



GRAND LAKE
COLORADO

**STREET DEVELOPMENT POLICIES,
STANDARDS AND SPECIFICATIONS**

ORDINANCE NO. 8-2008

See Ord. # 8-2008 Adopted July 22, 2008
See Ord. #20-2009 Adopted April 27, 2009
See Ord. #40-2009 Adopted October 26, 2009

CHAPTER 12
ARTICLE 4
STREET DEVELOPMENT POLICIES, STANDARDS, and SPECIFICATIONS

12-4-1 GENERAL PROVISIONS

A. PURPOSE and SCOPE

1. The purpose of this Ordinance is to define policies and procedures, as well as to establish standards relating to the development of new streets and the improvement of existing streets in the Town of Grand Lake.
2. The Ordinance is not intended to be used as a substitute for knowledge, experience, or judgment, but as a guide to aid in deciding those factors needed to intelligently plan, design, construct, and upgrade Town streets.
3. Simply meeting the minimum requirements contained herein is discouraged.
 - a. For example, higher standards should be used in those situations where they could be applied at little or no extra cost.
 - b. On the other hand, in a particular circumstance, if it can be clearly demonstrated that a certain requirement is unduly restrictive, a variance will be considered.
4. The requirements contained herein shall apply to all new construction or other work done on, over, or under any town street, Town street right-of-way, or other streets within the jurisdiction of the Town of Grand Lake that are planned for, subject to, or may become subject to public use.

B. SHORT TITLE

1. These regulations, together with all future amendments, shall be known as the Town of Grand Lake Street Development Policies Standards and Specifications Manual (hereinafter referred to as Street Standards). The original Street Standards were adopted by the Board of Trustees on July 9, 1973, and are hereby repealed and replaced with these Street Standards.

C. JURISDICTION

1. This Street Standards shall apply to all land within the Town of Grand Lake except where superseded by State of Colorado Department of Transportation jurisdiction.

D. PURPOSE

1. The purpose of this document is to specify established standard principles and practices to be used in the design and construction of streets in order to provide for uniformity of streets within the Town of Grand Lake and to ensure the safety of the general public.
2. Designs of streets for construction within the Town of Grand Lake limits shall be approved by the Town prior to such construction.
 - a. The design factors, formulas, and tables are intended to serve as guidelines for street design.
 - b. Ultimate responsibility for actual design, however, remains with the design engineer. Sound engineering judgment must always be applied.

- c. All streets (does not include driveways) shall be designed by a Colorado Registered Professional Engineer.
- E. REVIEW AND APPROVAL
 - 1. The Town Staff (or hired Engineer) will review all submittals for general compliance with the specific Street Standards.
 - 2. An approval by the Town does not relieve the owner, engineer, or designer from responsibility of ensuring that the calculations, plans, specifications, construction and record drawings are in compliance with the Street Standards.
- F. RELATIONSHIP TO OTHER STANDARDS
 - 1. Since the Town is the approval authority for land use changes, these Street Standards, which stipulate certain minimum conditions for land use changes shall apply.
 - a. If state government, federal government or special districts impose more stringent standards, this difference is not considered a conflict.
 - b. The more stringent standard shall apply.
- G. TOWN COMPREHENSIVE PLAN
 - 1. The Board of Trustees has adopted Comprehensive Plans showing all streets, trails/walkways, and paving improvements for future planning in the Town of Grand Lake. Referencing these Comprehensive Plans to aid in design is recommended.
- H. AMENDMENT AND REVISIONS
 - 1. These policies and criteria may be amended as new technology is developed and/or experience gained in the use of these Street Standards which indicates a need for revision.
 - 2. The Board of Trustees, following the recommendations of the Town Staff and the Planning Commission, may consider amendments to these Standards.
- I. REGULATORY COMPLIANCE
 - 1. All work shall comply with all applicable federal, state, county, and local regulations.
- J. PENALTIES/ENFORCEMENT
 - 1. GENERAL
 - a. In addition to all other enforcement actions authorized under the code, the Town may withhold or withdraw plan or development permit approval, revoke approval, forfeit the submitted financial guarantee, and/or refuse to accept work performed, if a permittee fails to comply with any requirement set forth in this chapter or the Road Standards. Further, the Town may bring civil suit to enforce any requirement, enjoin violation or seek any other remedy available at law or equity.
 - b. No Town review of or action on this application will occur unless the applicant (its constituents or members) are current with the Town and all Town enterprises for all fees, assessments, charges, taxes, or amount due of any type.
 - 2. ROAD APPROACHES
 - a. Failure to Construct Properly. In addition to all other enforcement actions authorized under the code, any person, firm, partnership, association, joint venture, corporation or other legal entity who fails to construct an approach properly will be required to compensate the Town for the improvement or removal of the approach.
 - (1) Compensation shall include administration time as well as equipment and materials to remove or improve the approach. Reimbursement shall be made to the Town of Grand Lake Public Works Department.
 - 3. FAILURE TO NOTIFY

- a. In addition to all other enforcement actions authorized under the code, if a permittee fails to notify the Town, as required by the Road Standards, then the Town may require sampling and/or testing post-construction, either by the Project Engineer or the Town. Costs for such testing and/or sampling shall be borne by the permittee.
 - (1) When such testing and/or sampling is required, the Town may prohibit or limit further work until all such tests and/or sampling have been completed and corrections made to the satisfaction of the Town.
 - (2) In addition to this provision, the Town reserves its right to bring any or all other enforcement action for the failure to notify.
- 4. INDEMNIFICATION
 - a. The holder of any right-of-way permit shall have no recourse whatsoever against the town or its officials, boards, commissions, agents, or employees for any loss, costs, expenses, or damages arising out of any provision or requirement of the permit or Road Standards, or because of the Town's enforcement activities.
 - b. Granting of a franchise or permit shall not imply or be construed to mean the Town shall be responsible for the design, construction, or operation of the facility or for public safety during the facility's installation, operation, or maintenance.
- 5. SEVERABILITY
 - a. If any provision of this Ordinance, or its application to any person, entity or circumstance is for any reason held invalid, the remainder of the Ordinance, or the application of the provision to other persons, entities or circumstances are not affected.

12-4-2 ROADWAY DESIGN AND TECHNICAL CRITERIA

A. GENERAL

- 1. All streets (does not include driveways) shall be designed by a Colorado Registered Professional Engineer.
- 2. Unless modified herein, all designs shall comply with the CDOT (Colorado Department of Transportation) Design Guide, latest edition.
- 3. Other manuals recommended for reference include A Policy on Geometric Design of Highways and Streets and Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT<400) both published by the American Association of State Highway and Transportation Officials (AASHTO).
- 4. Deviation from the requirements of these criteria must be approved by Town Staff.

B. STREET CLASSIFICATION

- 1. Streets in the Town of Grand Lake are classified according to the average daily traffic (ADT) associated with a particular road.
 - a. For design purposes, street classifications will be determined by the Town, or a traffic study, prepared by a Colorado Registered Professional Engineer, will be required.
- 2. The following street classifications (determined by the ADT) shall be utilized in determining the criteria under which a street is to be designed.
 - a. Major Collector Streets (ADT > 2000) – Designed for the movement of heavy local traffic. Major collectors generally connect minor collectors and some local streets to arterials and highways. Parking is discouraged on major collectors. (example - West Portal Road)

- b. Minor Collector Streets (ADT 500 - 2000) – Designed for the movement of principle generators within a community, such as neighborhood shopping centers, schools and recreation areas. Minor Collectors carry traffic from local streets to Major Collectors. (example - Center Drive)
- c. Local Streets (ADT < 500) – Provide primary access to abutting properties.
 - (1) Commercial (example - Grand Avenue)
 - (2) Residential (example - Mountain Avenue)

C. DEVELOPMENT STANDARDS

- 1. Development Abutting Major Rights-of-Way - Where a development abuts or contains an existing or proposed primary street or highway, the Planning Commission may require service streets, reverse frontage lots with screen planting in a reservation strip along the rear property line, deep lots with rear service alleys abutting the primary street or highway, or such other treatment as may be necessary for adequate protection of residential properties and for separation of through and local traffic.
- 2. Development Containing Major Right-of-Ways - Where a development borders on or contains highway right-of-way, the Planning Commission may require a street approximately parallel to and on each side of such right-of-way, at a distance suitable for the appropriate use of the intervening land. Such land would be appropriately used for park purposes in residential districts, or for commercial or industrial purposes in non-residential districts. Such distances shall be determined with due regard for the requirements of approach grades and future grade separations.

D. INSPECTION AND TESTING

- 1. Adequate inspections assure compliance to Town standards and are the basis for the Town Staff recommendation to the Board of Trustees for maintenance acceptance and for release of bond.
- 2. All soils and material testing shall be done by a soil/material-testing firm under the supervision of a Colorado Registered Professional Engineer.
- 3. Improvements made within Town ROW, soil testing and identification of the existing conditions shall be submitted to the Town with recommendations for structural section.
 - a. Structural sections shall be designed in accordance to 12-4-3 Pavement Design.
- 4. Improvements within Town ROW shall be supervised by a soil/material-testing firm.
 - a. The testing firm will be required to provide subgrade and road base for compaction test, materials testing of asphalt, road base, and concrete, and density tests of asphalt.
 - b. All tests shall meet CDOT requirements.
 - c. Reports shall be provided to the Town.
- 5. If unsuitable soils are encountered, a modified design shall be submitted by the soils-testing firm to the Town for approval.
- 6. The Town may not accept projects or may require a longer warranty period if there are test failures or testing has not been completed according to the requirements of this section or recommendations by the soils-testing firm.

E. TOWN MAINTENANCE

- 1. Acceptance of town roads does not constitute acceptance for town maintenance or access by emergency vehicles.

F. BONDING AND INSURANCE

- 1. The term “Bond” shall be any uncancellable surety secured unto the Town and

- acceptable to the Town Attorney.
- 2. Bonds shall be in the amount of 115% the estimated construction cost as approved by the Town Staff.
- 3. A Warranty Performance Guarantee shall be equal to fifteen percent (15%) of the total estimated cost of the improvements.
 - a. The Warranty Guarantee shall provide security for the costs which may be incurred in repairing and/or replacing improvements during a warranty period of two years following Initial Acceptance by the Town.
- 4. Bonds shall be forfeited if local public pressures warrant Town participation in completing the work, or if in the opinion of the Town, the work is not progressing in a satisfactory manner.
- 5. As logical units of work are completed and approved by the Town Staff, application may be made for a partial release of bond.

G. DESIGN DRAWING REQUIREMENTS

- 1. All construction plans, pertaining to this Street Design Criteria, designed for construction in the Town of Grand Lake must meet the following criteria:
 - a. 24 inch by 36 inch blue-line or black-line prints.
 - b. 1 inch = 50 feet horizontal and 1 foot = 5 feet vertical or
 - c. 1 inch = 20 feet horizontal and 1 inch = 2 vertical.
 - d. Larger scales will be considered.
- 2. The plan must include a statement, signed and stamped by the Registered Professional Engineer who prepared or directed preparation of the construction plans, on the cover sheet:

“These construction plans for (name, subdivision, development, or project) were prepared by me (or under my direct supervision) in accordance with the requirements of the Town of Grand Lake.”

Name of Engineer
Name of Firm
- 3. Any construction plans, pertaining to this Street Design Criteria, designed for construction in the Town of Grand Lake shall contain the following information:
 - a. Scale.
 - b. North arrow.
 - c. Plan view of all streets, including neighboring streets.
 - d. Grades.
 - e. Profiles or existing ground and proposed street at centerline (existing ground dashed).
 - f. Length of vertical curves, BVC's, EVC's and PVI's.
 - g. Culverts including locations, size and slope, and minimum cover.
 - h. Cross pans including location, size and slope.
 - i. All other structures.
 - j. Existing and proposed utility locations and elevations.
 - k. Existing and proposed signage.
 - l. Bench Mark, located within 1,000 feet of the street, tied to U.S.G.S. datum, and referenced to the Town of Grand Lake datum.
 - m. Horizontal curve data including radii, delta angles, bearing, distances, centerline stations at 100 foot intervals, and BC and EC stationing.

- n. Right-of-way widths.
- o. Street cross sections for all typical sections.
- p. Street Names, including all intersecting streets.
- q. Flow arrows showing direction of drainage.
- r. Existing and finished grade contours, 2' spacing (1' spacing may be requested for more detail in flat areas).
- s. Complete design drawings for all structures, such as bridges and box culverts.
- t. Stamp and signature of the Colorado Registered Professional Engineer under whose direction the plans were prepared.
- u. Snow Storage Area
- v. Frontage Screen Planting, if located on an arterial highway
- w. Soils report (where required).

H. AS-BUILT DRAWING REQUIREMENTS

1. Upon completion of all improvements, the design engineer, soils engineer, and construction engineer shall provide a letter to the Town that all improvements have been constructed per the approved road design and construction plans.
2. A set of as built drawings shall be provided prior to the final inspection of the improvements and any release of any remaining financial guarantees.
3. The Warranty Guarantee becomes effective at time of final inspection approval.

I. TRAFFIC IMPACT STUDY

1. A traffic impact study, prepared by a Colorado Registered Professional Engineer, is required for street classification or developments foreseeable expected to cause a 20% increase in traffic to adjacent roadways, or as required by Planning Commission or Town Staff.
2. A traffic impact study shall conform to the State of Colorado Access Code (Section 2.3 Part 5c).
3. The traffic impact study shall reference the Institute of Transportation Engineers Trip Generation Manual to determine traffic volumes for each land use.
4. In general, existing and proposed infrastructure improvements shall be determined by information provided by the owner/applicant in the Traffic Impact Study and by comments generated during Town of Grand Lake review and acceptance of that study.
5. Design elements such as asphalt paving, curb and gutter, and sidewalks, may be required by the Planning Commission, Town Staff, Public Works Director or results from the Traffic Impact Study.

J. PARTIALLY DEVELOPED RIGHT-OF-WAY

1. Half streets are prohibited.
 - a. When a proposed half street in one subdivision is adjacent to another property, the approval of the adjacent owner shall be obtained and the entire right-of-way shall be platted and dedicated by the owners.
 - b. The responsibility for acquiring the additional right-of-way shall be with the subdivider.
2. Dead end streets, with the exception of cul-de-sacs, shall be prohibited.

K. STREET NAMES AND NEW STREETS

1. New streets are added to the Town Street System by resolution passed by the Board of Trustees.
2. Sources of new streets are: Additions, realignments, Relinquished State Highways,

- Subdivisions and other developments.
- 3. Before a new street becomes a part of the Town Street System, the owner/applicant must follow the procedures for acceptance outlined by the Town of Grand Lake.
- 4. Names of new streets shall not duplicate names of existing streets.
 - a. New streets which are extensions of or which are in alignment with existing streets shall bear the names of the existing streets.
- 5. The Town of Grand Lake reserves the right to review/approve any street names.
- L. SNOW STORAGE AREA
 - 1. Dedicated snow storage areas shall be shown on the construction plans.
 - 2. The required snow storage to provide is calculated at 33% of the total parking, pathways, and driving areas (including shoulders).
- M. SIGNAGE AND STRIPING PLAN
 - 1. All signs and street markings shall be designed, constructed, and placed in accordance with the Manual of Uniform Traffic Control Devices, latest edition, unless otherwise approved by the Town.
- N. TEMPORARY UNPAVED STREET
 - 1. Under certain circumstances, the Town Staff may allow either a delay of final paving of a new street, or a delay in the final lift, until the following construction season to allow sufficient time for roadway stabilization or until a certain percentage of build out occurs.
 - a. In those cases, all street construction up to and including base work shall be completed.
 - b. While unpaved, the Town of Grand Lake shall require maintenance such as, but no limited to dust control and continuous grading.
 - c. Unpaved streets shall be graded to a three percent crown and then re-graded and compacted as required by these standards prior to paving.
 - d. Unpaved streets may not be accepted by the Town for maintenance purposes.

12-4-3 ROADWAY SPECIFICATIONS

- A. Roadways shall be designed using the standards in the CDOT Design Guide unless otherwise modified herein.
 - 1. Items not covered in either source shall use A Policy on Geometric Design of Highways and Streets.
 - 2. **Table 4 summarizes the minimum roadway construction requirements.**
 - a. Private streets shall be designed to at least the minimum roadway construction requirements.
- B. INGRESS AND EGRESS
 - 1. Subdivision road system shall be designed with two or more dedicated access roads for separate, multiple ingress and egress, where practical.
- C. SIDEWALKS AND PATHWAYS
 - 1. Sidewalks, pedestrian, and bicycle paths shall be constructed in accordance with the roadway templates and/or the Town's master trail concepts. (See Table 4 and Figure 4)
 - 2. Streets with on street parking require sidewalks.
 - 3. Handicap ramps shall be shown at all curb returns and must be shown (located) at all "T" intersections.

- a. Whenever designing a handicap ramp, reference the Town of Grand Lake Standard Detail to be used to construct that ramp. (See Figure 5)

D. CUL-DE-SAC CRITERIA

- 1. See Figure 6 for cul-de-sac configuration.
- 2. If topography dictates the use of a longer cul-de-sac, the approval of the Town Staff shall be obtained.
- 3. Drainage should be toward the intersecting street or a drainage easement shall be required between the cul-de-sac and the rear lot line of the lowest lot.
- 4. A T-shaped and Y-shaped terminus may be provided in mountainside developments as an alternative to a cul-de-sac or circular turnaround. Where provided, the “wings” of the T or Y shall be at least twenty feet (20’) deep, measured from the street boundary, and at least sixteen feet (16’) wide exclusive of parking space. Curbs at the intersection of the street and the “wings” of the T or Y shall be rounded with a minimum radius of twenty feet (20’).

E. HORIZONTAL ALIGNMENT (See Table 1 below)

1. Table 1: HORIZONTAL CURVES

Design Speed (mph)	Minimum Curve Radius* (Ft.)
20	110
25	200
30	330
35	510
40	760

* AASHTO “Green Book”

- 2. Standard for Curvature – Table 1 gives minimum centerline radii for curves. The table is based on design speed only. Increased radii may be required if minimum sight distances are not satisfied.
- 3. Super elevation – Refer to the AASHTO, latest edition. For low speed Local Streets super elevation is generally not used. Consult with the Town if super elevation is used.
- 4. Small Deflection Angles – For small deflection angles, curves should be of sufficient length to avoid the appearance of an angle in the road.
- 5. Reversing Curves – True reversing curves shall not be used in the Town of Grand Lake except as noted herein. In cases where curves in opposite directions must be used, a tangent between shall be used. A minimum 50-foot tangent shall be used if at all possible between reverse curves to facilitate steering and control. Lesser tangent lengths may be considered with deflection angle curves less than 10 degrees.
- 6. Broken Back Curves - Broken back curves consisting of two curves in the same direction joined by a tangent less than 50 feet shall not be used in the Town of Grand Lake, except on local streets with prior approval from the Town Staff.
- 7. Coordination with Vertical Alignment – To avoid the possibility of introducing serious traffic hazards, coordination is required between horizontal and vertical alignment. Particular care must be exercised to maintain proper sight distances at all times.

8. Pavement Transition – A pavement transition is the area of variable pavement width encountered when changing from one roadway width, or section, to another. All pavement transitions shall be based on the following formula:
 - a. $L = WS^2 / 60$ where:
 - (1) L = length of transition or taper (in feet)
 - (2) S = posted speed limit (in mph)
 - (3) W = offset in feet

F. VERTICAL ALIGNMENT

1. Design controls for vertical alignment are shown on Table 2 below.

Table 2: VERTICAL ALIGNMENT CONTROLS (From AASHTO “Green Book”)

Description	Design Speed	Min. K Value Crest	Min. K Value Sag
Local	20	7	17
	25	12	26
	30	19	37
Collectors	35	29	49
	40	44	64
	45	61	79

2. Grade Line – The grade line is a reference line by which the elevation of the pavement and other features of the roadway are established. The grade line shall coincide with the street centerline for all streets.
3. Grade – The minimum and maximum grades as measured at centerline shall be 1.0% and 8.0%, respectively. Grades in excess of 8.0% will require a variance request. The maximum permissible grade at intersections is shown in Section 2.7, Part 4.
4. Excessive changes in grade, which create a roller coaster effect, shall not be permitted. Connections with existing streets shall be smooth transitions and existing grades shall be shown in the design for at least 150 feet on all sides of a connection.
5. Vertical Curves – Properly designed vertical curves should provide adequate sight distance, safety, comfortable driving, good drainage, and pleasing appearance. Vertical curves in the Town of Grand Lake shall be parabolic curves. The use of grade breaks in lieu of vertical curves is discouraged. However, if a grade break is necessary, the algebraic difference shall not exceed 0.80% (.008 ft/ft).

G. STOPPING SIGHT DISTANCE

1. A primary consideration in the design of a street is to provide adequate sight distance for safe and efficient operation.
2. AASHTO standards shall be met for these types of sight distance.
3. **Table 3: STOPPING SIGHT DISTANCE** (From AASHTO "Green Book")

Design Speed (mph)	Stopping Sight Distance
15	100
20	125
25	150
30	200

35	250
40	275
45	325

H. INTERSECTION ALIGNMENTS

1. Whenever intersections do not align, offsets should be designed according to the roadway classification and follow Figure 7.
2. Minimum angle of Intersection – Intersections shall approximate right angles as closely as possible. The minimum angle allowed for any type of intersection shall be 70 degrees.
3. Radius – All intersections shall have a paved radius on all four corners with minimum radius as shown in Figure 7. Design radii should accommodate the largest vehicle expected to commonly use the intersection. For Fire Lane Configuration see Figure 8.
4. Cross Street Standard – All local streets intersecting Major Collector Streets shall be constructed to Minor Collector Street standards for a distance of 200 linear feet as measured from the edge of the Major Collector Street right-of-way. This shall include street width (asphalt and base) and right-of-way width.
5. Grades – Grades at intersections are based upon street classification.

Table 4: GRADES

Collector	Local
100' @ 3% max.	100' @ 3% max.
100' @ 3% max.	50' @ 4% max.

- a. Maximum grades may be increased in extreme terrain when approved by the Town. Access to cross streets should be designed to the section of lesser grade whenever possible, although flattening the through street at the intersection is recommended.
6. Separation – Intersections shall not occur at less than 300 linear foot separation wherever possible.
 - a. In no case shall two intersections be within 200 linear feet (edge to edge of ROW) of each other.
 - b. Opposing intersections (4 way) are required when intersecting with a major road and certain intersections of two collector streets.
 - c. T-type intersections have shown to be far safer than cross-type and shall be considered in the design of residential subdivisions. See Figure 7.
7. Intersection at a Curve – Intersections should not be placed on a curve unless all applicable sight and stopping distances are complied with.
8. Intersection Sight Distance – Intersection sight distance is defined by AASHTO as adequate when a driver has an unobstructed view of the entire intersection and sufficient lengths of the intersecting road to avoid collisions.
 - a. AASHTO standards shall be met for the sight triangle.
 - b. Obstructions of any type installed by private property owners are prohibited within Town ROW.

I. CONTINUATION OF ROADWAYS AND TRAILS

1. Streets, bike pathways, walkways, and easements shall be aligned to join with the planned or existing public ways adjacent to the subdivision.

- a. The Planning and Zoning Commission may require public ways to provide direct, continuous routes to all adjacent lands, whether such adjacent lands have been subdivided or not.
 - b. The location of public ways providing access to adjacent lands shall be selected by the subdivision planner provided such location shall be reasonably calculated to provide usable access to the adjacent lands.
 - c. The cost of such public ways leading to and within a subdivision shall be borne by the sub divider.
2. Streets shall be extended to boundaries of the property, where practical, except where such extension is prevented by topography or other physical conditions, or where the connection of streets with existing or probable future streets is deemed unnecessary for the advantageous development of adjacent properties.
 3. Where future extension of a street is anticipated, a temporary turn-around meeting Town Cul-de-sac standards, may be required.

J. SHOULDER STANDARDS

1. Width – The width of improved shoulder will vary with use and location.
 - a. The improved shoulder shall consist of 6 inches of compacted road base at grade with the improved roadway surface.
 - b. The decision to allow or not allow parking shall be made by the Town. See Figures 1-3.
2. Side Ditches – Side ditches shall be used in all cut sections.
 - a. All roadside swales shall be sized to handle the historical 100-year storm flows tributary to the street, unless alternate routes for the major runoff are provided.
 - b. Culvert sizes shall be designed to carry the 100-year historical flows.
 - c. The slope from the edge of the shoulder to the bottom of the side ditch shall not exceed 3:1.
 - (1) In cases where adequate erosion control measures are designed, a steeper grade may be utilized, not exceeding 2:1.
3. Side Slopes – Side slopes shall not exceed 3:1, unless otherwise approved by the Town Staff or based upon a slope stability analysis provided by a Colorado Certified Geotechnical Engineer.
 - a. Where slopes equal to or greater than 3:1 are used, special provisions for erosion control and re-vegetation shall be made.
 - b. Any proposal to deviate from a maximum 3:1 slope shall be accompanied by a soils study that addresses the slope protection being proposed.
4. Clear Zones- Clear zones are unobstructed, relatively flat area provided next to the traveled roadway for the recovery of errant vehicles.
 - a. The design of clear zones should be designed according to AASHTO Roadside Design Guide. See Figures 1-3.

K. CULVERTS

1. Size – All culverts installed shall be sized to handle the 100-year (historical) storm flows using the Grand County Drainage Standards.
 - a. Prior to installation, all culverts must be approved by Town Staff.
 - b. All culverts shall be installed with flared end sections.
2. Cover – Minimum cover over all culverts shall be 12 inches from top of pipe to finish road grade, unless otherwise approved by the Town Staff.

- a. Additional cover may be required for larger culverts in accordance with the manufacturer's recommendations.
3. Type – Corrugated steel pipe, reinforced concrete pipe, reinforced concrete boxes, or high density polyethylene (HDPE) shall be used.

L. RETAINING WALLS

1. Where necessary to meet required side slope grades, walls may be utilized.
2. Height – Retaining walls may not exceed 6 feet in height and require a 4' shelf between walls.
 - a. Any walls exceeding 6' will require a variance.
3. Location – Retaining walls may not be located closer than 10 feet from the traveled lanes (maximum separation is desired).
4. Design – Retaining walls over 4' must be designed by a Colorado Professional Engineer.
 - a. Retaining walls should include façade design, which is subject to approval by the Town and county building department.

M. CONCRETE

1. Concrete Class and Additives - Concrete used for concrete drainage and sidewalks shall meet the following minimum requirements:
 - a. Mix Design – A mix design shall be submitted to the Town for all concrete to be used within Town ROW.
 - b. Strength – Minimum 4000 psi
 - c. Fibers – “FiberMesh” fibers or approved substitute shall be added to the concrete, for strength, at a rate of 1.5 pounds of fiber per cubic yard of concrete.

N. GUARDRAIL

1. Guardrail requirements shall be as specified in the CDOT M & S Standards and AASHTO Roadside Design Guide, latest edition. Corten steel shall be used for all guardrail installations unless otherwise approved by the Town Staff.

O. PAVEMENT DESIGN

1. Pavement design is required for all construction. The following pavement design shall be adhered to for all new roads and all existing roads impacted during construction.
 - a. Thickness Design – Thickness design shall be in accordance with the procedures as outlined in the CDOT Design Manual-Pavement Design, latest edition. All new streets constructed in the Town of Grand Lake must be designed per these methods or other methods acceptable to the Town Staff.
 - b. Minimum Base and Asphalt Thickness - The pavement design shall be used unless the designed thickness is less than the minimum allowable according to the street classification found in Table 4.
 - c. Plant Mix Pavement and Base Course – Plant Mix pavement shall be State Highway Grading C.
 - (1) Final top lift shall be CX. Base shall be State Highway Class 6.
 - (2) Sub-base shall be State Highway Class 5.
 - d. Portland Cement Concrete Pavement – Concrete shall conform to State Highway requirements for Class “P”. “FiberMesh” fibers or approved substitute shall be added to the concrete, for strength, at the rate of 1.5 pounds of fiber per cubic yard of concrete.

P. CONSTRUCTION TRAFFIC CONTROL

1. Construction work zone traffic shall be controlled by signs, barricades, detours, etc. which are designed and installed in accordance with the Manual on Uniform Traffic Control Devices, most recent edition, and applicable Town of Grand Lake standards.
2. A traffic control plan shall be submitted and approved by the Town of Grand Lake prior to the start of any construction.

Q. CONSTRUCTION SPECIFICATION

1. Construction shall conform to the latest edition of the Colorado Department of Transportation Standard Specifications for Road and Bridge Construction.

Table 5: ROADWAY CLASSIFICATIONS

* Pavement Width should reflect driving lanes, parking and median, if required.

	Local		Minor Collector		Major Collector	
	Parking	Without Parking	Parking	Without Parking	Parking	Without Parking
Limit	< 500		500 - 2000		>2000	
Speed	20 – 35		30 - 45		30 - 45	
Lanes	2					
Width	10	N/A	10	N/A	10	N/A
One	N/A	N/A	10		N/A	10
Width (If Necessary)	16					
m Right-Of-Way	60		80		100	
d Width	42	30	44	32	60	52
nt Width*	Not Required		44*	24*	56*	40*
pe	N/A	Type 1	TBD**	Type 1	TBD**	TBD
k Width	8					
adius	30					
ection w/ major collector	25					
ection w/ minor collector	25					
ection w/ local						
m Horizontal Centerline	200 – 510		330 – 760		330 - 760	
m Tangent Between Curves	50					
m Grade	1.0%					
m Grade	8.0%					
nt Section	4” Minimum					
Asphalt Base/Sub-Base	Geotechnical Design Required					

** As directed by Town staff, “To Be Determined” on a case-by-case basis

ALL VALUES SHOWN ARE DESIGN MINIMUMS AND SHOULD BE USED AS A GUIDE.

IT IS RECOMMENDED TO EXCEED ALL DESIGN MINIMUMS WHENEVER POSSIBLE.

12-4-4 EROSION CONTROL AND DRAINAGE

A. EROSION CONTROL

1. Care shall be taken in designing streets to minimize the total area disturbed, as well as to have all disturbed areas re-vegetated per Town Street Design Criteria to prevent future erosion.
2. An acceptable erosion control plan must be approved by the Town Staff and utilized by the Contractor to prevent excessive erosion during and after construction.
3. If, in the opinion of the Town Staff, adequate measures to control erosion are not being taken, the Contractor may be ordered to stop all work within until satisfactory arrangements for control are made.

B. SOIL STABILIZATION

1. Exposed soil shall be stabilized and protected from erosive forces within 14 days of achieving final grade.
2. Appropriate stabilization methods include: rolled erosion control products (RECP's), turf reinforcement mats (TRM), proprietary geosynthetics or bonded fiber matrix (BFM's).
 - a. The Town is opposed to mulching and will not permit erosion control practices that include hay, or other seed-bearing materials.

C. RESEEDING

1. All areas disturbed within Town right-of-way during street construction shall be covered with 4 inches of topsoil and reseeded with a native seed mixture which is certified free of noxious weeds and approved by the Town within 14 days of achieving final grade.
2. The mix shall be applied to a prepared smooth base area free from foreign matter and excessive amount of rock (three inch diameter or larger).
3. The mix shall be applied at a rate and in a manner as recommended by the Natural Resources Conservation Service (N.R.C.S, Kremmling Office)
4. Final vegetation will be achieved when 70% of the existing vegetation surrounding the disturbance is met.
5. The Town, at its discretion, may require further re-vegetation efforts (i.e. soil netting) to ensure proper growth.

D. STEEP SLOPES

1. Any slopes 3:1 or greater shall receive, in addition to all requirements listed above, proper slope protection, approved by the Town Staff.
2. Slopes greater than 3:1 require specific engineering design and are subject to approval by the Town.
 - a. *Such plan shall show the extent and percent slope of cut and fill areas created by street construction.*
 - b. *Such plan shall show any proposed retaining structures in detail.*
 - c. *All cut and fill slopes and retaining structures shown as a result of street construction shall be located within the dedicated right-of-way proposed.*

E. DRAINAGE

1. All drainage appurtenances shall be designed and constructed in compliance with the *CDOT M & S Standards* and *CDOT Standard Specifications for Road and Bridge Construction*.
2. All earth drainage ways shall have a minimum flowline grade of 1.0%, 2.0% should be utilized whenever possible.
 - a. This does not apply to designed sedimentation basins.
3. Drainage ways including roadside ditches with side slopes exceeding 4:1 shall be treated with an approved rolled erosion control product and/or slope protection.

12-4-5 PRIVATE DRIVEWAY AND EMERGENCY ACCESS REQUIREMENTS AND CRITERIA

A. CRITERIA FOR ACCESS ONTO TOWN OF GRAND LAKE ROADWAYS

1. GENERAL

- a. The term driveway or access are interchangeable terms and refer to the specific locations granted to properties adjacent to Town ROW for the purpose of accessing the property.
 - b. Accesses for all purposes shall conform to the requirements in this section.
 - c. A driveway is defined as serving no more than 1 single-family residence or 1 multi-family unit (not to exceed a 4-plex).
 - d. For a commercial access, the Town of Grand Lake Roadway Design Standards must be used.
2. STATE HIGHWAYS
- a. Access to state highways are governed by CDOT through the State Highway Access Code.
3. TOWN ROADWAYS
- a. Private driveway access to Town roads shall be in accordance with Figures 1-4.
 - b. Access to adjacent lots shall not be limited by prior development.
 - c. The Town may request driveway stakes prior to approval.
- B. BASIC PRINCIPLES FOR DRIVEWAYS
1. SIGHT DISTANCE
- a. To the greatest extent possible, all openings for driveways shall be located at the point of optimum sight distance along the street.
 - b. For openings and driveways, there shall be sufficient space reasonably cleared of obstructions such that drivers entering the property will have sufficient sight distance to enable them to make proper and safe movements.
 - c. The profile of a driveway approach and the grading of the adjacent area shall be such that, when a vehicle is located on the driveway outside the traveled portion of street, the driver can see a sufficient distance in both directions to enable the vehicle to enter the street without creating a hazardous traffic situation.
2. UTILITY REPLACEMENT
- a. Adjustments, which must be made to utility poles, street light standards, fire hydrants, catch basins or intakes, traffic signs and signals, or other public improvements, or installations, which are necessary as the result of the driveway location, shall be accomplished without any cost to the Town of Grand Lake.
3. ABANDONED DRIVEWAYS
- a. The property owner shall restore any driveway, which has been abandoned.
4. DRIVEWAYS APPROACHES
- a. Driveway approaches, where the driveway is to serve as an entrance only or as an exit only, shall be appropriately signed and maintained by and at the expense of the property owner.
 - b. The property owner shall be required to provide some means of ensuring that the motorists will use the driveway as either an entrance only or an exit only but not both.
5. SNOW STORAGE

- a. Storage of snow from the driveways will not be allowed on public right-of-way. Storage area(s) shall be provided on private property and should be calculated to accommodate 33% of the total driveway area.
- 6. ACCESS TO MAJOR COLLECTOR STREETS
 - a. No driveway will be allowed to access onto a major collector street unless no other access exists.
 - b. No new subdivisions will be approved in which driveways must exit onto major or minor collector streets, unless approved by the Town.
- 7. EROSION CONTROL
 - a. See Chapter 4 of the Street Standards.
- 8. GATED ACCESS
 - a. Driveway gates are prohibited on Town right-of-way.
 - b. The Town and the fire department shall approve all gates prior to construction.
- 9. EXEMPTION AND CONFORMITY
 - a. Existing paved driveways may be repaved to the existing width.
 - b. Existing gravel driveways being relocated or paved shall follow these standards.
- C. MINIMUM DESIGN STANDARDS
 - 1. RESIDENTIAL DRIVEWAYS
 - a. The width of all driveways shall be 14' min. and 16' max. The use of wide driveways is discouraged.
 - b. Driveways must use a minimum of 4" of road base and 8" of pit run, but a pavement design may be required.
 - c. Culvert size must be a minimum of 18" and have a minimum cover of 12".
 - d. Additional cover may be required according to the pipe specifications.
 - e. Access radii shall be 10' or 15' for driveways designed for emergency access (See Figures 2 and 3).
 - f. An access shall not exceed a 4.0% grade for the first 25', measured from the edge of the nearest drive lane. (See Figure 9)
 - 2. ACCESS POINT LOCATION
 - a. Driveways may be placed in any side setback.
 - b. The edge of the driveway shall not be less than five feet (5 ft.) from the property line.
 - c. Driveways must maintain a minimum of 25' separation (measured from the closest edge) unless existing driveways or lot conditions do not make this possible.
 - d. The driveway setback is increased to 10' from the property line when located next to a vacant lot. This is required in order to not restrict the adjacent property with the 25' driveway separation.
 - e. In general, property shall be limited to one access point.
 - (1) Corner lots will be required to access the street with the lowest classification.
 - (2) Variances may be granted for access onto the higher-classified street and looped driveways located mid block when a minimum 100' of separation

exists between the edges of each drive and 50' from the adjoining property lines.

3. ACCESS ROADWAYS FOR FIRE APPARATUS

- a. All driveways that are further than 150' from a road in the public right-of-way will be required to meet the design standards depicted in Figure 3 and are required to install a fire department turn around. (See Grand County Road and Bridge Standards Figure 1.)

- (1) Private streets shall afford abutting properties reasonably adequate access for entry by private and emergency vehicles.

12-4-6 ROAD CUT STANDARDS AND REGULATIONS

- A. The purpose of this section is to prescribe the standards and procedures to be followed by the contractor and/or his representative in making proper excavations and backfilling of installations within the Town road right of way (ROW), and to define the position of the Town in administering this regulation.

B. PERMIT AND REGULATIONS

- 1. Any person, business, corporation, governmental agency or any other entity wishing to perform excavation work in the Town right of way shall obtain a right of way permit from the Town. A right of way permit shall be required for each excavation site in the Town right of way. The permit shall be issued only to the person, business, corporation, governmental agency or other entity doing the actual excavation work and that entity shall be responsible for compliance with rules, standards and specifications imposed by this Chapter.
- 2. A right of way permit shall be obtained seven (7) days prior to the beginning of excavation.
 - a. Unless Town Staff determines a bona fide emergency exists constituting an immediate danger to life, health, or property, failure to obtain a right of way permit at least seven days in advance of the beginning of excavation shall be cause to raise the permit fee to Two Hundred and Fifty Dollars (\$250.00).
- 3. At the time of the permit application, the applicant shall submit construction plans, specifications, a cost estimate for repair of the right of way area to its original condition, written work schedule covering the general sequence of work to be performed, and the appropriate surety bond and insurance as required by this Article.
 - a. Permits for any excavations made in a non-permeable roadway surface shall be reviewed by the Town Board of Trustees.
 - b. Failure to submit these items shall be sufficient reason to deny the application for the permit.
 - c. Neither the submitted specifications nor the work schedule may be modified after the right of way permit has been issued without the written consent of Town Staff.
- 4. Unless otherwise specified on the permit, a right of way permit shall be valid for the period of four (4) weeks from the date of issuance or October 15th, whichever is earlier.

- a. The schedule and the plans shall not be changed after the Right of Way Permit is approved without prior approval of Town Staff.
- 5. The Town may regulate and require such safety and warning equipment, safety practices, hours of work, or any other aspect of the proposed work it deems necessary to protect the public health, safety and welfare.
- 6. Unless required by a bona fide emergency, no work will be permitted to start on a Friday, nor continue through the weekend.
- 7. Applications must be submitted, and approved by Town Staff.
- 8. No permits shall be issued without permission of the Town.
- 9. Generally, applications should not be submitted between October 8th and April 25th and all construction should be completed by October 15th.
 - a. Permits may be issued, pending weather, on a case-by-case basis, between October 15th and May 1st.
- 10. Permits must be available at the work site and presented on demand to Town personnel at all times.
- 11. The cost for the issuance of each right of way permit shall be set by Resolution by the Board of Trustees and shall be accompanied by a surety bond which is acceptable to the Town.
 - a. The surety bond shall be in an amount equal to one hundred and fifteen percent (115%) of the cost estimate for the repair of the right of way area to its original condition.
- 12. No permit shall be issued unless and until the applicant has filed with the Town a bond conditioned to indemnify the Town (and its officers and employees), or evidence of insurance for any liability (including defense costs) of the Town (and its officers and employees), for any loss, liability or damage that may result or accrue from or because of the making, existence or manner of guarding or constructing any such excavation.
 - a. Such bond or insurance shall be in an amount of no less than One Million Dollars (\$1,000,000.00), and shall be issued by a business licensed to do business in the State of Colorado as a surety or insurer.

C. BORING/JACKING

- 1. Where the installation crosses an asphalt surfaced roadway 5 years old or newer, the installation shall be made by boring or jacking beneath the roadway surface.
 - a. Open cutting shall be allowed to the edge of the shoulder portion of the road.
 - b. No water shall be used in boring and no tunneling shall be permitted.
- 2. Any variance to this will require Town Board of Trustee approval.

D. CUTS

1. ASPHALT CUTS

- a. Pavement cuts are permitted only when unsuccessful attempt(s) have been made to bore or jack the installation or site constraints exist (i.e. attachment to manholes).
- b. Suitable material excavated from the trench may be used for backfill.
 - 1) At no time will wet, soggy, frozen or other unsuitable material be allowed as backfill.
 - 2) If proper backfill material is not at the excavation site, suitable material must be brought in and unsuitable material removed from the site.

- 3) Backfill shall extend to the sub-grade of the road.
 - 4) Backfill shall consist of previous material free of three inch (3") or larger rock and shall be placed in maximum eighteen inch (18") lifts. Each lift is to be compacted to ninety percent (90%) before the next lift is installed.
 - 5) All road cut backfill should use flowable fill material during construction.
 - c. Any road cuts within paved right of ways older than five years shall require proof of density tests meeting the requirements of CDOT's Materials Test Procedure Module by compaction or flowable fill.
 - d. All cuts made in asphalt, concrete, or chip seal surfacing shall be made by mechanically cutting to a true horizontal and vertical line, and shall be cut one foot wider than the top of the trench excavation.
 - 1) The final pavement cut shall not be made until immediately prior to patching.
 - 2) All excavations that are made in paved streets must be completely restored within 48 hours after acceptance of the backfill by the Town.
 - e. In hot mix asphaltic concrete, temporary repairs shall be made by tamping and rolling into place a cold mix asphaltic concrete.
 - 1) Such cold mix patches shall be removed and replaced by a permanent hot mix asphaltic concrete as soon as weather and availability of materials permit.
 - 2) Permanent hot mix asphaltic concrete patches shall be one and a half times the depth of the existing asphalt, but not less than two inches (2"), and shall be installed in accordance with best construction practices.
 - f. Damaged pavement shall be repaired by appropriate methods as approved by the Town.
 - 1) In general, cracks are to be filled with the proper asphaltum product and the surface properly seal coated.
 - 2) A minimum asphalt concrete overlay one and one half inch (1½") thick for the full width of the paved surface shall be required in those instances which, in the opinion of the Town, the riding quality or the appearance of the finished roadbed has been impaired.
 - 3) Sub-grade failures caused by the applicant's operation of heavy equipment shall be rectified by reconstructing the sub-grade layers and replacing the sub-base, base and asphalt pavement.
 - g. In the event that asphaltic concrete base, soil cement, or other base course materials are encountered during excavation, restoration shall be made in kind or as otherwise specified by the Town.
 - h. Roads completed over excavated and backfilled trenches or cuts that show signs of depressions or evidence of failure which have not been repaired by the applicant within thirty (30) days of being notified in writing by the Town may be repaired by the Town at the applicant's expense.
2. GRAVEL CUTS
- a. The repair of disturbed gravel surfaces shall be completed in accordance with these Street Standards.
 - b. Placement of the gravel shall be done to ensure a smooth surface is developed and proper compaction is achieved.

- c. Gravel roads shall consist of a compacted sub-base to 50% of the design thickness and the remainder compacted base course.
 - d. Where the original surface was crushed rock or gravel for the wearing surface and foundation material, Class 6 aggregate base course shall be used as replacement material.
 - 1) The gravel shall be screened if necessary to meet this requirement and to eliminate excess filler.
 - 2) It shall be placed to a compacted thickness minimum of eight inches (8") or the thickness of the removed material plus two inches (2"), whichever is greater.
 - 3) The material will be compacted to at least ninety percent (90%) of the maximum dry density.
 - e. An appropriate dust abatement material must be applied to gravel roads to better manage dust control.
3. Roads completed over excavated and backfilled trenches or cuts that show signs of depressions or evidence of failure which have not been repaired by the applicant within thirty (30) days of being notified in writing by the Town may be repaired by the Town at the applicant's expense.

E. QUALITY OF MATERIAL AND TESTING

- 1. Any work in which untested and unaccepted materials are used without written approval by the Town shall be performed at the applicant's own risk.
 - a. If such unauthorized materials are used in the work and found unacceptable, they shall be ordered removed and replaced at the applicant's expense.
- 2. Tests ordered by the Town to ascertain compliance with specifications shall be the most recent standard methods of AASHO and ASTM and shall be made by an independent testing firm at the expense of the applicant. Copies of all test data the Town requests are to be furnished to the Town.
- 3. The applicant shall be fully responsible for the maintenance and correction of any faulty construction, including unsuitable road cuts and chuckholes developed during the construction period.

F. INSPECTIONS

- 1. Adequate inspections assure compliance to Town requirements and are the basis for release of maintenance responsibility and bond.
- 2. It is the responsibility of the applicant to contact the Town no less than one day in advance of required inspections.
 - a. In-progress inspections of all elements of work will eliminate the need for extensive post-testing.
- 3. Any work or material which does not conform to Town standards will be brought to the attention of the applicant and if immediate corrections are not made, the construction will be stopped.

G. FINAL ROADWAY INSPECTION

- 1. All roads wherein right of way work has been performed shall be thoroughly cleared of all debris and extraneous material.
- 2. All disturbed portions of right of way and roadway shall be restored to a condition at least as good as the original condition.

- a. Items which would need to be restored include, but are not limited to, cleanup of pavement and all roadway appurtenances, pavement failures, broken concrete, damaged signs and fencing, dust control.
- b. All deficiencies must be resolved to the satisfaction of the Town.

H. MAINTENANCE AND REPAIR RESPONSIBILITY

1. Maintenance and repair responsibility shall be the applicant's for a period of two (2) years after completion of right of way work.
 - a. Any repairs made during this period may require the bond for that portion of the work to be extended an additional two (2) years from the date of the repair.

I. SAFETY AND PUBLIC CONVENIENCE

1. The applicant shall at all times conduct his work as to assure the least possible obstruction to public traffic. The safety and convenience of the general public and the residents along the right of way and the protection of persons and property shall be provided for at all times.
2. Flaggers shall be required for one lane or otherwise unsafe operations.
3. Adequate warning signs, barricades, lighting, flags, and other devices as may be required by the Public Works Director shall be provided and paid for by the applicant.
4. Excavation operations are to conform to the requirements in this Code and following best management practices.

J. ROAD CLOSURES

1. When road closures are permitted, the applicant must:
 - a. Submit a written notice to the Town one week in advance of the closing of the road.
 - b. Notify one week in advance the Grand Lake Fire Protection District and Grand County Sheriff's Office of the exact location, date, and time traffic will be impeded.
 - c. Erect and maintain, at his own expense, necessary barricades, flashers, construction signs, flaggers and take all necessary precautions for public safety and convenience.
2. Road closures will be permitted only between the hours of 8:30 a.m. and 3:30 p.m., if an approved, adequately signed detour is provided and the closure was explicitly provided for in the permit.
 - a. No road closures are permitted on weekends unless it is determined to be an emergency by the Town Public Works Director or his designee.

12-4-7 UTILITIES

- A. All utility installation within the Town right of way shall require an Encroachment License prior to any installation activity.
- B. All utility lines shall be designed according to the applicable utility company or district standards
 1. **utility companies and/or districts must be contacted prior to plan submittal.**
 2. All utilities must be clearly labeled on the plans and include the type, size, height, etc.

C. The Town shall not maintain any utilities within the Town Right-of-Way, this includes but not limited to snow removal to gain access.

D. UNDERGROUND UTILITIES

1. All road level accesses (manholes, valves, vaults, etc.) to utilities, where permitted, shall meet AASHTO H-20 Standards and be of heavy-duty construction, capable of safely supporting anticipated maintenance equipment and vehicular traffic.
2. Installed road rated vaults must be flush.
3. Manholes and water valve boxes shall be located 6" below surface on a gravel road and 3/4" below surface on a paved road.
 - a. Service from public utilities and sanitary sewers shall be stubbed out for each lot in such a manner that it will not be necessary to disturb the street pavement, curb, gutter, roadside ditch, sidewalk, and/or right-of-way when connections are made.
4. When the possibility exists of lowering the surrounding water table and thereby adversely affecting wells in the area, suitable seep plugs shall be installed in the trench at minimum five hundred foot (500') intervals.

E. INSTALLATION

1. All utilities installed within the Town Right-of-Way shall be installed in conduit beneath the road (min. 30" past flowline – lowest continuous elevation). This includes existing, proposed or platted roads or driveways.
2. Utility placement by plowing shall be allowed only after the approval of the Town.

Table 6: REQUIRED RIGHT OF WAY MINIMUM DEPTHS

UTILITY	MINIMUM DEPTH	CONDUIT REQUIRED
WATER	Based on district standards	No
SANITARY SEWER	Based on district standards	No
ELECTRICAL*	4'	Yes
FIBER OPTICS	3'	Yes
GAS*	3'	No
PHONE	3'	Yes
T.V. CABLE	3'	Yes

* minimum depth is reduced to 3' at service crossings

F. BRIDGE / CULVERT CROSSING

1. In general, utilities are not permitted to be attached to bridges but must be placed at least 3' below the ditch or creek flowing as close to the right-of-way line as conditions permit.
2. The utility must be continued 3' below the flowline elevation for a minimum distance of at least 10' on either side of the ditch bank or 20' beyond the Historic High Water Line as determined by the Town. This would generally permit future bridge and channel improvements without the necessity of relocating utilities.

3. Where utilities are permitted to be attached to bridges due to overriding conditions encountered in the field, as judged by the Town, then such utilities shall be placed so as not to obstruct the waterway of the bridge.

G. ABOVE GROUND UTILITIES

1. All aboveground utilities shall be located and installed so as not to cause unnecessary obstruction to pedestrian and vehicular traffic or damage to the utility itself that could be harmful to the general public.
2. No pole or structure aboveground shall be set to be in conflict with a pedestrian walkway or be set less than 3' from the shoulder of any Town road.
 - a. However, a lesser distance will be considered if insufficient cleared right-of-way does not permit this minimum distance and safety concerns are addressed.
 - b. In no case will a pole be permitted within the clear zone unless proper safety measures are in place (i.e. guardrail, breakaway posts, etc.).
3. All above ground utilities located within the Town R.O.W. (i.e. vaults, pedestals, etc.) shall be visible or flagged (a rigid material with contrasting color) a minimum of 8' above the surrounding ground elevation. The flagging should be a rigid material with a contrasting color and shall placed on/next to the object nearest to the road.

H. OVERHEAD LINES

1. The minimum vertical clearance of overhead utility lines and equipment above a road in the Town shall be at a height in which not to restrict vehicles complying with C.R.S. 42-4-504(1): "No vehicle unladen or with load shall exceed a height of 13'; except that vehicles with a height of 14' 6" shall be operated only on highways designated by the State Department of Transportation".
2. This clearance shall apply to conductors at maximum final sag conditions with ½" of ice at 32°F (no wind displacement), at 120°F (no wind displacement), or maximum conductor temperature for which the line was designed to operate, whichever produces the largest final sag.
3. This clearance shall consider possible snow accumulation and/or future road grades/surfacing changes on the roadway up to 1'.

I. FIRE HYDRANTS

1. Fire Hydrants, installed at the developer's expense, shall be placed a minimum of 10' away from the shoulder but not more than 15'.
2. All fire hydrants shall be flagged according to the district standard or a minimum of 4' above the outlet.

J. STREET LIGHTING

1. Street lighting may be required (i.e. intersections).
2. All street lighting requirements will be down cast, reviewed on a case-by-case basis, and will be installed at the developer's expense. In no case shall the Town be responsible for maintenance of any street lighting.

12-2-8 ACCEPTANCE PROCEDURES AND REQUIREMENTS

A. This section sets forth the procedures related to acceptance of road improvements in the Town of Grand Lake. It is intended to maintain a uniform road development policy throughout the Town and to provide a clear statement of procedures for road acceptance.

B. GENERAL POLICIES

1. Where road improvements are required for a subdivision or development, the initial capital cost will be paid by the developer.
 - a. After acceptance of the roads for maintenance, the Town will then provide a normal level of maintenance as available funds, manpower and equipment permit.
 - b. A normal level of maintenance means street snowplowing and repair and cleaning of drainage structures.
2. The Town will maintain only those roads specifically accepted for maintenance by the Board of Trustees.
3. Where a new development impacts an existing road or drainage facility by accessing onto the road or increasing storm runoff onto or along the road, the developer(s) will be responsible for upgrading the roadway to the minimum standards required by these Street Standards.
4. The construction of new roadways for the purpose of providing access to a development is the responsibility of the developer(s).
5. The following traffic control aspects shall apply to acceptance procedures.
 - a. **OPENING TO THE PUBLIC** - Roadways shall not be opened to general public traffic until necessary traffic control devices have been installed. Before a new roadway is accepted by the Town, it shall be properly signed and striped according to the approved plans.
 - b. **ADDITIONAL SIGNAGE** - If during acceptance inspection of the new subdivision or development it becomes evident that additional signs are needed, the Town shall inform the owner/developer in writing. These additional signs shall be the responsibility of the owner/develop to install such signs.

C. PROBATION ACCEPTANCE

1. Once public improvements (streets and/or drainage) which are covered by a valid Town permit are constructed to Town standards, the subdivider or developer may send a letter to Town Staff requesting inspection to be made of the public improvements for probationary acceptance. The letter shall fully describe the improvements for which the request is being made.
2. It is the strict practice of the Town Board to accept all the public improvements for a subdivision at one time. If the owner/developer desires partial acceptance of public improvements, a request for such treatment should precede the acceptance request.
 - a. The request should justify and define the partial acceptance schedule and explain the circumstances of the case.
 - b. The letter shall designate a contact person for the owner/ developer, an address, and a telephone number.
 - c. Included with the letter shall be the Record Drawings for the public improvements designed and constructed by the owner/developer.

3. ACCEPTANCE INSPECTION SCHEDULING

- a. Within ten working days of receiving the request for acceptance, the Town shall provide written acknowledgement to the owner/developer that the probationary acceptance request was received.
 - b. The acknowledgement letter shall indicate a time and date for the acceptance inspection to be performed by the Town.
 - c. The owner/developer shall be responsible for assuring all the public improvements are in good repair, are clean and free from dirt and debris, and are generally in an acceptable condition for thorough visual inspection on the date indicated in the acknowledgement letter.
4. TOWN'S RESPONSE
- a. Within ten working days following an acceptance inspection, the Town shall provide the owner/developer a written list of deficiencies for the public improvements.
 - b. These deficiencies must be rectified by the owner/developer as a condition of the Town granting probationary acceptance.
 - c. The owner/developer shall obtain necessary permits prior to commencing the remedial work. Such permits shall be issued on a "no fee" basis.
5. RE-INSPECTION SCHEDULING
- a. When the owner/developer completes the repairs according to the deficiency list previously provided, a re-inspection may be scheduled by calling the Town Engineer.
6. TOWN'S RESPONSE
- a. The Town Engineer shall grant or deny probationary acceptance based on re-inspection for compliance to the written deficiency list previously provided to the owner/developer.
 - b. If new deficiencies are found, either in quality or extent of construction, the owner/developer shall be notified in writing that these new deficiencies shall be corrected as a condition of final acceptance.
 - c. Probationary acceptance will not be delayed by discovery of new deficiencies.
 - d. The Town shall issue written notice either granting or withholding probationary acceptance within ten (10) working days of the acceptance re-inspection.
 - (1) If acceptance is denied, cause(s) shall be explicitly delineated.
 - (2) The probationary acceptance letter shall specify the date on which the owner/developer is eligible to request Final Acceptance.
 - (3) The probationary acceptance period will normally be two (2) years. It may be longer under unusual circumstances.
7. PERFORMANCE GUARANTY REDUCTION
- a. Upon receipt of the Probationary Acceptance Letter, the owner/developer is eligible to have the subdivision agreement collateral reduced to 20% of the original value.
 - b. If the probationary acceptance is for only part of the public improvements, the reduction in collateral shall correspond to the value of the accepted improvements.

D. FINAL ACCEPTANCE

1. Once public improvements have been totally completed and the designated warranty period as outlined in the Probationary Acceptance documents have been met, the owner/developer may request Final Acceptance.
 - a. The letter requesting Final Acceptance shall identify the public improvement by name and reference shall be made to the date of Probationary Acceptance.
 - b. A contact person, address and telephone number shall be listed.
 - c. The letter shall request a Final Acceptance Inspection and be accompanied by As-Built drawings.
2. ACCEPTANCE INSPECTION SCHEDULING
 - a. Upon receipt of the request, the Town will issue a response within ten (10) working days which will indicate a date and time for a final field inspection.
 - b. The owner/developer is responsible for having the public improvement clean and free of debris at the time of inspection. Failure to do so shall require rescheduling the inspection.
 - c. Rescheduling will be treated as a new inspection, not a re-inspection.
3. PUNCH LIST
 - a. During the field inspection, a listing of items requiring remedial action (punch list) will be prepared.
 - b. This list of items shall be issued to the applicant within ten (10) working days of completing the inspection.
 - c. It is the responsibility of the developer to address all items on the Punch List.
 - d. Initial acceptance will occur after all items on the Punch List are reviewed, and approved, by the Town.
 - e. The two-year warranty period will begin on the date of initial acceptance.
4. CORRECTIVE ACTION
 - a. The owner/developer shall then obtain necessary permits to perform corrective action prior to commencing any work operations.
 - (1) Such permits shall be issued on a “no fee” basis.
 - (2) These are required so that the Town is aware of all work on this right-of-way.
5. RE-INSPECTION REQUEST
 - a. Upon completion of all corrective work, the owner/developer shall request, in writing, a re-inspection.
6. RE-INSPECTION SCHEDULING
 - a. The Town shall notify the applicant by telephone or in writing when the re-inspection will occur.
 - b. The Town will endeavor to notify the applicant twenty-four (24) hours in advance.
7. FINAL ACCEPTANCE LETTER
 - a. Upon satisfactory completion of this final inspection, the Town shall issue a Final Acceptance Letter within ten (10) working days of the re-inspection.

12-4-9 VACATION / VARIANCE REQUEST AND PROCEDURE

A. VACATION REQUEST AND PROCEDURE

1. On occasion, vacation of Town Streets or various easements may be warranted, due to peculiar circumstances or changes in the overall development patterns.
2. The Board of Trustees may vacate any Town street or any portion thereof after receiving a recommendation from the Planning Commission.
3. No street or part shall be vacated that will leave a parcel of land without access to a public road.
4. All vacation requests must comply with Colorado Revised Statute.
5. A Land Use Application form must be filled out and accompanied with the following:
 - a. Appropriate Fee
 - b. 11 copies of a vacation plat
 - c. Signed Reimbursement Agreement
 - d. A letter to the Town with a thorough justification of the vacation request

B. VARIANCE REQUEST AND PROCEDURE

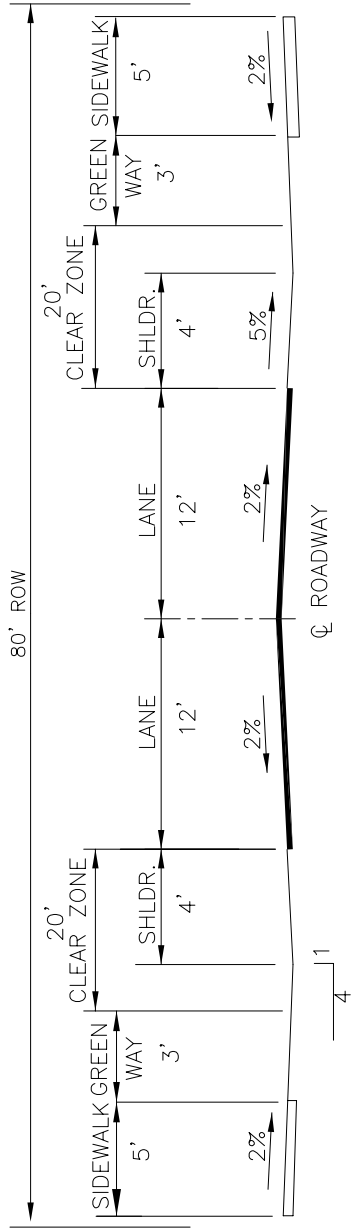
1. If a developer responsible to the Town for public improvements desires to design and construct such improvements in variance to criteria in these standards, such variance(s) should be identified in the initial submittal.
2. An application for a variance shall be filed with Town Staff no later than 14 days prior to the next regularly-scheduled Planning Commission meeting.
3. A Land Use Application form must be filled out and accompanied with the following:
 - a. Appropriate Fee
 - b. 11 copies of the proposed variance
 - c. Identification of the section to be waived or varied
 - d. Identification of the alternative design or construction criteria to be adhered to
 - e. A thorough justification of the variance request including which of the 'Considerable Hardships' the variance would apply to (See Section 12-4-9-C *Hardships for Consideration*)
 - f. All variance requests shall be signed and stamped by a Colorado Licensed Professional Engineer and signed by the developer
4. Variances from the Street Standards shall be reviewed by the Planning Commission at a public meeting and make a recommendation to the Board of Trustees, who shall make the final determination.
 - a. Fifteen (15) days prior to the scheduled public hearing date, legal notice shall be placed in the local newspaper of general circulation advertising the time, date, and location of the public meeting.
 - b. In addition, certified letters are to be mailed at least fifteen (15) days prior to the public meeting to all property owners within two hundred (200') feet of any portion of the property.
5. The Board of Trustees shall grant no variance from any provision of this regulation without first conducting a public hearing.
 - a. The Board of Trustees will hold a public hearing within 45 days from receiving a recommendation from the Planning Commission.
 - b. Fifteen (15) days prior to the scheduled date, legal notice shall be placed in the local newspaper of general circulation advertising the time, date, and location of the public hearing.

- c. In addition, certified letters are to be mailed at least fifteen (15) days prior to the public meeting to all property owners within two hundred (200') feet of any portion of the property.

C. HARDSHIPS FOR CONSIDERATION

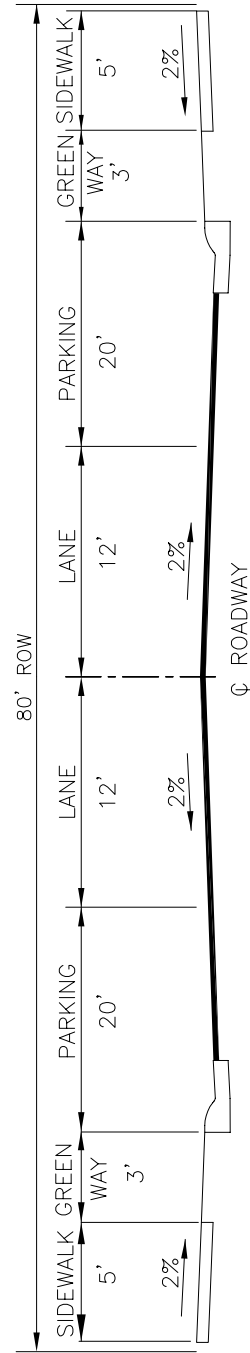
- 1. Variance requests will only be granted if the applicant can demonstrate one of the following:
 - a. That by reason of exceptional shape, size or topography of lot, or other exceptional situation or condition of the building or land, practical difficulty or unnecessary hardship would result to the owners of said property from a strict enforcement of these Regulations;
 - b. That literal interpretation of the provisions of these Regulations would deprive the applicant of rights commonly enjoyed by other properties in the same district under the terms of these Regulations.
 - c. That the special conditions and circumstances do not result from the actions of the applicant;
 - d. That granting the variance request will not confer on the applicant any special privilege that is denied by this ordinance to other lands, structures, or buildings in the same district;
 - e. That the granting of the variance does not pose a detriment to the public good and does not substantially impair the intent and purpose of the Zone Plan and these Regulations.

**APPENDIX A
FIGURES**



2-LANE

WITHOUT PARKING

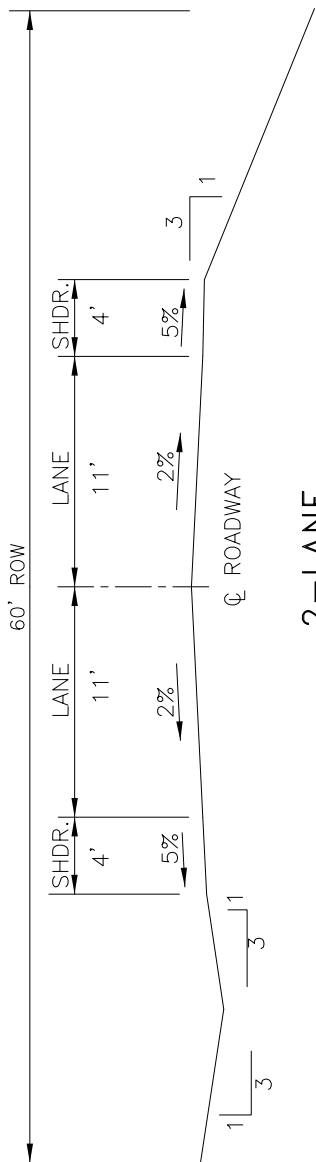


2-LANE

WITH PARKING

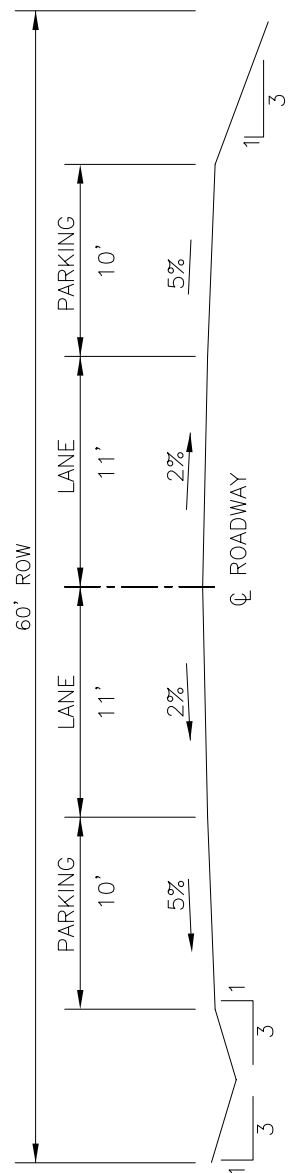
FIGURE-2

ROAD TEMPLATES - MINOR COLLECTOR STREET



2-LANE

WITHOUT PARKING

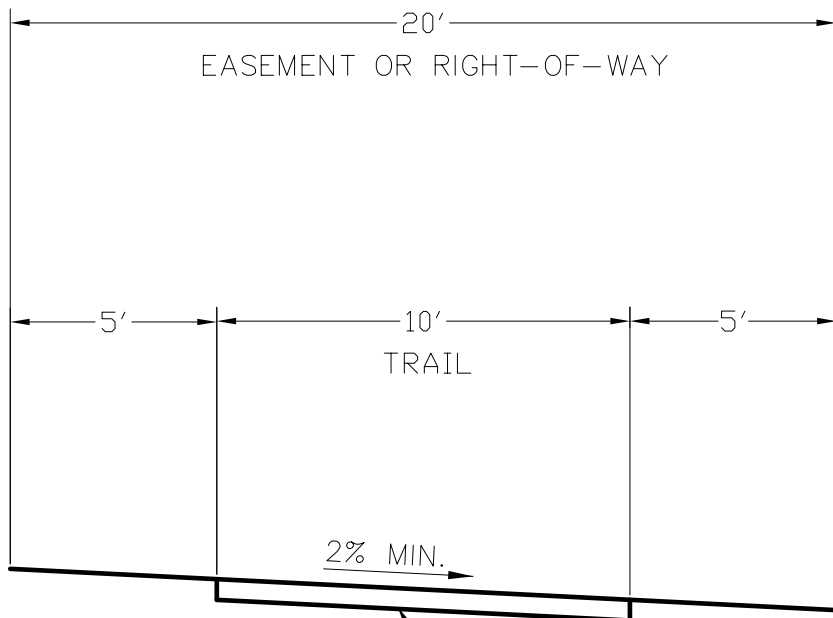


2-LANE

WITH PARKING

FIGURE-3

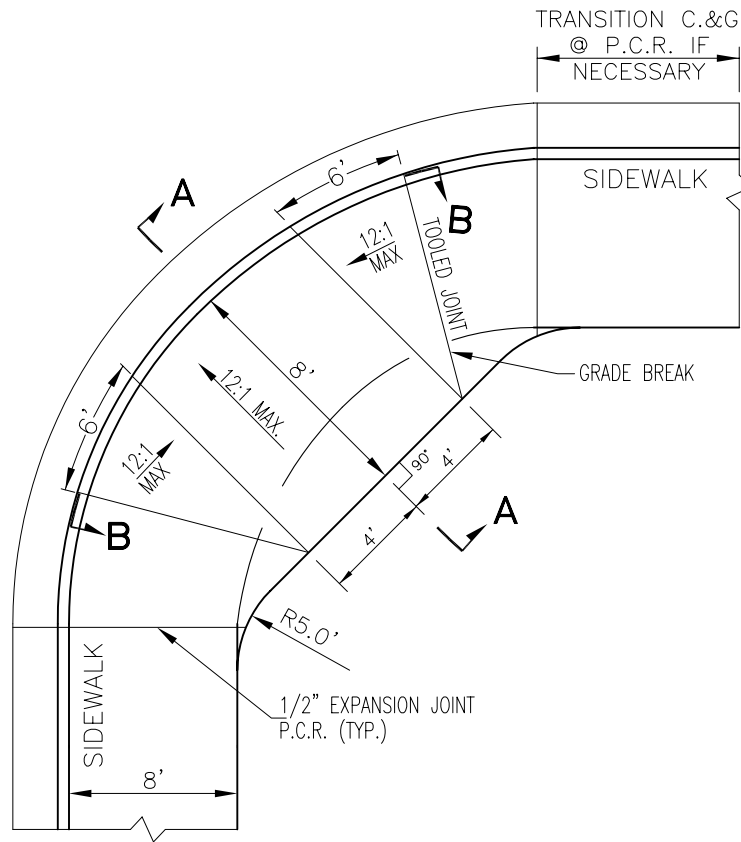
ROAD TEMPLATES - LOCAL STREET



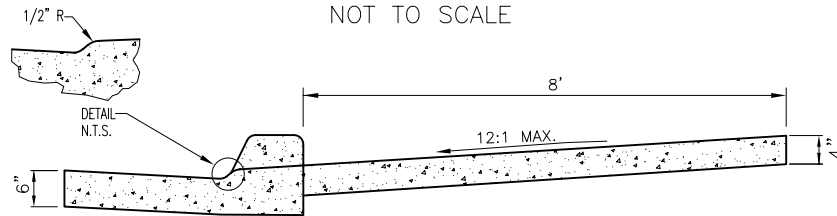
3" ASPHALT ON
3" CLASS C BASE OR
6" WOOD CHIPS ON
3" CLASS C BASE

FIGURE-4

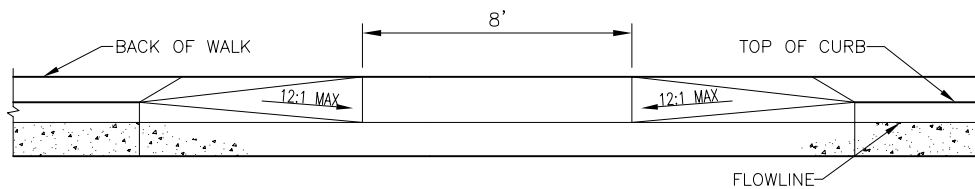
TRAIL / PATH DETAIL



ATTACHED SIDEWALK
NOT TO SCALE



SECTION A-A
NOT TO SCALE



SECTION B-B
NOT TO SCALE

FIGURE-5

A.D.A. CURB RAMPS

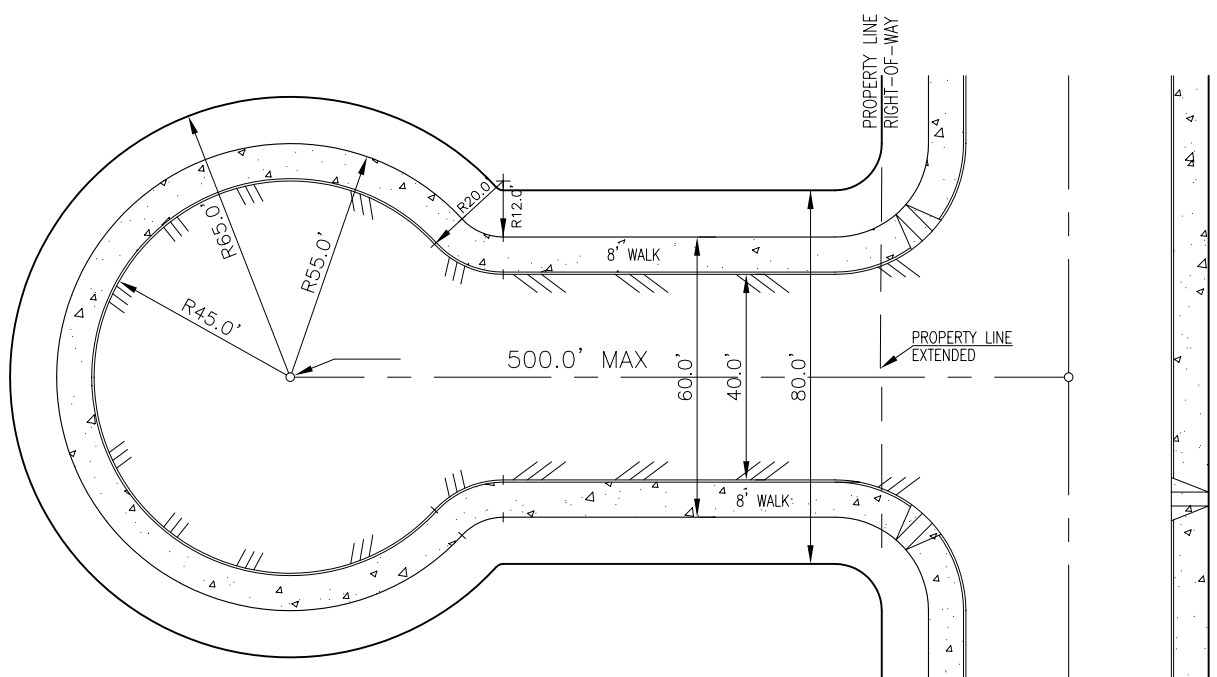
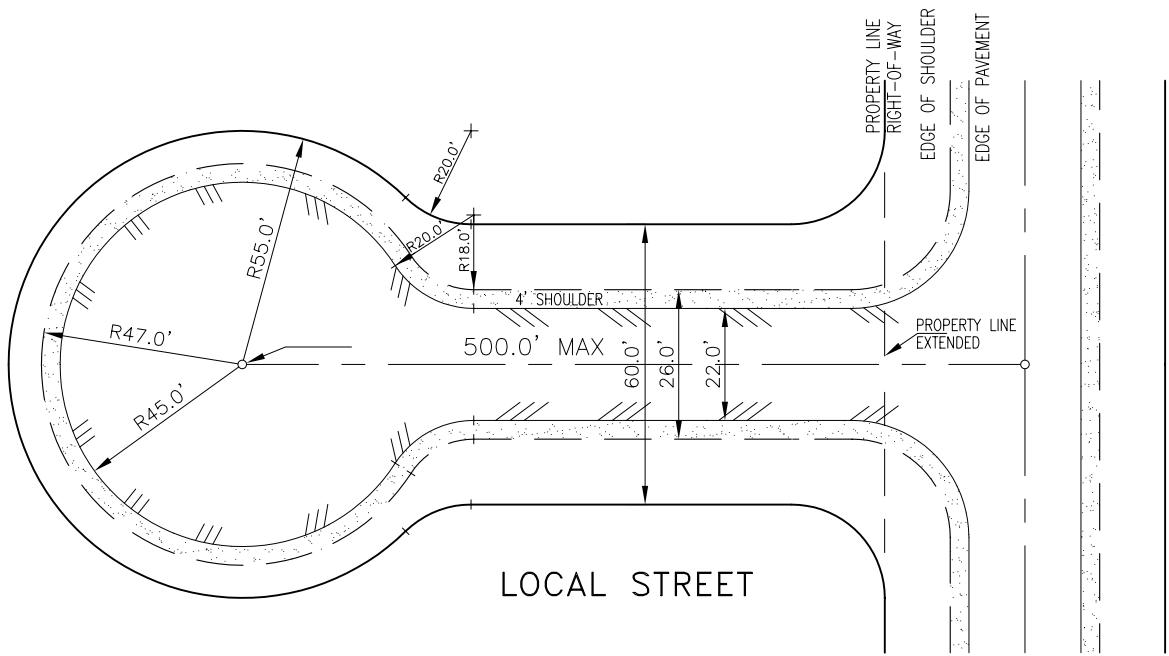


FIGURE-6
 CUL-DE-SAC CONFIGURATION

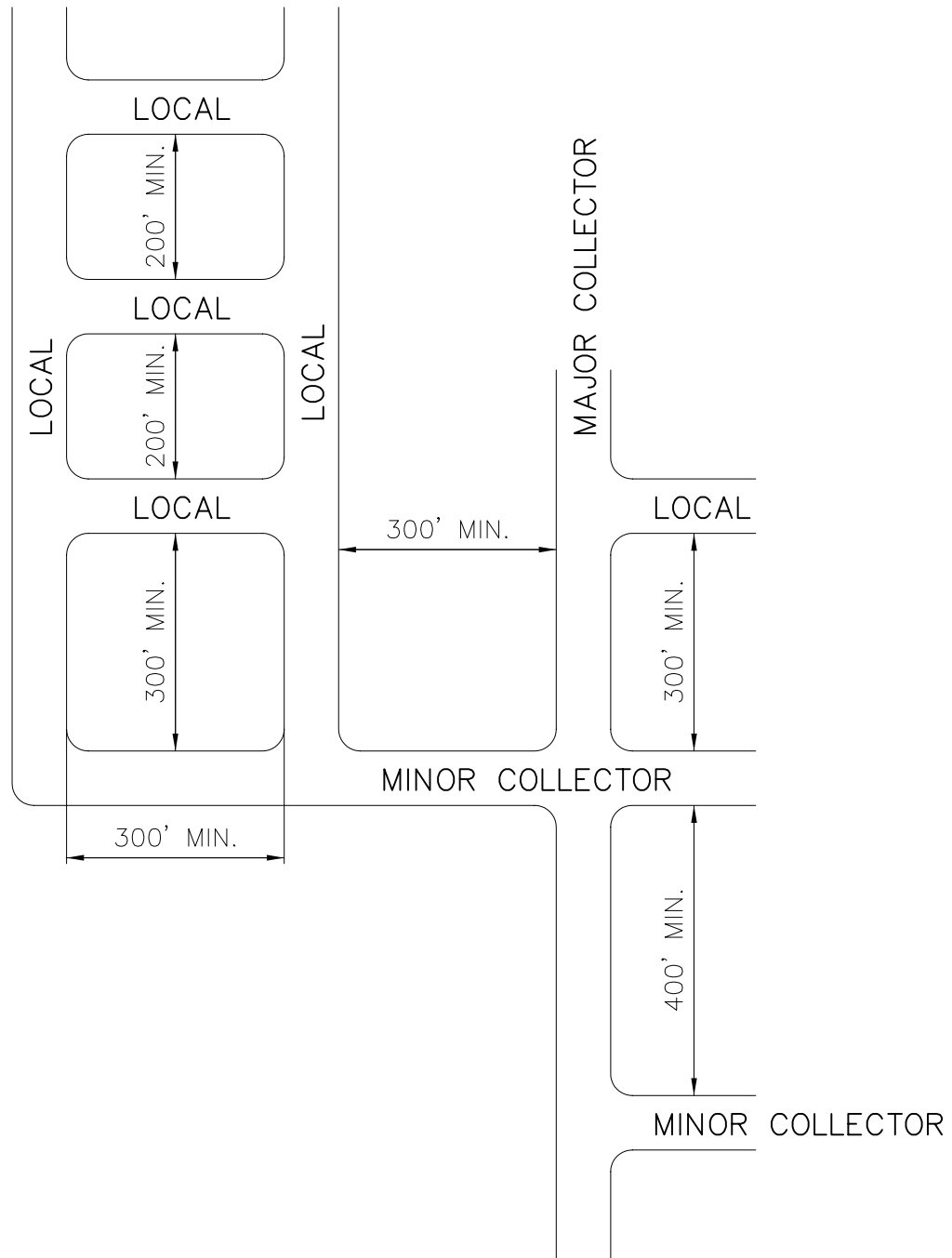
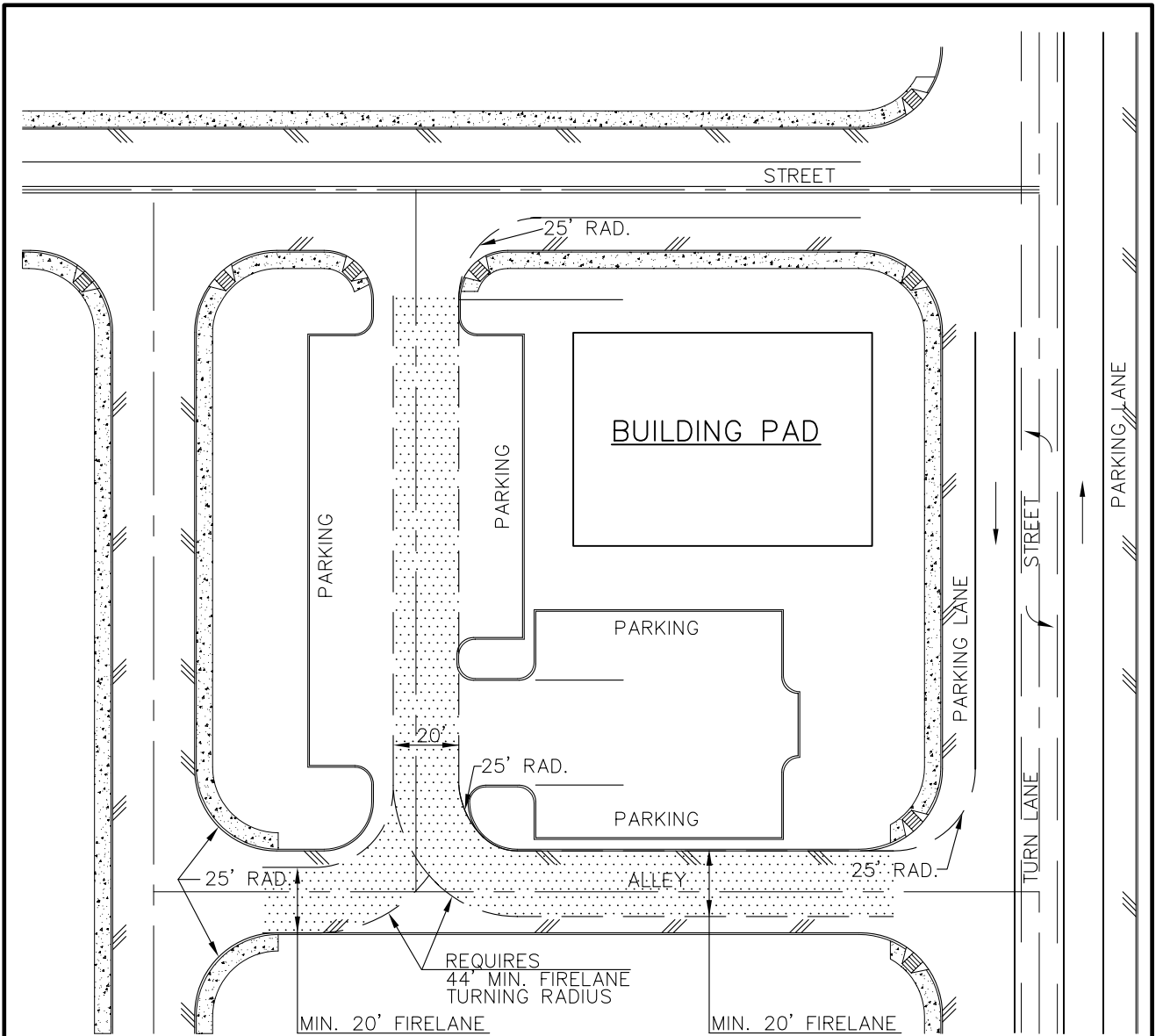


FIGURE-7

CORNER CLEARANCES FOR ROADWAYS

ACCESS TO HIGHWAY 34 WILL BE PER CDOT



NOTES:

ALL BUILDINGS SHALL BE ACCESSIBLE TO FIRE DEPARTMENT APPARATUS BY WAY OF ACCESS ROADWAYS WITH ALL-WEATHER DRIVING SURFACE OF NOT LESS THAN 20 FEET (20') OF UNOBSTRUCTED WIDTH, WITH ADEQUATE ROADWAY TURNING RADIUS (25-FOOT INSIDE RADIUS, 44-FOOT OUTSIDE RADIUS) CAPABLE OF SUPPORTING THE IMPOSED LOADS OF FIRE APPARATUS AND HAVING A MINIMUM OF THIRTEEN FEET SIX INCHES (13'-6") VERTICAL CLEARANCE.

THE ACCESS ROADWAY SHALL BE EXTENDED TO WITHIN ONE HUNDRED FIFTY FEET (150') OF ALL PORTIONS OF THE EXTERIOR WALLS OF THE FIRST STORY OF ANY BUILDING. WHERE THE ACCESS ROADWAY CANNOT BE PROVIDED, APPROVED FIRE PROTECTION SYSTEM OR SYSTEMS SHALL BE PROVIDED AS REQUIRED AND APPROVED BY THE FIRE CHIEF.

THE REQUIRED WIDTHS OF ACCESS ROADWAYS SHALL NOT BE OBSTRUCTED IN ANY MANNER, INCLUDING PARKING OF VEHICLES. "NO PARKING" SIGNS AND/OR OTHER APPROPRIATE NOTICES PROHIBITING OBSTRUCTIONS MAY BE REQUIRED AND SHALL BE MAINTAINED.

FIRE EASEMENTS SHALL BE SHOWN ON THE SUBDIVISION PLAT.

FIGURE-8

FIRE LANE CONFIGURATION

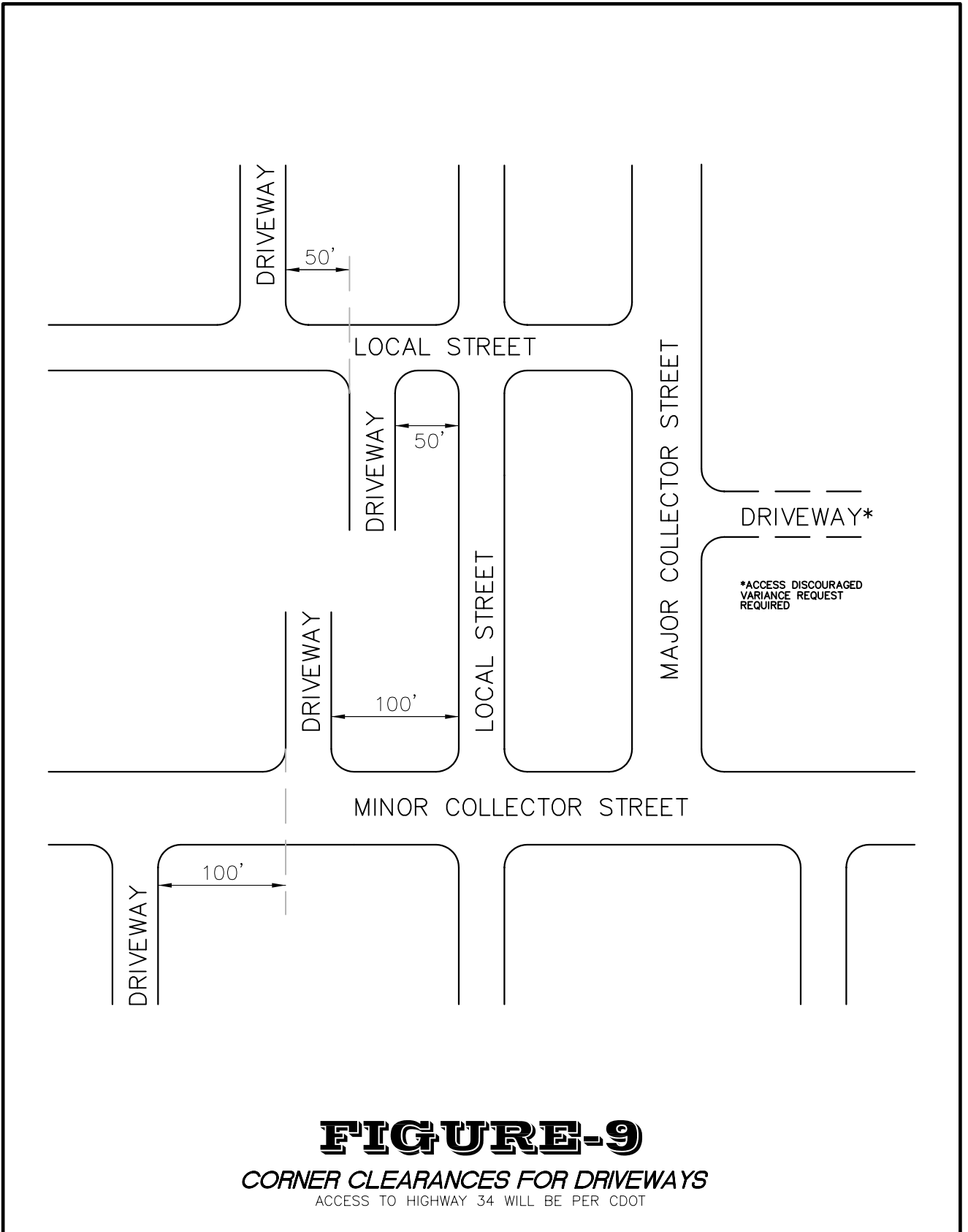
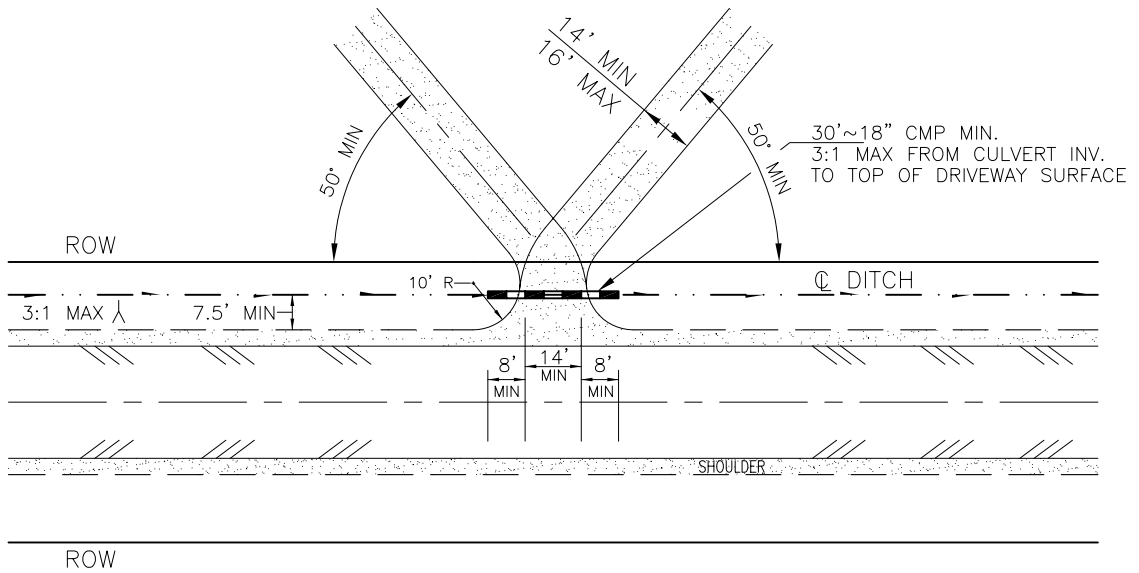


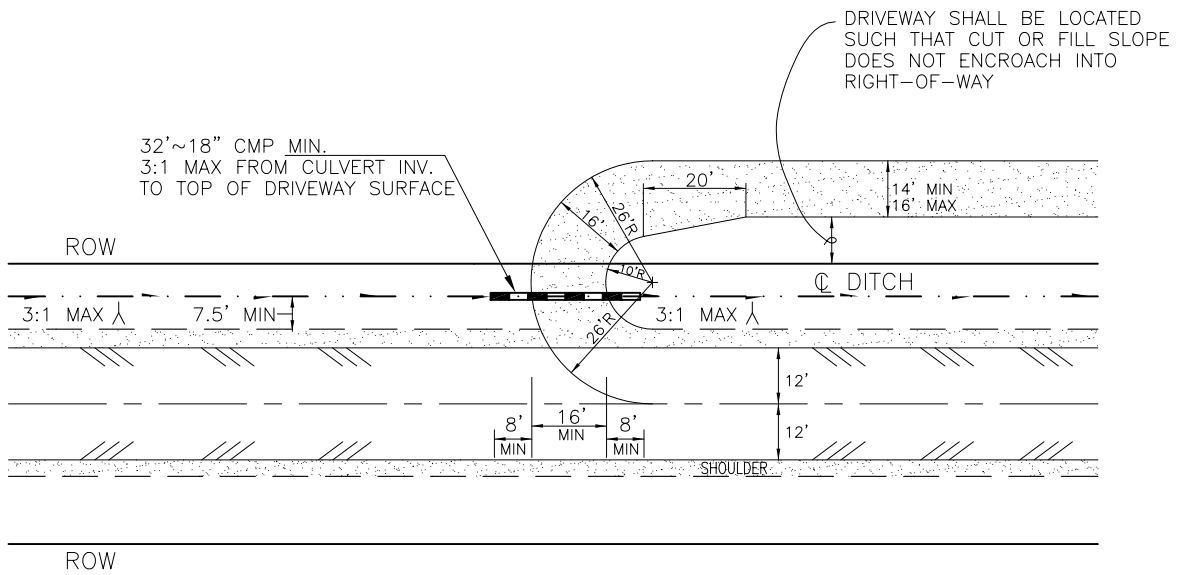
FIGURE-9

CORNER CLEARANCES FOR DRIVEWAYS

ACCESS TO HIGHWAY 34 WILL BE PER CDOT



DRIVEWAYS BETWEEN 50° to 90°



DRIVEWAYS BETWEEN 0° to 51°

FIGURE-10
DRIVEWAY CONFIGURATION
(RESIDENT WITHIN 150 FEET OF PUBLIC ROAD)

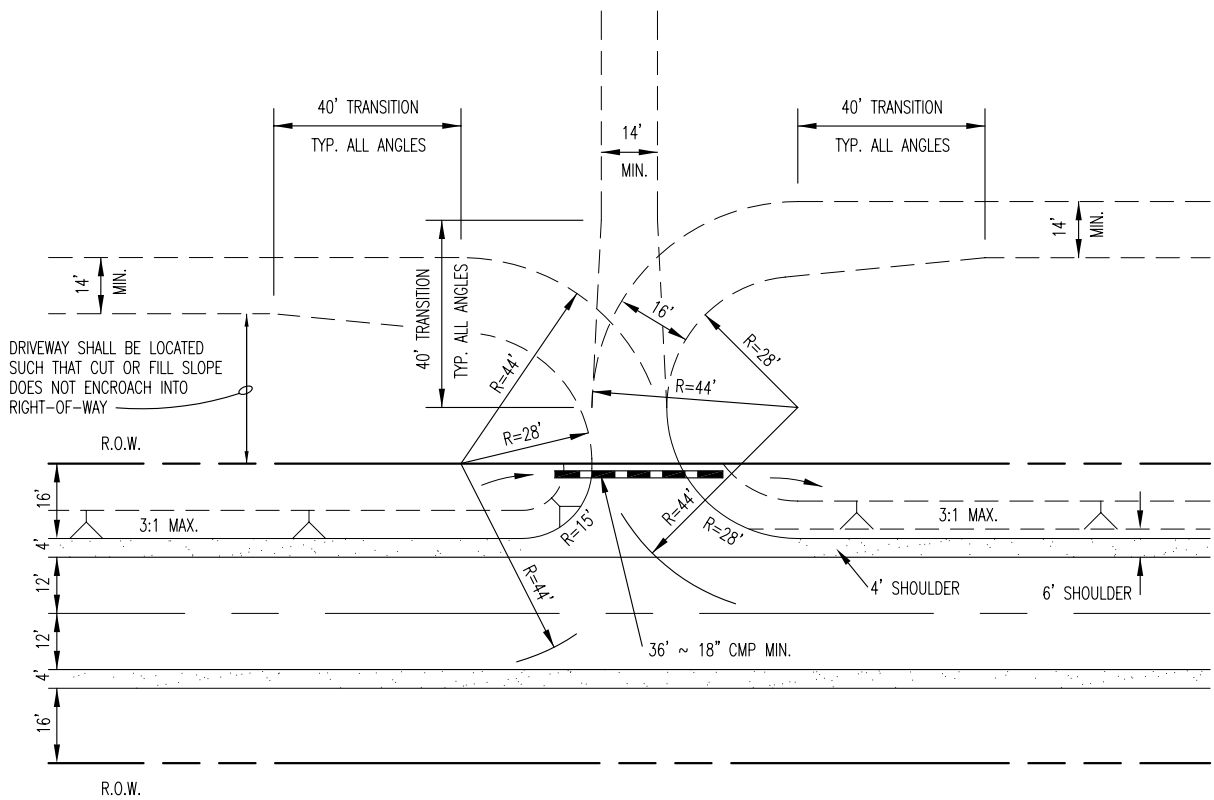


FIGURE-1 1

**DRIVEWAY CONFIGURATION
RESIDENCE REQUIRING EMERGENCY ACCESS
(GREATER THAN 150 FT. FROM PUBLIC ROAD)**

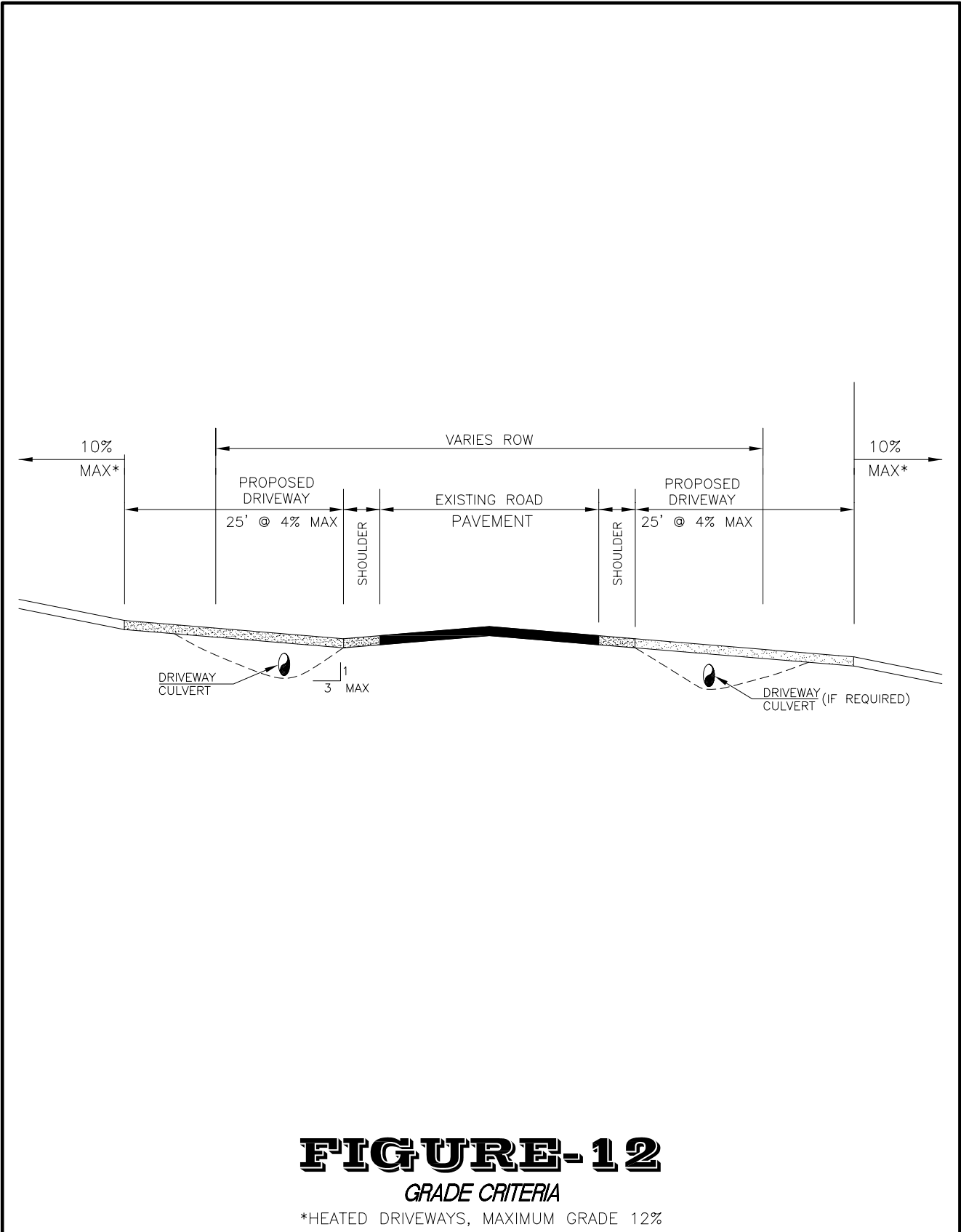


FIGURE-12

GRADE CRITERIA

*HEATED DRIVEWAYS, MAXIMUM GRADE 12%

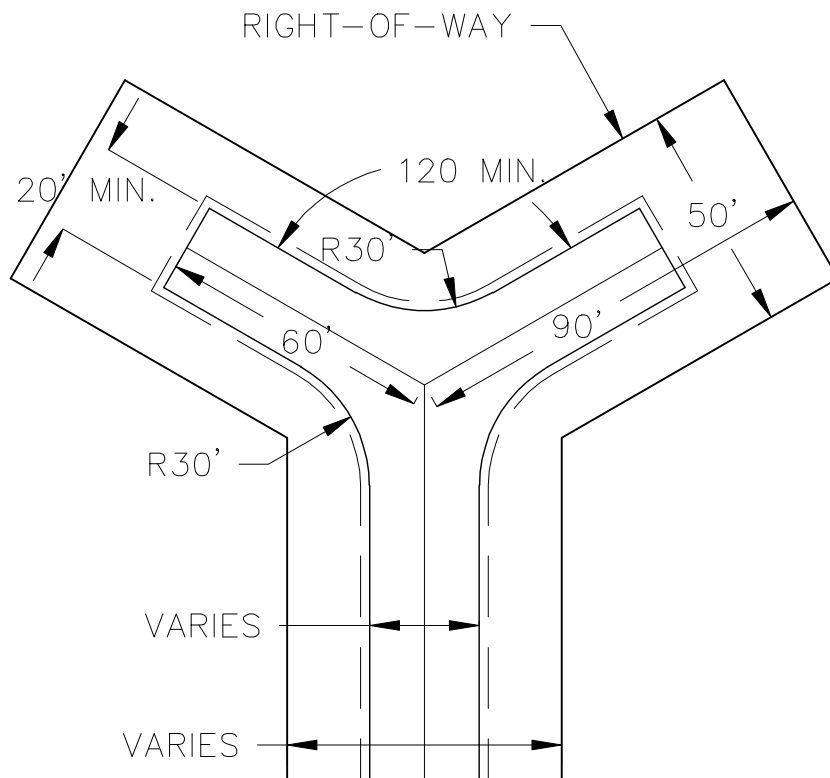


FIGURE-13
TYPICAL 'Y' TURNAROUND

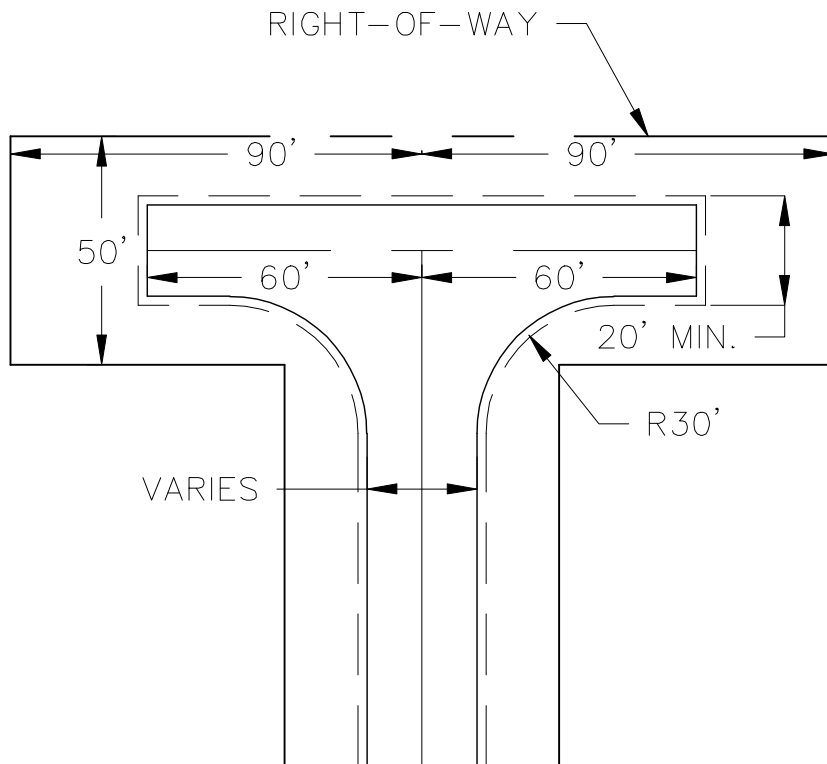


FIGURE-14
TYPICAL 'T' TURNAROUND