



OFFICE OF THE
PLANNING BOARD

TOWN HALL, 10 CENTRAL STREET, MANCHESTER-BY-THE-SEA, MA 01944-1399

RULES AND REGULATIONS GOVERNING THE SUBDIVISION
OF LAND IN
MANCHESTER-BY-THE-SEA, MASSACHUSETTS

Revised June 2016

RULES AND REGULATIONS GOVERNING THE SUBDIVISION

**OF LAND IN
MANCHESTER-BY-THE-SEA, MASSACHUSETTS**

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RULES AND REGULATIONS GOVERNING THE SUBDIVISION OF LAND IN MANCHESTER BY-THE-SEA, MASSACHUSETTS

SECTION 1

GENERAL PROVISIONS

1.1 Authority And Purpose

These Rules and Regulations for the Subdivision of Land and the Construction of Ways therein are adopted by the Manchester-by-the-Sea Planning Board (The Board) pursuant to the provisions of Massachusetts General Laws (M.G.L.), Chapter 41, Section 81Q. For matters not covered by these Subdivision Rules and Regulations, reference is made to the provisions of M.G.L. Chapter 41, Sections 81-K to 81-GG, inclusive.

Applicants submitting plans to subdivide land are directed to review the Zoning By-Law of Manchester-by-the-Sea (the By-Law), the Regulations of the Conservation Commission, and Board of Health (Title V, 310 CMR 15.000 and Manchester Addenda to Title V) including other applicable state and federal laws.

These Subdivision Rules and Regulations have been enacted for the purpose of protecting the safety, convenience and welfare of the inhabitants of the Town by regulating the laying out and construction of ways in subdivisions providing proper access to the several lots therein, but which have not become public ways, and ensuring sanitary conditions, in subdivisions and in proper cases, parks and open areas. The powers of the Board under these Subdivision Rules and Regulations shall be exercised to:

Provide adequate access to all lots in a subdivision by ways that are safe and convenient for travel;

Lessen congestion in such ways and in adjacent public ways;

Reduce danger to life and limb in the operation of motor vehicles; secure safety in case of fire, flood, panic and other emergencies;

Ensure compliance with the applicable zoning ordinances or by-laws;

Secure adequate provision for water distribution, underground utility service, sewerage, drainage, protection of natural water sources, erosion control, flood plains, and wetlands;

Protect, promote and enhance the natural beauty, and rural and historical character of the Town; and

Coordinate the ways in a subdivision with each other, with public ways in the Town and with ways in neighboring subdivisions.

In fulfilling the purpose of this law, the Planning Board shall have the power to review the impact of the proposed land division and road layout on the Town of Manchester-by-the-Sea as well as abutting communities. Further, the Planning Board has the power to negotiate with applicants filing under this statute, utilizing the provisions of M.G.L. ch. 41, s. 81-R to ensure the protection of the Town's natural and built environment.

EFFECTIVE DATE

These Rules and Regulations are to be effective upon their passage and from that time shall supersede all prior rules and regulations governing the subdivision of land in the Town of Manchester-by-the-Sea.

SECTION 2

DEFINITIONS

ABUTTER – An owner of land as listed in the most recent real property tax list, certified by the Board of Assessors, whose real property is within three hundred (300) feet, or who is an abutter to an abutter within three hundred (300) feet of the boundaries of a proposed subdivision of land as shown on the definitive plan.

APPLICANT – "Applicant" shall include an owner or his agent, representatives or his assigns.

APPROVAL – Approval of a plan submitted in accordance with Section 4 of these Subdivision Rules and Regulations and Massachusetts General Law Chapter 41, Sections 81-S, 81-T, 81-U, 81-V and 81-W.

ARTERIAL STREET – A proposed or existing street servicing more than one hundred twenty (120) dwelling units, or for non-residential subdivisions is to be used for major through traffic with a volume in excess of twelve hundred (1,200) vehicles in a representative twenty-four (24) hour period, as determined by the most recent edition of **Trip Generation**, Institute of Transportation Engineers (ITE), Washington, D.C.

BEST MANAGEMENT PRACTICES (BMP) – A structural device or practice designed to mitigate the effects of storm water runoff easing flooding, reducing erosion and pollution. BMPs shall conform to the Guidelines described in the **Performance Standards & Guidelines for Storm Water Management in Massachusetts** published by the Department of Environmental Protection.

BOARD – The Planning Board of the Town of Manchester-by-the-Sea.

BUILDING – A structure designed to be used as a place of occupancy, storage or shelter.

COLLECTOR STREET – A proposed or existing street servicing no more than one hundred twenty (120) dwelling units, or for non-residential subdivisions is to be used for through traffic with a volume of not more than twelve hundred (1,200) vehicles in a representative twenty-four (24) hour period as determined by the most recent edition of **Trip Generation**, Institute of Transportation Engineers (ITE), Washington, D.C.

CUL-DE-SAC – A dead end street culminating in a circular turnaround.

DEFINITIVE PLAN – A proposal plan for subdivision of land submitted pursuant to M.G.L. Chapter 41, and Section 6 et seq. of these Rules and Regulations for approval of the Planning Board.

DEVELOPER – The person, persons, corporation, trust, firm or partnership or other legal entity who will be responsible for the development of land and/or structure(s). The developer will be responsible for submitting qualifications of his development team.

DPW – The Department of Public Works of the Town of Manchester-by-the-Sea.

DEVELOPMENT REVIEW TEAM (DRT) – A review body consisting of the Planning Director, Conservation Administrator, Building Inspector, DPW Director, Representatives of the Board of Health and Fire and Police Departments and others as necessary.

DRAINAGE BASIN

DETENTION – A man-made basin, diked area, depression and/or related structure for the purpose of slowing the rate at which storm water is discharged from the site, and which may involve temporary backup of water during and immediately following a storm event.

RETENTION – A man-made basin, diked area or depression and/or related structure for the purpose of retaining or impounding storm water on a site which has no free flowing outlet, e.g. a pipe or weir, to allow storm water from small storm events to be discharged to a natural water course or wetland. Leaching pits or similar ground discharge structures shall not constitute an outlet.

DWELLING – An enclosure containing sleeping, kitchen and bathroom facilities designed for and used or held ready for use as a permanent residence by one family.

DWELLING UNIT – A building or a portion of a building providing living quarters for a single family having a single set of kitchen facilities (a stove plus either or both a refrigerator and sink) not shared with any other unit; or quarters for up to six persons in a lodging house, dormitory, congregate housing or similar group dwelling.

EASEMENT – A grant by a property owner to the use of land by the public, a corporation, or persons for specific purposes such as the construction of utilities, drainage ways and roadways.

ENDORSEMENT – Certified by or endorsed by a Planning Board, as applied to a plan or other instrument required or authorized by the Subdivision Control Law to be recorded, shall mean bearing a certification or endorsement signed by a majority of the members of the Planning Board, or by its chairman or clerk or any other person authorized by the Board to certify or endorse its approval or other action and named in a written statement to the Register of Deeds and Recorder of the Land Court, signed by a majority of the Board.

ENGINEER – A person who is registered and/or lawfully permitted to practice professional engineering in the Commonwealth of Massachusetts.

ENVIRONMENTAL & COMMUNITY IMPACT ASSESSMENT & MITIGATION

MEASURES [ECIA] – A comprehensive technical analysis and report by the Applicant which is required to be submitted to the Board pursuant to Section 6.10 of these Rules and Regulations.

FLOOD CONTROL DISTRICT – The areas designated as A1, A2 and B1 in a map entitled **Storm Drainage Improvements for the Bennett’s Brook Drainage Area**. See <http://host.appgeo.com/manchesterma/Map.aspx>

FRONTAGE – The boundary of a lot coinciding with a street line providing rights of access across that boundary to a potential building site, measured continuously along one street line between side lot lines or in the case of a corner lot, the midpoint of any radius.

GENERAL BY-LAWS – The General By-Laws of the Town of Manchester-by-the-Sea.

INDUSTRIAL, COMMERCIAL STREET – A proposed or existing street which, in the opinion of the Board, is to be used to provide local access to industrial-commercial enterprises.

LAND SURVEYOR – A person who is registered and/or lawfully permitted to practice land surveying in the Commonwealth of Massachusetts.

LANE – A proposed street which, in the opinion of the Board, is to be used primarily for residential purposes and servicing no more than ten (10) dwelling units, including cul de sacs.

LOT – A parcel of land used or set aside and available for use as the site of one or more buildings and buildings accessory thereto or for any other definite purpose, in one ownership and not divided by a street, not including any land within the limits of a public or private way upon which such lot abuts, even if the fee to such way is in the owner of the lot.

MASSACHUSETTS GENERAL LAW [M.G.L.] – The Constitution of the Commonwealth of Massachusetts, Chapter 41 of the General Laws.

MINOR STREET – A proposed or existing street which, in the opinion of the Board, is to be used primarily for residential purposes and servicing no more than forty (40) dwelling units.

MUNICIPAL SERVICES – Fire and police services and public utilities furnished by the Town of Manchester-by-the-Sea, such as water, sewerage and drainage.

OWNER – The owner of record as shown by the records in the South Essex Registry of Deeds or Land Registration Office.

PARCEL – A tract or plot of land of any size that may or may not be subdivided or improved.

PRELIMINARY PLAN – A plan of a proposed subdivision submitted in accordance with Section 5 of these Subdivision Rules and Regulations.

PROFILE – A vertical section of a street along its centerline, showing existing and proposed grades, storm drainage and sanitary sewer facilities.

RECORDED – Recorded in the South Essex Registry of Deeds, except that, as affecting registered land, it shall mean filed with the Recorder of the Land Court.

REGISTERED MAIL – Registered or certified mail as provided by US Postal Service.

REGISTRY OF DEEDS – The South Essex Registry of Deeds, hereafter referred to as “The Registry” including when appropriate, the Recorder of the Land Court.

RIGHT-OF-WAY (R.O.W.) – The area of land designated for the construction and maintenance of a way or street.

ROADWAY – The paved portion of the R.O.W. including berms, where permitted, and curbs.

SECURITY, SURETY – Funds deposited to ensure performance of subdivision approval.

SIDEWALK – A way within the R.O.W. generally parallel to the street designed for use by pedestrians.

STANDARD SPECIFICATIONS – The Massachusetts Department of Transportation Standard Specifications for Highways and Bridges, [MASSDOT] dated 1988, including all supplements and revisions.

STRUCTURE – Any construction, erection, assemblage or other combination of materials upon or beneath the land, including but not limited to, either by pilings, footings or a foundation for attachment and/or installation within the land, including swimming pools and septic systems.

SUBDIVISION – The division of a lot, tract or parcel of land into two (2) or more lots for the purpose of sale or development, including re-subdivision, and when appropriate, shall relate to the process of subdividing or to the land or territory subdivided; provided, however, that the division of a tract of land into two (2) 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 Town Clerk certifies is maintained and used as a public way, or (b) a way shown on a plan approved and endorsed in accordance with the Subdivision Control Law, or (c) a way in existence prior to February 18, 1954 when the Subdivision Control Law became effective in the Town of Manchester-by-the-Sea. The Planning Board shall require that the examples noted in (a), (b). or (c) above all have, in the opinion of the 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 presently required by the Zoning By-Law of Manchester-by-the-Sea. Conveyances or other instruments adding to, taking away from, or changing the size and shape of, lots in such a manner as 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 Town in which the land lies into separate lots on each of which one of such buildings remains standing, shall not constitute a subdivision. Such frontage shall be of at least such distance as is presently required by the Zoning By-Law of Manchester-by-the-Sea. 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 Town in which the land lies into separate lots on each of which one of such buildings remains standing, shall not constitute a subdivision.

UTILITIES – Gas, electric, water, drainage, cable television, telephone, septic, sewer, steam distribution and related and ancillary services.

WATER RESOURCE OVERLAY PROTECTION DISTRICT – [WROPD] The ground areas designated as Zones 1,2 and 3, and surface areas designated as Zones A,B and C on maps entitled **Water Resource Overlay Protection Districts** at <http://host.appgeo.com/manchesterma/Map.aspx>

WAY – Any public way or private way shown on a plan approved under the provisions of the Subdivision Control Law or a way in existence when the provisions of said Subdivision Control Law became effective in the Town, having in the opinion of the Board suitable width, grades and adequate construction to provide for the needs of vehicular traffic in relation to the proposed use of 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.

WETLAND – Wetlands as defined in Massachusetts General Law 131, Section 40 (310 CMR 10.0) and Article XVII of the General Bylaw of the Town of Manchester-by-the-Sea. See <http://host.appgeo.com/manchesterma/Map.aspx>

ZONING BY-LAW – The Zoning By-Law of the Town of Manchester-by-the-Sea.

SECTION 3

APPLICATION OF THE SUBDIVISION CONTROL LAW

3.1 Approved Definitive Plan Required Prior to Construction

No person shall make a subdivision of any tract, parcel, or lot of land into two (2) or more lots in such a manner as to constitute a "subdivision" within the Town of Manchester-by-the-Sea, or proceed with the improvement or sale of lots in a subdivision, or the construction of ways, or the installation of municipal services therein, unless and until a plan has been endorsed "Planning Board Approval Not Required" or a Definitive Plan of such subdivision has been submitted to and granted final approval and endorsement by the Board as hereinafter provided, and has been recorded at the Registry of Deeds or registered at the Land Court. [M.G.L. c. 41, s. 81-O; 81-P]

3.2 General

The Board will not approve a subdivision unless the plan is in compliance with these Subdivision Rules & Regulations and with all applicable zoning, other local regulations, bylaws and laws of the Commonwealth of Massachusetts. All proposed subdivisions shall comply with the intent of these Subdivision Rules and Regulations as previously set forth in Section 1 and shall adhere to the principles of environmentally sensitive land use planning and accepted engineering practice. [M.G.L. c.41, s. 81-Q]

3.3 Waivers of Compliance

The Board reserves the right to waive strict compliance with these Subdivision Rules and Regulations when, in the judgment of the Board, topography, environmental impacts, public safety or other considerations necessitate such variation and such action is in the public interest and consistent with the intent and purpose of these Subdivision Rules and Regulations. All requests for waivers of compliance shall be in writing and shall specify the section of these Subdivision Rules and Regulations for which a waiver is requested. The Board shall make a finding that said variation from these Subdivision Rules and Regulations is in the public interest and shall vote to approve each specific request for variation from these Subdivision Rules and Regulations. In the event any of these Subdivision Rules and Regulations do not fully cover a special or unforeseen or unique circumstance arising from a proposed subdivision, the Board may make a reasonable determination, interpretation or extension of its Subdivision Rules and Regulations, using commonly accepted standards to resolve unusual circumstances. [M.G.L. c. 41, s. 81-R]

3.4 Effect of Prior Recording of Plan

The recording of a plan of a subdivision at the Registry of Deeds prior to the effective date of the Subdivision Control Law in the Town of Manchester-by-the-Sea (February 18, 1954) shall not exempt the land within such subdivision from the application and operation of these Subdivision Rules and Regulations except as specifically exempted by M.G.L. c.41, s.81-FF and the Manchester-by-the-Sea Zoning By-Law.

3.5 One Dwelling Unit Per Lot

Not more than one building designated or available for use as a dwelling purposes shall be erected or placed or converted to use as such, on any lot in a subdivision without the consent of the Board, and such consent may be made conditional upon the providing of adequate ways furnishing access to each site for such building in the same manner as otherwise required for lots within a subdivision. [M.G.L. c. 41, s. 81-Q]

3.6 Severability

In the event that any section, paragraph, sentence, clause or provision of these regulations shall be adjudged not valid, the adjudication shall apply only to the specific section affected, and the remainder of these Subdivision Rules and Regulations shall be deemed valid and enforceable. [M.G.L. c. 41, s. 81-GG]

3.7 Invalidation by State Law

Any part of these Subdivision Rules and Regulations subsequently invalidated by State law or amendment of an existing State law shall automatically be brought into conformity with the new or amended law, and shall be deemed effective immediately, without recourse of public hearing and the customary procedures for amendment and repeal of such Subdivision Rules and Regulations. [M.G.L. c.41, s. 81-Q]

3.8 Applicant's Responsibility

The action of the Board to approve a subdivision does not affect any rights of others pertaining to the land to be subdivided, nor does it grant any rights to the applicant to perform work on land owned by others. The Board assumes that any plans submitted for its approval or consideration to be correct, unless valid written evidence is presented to the contrary. The acquisition of necessary rights and presentation of complete and accurate information by engineers and surveyors to the Board are the responsibilities of the applicant; the failure to do so, including failure or inability to obtain all necessary state or local permits, licenses, releases or rights, may constitute a reason for the disapproval or the rescission of approval of a subdivision.

SECTION 4

APPROVAL NOT REQUIRED [ANR] PROCEDURES FOR SUBMISSION AND BOARD ACTION

4.1 Submission Requirements

Any person who intends to record a plan of land at the Registry of Deeds [“the Registry”] or file a plan with the Land Court and believes that his plan does not require approval under the Subdivision Control Law (M.G.L. c. 41, s. 81-P) may submit the Mylar and ten (10) prints of the plan to the Planning Board by delivery to the Town Clerk accompanied by an application Form A (see APPENDIX E) and the appropriate fee (see SECTION 7). Checks shall be made payable to “Town of Manchester-by-the-Sea.” All ANR plans must contain the information listed in the ANR checklist shown in Appendix E and be accompanied by the necessary evidence to show that the plan does not require approval.

The Town Clerk shall date-stamp the application form, thus establishing the date of submission. The applicant shall provide a copy of the date-stamped application form to the Planning Board. If requested, the Town Clerk shall provide a copy to the applicant.

The Planning Director is available to answer questions on procedures, fees, Subdivision Rules and Regulations and applicability of other state and local regulations.

4.2 Planning Board Action: Endorsement, Determination, Annotation

4.2.1 Plans meeting the requirements set forth above and that in the opinion of a simple majority of the Board do not constitute a subdivision shall be endorsed without a public hearing. The Board shall act within twenty-one (21) days of receipt of application by the Town Clerk and shall notify the Town Clerk in writing of its action. The Board may add to such endorsement a statement of the reason approval is not required. Following approval, the Mylar copy shall be returned to the applicant for recording at the Registry of Deeds or to be registered at the Land Court and the Board shall also notify the Town Clerk in writing of its action.

4.2.2 If the Board determines that the plan constitutes a subdivision, no endorsement will occur. The Board shall notify the Town Clerk within the limited twenty-one (21) days and the applicant shall be notified by certified mail.

4.2.3 In instances where an ANR also shows a lot or a parcel that does not fully comply with zoning, the Board may require that the Mylar be annotated to indicate the non-compliance. Examples include:

- a. 'This endorsement shall not substitute for zoning compliance and the Planning Board's endorsement of this plan does not constitute or presume that the lots shown herein comply with the Zoning By-Law or any another relevant regulation or requirement.'
- b. 'Lot "2" lot does not comply with Section 5.7.1 of the Zoning By-law. It is not at least two acres in area and does not have sufficient frontage and does not have sufficient width.'
- c. 'Nothing in the granting of this ANR creates a buildable lot where one had not existed previously.'
- d. 'Planning Board endorsement of this plan shall not constitute approval of any of the parcels shown herein as buildable lots. '
- e. 'This endorsement is limited to Lot "1-2" as shown on this plan.'

4.3 Failure of a Board to Act

If the Board fails to act upon a plan submitted under this section or fails to notify the Town Clerk and the Applicant of its action within twenty-one [21] days after its submission, it shall be deemed to have determined that approval under the Subdivision Control Law is not required, and it shall forthwith make such endorsement on said plan, and on its failure to do so, the Town Clerk shall issue a certificate to the same effect.

SECTION 5

PRELIMINARY SUBDIVISIONS **PROCEDURES FOR SUBMISSION AND BOARD ACTION**

5.1 Pre-Submission Meeting

Applicants with plans for Preliminary Subdivisions should schedule a meeting with the Planning Director prior to submitting any plan. The applicant should have a conceptual or study plan for discussion and a listing of his development team's qualifications.

The Planning Director is available to answer any questions on procedures, Subdivision Rules and Regulations, the applicability of other state and local regulations, and to explain the special account requirements under M.G.L. c. 44, s. 53-G.

5.2 Residential and Non-residential Plans

a. A Preliminary Plan may be submitted for residentially zoned land to the Board for action prior to the submission of a Definitive Plan. The submission of a Preliminary Plan will enable the applicant, the Board, other municipal agencies, owners of property abutting the subdivision and any interested parties to discuss and clarify potential problems of the subdivision before a Definitive Plan is prepared.

b. A Preliminary Plan shall be submitted for non-residentially zoned land.

5.3 Submission Requirements and Procedure

The applicant for a Preliminary Plan shall submit an application [Form B] and eighteen (18) sets of plans and supporting documents to the Board via the Town Clerk. (See APPENDIX E). Preliminary Plans shall comply with all requirements specified in Section 5.4 below, and must contain the information listed in the Preliminary Plan Checklist in Appendix E. The submission shall be accompanied by the filing fee and escrow amount (See SECTION 7). The appropriate fee and the amount of funds required to establish the special account for the project must be verified by the Planning Director prior to submission. Checks shall be made payable to "Town of Manchester-by-the-Sea." Incomplete applications will be grounds for denial.

The Town Clerk shall date-stamp the Form B thus establishing the date of submission of the Preliminary Plan. The applicant shall provide a copy of the date-stamped Form B to the Planning Board. The Planning Board will distribute the plans to the various Town Departments for comments.

The applicant is responsible for submitting the plan to the Board of Health and is directed to follow Board of Health guidelines.

5.4 Contents

The purpose of the Preliminary Plan is to show sufficient information about the subdivision to enable the Board to form a clear basis for the evaluation of potential problems of the subdivision prior to the preparation of the Definitive Plan.

5.5 Design Review

The Preliminary Plan will be reviewed by the DRT Team in order to determine whether it complies with the requirements of these Subdivision Rules and Regulations and is consistent with sound land use and community planning goals. Following review, the DRT will make suggestions for revisions it deems to be in the public interest.

5.6 Planning Board Action

Within forty-five (45) days after receipt of application by the Town Clerk, the Board shall without a public hearing approve, disapprove, or approve with conditions the Plan, noting thereon any changes that should be made, and shall file a notice of its actions with the Town Clerk and mail a copy of the notice to the applicant by certified mail, return receipt requested. The Board shall give its reasons for disapproving any plan.

5.7. Effect of action

- a. Approval of a Preliminary Plan is not binding on the Planning Board.
- b. Neither approval nor disapproval of a Preliminary Plan with or without modifications shall constitute approval of the subdivision.
- c. The Preliminary Plan cannot be recorded at the Registry of Deeds.
- d. If the submission of a Preliminary Plan is followed by the submission of a Definitive Plan within seven (7) months and the Definitive Plan is subsequently approved, the zoning provisions in effect at the time of submission of the Preliminary Plan shall govern the land shown on the Definitive Plan for eight (8) years from the date of the Board's endorsement of the Definitive Subdivision Plan.
- e. The Board recommends that prior to submitting a Definitive Plan the applicant review the Preliminary Plan with the Conservation Commission pursuant to the applicability of M.G.L. c. 131 s. 40 and the Manchester-by-the-Sea General Bylaws, Article XVII,

SECTION 6
DEFINITIVE SUBDIVISIONS
PROCEDURES FOR SUBMISSION AND BOARD ACTION

6.1 Pre-Submission Meeting

Applicants with plans for Definitive Subdivisions that have not received preliminary approval are requested to schedule a meeting with the Planning Director prior to submitting any plan. The applicant should have a conceptual or study plan for discussion and a listing of his development team's qualifications. The Planning Director is available to answer any questions on procedures, Subdivision Rules and Regulations, the applicability of other state and local regulations, and to explain the special account requirements under M.G.L. c. 44, s. 53-G.

6.2 Submission Requirements and Procedure

The applicant for a Definitive plan shall submit an application form [Form C] and eighteen (18) sets of plans and supporting documents [as shown on the Definitive Plan Checklists in Appendix E] to the Planning Board via the Town Clerk. The Plans shall comply with all requirements specified in Sections 6.3 through 6.11. REQUIREMENTS. All Definitive Plans must contain the information listed in the Definitive Plan Checklist in Appendix E.

The submission shall be accompanied by the filing fee and escrow amount (See SECTION 7). The appropriate fee and the amount of funds required to establish the special account for the project must be verified by the Planning Director prior to submission. Checks shall be made payable to "Town of Manchester-by-the-Sea." At the time of submission of a Definitive Plan, all plans and information must be complete and accurate and in acceptable form as required by these Subdivision Rules and Regulations and the fee paid before the application package is accepted. Incomplete applications will be grounds for denial.

The Town Clerk shall date-stamp the form thus establishing the date of submission of the Definitive Plan and the applicant shall provide a copy of the date-stamped application form to the Planning Board.

The Planning Board will distribute plans to the various Town Departments for comment as specified in Section 6.12 and schedule a Development Review Team (DRT) meeting. A public hearing date shall be scheduled as soon as possible.

The Applicant is responsible for submitting the plan to the Board of Health and is directed to follow Board of Health guidelines.

6.3 Plan Requirements

6.3.1 General Requirements

- a. The Definitive Plan shall be prepared, signed and stamped on each sheet by a Registered Professional Engineer and Land Surveyor. Plans shall be submitted as blue or black line prints at a suitable scale. The original shall be drawn on Mylar. The plans shall be submitted on 24" x 36" sheets, with the longer dimension on the bottom. The property shall be oriented on the plan, when possible, so that the top is in a northerly direction.
- b. Each sheet shall be consecutively numbered. Plans shall have a title sheet and an index sheet showing the entire subdivision and identifying each street's location on the index of the entire subdivision. A locus plan at a scale of 1" = 1000' shall show the location of the subdivision in relation to the existing street system.
- c. The Planning Board signature block shall be located in the same general spot on each sheet of the submitted set of plans.
- d. A Definitive Subdivision Plan shall include, but not be limited to the following:

6.3.2 Title Sheet Title block with name of owner of the property, number of lots, and total length of roadways.

6.3.3 Existing Conditions

- a. Locations and outlines of all existing buildings, septic systems, site features such as stone walls, fences, wooded areas, rock outcroppings, waterways, natural drainage courses, wetlands, water bodies, flood plains, and seasonal wet areas within or adjacent to the proposed subdivision.
- b. Location of abutting structures, buildings, driveways, etc. within three hundred (300) feet of the parcel proposed for subdivision, noting the ownership of adjacent properties.
- c. Lengths and bearings of tract boundary lines and meridian used.
- d. Location and descriptions of all rights-of-ways or other easements existing and proof of secured easements inside and connecting to the land to be subdivided.
- e. Topographical contour elevations at two (2) foot intervals. This may be required to extend beyond the property boundaries for drainage design analysis and evaluation of clear sight distance.

f. Zoning District boundaries including the Water Resource Overlay Protection District [see ZBL 4.9] or Flood Control District [see ZBL 4.7] if applicable.

<http://host.appgeo.com/manchesterma/Map.aspx>

g. Delineation of the vegetated wetlands line with station numbers noting the Conservation Commission's acceptance of the line, if applicable.

h. Trees twelve (12) inches in diameter [DBH] or greater located in the R.O.W. and other areas determined by the Planning Board.

6.3.4 Proposed R.O.W., Lot Lines, & Lots

a. Lengths and bearings of all subdivision lot lines, including lot frontage on the streets.

b. Lengths and bearings of all straight center lines of streets.

c. Lengths, radii, tangents, and central angles of all curves in lot lines and street center lines.

d. The location, name, width and grade of each street and public or private way, bounding, approaching, or within sight distance of the subdivision, and the proposed ways within the subdivision.

e. Existing and proposed granite or cement concrete monuments shall be shown at all points of curvature, points of tangents, and changes in direction of street lines, or where otherwise designated by the Board. Proposed monuments shall be installed to the specifications of the Massachusetts Land Court.

f. The total area of each lot

g. All proposed building lots shall meet or exceed the minimum area and frontage requirements specified in Section 5 of the Zoning By-Law.

6.4 Water Distribution System

The proposed water distribution system shall be shown on the Definitive Plan. The location and size of all existing and proposed water mains and their appurtenances shall be shown on plans and shall be subject to the approval of the DPW Director. The location of any operating water wells within the proposed subdivision or within the boundaries of a lot adjacent to the proposed subdivision shall be shown on the Definitive Plan. Re-location of all existing and the location of proposed fire hydrants will be subject to the approval of the Manchester-by-the-Sea Fire Chief and the DPW Director.

6.5 Surface Water Drainage

Pursuant to the requirements of Section 8.4 below, the proposed size, type and location of all drainage pipes, structures, detention and retention basins, and other appurtenances shall be shown on the Definitive Plan. Specific areas of concern are the impacts of the discharge of stormwater runoff to existing water bodies, natural waterways, wetlands and resource areas, and abutting land areas.

6.6 Utilities

The location of all proposed utilities to serve the proposed dwellings or buildings shall be shown. All utilities shall be underground. The location of streetlights shall be shown at street intersections. All wires shall be placed in conduit.

6.7 Notification

The following note shall be placed on each sheet of the plan: "All contractors shall contact the Planning Office two (2) business days prior to initiation of any construction or resumption after a stoppage of five (5) consecutive business days." In addition the DPW Director shall be notified in writing at least two (2) business days in advance of beginning any work in a public way. Street opening permits are required. See the DPW Director for permit requirements to ensure that contractors are aware of the requirements and times for inspections.

6.8 Parks, Playgrounds, Open Space

Proposed park or open areas shall be suitably located for playground or recreation purposes within the subdivision in accordance with M.G.L. c. 41, s. 81-U.

6.9 Plan, Profile, Cross Sections

The Plan of each street shall show:

- a. The extent of the cut or fill limits outside of the road layout required for construction of the way. Side Slopes shall have a maximum of 2:1 slope unless waived by the Planning Board due to a topographical hardship.
- b. Existing center line shall be shown as a solid line.
- c. All existing and proposed intersections, walks, driveways, shown on both sides.
- d. The high water elevation and all test hole locations.
- e. Elevations of at least two (2) bench marks as shown on plan, using NGVD datum.

Profiles – Each sheet shall show:

- a. Vertical profiles of proposed streets with only one (1) street shown per sheet.
- b. A horizontal scale of one inch equals forty (1"=40') feet and a vertical scale of one inch equals four (1"= 4') feet.
- c. Proposed centerline grades as solid line, showing grade elevations at every fifty (50) foot station, except in vertical curves which shall be at every twenty-five (25) foot station. Existing ground elevations of centerlines to be shown to the left of station. Depth of peat, ledge or undesirable roadway base material, as determined by test pits or borings, taken at the discretion of the Board or its engineer, shall be shown on the centerline.
- d. Rates of vertical curve gradients shown by figures and vertical curve design data.

Cross Sections – Typical Sections shall show:

- a. Each street between top and/or bottom of slopes; type, lines and width of all curbing to be used; type of catch basin-frame and grate to be used (see APPENDIX B) and all utilities.
- b. Description of roadway construction including materials to be used.

6.10 Environmental and Community Impact Assessment and Mitigation Measures

Unless specifically waived by the Board during the Preliminary Plan Submission, an Environmental and Community Impact Assessment (ECIA) is required in order to identify any significant impacts of a proposed development, and the best available technology to minimize or prevent negative impacts from occurring. The Final ECIA shall be included at the time of submission of a definitive plan.

All subdivisions must minimize impacts to areas with steep slopes, flood plains, wetland resource areas, unique land forms, and rare or endangered plant and wildlife species in accordance with the goals and objectives of the Master Plan 2000, and any duly approved successor Comprehensive Plan.

The Board may retain an independent outside consultant, as outlined in SECTION 7, to review the ECIA and recommend appropriate mitigation measures. If a consultant is retained, a scope of work shall be provided by the Planning Director with input from other Town agencies and approved by the Board.

The ECIA shall include an Analysis of Development Impact using nutrient loading standards as noted in the Hydrogeologic Study in Appendix G.

The following concerns must be considered in the ECIA:

- a) Impacts to groundwater resources
- b) Impacts to surface water bodies, rivers or Manchester Harbor
- c) Impacts of erosion from roadway, drainage or re-grading of land for house site construction
- d) Impact to existing water supplies
- e) Impacts to community services such as police, fire, public works, schools
- f) Impacts to traffic (See APPENDIX G for requirements)
- g) Whether the possible impacts are limited only to the subdivision or contribute to the cumulative incremental impact of environmental degradation of the surrounding area
- h) Measures to mitigate all identified impacts

6.11 Erosion/Sediment Control Plan

In order to reduce erosion occurring from the construction of roadways, utilities, drainage structures and regrading of house lots, and to prevent siltation/sedimentation of water bodies, water courses and wetlands resource areas, the Board shall require the submission of an Erosion/Sediment control plan. This plan shall explain in detail the specific mitigating measures that will be implemented by the developer, and any subsequent lot owners, both for short term and long term construction of the subdivision, including house lots.

In order for an Erosion/Sedimentation control plan to be effective and reduce cost to the developer, the designer shall consider the following in the early stages of designing a subdivision:

- a) Fit development to the terrain
- b) Schedule grading and construction to minimize soil exposure to weather elements
- c) Retain existing vegetation whenever feasible
- d) Vegetate and mulch barren areas
- e) Direct runoff away from barren areas

- f) Minimize length and steepness of slopes
- g) Keep runoff velocities low
- h) Prepare drainage ways and outlets to handle concentrated or increased runoff
- i) Trap sediment on site
- j) Inspect and maintain control measures frequently and during storms to check effectiveness

The plan must include the measures that will be implemented, both short and long term to prevent erosion. (See Appendix B, Section 4: EROSION CONTROL DURING CONSTRUCTION).

The plan shall explain the mitigating measures that will be taken to prevent stockpiles of soil from eroding or creating problems associated with airborne particulates. Plastic covers and temporary vegetation may be used to prevent these problems from occurring.

The plan shall also include items such as the location, extent and type of berms, dikes, dams, detention/retention/ settling basins, silt fence, hay bales or any other erosion control measures that will be used to prevent erosion and sedimentation of wetlands and natural water courses.

In order to prevent dirt and mud from being tracked onto the roadway, which then washes into the drainage system, the construction of a crushed stone apron for vehicles entering home construction sites will be required as part of the erosion control plan (See Section D, **Figure 1** for details).

If dirt is tracked onto an existing Public Way the DPW Director will require that the area be swept at the end of each day in order to prevent sedimentation of the existing town drainage system.

Erosion control plans shall be considered a part of any definitive plan approval.

Compliance with the National Pollution Discharge Elimination System (NPDES) Phase II program is required for all sites in excess on an acre. Such sites shall have a Storm Water Pollution Prevention Plan (SWPPP) available on site at all times.

6.12 Public Hearing and Abutter Notification

- a. Before consideration of any **Definitive Plan**, the Planning Board will schedule a public hearing in accordance with M.G.L. c. 41, s. 81-T at which parties in interest, or their agent, shall have an opportunity to be heard. Notice of the time and place of such hearing and of the subject matter, sufficient for identification shall be published in a newspaper with local circulation for advertisement once in each of two (2) successive weeks, the

first publication to be not less than fourteen (14) days before the date of the hearing. Notice of the hearing shall be mailed to the **Applicant** and to all **Abutters** in accordance with M.G.L. c. 41, s. 81-T.

b. The Planning Board shall submit the notice of the hearing to the Town Clerk with a copy sent for advertisement to a newspaper with local circulation. The cost of advertisement shall be the responsibility of the applicant.

c. In the event a Public Hearing is continued for more than five (5) months, the applicant may, at the Board's discretion, be responsible for the costs of re-notifying abutters and re-advertising the legal notice.

d. Abutter notification shall be made by the Planning Board, using a list of abutters from the latest tax listing and postage, all provided by the applicant.

6.13 Review Procedures

6.13.1 DRT At least three (3) weeks before the Public Hearing, the applicant shall meet with the Planning Director for a pre-hearing meeting. Discussion will focus on comments on the plan from the Board's consulting engineer and the DRT. The Planning Director will make a report to the Board summarizing the DRT comments.

6.13.2 Board of Health The Board of Health shall, within forty-five (45) days after the plan is filed, report to the Planning Board in writing, approval or disapproval of said plan, and in the event of disapproval, shall make specific findings as to which, if any, areas shown on such plan cannot be used for building sites without injury to the public health, and include such specific findings and the reasons therefor in such report, and where possible, shall make recommendations for the adjustments thereof.

a. If the report of the Board of Health shall so require, the approval by the Planning Board shall be on condition that no building or structure shall be built or placed upon the areas designated, without consent by said Board of Health.

b. Failure of the Board of Health to report shall be deemed approval by such Board. In the event approval by the Board of Health is by failure to make such a report, the Planning Board shall note on the plan that approval by the Board of Health is by failure to report.

c. When the Definitive Plan shows that no Town sewer system is to service the proposed lots, approval by the Board of Health shall not be treated as, nor deemed to be approval of a permit for the construction and use on any lot of an individual sewage system, and approval of a Definitive Plan for a subdivision by the Board of Health shall not be treated as, nor deemed to be, an application for a permit to construct or use an individual sewage system on any lot contained therein.

6.13.3 Conservation Commission The Applicant shall document prior to Planning Board approval of the Definitive plan that either the Conservation Commission has determined that the Wetlands Protection Act is not applicable to the proposed development or that the Applicant has filed a Notice of Intent with the Commission.

6.13.4 Other Town Officials Prior to approval of any Definitive Plan and Profile, the Planning Board will require a letter of review from the DPW Director, the Fire Chief and the Chief of Police. If any of the above officials fail to report, such failure shall be noted in the Minutes of the Public Hearing.

6.14 Board action on a Definitive Subdivision Plan

A. Decision The Board shall act within one hundred thirty-five (135) days (or ninety (90) days in the case of non-residential subdivisions and subdivisions for which a preliminary plan has been submitted), unless otherwise agreed upon by the Applicant and the Board. All issues raised by the Board, various Town Departments, abutters, the Board's consultants and the Planning Director shall be resolved to the satisfaction of the Board. Criteria for action by the Board shall be the following:

1. Completeness and technical adequacy of all submissions;
2. Determination that development at this location does not entail unwarranted hazard to safety, health and convenience of future residents of the development or of others because of possible natural disasters, traffic hazard, or other environmental degradation which will result in an increased threat to public health and safety;
3. Conformity with the requirements of these Rules and Regulations;
4. Determination based upon the **Environmental and Community Impact Assessment [ECIA]**, where submitted, that the subdivision as designed will not cause substantial damage to the environment, which damage could be avoided or ameliorated through an alternative development plan;
5. Conformity with all applicable zoning requirements;
6. Consistency with the purposes of the Subdivision Control Law.

B. Following action to approve, approve with conditions, or disapprove a Definitive subdivision plan, the Board shall file a certificate of its action with the Town Clerk and shall send notice of its action by registered or certified mail to the Applicant at his address stated in the application. Such summary will be available to any person upon request. A copy of the certificate shall be transmitted by the Board to the Building Inspector.

6.15 As-Built Plan Requirements

Prior to placement of any bituminous concrete, a Utility As-Built Plan shall be supplied by the applicant [three (3) contact prints] to be reviewed and approved by the Planning Board. If after review any construction modifications should be required by the Planning Board, an additional revised Utility As-Built plan shall also be submitted. All applicants must allow adequate time for Planning Board review and approval prior to scheduling with contractors for paving.

An accurate As-Built drawing of the development shall be submitted to the Board for approval within ninety (90) days of completion of all construction of the subdivision.

6.16 Roadway Acceptance Plan

For subdivision roadways intended to be public ways accepted by Annual Town Meeting, a separate road acceptance plan in addition to the As-Built plan, shall be prepared and submitted for approval. Definitive As-Built plan approval does not constitute acceptance by the Town.

The applicant shall submit a street layout plan suitable for recording, prepared by a Massachusetts registered land surveyor. The plan shall be prepared in accordance with the Rules and Regulations of the Registry of Deeds, M.G.L. C. 82 s. 17- 23 showing the “Boundaries and Monuments of the Way”. If registered land, a land surveyor is also responsible for preparation of an appropriate plan in accordance with the “Commonwealth of Massachusetts Land Court Guidelines on Registered Land”. Upon approval, As-Built and street layout plans shall be submitted to the Planning Board in electronic digital format acceptable to the DPW Director. The applicant shall be responsible for all recording fees at both the Registry of Deeds and/or Land Court.

The Planning Board shall retain a minimum of \$25,000 surety or one buildable lot from the start of construction until the street is accepted by Town Meeting vote. Upon completion of the roadway, the applicant shall have submitted the As-Built plan and street layout plan for presentation to the Annual Town Meeting. The applicant shall also prepare a written document listing the metes and bounds description of the proposed layout, by reference to assessors map and parcel number of all land or easements acceptable by both the DPW Director and Town Counsel. Such document shall be an easement acquired for a public way purposes that will provide the public with all necessary rights of travel and associated use of the way(s) and relative easements, including installation of utilities but will not convey the fee interest in the land contained within the public way layout. After the date of the Town Meeting vote, the remainder of the \$25,000 surety shall be returned or the lot released, to the person(s) who originally posted the surety.

6.17 Modifications or Amendments of Approved Plans

When an applicant proposes changes to an approved definitive plan, the same requirements shall apply as for filing a Definitive Plan (See Section 6.3 Plan Requirements). Any modification is subject to the Subdivision Rules and Regulations in effect at the time of application. Only the area of modification need be shown if the proposed modification or amendment is a lot development change or utility change. Should the proposed modification or amendment be directly related to a larger component (i.e. drainage, street layout, etc.) then the entire site must be shown on a modification plan.

6.18 Rescission

The Board shall have the power to rescind its approval of a definitive plan and all the provisions relating to the submission and approval of a plan shall be applicable to the rescission of such approval. Failure of the developer to record the Definitive Plan within six months of its endorsement, or to comply with the construction schedule, if any, incorporated into the performance agreement, or to either initiate construction of improvements or sell lots in a subdivision or portion thereof within eight (8) years of the approval of the Definitive Plan, or to comply with all applicable sections of the Zoning By-Law and requirements of the Conservation Commission under the Wetlands Protection Act, or any unauthorized departure from any agreements made from these Regulations or plans submitted, whether or not at the direction of other public agencies or officials, shall constitute sufficient reason for the Planning Board to consider rescission of such approval, in accordance with the requirements and procedures of M.G.L. c.41 s. 81-W.

6.19 Appeal

Any person aggrieved by any decision of the Planning Board concerning a plan of a subdivision of land, or by the failure of the Board to take final action concerning such a plan within the required time, may appeal to the Superior Court or to the Land Court provided that such appeal is entered within twenty (20) days after such decision has been recorded with the Town Clerk and must also give notice to the Town Clerk so as to be received within the same period.

SECTION 7

FEES, PERFORMANCE SECURITIES AND SPECIAL ACCOUNTS

7.1 Filing Fees

At the time of filing any plan with the Board, a Filing Fee in the form of cash or a check made payable to the “Town of Manchester-by-the-Sea” shall be submitted with the applicable package. The application packages will not be complete until all funds are deposited with the Manchester-by-the-Sea Town Treasurer. Filing fees are as follows:

PLANNING BOARD FEE SCHEDULE

Approval Not Required Plans [Form A]	\$250 per lot shown. (ANR)
Preliminary Subdivision Plan [Form B]	\$2500 + \$100 per lot (plus deposit of escrow account funds; see Section 7.2 below).
Definitive Subdivision Plan [Form C]	\$2500 or \$500 per lot, whichever is the greater (plus deposit of escrow account funds; see Section 7.2 below).
Definitive Plan Modification [Form C-M]	\$2500 or \$500 per lot, whichever is the greater (plus deposit of escrow account funds; see Section 7.2 below).

7.2 Special Accounts for Consultant Costs

The Board may retain the services of a professional consultant to advise the Board on technical matters, review plans and inspect approved developments if the Board requires the assistance of a Planning, Traffic, Engineering, Legal, Soils or other professional to provide technical reviews and inspections of Subdivision Plans. The applicant will be responsible for paying all consultant costs incurred by the Town. At the time of filing either a preliminary or definitive plan, the applicant shall deposit with the Town Treasurer the following amount to be held in an individual interest bearing escrow account:

3 Lots or Less:	4 or More Lots:
\$3,000 minimum deposit	\$3,000 minimum deposit, plus \$500 per lot in the proposed subdivision

Checks shall be made payable to the “Town of Manchester-by-the-Sea.” Funds in the individual interest bearing account will be spent to pay consultant fees for the specific project for which they were collected. If at any time prior to approval of the Plan or final completion of the project

the amount in the account falls below \$1,000 for subdivisions of 3 lots or less or \$3,000 for subdivisions of 4 or more lots, the applicant shall deposit sufficient funds to bring the account back to the amount of the original deposit or an amount determined by the Board. Said funds must be deposited within ten (10) days of written notification of the Board. Failure to replenish the funds in the account within ten (10) days shall be reason for denial of the plan for failure to comply with these regulations. In the case of approved plans, failure to replenish the required amount of money within ten (10) days of notification shall be cause for the Board to schedule a hearing to rescind the lot releases of developments that are incomplete.

Following completion of the development and payment of the final consultant bill for reviewing the As-Built drawings, the remaining money in the account, including interest, if any, shall be returned to the applicant. Upon request, a final report of the account shall be made available to the applicant.

If the legal ownership of the development is transferred to another party, the new owner shall be responsible for meeting all applicable requirements of this section by re-establishing the account for consultant reimbursement. Any person or entity claiming to be the applicant's successor in interest shall provide the Board with sufficient documentation to establish legal ownership. The balance of the original escrow account shall be returned to the party who deposited it.

The consultant retained by the Board shall provide the Board with a line item invoice which indicates the cost incurred for each project. The consultant shall also provide a report to the Board of their findings and recommendations.

An applicant may appeal the selection of the Board's consultant to the Board of Selectmen (BOS), providing that such appeal is made within fourteen (14) days of notification of the Board's appointment of the consultant. The reasons for such an appeal shall be limited to claims that the consultant selected has a conflict of interest or does not possess the minimum required qualifications. The minimum qualifications shall consist of an educational degree and five (5) years of practice in the field at issue and, an appropriate license, registration and/or certification in the field at issue. The required time limit for action by the Board upon an application shall be extended by the duration of the administrative appeal. In the event that no decision is made by the Board of Selectmen within thirty (30) days following the filing of the appeal, the selection made by the Board shall stand.

7.3 Performance Bond

Following the approval of a Definitive Subdivision Plan, the developer has three options for completing the development:

Option 1 The developer completes all infrastructure improvements associated with the development such as: roads, drainage, seeding disturbed areas, utilities and tree plantings. If all work is completed to the satisfaction of the Board, no performance security is required and the Board will authorize release of lots.

Option 2 The developer partially completes improvements associated with the development and posts a Performance Security to ensure completion of the remaining work. The amount of the Performance Security is based on the estimated cost of completion of the development plus contingencies and a factor of 20%. After the developer posts a security acceptable to the Board (see Section 7.6 Form of Security), the Board will authorize release of the lots.

Option 3 The developer has an approved Definitive Plan, however, no construction has begun. The developer posts a security acceptable to the Board for the entire amount of the cost associated with completing the development. The amount of the security will be based upon the estimated cost of all improvements associated with the development plus contingencies and factor of 20%. After the developer posts a security acceptable to the Board (see Section 7.6 Form of Security), they will authorize release of the lots with a condition that no lot may be built upon until the base course of asphalt leading to the lot has been inspected and approved.

7.4 As-Built and Roadway Acceptance Plan Security

Prior to the endorsement of a Definitive Subdivision plan the applicant shall post a security to ensure completion of an As-Built drawing of the development as required in Section 6.15 and a Roadway Acceptance Plan as required in Section 6.16. The amount of the As-Built Bond will be based upon the number of permanent monuments (bounds) and the length of roadway. Bond amounts will be calculated as follows: \$150 per bound and \$10 per foot of roadway.

7.5 Procedures

7.5.1 Release of Lots/Covenant

The developer shall request in writing an inspection for the purpose of determining an amount for the cost of completing the development.

Following receipt of the itemized estimate for the cost of completing the development from the Board's consultant, the Board will vote to set the amount of the security.

After the Board has received the security and accepts the bond as being adequate to ensure completion of the development, it will vote to release the lots and sign a lot release form. An original of the lot release form shall be recorded by the developer at the Registry of Deeds. Proof of recording shall be submitted to the Board within thirty (30) days of endorsement of the release.

7.5.2 Partial Release of Security

Following completion of improvements of development under construction, the developer may request, in writing, a partial release of the performance security. The Board will have an inspection made to determine the amount of money necessary to hold in the performance security in order to ensure completion of the development. Following

the Board's review of the inspection report the Board may vote to lower the amount of money required in the performance security. The Board will then notify the appropriate authorities to authorize a reduction of the performance security.

7.5.3 Total Release of Performance Security

a) Performance Security

Following completion of the development, the applicant shall request in writing a final inspection. If all work is completed to the satisfaction of the Board, the Board will vote to release all remaining funds held in the performance security. If work remains incomplete or unsatisfactory, the remaining work must be completed within thirty (30) days, at which time another inspection will be conducted. The Planning Director will notify the developer in writing within fourteen (14) days of all incomplete or unacceptable work. When all work is completed to the satisfaction of the Board, the Planning Board will vote to release the balance of the performance security.

b) As-Built Drawing and Roadway Acceptance Plan Security

Upon completion of the As-Built drawings and Roadway Acceptance Plan for public ways, the developer shall submit said drawings for review. Following an engineering review of the As-Built drawings, the Board's Engineer shall submit his/her findings to the Board. When the Board receives a favorable recommendation from its engineer to accept the As-Built and/or Roadway Acceptance Plan drawings, the Board will vote to release the security.

7.5.4 Continued Responsibility of Roadway

The developer is responsible for the continued maintenance of roadway and utilities of the new street up until the street is accepted by Town Meeting. This includes but is not limited to pavement wearing surface; snowplowing; drainage system; water; sewer; street trees; and sidewalks, if any.

7.6 Form of Security

Two forms of security are available to the developer to select from to act as a "bond". The Board's requirements for these securities are described below. No depository institution acting as owner/developer may submit its own passbook account.

7.6.1 Treasurer's (Bank) Check

Deposit of a signed check, made out to the "Town of Manchester-by-the-Sea", with the Town Treasurer.

7.6.2 Surety Company

Surety companies acceptable to the Planning Board and registered with Massachusetts Division of Insurance can be utilized for posting a performance bond. The petitioner is responsible for maintaining such performance bond in good standing until such time the Planning Board votes a release.

7.7 Review and Recall of Security

7.7.1 The performance security held to ensure completion of the development will be reviewed annually after approval and endorsement of the Definitive Plan or at more frequent intervals at the discretion of the Board. The Board shall call a meeting with the developer to review progress. If the Board finds that the development has not been carried out in good faith, the Board will vote to recall the bond as described below.

7.7.2 If the Board determines that construction of the roadway, drainage structures or other improvements shown on the approved and endorsed definitive plan have not been completed, the Board will notify the developer in writing. Said notification will specify the incomplete or unsatisfactory work and how the construction or installation fails to comply with the endorsed Definitive Plan and Rules and Regulations. If after forty-five (45) days of the Town Clerk's receipt of said notice all work has not been satisfactorily completed, the Board may vote to recall the performance security. The money held in the performance security will be transferred into a special account of the Town's General Fund for the purpose of expenditure on completion of the development. All obligations under the security by the developer will be void. Any interest or remaining balance of the security not expended on completion of the development will be returned to the developer.

SECTION 8

DESIGN STANDARDS

8.1 General

All definitive plans must comply with the design standards contained in this section and as shown in Appendices A and D. Any variation from these standards must be authorized by a formal vote of the Board and must specify the section of these Rules and Regulations for which a waiver is requested. Failure to comply with these standards without benefit of a waiver shall be grounds for denial of the Definitive Plan.

NOTE: Material specifications and design standards not specifically addressed within these Rules and Regulations shall comply with the standards set forth in **Standard Specifications for Highways and Bridges**, published by the Massachusetts Highway Department, hereafter referenced as “State Specifications”, and **A Policy on Geometric Design of Highways and Streets** published by the American Association of State Highway and Transportation Officials (AASHTO) hereafter referred to as “AASHTO.”

8.2 Design Guidelines

The roadway, drainage design and building construction in all subdivisions shall be designed to accomplish the following goals:

REDUCE, TO THE GREATEST EXTENT POSSIBLE:

- a) Volume of cut and fill;
- b) Area over which existing vegetation will be disturbed, especially if within 200 feet of a water body, wetlands resource area, or a slope of more than 15%;
- c) Number of mature trees removed. The petitioner should consult with the Tree Warden as to the removal of any trees that may be subject to the Shade Tree Act (M.G.L. c. 87) and/or the Scenic Road Act (M.G.L. c. 40 s. 15-C);
- d) Extent of waterways altered or relocated;
- e) Visual impact of man-made elements not necessary for safety;
- f) Erosion or siltation;
- g) Alteration of natural valley flood storage areas;

h) Disturbance of important wildlife habitats, outstanding ecological or botanical features, scenic views or historic resources;

i) Detrimental impacts to water quality

INCREASE, TO THE EXTENT REASONABLY POSSIBLE:

a) Vehicular use of principal streets to avoid traffic on secondary and minor streets providing house frontages;

b) Visual prominence of natural features of the landscape;

c) Legal and physical protection of views from public ways;

d) Design street layouts to facilitate southern orientation of houses;

e) Use of curvilinear street patterns;

f) Pedestrian and bicycle access and safety;

g) Natural green belt & trees, etc. on lots.

8.3 Streets

All streets shall be designed to provide safe vehicular travel. Consideration shall be given to the number of dwellings served and to creating an aesthetically pleasing design of the street layout.

8.3.1 Classification of Streets [see SECTION 2]

Subdivision streets shall be divided into the following classifications for the purpose of establishing the applicable design and construction standards:

Arterial Streets shall have a R.O.W. layout width of seventy-five (75) feet.

Collector Streets shall have a R.O.W. layout width of sixty (60) feet.

Minor Streets shall have a R.O.W. layout width of fifty (50) feet. Second means of access/egress required.

Lanes including cul-de-sacs shall have a R.O.W. layout width of forty (40) feet. No second means of access required.

8.3.2 Pavement Widths

	# of Lots Served	ROW	Min. Width of Traveled Way*
Lane	4-10	40 ft	20 ft.
Minor	11+	50 ft	22 ft.
Collector		60 ft	24 ft.
Arterial		75 ft	34 ft.

*Curb width is in addition to the Traveled Way Width

8.3.3 Cross-Section shall be as required on 8.3.2 above. The Board may require additional lanes, widths, or other dimension changes where the proposed use requires such for public safety. All cross sections shall conform to Figures 1 and 2 in Appendix D and shall meet the following design criteria:

- a) Except by approval of the Board, all wires for electricity, cable television, telephones or similar utility distribution systems shall be installed in conduit underground with all such distribution systems spaced not less than thirty six (36) inches (horizontally) from any water main, detector tape should be placed above the conduits.
- b) All poles for telephone, electric light or other cables shall be located at least five (5) feet from the face of the curb and shall not be placed in sidewalks.
- c) Sidewalks shall be constructed as indicated in Appendix A and Appendix D.

8.3.4 Location, Alignment, Intersections

- a) Property lines at street intersections shall have a radius of not less than thirty (30) feet. In the case of intersections with significant traffic flow or other public safety issues, greater radii may be required. Minimum roadway curb line radii at all intersections shall be thirty (30) feet.
- b) The minimum roadway centerline radius shall be one hundred fifty (150) feet [& one hundred (100) feet for a Lane]. Greater radii may be required for principal and secondary streets, or where otherwise determined by the Board to pose a safety hazard.
- c) Streets shall be laid out so as to intersect as nearly as possible at right angles. No street shall intersect any other street at less than sixty (60) degrees.

d) Streets entering opposite sides of another street shall be laid out either directly opposite each other or with a minimum offset of two hundred (200) feet between their center lines.

e) Connection of Subdivision Ways to Public Ways:

In the case of a Definitive Plan showing the connection of Ways within the subdivision over a private way to a Public Way, approval of the Definitive Plan shall be denied unless the applicant has sufficient rights in the Private Way to enable the applicant to construct improvements to the private way to bring it into conformance with the requirements of these Rules and Regulations, or as waived pursuant to M.G.L. c.41, s. 81R. The Definitive Plan shall show such Private Way, in accordance with the requirements set forth in Section 6.3 Plan Requirements and this section.

f) Reserve strips which prohibit access to streets or adjoining property shall not be allowed unless the Board determines that they are in the public interest.

8.3.5 Clear Sight Distance

a) All roadway design shall take into consideration safe sight distances not only at intersections but also along the traveled way, or as stated below. Clear sight distance shall take into account topography, density of dwelling units, and horizontal and vertical alignment.

b) There must be an unobstructed sight distance along both approaches of both roads at an intersection and across their included corners for a distance sufficient to allow the operators of both vehicles approaching simultaneously to see each other in time to prevent a collision. Visibility from centerline of a street shall never be less than fifty (50) feet for Lanes, seventy-five (75) feet for Minor Streets and Collector Streets and one hundred (100) feet for Arterial Streets. Sight distance at street intersections shall not be less than three hundred (300) feet in each direction. Any object high enough to constitute a visual obstruction, including structures, trees, vegetation, fences, cut slopes and embankments shall be removed or lowered. The Board may require greater sight distances for intersections with heavily travelled main roads.

8.3.6 Grades

a) Grades of all streets shall be not less than one percent (1%), nor more than six percent (6%). Where the six percent (6%) requirement would result in adverse impacts to the aesthetic value of the site due to extensive cut and/or fill or tree removal, the Board may waive the six percent (6%) requirement provided such waiver is consistent with safety determinants, including the distance from an intersection, the number of dwellings served, the type of street, the length of the steeper graded portion of the street, the horizontal alignment and street curvature. At all intersections, the minimum grade on the

approach street shall not exceed two percent (2%) within a distance of one hundred (100) feet of the point at which the edges of the travel lanes intersect. Street grade at cul-de-sac turnarounds shall not exceed three percent (3%). Intersecting streets shall have sag vertical curve on approach street to keep water from encroaching onto pavement of through street.

b) There shall be a vertical curve for any change in street grade. Where proposed pavements meet existing pavements a vertical curve is not required if the difference in tangent grades is less than one-half of one percent (0.5%). Vertical crest curves shall have a minimum K value of thirty-five (35). Sag curves shall have a minimum K value of forty (40). K values of vertical curves shall be adjusted to provide the required stopping sight distance for the design speed as defined by AASHTO.

8.3.7 Cul-de-sacs

a) General - Dead end streets, including cul-de-sacs, shall not exceed 500 feet in length, as measured to the back of the cul-de-sac property line, unless a greater length is deemed desirable by the Board because of topography or other local conditions. For the purposes of this Section, any proposed street which intersects solely with a dead-end street shall be deemed to be an extension of the dead-end street.

b) Design Standards - All cul-de-sacs shall be provided with the following:

1. A circular turnaround having an outside roadway diameter of at least one hundred (100) feet, and a property line diameter of at least one hundred and twenty (120) feet unless otherwise specified by the Board. The Board may, at its option, allow an outside roadway diameter of up to two hundred (200) feet with the placement of a circular landscaped island with a minimum radius of twenty (20) feet at the center of the turnaround, if the dead-end street is not intended to connect with another street at some future point in time.
2. The pavement width at all turnarounds shall be a minimum of eighteen (18) feet with a granite vertical curb and a six (6) inch reveal.
3. The unpaved area of all cul-de-sac turnarounds must be landscaped with low maintenance trees and shrubbery.
4. Road grade shall not exceed three (3%) within a cul-de-sac.
5. Bituminous paving shall be used.
6. Drainage shall be provided in accordance with the requirements of Section 8.4 below.
7. Modified turnarounds such as hammerheads may not be used.

8.4 Storm Water - Drainage

a) General - The proposed storm water drainage shall minimize contribution of pollutants to surface or groundwater on or off the site and shall not adversely impact adjacent property by creating ponding, significant changes in the water table or increases in water discharge as noted herein. The applicant must contact the Conservation Commission to determine if the M.G.L. c. 131, s. 40 and Town of Manchester-by-the-Sea General Bylaw Article VII, apply. The applicant is encouraged to be innovative in creating a system which will fulfill the objectives listed in Section 8.4 c).

b) Design - Storm water drainage systems shall implement "Best Management Practices" and conform to the guidelines described in the **Performance Standards and Guidelines for Storm Water Management in Massachusetts** published by the Massachusetts Department of Environmental Protection.

Under certain circumstances, the Planning Board may also consider, after demonstration by a registered engineer, other designs and practices common to Low Impact Development (LID) to mitigate the effects of storm water runoff when reviewing storm water drainage systems.

c) Objectives - All available drainage management systems shall be reviewed to determine the appropriate method or combination of methods for the site. Soil types, topography, wetland types and location, vegetative cover, water table, flood conditions and the presence of water bodies on or near the site shall all be considered in the design of the drainage system:

Plans and calculations shall be developed in coordination with the Board, Planning Director, DPW Director, Board of Health, and the Conservation Commission. The following objectives shall guide the design:

1. Protect surface and groundwater quality using creative, multi-stage systems;
2. Minimize disruption to existing natural and topographic features on the site;
3. Ensure no increase in the rate of discharge from pre-development to post- development conditions.
4. Minimize future maintenance of the system;
5. Ensure public safety;
6. Protect existing abutting homes, properties and septic systems;
7. Create aesthetically pleasing designs which enhance views of the natural environment;
8. Prohibit direct discharges into any water body or resource area.

8.4.1 Design Requirements - Design of the drainage system shall conform to the following requirements:

a. Calculations - There shall be no increase in the peak rate of storm water runoff leaving the site for pre- and post- development. Design calculations to determine the size of all pipes, culverts and basins shall be submitted to the Board for review and shall be prepared by a professional engineer registered in the Commonwealth of Massachusetts. Calculations shall be clearly organized, detailed and accompanied by a written narrative. Sizing of the piping system shall be based on the Rational Method. Drainage calculations shall include a map showing the tributary watershed areas, soil types and surficial cover characteristics (e.g., forest, grass, pavement).

b. Drainage System - The drainage system shall be designed based on a twenty- five (25) year storm event. A complete storm drainage system shall be designed for each street and shall be laid out and be of sufficient size to permit unimpeded flow of all natural waterways, to eliminate undesirable accumulation of water on any portion of the subdivision or surrounding property and to intercept storm water runoff from adjacent lots. The storm drainage system shall include catch basins, manholes, pipe, gutters, swales, culverts, head-walls, and other related items as may be required to complete the system to the satisfaction of the Board. APPENDIX B contains the specifications for acceptable materials and installation practices for drainage systems.

1. Catch basins shall be located along edges of pavement at all low points in the roadway and at intervals as follows:

Maximum 300 ft. for grades up to 4%

Maximum 250 ft. for grades from 4% to 6%

Maximum 200 ft. for grades greater than 6%

No basins shall be located within driveway curb cuts or at sidewalk handicap access ramps.

2. Storm water drainage piping shall be minimum twelve (12) inch diameter and shall have a minimum depth of cover of two feet six inches (2'-6") as measured from the roadway subgrade. Slope of pipe shall not be less than 1/2 of one percent (0.5%). The drainage system shall be designed for a minimum self- scouring velocity of three (3) ft./sec.

3. Drainage pipes shall have positive outfalls, head-walls with wing walls or pre- formed flared end sections, and rip-rapped stone aprons to provide energy dissipation. In every case, a minimum of thirty (30) feet of vegetated swale shall be provided above the high water line of any stream, swamp, bank or wetlands. All outfalls into resource areas or their buffer zones shall be subject to the approval of the Conservation Commission.

4. Manholes shall be located at all changes in direction of drainage pipe, either horizontally or vertically, at all pipe connections and at maximum intervals of three hundred (300) ft. along pipe runs.

5. Culverts shall be designed on the basis of a one hundred (100) year storm on the assumption that the entire drainage area is built up to the density allowed by the current zoning bylaws. Hydraulic Calculations necessary to determine the size of waterway opening shall be submitted to the Board for review. Culverts shall have a head-wall at each end. Culverts thirty-six (36) inches or greater in equivalent diameter shall include additional protection for roadway side slopes and grates.

c. Swales - Wherever practical, except alongside roadways, stormwater shall be channeled via open swales to facilitate the removal of contaminants.

1. Scuppers or swales from the roadway onto adjacent lots must be designed to direct flows away from any existing or proposed homes. Whenever possible, scuppers and swales should be grassed to promote aesthetics and the removal of contaminants. Where higher velocities require the use of a heavier lining, rip-rap, trap rock or other similar material shall be used to prevent erosion.

2. Swales shall have minimum side slopes of 3:1 (horizontal to vertical) with maximum slope of swale not to exceed five percent (5%).

3. Dense vegetative cover shall be established as quickly as possible. Organic matter shall be incorporated into the soil for pollutant removal. Grasses shall be planted to provide enhanced vertical resistance to stormwater runoff.

d. Off-Site Systems - The use of existing or proposed off-site drainage systems will require the submission of legal easements or agreements with the applicable land owner as well as an access easement in the Town's favor. Drainage systems within off-site easement areas must comply with the requirements of these Subdivision Rules and Regulations. Calculations must be submitted demonstrating conformance with these Subdivision Rules and Regulations. All easements must be of a form acceptable to Town Counsel. See Section 8.8 Easements.

e. Sites within Water Resource Overlay Protection Districts (WROPD) and Flood Control Districts - Special attention shall be given to sites within the WROPD as defined in Section 4.9 of the Manchester-by-the-Sea Bylaw and shown on a map with the same title, dated December 4, 2002; other communities' Zone II; and areas subject to protection under M.G.L. c. 131, s. 40 or Town of Manchester General By-Law, Chapter VII; and within the Flood Control District as defined in Section 4.7 of the Manchester-by-the-Sea Bylaw and as shown on a map entitled "Storm Drainage Improvements for the Bennett's Brook Drainage Area" dated October, 1971. <http://host.appgeo.com/manchesterma/Map.aspx>

For such sites, the Board will require that a nitrogen loading analysis be performed to determine the suitability of the drainage system. These requirements also apply to existing drainage facilities either on or off the site which will be affected by runoff from the proposed subdivision. The analysis shall be based on criteria established in the Manchester-by-the-Sea Zoning Bylaw Section 4.9.4.1(a-c).

f. Drainage Basins - Detailed designs of all detention/retention basins and pre- treatment basins are required. At a minimum they shall include cross sections, soil types, depth to maximum level of groundwater, final slopes and elevations. A planting and stabilization schedule is required for side slopes. Drainage basins shall meet the following criteria:

1. Bottom of basins shall be a minimum of two (2) feet above maximum groundwater level and shall be vegetated to promote filtration of contaminants. Permanent standing water is discouraged unless the basin is located adjacent to or hydrogeologically connected to a wetland or water body.
2. A pre-treatment facility shall be provided to remove contaminants from the water prior to entering a detention/retention basin. Contaminants shall include sediment, grit, oil and general debris. Pre-treatment facilities may include lined siltation basins, oil/water separators, and oil/grit separators. No water shall be permitted to recharge or leach into the ground unless it has been pre-treated to remove oil and sediment.
3. Basins shall be designed to contain a twenty-five (25) year design storm with one (1) foot of freeboard at the maximum water level. All basins shall be designed with an emergency overflow spillway with appropriate erosion control protection.
4. Retention facilities shall be designed to dissipate within seventy-two (72) hours based on the percolation rate of the soil. Percolation tests for the site shall be required if a retention basin with recharge of stormwater into the ground is proposed.
5. Basin length to width ratio shall be at least 3:1 to maximize distance from inlet to outlet. Basin surface area shall be maximized.
6. Side slopes in basins shall not exceed 3:1 (horizontal to vertical) above a permanent pool and 2:1 within a permanent pool.
7. In dry basins, a pervious low flow channel shall be used to prevent erosion of the bottom of basin. Low flow channels shall have a minimum grade of two (2%) percent to prevent ponding. Suitable protection shall be provided to prevent erosion of the channel.
8. All pipes and risers shall be equipped with trash racks and/or guards as appropriate to prevent entry by children and animals.

9. Basins and associated outlet aprons and swales shall be incorporated into separate land parcels exclusively for purposes of stormwater management rather than be shown as easements. These parcels shall include the required buffers and maintenance access.

10. All facilities shall be designed to blend into the landscape to obviate the need for fencing and screening. Wherever possible, they shall follow the natural contours of the land so as not to create large disturbed areas, steep slopes or walls. Basins over four (4) feet in depth are not permitted.

11. Means of access for mechanized maintenance equipment shall be provided to all basins.

12. Plans for pre-treatment marshes shall specify the average and maximum levels of the adjacent water body and the final proposed water level of the marsh. If storage capacity is being created, the plans shall illustrate the methods being employed as well as the type and elevation of inlets and outlets. A specific planting scheme of wetland vegetation is required.

(a). Pre-treatment marshes shall be constructed in upland areas. Wetlands shall not be removed or altered for marsh construction without approval of the Conservation Commission.

(b). To promote water quality, the marsh shall be designed to retain the "first flush" of stormwater runoff to allow contaminants to settle out prior to entering the adjacent water body. Subsequently, it must be capable of storing or detaining a ten (10) year storm event.

13. A fifty (50) ft. buffer zone of existing vegetation shall be retained between all basins or pre-treatment facilities and adjacent uses or structures. Buffers shall be adapted for access and shall be fully contained within the drainage lot. A thirty (30) ft. buffer zone of existing vegetation shall be retained between all point source discharges of stormwater and surface waters and wetlands. In tidal areas, the buffer zone shall be measured from the mean high tide level.

14. Basins shall have positive outfalls with rip-rapped stone aprons to provide energy dissipation. In every case, a minimum of thirty (30) ft. of vegetated swale above the high water line of any stream, swamp, bank or wetlands shall be provided.

15. The Board may require that a separate performance guarantee be posted to secure the completion and satisfactory functioning of any drainage basin or pre-treatment facility. This performance guarantee may be required for a specified time period to ensure the proper growth of plant species pursuant to M.G.L. c. 131, s. 40, 310 CMR (10.55).

g) An Operation and Maintenance Plan shall be submitted to set up the functional, financial and organizational mechanisms for the ongoing operation and maintenance of the stormwater management system, based on Section 6.15.8 of the Zoning By-Law of Manchester-by-the-Sea.

8.5 Utility Requirements

a) Water pipes and related equipment such as hydrants and water main shut-off valves shall be designed in accordance with the latest standards of the American Water Works Association and shall be installed under the direction and supervision of the DPW Director to serve each lot of the subdivision.

b) Public Water Supply Standards: Wherever feasible, water supply shall be provided from a public water supply system. The water supply system will be considered adequate only if it is capable of providing each proposed fire hydrant with a flow of 750 gpm at 20 psi residual pressure for single and two family residential developments. For multi-family and non-residential developments approval of the Fire Chief is required. Each proposed lot shall have water pressure of 35 psi, average peak day, at street grade without individual booster pumps for domestic water. Where any part of any lot is at elevation 120 feet (msl) or higher, the applicant shall submit calculations documenting supply adequacy.

c) Private Supply Standards: Where connection to the public water supply is not feasible in the opinion of the Planning Board, the Planning Board may approve a subdivision upon the Board's determination, following consultation with the Fire Chief, that a sprinkler system or other provisions will adequately provide for fire safety. In addition, upon the Board's determination, following consultation with the Board of Health, wells on each lot shall be able to provide a sustained yield of five gpm of water meeting latest edition DEP "Drinking Water Regulations of Massachusetts" standards. Test wells may be required of the applicant.

d) Sewage disposal: On-site sewage disposal facilities shall be constructed in conformance with the Rules and Regulations of the Board of Health as promulgated and amended from time to time. No house may be occupied until the sewage disposal facilities have been approved by the Board of Health, and a certificate of occupancy has been issued by the Building Inspector.

The applicant shall submit sufficient information including test pits, perc tests, topographic and hydrologic data to indicate the feasibility of on-site disposal in the event public sewers are not available.

8.6 LED Street Lights

Street lights may be required at intersections of streets, near sharp turns or other areas where the Board deems they are needed for public safety. All fixtures shall be LED and shall have a color temperature approved by the Board and the DPW Director. Lighting shall be directed downward to prevent light from shining into residences or the eyes of pedestrians or drivers. The developer is responsible for installing the pole, wiring and arranging installation of the light fixture. The developer is responsible for paying for the cost of electricity until such time as the road is accepted by Town Meeting, or in the case of private roads, approval of the As-Built drawing at which time the light bill will be paid by fee owners of the road. Street lights must be installed prior to the issuance of the certificate of occupancy for the first dwelling in the subdivision. Design and placement shall be approved by the DPW Director.

8.7 Street Names

Road names shall be determined by the Planning Board with the advice of the House Numbering Committee at the time of approval of the Definitive Plan. Street name signs that conform with street signs used by the Town shall be furnished and erected at all street intersections. Other road signs, i.e. "Private Street", shall be furnished and erected, as the Board determines necessary.

8.8 Easements

Utility or drainage easements shall be provided where necessary and shall, whenever possible, be centered on side or rear lot lines, and shall be a minimum of twenty-five (25) ft. wide. For any utilities or drainage pipes buried greater than ten (10) feet below finished grade, the Planning Board will require Town ownership in lieu of an easement unless a public benefit can be demonstrated. All easements shall be shown on the definitive plan, As-Built drawing and Roadway Acceptance Plan.

All easements shall be accompanied by Easement Documents for recording at the Registry of Deeds. Easements must be clearly defined and described on the definitive plan. The applicant is responsible for recording all easement documents following endorsement of the definitive plan by the Board. Proof of recording shall be submitted to the Board within thirty (30) days of endorsement of the plan. Easements shall be in a form acceptable to Town Counsel.

There shall be no placement of any structure and/or subsurface system either above or below the land subject to an approved easement unless such easement is expressly dedicated to such use.

SECTION 9

FRONTAGE WAIVER REQUESTS

Applicants shall apply under the same procedures as a standard Definitive Subdivision plan, however, the plan showing the lots for which a waiver is requested shall consist of a plan similar to an ANR plan. All other plan requirements shall be the same as in a modification request.

SECTION 10

STREET SIGNS

During construction, temporary signage shall be posted for street identification. The developer shall erect and set in concrete the permanent street sign pole. The street sign will be made by the Department of Public Works upon written request and payment of the applicable DPW fee. The developer is then responsible for installing the sign on the pole prior to the issuance of the certificate of occupancy for the first house in the development. All streets must have a sign made by the DPW that conforms to Town specifications. Any other proposal for street identification shall require approval from the DPW prior to installation.

SECTION 11

SHADE TREES

All subdivisions shall have deciduous shade trees in order to enhance the aesthetic quality of the streetscape.

The location, size, number and species of trees shall be approved by the Planning Board, after consultation with the Tree Warden. Following the construction of the base course of the roadway, the developer shall request the Tree Warden to verify the staked locations for tree plantings. Groups of trees or shrubs may be required within the island of a cul-de-sac.

Trees shall be nursery stock quality, minimum of two (2) inch caliper. All trees must be properly wrapped and guyed, where indicated. Trees shall be planted at appropriate seasons in order to ensure survival. The developer shall be responsible for maintaining the health of the trees for two (2) full growing seasons or until such time as the As-Built plans of the street are approved by the Board (private ways), or the acceptance of the street by Town Meeting (public ways) whichever is longer.

SECTION 12

PRESERVATION OF NATURAL VEGETATION

Every effort shall be made to preserve the existing trees or other rare or unique flora within the R.O.W. and on the lots being created. Cuts and fill for roadway construction shall be done in a manner that preserves natural vegetation whenever possible. Stock-piles of fill shall be located in areas that do not bury existing trees above the natural grade. Machine operators shall exercise due caution during construction and avoid unnecessary damage to root systems or scraping bark from trees to be preserved.

The developer shall erect 8 ft x 8 ft. temporary wooden tree guards around specific trees designated to be saved to protect them from damage during construction.

SECTION 13

CONSTRUCTION STANDARDS

The construction of all subdivision improvements shall only occur during seasonal and weather conditions that allow for high quality infrastructure construction, utilizing accepted industry standards. See APPENDIX A, APPENDIX B, and APPENDIX D.

SECTION 14

CLEAN UP

Upon completion of all work on the ground, the developer shall remove from the streets and adjoining property, all temporary structures and all surplus material and rubbish which may have accumulated during construction, and shall leave the work in a neat and orderly condition. During construction, the developer shall keep the site free of rubbish which may be carried by wind or rain off the site to abutting properties or onto public ways.

SECTION 15

MAINTENANCE

The developer shall maintain the roads for vehicular travel, including snow plowing, in a manner satisfactory to the Board, until approval of the As-built plan for private roads or acceptance by Town Meeting for proposed public ways. Further, the developer shall maintain the completed roads, drainage structures and shade trees in a subdivision in a condition which meets all the above requirements to the satisfaction of the Board up until approval of the As-Built plan or until acceptance of the roads by vote of Town Meeting.

APPENDIX A

ROADWAY CONSTRUCTION SPECIFICATIONS AND STANDARDS

The following specifications shall govern the construction of all streets within the right- of-way (R.O.W.) lines of a proposed subdivision under the Rules and Regulations governing the Subdivision of Land, adopted by the Manchester-by-the-Sea Planning Board.

The term "**Standard Specifications**" as used in this section in reference to materials and methods of construction shall mean **Standard Specifications for Highways and Bridges** of the Massachusetts Highway Department, dated 1988, and including all supplements and revisions.

The term "AASHTO" shall refer to "A Policy on Geometric Design of Highways and Streets" published by the American Association of State Highway and Transportation Officials.

The contractor shall notify the DPW Director in writing at least forty-eight (48) hours in advance of beginning any construction within a public way.

1.0 ROADWAYS

1.1 Clearing and Grubbing

A. All areas to be cleared and grubbed within the roadway R.O.W. lines of a subdivision shall be clearly shown on the definitive plan in conjunction with the proposed landscaping.

The intent of the Planning Board is to maintain as much of the original natural vegetation as possible within a subdivision.

Trees to be preserved shall be physically protected from construction operations in a manner satisfactory to the Tree Warden.

Areas to be cleared and grubbed shall be cleared of all stumps, brush, roots, boulders and trees not designated for preservation.

All resulting debris from clearing and grubbing operations shall be properly disposed of off- site in accordance with all local, state and federal regulations. Stump dumps shall not be permitted within a subdivision.

Clearing and grubbing shall be required as follows:

- a) A minimum of four (4') feet from the proposed sideline of the travelled way of an Arterial, Collector or Minor Road
- b) A minimum of two (2') feet from the sideline of the travelled way of a Lane
- c) Within areas required for grading purposes
- d) Within ten (10) feet of an underground utility
- e) As required to maintain sight lines

B. All loam and other yielding material not suitable for foundation material shall be stripped from the full length and width of the paved roadway area of each street or way –under the six (6) foot wide grass shoulders and under sidewalks- to a depth of four (4) feet below the finished sub-grade and to a greater depth as may be required by the Planning Board or by the Director of Public Works, and replaced with an approved material. The sub-grade shall be thoroughly compacted before applying the gravel surface. Ledge and large boulders occurring anywhere in the full cross-section of the roadway must be cleared to a minimum depth of eighteen (18) inches below the finish surface. Roadway crown shall be 2% percent. No loam or gravel shall be removed from the area shown on the Definitive Plan except in accordance with the approved Plan.

C. Grade stakes shall be set and maintained at fifty (50) foot intervals on each side of the right-of-way.

1.2 Sub-Base and Base

A. The roadway shall be provided with a gravel base consisting of at least fifteen (15) inches compacted thickness of binding gravel [eighteen (18) inches in the case of Minor, Collector, Arterial and Industrial-Commercial Streets], satisfactory to the Director of Public Works, clean, free of organic matter, and containing no stones over three (3) inches in diameter, The gravel shall be spread in two (2) layers, each thoroughly watered and rolled true to line and grade.

B. Before the gravel is spread, the roadbed shall be shaped to a true surface conforming to the proposed cross-section of the road. Rolling shall be with an approved three (3) wheel roller or equivalent, weighing not less than ten (10) tons. All layers shall be compacted to not less than ninety-five (95) percent of the maximum dry density of the material as determined by the Standard **AASHTO** Test Designation T-180 compaction test Method D, at optimum moisture content. Any depressions that occur, either during or after rolling, must be filled with additional gravel and re-rolled until the surface is true and even. When required by the Board or the Director of Public Works, samples of the gravel to be used shall be tested for gradation by a sieve analysis and the compacted gravel shall be tested for compaction. The Planning Board may require streets to be re-excavated if the gravel base is placed prior to Plan approval or prior to an inspection and approval of the base.

The grading shall conform to the following requirements:

SIEVE	PERCENT PASSING
1/2 inch	59% - 85%
3/8 inch	45% - 80%
No.4	40% - 75%
No. 10	30% - 60%
No. 40	10% - 35%
No. 200	0% - 10%

C. The completed gravel base shall be treated the full pavement width as specified by the Director of Public Works.

D. Four (4) inches of dense graded crushed stone meeting the requirements of Section M2.01.7 of the **Standard Specifications** to be spread and compacted in accordance with Section 402 of the **Standard Specifications**.

E. The base material shall continue beyond the edge of the travelled way a distance of six (6) feet to provide a stabilized shoulder for occasional parking of vehicles.

1.3 Pavement

A. The base and finish courses of roadways and driveways within the right-of- way shall be Type-I Bituminous concrete pavement applied as per the table below, in accordance with Section 460 of the **Standard Specifications**.

<u>Pavement Thickness</u>	<u>Base Course</u>	<u>Finish Course</u>
Lane	2"	1 ½"
Minor Street	2 ½"	1 ½"
Collector Street	2 ½"	2"

B. The base course shall be applied after the treated roadway has been sufficiently compacted as approved by the Director of Public Works. No pavement shall be laid if frost is present in the ground. The finish course shall be applied only after the base course has weathered through at least one (1) winter and the temperature is 40° and rising

2.0 SIDEWALKS

2.1 Location, section and dimensions of concrete sidewalks shall be as shown in Figure 2. Sidewalks shall be at least six (6) inches higher than the adjacent roadway and at least 4'-6" wide.

2.2 Sidewalks shall be constructed of four (4) inches of cement concrete on a minimum eight (8) inch gravel borrow sub-base conforming to the requirements of Section 701 of the **Standard Specifications**. Concrete shall have a minimum 28 (twenty-eight) day compressive strength of 4,000 psi with maximum ¾ inch aggregate. One layer of No. 4, four by six inch (4x6) welded wire mesh shall be provided at mid-depth. The walking surface shall be broom finished. Concrete surfaces shall be coated on the top and sides with an approved sealer. Expansion joints (1/2 inch open) shall be provided at least every twenty (20) feet, with score joints at four (4) foot intervals. All expansion joints shall use a pre-formed expansion joint filler conforming to Section 9.14.0 of the **Standard Specifications**.

2.3 Sidewalks may meander to avoid destruction of existing major trees.

2.4 All driveway aprons that cross proposed sidewalks shall be concrete to match the concrete sidewalk. Concrete driveway aprons shall be installed with the installation of sidewalks.

3.0 CURB OR BERM

3.1 Curb or berm shall be placed along both shoulders of traveled ways.

a. Hot Mix asphalt monoberm shall be installed along both sides of all streets except where vertical granite curb is required as set forth in Section 3.1 b. below.

b. Vertical granite curbing Granite Curbing Type VA4 with six (6) inch reveal which is cut to the required radius, shall be placed after the binder course and before the finish course of Hot Mix Asphalt.

Granite curbing is required in the following locations:

1) intersections vertical granite curbing shall include curb return radius curb, one 6 ft. long straight curb section, and a transition curb at each location.

2) all curves having a radius of sixty (60) feet or less at the street line or a central angle of thirty (30) degrees or more shall have the gutter line curbed with curbing both circular and straight to fit the curve and the ends of the curve shall be extended by a straight section of curbing not less than five (5) feet long.

3) the straight leg of T- intersections and shall extend for the same length as the granite curb on the opposite side of the street.

4) roadway segments sloped steeper than six (6) percent, and shall terminate with 6 ft. long transition curbs.

5) the entire perimeter of all cul de sac turnarounds. Where a raingarden is proposed, curbing shall be omitted around cul-de-sac islands to allow stormwater runoff to flow into a cul-de-sac raingarden.

3.2 Curbing shall be omitted along roadway segments or along entire roadways to allow stormwater runoff to flow into dry swales.

4.0 GRASS STRIPS AND CLEARED AREAS

All areas disturbed by construction and grading operations adjacent to the pavement and sidewalk, within the limits of the Right-of-Way shall be seeded. A minimum of six (6) inches of loam (depth after compaction) shall be applied and the areas shall be seeded with grass seed. Composition of seed mixture must be indicated on the Definitive Landscape Plan. A dense robust vegetated area must be established and maintained until the development is certified as complete by the Board. These areas shall be periodically mowed and watered as required to maintain a neat appearance during construction of houses in the development.

5.0 UNDERGROUND UTILITIES

5.1 All underground utilities shall be marked with continuous plastic detector tape located in the backfill six (6) inches above the utility.

5.2 Water mains, hydrants and house lateral connections shall be constructed in accordance with the requirements of the Manchester Department of Public Works.

6.0 GUARD RAILS

Guard rails shall be required whenever the slope is greater than four (4) horizontal to one (1) vertical downhill, and the length of the slope is determined by the Board or the DPW Director to constitute a hazardous condition or there is a drop of more than four (4) feet from the Traveled Way to the bottom of slope. Guard rails shall comply with current **Standard Specifications**.

APPENDIX B

DRAINAGE MATERIALS AND INSTALLATION SPECIFICATIONS

1.0 GENERAL

1.1 DESCRIPTION

- a) This section specifies the materials and methods of construction required for the construction of a storm drainage system for a proposed development
- b) An applicant may propose alternate materials and methods of construction which deviate from the requirements of these specifications provided that such proposed alternates are of equal or better quality to the materials and methods of construction specified in this section. The Board will be the sole judge as to the acceptability of any proposed alternate.

1.2 STATE SPECIFICATIONS

The term "**Standard Specifications**" in this section shall mean materials and methods of construction, and shall refer to the **Standard Specifications for Highways and Bridges** of the Massachusetts Highway Department, dated 1988, including all amendments.

1.3 NOTIFICATION

The contractor shall notify the DPW Director in writing at least forty-eight (48) hours in advance of beginning any construction within a public way.

2.0 MATERIALS

2.1 PIPE

- a) Pipe for storm drainage systems shall be either reinforced concrete pipe (Class III minimum), HDE or corrugated plastic meeting the requirements of Sections M5.02.1 and M5.03.10 of the **Standard Specifications**, respectively. Minimum pipe size shall be twelve (12) inch diameter. Corrugated plastic pipe shall not be used as flared ends or in other applications where the pipe is exposed to vandalism or ultraviolet radiation. Corrugated plastic pipe shall have a smooth interior.
- b) Pipe joint material for reinforced concrete pipe shall be rubber ring or plastic gaskets made of tough, flexible, chemical-resistant material of such size and shape to ensure satisfactory, watertight pipe joints in conformance with ASTM-C443. Gaskets for joining pipe shall be compatible with the pipe system. Corrugated plastic pipe shall be firmly joined by an approved coupling. Methods for joining pipe shall be approved by the DPW Director.

2.2 MANHOLES AND CATCH BASINS

- a) Manholes and catch basins shall be precast concrete units conforming to the requirements of Section M4.02.14 of the **Standard Specifications**. Concrete for precast units shall have a minimum twenty-eight (28) day compressive strength of 4,000 psi. Precast units shall be designed for HS-20 loading. Joints between sections shall be tongue and groove, sealed with a rubber joint material conforming to ASTM C361. Exterior surfaces of precast units shall be sealed with a cold applied bituminous sealer. Size and dimensions of manholes and catch basins shall be approved by the DPW Director.
- b) Castings for frames, grates, covers and hoods shall conform to the requirements of ASTM A48, Grade 30, minimum. All castings shall be coated with an approved black asphaltum.
- c) Brick and mortar for field adjusting collars shall conform to the requirements of Sections M4.05.02 and M4.02.15 of the **Standard Specifications**, respectively.
- d) The minimum diameter of manholes shall be forty-eight (48) inches. Manholes shall have cast iron or reinforced plastic step rungs at twelve (12) inch spacing for access to the bottom. Steps shall be designed for a minimum load of three hundred (300) pounds. Manhole covers shall have the word "DRAIN" embossed on the cover unless otherwise directed by the DPW Director.
- e) Catch basins shall have a minimum three [3'-0"] foot sump provided. Cast iron hoods shall be provided on all outlet pipes to prevent floating oil and debris from entering the drainage pipe.

2.3 PIPE OUTFALLS

- a) Flared end sections of pipe shall be reinforced concrete precast sections (Class III) conforming to the requirements of Sections M5.02.0 of the **Standard Specifications**.
- b) Headwalls and wingwalls for end sections shall be constructed of reinforced concrete with a minimum 28 day compressive strength of 4,000 psi conforming to the requirements of Sections M4.02.00 (4,000 psi, 3/4 inch, 610 pound cement) of the State Specifications. Steel bar reinforcement shall be ASTM A615, Grade 60. Headwalls and wingwalls shall be designed in accordance with the requirements of the **Standard Specifications**.
- c) All pipe outfalls shall be protected from erosion with stone for pipe ends conforming to the requirements of Section M2.02.3 of the **Standard Specifications**.

3.0 CONNECTIONS TO EXISTING STRUCTURES

3.1 Cut holes in existing structure walls for new pipe connections to the minimum size required for pipe installation. Completely fill the space around the pipe with stiff cement mortar for the full thickness of the wall. All pipes shall be cut flush with the inside of structure.

3.2 Rim elevations of existing drainage structures shall be adjusted as required to meet new finished grades. Grade adjustments shall be made in the masonry leveling course.

4.0 EROSION CONTROL DURING CONSTRUCTION

4.1 The drainage system shall be made operational as soon as it is complete. At no time shall a completed drainage system be prevented from operating. Until adjacent embankment cut and fill slopes are stabilized to prevent erosion, and during construction on adjacent lots, the contractor shall employ temporary erosion control measures as necessary to prevent sediment from entering the drainage system.

4.2 The type and design of erosion control measures that will be required will vary from site to site and the specific cause of environmental degradation. The protective measures may consist of, but are not limited to:

- a. Temporary sedimentation pools for the protection of rivers, lakes, streams and ponds
- b. Temporary earth berms and slope drains to control and channel heavy runoff, thus preventing washouts
- c. Ditches and swales at bottoms of slopes
- d. Check dams in swales and ditches to slow runoff
- e. Filters at drain inlets
- f. Energy dissipaters at culvert outlets such as splash pads and rip rap
- g. Silt fences with or without straw wattle barriers
- h. Straw wattle barriers

4.3 An erosion control plan describing materials and specific methods of erosion control must be submitted as part of the definitive plan submittal and shall be approved by the Board.

4.4 If the final top course of pavement will not be applied immediately, the catch basin grates shall be temporarily set at the base course elevation to allow storm water to enter the drainage system. When the final top course of pavement is applied, the grate elevations shall be adjusted to meet the final grades.

5.0 FINAL ACCEPTANCE

Prior to final acceptance of the drainage system, all pipes, drainage structures, basins and swales shall be flushed and cleaned to remove any accumulated sediment and debris. All temporary erosion control measures shall be removed.

The developer shall be responsible for snow plowing and sanding during inclement weather until a roadway is accepted by the Town. In the event of a public safety emergency, the developer shall be responsible for all costs incurred by the Town for failure to maintain safe and adequate access.

APPENDIX C

INSPECTION AND TESTING OF REQUIRED IMPROVEMENTS

1.0 SCOPE

Construction of all subdivision improvements must be inspected at each significant stage of construction to ensure compliance with the approved Definitive Subdivision Plan by the Board's authorized Professional Engineer. Such inspection shall include observation of the work; review of plans for compliance, sketch plans, manufacturer's literature, manufacturer's technical drawings similar in content to shop drawings; measuring, sampling and testing; evaluation of field changes, and submission of construction inspection reports to the Board.

1.1 REQUESTS FOR INSPECTIONS

The applicant shall have sole responsibility for submitting requests for inspections to the Planning Board office in writing at least forty-eight (48) hours in advance and shall not proceed with work until the Board's Engineer is on-site to observe with work. If the Board's Engineer is unable to make required inspections for forty-eight (48) hours after the work is ready for inspection, the applicant shall notify the Planning Board Office so an alternate may make the inspection.

2.0 REQUIRED INSPECTIONS

The intent of the construction inspection process is to provide for thorough inspection all improvements at each significant stage of construction to ensure compliance with the approved Definitive Subdivision Plan. The Board or its professional consultant shall determine the number, timing, and scope of required inspections which shall include the following as a minimum:

- (1) Review of SWPPP compliance documentation.
- (2) Inspection of sedimentation and erosion controls; initial.
- (3) Inspection of sedimentation and erosion controls; quarterly or following major storm events.
- (4) Inspection of clearing and grubbing of right-of-way.
- (5) Inspection of excavation below normal depth if applicable.
- (6) Inspection of subgrade following completion of excavation if required by the Board.
- (7) Review embankment material gradation test.

- (8) Inspection of embankment construction.
- (9) Inspection of staking.
- (10) For stormdrain system, (i) review of manufacturer's certificates, (ii) literature, (iii) and technical drawings for all materials and products furnished and installed.
- (11) Inspection of stormdrain system installation; (i) bottom of trench, (ii) each drain line installation before backfill, (iii) each drain structure installation before backfill, (iv) backfill in lifts.
- (12) Inspection of catchbasin and drain manhole castings.
- (13) Inspection of swales, raingardens, lawn depressions, building roof water recharge systems.
- (14) Inspection of sediment forebays, retention basins, and detention basins including inlet and outlet control structures and dewatering systems.
- (15) For sanitary sewer system, (i) review of manufacturer's certificates, (ii) literature, (iii) technical drawings for all materials and products furnished and installed.
- (16) Inspection of sanitary sewer system installation; (i) bottom of trench or excavation, (ii) each sewer line installation before backfill, (iii) each sewer structure installation before backfill, (iv) backfill in lifts.
- (17) Inspection of sanitary sewer lateral installation; (i) bottom of trench, (ii) each lateral line installation before backfill, (iii) backfill in lifts.
- (18) Inspection of sanitary sewer manhole castings.
- (19) Observe sanitary sewer line, (i) sanitary sewer building service, (ii) sanitary manhole testing and review test results.
- (20) For water distribution system, (i) review of manufacturer's certificates, (ii) literature, (iii) technical drawings for all materials and products furnished and installed.
- (21) Inspection of water distribution system; (i) bottom of trench, (ii) installation of each segment of watermain before backfill, (iii) backfill in lifts.
- (22) Inspection of valve box and curb box covers.
- (23) Inspection of watermain chlorination and disinfection and review of test results furnished by Applicant's laboratory.

- (24) Inspection of watermain pressure and leakage testing and review of test results furnished by Applicant's laboratory.
- (25) Inspection of building water service installation.
- (26) Inspection of hydrant installation and adjustment to required height above finished grade.
- (27) Review compaction tests for completed subgrade.
- (28) Inspection of fine grading and compacting subgrade.
- (29) Review gravel base material gradation test furnished by supplier.
- (30) Inspection of gravel base for roadway placement and compaction in lifts.
- (31) Inspection of dense graded crushed stone base placement and compaction in lifts.
- (32) Review gravel base material gradation test furnished by supplier.
- (33) Inspection of gravel base for sidewalks placement and compaction in lifts.
- (34) Review survey of center line and both gutter lines prior to placing roadway binder.
- (35) Review pavement mix.
- (36) Continuous inspection during installation of roadway binder course.
- (37) Computation of pavement quantities.
- (38) Inspection of curb, edging, and berm installation.
- (39) Inspection of curb inlet, throatstone, and transition curb installation.
- (40) Review pavement mix.
- (41) Continuous inspection during installation of sidewalk binder course.
- (42) Computation of pavement quantities.
- (43) Inspection of roadway tack coat.
- (44) Review pavement mix.
- (45) Continuous inspection during installation of roadway top course.
- (46) Computation of pavement quantities.

- (47) Inspection of sidewalk tack coat.
- (48) Continuous inspection during installation of sidewalk top course.
- (49) Computation of pavement quantities.
- (50) Inspection of curb-cut ramps for location only. The Town Administrator shall determine compliance with ADA standards.
- (51) Inspection of transformer pads.
- (52) Review approvals of electric, telephone, cable, and gas system layouts and locations provided by the respective utility companies.
- (53) Inspection of underground utility conduit, (i) structures, (ii) handholes (electric, phone, cable, gas).
- (54) Evaluation of materials certificates for loam and seed.
- (55) Inspection of loam and seed installation.
- (56) Inspection of retaining wall installation including inspection of subgrade, (i) inspection of forms and reinforcing steel, (ii) inspection of concrete pour, (iii) review of 7 day and 28 day cylinder tests furnished by Applicant's laboratory.
- (57) Review of manufacturer's detail drawings of guardrail.
- (58) Inspection of guardrail installations.
- (59) Inspection of street trees and plantings including cul-de-sac plantings.
- (60) Inspection of bounds and monuments and review of bounds and monuments on as-built survey. .
- (61) Inspection of fire alarm installation.
- (62) Inspection of street sign installation.
- (63) Inspection of street light installation.
- (64) Final cleanup inspection.
- (65) Payment of quarterly Town maintenance fees.
- (66) Review As-Built Acceptance Plan.
- (67) Review running description of right-of-way and easements.

(68) Review submitted deeds.

(69) Other review, testing, and inspections on a project specific basis.

2.1 REPORTS

The professional consultant shall indicate the date of inspection and shall file an inspection report with the Board subsequent to each inspection.

2.1.1 FAILURE TO COMPLY

Failure to comply with the inspection procedure may necessitate removal of improvements at the expense of the Applicant or rescission of the approval of the plan in accord with Massachusetts General Laws Chapter 41, Section 81-W.

2.2 LABORATORY TESTING

The Applicant shall engage a Massachusetts licensed laboratory acceptable to the Board to obtain samples, conduct analysis and tests, and furnish test data and reports to the Board. Required tests include soils classification and properties tests, compaction tests for subgrade and embankments, disinfection tests for water mains, pressure and leakage tests for water mains, pressure and leakage tests for sanitary sewer mains, leakage tests for sanitary sewer manholes.

2.3 ORDER

The Board may establish the order of the required inspection and may require satisfactory completion of one step before the Applicant proceeds to the next. It may require tests to be done by the Applicant as a condition for approval when in the opinion of the Board it is advisable.

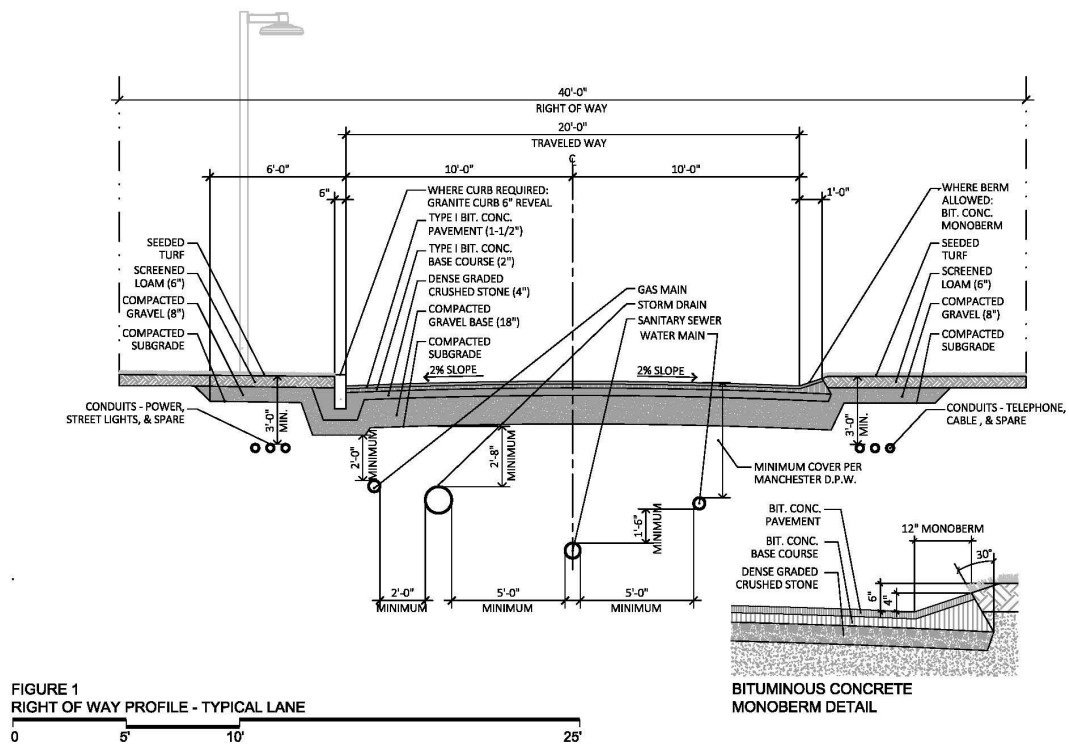
3.0 ENGINEER'S REPORT

3.1 The Board's Engineer will report that the work has been performed in accordance with these Subdivision Rules and Regulations and the Definitive Plan. The Board's Engineer will advise the Board when the work is not acceptable citing the reasons therefore.

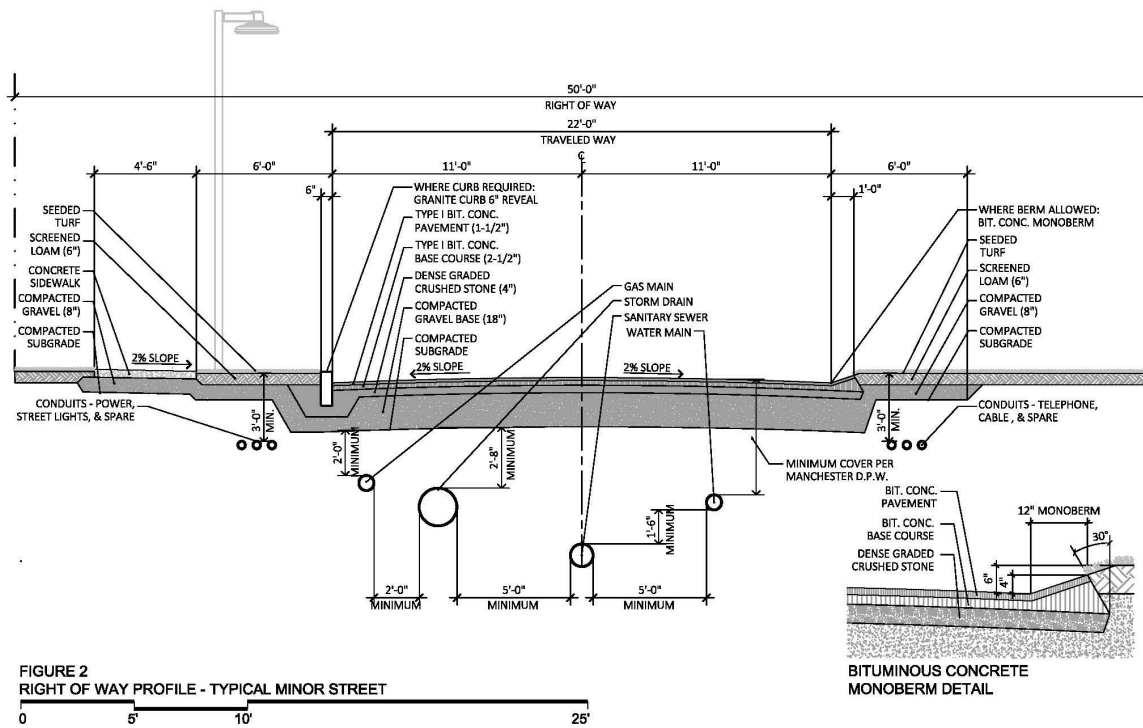
3.2 At any time during the progress of the work, the Board's Engineer shall advise the Board immediately of any factors that may adversely affect the progress of the work.

APPENDIX D
RIGHT OF WAY PROFILES

APPENDIX D: Figure 1



APPENDIX D: Figure 2



APPENDIX E
APPLICATION FORMS AND CHECKLISTS

Fee Received: (\$_____)_____ Town Clerk, Manchester-by-the-Sea MA
Manchester-by-the-Sea Planning Board

**FORM A — APPLICATION FOR ENDORSEMENT OF PLAN
BELIEVED NOT TO REQUIRE APPROVAL [ANR]
Filing Fee: \$250 per lot ***

Applicant shall comply with the requirements of Section 4 of the Subdivision Rules and Regulations and submit to the Manchester-by-the-Sea Planning Board through the Town Clerk, the Mylar and 10 prints of the plan, together with 10 executed copies of this Form A and a check in the amount of \$250 per lot made payable to Town of Manchester-by-the-Sea.

**Must be accompanied by a completed ANR Application Checklist*

Date: _____ Applicant: _____

Address: _____ Phone: _____

_____ email: _____

Owner [if other than Applicant]: _____

Address: _____ Phone: _____

_____ email: _____

Engineer/Surveyor: _____

Address: _____ Phone: _____

_____ Fax/email: _____

Essex South Registry Book: _____ Page: _____

Manchester-by-the-Sea Assessors Map: _____ Lot: _____

Location and description of property: _____

See <http://host.appgeo.com/manchesterma/Map.aspx> for applicability:

Zoning District: _____ Water Resource Protection District: _____ Flood Plain:

_____ Flood Control District: _____

To The Planning Board of the Town of Manchester-by-the-Sea:

The undersigned, believing that the accompanying plan of his/her property in Manchester-by-the-Sea does not constitute a subdivision within the meaning of and the Subdivision Control Law, submits that plan for determination and endorsement that Planning Board approval under the Subdivision Control Law is not required. The undersigned believes that such approval is not required for the following reasons: (Circle as appropriate.)

1. The division of the tract of land shown on the accompanying plan is not a subdivision because every lot shown on the plan has frontage of at least such distance as is presently required by Section 5 of the Manchester-by-the-Sea Zoning By-Law; and every lot shown on the plan has such frontage on:

a. a public way or way which the Town Clerk certifies is maintained and used as a public way, namely _____; or

b. a way shown on a plan theretofore approved and endorsed in accordance with the Subdivision Control Law, namely _____ on _____, and subject to the following conditions _____;

c. a private way in existence February 18, 1954 (when the Subdivision Control Law became effective in the Town of Manchester-by-the-Sea), 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, namely _____.

2. The division of the tract of land shown on the accompanying plan is not a "subdivision" because it shows a proposed conveyance/other instrument, namely _____, which adds to/takes away from/changes the size and shape of, lots in such a manner so that no lot affected is left without frontage as required by Section 5 of the Manchester-by-the-Sea Zoning By-Law.

3. The division of the tract of land shown on the accompanying plan is not a subdivision because two or more buildings, specifically _____ [buildings] were standing on the plan prior to February 18, 1954, the date when the Subdivision Control Law became effective in the Town of Manchester-by-the-Sea, and one of such buildings remains standing on each of the lots/said buildings as shown and located on the accompanying plan. Evidence of the existence of such buildings prior to the effective date of the subdivision control law is submitted as follows: _____.

4. The accompanying plan is a Perimeter Plan and is not a subdivision because the plan does not show a division of land.

Printed Name and Signature of Applicant:

Printed Names and Signatures of All Persons Whose Land is the Subject of this ANR Plan (except applicant):

Manchester-by-the-Sea Planning Board

Approval Not Required Plan [ANR] Checklist

Plans shall be submitted as black line prints at a suitable scale. At the time of submission all plans and information must be complete and accurate and in acceptable form as required by these Subdivision Rules and Regulations.

Petitioner:

Meeting Date:

1. ___ Ten (10) copies of Form A Application filed with Town Clerk
2. ___ Fee paid/amount (\$250 per lot shown) = \$ _____
3. ___ Ten (10) copies and one (1) Mylar of the Plan, *showing the following*:
 - a. ___ Name and address of owner of record, petitioner & surveyor
 - b. ___ Deed reference or land court certificate number
 - c. ___ Plan reference
 - d. ___ Date of application
 - e. ___ North arrow, locus sketch, date and scale
 - f. ___ Signature block with space for seven signatures.
 - g. ___ Minimum frontage on approved way
 - h. ___ Direct abutters noted by name and parcel number as determined from the Assessors Office
 - i. ___ Delineation and area of every lot - square feet and acres
 - j. ___ Location of all existing structures including setback and side and rear yard designation, and septic systems
 - k. ___ Sufficient data to determine the location, direction and length of every street and way

line, lot line and boundary line, monuments or references necessary to establish these lines on the ground.

l. ___ Delineation of wetlands on the lots being created by the plan (including the lot being created by the remaining land)

m. ___ The zoning classification and location of any other boundaries that may lie within the locus of the plan : see <http://host.appgeo.com/manchesterma/Map.aspx>

Zoning District _____ Water Resource Protection District _____

Flood Plain _____ Flood Control District _____

n. ___ The notation: "No official verification of any wetlands has been made or intended by Planning Board endorsement

o. ___ The notation: "Planning Board endorsement does not certify compliance with Zoning Bylaw."

p. ___ In the case of the creation of a new lot, the remaining land area and frontage of the land in the ownership of the applicant shall be shown on the plan.

Fee Received: (\$____)_____ Town Clerk, Manchester-by-the-Sea, MA

Manchester-by-the-Sea Planning Board

FORM B — APPLICATION FOR TENTATIVE APPROVAL OF PRELIMINARY SUBDIVISION PLAN

Fee: \$250 plus \$100 per lot*

Applicant shall comply with the requirements of Section 5 of the Subdivision Rules and Regulations, and shall submit to the Manchester-by-the-Sea Planning Board through the Town Clerk, by hand delivery or by registered or by certified mail, 18 executed copies of this Application Form B and 18 sets of the Preliminary Plans and supporting documents [and must contain the information listed in the Preliminary Subdivision Checklist in Appendix E]. The submission must be accompanied by the filing fee in the amount of \$250 plus \$100 per lot, with a check made payable to “Town of Manchester-by-the-Sea”[see Section 7 — Fees]. *The appropriate fee and amount of funds required to establish the special account [escrow] for the project must be verified by the Planning Director prior to submission; a W- 9 form is also required.

Application must also be accompanied by a completed Preliminary Plan Application Checklist

Date: _____ To the Planning Board of the Town of Manchester-by-the-Sea:

The undersigned, being the applicant as defined under Chapter 41, Section 81-L for tentative approval as a subdivision as allowed under the Subdivision Control Law and the Manchester-by-the-Sea Subdivision Rules and Regulations on a plan entitled:

Name of Owner: _____ Phone: _____
Address: _____ Fax/email: _____

Name of Developer: _____ Phone: _____
Address: _____ Fax/email: _____

Name of Engineer/Surveyor _____ Phone: _____
Address: _____ Fax/email: _____

Property Deed recorded in Essex South Registry Book:_____ Page:_____ and/or
registered in the Commonwealth of Massachusetts Land Court, Certificate of Title No.
_____: and said plan is free of encumbrances except for the
following:_____

Property shown on Manchester-by-the-Sea Assessors Map:_____ Page:_____

Location and Description of property: see <http://host.appgeo.com/manchesterma/Map.aspx>
Zoning District_____ Water Resource Protection District _____

Flood Plain_____ Flood Control District_____

Number of lots proposed_____ Total acreage of tract _____

Applicant's Signature _____

Applicant's Address _____

Applicant's phone _____ FAX _____

Applicant's email_____

Owner's signature and address [if other than applicant]

Received by Board of Health:

Date _____ Time _____

Signature of Agent _____

Manchester-by-the-Sea Planning Board

Preliminary Subdivision Plan Application Checklist

(To be submitted by Applicant with Application)

Preliminary Plans shall be submitted as black line prints at a suitable scale. The purpose of the Preliminary Plan is to show sufficient information about the subdivision to enable the Board to form a clear basis for the evaluation of potential problems of the subdivision prior to the preparation of the Definitive Plan.

Applicant: _____

Planning Board Meeting Date: _____

1. ___ Application filed Date _____

2. ___ Eighteen (18) copies of the plan and Eighteen (18) copies of Form B.

3. ___ Fee paid/amount: Application for approval of a Preliminary Subdivision plan [Form B]: \$250 plus \$100 per lot) = \$ _____; check payable to Town of Manchester-by-the-Sea

4. ___ The Plan shall carry the Subdivision name with the title "Preliminary Plan", shall have a signature block in the same space on each page and shall show boundaries, north arrow, date, scale, legend, and the following:

a. ___ Names and addresses of the record owner, applicant and the name or names of the engineer and Registered Land Surveyor

b. ___ Existing and proposed lines of streets, easements and any public areas within the subdivision.

c. ___ Existing and proposed public water supply and utilities in the area.

d. ___ Existing and proposed system of surface water, drainage and existing and proposed method of sewage disposal.

e. ___ Existing on-site structures including septic systems.

f. ___ Names, approximate location and widths of streets within 200' of property.

g. ___ Topography of the existing land at two (2)-foot contour intervals.

- h. ____ Location of all permanent monuments, large boulders, stone walls, vegetation and special features showing the outline of all woodlands, significant individual or group tree masses, rock outcroppings, roads and trails, flowing streams or waterways, drainage ways and ponds, noting those being disturbed by proposed ways, drainage easements, or any change in topography.
 - i. ____ An outline of all wetlands; also any areas within the Water Resource Overlay Protection District (WROPD) or the Flood Control District
<http://host.appgeo.com/manchesterma/Map.aspx>.
 - j. ____ A roadway profile drawn to a horizontal scale of 1"=40' and a vertical scale of 1"=4', showing all existing and proposed grades, drainage and sewer systems.
 - k. ____ Approximate boundary lines of proposed lots, with approximate areas and dimensions
 - l. ____ Zoning of proposed subdivision and contiguous parcels.
 - m. ____ Physical, geological, environmental and other characteristics unique to the site but not covered in (b) through (l) above.
 - n. ____ Direct abutters noted by name and parcel number as determined from the Assessors Office.
5. ____ If the Preliminary Plan does not include all of the contiguous land owned by the applicant in the area, a plan, in a general manner, should be submitted of the overall proposed development. If the developer does not agree to provide future development plans to the Board, the Board shall assume that the remaining land will be developed to the maximum amount allowed under Zoning.

ESCROW ACCOUNT: (Separate check payable to the Town of Manchester-by-the-Sea and Signed W-9 form required) (after consultation with Planning Director).

For 3 Lots or Less: \$3,000 minimum deposit.

For 4 or More Lots: \$3,000 minimum deposit, plus \$500 per lot in the proposed subdivision.

Fee Received: (\$) _____ Town Clerk, Manchester-by-the-Sea, MA

Manchester-by-the-Sea Planning Board

FORM C — APPLICATION FOR APPROVAL OF A DEFINITIVE SUBDIVISION PLAN

Filing Fee: \$500 per lot or \$2500 [whichever is greater]*

Applicant shall comply with the requirements of Section 6 of the Subdivision Rules and Regulations, and shall submit to the Manchester-by-the-Sea Planning Board through the Town Clerk by hand delivery or by registered or by certified mail, eighteen (18) executed copies of this completed Application Form C, one (1) Mylar and eighteen (18) sets of the Definitive Plan and supporting documents [and must contain the information listed in the Definitive Checklist]. The submission must be accompanied by the filing fee in the amount of \$500 per lot or \$2500 (whichever is greater), with a check made payable to “Town of Manchester-by-the-Sea”[see Section 7 — Fees].

The appropriate fee and amount of funds required to establish the special account [escrow] for the project must be verified by the Planning Director prior to submission; a W- 9 form is also required.*

Application must also be accompanied by:

- Completed Modification of a Definitive Plan Application Checklist
- Certified List of Abutters and Abutters to Abutters within 300 ft of property line, to be purchased from the Assessor's office.
- Check for the postage for mailing Legal Notices to Abutters [made out to “United States Postal Service”]
- Check for escrow account and W-9 form amount

Date: _____ To the Planning Board in the Town of Manchester-by-the-Sea:

The undersigned, being the applicant as defined under Chapter 41, Section 81-L, for approval of a proposed subdivision under the Subdivision Control Law and the Manchester-by-the-Sea Rules and Regulations as shown on a plan entitled: _____

Name of Owner: _____ Phone: _____
Address: _____ Fax/email: _____

Name of Developer: _____ Phone: _____
Address: _____ Fax/email: _____

Name of Engineer/Surveyor _____ Phone: _____
Address: _____ Fax/email: _____

Property Deed recorded in Essex South Registry Book: _____ Page: _____ and/or
registered in the Commonwealth of Massachusetts Land Court, Certificate of Title No.
_____: and said plan is free of encumbrances except for the
following: _____

Property shown on Manchester-by-the-Sea Assessors Map: _____ Page: _____

Location and Description of property: see <http://host.appgeo.com/manchesterma/Map.aspx>

Zoning District _____ Water Resource Protection District _____
Flood Plain _____ Flood Control District _____

Number of lots proposed _____ Total acreage of tract _____

Said plan has () has not () evolved from a Preliminary Plan submitted to the Board on
_____ (date) and approved (with modifications) () (disapproved) () on
_____ (date).

Received by Town Clerk:
Date _____ Time _____ Signature of Agent _____

Received by Board of Health
Date _____ Time _____ Signature of Agent _____

The undersigned hereby submits said plan as a DEFINITIVE Plan in accordance with the Rules and
Regulations of the Manchester-by-the-Sea Planning Board and makes application to the Board for
approval of said plan.

Applicant's Signature _____ Applicant's Address _____

Applicant's phone _____ FAX _____

Applicant's email _____

Owner's signature and address [if other than applicant]

Manchester-by-the-Sea Planning Board

Definitive Subdivision Plan Application Checklist

(To be submitted by Applicant with Application)

Definitive Plans shall be submitted as black line prints at a suitable scale. At the time of submission all plans and information must be complete and accurate and in acceptable form as required by these Subdivision Rules and Regulations.

Applicant: _____

Planning Board Meeting Date: _____

1. ___ Application filed Date _____

2. ___ Eighteen (18) copies of Application Form C, one (1) Mylar and eighteen (18) sets of the plans;

3. ___ Fee paid/amount: Application for approval of a Definitive Subdivision plan [Form C]: \$500 per lot or \$2500, whichever is greater = \$ _____; check payable to Town of Manchester-by-the-Sea

4. ___ The Plan shall carry the Subdivision name with the title "Definitive Plan", shall have a signature block in the same space on each page and shall show boundaries, north arrow, date, scale, legend, and the following:

a. ___ Names and addresses of the record owner, applicant and the name or names of the engineer and Registered Land Surveyor

b. ___ Existing and proposed lines of streets, easements and any public areas within the subdivision.

c. ___ Existing and proposed public water supply and utilities in the area.

d. ___ Existing and proposed system of surface water, drainage and existing and proposed method of sewage disposal.

e. ___ Approximate boundary lines of proposed lots, with approximate areas and dimensions.

f. ___ Names, approximate location and widths of streets within 200' of property.

g. ___ Topography of the existing land at two (2)-foot contour intervals.

h. ____ Location of all permanent monuments, large boulders, stone walls, vegetation and special features showing the outline of all woodlands, significant individual or group tree masses, rock outcroppings, roads and trails, flowing streams or waterways, drainage ways and ponds, noting those being disturbed by proposed ways, drainage easements, or any change in topography.

i. ____ Outline of all wetlands; also areas within the Water Resource Overlay Protection District (WROPD) or Flood Control District <http://host.appgeo.com/manchesterma/Map.aspx>

j. ____ A roadway profile drawn to a horizontal scale of 1"=40' and a vertical scale of 1"=4', showing all existing and proposed grades, drainage and sewer systems.

k. ____ Zoning district(s) of proposed subdivision and contiguous parcels.

l. ____ Existing on-site structures including septic systems.

m. ____ Physical, geological, environmental and other characteristics unique to the site but not covered in (b) through (l) above.

n. ____ Names and Assessors Map & Lot numbers of all direct abutters.

5. ____ Certified List of Abutters and Abutters to Abutters within 300 ft. of the property, to be purchased from the Assessor's Office.

6. ____ Postage to mail Legal Notices to Abutters.(check payable to U.S. Postal Service)

7. ____ If the Definitive Plan does not include all of the contiguous land owned by the applicant in the area, a plan, in a general manner, should be submitted of the overall proposed development. If the developer does not agree to provide future development plans to the Board, the Board shall assume that the remaining land will be developed to the maximum amount allowed under Zoning.

8. ____ Environmental Impact Plan [ECIA]

9. ____ Erosion Control Plan

10. ____ Drainage Calculations

ESCROW ACCOUNT: (after consultation with Planning Director) A separate check payable to the Town of Manchester-by-the-Sea and signed W-9 form also required). For 3 Lots or Less: \$3,000 minimum deposit. For 4 or More Lots: \$3,000 minimum deposit, plus \$500 per lot in the proposed subdivision.
Total = _____

Filing Fee (\$____) _____ Received by Town Clerk, Manchester-by-the-Sea MA

Manchester-by-the-Sea Planning Board

FORM C(M) — APPLICATION FOR OF A DEFINITIVE SUBDIVISION PLAN

Filing Fee: \$500 per lot or \$2,500, whichever is greater*

Applicant shall comply with the requirements of Section 6.17 of the Subdivision Rules and Regulations, and shall submit to the Manchester-by-the-Sea Planning Board through the Town Clerk by hand delivery, or by registered or certified mail, eighteen (18) executed copies of this Application Form C(M), one (1) Mylar original, and eighteen (18) copies of the Modified Definitive Plan [and must contain the information listed in the Modification of a Definitive Plan Checklist].

The submission must be accompanied by a filing fee in the amount of \$500 per lot or \$2500 (whichever is the greater), with a check made payable to “Town of Manchester-by-the-Sea” (see Section 7 — Fees). *The appropriate fee and amount of funds required to establish the special account [escrow] for the project must be verified by the Planning Director prior to submission; a W-9 form is also required.

Application must also be accompanied by:

- Completed Modification of a Definitive Plan Application Checklist
- Certified List of Abutters and Abutters to Abutters within 300 feet of the property line, purchased from the Assessor's office;
- Check for the postage for mailing Legal Notices to Abutters (made out to United States Postal Service);
- Check for escrow account and W-9 form amount

Date: _____ To the Planning Board of the Town of Manchester-by-the-Sea:

The undersigned, being the applicant as defined under Chapter 41, Section 81-L for tentative approval as a subdivision as allowed under the Subdivision Control Law and the Manchester-by-the-Sea Subdivision Rules and Regulations on a plan entitled:

Name of Owner/Applicant: _____ Phone: _____
Address: _____ Fax/email: _____

Name of Developer: _____ Phone: _____
Address: _____ Fax/email: _____

Name of Engineer/Surveyor _____ Phone: _____
Address: _____ Fax/email: _____

Property Deed recorded in Essex South Registry Book: _____ Page: _____ and/or registered in
the Commonwealth of Massachusetts Land Court, Certificate of Title No.
_____: and said plan is free of encumbrances except for the
following: _____
_____.

Property shown on Manchester-by-the-Sea Assessors Map: _____ Page: _____

Location and Description of property: See: <http://host.appgeo.com/manchesterma/Map.aspx>
Zoning District _____ Flood Plain _____

Flood Control District _____ Water Resource Protection District _____

Total acreage of tract _____ Number of lots proposed _____

Owner/Applicant Signature _____

Applicant's Address _____

Applicant's phone/email _____

Modification of a Definitive Subdivision Plan Application Checklist

(To be submitted by Applicant with Application)

Modified Definitive Plans shall be submitted as black line prints at a suitable scale. At the time of submission all plans and information must be complete and accurate and in acceptable form as required by these Subdivision Rules and Regulations.

Applicant: _____

Planning Board Meeting Date: _____

1. ___ Application filed Date _____

2. ___ Eighteen (18) copies of Application Form C, one (1) Mylar and eighteen (18) sets of the plans;

3. ___ Fee paid/amount: Application for approval of a Modification of a Definitive Subdivision Plan [Form C(M): \$500 per lot or \$2500, whichever is greater = \$ _____; check payable to Town of Manchester-by-the-Sea

4. ___ The Plan shall carry the Subdivision name with the title “ Modified Definitive Plan”, shall have a signature block in the same space on each page and shall show boundaries, north arrow, date, scale, legend, and the following:

a. ___ Names and addresses of the record owner, applicant and the name or names of the engineer and Registered Land Surveyor

b. ___ Existing and proposed lines of streets, easements and any public areas within the subdivision.

c. ___ Existing and proposed public water supply and utilities in the area.

d. ___ Existing and proposed system of surface water, drainage and existing and proposed method of sewage disposal.

e. ___ Approximate boundary lines of proposed lots, with approximate areas and dimensions.

f. ___ Names, approximate location and widths of streets within 200' of property.

g. ___ Topography of the existing land at two (2)-foot contour intervals.

h. ____ Location of all permanent monuments, large boulders, stone walls, vegetation and special features showing the outline of all woodlands, significant individual or group tree masses, rock outcroppings, roads and trails, flowing streams or waterways, drainage ways and ponds, noting those being disturbed by proposed ways, drainage easements, or any change in topography.

i. ____ Outline of all wetlands and areas within the Water Resource Overlay Protection District (WROPD) or Flood Control District <http://host.appgeo.com/manchesterma/Map.aspx>

j. ____ A roadway profile drawn to a horizontal scale of 1"=40' and a vertical scale of 1"=4', showing all existing and proposed grades, drainage and sewer systems.

k. ____ Zoning district(s) of proposed subdivision and contiguous parcels.

l. ____ Existing on-site structures including septic systems.

m. ____ Physical, geological, environmental and other characteristics unique to the site but not covered in (b) through (l) above.

n. ____ Names and Assessors Map and Lot numbers of all direct abutters.

5. ____ Certified List of Abutters and Abutters to Abutters within 300 ft. of the property, to be purchased from the Assessor's Office.

6. ____ Postage to mail Legal Notices to Abutters (check payable to U. S. Postal Service)

7. ____ If the Modified Definitive Plan does not include all of the contiguous land owned by the applicant in the area, a plan, in a general manner, should be submitted of the overall proposed development. If the developer does not agree to provide future development plans to the Board, the Board shall assume that the remaining land will be developed to the maximum amount allowed under Zoning.

8. ____ Environmental Impact Plan [ECIA]

9. ____ Erosion Control Plan

10. ____ Drainage Calculations

ESCROW ACCOUNT: (after consultation with Planning Director) A separate check payable to the Town of Manchester-by-the-Sea and signed W-9 form also required). For 3 Lots or Less: \$3,000 minimum deposit. For 4 or More Lots: \$3,000 minimum deposit, plus \$500 per lot in the proposed subdivision. Total = _____

APPENDIX F
SPECIAL PERMIT APPLICATION FORMS UNDER THE ZONING BY-LAW
and
EARTH REMOVAL PERMIT UNDER THE GENERAL BY-LAWS

APPENDIX F

SPECIAL PERMIT APPLICATION FORMS UNDER THE ZONING BY-LAW **and** **EARTH REMOVAL PERMIT UNDER THE GENERAL BY-LAWS**

A. Application Fees

All applications submitted to the Planning Board under the Zoning By-Law, and the General By-laws shall be subject to the following fees:

Applications for Determination under Section 4.9 of the Zoning By-Law Ground and Surface Water Overlay Protection Districts: \$100

Applications for Special Permit under Section 4.9 of the Zoning By-Law Ground and Surface Water Overlay Protection Districts: \$100

Applications for Special Permit under Section 4.10 of the Zoning By-Law for a Personal Wireless Telecommunications Facility: \$500

Applications for Special Permit under 6.2.8 of the Zoning By-Law for a Common Driveway Special Permit: \$250 per lot served

Applications for Special Permit under Section 6.16 of the Zoning By-Law for a Topographical Changes and Land Clearing Special Permit [Residential Districts]: \$300

Applications for Special Permit under Section 6.17 of the Zoning By-Law for a Wind Energy Conversion Facilities Special Permit: \$2,000

Applications for any Special Permit application under the Zoning By-Law not otherwise herein specified: \$175

Applications for Site Plan Review: \$150

Applications for Driveway/Curb Cut: \$100

Applications for Earth Removal Permit under the General By-laws, Article XII – Earth Removal, Section 10:

Filing Fee [due with the application for permit]: \$500 [Also applies to renewal applications.]

Permit fee [due prior to issuance of permit]: \$200.00 per month for permit period after first month.

Such other charges as it shall find necessary for clerical, civil engineering and other consultants, legal, and inspection expenses in connection with any application for a permit, its review by the Board and post-permit monitoring. The applicant shall deposit funds for such charges with the Town as the Board shall prescribe.

The Board may waive fees if and as it deems appropriate. These fees and charges shall apply to all applications for earth removal permits filed after the date of adoption of the above fee schedule, and to all permits issued pursuant thereto

B. Related charges under Section 7.9.

In connection with any application to (or request for determination by) the Planning Board, all expenses for advertising, recording and filing of documents, and for the reasonable fees (and expenses) for the employment of outside consultants as the Planning Board shall select, if and when it shall determine to do so, shall be borne by the applicant. The applicant shall be advised of the selection of an outside consultant, and of the sum to be deposited with the Town in a special account for the reasonable fees for the employment of the same. Such special account shall be established and dealt with in MGL C.44 § 53G.

The applicant may make an administrative appeal from the Planning Board's selection of any such outside consultant, such appeal to be made to the Town's Board of Selectmen and limited to claim that the consultant selected has a conflict of interest or does not possess the minimum required statutory qualifications (which as specified by MGL C.44 § 53G are either an educational degree in or related to the field at issue or three or more years of practice in the field at issue or a related field). As provided by MGL C.44 §53G, the required time limits for action on an application by the Planning Board shall be extended by the duration of such administrative appeal, and if no decision is made by the Town's Board of Selectmen within one month following the filing of such administrative appeal, the selection made by the Planning Board shall stand.

OFFICE OF THE PLANNING BOARD
Town Hall, Manchester-by-the-Sea, MA 01944

_____ @ _____ m.

Town Clerk

Hearing Date: _____

Site Viewing: _____

Granted: _____ Denied: _____

Decision Due: _____

Decision filed with the Town Clerk: _____

(for office use)

Nature of Action Requested:

____ Request for Determination under Section 4.9 of the Zoning By-Law. Fee \$100

Name of Owner: _____ Phone/Email _____

Address: _____

Location of lot _____

(No.) (Street)

Assessors Map No: _____ Lot No. _____ Zoning district _____

Water Resource Protection District: _____ <http://host.appgeo.com/manchesterma/Map.aspx>

Flood Plain: _____ Flood Control District: _____

Title of Attached Plan: _____

Date of Plan: _____ Lot No. on Plan: _____

Prepared by: _____

Dimensions of Lot: Frontage: _____ ft. Depth: _____ ft

Area: existing _____ s.f. Proposed impervious _____ s.f.

Mitigation measured proposed (swales, leach pits, etc.) _____

The undersigned owns no other real estate contiguous to land which is subject of this application except as follows: _____

Specific action requested, including use:

Signed: _____

Print Name: _____

Date: _____

Fee: Determination under 4.9 \$100 _____. Received by Town Clerk

OFFICE OF THE PLANNING BOARD
Town Hall, Manchester-by-the-Sea, MA 01944

_____ @ _____ m.

Town Clerk

Hearing Date: _____

Site Viewing: _____

Granted: _____ Denied: _____

Decision Due: _____

Decision filed with the Town Clerk: _____

(for office use)

Nature of Action Requested:

____ Request for Special Permit under Section 4.9 of the Zoning By-law. Fee \$175

Name of Owner: _____ Phone/Email _____

Address: _____

Location of lot _____

(No.) (Street)

Assessors Map No: _____ Lot No. _____ Zoning district _____

Water Resource Protection District: _____ <http://host.appgeo.com/manchesterma/Map.aspx>

Flood Plain: _____ Flood Control District: _____

Title of Attached Plan: _____

Date of Plan: _____ Lot No. on Plan: _____

Prepared by: _____

Dimensions of Lot: Frontage: _____ ft. Depth: _____ ft

Area: existing _____ s.f. Proposed impervious _____ s.f.

Mitigation measured proposed (swales, leach pits, etc.) _____

The undersigned owns no other real estate contiguous to land which is subject of this application except as follows: _____

Specific action requested, including use:

Signed: _____

Print Name: _____

Date: _____

The scheduling of a Public Hearing does not necessarily deem the application to be acceptable to the Planning Board.

Fee: Special Permit under 4.9 \$175 _____. _____ Received by Town Clerk

(Section 4.9, page 2) Supplemental Information

Zoning By-Law Requirements

4.9 Water Resource Overlay Protection District

4.9.5.1(p) Land uses that result in the rendering impervious of more than 15% or 2,500 square feet of any lot, whichever is greater, unless a system for artificial recharge of precipitation is provided, which is satisfactory to the Planning Board, that will not result in the degradation of groundwater quality

A special permit is required from the Planning Board for land uses that do not meet the criteria of 4.9.5.1(p); see 4.9.5.2 Special Permit uses in Zones II and III, and A, B, and C.

5.4 Minimum Area and Dimensional Requirements

Lot Coverage Requirements

Zoning District	Maximum % Lot by Structures and Impervious Surfaces
A	30%
B	35%
C	25%
D	50%
E	25%
General District	70% except as noted [See 4.3.11.2 for multiple dwellings]

OFFICE OF THE PLANNING BOARD
Town Hall, Manchester-by-the-Sea, MA 01944

_____ @ _____

Town Clerk

Hearing Date: _____

Site Viewing: _____

Granted: _____ Denied: _____

Decision Due: _____

Decision filed with the Town Clerk: _____

(for office use)

Nature of Action Requested:

Request for Special Permit under Section _____ of the Zoning By-law.

Other (Specify) _____

Name _____ of

Owner: _____ Phone/Email _____

Address: _____

Location of lot _____

(No.) (Street)

Assessors Map No: _____ Lot No. _____ Zoning district _____

Water Resource Protection District: _____

Flood Plain: _____ Flood Control District: _____

see <http://host.appgeo.com/manchesterma/Map.aspx>

Title of Attached Plan: _____

Date of Plan: _____ Lot No. on Plan: _____

Dimensions of Lot: Frontage: _____ feet. Depth: _____ feet

Area: _____

The undersigned owns no other real estate contiguous to land which is subject of this application except as follows: _____

Specific action requested, including use:

Signed: _____

Print Name: _____

Date: _____

The scheduling of a Public Hearing does not necessarily deem the application to be acceptable to the Planning Board. \$ _____ fee paid _____ Town Clerk

Special Permit (page 2). Rules and Regulations adopted in accordance with MGL Chapter 40A.

1. Applications for special permits must be submitted to the Town Clerk
 - a. A Public Hearing of the board will be scheduled.
2. Eighteen (18) copies of all applications to the Board shall be filed with the Town Clerk on forms prescribed by the Board and shall state:
 - a. the name and address of the petitioner;
 - b. which section of the Zoning By-law governs the Special Permit;
 - c. the specific provisions of the Zoning By-law involved;
 - d. the use for which a Special Permit is sought;
 - e. description of the land to be affected;
 - f. the name and address of the owner of the land if other than the petitioner;
 - g. a declaration of the status or interest of the petitioner if other than the owner of the land;
 - h. disclosure as to whether the land to be affected by a Special Permit is contiguous to other land held in common ownership;
 - i. a drawing to scale indicating lot dimensions and area, proposed lot lines, location, and dimensions of all structures on the lot; all abutters; front, rear and sideline setbacks; location of public ways, and
 - j. in the case of Special Permits which affect the USE of buildings, an adequately detailed, scale floor plan of the building in question will be furnished.
3. All applications shall be accompanied by a filing fee with checks made payable to the Town of Manchester by the Sea.

SPECIAL PERMIT

\$ _____

- a. Any application not complying with the requirements of paragraphs 2 and 3 shall not be considered properly filed and shall not be assigned for hearing until such time as it is in compliance.
4. In the event that the Board Chairman deems an application inadequate to a proper understanding of the matter or otherwise not properly filed, the applicant shall be advised and given an opportunity to bring the application into compliance.
 - a. An application may be dismissed for failure to comply with these rules.
 - b. Formal notice of dismissal of any application for non-compliance with these rules shall be filed with the Town Clerk.
5. After assignment of a hearing date, the Planning Board's clerk shall notify the Board of Assessors of the location of the land affected,
 - a. The clerk shall also file copies of the application, when applicable, with the Board of Health, Conservation Commission and Board of Selectmen.
 - b. The Planning Board shall publish a notice of the hearing of all applications for which a hearing date has been assigned in a newspaper of general circulation in the Town of Manchester-by-the-Sea and shall mail notices to the applicant and all interested parties as determined by the Board in accordance with the provisions of MGL Chapter 40A, Section 11, and all other interested parties who, in the opinion of the Board are deemed to be particularly affected.
 - c. Between the date of the first publication and the date of the hearing, there shall be an interval of not less than fourteen (14) days and the notice shall be published twice.
6. Minutes of the proceedings at Public Hearings shall be kept by the clerk to the Board.
7. The Board may, by majority vote, require further submission or waive any provision of these rules for good cause shown, provided that such waiver shall not be inconsistent with any provisions of the Zoning By-laws or the General Laws of the Commonwealth.

OFFICE OF THE PLANNING BOARD
Town Hall, Manchester-by-the-Sea, MA 01944

_____ @ _____

Town Clerk

Hearing Date: _____
Site Viewing: _____
Granted: _____ Denied: _____
Decision Due: _____
Decision filed with the Town Clerk: _____

(for office use)

Nature of Action Requested:

Application for Site Plan Review Under 6.5 of the Zoning By-Law. Fee \$150

Applicant: _____

Owner, if different: _____

Address: _____

Telephone: _____ Fax: _____ Email: _____

Location of Lot _____

(No.) (Street)

Water Resource Protection District: _____

Assessor's Map: _____ Lot: _____ Zoning District: _____ Flood Control District: _____

See <http://host.appgeo.com/manchesterma/Map.aspx>

Title of Attached Plan: _____ Date of Plan: _____

Dimensions of Lot: Area _____ sf Frontage _____ sf Impervious surface _____ sf

See reverse for other requirements

Parking spaces existing: _____ Total proposed spaces: _____

Specific action requested, including use:

Number of Dwelling units: _____ Square footage of each Dwelling unit: a) _____ sf b) _____ sf
c) _____ sf d) _____ sf

Previous Special Permits or Variances: Decision date/s _____ Granted by: _____

The undersigned owns no other real estate contiguous to land which is the subject of this application
except as follows: Assessor's Map & Lot _____

FEE: \$150

Received:

Signed: _____

Print Name: _____

Date: _____

(Site Plan Review page 2) Adopted from the Town of Manchester-by-the-Sea Zoning By-Law

The Building Inspector shall not approve any application subject to this section without receipt of written plan approval from the Planning Board, unless thirty (30) days elapse from the date of transmittal of plans to the Planning Board without receipt of such review from the Planning Board.

6.5.3 Procedure:

Applications for building permits for construction subject to Site Plan Review shall be accompanied by:

- a) a Site Plan Review application
- b) twelve (12) prints of the plans of the proposal.

6.5.4 Application Requirements

Plans to be prepared by a Registered Architect, Landscape Architect, or Professional Engineer.

Site plan shall be prepared at a scale no greater than 1" = 40', and shall show:

- a) All existing and proposed buildings, existing and proposed contour elevations, structures, parking spaces, driveway openings, driveways, service areas, facilities for sewage, refuse and other waste disposal and for surface water drainage, wetlands, surface water, areas subject to the 100-year flood, and landscape features such as fences, walls, trees and planting areas, walk and lighting, both existing and proposed
- b) the relation of locus map at a scale not greater than 1" = 2,000' [Assessor's Map]
- c) all contiguous land owned by the Applicant or by the owner of the property.

The Applicant shall submit:

- a) Material as may be required regarding measures proposed to prevent pollution of surface or ground water, soil erosion, increased runoff, changes in groundwater level, and flooding
- b) Such material as may be required regarding design features intended to integrate the proposed new development into the existing landscape, to enhance aesthetic assets, and to screen objectionable features from neighbors
- c) Such material as may be required regarding the projected traffic-flow patterns into and upon the site for both vehicles and pedestrians and an estimate of the projected number of motor vehicle trips to and from the site for an average day, and for peak hours.

6.5.5 Costs Incurred

Expenses incurred by the Planning Board in connection with site plan review, including the reasonable fees and expenses of any consultants retained by the Planning Board, shall be borne by the Applicant.

**APPLICATION FOR DRIVEWAYS/ CURB CUTS
UNDER MANCHESTER-BY-THE-SEA ZONING BY LAW SECTION 6.2.7**

Construction that involves a driveway or entrance from the traveled portion of a street requires a permit from the Planning Board.

This application for Driveways/Curb Cuts is to be filed with the Town Clerk with the following:

___ Copy of Assessor's map showing map number, and lot indicated by arrow.

___ Site Plan prepared by Registered Architect, Landscape Architect, or Professional Engineer showing entire lot indicating:

- location of property lines, edge of roadway, front yard setback, 5' side and rear setbacks;
- existing and proposed buildings and structures;
- location and dimension of radius of proposed driveway, parking and/or garage;
- approximate distance to and location of storm sewers, hydrants;
- approximate distance to and location of drains;
- identify any impediments to sign lines, such as utility poles, fences, walls, trees, crests of hill in roadway, etc;
- identify radius of curb cut apron (15' min. recommended);
- describe measures to mitigate run-off or erosion, i.e. gravel or grass swales, catch basins, etc.

Name of Applicant (print:_____

Telephone _____ Email _____ Fax _____

Address of Property:_____

Assessor's Map:_____ Lot:_____ Zoning District:_____

Check if in Overlay District:

Flood Plain:_____ Flood Control District:_____ Historic District:_____

Water Resource Overlay Protection District:_____

see <http://host.appgeo.com/manchesterma/Map.aspx>

For WROPD: Area (s.f.): Lot _____

Impervious surfaces: Structures _____ Other _____ Proposed new _____

Name and address of owner if other than applicant:_____

Date: _____ Name (signed):_____ Name Printed:_____

1 set of application and attachments to Town Clerk

9 sets of application and attachments to Planning Board

Fee: \$100 Received by Town Clerk _____ on _____

(Driveways/Curb Cuts application, page 2)

Excerpt from Section 6.2.7 of the Manchester-by-the-Sea Zoning By-law:

“The applicant shall: (a), at least seven days prior to filing the application, mail a notice (in the form specified by the Planning Board) to all property owners within one hundred feet of the locus for which a driveway/curb cut is sought as such property is identified in the most recent information available at the Assessor’s Office, (b) certify in such application that such notice has been mailed, (c) attach to such application a list of the names and addresses of those notified, and file the application (with the filing fee, as established by the Planning Board) with the Planning Board by submission to the Town Clerk.”

I hereby certify that I have complied with the requirements of the above paragraph of Section 6.2.7 of the Zoning By-law.

Name:

Date:

(Driveways/Curb Cuts application, page 3)

In accordance with Section 6.2.7 of the Zoning By-law, the Manchester-by-the-Sea Planning Board will hold a meeting on _____ at _____ p.m. at the Town Hall, Manchester-by-the-Sea, MA to consider the application of _____ for Driveways/Curb Cuts to access an existing lot at _____. Assessor's Map No. _____, Lot No. _____, Zoning District _____.

Any person interested or wishing to be heard on this matter should appear at the time and place above designated.

Chairman of the Planning Board

OFFICE OF THE PLANNING BOARD
Town Hall, Manchester-by-the-Sea, MA 01944

_____ @ _____

Town Clerk

Hearing Date: _____

Site Viewing: _____

Granted: _____ Denied: _____

Decision Due: _____

Decision filed with the Town Clerk: _____

(for office use)

Nature of Action Requested: Application for Earth Removal Permit under the General By-laws, Article XII-Earth Removal

Applicant shall submit 18 (eighteen) copies of applications and plans.

Filing Fee [due with the application for permit]: \$500 [Also applies to renewal applications.]

Permit fee [due prior to issuance to permit]: \$200.00 per month for permit period after first month, and

Such other charges as it shall find necessary for clerical, civil engineering and other consultants, legal, and inspection expenses in connection with any application for a permit, its review by the Board and post-permit monitoring. The applicant shall deposit funds for such charges with the Town as the Board shall prescribe.

The Board may waive fees if and as it deems appropriate. These fees and charges shall apply to all applications for earth removal permits filed after the date of adoption of the above fee schedule, and to all permits issued pursuant thereto

Application for Earth Removal Permit under the General By-laws, Article XII-Earth Removal, Section 3(b). Any person wishing to remove more than 250 cubic yards of earth from a property in the Town shall file a formal application with the Planning Board, which application shall include the following specific information and supporting documentation:

1. the location of the proposed excavation;
2. the legal name and address of the owner of the property involved;
3. the legal name and address of the petitioner, which address shall be used by the Board for all correspondence hereunder;
4. property lines, names and address of all abutting property owners, including those across any streets;
5. a detailed plan of the land involved, prepared by a Registered Civil Engineer, or a registered surveyor, and acceptable to the Board, at a scale of 1":20', or as determined appropriate, showing the entire parcel of land based on a perimeter survey and showing existing topography by five (5) foot contours within one hundred (100) feet of, and including, the site of the proposed excavation or to the property line. This contour plan shall show locations of a sufficient number of test borings made to determine the average depth of topsoil before excavation
6. a detailed plan of the land involved, prepared by a Registered Civil Engineer, or a registered surveyor, and acceptable to the Board, showing five (5) foot contours of a site as of the completion of the excavation project, all drawn to a scale acceptable to the Board. The plan shall further show the maximum depth that the applicant intends to excavate, the type of material the applicant intends to extract from the

land, the manner and depth in which he shall replace the top soil, and the type of reseeding and planting he proposes to use;

7. natural features such as wetlands, the 100-year flood plain, ground cover and surface and ground water. Water-table elevation shall be determined by test pits and soil borings. A log of soil borings shall be included, taken to the depth of the proposed excavation, congruent with the size and geological makeup of the site;

8. a topographical map showing drainage facilities, final grades, and proposed vegetation and trees;

9. erosion and sediment-control plan;

10. the amount and cost of proposed restoration materials;

11. the location of monitoring wells which have been used to establish the high water table. The highest elevation of the water table shall be determined by observation wells monitored during the months of April and May. The observation wells' location shall be determined by the Conservation Commission or its agent. The information concerning height of water table shall be gathered before application for a permit is made to the Planning Board;

12. the proposed form of performance security to be used; and

13. copies of the information outlined in the above articles one (1) through twelve (12) shall be filed with the Town Clerk and the Planning Board.

14. Outline of all areas within the Water Resource Overlay Protection District (WROPD)

<http://host.appgeo.com/manchesterma/Map.aspx>

Fee: \$500

Received:

Town Clerk

APPENDIX G

ASSESSMENT STUDY STANDARDS/MISC. HYDROGEOLOGIC STUDY GUIDELINES

1.0 Base Map

Should include:

1.1 Existing surface water bodies and wetlands

1.2 Location of existing wells and septic systems for abutting properties

1.3 Existing and planned land surface elevations

1.4 Groundwater contours at minimum two (2) foot intervals

1.5 Detailed description of proposed project, including:

a) location of planned septic systems

b) water supply wells

c) residential dwellings

d) lawn areas

e) paved areas

2.0 Background Information

Should include:

2.1 Existing condition of ground and surface water quality, including physical characteristics and water chemistry. Measurements shall specifically include concentrations of total phosphorus if in the recharge zone of freshwater pond; nitrate-nitrogen if in the recharge zone of saltwater pond or embayment; and nitrate- nitrogen if in a zone of contribution to a private or public water supply well.

2.2 Subsurface geology

2.3 Surface drainage patterns

3.0 Analysis Of Development Impact

The analysis of the impact of the development will vary depending on its location in relation to sensitive water resources within the Town. One of four categories will apply. They are: 1) Zone II protection areas to public drinking water supplies; 2) contributing areas to fresh water lakes or ponds; 3) contributing areas to coastal estuaries; and 4) those areas designated as not impacting in a significant way the sensitive water resources. Subdivisions with upland in excess of 80,000 square feet per buildable lot would be designated as being in the fourth category. No further analysis of development impact by subdivision in category four need to be performed, unless specifically required by the Planning Board.

3.1 Zone II Protection Areas to Public Drinking Water Supplies

Analysis should include:

The existing condition of the water supply, including well location and construction and the quality of water pumped by the well.

A calculation of the total nitrogen loading from the proposed development (in pounds per year) and the predicted nitrogen concentration in ground water underneath the development (in mg/l) using loading rates provided in **Table G-1** below.

A calculation of the predicted nitrogen concentration in ground water pumped by the water supply well from throughout the Zone II area. This analysis must include a calculation of the total loading within the Zone II area from all sources under saturation or build-out conditions. The loading analysis should use the loading rates provided in **Table G-1** below.

A comparison of the results of the post-development Zone II loading analysis to the critical nitrogen concentration of 5 mg/l for water pumped by the water supply well. If the predicted concentration is above 5 mg/l, the applicant must indicate nitrogen reduction measures for the proposed development that will reduce the nitrogen loading so the predicted concentration is 5 mg/l or less.

3.2 Contributing Areas to Fresh Water Lakes or Ponds

Analysis should include:

A map showing the boundaries of the contributing area based on ground water flow and/or surface water runoff.

A calculation of the total phosphorus loading from the proposed development (in pounds per year) using loading rates provided in **TABLE G-2** below.

A calculation of the predicted phosphorus concentration in the fresh water system from sources throughout the contributing area. This analysis must include a calculation of the loading within the contributing area from all sources under saturation or build-out conditions. The loading analysis should use the loading rates provided in **TABLE G-2** below.

A comparison of the results of the post-development phosphorus loading analysis to the critical phosphorus concentration of 0.2 mg/l for the fresh water resource. If the predicted concentration is above 0.2 mg/l, the applicant must indicate phosphorus reduction measures for the proposed development that will reduce the phosphorous loading so the predicted concentration is 0.2 mg/l or less.

3.3 Contributing Areas to Coastal Ponds or Estuaries

Analysis should include:

A map showing the boundaries of the contributing area based on ground water flow.

A flushing calculation showing how quickly water and associated nutrients and other contaminants are removed from the coastal system into Massachusetts Bay.

A calculation of the total nitrogen loading from the proposed development (in pounds per year) using loading rates provided in **Table G-1** below.

A calculation of the predicted nitrogen loading to ground water (in pounds per year) throughout the contributing areas. This analysis must include a calculation of the total loading within the contributing area from all sources under saturation or build-out conditions. The loading analysis should use the loading rates provided in **Table G-1** below.

A comparison of the results of the predicted loading analysis for the post-development condition to the critical nitrogen loading levels provided in **TABLE G-3** below which are based on the flushing characteristics of the coastal system. If the predicted concentration is above the critical loading levels, the applicant must indicate nitrogen reduction measures for the proposed development that will reduce the nitrogen loading so the predicted concentration is reduced to, or below the critical rate.

Table G-1
Nitrogen Loading Analysis Parameters

SOURCE	CONCENTRATION	LOADING RATE	FLOW/RECHARGE
Sewage	40 mg N/liter	(6.72 lbs N/person/yr) (165 gallons/dwelling)	55 gallons/person/day
Fertilizer (Lawns)		(0.9 lbs N/1000 sq. ft./yr.)	18 in./year
Pavement Runoff	2.0 mg N/liter	(.42 lbs N/1000 sq.ft./yr.)	40 in./yr
Roof Runoff	0.75 mg N/liter	(0.15 lbs N/1000 sq.ft./yr.)	40 in./yr
Precipitation	0.05 mg N/liter	(0.005 lbs N/1000 sq.ft./yr.)	18 in./year

Average Loading Rate Per Dwelling (25.3 lbs/yr)

*Agricultural fertilizer loading rates should be determined for dominant local crops, if appropriate.

TABLE G-2
Watershed Phosphorus Loading Model Build-out Conditions

	QUANTITY	SOURCE LOADING	PERSISTENCE	LOADING LBS/YR.
GROUNDWATER				
Septic Systems	*	9.6 lbs/unit/yr	0.20	**
Lawns	*	0.91 lbs/5000 sq.ft/yr	0.19	**
Agricult.Fields (w/ manure) (acres)	*	10 lbs/acre/yr	0.24	**
Feedlots (acres)	*	227 lbs/acre/yr	0.24	**
Forested (acres)	*	0.2 lbs/acre/yr	0.37	**
Road Drainage (acres)	*	0.92 lbs/acre/yr	0.00	**
TOTAL (Loading to Stream/Pond)				***
STORMWATER FLOW				
Septic Systems	*	9.6 lbs/unit/yr	0.31	**
Lawns	*	0.91 lbs/5000 sq.ft/yr	0.31	**
Agricult.Fields (w/ manure) (acres)	*	10 lbs/acre/yr	0.40	**
Feedlots (acres)	*	227 lbs/acre/yr	0.40	**
Forested (acres)	*	0.2 lbs/acre/yr	0.63	**
Road Drainage (acres)	*	0.92 lbs/acre/yr	1.00	**
TOTAL (Loading to Stream/Pond)				***
		TOTAL LOADING		*****

Runoff/Recharge Calculations:

	Soils	Runoff	Runoff	Recharge	Result
	(acres)	(ft/yr)	(M gal/yr/acre)	(ft/yr)	(M gal/yr/acre)
Glacial Till	*	1	0.3258	0.25	0.0814
Sandy Soils	*	0.25	0.0814	1.50	0.4887
Total	***		0.4072		0.569

Average stormflow (cfs) 1.86			Average baseflow (cfs) 0.69		

NOTE: *Number of acres times 43,560 square feet times runoff/recharge in ft/yr times 7.48 gallons per cubic foot equal gallons per year. Convert to liters and convert pounds per year to milligrams to get MG/L concentration.

** quantity of

*** quantity times unit loading times persistence measured in pounds per year

**** Sum of groundwater and stormwater flows Column total

TABLE G-3
Recommended Critical Nitrogen Loading Limits

Type of Embayment	SB* Waters	SA* Waters	Sensitive Waters
Shallow:			
Flushing in less than or equal to 5 days	350 mg/M3/Vr	200 mg/M3/Vr	100 mg/M3/Vr
Flushing in greater than 5 days	30 g/M2/yr	15 g/M2/yr	5 g/M2/yr
Deep:			
Use lesser loading rate	500 mg/M3/Vr or 45 g/M2/yr	260 mg/M3/Vr or 20 g/M2/yr	130 mg/M3/Vr or 10 g/M2/yr
Vr = residence time/square root (1+ residence time)			
* SB and SA are classifications for coastal waters relating to existing, desired water quality based on waterbody type, location, size, etc. and adjacent land uses. SB is lower quality based on waterbody type, location, size, etc. and adjacent land uses. SB is a lower quality than SA. The Commonwealth of Massachusetts has classified all coastal waters under the authority of 314 CMR 4, and has currently classified Duxbury coastal waters as SA.			

OUTLINE OF MINIMUM REQUIREMENTS FOR A TRAFFIC STUDY REPORT

1. Introduction

Project Description Locus Map

2. Description of Existing Conditions

Existing Road Geometrics

Lane and shoulder widths

Lateral Clearances
Horizontal and Vertical Alignment Intersection Geometrics
Traffic Signalization
Sight Distances

Abutting Land Uses and Zoning
Existing Traffic Characteristics Based on Traffic Counts or Observation

Vehicle Speeds
Average Daily Traffic (ADT)
Peak Hour Traffic
Directional Distribution
Truck Percentage for ADT and Peak Hour Turning Movements at Adjacent Intersections
Pedestrian Volumes

Accident Data Collection and Analysis
Summary of Three Year Accident History Accident Diagrams
Evaluation of Accidents

3. Projected Traffic Impacts Due to Proposed Development

Methodology for Making Projections Average Daily Traffic (ADT)
Peak Hour Traffic
Directional Distribution

Truck Percentage for ADT and Peak Hour Turning Movements at Adjacent Intersections
Pedestrian Volumes

4. Proposed Methods of Mitigating Traffic Impacts

Geometric Improvements Traffic Signalization

5. Level of Service Chart

Level	Delay in Seconds	Description
A	Less Than 5.0	Very little delay, rare stopping
B	5.1 – 15.0	Majority of vehicles do not stop
C	15.1 – 25.0	Some pass-through, significant # stop
D	25.1 – 40.0	Most stop, sometimes twice in cycle
E	40.1 – 60.0	Almost all stop, cycle failure frequent
F	Greater than 60.0	Gridlock

MAPS

[Maps for official use are at on file at Town Hall or available at
<http://host.appgeo.com/manchesterma/Map.aspx>

Zoning Districts [ZBL Section 3.2]

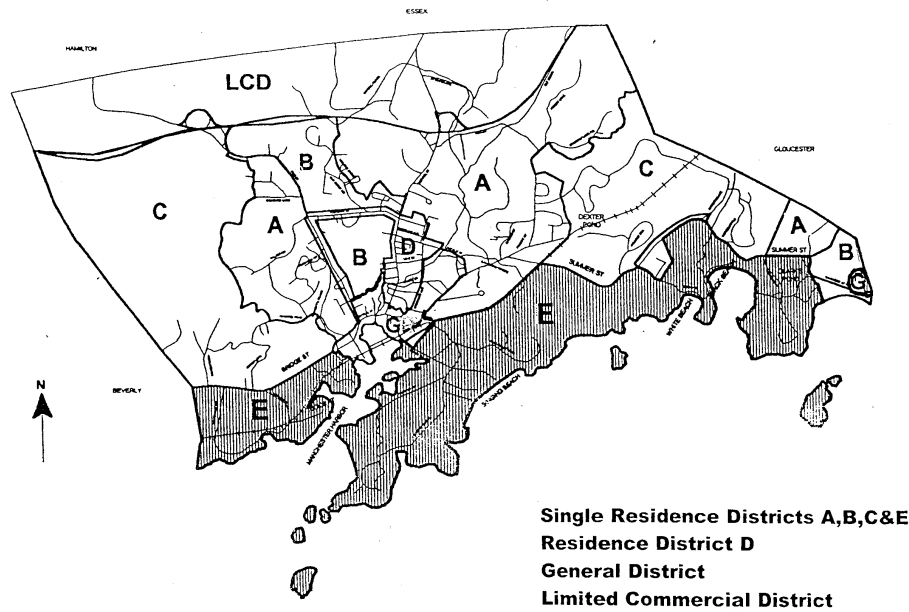
‘New’ District D [ZBL Section 4.2]

Bennett’s Brook Drainage Area/Flood Control District [ZBL Section 4.7]

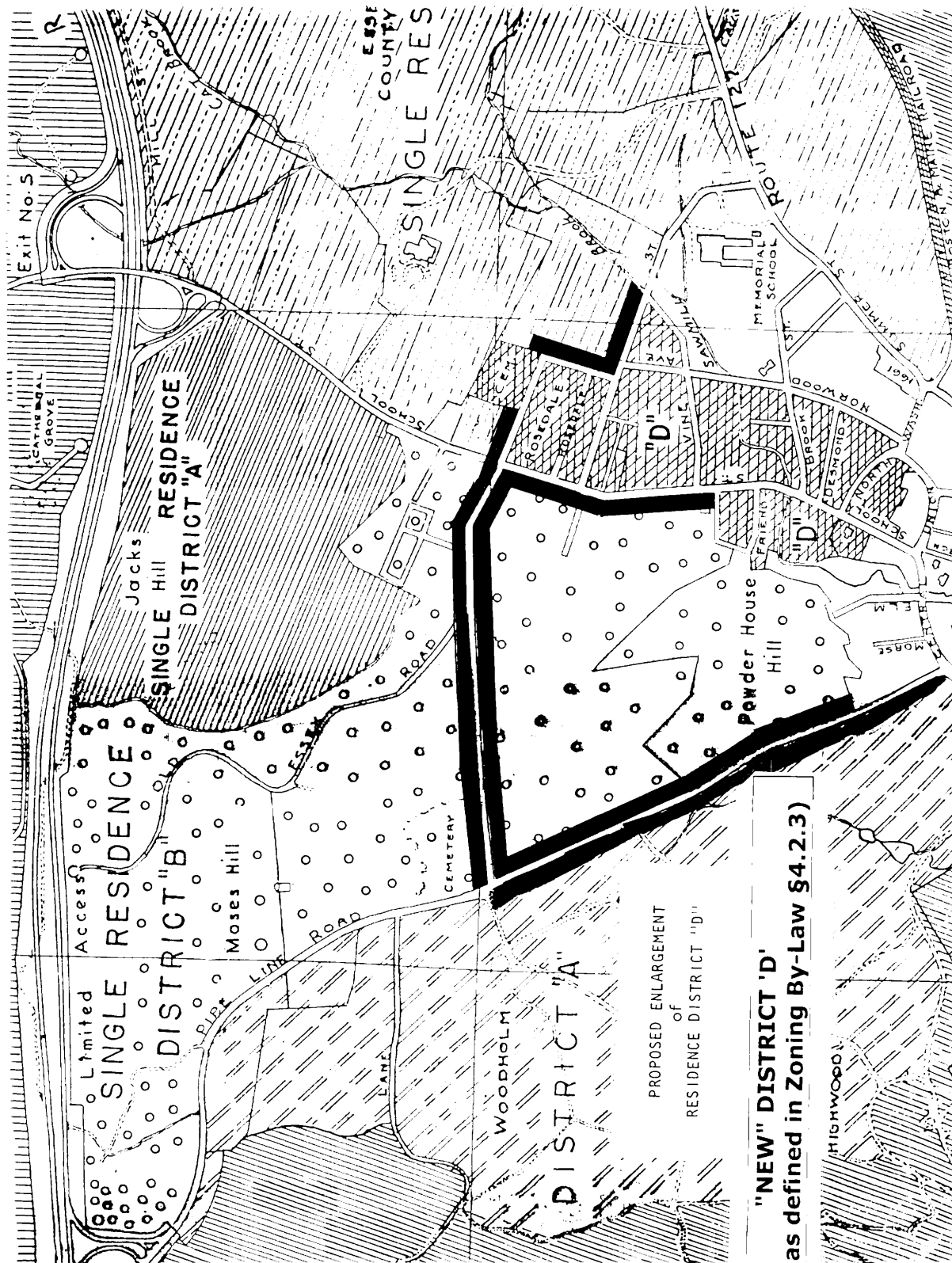
Water Resource Overlay Protection Districts [ZBL Section 4.9]

Watershed for Gravelly Pond/Round Pond [ZBL Section 4.9]

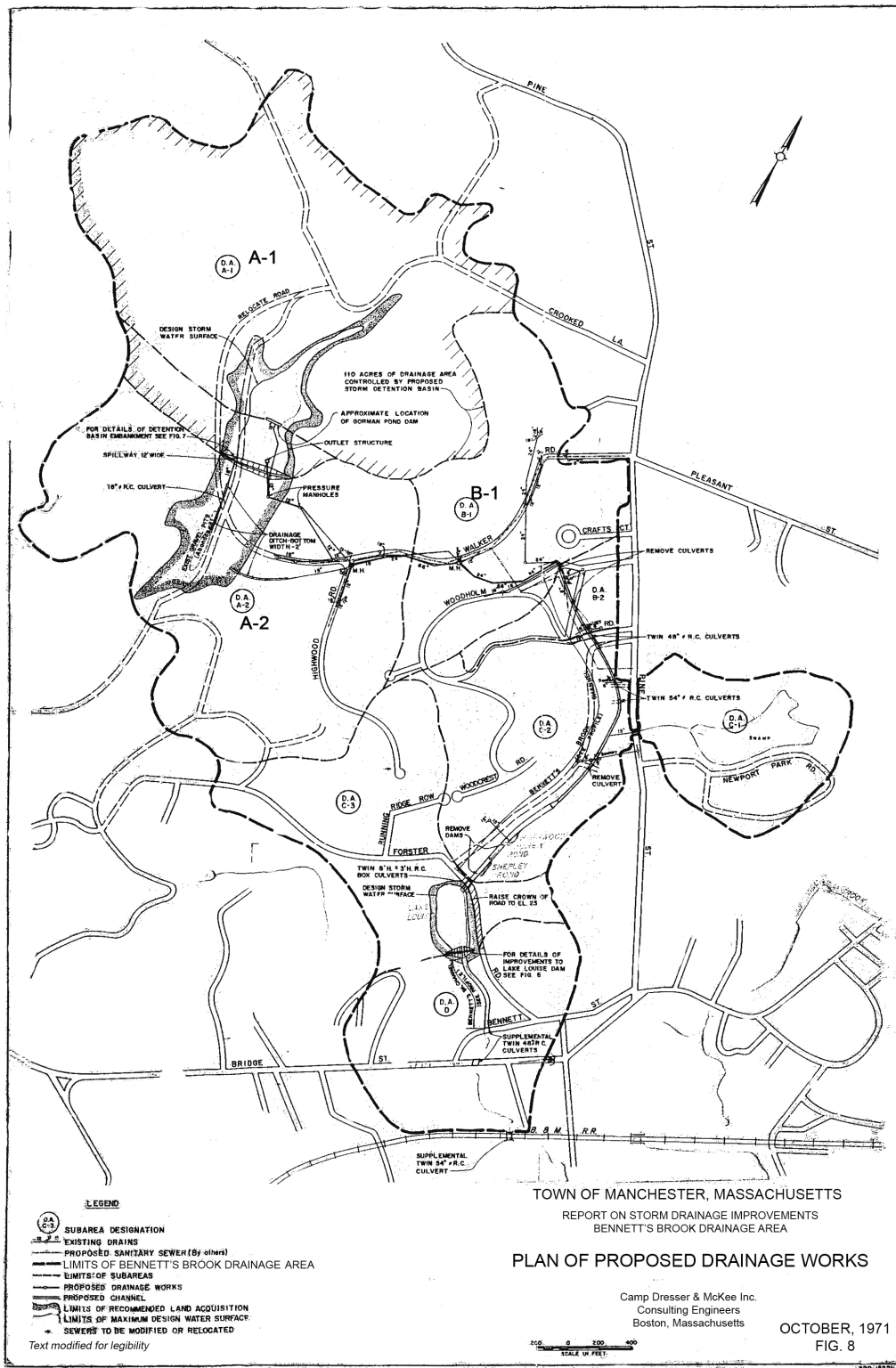
Zone of Contribution to Lincoln Street Well [ZBL Section 4.9]

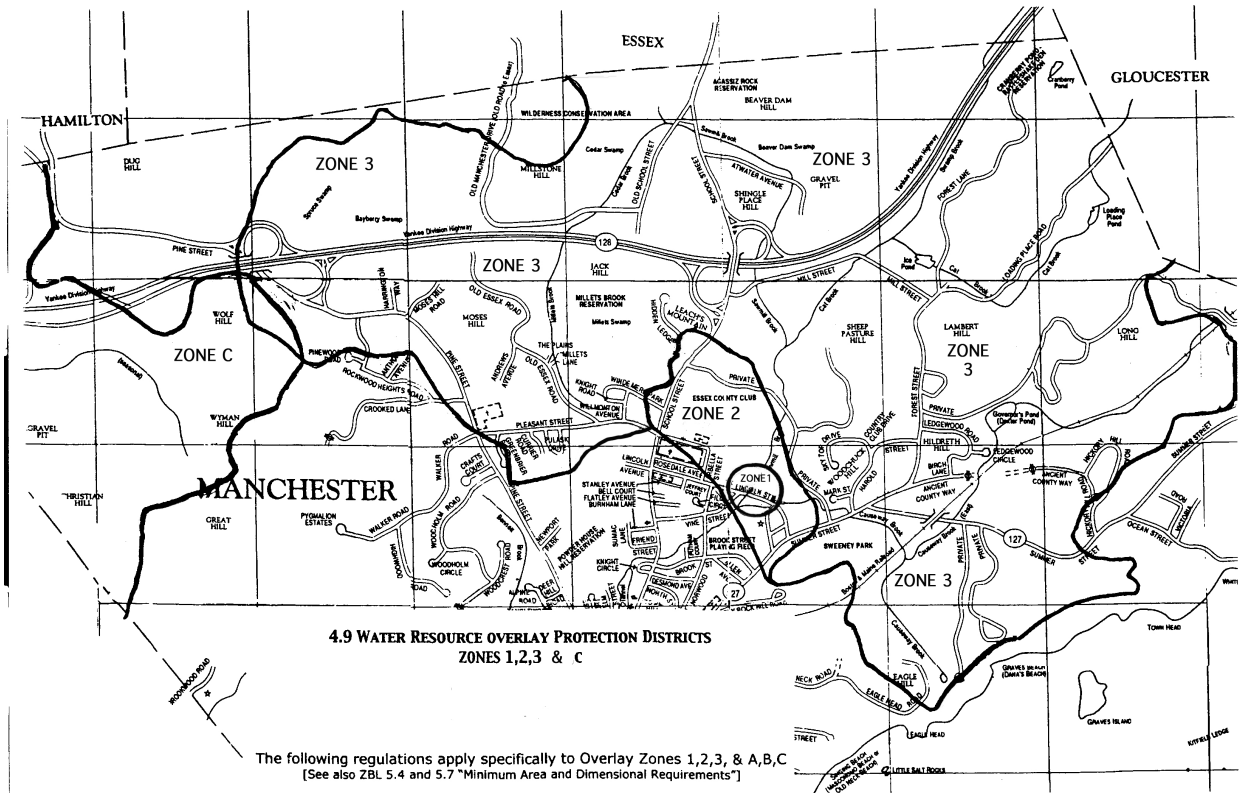


ZONING MAP
Town of Manchester-by-the-Sea
 March 2000

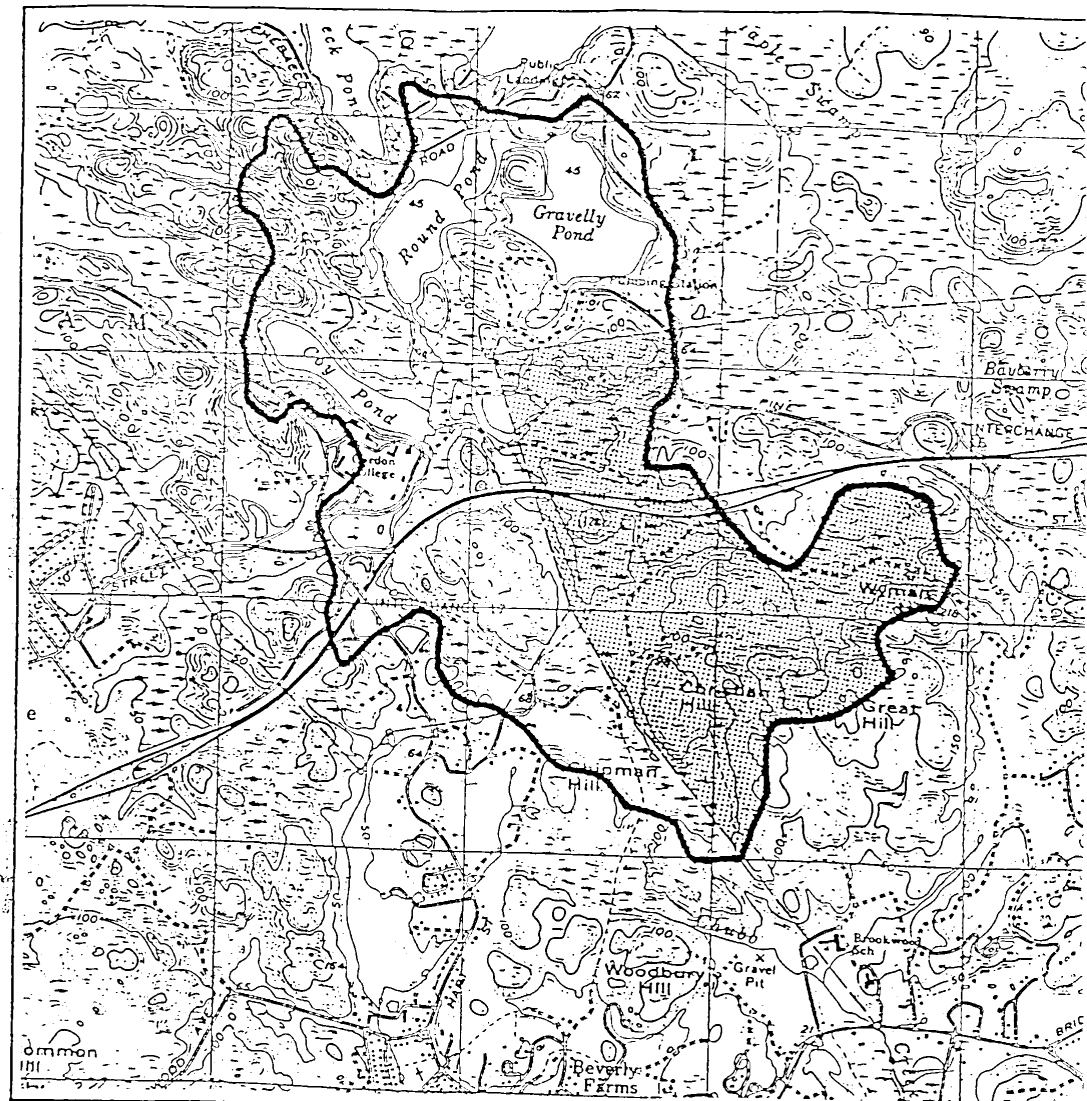


"NEW" DISTRICT 'D'
(as defined in Zoning By-Law §4.2.3)





Minimum lot Size [for lots not on sewer]	30,000s.f.	except by Special Permit
Maximum impervious surface	15% or 2,500s.f. [the greater]	except by Special Permit



EXPLANATION

— Watershed Boundary

□ Area of Watershed Inside Manchester Boundary

Watershed for Gravelly Pond/
Round Pond

Scale: 1"=3000'



HWH, Inc.

