

TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>
SECTION 1.0	PURPOSE AND AUTHORITY.....	5
1.1	Purpose.....	5
1.2	Authority.....	5
SECTION 2.0	GENERAL.....	5
2.1	Definitions.....	5
2.2	Access To Lots.....	10
2.3	Approved Plan Required.....	10
2.4	Plan Preparation.....	11
2.5	Filing Fees.....	11
2.5.1.	General Requirements.....	11
2.5.2.	Eligible Consultants.....	11
2.5.3.	Fund Administration.....	11
2.5.4.	Review Fee Retainer.....	11
2.6	Pre-submission review.....	11
SECTION 3.0	PROCEDURE FOR THE SUBMISSION AND APPROVAL OF PLANS.....	12
3.1	Plan Believed Not To Require Approval.....	12
3.1.1.	Submission of Plan.....	12
3.1.2.	Contents	12
3.1.3.	Endorsement of Plan Not Requiring Approval.....	13
3.1.4.	Determination That Plan Requires Approval...	13
3.1.5.	Recording.....	13
3.2	Preliminary Plan.....	13
3.2.1.	Submission of a Preliminary Plan.....	14
3.2.2.	Contents.....	16
3.2.3.	Approval of a Preliminary Plan . . .	16
3.2.4.	Disapproval of a Preliminary Plan	16
3.3	Definitive Plan	16
3.3.1.	Submission of a Definitive Plan . . .	16
3.3.2.	Contents	18
3.3.2.17.	Plan and Profile	20
3.3.2.18.	Contour Plan /Grading Plan . . .	20
3.3.2.19.	Utility Plan	20

3.3.2.20.	Drainage Calculations .	21	
3.3.2.21.	Cross-Sections	21	
3.3.2.22.	Impact Studies and Assessments . . .	21	
3.3.2.23.	Sedimentation and Erosion Control Plan	22	
3.3.2.24.	Traffic Congestion Control and Analysis	22	
3.3.2.24.3	Discretionary Exemption	23	
3.3.2.25	Curb Tie and Alignment Plan	24	
3.3.2.26	Waivers, Construction Sequencing and Timing	24	
3.3.2.27	Detail Plan	24	
3.3.2.28	STREET LIGHT SIGNAGE AND LANDSCAPE	24	
3.3.2.29	Wetland and Water Resource Protection	24	
3.3.3.	Staking	25	
3.3.4.	Soil Survey and Percolation Tests . .	25	
3.3.5.	Procedure	25	
3.3.5.1.	Review by Board of Health as to Suitability of Land	25	
3.3.5.2.	Review by Other Town Officials . . .	26	
3.3.5.3.	Public Hearing	27	
3.3.5.4.	Planning Board Procedure	27	
3.3.5.5.	Approval or Disapproval . . . * * ' *	27	
3.4.	Implementation of Definitive Plan . .	28	
3.4.1.	Performance Guarantee	28	
3.4.2.	Time for Completion	29	
3.4.3.	Endorsement	29	
3.4.4.	Recording	30	
3.4.5.	Release of Lots	30	
3.4.5.2.	Conveyance of Utilities and Easements to the Town " * ' * * ' * *	30	
3.4.6.	Reduction or Release of Performance Guarantee	31	
3.4.6.1.	Reduction of Bond Surety	31	
3.4.6.2.	Final Release of Performance Guarantee	31	
3.4.7	As-Built Acceptance Plans	32	32
3.4.7.3	Plan View	32	
3.4.7.4	Profile View	33	
3.4.7.5.	Description	33	
3.4.7.6.	Certifications	33	
3.4.7.7.	Signatures	34	
Section 4.0			
4.1	Basic Requirements/Design Guides . .	34	
4.1.4.	Referenced Standard	35	
4.2.	Relation to Surrounding Areas	35	
4.3.	Minimum Lot * *	35	
4.4.	Access Through Another Municipality	35	

4.5.	Reserve Strips	35
4.6.	Further Subdivisions	36
4.7.	Resubdivision	36
4.8.	Blocks	36
4.9.	Easements	36
4.9.1.	Layout	36
4.9.2.	Watercourses	36
4.9.3.	Utilities	36
4.9.4.	Trees * * * * ' * * '	36
4.10.	Pedestrian Ways/Walkways	36
4.11.	Open Space, Parks, and Playgrounds .	36
4.12.	Protection of Natural Features . . .	37
4.13.	Maintenance	37
4.14.	Stop Work Orders	37
4.15.	Streets	37
4.15.1.	Arrangement	37
4.15.2.	Access To Feeder Streets	38
4.15.3.	Reconstruction	38
4.15.4.	Street Jogs	38
4.15.5.	Reverse Curves	38
4.15.6.	Right-of-Way Widths and Alignments .	38
4.15.7.	Intersection	38
4.15.8.	Vertical Alignment	39
4.15.9.	Cul-de-Sacs	39
4.15.9.3.	Cul-de-sac Turnarounds	40
4.15.10.	Half Streets . . .	40
4.15.11.	Stopping Sight Distance	40
4.16	Dry Hydrants ...	40
4.17.	Woodwaste Disposal	40
4.18.	Slopes	40
4.19.	Driveways ...	

<u>Section</u>	<u>Title</u>	<u>Page</u>
5.1.	Basic Requirements	41
5.2.	Streets and Roadways	41
5.2.1.	Minimum Widths and Depths	41
5.2.2.	Clearing and Grubbing	42
5.2.3.	Excavation	42
5.2.4.	Embankments	42
5.2.5.	Gravel Subbase and Base	43
5.2.6.	Dense Graded Crushed Stone For Roadway Base	43
5.2.7.	Bituminous Concrete Pavement, Sidewalks, and Driveways	43
5.2.8.	Vertical Granit Curbing	43
5.2.9.	Granite Curb Inlets	44
5.2.10.	Cross Sections	44

5.2.11.	Walkways on Existing Roadways	45
5.2.11.1.	Width	45
5.2.11.2.	Clearing and Grubbing	45
5.2.11.3.	Bituminous Paving	45
5.2.11.4.	Grass Strip	45
5.2.11.5.	Drainage	45
5.3	Storm Drainage System	46
5.3.1.	General	46
5.3.2.	Design Analysis	46
5.3.3.	Design Storm	46
5.3.3.1.	Street Drains	46
5.3.3.2.	Major Structured, Culverts, Retention /Detention Systems, Leaching Basins .	
5.3.3.2.1.	Retention/Detention Systems	47
5.3.4.	Type of Pipe	48
5.3.5.	Selection of Drain Size	48
5.3.6.	Frames, Grates and Covers	48
5.3.7.	Manholes	48
5.3.8.	Catch Basins	49
5.3.9.	Flared	49
5.3.10.	Field Stone Masonry Ends	49
5.3.11.	Security Bars	49
5.3.12.	Scour Protection	49
5.3.13.	Subdrains	50
5.3.14.	Trench Excavation	50
5.3.15.	Pipe Bedding	50
5.3.17.	Pipe Installation and Backfilling . .	50
5.3.18.	Leaching Pit or Basin	50
5.4	Water Systems	51
5.5	Utilities	51
5.6	Retaining Walls	51
5.7	Fire Alarm System	51
5.8	Street Trees	51
5.9	Loaming and Seeding	52
5.10	Street Signs	52
5.11	Street Lights	52
5.12	Guard Rails	52
5.13	Bounds	52
5.14	Curb-Cut Ramps	53
5.15	Final Cleanup	53
5.16	Certificates of Compliance	53
SECTION 6.0	ADMINISTRATION	53
6.1	Authority	53
6.2	Variation	54
6.2.1	Waiver of Cmpliance.....	54
6.3	References	54
6.4	Validity	54

6.5	Amendments	54
6.6	Inspection of Improvements	
6.6.1	Clearing and Grubbing of Right-of-Way	54
6.6.2	Excavation	54
6.6.3	Embankments	55
6.6.4	Storm Drainage System	55
6.6.5	Water System	55
6.6.6	Subgrade of Right-of-way	55
6.6.7	Gravel Sub-base and Base * *	55
6.6.8	Dense Graded Crushed Stone for Base	55
6.6.9	Curb and Edging	55
6.6.10	Bituminous Concrete Pavement	
6.6.11	Curb - Cut Ramps	55
6.6.12	Loam and Seed	55
6.6.13	Retaining Walls - . .	55
6.6.14	Guard Rails	56
6.6.15	Street Trees and Plantings	56
6.6.16	Street Sign and Bounds	56
6.6.17	Fire Alarm System	56
6.6.18	Street Lights	56
6.6.19	Final Cleanup	56
6.6.20	Maintenance	56
APPENDIX A -SUPPLEMENTAL REQUIREMENTS		57
0	Mendon Planning Board Fee Schedule	57
0	Earth Removal	58
0	Bonding Procedure	59
0	Procedure for Reduction in Bonding ..	60

APPENDIX B
APPENDIX C
APPENDIX D

INTRODUCTION

(Adopted under the Subdivision Control Law Section 81-K to 81-GG inclusive Chapter 41, G.L.)

SECTION 1.0 PURPOSE AND AUTHORITY

1.1 Purpose

These subdivision regulations are adopted under the provisions of Chapter 41 of the General Laws consistent with the purpose of protecting the safety, convenience and welfare of the inhabitants of the Town of Mendon by "regulating the laying out and construction of ways in subdivisions providing access to the several lots therein, but which have not become

public ways, and ensuring sanitary conditions in subdivisions and in proper cases parks and open areas. The powers of a planning board and a board of appeal under the subdivision control law shall be exercised with 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; 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 the applicable zoning ordinances or by-law's; for securing adequate provision for water, sewerage, drainage and other requirements where necessary in a subdivision; and for coordinating the ways in a subdivision with each other and with the public ways in the city or town in which it is located and with the ways in neighboring subdivisions".

1.2 Authority

Under the authority vested in the Planning Board of the Town of Mendon by Section 81-Q of Chapter 41 of the General Laws, said Board hereby adopts these amended rules and regulations governing the subdivision of land in the Town of Mendon. Such rules and regulations as amended shall be effective on and after February 27, 2012.

SECTION 2.0 GENERAL

2.1 Definitions

APPLICANT	A person (as hereinafter defined) who applies for the approval of a plan of a subdivision (Section 3) or approval of a site plan (Section 7). "Applicant" shall include an owner, or his agent or representative, or his assigns. The Applicant may or may not be the Developer.
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BASE FLOOD ELEVATION	The 'Base Flood Elevation' shall be the level of flooding having a one percent chance of being equaled or exceeded in any given year, as designated on Flood Insurance Rate Maps (FIRM) cited in the Zoning By-Law, or, in the absence of such designation, to be verified by the Planning Board based upon the best available information regarding flood hazards, including any available United States Geologic Survey, Soil Conservation Service, and Corps of Engineers studies.
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BENCH MARK	A mark made in a durable non-growing object of known position and elevation as a reference point.
BIKEWAY	A way designed to be used principally or exclusively by a bicycle or similar unpowered vehicle.
BLOCK	An area of land enclosed on two or more sides by street right-of-way.
BOARD	The Planning Board of the Town of Mendon.
BRIDLE PATH	A way designed to be used principally or exclusively for equestrian purposes.
CERTIFIED BY	Certified by (or endorsed by) the Planning Board, as applied to a plan or other instrument required or authorized by the Subdivision Control Law to be recorded, shall mean bearing a certification or endorsement signed by a majority of the members of the Planning Board.
CUL-DE-SAC	A street with a closed end.
DESIGNER	A Professional Civil Engineer and/or a Land Surveyor registered to practice in Massachusetts.
DEVELOP	To construct a street, install utilities, erect a house or other structure, or take other action in furtherance thereof.
DEVELOPER defined) who	A person (as hereinafter proposes to develop a subdivision under a plan of a subdivision approved pursuant to Sec. 3 of these Rules and Regulations. The Developer may or may not be the Applicant.
DRAINAGE plan.	The control of surface water within the tract of land to be subdivided or the site

EASEMENT	A right acquired by public authority or other person to use or control property for a utility or other designated purpose.
GENERAL LAW	(Abbreviated M.G.L) The General Laws of Massachusetts, Official Edition, and as the same may be amended.
LOT	See Town of Mendon Zoning Bylaws for definition.
LOT AREA	No Part of any p.d., stream, river, swamp, or Wetland shall be included as part of a lot for the purpose of determining the minimum dimensional requirements of the lot.
MONUMENT	A permanent marker to indicate a boundary.
MUNICIPAL SERVICES	Sanitary sewers, storm drains, water pipes, gas pipes, electrical lines, telephone lines, cable tv system, fire alarm, similar systems and their respective appurtenances. (see Private & Public Utilities)
OWNER	As applied to real estate, the person holding the fee simple title to a parcel, tract or lot of land, as shown by the certified record in the Land Registration Office or the Registry of Deeds or Registry of Probate.
PATHWAY	A way designed for use by pedestrians, not necessarily parallel to a street.
PERSON	An individual, or two or more individuals or a group or association of individuals, a partnership, trust or corporation having common or undivided interests in a tract of land.
PRELIMINARY PLAN	A plan of a proposed subdivision or resubdivision of land prepared and duly submitted in accordance with Section 3.2 in order to facilitate preparation of a definitive plan.
DEFINITIVE PLAN	The plan of a subdivision as duly

	submitted with appropriate and completed application to the Board for approval, to be recorded in the Registry of Deeds or filed with the Land Court when approved by the Board, and as distinguished from a preliminary plan.
PLANNING BOARD REPRESENTATIVE/ AGENT	Town employee or private consultant authorized by the Planning Board to review subdivisions and administer the regulations.
PRIVATE UTILITIES	This term shall include telephones, cable television, electric light and power, and gas lines whether installed on, above or beneath the surface of the ground.
PUBLIC UTILITIES	This term shall include only sanitary sewers, fire alarms, storm water drains and water pipes and their appurtenances, which may become the property or responsibility of the Town.
RECORDED	Recorded shall mean recorded in the Registry of Deeds of Worcester County, except that, as affecting registered land, it shall mean filed with the Recorder of the Land Court. (Section 81-L of Chapter 41 M.G.L.).
REGISTERED MAIL	Registered or certified mail.
REGISTRY OF DEEDS	The Worcester County Registry of Deeds and, where appropriate, shall include the Land Court of Worcester County.
ROADWAY	That portion of a way which is designed and constructed for vehicular travel.
SIDEWALK	A way within the right-of-way of a proposed subdivision street normally parallel to the street, primarily designed and intended for use by pedestrians.
STANDARD SPECIFICATIONS	"The Commonwealth of Massachusetts, Department of Public Works, Standard Specifications for Highways and

Bridges", latest edition as amended.

STREET

See Town of Mendon Zoning Bylaws for definition.

Streets having access upon an accepted public way in the Town of Mendon, shall be designated as Principal streets. The remaining streets within the subdivision shall be designated as Secondary streets Both ends of all Secondary streets shall intersect a Principal street.

SUBDIVISION

The division of a tract of land into two (2) or more lots and shall include re-subdivision, and, when appropriate to the context, shall relate to the process of subdivision or the land or territory subdivided: provided, however, that the division of a tract of land into two (2) or more lots shall not be deemed to constitute a subdivision within the meaning of the subdivision control law if, at the time when it is made, every lot within the tract so divided has a frontage on (a) public way, or a way which the Town Clerk of the Town of Mendon certifies is maintained and used as a public way, or (b) a way shown on a plan therefore approved and endorsed in accordance with the Subdivision Control Law, or (c) a way in existence March 31, 1954, having in the opinion of the Planning Board, sufficient width, suitable grades and adequate construction to provide for the needs of vehicular traffic in relation to the proposed use of the land abutting thereon or served thereby, and for installation of municipal services to serve such land and the buildings erected or to be erected thereon. Such frontage shall be of at least such distance as is then required by the Zoning By-Law. Conveyances or other instruments adding to, taking away from, or changing the size and shape of lots in such a manner as not to leave any lot so affected without the frontage above

Certification of Compliance with G.L. c. 41, 8 IQ

True copies of these regulations, as amended, and certified by the Town Clerk, have been transmitted and filed at the Worcester County Registry of Deeds, in Worcester, and at the Massachusetts Land Court, in Boston. Additionally, true copies of these regulations, as amended, have been placed on file and are available for public inspection at the offices of the Planning Board and the Town Clerk.

SUBDIVISION (CONTINUED)	set forth, or the division of a tract of land on which one (1) of such buildings remains standing, shall not constitute a subdivision. (Section 81-L of Chapter 41, M.G.L.).
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SUBDIVISION CONTROL	The power of regulating the subdivision of land granted by the Subdivision Control Law, Chapter 41, Sections 81- K through GG inclusive, as amended.
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TOWN WALKWAY	Town of Mendon, Massachusetts A way within or near the right of way on
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an existing way, normally parallel to the street, primarily designed and intended for use by pedestrians.

WAY

A way is synonymous with the terms: road, street, highway and avenue; and shall denote any such line or route for passage whether public or private. The width of a way shall be the width of the strip of land laid out, designated, acquired and/or dedicated for the use of such way. Such width includes the spaces for vehicular travel, sidewalks, edge stone and planting spaces where required.

2.2 Access to Lots

Each lot proposed for acceptance in a definitive plan or a plan not requiring subdivision control (81P) shall have direct access for use by emergency and other vehicles from the street on which its frontage is measured.

2.3 Approved Plan Required

No person shall make a subdivision, within the meaning of the Subdivision Control Law, of any land within the Town, or proceed with the improvement or sale of lots in a subdivision, or the construction of ways, or the installation of Municipal Services therein, unless and until a Definitive Plan of such subdivision has been submitted to and approved by the Planning Board as hereinafter provided.

2.4 Plan Preparation

All plans submitted to the Board shall be prepared by a Massachusetts Registered Professional Engineer and/or Land Surveyor, as appropriate. Form C, Form D, and Form M2 Designer's Certificate, shall be completed and submitted to the Board.

2.5 Application and Review Fees

See Appendix A for Application and Review Fee Schedule. Review Fee Administration shall be in accordance with Sections 2.5.1 through 2.6.

2.5.1. General Requirements:

When reviewing an application for subdivision or site plan approval,

the Board may determine that the assistance of outside consultants is warranted due to the size, scale or complexity of a proposed project

or because of a project's potential impact. The Board may require that

the applicant pay a "review fee" consisting of the reasonable costs

incurred by the Board for the employment of outside consultants engaged by the Board to assist in the review of an application, in accordance with c. 593 of the Acts of 1989.

2.5.2. Eligible Consultants:

In hiring outside consultants, the Board may enngage engineers, planners, lawyers, urban designers or other appropriate professionals

who can assist the Board in analyzing a project to ensure compliance

with all relevant laws, by-laws and regulations.

2.5.3. Fund Administration:

Funds received by the Board pursuant to this section shall be deposited with the Town Treasurer who shall establish a 53G for this

purpose. Expenditures from this special account may be made at the direction of the Board wihout further appropriation.

Expenditures from this special account shall be made only in connection with the review

of a specific project or projects for which a review fee has been or

will be collected from an applicant. Failure of an applicant to pay a review fee shall be grounds for denial of the application.

2.5.4. Review Fee Retainer

At the time of submission, the applicant shall provide payment in the

amount (s) specified in the fee schedule, by check or money order

payable to the Town of Mendon. The applicant shall maintain a balance

in such account of at least 50% of the initial payment amount. The

Planning Board may periodically bill the applicant for the purpose of maintaining the required minimum balance.

2.6 Pre-Submission Review

Prior to investing in professional design efforts for subdivision plans, it will often prove useful to review the proposed development of a parcel of land with the Planning Board in order that general approaches and potential problems can be freely explored. Pencil sketches, which need not be professionally prepared, will assist the discussion, and might show some but not all of the information required on a preliminary plan. Such review shall be without prejudice to the Planning Board and the applicant for the purposes of preliminary and definitive plan review.

SECTION 3.0 PROCEDURE FOR THE SUBMISSION AND APPROVAL OF PLANS

3.1.1. Submission of Plan

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 his plan does not require approval under the Subdivision Control Law may submit an original reproducible copy of said plan and four (4) contact prints thereof and two (2) original copies of a properly executed Form A to the Planning Board, accompanied by the necessary evidence to show that the plan does not require approval and the appropriate filing fee (see Section 2.5). In addition all submittals must adhere to the Digital Submission Standards as sated in Appendix B. Said person shall file, by delivery or registered mail, a notice with the Town Clerk stating the date of submission to the Board for such determination accompanied by a copy of said application and describing the land to which the plan relates sufficiently for identification. If the notice is given by delivery, the Town Clerk shall, if requested, give a written receipt therefor. The plan must show compliance with the Mendon Zoning Bylaws.

3.1.2. Contents

Said plan shall be legibly drawn in accordance with the rules and regulations of the Registry of Deeds, Chapter 36, M.G.L. Section 13A as amended pertaining to plan size, material,

lettering and related requirements. The plan scale shall be
forty feet (401) to the inch or other scale acceptable to
the Planning Board and contain the following:

- 3.1.2.1 Identification of the plan by name of owner of record and loof
the
land in question, distance to the nearest intersection
street, the
scale, north point and date.
- 3.1.2.2. The statement "Approval Under Subdivision Control Law Not
Required,"
and sufficient space for the date and the signatures of all
members of
the Board.
- 3.1.2.3. Zoning classification and location of any Zoning District
Boundaries
that may lie within the locus of the plan. The Assessor's map
blocks
and lot numbers of subject property shall be shown.
- 3.1.2.4. In the case of the creation of a new lot, the remaining land
area and frontage of the land in the ownership of the
applicant shall be shown.
- 3.1.2.5. Notice of any proceedings and copies of decisions by the
Zoning Board of Appeals, including but not limited to
variances and exceptions, regarding the land or any buildings
thereon.
- 3.1.2.6. Names of abutters from the most recent local tax list unless
the applicant has knowledge of any changes subsequent to the
latest available Assessor's records.
- 3.1.2.7. Names and status private or public) of streets, ways and
easements shown on the plan.
- 3.1.2.8. Bearings and distances of all lines of the lot or lots shown
on the plan.
- 3.1.2.9. Location of all existing buildings, including setback, side
yard and rear yard designations on land under consideration.
- 3.1.2.10. Location of all bounds, brooks, fences, and walls on land
under consideration.
- 3.1.2.11. All plans shall show edge of wetland/flood plain and also the
edge of the 100' buffer zone when applicable, and total area

of upland. The applicant is directed to the provisions of Section 40 of Chapter 131, Protection of Wetlands, and to any Town of Mendon Zoning Bylaw and Bylaw regulations relative to wetland protection, aquifer protection, and/or water resource protection.

3.1.2.12. One half inch diameter circles shall be provided to indicate house numbers assigned by the Assessors Office, except that 2 one half (1/2") circles shall be provided for corner lots.

3.1.2.13. Frontage at property and set back line, and area dimensions of each proposed lot.

3.1.2.14. All plans shall be notated above the signature block with the following statement: "Planning board endorsement is not a determination as to conformance with zoning regulations".

3.1.3. Endorsement of Plan Not Requiring APPROVAL (ANR)
If the Board or its authorized agent determines that the plan (Form A) does not require approval under the Subdivision Control Law, it shall without a public hearing and within twenty-one (21) days of submission endorse the plan. Planning Board endorsement is not a determination as to conformance with zoning regulations.

The original plan shall be returned to the applicant, and the Board shall also notify the Town Clerk in writing of its action. However, endorsement does not signify build able lots.

3.1.4. Determination That Plan Requires Approval
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 the plan, so inform the applicant in writing and return the plan. The Board shall also notify the Town Clerk in writing of its action.

3.1.5. Recording

The applicant shall file the approved plan at the Registry of Deeds, and shall notify the Board by presenting written evidence of the recording of said plan documents within thirty (30) days of approval.

3.2 Preliminary Plan

3.2.1. Submission of a Preliminary Plan

A Preliminary Plan for a Residential subdivision may be submitted by the applicant for discussion and approval by the Board. A Preliminary Plan for a Non-Residential Subdivision shall be submitted to the Board. The submission of such a Preliminary Plan will enable the subdivider, the Board, other municipal agencies, and owners of property abutting the subdivision to discuss and clarify the potential problems of such subdivision before a Definitive Plan is prepared. Therefore, although not mandatory for a residential subdivision, it is strongly recommended that a Preliminary Plan be filed in every case.

Any person submitting a Preliminary Plan shall give written notice to the Town Clerk, by delivery or registered mail; such notices shall identify the tract, the date of submission, and the name and address of the owner (u~e Form B). The applicant shall file eight (8) prints with the Planning Board. Two prints shall be filed with the Board of Health directly. The Planning Board will distribute plans in accordance with Section 3.3.5.2.

A properly executed Form B - Application for Approval of a Preliminary Plan, Form D Designer's Certificate, Form M-1, a Certified List of Abutters, a clean Municipal Lien Certificate from the Town Collector (M.G.L. Ch.60, Sec. 23) and the appropriate filing fee (see Section 2.5) shall be filed with the Preliminary Plans submitted to the Planning Board.

3.2.2. Contents

The Preliminary Plan shall be drawn on reproducible paper at a scale of forty feet (40') to the inch, and on a maximum sheet size of 24 x 36 inches. The applicant's engineer or surveyor must certify on Form M-1 that the submission is complete. The plan shall be designated as a "Preliminary Plan" and to form a clear basis for discussion of the details of the subdivision and for preparation of the Definitive Plan, the plan shall contain the following:

- 3.2.2.1. The subdivision name, if any; boundaries, north point, date, scale, legend and title "Preliminary Plan".
- 3.2.2.2. The names and addresses of the record owner of the land and the subdivider, and the name, seal, and address of the designer, engineer and surveyor who made the plan, all of which shall appear in the lower right hand corner.

- 3.2.2.3. Identify abutting property owners by names and addresses, as determined from the most recent local tax list, unless the applicant shall have more recent knowledge of such abutters.
- 3.2.2.4. The locus (Scale 1" = 1,000') of the land shown on the plan with sufficient information to accurately locate the proposed subdivision.
- 3.2.2.5. The existing and proposed lines of streets, ways, easements and any public or common areas within the subdivision, in a general manner.
- 3.2.2.6. Major features of the land such as existing walls, fences, monuments, buildings, wooded areas, outcroppings, ditches, swamps, water bodies and natural waterways. Aerial photographs when available shall be provided. Location and area of dry land satisfying lot area requirements (see zoning by-laws))) shall also be indicated.
- 3.2.2.7. A general description of the type of systems of sewage disposal, water installation and surface drainage in a general manner including adjacent existing natural waterways.
- 3.2.2.8. The approximate boundary lines of proposed lots, with lot numbers, approximate areas and dimensions. Lot numbers are to be unique along a given street including extensions.
- 3.2.2.9. The names, approximate location and widths of adjacent streets, and of streets approaching or within 500' of the subdivision. Information to demonstrate that the adequate stopping sight distance can be achieved shall also be provided (see Section 4).
- 3.2.2.10. The topography of the land with a two foot (2') contour interval based on the Town Datum (National Geodetic Vertical Datum of 1929 [NGVDJ]). Water bodies and their maximum annual elevations shall be shown with the date of measurement. The FEMA community panel number, zone designation, and base 16 flood elevation shall be indicated on the plans.
- 3.2.2.11. Soil type based on the standards of United States Department of Agriculture, Soil Conservation Service.
- 3.2.2.12. Letter designation or names of the proposed streets.
- 3.2.2.13. Preliminary profiles of existing grades and approximate proposed finished grades of the roadway, drainage and utilities.

- 3.2.2.14. Area of contiguous land and water of the applicant not presently being subdivided, with a sketch plan showing a feasible future street layout for such contiguous land, if any.
- 3.2.2.15. The *zoning* classification Or land shown on the plan and the location of any zoning district boundaries including any overlay zoning, flood plains and wetland districts.
- 3.2.2.16. The Assessors Map, Block, and Lot Numbers of subject property shall be shown.
- 3.2.2.17. Easements and rights-of-way applicable to the area shown on the plan.
- 3.2.2.18. Appropriate title block and signature space shall be provided. Reference to an approved Preliminary Plan or Definitive Plan for the site shall also be indicated, if applicable.
- 3.2.2.19 All waiver proposals to be requested or a statement to the effect that no waivers are being requested shall be indicated on the plans.

3.2.3. Approval of a Preliminary Plan

The board may give such Preliminary Plan approval, with or without modification or suggestion, after the Board's review, and at the Board's option, review with the Board of Health, the Conservation Commission, the Board's Engineer, Highway Department, Water Commissioners and other Town agencies. Such approval does not constitute approval of the subdivision but enhances the Definitive Plan review/approval process.

Within forty-five (45) days after the proper submission of a preliminary plan, each Board (Planning and Health) shall file its findings in accordance with Section 81-S of Chapter 41, M.G.L. as amended. 699.

The original of the Preliminary Plan will be returned to the applicant. Approval shall be effective for seven (7) months from the date of plan submittal.

3.2.4. Disapproval 21 & Preliminary Plan

In the event of disapproval of a Preliminary Plan, the Board shall state the reasons for its disapproval in accordance with Section 81-S of Chapter 41, M.G.L.

3.3 Definitive Plan

3.3.1. Submission of a Definitive Plan

In order to maintain statutory rights under the Preliminary Plan, the Definitive Plan(s) shall conform substantially to the Preliminary Plan as approved but may constitute only that portion which is proposed to be recorded and developed at the time. The subdivision rules and regulations and zoning in effect at the time of the submission of the preliminary plan shall govern the definitive plans(s) if it is duly submitted within seven months of the preliminary plan submittal.

Any person who submits a Definitive Plan of a subdivision to the Board for approval shall file with the Board all items required in subsections 3.3.1., 3.3.2., 3.3.3 and 3.3.4 of this Section and the appropriate filing fee (see Section 2.5) for a Definitive Plan to be "duly submitted" in accordance with these Rules and Regulations and the General Laws of Massachusetts. Such submission shall be made to the Planning Board or its agent and include the following:

- 3.3.1.1. An original drawing of the Definitive Plan and the following contract prints for original and all revisions thereof, dark line on white background. The original drawings will be returned after approval or disapproval.

Contract prints shall be transmitted as follows:

8 copies of the Definitive Plans to the Planning Board

The Planning Board Agent shall distribute the prints as indicated in Section 3.3.5.2.

Where flood plain/wetlands are involved on a Definitive Plan, the applicant must file the Definitive Plan with the Mendon Conservation Commission simultaneously with the filing of the Definitive Plan with the Planning Board.

A final decision by the Planning Board will be forthcoming only after

The applicant has obtained a written report from the Conservation Commission stating that the basic location of the roadway layout and drainage structures can be built without being in violation of the Wetland Protection Act, M.G.L. 131, Section 40. Also, where flood plain/wetlands are involved on a Definitive Plan, the applicant shall clearly delineate the location of same and indicate the percent of land area for each lot that is flood plain/wetlands. Consideration may be given to lack of improvements on roads leading to the subdivision. Applicant may be required to make necessary improvements on roads leading to the subdivision. When the subdivision requires modification to an existing town road under the jurisdiction of the Board of Selectmen, the applicant must simultaneously file the plan with the Selectmen. A final decision by the Planning Board will be forthcoming only after the applicant has obtained approval from the Board of Selectmen to undertake the modification.

- 3.3.1.2. A properly executed application Form C Application for Approval of a Definitive Plan; Form D - Designer's Certificate; Form M-2; and a Certified List of Abutters as specified in Section 3.3.5.3. Approval of all plans shall be upon the condition that all ways shown thereon and public utilities required by the Board shall be completed and installed within the time so specified. In addition all submittals must adhere to the Digital Submission Standards as sated in Appendix B.
- 3.3.1.3. The Definitive Plan shall be prepared by a Project Team which shall include a Professional Civil Engineer (PE) and a Professional Land Surveyor (PLS) registered-in Massachusetts and professional personnel of other disciplines as specified in applicable sections of these Rules and Regulations. All professional personnel shall maintain current registration or certification if available for that discipline in Massachusetts.

- 3.3.1.3.1. The classification and precision of surveys shall conform to Class A or better of the most recent Land Court Manual of Instructions. Commonwealth of Massachusetts. It is recommended that all other survey and Definitive Plan preparation, where not herein specified, be guided by the Manual of Instructions,
- 3.3.1.3.2. The plan shall be a scale of one inch (1") equals forty feet (40') or such other scale as the Board may accept to show details clearly and adequately.
- 3.3.1.3.3. Sheet sizes shall be twenty-four by thirty-six inches (24" x 36") including a three-quarter inch (3/4") border.
- 3.3.1.3.4. All plans shall include a plat of the locus and a facsimile of a one (1) square mile section of the current Zoning Map at a scale of one (1") inch equals one thousand (1000) feet showing the relation of the subdivision to the highway and major streets in the Town.
- 3.3.1.3.5. All plans shall include a Title Sheet and Key Map. A listing of drawings and revision status, as well as a legend of symbols shall also be provided.
- 3.3.1.3.6. Appropriate title block and signature space shall be provided in accordance with the typical detail in Appendix D. Reference to an approved Preliminary Plan or Definitive Plan for the site shall also be indicated, if applicable.
- 3.3.1.3.7. All plans shall contain a location overview plan at a scale of between one-half inch (1/2") to one hundred feet (100) and one inch (1") to four hundred feet (400) depending on the size of the subdivision. The location plan shall show the entire subdivision layout, adjacent streets, if any, or streets within a reasonable distance, sufficient to identify the location and the access to the land, and shall be shown on the Title Sheet.
- 3.3.1.4. The applicant shall also file by delivery or registered mail a notice with the Town Clerk stating the date of submission to the Board for such approval accompanied by a copy of the completed Form C Application for Approval of Definitive Plan and said plans.

3.3.2

Contents

The applicant's engineer or surveyor must certify on Form M-2 that the submission is complete. The Definitive Plan shall contain the following information:

- sheet
- A title, appearing in the lower right-hand corner of each
- showing the name of the subdivision, if any; the date; scale; north arrow, the names and seals of the designer, engineer and surveyor who made the plan. A revision block shall also be provided on
- each
- sheet indicating the number, date and description of all
- revisions.
- 3.3.2.2. North point, whether true, magnetic or grid benchmark and so indicate and the boundaries of the subdivision indicated by shading.
- 3.3.2.3. Location and ownership of abutting property as it appears on the
- Certified List of Abutters, unless the applicant shall have more recent knowledge of such Abutters, so indicated, including all abutting land owned by the applicant not presently being subdivided and location and ownership of all other land within five hundred feet (500')
- of the
- boundaries of the land shown in the subdivision.
- 3.3.2.4 Major features of the land, such as: existing waterways, swamps and water bodies, natural drainage courses, walls, fences, buildings, wetland areas, outcroppings and ditches, old foundations, burial grounds, wells and other structures which exist on or near the site at the time of survey. Where available, aerial photographs may be required. Location and area of dry lands satisfying lot area requirements (see zoning by-laws) shall be indicated. The limits of any vegetated
- wetland
- including any swamp, wooded swamp, meadow, bog or marsh shall
- be
- established in the field by a professional botanist and shall be mapped
- through a field survey of the botanist's markings and shown
- on the
- plan. FEMA panel number, Zone designation, and basic flood elevation shall be indicated on the plan.
- 3.3.2.5. Lines of existing and proposed streets, setback lines, ways, lots, lot numbers of each lot designated numerically in sequence, easements, and public or common areas within the subdivision. The name designation of proposed streets shall be shown in pencil. Half inch (1/2") circles are to be shown on each lot for house numbers to be assigned by the Board. (Two half inch circles for corner lots.) Lot numbers are to be unique along a given street including extensions.
- 3.3.2.6. Sufficient data to determine the location, direction and length of every street and way line, lot line and boundary

line, and to establish these lines on the ground. This shall include the lengths and bearings of plan and boundary lines of all subdivision lot lines including lot frontage on the streets, of the radii, tangents, and central angles of all curves in lot lines and street line. All angle points, or intersections of tangents along the street lines shall be shown, areas of lots with lot numbers and the area and frontage on public way as set forth in Section 81-L of Chapter 41 M.G.L. of adjoining lands of the applicant not included in the Subdivision shall be shown. The engineer or surveyor may be requested to submit the mathematical computations to the Board (and/or Board Engineer) for review if required.

- 3.3.2.7. Location of all permanent monuments properly identified as to whether existing or proposed. The proposed subdivision shall be tied into the nearest existing town, county, or state bound.
- 3.3.2.8. Location, names and present widths of streets or private ways bounding, approaching or within reasonable proximity of the subdivision, showing both pavement widths and right-of-way widths.
- 3.3.2.9. The zoning district classification of land shown on the plan and the location of any zoning district boundaries that lie within the locus of the plan and the applicable minimum lot size, frontage, and front, side, and rear yard setback as appropriate.
- 3.3.2.10. Assessors' Map, Block, and Lot of subject property shall be shown on the plan.
- 3.3.2.11. Indication of all existing and proposed easements and rights-of-way applying to the land and their purposes, whether or not within the subdivision, and any decision on appeal or any variance or exceptions made by the Zoning Board of Appeals applicable to the subdivision of the land or any buildings thereon.
- 3.3.2.12. If the property that comprises the subdivision or any part or boundary thereof has been examined, approved, and confirmed by the Massachusetts Land Court, such information shall be noted on the plan with case numbers and other pertinent references to Land Court Procedure, and the same requirement shall apply to any adjoining parcels of land of the applicant.
- 3.3.2.13. Suitable space to record the action of the Planning Board and the signatures of all members of the Board, including where

appropriate the words "Deeds of easements to be recorded herewith" or the words "Covenants to be recorded herewith."

3.3.2.14. Frontage at property and set back line, lot widths and dimensions of each proposed lot.

3.3.2.15 Base lines shall be clearly indicated on all submitted plans showing stations at all points of curvature, point of tangencies, angle points, and one hundred foot stations.

3.3.2.16 Sight Distances at Intersections
Horizontal and vertical sight distances in all directions at intersections shall be noted on the plans

NOTE: (Items 3.3.2.17 through 3.3.2.24 shall be submitted on separate sheets of the same size and material as the plan sheet. Each sheet shall bear title block and signature block as required in paragraphs 3.3.2.1 and 3.3.2.13 above. Item 3.3.2.23 shall be submitted in text and tabular form.)

3.3.2.17. Plan and Profile
Existing profiles of the street exterior and center lines drawn
side,
streets at a
such other
fine black line; dot long dash for left, short dash for right
and solid for center-line. Proposed profile on the finished center-line drawn in heavy black solid line of proposed
horizontal scale of one inch (1") equals forty feet (40') and
vertical scale of one inch (1") equals four feet (4'), or
scales acceptable to the Board.

At least two (2) benchmarks are to be shown on plan profile sheets and grade elevations at every fifty foot (50') station except in vertical curves which shall be at every twenty-five foot (25') station and at the PVC and PVT. All existing and proposed intersections and sidewalks, curb-cut ramps, bikeways and walkways, storm drains and water lines, shall be shown with all proposed grade elevations calculated. Elevations are to be referenced to the Town Datum (National Geodetic Vertical Datum of 1929, NGVD.) Gradients shall be shown by figures expressed in percent.

3.3.2.18. Contour Plan /Grading Plan
Existing and proposed topography at two feet (2') contour intervals
five
and by symbols the highest known high water mark to the last

10,000
water
in

(5) years. In no case shall earth removal exceed more than cubic yards. There shall also be indicated by differentiating symbols the contour line for four feet W) above said high mark. All benchmarks will be noted, as well as items required

Section 3.3.4. Existing contours shall be shown as dashed lines with all existing topography screened and proposed contours solid.

The Board may require certification of compliance with G.L. c. 21E, as most recently amended, with respect to the existence of contamination or threat of contamination on the Site.

Removal of earth shall be performed in accordance with the requirements set forth later in Mendon Town Bylaws chapter 14 in accordance with Town of Mendon Bylaws, as most recently amended, and as specified by other agencies. The grading plan shall indicate conformance, as applicable.

3.3.2.19. Utility Plan

Size and location of existing and proposed water supply mains, hydrants, gas, electric, telephone, cable tv, fire alarm, street lighting, sanitary sewers, storm drains, and including all appurtenances and easements pertinent thereto, and curbs and curb dimensions, including data on borings and soil test pits, and method of-carrying water to the nearest watercourse or easements for drainage as needed, whether or not within the subdivision. Locations of proposed driveways shall be indicated on the plan.

If the Planning Board approves off site surface water discharge, the applicant or developer shall clearly indicate what course the discharge will take, and shall present to the Board evidence from their Engineer that such discharge is satisfactory and permitted by public or private ownership of adjacent street or property. In general, surface water shall be contained on site.

3.3.2.20. Drainage Calculations

Drainage calculations shall be submitted in a suitable form along with amplifying plans outlining drainage areas within and affecting the subdivision. A plan shall also be submitted showing the route followed by all drainage discharging from the subdivision to the primary receiving water course, other large body of water or on site disposal.

3.3.2.21. Cross-Sections

Typical cross-sections of each street, roadway, drainage ditch, driveway and sidewalk to be constructed.

Cross sections shall be drawn for all proposed roadways and existing roadways to be reconstructed. They shall be drawn at fifty (50) foot stations, including the beginning and ending stations, and at all-proposed culverts at a scale of eight (8) feet to the inch horizontally and vertically.

A summary table shall be added to cross sections showing the cubic yards of cut and fill between the stations and the total cubic yards of cut and fill estimated.

3.3.2.22. Impact Studies and Assessments

The Applicant shall inform the Planning Board of any and all impacts that the proposed development may have on the Abutters, neighborhood, community and Town. These impacts include the aspects of traffic, water supply, solid waste disposal, sewerage, storm water drainage, fire/police protection and infrastructure in general, as well as environmental contamination issues of noise, water, air, etc. The Applicant shall also indicate the measures which will be implemented to mitigate the results of these impacts.

The Board may additionally require at its discretion that the Applicant prepare and submit impact studies and assessments for specific aspects that the Board believes to be of paramount concern to the health, safety and welfare of the Town. The need for a study/assessment will be based upon the Board's determination that a potential significant impact(s) exists and mitigation measures be required.

The Board may require an impact statement as to the effect of a proposed subdivision on schools, police, fire protection, traffic, and municipal services.

The impact study shall include impact of drainage on abutting public water supply as well as impact on the public water supply in general.

The Applicant shall use appropriate professionals to perform the necessary studies/assessments and the results shall be presented in a written report to the Board, as requested.

3.3.2.23. Sedimentation and Erosion Control Plan.

A Comprehensive Sedimentation and Erosion Control Plan shall be submitted to the Board and/or other Town Agencies showing the staging of construction and the measures to limit water borne and wind induced erosion, which shall include quick rooting vegetation, expeditious- stabilization of disturbed area, hay bales, diversions, siltation fences, and sedimentation basins. The predevelopment and construction stage sediment loadings in all water courses shall be calculated using the Universal Soil Loss Equation.

3.3.2.24 Traffic Congestion Control And Analysis

3.3.2.24.1 Definitions:

3.3.2.24.1.1 CAPITAL IMPROVEMENTS include the planning of, engineering for, acquisition of land for, and construction of roads, turn lanes, intersection improvements and signalization, but does not include maintenance.

3.3.2.24.1.2 LEVEL OF SERVICE, PEAK TIMES, as a measure of roadway sufficiency as determined by the methodology of the most recent edition of the Transportation Research Board Highway Capacity Manual. Peak time shall be considered from 7:00 a.m. 9:00 a.m. or 4:00 p.m. - 6:00 p.m. Monday through Friday.

3.3.2.24.1.3 ADJACENT MAJOR ROAD NETWORK means all primary and secondary roads within Mendon, including proposed primary and secondary roads necessitated by new land development activity generating traffic, within one half (1/2) mile radius to the nearest point of the proposed subdivision.

3.3.2.24.1.4 TRIP GENERATION means the attraction or production of motor vehicle trips caused by a given type of land development activity.

3.3.2.24.2 Traffic Impact Analysis

3.3.2.24.2.1 A subdivider is required to submit a trip impact analysis that examines the existing

conditions and the impacts of the traffic generation of the proposed project on the adjacent major road network.

- 3.3.2.24.2.2. Projects which result in roadway performance on any part of the adjacent major road network to fall below the existing level of service during peak times shall either choose to:
- a. Reduce the project's density to maintain the adjacent major road network at the existing level of service, peak time; or shall
 - b. Phase the project to match the local timetable for undertaking improvement- to maintain the adjacent ma-or road network at the existing level of service, peak time; or may
 - c. Undertake the necessary capital improvements to maintain the adjacent road network at the existing conditions; or may
 - d. Provide a fee in lieu of undertaking the necessary capital improvements equal to the subdivision's fair share of the cost of lessening congestion that results from said subdivision as determined by the Planning Board or its agent, to be paid into an earmarked account for municipal use in undertaking the improvements.
 - e. Should the project proponent elect to pay a fee in lieu of undertaking the necessary improvements in the adjacent road network, said fee shall be paid to the Planning Board prior to definitive plan approval.
 - f. All fees collected in lieu of a subdivision undertaking a necessary improvement shall be paid into an earmarked account for the improvements for which they have been collected.

3.3.2.24.3 Discretionary Exemption

If, in accordance with the Town of Mendon's conservation and recreation policy which generally seeks to encourage provision of recreation and conservation land proportionate to the growth of the Town's residential and commercial population, the Planning Board determines that it is in the interest of the Town to assist and encourage the development of recreation and conservation land, then the requirement to lessen congestion in the streets may be

developments modified as follows: For residential and commercial
Town that propose to provide recreation or conservation land, the
Planning Board may exempt all or a portion of the traffic
congestion mitigation. By allowing such an exemption, the
would assume responsibility for providing the improvements
necessary to offset the impacts of the traffic congestion.

3.3.2.25 Curb Tie and Alignment Plan
A curb tie and alignment plan shall be submitted showing the
following information:

a Station and offset to all curbs at their point of curvature
(P.C.), point of tangency (P.T.), point of reverse
curvature (P.R.C.), and point of compound curvature (P.C.C.)

b Existing and proposed bounds with a tie in to the nearest
Town, County, or State bound.

c Chart indicating all proposed bounds with north and east
coordinates and station and offset.

d Bearings, distances, and curve data for all existing and
proposed base lines, curb lines, and right-of-way lines.

e Widths of existing and proposed traveled ways, grass
strips, and sidewalks.

f Stations of all intersecting existing and proposed
baselines.

g Chart indicating the location by station of curb cut ramps
along with the roadway identification.

3.3.2.26 Waivers, Construction Sequencing and Timing
applicant The plans shall indicate all waivers requested by the
show and approved by the Planning Board. The plans shall also
the proposed construction sequencing and timing for the
subdivision.

3.3.2.27 Detail Plan

details
understand
Planning
Planning
project
Planning
the
contractor and

A plan shall be prepared and submitted indicating all the in plan, section, and elevation as required to fully and complete the proposed project in accordance with the Board's Rules and Regulations. Details included in the Board Rules and Regulations and required for the proposed shall be included on the detail plan. In addition, the Board may require additional details to be included with contract plans which it believes will assist the the Town Mendon to fully understand the proposed project.

3.3.2.28 Street Light, Signage and Landscaping
sign Location of street lights at all intersections, street
on a Locations and tree plantings as required shall be shown
 plan of the entire subdivision.

3.3.2.29 Wetland And Water Resource Protection
any The attention of the applicant is directed to provisions of
relative to Section 40 of Chapter 131, Protection of Wetlands, and to
resource Town of Mendon Zoning Bylaw and Bylaw regulations
 wetland protection, aquifer protection, and/or water
 protection.

3.3.3. Staking
the To facilitate review of the Definitive Plan by the
streets at appropriate
 authorities, at the time of filing of the Definitive Plan,
roadways. applicant shall stake the center line of all proposed
 a minimum of every one hundred feet (100.') with the center
 line stations including intersections with existing

3.3.4. Soil Survey and Percolation Tests

The Board or its agent may require soil surveys and/or test pits or borings, which are to be prepared at the expense of the applicant, in order to establish the suitability of the land for the proposed storm drainage system and proposed street construction.

3.3.4.1. Test pits, borings or soundings shall be taken along the center line of each street shown on the plan at intervals of at least every two hundred feet (200') and at locations such as cut sections and areas of questionable foundation material where the subsurface conditions may be, in the opinion of the Board or its Agent, factors affecting the quality and service life of the street. Test pits shall be made under the supervision of an Agent of the Planning Board, and shall not be backfilled until the applicant has been notified by the Board or its Agent that all necessary inspection and sampling has been completed. Where borings are used, samples shall be taken at five foot (5') intervals and at each change in strata. Soundings shall be taken in areas of unsuitable material for the purpose of determining the hard bottom contours. Test pits and boring, where required, shall extend to a minimum depth of five feet (5') below the street profile grade or to bedrock, whichever is less. The applicant shall indicate on the plan a proposed layout of the subsurface exploration program complete with location, spacing, and type of exploration proposed.

3.3.4.2. Soil surveys

When required by the Board or its Agent, shall include a test excavation not less than seven feet (7') below finished grade at a frequency of one (1) per every four (4) lots, location of which must be shown on the contour plan, and a report thereon, a percolation test at a frequency of one (1) per every four (4) lots, location of which must be shown on the contour plan, and a report thereon. Percolation test shall be in accordance with Title 5 of the Commonwealth of Massachusetts State Environmental Code.

3.3.4.3. All information concerning the test pits, borings or soundings (location, depth, soil strata, depth of water table) shall be submitted to the Board in a written report to be made, evaluated and stamped by a Registered Professional Engineer.

3.3.5. Procedure

3.3.5.1. Review by Board of Health as to Suitability of Land

At the time of filing of the Definitive Plan, the applicant shall also file with the Board of Health two (2) contract prints of the Definitive Plan, dark line on white background, together with any and all information specified in the Board of Health's Rules and Regulations which may include percolation and other tests as well as septic system details and other information as the Board of Health may require. The Board of Health shall within forty-five (45) days after filing of the plan report to the Planning Board in writing its approval or disapproval of said plan. If the Board of Health disapproves said plan, it shall make specific findings as to which, if any, of the lots shown on such plan cannot be used for buildingsites without injury to the public health, and include such specific findings and the reasons therefor in such report, and where possible, shall make recommendations for the adjustment thereof.

Failure of the Board of Health to make such a report within forty-

five (45) days after the plan is filed with their office shall be deemed approval by that Board. The Board of Health shall send a copy of their report, if any, to the person who submitted said plan

Every lot so located that it cannot be served by a connection to the municipal sewer system shall be provided with septic tank and drain-field satisfactory to the Board of Health and/or the Commonwealth of Massachusetts Sanitary Code minimum standards as the Board of Health shall determine. A note shall be added to all plans as follows: No dwelling will be constructed on any lot without first securing from the Board of Health the Disposal Works

Cons
truction
Permit required by Title 5 of the State Environmental Code. The approval of a definitive subdivision plan by the Board does not absolve the developer of any other requirements of the Board of Health or other Town boards.

3.3.5.2. Review by Other Town Officials

The Planning Board Agent will transmit copies of the Definitive Plan to Town Officials other than the Board of Health as follows:

One (1) copy each to the Conservation Commission, Water Commission, Highway Department and the Police/Fire Departments and also two (2) copies to the Planning Board's Engineer.

Before the Definitive Plan is approved, the Board will request written statements from the above officials prior to the public hearing with regard to the proposed improvements in the following respect, but not limited to:

- 3.3.5.2.1. Conservation Commission as to potential involvement with Chapter 131. Section 40, M.G.L. and the effects of the subdivision on streams, wildlife and similar considerations within the scope of the Conservation Commission.
- 3.3.5.2.2. The Board's Engineer as to the design of the street system, location of easements, monuments, drainage system, water system and, if applicable, a sewage system and their appurtenances, and relationship to existing water and drainage systems.
- 3.3.5.2.3. Fire Department as to location of hydrants and for dry hydrants emergency access.
- 3.3.5.2.4. Police Department as to street safety, both vehicular and pedestrian, and access for emergency vehicles.
- 3.3.5.2.5. Highway Department as to the design of the street system including the feasibility of snow removal from sidewalks and roadways.
- 3.3.5.2.6. Water Commission as to the design of the water system, as applicable.
- 3.3.5.3. Public Hearing
Before taking any action to approve, modify and approve or disapprove a Definitive Plan, the Board Before taking any action to approve, modify and shall hold a hearing at which parties in interest shall have an opportunity to be heard, in person or by agent or attorney. Notice of the time and place of such hearing and of the subject matter, sufficient for identification shall be published in a newspaper of general circulation in the Town of Mendon once in each of two (2) successive weeks, the first publication to be not less than fourteen (14) days before the date of the hearing and by mailing a copy of such notice to the applicant and to all owners of land abutting the land and all owners of land within three hundred feet (3001) of a property line of the land shown on the plan as indicated in the Certified List of Abutters obtained by the Applicant from the Mendon Board of Assessors.
- 3.3.5.4. Planning Board Procedure
he procedure that the Board will follow with regard to approval, disapproval or modification of the Definitive Plan submitted by the applicant will be

that as set forth in Chapter 41, Section 81-U of the General Laws, as amended.. In summary, the Board, after receiving the Plan and profiles, will review

the same to determine whether they are in compliance with its adopted Rules and Regulations, zoning by-laws and other applicable statutes.

The Planning Board may require that a subdivision plan 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 the Board shall endorse the plan to require that no building may be erected on such park or parks for a period of not more than three years without the Board's approval.

Before approval of the plan, the Board shall establish that the street pattern is safe and convenient, that proper provision is made -or street extension and that all other purposes of the General Law are met. The Board may, as a condition of granting approval under Section 81-U, impose reasonable requirements designed to promote the health, convenience, safety and general welfare of the community and to benefit the Town. In such event, the Board shall endorse such conditions on the plan to which they relate, or set forth a separate instrument attached thereto, to which reference is made on such plan and which shall for the purpose of the Subdivision Control Law be deemed to be a part of the plan.

3.3.5.5 Approval or Disapproval

The action of the Board with respect to such plan shall be by vote, copies of which shall be filed with the Town Clerk and sent to the applicant. If the

Board modifies or disapproves such plan, it shall state in its vote the reasons for its action. The Planning Board on its own motion or on the petition

of any interested person, shall have the power to modify, amend, or rescind its approval of a plan of a subdivision, or to require a change in a plan as a condition of its retaining the status of an approved plan. (81-W) A note shall be added to the approved plan, adjacent to the signature block on all pages with the following words:

"Conditionally approved in accordance with MGL Chapter 41, Section 81U, as shown in covenant to be recorded herewith."

Final approval, if granted, shall be endorsed on the original drawing of the Definitive Plan by the signatures of a majority of the Planning Board but not until the statutory twenty (20) day appeal period has elapsed following the filing of the Board's certificate of approval or

disapproval, as the case

may be, with the Town Clerk and said Clerk has notified the Board that no appeal has been filed. If appeal has been made, said endorsement shall be made

after the entry of final decree of the court sustaining the approval of such plan. Final approval shall be subject to the construction specifications contained herein and to the rules and requirements of the Town Departments, Agencies and the Board of Health. After the Definitive Plan has been approved and endorsed, the Board shall return the original to the applicant.

The board may extend the time period permitted by statute between submission of a Definitive Plan and action thereon upon written request of the applicant. Approval of the Definitive Plan does not constitute the laying out or acceptance by the Town of streets shown on the plan.

3.4 Implementation of Definitive Plan

3.4.1. Performance Guarantee

Before endorsement of the Board's approval of any Definitive Subdivision Plan, the applicant shall agree to the following:

a. to complete, except in the case of any portion of the subdivision for which a surety company performance bond, a bank passbook, a performance bond

secured by a deposit of money, or a Lenders Agreement shall have been filed pursuant to 3.4.1.1, 3.4.1.2, 3.4.1.3 and 3.4.1.4 the required improvements for the subdivision, specified in these Rules and Regulations, within two (2) years of the date of such approval,

b. to complete the required improvements for any portion of the subdivision, for which a surety company performance bond or a performance bond secured by a deposit of money or Lenders Agreement shall have been filed pursuant to 3.4.1.2. and 3.4.1.3 and 3.4.1.4.) within two (2) years of the date of the performance bond or within two (2) years of the date of the Board's approval of the Definitive Plan, whichever date shall occur the earlier, and

c. that no building permits shall be issued until at least the base course of the bituminous concrete, as specified in these Rules and Regulations, has been applied to the streets which serve that structure. Such construction and installation shall be secured by one, or in part by one and in part by the other, of the following methods which may from time to time be varied by the applicant with the written consent of the Board.

The procedure for posting of a performance guarantee is presented in Appendix A.

Approval With Bonds or Surety

3.4.1.1. By a proper bond, sufficient in the opinion of the Planning Board to secure performance of the construction of ways and the

installation of municipal services required for lots in the subdivision shown on the plan. The Planning Board may also require that the application specify the time within which such construction shall be completed.

3.4.1.2. By a deposit of money sufficient in the opinion of the Planning Board to secure performance of the construction of ways and the installation of municipal services required for lots in the subdivision shown on the plan. The Planning Board may also require that the applicant specify the time within which such construction shall be completed.

3.4.1.3. By a covenant, executed and duly recorded by the owner of record, running with the land, whereby such ways and services shall be provided to serve any lot before such lot may be built upon or conveyed, other than by mortgage deed; provided, that a mortgagee who acquires title to the mortgaged premises by foreclosure or otherwise and any succeeding owner of such premises or part thereof may sell any such lot, subject to that portion or the covenant which provides that no lot shall be built upon until such ways and services have been provided to serve such lot; and provided, further, that nothing herein shall be deemed to prohibit a conveyance by a single deed, subject to such covenant, of either the entire parcel of land shown on the subdivision plan or of all lots not previously released by the Planning Board. A deed of any part of the subdivision in violation hereof shall be voidable by the grantee prior to the release of the covenant but not later than three (3) years from the date of such deed.

Failure to so complete the required improvements within two (2) years of the date of the Board's approval of the Definitive Plan shall automatically rescind approval of said plan.

3.4.1.4 By delivery to the Planning Board of an agreement executed after the recording of a first mortgage covering the premises shown on the plan or a portion thereof given as security for advances to be made to the applicant by the lender, which agreement shall be executed by the applicant and the lender and shall provide for the retention by the lender of funds sufficient in the opinion of the Planning Board and otherwise due the applicant, to secure the construction of ways and the installation of municipal services. Said agreement shall also provide for a schedule of disbursements which may be made to the applicant upon completion of various stages of the work, and shall further provide that in the event the work is not completed within the time set forth by the Planning Board, any funds remaining undisbursed shall be available for completion.

3.4.1.5 A note shall be added to all plans as follows:
"Plans subject to covenants, conditions and restrictions set forth in a covenant(s) dated (blank) to be recorded herewith."

3.4.2. Time for Completion

If the ways in any subdivision are not completed and the utilities aforesaid are not installed within the time so agreed to by the applicant or so required by the Board, including any extensions granted by the Board, any such bond may be enforced and any such deposit may be applied by the Planning Board for the benefit of the Town. Ways or portions thereof not completed within the time required shall thereafter be completed in accordance with the design and construction standards of the Board in effect at the time of approval upon the expiration of such time.

3.4.3. Endorsement

No endorsement will be made until the applicant has paid all bills owed to the Board. The endorsement of the plan approved by the Board shall be valid for a period of two (2) years from the date of said endorsement. Prior to the expiration of the two (2) year approval period, the developer and/or owner shall request in writing to the Board an extension of time, if necessary. Failure to request an extension of time prior to the expiration of the two (2) year period shall result in the Board's notifying the Building Inspector that no additional building permits shall be issued in said development. The request for an extension shall state the reasons for the, requested extension and also the length of time requested. Any extension shall not exceed two (2) years.

Failure to complete the required improvements within two (2) years of the date of the Board's approval of the Definitive Plan shall automatically rescind approval of said plan. As provided for in 3.4.1.3.

At least eight (8) days prior to endorsement, all required covenants shall be provided to the Board's agent along with a Designer's certification that title to the premises shown on said plan and appurtenances thereto, including any off-site easements and rights of way, are in the Applicant's name and are free of all encumbrances or that the encumbrances set forth will not preclude any required subdivision improvements.

No extensions will be granted that will bring the development beyond its eighth year. Beyond eight (8) years following the date of endorsement of the Definitive Plan, any undeveloped areas must conform to the current Zoning By-Laws and the Rules and Regulations.

3.4.4. Recording

The applicant shall file the approved set of Definitive Plan documents (including details, etc.) and covenant, if any, at the Registry of Deeds, and

shall notify the Board in writing presenting evidence of the recording of said plan and the covenant within thirty (30) days of approval. The applicant shall deliver to the Board one (1) copy of the approved and recorded Definitive Plans, and a copy or an affidavit filed by the owner stating that the title to the premises shown on said plan and appurtenances thereto are in the Applicant's name and are free of all encumbrances or with encumbrances as set forth.

3.4.5. Release of Lots

The applicant shall submit to the Board a completed Form H (see Appendix B, Volume II) to seek approval for the release of lots. As a minimum the roadway binder course shall be in place prior to release and access shall be maintained to all released lots. The approved Form H shall be filed at the Registry of Deeds and written proof of filing submitted to the Board as described above (3.4.4).

3.4.5.1 The applicant shall submit all requests for the setting of bond, reductions in the amount of bond to be held, release of bond, inspection requests, as built inspections and the like to the Board in writing. Requests shall be accompanied by the most up to date Form K, Inspection Check List.

3.4.5.2 Conveyance of Utilities and Easements to the Town

Prior to the release by the Board of a surety bond or deposit, or, in the case of a covenant, the issuance of a Release Form, the applicant shall execute a Form L, transferring to the Town, without cost, valid unencumbered title to all common sewers, storm drains and water mains, and appurtenances thereto, constructed and installed in the subdivision or portion thereto to be approved, and conveying to the Town without cost and free of all liens and encumbrances, perpetual right and easements to construct, inspect, repair, renew, replace, operate and forever maintain the aforesaid underground utilities, with any manholes, pipes, conduits and other appurtenances, and to do all acts incidental thereto, in, through and under the whole of all streets in the subdivision or portion thereof to be approved, and if any such utilities have been constructed and installed in land not within such streets, then in, through and under an easement as shown on the Definitive Plan.

3.4.6. Reduction or Release of Performance Guarantee

3.4.6.1. Reduction of Bond Surety

The penal sum of any such bond or the amount of any deposit held under clause paragraph 3.4.1.1. and 3.4.1.2, may, from time to time, be reduced by the

Board and the obligations of the parties thereto released by said Board in whole or in part. If release is by reason of covenant, a new plan of the portion to be subject to the covenant may be required by the Board.

The procedure for reduction of bond surety is presented in Appendix A.

3.4.6.2. Final Release of Performance Guarantee

Upon completion of improvements required in these Rules and Regulations, security for the performance of which was given by bond, deposit or covenant, or

upon the performance of any covenant with respect to any lot, the developer or owner, at their expense, will cause to be published in a newspaper of general

circulation in the Town of Mendon at least seven (7) days prior to the releasing of the performance bond or surety, an announcement that such release is

contemplated. The developer shall also send by registered mail to the Town Clerk and the Board a written statement that the said construction or installation in connection with which such bond, deposit or covenant has been secured, has been completed in accordance with the requirements contained in these Rules and Regulations. Such statement to contain:

3.4.6.2.1. Name and address of the applicant.

3.4.6.2.2. A compliance certificate signed under oath by the developer and their Engineer that the development has been completed according to the Rules and Regulations of the Planning Board and the Town of Mendon Zoning Bylaws.

Copies of or reference to the requisite number of inspection Forms and Reports.

3.4.6.2.4

Copy of or reference to the As-Built Acceptance Plan approved by the Board.

3.4.6.2.5. Written evidence from the Town Highway, Water and Building Departments, as to construction of all ways and sidewalks, installation of monuments, street signs, pavement, lighting, gutters and curbs, required grading and drainage, water mains, hydrants and appurtenances, adequate lot drainage, planting and seeding, all in accordance with the Definitive Plan.

3.4.6.2.6. Written evidence from the Board of Health as to the installation of sewage disposal facilities, if applicable, all in accordance with the Definitive Plan.

3.4.6.3. Determination of Incompleteness

If the Board determines that said construction, installation, or filing of "as-built" plans has not been completed, it shall specify to the Town Clerk

and to the developer, in writing, by registered mail, the details wherein said construction and installation shall have failed to comply with the requirements contained in these Rules and Regulations. Upon failure of the Board to act on such application within forty-five (45) days after the receipt of the application by the Town Clerk and the Board, all obligations under the bond shall cease and terminate by operation of law, and any deposit shall be returned and any such covenant shall become void.

In the event that said forty-five (45) day period expires without such specification, or without the release and return of the deposit or release of the covenant as aforesaid, the Town Clerk shall issue a certificate to such effect, duly acknowledged, which may be recorded.

3.4.6.4. Determination of Completeness

If the Board determines that said construction, installation, or filing of "as-built" plans has been completed, it shall notify the Town Treasurer within

forty-five (45) days on an executed Release Form, that it releases the interest of the Town in such bond or deposit and that it shall be returned to the person or persons who furnished same, or, in the case of covenant it shall issue a written release of the covenant on an executed Release Form.

3.4.7. As-Built Acceptance Plans

Prior to the final release, the developer shall file with the board an as-built acceptance plan of completed street or streets. The plan shall show all plans and profiles corrected and certified by the Applicant's Engineer to be actual as-built locations and profiles of all streets, ways and utilities, including those installed by others such as electric, telephone, and gas. Said plans shall be prepared in a manner suitable for records at the Registry of Deeds. All expenses by the Board to review accuracy of said plans will be borne by the Applicant.

3.4.7.1. The Developer shall provide the Planning Board with one (1) set of reproducible plans and four (4) sets of prints of the completed subdivision. The Plans must be prepared by a Registered Professional Engineer and Land Surveyor. In addition all submittals must adhere to the Digital Submission Standards as sated in Appendix B.

3.4.7.2. Acceptance Plan shall show both a plan and profile view of the street as constructed based upon the Definitive Plan. The plan shall be drawn at a scale of 1"=40' horizontal and 1"=4' vertical on a 24" x 36" sheet.

3.4.7.3. Plan View

The following shall be shown as a minimum:

- a Widths, lengths, bearings, including radii, tangents, and central angles of
all curves, of all boundary lines of streets and easements and curb lines.
- b Station and offset to P.O.C., P.R.C., P.C.C. and P.O.T. of all curb lines.
- c All required bounds with indication that same have been correctly set with
coordinates and station and offset.
- d Name, lot, and house number of each abutting owner appearing on the most
recent tax list.
- e North arrow and a minimum of two (2) bench marks referenced to the National
Geodetic Vertical Datum (N.G.V.D.) of 1929. The bench marks shall not be
located on growing features, such as trees.
- f Edge, width, and cross slope of traveled ways; indication as to type of
edging, or curb; location of ditches, easement structures, and driveways.
- g Storm drainage and sanitary sewer systems including major structures, culverts, leaching basins, retention/detention systems; size, type, and
class of pipe and subdrains; manholes, catch basins, gutter inlets, flared
and metal ends, field stone masonry ends, length and width of scour protection, and the location, type, size, and class of service lines to each
abutter.
- h Water systems including size, type, and class of pipe; location including
station and offset and size of all valves, boxes, and fittings, hydrants,
air release valves; and the location, type, size, and class of service lines
and curb stops to each abutter.

- i Gas service including size and type of pipe, location of all valves and boxes, and the location, type, and size of service lines to each abutter.
- j Electric, telephone, cable TV, and fire alarm systems including location, size and type of conduits, handholes/pullboxes, street light poles, utility poles, and the location, type, and size of service lines to each abutter.
- k Location of all retaining walls, street signs, guard rails, and curb-cut ramps.
- l Location, species, and date of installation of all trees.
- m Horizontal and vertical sight distances at all intersections in all directions.
- n Gutter line elevations shall be indicated at all fifty (50) foot stations including P.O.C.s, P.C.C.s, P.R.C.s, and P.T.s

3.4.7.4. Profile View

The following shall be shown as minimum:

- a Center line and easement profiles, grades, and elevations with elevations being shown at fifty (50) foot stations and at drainage structures.
- b All vertical curves, length, stopping sight distance, and elevations at twenty-five (25) foot stations and at the PVC and PVT.
- c Storm drainage and sanitary sewer systems, water system, structures, culverts; sizes, slopes, rim, and invert elevations.

3.4.7.5. Description

A deed(s) must be provided. A running description of all ways and easements shall be provided.

3.4.7.6. Certifications

The following notes shall appear on the acceptance plan and be endorsed by the Surveyor and Engineer.

- I hereby certify that (Street) has been laid out and the bounds have been set as shown on this plan.

Signature

Date

• I hereby certify that this plan shows the actual as built locations, profiles and elevations of the roadways, drainage facilities and utilities based upon a field survey made during the period

From _____
To _____

Surveyor _____

Engineer _____ Date _____

3.4.7.7. Signatures

Suitable space for endorsement by members of the. Planning Board and Board of Selectmen shall be provided.

SECTION 4.0 DESIGN STANDARDS

4.1. Basic Requirements/Design Guides

For the purpose of protecting the safety, convenience and welfare of the inhabitants of the Town of Mendon in any subdivision having one access from an accepted public way in the Town of Mendon, the total lineal feet (be center line) of the proposed street or streets, shall not exceed the combined (when added together) sum of the frontage distance required for four (4) building lots shall be provided at the closed end with a turn-around having an outside roadway diameter of one hundred (100) feet, and a property line diameter of one hundred and twenty (120) feet.

For the purpose of protecting the safety, convenience and welfare of the inhabitants of the Town of Mendon in any subdivision having more than one access from an accepted public way or ways in the Town of Mendon, the accesses shall be separated upon said public way by a minimum of the combined frontage of two (2) building lots as required under applicable zoning by laws

The minimum centerline radii of curved streets shall be three hundred (300) feet for primary streets and two hundred (200) feet for secondary streets. Greater radii may be required for principal streets. Property lines at street intersections shall be rounded or cut back to provide for a curb radius of not less than thirty (30) feet.

4.1.1. The subdivider shall observe all design standards for land subdivision as hereinafter provided. These standards shall be considered minimum standards and shall be varied from or waived only as provided in Section 6.2.

All subdivisions shall be designed and improvements made by the applicant consistent with the requirements of Section 4.

4.1.2 Design and construction shall reduce, to the extent reasonably possible, the following:

- a Volume of cut and fill;
- b Area over which existing vegetation will be disturbed, especially on land within 200 feet of a river, pond, or stream, or having a slope of more than 15%: Number of mature trees removed:
- c Visual prominence of man-made elements which are not necessary for safety or orientation:
- d Visibility of building sites from existing streets; Blockage of vistas through new development; Removal of existing stone walls;
- e Number of driveways exiting onto existing streets or collector roads;
- f Alteration in ground water or surface water levels or chemical constituents;
- g Disturbance of important wildlife habitats, outstanding botanical features, scenic or historic environs;
- h Soil loss or instability during and after construction.

4.1.3 Increase, to the extent reasonably possible, the following:

- a Visual prominence of natural features of the landscape;
- b Street layout facilitation of solar orientation of houses;
- c Use of curvilinear patterns.

4.1.4. Referenced Standard:

A policy on Geometric Design of Highways and Streets, by the American Association of State Highway and Transportation Officials (AASHTO), latest edition, as amended and Massachusetts Department of Transportation Highway Design Guide.

4.2. Relation to Surrounding Areas

The subdivision shall be in conformity with the respective zoning requirements and the general layout shall harmonize and conform with plans for Mendon, as adopted by the Planning Board.

4.3. Minimum Lot

No lot area frontage or width, in a subdivision, shall be less than the minimum required by the Zoning By law for the District in which it is located.

4.4. Access Through Another Municipality

In case access to subdivision crosses land in another municipality; the Board shall require certification, from appropriate authorities, that such access is in accordance with the Master Plan and subdivision requirements of such municipality and that a legally adequate performance bond has been duly posted or that such access is adequately improved to handle prospective traffic.

4.5. 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.

4.6. Further Subdivisions

In case a tract is subdivided into larger parcels than ordinary building lots or if a subdivision is adjacent to a tract capable of subdivision, such parcels and streets shall be arranged so as to allow the logical and economic extension of streets, utility easements, drainage ways, and public areas into such parcels or adjacent tracts.

4.7. Resubdivision

The Resubdivision of all or part of land covered by an existing plan, shall be governed by these regulations. Such Resubdivision shall show clearly that area or areas which are being replatted and shall show the file number of all previous plans of these same areas with dates of filing.

4.8. Blocks

In general, block lengths shall not be less than 300 feet nor more than 2000 feet.

4.9. Easements

4.9.1. Layout

Wherever possible, easements shall be continuous from block to block and their layout shall create as few irregularities as possible. The minimum easement width shall be 20 feet.

4.9.2. Watercourses

Streams or watercourses may require an easement conforming substantially with the line of its course, but not less than 20 feet in width.

Parallel streets or pedestrian ways and/or appropriate access may be required in connection therewith. The placement of streams or watercourses into open or covered culverts shall be kept to a minimum.

4.9.3. Utilities

Utility easements shall generally follow lot lines and shall be not less than 20 feet in width.

4.9.4 Trees

Tree easements shall follow and be outside of the right-of-way way lines and shall be 10 feet in width.

4.10. Pedestrian Ways/Walkways

Pedestrian ways or foot paths shall be required to provide convenient circulation or access to schools, playgrounds, shopping, churches, transportation, parks, conservation areas and/or other facilities. Such ways shall consist of an easement of at least 20 feet, except that walkways shall consist of an easement of at least 5 feet.

4.11.1. Open Space, Parks, and Playgrounds Before approval of a plan the Planning Board may 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. The park or parks shall not be unreasonable in the area in relation to the land being subdivided and to the prospective uses of such land. The Planning Board may by appropriate endorsement on the plan require that no building be erected upon such park or parks without its approval for a period of three (3) years.

Each area reserved for such purpose shall be as suitable area, dimensions, topography and natural character for the purpose of a park and/or playground. Each such area shall be so located as to serve adequately all parts of the subdivision as approved by the Planning Board. The Planning Board may require that the area or areas reserved shall be located and laid out so as to be used in conjunction with similar areas adjoining subdivisions or of probably subdivisions. All areas to be reserved for park and/or playground purposes shall contain not less than one (1) acre or shall be part of a similar area in an adjoining subdivision so that the total area is not less than two (2) acres. Unless otherwise specifically approved by the Planning Board, the total amount of area to be reserved for park and/or playground purposes shall be no less than ten percent (10%) of the gross area of the subdivision. Any land so reserved shall be graded to dispose properly of surface water and shall be left in condition for the purpose intended, as required by the Planning Board.

4.11.2. Any open space park or playground shall provide at least fifty feet of continuous frontage on a street, and pedestrian ways will normally

be required to provide access from each of the surrounding streets, if any, to which the open space, park or playground has no frontage. Further, such parks and/or playgrounds shall be required to have maintenance provided for by covenants and agreements acceptable to the Board, until public acquisition by the community.

4.11.3 Land designated for park or playground purposes shall not include wetlands, ledge or other lands unsuitable for recreation purposes.

4.12. Protection of Natural Features

Due regard shall be shown for all natural features such as large trees, watercourses, scenic points, historic spots and similar community assets which, if preserved, will add attractiveness and value to the subdivision.

4.13. Maintenance

All roads and utilities, including basin cleaning and snow removal, shall be maintained by the applicant until final inspection and street acceptance by the Town.

4.14. Stop Work Orders

At any time during the course of construction the Board may issue an order to cease some or all work within the subdivision or to undertake corrective or remedial work whenever the applicant has violated these rules and regulations, plan specifications or conditions of approval. The applicant shall comply with all such orders and failure to do so shall entitle the Board to rescind or amend plan approval or to undertake, at applicants expense, any corrective or remedial action.

4.15. Streets

4.15.1. Arrangement

The proposed streets shall be considered in their relation to existing and planned streets, topographic and geologic conditions, public convenience and safety, and for safe vehicular travel. Due consideration shall also be given by the developer to the attractiveness of the street layout in order to obtain the maximum amenity of the subdivision and to avoid excessive cut and fills. Long straight roadway sections should be avoided on residential streets. In addition, the proposed streets shall provide for appropriate continuation of existing principal and secondary streets, and the extension of principal and secondary streets into adjoining land.

4.15.2. Access To Feeder Streets

Intersections of existing primary streets will not be allowed at intervals of less than 400 feet.

4.15.3. Reconstruction

Provision, satisfactory to the Planning Board, shall be made for the reconstruction of adjacent public ways or the addition of alternate access roads or other remedial steps in cases where the development of the subdivision may cause congestion or a danger to pedestrian or vehicular traffic on the adjacent public ways.

4.15.4. Street Jogs

All streets in the subdivision shall be designed so that, in the opinion of the Planning Board, they will provide safe vehicular travel. Due consideration shall also be given by the subdivider to the attractiveness of the street layout in order to obtain the maximum livability and amenity of the subdivision.

Street jogs with centerline offsets of less than one hundred and twenty five (125) feet should be avoided.

4.15.5. Reverse Curves

All reverse curves shall be separated by a tangent at least 150 feet long.

4.15.6 Right-of-Way Widths and Alignments

On all classifications of streets the following characteristics shall be the minimum acceptable:

Mendon Street Classification	Minimum Right of Way (ft)	Centerline Radius (ft)	Design Speed (mph)	Stopping Sight Distance	Maxium Gradient	Minimum Gradient
Primary	50 ft.	300 ft.	35	250	6%	1.00%
Secondary	50	200 ft.	30	200	8%	1.00%

Superelevation Rate, $e = 0.00$

4.15.7. Intersections

4.15.7.1. Rights of way shall be laid out so as to intersect as nearly as possible at right angles. No right of way shall intersect any other right of way at less than 60 degrees.

4.15.7.2. Property lines at right of way intersections shall be cut back to provide for a curb radius on the roadway of not less than thirty feet except where the angle of intersection varies more than ten degrees from a right angle in which case the radii of the curve connecting the acute angle may be less and the opposite radius must be correspondingly greater.

4.15.7.3 Both the horizontal and vertical stopping sight distance at intersecting roadways within a subdivision and at subdivision roadways

intersecting with existing roadways shall be not less than 325 feet for secondary roads and not less than 550 feet for primary roads.

4.15.7.4 Horizontal and vertical stopping sight distances in all directions at existing and proposed intersections shall be noted on the plans.

4.15.8 Vertical Alignment

4.15.8.1. All changes in grade shall be connected by vertical curves of sufficient length of afford adequate sight distances.

4.15.8.2. Minimum lengths of crest or sag vertical curves is determined by the basic formula $L = KA$, where:

L = length of vertical curvature

K = rate of vertical curvature

A = algebraic difference in grades, percent.

Design controls for crest and sag vertical curves based on stopping sight distances.

Design Speed (MPH)	Stopping Sight Distance (ft.)	Crest <u>K</u>	Sag <u>K</u>
30	200	19	37
35	250	29	49

Minimum length of a sag or crest vertical curve shall be one hundred (100) feet. All vertical curves shall show the following on the profiles:

- a P.V.I. Station and elevation
- b High point or low point station and elevation

4.15.8.3. Where the proposed grades of any street meeting another existing or proposed street, whether said other street is within or adjacent to the subdivision, exceeds four (4) percent, a leveling area shall be provided for a distance of not less than one hundred (100) feet, measured from the nearest property line of the other street. The grade of the centerline or of any vertical curve tangent shall not exceed a negative one (1) percent.

4.15.9. Cul-de-Sacs

All streets in the subdivision having a closed end shall be designed so that, in the opinion of the Planning Board, they will provide safe vehicular travel. Due consideration shall also be given by the subdivider to the attractiveness of the street layout in order to obtain the maximum livability and amenity of the subdivision and shall not provide access to more than eight (8) lots.

4.15.9.2.1 Any easement in any turnaround shown on a plan approved under the subdivision control law other than an easement appurtenant to a lot abutting the turnaround, shall terminate upon the approval and recording of a plan showing extension, and the recording of a certificate by the Planning Board of the construction of such extension.

4.15.9.2.2 In the case of a temporary turn around, the plan shall show a right of way of street width to abutting developable land for future road extensions. Said right of way shall be laid out and construction plans included as part of the subdivision plan. The land in the right of way shall be turned over to the Town at the time the street is accepted.

4.15.9.2.3 Cul-de-sacs shall provide a turn around at the closed end(s) having a property line diameter of at least 120 feet; a radius at the outer edge of traveled way of 50 feet.

4.15.9.2.4 Cul-de-sacs shall not have a grade of less than 2% and not more than 4% for the last 100 feet-at the closed end.

4.15.9.2.5 A 20 foot easement may be required at the end of cul-de-sacs to provide for continuation of pedestrian traffic and/or utilities to the next street.

4.15.10. Half Streets

4.15.10.1. A half street is a portion of a proposed street running astride a common boundary line, said portion being within a subdivision under consideration.

4.15.10.2. Half streets shall be prohibited.

4.15.11. Stopping Sight Distance

Stopping sight distance is the sum of two distances: the distance traversed by the vehicle from the instant the driver sights an object necessitating a stop to the instant the brakes are applied and the distance required to stop the vehicle from the instant brake application begins. For all stopping site distance calculations, the height of the driver's eye is considered to be 3.50 feet above the road surface and the height of

the object is considered to be 0.50 feet above the road surface in accordance with AASHTO policy.

4.16. Dry Hydrant

For the purpose of protecting the safety and welfare of the residents of the town, the Planning Board shall require the construction of dry hydrants, with the specifications of the Mendon Fire Department. In areas where a good water supply is not available, a well, pump and storage tank that conform to the specifications of the fire department shall be required.

4.17. Woodwaste Disposal

Brush and stump disposal shall be in accordance with the latest DEP policy and/or regulation.

4.18. Slopes

Excavated cuts shall have a maximum slope of three (3) horizontal to one (1) vertical (3:1), cut slopes greater than fifteen feet (15') in height shall be benched or terraced and approved by the Board.

4.19. Driveways

All driveways shall be designed and constructed starting from the gutter line. The slope of the driveway shall be upwards toward the sidewalk to be constructed or to a point allowing for a sidewalk to be construction in the future. Sloping driveways downward towards the right of way line is prohibited. A detail and cross section of the proposed driveway shall be indicated on the plans.

5.1. Basic Requirements

5.1.1. The subdivider shall install all of the improvements itemized herein unless waived in writing by the Board. All work done under this section shall be done under the direction of the Planning Board.

5.1.2. No aforementioned Bond or Covenant shall be released until full approval in writing of all work done under this section is received by the Planning Board from the developers engineer and the boards designated inspector.

5.1.3. Referenced Standards:

The Commonwealth of Massachusetts, Department of Public Works, Standard Specifications for Highways and Bridges, latest edition, as amended; and the Supplemental Specifications to the Standard Specifications for Highways and Bridges, latest edition, as amended.

The Commonwealth of Massachusetts Department of Public Works, Construction Standards, 1977 Standards, as amended.

Typical Cross Sections (Appendix C) and Typical Details (Appendix D) of these Subdivision Rules and Regulations.

5.2. Streets and Roadways

5.2.1. Minimum Widths and Depths

The following minimum improvement standards shall be required (see typical cross sections).

5.2.1.1. Minimum Width Requirements (in feet)

<u>Sidewalk(s)</u> <u>Street</u> <u>Classification</u>	<u>Paved</u>			
	<u>Right-of-Way</u>	<u>Traveled Way</u>	<u>Grass Strip*</u>	<u>in grass Strip (s)</u>
Primary	50	28	2 @ 5.5	2 @ 5.5
Secondary	50	28	2 @ 5.5	2 @ 5.5

Cross slope for traveled way, grass strips, and sidewalks shall be one quarter (1/4) inch per foot.

* includes edging or curb and 12" grass strip

5.2.1.2. Minimum Depth Requirements (in inches)

<u>Street</u> <u>Classification</u>	<u>Processed Gravel</u>	<u>Roadways</u>		
		<u>Crushed Stone For Base</u>	<u>Course</u>	<u>BinderFinish Course</u>
Primary and Industrial	18	6	2.5	1 1/2
Secondary	18	6	2.5	1 1/2

<u>Sidewalks</u>			
<u>Street</u> <u>Classification</u>	<u>Processed Gravel</u>	<u>Binder Course</u>	<u>Finish Course</u>
Primary and Industrial	8*	1-1/2	1
Secondary	8*	1-1/2	1

*12 inches of processed gravel base required at all driveway crossings.

At access ways/driveways to all commercial and industrial sites provide 18 inch gravel base with 2 inches each of binder and finish courses from the traveled way to the property line.

5.2.2. Clearing and Grubbing

5.2.2.1. Clearing and grubbing shall be done in accordance with the relevant provisions of Section 101 of the M.D.P.W. Standard Specifications and Town of Mendon Bylaws.

5.2.2.2. All excavation and embankment areas shall be first cleared of all stumps, brush, roots, boulders, debris, and like materials and disposed of off site. All loam and topsoil within the excavation/embankment areas shall be removed and stockpiled for reuse within the subdivision.

5.2.3. Excavation

Excavations shall be done in accordance with the relevant provisions of Section 120, Excavation, of the M.D.P.W. Standard Specifications and Town of Mendon Bylaws.

5.2.4. Embankments

5.2.4.1. Construction of all embankment fill shall be done in accordance with the relevant provisions of Sections 120, 150, and 170 of the M.D.P.W. Standard Specifications and Town of Mendon Bylaws and in accordance with the procedures described herein.

5.2.4.2. Fill material shall be approved suitable existing material obtained from on site excavations and shall consist of solid, sound mineral-aggregate. It shall be free from deleterious, organic, elastic or foreign matter and shall be adequately graded for satisfactory compaction into a stabilized soil structure.

5.2.4.3. Embankments shall not be constructed with material from rock or boulder excavations.

5.2.4.4. Off site fill material shall be ordinary borrow conforming to M.D.P.W. Material Specification M1.01.0.

5.2.4.5. Fill for embankments shall be placed in uniform layers not exceeding 12 inches in loose measurement depth and compacted to not less than 95 percent of the maximum dry density as determined by the Standard AASHTO Test Designation T99 compaction test Method C at optimum moisture content. No fill material shall be placed, spread or compacted while the ground or fill material is frozen, thawing, or during inclement weather conditions. Fill material having excessive moisture content shall not be compacted until the material has been aerated by grading, harrowing or other methods to remove excessive moisture.

5.2.5. Gravel Subbase and Base

5.2.5.1. The subgrade shall be brought to proper grade and compacted as shown on the profiles and in accordance with the approved cross section. No gravel subbase shall be placed until all earthwork and utility installation work has been completed.

5.2.5.2. Gravel for roadway subbase and sidewalk base shall be spread and compacted in layers not exceeding 6 inches in compacted measurement depth and in accordance with the approved cross section. Material shall be compacted to not less than 95 percent of the maximum dry density as determined by the Standard AASHTO Test Designation T99 compaction test Method C at optimum moisture content.

5.2.5.3. Construction of gravel subbase and base courses shall be done in accordance with the relevant provisions of Sections 401 and 405 of the M.D.P.W. Standard Specifications except the compacted layers shall not exceed 6 inches.

5.2.5.4. Graded gravel for roadway subbase and sidewalk base shall conform to M.D.P.W. Material Specification M1.03.1. A certificate of compliance indicating the gradation and source of material shall be submitted and approved prior to delivery of any material to the site.

5.2.6. Dense Graded Crushed Stone For Roadway Base

5.2.6.1. Construction of all dense graded crushed stone for roadway base shall be done in accordance with the relevant provisions of Section 402, of the M.D.P.W. Standard Specifications and in accordance with the procedures described herein.

5.2.6.2. Processed gravel for base shall conform to M.D.P.W. Material Specification M2.01.7. A certificate of compliance indicating the gradation and source of material shall be submitted and approved prior to delivery of any material to the site.

5.2.6.3. Upon installation and compaction of the dense graded crushed stone, the applicant shall survey the finished base course. This survey shall consist of obtaining center line and both gutter elevations at fifty (50) foot stations. In areas where the roadway gradient and cross-slope do not agree with what is shown on the contract plans, the applicant shall reconstruct and resurvey those areas until the proper gradient and/or cross-slope has been obtained. No bituminous concrete shall be placed and compacted until written authorization has been obtained from the Planning Board or its engineer on the Form X.

5.2.7. Bituminous Concrete Pavement, Sidewalks and Driveways
Materials and construction methods of the bituminous concrete pavement, sidewalks, and driveways shall conform with the relevant provisions of Sections 460 and 701 of the M.D.P.W. Standard Specifications and in accordance with the procedures described herein. Pavement shall be placed and compacted in two courses, binder and finish. All driveways and curb cut ramps shall slope toward the roadway and end at the roadway gutter line. Driveways shall commence their downward slope to the roadway from the right-of-way/street line and the ramps from the sidewalk. No driveways or ramps which slope away from the roadway will be accepted. Edging or curb (as applicable) shall be continued into the driveway/ramp cut to prevent erosion at the cut.

5.2.8. Vertical Granite Curbing
Slant granite curbing shall be required on both side traveled travelled ways. Materials and construction methods shall conform with the relevant provisions of M.D.P.W. Standard Specification M9.04.2 and in accordance with the procedures described herein. Certificates of Compliance shall be required in accordance with subsection 5.17.

5.2.9. Granite Curb Inlets

5.2.9.1. Slant granite curbing shall be four-foot-minimum lengths, except where shorter lengths dictated by radius. It shall be set on a compacted gravel bedding at a forty-five-degree angle with a seven inch reveal. The nose of the granite shall be set in a concrete base approximately six (6) inches square which shall abut against the binder course. The top course of paving shall cover the concrete and key the granite in place. Joints shall be mortared.

5.2.9.2. Materials and construction methods shall conform with the relevant provisions of Section 501 of the M.D.P.W. Standard Specifications and in accordance with the procedures described herein.

5.2.10. Cross Sections

5.2.10.1. Cross sections shall be drawn for all proposed roadways and existing roadways to be reconstructed.

5.2.10.2. The following shall be shown on the sections:

- a Edges of existing roads, drives, walks, swamps, lawns, etc.
- b Existing walls, poles, hydrants, mail boxes, etc.
- c All existing trees 12" diameter and over, noting the diameter, species of tree, station and offset.

- d Indicate elevation, station, and description of wells, cesspools, and on site septic systems, and a description and elevation of sills of buildings.
- e Existing culverts shall be shown as long dash lines.
- f Water elevations shall be shown as a dashed line with elevation and a date taken.
- g Approximate elevation of the top of rock for above and below existing grade.
- h The profile grade and right-of-way lines are to be noted on each template.
- i The template shall consist of the finished grade and the proposed subgrade lines, baseline, and right-of-way lines
- j Stations shall be located below the cross section and increase going up the plan sheet
- k Guide vertical elevations and horizontal distances in both directions shall be shown on each cross section.
- l A summary table shall be shown with the cross sections showing the cubic yards between the stations for cut, fill, muck, and rock excavation, and gravel borrow. A total for each category shall be shown along with the final amount of cubic yards of earth to be removed from the site or gravel borrow to be brought into the site.
- m Limits of rock and muck excavation.
- n Planimeter readings are to be shown to the right of each template using the abbreviations - C=Cut, F=Fill, M=Muck Excavation, R=Rock Excavation, GB=Gravel Borrow.

5.2.11 Walkways on Existing Roadways

Walkways shall be required in the applicant's property along all existing public ways which immediately abut the proposed subdivision for the purpose of assuring safe and adequate pedestrian access to and from the subdivision.

In general, walkways on existing roadways shall be constructed with minimum change to the natural rural appearance of the street. Walkways shall follow the natural contours of the land and preserve both trees and shrubs to the extent possible to comply with the following guidelines. To facilitate review of the proposed plan by the appropriate authorities, the

applicant shall stake the sideline of the proposed walkway at fifty foot intervals.

5.2.11.1 Width

The width of the walkway shall be four feet. Where such a walk can not be constructed respecting the existing contours and natural features of the land such as trees, shrubs, stone walls, etc. a minimum width of three feet shall be allowed with prior written approval of the Planning Board.

5.2.11.2 Clearing and Grubbing

All excavation areas shall first be cleared of stumps, brush, roots, boulders, debris and like materials which should then be disposed of off site. All loam and topsoil within the excavation area shall be removed and stockpiled for reuse.

The removal of all trees shall be in compliance with the Shade Tree Act and the Scenic Roads Act where applicable. Trees not protected under these acts if in living viable condition and having a trunk in excess of 12 inches in diameter measured four feet above grade, shall be retained wherever possible. In addition, trees of special importance because of species or distance from other trees shall be field marked by the Planning Board or its agent indicating in each case whether the tree -should be removed or preserved.

5.2.11.3 Bituminous Paving

Bituminous concrete pavement for sidewalks and driveways shall be installed to conform with the relevant provisions of sections 460 and 701 of the MDPW standard specifications and in accordance with procedures described therein. At least one course of bituminous concrete pavement for walkways shall be installed to conform with generally accepted engineering practice.

5.2.11.4 Grass Strip

A grass strip separating the walkway from the road shall be installed wherever possible consistent with the walkway design procedures described herein.

5.2.11.5 Drainage

The paved surface shall be pitched a minimum of 1/4 inch per foot in the direction of existing drainage facilities to provide adequate disposal of surface water including control of erosion, flooding, and standing water on adjacent lands.

5. 3 Storm Drainage System

5.3.1. General

Storm drains, culverts, ditches, and related installations, including manholes and catch basins, shall be designed and installed to provide adequate disposal of surface water including control of erosion, flooding and standing water from or in the subdivision and adjacent lands. Connections to existing drainage systems must also be approved by the appropriate town authorities prior to endorsement.

Materials and construction methods for the installation of the storm drainage system shall be in accordance with the relevant provisions of Sections 201, 220, 230 260, and 280 of the M.D.P.W. Standard Specifications except as modified herein.

5.3.2. Design Analysis

5.3.2.1. Drainage plans, profiles and computations shall be submitted with the Definitive Plan and prepared by a Registered Professional Engineer. The analysis shall clearly indicate all the computations for the drain including determination of pipe size, slope, velocity, length, capacity and strength, design flow and a statement concerning the disposition of flow.

5.3.2.2. All areas where the flow is discharged to the ground surface will require a drainage easement over the ground subject to flow, obtained by the applicant, and a statement to that effect shall be included with the design analysis.

5.3.2.3 The impact of drainage on abutting public water supply shall be addressed to assure that there shall be no adverse effect.

5.3.3. Design Storm

5.3.3.1. Street Drains

A rainfall having a 4% chance of being equaled or exceeded in any given year (25 year storm) has been selected for design computations unless, in the opinion of the Planning Board, a larger design storm is necessary.

Computations shall be based on full development of all tributary areas up gradient of each system. A tributary area plan shall be submitted with the computations and analysis.

0 Runoff analysis shall be calculated by using the "Rational Formula"

$Q = CIA$

where:

Q = peak discharge of the watershed in cfs due to 25-year storm.

C = coefficient of runoff

I = rainfall intensity in inches per hour based on the time of concentration.

A = area of watershed in acres

0 Coefficient of Runoff

A weighted coefficient of runoff "C" is to be determined for each incremented drainage area based on the following minimum values.

Industry and Business areas	0.90
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Steep Grassed areas	0.70
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Residential 1 30,000	0.40
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Residential 2 43,560	0.35
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Residential 3 55,000	0.30
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0 Rainfall Intensity For precipitation frequencies of less than an hour the following shall be used:

NOAA Technical Memorandum NWS HYDRO-35 Five to 60-Minute Precipitation Frequency for the Eastern and Central United States

For precipitation frequencies more than an hour the following shall be used:

U.S. Department of Commerce, Weather Bureau, Technical Paper No.40

Rainfall Frequency Atlas of the United States for Durations from 30 minutes to 24 hours and Return Periods from 1 to 100 years.

5.3.3.3 Velocity All drains shall be sloped to provide for a minimum velocity of 2 feet per second and the maximum design velocity shall be 10 feet per second. The minimum slope shall be 0.5%.

5.3.3.4 Major Structure, Culverts Retention/Detention Systems, Leaching Basins

5.3.4.1 Design Storm

A rainfall having a 1% chance of being equaled or exceeded in any given year (100 year storm) has been selected for design computations. Storm drain pipes contributing to these systems shall be sized and designed for a 100 year storm.

5.3.4.2 Method of Estimating Peak Discharge

Runoff analysis shall be calculated using Technical Release No. 55, Urban Hydrology for Small Watersheds, 2nd Edition, prepared by the U.S. Soil Conservation Service.

5.3.4.3 Retention/Detention Systems

Retention/detention basins shall be designed with the following objectives to be considered: hydraulic function, safety, maintenance, aesthetics, and when required, water quality.

The outermost edge of retention/detention basins shall be located a minimum of 100 feet from any roadway and 25 feet from all property lines, and shall be screened from adjacent lots and streets by a greenbelt of evergreen trees and shrubs not more than 15 feet apart planted in two staggered rows. Such trees or shrubs shall be not less than 8 feet in height at the time of planting. No retention/detention basins shall be located at street intersections.

Emergency spillways will be sized and designed to cause detention of and passage of the design inflow without causing the water level to rise above a preselected elevation. A free board of three (3) feet will be required between the detained water level and the top of the embankment during peak design conditions.

Embankments shall have a 3:1 or flatter slope. The applicant shall submit to the Board for approval his method and materials of constructing the embankments and basin, along with the necessary cross sections.

Fencing or other effective measures shall be provided to exclude people and vehicles from potentially hazardous areas.

5.3.3.2.2. Where a proposed street is being extended past or constructed adjacent to any portion of an existing retention/detention basin, a wooden guardrail, site grading, and a green belt shall be installed or reconstructed at such basin to meet the requirements of Regulation 5.3.3.2.1.

5.3.4. Type of pipe

Storm drains shall be reinforced concrete pipe with rubber gaskets. Conformance:

Reinforced Concrete Pipe - ASTM C76 Minimum Class III Packer head type process shall not be used. Joints and Gaskets for Reinforced Concrete Pipe -

ASTM C443

The plans shall note that detail is to Town specs if not already noted on the detail.

5.3.5. Selection OF Drain Size

The minimum size of pipe shall be 12 inches in diameter. Culverts and drains shall be large enough to pass the design storm without surcharge. At manholes, when pipe size changes, the crown of the inflow pipe shall match the crown of the outflow pipe. Values of coefficient of roughness (n) Reinforced concrete pipe: 0.013

5.3.6. Frames, Grates and Covers

Ductile iron, ASTM A536: Manhole frames and covers shall be LeBaron Foundry Co. Catalog No. LK 110 with the word "DRAIN" on the cover, or "Sewer"

for sanitary sewer systems, or an approved equal. Catch basin frames and grates shall be LeBaron Foundry Co. Catalog No. LK 121 A or an approved equal. Cement concrete collars shall be placed around the castings after the final setting and as directed. Bricks for adjusting frames shall conform to ASTM C32. The plans shall note that detail is to Town specs if not already noted on the detail.

5.3.7. Manholes

Drainage and sanitary sewer manholes shall be precast reinforced concrete conforming to ASTM C478, minimum 4 foot inside diameter, and coated outside with bitumastic in accordance with the manufacturer's recommendations. Joints and lifting holes to be mastic gasket. Manholes to service pipes larger than 30 inches in diameter shall require a special manhole in accordance with the M.D.P.W. standards. Manholes will be required at every change in direction, slope or diameter in the drain pipes. Manhole steps shall be steel-reinforced polypropylene plastic and invert shall be cement concrete for storm drains and brick for sanitary sewers. When inverts in manholes differ more than 2.75 feet, drop manholes shall be installed. All pipe to manhole connections shall be by a resilient connector conforming to ASTM C923, latest edition.

5.3.8. Catch Basins

5.3.8.1. Catch basins shall be precast reinforced concrete conforming to ASTM C478, minimum 5 foot inside diameter with a 4 foot sump, and coated outside with bitumastic in accordance with the manufacturers recommendations. Hoods shall be installed in all catch basins and shall be LeBaron Foundry Co. Catalog No. L202 or an approved equal. Joints and lifting holes to be mastic gasket.

5.3.8.2. Catch basins shall be installed on both sides of the roadway on continuous grades at intervals not to exceed 250 feet, at low points and sags in the roadway, and near the corners of intersecting streets. Catch basins shall be provided with granite or precast concrete edging. Catch basin to catch basin connections will not be allowed. If gutter inlets are used, drains must enter a catch basin type structure prior to entering a manhole. Curb stops and boxes will be located only within the proposed roadway right of way.

5.3.9. Flare

Discharge ends of storm drains shall be provided with flared ends conforming to M.D.P.W. standards. Backfill shall be placed and thoroughly compacted around the flared ends. End walls -may be used when approved by the Planning Board.

5.3.10. Field Stone Masonry Ends

Culverts shall be provided at both ends with field stone masonry ends. Materials and construction methods for masonry ends in cement mortar shall conform to the relevant provisions of Section 685 of the M.D.P.W. Standard Specifications.

5.3.11. Security Bars

Removable security bars shall be provided at the entrance and outface of all culverts or open pipe drains. Bars shall be constructed of a design approved by the Planning Board or its agent, and the grate shall be installed in a manner approved by the Planning Board or its agent. A suitable drawing of the grate and method of installation shall be submitted for approval with the plans for the drains and appurtenances.

5.3.12. Scour Protection

The discharge ends of all drains and culverts shall be protected with a riprap apron of a width not less than five feet plus the outside diameter of the pipe. The length of the apron shall be a minimum of twenty feet measured from the end wall. Riprap shall conform to M.D.P.W. Material Specification M2.02.0. Stone for pipe ends will not be allowed.

5.3.13. Subdrains

When it is determined that the water table will unstabilize the proposed roadway, or sometimes to control erosion in cut slopes, installation of subdrains will be required. Materials and construction methods shall conform to Section 260 of the M.D.P.W. Standard Specifications.

5.3.14. Trench Excavation

Trench excavation shall conform with the relevant provisions of Section 140 of the M.D.P.W. Standard Specifications and in accordance with the procedures described herein.

5.3.15. Pipe Bedding

The pipe shall be bedded in well compacted granular material placed on a flat trench bottom. The granular bedding shall have a minimum thickness of one fourth (1/4) the outside pipe diameter, 4 in. minimum, and shall extend halfway up the pipe barrel at the sides. The remainder of the side fills and a minimum depth of 12 in. over the top of the pipe shall be filled with carefully compacted gravel borrow-conforming to MDPW Material Specification M 1.03.0, Type C or an approved backfill material. The granular bedding material shall conform to M.D.P.W. Material Specification M2.01.4.

5.3.17. Pipe Installation and Backfilling

5.3.17.1 Pipe shall be installed and backfilled in accordance with the relevant provisions of Section 230 of the M.D.P.W. Standard Specifications and in accordance with the procedures described herein.

5.3.17.2. Pipe laying shall begin at the downstream end of the installation with the bell or groove end of the first section upstream. The pipe shall be laid to the lines and grades specified with the pipe sections-closely jointed. When bell and spigot pipes are used bell holes shall be dug in the bedding to accommodate the bells. They shall be deep enough to insure that the bell does not bear on the bottom of the hole but shall not be excessively wide in the longitudinal direction of the installation.

5.3.17.3. When the pipe sections are laid the barrel of each section shall, be in contact with the quadrant shaped bedding throughout its full length exclusive of the bell. Where lift holes in the pipe have been provided such holes shall be refilled with an acceptable grade of concrete after laying and the concrete shall be thoroughly cured before backfill material is placed.

5.3.18 Leaching Pit or Basin

5.3.18.1. Pits shall be located a minimum of 100 feet from

any source of water supply, 50 feet from buildings, and 20 feet from property lines. The bottom of the leaching pit shall be at least 2 feet above groundwater and 5 feet above rock. Clear distance between two pits shall be at least three times the outside diameter of the larger pit. Leaching pits will not be located in clay soils or where there is less than 10 feet of soil above a rock formation. Overflow provisions shall be provided at each leaching pit or cluster of leaching pits to the satisfaction of Planning Board.

5.3.18.2. Soil-percolation tests shall be conducted at the proposed location of each pit by a Registered Professional Engineer at half the depth and at the full estimated depth of the leaching pit. The required wall area or effective absorption area shall be determined from the soil- percolation test. The applicant shall submit to the Planning Board the results of the soil- percolation tests and the design of the leaching pits for review and approval.

5.3.18.3. Leaching pits shall be precast reinforced concrete conforming to ASTM C478. Watertight ductile iron manhole frames and covers shall be LeBaron Foundry Co. Catalog No. LBW 268-1 with the word "Drain" on the cover or an approved equal. Crushed stone conforming to MDPW Material Specification M2.01.2 shall be placed in the bottom of the pit to a minimum depth of 6 inches and around the pit to a minimum thickness of 12 inches.

5.4 Water Systems

5.4.1. All buildings in a subdivision or other structures therein intended for human occupancy and all fire hydrants shall be connected to and served by the Town water supply system, as available or as extended at the expense of the developer of the subdivision. Materials and construction methods shall conform to the relevant provisions of Section 301 of the M.D.P.W. Standard Specifications, Mendon Water Board, and in-accordance with the procedures described herein.

5.4.2. The Definitive Plans shall indicate the existing and proposed locations of all water lines including their type, size, and class. All proposed valves and fittings shall be located on the plans and identified by its station. Proposed valves shall be located so that they line up with the edge of traveled way, gutter line, or street line. The existing nearest hydrant(s) to the development shall be located on the plans. Hydrants shall be located at all low points and hydrants or manual air release valves shall be located at all high points of the proposed water mains. Cement concrete collars shall be installed around all valve boxes.

5.5. Utilities

All utilities shall be placed underground with a minimum 36 inches of cover. All cables shall be installed in conduits of the size and type recommended by the utility company.

5.6. Retaining Walls

Retaining walls shall be installed where required and deemed necessary by the Planning Board. They shall be cemented stone masonry conforming to the relevant provisions of Section 685 of the M.D.P.W. Standard Specifications, Construction Standards, and in accordance with the procedures described herein. Maximum visible height of retaining walls shall be four (4) feet.

5.7 Fire Alarm System

The fire alarm system, if any, shall be installed in accordance with the recommended practices of the National Fire Protection Association. The number, type, and location of fire alarm boxes shall be established by the Mendon Fire Department.

5.8 Street Trees

Trees shall be planted at 40 feet or lesser intervals, on both sides of all streets including adjacent existing public ways, outside the right-of-way lines, and within the tree easement. They shall be at least 12 feet in height and 3 inches in caliper unless otherwise waived in writing by the Planning Board. All trees shall be planted no later than one month after installation of the first course of bituminous concrete, and shall be guaranteed for one year after street acceptance. A written copy of said guarantee shall be provided to the Planning Board prior to street acceptance. The species of street trees shall be chosen from the following species, unless otherwise specified in writing by the Tree Warden:

Acer saccharum - Sugar Maple;
Acer psuedoplatanus - Sycamore Maple
Palustris - Pin Oak
Quercus - Northern Red Oak
Zelkova serrata - Japanese Zelkova
Sophora japonica var. - Scholartree
Fraxinus pennsylvanica var. - Green Ash
Pyrus calleryana -- "bradford" - Bradford Callery Pear
Gleditsia triacanthos var. - Thornless Honeylocust

There shall be no more than one species of tree planted on each street. Tree wells shall be required for the protection of existing trees where deemed necessary by the Tree Warden. Materials and planting methods shall conform to the relevant provisions of Section 771 of the M.D.P.W. Standard Specifications (including but not limited to staking and wiring of all trees), the Mendon Tree Warden and in accordance with the procedures described herein. The applicant shall provide written verification to the

Planning Board that the Mendon Tree Warden has reviewed and approved the street tree planting plan.

5.9. Loaming and Seeding

The removal of topsoil from the development area will not be allowed. Not less than six inches of good quality loam shall be placed within the right-of-way, cut and fill areas, easements, lots, etc. Materials and construction methods for loam borrow and topsoil shall conform to the relevant provisions of Section 751 of the M.D.P.W. Standard Specifications and in accordance with the procedures described herein. Materials and construction methods for seeding shall conform to the relevant provisions of Section 765 of the M.D.P.W. Standard Specifications and in accordance with the procedures described herein. Seed for the grass strips shall conform to M.D.P.W. Material Specification M6.03.0, Grassplots and Islands. After loam and seed has been placed in retention/detention basins and slopes equal to or steeper than 3:1 a jute mesh matting or an approved equal shall be installed in accordance with the manufacturer's recommendations for slope stabilization. All loam and seeding shall be installed no later than one month after installation of the first course of bituminous concrete.

5.10. Street Signs

The applicant shall furnish and erect necessary streets signs to designate the name of each street in the development prior to the occupancy of any house on the street. Signs shall conform to those used by the Town and approved by the Highway Superintendent.

5.11. Street Lights

The applicant shall be responsible for furnishing and erecting street lights at locations approved by the Planning Board.

5.12. Guard Rails

5.12.1. Guard rails shall be required along roadways in at least the following areas:

Culvert crossings where side slopes are steeper than 3 horizontal to 1 vertical (3:1) and where, in the opinion of Planning Board, it is necessary for public safety.

5.12.2. Materials and construction methods shall conform to the relevant provisions of Section 601 of the M.D.P.W. Standard Specifications and in accordance with the procedures described herein. Posts shall be pressure treated wood, rectangular in section 6" x 8", chamfered on top, and at least 61 31' long with flat tops and butts, conforming to M.D.P.W. Material Specification M8.07.OB.2. rail elements shall conform to AASHTO -M180, class A, Type 4 Beams of corrosion resistant steel. Guard rail shall be ramped at both ends.

5.12.3. Wood Posts And Rails

5.12.3.1. Wood posts and rails are to be used only on very low speed roads and parking areas and are to be pressure treated. Prior Planning Board approval is required for use of this type of barrier.

5.12.3.2. Wood posts shall conform to the materials and construction methods as described in subsection 5.13.2. Spacing of posts shall be a maximum of 61 3" center to center.

5.12.3.3. Wood rails shall be 4" x 8" and of a length where points are to be located only at the ports. Rails shall be of the same species and stress grade as the wood posts. Rails shall be treated in accordance with M.D.P.W. Material Specification M8.07.OB.2. Two - 5/8 inch carriage bolts shall be used to fasten the rail to the post and counter sunk. Nuts shall be installed so that they cannot be backed off. The number of rails, either one or two, to be used for the wood guard rail shall be determined by the Planning Board.

5.13. Bounds

5.13.1. Materials and construction methods shall conform to the relevant provisions of Section 710 of the M.D.P.W. Standard Specifications and in accordance with the procedures described herein.

5.13.2. Bounds shall be set on both street lines at all angle points, at the beginning and end of curves, and at all intersections.

5.13.3. Certification, in writing, shall be made by the Registered Land Surveyor for the developer, to the Planning Board that, as determined, by a survey after completion of construction, the bounds have been properly set in accordance with the approved plan and Rules and Regulations of the Planning Board. Tie sketches to Bound Points shall be furnished to the Planning Board and to the Highway Superintendent on 8 1/2" x 11" sheets of paper with a suitable Title Block.

5.14. Curb-Cut Ramps

5.14.1. Curb-cut ramps must be provided in curbed areas that have sidewalks. The location of the curbcut opening and ramp must be carefully coordinated with respect to the pedestrian crosswalk lines, if any. This planning must ensure that the ramp opening (at the fully depressed curb) is situated within the parallel boundaries of the crosswalk markings.

5.14.2. Ramps for the handicapped are not limited to intersections and marked crosswalks, and ramps should also be provided at other appropriate or designated points of pedestrian concentration, such as loading islands, midblock pedestrian crossings, and locations where

pedestrians could not otherwise recognize the proper place to cross the roadway. Because nonintersection pedestrian crossings are generally unexpected by the motorist, warning signs should be installed and adequate visibility provided by prohibiting parking.

5.14.3. Ramps for the handicapped should have a textured nonskid surface. This texture not only provides a measure of safety for the user but also warns a blind person of the presence of the ramp.

5.15. Final Cleanup

5.15.1. Upon completion of all the work in the subdivision, the applicant shall remove from the right-of-way and all adjoining properties all temporary structures, rubbish and debris, surplus material, other objectionable materials, and shall leave the areas in a neat and orderly condition.

5.15.2. All storm drainage and sanitary sewer pipes and structures shall be cleaned and flushed, at the applicants expense, prior to final inspection and acceptance.

5.16. Certificates of Compliance

Certificates of compliance shall be submitted to the appropriate responsible agency indicated in Form K, Subdivision Inspection Checklist, of approval for all materials being used in accordance with the relevant provisions of Section 6.00 of the M.D.P.W. Standard Specifications.

SECTION 6.0 ADMINISTRATION

6.1 Authority

6.1.1. The Planning Board shall be the administrative agency of these regulations and shall have all the powers assigned them by Section 81A to Section 81GG of Chapter 41 of the Massachusetts General Laws.

6.1.2. The Planning Board may assign as their agents appropriate town agencies or officials and may hire professional assistance to review plans and inspect improvements, at the cost to the Applicant.

6.1.3. The Board on its own motion or on the petition of any interested person shall have the power to modify, amend or rescind its approval of a plan of a subdivision, or to require a change in a plan as a condition of its retaining the status of an approved plan, in accordance with Section 81 W of Chapter 41, M.G.L.

6.2. Variation

6.2.1. Waiver of Compliance

6.2.1.1. Strict compliance with the requirements of these rules and regulations may be waived only when, in the judgement of the Board, such action is in the public interest and not inconsistent with the Subdivision Control Law. In waiving strict compliance the Board may require such alternative conditions as will serve substantially the same objective as the standards or regulations waived.

6.2.1.2. Request for waivers from Subdivision Rules & Regulations requests shall be submitted with the preliminary Plan and stated on the definitive plan or contained in a separate Instrument attached thereto and referred to on said plan. All such requests for waivers shall be heard at the public hearing for the definitive plan.

6.3. References

For matters that may arise during subdivision procedures that are not covered by these regulations the following are accepted as standards in their applicable portions; "Sections 81K to 81GG" of Chapter 41 of the Massachusetts General Laws; "Suggested Land Subdivision Regulations " H.H.F.A.; "A Policy on Geometric Design of Highways and Streets", American Association of state Highway and Transportation Officials, Latest Edition, as amended; "Standard Specifications for Highways and Bridges", The Commonwealth of Massachusetts, Department of Public Works, Latest Edition, as amended; "Construction Standards", The Commonwealth of Massachusetts, Department of Public Works, Latest Edition, as amended.

6.4. Validity

If any section, paragraph, sentence, clause, or provision of these regulations shall be proved to be invalid for any reason, the invalidity shall apply only to the material so affected and the remainder of these regulations shall be deemed valid and effective.

6.5. Amendments

These regulations or any portion thereof may be amended, supplemented or repealed from time to time by the Board after a public hearing on its own motion or by petition, in accordance with Section 81Q of Chapter 41, M.G.L.

6.6. Inspection of Improvements

The proper inspecting Town Official and/or Agent shall indicate on Form K, Subdivision Inspection Checklist, presented in Appendix B, the date of

inspection and the approval signature and shall file such form, and an inspection report, if any, with the Board subsequent to each inspection. The Planning Board or its agent, Highway Superintendent or his agent, Health Department, Tree Warden, Water Department, and Fire Department shall be separately notified, in writing, at least forty-eight (48) hours prior to the commencement of any of the following work.

If any of the below designated work is commenced without proper notification being given as specified, such work shall be performed at the risk of the developer or owner. Sufficient lines and grades shall be provided by the developer or owner for the purpose of verifying that installation is in accordance with the definitive plans.

6.6.1. Clearing and Grubbing of Right-of-Way

The entire area between excavation/embankment areas shall be cleared, except trees of aesthetic value and over four (4) inch caliper may be allowed to remain provided that they are located at least five (5) feet outside of the street line, and are approved by the Tree Warden and the Planning Board. Loam and topsoil shall be removed and stacked. Inspection #1 -Clearing and Grubbing of Right-of-Way.

6.6.2. Excavation

Earth shall be excavated to the lines and grades shown on the plans. Muck, rock, clay, boulders, and other unstable material shall be removed to a depth as directed by the Inspector. Inspection #2 - Excavation
91

6.6.3. Embankments

Embankments shall be constructed of approved materials as specified. Inspection #3 - Embankment Construction

6.6.4. Storm Drainage System

The storm drainage system shall be installed in conformity with the definitive plan. These shall include all drains, catch basins, manholes, culverts, retention/detention basins, and subdrains called for in such plan. In no case shall any drain pipe or culvert be within two feet of the sub-grade plane. All drainage installation shall be inspected prior to backfilling. Inspection #4 Below Grade Storm Drain Installation Inspection #20 At Surface Storm Drains Inspection #37 Retention/Detention Basins and Appurtenances

6.6.5. Water Sysem

All water mains, laterals, hydrants, and associated equipment shall be installed in conformity with the definitive plan. Installation and testing shall be inspected. Prior to acceptance the following shall be accomplished: Inspection #8 -Below Grade Water Main Installation Inspection #9 - Water Main testing and Disinfection Inspection #10 - Water Main Laterals Installation Inspection #22 - At Surface Valve Boxes Inspection #23 - At Surface Curb Boxes Inspection #29 -Hydrants - Finish Grade

6.6.6. Subgrade of Right-of-way

Subgrade shall be brought to the proper grade and cross section, and fine graded and compacted in accordance with the specifications and to the satisfaction of the Inspector. Inspection #11 - Fine Grade and Compact Subgrade

6.6.7. Processed Gravel Sub-base and Base

The gravel for the roadway subbase, and driveway, sidewalk, and curb-cut ramp bases shall be installed in layers not exceeding 6 inches in compacted depth and as specified. Inspection #12 - Gravel Subbase for Roadway First Course Inspection #13 - Gravel Subbase for Roadway Final Course Inspection #14 - Gravel Base for Sidewalks First Course Inspection #15 - Gravel Base for Sidewalks Final Course

6.6.8. Processed Gravel for Base

The processed gravel for the roadway base shall be installed as specified. Inspection #16 - Processed Gravel for Roadway Base Inspection #16A - Survey of Center Line and Both Gutter Lines

6.6.9. Curb and Edging

Curb and edging shall be installed as specified. Inspection #17 - Curb/Edging Installation

6.6.10. Bituminous Concrete Pavement

The bituminous concrete pavement for roadways, sidewalks, driveways, and curb-cut ramps shall be installed as specified in two courses, binder and finish, and driveways constructed starting at the gutter line and sloping up towards the right-of-way. Inspection #18 - Roadway Binder Course Inspection #19 - Sidewalk Binder Course Inspection #24 - Roadway Finish Course Inspection #25 - Sidewalk Finish Course

6.6.11. Curb-Cut Ramps

Curb - cut ramps shall be installed in conformity with the definitive plan and as specified. Inspection #26 - Curb - cut Ramps

6.6.12. Loam And Seed

Loam and Seed shall be installed in all grass strips and on embankment/excavation slopes as specified and to the satisfaction of the Inspector. Inspection #28 - Loam and Seed

6.6.13. Retaining Walls

Retaining walls shall be installed as specified. Inspection #30 - Retaining Walls

6.6.14. Guard Rails

Guard rails shall be installed as specified.
Inspection #31 - Guard Rails

6.6.15. Street Trees And Plantings

Street Trees and plantings shall be installed as specified.

Inspection #32 - Trees and Planting Developer to provide documentation of tree warranty.

6.6.16. Street Sign And Bounds

Street signs and Bounds shall be installed as specified.

Inspection #33 - Bounds and Monuments

Inspection #35 - Street Signs

6.6.17. Fire Alarm Sysem

Fire alarm system shall be installed as specified.

Inspection #34 - Fire Alarm Installation

6.6.18. Street Lights

Street lights shall be installed as specified.

Inspection #36 - Street Lights

6.6.19. Final Cleanup

Final cleanup shall be accomplished to the satisfaction of the Inspector.

Inspection #38 - Final Cleanup Inspection

6.6.20. Maintenance

Streets and appurtenances shall be maintained as specified to the satisfaction of the Inspector.

Inspection #39 - Maintenance

APPENDIX A

SUPPLEMENTAL REQUIREMENTS

- Mendon Planning Board Fee Schedule
- Bonding Procedure
- Procedure for Reduction in Bonding

Mendon PLANNING BOARD FEE SCHEDULE

The Mendon Planning Board fees shall consist of (1) Application Fees and (2) Review Fees as set forth below. The administrative requirements of the Review Fees are described in Regulation 2.5. The Application Fee and initial Review Fee shall both be paid at the time of application. Application Fees shall be payable to "Town of Mendon"; Review Fees shall be payable to "Mendon Planning Board Review Account." Any additional costs incurred by the Planning Board are to be paid in full by the applicant.

A. Pre-Submission Review

Application Fee: No Charge.

Review Fee: No Charge.

B. 81P Plan - Plan not requiring subdivision approval

Application Fee:

1. Each plan submitted is \$25 per lot
2. Each plan resubmitted is \$25 per lot

Review Fee: No Charge.

C. Subdivision Plans,

1. Preliminary Plans

Application Fee: \$200.00

Review Fee: \$300-00 plus \$50.00 per lot

2. Definitive Plan

Application Fee: \$350.00

Review Fee: \$1,500.00 plus \$150.00 per lot.

3. Each Revision to Definitive Plans Under Review

Application Fee: Included in Application Fee for Definitive Plan

Review Fee: Included in Review Fee for Definitive Plan

4. Amendment, Modification or Revision of Approved Definitive Plan

Application Fee: \$250.00

Review Fee: \$2,000.00

5. Bonding, Including Reduction and Release Requests, Inspections, and Estimates

Application Fee: No Charge.

Review Fee: \$1,000.00

6. Performance Inspections

Application Fee: No Charge.

Review Fee: \$1.25 per linear foot of roadway with a minimum fee of \$750. The review fee is payable at the time of endorsement of the definitive plan.

E. Acceptance Plans for Subdivisions/Site Plans

Application Fee: No Charge.

Review Fee: \$1,000 per street for subdivisions; \$1,000 per site for site plan applications

F. Extraordinary Expenses

The above fees are subject to revision in the event the Planning Board incurs extraordinary expenses in the review of any plan or inspections including, but not limited to, retention basin and drainage, earth removal

and fill, engineering or land surveying, impact analyses, advertising, mailing, or inspection fees. The applicant will be required to reimburse the Town for such additional charges which result from associated professional services.

G. Form of Payment

Application Fees: Payable to "Town of Mendon"

Review Fees: Payable to "Mendon Planning Board Review Account"

Payment for all submissions, reviews, and inspections are to accompany the submittal and/or request. Payments are to be made by check. All invoices shall be paid within thirty (30) days of receipt.

H. Assessment for Late Payment

A late charge of 1-1/2% simple interest shall be charged monthly for bills not paid within 30 days.

EARTH REMOVAL (Red. MGL C40-S17 and Town of Mendon By-Laws)

Soil, loam, sand, or gravel which is to be removed in compliance with the requirements of a definitive subdivision plan approved by the Mendon Planning Board shall be subject to the requirements listed herein.

No earth shall be stripped, moved, stockpiled, or removed from any subdivision street right-of-way and easement being constructed within the town, to another parcel, except after approval and endorsement of the Definitive plan by the Planning Board.

In no case shall earth removal exceed five months of operation or removal of more than 10,000 cubic yards.

Any earth removal from the subdivision lots must comply with the Mendon Bylaws which is administered by the Board of Selectmen.

For all Definitive Plans involving Earth Removal, the following information shall be provided by the applicant:

1. A statement estimating the quantity of material to be removed;
2. The period of time during which operations are proposed;
- 3.- The routes of vehicles to be used,
4. Vehicle size, weight, and estimated number of loaded trips per day;
5. Statement of plans for the disposal of rock, tree stumps, and other waste materials and for the drainage of the site and excavation during-and after the removal operation;
6. The area to be stripped of vegetation at any one time, that is, prior to being re-seeded and having trees and shrubs planted.

Requirements:

During the earth removal phase of construction, the following shall be required:

1. A gate or other barricade to prevent unauthorized access or egress to motor vehicles along the traveled way leading from the public road to the site.
2. A legal sign, posted and maintained by the developer, with the words "No Trespassing. Police Take Notice."
3. In approving the removal, the Board may impose reasonable requirements which shall constitute a part of the approval and which may include, but not limited to: grading, seeding, and planting, construction of necessary fencing and other protections against nuisances, methods of removal, location and use of structures, hours of operation, the duration of the removal operation, routes of transportation of material removal, control of drainage, disposition of waste incident to the operation and providing of adequate vegetation. Any conditions so imposed by the Board shall be endorsed upon the approval issued to the applicant.
4. The Board shall require suitable bond or other security adequate to assure compliance with the provisions of the approval.
5. The area excavated during the duration of the permit shall be restored to conform to the natural state of the area and surrounding areas by grading, reloaming, to a minimum depth of 6" loose, loaming, and planting so that all scars resulting from the removal operation are eliminated in a timely fashion. Such restoration shall be completed before release of any lots affected by the removal operation from the covenant and/or bond pertaining to the subdivision.
6. No loam shall be removed from the subdivision.
7. No approval shall be issued until the owner of the site has granted to the town an easement over the land in question and conveys to the town the legal right to enter upon said land with equipment and personnel for the purpose of making acceptable restoration in accordance with the approved plan in the event of default of such restoration specified in the approval by the owner or his contractual representative.

The Planning Board shall be and is hereby authorized to determine the costs of any engineering fees incurred in the measurement of earth removed or to be removed under such permit. The engineering fees charged for each approval will be paid by the applicant.

After subdivision completion, to include:

- a.) satisfactory completion of all inspections, and

b.) release of all lots and performance bond, and

c.) approval of the As-Built Plan by the Planning Board
the Planning Board function regarding Earth Removal from that Subdivision shall cease. After the time of completion, the Mendon Earth Removal Bylaw (Article IV, Section 5) will apply to that Subdivision.

BONDING PROCEDURE

1. After a covenant has been duly executed, the developer informs the Board in writing he would like to have a bonding figure set.
2. The developer makes an appointment with the Board. At the meeting he submits:
 - a. Form K signed by the Highway Superintendent or his representative or Planning Board agent and/or Water Superintendent, if appropriate.
3. Board schedules and makes a site inspection. (Developer is advised to attend to answer questions).
4. Inspection report and Board's bonding estimate prepared.
5. Developer makes an appointment. The developer and Board meet to agree upon the bonding amount and the duration of bonding.
6. Lots are released for the bonded sections of the subdivision provided all earth removal operations have been completed

PROCEDURE FOR REDUCTION IN BONDING

When the developer determines that a reduction in bonding for improvements in his subdivision is in order, he must follow the procedure below:

1. Developer informs the Board in writing he is requesting a reduction in bonding.
2. Developer submits an up to date Form K.
3. Planning Board schedules site inspection. (Applicant is advised to attend the site inspection to answer questions). An updated inspection report and bond estimate to complete all required improvements are prepared.
4. Developer meets with Board to agree to amount of bonding to be held by the Town to complete improvements.
5. After all paperwork has been completed and approved by the Board, it sends a letter to the Town Treasurer releasing the appropriate amount of bonding.

S A M P L E B A N K L E T T E R
(Bank's letterhead)
FIRST NATIONAL BANK OF MENDON

March 23, 1989

Town of Mendon Planning Board
P. O. Box 316
Mendon, MA 01756

Re: Haven Estates Subdivision
Haven Realty Trust
Robert Smith, Trustee

Gentlemen:

Please be advised that we have opened and are holding funds in the enclosed passbook account #12345 in the names of Haven Realty Trust, Robert Smith, Trustee or the Town of Mendon Planning Board.

The bank agrees not to release these funds until receiving prior written approval from the Mendon Planning Board. Moreover, during the time the Mendon Planning Board holds passbook account #12345 as surety, the Bank hereby agrees not to exercise any "set off" or claim against this money and it will not honor any claim for a lost passbook from any other party other than the Town of Mendon.

THE FIRST NATIONAL BANK OF MENDON

BY _____
Henry Allen, Vice President

The above mentioned has appeared before me on
(Notary December 18, 1985.
Public Seal)
(Notary Public Signature)

Appendix B

Submission Standard (<https://www.mass.gov/service-details/massgis-standard-for-digital-plan-submission-to-municipalities>). Language used in this modified standard was taken from the MassGIS version.

Under this standard, plans produced using computer aided drafting and design (CADD) software, must be accompanied by a digital file containing a subset of the features in the CADD file. This subset of features is referred to as the Standard Digital File or SDF (see page 2 of MassGIS Digital Submission Standard for further detail about SDF).

The SDF is not simply a copy of the CADD file used to print development plans. It does not include information about bearings (distances are required), the title block, border, or notes from the CADD file.

- The SDF cannot be required if the development plans being submitted to a municipality were prepared by hand.
- Only features present in the source CADD file for the project for which approval is sought must be included in the SDF.

The SDF will be used as a source for maintaining map features and associated information in the GIS database of any municipality using this standard.

The printed plan will remain the official document.

The SDF must meet the following requirements;

1. Plan View

- a. The required subset of CADD file layers of the affected construction area shall be submitted, in plan view, as one comprehensive drawing file. Plan view is defined as all “entities” on the same plane of zero elevation in the drawing coordinate space.

2. File Format

- a. File format shall be the AutoCAD DWG (alternatively ASCII DXF) file format; most GIS software can read DWG or DXF file format. DXF files can be created by all the major CADD and GIS packages.

3. Delivery Method

- a. The SDF shall be delivered on a CD-ROM disk, digitally or any other media as specified by the municipality implementing this standard.
- b. The delivered SDF should include the following information;
 - i. Project or subdivision name.
 - ii. The name of the land owner and of the preparer of the plan/SDF.
 - iii. The name and version of the CADD software used to create the SDF.
 - iv. Project address or, if no address, a descriptive location.
 - v. The date or dates when the survey work was performed.

4. Graphic Specifications

- a. Reference to external CADD layers ("XREF") must be removed and the referenced information included directly in the SDF.
- b. The SDF must be created in the "World Coordinate System" in model space (or the Massachusetts Coordinate System, see below), it must have a one-to-one (1:1) DWG scale, where one (1) drawing unit = one (1) U.S. Survey Foot. The coordinate system base must be the same as the AutoCAD system coordinate base or equivalent with the north rotation up. In other words the project (N,E,Z) should equal the CADD (Y,X,Z). The North Rotation must be 0°.
- c. When the SDF is in the Massachusetts Coordinate System, all of requirement 'b' above applies.
- d. When creating line features that represent polygons in a GIS, CADD users must snap end points of lines together and must make sure polygons close (e.g. property boundaries).
- e. All line features shall be of a continuous line-type, such that each individual line/pipe feature (i.e. each segment) is only broken at the ends where a node/structure is located.
- f. Straight lines must be represented by only the beginning and ending x- and y-coordinate points. The exception to this is a line developed from multiple traverses on the same bearing where the coordinates differ only in the "z" values. Line strings must not cross back on themselves or have a zero length (i.e., points).
- g. All point features (see FEATURE TYPE in Table 1) shall be entered using standard point/node symbols.

5. Adobe PDF Format File

- a. A copy of the original CADD file that was the source of the layers in the SDF file must accompany the SDF; this copy must be in Adobe PDF format. This requirement ensures that the municipality receiving the SDF has an electronic reference copy of the original CADD File that cannot be altered electronically and that fully and appropriately credits the source of the SDF.

6. SDF Coordinate System

- a. The coordinate system of the SDF must be the Massachusetts Coordinate System, North American Datum 1983, with units of U.S. Survey Feet. The vertical datum must be North American Vertical Datum 1988, unless the municipality using this standard requires that the local vertical datum be used.
 - i. If the local vertical datum is required, the city or town must provide a conversion factor between the local vertical datum and NAVD88. This conversion factor should be developed using the North American Vertical Datum Conversion (VERTCON) algorithm.
- b. If a temporary benchmark (TBM) is created, it must be shown and labeled in the SDF.
- c. The horizontal and, as applicable, vertical accuracy of the features in the SDF must match those of the surveyed locations depicted on the printed plan to which the SDF is a companion submission.
- d. The plan in the SDF shall be submitted with a minimum two points of spatial reference.

- i. The two points of spatial reference for the SDF are only required if useable reference points are within 750 feet (via survey traverse) of the project's boundaries.
- ii. These reference points can be one or both of the following types, depending on what is available in a community:
 - 1. FGDC Second Order, Class II (FGDC-STD-007.4-2002 Table A-1) or better survey control monument locations.
 - 2. The centers of manholes, fire hydrant spindles, or catch basins; utility poles may also serve as reference points. Alternatively or in addition, a municipality may choose to provide photo-identifiable points (e.g., ends of specific parking stripes, junctions of lines painted on publicly accessible outdoor basketball or tennis courts) from their orthophoto base map that are currently visible on the ground.
- iii. Features being referenced must appear in the SDF; their locations must be determined as part of completing the field survey work for the project depicted in the SDF.
- iv. The points selected for reference in the SDF must be separated by as much distance as is possible given the features available to choose from.