SECTION 300

FIRE SAFETY SYSTEMS

305.00 FIRE SAFETY SYSTEMS - SPECIFICATIONS

TABLES

350.00 FIRE SAFETY SYSTEMS - DETAILS

SECTION 300

FIRE SAFETY SYSTEMS

301.00 FIRE SAFETY SYSTEMS – GENERAL POLICY AND REQUIREMENTS

301.01 Fire Lanes:

A. The County shall designate fire lanes on public streets and on private property used for single family attached, multi-family, commercial, institutional, and industrial developments.

B. The purpose of the fire lanes shall be to prevent parking and standing adjacent to fire hydrants, and also to provide clear access to buildings and fire protection equipment.

301.02 Water Supply Systems: Water supply systems shall be provided in accordance with Section 400 of this manual.

301.03 Fire Protection Lines: All fire protection lines shall be privately owned and maintained.

302.00 FIRE SAFETY SYSTEMS – PLANNING AND DESIGN

302.01 Fire Lanes:

A. Fire lanes in residential, commercial, institutional and industrial developments shall be designated by the County, and shall be a minimum of twenty (20) feet in width. This dimension shall be measured perpendicular from the painted curb or perimeter line. Parking and traffic flow patterns within designated fire lanes shown on site plans shall be as follows:

STANDARD REQUIREMENTS		
Width Curb to Curb	**One Way Traffic**	**Two-Way Traffic**
20’ to 30’	Parking on one side	No Parking
30’ to 35’	Parallel parking allowed on both sides of street	Parallel parking on one side determined by the Fire Marshall’s Office
35’ or greater	No fire lane will be established	No fire lane will be established.

B. A minimum of two (2) signs shall designate fire lanes, one (1) at each end. Additional signs shall be provided at a minimal interval of one hundred (100) feet. Fire lanes may be painted in parking areas where no curb or gutter exists and where posting of a metal sign is not feasible. See construction standards for fire lanes in Section 304.01 of this manual.

302.02 Emergency Access in General:

A**.** All-weather access roadways to construction and demolition sites shall be provided during the time of the construction or demolition of a building. These requirements are not applicable to driveways serving single family dwellings. This access need not be paved or gaveled, but must be able to meet the following criteria:

1. Such roadways shall be readily accessible to emergency and inspection staff vehicles.

2. Such roadways shall be capable of supporting a minimum of 76,000 pounds vehicular load, have a minimum clear width of 20 feet, a minimum vertical clearance of at least 13'6", a maximum vertical projection of 8", and be able to accommodate the turn characteristics of a 40' long truck.

3. Such access roadways shall not be blocked by vehicles, construction equipment, construction materials or anything else.

The director of Public Works may issue a stop work order if violations of this section are found.

B. Access control gates and storage areas, when provided on private streets, shall be designed, installed and located in a manner acceptable to the director of Public Works and the Fire Marshal. Access control gates and all accessory facilities and equipment shall not be allowed on the public right-of-way.

302.03 Emergency Access to the Front of Buildings:

A**.** An unobstructed emergency space of at least nine (9) feet in width shall be provided in front of the main entrance of buildings where vehicle parking is adjacent to the building and not separated from it by a fire lane.

B. Where there are multiple tenants having separate exterior main entrances in a building or strip shopping center, a series of nine (9) foot wide unobstructed emergency spaces shall be provided in front of the building or strip shopping center, where parking is adjacent to the building and not separated from it by a fire lane. The spaces shall be provided at maximum one hundred (100) foot intervals along the front of the building.

302.04 Emergency Access to the Rear and Side of Buildings:

A. Access requirements shall comply with appropriate parts of Section 32-401 of the Zoning Ordinance.

B. All portions of a building and any portion of the exterior wall of the first story of a building shall be within one hundred fifty (150) feet of an access road capable of supporting fire and rescue apparatus. The access used exclusively for emergency purposes shall be a minimum of twenty (20) feet wide.

C. Where access cannot be provided within one hundred fifty (150) feet of an access road capable of supporting fire and rescue apparatus due to location on the property, topography, waterways, non-negotiable grades or other similar conditions, distance may be increased provided an approved alternative means of fire protection is provided.

D. Fire emergency access roads in excess of 150 feet with a dead end must be provided with an approved area for emergency apparatus turnaround.

302.05 Emergency Access Limits:

A. Emergency access limits are defined by the maximum distance between a building and the closest point of emergency vehicle access. These limits shall be measured from the main building entrance to the edge of pavement, curb line, or emergency access point. An emergency access point is defined as the closest point to the main entrance of a building that an emergency vehicle can reach on an all weather surface capable of supporting such vehicle.

B. In single family developments, the maximum distance from the curb line (or the emergency access point) to the building entrance may not exceed seventy five (75) feet.

C. In multi-family developments, the maximum distance from the curb line (or the emergency access point) to the building entrance shall be fifty (50) feet. The maximum number of buildings connected in a series shall be limited to two (2), unless fire vehicles have access to the front and back of the building.

D. In buildings over three (3) stories in height, the maximum distance from the curb (or the emergency access point) shall conform to the guidelines listed in Table 3-1. For purposes of this section, the building height measured in feet is the distance between the lowest level of fire department access to the finish floor level of the topmost habitable floor.

302.06 Fire Hydrants in General:

A. Fire hydrants shall be connected to a water main with a six (6) inch ductile cast iron pipe, and shall be controlled by an independent six (6) inch gate valve. The gate valve shall be located as near to the service main as practical.

B. Where the hydrant service line is longer than fifty (50) feet, a second six (6) inch gate valve shall be located not more than six (6) feet from the hydrant.

C. All hydrant barrels shall be painted in accordance with the Prince William County Service Authority Utility Standards Manual (PWCSA-USM).

D. The four and one-half (4-1/2) inch pumper connection on the hydrant shall face the street, travel lane, or service drive.

E. The bottom of the four and one-half (4-1/2) inch connection shall be eighteen (18) inches above the elevation of the edge of the shoulder on streets without curb and gutter and eighteen (18) inches above the elevation of the curb on streets with curb and gutter.

F. The two and one half (2-1/2) inch hose connection shall have a minimum of four (4) feet of clearance on all sides.

302.07 Fire Hydrants in Relation to Streets and Parking Lots:

A. Fire hydrants shall be located along the right-of-way at street intersections and at intermediate locations where necessary, as determined by the Fire Marshal's Office in cooperation with the Prince William County Service Authority (PWCSA). All distance measurements are to be made along the center line of streets, travel ways or other unobstructed paths that may be used by the fire department. In no case shall the distance between fire hydrants be greater than one thousand (1,000) feet.

B. In areas with curb and gutter, the center of the fire hydrant shall be located from the face of the curb no less than eighteen (18) inches or more than thirty six (36) inches. Any part of a fire hydrant shall not conflict with or overhang sidewalk, trail, or vehicular travelway.

C. On roads with ditches, fire hydrants shall be located behind the ditch.

D. Traffic bollards or other protective measures shall be provided in areas such as parking lots, where the proposed site improvements will not provide adequate protection of the fire hydrant from vehicles.

E. When installed in parking areas, clear access shall be provided to the front of the hydrant (that portion with the large pumper connection at the center) and fifteen (15) feet to each side. This clear access area shall be marked as a fire lane.

F. Plantings or other obstructions shall be kept clear of fire hydrants for a minimum of four and one-half (4-1/2) feet around the hydrant.

G. Wherever possible, fire hydrants installed on streets adjacent to driveways shall be positioned a minimum of four and one-half (4-1/2) feet from the curb return (see Detail 350.05). This distance shall be measured from the beginning of the curb return on the driveway to the centerline of the fire hydrant.

302.08 Fire Hydrants in Relation to Buildings:

A. Fire hydrants shall be located to serve remote areas of buildings. Those hydrants used to meet fire flow requirements shall be located within five hundred (500) of the building to be protected.

B. Fire hydrants shall be required along the perimeter of the building for use groups in accordance with Table 3-2. The remote distance shall be measured to the most remote distance the hydrant will serve.

C. Fire hydrants shall be a minimum of fifty (50) feet away from all buildings including townhouses but not single family detached dwellings.

302.09 Fire Hydrants in Relation to Sprinklers/Standpipes Connections:

A. Fire hydrants shall be located within one hundred (100) feet travel distance of any fire department sprinkler or standpipe connections where those systems are required in buildings.

B. Where possible, the fire hydrant designated to serve the fire department connections shall be located on the same side of the street as the fire department connection.

C. Where possible, the fire department connection shall be located so it is in clear and plain view of the fire hydrant designated to supply it.

302.10 Fire Hydrants in Relation to Pipestem Lots: A fire hydrant may be required, as determined by the Fire Marshal, to be placed within five hundred (500) feet of all pipestem lots.

302.11 Fire Protection Lines:

A. All fire protection lines shall be a separate connection to the water main unless otherwise directed by the PWCSA.

B. Fire protection lines shall have a valve at its connection to the main.

C. Plans for fire protection lines and a permit application shall be submitted for approval by Public Works prior to installation.

D. Underground fire protection lines for fire sprinkler and/or fire standpipe systems shall be positioned such that the riser room is located adjacent to an exterior wall with a personnel access door that allows immediate access into the room for Fire and Rescue personnel.

E. Underground fire protection lines shall extend horizontally a minimum of forty two (42) inches, but no more than ten (10) feet, into the building beyond the exterior foundation wall.

F. Underground fire lines shall be a minimum of six (6) inches in diameter unless calculations are provided showing that a smaller fire service line will provide the demands of the system. All calculations shall be prepared and sealed and signed by a licensed professional engineer.

302.12 Sprinkler/Standpipe Fire Department Connections:

A**.** Fire department connections shall be located to be visible from a street. If a visible location from a street is not possible, alternative locations shall be approved by the Fire Marshal's Office. Such connections shall be located to provide immediate access to the fire department. Walls, fences, trees, shrubs, and other obstructions shall not prevent access.

B. Fire department connections shall be arranged to allow the use of any one (1) water sprinkler connection to serve all the sprinklers within the building, and to allow for the use of any one (1) standpipe connections to serve all the standpipes within the building.

C. Fire department connections shall not be less than eighteen (18) inches and not more than forty two (42) inches in elevation measured from ground level to the centerline of the inlets.

D. In buildings classified as high-rise by the building code, the fire department connections shall be located a minimum of fifty (50) feet from the building. The location of this yard connection shall be approved by Public Works and the Fire Marshal's Office.

302.13 Water Systems and Fire Flow Requirements:

A. Water systems shall be designed to provide fire flows in accordance with Table 3-3, plus the domestic demand required by the Prince William County Service Authority (PWCSA). A residual pressure of not less than twenty (20) pounds per square inch (psi) to be at least one (1) point within five hundred (500) feet of each building proposed to be served shall be provided.

B. The fire flows in Table 3-3 apply to new development. Where the size and scope of the development exceeds these requirements, additional flow shall be provided in accordance with Insurance Services Office (ISO) requirements.

C. Fire flow requirements may be met in single family residential and two family developments with a single hydrant within five hundred (500) feet of a structure in accordance with Table 3-3.

D. In areas of multi-use development, the higher flow rates listed above shall be provided for each hydrant.

E. Other residential, commercial, institutional and industrial developments shall provide a fire flow of two thousand five hundred (2,500) gallons per minute.

302.14 Fire Flow Calculations:

A. Fire flow calculations shall include assumptions about the existing system. The calculations shall indicate available flows at the proposed hydrants and the pressure throughout the proposed system.

B. Fire flow calculations for projects to be developed in sections or phases shall indicate the available fire flows during each section or phase of the project.

C. For small sites that propose no major waterline extensions, an evaluation of the existing fire flow available may be substituted for existing fire flow calculations.

D. In the event that minimum fire flows cannot be achieved, the developer of a property shall design additional fire protection measures into every building not covered by adequate

flows. Any deviation from the minimum fire flow requirements shall require a site development plan waiver application, for conditional fire flow requirements. See site development plan requirements in section 303.02 of this manual.

E. Flow calculations shall be prepared using a computer program that is acceptable to the PWCSA, such s the "K Pipe" program developed by the University of Kentucky.

F. Flow calculations shall utilize a pipe roughness factor, c=120 for pipes that are twelve (12) inches in diameter and greater. For pipes smaller than twelve (12) inches, roughness factor, c=100 shall be utilized. Since a conservative "c" factor is utilized in the calculations, no allowance is required for the losses in valves and other fittings.

The line velocity shall not exceed ten (10) feet per second under any flow condition. Consideration shall be given to the line size used in areas where a domestic service line extends from a dead end line. In this instance, the line velocity may be permitted to exceed ten (10) feet per second to avoid stale water problems.

302.15 Water Storage Systems: Water storage systems utilized to maintain fire flow shall have capacity to sustain the required flow for a minimum of four (4) hours duration.

302.16 Rural Water Supplies:

A. Suitable static water sources such as storm water management or BMP wet ponds in areas beyond the limits of public water services shall be accessible to fire department pumpers. Access to static water sources may include dry suction hydrants and/or access lanes capable of supporting heavy fire apparatus under all weather conditions.

B. The location and method of access shall be approved by Public Works and shall be constructed in accordance with Section 304.02 of this manual.

303.00 FIRE SAFETY SYSTEMS - SUBMISSION REQUIREMENTS

303.01 Plan Elements in General: The site development plans shall include the following:

A. Fire lanes.

B. Emergency access

C. Existing and approved fire hydrants.

D. Fire protection lines.

E. Water storage systems, where applicable.

F. Rural water supplies, where applicable.

303.02 Fire Flow Calculations:

A. Fire flow calculations shall be included with the site development plans.

B. Deviations from the minimum flow requirements in Section 302.14 of this manual shall require a conditional fire flow waiver with the site development plan application. The waiver shall address current fire flow available and provide a system analysis to determine measures for bringing deficiencies up to minimum standards.

C. Public Works, after coordination with the Fire Marshal's Office, shall approve additional fire protection measures proposed for every building not covered by adequate fire flows, prior to the approval of the site development plans. Any waivers will be coordinated with the Prince William County Service Authority.

D. Fire protection lines will be reviewed for general conformance only, to include location and materials of construction. Sizing of the fire protection line shall be the responsibility of the design engineer and shall be in accordance with the requirements of the sprinkler manufacturer.

304.00 FIRE SAFETY SYSTEMS – CONSTRUCTION STANDARDS

304.01. Fire Lane Signs and Painting:

A. Fire lane signs shall be constructed of metal with a dimension of approximately twelve (12) inches by fifteen (15) inches.

B. The sign shall be painted with red letters on a white background with a three-eighths (3/8) inch red trip strip around the entire outer edge of the sign. The lettering on the sign shall read "NO PARKING OR STANDING FIRE LANE," which shall be spaced on the sign face uniformly. Solid arrows shall also be painted on the signs to point to and indicate the designated fire lane. The lettering and arrow on the sign shall be in accordance with Table 3-4.

C. Signs for fire lanes shall be posted at intervals of one hundred (100) feet with the bottom of the sign no less than six (6) feet from the ground, and the top no more than eight (8) feet from the ground, unless otherwise directed by Public Works and the Fire Marshal's Office. Sign posts shall be metal and securely mounted unless permission from the Fire Marshal's Office is obtained prior to installation for an alternative method.

D. Letters at least two (2) feet in height may be painted on the pavement where a fire lane runs through a parking area without curbing adjacent to the fire lane, and where the posting of a metal sign(s) is impractical. The lettering shall read "NO PARKING OR STANDING FIRE LANE."

E. When curbing is provided adjacent to the fire lane, it shall be painted yellow within the limits of the fire lane.

F. When curbing is not provided adjacent to the fire lane, a yellow line shall be painted on the pavement along the perimeter and within the limits of the fire lane with two (2) foot long intersecting lines and painted at three (3) foot intervals on the fire lane side of the perimeter.

304.02 Rural Water Supply Access: Access to a static rural water supply shall be constructed in accordance with design criteria, NFPA Standard 1231.

304.03 Acceptance Testing for Fire Protection Lines:

A. Acceptance testing shall be required on all fire protection lines prior to concealment and use. Fire protection lines, except those serving single family detached and two family dwellings, shall be hydrostatically tested at not less than two hundred (200) pounds per square inch (psi) for two (2) hours or at fifty (50) psi in excess of the maximum static pressure when the maximum static pressure is in excess of one hundred fifty (150) psi.

B. Concealment of an underground fire protection line prior to acceptance testing may occur if a visual inspection of the system is conducted to verify that piping and anchorage is installed in an approved manner, and if the developer or contractor assumes responsibility for corrections to failures of the hydrostatic test

C. Flushing of a fire protection line shall occur prior to admittance of any water through the line and into the fire protection system. The minimum water flow required for line flushing shall comply with Table 3-5 or the hydrostatically calculated water demand rate of the system, whichever is greater.

D. Hydrostatic testing of the fire protection line shall consist of testing the line from the valve at the water main up to, and including, the temporary flange/gate valve assembly.

304.04 Fire Protection Line Anchorage:

A. Pipe anchorage shall be required on fire protection lines whenever they change direction. This includes bends, tees, and pipe ends. The pipe shall bear on a surface which is capable of resisting the loads imposed by moving water.

B. Restraining systems shall comply with the standards of the Service Authority, as specified in the Prince William County Service Authority Utility Standards Manual.

304.05 Fire Detection Check Valves:

A. Approved detection check valves shall be required on all fire service mains in buildings served by a “wet pipe” type sprinkler system.

B. The detection check valve shall be equipped with a bypass meter assembly as shown in the details in Section 350.10 (DCV-1) of this manual. An appropriately sized gate valve shall be installed on either side of the check valve.

C. The vault housing the detector check valve should be sized in accordance with the details in Section 350.20 (DCV-2) of this manual.

D. Detection check valves shall not be required on exterior fire lines in the PWCSA service area, unless otherwise directed by the PWCSA.

E. An approved back flow protector shall be required on all fire protection lines.

305.00 FIRE SAFETY SYSTEMS – SPECIFICATIONS

305.01 Fire Hydrants

A. All fire hydrants shall be traffic model type, either Mueller Centurion, Kennedy K-81, or approved equal.

B. Fire hydrants shall be of the compression type with main valve openings not less than five and one-quarter (5-1/4) inches in diameter. Hydrants shall have a cast iron body with bronze trim and shall withstand a hydrostatic pressure of three hundred (300) pounds per square inch (psi).

C. Fire hydrants shall have a minimum six (6) inch connection base for setting, with a minimum of forty two (42) inch cover on connecting pipe.

D. Fire hydrants shall be equipped with three (3) hose connections. Two (2) of the connections shall be two and one-half (2-1/2) inch N.S.T., and the third connections shall be four and one-half (4-1/2) inch N.S.T.

E. Fire hydrants shall have a standard one and one-half (1-1/2) inch pentagon shaped operating nut, opening counterclockwise. The direction of the opening shall be clearly marked by an arrow case on the outside of the hydrant.

F. Fire hydrant connections to the water mains shall be six (6) inch ductile cast iron pipe.

G. Fire hydrant barrel paint shall be Duron #3837-6, chrome yellow, or equal.

305.02 Sprinkler Standpipe Connections: All fire department connections shall be fitted with national standard threads.

350.00 FIRE SAFETY SYSTEMS - DETAILS

TABLE 3-1 BUILDING HEIGHT AND DISTANCE FROM THE CURB OR EMERGENCY ACCESS POINT	
Building Height feet	**Distance feet**
30 to 45	50
46 to 60	40
61 to 75	30
greater than 75	20

TABLE 3-2 USE GROUP AND FIRE HYDRANT REMOTE DISTANCE	
Use Group	**Remote Distance feet**
F, H, S, M Industrial and storage buildings	300
E, I School and institutional buildings	300
A, B, M Commercial, churches and office buildings	300
R1, R2, R3 Motels, apartments, multi-family and single family attached	300
R4 Single family detached dwellings	500

TABLE 3-3

FIRE FLOW REQUIREMENTS FOR SINGLE FAMILY DETACHED AND TWO FAMILY DWELLINGS

Unit to Unit Exposure Distance feet	Flow Requirements per Hydrant gpm	Flow Requirements for a Hydrant within 500 feet of a Structure gpm
0 TO 10	1,500	2,000
10 to 30	1,000	1,500
> 30	1,000	1,000

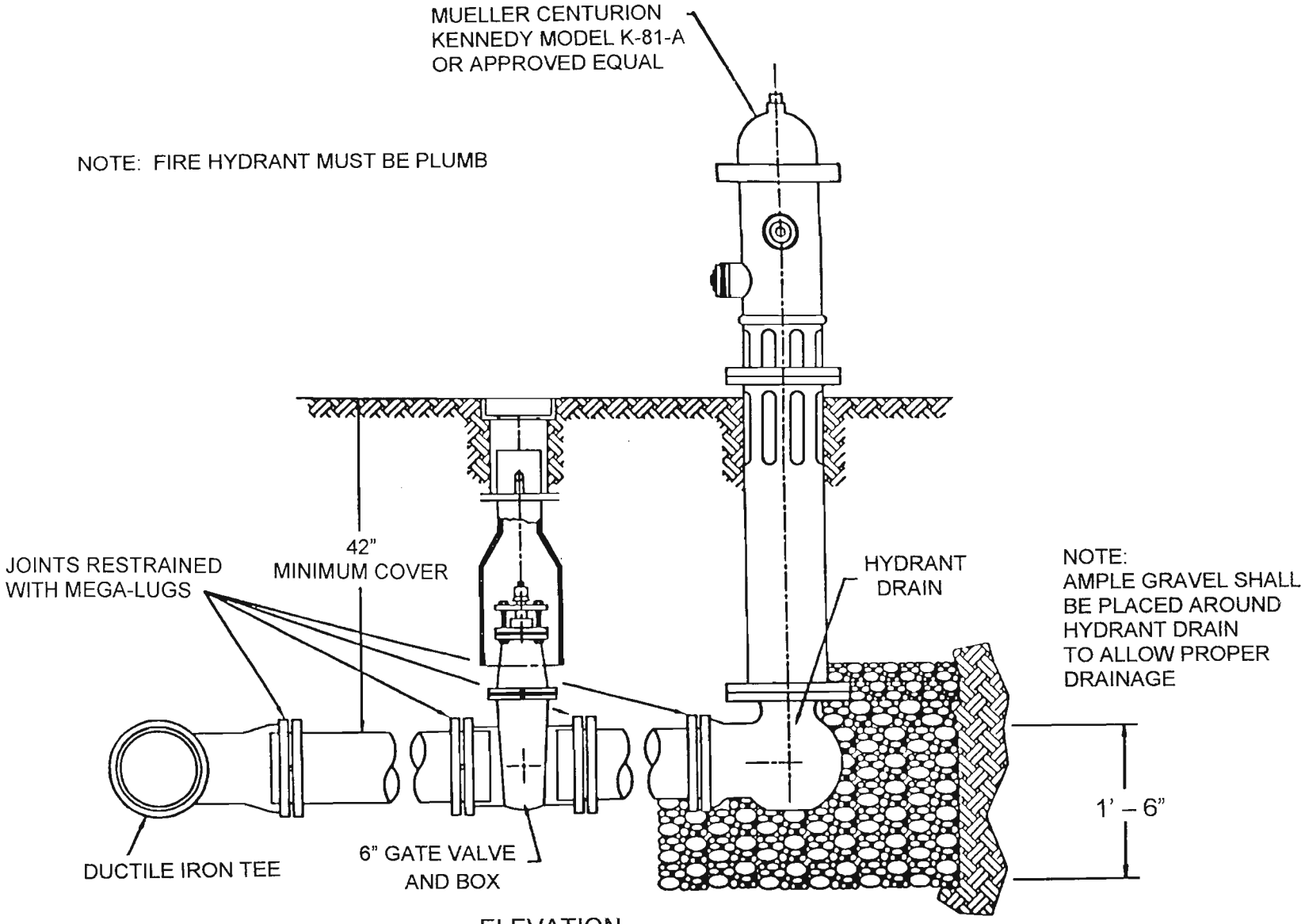
TABLE 3-4

SIGN TYPES AND DESIGN

SIGN TYPE "A"	SIGN TYPE "B"	SIGN TYPE "C"
NO PARKING OR STANDING FIRE LANE 	NO PARKING OR STANDING FIRE LANE 	NO PARKING OR STANDING FIRE LANE 

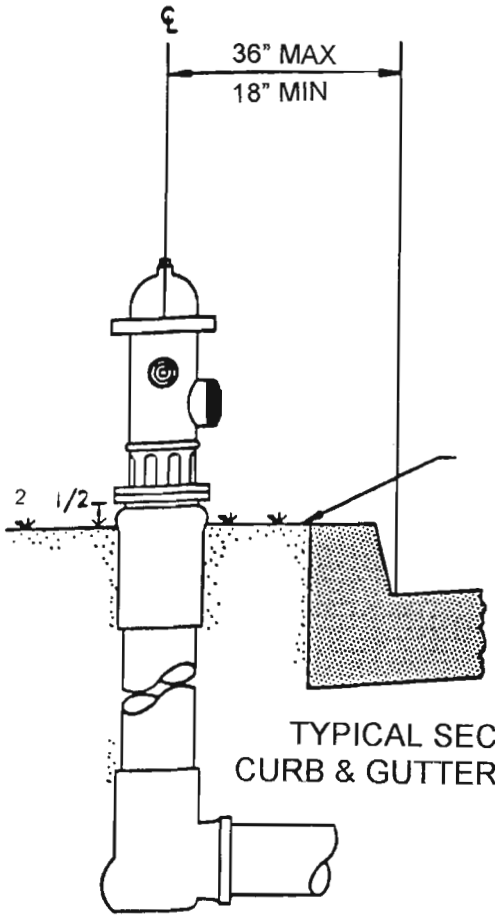
LETTERING	LETTER HEIGHT IN INCHES
NO PARKING	2
OR	1
STANDING	2
FIRE LANE	2 ½
ARROWS	1

TABLE 3-5 WATER FLOW RATE FOR LINE FLUSHING		
Pipe Size inches	**Flush Orifice Size inches**	**Flow Rate gpm**
2	2	60
4	3	400
6	4	750
8	4	1,000
10	6	1,500
12	6	2,000



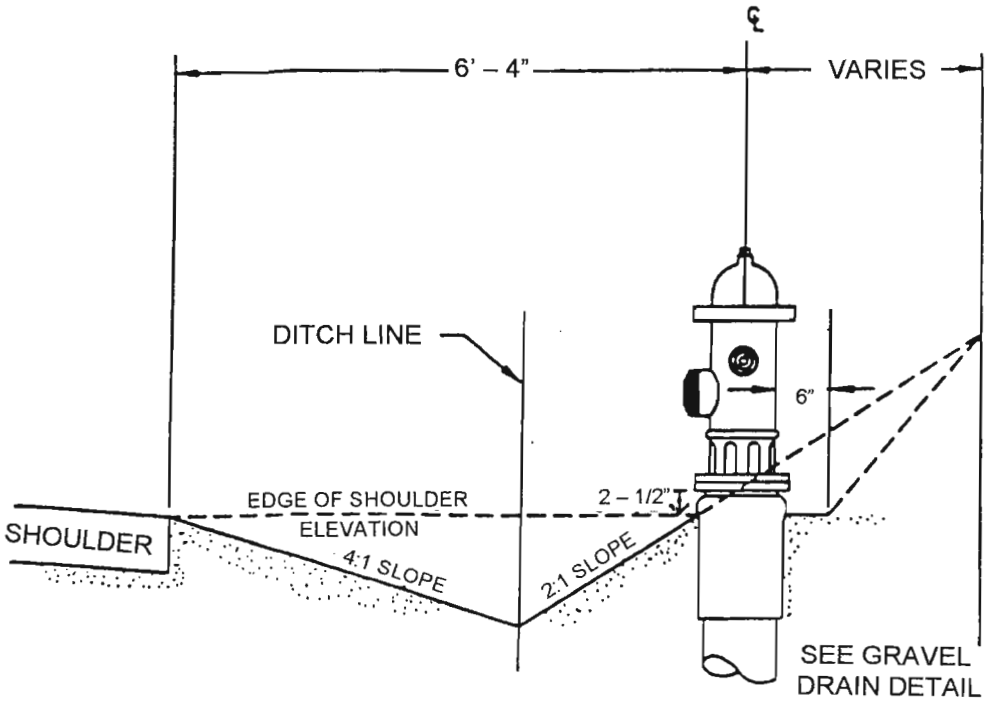
ELEVATION

DETAIL NO.					
350.01	FH-1		COUNTY OF PRINCE WILLIAM VIRGINIA	TYPICAL FIRE HYDRANT	REVISION DATE 6/6/2006



NOTE:
HYDRANT SHALL CONFORM IN ALL RESPECTS TO TYPICAL FIRE HYDRANT DETAIL

TYPICAL SECTION
CURB & GUTTER STREET



TYPICAL SECTION
STREET WITHOUT CURB & GUTTER

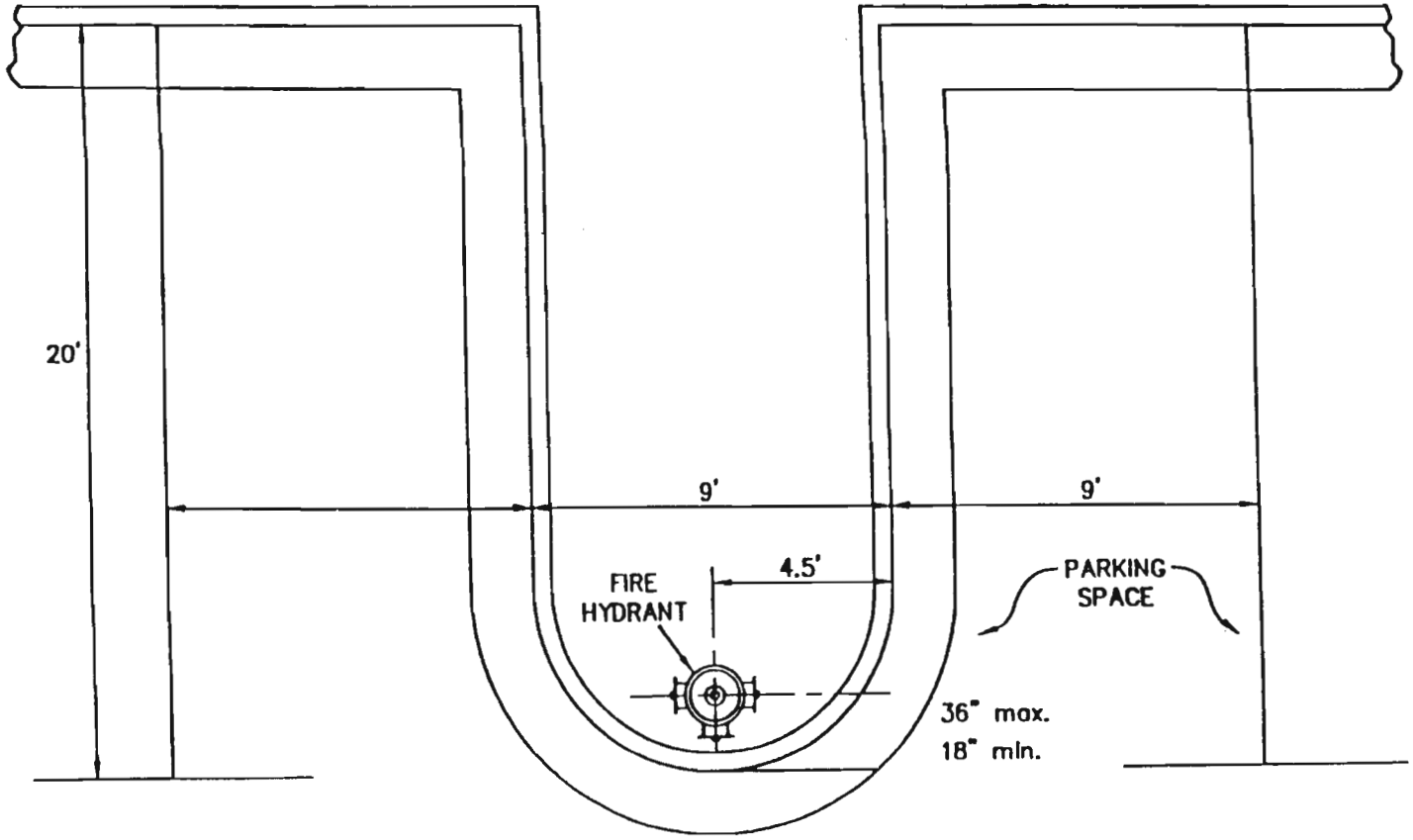
REV. NO.	REVISION DATE
	04/2000

TYPICAL FIRE HYDRANT
LOCATION WITH CURB & GUTTER
OR DITCH LINE

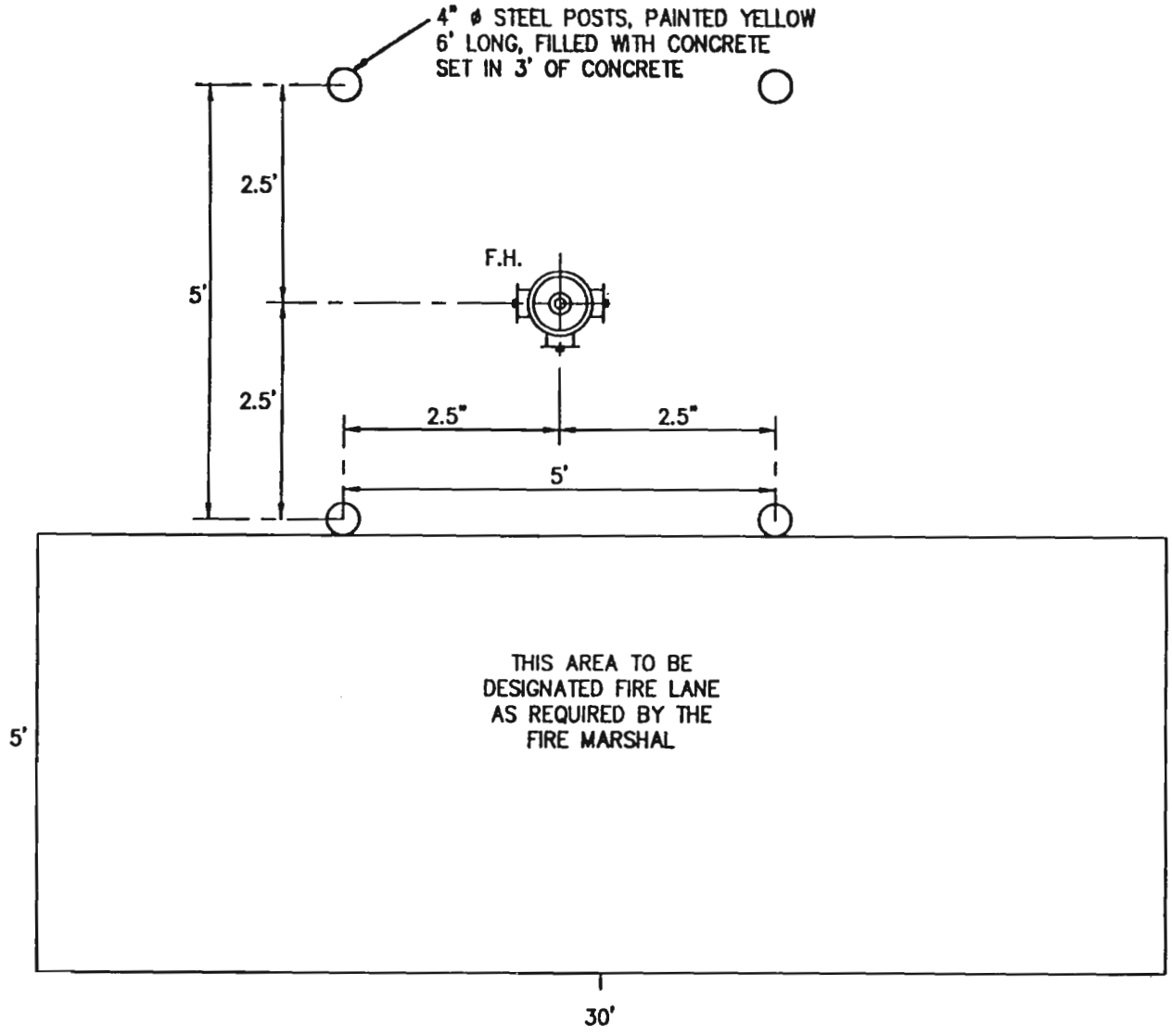
COUNTY OF
PRINCE WILLIAM
VIRGINIA

FH-2

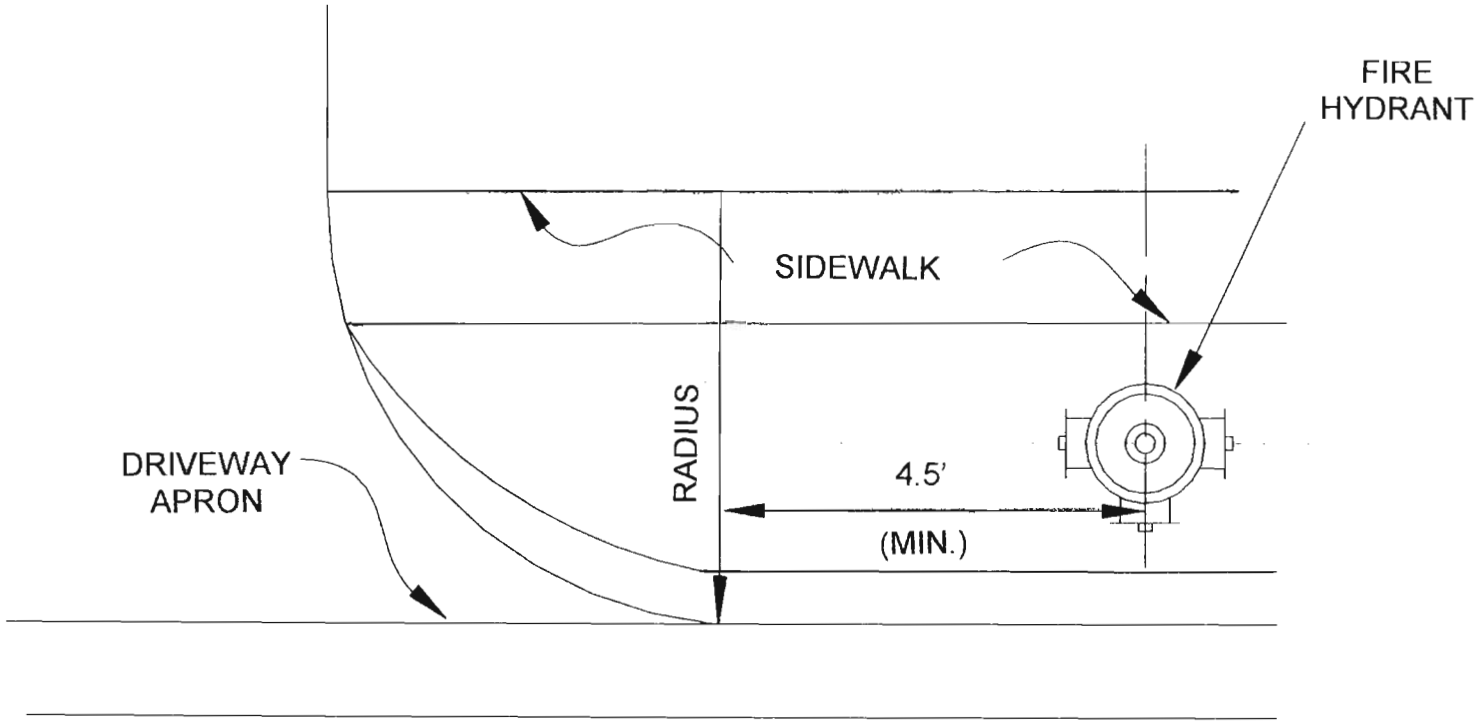
DETAIL NO.
350.02



DETAIL NO.					
350.03	FH-3		COUNTY OF PRINCE WILLIAM VIRGINIA	TYPICAL FIRE HYDRANT LOCATION IN ISLAND & PARKING AREA	REV. NO. REVISION DATE 04/2000

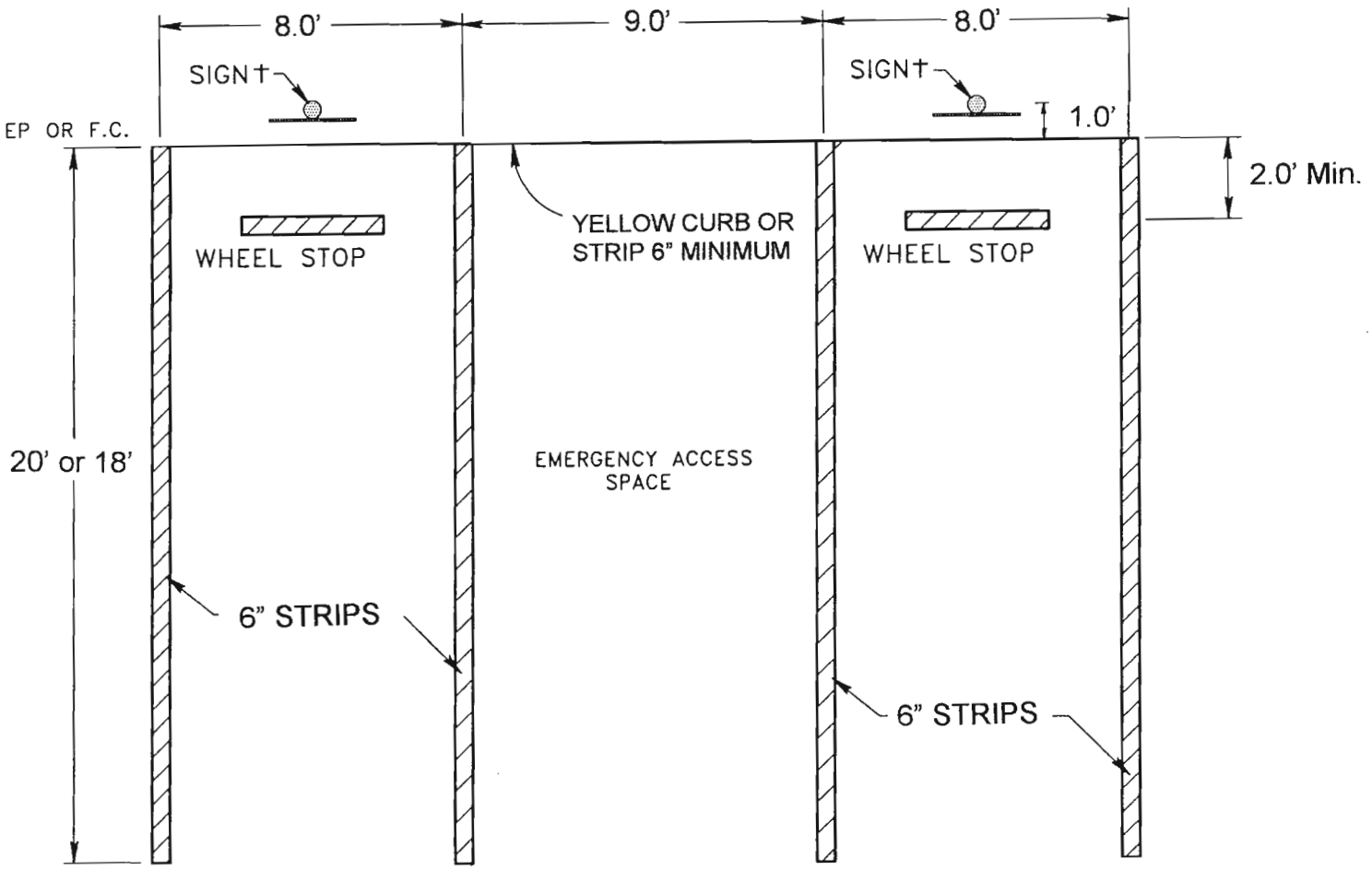


DETAIL NO.					
350.04	FH-4		COUNTY OF PRINCE WILLIAM VIRGINIA	TYPICAL FIRE HYDRANT POST PROTECTION	REV. NO. REVISION DATE 04/2000



DETAIL NO.					
350.05	FH-5		COUNTY OF PRINCE WILLIAM VIRGINIA	TYPICAL FIRE HYDRANT LOCATION ON RESIDENTIAL STREET	REVISION DATE 6/6/2006

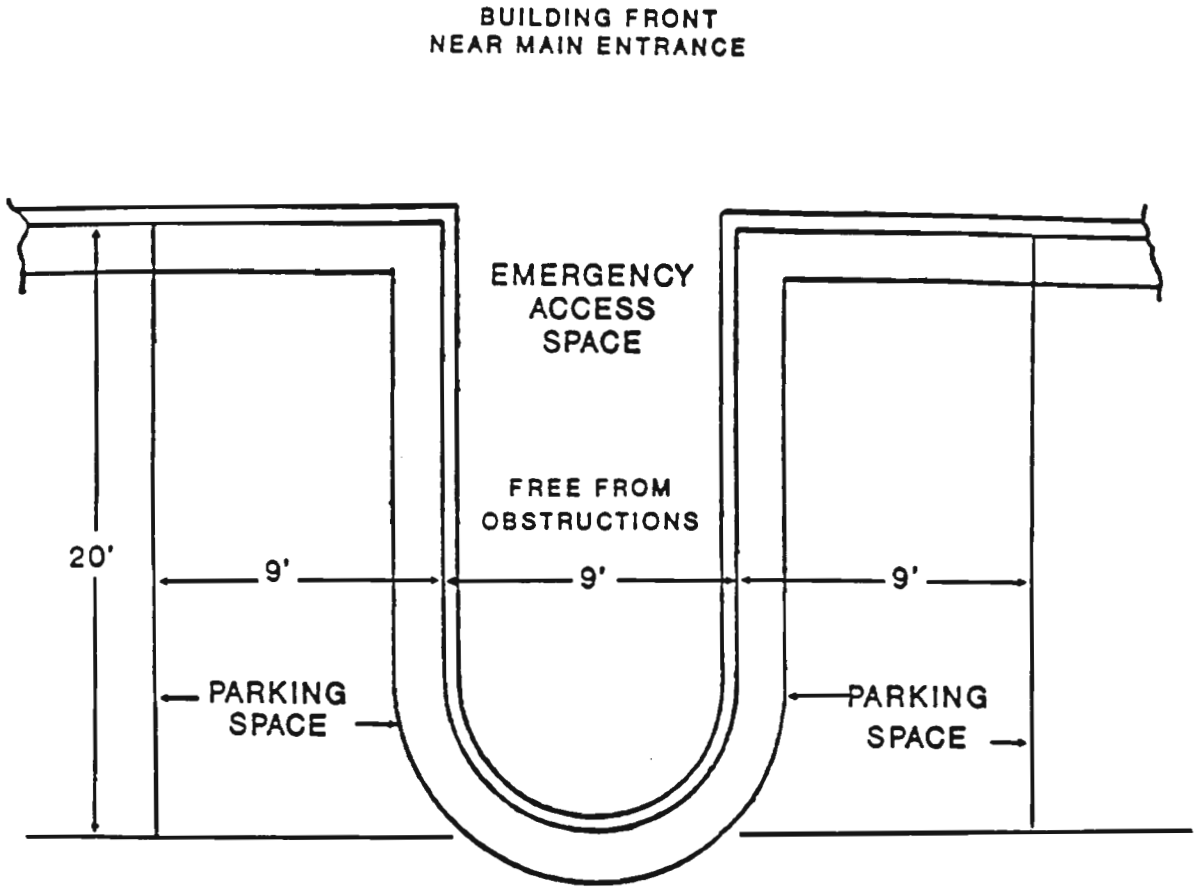
BUILDING FRONT
NEAR MAIN ENTRANCE



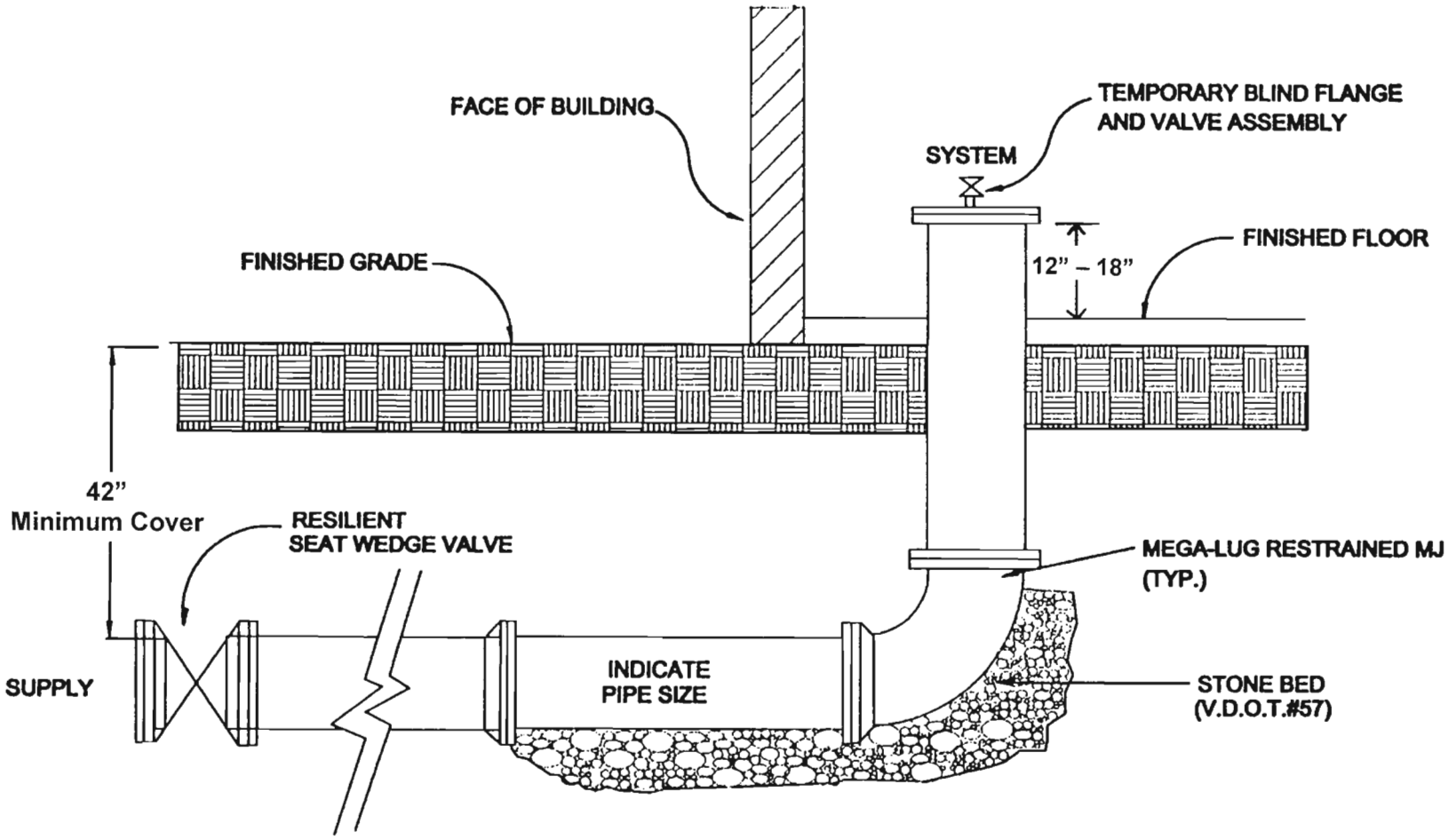
** Refer to HP-1 650.50 for sign detail and location

Note: Access ramp must be located at some point adjacent to the 9.0' Emergency Access Space.

DETAIL NO.					
350.06	EA-1		COUNTY OF PRINCE WILLIAM VIRGINIA	Emergency Access Space Consolidated with two adjacent parking spaces reserved for the handicapped.	REVISION DATE 6/6/2006

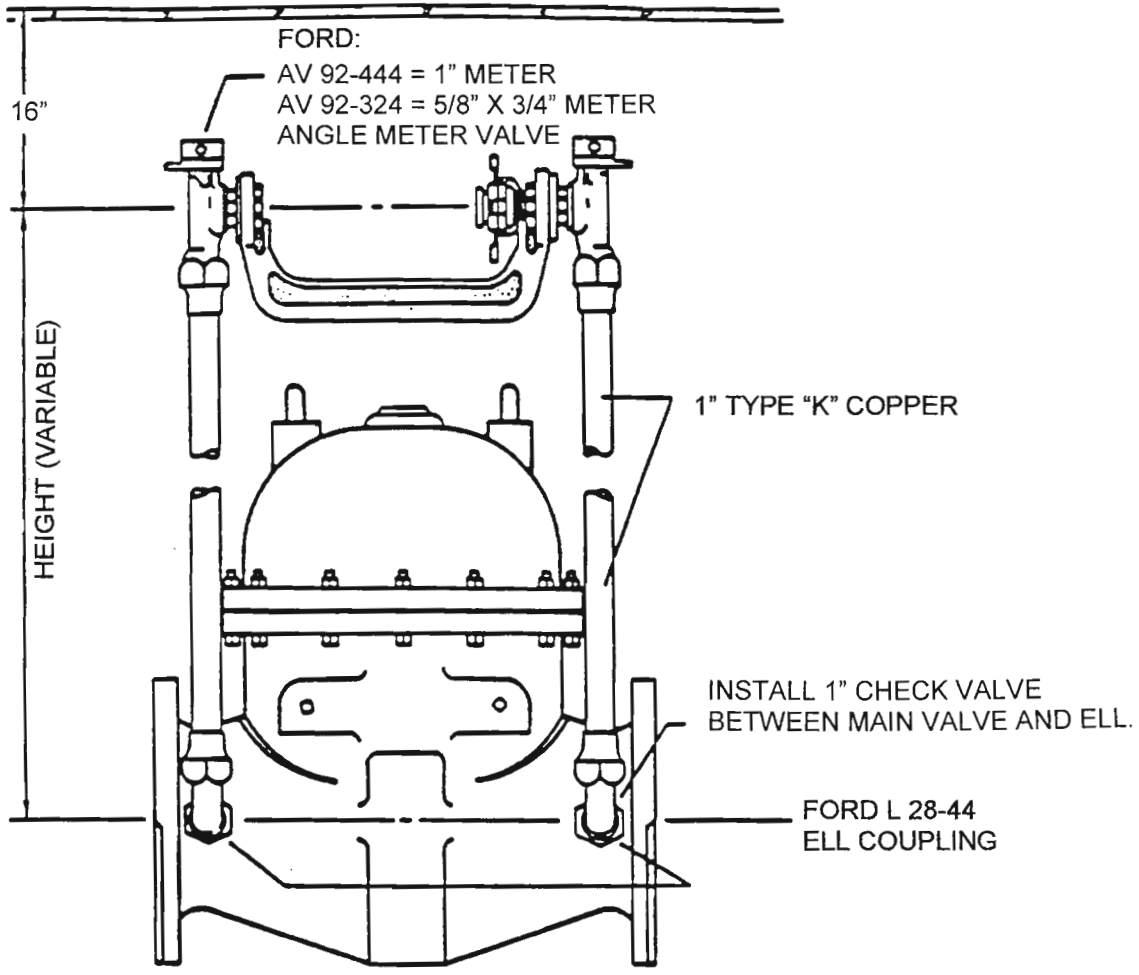


DETAIL NO.					
350.07	EA-2		COUNTY OF PRINCE WILLIAM VIRGINIA	TYPICAL EMERGENCY ACCESS SPACE	REVISION DATE 6/6/2006



DETAIL NO.					
350.08	FL-1		COUNTY OF PRINCE WILLIAM VIRGINIA	FIRE LINE DETAIL	REV. NO. 1 REVISION DATE 6/6/2006

TOP OF VAULT (SEE VAULT DETAIL)

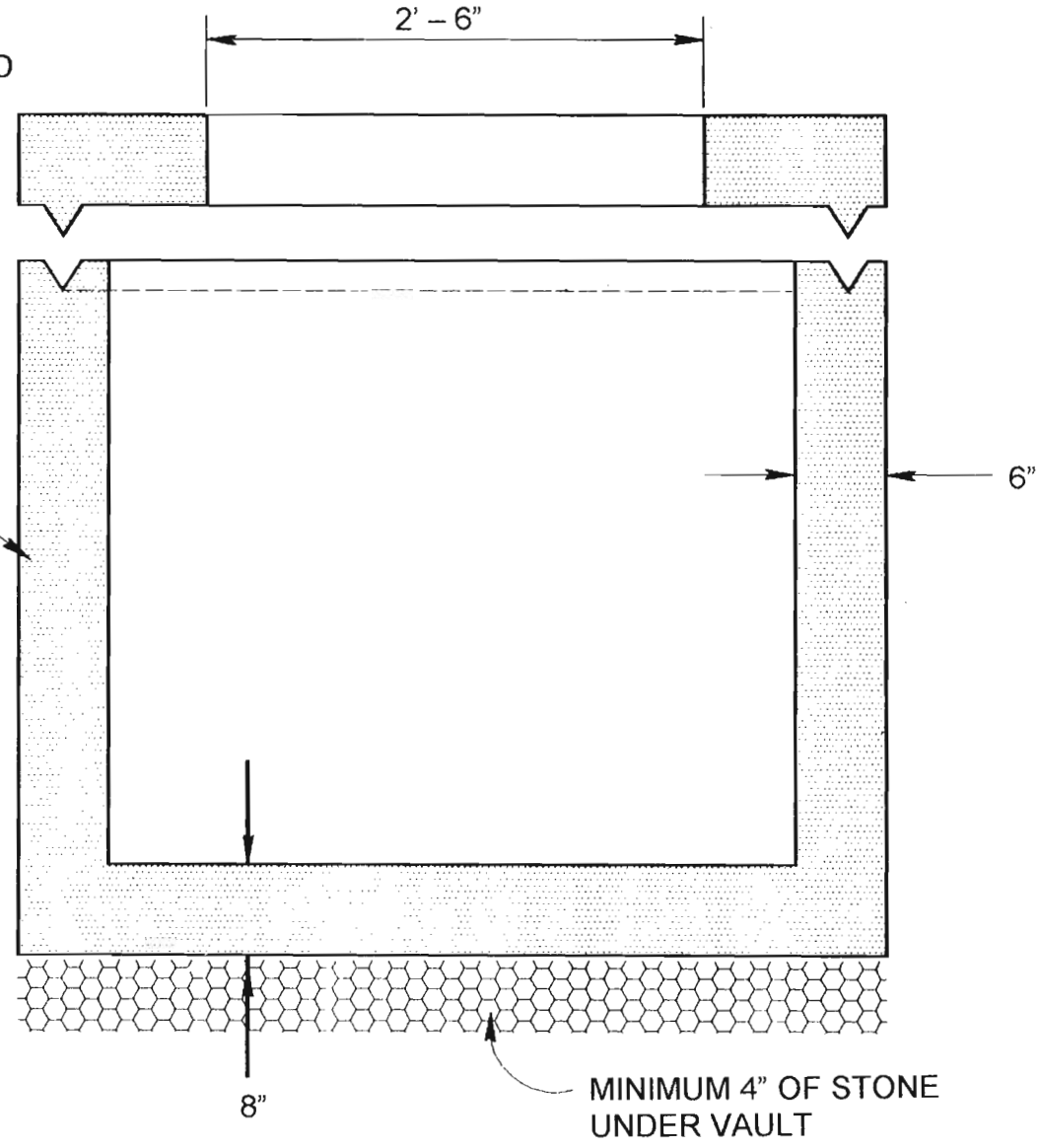


NOTES:

1. PROVIDE 11" READING LID IN TOP OF VAULT DIRECTLY OVER METER DIAL.
2. METER TO BE OBTAINED FROM PWCSA.
3. GATE VALVE TO BE INSTALLED ON EITHER SIDE OF DETECTOR CHECK VALVE.

DETAIL NO.					
350.10	DCV-1		COUNTY OF PRINCE WILLIAM VIRGINIA	WATER DISTRIBUTION SYSTEM DETECTOR CHECK VALVE WITH 1", 5/8" & 3/4" DETECTOR METERS	REVISION DATE 6/6/2006

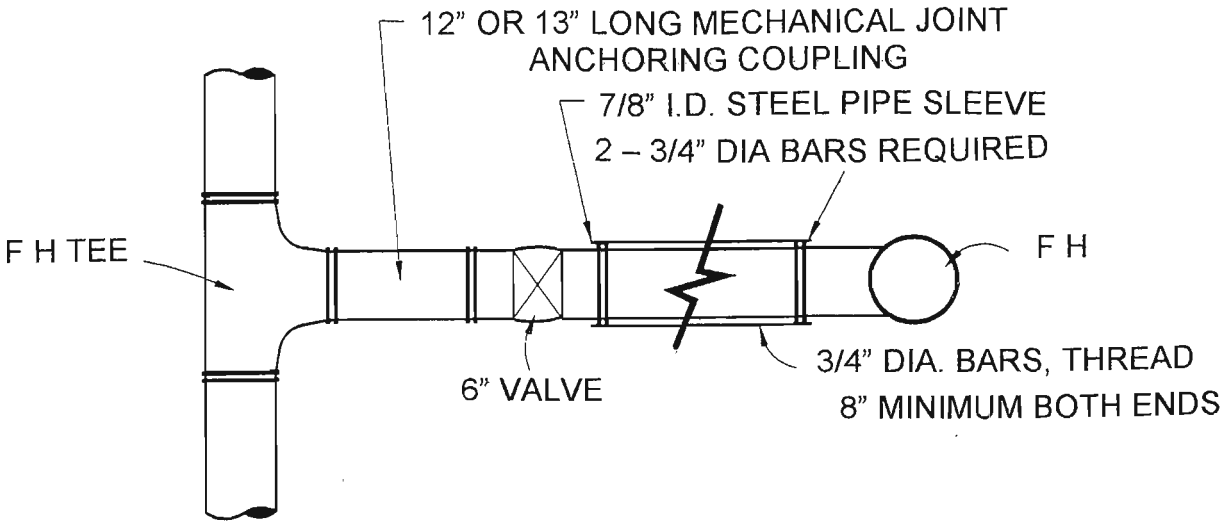
2" – 6" TOP OPENING FOR MANHOLE
FRAME & COVER WITH AN 11" READING LID



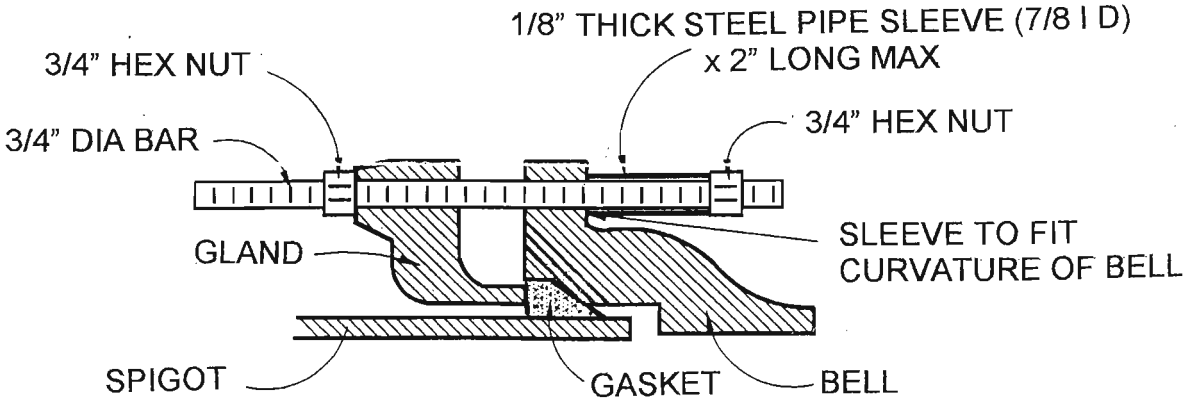
MINIMUM INSIDE DIMENSIONS OF VAULT:

DETECTOR CHECK VALVE SIZE	LENGTH	WIDTH	HEIGHT
4" TO 8"	4'	4'	4'
10" & UP	6'	4'	4'

DETAIL NO.					
350.20	DCV-2		COUNTY OF PRINCE WILLIAM VIRGINIA	DETECTOR CHECK VALVE VAULT CROSS-SECTIONAL VIEW	REV. NO.
					REVISION DATE 6/6/2006



PLAN



CROSS SECTION
SLEEVE AND BAR ASSEMBLY

USE MECHANICAL JOINT FIITING ONLY
PAINT ALL STEEL WITH TWO COATS OF BITUMINOUS PAINT

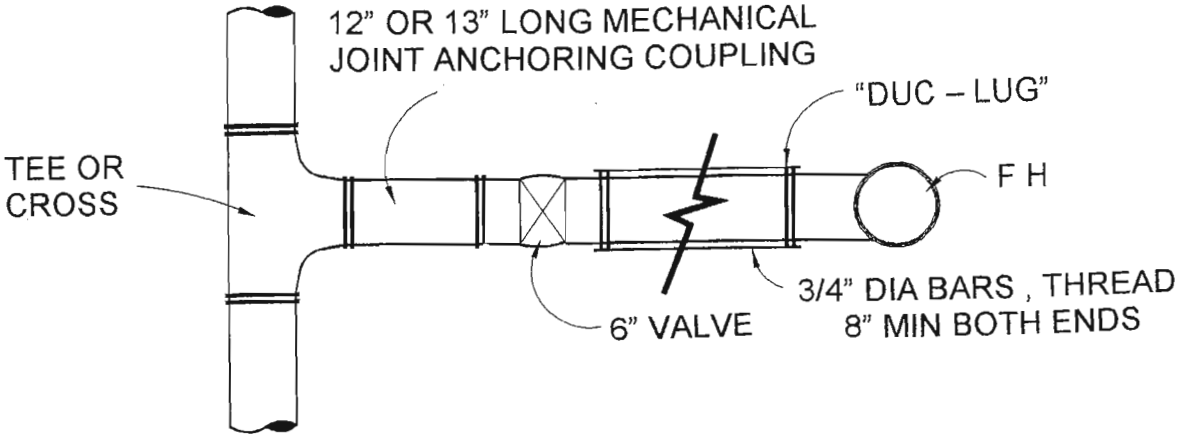
REVISION DATE 6/6/2006

METHOD OF STRAPPING FIRE HYDRANT TO MAIN

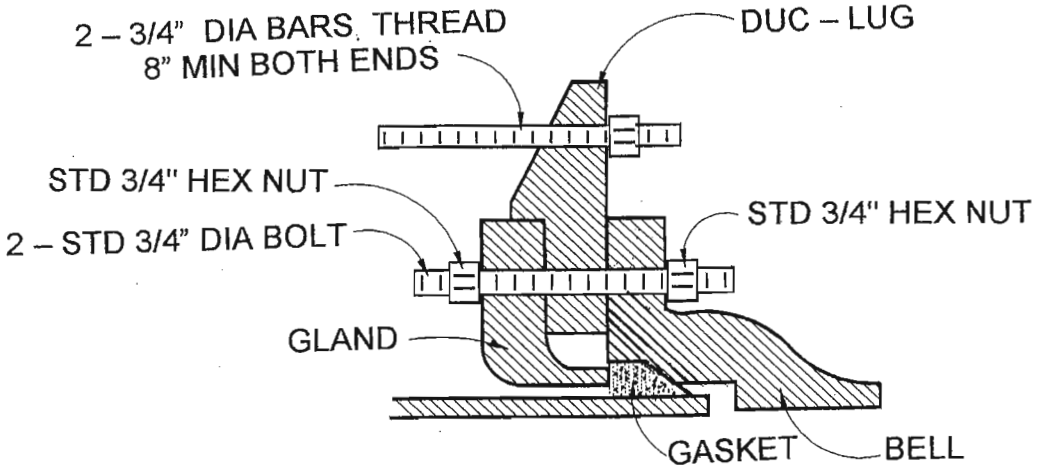
COUNTY OF PRINCE WILLIAM VIRGINIA

ST-2

DETAIL NO. 350.30



PLAN



CROSS SECTION
LUG ASSEMBLY

USE MECHANICAL JOINT FITTINGS ONLY

PAINT ALL STEEL WITH TWO COATS OF BITUMINOUS PAINT

REVISION DATE 6/6/2006

ALTERNATE METHOD OF STRAPPING VALVE TO HYDRANTS WITH "DUC-LUGS"

COUNTY OF PRINCE WILLIAM VIRGINIA

DL-1

DETAIL NO. 350.40