



CITY OF ANACORTES ENGINEERING DEPARTMENT

CHAPTER 3

STREETS



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CHAPTER 3 – STREET PLANNING/DESIGN CRITERIA

STR-01 STREET STANDARDS (ORDINANCE 3031)

STR-01.1 Street Design

See Ordinance Number 3031 establishing low-impact development standards.

For New Development and Redevelopment, each project will be required to implement Low Impact Development Guidelines.

* Construct permanent cul-de-sacs at a platted intersection of two streets.

The City may allow a temporary cul-de-sac when it determines that connection/extension of the proposed street is not reasonable or practical at the time of development. The City may allow thickened edges instead of curb and gutter on a temporary cul-de-sac.

** The City may require thickened edges.

Maximum Cul-de-sac Length		
Zone:	Maximum Grade:	Length:
R1 and R2	12 percent	1,000'
R3 and R4	10 percent	600'

STR-01.2 Short Cul-de-Sac Design

Exception by Ordinance 2655 – A Short Cul-de-sac is a public road not more than 150 feet in length with no reasonable possibility of extension, serving not more than six residential building sites.

Design requirements:

1. 80-foot diameter cul-de-sac, 24 feet curb to curb
2. 5-foot sidewalks both sides, standard curb
3. Right of way minimum 25 feet wide with additional for cul-de-sac
4. Two off-street parking spaces per unit plus garage, one street light.

STR-01.3 Existing Platted Parcels Design

1. Applicable Improvements are required.
2. All improvements shall connect to similar improvements where feasible.
3. If the improvements fall within an existing Platted Block, a design shall be provided to the City of Anacortes Public Works Engineering Department that includes design for the entire block. The entire block means the street improvements from radius of curb/gutter and sidewalk to radius of curb/gutter and sidewalk.

STR-02 SUPER ELEVATION ON HORIZONTAL CURVES

The City of Anacortes may allow super elevation curves conforming to WSDOT Design Manual Chapter 640.

STR-03 GRADES

Refer to AMC 16.32. Minimum road grade is .5 percent.

Maximum Road Grades	
Major Arterials	6%
Minor Arterial, Collector Arterials	8%
Residential Access Streets R1 and R2 Zones	12%
Residential Access streets Re and R4 Zones	10%
Cul-de-sac Bulb Areas	6%

STR-04 INTERSECTIONS

Roads must intersect as close to 90-degrees as topography permits, and must not intersect at less than 75-degrees.

Minimum Center Offset for Same Street Access	
Local streets intersecting local streets	125 feet
Collectors intersecting arterials	250 feet
Arterials intersecting arterials	300 feet

High volume or commercial driveways sited on opposite sides of a street must align with one another.

Minimum Road Width Transition Ratios	
Approach	8:1
Exit	20:1

See the WSDOT Design Manual for road width transition requirements.

STR-05 SPEED CHANGE LANES

See WSDOT Design Manual for speed change lane requirements

STR-06 CURBS

See WSDOT/APWA Standard Plans for 18-inch wide cement concrete barrier curb and gutter standard to be used for all roadway, island and median curbs. Exceptions are listed below:

1. Rolled curb and gutter, 24-inches wide is allowed in Cul-de-Sac bubbles. Sidewalks adjacent to the rolled curb applications must be 6-inches thick.
2. An alternate curb design may be considered to allow emergency vehicle access across the median.
3. See WSDOT/APWA Standard Plans for extruded cement concrete curb for parking areas that are not part of the public road system.

STR-06.1 Minimum Corner Curb Radii

Neighborhood-Neighborhood Intersection	25 feet
Neighborhood-Collector Intersection	30 feet
Arterial-Arterial Intersection	35 feet
Truck Routes (Transportation Comp Plan)	35' to 40'

The City may require larger radii to accommodate large vehicle turning movements.

STR-06.2 Curb Ramps (Wheelchair Ramps)

- Detectable Warning Devices are required at each Wheelchair Ramp. See STR-06.4 and STR-06-5 for Detectable Warning Device specifications.
- The pan and wings shall be stamped. The type of stamping that is acceptable is 1-inch construction fencing. Rolling is not an acceptable option.
- When upgrading or installing a wheelchair ramp as a retrofit, then these design features apply;
 - Radius 20-foot and under require the low pan around the entire radius.
 - Radius 25-feet and above require 2 ramps, per ADA.
- All ramps shall meet ADA requirements.

STR-06.3 Detectable Warning Devices – New Ramps

- Installed in all curb ramps and hazardous areas.
- Wet cast only, unless otherwise approved in writing by the Public Works Director.
- “White” in color, unless otherwise approved in writing by the Public Works Director.
- Shall be a Polymer concrete Cast-in-Place Detectable Warning “Replaceable Panels”, as specified by the Amorcst Products Company, or approved equal.

STR-06.4 Detectable Warning Devices – Existing Ramps

- Installed in all curb ramps and hazardous areas.
- Warning Tiles only, unless otherwise approved in writing by the Public Works Director.
- “White” in color, unless otherwise approved in writing by the Public Works Director.
- Shall be a Polymer concrete Detectable Tile, as specified by the Amorcast Products Company, or approved equal.

STR-06.5 Curb/Gutter and Sidewalk Workmanship and Aesthetics

1. Curb, gutter and sidewalk construction shall follow a true and uniform horizontal and vertical alignment.
2. The horizontal and vertical surfaces shall be a smooth broom finish with no detectable finishing blemishes, undulations, ripples, swells, waves, ruts, furrows, graffiti or other objectionable marks. The end result shall be a neat professionally finished appearance.
3. The edge finish adjacent to the expansion joint material shall be clean and free of excess slurry. The expansion joint material shall be trimmed to a level even with the adjacent concrete resulting in a neat and professionally finished appearance.
4. The City Engineer, at his/her sole discretion reserves the authority to order the removal of sections of curb, gutter and sidewalk that do not meet the Workmanship and Aesthetic standard of the City of Anacortes.
5. Sections of newly constructed curb, gutter and sidewalk, that exhibit cracking following curing, shall be subject to removal and replacement.
 - Cracking resulting from sub-base failure or construction site damage shall be immediately removed and replaced to the nearest expansion joint.
 - Minor hair line stress cracks may, at the discretion of the Project Manager, be monitored and re-evaluated for possible removal at the end of the maintenance period.

STR-07 **SIGHT DISTANCE**

See *A Policy on Geometric Design of Highways and Streets*, AASHTO, current edition, for minimum sight distance requirements. When these guidelines do not adequately address real-world conditions, the City will establish sight distance requirements that conform to the intent of the AASHTO guidelines. The sight distance triangle must be entirely within City right-of-way. The City may require a plan and profile drawing of existing site distance conditions.

STR-08 **ROAD NETWORK CIRCULATION**

New streets must enhance the City’s overall transportation plan.

Street plans should improve travel efficiency, provide route choices, minimize travel through residential areas, provide adequate access points, create shorter travel distances, facilitate the public transit system and school bus service, ease arterial congestion, minimize noise and air pollution, facilitate emergency vehicle response, and provide routes between neighborhoods.

STR-09 PEDESTRIAN TRAVEL

Provide sidewalks or non-motorized pedestrian routes along all streets. Connect proposed facilities to existing sidewalks, trails, paths or shoulders.

Construct sidewalks on both sides of the street in new subdivisions, commercial developments, and industrial developments except in the heavy manufacturing zone.

Separate sidewalks from curbs and gutters by a planted median at least 6 feet wide shall be constructed unless otherwise approved by the City Engineer.

All pedestrian facilities shall meet ADA requirements as specified in these standards.

STR-10 CROSSWALK POLICY

The City will refer to the MUTCD to determine when to allow/require a marked, signed crosswalk or other pedestrian crossing treatment.

All pedestrian facilities shall meet ADA requirements as specified in these standards.

STR-11 SIDEWALKS

Provisions for Pedestrian travel shall be made on all streets. Connection/extension of the proposed facilities to existing sidewalks, trails, paths or shoulders shall be required where practical and reasonable and shall meet ADA requirements as specified in these standards.

Sidewalks shall be required on both sides of the street in all new subdivisions, commercial development and industrial development outside the heavy manufacturing zone.

Sidewalks shall normally be separated from curb and gutters by a planted median at least six feet in width. The city engineer is authorized to modify or eliminate the separation width whenever sound engineering/construction considerations indicate such action is warranted.

When the sidewalk is adjacent to the curb, measure sidewalk width from the back of the curb to the back of the sidewalk.

Zone	*Minimum Sidewalk Width
R2 and R3	5'
R4	6'
C and CBD	8'

* Except by City approval when connecting to narrower than standard existing sidewalks or when wider-than-standard sidewalks are required near high volume pedestrian generators. (Ord. 2482 Att. B § 6 (part), 1999; Ord. 2448 (part), 1998)

When designing sidewalks, avoid obstructions such as utility poles and fire hydrants. When sidewalks must meander around obstructions, obtain right of way or easement sufficient to construct sidewalks to minimum width.

At bus stops, provide a landing pad for wheelchair operations at least 9 feet deep and 15 feet wide.

Design and construct driveways and sidewalks at the same time.

STR-12 NON-MOTORIZED PATHS AND ACCESS ROADS

	Minimum Width	Maximum Grade	Minimum Curb Radii
Non-motorized bike/pedestrian path	*10'	15%	10'
Maintenance Access Road	12'	15%	25'
Public Access Easement or Tract	15'		

* The City may allow sections less than 10 feet wide to accommodate topographic constraints.

STR-13 PUBLIC ACCESS EASEMENTS

To facilitate pedestrian travel to and between neighborhoods, schools, shopping areas, transit facilities, or other activity centers, the City may require dedication of an improved public access easement or tract consisting of sidewalks, or non-motorized bike/pedestrian paths, and diverters or bollards.

STR-14 BOLLARDS

To prevent motor vehicle access to an easement, tract, or path, the City may require installation of a line of bollards. In that case, install a fixed bollard on each side of the traveled way. Install removable, locking bollards across the traveled way to allow passage of maintenance and emergency vehicles. Install one bollard on the centerline. Maintain maximum spacing of 4 feet on center.

STR-15 ROADWAY STRUCTURAL REQUIREMENTS

Low Impact Development and Design will take priority over all subsections in STR-15.

For New Development and Redevelopment, each project will be required to implement Low Impact Development Guidelines.

STR-15.1 Design

A pavement surfacing design procedure shall be performed for all new and reconstructed Public Roads within City Limits. A roadway section designed with a 40-year life and a 2 percent growth factor based on an analysis of the load-bearing capacity of soils and traffic carrying requirements shall be used.

The design procedure shall be approved by the City of Anacortes Public Works Director and shall consider the following:

1. Traffic Loading – An estimate of number of types of loadings the roadway will carry for the design life. This estimate of loading shall be established and accepted by the City of Anacortes Public Works Director.

- 2. Subgrade Support – A representative value for the stiffness of the native material on which the road will be built. This value shall be shall be accepted by the City of Anacortes Public Works Director.
- 3. Analysis – A procedure for establishing the surfacing depth required for a given traffic loading and subgrade resilient modulus. This procedure shall be approved by the City of Anacortes Public Works Director. Once pre-approved procedure is the use of the “Guide for the Design of Pavement Structures”, 1993, or current version of AASHTO.

STR-15.2 Minimum Thickness

- As an alternative to the thickness computed by the design procedure, the minimum thickness of in-place, compacted surfacing of all Public Streets shall be as follows:

*Minimum Structural Requirements Over Well Drained, Stable, Compacted Subgrade	
Arterials and Adjacent Shoulders	3-inches Class B Asphalt Concrete Pavement over 3-inches Crushed Surfacing Top Course or Asphalt Treated Base over 8 inches Gravel Borrow
Non-arterials and Adjacent Shoulders	3 inches Class B Asphalt Concrete Pavement over 3 inches Crushed Surfacing Top Course or Asphalt Treated Base over 6 inches Gravel Borrow
Concrete Sidewalk Adjacent to Vertical Curb	4 inches Portland Cement Concrete over 4 inches gravel base
Concrete Sidewalk Adjacent to Rolled Curb and Driveway Sections	6 inches Portland Cement Concrete over 4 inches gravel borrow
**Non-Motorized Bike/Pedestrian Paths and Access Roads	2 inches Class B Asphalt Concrete Pavement over 4 inches Crushed Surfacing Top Course
Alley	2 inches Asphalt over 2 inches Crushed Surfacing Top Course or Asphalt Treated Base over 6 inches Gravel Borrow

* The City may require enhanced roadway sections designed with a 40-year life and a 2 percent growth factor based on an analysis of the load-bearing capacity of soils and the traffic carrying requirements.

** Where a pedestrian path is incorporated into the road shoulder, use the road shoulder standard.

STR-15.3 Additional Requirements

- All Plan submittals shall be accompanied by the soils and traffic analysis on which the design was based. All minimum surfacing requirements assumed are acceptable, well-drained, stable, compacted subgrade.
- Additional measures will be required if evidence exists of unstable subgrade. In all cases, the total base thickness, including crushed surfacing base course or

equivalent, shall not be less than 12-inches. Alternate base materials such as asphalt treated base, cement treated base or gravel base may be used when supported with an approved pavement section design and the total thickness is not less than 12-inches.

STR-16 SIDE SLOPES

Side slopes shall generally be constructed no steeper than 3:1 for fill slopes and 2:1 for cut slopes. For neighborhood streets, fill slopes may be 2:1. Steeper slopes may be approved by the Public Works Director upon showing that the steeper slopes, based on geotechnical analyses, will be stable.

Side slopes shall be stabilized with grass sod or seeding or by other planting or surfacing materials acceptable to the Public Works Director.

STR-17 ROADWAY BARRICADES

See the MUTCD and WSDOT Standard Plans for temporary and permanent barricade requirements.

STR-18 ROADSIDE OBSTACLE, STREET TREES AND ENCROACHMENTS

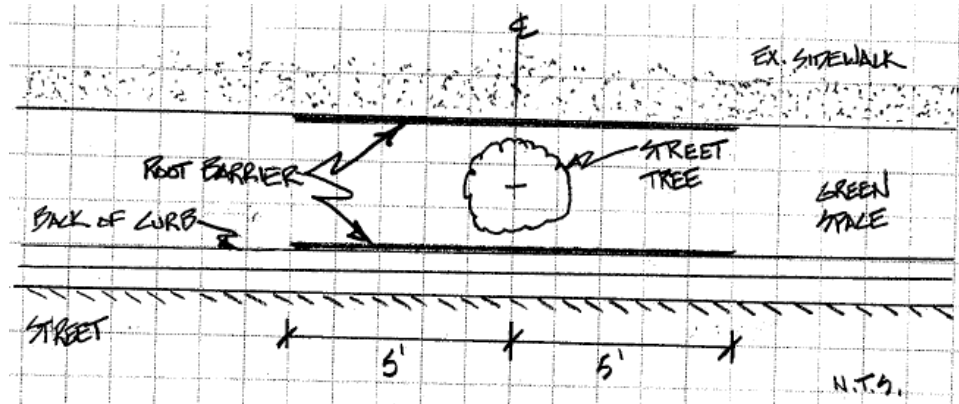
STR-18.1 Roadside Obstacle

- WSDOT establishes “clear zone” distances for placement of roadside features within the city Right-of-Way. See the WSDOT Design Manual Chapter 710, Traffic Barriers, or the WSDOT Utility Manual Appendix 1, Control Zone Guidelines – Utilities for clear zone distances on roads with posted speed limits greater than 35 mph.
- Roadside features that might present a hazard must be placed outside of WSDOT-defined clear zone areas. Clustered Mailboxes or NDCBU Mailboxes placed along streets posted at 25 mph or less are exempt from clear zone requirements.
- The City may consider an exception to the clear zone requirement when the obstacle is shielded by a barrier or placed in an area normally inaccessible to vehicles, or is designed to break away, and a traffic engineering analysis can justify the exception.
- Utility poles must not interfere with sight distance, roadway signing, traffic signals, culverts, etc. Locate utility poles so that they are compatible with driveways, intersections, and other roadway features. Poles and other above ground obstacles are not permitted in sidewalks or walkways unless the Public Works Director approves otherwise. The Developer must bear the cost of relocating poles or obstacles.

STR-18.2 Street Trees

- Contact the Parks Department at 360.293.1918 regarding approved Street Trees in the City of Anacortes.
- Identify the Street Trees and Root Barrier layout on a Landscape Plan for approval by the City of Anacortes.

- The Root Barrier shall be Deep Root Universal Barrier, or approved equal.
- Root Barrier shall be installed in a linear application along the curb line and edge of sidewalk at a minimum depth of 18" for protection from invasive roots under the sidewalk and road section.



Typical Root Barrier Layout Application in the Public Right-of-Way

- WSDOT Specifications reference a Type B and C soils. The use of Type A soils is required for the planting of any Street Trees.

The Type A soils shall be a two-part mixture consisting of two-thirds soil and one-third organic matter with the pH of 5.5 to 6.5. The soil shall be a weed seed free sandy loam mix.

The soil gradation shall meet:

Sieve Size	Percent Passing
3/8"	100%
No. 10	85-100%
No. 270	10-50%
0.002 Millimeters	0-10%

The organic matter shall be derived from sphagnum peat or previously approved substitutes such as fibrous sedge, wood or reed type peat. Substitutes shall contain less than 20 percent ash by dry weight and have a moisture content of less than 50 percent of the dry weight. The organic matter shall have been thoroughly aerated during drying. Dolomite limestone shall be used to adjust the pH to within specified limits. Said dolomite limestone shall be fine grind and packaged in waterproof bags, which are clearly labeled as to weight and content.

Construction Requirements:

Prior to bringing any topsoil to the job site, the contractor shall provide the owner's representative with certified lab test results of the sieve analysis showing percent passing, the sieve size listed, organic matter and pH. The soil shall also be tested to assure that it is weed seed free and free of toxic chemicals. One full test result is required for every 50 cubic yards.

The contractor shall assure that the said samples are representative. Material on site, which does not meet the requirements, shall be promptly removed at no cost to the owner. Costs of sampling and testing shall be included in the cost of the topsoil. Should the owner require additional tests of these materials, the owner shall bear the cost. In the event of a discrepancy between the contractor-submitted tests and those of the owner, the contractor will be requested to stop work on this item until confirmation that the proper material is on site. Any third party sampling and testing required to ensure compliance shall be the responsibility of the contractor.

STR-18.3 Encroachments (Anacortes Municipal Code 12.30)

It is the City of Anacortes policy to retain adequate Right-of-Way and Easements for future expansion of Streets, Alleys and Utility Systems and to encourage the limited use of the Public Right-of-Way and Easements by the adjoining property owners.

Prior to any placement of any barricades, material, earth, gravel, rock, debris or any other material or thing over, under, or upon any Public Right-of-Way or Easement in the City of Anacortes, an Encroachment Agreement shall be obtained. A separate permit shall be obtained for each separate project.

See the Anacortes Municipal Code, Section 12.30 for additional information regarding the Encroachment Agreement and processes.

STR-19 MAILBOXES

The approved construction plans must show the location of mailboxes. The City may require turnouts for mail delivery on arterials or neighborhood collectors

When the project requires the removal or disturbance of existing mailboxes, install the mailboxes temporarily as directed by the Postmaster. Reinstall mailboxes at Postmaster-approved locations. Use existing posts and materials except when they conflict with these Standards.

STR-20 RETAINING WALLS AND ROCKERIES

STR-20.1 Requirements

Rock walls constructed against cuts over 8 feet high and fills over four feet high must be designed by a geotechnical or other professional engineer qualified in rock wall design. Where rockeries cannot be constructed without significant foundation settlement or outward thrust upon the rockery, the City requires a structural wall, such as a reinforced concrete retaining wall. The design engineer must be a practicing geotechnical engineer licensed as a professional civil engineer in the State of Washington.

If the rock walls are constructed within the Public Right-of-Way and or Public Easements, the rock wall:

- Shall be placed a minimum distance of 18-inches from the back of the sidewalk. If the distance is less than the required minimum distance, then the request shall be made in writing to the Public Works Director.

- Will required an Encroachment Agreement, per the Anacortes Municipal Code Section 12.30.020.

STR-20.2 Construction

Rockery and wall construction must comply with these Standards and the geotechnical engineer’s supplemental recommendations. The design engineer must monitor and verify in a written report to the City that the rockery was professionally constructed of suitable materials in conformance with these Standards and with his/her supplemental recommendations.

Slopes above rockeries should be as flat as possible, but must not exceed 2:1 (Horizontal:Vertical) unless the design specifically provides restraint to the load imposed by the slope. Hydroseed slopes with a deep root, rapid growth vegetative mat and mulch to help reduce the potential for erosion.

STR-21 ASPHALT

For New Development and Redevelopment, each project will be required to implement Low Impact Development Guidelines.

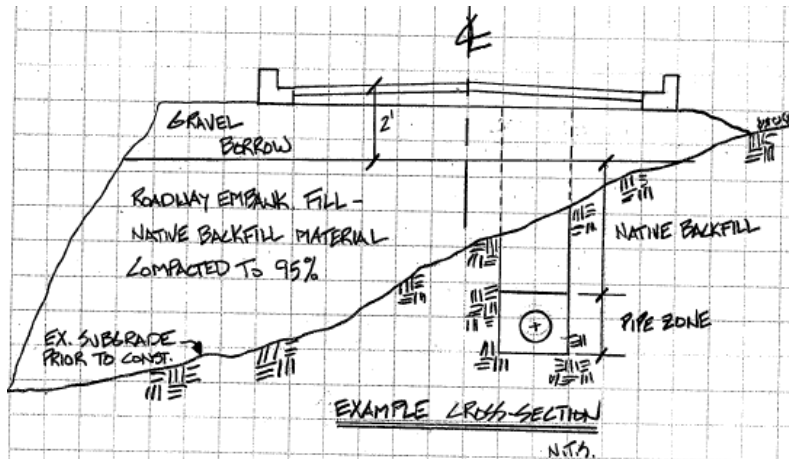
Refer to WSDOT GSP’s for specifications regarding pervious asphalt.

Use Asphalt Class HMA CL. ½-inch PG64-22 for all street and related construction.

See Appendix (A) INSP-05 - Right-of-Way Testing and Inspection Practice.

STR-22 ROADWAY EMBANKMENT

Road embankment fill soil must be compacted to 95 percent of maximum density as determined by ASTM D1557 modified proctor, resulting in a firm and unyielding surface. Road embankment soil to 2 feet below finish grade must be gravel borrow conforming to Backfilling WSDOT/APWA Specifications 9-03.14. Utility trench backfill within Right-of-Way must conform to 7-08.3(3) except that the top two feet to sub-grade must be gravel borrow conforming to WSDOT/APWA Specifications 9-03.19.



STR-23 PAVEMENT MARKINGS

Pavement markings must be reflectorized, hot applied or cold applied thermoplastic, conforming to WSDOT/APWA Specifications 8-22.

STR-24 SIGNS

All Signs	Public Works Operations division approval required Conform to the M.U.T.C.D. Diamond grade
Stop signs	Minimum 30 inches wide and high.
Street name signs	6 inch capital letters Centered in top cap brackets on the post 9 inch flat blades
Posts	2 inches square Perforated 14-gauge steel. Installed in 14 gauge galvanized sleeve, 30 inches deep, 2¼ inches square

STR-25 SURVEY MONUMENTS**STR-25.1 New**

See WSDOT Standard Plans H-6 through H-7 for survey monument installation requirements. Surface monuments are not allowed. Set a monument, case, and cover for all points of curvature (PT), points of tangent (PT), center of cul-de-sac, and points of intersection (PI), except on plat road curves when the PI falls within the paved roadway or walkway, the PI monument alone is acceptable.

STR-25.2 Disturbing a Survey Monument

Refer to the RCW 58.04.015 for penalties and cost.

STR-25.3 Monuments disturbed by construction activities

Refer to the RCW 58.09.130 for procedures and requirements

STR-26 STREET CUTS

Approval of a Right-of-Way Permit to cut the street is conditioned on:

- A. See AMC Chapter 12.08 – Street Excavation Permit Requirement
- B. Purpose for the cut.
- C. Pavement condition.
- D. Future street improvement plans.
- E. Traffic volume.
- F. Cut location in relation to the traveled portion of the street.
- G. Evaluation of less damaging alternatives.

Street cuts are generally not allowed for the purpose of exploring utilities locations.

Street cuts must comply with WSDOT/APWA Specifications and the Anacortes Municipal Code.

For temporary overnight restoration of street cut trenches on high-volume streets and intersections, install a cold mix asphalt-treated base or steel plates.

The City may require controlled density backfill when compaction will be difficult, in arterial streets, and when existing asphalt is unblemished.

See WSDOT/APWA Specifications 5-04 for tack coat applications at the edge of the saw cuts. Seal cold joints with AR 4000W paving asphalt or equivalent.

Restore asphalt within three days of cutting. Asphalt patches must be 3 inches deep minimum. The restoration must be no less than 4 feet wide with at least 1 foot on each side of the trench. Restorations adjacent to existing curb or roadway edge must extend to the lip of the gutter or roadway edge. The width of the restoration must be sufficient to prevent isolated sections of pavement or a patch within a patch, even when that would require removing and reconstructing adjacent sections. Street cuts permitted within 5 years of a significant asphalt improvement may require lane width or full street width restoration overlays.

The City may require a wider area of restoration to repair construction-damaged asphalt or to correct other problems discovered during construction.

Asphalt surface smoothness of the restoration must comply with WSDOT/APWA Specifications 5-04.3(13) and the top or wearing course of the asphalt patch must be as nearly continuous as possible. Joints must comply with WSDOT/APWA Specifications 5-04.3(11).

STR-26.1 Inclimate Weather – Temporary Repair

The WSDOT Specifications do not allow for asphalt paving between the months of October to November. During this period, Street Cuts can be issued with the following criteria:

1. Cold mix asphalt is used as the temporary asphalt surface layer.
2. A Performance Bond is provided to the City of Anacortes that is the cost of repair (See AMC 12.08) x 150%.
3. The Contractor is responsible for all maintenance and repair during this period.

STR-27 CITY-OWNED UNDERGROUND CONDUIT AND VAULT REQUIREMENTS

The contractor must obtain a Right-of-Way Permit to install underground conduit in the right-of-way. See AMC Chapter 12.08 – Street Excavation Permit Requirement

Install 18-30 inches deep within and parallel to the right-of-way.

4-inch diameter solid wall polyvinyl chloride (PVC) pipe conduit conforming to ASTM D 3034 SDR 35. Installation under roads and high-traffic locations, i.e., parking lots, require Schedule 80 PVC pipe.

Maximum 500 feet long conduit between junction boxes/vaults.

Joints must conform to ASTM D 3212 using elastomeric gaskets conforming to ASTM F 477.

Conduit ends terminate at Type II junction boxes conforming to WSDOT Standard Plans J-11a. or other approved underground vault equivalent to 466-TA Splicing Vault (Utility Vault Co. (800) 839-3500) with inside dimensions of 3'-5"W X 5'-5"L X 5'-1¾"D.

The contractor must submit conduit and vault as-built drawings showing the right-of-way and property corners, offset dimensions, depth of installation, conduit diameter, and size and type of junction box/vault.

Mark conduit with detectable orange colored marking tape or wire prominently labeled "Caution Telephone CATV."

STR-28 PROPERTY ACCESS

STR-28.1 Driveways

Driveway Standards Measured Curb to Curb		
Minimum to Property Line	8 feet	
Minimum Between Driveways	30 feet	
Minimum Tangent Curb Length to Intersection	50 feet	
*Maximum Width at Street	20 feet Residential	30 feet **Commercial
Right Turn Only at Signalized Intersections	≤ 250 feet Arterials	≤ 125 feet Collectors
Right-In-Right-Out Only	When Safety Warrants	

* Driveway cuts in sidewalk required

** Unless topography or traffic volumes require wider.

STR-28.2 Parking Lots

Plan cross access and unified circulation with adjacent parking lots.

STR-29 PARKING LAYOUT STANDARD

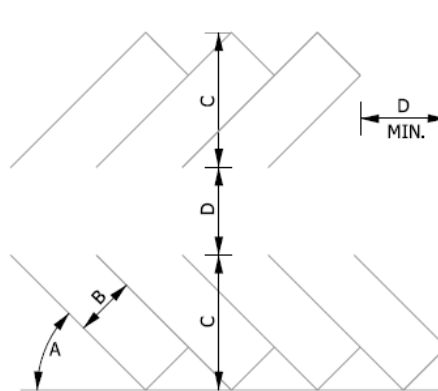
Parking Dimensions:

A	B	C	D	E	F (2)
Angle	Stall Width	Stall to Curb	Aisle Width	Curb Length	Overhang
0	9	9	12	23	0
20	9	15	11	26.3	0.5
30	9	18	11	18	1
40	9	19	12	14	1
45	9	20	13	12.7	1.5
50	9	20	16	11.7	1.5
60	9	21	18	10.4	1.5
70	9	21	19	9.6	1.5
80	9	20	24	9.1	1.5
90	9	19	24	9	1.5

(1) On-site (Private) parking is referenced under Chapter 17.46 of the Anacortes Municipal Code.

- (2) Overhang may be utilized to reduce parking space length if a solid curb is installed and the overhang area is landscaped with plant material that does not exceed 12-inches in mature height. If an attached sidewalk and curb are proposed as a wheel stop, the sidewalk must be the minimum required sidewalk width (5-feet, see also section STR-11 for additional sidewalk width requirements per Zone) plus the overhang width.

Typical Parking Layout



Accessible parking spaces: The width of accessible parking spaces shall be a minimum of eight (8) feet. Access aisles adjacent to accessible spaces shall be a minimum of five (5) feet wide, except as provided as follows: one in every eight (8) accessible space, but not less than one (1), shall be served by an accessible aisle eight (8) feet wide minimum and shall be designated “Van Accessible”. All accessible parking spaces shall be designated as reserved by a sign showing the symbol of accessibility. Spaces designed with eight (8) foot wide accessible aisle shall have an additional sign “Van Accessible” mounted below the symbol of accessibility. Such signs shall be located so they cannot be obscured by a vehicle parked in the space.

Small Car Spaces: The minimum width of 8.5 feet and 16 feet deep. The above dimensions can be appropriately reduced for small care spaces.

STR-30 TRAFFIC IMPACT ANALYSIS GUIDELINES

A traffic impact analysis is a study which assesses the effects that a particular development’s traffic will have on the transportation network in the community. These studies vary in their range of detail and complexity depending on the type, size and location of the development. Traffic impact studies should accompany developments which have the potential to impact the transportation network. They are important in assisting the City to make land use decisions. These studies can be used to help evaluate whether the development is appropriate for a site and what type of transportation improvements may be necessary.

Traffic Analyses help Anacortes to:

- Forecast additional traffic associated with new development, based on accepted practices
- Determine the improvements that are necessary to accommodate the new development.
- Assist in land use decision making.

- Assist in allocating scarce resources to areas which need improvements.
- Identify potential problems with the proposed development which may influence the developer's decision to pursue it.
- Allow the community to assess the impacts that a proposed development may have.
- Help to ensure safe and reasonable traffic conditions on streets after the development is complete.
- Reduce the negative impacts created by developments by helping to ensure that the transportation network can accommodate the development.
- Provide direction to community decision makers of expected impacts.
- Protect the substantial community investment in the street system.

Prior to preparing a Traffic Impact Analysis, the developer and design engineer should schedule a meeting with the City's Development Review Group, at 360.293.1901, to discuss requirements specific to the project.

Any Traffic Impact Analysis performed along the Oakes Avenue/12th Street/Commercial Avenue to SR20 corridors are required to incorporate these additional design parameters into the analysis;

- Review both AM/PM volumes for peak hour traffic volumes and use the result that identifies the greatest impact to the Level of Service (LOS) of all intersections impacted.
- Incorporate a ferry surge to the peak hour traffic volume as there are ferry surges several times a day that impact this corridor.

A traffic impact analysis shall include, but not limited to:

1. Project Information

- Vicinity map
- Site Plan
- Project Description
- Number of development-generated peak hour trips
- Existing land use on site
- Proposed land use on site
- Anticipated phasing of the project

2. Existing Conditions

- Identify streets, intersections, pedestrian and transit facilities affected by development-generated traffic.
- Obtain 3-year accident history at key intersections; identify accident trends.
- Diagram existing lines of sight and turning movements for affected intersections; identify sight distance problems.
- Provide traffic volumes at key intersections using field counts and the pipeline model.

3. Future Conditions

- Forecast future conditions using pipeline model and future volume predictions.
- Future conditions without project:
 - Diagram future lines of sight and turning movements at affected intersections.
- Future conditions with project:
 - Diagram future lines of sight and turning movements at affected intersections.
 - Show net new, development-generated peak hour trips, including direction, and distribution.
 - Show distribution on streets and intersections having five or more weekday p.m. peak-hour trips.
 - Identify pedestrian safety issues.

4. Proposed Mitigation

- Summarize the proposed improvements to mitigate traffic impact.

Levels of Analysis for Traffic Impacts

The following guidelines are provided to determine the size of the area to study for a traffic impact analysis and the detail of the analysis that will be required. There are three levels of analysis each having an increasing level of detail. Keep in mind that a particular development may have unique traffic issues which could require further study. City staff or WSDOT, in the case of State Highway impacts, may require a higher level of analysis or the submittal of additional information.

Level One:

Level One, is for small commercial or residential developments, or additions to existing developments, creating less than 10 peak hour trips (AM, PM, or Mid-day whichever is greatest).

Placement and design of internal (on site) features such as parking layout, access to public streets, site circulation, intersection sight distance, pedestrian circulation, delivery and loading areas and internal public street layout.

Level Two:

Level Two applies to small to medium sized residential and commercial developments, or additions to existing developments, creating between 10 and 75 additional peak hour trips (AM, PM, or Mid-day whichever is greatest).

On site analysis (Level One) plus the impact of the development and its traffic on adjacent and affected area streets, impacted intersections, adjoining developments, pedestrians and public transit facilities. The project analysis will include those facilities as designated by Staff.

Level Three:

Level Three applies to larger sized residential and commercial developments, or additions to existing developments, creating over 75 additional peak hour trips (AM, PM, or Mid-day whichever is greatest).

On site analysis (Level One) plus project area analysis (Level Two) plus the impact of the proposed development on a larger study area and the street and highway system that is being impacted by the addition or improvement of arterial streets and by other large developments in the study area.

**APPENDIX A:
STANDARD STREET PLAN NOTES**

<u>Description:</u>	<u>Page:</u>
1. ASPHALT CONSTRUCTION NOTES	STR-23
2. CONCRETE CONSTRUCTION NOTES	STR-24
3. CONCRETE WORKMANSHIP AESTHETIC POLICY	STR-25
4. GENERAL NOTES	STR-26
5. RIGHT-OF-WAY TESTING PRACTICE	STR-30

The standard plan notes must be included on all plans. At the applicant's discretion, notes which in no way apply to the project may be omitted; however, the remaining notes must not be renumbered. For example, if General note C were omitted, the remaining notes should be numbered A, B, D, E, F, etc.

ASPHALT CONSTRUCTION: See Section 5-05 and Section 9 of the Current WSDOT Specification for Road, Bridge and Municipal Construction.

For New Development and Redevelopment, each project will be required to implement Low Impact Development Guidelines where applicable.

- A. All asphalt to be removed must be saw cut. A jackhammer can be used if a nice even cut is made. Wheel cutting is not an approved method unless approved by the City of Anacortes Engineer in advance. Any deviation from this specification shall be in writing 48-hours before saw cutting takes place.
- B. Additional asphalt may be required for removal by the City of Anacortes Engineer or Inspector.
- C. All vertical drop-offs within the traveled way will be backfilled each night.
- D. Abutting edges and curbs must be thoroughly cleaned
- E. All asphalt edging will be tacked prior to asphaltting.
- F. All asphalt patches must be a smooth transition. No bumps or high/low spots (Section 5-04.3(13)). Surface smoothness maximum variation in 10-feet parallel to the centerline is 1/8" and transverse 1/4".
- G. Sub grade will be compacted and tested prior to asphaltting.
- H. A minimum of 3-inch HMA patch to be compacted to 92% max rice density (Section 5-04.3(10)B).
- I. All final joints and saw cuts to be sealed (Section 5-05.3(8)B) using a hot poured joint sealant (Section 9-04.2(1)). A preferred sealant is AR-4000.
- J. In areas where asphalt has been removed and CDF is in the trench curing, a steel plate is required for cover while it is curing. Provide asphalt around steel plate to prevent the plate from rattling. The Contractor will be called out at anytime to correct any rattling that provides complaints.
- K. On Commercial Avenue where local businesses are affected, no asphaltting will happen in the lane of travel. Work will proceed before or after business hours.
- L. On major streets where traffic congestion is a problem, the patch will be protected with a 1/4 inch steel plate until sufficiently cooled.

The standard plan notes must be included on all plans. At the applicant's discretion, notes which in no way apply to the project may be omitted; however, the remaining notes must not be renumbered. For example, if General note C were omitted, the remaining notes should be numbered A, B, D, E, F, etc.

CONCRETE CONSTRUCTION:

Section 8-04 and 8-14 of the current WSDOT Specification for Road, Bridge and Municipal Construction.

For New Development and Redevelopment, each project will be required to implement Low Impact Development Guidelines where applicable.

- A. Call for a forms inspection before placing of concrete. Call 360.299.1951 to schedule.
- B. No monolithic pours allowed per the City of Anacortes City Engineer. In other words, the sidewalk, curb & gutter, driveways, driveway aprons, wheelchair ramps, etc. are to be individual pours and separated by a fabric expansion joint.
- C. Protecting the concrete is the responsibility of the contractor. No graffiti, footprints, finishing blemishes or other objectionable marks allowed. If any of this takes place, the section that is damaged will be replaced.
- D. Concrete shall be a 5.5 sack mix with a 28-day strength of 3000 psi. Any deviation from this specification shall be in writing 48-hours before concrete is placed.
- E. The pan and wings shall be stamped. The use of 1-inch construction fencing acceptable. Rolling is not an option.
- F. During the first 14-days of curing, the contractor must protect from freezing.

Curb/Gutter and Sidewalk Workmanship and Aesthetics

1. Curb/Gutter and sidewalk construction shall follow a true and uniform horizontal and vertical alignment.
2. The vertical and horizontal surfaces shall be a smooth broom finish with no detectable finishing blemishes, undulations, ripples, swells, waves, ruts, furrows, graffiti or other objectionable marks. The end result shall be a neat and professionally finished appearance.
3. The edge finish adjacent to the expansion joint material shall be clean and free of excess slurry. The expansion joint material shall be trimmed to a level even with the adjacent concrete resulting in a neat and professionally finished appearance.
4. The City Engineer, in his sole discretion reserves the authority to order the removal of sections of curb/gutter and sidewalk that do not meet the workmanship and aesthetic standards of the City of Anacortes.
5. Sections of newly constructed curb/gutter and sidewalk, that exhibit cracking following curing, shall be subject to removal and replacement.
 - Cracking resulting from sub-base failure or construction site damage shall be immediately removed and replaced to the nearest expansion joint.
 - Minor hair line stress cracks may, at the discretion of the Project Manager, be monitored and re-evaluated for possible removal at the end of the maintenance period.

The standard plan notes must be included on all plans. At the applicant's discretion, notes which in no way apply to the project may be omitted; however, the remaining notes must not be renumbered. For example, if General note C were omitted, the remaining notes should be numbered A, B, D, E, F, etc.

1. WORK HOURS:

The City of Anacortes Ordinance allows work from 7:00 A.M. to 10:00 P.M, seven days a week (COA Ord. #2316). Someone in charge to be on site at all times when work is in progress. If work is done on weekends, please inform the Project Manager so the City of Anacortes can have an Inspector on site. Contractor will be billed for City of Anacortes Overtime.

2. CALL 48-HOURS BEFORE THE FOLLOWING:

For Inspection contact 360.299.1951.

- A. Prior to work start-up
- B. Prior to any utility construction in the right of way.
- C. Prior to pouring cast-in-place concrete structures.
- D. Prior to placing any crushed rock on roadway sub grade.
- E. Prior to placing curb, gutters and sidewalks.
- F. Prior to asphalt paving.

3. MATERIALS AND WORKMANSHIP:

- A. All materials used, must meet WSDOT, APWA and City of Anacortes specifications.
- B. All **(Add: work and)** materials that does **(Delete: does and add do)** not meet the above specifications must be removed as directed by the Project Inspector.
- C. **SUBGRADE COMPACTION TESTS:** Will be done before any C.S.B.C is put in place, all trenches will be tested for compaction. The Material Testing Lab needs **24-HOUR NOTICE**. Use the testing protocol provided by the City. Items to be compaction tested will include the pipe bedding (Section 7-08.3(1)C), Backfill (Section 7-08.3(3) and sub grade for surfacing (Section 2-06.3(2)) and asphalt (Section 5-04.3(10)B).
- D. **INSPECTION:** All aspects of this project will be inspected including piping, backfill, sub grade, concrete and asphalt, as well as forms, curb, gutter and sidewalk. If a portion gets backfilled before inspection, the contractor will dig up that portion for inspection. **24-HOUR NOTICE REQUIRED**. Know the schedule and let the City know.
- E. **TESTING PROTOCOL:** Prior to construction, a proctor and sieve analysis shall be submitted, reviewed and approved by the City of Anacortes on all material used in the Right-of-Way. See the City of Anacortes Testing Schedule.

- F. All compaction test shall be approved by the City of Anacortes Engineer and Project Manager prior to placing of crushed surfacing, asphalt, curb, gutter, sidewalk (Including trench restoration when test may be required in each lift).
- G. City of Anacortes may require additional tests on sub grade, trenches, concrete, or asphalt. The costs of testing shall be paid for as indicated in the contract documents.

4. TRAFFIC CONTROL AND PUBLIC SAFETY:

- A. **FLAGGING:** All flaggers must have Flagging Certificates and must have attended a flagging course or an off duty police officer is required. The job will be shut down if any uncertified people are flagging. A stop work order will be given and work will not proceed until a certified person is flagging.
- B. **SIGNAGE:** All signage must be per the Manual Uniform Traffic Devices. Before job is to begin, proper signage will be in place with flaggers in place if needed. Extra signage may be needed. Be ready to rent signs if needed.
- C. **TRAFFIC CONTROL PLAN:** Needs to be submitted and approved by the Assistant City Engineer prior to Construction start. Traffic Control plan shall include the location of signage, flaggers, work zone, safe zone, and traffic flow and needed dimensions. **No Detours Allowed** without approval from the Assistant City Engineer.
- D. **FOR STREET CLOSURE:** Call 911.
- E. **CONSTRUCTION SAFETY:** is the responsibility of the contractor.

5. ROADWAY EMBANKMENT AND SUBGRADE CONSTRUCTION:

- A. Crushed Surfacing shall be compacted to 95% of maximum density. No recycled material allowed.
- B. Embankment and sub grade must be compacted to 95% of maximum density.
- C. Proper moisture must be maintained throughout placing and compacting.
- D. Compaction testing to be performed by an independent lab. Use a "Modified Proctor".

6. TRENCHES IN DEVELOPED RIGHT-OF-WAY:

See City of Anacortes Standard Construction Details and Section 7 of the current WSDOT Specifications for Road, Bridge and Municipal Construction.

- A. Pipe zone shall be compacted to 90% of maximum density.
- B. Trench zone shall be compacted to 95% of maximum density in 12-inch lifts.
- C. Crushed Surfacing shall be compacted to 95% of maximum density. No recycled material allowed.

7. DRAINAGE SYSTEM CONSTRUCTION:

- A. Any permanent flow control facility used as a temporary settling basin shall be modified with the necessary erosion control measures and shall provide adequate storage capacity. If the facility is to function as an infiltration system, the temporary facility must be graded so that the bottom and sides are at least three (3) feet above the final grade of the permanent facility.
- B. Overflows, spillways, gravel filter windows, must be constructed per plans and specifications. No Deviations. As-built for verification required.
- C. Quarry rock must be sound "hard" durable rock. No recycled material.
- D. Grass lined swale shall be constructed per the details provided. No Deviation allowed. All swales must be operational before acceptance.
- E. Catch Basins must be set to line grade using no more than two (2) adjustment bricks.
- F. Minimum 1-foot separation between pipes in Type II Catch Basins.

8. RESTORATION OF RIGHT-OF-WAY:

- A. Contractor must leave the right-of-way, equal to existing or better condition
- B. Place compacted topsoil (Section 9-14.1(1), (2) and (3)) and seed all areas disturbed by excavation. (Section 9-14.2).
- C. All drainage systems must be fully cleaned, restored and operational before final acceptance. (Section 7-07.3).

11. FINAL INSPECTION AND ACCEPTANCE:

See Section 1-05.11 and Section 1-08.5)

- A. When Contractor has completed all of the work on the approved plans, the contractor will:
 - Complete the "Final Inspection Guidelines for Contractors Inspection Form".
 - Give the completed "Final Inspection Guidelines for Contractors Inspection Form" to the PW Inspector and request a site inspection. All site inspections are on Wednesdays between 9 am and 12 pm.
- B. The Project Manager, Engineer of Record, Inspector, Contractor and other City of Anacortes Departments will walk the site and create a punch list. The Contractor will complete the punch list and check off each item, then return it to the Inspector for reinspection. The Inspector will verify that items on walk through are completed.
- C. The City will not make the final inspection until the physical work required by the contract and approved plans, including final cleanup and all work ordered by the Project Manager, has been completed. (Section 1-05.11)
- D. Final approval of the project will not be granted until "as built" drawings (both digital and hard copy) have been received and approved by the Project Manager.

- E. The Contractor must furnish all documentation required by law, to allow the City of Anacortes to process final acceptance of the contract.

12. MISCELLANEOUS:

- A. **AS-BUILTS:** The Developer will supply to the City, one hard copy and one electronic file (AutoCAD Version 2002) of as-built drawings to include all City utilities. The as-built drawings will be submitted to the Project Manager at substantial completion for review and approval prior to the issuance of final project approval and acceptance.
- B. **UTILITY LOCATES NUMBER:** 1.800.424.5555. Required before starting any groundwork.

City of Anacortes Public Works Road Right-of-way Testing and Inspection Practice

Utility Trenches:

Compaction Testing

Perform at least 2 compaction tests (ASTM D 2922 nuclear method) per 100 lineal feet of trench, one at sub-grade level, one at 50% of the trench depth if a hoe-pack is used for compaction. In addition, test all road crossings at sub-grade and 50% depth. If walk-behind compaction equipment is used (i.e. jumping jack) test each 12" of depth.

Trench backfill should be compacted to at least 95% of the maximum dry density according to the modified proctor (ASTM D 1557). Fill should be placed in horizontal lifts not to exceed 12 inches of loose thickness and follow WSDOT 7-08.3(3) specifications (2002).

Using a loaded, 10 yard gravel truck, proof roll the trench lines to verify that a firm and unyielding condition prevails over the entire length of the trenches at the road sub-grade elevation.

Sieve analysis of backfill material

Sample the imported fill material for sieve analysis prior to trench backfilling at a minimum interval of one sample per day of operation.

Sample of materials to be used shall be submitted prior to construction to determine conformance to WSDOT specifications 9-03.12(3) for pipe zone material, 9-03.19 for trench backfill and 9-03.9 for Aggregates for Ballast and Crushed Surfacing.

Samples should be taken from material delivered to the site.

Road Sections:

Proof Rolling

Prior to placing structural fill for the road section, testing lab and city engineer representatives should observe a proof roll of the undisturbed native sub-base using a loaded dump truck (15 ton minimum certified by load ticket). In areas of significant pumping and yielding, scarify, aerate and re-compact existing materials (WSDOT 2-06). If loose native soil conditions prevail, over-excavate the deleterious material to the satisfaction of testing lab representative and city engineer. After 18" of over-excavation, place a woven structural geo-textile fabric that is equivalent to or better than a Mirafi 500x product. Backfill over-excavated areas with clean (<7% fines) structural fill compacted to 95% of the maximum dry density (ASTM D 1557).

Once the entire road section is placed and prior to paving, testing lab representative should observe a proof roll of the sub-grade to ensure that there are no yielding or pumping areas.

Compaction Testing for Road Sections:

Granular and crushed aggregate

Roadbed fill materials should be compacted to 95% of the maximum dry density (ATSM D 1557) and verified with the nuclear method (ATSM D 2922).

For every lift placed in the roadway, compaction testing should occur twice per 100 linear feet, one on either side of the centerline at locations determined by city engineer representative.

Fill material unable to be tested by the nuclear method, such as rock fills, should be tested by a loaded, 10 yard dump truck proof roll.

Asphaltic Concrete Pavement

Prior to placement of pavement, the city shall make a determination of sub-grade acceptance based upon test results and the observations of a firm and unyielding surface. The city shall also establish test area boundaries. The contractor shall supply the city with a mix design including values for the theoretical maximum density of the asphalt being used on the project.

Specification for minimum allowable density for asphalt is 92% of the theoretical maximum density.

The point of acceptance is when the asphalt reaches 175 degrees f.

When the contractor indicates that the pavement is ready for acceptance or it reaches 175 degrees f., whichever is sooner, the city shall supervise 5 nuclear densometer readings at random locations within every test area. A test area shall not exceed 200 tons of asphalt, however, smaller areas may be determined, such as cul-de-sacs may be singled out as a test area or individual streets within a street network may be singled out as test areas, even though these areas would be less than 200 tons.

The results of the densometer readings for each test area shall be evaluated and the average applied to the entire test area. If the average is below minimum, the owner may request core tests to be taken at his expense and at locations determined by city personnel, within 24 hours of the final paving of the test area. Five core tests shall be taken for each test area and the results evaluated and the average applied to the whole test area.

If the pavement is below minimum compaction subsequent to the final testing procedures, the owner may increase depth of the final lift of asphalt as directed by the city engineer, or provide payment to the city as directed by the city engineer.

All isolated areas within test areas that fall below 88.0% shall be subject to extensive testing and subsequent removal of the asphalt, unless otherwise directed by the city engineer.

The use of a correction factor to correct density readings obtained from the nuclear densometer is acceptable upon authorization by the city engineer in the following instances: 1) first lift overlays on existing pavement; 2) first course over granular material.

TESTING AND INSPECTION SUMMARY:**Testing Frequency**

<u>Work phase</u>	<u>Frequency of Testing/Inspection</u>	<u>Required Results</u>
Trench back filling	2 tests every 100 feet of trench, at sub-grade and 50% of fill depth or below top of trench at time of test	95%
Roadbed materials	2 test every 100 feet of roadway, one for each side of centerline	95%
Asphalt	5 test per 200 tons	92%

Roadway Sections

<u>Work phase</u>	<u>Frequency of Testing/Inspection</u>	<u>Required Results</u>
Native roadway Sub-base	1 proof roll of undisturbed native soil prior to placing fill, but after stripping of overburden.	No yielding or deflection
Roadbed fill materials	2 test every 100 feet of roadway, one for each side of centerline	95%
	1 proof roll at sub grade elevation prior to paving.	No yielding or deflection
Trench backfill	2 tests every 100 feet of trench, at sub-grade and 50% of fill depth or below top of trench at time of test	95%
	1 proof roll of trench lines after completion of backfill and compaction	No yielding or deflection

Laboratory Analysis

<u>Work phase</u>	<u>Frequency of Testing/Inspection</u>	<u>Required Result</u>
Trench backfilling	1 gradation prior to backfilling, a minimum of one per day of work. 1 proctor prior to backfilling	To design Spec's
Roadbed fill materials	1 gradation prior to filling, a minimum of one per day. 1 proctor prior to placing fill.	To design Spec's

Asphalt

1 rice density per day of paving,
1 extraction, fracture and gradation
for every 200 tons of asphalt place
in a day

To design
Spec's

GENERAL REQUIREMENTS:

All test reports shall be faxed to the City Engineer representatives (A copy each for the project manager and inspector) within 1 business day. Failing tests shall be noted and marked.

Testing Lab shall be WABO certified and under the supervision of a qualified registered Geologist or Engineer. All procedures shall meet ASTM and WSDOT/APWA Standards.

All sample locations shall be clearly indicated by project stationing and the depth in relationship to sub grade elevation.

Material sources, locations, sampling methods, dates, lab personnel, sample identifier, etc. shall be clearly indicated for each proctor or gradation. Each density test shall specifically indicate the reference standard for the test material.

Indicate the contractors intended or stated use of the material (ie, bedding, ballast, trench backfill, etc.)

APPENDIX B:
STREET STANDARD DRAWINGS

<u>Description:</u>	<u>Page:</u>
1. UTILITY TRENCH TYPICAL	ST-01
2. STRUCTURE ADJUSTMENT AND PERIMETER SEAL	ST-02
3. CURB AND GUTTER REPLACEMENT	ST-03
4. SIDEWALK BARRIER FREE ROUTE OF TRAVEL	ST-04
5. HAMMERHEAD TURN-AROUND	ST-05
6. SOLID WASTE CONTAINER PAD	ST-06