

ARTICLE XIII - DESIGN AND PUBLIC IMPROVEMENT STANDARDS

A. General

The subdivider, at his own expense, shall construct all improvements where required by the Planning Board in granting approval for any subdivision or land development project subject to these Regulations.

B. Street Design Standards

The following design standards shall be followed where applicable in the design and construction of any subdivision:

1. Frontage on Improved Streets

The area to be subdivided shall have frontage on an existing improved public street. If such an existing street has not been improved to the standards and specifications as required in these Regulations, the Board may require the subdivider to make certain improvements along the part of the street abutting the property or leading to the property being subdivided where necessary for drainage, safety, traffic or other reasons as deemed proper by the Board. See Section H of this Article.

For the purposes of these Regulations, streets platted but not improved or accepted for maintenance by the Town or State, shall not be considered existing improved public streets. Where these streets are incorporated within the subdivision, they shall be improved by the developer to meet the Subdivision Regulation standards.

2. Street Classification

Street design within a proposed subdivision shall conform to a street hierarchy system as established herein. Requirements for right-of-way and pavement width, on-street parking, drainage and other utilities, sidewalks, bicycle path and other design standards shall be tailored to street function.

Street Classification shall be determined by the Planning Board. The following references are used in making the determinations:

- a. Technical Paper Number 130 Highway Functional Classification System For the State of Rhode Island 1995-2005 (Adopted May 1988) October 1988. Division of Planning, Rhode Island Department of Administration, 265 Melrose Street, Providence, RI 02907.
- b. A Policy on Geometric Design of Highways and Streets 1990. American Association of State Highway and Transportation Officials.

c. Recommended Guidelines for Subdivision Streets. Institute of Transportation Engineers, Washington, DC: ITE, 1984.

d. Trip Generation, 1987 edition, Washington, DC : Institute of Transportation Engineers.

The following major categories of street classification are established:

a. Arterial - A major public street that serves as an avenue for the circulation of traffic into, out of, or around the Town and carries high volumes of traffic and provides for high levels of mobility. See Figure 1.

b. Collector - A public street whose principal function is to carry traffic between local streets and arterial streets but that may also provide direct access to abutting properties. These streets provide a balance between land access and mobility. See Figure 2.

c. Local Public - Public streets whose primary function is to provide access to abutting residential properties, which are accepted for ownership and maintenance by the public. The following sub-categories of Local Public streets are established:

- Local Public "A" - an internal through street providing access to more than 20 lots. See Figure 3

- Local Public "B" - a long permanent dead-end or through street providing direct access to 11 - 20 lots. See Figure 3

- Local Public "C" - a short dead-end or through street providing direct access to no more than 10 lots. See Figure 3

- Local Public "D" - a short dead-end or through street providing direct access to no more than 5 lots. See Figure 3

- Local Public "E" - optional design for any of the above street categories which provides for drainage swales. See Figure 4

d. Local Private - Privately owned and maintained streets whose primary function is to provide access to abutting residential properties. Streets within residential compounds serving up to twenty (20) residential dwellings and streets in minor residential subdivisions serving up to five (5) residential dwellings on a private street also fall within this classification.

3. Street Rights of Way and Pavements

Street rights-of-way and pavements shall conform to the widths and pavement details shown in Table 1 below and as illustrated in Figures 1-10. Figures 1-2 illustrate typical cross-sections of arterial and collector streets, respectively. Specific design criteria will be determined by the Board on a case-by-case basis.

Figure 3 is a typical cross section of a local public street proposed for acceptance and maintenance by the Town. Where the subdivider proposes the use of grass swales in lieu of a continuous piped stormwater drainage system, either of the alternative cross sections shown in Figure 4 may be used, subject to the approval of the Planning Board. Refer to Section D of this Article entitled Drainage for more specific design criteria.

Figures 5a and 5b show details of the pavement surface to be used in residential compounds and in minor subdivisions creating local private streets. (See below and Table 1).

Figure 6 shows a cross section of a street in a residential compound. Right of way and pavement width do not vary, but pavement type does vary. A gravel surface as shown in Figure 5a. is permitted where the proposed street will serve 10 or fewer lots or where the total street length will not exceed 1,000 feet. Paving in accordance with Figure 5b. is required for all residential compounds which exceed the above parameters regarding number of lots and street length. Should the length of street or the number of lots served in any existing compound having a gravel street surface be increased in the future, or should an additional compound be added so that the above parameters are exceeded, the Planning Board may require paving of the entire length of street in the original compound.

Figure 7 shows two typical plans for minor subdivisions involving no new street creation or extension, and illustrates a common shared driveway (individual layout may vary). There are no requirements for ROW width or pavement standards for shared driveways involving only 2 lots. The Planning Board will review these on a case-by-case basis. Where common driveways serving more than 2 lots are proposed, but no new street is being created, the Planning Board may require a ROW and pavement meeting the same standards required for private streets in minor subdivisions or residential compounds serving an equivalent number of lots.

Figure 8 shows a typical plan for a minor subdivision of 2-5 lots which creates a local private street (individual layout may vary). Right-of-way width and pavement width are the same for all private streets constructed in minor subdivisions. Pavement type varies depending upon the zoning district in which the subdivision is located. Subdivisions located in the following zoning districts shall provide a paved surface as shown in Figure 5b: RM, R10, R20, and all Commercial (C), Mixed Use (MU) and Industrial (Ind). Subdivisions located in all other zoning districts may be constructed with a gravel surface conforming to Figure 5a.

Figure 9 illustrates various optional turnaround designs to be used in the various types of public and private streets permitted under these Regulations.

Figure 10 illustrates the hierarchy of streets designated herein. This is provided for illustrative purposes only.

4. Geometric Data

Table 1 below shall be used as a guide in designing streets within a subdivision.

**ARTICLE XIII - TABLE 1
GUIDE TO DESIGNING STREETS WITHIN A SUBDIVISION**

	Fig. 1 Arterial	Fig. 2 Collector	Fig. 3,4 Local Streets (Public)					Fig. 5a, 5b, 6, 9 Residential Compound (Private)	Fig. 8, 9 Minor Subdivision (Private)
			A	B	C	D	E		
ROW Width	75'	60'	50'	50'	40'	50' ^a 40' ^b	60'	40'	40'
Pavement Type			BC	BC	BC	BC	B	G/P	G/P
Road Pavement Width	34'	30'	26' *	24' *	22''	20'	26'	18'	18'
Bike Width	10'/6'	6'							
Number Lots	N/A	N/A	>20	11-20	6-10	1-5	7+	2-20	2-5
Maximum Grades --centerline	7%	7%	9%	9%	9%	9%	9%	10%	10%
--within 150' of centerline intersections	2.5%	2.5%	2.5%	4%	6%	4%	2.5%	N/A	N/A
Minimum Grades --centerline	1%	1%	1%	1%	1%	1%	1%	.05%	.05%
Minimum Length for Vertical Curves	200'	150'	100'	100'	100'	100'	100'	As determined by DPS	As determined by DPS
Minimum Radius of Centerline Curve	250'	200'	150'	150'	100'	150'	150'	100'	100'

- * Includes Bituminous Curb (See Fig. 3)
- BC Bituminous Concrete (See Fig. 3)
- G Gravel (See Fig. 5a)
- P Paved (See Fig. 5b)
- ^a With further development potential
- ^b With no further development potential

**ARTICLE XIII - TABLE 1
GUIDE TO DESIGNING STREETS WITHIN A SUBDIVISION (CONT.)**

	Fig. 1 Arterial	Fig. 2 Collector	Fig. 3,4 Local Streets (Public)					Fig. 5a, 5b, 6& 9 Residential Compound (Private)	Fig. 8, 9 Minor Subdivision (Private)
			A	B	C	D	E		
Minimum Sight Distance	300'	250'	200'	150'	100'	150'	150'	100'	100'
Cul-de-sac Turnaround**	See Fig. 10								
--ROW Diameter	N/A	N/A	100'	100'	100'	100'	100'	100'	100'
--Pavement Diameter*	N/A	N/A	80'	80'	80'	80'	80'	80'	80'
--Maximum Grade	N/A	N/A	4.5%	4.5%	4.5%	4.5%	4.5%	N/A	N/A
--Minimum Grade	N/A	N/A	2%	2%	2%	2%	2%	N/A	N/A
Intersection Fillet Curve									
--Minimum ROW Radius	25'	25'	15'	15'	15'	15'	15'	15'	10'-15'
--Minimum Pavement Radius	35'	35'	25'	25'	25'	25'	25'	25'	25'
Pavement Crown	7"	6"	5"	5"	5"	5"	5"	4"	4"

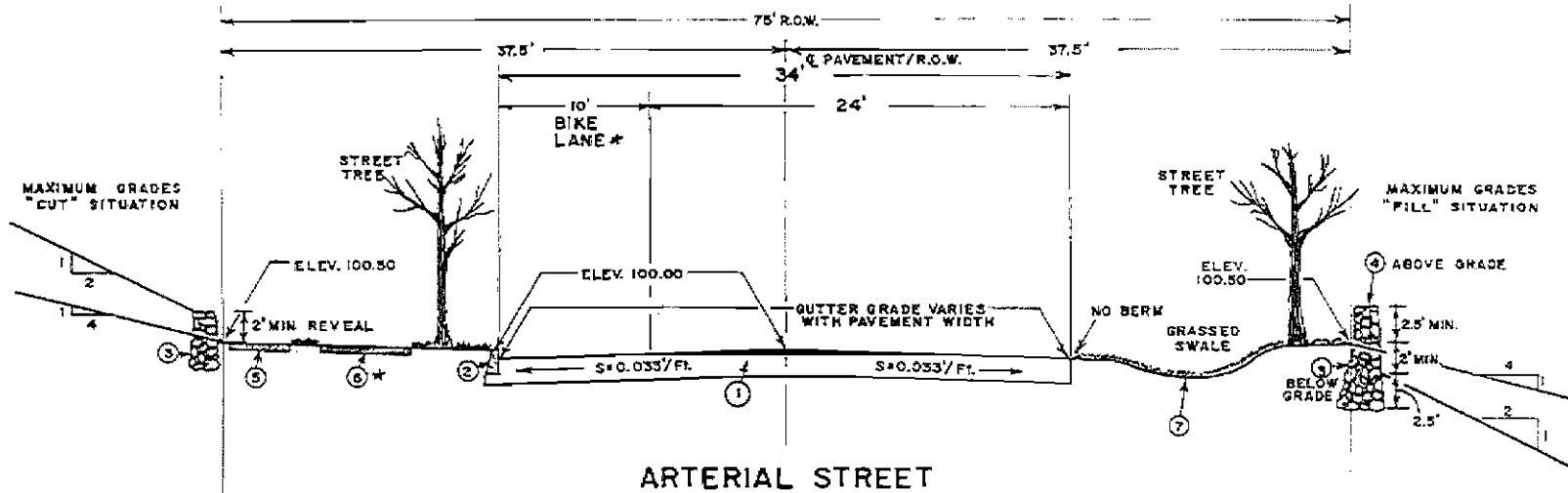
* Includes Bituminous Curb (See Fig. 3)

** See Fig. 9 for Hammerhead Turnaround (Optional)

BC Bituminous Concrete (See Fig. 3)

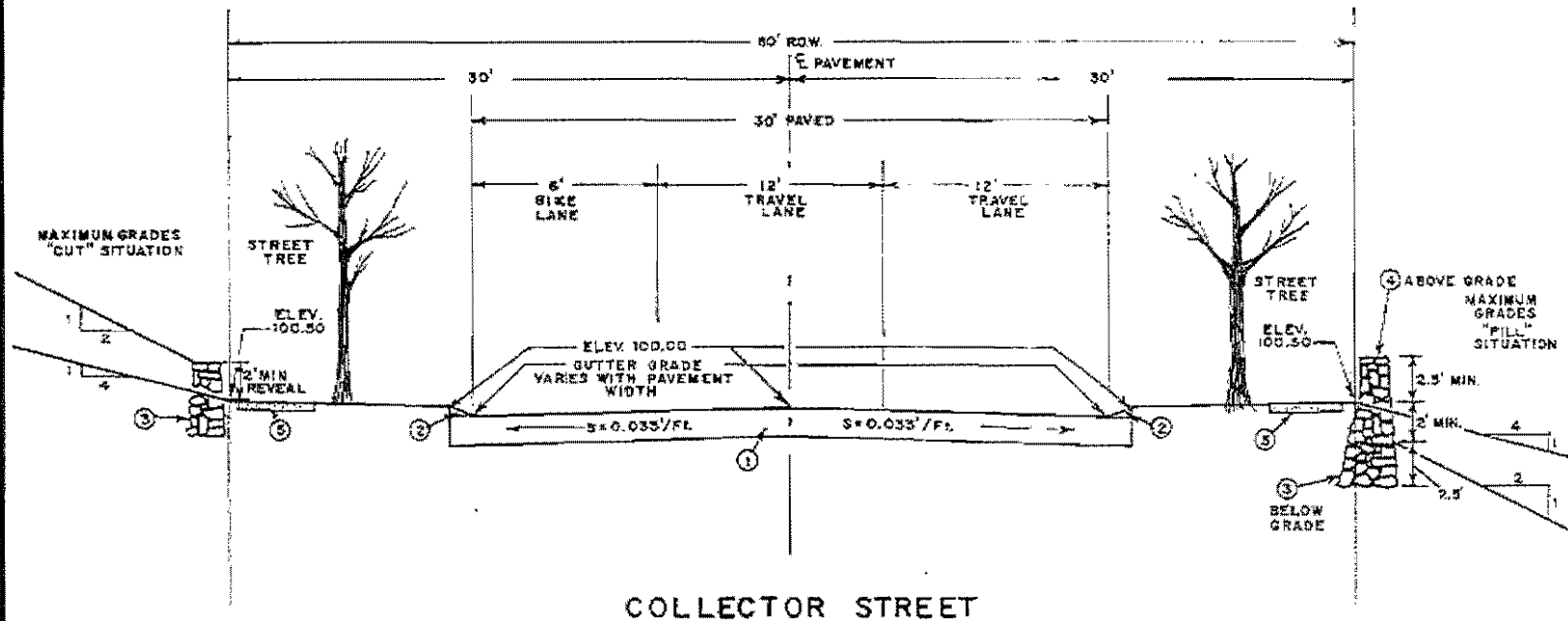
G Gravel (See Fig. 5a)

P Paved (See Fig. 5b)



- 1) ROADWAY CROSS SECTION AND MATERIALS SHALL CONFORM TO T.S.K. STANDARDS FOR ROAD CONSTRUCTION AND UTILITY LOCATIONS
- 2) PRECAST CONCRETE CURBING - RIDOT SID. 711 OR APPROVED EQUAL
- 3) RETAINING WALL - RI DOT SID. 101 OR APPROVED EQUAL
- 4) STONE WALL - RI DOT SID. 103 OR APPROVED EQUAL
- 5) CONCRETE SIDEWALK - T.S.K. STANDARD 5" THICK BY 4' WIDE (MIN.), 4000 IS MIX
- 6) BICYCLE PATH - 6' WIDE (MIN.) CONCRETE OR BITUMINOUS CONCRETE CLASS III (SEPARATED FROM MOTOR VEHICLE TRAFFIC), CROSS SECTION AND MATERIALS TO T.S.K. STANDARDS
- 7) GRASSED SWALE DESIGN SHALL CONFORM TO USDA SOIL CONSERVATION SERVICE AND RI DEM SOIL EROSION AND SEDIMENT CONTROL HANDBOOK (RISECH) STANDARDS. LOCATION MAY VARY WITHIN SHOULDER.
- * 10' WIDE CLASS III BIKE LANE MAY BE USED IN LIEU OF 6' WIDE CLASS II BIKE PATH

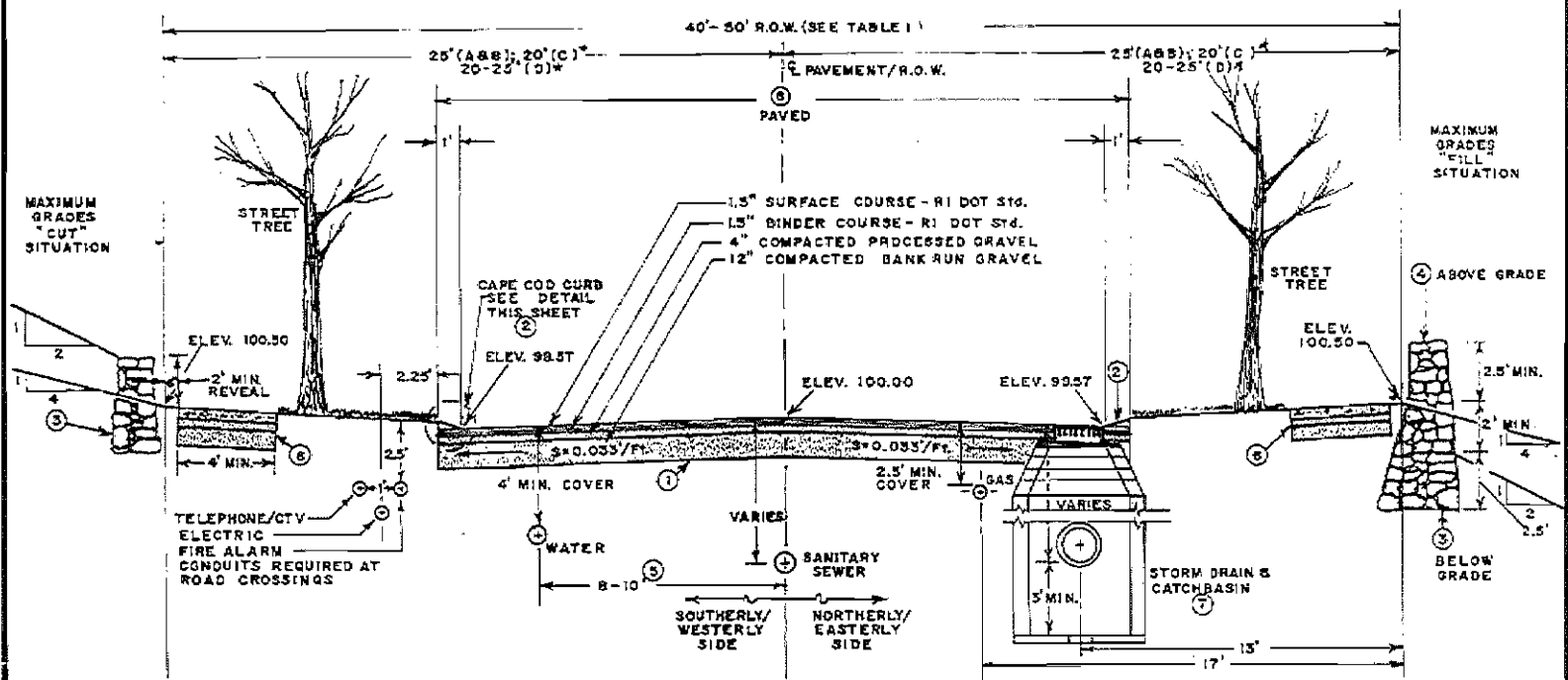
TOWN OF SOUTH KINGSTOWN, R. I.			
FIGURE	TYPICAL CROSS SECTION ARTERIAL STREET (TOWN ACCEPTED)		
1	DEPT. PLANNING	DATE 3/93	DRN. PJE APPR.
	SCALE NOT TO SCALE		REVISED 8/95, 9/95
	NOTES		



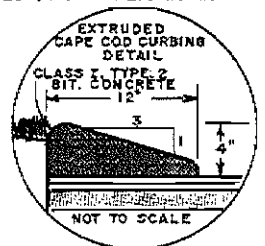
COLLECTOR STREET

- 1) ROADWAY CROSS SECTION AND MATERIALS SHALL CONFORM TO T.S.K. STANDARDS FOR ROAD CONSTRUCTION AND UTILITY LOCATION.
- 2) EXCURVED ASPHALT CURB, DPH APPROVED, ROOT STD. 7.2" CURB REDD. AT FILLET CURVE INTERSECTIONS.
- 3) RETAINING WALL - RI DOT SH. 10; OR APPROVED EQUAL
- 4) STONE WALL - RI DOT SH. 10.3 OR APPROVED EQUAL
- 5) CONCRETE SIDEWALK - T.S.K. STANDARD 5" THICK BY 4' WIDE (MIN), 4000 LB. MIX

TOWN OF SOUTH KINGSTOWN, R. I.			
FIGURE 2.	TYPICAL CROSS SECTION COLLECTOR STREET (TOWN ACCEPTED)		
DEPT. PLANNING	DATE 3/95	DRN. PJE	APPR.
SCALE NOT TO SCALE		REVISED 8/95	
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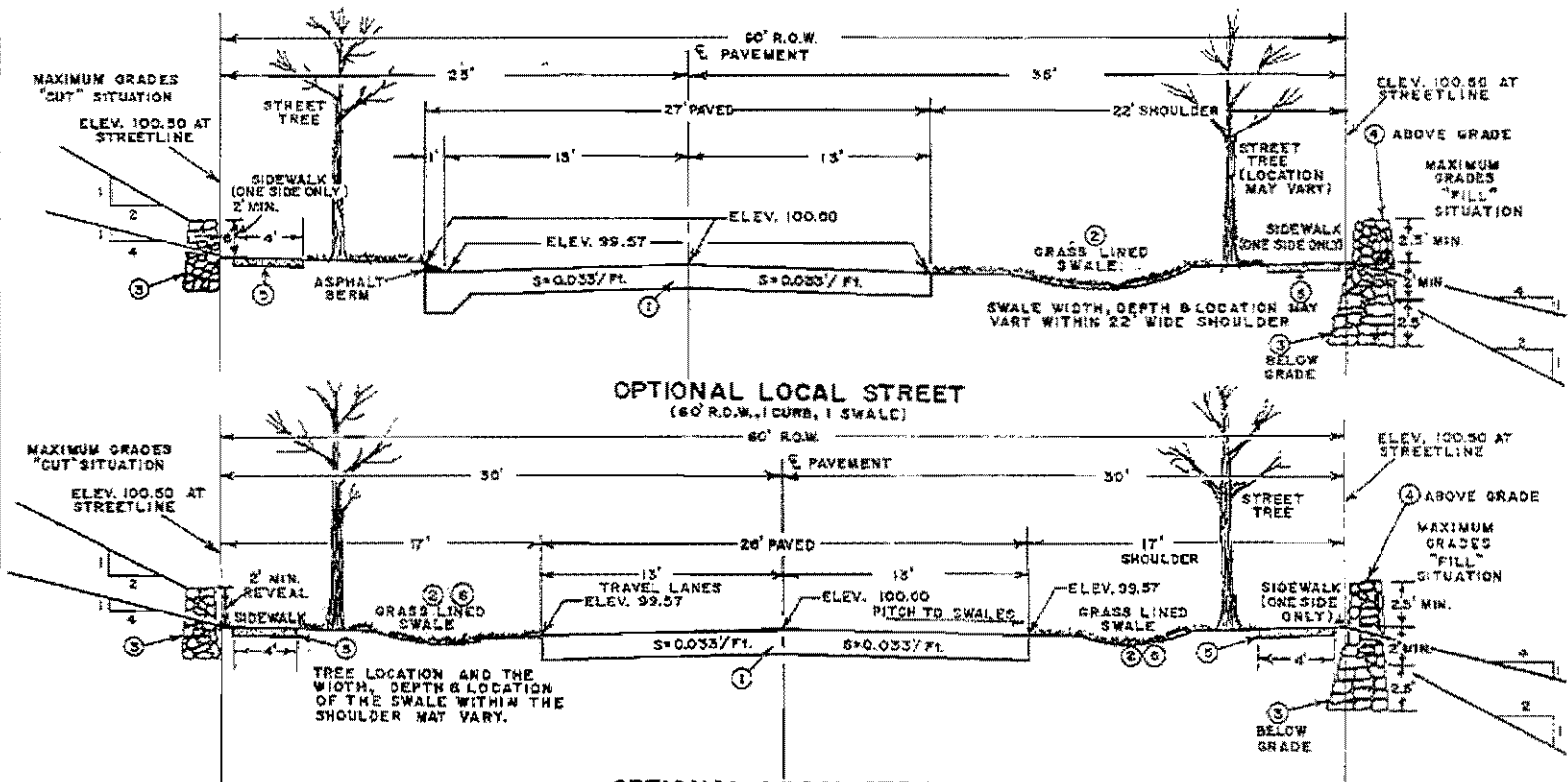


- 1) ROADWAY CROSS SECTION AND MATERIALS SHALL CONFORM TO T.S.K. STANDARDS FOR ROAD CONSTRUCTION AND UTILITY LOCATION.
- 2) CAPE COD CURBING - HALL MANUFACTURING CO. MOLD J6X OR D.P.W. APPROVED EQUAL, SLOPE FACED PRECAST CONCRETE CURBING REQUIRED AT ALL INTERSECTION FILLET CURVES, SEE RI DOT STD. 7.21
- 3) RETAINING WALL - RI DOT STD. 10.1 OR APPROVED EQUAL
- 4) STONE WALL - RI DOT STD. 10.3 OR APPROVED EQUAL
- 5) WATER MAIN LOCATION SUBJECT TO APPROVAL OF DIRECTOR OF PUBLIC WORKS
- 6) CONCRETE SIDEWALK - T.S.K. STANDARD, 6" THICK BY 4' WIDE (MIN.), 4000 LB. MIX OVER 4" PROCESSED GRAVEL OVER 8" BANK RUN GRAVEL
- 7) STORM DRAIN MATERIALS AND METHODS SHALL CONFORM TO APPLICABLE T.S.K. AND RI DOT STANDARDS
- 8) ROAD WIDTHS: SEE TABLE 1
- * UTILITY LOCATIONS FOR 40' R.O.W. SUBJECT TO APPROVAL OF TOWN ENGINEER



NOTE: HALL MANUFACTURING CO. MOLD J6X OR APPROVED EQUAL

TOWN OF SOUTH KINGSTOWN, R. I.			
FIGURE	TYPICAL CROSS SECTION LOCAL STREETS A,B,C,D (TOWN ACCEPTED)		
3	DEPT. PLANNING	DATE 3/93	DRN. PJE
	SCALE NOT TO SCALE	REVISED 11/95	APPR.
NOTES			



- 1) ROADWAY CROSS SECTION & MATERIALS SHALL CONFORM TO T.S.K. STANDARDS FOR ROAD CONSTRUCTION AND UTILITY LOCATION.
- 2) GRASSED SWALE DESIGN SHALL CONFORM TO USDA SOIL CONSERVATION SERVICE AND RI DEM SOIL EROSION AND SEDIMENT CONTROL HANDBOOK (RI SECT) STANDARDS.
- 3) RETAINING WALL - RI DOT STD. 10.1 OR APPROVED EQUAL
- 4) STONE WALL - RI DOT STD. 10.3 OR APPROVED EQUAL
- 5) CONCRETE SIDEWALK - T.S.K. STANDARD 5" THICK BY 4' WIDE (MIN.), 4000 LB. MIX OVER 4" PROCESSED GRAVEL OVER 8" BANK RUN GRAVEL
- 6) MINIMUM CROSS SECTION SIDE SLOPE FOR SWALES IS 3:1

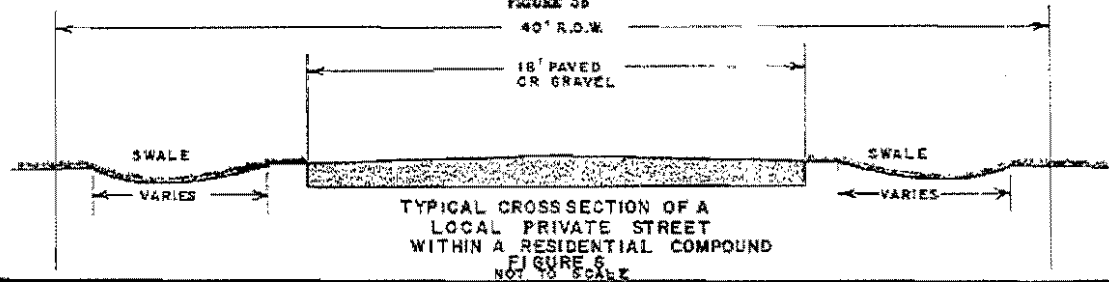
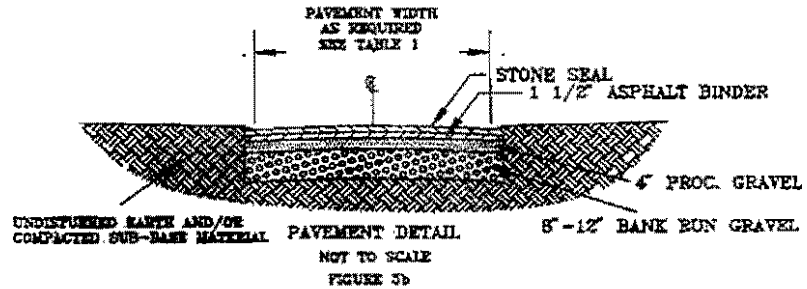
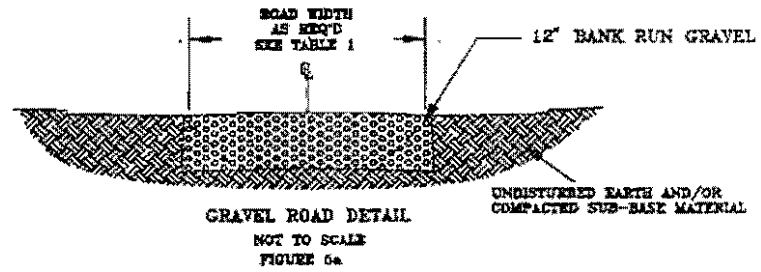
OPTIONAL LOCAL STREET
(60' R.O.W., NO CURRS, SWALE BOTH SIDES)

TOWN OF SOUTH KINGSTOWN, R. I.

FIGURE
4

**TYPICAL CROSS SECTIONS
OPTIONAL LOCAL STREETS (E)
(TOWN ACCEPTED)**

DEPT. PLANNING	DATE 3/93	DRN. P.J.E.	APPR.
SCALE NOT TO SCALE		REVISED 11/95	
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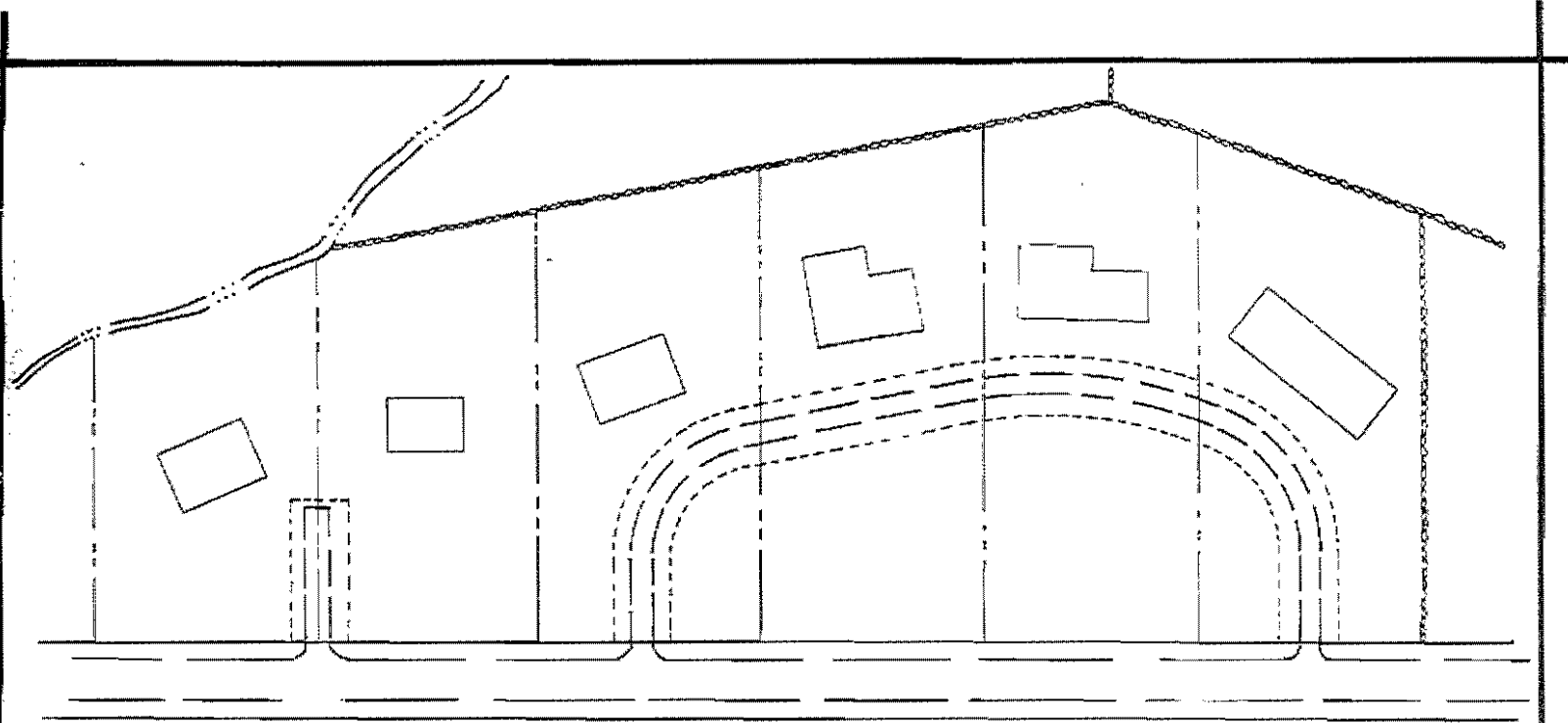


MINIMUM SURFACE REQUIREMENTS FOR RESIDENTIAL COMPOUND ROADWAYS

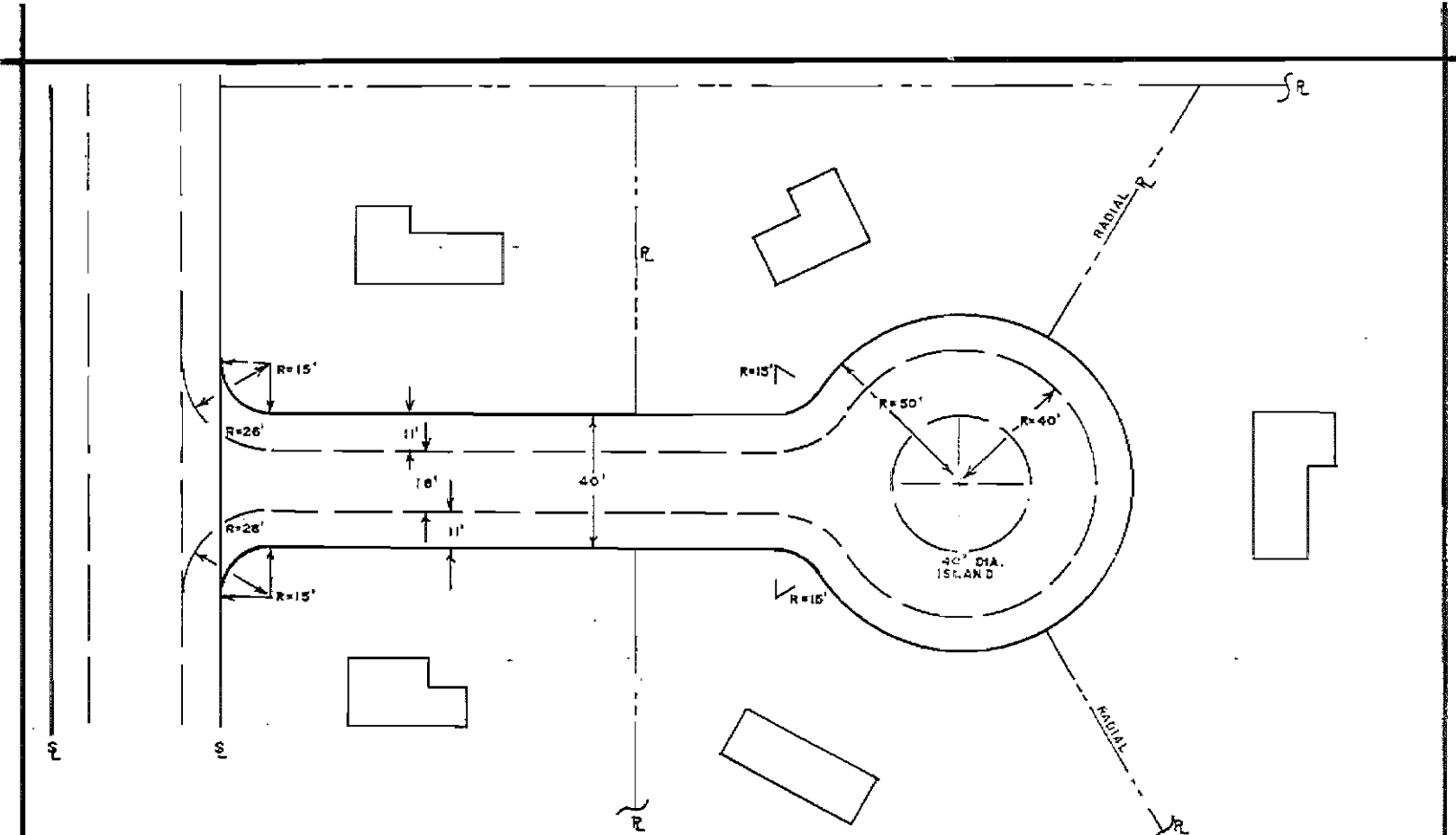
- 1) GRAVEL SURFACE (FIGURE 5a) FOR 1-10 LOTS OR LESS THAN 1000' OF STREET LENGTH
- 2) PAVED SURFACE (FIGURE 5b) FOR MORE THAN 10 LOTS OR MORE THAN 1000' OF STREET LENGTH

TOWN OF SOUTH KINGSTOWN, R. I.			
FIGURES 5a, 5b & 6	RESIDENTIAL COMPOUND STREETS		
	DEPT. PLANNING	DATE 4/93	DRN. P.J.E. APPR.
	SCALE NOT TO SCALE		REVISED 11/95
	NOTES		

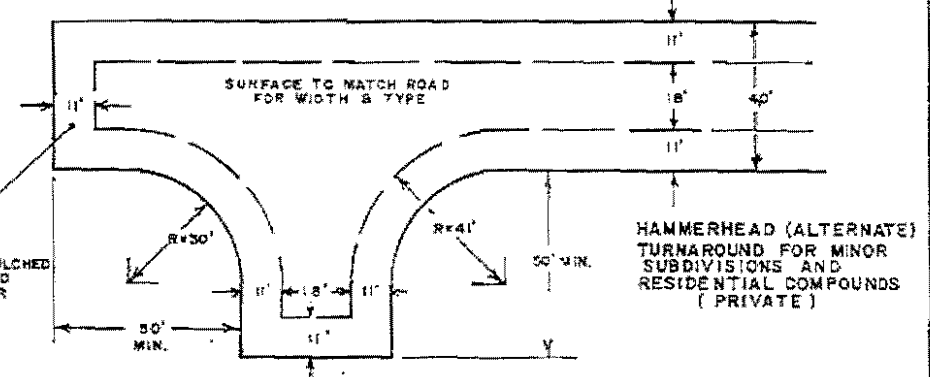
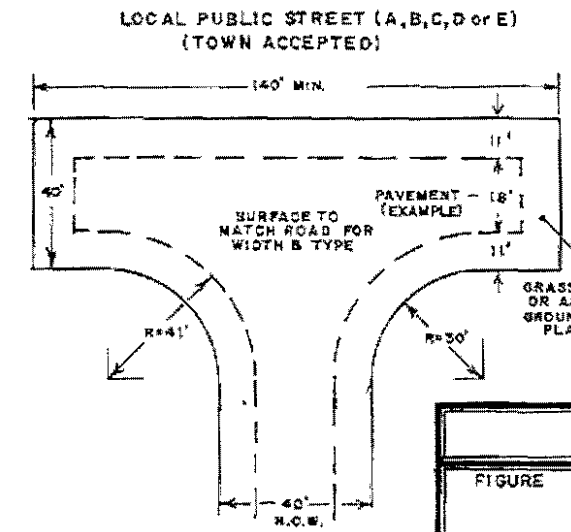
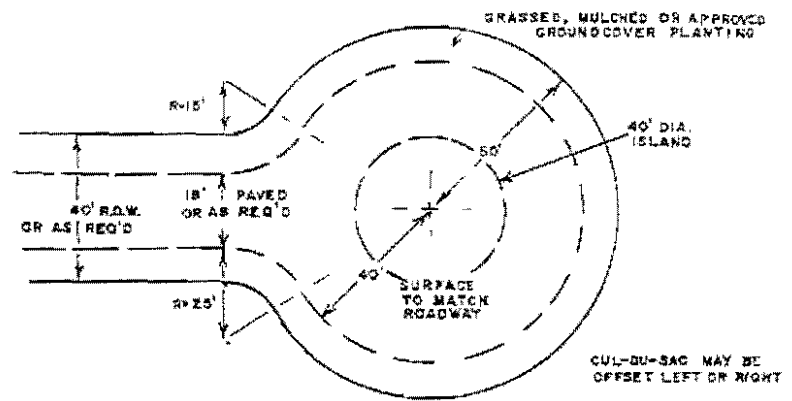
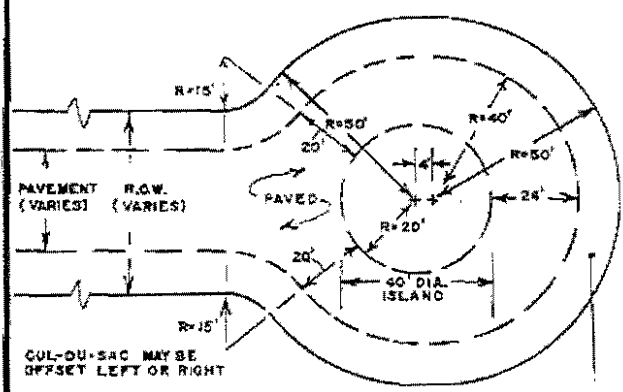
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TOWN OF SOUTH KINGSTOWN, R.I.				
	SHARED (COMMON) DRIVEWAYS FOR MINOR SUBDIVISIONS INVOLVING NO STREET CREATION OR EXTENSION			FIGURE
	DATE 11/95	DRN PJE	APPR.	7
	SCALE	NOT TO SCALE	REVISED	
	NOTES			

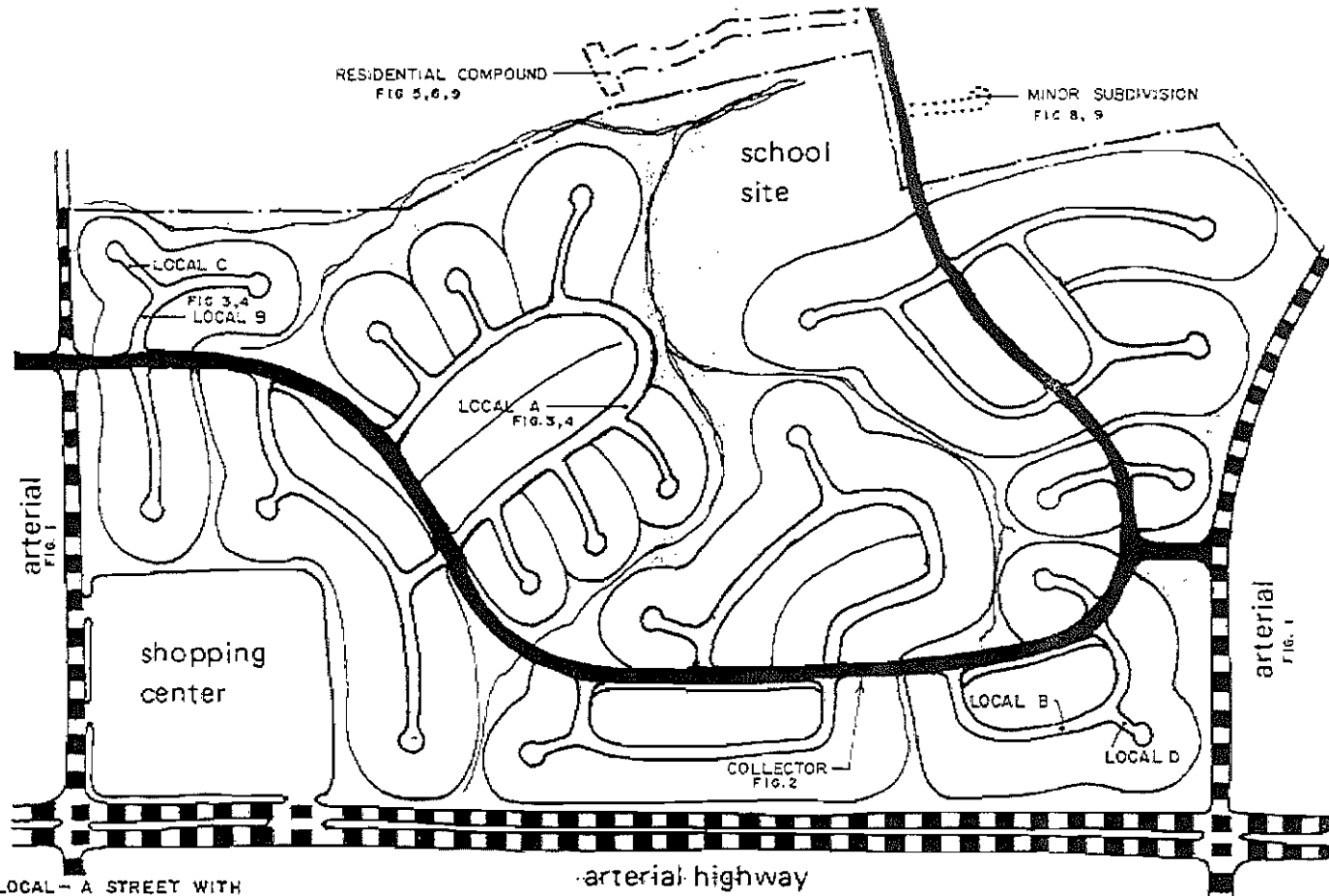


TOWN OF SOUTH KINGSTOWN, R.I.			
FIGURE	LOCAL PRIVATE STREETS IN MINOR SUBDIVISIONS (2-5 LOTS)		
8	DEPT. PLANNING	DATE 4/93	DRN. P.J.E. APPR.
	SCALE NOT TO SCALE		REVISED 11/95
	NOTES		



TOWN OF SOUTH KINGSTOWN, R. I.

<p>FIGURE 9</p>	<p>TURNAROUND DESIGNS</p>			
	DEPT. PLANNING	DATE 4/93	DRN. P.L.E.	APPR.
	SCALE NOT TO SCALE		REVISED 11/95	
	NOTES			



KEY

- LOCAL - A STREET WITH FUNCTIONS FOR LAND ACCESS
- COLLECTOR - A STREET THAT PROVIDES BALANCED USE BETWEEN LAND ACCESS AND MOBILITY
- ARTERIAL - A MAJOR STREET WITH PRIMARY FUNCTIONS FOR HIGH LEVELS OF TRAFFIC MOBILITY & CIRCULATION
- == RESIDENTIAL COMPOUND
- MINOR SUBDIVISION

TOWN OF SOUTH KINGSTOWN, R.I.			
FIGURE	AN EXAMPLE OF RESIDENTIAL STREET HIERARCHY		
10	DEPT. PUBLIC WORKS	DATE FEB. '93	DRN. PJE
	SCALE N/T/S	REVISED 9/95	
NOTES ADAPTED FROM PERFORMANCE STREETS, BUCKS COUNTY (PA) PLANNING COMMISSION, APRIL 1980			

5. Street Layout and Arrangement

The arrangement of streets shall be considered in relation to the existing street system, and to existing topographic and natural conditions. The road system shall be designed to permit the safe, efficient and orderly movement of traffic; to meet, but not exceed the needs of the present and future population served; to have a simple and logical circulation pattern; to respect natural features and topography; and to create an attractive streetscape.

Wherever possible in residential subdivisions, the road system shall be designed to serve the needs of the neighborhood and to discourage use by through traffic. However, in major subdivisions, access shall be designed to avoid street systems which have only one principal means of egress. In order to provide for alternative access, at least two vehicular access streets may be required by the Planning Board, in major subdivisions when determined by the Board to be feasible. Proposed streets within a major subdivision shall provide for their continuation or projection to intersect with principal streets on the perimeter of the subdivision or with adjacent vacant property in order that the streets may be extended at a future time.

6. Private Streets

Private streets shall not be permitted except for residential compounds and minor subdivisions as authorized in Article IV of these Regulations.

7. Street Intersections

Street intersections shall either coincide precisely with, or be offset by at least 200 feet from other intersections. Intersections shall be at 90 degree angles. Lesser angles between 75 degrees and 90 degrees may be approved by the Director of Public Services.

8. Dead-End Streets (Cul-de-sacs)

All dead end streets shall end in a cul-de-sac turnaround constructed according to the table of geometric data above, and shall be clearly marked at their entrances. The Planning Board may limit the length of the dead end street (cul-de-sac) where necessary, to ensure the adequate and safe circulation of vehicular traffic.

9. Street Names

An extension of an existing street shall have the same name as the existing street. Names of other proposed streets shall be substantially different from any existing street name in the Town of South Kingstown. All newly proposed street names shall be checked for duplication, pronunciation and other similarities and approved by the Department of Public Services. Street numbers shall be assigned as provided in the South Kingstown Code of Ordinances. Revisions to street names on approved and recorded subdivisions shall be treated in accordance with the provisions of Article VI, Section B, entitled Changes to Recorded Plats and Plans.

10. Access to Adjoining Property

When considered desirable by the Planning Board to provide access to adjoining property, proposed streets shall be continued and improved to the property line. The reservation of strips of land preventing such access shall not be permitted. The Planning Board may require provision of a temporary turnaround until such time as the adjacent tract is developed. A bond may be required to insure completion of the street or construction of a permanent cul-de-sac within a reasonable period of time.

Access to adjoining property for pedestrian and/or bicycle circulation shall be required wherever the Planning Board determines that such connection will increase accessibility between adjoining subdivisions, to existing or proposed sidewalks or bicycle paths, from subdivisions to major public or private schools, recreation areas or other facilities or where the public safety will be significantly enhanced by such pedestrian and/or bicycle connections.

11. Street Signs

Street name and traffic signs, approved the Department of Public Services, shall be installed by the developer or by the Department of Public Services at the developer's expense.

12. Street Lighting

In all new subdivisions where utilities are being installed underground, provisions shall be made for street lighting connections only where required by and approved by the Director of Public Services.

13. Street Trees

Where natural tree growth is determined by the Planning Board to be insufficient, the Planning Board shall require the subdivider to plant street trees appropriate for the terrain, soil and climatic conditions encountered in the subdivision, and in accordance with the following standards:

a. Location - Street trees shall be located as shown in Figure 3 or on the portion of building lots within 10 feet of the street right-of-way line, if assurance can be given by the subdivider that the trees will not be disturbed by building activities. In either case, no street trees shall be located so as to interfere with overhead or underground utility lines.

Trees shall be spaced approximately 30 feet to 50 feet on center, depending on anticipated ultimate size.

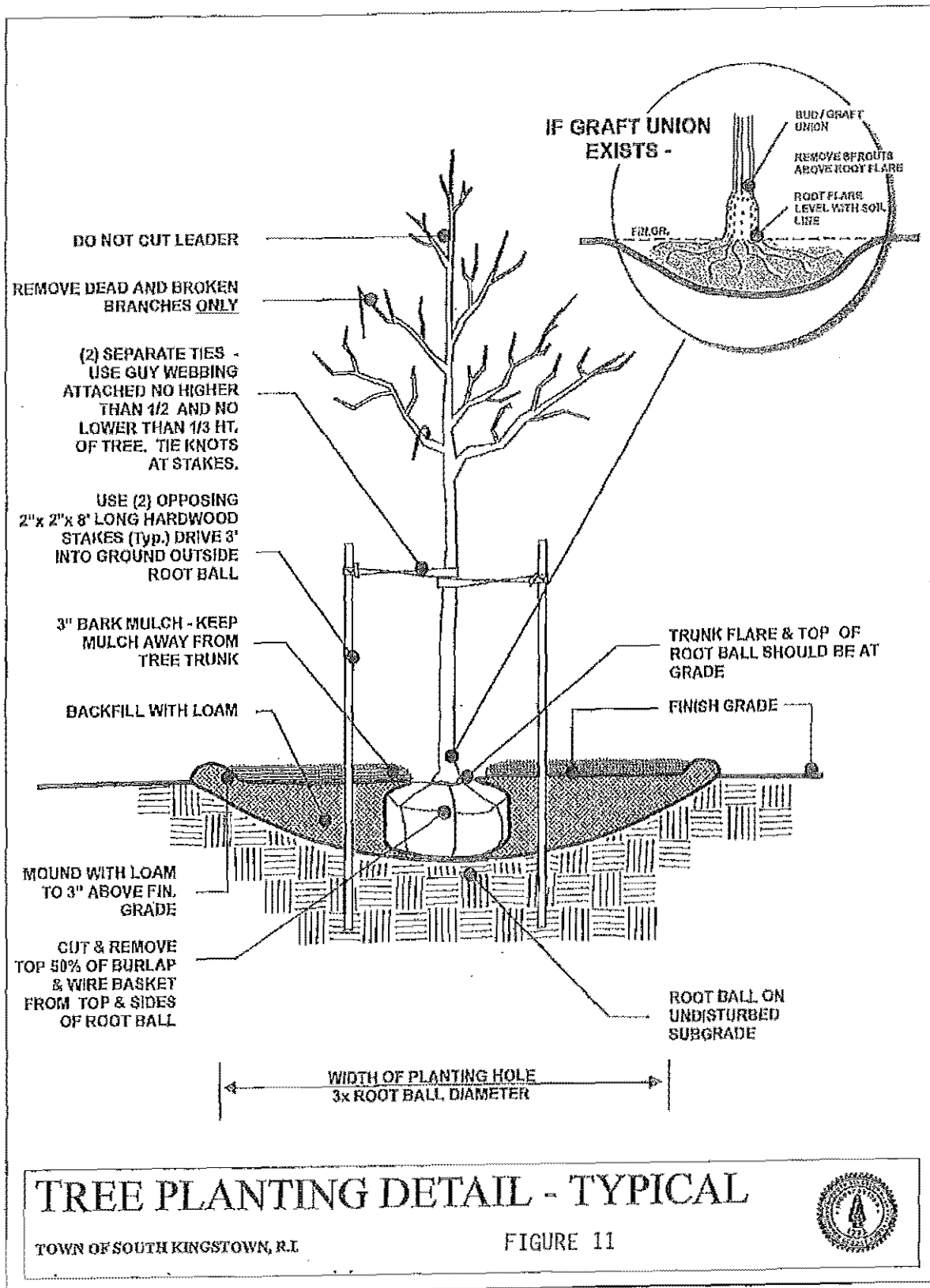
b. Type - The species selected are to be suitable for Zone 6 hardiness and shall be selected from the publication entitled "Sustainable Trees and Shrubs for Southern New England," (University of Rhode Island and University of Massachusetts Cooperative Extension Systems, 1995) and shall be selected for suitability for the location. Where multiple trees are to be planted, monoculture planting should be avoided.

c. Size - Species shall be 1 1/2 to 2 inches caliper, measured one-foot from ground level in place, and 6 feet to 8 feet of height in place.

d. Quality - Street trees shall be balled and burlapped with good root development and branching characteristics. Trees shall have a well-defined central leader. All trees shall be of licensed nursery stock. Native species should be used whenever possible. Dead and broken branches shall be removed. No more than 25% of branches shall be removed at time of planting.

e. Planting – The subdivider shall engage a Rhode Island Licensed Arborist to be on site during planting to ensure that the following standards and procedures are observed during planting:

- The top 50% of burlap and wire basket shall be removed.
- Enough soil from the top of the root ball shall be removed to expose trunk/root flare.
- Torn or ragged roots shall be pruned to make a clean termination.
- Trees shall be planted in bowl-shaped hole three (3) times the width of the root ball.
- The soil at the bottom of the hole shall be compacted to resist settling of the tree.
- Soil that is nutrient deficient shall be amended by the addition of compost prior to backfilling the hole.
- Trees shall be planted at a depth that allows full exposure of trunk/root flare.
- Trees shall be staked and guyed, using arbor tape that is not pulled taut.
- Soil from the planting hole shall be built up along the perimeter, to act as a dam to retain water.
- Trees shall be mulched with 2 (two) to 3 (three) inches of mulch, keeping mulch 3 (three) inches away from trunk.



f. Screening - Where a proposed residential development abuts an existing or proposed commercial or industrial area, a dense evergreen buffer at least 10 feet in depth, shall be planted along the common boundary between the residential development and such commercial or industrial development.

g. Inspection - The Town Tree Warden shall determine the suitability of the street trees being proposed, and certify proper planting techniques and maintenance have been followed.

h. Maintenance - Street trees shall be maintained by the subdivider from the time of planting until the time of the release of the maintenance bond following acceptance of streets by the Town Council as provided in Article VII. If there is no maintenance bond required, the Planning Board may require separate guarantee provisions for maintenance of required street trees by the subdivider for a maximum period of two (2) years from the date of planting. Any trees which are not healthy at the end of the guarantee period shall be replaced at the subdivider's expense.

14. Landscaping Standards

a. Landscaping shall be provided as part of site plan and subdivision design. It shall be conceived in a total pattern throughout the site, integrating the various elements of site design, preserving and enhancing the particular identity of the site and creating a pleasing site character.

b. Landscaping may include plant materials such as trees, shrubs, ground covers, grass, flowers, etc. but may also include other materials such as rocks, wetlands, stone walls, paving materials, planters, signage, and street furniture. Areas which may be required to provide landscaping shall include, but are not necessarily limited to the following:

- (1) Drainage facilities, such as retention/detention basins, or drainage swales
- (2) Entrance features
- (3) Open space areas
- (4) Proposed recreation facilities
- (5) Buffer areas
- (6) Lot areas which are disturbed during the construction process or where extensive grading removes a significant amount of natural vegetation
- (7) Areas subject to regrading or stabilization for soil erosion and sediment control purposes

c. Landscape Plan - A landscape plan prepared by a registered landscape architect shall be submitted to the Planning Board when the Board determines that (a) existing landscaping is insufficient; (b) the site of the proposed subdivision has been disturbed so as to require significant new vegetation; or (c) additional landscaping is necessary to protect, preserve, or enhance significant visual characteristics of the site. If a requirement for a landscape plan is required by the Board, the applicant shall be advised of this requirement at the preliminary review stage of an administrative or minor subdivision, and at the master plan stage of a major subdivision. The plan shall identify existing and proposed trees, shrubs and ground covers; natural features such as stone walls and rock outcroppings; man-made elements such as retaining walls, fences, signs, planters, etc; proposed grading at two-foot contour intervals; lighting; specifications for loaming, fertilizing and seeding; and

other proposed landscaping elements. The plan shall indicate the location of all proposed landscaping and shall include construction details as necessary. A planting schedule shall be included to indicate proposed planting by species, size at time of planting and maintenance requirements. Where existing plantings are to be retained, the plan shall indicate proposed methods of protecting them during construction.

d. Tree Protection During Construction – A construction fence ("snow fencing") shall be erected outside of the dripline of the tree, defining the protection area free from construction equipment, materials, and foot traffic. If such traffic cannot be routed away from inside of the dripline, 10 (ten) inches of wood chips shall be placed on the ground around the tree 4 (four) inches away from the trunk, extending to the dripline; and removed upon the completion of construction. Prior to construction, the Tree Warden shall determine the best possible method(s) of tree protection for each tree to be protected during construction. The Tree Warden, or his/her appointed deputy, shall approve the installation prior to any land disturbance. If any excavation, required for building foundations or utility tunnels, encounters tree root interference, the Tree Warden, or deputy, shall be called in to make the proper pruning cuts. The grade of the soil within the dripline of the tree(s) to be saved must not be raised or lowered. If a grade change is unavoidable, the Tree Warden shall be consulted to explore the possibility of transplanting the tree(s) or replacing the tree(s) in that area. Soil and conservation materials shall not be placed within the dripline of any tree(s) to be saved.

15. Monuments

Monuments (concrete boundary markers) shall be of the type furnished by the Town and paid for by the developer and placed by a Registered Land Surveyor on the street line at the beginning and end of all horizontal curves on both sides of each subdivision (public) street and shall not be more than five hundred feet apart. Monuments shall be set four inches above finished grade of the center of the street.

16. Sidewalks

Sidewalks shall be required to be installed on one side of all proposed new public streets in subdivisions located in RM, R10 and R20 zoning districts, and in all Flexible Design Residential Projects or multifamily developments except for short cul-de-sac streets serving five (5) or fewer lots or dwellings. Sidewalks may be required to be installed along new streets in other areas if the Planning Board finds any of the following:

- a. The subdivision is located within an area within one mile of a public or private school; or,
- b. The subdivision is located in reasonable proximity to major public or private facilities such as churches, shopping areas, playgrounds, etc. where there is a reasonable likelihood that pedestrian traffic to/from/within the proposed subdivision would result; or,
- c. The subdivision is located within an area with high vehicular traffic volumes and where there would be a likelihood of significant danger to pedestrians.

Sidewalks may be required to be installed as off-site improvements in accordance with the provisions of Section H. of this Article.

17. Bicycle Paths

Bicycle paths shall be incorporated into the proposed subdivision where necessary to extend an existing bicycle path; to intersect with proposed State bicycle facilities; to connect adjacent subdivision where vehicular connections would be impractical; or where adjacent or nearby public or private school, recreation areas or other similar facilities would be likely to generate significant bicycle

18. Curbing at Intersection Fillet Curves

Slope faced precast concrete curbing meeting RI DOT Standard 7.21 shall be installed at all intersection fillet curves in lieu of extruded Cape Cod curbing as illustrated in Figure 3. Precast concrete wheelchair ramp curbs meeting RI DOT Standard 7.19 shall be installed where required by the Director of Public Services.

19. Engineering and Land Survey

Wherever it is mandated by these Regulations that certain tasks associated with subdivision plans and improvements be performed by registered professional engineers and/or registered land surveyors, all such tasks shall be performed according to existing and amended standards of the State of Rhode Island and Providence Plantations Board of Registration for Professional Engineers and Board of Registration for Land Surveyors.

C. Lot Design Standards

1. Side Lot Lines

Side lot lines shall be at right angles to street lines or radial to curved street lines unless the Planning Board determines that a variation from this rule will provide a better street or lot plan.

2. Developable Land Area

All lots shall be designed so as to contain the minimum land area required by the Zoning Ordinance exclusive of Land Unsuitable for Development as defined in Article III.C.

3. Easements

Easements may be required by the Planning Board where necessary for the proper location and placement of improvements on private land as described below. The Board may, in its own discretion, require the dedication of land to the Town in lieu of easements if such dedication would provide greater control over and access to the intended use.

a. Water Courses - Where a subdivision is traversed by a water course, drainage way, channel or stream, there shall be provided a stormwater easement or drainage right-of-way conforming substantially with the lines of such water course and of such width as will be adequate for the purpose.

b. Sanitary Sewers - Easements across lots or centered on rear or side lot lines shall be provided for sanitary sewers where they are required. The Planning Board may require

permanent easements of such width as recommended by the Technical Review Committee, plus temporary construction easements if necessary. The nominal width for a sewer easement shall be thirty (30) feet.

c. Drainage Easements - Easements to install and maintain underground drainage facilities on private land shall be dedicated to the Town where required. The nominal width for such a drainage easement shall be twenty (20) feet. Where above-ground drainage flows are directed over private property which does not contain natural watercourses or wetlands, or where publicly owned and maintained drainage systems outfall on private land, a drainage easement shall be dedicated to the Town over the area and at a location adequate for the intended purpose. Easements into and upon aboveground drainage facilities such as stormwater detention or retention basins shall be granted to the Town wherever stormwater from Town-owned streets or other improvements is intended to be directed to such basins.

d. Grading Easements - The Planning Board may require the dedication of an easement to the Town in order to grade or to maintain grading on private property where such grading is necessary to establish or maintain adequate drainage, sight distances, or topographic features required as a condition of subdivision approval.

e. Sight Distance Easements - Where deemed necessary by the Planning Board to establish or maintain adequate sight distances for vehicular traffic, the dedication of an easement to the Town may be required which would prohibit the erection or maintenance of any visual obstruction such as a structure, tree, shrub, wall, earthen embankment, hill or any other obstruction.

f. Bicycle or Pedestrian Access Easements - Bicycle and pedestrian access shall be provided where required on a separate strip of land dedicated to the Town or on an easement having a minimum width of 15 feet.

g. Other Easements - All other required easements shall be of sufficient width and area for the intended purpose. All utility easements shall be a minimum width of 20 feet and contain at least one concrete bound.

4. Lot Configurations

The Planning Board shall have the right to prohibit or require modification to lots which are shaped or configured in such a manner as to conflict with the use of the land for the intended purpose. In particular, long, narrow strips of land shall be avoided in creating residential lots. Unusual shapes, angles, and dimensions shall be avoided in lot layout and design. The Board may, in reviewing a proposed subdivision, require modification to the proposed lot layout as it deems necessary to achieve the purposes of these Regulations.

D. Drainage

The drainage system may be comprised of natural and man-made elements. These include grass swales, retention and detention basins, curbs, catchbasins, culverts, and stormwater pipes. The subdivider is encouraged to incorporate natural elements into the drainage design whenever possible. These elements (i.e.

grass swales, wet basins) not only collect and transport stormwater, but also mitigate pollution, reduce sedimentation, provide visual amenities and provide potential wildlife habitat.

Where a drainage plan and drainage calculations are required by the appropriate Plat Checklist in Article XV, the plan and calculations shall be prepared by a Registered Professional Engineer. The stormwater drainage calculations, runoff rates and system design shall be based on the application of the appropriate method as follows:

The Rational Method - This method is the preferred method for small systems of 3 acres or less, where no wetlands, ponds, or other storage depressions are present, and where drainage is toward the point of analysis.

TR-55 - This is the preferred method for calculating runoff volumes, peak discharge rate, and flood storage requirements for site development between one acre and two thousand acres.

TR-20 - This is for large complex watersheds and systems beyond the scope of TR-55.

The drainage plan and drainage calculations shall contain the following information:

1. An estimate of the quantity of storm water surface run-off presently flowing from the land proposed to be subdivided, and that which would be generated by the proposed subdivision, calculated on the basis of a 25-year frequency rainfall.
2. An estimate of the quantity of storm water surface run-off entering the subdivision naturally from upstream areas within the watershed under present conditions, calculated on the basis of a 25-year frequency rainfall.
3. An analysis of the capability of existing watercourses, storm sewers, culverts and other drainage facilities within the land proposed to be subdivided to handle the run-off as calculated under 1 and 2 above, and proposals to handle such surface run-off. Design criteria for drainage improvements shall conform to the State Specifications cited above as modified by the Town of South Kingstown. Culvert and storm sewers shall be designed for a 25-year frequency rainfall, with a minimum pipe size of 15 inches, and a minimum pipe gradient of 1 percent.
4. Proposals for disposal of surface run-off, downstream from the subdivision without damage to land and improvements and to the receiving water body.
5. The drainage plan shall further indicate how the following specific requirements will be met:
 - a) That each lot will be adequately drained;
 - b) That natural drainage patterns will be maintained whenever possible;
 - c) That all existing watercourses will be left open, unless approval to enclose is granted by the Planning Board;

d) That all new open watercourses will be seeded, sodded or paved, depending on grades and soil types;

e) That a continuous drainage system will be installed and connected to a natural or manmade water course or to an existing piped storm drainage system. The ultimate destination of such continuous drainage shall be a permanent natural body of water or wetland. Where the Planning Board determines that such ultimate destination is impractical, the Board shall require the construction of a retention area capable of accommodating proposed storm-water volumes based on a 100-year frequency rainfall;

f) Where any part of the drainage system is proposed for location outside the public street right-of-way, provisions for future maintenance approved by the Planning Board will be provided;

g) That all necessary easements to off-street watercourses will be obtained by the subdivider; and,

h) Where volume velocity of the surface run-off is high, the flow thereof shall be controlled by rip-rap, sediment basins, flow spreaders, or other applicable devices and/or techniques recommended in the Rhode Island Soil Erosion and Sediment Control Handbook.

6. The proposed drainage system shall be designed to accommodate stormwater such that post construction conditions do not result in peak run-off increases in rate or volume from pre-construction conditions.

7. The plan should include an assessment of structural integrity to withstand discharge from a 2 to 200 year storm.

8. If stormwater detention or retention basins are proposed, the drainage plan shall include evidence that the size and/or number of said basin(s) has been limited so as to avoid creation of a single large, deep basin. Alternate designs and/or other stormwater management techniques shall be investigated in the drainage plan to determine if such large basins can be avoided by creation of grassy swales and a series of smaller basins in lieu of a single large basin. In no case shall the depth of a basin exceed 6 feet, with side slopes not to exceed 20 percent (5:1). The Planning Board shall require such basins to be designed and landscaped so as to achieve a natural appearance which is aesthetically pleasing and compatible with the natural environment.

9. Where construction of stormwater detention or retention areas is required, the drainage plan shall indicate the amounts of cut and fill being proposed to the existing topography. The Board shall require the subdivider to demonstrate that the minimum practicable disturbance to the natural or existing grade of the site is being proposed. The Board shall require that the minimum amount of soil, topsoil, sand, gravel or other earth material will be removed from the subdivision parcel while still achieving the objectives of the drainage design.

E. Utilities

1. Sanitary Sewers - Sanitary sewers shall be required in all subdivisions and land development projects where such sewer service is required in accordance with the procedures and standards set forth in Chapter 19 of the South Kingstown Code of Ordinances entitled Utilities.
2. Water Lines - When a public water system is available, water lines shall be installed and water stops shall be provided for each lot in accordance with the Rules and Regulations of the appropriate water utility company. Water lines shall be generally located on the southerly or westerly side of the street wherever possible or as required by the Planning Board.
3. Gas Lines - Natural gas lines may be installed in any subdivision or land development project at the discretion of the subdivider. If proposed, gas lines shall be located on the northerly or easterly side of the street wherever possible or as required by the Planning Board.
4. Communication Lines (Electric, Telephone, and Cable TV) - All electric, communication (telephone, fire alarm and cable TV) and street lighting lines shall be installed underground. In cases where underground installation is not feasible due to physical conditions of the site or other limitation, an alternative location for these utility lines shall be approved by the Planning Board, if prior approval thereof has been obtained by the utility company involved.

Communication lines are not required to be placed underground for (1) residential compounds; or (2) for minor subdivisions where no street creation is required. For minor subdivisions where a private street is required and the Town will not be requested to accept the street for ownership and maintenance, the Board may require communication lines to be placed underground. In making this determination, the Board shall consider the extent of existing vegetation and tree cover, the existing topography and natural features, the character of the surrounding area, and the degree to which placement of communication lines underground will promote high quality and appropriate design of the subdivision.

5. Fire Alarm - Provision for connection to the fire alarm system of the Town of South Kingstown shall be required for all land development projects and subdivisions having streets proposed for dedication to the Town for ownership and maintenance. Fire alarm systems in subdivisions proposing privately owned streets may be installed at the discretion of the subdivider. Standards for fire alarm systems shall meet the minimum requirements of the International Municipal Signal Association. Fire alarm boxes shall be located within the street right-of-way at a maximum separation of 1,000 feet between boxes or as directed by the Communications Department of the Town.
6. Fire Hydrants - Fire hydrants shall be installed in all subdivisions where public water supply systems are installed. Hydrant type, location, and spacing shall meet the minimum requirements of the National Fire Protection Assn. or as directed by the appropriate Fire District.

F. Erosion and Sediment Control

All major land developments and major subdivisions shall submit a soil erosion and sediment control

plan as required herein. Minor land developments, minor subdivisions and administrative subdivisions shall not be required to submit such plans if the land disturbing activity involved in construction of subdivision improvements meets all of the following criteria:

- a. Construction activity will not take place within 100 feet of any wetland or coastal feature;
- b. Slopes at the site of land disturbance do not exceed ten percent (10%);
- c. The total area of such activity does not exceed ten thousand (10,000) square feet;
- d. Proposed grading does not exceed two (2) feet of cut or fill at any point;
- e. The grading does not involve a quantity of fill greater than sixty (60) cubic yards; except where fill is excavated from another portion of the subdivision parcel and the quantity of fill does not exceed one hundred eighty-five (185) cubic yards.
- f. Has all disturbed surface areas promptly and effectively protected to prevent soil erosion and sedimentation.

1. Plan preparation

The erosion and sediment control plan shall be prepared by a registered engineer, a registered landscape architect, a soil and water conservation society certified erosion and sediment control specialist, or a Certified Professional Soil Scientist.

2. Plan contents

The erosion and sediment control plan shall include sufficient information about the proposed activities and land parcel(s) to form a clear basis for discussion and review and to assure compliance with all applicable requirements of these Regulations. The plan shall be consistent with the data collection, data analysis, and plan preparation guidelines in the current "Rhode Island Soil Erosion and Sediment Control Handbook," prepared by the U.S. Department of Agriculture, Soil Conservation Service, R.I. Department of Environmental Management, R.I. Conservation Committee, and at a minimum, shall contain:

- a. A narrative describing the proposed land disturbing activity and the soil erosion and sediment control measures and stormwater management measures to be installed to control erosion that could result from the proposed activity. Supporting documentation, such as a drainage area, existing site conditions, and soil maps shall be provided as required by the Planning Board.
- b. Construction drawings illustrating in detail all land disturbing activity including existing and proposed contours, cuts and fills, drainage features, and vegetation; limits of clearing and grading, the location of soil erosion and sediment control and stormwater management measures, detail drawings of control measures; stock piles and borrow areas; sequence and staging of land disturbing activities; and other information needed for construction.

c. Other information or construction plans and details as deemed necessary by the Planning Board for thorough review of the plan prior to action being taken as prescribed in these Regulations.

3. Performance Principles

The contents of the erosion and sediment control plan shall clearly demonstrate how the principles, outlined below, have been met in the design and are to be accomplished by the proposed development project.

a. The site selected shall show due regard for natural drainage characteristics and topography.

b. To the extent possible, steep slopes shall be avoided.

c. The grade of slopes created shall be minimized.

d. Post development runoff rates should not exceed pre development rates, consistent with other stormwater requirements which may be in effect. Any increase in storm runoff shall be retained and recharged as close as feasible to its place of origin by means of detention ponds or basins, seepage areas, subsurface drains, porous paving, or similar techniques.

e. Original boundaries, alignment, and slope of watercourses within the project locus shall be preserved to the greatest extent feasible.

f. In general, drainage shall be directed away from structures intended for human occupancy, municipal or utility use, or similar structures.

g. All drainage provisions shall be of such a design and capacity so as to adequately handle storm water runoff, including runoff from tributary upstream areas which may be outside the locus of the project.

h. Drainage facilities shall be installed as early as feasible prior to any additional site clearance or disturbance.

i. Fill located adjacent to watercourses shall be suitably protected from erosion by means of rip-rap, gabions, retaining walls, vegetative stabilization, or similar measures.

j. Temporary vegetation and/or mulch shall be used to protect bare areas and stockpiles from erosion during construction; the smallest areas feasible shall be exposed at any one time; disturbed areas shall be protected during the nongrowing months, November through March.

k. Permanent vegetation shall be placed immediately following fine grading.

l. Trees and other existing vegetation shall be retained whenever feasible; the area within the dripline shall be fenced or roped off to protect trees from construction equipment.

m. All areas damaged during construction shall be resodded, reseeded, or otherwise restored. Monitoring and maintenance schedules, where required, shall be predetermined.

4. Maintenance of Measures

Maintenance of all erosion-sediment control devices under this ordinance shall be the responsibility of the subdivider. The erosion-sediment control devices shall be maintained in good condition and working order on a continuing basis. Watercourses originating and located completely on private property shall be the responsibility of the subdivider to their point of open discharge at the property line or at a communal water-course within the property. If proper maintenance procedures are not followed, the Planning Board may authorize the Administrative Officer to take the steps necessary to ensure proper maintenance by using improvement guarantee funds as provided in Article VII.

5. Periodic Inspections

The Director of Public Services may require inspections at such intervals as he/she may deem necessary to assure proper compliance with the approved Erosion and Sediment Control Plan. Copies of all inspection reports shall be made available to the subdivider upon request.

G. Site Design

1. Purpose - The purpose of good subdivision and site design is to create a functional and attractive development, to minimize adverse impacts, and to ensure that a project will be an asset to the community. To promote this purpose, land development projects and subdivisions shall conform to the following standards which are designed to result in a well-planned community without adding unnecessarily to development costs.

2. Site Analysis - An analysis of the subdivision site and nearby areas shall be required by the Planning Board for all major subdivisions. The scope and content of the site analysis shall be discussed during the pre-application meeting and shall be presented by the subdivider during the Conceptual Master Plan stage of review. Such an analysis may be required by the Planning Board for minor subdivisions if the Board finds that the proposed development may have a negative impact on the existing natural and built environment or would be inappropriate for the character of the surrounding neighborhood.

Such a site analysis shall include written and/or graphic analysis of the following characteristics of the development site: site context; geology and soil; agricultural lands; wetlands; coastal features; topography; climate; ecology; existing vegetation, structures, and road networks; visual features; past and present use of the site; and a preliminary assessment describing the potential effects of the proposed project on the natural resources of the site.

3. Subdivision and Site Design

a. Design of the development shall take into consideration all existing Town and regional plans for the surrounding community.

b. Development of the site shall be based on the characteristics of the site and upon the site analysis. To the maximum extent practicable, development shall be located to preserve the natural features of the site, to avoid areas of environmental sensitivity, and to minimize negative impacts and alteration of natural features, historic and cultural resources, and areas of scenic value which contribute to the character of the town.

c. The following specific areas shall be preserved as undeveloped open space or lot area, to the extent consistent with the reasonable utilization of land, and in accordance with applicable state or Town regulations:

- 1) Unique and/or fragile areas, including freshwater wetlands and coastal features;
- 2) Significant trees or stands of trees, or other vegetative species that are rare to the area or are of particular horticultural or landscape value;
- 3) Lands in the flood plain, as defined in Article II;
- 4) Steep slopes in excess of 20 percent as measured over a 10-foot interval unless appropriate engineering measures concerning slope stability, erosion, and resident safety are taken;
- 5) Habitats of endangered wildlife, as identified on applicable federal or /state lists;
- 6) Historically significant structures and sites, as listed on federal or state lists of historic places; and,
- 7) Agricultural lands

d. The development shall be laid out to avoid adversely affecting ground water and aquifer recharge; to reduce cut and fill; to avoid unnecessary impervious cover; to prevent flooding; to provide adequate access to lots and sites; and to mitigate adverse effects of shadow, traffic, drainage, and utilities on neighboring properties.

e. The development shall be designed to minimize the amount of regrading and earth removal to the site and to preserve the existing natural terrain to the maximum practical extent.

4. Residential Development Design

a. The Planning Board may vary street locations, lot shapes and dimensions, yards, and setbacks for the purpose of encouraging and promoting flexibility, economy, and environmental soundness in layout and design, provided that the lots' areas and dimensions, yards, and setbacks within the subdivision conform to the minimum requirements of the zoning ordinance, and provided that such standards shall be appropriate to the type of development permitted.

- b. Residential lots shall front on local streets wherever possible.
- c. Every lot shall have sufficient access to it for emergency vehicles as well as for those needing access to the property in its intended use.
- d. The placement of dwelling units in residential developments shall take into consideration topography, privacy, building height, orientation, drainage, and scenic values.
- e. Lots shall be designed so that proposed buildings have adequate privacy from adjacent streets.
- f. Vegetated buffer areas shall be required where necessary to avoid adverse impacts to and/or from adjacent uses. The Planning Board may require the planting of vegetated buffers and/or the preservation of existing vegetation along perimeter property lines of the subdivision parcel in order to mitigate such adverse impacts. The Board may also require easements along property lines wherever necessary to preserve existing or proposed vegetation. If required, said easements shall be enforceable by the Town.
- g. Lot lines shall follow stone walls wherever possible.

5. Commercial and Industrial Development Design

Commercial and industrial developments shall be designed according to the same principles governing the design of residential developments; namely, buildings shall be located according to topography, with environmentally sensitive areas avoided to the maximum extent practicable; factors such as drainage, noise, odor, and surrounding land uses considered in siting buildings; sufficient access shall be provided; and adverse impacts buffered.

6. Circulation System Design

- a. The road system shall be designed to permit the safe, efficient, and orderly movement of traffic; to meet, but not exceed the needs of the present and future population served; to have a simple and logical pattern; to respect natural features and topography; and to present an attractive streetscape.
- b. In residential subdivision, the road system shall be designed to serve the needs of the neighborhood and to discourage use by through traffic.
- c. The pedestrian system shall be located as required for safety. In conventional developments, walks shall be placed parallel to the street, as shown in the typical street cross-sections in Article XIII, with exceptions permitted to preserve natural features or to provide visual interest. In Flexible Design Residential Projects and Land Development Projects, walks may be placed away from the road system with permission of the Planning Board.

7. Landscape Design

- a. Reasonable landscaping should be provided at site entrances, in public areas, and adjacent to buildings. The type and amount of landscaping required shall be allowed to vary with type of development.
- b. The plant or other landscaping material that best serves the intended function shall be selected. Landscaping materials shall be appropriate for the local environment, soil conditions, and availability of water. The use of grasses that require minimal watering and fertilization is encouraged, particularly in areas that are ecologically sensitive.

8. Existing Resources and Site Analysis Map

All subdivisions and Land Development Projects, whether or not proposed to be developed as a Flexible Design Residential Project, shall be required to prepare an Existing Resources and Site Analysis Map. Provided, however that administrative subdivisions and subdivisions that create lots which are not for the purpose of present or future development shall not be required to provide such Map. The purpose of this Map is to provide the Planning Board with a comprehensive analysis of existing conditions, both on the proposed development site and within 500 feet of the site. Conditions beyond the parcel boundaries may be described on the basis of existing published data available from governmental agencies, and from aerial photographs.

The Planning Board shall review the Map to assess its accuracy, conformance with municipal ordinances, and likely impact upon the natural and cultural resources on the property. Unless otherwise specified by the Planning Board, such plans shall generally be prepared at the scale of 1" = 100' or 1" = 200', whichever would fit best on a single standard size sheet (24" x 36"). The following information shall be included in this Map:

- a. An aerial photograph enlarged to a scale not less detailed than 1 inch = 400 feet, with the site boundaries clearly marked.
- b. Topography, the contour lines of which shall generally be at two-foot intervals, determined by photogrammetry (although 10-foot intervals are permissible beyond the parcel boundaries, interpolated from U.S.G.S. published maps). The determination of appropriate contour intervals shall be made by the Administrative Officer, who may require greater or lesser intervals on exceptionally steep or flat sites. Slopes between 15 and 25 percent and exceeding 25 percent shall be clearly indicated.

Topography for major subdivisions shall be prepared by a professional land surveyor or professional engineer from an actual field survey of the site or from stereoscopic aerial photography and shall be coordinated with official U.S.G.S. benchmarks.

c. The location and delineation of ponds, streams, ditches, drains, vernal pools and natural drainage swales, 100-year floodplains and wetlands, as defined in the Zoning Ordinance. Additional areas of wetlands on the proposed development parcel shall also be indicated, as evident from testing, visual inspection, or from the presence of wetland vegetation.

d. Vegetative cover conditions on the property according to general cover type including cultivated land, permanent grass land, meadow, pasture, old field, hedgerow, woodland and wetland. Trees with a caliper in excess of fifteen inches, if located within an area proposed for disturbance or alteration shall also be indicated. Vegetative types shall be described by plant community, relative age and condition.

e. Soil series, types and map units, as mapped by the U.S. Department of Agriculture, Soil Conservation Service in the latest published soil survey for the State, and accompanying data published for each soil relating to its suitability for construction (and, in unsewered areas, for septic suitability).

f. Ridge lines of existing hills and watershed boundaries shall be identified.

g. A viewshed analysis showing the location and extent of views both from and within the proposed development parcel as well as views into the property from adjacent public or private streets and properties.

h. Geologic formations on the proposed development parcel, including rock outcroppings, cliffs, coastal features, etc. based on available published information or more detailed data obtained by the applicant.

i. All existing man-made features including but not limited to streets, driveways, farm roads, woods roads, buildings, foundations, walls, wells, drainage fields, dumps, utilities, and storm and sanitary sewers.

j. Location of all historically significant sites or structures on the tract, including but not limited to cemeteries, stone walls, and known archaeological resources.

k. Location of trails that have been in public use (pedestrian, equestrian, bicycle, etc.).

I. Location of all easements and other encumbrances of property which are or have been filed of record with the Land Evidence Records of the Town.

H. Off-Site Improvements

1. Purpose - This section is intended to ensure that subdividers provide off-site infrastructure improvements in order to mitigate the impacts which are directly or indirectly attributable to new development. Such improvements may be required by the Planning Board if the Board finds that there is a reasonable relationship between the requested improvement and the proposed new development. Off-site improvements may include, but are not limited to improvements to the following:

- | | |
|-------------------------|---------------------|
| a. sanitary sewers | d. sidewalks |
| b. water supply systems | e. bicycle paths |
| c. roadways | f. drainage systems |

2. Definition and Principles - As a condition of final approval, the Planning Board may require a subdivider to construct reasonable and necessary improvements located off of the proposed land being subdivided. "Necessary" improvements are those clearly and substantially related to the subdivision or land development being proposed. The Planning Board shall provide in its resolution of final approval the basis for requiring such off-site improvements. In its resolution, the Board must find that a significant negative impact on existing conditions will result if the off-site improvements are not made, and are clearly documented in the public record. The mitigation required as a condition of approval must be related to the significance of the identified impact. All required off-site improvements must reflect the character defined for that neighborhood or district by the Comprehensive Community Plan.

I. Areas of Special Flood Hazard

The Planning Board shall examine each proposed subdivision to ensure that:

- a. If any part of the proposed subdivision is located within an area of special flood hazard as identified in Article II, it is consistent with the need to minimize flood damage.
- b. It provides for adequate protection against flood damage with respect to materials, design, and methods of construction.
- c. All public utilities and facilities such as sewers, gas, electrical and water systems are elevated and constructed to minimize or eliminate damage from flooding.
- d. Adequate drainage is provided so as to reduce exposure to flood hazards.

J. General Construction Procedures

The following procedures shall be followed by the subdivider and by contractors under the direction of the subdivider in the construction of any subdivision or related improvement:

1. Pre-construction meeting - A pre-construction meeting shall be held with the Director of Public Services at least seven (7) days prior to the start of any subdivision improvements. The subdivider (or his duly authorized representative) and the on-site project manager shall attend this meeting.
2. Notification - No step in the construction of required improvements shall commence until the Director of Public Services has been notified at least twenty-four (24) hours in advance of the phases of construction listed in 3, below.
3. Inspection of Improvements - Inspection and approval by the Director of Public Services shall be required for the following phases of subdivision improvements:
 - a. During and following installation of all underground drainage structures, systems and utilities prior to backfilling;
 - b. During and following the preparations of the road sub-grade and shoulders;
 - c. During and following the spreading and compaction of the sub-base course;
 - d. During and following the spreading and compaction of the base course prior to the application of the asphalt binder course;
 - e. Immediately prior to and during the application and compaction of the asphalt surface course on the roadway and, if required, sidewalks; and,
 - f. Following completion of all improvements and installation of bounds.
 - g. At periodic intervals as required to ensure compliance with the approved Erosion and Sediment Control Plan.

The Director of Public Services may require inspection at such other intervals as he may deem necessary to assure proper construction of improvements.

4. Request for Inspection - Whenever an inspection is required the developer shall request the Director of Public Services to make such inspection. The Director of Public Services or his representative shall within 48 hours exclusive of Saturday, Sunday and holidays, make such inspection and give to the developer written approval or disapproval of the improvements inspected by him. No subsequent step or phase shall commence until an inspection has been made and approval granted.
5. As-Built Drawings - Upon completion of construction of all required improvements for streets (public, private, and residential compound), and before the performance bond is released and the maintenance bond is accepted, the subdivider shall furnish two sets of transparent mylar as-built drawings of required improvements to the Administrative Officer. The drawings shall accurately show all features listed below as designed on approved subdivision plans and as actually built and constructed in the field so that all features can be located by public and private agencies:

- a. Department of Public Services

- (1) Accurate horizontal and vertical locations of:
 - (a) All roads, walks, and utilities within the street right-of way
 - (b) All catch basins, retention and/or detention basins, manholes, and pipeline shutoff valves
 - (c) All overhead utility poles, or underground power, telephone, cable TV, and fire alarm cables and boxes
 - (d) All street lines (3 level profile) and spot driveway elevations at street right-of-way lines and at street center lines opposite driveways

- (2) Accurate monumentation
 - (a) All horizontal changes in direction on both sides of subdivision streets
 - (b) P.K.'s installed in finished centerline of road at all changes in direction
 - (c) Concrete monuments (must be installed 4 inches above finished centerline of road; purchased from the Town of South Kingstown)

- (3) Plans
 - (a) Plans must be drawn to scale as required for final subdivision plans, including title, revision date, and reference notes
 - (b) Plans must contain Professional Land Surveyor's certification that all horizontal and vertical locations are accurate
 - (c) Plans must contain Professional Engineer's certification that all systems including roads and utilities will function as designed and constructed

b. Town of South Kingstown Utilities Department

Where utilities are proposed for ownership and maintenance by the Town, or where privately-owned collection/distribution systems are proposed for connection to the Town system, the location of water and/or wastewater facilities shall be shown on the plans in a manner conforming to the latest Municipal Water/Wastewater As-Built Drawing Checklist provided by the South Kingstown Utilities Department.

6. Inspection Fees - Inspection fees shall be paid in the amount established in Article XI, and shall be paid in full before construction begins of any improvements requiring inspection.

K. Incentives for Waiver or Modification

The Planning Board may grant waivers or modifications from the Design and Public Improvement Standards set forth in this Article in cases where the subdivider voluntarily agrees to substantially reduce the maximum residential density of the proposed subdivision as permitted by zoning. Such incentives shall be limited to major subdivisions or land development projects.