

TOWN OF ALBANY, NEW HAMPSHIRE

STREET STANDARDS

for

DESIGN AND CONSTRUCTION

Effective March 9, 1982
Amended: July 9, 1989

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Section 1 - Legislative Intent

The intent of the following ordinance, to be known as the Town of Albany, N.H. Street Standards of Construction and Design, is to provide all citizens of Albany with safe roads which require a minimal amount of maintenance, while improving the circulation patterns of the Town.

Section 2 - Authority

In accordance with RSA 230 and 231, as amended, the Board of Selectmen shall enforce the provisions of this ordinance with the lone exception being the acceptance of private roads as Town roads, which shall be done by Town meeting vote. (See Section 5E-Street Acceptance.)

Section 3 - Definitions

Average Daily Traffic - An estimate of the daily volume of traffic utilizing a street.

Base - That elevation to which base materials must be brought prior to installation of pavement.

Build Out - That point in time when all approved lots and/or units along a street have been completed and occupied.

Collector Street - Those streets whose primary purpose is intersecting traffic from local streets and handling this movement to the nearest major street. A secondary function is service to abutting land use. Average daily traffic is typically 1500 to 3000 trips per day; however, collectors may be required for lower volumes based upon purpose of use. In determining the need for a collector, potential future development shall be considered.

Crown - The elevation of a road surface at its center above its elevation at its edges.

Cul-de-sac - A minor street with entrance and exit at the same end. Such streets have a turn around at the end of the street. Cul-de-sacs are a type of local street.

Curb - The granite or concrete edging of a sidewalk or paved street.

Curb Radius - That radius which pavement must obtain when a street flares into an intersection.

Drainage - All drainage systems, catch basins, drains, ditches, culverts, pipes, mains and other similar structures.

Driveway - An area located on a lot, tract or parcel of land built for access to a garage or off-street parking space, serving not more than two lots. Driveways may be allowed for access to parking lots to unit type developments at the discretion of the selectmen, but must be built to a minimum width of twenty feet. Should the Selectmen determine that too many units are proposed for a driveway, the developer must provide other means of access to the units.

Easement - That land area created through authorization by a property owner for the use by another for a specified purpose of any designated portion of his property.

Grade - The slope of a road, channel or natural ground.

Headwall - A structure protecting the exposed ends of drainage structures from erosion and directing the flow of water into the structure. Headwalls are typically constructed of reinforced concrete, mortared stone or granite slabs.

Intersection - That location where more than one street intersects. In no case shall more than two streets meet at an intersection.

Invert - The elevation at which the bottom of a pipe is to be set.

Limits of Roadbed - That area which encompasses the traveled way, shoulders, sidewalks and slope gradings.

Local Street - The lowest functional classification of streets whose primary function is to serve abutting land use. Average daily traffic (ADT) ranges up to 1500 trips per day.

Minimum Sight Distance - That distance, achieved for both vertical and horizontal curves at which a driver, whose eyes are at a height of three and one half feet above the road surface, can see an object one half of a foot in height on the road.

Parking Space - An off-street space for exclusive use as a parking area for one motor vehicle, with a minimum size of nine by eighteen feet.

Pavement - For the purpose of these regulations, pavement refers to hot laid bituminous pavement.

Right-of-way - A general term denoting land, property or interest therein, usually in a strip, acquired for or devoted to transportation purposes.

Shoulder - That portion of a roadway between the edge of the wearing course and the top of the foreslope of a ditch or embankment.

Slope - The steepness of land surface. Slope is expressed in a percent by dividing the change in elevation by a given horizontal distance and multiplying by 100%.

Street - A state highway or a highway, road, avenue, land and/or any other way which exists for vehicular travel, exclusive of a driveway serving not more than two adjacent lots or units. The word "street" shall include the entire right-of-way.

Subbase - That elevation to which subbase materials must be brought prior to the installation of base materials and pavement.

Unsuitable Materials - Those materials which tend to deteriorate a street if left in place. Such materials as loam, vegetative or organic matter, boulders, ledge and clay are examples. Others shall be determined by the Selectmen or their representatives in the field.

Valuation - Shall be as per the assessment records of the Town of Albany, factored up to 100% value.

Section 4 - Street Standards

A. Construction of Streets

1. Right-of-way Width - No street right-of-way shall be less than fifty feet in width. Greater width may be required if, in the opinion of the Selectmen, additional area is needed to provide adequate room for the proposed street, sidewalks if required, street utilities, drainage, grading and snow retention.
2. Clearing and Grubbing - The entire right-of-way shall be cleared of all trees, stumps, roots, boulders and like materials. In addition, all topsoil and unsuitable materials must be removed from the limits of the road bed.
3. Subbase Material - In areas of extreme fill or unsuitable material, the construction of a subbase will be required to bring the level of the street up to that which is needed to place base materials. Subbase shall be brought to grade with bank run gravel. Other materials may only be used with prior approval from the Selectmen.
4. Base Material - The base course shall consist of:
 - a. Twelve inches of bank run gravel or crushed rock with a maximum size of four inches and,
 - b. Six inches of crushed gravel, 100% of which will pass a 3/4" sieve, and will meet "State of New Hampshire Specifications, Section 304, 1974".

The base course shall be installed to provide for four foot shoulders on each side of the pavement.

5. Compaction - Compaction is required for both the subbase and base materials. It shall be performed by vibrating compactor or other means in lifts of no greater than six inches. Compaction shall be performed to the satisfaction of the Selectmen or their representative or until ninety-five percent of maximum density as determined by ASTM D 1557, Method D is achieved by test. Should the Selectmen or their representative determine testing is required, it shall be done at the applicants expense.

6. Pavement

- a. Binder Course - A one and one half inch lift of pavement meeting New Hampshire Standard Specifications for Road and Bridge Construction, Division 400, Section 401, Table 1, Type B, 1974, shall be installed and,
- b. Wearing Course - A one inch lift of pavement meeting New Hampshire Standard Specifications for Road and Bridge Construction, Division 400, Section 401, Table 1, Type D, 1974, shall be installed.
- c. Pavement shall not be installed when temperature is below 40 degrees Fahrenheit, nor later than November first of any year.

7. Shoulders - Four foot shoulders shall be installed on both sides of the street and shall consist of materials as described in Section 4 A of these standards. When curbs are installed this section shall not apply.

8. Loaming and Seeding

- a. All remaining disturbed areas within the right-of-way shall have four inches of loam, which is free of stumps, roots and other unsuitable material, installed.
- b. All remaining disturbed areas within the right-of-way shall be fertilized and seeded as follows:

Fertilizer

Limestone	100 lbs per 1000 sq. ft.
Nitrogen	2.2 lbs per 1000 sq. ft.
Phosphate	2.2 lbs per 1000 sq. ft.
Potash	2.2 lbs per 1000 sq. ft.

Seed Mix

Tall Fescue	50%
Red Fescue	25%
Crownvetch	25%

Seed shall be uniformly spread at the rate of 1 lb. per 1000 sq. ft. Mulch shall be applied immediately after seeding.

9. Cross Sectional Grading of Slopes

- a. Shoulders shall generally follow the slope of the pavement but in no case shall they be less than a 4:1 slope (i.e 3:1 or 2:1).
- b. From the edge of the shoulder, the grade must be negative to either the edge of a ditch or to meet existing grade. When sloping to a ditch, the grade shall not be less than a 3:1 slope, while when matching an existing grade it shall not be less than a 2:1 slope.
- c. When a street is in a cut condition, the slope from the edge of the ditch shall not be less than a 3:1 slope until the elevation of the center-line of the road is reached. From that point on, it shall not be less than a 2:1 slope unless it is a ledge cut, in which case, it shall be no less than a 1:1 slope.

B. Drainage

1. Adequate disposal of surface water shall be provided. Provisions must be made for natural water courses. Drainage calculations must be submitted to the Selectmen for their approval. For drainage areas of less than 200 acres, the Rational Method shall be utilized, using a ten year storm frequency, except for structures which are greater than thirty inches in diameter, in which case, a twenty-five year storm frequency shall be used. For drainage areas of greater than 200 acres, Potters Small Watershed Analysis or other methods as approved by the Selectmen or their representative shall be used.
2. All culverts shall be at least eighteen inches in diameter and shall be either asphalt coated corrugated metal pipe (ACCP) or reinforced concrete pipe (RCP). No aluminum or plastic pipe shall be allowed.
3. When pipe systems are included in a street design, plan/profile sheets shall be required for the systems showing proper sizing, slopes, inverts, etc...
4. Where drainage ditches are utilized, they shall be a minimum of two feet in bottom width and eighteen inches in depth from the elevation of the center-line of the road to the bottom of the ditch. When a ditch extends greater than three hundred feet without a culvert, a ditch block shall be required at the inlet. Justification for ditch sizes and types (grass, stone, paved) shall be submitted with appropriate calculations.
5. The street crown, center to shoulder, shall be 1/4 inch per foot. When designing a superelevated street, the crown shall not exceed 3/4 inch per foot, and must be accompanied by engineering calculations.

6. Headwalls of proper design shall be required at each end of all culverts.
7. Bridges - On stream crossings with spans of ten (10) feet or more, the structure shall be designed to H15-S20 loading (AASHTO specifications). The minimum bridge width shall be twenty-six (26) feet. All bridges shall be designed by a professional engineer registered with the State of New Hampshire.

C. Local Street Design

1. Terrain Classifications - As there is a wide variation of slopes in this region, streets must be designed to work with the existing topography. The terrain classification is representative of existing topography of the area on which a street is to be constructed. When question arises as to which classification a street should be, the Selectmen shall make the final determination.

- a. Level - Existing grades of 0 - 8%
- b. Rolling - Existing grades of 8.1 - 15%
- c. Hilly - Existing grades of > 15%

2. Pavement Width

- a. Level Terrain - Pavement width shall be twenty feet if shoulders are provided or twenty-seven feet if the street is to be curbed.
- b. Rolling Terrain - Pavement width shall be twenty-two feet if shoulders are provided or twenty-seven if curbs are provided.
- c. Hilly Terrain - Pavement width shall be thirty feet.

3. Curbing

- a. Use
 - 1. Level Terrain - Use of curbing is optional. If used, either a roll type curb or vertical curb shall be used.
 - 2. Rolling Terrain - Use of curbing is optional. If used, vertical curb shall be used.
 - 3. Hilly Terrain - Vertical curb shall be used.
- b. Type - Either granite or concrete curbing shall be utilized when curbing is installed. Bituminous curbing shall not be permitted as it is a substandard material for this use.

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4. Sidewalks - As a matter of pedestrian safety, all hilly terrain streets must provide four foot sidewalks which are six feet back from the curb face. At a minimum,

these sidewalks shall extend from the top to the bottom of any hill which has a portion which classifies as hilly. The Planning Board may require more expansive sidewalks as part of their review. (See Figure 5 for construction detail.)

5. Minimum Sight Distance - All sight distances shall be computed for both vertical and horizontal curves.
 - a. Level Terrain - A minimum sight distance of two hundred feet is required.
 - b. Rolling and Hilly Terrain - A minimum sight distance of one hundred and fifty feet is required.
6. Maximum cul-de-sac length - A maximum length of one thousand feet from the nearest through road to the end of the cul-de-sac shall apply. In cases where this standard cannot be met, one of the following possibilities is recommended to the applicant:
 - a. Provide at least two separate streets, fully connected to the internal system of streets.
 - b. Provide a divided type street, with a median of sufficient width to largely insure freedom of continued access by lanes on one side. Median widths shall range between ten feet and thirty feet depending upon the nature of the surrounding terrain.
 - c. Redesign the development by adding or relocating local and/or connector streets.

7. Grades

- a. Maximum
 1. Level Terrain - Maximum grade shall be four percent.
 2. Rolling Terrain - Maximum grade shall be eight percent.
 3. Hilly Terrain - Maximum grade shall be ten percent.
- b. Minimum - No grade falling in the range of - 0.5% to 0.5% shall be allowed.

8. Minimum cul-de-sac turn around radius - The minimum radius shall be sixty-six feet, of which the outside pavement edge shall achieve a fifty-five foot radius. When center islands are desired, they shall be cleared of trees, stumps, and like materials and shall be graded in accordance with the street such that a plow will be able to plow over it in the winter months.

9. Design Speed

- a. Level Terrain - 30 MPH
- b. Rolling Terrain - 25 MPH
- c. Hilly Terrain - 20 MPH

10. Minimum Center Line Radius of Curves

- a. Level Terrain - A minimum radius of 200 feet is required if designed with superelevated curves. 430 feet if not.

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b. Rolling Terrain - A minimum radius of 175 feet is required if designed with superelevated curves, 280 feet if not.

c. Hilly Terrain - A minimum radius of 125 feet is required if designed with superelevated curves, 180 feet if not.

11. Minimum Tangent Between Reverse Curves - A minimum of fifty feet shall be required between reverse curves to facilitate steering and control.

12. Off Street Parking - The pavement widths as detailed earlier are predicated on there being no on street parking. As such, off street parking of two spaces per lot or unit shall be required.

13. Street Lighting - At a minimum, street lighting shall be provided at every intersection. The intent of this section is to provide safe pedestrian and vehicular movements through intersections. An engineer competent in illumination shall submit documentation as to the adequacy of the proposed intersection lighting.

14. Driveways - Driveways shall be located and their entrances designed as a part of street design. The minimum standards which must be met are as follows:

- a. Drainage analysis shall be submitted.
- b. A minimum width of twelve feet shall be required for a single family residence and a minimum width of twenty feet shall be required to residential parking lots.
- c. Driveways shall be designed to intersect with the street at 90 degree +/- 15 degree angles.
- d. Intersection flares - At a minimum, single family driveways shall provide a five foot curb radius, while driveways to residential parking lots shall provide fifteen foot curb radii.
- e. Driveway grades shall not exceed 8 percent within the right-of-way and shall maintain a negative grade to beyond the ditch line.

D. Collector Street Design

1. Terrain Classification - As there is a wide variation of existing slopes in this region, streets must be designed to work with the existing topography. The terrain classification is representative of existing topography of the area on which a street is to be constructed. When question arises as to which classification a street should be, the Selectmen shall make the final determination.

- a. Level - Existing grades of 0 - 8%
- b. Rolling - Existing grades of 8.1% - 15%
- c. Hilly - Existing grades of > 15%

2. Pavement Width

- a. Level Terrain - Pavement width shall be twenty-two feet if shoulders are provided or twenty-seven feet if the street is to be curbed.
- b. Rolling Terrain - Pavement width shall be twenty-two feet if shoulders are provided or thirty feet

if curbs are provided.

- c. Hilly Terrain - Pavement width shall be thirty-two feet wide.

3. Curbing

a. Use

- 1. Level Terrain - Use of curbing is optional. If used, either a roll type curb or vertical curb shall be used.
- 2. Rolling Terrain - Use of curbing is optional. If used, vertical curb shall be used.
- 3. Hilly Terrain - Vertical curb shall be used.

- b. Type - Either granite or concrete curbing shall be utilized when curbing is installed. Bituminous curbing shall not be permitted as it is a substandard material for this use.

- 4. Sidewalks - As a matter of pedestrian safety, all collector streets must provide four foot sidewalks which are eight feet back from the curb face. (see Figure 5 for construction detail.)

- 5. Minimum Sight Distance - All sight distances shall be computed for both vertical and horizontal curves.

- a. Level Terrain - A minimum sight distance of two hundred and fifty feet is required.
- b. Rolling Terrain - A minimum sight distance of two hundred feet is required.
- c. Hilly Terrain - A minimum sight distance of one hundred and fifty feet is required.

6. Grades

a. Maximum

- 1. Level Terrain - Maximum grade shall be four percent.
- 2. Rolling and Hilly Terrain - Maximum grade shall be eight percent.

- b. Minimum - No grade falling in the range of -0.5% to 0.5% shall be allowed.

7. Design Speed

- a. Level Terrain - 35 MPH
- b. Rolling Terrain - 30 MPH
- c. Hilly Terrain - 25 MPH

8. Minimum Center Line Radius of Curves

- a. Level Terrain - A minimum radius of 350 feet is required if designed with superelevated curves, 580 feet if not.
- b. Rolling Terrain - A minimum radius of 250 feet is required if designed with superelevated curves, 430 feet if not.
- c. Hilly Terrain - A minimum radius of 175 feet is required if designed with superelevated curves, 280 feet if not.

- 9. Minimum Tangent Between Reverse Curves - A minimum of one hundred feet shall be required between reverse curves to facilitate steering and control.

10. Off Street Parking - The pavement widths as detailed earlier are predicated on there being no on street parking. As such, off street parking of two spaces per lot or unit shall be required.
11. Street Lighting - At a minimum, street lighting shall be provided at every intersection. The intent of this section is to provide safe pedestrian and vehicular movements through intersections. An engineer competent in illumination shall submit documentation as to the adequacy of the proposed intersection lighting.
12. Driveways - As the primary purpose of collector streets is to move traffic through an area, it follows that driveways are not desirable on these streets. As such, every effort must be made to minimize the number of driveways on collector streets. Common driveways or additional local streets are suggested alternatives to consider. However, when needed, driveways shall be located and their entrances designed as a part of street design. The minimum standards which must be met are as follows:
 - a. Drainage analysis shall be submitted
 - b. Minimum width of driveways to single family residences shall be twelve feet; the minimum width of driveways to residential parking lots shall be twenty feet.
 - c. Driveways shall intersect with streets at 90 degree (+/- 15 degrees) angles.
 - d. Intersection Flares - At a minimum, driveways to single family residences shall provide a five foot curb radius, while driveways to residential parking lots shall provide fifteen foot curb radii.
 - e. Driveway grade shall not exceed eight percent within the right-of-way and shall maintain a negative grade until it is beyond the ditch line.

E. INTERSECTION DESIGN

1. Terrain Classification - As there is a wide variation of existing slopes in this region, streets must be designed to work with the existing topography. The terrain classification is representative of existing topography of the area on which a street is to be constructed. When questions arise as to which classification a street should be, the Selectmen shall make the final determination.
 - a. Level - Existing grades of 0 - 8%
 - b. Rolling - Existing grades of 8.1% - 15%
 - c. Hilly - Existing grades of > 15%

2. Approach speed refers to the safe speed required for safe stopping distance on vertical and horizontal curves, beginning one hundred feet from the intersection, and clear sight distance.
 - a. Level and Rolling Terrains - 25 MPH approach speed
 - b. Hilly Terrain - 20 MPH approach speed
3. Clear sight distance at intersections promotes intersections which operate without traffic signals.
 - a. Approach Sight Distance (See Figure 2)
 1. Level and Rolling Terrain - A minimum distance of ninety feet along each approach leg shall be required.
 2. Hilly Terrain - A minimum distance of seventy feet along each approach leg shall be required.
 - b. Intersection sight distance shall be computed based upon the design speed of the road to be entered.
4. Vertical Alignment within Intersection Area
 - a. Grade - A maximum grade of two percent shall be allowed for all terrain classifications. No grade falling in the range of -0.5% to 0.5% shall be allowed.
 - b. Length - The above mentioned grades must be achieved for a minimum length of one hundred feet, measured from the edge of the pavement of the street which is to be intersected.
5. Minimum Angle of Intersection - Every effort to achieve a ninety degree intersection shall be made. However, when this is impractical, an angle of ninety degrees plus or minus ten degrees may be allowed.
6. Minimum Curb Radius
 - a. Intersection of Two Local Streets - The minimum curb radius shall be twenty feet.
 - b. Intersection of a Local Street with a Collector Street - The minimum curb radius shall be twenty-five feet.
 - c. Intersection of Two Collector Streets - The minimum curb radius shall be thirty feet.
7. Minimum Centerline Offset of Adjacent Intersections - As a general practice, T-type intersections are safer than four-way intersections. As such, they are encouraged in the design of subdivisions. However, in order to operate efficiently and safely, these intersections must be adequately offset from one another.
 - a. If both intersecting streets are local, then the minimum offset shall be one hundred and twenty-five feet.
 - b. If one intersecting street is a local street and one is a collector street, then the minimum offset shall be one hundred and fifty feet.
 - c. If both intersecting streets are collectors, the minimum offset shall be two hundred feet.

8. Minimum Tangent Length Approaching an Intersection - All approaches to an intersection which have curve radii of less than four hundred feet, must provide a fifty foot tangent length of roadway measured from the center of the intersection.

Section 5. Miscellaneous Standards

A. Highway Bounds and Signs

Concrete or granite highway bounds, at least twenty-four inches in length and four inches square, shall be set at all points of street intersection and at all points of change of direction as per proper surveying standards.

All projects shall conform with the Manual of Uniform Traffic Control Devices.

B. Consultants

The Board of Selectmen may hire consultants to review plans, perform inspections and/or perform other duties related to the project as they deem appropriate. All costs of said consultants shall be reimbursed to the Selectmen by the applicant.

C. Inspections

At a minimum, the applicant shall notify the Office of the Selectmen forty-eight hours prior to the need of the following inspections:

1. Cleared and Grubbed - Roadway has been cleared and grubbed down to native soil free of loam or other unsuitable materials.
2. Subbase Gravel - Subbase gravel has been installed and compacted.
3. Crushed Gravel - Crushed gravel has been installed and compacted.
4. Pavement Installation - Applicant must notify Selectmen as to date(s) pavement is scheduled to be installed.

Failure to notify the Selectmen or their representative of said inspection points shall give the Selectmen the right to reject the work and require reconstruction.

The Selectmen and/or their designated representative shall at all times have access to the site for the purpose of performing inspections.

D. Surety of Work

Proper surety in the form of cash, bonds, etc... must be submitted to the Selectmen to insure the completion of work. No work shall start on the property until proper surety is in place.

Cost estimates shall be submitted to the Selectmen for their approval prior to the surety being accepted. Surety may be drawn down by the Selectmen at no greater frequency than quarterly. In no case shall the surety be drawn below twenty-five percent until the completed road has successfully been through a freeze/thaw cycle.

E. Street Acceptance

The annual March Town Meeting shall be the only body authorized to accept streets as Town owned and maintained streets. The following conditions shall be met prior to the Selectmen recommending a street for acceptance:

1. The lots and/or units along the street shall have achieved at least eighty percent build out.
2. The valuation along said street shall be a minimum of two million dollars per mile.
3. Street construction shall have been complete for a minimum of eighteen months.
4. The standards of this ordinance shall have been met.
5. At least one thousand feet of street shall be proposed for acceptance except when the proposal is for a generally straight extension of an existing Town street.
6. A metes and bounds description, prepared by a New Hampshire licensed surveyor, shall be submitted to the Town. Accompanying the legal description shall be a certification by the Owner's surveyor that the right-of-way bounds have been set at the locations shown on the street design plan.

F. Waivers

Waivers to any section may be requested. All waiver requests must be submitted in writing. The Selectmen shall not approve waivers unless findings based upon evidence presented in each specific case shows that:

1. The granting of the waiver will not be detrimental to the public safety, health or welfare or injurious to other properties located nearby.
2. Because of the particular physical surroundings, shape or topographical conditions of the specific property involved, a particular hardship to the owner would result, as distinguished from a mere inconvenience, if the strict letter of the regulations are carried out.
3. The granting of the waiver shall not have the effect of nullifying the intent and purpose of these regulations.

Upon receiving the request, the Selectmen shall evaluate the arguments, review possible precedence which the decision may set, and shall vote to approve or disapprove the request.

G. More Stringent Provisions

In all cases of conflict between this and other Town or State regulations, the stricter regulations shall apply.

H. Minimum Data Required On Street Design Plans

1. The applicant shall submit two complete sets of street design plans for the Selectmen's review. The applicant shall also submit two copies of any revisions made to the plans for approval. The plans shall be submitted on twenty-two by thirty-four inch plan/profile paper and shall be done with a horizontal scale of 1" = 50' and a vertical scale of 1" = 10'.

2. Data Requirements

- a. Title showing the name of the subdivision, name of the street and name of the owner, date (day, month, year), scale, and name and seal of an engineer licensed in the State of New Hampshire.
- b. Right-of-way lines
- c. Slope and drainage easements
- d. All center-line data (tangent lengths and bearings, curve data and stationing)
- e. Edge of pavement lines
- f. Typical cross section
- g. Existing grade at each half station (on profile)
- h. Proposed grade at each half station (on profile)
- i. Length of vertical curves and data (on profile)
- j. Sight distance of horizontal and vertical curves
- k. Design speed
- l. Type of terrain considered to control design
- m. Average daily traffic (ADT) based on "ITE Trip Generation Manual, 1987"
- n. Design Year based on tenth year after opening year
- o. Drainage structure location and inverts, station, skew, length, slope and end treatment
- p. Benchmarks not more than five hundred feet apart
- q. Utility locations
- r. Specific material specification or reference
- s. A detailed engineer's estimate of construction cost
- t. A letter of certification that all road and utility materials meet the standards specified in these regulations
- u. A notarized letter fixing the legal responsibility for maintenance of the streets.
- v. Grading plan showing existing and proposed contours at a minimum of five foot frequency within the right-of-way.

I. As-Builts

In order to insure the proper construction of development streets, "As-Builts" shall be presented to the Selectmen for their review prior to final drawdown of the surety for the project.

TABLE 1
LOCAL STREET DESIGN GUIDELINES

SECTION	DESCRIPTION	TERRAIN		
4.C.1	Terrain Classification	Level	Rolling	Hilly
4.A.1	Right of way (ft)	50	50	50
4.C.2	Pavement width (ft)	20-27	22-27	30
4.C.3	Type of Curb (V = vertical face) (R = roll type) (O = none)	O/R	O/V	V
4.C.4	Sidewalks (width) (distance from curb face)	O/4 O/6	O/4 O/6	4 6
4.C.5	Minimum Sight Distance (ft)	200	150	150
4.C.6	Maximum Cul-de-sac length (ft)	1000	1000	1000
4.C.7	Maximum Grade	4%	8%	10%
4.C.8	Maximum Cul-de-sac Radius (right of way width)	50	50	50
4.C.9	Design Speed	30	25	20
4.C.10	Minimum Centerline Radius Superelevated (ft) Normal (ft)	200 430	175 280	125 180
4.C.11	Minimum Tangent - Reverse Curves (ft)	50	50	50
4.C.12	Off street parking	**** See Discussion ****		
4.C.13	Street Lighting	**** See Discussion ****		
4.C.14	Driveways	**** See Discussion ****		

TABLE 2
COLLECTOR STREET DESIGN GUIDELINES

SECTION	DESCRIPTION	TERRAIN		
4.D.1	Terrain Classification	Level	Rolling	Hilly
4.A.1	Right-of-way (ft)	50	50	50
4.D.2	Pavement width (ft)	22-27	22-30	32
4.D.3	Type of Curb (V = vertical face) (R = roll type) (O = none)	O/R	O/V	V
4.D.4	Sidewalks (Width)	4	4	4
	(Distance from Curb Face)	8	8	8
4.D.5	Minimum Sight Distance (ft)	250	200	150
4.D.6	Maximum Grade	4%	8%	8%
4.D.7	Design Speed	35	30	25
4.D.8	Minimum Centerline Radius			
	Superelevated (ft)	350	250	175
	Normal (ft)	580	430	280
4.D.9	Minimum Tangent- Reverse Curves (ft)	100	100	100
4.D.10	Off Street Parking	**** See Discussion ****		
4.D.11	Street lighting	**** See Discussion ****		
4.D.12	Driveways	**** See Discussion ****		

TABLE 3
INTERSECTION DESIGN GUIDELINES

SECTION	DESCRIPTION	TERRAIN		
4.E.1	Terrain Classification	Level	Rolling	Hilly
4.E.2	Approach Speed (MPH)	25	25	20
4.E.3	Clear Sight Distance			
	Approach	90	90	70
	At Intersection	**** See Discussion ****		
4.E.4	Vertical Alignment			
	Maximum Grade	2%	2%	2%
	Distance (ft)	100	100	100
4.E.5	Minimum Angle of Intersection	*** 90 degrees (+/-10 degrees)		
4.E.6	Minimum Curb Radius (ft)			
	Local - Local	20	20	20
	Local - Collector	25	25	25
	Collector - Collector	30	30	30
4.E.7	Minimum Center -line Offset from adjacent intersection			
	Local - Local	125	125	125
	Local - Collector	150	150	150
	Collector - Collector	200	200	200
4.E.8	Minimum Tangent Length approaching intersection (ft)	50	50	50

FIGURE 1
TYPICAL ROAD CONSTRUCTION

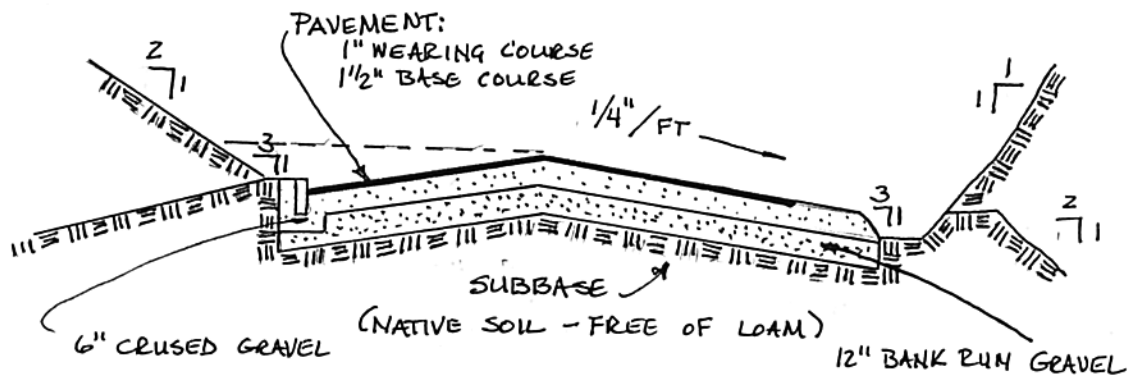


FIGURE 2
INTERSECTION APPROACH SIGHT DISTANCE

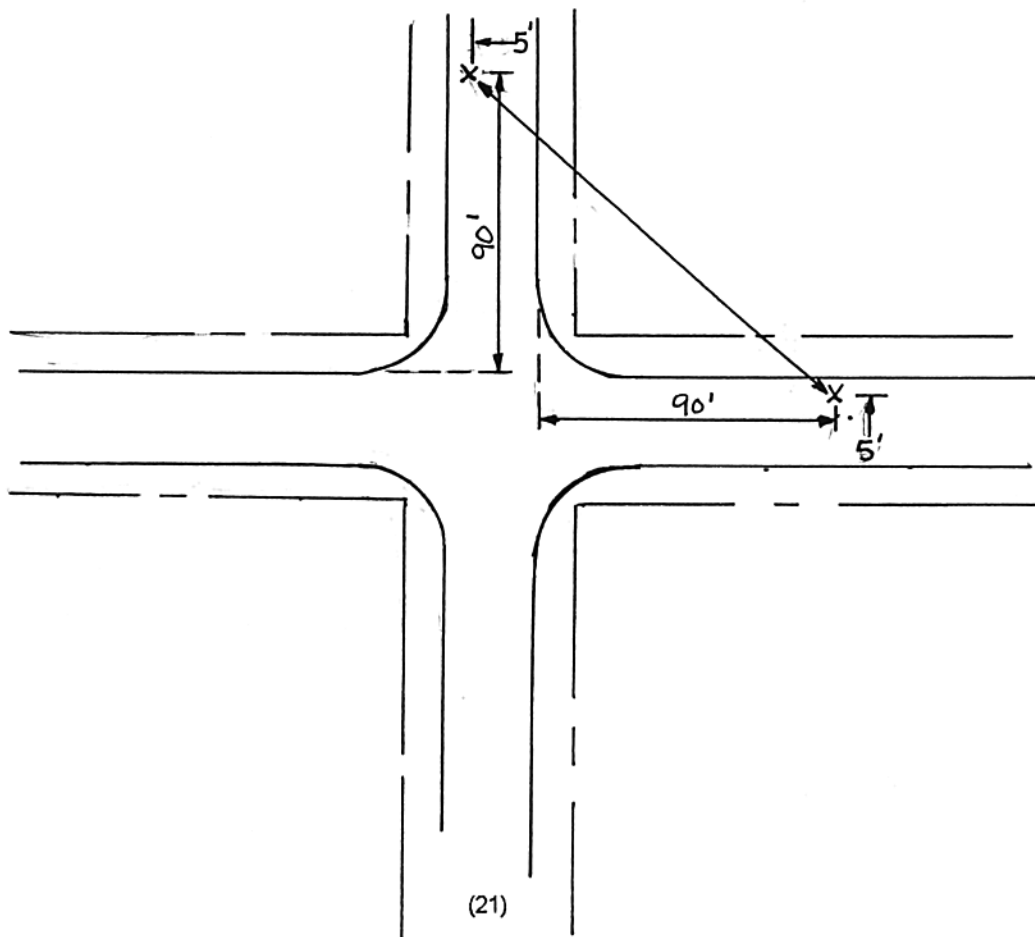


FIGURE 3
TYPICAL DITCH DESIGN

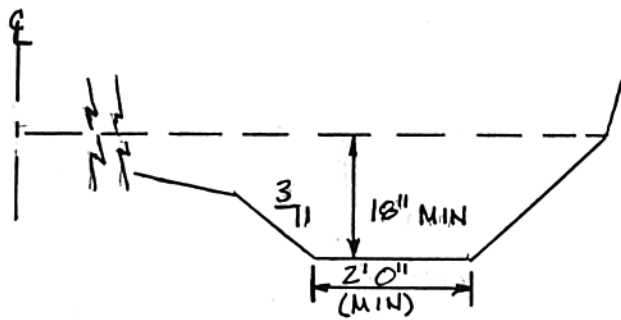


FIGURE 4
TYPICAL SIDEWALK LAYOUT

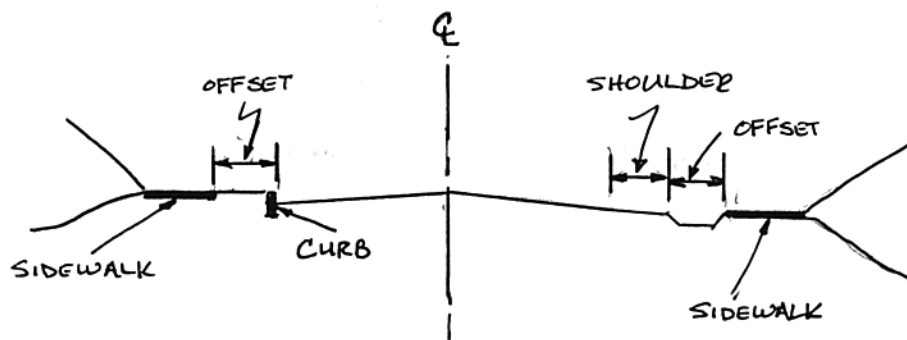


FIGURE 5
SIDEWALK CONSTRUCTION DETAIL

