Pineville Land Development Standards Manual
(PLDSM)

July 1, 2013

Pineville Land Development Standards Manual

Town of Pineville Land Development

Table of Contents

Specifications & Special Provisions:

Page No.	Title
	I. STREETS
1	A. General Notes
4	B. Standards of Street Design
7	C. Grading
7	D. Roadway Base
8	E. Roadway Intermediate and Surface Course
9	F. Sidewalks and Driveways
	II. STORM DRAINAGE
10	A. General Notes
11	B. High Density Polyethylene Pipe
11	C. Reinforced Concrete Pipe
12	D. Installation of Reinforced Concrete and CMP
13	E. Standards for Design
	III. PLAN REQUIREMENTS
14	A. General Requirements
14	B. Subdivision Preliminary Plan
15	C. Bond Policy Subdivision Improvements
	IV. APPROVED PLANT SPECIES
17	A. Trees
23	B. Shrubs
24	V. REFERENCES

Standard Details:

1000 Series - Miscellaneous Infrastructure Standards

Standard	Description
10.01	Major Commercial Street
10.02	Minor Commercial
10.03	Industrial Street
10.04	Industrial Street (Ditch type)
10.05	Commercial Street (Special use conditions)
10.06	Local Residential
10.07	Residential Collector Street
10.08	Residential Collector Street (On street parking)
10.13	Commercial Cul-De-Sac
10.14	Residential Cul-De-Sac
10.11A	Residential Alley Detail (one way operation)
10.11B	Residential Alley Detail (double loaded - two way operation)
10.11C	Residential Alley Detail (single loaded - two way operation)
10.17A	Standard Curb and Gutter
10.17B	Curb and Gutter
10.18	18" Vertical Curb
10.19	Curb Transition 2'-6" To 2'-0" Valley
10.20	Curb Transition 2'-6" To 1'-6" Standard
10.22	Concrete Sidewalks
10.23	Monolithic Concrete Curb and Sidewalk
10.24A	Commercial Type II and Residential Drop Curb Type I Driveway with Sidewalk Abutting Curb (2'-6" Curb and Gutter)
10.24B	Commercial Type II and Residential Drop Curb Type I Driveway with Sidewalk Abutting Curb (6"X18" Vertical Curb)
10.24C	Commercial and Residential Drop Curb Driveway with Sidewalk Abutting Curb
10.25A	Residential Drop Curb Type I Driveway with Planting Strip (2'-6" Curb and Gutter)
10.25B	Commercial Drop Curb Type II Driveway with Planting Strip (2'-6" Curb and Gutter)
10.25C	Residential Drop Curb Type I Driveway with Planting Strip (6"X18" Vertical Curb)
10.25D	Commercial Drops Curb Type II Driveway with Planting Strip (6"X18" Vertical Curb)
10.25E	Modified Type II Driveway Detail with Planting Strip
10.25F	Commercial Type IV Driveway Standard
10.26	Drop Curb Driveway – Monolithic Curb and Sidewalk
10.27A	Residential Driveway (Type I) Valley Gutter
10.27B	Commercial Type II Driveway For 2'-0" Valley Gutter
10.28	Type III Driveway Entrance
10.29	Catch Basin Frame in Valley Gutter
10.30	Catch Basin Placement in Valley Gutter
10.31A	Accessible Ramp Standard with Planting Strip 2'-6" Curb and Gutter
10.31B	Accessible Ramp Section with Planting Strip 2'-6" Curb and Gutter
10.32A	Accessible Ramp Standard without Planting Strip 2'-6" Curb and Gutter
10.32B	Accessible Ramp Sections without Planting Strip 2'-6" Curb and Gutter
10.33A	Accessible Ramp Standard 2'-0" Valley Gutter
10.33B	Accessible Ramp Sections 2'-0" Valley Gutter
10.34A	Accessible Ramp Standard Monolithic Curb and Sidewalk
10.34B	Accessible Ramp Sections Monolithic Curb and Sidewalk
10.35A	Standard Placement of Accessible Ramps and General Notes
10.35B	Truncated Domes Plan and Cross Section
10.36A	Culvert Crossings on Residential and Commercial Streets
10.36B	Culvert Crossings on Residential and Commercial Streets
10.37	Typical Local Residential To Local Limited Street Taper

10.40A	Directional Accessible Ramp with Small/Medium Curb Radii
10.40B	Directional Accessible Ramp with Large Curb Radius

2000 Series - Storm Drain Standards

Standard	Description
20.00A,B,C	NCDOT Standards Approved For Use in the Town of Pineville
20.03	Double Brick Catch Basin 15"-36" Pipe
20.05A	Slab Type Catch Basin 15" Thru 48" Pipe
20.05B	Manhole Ring and Cover for Slab Type Catch Basin
20.17A	Concrete Wingwall Splash Pad
20.22	Flared End Section 12" To 72"
20.23	Rip Rap Aprons at Outfalls
20.24	Rip Rap Plunge Pool
20.25	Trench Detail for Storm Drain
20.26	Concrete Paved Ditches
20.27	Rip Rap Ditches
20.28	Subdrain Detail
20.29	Overlapping Sewer and Storm Easements
20.30	Minimum Storm Easements Pipe and Channel
20.34	Offset Catch Basin
20.35	Grading At Drop Inlet

2100 Series – Stormwater BMP Details

Standard	Description
21.01	Bioretention Plan
21.02	Bioretention Cross-Section
21.03	Bioretention Planting Zones
21.04	Flow Splitter Structure
21.05	Wetpond Plan
21.06	Wetpond Profile
21.07	Wetpond Cross-Sections
21.08	Wetpond Littoral Shelf and Berm Detail
21.09	Wetpond Planting Plan
21.10	Wetland Plan
21.11	Wetland Section
21.12	Wetland Cross-Sections
21.13	Wetland Details
21.14	Wetland Planting Plan
21.15	Enhanced Grass Swale Planting Plan
21.16	Enhanced Grass Swale Details
21.17	Grass Channel
21.18	Grass Channel Planting Plan
21.19	Infiltration Trench
21.20	Monitoring Well Detail
21.21	Buffer Strip
21.22	Buffer Strip Planting Plan
21.23	Underground Sand Filter
21.24	Surface Sand Filter
21.25	Surface Sand Filter Section

3000 Series - Erosion Control Standards

Standard	Description
30.00	Special Erosion Control Requirements & Notes
30.01	Temporary Sediment Trap
30.02A	Skimmer Sediment Basin
30.02B	Skimmer
30.03A	Sediment Basin
30.03B	General Notes – Sediment Basins
30.04	Flexible Pipe Slope Drain
30.05	Temporary Silt Ditch
30.06A	Temporary Silt Fence
30.06B	High Hazard Temporary Silt Fence
30.07	Block and Gravel Stone Inlet Protection
30.08	Stone Inlet Protection
30.09	Hardware Cloth and Gravel Inlet Protection
30.10	Temporary Rock Check Dam
30.11A	Stabilized Construction Entrance
30.11B	Construction Entrance Tire Wash
30.12	Gravel and Rip Rap Filter Berm Basin
30.13	Erosion Control Dewatering
30.14	Temporary Stream Crossing
30.15	Catch Basin Inlet Protection
30.16	Slope Stability
30.17	Temporary Seeding Schedule
30.18	Construction within Creek Bank
30.19	Baffle Installation
30.20	Embankment Matting Detail
30.21	Brick Storm Structure with Temporary Pipe

4000 Series - Tree Standards

Standard	Description
40.01	Tree Planting Detail
40.02	Tree Protection Detail Large and Small Maturing Tree Pit with Grate in Sidewalk (Plan)
40.03A	Large and Small Maturing Tree Pit with Grate in Sidewalk (Section)
40.03B	Large and Small Maturing Tree Pit with Grate in Sidewalk (Section)
40.03C	Large and Small Maturing Tree Pit with Grate in Sidewalk (Section)
40.04	Typical Valve and Valve Box Installation
40.05A	Shrub Planting Bed
40.05B	Individual Small Shrub / Tree Planting
40.08A	Median Greater than 120 Inches Excavation, Drainage and Backfill
40.08B	73 to 120 Inch Median Excavation, Drainage and Backfill
40.08C	48 to 72 Inch Median Excavation, Drainage and Backfill
40.09	Root Flare Depths
40.10	Tree Planting Notes
40.11	Bridging Tree Roots
40.12	Temporary Tree Protection Detail
40.13	Asphalt Curb Placement at Existing Trees
40.14	Rock Chimney

5000 Series - Miscellaneous Standards

Standard	Description
50.03	Concrete Control Monument
50.04A	Typical Handrail
50.04B	Handrail Warrants
50.05A	Street Name Sign
50.05B	Street Name Sign
50.06	Street Name Sign Installation Locations
50.07A	Dead End Street Barricade
50.07B	Dead End Street Barricade General Notes
50.08A	End of Roadway Marker
50.08B	End of Roadway Marker Guard Rail Clamp
50.08C	Installation Street Connectivity Sign for End-of-Road
50.09A	Barricade Parking Standards
50.09B	Parking Standards (Continued)
50.09C	Parallel Parking Standards
50.10A	Accessible Parking and Signage Standards
50.10B	Supplemental Van Accessible Sign (R7-8P)
50.10C	Supplemental Accessible Sign
50.11	Signage and Pavement Markings at Roundabouts
50.13	Directional Crossover with Raised Medians
50.14	Piano Style Crosswalk
50.20	Inverted U Rack Bicycle Parking
50.21	Wave Rack for Bicycle Parking
50.50A	Road Hump
50.50B	Speed Bump
50.50C	Speed Bump Alternate

PINEVILLE LAND DEVELOPMENT STANDARDS
SPECIFICATIONS AND SPECIAL PROVISION NOTES

The following specifications and special provisions are intended to be used in conjunction with Pineville Land Development Standard Drawings, NCDOT Roadway Standard Drawings, and NCDOT Standard Specifications for Roads and Structures for all development within the Town of Pineville unless otherwise directed by the Town Engineer.

I. STREETS

A. GENERAL NOTES

1. All work and materials shall conform to the latest edition of the North Carolina Department of Transportation Standard Specifications for Roads and Structures *unless otherwise specified in this manual.*

2. All asphalt cuts shall be made with a saw when preparing street surfaces for patching or widening strips.

3. Paper joints shall be used to seal the ends of an asphalt pour so that future extensions can be made without causing rough joints.

4. When placing asphalt against existing surfaces, a straight edge shall be used to prevent "humping" at that location.

5. Stone shall be primed if paving is not complete within seven days following stone base approval.

6. Surfaces shall be tacked when asphalt is being placed over existing asphalt streets or adjoining concrete, storm drain and sanitary sewer structures.

7. In rolling and hilly terrains, sweeping of the stone base and/or application of a tack coat may be required near intersections. These requirements will be established by the Town Inspector based on field conditions.

8. ALL concrete used for streets, curb and gutter, sidewalks and drainage structures, etc. shall have a minimum compressive strength of 3600 PSI at 28 days. This requirement shall be provided regardless of any lesser compressive strength specified in the North Carolina Department of Transportation Standard Specifications for Roads and Structures. The contractor shall prepare concrete test cylinders in accordance with Section 1000 of the North Carolina Department of Transportation Standard Specifications for Roads and Structures at the direction of the project inspector. All equipment and cylinder molds shall be furnished by the contractor. It shall be the responsibility of the contractor to protect the cylinders until such time as they are transported for testing. Testing for projects shall be performed by an independent testing lab, at no cost to the Town. The contractor shall provide equipment and perform tests on concrete for a maximum slump and air content as defined in Section 1000 of the North Carolina Department of Transportation Standard Specifications for Roads and Structures. These tests shall be performed at a frequency established by the inspector. Materials failing to meet specifications shall be removed by the contractor.

9. All concrete shall be cured with 100% Resin Base, white pigmented curing compound which meets ASTM Specifications C-309, Type 1, applied at a uniform rate at one (1) gallon to 400 square feet within 24 hours of placement of the concrete.

10. All curb and gutter shall be backfilled with soil approved by the Inspector within 48 hours after construction to prevent erosion.

11. All backfill shall be non-plastic in nature, free from roots, vegetative matter, waste, construction material or other objectionable material. Said material shall be capable of being compacted by mechanical means and the material shall have no tendency to flow or behave in a plastic manner under the tamping blows or proof rolling.

12. Materials deemed by the Inspector as unsuitable for backfill purposes shall be removed and replaced with select backfill material.

13. All trenches in the street right-of-way shall be backfilled with suitable material immediately after the pipe is laid. The fill around all pipe shall be placed in layers not to exceed six (6) inches and each layer shall be compacted thoroughly.

14. Under no circumstances shall water be permitted to rise in un-backfilled trenches after the pipe has been placed.

15. Compaction requirements shall be attained by the use of mechanical compaction methods. Each six (6) inch layer of backfill shall be placed loose and thoroughly compacted into place.

16. Straight forms shall not be used for forming curb and gutter in curves.

17. All excess concrete on the front edge (lip) of gutter shall be removed when curb and gutter is poured with a machine.

18. All subgrade shall be compacted to 100% of the maximum density obtainable with the Standard Proctor Test to a depth of eight (8) inches, and a density of 95% Standard Proctor for depths greater than eight (8) inches. All tests shall be performed by developer at no cost to the Town.

19. A canvas cover or other suitable cover shall be required for transporting plant mix asphalt during cool weather when the following conditions are present:

    a. Air temperature is below 60 degrees F.
    b. Length of haul from plant to job is greater than five (5) miles.
    c. Other occasions at the Inspector's discretion when a combination of factors indicates that material should be covered in order to assure proper placement temperature.

20. Concrete or asphalt shall not be placed until the air temperature measured at the location of the paving operation is at 35 degrees F and rising by 10:00 a.m. Concrete or paving operations should be suspended when the air temperature is 40 degrees F and descending. The contractor shall protect freshly placed concrete or asphalt in accordance with Sections 420 (Concrete Structures), 600 (Asphalt Bases And Pavements), and 700 (Concrete Pavements And Shoulders) of the North Carolina Department of Transportation Standard Specifications when the air temperature is at or below 35 degrees F and the concrete has not obtained an age of 72 hours.

21. The contractor shall maintain two-way traffic at all times when working within existing streets. The contractor shall place and maintain signs, danger lights, and barricades and furnish watchmen or flagmen to direct traffic in accordance with the latest edition Work Area Traffic Control Handbook (WATCH), Work in the right-of-way of State System Streets may require additional traffic control provisions.

22. The contractor shall do that which is necessary to control erosion and to prevent sedimentation damage to all adjacent properties and streams in accordance with the appropriate Town of Pineville Erosion and Sedimentation Control Ordinance.

B. STANDARDS OF STREET DESIGN

Note: Use of Hilly Terrain criteria is NOT permitted without PRIOR approval of the Town Engineer.

Note: Design standards will apply from the latest edition of the NCDOT design manual *Subdivision Roads*. Any revisions to *Subdivision Roads* will supersede the design standards given in the Pineville Land Development Standards for NCDOT maintained roads and under no circumstances shall an NCDOT standard be less restrictive than what is required by the Town of Pineville.

1. STREETS (PUBLIC and PRIVATE):

	ALL LOCAL STREETS (Except Industrial & Collector)		LOCAL INDUSTRIAL AND COLLECTOR ONLY	
	Level/Rolling	Hilly	Level/Rolling	Hilly
a. Terrain Classification	0-15%	15% +	0-15%	15%+
b. Maximum Grade	10%	12%	8%	10%
c. Design Speed (mph)	25	20	30	25

d. Minimum Radius (ft.)				
Public Street	150	90	250	175
Private Street	50	50	150	150
e. Min. Tangent between Reverse Curves (ft.) Horiz. And Vert.	50	50	100	100
f. K Values (crest/sag)	20/20	15/20	28/35	20/20

Note: Provisions of adequate stopping sight distance may require use of larger K values than the minimums listed above. The Pineville Department of Transportation, under Section 19-245 of Town Code, reserves the right to prescribe more stringent sight distance standards and/or means to achieve adequate sight distance than these listed above.

2. INTERSECTIONS:

a. PUBLIC STREET: Vertical Alignment is 5% maximum within 100 feet of intersection.
PRIVATE STREET: Vertical Alignment is 5% maximum within 40 feet of intersection.

b. Minimum Angle of Intersection is 75 degrees.

c. Minimum Curb & R/W Radius

Table 4 - Curb Radii for Local Street Intersections

From\To	R/Narrow	R/Medium	R/Wide	C/Narrow	C/Wide	Industrial
R/Narrow	35					
R/Medium	20	15				
R/Wide	15	15	10			
C/Narrow	20	15	25	35		
C/Wide	15	15	15	30	10	
Industrial	30	25	15	40	25	50

R = Residential
C = Commercial

d. Minimum Intersection Separation.

Along local streets	125 feet
Along collector streets	200 feet
Along thoroughfares	To be determined by Town

Intersection offsets/separation from a thoroughfare, at signalized intersections, or at intersections that may become signalized in the future may need to be greater that these minimums and will be determined by THE TOWN on a case by case basis.

3. Design criteria for arterial streets shall be established jointly by the Town Engineer and the Director of the Department of Transportation on a case by case basis using the latest edition of the American Association of State Highway and Transportation Officials (AASHTO) A Policy on Geometric Design of Highway and Streets and/or NCDOT Roadway Design Manual.

4. Intersection corner – A minimum 35' x 35' sight triangle (measured along right-of-way lines) shall be provided at each intersection corner. An additional 10' x 70' sight triangle shall be provided at intersections connecting to NCDOT maintained roadways. Other sight distance requirements may be required by the NCDOT or the Town.

5. Refer to the NCDOT Subdivision Roads Minimum Construction Manual for development criteria for sites located within the Town of Pineville Extraterritorial Jurisdiction (ETJ) within these areas governed by Pineville Land Development Standards Manual and the NCDOT Subdivision Roads Minimum Construction Standards Manual. The more restrictive standard shall apply.

C. GRADING

1. Proposed street rights-of-way shall be graded to their full width for ditch type streets and a minimum of eight (8) feet behind the curb for curb and gutter sections.

2. Fill embankments shall be formed of suitable material placed in successive layers not to exceed more than six (6) inches in depth for the full width of the cross-section, including the width of the slope area. No stumps, trees, brush, rubbish or other unsuitable materials or substances shall be placed in the embankment. Each successive six (6) inch layer shall be thoroughly compacted by the sheepsfoot tamping roller, 10-ton power roller, pneumatic-tired roller, or other methods approved by the Town Engineer. Embankments over and around all pipe culverts shall be of select material, placed and thoroughly tamped and compacted as directed by the Town Engineer or his representative.

D. ROADWAY BASE

1. All roadways shall be constructed with a base course as described on the appropriate Pineville Land Development Standard Detail Drawing.

2. The material for stone base course shall conform to the requirements of Section 1010, Aggregate for Non-Asphalt Flexible Type Base, and Section 520, Aggregate Base course of the North Carolina Department of Transportation Standard Specifications for Roads and Structures.

3. The stone base shall be compacted to 100% of the maximum density obtainable with the Modified Proctor Test (AASHTO- T180) by rolling with ring or tamping roller or with a pneumatic tired roller with a minimum weight of ten tons. When completed, the base course shall be smooth, hard, dense, unyielding and well bonded.

4. A bituminous concrete base course, as specified on the Standard Detail Drawing may be substituted in lieu of a stone base course.

5. Asphalt base course will only be allowed within widening strips less than five (5) feet in width.

E. ROADWAY INTERMEDIATE AND SURFACE COURSE

1. All public roadways shall be constructed with an intermediate and surface course as described on the appropriate Town of Pineville Land Development Standard Detail Drawing.

2. Plant mixed asphalt shall conform in all respects to Section 610 of the North Carolina Department of Transportation Standard Specifications for Roads and Structures.

3. The final (1) one inch lift of asphalt surface course for Residential Subdivision Streets shall be withheld until a minimum of (75%) Seventy-Five Percent of the Development is occupied (occupied means a certificate of occupancy has been issued) or at least (1) one year has lapsed from the application of the intermediate course layer (All documentation to be provided by the developer and approved by the Town Inspector). All known base failures shall be repaired prior to application of the final one inch lift of asphalt surface course.

4. The Town inspector shall be given a (24) twenty-four hour notification to inspect the intermediate course deficiencies. All deficiency repairs are to be monitored by a Town Inspector and accepted prior to application of final layer.

5. Town inspectors shall be notified prior to using recycled plant mixes.

6. Failure to meet the above requirements may result in the delay or prevention of street acceptance by the Town of Pineville or NCDOT.

F. SIDEWALKS AND DRIVEWAYS

1. Sidewalks shall be constructed of not less than 3600 P.S.I. concrete and shall be four (4) inches thick, constructed on an adequately graded base, except where a sidewalk crosses a driveway it shall be six (6) inches thick. Subgrade shall be compacted to 95% of the maximum density obtainable with the Standard Proctor Test. The surface of the sidewalk shall be steel trowel and light broom finished and cured with an acceptable curing compound. Tooled joints shall be provided at intervals of not less than five (5) feet and expansion joints at intervals of not more than forty-five (45) feet. The sidewalk shall have a lateral slope of one-quarter (1/4) inch per foot.

2. Planting strip adjacent to sidewalk shall be graded to ¼ inch per foot (min.) up to 1 ¼ inch per foot (max.), except where excessive natural grades make this requirement impractical. In such cases, the Town Engineer may authorize a suitable grade.

3. Sidewalk widths shall be a minimum of four (4) feet unless otherwise specified. A 5' x 5' sidewalk is required at least every 200' as required by ADA for a passing zone unless otherwise provided by residential driveways, intersecting sidewalk, etc.

4. Approval of sidewalk construction plans must be obtained as part of the plan review process. Except in unusual circumstances, sidewalk must be located a minimum of (4) four feet from the back of the curb or at the back of the right-of-way. A recorded public sidewalk easement is required for all sidewalk located outside public right-of-way; the width shall be equal to the distance from the right-of-way line to the back of the sidewalk plus two feet or to the face of building, whichever is less. The sidewalk easement must be recorded with the Union County Register of Deeds prior to issuance of a certificate of occupancy for the corresponding building(s).

5. Accessible ramps are required where sidewalks intersect curbing at any street intersection and at Type III driveway connections.

6. For Town projects only: On Commercial Type II and Residential Type I drop curb driveways with sidewalk abutting the curb (PLDS #10.24A/B/C) – the curb and gutter across the front of the driveway shall be measured and paid for under 2'-6" Curb and Gutter. The curb and gutter is to be measured per linear foot along the surface of the top of the curb. The concrete driveway apron is to be measured per square yard.

II. STORM DRAINAGE

A. GENERAL NOTES

1. All work and materials shall conform to the latest edition of the NCDOT Standard Specifications *unless otherwise specified in this manual.* ALL concrete used for drainage structures shall have a minimum compressive strength of 3600 PSI at 28 days. This requirement shall be provided regardless of any lesser compressive strength specified in the North Carolina Department of Transportation Standard Specifications for Roads and Structures.
2. Reinforced concrete pipe may be used in all storm drain applications. High Density Polyethylene Pipe (HDPE) may be substituted for pipe diameters of 48 inches or less. Culverts 60 inches in diameter or greater may be Corrugated Aluminized Metal Pipe (CAMP) or aluminum with a minimum 14 gauge metal.
3. All pipe shall be laid with the bell or groove upgrade and the joint entirely interlocking.
4. The minimum cover for all pipes is two (2) feet measured from the final surface. Special applications for less than two (2) feet of cover will be reviewed and approved by the Town Engineer individually. The maximum cover for storm drainage pipes shall at a minimum comply with the requirements of the North Carolina Department of Transportation Highway Design Branch Roadway Design Manual, Part I, Section 5, and "Drainage Design". Storm pipe design that exceeds these criteria may be approved at the discretion of the Town Engineer.
5. All pipes in storm drain structures shall be flush with the inside wall.
6. All storm drain structures over three (3) feet and six (6) inches in height must have steps in accordance with standard details set forth in this manual.
7. The interior surfaces of all storm drainage structures shall be pointed up and smoothed to an acceptable standard using mortar mixed to manufacturer's specifications.
8. All frames, grates, rings, covers, etc., must conform to the standards set forth in this manual.
9. All graded creek banks and slopes shall be at a maximum of two (2) feet horizontal to one (1) foot vertical (2:1) and not to exceed 10' without terracing or the slopes shall be designed by a Professional Geotechnical Engineer and approved by the Town Engineer on a case by case basis.

B. HIGH DENSITY POLYETHYLENE PIPE (HDPE)

1. The Product used shall be corrugated exterior/smooth interior pipe (Type S), conforming to the requirements of AASHTO Specification M294 (latest edition) for Corrugated Polyethylene Pipe.
2. Bell and spigot joints shall be required on all pipes inside the right-of-way. Bells shall cover at least two full corrugations on each section of pipe. The bell and spigot joint shall have an "O" ring rubber gasket meeting ASTM F477 with the gasket factory installed, placed on the spigot end of the pipe. Pipe joints shall meet all requirements of AASHTO M294.
3. All HDPE pipe installed must be inspected and approved by the Town's Inspector prior to any backfill being placed. The Town inspector must be present during the backfilling operation as well.
4. Backfill material used to install HDPE pipe within the street right-of-way shall be Select Material, Class II-IV, as defined by Section 1016-3 of the North Carolina Department of Transportation Standard Specifications for Roads and Structures. Upon submittal of written certification of material suitability by a licensed geotechnical engineer, NCDOT Class I Select Material may be used. All backfill material shall be approved by the Town inspector prior to placement of the material within the street right-of-way.
5. The minimum length of HDPE pipe permitted for use shall be four (4) feet. HDPE flared end sections are not allowed.
6. All HDPE pipe installed shall be third party certified and shall bear the Plastic Pipe Institute's (PPI) certificate sticker.

C. REINFORCED CONCRETE.

1. All concrete shall be at least 3600 PSI. Prior approval shall be obtained in order to use pre-cast storm drainage structures in any street right-of-way by Town Engineer.
2. Concrete pipe used within the street right-of-way shall be a minimum of Class III Reinforced Concrete Pipe, with a minimum diameter of fifteen (15) inches (eighteen (18) inches minimum on cross drain culverts within the ETJ). Installation of Class IV or higher concrete pipe shall be identified on the As-Built Plan and the Town inspector shall be given documentation and notification of this information prior to construction.
3. Concrete mortar joints shall be used for joining all concrete pipes. The pipe shall be clean and moist when mortar is applied. The lower portions of the bell or groove shall be filled with mortar sufficient to bring the inner surface flush and even when the next joint is fitted into place. The remainder of the joint shall then be filled with mortar and a bead or ring of mortar formed around the outside of the joint. The application of mortar may be delayed until fill is completed when the pipe is larger than thirty (30) inches.

4. Performed joint sealer, which conforms to AASHTO specification M-198 for Type B flexible plastic gaskets, may be used in lieu of the mortar joining method.

D. INSTALLATION OF REINFORCED CONCRETE AND CORRUGATED METAL PIPE.

1. All backfill shall be non-plastic in nature, free from roots, vegetative matter, waste, construction material or other objectionable material. Said material shall be capable of being compacted by mechanical means and shall have no tendency to flow or behave in a plastic manner under the tamping blows or proof rolling.
2. Materials deemed by the Engineer as unsuitable for backfill purposes shall be removed and replaced with select backfill material.
3. Backfilling of trenches shall be accomplished immediately after the pipe is laid. The fill around the pipe shall be placed in layers not to exceed eight (8) inches, each layer shall be thoroughly compacted to 95% of the maximum density obtainable with the Standard Proctor Test (a density of 100% Standard Proctor is required for the top eight (8) inches).
4. Compaction requirements shall be attained by the use of mechanical compaction methods. Each layer of backfill shall be placed loose and thoroughly compacted in place.
5. Under no circumstances shall water be permitted to rise in un-backfilled trenches after the pipe has been placed.

E. STANDARDS FOR DESIGN

1. All storm drainage design shall conform to the standards and specifications as provided in the Pineville Storm Water Design Manual, North Carolina Department of Transportation Standards Specifications for Roads and Structures, Pineville Land Development Standards Manual, or the more restrictive of any standards that conflict.

2. Adequate storm drainage shall be provided throughout the development by means of storm drainage pipes or properly graded channels. All pipes shall be of adequate size and capacity, as approved by the Town Engineer, to carry all storm water in its drainage area.

3. In accordance with Section 12.603 of the Town Zoning Ordinance, the Town Engineer shall review the drainage plan for compliance with the standards contained in the current edition of the Pineville Land Development Standards Manual and the Pineville Storm Water Design Manual and all other relevant and appropriate standards established by the Town.

4. Sub-surface drainage shall be provided where the ground water level is likely to be near the surface. In capillary soils, the water level should be four (4) to six (6) feet below the surface to prevent the rise of moisture into the subgrade. Subdrains

shall be used to lower ground water in low areas in the street.

5. The NCDOT Standard Drawings have been accepted as approved standards to be specified for Land Development projects in the Town of Pineville and Town of Pineville ETJ. See standard #20.00A, B, and C of this manual for a table listing the standards accepted. These standard drawings shall be referenced by NCDOT number or shown on all plans submitted to the Town of Pineville for approval.

III. PLAN REQUIREMENTS

A. GENERAL NOTES

1. All erosion control measures shall conform to the standards set forth in the Pineville Land Development Standards Manual, North Carolina Erosion and Sediment Control Planning and Design , or the more restrictive of any standards that conflict.

2. All storm drainage design shall conform to the standards and specifications as provided in the Pineville Storm Water Design Manual, Pineville Land Development Standards Manual, or the more restrictive of any standards that conflict.

3. In areas where the Floodway Regulations are applicable, the FEMA Flood Fringe Line and FEMA Encroachment Line shall be shown on the preliminary plan and the final plat. An application for a Floodlands Development Permit shall be submitted to the Town in accordance with the requirements set forth in the Towns Regulations.

4. Cite all appropriate standard detail numbers for any structures or specifics used within the plans in reference to the most current copy of the Pineville Land Development Standards Manual.

B. SUBDIVISIONS & PRELIMINARY PLANS

1. The preliminary plan must include, at a minimum, the information described in the Town of Pineville Subdivision Ordinance.

2. Storm Drainage Easements shall be provided for all storm drainage pipe and shown on site plans, construction plans and plats with widths specified below. The following note shall be placed on all grading plans and plats; "The purpose of the storm drainage easement (SDE) is to provide storm water conveyance. Buildings are not permitted in the easement area. Any other objects which impede storm water flow or system maintenance are also prohibited."

PIPES

Diameter	Width
15" – 24"	15'
30" – 36"	20'
42" – 48"	25'
54" +	30'

CHANNELS

Drainage Area (Ac)	Channel Easement Width (feet)
1 – 45	20'
45 – 120	30'
120 – 500	40'
500 +	see std. 20.30

3. Overlapping of storm drainage easements shall be approved by the Town Engineer.

C. BOND POLICY – SUBDIVISION IMPROVEMENTS

1. Release of the final subdivision plat will not occur until the improvements required for the area of the final plat are constructed and a final inspection has been performed and found to be in conformance with the plans approved by the Town of Pineville., or a security has been posted with the Town Engineer and all required documents are received in their entirety.
2. The security shall be posted and remain in force until the construction is complete and found to be in conformance with the plans approved by the Town of Pineville. The security will be reevaluated after one year from the date of posting.
3. The Applicant shall notify the Town Engineer or his assigns that construction is complete according to the appropriate subdivision ordinance and the Pineville Land Development Standards Manual before any security will be released. A final inspection will be made to check completeness of the project upon notification.
4. One type of security may be replaced by another type of security in certain situations. The amount of the replacement security will be based on the Town's Engineer Estimate of the work remaining. If the estimate of work results in a lower amount, the replacement security will be treated as a reduction. Certain situations will require an increase in a security and in such cases the replacement security shall be required to equal the higher amount.
5. A one-time reduction in security will be allowed if requested in writing by the principal party of the security. However, the security shall never be less than $15,000 for the Town of Pineville unless approved by the Town Engineer.

7 APPROVED PLANT SPECIES

The following list of trees and shrubs represent the approved plant species that may be used to comply with the Pineville Zoning Ordinance.

List subject to change

* - Not allowed for required city planting.

**- Not reccomended for required town planting.

† - Cultivars under 15' tall only.

‡- Trees <25' mature height can be planted directly under power lines.

Trees 25'- 40' mature height can be planted at least 20' from power lines.

Trees

Common Name	Scientific Name	Town Tree Ordinance Approved	CIP/ROW Approved	Town Zoning Approved (Large or Small Maturing)	Duke Transmission Zone(T) or Distribution line(D) Approved		Shade Tolerant	Tolerates Poor Drainage	Native	Blooming	Foliage (Deciduous, Semi-deciduous, or Evergreen)
LARGE MATURING (50'+ H)											
Arborvitae, 'Green Giant'	Thuja 'Green Giant'		x					x			E
Ash, Green	Fraxinus pennsylvanica			L			x		x		D
Ash, White	Fraxinus americana	x		L					x		D
Baldcypress	Taxodium distichum	x	x	L				x	x		D
Beech, American	Fagus grandiflora	x	x	L					x		D
Birch, River	Betula nigra	x	x	L			x	x	x		D
Black Gum	Nyssa sylvatica	x	x	L					x		D
Cedar, Deodar	Cedrus deodara	x	x	L							E
Cedar, Eastern Red	Juniperus virginiana		x	L					x		E
Cryptomeria, Japanese	Cryptomeria japonica	x	x					x			E

Trees

Common Name	Scientific Name	City Tree Ordinance Approved	CIP/ROW Approved	City Zoning Approved (Large or Small Maturing)	Duke Transmission Zone(T) or Distribution line(D) Approved	Shade Tolerant	Tolerates Poor Drainage	Native	Blooming	Foliage (Deciduous, Semi-deciduous, or Evergreen)
LARGE MATURING (50'+ H) cont...										
Dawn Redwood	Metasequoia glyptostroboides	x	x							S
Elm, Princeton	Ulmus americana 'Princeton'		x							D
Elm, Lacebark	Ulmus parvifolia	x	x	L		x	x			D
Gingko ‡	Gingko biloba	x	x	L		x	x			D
Hackberry, Common	Celtis occidentalis	x		L		x	x	x		D
Hackberry, Sugar	Celtis laevigata	x				x	x	x		D
Hemlock, Eastern	Tsuga canadensis			L		x		x		E
Hickory, Bitternut	Carya cordiformis			L				x		D
Hickory, Pignut	Carya glabra			L				x		E
Hickory, Shagbark	Carya ovata			L				x		E
Holly, American	Ilex opaca	x	x	S		x		x		E
Honeylocust, Shademaster**	Gleditsia tricanthos inermis 'Shademaster'							x		D
Hornbeam, European	Carpinus betulus	x	x	S		x	x			D
Kentucky Coffeetree	Gymnocladus dioicus	x	x			x		x		D
Linden, Little Leaf	Tilia cordata	x				x	x		x	D
Magnolia, Cucumber	Magnolia acuminata		x					x	x	D
Magnolia, Southern	Magnolia grandiflora	x	x	L			x	x	x	E
Maple, Freeman	Acer x fremanii	x	x			x		x		D
Maple, Red *	Acer rubrum		x	L		x	x	x		D
Maple, Sugar	Acer saccharum	x	x	L		x		x		D
Oak, Black	Quercus velutina			L		x		x		D
Oak, Fastigiante English	Quercus robur 'Fastigiata'		x							D

Trees

Common Name	Scientific Name	City Tree Ordinance Approved	CIP/ROW Approved	City Zoning Approved (Large or Small Maturing)	Duke Transmission Zone(T) or Distribution line(D) Approved		Shade Tolerant	Tolerates Poor Drainage	Native	Blooming	Foliage (Deciduous, Semi-deciduous, or Evergreen)
LARGE MATURING (50'+ H) cont...											
Oak, Laurel	Quercus laurifolia	x		L			x		x		D
Oak, Live	Quercus virginiana	x	x	L			x	x	x		E
Oak, Northern Red*	Quercus rubra			L			x		x		D
Oak, Nuttall	Quercus nuttalii	x	x				x		x		D
Oak, Overcup	Quercus lyrata	x	x				x	x	x		D
Oak, Scarlet**	Quercus coccinea			L					x		D
Oak, Shumard	Quercus shumardii	x	x	L			x		x		D
Oak, Southern Red	Quercus falcata	x	x	L			x		x		D
Oak, Swamp White	Quercus bicolor		x	L			x	x	x		D
Oak, Water	Quercus nigra		x	L				x	x		D
Oak, White	Quercus alba		x	L			x		x		D
Oak, Willow	Quercus phellos	x	x	L			x	x	x		D
Pecan	Carya illinoensis			L					x		D
Persimmon	Diospyros virginiana			L			x		x		D
Pine, Austrian	Pinus nigra	x		L				x			E
Pine, Japanese Black	Pinus thunbergi			L							E
Pine, Loblolly	Pinus taeda	x	x	L				x	x		E
Pine, Shortleaf	Pinus echinata		x	L					x		E
Pine, Virginia	Pinus virginiana	x	x	L					x		E
Poplar, Tulip	Liriodendron tulipfera	x	x	L			x	x	x	x	D
Sweetgum, Fruitless	Liquidambar styraciflua 'Rotundiloba'	x	x	L			x	x	x		D
Sweetgum, Slender	Liquidambar styraciflua 'Slender Silhouette'		x				x	x	x		D
Zelkova, Japanese *	Zelkova serrata			L			x				D

Trees

Common Name	Scientific Name	City Tree Ordinance Approved	CIP/ROW Approved	City Zoning Approved (Large or Small Maturing)	Duke Transmission Zone(T) or Distribution line(D) Approved		Shade Tolerant	Tolerates Poor Drainage	Native	Blooming	Foliage (Deciduous, Semi-deciduous, or Evergreen)
MEDIUM MATURING (30'-50'H)											
Arborvitae, American †	Thuja occidentalis		x		D			x	x		E
Carolina Silverbell	Halesia carolina	x	x	S			x		x	x	D
Chinese Pistache	Pistacia chinensis	x	x				x	x			D
Crape Myrtle (Biloxi, Natchez)*	Lagerstroemia		x								D
Dogwood, Flowering ‡	Cornus florida	x	x	S	D		x		x	x	D
Dogwood, Kousa ‡-	Cornus kousa	x	x	S	D		x		x	x	D
Fringetree, Chinese	Chionanthus retusus	x					x			x	D
Golden Raintree	Koelreuteria paniculata		x	S						x	D
Hawthorne, Green	Crataegus viridis 'Winter King'	x	x					x	x	x	D
Holly, 'Emily Brunner'	Ilex X 'Emily Brunner'		x				x				E
Holly, 'Nellie R. Stevens'	Ilex X 'Nellie R. Stevens'		x				x				E
Holly, Savannah	Ilex X attenuata 'Savannah'		x	S				x	x		E
Hornbeam, American	Carpinus caroliniana	x	x	S			x	x	x		D
Maple, Hedge	Acer campestre		x	S				x			D
Maple, Paperbark	Acer griseum		x								D
Maple, Trident	Acer buergeranum	x	x				x				D
Redbud, Chinese ‡	Cercis chinensis	x	x		D		x			x	D
Sourwood	Oxydendrum arboreum			S			x		x	x	D

Trees

Common Name	Scientific Name	City Tree Ordinance Approved	CIP/ROW Approved	City Zoning Approved (Large or Small Maturing)	Duke Transmission Zone(T) or Distribution line(D) Approved		Shade Tolerant	Tolerates Poor Drainage	Native	Blooming	Foliage (Deciduous, Semi-deciduous, or Evergreen)
SMALL MATURING (UP-25'H)											
Arborvitae, Emerald Green	Thuja occidentalis 'Emerald Green'		x								E
Buckeye, Bottlebrush †	Aesculus parviflora	x	x		T		x		x	x	D
Camellia, Sasanuqa	Camellia sasanqua		x	S			x			x	E
Cherry, Kwanzan	Prunus serrulata 'Kwanzan'	x		S						x	D
Cherry, Snowgoose	Prunus serrulata 'Snowgoose'		x							x	D
Cherry, 'Okame'	Prunus X 'Okame'	x	x							x	D
Cherry, Weeping	Prunus subhirtella pendula			S						x	D
Cherry, Yoshino	Prunus X yedoensis	x	x	S	D					x	D
Cherrylaurel, Carolina	Prunus caroliniana			S			x	x	x	x	E
Crabapple, Japanese Flowering †	Malus floribunda		x	S	D					x	D
Crape Myrtle	Lagerstroemia		x								D
Dogwood, redtwig †	Cornus sericea f. baileyi		x		D			x	x	x	D
Dogwood, Rutger's Hybrid	Cornus kousa X florida		x		D		x	x		x	D
Filbert, American	Corylus americana	x	x		T,D		x		x		D
Fringetree	Chionanthus virginiana		x					x	x	x	D
Hawthorne, Washington	Crataegus phaenopyrum	x	x	S				x	x	x	D
Holly, Foster	Ilex X attenuata 'Fosteri'	x	x	S				x	x		E
Holly, Yaupon	Ilex vomitoria		x	S			x		x		E
Magnolia, Star †	Magnolia stellata	x	x	S	D			x	x	x	D

Trees

Common Name	Scientific Name	City Tree Ordinance Approved	CIP/ROW Approved	City Zoning Approved (Large or Small Maturing)	Duke Transmission Zone(T) or Distribution line(D) Approved		Shade Tolerant	Tolerates Poor Drainage	Native	Blooming	Foliage (Deciduous, Semi-deciduous, or Evergreen)
SMALL MATURING (UP-25'H)											
Magnilia, Lily Flowered	Magnolia liliiflora		x				x			x	D
Magnolia, 'Little Gem'	Magnolia grandiflora 'Little Gem'	x	x					x	x	x	E
Magnolia, 'Merrill'	Magnolia X loebneri 'Merrill'		x					x	x	x	D
Magnolia, Saucer	Magnolia X soulangiana	x	x	S	D			x	x	x	D
Maple, Armur 'Flame' †	Acer tataricum ginnala 'Flame'	x	x		D			x			D
Maple, Japanese	Acer palmatum	x	x				x				D
Maple, Purplebow/Shantung	Acer truncatum		x								D
Plum, Purpleleaf	Prunus cerasifera 'Atropurpurea'	x	x	S						x	D
Redbud, Eastern	Cercis canadensis	x	x	S	D		x	x	x	x	D
Serviceberry	Amelanchier arborea	x	x						x	x	D
Serviceberry, Shadbush †	Amelanchier canadensis	x	x	S	T		x		x	x	D
Waxmyrtle	Myrica cerifera	x		S				x			E

SHRUBS

Common Name	Scientific Name
Burford holly *	Ilex cornuta burfordi
Camellia *	Camellia japonica
Convex Japanese holly *	Ilex crenata `convexa'
Dwarf burford holly *	Ilex cornuta burfordi nana
Emily brunner holly *	Ilex "Emily Brunner"
English holly *	Ilex aquifolium
Evergreen euonymus *	Euonymus japonicus
Flowering quince	Chaenomeles speciosa
Forsythia	Forsythia intermedia
Glenn dale azalea *	Azalea hybrida
Glossy abelia *	Abelia grandiflora
Hetzi Japanese holly *	Ilex crenata `hetzi'
Hetzi jumper *	Jumperus chinesis hetzi
Indian azalea *	Azalea Indica
Inkberry holly *	Ilex glabra
Japanese aucuba *	Aucuba japonica
Kaempferi azalea *	Azalea obtusum Kaempferi
Laurel *	Laurus nobilis
Loropetalum *	Loropetalum chinense
Lusterleaf holly *	Ilex latifolia
Oakleaf hydrangea	Hydrangea quercifolia
Perny holly *	Ilex pernyi
Pfitzer juniper *	Juniperus chinensis pfitzeriana

Common Name	Scientific Name
Roundleaf Japanese holly *	Ilex crenata `rotundifolia'
Sasanqua Camellia *	Camellia sasanqua
Witch-hazel	Hammamelis virginiana
Yaupon holly *	Ilex vomitoria
Wax myrtle *	Myrica cerifera
Wild olive *	Osmanthus americana
Chinese photinia *	Photinia serrulata
Mountain andromeda *	Pieris floribunda
Japanese andromeda *	Pieris japonica
Pittosporum *	Pittosporum tobira
English laurel *	Prunus laurocerasus
Podocarpus *	Podocarpus macrophyllus maki
Narrow leafed English laurel *	Prunus laurocerasus angustifolia
Scarlet firethorn	Pyracantha coccinea
Yeddo-hawthorn *	Raphiolepis umbellata
Reeves spirea	Spirea cantoniensis
Thunberg spirea	Spirea thunbergii
Bridalwreath spirea	Spirea prunifolia plena
Vanhoutte spirea	Spirea vanhouttei
Japanese yew *	Taxus cuspidata
Leatherleaf viburnum *	Viburnum rhytidophyllum
Laurestinus viburnum *	Viburnum tinus

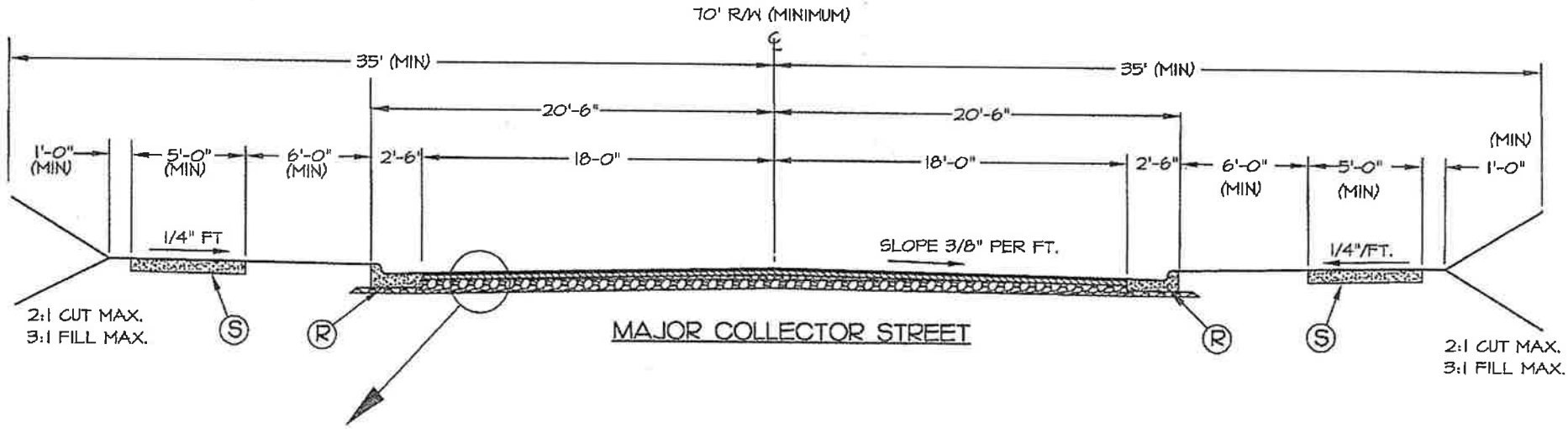
* denotes evergreen

Other species may be allowed with town approval

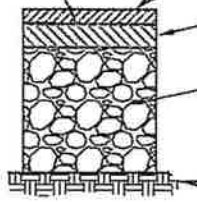
List subject to change

REFERENCES

- North Carolina Department of Transportation, most recent edition, Standard Specifications for Roads and Structures.
- North Carolina Department of Transportation, most recent edition, Roadway Standards Drawings.
- City of Charlotte Department of Transportation, most recent edition, Work Area Traffic Control Handbook (WATCH)
- Town of Pineville Storm Water Design Manual
- American Association of State Highway and Transportation Officials most recent edition, A Policy on Geometric Design of Highways and Streets
- North Carolina Department of Transportation, Roadway Design Manual, latest edition
- North Carolina Department of Environment and Natural Resources most recent edition, Erosion and Sediment Control Planning and Design Manual
- NCDENR, Storm Water Best Management Practices, latest edition.
- City of Charlotte Land Development Standards Manual, latest edition.



MAJOR COLLECTOR STREET



TACK COAT
(SEE NCDOT SPECIFICATIONS)

SURFACE COURSE (THREE LANE SECTION)
3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B
TO BE PLACED IN TWO 1.5" LIFTS EACH
1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B
TO BE APPLIED AFTER 90% DEVELOPMENT OCCUPANCY

INTERMEDIATE COURSE
2.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B

BASE COURSE
10" COMPACTED AGGREGATE BASE COURSE
OR 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B.

SUBGRADE
COMPACTED SUBGRADE

TYPICAL MINIMUM PAVEMENT SECTION

(SEE NOTES)

NOTES:

1. DEVELOPER MAY SUBMIT AN ALTERNATIVE PAVEMENT DESIGN TO TOWN ENGINEER.
2. AN ALTERNATIVE PAVEMENT DESIGN MAY BE REQUIRED BY NCDOT BASED ON SPECIFIC TRAFFIC PARAMETERS.
3. SIDEWALK EASEMENT MAY BE REQUIRED.
4. IRRIGATION SYSTEMS ARE NOT ALLOWED IN THE STREET RIGHTS-OF-WAY UNLESS AN ENCROACHMENT AGREEMENT HAS BEEN ISSUED BY THE TOWN OF PINEVILLE.
5. TREES PROPOSED IN THE PLANTING STRIPS OR RIGHTS-OF-WAY SHALL APPROVED BY THE TOWN OF PINEVILLE PRIOR TO INSTALLATION.
6. ALL PROPOSED ROADWAYS IN COMMERCIAL AND INDUSTRIAL DEVELOPMENTS SHALL BE CONSIDERED COMMERCIAL COLLECTOR STREETS.

KEY

(R) 2'-6" CURB AND GUTTER

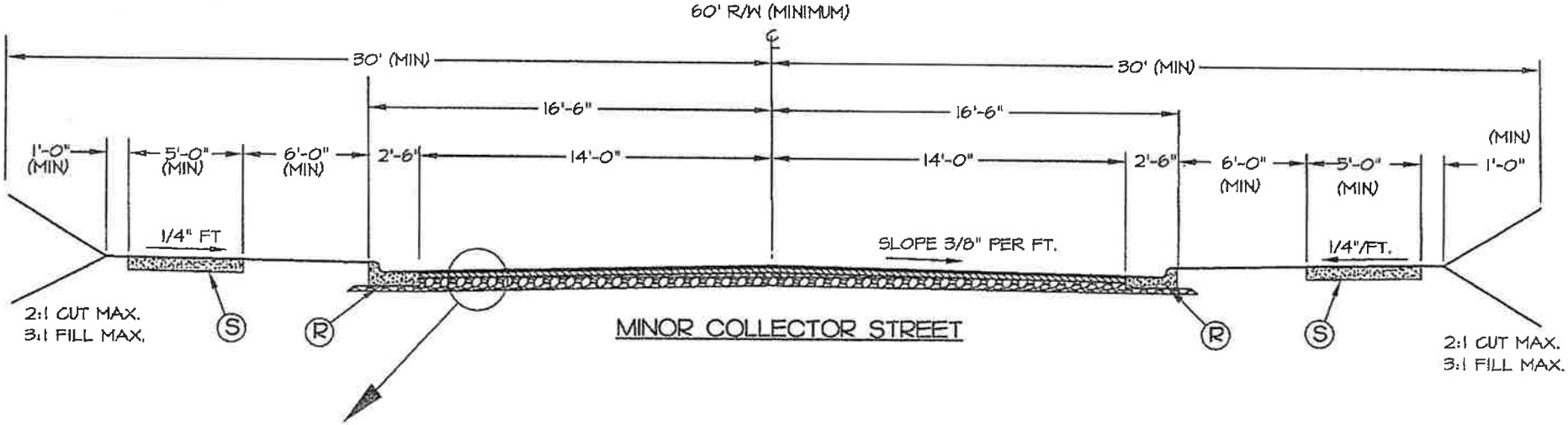
(S) 4" CONCRETE SIDEWALK (THICKNESS) 6" AT ALL DRIVEWAYS

NOT TO SCALE

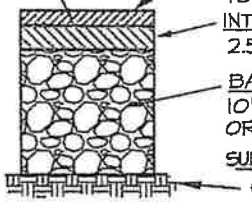
TOWN OF PINEVILLE
LAND DEVELOPMENT STANDARDS

MAJOR COLLECTOR STREET

STD. NO.	REV.
10.01	



MINOR COLLECTOR STREET



SURFACE COURSE (TWO LANE SECTION)
3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B
TO BE PLACED IN TWO 1.5" LIFTS EACH
1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B
TO BE APPLIED AFTER 90% DEVELOPMENT OCCUPANCY

INTERMEDIATE COURSE
2.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 119.0B

BASE COURSE
10" COMPACTED AGGREGATE BASE COURSE
OR 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B.

SUBGRADE
COMPACTED SUBGRADE

TYPICAL MINIMUM PAVEMENT SECTION
(SEE NOTES)

NOTES:

1. DEVELOPER MAY SUBMIT AN ALTERNATIVE PAVEMENT DESIGN TO TOWN ENGINEER.
2. AN ALTERNATIVE PAVEMENT DESIGN MAY BE REQUIRED BY NCDOT BASED ON SPECIFIC TRAFFIC PARAMETERS.
3. SIDEWALK EASEMENT MAY BE REQUIRED.
4. IRRIGATION SYSTEMS ARE NOT ALLOWED IN THE STREET RIGHTS-OF-WAY UNLESS AN ENCROACHMENT AGREEMENT HAS BEEN ISSUED BY THE TOWN OF PINEVILLE.
5. TREES PROPOSED IN THE PLANTING STRIPS OR RIGHTS-OF-WAY SHALL APPROVED BY THE TOWN OF PINEVILLE PRIOR TO INSTALLATION.
6. ALL PROPOSED ROADWAYS IN COMMERCIAL AND INDUSTRIAL DEVELOPMENTS SHALL BE CONSIDERED COMMERCIAL COLLECTOR STREETS.

KEY

(R) 2'-6" CURB AND GUTTER

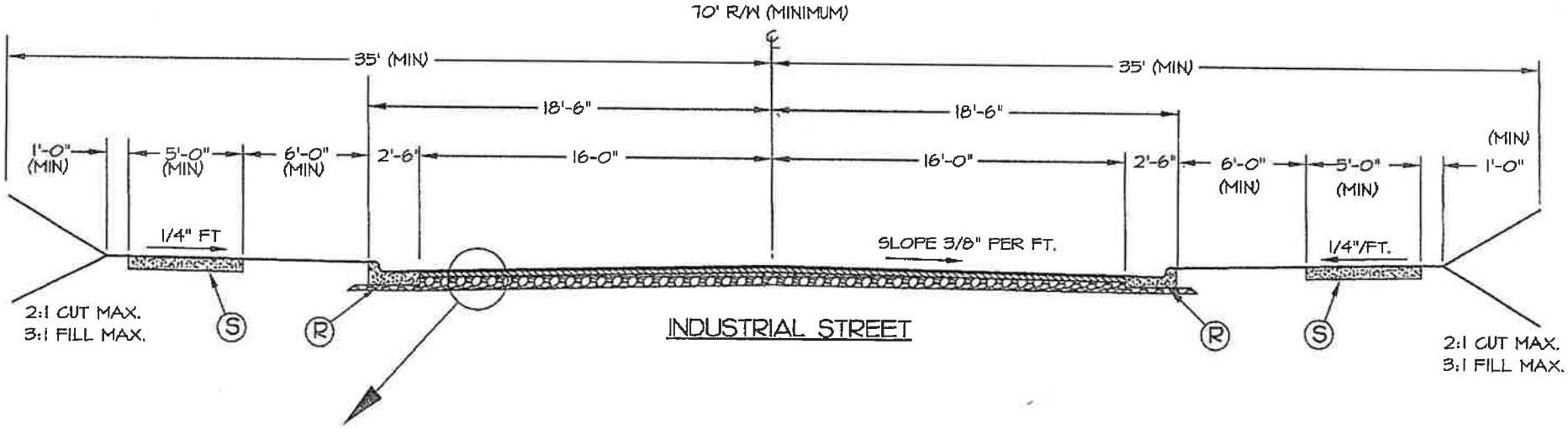
(S) 4" CONCRETE SIDEWALK (THICKNESS) 6" AT ALL DRIVEWAYS

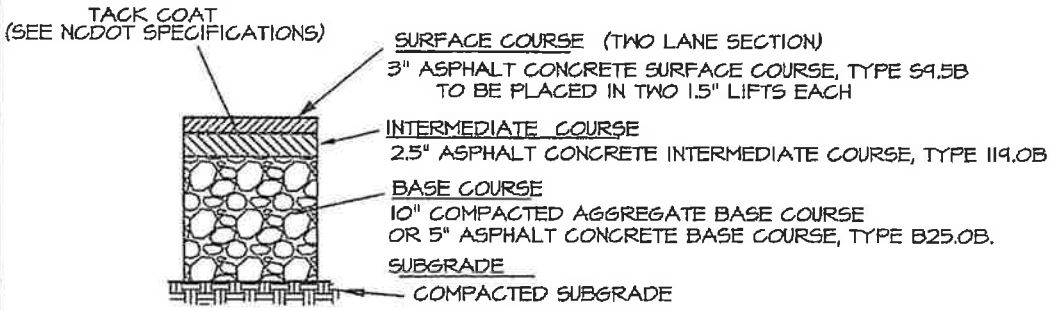
NOT TO SCALE

TOWN OF PINEVILLE
LAND DEVELOPMENT STANDARDS

MINOR COLLECTOR STREET

STD. NO.	REV.
10.02	





TYPICAL MINIMUM PAVEMENT SECTION

(SEE NOTES)

NOTES:

1. DEVELOPER MAY SUBMIT AN ALTERNATIVE PAVEMENT DESIGN TO TOWN ENGINEER.
2. AN ALTERNATIVE PAVEMENT DESIGN MAY BE REQUIRED BY NCDOT BASED ON SPECIFIC TRAFFIC PARAMETERS.
3. SIDEWALK EASEMENT MAY BE REQUIRED.

KEY

(R) 2'-6" CURB AND GUTTER

(S) 4" CONCRETE SIDEWALK

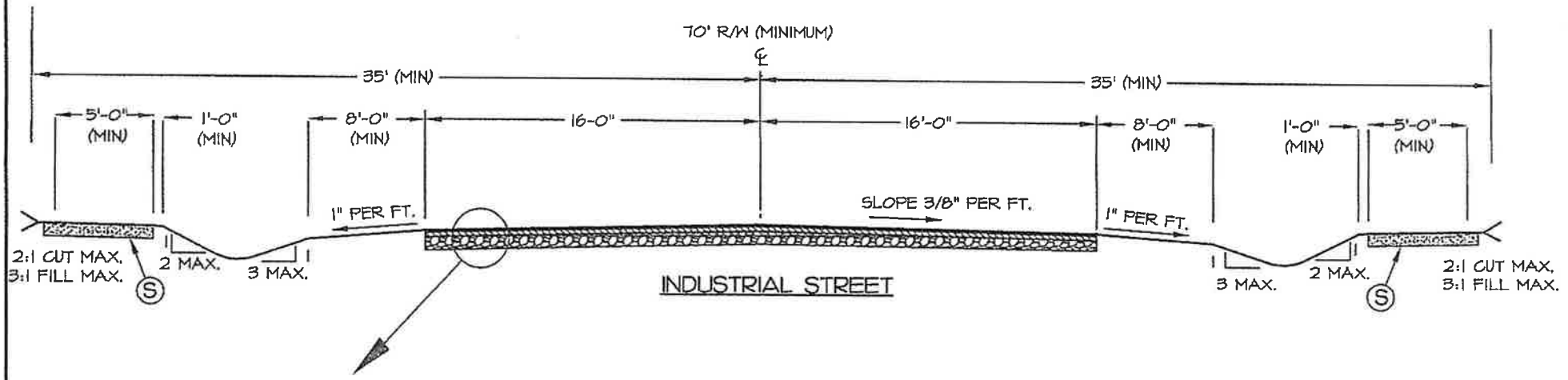
NOT TO SCALE

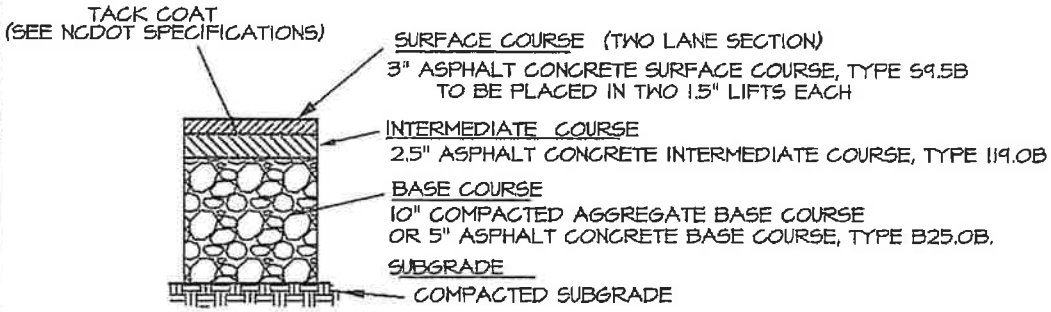
TOWN OF PINEVILLE

LAND DEVELOPMENT STANDARDS

INDUSTRIAL STREET

STD. NO.	REV.
10.03	





TYPICAL MINIMUM PAVEMENT SECTION

(SEE NOTES)

NOTES:

1. DEVELOPER MAY SUBMIT AN ALTERNATIVE PAVEMENT DESIGN TO TOWN ENGINEER.
2. AN ALTERNATIVE PAVEMENT DESIGN MAY BE REQUIRED BY NCDOT BASED ON SPECIFIC TRAFFIC PARAMETERS.
3. SIDEWALK EASEMENT MAY BE REQUIRED.

KEY

Ⓢ 4" CONCRETE SIDEWALK

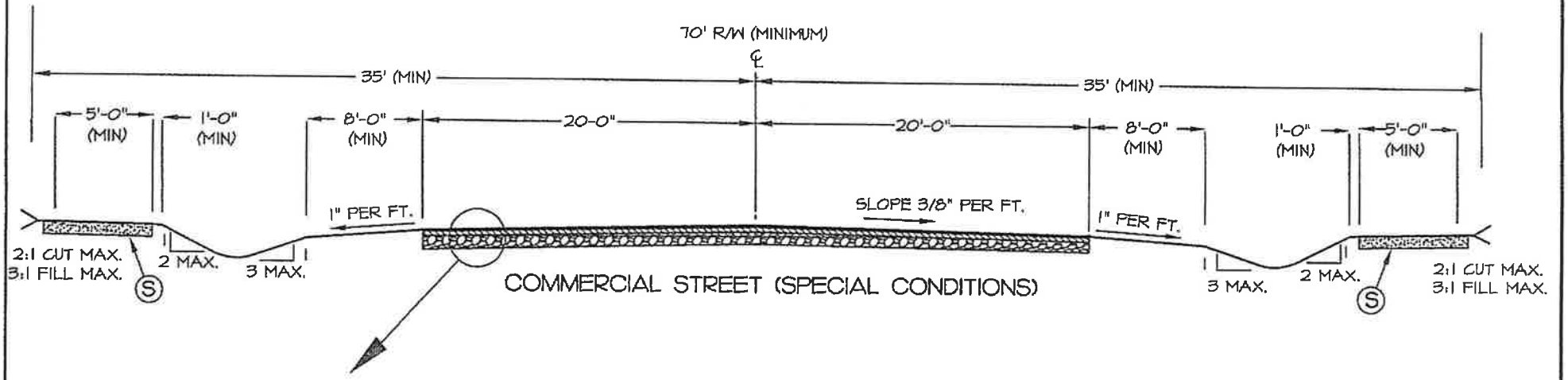
NOT TO SCALE

TOWN OF PINEVILLE

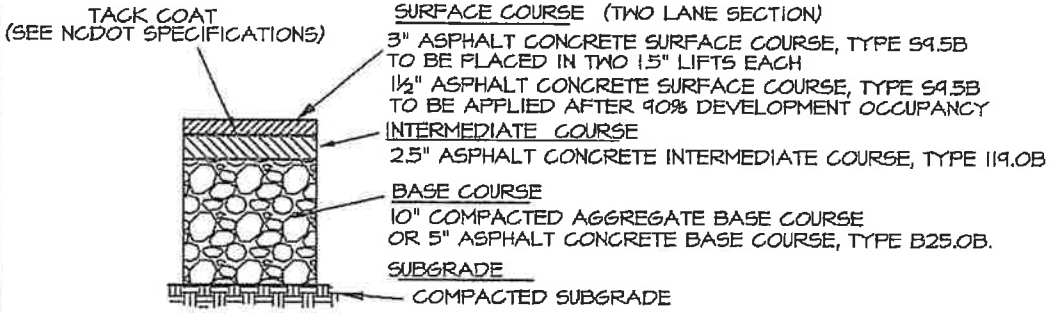
LAND DEVELOPMENT STANDARDS

INDUSTRIAL STREET
(DITCH TYPE)

STD. NO.	REV.
10.04	



COMMERCIAL STREET (SPECIAL CONDITIONS)



TYPICAL MINIMUM PAVEMENT SECTION

(SEE NOTES)

NOTES:

1. DEVELOPER MAY SUBMIT AN ALTERNATIVE PAVEMENT DESIGN TO TOWN ENGINEER.
2. AN ALTERNATIVE PAVEMENT DESIGN MAY BE REQUIRED BY NCDOT BASED ON SPECIFIC TRAFFIC PARAMETERS.
3. SIDEWALK EASEMENT MAY BE REQUIRED.

KEY

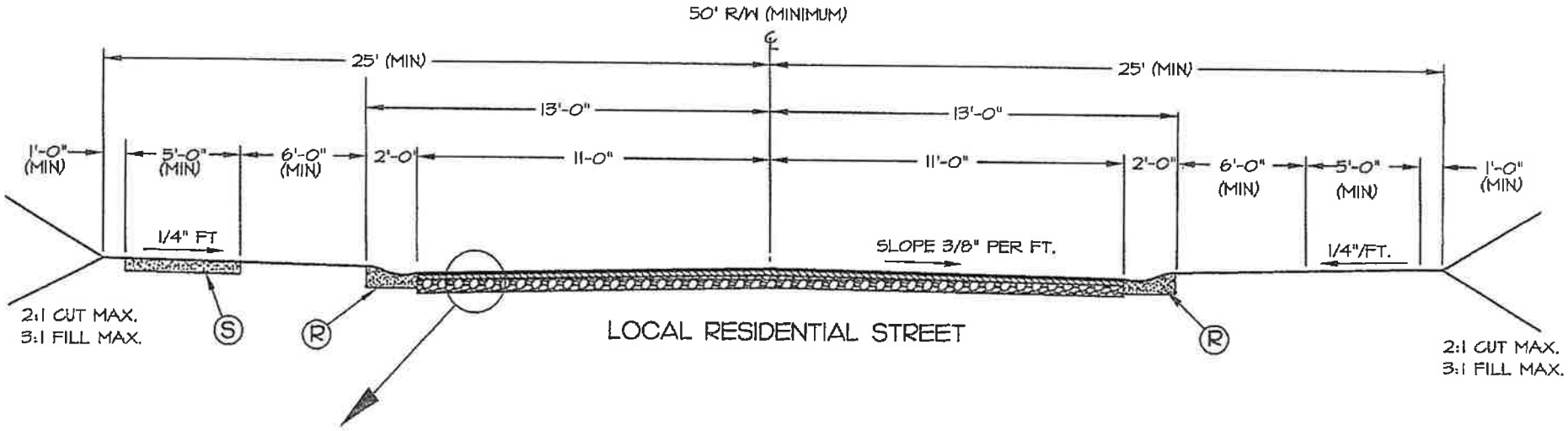
Ⓢ 4" CONCRETE SIDEWALK

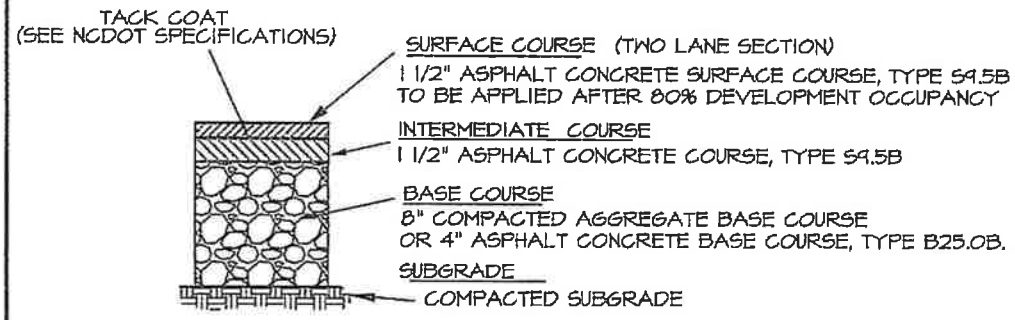
NOT TO SCALE

TOWN OF PINEVILLE
LAND DEVELOPMENT STANDARDS

COMMERCIAL STREET
(SPECIAL USE CONDITIONS)

STD. NO.	REV.
10.05	





TYPICAL MINIMUM PAVEMENT SECTION

(SEE NOTES)

NOTES:

1. SIDEWALK WILL ONLY BE REQUIRED ON ONE SIDE OF STREET AND NOT ALONG CUL-DE-SAC "BULB".
2. IRRIGATION SYSTEMS ARE NOT ALLOWED IN THE STREET RIGHTS-OF-WAY UNLESS AN ENCROACHMENT AGREEMENT HAS BEEN ISSUED BY THE TOWN OF PINEVILLE.
3. TREES PROPOSED IN THE PLANTING STRIPS OR RIGHTS-OF-WAY SHALL APPROVED BY THE TOWN OF PINEVILLE PRIOR TO INSTALLATION.
4. ANY RESIDENTIAL STREET THAT RECIEVES TRAFFIC FROM 150 OR MORE LOTS SHALL BE CONSIDERED A RESIDENTIAL COLLECTOR STREET.

KEY

(R) 2'-0" VALLEY GUTTER

(S) 4" CONCRETE SIDEWALK (THICKNESS) 6" AT ALL DRIVEWAYS

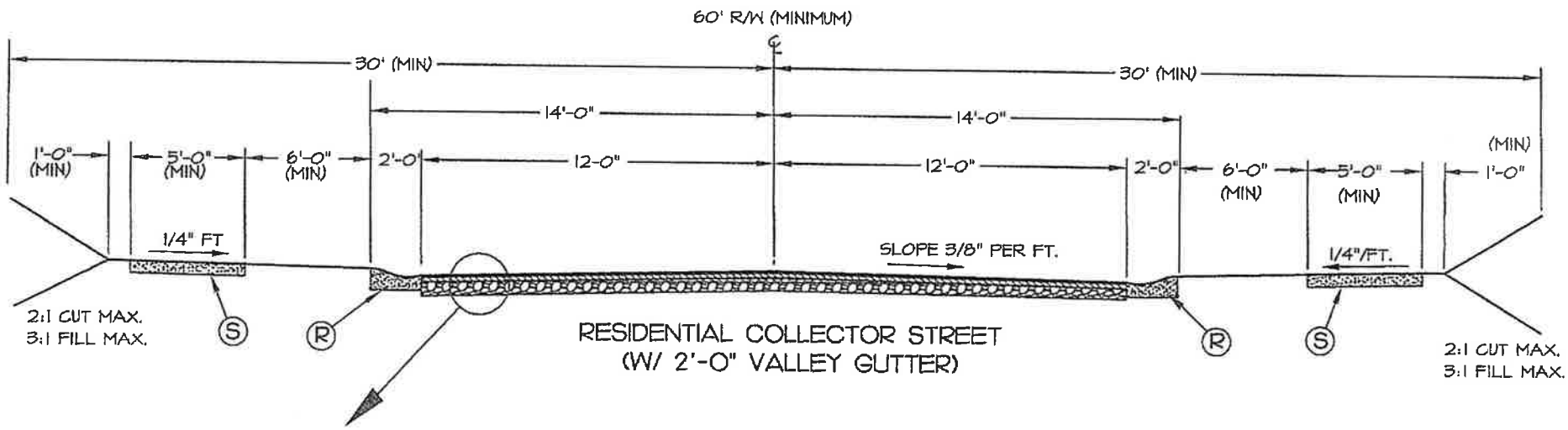
NOT TO SCALE

TOWN OF PINEVILLE

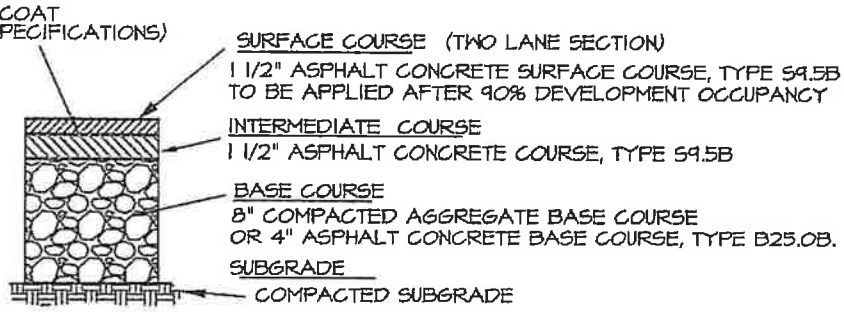
LAND DEVELOPMENT STANDARDS

LOCAL RESIDENTIAL STREET

STD. NO.	REV.
10.06	



RESIDENTIAL COLLECTOR STREET
(W/ 2'-0" VALLEY GUTTER)



TYPICAL MINIMUM PAVEMENT SECTION

(SEE NOTES)

NOTES:

1. DEVELOPER MAY SUBMIT AN ALTERNATIVE PAVEMENT DESIGN TO TOWN ENGINEER.
2. AN ALTERNATIVE PAVEMENT DESIGN MAY BE REQUIRED BY NCDOT BASED ON SPECIFIC TRAFFIC PARAMETERS.
3. SIDEWALK EASEMENT MAY BE REQUIRED.
4. IRRIGATION SYSTEMS ARE NOT ALLOWED IN THE STREET RIGHTS-OF-WAY UNLESS AN ENCROACHMENT AGREEMENT HAS BEEN ISSUED BY THE TOWN OF PINEVILLE.
5. TREES PROPOSED IN THE PLANTING STRIPS OR RIGHTS-OF-WAY SHALL APPROVED BY THE TOWN OF PINEVILLE PRIOR TO INSTALLATION.
6. ANY RESIDENTIAL STREET THAT RECIEVES TRAFFIC FROM 150 OR MORE LOTS SHALL BE CONSIDERED A RESIDENTIAL COLLECTOR STREET.

KEY

(R) 2'-0" VALLEY GUTTER

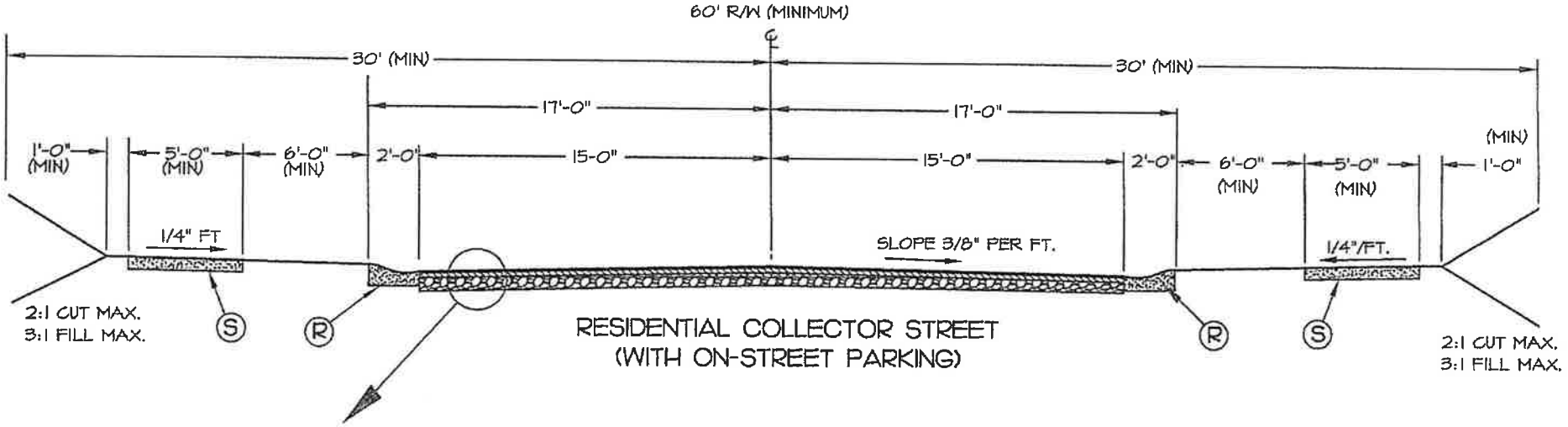
(S) 4" CONCRETE SIDEWALK (THICKNESS) 6" AT ALL DRIVEWAYS

NOT TO SCALE

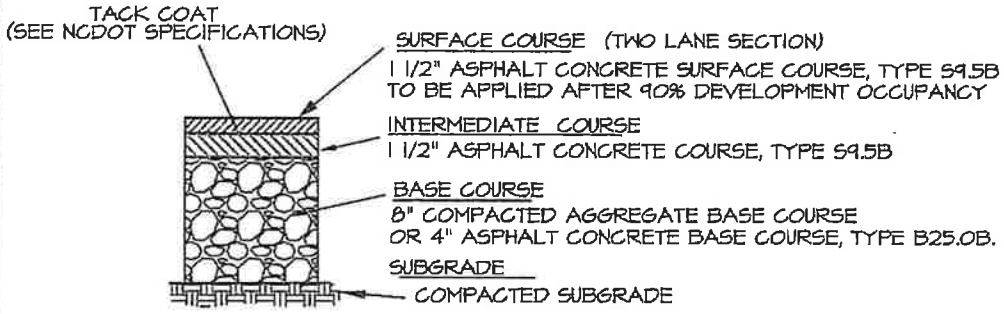
TOWN OF PINEVILLE
LAND DEVELOPMENT STANDARDS

RESIDENTIAL COLLECTOR STREET

STD. NO.	REV.
10.07	



RESIDENTIAL COLLECTOR STREET
(WITH ON-STREET PARKING)



TYPICAL MINIMUM PAVEMENT SECTION
(SEE NOTES)

NOTES:

1. DEVELOPER MAY SUBMIT AN ALTERNATIVE PAVEMENT DESIGN TO TOWN ENGINEER.
2. IRRIGATION SYSTEMS ARE NOT ALLOWED IN THE STREET RIGHTS-OF-WAY UNLESS AN ENCROACHMENT AGREEMENT HAS BEEN ISSUED BY THE TOWN OF PINEVILLE.
3. TREES PROPOSED IN THE PLANTING STRIPS OR RIGHTS-OF-WAY SHALL APPROVED BY THE TOWN OF PINEVILLE PRIOR TO INSTALLATION.
4. ANY RESIDENTIAL STREET THAT RECIEVES TRAFFIC FROM 150 OR MORE LOTS SHALL BE CONSIDERED A RESIDENTIAL COLLECTOR STREET.

KEY

(R) 2'-0" VALLEY GUTTER

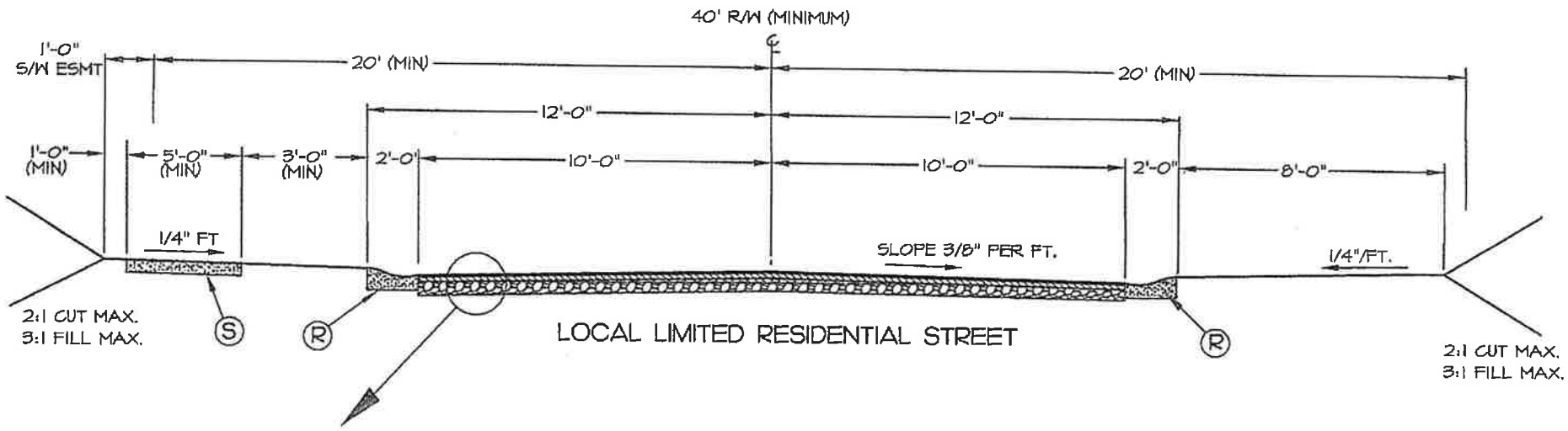
(S) 4" CONCRETE SIDEWALK (THICKNESS) 6" AT ALL DRIVEWAYS

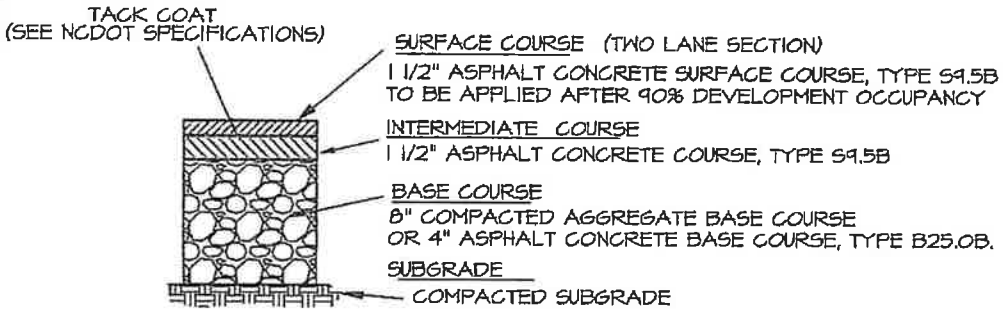
NOT TO SCALE

TOWN OF PINEVILLE
LAND DEVELOPMENT STANDARDS

RESIDENTIAL COLLECTOR STREET
(WITH ON-STREET PARKING)

STD. NO.	REV.
10.08	





TYPICAL MINIMUM PAVEMENT SECTION

(SEE NOTES)

NOTES:

1. SIDEWALK WILL ONLY BE REQUIRED ON ONE SIDE OF STREET AND NOT ALONG CUL-DE-SAC "BULB".
2. IRRIGATION SYSTEMS ARE NOT ALLOWED IN THE STREET RIGHTS-OF-WAY UNLESS AN ENCROACHMENT AGREEMENT HAS BEEN ISSUED BY THE TOWN OF PINEVILLE.
3. TREES PROPOSED IN THE PLANTING STRIPS OR RIGHTS-OF-WAY SHALL APPROVED BY THE TOWN OF PINEVILLE PRIOR TO INSTALLATION.
4. ANY LOCAL LIMITED RESIDENTIAL STREET IS RESERVED FOR RESIDENTIAL STREETS THAT ARE LESS THAN 250 FT IN LENGTH END IN A CUL-DE-SAC AND WILL NOT BE EXTENDED IN THE FUTURE.

KEY

(R) 2'-0" VALLEY GUTTER

(S) 4" CONCRETE SIDEWALK (THICKNESS) 6" AT ALL DRIVEWAYS

NOT TO SCALE

TOWN OF PINEVILLE
LAND DEVELOPMENT STANDARDS

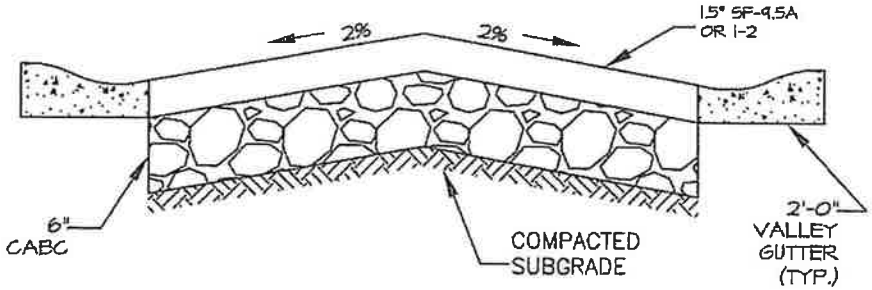
LOCAL LIMITED RESIDENTIAL STREET

STD. NO.	REV.
10.09	

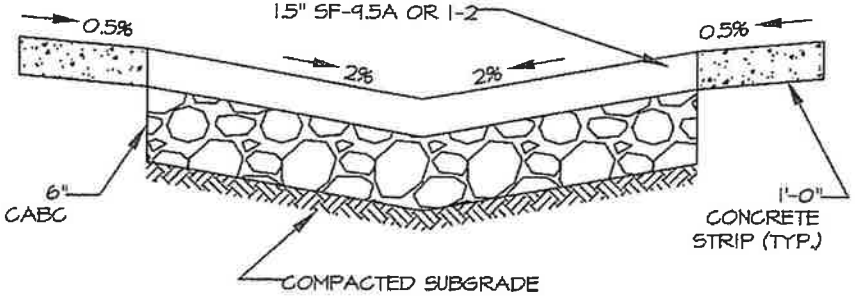
NOTES:

1. SUBGRADE SHALL BE COMPACTED TO PUBLIC STREET STANDARDS.
2. STORM DRAINAGE (NOT SHOWN) SHALL BE PROVIDED AS NECESSARY.
3. ALLEYS SHALL BE CONSIDERED PRIVATE EASEMENTS AND WILL NOT BE ACCEPTED FOR MAINTENANCE BY THE TOWN OF PINEVILLE.
4. DRIVEWAYS SHALL BE SEPARATED BY AT LEAST 5 FEET, OR GREATER IF REQUIRED BY PLANNING (LOT SIZE) REQUIREMENTS AND/OR N.C. BUILDING CODE.
5. DETAIL APPLIES TO SINGLE- OR DOUBLE-LOADED ALLEYS. FOR SINGLE-LOADED ALLEYS, THERE SHALL BE A 20-FOOT CLEAR ZONE FREE OF CUT SLOPES, OBSTRUCTIONS, HEDGES, ETC. FROM THE LOADED SIDE EDGE OF PAVEMENT.

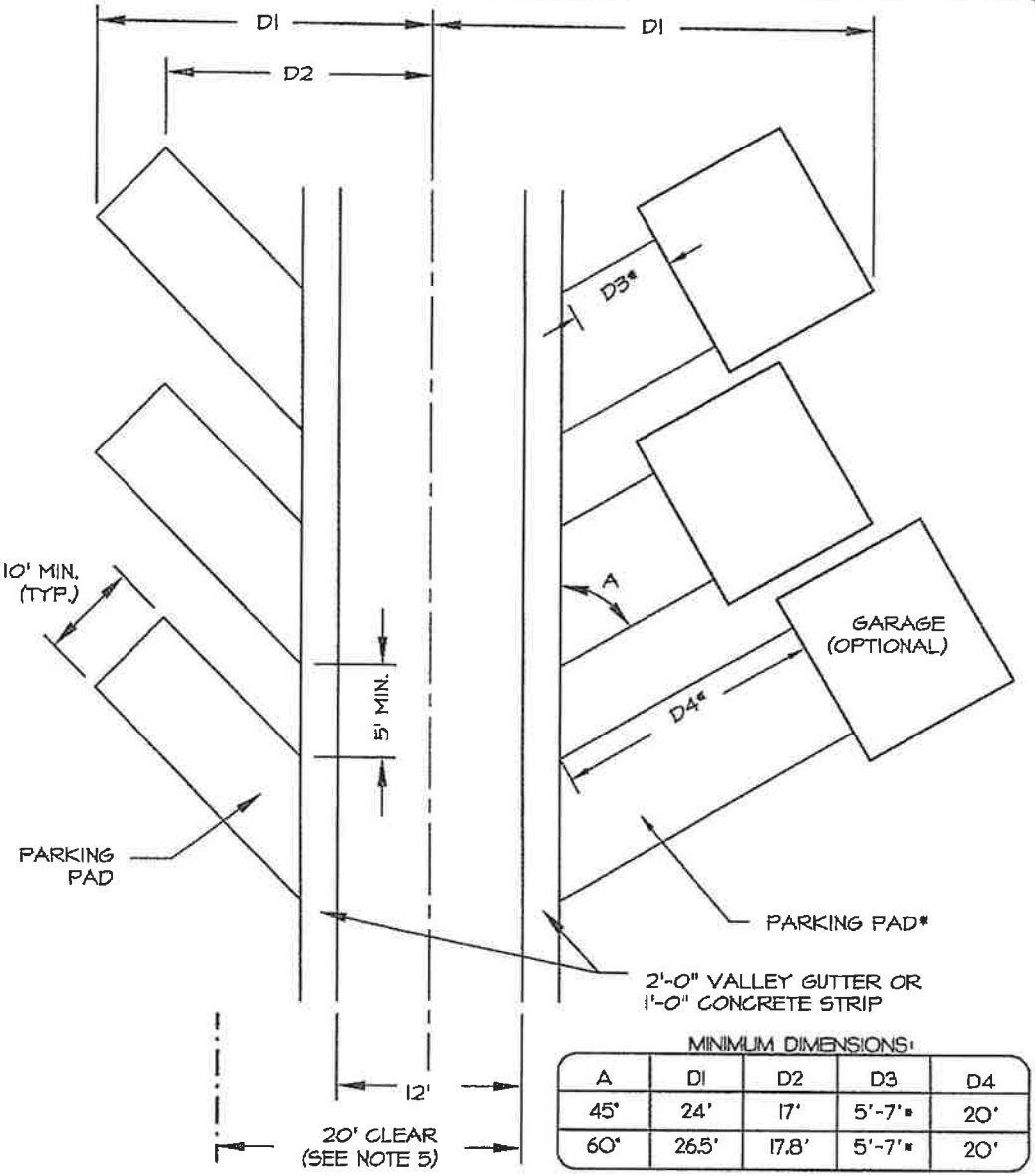
* WITH NO PARKING PAD, DIMENSION D3 IS REQUIRED TO BE MINIMUM 5' BUT NO GREATER THAN 7'. WITH PARKING PAD, DIMENSION D4 IS REQUIRED TO BE A MINIMUM OF 20'.



ALLEY WITH NORMAL CROWN



ALLEY WITH INVERSE CROWN



MINIMUM DIMENSIONS:

A	D1	D2	D3	D4
45°	24'	17'	5'-7"*	20'
60°	26.5'	17.8'	5'-7"*	20'

PLAN

NOT TO SCALE

TOWN OF PINEVILLE
LAND DEVELOPMENT STANDARDS

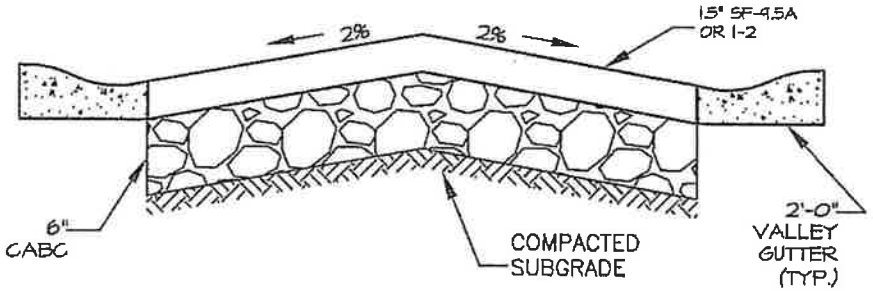
RESIDENTIAL ALLEY DETAIL ONE-WAY OPERATION

STD. NO.	REV.
10.11A	

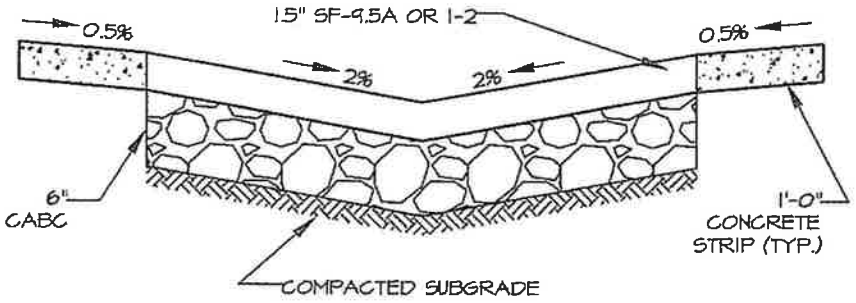
NOTES:

1. SUBGRADE SHALL BE COMPACTED TO PUBLIC STREET STANDARDS.
2. STORM DRAINAGE (NOT SHOWN) SHALL BE PROVIDED AS NECESSARY.
3. ALLEYS SHALL BE CONSIDERED PRIVATE EASEMENTS AND WILL NOT BE ACCEPTED FOR MAINTENANCE BY THE TOWN OF PINEVILLE.
4. DRIVEWAYS SHALL BE SEPARATED BY AT LEAST 5 FEET, OR GREATER IF REQUIRED BY PLANNING (LOT SIZE) REQUIREMENTS AND/OR N.C. BUILDING CODE.

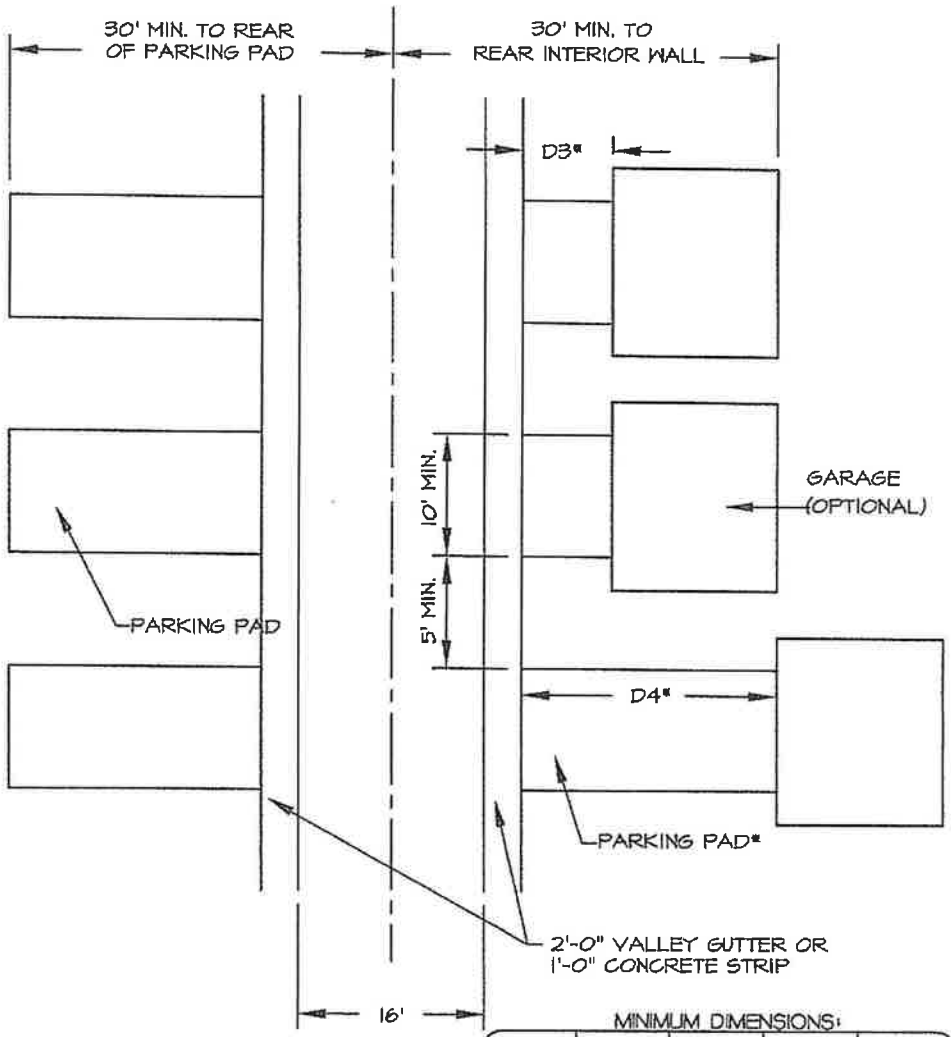
* WITH NO PARKING PAD, DIMENSION D3 IS REQUIRED TO BE MINIMUM 5' BUT NO GREATER THAN 7'. WITH PARKING PAD, DIMENSION D4 IS REQUIRED TO BE A MINIMUM OF 20'.



ALLEY WITH NORMAL CROWN



ALLEY WITH INVERSE CROWN



PLAN

MINIMUM DIMENSIONS:

A	D1	D2	D3	D4
45°	24'	17'	5'-7'*	20'
60°	26.5'	17.8'	5'-7'*	20'

NOT TO SCALE

TOWN OF PINEVILLE
LAND DEVELOPMENT STANDARDS

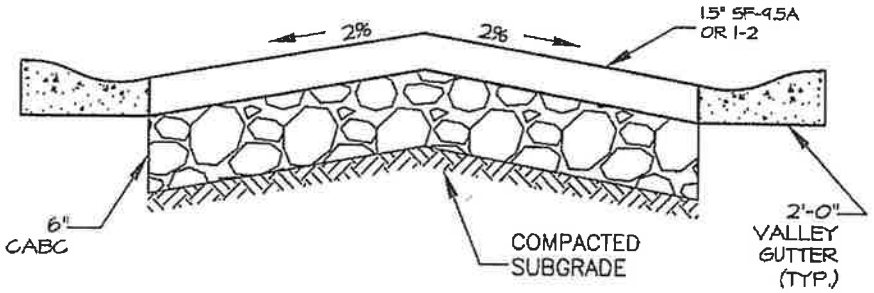
RESIDENTIAL ALLEY DETAIL DOUBLE LOADED W/ TWO-WAY OPERATION

STD. NO.	REV.
10.11B	

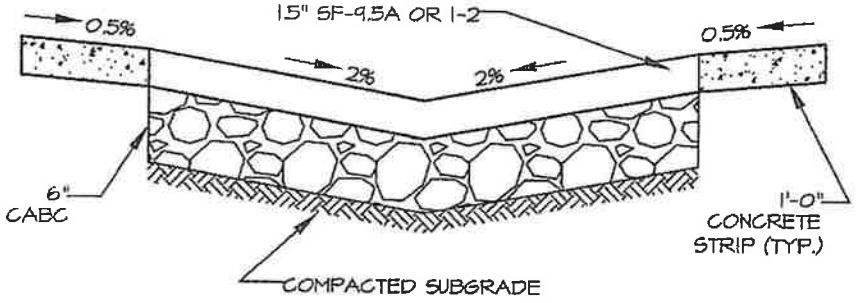
NOTES:

1. SUBGRADE SHALL BE COMPACTED TO PUBLIC STREET STANDARDS.
2. STORM DRAINAGE (NOT SHOWN) SHALL BE PROVIDED AS NECESSARY.
3. ALLEYS SHALL BE CONSIDERED PRIVATE EASEMENTS AND WILL NOT BE ACCEPTED FOR MAINTENANCE BY THE TOWN OF PINEVILLE.
4. DRIVEWAYS SHALL BE SEPARATED BY AT LEAST 5 FEET, OR GREATER IF REQUIRED BY PLANNING (LOT SIZE) REQUIREMENTS AND/OR N.C. BUILDING CODE.
5. NO CUT SLOPES, OBSTRUCTIONS, HEDGES, ETC. ON NON-LOADED SIDE OF ALLEY WITHIN 20 FEET OF LOADED SIDE EDGE OF PAVEMENT.

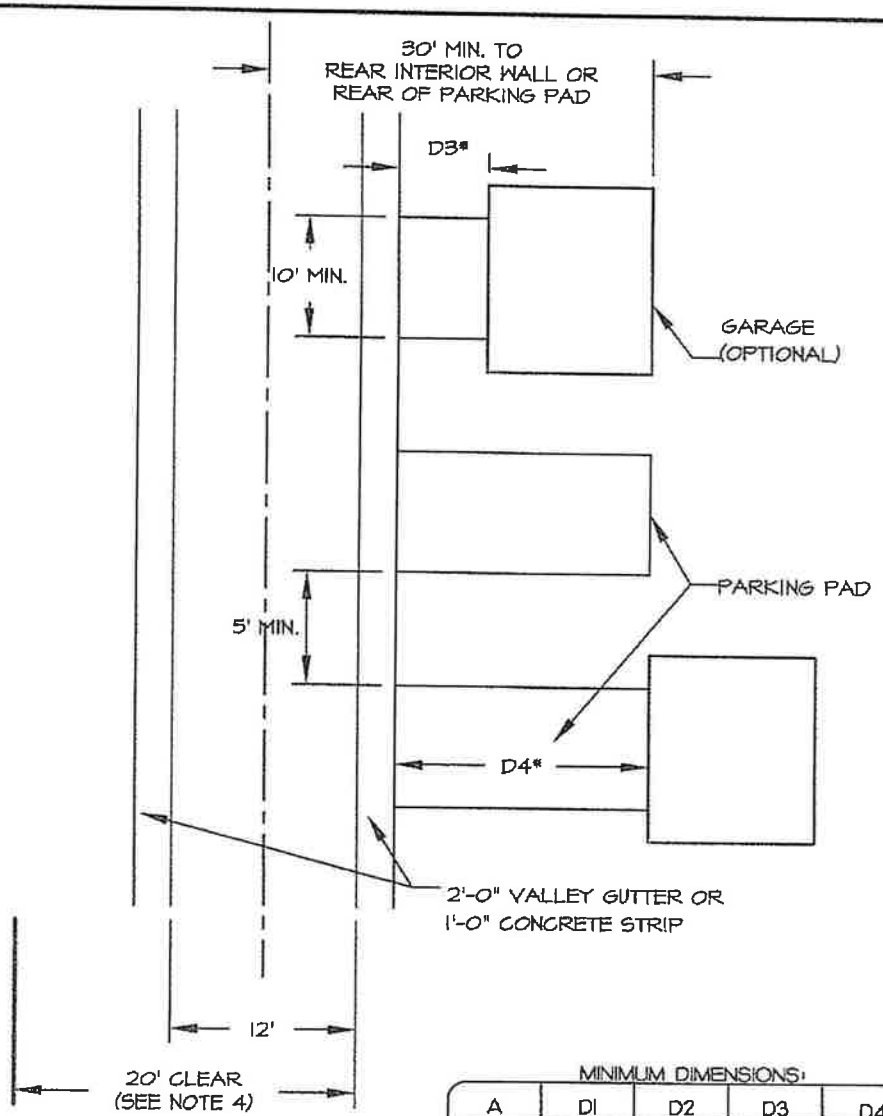
* WITH NO PARKING PAD, DIMENSION D3 IS REQUIRED TO BE MINIMUM 5' BUT NO GREATER THAN 7'. WITH PARKING PAD, DIMENSION D4 IS REQUIRED TO BE A MINIMUM OF 20'.



ALLEY WITH NORMAL CROWN



ALLEY WITH INVERSE CROWN



PLAN

MINIMUM DIMENSIONS:

A	DI	D2	D3	D4
45°	24'	17'	5'-7'*	20'
60°	26.5'	17.8'	5'-7'*	20'

NOT TO SCALE

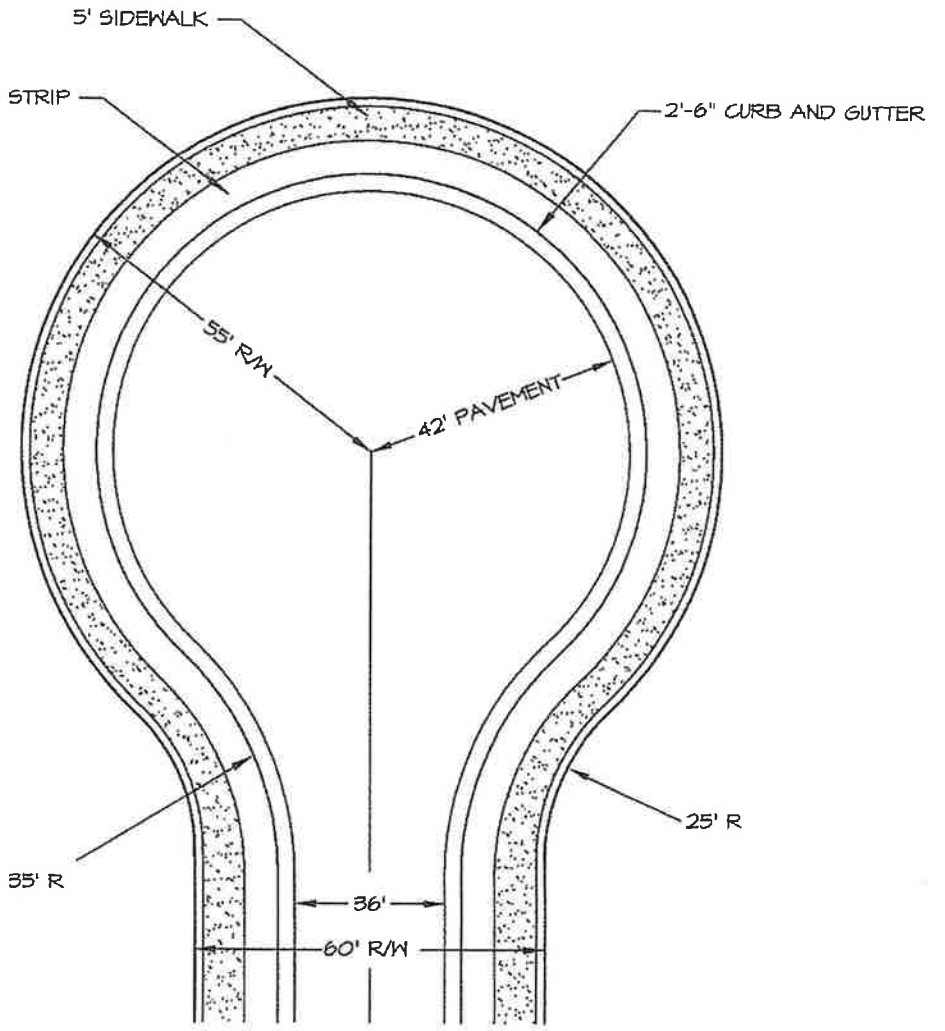
TOWN OF PINEVILLE
LAND DEVELOPMENT STANDARDS

RESIDENTIAL ALLEY DETAIL SINGLE LOADED W/ TWO-WAY OPERATION

STD. NO.	REV.
10.11C	

NOTES:

1. ALTERNATIVE CUL-DE-SAC DESIGNS, INCLUDING ISLANDS SHALL BE SUBMITTED TO THE TOWN ENGINEER FOR REVIEW AND APPROVAL.
2. PAVEMENT SECTION SHALL CONFORM WITH THE DESIGN REQUIREMENTS FOR COMMERCIAL STREETS.
3. THE CROWN FOR PAVEMENT SHALL BE 1/4" PER FT FROM THE CENTER OF THE CUL-DE-SAC.
4. IRRIGATION SYSTEMS ARE NOT ALLOWED IN THE STREET RIGHTS-OF-WAY UNLESS AN ENCROACHMENT AGREEMENT HAS BEEN ISSUED BY THE TOWN OF PINEVILLE
5. TREES PROPOSED IN THE PLANTING STRIPS OR RIGHTS-OF-WAY SHALL APPROVED BY THE TOWN OF PINEVILLE PRIOR TO INSTALLATION



NOT TO SCALE

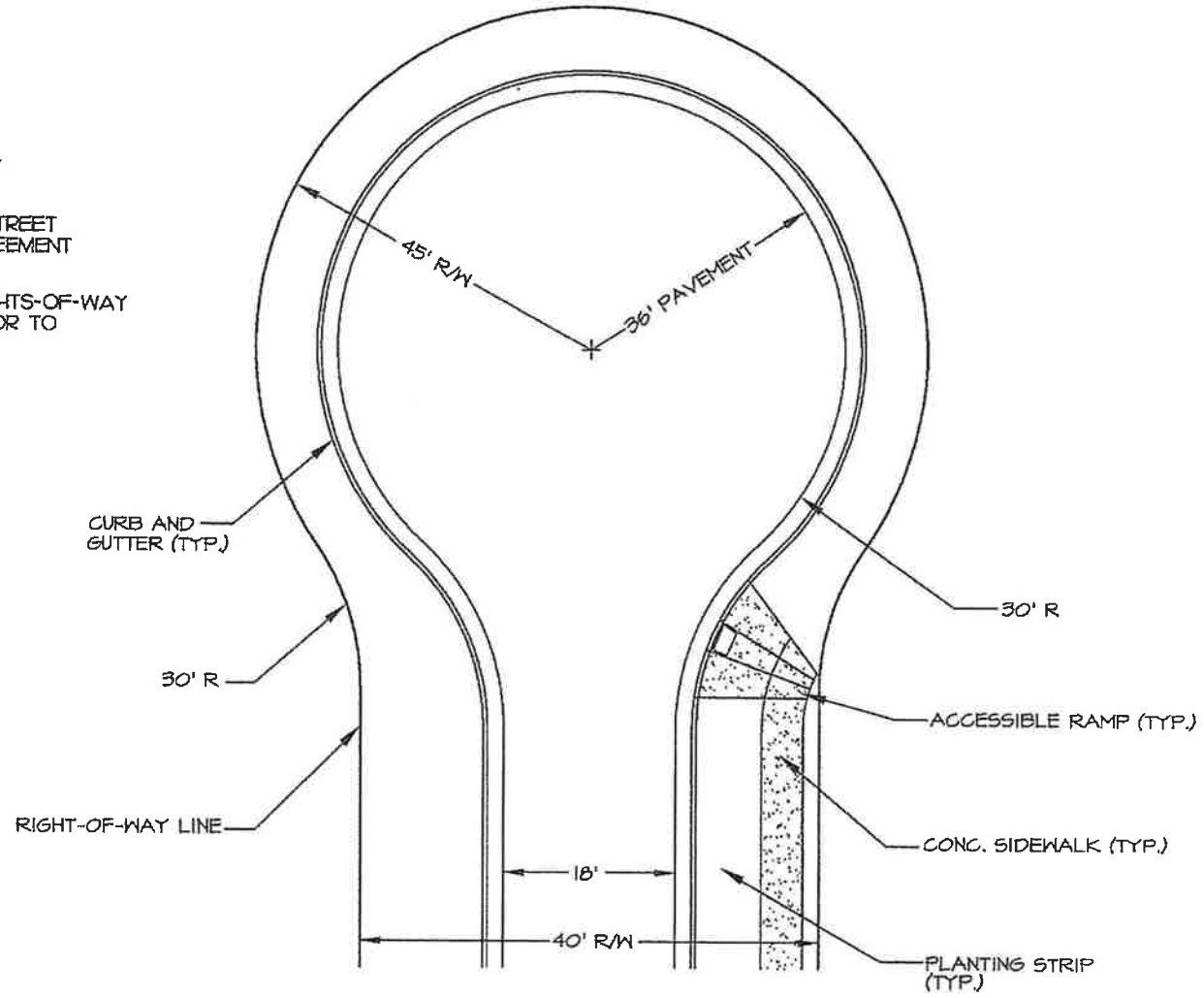
TOWN OF PINEVILLE
LAND DEVELOPMENT STANDARDS

MINOR COLLECTOR CUL-DE-SAC

STD. NO.	REV.
10.13	

NOTES:

1. ALTERNATIVE CUL-DE-SAC DESIGNS, INCLUDING ISLANDS SHALL BE SUBMITTED TO THE TOWN ENGINEER FOR REVIEW AND APPROVAL.
2. SIDEWALK MAY BE REQUIRED TO EXTEND AROUND CUL-DE-SAC BULB WHERE PARKS OR SCHOOLS HAVE FRONTAGE TO THE END OF THE CUL-DE-SAC.
3. THE CROWN FOR PAVEMENT SHALL BE 1/4" PER FT FROM THE CENTER OF THE CUL-DE-SAC.
4. IRRIGATION SYSTEMS ARE NOT ALLOWED IN THE STREET RIGHTS-OF-WAY UNLESS AN ENCROACHMENT AGREEMENT HAS BEEN ISSUED BY THE TOWN OF PINEVILLE
5. TREES PROPOSED IN THE PLANTING STRIPS OR RIGHTS-OF-WAY SHALL APPROVED BY THE TOWN OF PINEVILLE PRIOR TO INSTALLATION

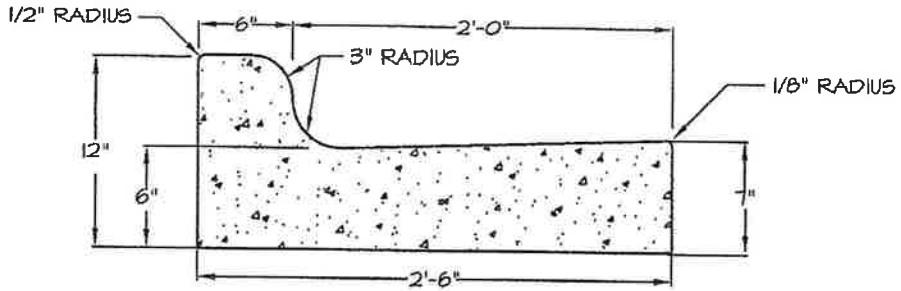


NOT TO SCALE

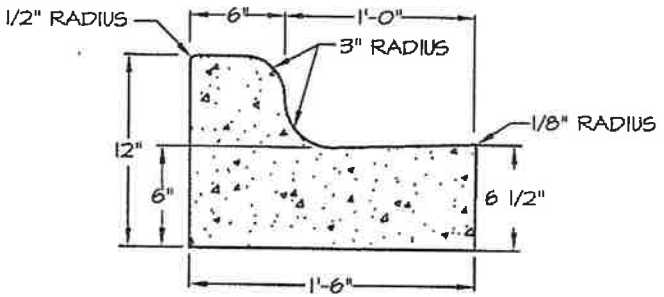
TOWN OF PINEVILLE
LAND DEVELOPMENT STANDARDS

RESIDENTIAL CUL-DE-SAC

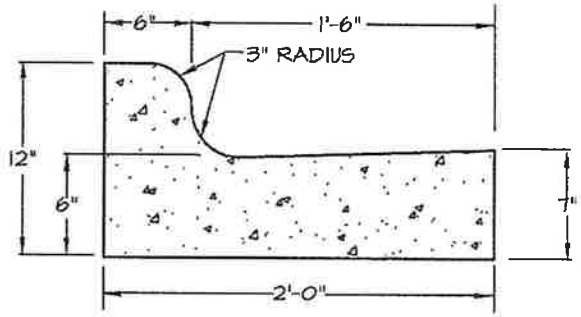
STD. NO.	REV.
10.14	



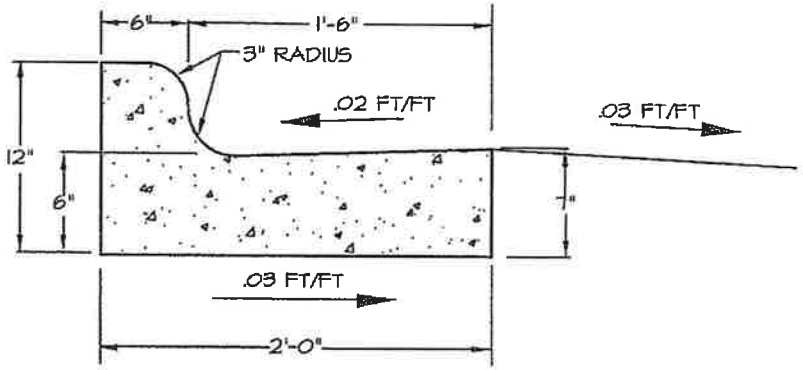
STANDARD 2'-6" CURB AND GUTTER



1'-6" STANDARD CURB AND GUTTER



2'-0" STANDARD CURB & GUTTER



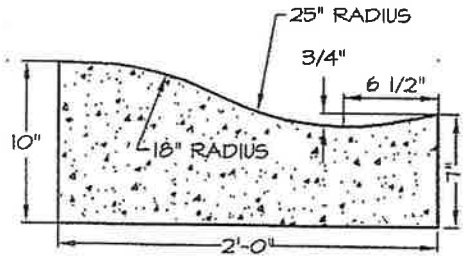
SLOPE FOR VARIABLE
SUPERELEVATION RATES

NOT TO SCALE

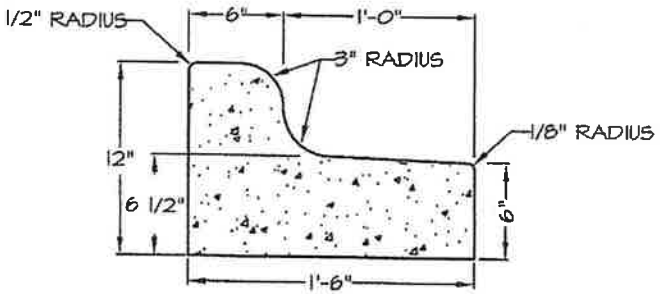
TOWN OF PINEVILLE
LAND DEVELOPMENT STANDARDS

STANDARD CURB AND GUTTER

STD. NO.	REV.
10.17A	

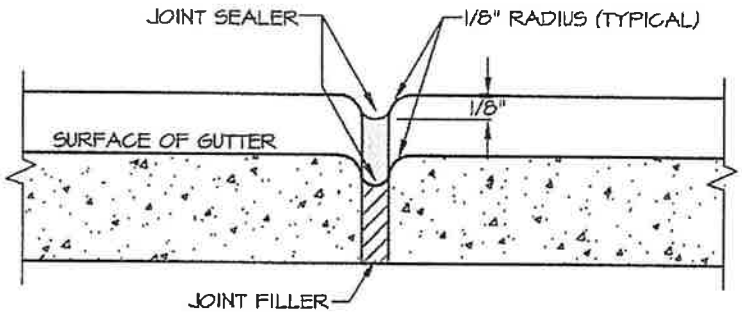


2'-0" VALLEY GUTTER

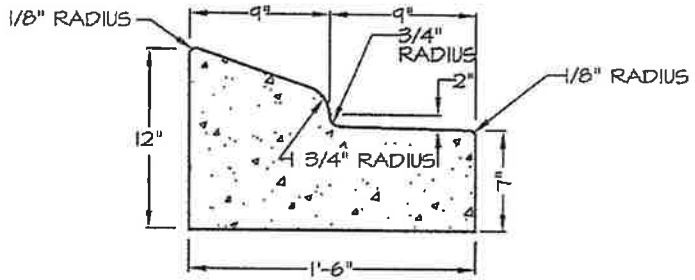


1'-6" MEDIAN CURB AND GUTTER

TO BE USED IN MEDIANS WHEN LANES ARE SLOPED FROM ISLAND OR AS SPECIFIED BY THE TOWN ENGINEER.



TRANSVERSE EXPANSION JOINT



1'-6" MOUNTABLE CURB AND GUTTER

TO BE USED IN MEDIANS ONLY: WHEN SPECIFIED BY THE APPROPRIATE TOWN ENGINEERING DEPT.

NOTES:

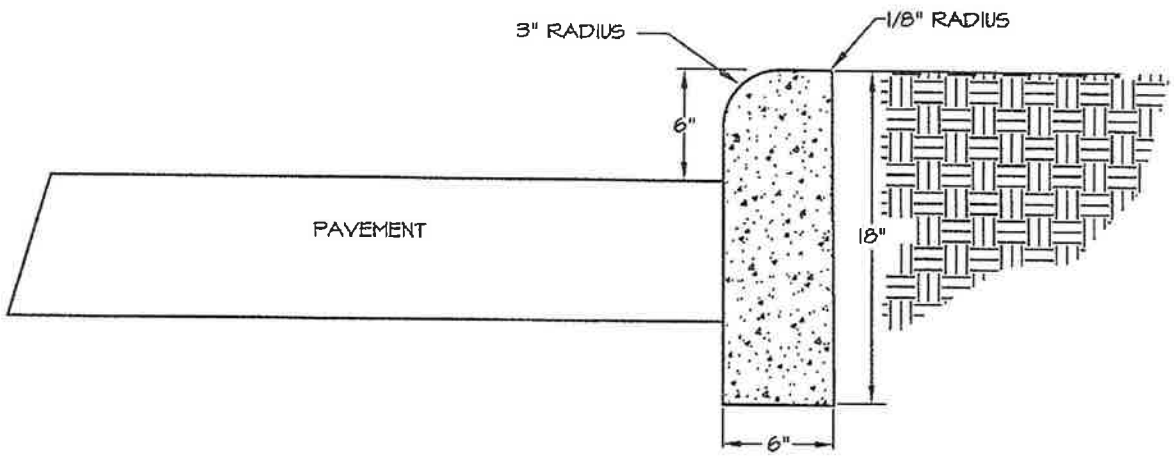
1. CONTRACTION JOINTS SHALL BE SPACED AT 10-FOOT INTERVALS. FOR VALLEY GUTTER, A 10-FOOT SPACING MAY BE USED WHEN A MACHINE IS USED. JOINT SPACING MAY BE ALTERED BY THE TOWN ENGINEER TO PREVENT UNCONTROLLED CRACKING.
2. CONTRACTION JOINTS MAY BE INSTALLED BY THE USE OF TEMPLATES OR FORMED BY OTHER APPROVED METHODS. WHERE SUCH JOINTS ARE NOT FORMED BY TEMPLATES, A MINIMUM DEPTH OF 1 1/2" SHALL BE OBTAINED.
3. ALL EXPANSION JOINTS SHALL BE SPACED AT 90-FOOT INTERVALS, AND ADJACENT TO ALL RIGID OBJECTS. JOINTS SHALL MATCH LOCATIONS WITH JOINTS IN ABUTTING SIDEWALK.
4. CONCRETE COMPRESSIVE STRENGTH SHALL BE 3600 P.S.I. IN 28 DAYS.
5. CURB SHALL BE DEPRESSED AT INTERSECTIONS TO PROVIDE FOR FUTURE ACCESSIBLE RAMPS.
6. TOP 6" OF SUBGRADE BENEATH THE CURB AND GUTTER SHALL BE COMPACTED TO 100% STANDARD PROCTOR DENSITY.

NOT TO SCALE

TOWN OF PINEVILLE
LAND DEVELOPMENT STANDARDS

CURB AND GUTTER

STD. NO.	REV.
10.17B	



NOTES:

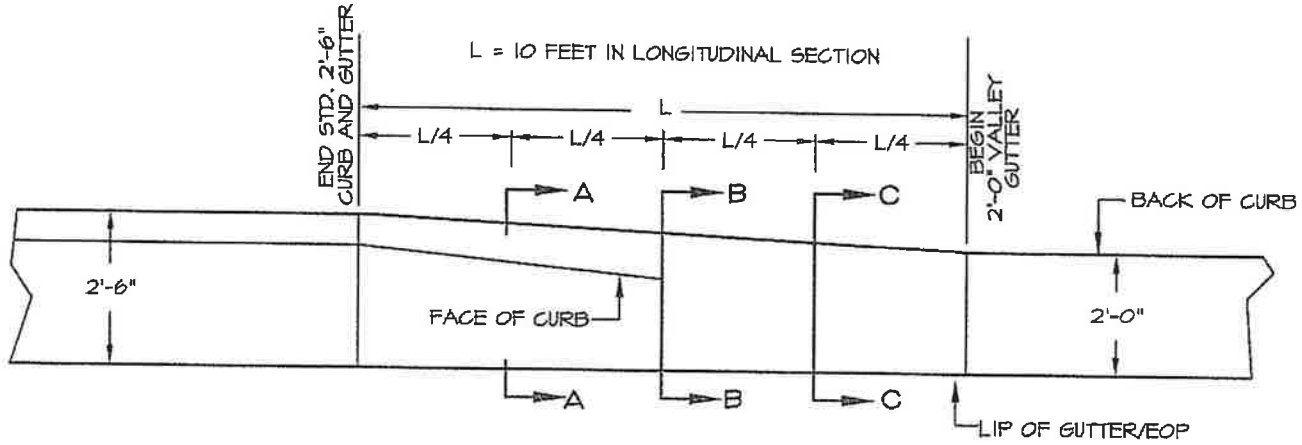
1. CONTRACTION JOINTS SHALL BE SPACED AT 10-FOOT INTERVALS. JOINT SPACING MAY BE ALTERED BY THE ENGINEER TO PREVENT UNCONTROLLED CRACKING.
2. CONTRACTION JOINTS MAY BE INSTALLED BY THE USE OF TEMPLATES OR FORMED BY OTHER APPROVED METHODS. WHERE SUCH JOINTS ARE NOT FORMED BY TEMPLATES, A MINIMUM DEPTH OF 1 1/2" SHALL BE OBTAINED.
3. ALL EXPANSION JOINTS SHALL BE SPACED AT 90-FOOT INTERVALS, AND ADJACENT TO ALL RIGID OBJECTS. JOINTS SHALL MATCH LOCATIONS WITH JOINTS IN ABUTTING SIDEWALK.
4. CONCRETE COMPRESSIVE STRENGTH SHALL BE 3600 P.S.I. IN 28 DAYS.
5. CURB SHALL BE DEPRESSED AT INTERSECTIONS TO PROVIDE FOR FUTURE ACCESSIBLE RAMPS.
6. TOP 6" OF SUBGRADE BENEATH THE CURB SHALL BE COMPACTED TO 100% STANDARD PROCTOR DENSITY.
7. DETAIL MAY BE USED FOR PRIVATE DRIVES, PARKING LOTS, AND INTERIOR CIRCULATION DRIVE.

NOT TO SCALE

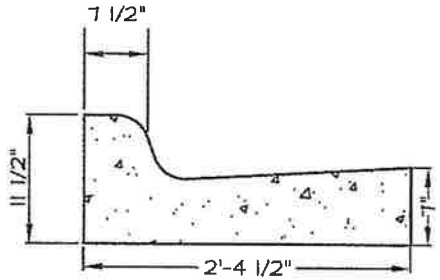
TOWN OF PINEVILLE
LAND DEVELOPMENT STANDARDS

18" VERTICAL CURB

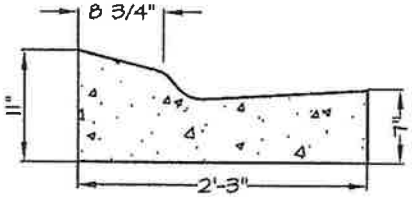
STD. NO.	REV.
10.18	



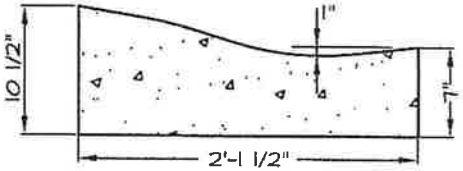
PLAN VIEW



SECTION A-A



SECTION B-B



SECTION C-C

NOTES:

1. TRANSITION IS NOT TO BE LOCATED WITHIN THE CURB RADIUS.

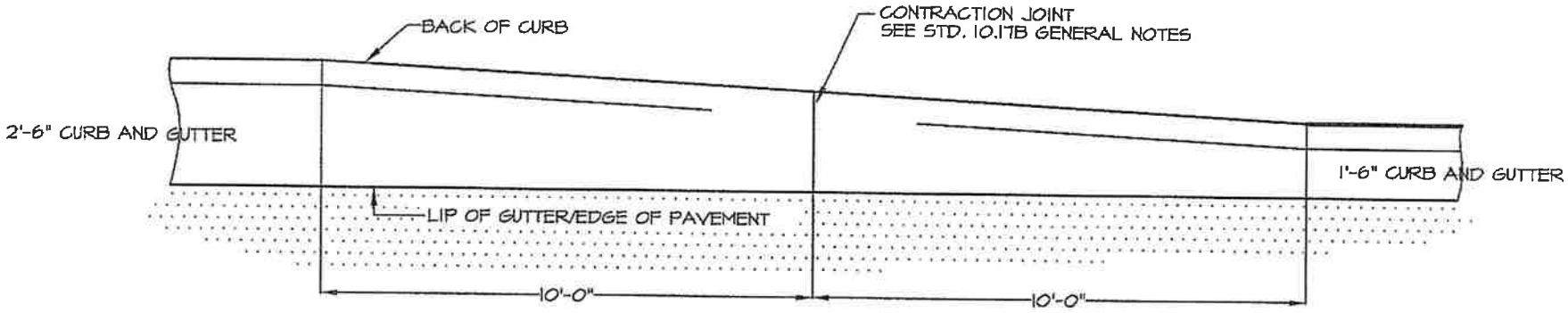
NOT TO SCALE

TOWN OF PINEVILLE
LAND DEVELOPMENT STANDARDS

CURB TRANSITION

2'6" CURB AND GUTTER TO 2'-0" VALLEY GUTTER

STD. NO.	REV.
10.19	



PLAN VIEW

NOTES:

1. TRANSITION TO BE ALONG BACK OF CURB.

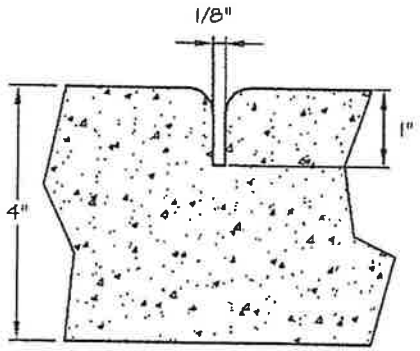
NOT TO SCALE

TOWN OF PINEVILLE
LAND DEVELOPMENT STANDARDS

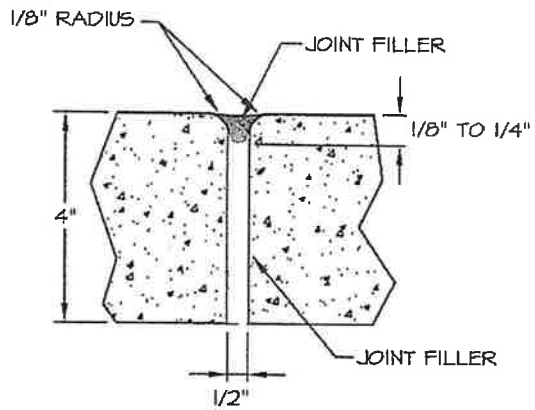
CURB TRANSITION

2'-6" CURB AND GUTTER TO 1'-6" CURB AND GUTTER

STD. NO.	REV.
10.20	



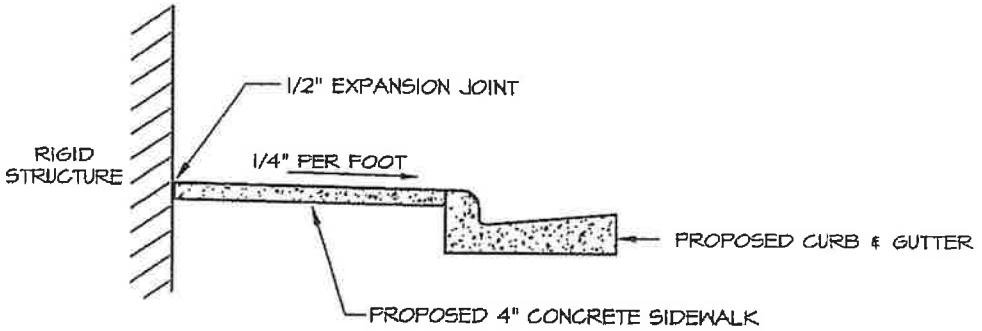
GROOVE JOINT IN SIDEWALK



TRANSVERSE EXPANSION JOINT IN SIDEWALK

GENERAL NOTES:

1. A GROOVE JOINT 1" DEEP WITH 1/8" RADII SHALL BE REQUIRED IN THE CONCRETE SIDEWALK AT 5' INTERVALS. ONE 1/2" EXPANSION JOINT WILL BE REQUIRED AT 45' INTERVALS NOT TO EXCEED 50' AND MATCHING EXPANSION/CONSTRUCTION JOINT IN ADJACENT CURB. A SEALED 1/2" EXPANSION JOINT WILL BE REQUIRED WHERE THE SIDEWALK JOINS ANY RIGID STRUCTURE.
2. SIDEWALK AT DRIVEWAY ENTRANCES TO BE 6" THICK.
3. WIDTH OF SIDEWALK ON THOROUGHFARE STREETS SHALL BE A MINIMUM OF 5'. WIDTH OF SIDEWALKS IN THE CENTRAL BUSINESS DISTRICT WILL BE DETERMINED BY THE TOWN PLANNING DEPT..
4. WIDTH OF SIDEWALKS ON NON-THOROUGHFARE STREETS SHALL BE A MINIMUM OF 5'.
5. SIDEWALK TO BE POURED TO END OF RADIUS AT INTERSECTING STREETS.
6. CONCRETE COMPRESSIVE STRENGTH SHALL BE 3600 PSI. IN 28 DAYS.
7. ZONING CONDITIONS MAY REQUIRE ADDITIONAL WIDTH SIDEWALKS WHICH SHALL SUPERSEDE THESE STANDARD DIMENSIONS SHOWN.
8. TRANSVERSE EXPANSION JOINTS SHALL BE FILLED WITH AN ELASTIC EPOXY FROM THE FILLER TO FLUSH WITH THE TOP OF THE SIDEWALK



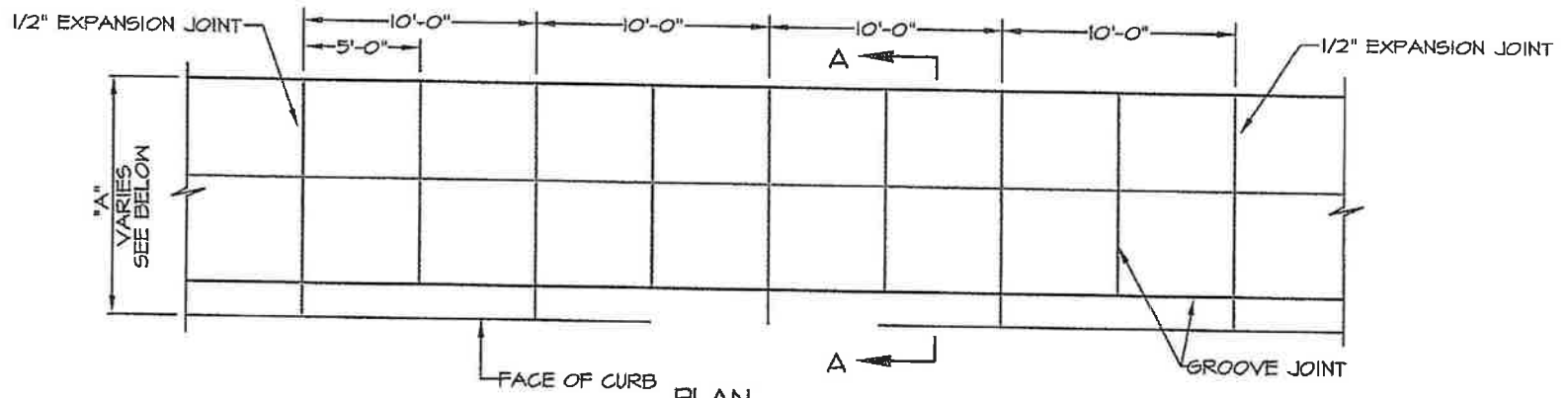
DETAILS SHOWING EXPANSION JOINTS IN CONCRETE SIDEWALK

NOT TO SCALE

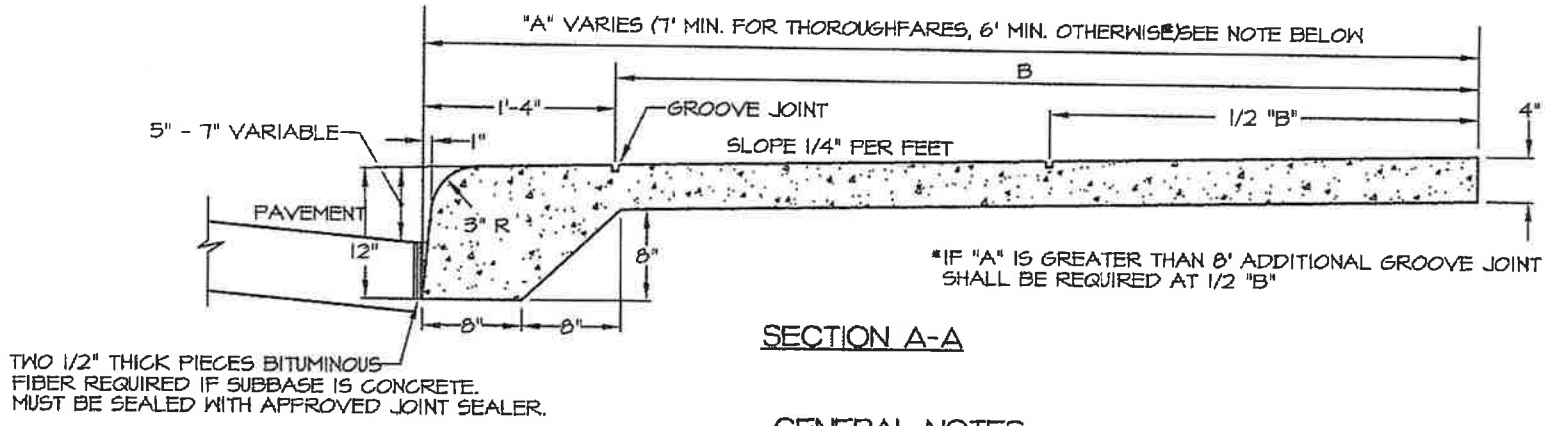
TOWN OF PINEVILLE
LAND DEVELOPMENT STANDARDS

CONCRETE SIDEWALKS

STD. NO.	REV.
10.22	



PLAN



SECTION A-A

GENERAL NOTES:

1. A GROOVE JOINT 1" DEEP WITH 1/3" RADII SHALL BE REQUIRED IN THE CONCRETE SIDEWALK AT 5' INTERVALS. ONE 1/2" EXPANSION JOINT WILL BE REQUIRED AT 40' INTERVALS. A 1/2" EXPANSION JOINT WILL BE REQUIRED WHERE THE SIDEWALK JOINS ANY RIGID STRUCTURE.
2. ALL CONCRETE TO BE 3600 P.S.I. COMPRESSIVE STRENGTH.
3. SEE STANDARD 10.22 FOR DETAIL OF EXPANSION JOINT AND GROOVE JOINT.
4. SEE STANDARD 10.26 FOR DETAIL OF DRIVEWAY.
5. MONOLITHIC CURB AND SIDEWALK TO BE CONSTRUCTED ONLY WHEN REPLACING GRANITE CURB OR AT LOCATIONS APPROVED BY THE APPROPRIATE TOWN ENGINEER.

NOT TO SCALE

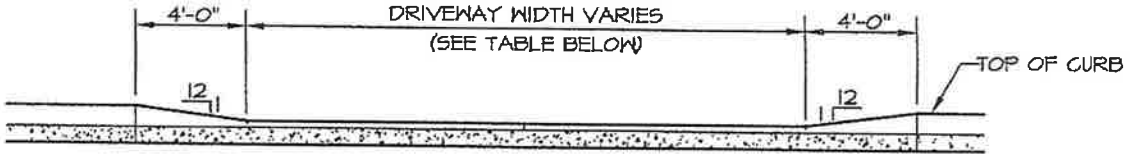
TOWN OF PINEVILLE
LAND DEVELOPMENT STANDARDS

MONOLITHIC CONCRETE CURB AND SIDEWALK

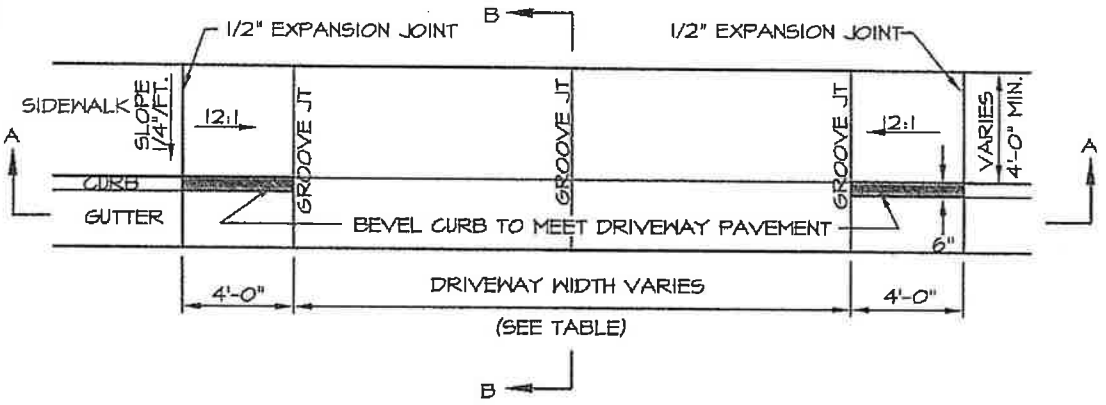
STD. NO.	REV.
10.23	

NOTE:

1. 1/2" EXPANSION JOINTS REQUIRE INSTALLATION OF ONE 1/2" THICK PIECE OF BITUMINOUS FIBER THROUGH THE ENTIRE SLAB.
2. TO LIMIT STORM WATER FLOW DOWN DRIVEWAYS, USE STANDARD 10.24C FOR DRIVEWAYS NEAR LOW POINTS.
3. ALL DRIVEWAYS MUST MEET THE CURRENT TOWN DRIVEWAY REGULATIONS AND NCDOT REQUIREMENTS FOR SPACING, SIGHT DISTANCE AND OFFSETS FROM PROPERTY LINES AND INTERSECTIONS.
4. "A" BREAKOVER SHALL BE 8% OR LESS (A = ALGEBRAIC DIFFERENCE).
5. PRIOR APPROVAL IS REQUIRED BY CDOT ON GRADES EXCEEDING WHAT ARE SHOWN.



SECTION A - A



PLAN

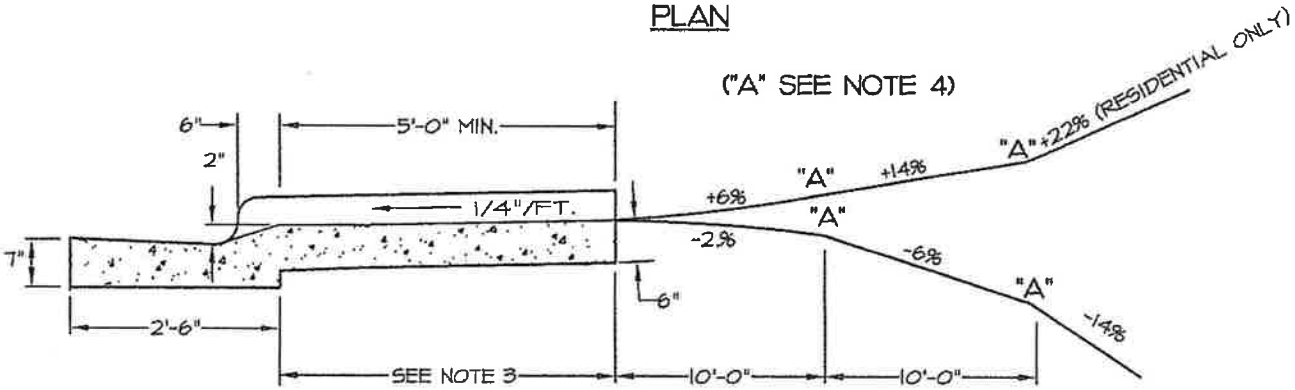
GENERAL NOTES:

ALL CONCRETE TO BE 3600 P.S.I. COMPRESSIVE STRENGTH.

ALL CURB, CURB AND GUTTER AND SIDEWALKS ARE TO BE REMOVED TO THE NEAREST JOINT BEYOND NEW CONSTRUCTION OR CUT WITH A SAW AND REMOVED. SAW CUT OR JOINT TO BE PERPENDICULAR TO EDGE OF EXISTING PAVEMENT.
SEE STD. NO 10.17B FOR DETAIL OF EXPANSION JOINT AND GROOVE JOINT.

DRIVEWAY WIDTH		
TYPE DRIVEWAY	MINIMUM	MAXIMUM
TYPE ERESIDENTIAL:		
LOCAL/COLLECTOR	10'	30'
THOROUGHFARE*	15'	30'
ONE-WAY TYPETIT COMMERCIAL	20'	30'
TWO-WAY TYPETTT COMMERCIAL	26'	50'

* MUST PROVIDE ON-SITE TURNAROUND



SECTION B - B

NOT TO SCALE

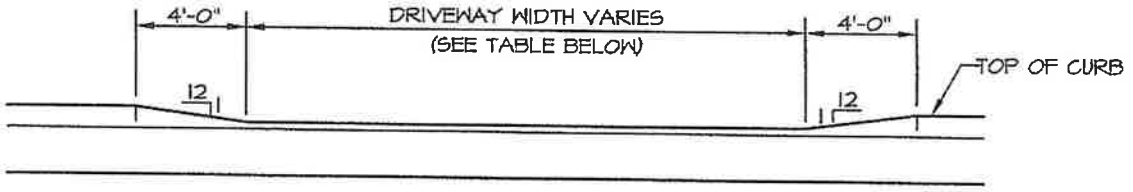
TOWN OF PINEVILLE
LAND DEVELOPMENT STANDARDS

COMMERCIAL TYPE II AND RESIDENTIAL TYPE I DROP CURB DRIVEWAY WITH SIDEWALK ABUTTING CURB
(2'-6" CURB AND GUTTER)

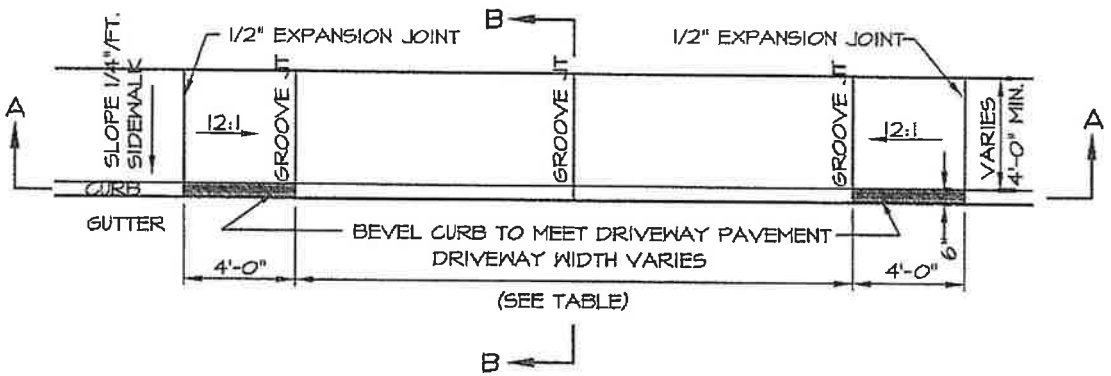
STD. NO.	REV.
10.24A	

NOTE:

1. 1/2" EXPANSION JOINTS REQUIRE INSTALLATION OF ONE 1/2" THICK PIECE OF BITUMINOUS FIBER THROUGH THE ENTIRE SLAB.
2. TO LIMIT STORM WATER FLOW DOWN DRIVEWAYS, USE STANDARD 10.24C FOR DRIVEWAYS NEAR LOW POINTS.
3. ALL DRIVEWAYS MUST MEET THE CURRENT TOWN DRIVEWAY REGULATIONS AND NCDOT REQUIREMENTS FOR SPACING, SIGHT DISTANCE AND OFFSETS FROM PROPERTY LINES AND INTERSECTIONS.
4. "A" BREAKOVER SHALL BE 8% OR LESS (A = ALGEBRAIC DIFFERENCE).
5. PRIOR APPROVAL IS REQUIRED BY TOWN ENGINEER ON GRADES EXCEEDING WHAT ARE SHOWN.



SECTION A - A



PLAN

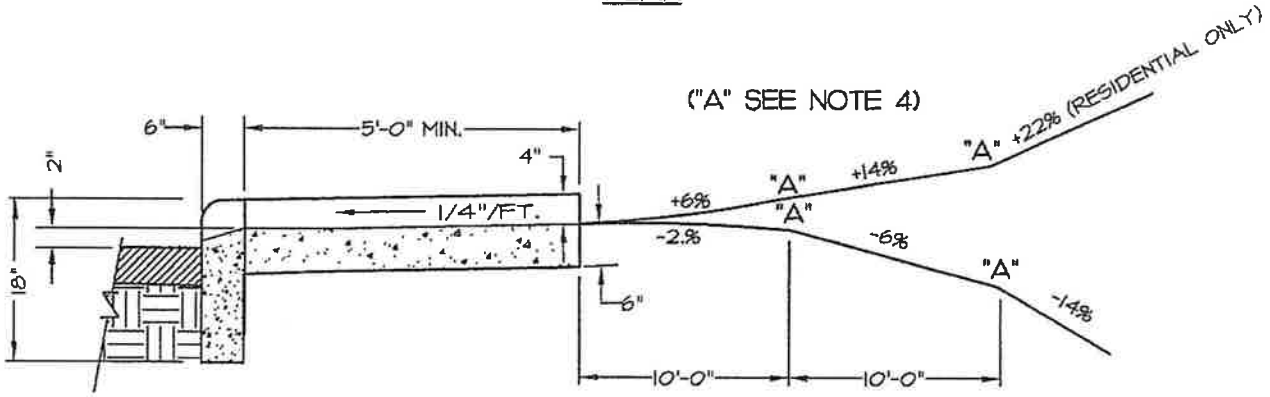
GENERAL NOTES:

ALL CONCRETE TO BE 3600 P.S.I. COMPRESSIVE STRENGTH.

ALL CURB, CURB AND GUTTER AND SIDEWALKS ARE TO BE REMOVED TO THE NEAREST JOINT BEYOND NEW CONSTRUCTION OR CUT WITH A SAW AND REMOVED. SAW CUT OR JOINT TO BE PERPENDICULAR TO EDGE OF EXISTING PAVEMENT.
SEE STD. NO 10.17B FOR DETAIL OF EXPANSION JOINT AND GROOVE JOINT.

DRIVEWAY WIDTH		
TYPE DRIVEWAY	MINIMUM	MAXIMUM
TYPE I-RESIDENTIAL: LOCAL/COLLECTOR THOROUGHFARE*	10' 15'	30' 30'
ONE-WAY TYPE II COMMERCIAL	20'	30'
TWO-WAY TYPE II COMMERCIAL	26'	50'

* MUST PROVIDE ON-SITE TURNAROUND



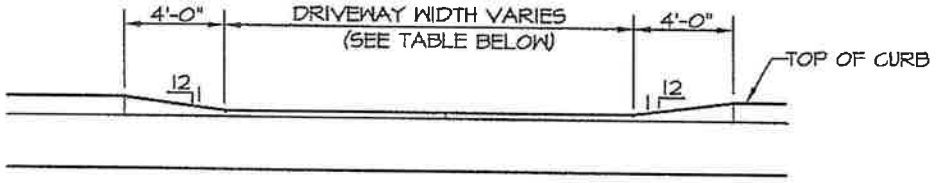
SECTION B - B

NOT TO SCALE

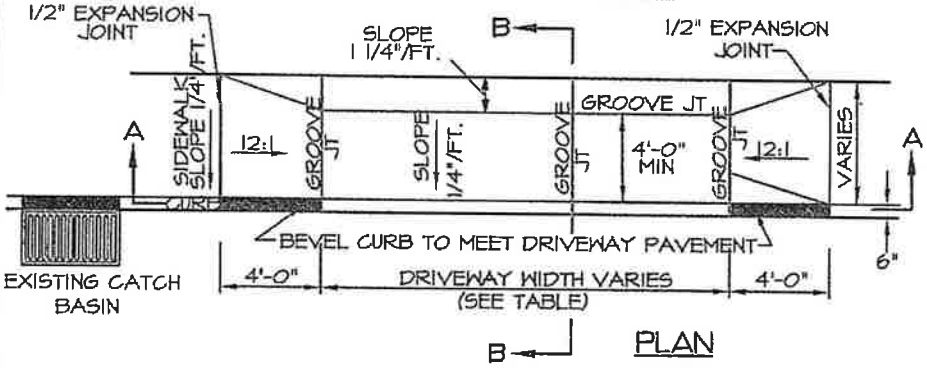
TOWN OF PINEVILLE
LAND DEVELOPMENT STANDARDS

COMMERCIAL TYPE II AND RESIDENTIAL TYPE I DROP CURB DRIVEWAY WITH SIDEWALK ABUTTING CURB
(6" X 18" VERTICAL CURB)

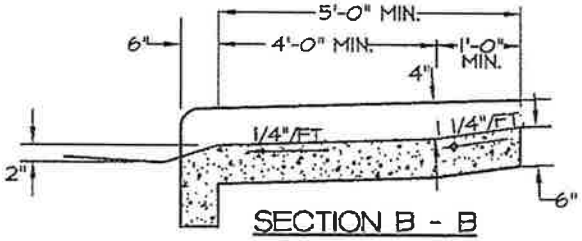
STD. NO.	REV.
10.24B	



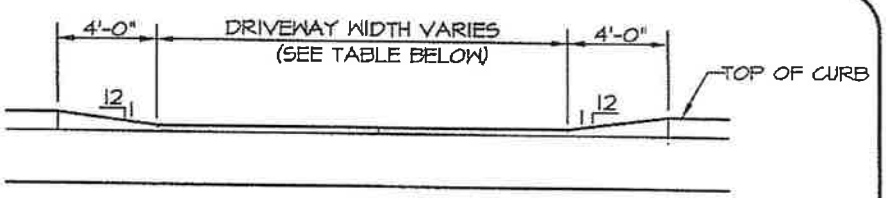
SECTION A - A



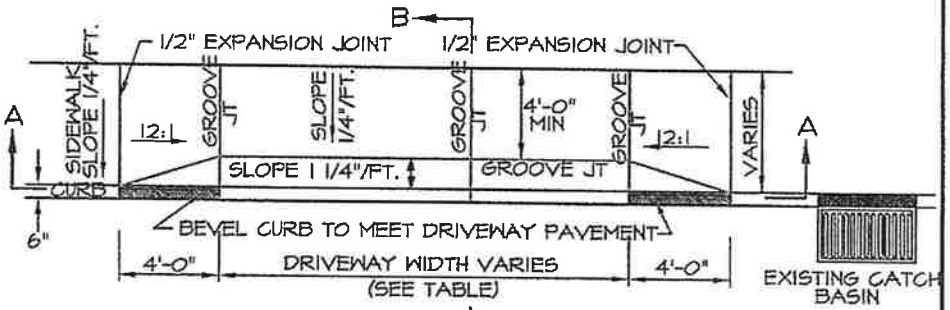
PLAN



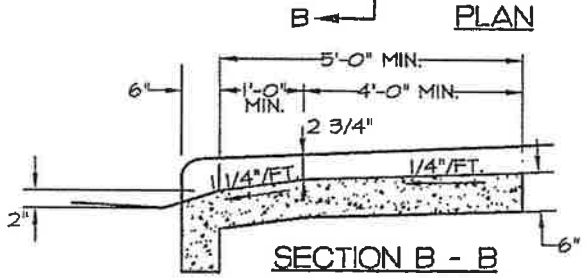
SECTION B - B



SECTION A - A



PLAN



SECTION B - B

DRIVEWAY WIDTH		
TYPE DRIVEWAY	MINIMUM	MAXIMUM
TYPE I-RESIDENTIAL LOCAL/COLLECTOR THOROUGHFARE*	 10' 15'	 30' 30'
ONE-WAY TYPE II COMMERCIAL	20'	30'
TWO-WAY TYPE II COMMERCIAL	26'	50'

* MUST PROVIDE ON-SITE TURNAROUND

NOTES

1. USED AT LOW POINTS IN ROADWAYS WITH 2'-6" CURB AND GUTTER OR 6" X 18" CURB AS DIRECTED BY TOWN ENGINEER.
2. SEE STANDARDS 10.24A & 10.24B FOR ADDITIONAL DETAILS.
3. ALL DRIVEWAYS MUST MEET THE CURRENT TOWN DRIVEWAY REGULATIONS AND NCDOT REQUIREMENTS FOR SPACING, SIGHT DISTANCE AND OFFSETS FROM PROPERTY LINES AND INTERSECTIONS.

NOT TO SCALE

TOWN OF PINEVILLE

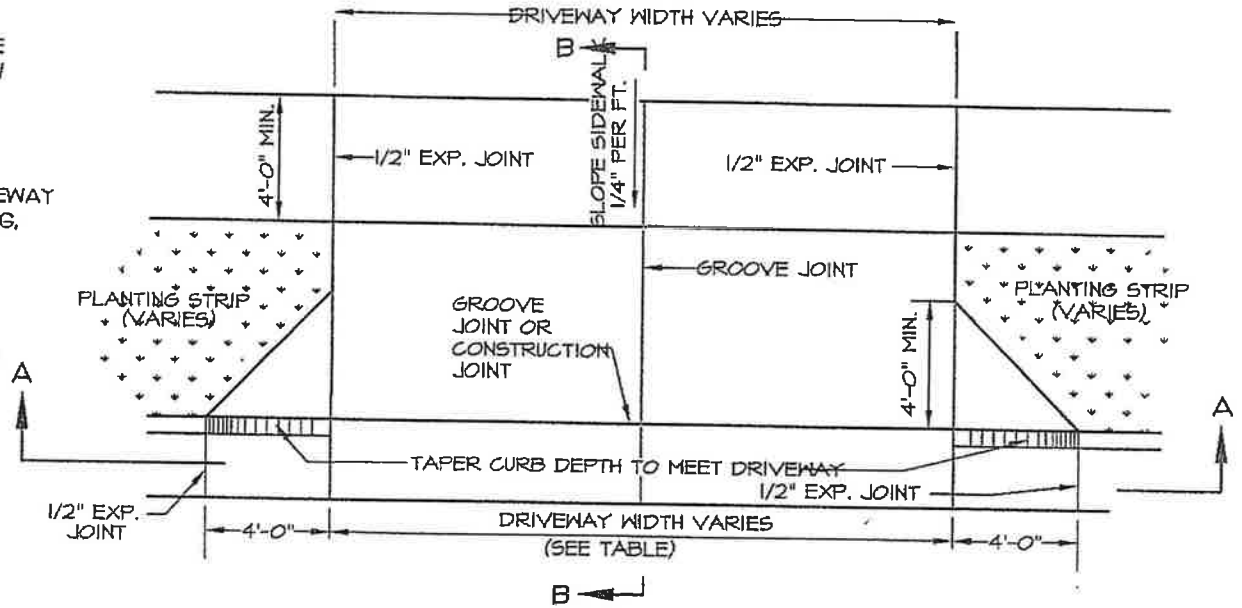
LAND DEVELOPMENT STANDARDS

COMMERCIAL AND RESIDENTIAL DROP CURB DRIVEWAY WITH SIDEWALK ABUTTING CURB

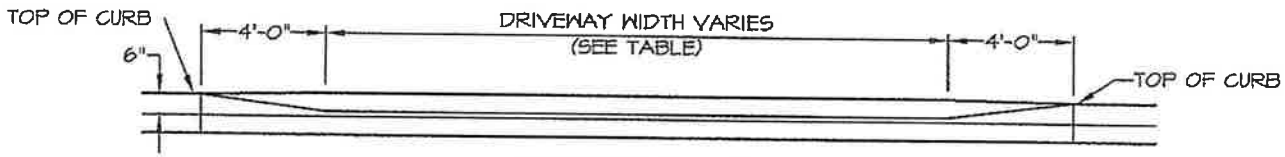
STD. NO.	REV.
10.24C	

NOTES:

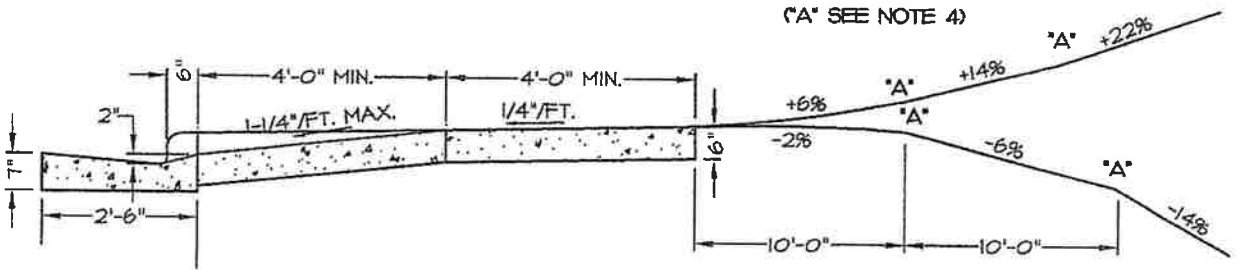
1. ALL CONCRETE TO BE 3600 P.S.I.
2. ALL CURB OR CURB AND GUTTER AND SIDEWALKS ARE TO BE REMOVED TO THE NEAREST JOINT BEYOND NEW CONSTRUCTION OR CUT WITH A SAW AND REMOVED. SAW CUT OR JOINT TO BE PERPENDICULAR TO EDGE OF EXISTING PAVEMENT. SEE STD. NO. 10.17 FOR JOINT DETAIL.
3. ALL DRIVEWAYS MUST MEET THE CURRENT TOWN DRIVEWAY REGULATIONS AND NCDOT REQUIREMENTS FOR SPACING, SIGHT DISTANCE AND OFFSETS FROM PROPERTY LINES AND INTERSECTIONS.
4. "A" BREAKOVER SHALL BE 8% OR LESS (A = ALGEBRAIC DIFFERENCE).
5. PRIOR APPROVAL IS REQUIRED BY TOWN ENGINEER ON GRADES EXCEEDING WHAT ARE SHOWN.



PLAN VIEW



SECTION A - A



SECTION B - B

DRIVEWAY WIDTH		
DRIVEWAY TYPE	MINIMUM	MAXIMUM
LOCAL/COLLECTOR	10'	30'
THOROUGHFARE*	15'	30'

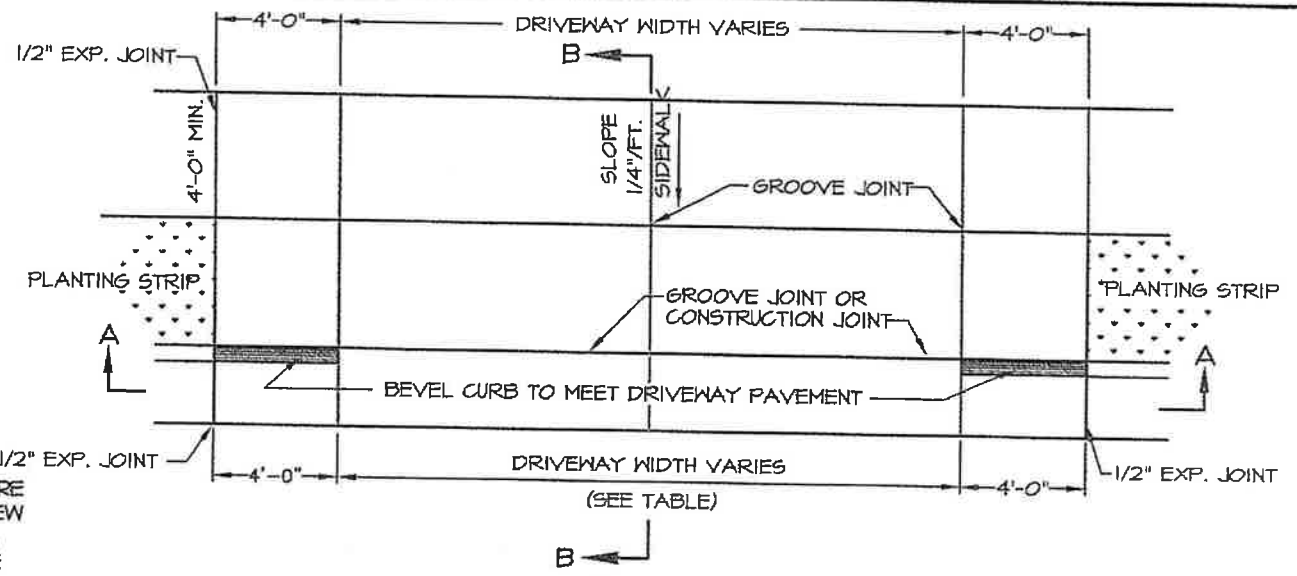
* MUST PROVIDE ON-SITE TURNAROUND

NOT TO SCALE

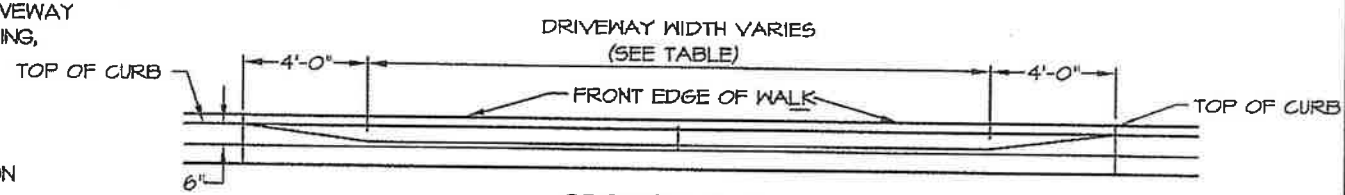
TOWN OF PINEVILLE
LAND DEVELOPMENT STANDARDS

RESIDENTIAL DROP CURB TYPE I DRIVEWAY WITH PLANTING STRIP (2'-6" CURB AND GUTTER)

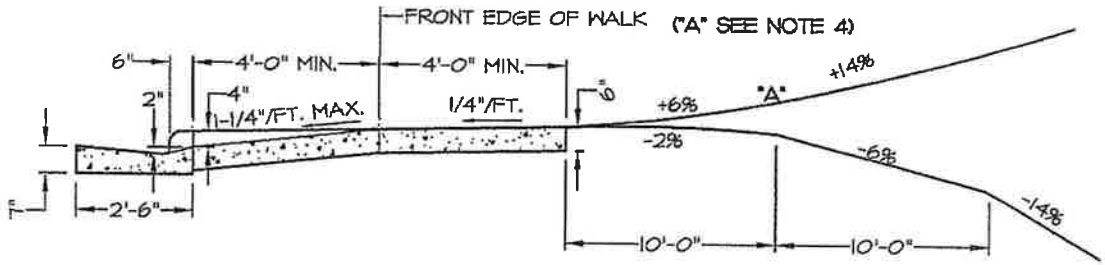
STD. NO.	REV.
10.25A	



PLAN VIEW



SECTION A-A



SECTION B-B

NOTES:

1. ALL CONCRETE TO BE 3600 P.S.I.
2. ALL CURB OR CURB AND GUTTER AND SIDEWALKS ARE TO BE REMOVED TO THE NEAREST JOINT BEYOND NEW CONSTRUCTION OR CUT WITH A SAW AND REMOVED. SAW CUT OR JOINT TO BE PERPENDICULAR TO EDGE OF EXISTING PAVEMENT. SEE STD. NO. 10.17 FOR JOINT DETAIL.
3. ALL DRIVEWAYS MUST MEET THE CURRENT TOWN DRIVEWAY REGULATIONS AND NCDOT REQUIREMENTS FOR SPACING, SIGHT DISTANCE AND OFFSETS FROM PROPERTY LINES AND INTERSECTIONS.
4. "A" BREAKOVER SHALL BE 8% OR LESS (A = ALGEBRAIC DIFFERENCE).
5. PRIOR APPROVAL IS REQUIRED BY TOWN ENGINEER ON GRADES EXCEEDING WHAT ARE SHOWN.

DRIVEWAYS CLASSIFICATION		
TYPE DRIVEWAYS	MINIMUM	MAXIMUM
ONE-WAY TYPE II - COMMERCIAL	20'	30'
TWO-WAY TYPE II - COMMERCIAL	26'	50'*

* NEED MORE THAN ONE CONTRACTION JOINT IN CENTER.

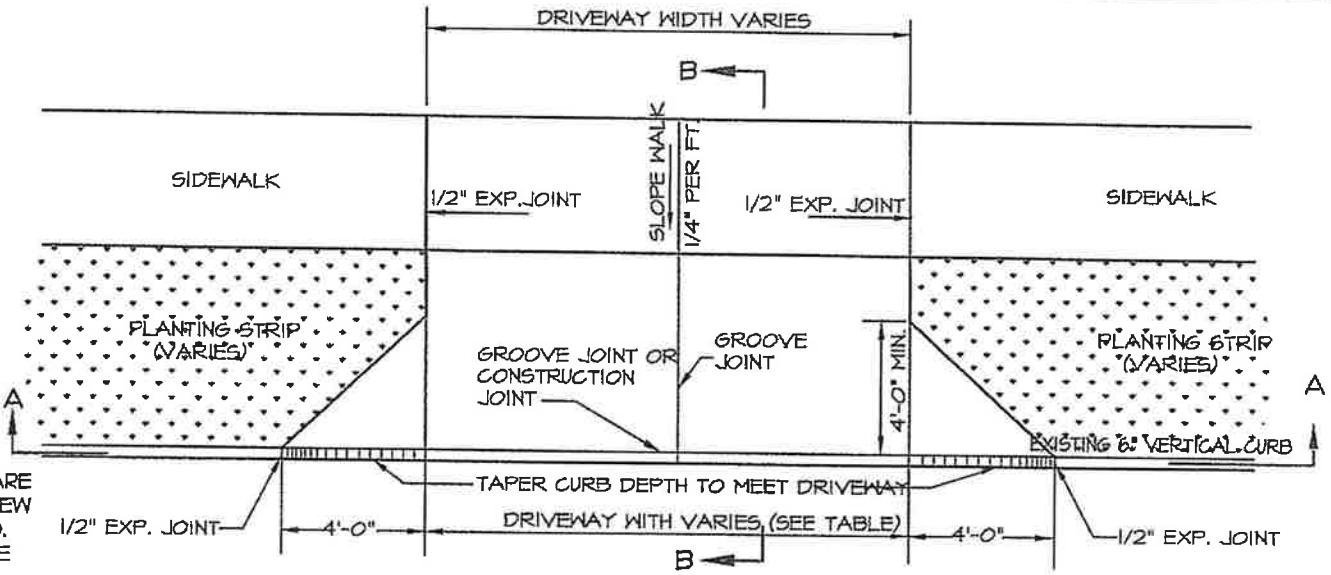
NOT TO SCALE

TOWN OF PINEVILLE

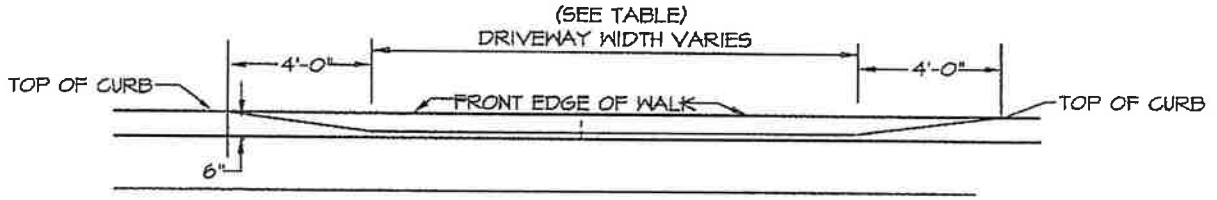
LAND DEVELOPMENT STANDARDS

COMMERCIAL DROP CURB TYPE II DRIVEWAY WITH PLANTING STRIP (2'-6" CURB AND GUTTER)

STD. NO.	REV.
10.25B	



PLAN VIEW



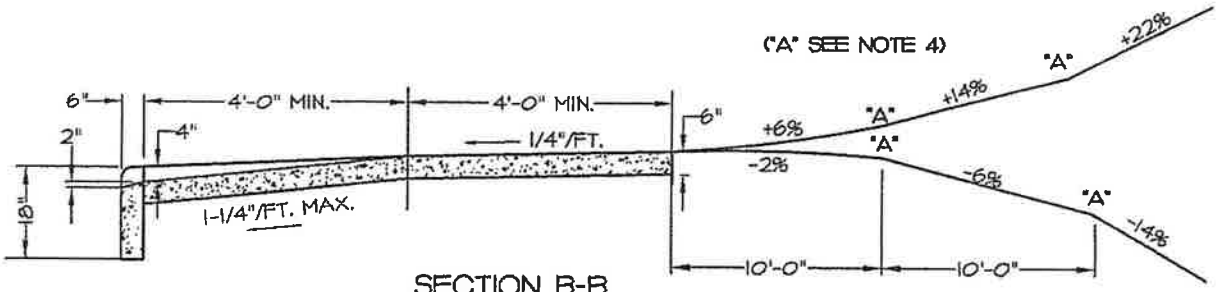
SECTION A-A (ALONG FLOW LINE)

NOTES:

1. ALL CONCRETE TO BE 3600 P.S.I.
2. ALL CURB OR CURB AND GUTTER AND SIDEWALKS ARE TO BE REMOVED TO THE NEAREST JOINT BEYOND NEW CONSTRUCTION OR CUT WITH A SAW AND REMOVED. SAW CUT OR JOINT TO BE PERPENDICULAR TO EDGE OF EXISTING PAVEMENT. SEE STD. NO. 10.17 FOR JOINT DETAIL.
3. ALL DRIVEWAYS MUST MEET THE CURRENT TOWN DRIVEWAY REGULATIONS AND NCDOT REQUIREMENTS FOR SPACING, SIGHT DISTANCE AND OFFSETS FROM PROPERTY LINES AND INTERSECTIONS.
4. "A" BREAKOVER SHALL BE 8% OR LESS (A = ALGEBRAIC DIFFERENCE).
5. PRIOR APPROVAL IS REQUIRED BY TOWN ENGINEER ON GRADES EXCEEDING WHAT ARE SHOWN.

DRIVEWAY WIDTH		
DRIVEWAY TYPE	MINIMUM	MAXIMUM
LOCAL/COLLECTOR	10'	30'
THOROUGHFARE*	15'	30'

* MUST PROVIDE ON-SITE TURNAROUND



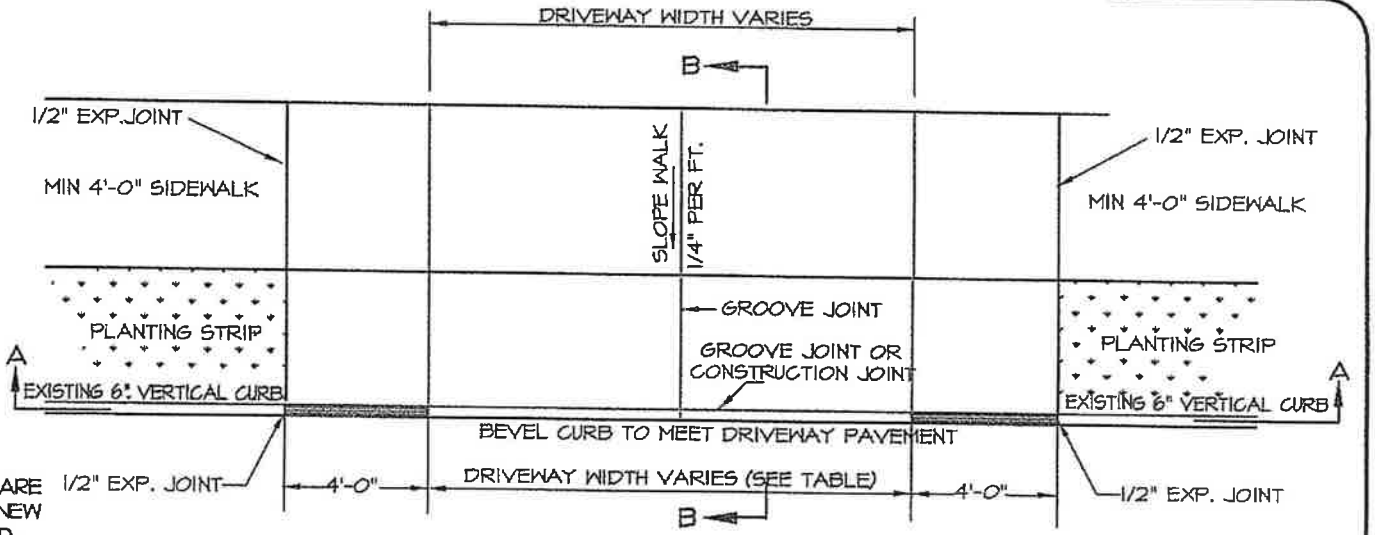
SECTION B-B

NOT TO SCALE

TOWN OF PINEVILLE
LAND DEVELOPMENT STANDARDS

RESIDENTIAL DROP CURB TYPE I DRIVEWAY WITH PLANTING STRIP (6" X 18" VERTICAL CURB)

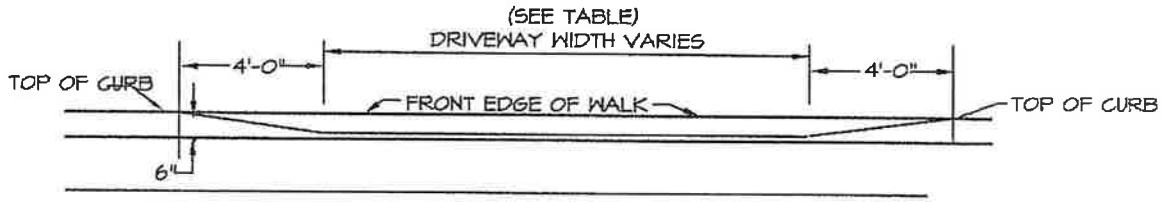
STD. NO.	REV.
10.25C	



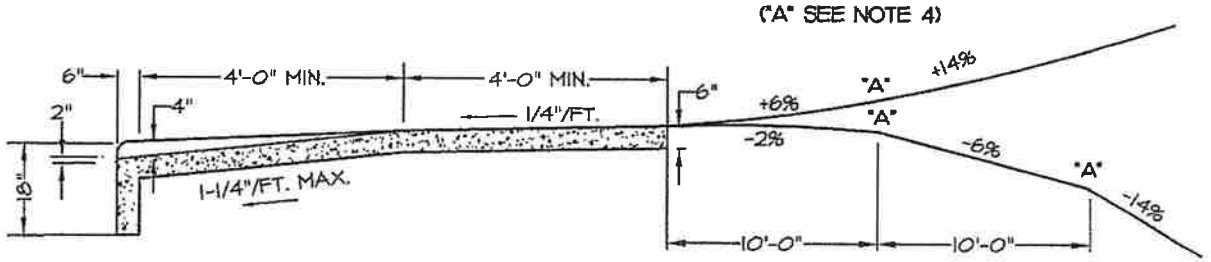
PLAN VIEW

NOTES:

1. ALL CONCRETE TO BE 3600 P.S.I.
2. ALL CURB OR CURB AND GUTTER AND SIDEWALKS ARE TO BE REMOVED TO THE NEAREST JOINT BEYOND NEW CONSTRUCTION OR CUT WITH A SAW AND REMOVED. SAW CUT OR JOINT TO BE PERPENDICULAR TO EDGE OF EXISTING PAVEMENT. SEE STD. NO. 10.17 FOR JOINT DETAIL.
3. ALL DRIVEWAYS MUST MEET THE CURRENT TOWN DRIVEWAY REGULATIONS AND NCDOT REQUIREMENTS FOR SPACING, SIGHT DISTANCE AND OFFSETS FROM PROPERTY LINES AND INTERSECTIONS.
4. "A" BREAKOVER SHALL BE 8% OR LESS (A = ALGEBRAIC DIFFERENCE).
5. PRIOR APPROVAL IS REQUIRED BY TOWN ENGINEER ON GRADES EXCEEDING WHAT ARE SHOWN.



SECTION A-A (ALONG FLOW LINE)



SECTION B-B

DRIVEWAYS CLASSIFICATION		
TYPE DRIVEWAYS	MINIMUM	MAXIMUM
ONE-WAY TYPE II - COMMERCIAL	20'	30'
TWO-WAY TYPE II - COMMERCIAL	26'	50'*

* NEED MORE THAN ONE CONTRACTION JOINT IN CENTER.

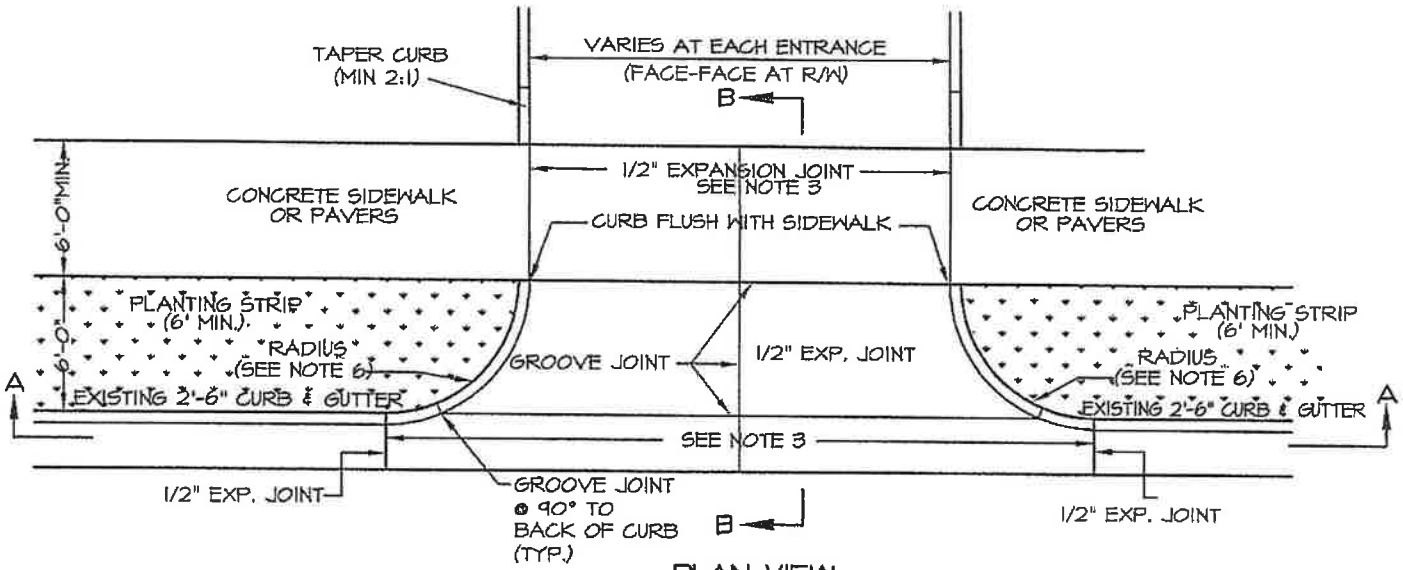
NOT TO SCALE

TOWN OF PINEVILLE
LAND DEVELOPMENT STANDARDS

COMMERCIAL DROP CURB TYPE II DRIVEWAY WITH PLANTING STRIP (6" X 18" VERTICAL CURB)

STD. NO.	REV.
10.25D	

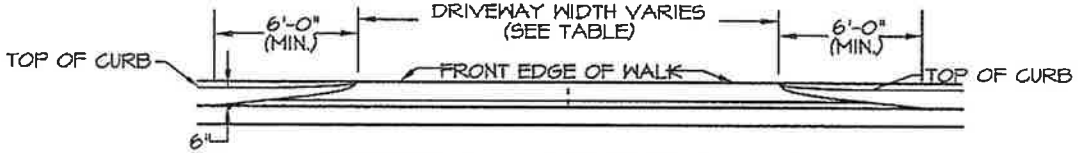
DRIVEWAY DIMENSIONS		
OPERATION/RADIUS	MINIMUM	MAXIMUM
ONE-WAY WITH 6-12 FT. RADII	20'	30'
ONE-WAY WITH 13+ FT. RADII	15'	25'
TWO-WAY WITH 6-12 FT. RADII	26'	50'
TWO-WAY WITH 13+ FT. RADII	22'	40'



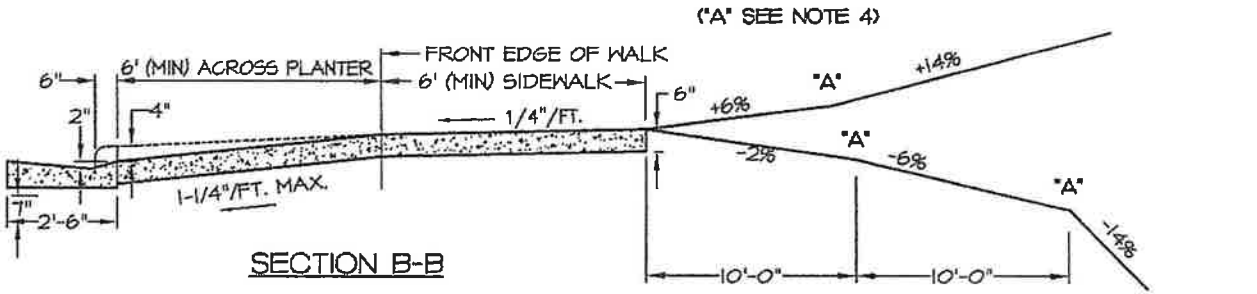
PLAN VIEW

NOTES:

1. ALL CONCRETE TO BE 3600 P.S.I.
2. ALL CURB OR CURB AND GUTTER AND SIDEWALKS ARE TO BE REMOVED TO THE NEAREST JOINT BEYOND NEW CONSTRUCTION OR CUT WITH A SAW AND REMOVED. SAW CUT OR JOINT TO BE PERPENDICULAR TO EDGE OF EXISTING PAVEMENT. SEE STD. NO. 10.17 FOR JOINT DETAIL.
3. ALL DRIVEWAYS MUST MEET THE CURRENT TOWN DRIVEWAY REGULATIONS AND NCDOT REQUIREMENTS FOR SPACING, SIGHT DISTANCE AND OFFSETS FROM PROPERTY LINES AND INTERSECTIONS.
4. "A" BREAKOVER SHALL BE 8% OR LESS (A = ALGEBRAIC DIFFERENCE).
5. PRIOR APPROVAL IS REQUIRED BY TOWN ENGINEER ON GRADES EXCEEDING WHAT ARE SHOWN.
6. RADII MUST BE MINIMUM 6 FEET OR THE WIDTH OF THE PLANTING STRIP, WHICHEVER IS GREATER. RADII GREATER THAN THESE MINIMUMS MAY BE REQUIRED BY TOWN ENGINEER ON A CASE-BY-CASE BASIS. FOR RADII GREATER THAN 6 FEET, THE RADII ARE TO CONTINUE AS A BAND AT-GRADE THROUGH THE SIDEWALK.



SECTION A-A (ALONG FLOW LINE)



SECTION B-B

NOT TO SCALE

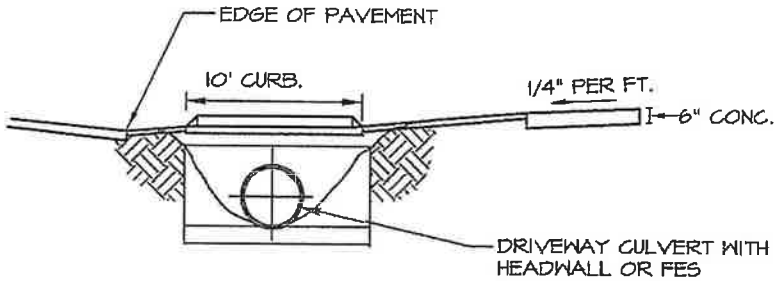
TOWN OF PINEVILLE

LAND DEVELOPMENT STANDARDS

TYPE II-MODIFIED DRIVEWAY WITH PLANTING STRIP (2'-6" STANDARD CURB)

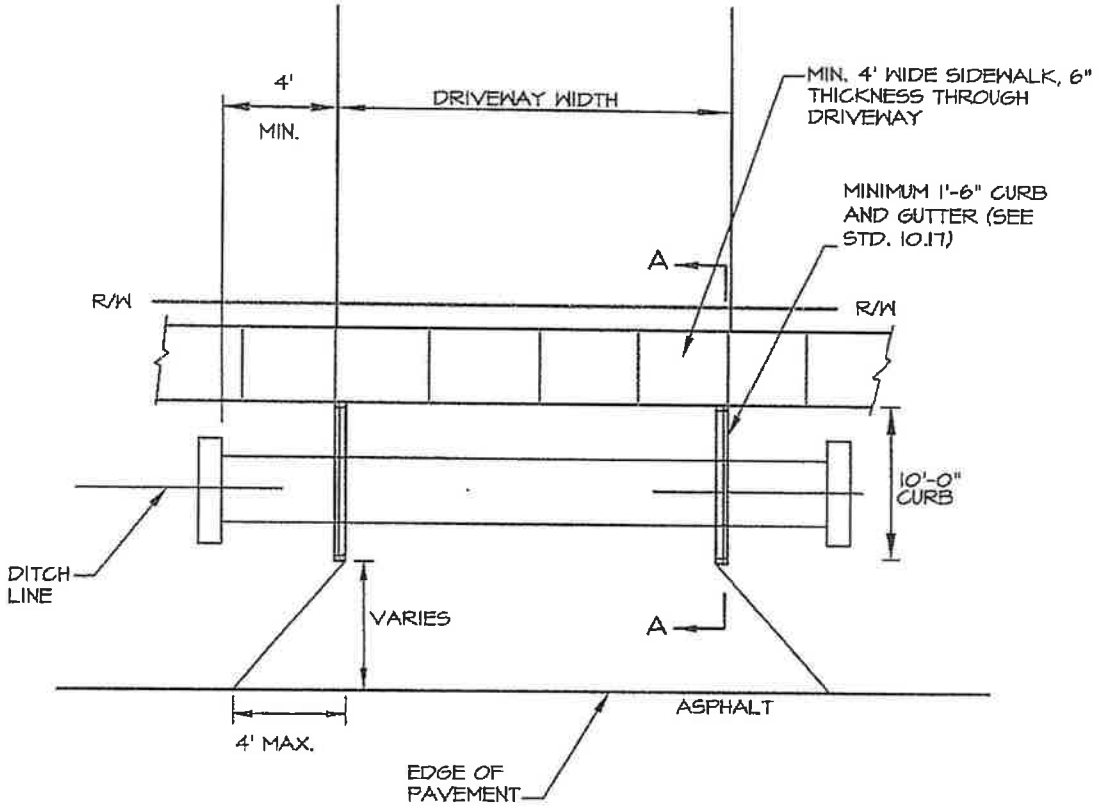
STD. NO.	REV.
10.25E	

DRIVEWAY WIDTH		
DRIVEWAY TYPE	MINIMUM	MAXIMUM
ONE-WAY	20'	30'
TWO-WAY	26'	50'



* NCDOT TO APPROVE ON NCDOT SYSTEM ROAD.

SECTION A-A



PLAN

NOTES:

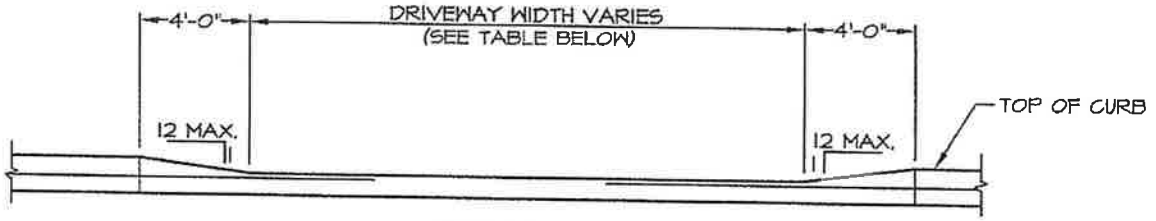
1. TO BE USED ON ROADS WITHOUT CURB AND GUTTER AND WHERE CURB AND GUTTER IS NOT BEING INSTALLED. (MUST MEET BOTH CRITERIA)
2. ALL CONCRETE TO BE 3600 P.S.I. COMPRESSIVE STRENGTH.
3. USE OF THIS STANDARD FOR RESIDENTIAL DRIVEWAY CONSTRUCTION AT THE DISCRETION OF THE TOWN ENGINEER ONLY.

NOT TO SCALE

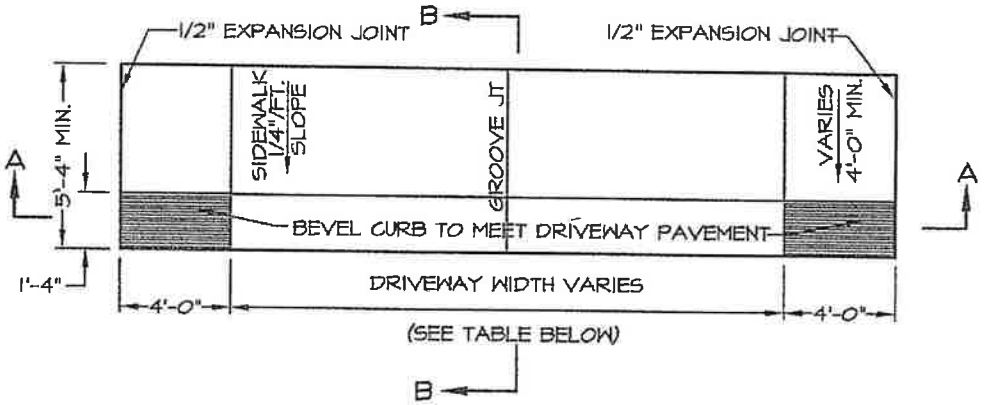
TOWN OF PINEVILLE
LAND DEVELOPMENT STANDARDS

COMMERCIAL TYPE IV DRIVEWAY

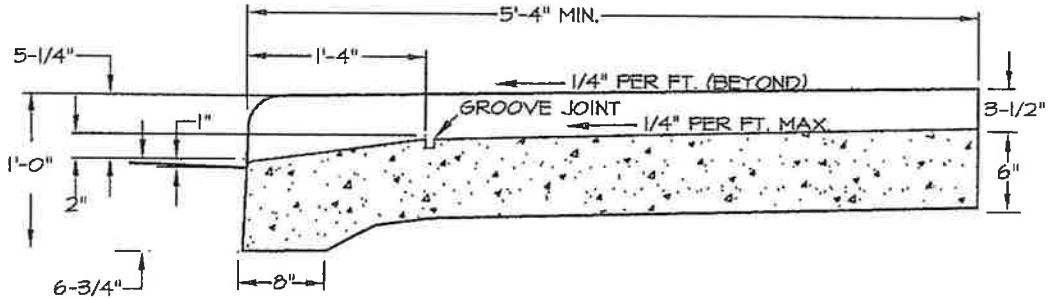
STD. NO.	REV.
10.25F	



SECTION A-A



PLAN



SECTION B-B

NOT TO SCALE

GENERAL NOTES:

ALL CONCRETE TO BE 3600 P.S.I. COMPRESSIVE STRENGTH.

A 1/2" EXPANSION JOINT WILL BE REQUIRED WHERE WHERE THE SIDEWALK JOINS ANY RIGID STRUCTURE. SEE STANDARD 10.22.

THIS DETAIL TO BE USED ONLY IN CONJUNCTION WITH MONOLITHIC SIDEWALK AS ON STANDARD NO. 10.23

NOTES:

1. ALL DRIVEWAYS MUST MEET THE CURRENT TOWN DRIVEWAY REGULATIONS AND NCDOT REQUIREMENTS FOR SPACING, SIGHT DISTANCES, AND OFFSETS FROM PROPERTY LINES AND INTERSECTIONS.

DRIVEWAY WIDTH		
TYPE DRIVEWAY	MINIMUM	MAXIMUM
TYPE I RESIDENTIAL LOCAL/COLLECTOR THOROUGHFARE*	 10' 15'	 30' 30'
ONE-WAY TYPE II COMMERCIAL	20'	30'
TWO-WAY TYPE II COMMERCIAL	26'	50'

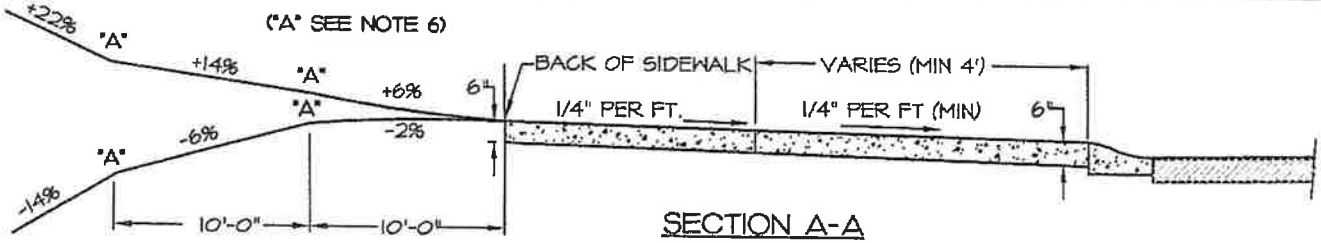
* MUST PROVIDE ON-SITE TURNAROUND

TOWN OF PINEVILLE

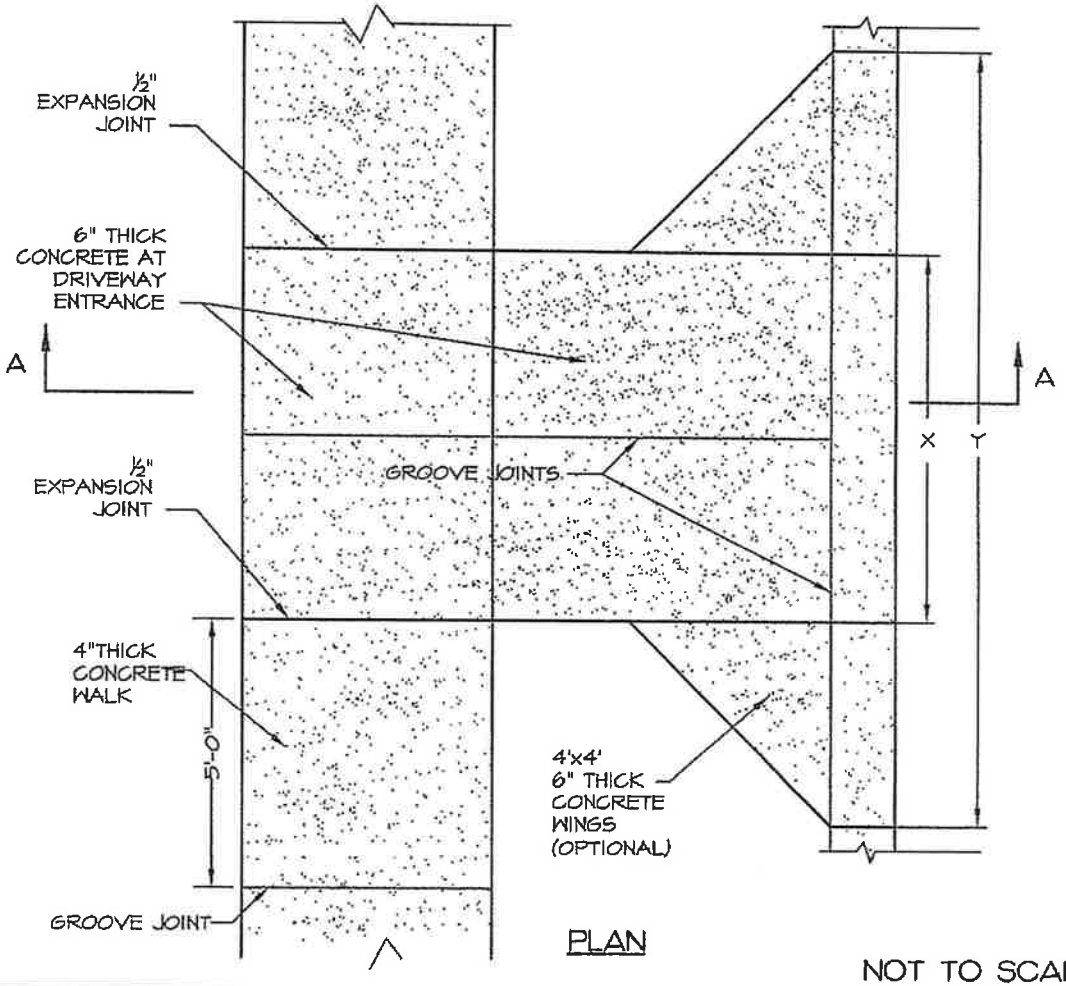
LAND DEVELOPMENT STANDARDS

DROP CURB DRIVEWAY MONOLITHIC CONCRETE CURB AND SIDEWALK

STD. NO.	REV.
10.26	



SECTION A-A



PLAN

NOT TO SCALE

NOTES:

1. THE ELEVATION OF THE SIDEWALK SHALL BE NOT LESS THAN SIX INCHES OR MORE THAN EIGHTEEN INCHES ABOVE THE ROADWAY CROWN. THIS ELEVATION DIFFERENTIAL SHALL BE CONSISTENT WITHIN EACH BLOCK.
2. ALL CONCRETE TO BE 3600 PSI STRENGTH.
3. ALL CONSTRUCTION PRACTICES, INCLUDING COMPACTION, CURING, FINISHING, ETC. SHALL BE IN ACCORDANCE WITH THE THESE LAND DEVELOPMENT STANDARDS.
4. PLANTING STRIP SHALL BE GRADED WITH A CROSS SLOPE BETWEEN 1/2 IN. PER FOOT AND 1 1/4 IN. PER FOOT EXCEPT WHERE EXCESSIVE NATURAL GRADES MAKE THIS REQUIREMENT IMPRACTICAL. IN SUCH CASES, THE TOWN ENGINEER MAY AUTHORIZE A SUITABLE GRADE
5. ALL DRIVEWAYS MUST MEET THE CURRENT TOWN DRIVEWAY REGULATIONS AND NCDOT REQUIREMENTS, INCLUDING BUT NOT LIMITED TO SPACING, SIGHT DISTANCE, AND OFFSETS FROM PROPERTY LINES AND INTERSECTIONS.
6. "A" BREAKOVER SHALL BE 8% OR LESS (A = ALGEBRAIC DIFFERENCE).

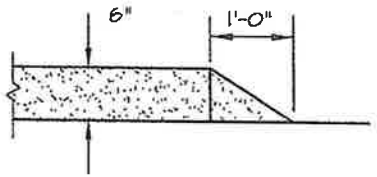
DRIVEWAY WIDTH		
TYPE I-RESIDENTIAL:	X	Y
LOCAL/COLLECTOR	10' MIN.	30' MAX. **
THOROUGHFARE *	15' MIN.	30' MAX. **

* MUST PROVIDE ON-SITE TURNAROUND
** MAXIMUM WIDTH INCLUDES OPTIONAL WINGS

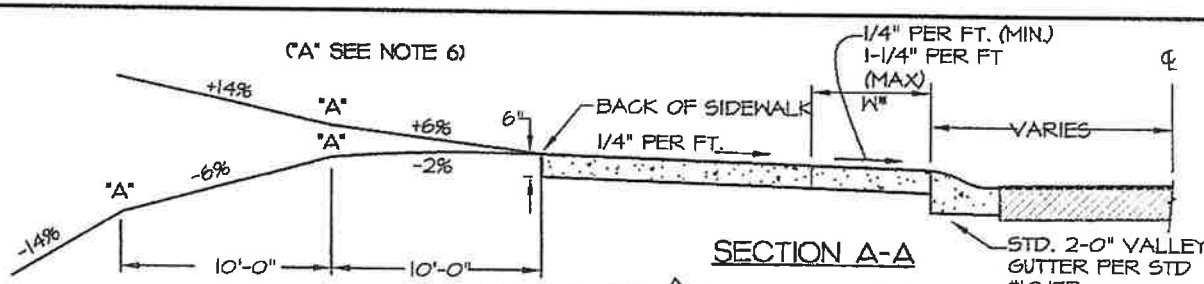
TOWN OF PINEVILLE
LAND DEVELOPMENT STANDARDS

RESIDENTIAL DRIVEWAY (TYPE I) FOR 2'-0" VALLEY GUTTER

STD. NO.	REV.
10.27A	



SECTION B-B



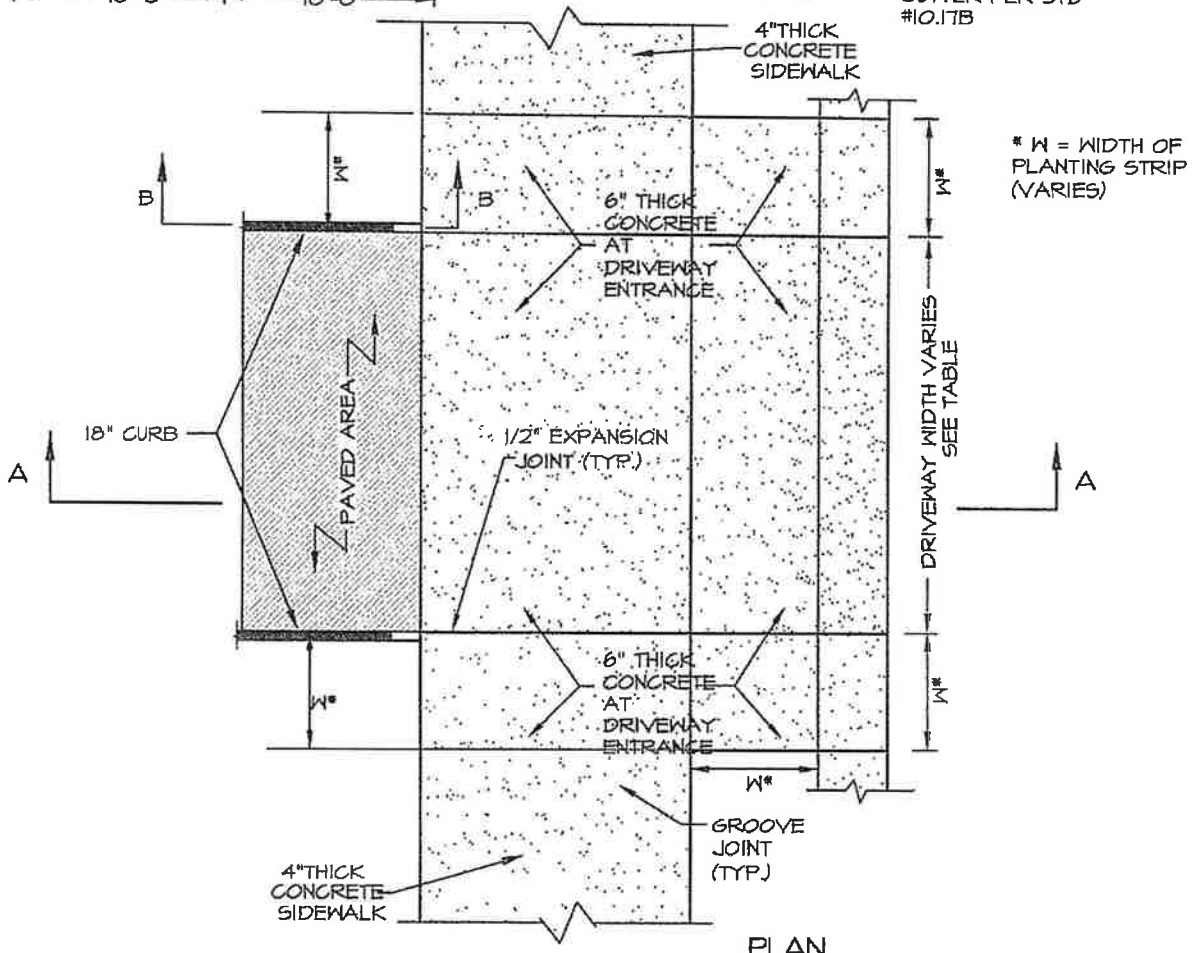
SECTION A-A

NOTES

1. THE ELEVATION OF THE SIDEWALK SHALL BE NOT LESS THAN SIX INCHES OR MORE THAN EIGHTEEN INCHES ABOVE THE ROADWAY CROWN. THIS ELEVATION DIFFERENTIAL SHALL BE CONSISTENT WITHIN EACH BLOCK.
2. ALL CONCRETE TO BE 3600 PSI STRENGTH.
3. ALL CONSTRUCTION PRACTICES, INCLUDING COMPACTION, CURING, FINISHING, ETC. SHALL BE IN ACCORDANCE WITH THESE LAND DEVELOPMENT STANDARDS.
4. PLANTING STRIP SHALL BE GRADED WITH A CROSS SLOPE BETWEEN 1/2 IN. PER FOOT AND 1 1/4 IN. PER FOOT EXCEPT WHERE EXCESSIVE NATURAL GRADES MAKE THIS REQUIREMENT IMPRACTICAL. IN SUCH CASES, THE CITY ENGINEER MAY AUTHORIZE A SUITABLE GRADE
5. ALL DRIVEWAYS MUST MEET THE CURRENT TOWN DRIVEWAY REGULATIONS AND NCDOT REQUIREMENTS, INCLUDING BUT NOT LIMITED TO SPACING, SIGHT DISTANCE, AND OFFSETS FROM PROPERTY LINES AND INTERSECTIONS.
6. "A" BREAKOVER SHALL BE 8% OR LESS (A=ALGEBRAIC DIFFERENCE).
7. PRIOR APPROVAL IS REQUIRED BY THE TOWN ENGINEER ON GRADES EXCEEDING WHAT ARE SHOWN.

DRIVEWAY WIDTH		
TYPE DRIVEWAY	MINIMUM	MAXIMUM
ONE-WAY TYPE II COMMERCIAL	20'	30'
TWO-WAY TYPE II COMMERCIAL	26'	50'

* MUST PROVIDE ON-SITE TURNAROUND



PLAN

NOT TO SCALE

TOWN OF PINEVILLE

LAND DEVELOPMENT STANDARDS

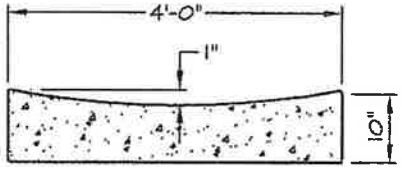
COMMERCIAL TYPE II DRIVEWAY FOR 2'-0" VALLEY GUTTER

STD. NO.	REV.
10.27B	

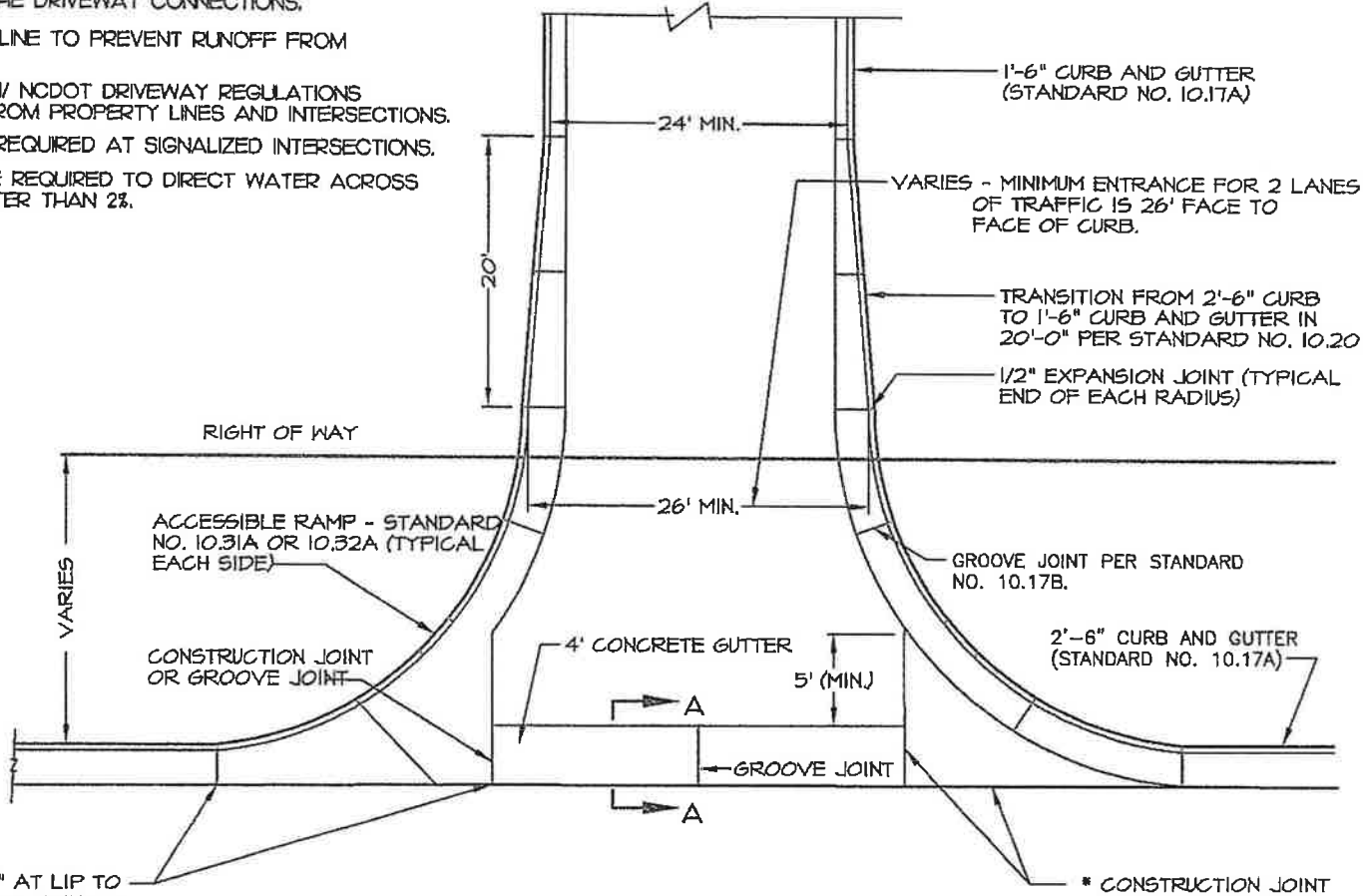
NOTES:

1. WHERE A TYPE III DRIVEWAY IS APPROVED BY THE TOWN ENGINEER THAT CONNECTS TO AN EXISTING SIGNALIZED INTERSECTION, OR AT A LOCATION WHERE A TRAFFIC SIGNAL INSTALLATION IS PROPOSED BY BASED ON A TRAFFIC IMPACT/SIGNAL WARRANT STUDY, A FULL DEPTH ASPHALT PAVEMENT (2-1/2" S-9.5 B/C AND 6" B-25.0 B/C) IS REQUIRED. THIS PAVEMENT DESIGN IS REQUIRED IN THE DRIVEWAY EASEMENT (100-FOOT MINIMUM) TO MAINTAIN DETECTOR LOOPS AND PAVEMENT MARKINGS.
2. A CONCRETE GUTTER IS TO BE USED EXCEPT AT EXISTING OR PROPOSED TRAFFIC SIGNAL LOCATIONS. AT THESE LOCATIONS ADDITIONAL DRAINAGE REQUIREMENTS WILL BE NECESSARY TO ELIMINATE THE NEED FOR GUTTER ACROSS THE DRIVEWAY CONNECTIONS.
3. THE DRIVEWAY MUST RISE 6" FROM THE GUTTER LINE TO PREVENT RUNOFF FROM ENTERING DRIVEWAY.
4. ALL DRIVEWAYS MUST MEET THE CURRENT TOWN/ NCDOT DRIVEWAY REGULATIONS FOR SPACING, SIGHT DISTANCE, AND OFFSETS FROM PROPERTY LINES AND INTERSECTIONS.
5. TWO (2) ACCESSIBLE RAMPS PER CURB RETURN REQUIRED AT SIGNALIZED INTERSECTIONS.

- FOUR (4) FOOT GUTTER AND WINGS WILL NOT BE REQUIRED TO DIRECT WATER ACROSS DRIVE IF THE DRIVEWAY GUTTER SLOPE IS GREATER THAN 2%.



SECTION A-A



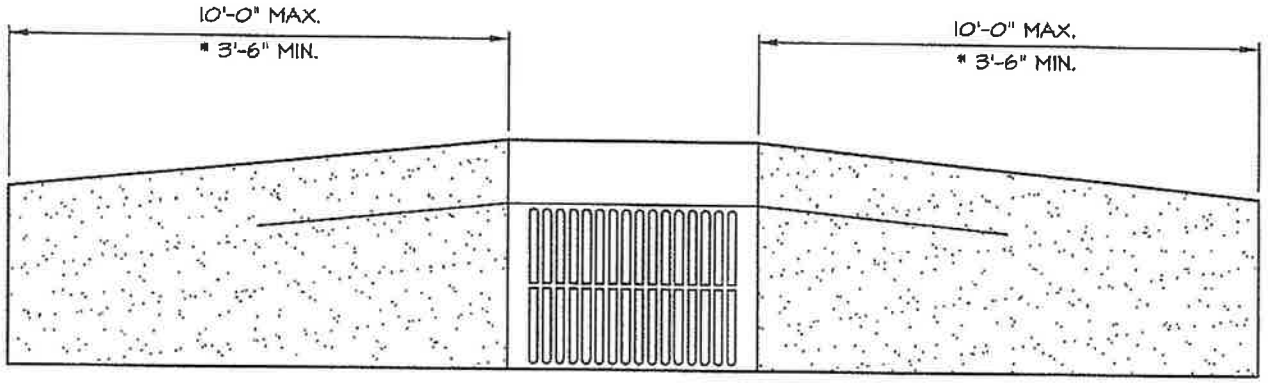
PLAN

NOT TO SCALE

TOWN OF PINEVILLE
LAND DEVELOPMENT STANDARDS

TYPE III DRIVEWAY ENTRANCE

STD. NO.	REV.
10.28	



PLAN

NOTE:

TRANSITION FROM 2'-6" STANDARD CURB TO VALLEY CURB AT A DRAINAGE INLET ONLY.

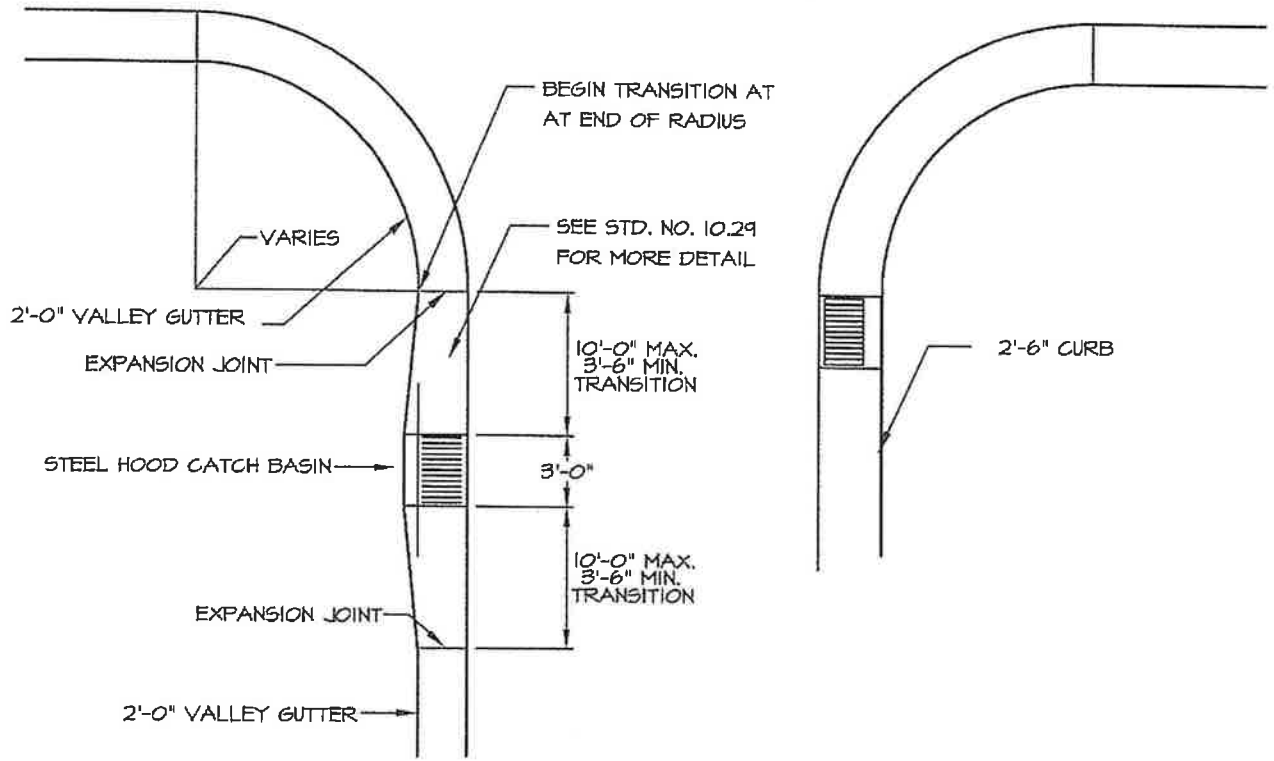
*SEE STANDARD 10.19 FOR CROSS SECTION GEOMETRY.

TOWN OF PINEVILLE

LAND DEVELOPMENT STANDARDS

CATCH BASIN FRAME IN VALLEY GUTTER

STD. NO.	REV.
10.29	



NOTE:

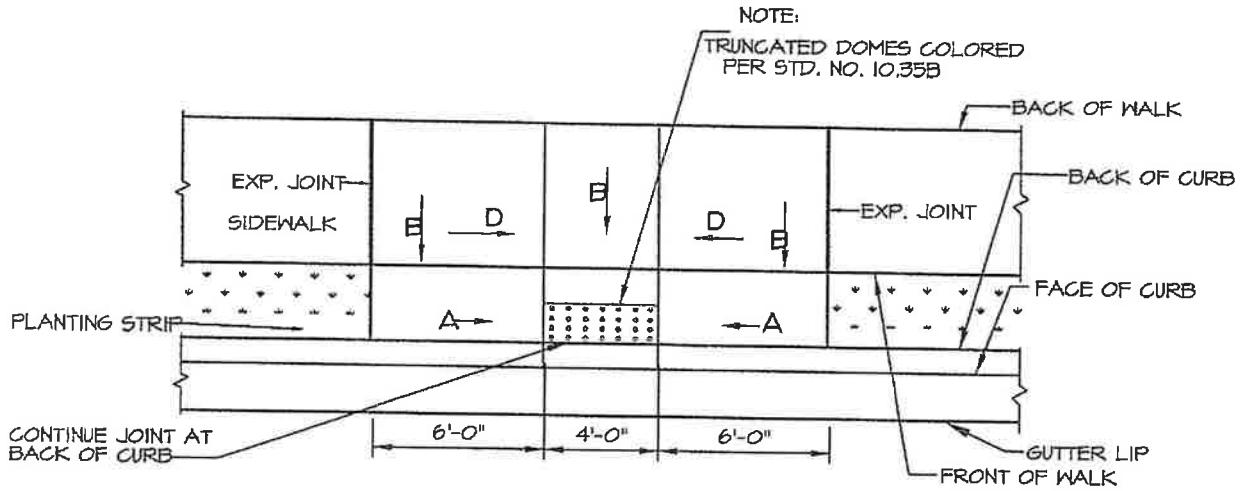
1. WHERE 2'-6" CURB AND GUTTER IS USED, CATCH BASINS MAY BE LOCATED AT END OF RADIUS.
2. RADIUS AT INTERSECTION MAY VARY.

NOT TO SCALE

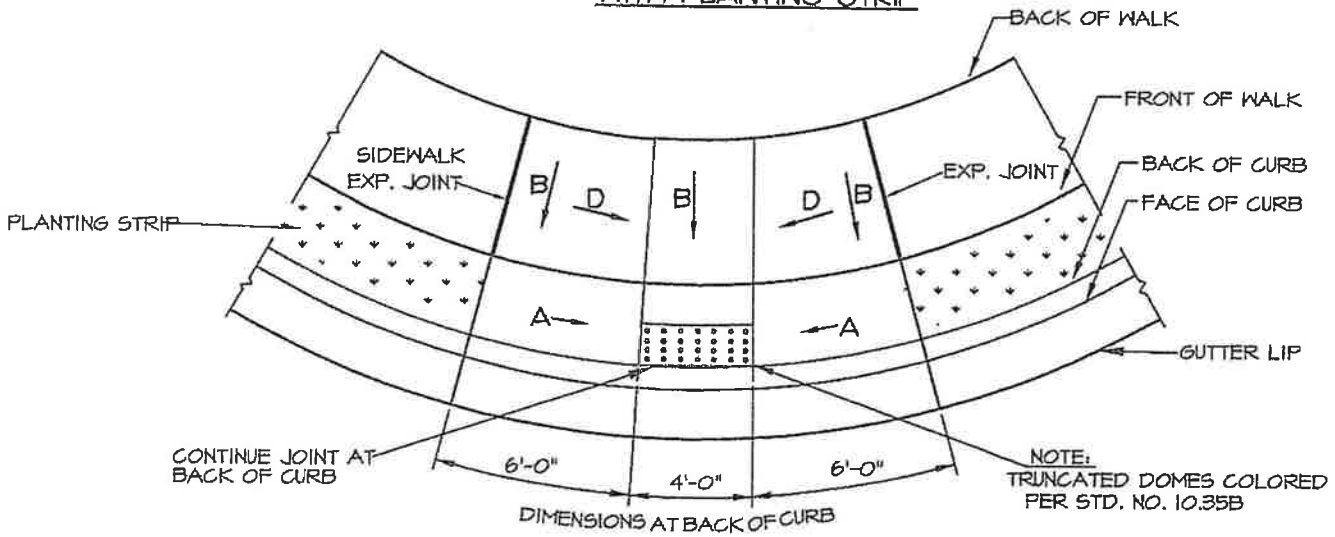
TOWN OF PINEVILLE
LAND DEVELOPMENT STANDARDS

CATCH BASIN PLACEMENT AT INTERSECTIONS

STD. NO.	REV.
10.30	



PLAN VIEW-PARALLEL RAMP WITH PLANTING STRIP



PLAN VIEW-DIAGONAL RAMP WITH PLANTING STRIP

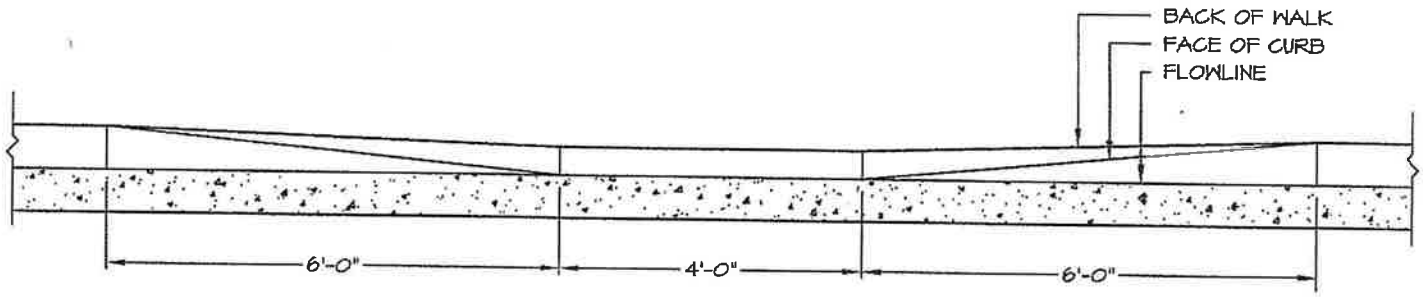
SLOPE "A" 12:1
SLOPE "B" 1/4"/FT
SLOPE "D" 3/8"/FT

NOT TO SCALE

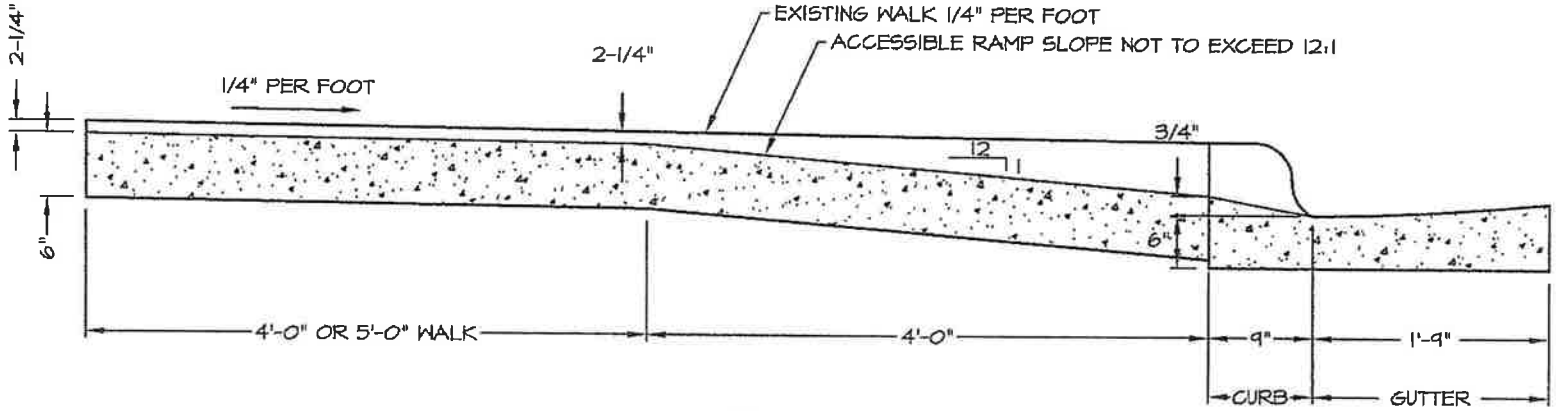
TOWN OF PINEVILLE
LAND DEVELOPMENT STANDARDS

ACCESSIBLE RAMP STANDARD WITH PLANTING STRIP 2'-6" CURB AND GUTTER

STD. NO.	REV.
10.31A	



ELEVATION



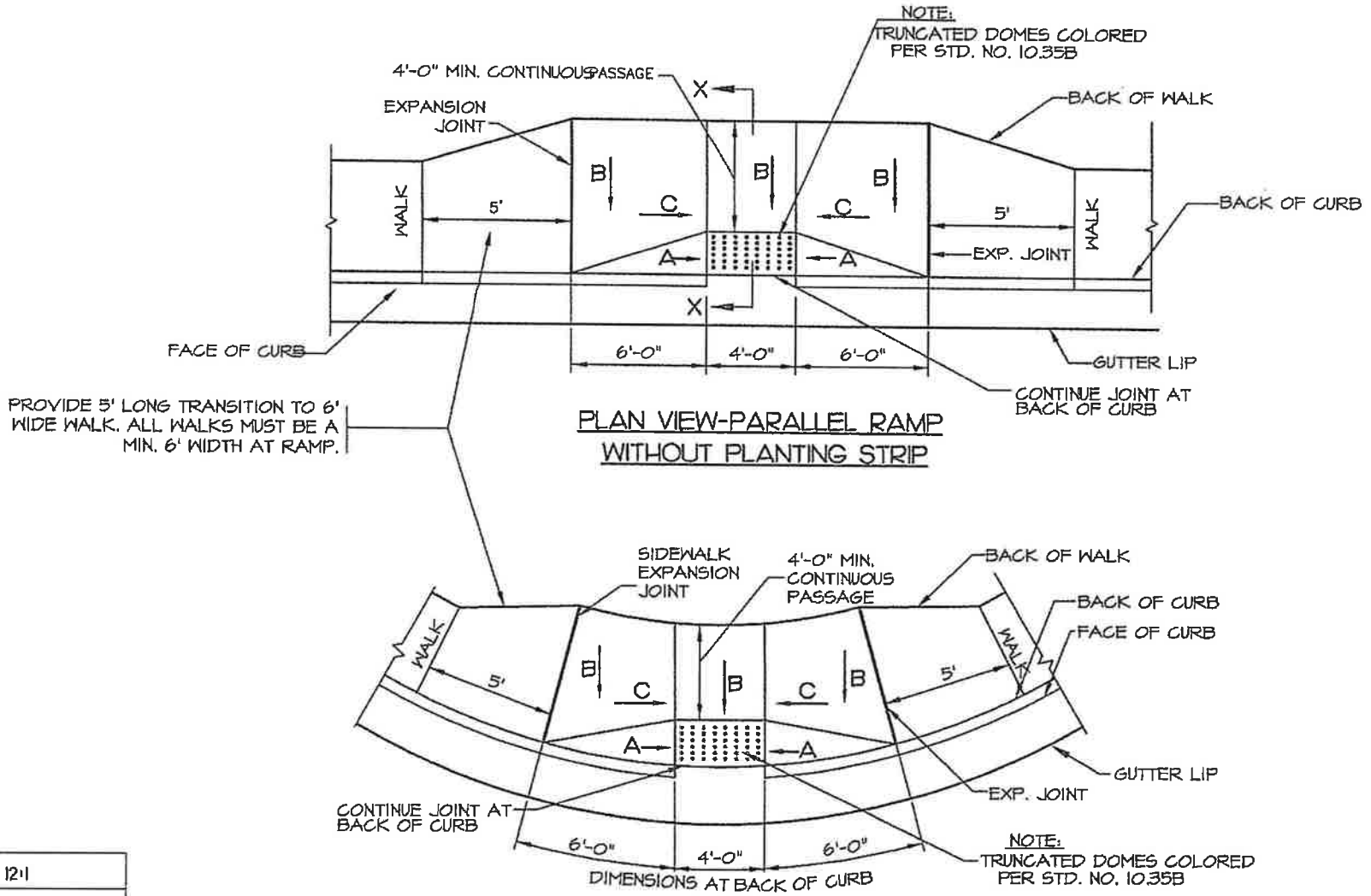
TYPICAL RAMP ℄ SECTION

NOT TO SCALE

TOWN OF PINEVILLE
LAND DEVELOPMENT STANDARDS

ACCESSIBLE RAMP SECTIONS WITH PLANTING STRIP 2-6" CURB AND GUTTER

STD. NO.	REV.
10.31B	



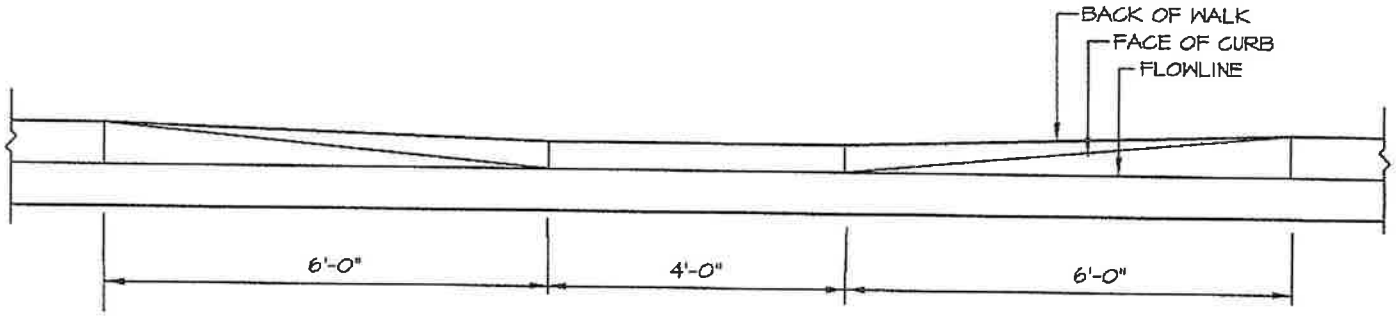
SLOPE "A" 12:1
SLOPE "B" 1/4"/FT
SLOPE "C" 5/8"/FT

NOT TO SCALE

TOWN OF PINEVILLE
LAND DEVELOPMENT STANDARDS

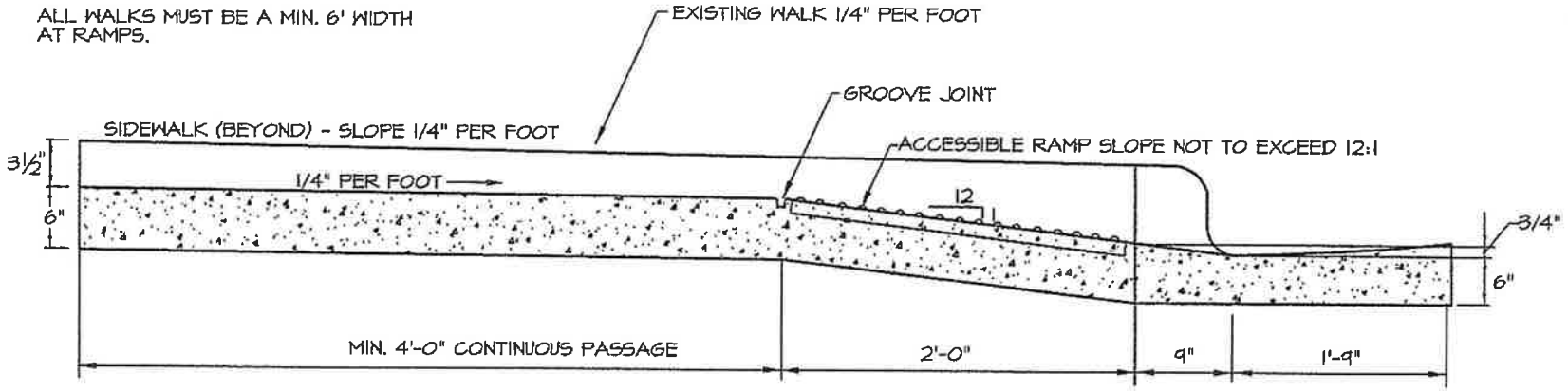
ACCESSIBLE RAMP STANDARD WITHOUT PLANTING STRIP 2'-6" CURB AND GUTTER

STD. NO.	REV.
10.32	



SECTION THROUGH FLOWLINE

NOTE:
ALL WALKS MUST BE A MIN. 6' WIDTH AT RAMPS.



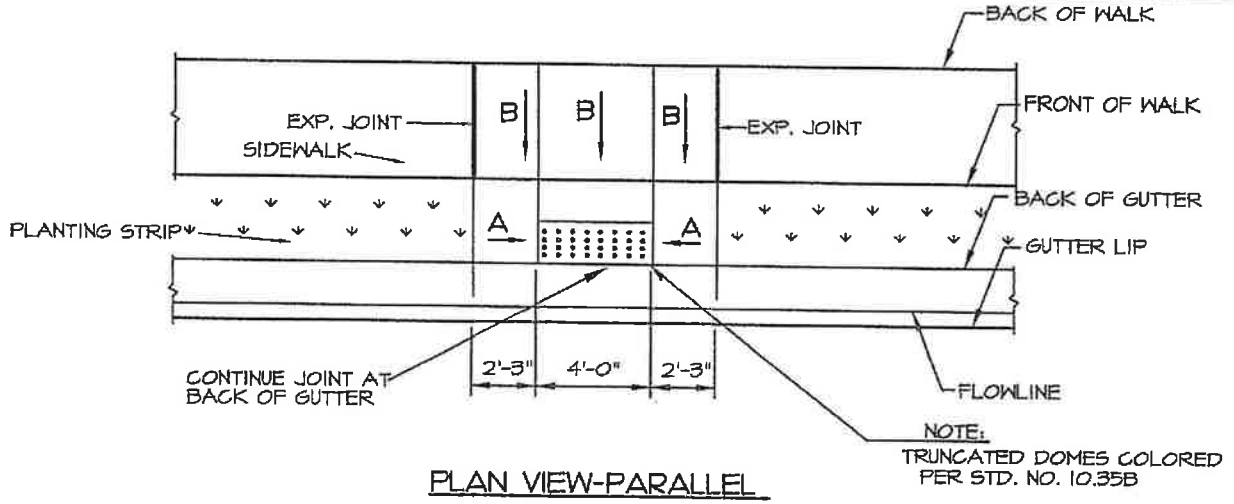
TYPICAL RAMP ℄ SECTION X-X

NOT TO SCALE

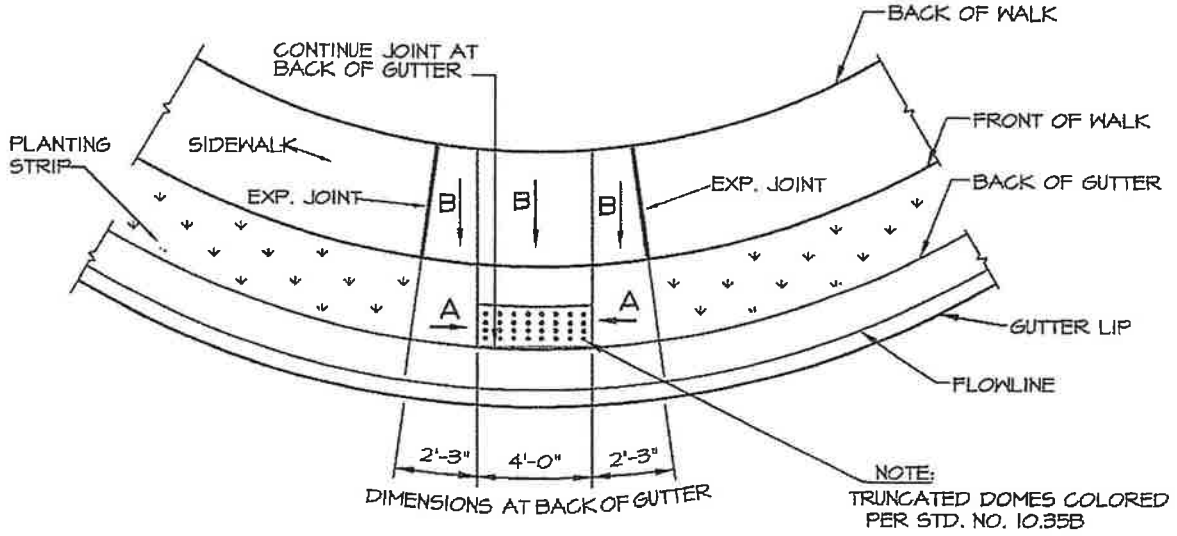
TOWN OF PINEVILLE
LAND DEVELOPMENT STANDARDS

ACCESSIBLE RAMP STANDARD WITHOUT PLANTING STRIP 2'-6" CURB AND GUTTER

STD. NO.	REV.
10.32B	



PLAN VIEW-PARALLEL
RAMP WITH PLANTING STRIP



PLAN VIEW-DIAGONAL RAMP
WITH PLANTING STRIP

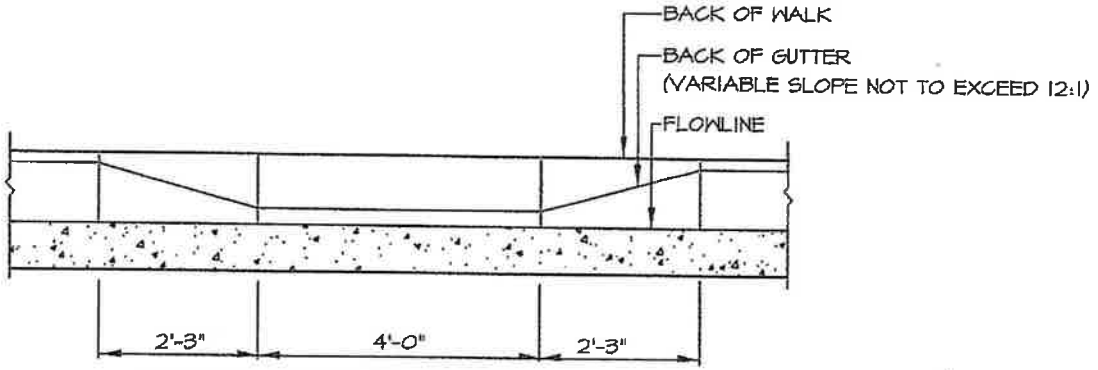
SLOPE "A" 12:1
SLOPE "B" 1/4"/FT

NOT TO SCALE

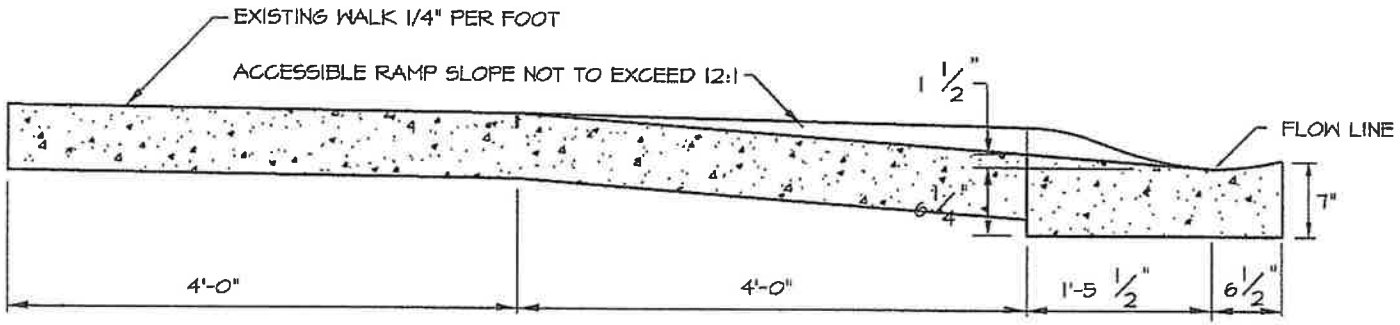
TOWN OF PINEVILLE
LAND DEVELOPMENT STANDARDS

ACCESSIBLE RAMP STANDARD
2'-0" VALLEY GUTTER

STD. NO.	REV.
10.33A	



SECTION THROUGH FLOWLINE



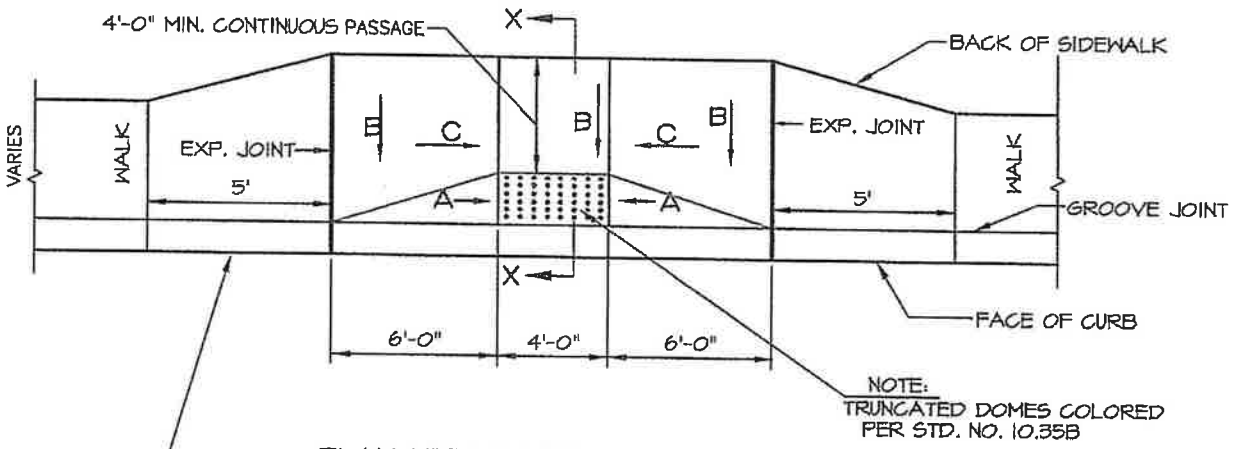
TYPICAL RAMP ℄ SECTION

NOT TO SCALE

TOWN OF PINEVILLE
LAND DEVELOPMENT STANDARDS

ACCESSIBLE RAMP SECTIONS
2'-0" VALLEY GUTTER

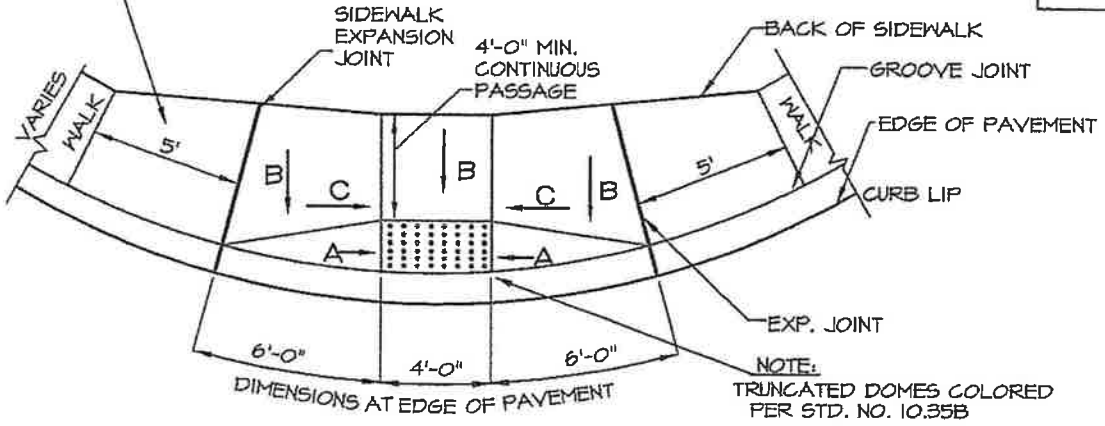
STD. NO.	REV.
10.33B	



PLAN VIEW-PARALLEL RAMP

PROVIDE 5' LONG TRANSITION TO 6' WIDE WALK. ALL WALKS MUST BE A MIN. 6' WIDTH AT RAMP.

SLOPE "A"	12:1
SLOPE "B"	1/4"/FT
SLOPE "C"	1/2"/FT



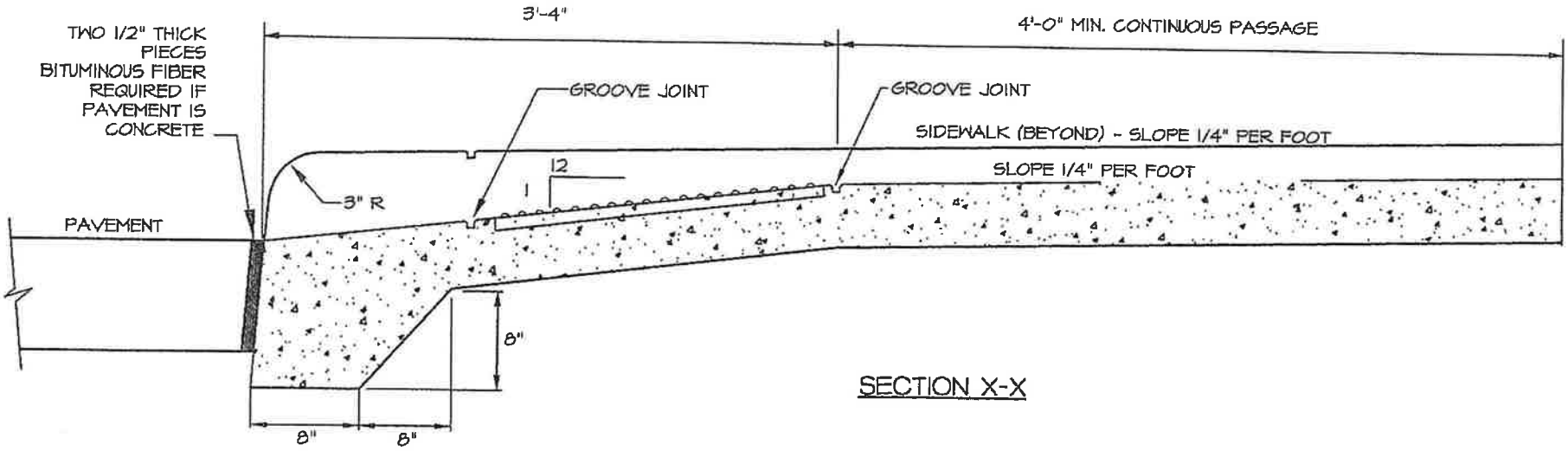
PLAN VIEW-DIAGONAL RAMP

NOT TO SCALE

TOWN OF PINEVILLE
LAND DEVELOPMENT STANDARDS

ACCESSIBLE RAMP STANDARD
MONOLITHIC CURB AND SIDEWALK

STD. NO.	REV.
10.34A	



SECTION X-X

NOT TO SCALE

TOWN OF PINEVILLE
LAND DEVELOPMENT STANDARDS

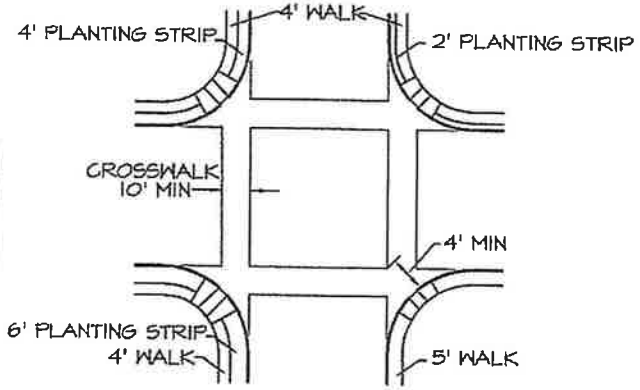
ACCESSIBLE RAMP SECTIONS MONOLITHIC CURB AND SIDEWALK

STD. NO.	REV.
10.34B	

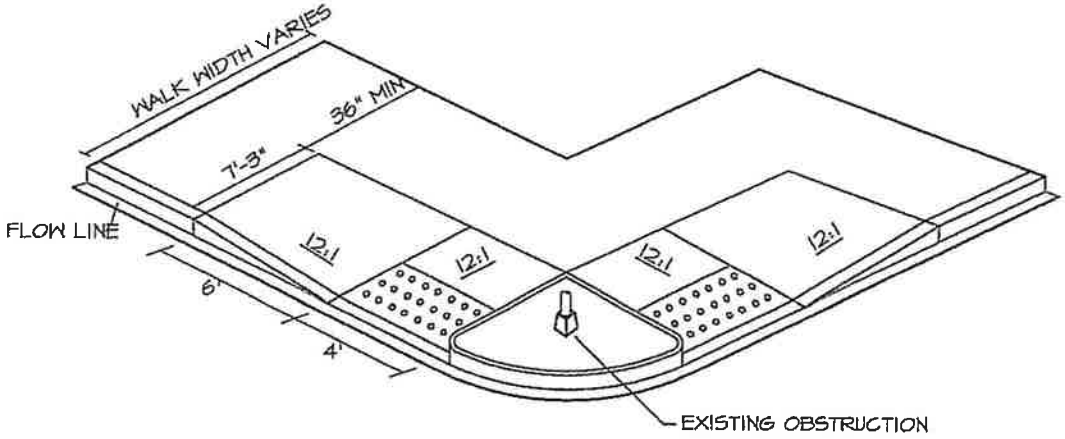
NOTES:

1. RAMP AND WING SLOPES SHALL NOT BE STEEPER THAN 12:1.
2. GUTTER FLOW LINE AND PLAN PROFILE SHALL BE MAINTAINED THROUGH THE RAMP AREA.
3. THE SURFACE OF THE RAMP SHALL BE FLUSH WITH THE FLOWLINE OF THE CURB AND GUTTER.
4. THE RAMP OPENING (AT THE FULLY DEPRESSED CURB) SHALL BE LOCATED WITHIN THE PARALLEL BOUNDARIES OF THE CROSSWALK MARKINGS. THE RAMP CENTERLINE SHALL BE LOCATED AT THE CORNER RADIUS CENTERLINE UNLESS OTHERWISE DIRECTED BY THE ENGINEER. DIAGONAL CURB RAMPS SHALL HAVE A SEGMENT OF STRAIGHT CURB AT LEAST 24 INCHES LONG LOCATED ON EACH SIDE OF THE WING SLOPE AND WITHIN THE CROSSWALK MARKINGS.
5. THE WING AND RAMP SURFACES SHALL BE 3600 PSI CONCRETE WITH A SIDEWALK FINISH IN ACCORDANCE WITH CURRENT EDITION NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.
6. DRAINAGE STRUCTURES, MAST ARMS, LIGHT POLES AND OTHER OBSTRUCTIONS SHALL NOT BE PLACED IN LINE WITH RAMPS. LOCATION OF THE RAMP SHALL TAKE PRECEDENCE OVER LOCATION OF OBSTRUCTIONS EXCEPT WHERE EXISTING OBSTRUCTIONS ARE BEING UTILIZED IN THE NEW CONSTRUCTION.
7. AT ALL LOCATIONS, NOT LESS THAN 2 FEET OF FULL HEIGHT CURB SHALL BE PLACED BETWEEN THE RAMPS.
8. SEE STANDARD DRAWING 10.35B FOR DETECTABLE WARNING INSTALLATION.

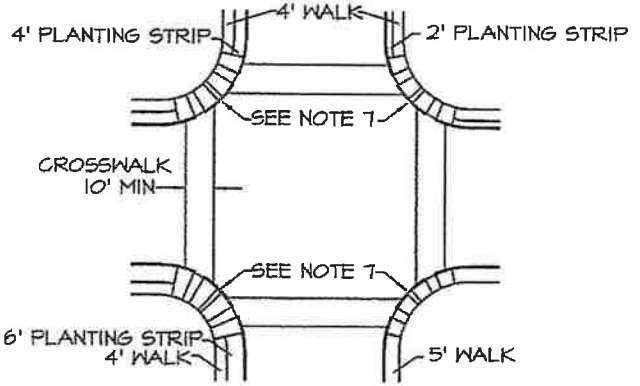
ROADWAY PLAN SYMBOL
(ACC)
FOR PROPOSED ACCESSIBLE RAMP



TYPICAL LOCATION OF ACCESSIBLE RAMPS AND PEDESTRIAN CROSSWALKS ON SUBDIVISION STREETS



PLACEMENT FOR OBSTRUCTED CORNER RADIUS OR CORNER RADIUS LESS THAN TEN FEET



TYPICAL LOCATION OF ACCESSIBLE RAMPS AND PEDESTRIAN CROSSWALKS ON THOROUGHFARES/SIGNALIZED INTERSECTIONS

SEE NCDOT STANDARD DRAWINGS

NOT TO SCALE

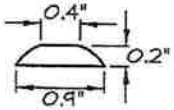
TOWN OF PINEVILLE
LAND DEVELOPMENT STANDARDS

STANDARD PLACEMENT OF ACCESSIBLE RAMP AND GENERAL NOTES

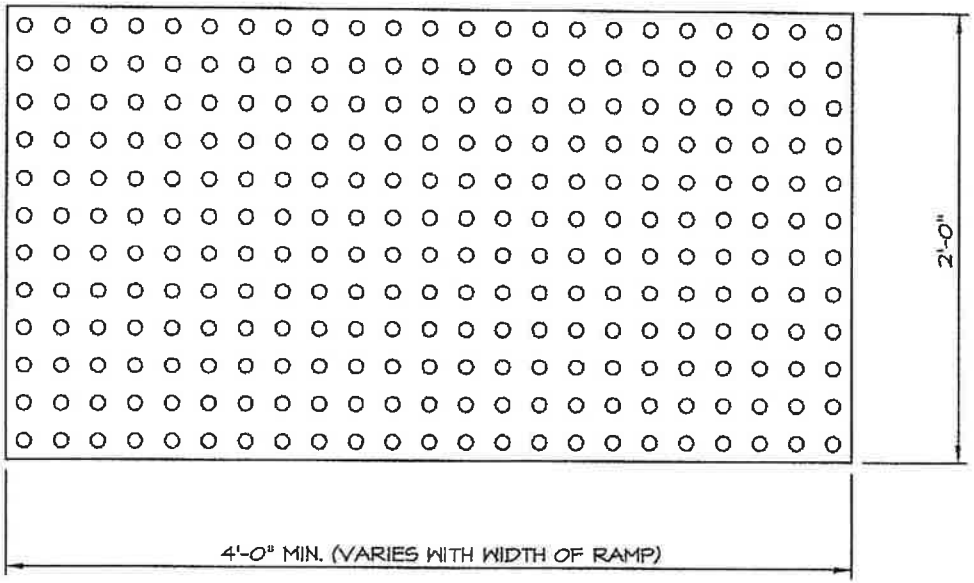
STD. NO.	REV.
10.35A	

NOTES:

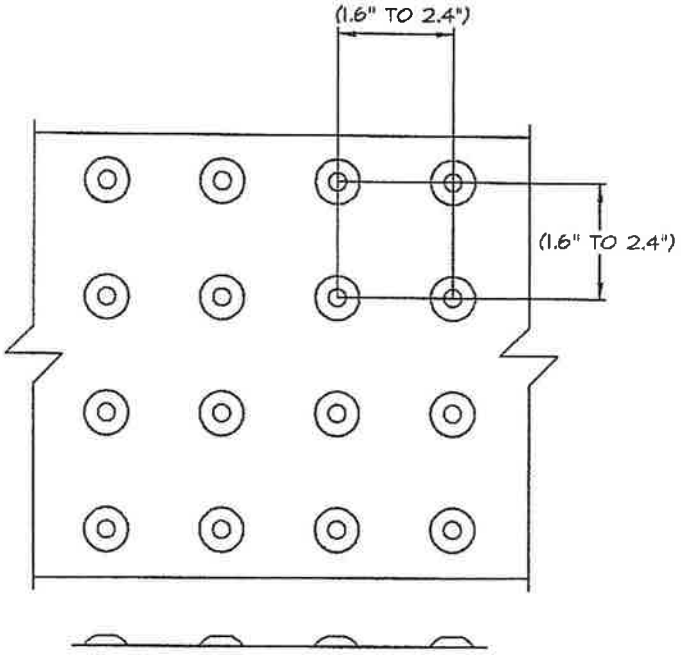
1. ALL DETECTABLE WARNING DEVICES USED IN NEW CONSTRUCTION SHALL BE OF A RIDGID PRECAST OR EMBEDDED PRODUCT APPROVED BY THE TOWN ENGINEER. RETRO FIT MATS WILL ONLY BE ALLOWEED ON EXISTING RAMPS WITH PRIOR APPROVAL OF THE TOWN ENGINEER FOR MATERIAL TYPE AND INSTALLATION (IE. RESURFACING).
2. WIDTH OF DETECTABLE WARNING AREA SHALL BE A MINIMUM OF 4 FEET AND VARY WITH WIDTH OF RAMP.
3. LENGTH OF DETECTABLE WARNING AREA SHALL BE 2 FEET REGARDLESS OF SECTION WIDTH.
4. DETECTABLE WARNING AREA CAN BE SQUARE WHERE USED IN A CURB RADIUS.
5. DETECTABLE WARNING DOMES SHALL BE ALIGNED ON A SQUARE GRID IN THE PREDOMINANT DIRECTION OF OF TRAVEL TO PERMIT WHEELS TO ROLL BETWEEN DOMES.
6. DECTECTABLE WARNING AREA SHALL BE COLORED BLACK IN ALL LOCATIONS EXCEPT ON TRYON STREET MALL, WHERE FRENCH GRAY IS TO BE USED.
7. IF PAVERS ARE TO BE USED, PAVERS SHALL BE 6" THICK AND CAST FROM 5000 psi CONCRETE.
8. MATS ARE TO BE RIGID WITH TURN DOWN EDGES EMBEDDED IN CONCRETE TO ELIMINATE TRIP HAZARD.



TRUNCATED DOME SECTION



TRUNCATED DOME PLAN VIEW



TRUNCATED DOME SPACING

NOT TO SCALE

TOWN OF PINEVILLE
LAND DEVELOPMENT STANDARDS

TRUNCATED DOMES PLAN AND CROSS-SECTION

STD. NO.	REV.
10.35B	

NOTES:

1. SEE STD. NO. 10.36B FOR GENERAL NOTES AND CLEAR ZONE DISTANCES

(H) 2'-6" CURB AND GUTTER, STD. 10.17A

(M) SAFETY RAIL, STD. 50.04A & 50.04B

(S) 4'-0" SIDEWALK, STD. 10.22

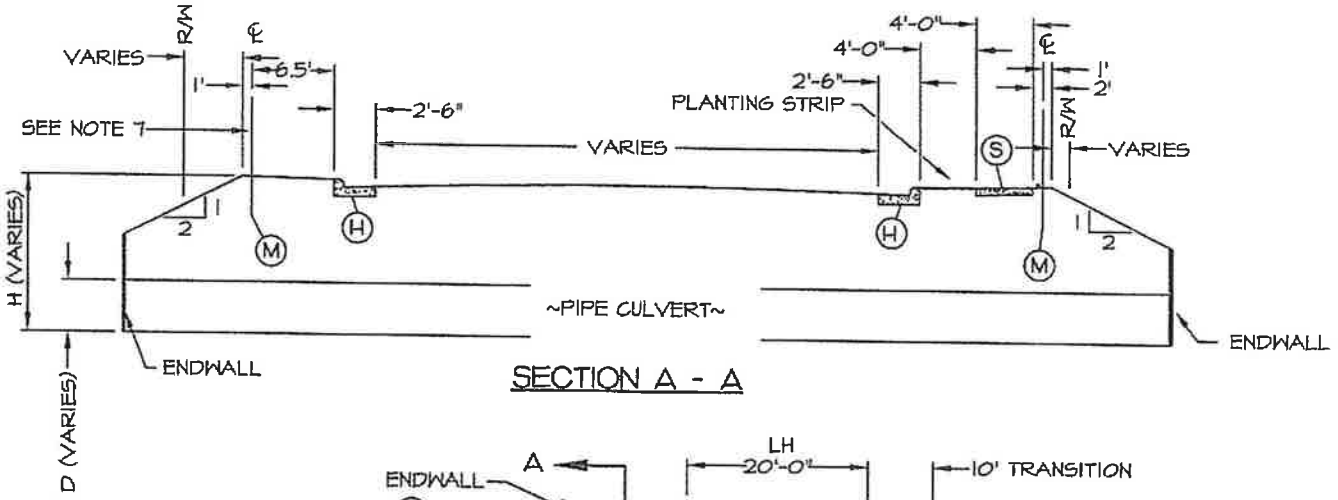
(H1) 2'-0" VALLEY GUTTER, STD. 10.17B

(H2) CURB TRANSITION 2'-6" CURB AND GUTTER TO 2'-0" VALLEY GUTTER, STD. 10.19

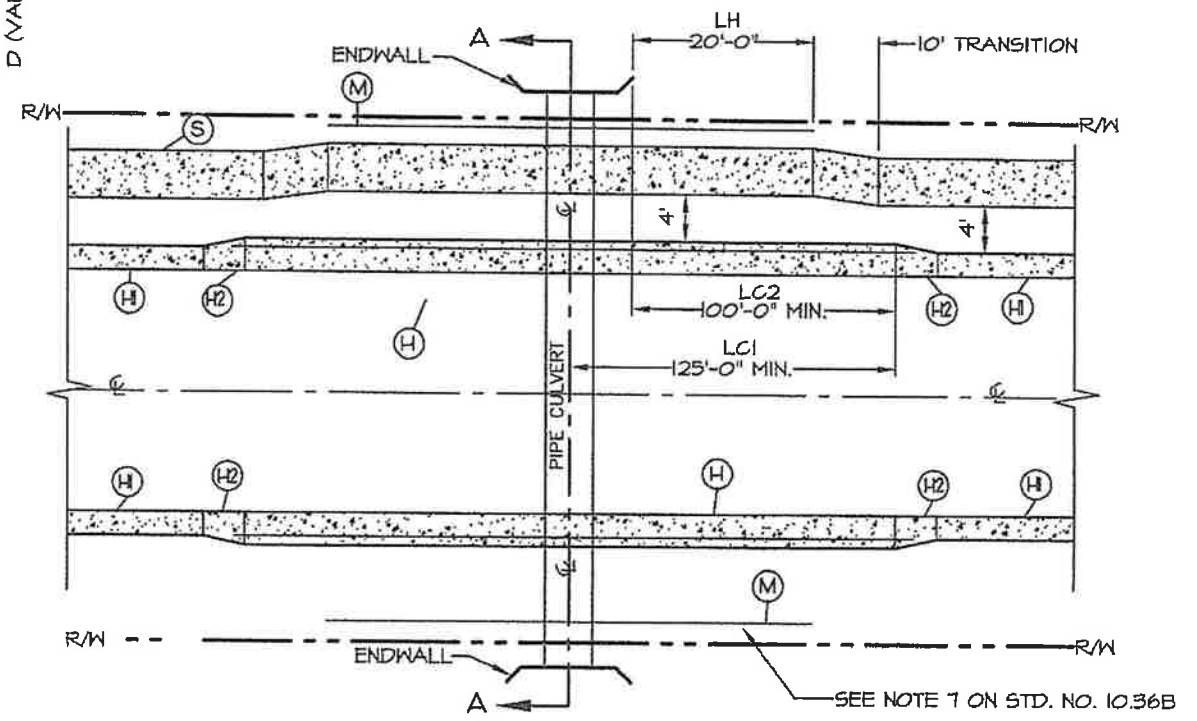
LH = DISTANCE FROM END OF WINGWALL TO END OF SAFETY RAIL.

LC1 = DISTANCE FROM ℄ OF CULVERT TO END OF 2'-6" CURB AND GUTTER GUTTER.

LC2 = DISTANCE FROM END OF WINGWALL TO END OF 2'-6" CURB AND GUTTER.



SECTION A - A



NOT TO SCALE

TOWN OF PINEVILLE
LAND DEVELOPMENT STANDARDS

CULVERT CROSSINGS ON RESIDENTIAL AND COMMERCIAL STREETS

STD. NO.	REV.
10.36A	

GENERAL NOTES:

1. UNLESS OTHERWISE DETERMINED BY THE CITY ENGINEER, THE MEASURES ILLUSTRATED SHALL BE USED WHEN CULVERT DIAMETER, D, IS GREATER THAN OR EQUAL TO 24 INCHES AND WHEN THE DIFFERENCE IN ELEVATION BETWEEN THE CULVERT INVERT AND THE TOP OF SLOPE, H, IS GREATER THAN OR EQUAL TO 5 FEET.
2. INSTALLATION OF 2'-6" CURB AND GUTTER MAY NOT BE REQUIRED WHEN AN ADEQUATE CLEAR ZONE IS PROVIDED FOR VEHICLES WITH A MAXIMUM OF 6:1 SLOPE (SEE TABLE I).
3. INSTALLATION OF SAFETY RAIL MAY NOT BE REQUIRED WHEN A 10-FOOT PEDESTRIAN CLEAR ZONE IS PROVIDED BEHIND THE SIDEWALK WITH A MAXIMUM OF 6:1 SLOPE. WHERE NO SIDEWALK IS REQUIRED, INSTALLATION OF SAFETY RAIL MAY NOT BE REQUIRED WHEN A 15-FOOT PEDESTRIAN CLEAR ZONE IS PROVIDED BEHIND THE CURB WITH A MAXIMUM OF 6:1 SLOPE.
4. FOR CULVERT CROSSINGS WITHOUT ENDWALLS, LH AND LC2 SHALL BE MEASURED FROM THE OUTSIDE OF THE NEAREST WALL OF THE CULVERT BARREL.
5. FOR MULITIPLE BARREL CULVERT CROSSINGS, LC1 SHALL BE MEASURED FROM THE CENTERLINES OF THE OUTBOARD CULVERT BARRELS.
6. WHEN NECESSARY, AS DETERMINED BY THE TOWN ENGINEER, ADDITIONAL MEASURES MAY BE REQUIRED.
7. INSTALLATION OF SAFETY RAIL IS REQUIRED ON BOTH SIDES OF STREET IF SIDEWALK IS REQUIRED ON BOTH SIDES.
8. INSTALLATION OF SAFETY RAIL IS REQUIRED ON BOTH SIDES OF STREET IF NO SIDEWALK IS REQUIRED EXCEPT WHEN A 15-FOOT PEDESTRIAN CLEAR ZONE IS PROVIDED BEHIND THE CURB WITH A MAXIMUM OF 6:1 SLOPE.
9. INSTALLATION OF SAFETY RAIL IS REQUIRED ON THE SIDEWALK SIDE OF STREET IF SIDEWALK IS ONLY REQUIRED ON ONE SIDE OF STREET. INSTALL EITHER SAFTEY RAIL OR 15-FT CLEAR ZONE ON SIDE WITHOUT SIDEWALK.
10. DESIGN ADT IS CALCULATED ASSUMING A TRIP GENERATION OF 10 DAILY TRIPS PER SINGLE FAMILY DWELLING UNIT.

TABLE I.
CLEAR ZONE DISTANCES
LOCAL, COLLECTOR, AND COMMERCIAL STREETS

DESIGN ADT	CLEAR ZONE FROM EDGE OF PAVEMENT	
	TANGENT SECTION	CURVE (WITHIN 125' OF CULVERT)
UNDER 750	10'	15'
750 - 1500	12'	18'
1501 - 6000	14'	21'
OVER 6000	16'	24'

SEE STD. NO. 10.36A FOR PLAN AND CROSS SECTIONAL SCHEMATICS.

NOT TO SCALE

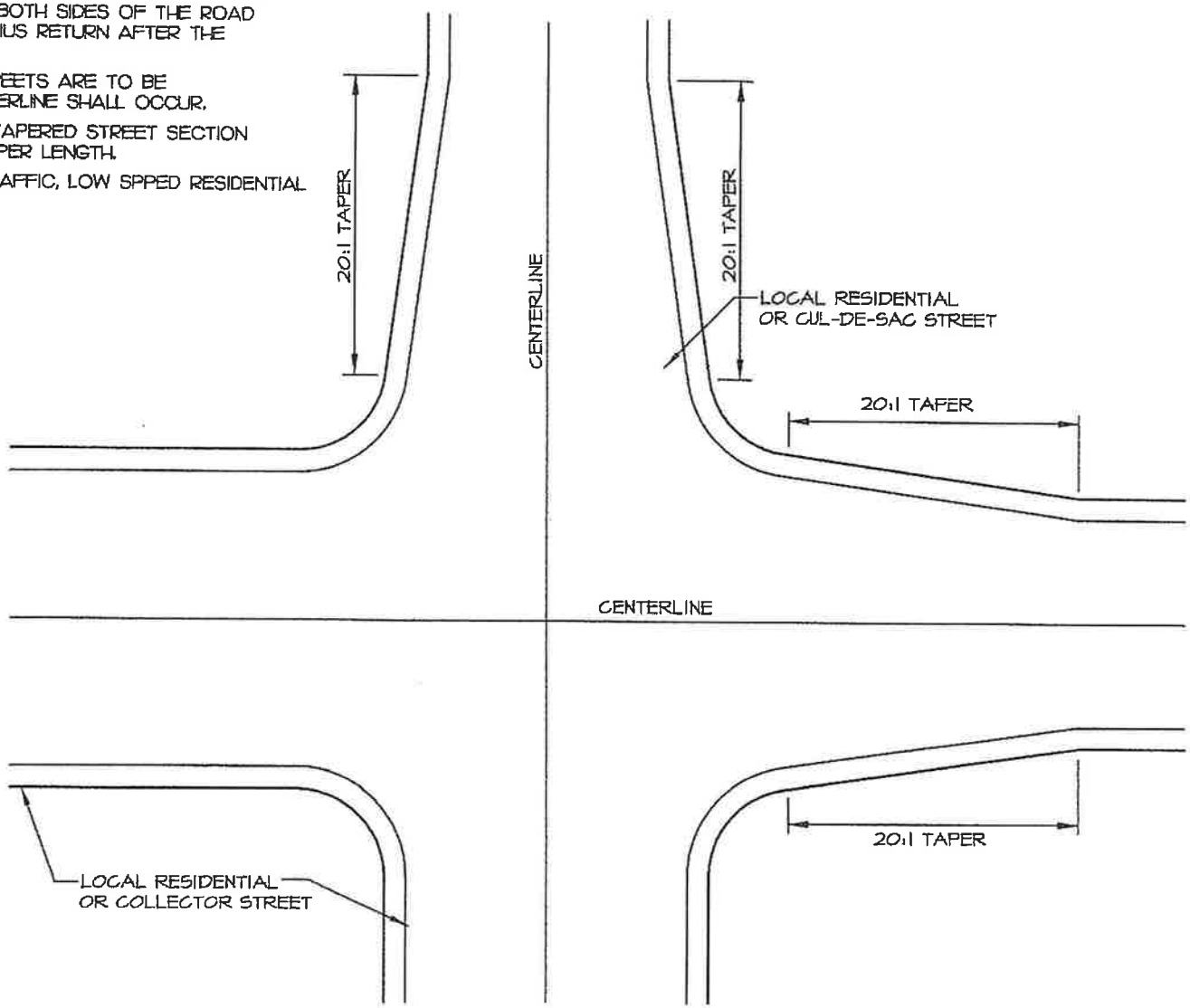
TOWN OF PINEVILLE
LAND DEVELOPMENT STANDARDS

CULVERT CROSSINGS ON RESIDENTIAL AND COMMERCIAL STREETS

STD. NO.	REV.
10.36B	

GENERAL NOTES:

1. ALL TAPERS ARE 20:1 AND OCCUR ON BOTH SIDES OF THE ROAD TO BE TAPERED STARTING AT THE RADIUS RETURN AFTER THE INTERSECTION.
2. CENTERLINE OF LOCAL RESIDENTIAL STREETS ARE TO BE MAINTAINED. NO SHIFTING OF THE CENTERLINE SHALL OCCUR.
3. RIGHT OF WAY AND SIDEWALK BEHIND TAPERED STREET SECTION TO TAPER OVER THE SAME STREET TAPER LENGTH.
4. DETAIL ALSO APPLIES FOR ALL LOW TRAFFIC, LOW SPPED RESIDENTIAL STREETS.



NOT TO SCALE

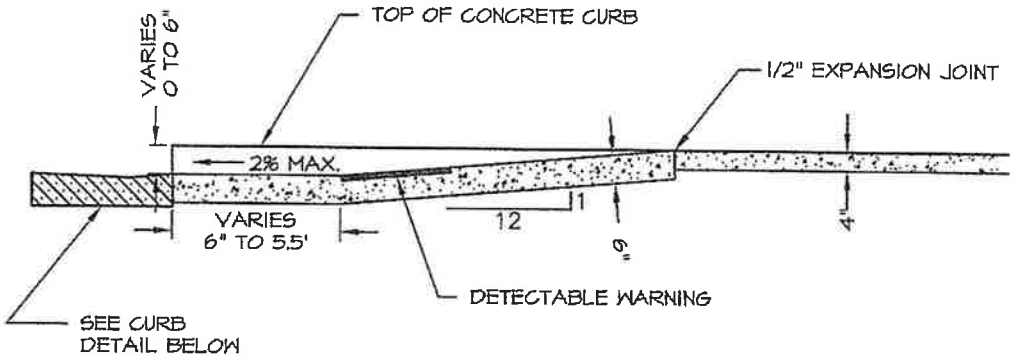
TOWN OF PINEVILLE
LAND DEVELOPMENT STANDARDS

TYPICAL RESIDENTIAL STREET TAPER

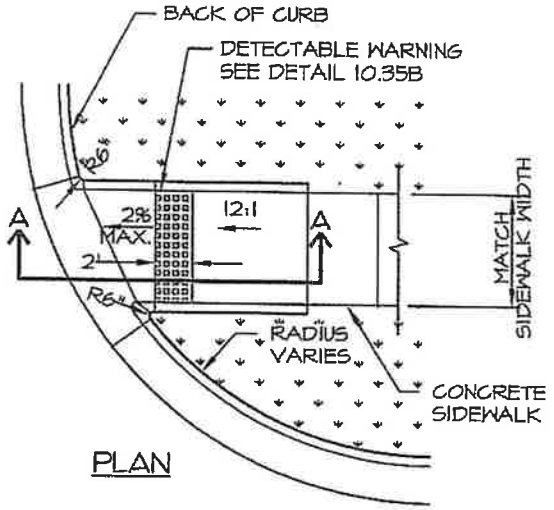
STD. NO.	REV.
10.37	

NOTES:

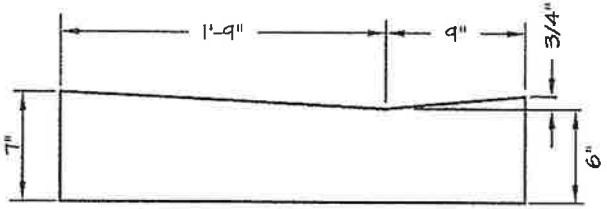
1. USE THIS DETAIL ONLY UNDER THE FOLLOWING CIRCUMSTANCES:
   - A 5-FOOT SIDEWALKS WITH CURB RADII OF 35 FEET OR LESS
   - B 6-FOOT SIDEWALKS WITH CURB RADII OF 30 FEET OR LESS
   - C 8-FOOT SIDEWALKS WITH CURB RADII OF 25 FEET OR LESS
2. DIRECTIONAL RAMPS MAY BE USED WHEN AN 8-FOOT PLANTING STRIP IS PROVIDED. DO NOT USE THIS DETAIL IF THERE IS HARDSCAPE INSTEAD OF A PLANTING STRIP.
3. ALL CONCRETE SHALL BE AT LEAST 3600 PSI.



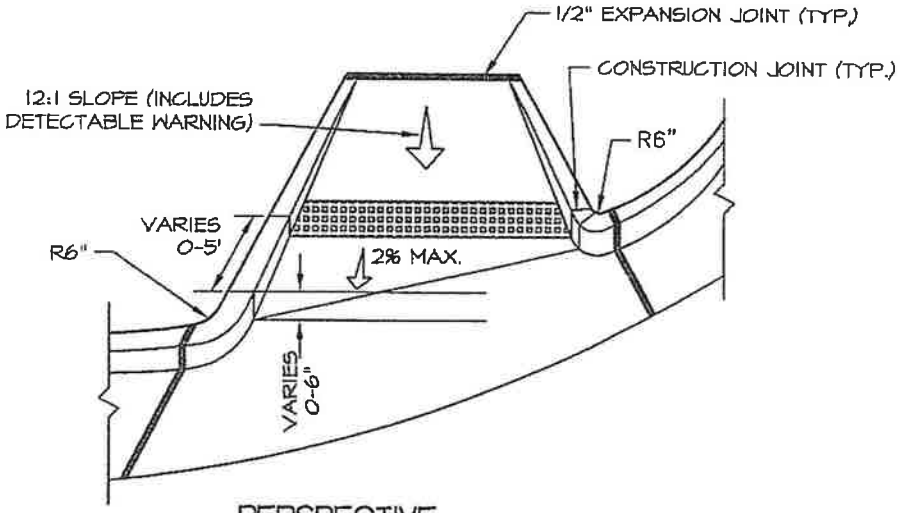
SECTION A-A



PLAN



CURB DETAIL



PERSPECTIVE

NOT TO SCALE

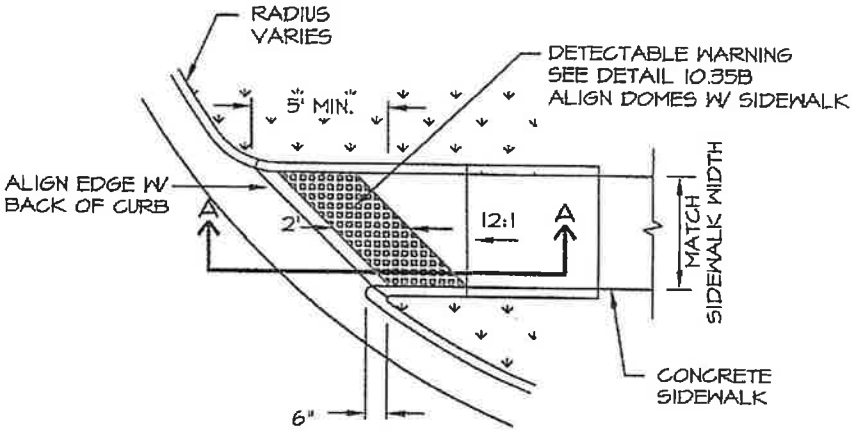
TOWN OF PINEVILLE
LAND DEVELOPMENT STANDARDS

DIRECTIONAL ACCESSIBLE RAMP WITH SMALL/MEDIUM CURB RADII

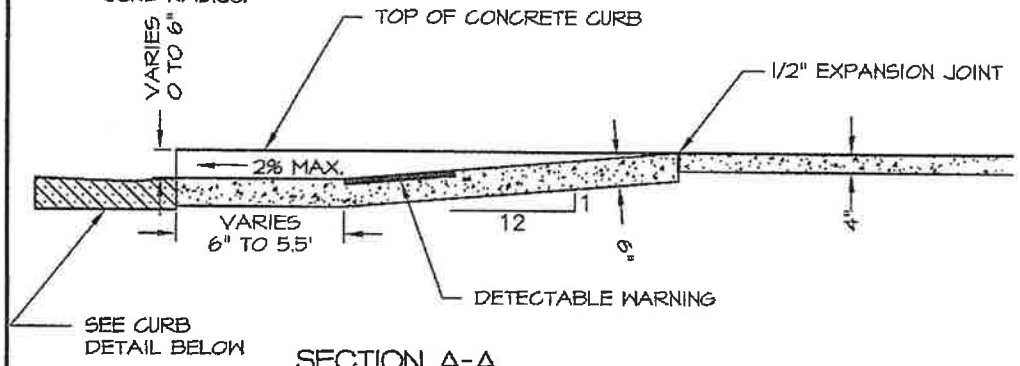
STD. NO.	REV.
10.40A	

NOTES:

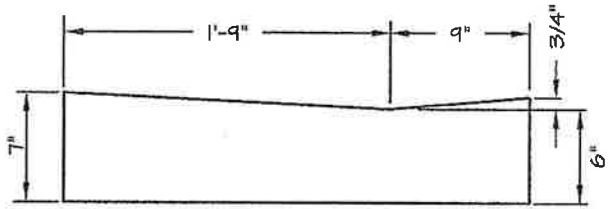
1. USE THIS DETAIL ONLY UNDER THE FOLLOWING CIRCUMSTANCES:
   - A 5-FOOT SIDEWALKS WITH CURB RADII GREATER THAN 35 FEET
   - B 6-FOOT SIDEWALKS WITH CURB RADII GREATER THAN 30 FEET
   - C 8-FOOT SIDEWALKS WITH CURB RADII GREATER THAN 25 FEET
2. DIRECTIONAL RAMPS MAY BE USED WHEN A MIN. 8-FOOT PLANTING STRIP IS PROVIDED. DO NOT USE THIS DETAIL IF THERE IS HARDSCAPE INSTEAD OF A PLANTING STRIP.
3. ALL CONCRETE SHALL BE AT LEAST 3600 PSI.
4. THE ANGLES ON THE DETECTABLE WARNING WILL VARY WITH THE CURB RADIUS AND SIDEWALK WIDTH. IN THE CONFIGURATION SHOWN IN PLAN VIEW, ONE SIDE OF THE DETECTABLE WARNING TRAPEZOID SHALL BE LOCATED AT THE TOE OF THE 12:1 SLOPE, AND THE OTHER SIDE SHALL BE ALIGNED WITH THE CURB ON THE ACCESSIBLE RAMP.
5. THE TRUNCATED DOME PATTERN MUST ALIGN WITH THE SIDEWALK TO ALLOW WHEELCHAIRS TO PASS FREELY. DO NOT ALIGN DOME PATTERN WITH THE CURB RADIUS.



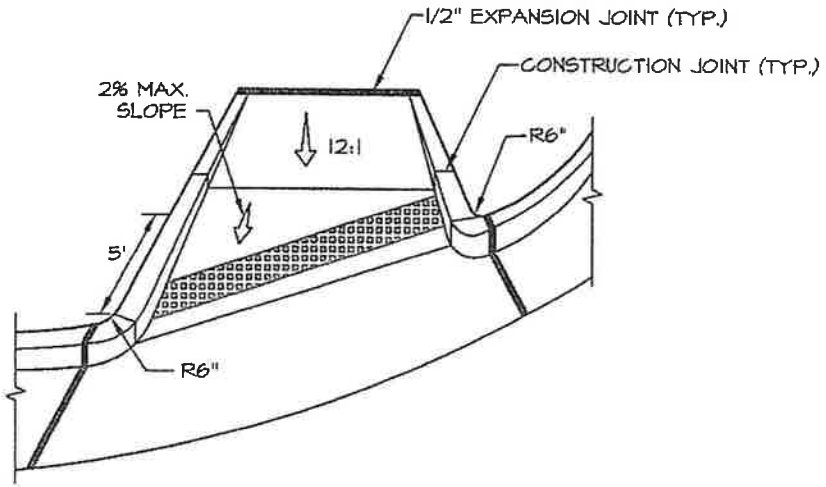
PLAN



SECTION A-A



CURB DETAIL



PERSPECTIVE

NOT TO SCALE

TOWN OF PINEVILLE
LAND DEVELOPMENT STANDARDS

DIRECTIONAL ACCESSIBLE RAMP WITH LARGE CURB RADIUS

STD. NO.	REV.
10.40B	

DWG	SHEET TITLE	SPECIAL REQUIREMENTS AND NOTES
300.01	METHOD OF PIPE INSTALLATION - METHOD A	
310.02	PARALLEL PIPE END SECTION-PRECAST CONCRETE FOR 15" TO 24" PIPE	REQUIRED IN RIGHT OF WAY WITHIN THE ETJ
310.03	CROSS PIPE END SECTION-PRECAST CONCRETE FOR 18" TO 30" PIPE	REQUIRED IN RIGHT OF WAY WITHIN THE ETJ
310.10	DRIVEWAY PIPE CONSTRUCTION USING NO SPECIAL END SECTIONS	ONLY AT LOCATIONS APPROVED BY THE TOWN ENGINEER
815.03	PIPE UNDERDRAIN AND BLIND DRAIN	
816.03	GEOCOMPOSITE SHOULDER DRAIN	
838.01	CONCRETE ENDWALL FOR SINGLE AND DOUBLE PIPE CULVERTS	NOTE 1
	15" THRU 48" PIPE 90° SKEW	NOTE 1
838.02	CONCRETE ENDWALL AND SLUICE GATE 15" THRU 36" PIPE-90° SKEW	NOTE 1
838.04	CONCRETE ENDWALL FOR SINGLE AND DOUBLE PIPE CULVERTS	NOTE 1
	17"X13"THRU 71"X47" PIPE ARCH 90° SKEW	NOTE 1
838.05	CONCRETE "L" ENDWALL FOR SINGLE PIPE CULVERTS 15" THRU 48" PIPE	NOTE 1
838.06	CONCRETE "L" ENDWALL FOR SINGLE PIPE CULVERTS 17"X13" THRU 71"X47"	NOTE 1
	71"X47" ARCH PIPE	NOTE 1
838.07	CONCRETE ENDWALL FOR SINGLE AND DOUBLE PIPE CULVERTS	NOTE 1
	40"X31" THRU 66"X51" PIPE ARCH 90°SKEW	NOTE 1
838.08	CONCRETE "L" ENDWALL FOR SINGLE PIPE CULVERTS 40"X32"	NOTE 1
	THRU 66"X51" PIPE ARCH	NOTE 1
838.10	CONCRETE ENDWALL FOR OUTFALL 4'-6" OR 8" PIPE	NOTE 1
838.11	BRICK ENDWALL FOR SINGLE AND DOUBLE PIPE CULVERTS	NOTE 1
	15" THRU 48" 90° SKEW	NOTE 1
838.14	BRICK ENDWALL FOR SINGLE AND DOUBLE PIPE CULVERTS 17"X31"	NOTE 1
	THRU 71"X47" 90° SKEW	NOTE 1
838.15	BRICK "L" ENDWALL FOR SINGLE PIPE CULVERTS 15" THRU 48" PIPE	NOTE 1
838.16	BRICK "L" ENDWALL FOR SINGLE PIPE CULVERTS 17"X13" THRU	NOTE 1
	71"X47" PIPE ARCH	NOTE 1
838.17	BRICK ENDWALL FOR SINGLE AND DOUBLE PIPE CULVERTS 40"X31"	NOTE 1
	THRU 66"X51" PIPE ARCH 90°SKEW	NOTE 1
838.18	BRICK ENDWALL FOR SINGLE PIPE CULVERTS 40"X31" THRU	NOTE 1
	66"X51" PIPE ARCH 90° SKEW	NOTE 1
838.20	BRICK ENDWALL FOR OUTFALL 4", 6" AND 8" PIPE	NOTE 1
838.21	REINFORCED CONCRETE ENDWALL FOR SINGLE 54" PIPE 90° SKEW	NOTE 1 SEE STD 20.17 FOR SPLASH PAD
838.22	REINFORCED CONCRETE ENDWALL FOR DOUBLE & TRIPLE 54" PIPE 90° SKEW	NOTE 1 SEE STD 20.17 FOR SPLASH PAD
838.27	REINFORCED CONCRETE ENDWALL FOR SINGLE 60" PIPE 90° SKEW	NOTE 1 SEE STD 20.17 FOR SPLASH PAD
838.28	REINFORCED CONCRETE ENDWALL FOR DOUBLE & TRIPLE 60" PIPE 90° SKEW	NOTE 1 SEE STD 20.17 FOR SPLASH PAD
838.33	REINFORCED CONCRETE ENDWALL FOR SINGLE 66" PIPE 90° SKEW	NOTE 1 SEE STD 20.17 FOR SPLASH PAD
838.34	REINFORCED CONCRETE ENDWALL FOR DOUBLE & TRIPLE 66" PIPE 90° SKEW	NOTE 1 SEE STD 20.17 FOR SPLASH PAD
838.39	REINFORCED CONCRETE ENDWALL FOR SINGLE 72" PIPE 90° SKEW	NOTE 1 SEE STD 20.17 FOR SPLASH PAD
838.40	REINFORCED CONCRETE ENDWALL FOR DOUBLE & TRIPLE 72" PIPE 90° SKEW	NOTE 1 SEE STD 20.17 FOR SPLASH PAD

NOTE 1: FOR ALL STRUCTURES - NCDOT REQUIRES CLASS B CONCRETE (2500PSI). THE TOWN REQUIRES 3600 PSI CONCRETE STRENGTH @ 28 DAYS. 3600 PSI CONCRETE SHALL BE USED IN ALL TOWN PROJECTS.

NOT TO SCALE

TOWN OF PINEVILLE

LAND DEVELOPMENT STANDARDS

NCDOT STANDARDS

APPROVED FOR USE IN THE TOWN OF PINEVILLE

STD. NO.	REV.
20.00A	

DWG	SHEET TITLE	SPECIAL REQUIREMENTS AND NOTES
838.45	NOTES FOR REINFORCED CONCRETE ENDWALL STANDARD DRAWINGS	
	838.21 THRU 838.40	NOTE 1 SEE STD 20.17 FOR SPLASH PAD
838.51	REINFORCED BRICK ENDWALL FOR SINGLE 54" PIPE 90° SKEW	NOTE 1 SEE STD 20.17 FOR SPLASH PAD
838.52	REINFORCED BRICK ENDWALL FOR DOUBLE & TRIPLE 54" PIPE 90°SKEW	NOTE 1 SEE STD 20.17 FOR SPLASH PAD
838.57	REINFORCED BRICK ENDWALL FOR SINGLE 60" PIPE 90° SKEW	NOTE 1 SEE STD 20.17 FOR SPLASH PAD
838.58	REINFORCED BRICK ENDWALL FOR DOUBLE & TRIPLE 60" PIPE 90° SKEW	NOTE 1 SEE STD 20.17 FOR SPLASH PAD
838.63	REINFORCED BRICK ENDWALL FOR SINGLE 66" PIPE 90° SKEW	NOTE 1 SEE STD 20.17 FOR SPLASH PAD
838.64	REINFORCED BRICK ENDWALL FOR DOUBLE & TRIPLE 66" PIPE 90° SKEW	NOTE 1 SEE STD 20.17 FOR SPLASH PAD
838.69	REINFORCED BRICK ENDWALL FOR SINGLE 72" PIPE 90° SKEW	NOTE 1 SEE STD 20.17 FOR SPLASH PAD
838.70	REINFORCED BRICK ENDWALL FOR DOUBLE & TRIPLE 72" PIPE 90° SKEW	NOTE 1 SEE STD 20.17 FOR SPLASH PAD
838.75	NOTES FOR REINFORCED BRICK ENDWALL STANDARD DRAWINGS 838.51 THRU 838.70	NOTE 1 SEE STD 20.17 FOR SPLASH PAD
838.80	PRECAST CONCRETE ENDWALL FOR SINGLE 12" THRU 72" PIPE 90° SKEW	
840.00	CONCRETE BASE PAD FOR DRAINAGE STRUCTURES	
840.01	BRICK CATCH BASIN 15" THRU 54" PIPE	
840.02	CONCRETE CATCH BASIN 12" THRU 54" PIPE	
840.03	FRAME, GRATE BASIN 12" THRU 54" PIPE	
840.04	CONCRETE OPEN THROAT CATCH BASIN 12" THRU 48" PIPE	NOTE 1, OPENINGS PERMITTED IN 4 SIDES OUTSIDE OF STREET R/W MANHOLE RING AND COVER REQUIRED IN TOP SLAB SEE STD 20.05 A&B
840.05	BRICK OPEN THROAT CATCH BASIN 15" THRU 48" PIPE	NOTE 1, OPENINGS PERMITTED IN 4 SIDES OUTSIDE OF STREET R/W MANHOLE RING AND COVER REQUIRED IN TOP SLAB SEE STD 20.05 A&B
840.14	CONCRETE DROP INLET 12" THRU 30" PIPE	NOTE 1
840.15	BRICK DROP INLET 12" THRU 30" PIPE	NOTE 1
840.16	DROP INLET FRAME AND GRATE FOR USE WITH DWGS. 840.14 & 840.15	NOTE 1
840.17	CONCRETE GRATED DROP INLET TYPE "A" 12" THRU 72" PIPE	NOTE 1
840.18	CONCRETE GRATED DROP INLET TYPE "B" 12" THRU 36" PIPE	NOTE 1
840.19	CONCRETE GRATED DROP INLET TYPE "D" 12" THRU 36" PIPE	NOTE 1
840.20	FRAMES AND WIDE SLOT FLAT GRATES	NOT FOR USE IN PEDESTRIAN AREAS
840.22	FRAMES AND WIDE SLOT SAG GRATES	NOT FOR USE IN PEDESTRIAN AREAS
840.24	FRAMES AND NARROW SLOT SAG GRATES	
840.25	ANCHORAGE FOR FRAMES BRICK OR CONCRETE	
840.26	BRICK GRATED DROP INLET TYPE "A" 12" THRU 72" PIPE	
840.27	BRICK GRATED DROP INLET TYPE "B" 12" THRU 36" PIPE	
840.28	BRICK GRATED DROP INLET TYPE "D" 12" THRU 36" PIPE	
840.29	FRAMES AND NARROW SLOT FLAT GRATES	
840.30	DRIVEWAY DROP INLET	

NOTE 1: FOR ALL STRUCTURES - NCDOT REQUIRES CLASS B CONCRETE (2500PSI). THE TOWN REQUIRES 3600 PSI CONCRETE STRENGTH @ 28 DAYS. 3600 PSI CONCRETE SHALL BE USED IN ALL TOWN PROJECTS.

NOT TO SCALE

DWG	SHEET TITLE	SPECIAL REQUIREMENTS AND NOTES
840.31	CONCRETE JUNCTION BOX (WITH OPTIONAL MANHOLE) 12" THRU 66" PIPE	NOTE 1, OPTIONAL MANHOLE IS REQUIRED
840.32	BRICK JUNCTION BOX 12" THRU 66" PIPE	NOTE 1, OPTIONAL MANHOLE IS REQUIRED
840.34	TRAFFIC BEARING JUNCTION BOX FOR USE WITH PIPES 42" AND UNDER	NOTE 1, OPTIONAL MANHOLE IS REQUIRED, AS MEASURED FROM BOTTOM OF TOP SLAB -- FOR JUNCTION BOX HEIGHT 0'-4'8" USE 8" THICK WALL, FROM 4'8" HEIGHT TO 10' HEIGHT, USE 12" THICK WALL. IF PROPOSED STRUCTURE EXCEEDS 12'-0" HEIGHT A SPECIAL DESIGN WILL BE REQUIRED
840.35	TRAFFIC BEARING DROP INLET FOR CAST IRON DOUBLE FRAME AND GRATES	
840.36	TRAFFIC BEARING DROP INLET FOR STEEL (840.37) DOUBLE FRAME AND GRATES	NOT FOR USE IN PEDESTRIAN AREAS
840.37	STEEL GRATE AND FRAME	NOT FOR USE IN PEDESTRIAN AREAS
840.41	SPRING BOX CONCRETE OR BRICK	
840.45	PRECAST DRAINAGE STRUCTURE (SOLID AND WAFFLE WALL)	WAFFLE WALL IS NOT PERMITTED IN ROADWAY, PLANTING STRIPS, OR MEDIANS. ALL OPENINGS SHALL BE PRE-CAST
840.46	TRAFFIC BEARING PRECAST DRAINAGE STRUCTURE	
840.51	BRICK MANHOLE 12" 36" PIPE	
840.52	PRECAST MANHOLE 4', 5' AND 6' DIAMETER 12" THRU 42" PIPE	
840.53	PRECAST MANHOLE WITH MASONRY BASE 12" THRU 42" PIPE	
840.54	MANHOLE FRAME AND COVER	
840.60	DRAINAGE STRUCTURE STEPS	
840.71	CONCRETE PAVED DITCHES	
840.72	PIPE COLLAR	
850.01	CONCRETE PAVED DITCHES	
852.04	METHODS FOR PLACEMENT OF DROP INLETS IN GRASSED MEDIAN (USING 1'-6" CURB AND GUTTER)	
852.05	MEDIAN CURB FOR CATCH BASIN (FOR USE WITH 1'-6" CURB AND GUTTER)	
852.06	METHOD OF PLACEMENT OF DROP INLETS IN CONCRETE ISLANDS	
876.01	RIP RAP IN CHANNELS	
876.03	DRAINAGE DITCHES WITH CLASS "A" RIP RAP	
876.04	DRAINAGE DITCHES WITH CLASS "B" RIP RAP	
310.01	1998 DRAWINGS CONCRETE FLARED END SECTION	

NOTE 1: FOR ALL STRUCTURES - NCDOT REQUIRES CLASS B CONCRETE (2500PSI). TOWN REQUIRES 3600 PSI CONCRETE STRENGTH @ 28 DAYS. 3600 PSI CONCRETE SHALL BE USED IN ALL TOWN PROJECTS.

NOT TO SCALE

TOWN OF PINEVILLE

LAND DEVELOPMENT STANDARDS

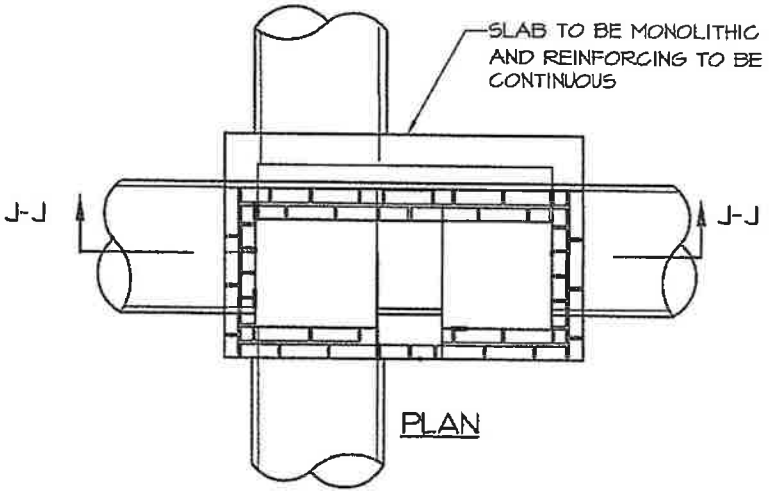
NCDOT STANDARDS

APPROVED FOR USE IN THE TOWN OF PINEVILLE

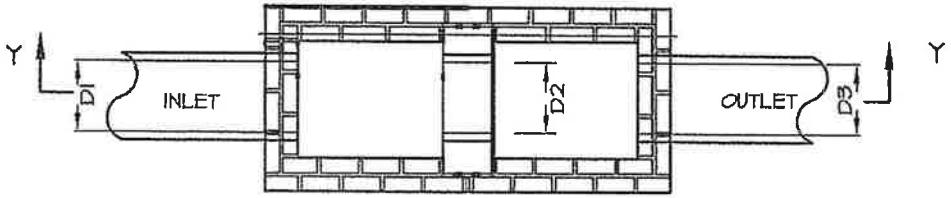
STD. NO.	REV.
20.00C	

GENERAL NOTES:

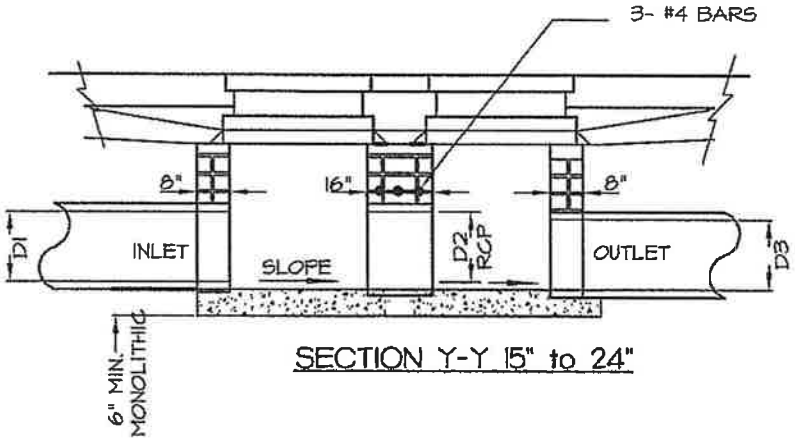
1. SEE NCDOT STANDARD 840.01 FOR DETAILS BASED ON PIPE SIZE PER CROSS SECTION.
2. CONSTRUCT TWO SINGLE BASINS PER NCDOT STANDARD WITH DOUBLE INTERIOR WALL.
3. ALL CONCRETE TO BE 3600 P.S.I COMPRESSIVE STRENGTH.
4. BASE SLAB SHALL BE MONOLITHIC.
5. SEE STANDARDS #10.29 AND #10.30 FOR PLACEMENT OF CATCH BASIN.
6. PIPE SECTION D2 CONNECTING CATCH BASINS SHALL HAVE A MINIMUM DIAMETER SAME AS OF OUTLET PIPE D3.
7. ALL REINFORCING STEEL SHOWN ON NCDOT STANDARDS IS TO BE PROVIDED AS CONTINUOUS MEMBERS. (NO LAPS, USED AS A SINGLE CONTINUOUS BAR IN THE SLAB)
8. WEEP HOLES SHALL BE PLACED IN BACK WALL WITH FILTER FABRIC OR STONE ON BACK SIDE



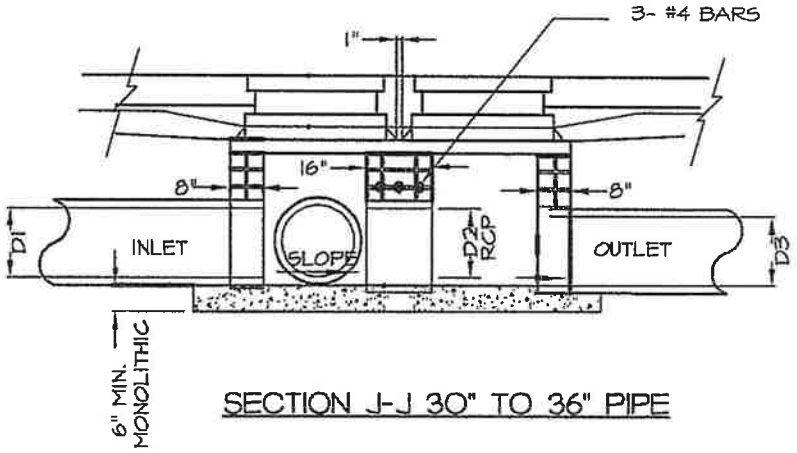
PLAN



PLAN



SECTION Y-Y 15" to 24"



SECTION J-J 30" TO 36" PIPE

NOT TO SCALE

TOWN OF PINEVILLE
LAND DEVELOPMENT STANDARDS

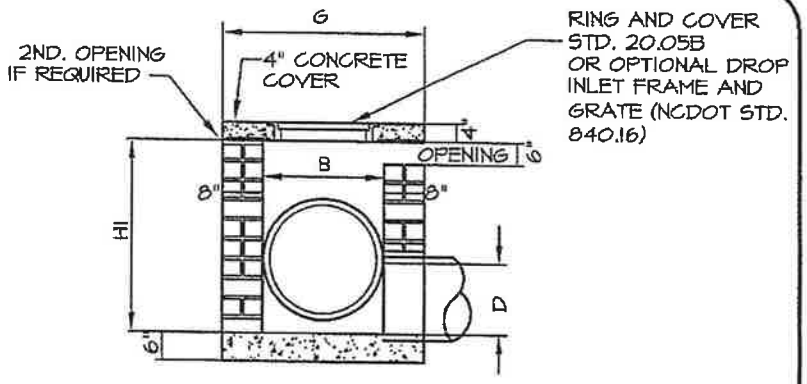
BRICK DOUBLE CATCH BASIN
15" THRU 36" PIPE

STD. NO.	REV.
20.03	

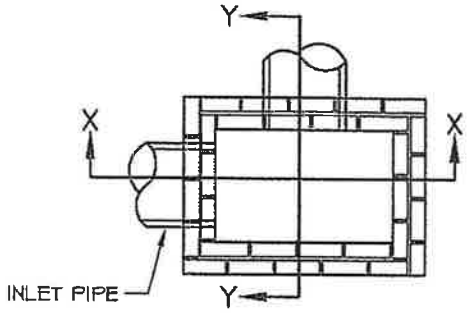
GENERAL NOTES:

1. MORTAR JOINTS SHOULD BE BETWEEN 3/8" AND 5/8" THICK.
2. ALL CONCRETE TO BE 3600 P.S.I COMPRESSIVE STRENGTH.
3. THE 6" OPENING SHOWN MAY BE INCREASED TO 8" MAX. IF DEEMED TO BE NECESSARY BY THE ENGINEER.
4. ALL CATCH BASIN OVER 3'-6" IN DEPTH SHALL BE PROVIDED WITH STEPS 1'-2" ON CENTERS. STEPS SHALL BE IN ACCORDANCE WITH STD. 20.12.
5. CONCRETE BRICK MAY BE USED IN LIEU OF HARD COMMON CLAY BRICK.
6. JUMBO BRICK WILL BE PERMITTED.
7. FOR 8'-0" IN HEIGHT OR LESS USE 8" WALL, OVER 8'-0" IN HEIGHT USE 12" WALL TO 6'-0" FROM TOP OF WALL, AND 8" WALL FOR THE REMAINING 6'-0".
8. ALL EXPOSED JOINTS WILL BE CONCAVE TOOLED.
9. ALL PIPE IN STORM DRAIN STRUCTURE SHALL BE STRUCK EVEN WITH THE INSIDE WALL, GROUTED AND BRUSHED SMOOTH.
10. WEEP HOLES SHALL BE PLACED IN BACK WALL WITH FILTER FABRIC OR STONE ON BACK SIDE.
11. THIS CATCH BASIN IS NOT TO BE USED WITHIN STREET RIGHT OF WAY UNLESS OTHERWISE APPROVED BY TOWN ENGINEER.

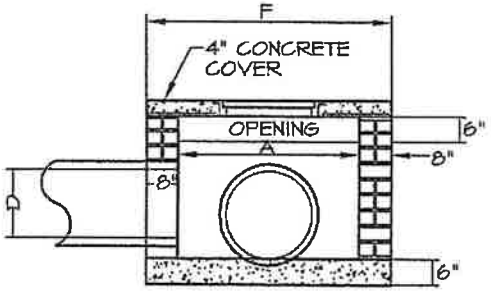
DIMENSIONS OF BOX AND PIPE				REINFORCING					COVER DIMENSION	
PIPE	SPAN	WIDTH	HEIGHT	BARS - X		BARS - Y		TOTAL		
D	A	B	H(MIN.)	NO.	LENGTH	NO.	LENGTH	LBS.	F	G
15"	3'-6"	2'-3"	2'-7"	2	3'-4"	7	4'-7"	26	4'-10"	3'-7"
18"	4'-0"	2'-8"	2'-11"	2	3'-9"	8	5'-1"	33	5'-4"	4'-0"
24"	4'-0"	2'-8"	3'-5"	2	3'-9"	8	5'-1"	33	5'-4"	4'-0"
30"	4'-0"	3'-6"	3'-11"	2	4'-7"	9	5'-1"	37	5'-4"	4'-10"
36"	4'-0"	3'-6"	4'-6"	2	4'-7"	9	5'-1"	37	5'-4"	4'-10"
42"	4'-0"	3'-6"	4'-11"	2	4'-7"	9	5'-1"	37	5'-4"	4'-10"
48"	4'-6"	4'-0"	5'-5"	2	5'-1"	10	5'-7"	45	5'-10"	5'-4"



SECTION Y-Y



PLAN



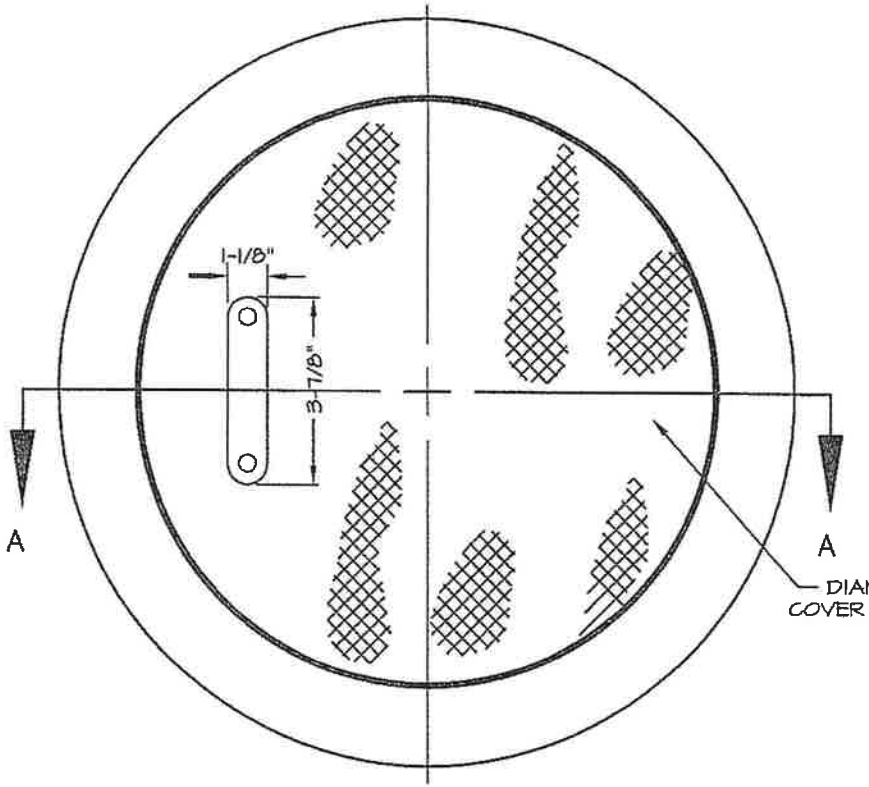
SECTION X-X

NOT TO SCALE

TOWN OF PINEVILLE
LAND DEVELOPMENT STANDARDS

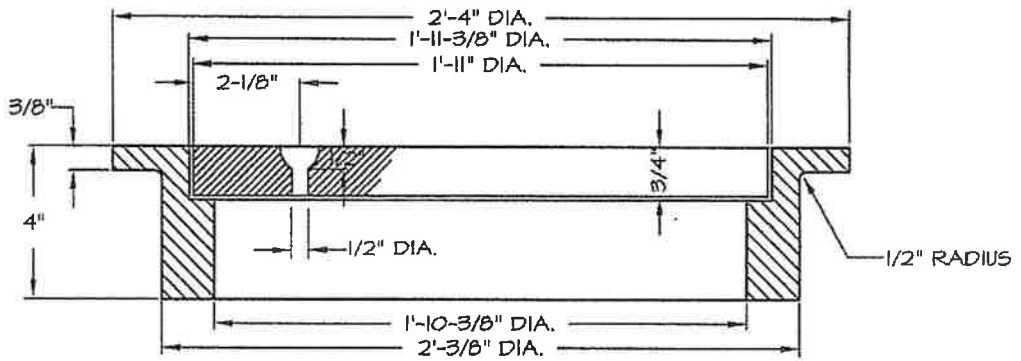
SLAB TYPE CATCH BASIN
15" THRU 48" PIPE

STD. NO.	REV.
20.05A	



PLAN VIEW

MINIMUM WEIGHT	
RING	96 LBS
COVER	86 LBS



SECTION A-A

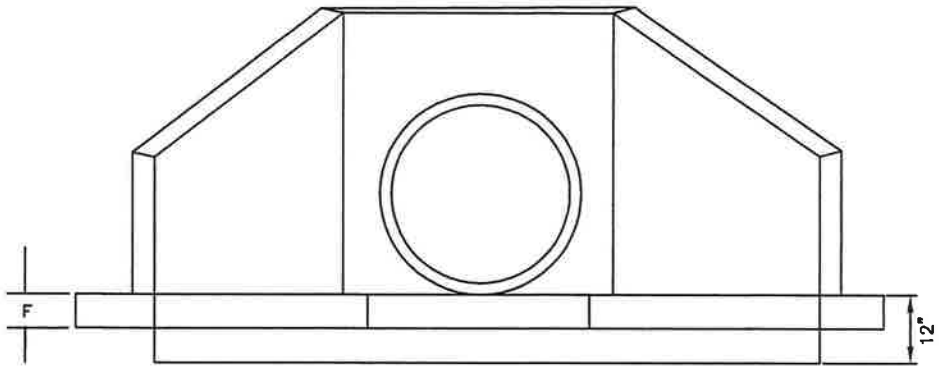
NOT TO SCALE

TOWN OF PINEVILLE
LAND DEVELOPMENT STANDARDS

MANHOLE RING AND COVER FOR SLAB TYPE CATCH BASIN

STD. NO.	REV.
20.05B	

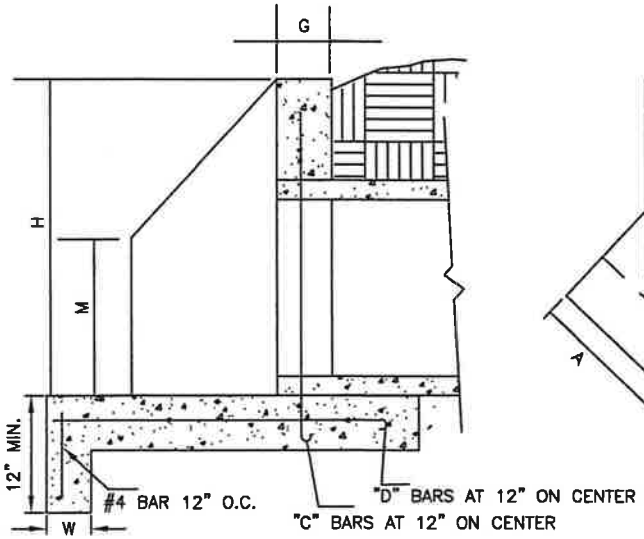
CONCRETE PIPE			DIMENSIONS									
WALL THK.	OUT DIA.	IN DIA.	H	A	B	C	E	F	G	W	K	M
2 1/4"	19 1/2"	15"	27 1/2"	20"	24"	8"	7 1/2"	4"	4"	8"	17"	10"
2 1/2"	23"	18"	31"	20"	24"	8"	9"	4"	4"	8"	17"	12"
3"	30"	24"	38"	20"	30"	8"	12"	4"	4"	8"	21"	15"
3 1/2"	37"	30"	45"	20"	44"	12"	15"	6"	8"	8"	31"	18"
4"	44"	36"	52"	32"	44"	12"	18"	6"	8"	8"	31"	22"
4 1/2"	51"	42"	59"	32"	48"	12"	21"	6"	8"	8"	34"	26"
5"	58"	48"	66"	32"	48"	12"	24"	6"	8"	8"	34"	29"
5 1/2"	65"	54"	73"	32"	54"	12"	27"	6"	8"	8"	38"	33"
6"	72"	60"	80"	36"	66"	12"	30"	8"	12"	12"	46"	36"
6 1/2"	79"	66"	87"	36"	72"	12"	33"	8"	12"	12"	51"	40"
7"	86"	72"	94"	36"	78"	12"	36"	8"	12"	12"	56"	43"



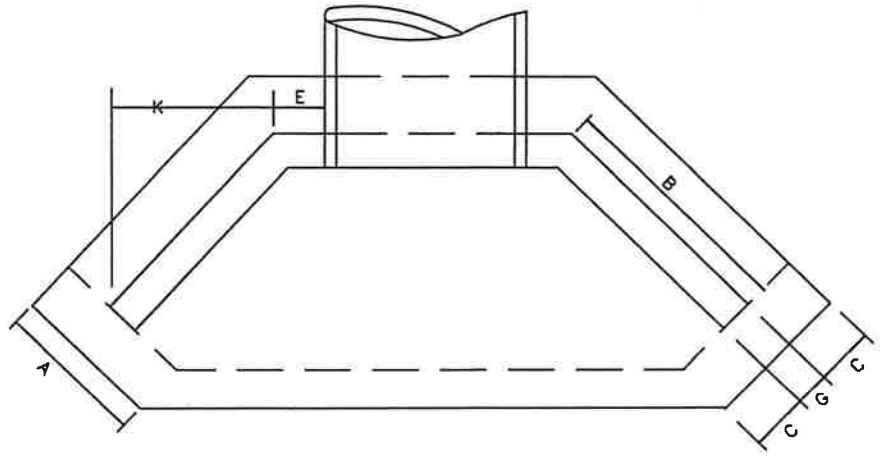
FRONT VIEW

REINFORCING

DIA.	"C" BAR		"D" BAR	
	NO.	LGT.	NO.	LGT.
15"	4	2'-0"	4	1'-11"
18"	4	2'-3"	4	2'-2"
24"	4	2'-9"	4	2'-8"
30"	4	3'-3"	4	3'-2"
36"	4	3'-9"	4	3'-8"
42"	4	4'-3"	4	4'-2"
48"	4	4'-9"	4	4'-8"
54"	4	5'-3"	4	5'-2"
60"	4	5'-9"	4	5'-8"
66"	4	6'-3"	4	6'-2"
72"	4	6'-9"	4	6'-8"



SIDE VIEW



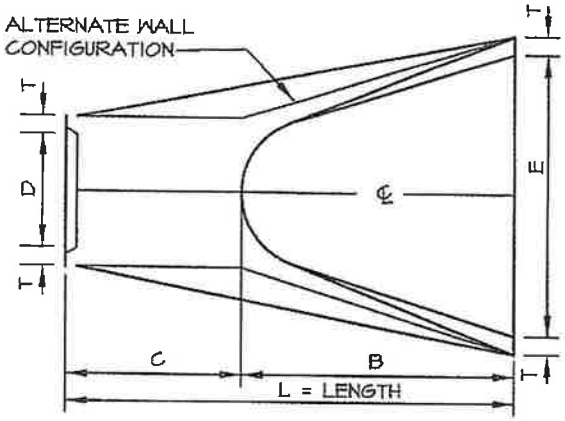
TOP VIEW

NOT TO SCALE

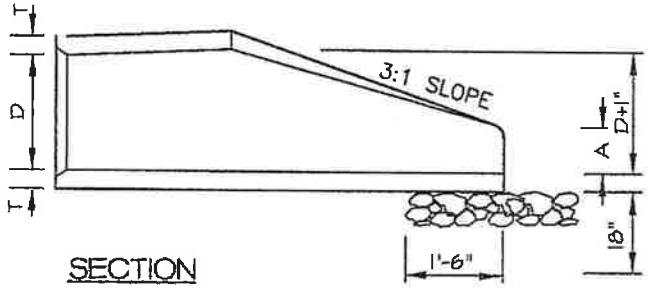
TOWN OF PINEVILLE
LAND DEVELOPMENT STANDARDS

CONCRETE WINGWALL WITH SPLASH PAD

STD. NO.	REV.
20.17A	

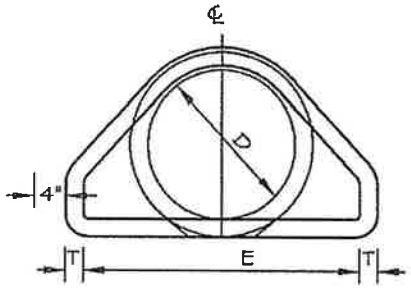


PLAN



SECTION

SEE STD. 20.23 AND 20.24



END VIEW

TABLE OF DIMENSIONS							
D	T	A	B	C	E	L	WT.
12"	2-1/4"	4"	2'-0"	4'-1"	2'-0"	6'-1"	730
15"	2-1/4"	6"	2'-3"	3'-10"	2'-0"	6'-1"	730
18"	2-1/2"	9"	2'-3"	3'-10"	3'-0"	6'-1"	1190
24"	3"	10"	3'-8"	2'-6"	4'-0"	6'-2"	1770
30"	3-1/2"	1'-0"	4'-6"	1'-8"	5'-0"	6'-2"	2380
36"	4"	1'-3"	5'-3"	2'-11"	6'-0"	8'-2"	5320
42"	4-1/2"	1'-9"	5'-3"	2'-11"	6'-6"	8'-2"	5920
48"	5"	2'-0"	6'-0"	2'-2"	7'-0"	8'-2"	7470
54"	5-1/2"	2'-3"	5'-6"	2'-10"	7'-6"	8'-4"	8810
60"	6"	2'-6"	5'-0"	3'-3"	8'-0"	8'-3"	11180
66"	6-1/2"	3'-0"	6'-0"	2'-3"	8'-6"	8'-3"	12530
72"	7"	3'-0"	6'-6"	1'-9"	9'-0"	8'-3"	13980

GENERAL NOTES:

1. SEE FORMER NCDOT STANDARD 310.01 FOR DETAILS.
2. REINFORCEMENT SHALL CONFORM TO THE REQUIREMENTS OF REINFORCED CONCRETE PIPE OF LIKE DIAMETER PER AASHTO M170, TABLE 2, WALL B.
3. ALL CONCRETE TO BE 3600 P.S.I COMPRESSIVE STRENGTH.
4. PROVIDE TONGUE OR SPIGOT JOINT AT INLET END SECTION.
5. PROVIDE GROOVE OR BELL JOINT AT OUTLET END SECTION.
6. THE DIMENSIONS FOR END SECTIONS SHALL SUBSTANTIALLY AGREE WITH THE TABLE. MINOR VARIATIONS WILL BE PERMITTED BASED ON THE MANUFACTURER'S STANDARD FORMS AND TEMPLATES.
7. NOT TO BE USED IN NCDOT MAINTAINED RIGHT OF WAY.

NOT TO SCALE

TOWN OF PINEVILLE
LAND DEVELOPMENT STANDARDS

FLARED END SECTION
12" THRU 72" PIPE

STD. NO.	REV.
20.22	

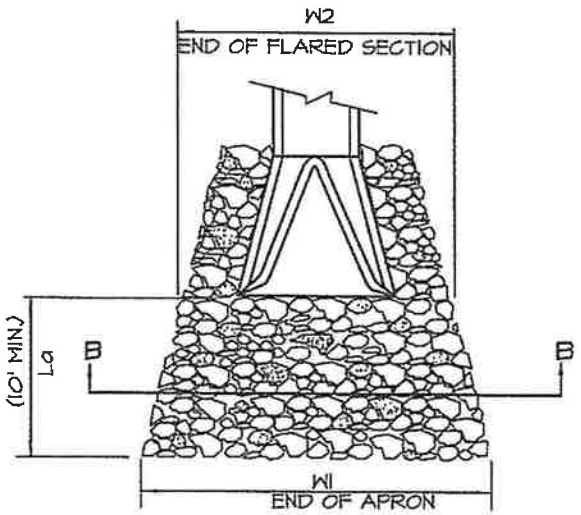
NOTES:

1. CLASS OR MEDIAN SIZE OF RIPRAP AND LENGTH, WIDTH AND DEPTH OF APRON TO BE DESIGNED BY THE ENGINEER.
2. REFER TO THE CHARLOTTE MECKLENBURG STORM WATER DESIGN MANUAL FOR RIPRAP APRON DESIGN STANDARDS.
3. RIPRAP SHOULD EXTEND UP BOTH SIDES OF THE APRON AND AROUND THE END OF THE PIPE OR CULVERT AT THE DISCHARGE OUTLET AT A MAXIMUM SLOPE OF 2:1 AND A HEIGHT NOT LESS THAN TWO THIRDS THE PIPE DIAMETER OR CULVERT HEIGHT.
4. THERE SHALL BE NO OVERFLOW FROM THE END OF THE APRON TO THE SURFACE OF THE RECEIVING CHANNEL. THE AREA TO BE PAVED OR RIPRAPPED SHALL BE UNDERCUT SO THAT THE INVERT OF THE APRON SHALL BE AT THE SAME GRADE (FLUSH) WITH THE SURFACE OF THE RECEIVING CHANNEL. THE APRON SHALL HAVE A CUTOFF OR TOE WALL AT THE DOWNSTREAM END.
5. THE WIDTH OF THE END OF THE APRON SHALL BE EQUAL TO THE BOTTOM WIDTH OF THE RECEIVING CHANNEL. MAXIMUM TAPER TO RECEIVING CHANNEL 5:1
6. ALL SUBGRADE FOR STRUCTURE TO BE COMPACTED TO 95% OR GREATER.
7. THE PLACING OF FILL, EITHER LOOSE OR COMPACTED IN THE RECEIVING CHANNEL SHALL NOT BE ALLOWED.
8. NO BENDS OR CURVES IN THE HORIZONTAL ALIGNMENT OF THE APRON WILL BE PERMITTED.
9. FILTER FABRIC SHALL BE INSTALLED ON COMPACTED SUBGRADE PRIOR TO PLACEMENT OF RIP RAP.
10. ANY DISTURBED AREA FROM END OF APRON TO RECIEVING CHANNEL MUST BE STABILIZED.

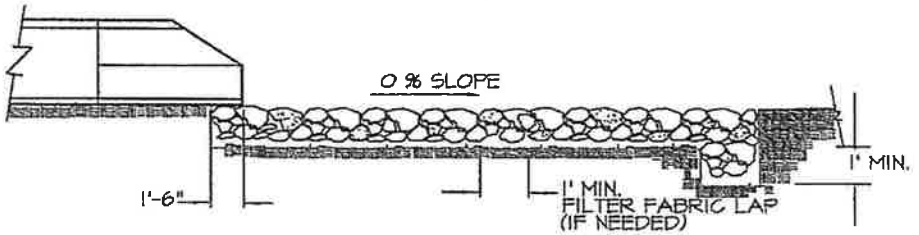
USE USDA NOMOGRAPH FROM NC SEDIMENT AND EROSION CONTROL MANUAL FOR DESIGN DATA.

OUTLET	La	WI	W2	*T	H

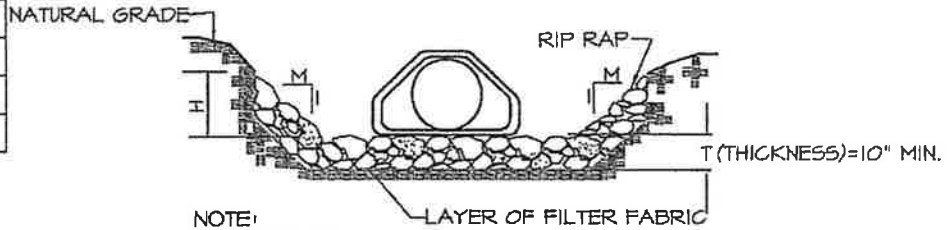
* d50 (see Fig 8.06 a&b "NC SEDIMENT AND EROSION CONTROL MANUAL"
dmax = 1.5 x d50
T = 1.5 X dmax.
T(min.)=10"



PLAN



ELEVATION



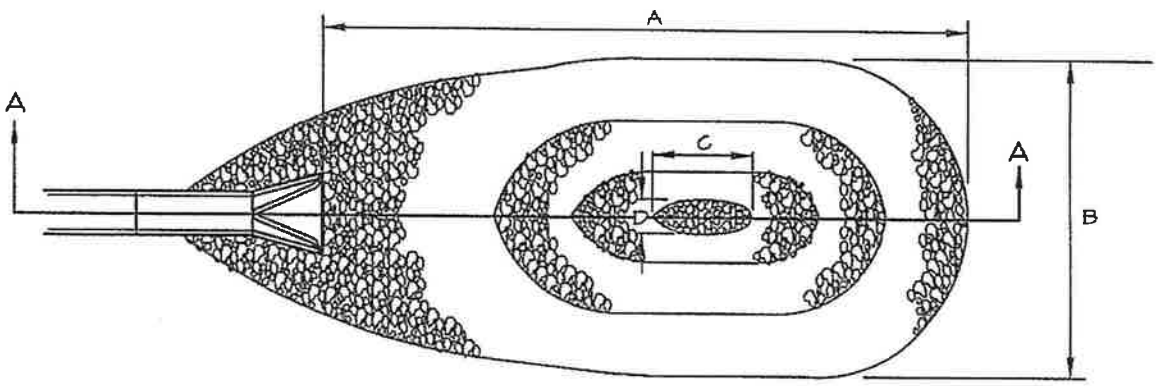
SECTION B-B

NOT TO SCALE

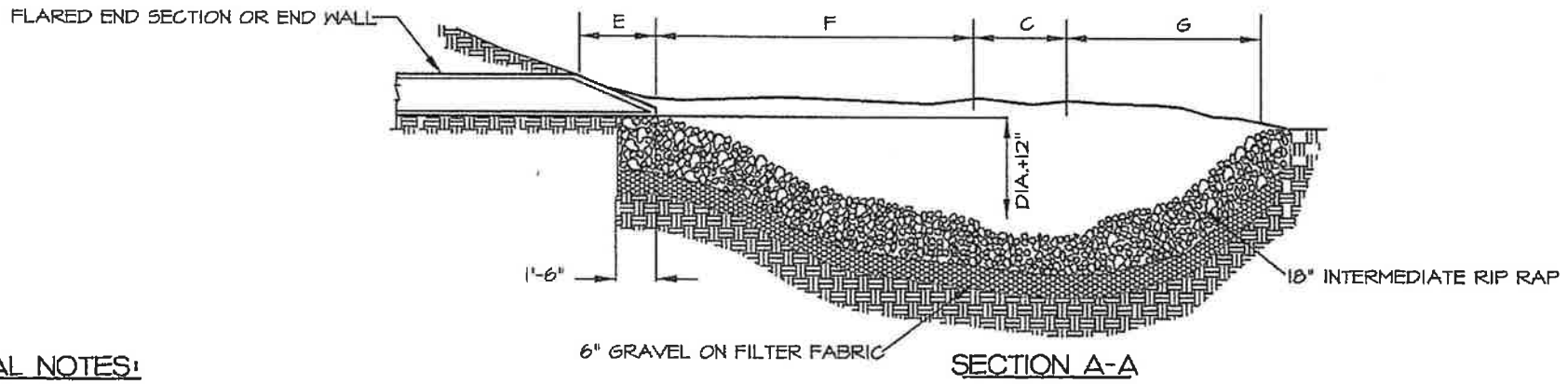
TOWN OF PINEVILLE
LAND DEVELOPMENT STANDARDS

RIPRAP APRON AT PIPE OUTFALLS OTHER THAN AT CREEK BUFFERS

STD. NO.	REV.
20.23	



PLAN



SECTION A-A

GENERAL NOTES:

1. THIS DETAIL IS TO ONLY BE USED WHEN OUTFALL HAS A CONTINUOUS FLOW OF WATER AND WITH PRIOR APPROVAL OF THE TOWN ENGINEER.

PIPE SIZE	A	B	C	D	E	F	G	WT. RIP RAP IN TONS
15"	10'	7'	1 1/2'	1'	1'	4 1/2'	3'	6
18"	12'	8'	2'	1'	1'	5'	4'	8
21"	15'	9'	2 1/2'	1 1/2'	1'	7'	4 1/2'	12
24"	17'	10'	2 1/2'	1 1/2'	1'	8'	5 1/2'	15
30"	20'	13'	3'	2'	2'	9'	6'	22
36"	24'	16'	3 1/2'	2'	2'	9 1/2'	7'	33

NOT TO SCALE

TOWN OF PINEVILLE
LAND DEVELOPMENT STANDARDS

RIP RAP PLUNGE POOL

STD. NO.	REV.
20.24	