

Town of North Andover

Massachusetts

PLANNING BOARD

RULES AND REGULATIONS GOVERNING THE SUBDIVISION OF LAND

In North Andover, Massachusetts

November 2000

Amended

December 2002

Sections: 3.1.1, 4.2.3, and 5.1.4

October 2001

* Editor's note - Printed herein are the Rules and Regulations for the Subdivision of Land adopted by the North Andover Planning Board on July 12, 2000 and supersedes the Rules and Regulations for the Subdivision of Land in North Andover of February, 1989 and subsequent amendments. The Rules and Regulations were registered with the Town Clerk of North Andover on July 12, 2000, and registered with the Essex County Registry of Deeds on November 21, 2000 by certified return receipt and registered with the Recorder of Land Court on November 22, 2000 by certified return receipt mail.

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**RULES AND REGULATIONS GOVERNING THE SUBDIVISION OF LAND
IN North Andover, MASSACHUSETTS**

This document is adopted under the Subdivision Control Law, Sections 81K to 81GG inclusive, Chapter 41 of the Massachusetts General Laws, (M.G.L.) including all amendments thereto.

SECTION I. PURPOSE, AUTHORITY AND DEFINITIONS

1.1 AUTHORITY

Under the authority vested in the Planning Board of the Town of North Andover by Section 81-Q of Chapter 41 of the General Laws, said Board hereby adopts these rules and regulations governing the subdivision of land in the Town of North Andover.

1.2 PURPOSE

The North Andover Planning Board is authorized under the General Laws of Massachusetts to regulate the laying out and construction of ways in subdivisions to insure the safety, convenience and welfare of the present and future inhabitants of North Andover. The Board shall exercise its authority with due regard for provision of adequate access to all of the lots in the subdivision by ways that will be safe and convenient for travel; for lessening congestion in such ways and in the adjacent public ways; for reducing danger to life and limb in the operation of motor vehicles; for securing safety in the case of fire, flood, panic and other emergencies; for insuring compliance with applicable provisions of the North Andover Zoning By-law; for securing adequate provisions for water, sewerage, drainage, underground utility service, police and fire protection and other requirements where necessary in a subdivision; for coordinating the ways in a subdivision with each other and with the public ways in neighboring subdivisions.

In considering a proposed subdivision, the Planning Board shall solicit the opinions of other Town Boards, Committees, Commissions and Officials as they pertain to the activity of the subdivision. The Board may also solicit the opinion of technical experts employed by the Board for the purposes of providing specialized technical review to the Board.

1.3 DEFINITIONS

In constructing these Regulations, the definitions in Section 81-L of Chapter 41 of the General Laws shall apply. In addition, the following other terms and words are defined:

1.3.1 AASHTO: American Association of State and Highway Transportation Officials

1.3.2 Applicant: a person applying for the approval of a plan under these regulations, including owner, agent, representative or assigns of the owner. The applicant's agent and/or representative shall obtain and submit to the Board written authorization from the owner of record.

1.3.3 As-built (Interim): An interim as-built plan shall include the following information:

- The location and elevations of all underground drainage, sewer and water pipes, with sizes, inverts, valves and service connections to lots;
- Utilities including electric, telephone, fire alarm, and cable transmission lines and any roadway crossings;
- All detention/retention basins;
- All roadway centerline locations; and
- Width and roadway grades on pavement;

1.3.4 As-built (final): A final as-built plan prepared by a Registered Professional Civil engineer and a Land Surveyor showing the as-built information required in Article 5.14.

1.3.5 Authorized Agent/Board's Designee: that person or persons of the Planning Board staff to whom the Planning Board has delegated authority: (1) to receive from applicants, on behalf of the Board, plans and documents and instruments submitted or filed with the Board under the Subdivision Control Law and under these Rules and Regulations and to place thereon the Board's stamp showing date of submission or filing, as the case may be; (2) to file on behalf of the Board in the Town Clerk's office, and record in the Essex North Registry of Deeds plans and documents the subject of proceeding the subject of proceedings before it; (3) to give and publish notice on the Board's behalf all, in each such case, as may from time to time be required by the Subdivision Control Law and by these Rules and Regulations; (4) to issue Stop Work Orders; and (5) that person or persons authorized by the Planning Board to conduct inspections and review proposed projects in accordance with Section 5.7.1 of these regulations.

1.3.6 Base Flood Elevation: the level of flooding having a one percent chance of being equaled or exceeded in any given year, as designated on the Federal Insurance Rate Map (FIRM) or, in the absence of such designation, as may be determined based upon the best available information regarding flood hazards, including any available U.S. Geologic Survey, Soil Conservation Service, and/or the Corps of Engineers studies.

1.3.7 Bench Mark: a permanent physical mark of known elevation. All elevations shall be based on the National Geodetic Vertical Datum of 1929 (NGVD).

1.3.8 Board: The Town of North Andover Planning Board. A quorum for a meeting or hearing is three members.

1.3.9 Cul-de-Sac: a local, dead-end street with a turnaround at the end.

1.3.10 Date of Submission: the date when the plan is delivered at a meeting of the Board or when sent by registered mail to the Board. If mailed, the date of mailing shall be deemed the date of submission of the plan. For the purposes of the Subdivision Control Law and of these Rules and regulations, a plan delivered to the Authorized Agent of the Planning Board during regular business hours at its then principal office shall be deemed delivered at a meeting of the Board.

1.3.11 Drainage: the control of surface or subsurface water within the tract of land to be subdivided.

1.3.12 Easement: a right in land acquired by public authority or other person to use or control property for a utility or other designated purpose.

- 1.3.13 Engineer or Surveyor:** a person registered by the Commonwealth of Massachusetts to perform professional civil engineering or land surveying services in accordance with all applicable laws and requirements of such registration.
- 1.3.14 Lot:** An area of land in single or consolidated ownership which contains definite boundaries and ascertainable by a recorded deed in the Essex County Registry of Deeds Office. Areas endorsed by the Board upon a plan as "Not a Building Lot" or "not available for building purposes" shall not be considered lots.
- 1.3.15 MHD:** Massachusetts Highway Department
- 1.3.16 Municipal Service:** public utilities furnished by the town in which a sub -division is located, such as water, sewerage, and electricity. For the purposes of these regulations, private utilities including, but not limited to gas, and community antenna television cabling, shall be considered municipal services.
- 1.3.17 Owner:** the owner of record as shown by the records of the Essex County South District Registry of Deeds or of the Land Court of the Commonwealth of Massachusetts.
- 1.3.18 Person:** an individual, or two or more individuals, or a group or association of individuals, or realty trust, a partnership or a corporation having common or undivided interests in a tract of land.
- 1.3.19 Recorded:** recorded in the Registry of Deeds for Essex County South District; if registered land is affected, filed with the recorder of the Land Court of the Commonwealth of Massachusetts.
- 1.3.20 Registered Mail:** registered or certified mail.
- 1.3.21 Register of Deeds:** the register of deeds of the county or district in which the land in question, or the Town or town in question, is situated, and, when appropriate, shall include the recorder of the Land Court.
- 1.3.22 Scenic Road:** A street, designated by M.G.L. Ch.40, Section 15-C, as having stone walls and trees of significant value within the street right-of-way. Said street designation shall be by the North Andover Planning Board and the North Andover Board of Selectmen and shall not include numbered state roads.
- 1.3.23 Street:**
- Local:** a street that provides direct access to abutting properties only and carries low volumes of traffic; this category includes cul-de-sacs and loop streets.
- Collector:** a street used primarily to connect local streets to arterial streets. It carries moderate volumes of traffic. Less than 25% of the average daily traffic of a collector street is normally attributed to through traffic.
- Minor arterial:** a street used to provide movement between major arterial, collectors and other minor arterial. It carries relatively high volumes of traffic. At least 25% of the average daily traffic volume is normally attributed to through traffic.
- Major arterial:** a street of regional significance, with high volumes of traffic used primarily to carry traffic through the Town. It is not intended as a residential street.

- 1.3.24 Structure:** a combination of materials requiring a permit to erect, place or construct to form a configuration and includes, but is not limited to, stadiums, platforms, radio towers, sheds, storage bins, signs, swimming pools, and fences.
- 1.3.25 Subdivision:** the division of a tract of land into two or more lots, including re-subdivision, provided that such division shall not be deemed to constitute a subdivision under the Subdivision Control Law (M.G.L. c. 41 Sec. 81 K-GG) if at the time it is made, every lot within the tract so divided has frontage on:
- a) a public way certified by the Town Clerk as being 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, or
 - c) a way in existence prior to the date on which the subdivision control law was adopted by the Town, and meeting the standards of the Board as set forth in Section 3.3.
- 1.3.26 Subdivision Control:** the power of regulating the subdivision of land granted by the Subdivision Control Law.
- 1.3.27 Way, Public:** a way which in the judgment of the Board has sufficient width, suitable grades and adequate construction to provide for the needs of the vehicular traffic in relation to the existing and proposed use of land the abutting thereon or served thereby and for the installation of municipal services to such land(s) and/or buildings erected or to be erected thereon which complies with one of the following criteria:
- 1. a way which the Town Clerk certifies is used as and maintained regularly and consistently as a public way by the Town to the same extent to which other public ways are maintained by the Town; or
 - 2. a way shown on a plan previously approved and endorsed by the Board and recorded at the Registry of Deeds or in the Land Court; or
 - 3. a way existing prior to the date on which subdivision control was adopted by the Town; or
 - 4. a way shown on a plan of a subdivision recorded at the Registry of Deeds or at the Land Court prior to the date on which the Town adopted the subdivision control law.
- 1.3.28 Wetland Resource Area:** Those areas subject to protection under the Massachusetts Wetlands Protection Act (MGL c.131 s.40) and the North Andover Wetlands Protection Bylaw and Regulations.
- 1.3.29 Utilities:** private or municipal services to be furnished within the subdivision including, without limitation, telephone, community access television, electric light and power, gas lines, sanitary sewers, storm drains, water mains and appurtenances.
- 1.3.30 Zoning By-law:** the Zoning By-law of the Town of North Andover, adopted at the Annual Town Meeting of March 13, 1943, and approved by the Attorney General February 13, 1946, and any and all duly adopted and approved amendments thereto.

SECTION II. GENERAL ADMINISTRATION

2.1 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.

2.2 LIMITATION OF ONE DWELLING ON ANY LOT

Unless otherwise provided for in the Town of North Andover Zoning By-law or in the Massachusetts General Laws, Chapters 40A and 41-81, no 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, without the consent of the Board. Such consent may be conditioned upon the providing of adequate ways, furnishing access to each site for each such building, in the same manner as otherwise required for lots within a subdivision.

2.3 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.

2.4 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.

2.5 ADEQUATE ACCESS FROM PUBLIC WAY

2.5.1 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.

2.5.2 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.

2.6 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 North Andover (February 18, 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.

2.7 FAILURE TO COMPLY; WAIVERS

2.7.1 Failure to Comply

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

2.7.2 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 the Board fails to be able to make the findings to grant a waiver, the waiver request shall be considered denied.

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.

2.7.3 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.

2.7.4 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.

2.7.5 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.

2.8 INTERPRETATION, CONFLICT AND SEPARABILITY

2.8.1 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.

2.8.2 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.

2.8.3 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.

2.9 RESERVATIONS AND APPEALS

Upon adoption of these regulations, the Rules and Regulations Governing the Subdivision of Land in North Andover, Massachusetts adopted in February of 1989 as amended, are hereby repealed (except to such section(s) expressly described in M.G.L. c.41, Section 81.)

2.10 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.

2.11 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.

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.

2.12 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.

2.13 WITHDRAWAL

An applicant may withdraw a submitted plan by filing with the Planning Board and the Town Clerk a written request for withdrawal (see Form R for sample language). 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.

2.14 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 on Form S, 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 III. APPROVAL UNDER SUBDIVISION CONTROL LAW NOT REQUIRED

3.1 SUBMISSION

Any person who wishes to cause to be recorded in the Registry of Deeds or to be filed with the Land Court a plan of land and who believes that the plan does not require approval under the Subdivision Control Law shall submit the following documents and plans:

An original and 2 copies of a typewritten FORM A Application (see Appendix) time stamped by the Town Clerk including a statement of the basis upon which the applicant claims that approval under Subdivision Control Law is not required. One copy of the application and plan to be submitted to the Town Clerk.

An original Mylar of the plan in a form described in Section 3.2 with four (4) contact prints; one print shall be retained in the files of the Board, one print each shall be submitted by the Board to the Building Department and the Town Assessor.

3.1.1 Filing Fee

- a. Base Filing Fee:** A base filing fee of \$40, plus \$30/lot line changed or \$70 per new lot created is required.
- b. Project Review Fee:** If the Board's designee deems necessary, the applicant may have to pay a review fee if needed.
project
- c. Failure to Pay Fees:** Failure to pay all fees listed above in 3.1.1a-b at the time of submission of the definitive plan will result in the plan being denied.

3.2 CONTENTS OF ANR PLANS

The plan shall be legibly drawn in accordance with the rules and regulations of the Register of Deeds or Land Court Manual of instructions, as amended, and shall bear the original seal and signature of the professional land surveyor preparing the plan. The plan shall be prepared in accordance with the provisions of 250 CMR 6.00: Procedural and Technical Standards for the Practice of Land Surveying. The Plan shall contain the following information:

- 3.2.1 A title block, preferably in the lower right corner, identifying the location of the land shown, the name of the owner of record and address, date and scale of the plan, and the name and address of the firm or individual preparing the plan;
- 3.2.2 The statement, "Approval under the Subdivision Control Law Not Required" and sufficient space for the date and signatures of all members of the Board together with a notation, below the signature block, that "The Planning Board's endorsement of the plan as not requiring approval under the Subdivision Control Law is not a determination as to conformance with the Town of North Andover Zoning Bylaw and Regulations."
- 3.2.3 Zoning classifications and location of any zoning district boundaries that may lie within the locus of the plan;
- 3.2.4 Reference to any decisions by the Zoning Board of Appeals and /or Planning Board including, but not limited to, variances, special permits, or exceptions regarding the land or any structures thereon. Notice of any decisions by the Zoning Board of Appeals, including but not limited to variances and exceptions or special permits regarding the land or any buildings thereon. If necessary, plans must be signed by the Board of Appeals prior to the Planning Board signing the plans;
- 3.2.5 A locus map drawn at a scale of 1"=1000', and is preferably located in the upper right corner of the plan. The map must show at least one intersection of two existing town roads;
- 3.2.6 Location and names of all abutters as they appear on the most recent tax list(s) including those in adjoining communities;
- 3.2.7 Location, names, status (private or public), and widths of pavement and right-of-way of all streets and ways shown on the plan and notation if any streets are designated as "scenic roads" under M.G.L. C.40, S. 15-C;
- 3.2.8 Bearings and distances or curve data of all street lines, ways, easements and lot lines shall be shown on the plan and location of all permanent bounds identified as existing or proposed. Bearings and distances to a minimum of two (2) existing permanent bounds shall also be shown;
- 3.2.9 The lot number and area of each lot in square feet and in acres, if over one acre. The units of acres shall be rounded to a minimum of three (3) decimal places;

- 3.2.10** The total frontage of each lot and the total lot width, as measured at the midpoint of for each lot. Proof where required, of conformance with the width requirements set forth in the North Andover Zoning Bylaw;
- 3.2.11** The contiguous buildable area of each lot;
- 3.2.12** The entire land area in which the division takes place shall be shown including all parcels affected by an increase or decrease in frontage, lot width, and area, which also includes the remaining land, if any, owned by the applicant;
- 3.2.13** Any lot(s) or parcels not meeting the minimum frontage, lot width or lot area in accordance with the requirements for the zoning district in which the lot(s) or parcels is situated, shall be designated on the plan as "Not a Building Lot";
- 3.2.14** Location of all known existing structures, both above and below ground, including but not limited to, buildings, wells, septic systems, cisterns, and cesspools, on the lots or parcels;
- 3.2.15** Location of all streams, brooks, and water bodies bounding any of the parcels or lots shown on the plan;
- 3.2.16** Where applicable the location of all significant trees over six inches in caliper within or along the right-of-way of roads adjacent to the lots shall be shown;
- 3.2.17** References to all deeds and plans of record used to establish the property lines of the lot(s) or parcels and of the streets, ways and easements shown on the plan, including deed references to abutting lots;
- 3.2.18** The north arrow shall be clearly marked and identified as to whether it is magnetic or true north or referenced to a recorded plan and so stated;
- 3.2.19** Evidence that each lot on the plans, and/or any lot altered by the plan:

Has frontage on a way which in the judgment of the Board has sufficient width, suitable grades and adequate construction to provide for the needs of the vehicular traffic and public safety access in relation to the existing and proposed use of land abutting thereon or served thereby and for the installation of municipal services to such land(s) and/or buildings erected or to be erected thereon;

Which complies with one of the following four criteria:

Has all the frontage required under the North Andover Zoning By-law on:

- a public way; or
- a way which the Town Clerk certifies is maintained and used as a public way; in determining whether a way has been used and maintained as a public way, the Planning Board shall require that written evidence from the Town Clerk be submitted by the applicant to substantiate that the way is under public maintenance and has been in continuous and substantial use by the general public without permission of the landowners for at least twenty (20) years. Sporadic use, use by a few persons, or use by agreement of the abutters shall not suffice, or
- a way inexistence when the Subdivision Control Law became effective in North Andover which the Planning Board finds has sufficient width, suitable grades, adequate construction to provide for the needs of vehicular traffic in relation to the proposed use of the land abutting thereon, and for the installation of municipal services to serve such land and the existing and future buildings on such land.

Has been clearly marked on the plan to be either:

- i.) joined to and made part of an adjacent existing lot; or
- ii.) "Not a Building Lot"; or

Contains two or more buildings which were existing when the subdivision control law went into effect in which land lies into separate lots on each of which one of such buildings remains existing; or

Constitutes an existing parcel with no new lot division. If the lot is not being subdivided and does not contain frontage on a way, as specified above, the lot shall be clearly marked on the plan that it is "Not a Building Lot."

3.3 DETERMINATION OF FRONTAGE

In determining whether each and every lot shown on the plan has adequate frontage, the Applicant must demonstrate that the lot directly abuts a public or private way and that the lot has direct, practical access from the abutting way.

3.3.1 Indicative criteria for determination

In determining whether an existing way is adequate to qualify a plan as not constituting a subdivision, the Board may consider the following conditions, among others:

- a. that the way is paved and adequate to accommodate public safety access;
- b. that the way is comparable to other public ways in the area;
- c. that the way by virtue of its horizontal and vertical alignment provides safe travel.
- d. when direct access to a lot from the abutting street is not possible due to nonaccess strips or easements or due to steep grades, Wetland Resource Areas, watercourses or other physical constraints, the Planning Board may consider the lot as not having sufficient frontage to allow a division of land without approval under the Subdivision Control Law.
- e. The full length of the required frontage must contain adequate access as defined in Item 3.3.1.d.

3.4 BOARD ACTION

If the Board finds that the application is not a proper submittal, the application shall be denied without prejudice.

If the Board finds that the plan does not require approval, it shall, without a public hearing, endorse the plan under the words "Approval Under Subdivision Control Law Not Required". The Board may add to such endorsement a statement of the reason approval is not required. The plan will be returned to the applicant and the Board shall notify the Town Clerk of its action.

If the Board determines that the plan does require approval under the Subdivision Control Law, it shall, within twenty-one (21) days of the submission of said plan, provide written notice of its determination to the applicant and return the plan. The Board shall also notify the Town Clerk of its action.

If the Board fails to act upon a plan submitted under this section within twenty-one (21) days after its submission, it shall be deemed to have found that approval under the Subdivision Control Law is not required.

Any other plan, which does not meet all of the criteria listed above, shall be deemed a subdivision for purposes of the Subdivision Control Law.

"Form A" Approvals - if lots have been previously approved as Plans Not Requiring Approval, they shall not be submitted as part of a definitive subdivision plan. If Form A's are shown on a subdivision plan, and they have not been previously approved, then such lots shall be considered as part of the subdivision.

Approval of ANR plans shall not insure compliance of the lots altered or created with the Zoning Bylaw of the Town of North Andover.

SECTION IV. PROCEDURE FOR SUBMISSION AND APPROVAL OF A PRELIMINARY SUBDIVISION

4.1 PURPOSE

The submission of a Preliminary Plan enables the applicant, the Board, other municipal agencies and officials and the owners of property abutting the subdivision to discuss and clarify any problems the proposed subdivision may present before a Definitive Plan is prepared.

The applicant must read these Rules and Regulations carefully and thoroughly and then meet informally with the Town Planner with a sketch of the area of the proposed subdivision to obtain information about the subdivision requirements of the area. Any uncertainties and ambiguities about the Rules and Regulations or the requirements in the Appendices should be raised during this initial consultation. After such initial consultation with the Town Planner, the applicant may meet before the Board. Such pre-application consultation shall be informal, non-binding, and directed toward:

- a) Reviewing the basic concepts of the proposal;
- b) Reviewing the proposal with regard to the master plan and zoning bylaw;
- c) Explaining the state and local regulations that may apply to the proposal;
- d) Preliminary discussion shall not bind the applicant or the Board.

It is strongly recommended that a Preliminary Plan be filed in every case. In accordance with M.G.L. c. 41, s.81-S, in the case of a non-residential subdivision, the submission of a Preliminary Plan is required. However, the submission of a Preliminary Plan for subdivision showing lots in a residential zone is left to the discretion of the applicant.

4.2 APPLICATION PROCEDURE

Any person who desires approval of a Preliminary Plan for the subdivision of land shall:

4.2.1 Filing Form B with Board and Health Board

File an application - Form B with the Board and with the Board of Health. (see Appendix)

4.2.2 Required sets of plans with submission

Submit with the application a reproducible Preliminary Plan, prepared in accordance with the form described under Section 4.3, and nine (9) contact prints to the Board. A plan shall be submitted under this section when delivered at a meeting of the Board or when sent by registered mail to the Planning Board, care of the Town Clerk. If so mailed, "the date of mailing, of the plan by the applicant shall be the receipt date stamped by the Town Clerk's Office. Two (2) contact prints shall be submitted by the applicant to the Board of Health simultaneously with the submittal to the Town Clerk. Please refer to Section 4.4 for additional prints which need to be submitted to other departments for the submission to be approved by the Planning Board.

4.2.3 Filing Fee

- a) Base Filing Fee: Submit with the application a base filing fee of Two Hundred and Seventy Five Dollars (\$275.00) plus Seventy Dollars (\$70.00) per each building lot shown on the plan.
- b) Project Review Fees: See Attached Project Review Fees Schedule at End of Document
- c) Failure to Pay Fees: Failure to pay all fees listed above in 4.2.3a-b at the time of submission of the definitive plan will result in the plan being denied.

4.2.4 Filing notice with Town Clerk

File, by delivery or registered mail, a written notice to the Town Clerk, stating the date of submission of the Preliminary Plan.

4.3 FORM AND CONTENTS

The Preliminary Plan should contain sufficient information about the subdivision to form a clear basis for discussion and for the preparation of the definitive plan. The plan shall, **at a minimum**, provide the following. Plans that do not include the following will not be considered submitted:

- 1) Shall be prepared by a Registered Professional Engineer or Registered Land Surveyor and shall bear the professional seal and signature. The plan shall be drawn clearly and legibly on Mylar sheets that are 24 inches by 36 inches, with a 1-1/2 inch left hand margin and all others 3/4 inch, and contain the following information
 - a) Subdivision name, boundaries, north arrow (indicate whether true, magnetic, or grid), locus, date, legend, and the title "Preliminary Subdivision Plan".
 - b) Names and addresses of the record owner, the subdivider, the Designer, and engineer or surveyor.
 - c) Names of all abutting property owners taken from the Certified List of Abutters. Abutting properties shall be labeled as to ownership.
 - d) Location, names, improved widths, and exterior lines of existing streets abutting, providing access to, or approaching in close proximity to the proposed subdivision. The existing streets shall be marked as to whether they are accepted or unaccepted ways.
 - e) Location names, proposed improved width, and exterior lines of all proposed streets within the subdivision. State whether the proposed streets will be offered for acceptance to the Town.

- f) Boundaries and character of all existing and proposed easements within or immediately adjacent to the subdivision
- g) Boundaries of any existing or proposed areas dedicated to public use.
- h) The entire parcel being subdivided shall be shown on the Preliminary Subdivision Plan. The parcel shall include all contiguous property in the ownership of the subdivider or in the same ownership as any of the land being subdivided. If the applicant wishes to have some portion of such land designated in the Preliminary Subdivision Plan as not a part of the subdivision, the applicant must submit to the Planning Board a determination from the Inspector of Buildings that the land so excluded is a legally separate and buildable lot.
- i) Proposed boundary lines of lots, with dimensions and areas indicated.
- J) 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 structures 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, flows that would be generated by the subdivision and must be accommodated by the drainage system.
- k) The topography shown with contour intervals of not greater than two (2) feet. Figures of elevation to represent the natural surface may be provided in addition to contours.
- l) A copy of the deed demonstrating ownership of the property and reference to any and all deeds, encumbrances and easements shall be listed on the plan and depicted on a separate sheet.

4.3.1 Subdivision name, plan legends

Subdivision name, boundaries, north arrow, date, zoning district(s), legend, scale and title Preliminary Plan;

4.3.2 Names of owner, applicant, engineer, RLS

Name(s) and address(es) of record owner(s), applicant(s), engineer and land surveyor;

4.3.2.1 Requirement of RPE/RLS Stamp

The original Mylar and Form B shall bear the original seal and signature of the professional(s) responsible for the preparation of the plan;

4.3.3 Names of abutters

Names of all abutters to the lot which is the subject of the application, as they appear on the most recent tax list;

4.3.4 Location of streets, scenic roads, and all utilities

Location, names and present exterior pavement and right-of way widths of existing and proposed streets and ways within the plan and in the immediate vicinity. Indication of whether the existing street is subject to the Scenic Road Act (M.G.L. c.40, s 15-C) location and identification of all existing utilities within the plan and immediate vicinity;

4.3.5 Lot lines and numbers

Lot lines with approximate dimensions, CBA areas, and total frontage. Each lot shall be numbered; This information must also appear in a table on the cover sheet

4.3.6 Public areas abutting or within the subdivision;

4.3.7 Existing and proposed topography at 2 foot intervals sufficient to establish drainage patterns and profiles and water bodies. The topography shall include a sufficient length of the existing street(s) to which the proposed subdivision street(s) will connect to determine the available sight distances for all vehicle turning movements at the street intersection(s) and the location, size and type of existing utilities and street trees. The topography shall also include a sufficient length of the natural watercourse(s) that will receive runoff and drainage system discharge from the site to determine hydraulic characteristics and flooding potential beyond the subdivision boundaries.

4.3.8 Major features of the land, such as existing structures, wells, septic systems, walls, fences, monuments, wooded areas, outcroppings, ditches, swamps, water bodies, Wetland Resource Areas and natural waterways intended to receive drainage effluent;

4.3.9 A statement describing cut and fill operations, including a general assessment of the net import or export of fill from the subdivision;

4.3.10 Areas of the Plan designated as floodplain, in accordance with the Federal Insurance Rate Maps (FIRM);

4.3.11 Existing and proposed center line profile of all proposed streets and ways;

4.3.12 Existing and proposed drainage systems, sewer and water pipes, hydrants, valves, gas lines, and other utilities; Layout of proposed storm and surface drainage system. This shall include the general location and size of drain pipes, culverts, trenches, catch basins, manholes, and other structures 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, flows, etc., that would be generated by the subdivision and must be accommodated by the drainage system.

4.3.13 Existing and proposed easements and rights-of-way applicable to the area shown on the Plan.

4.3.14 Locus map at a scale of 600' to the inch and a key map shown at a scale of 200' to the inch.

4.4 REVIEW OF PRELIMINARY PLAN

One set of prints and supporting documentation of the Preliminary Plan shall be forwarded forthwith **by the applicant** to the Fire Chief, Conservation Commission, Board of Health, Department of Public Works, Open Space Committee, Police Department and Building/Zoning Department and any other applicable Town board and/or commission for their information and review. Proof of receipt of these plans by a signature of the appropriate staff of each of the above named departments must be provided to Planning Department in order for a submittal to be reviewed.

4.5 APPROVAL OF A PRELIMINARY PLAN

The Planning Board, in considering a Preliminary Subdivision Plan, shall first determine whether the applicant's submission constitutes a proper submittal. If the Planning Board determines that the application is not a proper submittal, the application shall be denied without prejudice. If the application is determined to be a proper submittal the Planning Board may consider the application.

Within forty-five (45) days after submission of a Preliminary Plan, the Board shall notify the applicant and the Town Clerk, by certified mail, either that the plan has been approved, or that the plan has been approved with modifications suggested by the Board or agreed upon by the person submitting the plan, or that the plan has been disapproved. In the case of disapproval, the Board shall state in detail its reason therefore. The approval of a Preliminary Plan does not constitute approval of a subdivision but does facilitate the procedure in securing the approval of a Definitive Plan. Except as otherwise provided, the provisions of the Subdivision Control Law relating to a plan shall not be applicable to a Preliminary Plan, and no Register of Deeds shall record a Preliminary Plan.

4.6 RELATIONSHIP OF PRELIMINARY PLAN TO DEFINITIVE PLAN

Approval of a Preliminary Plan does not constitute approval of a subdivision and a Preliminary Plan can not be recorded in the Registry of Deeds or the Land Court.

SECTION V. DEFINITIVE SUBDIVISION PLAN

5.1 APPLICATION PROCEDURE

Any person who wishes to submit a Definitive Plan of land to the Planning Board for its approval shall complete the following steps;

5.1.1 Form C filing with Town Clerk

The Applicant shall file a definitive subdivision application, using a Form C (See Forms), with the Town Clerk by hand delivery or by registered mail, postage prepaid. Three (3) copies of the Form C shall be stamped by the Town Clerk. One (1) copy shall be kept in the Clerk's files, with the other two, to be kept in the Planning Board office;

5.1.2 Notice to Board of Health w/plans

The applicant shall give written notice to the Board of Health, together with a copy of Form C and one copy of the Definitive Plan.

5.1.3 Notice to Board w/ sets of plans

Written notice shall be given to the Planning Board, together with two copies of the application forms, (Form C - one original and one copy), nine (9) contact prints of the plans and a reproducible Mylar;

5.1.4 Filing Fee

- a) Base Filing Fee: Please refer to the current "Schedule of Planning Board Filing Fees".
- b) Modification Filing Fee: Please refer to the current "Schedule of Planning Board Filing Fees".
- c) Project Review Fee: Please refer to the current "Schedule of Planning Board Filing Fees".
- d) Failure to Pay Fees: Failure to pay all fees listed above in 5.1.4a-c at the time of submission of the definitive plan will result in the plan being denied.

5.1.5 Site Evaluation Statement

Submit an Environmental and Community Impact Analysis, if required (see Section 5.4);

5.1.6 Certified copy of deed/proof of ownership

A certified copy of the recorded deed for the parcel for verification of ownership and Form to allow authorization to do so if applicant is other than owner.

5.1.7 List of names of abutters

A list of the names and mailing addresses of all abutting property owners as they appear in the most recent tax list(s). This list shall not be more than 6 months old. The list must include property owners on the opposite side of any street abutting the subdivision and abutters to abutting property owners within three hundred feet of the property under development consideration. The list of owners and their mailing addresses shall be certified by the Assessor's Office. Two sets of the addressed and stamped envelopes containing the names of the abutters must be provided to facilitate notice to the abutters.

5.1.8 List of waivers

If applicable, a list of any waivers of the regulations being requested, and the reasons for requesting such waivers. Please refer to Section 2.5 regarding general procedures for waivers.

5.1.9 Construction Schedule

The approximate scheduled time within which the ways in the subdivision will be completed and the public utilities and other improvements required by the Board will be installed therein. If the approved time is exceeded, the bond or conditional approval may be exercised or the approval may be rescinded.

5.1.10 Type of Performance Guarantee

A statement of the type of performance guarantee which the applicant plans to submit in the event of approval of the Definitive Plan.

5.1.11 Quitclaim Deed to streets subject to acceptance; and to open space areas subject to Town purchase

Upon approval of a subdivision, a sample quitclaim deed, including the descriptions for all streets and ways to be dedicated, shall be placed with the Planning Board of the Town of North Andover.

5.1.12 Modification of Definitive Subdivision:

No modification, amendment, or rescission of the approval of a plan of a subdivision or changes in such plan shall affect the lots in such subdivision which have been sold or mortgaged in good faith and for a valuable consideration subsequent to the approval of the plan, or any rights appurtenant thereto, without the consent of the owner of such lots, and of the holder of the mortgage or mortgages, if any thereon; provided, however, that nothing herein shall be deemed to prohibit such modification, amendment or rescission when there has been a sale to a single grantee of either the entire parcel of land shown on the subdivision plan or of all the lots not previously released by the Board.

5.2 FORM AND CONTENTS OF PLANS

The Definitive Plan shall be prepared by a professional engineer or by a professional land surveyor registered in the Commonwealth of Massachusetts. A set of definitive subdivision plans shall contain the following sheets, unless otherwise approved by the Board:

1. Cover Sheet
2. Lot Layout Plan
3. Grading, Drainage and Utilities Plan
4. Street Plan and Profile
5. Typical Sections, Details and Notes
6. Waiver Requests

(For large subdivisions, requiring the use of multiple sheets for Items 2 and 3, a Drawing Index Sheet, showing the entire subdivision at a legible scale, shall be included after the cover sheet.)

5.2.1 Plans to be prepared per Registry of Deeds Rules/Regs; Land Court Manual of Instructions

All plan sheets shall be prepared in accordance with the Rules and Regulations of the Register of Deeds or the Land Court Manual of Instructions. Plan sheets shall be 24" by 36" with a minimum of 3/4 inch borders;

5.2.2 Signature Blocks; space for revision dates

Each sheet shall be provided with a signature block for the endorsement by the Board and certification by the Town Clerk with spaces for annotating dates of approval and conditions of endorsement. Each sheet shall also be provided with a space for listing and dating revisions to the plan – a sample is placed in the appendices;

5.2.3 Title block, owner/developer information

Each sheet, other than the Cover Sheet, shall contain a title block in the lower right corner, identifying the name of the subdivision, the title of the sheet, the name and address of the record owner and applicant, date and scale of the plan, and the name and address of the firm or individual preparing the plan – a sample is placed in the appendices;

5.2.4 Seal/signature of RPE/RLS

The original Mylar and Form C shall bear the original seal and signature of the professional(s) responsible for the preparation of the plan;

5.2.5 Plan Contents

The plans shall include the following information:

5.2.5.1 Cover Sheet

- a.) Subdivision name, name and address of record owner, name and address of the applicant, a locus plan at a scale not smaller than 1"=1400', identification of the zoning district(s), and index to all the plan sheets, a legend, project bench mark data, reference and identification of the starting bench mark, date of submission, and the names and addresses of the professional(s) engaged in the preparation of the plans and a description of the area of responsibility of each professional.
- b.) Notation that all deeds from the owner of the subdivision shall reserve the fee in all streets or ways shown on the subdivision plan, such fee to be retained by the developer until conveyed to the Town.

5.2.5.2 Lot layout plan

The Plan shall be prepared at a scale of 1"=40', unless otherwise required by the Board; and show the following information:

1. Bearings, distances and curve data to readily determine the location, direction, and length of every existing and proposed lot line, street line, way, easement and boundary line in and abutting the subdivision;
2. Location and names of all abutters as they appear on the most recent tax list, including owners of the property on the opposite side of all streets abutting the subdivision;
3. Location of all permanent monuments, identified as to whether existing or proposed. Ties, with bearings and distances, shall be shown to a minimum of two (2) existing permanent monuments in or adjacent to the subdivision.
4. All bench marks and elevations shown on the subdivision plans shall be based on the National Geodetic Vertical Datum of 1929 (NGVD) and the starting NGVD bench mark shall be referenced on the plans;
5. The area of each lot and any easements, in square feet and in acres. The units of acres shall be rounded to a minimum of three (3) decimal places;
6. The contiguous buildable acreage, total frontage of each lot and the total lot width for each lot in accordance with the Town of North Andover Zoning By-law;
7. Any lot(s) not meeting the minimum frontage, lot width, or lot area in accordance with the requirements for the zoning district in which it is situated. Such lots shall be designated as "not a building lot";
8. Lot numbers enclosed in a circle and house numbers as assigned by the DPW;
9. Location, names, status, and widths of pavement and right-of-way of all existing streets bounding, approaching or within reasonable distance of the subdivision and a notation if any of the streets is designated as a "scenic road";
10. All existing structures in the subdivision and within 50' of the perimeter of the subdivision;
11. Proposed structures on lots, the configuration of such structures and all proposed grading associated with such structures.
12. All stone walls, fences, cart paths, water bodies or water courses bounding or crossing the subdivision;
13. Zoning district(s) classification(s) of the land in the subdivision and the precise location of the boundaries of these district(s);
14. Reference(s) to any existing or proposed covenants and/or restrictions, including any variances or special permits either granted or required by the North Andover Planning Board, the Zoning Board of Appeals or the North Andover Board of Selectmen. Recorded copies of said covenants, restrictions and/or zoning relief shall be provided to the Board;

15. References to all deeds and plans of record used to establish the property lines of the subdivided parcel and of all the streets, ways and easements including deed references to the abutting lots; (see section 5.1.7)
16. A clearly marked north arrow, which shall be identified as to whether it is magnetic or true north or shall be referenced to a record plan and so stated.

5.2.5.3 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 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 North Andover 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 shown on the definitive subdivision plans (use an additional sheet, if necessary);
11. Existing and proposed water courses, drainage ditches, streams, brooks, water bodies, retention swales and/or detention basins 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 regrading 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 North Andover Wetlands Protection Bylaw;
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 shall be in accordance with the accepted species and installation practices as referred to in Section 6.18 of these Regulations;

17. The location and methods of all proposed erosion/sedimentation control within the subdivision;
18. The location of proposed stocking 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. That 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 North Andover Zoning By-law and/or the requirements of the Town Earth Removal Board regarding Sand, Gravel, or Loam, 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" 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."

5.2.5.4 Street plan and profile

a. This sheet shall show the plan of the proposed streets drawn to a scale of 1"=40' with the existing and proposed profiles, 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;

b. The street plan shall show the following information:

1. Bearings and distances of all tangents along the center line and the right-of-way;
2. Radii, arc length and central angle of all curves along the center line and right-of-way;
3. Points of intersection of all tangents (pi's), with tangent lengths, of all center line curves;
4. Stations shall be clearly marked at 50' intervals along the street center line and at points of curvature and tangency (pc's and pt's) of all curves. Where the center line intersects itself or other proposed streets, the point of intersection shall be clearly marked with a station equation;
5. Existing and proposed lot lines intersecting the right-of-way with the frontage and lot numbers shown;
6. Bearings and distances of all lines of existing and proposed easements;
7. Existing and proposed pavements, including dimensions of all streets, sidewalks, handicapped ramps, driveways and parking areas;
8. Existing and proposed curbs and berms and identification of the materials;
9. Existing and proposed drainage facilities with pipe sizes and materials including catch basins, manholes, culverts, headwalls, detention and/or retention basins, and outlet pipes/structures with rim and invert elevations, as applicable;
10. Existing and proposed water mains with sizes and materials including hydrants, gates and appurtenances;
11. Existing and proposed sewer mains with sizes and materials including manholes with rim and invert elevations;

12. Existing and proposed gas mains;
 13. All other existing and proposed, above and below ground, utilities including electric, telephone, cable T.V., poles, conduits, transformers and appurtenances; Existing and proposed street trees
 14. Two (2) permanent bench marks shall be shown on the plan for each street. Bench marks shall be identified with sufficient data to readily determine their location and elevation in the field.
- c. The street profile shall show the following information:
1. Existing center line profile drawn with a fine dashed line and the existing elevations labeled at 50' intervals;
 2. Existing left and right, right-of-way profiles drawn in fine lines - dot dash for left and dot dot dash for right with limits of normal crown and superelevated sections and the percent of superelevation shown;
 3. Proposed center line profile drawn in solid line with proposed stations and elevations labeled at 50' intervals and at points of vertical curvature, gradient intersection, and tangency (pvc,. pvi, and pvt). Where the center line intersects itself or other proposed streets, the point of inter-section shall be clearly marked with the existing and proposed elevation and station equation;
 4. Gradient lines shall be labeled with the rate of grade expressed as a percent;
 5. Lengths of all vertical curves shall be labeled, including applicable sight distances and other information required in the Design Standards for Streets, Section 6.8.
 6. Existing and proposed drainage facilities including drainage lines, catch basins, manholes, culverts, headwalls, outlet pipes/ structures shall be drawn in solid lines showing pipe sizes, pipe slopes, rim and invert elevations. Stations and offsets shall be indicated for all catch basins, manholes, culverts, headwalls and outlet pipes/structures;
 7. 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;
 8. Existing and proposed sewer pipes and manholes shall be drawn in solid lines showing pipe sizes, pipe slopes, rim and invert elevations, and station and offsets to manholes;
 9. Vertical clearances shall be labeled between all crossing utilities;
 10. The roadway centerline shall be conspicuously marked upon the ground by stakes or flagging sufficient in number to orient the Board or its staff while making an on-site inspection. These markings shall be clearly indicated on the plan as to location and type.
 11. A planting or landscaping schedule shall be required where deemed necessary by the Board for buffering or for adding to the amenity of the subdivision.

5.2.5.5 Typical sections, details and notes

- a. 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";
- b. 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, ten (10) and one hundred (100) year storm water elevations, details and elevations of emergency spillway structure(s), embankment construction and slope treatment, top of dam elevation, and volume of storage capacity;

- c. Profiles of all cross-country drain pipes, swales or ditches with typical cross sections of each;
- d. Details of drainage structures including catch basins, manholes, headwalls, flared-end sections, outlet and velocity control structures, rip-rap slopes and channels;
- e. Details of sewer manholes and drop inlet structures;
- f. Details of hydrants, blow-off valves and thrust blocks;
- g. Detail(s) of curb installation(s);
- h. Detail of handicap ramp;
- i. Detail of guardrail(s);
- j. Detail(s) of erosion/sedimentation control devices;
- k. Plans, details, sections, and profiles of any other utility, structure or facility proposed in the subdivision;
- l. 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;
- m. 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:
- n. 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 North Andover as set forth Appendices I - IX, inclusive, of these Rules and Regulations.

5.2.6 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.
- 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

5.3 STORMWATER MANAGEMENT REPORT

A separate storm water management report shall be submitted together with the definitive subdivision plans. The report shall be prepared in accordance with the applicable provisions of Section 6.14 and Appendix VIII of these Regulations.

5.4 ENVIRONMENTAL AND COMMUNITY IMPACT STATEMENT

5.4.1 Applicability:

a. Any subdivision of any residential subdivision which creates frontage for six (6) or more dwelling units, and all non-residential subdivisions, shall be accompanied by eight (8) copies 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 North Andover. 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 six lots, shall be required to meet the requirements of item 5.4.1.a. above. The Planning Board may waive such requirement as it applies to this item.

5.4.2 Purpose:

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

5.4.3 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 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 the construction phase as well as those resulting from the projects completion;
- b. Adverse Impacts which cannot be avoided should the proposed development be implemented - The report 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 - The report 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 -Corrective and protective measures which will be taken, as part of the project, to minimize adverse impacts shall be described in detail.

5.4.4 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 IV, shall provide a draft Environmental and Community Impact Analysis. The draft shall address all pertinent aspects of Section 5.4. 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:

5.4.4.1 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 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 ground water; and
- f. Sewage Disposal - The average and peak daily disposal and the impact of each disposal on the ground water.

5.4.4.2 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.

5.4.4.3 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.

5.4.4.4 Aesthetics

- a. Lighting - The type, design, location, function and intensity of all exterior 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 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.

5.4.4.5 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.

5.4.4.6 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. 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.

5.4.4.7 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 North Andover as a result of the proposed development; this also should estimate net benefits or costs of non-quantifiable environmental impacts.

5.4.4.8 Cost Estimate

The applicant shall provide a complete cost estimate for the proposed subdivision street utilities, storm water management and erosion protection facilities 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.

5.4.4.9 Soil Erosion and Sedimentation Control Plan

A 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.

- i. 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 North Andover 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 at the same scale as the Form C plan, and 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);
- (v) surface extent of each soil type and relative erodibility as determined by the United States Department of Agriculture, Soils Conservation Service Soil Survey.
- (vi) critical areas within or near the project area, such as streams, lakes, protected Wetland Resource Areas as defined by MGL Chapter 1315.40 and Chapter 178 of the Code of North Andover, or major drainage ways;
- (vii) location and types of both temporary and permanent control measures;
- (viii) 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.

ii. 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, by the Association of Bay Area Governments.
- (c) Soil Survey of Essex Cty, 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.

5.5 REVIEW PROCEDURES

5.5.1 Application Review:

Within fourteen (14) days after the filing of the Definitive Plan Application (Form C) with the Board, the Board's Designee shall notify the Board of any missing or incomplete information in the application. Upon such notification, the Board shall notify the applicant in writing of said missing or incomplete information in the application. At that time, the applicant may withdraw an incomplete application by notifying the Board and the Town Clerk, in writing, of the decision to withdraw the application from consideration. If the applicant withdraws the application, the filing fee shall be forfeited.

If the applicant does not withdraw an incomplete application within seven (7) days of notification of incompleteness, the Board shall proceed to advertise and hold a Public Hearing on the application as submitted. No additional information or materials shall be accepted for review after the receipt of application is acknowledged by the Board without their express written consent. If the Board approves the acceptance of additional submission materials, the applicant is required to formally amend the application with amendment materials being provided to the Town Clerk, the Board of Health and the Board.

5.5.2 Public Hearing:

Upon determination by the Board that the application for approval of the Definitive Plan is complete, or that it is incomplete and the applicant has failed to withdraw or seek to formally amend the application, the Board shall set a date for the public hearing and so notify the applicant.

Notice of the hearing shall be typed by the Board or the Board's Designee. Then, at the applicant's expense, the applicant will advertise the notice in a newspaper of general circulation in North Andover in each of two (2) successive weeks, the first publication being not less than fourteen (14) days before the day of such hearing: and by mailing, return receipt requested, not less than ten (10) days before the date of the hearing, a copy of the advertisement to all owners of land abutting upon the land included in the plan as appearing on the most recent tax list. Proof of receipt of the advertisement being placed must be provided to the Planning Department ten days prior to the public hearing.

5.5.3 Report of the Board of Health:

The Board of Health shall submit a written report to the Board within forty-five (45) days after the plan is filed. Said report shall indicate approval or disapproval of said plan and, in the event of disapproval, shall make specific findings in the report, and where possible, shall make recommendations for adjustment. Failure to report within forty-five (45) days after filing shall be deemed approved by the Board of Health. If the proposed subdivision is to be serviced by the North Andover sewage system, failure to report within forty-five (45) days after filing shall also be deemed approved by the Board of Health.

Extreme care shall be practiced in the layout of a subdivision in un-sewered areas. The extent of soil evaluation shall be determined by the North Andover Health Agent based on the Town of North Andover Soils Maps and whatever other soil information is available. The tests which may be required include deep hole test holes, percolation tests and test borings, and the number of tests required shall be determined by the North Andover Health agent.

5.5.4 Plan Review by Other Town Officials:

Prior to approval of any Definitive Plan, the Board shall give due regard to the reports of the Office of Planning, Conservation Commission, Police Department, Fire Department, Health Department and the Building Department and any technical expert hired by the Board.

Where any deviations from the design requirements specified by these Rules and Regulations or the Town of North Andover's design standards and construction specifications are indicated on the plan, the Board's Designee shall so notify the Board and shall provide a written statement approving or disapproving said deviation.

The Board's Designee shall also provide a recommendation of the proper amount of security as required in Section 6. This recommendation shall be based on information provided by the Applicant on the cost of performing the various items of work described in the plans. Due to the fact that the Board is using the security as assurance of project completion, the Board may, at their reasonable discretion, factor in administrative costs, applicable prevailing wage schedules, engineering and inspection services and a contingency for the project.

5.6 DECISION:

After the Public Hearing the Board will approve, modify and approve or disapprove the plan as submitted. Findings for action by the Board shall be the following:

- a) completeness and technical adequacy of the plans and supporting material;
- b) due regard for the provision of adequate access to all of the lots in a subdivision by ways that will be safe and convenient for travel
- c) for lessening congestion in such ways and in the adjacent public ways
- d) for reducing danger to life and limb in the operation of motor vehicles
- e) for securing safety in the case of fire, flood, panic and other emergencies
- f) for ensuring compliance with the applicable zoning by-laws or by-laws
- g) for securing adequate provisions for water, sewerage, drainage, underground utility services, fire, police, and other similar municipal equipment, and street lighting and other requirements where necessary in a subdivision
- h) for coordinating the ways in neighboring subdivisions
- i) conformity with the design and construction standards described in these Rules and Regulations and in attached Appendices;
- j) conformity with all applicable zoning requirements;

Following such action, and within ninety (90) days of receipt of the Definitive Plan, the Board shall file a certificate of its action with the Town Clerk and send notices of its action by certified mail to the applicant. In the event a Preliminary Plan has not been filed, or in the event that a Preliminary Plan previously had been filed and disapproved by the Board, the Board shall file a certificate of vote within one hundred thirty-five (135) days of receipt of the Definitive Plan.

5.6.1 Time Extensions:

Further time, as may be agreed upon by the Board and the applicant, may be allowed for the Board's decision. Such time extensions shall be at the written request of the applicant and such notice(s) of time extension shall be filed forthwith by the Board with the Town Clerk.

5.7 PERFORMANCE GUARANTEE:

5.7.1 Requirement For Posting

Pursuant to MGL Section 81-U, before endorsement of the Board's approval of a Form C plan, the applicant shall secure the construction of ways and installation of municipal services in an amount sufficient to cover the cost of all or any agreed upon portion of such construction and installation and of the subdivision improvements specified in Section VII of these regulations or as may be shown on the Form C plan.

1. The amount of the performance guarantee shall be established by the Board in a sum

sufficient to cover the cost of construction of the required subdivision improvements and the cost of legal and engineering work necessary for street acceptance. The amount shall be adjusted to include a reasonable inflation factor as shown in the latest Engineering News-Record Construction Cost Index with a minimum ten (10%) percent for a two (2) year guarantee.

2. The performance guarantee shall be in the form of a passbook account, established in the name of the applicant, titled "Trust Account" from which withdrawals shall not be allowed without the approval of the Board. The passbook together with a signed withdrawal slip shall be delivered to the Board within 30 days of approval of the amount by the Board. (see section IVB.2)
3. Guarantees for terms longer than two years shall not be established except under extenuating circumstances which shall be demonstrated to the Board by the applicant.
4. The Board may approve a plan without establishment of a passbook account **guarantee, if, but only if**, the applicant records, and provides the Board with a certified copy of such recording, a covenant by the owner of record of land, running with the land, whereby such ways and services and improvements shall be provided to serve any lot before such lot may be built upon or conveyed, other than by mortgage deed.
5. Simultaneously, a Performance Guarantee Agreement and Bond form must be signed in the Planning Office, along with the set of Road Construction Guidelines (sample attached).
6. If an applicant is to deposit a performance guarantee in the form a surety,

5.7.2. Performance Guarantee Procedure

The applicant shall request, in writing to the Board, the establishment of a performance guarantee amount for any or all of the required subdivision improvements, including ways and municipal services, shown on the Form C plan. The applicant shall specify the time period in which he intends to have completed all such subdivision improvements. Completion shall include all physical construction of such subdivision improvements and those legal and engineering documents needed for acceptance of streets, utilities and any open spaces by the Town.

1. The Board's Designee shall compute the amount estimated to be required to complete such subdivision improvements shown on the plan. This amount shall be adjusted to include a reasonable inflation factor under Section 5.7.1.1. above and such fees deemed by the Board to be sufficient to cover legal fees and engineering fees necessary to have streets accepted by the town. In no case shall these legal and engineering fees be less than two hundred (\$200) dollars per lot in the subdivision.
2. The Board shall consider approval of the figure submitted by the Board's Designee at a public meeting. If approved by majority vote, the board shall notify the developer of the term of the performance guarantee (not to exceed two years) and the amount, which shall be a valid figure for a period of thirty (30) days.
3. The applicant shall provide the performance guarantee in passbook account form, as required by Section 5.7.1.2. of these regulations, by delivery to the Board's office in the Town Office Building, the passbook and withdrawal slip shall be held by the Town Treasurer.

5.7.3 Performance Guarantee -- Fees for Project Review and Inspectional Services:

- a. When conducting inspections in relation to, a preliminary subdivision, a definitive subdivision, or a Special Permit under the provisions of the North Andover Zoning Bylaws, the Planning Board may determine that the assistance of outside consultants is warranted due to the size, scale or complexity of a proposed project, because of a project's potential impacts, or because the Town lacks the necessary expertise to perform the work related to a preliminary subdivision, a definitive subdivision, or a Special Permit under the provisions of the North Andover Zoning Bylaws. The Planning Board may require that applicants pay a "project review

- fee” consisting of the reasonable costs incurred by the Planning Board for the employment of outside consultants
- b. In hiring outside consultants, the Planning Board may engage engineers, planners, lawyers, urban designers or other appropriate professionals who can assist the Planning Board in analyzing a project to ensure compliance with all relevant laws, ordinances/bylaws, and regulations. Such assistance may include, but not be limited to, monitoring or inspecting a project or site for compliance with the Planning Board’s decision or regulations, or inspecting a project during construction or implementation.
 - c. Prior to any expense being incurred, which would be chargeable to the developer, the Planning Board shall provide the developer with an estimate of the expected costs. The developer shall deposit with the Town a cash amount equal to the total estimated cost of review and inspection of the proposal.
 - d. Funds received by the Planning Board pursuant to this section shall be deposited with the municipal treasurer who shall establish a special account for this purpose. Expenditures from this special account may be made at the discretion of the Planning Board without further appropriation. Expenditures from this special account shall be made only for services rendered on connection with a specific project or projects for which a project review fee has been or will be collected from the applicant. Accrued interest may also be spent for this purpose. These funds will be disbursed by the Planning Board to the reviewing/inspecting party until expended.
 - e. Upon completion of all review and inspection services, the Planning Board shall examine all records to ensure that all payments have been made. In the case of an estimate being too low the developer shall make a final deposit to the Town in the amount of the shortfall. In the case of an estimate being too high the Planning Board shall refund to the developer any unused funds, including accrued interest. The failure of the developer to provide funds for all outstanding costs shall be cause for a stop work order of the proposal. A final report of said account shall be made available to the applicant or the applicant’s successor in interest. For the purpose of the regulation, any person or entity claiming to be an applicant’s successor in interest shall provide the Planning Board with documentation establishing such succession in interest.
 - f. Any applicant may make an administrative appeal from the selection of the outside consultant to the Board of Selectmen. Such appeal must be made in writing and must be made within 20 days after the Planning Board has mailed or hand-delivered notice to the applicant of the selection. The grounds for such an appeal shall be limited to claims that the consultant selected has a conflict of interest or does not possess the minimum, required qualifications. The minimum qualifications shall consist either of an educational degree in, or related to, the field at issue or three or more years of practice in the field at issue or a related field. The required time limit for action upon an application by the Planning Board shall be extended by the duration of the administrative appeal. In the event that no decision is made by the Board of Selectmen within 30 days following the filing of the appeal, the selection made by the Planning Board shall stand.

5.8 RELEASE OF PERFORMANCE GUARANTEE

5.8. Written Request:

Upon completion of improvements required by these Regulations, the applicant may request either partial or full release of the bond, deposit or covenant by filing a statement of completion and a request for release to the Town Clerk and the Board. The statement shall include:

- a) written evidence from the Board Designee that the streets and drainage conform to the Board's requirements in accordance with the approved Definitive Subdivision;
- b) written evidence from the Board Designee that the underground wiring, water mains, sanitary sewers, storm sewers, hydrants and/or other site improvements conform to the specifications and the Board's requirements in accordance with the approved Definitive Plan;
- c) written evidence from both the Board Designee and the Director of Engineering of the Department of Public Works that as-built and road layout plans have been submitted and reviewed;
- d) written evidence from the Board Designee that the improvements have been exposed to one complete winter environment (Dec. 1 to April 30) without damage, or that damage, if incurred, has been repaired to the satisfaction of the Subdivision Inspector and the Department of Public Works; and
- e) written evidence from the Board Designee that installation of street trees and other plants as described in Section 6 have been completed satisfactorily, the plant materials are in healthy condition and that the warranty has been assigned to the Town.
- f) Owners of record of all lots within a subdivision for which release of all performance guarantee monies is requested, shall be given timely notice prior to the meeting at which the Board shall vote on such release.

5.8.2 Partial Release:

Prior to final release of security, the Board may, at its discretion, grant up to three (3) partial releases from the required security for partial completion of improvements provided that:

- a) no reduction shall reduce the bond, deposit or covenant to a value below the estimated cost of completing the unfinished portions of the improvements;
- b) no lot shall be released from the covenant unless and until construction of ways and installation of municipal services up to and including the base course of asphalt to serve said lot both have been completed to the Board's satisfaction;
- c) no partial release of security shall be granted until the Board has received written verification from the Board Designee that substantially more than fifty percent (50%) of the required improvements have been completed satisfactorily;
- d) no partial release shall reduce the security by more than fifty percent (50%) of the amount being held at the time the release is requested; and
- e) no partial release of security shall be granted until the Board has received stamped record plans documenting construction completed to date.

5.8.3 Final Release of Security:

If the Board determines that the required improvements have been completed in accordance with these Rules and Regulations, it may release the interest of the Town in any bond or deposit and return the bond or deposit to the applicant, or release the covenant by appropriate instrument.

However, the Board shall retain security in an amount equal to at least 10% of the total cost of landscaping and street improvements to ensure construction adequacy against latent defects. Such security shall not be released until the fee in the road and any related instruments have been conveyed to the town and said road has been accepted at Town Meeting.

5.9 RESCISSION:

Failure of an Applicant to record the Definitive Plan within six (6) months of its endorsement by the Board at the Essex North District Registry of Deeds or at the Land Court; or to comply with the construction schedule incorporated into the performance agreement; or to initiate construction of improvements in a subdivision within two (2) years of the approval of the Definitive Plan; or to comply with all applicable Town of North Andover Zoning By-law requirements; or to comply with the approved plans and any conditions of approval; shall constitute grounds for rescission of approval in accordance with the requirements and procedures set forth in M.G.L. c.41, s. 81-W.

5.10 MUNICIPAL COMPLETION OF SUBDIVISION:

Any such bond may be enforced and any such deposit may be applied by the Board for the benefit of the Town of North Andover, as provided in M.G.L. C41, s.81-Y, upon failure of the performance for which any such bond or deposit was given to the extent the reasonable cost to the Town of completing the construction and installation of the improvements.

5.11 OWNERSHIP AND MAINTENANCE OF SUBDIVISION IMPROVEMENTS

5.11.1 Acceptance:

Approval by the Board of a Definitive Subdivision Plan shall not constitute acceptance by the Town of North Andover of any street, sidewalk or other municipal service within the subdivision.

5.11.2 Ownership:

The Applicant shall retain title to the fee of each street, path or easement in, or appurtenant to, the subdivision until conveyed to the Town and shall maintain and repair the streets and improvements in a manner satisfactory to the Town, acting by and through its Board, during this period. A notation shall be made on the plans which indicates the Applicant's ownership of said street(s) pending acceptance by the Town.

If the Town must maintain a portion of, or enter the subdivision for the purpose of public safety, emergency purposes, or otherwise, the Town reserves the right to charge the Applicant for services rendered.

Prior to final release of security, the Applicant shall submit to the Board and the Town Counsel all the necessary documentation for street acceptance including, but not limited to, plans in a form acceptable to the Registry of Deeds or the Land Court, a street layout plan, legal descriptions, easements, a list of owners and mortgagees of lots having rights in the street(s), and all other necessary grants, of deeds or instruments affecting a locus.

5.11.3 Maintenance by Applicant:

The Applicant shall be responsible for maintaining in good repair all streets in the subdivision after release of the security, as required in Section 5.7 and Section 5.9 or until the streets are accepted by the Town Meeting. To assure such responsibility, the Applicant shall guarantee the maintenance of the streets in the subdivision in a condition which meets all the requirements of these Rules and Regulations to the satisfaction of the Board, by posting with the Town a maintenance security, in an amount sufficient in the determination of the Board, to secure the aforesaid maintenance. The applicant shall be responsible for maintenance of all improvements within the street, from edge to edge of the right-of-way, as shown in Figure 1.

5.12 COMPLETION WITHIN TWO YEARS

10) The Board may impose as a condition of approval on a Definitive Plan that construction of all ways and all installation of municipal services shown on the plan be completed within two (2) years of the date of approval. For purposes of clarification, "completed" shall be defined as the utilities being installed and the streets or ways constructed to binder coat two years from the date of Definitive Plan approval. If the construction and installation is not completed within a two (2) year period, the approval shall automatically lapse and no way shall be laid out, constructed or opened for public use unless and until a new Definitive Plan application has been filed in accordance with the Rules and Regulations then in effect and the new plan has been approved by the Board.

5.13 RIGHT OF ENTRY:

The Board, its officers and agents, may, as far as they deem necessary in carrying out the subdivision control law, enter upon any lands and there make examinations and surveys or to place and maintain monuments and marks.

5.14 AS-BUILT PLAN:

An accurate "as-built" plan and profile of the roadway(s) and associated site improvements, prepared by a registered professional engineer and registered professional land surveyor, shall be submitted to the Board after completion of the construction and prior to any partial release. Said plan shall indicate the record location of all municipal services as actually installed. Sufficient ties, including depths shown as profiles, for the proper and accurate identification and location, shall be provided. Additional information to be provided includes, but is not limited to, the location and size of sewer pump/lift stations, location and total storage provided of detention ponds, and other similar facilities.

Prior to a final bond release, a final as-built plan and profile prepared at the same scale as the approved subdivision plan drawn to the requirements of the Registry of Deeds, shall be submitted to the Planning Board for approval. The as-built plan and profile shall bear the certification from both a Registered Professional Civil Engineer and Land Surveyor that all utilities shown thereon are as-built as to location and grade, that all stone bound monuments have been properly and accurately set in accordance with Professional Land Surveying standards and that the roadway is within the right-of-way lines as shown, and that the subdivision is entirely as constructed is in accord with the proposed grading plan and that the drainage patterns conform to the drainage analysis as submitted

and approved by the Planning Board. Final as-built plans and profiles shall include as a minimum the following information.

- 1) Rims, size, type and inverts of all drainage and sewer pipes.
- 2) Location, type and elevation of all water mains, including gates, tees, services and hydrants.
- 3) Location and type of all underground electrical, telephone, fire alarm and cable lines, including services to lots, transformers, utilities and junction boxes.
- 4) Water service shut-off boxes to each lot with linear ties to a permanent structure or monument.
- 5) Location of all gas lines including lot services and shut-offs.
- 6) Curbing including sizes and type.
- 7) Sidewalks and grass plots including type and width and handicap ramps.
- 8) Driveway curb cut from edge of pavement to right-of-way lines.
- 9) Centerline stationing with monument stationing.
- 10) Top and bottom of fill and cut slopes adjacent to the roadway.
- 11) Centerline profile elevations at every 50' station and at high and low points.
- 12) Width of roadway pavement.
- 13) Utility and light poles with guys.
- 14) Street signs.
- 15) Permanent bench marks on each sheet.
- 16) Landscaping and Tree plantings.
- 17) All off roadway drainage facilities including easements, swales, appurtenances and final landscaping. If a detention/retention basin is part of the Subdivision, provide enough spot elevations on the bottom and top of side slopes to indicate that the basin will have proper staging as approved.
- 18) Notation of any changes that deviate from the endorsed and recorded plans and the authority that allowed such change to be made;
- 19) A Mylar of the endorsed and recorded plans in the same scale required of the as-built final plans with a clear film so an overlay can be made to quickly distinguish any changes which may deviate from that of the endorsed and recorded plans.

The applicant shall submit an interim as-built drawing, with completed municipal services, for review and acceptance by the Board, before the placement of any pavement.

A statement shall be provided on the "as-built" plans that the information provided conforms to these regulations, to the design intent of the design engineer and that any exceptions, exclusive of granted waivers, shall be noted on said plan. The "as-built" plan shall be recorded in the Registry of Deeds upon the release of all lots and completion of all ways and utilities.

5.15 Planning Board Conditions and Releases of Conditions

5.15.1 General

This section describes how conditions may be attached to the Board's approval of a Form C plan, and the types and terms of releases of those conditions.

5.15.2 Establishment of Conditions

1. In the interest of orderly development of the Town of North Andover and of preserving the health, safety and welfare of its inhabitants, the Board may attach or impose reasonable conditions to its approval of a Form C plan.

2. These conditions of approval will normally address but need not be limited to such matters as: plan recording, subdivision improvements, performance guarantees, construction scheduling, grading, earth movement, Wetland Resource Areas, construction standards, erosion and sedimentation control, stabilization of slopes and soil surfaces, drainage, location of stump dumps, protection of open space, street acceptance procedures, and compliance with the M.G.L. and with particular federal or state statutes and local bylaws deemed relevant by the Board.
3. Conditions, if any, imposed by the Board shall accompany the Board's approval endorsement upon a Form C plan, either upon the plan itself or by separate schedule attached, the existence of which schedule of conditions shall be noted on the face of the plan and be deemed an integral part of the plan as approved.
4. Where streets or ways are not otherwise deemed adequate, the board may impose conditions limiting the lots upon which buildings may be erected, and the number of the buildings that may be erected on particular lots and the length of time for which particular buildings may be maintained without further consent by the Board to the access provided.

5.15.3 Recording the Conditions

Following expiration of the twenty (20) day appeal period following approval of the plan, the applicant may record the plan and the decision containing the conditions of approval, to be recorded at the Registry of Deeds. Thereupon the conditions shall be known and referred to as Restrictions. A copy of the recorded decision and the recorded plan shall be made available to the Planning Office.

5.15.4 Partial Release of Conditions

Upon the delivery of the performance guarantee required by Section IV to the Board, the Board may provide an instrument allowing for the conveyance, sale, or transfer of lots shown on the plan. There after the Board may provide instruments for partial releases of restrictions, meaning those restrictions which have been complied with or are not applicable to any given lot, for which a fee of twenty five (\$25.00) shall be charged.

5.15.5 Clearance Certificates

Prior to the issuance of any building permits by the Inspector of Buildings for any lot created under these rules and regulations, the following conditions shall have been met:

1. The North Andover Board of Health or its agent shall have approved either connection to the municipal sanitary sewer, or the installation of an on-site sewage disposal system;
2. The North Andover Department of Public Works shall certify that properly installed water service appurtenant to the lots and adequate under standards generally applied in North Andover, has been installed and approved;
3. The construction of roads or ways shown on the subdivision plan shall be completed at least through binder pavement course and in compliance with these rules and regulations;
4. a Clearance Certificate shall have been filled out by the applicant for such building permit and shall have been approved by the agent of the Board.

5.15.6 Minor Amendments to Conditions

1. Minor amendments or changes to conditions of approval or restrictions may be made but only upon the following circumstances:

2. Field conditions may warrant minor changes which may be allowed by the Board when in its staff's opinion such change will not substantially detract from the intent of the condition or restriction. Such a change shall be reviewed and approved by the Board at the next regularly scheduled meeting.

5.15.7 Substantial Modification or Amendment of a Form C Approval or of its Condition

Any modification or amendment of a Form C plan or its conditions which is not minor shall be made only pursuant to MGL Section 41, 81-W and shall be subject to the submission, notice, hearing, and approval requirements of the MGL and these rules and regulations. (See Section 2.7.5)

5.15.8 Failure to Comply with Conditions

Failure on the part of the applicant, his agent, or contractor to comply with any condition or restriction established by the Board in regard to a Form C plan shall be dealt with in the following manner:

1. The Board, through its staff, shall have the authority to enforce the conditions of the Board's approval of the plan.
2. Infractions deemed by the Board or its staff minor in nature, shall result in the applicant being notified of such infraction and directed to take corrective actions.
3. Repeated infractions or infractions deemed by the Board or its staff to be major or having a direct impact on health, safety and welfare or upon the integrity of the rules and regulations of the Board, shall result in an immediate Stop Work Order being issued at the project site by the authorized staff or agent, and notification by certified mail of such action to the applicant.
4. A Stop Work Order with certified notice of action shall require the applicant and the agent who issued said Order to appear before the Board at a public meeting for a determination of facts and subsequent action by the Board to secure health, safety and welfare, and compliance with these rules and regulations.

5.15.9 Final Release of Conditions

Upon acceptance of the subdivision streets by the Town, the Board may release all restrictions not previously released by execution of a formal document, in recordable form, except such as are on their face intended to survive acceptance of subdivision streets.

5.16 STREET ACCEPTANCE PROCEDURES

This paper contains the guidelines and procedures to be followed by those applicants wishing to submit subdivision streets to the Town for acceptance at Town Meeting.

It is imperative that applicants, attorneys and engineers review, understand and follow these procedures, especially as to documents required and deadlines, in order to eliminate confusion and delay to all parties.

Final approval of the Form C plan does not constitute the laying out or acceptance by the Town of streets within a subdivision, nor entitle the streets to such acceptance.

Street acceptances within a subdivision are the financial and legal responsibility of the applicant.

A. PROCEDURE SEQUENCE

1. After all subdivision improvements have been installed and inspected by the Department of Public Works the applicant shall compile the engineering and legal documents required for street acceptance and shall submit, according to the form and schedule prescribed by the Town Clerk, an Article for the Town Meeting Warrant seeking acceptance of the street by Town Meeting voters.
2. The applicant contacts the Town Clerk's office to find out the deadline for submitting the actual warrant article to ensure their place on the Town Meeting Warrant. A copy of the as-built and layout plans are placed on file with the Town Clerk at the time of submission of the warrant article.
3. The applicant should meet with the Town Planner at least 4 months prior to Town Meeting date to review any outstanding issues or missing forms within the subdivision and/or file itself.

The applicant shall submit all required documents and materials to the Planning Department (See Section B - Street Acceptance Documentation) and other applicable departments listed below at least 3 months prior to Town Meeting. The applicant sends any legal documentation required (all deeds, easements, conveyance of open space land to the town, certificate signed by the applicant's attorney certifying that all necessary parties have signed all easement instruments, street deeds and open space deeds, etc.) to Town Counsel for review of this documentation, accompanied by a letter explaining what subdivision you are requesting street acceptance on and for Town Counsel to review the enclosed documentation. You must also send a copy to the Staff Engineer at the Public Works Department so they can verify that the deeds and easements match up to those depicted on the as-built plans.

A copy of these requests must be submitted to the Planning Department for our records.

4. At least sixty (60) days prior to Town Meeting, Town Counsel and the Town Engineer shall complete their review of the documents and shall notify the Board in writing of approval or disapproval of these documents. Those documents found defective shall be returned to the applicant for correction.
5. At least forty-five (45) days prior to Town Meeting, in the case of documents to be corrected, the applicant shall submit the corrected documents to Town Counsel and/or the Town Engineer for final review. A copy of the re-submitted documentation shall be provided to the Planning Department.
6. The applicant will be scheduled for a public hearing (prior to Town Meeting) in front of the Board of Selectmen so that they may also make a recommendation to Town Meeting. The applicant can contact the Selectmen's Office to find out when they will be scheduled for their public hearing.
7. If the applicant has received favorable recommendations from DPW, Town Counsel and the Planning Department, the applicant will be placed on the next available Planning Board Meeting (prior to Town Meeting) so that they can receive a recommendation from the Planning Board to be made to Town Meeting.
8. At least thirty (30) days prior to Town Meeting, when corrected documents have been required, Town Counsel and the Town Engineer shall complete their final review and file a written report stating approval or disapproval of the documents.

9. The applicant or his representative shall make a motion on the floor of Town Meeting that a vote be taken to accept the subdivision street(s) as provided in the Warrant Article.

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B. STREET ACCEPTANCE DOCUMENTATION

The applicant shall submit the following documents and materials to the Planning Department:

- a. Certificate of Completion request to the Planning Department relative to the Subdivision. A copy of this request shall also be made simultaneously to the Department of Public Works and/or the inspecting agent.
- b. The applicant also sends a memorandum to the DPW requesting a final punch list of outstanding items to be completed within the Subdivision.
- c. The applicant submits a copy of the stone bound certification.
- d. The applicant submits (if they haven't previously) a Mylar of as-built plans and layout plans to the Planning Department and the Department of Public Works showing the street or streets to be accepted. The layout plans (not to be confused with the as-built plans) shall show the streets and all appurtenant easements by courses and distances. The plans shall be labeled individually; one being titled "Street As-Built Plan" and the other being titled "Street Layout Plan". The Selectmen will endorse the layout plan therefore a signature block must be provided for them to endorse the plans.
- e. Certificate of Compliance with conditions imposed on the development by the Conservation Commission under the Wetlands Protection Act.
- f. Instruments suitable for recording running to the "Inhabitants of the Town of North Andover" for all easements which are not a part of the street or streets (drainage, sewer, water). These instruments must be signed by all parties having any rights or interest in such easements.
- g. Deed for the street itself, running to the "Inhabitants of the Town of North Andover". This deed shall contain a legal description of the street named in the petition and shall be signed by all parties having any rights or interests in such street.
- h. Deed of gift in trust for "open space" parcels (if applicable) running to the "Inhabitants of the Town of North Andover" in a form acceptable to the Planning Department.
- i. Certificate(s) signed by the applicant's attorney certifying that all necessary parties have signed all easement instruments, street deeds, and open space deeds.
- j. Name and addresses of each property owner and mortgagee having rights or interests in the streets, easements, and open space, and the names and addresses of each abutter thereto, along with a Request for a Public Hearing by the Board of Selectmen for Street Acceptance pursuant to Massachusetts General Laws, Chapter 82, Section 22.
- k. Certificate of Notice signed by the applicant's attorney that all property owners, mortgages, and abutters have been notified of a Public Hearing pursuant to the provisions of Massachusetts General Laws, Chapter 82, Section 22 with a return to the Board of Selectmen not less than seven (7) days before the Public Hearing. Said notice to be in the following form:

"Notice is hereby given that the Board of Selectmen of the
Town of North Andover will hold a Public Hearing on _____
in the _____ in the matter of the layout of
_____ as a Public Way."

C. SPECIAL REQUIREMENTS

1. For streets and ways within a subdivision of land, title to which or any portion of which has been registered under Massachusetts General Laws, Chapter 185 by the Land Court, the applicant shall submit to the Board an easement reading the following: “an easement running to the ‘Inhabitants of the Town of North Andover’ for all purposes of a public way or street including the right to install, repair, maintain, alter, and operate sanitary sewerage, drainage, water lines and other appurtenant utilities in, into, upon, over, or across said land as shown on Land Court Plan No. _____ (sheets) _____ filed in the Essex County North District Land Registration Office in Land Court. Book No. _____, drawn by _____, dated _____, as modified and approved by the Court, filed in the Essex County North District Land Registration Office, a copy of which is filed with Certificate of Title No. _____.”
2. All property taxes owed to the Town for the Open Space lot(s), if any, must be paid before the Town will recommend the street for acceptance. Proof of this payment must be provided by the applicant to the Planning Department through virtue of a receipt from the Treasurer’s Office.

D. WORK TO BE COMPLETED AFTER ACCEPTANCE AT TOWN MEETING

1. Following street acceptance by Town Meeting:
 - a. Developer brings original recorded deeds and easements and original Mylar of endorsed plans to the Planning Department;
 - b. Planning Board will release final bond monies (usually maintenance monies) upon request of developer.

SECTION 6. REQUIREMENTS FOR IMPROVEMENTS AND DESIGN

6.1 GENERAL REQUIREMENTS

In order to provide for streets of suitable location, width and construction to accommodate prospective traffic and afford satisfactory access for police, emergency and medical, fire fighting, snow removal, sanitation and other road maintenance equipment; to coordinate streets so as to compose a convenient system; to avoid undue financial burdens for present and future taxpayers; and to avoid potential natural or technological hazards or nuisances, including the problems associated with uncontrolled storm water run-off, the Board has established the design of subdivisions set forth in this Section.

In addition to the requirements established in these regulations, all subdivisions shall conform to the provisions of the Town of North Andover Zoning By-law, the regulations of the North Andover Board of Health, the Town of North Andover Water Rules and Regulations, the Town of North Andover Sewer Regulations, the Town of North Andover Zoning By-law and Rules and Town of North Andover's Wetlands Protection Bylaw and its regulations, and all other rules and regulations applicable in the development of land in North Andover.

6.2 CHARACTER OF THE LAND

6.2.1 Protection of Natural Features:

In laying out of a subdivision, the Applicant shall comply with these rules and regulations with due regard to all natural features such as large trees, watercourses, scenic or historic elements, aquifers, flood plains, habitats of rare or endangered species, and any state listed plant species as defined by the MA Natural Heritage & Endangered Species Program. These features shall be left undisturbed wherever practical and the Board may waive design requirements in order to protect important natural features.

New subdivisions shall in all cases be designed so that compatibility with existing neighborhoods is achieved, and the maximum amenities (sidewalks, utilities, guardrails and fences, curbing) within the new development are created.

New subdivisions shall in all cases be designed to achieve the least amount of earth disturbance (cutting, filling, regrading).

6.2.2 Unsuitable Land:

Land which the Board finds to be unsuitable for development due to flooding, improper drainage or adverse drainage, adverse topography, poor soils, bedrock, location of utility easements, or other features which the Board has reason to believe would be detrimental to the health, safety, and general welfare of the present or future inhabitants of the subdivision and/or its surrounding area, shall not be subdivided or developed unless adequate measures are formulated by the Applicant and are approved by the Board to eliminate or minimize any short-term or long-term impacts created by development of the unsuitable land.

6.2.3 Subdivisions Straddling Municipal Boundaries:

Whenever access to the subdivision is required across land in another Town, the Board will not approve subdivisions where the access to the subdivision is required across land in another Town.

6.2.4 Self-Imposed Restrictions:

If, as part of a subdivision application, the Applicant or Owner places voluntary restrictions on any of the land contained in the subdivision which are greater than the requirements of these Regulations or of the Town of North Andover By-law, such restrictions or references thereto shall be indicated and located on the Definitive Plan and shall be recorded in the Essex South District Registry of Deeds or the Land Court.

6.3 LOTS

6.3.1 Lot Arrangement:

Lots shall be arranged so there will be no foreseeable difficulties due to topography, soils, Wetland Resource Areas, bedrock, improper drainage, or other conditions, in securing permits to build upon all lots in compliance with the Town of North Andover Zoning By-law, nor in providing practical, feasible driveway access to a building on each such lot.

6.3.2 Lot Dimensions:

Lot dimensions shall comply with the minimum standards of the Town of North Andover Zoning By-law. Dimensions of corner lots should be large enough to allow for erection of buildings and fulfilling the minimum front yard setback and lot width 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 By-law.

6.3.3 Soil Preservation, Sedimentation and Erosion Control:

The applicant shall comply with the Rules and Regulations Governing Soil Erosion and Sedimentation Control as provided for in Appendix VI of these rules and regulations.

6.3.4 Lot Drainage:

Lots shall be laid out to provide positive drainage away from all proposed buildings. Individual lot drainage shall be designed to avoid concentrating stormwater drainage from each lot onto adjacent lots and/or the street.

6.3.5 Debris and Waste:

No construction 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 the same shall be required prior to final release of any covenant or security. Stump dumps are not allowed.

6.4 CONSTRUCTION SPECIFICATIONS:

The specifications for construction, as referenced in Appendices I through VI of these Rules and Regulations, shall be used as a guide for required construction specifications unless otherwise directed. The Board, upon recommendation from the Board's Designee, shall determine if the standards have been met.

6.5 GENERAL CONSTRUCTION PROCEDURES

6.5.1 Notification to subdivision inspector:

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.

6.5.2 Inspections:

Each phase or step in the construction of the required improvements shall be inspected and approved in writing by the Board's Designee. 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 Section 5.14. 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
- 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

6.6 CONSTRUCTION METHODS

6.6.1 Clearing and Grubbing:

The area within the proposed street rights of way shall be cleared and grubbed except for those trees which are intended to be preserved as street trees and to be retained in side slope areas.

6.6.2 Earth Excavation:

All excavation shall conform to the lines and grades shown on the approved Definitive Plan(s). Where organic soils, ledge or clay is encountered within the right of way, it shall be removed entirely and, where necessary, replaced with sand and gravel. Where water is encountered, or is expected to be encountered, within four feet (4') of the finished grade of the street, subsurface drainage, of a design acceptable to the Board, upon recommendation from the Board's Designee, shall be installed. Proposed roadway side slopes higher than 15' shall contain horizontal benches with drainage swales to ensure side slope soil stability.

6.6.3 Ledge Excavation:

Boulders or ledge shall be removed to a depth of at least twenty-four inches (24") below finished grade wherever it exists within the road or sidewalk pavement area.

6.6.4 Retaining Walls:

If street and/or side slope grades require more than two feet (2') of cut or fill, the Board may require retaining walls along abutting property lines unless a suitable alternative is approved by the Board.

6.7 STREETS - BASIC REQUIREMENTS

6.7.1 Frontage:

No subdivision shall be approved unless the land to be subdivided shall have frontage on an existing or proposed public street or, if the area to be subdivided is to use a private way to access the public street, the private way shall be improved or constructed by the applicant to meet the minimum design and construction requirements of these Regulations.

6.7.2 Improving Existing Streets:

If a subdivision borders an existing but inadequately constructed public or private street, the applicant may be required to improve the street bordering the subdivision tract or provide the land necessary for future improvements for that portion bordering the subdivision. Land used for or reserved for future street improvements may not be counted in satisfying the setback and area requirements of the Town of North Andover Zoning By-law. If the projected traffic generation from the proposed development, as determined in the traffic impact analysis required in article 5.4.4.6, will have adverse impacts on traffic conditions on existing public streets, and their intersections, the applicant shall construct and pay for the improvements required to mitigate or minimize the impacts.

6.7.3 Topography and Location:

Streets shall be designed and located to conform as closely as possible to the original topography of the site. There shall be a minimum amount of cut and fill in the design and construction of the streets. The overriding concern is public safety, therefore the overall topography of the site shall be taken into consideration, resulting in an avoidance of steep grades and curves.

6.7.4 Street Names:

Proposed street names shall be included on the plans and shall be sufficiently different in sound and in spelling from other street names in the Town so as not to cause confusion. A street which is planned as a continuation of an existing street shall bear the same name. The proposed street name shall be included in the application submitted to the Board. E 911 shall give final approval of all street names.

6.7.5 Street Numbers:

Street numbers shall be assigned by the DPW and shall be included in the application submitted to the Board.

6.8 STREETS - DESIGN STANDARDS

6.8.1 Table IA

**Minimum Design Standards for LOCAL Streets
(Design Speed: 30 miles per hour)**

	Residential	Non-Residential
Design Speed	30 mph	30 mph
Min. ROW Width	50 feet	60 feet
Min. Pavement Width	26 feet	30 feet
Min. Centerline Curve Radius	225 feet	250 feet
Min. Tangent length between reverse curves	150 feet	150 feet
Min. Intersection Corner Curb Radius	40 feet	40 feet
Min. Horizontal and Vert. Site distance	200 feet	250 feet
Centerline Profile Grade – Max.	8%	7%
Centerline Profile Grade – Min.	1%	1%
Vertical Curve – Min. Length	100 feet	100 feet
Vertical Curve: K Value – Crest	30	30
Vertical Curve: K Value – Sag	40	40
Pavement Cross Slope – Normal Crown	3%	3%
Maximum Superelevation	6%	6%
Cul-de-sacs		
Max. Length (roadway plus turnaround)	600 feet	600 feet
Min. Turnaround ROW radius	120 feet	170 feet
Min. Turnaround pavement diameter	100 feet	120 feet

6.8.2 Table IB

**Minimum Design Standards for COLLECTOR Streets
(Design Speed: 40 miles p.h)**

	Residential	Non-Residential
Design Speed	40 mph	40 mph
Min. ROW Width	50 feet	60 feet
Min. Pavement Width	26 feet	30 feet
Min. Centerline Curve Radius	450 feet	450 feet
Min. Tangent length between reverse curves	150 feet	150 feet
Min. Intersection Corner Curb Radius	40 feet	40 feet
Min. Horizontal and Vert. Site distance	325 feet	325 feet
Centerline Profile Grade – Max.	6%	6%
Centerline Profile Grade – Min.	1%	1%
Vertical Curve – Min. Length	100 feet	100 feet
Vertical Curve: K Value – Crest	80	80
Vertical Curve: K Value – Sag	70	70
Pavement Cross Slope – Normal Crown	3%	3%
Maximum Superelevation	6%	6%

6.8.3 Table IC

**Minimum Design Standards for ARTERIAL Streets
(Design Speed: 45 miles p.h)**

Residential and Non-Residential

Design Speed	45 mph
Min. ROW Width	60 feet
Min. Pavement Width	36 feet
Min. Centerline Curve Radius	800 feet
Min. Tangent length between reverse curves	150 feet
Min. Intersection Corner Curb Radius	50 feet
Min. Horizontal and Vert. Site distance	450 feet
Centerline Profile Grade – Max.	5%
Centerline Profile Grade – Min.	1%
Vertical Curve – Min. Length	100 feet
Vertical Curve: K Value – Crest	120
Vertical Curve: K Value – Sag	90
Pavement Cross Slope – Normal Crown	3%
Maximum Superelevation	6%

6.8.4 Street Geometry:

Street geometry (i.e., horizontal and vertical alignment) should be selected to achieve both safe vehicular movement and adequate sight distances for associated design speeds. The design engineer shall demonstrate conformance to this objective by providing tables of calculations which indicate the resultant sight distances.

6.8.5 Excess Right-of-Way:

Right of way widths in excess of the standards designated in Tables IA, IB, and IC may be required whenever, due to anticipated future traffic/loading conditions, additional width is necessary to provide improved alignment.

6.8.6 Cul-de-sac - Temporary:

The subdivision design shall provide for continuation of streets between adjacent properties when such continuation promotes the convenient movement of traffic, effective fire protection and emergency vehicle access, efficient snow removal service and efficient provision of utilities.

If the adjacent property is undeveloped and a street must be dead-ended temporarily, the right-of-way shall extend to the property line.

6.8.7 Cul-de-sac- Permanent:

If a street will not extend beyond the subdivision boundaries and its continuation is not required for access to an adjoining property, the terminus shall not be nearer the subdivision boundary than fifty feet (50'). A permanent dead-end street shall be provided with a cul-de-sac turnaround in accordance with Section 6.8.1, Table IA.

6.8.8 Reserve Strips:

Reserve strips prohibiting access to streets or adjoining property shall not be permitted except where, in the opinion of the Board, such strips shall be in the public interest.

6.8.9 Intersections:

Streets shall be laid out so as to intersect as nearly as possible at right angles, and in no case at less than a 75 degree angle. New intersections at one side of an existing street shall align directly with any existing intersection at the opposite side of the street whenever feasible. Street intersection jogs with centerline offsets of less than one hundred and fifty feet (150') shall not be permitted.

Street intersections shall be designed with a flat grade (not greater than 3%) for a distance of at least one hundred (100') feet as the street approaches each side, as applicable, of any intersecting street.

The minimum sight distances (in both directions) at all intersections of streets shall be the decision sight distance listed in Section 7 of the MHD Highway Design Manual.

6.9 CURBING:

At a minimum, a continuous low-profile, granite edging shall be provided as an integral part of all new streets. On cul-de-sac turnarounds and at intersections, vertical granite curbing shall be required. Vertical granite curb inlets with curb transition sections shall be required at the back of catch basins, on grades over six (6) percent, and at the intersections with arterial streets.

6.10 DRIVEWAY APRONS:

Driveway aprons and road pavement shall be installed at the same time. Aprons shall extend from the street to the street right-of-way line. In the event that the driveway aprons can not be installed at the same time as the street construction, it shall be the responsibility of the applicant to ensure that the driveway aprons are installed prior to the acceptance of the street by Town Counsel and the Board's Designee. If a lot is undeveloped, the applicant shall curb the frontage of the lot until such time as the lot owner obtains a street opening permit.

6.11 SIDEWALKS

6.11.1 Requirement:

- a) Sidewalks shall be required on both sides of the street along all arterials.
- b) Sidewalks shall be required on one side of the street along all local and collector streets unless the Board determines pedestrian movement is otherwise accommodated.
- c) Sidewalks shall be constructed at the same time as, and in conjunction with, the roadway.

6.11.2 Design Standards:

The design and construction of sidewalks shall be based upon the nature and density of development as shown in TABLE II. All sidewalks shall be set back a minimum of 5' from the edge of the roadway.

TABLE II - Minimum Design Standards for Sidewalks

Street Class	Zoning District	
	Residential	Non-Residential
Local	bit. meandering (1) standard (2) 5' wide	or concrete standard 6' wide in business district or bit. standard 5' wide in other areas.
Collector	bit. meandering standard 5' wide	or concrete standard 6' wide in business district or bit. standard 5' wide other areas.

Arterial	bit. standard 5' wide in business district or	concrete standard 6' wide concrete standard 5' wide in other areas.
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Footnotes:

- 1) Meandering- following existing terrain and major features such as stonewalls, large trees, or rock outcroppings, within the street right-of-way.
- (2) Standard - uniform width parallel to the street.

6.11.3 Materials:

Where new sidewalks are to be constructed in short sections to connect existing sidewalks, the new sections shall be constructed of the same materials as the existing sidewalks.

6.11.4 ADA Requirements:

All sidewalks and ramps shall conform with the Americans with Disabilities Act (ADA). Wheelchair ramps shall be constructed in conformance with the current editions of the MHD Wheelchair Ramp Standards. Wheelchair ramps shall be cement concrete, except ramps in bituminous concrete sidewalks parallel to the street at the intersection.

6.12 MONUMENTS

6.12.1 Requirements:

Monuments shall be four feet long, 6 inch square concrete or granite, and shall be installed at all street intersections, at all points of change in direction or at curvature of streets, at two (2) property corners of all new lots and at any other points where, in the opinion of the Board, permanent monuments are necessary.

6.12.2 Monument Spacing:

Monuments located in the street right-of-way shall be spaced so as to be within sight of each other, the sight lines being contained wholly within the street right-of-way limits. The maximum interval shall be one thousand feet (1000').

6.12.3 Monument Materials:

Monuments shall be standard granite markers of not less than four feet (4') in length and not less than five inches (5") square, and shall have a drill hole in the center. If subsoil conditions prohibit installation of four (4') foot monuments, with advance approval by the Board, monuments meeting alternative specifications shall be installed. Monuments shall be set flush with the finished grade.

6.12.4 Monument Certification:

No permanent monuments shall be installed until all construction which would destroy or disturb the monuments is completed. Placement and location of bounds are to be certified by a registered professional land surveyor after installation of the street, and shall be shown on the "as-built" or record plans.

6.13 UTILITIES - BASIC REQUIREMENTS

6.13.1 Installation:

All utility lines, and/or other subsurface facilities within the street rights-of-way shall be installed prior to the placement of the roadway subbase materials.

6.13.2 Identification:

The applicant shall provide and install utility identification tape for all underground utility installations. The tape shall be placed in the trench a minimum of twelve inches (12") above the pipe, conduit or cable and not less than twelve inches (12") below the finished grade.

Identification tape for utilities shall be traceable, durable, and either non-biodegradable plastic or metallic, and shall be approximately six inches (6") wide by four thousandths (.004) inches, or four mil, in thickness.

The following colors shall be used:

- Orange - Gas
- Yellow - Electric
- Green - Communications (telephone, cable, fire alarm)
- Blue - Water
- Red - Sanitary Sewer

6.13.3 Easements:

Wherever necessary, the Board shall require perpetual, unobstructed easements for sewers, storm drains, power lines and water mains. Such easements shall be a minimum width of thirty feet (30'), centered on the utility, and shall be indicated on the Definitive Plan by metes and bounds.

- I. Easements for water, sewer, electric, telephone lines and drainage piping or channels shall be provided at locations determined by the Board and the Department of Public Works for the provision or extension of utilities within the development or to adjacent properties. Such easements shall be no less than twenty (20) feet in width.
- II. Where a subdivision is traversed by any open water course, drainage way, channel or stream, an easement shall be provided which substantially conforms to the lines of such features for the purpose of protection against encroachment or alteration. Such easements shall be at least thirty (30) feet in width, unless determined otherwise by the Board or Department of Public Works.
Where such easement or any part thereof crosses or appears on any subdivision lot in the development, the deed for said lot shall provide a restriction which shall run with the lot which prohibits any encroachment or alteration within such easement.

- III. Utility easements into or crossing any open space or protected area shall be prohibited unless approved by the Board upon the recommendation of the Department of Public Works.
- IV. Where easements have been approved entering into or crossing open spaces or protected areas they shall be restored to reflect as nearly as possible the conditions existing prior to the easement. Vegetative visual buffering required by the Planning Board in such easements shall be the responsibility of the developer and shall be reflected in the subdivision performance guarantee.
- V. Easements for access to parks and conservation lands abutting a proposed subdivision may be required by the Board. These easements shall be at a width determined by the Board to be sufficient for their purpose but will not normally exceed 30 feet in width.
- VI. The developer may be required to obtain off-site drainage easements when, in the Board's opinion, the subdivision will cause an increase or change in the surface water volumes or velocities, either through open channels or through culverts into or onto any abutting properties.
- VII. Where the easement is accessible from the street, the side slope shall be no greater than four feet (4') horizontal to one foot (1') vertical. The first twenty feet (20') of the easement from the back of sidewalk, or edge of roadway, shall have a twelve inch (12") deep base of gravel subbase material beneath the topsoil to support maintenance equipment.

6.14 STORM DRAINAGE

Storm water run-off shall be disposed of through a combination of storage and controlled release, as indicated in the Rules and Regulations Governing Storm Water Management (See Appendix V) Drainage systems shall be designed according to the following principles and criteria:

6.14.1 Peak Flows:

Property shall be developed in such a manner as to maximize storm water recharge on the site and to minimize direct overland run-off into adjoining streets and watercourses. Peak flows and run-off at the boundaries of the subdivision shall be no higher following development than before development, for the 10 and 100 year storm events.

6.14.2 Capacity:

Drainage systems shall have adequate capacity to carry all storm water run-off presently flowing through the subdivision, as well as to dispose of any additional run-off generated by the proposed development up to and including the run-off from a one hundred (100) year storm using the following methods:

- a) the flow from storms of up to a twenty-five (25) year frequency and a twenty-four (24) hour duration shall be conveyed through the storm drain system on the subdivision site. Storm drain piping and grate inlets shall be designed for a 25 year storm event;
- b) Detention facilities and culverts shall be provided to accommodate all run-off, up to and including the run-off generated by the one hundred (100) year, twenty-four (24) hour storm. As a minimum, detention basin routing calculations shall be prepared for the ten (10) and one hundred (100) year storm events.

6.14.3 Release Rate:

The combination of storage and design release rate shall not result in a storage duration of greater than seventy-two (72) hours. Maximum depth of storm water detention/retention areas shall be four feet (4').

6.14.4 Outlet Structures:

Outlet control structures shall be designed as simply as possible and shall require as little maintenance as possible for proper operation.

6.14.5 Emergency Overflow:

Each storm water detention area shall be provided with a method of emergency overflow in the event of a storm in excess of the one hundred (100) year frequency type.

6.14.6 Natural Patterns:

Natural drainage patterns shall be used wherever possible. All existing watercourses shall be left as existing unless approval to alter them is obtained through the Conservation Commission. All new open watercourses shall be protected from erosion with seeded, sodded, rip rapped, stone lined or other treatment required for the projected volume and velocity of flow.

6.14.7 Alteration:

Any alteration of land on the site shall be such that changes in existing patterns of drainage shall not affect properties outside the subdivision by increasing the amount or rate of peak flow as designated by the Wetlands Protection Act.

6.14.8 Structured Systems:

If soil conditions or topography make natural drainage systems impractical and existing drains in adjacent streets or easements have adequate capacity to accommodate the drainage flow from the subdivision, a structured system shall be used and appropriate connection to the existing Town drainage system shall be made.

6.14.9 Calculations:

Hydraulic calculations, prepared by a registered professional engineer, shall note the specific engineering and/or computer program to be used. Hydraulic calculations shall be submitted to substantiate all design features of any proposed drainage system. Computations for run-off shall be made in accordance with standard engineering practice, acceptable to the Board's Designee. Pipe systems shall be designed to provide self-cleaning flow velocities.

The hydrology calculations information shall include the following information, as a minimum:

1. Runoff area boundaries shown on a plan
2. Methodology used
3. C factors and I values used for existing and proposed conditions
4. Soil conditions / ground water

The hydraulic calculations shall show the following information, as a minimum:

1. Capacity and projected volume of each catch basin or other inlet grate
2. Pipe size calculation
3. Detention / retention pond calculations including outlet structure as applicable
4. Total suspended solid (TSS) removal rates
5. Infiltration calculations as applicable
6. Gutter flow calculations
7. Culvert analysis and calculation as applicable

6.14.10 Detention / Retention Basin Side Slopes:

Basin area side slopes shall be kept as close as possible to natural land contours, i.e. ten percent (10%) or less wherever possible. A maximum 3:1 side slope shall be constructed for the interior of the basin areas. For security purposes fencing may be required by the Board. Drainage basins shall be designed to facilitate access for maintenance vehicles and personnel.

6.14.11 Drainage Easements:

If it is necessary to carry drainage across lots within the subdivision, storm drainage easements shall be provided, of such width and construction as will be adequate to accommodate the volume and velocity of the runoff. However, no such easement shall be less than thirty feet (30') in width.

If a proposed drainage system would carry water across land outside the subdivision boundaries to an approved outfall, appropriate drainage rights shall be secured by the applicant at the applicant's expense, and shall be referenced on the Definitive Plan.

6.15 WATER FACILITIES

6.15.1 Installation:

The applicant shall be responsible for installing water facilities, including, but not limited to water supply, pipes, hydrants, hydrant markers, gates, valves, and all other related appurtenances, in accordance with the Regulations and Master Plan of the Water Department. Any extension of an existing pipe and construction of new pipes requires approval from the Water Department. Building service pipes and appurtenances from the system piping to the exterior line of the street right-of-way shall be constructed for each lot unless the Board of Health has approved individual wells. Said water facilities shall be shown on the definitive plan.

6.15.2 Fire Hydrants:

Fire hydrants shall be required for all a subdivisions. Fire hydrants, with hydrant markers, shall be located not more than five hundred feet (500') apart; shall be approved, in writing, as to location by the Fire Chief and the DPW; and shall be shown on the Definitive Plan.

6.15.3 Extensions:

Reasonable provisions shall be made for extension of the water system and pipes to adjoining property, including installation of water gates. Appropriate easements may be required.

6.15.4 Additional Alternative System of Water Supply/Fire Protection:

If the municipal water supply is available, but the minimum required flow is not available, in addition to extending the municipal water system, the applicant shall propose an alternative system for providing water supply for fire protection.

6.15.5 Municipal Water Supply Not Available:

If the municipal water supply is not available to the subdivision, the applicant shall propose an alternative method of providing water supply for fire protection. Water for fire fighting may be supplied by natural or man-made bodies of water. The surface of each pumping access point shall be adequate to support at least 42,000 pound gwv vehicles at all times of the year. Provisions shall be made so that such water suction points shall be visible and useable in all weather conditions. Each dry hydrant which may be exposed to damage by vehicular traffic shall be protected by suitable barriers.

6.16 SEWER

6.16.1 Installation:

In the event that the Town sanitary sewer system is located within an existing public way within four hundred feet (400') measured along the existing public way or proposed roadway of the subdivision, the applicant shall be responsible for connecting all lots to the sewerage system. Connection to the system shall require an approval from the DPW, and any other required approvals, including, but not limited to, a permit for extension of the sewer system issued by the Massachusetts Division of Water Pollution Control.

6.16.2 Sewer Options:

If the applicant is not required to connect to the Town sanitary sewer system, the applicant shall provide an alternative system for wastewater disposal. The following options are available:

- a) install a communal sewage disposal system, the design and construction of which shall be subject to the approval of the Massachusetts Department of Environmental Protection (DEP), the North Andover Board of Health and all other necessary review agencies; or
- b) provide engineering data in accordance with Title 5: "Minimum Requirements for the Subsurface Disposal of Sanitary Sewage" of the Massachusetts Environmental Code and with the Rules and Regulations for Sewage Disposal Installations as promulgated and amended from time to time by the Town of North Andover Board of Health (See Appendix V.), to prove to the satisfaction of the Board and the Board of Health the feasibility of providing private on-lot sewage disposal systems for each lot. Each on-lot system shall be located in the front yard, wherever practical, to facilitate future connections to the Town sewerage system.
- c) grading for slope requirements for on-site sewage disposal systems shall be totally contained within the lot upon which such system is proposed. No slope easements onto any adjacent lot or proper shall be permitted.

6.17 ELECTRIC AND COMMUNICATIONS LINES

6.17.1 Installation:

All electrical and communications lines shall be installed underground. Communications lines shall include, but not be limited to, telephone and community antenna television cable.

6.17.2 Electric Lines:

The electrical power distribution shall be installed in accordance with the specifications of the Rules and Regulations of the Department of Public Works of the Town of North Andover in effect at the time of application.

6.18 TREES AND OTHER PLANTINGS

6.18.1 Location:

Street trees shall be planted by the applicant on all streets within the tract being subdivided. Trees shall be planted within the street right-of-way, between the sidewalks and the edge of the street pavement and shall be spaced at intervals of approximately fifty feet (50') on center, but no closer than thirty-five feet (35') on center.

6.18.2 Species:

The species of street trees selected shall be a minimum of four different species from the list of recommended street trees below:

Fraxinus Ornus	Flowering Ash	Fraxinus Americana
White Ash	Tilia Tomentosum	Silver Linden
Liquidambar Styraciflua	Sweet Gum	Plantanus Acerifolia
London Planetree	Acer Campestre	Norway Maple
Acer Saccharum	Sugar Maple	

6.18.3 Requirements:

Tree size and planting shall conform to the requirements of Appendix VII, Tree Planting Specifications.

6.19 Guard Rails:

Guard rails shall be installed in all areas where fill slopes in excess of the required 3:1 have been approved. Appropriate slope treatment and erosion control measures shall be provided for all slopes in excess of 3:1 and rip-rap may be required on all slopes in excess of 2:1, unless otherwise specified by the Board.

6.20 STREET SIGNS:

Street signs shall be installed at all intersections in conformity with the specifications of the

Department of Public Works. Until such time as each street is accepted by the Town as a public way, the sign posts at the intersection of each street with any other street, shall have affixed thereto a sign designating such street as a private way. Upon application for acceptance of the streets, the costs for advertising for hearing, for data collection in support of the street acceptance, for permanent signs and for any other costs related to the acceptance of the street shall be paid by the applicant.

6.21 STREET LIGHTING:

Provisions shall be made for street lighting connections at locations determined by the Board.

6.22 RESERVATION OF LAND FOR PUBLIC PURPOSE

No rule or regulation shall require, and no Planning Board shall impose, as a condition for the approval of a plan of a subdivision, that any of the land within said subdivision be dedicated to the public use, or conveyed or released to the Commonwealth or to the county, Town or Town in which the subdivision is located, for use as a public way, public park or playground, or for any other public purpose, without just compensation to the owner thereof.

Before approval of a plan by a Planning Board, said Board shall also in proper cases require the plan to show a park or parks suitably located for playground or recreation purposes or for providing light and air and not unreasonable in area in relation to the area of the land being subdivided and the prospective uses of such land, and if so determined said Board shall by appropriate endorsement on the plan, require that no building may be erected on such park or parks for a period of not more than three years without its approval.

6.23 Grading

The final grading shown on any approved Form C plan shall not be amended or changed without prior review and approval of the Board except as may be deemed minor by the Board's staff as defined in Section VI.F.7. below. In reviewing proposed amendments or changes, the Board shall consider the impact of such amendments or changes upon the subdivision as:

- a) changes in the direction of storm water;
- b) changes in velocities of runoff;
- c) impacts on abutting properties;
- d) impacts on street drainage systems;
- e) impacts on natural drainage channels, water courses or streams.

6.24 Slopes

Lot slope requirements in the residential zoning districts shall be as follows:

a. The slope of land at any point, stated as a percentage, shall be defined as the change in elevation over a horizontal distance measured perpendicular to the contours divided by the distance over which the change occurs multiplied by 100.

$$\text{Slope} = (\text{Change in elevation/horizontal distance measured perpendicular to contours}) \times 100$$

b. All natural slopes exceeding 25% over a horizontal distance of 10 feet as measured perpendicular to the contour are protected and shall remain in their natural state.

c. All cut-and-fill slopes within or contiguous to the street right-of-way shall be planted with suitable, well rooted, low growing plant materials or grass as determined by the Board, with advice from the Board's Designee. A wood chip or comparable mulch shall be used with ground cover plants to minimize erosion. Planting of sod may be required.

APPENDIX I - STREET CONSTRUCTION SPECIFICATIONS

A. ROADWAYS

1. Clearing and Grubbing:

The entire area of each proposed street right-of-way shall be cleared of all stumps, brush, roots, boulders and like material and all trees not intended for preservation. Existing trees within the area of the right-of-way may be selected for preservation for aesthetic or other values by the Planning Board or its Designee provided that they shall be over four (4) inches in caliper and shall be located at least five (5) feet from the edge of the finished roadway pavement. No trees shall be removed until said selection is made. Such trees to be preserved shall be protected from bruises and other abuses continuously throughout the construction of the subdivision in a manner satisfactory to the Planning Board or its Designee.

2. Excavation and Subgrade Preparation:

All topsoil, organic and other unsuitable soils shall be removed for the full length and width of the proposed roadway pavements and from under the sidewalk location when sidewalks are required, regardless of whether or not the finished grade is above existing grade.

All other material shall be removed for the full length and width of the proposed roadways to the proposed roadway subgrade elevations as shown on the profile plan; provided, however, that if the soil is soft and spongy or contains undesirable material such as clay, peat, sand pockets, tree stumps, or any other material detrimental to the subgrade, a deeper excavation below the subgrade shall be made as required by the Planning Board Subdivision Inspector or his Designee.

3. Utilities:

Subsurface utilities shall be constructed after the roadway area has been graded to subgrade elevations, but before final subgrade compaction and final fine grading. Connections for sewer, drain, water, gas, telephone and electric services, where municipal services are available, shall be constructed for each lot (whether or not there is a building there) from the main service line in the way to five (5) feet beyond the exterior line of the way, except that the Planning Board may waive such requirement in whole or in part in the case of a lot to be used for a park, playground or for any other purpose for which, in the opinion of the Planning Board, such connections shall not be required.

4. Grading:

All roadway subgrades shall be fine graded and compacted in conformance with the finished grades shown on the profiles of the Definitive Plan or other design. Roadway cross slopes shall conform to the slopes and superelevations shown on the Definitive Plan profiles.

5. Gravel Sub base:

After the roadway subgrade has been fine graded to an elevation twenty-one (21) inches below the finished grade and approved, twelve (12) inches of gravel sub base material shall be spread and rolled with a roller of sufficient weight to compact to ninety five (95) percent Proctor density. Gravel shall be in conformity with the current MHD Standard Specifications and shall consist of hard, durable stone and coarse sand practically free from loam and clay, uniformly graded and containing no stone having a dimension greater than three (3) inches. The gravel shall be spread in two six-inch (6") layers, each thoroughly compacted to 95% Proctor density and true to line and grade.

The gravel shall conform to the following gradation requirements:

Sieve	Percent Passing
3 inches	100%
1/2 inch	50% - 85%
3/8 inch	45% - 80%
No. 4	40% - 75%
No. 10	30% - 60%
No. 40	8% - 35%
No. 200	0% - 8%

If the site contains in-situ gravel material that conforms to the current MHD Standard Specifications and the above gradation, it may be used as a base material.

6. Crushed Stone Subbase:

A 4 inch sub base course of dense graded crushed stone shall be placed and compacted on the completed gravel subbase course. Dense graded crushed stone material and construction shall conform to the requirements of the current MHD Standard Specifications, Section 402.

7. Pavement:

The pavement shall be Class I, Type I-1 bituminous concrete conforming to the current MHD Standard Specifications. The pavement shall consist of a 4 inch base course and a 1 ½ inch top course.

The base course shall be base course material placed in one course or two 2 inch binder course material courses placed in a continuous operation to produce the required 4 inch thickness before any vehicular traffic or construction equipment is permitted on the new pavement.

The top course shall be top course material placed in one course. The top course shall not be placed until all building and other construction within the site has been completed, unless otherwise approved by the Planning Board.

The base course shall be tack coated with RS-1 asphalt emulsion at the rate of 0.05 gallons per square yard immediately before placement of top course material.

8. Guard Rails and Posts:

Guard rails shall be galvanized steel beam Type SS with H section steel posts in conformance with current MHD Standard Specifications. A wood guard rail with wood posts may be approved by the Board provided the rail and post lumber is approved pressure treated wood and the rail and post dimensions, and steel backing, is in conformance with the current AASHTO Roadside Design Guide Manual requirements.

B. CURBING

Curbing shall be vertical granite curb Type VB and sloped granite edging Type SB conforming to MHD Standard Specifications Section M9.04.1 and M9.04.2, respectively. Granite curb inlets shall conform to Section M9.04.5

C. SIDEWALKS

1. Preparation:

The sidewalk sub grade shall be graded and compacted to the proposed lines, grades, and cross slopes. Any soft, yielding or other undesirable materials found in the subgrade shall be removed and replaced with gravel and recompacted. An 8 inch thick gravel sub base course shall be placed on the approved sub grade and compacted to 95% Proctor density.

2. Sidewalk Pavement:

Concrete sidewalk pavement shall be 3000 lb. strength cement concrete, four (4) inches in thickness, reinforced with No. 10, 6 inch by 6 inch mesh and broom finished. An expansion joint (3/4 inch open) shall be provided at least every twenty (20) feet; dividing joints shall be scored into the sidewalk every four (4) feet. Concrete sidewalk shall be constructed within edge forms. Forms shall be removed after completion of walk construction.

Bituminous concrete sidewalks shall be two 1 ¼ inch thick courses of Class I, Type I-1 dense mix material conforming to MHD Standard Specification Section M3.11.00.

All sidewalks shall be constructed in conformance with MHD Standard Specification Section 701.

D. SIDEWALKS, PATHWAYS AND BICYCLE PATHS

Wherever pedestrian pathways or bicycle paths are provided for in the Definitive Subdivision Plan, construction shall be as required by the Board.

All edges of cement concrete pathways shall be formed with wood which shall be securely anchored and left in place; this provision shall not apply to bituminous concrete paths/pathways. Wood shall be treated lumber.

E. TOPSOIL

Topsoil shall be placed to a minimum depth, after compaction, of four inches on all roadside slopes and uncovered areas. Topsoil shall be natural material obtained from, or off, the site and shall conform to MHD Standard Specification Section M1.07.0.

F. STREET NAME SIGNS

Street name signs shall be installed at all street intersections in conformance with DPW requirements.

APPENDIX II - SURFACE WATER DRAINAGE INSTALLATION SPECIFICATIONS

The surface water drainage system shall adequately dispose of surface runoff from the street and adjacent areas and shall be installed in accordance with the following requirements:

1. Pipes, Culverts and Drains:

Pipe for the construction of culverts and drainage system pipes shall be reinforced concrete ASTM C-76 Class 4. All pipe shall not be less than twelve (12) inches in diameter. Pipe joints shall be carefully made so that the spigot is tightly butted to the seat of the bell and the spacing between the spigot is uniformly proportioned and caulked with loose or braided jute. In all cases the joints shall be filled with cement Mortar unless rubber gasket type joints are used.

Pipes shall be laid in a bed of six (6") inches of processed gravel conforming to MHD Standard Specification Section M1.03.01 or crushed stone conforming to MHD Standard Specification Section M2.01.3. All utility trenches shall be backfilled with bank gravel conforming to MHD Standard Specification Section M1.03.0 Type 6 carefully compacted level with adjacent grades. When pipes, culverts or drains are not located in the street or street shoulder, six (6) inches of loam shall be placed over the trench fill, and the grades shall be leveled with adjacent terrain. All drains shall be laid to uniform grades and shall be carefully backfilled so that the pipe is supported throughout its entire length with compacted earth. Earth cover shall be a minimum of three (3) feet, except where a greater pipe strength is requested and approved by the board.

2. Catch Basins:

All catch basins shall have a four (4) foot deep sump and shall discharge into manholes. The distance between two (2) catch basins shall be as determined by approved hydraulic calculations, but not to exceed three hundred (300) feet, however, the Planning Board may approve a greater distance if deemed advisable due to unusual field conditions and justifiable by calculations.

Supplementary catch basins shall be provided as required adjacent to catch basins at low points to prevent ponding if the low point basin grate and inlet become clogged.

The materials and construction of catch basins and drain manholes shall conform to the MHD Standard Specifications Section 2.01. Any change in alignment or grade, if not normally the location of a catch basin, shall be made by using a standard manhole conforming to the above specifications. Catch basins and drain manholes shall be constructed of pre-cast concrete. Drain manholes shall contain ladder rungs and brick and/or concrete inverts. Catch Basins and sewer manhole structures shall have a minimum forty-eight (48") inch inside diameter.

APPENDIX III.

SPECIFICATIONS FOR INSTALLATION OF ELECTRICAL SERVICES

1. Underground Distribution System in Residential Subdivisions

Upon application to the Massachusetts Electric Department and subject to the provisions hereinafter specified, an Applicant proposing to construct a residential subdivision, which has been approved by the Planning Board with regard to design feasibility, shall extend underground wiring for light, power, and street light throughout the subdivision where no other electric distribution system is in existence.

All provisions hereinafter set forth apply to subdivisions consisting of front lot distances measuring an average of not over two hundred (200) feet. For lots over two hundred (200) feet frontage, additional terms, conditions and/or costs may apply.

2. Applicant's Responsibilities:

The applicant's responsibilities shall be to:

- a. Present to the Department at least two (2) sets of the Preliminary Plan and/or Definitive Plan showing the subdivision as proposed, including the location and depth of electric service lines and all other underground installations such as water, sewer and drainage as are required in said plans. The approximate schedule for subdivision completion shall be noted.
- b. If a definitive Plan is approved, provide the Department with lines, grades, permanent easement (s), and partial release of mortgage from any mortgage for the location and installation of hand holds, manholes, transformer vaults, cable, ducts, street lighting fixtures and other necessary equipment.
- c. Install all underground wires and structures in accordance with the National Electric Code. All work shall be installed by an electrician, licensed by the Commonwealth of Massachusetts. All work shall be reviewed and approved by the Massachusetts Electric Department.
- d. Obtain adequate ties to underground conduit, prior to backfilling, to plot the location of all underground conduit on the as-built drawings for the street.
- e. Provide service installation for each residential lot as required by the Massachusetts Electric Department.
- f. Provide, as necessary, temporary, sixty (60) ampere structures in conformity with the design and requirements shown in figure 5.

3. No extension shall be made under the above provisions until the Applicant furnishes the Massachusetts Electric Department and the Town of North Andover Planning Board with a set of plans for the subdivision and the necessary permanent easements or rights-of-access which bear no cost to said department.

APPENDIX IV. TREE PLANTING SPECIFICATIONS

1. All street trees shall be planted within the right-of-way lines of a street except, when upon the written consent of the owner, trees may be planted upon private property up to twenty (20) feet from the right-of-way lines.
2. If the planting of trees is required, the distance apart shall be a minimum of thirty five (35) feet on center and a maximum of fifty (50) feet on center.
3. All trees to be planted shall have a minimum height of eight to ten (8-10) feet and shall be of at least two and one half (2-1/2) inches in caliper measured at a height of four (4) feet from the ground level.
4. The specie and variety of the trees to be planted shall be selected and approved by the Planning Board and the Director of Public Works/Tree Warden.
5. No evergreen trees, such as pine, fir, spruce or hemlock shall be planted as public shade trees along a way.
6. No trees or shrubs shall be planted at any corner or intersection where they could become a traffic hazard by obstructing vision or preventing safe vehicular movement.
7. All side slopes steeper than 3:1; or have highly erodible soils shall be planted with a low-growing evergreen shrub such as laurel, mugho pine or juniper and shall be seeded with a deep-rooted perennial grass to prevent erosion.
8. All trees shall be planted in one-half (1/2) of a cubic yard of loam, mulched with four (4) inches of chips and shall be properly wrapped and guyed in a manner to ensure their survival.(See Figure 6.)
9. In a subdivision, the Applicant shall be liable for all plant materials as to their erectness and good health for one (1) year after installation, as determined by the Planning Board and/or its Designee.

APPENDIX V.

RULES AND REGULATIONS GOVERNING STORM WATER MANAGEMENT

1. Purpose and Intent

The purpose and intent of stormwater management shall include:

- a. for quantitative control of stormwater runoff, consisting of a system of native specie vegetation and structural measures that control the increased volume and rate of surface runoff caused by man-made changes to the land; and
- b. for qualitative control of stormwater runoff, consisting of a system of native specie vegetation, structural or other measures that reduce or eliminate pollutants that might otherwise be carried off by surface runoff.

2. Application

The applicant shall follow all regulations and policies for proper stormwater management for the following all new subdivisions.

3. Submission Requirements

The applicant shall be responsible for providing applicable information in compliance with these Rules and Regulations.

Information to be provided shall include:

- A. All storm drainage information in accordance with 6.14 of the Rules and Regulations Governing the Subdivision of Land in North Andover, Massachusetts;
- B. Detailed description of the existing environmental and hydrological conditions of the site and of the receiving waters and Wetland Resource Areas. This information shall include, but not be limited to, the following:
 - 1) the direction, flow rate, and volume of surface runoff under existing conditions and, to the extent practicable, pre-development conditions;
 - 2) the location of areas of the site where stormwater collects or percolates into the ground;
 - 3) a description of all surface watercourses, water bodies, and Wetland Resource Areas on or entering the site, or adjacent to the site, or into which stormwater flows. Information regarding their water quality and current water quality classification shall be included;
 - 4) depth of seasonal groundwater levels, approximate direction and rate of flow, seasonal fluctuations;
 - 5) location of 100 year flood zones/plains;
 - 6) principal vegetation types;
 - 7) topography described in full contour detail, at two (2) foot intervals, with area of steep slope (over 10%) highlighted;
 - 8) soils, with an accompanying analysis of the best use potential of the soils and the hydrological group classification: the soil map and use potentials analysis prepared by the U.S. Soil Conservation Service shall be used as the basis for this analysis.

- C. Proposed alterations of the site shall be described in detail including, but not limited to, the following:
- 1) changes in topography, described in full contour, with details at two (2) foot intervals;
 - 2) areas where vegetation will be cleared or otherwise altered;
 - 3) areas that will be covered with an impervious surface and a description of the surfacing material(s);
- D. The proposed development layout shall be described in detail including, but not limited to, the following:
- 1) the site arrangement including the location of structures, roadways, parking areas, sewage disposal facilities and undisturbed lands;
 - 2) all drainage systems to be provided, including the location and design of the roadway and individual lot subdrains and full drainage calculations and supporting documentation;
- E. Predicted impacts of the proposed development on existing conditions shall be described in detail and shall include:
- 1) changes in water quality including, but not limited to, ground and surface water;
 - 2) changes in groundwater levels;
 - 3) changes in the incidence and duration of flooding on the site and upstream and downstream from it;
 - 4) adverse impacts on Wetland Resource Areas;
 - 5) impacts on vegetation.
- F. All components of the drainage system and any measures for the detention, retention or infiltration of water and/or for the protection of water quality shall be described in detail, including the following:
- 1) the channel, direction, volume and rate of flow and the quality of stormwater that will be conveyed from the site, with a comparison to existing conditions and to the extent practicable, pre-development conditions;
 - 2) detention and retention areas and devices, including:
 - i) plans for discharge of contained waters, including the time to draw down from full condition, and description of outlet structures;
 - ii) maintenance plans: including maintenance schedule, an outline of responsible parties and owners, and all pertinent information and/or agreements to be executed to insure proper maintenance;
 - iii) an evaluation of the pollutant removal efficiency of such devices under the existing conditions;
 - 3) areas of the site to be used or reserved for percolation including the depth to seasonal groundwater table, and prediction of the impact on groundwater quality;
 - 4) areas to be utilized in overland flow, the hydrological soil type of such areas, vegetation present, and the soil susceptibility to erosion;
 - 5) any other information which the Applicant or the Planning Board believes is necessary for an evaluation of the development.
- G. Nitrogen and/or Phosphorus Loading Report: For review of water quality impact, an Applicant shall submit calculations of anticipated nitrogen and/or phosphorus contribution from roads, lawns and septic systems. The Applicant must determine the "carrying load" or ability to absorb nitrogen and phosphorus loading of all receiving water systems on site.

4. Performance Standards:

The Stormwater Management Report submitted must demonstrate that the proposed development or activity has been planned and designed and shall be constructed and maintained, to the extent that is reasonably possible, to meet each of the following standards:

- a. ensure that after development that no detrimental effects shall be created or caused by the proposed development.
- b. maintain the natural hydrodynamic characteristics of the watershed;
- c. protect or improve the quality of surface and ground waters;
- d. protect, maintain, or improve water quality or existing water quality standards for all receiving waters, water courses and water bodies;
- e. protect and maintain groundwater levels;
- f. protect the beneficial functioning of Wetland Resource Areas as areas for natural storage of flood waters, the chemical reduction and assimilation of pollutants and wildlife and fisheries habitat;
- g. prevent increased flooding and damage that results from improper location, construction and design of structures;
- h. prevent reverse salt water intrusion;
- i. protect the natural fluctuating levels of salinity in estuarine areas;
- j. minimize alteration to flora and fauna and adverse impacts to fish and wildlife habitat;
- k. otherwise further the objectives of the Stormwater Management Policies and Regulations.

5. Design Standards

The design, construction and maintenance of stormwater systems shall be consistent with the following:

- a. Discharging runoff directly into rivers, streams, watercourses, or enlarging the volume, rate or further degrading the quality of existing discharges/runoff is prohibited. Runoff shall be routed through vegetated swales, using native species and other structural and nonstructural systems designed to increase time of concentration, decrease velocity, increase infiltration, allow suspended solids to settle and remove pollutants. Such systems will utilize overland flow and re-infiltration as priority techniques for the treatment of run-off;
- b. Retention and detention ponds, and methods of overland flow may be used to retain, detain and treat the increased and accelerated runoff which the development generates;
- c. There shall be a minimum of two (2') feet of naturally occurring soils between the detention basin bottom and the maximum annual ground water table;
- d. Water shall be released from detention ponds at a rate and in a manner approximating the natural conditions which would have occurred before development;
- e. Intermittent water courses such as swales shall be vegetated;
- f. The first one (1") inch of runoff from impervious surfaces, such as rooftops and paved surfaces, shall be treated in the site of the development;
- g. Runoff from parking lots and streets shall be treated to remove oil and sediments. Catch basins shall be provided with hoods; in the alternative, drainage outfalls shall discharge to low velocity "vegetated treatment" swales.
- h. The use of drainage facilities and vegetated buffer zones as open space and conservation areas shall be encouraged;
- i. Neighboring properties shall not be effected by flooding from excessive runoff.

6. Detention/Retention Basins:

a. Performance Standards:

The performance standards shall include the following:

- i) Development shall be oriented to the site so that cutting and stripping of vegetation and grading are minimized;
- ii) Temporary seeding, mulching or other suitable stabilization methods shall be used to protect exposed soil areas during construction; as feasible, natural vegetation shall be retained and protected; during the months of October through March, when seeding and sodding may be impractical, an anchored mulch shall be applied as approved by the Board or by the Board's Designee; diversions and/or prepared outlets may be required in critical areas during construction
- iii) Soil and other materials shall not be stockpiled or redistributed, either temporarily or permanently, in locations or in such a manner as would cause suffocation of tree root systems;
- iv) Erosion and sediment controls shall be coordinated with the sequence of grading, development and construction operations; control measures shall be in effect prior to commencement of each increment/phase of the process;
- v) No area shall be cleared larger than that portion on which construction can be completed rapidly; large areas shall not be left bare and exposed for long periods of time;
- vi) Grading shall be kept to a minimum; tree removal shall be minimized;
- vii) Runoff shall be controlled and conveyed into storm drains and other outlets so it will not erode the land or cause off-site damage; sediment in runoff shall be trapped by using staked hay bales, silt fencing, or sedimentation traps;
- viii) Sediment basins shall be constructed where necessary to detain runoff and to trap sediment during construction;
- ix) Permanent vegetation and erosion control structures, as necessary, shall be installed preferably immediately after construction is completed but otherwise no later than the first full spring season immediately thereafter; they shall comply with the erosion and sedimentation vegetative practices recommended by the U.S. Soil Conservation Service;
- x) Temporary ground cover or erosion/sedimentation controls shall be established on any unbuilt lots as required by the Board;
- xi) Native species shall be used for re-vegetation;
- xii) All graded areas beyond the Street Right-of-Way shall be covered with four (4") inches of topsoil and planted with a native species of vegetative cover, sufficient to prevent erosion;
- xiii) Topsoil shall be stripped from disturbed areas, stockpiled in approved areas and stabilized with temporary vegetative cover if it is to be left for more than thirty (30) calendar days; perimeter sediment controls shall be installed around each area of stockpiled topsoil.

b. Design Standards

- i) Soil erosion control structures shall not be located in a front yard or side yard bordering a street;
- ii) Structures should be designed to preclude the necessity for perimeter security fencing;
- iii) The slope of any bank should not be greater than three (3) to one (1);
- iv) The greatest depth of water in a detention pond during a 100-year design storm shall not exceed four (4) feet; release rates shall comply with the provisions of Section 6.14.3 of the Rules and Regulations Governing the Subdivision of Land in North Andover, Mass; and
- v) Groundwater recharge systems shall be utilized whenever feasible.

c. Maintenance Standards - Prior to Acceptance

- i) As required by the Board, all control structures and associated systems shall be inspected for functionality and damage at least twice each year by the Board's Subdivision Inspector or an agent of the Town. The costs for such inspection shall be paid by the Applicant;
- ii) The Applicant shall be responsible for cleaning sediment and debris from catch basins at least annually; additional cleaning may be required by the Board;
- iii) The Applicant shall be responsible for removal of trees, bushes and /or other growth in the sedimentation basins, and for keeping live native specie vegetative cover on the banks of such basins. Replacement for dead vegetative cover and re-seeding shall be completed promptly;
- iv) The Applicant shall repair or replace any damaged system to the satisfaction of the Board; the Applicant shall be responsible for any damage due to flaws in design or construction; and
- v) The Applicant shall be responsible for cosmetic maintenance such as periodic mowing of grassed areas in sedimentation basins.

d. Acceptance of the System

- i) Prior to any acceptance by the Town or by another entity, the control structures shall be subject to a final inspection by the Board's Subdivision Inspector and/or the Town's agent; the cost of inspection shall be paid by the Applicant; the inspection shall assure compliance with the following elements:
 - a. the system has been constructed in accordance with the plans approved by the Board;
 - b. all construction debris has been removed;
 - c. sediment has been flushed from pipes by a pressure wash;
 - d. catch basins and detention/retention structures are free of sediment and
 - e. ground cover is fully established on **slopes**.
- ii) No release of security for erosion and sedimentation control measures shall be granted until the Board is satisfied that the systems comply with the plans;
- iii) If as a result of the final inspection the Applicant is found to be in non-compliance with the plans, the Board may use the security to assure that the control system(s) is/are brought in to conformance and is/are cleaned and maintained properly in accordance with the plans.

7. General Requirements

The Applicant shall secure future maintenance of the stormwater system by a proper bond or by a deposit or money of an amount as determined by the Board. Such security must be established to the satisfaction of the Board prior to release of any lots within the development and prior to the Board's sign-off of building permit.

In the event that the applicant does not follow maintenance procedures and programs as approved by the Board, the Board shall have the authority to expend any portion of said security to provide such maintenance.

In the event that the stormwater system is accepted by the Town or any private association and/or trust, and, therefore the Town or a private association and/or trust, assumes the ownership of said system, any remaining portion of this security may be refunded to the applicant or the homeowner's association as deemed appropriate by the Board.

APPENDIX VI

RULES AND REGULATIONS GOVERNING SEDIMENTATION AND EROSION CONTROL

1. Purpose and Intent

These regulations are to prevent adverse environmental impacts due to erosion, soil loss and sedimentation, including secondary and cumulative, caused by alterations to vegetation and soil surfaces during land development.

Sedimentation and erosion control structures are required to prevent sediment from clogging stormwater/drainage systems and road ditches. These structures also prevent sediment from entering ponds, streams, reservoirs, watercourse, Wetland Resource Areas and other critical resource within which it is a pollutant. In many cases, these structures detain stormwater runoff, thus preventing flooding of downstream areas.

Responsibility for periodic inspection, maintenance and repair of these control structures and systems to ensure they continue to operate consistent with approved design lies solely with the Applicant, until such time as the street(s) and all other improvements in the subdivision are accepted by the Town.

2. General Requirements

A. If the Applicants proposed development creates six (6) or more house lots or otherwise requires submission of an Environmental and Community Impact Analysis pursuant to Section 5.4 of the Rules and Regulations Governing the Subdivision of Land in North Andover, Massachusetts, the Applicant shall submit a separate plan therewith, which plan shall contain the elements in Section B. and which complies with all other provisions of this Appendix. All subdivision applications must comply with the Performance, Design, and Maintenance Standards and be subject to final inspection before acceptance, as specified herein.

B. The Applicant shall submit an erosion/sedimentation control plan which shall include the following:

- 1) existing and proposed grades, elevations, and contours;
- 2) location and description of existing natural and manmade features on the property and within one hundred (100) feet of the property;
- 3) perimeters of the areas affected and the types of controls proposed within each affected area;
- 4) a soils survey or soils engineering report;
- 5) a schedule of the sequence of installation or application of planned erosion controls, both temporary and permanent, relative to the proposed improvements as the project progresses;
- 6) a slope stabilization and re-vegetation plan which shall include: a description of the existing vegetation; the vegetation to be removed and the method of disposal; the native specie vegetation to be planted; and the slope stabilization measures which are to be installed; the plan also shall assess the environmental effects of such operations on slope stability, soil erosion and water quality;
- 7) a maintenance schedule for erosion/sedimentation controls until street construction is completed and until the street(s) is accepted by the Town or other entity;
- 8) details and, if applicable, cross sections of erosion/sedimentation control devices;

- 9) perimeter delineation of any drainage ways, steep slopes and proposed stockpiles of topsoil, to be restored and/or seeded;
- 10) a note on the plan stating that temporary ground cover and/or erosion/siltation control shall be established on any unbuilt lots as required by the Board;
- 11) a note on the plan that the erosion/sedimentation control plan and associated information is referenced on the definitive subdivision plan.

FORM A

APPLICATION FOR APPROVAL NOT REQUIRED

DATE:

(Stamp two (2) forms with the Town Clerk. File one (1) form with the Town Clerk and one (1) form with the Planning Board.)

To the Planning Board:

The undersigned, believing that the accompanying plan of property in the Town of North Andover, Massachusetts, does not constitute a subdivision within the meaning of the Subdivision Control Law, herewith submits said plan for a determination and endorsement that the Planning Board approval under the Subdivision Control Law is not required.

1. Name of Applicant: _____

Address: _____

2. Location and Description of Property [include Assessor's Map and Lot and Zoning District(s)]: _____

3. Deed Reference: Book _____, **Page** _____

or Certificate of Title: _____

4. Name of Surveyor: _____

Address: _____

Signature of Owner(s): _____

Address: _____

Please indicate the grounds (either A, B, C or D, not a combination) on which you believe your plan not to be a subdivision.

A. Each lot on the plan meets one of the following criteria:

1. Has the frontage, lot area, and lot width required under the Zoning By-law on:

- _____ a) a public way, or
- _____ b) a way which the Town Clerk certifies is maintained & used as a public way, or
- _____ c) a way shown on a plan approved and endorsed by the Planning Board under the Subdivision Control Law, recorded in Plan Book _____ Plan _____, or
- _____ d) a way in existence before the adoption of the Subdivision Control Law by the Town and which the Board finds adequate for the way's proposed use, or
- _____ e) a way shown on a plan of a subdivision recorded at the Registry of Deeds or the Land Court prior to the adoption of the Subdivision Control Law.

B. Each Lot has been clearly marked on the plan to be either:

- a) joined to and made part of an adjacent lot, or
- b) labeled "Not A Building Lot".

C. Each lot on the plan contains a building which existed prior to the adoption of the Subdivision Control Law.

D. The plan shows an existing parcel with no new lot division(s) and has frontage on a way described above.

Received: Town of North Andover Town Clerk (date stamp):

Signature of Town Official receiving this application:

FORM B

APPLICATION FOR PRELIMINARY SUBDIVISION APPROVAL

DATE: _____

(Stamp two (2) forms with the Town Clerk. File one (1) form with the Town Clerk and one (1) form with the Planning Board)

To the Planning Board:

The undersigned, being an applicant under Chapter 41, 81-S, MGL, for approval of a proposed subdivision plan, hereby submits a Preliminary Plan and makes application for approval to the North Andover Planning Board:

1. **Name of Applicant:** _____

Address: _____

2. **Name of Subdivision:** _____

Location and Description of Property [include Assessor's Map & Lot and Zoning District(s)]:

3. **Deed Reference: Book _____, Page _____ or**

Certificate of Title _____

4. **Name of Surveyor/Engineer:** _____

Address: _____

5. **Signature of Owner(s):** _____

Address: _____

Received: Town of North Andover Town Clerk (date stamp):

Signature of Town Official receiving this application:

FORM C

APPLICATION FOR DEFINITIVE SUBDIVISION APPROVAL

(Stamp two (2) forms with the Town Clerk. File one (1) form with the Town Clerk and one (1) form with the Planning Board)

To the Planning Board:

The undersigned, being an applicant under Chapter 41, 81-O, MGL, for approval of a proposed subdivision plan, hereby submits a Definitive Plan and makes application for approval to the North Andover Planning Board:

1. **Name of Applicant:** _____
Address: _____
2. **Name of Subdivision:** _____
3. **Location and Description of Property [include Assessor's Map & Lot and Zoning District(s)]:** _____
4. **Deed Reference: Book _____, Page _____ or Certificate of Title _____**
5. **Name of Surveyor/Engineer:** _____
Address: _____
Easements & Restrictions of Record (Describe & Include Deed References):

6. **Preliminary Plan Submitted?** _____; **Plan Approved?** _____; **Date:** _____

Signature of Owner(s): _____

Address: _____

Received: Town of North Andover Town Clerk (date stamp):

Signature of Town Official receiving this application:

FORM G

PERFORMANCE BOND - SECURED BY DEPOSIT

KNOW ALL MEN BY THESE PRESENTS that _____

of _____

hereby binds and obligates himself/herself and his/her executors, administrators, Designees, heirs, successors and assigns to the Town of North Andover, a Massachusetts municipal corporation, in the sum of _____ Dollars, and has secured this obligation by the deposit with the Treasurer of said Town of North Andover of said sum of money or negotiable securities.

The condition of this obligation is that if the undersigned or his/her its executors, administrators, Designees, heirs, successors and assigns shall fully and satisfactorily observe and perform in the manner and in the time therein specified, all of the covenants, conditions, agreements, terms and provisions contained in the following:

1. Application for Approval of Definitive Plan (Form C) signed by the Principal and dated _____;
2. The Rules and Regulations Governing this Subdivision of Land in the Town of North Andover adopted by the Planning Board; and
3. The Definitive Plan as defined by the above Rules and Regulations and as qualified by the Certificate of Approval (Form H) issued by the Planning Board dated _____;

then this obligation shall be void; otherwise, it shall remain in full force and effect, and that portion of the aforesaid security required to complete the Principal's obligation under this agreement shall become the sole property of said Town of North Andover as liquidated damage.

IN WITNESS WHEREOF the undersigned has hereunto set

his/her hand and seal this _____ day of

_____, 19____.

FORM I
COVENANT

KNOW ALL MEN BY THESE PRESENTS THAT WHEREAS the undersigned has submitted an application, dated _____, 19____ to the North Andover Planning Board for approval of a Definitive Plan of a certain subdivision bearing the name of _____, and has requested that the Board approve such plan without requiring a performance bond,

THIS AGREEMENT WITNESSETH THAT, for the consideration that the North Andover Planning Board waive the aforesaid requirement for a bond, the undersigned covenants and agrees with the Town of North Andover as follows:

1. The undersigned will not sell any lot until the work on the ground necessary to serve such lot adequately has been completed in the manner required in the aforesaid application, and in accordance with the covenants, conditions and agreements thereof, (except for the following particular items of work, the performance of which shall be exempt from the conditions of this contract:

2. The undersigned agrees to record this agreement in South Essex Registry of Deeds as required by the Rules and Regulations of the North Andover Planning Board.

3. The undersigned agrees that this contract shall be binding upon his/her heirs, executors, and administrators, and particularly upon any grantees of the undersigned.

It is the intention of the undersigned, and it is hereby understood and agreed, that this contract shall constitute a covenant running with the land. Lots within the subdivision shall respectively be released from the foregoing conditions hereof upon the recording of a certificate of performance executed by a majority of said Planning Board which certificate shall enumerate the specific lots to be so released.

3There are no mortgages of record or otherwise on any of the land in the aforesaid subdivision except as described below and the present holders of said mortgages have assented to this contract prior to its execution by the undersigned.

IN WITNESS WHEREOF, the undersigned, applicant as aforesaid, does hereunto set his/her hand and seal this _____ day of _____, 19____.

Description of Mortgages (Give complete names and Registry of Deeds reference):

Assents of Mortgages

COMMONWEALTH OF MASSACHUSETTS

Date _____

Then personally appeared the above-named _____ and acknowledged the foregoing instrument to be his/her free act and deed before me.

Notary Public
My Commission Expires:

FORM J

Lot Release Form

The undersigned being a majority of the Planning Board of the Town of North Andover, MA hereby certify that the requirements for work on the ground called for by the Conditional Approval dated

_____, 19___ and recorded in Essex South District Registry of Deeds, Book _____,

Page _____ (or registered in _____ Land Registry District as Document No. _____,

and noted on Certificate of Title No. _____, in Registration Book _____, Page _____) have been completed to the satisfaction of the Planning Board as to the following enumerated lots shown on Plan

entitled _____ recorded with said Deeds, Plan Book

_____, Plan _____, (or registered in said Land Registry District, Plan Book _____, Plan _____) and said lots are hereby released from the restrictions as to sale and building specified thereon.

Lots designated on said Plan as follows: _____

(To be attested by a Registered Land Surveyor)

I hereby certify that lot number (s) _____ on _____
Street(s) do conform to layout as shown on Definitive Plan entitled “ _____
Section _____ Sheet(s) _____ ”

Registered Land Surveyor

_____ Majority Of

_____ The Planning

_____ Board Of The

_____ Town of

_____ North Andover

COMMONWEALTH OF MASSACHUSETTS

_____, ss. _____, 19___

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

Notary Public
My Commission Expires:

FORM N

SUBDIVISION INSPECTION CHECKLIST

Subdivision Name: _____

Plan Title: _____

PRELIMINARY INSPECTION

Prior to any formal inspections, the subdivider shall provide the following permits for the Subdivision Inspector's review (unless all permits are "in hand" or shown to be otherwise not applicable, the Subdivision Inspector will not be authorized to be on the job):

- ___ Planning Board Approval.
- ___ Planning Board Special Permit (cluster zone if applied for).
- ___ Street Opening Permit.
- ___ Sewer Extension Permit (from the Town and from the State).
- ___ Water Extension Permit (including the pro forma water pressure and flow calculations).
- ___ Building Permit(s).
- ___ Conservation Commission, Orders of Condition, Determination of Applicability or Letter of No Apparent Jurisdiction.
- ___ 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 (Town Engineer):

- Pipe meets minimum diameter and class standards as set by Water Division?
- 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?

___ Sewerage System (Town Engineer):

- Does pipe meet diameter requirements and class standards as set by Sewer Division?
- Is pipe bedded and joined properly?
- Has pitch been checked from SMH to SMH?
- Have all SMH's been leak tested?
- Are all service wyes installed, and field notes made of ties for the wyes?
- Has pipe been tested for infiltration?

___ Electrical System (sign-off by Department Manager as system is installed by I.E.L.D.).

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):

- 3 inch 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:

- primary streets 5% grade.
- secondary streets 6" grade.
- residential streets 8% grade.
- 5" wide, 17" thick reinforced concrete, set 12" below grade, with 6" compacted gravel footing.
- granite curbing in the following cases:
 - all finished street grades greater than 5%.
 - 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 (4"):

- Take core samples.

___ Check for width of pavement:

per Figure 1 requirements

SIXTH INSPECTION

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

___ Compare by extraction analysis to job formula.

SEVENTH INSPECTION

- ___ Sidewalks, subgrade established by removal of existing materials.
- ___ Grass strips - 8" compacted topsoil and seeding.
- ___ Side slopes finish grade per Section 6.8.5. Loomed and seeded as per grass strips.
- ___ Street trees planted per DPW instructions?
- ___ Street lights installed per Light Department standards?
- ___ 4' long, 6" square, 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:

FORM K

SUBDIVISION COMPLETION CERTIFICATE

North Andover, MA _____, 19 ____

Name of Subdivision _____ of

Owner _____

Date of Application _____

Date of Approval or other action by Planning Board _____

Performance Guarantee _____

Way Completed to Satisfaction of:

Conservation Commission By _____
Date: _____

Sewer Division By _____
Date: _____

Water Division By _____
Date: _____

Board of Health By _____
Date: _____

Building Department By _____
Date: _____

Planning Department By _____
Date: _____

Planning Board Inspector By _____
Date: _____

Release of Bond or Security Approved by the North Andover Planning Board

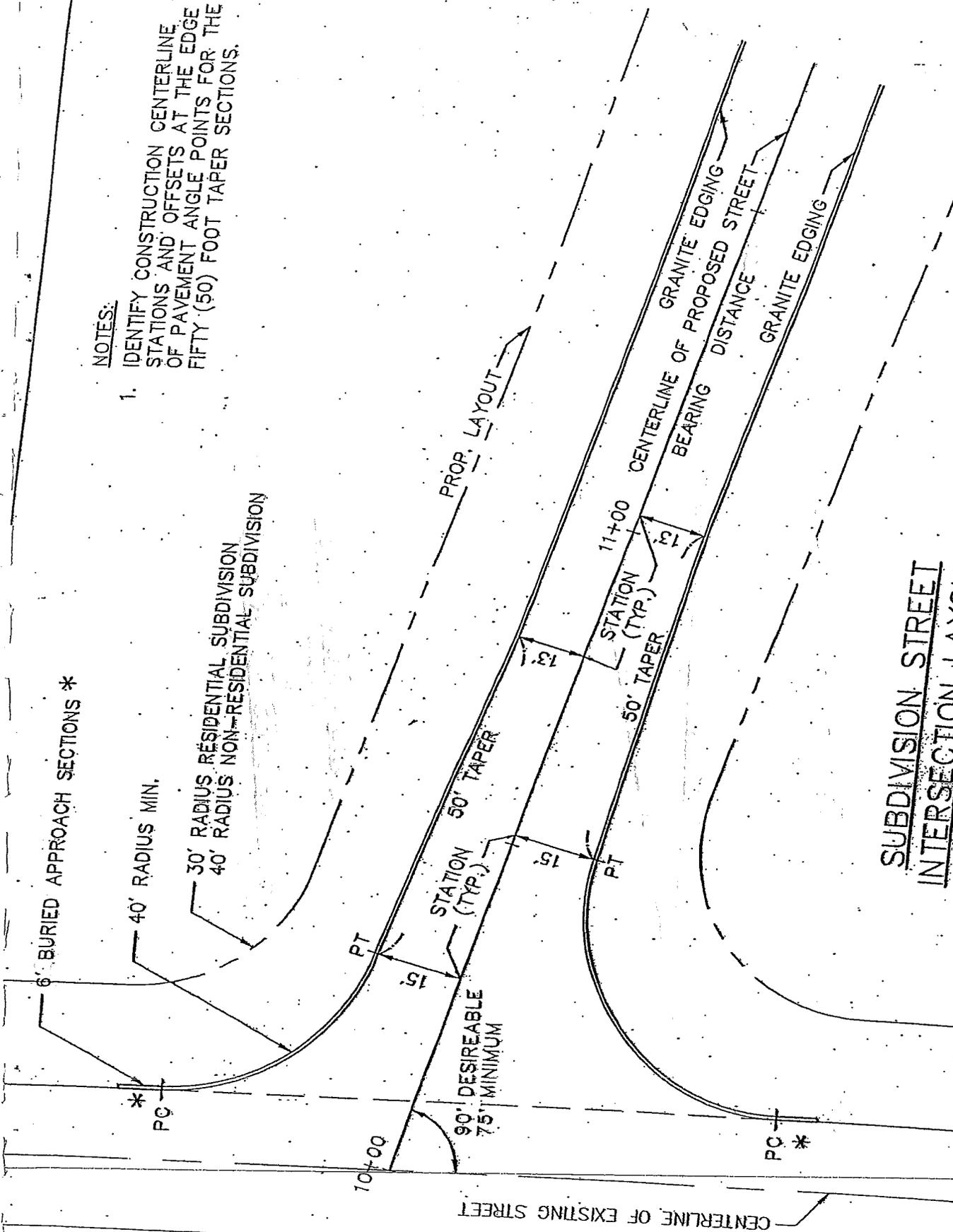
Date: _____ By _____, Chairman

By _____, Clerk

Approved as to Form: _____ Date: _____

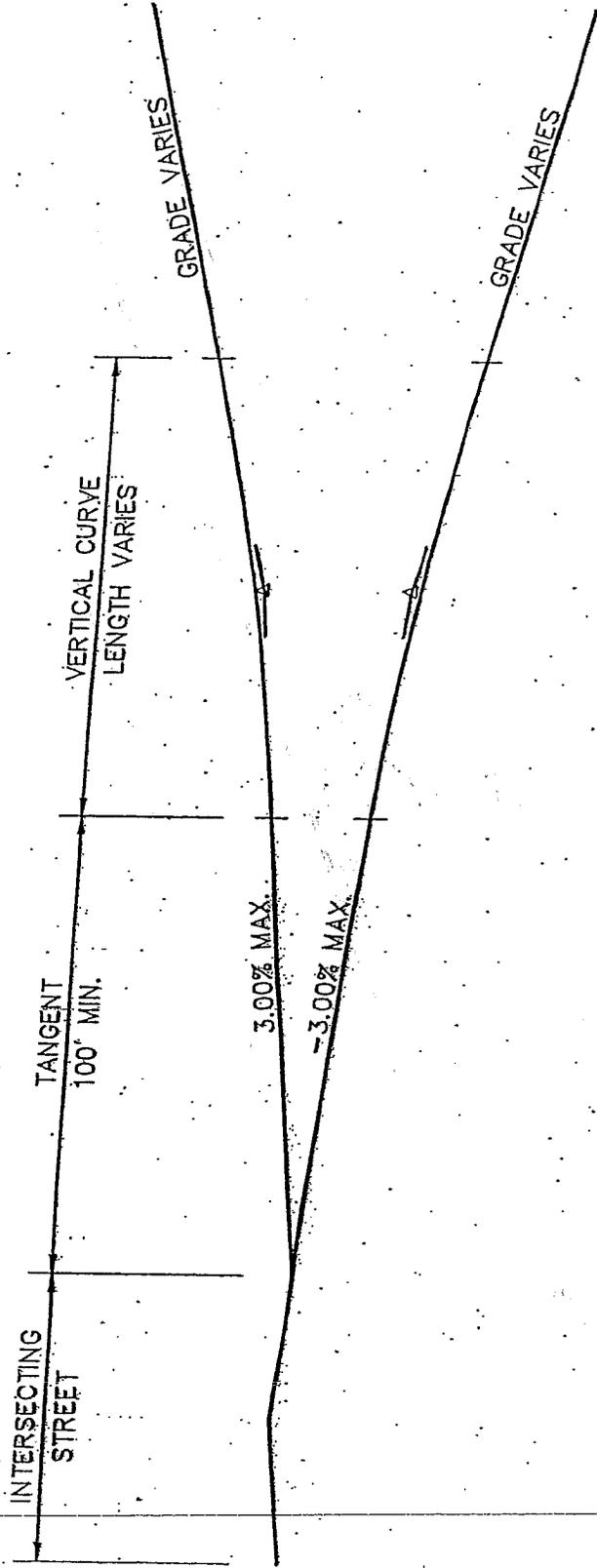
NOTES:

1. IDENTIFY CONSTRUCTION CENTERLINE STATIONS AND OFFSETS AT THE EDGE OF PAVEMENT ANGLE POINTS FOR THE FIFTY (50) FOOT TAPER SECTIONS.



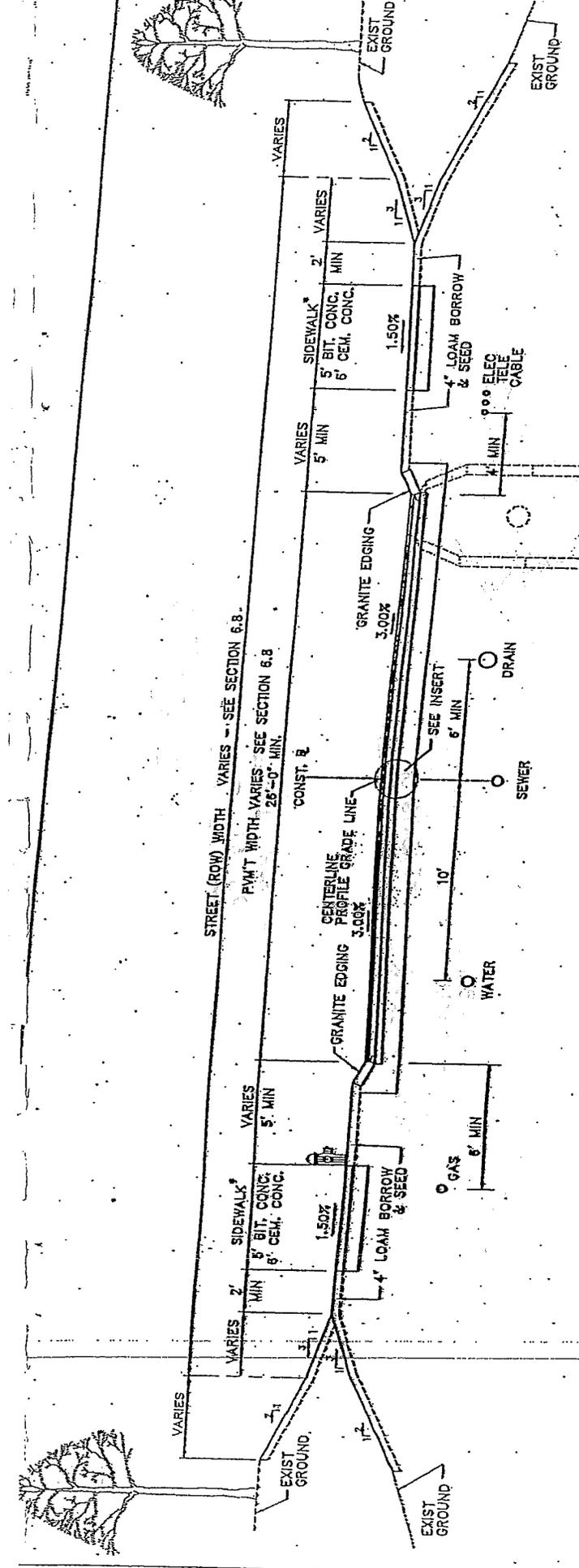
SUBDIVISION STREET INTERSECTION LAYOUT
N.T.S.

TOWN OF NORTH ANDOVER, MA PLANNING BOARD STANDARDS



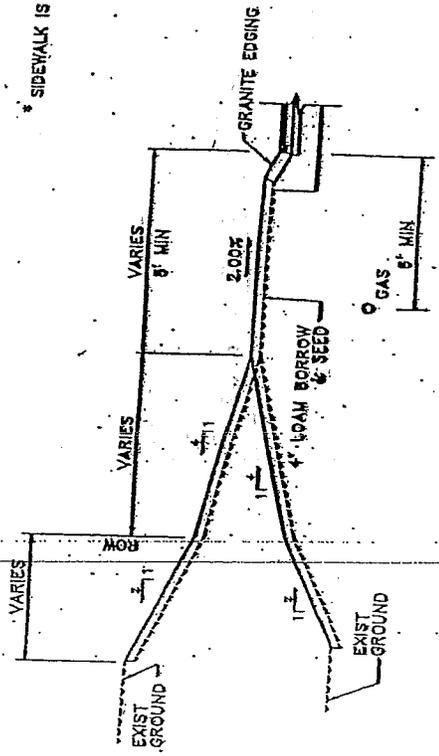
SUBDIVISION STREET
PROFILE
APPROACHES TO INTERSECTIONS
 N.T.S.

TOWN OF NORTH ANDOVER, MA PLANNING DEPARTMENT

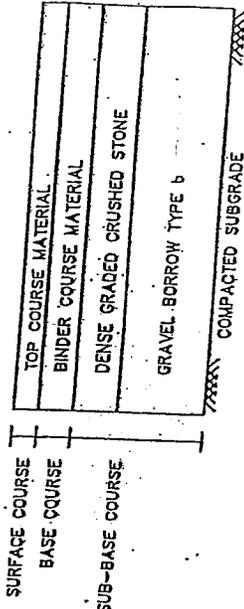


* SIDEWALK IS TYPICALLY REQUIRED ON ONE SIDE OF THE SUBDIVISION ROADWAY.

SUBDIVISION STREET
N.T.S.



NO SIDEWALK*
N.T.S.



PAVEMENT SECTION INSERT
N.T.S.

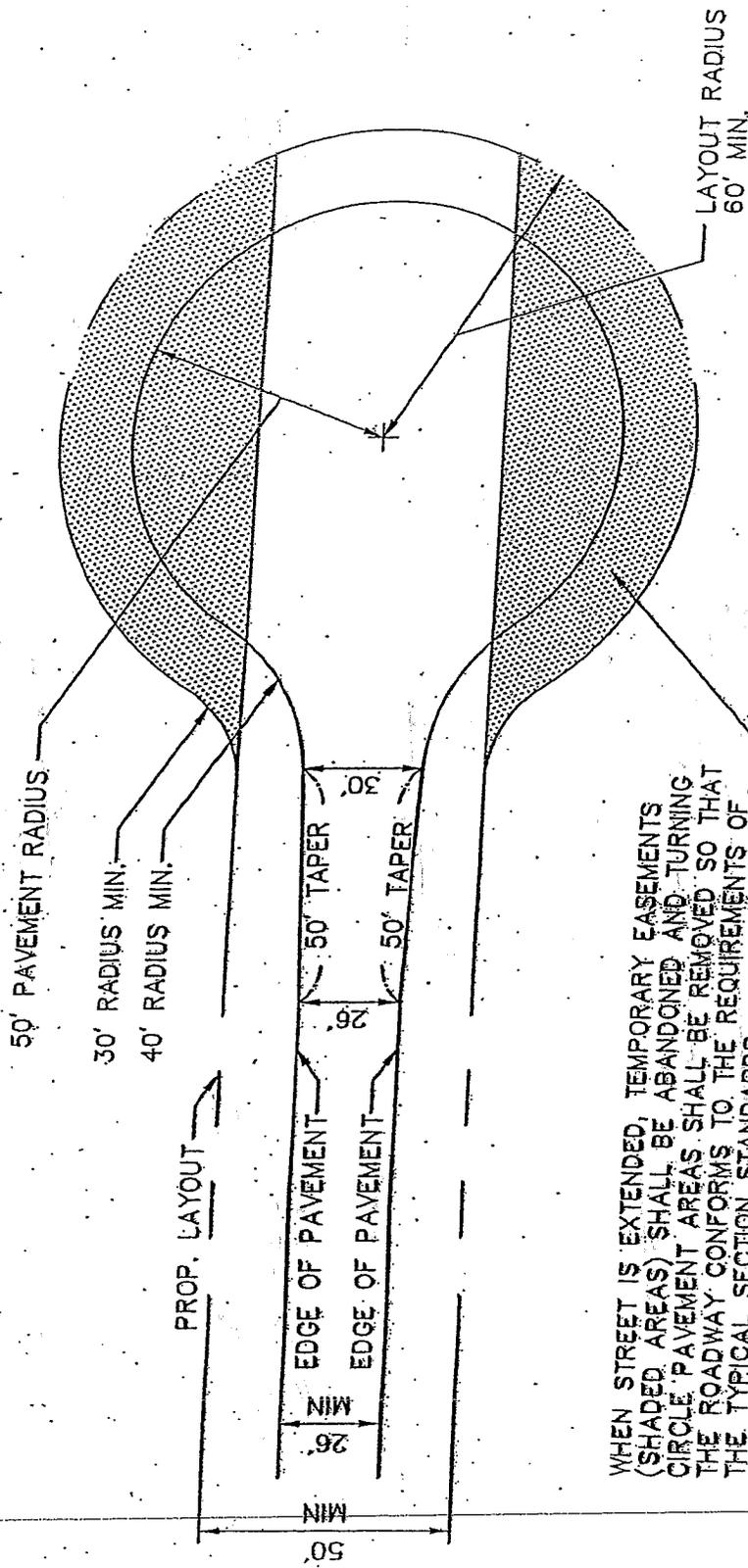
PAVEMENT NOTES

- SURFACE COURSE: 1-1/2" CLASS I BIT. CONC. TYPE I-1 TOP COURSE MATERIAL
- BASE COURSE: 3" CLASS I BIT. CONC. TYPE I-1 BINDER COURSE MATERIAL
- SUB-BASE COURSE: 4" DENSE GRADED CRUSHED STONE ON 8" GRAVEL BORROW TYPE b

TYPICAL SECTIONS & PAVEMENT NOTES
N.T.S.

TOWN OF NORTH ANDOVER, MA PLANNING BOARD STAFF

FIGURE NO. 3



WHEN STREET IS EXTENDED, TEMPORARY EASEMENTS (SHADED AREAS) SHALL BE ABANDONED AND TURNING CIRCLE PAVEMENT AREAS SHALL BE REMOVED SO THAT THE ROADWAY CONFORMS TO THE REQUIREMENTS OF THE TYPICAL SECTION STANDARDS

SUBDIVISION STREET
TYPICAL CUL-DE-SAC
WITHOUT LANDSCAPED ISLAND
 N.T.S.

WHEN STREET IS EXTENDED, TEMPORARY EASEMENTS (SHADED AREAS) SHALL BE ABANDONED AND TURNING CIRCLE PAVEMENT AREAS SHALL BE REMOVED SO THAT THE ROADWAY CONFORMS TO THE REQUIREMENTS OF THE TYPICAL SECTION STANDARDS

50' PAVEMENT RADIUS

30' RADIUS MIN.

40' RADIUS MIN.

PROP. LAYOUT

50' MIN

EDGE OF PAVEMENT

EDGE OF PAVEMENT

26' MIN

50' TAPER

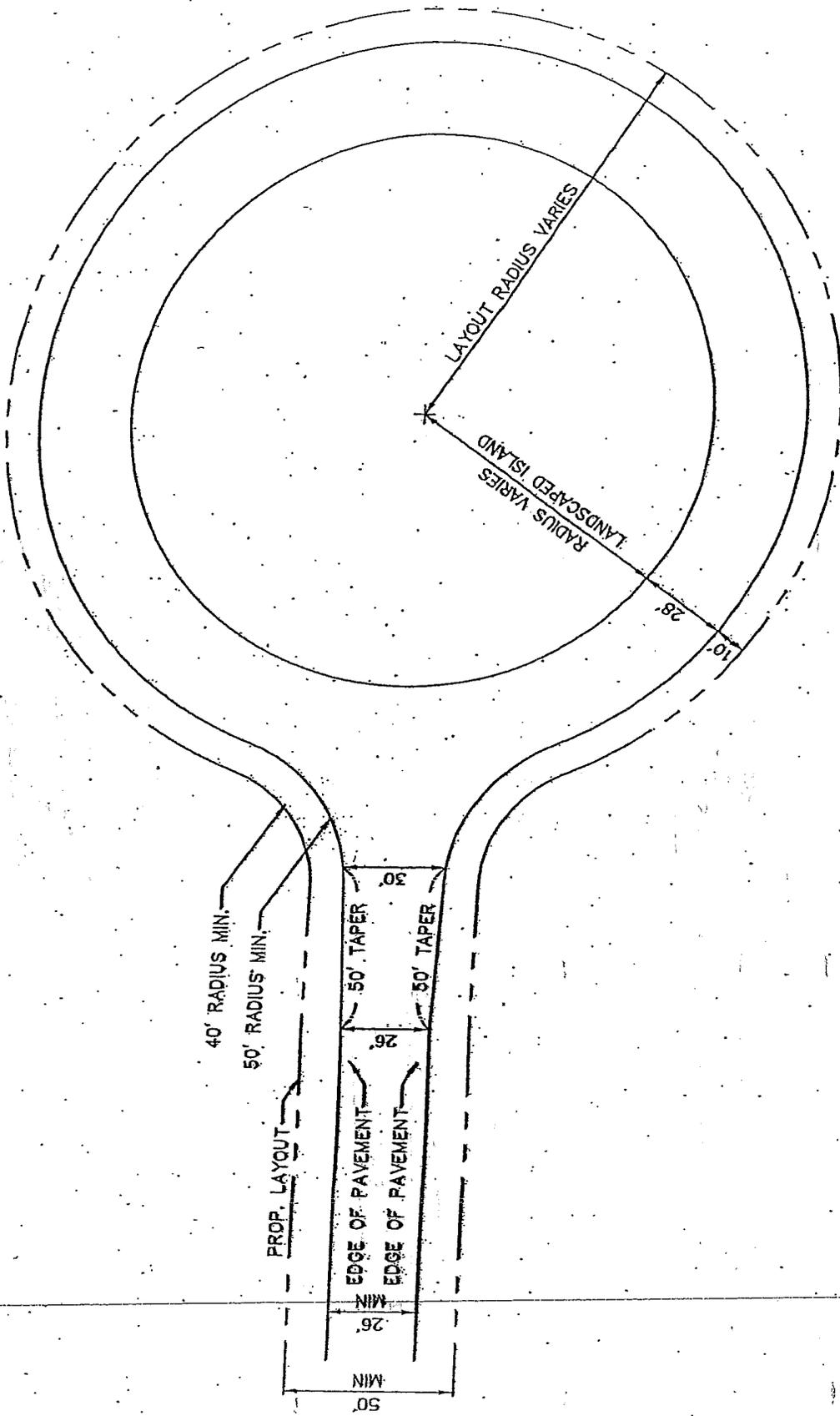
28'

LAYOUT RADIUS
60' MIN.

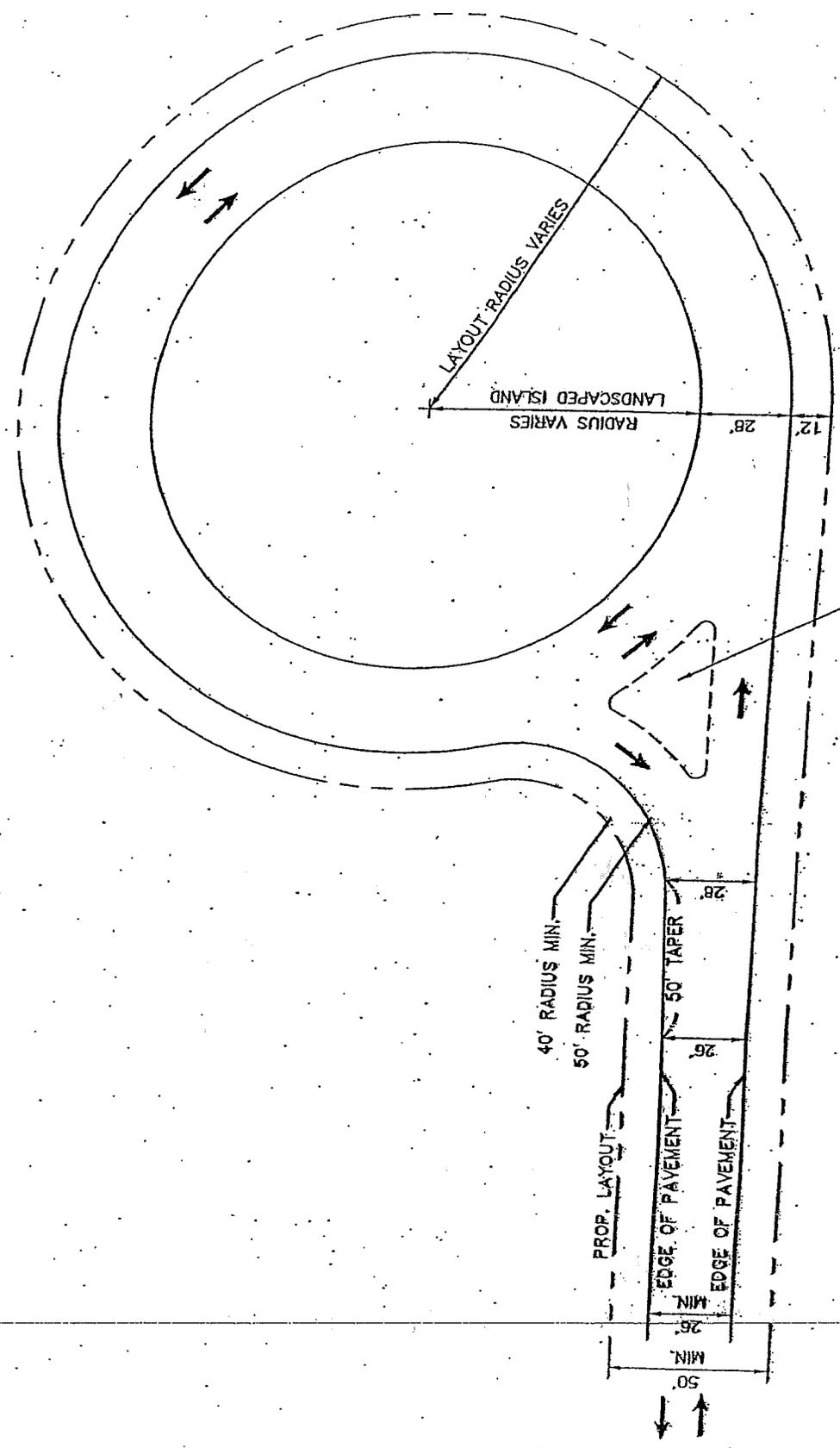
SUBDIVISION STREET
TYPICAL OFFSET CUL-DE-SAC

N.T.S.

TOWN OF NORTH ANDOVER, MA PLANNING BOARD

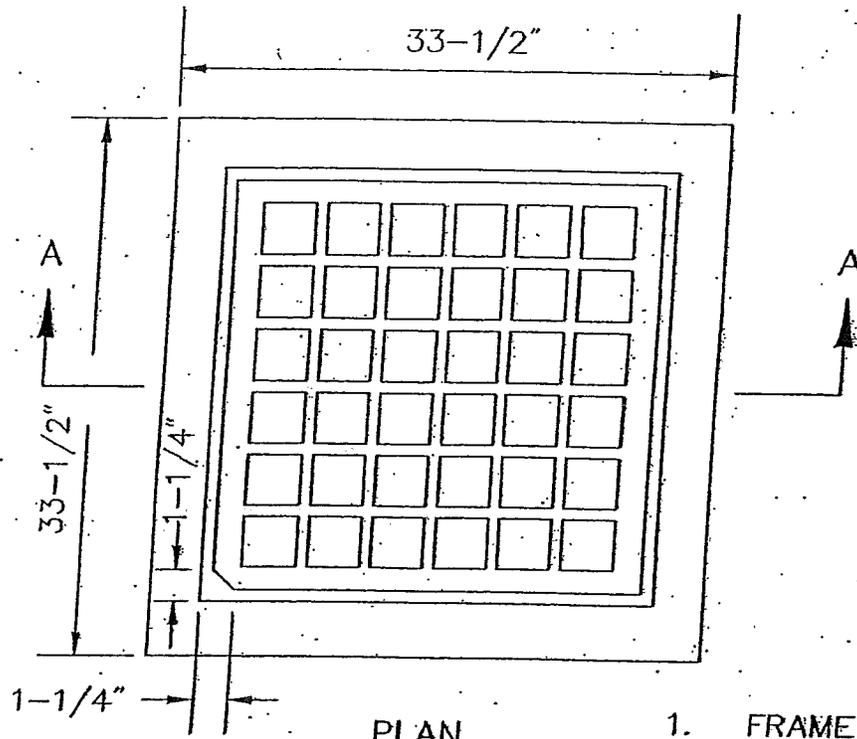


SUBDIVISION STREET
 TYPICAL CUL-DE-SAC
 WITH LANDSCAPED ISLAND
 N.T.S.

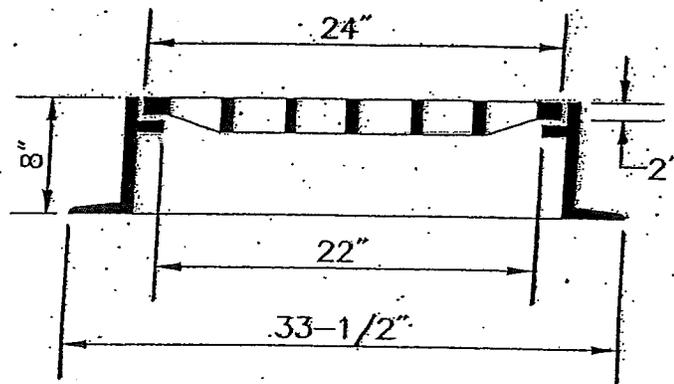


SUBDIVISION STREET
 TYPICAL OFFSET CUL-DE-SAC
 WITH LANDSCAPED ISLAND
 N.T.S.

→ PROPOSED TRAFFIC FLOW

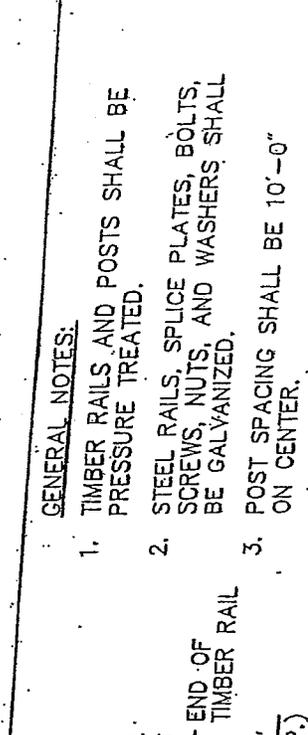


1. FRAME AND GRATE SHALL BE RATED FOR HS-20 LOADING
2. FRAME AND GRATE SHALL BE RATED BICYCLE SAFE.

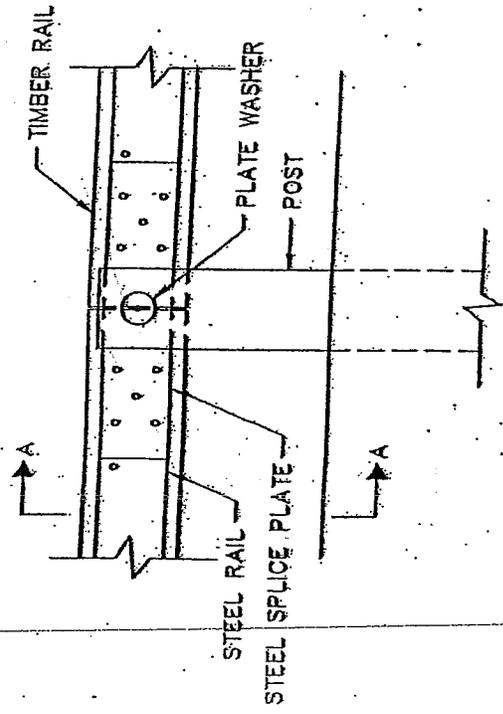
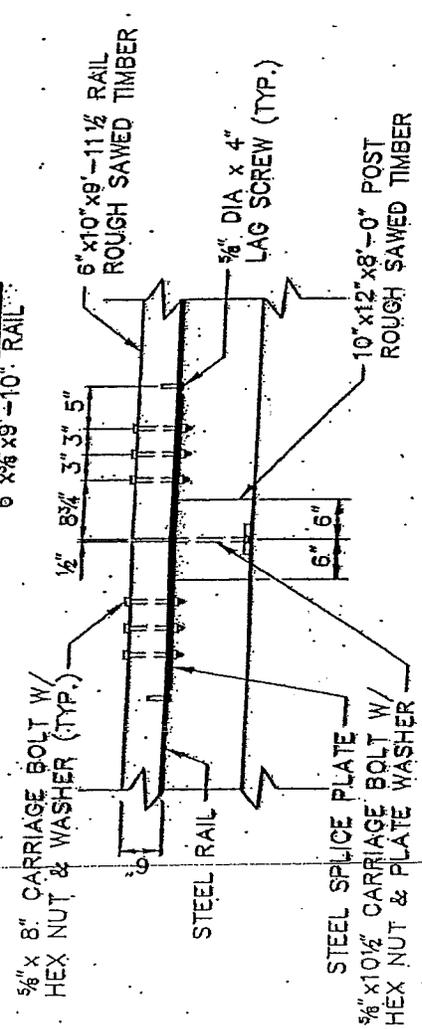


SUBDIVISION STREET
CATCH BASIN FRAME AND GRATE
 N.T.S.

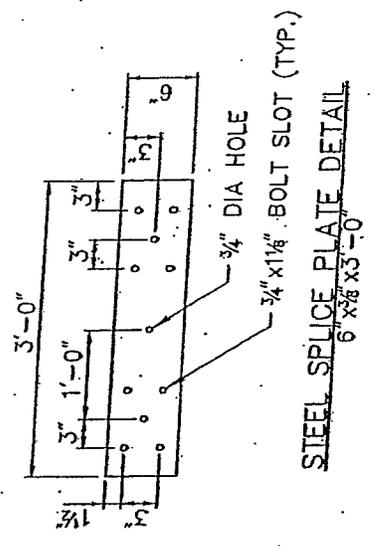
FIGURE NO. 8



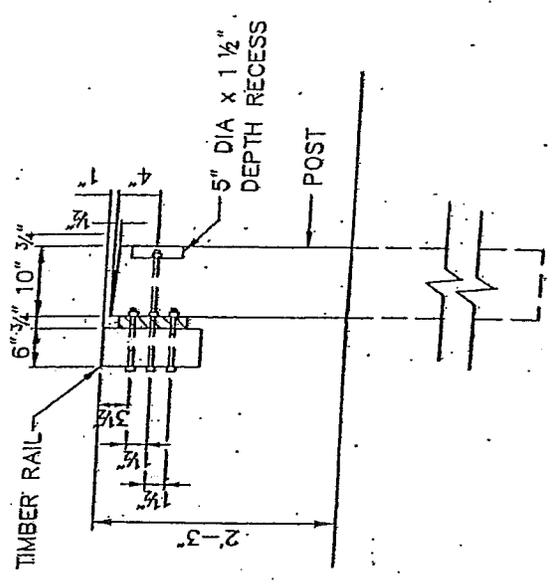
STEEL RAIL DETAIL
6" x 8" x 9" - 10" RAIL



POST CONNECTION DETAIL



STEEL SPLICE PLATE DETAIL
6" x 6" x 3" - 0"



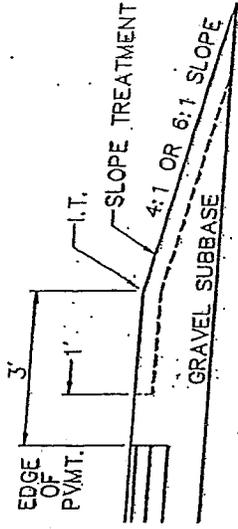
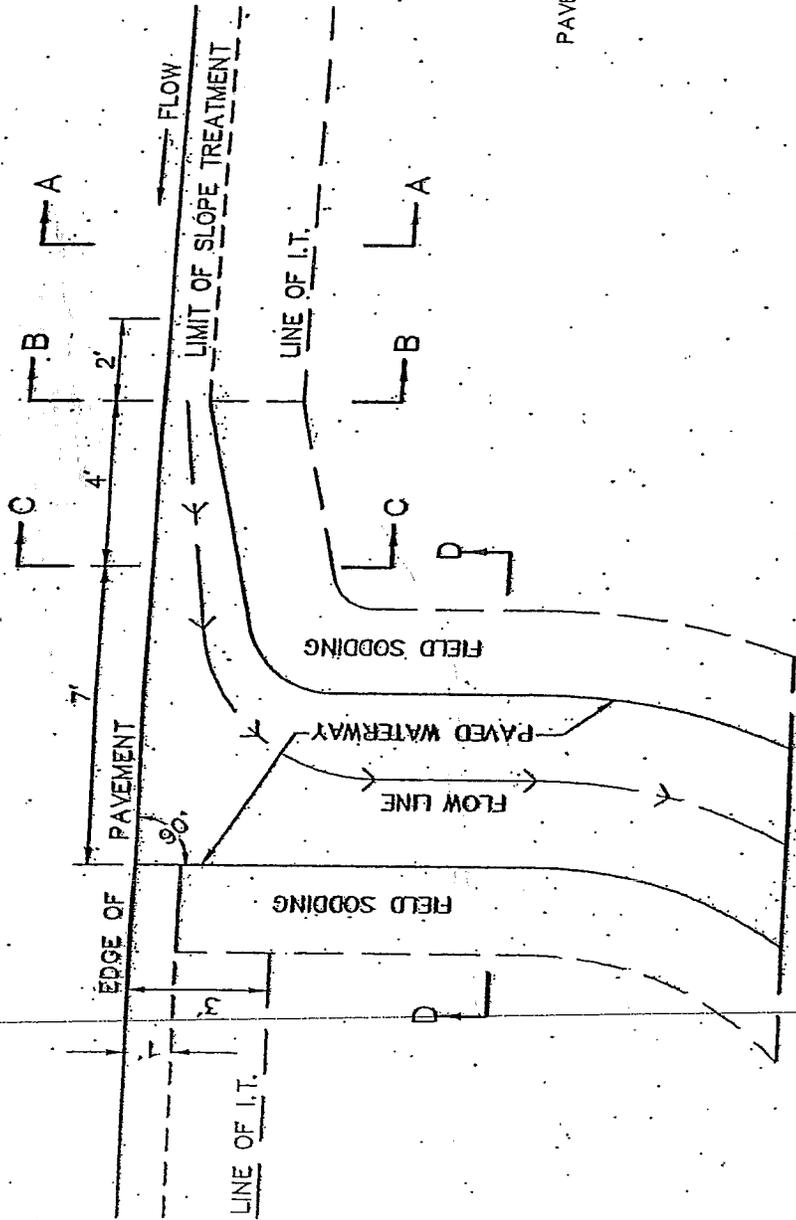
SECTION A-A

GENERAL NOTES:

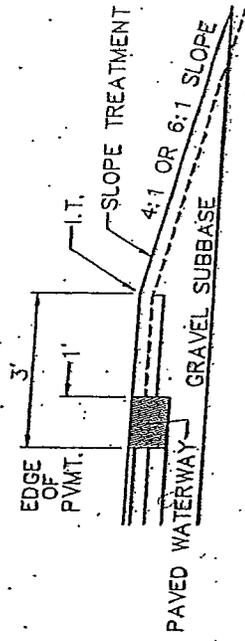
1. TIMBER RAILS AND POSTS SHALL BE PRESSURE TREATED.
2. STEEL RAILS, SPLICE PLATES, BOLTS, SCREWS, NUTS, AND WASHERS SHALL BE GALVANIZED.
3. POST SPACING SHALL BE 10'-0" ON CENTER.
4. NOMINAL BARRIER HEIGHT SHALL BE 27".

SUBDIVISION STREET
STEEL-BACKED WOOD GUARD RAIL
N.T.S.

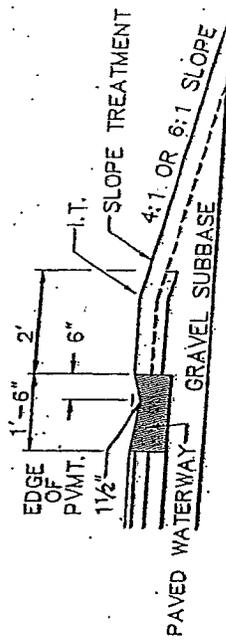
TOWN OF NORTH ANDOVER, MA PLANNING DEPT.



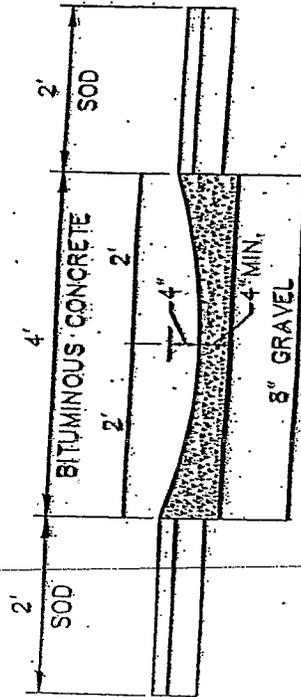
SECTION A-A



SECTION B-B



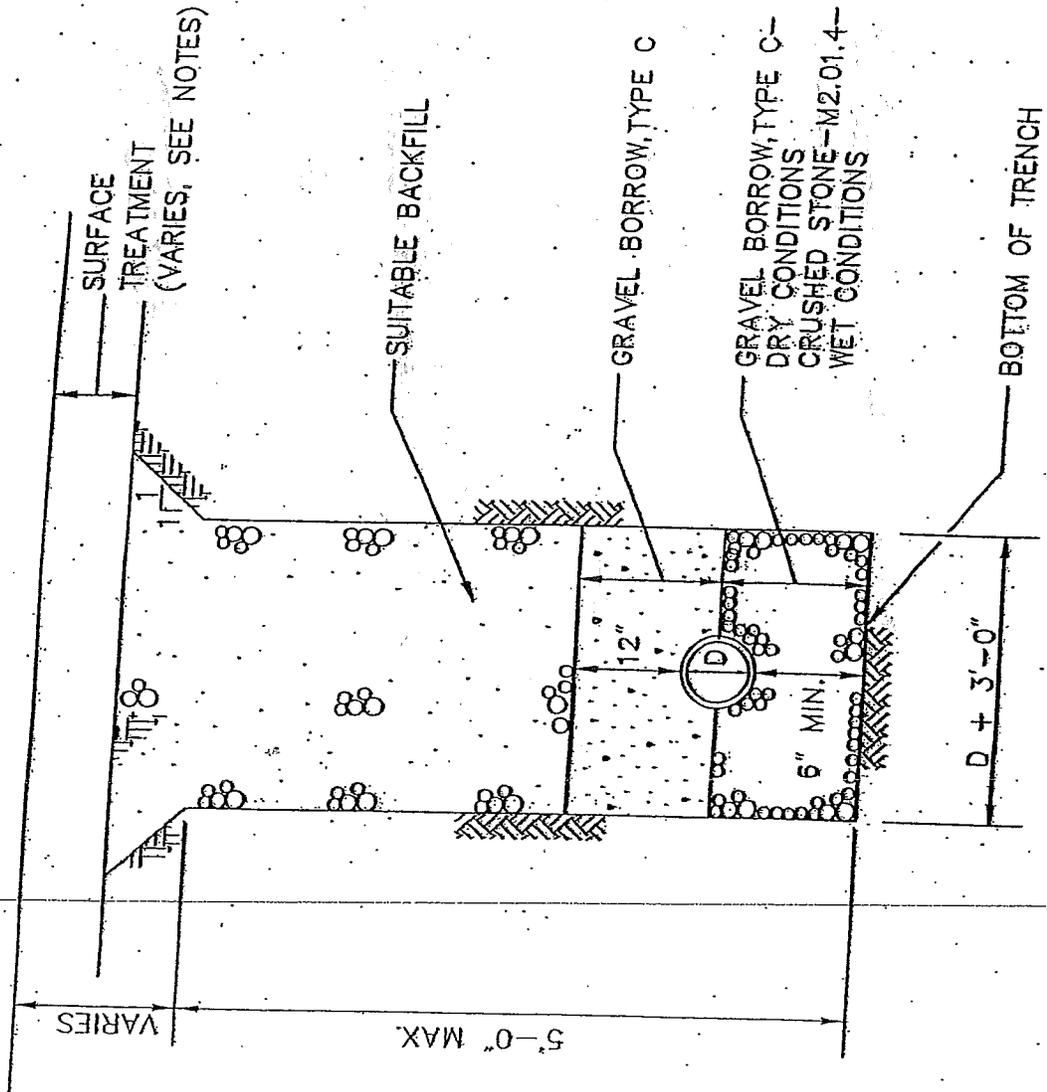
SECTION C-C



SECTION D-D

1. ON CURVED ALIGNMENTS, WATERWAYS SHALL BE BANKED AS DIRECTED BY THE ENGINEER.
2. FOR DESCRIPTIONS, MATERIALS AND CONSTRUCTION METHODS, SEE THE MASSACHUSETTS HIGHWAY DEPARTMENT'S STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES.

SUBDIVISION STREET
PAVED WATERWAY
N.T.S.



GENERAL NOTES

1. SURFACE TREATMENT OF UTILITY TRENCH FOR INSTALLATION OF UTILITIES AFTER PLACEMENT OF BITUMINOUS CONCRETE PAVEMENT WITHIN A SUBDIVISION OR IN AN EXISTING ROADWAY SHALL BE AS FOLLOWS:
 - a. A TEMPORARY BITUMINOUS CONCRETE PAVEMENT PATCH SHALL BE CONSTRUCTED OVER THE BACKFILLED TRENCH. THE TEMPORARY PATCH SHALL BE 3 INCHES OF BINDER COURSE MATERIAL AT A MINIMUM, BUT SHALL MATCH THE EXISTING PAVEMENT THICKNESS.
 - b. AFTER A PERIOD OF ONE YEAR TO ALLOW FOR SETTLEMENT OF THE UTILITY TRENCH, THE TEMPORARY PATCH SHALL BE REMOVED AND A PERMANENT FULL-DEPTH PAVEMENT PATCH SHALL THEN BE CONSTRUCTED.
2. EXISTING PAVEMENT SHALL BE SAWCUT ON BOTH SIDES OF THE TRENCH PRIOR TO CONSTRUCTION OF THE TEMPORARY AND PERMANENT PATCHES.

FULL-DEPTH PAVEMENT PATCH

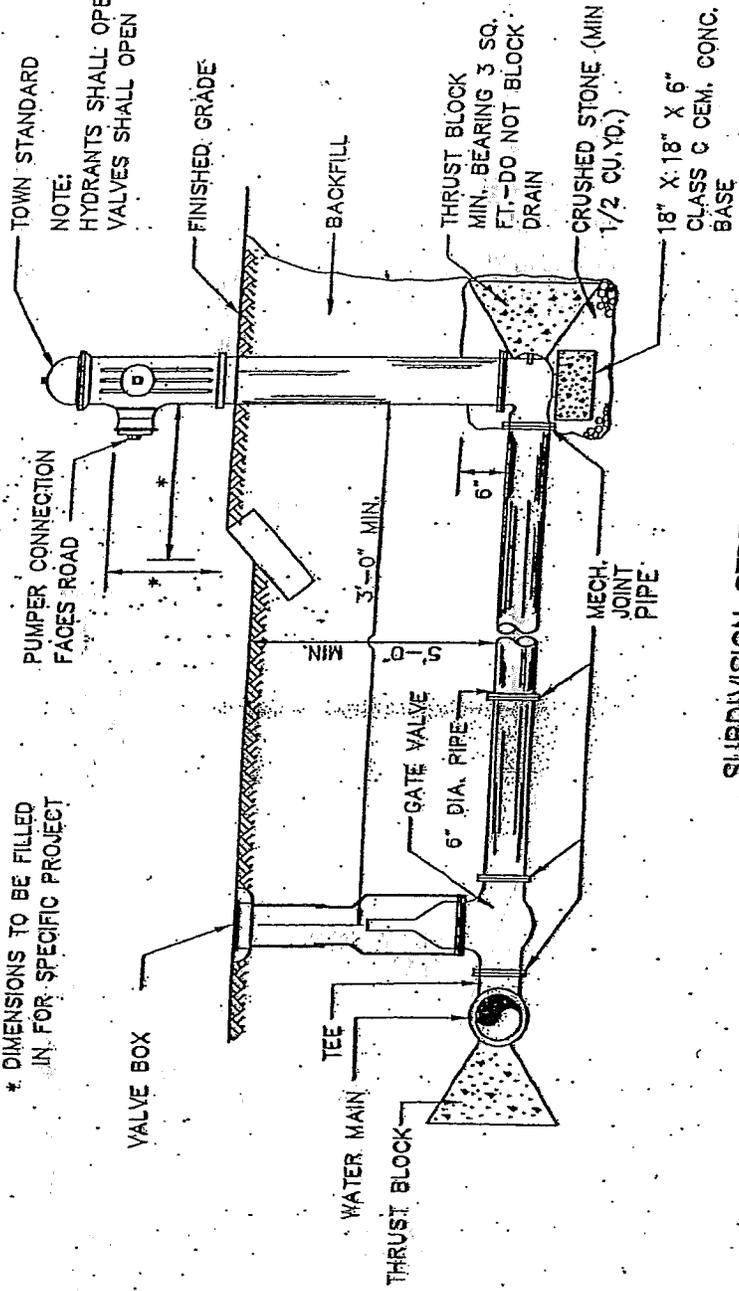
- SURFACE COURSE: 1 1/2" OF CLASS 1 BITUMINOUS CONCRETE TYPE 1-1 TOP COURSE MATERIAL
- OVER
- BASE COURSE: 4" OF CLASS 1 BITUMINOUS CONCRETE TYPE 1-1 BINDER COURSE MATERIAL

SUBDIVISION STREET TRENCH DETAIL
N.T.S.

* HYDRANT IN SIDEWALK AREAS TO BE LOCATED TO PROVIDE MINIMUM CLEAR SIDEWALK PASSAGE WIDTH OF 3 FEET AT HYDRANT.

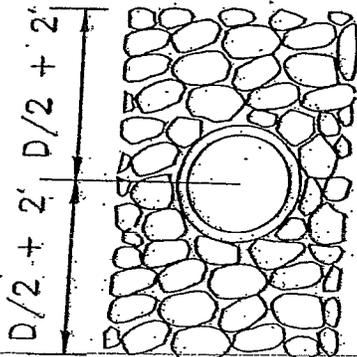
TOWN STANDARD
NOTE:
HYDRANTS SHALL OPEN LEFT
VALVES SHALL OPEN RIGHT

* DIMENSIONS TO BE FILLED
IN FOR SPECIFIC PROJECT

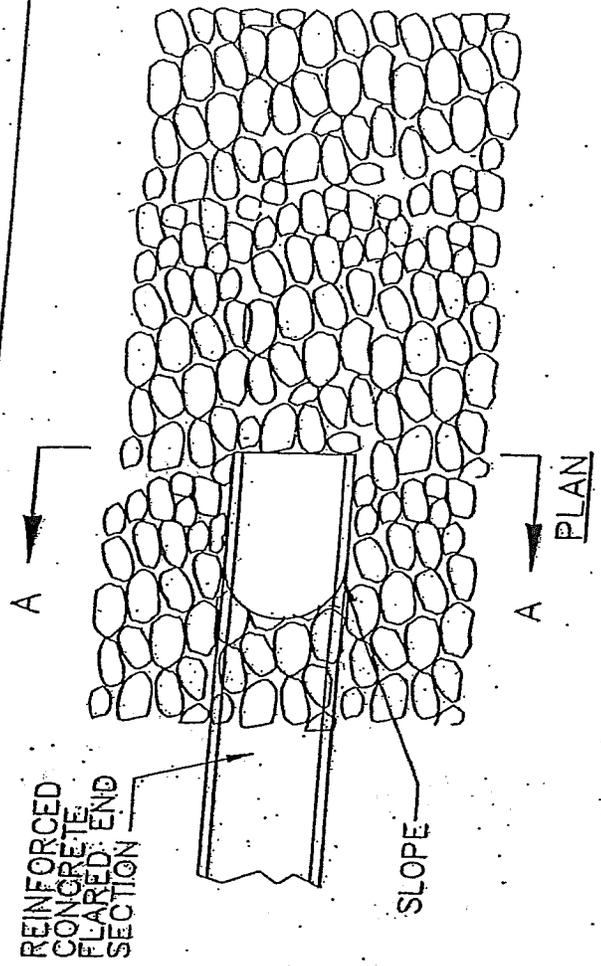


SUBDIVISION STREET
HYDRANT CONNECTION
N.T.S.

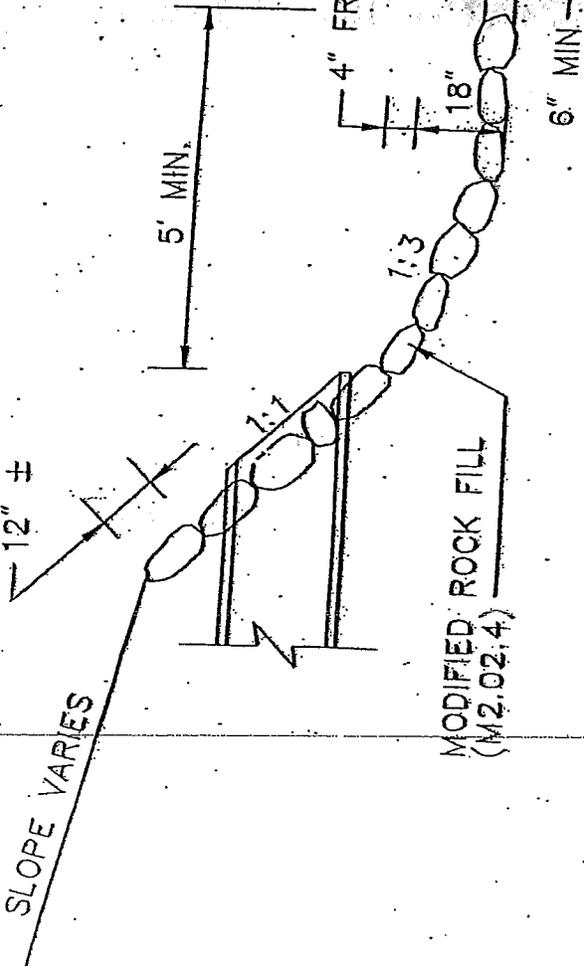
FIGURE NO. 14



SECTION A-A



SLOPE VARIES



* SAME DETAIL APPLIES FOR AN OUTLET WITH A HEADWALL

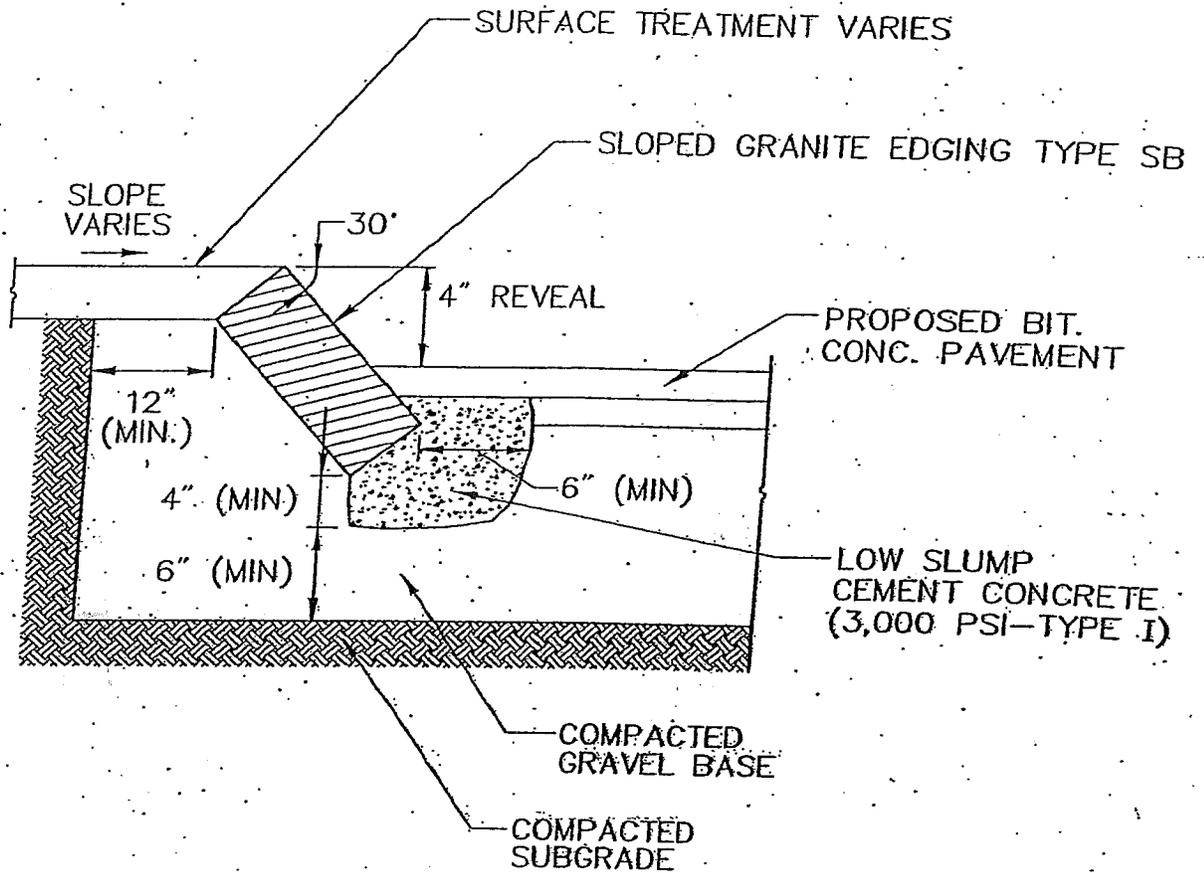
SUBDIVISION STREET
STONE FOR PIPE ENDS
N.T.S.

TOWN OF NORTH ANDOVER, MA PLANNING BOARD

FIGURE NO. 15

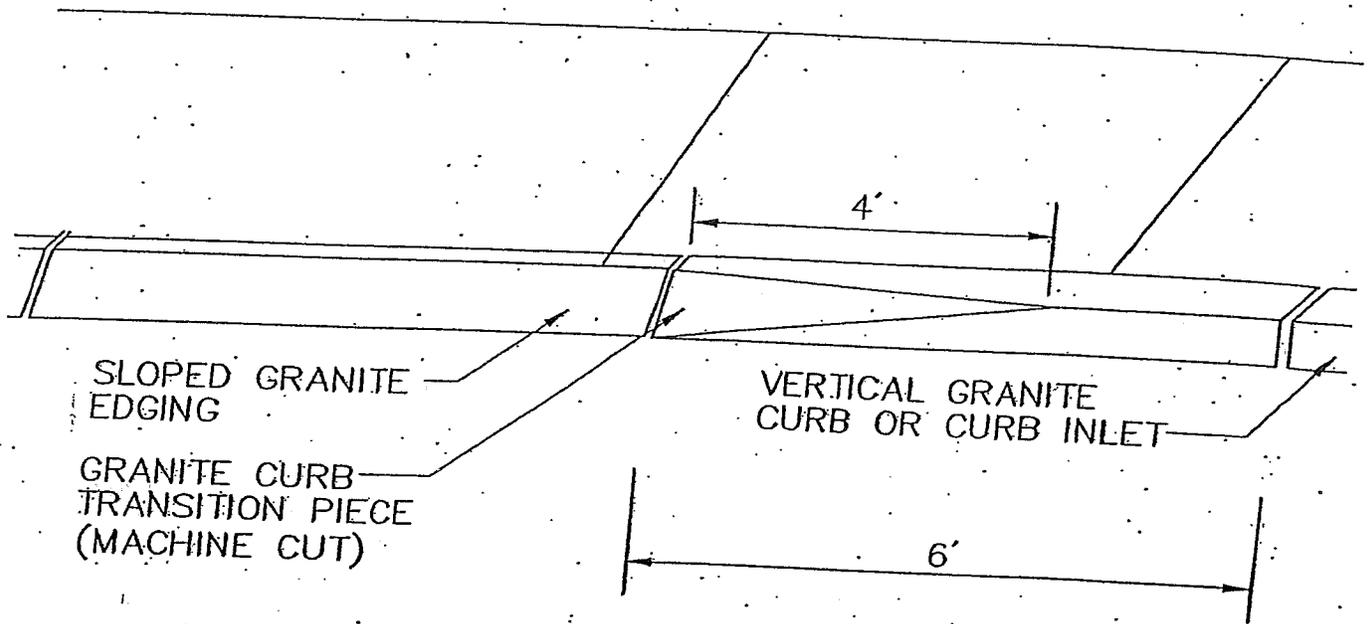
Figure 16 – Subdivision Street Granite Curb in Full Depth Pavement

To be added



SUBDIVISION STREET
SLOPED GRANITE EDGING
 N.T.S.

FIGURE NO 17



SUBDIVISION STREET
GRANITE CURB TRANSITION PIECE
 N.T.S.

FIGURE NO 18

TOWN OF NORTH ANDOVER, MA PLANNING BOARD STANDARDS

Figure 20 – Subdivision Street Typical Driveway without Grass Strip

To be added

BENDS		B	C	D	E	F	BENDS		B	C	D	E	F
6"	111/4"	8"	15"	12"	24"	12"	6"	45°	8"	30"	12"	24"	14"
6"	221/2"	"	19"	"	"	13"	6"	90°	"	30"	"	"	27"
8"	111/4"	"	20"	"	"	12"	8"	45°	"	30"	"	"	24"
8"	221/2"	"	22"	"	"	17"	8"	90°	"	38"	"	"	36"
12"	111/4"	"	30"	"	"	15"	12"	45°	"	40"	"	"	40"
12"	221/2"	"	35"	"	"	25"	12"	90°	"	60"	"	"	52"

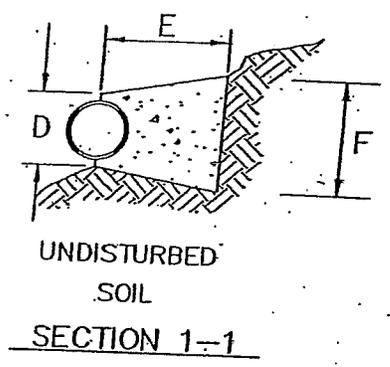
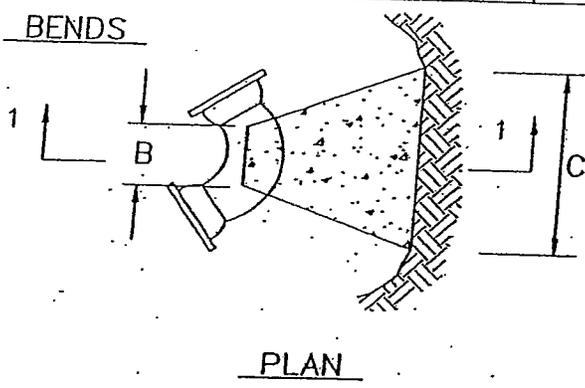
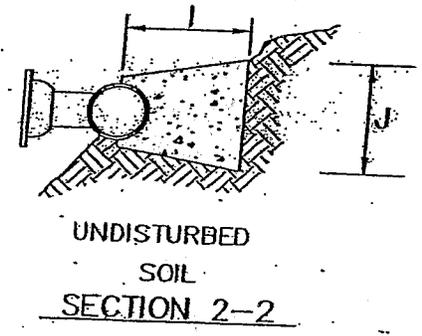
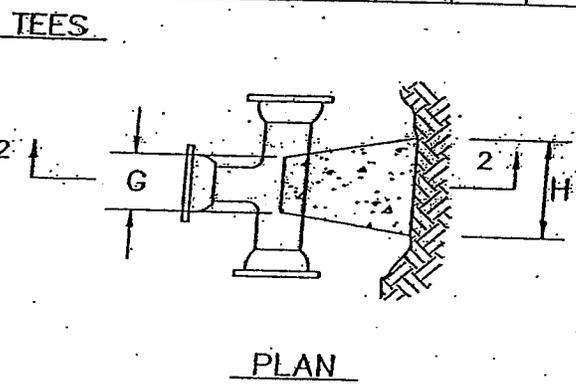


TABLE OF DIMENSIONS

TEES	G	H	I	J	TEES	G	H	I	J
6"x 6"x 6"	12"	24"	24"	18"	12"x 12"x 6"	12"	24"	24"	18"
8"x 8"x 6"	"	"	"	"	12"x 12"x 8"	"	"	"	24"
8"x 8"x 8"	"	"	"	24"	12"x 12"x 12"	"	36"	"	36"



NOTES:

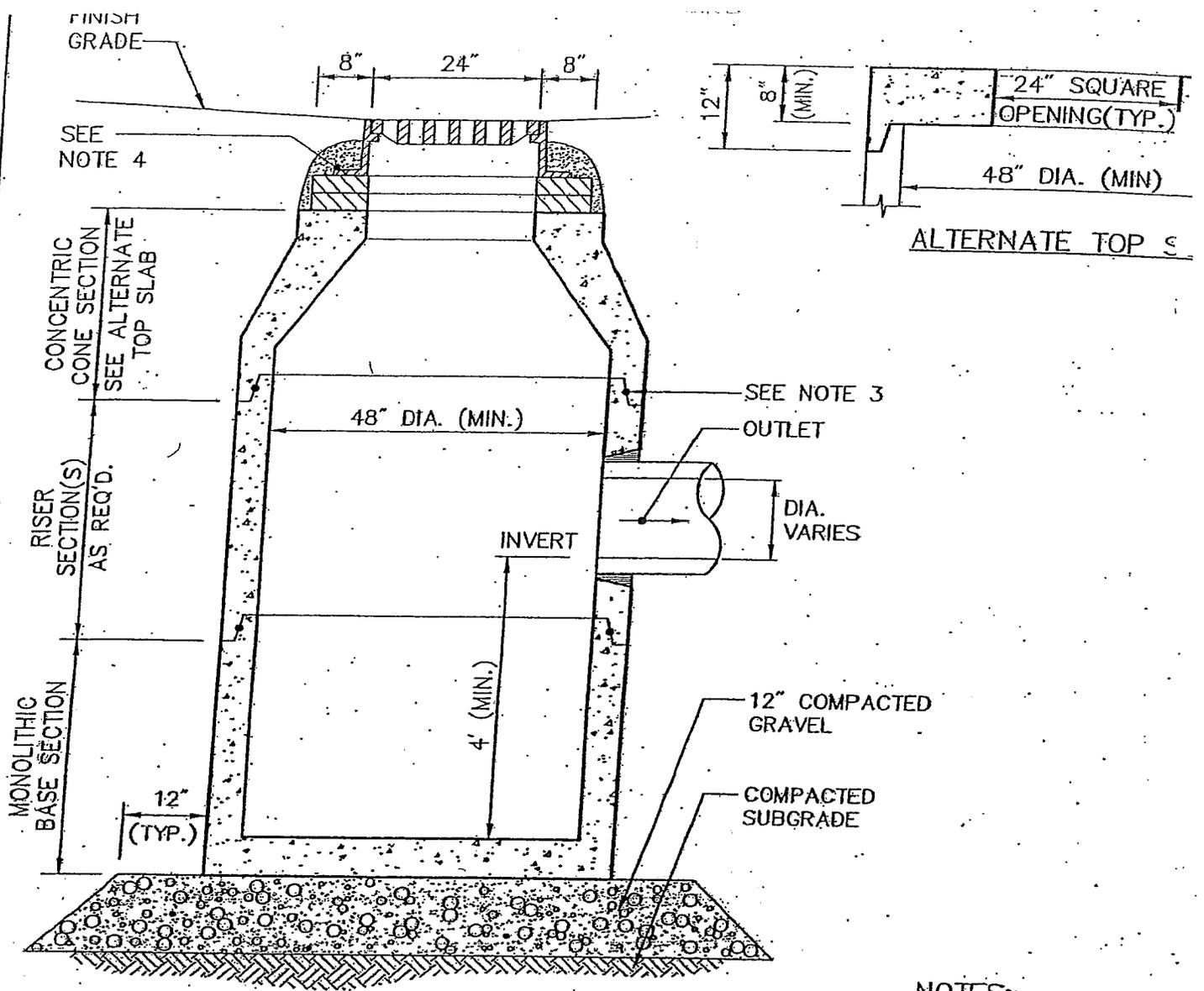
1. PROVIDE BLOCKS FOR TAPPING SLEEVES, DEAD ENDS, GATE VALVES, AND VERTICAL BENDS. (SAME SIZE AS REQUIRED FOR TEES). PROVIDE ANCHOR RODS AT VERTICAL BENDS AND GATE VALVES.
2. CONCRETE SHALL NOT BE PLACED AGAINST PIPE BEYOND FITTING.
3. CONCRETE SHALL BE 3000 PSI-TYPE I

SUBDIVISION STREET
CONCRETE THRUST BLOCK

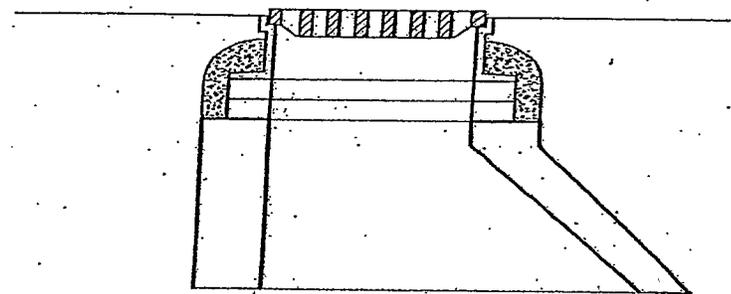
N.T.S.

FIGURE NO 21

TOWN OF NORTH ANDOVER, MA PLANNING BOARD STANDARDS



ALTERNATE TOP SECTION



ALTERNATE ECCENTRIC CONE SECTION

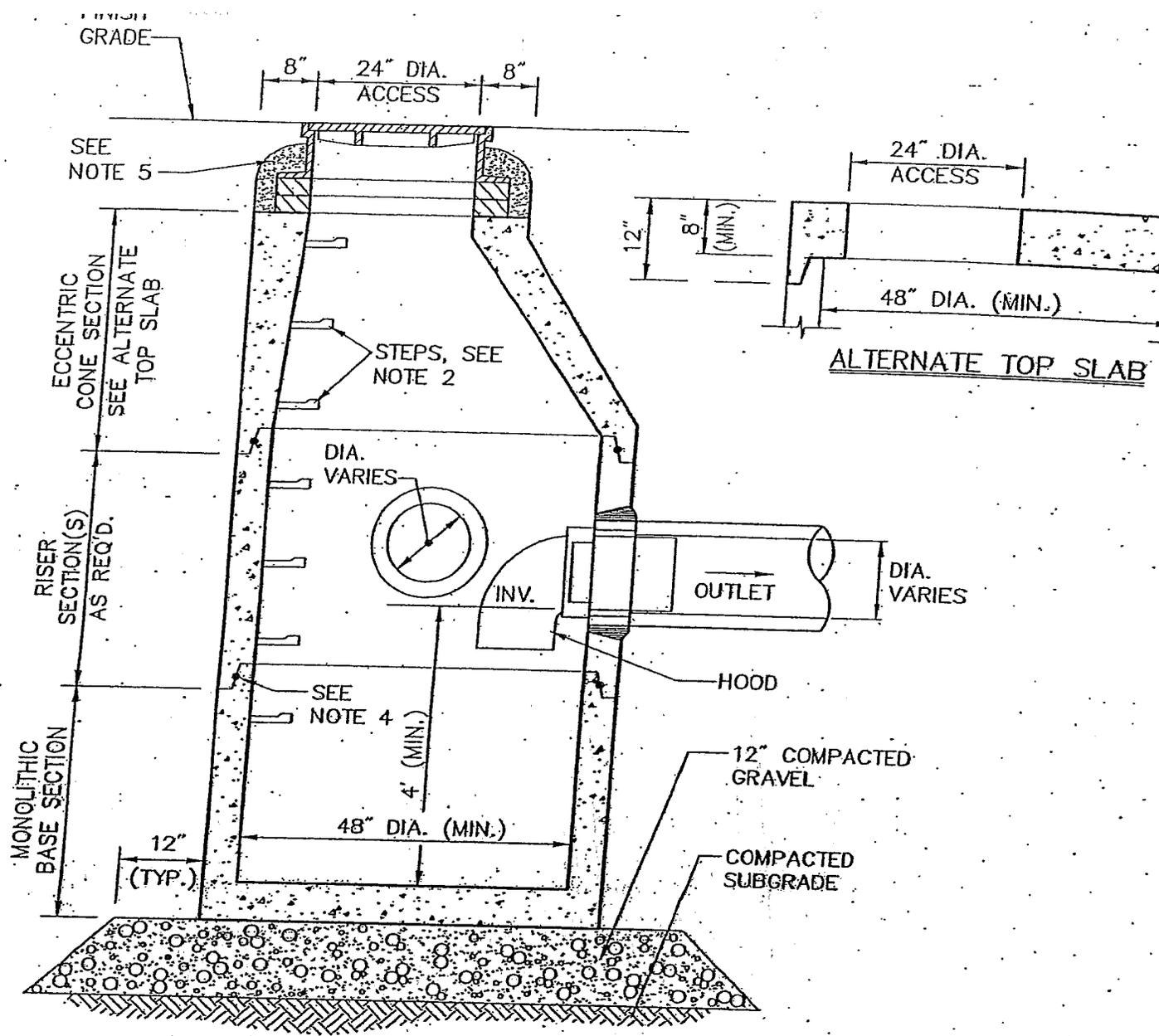
NOTES:

1. ALL SECTIONS SHALL BE DESIGNED FOR HS-20 LOADING.
2. PROVIDE "V" KNOCKOUTS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS.
3. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PREFORMED BUT RUBBER.
4. CATCH BASIN FRAME AND GRATE SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH CLAY BRICK AND MORTAR (2 BRICK COURSES TYPICALLY, 5 BRICK COURSES MAXIMUM)

SUBDIVISION STREET
CATCH BASIN

N.T.S.

FIGURE NO 22



NOTES:

1. ALL SECTIONS SHALL BE DESIGNED FOR H-20 LOADING.
2. COPOLYMER MANHOLE STEPS SHALL BE INSTALLED AT 12" O.C. FOR THE FULL DEPTH OF THE STRUCTURE.
3. PROVIDE "V" KNOCKOUTS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS.
4. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PREFORMED BUTYL RUBBER.
5. DRAIN MANHOLE FRAME AND COVER SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH CLAY BRICK AND MORTAR (2 BRICK COURSES TYPICALLY, 5 BRICK COURSES MAXIMUM)

SUBDIVISION STREET

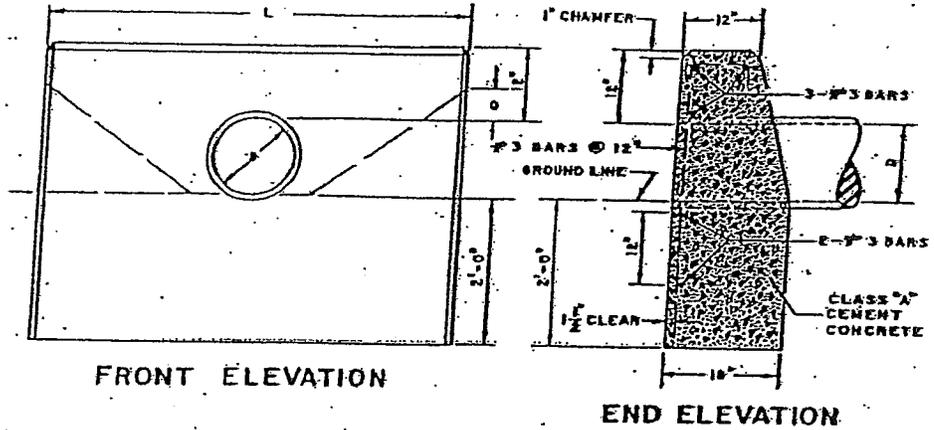
DRAIN MANHOLE (DMH) WITH HOOD

N.T.S.

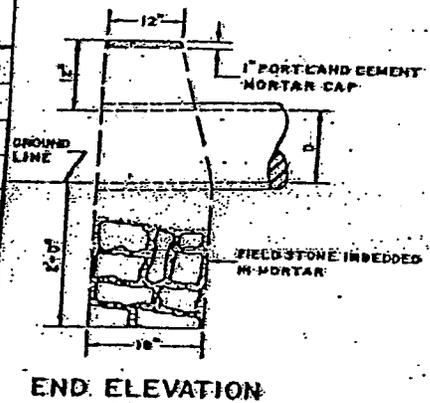
FIGURE NO 23

TOWN OF NORTH ANDOVER, MA PLANNING BOARD STANDARDS

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



TRENCH EXCAV. 1'-0" DEPTH	PIPE DIAM.	1 1/2 : 1 SLOPE		2 : 1 SLOPE		TRENCH EXCAV. 1'-0" DEPTH		
		CU. FT.	D	L	CONC. ORY.S.M. CU. YDS.		STEEL LBS.	L
21.60	8"	4'-2"	0.77	15	5'-10"	1.05	21	27.40
23.91	10"	4'-10"	0.92	20	6'-8"	1.28	23	30.35
26.25	12"	5'-6"	1.08	21	7'-6"	1.49	29	33.25
29.75	15"	6'-6"	1.34	24	8'-9"	1.82	32	37.63
33.25	18"	7'-6"	1.61	30	10'-0"	2.18	39	42.00
37.35	21"	8'-6"	1.95	34	11'-6"	2.62	43	47.25
39.38	24"	9'-3"	2.16	35	12'-6"	2.97	50	50.75
43.75	30"	10'-6"	2.63	44	15'-0"	3.86	62	59.50
0		4" FOR 1 1/2 : 1 SLOPE		6" FOR 2 : 1 SLOPE				



CONCRETE CRADLE FOR PIPE CULVERTS

- NOTE:**
1. FOR DESCRIPTIONS, MATERIALS AND CONSTRUCTION METHODS, SEE LATEST SPECIFICATIONS.
 2. ALL CONCRETE DIMENSIONS SHOWN ARE MINIMUM.

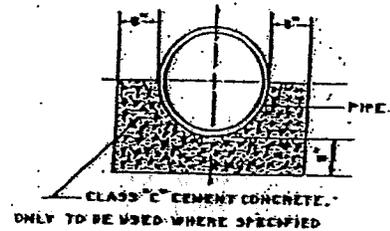
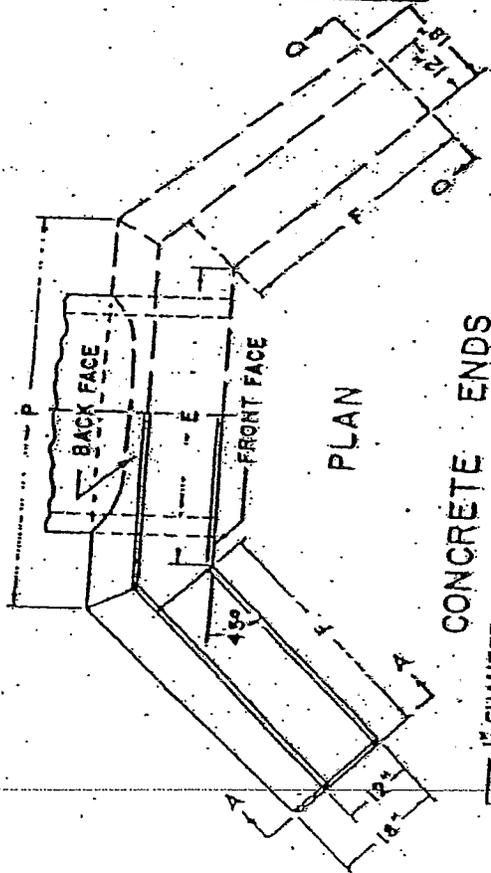


FIGURE NO 24

TOWN OF NORTH ANDOVER, MA PLANNING BOARD STANDARDS

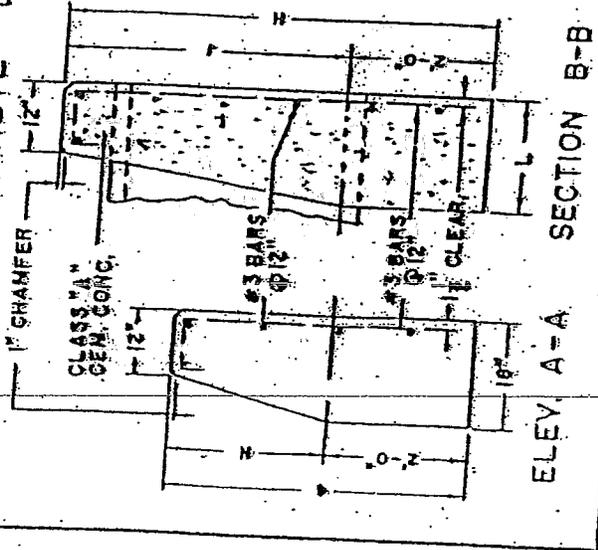
CONCRETE AND FIELD STONE MASONRY ENDS FOR 30" TO 84" PIPE

NOTE
 1. FOR DESCRIPTION, MATERIALS, AND CONSTRUCTION METHODS, SEE SPECIFICATIONS.
 2. ALL CONCRETE DIMENSIONS SHOWN ARE MINIMUM.

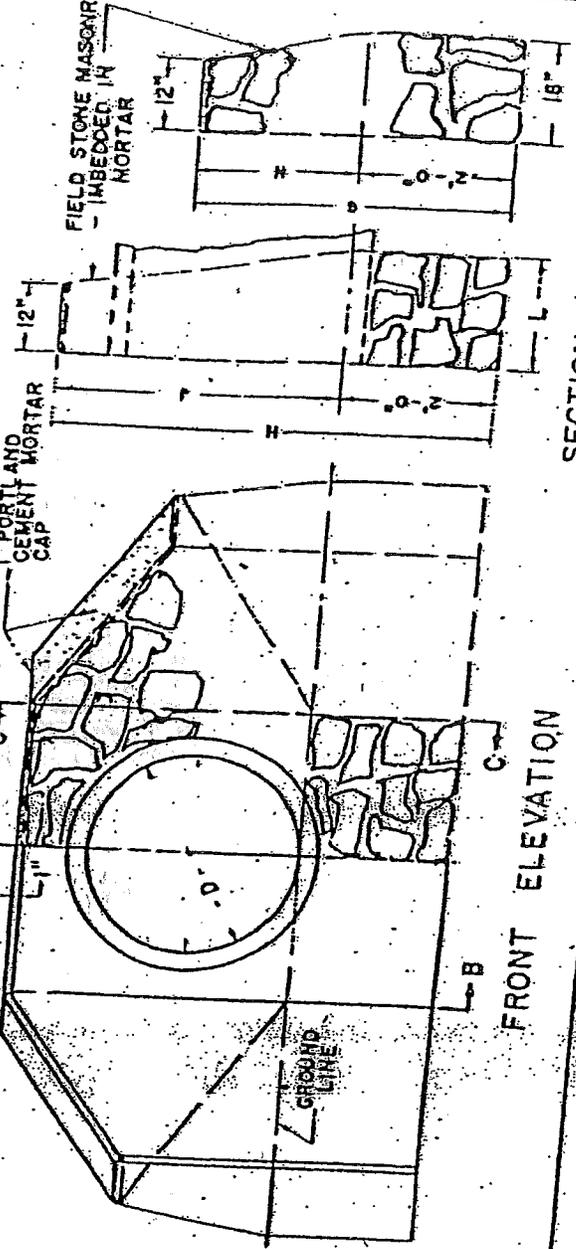


DRENCH EXCAV. FOR PIPE	1 1/2:1 SLOPES						2:1 SLOPES						SLOPE	CU. YDS.	LBS. F	CU. YDS.	LBS. F	
	D	E	G	H	J	L	N	P	F	F	F	F						
30"	4'-0"	4'-0"	5'-6"	3'-6"	1'-6"	2'-0"	5'-3"	3'-0"	5'-3"	3'-0"	5'-3"	3'-0"	5'-3"	45	4'-3"	3.16	54	55.16
36"	4'-6"	4'-3"	6'-0"	4'-0"	1'-8"	2'-3"	5'-1"	3'-6"	5'-1"	3'-6"	5'-1"	3'-6"	5'-1"	54	5'-0"	4.15	64	64.35
42"	5'-0"	4'-6"	6'-6"	4'-6"	1'-10"	2'-6"	6'-6"	4'-0"	6'-6"	4'-0"	6'-6"	4'-0"	6'-6"	59	5'-8"	5.25	70	73.70
48"	5'-6"	4'-9"	7'-0"	5'-0"	2'-0"	2'-9"	7'-2"	4'-6"	7'-2"	4'-6"	7'-2"	4'-6"	7'-2"	65	6'-6"	6.50	83	83.56
60"	6'-6"	5'-3"	8'-0"	6'-0"	2'-2"	3'-0"	7'-10"	5'-0"	7'-10"	5'-0"	7'-10"	5'-0"	7'-10"	73	7'-3"	7.88	95	94.46
72"	7'-6"	5'-9"	9'-0"	7'-0"	2'-8"	3'-9"	8'-5"	5'-6"	8'-5"	5'-6"	8'-5"	5'-6"	8'-5"	85	8'-0"	9.37	106	105.30
84"	8'-6"	6'-3"	10'-0"	8'-0"	3'-0"	4'-3"	11'-0"	6'-6"	11'-0"	6'-6"	11'-0"	6'-6"	11'-0"	98	9'-6"	12.99	128	128.92
														120	11'-0"	17.32	154	153.66

CONCRETE ENDS



FIELD STONE MASONRY ENDS



SECTION C-C ELEV. D-D

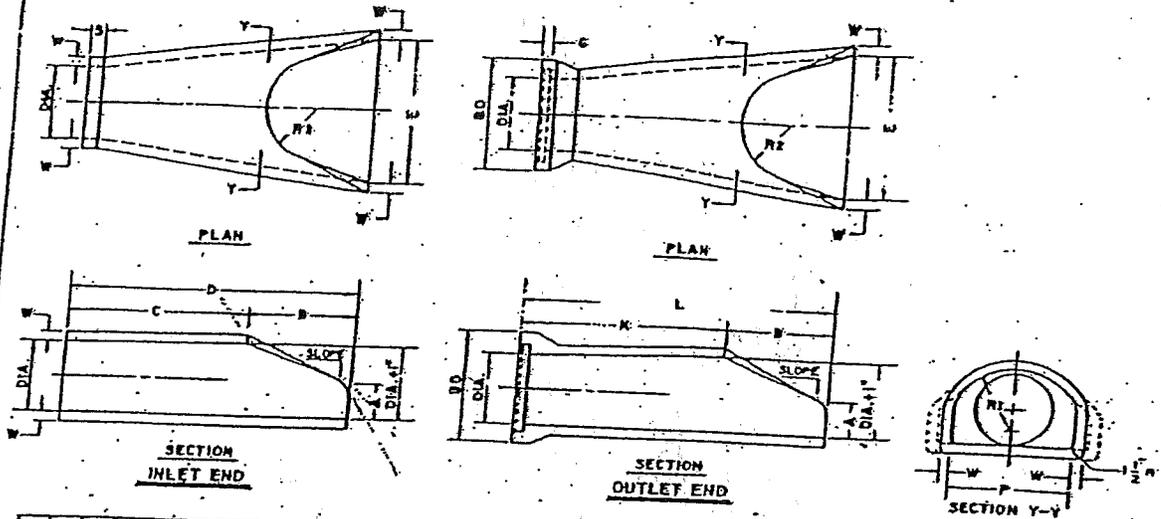
FRONT ELEVATION

ELEV. A-A SECTION B-B

FIGURE NO 25

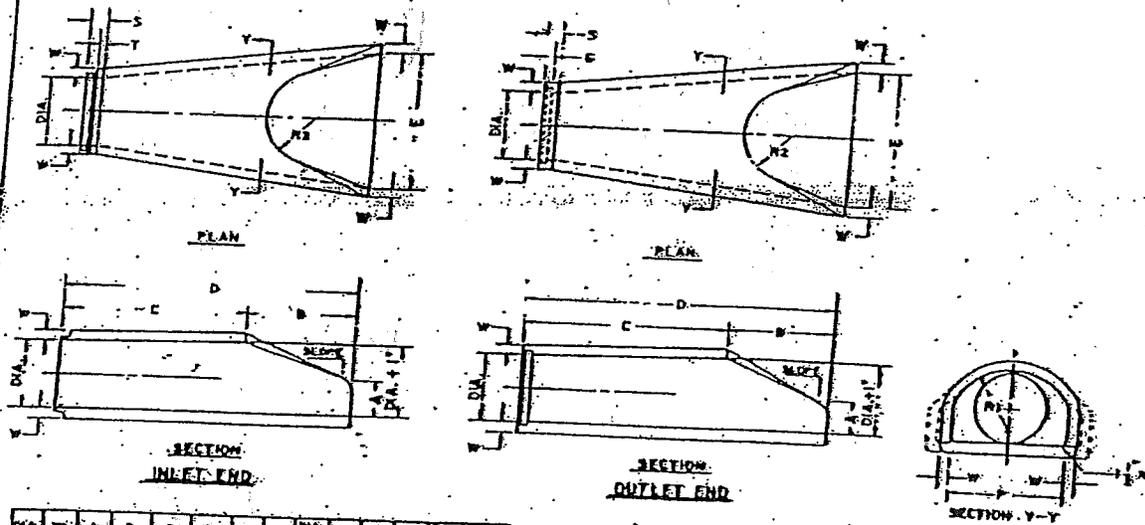
TOWN OF NORTH ANDOVER, MA PLANNING BOARD STAFF

REINFORCED CONCRETE PIPE FLARED ENDS



DIA	W	A	B	C	D	E	BD	K	L	F	R1	R2	S	G	AL/PC	
12	2"	4"	2'-0"	4'-0"	8'-11"	2'-0"	20"	4'-8"	8'-8"	10'	13"	10'	3"	4"	2 1/2	3:1
15	2 1/2"	6"	2'-3"	5'-10"	10'-11"	2'-6"	24"	5'-3"	10'-6"	12'	16"	12'	4"	2 1/2	3:1	
18	2 1/2"	8"	2'-3"	5'-10"	10'-11"	2'-6"	24"	5'-3"	10'-6"	12'	16"	12'	4"	2 1/2	3:1	
21	2 1/2"	8"	2'-4"	5'-10"	10'-11"	2'-6"	24"	5'-3"	10'-6"	12'	16"	12'	4"	2 1/2	3:1	
24	3"	8"	2'-4"	5'-10"	10'-11"	2'-6"	24"	5'-3"	10'-6"	12'	16"	12'	4"	2 1/2	3:1	

FOR BELL & SPIGOT PIPE



DIA	W	A	B	C	D	E	F	BD	K	L	F	R1	R2	S	G	AL/PC
17	3"	10"	2'-4"	5'-11"	10'-11"	2'-6"	24"	5'-3"	10'-6"	12'	16"	12'	4"	2 1/2	3:1	
30	3"	12"	2'-4"	5'-11"	10'-11"	2'-6"	24"	5'-3"	10'-6"	12'	16"	12'	4"	2 1/2	3:1	
36	6"	18"	2'-5"	5'-11"	10'-11"	2'-6"	24"	5'-3"	10'-6"	12'	16"	12'	4"	2 1/2	3:1	
42	6"	24"	2'-5"	5'-11"	10'-11"	2'-6"	24"	5'-3"	10'-6"	12'	16"	12'	4"	2 1/2	3:1	
48	6"	24"	2'-5"	5'-11"	10'-11"	2'-6"	24"	5'-3"	10'-6"	12'	16"	12'	4"	2 1/2	3:1	

FOR TONGUE & GROOVE PIPE

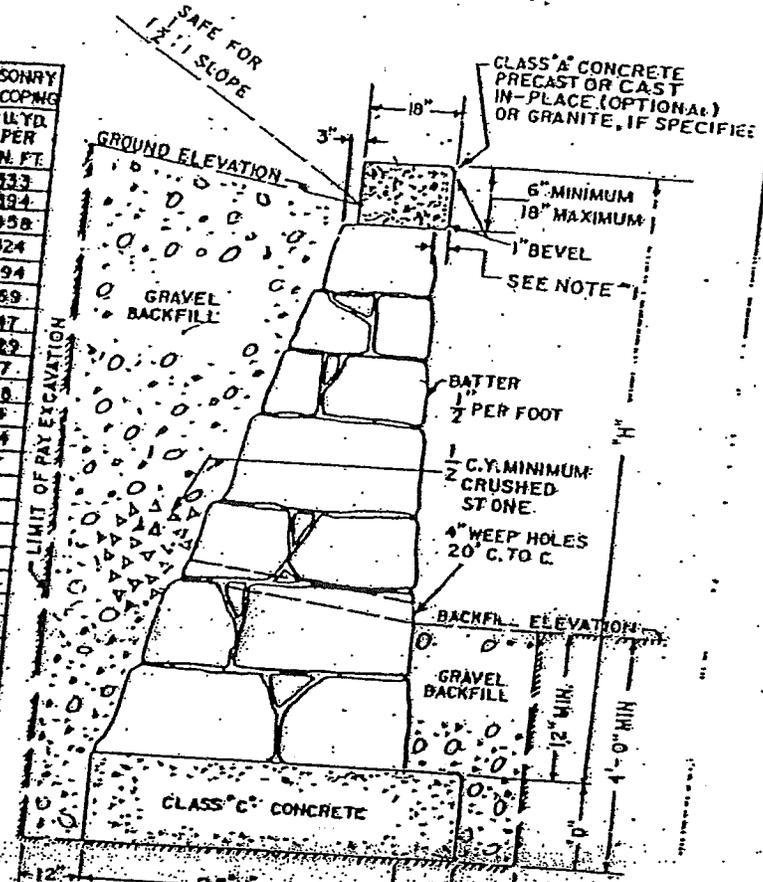
- NOTES:**
- SEE SPECIFICATIONS FOR THE TYPE OF PIPE TO BE USED (BELL SPIGOT OR TONGUE & GROOVE)
 - SEE SPECIFICATIONS FOR THE TYPE AND PLACING OF STEEL REINFORCEMENT
 - THE JOINTS ARE TO BE COMPATIBLE WITH THE MAIN RUN OF PIPE

FIGURE NO 26

TOWN OF NORTH ANDOVER, MA PLANNING BOARD STANDARDS

CEMENTED STONE MASONRY WALL

H	W	D	CONC. MASONRY FOOTING		STONE MASONRY EXCLUDING COPING	
			SECTION AREA SQ. FT.	CU. YD. PER LIN. FT.	SECTION AREA SQ. FT.	CU. YD. PER LIN. FT.
5.0	0.75	1.25	4.06	0.150	6.00	0.333
5.5			4.39	0.162	10.63	0.394
6.0			4.69	0.174	12.38	0.458
6.5			5.00	0.185	14.16	0.524
7.0			5.31	0.197	16.05	0.594
7.5			5.63	0.208	18.06	0.669
8.0	1.0	1.5	7.30	0.278	20.16	0.747
8.5			7.88	0.292	22.40	0.822
9.0			8.25	0.306	24.75	0.917
9.5			8.63	0.319	27.22	1.008
10.0	1.2	2.0	12.40	0.459	29.80	1.104
10.5			12.90	0.475	32.50	1.204
11.0			13.40	0.496	35.28	1.307
11.5			13.90	0.515	38.21	1.413
12.0			14.40	0.533	41.25	1.528
12.5			14.90	0.552	44.41	1.643
13.0	1.5	2.5	20.00	0.741	47.68	1.766
13.5			20.53	0.764	51.07	1.891
14.0			21.25	0.787	54.53	2.020
14.5			21.88	0.810	58.17	2.153
15.0			22.50	0.833	61.88	2.292
15.5			23.13	0.856	65.72	2.434
16.0			23.75	0.880	69.68	2.581
16.5	1.8	3.0	30.15	1.117	73.76	2.732
17.0			30.90	1.144	77.90	2.883
17.5			31.65	1.172	82.21	3.043
18.0			32.40	1.200	86.63	3.208
18.5			33.15	1.228	91.36	3.384
19.0			33.90	1.255	96.25	3.569
19.5			34.65	1.283	101.25	3.766
20.0			35.40	1.311	106.38	3.940
20.5			36.15	1.339	111.63	4.134
21.0			36.90	1.367	117.00	4.333
21.5			37.65	1.394	122.50	4.537
22.0			38.40	1.422	128.13	4.745
22.5			39.15	1.450	133.88	4.958
23.0			39.90	1.478	139.75	5.176
23.5			40.65	1.506	145.75	5.398
24.0			41.40	1.533	151.88	5.623
24.5			42.15	1.561	158.13	5.856
25.0			42.90	1.589	164.50	6.093
25.5			43.65	1.617	171.00	6.333
26.0			44.40	1.644	177.63	6.579
26.5			45.15	1.672	184.38	6.823



- NOTES:
1. COPING OVERHANG TO BE APPROXIMATELY 3" FOR WALLS 10' OR MORE IN HEIGHT AND APPROXIMATELY 2" FOR WALLS LESS THAN 10' IN HEIGHT; IN A CONTINUOUS WALL OF VARYING HEIGHT THE OVERHANG WILL BE APPROXIMATELY 2" TO 3" FOR THE ENTIRE LENGTH.
 2. ALL DIMENSIONS SHOWN ARE MINIMUM

COPING TO BE PRECAST CONCRETE OR GRANITE OF UNIFORM DEPTH FOR ENTIRE LENGTH. DEPTH OF CONCRETE TO BE 1/2 THE AVERAGE "H" WITHIN THE LIMITS SHOWN. DEPTH OF GRANITE TO BE AS SHOWN ON THE PLANS, 6" OR 9".

FOR CHAIN-LINK FENCE ON TOP OF WALL, THE COPING SHALL BE CONCRETE CAST-IN-PLACE WITH A MINIMUM DEPTH OF 12". THE LENGTH OF GALVANIZED PIPE SLEEVES FOR FENCE POSTS SHALL BE EQUAL TO THE DEPTH OF COPING.

FIGURE NO 27