DST 2001-01 Hold Line Marking

A: DESIGN STANDARDS

Parris N. Glendening
Governor

John D. Porcari
Secretary

Maryland Aviation Administration

David L. Blackshear Executive Director

MEMORANDUM

TO: Distribution

FROM: Benjamin Chin, Acting Director
Facilities Design

DATE: January 24, 2001

SUBJECT: Design Standard (DST) 2001-01, Hold Line Marking

Attached for your information and use is a copy of the "heads-up" from the Federal Aviation Administration, Safety and Standards Branch indicating that the standard for hold line marking shall be changing in the near future. The change will require 12-inch wide lines with 12-inch spaces (yellow lines set against a black background) for all hold lines. Additionally, 139 airports with Air Traffic Control Towers and Land and Hold Short Operations (LAHSO) will require 12-inch lines for LAHSO markings as well.

Effective immediately, all Baltimore/Washington International and Martin State Airport projects should be designed with the 12-inch hold line and 12-inch spaces.

If you should have any questions regarding this matter, please contact me at 410-859-7093.

BC/tmt

Attachment

Distribution:

Mr. David Benner (Urban)
Mr. Ian Bricknell (TAMS)
Mr. Emory Carrigan (MAA)
Mr. Jose Chaves (MAA)
Mr. Peter Florian (PB)
Mr. Ray Heverling (MAA)
Mr. Ernie Lepore (Baker)
Mr. Ali Logmanni (MAA)
Mr. David Lookenbill (JMT)
Mr. Steve Lucchesi (URS)
Ms. Suzette Moore (MAA)
Mr. Chirantan Mukhopadhyay (Parsons)
Mr. Alex Noorani (MAA)
Mr. Charles Steen (MAA)
Mr. William Tsai (MAA)
Mr. Ron Walden/Building Permit Committee (MAA)
Mr. Reginald Weaver (Baker)
Mr. Mike West (MAA)

A: DESIGN STANDARDS FILE

Parris N. Glendening
Governor

John D. Porcari
Secretary

Maryland Aviation Administration

David L. Blackshear Executive Director

TO: Distribution

FROM: Benjamin Chin, Acting Director
Facilities Design

DATE: January 11, 2001

SUBJECT: Design Standard (DST) 2001-02, Door Identification Signs

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Effective immediately, all Baltimore/Washington International and Martin State Airports projects shall be designed and specified to include the attached door identification signs. Designers will be responsible for developing a suitable sign attachment method for approval by the Maryland Aviation Administration Project Manager and Division Chief, Fire Prevention.

If you should have any questions regarding this matter, please contact me at 410-859-7093.

BC/tmt

Attachments

Distribution:

Mr. David Benner (Urban)
Mr. Lynn Bezilla (MAA)
Mr. Ian Bricknell (TAMS)
Mr. Emory Carrigan (MAA)
Captain Woody Cullum (MAA)
Mr. Peter Florian (PB)
Mr. Ray Heverling (MAA)
Mr. Ernie Lepore (Baker)
Mr. David Lookenbill (JMT)
Mr. Ali Logmanni (MAA)
Mr. Steve Lucchesi (URSGWC)
Ms. Suzette Moore (MAA)
Mr. Chirantan Mukhopadhyay (Parsons)
Mr. Alex Noorani (MAA)
Mr. Charles Steen (MAA)
Mr. William Tsai (MAA)
Mr. Ron Walden/Bldg. Permit Committee (MAA)
Mr. Reginald Weaver (Baker)
Mr. Mike West (MAA)

SPRINKLER CONTROL VALVES

Sign type No.1

SPRINKLER/STANDPIPE CONTROL VALVES

Sign type No.2

Metal type sign with red background and reflective white letters. These signs will be placed indoors and outdoors.

Sign size: 10"x6"

The sign shall be placed on the door closest to the valves.

MFP 1111

This sign shall be used to identify the location of "Manual Fire Pull" stations at exit doors leading to the aircraft apron.

The MFP shall be constant for all signs; the 4-digit number will change. The last four digits of the 12-digit fire alarm number shall be used. The sign shall be placed on the exterior of doors as high as possible.

Metal type sign with red background and white reflective letter and numbers.

Sign Size 2"x6"

WARNING
ELECTRIC SUBSTATION PROTECTED BY WET SPRINKLER SYSTEM

This sign shall be used to identify the location of Electrical Substations.

Metal type sign with red background and white reflective letters shall be placed on the outside of the door.

Sign size: 6"x12"

Fire Dept.Standpipe Connection

This sign shall be made like a bumper sticker. It will be used indoors only and placed on smooth metal or glass. It will be placed over existing signage on glass that is stenciled on the interior of the glass.

The sign contractor shall determine the sign size (minimum 10"x3"), color and size of the lettering.

The locations and placement shall be field determined.

Metal type sign with red background and white reflective letters. The sign will be placed on the outside of the door.

Sign size 9"x11"

A; DESIGN STANDARD FILE

Parris N. Glendening
Governor

John D. Porcari
Secretary

Maryland Aviation Administration

David L. Blackshear Executive Director

MEMORANDUM

TO: Distribution

FROM: Benjamin Chin, Acting Director
Facilities Design

DATE: January 16, 2001

SUBJECT: Advisory Standard (DST) 2001-03, Meeting Minutes

Effective immediately, all meeting minutes prepared for Maryland Aviation Administration Facilities Design projects shall be distributed to all attendees and persons invited to the meeting. The Meeting Notice shall also be attached to the meeting minutes.

If you should have any questions regarding this matter, please contact me at 410-859-7093.

BC/tmt

Distribution:

Mr. David Benner (Urban)
Mr. Lynn Bezilla (MAA)
Mr. Ian Bricknell (TAMS)
Mr. Emory Carrigan (MAA)
Mr. Peter Florian (PB)
Mr. Ray Heverling (MAA)
Mr. Ernie Lepore (Baker)
Mr. Ali Logmanni (MAA)
Mr. David Lookenbill (JMT)
Mr. Steve Lucchesi (URS)
Ms. Suzette Moore (MAA)
Mr. Chirantan Mukhopadhyay (Parsons)
Mr. Alex Noorani (MAA)
Mr. Charles Steen (MAA)
Mr. William Tsai (MAA)
Mr. Ron Walden/Building Permit Committee (MAA)
Mr. Reginald Weaver (Baker)
Mr. Mike West (MAA)

Parris N. Glendening
Governor

John D. Porcari
Secretary

Maryland Aviation Administration

David L. Blackshear Executive Director

MEMORANDUM

TO: Distribution

FROM: Benjamin Chin, Acting Director
Facilities Design

DATE: January 24, 2001

SUBJECT: Design Standard (DST) 2001-04, Glycol Aboveground Storage Tank (Glycol AST) System Design Standard

Note: This Standard supersedes (DST) 2000-08, Above Ground Glycol Storage Tank (Glycol AST) System Design Standards.

Effective immediately, all Baltimore/Washington International (BWI) and Martin State Airports projects involving the design and specification of Glycol ASTs, both permanent and temporary, shall be per the following:

1. All glycol ASTs shall be in compliance with the most recent regulations of: Code of Maryland Regulations (COMAR) 26.10, Oil Pollution and Tank Management and all related Environmental Protection Agency or federal regulatory requirements.

2. All glycol ASTs shall be in compliance with all applicable codes of the National Fire Protection Association (NFPA), particularly NFPA 1, 10, 30 & 30A, 70, 415 and 704, COMAR 12, State of Maryland Fire Prevention Code, Code of Federal Regulations, and BWI Tenant Directives as follows:
   - A. NFPA 1, Fire Prevention Code
   - B. NFPA 704, Identification of Fire Hazards
   - C. NFPA 10, Fire Extinguishers
   - D. NFPA 30, 30A, Flammable & Combustible Liquids Code
   - E. NFPA 70, National Electric Code
   - F. NFPA 101, Life Safety Code
   - G. NFPA 415, Airport Terminal Building, Fuel Ramp Drainage
   - H. NFPA 704, Identification of Fire Hazards, Signs/Signal System
   - I. Code of Maryland Regulations (COMAR) 26.10, Maryland Department of the Environment Oil Pollution and Tank Management

J. COMAR 12.03.01.02, Fire Prevention Code
K. Code of Federal Regulations 40 CFR 112.7, Spill Prevention Control and Countermeasure Plan
L. BWI Tenant Directive 215.1, Deicing Procedures at Baltimore/ Washington International Airport
M. BWI and MTN Tenant Directive 007.1, Building Permits- Baltimore/Washington International Airport
N. BWI Tenant Directive 502.1, Airport Fuel/Oil and Hazardous Material Spill Procedures for Legal Reporting Responsibilities
O. BOCA National Plumbing Code

3. Transport trailer tanks will not be permitted for glycol storage after September 1, 2000.

4. Effective January 1, 2001, all new glycol AST installations must meet or exceed Maryland Aviation Administration's (MAA) design standards or be removed at the owner's expense.

5. All glycol ASTs installed prior to January 1, 2001 must be upgraded to meet the following requirements prior to September 1, 2001:
   - All tank and pipe fittings must be metallic
   - No plastic site tubes
   - Collision barrier
   - Containment curb impermeable to flow, capable of holding 25% of the volume of the largest tank or 10 inches in height, whichever is greatest
   - Lockable drain valve

6. The MAA will permit glycol ASTs to be placed only at those pier locations where gate deicing is permitted (See BWI Tenant Directive 215.1, Deicing Procedures at Baltimore/Washington International Airport). Positioning of tanks shall not interfere with:
   - Emergency terminal exits
   - Fire protection equipment
   - Vehicle traffic
   - Other airport operations
   - Line of sight concerns from the Air Traffic Control Tower.

7. Request for tank locations must be approved by MAA Director of Operations Center prior to submittal of building permit or conceptual design for MAA Facilities Design Division.

8. All glycol ASTs shall be, at a minimum, steel or noncombustible material, UL Listed single walled construction. Installation is to be in accordance with the manufacturer's specifications.

9. All glycol ASTs and associated pumps, piping and equipment, regardless of capacity, shall be installed within a steel containment dike capable of holding 110% of the total tank volume,

providing protection from collision, and shall include a lockable drain valve, in accordance with COMAR 26.10.01.12B-1. Penetrations through the tank must be watertight.

10. The tank owner must develop procedures to respond to a spill. The spill response procedures must be submitted to the MAA Environmental Compliance Section. The spill procedures must be developed according to BWI Tenant Directive 502.1, Airport Fuel/Oil and Hazardous Material Spill Procedures for Legal Reporting Responsibilities, to address any possible spills or leaks that may occur. In addition, the procedures shall include a process for emptying stormwater from the containment dike area. The procedure shall be developed to prevent stormwater from reaching a level that will decrease the capacity of the containment dike area below the storage capacity of the tank. The tank owner must also have a spill kit available at the tank location. The kit must contain drain protection booms or mats.

11. Tank owner must visually inspect tanks weekly and keep records of tank inspections.

12. All leaks and spills must be addressed immediately by the tank owner. Immediate measures must be taken to prevent the migration of spilled material into stormwater drains. The MAA Airport Operations Center must be notified immediately of a leak or spill by telephoning (410) 859-7018.

13. When required, tanks must be placed on concrete pads of sufficient strength to support the tank's full weight (including other necessary structural support).

14. All tanks must be provided with a flow meter with a totalizer applicable for glycol usage. They must be capable of providing a reading of the total amount of glycol discharged from the tank. An annual calibration must be performed according to manufacturer's recommendations. The meter must be accessible to the MAA at all times.

15. All tanks shall have a label affixed identifying their contents and tanks' maximum capacity, e.g., Propylene Glycol, Type IV, 5,000 gallons. The NFPA-704 symbol shall also be displayed.

16. All connections to potable water supply must have a back-flow preventer.

17. All glycol AST equipment must be secure from tampering and unauthorized use and must be limited to personnel trained by the tenant according to its company's standards.

18. All operator hoses must be in good working order and be securely fastened in an upright manner to prevent any leaking. Valves must be in closed position when not in use.

19. The MAA Project Manager and Resident Architect must approve the color of the tanks.

If the above requirements conflict with any other codes or regulations, it should be brought immediately to the attention of the Acting Director, Facilities Design Division.

If you should have any questions regarding this matter, please contact me at 410-859-7093.

Distribution:

Mr. David Benner (Urban)
Mr. Ian Bricknell (TAMS)
Ms. Joanne Brooks (MAA)
Mr. Emory Carrigan (MAA)
Chief Woody Cullum (MAA)
Mr. Gary Davies (MAA)
Mr. Peter Florian (PB)
Ms. Barbara Grey (MAA)
Mr. Ray Heverling (MAA)
Mr. Ernie Lepore (Baker)
Mr. Ali Logmanni (MAA)
Mr. David Lookenbill (JMT)
Mr. Steve Lucchesi (URS)
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Mr. Alex Noorani (MAA)
Mr. Charles Steen (MAA)
Mr. William Tsai (MAA)
Mr. Ron Walden/Building Permit Committee (MAA)
Mr. Reginald Weaver (Baker)
Mr. Mike West (MAA)
Ms. Delma Wickham-Smith (MAA)

cc: Mr. John Stewart (MAA)
Mr. Mark Williams (MAA)

Parris N. Glendening
Governor

John D. Porcari
Secretary

Maryland Aviation Administration

David L. Blackshear Executive Director

MEMORANDUM

TO: Distribution

FROM: Benjamin Chin, Acting Director
Facilities Design Division

DATE: January 26, 2001

SUBJECT: Design Standard (DST) 2001-05, Electrical Cable
Amendment Number 1

Effective immediately, please incorporate the requirements of Amendment Number 1 into the design and specification of all projects at Baltimore/Washington International (BWI) and Martin State (MTN) Airports.

The requirements of Amendment Number 1 to the Electrical Cable Design Standard (DST 2000-02) are as follows:

- Page 2, 1st Paragraph, 2nd sentence: Delete "Fire alarm and".

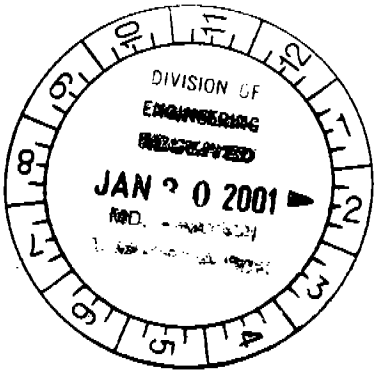
- Page 2, New Item

  Add new paragraph after Item 8 "All Fire Alarm related wiring and cable shall be installed in a raceway system as detailed in indoor wiring methods 1 through 3 shown above. The use of flexible metal conduit shall be permitted only for final connections for hard to reach fire alarm devices as approved by the Fire Marshall. See BWI Airport Wide Standard for Interface of Fire Alarm, Life Safety and Security Systems and related amendments for additional requirements."

If the above requirements conflict with any other codes or regulations, it should be brought immediately to the attention of the Acting Director, Facilities Design Division.

If you should have any questions regarding this matter, please contact me at 410-859-7093.

BC/tmt



Distribution:

Mr. David Benner (Urban)
Mr. Alek Beri Jr. (MAA)
Mr. Lynn Bezilla (MAA)
Mr. Ian Bricknell (TAMS)
Mr. Emory Carrigan (MAA)
Captain Woody Cullum (MAA)
Mr. Gary Davies (MAA)
Mr. Charles Flood (MAA)
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Mr. Bill Lins (MAA)
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Mr. Alex Noorani (MAA)
Mr. Charles Steen (MAA)
Mr. William Tsai (MAA)
Mr. Ron Walden/Building Permit Committee (MAA)
Mr. Reginald Weaver (Baker)
Mr. Mike West (MAA)

cc: Mr. Ned Carey/Electronics Committee (MAA)

Parris N. Glendening
Governor

John D. Porcari
Secretary

Maryland Aviation Administration

David L. Blackshear Executive Director

MEMORANDUM

TO: Distribution

FROM: Benjamin Chin, Acting Director
Facilities Design Division

DATE: January 26, 2001

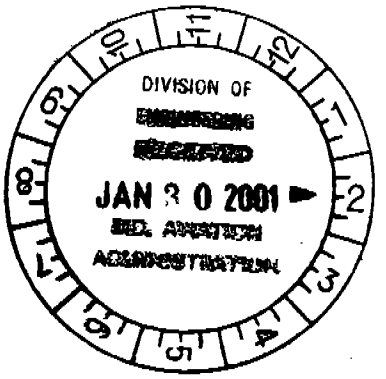
SUBJECT: Design Standard (DST) 2001-06, Bird Deterrent System

Attached for your information and use is a copy of USDA's recommendation for a sediment trap bird deterrent system to mitigate the potential of aircraft bird strike hazards. During the design process, consultants shall review project specifics to determine if the deterrent system should be specified for projects at Baltimore/Washington International and Martin State Airports.

If you should have any questions regarding this matter, please contact me at 410-859-7093.

BC/tmt

Attachment



Distribution:

Mr. David Benner (Urban)
Mr. Ian Bricknell (TAMS)
Mr. Emory Carrigan (MAA)
Mr. Jose Chaves (MAA)
Mr. Peter Florian (PB)
Ms. Barbara Grey (MAA)
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Mr. Alex Noorani (MAA)
Mr. Charles Steen (MAA)
Mr. William Tsai (MAA)
Mr. Ron Walden/Building Permit Committee (MAA)
Mr. Reginald Weaver (Baker)
Mr. Mike West (MAA)

WATERFOWL DETERRENT SYSTEM FOR SEDIMENT TRAPS AT BWI AIRPORT

There is a need to discourage ducks and other waterfowl from being attracted to stormwater in sediment traps. The system proposed for BWI will interfere with the ducks' landing pattern by installing a grid using lightweight wire above the surface of the trap. As they approach a water-filled trap, ducks, geese and other waterfowl will see the grid wires and not attempt to land. A perimeter fence consisting of two wire strands strung around the posts will keep birds from walking onto the traps.

Grid spacing will be five feet for short spans and ten feet for long spans. See the attached detail for a typical layout. The ends of the grid wires will be strung from hooks placed on posts three feet above the ground. It is expected that the wires will sag as much as two feet and will exert a maximum line tension of 35 pounds.

Grid wire will be high-strength, lightweight synthetic material made from aramid fiber as manufactured by Phillystran, Inc., Part No. PS29 1x7x.045J, or approved equal.

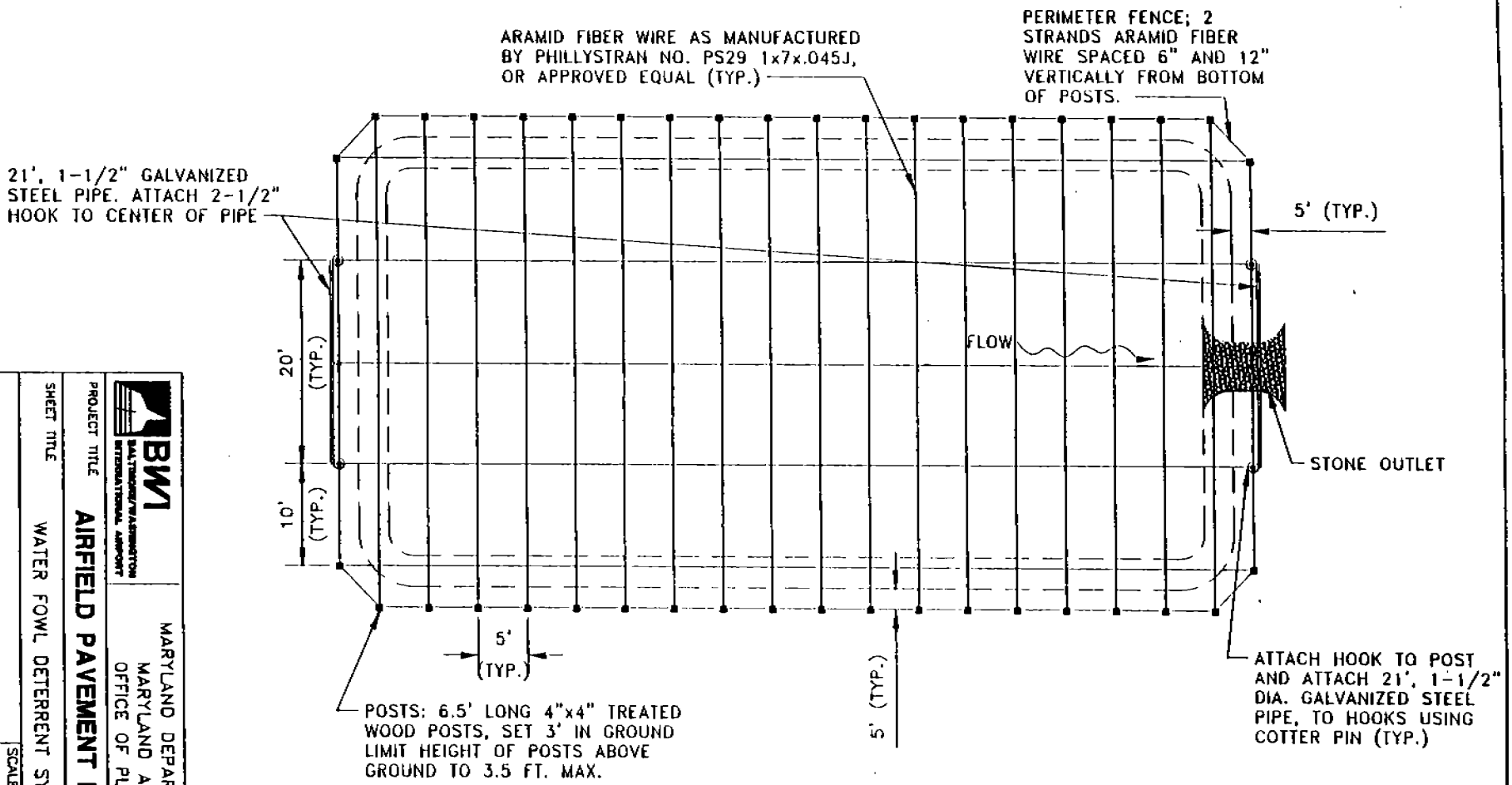
Posts will be six and one half feet long, 4"x4" treated wood, driven three feet into the ground. Three holes will be drilled into each post to attach one 2-1/2 inch hook and two 1-1/2 inch eye bolts.

An access "gate" will be constructed to facilitate trap cleanout. The "gate" consists of a 21' long, 1-1/2" diameter horizontal pipe placed 3' above ground and spanning two posts spaced 20' apart. When sediment is to be cleaned out from the trap, the long pipe is removed. An identical horizontal pipe will also span the stone outlet weir at the opposite end of the trap. Each pipe will have a hook placed in the middle to attach the grid wire.

PROCEDURE FOR INSTALLING AND REMOVING GRID WIRE SYSTEM

After each sediment trap is constructed, posts are placed five feet outside of the top edge of the traps, spaced 5 feet on center on the long side of the trap and 10 feet on center on the short sides, leaving one 20 foot gap for the gate. Attach hooks to posts. Attach beams to posts straddling outlet weir and access "gate. Grid wires will then be sized and loops assembled according to manufacturer's directions. Grid wires are then attached to posts starting with the long dimension first so that the longer wires will sag below the shorter strands. Wire lengths should be sized to allow them to be pulled tight with no more than one to two feet sag in the middle of the longest spans. After the grid is in place, the two-strand perimeter fence can be installed.

When sediment needs to be cleaned out, disconnect and store the grid wires. This can be done with a two-man crew, one on either end of the wire. Each person shall disconnect the wire from the hook at the same time, walk beyond the trap, holding the wire taut, and place the wire on the ground. The crew then moves to the next wire and repeats the procedure until all the wires have been removed. Next, the crew shall remove the perimeter fence strands at the access gates as well as the 21' long horizontal beam. Contractor's equipment can then enter the trap to remove sediment. After sediment removal, the crew shall re-install grid assembly as described above.



GRID WILL BE 5' APART FOR SHORT SPAN WIRES AND 10' APART FOR LONG SPAN WIRES. OUTSIDE GRIDWIRE TO BE PLACED OVER BOTTOM EDGE OF TRAP.

DUCK DETERRENT SYSTEM FOR TYPE 2 SEDIMENT TRAP

85'x40' TRAP IS SHOWN

BWI BALTIMORE/WASHINGTON INTERNATIONAL AIRPORT

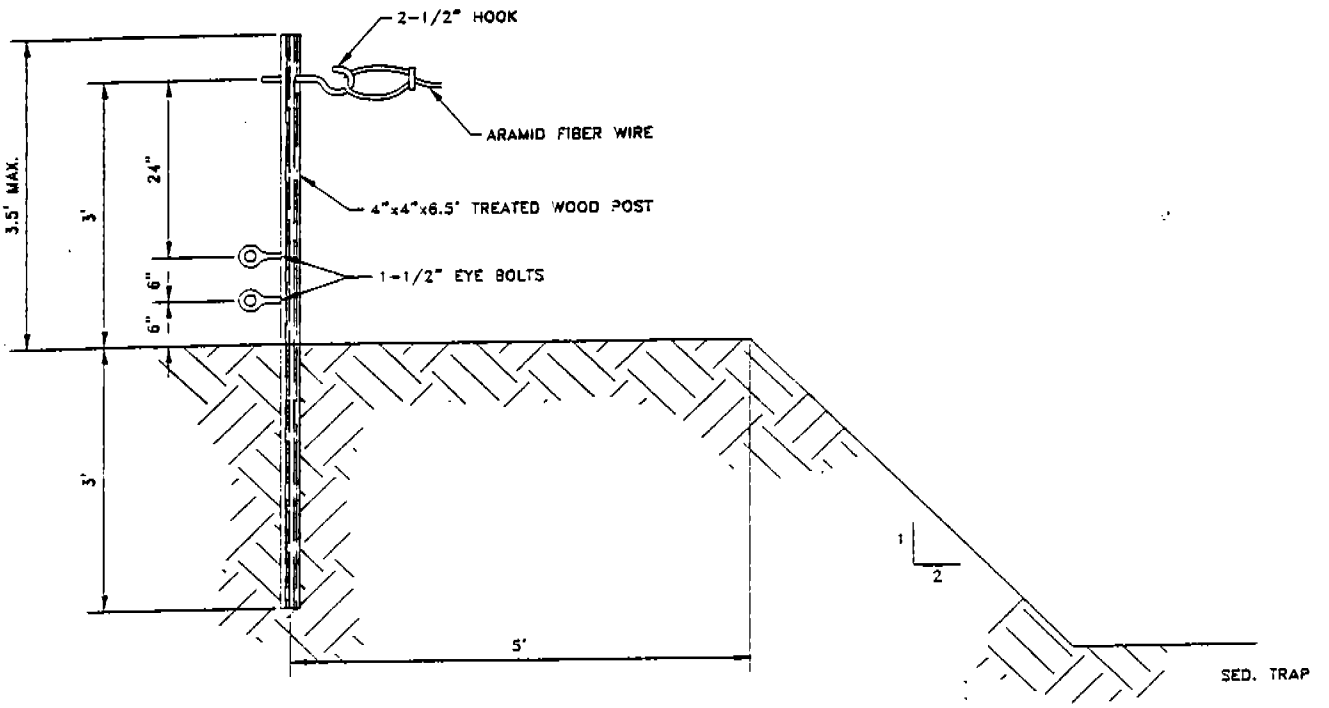
PROJECT TITLE: **AIRFIELD PAVEMENT REHABILITATION 2000**

MARYLAND DEPARTMENT OF TRANSPORTATION
MARYLAND AVIATION ADMINISTRATION
OFFICE OF PLANNING AND ENGINEERING

SHEET TITLE: WATER FOWL DETERRENT SYSTEM FOR SEDIMENT TRAPS

URS Greiner Woodward Clyde
HUNT VALLEY, MARYLAND

DATE	SCALE	PROJECT NO.	EXHIBIT NO.
08/1/00	N.T.S.	MAA-CO-00-014	
		SHEET REFERENCE	



POST

FOR DUCK DETERRENT SYSTEM
FOR TYPE II SEDIMENT TRAP

BWI BALTIMORE/WASHINGTON INTERNATIONAL AIRPORT	MARYLAND DEPARTMENT OF TRANSPORTATION MARYLAND AVIATION ADMINISTRATION OFFICE OF PLANNING AND ENGINEERING		
PROJECT TITLE	**AIRFIELD PAVEMENT REHABILITATION 2000**		
SHEET TITLE	WATER FOWL DETERRENT SYSTEM FOR SEDIMENT TRAPS		
URS Greiner Woodward Clyde HUNT VALLEY, MARYLAND	SCALE N.T.S.	PROJECT NO. MAA-CO-00-014	EXHIBIT NO.
	DATE 08/1/00	SHEET REFERENCE	

WATERFOWL DETERRENT SYSTEM
FOR SEDIMENT TRAPS AT BWI AIRPORT

Sediment Trap Bottom Dimensions, ft.	Approximate length per Gridwire, ft.	Number of Gridwires	Total length Of Gridwire ft.	Total length of Perimeter Fence ft.	Number of Posts
40' x 85'	113'	5	565'	362'	44
	68'	18	1,224'		
	Trap TOTAL:		**1,789'**		
40' x 70'	98'	5	490'	332'	38
	68'	15	1,020'		
	Trap TOTAL:		**1,510'**		
30' x 105' (2 traps)	125'	4	500'	350'	50
	50'	22	1,100'		
	Trap TOTAL:		**1,600'**		
30' x 150'	175'	4	700'	450'	70
	50'	32	1,600'		
	Trap TOTAL:		**2,300'**		
30' x 155'	170'	4	680'	440'	68
	50'	31	1,550'		
	Trap TOTAL:		**2,230'**		
GRAND TOTAL:			**11,029'**	**2,284'**	**320**

TOTAL LENGTH OF GRIDWIRE: 11,029 + 2 x 2,284 = 15,597 feet

DST 2001-07 Construction Document Review Items

DST A:/...

Parris N. Glendening
Governor

John D. Porcari
Secretary

Maryland Aviation Administration

David L. Blackshear Executive Director

MEMORANDUM

TO: Distribution

FROM: Benjamin Chin, Acting Director
Facilities Design Division

DATE: May 18, 2001

SUBJECT: Design Standard (DST) 2001–07, Construction Document Review Items

Effective immediately, the following check list items shall be verified and included in all construction documents prepared for the Maryland Aviation Administration (MAA) Office of Facilities Development. Prior approval from the MAA Director of Facilities Design Division must be obtained for any deviations from this standard.

1. All contract milestones shall be specified in calendar days from NTP. Specifying "specific dates" must be approved by the MAA.

2. All incentives must be approved by the MAA.

3. All sole source and proprietary items must be approved by the MAA.

4. Performance specifications which require the contractor to design/build shall be identified and brought to the attention of the MAA. The designer should provide justification for using this method.

5. Specifications which require pre-qualification of contractors and suppliers, i.e. number of years providing specific products or services, previous project experience etc. should be identified and brought to the attention of the MAA. The designer should provide justification for pre-qualification requirements.

6. Specifications which have specific warranty/maintenance requirements beyond the MAA standard of one year shall be identified. The designer should provide justification for extended/additional warranty maintenance requirements.

7. The designer shall provide to the MAA written documentation outlining the basis for liquidated damages. The documentation shall be provided prior to the advertisement submittal.

Distribution:

Mr. Dave Benner (Urban)	Mr. Chirantan Mukhopadhyay (Parsons)
Mr. Emory Carrigan (MAA)	Mr. Alex Noorani (MAA)
Mr. Peter Florian (PB)	Mr. Charles Olsen (JMT/WSA)
Mr. Ray Heverling (MAA)	Mr. Charles Steen (MAA)
Mr. Ernie Lepore (Baker)	Mr. Bill Tsai (MAA)
Mr. Ali Logmanni (MAA)	Mr. Ron Walden/Building Permit Committee (MAA)
Mr. Steve Lucchesi (URS)	Mr. Reginald Weaver (Baker)
Ms. Suzette Moore (MAA)	Mr. Mike West (MAA)

DST 2001–08 Carpeting at BWI Airport

DST A1/...

Parris N. Glendening
Governor

John D. Porcari
Secretary

Maryland Aviation Administration

David L. Blackshear Executive Director

MEMORANDUM

TO: Distribution

FROM: Benjamin Chin, Acting Director
Facilities Design Division

DATE: May 18, 2001

SUBJECT: Design Standard (DST) 2001–08, Carpeting at Baltimore/Washington International Airport (BWI)

DST 97–3, Carpeting Specification for BWI Airport (see attached) is hereby rescinded.

Attachment

Distribution:

Mr. David Benner (Urban)
Mr. Emory Carrigan (MAA)
Mr. Peter Florian (PB)
Mr. Ray Heverling (MAA)
Mr. Andy Hriz (MAA)
Mr. Ernie Lepore (Baker)
Mr. Ali Logmanni (MAA)
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Mr. Ron Walden/Building Permit Committee (MAA)
Mr. Reginald Weaver (Baker)
Mr. Mike West (MAA)

Maryland Aviation Administration

"Striving to do our best in everything we do - dedicated to providing outstanding airport facilities and services"

Theodore E. Mathison Executive Director

MEMORANDUM

TO: Distribution

FROM: Benjamin Chin, Manager
Design Services

DATE: February 19, 1997

SUBJECT: Design Standard (DST) 97-3, Carpeting Specification for Baltimore/Washington International (BWI)

Maryland Aviation Administration has determined Lee's Commercial Carpet with Duracolor will be the only carpet used in the public areas at BWI Airport. Accordingly, "No substitutions will be accepted" should be used when specifying Lee's Commercial Carpet on all future contracts. This requirement is effective immediately.

The Assistant Director, Division of Maintenance, must concur on the type of Lee's Commercial Carpet specified. Please add this to your checklists.

If you should have any questions regarding this matter, please contact me at 410-859-7093.

BC/jao

Distribution:

Mr. Ian Bricknell (TAMS)
Mr. Emory Carrigan (OPE)
Mr. Brad Collins (DMJM)
Mr. Ray Heverling (OPE)
Ms. Karen Kuczinski (OPE)
Mr. Ali Logmanni (OPE)
Mr. Steve Lucchesi (URSGreiner)
Mr. Derek Moore (Bodouva)
Mr. Chirantan Mukhopadhyay (Parsons)
Mr. Charles Steen (OPE)
Mr. William Tsai (OPE)
Mr. Reginald Weaver (Baker)

cc: Mr. Alex Noorani
Mr. Jim Peterka
Mr. Jim Poppinga
Mr. Mike West

DST 2001-09 Addendum Number 1 to DST 2001-06, Bird Deterrent System

JAWENSZ H:/BEN/mfh...

Parris N. Glendening
Governor

John D. Porcari
Secretary

Maryland Aviation Administration

David L. Blackshear Executive Director

MEMORANDUM

TO: Distribution

FROM: Benjamin Chin, Acting Director
Facilities Design Division

DATE: May 18, 2001

SUBJECT: Design Standard (DST) 2001–09, Addendum Number 1: DST 2001-06, Bird Deterrent System at Baltimore/Washington International Airport

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Attached for your information and use is Addendum Number 1 to DST 2001– 06, Bird Deterrent System. Addendum Number 1 addresses comments received from the United States Department of Agriculture (USDA). The Addendum allows the Maryland Aviation Administration to monitor the effectiveness of the wire grid system and, if necessary, install additional wires on the long span to decrease the spacing to five feet. The Addendum also changes the material from 4" x 4" treated wood posts to metal U–channel sign posts. Please replace the narratives, table, and drawings in DST 2001–06 with those in Addendum Number 1, as follows:

1. Procedure for Installing and Removing Grid Wire System
2. Waterfowl Deterrent System for Sediment Traps at BWI Airport
3. Waterfowl Deterrent System for Sediment Traps at BWI Airport – Table
4. Waterfowl Deterrent System for Sediment Traps and Sediment Basins Drawings (3)

Attachments (6)

Distribution:

Mr. David Benner (Urban)
Mr. Emory Carrigan (MAA)
Mr. Peter Florian (PB)
Ms. Barbara Grey (MAA)
Mr. Ray Heverling (MAA)
Mr. Ernie Lepore (Baker)
Mr. Ali Logmanni (MAA)
Mr. Steve Lucchesi (URS)
Mr. Chirantan Mukhopadhyay (Parsons)
Mr. Alex Noorani (MAA)
Mr. Charles Olsen (JMT/WSA)
Mr. Charles Steen (MAA)
Mr. John Stewart (MAA)
Mr. Bill Tsai (MAA)
Mr. Ron Walden/Building Permit Committee (MAA)
Mr. Reginald Weaver (Baker)
Mr. John Wisniewski (PB)

cc: Ms. Sonja Hardman (URS)

PROCEDURE FOR INSTALLING AND REMOVING GRID WIRE SYSTEM

After each sediment trap is constructed, posts are placed five feet outside of the top edge of the traps, spaced five feet on center on the long side of the trap and ten feet on center on the short sides, leaving one twenty foot gap for the gate. After monitoring for effectiveness, installation of additional long spans may be ordered by MAA. Attach hooks to posts. Attach beams to posts straddling outlet weir and access gate. Grid wires will then be sized and loops assembled according to manufacturer's directions. Grid wires are then attached to posts starting with the long dimension first so that the longer wires will sag below the shorter strands. Wire lengths should be sized to allow them to be pulled tight with two feet sag in the middle of the spans. After the grid is in place, the two-strand perimeter fence can be installed.

When sediment needs to be cleaned out, disconnect and store the grid wires. This can be done with a two-man crew, one on either end of the wire. Each person shall disconnect the wire from the hook at the same time, walk beyond the trap, holding the wire taut, and place the wire on the ground. The crew then moves to the next wire and repeats the procedure until all the wires have been removed. Next, the crew shall remove the perimeter fence strands at the access gates as well as the twenty-one foot long horizontal beam. Contractor's equipment can then enter the trap to remove sediment. After sediment removal, the crew shall re-install grid assembly as described above.

WATERFOWL DETERRENT SYSTEM FOR SEDIMENT TRAPS AT BWI AIRPORT

There is a need to discourage ducks and other waterfowl from being attracted to stormwater in sediment traps. The system proposed for BWI will interfere with the ducks' landing pattern by installing a grid using lightweight wire above the surface of the trap. As they approach a water-filled trap, ducks, geese and other waterfowl will see the grid wires and not attempt to land. A perimeter fence consisting of two wire strands strung around the posts will keep birds from walking onto the traps.

Initial grid spacing will be five feet for short spans and ten feet for long spans. See the attached detail for a typical layout. After monitoring the effectiveness of this system, MAA may require installation of additional long spans to decrease spacing to five feet. The ends of the grid wires will be strung from hooks placed on posts three feet above the ground. It is expected that the wires will sag two feet and will exert a maximum line tension of thirty-five pounds.

Grid wire will be high-strength, lightweight synthetic material made from aramid fiber as manufactured by Phillystran, Inc., Part No. PS29 1x7x.045J, or approved equal.

Posts will be nine-foot long galvanized steel U-channel signposts, driven five and one half feet into the ground. The height above ground shall be no more than three and one half feet. Three holes will be attached to each post to fasten one 2-1/2 inch hook and two 1-1/2 inch eye bolts.

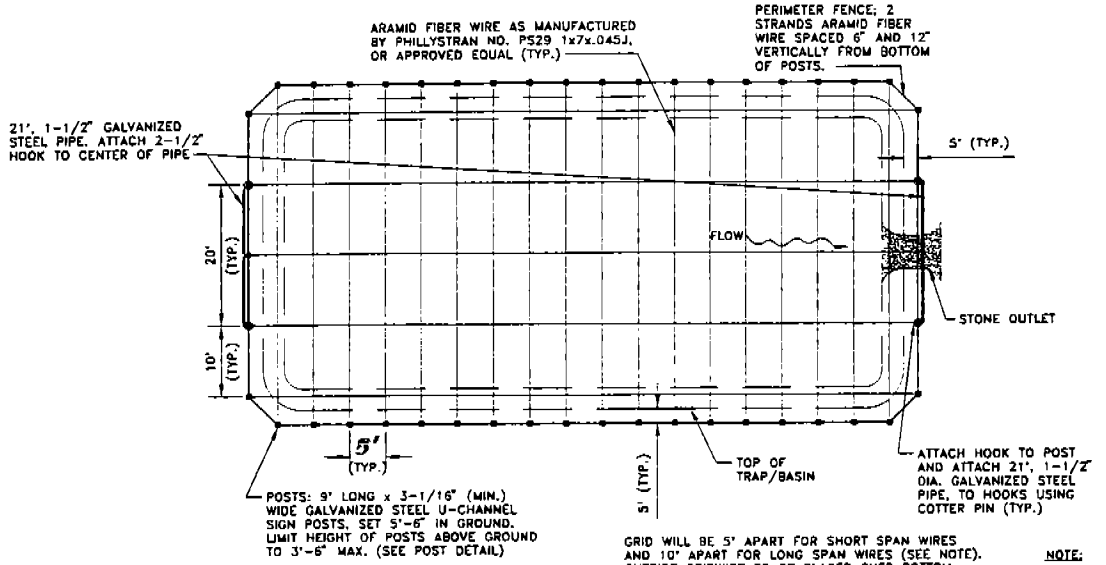
An access gate will be installed on the short end opposite the outlet to facilitate trap cleanout. Each gate consists of a twenty feet long, 1-1/2" diameter horizontal pipe placed three feet above ground and spanning two posts spaced twenty feet apart. When sediment is to be cleaned out from the trap, the long pipe is removed. An identical horizontal pipe will also span the stone outlet weir at the opposite end of the trap. Each pipe will have a hook placed in the middle to attach grid wire.

WATERFOWL DETERRENT SYSTEM
FOR SEDIMENT TRAPS AT BWI AIRPORT

Sediment Trap Bottom Dimensions, ft.	Approximate length per Gridwire, ft.	Number of Gridwires	Total length Of Gridwire ft.	Total length of Perimeter Fence ft.	Number of Posts
40' x 85'	113'	5	565'	362'	44
	68'	18	1,224'		
	Trap TOTAL:		**1,789'**		
40' x 70'	98'	5	490'	332'	38
	68'	15	1,020'		
	Trap TOTAL:		**1,510'**		
30' x 105' (2 traps)	125'	4	500'	350'	50
	50'	22	1,100'		
	Trap TOTAL:		**1,600'**		
30' x 150'	175'	4	700'	450'	70
	50'	32	1,600'		
	Trap TOTAL:		**2,300'**		
30' x 155'	170'	4	680'	440'	68
	50'	31	1,550'		
	Trap TOTAL:		**2,230'**		
GRAND TOTAL:			**11,029'**	**2,284'**	**320**

TOTAL LENGTH OF GRIDWIRE: 11,029 + 2 x 2,284 = 15,597 feet

BIRD DETERRENT SYSTEM FOR SEDIMENT TRAPS AND SEDIMENT BASINS



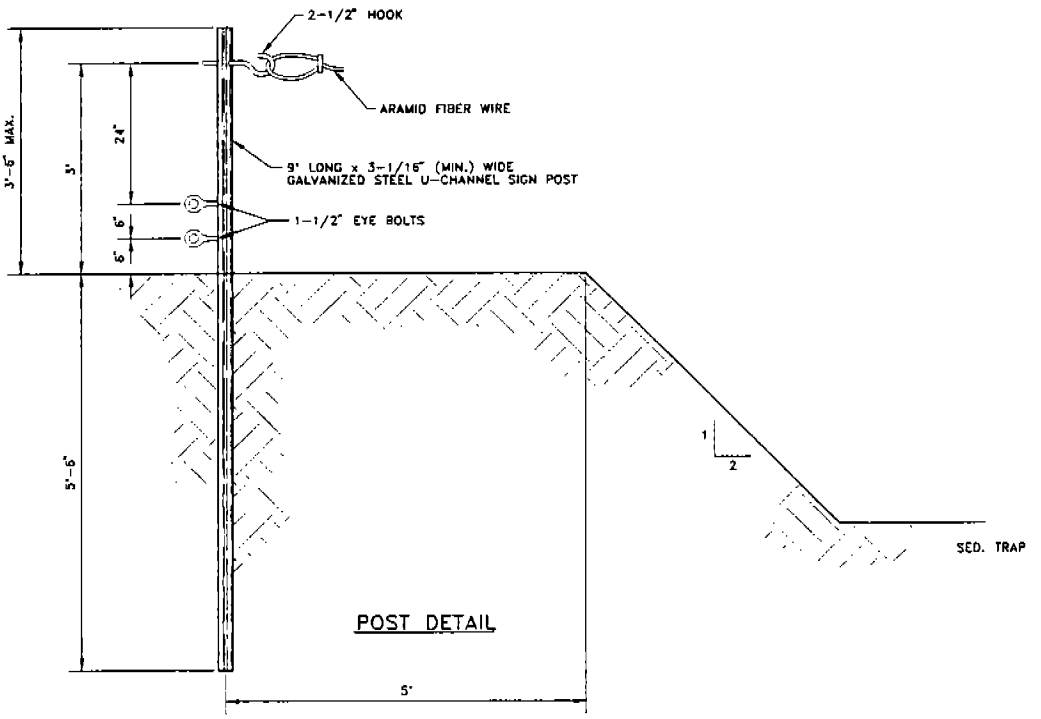
GRID WILL BE 5' APART FOR SHORT SPAN WIRES AND 10' APART FOR LONG SPAN WIRES (SEE NOTE). OUTSIDE GRIDWIRE TO BE PLACED OVER BOTTOM EDGE OF TRAP.

NOTE:

AFTER MONITORING THE EFFECTIVENESS OF THE GRID WIRE SYSTEM, THE ENGINEER MAY ORDER ADDITIONAL POSTS AND WIRES TO BE INSTALLED ON THE LONG SPAN, TO DECREASE SPACING TO 5-FEET.

BIRD DETERRENT SYSTEM FOR SEDIMENT TRAPS AND SEDIMENT BASINS

N.T.S.



POST DETAIL

CONSTRUCTION SPECIFICATIONS

AFTER EACH SEDIMENT TRAP/BASIN IS CONSTRUCTED, POSTS ARE PLACED FIVE FEET OUTSIDE OF THE TOP EDGE OF THE TRAP/BASIN, SPACED FIVE FEET ON CENTER ON THE LONG SIDES AND TEN FEET ON CENTER ON THE SHORT SIDES, LEAVING ONE 20-FOOT GAP FOR THE GATE AND ANOTHER 20-FOOT GAP TO STRADDLE THE OUTLET WEIR. AFTER MONITORING FOR EFFECTIVENESS, INSTALLATION OF ADDITIONAL LONG SPANS MAY BE ORDERED BY THE ENGINEER. ATTACH HOOKS TO POSTS. ATTACH BEAMS TO POSTS STRADDLING OUTLET WEIR AND ACCESS GATE. GRID WIRES WILL THEN BE SIZED AND LOOPS ASSEMBLED ACCORDING TO MANUFACTURER'S DIRECTIONS. GRID WIRES ARE THEN ATTACHED TO POSTS STARTING WITH THE LONG DIMENSION FIRST SO THAT THE LONGER WIRES WILL SAG BELOW THE SHORTER STRANDS. WIRE LENGTHS SHOULD BE SIZED TO ALLOW THEM TO BE PULLED TIGHT WITH TWO FEET SAG IN THE MIDDLE OF THE SPANS. AFTER THE GRID IS IN PLACE, THE TWO-STRAND PERIMETER FENCE CAN BE INSTALLED.

WHEN SEDIMENT NEEDS TO BE CLEANED OUT, DISCONNECT AND STORE THE GRID WIRES. THIS CAN BE DONE WITH A TWO-MAN CREW, ONE ON EITHER END OF THE WIRE. EACH PERSON SHALL DISCONNECT THE WIRE FROM THE HOOK AT THE SAME TIME, WALK BEYOND THE TRAP/BASIN, HOLDING THE WIRE TAUT, AND PLACE THE WIRE ON THE GROUND. THE CREW THEN MOVES TO THE NEXT WIRE AND REPEATS THE PROCEDURE UNTIL ALL THE WIRES HAVE BEEN REMOVED. NEXT, THE CREW SHALL REMOVE THE PERIMETER FENCE STRANDS AT THE ACCESS GATES AS WELL AS THE 21-FOOT LONG HORIZONTAL BEAM. CONTRACTOR'S EQUIPMENT CAN THEN ENTER THE TRAP/BASIN TO REMOVE SEDIMENT. AFTER SEDIMENT REMOVAL, THE CREW SHALL RE-INSTALL GRID ASSEMBLY AS DESCRIBED ABOVE.

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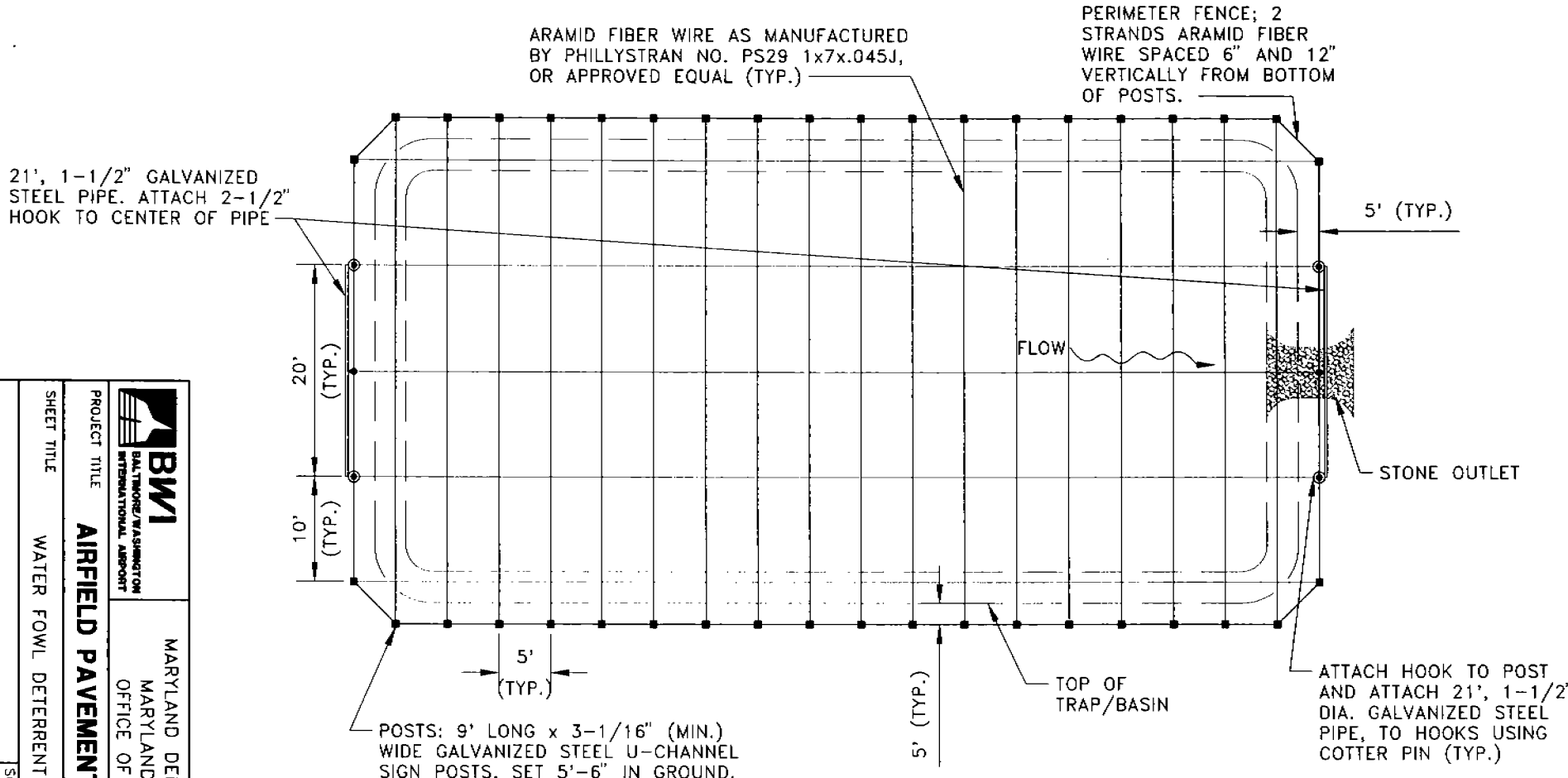
ADDENDUM NUMBER 1 TO DST 2001-06
MAY 18, 2001



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NOTE:

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BIRD DETERRENT SYSTEM FOR SEDIMENT TRAPS AND SEDIMENT BASINS

N.T.S.

BWI BALTIMORE/WASHINGTON INTERNATIONAL AIRPORT

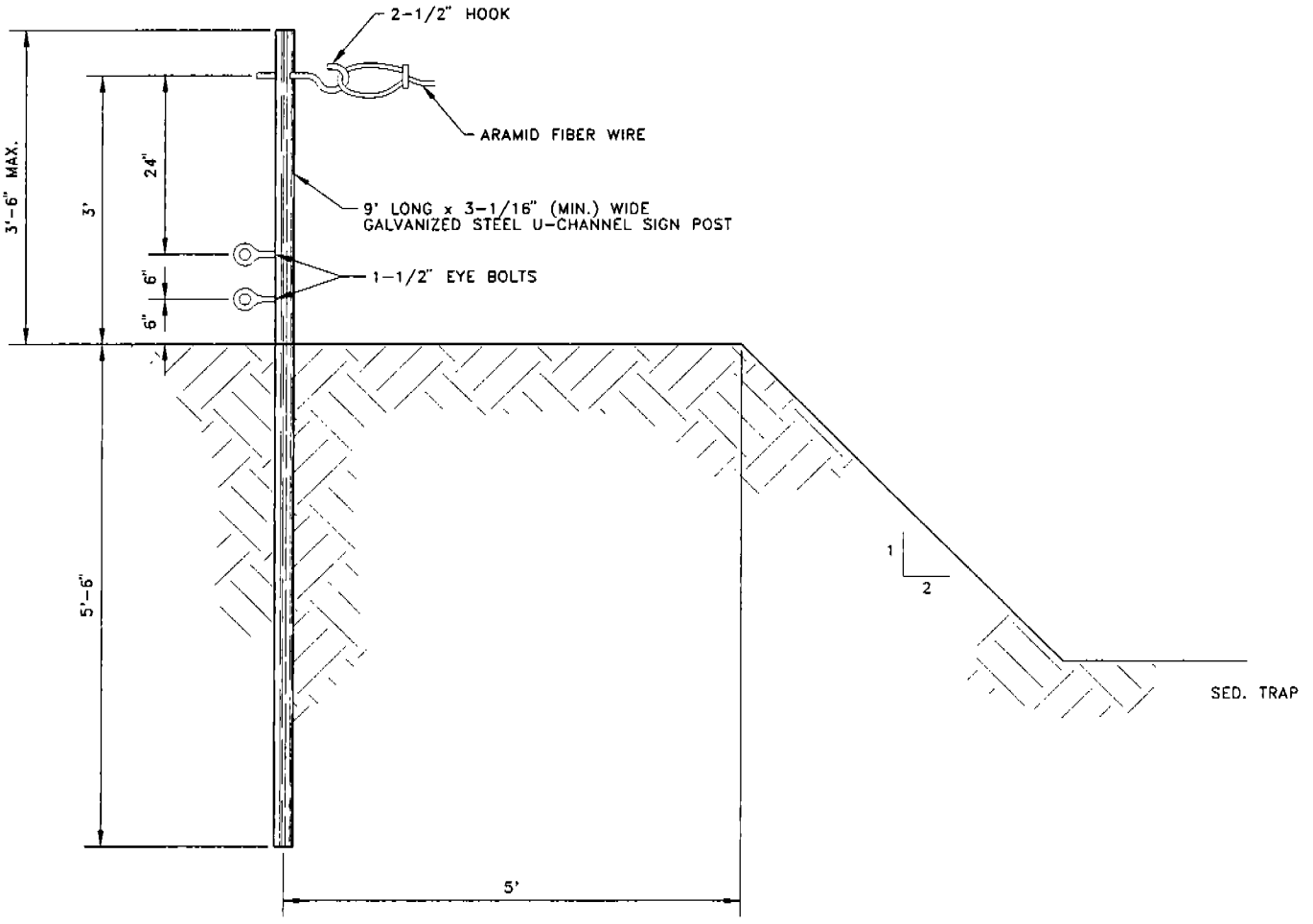
MARYLAND DEPARTMENT OF TRANSPORTATION
MARYLAND AVIATION ADMINISTRATION
OFFICE OF PLANNING AND ENGINEERING

PROJECT TITLE **AIRFIELD PAVEMENT REHABILITATION 2000**

SHEET TITLE WATER FOWL DETERRENT SYSTEM FOR SEDIMENT TRAPS

URS Greiner Woodward Clyde
HUNT VALLEY, MARYLAND

SCALE N.T.S.
DATE 02/16/01
PROJECT NO. MAA-CO-00-014
SHEET REFERENCE
EXHIBIT NO.



POST DETAIL

BWI BALTIMORE/WASHINGTON INTERNATIONAL AIRPORT	MARYLAND DEPARTMENT OF TRANSPORTATION MARYLAND AVIATION ADMINISTRATION OFFICE OF PLANNING AND ENGINEERING		
PROJECT TITLE	**AIRFIELD PAVEMENT REHABILITATION 2000**		
SHEET TITLE	WATER FOWL DETERRENT SYSTEM FOR SEDIMENT TRAPS		
URS Greiner Woodward Clyde HUNT VALLEY, MARYLAND	SCALE: N.T.S.	PROJECT NO.: MAA-CO-00-014	EXHIBIT NO.
	DATE: 02/16/01	SHEET REFERENCE	

DST 2001-10 Specifications for Performing Landscaping Activities for MAA

Parris N. Glendening
Governor

John D. Porcari
Secretary

Maryland Aviation Administration

Beverley K. Swaim-Staley
Acting Executive Director

MEMORANDUM

TO: Distribution

FROM: Benjamin Chin, Acting Director
Facilities Design Division

DATE: September 17, 2001

SUBJECT: Design Standard (DST) 2001–10, Specifications for Performing Landscaping Activities for the Maryland Aviation Administration

Enclosed for your information and use is a copy of the "Specifications for Performing Landscaping Activities for the Maryland Aviation Administration (MAA)", dated May 2001, as prepared by the MAA Office of Facilities Planning. The specifications have been approved by the Federal Aviation Administration, Maryland Department of the Environment-Water Management Administration, USDA Wildlife Services, and the Natural Resources Conservation Service. The specifications should be edited and formatted for coordination with other contract specification sections and plans. Technical modifications to the specifications must be approved by the MAA Manager, Environmental Plans and Programs. Effective immediately, all Baltimore/Washington International Airport and Martin State Airport projects are to be designed and specified per this standard.

If the requirements of this standard conflict with any other codes or regulations, they should be brought immediately to the attention of the Director, Facilities Design Division.

If you should have any questions regarding this matter, please contact me at 410-859-7093.

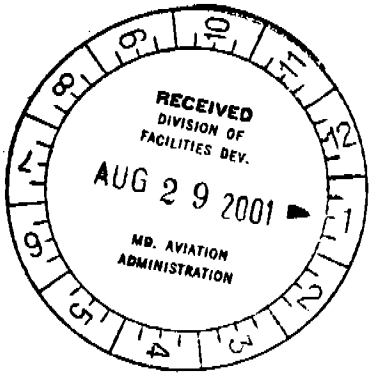
Enclosure

Distribution:

Mr. David Benner (Urban)
Mr. Emory Carrigan (MAA)
Mr. Peter Florian (PB)
Mr. Ray Heverling (MAA)
Mr. Andy Hriz (MAA)
Mr. Ernie Lepore (Baker)
Mr. Ali Logmanni (MAA)
Mr. Steve Lucchesi (URS)
Mr. Chirantan Mukhopadhyay (Parsons)
Mr. Alex Noorani (MAA)
Mr. Charles Olsen (JMT/WSA)
Mr. Charles Steen (MAA)
Mr. Bill Tsai (MAA).
Mr. Ron Walden/Building Permit Committee (MAA)
Mr. Reginald Weaver (Baker)

cc: Mr. Shawn Ames, Acting Manager, Airport Planning Division, MAA
Ms. Robin Bowie, Acting Manager, Environmental Plans and Programs, MAA
Ms. Lisa Harmon, Environmental Specialist, MAA
Ms. Suzette Moore, Acting Chief Procurement Officer, Procurement Department, MAA
Mr. Mike West, Associate Executive Director, Office of Facilities Development, MAA

MARYLAND DEPARTMENT OF TRANSPORTATION
MARYLAND AVIATION ADMINISTRATION



TO: Benjamin Chin, Acting Director
Facilities Design Division

FROM: Robin M. Bowie, Acting Manager
Environmental Plans and Programs

DATE: August 29, 2001

SUBJECT: Seed Specification, Modification of Standards

After many months of agency coordination, the "Specification for Performing Landscaping Activities for the Maryland Aviation Administration" has been approved by all agencies asked to review and comment on the specifications. Enclosed please find FAA's approval, which was the final agency approval we were awaiting. In addition to FAA's approval, these specifications have been reviewed and approved by Maryland Department of the Environment, Water Management Administration (Jim Tracy), USDA Wildlife Services (Les Terry), and the Natural Resources Conservation Service (Ann Lynn). These new specifications cover work to be done at both BWI and MTN airports.

I have attached two copies of the specifications along with FAA's approval letter. I would suggest that these specifications be distributed to the design engineers, the construction division for tenants and to the maintenance division. With this memorandum, I will distribute a copy to the procurement division.

If you have any questions, please call me at 410-859-7103.

Attachments

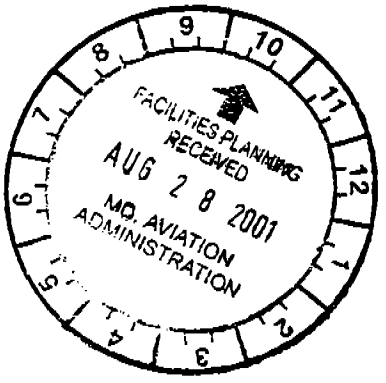
cc: Shawn Ames, MAA
Lisa Harmon, SES
Suzette Moore, MAA
Kevin Sullivan, USDA, Wildlife Services
Kentra Teter, USDA, Wildlife Services

U. S. Department of Transportation

Federal Aviation Administration

WASHINGTON AIRPORTS DISTRICT OFFICE
23723 Air Freight Lane, Suite 210
Dulles, Virginia 20166
Telephone: 703-661-1359
Fax: 703-661-1370

August 25, 2001



Ms. Robin Bowie
Environmental Planner
Office of Facilities Planning
Maryland Aviation Administration
P. O. Box 8766
BWI Airport, Maryland 21240-0766

Reference: Baltimore Washington International Airport
Seeding Specifications
Modification of Standards

Dear Ms. Bowie:

We have enclosed a copy of the recently approved Modification of Standards (MOS) for use of the specifications for performing landscaping activities for the Maryland Aviation Administration. We apologize for the length of time taken to provide our response.

Please contact our office if you have any questions.

Sincerely,

Thomas A. Priscilla, Jr.
Airport Engineer

Specifications for Performing Landscaping Activities for the Maryland Aviation Administration

Maryland Aviation Administration

Office of Facilities Planning
P.O. Box 8766
BWI Airport, Maryland 21240

May 2001

Prepared by:

STRAUGHAN
ENVIRONMENTAL
SERVICES, INC.

Straughan Environmental Services, Inc.
3905 National Drive, Suite 370
Burtonsville, MD 20866

Under Contract to:

WESTON®
MANAGERS DESIGNERS/CONSULTANTS

Roy F. Weston, Inc.
1395 Piccard Drive, Suite 200
Rockville, MD 20850-4391

TABLE OF CONTENTS

LIST OF APPENDICES

ITEM 900 LANDSCAPING

INTRODUCTION: The Maryland Aviation Administration (MAA) faces many challenges with respect to local, State and Federal regulations regarding construction and construction-related activities at MAA owned and operated airport properties, including the Baltimore/Washington International (BWI) Airport. Maryland is the only state with a Forest Conservation Act (FCA) that regulates impacts to forested areas and that has enforceable planting requirements. The Federal Aviation Administration (FAA) mandates height restrictions for all objects that have the potential to penetrate imaginary air surfaces utilized by pilots during takeoff and landings, and it provides enforceable guidelines for activities that have the potential to attract hazardous wildlife. MAA considers the requirements set forth by both FAA and the State of Maryland when undertaking construction projects.

To comply with these regulations, MAA has completed a Forest Stand Delineation, Reforestation Master Plan, and Forest Management Plan (Draft) that comply with the multi-agency regulations and restrictions. The Reforestation Master Plan specifies areas set aside for forest conservation and retention. Long-term management of forested resources on BWI Airport property is addressed by the Forest Management Plan. As a responsible landowner, MAA insists that all construction and construction-related activities regarding temporary, short-term, or long-term landscaping activities comply with applicable State and Federal regulations. These regulations include:

- The State of Maryland Forest Conservation Act;
- The State of Maryland Forest Conservation Technical Manual;
- COMAR (Agricultural Article Sections 8-101 through 8-501; 8-801 through 8-806; 9-101 through 9-110; and 9-201 through 9-214.); and
- Federal Aviation Administration Advisory Circular 150/5370-10A, Items T-901 through T-908.

In addition, MAA requires all construction and construction-related activities be in accordance with the Reforestation Master Plan for BWI Airport and the Forest Conservation Plan for the specific project. The following documents are available upon request to assist contractors with adherence to these regulations:

- Reforestation Master Plan for Baltimore/Washington International Airport;
- Forest Conservation Plan for appropriate project;
- Maryland Forest Conservation Act;
- FAA Advisory Circular 150/5200-33, "Hazardous Wildlife Attractants On or Near Airports;"
- FAA Advisory Circular 150/5370 - 2 Items P-151 through 156 (as amended by MAA); and
- FAA Advisory Circular 150/5370-10A Items T-901 through T-908 (as amended by MAA).

Each construction project has its own Forest Conservation Plan that is prepared by the design consultant. ***A copy of the Forest Conservation Plan for the specific project shall be kept on site during all hours of operation.***

PURPOSE: These specifications are provided to Contractors performing landscaping and landscape-related work for MAA to ensure adequacy, consistency, and conformance with applicable state and federal regulations. In certain cases, such as planting, seeding, and sodding, specifications were intentionally designed to reduce the attractiveness of certain areas to wildlife, and thus reduce the risk of wildlife strikes by aircraft. Contractors performing activities related to landscaping for MAA shall adhere to these specifications.

SEQUENCING OF TASKS: Tasks performed by the Contractor shall occur in a logical and efficient sequence. The Contractor shall provide sufficient time for testing and analysis to be completed without compromising the sequencing of tasks. Coordination with the designated MAA Engineer is critical for efficient completion of tasks. MAA will not reimburse the Contractor for time or materials lost as a result of failure to comply with these standards, MAA plan reviews, or the State of Maryland Forest Conservation Act.

Limits of Disturbance and Forest Retention Areas shall be identified as follows:

- **Limits of Disturbance:** The limits of disturbance of the project area shall be clearly identified with "Forest Retention Area" signs attached to stakes placed at 50-foot intervals. Diversion dikes and silt fences shall be in place prior to any disturbance.

- **Forest Retention Area Boundaries:** For all projects conducted within 75 feet of a forest retention area, the Contractor will identify the boundary of the forest retention area with ½-inch blaze orange flagging at 100-foot intervals on perimeter trees. The contractor will install blaze orange plastic mesh fence (see Appendix B) along the entire forest retention area offset 45 feet from the forest retention area boundary. If necessary, "specimen tree signs" (see Appendix B) will be installed on specimen trees and appropriate protection measures will be followed as specified in the State Forest Conservation Technical Manual.

- **Pre-construction Site Inspection**: After the forest retention limits of disturbance (LOD) and boundaries have been delineated, the contractor will notify the Office of Facilities Planning and the Department of Natural Resources (DNR) Forest Service, to schedule a walk through inspection of the site. The DNR representative will inspect the forest retention boundary marking, discuss the proposed construction timetable, and discuss additional requirements that may be necessary. MAA and DNR shall approve all plans prior to the initiation of work.

Planting Plans: The following design standard should be used to determine appropriate plant material for use in landscaping and site stabilization in accordance with the FAA advisory circular 150/5200-33, "Hazardous Wildlife Attractants on or Near Airports":

- Use native plants whenever possible;
- Use plants with a minimal wildlife attractiveness value. See Draft List of Recommended species for Construction Plantings;
- Use sterile plants or plants that exhibit minimal seed production;
- Reduce mowing requirements in long narrow areas or areas less than 1,000 square feet by planting low growing shrubs or other alternative ground covers;
- Plant in clusters and group species in communities in large contiguous areas;
- Create distinct breaks between vegetation strata;
- Avoid planting low-growing trees, shrubs, brambles, and vines at the edges of a forest where the forest meets the turf or scrub/shrub areas to reduce the edge effect; and
- All plant material used by the contractor for temporary, short- term landscaping or long-term landscaping shall be from the MAA approved plant materials list (see Draft List of Recommended Species for Construction Plantings).

Deviations from these standards require specific justification and approval by the MAA Office of Facilities Planning.

Specifications: Landscape activities shall be conducted according to the document *Specifications for Performing Landscaping Activities on Baltimore/Washington International and Martin State Airport Properties*.

Compliance: MAA acknowledges that these specifications vary slightly from the Natural Resources Conservation Service Standards for Critical Area Planting (MD 342). However, this specification was approved by the Maryland Department of the Environment, Water Management Administration, the United States Department of Agriculture's Wildlife Services Division, and the Natural Resources Conservation Service in May 2001, and satisfies compliance for MD 378 projects.

Post Construction: Once construction activities (including reestablishment of vegetation) have ceased, the contractor is required to remove all flagging and protective measures (with the exception of forest retention signage) from both the forest retention area and the construction site. MAA has the right to retain final payment until aforementioned actions have been performed.

ITEM 901 TOPSOIL

DESCRIPTION

901-1 GENERAL. This item provides specifications for topsoil and for topsoil-related activities such as preparation of ground surfaces, removal of topsoil from designated areas, placement and spreading of topsoil, and soil stabilization methods. All activities shall conform with the standards described in this specification and occur at locations clearly indicated on site plans or as directed by the MAA Engineer.

MATERIALS

901-2.1 TOPSOIL. Topsoil is a component of soil, composed of the surface layer of soil containing organic matter and free from any admixture of refuse or other materials toxic to plant growth. Topsoil shall be reasonably free from subsoils as well as all stumps, roots, brush, stones (1 inch or more in diameter), clay lumps, or similar objects. Brush and other vegetation that will not be incorporated with the topsoil during handling operations shall be removed. Topsoil shall be free from any parts of Johnson grass (*Sorgum halepense*), Canada thistle (*Circium arvense*) or phragmites (*Phragmites australis*) in addition to the following state designated noxious weeds: annual bluegrass (*Poa annua*), Bermuda grass (*Cynodon dactylon*), bindweed (*Calystegia* spp.), cocklebur (*Xanthium* spp.), corn cockle (*Agrostemma githago*), dodder (*Cuscuta* spp.), giant foxtail (*Setaria magna*), horse nettle (*Solanum carolinense*), spurred anoda (*Anoda* spp.), wild garlic (*Allium vineale*), and wild onion (*Allium canadense*).

Topsoil shall conform to the standards required by the Maryland State Highway Administration as summarized below. Topsoil, unless otherwise specified or approved, shall have a pH range of approximately 6.0 to 7.5, as determined by laboratory testing. The organic content may not be less than 3% nor more than 20% as determined by the wet-combustion method (chromic acid reduction). Topsoil shall conform to the following size and texture specifications:

SIEVE SIZE	MINIMUM PERCENT SOIL PASSING BY WEIGHT
50.00 mm (2 in.)	100
4.75 mm (No. 4)	90
2.00 mm (No. 10)	80

SOIL PARTICLE SIZES AND TEXTURES	PERCENT PASSING BY WEIGHT
Sand (2.0-0.050 mm)	20-75
Silt (0.050-0.002 mm)	10-60
Clay (less than 0.002 mm)	5-30

901-2.2 INSPECTION AND TESTING. Within 10 days following acceptance of the bid, the Contractor shall notify the MAA Engineer of the proposed source of topsoil to be furnished for the project. The topsoil shall be inspected to determine whether the soil is appropriate for use and conforms to MAA standards. During the inspection, the Contractor may be required to collect representative soil samples from several locations within the area under consideration and to the proposed stripping depths for content analysis as described in Paragraph 2.1 of this Item. Samples shall be tested for pH, content of organic matter, particle size, and texture (percentage of sand, silt, and clay).

901-2.3 SOILS FOR REPAIR. Soils to be used for areas in need of repair shall be of equal quality or greater than those that exist in adjacent areas and shall meet the specifications described in Paragraph 901-2.1.

CONSTRUCTION METHODS

901-3.1 GENERAL. Areas receiving topsoil shall be clearly shown on the site plan. If topsoil is available on site, locations of stockpiles or areas to be stripped of topsoil and the associated stripping depths also shall be shown on site plans. Suitable equipment necessary for proper preparation and treatment of the ground surface, stripping of topsoil, and handling and placing of all required materials shall be on site, in good condition, and approved by the MAA Engineer before topsoil operations begin.

901-3.2 PREPARATION OF GROUND SURFACES. Prior to depositing and spreading topsoil on a given area, the surface shall be loosened by discs, spike-tooth harrows, or other means approved by the MAA Engineer, to a minimum depth of 2 inches to facilitate bonding of the topsoil with the soil. The surface of the area receiving topsoil shall be clear of all stones greater than 1 inch in diameter as well as any litter or other materials that may be detrimental to proper bonding, the rise of capillary moisture, or the proper growth of the desired plants. Areas that may be too compact to respond to these operations shall receive special scarification prior to application of any soil.

Grades on the area to receive topsoil, previously established by the Contractor or others, and shown on site plans, shall be maintained in a true and even condition. Where grades have not been established, the areas shall be smooth-graded and the surface left at a prescribed grade in an even and properly compacted condition to prevent, insofar as practical, the formation of low areas or pockets where water may stand. Damages caused by erosion or other forces that occur after the completion of grading shall be repaired prior to the application of topsoil. The Contractor will repair such damages, which may include filling gullies, smoothing irregularities, and repairing other incidental damages prior to the application of topsoil.

901-3.3 OBTAINING TOPSOIL. Prior to stripping of the topsoil from designated areas, all vegetation, briers, stumps and large roots, rubbish, and stones that might interfere with subsequent operations shall be removed using methods approved by the Engineer. Heavy sods or other cover shall be removed.

901-3.3.1 SALVAGED TOPSOIL (TOPSOIL OBTAINED ON SITE). When suitable topsoil is available on site, the Contractor shall salvage this material from the areas as indicated on site plans and to the depth directed by the MAA Engineer. The salvaged topsoil shall either be spread on areas that have already been tilled and smooth-graded or stockpiled in areas previously approved by the MAA Engineer and indicated by site plans. Any topsoil stockpiled by the Contractor shall be removed from the site and properly stored at an MAA-designated location for future use. Any topsoil that has been stockpiled on the site by others and is no longer required for topsoiling purposes shall be removed from the site and properly disposed of by the Contractor. All stockpile sites and adjacent areas that have been disturbed by the Contractor shall be graded and put into a condition acceptable for seeding or other landscaping activities.

901-3.3.2 FURNISHED TOPSOIL (TOPSOIL OBTAINED OFF SITE). When topsoil is secured off site, the Contractor shall locate and obtain the supply with the approval of the MAA Engineer. The Contractor shall notify the MAA Engineer sufficiently in advance of operations so that necessary measurements and tests can be performed. The Contractor shall only remove the topsoil from approved areas and to the depth as directed. The topsoil shall be hauled to the site of work and either placed for spreading by others or spread by the Contractor as specified by site plans. Any topsoil hauled to the site of work and stockpiled shall be removed from the site following completion of the task and properly stored at an MAA-designated location for future use.

901-3.4 SPREADING TOPSOIL. Topsoil shall be evenly spread to a minimum uniform depth of 4 inches after compaction on all areas, with the exception of those areas with a finished grade of 4:1 or steeper. In these sloped areas topsoil should be spread to a minimum depth of 4 inches. Spreading shall not occur when the ground or topsoil is frozen, excessively wet, or otherwise in a condition detrimental to the work. Spreading shall be conducted so that turfing operations can proceed with minimal soil preparation.

After spreading the topsoil the Contractor shall collect and dispose of rocks (1 inch or more in diameter), roots, litter, or any other foreign material occurring on the surface of the topsoil. Large stiff clods and hard lumps of soil shall be pulverized. After removal of such objects has been completed, the topsoil shall be graded. Any topsoil or other dirt falling upon pavements as a result of hauling or handling of topsoil shall be promptly removed and disposed of by the Contractor.

901-3.5 SOIL STABILIZATION MATTING. The need for soil stabilization matting will be approved by the MAA Engineer on a project-by-project basis. Soil stabilization matting shall consist of machine-produced mats of wood fibers, wood excelsior, or biodegradable man-made fibers and shall be 40 to 96 inches wide. Matting shall have a uniform thickness and distribution of fibers. All soil stabilization matting shall be smolder resistant. If chemicals are required during application of matting, the chemicals shall be non-leaching, nontoxic to vegetation (including the germination of seed), and non-injurious to the skin.

If excelsior matting is utilized, the top and bottom shall be covered by a biodegradable extruded plastic netting with a maximum mesh size of 2 square inches (50 by 50 mm) or be covered (on the topside) by netting machine sewn on 2-inch (50 mm) centers along the longitudinal axis of the material. The average breaking strength of any two strands of netting shall be at least 5 pounds. Netting shall be entwined with matting fibers in a manner that will provide adequate reinforcement against damage during handling and placement and shall resist degradation for a minimum of six months and a maximum of one year.

901-3.6 STAPLES. Staples shall be either U- or T-shaped steel wire with minimum gauges of No. 11 (3.061 mm) and No. 8 (4.115 mm) respectively. The U-shaped staples shall be at least 6 inches (150 mm) long and average between 1 and 1.5 inches (25 to 40 mm) wide. The T-shaped staples shall have a primary leg 8-inches (200-mm) long, a secondary leg 1-inch (25 mm) long, and a 4-inch (100-mm) head.

METHOD OF MEASUREMENT

Topsoil will be measured by volume in cubic yards computed by the method of end areas. The quantity of topsoil to be paid for will be measured by the number of square yards measured in place and will account for depth.

901-4.1 Salvaged topsoil (topsoil obtained on site) will be measured by the number of square yards of topsoil measured in its original position, and again after it has been stripped or excavated. Topsoil stockpiled by others and removed for topsoiling by the Contractor will be measured by the number of square yards of topsoil measured to a specific depth in the stockpile. Salvaged topsoil will be measured by volume in either cubic yards computed by the method of end areas or square yards at 1-, 2-, or 4-inch depths.

901-4.2 Furnished topsoil (topsoil obtained off site) will be measured by the number of square yards of topsoil measured in its original position, and again after it has been stripped or excavated. Furnished topsoil will be measured by volume in either cubic yards computed by the method of end areas or square yards at 1-, 2-, or 4-inch depths.

BASIS OF PAYMENT

901-5 Payment will be made at the contract unit price per cubic yard for topsoiling. This price will provide full compensation for furnishing all materials and for all preparations, placing, and spreading of materials, and for all labor, equipment, tolls, and incidentals necessary for the completion of the task.

Payment will be made under:

Item 901-5.1	Topsoil --per cubic yard
Item 901-5.2	Salvaged Topsoil – per square yard at 1-inch depth
Item 901-5.3	Furnished Topsoil – per square yard at 1-inch depth
Item 901-5.4	Salvaged Topsoil – per square yard at 2-inch depth
Item 901-5.5	Furnished Topsoil – per square yard at 2-inch depth
Item 901-5.6	Salvaged Topsoil – per square yard at 4-inch depth
Item 901-5.7	Furnished Topsoil – per square yard at 4-inch depth

END OF ITEM 901

ITEM 902 PLANT INSTALLATION

DESCRIPTION

902-1 GENERAL. This item provides specifications for plant materials to be used for landscaping activities. All activities shall conform to the standards described in this specification and occur at locations clearly indicated by site plans or as directed by the MAA Engineer.

MATERIALS

902-2.1 PLANTS.

902-2.1.1 SPECIES. Preferred species that appear in Appendix A "Approved Landscape Plant Material" shall be used unless otherwise approved by the MAA Engineer. The authority for all plant names shall be the current printing of *Hortus Third*[1]. Representative samples of every shipment of plant materials shall be labeled as to genus, species, and specified size.

902-2.1.2 HEALTH. All plants, unless otherwise specifically permitted, shall conform to the standards of the current edition of *American Standard for Nursery Stock*[2] as approved by the American Standards Institute, Inc. All plants, unless otherwise specifically permitted, shall be nursery grown and shall have been grown within plant hardiness zones 5, 6, 7, or the Virginia portion of zone 8A as recorded in the current edition of *USDA Plant Hardiness Zone Map*[3], prepared by the U.S. National Arboretum, Agricultural Research Service, U.S. Department of Agriculture. All plant materials shall have normal, well developed branches and a vigorous root system. They shall be healthy plants free from physical defects, plant diseases, and insect pests. Plant materials grown in fields or blocks that show evidence of containing any parts of Johnson grass (*Sorgum halepense*), Canada thistle (*Cirsium arvense*), or Phragmites (*Phragmites australis*) will not be accepted. Shade and flowering trees shall be symmetrically balanced. Major branches shall not have V-shaped crotches capable of causing structural weakness. Trunks shall be free of unhealed branch removal wounds greater than 1 inch (25 mm) in diameter. Shade trees shall have a single main trunk. Trunks shall be free of branches below the following heights:

- 1-1/2 to 2-1/2 inch (40- to 65-mm) caliper trees = 5 feet (1.5 meter) height
- 3-inch (75 mm)-caliper and greater trees = 6 feet (1.8 meter) height.

902-2.1.3 INSPECTION AND TESTING. The initial inspection for conformance with these specifications will be made at the nursery, holding area, or job site. The condition of all plant material will be subject to reinspection for the life of the Contract. Inspection and tagging of

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[1] Staff of the L.H. Bailey Hortorium, Cornell University, 1976. *Hortus Third: A Concise Dictionary of Plants Cultivated in the United States and Canada*. Barnes and Noble, Inc. New York, New York.

[2] American Nursery and Landscape Association, 1990. *American Standard for Nursery Stock.*

[3] US National Arboretum, Agricultural Research Service, US Department of Agriculture, 1990. *USDA Plant Hardiness Zone Map.*

plant material with a MAA seal prior to digging will occur at the discretion of the MAA Engineer. Material arriving with broken seals (if tagging is required), broken or loose root balls, mechanical damage, insufficient protection and/or shriveled or undeveloped roots will not be accepted. All container grown plants shall be well rooted, vigorous, and established in the size pot specified, shall have well balanced tops for the pot size, and shall not be root bound. All plant materials shall be declared and certified free from disease and insects of any kind as required by law for the necessary interstate or interdistrict transportation.

902-2.1.4 SUBSTITUTION OF PLANT MATERIALS. No substitutions shall be made without the permission of the MAA Office of Facilities Planning. In cases where plant materials are not available at the time of planting, the Contractor shall submit, in writing, evidence that the plants are unavailable. If necessary, MAA will determine suitable substitutions.

902-2.2 FERTILIZER. Fertilizer, if necessary, shall be standard commercial fertilizer and shall meet the requirements of applicable state and federal laws as well as standards set forth by the Association of Official Agricultural Chemists.

902-2.3 SOIL AMENDMENTS. Soil amendments shall be commercial grade and shall meet the requirements of applicable state and federal laws as well as standards set forth by the Association of Official Agricultural Chemists.

902-2.4 WATER. All water used shall be obtained from fresh water sources and shall be free from injurious chemicals and other toxic substances harmful to plant life. Brackish water shall not be used at any time. The Contractor shall identify all sources of water to the Engineer at least two weeks prior to use. The Engineer may take samples of the water at the source or from the tank at any time and submit the samples to a laboratory to identify chemical and saline content. The Contractor shall not use any water from any source that is disapproved by the Engineer following such tests.

CONSTRUCTION METHODS

902-3.1 GENERAL. This section provides approved methods for installation of plant material and includes specifications for soil preparation, fertilization, installation, and post-installation care. Prior to beginning any planting activities, a planting design prepared by a landscape architect or a qualified official shall be submitted to and approved by the MAA Office of Facilities Planning on behalf of the MAA Engineer. The planting design shall be to scale and clearly show the species to be planted, locations of individual plants, size of individual plants, and spacing requirements. The MAA Office of Facilities Planning shall approve deviations from an approved design. The approved planting design shall be kept on site during all working hours.

902-3.2 PREPARATION OF GROUND SURFACES. Areas designated for planting shall be properly prepared before plant installation occurs. The soil of a properly prepared planting bed shall be loose and friable to a minimum depth of 1 foot (30.5 cm), laboratory tested, and properly amended based on laboratory recommendations. The soil of a properly prepared planting bed

shall be free of any stones larger than 1 inch in diameter, sticks, stumps, and/or other debris that may interfere with plant installation, growth of plant material, and subsequent maintenance of planted areas. The soil of a properly prepared planting bed shall be properly graded to conform with the required lines, grades, and cross sections as shown on the planting design plan.

902-3.2.1 TOPSOIL. Topsoil, if necessary, shall conform to the standards and be incorporated with existing soils according to procedures described in Item 901 - "TOPSOILING" prior to laboratory analysis of soil and subsequent addition of any necessary soil amendments.

902-3.2.2 FERTILIZER. Fertilizer, if necessary, shall be applied at concentrations and rates suggested by the soil testing laboratory based on results of soil analysis. Fertilizer, unless otherwise specified, shall be added by hand on a plant-by-plant basis. Unless specifically required, lime shall not be added to areas to be planted.

902-3.2.3 SOIL AMENDMENTS. Soil amendments shall be added according to recommendations made by the laboratory based on analytical results. These recommendations shall be provided to and approved by the MAA Engineer prior to amendment of any soil.

902-3.3 OBTAINING PLANT MATERIAL. Plant material shall be free from all pests and diseases and conform to the standards described in Section 902-2 "MATERIALS."

902-3.3.1 NURSERY STOCK PLANTS. Nursery stock plants shall be obtained from a nursery certified by the Associated Landscape Contractors of America.

902-3.3.2 TRANSPLANTED PLANTS. Plants approved for transplanting shall be vigorous and free from all pest infestations and/or diseases. Potential plant materials for transplanting shall be inspected by a Licensed Arborist and subsequently approved by the MAA Engineer. Plants approved for transplanting shall be dug up, cared for, and transported according to the standards of the Associated Landscape Contractors of America.

902-3.4 PLACEMENT OF PLANT MATERIALS. Prior to installation of plant material, the site design shall be reviewed, and individual plants shall be placed at locations on the prepared bed as indicated by the site design. Once the design layout has been marked on the prepared bed, the Contractor shall determine if the proposed sizes and spacing of plants are reasonable. Alterations to the landscape design shall be performed by a qualified Landscape Architect and approved by the MAA Office of Facilities Planning on behalf of the MAA Engineer. The planted bed shall be graded to the specifications indicated by the site design.

902-3.5 INSTALLATION OF PLANT MATERIAL. All plant material shall be installed in satisfactorily prepared beds according to the methods detailed in *Landscape Specification Guidelines* published by the Associated Landscape Contractors of America. Portions of these guidelines relevant to digging, backfilling, and securing of plant materials are included as Appendix B.

If circumstances exist that delay installation of plant material, the Contractor shall provide adequate care required to maintain the plants in a healthy condition until installation can be performed. Such care may include watering, protection from excessive sun and wind exposure, and protection from damage by wildlife. Plants must be stored in a location that does not cause an increased risk of wildlife strike hazards and is approved by the MAA Engineer (plant material must not be stored near aircraft operation areas or approach/departure paths). Materials that deteriorate beyond the potential for recovery shall not be installed. It will be the Contractor's responsibility to replace these items at no additional cost to MAA.

902-3.5 POST INSTALLATION. After installation of all plant materials to a bed, subsequent activities such as seeding, sodding, or mulching shall be conducted as indicated by the site design. Methods for completion of these activities shall conform to the standards set forth in Items 903 "Seeding," 904 "Sodding," and 905 "Mulching."

902-3.6 MAINTENANCE. Maintenance of installed plant material includes watering, weed and pest control, health inspections, and replacements as needed.

METHOD OF MEASUREMENT

902-4 This item will be measured on a per plant basis.

BASIS OF PAYMENT

902-5 This item will be paid for on a per plant basis.

Payment will be made under Item 902-5 Planting.

END OF ITEM 902

ITEM 903 SEEDING

DESCRIPTION

903-1.1 GENERAL. This item provides specifications for seeding of areas as designated on plans or as directed by the MAA Engineer. The species, mixtures, and methods of application provided in this item have been designed to reduce the attractiveness of airport grounds to wildlife. Only MAA-approved species, mixtures, and rates of application provided in this item may be used to establish vegetation. All activities associated with seeding including soil preparation, seed application, fertilization, and maintenance shall also conform to these approved standards.

MATERIALS

903-2.1 SEED. All seed shall comply with the Maryland Seed Law (Agricultural Article of the Annotated Code of Maryland). Only MAA-approved species, mixtures, and rates of application provided in this item may be used to establish vegetation. Seed will be sampled and tested by an inspector from the Turf and Seed Section, Maryland Department of Agriculture (MDA), Annapolis, Maryland. All lawn and turf seed and mixtures shall be free from the following state-listed restricted noxious weeds:

corn cockle (*Agrostemma githago*),
bentgrass (*Agrostis* spp.)[4],
redtop (*Agrostis gigantea*)[1]
wild onion (*Allium canadense*),
wild garlic (*Allium vineale*),
bindweed (*Calstegia* spp.),
dodder (*Cuscuta* spp.),
Bermuda grass (*Cynodon dactylon*),
orchardgrass (*Dactylis glomerata*),
tall fescue (*Festuca arundinacea*)[1]
meadow fescue (*Festuca pratensis*)[1],
velvetgrass (*Holcus lanatus*),
annual bluegrass (*Poa annua*),
rough bluegrass (*Poa trivialis*)[1],
timothy (*Phleum pratense*), and
Johnson grass (*Sorgum halepense*).

Restricted noxious-weed seed may not exceed 0.5 percent by weight of any seed mixture. In addition, all seeds sold in Maryland shall be free from the following listed prohibited noxious weeds: balloonvine (*Cardiospermum halicacabum*), quackgrass (*Elytrigia repens*), sicklepod (*Senna obtusifolia*), sorghum (*Sorghum* spp.), Canada thistle (*Cirsium arvense*), plumeless thistle

[4] These species may be included as a labeled component of a mixture when each is present in excess of five percent of the mixture by weight.

(*Carduus* spp.-includes musk thistle and curled thistle), and serrated tussock (*Nassella trichotoma*).

903-2.1.1 APPROVED SPECIES. The following table contains species that are approved by MAA for use in seed mixtures. Purity requirements and germination requirements are also provided.

APPROVED PLANT SPECIES
MAA SEED MIXTURES

	Purity[a] Not Less than %	Minimum % Germination[b]	Pure Live Seed Factor
Certified Turf-Type Tall Fescue (*Festuca arundinacea*)	98	90	1.13
Certified Kentucky Bluegrass (*Poa pratensis*)	90	80	1.39
Hard Fescue (*Festuca longifolia*)	98	90	1.13
Chewings Red Fescue (*Festuca rubra commutata*)	98	90	1.13
Annual Ryegrass (*Lolium multiflorum*)	95	85	1.24
Perennial Ryegrass (*Lolium perenne*)	90	80	1.39
Fowl Meadow Grass (*Poa palustris*)	90	80	1.39
Little Bluestem (*Andropogon scoparius*)	62	94	1.71

[a] The percentage weight of pure seed present shall be free of any agriculture seeds, inert matter, and other seeds distinguishable by their appearance.
[b] The percentage of germination shall be actual sprouts and shall not include hard seeds unless specifically permitted by the MAA Engineer.

903-2.1.2 PURITY. All seed shall be free of all state-designated noxious weeds listed in Paragraph 2.1.1 and conform to MAA specifications. To ensure compliance, MAA requires sampling and testing of seed by the Turf and Seed Section, Maryland Department of Agriculture (MDA). The Contractor shall furnish the MAA Engineer with duplicate signed copies of a statement by the Turf and Seed Section certifying that each lot of seed has been laboratory tested within six months of date of delivery. This statement shall include the following information:

- name and address of laboratory,
- date of test,
- lot number,
- the results of tests as to name, percentages of purity and of germination,
- percentage of weed content for the seed furnished,
- and, in the case of a mixture, the proportions of each kind of seed.

Seed shall be furnished in standard containers with the seed name, lot number, net weight, percentages of purity, germination rate and hard seed, and percentage of maximum weed seed content clearly marked. All seed containers shall be tagged with a MDA supervised mix program seed tag.

903-2.1.3 MIXTURES AND APPLICATION RATES. Only seed mixtures and application rates described in this item may be used unless otherwise approved by the MAA Engineer. Seed mixtures shall meet criteria detailed in Paragraph 903-2.1.2. Seed mixtures have been formulated to minimize the attractiveness of areas to wildlife of common landscape scenarios. The appropriate seed mixture for application will be designated based on environmental conditions and may vary from site to site. All planting rates listed are in pounds of Pure Live Seed (PLS) per acre.

Seed mixtures, application scenarios, and rates *for permanent cool-season grasses* are as follows:

a. Seed Mixture No. 1 - relatively flat areas (grade less than 4:1) subject to normal conditions and regular mowing (Application rate = 234 lbs PLS/acre);
b. Seed Mixture No. 2 - sloped areas (grade greater than 4:1) not subject to regular mowing (Application rate = 115 lbs PLS/acre); and
c. Seed Mixture No. 3 - wetlands and their associated buffer zones (Application rate = 131 lbs PLS/acre).

Seed Mixture No. 1: Relatively flat areas regularly mowed and exposed to normal conditions (Application rate = 234 lbs PLS/acre)

Seed	Rate of Application (lbs of PLS/acre)
85% Certified Turf-Type Tall Fescue	192
10% Certified Kentucky Bluegrass	28
5% Perennial Ryegrass	14
Supplemental Seed	
Annual Ryegrass	25

Seed Mixture No. 2: Sloped areas not subject to regular mowing (Application rate = 115 lbs PLS/acre)

Seed	Rate of Application (lbs of PLS/acre)
75% Hard Fescue	85
20% Chewings Fescue	23
5% Kentucky Bluegrass	7
Supplemental Seed	
Redtop	3

Seed Mixture No. 3 - Wetland areas and their associated buffer zones (Application rate = 131 lbs PLS/acre)

Seed	Rate of Application (lbs of PLS/acre)
60% Fowl Meadow Grass	83
30% Chewings Fescue	34
10% Perennial Ryegrass	14
Supplemental Seed	
Redtop	3

903-2.1.4 SEEDING SEASONS. Application of seed and seed mixtures shall occur within a specified seeding season unless otherwise approved by the MAA Engineer. No seed or seed mixtures are to be applied on frozen ground or when the temperature is at or below 35 degrees Farenheit (7.2 degrees Centigrade). Under these conditions, a layer of mulch should be applied in accordance with Item 905, Mulching, to stabilize the site, and permanent seeding should occur in the subsequent seeding season. Seed application may occur during the seeding season dates listed below. Seeding performed after October 20 should be a temporary cover of annual ryegrass and followed by overseeding of the appropriate seed mixture during the spring seeding season.

SEEDING SEASONS	
Permanent Cool-Season Grasses	March 1 to April 20 and August 1 to October 20, inclusive
Temporary Cover of Annual Rye/Redtop	March 1 to April 30 and August 1 to November 30, inclusive
Temporary Cover of Warm-Season Grasses *(Little Bluestem only)*	May 1 to July 31, inclusive. Rate of application should be 13.6 lbs. PLS per acre.

Seeding seasons are based on typical years and can be subject to variation, which may be modified by the MAA Engineer based on seasonal trends.

If the time required to complete any of the operations necessary under this item, within the specified planting season or any authorized extensions thereof, extends beyond the Contract period, then such time will be charged against the Contract time, and liquidated damages will be enforced with respect to this portion of work.

903-2.2 LIME. Lime shall consist of ground limestone and contain at least 85 percent total carbonates. Lime shall be ground to a fineness so that at least 90 percent will pass through a No. 20 mesh sieve and 50 percent will pass through a No. 100 mesh sieve. Dolomitic lime or a high magnesium lime shall contain at least 10 percent magnesium oxide. Lime shall be applied by approved methods detailed in Section 903-3.3 of this item. The rate of application will be based on results of soil tests.

903-2.3 FERTILIZER. Fertilizer shall be standard commercial fertilizer (supplied separately or in mixtures) and meet the requirements of applicable state and federal laws (O-F-241) as well as standards of the Association of Official Agricultural Chemists. Nitrogen-Phosphorus-Potassium (N-P-K) concentrations shall be determined from analysis of soil samples. Methods of fertilizer application shall conform to standards described in Section 903-3.3 of this item. Fertilizer shall be furnished in standard containers that are clearly labeled with name, weight, and guaranteed analysis of the contents (percentage of total nitrogen, available phosphoric acid, and water-soluble potash). Mixed fertilizers shall not contain any hydrated lime or cyanamide compounds. Fertilizers failing to meet the specified analysis may be approved by the MAA Engineer, providing sufficient materials are applied to conform with the specified nutrients per unit of measure without additional cost to MAA.

The fertilizers may be supplied in the following forms:

a. A dry, free-flowing fertilizer suitable for application by a common fertilizer spreader;

b. A finely ground fertilizer soluble in water, suitable for application by power sprayers; or

c. A granular or pellet form suitable for application by blower equipment.

The rate of application will be based on results of soil tests performed by the University of Maryland Soil Testing Laboratory. By law, persons applying fertilizer to State-owned land shall follow the recommendations of the University of Maryland as set forth in the "Plant Nutrient Recommendations Based on Soil Tests for Turf Maintenance" and the "Plant Nutrient Recommendations Based on Soil Tests for Sod Production" (see Appendix B). Application of the fertilizer shall be in a manner that is consistent with the recommendations of the University of Maryland Cooperative Extension.

CONSTRUCTION METHODS AND EQUIPMENT

903-3.1 GENERAL. This section provides approved methods for the application of and includes standards for seedbed preparation, methods of application, and equipment to be used during the process. Lime and fertilizer shall be applied to seeded areas before the seed is spread. The mixture of seed will be determined for sites based on environmental conditions as described in Paragraph 903-2.1.3.

903-3.2 ADVANCE PREPARATION. Areas designated for seeding shall be properly prepared in advance of seed application. The area shall be tilled and graded prior to application of lime and fertilizer, and the surface area shall be cleared of any stones larger than 1 inch in diameter, sticks, stumps, and other debris that might interfere with sowing of seed, growth of grasses, or subsequent maintenance of grass-covered areas. Damage caused by erosion or other forces that occur after the completion of grading shall be repaired prior to the application of fertilizer and lime. The Contractor will repair such damage, which may include filling gullies, smoothing irregularities, and repairing other incidental damage before beginning the application of fertilizer and ground limestone.

If an area to be seeded is sparsely sodded, weedy, barren and unworked, or packed and hard, all grass and weeds shall first be cut or otherwise satisfactorily disposed of, and the soil then scarified or otherwise loosened to a depth not less than 5 inches (125 mm). Clods shall be broken and the top 3 inches (75 mm) of soil shall be worked into a satisfactory condition by discing or by use of cultipackers, rollers, drags, harrows, or other appropriate means.

An area to be seeded shall be considered a satisfactory seedbed (without requiring additional treatment) if it has recently been thoroughly loosened and worked to a depth of not less than 5 inches; the top 3 inches of soil is loose, friable, and is reasonably free from large clods, rocks, large roots, or other undesirable matter; appropriate amounts of fertilizer and lime have been added; and, if it has been shaped to the required grade immediately prior to seeding. For slope areas steeper than 3:1 (three horizontal to one vertical), the subsoil shall be loose to a depth of 1 inch.

After completion of tilling and grading, lime and fertilizer shall be applied within 48 hours according to the specified rate (Paragraphs 903-2.2 and 2.3) and methods (Paragraphs 903-3.3.1 and 903-3.3.2) approved by MAA. The seeding mixture shall be applied within 48 hours after

application of lime and fertilizer. To firm the seeded areas, cultipacking shall occur immediately after seeding.

903-3.3 METHODS OF APPLICATION. Lime, fertilizer, and seed mixes shall be applied by either the dry or wet application methods that have been approved by MAA and are detailed below.

903-3.3.1 DRY APPLICATION METHOD

a. Liming. If soil test results indicate that lime is needed, the following procedures will be used: following advance preparation of the seedbed, lime shall be applied prior to the application of any fertilizer or seed and only on seedbeds that have been prepared as described in paragraph 903-3.2. The lime shall be uniformly spread and worked into the top 2 inches of soil, after which the seedbed shall be properly graded again.

b. Fertilizing. Following advance preparations (and liming if necessary), fertilizer shall be spread uniformly at the specified rate to provide no less than the minimum quantity stated in Paragraph 903-2.3.

c. Seeding. Seed mixtures shall be sown immediately after fertilization of the seedbed. The fertilizer and seed shall be lightly raked to a depth of 1 inch for newly graded and disturbed areas.

d. Rolling. After the seed has been properly covered, the seedbed shall be immediately compacted using a cultipacker or an approved lawnroller.

903-3.3.2 WET APPLICATION METHOD/HYDROSEEDING

a. General. The Contractor may elect to apply seed and fertilizer as per Paragraphs c and d of this section in the form of an aqueous mixture by spraying over the previously prepared seedbed using methods and equipment approved by MAA. The rates of application shall be as specified in Paragraphs 903-2.1 through 903-2.3.

b. Spraying Equipment. The spraying equipment shall have a container or water tank equipped with a liquid level gauge capable of reading increments of 50 gallons or less over the entire range of the tank capacity. The liquid level gauge shall be mounted so as to be visible to the nozzle operator at all times. The container or tank shall also be equipped with a mechanical power-driven agitator capable of keeping all the solids in the mixture in complete suspension at all times until used.

The spraying equipment shall also include a pressure pump capable of delivering 100 gallons per minute at a pressure of 100 pounds per square inch. The pressure pump assemblage shall be configured to allow the mixture to flow through the tank when not being sprayed from the nozzle. All pump passages and pipelines shall be capable of providing clearance for 5/8-inch solids. The power unit for the pump and agitator shall

have controls mounted so as to be accessible to the nozzle operator. A pressure gauge shall be connected to and mounted immediately behind the nozzle.

The nozzle pipe shall be mounted on an elevated supporting stand in such a manner that it can be rotated through 360 degrees horizontally and inclined vertically from at least 20 degrees below to at least 60 degrees above the horizontal. There shall be a quick-acting, three-way control valve connecting the recirculating line to the nozzle pipe and mounted so that the nozzle operator can control and regulate the amount of flow of mixture to be supplied so that mixtures may be properly sprayed over a distance varying from 20 feet to 100 feet. One shall be a close-range ribbon nozzle, one a medium-range ribbon nozzle, and one a long-range jet nozzle. For ease of removal and cleaning, all nozzles shall be connected to the nozzle pipe by means of quick-release couplings. In order to reach areas inaccessible to the regular equipment, an extension hose at least 50 feet in length shall be provided to which the nozzles may be connected.

c. Mixtures. Lime shall be applied separately in the quantity specified, prior to the fertilizing and seeding operations. Lime should be added to and mixed with water at a concentration not to exceed 220 pounds of lime for every 100 gallons of water. After lime has been applied, the tank should be emptied and rinsed with fresh water. Seed and fertilizer shall be mixed together in the relative proportions specified, but the resulting concentration should not exceed 220 pounds of mixture per 100 gallons of water and should be applied within 30 minutes to prevent fertilizer burn of the seeds.

All water used shall be obtained from fresh water sources and shall be free from injurious chemicals and other toxic substances harmful to plant life. Brackish water shall not be used at any time. The Contractor shall identify all sources of water to the MAA Engineer at least two weeks prior to use. The Engineer may take samples of the water at the source or from the tank at any time and have a laboratory test the samples for chemical and saline content. The Contractor shall not use any water from any source that is disapproved by the Engineer following such tests.

All mixtures shall be constantly agitated from the time they are mixed until they are finally applied to the seedbed. All such mixtures shall be used within 30 minutes from the time they were mixed or they shall be wasted and disposed of at a location acceptable to the Engineer.

d. Spraying. Lime shall be sprayed upon previously prepared seedbeds on which the lime, if required, shall have been worked in already. The mixtures shall be applied using a high-pressure spray which shall always be directed upward into the air so that the mixtures will fall to the ground in a uniform spray. Nozzles or sprays shall never be directed toward the ground in such a manner that might produce erosion or runoff. Particular care shall be exercised to ensure that the application is made uniformly, at the prescribed rate, and to guard against misses and overlapped areas. Predetermined quantities of the mixture shall be used in accordance with specifications to cover specified sections of known areas. To checks the rate and uniformity of application, the

applicator will observe the degree of wetting of the ground or distribute test sheets of paper or pans over the area at intervals and observe the quantity of material deposited thereon.

On surfaces that are to be mulched as indicated by the plans or designated by the MAA Engineer, seed and fertilizer applied by the spray method need not be raked into the soil or rolled. However, on surfaces on which mulch is not to be used, the raking and rolling operations will be required after the soil has dried.

903-3.4 MAINTENANCE OF SEEDED AREAS. The contractor shall protect seeded areas against traffic or other use by warning signs or barricades, as approved by the Engineer. Surfaces gullied or otherwise damaged following seeding shall be repaired by regrading and reseeding as directed. The Contractor shall mow, water as directed, and otherwise maintain seeded areas in a satisfactory condition until final inspection and acceptance of the work.

When either the dry or wet application method outlined above is used for work performed out of season, the Contractor will be required to establish a good stand of grass of uniform color and density to the satisfaction of the Engineer. If at the time when the contract has been otherwise completed it is not possible to make an adequate determination of the color, density, and uniformity of such stand of grass, payment for the unaccepted portions of the areas seeded out of season will be withheld until such time as these requirements have been met.

METHOD OF MEASUREMENT

903-4 The quantity of seeding to be paid for shall be the numbers of acres (or square yard) or portions thereof, measured on the ground surface, completed, and accepted. Separate measurements will be made of the areas seeded with the several seed mixtures specified. No distinction will be made between "graded" areas and "undisturbed" areas in arriving at the total acreage (or square yard) for each area seeded with specified seed mixes. No separate measurements will be made of graded and undisturbed areas for purposes of separate payments.

BASIS OF PAYMENT

903-5.1 The quantity, determined as provided above, will be paid for at the contract unit price per acre (or square yard), or fraction thereof, for seeding, which price and payment shall be full compensation for furnishing and placing all material, including fertilizers, and for all labor, equipment, tools, and incidentals necessary to complete the work prescribed in the item.

Payment will be made under:

Item 903-5.1 Seeding Mixture No. 1 -- per acre
Item 903-5.2 Seeding Mixture No. 1 -- per square yard
Item 903-5.3 Seeding Mixture No. 2 -- per acre

Item 903-5.4 Seeding Mixture No. 2 -- per square yard
Item 903-5.5 Seeding Mixture No. 3 -- per acre
Item 903-5.6 Seeding Mixture No. 3 -- per square yard
Item 903-5.7 Amendments – per acre
Item 903-5.8 Amendments – per square yard
Item 903-5.9 Fertilizer – per acre
Item 903-5.10 Fertilizer – per square yard

END OF ITEM 903

ITEM 904 SODDING

DESCRIPTION

904-1 This item provides standards for furnishing, hauling, and placing approved live sod on prepared areas as indicated on site plans. Sod will only be applied to landscape areas and shall be mowed frequently. All sodding activities shall conform to these specifications at the locations shown on site plans or as directed by the MAA Engineer.

MATERIALS

904-2.1 SOD. Sod furnished by the Contractor shall have a good cover of living or growing grass. This includes grass that is seasonally dormant during the cold or dry seasons and capable of renewing growth after the dormant period. All sod shall be obtained from areas in which the soil is reasonably fertile and contains a high percentage of loamy topsoil. Sod shall be cut or stripped from living, thickly matted turf relatively free of weeds or other undesirable foreign plants, large stones, roots, or other materials that might be detrimental to the development of the sod or to future maintenance. Grass sod shall be Maryland-certified or approved and shall comply with the Maryland Sod Law of the Annotated Code of Maryland (Agricultural Article Sections 9-101 through 9-110). Each load of sod shall bear a Maryland State Approved or Certified label at the time of delivery on the job. Sod shall be either: (1) Bluegrass sod containing not less than 80 percent Kentucky bluegrass (*Poa pratensis*) and not more than 20 percent Red Fescue (*Festuca rubra*); or (2) certified turf type-tall fescue (*Festuca arundinacea*) sod containing not less than 80 percent certified turf type-tall fescue (*Festuca arundinacea*) grass and not more than 20 percent Kentucky Bluegrass (*Poa pratensis*) and Red Fescue (*Festuca rubra*). Any vegetation more than 6 inches in height shall be mowed to a height of 3 inches or less before sod is lifted. Sod, including the soil containing the roots and the emergent plant growth, shall be cut uniformly to a thickness not less than that specified in Section 904-3.4.

904-2.2 LIME. Lime shall conform to standards described in Section 903, "Seeding."

904-2.3 FERTILIZER. Fertilizers and application methods shall conform to the standards previously described in Section 903, "Seeding."

904-2.4 WATER. All water shall conform to the standards previously described in Paragraph 902-2.4, "Water."

904-2.5 SOILS FOR REPAIR. All soils for repairs shall conform to the standards previously described in Paragraph 901-2.3, "Soils for Repair."

CONSTRUCTION REQUIREMENTS

904-3.1 GENERAL. Areas to be sodded shall be clearly indicated by site plans. Areas requiring special ground surface preparation, such as tilling, and those areas in a satisfactory condition that are to remain undisturbed shall also be shown on the plans.

Suitable equipment necessary for proper preparation of the ground surface and for the handling and placing of all required materials shall be on hand; in good condition, and shall be approved by the MAA Engineer before sodding operations begin. The Contractor shall demonstrate to the MAA Engineer, before starting the various operations, that the application of required materials, such as fertilizer and limestone, will be made at the specified rates.

904-3.2 ADVANCE PREPARATION. If the area to be sodded is sparsely vegetated, weedy, barren and unworked, or packed and hard, all existing herbaceous vegetation shall be removed. The soil shall then be scarified or otherwise loosened to a depth of at least 5 inches (125 mm). Clods shall be pulverized, and the top 3 inches (75 mm) of soil shall be worked into a satisfactory bed by discing or use of cultipackers, rollers, drags, harrows, or other equipment approved by the MAA Engineer. The area shall then be properly graded as indicated by site plans.

After grading of areas is complete and prior to the application of fertilizer and limestone, areas to be sodded shall be raked or otherwise cleared of stones larger than 1 inch in diameter, sticks, stumps, and other debris which might interfere with sodding, growth of grasses, or subsequent maintenance of grass-covered areas. If any damage by erosion or other causes has occurred after grading of areas and before beginning the application of fertilizer and ground limestone, the Contractor shall repair such damage. This may include filling gullies, smoothing irregularities, and repairing other incidental damage.

An area to be sodded will be considered a satisfactory seedbed without requiring additional treatment if it recently has been thoroughly loosened and worked to a depth of at least 5 inches as a result of grading operations and, if immediately prior to sodding, the top 3 inches of soil is loose, friable, reasonably free from large clods, rocks, large roots, or other undesirable matter, and is shaped to the required grade. For slope areas steeper than 3:1 (three horizontal to one vertical) the subsoil shall be loosened to a depth of 1 inch. Lime and fertilizer shall be applied within 48 hours after tilling as described in 903-3.3 and 3.4. The sod shall be applied immediately after the lime and fertilizer have been worked into the soil.

904-3.3 APPLICATION OF FERTILIZER AND LIME. Following ground surface preparation, fertilizer shall be uniformly spread as described in Section 903-3.3 at a rate that will provide at least the minimum quantity of fertilizer required. If the use of ground limestone is specified, it shall be spread as described in Section 903-3.3, "Methods of Application"; at a rate that will provide at least the minimum quantity of lime required. These materials shall be incorporated into the soil to a depth of at least 2 inches by discing, raking, or other methods

approved by the MAA Engineer. Any stones larger than 1 inch in diameter, large clods, roots, and other litter brought to the surface by this operation shall be removed.

904-3.4 OBTAINING AND DELIVERING SOD. The sod shall be well rooted, grown in the State of Maryland, and field grown for a minimum of 12 months. After inspection and approval of the sod by the MAA Engineer, the sod shall be cut with approved sod cutters to such a thickness that after placement on the prepared bed, but before compaction, it shall have a uniform attached soil thickness of at least 0.75 inch. Sod sections or strips shall be cut in uniform widths of at least 14 inches and in lengths of at least 18 inches, but not to lengths that might inhibit placement without breaking, tearing, or loss of soil. Where strips are required, the sod shall be rolled or folded undamaged, with the grass facing inward. The Contractor may be required to mow high grass before cutting sod.

Sod shall be transplanted within 24 hours from the time of harvest unless circumstances beyond the Contractor's control make storage necessary. In such cases, sod shall be stacked, kept moist, protected from exposure to the air and sun, and shall be kept from freezing. Sod shall only be harvested and moved when soil moisture conditions are such that favorable results can be expected. Where soil is too dry, permission to cut sod may be granted only after it has been sufficiently watered to moisten the soil to the depth at which the sod will be cut.

904-3.5 PLACING SOD. Sodding shall only be performed during seasons when satisfactory results can be expected. Frozen sod shall not be used and sod shall not be placed upon frozen soil. Sod may be transplanted during periods of drought with the approval of the MAA Engineer, provided the sod bed is watered to moisten the soil to a depth of at least 4 inches immediately prior to laying the sod.

The sod shall be moist and shall be placed on a bed, prepared according to Paragraphs 904-3.2 "Advance Preparation", and 904-3.3, "Application of Fertilizer and Lime" by hand. Pitchforks shall not be used to handle sod, and dumping from vehicles shall not be permitted. The sod shall be placed carefully by hand, edge to edge and with staggered joints, in rows at right angles to the slopes, starting at the base of the area to be sodded and working upward. The sod shall immediately be pressed firmly into contact with the sod bed by tamping or rolling with approved equipment to provide a true and even surface, and ensure knitting without displacement of the sod or deformation of the surfaces of sodded areas. Where the sod has been displaced during sodding operations, the workmen replacing it shall work from ladders or treaded planks to prevent further displacement. Where the grades are such that the flow of water will be from paved surfaces across sodded areas, the surface of the soil in the sod after compaction shall be set approximately 1.5 inches below the pavement edge. Where the flow will be over the sodded areas and onto the paved surfaces around manholes and inlets, the surface of the soil in the sod after compaction shall be placed flush with pavement edges.

On slopes steeper than 1:2.5 and in V-shaped or flat-bottom ditches or gutters, the sod shall be secured with wooden pegs at least 18 inches long and a cross-sectional area of at least 0.75-square inch, or by other methods of securing sod approved by the MAA Engineer. The pegs shall be driven flush with the surface of the sod. The pegs shall be of sufficient number and at

adequate spacing to secure sod from displacement. The use of sod staples or other means of securing the sod from displacement may be approved by the MAA Engineer provided satisfactory results are expected.

904-3.6 WATERING. Adequate water and watering equipment shall be on hand before sodding begins, and sod shall be kept moist until it has become established and its continued growth assured. In all cases, watering shall be done in a manner that will avoid erosion from the application of excessive quantities and will avoid damage to the finished surface.

904-3.7 ESTABLISHING TURF.

904-3.7.1 GENERAL. The Contractor shall provide general care for the sodded areas as soon as the sod has been laid and shall continue to provide such care until final inspection and acceptance of the work.

904-3.7.2 PROTECTION. All sodded areas shall be protected against traffic or other use by warning signs and barricades approved by the MAA Engineer.

904-3.7.3 MOWING. The Contractor shall mow the sodded areas with approved mowing equipment, depending upon climatic and growth conditions and the needs for mowing of specific areas. In the event that weeds or other undesirable vegetation establishes to such an extent that, either cut or uncut, they threaten to smother the sodded species, the weeds shall be mowed and the clippings raked and removed from the area. Spot applications of an appropriate herbicide by a licensed applicator shall be approved by the MAA Engineer to remove invasive species. The appropriate herbicide shall be determined on a case-by-case basis, depending on the location and type of weed.

904-3.7.4 REPAIR. When the surface has become gullied or otherwise damaged during the period covered by this contract, the affected areas shall be repaired to re-establish the grade and the condition of the soil and shall then be re-sodded as specified in Paragraph 904-3.5, "Placing Sod", at the Contractor's expense.

METHOD OF MEASUREMENT

904-4 This item will be measured on the basis of the area in square yards of the surface covered with sod and accepted.

BASIS OF PAYMENT

904-5 This item will be paid for on the basis of the contract unit price per square yard for sodding. The price will provide full compensation for all labor, equipment, material, staking, and incidentals necessary to satisfactorily complete the items as specified.

Payment will be made under:

Item 904-5.1 Sodding—per square yard.
Item 904-5.2 Amendments – per square yard
Item 904-5.3 Fertilizer – per square yard

END OF ITEM 904

ITEM 905 MULCHING

DESCRIPTION

905-1.1 GENERAL. This item provides the Contractor with MAA-approved specifications for mulch and the application of mulch including distribution of mulch and securing of mulched areas. Areas to be mulched will be clearly shown on site plans or otherwise designated by the MAA Engineer.

MATERIALS

905-2.1 TYPES OF MULCH. Acceptable mulch shall be composed of the materials listed below or composed of any locally available materials that are similar to those specified and approved by the MAA Engineer. Low-grade, shalely, soiled, partially rotted hay, straw, or other materials unfit for animal consumption will not be acceptable for use as mulch. Straw or other material that is fresh, excessively brittle, or is in such an advanced stage of decomposition as to smother or retard the planted grass, is not acceptable. Clean, weed-free straw may be used. Mulch materials containing matured seed with the potential to establish and be detrimental to the project or the surrounding area is not acceptable.

a. Shredded Hardwood Bark. Shredded hardwood bark shall consist of hardwood tree bark that has been milled and screened to ensure a maximum 4-inch (100-mm) particle size, provide a uniform texture, and be free from sawdust, toxic substances, and other foreign materials.

b. Wood Chips. Wood chips shall be produced by a chipping machine to a size specified by the MAA Engineer. Chips may not have been subjected to any conditions that would shorten their useful life or cause them to lose any of their value as mulch. Wood chips shall be free from bark, leaves, twigs, wood shavings, sawdust, toxic substances, and other foreign material.

c. Wood Cellulose Fiber. Wood cellulose fiber shall consist of a processed wood product with uniform fiber characteristics. The fiber shall be capable of remaining in a uniform suspension under agitation in water and blending with seed, fertilizer, and other additives to form a homogeneous slurry. The fiber shall perform satisfactorily in hydraulic seeding equipment without clogging or damaging the system. The slurry shall contain a green dye to provide easy visual inspection for uniformity of application.

Certification showing that the fiber material conforms to the following specifications shall be provided by the manufacturer:

Wood Cellulose Fiber Requirements	
Particle Length, in. (mm)	Approximately 1/2 (13)
Particle Thickness, in. (mm)	Approximately 1/16 (1.5)
Net dry Weight Content	Minimum as stated on bag
TAPPI* T 509, pH	4.0 to 8.5
Ash Content, TAPPI* Standard T 413, % max	7.0
Water Holding Capacity, % min	90

*Technical Association of Pulp and Paper Industry

The material shall be delivered in packages of uniform net weight of 75 lbs (34 kg) or less and shall be clearly labeled with the name of the manufacturer, net weight, and a supplemental statement of the net weight content.

905-2.2 INSPECTION. Within five days after acceptance of the bid, the Contractor shall provide representative samples of mulch material to be used to the MAA Engineer and identify the source of the material and quantities of mulch materials available. The samples provided may be used as standards with the approval of the MAA Engineer and any materials brought on the site that do not meet these standards may be rejected.

CONSTRUCTION REQUIREMENTS

905-3.1 ADVANCE PREPARATION. Before spreading mulch, all large clods, stumps, stones, brush, roots, and other foreign material shall be removed from the area to be mulched. Mulch shall be applied immediately after seeding unless otherwise specified. The application and spreading of mulch may be by hand methods, blower, or other mechanical methods, provided a uniform covering is obtained.

905-3.2 APPLICATION OF MULCH. The Contractor shall evenly apply mulch materials to areas indicated by site plans or otherwise designated by the MAA Engineer. Cellulose-fiber or wood-pulp mulch shall be applied at the rate of 1,500 pounds (dry weight) per acre. Mulch may be blown on the slopes and use of cutters in the equipment for this purpose will be permitted to the extent that at least 95 percent of the mulch in place on the slope is 6 inches or more in length. When mulch applied by the blowing methods is cut, the loose depth in place shall be 1 to 2 inches. Cellulose fiber or wood-pulp mulch shall be applied as an aqueous mixture by spraying at the rate of 1,500 pounds (dry weight) per acre using spraying equipment approved by the MAA Engineer.

905-3.3 SECURING MULCH. Mulch shall be held in place by light discing, a thin coating of topsoil, pins, stakes, wire mesh, or other methods approved by the MAA Engineer. If the "peg and string" method is used, the mulch shall be secured with stakes or wire pins driven into the ground on 5-foot centers or less. Binder twine shall be strung between adjacent stakes in straight

lines and crossed diagonally over the mulch. The stakes shall be firmly driven nearly flush to the ground to draw the twine down tightly onto the mulch.

905-3.4 MAINTENANCE OF MULCHED AREAS. The Contractor shall care for mulched areas until final acceptance of the project. Care required may consist of providing protection against traffic or other disturbances by placement of warning signs and/or barricades before or immediately after mulching has been completed.

The Contractor may be required to repair or replace any mulching that is defective or becomes damaged before the project is finished and deemed satisfactory by the MAA Engineer. When, in the judgment of the MAA Engineer, defects or damage result from poor workmanship or failure to meet the requirements of the specifications, the cost of the necessary repairs or replacement will be borne by the Contractor. However, once the Contractor has completed the mulching of an area in accordance with the provisions of the specifications and to the satisfaction of the Engineer, no additional work at his expense will be required. Any subsequent repairs and/or replacements deemed necessary by the Engineer may be made by the Contractor and will be paid for as additional or extra work.

METHOD OF MEASUREMENT

905-4 Mulching will be measured in square yards on the basis of the actual surface area acceptably mulched to depths of 1-, 2-, or 4-inch depths.

BASIS OF PAYMENT

905-5 Payment will be made at the contract unit price per square yard for mulching. This price will provide full compensation for furnishing all materials, for placing and anchoring the materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

Item 905-5.1 Mulching – per square yard at 1-inch depth
Item 905-5.2 Mulching – per square yard at 2-inch depth
Item 905-5.3 Mulching – per square yard at 3-inch depth

END OF ITEM 905

APPENDIX A

APPROVED SPECIES LIST

List of Recommended Species for Construction Plantings

Grasses

	Scientific name	Common name
Species	*Festuca arundinacea*	Certified Turf-Type Tall Fescue
	Festuca longifolia	Hard Fescue
	Festuca rubra commutata	Chewings Red Fescue
	Lolium multiflorum	Annual Ryegrass
	Lolium perenne	Perennial Ryegrass
	Poa palustris	Fowl Meadowgrass
	Poa pratensis	Kentucky Bluegrass
	Agrostis alba	Redtop
Quick Cover	*Lolium multiflorum*	Annual Rye
	Lolium perenne	Perennial Rye
	Agrostis alba	Redtop
Soil Stabilization/ Erosion Control	*Festuca arundinacea*	Certified Turf-Type Tall Fescue
	Festuca rubra commutata	Chewings Red Fescue
	Lolium multiflorum	Annual Rye
	Lolium perenne	Perennial Rye
	Agrostis alba	Redtop
Wetlands/Buffers	*Festuca rubra*	Red Fescue
	Lolium multiflorum	Annual Rye
	Lolium perenne	Perennial Rye
	Poa palustris	Fowl Meadowgrass
	Agrostis alba	Redtop
Sod Forming	*Festuca rubra commutata*	Chewings Red Fescue
	Poa pratensis	Kentucky Bluegrass
Drought Tolerant	*Festuca arundinacea*	Certified Turf-Type Tall Fescue
	Festuca rubra commutata	Chewings Red Fescue
	Poa compressa	Canada Bluegrass
Shade Tolerant	*Festuca rubra commutata*	Chewings Red Fescue
	Poa compressa	Canada Bluegrass
	Poa pratensis	Kentucky Bluegrass

List of Recommended Species for Construction Plantings

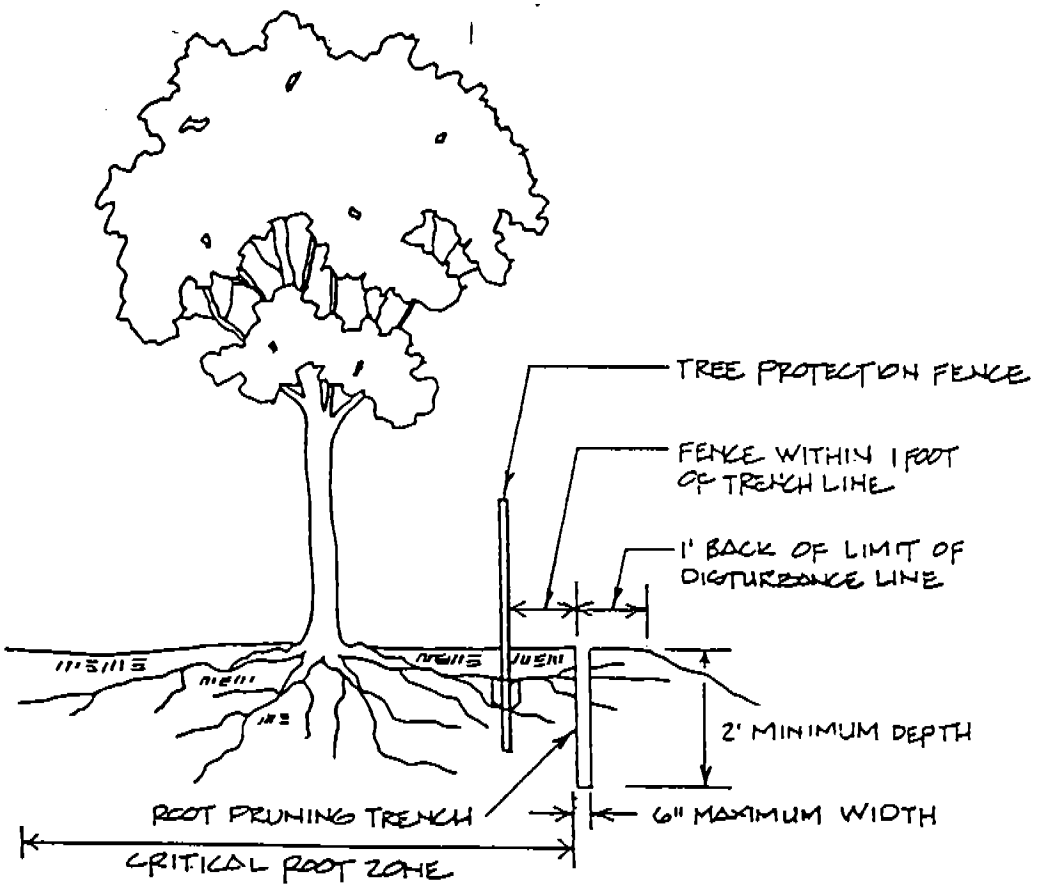
	Scientific name	Common name
Wildflowers and Herbaceous Plants		
Wildflowers	*Rudbekia hirta*	Black-eyed Susan
	Asclepias spp.	Milkweeds
	Achillea millefolium	Yarrow
	Myosotis spp.	Forget-me-not
	Aster spp.	Asters
	Veronica officinalis	Speedwell
	Jasminum spp.	Jasmine
Aromatic Herbs	*Salvia* spp.	Sage
	Thymus spp.	Thyme
	Santolina spp.	Santolina
	Rosmarinus spp.	Rosemary
Spreading	*Phlox subulata*	Moss Phlox
Vines	*Clematis virginiana*	Clematis
Ground Cover		
Perennial/Deciduous	*Phlox subulata*	Moss Phlox
Evergreen	*Juniperus 'procumbens nana'*	Blue Rug Juniper
	Juniperus conferta "Blue Pacific"	Blue Pacific Juniper
Vines	*Clematis virginiana*	Clematis
Shrubs and Trees		
Deciduous	*Ilex verticilata* (male)	Winterberry
	Lindera benzoin (male)	Spicebush
Evergreen	*Picea* spp.	Spruce
	Juniperus spp.	Junipers

APPENDIX B

APPROVED INSTALLATION METHODS

Figure J -1

Root Pruning



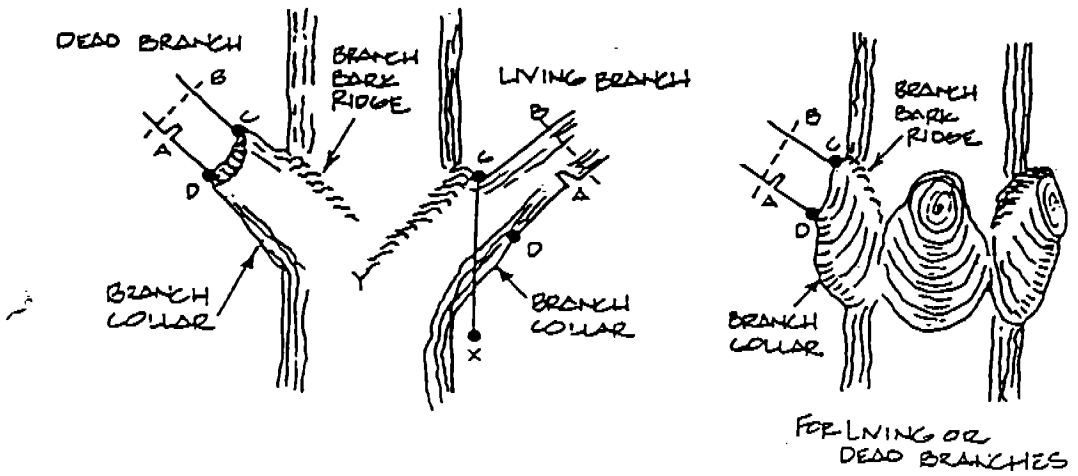
Notes:

1. Retention Areas will be set as part of the review process
2. Boundaries of Retention Areas should be staked flagged prior to trenching
3. Exact location of trench should be identified
4. Trench should be immediately backfilled with soil removed or other high organic soil
5. Roots should be cleanly cut using vibratory knife or other acceptable equipment

Source: City of Gaithersburg, Maryland: City Tree Manual

Figure J-2

Crown Reduction

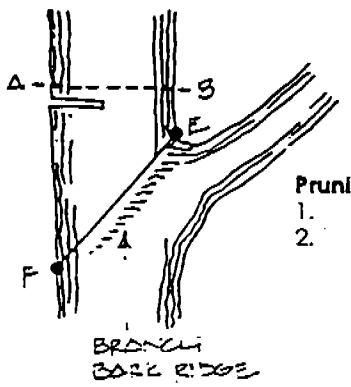


HARDWOODS

CONIFERS

Pruning a Branch

1. Remove branch weight by undercutting at A and remove limb by cutting through at B.
2. Remove stub at CD (line between branch bark ridge and outer edge of branch collar).
3. If D is difficult to find on hardwoods, drop vertical from C (line CX). Angle XCY=XCD.



Pruning a Leader or To Reduce Size

1. Remove top weight by cutting at A&E.
2. Remove stub at EF parallel to the Branch Bark Ridge.

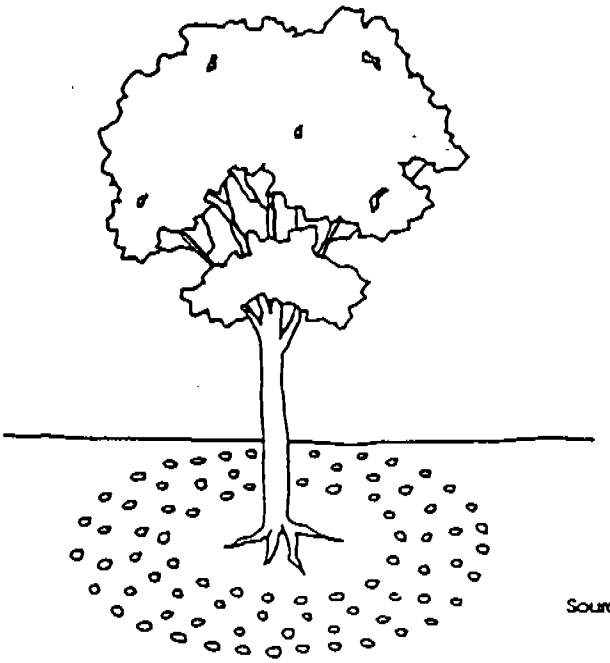
Source: Fairfax County, Virginia
Vegetation Preservation & Planting

Notes:

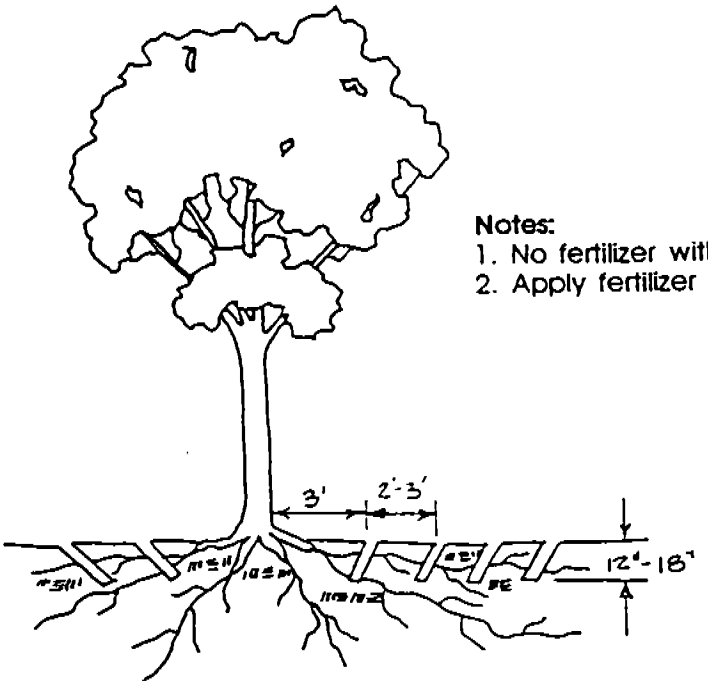
1. Only prune at specified times
2. No more than 30% of crown to be removed at one time.

Figure J-3

Application of Fertilizers by Injection



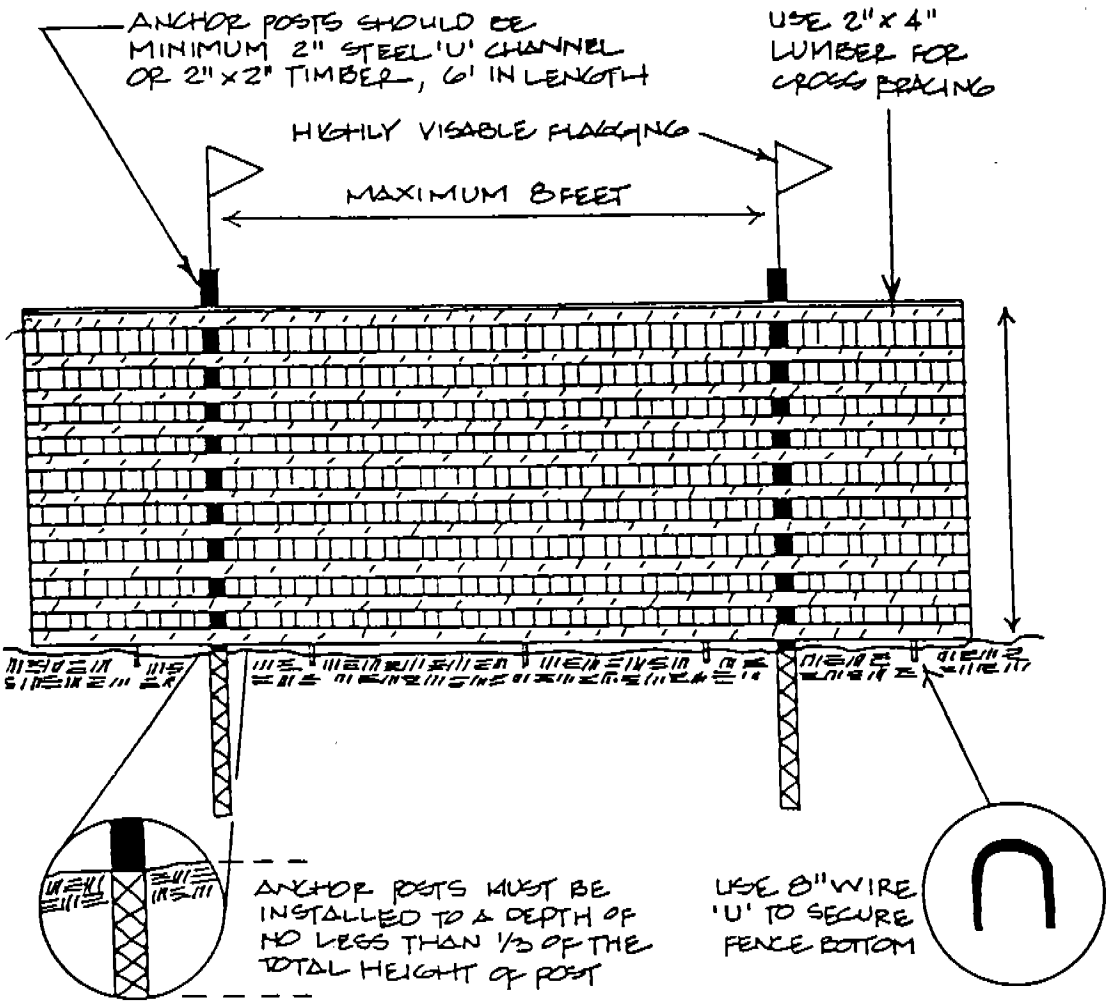
Source: Pirone, 1978



Notes:
1. No fertilizer within 3 feet of trunk
2. Apply fertilizer to entire critical root zone

Figure J-4

Blaze Orange Plastic Mesh



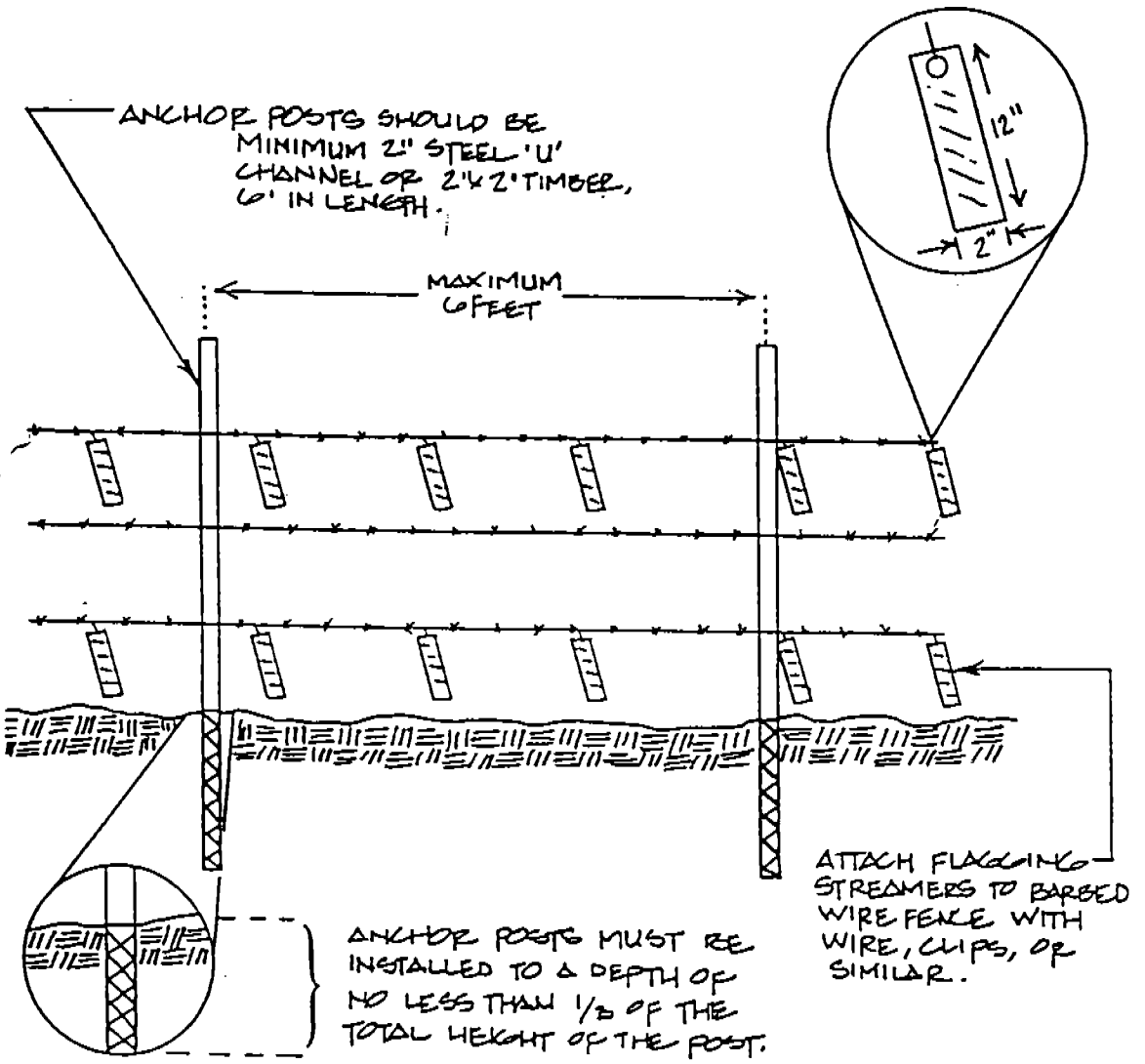
Notes

1. Forest protection device only.
2. Retention Area will be set as part of the review process.
3. Boundaries of Retention Area should be staked and flagged prior to installing device.
4. Root damage should be avoided.
5. Protective signage may also be used.
6. Device should be maintained throughout construction.

Source: Prince George's County, Maryland: Woodland Conservation Manual

Figure J-5

Three Strand Barbed Wire



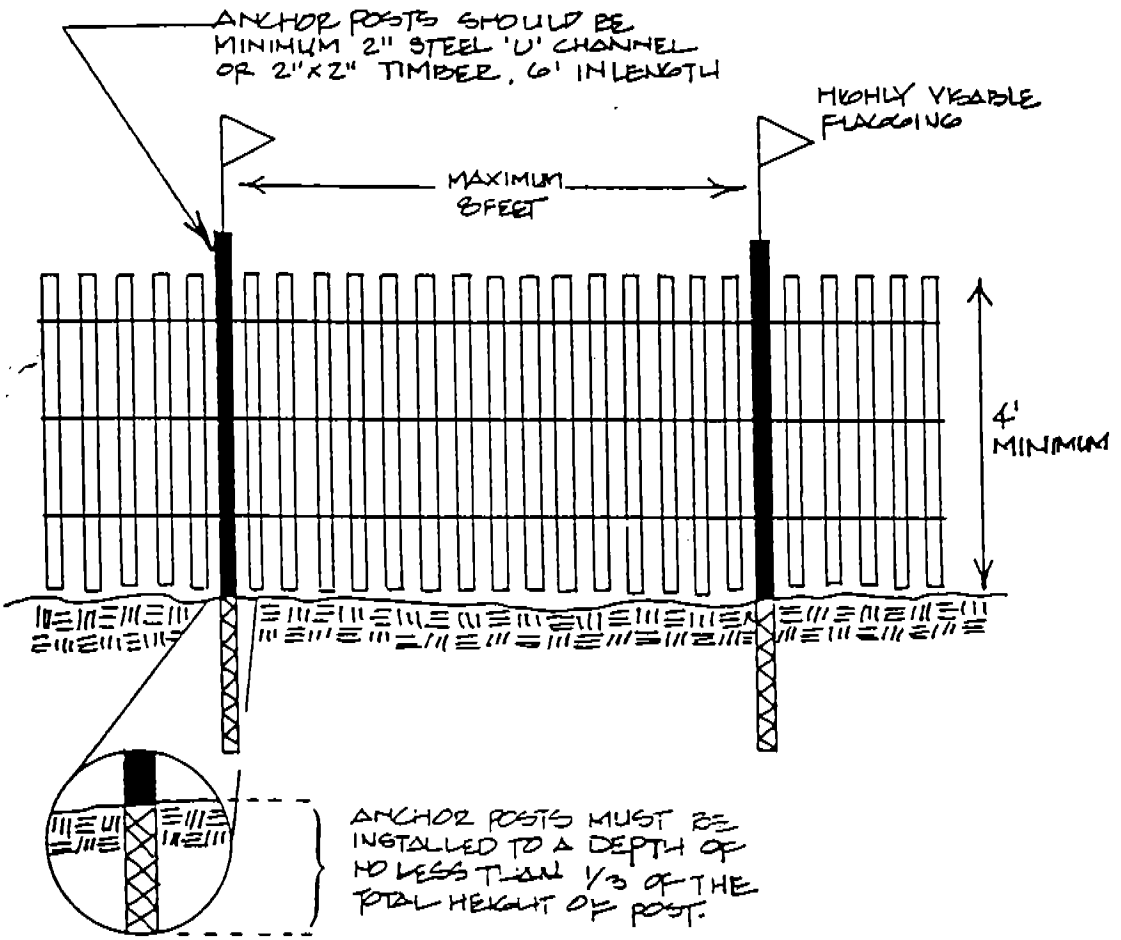
Notes

1. Forest protection device only
2. Retention Area will be set as part of the review process.
3. Boundaries of Retention Area should be staked and flagged prior to installing device.
4. Avoid root damage when placing anchor posts.
5. Barbed wire should be securely attached to posts.
6. Device should be properly maintained during construction.
7. Protective signage is also recommended.

Source: Prince George's County, Maryland: Woodland Conservation Manual

Figure J-6

Snow Fence



Notes:

1. Forest protection device only
2. Retention area will be set as part of the review process
3. Boundaries of Retention Area should be staked prior to installing protective device
4. Avoid root damage when placing anchor posts
5. Device should be properly maintained during construction
6. Protective signage is also recommended

Source: Prince George's County, Maryland: Woodland Conservation Manual

Figure J-7

Signage

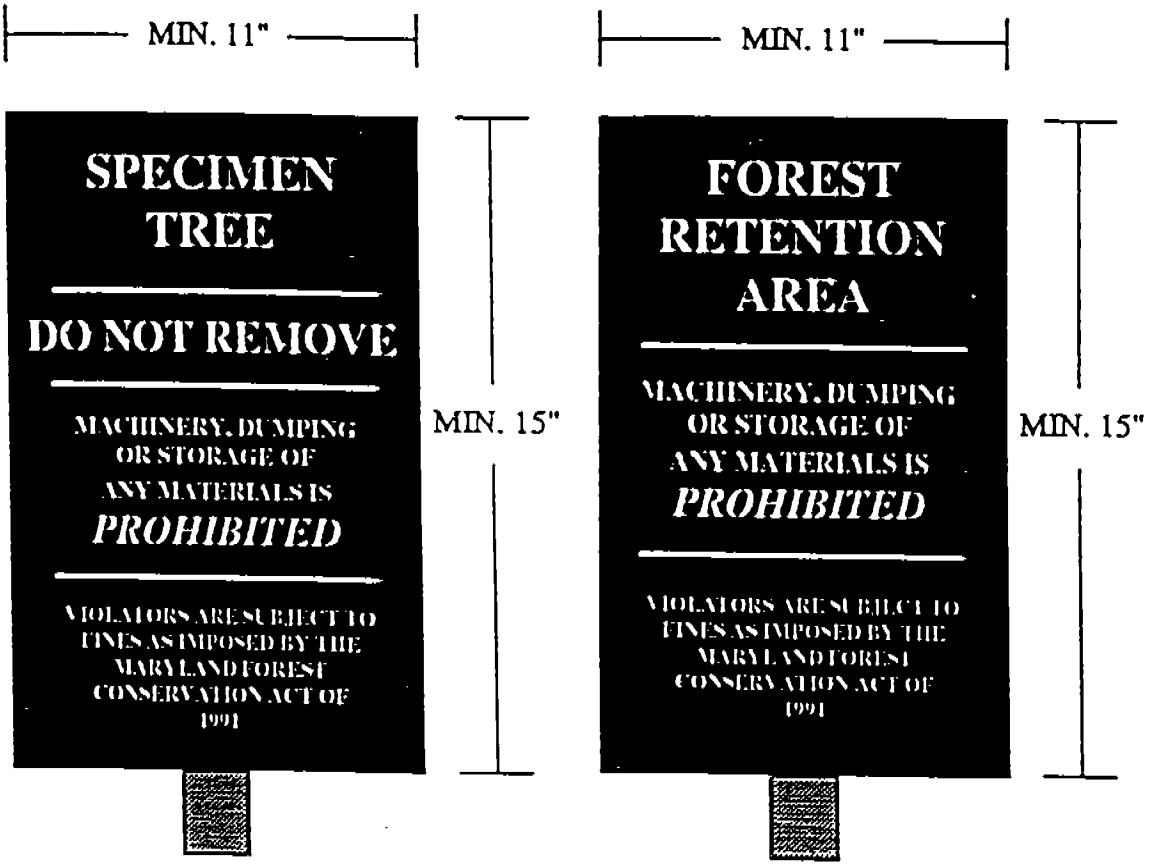
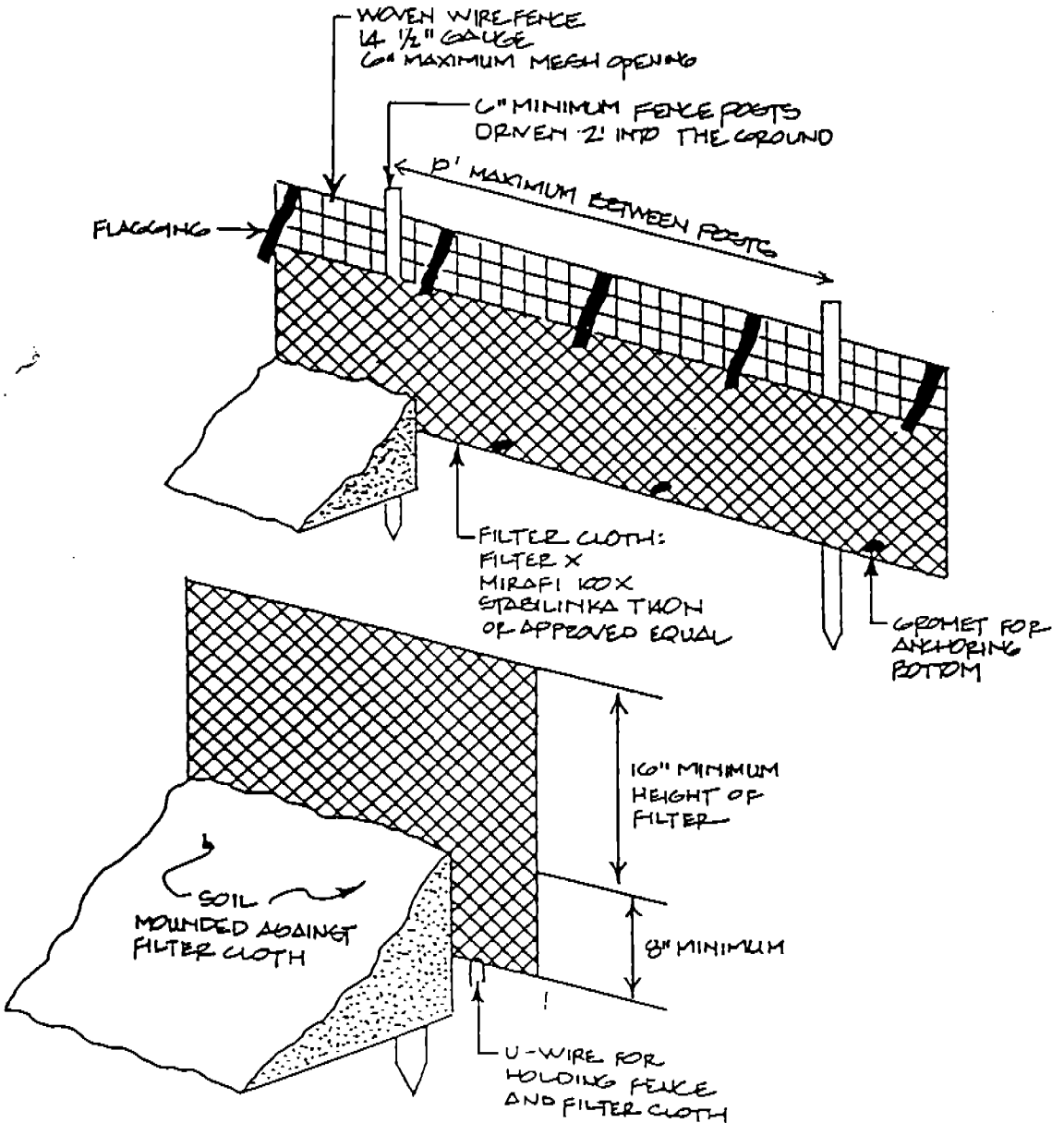


Figure J-8

Filter Cloth on Wire Mesh

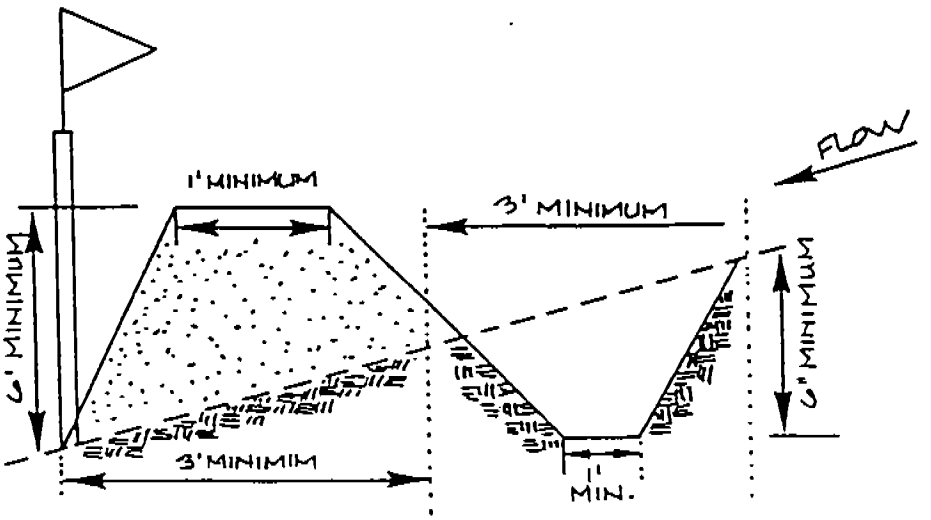


Source: Prince George's County, Maryland: Woodland Conservation Manual

Notes:

1. Combination sediment control and protective device
2. Retention area will be set as part of the review process
3. Boundaries of Retention Area should be staked prior to installing protective device
4. Root damage should be avoided
5. Mound soil only within the limits of disturbance
6. Protective signage is also recommended
7. All standard maintenance for sediment control devices apply to these details

Figure J-10 **Earthen Dike and Swale**

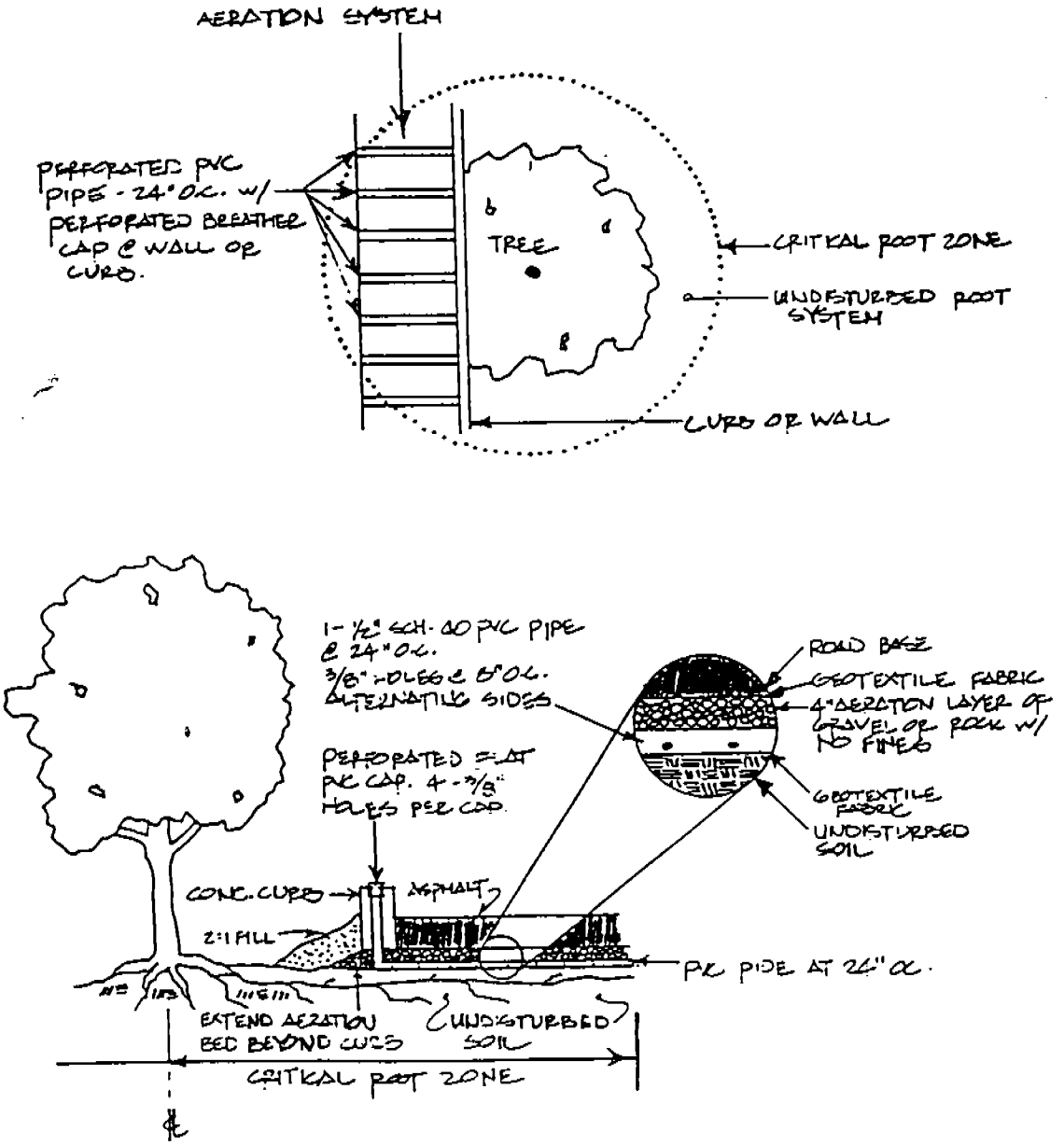


Notes:
1. Combination sediment control and protective device
2. Retention area will be set as part of the review process
3. Boundaries of Retention Area should be staked prior to installing protective device
4. Root damage should be avoided
5. The top or toe of slope should be within the limit of disturbance
6. Equipment is prohibited within critical root zone of retention area; place dike accordingly
7. All standard maintenance for earthen dikes and swales apply to these details
8. All standard reclamation practices for earthen dikes and swales shall apply to these details

Source: Prince George's County, Maryland: Woodland Conservation Manual

Figure J- 11

Aeration System



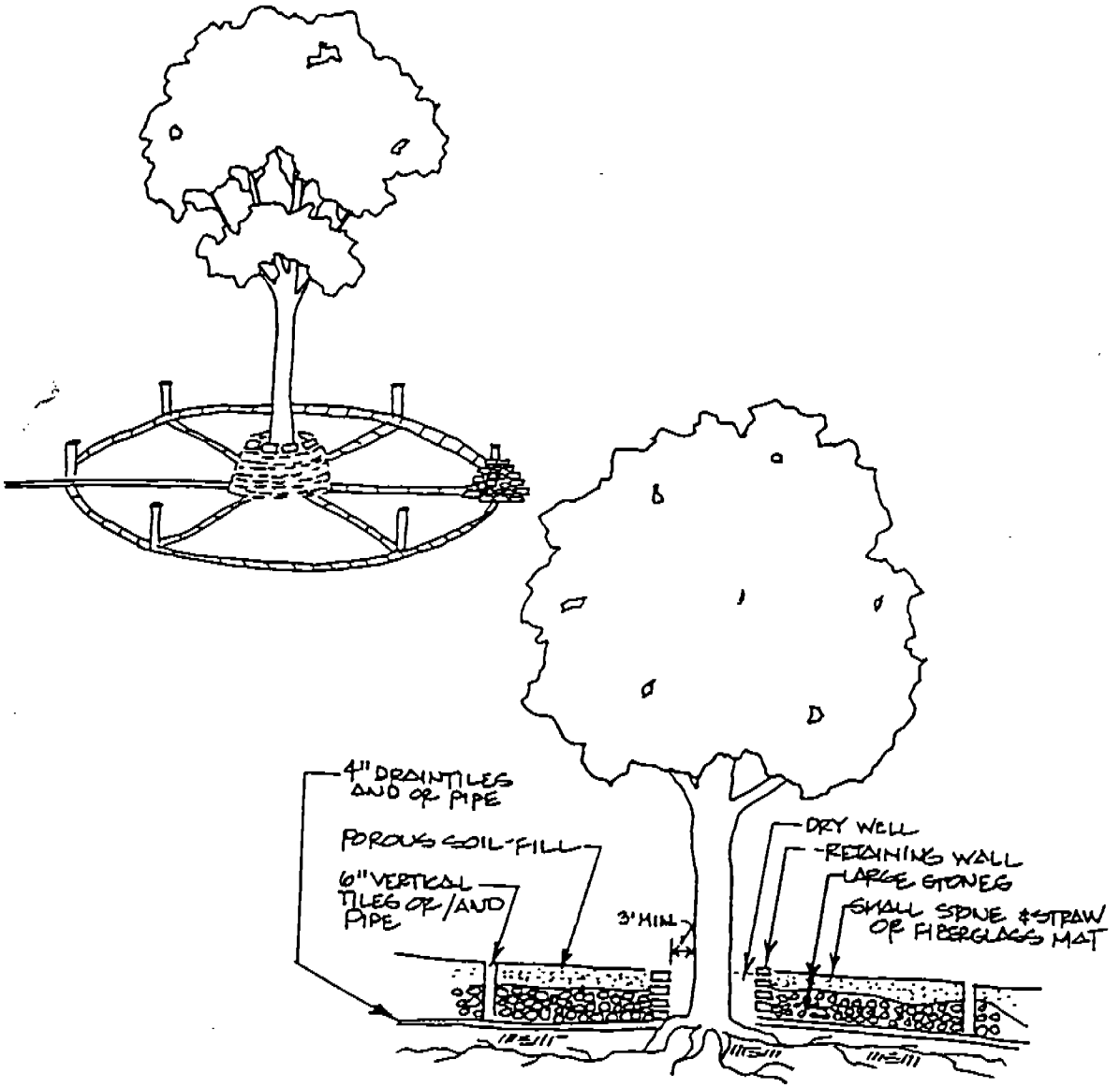
Notes:

1. Bed preparation should not exceed two inches.
2. Vertical pipe should be capped with a perforated cap with 4-3/8 inch holes per cap.
3. Gravel or rock should contain no fines.
4. Can also be used when critical root zone is covered by fill instead of asphalt.

Source: Steve Clark & Associates

Figure J -12

Tree Well



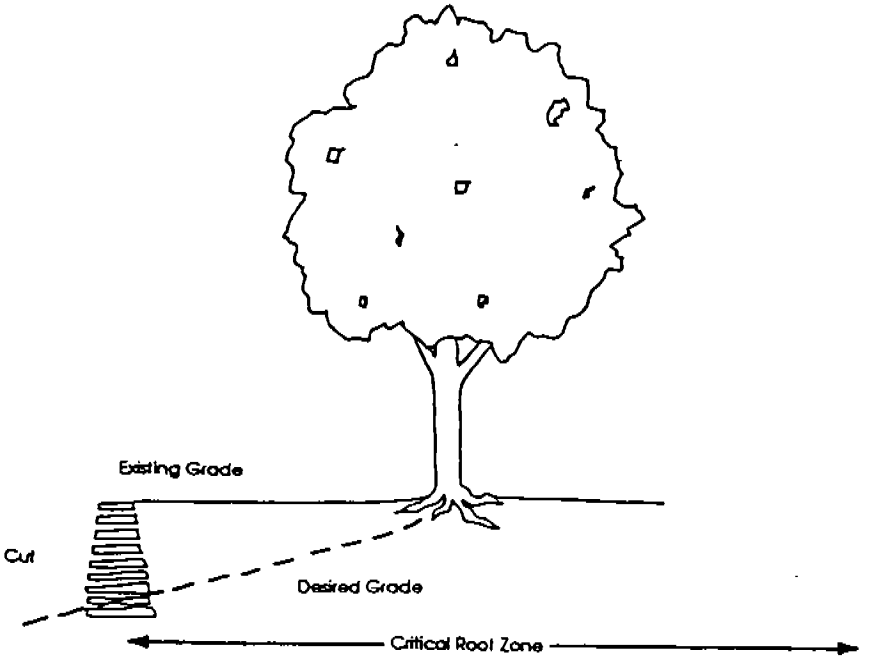
Notes:

1. Well wall should be no closer than 3 feet from tree trunk or more for smaller trees.
2. Drainage pipe layout should extend beyond the critical root zone
3. Vertical pipes shall be capped with a perforated flat cap with 4-3/8 inch holes per cap
4. Radiating spokes should be on 3 foot centers at the well wall

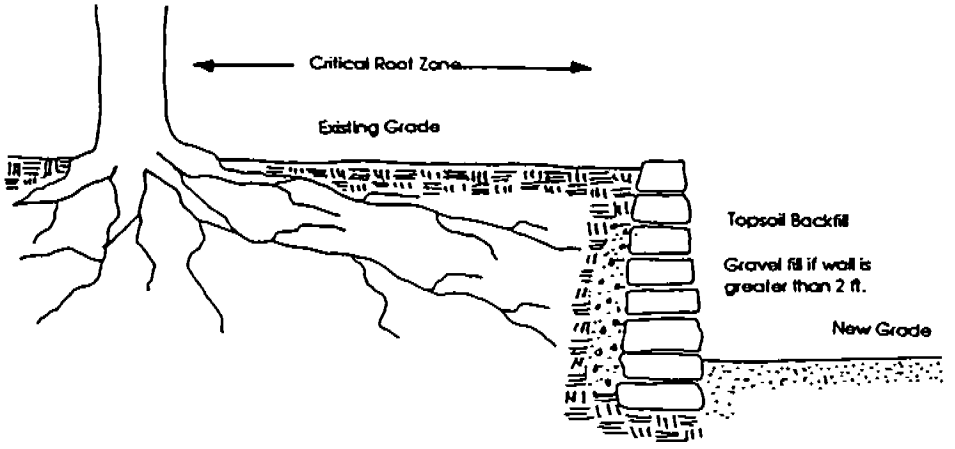
Source: Fairfax County, Virginia: Vegetation Preservation & Planting

Figure J- 13

Retaining Walls



Source: Fulton County, Georgia
Tree Preservation Ordinance

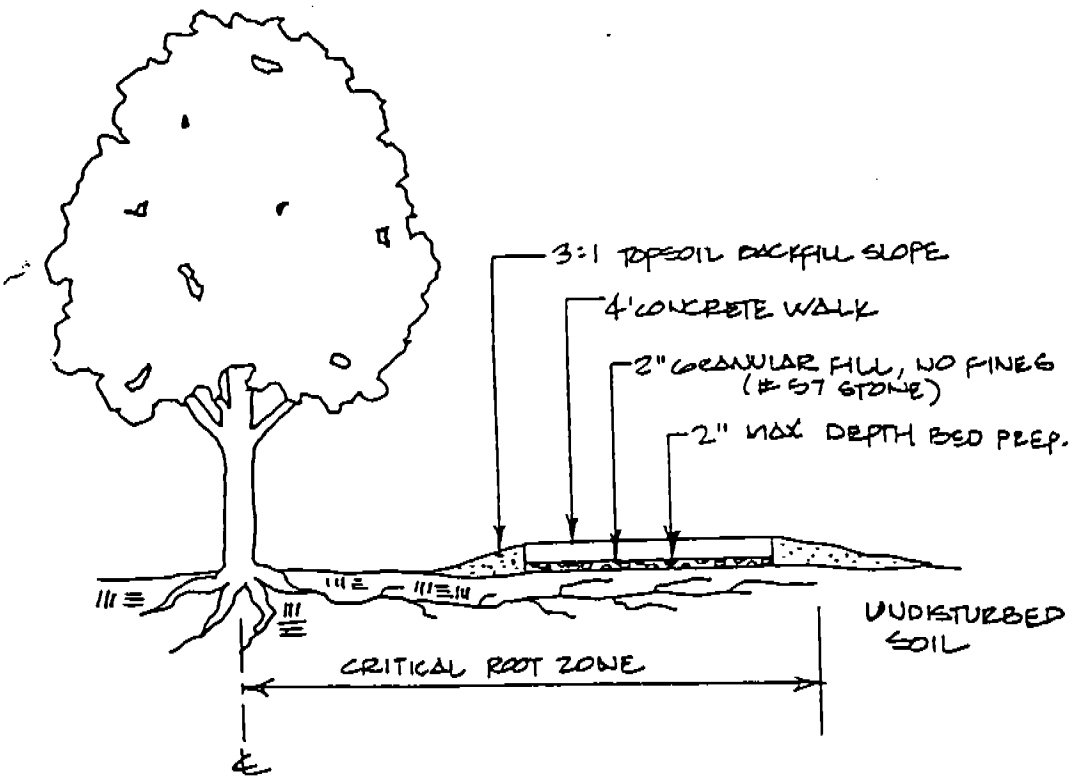


Source: Fairfax County, Virginia
Vegetation Preservation & Planting

Note:
1. Wall should be constructed outside the critical root zone.

Figure J-14

Raised Sidewalk

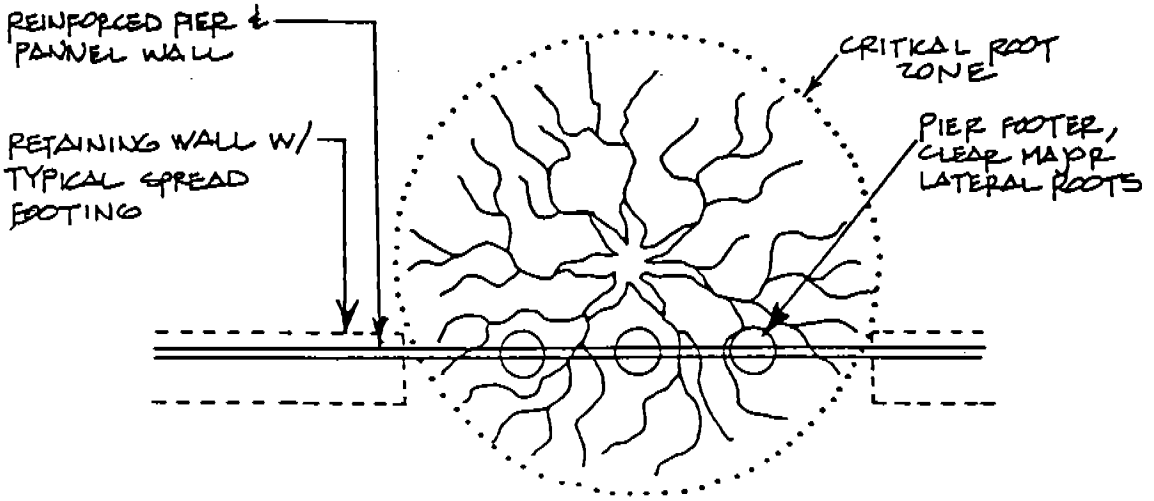


Notes:

1. Bed preparation should not exceed 2 inches
2. Granular fill should contain no fines
3. Minimize width of sidewalk; should be no wider than 4 feet

Source: City of Gaithersburg, Maryland: City Tree Manual

Figure J-15 **Reinforced Pier and Panel Wall**

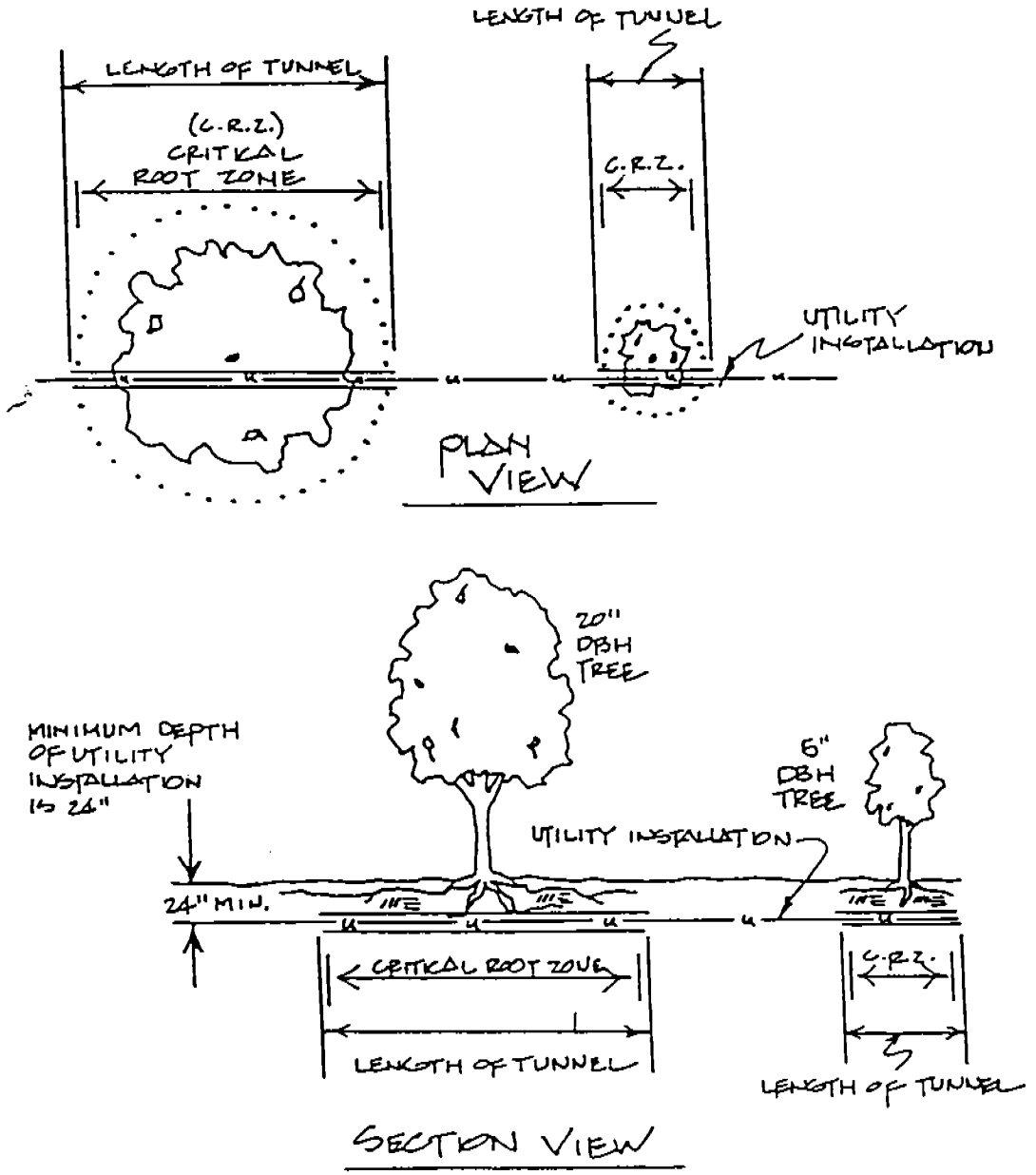


Notes:
1. Area of disturbance should be minimized
2. Care should be taken to avoid major lateral roots
3. Roots should be cleanly cut using a vibratory knife or other similar equipment

Source: Steve Clark & Associates

FigureJ- 16

Tunnelling



Notes:

1. Tunnel under critical root zone
2. Tunnel should be 24 inches deep at a minimum
3. When tunneling, aim for the trunk of the tree
4. When trenching, tunnel through the critical root zone

Adapted from: Fairfax County, Virginia: Vegetation Preservation & Planting

Parris N. Glendening
Governor

John D. Porcari
Secretary

Maryland Aviation Administration

Beverley K. Swaim-Staley
Acting Executive Director

MEMORANDUM

TO: Distribution

FROM: Benjamin Chin, Director
Division of Facilities Design

DATE: December 5, 2001

SUBJECT: Design Standard (DST) 2001-11, Pre-Conditioned Air and 400 Hertz Systems and Associated Loading Bridge Requirements

The purpose of this design standard is to provide information, guidance, and criteria for the design and construction of Pre-Conditioned (PC) Air and 400 Hertz (Hz) systems and associated loading bridge requirements at Baltimore/Washington International Airport. This design standard is effective immediately. Deviations from this standard must be approved by the Director, Division of Facilities Design.

The requirements of BWI Tenant Directive 005.3, Modifications to Loading Bridges, are hereby incorporated by reference.

BACKGROUND

PC Air

PC Air systems are utilized to provide cooling and heating for aircraft while they are parked at the gates in between flights. Usually, aircraft utilize their on-board Auxiliary Power Units (APU) to heat and cool the aircraft. The APUs are noisy, use fuel, and produce local air pollution at the airport. PC Air units are typically provided to eliminate the need for the APU operation. A PC Air unit consists of a high-pressure air-handling unit usually located on the underside of the loading bridge, with flexible duct connected to the aircraft. The unit is designed to provide both cooling and heating, depending on the season.

There are two types of PC Air systems. The most common is referred to as Point-of-Use (POU). POU PC Air systems include the high pressure air handling unit with compressors and direct expansion refrigerant coils for cooling and electrical coils for heating. All of the heating and cooling equipment components are contained within the POU air-handling unit. The second type of PC Air system is a central system. In a central PC Air system, a similar type air-handling unit

is provided, but the unit only contains the cooling coils and heating coils. The coils at the unit are supplied with chilled water (typically mixed with glycol) in the summer and hot water in the winter. The chilled water and heating water are both produced in a centrally located mechanical room and piped through a loop system to the air handling units.

400 Hz

Ground power for aircraft is produced at 400 Hz so aircraft parked at gates can deactivate their on-board power generation, which usually uses the aircraft's APU. As mentioned above for the PC Air, there are savings in fuel, noise, and air pollution that can be realized by using ground powered 400 Hz. The alternatives for 400 Hz ground power are POU and centrally powered systems.

POU 400 Hz converters are usually solid state devices mounted on the underside of the cab of the passenger boarding bridge. Power at 480 volts, 60 hertz, the airport normal frequency, is brought to the input terminals of the POU converter where it is converted to Direct Current (DC). The DC voltage is then used to produce 400 Hz Alternating Current (AC) at 120 volts. Creation of 400 Hz AC power from DC involves using activation of electronic devices. The electronic devices turning on and off requires and produces multiple frequencies (harmonics) in the input terminals of the converter. These harmonics can produce excess heating in airport distribution system and other harmful effects if not mitigated.

Centrally powered 400 Hz systems use motor-generator sets to produce 400 Hz power. A 60 Hz motor is coupled to a 400 Hz generator which produces output with little or no harmonics. Solid State 400 Hz central converters are also available.

RESPONSIBILITY AND OWNERSHIP

1. An airline (tenant) assigned gates on a preferential use basis will be responsible for the installation and maintenance of PC Air and 400 Hz equipment on its preferential use passenger boarding bridges. Upon terminating the preferential use of the gate, the airline shall remove, at its sole expense, the PC Air and 400 Hz equipment.

2. MAA, which owns and assigns the common use gates, will be responsible for the installation and maintenance of the PC Air and 400 Hz equipment on the common use passenger boarding bridge. MAA will determine the need and timetable for providing this equipment.

DESIGN AND CONSTRUCTION REQUIREMENTS

Loading Bridge Procurement Requirements

Loading bridges shall be specified to readily accept PC Air and 400 Hz equipment. In circumstances where the PC Air and 400 Hz equipment is to be installed at a later date, the loading bridge shall be specified to allow installation of the heaviest POU equipment which satisfies the largest aircraft requirements of that gate.

PC Air and 400 Hz Systems Requirements

1. All PC Air and 400 Hz equipment for preferential use and common use gates shall be designed and constructed to include separate metering, allow separate billing of electrical usage, and connection to MAA's METASYS Building Management System.

2. All PC Air and 400 Hz equipment installed at existing gates and passenger boarding bridges shall be POU units.

3. All PC Air and 400 Hz equipment installed at newly constructed terminals and concourses shall be POU units. Centralized systems will be considered by MAA when the installer can meet all of the following requirements:

    a. Demonstrates through cost benefit analysis the viability of the central system.
    b. Agrees to lease all areas associated with the central system equipment.
    c. Satisfies all concerns related to location of equipment in the building and on the aircraft ramp, line-of-sight issues, aesthetic issues, real estate issues, and operational issues.
    d. For centralized PC Air, the glycol loop piping shall be constructed with soldered or welded joints (not threaded), and will be placed in the lower level only, keeping it out of public spaces. All main supply piping for the glycol loop shall be located in the interior of the building.
    e. For 400 Hz systems, all main supply conduits and wires shall be located in the interior of the building, except for branch conduit and wire needed for connection to the passenger boarding bridge.

4. 400 Hz systems are known to produce harmonics. In order to mitigate the harmonic effects, each piece of 400 Hz equipment must comply with the following performance criteria:

    a. Harmonics content: total harmonic distortion of the input current wave form, as measured at the input terminals, shall be 30% of the lower whenever load is 50% of rated output or higher.

b. Power factor: the power factor measured at the input terminals shall be 90% or higher whenever load is 50% of rated output or higher.

5. All PC Air and 400 Hz units shall be located on the underside of the passenger boarding bridges, and not on the ground. In situations where supporting the equipment from the underside of the passenger boarding bridge is not possible and requires ground mounting, equipment must be located to allow efficient and safe snow removal and ramp operations. All proposed locations of PCAir and 400 Hz ground mounted equipment must be approved by MAA.

6. Installation of the PC Air and 400 Hz equipment on the passenger boarding bridge should not affect the structural integrity, operation, or the warranty of the passenger boarding bridge.

Building Permit Approval

An airline (tenant) installing PC Air and 400 Hz equipment at its preferential use gate(s) will be required to obtain an MAA building permit. Notwithstanding the other requirements of the building permit process, the airline will be required to coordinate the installation of PC Air and 400 Hz equipment with MAA's passenger boarding bridge repair and maintenance contractor. MAA's contractor will review and inspect the installation. In addition, catalog cuts and data for all proposed equipment should be submitted to MAA for review and approval.

If the above requirements conflict with any other codes or regulations, it should be brought immediately to the attention of the Director, Division of Facilities Design.

If the above requirements conflict with any prior MAA agreements, it should be brought immediately to the attention of the MAA Project Manager or the MAA Building Permit Committee for tenant improvements.

If you should have any questions regarding this matter, please contact me at 410-859-7093.

Distribution:

Mr. David Benner (Urban)
Mr. Alek Beri (MAA)
Mr. Ned Carey (MAA)
Mr. Emory Carrigan (MAA)
Mr. Gary Davies (MAA)
Mr. Peter Florian (PB)
Mr. Hamid Gazy (MAA)
Mr. Ray Heverling (MAA)
Mr. Andy Hriz (MAA)
Mr. Ernie Lepore (Baker)
Mr. Ali Logmanni (MAA)
Mr. Steve Lucchesi (URS)
Mr. Chirantan Mukhopadhyay (Parsons)
Mr. Alex Noorani (MAA)
Mr. Charles Olsen (JMT/WSA)
Mr. Stephen Sheehan (MAA)
Mr. Charles Steen (MAA)
Mr. Bill Tsai (MAA)
Mr. Ron Walden/Building Permit Committee (MAA)
Mr. Reginald Weaver (Baker)
Mr. Mike West (MAA)

Parris N. Glendening
Governor
John D. Porcari
Secretary

Maryland Aviation Administration

Beverley K. Swaim-Staley
Acting Executive Director

TO: Distribution

FROM: Benjamin Chin, Director
Division of Facilities Design

DATE: November 5, 2001

SUBJECT: Design Standard (DST) 2001-12
Model Performance Code, COMAR 05.02.01
Maryland Building Performance Standards, COMAR 05.02.07

This Standard amends DST 98-8, dated May 22, 1998, regarding the Model Performance Code, COMAR 05.02.01 and Maryland Building Performance Standards, COMAR 05.02.07. This standard sets forth requirements mandated by COMAR, and is effective immediately. The Model Performance Code and Maryland Building Performance Standards were revised and recently adopted on October 15, 2001. The major revision to the Maryland Performance Code is the adoption of the International Building Code 2000, International Plumbing Code 2000, National Electrical Code 1999 edition, International Residential Code for One and Two Family Dwellings 2000, and International Mechanical Code 2000.

Copies of the following applicable regulations are attached for your reference:

Model Performance Code, COMAR .05.02.01
Maryland Building Performance Standards, COMAR .05.02.07

NOTE: Unless agreements have been made to the contrary, projects which have completed the schematic design phase under the previous code requirements prior to October 15, 2001, shall be exempt from this design standard.

If the above requirements conflict with any other codes or regulations, it should be brought immediately to the attention of the Director, Division of Facilities Design.

If you should have any questions regarding this matter, please contact me at 410-859-7093.

Distribution:

Mr. David Benner (Urban)
Ms. Robin Bowie (MAA)
Ms. Joanne Brooks (MAA)
Mr. Emory Carrigan (MAA)
Captain Woody Cullum (MAA)
Mr. Gary Davies (MAA)
Mr. Peter Florian (PB)
Mr. Ray Heverling (MAA)
Mr. Ernie Lepore (Baker)
Mr. Ali Logmanni (MAA)
Mr. David Lookenbill (JMT/WSA)
Mr. Steve Lucchesi (URS)
Ms. Suzette Moore (MAA)
Mr. Chirantan Mukhopadhyay (Parsons)
Mr. Alex Noorani (MAA)
Mr. Charles Steen (MAA)
Mr. William Tsai (MAA)
Mr. Ron Walden/Building Permit Committee (MAA)
Mr. Reginald Weaver (Baker)

Attachments

cc: Mr. Mike West

05.02.01.00

Title 05 DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

Subtitle 02 BUILDING AND MATERIAL CODES

Chapter 01 Model Performance Code

Authority: Article 83B, §6-101, Annotated Code of Maryland

05.02.01.01

.01 Definitions.

A. In this chapter, the following terms have the meanings indicated.

B. Terms Defined.

(1) "CABO" means Council of American Building Officials, 5203 Leesburg Pike, Suite 708, Falls Church, VA 22041.

(2) "Department" means the Department of Housing and Community Development.

(3) "Industrialized building" has the meaning stated in Article 83B, §6-202(d), Annotated Code of Maryland.

(4) "ICC" means the organization known as the International Code Council.

(5) "Model Performance Code and Model Code" means the Model Performance Code for building construction as detailed in Regulation .03 of this chapter.

(6) "NFPA" means National Fire Protection Association, Inc.

(7) "Person" means any private individual, firm, or corporation and any public officer or agency.

(8) "Regulations" means the regulations as defined in Regulation .02 of this chapter.

(9) "Secretary" means the Secretary of Housing and Community Development, or a designated representative.

(10) "State certified inspector" means an individual qualified by reason of experience, training, and/or examination, to inspect buildings for compliance with the State Model Performance Code, and certified pursuant to Regulation .07 of this chapter.

05.02.01.02

.02 General.

A. Title. These regulations shall be known and may be cited as the Maryland Model Performance Code Regulations. Except as otherwise indicated, "regulations" as used here shall mean the Maryland Model Performance Code Regulations.

B. Application. These regulations may not be binding upon any subdivision of the State unless the subdivision adopts the Model Performance Code, by law, ordinance, or resolution of its governing body referring to the Model Performance Code.

C. Equivalency. Nothing in the Model Performance Code is intended to prevent the use of systems, methods, or devices of equivalent or superior quality, strength, fire resistance, effectiveness, durability, and safety to those prescribed by the Model Code, providing technical documentation is submitted to the authority having jurisdiction to demonstrate equivalency, and the system, method, or device is approved for the intended purpose.

'05.02.01.02-1

.02-1 Incorporation by Reference.

A. In this chapter, the following documents are incorporated by reference, except as modified in Regulation .03 of this chapter.

B. Documents Incorporated.

(1) International Building Code 2000 (International Code Council, 5203 Leesburg Pike, Suite 708, Falls Church, Virginia 22041-3401).

(2) International Plumbing Code 2000 (International Code Council, 5203 Leesburg Pike, Suite 708, Falls Church, Virginia 22041-3401).

(3) National Electrical Code, 1999 Edition (National Fire Protection Association, Batterymarch Park, Quincy, Massachusetts 02269).

(4) International Residential Code for One- and Two-Family Dwellings 2000 (International Code Council, 5203 Leesburg Pike, Suite 708, Falls Church, Virginia 22041-3401).

(5) International Mechanical Code 2000 (International Code Council, 5203 Leesburg Pike, Suite 708, Falls Church, Virginia 22041-3401).

05.02.01.03

.03 Model Performance Code.

A. The standards incorporated by reference in Regulation .02-1 of this chapter, and modified as follows, constitute the Model Performance Code for building construction in the State:

(1) For industrialized building construction:

(a) International Building Code with modifications related to building standards, as adopted under COMAR 05.02.07.04,

(b) International Plumbing Code with the following modification: Delete all of §404.0 — the subject matter is covered by Maryland Accessibility Code, COMAR 05.02.02,

(c) National Electrical Code,

(d) International Mechanical Code, and

(e) International Residential Code for One- and Two-Family Dwellings with modifications related to building standards, as adopted under COMAR 05.02.07.04;

(2) For all other building construction:

(a) The International Building Code with modifications related to building standards, as adopted under COMAR 05.02.07.04,

(b) Plumbing Code requirements adopted under Business Occupations and Professions Article, §§12-101—12-702, Annotated Code of Maryland,

(c) National Electrical Code,

(d) International Mechanical Code, and

(e) The International Residential Code for One- and Two-Family Dwellings with modifications related to building standards, as adopted under COMAR 05.02.07.04.

B. The incorporated documents listed above are on deposit in the following public libraries:

(1) Maryland Department of Legislative Reference Library, 90 State Circle, Annapolis, MD 21401, Monday through Friday, 8:30 am—4:30 pm;

(2) State Library Resource Center, Enoch Pratt Central, Maryland Department, Cathedral Street, Baltimore, MD 21201, Monday through Thursday, 9 am—9 pm; Friday and Saturday, 9 am—5 pm; Sunday (October—May), 1 pm—5 pm;

(3) Frostburg State University Library, Midlothian Road and Center Street, Frostburg, MD 21532, Monday through Thursday, 3:30—12 midnight; Friday, 3:30—10 pm; Saturday, 8:30 am—5 pm; Sunday, 1 pm—12 midnight;

(4) Southern Maryland Regional Library, Charles County Public Library Building, Charles and Garrett Streets, La Plata, MD 20642, Monday through Thursday, 9 am—8 pm; Friday, 12 pm—5 pm; Saturday (during school year), 9 am—5 pm;

(5) Salisbury State University Library, College and Camden Avenues, Salisbury, MD 21801, Monday—Friday, 8 am—10 pm; Saturday, 10 am—10 pm; Sunday, 12 pm—10 pm (library closed when school not in session);

(6) Library of Congress, Gifts and Exchanges Division, 10 First Street S.E., Washington, DC 20540, Monday through Friday, 8 am—4:30 pm;

(7) Division of State Documents, 1700 Margaret Avenue, Annapolis, MD 21401, Monday through Friday, 9 am—5 pm;

(8) State Law Library, Courts of Appeal Building, 361 Rowe Boulevard, Annapolis, MD 21401, Monday, Wednesday, and Friday, 8:30 am—4:30 pm; Tuesday and Thursday, 8:30 am—9 pm; Saturday, 9 am—4 pm.

05.02.01.04

.04 Modifications to Model Performance Code.

A. As stated in Regulation .02B, the Model Performance Code is not binding on any subdivision of the State unless specifically adopted by it. A copy of the law, ordinance, or resolution adopting the Model Code shall be sent by the governing body of the adopting subdivision to the Secretary. Copies of all subsequent laws, ordinances, or resolutions pertaining to the Model Code shall similarly be sent by the governing body to the Secretary.

B. After adoption by a subdivision, alteration or modification of the Model Code is prohibited without prior concurrence of the Secretary.

C. The Department will regularly consult with local officials to review the application and effectiveness of the Model Code in each adopting subdivision.

D. Requests for Changes.

(1) Requests for changes, modifications, or exceptions to make the Model Code more effective and useful in any subdivision shall be submitted in writing by certified mail, return receipt requested, to the Secretary by the appropriate authority in the subdivision, together with the reasons for the request.

(2) Upon receipt of a request, the Secretary may:

(a) Concur with it.

(b) Take no action for a period of 30 days after receipt of the request, which shall be deemed concurrence.

(c) Refer the request to the Advisory Commission on Industrialized Building and Mobile Homes, or to any subcommittee of it, for advice on the request. The Secretary shall notify the requesting subdivision of the referral. The time for decision by the Secretary shall be extended for 90 days from the date of the referral.

(d) Deny the request, either before or after referral to the Advisory Commission, so notifying the requesting subdivision in writing. The Secretary may utilize the 30-day and 90-day periods provided hereby for informal consultation with the requesting subdivision and with any other individuals or groups.

(3) Concurrence with requests for special Model Code provisions to meet local conditions will not be unreasonably withheld.

E. The administrative sections of Article 1 of the 2000 International Building Code are entirely administrative and may require alteration to adapt them to local use. Alterations to these sections of Article 1 are therefore excluded from the requirement of concurrence by the Secretary. However, any alterations shall be forwarded to the Secretary for the Department's records.

05.02.01.05

.05 Appeals of Code Interpretations or Applications.

A. If a subdivision provides for a body and procedures to hear building appeals, any person aggrieved by any application or interpretation of the Model Code may obtain review under the procedures.

B. Review by this Department shall be granted:

(1) If requested by the appeals body referred to in § A.

(2) If requested by the aggrieved party before commencement of appeal procedures provided by the subdivision. In that case, the Director of Codes Administration may, in his discretion, decline to review the question of interpretation or application and remand the question to the subdivision, because the question is of insufficient importance or can be resolved more readily at a local level, or for other reasons. The action is not reviewable.

(3) When a building appeals procedure is not provided by the subdivision.

C. An aggrieved person requesting review by the Department of an application or interpretation of the Model Code shall do so in writing, addressed to the Director of Codes Administration in the Department, together with a full statement of the circumstances and the reasons for challenge.

D. The Director of Codes Administration will normally refer the question of interpretation or application to ICC or NFPA, as the case may be, for answer by their respective interpretation services. The Director is not required to refer the question to ICC or NFPA. The Director shall notify the parties of the referral.

E. Within 10 days from the receipt by the Director of Codes Administration of the request for review, or within 10 days from receipt by the Director of an answer from ICC or NFPA when the question has been referred, the Director shall notify the parties of the Director's decision, with a statement of the reasons for it, including a copy of any communication from ICC or NFPA.

F. Review of an adverse decision of the Director of Codes Administration shall be by appeal to the Secretary, filed within 30 days after issuance of the decision by the Director.

05.02.01.06

.06 Code Improvements.

Any recommendations for changes to improve these regulations should be submitted to the Secretary with an explanation of the modification desired.

05.02.01.07

.07 Training and Certification of Building Inspectors.

In order to assist local jurisdictions to effectively administer the Model Code, the Department has the responsibility to train and certify building code enforcement officials in any jurisdiction where the Model Performance Code is in effect.

05.02.01.9999

Administrative History

Effective date: April, 1973

Regulation .01 amended effective December 30, 1985 (12:26 Md. R. 2542)

Regulation .02C adopted effective December 30, 1985 (12:26 Md. R. 2542)

Regulation .03 amended effective August 6, 1975 (2:17 Md. R. 1188); March 3, 1976 (3:5 Md. R. 295); June 29, 1979 (6:13 Md. R. 1124); March 1, 1983 (10:3 Md. R. 208); December 30, 1985 (12:26 Md. R. 2542)

Regulations .04 and .05 amended effective November 3, 1978 (5:22 Md. R. 1671)

Regulations .04E and .05C amended effective December 30, 1985 (12:26 Md. R. 2542)

Regulation .07A amended effective December 30, 1985 (12:26 Md. R. 2542)

Regulation .07B amended effective August 6, 1975 (2:17 Md. R. 1188) and November 3, 1978 (5:22 Md. R. 1671); repealed effective December 30, 1985 (12:26 Md. R. 2542)

Chapter recodified from COMAR 05.01.03 to COMAR 05.02.01

Regulation .01B amended effective June 1, 1988 (15:11 Md. R. 1329); July 28, 1997 (24:15 Md. R. 1061); January 12, 2001 (28:1 Md. R. 25)

Regulation .02-1 adopted effective July 28, 1997 (24:15 Md. R. 1061)

Regulation .02-1B amended effective October 15, 2001 (28:1 Md. R. 25)

Regulation .03 amended effective June 1, 1988 (15:11 Md. R. 1329); July 22, 1991 (18:14 Md. R. 1609); July 28, 1997 (24:15 Md. R. 1061); October 15, 2001 (28:1 Md. R. 25)

Regulation .04E amended effective June 1, 1988 (15:11 Md. R. 1329); October 15, 2001 (28:1 Md. R. 25)

Regulation .05D, E amended effective October 15, 2001 (28:1 Md. R. 25)

Title 05
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
Subtitle 02 BUILDING AND MATERIAL CODES

Chapter 07 Maryland Building Performance Standards
Authority: Article 83B, Sec. 6-401--6-406, Annotated Code of Maryland

.01 Title.

These regulations shall be known and may be cited as the Maryland Building Performance Standards Regulations.

.02 Purpose and Scope.

The purpose of this chapter is to adopt the International Building Code (IBC), as may be modified by the Department, as the Maryland Building Performance Standards, which will provide reasonable protection to the public against hazards to life, health, and property, and to establish the policies and procedures associated with the operation of a data base that contains the Standards, the local amendments, and other related information.

.03 Definitions.

A. In this chapter, the following terms have the meanings indicated.

B. Terms Defined.

(1) "Building" has the meaning and interpretation set forth in the International Building Code.

(2) "Codes Administration" means the Maryland Codes Administration, an administration within the Department.

(3) "County" means any of the 23 counties of the State and the Mayor and City Council of Baltimore.

(4) "Department" means the Department of Housing and Community Development of Maryland.

(5) "IBC" means the International Building Code, as incorporated by reference in this chapter.

(6) "ICC" means the organization known as the International Code Council.

(7) "Local amendment" means:

(a) An amendment to the standards that has been adopted by a local jurisdiction in accordance with applicable local laws and regulations; and

(b) A copy of the amendment has been provided to the Department for inclusion in the data base within the following time period:

(i) At least 15 days before the effective date of the amendment, or

(ii) In the case of an emergency adoption of an amendment, within 5 days of the emergency amendment's adoption.

(8) "Local jurisdiction" means the county or municipality responsible for implementation and enforcement of the Maryland Building Performance Standards.

(9) "MBPS" or "Standards" means the Maryland Building Performance Standards established by these regulations.

(10) "Municipality" means a municipal corporation subject to the provisions of Article XI-E of the State Constitution.

(11) "Person" means an individual, corporation, partnership, association, or any other legal entity authorized to do business in the State.

(12) "Standard Building Code" means the Standard Building Code issued by the Southern Building Code Congress International, Inc. The Standard Building Code is not the standard incorporated by reference in these regulations.

(13) "Structure" has the meaning and interpretation set forth in the IBC.

.04 Incorporation by Reference.

A. The International Building Code, with the modifications found in §B of this regulation, is incorporated by reference under COMAR 05.02.01.02-1B (1).

B. Modifications to the International Building Code.

(1) Chapter 1. Add note to Chapter 1 of the IBC: Local jurisdictions are responsible for the implementation and enforcement of the Maryland Building Performance Standards. Refer to each local jurisdiction for local amendments to Chapter 1 of the IBC. Each local jurisdiction having authority shall establish, on or before the application date in Regulation .06 of this chapter, implementation and enforcement procedures that include:

(a) Review and acceptance of appropriate plans;

(b) Issuance of building permits;
(c) Inspection of the work authorized by the building permits; and
(d) Issuance of use and occupancy certificates.

(2) Chapter 1. Delete the Section 101.2.1 Appendices and replace with the following:
101.2.1 Appendices: Provisions in Appendix C, GROUP U — Agricultural Buildings; Appendix F, Rodent Proofing; Appendix G, Flood Resistant Construction; Appendix H, Sign; and Appendix I, Patio Covers, are adopted as part of the IBC. Provisions in Appendix A, Employee Qualifications; Appendix B, Board Appeals; Appendix D, Fire Districts; Appendix E, Supplementary Accessibility Requirements; and Appendix J, Supplementary Accessibility Requirements for Qualified Historic Buildings and Facilities, do not apply unless specifically adopted by authorities having jurisdiction.

(3) Chapter 5. Delete the first paragraph of Section 504.2 Automatic sprinkler systems, and replace with the following:

504.2 Automatic sprinkler increase. For buildings protected throughout with an approved automatic sprinkler system installed in accordance with Section 903.3.1.1, the value specified in Table 503 for maximum height is increased by 20 feet (6096 mm), and the maximum number of stories is increased by one story. When the building is equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.2 for Groups R-1, R-2, and R-4, and in accordance with Section 903.3.1.3 for Group R-3, the building height limitations specified in Table 503 are increased one story and 20 feet (6096 mm) but may not exceed a height of four stories and 60 feet (18288 mm) above the grade plane. These increases are permitted in addition to the area increase.

(4) Chapter 7. Delete item 6 of Exceptions in Section 705.6 Vertical continuity, and replace with the following:

6. In Groups R-2 and R-3 as applicable in Section 101.2, walls are permitted to terminate at the roof sheathing or deck in Types III, IV, and V construction, if:

6.1 The roof sheathing or deck is constructed of approved noncombustible materials or of fire-retardant-treated wood for a distance of 4 feet (1220 mm) on both sides of the wall, or

6.2 The building is equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2 for Group R-2, and 903.3.1.1, 903.3.1.2, or 903.3.1.3 for Group R-3, or

6.3 All of the following:

6.3.1 The roof is protected with 5/8inch (15.9 mm) Type X gypsum board directly beneath the underside of the roof sheathing or deck, supported by a minimum of 2-inch (51 mm) ledgers attached to the sides of the roof framing members, for a minimum distance of 4 feet (1220 mm)

on both sides of the fire wall, and

6.3.2 Openings in the roof are not located within 4 feet (1220 mm) of the fire wall, and

6.3.3 The roof is covered with a minimum Class C roof covering.

(5) Chapter 9. Add note to Section 901.1 Scope: Fire protection system requirements of Chapter 9 may be concurrently covered in the State Fire Code, Article 38A, §§3 — 67, and COMAR 29.06.01. The State Fire Code is enforced by the State Fire Marshal or authorized fire official.

(6) Chapter10.

(a) Delete Exception 5 in Section 1003.3.3.3, and replace with the following:

In occupancies in Group R-3 as applicable in Section 101.2, within dwelling units in occupancies in Group R-2, and in occupancies in Group U which are accessory to an occupancy in Group R-3, the maximum riser height shall be 8-1/4 inches (210 mm) and the minimum tread depth shall be 9 inches (229 mm). A nosing not less than 3/4inch (19 mm) but not more than 1-1/4 inches (32 mm) shall be provided on stairways with solid risers where the tread depth is less than 11 inches (279 mm).

(b) Add new exception to Section 1003.3.3.11.3 as follows: Exception: For occupancies in Group R-3 as applicable in Section 101.2 and within dwelling units in occupancies Group R-2 as applicable in Section 101.2, the grip portion of handrails shall have a circular cross section of 1.25 inches (32 mm) minimum to 2.625 inches (66.7 mm) maximum. Other shapes that provide an equivalent grasping surface are permissible. Edges shall have a minimum radius of .125 inches (3.2 mm).

(c) Add note to Section 1001.1 General: Means of egress requirements of Chapter 10 may be concurrently covered in the State Fire Code, Article 38A, §§3 — 67, and COMAR 29.06.01. The State Fire Code is enforced by the State Fire Marshal or authorized official.

(7) Chapter 11. Chapter 11 of the IBC related to accessability requirements is hereby replaced with the Maryland Accessibility Code set forth in COMAR 05.02.02.

(8) Chapter 13. Add note to Section 1301.1 Scope: The requirements concerning energy conservation for buildings and structures are governed by Energy Conservation Building Standards, Public Utility Companies Article, §§7-401 — 7-408, Annotated Code of Maryland, as amended. In the event of a conflict between the Annotated Code of Maryland and the IBC, the requirements of the Public Utility Companies Article, §§7-401 — 7-408, Annotated Code of Maryland, prevail.

(9) The requirements for safety glazing set forth in Article 83B, §§6-301 — 6-306, Annotated Code of Maryland, are in addition to Chapter 24, Section 2406 of the IBC related to safety glazing. In the event of a conflict between Chapter 24 of the IBC and the Annotated Code of Maryland, the requirements of the Annotated Code of Maryland prevail.

(10) Chapter 27. ELECTRICAL. Add note to section 2701.1 Scope: The subject matter of this chapter is not within the scope of the Maryland Building Performance Standards. For the applicable electrical requirements, refer to the local electrical code and the National Electrical Code as adopted and enforced by the State Fire Marshal, authorized fire officials, or building officials pursuant to the provisions of Article 38A, §§3 and 58 — 66, Annotated Code of Maryland.

(11) Chapter 28. MECHANICAL SYSTEMS. Add note to section 2801.1 Scope:
The subject matter of this chapter is not within the scope of the Maryland Building Performance Standards. For the applicable requirements concerning the mechanical systems, refer to the local mechanical code and the mechanical code adopted pursuant to the provisions of Business Regulation Article, § 9A-205, Annotated Code of Maryland,

(12) Chapter 29. PLUMBING SYSTEMS. Add note to section 2901.1 Scope:
The subject matter of this chapter is not within the scope of the Maryland Building Performance Standards. For the applicable requirements concerning the plumbing systems, refer to the local plumbing code and the plumbing code adopted pursuant to the provisions of Business Occupations and Professions Article, Title 12, Annotated Code of Maryland,

13) Chapter 30. The provisions of Chapter 30 of the IBC relate to elevators and conveying systems and are in addition to and not instead of the requirements set forth in Article 89, §49B, Annotated Code of Maryland. In the event of a conflict between the IBC and the Annotated Code of Maryland, the provisions of the Annotated Code of Maryland prevail.

(14) Chapter 34. Upon the adoption of the Maryland Building Rehabilitation Code by the Department under Article 83B, § 6-503, Annotated Code of Maryland, Chapter 34, Existing Structures of the IBC will be deleted and no longer applicable. The provisions of Chapter 34, Existing Structures, are applicable until the adoption of the Maryland Building Rehabilitation Code by the Department.

(15) Chapter 35. Delete the first paragraph of Chapter 35, and replace with the following paragraph:
The Chapter lists the standards that are referenced in various sections of this document. The standards are listed herein by the promulgating agency of the standard, the standard identification, the effective date and title, and the section or sections of this document that reference the standard. The application of the referenced standards shall be as specified in Section 102.4.

C. The 2000 International Residential Code for One and Two-Family Dwellings, with the following modifications, is incorporated by reference under COMAR 05.02.01.02-1B(4):

(1) Chapter 3. Delete Section R303.4.1, and replace with the following:
R303.4.1 Light activation. The control for activation of the required interior stairway lighting shall be accessible at the top and bottom of each stairway without traversing any risers. The illumination of the exterior stairways shall be controlled from inside the dwelling unit.

Exceptions:
1. Lights that are continuously illuminated or automatically controlled;
2. Interior stairways consisting of less than six risers.

(2) Chapter 3. Delete Section R310.1, and replace with the following:
R310.1 Emergency escape and rescue required. Every sleeping room shall have at least one openable emergency escape and rescue window or exterior door opening for emergency escape and rescue. If openings are provided as a means of escape and rescue they shall have a sill height of not more than 44 inches (1118 mm) above the adjacent interior standing surface. If a door opening having a threshold below the adjacent ground elevation serves as an emergency escape and rescue opening and is provided with a bulkhead enclosure, the bulkhead enclosure shall comply with Section R310.3. The net clear opening dimensions required by this section shall be obtained by the normal operation of the window or door opening from the inside. Escape and rescue window openings with a finished sill height below the adjacent ground elevation shall be provided with a window well in accordance with Section R310.2.

(3) Chapter 3. Delete the first exception of Section R312.1.2, and replace with the following:
R312.1.2 Landings at Doors. There shall be a floor or landing on each side of each exterior door.
Exception: If a stairway of two or fewer risers is located on the exterior side of a door, other than the required exit door, a landing is not required for the exterior side of the door.

(4) Chapter 3. Delete Section R314.2, Treads and risers, and replace with the following:

R314.2 Treads and risers. The maximum riser height shall be 8-1/4 inches (210 mm) and the minimum tread depth shall be 9 inches (299 mm). The riser height shall be measured vertically between leading edges of the adjacent treads. The tread depth shall be measured horizontally between the vertical planes of the foremost projection of adjacent treads and at a right angle to the tread's leading edge. The walking face of treads and landings of a stairway shall be sloped no steeper than one unit vertical in 48 units horizontal (2 percent slope). The greatest riser height within any flight of stairs shall not exceed the smallest by more than 3/8inch (9.5 mm). The greatest tread depth within any flight of stairs shall not exceed the smallest by more than 3/8inch (9.5 mm).

(5) Chapter 3. Delete Exception 1 of the R314.2.1 Profile, and replace with the following:

1. A nosing is not required if the tread depth is a minimum of 10 inches (254 mm).

(6) Chapter 3. Delete Section R315.1, and replace with the following:
R315.1 Handrails. Handrails shall be provided on at least one side of stairways consisting of three or more risers. Handrails shall have a minimum height of 34 inches (864 mm) and a maximum height of 38 inches (965 mm) measured vertically from the nosing of the treads. All required handrails shall be continuous the full length of the stairs from a point directly above the top riser to a point directly above the lowest riser of the stairway. The ends of the handrail shall be returned into a wall or shall terminate in newel posts or safety terminals. A minimum clear space of 1-1/2 inches (38 mm) shall be provided between the wall and the handrail.

Exceptions:

1. Handrails shall be permitted to be interrupted by a newel post at a turn.
2. The use of a volute, turnout, or starting easing shall be allowed over the lowest tread.

(7) Chapter 3. Delete Section R321.3.2, and replace with the following:
R321.3.2 Membrane penetrations. Membrane penetrations shall comply with Section R321.3.1. If walls are required to have a minimum 1-hour fire resistance rating, recessed light fixtures shall be so installed that the required fire resistance will not be reduced.

Exceptions:

1. Steel electrical boxes that do not exceed 16 square inches (0.0103 square meters) in area if the total area of the openings does not exceed 100 square inches (0.0645) for any 100 square feet (9.29 square meters) of wall area. Outlet boxes on opposite sides of the wall shall be separated as follows:
   1.1 By a horizontal distance of not less than 24 inches (610 mm), or
   1.2 By a horizontal distance of not less than the depth of the wall cavity when the wall cavity is filled with cellulose loose-fill or mineral fiber insulation, or
   1.3 By solid fire blocking in accordance with Section R602.8, or
   1.4 By other listed materials and methods.

2. Membrane penetrations for listed electrical outlet boxes of any materials are permitted if the boxes have been tested for use in fire resistance rated assemblies and are installed in accordance with the instructions included in the listing.

3. The annular space created by the penetration of a fire sprinkler if it is covered by a metal escutcheon plate.

(8) MECHANICAL, Chapter 12. MECHANICAL ADMINISTRATION. Add note to section M1201.1 Scope: The subject matter of the chapters 12 through 24 is not within the scope of the Maryland Building Performance Standards. For the applicable requirements concerning the mechanical systems, refer to the local mechanical code and the mechanical code adopted pursuant to the provisions of Business Regulation Article, § 9A-205, Annotated Code of Maryland,

(9) PLUMBING, Chapter 25. PLUMBING ADMINISTRATION. Add note to section P2501.1 Scope: The subject matter of

the chapters 25 through 32 is not within the scope of the Maryland Building Performance Standards. For the applicable requirements concerning the plumbing systems, refer to the local plumbing code and the plumbing code adopted pursuant to the provisions of Business Occupations and Professions Article, Title 12, Annotated Code of Maryland,

(10) ELECTRICAL. Chapter 33. GENERAL REQUIREMENTS. Add note to section E 3301.1 Applicability: The subject matter of the chapters 33 through 42 is not within the scope of the Maryland Building Performance Standards. For the applicable electrical requirements, refer to the local electrical code and the National Electrical Code as adopted and enforced by the State Fire Marshal, authorized fire officials, or building officials pursuant to the provisions of Article 38A, §§3 and 58 — 66, Annotated Code of Maryland.

.05 Maryland Building Performance Standards.

A. The IBC, as modified in Regulation .04 of this chapter, shall constitute the Maryland Building Performance Standards.

B. Local Amendments.

(1) Each local jurisdiction may by local amendment modify the provisions of the Standards to address conditions peculiar to the local jurisdiction's community.

(2) If a local jurisdiction adopts a local amendment, the Standards as amended by the local jurisdiction shall apply in that local jurisdiction.

(3) If a local amendment conflicts with the provisions of the Standards, the provisions of the local amendment shall prevail in the local jurisdiction.

(4) Local amendments shall be submitted to the Department:
(a) At least 15 days before the effective date of the amendment; or
(b) In the case of an emergency adoption of a local amendment, within 5 days after the local amendment's adoption.

.06 Application of the Standards.

The Standards shall apply to all buildings and structures within the State for which a building permit application is received by a local jurisdiction, except:

A. In counties or municipalities that have adopted the Standard Building Code as of October 1, 1993, the Standards shall apply to all buildings and structures for which a building permit application is received by the local jurisdiction on or after August 1, 2001, and

B. A local jurisdiction may implement and enforce the Standards and any local amendments on or before the dates specified in this regulation.

.07 Utilization of Standards.

A. Central Data Base.

(1) The Department shall establish an automated central data base which shall contain or provide a link to access the following information:

(a) The Standards;

(b) Local amendments;

(c) State Fire Prevention Code and amendments to the State Fire Prevention Code promulgated by the State Fire Prevention Commission, or the State Fire Prevention Commission's successor;

(d) The fire codes adopted by the local jurisdictions and any amendments to them;

(e) The electrical code required under Article 38A, Sec. 59 and 60, Annotated Code of Maryland;

(f) Local amendments to the electrical code required under Article 38A, Sec. 59 and 60, Annotated Code of Maryland;

(g) The energy code required under Public Utility Companies Article, §7-401, Annotated Code of Maryland;

(h) Local code provisions that are more restrictive than the energy code required under Public Utility Companies Article, §7-401,Annotated Code of Maryland;

(i) The Maryland Building Rehabilitation Code; and

(j) Local amendments to the Maryland Building Rehabilitation Code.

(2) The Department may compile and include in the central data base:

(a) Any information provided by the local jurisdiction on the implementation and interpretation of the Standards by the local jurisdiction;

(b) Interim amendments to the IBC, including subsequent printing of the most recent edition; and

(c) Any other information the Department determines is relevant to the construction or rehabilitation of buildings and structures in the State.

(3) Software.

(a) The Department shall be responsible for the development and distribution among the local jurisdictions of software related to the operation of the central data base.

(b) Any software developed by or on behalf of the Department shall be owned by the Department, or the developer of the software.

(c) Neither the local jurisdiction nor any other user acquires any proprietary right in any of the ICC copyrighted material or ICC trademark contained in the software.

(4) Sublicense of ICC Copyrighted Materials and Trademarks.

(a) The information in the Standards is developed from the copyrighted IBC and is reproduced with ICC's permission.

(b) The copyrighted information is the sole and exclusive property of the ICC and may not be printed out except that it may be transferred to a printer or computer disk using the print screen key or its equivalent.

(c) The copyrighted material and the ICC trademark used in the data base may be used only on one personal computer and may not be connected to a network of personal computers unless there is a license for each personal computer.

(d) The ICC makes no warranties, guarantees, conditions, covenants, or representations as to fitness for a particular purpose, or any other attribute, whether express or implied (in law or in fact), oral or written, of the copyrighted ICC property contained in the data base.

(e) If any user fails to comply with the provisions of this regulation, the ICC or the Department, in their discretion, may require the user to discontinue use of the data base.

B. Voluntary Dispute Resolution.

(1) Upon the written request of a local jurisdiction and any person aggrieved by the Standards or any local amendments to

them, the Codes Administration shall conduct an informal mediation or conciliation with the local jurisdiction and any person aggrieved by the Standards or any local amendments to them.

(2) The aggrieved person and the local jurisdiction shall each submit to the Codes Administration a written statement of the dispute and include any related material either party feels is appropriate. In addition to the written statement, either party may request a meeting with the other party and the Codes Administration to discuss the dispute.

(3) Within the latter to occur of 30 days of receipt of both statements of the disputed and any related material, or 30 days after a meeting conducted in accordance with Sec. B(2) of this regulation, the Director of the Codes Administration shall issue a decision on behalf of the Department regarding resolution of the dispute.

(4) Within 15 days of the date of the decision of the Director of the Codes Administration, either party may appeal to the Secretary of the Department or the Secretary's designee, in writing. The Secretary of the Department or the Secretary's designee shall respond to the appeal within 15 days of receipt of the appeal.

(5) Neither a decision by the Codes Administration nor the Department under Sec. B(3) or (4) of this regulation shall constitute a contested case proceeding under the Maryland Administrative Procedure Act and is not subject to the provisions of COMAR 05.01.01.

.08 Enforcement of the Standards.

Enforcement of the Standards shall be the responsibility of the local jurisdiction in which the building or structure is located.

.09 Enforcement of State Fire Code Requirements.

There is a State Fire Code, Article 38A, Sec. 3--67, Annotated Code of Maryland, and COMAR 12.03.01, which requires enforcement of the Fire Code by the State Fire Marshal or authorized fire official.

Administrative History
Effective date:
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Regulation .03B amended effective April 7, 1997 (24:7 Md. R. 552)
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