



RULES AND REGULATIONS
GOVERNING SUBDIVISIONS
and
SPECIAL PERMITS
including
SITE PLAN REVIEW

**TOWN OF HARWICH
MASSACHUSETTS**

**Effective Date
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(Amended through December 23, 2008)**

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Part I
GENERAL
INFORMATION

SECTION 1 INTRODUCTION

A. AUTHORITY

Under the authority vested in the Planning Board of the Town of Harwich by Section 81-Q of Chapter 41 of the Massachusetts General Laws and all other applicable sections thereof, said Board hereby adopts these Rules and Regulations Governing the Division of Land and Special Permits including Site Plan Review in the Town of Harwich, Massachusetts, to supersede present regulations and shall be effective on the date of adoption.

For matters not covered by these Rules and Regulations, reference is made to Chapter 41 Section 81-K to 81-GG and Chapter 40A of the Massachusetts General Laws.

B. HISTORY

The Town of Harwich originally adopted local subdivision regulations made effective March 25, 1949. The State Subdivision Control Law, Chapter 41, Section 81-A to 81-Y, inclusive, of the General Laws, was adopted by the Town of Harwich effective October 2, 1953.

C. TITLE

These Rules and Regulations of the Harwich Planning Board shall be known and may be cited as the "Rules and Regulations Governing the Subdivision of Land and Special Permits including Site Plan Review in the Town of Harwich, Massachusetts," which herein are called "these Rules and Regulations." As a short title, these Rules and Regulations shall be known and may be cited as the "Harwich Rules and Regulations."

D. PURPOSE

These Rules and Regulations have been enacted for the purpose of protecting the safety, convenience, and welfare of the inhabitants of the Town of Harwich by regulating the laying out and construction of roadways in subdivisions providing access to the several lots therein, but which have not become public roadways, and ensuring sanitary conditions in subdivisions and, in proper cases, parks and open areas.

The Harwich Planning Board, through these Rules and Regulations, shall pursue the objectives of providing adequate access to all of the lots in a subdivision by roadways that will be safe and convenient for travel;

- lessening congestion in such ways and in the adjacent public ways;
- reducing danger to life and limb in the operation of motor vehicles;
- securing safety in the case of fire, flood, panic, and other emergencies;
- ensuring compliance with the applicable Zoning By-laws;
- securing adequate provision for water, sewerage, drainage, and other requirements where necessary in a subdivision;
- coordinating the ways in a subdivision with each other and with the public ways in the Town of Harwich and with the ways in neighboring subdivisions;

- encouraging good subdivision design;
- ensuring sound community growth with minimum governmental costs consistent with the encouragement of the appropriate development of land; and
- relating new subdivisions to the Harwich Local Comprehensive Plan.

SECTION 2 DEFINITIONS

For the purpose of these Regulations, the terms and words defined in the Subdivision Control Law shall have the meaning given therein.

Abutter: A person who owns property that adjoins or faces across a way, a lot/parcel that is the subject of the subdivision application or related procedure.

Applicant: An owner, agent, representative or assign who is authorized to propose and/or develop the proposed subdivision.

Approval Not Required (ANR) Plan: A plan showing a division of land where each lot created is served by existing safe and adequate access (with limited exceptions). While an ANR does not require Planning Board 'Approval,' it does require Planning Board 'Endorsement' verifying that the plan is consistent with MGL Ch 41 §81L.

Board: The Planning Board of the Town of Harwich

By-laws, General: Legislation governing aspects dealing primarily with administrative policies and quality of life in the Town of Harwich

By-laws, Zoning: Legislation that deals primarily with land use in the Town of Harwich

Definitive Plan: A plan submitted for Planning Board approval which represents the proposed specifications for the division of land and construction of roadways and utilities. [MGL Ch 41, §81L]

Drinking Water Resource Protection District (DWRPD): Any designated district falling within the recharge boundaries for the drinking water/aquifer area. This specially zoned area places limitations on certain uses within its boundaries as defined in Section V Table 1 of the Harwich Zoning Bylaws. The Drinking Water Resource Protection Districts established in the Harwich Zoning By-Law are shown on a map entitled "Drinking Water Resource Protection District and Approved Zone II Delineations, Harwich, Massachusetts", dated December, 1996, Scale: 1:12000, which map is on file in the Office of the Town Clerk, the authenticity of said map to be established in the same manner as provided for establishing the authenticity of the Zoning Map.

Engineer: A Professional Engineer registered in the Commonwealth of Massachusetts.

Frontage: The boundary of a lot that runs adjacent to a roadway.

General Laws: The Commonwealth of Massachusetts General Laws [MGL], with all additions and amendments. In case of a rearrangement of the General Laws, any citation of particular sections of the General Laws shall be applicable to the corresponding sections in the new codification.

Land Surveyor: A Professional Land Surveyor registered in the Commonwealth of Massachusetts.

Lot: A measured parcel of land having fixed boundaries and designated on a plot or survey, with definite boundaries, used, or available for use, as the site of one or more buildings. A lot may be divided off of a larger parcel.

Parcel: A tract or plot of land, with definite boundaries, used, or available for use which contains sufficient upland to potentially be divided into one or more lots.

Preliminary Plan: An informal and optional working plan submitted for Planning Board Approval which precedes a definitive plan. The Preliminary Plan is used to confirm direction and details needed for a future definitive plan submission. [MGL Ch 41, §81L]

Roadway: A traveled path that allows for safe and adequate access to lots and parcels. The term 'roadway' shall mean, but is not limited to, street, place, path, court, trail, way, road, avenue, boulevard, etc. . .

Roadways as referenced in Table 1 - Recommended Design Standards are categorized as follows:

- **Ways:** A traveled roadway which in the opinion of the Board is used to service abutting lots and is not intended for use by through traffic, and shall include any roadway servicing 5 or fewer lots or dwelling units.
- **Minor:** A traveled roadway which in the opinion of the Board is used to service abutting lots and is not intended for use by through traffic, and shall include any roadway servicing 6-49 lots or dwelling units.
- **Major:** A traveled roadway collecting traffic from several minor roadways, and shall include any roadway servicing 50-99 lots or dwelling units.
- **Collector:** A traveled roadway which in the opinion of the Board is being used or will be used as a thoroughfare between different sections of the Town, or which will be used as a principle access to a business or industrial subdivision, and shall include any roadway servicing 100 or more lots or dwelling units.

Roadway, Paper: A way shown on a recorded plan but not built on the ground.

Rules and Regulations: A publication of the Planning Board which governs the procedures for the submission and approval of applications for subdivision, site plan review and special permits. [MGL Ch 41§81Q]

Subdivision: The division of a tract of land into two or more lots including resubdivision, and, when appropriate to the context, shall relate to the process of subdivision or the land or territory subdivided; provided, however, that the division of a tract of land into two or more lots shall not be deemed to constitute a subdivision within the meaning of the subdivision control law if, at the time when it is made, every lot within the tract so divided has frontage on (a) a public way or a way which the clerk of the city or town certifies is maintained and used as a public way, or (b) a way shown on a plan

theretofore approved and endorsed in accordance with the subdivision control law, or (c) a way in existence when the subdivision control law became effective in the city or town in which the land lies, having, in the opinion of the planning board, sufficient width, suitable grades and adequate construction to provide for the needs of vehicular traffic in relation to the proposed use of the land abutting thereon or served thereby, and for the installation of municipal services to serve such land and the buildings erected or to be erected thereon. Such frontage shall be of at least such distance as is then required by zoning or other ordinance or by-law, if any, of said city or town for erection of a building on such lot, and if no distance is so required, such frontage shall be of at least twenty feet. Conveyances or other instruments adding to, taking away from, or changing the size and shape of, lots in such a manner as not to leave any lot so affected without the frontage above set forth, or the division of a tract of land on which two or more buildings were standing when the subdivision control law went into effect in the city or town in which the land lies into separate lots on each of which one of such buildings remains standing, shall not constitute a subdivision. [MGL Ch 41 § 81-L]

Subdivision Control Law: SECTION 81-K to 81-GG, inclusive of Chapter 41, General Laws of the Commonwealth of Massachusetts and any modifications or additions thereto. See <http://www.mass.gov/legis/laws/mgl/mgllink.htm>.

Utilities: Sewers, surface water drains, water pipes, gas pipes, electric lines, telephone lines, fire alarm lines, cable television and/or internet lines, their respective appurtenances, and other like services.

Wetlands: Resource areas subject to regulation under MGL Ch 131, §40; and the Town of Harwich Wetland By-law.

SECTION 3 OTHER

A. WAIVER OF RULES AND REGULATIONS

As provided in Chapter 41 §81-R of, Massachusetts General Laws, the Planning Board may waive strict compliance with these Rules and Regulations when, in its judgment, such action is in the public interest and not inconsistent with the intent or purposes of the Subdivision Control Law. However, they cannot waive those requirements that originate from the General and Zoning By-laws.

Applicants seeking waivers from the requirements of the Rules and Regulations must, at the time of filing of an application for approval, submit a separate written request for waivers. Said request shall specify:

- the waivers requested by section and paragraph;
- provide a concise statement of the nature and extent of the waiver(s) requested,
- the reason(s) for the request, and how such waiver(s) would serve the public interest.

In acting to approve waiver requests, the Board may consult with other agencies as appropriate and may impose reasonable conditions and/or requirements not expressly written in these Rules and Regulations, provided such conditions or requirements represent a reasonable consideration for the waiver requested, serve the public interest, and are not unduly burdensome to the Applicant.

B. INFORMAL DISCUSSIONS

Requests for informal discussions shall be made to the Planning Department in writing. Written requests must include the requester's name, address, local phone number, and a brief explanation of the matter to be discussed with the Board. Such discussions will be scheduled for the next available time slot on the Board's regular meeting agenda. No informal discussions will be scheduled less than seven (7) days prior to a meeting date.

Part II
SUBDIVISION

SECTION 1 INTRODUCTION

The primary intent of subdivision review is for protecting the safety, convenience, and welfare of the inhabitants of the Town of Harwich by regulating the laying out and construction of roadways which provide access to the lots within the subdivision.

Applications for a subdivision may be submitted to the Planning Board under two conditions:

1. Access to the lots already exists and is safe and adequate*. Approval of a plan for subdivision by the Planning Board is Not Required for this type is referred to as an "ANR." While an ANR does not require Planning Board 'Approval,' it does require Planning Board 'Endorsement' verifying that the plan is consistent with MGL Ch 41 §81L.

*(*Most commonly. There are other situations where approval is not required pursuant to MGL Ch 41 § 81-L.)*

2. Access to the lots does not exist, or, is not safe and adequate. Approval of the Subdivision by the Planning Board is Required (Subdivision). Plans will be referred to as 'subdivision' and may be submitted in the following forms:

- Preliminary
- Definitive
- Modification, Amendment of an Approved Plan
- Rescission of an Approved Plan

SECTION 2 ANR

A. CRITERIA FOR ENDORSEMENT OF ANR

In determining whether or not a plan constitutes a subdivision, the Board shall determine whether or not all three of the following standards have been met in accordance with MGL Chapter 41, §81L-M:

1. The lots shown on such plan must meet the minimum frontage requirements as specified in Chapter 41, §81L, MGL; and,
2. The lots shown on such plan must front on one of the three types of ways specified in Chapter 41, §81L, MGL; and,
 - a. a public way or a way that the Harwich Town Clerk certifies is maintained and used as a public way, or,
 - b. a way shown on a plan previously approved and endorsed in accordance with the subdivision control law or,
 - c. a way in existence when the subdivision control law became effective in the Town of Harwich
3. The Planning Board verifies that existing access to such lots provide sufficient width, suitable grades and adequate construction to provide for the needs of vehicular traffic in relation to the land abutting or served thereby, and for the installation of municipal service to serve such land and the buildings existing thereon to be erected as specified in Table 1 of these Rules and Regulations.
4. Lots created for building purposes shall meet all requirements specified in the Harwich Zoning By-laws, specifically Sections IV, V, and VI which describe lot size, shape and use requirements.

B. DETERMINATION OF SAFE AND ADEQUATE ACCESS

In determining whether or not existing access meets the standards as defined in these Rules and Regulations, the Planning Board will examine evidence as follows:

1. The Applicant will provide all items listed in Appendix 4.
2. The Planning Board will circulate the application to the Town Engineer and Surveyor for general comments. When necessary, additional comments may be requested from the following departments:
 - a. Department of Public Works
 - b. Fire Department
 - c. Police Department
3. All ways which are neither Town ways nor ways shown on a plan approved and endorsed in accordance with the Subdivision Control Law (existing private ways) must meet the minimum standards for new ways in the Town of Harwich as specified in Table 1 of these Rules and Regulations in order to be considered frontage for building purposes or the division of land for which approval under the Subdivision Control Law is not required. If such way is substandard, approval may be granted if the Applicant agrees to complete the necessary improvements to the substandard way; said agreement to be filed in the form of a covenant at the time of approval of the definitive plan. [MGL Ch 41 § 81-FF]

C. SATISFACTION OF SAFE AND ADEQUATE ACCESS

When in the opinion of the Planning Board, the existing condition of the roadway does not meet the minimum standards for roadways in the Town of Harwich in order to be considered frontage for building purposes, and the necessary roadway improvements do not substantially change the nature, layout or composition of the roadway, the Planning Board may determine, without a public hearing, that submission of a subdivision plan for approval is not required by an affirmative vote of a majority of the Planning Board present, and in no event less than four members. Once the improvements have been made, the Applicant may submit their request for Determination of Safe and Adequate Access.

Improvements to Town roadways must also meet the requirements of the Town of Harwich General By-law Article III.

SECTION 3 SUBDIVISION FILING

A. GENERAL FILING REQUIREMENTS

Applications shall meet all requirements as specified herein SECTION 3. Failure to file a complete application with the Planning Board may be considered grounds for denial of board approval. [MGL Ch 40A, §9 and 14].

1. Prior to submitting any plans showing a proposed road to the Board, the Applicant will cause the intersection of the centerline of the proposed road and the existing road to be staked on the ground with one point, for inspection by the Board.
2. Prior to submission to the Planning Board, the Applicant shall file with the Town Clerk, by delivery or registered mail, a complete set of application materials including plans and supporting documents to be stamped with the date of submission.
3. All taxes, assessments, and charges relative to land being subdivided must be paid in full prior to submission of the application. The Applicant shall be responsible for obtaining of a Municipal Lien Certificate from the Town Treasurer, indicating that all taxes, assessments, and charges have been paid in full.
4. For Preliminary and Definitive Plans of a subdivision, the information requested shall be submitted by the Applicant to both the Planning Board and Board of Health for discussion and approval, modification, or disapproval. The submission of a Preliminary Plan will enable the Applicant, the Planning Board, the Board of Health and other local agencies to discuss and clarify the problems of such subdivision before a Definitive Plan is prepared.
5. **Protection of Natural Features:** Due regard shall be shown for all natural features, such as large trees, water-courses, ponds, wetlands, beaches, dunes, scenic points, historic spots, and similar community assets, which, if preserved, will add attractiveness and value to the subdivision.
6. When a filed subdivision plan is to be revised, six (6) full size copies of the revised subdivision plan which must show the latest revision date and the word "REVISED" in bold capital letters, must be submitted to the Town Clerk's Office no later than ten (10) days prior to the next scheduled discussion of the application by the Board. Failure to meet this deadline may cause discussion of the application to be continued until a subsequent meeting or, if the Board is constrained by an action deadline, could result in the denial of said plan [MGL Ch 41, §81S].
7. All other requirements as listed in Appendix 4.

B. PLAN, PROFILE AND CROSS-SECTION REQUIREMENTS

1. All plans shall be prepared and stamped by a Professional Land Surveyor and shall be clearly and legibly drawn in permanent ink upon a reproducible material acceptable for recording at the Registry of Deeds or in Land Court, complying with the requirements of the Registry of Deeds and Land Court, if applicable, and having an error of closure not to exceed one part in twelve thousand (1:12,000).

2. When a separate plan and profile are submitted, they shall be of the same exact size. The plan and profile shall be prepared and stamped by a Professional Engineer.
3. All other requirements as listed in Appendix 4.

C. ADDITIONAL REQUIREMENTS

1. Special Permits All applications must comply with any additional requirements as stated in the Zoning By-laws Section V Table 1 such as Flexible Cluster, Open Space Residential (X.G.4), and Six-Ponds District.
2. Naming New Ways Three (3) proposed street names shall be submitted with a subdivision plan. Duplicate street names or names similar to existing street names shall not be considered.
3. Re-naming existing ways Refer to MGL Ch 85 §3 and 3B and Ch 41 §74 which requires that the Planning Board notice and hold a public hearing to change the name of an existing way. See also the Town of Harwich General By-law Article III for petition requirements along private ways.
4. The Planning Board may require additional information as necessary.

SECTION 4 SUBDIVISION REVIEW PROCEDURE

A. APPROVAL NOT REQUIRED (ANR)

A plan showing a division of land where each lot created is believed to be served by existing adequate access plan shall be submitted for a determination as to whether or not the plan requires approval by the Planning Board under the Subdivision Control Law will be scheduled for action by the Board at the earliest reasonable date but no later than twenty-one (21) days after filing with the Town Clerk's Office. [MGL Ch 41, §81P]

If the Board determines that the plan does not require approval, it shall without a public hearing and without unnecessary delay endorse the plan with the words "Approval under the Subdivision Control Law not required".

The Board may add to such endorsement a statement of the reason approval is not required. Notice of the Board's endorsement shall be made to the Town Clerk and the Applicant. The original plan shall be returned to the Applicant.

If the Board determines that the plan does require approval under the Subdivision Control Law, it shall give written notice of its determination to the Town Clerk and the Applicant.

If the Board fails to act upon a plan submitted under this section within 21 days after its submission, it shall be deemed to have been determined that approval under the Subdivision Control Law is not required, and it shall make such endorsement on the plan. If the Board fails to do so, the Town Clerk shall issue a certificate to the same effect. In either case, the original shall be delivered to the Applicant.

B. PRELIMINARY PLAN

1. Action

Within forty-five (45) days after submission of a Preliminary Plan, the Planning Board shall approve, approve with modifications, or disapprove the Preliminary Plan. In the case of disapproval, the Board must state specific reasons for denial. Said notice of decision shall be filed with the Town Clerk and sent via certified mail to the Applicant.

Approval of a Preliminary Plan does not constitute approval of a subdivision. The Rules and Regulations in effect at the time of submission of such Preliminary Plan shall govern the Definitive Subdivision Plan evolved from such Preliminary Plan, provided such Definitive Plan is submitted within seven (7) months of the submission of the Preliminary Plan.

2. Certificate of Approval (Decision)

The action of the Board with respect to a Preliminary Plan shall be by vote, copies of which shall be certified by and filed with the Town Clerk and sent by certified mail to the Applicant. If the Board modifies or disapproves the plan, it shall state specifically the reasons for its action.

C. DEFINITIVE PLAN INCLUDING MODIFICATION, AMENDMENT OR RESCISSION

All procedures relating to the submission and approval of a subdivision plan of land shall, so far as apt, be applicable to the approval of the modification, amendment, or rescission, and to the plan, which has been changed.

A public hearing is required before approval, modification of approval, disapproval or rescission of the Definitive Plan is given. A public hearing shall be held by the Board, notice of the time and place of the hearing as well as the subject matter, sufficient for identification, as follows:

1. Public Notice

- a. The Board shall give notice by posting such notice in a conspicuous place in the Town Hall for a period of not less than fourteen (14) days before the day of such hearing; and,
- b. The Board shall give notice by advertisement in a newspaper of general circulation in the Town of Harwich, once in each of two (2) successive weeks, the first publication being not less than fourteen (14) days before the day of such hearing; and,
- c. The Applicant shall give notice by mailing a copy of such advertisement via certified mail return receipt to property owners within 300 feet abutting the subject property which may also include abutters to abutters, and properties across the roadway from the subject property. The advertisement and list of abutters, to include names and addresses of abutters certified by the Harwich Board of Assessors, will be supplied to the Applicant by the Planning Department. Said notice shall be mailed out no less than ten (10) days prior to the scheduled public hearing. A copy of the certified mail receipts must be filed with the Planning Office and the original returned "green cards" shall be submitted as well.

2. Public Hearing

At a Public Hearing a presentation is made by the Applicant, the Board reviews and considers all information and comments submitted by interested parties, and discusses the merits of the application. The Board, on its own motion or acting on the petition of any person interested, may modify, amend, or rescind its approval of a plan of a subdivision or require a change in a plan as a condition of its retaining the status of an approved plan.

3. Action

The Planning Board must take final action and file a notice of decision with the Town Clerk within 90 days of the filing date provided the definitive filing was preceded by a preliminary plan within the last 7 months or 135 days if either there was no preliminary plan or 45 days have not elapsed since the submission of the preliminary plan. It may

approve, modify and approve, or disapprove said plan as provided by statute. In the case of disapproval, the Board must state specifically where the plan does not comply with the Rules and Regulations or the recommendation of the Board of Health or Health Officer. The Planning Board shall file said decision with the Town Clerk and shall send via certified mail a copy of the decision to the Applicant.

4. Certificate of Approval (Decision)

The action of the Board with respect to a Definitive Plan shall be by vote, copies of which shall be certified by and filed with the Town Clerk and sent by certified mail to the Applicant. If the Board modifies or disapproves the plan, it shall state specifically the reasons for its action. Approval, if granted, shall be endorsed on the original drawing of the Plan by the signatures of a majority of the Board (or by the signature of the person officially authorized by the Board) but not until the statutory twenty (20) day appeal period has elapsed following the filing of the certificate of the action of the Board with the Town Clerk and said Clerk has notified the Board that no appeal has been filed.

D. PERFORMANCE GUARANTEE

The Board shall require, before endorsement of its approval of a Definitive Plan of a subdivision, that the Applicant shall agree to complete the required improvements specified in Section VII according to his plans and profiles, such construction and installation to be secured by one, or in part by one and in part by the other, of the methods described below. In addition, other methods may be approved by the Planning Board.

1. **Approval with Financial Security to include Escrow, Bonds, and Surety:** The Applicant shall post a financial security in an amount determined by the Board to be sufficient to cover the cost of the improvements shown on the subdivision plans. Such financial security, if filed or deposited, shall be approved as to form and manner of execution by Town Counsel and as to sureties by the Harwich Town Treasurer. Such financial security shall be contingent on the completion of such improvements within two (2) years of the filing of other surety. At the discretion of the Board, a time extension may be granted.
2. **Approval with Covenant:** The Applicant shall file a covenant (Form B-2), executed and duly recorded with Barnstable County Registry of Deeds by the owner of record, running with the land, whereby such ways and services as shown on the plans shall be provided to serve any lot before such a lot may be built upon or conveyed, other than by mortgage deed provided that a mortgagee who acquires title to the mortgaged premises by foreclosure or otherwise, and any succeeding owner of the mortgaged premises or part thereof may sell any such lot, subject to that portion of this covenant which provides that no lot shall be built upon until such ways and services have been provided to serve such lot; and provided, further, that nothing herein shall be deemed to prohibit a conveyance by a single deed, subject to such covenant, of either the entire parcel of land shown on the subdivision plan or of all lots not previously released by the Board.

E. RECORDING OF PLAN

Once the plan and covenant have been recorded, documentation of said recording shall be filed with the Planning Board. Upon receipt of notification of recording, the Board shall file one (1) print of the Definitive Plan with the Building Department. In accordance with the statute, where approval with covenant is noted, the Building Department shall issue no permit for the construction of a building on any lot within the subdivision except upon receipt from the Board of a copy of the Certificate of Release of Covenant (Form B-3), releasing the lot or lots in question (see F and G below). In addition, no site work or road construction work shall commence until the plan and covenant have been recorded and documentation of said recording shall be filed with the Planning Board.

F. EVIDENCE OF SATISFACTORY PERFORMANCE

Before the Board will release the interest of the town in a performance bond or deposit or, in the case of approval with covenant, issue a release of covenant the following must be submitted to and approved by the Board:

1. A certification shall be done by a Professional Engineer with the following statement or similar statement **“all roadways, sidewalks, sewers, storm drains, and water mains, and their appurtenances shown have been constructed in accordance with the approved design plan.”** Certification shall be by the Professional Engineer employed by the Applicant at his or her own expense.
2. An “As Built” drawing shall be prepared and certified by a Professional Land Surveyor in accordance with Appendix 4 with the following statement or similar statement **“all roadways, sidewalks, sewers, storm drains, and water mains, and their appurtenances shown have been laid out in accordance with the lines and grades of the approved plan and are accurately located as shown hereon.”** Certification shall be by the Professional Land Surveyor employed by the Applicant at his or her own expense.
3. The Board shall obtain in writing from the Town Engineer, a statement that all work required by the Rules and Regulations and the approved Definitive Subdivision Plan has been inspected by him or her and completed in each roadway in the subdivision (or the roadway or roadways serving the lots in question), including storm drains, bridges, and sidewalks and that he or she has approved the methods of construction and materials used in the performance of such work.
4. The Board shall obtain in writing from the Board of Water Commissioners a statement that they have inspected and that the Applicant has completed each water main and their appurtenances in accordance with the requirements of these Rules and Regulations and that they have approved the methods of construction and materials used in the performance of such work.
5. The Applicant shall execute an instrument, in a form approved by the Board, transferring to the Town or to an approved public utility company, without cost, valid unencumbered title to all water mains and appurtenances thereto, constructed and

installed in the subdivision or approved portion thereof, and conveying to the Town or to an approved public utility company, without cost and free of all liens and encumbrances, perpetual rights and easements to construct, inspect, repair, renew, replace, operate, and forever maintain such water mains, with any manholes, pipes, conduits and other appurtenances, and to do all acts incidental thereto, in through and under the whole of all roadways in the subdivision or approved portion thereof, and if any such sewers or water mains have been constructed and installed in land not within such roadways, then in, through, and under a strip of land extending ten (10) feet in width on each side of the centerline of all such water mains.

G. RELEASE OR PARTIAL RELEASE OF PERFORMANCE GUARANTEE

The penal sum or the amount of any financial security held under Item D – Performance Guarantee, above, may, from time to time, be reduced by the Board and the obligations of the parties thereto released by the Board in whole or in part. If release is by reason of covenant, a new plan of the portion to be subject to the covenant may be required.

A request for a full or partial release of security will be considered by the Board no sooner than ten (10) days after the Planning Department has received a written request for the release, subject to the availability of Town officials to perform the required inspections of the respective improvements and furnish written reports to the Board.

Upon completion of improvements shown on the Applicant's plans, security for the performance of which was given by financial security, or covenant, or upon the performance of any covenant with respect to any lot, the Applicant shall submit to the Town Clerk and the Planning Board, a written statement that the said construction or installation in connection with which such financial security or covenant has been given, has been completed in accordance with these Rules and Regulations, such statement to contain the address of the Applicant.

Upon receiving the Applicant's request for a partial or full release of covenant or security, the Board will request from the Town Engineer a report regarding the quality and quantity of work completed. The Town Engineer will produce a list of the items of work left to be completed in the subdivision, in accordance with the approved definitive subdivision plan and the Rules and Regulations, and give an estimate of the cost to cover the remaining items of work. Such estimate shall reflect 150% of the calculated cost.

If the Board determines that said construction or installation has not been completed in accordance with the approved Definitive Subdivision Plan based on the Town Engineer's report, it shall specify in a notice sent by registered mail to the Applicant and delivered to the Town Clerk, the details wherein said construction and installation fails to comply with these Rules and Regulations. Upon failure of the Board to act on such application within forty-five (45) days after the receipt of the application by the Town Clerk, all obligations under the financial security shall cease and terminate and any deposit shall be returned and any such covenant shall become void. In the event that said forty-five (45) day period expires without such Board action or without the release

and return of the bond or return of the financial security or release of the covenant as aforesaid, the Town Clerk shall issue a certificate to such effects, duly acknowledged, which shall be recorded.

SECTION 5

DESIGN STANDARDS FOR NEW ROADWAYS

A. LOCATION AND ALIGNMENT

1. All streets/roads in the subdivision shall be designed so that, in the opinion of the Board, they will provide safe vehicular travel. Due consideration shall also be given by the Applicant to create an attractive street/road layout.
2. The recommended street design standards presented by Table 1 and displayed by the Figures 1 to 9 are to be used by the designer.
3. Streets shall be laid out so as to intersect as nearly as possible at right angles. No roadway shall intersect any other roadway at less than seventy (70) degrees (Figure 1). Owners are encouraged to consult with the Town's Tree Warden concerning removal of trees within the town right-of-way and to plan and locate road intersections to minimize their loss.
4. Public and private utilities shall be located within the right-of-way in accordance with Figure 3. All utilities shall be underground. The applicant may be requested to make provisions for street lighting.
5. Other design standards shall be consistent with Table 1.

B. WIDTH

1. The minimum width of a right-of-way shall be consistent with Table 1.
2. The minimum width and other dimensions of ways shall be as indicated by Figures 3 and 4 and in Table 1. Eighteen (18") inch machine berms shall be required to be installed on both sides of the pavement.

C. DEAD-END WAY (FIGURE 1)

1. Dead-end ways shall be no longer than 1,200 feet unless, in the opinion of the Board, greater length is appropriate. The 1,200-foot distance shall be measured from the intersecting right-of-way to the center of the turnaround along the proposed centerline.
2. Dead-end ways shall be provided at the closed end with a circular turnaround having an outside roadway diameter of at least ninety (90') feet, and a property line diameter of at least 110 feet. "T" type turnarounds are not permitted. Dead-end ways shall be provided with turning circle paved in the same manner as the rest of the roadway. The paved turning circle shall have a radius of at least forty-five (45') feet with twenty-five (25') feet transition radii. Within a circular turnaround, a thirty (30') foot diameter planting area may be considered by the Board.

D. WAIVERS OF ROAD LENGTH LIMIT

Where topography or other unique site conditions exist, the Board may waive the

specified road length limit as it deems appropriate, provided such action is, in the opinion of the Planning Board, in the public interest and not inconsistent with the intent or purposes of the Subdivision Control Law.

E. WAIVERS FROM DESIGN STANDARDS FOR SUBDIVISIONS TO MAINTAIN RURAL CHARACTER

In order to apply for waivers under this section, the Applicant must file a preliminary subdivision plan along with any waiver requests to the Board. In order to maintain the rural character of an area, the Planning Board may grant waivers for a residential subdivision plan, which is designed to be in keeping with the rural character of the surrounding area, based on the following findings by the Board:

1. That the plan is well designed, and generally in keeping with the design principles set forth in these Rules and Regulations.
2. That there is adequate access to the lots for the intended uses.
3. That the plan is in keeping with the character of the surrounding area.

SECTION 6 DESIGN STANDARDS FOR UTILITIES

A. DRAINAGE

1. The quantity of stormwater carried to basins or pipes shall be determined by the rational method, and the design shall be for twenty-five (25) year storms except for bridges in which case it shall be for fifty (50) year storms. Coefficient of runoff to be used shall be as outlined in Appendix I, a detailed description of The Rational Method of Drainage Design. Other methods may be used with the approval of the Planning Board on the recommendation of the Town Engineer.
2. Pipe drains, where used, shall have a minimum diameter of twelve (12") inches. In general, they shall be designed to flow full with the hydraulic gradient at the crown. However, in flat slope areas surcharge may be allowed. The minimum velocity at design flow should be 2-1/2 fps (feet per second) and the maximum of fifteen (15) fps.
3. Stone-paved channels shall be installed where requested. The typical section of the channel shall have a flat bottom and side slope at least one (1') foot higher than the design water surface. The maximum velocity allowed in any channel at design flow shall be six (6) fps. A coefficient of friction "n" equal to 0.030 should be used for the stone-paved channel.
4. All storm water shall be disposed of by subsurface leaching or drainage easements (See paragraph 5 below). No paved surface runoff shall be allowed to be directed to open stream channels or vegetative wetlands as defined in the Harwich Wetland By-Law. Leaching basins shall be of the radial block or precast concrete type (Figure 5). These leaching basins shall be connected (equalizing pipe by a twelve (12") inch diameter asphalt coated corrugated metal pipe (ACCOMP) or High Density Polyethylene pipe (HDPE) of the proper gauge or reinforced concrete pipe of the proper class. Aluminum pipe under roadways will not be permitted unless encased in six (6") inches of cement concrete.
5. Catch basins shall be spaced so that storm runoff is received from a maximum roadway distance of 250 feet. Catch basins located in low points (sags) shall collect from a roadway for a distance not greater than 200 feet. Runoff collected by catch basins will be piped to suitable leaching facilities located in easements outside the right-of-way. Said easements shall be at least 625 square feet in area and shall be of a suitable configuration for the proposed facility. Sufficient test pits shall be installed to determine the suitability of the soils for subsurface disposal. The center of the catch basins shall be located along the gutter line regardless of the percent grade.

6. Frames and Grates: The Massachusetts Standard square catch basin frame and grate shall be utilized for all catch basins and/or leaching basins.

B. WATER

Water systems shall be installed in accordance with the standards of the Harwich Board of Water Commissioners.

For all new subdivisions where access to Town water is available within 500 feet of the point of intersection of any new subdivision road with any Town or private road, the Applicant shall be required to hook up to Town water and provide Town water service to all lots within said subdivision. For all new subdivisions where access to Town water is not available within 500 feet of the point of intersection of any new subdivision road with any Town or private road, the Applicant shall be required to provide the required piping and hydrants within the entire subdivision to allow for hook up to Town water at such time as a main reaches within 500 feet of the point of intersection of said subdivision road.

The Board of Water Commissioners may grant a waiver to this requirement following a written request from the Applicant explaining the reasons why neither option is feasible for the proposed subdivision. The Board of Water Commissioners shall provide written conformation of the grant of a waiver to the Planning Board. In the case of the grant of a waiver, a water easement shall be provided in accordance with the requirements of the Board of Water Commissioners. Said easement shall be delineated on the subdivision plan and an agreement prepared and submitted to the Board of Water Commissioners.

C. EASEMENTS

1. Easements for utilities across lots or centered on rear or side lot lines shall be provided where necessary and shall be at least twenty (20) feet wide.
2. Where a subdivision is traversed by a watercourse, drainage way, channel, or stream, the Board may require that there be provided a storm water easement or drainage right-of-way of adequate width to conform substantially to the lines of such watercourse, drainage way, channel, or stream, and to provide for construction or other necessary purposes.

SECTION 7 REQUIRED IMPROVEMENTS AND SPECIFICATIONS FOR CONSTRUCTION

A. GENERAL PROVISIONS

Construction details and specifications shall comply with the standards as shown on Figures 3 and 5 unless the Planning Board grants waivers from the Rules and Regulations requirements.

All improvements specified on the Definitive Subdivision Plan, road profile plans, and road cross-sections shall be constructed or installed by the Applicant in accordance with the provisions of the Harwich By-Laws, this section of the Rules and Regulations, or as directed by the Board. The Applicant shall furnish all necessary materials, labor, and equipment that may be required to complete the work called for or implied on the Definitive Plan, including all related expenses. Items not specifically mentioned herein shall be constructed in accordance with the latest revision of the Standard Specification for Highways and Bridges of the Massachusetts Department of Public Works (hereinafter referred to as the Department's Specifications); unless specifically directed otherwise by the Board.

All work performed by the Applicant as a consequence of these Rules and Regulations will be subject to the review and acceptance or approval of the Board. Therefore, the Town Engineer will act as the Planning Board's agent for the inspection of the work. In order that the Town Engineer may properly inspect the work as it progresses, the Applicant will keep the Town Engineer informed of the progress of the work, and shall at any time, provide safe and convenient access to all parts of the work for inspection by members of the Board or the Town Engineer. No work will be approved which has been covered prior to inspection by subsequent work. Reference should be made to Section 8 for inspections required by the Board.

B. SUBDIVISION LAYOUT

The subdivision, including all way, lot lines, drain lines and utilities shall be laid out as to line and grade by a Professional Land Surveyor and a certificate filed with the Board to this effect. Stakes for line and grade, clearly marked with the proper station shall be maintained throughout construction.

In the event that the construction of the road deviates from the plan and profile approved by the Board the Applicant must stop work and notify the Town Engineer. The Town Engineer will review the changes and consult with Planning Staff as necessary. If said changes are deemed to be significant in nature work shall not resume until said changes are brought before the Board for review and approval. If said changes are deemed to be minor in nature, with the Town Engineer's approval, the work may proceed. All changes must be shown on the As-built plan.

Any work, which in the opinion of the Board, has not been properly laid out or does not

conform to the Plans may be checked by the Town Land Surveyor or a Land Surveyor employed by the Board. If the Board determines that such work does not conform to the Plan, the Applicant shall pay all costs that the Board incurs in connection with checking the work. No lots shall be released from the covenant until such payment has been made in full. The Board may require, at the Applicant's expense, the removal and correct replacement of any work, which has been incorrectly laid out.

C. CLEARING, GRUBBING AND EXCAVATION

No clearing of vegetation or grading for the development of ways or building sites shall commence until an approved, signed definitive plan has been recorded with the Barnstable Registry of Deed, or Land Court and evidence of such recording has been returned to the board. This shall not apply to limited clearing for the purpose of surveying or performing percolation tests.

Proposed roadways shall be cleared, grubbed, and excavated to a minimum width of 35 feet. All deleterious materials, such as logs, stumps, branches, and brush, shall not be buried on any part of the subdivision property and shall be removed from the site and disposed of properly. Trees intended to be preserved shall be protected from injury by suitable boxes, or fenders, or wells if in fill.

The Town Engineer will make an inspection when this phase of the work is completed.

D. EROSION CONTROL MEASURES

Erosion control during and after construction shall be accomplished, using the following erosion control measures recommended by the U.S. Soil Conservation Service:

1. Erosion Minimization

Stripping of vegetation, soil removal, and regrading shall be accomplished so as to minimize erosion.

2. Duration of Exposure

The duration of exposure of disturbed area shall be kept to a practical minimum.

3. Temporary Erosion Control

Temporary vegetation and/or mulching shall be used to protect exposed critical areas during development.

4. Permanent Erosion Control Installation

Permanent (final) vegetation and mechanical measures to stabilize the land surface and control erosion shall be installed as soon as practicable after construction ends.

5. Protection of Permanent Drainage Facilities

Until a disturbed area is stabilized, permanent drainage facilities including, but not limited to, catch basins, pipes, retention basins, grass swales, and infiltration devices, shall be protected from sediment in run-off water by the use of temporary drainage facilities such as debris basins, sediment basins, silt traps, or

other acceptable methods.

6. Dust Control

During grading operations, methods of dust control shall be employed wherever practicable. The Board may require the implementation of reasonable soil erosion control measures during construction if, in its opinion, such measures are warranted but have not been implemented by the Applicant.

E. DRAINAGE SYSTEM

1. Drainage Specifications

All proposed drainage systems shall be in compliance with Massachusetts Department of Environmental Protection Phase II Stormwater Regulations Best Management Practice.

2. Disposal of Surface Water

Adequate disposal of surface water shall be provided. Catch basin/leaching basin systems shall be constructed on both sides of the roadway and shall be interconnected. Systems shall be located on both sides of the pavement on continuous profile grades, at profile low points and at intersections. Systems shall also be located at intersections of proposed roads with existing roads. It is necessary that storm runoff from existing roads and/or gutter flow not enter the proposed subdivision drainage system and, therefore, must be provided for disposal within the existing road right-of-way in accordance with the requirements of the Director of Division of Highways and Maintenance.

3. Inspection Required Prior to Backfilling

The Town Engineer will inspect the completed drainage system or sections thereof prior to placing any backfill.

4. Backfill Specifications

All trench backfill for the storm and subsurface drains and other backfill within the limits of the way shall conform to the base course requirements. Frozen earth/soil shall not be used for backfill material.

F. UTILITIES

All utilities shall be installed underground prior to the placing of the bituminous concrete binder course.

1. Responsibility

The Applicant shall provide and install all necessary materials, appurtenances and equipment to complete the utilities as may be required by these Rules and Regulations and as provided on the Definitive Plan in a manner acceptable to the officials or agency having jurisdiction over each service. All costs incurred by the Applicant as a consequence of installing and maintaining such utilities as the Board requires shall be paid by the Applicant, including all costs which may be incurred for any reasons whatsoever. The Board will not take any action to have the Applicant reimbursed for any costs so incurred.

2. Water Distribution Specifications

- a. General - Water distribution facilities shall be installed in conformity with specifications and requirements of the Harwich Board of Water Commissioners.

- b. Hydrant and Water Main Specifications - Water pipes and related equipment, such as hydrants and main shut-off valves, shall be constructed to serve all lots on each roadway. In addition, service connections shall be installed from the main to the opposite side of the roadway right-of-way line. These services shall be installed in accordance with Harwich Water Department specifications, with a proper stopcock at the approximate center of each lot. All stopcocks shall be located by permanent ties the location of which will be filed with the Harwich Board of Water Commissioners.

3. All Other Utilities

All other utilities shall be installed in conformity with specifications and requirements of the specific utility company.

4. Notification of Backfill and Paving

All work in connection with the utilities shall be left uncovered until the Town Engineer permits the backfill to be placed.

The Applicant shall notify all companies with utilities installed or to be installed within the ways as to the date and time the Applicant intends to place the gravel base course and the paving so that such utility company may properly record the location of pertinent features of the system so that they will not be covered or lost as a result of the paving operation.

5. Backfill Specifications

All trench backfill material for the utilities within the way limits shall conform to the base course requirements. Frozen earth/soil shall not be used for backfill material.

G. PREPARATION OF SUBBASE

Topsoil and stone dust, gravel, processed stone, or reclaimed asphalt shall be stockpiled for future use on the site. The subbase shall be prepared in order to accept the base, base leveling course, and pavement in accordance with the approved plans and profiles. Such preparation shall include compaction of the road bed prior to installation of the base leveling course.

All utilities including but not limited to storm drains, subdrains, and drainage structures within the way lines shall be installed prior to the completion of the subbase. This shall include the installation of each service pipe, sleeve, or conduit to the front lot line of each lot in the subdivision. Upon completion of the subbase and the backfill of all

service trenches, the work will be inspected by the Town Engineer. Subsequent work shall not commence until the Town Engineer has approved the fill as acceptable for the application of the roadway foundation material.

H. BASE AND BASE LEVELING COURSE

Upon completion of the subbase, four (4") inches of processed stone or reclaimed asphalt (T-Base) shall be placed and compacted with suitable equipment to a width of twenty-eight (28') feet. Four (4") inches of Dense Graded Crushed Stone conforming to the gradation shown in Table 2, or reclaimed asphalt, shall be placed and compacted to the width of the first four (4") inch layer. Moisture content of the processed material shall be sufficient to enable the material to be compacted into a firm, dense surface.

Reclaimed base borrow material for subbase course shall consist of crushed asphalt pavement, crushed cement concrete, and gravel borrow [Meeting Massachusetts Highway Department Standard Specifications for Highways and Bridges) free from loam, clay and deleterious materials including, but not limited to brick, reinforcing steel, glass, wood, paper, plaster, lathing, and building rubble.

The coarse aggregate shall have a percentage of wear, by the Los Angeles Abrasion Test, of not more than 50.

The gradation shall meet the requirements as specified in Table 3.

The approved source of reclaimed pavement borrow material shall be processed by mechanical means. The equipment for producing crushed material shall be of adequate size and with sufficient adjustments to produce the desired materials. The processed material shall be stockpiled in such a manner as to minimize segregation of particle sizes. All reclaimed pavement borrow material shall come from approved stockpiles.

The composite gradation and moisture content shall be controlled to insure a uniform product delivered to the job site.

I. PAVEMENT

The prepared base shall be paved in two (2) courses of Type 1 bituminous concrete (Figure 3). The "binder course" shall meet the requirements of Table 1. The bituminous concrete aggregate gradation shall be as given in Table 4. All road pavement shall be crowned in order to maintain a 1/4 in./ft. to 3/8 in./ft. cross slope.

No bituminous work shall be done during rainy weather, upon any surface where water is ponding, when the temperature is lower than thirty-four (34) degrees and rising, or when frost is in the ground.

J. BERMS (Figure 8)

Machined berms, where required, shall be placed along both edges of all roads. The berms shall be eighteen (18) inches wide with a three (3) inch minimum pitch. The berms shall be Type 1 bituminous concrete.

K. SIDESLOPES (Figure 8)

Sideslopes, where necessary, shall be no steeper than three (3) horizontal on one (1) vertical. In areas where fill has been placed to acquire the needed elevation and the vertical fill distance is six (6) foot or greater, guard rails shall be placed. Rails and posts shall be of a design approved by the Town Engineer and/or Director of Division of Highways and Maintenance.

L. TOPSOILING AND HYDROSEEDING (Figure 8)

All areas which are disturbed by the construction shall be graded to blend into undisturbed areas and shall be loamed to a depth of four (4) inches, fertilized, and hydroseeded. Loam obtained from the stripping operations may be used and/or loam may be furnished from off site by the contractor. All areas shall be given an application of lime (dolomitic limestone) and commercial fertilizer of an 8-6-4 mixture. The rate of application of lime shall be forty-five (45) pounds per 1000 square feet and the rate of fertilizer application shall be twenty (20) pounds per 1000 square feet.

The following hydroseed mixture will be required:

38.8%	Rebel II Tall Fescue
38.3%	Tribute Tall Fescue
9.7%	Cowboy Perennial Rye Grass
9.5%	Baron Kentucky Bluegrass
3.2%	Other (weed, inert, crop grass, etc.)

The Applicant shall be responsible for maintaining the (hydroseeded) areas until growth is established.

M. SIDEWALKS

1. Sidewalk Requirement (Figure 2)

Sidewalks (Figure 9) of not less than four (4) feet in width shall be constructed on one (1) side of the roadway, or both sides of the roadway when required by the Planning Board. The maximum grade for a sidewalk in a new subdivision will be five (5%) percent. This number reflects the current Americans with Disabilities Act (ADA) requirement for walks. Any steeper grade would be considered in the same category with handicapped ramps and would, therefore, require handrails and grades of restricted length.

2. Subgrade (Figure 9)

All materials shall be removed for the full width of the sidewalk to subgrade 8-1/2 inches below finished grade. All soft spots and other undesirable material below subgrade shall be replaced with gravel or other good binding material and rolled. This excavated area shall then be filled with six (6) inches of a good quality stone dust, gravel, processed stone, or reclaimed asphalt, and rolled with a 3/16 inch per foot width pitch toward the gutter/roadway.

3. Surface (Figure 9)

One of the following methods may be used: forms shall be set to grade, filled with asphalt concrete and rolled to a thickness of 1-1/2 inches. A second 1-1/2 inch course is then to be placed over the first one, in the same manner. Alternatively, other material may be used for the sidewalk surface, if approved by the Planning Board. In this case, specification of the Massachusetts Department of Public Works shall be complied with.

4. *Typical Driveway/Roadway Intersection (Figure 9)*

The intersection of a sidewalk with a driveway or a roadway shall be constructed in accordance with the specifications detailed in Figure 9. At any point where a sidewalk meets a driveway or a roadway, the sidewalk shall remain at its 3/16 inch per foot pitch toward the gutter/roadway.

5. *Typical Sidewalk Retaining Wall (Figure 9)*

If found to be necessary due to the steepness of sideslopes within the layout of a new subdivision road, retaining walls shall be constructed along sidewalks in accordance with the specifications detailed in Figure 9. The height of the retaining wall may vary according to the finished grade of the sideslopes. Six (6) inch by six (6) inch pressure-treated timbers with one-half (1/2) inch thick steel rods at four (4) foot on center shall be installed at a depth of two (2) feet. Lateral tiebacks with a one (1) inch steel rod and concrete anchor shall be installed when a retaining wall exceeds two (2) feet in height. Filter fabric shall be placed between the pressure treated timbers and the side-slope. The disturbed area of the sideslope shall be backfilled with excavated material and loamed and hydroseeded in accordance with subsection 11-TOPSOILING AND HYDROSEEDING (Figure 8) above.

6. *Maintenance of Subdivision Sidewalks during Construction of Structures and Driveways*

Where a sidewalk exists along a roadway in the Town of Harwich, the condition and grade of the sidewalk shall not be disturbed when a structure and its driveway are under construction. When a driveway opening permit is applied for from the Division of Highways and Maintenance, each property owner shall provide a plan of the property, proposed driveway curb cut, and any existing subdivision sidewalks, which may exist within the subdivision road layout. The Division of Highways and Maintenance will note the existence of a sidewalk on the permit and/or sign-off sheet that is submitted to the Building Department, and will inform the Applicant that the condition and grade of the sidewalk are to remain undisturbed throughout the building process of the structure.

At the final inspection stage of the building process, the Local Building Official will note the condition of the existing sidewalk. If the sidewalk is found to be altered or inadequate in anyway, the Local Building Official will notify the property owner of the sidewalk's condition. The property owner will be responsible for repairing any damage to the sidewalk and insuring that it will be restored to its former condition.

7. Waiver of Sidewalk Construction

The Planning Board may grant a waiver of sidewalk construction at the Applicant's request, contingent on a finding that the location of the subdivision or the rural nature of the subdivision would not benefit from the construction of a sidewalk as part of the subdivision. If a waiver of sidewalk construction is granted, the Applicant will pay, in lieu of performance, an amount equivalent to the cost of constructing the waived sidewalk to the Town of Harwich to be used for sidewalk construction. The amount of the payment will be calculated by the Town Engineer and provided to the Planning Board and the Applicant before the waiver request is considered.

N. GRANITE OR CONCRETE BOUNDS

Granite or concrete bounds shall be placed at all intersections of roadway lines, angle points, and where there is a change in the direction of curvature or at centerline of road.

Granite or concrete bounds shall be no less than two and one-half (2-1/2) feet in length and a minimum of four (4) inches square and shall be set as shown on the approved drawings with a 3/8 inch drill hole or steel rod or brass cap set into the top to indicate the point. All concrete bounds are required to have a No. 4 reinforcement bar. The top of the granite or concrete bound when placed in a way shall be set flush with or to finish grade. All monuments must be properly placed, backfilled, and tamped with a good binding gravel or stone dust.

O. LOT CORNERS

At all lot corners where a granite or concrete bound is not required under Subsection 15 above, concrete bounds shall be set.

P. ROADWAY NAME SIGNS

Roadway name signs, of a type, lettering, and material approved by the Planning Board and the Director of the Division of Highways and Maintenance shall be placed at all intersections. Signs may be ordered from the Harwich Division of Highways and Maintenance. Signs shall be installed prior to the issuance(s) of any Certificate of Occupancies for any structure within the subdivision.

Q. CLEANING UP

The entire area of the subdivision shall be cleaned up to leave, in the opinion of the Board, a neat and orderly appearance free from debris and other objectionable materials. ALL CATCH BASINS SHALL BE CLEANED OUT.

R. ROADWAY MAINTENANCE

If released from restrictions with regard to sale of lots or buildings on lots by the posting of a performance bond or other security, the Applicant shall maintain the roadway for vehicular traffic in a manner satisfactory to the Board. Further, the Applicant shall maintain the roadway in a subdivision in a condition that meets all the above

requirements to the satisfaction of the Board either until acceptance of the way by a vote of the Town, or for a period of one (1) year from the date of release.

SECTION 8 INSPECTIONS DURING CONSTRUCTION

A. GENERAL PROVISIONS

1. Responsibility

All subdivision and road construction work performed in connection with these Rules and Regulations shall be subject to the review of the Planning Board which shall approve or reject each phase or portion of such work and at completion shall recommend the acceptance of all work or disapproval of the work with reasons therefore. The Town Engineer, or a representative of the Engineering Department, will act as the Planning Board's agent in the inspection of the work to insure compliance with these Rules and Regulations and will report to the Board with recommendations as to approval or disapproval of the work.

The Applicant will engage the services of a Professional Engineer throughout both the design and construction phases of the work who will act as agent with the Town Engineer. The Town Engineer shall make certain inspections as prescribed herein prior to such work being covered by subsequent work. However, the Board and the Town Engineer shall have the right to inspect the work at anytime. Therefore, the Applicant shall at any time provide safe and convenient access to all parts of the work for inspection by the Board or its authorized agents.

2. Compliance

All work that has been disapproved or is not acceptable to the Board shall be removed and replaced or otherwise corrected to the point of complying with the requirements of the Board for acceptance. Any work that has been covered by subsequent work prior to acceptance or is otherwise not available or obscured to the point of rendering inspection of the work difficult shall be considered not acceptable to the Board. Such subsequent work shall be removed as directed by the Town Engineer to insure availability of the work to be inspected as required in this section. The release of the performance guarantee shall depend upon the acceptance of all work prescribed herein and on the Definitive Plan and as directed by the Board.

3. Inspection By The Town Engineer

At points indicated in Section 7 and as further described in this section hereinafter, the Town Engineer or a representative of the Engineering Department will inspect the construction of the required improvements. Unless approval of the work completed including approval of the materials used to each point of construction has been given in writing, no further work shall be commenced. Such inspections may include the taking of certain samples for laboratory analysis or testing. In such cases, the Applicant shall insure that the Town Engineer is in no way hindered or obstructed in the course of obtaining such samples. Where such samples are removed from the completed work, the Applicant shall replace and restore such work, to the satisfaction of the Town Engineer, to its condition prior to the taking of the sample.

The Town Engineer may require certified copies of delivery receipt or bills of lading or

other certification as to the description of materials used or incorporated in the work. The Town Engineer may also require a sample of any materials or supplies, which may be incorporated in the work; such samples shall be furnished at the expense of the Applicant, and the Applicant shall pay for all costs and fees incurred by the Board as a result of transporting and testing such materials.

B. NOTIFICATION TO THE APPLICANT'S ENGINEER

1. Applicant's Procedure

After the approval of the Definitive Plan, the Applicant shall notify the Board as to the Engineer who will act as their agent, and keep the Town Engineer fully informed as to the status and progress of the work and shall notify the Town Engineer directly in writing at least forty-eight (48) hours in advance, that work has progressed to a stage that an inspection is required. Where applicable the Applicant shall also submit testing results.

2. Town Engineer Procedure

In the event the Town Engineer makes an inspection of the work at the time designated and finds that such work is not at the proper state of completion or that the work has been covered or otherwise obscured, the Town Engineer shall notify the Applicant and the Board as to the additional steps the Applicant shall take to complete the work to the point required or to the extent the work shall be uncovered or exposed to full view. The Applicant shall notify the Town Engineer again when the work is ready as prescribed in paragraph 1 above.

3. Liability

The Applicant shall pay for all costs and fees incurred by the Board as a result of requests by the Applicant for inspection of the work that, in the opinion of the Board, was not at an acceptable stage of completion for such inspection.

C. LINES AND GRADES

1. Deviation from Plan and Profile

The Applicant's Engineer will advise the Board at any time during the construction if, in the Engineer's opinion, the work has not been laid out to the lines and grades as shown on the Plan and Profile associated with the approved Definitive Plan. In such cases, the Applicant will proceed as described in Section 7.B.

2. Responsibility

Any costs that occur as a result of deviating from the definitive plan during the construction phase of the subdivision are the responsibility of the Applicant in addition to any fees required.

D. INSPECTION OF REQUIRED IMPROVEMENTS

The following inspections of the required improvements will be made by the Town Engineer. (Form B-5, Subdivision Road Construction Inspection Form, shall be used during each inspection.) These inspections may be in addition to any other inspection the Board may make or cause to be made. All sampling and testing of materials shall be performed by qualified personnel acceptable to the Town and shall be at the

Applicant's expense. At the discretion of the Town Engineer or the Applicant's Engineer, additional sampling may be required.

1. First Inspection

An inspection will be made of the work upon completion of all clearing, grubbing, and excavation and all work incidental thereto as may be required in SECTION V.C. No fill shall have been placed at the time of this inspection.

2. Second Inspection

An inspection will be made of the completed drainage system (without backfill) as required herein or on the Definitive Plan.

At the same time, or such other time as the work may be available, an inspection will be made of the completed utilities (without backfill) as required on the Definitive Plan. The inspection of the required utilities will be made by the agency responsible for the particular service as well as by the Applicant's Engineer. The Town Engineer shall also be notified so that he or she may inspect the utilities prior to backfill. Each agency so involved will notify the Town Engineer of the approval of such work.

Backfill of any portion of the drainage system or utilities shall not be made until after receipt of notification of approval or acceptance by the Town Engineer or agency responsible.

The inspection of the construction of the ways shall include the inspection of the backfilling and compaction of all utility trenches as may be installed by utility companies and such work shall be performed in the manner as required by these Rules and Regulations. It shall be the Applicant's responsibility to insure compliance with these requirements. If, in the opinion of the Planning Board, the backfilling and compaction of utility trenches and the patching of the pavement, if required, has not been performed in accordance with these Rules and Regulations, the Planning Board may not release the bond or covenant applicable until such work has been performed to the satisfaction of the Planning Board.

3. Third Inspection

An inspection will be made of the compacted fill as specified in SECTION V, G., and as may be required to bring the roadways to their proposed grades. The Applicant shall notify the Town and the Town Engineer as to the source of gravel for fill as soon as such information is known, so that samples may be taken and analyzed by the Town and the Town Engineer. The Applicant is hereby advised not to proceed with the filling operation until the Town and the Town Engineer notify the Applicant that the gravel proposed for the fill is acceptable. If the Applicant precedes with the fill prior to such notice this act shall be at the Applicant's own risk. The Applicant shall not use a gravel source other than the one designated without prior notice to the Board and the Town Engineer. The Applicant's Engineer or the Town Engineer may also require compaction tests.

4. Fourth Inspection

An inspection will be made of the first layer of compacted roadway foundation (stone dust, gravel, processed stone, or reclaimed asphalt) as specified in SECTIONV, H. A gravel sample or samples may be taken at the option of the Town Engineer, in the same manner as prescribed for the Third Inspection. Compaction tests may also be required by the Applicant's Engineer or the Town Engineer.

5. Fifth Inspection

An inspection will be made of the final layer of compacted roadway foundation (processed stone) prior to the application of the concrete penetration as specified in SECTIONV, H. and gravel sample may be taken by the Town Engineer. Compaction tests may also be required by the Applicant's Engineer or the Town Engineer.

6. Sixth Inspection

An inspection of the binder course (bituminous concrete) will be made during placement and following completion. If required, samples of the mix shall be taken by the Applicant's Engineer or the Town Engineer for the purposes of performing extraction tests, compaction tests, or pavement thickness tests. Core drill samples may be required at the Applicant's expense. Certified paving slips indicating bituminous concrete quantities shall be submitted to the Applicant's Engineer who will tabulate the quantities, check the correlation with the anticipated qualities, and then forward the slips and a report to the Town Engineer.

7. Seventh Inspection

An inspection of the finish course (bituminous concrete) before, during, and following the placement of the mix shall be performed. A tack coat shall be applied to the binder course of mix prior to placement of the top coat where required by the Applicant's Engineer or the Town Engineer. The requirements regarding sampling, testing, and quantity slips indicated in paragraph 6 above for binder course shall also apply to the top course.

8. Eighth Inspection

An inspection will be made of all work as required on sidewalks, berms, topsoil, hydroseeding, open space, side slopes, monuments, bounds, and roadway signs.

9. Ninth Inspection

A final inspection will be made of all subsequent work as required herein or on the Definitive Plan, which shall include the final clean up. An as-built plan shall be filed following this inspection.

E. TOWN ENGINEERS REPORT

The Town Engineer will submit a completed certified report to the Board for each way in a subdivision.

If the Applicant submits a request for full or partial release from the covenant with the Town, the Planning Board may request a report from the Town Engineer prior to

completion of the subdivision road(s).

Part III
SPECIAL PERMITS
Including
SITE PLAN REVIEW

SECTION 1 GENERAL REQUIREMENTS

A. APPLICABILITY

A Site Plan Special Permit from the Planning Board is required for all activities outlined in §X.K.3 of the Harwich Zoning By-Law. This is in addition to any special permit or variance required under SECTION V.E (Table of Use Regulations) of the Harwich Zoning By-Law. The Planning Board may waive strict compliance with these Rules and Regulations Governing Site Plan Special Permits when, in its judgment, such action is in the public interest and not inconsistent with the intent or purposes of these Rules and Regulations or the Zoning By-laws.

B. APPLICATIONS AND PLANS

The following must be filed with the Town Clerk for application for a Special Permit including a Site Plan Special Permit:

1. Complete Application
 - a. A complete application shall include all items listed in Appendix 4 respective to the nature of the Special Permit and any other requirements as specified in SECTION 2.
 - b. Failure to submit a complete application at the time of filing may be grounds for denial of the site plan special permit. Failure to submit the required site plan fee prior to the scheduled public hearing may also be grounds for denial. Failure to file a complete application with the Board may be grounds for denial by the Planning Board. [MGL Ch40A, §9 & §14]
 - c. For uses that do not utilize a structure, the area of the parcel covered by the use.
 - d. Land areas must be expressed separately for each parcel and for each zoning district affecting each parcel. These numbers must also be shown as a project total for each zoning district. Such use must be specified.
 - e. Plans for redevelopment of a site or modification of an approved site plan must show all land on the subject parcel and any other parcels relating to the subject use, including all structures, parking areas, other appurtenant facilities, and open space (undeveloped natural areas and landscaped areas). Failure to show all property pertaining to the subject use(s) may result in incomplete notification to all parties in interest, which may invalidate any approval obtained.

2. Traffic Study
 - a. The Board may also require the Applicant to submit professionally prepared documentation of the environmental, traffic, or other impacts of a particular project (use) or project element in order to determine compliance with the general conditions for granting a special permit.
 - b. If the Board requires a traffic study for the proposed use/project, the Applicant shall document the traffic levels expected for average daily traffic and a.m. and p.m. peak hours. This data shall be presented for summer and nonsummer periods.

3. Landscaping - See Table 7.

- a. When required, details of the Proposed Landscaping Plan shall include all proposed landscaping, including species names, quantities, location, and size upon planting. Evergreen species shall be specifically identified as such when used for screening.
- b. The plan must also show with appropriate graphic symbols the specific areas of landscaping which are counted as interior landscaping. A dotted line shall be used to delineate the area used for total parking lot area for the purpose of interior landscaping computation, which should include parking spaces, the maneuvering area for a single space or row of spaces, the maneuvering area between two rows of spaces, all loading areas, and the landscape islands. Areas to be excluded from total parking area computations and interior landscape area totals are driveway areas where there are not adjacent parking spaces and areas beyond the perimeter of the parking area such as building yard areas, required parking setback areas and non-island or non-peninsula landscape areas along the perimeter of the parking area.

4. Utilities - Water

- a. Location of existing water lines, if any, and the location of any existing hydrants within the site or within the layout of any way adjacent to the site, if any shall be marked on the plan.
- b. The location of proposed water lines and hydrants are to be determined pursuant to the requirements of the Board of Water Commissioners and shall be shown on the site plan.

5. Revised Site Plans

A revised site plan is defined as any plan showing a change in a filed site plan that is awaiting Board action. For the purpose of this section, any plan showing a change in a site plan which has received action by the Board to approve or deny, will be subject to all of the requirements for an initial site plan special permit application. When a filed site plan is to be revised, six (6) copies of the revised site plan, which must show the latest revision date, must be submitted to the Town Clerk's office no later than ten (10) days prior to the next scheduled discussion of the application by the Board.

SECTION 2 ADDITIONAL REQUIREMENTS

A. ACCESSORY APARTMENT OR TWO-FAMILY DWELLING

In addition to the General Requirements, the following must be filed with the Town Clerk for application for an Accessory Apartment Special Permit:

1. Two (2) copies of a signed and notarized affidavit by the owner stating that he or she will live in one (1) on the units on a year-round basis. In the case of a not-for-profit housing entity proof of ownership must be filed.
2. Two (2) copies of the required covenant for parcels in a Water Resource Protection District.
3. Accurately drawn and scaled floor plans of both the existing structure and the proposed apartment, showing floor area by room and the common wall between the two (2) units.
4. Building elevation drawings, showing all existing and proposed entrances to the main dwelling and the accessory apartment.
5. Parking spaces must have direct access to a roadway and may not be lined up one behind the other.

B. DRINKING WATER RESOURCE PROTECTION DISTRICT

In addition to the General Requirements, the following must be filed with the Town Clerk for application for a Special Permit in the Drinking Water Resource Protection District:

1. A plan showing the location of all buildings, impervious surfaces, subsurface disposal systems and boundaries of the District where applicable.
2. A drainage plan for the property showing the method to be used for disposing of all runoff from impervious surfaces. If dry wells are to be used, evidence must be presented to show that other methods of disposal are undesirable.
3. A complete list of the type and quantities of all chemicals, pesticides, fuels and other potentially hazardous or toxic materials to be stored, used, or disposed of on site.
4. A description of how and where the hazardous materials will be stored, accompanied by a description of the provisions which will be employed to protect all said materials from vandalism, corrosion, leakage, and spills. The description should include control measures and the degree of threat to the groundwater quality should controls fail.
5. A description of potentially toxic or hazardous waste or waste by-products to be

generated, indicating storage and/or disposal methods to be used.

6. Nitrogen loading calculation of wastewater to be disposed of on site.
7. For any project where runoff other than typical runoff from parking lots or driveways may occur and/or subsurface disposal of materials other than typical septage waste may occur, the following additional information shall be supplied:
 - a. Data developed from test borings and test holes or wells to adequately indicate the elevation [Mean Sea-level datum) of the ground water on site and the nature and composition of the soil.
 - b. A projection of ground water flow conditions on site including a description of down gradient water resources and an evaluation of the impact of disposal of accidental spills on such resources.
 - c. A description of mitigating measures, which the Applicant plans to implement to eliminate the potential for ground water contamination and any back up measure, should said measure fail.
8. The Planning Board shall make findings with the guidance of the Board of Health and/or Health Department consistent with the requirements of SECTION X.G.2 of the Harwich Zoning By-law.

SECTION 3 REVIEW PROCEDURE

A. PUBLIC HEARING

Following the submittal of a completed application and plans, the Planning staff will schedule a public hearing before the Planning Board consistent with the requirements of MGL Ch 40A, §9 which requires public notice of the time and place of the public hearing and of the subject matter, sufficient for identification as follows:

1. The Board shall give notice by advertisement in a newspaper of general circulation in the Town of Harwich, once in each of two (2) successive weeks, the first publication being not less than fourteen (14) days before the day of such hearing; and,
2. The Board shall give notice by posting such notice in a conspicuous place in the Town Hall for a period of not less than fourteen (14) days before the day of such hearing.
3. The Applicant shall give notice by mailing a copy of such advertisement via certified mail return receipt to abutters to the subject property, abutters to abutters, and properties across the roadway from the subject property. The notice and a list of names and addresses of abutters certified by the Harwich Board of Assessors, names and addresses, will be supplied to the Applicant by the Planning Department. Said notice shall be mailed out no less than ten (10) days prior to the scheduled public hearing. A copy of the certified mail receipts must be filed with the Planning Office and the original returned "green cards" shall be submitted as well.

B. PLANNING BOARD ACTION

In accordance with MGL Ch 40A, the Board shall hold the public hearing within 65 days of the filing with the Town Clerk. Following the closing of the hearing, the Planning Board shall have ninety (90) days to render a decision and file it with the Town Clerk. Once the decision is rendered, the Board shall have fourteen (14) days to file said decision with the Town Clerk, but within ninety (90) days from the closing of the hearing. The Planning Board may approve, approve with conditions or modifications, or disapprove said plan as provided by MGL Ch 40A by a two-thirds (2/3) vote. Said decision shall state specifically the reasons for such action. A copy of the decision shall be forwarded to the Applicant and/or the representative.

C. EFFECTIVE DATE

No special permit shall be effective until the appeal period has passed and a copy certified by the Town Clerk is recorded together with any covenant made in connection with said special permit at the Registry of Deeds in Barnstable. The site shall not be occupied or used until a Certificate of Completion has been issued by the Planning Board.

D. APPEAL PERIOD AND CERTIFICATE OF APPROVAL

Following the filing of the decision with the Town Clerk there shall be a twenty (20) day appeal period. Provided the application is approved or approved with conditions or

modifications and following the expiration of the appeal period the Applicant or the representative may request from the Town Clerk a certification that no appeal was taken in this matter.

E. COVENANTS AND AGREEMENTS

In any case where the Board pursuant to the authority conferred on it by the Zoning By-Law has voted to grant a density bonus to an Applicant, the Board shall require prior to the issuance of a special permit that the Applicant execute a covenant in such form as the Board deems appropriate wherein the Applicant agrees to construct the amenities for which the density bonus has been granted according to a specific timetable with such security guaranteeing said construction as the Board and the Applicant may agree is appropriate. As a condition to the grant of a special permit, the Board may require that when constructed; said amenities will be conveyed by the Applicant or other person developing the project to any of the individuals, groups, or corporations designated by the Town of Harwich Zoning By-Laws or by General Laws, Chapter 40A, SECTION 2 or SECTION 9.

F. RECORDING OF THE SPECIAL PERMIT DECISION

Upon filing the special permit decision with the Town Clerk, the Board shall send a copy of the decision to the Applicant notifying them that the decision has been filed with the Harwich Town Clerk and an appeal, if any, from the Board's decision must be filed with the Superior Court or a District Court of Barnstable County or the Massachusetts Land Court within twenty (20) days. After the twenty (20) day appeal period has expired, the Applicant shall present the decision to the Town Clerk for certification that no appeal has been taken. Once this certification is received, the decision must be recorded at the Barnstable County Registry of Deeds. After recording the decision, the Applicant shall return copies of the decision, stamped at the Registry, to the Board and the Town Clerk.

G. INSPECTION, CERTIFICATE OF COMPLETION AND AS-BUILT PLAN

The site shall not be occupied or used until one of the following has been complied with:

1. The Applicant shall notify the Planning Department/Planning Board when all required site work has been completed. The Board shall obtain in writing from the Planning Department, or other designated Planning Board agent, a certification that all work required by the Rules and Regulations and the approved Site Plan Special Permit (with conditions, if any) has been inspected by him or her and completed to the satisfaction of all Town agencies involved in the site plan process.

In addition, an as-built plan, certified by a Professional Land Surveyor or Registered Engineer shall be submitted to the Planning Department/Planning Board. The as-built plan shall attest to the development's conformity to the approved site plan, by indicating landscaping, buildings, structures, signs, drainage and all other site improvements. Until the certification and as-built are approved, the site shall not be occupied or used.

2. In the alternative, the Applicant may submit a cost estimate to cover the remaining site work to be performed and the cost to prepare and submit an as-built plan. The Town Engineer shall review said estimate and shall submit a report to the Planning Board indicating the accuracy of the estimate and stating any recommendations or discrepancies. The Planning Board shall review the estimate and the Town Engineers report and set the amount for a cash bond or passbook account. An incentive factor of 150% shall be calculated in to the final amount.

The cash bond or passbook account shall be released or reduced by the Planning Board only after certification by the Planning Board that all of the required improvements or those improvements requested for release have been completed in conformance with the approved plan and all applicable conditions and regulations. There shall be no complete release until an as-built plan is submitted and accepted by the Planning Board.

SECTION 4 OTHER REQUESTS

A. WAIVER FROM SITE PLAN REQUIREMENT

Pursuant to Section X.K.6 of the Harwich Zoning By-law, the Planning Board may waive the requirements of the filing of a Site Plan. When in the opinion of the Planning Board, the requirements of Section X.K.3 of the Harwich Zoning By-law, do not substantially change the relationship of the structure to the site and to abutting properties and structures, the Planning Board may determine, without a public hearing, that submission of a site plan for special permit approval is not required.

1. Application Requirements

The following must be filed with the Town Clerk for application for a Waiver from Site Plan Special Permit Requirements:

- a. All items as listed in Appendix 4.
- b. A clearly drawn plan to scale shall be prepared showing the proposed changes and/or additions to the site. If an approved Site Plan Special Permit exists the same plan shall be utilized showing the proposed changes and/or additions to the site.
- c. Site plan information may be superimposed on a valid survey plan or a valid existing site plan, provided the following notation is included on the site plan: [This site plan was prepared by (name of preparer) using a (plan of land/site plan) entitled " _____, dated _____ and last revised on _____, Scale: _____, prepared by _____."]

2. Planning Board Action

- a. Following the submittal of a completed application and plan, the Planning staff will schedule a public meeting before the Planning Board.
- b. A notice of said meeting shall be mailed to the abutters no less than ten (10) days prior to the scheduled meeting.
- c. Failure to submit a complete application at the time of filing may be grounds for denial of the site plan special permit. Failure to submit the required site plan fee prior to the scheduled public hearing may also be grounds for denial.

B. REPETITIVE PETITION

MGL Ch 40A, §16 provides for a repetitive petition process before the Planning Board. The Planning Board has the ability to refer cases back to the permit or special permit granting authority within 2 years of an unfavorable action by said authority

1. Application Requirements

In addition to items listed in Appendix 4, the following must be filed with the Town Clerk for application for a Special Permit:

- a. Original Plan presented to the special permit granting authority or the

- permit granting authority, which denied the original request.
- b. A revised plan showing, if applicable, showing the changes and/or differences from the original plan.

2. Planning Board Action

In order for the Planning Board to give there consent for a case to return to said authority, the Board must make a finding, with a vote of all but one member of the Planning Board, that there are specific and material changes in the conditions upon which the previous unfavorable action was based. Notice of the consent proceedings shall be given to parties in interest of the time and place of such proceedings.

**SECTION 5
RULES AND REGULATIONS GOVERNING
OPERATION PERMITS**

(from Section XVII.10.0 of the Town of Harwich Zoning By-laws)

**I. OPERATION PERMIT FOR EARTH REMOVAL/SAND AND GRAVEL MINING
WITHIN THE SIX PONDS SPECIAL DISTRICT**

A. Purpose

One of the purposes of these regulations is to control accelerated stormwater run-off, soil erosion and resulting sedimentation as a result of earth moving and sand and gravel mining activities. The primary purpose and most important goal of this zoning by-law is to protect groundwater, and enhance public safety in the Six Ponds Special District.

B. Scope

Within the Six Ponds Special District, no person, firm or corporation shall undertake any mining of sand or gravel or excavation or filling of topsoil or subsoil material exceeding 500 cubic yards or exceeding a combined area of 10,000 square feet over a period of six (6) months without first obtaining an Operations Permit from the Planning Board pursuant to these regulations.

In cases where previously pre-existing lots were used for earth removal/sand and gravel mining and continued use is planned, accommodations must be made for soil absorption systems and/or storm water runoff discharge outside of the 300-foot wetland buffer. All of these Earth Removal/Sand and Gravel Mining or related operations shall be located at the maximum possible distance from the shoreline elevation of a pond. Additional provisions for protection of adjacent ponds are also advised in these instances.

Facilities for the dumping of construction debris or other solid waste, including wood waste reclamation facilities, are prohibited within the Six Ponds Special District.

C. Operations Permit

Earth Removal shall be allowed only under an Operations Permit issued by the Planning Board. Any Applicant must first file a written application for this purpose on Form 11 that includes the required information and materials. Permits to be issued for a period of not more than two years. An Operations Permit only covers earth removal and sand and gravel mining.

All Applicants for Earth Removal operations permits are also subject to Site Plan Review by the Planning Board.

1. Required Elements for Application

Ten sets of plans drawn to at least 1"=40' scale, prepared and stamped by a Registered Land Surveyor and Registered Engineer, containing the following information:

- a. Pre-Excavation Plan
 1. Existing property lines for the subject property, with names and addresses of all direct abutters.
 2. Existing topography in the proposed area for earth removal and for 100 feet beyond the proposed area within the boundaries of the subject property.
 3. Any existing wetlands
 4. Estimates of the evaluation of historic high groundwater as determined from monitoring wells and historical water table fluctuation compiled by USGS
 5. Grades below which excavation will not take place
 6. Existing cover vegetation and trees
 7. Proposed signage
 8. Surface run-off plan
 9. Commencement and estimated completion dates
 10. Municipal Lien Certificate
 11. Proof of Ownership of the property in question. If the Applicant is not the owner of the property, the owner will provide a notarized statement that they are aware of and support the Applicant's request.

- b. Post-Excavation Plan
 1. Proposed finish grades upon completion of removal and restoration activities.
 2. Proposed cover vegetation and trees

D. Waivers

The Planning Board may waive any of the above requirements. An Applicant seeking a waiver from any of these requirements should include a written request for waivers with the application materials for the Operations Permit.

E. Review Considerations

Before granting a permit, the Planning Board shall give due consideration to the location of the proposed earth removal, the general character of the surrounding neighborhood, the protection of water supply, and the general safety of the public on the public ways in the vicinity and in any publicly accessible areas adjacent to the earth removal operation, as well as those set forth in SECTION 1.0 (Purpose).

Where the subject property covers an area larger than 5 acres, the Operations Permit may be granted for a specific area, not to exceed 5 contiguous acres. Approval of additional areas shall be contingent upon the satisfactory completion and reclamation of each previous section. The Planning Board may allow the Applicant to delay reclamation of a specified area to facilitate circulation on the site and for continuity of the earth moving operation. Work of any sort connected with earth moving shall not be performed on more than one phase area at a time, without prior approval of the Planning Board.

F. Public Hearing

The Planning Board shall conduct a public hearing following the procedures set forth in Chapter 40A SECTION9 (Special Permits).

G. Criteria for Approval

Approval by the Planning Board will be contingent upon receipt of a removal and restoration plan by the Applicant. Approval shall be based on the following criteria:

1. Removal Criteria
 - a. Areas proposed for excavation shall be posted and/or secured to prevent trespassing. security measures may include: signage, fencing, vegetated screening or other suitable measures.
 - b. Finish grade shall not lie below a level that would reasonably be considered a desirable grade for later development of the area, or below the grades specified on the plan accompanying the permit application. The Board may specify a base grade below which excavation shall not take place under any circumstances. No excavation shall take place within 10 feet of historic high ground water.
 - c. Provision shall be made for safe drainage of water, and for prevention of wind or water erosion carrying materials onto adjoining properties.
 - d. A minimum 200 foot buffer strip shall be maintained at all boundaries of earth removal/sand and gravel mining operations. Excavation may take place within the buffer strip, however, a slope of not greater than four feet horizontal to one-foot vertical shall be maintained.
 - e. All stumps shall be removed to a licensed Wood Waste Reclamation Facility.
 - f. A road map shall be provided indicating the routes to be used to transport the materials removed. The map will include any driveways to and from the subject property. Not more than one entrance or exit from a public or private way shall be provided to any area of operation. Access points shall be located in such a way so as to avoid routing of vehicles over developed residential roadways if possible.
 - g. No excavation shall be allowed closer than three hundred (300) feet from a natural stream or pond.
 - h. No topsoil (loam) or subsoil (hardening) shall be removed from any area of ground within the legal limits of the Town consisting of more than fifty thousand (50,000) square feet, other than that which is incidental to and in connection with the construction of a building on the same lot, unless that person removing such topsoil or subsoil shall replant the entire area with rye, vetch, wheat, legumes or any permanent cover crop or reforest the area and stabilize the soil.
 - i. Operation hours shall be only between the hours of 8am and 7pm weekdays excluding Sundays and legal holidays and loaded trucks may leave the subject parcel only within these hours.
 - j. Earth removal/sand and gravel operations must comply with existing state and federal regulations governing the visibility, sound and airborne

particulates from processing equipment and dust created through the operations of the pit.

2. Restoration

Following the expiration or withdrawal of a permit, or upon voluntary cessation of operations, the entire area shall be restored as follows:

- a. All land shall be graded so that no slope exceeds one-foot vertical rise in a four-foot horizontal distance and shall be graded to safely provide for drainage without erosion.
- b. The entire area shall be covered with not less than four inches of topsoil, which shall be planted with cover vegetation adequate to prevent soil erosion.

H. Additional Conditions

The Planning Board must be notified of any transfer of ownership or legal interest or change in contractual interest in the subject premises within 10 days of such transfer or change. Failure to do so will be grounds for revocation of said permit.

I. Renewal or Review of Permit

No Operations Permit shall be issued under the provisions of this section for a period of more than two years. A permit may be renewed upon application without a public hearing at the discretion of the Planning Board. Prior to any renewal, an inspection of the premises shall be made by the Planning Board or its agent to determine if the provisions of this by-law and the Operations Permit have been and are being complied with.

The Planning Board may conduct a duly noticed public hearing at any time to determine whether any Operations Permit has been or is being violated and shall notify the Building Commissioner to request an inspection of the property and appropriate enforcement if necessary.

J. Expenses

The Town shall require the permit holder to pay a permit fee based on the following: for up to 1 acre to be excavated -- \$200.00. For each additional acre -- \$100, to a maximum fee of \$600 for 5 acres.

K. Applicability

Removal of earth material from a parcel for which removal was previously authorized under a special permit pursuant to Town of Harwich Zoning By-laws Section XV (Special Conditions) shall be permitted until the expiration date of said permit. From that expiration date, full compliance with the requirements of this by-law must be met.

In the case when no special permit was ever issued for the removal of earth materials under the prior zoning by-law, because said activity preceded the adoption of said zoning by-law, an owner and/or operator must file an application for an Operations Permit within 90 days of the effective date of this by-law as set forth in Section 3.0 (Operations Permit).

Part IV

Appendices

Appendix 1
**Rational Method of
Drainage Design**

Appendix I

THE RATIONAL METHOD OF DRAINAGE DESIGN

1. The Rational Method of Drainage Design shall be used for all drainage calculations. Drainage calculations, appropriate drawings, and watershed area delineations shall be submitted with the application of the Definitive Plan. Other drainage calculations methods may be allowed with the approval of the Town Engineer.
2. The runoff coefficients (C) to be used are as follows:

<u>Type of Surface</u>	<u>Runoff Coefficient (C)</u>
Cement or Bituminous Concrete, Roof Area	0.9 – 1.0
Gravel	0.4 – 0.6
Bare Earth	0.3 – 0.8
Steep Grass Slopes (2:1 or steeper)	0.5 – 0.7
Turf Meadows (Gentle Slopes)	0.3 – 0.4
Cultivated Fields (Gentle Slopes)	0.3 – 0.4

If variable surfaces exist within an area, the average C value will be determined by the following formula:

$$C \text{ average} = \frac{C A + C A + C A + \dots\dots\dots}{A + A + A + \dots\dots\dots}$$

3. The rainfall intensity (I) shall be determined by using the rainfall intensity curves (included herewith). Starting at the left of the curve, the distance is the greatest measured distance of water runoff from the highest to the lowest elevation. Plot a horizontal line from the appropriate distance to the % slope (% slope is the drop in elevation divided by the distance times 100). From the appropriate % slope, plot a line vertically downward until it intersects the C value curve; then plot a line horizontally and to the right until it intersects the storm frequency curve. Now plot a line vertically downward and read the rainfall intensity in inches per hour. The minimum rainfall intensity (I) value is 3 inches per hour.
4. Calculate the rate of runoff by using the following Rational Method formula:

$$Q = CIA$$

Where Q = Rate of runoff in cubic feet (cf) per second
 C = Runoff Coefficient
 I = Rainfall intensity in inches per hour
 A = Drainage area in acres

Minute (gal/min) as follows:

$$Q \text{ gal/min} = Q \text{ cf/sec} \times 60 \text{ sec/min} \times 7.48 \text{ gal/cf}$$

5. The ratio of square feet of leaching provided to Q gal/min

<u>Soil Percolation Rate</u>	<u>Ration</u> <u>Q – Leaching Area</u>
Less than 2 min/inch	0.7
2 min/inch to 8 min/inch	0.5
8 min/inch to 12 min/inch	0.2
Greater than 12 min/inch is unsuitable for leaching basin	

6. No accounting for storage and/or leaching during a rainstorm will be allowed.
7. Percolation and deep tests shall be required at the proposed location of each leaching system. More tests may be required by the Town Engineer.
8. The USGS method shall be used to estimate probable high ground water levels.
9. The bottom of leaching structures must be at least one (1') foot above the estimated probable high groundwater level.

Appendix 2

Tables 1-7

TABLE 1
Recommended Geometric Design Standards for Roadways

DESIGN ELEMENTS	Ways	Minor Roadways	Major Roadways	Collector Roadways	Figure Reference
Roadway layout					
Minimum right-of-way width	40 feet	50 feet	50 feet	50 feet	fig. 3
Minimum Roadway width – not including berms	20 feet	22 feet	22 feet	22 feet	fig. 3
Sidewalks (width)	n/a	4 feet	4 feet	4 feet	fig. 9
Clearance above grade					
Horizontal Alignment					
Minimum radius at street centerline	150 feet	150 feet	300 feet	400 feet	fig. 4
Vertical Alignment					
Clear sight distance from 4' -6" to 4" above pavement	200 feet	200 feet	350 feet	350 feet	fig. 2
Minimum vertical curve	100 Feet	100 feet	100 feet	100 feet	fig. 2
Grade					
Maximum grade	8%	8%	6%	6%	fig. 2
Minimum grade	1%	1%	1%	1%	fig. 2
Maximum grade, within 30' from intersection	2%	2%	2%	2%	fig. 2
Intersection Standards					
Minimum intersection angle	70°	70°	85°	85°	fig. 1
Minimum centerline offset	125 feet	125 feet	200 feet	200 feet	fig. 4
Minimum curb (or edge of roadway) radius	15 feet	15 feet	30 feet	30 feet	n/a
Required Cleared Area at Intersection	100 feet	100 feet	150 feet	150 feet	fig. 4
Dead-end Street					
Maximum length	1,200 feet	1,200 feet	Not allowable	Not allowable	fig. 1
Minimum radius of circular turnaround, to curb or to edge of pavement	45 feet	45 feet	n/a	n/a	fig. 1
Pavement and Storm Frequency Standards					

Unpaved*	6" T-Base 3" crushed Stone	n/a	n/a	n/a	fig. 3A
Pavement, compacted thickness	3" total 2" binder 1" finish	3" total 2" binder 1" finish	4½" total 2½" binder 2" finish	4½" total 2½" binder 2" finish	fig. 3
Base, compacted thickness	8" total 4" sub-base 4" base	8" total 4" sub-base 4" base	12" total 6" sub-base 6" base	12" total 6" sub-base 6" base	fig. 3
Storm frequency for drainage calculations	25 years	25 years	25 years	50 years	
Storm frequency for cross culverts sizing	50 years	50 years	50 years	100 years	

n/a – Not applicable.

*Although unpaved roads may be accepted as access for no more than 5 lots or dwelling units under these regulations, they will not be considered for acceptance as a town road unless reconstructed.

TABLE 2
DENSE GRADED CRUSHED STONE BASE MATERIAL

Sieve Size	Gradation - % Passing
2"	100
1½"	70-100
¾"	50-85
No. 4	30-55
No. 40	10-35
No. 200	2-10

TABLE 3
RECLAIMED PAVEMENT BORROW MATERIAL FOR BASE COURSE

Sieve Designation	Percent Passing
3"	100
1½"	70-100
¾"	50-85
No. 4	30-60
No. 50	8-24
No. 200	0-10

TABLE 4
GRADATION FOR AGGREGATE IN BITUMINOUS
CONCRETE PAVEMENT TYPE I

Sieve Size	Binder Course % Passing*	Finish Course % Passing*
7/8"	100	
3/4"	80-100	
1/2"	50-80	100
3/8"	50-55	80-100
No. 4	28-50	50-76
No. 10	18-35	35-45
No. 20	10-25	22-35
No. 40	7-18	14-27
No. 80	3-10	6-18
No. 200	1-4	3-6

***by weight**

Table 5 – Typical Parking Schedule

Parking Requirements Generator	Quantity or Rated Capacity	Basis For Parking Calculation per Zoning By-law	Number of Spaces Required
Retail Space	4,300 sq. ft.	One space per each 200 sf of floor area devoted to customer use	22
Restaurant	59 seats	One space for each three units of rated capacity	20
Employees, maximum shift	18	1 space for every 2 employees, max shift	9
TOTAL NUMBER OF SPACES REQUIRED			51

Table 6 – Typical Zoning Compliance Table

Zoning District:			
Subject	Existing	Required	Proposed
Lot Area	32,547 sq. ft.	20,000 sq. ft.	32,547 sq. ft.
Frontage	112 ft.	100 ft.	112 ft.
Front Setback	20 ft.	25 ft.	25 ft.
Side 1 Setback	5ft.	10 ft.	62 ft.
Side 2 Setback	20ft.	10 ft.	13 ft.
Rear Setback	20 ft.	10 ft.	35 ft.
Minimum Front Parking Setback	10 ft.	15 ft.	15 ft.
Minimum Side Parking Setback	5 ft.	5 ft.	5 ft.
Minimum Rear Parking Setback	5 ft.	5 ft.	5 ft.
Building Coverage	43%	50% max	31%
Site Coverage	78%	80% max	75.5%
Building Height	22ft.	30 ft.	26 ft.
Interior Landscaping	0%	10%	10.8%
Number of Parking Spaces	17	21	21
Driveway Width	24 ft.	30 ft.	29 ft.

Note: Add additional columns if the project involves more than one zone. Table 6 serves as an example only of how a typical Zoning Compliance table should be organized on a site plan. Please refer to the Town of Harwich Zoning By-law for the requirements for each zoning district.

Table 7 – Typical Planting Schedule

Symbol	Quantity	Common Name	Type*	Size	Spacing	Comments
	10	Eastern Red Cedar	E, S	3'	5' O.C.	Parking screen
	5	American Holly	E, T	3'	6' O.C.	Parking screen
	12	Japanese Beach Rose	D, S	3 gal	Random	Parking setback
	4	Winterberry Holly	D, S	3 gal	1/Island	Int landscaping
	4	Green Ash	D, T	8'	1/Island	Int landscaping
	8	Red Oak	D, T	8'	Random	Parking setback
	4	Common Bayberry	D, S	30"	Random	Parking setback

*Types: E = Evergreen D = Deciduous S = Shrub T = Tree Note: The above species are examples only of native plantings that generally require low maintenance and little or no fertilizers or pesticides. Other species may be proposed. It is Planning Board policy to encourage the use of native species to optimize planting survival and minimize the application of chemicals, which may pollute groundwater.

