Chapter11.04 Street Design and Construction Standards

Sections:

11.04.010 Intent.
11.04.020 Applicability.
11.04.030 Definitions.
11.04.040 Street construction, design and dedication requirements--General.
11.04.050 Master Roads and Streets Plan--Adopted.
11.04.055 Official Road Maintenance Map--Adopted.
11.04.058 Design Criteria Manual--Adopted.
11.04.060 Geometric design requirements.
11.04.070 Required cross-section.
11.04.080 Drainage and erosion control.
11.04.090 Intersections (street and driveway).
11.04.100 Utilities in right-of-way.
11.04.110 Street lighting.
11.04.120 Sidewalks and non-motorized transportation corridors.
11.04.130 Traffic-control devices and street signs.
11.04.140 Construction requirements.
11.04.150 Violation--Penalty.

11.04.010 Intent. The intent of this chapter is to:
a. Promote the safety, convenience, comfort, and common welfare of the public by providing for minimum standards to regulate design and construction of public streets, roads, and highways within the City.
b. Minimize public liability for publicly and privately developed improvements by ensuring that roads and streets will be built to City standards. (Ord. 85-14 (part), 1985).

11.04.020 Applicability. The requirements of this chapter shall govern the construction or reconstruction of roads and streets within the City of Homer. (Ord. 87-6(S) 1(part), 1987).

11.04.030 Definitions. In this chapter, unless otherwise provided, or the contest otherwise requires, the following words and phrases shall have the meanings set forth below:

a. "Arterial" means a street or highway which provides as a major function the transmission of vehicular through traffic along its prolongation or length (in preference to traffic entering the street or highway from an abutting lot or intersecting road), and which performs a major role in serving the transportation needs of the community (by serving relatively longer trip lengths with minimal interference and higher speeds), and which is identified as an arterial on the Homer Master Roads and Streets Plan.
b."As-built drawings" means the plan and profile drawings of the improvements as constructed, drawn to the same level of detail as the original design drawings.
c."Base Course" means a layer of crushed aggregate placed atop the subbase, according to a specified gradation.
d."City" means the City of Homer, a municipal corporation, acting through the City manager and/or his designees.
e."Collector" means a street which collects traffic from local streets and/or relatively large traffic generators, and channels it into the arterial system, and is identified as a "commercial/industrial collector" or is a "residential collector" in the Homer Master Plan for Roads and Streets. (A "commercial/industrial collector" is a collector located in a commercial or industrial zoning district, while a "residential collector" is a collector located in a residential, district.)
f."Cross culvert" means a culvert which crosses beneath the traveled way of street, such that its ends are exposed on the embankment of each side of the street.
g."Cul-de-sac" means a street that is closed at one end and which is therefore required to provide a circular turnaround.
h."Design Criteria Manual" means a publication issued by the City of Homer entitled "Design Criteria Manual for Streets and Storm Drainage," dated April, 1985.

i."Design engineer" is a professional civil engineer, registered in the State of Alaska, who shall perform the project design for the developer.
j."Developer" means a person, firm, association, partnership, corporation, governmental unit, or combination of any of these which proposes to install street improvements, either as part of a subdivision development or as a development project on an existing right-of-way.
k."Drainage Management Plan" refers to the City of Homer's documents entitled "Drainage Management Plan - Homer, Alaska" (dated August, 1979) and "Revised Drainage Management Plan - Homer, Alaska" (dated February, 1982).
l."Driveway" means an entrance/exist roadway which provides lateral access to a private property from a public right-of-way, and which is located on private property except for its junction with the public road within such right-of-way.
m."Driveway intersection" means the junction of a driveway with a street or other public road.
n."Local street" is a street which services primarily relatively short trip lengths and low traffic, allowing transmission of traffic from abutting lots to the collector or arterial system, and which does not qualify for designation as a collector or arterial. For the purposes of this ordinance, local streets are segregated into tow subclasses: "local residential" streets are those local streets situated in residential zoning districts and "local commercial/industrial" streets are those local streets located in commercial or industrial zoning districts.
o."Master Roads and Streets Plan" refers to the document labeled such, adopted by the City of Homer.
p."Nonfrost susceptible material" means nonorganic soil containing less than three percent by weight of grains smaller than .02 mm obtained from minus three-inch material.
q.“Non-Motorized Transportation and Trail Plan” means the Homer Non-Motorized Transportation and Trail Plan (2004), adopted as an element of the Homer Comprehensive Plan by HCC 21.02.010(b).
r.“Non-motorized transportation corridor” means an easement or right-of-way designated for public use for pedestrian, bicycle, equestrian or other non-motorized means of transportation.
s.“Public access corridor” means an easement or right-of-way providing public access through a lot, subdivision or development.
t."Right-of-way" means land, property, or interest therein, usually in a strip, acquired for or dedicated to the public for transportation purposes.
u."Road" is synonymous with "street".
v."Roadway" means the portion of a street, road, or highway, including shoulders, for vehicular use.

w."Shoulder" means the portion of the roadway contiguous with the traveled way for accommodation of stopped vehicles for emergency use, and/or for lateral support of base and surface courses.
x."Street" is a general term denoting a public way or track, or any length thereof, in urban settings, used for purposes of vehicular travel.
y."Street intersection" means the junction of two or more public roads, i.e., roads located within public rights-of-way.
z."Subbase" means the specified or selected material of planned thickness placed atop the subgrade and below the base course.
aa."Subdivider" means a person, firm, association, partnership, corporation, governmental unit, or combination of any of these which may hold any recorded or equitable ownership interest in land being subdivided, The term shall also include all heirs, assigns or successors in interest, or representatives of the subdivider, owner, proprietor or developer.
bb. "Subdivision" means the division of a tract or parcel of land into two or more lots, sites, or other divisions for the purpose, whether immediate or future, of sale, lease, or building development, including resubdivision. Any addition, deletion or relocation of the boundary of a tract or parcel of land shown on a recorded plat is a subdivision. When appropriate to the context, the term shall refer to the process of subdividing or to the land or areas subdivided.
cc."Subgrade" means the basement soil material in excavation (cuts), embankment (fills), and embankment foundations immediately below the first layer of subbase and to such depth as may affect the structural design of the roadway.
dd."Traveled way" means that portion of the roadway reserved for the movement of vehicles, exclusive of shoulders.
(Ord. 10-57 §1 & 2 (part), 2011; Ord. 02-33 §1, 2002; Ord. 87-6(S) §1(part), 1987; Ord. 85-14 (part), 1985).

11.04.040 Street construction, design and dedication requirements--General.
a. All streets, or non-motorized transportation facilities constructed or reconstructed within the City of Homer after the effective date of the ordinance codified in this chapter shall adhere to the dedication, design and construction standards set forth in this chapter and shall also be designed and constructed according to the procedures and standards set forth in Chapter 11.20, unless waived as provided in Chapter 11.20.

b. The City shall require new subdivisions to dedicate the rights-of-way according to the widths specified in Section 11.04.060(f) below, according to the appropriate functional classification. Arterials and collectors are as designated in the Master Roads and Streets Plan. This provision may be waived on a case-by-case basis by the Director of Public Works by requiring a minimum dedicated right-of-way of sixty feet along with an expanded building setback of sufficient width to equal the rights-of-way widths specified in Section 11.04.060(f).
c. The Planning Commission shall require the dedication of a half street if the other half of the street has been dedicated or can reasonably be expected to be dedicated, unless it determines the street would be unnecessary or undesirable. It shall further require half-street dedications if the street is on the Master Plan for Roads and Streets map as a planned improvement of is the logical existing street.
d. When a subdivision boarders or contains a street designated an arterial on the Master Plan map, the Homer Advisory Planning commission may require shared access or the dedication of a frontage street. Alternatively, an interior road may be required (along the rear lot lines of the lots abutting the arterial) which will serve the access requirements of all the lots fronting the arterial. (Ord. 10-57 §4 (part), 2011; Ord. 87-6 1(part), 1987; Ord. 85-14 (part), 1985).

11.04.050 Master Roads and Streets Plan--Adopted. a. The City hereby adopts the functional classification system, Master Plan map, and preliminary plans and profiles of future streets contained in the Master Roads and Streets Plan.
b. In all new subdivisions, excepting those specifically exempted in Chapter 22.10, the subdivider shall be required to dedicate street rights-of-way designated as arterials or collectors on the Master Plan for Roads and Streets map, in general agreement with the location and geometrics outlined on the map and, if preliminary engineering plans have been prepared, in general accordance with the route layout specified therein. The Planning commission may require adjustments to the proposed plat at the preliminary platting stage if it finds that such geometrics and alignments are not adhered to.
c. If a development includes a segment of an arterial or collector street as shown on the Master Plan, the developer shall construct the streets on the alignment adopted in the Master Roads and Streets Plan, and according to the geometric requirements (maximum grade, curvature, and intersection grade, and minimum intersection curb return radius) conforming to the respective classification. The developer, in such case, shall be required to construct the street to a twenty-eight-foot width in accordance with the minimum requirements of a local residential street; provided, however, that the City may, upon director of the City Council, elect to require construction to the full standards and pay to the developer the cost difference between the required street and the proposed street.
d. The City Council shall be empowered to designate additional routes as arterials and collectors beyond those adopted on the Master Plan map. (Ord. 87-6(S) 1(part), 1987; Ord. 85-14 (part), 1985).

11.04.055 Official Road Maintenance Map--Adopted. a. The "Official Road Maintenance Map of the City of Homer" is enacted by reference and declared to be part of this chapter in its exact form as it exists on the date that the ordinance codified in this chapter is adopted by the City Council. This map shall be kept in the City offices for public inspection.
b. After the effective date of the ordinance codified in this chapter, the City shall not accept maintenance responsibility for any roads, existing or future, which are not constructed or reconstructed to the standards of this chapter, unless such road is shown on the "Official Road Maintenance Map of the City of Homer."
c. City maintenance service, as specified on the official map, shall be provided in two categories:
1. Urban Road Maintenance, level of service for road maintenance on streets that meet the City Standard and these roads are first priority, and
2. Rural Road Maintenance, the level of service for roads that do not meet City standards and are determined to deserve a reduced level of service and these roads take second priority.
d. If the map becomes lost or damaged, the map or significant parts thereof remaining after partial destruction shall

be preserved. The City Council may by ordinance enact a new map which shall be consistent with and supersede the old map.
e. The map shall be signed by the City Clerk with a note of the date of enactment by the City Council. Amendments by ordinance shall be immediately added to the "Official Road Maintenance Map of the City of Homer" with a notation of the date of enactment of said ordinance by the City Council. (Ord. 02-33, 2002; Ord. 02-23(S), 2002; Ord. 87-6(S) 1(part), 1987; Ord. 85-14 (part), 1985).

11.04.058 Design Criteria Manual--Adopted. The City of Homer adopts by reference the "Design Criteria Manual for Streets and Storm Drainage," dated April, 1985 and revised February 1987. The "Design Criteria Manual" shall augment the standards of this chapter and shall govern site reconnaissance, survey and soils and design for streets and storm drains. (Ord. 87-6(S) 1(part), 1987).

11.04.060 Geometric design requirements. The following design criteria shall be adhered to on all street construction within the City.
a. Street Alignment. The street construction shall coincide with the right-of-way centerline unless otherwise approved by the City.
b. Street Design. Streets shall be designed to meet the following objectives:
1. To drain adjacent property where possible;
2. To match existing driveways where possible, and in all cases to match existing cross-street grades;
3. To minimize cross-street or driveway grades;
4. To provide drainage of roadways;
5. To facilitate continuity of natural drainage patterns if storm drains are not incorporated in accordance with the Drainage Management Plan.
c. Grade and Curvature Maxima. The following design limitations shall apply to grades and curvature according to the street's functional classification:

Grade and Curvature Maxima	Classification	Maixmum Grade %	Short Distance (Less than 500 ft) Maximun Grade %	Maximum Grade on Curve %
	Major Arterial	6	8	6
	Minor Arterial	8	10	6
	Collector comm/indus	8	12	6
	Local comm/indust	8	12	6
	Collector, res.	10	12	8
	Local, res.	10	12	8

* Radius shall be measured to right-of-way centerline.
** In hilly terrain (as defined by the Design Criteria Manual), the minimum curve radius for residential collector streets may be reduced to two hundred seventy-five feet, and the minimum curve for local residential streets may be reduced to one hundred twenty feet, upon approval of the City Public Works Engineer.

d. Traffic Forecast. Street design criteria (e.g., pavement thickness, roadway widths, etc.) shall be based on twenty-year traffic forecasts as approved by the City. Forecasts for local streets shall be based on estimated trip generation, such estimates to be obtained on per-unit basis from the Design Criteria manual and standard texts and calculated by the design engineer for the given land-use intensity and type.
e. Cul-de-sacs. Cul-de-sacs must not be longer than six hundred feet and must have turnaround, with a minimum

radius to outer edge of pavement or shoulder of thirty-eight feet.
f. Width. Right-of-way, traveled way, and shoulder width standards for city streets shall, at minimum, be as follows:

Shoulder Width Standards	Functional Class or Type	Right-of-way Width Feet	Traveled Way Width Feet	Shoulder Width, Each Side Feet*
	Arterial, major	100	36	8
	Arterial, minor	100	26	6
	Collector, comm./ indus.	80	26	4
	Collector, res.	80	26	4
	Local, comm./indus.	60	22	3
	Local, res., gravel road/street	60	26	0
	Local, res., paved road/street	60	26	4
	Cul-de-sac turn-around radius	50 (radius)	38 (radius)	2

* Shoulder width reductions may be allowed on roads with curb and gutter.

g. The right-of-way width standards of Section 11.04.060(f) above shall constitute minimum dedication requirements for subdivisions for respective street classification. subdividers and developers shall be required to construct roadways to the width specified for local residential streets, regardless of the street classification.
h. Construction or reconstruction of existing streets in pre-existing platted rights-of-way narrower than those defined in Section 11.04.060(f) shall require dedication of a sufficient construction and maintenance easement on each side of the road to allow the roadway to be constructed in accordance with Chapter 11.20 and the City of Homer Design Criteria Manual.
i. Other design criteria shall be as specified in the City of Homer "Design Criteria manual for Streets and Storm Drainage." Further explanation and elaboration of the requirements in (c) through (f) of this section is also set forth in the Design Criteria Manual. (Ord. 87-6(S) 1(part), 1987).

11.04.070 Required cross-section. a. All cross-section designs shall be performed in conformance with the City of Homer Street Design Manual. Thickness shall be based on analysis of native soil and groundwater conditions, as detailed in the Street Design Manual using limited subgrade frost penetration, reduced subgrade strength, California Bearing Ratio, or other methods as appropriate for the functional classification of each roadway, provided that in no case shall be combined thickness of subbase and base course be less than twenty-four inches. Base course thickness shall be four inches on paved roads and six inches on unpaved roads.
b. Prior to the placement of roadway structural fill, material, native material shall be excavated to subgrade, and geotextile fabric, of a type approved by the City, shall be placed atop of subgrade prior to placement of structural

fill.
c. Base course and subbase gradation shall be specified in the City of Homer's Design Criteria Manual, except as otherwise approved or specified by the City Public Works Engineer. (Ord. 87-6(S) 1(part), 1987).

11.04.080 Drainage and erosion control. a. An adequate drainage system, which may include necessary storm drainage facilities, drain inlets, manholes, culverts, bridges and other appurtenances, shall be provided to conduct stormwater efficiently and to protect the roadway's integrity. The flow requirements for each particular drainageway shall be established by the City, using the City Drainage Management Plan as a data base.
b. Hydraulic structures shall be designed in accordance with the Design Criteria Manual.
c. Underground storm drain systems will be required after preparation and official adoption of an official storm drain network plan, if the development occurs on the route of a storm drain, as provided on such official plan. Storm drains shall be designed in accordance with the Design Criteria Manual.
d. Cross culverts shall have a minimum inside diameter of twenty-four inches, and shall be larger if the flow through the culvert will require larger diameter pipe, as determined by the City Public Works Engineer.
e. Driveway culverts will be a minimum of eighteen inches in diameter, and shall be larger if the flow through said culvert will require larger diameter pipe, as determined by the City Public Works Engineer.
f. Plunge basins or other methods, as approved by the City, shall be employed to dissipate energy at culvert outfalls where the City or design engineer determines such methods are necessary, in accordance with the Design Criteria Manual.
g. Ditch lining or other methods shall be required if necessary to prevent ditch erosion. (Ord. 87-6(S) 1(part), 1987).

11.04.090 Intersections (street and driveway). a. Right-of-way Requirements. Rights-of-way shall intersect at an angle as close to ninety degrees as feasible, and in no event at an angle less than sixty degrees.
b. Right-of-way Radius Returns. At all intersections, right-of-way radius returns shall be a minimum of twenty feet. Additional radius shall be required in cases where the intersection angle is less than ninety degrees; the rounding shall permit construction of curb returns or turning radii as required in subsection c of this section, and radius returns in such cases shall not be less than forty feet.
c. Curb Returns and Turning Radii. turning radii at intersections shall be designed and constructed to accommodate the turning path of design turning vehicles with minimal encroachment on shoulders and opposing lanes; the design turning vehicles are as specified in the Design Criteria manual, according to the street's functional classification.
d. Centerline Separation. The distance between street intersection centerlines shall be not less than two hundred feet, measured along the centerline of the intersected street. Street intersections created by new subdivisions shall be spaced at intervals of not less than six hundred feet on major arterials, three hundred feet on minor arterials, and two hundred feet on collectors.
e. Grades. Intersection grades shall not exceed three percent within sixty feet nor four percent within one hundred feet, of the intersection with the through-road centerline. The through-road grade shall not exceed seven percent approaching the intersection if possible.
f. Sight Distances. Intersections shall be planned and designed to provide sight distances in accordance with the Design Criteria Manual.
g. New Subdivisions. For new subdivisions, the Homer Advisory Planning Commission may specify separation intervals between driveway and/or street intersections on arterial and collector streets, not to exceed the street intersection interval specified in this section. (Ord. 87-6(S) 1(part), 1987).

11.04.100 Utilities in right-of-way. New streets to be constructed for acceptance by the City or existing substandard streets to be reconstructed for acceptance by the City shall also include the construction of applicable utilities in accordance with the Development Agreement. Placement of utilities in right-of-way shall be governed by the standards of the City of Homer Design Criteria Manual. (Ord. 87-6(S) 1(part), 1987).

11.04.110 Street lighting. Street lighting shall be installed in all streets in conformance with the requirements of the City of Homer Design Criteria Manual and the standards of the electric utility. (Ord. 87-6(S) 1(part), 1987).

138-5
(Homer 03/11)
11.04.120—11.04.140(e)

11.04.120 Sidewalks and non-motorized transportation corridors. a. New streets to be accepted by the City and identified as public access corridors in the adopted Homer Non-Motorized Transportation and Trail Plan shall have easements for sidewalks, bicycle paths or other non-motorized transportation facilities to ensure convenient

mobility and convenient access to parks, recreation areas, trails, playgrounds, schools and places of public assembly.
b. New streets to be accepted by the City and not identified as public access corridors in the Non-Motorized Transportation and Trail Plan may, at the developer's option, have sidewalks, bicycle paths or other non-motorized transportation facilities.
c. Sidewalks, bicycle paths and other non-motorized transportation facilities shall be designed in accordance with the design criteria of the City of Homer Design Criteria Manual. (Ord. 10-57 §4, 2011; Ord. 87-6(S) 1(part), 1987).

11.04.130 Traffic-control devices and street signs. a. Street signs and other traffic control devices, including striping where applicable, shall be provided in accordance with the Alaska Traffic Manual.
b. Street name signs shall be provided at all intersections, on fixtures and according to type specified in the Alaska Traffic Manual. (Ord. 87-6(S) 1(part), 1987).

11.04.140 Construction requirements. Street construction within rights-of-way dedicated or to be dedicated to the public within the City shall be subject to the following:
a. Construction methods, materials, and practices for all work related to streets within the City shall conform to the Design Criteria Manual of the City of Homer; amendments to these specifications shall be subject to approval or shall be specified by the City of Homer.
b. Construction procedures and responsibilities shall be as specified in chapters 11.20 and 13.08 of the Homer City Code.
c. Copies of applicable permits must be on the construction site. If not, the City reserves the right to close the work down until such time the permits are present.
d. If the project creates a condition that the City deems hazardous or detrimental to the public or public right-of-way, the City reserves the right to close the work down until such time that the problem is corrected.
e. Restoration of Existing Streets and Rights-of-way. Contractors will be required to restore streets and public rights-of-way to the grade and condition originally found, to replace gravel, paving or sealcoating, ditches, culverts, fences, signs, or other improvements, unless specific authorization to the contrary is authorized in writing

by the City. Failure to do so will be cause for the City to accomplish the required work, and to collect damages from the contractor or his surety. All work shall comply with the standards set forth by the State of Alaska, Homer City Code, Homer Standard Construction Practices and Standard Specifications.
f. Clean Up. As the work progresses, all streets shall be thoroughly cleaned of all rubbish, excess earth, rock, and other debris resulting from such work. All clean-up operations at the location of such work shall be accomplished at the expense of the contractor and shall be completed to the satisfaction of the Public Works Inspector. Immediately after completion of said work, the contractor shall, at his own expense, clean up and remove all refuse and unused materials of any kind resulting from said work, and upon failure to do so within one working day after having been notified to do so by the Public Works Inspector, work may be done by the Department of Public works; the cost thereof charged to the contractor and the contractor shall also be liable for the cost thereof under the security bond provided hereunder. The contractor shall maintain all gutters free and unobstructed for the full depth of the adjacent curb and for at least one foot in width from the face of such curb at the gutter line. Where gutters do not exist, drainage ditches shall be kept free of obstructions and restored to their original condition. Whenever a gutter or culvert crosses an intersecting street, an adequate waterway shall be provided and at all times maintained. The contractor shall make provisions to take care of all surplus water, muck, silt, slickings, or other runoff pumped from excavations or resulting from sluicing or other operations and shall be responsible for any damage resulting from its failure to so provide. (Ord. 87-6(S) 1(part), 1987).

11.04.150 Violation--Penalty. The violation of any provision contained in this chapter shall be punished under Section 1.16.010. (Ord. 87-6(S) 1(part), 1987).

[2] Editor's Note: The provisions of this chapter were originally enacted by Ordinance 85-14, which was repealed by Ordinance 87-6(S).

(Homer 03/11)

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