 3 OF 9



LIGHT DUTY- PAVEMENT SECTION
NOT TO SCALE

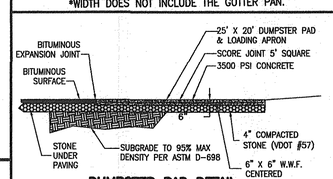


HANDICAPPED PARKING SIGNS
NOT TO SCALE

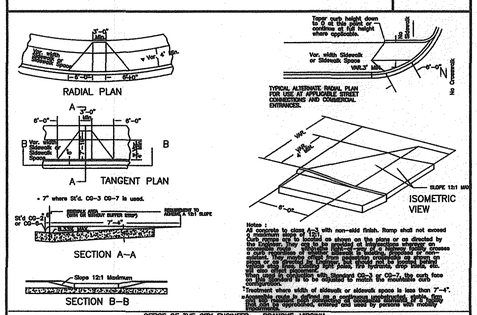


HOLLINS ROAD TURN LANE DETAIL
NOT TO SCALE
*WIDTH DOES NOT INCLUDE THE GUTTER PAN.

CBR NOTE: SUBBASE DEPTH FOR SUBGRADE IS BASED UPON A CBR VALUE OF 4. A MINIMUM OF FIVE SOILS SAMPLE FREQUENCY AND CBR TESTS OF THE SUBGRADE MUST BE TAKEN FOR ACTUAL DETERMINATION OF REQUIRED SUBBASE THICKNESS PRIOR TO CONSTRUCTION. A MINUMUM OF FIVE TESTS SHALL BE PERFORMED TO CHECK THE DENSITY, COMPACTION AND THICKNESS OF THE PROPOSED PAVEMENT SECTION. ALL TEST RESULTS WILL BE SUBMITTED TO THE CITY FOR APPROVAL BEFORE PROCEEDING WITH THE NEXT PHASE OF WORK.CONTRACTOR TO COORDINATE TESTING WITH GEOTECHNICAL ENGINEER, INDEPENDENT LABORATORY AND THE RESULTS SUBMITTED AND APPROVED BY THE CITY OF ROANOKE.



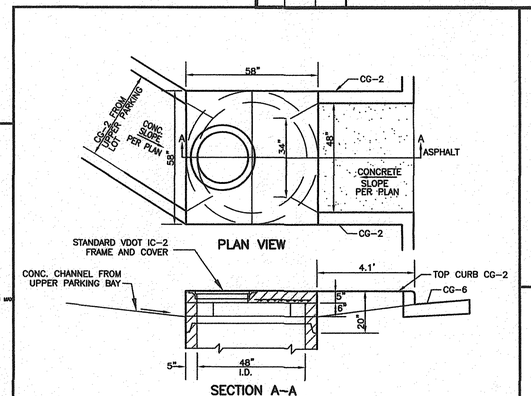
DUMPSTER PAD DETAIL
NOT TO SCALE



OFFICE OF THE CITY ENGINEER - ROANOKE, VIRGINIA

APPROVED: City Engineer — DATE:

CURB RAMP (PERSONS WITH MOBILITY IMPAIRMENTS) — SHEET 7 OF 7

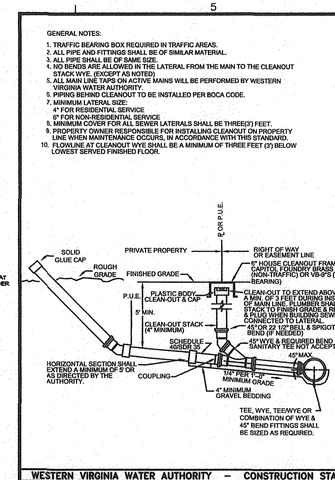


USE HANSON FAIRFAX CO. YI-1 MEDIAN OR SWALE INLET OR APPROVED EQUAL

(4) **CURB CUT INLET**
NTS

GENERAL NOTES:

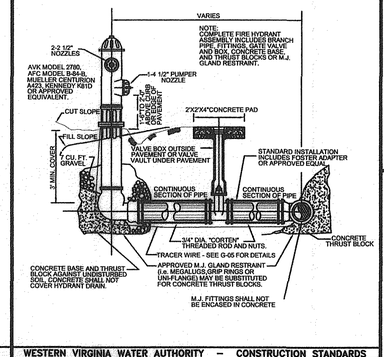
1. TRAFFIC BEARING BOX REQUIRED IN TRAFFIC AREAS.
2. ALL PIPE AND FITTINGS SHALL BE OF SIMILAR MATERIAL.
3. ALL PIPE SHALL BE OF SAME SIZE.
4. NO BENDS ARE ALLOWED IN THE LATERAL FROM THE MAIN TO THE CLEANOUT STACK WYE. (EXCEPT AS NOTED)
5. ALL MAIN LINE TAPS ON ACTIVE MAINS WILL BE PERFORMED BY WESTERN VIRGINIA WATER AUTHORITY.
6. PIPING BEHIND CLEANOUT TO BE INSTALLED PER BOCA CODE.
7. MINIMUM LATERAL SIZE:
   4" FOR RESIDENTIAL SERVICE
   6" FOR NON-RESIDENTIAL SERVICE.
8. MINIMUM COVER FOR ALL SEWER LATERALS SHALL BE THREE(3) FEET.
9. PROPERTY OWNER RESPONSIBLE FOR INSTALLING CLEANOUT ON PROPERTY LINE WHEN MAINTENANCE OCCURS, IN ACCORDANCE WITH THIS STANDARD.
10. FLOWLINE AT CLEANOUT WYE SHALL BE A MINIMUM OF THREE FEET (3') BELOW LOWEST SERVED FINISHED FLOOR.



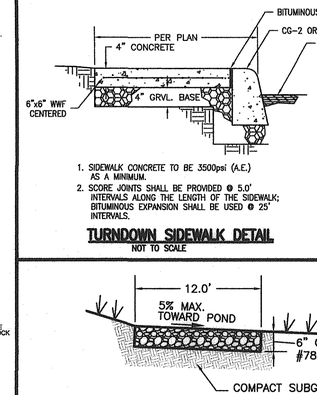
WESTERN VIRGINIA WATER AUTHORITY - CONSTRUCTION STANDARDS			
REVISION DATE			
07/01/04	SANITARY SEWER LATERAL	S-08	
03/01/06			

NOTES:

1. PUBLIC HYDRANTS SHALL BE PAINTED SILVER WITH AN OIL-BASED PAINT AND PRIVATE HYDRANTS SHALL BE PAINTED WHITE WITH AN OIL-BASED PAINT.
2. FIRE HYDRANT SHALL BE INSTALLED 2' MIN. AND 4' MAX. FROM BACK OF CURB OR 5' MIN. AND 12' MAX. WHEN CURB IS NOT PRESENT. FIRE HYDRANT TO BE INSTALLED WITHIN RIGHT-OF-WAY OR EASEMENT LINE.
3. AREA AROUND HYDRANT AT A RADIUS OF 4' TO BE LEVEL AND UNOBSTRUCTED.
4. WATERPROOF BAGS SHALL BE PLACED OVER ALL NEWLY INSTALLED FIRE HYDRANTS.
5. HIGH PRESSURE (OVER 120 PSI) REQUIRES THE USE ALL 3 RESTRAINTS.

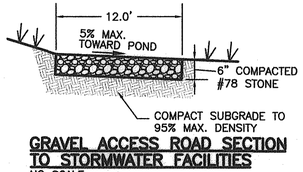


WESTERN VIRGINIA WATER AUTHORITY - CONSTRUCTION STANDARDS			
REVISION DATE			
07/01/04	FIRE HYDRANT ASSEMBLY	W-18	
03/01/06			



1. SIDEWALK CONCRETE TO BE 3500psi (A.E.)
2. SCORE JOINTS SHALL BE PROVIDED @ 5.0' INTERVALS ALONG THE LENGTH OF THE SIDEWALK; BITUMINOUS EXPANSION SHALL BE USED @ 25' INTERVALS.

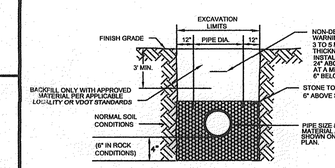
TURNDOWN SIDEWALK DETAIL
NOT TO SCALE



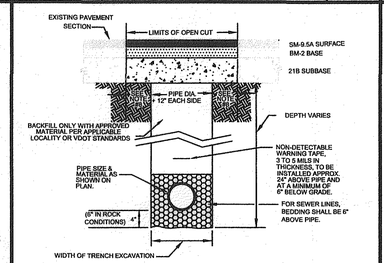
GRAVEL ACCESS ROAD SECTION TO STORMWATER FACILITIES
NO SCALE

NOTES:

1. BEDDING, HAUNCHING AND INITIAL BACKFILL CONSTRUCTION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION.
2. ALL PVC PIPE SHALL BE BEDDED IN COMPACTED VDOT #57 OR #68 STONE.
3. IN AREAS NOT SUBJECTED TO VEHICULAR TRAFFIC, BEDDING STONE AND FILL SHALL BE PLACED IN 6" LIFTS FROM BOTTOM OF TRENCH TO 1'-ABOVE THE PIPE AND THE REMAINING SHALL BE PLACED IN 12" LIFTS AND SHALL BE COMPACTED TO AT LEAST 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D 698.
4. ALL SEWER LINE PIPE SHALL BE BEDDED IN COMPACTED GRANULAR MATERIAL. BEDDING REQUIREMENTS FOR DUCTILE SEWER LINE ARE DEPENDENT ON MANUFACTURER'S BEDDING CRITERIA.
5. ALL EXCAVATIONS SHALL COMPLY WITH OSHA TECHNICAL MANUAL, CHAPTER 2, TITLED "EXCAVATIONS: HAZARD RECOGNITION IN TRENCHING AND SHORING."



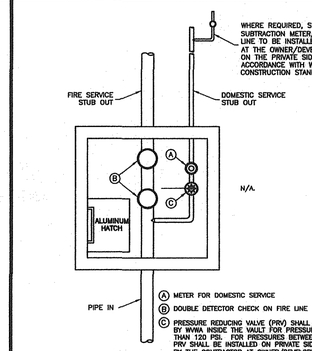
WESTERN VIRGINIA WATER AUTHORITY - CONSTRUCTION STANDARDS			
REVISION DATE			
07/01/04	BEDDING AND BACKFILL OUTSIDE OF PAVED AREAS	S-30	
03/01/06			



NOTES:

1. BEDDING, HAUNCHING AND INITIAL BACKFILL CONSTRUCTION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION.
2. ALL PVC PIPE SHALL BE BEDDED IN COMPACTED VDOT #57 OR #68 STONE.
3. IN RORNOKE COUNTY, THE CONTRACTOR SHALL REPLACE THE OPEN CUT WITH A MINIMUM TOP COURSE OF 1.5" (MINIMUM) VDOT SM-9.5A, BASE COURSE OF 3" VDOT BM-25A, AND SUBBASE OF 10" VDOT 21B, OR AS REQUIRED BY VDOT. IN ROANOKE CITY, CONTRACTOR SHALL REPLACE PAVMENT AS REQUIRED BY CITY OF ROANOKE RIGHT OF WAY EXCAVATION AND RESTORATION STANDARDS.
4. ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE AS SPECIFIED BY VDOT OR APPLICABLE LOCALITY.
5. PRIOR TO CONSTRUCTION, CONTRACTOR IS RESPONSIBLE FOR SECURING ALL REQUIRED PERMITS FROM VDOT AND/OR APPLICABLE LOCALITY.
6. IN AREAS SUBJECTED TO VEHICULAR TRAFFIC, BEDDING STONE AND FILL SHALL BE PLACED IN 6" LIFTS AND SHALL BE COMPACTED TO AT LEAST 95% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D 698.
7. ALL SEWER LINE PIPE SHALL BE BEDDED IN COMPACTED GRANULAR MATERIAL. BEDDING REQUIREMENTS FOR DUCTILE SEWER LINE ARE DEPENDENT ON MANUFACTURER'S BEDDING CRITERIA.
8. BENCHCUT ON EACH SIDE OF PAVEMENT: CITY OF ROANOKE EQUALS 12"; VDOT RIGHT-OF-WAY EQUALS 6".
9. ALL EXCAVATIONS SHALL COMPLY WITH OSHA TECHNICAL MANUAL, CHAPTER 2, TITLED "EXCAVATIONS: HAZARD RECOGNITION IN TRENCHING AND SHORING."

WESTERN VIRGINIA WATER AUTHORITY - CONSTRUCTION STANDARDS			
REVISION DATE			
07/01/04	BEDDING AND BACKFILL UNDER PAVEMENT AND RIGHT-OF-WAY	S-31	
03/01/06			



(A) METER FOR DOMESTIC SERVICE
(B) DOUBLE DETECTOR CHECK ON FIRE LINE
(C) PRESSURE REDUCING VALVE (PRV) SHALL BE INSTALLED BY WVWA INSIDE THE VAULT FOR PRESSURES GREATER THAN 120 PSI. FOR PRESSURES BETWEEN 80 AND 120 PSI, PRV SHALL BE INSTALLED ON PRIVATE SIDE OF THE VAULT BY THE CONTRACTOR AT OWNER/DEVELOPERS EXPENSE.

NOTES:

1. FOR 6" FIRE LINE, EXTERIOR VAULT DIMENSIONS SHALL BE 6' X 6'
2. FOR 8" FIRE LINE, EXTERIOR VAULT DIMENSIONS SHALL BE 11' X 7'
3. VAULT TO BE FURNISHED AND INSTALLED BY CONTRACTOR (OWNER EXPENSE). COORDINATE WITH THE WVWA FOR APPROVED VAULT TYPE AND SUPPLIER.

WESTERN VIRGINIA WATER AUTHORITY - CONSTRUCTION STANDARDS			
REVISION DATE			
03/01/06	WATER VAULT	W-26	

INFILTRATION TRENCH
NTS

ALL EXPOSED EDGES OF EXISTING BITUMINOUS SURFACE COURSE SHALL BE PRIMED WITH ASPHALTIC MIXTURE PRIOR TO NEW ASPHALT PLACEMENT.

ALL PAVEMENT SECTIONS ARE "SUPERPAVE" DESIGNATIONS.

HEAVY-DUTY PAVEMENT DETAIL
NOT TO SCALE

revisions			
3	10.04.07	drb/jde	city 09.26.07
2	09.06.07	drb/jde	city 08.30.07
1	07.30.07	drb/jde	city 06.04.07

date	May 30, 2007		
project	06120	JDE	DRB
designed		JDE	
drawn			
checked			

RODRIGUEZ RIPLEY MADDUX MOTLEY ARCHITECTS

COMMONWEALTH OF VIRGINIA
JACK DURRELL ELLINWOOD
Cert. No. 1107
10/4/07
LANDSCAPE ARCHITECT

project BRBH - HOLLINS ROAD PROJECT
drawing DETAILS

sheet 13
C3.01
of

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ROANOKE, VIRGINIA 24018
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