



# TOWN OF ORLEANS

19 SCHOOL ROAD ORLEANS MASSACHUSETTS 02653-3699

Telephone (508) 240-3700 — Fax (508) 240-3703

<http://www.town.orleans.ma.us>

BOARD OF  
SELECTMEN

TOWN  
ADMINISTRATOR

TO:

Ann Herrick

FROM:

Mark Budnick Highway Dept. MGR.  
Town of Orleans, Massachusetts

RE:

NPDES PIT Small MSA General Permit  
Annual Report No 4

DATE:

4/30/07

FAX TO:

1-617-918-0560

# OF PAGES:

29

NOTES:

---

---

---

---

---

---

---

---

---

---



# TOWN OF ORLEANS

19 SCHOOL ROAD • ORLEANS, MA 02653  
TEL. 508-240-3790 • FAX 508-240-3792

**MARK J. BUDNICK**  
MANAGER

April 27, 2007

U.S. Environmental Protection Agency  
One Congress Street  
Suite 1100 (SEW)  
Boston, MA 02114-2023  
Attention: Thelma Murphy

Dear Ms. Murphy,

Enclosed you will find enclosed the Town of Orleans NPDES PII Small MS4 General Permit Annual Report No. 4 for March 06- March 07.

Please contact me directly with any questions or comments.

Sincerely,

Mark J. Budnick  
Orleans Highway Department/Transfer Station

cc: John Kelly, Town Administrator

**Municipality/Organization:** Orleans, MA

---

**EPA NPDES Permit Number:** MAR041146

---

**MaDEP Transmittal Number:** W-035744

---

**Annual Report Number  
& Reporting Period:** No. 4: March 2006-March 2007

---

## NPDES PII Small MS4 General Permit Annual Report

### Part I. General Information

**Contact Person:** Mark Budnick **Title:** Highway Dept. Superintendent

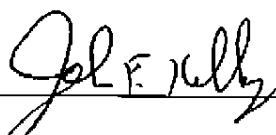
---

**Telephone #:** 508-240-3790 **Email:** mbudnick@town.orleans.ma.us

---

#### Certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

**Signature:**  \_\_\_\_\_

**Printed Name:** John F. Kelly \_\_\_\_\_

**Title:** Town Administrator \_\_\_\_\_

**Date:** 04/30/07 \_\_\_\_\_

**Part II. Self-Assessment**

**Part III. Summary of Minimum Control Measures**

**1. Public Education and Outreach**

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 3 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 4
A.1 Revised	Develop and Broadcast VIA PA CATV Stormwater Video	Mark Budnick, Highway Dept.	One per year – in conjunction with County Group	No progress.	
A.2 Revised	Household Hazardous Waste Control	Mark Budnick, Highway Dept.	Annual HHW Collection	Collection day held September 16, 2006 in Orleans. Town residents can also participate in Eastham's HHW collection day, which was held on July 15, 2006.	Annual collection day.
A.3 Revised	Education Flyers	Mark Budnick, Highway Dept.	Distribute 2 per year at Transfer Station	No progress.	Distribute at transfer station.
A.4 Revised	Web Page Information	Mark Budnick, Highway Dept.; Peter VanDyck, IT Coordinator	Short Article – one per year	No progress.	Provide links to stormwater related sites on Town website.
Revised					

**1a. Additions**


**2. Public Involvement and Participation**

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 3 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 4
B.1 Revised	Water Quality Monitoring Program	Water Quality Task Force	Ongoing for past ten years	Water quality monitoring has been performed over the year. Task force meets once per month.	Continue monitoring water quality
B.2 Revised	Estuaries Program	George Meservey, Planning Dept.		MEP Report released for Pleasant Bay. The Town is in the process of developing a comprehensive wastewater management plan (CWMP) to achieve compliance with TMDLs stated in report.	Reports for Nauset Estuary and Cape Cod Bay creeks expected in July 2007. Work on CWMP is continuing.
Revised					

**2a. Additions**


**3. Illicit Discharge Detection and Elimination**

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 3 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 4
C.1 Revised	Stormwater System Mapping and Database Development	Mark Budnick, Highway Dept.; Americorps	Comprehensive town-wide survey by year 2 as funding allows	Mapping by Americorps volunteers was completed in Year 1. Application for grant money to assist in database development was not received.	
C.2 Revised	Review Existing By-Laws	George Mcscrvey, Planning Dept.	Review existing by-laws and adopt stormwater ordinance FY06.	No progress.	
C.3 Revised	Identify and Document Illicit Connections	Mark Budnick, Highway Dept.	Review C.1 results, finalize database by Year 4.	Ongoing. Illicit connections are noted during annual catchbasin cleaning. Identified connections are remediated.	Continue review of mapping results and identification during catchbasin cleaning.
Revised					
Revised					
Revised					

**3a. Additions**


**4. Construction Site Stormwater Runoff Control**

<b>BMP ID #</b>	<b>BMP Description</b>	<b>Responsible Dept./Person Name</b>	<b>Measurable Goal(s)</b>	<b>Progress on Goal(s) – Permit Year 3</b> (Reliance on non-municipal partners indicated, if any)	<b>Planned Activities – Permit Year 4</b>
D.1	Review Existing By-Laws	George Meservey, Planning Dept.	Review existing by-laws and adopt construction ordinance FY06	Sediment control requirements for construction project are listed in the Town's draft Street Access Regulations, which are currently awaiting a public hearing with Board of Selectmen.	Anticipate adoption of ordinance by selectmen.
Revised					
D.2	Propose amendments and articles at Town Meeting	George Meservey, Planning Dept.	Adoption of ordinance.	Drafted ordinance.	Anticipate adoption of ordinance by selectmen.
Revised					

**4a. Additions**


**5. Post-Construction Stormwater Management in New Development and Redevelopment**

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 3 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 4
E.1 Revised	Review Existing By-Laws	George Meservey, Planning Dept.	Review existing by-laws and adopt Runoff Control Ordinance FY06	Sediment control requirements for construction project are listed in the Town's draft Street Access Regulations, which are currently awaiting a public hearing with Board of Selectmen.	Anticipate adoption of ordinance by selectmen.
E.2 Revised	Propose amendments and articles at Town Meeting	George Meservey, Planning Dept.		Drafted ordinance.	Anticipate adoption of ordinance by selectmen.
Revised					

**5a. Additions**


**6. Pollution Prevention and Good Housekeeping in Municipal Operations**

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 3 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 4
F.1 Revised	Street Sweeping	Mark Budnick, Highway Dept.	Annual winter cleanup and as-necessary	All streets were swept at least once, some more than once. 414 tons of sand was collected and documented at the Transfer Station.	Annual street sweeping. The Town is in the process of applying for a Beneficial Use Determination for using street sweepings in berm construction at the landfill.
F.2 Revised	Catchbasin Cleaning	Mark Budnick, Highway Dept.	Clean all basins in town on yearly rotating schedule	All basins received an annual cleaning. 423 tons of catchbasin cleanings were received at the Transfer Station. The catchbasin cleanings are used for berm construction at the landfill (per Beneficial Use Determination approval).	Annual catchbasin cleaning.
F.3 Revised	Develop Drainage System Improvement Plan	Mark Budnick, Highway Dept.	Prepare Capital Plan Article for FY06	Capital Plan of May 2005 includes an annual allotment for drainage improvements.	
F.4 Revised	Propose Amendments and Articles at Town Meeting	Mark Budnick, Highway Dept.		See comments for F.3	

**6a. Additions**


**7. BMPs for Meeting Total Maximum Daily Load (TMDL) Waste Load Allocations (WLA) <<if applicable>>**

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 3 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 4
Revised					

**7a. Additions**


**7b. WLA Assessment**

**Part IV. Summary of Information Collected and Analyzed**

The DRAFT Street Access Management Regulations and the DRAFT Town of Orleans Construction Standards are attached. These are the proposed ordinances that are awaiting adoption by the Board of Selectmen.

**Part V. Program Outputs & Accomplishments (OPTIONAL)**

**Programmatic**

Stormwater management position created/staffed	(y/n)	
Annual program budget/expenditures	(\$)	

**Education, Involvement, and Training**

Estimated number of residents reached by education program(s)	(# or %)	
Stormwater management committee established	(y/n)	
Stream teams established or supported	(# or y/n)	
Shoreline clean-up participation or quantity of shoreline miles cleaned	(y/n or mi.)	
Household Hazardous Waste Collection Days		
▪ days sponsored	(#)	
▪ community participation	(%)	
▪ material collected	(tons or gal)	
School curricula implemented	(y/n)	


**Legal/Regulatory**

	In Place Prior to Phase II	Under Review	Drafted	Adopted
<b>Regulatory Mechanism Status (indicate with "X")</b>				
▪ Illicit Discharge Detection & Elimination				
▪ Erosion & Sediment Control				
▪ Post-Development Stormwater Management				
<b>Accompanying Regulation Status (indicate with "X")</b>				
▪ Illicit Discharge Detection & Elimination				
▪ Erosion & Sediment Control				
▪ Post-Development Stormwater Management				

**Mapping and Illicit Discharges**

Outfall mapping complete	(%)	
Estimated or actual number of outfalls	(#)	
System-Wide mapping complete	(%)	
<b>Mapping method(s)</b>		
▪ Paper/Mylar	(%)	
▪ CADD	(%)	
▪ GIS	(%)	
Outfalls inspected/screened	(# or %)	
Illicit discharges identified	(#)	
Illicit connections removed	(#) (est. gpd)	
% of population on sewer	(%)	
% of population on septic systems	(%)	


### Construction

Number of construction starts (>1-acre)	(#)	
Estimated percentage of construction starts adequately regulated for erosion and sediment control	(%)	
Site inspections completed	(# or %)	
Tickets/Stop work orders issued	(# or %)	
Fines collected	(# and \$)	
Complaints/concerns received from public	(#)	

### Post-Development Stormwater Management

Estimated percentage of development/redevelopment projects adequately regulated for post-construction stormwater control	(%)	
Site inspections completed	(# or %)	
Estimated volume of stormwater recharged	(gpy)	

### Operations and Maintenance

Average frequency of catch basin cleaning (non-commercial/non-arterial streets)	(times/yr)	
Average frequency of catch basin cleaning (commercial/arterial or other critical streets)	(times/yr)	
Total number of structures cleaned	(#)	
Storm drain cleaned	(LF or mi.)	
Qty. of screenings/debris removed from storm sewer infrastructure	(lbs. or tons)	
Disposal or use of sweepings (landfill, POTW, compost, recycle for sand, beneficial use, etc.)		
Cost of screenings disposal	(\$)	


Average frequency of street sweeping (non-commercial/non-arterial streets)	(times/yr)	
Average frequency of street sweeping (commercial/arterial or other critical streets)	(times/yr)	
Qty. of sand/debris collected by sweeping	(lbs. or tons)	
Disposal of sweepings (landfill, POTW, compost, beneficial use, etc.)	(location)	
Cost of sweepings disposal	(\$)	
Vacuum street sweepers purchased/leased	(#)	
Vacuum street sweepers specified in contracts	(y/n)	

Reduction in application on public land of: ("N/A" = never used; "100%" = elimination)		
▪ Fertilizers	(lbs. or %)	
▪ Herbicides	(lbs. or %)	
▪ Pesticides	(lbs. or %)	

Anti-/De-Icing products and ratios	% NaCl % CaCl <sub>2</sub> % MgCl <sub>2</sub> % CMA % Kac % KCl % Sand	
Pre-wetting techniques utilized	(y/n)	
Manual control spreaders used	(y/n)	
Automatic or Zero-velocity spreaders used	(y/n)	
Estimated net reduction in typical year salt application	(lbs. or %)	
Salt pile(s) covered in storage shed(s)	(y/n)	
Storage shed(s) in design or under construction	(y/n)	



DRAFT – November 24, 2006

## **Street Access Management Regulations**

Adopted pursuant to Orleans Town Code Chapter 87, Driveway Curb Cuts and Road Opening

### **1 Purpose**

The purpose of the Driveway Curb Cut and Road Opening Bylaw is to provide criteria for driveways, road openings, and work in the public road layout that allows for reasonable access to development; while promoting safety and not interfering with the intended function of the roadway system.

### **2 Applicability**

This regulation shall apply to the driveway curb cuts and road openings within the public road layout for any purpose. No permit for work within the public road layout or for a driveway curb cut permit on a private way shall be issued without the written approval of the Board of Selectmen, or its designee(s). The Board of Selectmen may delegate from time to time certain duties described in these regulations to designees who will act on its behalf. Included, but not limited to, are the following types of work:

- a) Construction, repair, installation, maintenance of sanitary sewers, storm drains, water mains and appurtenances, or direct buried cables, gas mains, telephone and electrical cables or conduits and service connections there to, roadways, driveways, pavement extensions, manholes, inlets, catch basins, fire hydrants, sidewalks, curbs or steps.
- b) Erection and maintenance of poles, wire, guys, cables, and other overhead structures where excavation is required in a public place.
- c) Any other construction operations, other than Town contracted projects, which may cause abnormal wear to or deface or damage existing structures, pavement, curbs, sidewalks bike paths or vegetation areas.
- d) Utility companies performing routine services shall be required to obtain a permit for said work in accordance with these regulations.

Applicants, if not the licensed contractor intending to perform the work, shall identify on the permit application the name of the contractor or subcontractor who would perform the work. No applicant, contractor, or subcontractor shall perform work within the layout unless permitted to do so by the Orleans Board of Selectmen or its designee(s) and has an up to date performance bond, if required, on file with the Town.

All work required under this Bylaw shall conform to the Construction Standards of the Orleans Highway Department, dated November 24, 2006 and as amended, for work within the public road layout, copies of which are available in the office of the Town Clerk and the Orleans Highway Department.

#### **2.1 Emergency Repairs.**

Emergency excavations necessitated by damages resulting from uncontrollable forces shall be exempt from any immediate permitting requirements or notification to the Highway Manager. However, the contractor performing the excavation shall notify and apply for permits on the closest following working day. If remediation efforts require multiple working days and possible risks to the general public and traffic exist, the

DRAFT – November 24, 2006

Highway Manager shall be contacted immediately. The Highway Manager may require that work be performed continuously and by an adequately sized crew to minimize traffic disturbance and safety risks to the public.

### 3 Definitions

***Blind curve:*** a curve lacking or deficient in sight distance due to road geometry.

***Driveway/curb cut:*** Any access point onto a roadway. This may include, but is not limited to, an entrance to a parcel, or an intersection with another roadway and includes temporary construction access to parcels.

***Driveway curb cut permit:*** a permit issued by the Orleans Board of Selectman, or its designee(s), for any work within the public road layout.

***Driveway interconnection:*** A private driveway connection between two lots that does not require traveling on the roadway system.

***Emergency repair:*** An unforeseen occurrence or combination of circumstances which calls for immediate repair to protect the public and/or for public safety reasons.

***Excavation:*** Any opening in the surface within the layout of a public way or public place within the town made in any manner whatsoever, either planned or in an emergency, or any disturbance of the non-paved areas to a depth greater than 1 foot when done by means other than by hand digging for exploratory purposes, except an opening in a lawful structure below the surface of said locations the top of which is flush with the adjoining surface and is so constructed as to permit frequent openings without injury or damage to said locations. Excavation as defined herein shall include but is not limited to the construction or repair of storm drainage systems, sanitary sewer systems, water mains, gas mains, electrical conduits, buried telephone cables, or cable television cables.

***Public Road Layout:*** The land encompassing a public way that has been laid out on a plan showing the boundaries and measurements and accepted by the legislative body of the Town for purposes of easement of passage and dedicated to public use or is otherwise recognized by the Town of Orleans as being a public way.

***Road Opening Permit:*** a permit issued by the Orleans Board of Selectman, or its designee(s), for any road opening in a public road.

***Substructure:*** Any pipe, pipeline, sleeve, tube, main, conduit, tunnel, duct, service, trap, vent, vault, manhole, meter, gauge, regulator, valve, conduit, wire, tower, pole, guy wire, pole line anchor, cable, wire, junction box, and/or any other material, structure, or object of any kind or character, whether enumerated herein or not, which is or may be lawfully constructed, left placed, or maintained in, upon, along, across, or under any public way or public place.

DRAFT - November 24, 2006

#### 4 Driveways and Curb Cut Requirements

##### 4.1 Driveway/ Curb Cut Permit

The Board of Selectmen, or its designee (s), shall approve all proposed driveways and changes to existing driveways. Building permits shall not be granted without an approved driveway/ curb cut permit, as required under this regulation.

##### 4.2 Setbacks from Drainage

Driveway openings shall be setback at least 10 feet from existing drainage structures. Openings shall not interrupt existing positive drainage patterns and shall be positioned to provide adequate pitch to the street. A 1-inch lip must be provided along the entrance to any proposed driveway opening to contain gutter flows.

##### 4.3 Number of curb cuts – Shared Access

Multiple driveways shall be consolidated into a single driveway where possible. All development and redevelopment shall provide the minimum number of driveways for the size and type of land use proposed. Driveway interconnections shall be provided, where applicable, between adjacent parcels to avoid short trips and conflicts on the main road. Driveways for auxiliary use, such as seasonal boat storage, which are used only intermittently, may be allowed.

There shall be a maximum of one driveway for up to 150 feet of frontage, two driveways for 151 to 500 feet of frontage and three driveways for greater than 500 feet of frontage.

##### 4.4 Sight Distance

Driveways shall be positioned so as to provide maximum sight distance and safety, in accordance with the then current American Association of State Highway Transportation Officials (AASHTO) guidelines listed below:

Speed	Recommended Sight Distance
25 mph	150 ft
30 mph	200 ft
35 mph	250 ft
40 mph	300 ft

*Driveway clearance shall be measured from a point ten feet back from the street edge, at a level 3 ½ feet above the surface.*

##### 4.5 Tree Removal

Tree removal will be considered only when an adequate driveway entrance cannot be established in a location where such removal could be avoided. All proposed tree removal in the public road layout shall be coordinated with the Orleans Tree Warden and shall meet the requirements of the Public Shade Tree Act as well as the Orleans Scenic Road By-Law, as applicable.

##### 4.6 Safe Turning Movements

In no case shall a driveway/ curb cut permit be granted that would allow turning movements that cause safety concerns through driveway geometry, signage, or trees within the street layout. On-site turning areas shall be provided to avoid vehicles backing into the roadway.

DRAFT – November 24, 2006

#### **4.7 Corner Clearance**

At corners of intersecting streets or driveways, no sign, fence, wall, hedge, or other obstruction shall block vision between two and a half (2 ½) feet and eight (8) feet above the street grade within a triangle formed by the intersecting street lines and a straight line joining points on said lines twenty (20) feet back from their point of intersection.

#### **4.8 Curb Cuts in Turning Lanes**

No curb cut or driveway may intersect the storage, deceleration, and transition taper areas of a proposed right-turn lane or a proposed left-turn lane. In the event a turning lane is proposed, existing driveways that enter said turn lane(s) shall be relocated, by the proponent, outside this area consistent with the standards as outlined in these regulations.

#### **4.9 Corner Lots**

For lots with frontage on two streets, access shall be via the street with the lesser traffic volume if possible.

### **5 Drainage Requirements**

#### **5.1 Runoff**

All runoff from impervious surfaces of a lot shall be recharged on that lot. Runoff shall be diverted towards areas covered with vegetation for surface infiltration. Dry wells shall be used only where other methods are not feasible and shall be preceded by oil, grease and sediment traps to facilitate removal of contamination.

#### **5.2 25-Year Storm**

Stormwater drainage shall be contained on the development site, away from wetland resources and designed to handle calculated flows from a 25-year storm. All stormwater shall be treated on-site unless there is a public benefit to connecting to another drainage system or allowing stormwater to flow off-site.

#### **5.3 Roof Drains**

In no instance shall roof drains, subsurface drains, or overflows of any kind be directed to the public road layout.

### **6 Erosion and Sediment Control Requirements**

#### **6.1 Erosion Control**

Erosion control provisions shall be designed and executed to prevent erosion or excessive uncontrolled surface water runoff from draining onto any public way, both during and after construction. The Town may require measures to reduce tracking of sediment from construction vehicles onto the public way. The contractor is required to clean up any sediment inadvertently discharged, through tracking or other means, into the public way or drainage systems. No grading or clearing of land shall begin until all required erosion control measures are in place and fully constructed. Permanent erosion control measures including but not limited to re-vegetation, retention basins and siltation barriers may be required to ensure stormwater will not discharge onto the public way.

DRAFT – November 24, 2006

## **7 Road Opening Requirements**

### **7.1 Road Opening Permit**

No work shall be performed within a public road layout until the Orleans Board of Selectmen, or its designee(s), has granted a Road Opening Permit.

### **7.2 Dates of Construction**

Due to the adverse impacts of road openings in inclement weather, road opening projects, except in the case of an emergency, may only be permitted from April 15 to December 15 subject to weather.

Once work has begun, it shall be diligently pursued to completion.

### **7.3 Notification**

The applicant shall notify the Highway Department 24 hours prior to the commencement of a road-opening project. The Highway Department shall have discretion as to the appropriateness of a road-opening project and may limit the scope of work or defer the project to a later date. Reasons for limiting or deferring a project may include but shall not be limited to anticipated bad weather, scheduled community events, or another nearby road-opening project that may divert traffic in the direction of the applicant's requested project.

## **8 Additional Requirements**

### **8.1 Cost**

Project applicant(s) may be required by the Town to pay for safety requirements during construction. Disturbances to pavement markings, crosswalks, lines, etc must be restored by the applicant.

### **8.2 State Highway Access**

Applicants seeking a curb cut permit from the Massachusetts Highway Department (MHD) shall consult MHD regarding the proposed access on the State Highway and coordinate all proposed work with the Orleans Highway Department and other authorizing agencies, and as required, agree on an overall access plan for the site prior to site approval and issuance of a driveway/ curb cut permit.

## **9 Protection of Property**

The applicant shall, at the applicant's own expense, preserve and protect adjoining property from injury by providing proper foundations and by taking such other precautions as may be necessary for the purpose. The applicant shall, at the applicant's own expense, shore up and protect buildings, trees, walls, fences or other property likely to be damaged during the progress of the excavation work and shall be responsible for all damage to public or private property or roads resulting from its failure to properly protect and carry out said work.

## **10 Bond**

The Board of Selectmen or its designee shall have the discretion to require a suitable bond, prior to the approval of a driveway curb cut or road-opening permit, to ensure adequate restoration of the roadway. Such bond, if required, shall not be released until all aspects of the road-opening project have been completed and restored.

DRAFT – November 24, 2006

### **11 Severability**

The invalidity of any section or sections or parts of any section or sections of these regulations shall not affect the validity of the remainder of any other section.

### **12 Appeals Process**

Any order or decision of the Board of Selectman or their designee made in the administration of this bylaw, may be appealed by any person aggrieved, to the Board of Selectman. Any such appeal shall be taken within thirty (30) days from the date of the decision or order which is being appealed by filing a notice of appeal, specifying the grounds thereof, in the office of the Town Clerk with a copy in the office of the Board of Selectman. The Board of Selectman shall hold a public hearing on any such appeal within thirty (30) days from the date of filing. The Board of Selectman shall cause notice of the public hearing to be published once in a newspaper of general circulation in the Town of Orleans at least seven (7) days before the hearing. All hearings of the Committee shall be open to the public. The decision of the Board of Selectman shall be made within fifteen (15) days of the close of the public hearing and within seven (7) days filed in the Office of the Town Clerk with a copy sent to the petitioners. In exercising the powers granted by this section, the Board of Selectman may make orders or decisions, reverse or affirm in whole or in part, or modify any order of decision.

### **13 Fines and Penalties**

Any person violating this chapter shall be punished by a fine of not more than two-hundred dollars (\$200.) for each offense, and may have his permit revoked.

DRAFT – November 24, 2006

# **Town of Orleans Construction Standards**

*Standards for all work performed in the Town Road Layout*

## **1 Construction Standards**

### **1.1 Driveway Standards**

Driveways within the Town Layout shall be constructed as follows:

Residential driveways shall be between 10 and 15 feet wide at the layout line. The radius of the driveway shall be 5-8 feet for driveways on local roads and 10 – 15 feet on arterial and collector roadways.

Commercial driveways shall be between 20 and 30 feet wide at the layout line depending on the proposed traffic flow to the facility and location.

Driveway entrances onto public ways shall be constructed or reconstructed conforming to the conditions existing in the immediate area. Sidewalks should be lowered to meet driveway grades, but stormwater must be contained on site. Bituminous aprons shall provide a minimum of 3-1/2 inches of Type I asphalt placed in two layers. The bottom course shall be 2 inches thick, and the surface course shall be 1-1/2 inches after rolling. There shall be no deviation from a free surface in excess of 1/4 inch when tested with a 10-foot long straight edge. Driveway entrances in areas which have concrete sidewalks shall have a minimum thickness of six (6) inches of Portland Cement Concrete with 6"x 6", Number 8 wire reinforcing. Either bituminous concrete or concrete driveways shall be constructed on eight (8) inches of well-compacted 3/4-inch dense grade stone material. If openings are to be constructed through existing sidewalks, the requirements as stated above will extend through the full width of sidewalk. Where no sidewalk exists, the driveway apron shall extend to the sideline of the street layout.

### **1.2 Excavation Standards**

All excavation work shall be performed and conducted so as not to interfere with access to fire hydrants, fire stations, police stations, fire escapes, catch basins, or any other vital public necessity as designated by the Highway Manager.

Excavation associated with drainage and utility installations located within roadway pavement limits shall be performed in agreement with the dimensions and grades shown on the construction plans. The Applicant is required to ensure that adequate means of protection, both to the public and workers, be provided. Such protection may include timber sheeting; shoring, steel trench boxes, or any other OSHA approved method. Excavation that must remain un-backfilled overnight shall be approved by the Highway Manager and shall have steel sheeting covers for protection and safety of the public.

### **1.3 Breaking through Pavement**

Pavement shall be saw cut unless otherwise approved by the Highway Manager.

Sections of bituminous or cement concrete sidewalks shall be removed to the nearest score line or saw cut edge.

Unstable pavement shall be removed over cave-outs and over breaks and the

DRAFT – November 24, 2006

subgrade shall be treated as the main trench.

Pavement edges shall be trimmed to a vertical face and neatly aligned parallel with the center line of the trench

Cutouts outside of the trench lines must be regular and aligned parallel and/or perpendicular to the centerline of the trench.

Trenches and excavations shall be braced and sheathed when necessary as required to comply with OSHA specifications.

Road surface openings shall be restricted for a period of five (5) years after a new "permanent surface" is laid, except in cases of emergency.

When excavation is permitted in roads resurfaced within the past three (3) years, the Applicant must install a bituminous concrete patch the full width of the roadway and at least thirty (30) feet beyond the affected area with one (1) inch of dense graded bituminous concrete unless otherwise authorized by the Highway Manager. Utility companies placing utilities in a shallow (0' to 5' in depth) or narrow trench (1' to 3' in width) may in certain instances be exempt from the bituminous concrete patch at the discretion of the Highway Manager. The existing paved surface shall be grooved to accept the new overlay at its lineal limits.

#### 1.4 Backfilling

The excavation in the road must be filled and resurfaced during the same day it is opened unless otherwise allowed by the Highway Manager. The excavation shall be backfilled with clean gravel in no more than six (6) inch mechanically tamped layers. Excavated material may be used if determined suitable by the Highway Manager, to within ten (10) inches of the finished grade with approved material and then six (6) inches of three quarter (3/4") inch dense graded material shall be placed and compacted into the trench and the remaining four (4") inches shall be filled with the bituminous concrete patch. The road surface shall be precut to avoid damaging surfaces surrounding the trench. The backfill and dense graded material in the trench must be mechanically tamped to 95% of maximum dry density as determined by the Modified Proctor Test in accordance with ASTM-1557 method.

#### 1.5 Patches/Repairs

Permanent Patching - The permanent patching of bituminous concrete base and top shall be laid and rolled in two (2) courses and shall be done within six months of the initiation of excavation. The binder (base course) shall be one and one-half (1-1/2") inches in compacted thickness and the wearing course shall be one (1") inch in compacted thickness. The minimum total thickness of both courses, measured after rolling shall be two and one-half (2-1/2) inches. The base course of the permanent pavement shall be placed, carefully raked and thoroughly rolled to the required thickness. Before placing the base course of the pavement, the edge of the original pavement surface shall be cleaned of all dirt, dust and debris and then receive an application of approved asphalt emulsion so that the new pavement material may be properly bonded to the old. The joint between the old and new pavement at the road surface intersection will then have an application of asphalt emulsion of at least one (1) foot in width applied to it. The permanent

DRAFT – November 24, 2006

paving shall not overlap the existing pavement and will not have to be applied with a mechanical spreader unless otherwise directed. The Applicant shall furnish, place, grade, and compact Bituminous Concrete Pavement of Class I Type 1-1 as shown and specified in the latest Massachusetts Highway Department *Standard Specifications for Highways and Bridges*. The Applicant shall maintain permanent patches for a period of eighteen months or until infrared patching treatment takes place and within 24 hours of notification by the Town shall fill with similar material any depression or holes that may occur as to maintain the surface in a safe and satisfactory condition.

1.6 Infrared Patch Treatment

Between six months and eighteen months after the permanent patch is placed, the patch shall be heated up utilizing an infrared machine, and the patch surface reconstructed and blended with the existing surrounding pavement. During the process additional bituminous concrete material will be added as required. The Highway Manager must approve the infrared equipment and final result.

1.7 Temporary Patches

Under certain conditions, the Highway Manager may authorize the installation of a temporary patch. Temporary patches shall preferably be hot Class I Type I- I bituminous concrete but may be substituted for with cold mix if hot mix is unavailable and the substitution is authorized by the Highway Manager. The patch shall be laid and compacted in two (2) courses to a minimum of four inches total of compacted thickness to a finished grade matching the existing road surface. Temporary patches shall be removed and replaced with permanent patches within 120 days following placement of the temporary patch. The Applicant shall continuously maintain temporary patches and, within 8 hours of notification by the Town, fill with similar material any depressions and holes that may occur so as to maintain the surface in a safe and satisfactory condition.

1.8 Pavement Overlay

Under certain circumstances a one (1") inch thick bituminous overlay for the full section of the road, and extending thirty (30) feet beyond the area affected by the road patch may be required. Generally, this will be required when the patch was made on a road that was resurfaced in the last five (5) years or when a patch is fairly extensive. Where overlays are required they will be noted on the permit.

1.9 Testing

If required by the Highway Manager, the applicant will engage, at no cost to the Town, a certified testing company acceptable to the Department, to sample and test materials and/or compaction. The applicant will correct any deficiencies, and testing and sampling may include, but will not be limited to, compaction tests, soil sieve analysis, bituminous concrete density tests, pavement coring, and nuclear density testing.

1.10 Trenches

Unless the Highway Manager specifies a shorter length, the maximum length of open trench permissible at any one time, shall be limited to no more than three hundred (300) feet. No greater length shall be open for pavement removal, excavation, construction or backfilling without written permission of the

DRAFT – November 24, 2006

### Highway Manager.

#### 1.11 Restoration of Pavement Markings

All permanent pavement markings, crosswalks, traffic centerlines etc., which are obliterated or damaged during construction shall be repainted by or under the direction of the Highway Department at the expense of the Applicant.

#### 1.12 Lawn Surfaces and Plantings

All grassed surfaces that are disturbed, shall be replaced with six (6) inches of screened loam, limed, fertilized and reseeded with a good quality perennial lawn seed or sod. Likewise, any areas containing plantings shall be restored to their original condition with the same or similar plantings. Special care shall be taken to insure the areas are re-landscaped to meet the conditions that existed before the excavation. The Applicant shall water and otherwise maintain grass and other vegetation and shall guarantee its survival for a period of 12 months.

#### 1.13 Shoulders

Shoulders that are disturbed shall be reconstructed to previously existing grade and regardless of its prior existing condition, shall be loamed with six (6) inches of loam, limed, fertilized and seeded with good quality perennial lawn seed.

## 2 **Additional Standards**

### 2.1 Utilities

The Applicant shall not interfere with any utility. If a utility must be relocated, the Applicant shall bear all costs associated with its relocation. At no time is any utility to be taken out of service without the express written approval of the utility company. Utility conduit locations shall be verified by the appropriate utility companies and by DIG-SAFE prior to any excavation. The Applicant shall pay damages to any utility.

### 2.2 Police Assistance

Police Details shall be required for all work within the layout unless otherwise notified by the Highway Manager or Police Chief.

### 2.3 Track Machines

Tracked equipment shall not be loaded or off loaded on the roadway pavement surface or within the vegetated area of the Town road layout without the proper surface protection of each. The Highway Manager, at his discretion, may require a bond for working with heavy equipment in Orleans, in order to ensure protection of public roads.

### 2.4 Dust and Cleanup

During and upon completion of work, all public ways shall be thoroughly cleaned, at the Applicant's expense, of all rubbish, excess earth, rock and other debris.

The Applicant shall take necessary precautions to prevent and avoid dust and to keep gutters free and unobstructed for the full depth of the adjacent curb.

### 2.5 Catch Basins

The Applicant shall keep all catch basins clear and serviceable. The Applicant shall make provisions to take care of all surface/ground water, muck, silt, residue, or other run-off pumped or removed from the excavations and shall be responsible for any damages resulting from the Applicant's failure to so provide.

DRAFT -- November 24, 2006

## 2.6 Utilities, Sewers and Drains

The Applicant shall in accordance with Massachusetts General Laws, give proper and timely notice to public utilities before making any excavation in a public way. The Applicant shall not interfere with any utility. If it becomes necessary to relocate an existing utility, its owner shall do this and the Applicant shall pay for the cost of such work. The Applicant shall inform itself as to the existence and location of all underground facilities and protect the same against damage. The Applicant shall adequately support and protect by timbers, sheeting, shoring, etc. all pipes, conduits, poles, wires, cables or other appurtenance which may be, in any way, affected by the excavation work, and do everything necessary to support, sustain and protect those facilities under, over, along or across the proposed work area. In the event any of said pipes, conduits, poles, wires, cables or appurtenance are damaged, and for this purpose pipe coatings or outer encasements or similar type protective devices are to be considered as part of a substructure, such damage shall be repaired by the agency or persons owning them and the cost of such repairs paid for by the Applicant. The Applicant shall be responsible for any damage done to any public or private property by reason of the breaking of any water, sewer, drains or gas pipes, wire, conduits or other such similar type appurtenance.

## 2.7 Monuments

The Applicant shall engage the services of a Registered Land Surveyor to reset any survey boundary monuments disturbed during the course of work. All disturbed monuments shall be reset within 30 days of the completion of construction activities. The Registered Land Surveyor shall certify in writing to the Highway Manager that the monuments have been properly placed.

## 2.8 Trees

The Applicant shall not remove, even temporarily, any trees or shrubs which exist within the public right of way without first obtaining permission from the Town Tree Warden. Every effort shall be made to protect tree root systems by tunneling, boring, or hand excavation as necessary. In the event that a tree or a shrub is damaged, destroyed or is authorized for removal, the Applicant shall replace the tree or shrub with trees or shrubs of comparable value at his/her expense. The Tree Warden shall determine the species, size, and location of all replacement vegetation. In addition, if three (3) or more trees are involved in a permit, all material, including branches and slash up to twelve (12) inches in diameter, shall be reduced to chips and delivered to a location designated by the Orleans Highway Manager. All tree stumps and debris resulting from such work will be removed from the work site at Applicant's expense.

## 2.9 Scenic Roads

On roads which have been designated as Scenic Roads, the tearing down, displacing or destruction of stone walls, cutting or removal of trees and the repair, maintenance and reconstruction or paving work done within the right of way, including the construction of new driveways or alterations of those existing, insofar as they affect stone walls or trees within the right of way, shall require the written approval of the Planning Board. (A copy of the Scenic Way Listing is available through the Highway Department or Planning Department.)

DRAFT – November 24, 2006

2.10 Traffic Signs

No traffic regulating, warning, directional or street signs shall be removed from the area or relocated therein unless so indicated on the plans or unless so indicated by the Highway Manager. Signs shall be removed and replaced as directed by the Highway Manager.

2.11 Violations

The Applicant shall immediately correct any condition at the work site that, in the opinion of the Highway Manager, the Police Department, Fire Department or Building Inspector, adversely affects the safety of the public or property. A timeframe shall be determined for the correction. If the Applicant fails to take corrective action within the stated time, the Highway Manager will take whatever action is deemed necessary to correct the problem and the Applicant shall be required to reimburse the Town for the cost of the correction. Repeated violation shall result in revocation of the permit.