

Amended through
June 2012

SUBDIVISION RULES & REGULATIONS
TOWN OF
HANSON, MASSACHUSETTS

PLANNING BOARD

RULES AND REGULATIONS GOVERNING
THE SUBDIVISION OF LAND

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TABLE OF CONTENTS

TO THE RULES AND REGULATIONS OF HANSON PLANNING BOARD	PAGE
<u>Section 1. General Provisions</u>	9
1.1 Authority	9
1.2 Purpose	9
1.3 Subdivisions	9
1.4 Definitions	9
<u>Section 2. Plans Believed Not to Require Approval</u>	12
2.1 "Approval Not Required" Plans	12
2.2 Endorsement	12
2.3 Applicant's Statement For "ANR" Plans	12
<u>Section 3. Subdivision - General Requirements</u>	14
3.1 General Requirements	14
3.2 Expenses, Submittal of	14
3.3 Applicant's Responsibility	14
3.4 One Dwelling Per Lot	14
3.5 Submission to Town Clerk and Board of Health	14
3.6 Unapproved Subdivision Prohibited	15
3.7 Public Health and Safety	15
3.8 Continuation of Principal Streets	15
3.9 Adequate Access From Public Way	15
3.9.2 Dedication of Land to Widen Right-of-way	16
3.10 Effect of Prior Recording	16
3.11 Failure to Comply; Waivers	16
3.11.1. Failure to Comply	16
3.11.2 Waiver of Specific Rules and Regulations	16
3.11.3 Waiver of a Submission Requirement	17
3.11.4 Waiver of a Development Standard	17
3.11.5 Modification After Approval of Subdivision	17
3.12 Interpretation, Conflict and Separability	18
3.12.1 Minimum Requirements	18
3.12.2 More Restrictive Standard to Apply	18

	PAGE
3.12.3 Separable	18
3.13 Reservations and Appeals	18
3.14 Amendments	18
3.15 Completeness and Application	18
3.16 Consent of Property Owner Required for all Applications	19
3.17 Withdrawal	19
3.18 Extension	19
 <u>Section 4. Preliminary Plan</u>	 20
4.1 Preliminary Plan Requirements	20
4.2 Preliminary Plan Procedure	21
4.3 Preliminary Sketch	21
 <u>Section 5. Definitive Plan Requirements</u>	 22
5.1 Components of Definitive Plan	22
5.2 Plan Requirements	23
5.3 Vicinity Map	23
5.4 Lot Layout Plan	24
5.5 Street Plan and Profile	25
5.6 Detail Drawings/roadway cross-section	26
5.7 Topographic or Contour Plan	27
5.8 Federal Flood Insurance	27
5.9 Other Information	27
5.10 Test Data	28
 <u>Section 6. Design Standards</u>	 29
6.1 Lots	29
6.2 Natural Features	30
6.3 Easements	30
6.4.1 Street System	30
6.4.2 Prohibited Features	30
6.4.3 Street Curves	31
6.4.4 Street Classification	31
6.4.5 Street Grades	32
6.4.6 Dead-end Streets	32
6.5 Storm Drains	32
6.6 Water Mains	32
6.7 Street Lights	33

<u>Section 7. Required Improvements</u>	PAGE 34
7.1 Compliance with Plan, Rules and Regulations and Standard Specifications	34
7.2 Access for Inspections	34
7.2.1 Pre-construction requirements	34
7.2.2 Phased construction	35
7.2.3 Sequence of Construction	35
7.2.4 Notification of Commencement of Construction	36
7.3 Streets and Roadways	36
7.3.1 Initial Preparation	36
7.3.2 Gravel Base	36
7.3.3 Roadway Paving	37
7.3.4 Inspection	37
7.4 Utilities	37
7.4.1 Underground Utilities	37
7.4.2 Sewers and Drains	37
7.4.3 Disposal of Surface Water	37
7.4.31 Design Analysis	38
7.4.32 Design Storm	39
7.4.33 Computation of Runoff	42
7.4.34 Selection of Drain Size	43
7.4.35 Type of Pipe	43
7.4.36 Slope of Pipe	43
7.4.37 Inlets	43
7.4.38 Catchbasins - Manholes	44
7.4.39 Excavation	44
7.4.40 Bedding	44
7.4.41 Pipe Laying	45
7.4.42 Backfilling	45
7.4.43 Security Bars	45
7.4.44 Headwalls	46
7.4.45 Scour Protection	46
7.4.46 Water Pipes and Related Facilities	46
7.5 Sidewalks and Bikeways	47
7.5.1 General	47
7.5.11 Concrete	47
7.5.12 Bituminous Concrete	47
7.6 Curbing	48
7.6.1 Curbing, General	48
7.6.2 Approved Types of Curbing	48
7.6.3 Terminal Curb Section	48
7.6.4 Side Slopes	48

	PAGE
7.7 Topsoil and its Removal and Loam and Seeding	49
7.8 Monuments	49
7.9 Street Trees	49
7.10 Street Signs	50
7.11 Street Lights	50
7.12 Cleaning Up	50
<u>Section 8. Processing of Definitive Plans</u>	51
8.1 Submission of Definitive Plans	51
8.2 Submission Procedure	51
8.3 Public Hearing	52
8.4 Approval or Disapproval	52
8.5 Streets Are Not Public Ways	52
<u>Section 9. Performance Guarantees and Release</u>	53
9.1 Ensure Construction of Ways and Utilities	53
9.2 Surety	53
9.3 Covenant	54
9.4 Reversion to Covenant	54
9.5 Turnarounds Required	54
9.6 Certificate of Completion	54
9.7 Evidence of Satisfactory Performance	55
9.7.1 Certified Layout Plan	55
9.7.2 Statement from Town Street Superintendent	55
9.7.3 Conveyance of Utilities	55
9.7.4 Statement from Water Board	56
9.7.5 Final Acceptance Plans	56
9.7.6 Certified Final Locations	56
9.8 Release of Surety	56
9.9 Criteria for Satisfactory Partial Completion	57
9.10 Reduction of Surety	57
<u>Section 10. Revision of Subdivisions & Private Ways</u>	58
10.1 Modification of Existing Subdivisions & Private Ways	58
10.2 Minor Revisions	58
10.3 Subdivision Plan Reference	58
10.4 Rescission After 8 Years	58
<u>Section 11. Administration</u>	59
11.1 Variation	59

	PAGE
11.2 Reference	59
11.3 Design Review and Construction Inspection Deposit & Fees	59
11.3.1 Design Review, General	59
11.3.2 Deposit	59
11.3.3 Return of Deposit	59
<u>FORMS</u>	60
Form A - APPLICATION FOR A DETERMINATION OF SUBDIVISION APPROVAL	61
Form B - APPLICATION FOR APPROVAL OF A PRELIMINARY PLAN	62
Form C - APPLICATION FOR APPROVAL OF DEFINITIVE SUBDIVISION PLAN	63
Form D - DESIGNER'S CERTIFICATE	66
Form E - PLANNING BOARD DETERMINATION, SUBDIVISION APPROVAL REQUIRED	67
Form F - CERTIFICATE OF ACTION	68
Form G - TYPICAL COVENANT AND PERFORMANCE BOND FORMS:	69-78
G-1 Covenant	69
G-2 Performance Bond Secured by Deposit	72
G-3 Performance Bond Secured by Bank Passbook	74
G-4 Performance Bond Surety Company	75
G-5 Assignment	77
G-6 Release of Lots	78

Form H - CONVEYANCE OF EASEMENTS AND UTILITIES	PAGE 80
Form I - TYPICAL TITLE BOX	82
Form J - CERTIFICATION OF CONSTRUCTION	83
Form K - COMPLETION COST ESTIMATE	85
Form L - FEE SCHEDULE	87
<u>APPENDIX</u>	88
<u>OTHER INFORMATION/SUPPORTING REPORTS REQUIREMENTS</u>	
<u>APPENDIX 1-</u> ENVIRONMENTAL AND COMMUNITY IMPACT STATEMENT	89
<u>APPENDIX 2-</u> SOIL EROSION AND SEDIMENTATION CONTROL PLAN	93
<u>APPENDIX 3-</u> GRADING, DRAINAGE, AND UTILITIES PLAN	96
<u>APPENDIX 4 -</u> SUBDIVISION INSPECTION CHECKLIST	98
<u>APPENDIX 5-</u> APPROVAL NOT REQUIRED "ANR" PLAN CHECKLIST PROVIDED AS A GUIDE	101
<u>APPENDIX 6-</u> PRELIMINARY PLAN APPLICATION CHECKLIST PROVIDED AS A GUIDE	102
<u>APPENDIX 7-</u> DEFINITIVE PLAN APPLICATION CHECKLIST PROVIDED AS A GUIDE	103
<u>APPENDIX 8-</u> AS-BUILT PLAN, AND PROFILE REQUIREMENTS	104
<u>APPENDIX 9-</u> STREET ACCEPTANCE PLAN CHECKLIST	107
<u>APPENDIX 10 -</u> ROADWAY CONSTRUCTION SPECIFICATIONS AND STANDARDS	108
<u>APPENDIX 11-</u> DRAINAGE MATERIALS AND INSTALLATION SPECIFICATIONS	111

<u>PLATES (STANDARD DESIGN REQUIREMENTS)</u>	PAGE 114
PLATE 1 CONCRETE BLOCK CATCH BASIN	115
PLATE 1A PRECAST CONCRETE CATCH BASIN	116
PLATE 2 CONCRETE BLOCK MANHOLE	117
PLATE 2A PRECAST CONCRETE MANHOLE 69	118
PLATE 3 SPECIAL MANHOLE	119
PLATE 3A SPECIAL MANHOLE	120
PLATE 3B SPECIAL MANHOLE	121
PLATE 4 TYPICAL ROADWAY SECTION	122
PLATE 4A TYPICAL SIDEWALK DETAILS	123
PLATE 5 SLOPED GRANITE CURB	124
PLATE 6 TERMINAL & VERTICAL GRANITE CURB	125
PLATE 7 FIELDSTONE & CONCRETE HEADWALLS	126

SECTION 1. GENERAL PROVISIONS

1.1 AUTHORITY

Under the authority vested in the Planning Board of the Town of Hanson by Section 81-Q of Chapter 41 of the General Laws and by all other applicable sections of the subdivision Control Law and other enabling laws, said Planning Board hereby adopts these "Rules and Regulations Governing the Subdivision of Land in the Town of Hanson, Mass." if, pursuant to Section 81-R of Chapter 41, the Board waives any requirements of these Rules and Regulations it shall provide in writing the reason therefore.

1.2 PURPOSE

These Rules and Regulations have been adopted to regulate the subdivision of land in the Town of Hanson in accordance with the purposes set forth in Section 81-M and other applicable sections of said Chapter 41 of the General Laws.

1.3 SUBDIVISION

No person shall make a subdivision within the meaning of the Subdivision Control Law of any land within the Town of Hanson, 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 definitive plan of such subdivision has been submitted and approved by the Board; as herein-after provided, and/or endorsed by the Town Clerk.

1.4 DEFINITION

For the purpose of these rules and regulations, unless a contrary intention clearly appears, the terms and words defined in the Subdivision Control Law shall have the meaning given therein. The following other terms and words shall have the following meaning: Terms and words not defined herein but defined in the Commonwealth of Massachusetts State Building Code shall have the meanings given therein unless a contrary intention clearly appears. Words not defined in either place shall have the meaning given in Webster's Unabridged Dictionary, Latest Edition.

Other definitions shall be as used in the Subdivision Control Law and reference to Boards, Departments, and Officials shall mean such Boards, Departments, and Officials in the Town of Hanson, unless otherwise indicated.

a. Agent - Inspector and/or engineer acting as the agent of the Planning Board.

b. Applicant - All the owners of record of the land stated in the application for subdivision. An agent, representative or his assigns may act for an owner, provided written evidence of such fact is submitted to the Board. Evidence in the form of a list of

their officers and designated authority to sign legal documents shall be required for a corporate owner.

c. Board - The Planning Board of the Town of Hanson, Massachusetts, established under Section 81A.

d. Definitive Plan - A definitive plan shall mean a plan of a proposed subdivision or resubdivision of land drawn in accordance with Section 5 of these rules and regulations that will be recorded in the Registry of Deeds or filed with the Land Court when approved by the Board.

e. Designer - Professional engineer, landscape architect, architect, or land surveyor registered to practice in Massachusetts. All public and private utility design and other engineering practices as defined in Section 81D of Chapter 112 of the General Laws shall be done by or under the direct supervision of, and shall be endorsed by, a registered professional engineer. All layout of lands and subdivisions shall be done by or under the direct supervision of, and shall be endorsed by, a registered land surveyor.

f. Developer - An owner or his agent, or representative, or his assigns.

g. Engineer - A person registered or legally permitted to practice professional engineering in the Commonwealth of Massachusetts.

h. General Laws - The General Laws of the Commonwealth of Massachusetts.

i. MHD- Massachusetts Department of Transportation-Highway Division.

j. Preliminary Plan -A preliminary plan shall mean a plan of a proposed subdivision or resubdivision of land drawn in accordance with Section 4 of these rules and regulations.

k. Roadway or traveled way -The portion of a street intended for vehicular use.

l. Street or way - A way, street or road open and dedicated to public use, including a public way or a way certified by the Town Clerk to have been used and maintained by public authorities as a public way, a way approved and constructed under the provisions of the Subdivision Control Law, or a private way in existence prior to said Subdivision Control Law having become effective in the Town of Hanson and having, in the opinion of the Board, adequate width, grades, and construction for the vehicular traffic and the installation of municipal services to serve the land abutting on such way and the buildings erected or to be erected thereon.

m. Subdivision - "Subdivision" shall mean the division of a tract of land into two (2) or more lots and shall include re-subdivision, and, when appropriate to the context, shall

relate to the process of subdivision or the land or territory subdivided; provided, however, that the division of a tract of land into two (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 clerk of the town certifies is maintained and used as a public way, or (b) a way shown on a plan theretofore approved and endorsed in accordance with the subdivision control law, or (c) a way in existence when the subdivision control law became effective in the town of Hanson (Feb. 18, 1954), 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 land abutting thereon or served thereby, and for the installation of municipal services to serve such land and the buildings erected or to be erected thereon. Such frontage shall be of at least such distance as is then required by zoning or other bylaw, if any, of the town of Hanson for erection of a building of such lot.

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 (2) 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 (1) of such building remains standing, shall not constitute a subdivision.

(Section 81-L of Chapter 41, G.L.)

n. Subdivision Control Law - The power of regulating the subdivision of land granted by Sections 81-K to 81-GG, inclusive, of Chapter 41 of the General Laws and any acts in amendment thereof, addition thereto or substitution therefore.

o. Surveyor - A person registered or legally permitted to practice land surveying in the Commonwealth of Massachusetts.

p. These Rules and Regulations - The "Rules and Regulations Governing the Subdivision of Land in Hanson, Mass." as adopted and amended by the Planning Board pursuant to Section 81-Q of the Subdivision Control Law.

q. Utilities - Municipal services, including storm water drainage systems, water supply piping, fire alarm conduits, electric and telephone wiring and all appurtenances thereof.

SECTION 2. PLANS BELIEVED NOT TO REQUIRE APPROVAL

2.1 APPROVAL NOT REQUIRED PLAN (FORM A)

Any person wishing to cause to be recorded in the Registry of Deeds a plan of land situated in the Town of Hanson, who believes that such plan does not require approval under the Subdivision Control Law, may submit such plan to the Board in the manner prescribed in Section 81-T of said Subdivision Control Law. Such plan shall be suitable for recording and shall be accompanied by seven full size copies, by a completed application Form A (See Forms) by other evidence necessary to enable the Board to determine that the plan does not show a subdivision within the meaning of the Subdivision Control Law and that no non-conforming lots or structures are created by the submitted application. Such information shall include, but shall not necessarily be limited to the locus, zoning identification, delineation of property boundary, area and frontage of, and the buildings thereon with setbacks from all lot lines, any lot or parcel of land the boundaries of which are being established, requisite square, percentage of uplands, assessor's plan # and lot #, changed or to be recorded without change (a checklist has been provided as a guide). Any plan submitted under this section shall contain sufficient information to show that the parcel is not a subdivision. Failure of the plan to show adequate or accurate information shall be sufficient grounds for the Board to refuse to endorse under Section 81-P of Chapter 41A.

2.2 ENDORSEMENT

Within twenty-one days of the submission of a plan believed not to require approval, the Board shall either endorse the plan with the words "Approval under the Subdivision Control Law not required" followed by date and signatures or, if the Board determines that the plan requires approval as a subdivision, it shall notify the applicant by certified mail and the Town Clerk in writing of its decision. The Board may add notations, if the plan so warrants, indicating certain lots are not buildable under the current Town By-Laws. The original tracing of the plan shall be released to the applicant and the copies shall be retained by the Planning Board.

2.3 FORM A SHALL BE SUBMITTED WITH PLAN STATING WHY THE APPLICANT BELIEVES SUCH APPROVAL IS NOT REQUIRED FOR THE FOLLOWING REASONS:

Every lot shown of the plan has frontage on:

- a. a public way or way in which the Town Clerk certifies is maintained and used as a public way.
- b. A way shown on a plan theretofore approved and endorsed in accordance with the subdivision control law.

c. A private way in existence when the subdivision control law became effective in the Town of Hanson having, in the opinion of the Planning Board, sufficient width, suitable grades, and adequate construction to provide 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.

SECTION 3. SUBDIVISION - GENERAL REQUIREMENTS

3.1 GENERAL REQUIREMENTS

No subdivision shall be approved unless it complies with these Rules and Regulations and with the applicable provisions of zoning and other town by-laws and regulations and of the General Laws of the Commonwealth of Massachusetts, nor unless, in the opinion of the Board, such subdivision meets the requirements of public safety, including reasonable precautions against possible natural disasters, of traffic safety and convenience, of adequate water supply, method of erosion and sedimentation control, storm water drainage and sewage disposal and is designed with due regard to the rights, health and welfare of Hanson inhabitants, including the residents of such subdivision. Proposed subdivisions shall adhere to the principles of correct land use, sound planning and good engineering.

3.2 EXPENSES - SUBMITTAL OF

All expenses for advertising, engineering, plans, construction, recording and filing of plans and documents and all other expenses in connection with or for a subdivision shall be borne by the applicant. A definitive subdivision plan shall be accompanied by a filing fee, in accordance with the fee schedule.

3.3 APPLICANT'S RESPONSIBILITY

The approval of a subdivision by the Board does not affect any rights others may have in or over the land to be subdivided, nor does it give the applicant the right to perform work on land owned by others. The Board assumes any plans submitted for its approval or consideration to be correct, unless evidence is presented to the contrary. The acquisition of necessary rights and the presentation of complete and correct information to the Board are responsibilities of the applicant and the failure to do so, including the failure or inability to obtain all necessary permits, licenses, releases or rights may constitute a reason for the disapproval or the rescission of approval of a subdivision plan. The applicant shall certify that every lot within a subdivision has an area equal to or greater than that required by the Zoning Bylaw.

3.4 ONE DWELLING PER LOT

Not more than one building designed or available for use for dwelling purposes shall be erected or placed or converted to use as such on any lot in a subdivision, or elsewhere in the Town, unless otherwise provided by other local bylaws.

3.5 SUBMISSION TO TOWN CLERK AND BOARD OF HEALTH

The Subdivision Control Law requires that when either a preliminary or definitive subdivision plan is submitted to the Board, the applicant shall file with the Town Clerk by in-hand delivery or registered mail a notice stating the date of submittal; this filing

shall include, in addition to items listed in Section 4 or 5, a completed application Form B (see Forms) for a preliminary plan, or Forms C with C-1 and D (see forms) for a definitive plan. If the notice is given by delivery, the Town Clerk shall, if requested, give a written receipt therefore. The applicant shall simultaneously deliver a copy of such plan to the Board of Health. Such plan shall be considered submitted, unless within one week of such delivery the Board determines that the required procedure was not followed, as by omission of one or more of the items required to be filed with the definitive plan in subsection 8.1, or by failure to comply with the requirements of Sections 4 and 5 of these Rules and Regulations, in which case the date when all such required items or data are furnished to the Board shall be considered the legal date of submission of the plan.

3.6 UNAPPROVED SUBDIVISION PROHIBITED

No subdivision of any land, improvement or sale of lots in a subdivision, or construction of streets or installation of municipal utilities therein shall be permitted unless and until a definitive plan of such subdivision has been submitted to and approved by the Board under the provisions of these regulations.

3.7 PUBLIC HEALTH AND SAFETY

No land shall be subdivided unless it is of such character that it can be used for building purposes without danger to the public health and safety. No land shall be subdivided unless the subdivision plan shall provide means of drainage and sanitary sewage disposal adequate in the opinion of the Board to fully protect the public health.

Each subdivision plan shall make such provision for water supply, storm water drainage, surface water drainage, sanitary sewage disposal, fire hydrants, utilities, curbs, sidewalks and other improvements as in the opinion of the Board is proper and adequate for the particular subdivision, and in places deemed proper by the Board, open spaces for parks and playgrounds shall be provided.

3.8 CONTINUATION OF PRINCIPAL STREETS

Streets in each subdivision shall be laid out to provide for continuation of the principal streets adjoining or entering the subdivision, especially in regard to safe intersections with such streets, and so arranged and of such widths as to provide an adequate and convenient system for present and potential traffic needs, and for the proper projection of streets as laid out in the proposed subdivision into adjoining land, on which there are no existing streets. Street names shall be assigned to proposed streets in a manner to avoid confusion from the towns existing streets.

3.9 ADEQUATE ACCESS FROM PUBLIC WAY

3.9.1 Required Improvements

Where the street system within a subdivision does not connect with or have, in the opinion of the Board, adequate access from a Town, County or State (public) way, the Board may require, as a condition of approval of a plan, that such adequate access be

provided by the applicant, and/or that the applicant make physical improvements to and within such a way of access, from the boundary of the subdivision to a Town, county or State way. The physical improvement shall include, but not limited to reconstruction for the roadway for a minimum distance for 100 feet in each direction, widening, drainage installation, and sidewalks. If existing roadway that the subdivision roadway connects in the opinion of the Planning Board does not have adequate width, alignment or drainage to adequately support the subdivision roadway the existing roadway shall be reconstructed for a minimum distance of 100 feet in each direction. These improvements will include reconstructing and widening, installation of drainage and sidewalks for the existing road.

3.9.2 Dedication of Land to Widen Right-of-way

Where the physical condition or width of a public way from which a subdivision has its access is considered by the Board to be inadequate to carry the traffic expected to be generated by such subdivision, the Board may require the Applicant to dedicate a strip of land for the purpose of widening the abutting public way to a width at least commensurate with that required within the subdivision, and to make physical improvements to and within such public way to the same standards required within the subdivision. Any such dedication of land for the purpose of a public way and any such work performed within such public way shall be made only with permission of the governmental agency having jurisdiction over such way, and all costs of any such widening or construction shall be paid by the Applicant.

3.10 EFFECT OF PRIOR RECORDING

The recording of a plan of subdivision within the Town at the Registry of Deeds or the Land Court prior to the effective date of the Subdivision Control Law in the Town of Hanson (March 1, 1954) shall not exempt the land within such subdivision from the application and operation of these Rules and Regulations except as specifically exempted in M.G.L. c.41, Sect 81.

3.11 FAILURE TO COMPLY; WAIVERS

3.11.1 Failure to Comply

Failure to comply with the provisions of these Rules and Regulations Governing the Subdivision of Land in Hanson, Massachusetts, shall be reason for denial of a subdivision filed thereunder.

3.11.2 Waiver of Specific Rules and Regulations

Pursuant to MGL Section 81-R, the Board may waive strict compliance with these Rules and Regulations in any particular case where such action is in the public interest and not inconsistent with the intent and purpose of the Subdivision Control Law. A waiver shall be approved only by a motion which gives reasons why the waiver is appropriate, and which motion shall be supported by a majority of the Members of the Board. The Board

may make their approval of a waiver conditional upon certain requirements for the proposed subdivision.

If the applicant wants certain requirements waived for a plan submitted pursuant to these Rules and Regulations, the request for waiver shall be submitted together with the application. The request for waiver shall state the particular rule and regulation for which a waiver is requested and give the justification for the waiver.

If no waiver request is submitted, the non-compliance with these Rules and Regulations may provide the basis for determining that the application is not a proper submittal or that it should be denied.

3.11.3 Waiver of a Submission Requirement

Where an applicant requests the waiver of a filing or submission requirement, the Board must make the finding that the waived requirement is not in violation of State law nor impairs the ability of the Board or other Town Boards and officials to understand the nature and impacts of the proposed plan. In addition, the Board must find that the waived requirement would not impair the ability of the Board to process the application.

Where a waiver request from a filing or submittal requirement is not granted, the application may be deemed an improper submittal and the application denied on that basis. Alternatively, the Board may grant the applicant's request for an extension in order to submit the required material and circulate it to other Boards or the applicant may require that the application be withdrawn.

3.11.4 Waiver of a Development Standard

Where an applicant requests the waiver of a development standard and the applicant will not withdraw the waiver request, the Board must make the finding that the waived requirement will not impair the functioning, long term maintenance nor appearance of the future development of the land shown on the plan. The waived requirement must not result in an adverse impact for the areas adjacent to the land shown on the plan, and must be consistent with the Board's development objectives.

Where a waiver request for a development standard is not granted, that rule or regulation must be used as the basis for denial of the application or the imposition of a conditional approval.

3.11.5 Modification After Approval of Subdivision

Waivers may not be granted after the approval of a subdivision without a Subdivision Modification. Any and all deviations from the approved, endorsed and recorded subdivision plans shall require a modification to a subdivision plan to be filed in accordance with M.G.L. Chapter 41, Section 81U.

3.12 INTERPRETATION, CONFLICT AND SEPARABILITY

3.12.1 Minimum Requirements

The provisions of these regulations shall be held to be the minimum requirements for the promotion of the public health, safety and general welfare.

3.12.2 More Restrictive Standard to Apply

These regulations are not intended to interfere with, abrogate or annul any other by-law, regulation, statute, or other provision of law. If any provision of these regulations imposes restrictions different from those imposed by any other provision of these regulations or any other regulation, by-law or other provision of law, whichever provision is more restrictive or imposes a higher standard shall apply.

3.12.3 Separable

If any part or provision of these regulations, or if application of any part or provision of these regulations to any particular circumstances, is adjudged to be invalid by any court of competent jurisdiction, such judgment shall not affect or impair the validity of the remainder of these regulations or the application of the remainder of these regulations as a whole to other circumstances.

3.13 RESERVATIONS AND APPEALS

Upon adoption of these regulations, the Rules and Regulations Governing the Subdivision of Land in Hanson, Massachusetts adopted in March 1, 1954 as amended, are hereby repealed (except to such section(s) expressly described in M.G.L. c.41, Section 81.)

3.14 AMENDMENTS

The Board may from time to time amend these regulations. The Board in the manner described in M.G.L. c. 41, Section 81-Q, shall hold public hearings on all proposed amendments.

3.15 COMPLETENESS OF APPLICATION

Before the Board may act on an application filed pursuant to these Rules and Regulations, the Board shall first determine whether the submitted application is complete and properly submitted.

If an application is determined to be an improper submittal, it shall be denied without need of a public hearing but with prior written notice to the applicant that the Board will be considering whether the application is a proper submittal. A determination that an application is not a proper submittal shall be filed with the Town Clerk within fourteen (14) days following the vote of the Board or the applicant may require that the application be withdrawn.

For purposes of clarification, "Substantially Incomplete" plans can be defined as lacking critical information and or entire sections of the subdivision regulations that would be

cause for a staff member to not have sufficient information to determine compliance with, or meeting the requirements of, the subdivision regulations. Not including a drainage analysis when required is substantially incomplete.

3.16 CONSENT OF PROPERTY OWNER REQUIRED FOR ALL APPLICATIONS

When the applicant does not own the property shown in a plan filed with an application pursuant to these Rules and Regulations, the applicant shall state the nature of his or her interest in the property and shall submit the written consent of the property owner by having the property owner appropriately endorse the application for plan approval. An application made by someone other than the property owner shall not be considered a proper submittal unless the consent of the property owner has been submitted. Where the owner is a corporation, corporate documents must be submitted indicating who has signing authority to enter into agreement on behalf of the corporation.

3.17 WITHDRAWAL

An applicant may withdraw a submitted plan by filing with the Planning Board and the Town Clerk a written request for withdrawal. If the request is filed before public notice is given in the case of a Definitive Subdivision Plan or before a Preliminary Subdivision Plan is shown on a Planning Board agenda, the withdrawal request does not require Planning Board approval. If the withdrawal request is submitted later, Planning Board approval by a majority vote is required.

3.18 EXTENSION

An applicant may request an extension to the statutory limits for the Planning Board to take action on an application in order to provide additional time to discuss issues related to an application filed pursuant to these Rules and Regulations. The request shall be made in writing, giving a description of the application and plan, the date of filing, the statutory deadline for action, any previously approved extensions, the length of the requested extension, and the proposed date for final action.

A copy of the request for an extension, once approved, shall be filed with the Town Clerk.

SECTION 4. PRELIMINARY PLANS

4.1 PRELIMINARY PLAN REQUIREMENTS

Preliminary plans of a subdivision may be submitted when desired by the applicant (appendix 6 checklist has been provided as a guide). The preliminary plan shall be drawn to a scale of 1" = 40' on mylar sheets that are 24" by 36" ink and eight full size copies shall be submitted to the Board. The preliminary plan shall identify all easements, rights of way, covenants or restrictions applying to the proposed subdivision. Approval of a preliminary plan does not constitute approval of a subdivision and a preliminary plan cannot be recorded in the registry of deeds or the land court. In addition the preliminary plan shall provide the following information.

- a. Subdivision name (if any), boundaries, north arrow, date, scale, legend, and title "Preliminary Plan";
- b. The names and addresses of the recorded owner of the land and the applicant (if different), and the name of the designer, engineer or surveyor;
- c. The names of all abutters as they appear in the most recent tax list;
- d. The names, approximate location and width of all adjacent streets;
- e. The existing and proposed lines of streets, ways, easements, and of any public areas within or next to the subdivision, in a general manner;
- f. The approximate boundary lines of existing and proposed lots with approximate areas and dimensions; including requisite square;
- g. Layout of proposed storm and surface drainage system. This shall include the general location and size of drain lines, culverts, trenches, catch basins, manholes, and other structure in the proposed drainage system. The proposed drainage plan shall indicate the location of bodies of water and Wetland Resource Areas, both within and adjacent to the subdivision, particularly if they will be receiving drainage discharge from the subdivision. The applicant shall submit sufficient information to indicate the general volumes, rates and flows that would be generated by the subdivision and must be accommodated by the drainage system.
- h. The existing topography and contours 2-foot intervals of the land in a general manner, existing buildings and significant structures, existing facilities for municipal services, site features such as ledge outcroppings, bodies of water, streams, stone walls, predominant vegetation, and permanent monuments.
- i. Zoning classification of the area.
- j. Percentage of uplands.
- k. Wetlands, in accordance with state and local laws.

4.2 PRELIMINARY PLAN PROCEDURE

The Board may invite the applicant to discuss proposed modifications of the preliminary plan and shall then, within forty- five days of the submission, approve with or without modifications or disapprove such preliminary plan. the time during which the Planning

Board must act on a Preliminary Plan may be extended by the Planning Board upon written request of the applicant and notification to the Town Clerk of its action and, in case of disapproval, state the reasons therefore. The approval of the preliminary plan does not constitute an approval of the subdivision. If the preliminary plan is approved, the Rules and Regulations of the Planning Board in effect at the time of its submission shall govern the definitive subdivision plan evolved from such preliminary plan, provided such definitive plan is submitted within seven months of the submission of the preliminary plan.

4.3 PRELIMINARY SKETCH

A Preliminary sketch, showing less information than required for a preliminary plan, may be submitted by an applicant for an informal review and recommendations of the Board. Such preliminary recommendations of the Board shall be conditioned on the extent of information shown on the sketch. Applicants are urged to submit such preliminary sketches in order to obtain the Board's recommendations regarding the overall layout and the location of proposed streets in a future subdivision, thus avoiding the expense and delays necessitated by changes in a definitive plan, if submitted without such preliminary review.

SECTION 5. DEFINITIVE PLAN REQUIREMENTS

5.1 COMPONENTS OF DEFINITIVE PLANS

A definitive subdivision plan, referred to herein in singular, shall consist of several drawings or sheets, including the following;

- a. Vicinity map.
- b. Lot layout plans.
- c. Street and utilities plans and profiles.
- d. Topography or contour plan 2-foot intervals.
- e. Detailed drawings as required
- f. A plan for the control of sedimentation and erosion.
- g. All items required by Section 4.1 for preliminary plan submission.
- h. Such other information as may be required by the Board to evaluate the proposed subdivision.
- i. Wetlands.
- j. Percentage of uplands.
- k. Requisite square.
- l. Environmental and/or community impact statement with proposed mitigation measures. (see appendix).
- m. Excavation impact report.

The applicant shall submit an Excavation Impact Report, to be prepared and stamped by a Registered Professional Engineer detailing volumetric calculations (in cubic yards) of proposed cuts and fills based on existing and proposed topography, including: total excavation quantity; total fill quantity, total excavated material to be trucked off-site; and total fill material to be trucked onto the site. The report shall also include an evaluation of required blasting and the identified areas in which the blasting will occur.

- n. Construction management plan, which shall include construction start date, dates for starting and completing major phases of the work, any proposed phasing of roadway and/or dwelling construction, and anticipated subdivision completion date.
- o. Traffic impact report.
- p. Watershed protection district and/or aquifer protection overlay district.
- q. 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.
- r. Sight distances at intersection of subdivision roads with existing streets.
- s. Existing water mains, sewers, and utilities adjoining and within the subdivision.
- t. Location of the proposed subdivision with regard to 1) historical district, or other designation as an historically significant property; 2) flood areas as depicted on the flood insurance rate maps.

Item d. above may be combined with item a. and item e. may be combined with item c. above. (Preliminary with "exact")

5.2 PLAN REQUIREMENTS

All drawings comprising a definitive subdivision plan shall be made on consecutively numbered sheets of uniform size, which size may be 18" X 24", 24" X 30", 24" X 36", or 30" X 40", by or under the direct supervision of the designer whose name appears on the plans. Except as specified below, all drawings shall be executed in black drawing ink on tracing cloth, mylar or equivalent to a plan or horizontal scale of 1" = 40' and vertical scale for profiles of 1" = 4', except that vicinity maps, cross sections and details may be shown to such other scale as will ensure clarity. All drawings shall have a title block containing the name and section designation of the subdivision, the names of the applicant and designer, designation of drawing with reference to the matter shown thereon, scale, date, imprint of designer's professional registration stamp and the number of the drawing (see Forms - Form I). There shall be provided on each drawing space for endorsement by the Planning Board, including space for reference to any conditions or limitations of approval and for the date, space for the Town Clerk's certificate of no appeal. All plans shall have a north arrow designated as to bearing system which shall be the same for all plans for a given subdivision.

REFERENCE BENCH MARK

All profiles and topographic plans shall be U.S. Coast and Geodetic Survey base (Mean Sea Level of 1988 Datum Plane) and shall list and, where possible, show bench marks used and their elevations.

All plans shall conform, as far as possible, to the latest Manual of Instruction of Massachusetts Land Court. The number and arrangement of plans shall be such as to provide for clarity and easy readability. The names of proposed streets shall not be inked in until approved by the Board, but such proposed names may be shown in pencil.

5.3 VICINITY MAP

The vicinity map shall be drawn to a convenient scale between 1" = 800' and 1" = 200' inclusive to show on one sheet all of the proposed subdivision, all of other adjacent land of the applicant and other adjacent properties to the nearest existing street in every direction. Important ground features such as brooks, public areas, lot lines, easements and streets only need be shown in a general manner and labeled, no dimensions need be given except where of specific importance in evaluating the subdivision. Pencil tracings or prints are acceptable. The limits of the proposed subdivision shall be indicated by a heavy line or by use of color and existing and proposed features should be distinguished by different lines, labeling or other methods.

5.4 LOT LAYOUT PLAN

The lot layout plan shall show to scale and in their true relative position and with

sufficient dimensions and bearings to establish their exact location on the ground and on the plan with respect to at least two existing permanent monuments in existing ways the boundaries of the subdivision, existing buildings and all of the items denoted R (required) in the following Table, located within or less than 25 feet from the proposed subdivision. The plans shall show the location and width of all existing and proposed easements, covenants, restrictions and right-of-way. All proposed streets or ways shall be mathematically tied into the layout of the nearest accepted local, county, or state road, and said calculations be made available to the Board's engineer upon request.

TABLE OF INFORMATION TO BE SHOWN ON LOT LAYOUT PLAN

Items shown on plans	Data to be shown					
	A	B	C	D	E	F
Existing lots	-	R	-	-	R	-
New lots	R	R	-	R	R	-
Parks, playgrounds	R	R	-	R	R	R
Public areas	R	R	-	R	R	R
Reservations	R	R	-	R	R	R
Easements	R	R	R	-	R	R
Rights-of-way	R	R	R	-	R	R
Alleys	R	R	R	-	-	R
Ways, streets	R	R	R	-	-	R
Zoning districts	R	R	-	-	-	-
Historic districts	R	R	-	-	-	-
Town boundary	R	-	-	-	-	-
Monuments	R	R	-	-	-	-
Aquifer protection districts	R	-	-	-	-	R
Wetlands	R	-	-	R	-	R

A= Dimension adequate to reproduce each point on the ground and verify location with reference to subdivision boundaries monuments and property corners.

B= identification and whether proposed or existing.

C= Width in feet.

D= Area in square feet.

E= Name of owner of record if other than applicant.

F= Person or agency having special rights or responsibilities with respect to item.

R= Required

5.5 STREET PLAN AND PROFILE

The street and utilities construction plan and profile for each street shall be on a separate sheet and shall consist of the layout plan of the street within the subdivision or beyond it to the limit of the proposed construction necessary to provide adequate access and connection of municipal services, and of a profile matching the layout and located whether above or below it for ease in locating corresponding points. This sheet shall show the plan of the proposed streets drawn to a scale of 1"=40' with the existing and proposed profiles (including gutters on both sides of street), drawn directly below the plan at a horizontal scale of 1"=40' and a vertical scale of 1"=4', unless otherwise required by the Board. The plan shall show all street sidelines, centerlines, corner roundings, turnarounds (clearly identifiable as permanent or temporary), showing the length of each straight segment to the nearest one hundredth of a foot and the bearing thereof to the nearest five seconds of arc, and shown the length, central angle, radius, length of tangents for each curved segment to the same degree of precision as the straight lines and clearly identifying all non-tangent curves. The centerline of the roadway shall coincide with the centerline of the right-of-way. The plan shall also show and clearly identify as such all existing and proposed construction features, such as pavement, walks, curbing, drains, catch basins, manholes, water mains, other underground conduits where known, retaining walls, traffic islands, grass plots, bituminous berms and gutters. Centerline stations shall be designated at 50 foot intervals and at or opposite points of tangency, angles in street line, manholes, catch basins, and culverts.

EXISTING CONDITIONS

The profile shall show the existing sidelines and existing and proposed centerlines with elevations every 50 feet and at points of vertical curvature, gradient intersection, tangency (PVC, PVI, PVT) at all high and low points, and all proposed drains, catch basins, manholes, cleanouts, siphons and other appurtenances identifying the material, class or strength, and size of drains and the rate of grade for each section thereof in percent and giving centerline stations offsets, and invert elevations of all catch basins, manholes, cross drains or culverts.

Length of all vertical curves shall be labeled, including applicable sight distances and other information required in the Design Standards for Streets.

Existing and proposed water pipes shall be drawn in solid lines showing pipe sizes, depths of cover, laterals to hydrants and station and offset(s) to hydrants. Vertical clearances shall be labeled between all crossing utilities.

The lines and figures relating to the proposed centerline and to proposed drains, water mains and their appurtenances shall be in red or other reproducible colored drawing ink.

5.6 DETAIL DRAWINGS / ROADWAY CROSS-SECTIONS

Detail drawings: any special construction features, deviating from or not covered by standard specifications, shall be shown on detail drawings. Such detail drawings may be incorporated as part of a utility plan or profile or may be executed on separate sheet or sheets and shall provide information as to dimensions, locations, inverts, rim elevations, elevations, materials, etc., of the construction details involved. The requirement for detail drawings shall be applicable, but not limited to, bridges, culverts, structurally stabilized slopes, utility piping encased in concrete, ditches and brooks shaped or constructed to a definite cross-section, dams, and spillways, steps within the exterior lines of the street and similar construction features.

5.6.1. Typical cross-section of each street (if more than one type) showing width of the right-of-way, width of pavement, curbs, cross slope, sidewalk(s), grass strips, utility locations and depths of cover, thickness and types of pavements for the street and sidewalk, thickness of street and sidewalk base courses, thickness of loam, location of guardrail, existing and proposed grades, and the maximum grade of return to existing grade. One side of the section shall indicate a typical "fill" and the other a typical "cut."

5.6.2. Typical cross-section(s) and details of all proposed retention and/or detention basins showing existing and proposed grades, details of inlet pipes with inverts and full flow capacity, outlet control structures and pipes with inverts and full flow capacity, twenty-five (25) and one hundred (100) year storm water elevations for collector roads and ten (10) and fifty (50) year storm water elevations for minor and local roads, details and elevations of emergency spillway structure(s), embankment construction and slope treatment, top of dam elevation, and volume of storage capacity.

Profiles of all cross-country drain pipes, swales or ditches with typical cross sections of each. Details of drainage structures including catch basins, manholes, headwalls, flared-end sections, outlet and velocity control structures, rip-rap slopes and channels. Details of sewer manholes and drop inlet structures. Details of hydrants, blow-off valves and thrust blocks. Detail(s) of curb installation(s). Detail of handicap ramp. Detail of guardrail(s). Detail(s) of erosion/sedimentation control devices. Plans, details, sections, and profiles of any other utility, structure or facility proposed in the subdivision. All plans and profiles shall be drawn at a horizontal scale of not less than 1"=40' and a vertical exaggeration not greater than 1"=4'; details and sections shall be drawn at a scale of not less than 1"=4' or approximately 1/4 scale if drawn "not to scale", unless otherwise approved by the Board. Specific and general notes identifying the standards for materials and construction methods of all the elements in the subdivision. Accepted standards and specifications include the following:

American Society for Testing and Materials (ASTM)

American Water Works Association (AWWA)

Commonwealth of Massachusetts Highway Department Standard Specifications for Highways and Bridges

State Environmental Code - Title 5

Specifications by the Town of Hanson as set forth in these Rules and Regulations.

5.7 TOPOGRAPHIC OR CONTOUR PLAN

Contour plan: Unless otherwise authorized by the Planning Board, topographic plans shall show and designate the existing contour lines at two foot elevation intervals, the bottom elevation of all streams and water

bodies within the subdivision shall be given and ground surfaces identified as to type, such as woodland, fields, swamp, ledge outcrops, periodically flooded, etc.; street and lot lines shall be shown in a general manner to facilitate orientation; bench marks, brooks, ditches, walls and structures, trees larger than six inches in caliper, and spot elevations of high and low points shall be shown and identified. Existing and proposed contours shall be shown on the same drawing whenever excavation or fill in excess of two feet depth will be necessary at any lot in the subdivision. Said contours shall be shown in two foot intervals using dashed lines for existing and solid lines for proposed contours. The contours must correspond to the existing and proposed grades of streets shown on profile drawings. The approval of a subdivision by the Planning Board does not constitute an authority to remove from it the earth materials and the developer shall be required to comply with all provisions of all town by-laws, of the General By-Laws and with any other laws and regulations relative to the removal of soil, loam, sand, gravel, rock, and other earth material.

FEDERAL FLOOD INSURANCE

5.8 The applicant shall provide base flood elevation (level of 100-year flood) data for any land being developed within the Federal Flood Insurance District which is designated Zone A on the Hanson Flood Insurance Rate Maps (F.I.R.M.).

OTHER INFORMATION/SUPPORTING DOCUMENTATION

5.9 Other information: The Planning Board may require the applicant to furnish such additional information as may, in the opinion of the Planning Board, be necessary to evaluate the feasibility of proposed design of the subdivision. Such information may include the results of any tests or copies of calculations used in design, calculations demonstrating the adequacy of proposed storm drain systems and their compatibility with existing drainage systems, estimates of flood elevations reached during a 100-year storm, ground and surface water elevations, reasons for excessive fill or excavation, cross-sections of excavation of fill areas, evaluation of traffic safety and adequacy of roads in the vicinity of the subdivision, environmental, and community impact statement, soil erosion and sedimentation control plan, grading, drainage, and utilities plan, construction management report (see appendix for detail) copies of agreements granting the developer rights essential to development of the land and construction work involved, including the right of access over existing ways.

5.10 Test Data

The following test data shall be submitted :

- a. The plan shall show, with a reference key, the location of deep hole and percolation tests on each lot. Deep hole and percolation tests shall be required on all lots where on-site sewage disposal systems are proposed and may be required on other lots if conditions warrant. Subsurface investigations shall include test pits and borings to determine historical ground water extremes through observation and mottling of soils.
- b. Results of all deep hole and percolation tests (whether passed or failed) shall be presented as an accompanying document, using the reference key referred to in (a) above.
- c. Soil borings or test pits shall be made at locations and to depths determined by the Director of Public Health along all proposed roadways. The Director of Public Health shall view the open pits. Samples and boring logs shall be submitted to the Director of Public Health showing the character of all materials found and the water table measurements. A reference key shall be provided on the plan showing boring and test sites and shall be used for the sample and boring logs. Where the roadway will be "cut" with side slopes 10 feet or greater in height, the soil exploration shall include borings or test pits to obtain soil type and groundwater elevation information sufficient to determine if permanent slope erosion protection devices are required.
- d. The plan shall include a calculations package prepared by the professional land surveyor which indicates the perimeter, lot, and right-of-way closure calculations.

SECTION 6. DESIGN STANDARDS

LOTS

6.1 All lots shown on the plan shall comply with area, frontage and other requirements of the Hanson Zoning by-Law.

6.1.1 Lot Arrangement: Lots shall be arranged so that there will be no foreseeable difficulties for reasons of topography, soils, bedrock, improper drainage, or other conditions in securing building permits to build on all lots in compliance with the Town of Hanson Zoning Bylaw, or in providing practical, feasible driveway access to the building on such lots.

6.1.2 Lot Dimensions: Lot dimensions shall comply with the minimum standards of the Town of Hanson Zoning Bylaw. Dimensions of corner lots should be large enough to allow for erection of buildings, observing the minimum front yard setback from both streets. Depth and width of properties laid out for business or industrial use shall be adequate to provide for the off-street parking and loading facilities required by the Zoning Bylaw.

6.1.3 Soil Preservation and Final Grading: The Board may condition approval of a Definitive Plan by requiring that no certificate of occupancy be issued for a building in the subdivision until final grading of the lot has been completed in accordance with the Definitive Plan, and the entire lot recovered with topsoil for an average depth of at least six (6) inches, except for that portion of the lot where the grade has not been changed or the vegetation seriously damaged. The topsoil shall be stabilized by seeding and/or sodding.

6.1.4 Lot Drainage: Lots shall be laid out so as to provide positive drainage away from all proposed buildings. Individual lot drainage shall be designed so as to avoid concentration of stormwater drainage from each lot to adjacent lots or to the street. Grade higher than 10 percent on driveways are not permitted.

6.1.5 Debris and Waste: No debris, junk, rubbish, or other non-biodegradable waste materials shall be buried on any land in the subdivision or left on any lot or on the street right of way, and removal of same shall be required prior to final release of any covenant or security. Burial of biodegradable materials on the site shall be subject to approval of the Board of Health. The burial location(s) and description of buried materials shall be noted on the as-built drawings. The Planning Board may require that the description and location of buried materials be recorded in the Registry of Deeds prior to release of affected lots for sale or building.

NATURAL FEATURES

6.2 Natural features, ledge outcrops, large trees, water courses, scenic points, historic spots and similar community assets which add value and attractiveness to the subdivision and the Town shall be protected and preserved.

EASEMENTS

6.3 Easements for utilities, bicycles and pedestrian paths shall be provided where necessary across lots or along the rear or sidelines of lots and shall be at least 30 feet wide for utilities and 12 feet wide for bicycle and pedestrian paths. When a subdivision is traversed by a water course, drainage way, channel or stream, or contains a water storage facility, the Board may require the provision of an easement of adequate width to conform substantially to the lines of said feature and to provide for the possibility of flooding, protection of banks and adjacent properties, future maintenance of construction and other necessary purposes. Slope easements shall be provided where necessary to ensure lateral support and protection of streets and other construction features. If detention or retention ponds are needed they should be protected by fencing if applicable. They should be designed so they do not adversely affect abutters if they fail or fill and hold water.

STREET SYSTEM

6.4.1 Streets within a subdivision shall be continuous, in alignment with existing streets or to the limits of the subdivision so as to provide for future extension in adjacent undeveloped lands and to form a convenient system for safe travel. No subdivision shall be approved unless the streets therein connect to and are accessible from a public way or an existing private way open to public and in which the applicant has the necessary rights, nor shall it be approved if the Planning board determines that such access roads will fail to meet acceptable engineering standards for capability to handle expected additional traffic from said subdivision.

PROHIBITED FEATURES

6.4.2 Street intersections or jogs with centerline offset of less than 150 feet, reverse curves, streets of varying width, street intersections at less than 75 degree angle and reserve strips prohibiting access to streets or adjoining property shall not be permitted, except where the Board finds them to be in the public interest. 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 75 degrees. The minimum number of ways converging at an intersection shall be kept to four (4) with the centerline of said street intersections at one common point.

Property lines at street intersections shall be rounded with a street line radius of not less

than one half of the wider right-of-way.

STREET CURVE

6.4.3 Intersections of street sidelines shall be rounded with a curve of not less than 30 feet radius in minor and local streets, and not less than 40 feet in collector streets. All changes in the direction of a street of more than 30 degrees shall be by means of curves in the sidelines of at least 150 feet radius, with greater radii required for collector and arterial streets.

STREET CLASSIFICATION

6.4.4 Depending on the amount of traffic they will be expected to accommodate, the streets in town, except state highways, shall be classified as arterial, collector, local and minor. The classification of a proposed street shall be determined by the Planning Board. Stopping sight distances for all streets shall conform to standards for horizontal and vertical alignment and intersections given in the American Association of State Highway and Transportation Officials "A Policy on Geometric Design of Rural Highways" latest revised publication.

COLLECTOR STREETS

A. Collector streets shall include streets expected to accommodate traffic generated by one or more sub-divisions or neighborhoods, or streets connecting parts of the town or carrying industrial or commercial traffic but not serving as major thoroughfares or having access to 11 or more lots. Collector streets shall have a right-of-way width of 50 feet, minimum pavement width of 26 feet, and a minimum sight distance of 200 feet.

LOCAL STREETS

B. Local streets shall include dead-end streets of over 200 feet in length that provide access to abutting lots and serve 10 lots or less and all streets not otherwise classified and shall have a right-of-way width of 40 feet, minimum pavement width of 24 feet, and a minimum sight distance of 150 feet.

MINOR STREETS

C. Minor streets shall include residential streets expected to carry only the traffic generated by the residences on such street and in the immediate proximity thereof and shall have a right-of-way width of 40 feet, minimum pavement width of 20 feet, and a minimum sight distance of 150 feet.

STREET GRADES

6.4.5 The minimum grade for all streets shall be 1.0% and the maximum grade shall be 8% for arterial and collector streets and 8% for all other streets. Where street grade at the approach to an intersection exceeds 3%, a leveling area shall be provided having grades not exceeding 1% for a distance of 50 feet from the nearer exterior line of the intersecting street.

DEAD END STREET

6.4.6 Dead end streets shall not be longer than 1400 feet on centerline from the near line of intersecting through street to the end of the turnaround, and shall be provided at the closed end with a turnaround having an outside property line diameter of at least 120 feet.

STORM DRAINS

6.5 Storm drains, culverts, and related installations, both surface and sub-surface, shall be designed to provide for safe unimpeded flow of natural water courses, drainage of low areas along streets and to intercept water runoff along streets at intervals reasonably related to the extent, surface type and grade of the area drained. Proper connection shall be provided to the existing drainage system and drains shall be extended to adjacent lands so as to provide for their future continuation. Drainage depending on flow over streets or land outside subdivision shall not be approved unless appropriate easements are first obtained, recorded and submitted to the planning board. The minimum drain pipe size shall be 12" and the design velocity of flow shall be no lower than 3 feet per second. Maximum design velocity of flow shall be 7.5 feet per second. Catch basins shall be located at both sides of roadway not more than 250 feet apart and as necessary for proper interception of water runoff. Catch basins shall not be located at driveway openings. Culverts on minor and local roads shall be designed to accommodate a 50 year frequency storm, underground storm drains, catch basins and related installations shall be designed to accommodate a 10 year frequency storm on minor and local roads. Culverts on collector roads shall be designed to accommodate a 100 year frequency storm, underground storm drains, catch basins and related installations shall be designed to accommodate a 25 year frequency on collector roads.

WATER MAINS

6.6 Water mains, laterals and appurtenances shall be designed to conform with the Water Department specifications, and to provide adequate water service for the needs of residents and for fire protection. The minimum size of water main shall be 8". Water mains shall connect to municipal water supply system and shall extend to the limits of subdivisions wherever a future continuation into adjacent land is feasible. Whenever possible, the system shall be designed to form a continuous loop with existing or

proposed water mains. Hydrants shall be spaced not more than 500 feet apart. A copy of the plan, showing such spacing shall be submitted by the Board for the comments and recommendations of the Fire Chief. Dead-end water mains shall be avoided and all water mains shall be looped to eliminate standing water, except upon the express written recommendation of the Board of Water Commissioners. Easements for future extension or looping of the water system shall be provided, except upon the express written recommendation of the Board of Water Commissioners.

6.7 Street lights - Provisions shall be made for street lighting connection at locations determined by the Board.

SECTION 7. REQUIRED IMPROVEMENTS

COMPLIANCE WITH PLAN, RULES AND REGULATIONS AND STANDARD SPECIFICATIONS

7.1 The applicant shall arrange, perform or contract and pay for all services and material needed for the installation of municipal services, including storm drains, water supply, and fire alarm and their appurtenances and for the construction of streets, including roadbed preparation, pavement, driveway aprons, sidewalks, grass plots, curbing, non-regulating street signs, bounds, fences and guard rails, retaining walls and roadside improvement such as slopes and trees. All of these required improvements shall be installed or constructed in accordance with applicable provisions of these Rules and Regulations Massachusetts Highway Department (MHD) specifications (where applicable) and as shown on approved definitive plans or as specified in the certificate of Planning board's approval or in any covenants and agreements executed by the applicant and accepted or approved by the Board.

ACCESS FOR INSPECTION

7.2 Planning Board may employ expert engineering, technical, clerical and other assistants to ensure proper administration of the Subdivision Control Law and of these Rules and Regulations. The Planning Board Agent is authorized to review and inspect the work in subdivisions and ensure that it is performed in accordance with good engineering practice and with all applicable conditions, and specifications. The developer shall keep the Planning Board and its Agent informed of the progress of the work and shall provide safe and convenient access to all parts of the work for inspection by members and agents of the Planning Board. No work will be accepted that has been covered before such inspection.

7.2.1 PRE-CONSTRUCTION REQUIREMENTS

The board may limit storage duration of contractor's equipment and materials, and specify that equipment and materials be screened from public view with stockade fencing. Before construction begins the construction contractor shall provide the following.

1. The location and analysis of the base materials that will be used, and submittal of the results for required testing,
2. Shop drawings or catalog cuts of the drainage materials for frames, grates, covers, granite curb headers, pipe, joint material, catch basins, sub drains,
3. List of Subcontractors that will be used on the project,
4. Schedule a pre-construction meeting with the Board's agent,
5. The developer shall submit a construction schedule for the completed project.

7.2.2 PHASED CONSTRUCTION

If a developer requests a release of lots prior to final completion, the roadway, and sidewalk shall be completed to the sub-base and the drainage system on and off the roadway shall be operating properly. The "as built drawings" prepared by a Land Surveyor shall indicate the roadway grades at the center line and gutters, pipe invert elevations.

7.2.3 SEQUENCE OF CONSTRUCTION (SEE APPENDIX)

Each phase or step in the construction of the required improvements shall be inspected and approved in writing by the Board's Agent. The Board's Designee may require submittals and testing as necessary to assure proper construction. At a minimum, the applicant shall request an inspection at the following stages of construction:

- a) following stakeouts of the limits of clearing and grubbing;
- b) following clearing and grubbing, stakeout of the top and bottom of street side slopes and prior to the placement of any fill material;
- c) during installation of all utilities and prior to any backfilling of utility excavations;
- d) following construction of detention/retention ponds and other stormwater management structures;
- e) following fine grading and compaction of roadway pavement subgrade and prior to placement of gravel subbase material;
- f) following placement, compaction and grading of the roadway pavement gravel and crushed stone subbase courses;
- g) during placement of the bituminous concrete base course(s);
- h) during construction of granite curb and edging;
- i) during placement of bituminous concrete top course;
- j) following fine grading and compaction of sidewalk and path pavement subgrade;
- k) following placement, compaction and grading of the sidewalk and path gravel base course material;
- l) during sidewalk pavement construction;
- m) following installation of bounds and all other improvements;

The applicant shall not proceed with construction of any of the above stages of development until the Board's Designee has signed off on the previous stage.

The Board's Designee may require inspection at such other intervals as deemed necessary to assure proper construction of improvements, including but not limited to as-built drawing submittals required under these regulations. In addition, the Board's Designee may require periodic inspection reports from the applicant's engineer.

The applicant shall employ a certified testing laboratory for material testing. As a minimum, the following materials shall be tested for conformance with these specifications:

- a) Gravel subbase
- b) Crushed stone subbase

- c) Processed gravel backfill
 - d) All bituminous concrete mixes, both at the asphalt plant, and also at the time of placement on the road by the method of nuclear density test
 - e) Cement concrete
- Manufacturer's certification shall be furnished for
- a) All types of pipe and pipe system appurtenances
 - b) Precast drainage; sewer and retention/detention pond outlet structures

NOTIFICATION OF COMMENCEMENT OF CONSTRUCTION

7.2.4 No step in the construction of the required improvements shall commence until the Board's Designee has been notified at least forty-eight (48) hours in advance of the beginning of construction phases.

7.2.5 The Town Surveyor shall be notified 48 hours before placement of any bituminous concrete.

7.3 STREET AND ROADWAYS

7.3.1 Initial Preparation

The entire area of each street or way shall be first cleared of all stumps, brush, roots, boulders, like material and all trees not intended for preservation. All loam and other yielding material shall be removed from the roadway area to the depth encountered and for the full width of the traveled way. Rock and boulders shall be taken away or broken off to a depth of not less than 12" below the bottom of the subgrade. All drains, public utilities and water mains including individual service laterals shall be installed prior to any further construction of the roadway.

GRAVEL BASE

7.3.2 All roadways shall be brought to a finished grade as shown on the profiles of the Definitive Plan and in accordance with the cross section adopted by the Planning Board, constructed as follows: At least eight (8) inches of processed gravel meeting requirements of section M.1.03.1 of the MHD specifications with no stones larger than 2 inches in diameter shall be placed, spread and compact in accordance with section 405 of the MHD specifications. The surface shall be wet during rolling to bind the material. Thereafter the roadway shall receive a layer of dense graded crushed stone meeting the requirements of section M2.01.07 of the MHD specifications, spread and compact in accordance with section 402 of the MHD specifications of at least four (4) inches in thickness, free of all stone over one and one-half (1 1/2) inches in diameter and free from loam or other foreign material. This layer shall also be wet and rolled with said roller. Prior to any further construction the roadway shall be inspected as hereinafter provided.

ROADWAY PAVING

7.3.3 After the roadway has been finished with the dense graded crushed stone and inspected it shall receive the following surface treatment.

The minor and local roadways shall be paved to a thickness of $4\frac{1}{2}$ inches measured after compaction with two (2) courses of Class One Bituminous concrete pavement, Type I-1 consisting of a $1\frac{1}{2}$ inch wearing course and 3 inch binder course. The aggregate shall be composed, mixed, and laid hot in tow courses as specified in the MHD (state) Specifications, Section 460 for Class I Bituminous Concrete Pavement" as specifically set forth in Section 460.20 to 460.82 (see plate 4) or as amended. Upon completion of the surface treatment said roadway shall be again inspected as hereinbefore.

The collector road shall be paved to a thickness of minimum $6\frac{1}{2}$ inches measured after compaction with 2 courses of class one bituminous concrete pavement, type I-1 consisting of $1\frac{1}{2}$ inch wearing course, 2 inch binder course, and 3 inch base course.

INSPECTION

7.3.4 At the points previously noted the roadway shall be inspected by the Planning Board or its designee. The inspectors' written approval of the work completed is required before further work may begin. An asphalt inspector shall be inspecting and approving all asphalt used on subdivision streets prior to placement at the plant, and after placement by the method of nuclear density test. To cover the cost of such inspection there shall be deposited with the Board, prior to the first request for inspection, a sum equal to the amount set by the Board in accordance with Section 11.3.

7.4 UTILITIES

UNDERGROUND UTILITIES

7.4.1 All utilities within a subdivision shall be place underground unless waived and shall be shown on the plan. Adequate provisions for street lighting shall be made where underground electrical service is provided.

SEWERS

7.4.2 Sewer pipes and related structures such as manholes and connection Y's shall be constructed in conformity with specifications of the Board of Health.

DISPOSAL OF SURFACE WATER

7.4.3 The applicant shall be responsible for the cost of operation, and maintenance (O & M) of the stormwater facility until the acceptance by the town. A schedule of O & M

shall be included with the submittal of drainage plan. Adequate disposal of surface water shall be provided in the following manner:

DESIGN ANALYSIS

7.4.31 Each drainage plan submitted for approval shall be accompanied by a design analysis prepared by a qualified Registered Professional Engineer (P.E.). The analysis shall clearly indicate all the computations for the drain including determination of pipe size and strength, and a statement concerning the disposition of flow. If the flow is discharged to the ground surface on land not belonging to the applicant then a drainage easement over the ground subject to flow shall be obtained by the applicant, and a statement to that effect shall be included with the design analysis.

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" latest edition published by the Massachusetts Department of Environmental Protection, where applicable.

Under certain circumstances, the Planning Board may also consider, after demonstration by a P.E., other designs and practices common to Low Impact Development (LID) to mitigate the effects of storm water runoff when reviewing storm water drainage systems. 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, 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.
9. The hydraulic calculations shall show the following information, as a minimum:
 - a) Capacity and projected volume of each catch basin or other inlet grate
 - b) Pipe size calculation
 - c) Detention / retention pond calculations including outlet structure as applicable
 - d) Total suspended solid (TSS) removal rates

- e) Infiltration calculations as applicable
- f) Gutter flow calculations
- g) Culvert analysis and calculation as applicable

DESIGN STORM

7.4.32 A rainfall having a frequency of occurrence of once in 10 years has been selected for design computations for drain lines on minor and local roads. This storm amounts to 1.8 total inches of rain in one hour. Intensities for small areas correspond to the time of concentration for the area. A rainfall having a frequency of once in 50 years for minor and local roads shall be used for roadway culvert design.

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.

1. 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 P.E. 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).

2. Drainage System - The drainage system shall be designed based on a twenty-five (25) year storm event for collector roads, and 10 year storm event for minor and local roads. A complete storm drainage system (incorporating LID designs and practices when feasible) 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.

a) 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.

b) 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.

c) 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, bank, resource area or wetland. All outfalls into resource areas or their buffer zones shall be subject to the approval of the Conservation Commission.

d) 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.

e) Culverts shall be designed on the basis of a one hundred (100) year storm for collector roads, and 50 year storm for minor or local roads 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.

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

a) 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 vegetated 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.

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

c) Dense vegetative cover shall be established as quickly as possible. Organic matter shall be incorporated into the soil to enhance potential for pollutant removal. Vegetation shall be planted to provide enhanced vertical resistance to stormwater runoff.

4. 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.

5. Sites within Aquifer Protection Overlay Districts (APOD) and Other Sensitive Areas -

Special attention shall be given to sites within the APOD ; other communities' Zone II; and areas subject to protection under M.G.L. c. 131, s. 40 or Town of Hanson General Bylaw, and other sensitive areas.

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 effected by runoff from the proposed subdivision.

6. Drainage Basins - If detention or retention ponds are needed they should be protected by fencing if applicable. They should be designed so they do not adversely affect abutters if they fail or fill and hold water. The maintenance of the facility should be guaranteed by the developer for a period of five years by a satisfactory security agreement. 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:

- a) 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. Test pit and borings to determine ground water depth shall be performed.
- b) 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.
- c) Basins shall be designed to contain a twenty-five (25) year design storm with three (3) feet of freeboard at the maximum water level. All basins shall be designed with an emergency overflow spillway with appropriate erosion control protection.
- d) 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.
- e) Basin length to width ratio shall be at least 3:1 to maximize distance from inlet to outlet. Basin surface area shall be maximized.
- f) Side slopes in basins shall not exceed 3:1 (horizontal to vertical).
- g) 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.
- h) All pipes and risers shall be equipped with trash racks and/or guards as appropriate to prevent entry by children and animals.
- i) 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.

- j) 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.
- k) Means of access for mechanized maintenance equipment shall be provided to all basins.
- l) 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.
 - 1. Pre-treatment marshes shall be constructed in upland areas. Wetlands shall not be removed or altered for marsh construction.
 - 2. 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.
- m) 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.
- n) 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.
- o) An operation and maintenance plan of drainage system is required.
- p) 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).

COMPUTATION OF RUNOFF

7.4.33 Runoff for any area may be calculated by using the "Rational Formula", which allows for infiltration, filling minor depressions, and other losses. The factors used in the Rational Formula are based on the assumption of built up areas throughout town. Pipe sizes computed on this basis will be slightly oversized for present land development, but will allow adequate capacity for future land development.

SELECTION OF DRAIN SIZE

7.4.34 The proper drain size may be calculated by using "Manning's Formula" with a "Kutter's" "n" value of .013 for concrete pipe, and .024 for corrugated metal pipe. For culverts, the minimum size of pipe shall be 12 inches in diameter. The culverts and drains shall be large enough to pass the design storm without surcharge.

TYPE OF PIPE

7.4.35 All storm drains shall be reinforced concrete of adequate strength except that in off-street locations bituminous coated, galvanized, corrugated metal pipe meeting the requirement of the MHD specifications, corrugated high density polyethylene pipe (HDPE) meeting the requirements of sections M5.02.1, and M5.03.10 of the MHD specifications or pipe arch may be used if approved by the Hanson Planning Board. Concrete pipe shall conform to the State of Massachusetts standard specifications for Highways and Bridges, as amended.

SLOPE OF PIPE

7.4.36 All pipes shall be laid on a slope so that the minimum velocity with the pipe flowing full shall be 3.0 feet per second. Consideration will be given to flatter slopes if adequate provisions are made for cleaning the pipes. The maximum allowable velocity with the pipe flowing full shall be the 7.5 feet per second.

INLETS

7.4.37 Inlets shall have an adequate waterway opening to pass the design storm with not more than 0.2 feet of surcharge. Grates and frames shall be cast iron made in U.S.A. only suitable for the loads which can occur either during the construction or afterward. Inlets shall be constructed either during the construction or afterward. Catch basin frames and grates shall be LeBaron LF 248-2, three flange or acceptable equivalent. Manhole frames and covers shall be LeBaron LK 110A or acceptable equivalent. Inlets shall be constructed either of clay brick (MHD, M.4.05.2) (cement bricks are not acceptable) and mortar with 8" thick walls, precast segmental concrete blocks not less than 6" thick mortared in place, or of precast pipe sections. Inlets shall be set on a base of either poured concrete 8" in thickness, or precast segmental base blocks not less than 4 inches in thickness. Inlets shall be used in off-street locations and the grate frame shall be mortared in position with the top 0.2 feet below the grade of the finished ground surface. Side openings may be used in addition to grates if the quantity of runoff exceeds the capacity of a grate of reasonable size as approved by the Planning Board of its agent. Inlets shall be 4.0 feet inside diameter below the corbelling and shall not be used on drains greater than 30 inches in diameter. A shaped invert is not required but the bottom of the inlet shall be finished at the same grade as the lowest pipe invert. At inlets where the outlet

pipe is larger than the inlet pipe, the crown of the outlet pipe shall be at the same elevation or lower than the crown of the inlet pipe. Drains from cellars are prohibited. Brick, and mortar for adjusting collars shall be used and conform to the requirements of sections M4.05.02, and M4.05.15 of the MHD specifications, respectively.

CATCH BASINS - MANHOLES

7.4.38 Catch basins shall be installed on both sides of the roadway on continuous grades at intervals not to exceed 250 feet, at low points and sags in the roadway, near the corners of the roadway at intersecting streets, or as determined by the board . Such catch basins shall be provided with granite curb inlets. (See detail plate 4-a). Drain pipes shall extend through a maximum of 3 catch basins and thereafter through manholes to the point of discharge, with a manhole being required at every change in direction, slope or diameter in the drain pipe, and at every intersection of drain pipes. All catch basins except for the first 3 shall discharge into the drain through a manhole. (See detail plates 1, 1A, 2, 2A, 3, 3A, 3B). Cross drainage grate system at all driveways with 4 percent to 6 percent shall be built if sheet flow of storm water runoff is expected. The adjustment of the casting shall allow for a minimum of three bricks. Catch basins shall have a minimum of 4' sump, and be equipped with a devise such as hood, snout, or eliminator to protect the pipe from filling with debris or sediment. Brick, and mortar for filed adjusting collars shall be used and conform to the requirements of sections M4.05.02, and M4.05.15 of the MHD specifications, respectively.

EXCAVATION

7.4.39 The pipe trench shall be excavated to the required line and grade shown on approved plan provided by the design engineer, and recommended by pipe manufacturer including earth boulders and ledge. Trenches for storm drains shall be no wider than the outside diameter of the pipe plus 46 24 inches for pipes through 18 inches nominal diameter, and the outside diameter plus 24 36 inches for pipe larger than 18 inches. This trench width shall apply from the top of the pipe to the bottom of the trench. Above the top of the pipe the trench may be as necessary to properly install the pipe. If any cross pipes conduits, drains or other unforeseen obstacles are encountered in the excavation which cannot be relocated, the drain shall be redesigned to avoid the obstruction in a manner suitable to the Planning Board or its agent. Possible obstructions to the line shall be investigated prior to the construction of the drain in its immediate vicinity.

BEDDING

7.4.40 Trenches may be excavated with a flat bottom, but the full length of the pipe, except the bell, must rest upon undisturbed soil except as hereinafter specified, Where trenches have been over-excavated, a gravel foundation meeting the requirements of MHD specifications with maximum stone size of 2 inches, thoroughly compacted, shall

be provided for proper pipe bedding. Any unsuitable material, which is considered to be unstable by the Planning Board or its agent, shall be removed to a depth of not less than 2 feet below the bottom of the pipes and replaced with compacted sand and gravel to the bottom of the pipe. Unstable soil or other excavated material shall be disposed of off site.

PIPE LAYING

7.4.41 Pipe shall be laid starting with the downstream end. Grade boards or other approved devices shall be provided to insure that the pipe is laid true to line and grade. Reference bench marks shall be clearly marked to enable the Inspector to quickly check the grade and invert elevations. The joints of all pipes shall be connected per manufacturer recommendation, and applicable section(s) of MHD specifications. The downstream pipe shall be laid with groove or bell end facing upstream in the proper position, and a dab of mortar shall be placed in the bell or groove. the spigot or tongue end shall be placed in the bell or groove, such that the inverts match and, the peripheral space shall be filled with stiff mortar, where applicable. All mortar squeezed out on the inside of the pipe shall be removed before it sets.

BACKFILLING

7.4.42 After the pipe has been laid and inspected, the trench shall be backfilled. The space under the pipe haunches shall be carefully filled with selected material, free from stones or frozen earth, and compacted carefully to prevent the pipe from moving. The layer of backfill up to 12 inches (minimum) over the top of the pipe shall also be of selected material free from stones and frozen earth, well compacted. The remainder of the trench shall be backfilled in 12 inch layers except as noted below, and each layer shall be fully compacted in an approved manner. Under roads or other traffic areas the trench shall be backfilled in 6 inch layers with each layer compacted to the density of the surrounding soil. Pavement and base course materials removed during the excavation process shall be replaced with pavement and base course to match those removed. No old pavement shall be backfilled into trench. When, in the opinion of the Planning Board or its agent, the excavation is deep enough to warrant it, temporary pavement shall be provided as directed. Trenches not in pavement shall be left in mounded condition as directed by the Planning Board or its agent.

SECURITY BARS

7.4.43 Security bars shall be provided at the entrance and outface of all culverts or open pipe drains. Bars shall be designed by the applicant's P.E. A suitable drawing of the grate and method of installation shall be submitted for approval with the plans for the drains and appurtenances. At outfall of 12" diameter pipes, a single rust proof bar grate which passes through the center of the opening is sufficient. At outfalls of 15" diameter pipes, a two rust proof bar grate, which divides the opening into thirds, is sufficient. At all other

locations, including upstream openings of all pipes, grates are required as follows:

The grate shall be constructed of rust proof bars not less than ½" diameter welded together to provide a grate not smaller than the pipe opening. The vertical bars shall be placed with 4" clear openings between them, and the horizontal bars shall be placed 6" on center. The grate shall be installed at the face of the headwall in such a manner as to allow removal for maintenance purposes. A suitable sketch of the grate and method of installation shall be submitted for approval with the plans for the drains and appurtenances. All bar grates shall be rust proof.

HEADWALLS

7.4.44 Concrete or Field Stone masonry headwalls shall be provided at both ends of culverts and the discharge ends of storm drains. They shall conform to the table on Detail Plate for field stone and concrete head walls.

SCOUR PROTECTION

7.4.45 The discharge ends of all drains with flowing full velocities of 4 feet per second or more shall be protected with a rip-rap apron of a width not less than 10 times the nominal pipe diameter from the end of the discharge pipe. The riprap for exit velocities of 10 feet per second or less shall be composed of a layer of stones 12 inches in thickness or more, placed upon a bed of sand and gravel 6 inches in thickness. The stones shall be sized so that not less than 60 percent shall have one dimension 12 inches or more. The stones after being laid shall be carefully chinked by hand to make a reasonably smooth and shaped surface. Where exit velocities are greater than 10 feet per second, the thickness of stones and the dimensions of the individual pieces shall be sized to prevent displacement by the flow. In this case, details shall be submitted to the Planning Board or its agent for approval. In addition, riprap will be required for all drainage channels having design flow velocities greater than five (5) feet per second and for any change in direction or intersection of drainage channels. A filter fabric to prevent soil erosion meeting the MHD specifications shall be placed underneath a foundation of six inches washed ¾ inches to 1 1/2 inches size crushed stone prior to placing any riprap for scour protection.

WATER PIPES AND RELATED FACILITIES

7.4.46 Water pipes and related facilities such as hydrants, blow-offs and shut-off valves shall be installed within the subdivision as necessary, providing all lots on each street with adequate water supply for domestic and fire protection use. Hydrants shall be not further than 500 feet apart. The cost for materials, labor and installation shall be borne by the subdivider. Materials and supplies used in such installation shall conform to Water Department specifications. Water mains shall be no less than 8 inches in diameter and shall be of larger size when required by the Board. All water pipe and facilities including

curb stops for each lot shall be constructed prior to the finish grading of the roadway. Installation of water mains shall be under the supervision of the Hanson Water Department. Spring action hydrant markers shall be attached to the hydrant per requirement of Hanson Water Department.

7.5 Sidewalks and Bikeways

GENERAL

7.5.1 Sidewalks shall be required on two (2) sides of the street and as required by the Planning Board. Sidewalks, and Bikeways shall be built in compliance with the "American with Disabilities Act (ADA)," and requirements of state regulations. Bikeways shall be considered as separate from sidewalks and should be located according to Planning Board recommendations. Where bikeways and sidewalks are adjacent, the minimum right-of-way shall be twenty-five (25 feet). The profile, dimensions and location of separately located sidewalks and bikeways shall be subject to the approval of the Planning Board. Sidewalks shall be shown on the roadway layout plan, and built within the roadway layout. The grade shall be at least 1" above curb elevation. Sidewalks and bikeways shall be in accordance with either specification 7.5.11 or 7.5.12 below:

CONCRETE

7.5.11 Concrete sidewalks, 5" thick cement concrete (6" thick at driveways), with maximum ¾" size aggregate, reinforced with fiber mesh, minimum 28 day compressive strength of 3500 pounds per square inch (PSI) concrete with 5% to 7% air entrained, broom finished, laid on a base of at least 6" of well compacted processed gravel meeting MHD specification. An expansion joint (¾" open) shall be provided at least every 20' dividing joints shall be scored into walk every 4'. Base gravel material shall be in accordance with the specifications outlines above for street construction, provided that no stone shall have a dimension in excess of 2-1/2". It shall be thoroughly compacted using a sidewalk roller weighing at least two tons. (See detail plate 4A). Concrete surfaces shall be coated on the top and sides with an approved sealer. All expansion joints shall use a performed expansion filler conforming to section 9.14.0 of the MHD specifications. Sidewalks may meander to avoid destruction of major trees.

BITUMINOUS CONCRETE

7.5.12 The foundation shall be 8" of processed gravel as specified in (a) above (material and compaction). The wearing surface shall be laid in two courses, a 2" binder course, and a 1 ½" top course, compacted, the thickness to be measured after compaction. The material and application shall conform to the specifications for roadway surfacing. All edges of the walks shall be formed with wood screeds which are securely anchored and left in place. (see detail place 4A).

BIKEWAYS

The following design guidelines shall be observed during the construction of bikeways:

- a. Minimum pavement width: ten feet (10')
- b. Maximum gradient: five percent (5%)
- c. Minimum center line radius: twenty-five feet (25')
- d. Vertical curves shall be required for changes in grade which exceed one percent (1%).
- e. Curb cuts shall be provided at the intersection of bikeways and streets.
- f. Signs of a design approved by the Board shall clearly mark each "Bikeway".

7.6 CURBING

CURBING, GENERAL

7.6.1 Granite type VA4 curbing is required on both sides of all roadways, and sloped granite curb type SB may be used around island in the center of cul-de-sac. The granite curb shall be installed on compacted gravel as shown on plate 4.

APPROVED TYPE OF CURBING

7.6.2 Approved types of Curbing.

1. Sloped granite edge stone type SB (See detail plate 5)
2. Granite curbing type VA4 (See detail plate 6).

TERMINAL CURB SECTION

7.6.3 A tapered terminal curb section of vertical granite curb construction having a tapered section 6 feet in length will be required as the first and last stones along each section of granite curbing and adjacent to each separately place curb inlet.

SIDE SLOPES

7.6.4 The area in back of the sidewalk shall be sloped at the rate of four to one (maximum) to a point where it precisely coincides with the finished grade of abutting lots.

TOPSOIL AND ITS REMOVAL AND LOAMING AND SEEDING

7.7 On all areas within roadway, walkway, and bikeway right-of-ways except areas receiving surface treatment or areas requested by the Board to be left in a "natural condition" the ground shall be cleared and grubbed and at least six inches (6") of an approved loam topsoil shall be applied. These areas shall be protected from erosion and seeded with an acceptable perennial lawn grass or other approved ground cover. Planted areas will not be accepted until there is a substantial, uniform, and healthy growth and until building construction has been completed.

No removal of loam from the development shall be made until a 6" thickness of loam shall be provided throughout the entire area of all lots and on the planting strips along the roadway.

Only such areas as roadways, driveways, building sites and areas requiring filling may be stripped of topsoil. Areas on a lot where cut or fill is not required for construction of the buildings on that lot shall not be stripped of topsoil. Only surplus loam after the above requirements have been met may be disposed of within the Town.

MONUMENTS

7.8 Monuments shall be installed at two property corners of all lots, meeting street sideline at all street intersections, at all points of change in directions or curvature of streets and at other points where, in the opinion of the Board, permanent monuments are necessary. Such monuments shall be at least 4" X 4" reinforced concrete or granite posts have a drill hole in the center and must extend from 3-1/2 feet below finished grade to not more than 6" above ground unless otherwise specifically authorized by the Board in writing. Required monuments shall not be placed on sidewalks.

No permanent monuments shall be installed until all construction which could destroy or disturb the monuments is completed.

STREET TREES

7.9 Street trees not less than twelve (12) feet in height and of a nature species (i.e. flowering Bradford) approved by the Board shall be planted on each side of every street, three trees per lot, in the subdivision wherever in the opinion of the Planning Board existing woodlands or suitable individual are not retained. Trees shall be located outside the exterior street lines and at such distance therefrom and at such spacing as the Board shall specify. Willows will not be permitted. All street trees shall be guaranteed until the road is accepted.

STREET SIGNS

7.10 The developer shall furnish and erect necessary street signs to designate the name of each street in his development, said signs to conform with those used by the Town. Other signs as required by Manual on Uniform Traffic Control Devices (MUTCD) shall be furnished and erected (i.e. curve, side streets or intersection indicators) .

STREET LIGHTS

7.11 The developer shall be responsible for furnishing and erecting street lights at locations approved by the Planning Board and the Board of Selectmen. The street lights shall stay lit, maintained, and paid for by the Developer for two years after the issuance of the certification of completion.

CLEANING UP

7.12 The entire area must be cleaned up so as to leave a neat and orderly appearance free from debris and other objectionable materials.

SECTION 8. PROCESSING OF DEFINITIVE PLANS
SUBMISSION OF DEFINITIVE PLANS

8.1 Any person submitting a definitive plan of a subdivision to the Board shall file with the Board the following:

ORIGINAL PLAN

A. The original mylar of the definitive plan, as described in Section 5 of the Rules and Regulations and eight prints thereof, dark line on white paper.

FILING FEE

b. A filing fee payable to Town of Hanson as stated in the fee schedule.

APPLICATION

c. A properly completed application on Form C (see Forms).

DESIGNER'S CERTIFICATE

d. Designer's Certificate on Form D (see Forms).

BOUNDARY DESCRIPTION

e. A legal description of the boundaries of the proposed subdivision, as shown on the definitive plans and sufficient to enable the Board to determine exactly the boundaries of land included in the subdivision.

DRAINAGE CALCULATIONS

f. Drainage calculations prepared by the applicant's engineer including design criteria used, drainage area and other information sufficient for the Board to check the size of any proposed drain, culvert, bridge, or retention area.

SUBMISSION PROCEDURE

8.2 A definitive subdivision plan may be submitted by in-hand delivery to the Board or by registered mail, care of the Town Clerk, as provided by the Subdivision Control Law. Such plan shall be considered submitted, unless within one week of such delivery the Board determines that the required procedure was not followed, as by omission of one or more of the items required to be filed with the definitive plan in subsection 8.1, or by failure to comply with the requirements of Sections 4 and 5 of these Rules and Regulations, in which case the date when all such required items or data are furnished to the Board shall be considered the legal date of submission of the plan. The applicant shall give notice to the Town Clerk of the submission of a definitive plan and submit copies of all components of a definitive plan to the Board of Health as required by the Subdivision Control Law.

PUBLIC HEARING

8.3 Before approval or disapproval of a definitive plan, the Board shall hold a public hearing, notice of the item and place of which and of the subject matter sufficient for identification and including the location of the proposed subdivision and the name of the applicant, shall be given at the expense of the applicant by advertisement in a newspaper of general circulation in the Town of Hanson once in each of two successive weeks, the first publication being not less than 14 days before the day of such hearing, and by mailing by certified or registered mail a copy of such advertisement to the applicant and to each owner of land abutting the land included in such plan as appearing on the most recent tax list. The applicant shall file at the time of the public hearing sufficient evidence that he has paid the cost of providing required notice and no plan shall be approved until such expenses listed in fee schedule have been paid.

APPROVAL OR DISAPPROVAL

8.4 After the public hearing and not later than 135 days with no preliminary plans, 90 days for non-residential, and 90 days residential with preliminary plans, after the submission of the definitive plan, unless an extension of this time limit has been requested in writing by the applicant or his agent and granted by the Board, the Board shall, by a majority vote approve, with or without modifications and conditions, or disapprove such plan. The action of the Board, including any conditions of approval or specific reasons for disapproval, shall be stated in a certificate of action and filed with the Town Clerk and a copy thereof sent by the Board to the applicant by registered mail. Unless an appeal is taken to the superior court from the action of the Board and a written notice of such appeal is received by the Town Clerk within 20 days of the receipt by the Town Clerk of the certificate of action, the Planning Board shall sign the approved definitive plan and refer thereon to any conditions of approval or to any instrument describing such conditions. The applicant will then, at his expense, furnish the Board with eight sets of full size copies of all drawings comprising the definitive plan and with one complete set of duplicate tracings on mylar, tracing cloth, or equivalent.

STREETS ARE NOT PUBLIC WAYS

8.5 The approval by the Board of a definitive subdivision plan does not constitute a laying out or acceptance by the Town of the streets within the subdivision as town or public ways.

SECTION 9. PERFORMANCE GUARANTEES AND RELEASE

ENSURE CONSTRUCTION OF WAYS AND UTILITIES

9.1 Before the Board endorses its approval on a definitive plan, the applicant shall agree to construct streets and to install utilities necessary in the opinion of the Board to provide access and municipal services for all lots within such subdivision and including such grading of the land as may in the opinion of the Board, be necessary to ensure proper drainage and to perform all such work in strict compliance with these Rules and Regulations and shall secure such construction and installations by one of the two methods described in the following subsections 9.2 and 9.3, which method may be selected and from time to time varied by the applicant. Any definitive subdivision plan approved hereunder, or any modification of any such subdivision plan previously approved, shall received an approval that shall be automatically limited to a period of two (2) years. The construction of ways, utilities, and other infrastructure in the proposed subdivision shall be completed within the two (2) years, or such other time period adopted. The time shall run from the date of said approval and not from the date of endorsement or from the date of recording of such subdivision plan. In the event that an applicant has failed to perform within the requisite period, the planning board may rescind the previously issued conditional approval and may rescind all approved lot releases related to the conditional approval. The planning board shall consider the rescission of the conditional approval and lot release approvals at a duly noticed public hearing. Upon rescission of conditional approval, lot release approvals, or both, the planning board shall provide due notice as provided under section 81W of M.G.L., chapter 41, The Subdivision Control Law. Upon rescission of conditional approval, the applicant may apply for a new definitive subdivision plan approval for the site. However, the application will be subject to the subdivision rules and regulations then in effect. Upon rescission of lot release approvals, no further building permits shall be issued for said rescinded lots and no occupancy permits shall be issued for any construction on said rescinded lots under a previously issued building permit until the planning board re-approves the lot releases.

SURETY

9.2 The applicant shall file surety with the Town, satisfactory to the Board, in a penal sum or amount sufficient in the opinion of the Board to secure the performance of the construction of ways and installation of utilities for all lots not covered by a Covenant as described in subsection 9.3 below. Any surety filed or deposited in accordance herewith, shall be executed so as to secure the completion of all required work within two years of such filing or deposit or within such other time as the Board may specify. Standard forms and cost estimates to be completed and filed by the Developer with annual review by the Planning Board. Upon failure of the developer to complete such work to the satisfaction

of the Board and in accordance with all applicable plans, regulations and specifications, the Town shall be entitled to enforce or realize upon such security to the extent necessary to complete all such work without delay.

COVENANT

9.3 The applicant shall execute a Covenant, approved by the Board as to content and from which shall be recorded with the approve definitive plan at the expense of the applicant. The Covenant shall provide that no lot within the subdivision of the portion thereof described in the Covenant shall be built upon or conveyed, except by mortgage deed, until such lot or lots shall be released from the conditions of said Covenant by a majority vote of the Planning Board upon satisfactory completion of ways and the installation of municipal services in accordance with the approve definitive plans and with all applicable plans, regulations and specifications. The Covenant shall run with the land and shall be binding upon the applicant and the applicant's successors in title to the land to which the Covenant refers or any portions thereof. Any Covenant and any conditions required by the Board of Health shall be inscribed on the definitive plan to which they refer or shall be recorded as a separate document and referred to on such definitive plan.

REVERSION TO COVENANT

9.4 If the developer desires to secure by means of a Covenant the construction of ways and the installation of municipal services in a portion of a subdivision for which no building permits have been granted and to have the Board release the bond or negotiable securities previously furnished to secure such construction and installation, the developer shall submit to the Board a mylar, electronic files compatible with town's format and three copies of a new plan, limited only to that part of the definitive plan which is to be subject to such Covenant. Upon approval of the Covenant by the Board, reference thereto shall be inscribed on such new plan and the plan endorsed by the Planning Board and recorded with the Covenant at the expense of the developer.

TURNAROUNDS REQUIRED

9.5 No reduction or release of bond or other sureties and no release of lots from the restrictions of a Covenant shall be granted by the Board, unless a turnaround as described in 6.5.6 above is constructed at the end of the constructed portion of each street in the subdivision, except where such street ends in a junction with another existing street.

CERTIFICATE OF COMPLETION

9.6 The developer may request in writing the release of bond or negotiable securities or the release of lots in a subdivision from the restrictions contained in a Covenant upon the completion of all work secured thereby. Such request shall be accompanied by two copies

of a certificate by a designer that the work in the subdivision had been completed to the extent described in such certificate and conforms in all details to the approved subdivision plan to the Planning Board Certificate of Action, and to these Rules and Regulations. Before the Board releases said surety or said lots it shall receive from their agent a written notification confirming that the developer has complied with all conditions and terms of the Certificate of Action and with all requirements of the Standard Specifications. In the event of deviation from the approved plan, Certificate of Action or from the requirements of these Rules and Regulations, such deviation shall be described in the certificate, which shall then be accompanied by a mylar, electronic file compatible with town's format two copies of the as built plan, and street layout plan and profile showing the utilities and the street layout plans and profile showing the utilities and the street or portion of street "as constructed."

EVIDENCE OF SATISFACTORY PERFORMANCE

9.7 Before the Board will release the interest of the Town in the deposit or, in the case of approval with covenant, issue a release of covenant;

CERTIFIED LAYOUT PLAN

9.7.1 The applicant shall file with the Board a certified copy of a separate layout plan including mylar, electronic files compatible with town's format (with accompanying cross sections and profile) for each street in the subdivision (or, in the case of approval with covenant, of the street or streets serving the lots for which a release is desired). Certification shall be by the engineer and surveyor employed by the applicant at his own expense, and shall indicate that all easements, street, sidewalks, storm drains, water lines, underground telephone and electricity, and their appurtenances have been constructed in accordance with lines and grades of said plan and are accurately located as shown thereon.

STATEMENT FROM TOWN STREET SUPERINTENDENT

9.7.2 The Board shall obtain from the applicant a statement in writing by the Highway Surveyor, Certification of Construction (Form J), that all work under his jurisdiction required by these rules and regulations has been inspected and completed in each street in the subdivision (or in the street or streets serving the lots covered by the surety), including storm drains, bridges, and sidewalks and that he has approved the construction and materials used in the performance of such work.

CONVEYANCE OF UTILITIES

9.7.3 The applicant shall execute an instrument (Form H) transferring to the Town valid, unencumbered title to all utilities constructed and installed in the subdivision. The

developer shall also convey to the Town, without cost and free of all liens and encumbrances, perpetual rights and easements to construct, inspect, repair, renew, replace, operate and forever maintain such utilities and all water courses, banks and holding ponds constructed and installed within the subdivision.

- a. in, through and under all streets,
- b. in, through and under easements as shown on the definitive plan not within said streets.

The above shall not be construed to relieve the developer, and his successors in title, of responsibility to complete all construction as required by covenants and agreements with the Town, and to thereafter maintain all streets and utilities in a satisfactory condition until they are accepted by the Town.

STATEMENT FROM WATER BOARD

9.7.4 The Board shall obtain from the applicant a statement in writing by the Water Board (Form J) that it has inspected and the applicant has completed each water main and its appurtenances in accordance with the requirements of these rules and regulations and it has approved the construction and materials used in the performance of such work.

FINAL ACCEPTANCE PLANS

9.7.5 The applicant shall provide the Town at no cost with final acceptance plans for each street single sheet in the subdivision including all property lines and total acreage. Each street will be recorded at the registry of deeds as a separate lot or parcel of land with a deed. A deed conveying fee title to all road, or right of way and appurtenant municipal improvements, not limited to drainage structures, and any appurtenant to the town of Hanson.

CERTIFIED FINAL LOCATIONS (AS BUILT DRAWINGS)

9.7.6 The applicant shall provide the town at no cost with final plans showing the precise location of public water supply, public sewers, storm drainage, public utilities, water valves, shut-offs, manholes, hydrants, and monuments. At least (2) two ties shall be shown to each water service lot connection, utilities service lot connection and street light service. The plan shall contain a certification by an engineer that the locations shown on the plan represent the locations as constructed.

RELEASE OF SURETY

9.8 Upon the receipt of such request for the release of lots or sureties, the Board shall request from their agent a verification of the satisfactory completion of all work in the

subdivision and shall either approve the work and release the surety or the lots or state wherein the work fails to comply with the definitive plan and with these Rules and Regulations and refuse the request. Either action shall be by a majority vote of the Board and a certificate of the Board's action shall be transmitted, within 45 days of the developer's request, to the Town Clerk, to the developer by registered mail, in a form suitable for recording, and to the surety company concerned, if any.

CRITERIA FOR SATISFACTORY PARTIAL COMPLETION

9.9 When only a portion of the streets and other improvements shown on the definitive plan have been constructed or installed and a release from the covenant is requested, the Board shall consider as satisfactorily completed only such lengths and parts as thereof as will (in and of themselves) from convenient and adequate systems without the necessity of further extension or improvement, and shall consider as eligible for release only such lots as front on, are connected, or are otherwise served by such streets, utilities and other improvements.

REDUCTION OF SURETY

9.10 Upon a request by the developer or upon its own initiative, the Board may request from their agent a statement of extent and of the construction work completed by the developer and other estimated cost thereof, and may by a majority vote reduce the penal sum of bond or the amount of deposit of negotiable securities to an amount not less than the estimated cost of the completion of the remainder of the construction of ways and the installation of municipal services secured by such bond or deposit, except that no such reduction shall be to an amount less than 15% of the initial surety of \$1000 whichever is greater. Copies of such vote shall be transmitted by the Board in writing to the Town Clerk, the applicant and the bonding or surety company, if any.

SECTION 10. REVISION OF SUBDIVISION AND PRIVATE WAYS

MODIFICATION OF EXISTING SUBDIVISIONS AND PRIVATE WAYS

10.1 The Board may rescind or modify its approval of a subdivision plan previously approved, may discontinue and abandon private ways and may establish or revise the exterior lines, profiles (grades) and names of such private ways previously approved under the Subdivision Control Law or shown on a plan recorded prior to the date said law became effective in the Town of Hanson and not laid out or maintained by the Selectmen or other public authorities. The procedure for such rescission or modification of approval, discontinuance or private ways and the establishment or revision of the exterior lines, grades or names thereof shall, so far as apt, follow the procedure for the submission, processing and approval of definitive subdivision plans, including the requirements for the construction of ways and the installation of utilities, where applicable. Lots sold or mortgaged in good faith and for a valuable consideration and any rights appurtenant to lots shall not be affected by any action of the Board under this section, except with a written consent of the owners and mortgagees of such lots. The action of the Board under this section shall become effective in accordance with Section 81-W of the Subdivision Control Law.

MINOR REVISIONS

10.2 The Board may permit relocation of lot lines without a public notice or a public hearing in accordance with Section 2 of these Rules and Regulations, and may permit relocation of utility easements and other minor changes which do not effect names, grades or exterior lines of ways without a public notice or a public hearing.

SUBDIVISION PLAN REFERENCE

10.3 Any plan showing a revision of an approved subdivision plan and submitted prior to the complete release of all lots or sureties in that portion of the subdivision affected by such revisions, shall bear notation referring to the original subdivision plan.

RESCISSION AFTER 8 YEARS

10.4 The failure of the developer to begin work in a subdivision or a portion thereof within 8 years of the approval of the definitive plan shall constitute a reason for the rescission of such approval under Chapter 40A, Section 6.

SECTION 11. ADMINISTRATIONS

WAIVERS

11.1 Strict compliance with the requirements of these Rules and Regulations may be waived only by a recorded vote of the Board. A waiver may be granted when in the judgment of the Planning Board such action is in the public interest and not inconsistent with the Subdivision Control Law.

REFERENCE

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

DESIGN REVIEW GENERAL

11.3 Design Review and Construction Inspection Deposit and Fees

11.3.1 The Planning Board may assign as their agents appropriate Town agencies or officials and may at their discretion employ professional assistance to review plans and inspect construction, at the cost of the subdivider.

DEPOSIT

11.3.2 A deposit as stated in the fee schedule shall be made by the applicant payable to the Town of Hanson for fees in relation to plan review, at the time of definitive submittal and at the time of preliminary plan submittal if deemed necessary by the Board. A deposit as stated in the fee scheduled shall be made by the applicant payable to the Town of Hanson for fees in relation to construction inspection. Additional deposits of higher amounts may be required in the case of extraordinary size, construction design, or design change. As the above deposits are expended, the applicant shall, upon notice from the Board, make further deposits in such a manner that the total deposit with the Town shall at all times equal the initial amount as determined by the Board.

RETURN OF DEPOSIT

11.3.3 Upon satisfactory completion of all improvements, the Board shall refund to the applicant any deposit remaining.

FORMS

TOWN OF HANSON, MASSACHUSETTS
PLANNING BOARD

FORM A

APPLICATION FOR ENDORSEMENT OF A PLAN BELIEVED NOT TO REQUIRE
SUBDIVISION APPROVAL

(The application must be completed and submitted in accordance with G.L. c. 41, Section 81-P and Section 81-T as amended, accompanied by the original tracing and eight copies of the plan.) _____, 20

To the Planning Board of the Town of Hanson:

The undersigned, wishing to record a plan of land in Hanson entitled _____, dated _____ 20__, by _____, Designer, showing lots located and described: _____, believing that said plan does not constitute a subdivision within the meaning of the subdivision control law, hereby submits said plan for determination and endorsement that Planning Board approval is not required under the subdivision control law for the reasons given below:

The owner's title to the land is derived from deed from _____ dated _____ and recorded in Plymouth County Deeds Book _____ Page _____ or registered in the Plymouth County Land Registration Office under Land Court Certificate of Title No. _____.

Signature of Owner _____
(if not applicant)

Address: _____ Address: _____

Tel. No. _____

Received with the original tracing and eight copies of plan on _____

By: _____

TOWN OF HANSON, MASSACHUSETTS
PLANNING BOARD

FORM B

APPLICATION FOR APPROVAL OF A PRELIMINARY PLAN

(This application must be completed and submitted with four copies of the preliminary subdivision plan to which it relates. A copy of this application may be used as a notice to the Town Clerk of the submission of the plan, as provided in Section 81-S, Chapter 41, G.L.) _____, 20____

To the Planning Board of the Town of Hanson:

The undersigned, being the owner of all land included within a proposed subdivision shown on the accompanying plan entitled _____
_____ by _____ (Designer) showing land described
as follows:

_____ submits said plan as a PRELIMINARY subdivision plan showing in a general way the information required under the Rules and Regulations of the Hanson Planning Board and makes application to the Board for the approval of said preliminary plan.

The owner's title to the land is derived from deed from _____

dated _____ and recorded in Plymouth County Deeds Book _____

Page _____ or registered in the Plymouth County Land Registration Office

under Land Court Certificate of Title No. _____.

(All owners, authorized officer Signature of Applicant
of a corporation or Trustees
must sign).

Address

Received with four copies of plan on _____, 20____

By: _____

THE SUBDIVISION CONTROL LAW REQUIRES SIMULTANEOUS SUBMISSION
OF SUBDIVISION PLANS TO THE BOARD OF HEALTH.

TOWN OF HANSON, MASSACHUSETTS

PLANNING BOARD

FORM C

-----,20----

APPLICATION FOR APPROVAL OF DEFINITIVE PLAN

To the Planning Board of the Town of Hanson, Massachusetts

The undersigned, being the owner of certain land shown on proposed subdivision plan entitled _____

_____ by _____
_____ dated _____

_____, 20____, hereby submits eight copies of said plan as a definitive plan in accordance with the Rules and Regulations of the Planning Board of the Town and makes application to the Board for approval of said plan.

The applicant's title to said land is derived from

_____ by deed dated _____
and recorded in _____ District Registry of Deeds,
Book _____, Page _____, and/or registered in the _____
_____ Registry District of the Land
Court, as Document No. _____ and noted on Certificate of Title No.
_____, Registration Book _____, Page _____, and
said land is free of encumbrances except for the following: _____

Said plan has // has not// evolved from a preliminary plan submitted to the Planning Board on _____, 20____, and approved // with modifications // disapproved// on _____, 20_____.

The applicant hereby applies for the approval of said definitive plan by the Planning Board, and in furtherance thereof hereby agrees to abide by the Rules and Regulations of the Planning Board of the Town. The applicant hereby further covenants and agrees with the Town, upon the approval of said definitive plan by the Planning Board.

1. To construct ways and install municipal services as shown on the approved definitive plan in accordance with the Rules and Regulations of the Planning Board of the Town, with such modifications or conditions, if any, as may be imposed by the Planning Board or Board of Health of the Town, such modifications or conditions to be set forth in a Certificate of Action to be filed by the Planning Board with the Town Clerk. Such construction of ways and installation of municipal services shall, if begun, be completed within two years from the date of endorsement by the Planning Board of its approval of the plan unless the Planning Board shall specify a different period of time for the completion of such work. If the construction of ways and installation of municipal services is not begun within two years from the date of endorsement by the Planning Board of its approval of the plan, or within such shorter or longer period of time as the Planning Board may specify, such approval shall terminate and the applicant shall be required to resubmit the plan to the Planning Board for re-approval with such modifications or conditions as the Planning Board may then deem appropriate.

2. To give security for the construction of ways and installation of municipal services required under paragraph 1 above in accordance with G.L. c.41, s. 81U, as amended. The giving of such security shall not operate so as to relieve the applicant of his or its obligations under paragraph 1 above, and if the applicant fails to construct ways and install municipal services as therein required and the security given under this paragraph proves insufficient to pay for the completion of such work, then the applicant shall be liable to the Town for the additional cost of completing such construction of ways and installation of municipal services.

3. To permit the Planning Board, its duly authorized agents and employees, and any agent or employee of the Town or any person authorized by the Town, to enter upon the land included in the subdivision for the purpose of determining whether the work required under paragraph 1 has been begun or completed, and for the purpose of completing such work, if begun, in the event the applicant fails to do so within the required time. The applicant shall grant to the Town an easement, which shall be referred to on the plan and recorded with the plan, to enter upon the land for the purposes set forth in the preceding sentence.

4. To record the definitive plan and any covenant given under G.L. c. 41 s. 81U, as amended, in the appropriate district registry of deeds or registry district of the land court within sixth (60) days of the date of the Planning Board's endorsement of its approval of the plan. Any covenant given under G.L. c.41, s. 81U, as amended shall be referred to on

the recorded definitive plan. If the Planning Board shall impose modifications or conditions on its approval of the definitive plan, its Certificate of Action setting forth such modifications or conditions shall be referred to on the plans and shall be attached to and recorded with the plan. Any condition required by the Board of Health or Health Officer of the Town not incorporated in the Planning Board's Certificate of Action shall also be inscribed on the plan or contained in a separate document referred to on the plans and recorded with the plan.

The applicant hereby requests that the time within which the Planning Board must act on the subdivision plan submitted herewith be extended to a period of 120 days from the date of submission.

Received by Town Clerk:

Date: _____

Signature of Applicant*

Time: _____

Signature: _____

Address

* _____
All owners of the land must sign the application. If the land is owned by a corporation or trust, a copy of the instrument authorizing the person who signs the application to act for the owner must be attached to the application. If the applicant is not the owner of the land, a separate sheet listing the names and addresses of the owners and the interests of the applicant in the land should be attached to the application.

TOWN OF HANSON MASSACHUSETTS

PLANNING BOARD

FORM D

DESIGNER'S CERTIFICATE

_____, 20 ____

To the Planning Board of the Town of Hanson:

I hereby certify that the accompanying plan, entitled

and dated _____, 20 ____, is true and correct to the accuracy required
by the Rules and Regulations of the Hanson Planning Board.

Designer, Engineer or Surveyor

Professional
Registration
Stamp

Address

*May be incorporated on definitive plan.

TOWN OF HANSON, MASSACHUSETTS

PLANNING BOARD

FORM E

Date

Town Clerk
Town of Hanson, Massachusetts

Re: Application for a Determination of Subdivision Approval Requirement

Form A# -----,-----Applicant

This is to notify you that the Planning Board has determined that the plan

entitled _____

dated _____, by _____

showing lots designated and located as follows _____

submitted by the above applicant on _____

REQUIRES APPROVAL under the Subdivision Control Law.

HANSON PLANNING BOARD

By _____

TOWN OF HANSON, MASSACHUSETTS

PLANNING BOARD

FORM F

CERTIFICATE OF ACTION

This is to certify that the Planning Board of the Town of Hanson, Massachusetts has this day approved a definitive subdivision plan entitled

by

Dated _____, 20____, this approval is subject to receipt of a covenant or other proper security under G.L. c.41, s. 81U, as amended, to secure the construction of ways and the installation of municipal services in accordance with the Rules and Regulations of the Planning Board of the town and the plans now on file with the Planning Board.

This approval is further subject to the following terms and conditions:

1. (etc.)

Majority of the Planning

Board of the Town of Hanson

TOWN OF HANSON, MASSACHUSETTS
PLANNING BOARD
FORM G-1

COVENANT

Whereas _____

Names of Owner(s)

_____ the Developer has submitted an application dated _____, 20____ to the Planning Board of the Town of Hanson a municipal corporation situated in Plymouth County Massachusetts, for the approval of a definitive plan of a certain subdivision entitled _____

by _____ dated _____, 20____, and has requested the Planning Board to approve such plans without requiring a performance bond or other surety;

Now therefore, in consideration of the Planning Board approving said plan without requiring a performance bond or other surety, and in consideration of one dollar in hand paid, receipt whereof is hereby acknowledged, the Developer represents, covenants and agrees with the Town pursuant to G.L.c. 41, s. 81U, as amended as follows:

1. The developer is the owner in fee simple of all the land included in the aforesaid subdivision and there are no mortgages of record or otherwise on any of said land, except those described below and subordinated to this Covenant, and the present holders of said mortgages have assented to this Covenant prior to its execution by the Developer.

Description of Mortgages: _____

(Give complete names of mortgages and registry of deeds reference to mortgage.)

2. This Covenant shall run with the land included in the aforesaid subdivision and shall operate as a restriction upon said land.

3. The ways and municipal services required to serve the lots in said subdivision shall be

installed and constructed as shown on the definitive plan and in accordance with the Rules and Regulations of the Planning Board of the Town, with such modifications or conditions, if any, as have been imposed by the Planning Board or Board of Health of the Town, such modifications or conditions being set forth in a Certificate of Action dated _____ to be recorded herewith, before such lot may be built upon or conveyed other than by a mortgage deed; provided that a mortgagee who acquires title to the mortgaged premises by foreclosure or otherwise and any succeeding owner of such premises or part thereof may sell any such lot subject to the limitation that no lot shall be built upon until such ways and services have been provided to serve such lot; and provided further that nothing herein shall be deemed to prohibit a conveyance by a single deed, subject to this Covenant, of either the entire parcel of land shown on said subdivision plan or of all of lots shown on such plan not previously released by the Planning Board.

4. Reference to this Covenant shall be entered upon said plan and this Covenant shall be recorded when said plan is recorded.

5. Lots within the subdivision may be released from the foregoing conditions only upon the recording of a written release executed by a majority of the Planning Board and specifically enumerating the lots to be released thereunder.

6. This Covenant shall be binding upon the executors, administrators, devisees, heirs, successors and assigns of the Developer.

Executive as a sealed instrument this _____ day of _____, 20____.

(Signatures of individuals, trustees under a declaration of trust or corporate officers, thereunto duly authorized, as owner(s) or mortgagee(s), as applicable).

Owner(s)*

(seal if applicable)

*If there is more than one owner, all must sign.

Assents of Mortgagee(s)

COMMONWEALTH OF MASSACHUSETTS

_____, ss. _____, 20__

The personally appeared the above-named (name of owner as individual, trustee or corporate officer, as applicable) and acknowledged the foregoing instrument to be his free act and deed (and the free act and deed of said corporation), before me.

Notary Public

My Commission Expires: _____

(Attach votes of corporation authorizing execution of
Covenant, if applicable)

COMMONWEALTH OF MASSACHUSETTS

_____, ss. _____, 20__

Then personally appeared the above-named (name of mortgagee as individual, trustee or corporate officer, as applicable) and acknowledged the foregoing instrument to be his free act and deed (and the fee act and deed of said corporation), before me.

Notary Public

My Commission Expires: _____

TOWN OF HANSON, MASSACHUSETTS

PLANNING BOARD

FORM G-2

PERFORMANCE BOND
SECURED BY DEPOSIT

Know all men by these presents that _____

_____, as Principal, hereby binds and obligates himself-itself and his or its executors, administrator, devisees, heirs, successors and assigns, jointly and severally to the Town of Hanson, a Massachusetts municipal corporation, in the sum of _____ dollars, and has secured this obligation by depositing said sum in money or negotiable securities with the Treasurer of the Town.

The condition of this obligation is that if the Principal fully and satisfactorily observes and performs in the manner and in the time therein specified, all of the covenants, conditions, agreements, terms and provisions contained in the application signed by the Principal and dated _____, 20 ___, under which approval of a definitive plan of a certain subdivision entitled _____

by _____ dated _____, 20 ___, has been granted by the Planning Board of the Town, with such modifications or conditions, if any, as have been imposed by the Town acting through its Planning Board or Board of Health, then this obligation shall be void, otherwise, it shall remain in full force and effect and the aforementioned sum shall be paid to the Town to satisfy and complete the Principal's obligations.

In witness whereof the Principal has hereunto set his hand and seal this _____ day of _____, 20 ____.

Principal

By: _____
Title

to satisfy and complete the Principal's obligation on said project, without further notice to or consent by the Principal.

Upon completion of all the work required to be completed by the Principal as above set forth, the aforesaid bank book shall be returned to the Principal.

In witness whereof, the; Principal has hereunto set his hand and seal this _____ date of _____, 20__.

Principal

By: _____
Title

The _____ Bank hereby acknowledges that it has received notice of the Principal's obligation under this bond, and, in the event the Principal fails to perform said obligation, agrees to pay the Town in accordance with the Provisions of this bond.

Authorized Signature

To be executed in 4 copies, all of which are to be considered originals. Two (2) copies are to be forwarded to the above Bank and one (1) signed copy returned to the Planning Board. In addition to the bank book, the Town should also receive a written assignment of the account and a withdrawal slip signed in blank.

TOWN OF HANSON, MASSACHUSETTS

PLANNING BOARD

FORM G-3

PERFORMANCE BOND
SECURED BY BANK PASSBOOK

Know all men by these presents that _____

_____,
as Principal, hereby binds and obligates himself/itself and his or its executors,
administrators, devisees, heirs, successors and assigns, jointly and severally, to the Town
of Hanson, a Massachusetts municipal corporation, in the sum of

_____ Dollars, and has secured this obligation
by depositing in the name of the Town of Hanson the sum of

_____ in _____

(name of bank)

evidence by Bank Book No. _____, and by depositing said bank book
with the Treasurer of the Town.

The condition of this obligation is that if the Principal fully and satisfactorily observes
and performs in the manner and in the time therein specified, all of the covenants,
conditions, agreements, terms and provisions contained in the application signed by the
Principal and dated _____, 20____, under which approval of a definitive
plan of a certain subdivision entitled

by _____
dated _____, 20____, has been granted by the Planning Board of the
Town, with such modifications or conditions, if any, as have been imposed by the Town
acting through its Planning Board or Board of Health then this obligation shall be void,
otherwise it shall remain in full force and effect and the aforesaid sums shall be paid to
the Town to satisfy and complete the Principal's obligation.

In the event the Principal shall fail to perform its obligation as above set forth, the Town
may use the funds in said account, or any part thereof.

TOWN OF HANSON, MASSACHUSETTS

PLANNING BOARD

FORM G-4

PERFORMANCE BOND
SURETY COMPANY

Know all men be these presents that _____

_____,
as Principal, and _____,
a corporation duly organized and existing under the laws of the State of
_____ and having a usual place of business in
_____, as Surety, hereby bind and obligates themselves and
their respective executors, administrators, devisees, heirs, successors and assigns, jointly
and severally, to the Town of Hanson, a Massachusetts municipal corporation, in the sum
of _____ Dollars.

The condition of this obligation is that if the Principal fully and satisfactorily observes
and performs in the manner and in the time therein specified, all of the covenants,
conditions, agreements, terms and provisions contained in the application signed by the
Principal and dated _____, 20____, under which approval of a
definitive plan of a certain subdivision entitled

by _____

dated _____, 20____, has been granted by the Planning Board of the
Town, with such modifications or conditions, if any, as have been imposed by the Town
acting through its Planning Board of Board of Health, then this obligation shall be void;
otherwise, it shall remain in full force and effect and the aforesaid sum shall be paid to
the Town to satisfy and complete the Principals obligation.

The Surety hereby assents to any and all changes and modifications that may be made of
the aforesaid covenants, conditions, agreements, terms and provisions to be observed and
performed by the Principal, and waives notice thereof.

In witness whereof we have hereunto set our hands and seals this
_____ day of _____, 20____.

PRINCIPAL

By: _____
Title

SURETY

By: _____
(Attorney-in Fact)

TOWN OF HANSON, MASSACHUSETTS

PLANNING BOARD

FORM G-5

ASSIGNMENT

The Principal, _____, hereby assigns
_____, deposited in (bank, address of bank) as a
performance bond for certain subdivision developments to be performed at the location of
_____ in the Town of Hanson
_____, shall be held by the Treasurer of the Town of
Hanson until such time as the development requirements shall be fully completed by the
principal. Upon the principals written notification to the Planning Board of the Town of
Hanson, the Town shall cause an inspection of the site within thirty days of the written
notification and upon approval, release _____, with a written
release to the principal.

TOWN OF HANSON, MASSACHUSETTS

PLANNING BOARD

FORM G-6

RELEASE OF LOTS
(PROVISIONS OF SURETY)

The undersigned, being a majority of the Planning Board of the Town of Hanson, Massachusetts, hereby certify that in the opinion of the Planning Board sufficient surety has been provided to secure performance of the construction of ways and installation of municipal services required to serve certain lots, hereinafter designated, in accordance with the provisions of the Covenant dated _____, 20____, and recorded in _____ Registry of Deeds, Book _____, Page _____, and/or registered in _____ Registry District of the Land Court, as Document No. _____ and noted on Certificate of Title No. _____, Registration Book _____, Page _____, said lots being shown on a plan entitled _____

recorded with said Registry of Deeds in Plan Book _____, Page _____, Plan No. _____ and/or registered in said Registry District of the Land Court in Plan Book _____, Plan _____, and said lots are hereby release from the restrictions as to building and sale specified in paragraph 3 of said Covenant.

Lots designated on said plans and release hereunder:

Executed as a sealed instrument this _____ day of _____, 20____.

Majority of the _____
Planning Board _____
of the Town of _____
Hanson _____

COMMONWEALTH OF MASSACHUSETTS

_____, ss. _____, 20____

Then personally appeared _____, one of the above-named members of the Planning Board of the Town of Hanson, Massachusetts, and acknowledged the foregoing instrument to be the free act and deed of said Planning Board, before me.

Notary Public

My Commission Expires: _____

TOWN OF HANSON, MASSACHUSETTS

PLANNING BOARD

FORM H

_____ (owners), for consideration paid, hereby grant to the Town of Hanson, a municipal corporation in Plymouth County, Massachusetts, with quitclaim covenants, the following:

A. The perpetual rights and easements to construct, inspect, repair, remove, replace, operate and forever maintain (1) pipes, conduits, and their appurtenances for the conveyance of water, and (2) a covered surface and ground water drain or drains with any manholes, pipes, conduits and their appurtenances, and to do all other acts incidental to the foregoing, including the right to pass along and over the land for the aforesaid purposes, in, through, and under the whole of _____, dated _____, said plan is made and said plan is incorporated herein for a complete and detailed description of said roads.

B. The perpetual rights and easements to use for _____ (describe use or purpose) the following parcel of land situated on _____ (street) in said Hanson and bounded and described as follows:
(description)

TO HAVE AND TO HOLD the above described rights and easements unto the said Town of Hanson and its successors and assigns forever.

For grantors' title see deed from _____, dated _____, and recorded in Plymouth County _____, Book _____, Page _____.

And, for consideration paid, _____ (mortgagee duly organized under law and having a usual place of business in _____ Massachusetts, the present holder of a mortgage upon the above described land which mortgage is dated _____, and recorded in said Deeds, Book _____, Page _____, hereby releases unto the said grantee and its successors and assigns from the operation of said mortgage the rights and easements hereinabove granted and assents thereto.

IN WITNESS WHEREOF, we hereunto set our hands and seals this _____
day of _____, ____.

(Owners signature)

(Mortgagee's signature)

COMMONWEALTH OF MASSACHUSETTS

_____(DATE)

Then personally appeared the above-named _____
and acknowledged the foregoing instrument to be his free act and deed, before me.
_____(Notary Public)

My Commission Expires: _____

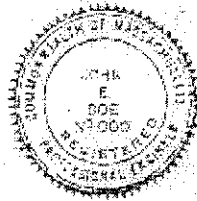
TOWN OF HANSON, MASSACHUSETTS
PLANNING BOARD

FORM 1

TITLE BLOCK LAYOUT

APPLICANT OWNER OF RECORD	NAME OF SUBDIVISION AND SECTION IF ANY
	TITLE OR DESIGNATION OF DRAWING AND SCALES
IMPRINT OF DESIGNER'S PROFESSIONAL REGISTRATION STAMP	NAME, TITLE AND ADDRESS OF DESIGNER
	DATE SHEET ____ OF ____

TYPICAL TITLE BLOCK

HANSON DEVELOPMENT CORPORATION	SUNNYBROOK FARMS HANSON, MASS.
	PLAN AND PROFILE OF REBECCA ROAD (STATION 0+00 TO STATION 5+25)
	HORIZ. SCALE: 1"=40' VERT. SCALE: 1"=4'
	JOHN DOE ENGINEERING COMPANY HANSON, MASS. JUNE 21, 1980 SHEET 2 OF 5

TOWN OF HANSON, MASSACHUSETTS
PLANNING BOARD

FORM J
CERTIFICATION OF CONSTRUCTION

Developer: _____ Telephone: _____
Subdivision: _____
Street: _____
From Station _____ to Station _____

<u>CONSTRUCTION SEQUENCE</u>	<u>Date approved</u>	<u>Approved by</u>
1. Clearing and grubbing of Right-of-Way	_____	_____
2. Sub Grade Preparation & Rough Grading	_____	_____
3. Temporary Street Signs	_____	_____
4. Drainage (below grade) Installation	_____	_____
5. Water Mains Installation	_____	_____
6. Underground Utilities		
a. Electricity	_____	_____
b. Telephone	_____	_____
c. Gas	_____	_____
d. Cable	_____	_____
7. Sub Base Grading	_____	_____
8. Compaction Test	_____	_____
9. Permanent Street Signs	_____	_____
10. Base Grading	_____	_____
11. Penetration	_____	_____
12. Bituminous Concrete Binder Course	_____	_____
13. Castings and Curb Inlets	_____	_____
14. Water Gates, Shutoffs and Hydrants	_____	_____
15. Bituminous Concrete Surface Course	_____	_____
16. Curbing Installation	_____	_____
17. Sidewalk Construction	_____	_____
18. Shoulders (loamed & seeded)	_____	_____
19. Bounds	_____	_____
20. Clean-up & Final Inspection	_____	_____

NOTES: Items 5 & 14 are to be approved by the Water Board.

The items under (6) are to be approved as completed by a representative of each specific utility company. A letter authorizing said representative to make said approval shall be filed with the Board.

All other items are to be approved by the Superintendent of Streets.

The approval of any stage is for the purpose of proceeding to the next stage and does not relieve the developer from repairing, correcting, renewing or replacing any defects or imperfections in the construction, the construction method, or quality of materials discovered before the final inspection.

Upon completion of the Certification of Construction, the Planning Board shall make an inspection of the street and notify the developer in writing of any defects that must be corrected.

TOWN OF HANSON, MASSACHUSETTS
PLANNING BOARD

FORM K
COMPLETION COST ESTIMATE

Developer: _____
Subdivision: _____
Street: _____ From Station _____ to Station _____

<u>DESCRIPTION</u>	<u>UNIT</u>	<u>QUANTITY</u>	<u>UNIT PRICE</u>	<u>TOTAL</u>
ROADWAY				
1. Clearing & Grubbing	Acre			
2. Rough Grading	c.y.			
3. Gravel (Deliver,place,compact)	c.y.			
4. Bit. Con. Binder Course	Ton			
5. Bit. Con. Wearing Course	Ton			
6. Bit. Con. Berm	l.f.			
7. Curbing	l.f.			
8. Penetration	s.y.			
SIDEWALKS & BIKEWAYS				
9. Gravel(Deliver,place,compact)	c.y.			
10.Bit. Con. Binder Course	Ton			
11.Bit. Con. Wearing Course	Ton			
12.Concrete sidewalk/bikeway	s.y.			
DRAINAGE				
13. Manholes	Ea.			
14. Catch Basins	Ea.			
15. Reinforced Concrete Pipe	l.f.			
16. Headwalls (including security grate)	Ea.			
17. Riprap	s.y.			
UTILITIES				
18. Water Lines (including ftgs)	l.f.			
19. Hydrants	Ea.			
20. Gate Valves	Ea.			
21. Sewer Lines	l.f.			

22. Sewer Manholes	Ea.
23. Electric, Cable & Telephone Lines	1.f.

<u>DESCRIPTION</u>	<u>UNIT</u>	<u>QUANTITY</u>	<u>UNIT PRICE</u>	<u>TOTAL</u>
24. Street Lighting (Poles & Fixtures)	Ea.			
25. Gas Lines	1.f.			

MISCELLANEOUS ITEMS

26. Monuments	Ea.
27. Street Signs	Ea.
28. Street Trees	Ea.
29. Loam & Seed Grass Strip s.y. and Shoulders	
30. Flush Drainage System & Clean-up	1.s.
31. Additional Costs	1.s.
32. Engineering	1.f./st.
Sub-Total	
Construction Cost Increase (10% per year)	
Retainage @ 20% of total:	

TOTAL SURETY REQUIRED

TOWN OF HANSON, MASSACHUSETTS
PLANNING BOARD

FORM L
FEE SCHEDULE

FORM A/ANR \$50 plus \$5 per lot for each lot in excess of 5 lots

PRELIMINARY \$100 filing fee. \$500 for the first lot and
SUBDIVISION \$10 for each remaining lot. (Preliminary plans
will be sent to an engineer for review)

DEFINITIVE \$250 filing fee. (Escrow Deposit of) \$2000 for
SUBDIVISION the first lot, \$200 for the next 10 lots, and
\$100 per lot for all lots exceeding 11.

RELEASE OF \$50 per lot
COVENANT

APPENDIX

APPENDIX 1-

ENVIRONMENTAL AND COMMUNITY IMPACT STATEMENT

Applicability:

- a. Any subdivision of any residential subdivision which creates frontage for forty (40) or more dwelling units and 11 or more non-residential subdivisions, shall be accompanied by eight (8) copies and electronic file of an Environmental and Community Impact Analysis. The Board may require portions of this Analysis be carried out for shorter roads if, in their opinion, the sensitivity of the land, neighborhood or infrastructure warrants the investigation. The Environmental and Community Impact Analysis shall clearly and methodically assess the relationship of the proposed development to the natural and man-made environment of Hanson. This report shall be prepared by professionals qualified, experienced, and, as applicable, licensed, in their fields. Such professionals may include Registered Professional (Civil) Engineers, Traffic Engineers, Architects, Landscape Architects, Land-Use Planners, Hydrologists, Biologists and other environmental professionals. The applicant shall bear the cost of this analysis.
- b. Any further subdivision of land, over a period three years (the term beginning at the recording date of the prior plan), which in total creates eleven lots, shall be required to meet the above requirements. The Planning Board may waive such requirement as it applies to this item.

Purpose:

This analysis shall be a guide to the Planning Board in its overall deliberations. It will also build into the Board's decision-making process consideration of the environmental and community impacts of the proposed development.

Concerns to be Addressed:

For each of the components of the Environmental and Community Impact Analysis listed under paragraph 4 below, each of the following concerns must be separately and completely addressed:

- a. The Environmental and Community Impacts of the Proposed Development - The primary and secondary environmental and community impacts, both beneficial and adverse, anticipated as a result of the proposed development; this section shall include all impacts resulting from construction through completion and use;
- b. Adverse Impacts which cannot be avoided should the proposed development be implemented - This section shall describe the kinds and magnitudes of adverse impacts which cannot be reduced in severity or which can be reduced in severity but not eliminated;
- c. Alternatives to the proposed development - This section shall develop, describe, and objectively weigh alternatives to the proposed development which are allowed by the Zoning By-law; and

d. Measures to be used to minimize adverse environmental and community impacts- Describe the corrective and protective measures which will be taken, as part of the project, to minimize adverse impacts shall be described in detail.

Topics to be Evaluated and Level of Detail Required:

The Applicant, as part of a Preliminary Subdivision Plan submitted in accordance with the requirements of Section 4, shall provide a draft Environmental and Community Impact Analysis. The Planning Board, upon review of the draft Environmental and Community Impact Analysis, shall specify which of the following topics shall be evaluated in detail, within the Definitive Plan submittal. If no preliminary subdivision plan is submitted, the Environmental and Community Impact Analysis shall evaluate all of the following topics:

Natural Environment

- a. Air and Noise Pollution - The impact of local air quality and noise from the proposed development (including traffic generated from the development), both during and after construction, shall be evaluated; for larger developments (over 30 dwelling units) the Planning Board may require detailed technical reports of such impacts;
- b. Water Pollution - The impact of storm water run-off on adjacent and downstream surface water bodies and sub-surface ground water shall be evaluated; dangers of flooding as a result of increased downstream runoff, especially peak runoff; and the impact of the proposed project on water table levels shall also be analyzed;
- c. Land - Compatibility of the proposed development with existing topography, unique soils; the impact of any soils or other such materials to be removed from or added, to the site; and the potential dangers and impacts of erosion and sedimentation caused by the proposed development;
- d. Plants & Wildlife - The impact that the proposed project may have on wildlife habitat and on any rare or endangered plant or animal species known to exist in the area;
- e. Water Supply - The average and peak daily demand and the impact of such demands on the municipal water system as well as ground water supplies; and
- f. Sewage Disposal - The average and peak daily disposal and the impact of each disposal on the ground water.

Man-Made Environment

- a. Existing Neighborhood Land Use - Compatibility with adjacent or nearby existing land uses, or approved private development plans, if known, for adjacent or nearby land use changes to occur during the life of the proposed development; if not compatible, reasons therefore shall be detailed; and
- b. Zoning - Compatibility of proposed development with the purposes of the Zoning By-Law and the Zoning district(s) within which the site is located.

Public Services

- a. Schools - The expected impact on the school system, both elementary and secondary

levels, and the number of students;

b. Police - The expected impact on police services, time and manpower needed to protect the proposed development and service improvements necessitated by the proposed development;

c. Fire - Expected fire protection needs; on-site fire fighting capabilities; on-site alarm or other warning devices; fire-flow water needs, source and delivery system and other needs shall be presented; fire department service improvements necessitated as a result of the proposed project shall also be discussed;

d. Recreation - On-site recreation provisions shall be detailed and off-site recreation demands shall be estimated; provision for public open space, either dedicated to the Town or available to its residents or employees shall also be described;

e. Solid Waste Disposal - Analysis of the projected volume and type of solid waste to be generated by the proposed development and methods of removal;

f. Traffic - The expected impact of traffic generated by the proposed development on area roadways; discussion shall include existing average and peak traffic volumes and composition, projected average and peak traffic generation and composition, intersection impacts and analysis of area roadway and intersection capacities; methodologies used to make projection shall be included; and

g. Highway - Projected needs, responsibility and costs to the Town of roadway maintenance shall be analyzed; impacts of construction equipment on area roadways shall also be discussed and the impacts of road work to be defined during construction.

Aesthetics

a. Lighting - The type, design, location, function and intensity of all street lighting facilities shall be described; attention given to safety, privacy, security, and daytime and nighttime appearance shall be detailed;

b. Landscaping - Provisions for landscaping shall be described including type, location and function of all plantings (see enclosed best development practices (BDP) conservation plants list) and materials; and

c. Visual - Attention given to views into the site and from the site shall be described; included shall be long-distance views as well as views to and from adjacent properties.

Planning

Analyze the compatibility of the proposed development and its alternatives with the goals and objectives of the most recent Master Plan and the most recent Open Space and Recreation Plan.

Traffic Impacts

The applicant shall provide an analysis of development impact which, at a minimum, includes the following:

a. The existing Level of Service (LOS - see definition below) of relevant road systems including quantitative and qualitative measurements of operational factors including speed, travel delay, freedom to maneuver and safety;

b. The expected change in the condition of relevant road systems as a result of the

proposed development;

c. The comparison on a per-acre basis of the total vehicular traffic generation from the proposed development with:

i) The existing and potential vehicular traffic generation from all other developments accessing relevant road systems; and

ii) The vehicular traffic generation which would be expected to produce a LOS below LOS "C"; and

d. In determining the impact of vehicular traffic generation from a development, the following standards and definitions shall be used (unless the applicant demonstrates to the Planning Board that given the nature of the proposed project or applicable road systems, other standards are appropriate:

i) Trip generation rates for land uses as listed in the most recent update of Trip Generation, Institute of Transportation Engineers, Washington, D.C.; and

ii) Levels of Service: "Level of Service (LOS) is a term which traffic engineers use to define the various operating conditions that occur on a roadway or intersection when accommodating various traffic volumes; although LOS is a qualitative measure of traffic flow, it is an acceptable measurement for determining overall impact of development on roadway networks; LOS "A" is associated with relatively free-flow and average overall traffic speed in excess of 30 miles per hour; LOS "B" represents stable flow with minor delays and speeds of 25 miles per hour or greater; LOS "C" corresponds to the design capacity of a road system and indicates stable flow with delays, and speeds of 20 miles per hour or more; LOS "D", "E", and "F" correspond to decreasing abilities to travel greater than 15 miles per hour and correspond to the over-capacity of the road system.

Cost/Benefit Analysis

The Applicant shall provide a cost/benefit analysis of the development at full build-out; this municipal cost/benefit analysis should follow standard and usual procedures for measuring both the benefits to be derived and costs to be incurred by the Town of Hanson as a result of the proposed development; this also should estimate net benefits or costs of non-quantifiable environmental impacts.

Cost Estimate

The applicant shall provide a complete cost estimate for the proposed subdivision street utilities, storm water management and erosion protection facilities, landscape and other portions of the proposed infrastructure required for the subdivision development. The cost estimate will be used to determine the amounts required for performance bonds, or other types of guarantee, and for estimates of inspection costs.

The estimate shall include quantities of all materials and work, and the unit prices used by the applicant to produce the cost estimate.

APPENDIX 2-

SOIL EROSION AND SEDIMENTATION CONTROL PLAN

1) Soil erosion and sedimentation control plan shall be provided at the time of definitive plan submission.

The plan shall be prepared and signed by a person or firm qualified by training and experience to have expert knowledge of erosion and sedimentation control methods. Documentation of qualification shall be provided to the Board.

2) The plan shall consist of three parts:

(a) A narrative intended to summarize for the plan reviewer the project aspects important for erosion control. At a minimum, the narrative shall contain:

- (i) a brief description of the proposed land-disturbing activities, existing site conditions and adjacent areas (such as streams, protected Wetland Resource Areas as defined by the Hanson Wetlands Protection Bylaw) that might be affected by the land disturbance;
- (ii) a description of critical areas on the site (areas that have potential for serious erosion problems);
- (iii) the expected length of time of destabilization;
- (iv) a brief description of the measures that will be used to control erosion and sediment on the site, including both temporary and permanent measures. The plan should specify contingency actions to winterize the site if construction should fall behind schedule.
- (v) a maintenance program, with provisions for frequency of inspection, reseeding of vegetated areas, repair or reconstruction of damaged structures, cleanout method and frequency, disposal of waste materials and disposition of control measures after they have served their purpose.

(b) A separate map using the standard symbols contained in the appendix of these Rules and Regulations. This map shall show:

- (i) existing site contours at an interval sufficient for distinguishing runoff patterns before and after disturbance.
- (ii) limits of clearing and grading;
- (iii) proposed final contours;
- (iv) location of the project relative to highways, municipalities, major streams or other identifiable landmarks (locus map);
- (v) existing vegetation (grassy areas, major groups of trees and unique species);
- (vi) surface extent of each soil type and relative erodibility as determined by the United States Department of Agriculture, Soils Conservation Service Soil Survey.
- (vii) critical areas within or near the project area, such as streams, lakes, protected Wetland Resource Areas as defined by Hanson Wetlands

Protection Bylaw, MGL Chapter 131, s. 40, or major drainage ways;
(viii) location and types of both temporary and permanent control measures;
(ix) dimensional details of facilities.

(c) Details including:

- (i) detailed drawings of erosion and sediment control structures, showing key dimensions and other important details;
- (ii) design assumptions and calculations for structural measures such as sediment basins, channels and outlet protection;
- (iii) seeding specifications;
- (iv) maintenance noted.

3) The following documents may be used or referred to in the preparation of the soil erosion and sedimentation control plan:

- (a) Guidelines for Soil and Water Conservation by the United State Department of Agriculture Soil Conservation Service.
- (b) Manual of Standards for Erosion and Sediment Control Measures.
- (c) Soil Survey of Plymouth County, MA, by United State Department of Agriculture Soil Conservation Service.
- (d) Urban Hydrology for Small Watersheds, Technical Report 55, by United States Department of Agriculture Soil Conservation Service.

The plan must include the measures that will be implemented, both short and long term to prevent erosion.

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.

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 temporary 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 could then washes into the drainage system, the construction of a crushed stone apron (min. 30' wide X 50' long) for vehicles entering home or any construction sites will be required as part of the erosion control plan.

Dirt tracked onto an existing Public Way 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 of one acre. Such sites shall have a Storm Water Pollution Prevention Plan (SWPPP) available on site at all times.

APPENDIX 3 -

GRADING, DRAINAGE AND UTILITIES PLAN

The Plan shall be prepared at a scale of 1"=40' with a two (2) foot contour interval, unless otherwise required by the Board; and show the following information:

1. Existing and proposed boundaries of all lots, streets, ways and easements within and adjacent to the subdivision;
2. Existing contours in the subdivision and extending 50' beyond the perimeter of the subdivision. Spot elevations shall also be shown in areas where the existing grades are 1% or less;
3. Proposed contours indicating the finished grades of all proposed construction in the subdivision. Spot elevations shall also be shown in areas where the finished grades are less than 1%;
4. The extent of all existing and proposed streets, drives, walks, handicap ramps, parking areas and the like;
5. Center line with stations interval of all proposed streets;
6. All stone walls, fences, and cart paths within, bounding or crossing the subdivision;
7. All existing structures in the subdivision and within 50' of the perimeter of the subdivision;
8. All existing wells and septic systems, that can be observed and/or are on file with the Town of Hanson Board of Health, in the subdivision and within 100' of the perimeter of the subdivision;
9. Location of all proposed structures, wells, and septic systems in the subdivision, including all required setback dimensions to lot lines, wells, septic systems and presumed Wetland Resource Areas boundaries;
10. Location and identification of all groundwater observation and percolation test pits and/or borings in or adjacent to the subdivision. Logs of observed data of these tests shall be depicted on the definitive subdivision plans (use an additional sheet, if necessary);
11. Existing and proposed water courses, drainage ditches, streams, brooks, water bodies, swales, retention and/or detention basins and other stormwater management structures including annual and 100 year high water elevations;
12. Where feasible, indicate location and identification of all Wetland Resource Areas boundaries in and within 100' of any proposed construction, land regarding and/or Wetland Resource Areas alteration within the subdivision. Wetland Resource Areas boundaries shall be delineated in the field with numbered flags by a qualified Wetland Resource Areas specialist, surveyed and shown on the plan(s) with the reference to flag numbers. The resource areas shall be identified in accordance with the Massachusetts Wetland Protection Act (M.G.L. c.131, s.40), and the Town of Hanson Wetlands Protection Bylaw article 3-13;
13. The location of the 100 year flood boundary, as shown on the Flood Insurance Rate Map (FIRM), in and within 100' of the subdivision;
14. The location and type of all existing and proposed above and below ground utilities;

15. The location and identification of all permanent project bench marks in the subdivision. A minimum of two (2) bench marks are required for each street;
16. The location, size and type of all proposed street trees. Street tree species (i.e. flowering Bradford) shall be in accordance with the BDP conservation plant list and accepted installation practices;
17. The location and methods of all proposed erosion/sedimentation control within the subdivision;
18. The location of proposed stock pile area(s) for "earth" materials;
19. Existing and legally allowed stump dump(s);
20. The location of proposed area(s) for disposal of surplus "earth" materials. The finished grades of these areas shall be indicated by contours and/or spot elevations with the volume of "fill" indicated;
21. The location of area(s) to be utilized for borrow materials. The finished grades of these areas shall be indicated by contours and/or spot elevations with the volume of material indicated;
22. If excess "earth" materials are proposed to be disposed of off site, then a notation stating the volume of "earth" to be removed, as defined in the Town of Hanson Zoning By-law, shall be provided on the plan(s). Permits for such earth removal shall be obtained from the Special Permit Granting Authority prior to filing a definitive subdivision plan. This volume shall include all amounts of earth proposed to be removed for the construction of streets, sidewalks, driveways, structures, and all other improvements related to the subdivision. If no earth material is to be removed, a statement to such effect shall be included on the plan(s);
23. A notation stating the volume of "fill" material proposed to be obtained off site including borrow, gravel, and other materials necessary for the construction of the streets, sidewalks, driveways, structures, and all other improvements related to the subdivision;
24. A note which says "No building or structure shall be built or placed on any lot without a permit from the Board of Health, if such a permit is required."

APPENDIX 4-

SUBDIVISION INSPECTION CHECKLIST

Subdivision Name: _____

Plan Title: _____

PRELIMINARY INSPECTION

Prior to any formal inspections, the developer shall provide the following permits for the Subdivision Inspector's (SI) review (unless all permits are "in hand" or shown to be otherwise not applicable, the Subdivision Inspector (SI) is not authorized to perform inspection):

____ Planning Board Approval.

____ Street Opening Permit.

____ Water Extension Permit (including the pro forma water pressure and flow calculations).

____ Building Permit(s).

____ Conservation Commission, Orders of Condition, Determination of Applicability or other applicable documentation.

____ All requirements of Form L have been met and all other permits issued.

____ All easements have been obtained.

____ Site orientation and free flagging.

FIRST INSPECTION

____ 4" street trees set at least five feet back from pavement; and 12" lot trees; fenders installed?

____ Assure no fill has been placed.

____ Assure no loam has been removed, except in street area.

____ Removal of all stumps, brush, roots, and boulders in right of way.

____ Removal of topsoil in roadway and sidewalks to a depth of at least 21" below finish grade, or deeper to assure sound foundation.

SECOND INSPECTION

____ Drainage system (no backfill):

() Assure all drains are of reinforced concrete, with headwalls and endwalls or riprap - minimum 12" diameter.

() Minimum slope shown on the plan.

() Are the basins located at:

() all low points of drainage

() adjacent to low point catch basins

() all intersections

____ Water System:

() Pipe meets minimum diameter and class standards as set by Water Department?

() Is pipe bedded and joined properly?

- ☐ Has pipe been pressure-tested?
- ☐ Has pipe been disinfected?
- ☐ Are all gate valves and hydrants (and hydrant pipes) installed as shown on the plan?
- ☐ Have as-built field notes/ties been kept for all gate valves, curb cocks, tees and elbows and are dead-end house services marked by 3' pipe above ground?
- ☐ Are hydrant breakaway flanges 2" above finish grade?
- ☐ Each nozzle and pumper outlet at least 18" above grade once installed?
- ☐ Are hydrants anchored by mechanical means or thrust blocks?
- ☐ 1/2 Yard of 2" stone around hydrant for drainage?
- ☐ Stone placed to 6" above hydrant drain?
- ☐ All hydrants at least 20' away from intersections and within 1' of curb line?
- ☐ Has the hydrant been flow tested and inspected for proper drainage?

____ Electrical System (sign-off).

THIRD INSPECTION

____ Backfilling and compaction of trenches:

- ☐ Test for 95% compaction?

FOURTH INSPECTION

____ Gravel sub base 12" (identify source of gravel and test if against this standard):

- ☐ 2inch sieve at 100%
- ☐ 1/2 inch sieve at 50% - 85% passing
- ☐ 3/8 inch sieve at 45% - 80% passing
- ☐ #4 sieve at 40% - 75% passing
- ☐ #10 sieve at 50% passing
- ☐ #40 sieve at 8% - 35% passing
- ☐ #200 sieve at 5% passing

____ Assure subgrade street does not exceed allowable slopes:

- ☐ granite curbing in the following cases:
- ☐ headwalls and endwalls for storm drains and catch basins.
- ☐ at all intersections of streets.

____ Obtain job mix formula for bituminous concrete pavement courses.

FIFTH INSPECTION

____ Check thickness of base course (2" minimum):

____ Check thickness of binder course (2" minimum):

- ☐ Core samples taken.

____ Check for width of pavement:

SIXTH INSPECTION

____ Test (by core samples), thickness of top course (min. 1 1/2").

____ Compare by extraction analysis to job formula.

SEVENTH INSPECTION

____ Sidewalks, subgrade established by removal of existing materials.

____ Cleared areas - 6" compacted topsoil and seeding.

____ Side slopes finish grade loomed and seeded.

____ Street trees planted.

____ Street lights installed.

____ Monuments installed to grade at all locations on definitive plan.

____ Hydrant pipe 7' above grade, 3' in ground, set in concrete,
painted red, 2' to the rear of the hydrant.

____ Street name signs - 2" diameter posts, 7' clearance above grade, 30" in ground set in
concrete. Signs to be cast, double-faced of current Town Standard.

EIGHTH INSPECTION

____ Final cleanup.

____ Completion of Form J.

____ Maintenance:

() All drains and catch basins cleared during lot construction?

() Completion of Form K.

COMMENTS:

APPENDIX 5 -

APPROVAL NOT REQUIRED PLAN CHECKLIST (PROVIDED AS A GUIDE)

Petitioner: _____

Meeting Date: _____

1. _____ Application filed
2. _____ Fee paid/amount
3. _____ Eight copies of plan filed along with mylar
4. _____ Name and address of owner of record, petitioner & surveyor
5. _____ Deed reference or land court certificate number noted on plan
6. _____ Plan reference noted on plan
7. _____ Date of application noted on plan
8. _____ Location of all existing structures and septic systems
9. _____ Minimum frontage on approved way (meeting current zoning requirements)
10. _____ Direct abutters noted by name and parcel number
11. _____ Delineation and gross area - square feet and acres
12. _____ Delineation and gross area of wetlands- sq. feet and acres
13. _____ Delineation and gross area of uplands - (sq. feet)
14. _____ Net area of each lot (sq. feet)
15. _____ Net area of each lot of wetlands and upland - (sq. feet)
16. _____ North arrow, locus sketch, date and scale
17. _____ Notation: "Planning Board endorsement does not certify compliance with
Zoning Bylaw."
18. _____ Notation: "No official verification of any wetlands has been made or intended
by Planning Board endorsement."
19. _____ Signature block
20. _____ Stone fences and public shade trees

APPENDIX 6 -

PRELIMINARY PLAN APPLICATION CHECKLIST (PROVIDED AS A GUIDE)
(To be submitted by applicant with application)

Applicant: _____

Planning Board Meeting Date: _____

- _____ 1. Subdivision name, boundaries, north arrow, scale, legend and title, "Preliminary Plan".
- _____ 2. Name of the record owner, applicant, engineer and surveyor.
- _____ 3. Existing and proposed lines of streets, easements and any public areas within the subdivision.
- _____ 4. Existing and proposed public water supply and utilities in the area.
- _____ 5. Existing and proposed system of surface water, drainage and existing and proposed method of sewage disposal.
- _____ 6. Approximate boundary lines of proposed lots, with approximate areas and dimensions.
- _____ 7. Names, approximate location and widths of streets within 200' of property.
- _____ 8. Topography of the existing land at two (2)-foot contour intervals.
- _____ 9. 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, wetlands, waterways, drainage ways, aquifer protection watershed, and ponds, noting those being disturbed by proposed ways, drainage easements, or any change in topography.
- _____ 10. 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.
- _____ 11. Zoning of proposed subdivision and contiguous parcels.
- _____ 12. Existing on-site structures including septic systems.
- _____ 13. Names and nine-digit parcel numbers of all direct abutters as they exist on the most recent tax list.
- _____ 14. Physical, geological, environmental and other characteristics unique to the site but not covered in 1-15 above.
- _____ 15. COPIES of the plan are required. The signature block must be in the same space on each page.

FEES: Application Fee

Escrow Account: (Separate check payable to the Town of Hanson. W-9 form required).

APPENDIX 7-
DEFINITIVE PLAN APPLICATION CHECKLIST (PROVIDED AS A GUIDE)
(To be submitted by applicant with application)

Applicant: _____

Planning Board Meeting Date: _____

- _____ 1. Subdivision name, boundaries, north arrow, scale, legend and title, "Definitive Plan".
- _____ 2. Name of the record owner, applicant, engineer and surveyor.
- _____ 3. Existing and proposed lines of streets, easements and any public areas within the subdivision.
- _____ 4. Existing and proposed public water supply and utilities in the area.
- _____ 5. Existing and proposed system of surface water, drainage and existing and proposed method of sewage disposal.
- _____ 6. Approximate boundary lines of proposed lots, with approximate areas and dimensions.
- _____ 7. Names, approximate location and widths of streets within 200' of property.
- _____ 8. Topography of the existing land at two (2)-foot contour intervals.
- _____ 9. 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.
- _____ 10. An outline of all areas within the Wetland and Watershed Protection District and/or Aquifer Protection Overlay District (APOD).
- _____ 11. 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.
- _____ 12. Zoning of proposed subdivision and contiguous parcels.
- _____ 13. Existing on-site structures including septic systems.
- _____ 14. Names and nine-digit parcel numbers of all direct abutters as they exist on the most recent tax list.
- _____ 15. Physical, geological, environmental and other characteristics unique to the site but not covered in 1-14 above.
- _____ 16. COPIES of the plan are required. The signature block must be in the same space on each page.
- _____ 17. Environmental and community Impact Statement
- _____ 18. Soil Erosion and Sedimentation Control Plan
- _____ 19. Drainage Calculations
- _____ 20. Grading, Drainage, and Utilities Plan

FEES: Application fee (Check payable to the town of Hanson).

ESCROW ACCOUNT: (Check payable to the town of Hanson).

APPENDIX 8 -

AS-BUILT PLAN AND PROFILE REQUIREMENTS

As-built plans showing the location, grades, and other significant information regarding utilities shall be prepared by the applicant's professional land surveyor and turned over to the Planning Board prior to the final approval of the improvements and release of security as hereinafter provided. This will be done by submitting Mylar(s) and computer disk(s) of the subdivision's metes and bounds as prepared in accordance with the Rules and Regulations of the Registers of Deeds, Chapter 82, Section 17 thru 23 and this section. Additionally, a surveyor's certificate signed and sealed by a registered professional land surveyor in the Commonwealth of Massachusetts must be furnished to the Planning Board. The certificate shall state that all bounds have been set in accordance with the subdivision plan filed and recorded at the Registry of Deeds. Also included will be the plan number, year, plan book and page of the recorded plan.

The subdivider shall file with the Planning Board an As-built plan on mylar, three (3) copies and electronic format compatible with town requirements depicting street or streets, utilities and easements together with proper legal descriptions. The subdivider shall grant a deed to the Town of all the streets, utilities and easements, as contained in the plan said deed to be recorded by the Town upon acceptance of the streets by the Town Meeting.

1. The As-built plan will meet the following criteria:

- a. Scale 1":40'
- b. 24" x 36" sheets (max.)
- c. Index Plan at 1"=100'
- d. A signature block for the Planning Board to sign when the road is acceptable to recommend acceptance as a public way.
- e. Professional Land Surveyor's signature and stamp
- f. Lot numbers
- g. Name of subdivision
- h. Name of street(s)
- i. Date
- j. Name of owner
- k. Name of subdivider
- l. Name of design engineer
- m. North point and reference
- n. Bench marks(NAD88 Datum)
- o. Locus map(1"=600')
- p. Intersecting boundary lines of abutting land
- q. All necessary bearings, lengths of lines and radii, tangents, arc lengths, and central angles of curves of all street lines, boundary lines, and areas needed to adequately described but not limited to

the following:

1. Streets
2. Ways
3. Easements
4. Common or public areas

r. Sufficient data to determine the locations, elevation, direction and length of:

1. Streets
2. Ways
3. Boundary Lines
4. Pavement and right of way widths
5. Location of permanent monuments

a. A minimum of three of the permanent concrete monuments shall have their North American Datum (NAD83) horizontal datum coordinates and United States Geological Survey (USGS) vertical datum coordinates shown on the final As-built. The Planning Board or their designee shall determine which three monuments are chosen. More monuments may be chosen if deemed necessary by the Board or their designee.

6. Location and names of streets intersecting the subject area

s. The following shall be accurately located by survey on the plan (station and offset where appropriate):

1. Storm drains and all appurtenances
2. Water mains and all appurtenances
3. Sewer mains and all appurtenances
4. Other underground and above ground utilities (electric, telephone, gas, etc.) And all appurtenances.
5. Hydrants
6. Water services, gate valves and sewer services including ties to buildings and other permanent structures
7. Street signs
8. Headwalls
9. Wheelchair ramps
10. Guardrails
11. Curbing and or berms
12. Edge of pavements

t. Sizes and material type of the following:

1. Storm drains
2. Water mains
3. Sewer mains
4. Gas mains

u. Sidewalks and driveways

v. NAD88 elevation datum

If the approved subdivision used a different datum then the conversion shall also be supplied.

- w. NAD88 bench marks
- x. Original datum bench mark described
- y. Rates of gradients for drainage and sewer mains.
- z. Roadway centerline stationed
- aa. Offsite easements shown and completely described.
- bb. The As-built profiles should meet the following requirements:
 - 1. Horizontal scale: 1" = 40' Vertical scale: 1" = 4'
 - 2. Center line grades-heavy line
 - 3. Grade elevations at 50' stations
 - 4. Locations of the following (station and offsets as appropriate):
 - a. Storm drains and all appurtenances
 - b. sewer mains and all appurtenances
 - c. headwalls
 - 5. Sizes and material type of the following:
 - a. storm drains
 - b. sewer mains
 - 6. Rims and inverts of the following:
 - a. storm drains
 - b. sewer mains
 - 7. NAD88 elevation datum
 - 8. Rates of gradients for drainage and sewer mains
 - 9. Off street easements shown with all utilities
- cc. 3 ½" x 3 ½" registry block
- dd. Ownership of abutting lots
- ee. Lot lines within 100' of the street right of way &/ or easements.
- ff. The As-built plan must be recordable at the Registry of Deeds or Land Court as applicable as a street acceptance plan.
- gg. Board of Selectmen acceptance signature block.
- hh. A monument certification stating: "I certify that the monuments are set as shown on this plan".

Professional Land Surveyor Date

- ii. A registry certification block stating: "I certify that these plans are prepared in accordance with the Rules and Regulations of the Register of Deeds."

Professional Land Surveyor Date

2. Prior to placement of any bituminous concrete, a Utility As-Built Plan shall be supplied by the applicant three (3) prints to be reviewed and approved by the Planning Board. If after review, should any construction modifications be required by the Planning Board, an additional revised Utility As-Built plan shall also be submitted. The Utility As-Built Plan must meet all applicable and/or revised criteria of Appendix 8. All applicants must sufficiently plan ahead to allow adequate time for Planning Board review and approval prior to scheduling with contractors for paving.

APPENDIX 9-

STREET ACCEPTANCE PLAN CHECKLIST

GENERAL:

- _____ Title Block specifying "Street Acceptance Plan for _____, Hanson, Massachusetts" indicating scale (1" = 40'), Date, Preparer of Plan.
- _____ North Arrow, graphic scale, locus
- _____ Board of Selectmen approval signature box
- _____ Town Clerk certification (filing date and final acceptance date)
- _____ Surveyor certification that plan prepared in conformity with requirements of Registry of Deeds
- _____ Title box for Registry use only
- _____ Roadway location, including all bearings, distances, horizontal curve (radius, turnouts, length of curve)
- _____ Name of street and intersecting streets (each street on a separate sheet showing the acres)
- _____ Names of lot owners on street(s)
- _____ Location of all public easements with written description attached on separate instrument detailing size and purpose.
Street Acceptance Plan shall also have written description of layouts for recording.

APPENDIX 10 -

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 Hanson Planning Board. Whenever the term "MHD Specifications" is used in this section in reference to materials and methods of construction, it shall mean the Standard Specifications for Highways and Bridges of the Massachusetts Highway Department, latest edition, including amendments.

1.0 ROADWAYS

1.1 Clearing and Grubbing

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 Board is to maintain as much of the original natural vegetation as possible within a subdivision. Clearing and grubbing shall be required as follows:

- a) A minimum of ten (10) feet beyond the back of roadway berm
- b) A minimum of four (4) feet beyond the back of sidewalk
- c) Within areas required for grading purposes
- d) Within ten (10) feet of an underground utility
- e) As required to maintain sight lines

Areas to be cleared and grubbed shall be cleared of all stumps, brush, roots, boulders and trees not designated for preservation. Trees to be preserved shall be physically protected from construction operations in a manner satisfactory to the Planning Board. 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.

1.2 Excavation and Subgrade Preparation

All topsoil shall be removed for the full width of the paved roadway, under the six (6) foot wide grass shoulders and under sidewalks, regardless of whether the finished grade is above or below existing grade. All other material shall be removed for the full length and width of roadway to the proposed roadway subgrade. If the soil below the proposed subgrade contains undesirable material which will affect the structural integrity of the pavement such as clay, soft or spongy material, sand pockets, tree stumps, or other material detrimental to the subgrade, such material shall be excavated and removed as required by the Board's agent. Excavation below subgrade shall be backfilled with processed gravel per Section M1.03.1 of the "MHD Specifications" and compacted.

1.3 Grading

All roadways shall be brought to a finished grade as shown on the vertical roadway profiles of a Definitive Plan. Before sub-base material is spread, the subgrade shall be shaped to a true surface conforming to the proposed cross section of the roadway and sidewalk and compacted in accordance with Section 170 in the "MHD Specifications". Roadway crown shall be a minimum of 1/4 inch per foot.

1.4 Pavement Sub-Base

After the roadway subgrade has been carefully graded and compacted, a pavement sub-base layer consisting of the following shall be spread and compacted:

- a) Eight (8) inches of processed gravel for sub-base meeting the requirements of Section M1.03.1 of the "MHD Specifications" except that the maximum stone size shall be two (2) inches. Spread and compact the material in accordance with the requirements of Section 405 of the "MHD Specifications".
- b) Four (4) inches of dense graded crushed stone for sub-base meeting the requirements of Section M2.01.7 of the "MHD Specifications". Spread and compact the material in accordance with Section 402 of the "MHD Specifications".

1.5 Pavement and Wearing Surface

After the pavement sub-base has been carefully graded and compacted, the pavement shall be constructed. The pavement shall consist of the following:

- a) Three (3) inches of Class I Bituminous Concrete Base Course for collector roads, Type I-1 meeting the requirements of Section 420 of the "MHD Specifications".
- b) Three and 1/2 inches of Class I Bituminous Concrete Pavement, Type I-1 binder course for minor and local roads, 2" for collector roads meeting the requirements of Section 460 of the "MHD Specifications". An RS-1 emulsion shall be applied between the base and top courses.
- c) One and 1/2 inches of class I Bituminous concrete pavement, type I-1 top course for all roadway classifications meeting the requirements of section 460.

2.0 SIDEWALKS

2.1 Location, section and dimensions of concrete sidewalks shall be as shown on plate 4A.

2.2 Sidewalks shall be constructed of four (4) inches of cement concrete (6" at driveways) on a minimum six (6) inch gravel sub-base conforming to the requirements of Section 701 of the "MHD Specifications". Concrete shall have a minimum 28 day compressive strength of 3,500 psi with maximum 3/4 inch aggregate. One layer of No. 4, 4 by 4 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 preformed expansion joint filler conforming to Section 9.14.0 of the "MHD 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.

2.5 Refer to section 7.5.12 for Bituminous concrete sidewalk.

3.0 CLEARED AREAS

3.1 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. Composition of seed mixture must be indicated on the Definitive Landscape Plan (see BDP, SPP list). 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, and maintained as required to present a neat appearance during construction of houses in the development.

4.0 UNDERGROUND UTILITIES

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

4.2 Water mains, hydrants and house lateral connections shall be constructed in accordance with the requirements of the Hanson Water Department.

APPENDIX 11 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 alternative.

1.2 MHD SPECIFICATIONS

Whenever the term "MHD Specifications" is used in this section in reference to materials and methods of construction, it shall mean the Standard Specifications for Highways and Bridges of the Massachusetts Highway Department, latest edition, including amendments.

1.3 NOTIFICATION

The contractor shall notify the Town Planner/Board's Agent in writing at least forty-eight (48) hours in advance of beginning any construction.

2.0 MATERIALS

2.1 PIPE

- a) Pipe for storm water management systems shall be reinforced concrete pipe (Class III minimum) except that in off street locations either Bituminous coated, galvanized corrugated metal pipe meeting the requirements of the MHD or corrugated plastic meeting the requirements of Sections M5.02.1 and M5.03.10 of the "MHD 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, water-tight 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 Planning Board. Methods for trench excavation shall be per pipe manufacturer's recommendation, and shown on definitive subdivision plan.

2.2 MANHOLES AND CATCH BASINS

- a) Manholes and catch basins made of precast concrete units shall be conforming to the requirements of Section M4.02.14 of the "MHD Specifications. Concrete for precast units shall have a minimum 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.
- 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 and American made.
- c) Brick and mortar for field adjusting collars shall conform to the requirements of Sections M4.05.02 and M4.02.15 of the "MHD 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 300 pounds. Manhole covers shall have the word "DRAIN" embossed on the cover.
- e) Catch basins shall have a 4' 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 MHD 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 MHD specifications. Steel bar reinforcement shall be ASTM A615, Grade 60. Headwalls and wingwalls shall be designed in accordance with the requirements of the MHD Specifications, latest edition.
- c) All pipe outfalls shall be protected from erosion.

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 storm water management 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, ponds, and wetlands
- 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 dissipators at culvert outlets such as splash pads and rip rap
- g. Silt fences with or without hay bales
- h. Haybales
- i. Other erosion control blankets

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.

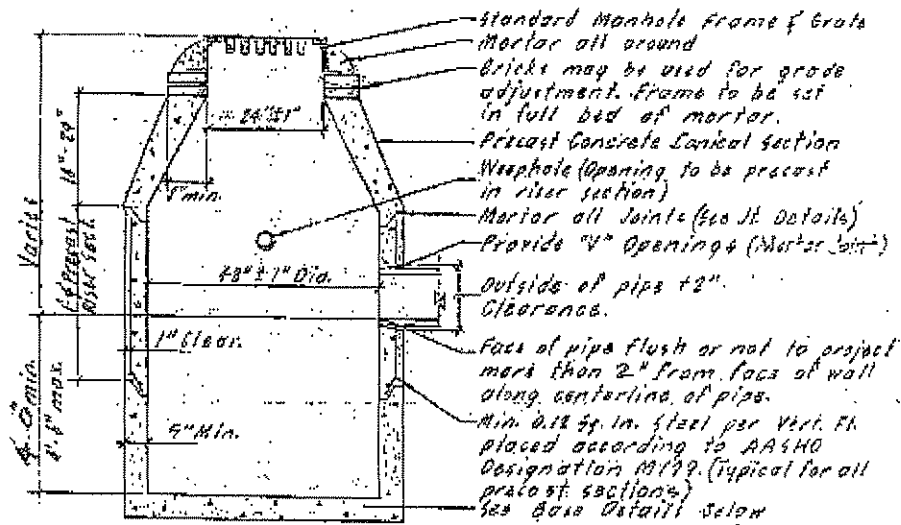
4.4 If the final top course of pavement will not be applied immediately, the catch basin grates shall be temporarily set at the base course elevation to allow storm water to enter the drainage system. When the final top course of pavement is applied, the grate elevations shall be adjusted to meet the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

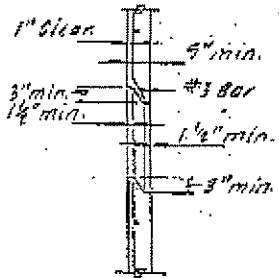
PLATES

PRECAST CONCRETE CATCH BASIN



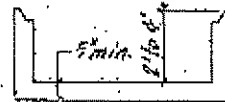
TYPICAL SECTION - CATCH BASIN

Scale: 1/4" = 1'-0"



JOINT DETAIL

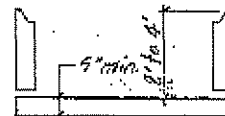
Scale: 1/4" = 1'-0"



PRECAST UNIT



PRECAST BASE



CAST IN PLACE BASE

BASE DETAILS

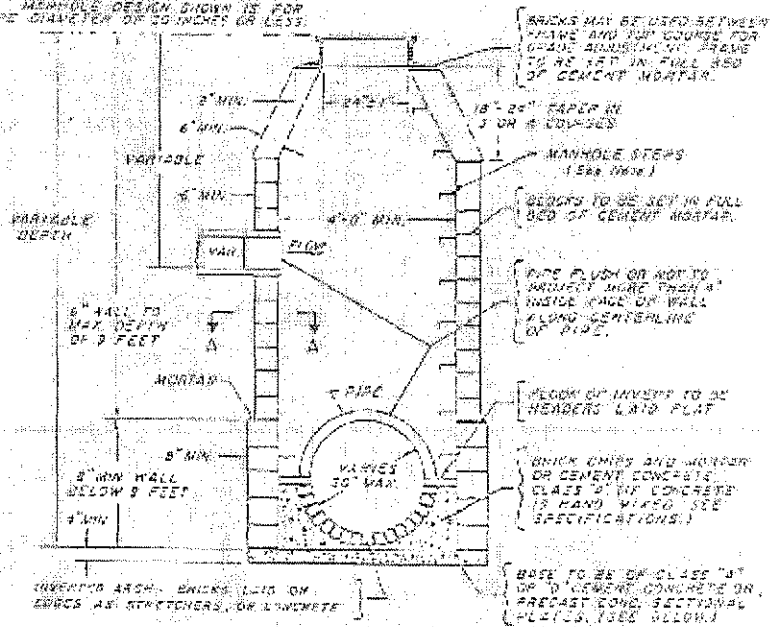
Scale: 1/4" = 1'-0"

HANSON PLANNING BOARD
HANSON, MASSACHUSETTS

PLATE 1-A

CONCRETE BLOCK MANHOLE

NOTE: MAXIMUM DESIGN DRAIN IS FOR
PIPE GRADE FROM 20 INCHES OR LESS



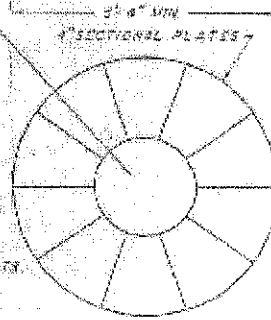
2023年

1. WHOLE STEMS SHALL BE SAFETY TYPE MADE OF ALUMINUM FORGINGS ALLOY F204, TYPE SPACED 12" O.C.
2. BRICK SHALL SCORPION TO ASTM C32, GRADE NO

SOUD SECTION: OR FILL
HOLE WITH GRAVEL AND
MORTAR OR FILL WITH
CLASS "A" OR "B" CONCRETE
(OF HAND MIXED SEE
SPECIFICATIONS.)



SECTION A-4

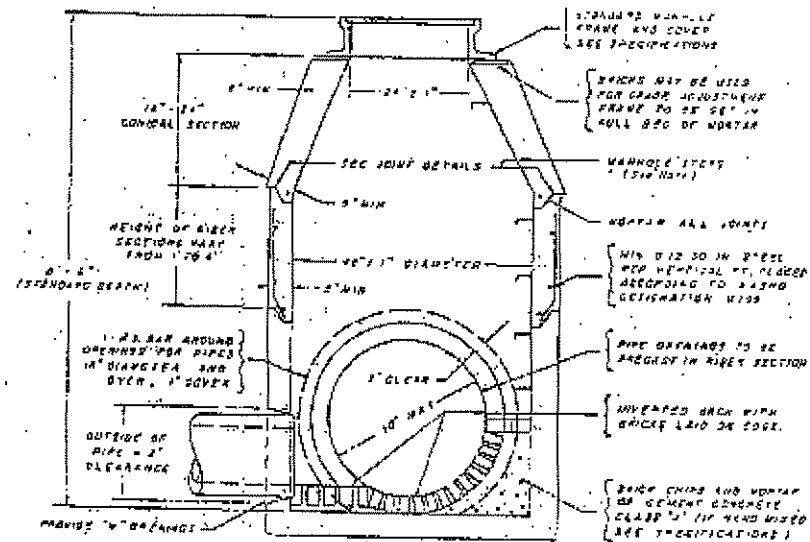


PLAN OF BASE

HANSON PLANNING BOARD
HANSON, MASSACHUSETTS

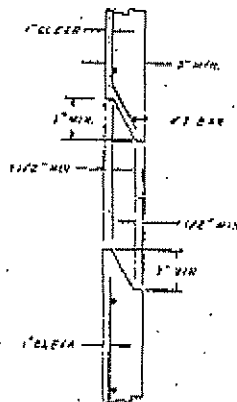
PLATE 2

PRECAST CONCRETE MANHOLE

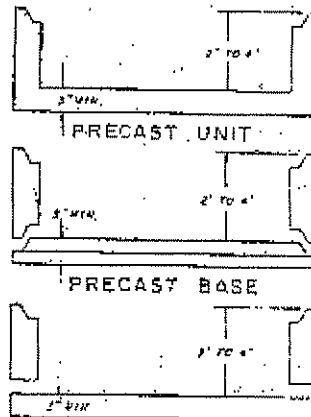


NOTE FOR SECTION, MATERIALS AND CONSTRUCTION METHOD, SEE SPECIFICATIONS

NOTE
MANHOLE STEPS SHALL BE 12" DIA. STEEL OR ALUMINUM CORROSION RESISTANT TO 1/2" DIA. STEEL



JOINT DETAILS



CAST IN PLACE BASE
BASE DETAILS

HANSON PLANNING BOARD
HANSON, MASSACHUSETTS

PLATE 2-A

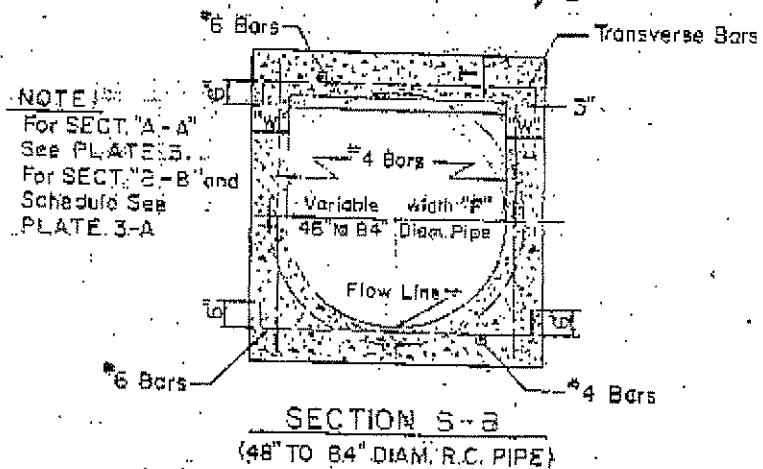
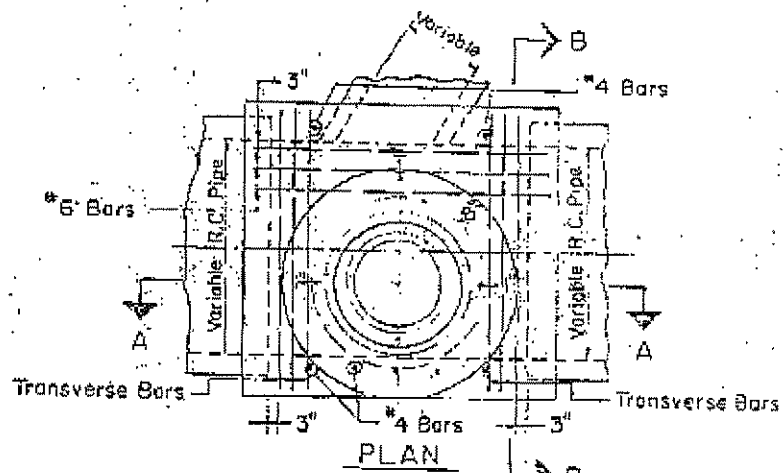


Size of Pipe	Width "F"	Height "F"	Height "L"				
			6'0"	12'6"	18'0"	23'6"	24'6"
36"	4'-0"	5'-6"	5'	0"	7'	11'	12'
42"	4'-0"	5'-6"	5'	0"	7'	11'	12'
48"	4'-0"	5'-6"	5'	0"	7'	11'	12'
54"	4'-0"	5'-6"	5'	0"	7'	11'	12'
60"	5'-0"	5'-6"	5'	0"	7'	11'	12'
72"	5'-0"	5'-6"	5'	0"	7'	11'	12'
84"	7'-0"	7'-0"	7'	0"	11'	12'	12'

	up Side		Bottom Side		Vertical
T	Trans. Bars	Long. Bars	Trans. # Hubs	Long. # Joints	Vertical # Bars
2"	5-7	3-6	5/2 pc.	2 1/2 pc.	12 pc.
3"	6-7	3-6	5/2 pc.	do	do
10"	6-8	3-6	5 pc.	do	do
14"	6-8	3-6	4 1/2 pc.	do	do
20"	6-8	3-6	4 pc.	do	do
30"	6-10	3-6	2 pc.	do	do

For SECTION "A-A" See PLATE 3
For PLAN and SECTION "B-B" See PLATE 3-B

PLATE 3-A

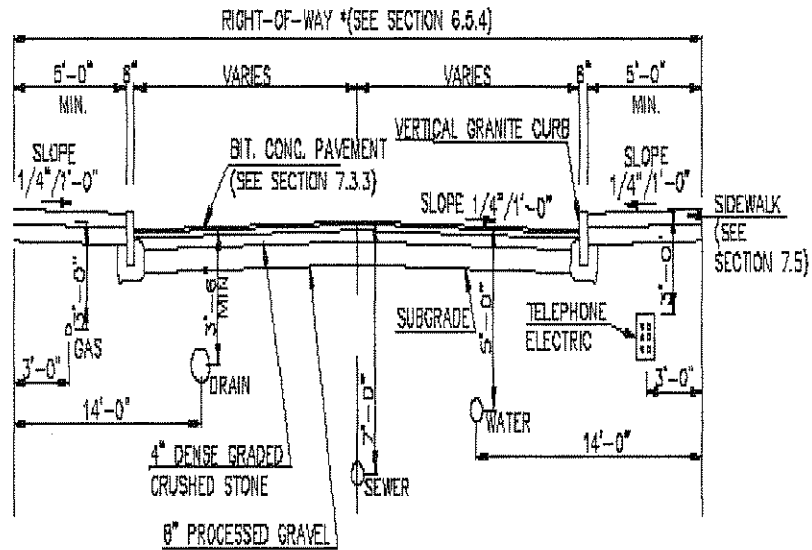


NOTE:
For SECT. "A-A"
See PLATE 3-5.
For SECT. "B-B" and
Schedule See
PLATE 3-A

SPECIAL MANHOLE (FOR 36" TO 84" DIAM. R.C. PIPE)

HANSON PLANNING BOARD
HANSON, MASSACHUSETTS

PLATE 3-8

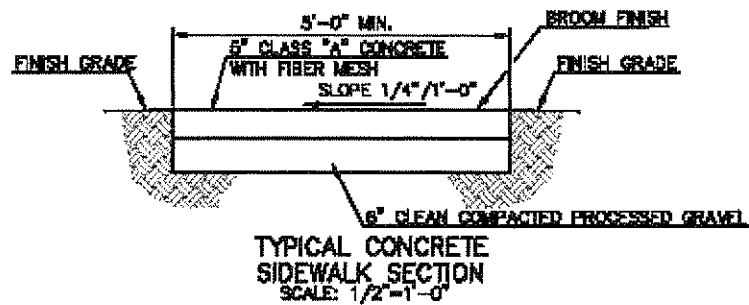
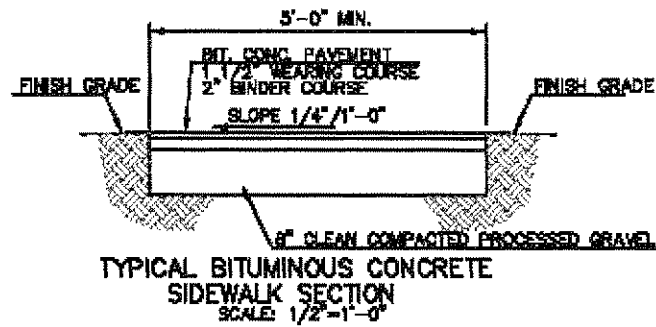
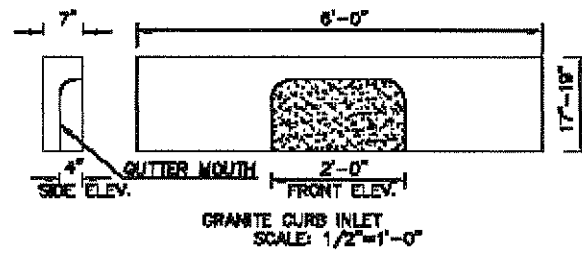


TYPICAL ROADWAY SECTION
SCALE: 3/16"=1'-0"

- * RIGHT OF WAY
- A. COLLECTOR STREET - 60'
 - B. LOCAL STREET - 50'
 - C. MINOR STREET - 50'

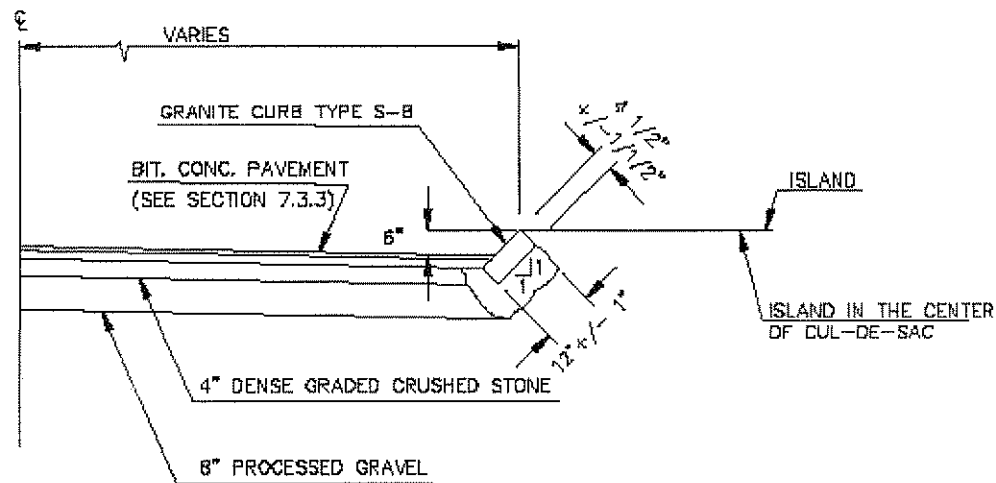
HANSON PLANNING BOARD
HANSON, MASSACHUSETTS

PLATE 4



HANSON PLANNING BOARD
HANSON, MASSACHUSETTS

PLATE 4-A



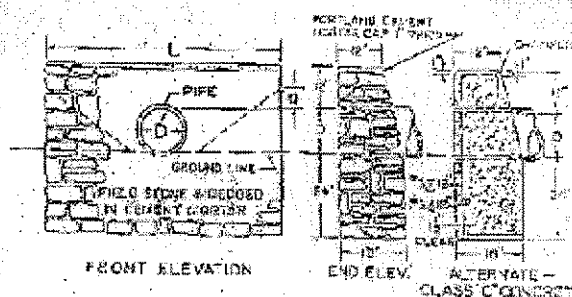
DETAIL — SLOPED GRANITE CURB

SCALE: 3/8"=1'-0"

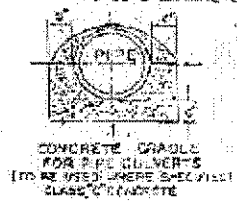
NOTE:
SLOPED GRANITE CURBING MAY BE
USED AROUND ISLAND IN THE
CENTER OF THE CUL-DE-SAC

HANSON PLANNING BOARD
HANSON, MASSACHUSETTS

PLATE 5



PIPE		1 1/2:1 SLOPE		2:1 SLOPE	
D	L	CU. YDS.	LG.	D	L
8"	4'-2"	0.77	13	3'-0"	1.08
10"	4'-10"	0.82	14	3'-4"	1.23
12"	5'-0"	1.04	16	3'-6"	1.43
15"	6'-0"	1.24	21	4'-0"	1.82
16"	6'-12"	1.42	22	4'-2"	1.94
18"	7'-0"	1.51	27	4'-6"	2.16
21"	8'-0"	1.53	30	4'-8"	2.68
24"	9'-0"	2.16	34	5'-0"	2.97
30"	11'-0"	2.62	43	5'-6"	3.88
0		4' FOR 1 1/2:1 SLOPE		6' FOR 2:1 SLOPE	



FIELD STONE MASONRY AND CONCRETE ENDS
FOR 8" TO 30" PIPE CULVERTS