Street Standards

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CHAPTER 1 – INTRODUCTION

Chapter Organization

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1.1 TITLE

These regulations, along with all future amendments, shall be known as the City of Spokane Valley Street Standards (hereinafter called "Standards" or “Street Standards”).

1.2 INTENT AND PROVISIONS

These Standards apply to all capital and development projects within the City and, to the extent allowed by law, to those projects outside of City limits that impact City infrastructure or transportation systems.

The City’s review and approval of any plans, reports, or drawings, or the City’s inspection and approval of any improvements designed and constructed by the Applicant in accordance with these Standards, does not constitute a representation, warranty, or guarantee by the City that such improvements are free from defects or will operate adequately for the purpose intended.

These Standards pertain to planning, design, approval, construction, inspection, testing, maintenance and documentation of street improvements. The intent of this manual is to establish the minimum acceptable standards.

1.3 OBJECTIVES OF STREET STANDARDS

1.3.1 MINIMUM STANDARDS

These Standards shall be the minimum standards necessary for design and construction of all street-related and some onsite private improvements in the City. Special situations, as determined by the City, may require different facilities and/or standards. For items not covered by these Standards, the City may require the use of other standards as referenced in Section 1.9.

It is incumbent upon the Applicant’s engineer to use good engineering practice and to be aware of, and implement, new design practices and procedures that reflect current techniques in civil engineering. Good engineering practice is defined in these Standards as professional and ethical conduct that meets the current codes and regulations adopted for engineers. The proposed design shall consider functionality, constructability, operation, and maintenance, including the health, safety and welfare of the public.

1.3.2 OBJECTIVES

It is the objective of these Standards to address the following:

- To provide for an efficient transportation system and improve local circulation and emergency access by providing connectivity between residential streets and arterials;
- To extend the functional life of the existing transportation systems and increase its safe and efficient operation;
- To ensure public facilities and services meet level of service standards as adopted in the Comprehensive Plan;

- To encourage the use of public streets in new development;
- To protect the public health, safety, environment, and welfare to the greatest extent possible resulting from construction, operation and maintenance activities within the public rights-of-way;
- To ensure the primary uses of the public rights-of-way are for bicycle, pedestrian and vehicular travel;
- To ensure the public rights-of-way are properly maintained;
- To protect the City's infrastructure investment by establishing standardized design, materials, construction, and repair criteria for all public improvements;
- To optimize the use of the limited physical capacity of public rights-of-way held by the City;
- To provide an efficient permit system that regulates and coordinates activities in an effective and safe manner;
- To protect private and public property from damages that could occur because of faulty design and construction; and,
- To provide criteria for inspection of public and private improvements, in order to ensure conformance with the approved plans, proper construction techniques, and to ensure that acceptable materials are used for the construction process of such public and/or private improvements.

1.4 DOCUMENT ORGANIZATION

These Standards are generally organized as described below:

- Chapter 2 describes typical project requirements;
- Chapter 3 describes traffic analysis requirements;
- Chapter 4 describes requirements for plan submittal;
- Chapter 5 describes requirements for clearing and grading;
- Chapter 6 describes requirements for utility work;
- Chapter 7 describes requirements for street design;
- Chapter 8 describes requirements for pavement design;
- Chapter 9 describes requirements for inspection and certification;
- Chapter 10 describes maintenance requirements; and,
- Chapter 11 provides the City's Standard Plans.

1.5 AMENDMENTS AND REVISIONS TO STANDARDS

The Street Standards may be periodically amended as necessary to provide additional clarity or to reflect changes in policy or in construction or engineering practice. Such revisions to these Standards may consist of either "policy" revisions or "technical" revisions.

The City will maintain an electronic file of these Standards. All updates and revisions will be available on the City web page or at the City Clerk's office.

1.5.1 POLICY REVISIONS

Policy revisions shall be considered major changes, changes in law and changes that will cause significant increased cost or controversy. Policy revisions also include those changes that relate to the public use and convenience, such as changes in standard street width.

Policy revisions require a public hearing process for their adoption and City Council approval.

1.5.2 TECHNICAL REVISIONS

Technical revisions shall consist of minor additions, clarifications, revisions, and corrections to the Street Standards and City standard plans as may be necessary to better conform to good engineering and/or construction standards and practice.

Technical revisions shall be:

a. Consistent with all existing policies relevant to the revision;

b. Necessary for the public's health, safety and welfare;

c. Needed to clarify these Standards; or,

d. Consistent with existing law.

Technical revisions shall become effective when approved in writing. If technical revisions are deemed necessary, the revisions may occur through either:

e. Planned periodic revisions; or

f. An accelerated process. If a technical revision is determined to be immediately necessary, then the change shall be made and notification given on the web page. Document holders on record with the City will be notified of the changes.

1.6 INTERPRETATION OF STANDARDS

In the interpretation and application of the provisions of the Street Standards, the following principles shall apply:

1.6.1 GOVERNING STANDARDS

Whenever a provision of the Street Standards or any provision in any law, ordinance, resolution, rule, or regulation of any kind contains restrictions covering

any of the same subject matter, the standards that are more restrictive or impose higher standards or requirements shall govern.

1.6.2 PRIOR ACCEPTANCE OF CONSTRUCTION PLANS

The Street Standards shall not modify or alter any street construction plans that have been filed with and accepted by the City prior to the effective date of the ordinance adopting the Street Standards. This exception shall be subject to the conditions and limitations under which said plans were accepted by the City.

1.7 REFERENCE MATERIAL

The Street Standards are supplemented by the current version of the "Washington State Department of Transportation/American Public Works Association (WSDOT/APWA) Standard Specifications for Road, Bridge and Municipal Construction.," The Street Standard Details are comprised of the City's construction and design detail drawings for grading, storm drainage, and street work within the City that are supplemented by the current version of the WSDOT "Standard Plans for Road, Bridge and Municipal Construction."

The current version of the following publications shall be used as additional reference material for design applications, when situations are not addressed by these Street Standards or WSDOT Standards. Every subsequent reference to one of these publications in the Street Standards shall be to the currently adopted version unless specifically stated to the contrary, whether stated or not. Other standard technical references may be used if approved by the City Engineer:

a. American Association of State Highway and Transportation Officials' (AASHTO) "A Policy on Geometric Design of Highways and Streets" (Green Book)
b. AASHTO Guide for the Development of Bicycle Facilities
c. AASHTO Standard Specifications for Highway Bridges
d. Americans with Disabilities Act (ADA)Accessibility Guidelines
e. American Society for Testing and Materials (ASTM)
f. Associated Rockery Contractors, Standard Rock Wall Construction Guidelines
g. City of Spokane Valley Municipal Code
h. Federal Highway Administration (FHWA) Engineering Circulars
i. Highway Capacity Manual
j. Institute of Transportation Engineers (ITE) Trip Generation Manual
k. International Fire Code adopted by the City of Spokane Valley
l. Washington Model Traffic Ordinance (Chapter 308-330 WAC)
m. Spokane County Standards for Road and Sewer Construction
n. Spokane Regional Stormwater Manual
o. U. S. Department of Transportation Manual on Uniform Traffic Control Devices, (MUTCD)
p. Washington Department of Ecology Stormwater Management Manual for Eastern Washington
q. Washington State Department of Transportation (WSDOT) Design Standards
r. WSDOT Guidelines for Urban Arterial Program
s. WSDOT Local Agency Guidelines

t. WSDOT Standard Specifications for Road, Bridge and Municipal Construction
u. WSDOT "Design Standards"
v. Design criteria of federal agencies including the Federal Housing Administration, Department of Housing and Urban Development; and the Federal Highway Administration, Department of Transportation

1.8 DESIGN DEVIATIONS

In special cases, strict application of Street Standards may not best address a particular engineering situation. In these cases, a design deviation may be requested. Design deviation requests shall be on the City's form and include applicable engineering justification for the deviation.

a. The Applicant shall request a design deviation when either of the following situations applies:
   i. The project proposes non-standard methods, analysis, design elements or materials; or,
   ii. The project proposes design elements above maximum criteria or below the minimum criteria found in these Standards.

b. A design deviation will only be considered for review if:
   i. The design elements proposed do not conflict with or modify a condition of approval; and,
   ii. The design elements proposed are based on sound engineering principles, and are not inconsistent with the public interest, and the City's goals and policies.

c. To request a design deviation, the Applicant shall submit a design deviation request and supporting documentation. The supporting documentation shall include sufficient information for the City to make a decision as to the adequacy of the proposal. The design deviation package shall demonstrate that:
   i. There are special physical circumstances or conditions affecting the property that may prohibit the application of some of the requirements of these standards;
   ii. Every effort has been made to find alternative ways to meet the objectives of the Street Standards;
   iii. Approving the design deviation will not cause adverse impact on down gradient or adjacent properties, public health or welfare; and,
   iv. Approving the design deviation will not adversely affect the goals and policies of: *the City's Comprehensive Plan*, *Spokane Valley Municipal Code*, *Street Master Plan*, and *Transportation Improvement Plan.*

1.9 ABBREVIATIONS

When the following abbreviations appear in these Standards, they shall mean the following:

AASHTO	American Association of State Highway and Transportation Officials
ADA	Americans with Disabilities Act
ADT	Average Daily Trips
APWA	American Public Works Association
ASA	American Standards Association
ASTM	American Society for Testing Materials
BMPs	Best Management Practices
CBR	California Bearing Ration
CC&Rs	Covenants, Codes and Restrictions
CESCL	Certified Erosion and Sediment Control Lead
CSBC	Crush surfacing base course
CSTC	Crush surfacing top course
Dbh	Diameter Breast Height
ESALs	Equivalent Single-Axle Loads
ESC	Erosion and Sediment Control
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FOP	Field Operating Procedure
GMA	Growth Management Area
HCM	Highway Capacity Manual
HMA	Hot Mix Asphalt
HOA	Homeowner's Association
IBC	International Building Code
IFC	International Fire Code
IRC	International Residential Code
ITE	Institute of Transportation Engineers
LOS	Level of Service
M_r	Resilient Modulus
MUTCD	Manual on Uniform Traffic Control Devices

O&M	Operations and Maintenance
PI	Point of Intersection
PC	Point of Curvature
PCR	Point of Curve Return
PE	Professional Engineer
PGIS	Pollution Generating Impervious Surfaces
PLS	Professional Land Surveyor
POA	Property Owner's Association
PT	Point of Tangency
RCW	Revised Code of Washington
SEPA	State Environmental Policy Act
SI	Street intersection
SR	State Route
SRSM	Spokane Regional Stormwater Manual
SRTC	Spokane Regional Transportation Council
SVMC	Spokane Valley Municipal Code
TESC	Temporary Erosion and Sedimentation Control
TIA	Traffic Impact Analysis
TIP	Transportation Improvement Program
USGS	United States Geological Survey
WAC	Washington Administrative Code
WAQTC	Western Alliance for Quality Transportation Construction
WSDOT	Washington State Department of Transportation

1.10 DEFINITIONS

For the purpose of these Street Standards, certain words and terms are herein defined. The word "shall" is always mandatory. The word "may" is permissive, subject to the judgment of the person administering the code.

These definitions take precedence over those found elsewhere in the SVMC. In the event a technical term is not listed below, definitions shall be taken from the WSDOT Design Manual.

Access Management: The concept of a public agency controlling the location of access points in order to achieve the dual purposes of providing access to individual land uses and limiting access on higher order streets in order to facilitate the smooth flow of traffic with a limited amount of impedance.

Applicant: The party or parties desiring to construct a public or private improvement or project within City rights-of-way, easements or private property, securing all required approvals and permits from the City, and assuming full and complete responsibility for the project. The Applicant may be the Developer or the individual designated by the Developer to act on his behalf.

Binding Site Plan: A division of land approved administratively by the Department of Community Development, which legally obligates a person making a proposal to conditions, standards or requirements specified by these Standards and the SVMC.

Border Easement: A dedicated easement on private property adjacent to public street right-of-way established for the purpose of utility, drainage facilities, pedestrian access or other public purpose.

Building Division: The Division at the City of Spokane Valley responsible for reviewing, issuing and certifying construction permits.

Builder: The party or parties desiring to construct a public or private project, which may include improvements, within the boundaries of the Applicant's project. Builder's project may include but not be limited to landscaping, paving, stormwater facilities, structures and installation of facilities or utilities to support the Builder's project.

Certificate of Occupancy: An official certificate issued by the City building official that indicates conformance with all applicable provisions of the SVMC and authorizes legal use of the premises for which it is issued.

Certification Package: A packet prepared by the Onsite Inspector including, but not limited to, Mylar record drawings, weekly reports, certification checklist and related construction documents, for review by the City to determine project acceptability.

City: City of Spokane Valley, Washington.

City Engineer -- The City Engineer or his duly authorized representative.

Clear Zone: A relatively flat area void of fixed objects or obstructions beyond the edge of the traveled way that allows drivers to stop safely or regain control of a vehicle that leaves the traveled way.

Clearing and grubbing: Includes, but is not limited to, removing trees, stumps, roots, brush, structures, abandoned utilities, trash, debris and all other materials found on or near the surface of the ground in the construction area.

Concurrency: A requirement that those public facilities and services necessary to support development shall be adequate to serve the development at the time the development is available for occupancy and use, without decreasing the current level of service below minimum standards adopted by the City**.**

Contractor: The individual, partnership, firm or organization to whom a construction contract has been awarded by the Applicant, or who has been issued a right-of-way work permit by the City, for work covered by the contract. Agents, employees, workers, subcontractors, or designers employed by the Contractor shall also be bound by the terms of the contract or permit.

Corner Clearance: At an intersecting street, the distance measured along the curb line from the projection of the intersecting street flowline to the nearest edge of the curb opening.

County: Spokane County.

Design Deviation: An administrative approval of design elements that do not conform to or are not explicitly addressed by these Standards.

Developer: Owner of the Project and/or Development. Owner may be an individual, corporation, government or governmental agency, business trust, estate, trust, partnership, association, or some combination of the foregoing.

Development: Any man-made change to improved or unimproved real estate including the division of land with potential for construction.

Development Agreement: The contract between the City and the Applicant that defines public improvement requirements, costs, and other related public improvement issues.

Development Inspector: A City employee, responsible for coordinating with the Onsite Inspector(s), reviewing and accepting certification packages and warranty sureties, and recommending public streets for establishment.

Driveway: Any area, improvement or facility between a public or private street and private property, which provides ingress/egress for vehicles from a public or private street to a lot or parcel or to a structure constructed on the lot or parcel, whichever is longer.

Driveway Approach: The transition at the end of a private street or driveway where it connects to a public or private street. For details, see standard plans.

Easement: A right to use the land of others. The right may be from the common law or may be acquired, usually by purchase or condemnation and occasionally by prescription or inverse condemnation. The right is not exclusive, but subject to rights of others in the same land, the lesser right being subservient to a prior right which is dominant. Easements for drainage may give rights to impound, divert, discharge or concentrate surface flow, extend pipelines, deposit silt, erode, scour, or any other necessary consequence of a development.

Engineered Driveways: Driveways, which due to their length, surface area or other situational factors, are required to be designed by a professional engineer.

Engineering – City Engineering Department

Fill: A deposit of earthen material placed by artificial means.

Fire Department: Fire district having jurisdiction.

Fire Lane: An access designated to accommodate emergency access to a parcel of land or its improvements.

Final Acceptance: The written notification from Engineering, after the City Engineer finds the Warranty Period to be satisfactorily completed, that all public improvements

are free of defects, and the City releases the Applicant from future maintenance obligations.

Frontage Improvements: Required improvements on public streets fronting the property which typically include pavement widening, curb, gutter, grassy swale, and sidewalk.

Grading: The physical manipulation of the earth's surface and/or surface drainage pattern which includes surcharging, preloading, contouring, cutting, and filling to establish final site grades.

Half-Street Improvements: The construction of frontage improvement on the street fronting the property or development, including paving from the street centerline, curb, gutter, swale or grassy strip, and sidewalk, plus a minimum of a 12-foot lane on the opposite side of centerline with a one-foot gravel shoulder and grassy ditch for stormwater treatment. The final pavement width shall be at least 28 feet.

Improvements: All public or private improvements within City rights-of-way, easements or private property. Development of a public or private street, typically including some or all of the following: pavements, curb, gutter, landscaped swale, sidewalk, drainage improvements.

Intersection Sight Distance: The distance necessary for the driver of a motor vehicle stopped at an intersection or driveway to see approaching vehicles, pedestrians, and bicyclists along the intersecting major street and have sufficient space to make any allowed move to cross the intersection or merge with traffic without causing vehicles, pedestrians, or bicyclists traveling at or near the design speed on the major street to slow down. The controlling distance for design is the longest distance, generally the distance necessary to merge with traffic.

Land Disturbing Activity: The result in a change in existing soil cover (vegetative or non-vegetative) or site topography. Land disturbing activities include, but are not limited to, demolition, construction, clearing and grubbing, grading and logging.

Level of Service (LOS): A measure of a public facility or service's operational characteristics used to gauge its performance.

Offsite Improvements: Construction of facilities located away from and up to a project site, necessary to serve the proposed development or to mitigate effects of the development.

Onsite Inspector: A qualified person or firm, hired by the Applicant or Owner, responsible for project inspection and certification.

Pollution Generating Impervious Surface (PGIS): Impervious surfaces that are significant sources of pollutants in stormwater runoff. Such surfaces include those that are subject to vehicular use, industrial activities, or storage of erodible or leachable materials that receive direct rainfall, or run-on or blow-in of rainfall. Metal roofs are considered to be PGIS unless coated with an inert, non-leachable material. Roofs that are subject to venting of manufacturing, commercial, or other indoor pollutants are also considered PGIS. A surface, whether paved or not, shall be considered PGIS if it is regularly used by motor vehicles. The following are considered regularly-used

surfaces: streets, non-vegetated street shoulders, bike lanes within the traveled lane of a street, driveways, parking lots, unfenced fire lanes, vehicular equipment storage yards, and airport runways.

Pre-Construction Meeting: A meeting between the Designer and assigned agents, the Onsite Inspector, and the Development Inspector to review proposed work necessary to construct the project, prior to proceeding with the work. A meeting may be required for each project, at the Development Inspector's discretion.

Private Street: A local access street that is privately owned and maintained by capable and legally responsible owner(s).

Professional Engineer (P.E.) (or Engineer): A civil engineer licensed in Washington under Chapter 18.43 RCW who is qualified by examination and/or experience to practice in the fields of civil, geotechnical and/or soils engineering.

Professional Land Surveyor (P.L.S.) (or Surveyor): A Washington licensed land surveyor.

Project: The public or private improvement(s) designated in the approved plans, which are to be constructed in conformance with these Standards. The term "Project" includes any and all public or private improvement projects for or within the City, whether development projects, private utility projects, or capital improvement projects.

Public Improvements: Public facilities to be located within the rights-of-way or border easement which include pavement, curb and gutter, sidewalk, pedestrian/bike/equestrian paths, storm drain facilities, bridges, water distribution or transmission facilities with related appurtenances, pavement markings, signage and striping, traffic signals and related appurtenances, erosion control and right-of-way grading, or earth excavation processes integral to construction of other public improvements listed herein.

Punch list, Initial or Final: A written list of work items, compiled by the Onsite Inspector, which do not conform to these Standards, the plans or SVMC that govern the project and require correction prior to project approval.

Record Drawings: Original approved design drawings, updated by an engineer which depicts all modifications from the design that occurred during construction.

Redevelopment: Removal or modification of existing improvements and construction of new improvements or substantial remodeling.

Regional Pavement Cut Policy: A regional policy adopted by the City of Spokane Valley, City of Spokane, and Spokane County.

Rights-of-way (Also "public right-of-way"): The land area owned by the City which was obtained by acquisition or dedication for public use of streets, utilities, walks, and other uses, including providing access to adjoining properties.

Right-of-way Permit: A permit, with or without conditions specified by the City, which allows an Applicant to construct public or private improvements within the public rights-of-way or border easement.

Subdivision:

Long Subdivision: A division of land resulting in the creation of 10 or more lots.

Short Subdivision: A division of land resulting in the creation of nine or fewer lots.

Slope, Recoverable: A slope on which a motorist may retain or regain control of a vehicle by slowing or stopping. Slopes flatter than 4:1 are generally considered recoverable.

Slope, Non-recoverable: A slope considered being traversable but on which an errant vehicle continues to bottom. Embankment slopes between 3:1 and 4:1 may be considered traversable but non-recoverable if they are smooth and free of fixed objects.

Specifications: Construction and standards adopted by the City.

Speed – 85th Percentile: The speed at or below which 85% of the motorists drive on a given street unaffected by slower traffic or poor weather. This speed indicates the speed that most motorists on the street consider safe and reasonable under ideal conditions.

Street: A public or private way for vehicular travel, exclusive of the sidewalk or shoulder even though such sidewalk or shoulder is used by persons riding bicycles.

Street Classifications: The identification of a street according to different levels of emphasis on traffic movement versus direct access to property.

Surety: A financial instrument securing the Applicant's responsibility to complete construction of public or private improvements within an approved project. Surety shall also mean a financial instrument securing the Applicant’s obligations throughout the Warranty Period. Sureties approved by the City include cash, letters of credit and savings assignment.

Surety, Performance: A surety securing the Applicant’s responsibility to complete construction of public or private improvements within an approved project.

Surety, Warranty: A surety securing the Applicant’s obligations throughout the warranty period; required of projects in the public rights-of-way and border easements, guaranteeing against defects in street construction, utility work and/or drainage facilities.

Swale: A grassland percolation area designed to accept and treat storm runoff from impervious areas such as streets, driveways, sidewalks, parking lots, roofs, etc.

Traffic Calming Devices: Physical measures included in the design of streets that improve neighborhood livability by reducing the speed and impact of vehicular traffic on residential streets.

Travel Lane: The portion of the street intended for the movement of vehicles, exclusive of shoulders and lanes for parking.

Trip Generation and Distribution Letter (TGDL): A document, prepared by a professional civil engineer with experience in traffic, design and analysis that identifies

the amount of traffic anticipated to and from a development. The letter is reviewed to determine if a traffic impact analysis is required.

Traffic Impact Analysis (TIA): A study of the potential traffic impacts of a development on the transportation system.

Warranty Period: The period of time that the Applicant remains responsible for material and workmanship defects in the public improvements, which remains in effect until written notification is issued by the City. Warranty period is a minimum of two years.

Wheel Path: The three-foot wide portion of a travel lane, located on both sides of the travel lane and the two-foot wide portion from the center of the travel lane.

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CHAPTER 2 – DEVELOPMENT REQUIREMENTS

Chapter Organization

List of Tables

2.1 INTRODUCTION

This chapter sets forth specific requirements for development projects. These requirements are intended to supplement the general requirements of the chapter 22.130 SVMC, and are adopted pursuant to SVMC 22.130.040.

Required improvements and dedications shall be in compliance with all Chapters in these Street Standards.

2.2 APPLICABILITY

Projects reviewed and conditioned by the City fall within three general categories:

- Land divisions (short subdivisions, subdivisions and binding site plans);
- Commercial building permits; and,
- Miscellaneous projects which include access permits, boundary line adjustments, rezones, changes of use, changes of occupancy, temporary use permits, conditional use permits and residential projects with engineering concerns. In some instances, this last category of projects may not need a building permit. They may, however, result in an increase in traffic and other impacts that may require street improvements and other mitigation.

2.3 REQUIRED DEDICATIONS AND IMPROVEMENTS

This section describes the dedications and types of improvements that may be required pursuant to chapter 22.130 SVMC, RCW 35.63.080, RCW 35.63.090, RCW 35A.63.100, chapter 43.21C RCW; chapter 58.17 SVMC, and RCW 82.02.020.

Land divisions and development permits require dedications of public right-of-way, border easements, and construction of improvements. Other project types may also trigger these requirements. Specific requirements shall be determined during project review.

To determine the requirements for a project, the City considers the following:

a. Existing improvements, both onsite and offsite, such as curb, gutter, swale and sidewalk;

b. Any anticipated increase in traffic that would lead or contribute to an unacceptable level of service;

c. Connectivity of existing or future streets to better serve public and emergency vehicle mobility;

d. Street classification, as shown in the City's Comprehensive Plan;

e. The City's Six-year Transportation Improvement Program and any anticipated improvements in the project vicinity;

f. Public safety as affected by the project (i.e. pedestrian and vehicle safety, traffic flow, etc.);

g. Bike routes, pursuant to the City's Comprehensive Plan; and,

h. Environmental impacts as identified through applicable SEPA reviews related to street, sidewalk, drainage improvements, or traffic impacts.

2.3.1 TYPICAL REQUIREMENTS

Typical requirements for all projects, except for single-family dwellings, may include the following:

a. Design and construction of all new streets to provide adequate transportation service within a development;

b. Design and construction of fronting improvements on existing streets necessary to provide adequate transportation service to, or within, a development, as applicable (see Sections 2.3.2 and 2.3.3);

c. Adequate access for all parcels. Offsite streets used to access the project shall be improved to the applicable standard. Improvement shall extend from the nearest public street meeting the pavement width requirements, up to the project boundaries. Curb, gutter, and sidewalk may not be required for the offsite improvements unless they are made necessary by the proposed development. However, provisions for stormwater management pursuant to the *Spokane Regional Stormwater Manual* shall be required;

d. Dedications of right-of-way and border easements for full build-out of the project's side of all adjacent and interior public streets (Chapter 7);

e. Emergency access to all parcels of land, pursuant to City standards and the latest *International Fire Code*;

f. Driveway approaches pursuant to Chapter 7;

g. Relocation of rigid objects out of the clear zone more specifically set forth in Chapter 7;

h. Repair and replacement of damaged curb, gutter, swales/planters, sidewalk, survey monuments, etc. (Chapter 7);

i. Removal of abandoned or substandard approaches and replacement with frontage improvements (Chapter 7); and

j. Mitigations as determined by a traffic impact analysis, more specifically described in Chapter 3. Mitigations may include construction of or contributions to traffic calming devices, traffic signals, street lights, signing and/or pavement markings, etc.

2.3.2 SPECIFIC REQUIREMENTS FOR SHORT SUBDIVISIONS, LONG SUBDIVISIONS AND BINDING SITE PLANS

a. Short subdivisions, long subdivisions, and binding site plans shall provide fronting improvements along all public streets adjacent to the project where

access from the project is provided to the street. The extent of required improvements shall be based on existing conditions, the identified impact of the project or transportation improvement, and the applicable standard. Required improvements typically include pavement widening, curb, gutter, grassy swale and sidewalk.

b. All land division projects shall fully improve new internal streets.

c. If the existing fronting street is unimproved or will have less than 28 feet of pavement with fronting improvements, the Applicant shall provide half-street improvements as defined in Section 1.13. No Parking-Fire Lane signs shall be installed per the latest adopted International Fire Code. Curb, gutter, and sidewalk are only required on the side of the street adjacent to the project's parcel(s). Provisions for stormwater management are required for the sides of the street being improved (Chapter 7).

2.3.3 SPECIFIC REQUIREMENTS FOR COMMERCIAL BUILDING PERMITS

a. Fronting improvements for building permits are determined based on the type of project, square footage of the project, and peak hour vehicle trips. These projects shall provide improvements for the street fronting their projects pursuant to Table 2.1.

b. In the event that the street used to access the project is unimproved or has less than 28 feet of pavement, the Applicant shall provide fronting improvements and/or half-street improvements to meet the applicable standards regardless of the proposal type or size. In these instances, curb, gutter, and sidewalk requirements, for the side of the street adjacent to the project, shall be pursuant to Table 2.1. Provisions for stormwater management are required for the sides of the street being improved.

TABLE 2.1 REQUIRED STREET IMPROVEMENTS FOR COMMERCIAL BUILDING PERMITS

PROJECT PROPOSAL				
COMMERCIAL BUILDING PERMITS FOR PARCELS WITH EXISTING OR NEW BUILDING				
Gross Area of Building (for proposed additions or new structures) in sq. ft.; or,	Up to 999	1,000 to 5,999	6,000 to 11,999	12,000+
Number of New Peak Hour Trips Generated by Project	Up to 4	5 to 9	10 to 15	16+
COMMERCIAL BUILDING PERMIT FOR PARKING LOT ONLY (NO NEW OR EXISTING BUILDING)				
	Up to 9 spaces	10 to 19 spaces	20 to 40 spaces	41+ spaces
	REQUIRED IMPROVEMENTS			
Widen Pavement		✓(1)	✓	✓
Curb & Gutter		(2)	✓	✓
Grass Strip or Swale		✓	✓	✓
Sidewalk		(2)	(2)	✓
Right-of-way and Border Easements	✓(3)	✓	✓	✓

1. The final pavement width on the project's side of the street is the half-street width, plus six inches to allow for future curb installation. If the amount of pavement width needing to be added is less than two feet, then widening can be omitted unless the full width is less than 28 feet. Grassed ditches or swales are required along pavement edges required to be improved for stormwater treatment, regardless of amount of widening.
2. If a project is located in an area already improved to the requirements above, the project may be required to provide curb and gutter and/or sidewalk.
3. Not required if project is determined to have insignificant impact.

d. When using Table 2.1 for commercial building permits with existing or new buildings, the Applicant shall identify the size of building and number of peak hour vehicular trips. The one triggering the most improvement requirements shall be used. For example, an Applicant is proposing an addition to an existing building; the proposed addition is 3,000 square feet. The proposal also generates 10 peak hour vehicular trips. This project shall be required to provide frontage improvements which include pavement widening, curb and gutter installation, grass strip/swale construction, and right-of-way and border easement dedication. If the required improvements currently exist, then the project shall be required to provide sidewalk.

2.3.4 SPECIFIC REQUIREMENTS FOR MISCELLANEOUS PROJECTS

Miscellaneous projects include access permits, boundary line adjustments, rezones, changes of use, changes of occupancy, temporary use permits and conditional use permits. In some instances, this last category of projects may not need a building permit. They may, however, result in an increase in traffic and other impacts that may require street improvements and/or other mitigation.

Required improvements for change of use and conditional use permits are determined based on traffic impacts pursuant to chapter 22.20 SVMC. Required improvements for boundary line adjustments, rezones, changes of occupancy, and temporary use permits are determined on a case-by-case basis during project review pursuant to Section 2.3.

2.3.5 OTHER REQUIREMENTS

Additional improvements may be required on a case-by-case basis, depending on site-specific conditions. These requirements may include, but are not limited to, the following:

- Improvements previously required by the Spokane Valley City Council by ordinance, past land use action, or resolution, to be provided in the vicinity of the project;
- New streets (and accompanying dedications) as required by the *Street Master Plan,* and according to the City's Comprehensive Plan;
- Participation in the City's Transportation Improvement Program*;*
- Other public improvements when physical characteristics of the property (including but not limited to topography, slope, soil type, drainage pattern or vegetation) create potential hazards; and,
- Other public improvements necessitated by the public's health, safety, or welfare.

2.4 MODIFICATIONS TO REQUIREMENTS

2.4.1 DEFERRING CONSTRUCTION

Generally, all improvements shall be constructed prior to issuing a certificate of occupancy or final platting. In certain circumstances, installation of some or all of the frontage improvements may not be appropriate at the time development occurs. These may include instances where:

a. Required improvements are part of a larger project scheduled for construction in the City's Transportation Improvement Program; or,

b. Sanitary sewer is not available but is scheduled to come through in less than three years.

In these situations, the installation of such improvements may be deferred to a later date or waived. A development agreement may be required and a surety, as deemed sufficient by the City pursuant to Section 9.14.

2.4.2 LIMITING SITE CONDITIONS

Generally, all projects shall build public or private streets and related improvements to the applicable standard. However, the City may approve minor alterations to the requirements when full construction of the improvements is not possible. The Applicant shall demonstrate that full improvement construction is not possible and propose alternative(s). All such proposals shall be approved before the submittal of the preliminary plat application.

2.5 APPLICANT'S RESPONSIBILITIES

The Applicant is the party or parties desiring to construct a public or private improvement within City right-of-way, easements or private property, securing all required approvals and permits from the City, and assuming full and complete responsibility for the project. The Applicant may be the Owner or the individual designated by the Owner to act on his behalf. The Applicant is responsible for the following:

a. General project management;

b. Communicating requirements and project status with the Owner, if Applicant and Owner are not the same;

c. Coordinating project consultants;

d. Providing complete submittals;

e. Ensuring all required applications have been submitted to the City;

f. Ensuring adherence to:

   i. The standards and criteria presented in these Standards, as amended;

   ii. Hearing Examiner's decision and staff report with administrative decisions, if applicable; and,

   iii. Any conditions established by City staff.

CHAPTER 3 –TRAFFIC ANALYSIS

CHAPTER ORGANIZATION

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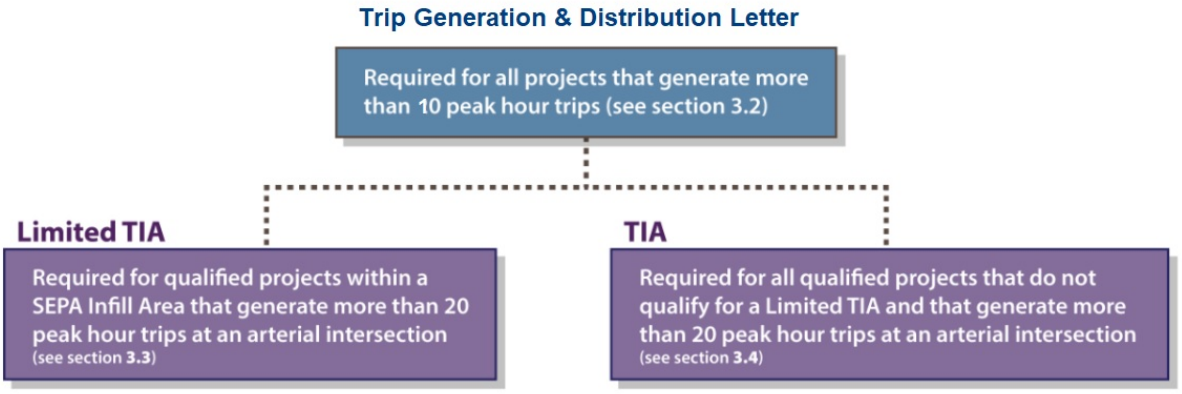
3.1 INTRODUCTION

This chapter describes the contents of the trip generation letter and traffic impact analysis (TIA) submittals. All projects except those exempt pursuant to SVMC 22.20.020 shall be subject to transportation concurrency review. This review is conducted to ensure that adequate transportation facilities are provided in conjunction with new growth. Transportation concurrency shall be measured using the concept of level of service (LOS). Acceptable LOS thresholds are defined in the Spokane Valley Comprehensive Plan.

This flowchart may be used to determine what type of transportation concurrency document is required. The City shall not sign off on a project until transportation concurrency has been determined.



The table below summarizes the mandatory scope elements for each type of analysis required by Spokane Valley:

Table 1 – Summary of Traffic Analysis Scope Elements			
Scope Elements	**Trip Generation Letter**	**Limited TIA**	**TIA**
Engineering Seal	X	X	X
Title Page		X	X
Project Description and Summary	X	X	X
Proposed Development and Trip Generation	X	X	X
Summary of Existing Conditions		X	X
Background projects and growth rate		X	X
Study Area			
Intersections of Collectors or higher within ½ mile		X	
Intersections of Collectors or higher within 1 mile			X
LOS Analyses			X
Safety Analyses		X	X
Other Analyses *(Operations, Sight Distance, Turn Lane Warrants, etc.)*		X	X
Analysis Scenarios (Peak Hours defined in scope)			
Existing Conditions			X
Build-out year without project			X
Build-out year with project			X
Build-out + 5 years without project			X
Build-out + 5 years with project			X
Regional modeling – regional impacting development			X
Findings		X	X
Appendices		X	X
Public Meetings			X

3.2 TRIP GENERATION & DISTRIBUTION LETTER GUIDELINES

All projects which generate 10 or more new peak-hour vehicular trips shall submit a trip generation and distribution letter. The letter shall be based on the current version of the Institute of Transportation Engineers (ITE) *Trip Generation Manual* and developed by an Engineer.

If a project is subject to State Environmental Policy Act (SEPA) review, the trip generation and distribution letter shall be submitted for review at the time of the SEPA application.

The letter is required to be approved by the City prior to submittal of a traffic impact analysis report.

3.2.1 APPLICABILITY

a. A trip generation and distribution letter is required for most projects. However, the following projects are typically under the peak-hour threshold and may not be required to prepare a trip generation and distribution letter:

i. Residential short plats (the number of trips from a duplex shall be equivalent to two single family homes);

ii. Drive-through coffee stands with no indoor seating;

iii. Multi-family projects with nine units or less;

iv. Changes of use from residential to commercial with no new buildings or building additions;

v. Office projects of less than 2,500 square feet (ITE land uses 700-799); and,

vi. Industrial projects of less than 9,000 square feet (ITE land uses 100-199).

b. For projects expected to generate less than 10 peak-hour vehicular trips the project applicant is required to submit a letter with the following information for all proposed development phases for the property:

i. Brief project description;

ii. Number of expected employees;

iii. Hours of business; and,

iv. The expected number of vehicular trips (customers and employees) to the business during the AM and PM peak hours.

3.2.2 MINIMUM ELEMENTS

The trip generation and distribution letter for projects generating 10 or more peak-hour trips shall include the following elements:

a. Project description, including proposed use;

b. Site plan with vicinity map;

c. Building size noted in square feet;

d. Zoning of the property;

e. Determination of whether the project is in a SEPA Infill Area (see following section);

f. Proposed and existing access points, site circulation, queuing lengths for driveways (and drive-throughs, if applicable) and parking locations;

g. Project phasing and expected build out year;

h. An estimate of trip generation for the typical weekday, AM peak-hour, and PM peak-hour conditions. Supporting calculations and data sources shall be shown. Any adjustments for transit use, mixed use internalization, pass-by trips, and/or diverted trips shall be clearly stated;

i. A comparison of the trip generation between the previous and the proposed site use for projects involving a change of use. If the comparison shows a

net increase in trip generation, the project shall be subject to the TIA requirements of a new development;

j. A preliminary distribution pattern for traffic on the adjacent street network, shown in a graphical format; and,

k. The engineering seal signed and dated by the engineer who prepared the letter.

3.3 LIMITED TRAFFIC IMPACT ANALYSIS

Pursuant to SVMC 21.20.040, portions of Spokane Valley had additional environmental review performed as part of the Comprehensive Plan EIS. Because of the additional environmental review within the SEPA Infill Areas, the majority of development projects within these areas do not require a full TIA report if the Applicant adopts the subarea environmental analysis and mitigation requirements identified in the SEPA documents. However, to assess potential traffic safety or site access issues, a limited TIA is required as set forth below.

3.3.1 APPLICABILITY

A limited TIA is required for the following situations:

a. Projects adding 20 or more peak-hour trips through an arterial intersection and which are located within a SEPA Infill Area;

b. Projects within a SEPA Infill Area that impact local access intersections, alleys, or driveways located within an area with a current traffic problem as identified by the City or previous traffic study, such as a high-accident location, poor roadway alignment, or area with a capacity deficiency; or

c. At the discretion of the City in lieu of a full TIA.

A full TIA (see Section 3.4) is required for land uses that exceed the total trip bank established in SVMC 21.20.040. Applicants are encouraged to consult with City staff if they are unsure if they apply for both SEPA relief and a limited TIA.

3.3.2 SCOPE

The scope of the limited TIA shall be developed by an engineer. A draft scope shall be reviewed and approved by the City prior to submission of the limited TIA. The scope of the limited TIA shall conform to the following:

a. The study area may include any intersections or streets within a 1/2 mile radius of the site.

b. A safety analysis may be required, as identified by City staff in the scope review phase. If the analysis is required, the City shall assist by providing crash data if available. Safety analysis at a minimum requires three years of crash history showing the date and time, type, number of vehicles involved in the crash, including weather and road conditions. Crash analysis shall include bicycle and pedestrian crashes. Crash information shall be assessed by the developer's engineer to identify possible impacts the proposed new

trips would add to the problem. Examples may include queuing that exceeds storage pocket lengths or that extends to upstream intersections, recurring left turn crashes, limited sight distance, or proposed project access intersections that may be poorly placed.

c. If a safety and operational analysis reveals deficiencies, then mitigation measures shall be developed with recommendations to fix the deficiencies.

d. Unless otherwise identified by the City, the analysis shall be performed for the build-out year of the proposed development.

3.3.3 METHODOLOGY

The analysis shall be done using the following methodology:

a. Background growth rate – The background growth rate may be based on historical growth data or the growth rate as calculated from Figures 30 and 32 of the Comprehensive Plan (the 2016 and 2040 average daily traffic volumes). A minimal annual growth rate of 1% is required unless otherwise approved by the City;

b. The LOS shall be determined in accordance with the methods reported in the current version of the *Highway Capacity Manual (HCM)*;

c. Use of the two-stage gap acceptance methodology for unsignalized intersections is subject to City approval;

d. ***"Synchro"*** is the primary traffic software used by the City to model intersection and turn pocket queuing analysis. Depending on the analysis, the City may request other traffic analysis using other modeling software. In addition to ***Synchro***, the engineer may use the most current version of Highway Capacity Software (***HCS***). Other analysis tools may be utilized with City approval if HCM methodology cannot accurately model an intersection;

e. Trip generation data shall be based on the latest version of the *ITE Trip Generation Manual*. Trip generation data from studies of similar facilities may be substituted with prior City approval; and,

f. Turning movement counts and crash diagrams may need to be developed to document a safety or operations problem. If traffic counts are required, they shall be taken on a Tuesday, Wednesday, or Thursday representing a typical travel day. Counts shall not be taken during a week which contains a holiday or during a week of a significant weather event. Projects near schools may be required to collect turning movement counts during a typical school day.

3.3.4 LIMITED TIA REPORT MINIMUM ELEMENTS

The limited TIA report shall include at least the following:

3.3.4.1 Title Page

The limited TIA shall include a title page with the following elements:

a. Name of project;

b. City project number/permit number;

c. Applicant's name and address;

d. Engineer's name, address and phone number;

e. Date of study preparation; and,

f. The engineering seal, signed and dated by the professional engineer licensed in the State of Washington who prepared the report.

3.3.4.2 Project Description and Summary

The limited TIA shall include a brief description of project, location, study intersections, findings, and mitigation.

3.3.4.3 Proposed Development and Trip Generation

The limited TIA shall include the following information for the proposed development:

a. Project description, including proposed use;

b. Site plan with vicinity map;

c. Building size noted in square feet;

d. Zoning of the property;

e. Determination of whether the project is within a SEPA Infill Area (see following section);

f. Proposed and existing access points, site circulation, queuing lengths for driveways (and drive-throughs, if applicable) and parking locations;

g. Project phasing and expected opening year;

h. An estimate of trip generation for the typical weekday, AM peak-hour, and PM peak-hour conditions. Supporting calculations and data sources shall be shown. Any adjustments for transit use, mixed use internalization, pass-by trips, and/or diverted trips shall be clearly stated;

i. A comparison of the trip generation between the previous and the proposed site use for projects involving a change of use. If the comparison shows a net increase in trip generation, the project shall be subject to the limited TIA requirements of a new development;

j. A preliminary distribution pattern for traffic on the adjacent street network, shown in a graphical format; and,

k. Project phasing and timing.

3.3.4.4 Summary of Existing Conditions

The limited TIA shall provide a brief summary of existing conditions for the study area that includes at least the following:

a. Brief summary of the transportation network adjacent to the site including a qualitative description of the facilities, speed limits, presence of bike lanes/trails, bus stops, and on-street parking;

b. Figure or table of the peak hour turning movement volumes at the study intersections;

c. Collision history – three years minimum;

d. Length of existing turn pockets at study intersections; and,

e. Other information as identified during the scoping process.

3.3.4.5 Background Projects

If background project traffic is necessary to assess build-out conditions, it shall include the following:

a. Traffic from newly constructed projects;

b. Projects for which traffic impacts have been tentatively reserved;

c. Projects for which a Concurrency Certificate has been awarded;

d. Non-project, general background traffic increases; and,

e. Vested traffic for vacant buildings that are undergoing redevelopment.

The limited TIA shall provide the following information for background projects, as identified by the City:

a. Project descriptions;

b. Vicinity map;

c. Trips generated by projects and assigned to study intersections,

d. Figure or table of the build-out peak hour turning movement volumes at the study intersections;

e. Planned transportation improvements (private development and City); and,

f. Where required, safety and operations analysis results.

3.3.4.6 Other Analyses

Other analyses may be required as requested by the City, including but not limited to:

a. Queue lengths at driveways and drive-through windows;

b. Noise;

c. Air quality (typically required when physical improvements are proposed and requires electronic submittal of Synchro files);

d. Intersection control warrant analysis (signal, roundabouts, four-way stop, yield);

e. Auxiliary lane warrant analysis;

f. Parking study (including vehicles and/or bicycles);

g. Site access; and,

h. Pedestrian access study.

3.3.4.7 Findings

The following shall be addressed in the findings section:

a. Traffic and safety impacts;

b. Proposed project modifications; and,

c. Off-site mitigation.

3.3.4.8 Appendices

The following information shall be included in appendices:

a. Definitions;

b. Trip generation sources;

c. Passer-by and origin-destination studies (if applicable);

d. Volume and turning movement count sheets;

e. Analysis software (Synchro, HCS, SimTraffic, etc.) report printouts (electronic submittal may be required);

f. Warrant analysis calculations; and,

g. References.

3.4 TRAFFIC IMPACT ANALYSIS

For developments that are not within a SEPA Infill Area, this section outlines the requirements for a TIA. The intent of the TIA is to allow the City to properly plan and improve the transportation system to meet the mobility needs of future growth and to comply with SEPA requirements.

3.4.1 APPLICABILITY

A TIA is required for the following situations:

a. Projects adding 20 or more peak-hour trips to an intersection of arterial streets, within a one-mile radius of the project site as shown by the trip generation and distribution letter; or,

b. Projects impacting local access intersections, alleys, or driveways located within an area with a current traffic problem as identified by the City or previous traffic study, such as a high-accident location, poor roadway alignment or capacity deficiency.

3.4.2 SCOPE

The scope of the TIA shall be developed by an engineer. Prior to submittal of the TIA, the City and other impacted jurisdictions/agencies shall approve the scope of the TIA. The scope of the TIA shall conform to the following:

a. The study area shall include any intersections of arterial streets within a one-mile radius of the site that would experience an increase of at least 20 vehicle trips during a peak hour. Some intersections may be excluded if analyzed within the past year and are shown to operate at LOS C or better. All site access points shall be analyzed. Additional arterial intersections outside of the one mile radius and intersections of local streets may also be required at the discretion of the City;

b. If any of the study intersections are on a Major Arterial Corridor, a corridor LOS analysis shall be conducted for all relevant corridors. For example. If a project increases traffic by 20 vehicles at the intersection of Pines Road/Mission Avenue, then a corridor LOS analysis shall be required for Pines Road. If a corridor has been analyzed within the last two years and is shown to operate at LOS C or better, the City may exempt the corridor LOS analysis, although traffic counts on the corridor may still be required in order to maintain an up-to-date database of counts along the Major Arterial Corridors. Below is a list of the Major Arterial Corridors from the Comprehensive Plan:

- Argonne/Mullan Road between Trent Avenue and Appleway Blvd
- Pines Road between Trent Avenue and 8th Avenue
- Evergreen Road between Indiana Avenue and 8th Avenue
- Sullivan Road between Wellesley Avenue and 8th Avenue

- Sprague Avenue/Appleway Blvd between Fancher Road and Park Road

c. A PM peak hour LOS analysis shall be conducted for all study area intersections (and corridors if applicable). An LOS analysis of the AM peak hour, Saturday afternoon, or other time period may be required at the discretion of the City;

d. As identified by City staff in the scope review phase, a safety analysis may be required, which may include intersection queuing, turn lane warrants and LOS, sight distance, and pedestrian/bicycle conflicts to identify potential safety issues; and,

e. Additional analysis may be required by other reviewing agencies.

The Intersection and corridor (if applicable) LOS shall meet or exceed the thresholds pursuant to the City's Comprehensive Plan – Chapter 4: Capital Facilities, Table 4.3 Spokane Valley Level of Service Standards.

In the event that the LOS standard is not met, the project applicant shall work with the City to identify appropriate mitigation measures, which could include modification of the intersection designs, constructing/funding improvements to City-owned intersections, or changing the scale of the development.

A safety analysis may be required, as identified by City staff in the scope review phase. If the analysis is required, the City shall assist by providing crash data if available. Safety analysis at a minimum requires three years of crash history showing the date and time, type, number of vehicles involved in the crash, weather and road conditions. Crash analysis shall include bicycle and pedestrian crashes. Crash information shall be assessed by the developer's engineer to identify possible impacts proposed new trips would add to the problem. Examples may include queuing that exceeds storage pocket lengths or that extends to upstream intersections, recurring left turn crashes, limited sight distance, or proposed project access intersections that may be poorly placed. Safety issues shall be mitigated to the satisfaction of City staff.

3.4.3 METHODOLOGY

The analysis shall be done using the following methodology:

a. Background growth rate – The background growth rate may be based on historical growth data or the growth rate as calculated from Figures 30 and 33 of the Comprehensive Plan (the 2016 and 2040 average daily traffic volumes). A minimal annual growth rate of 1% is required unless otherwise approved by the City;

b. The LOS shall be determined in accordance with the methods reported in the current version of the *Highway Capacity Manual (HCM)* or as further defined by City staff;

c. Corridor LOS shall be determined by calculating the volume-weighted average intersection LOS of all signalized arterial/arterial intersections

along the defined length of the Major Arterial Corridor.[1] With all intersection LOS calculated along the corridor, the control delays of all intersections shall be averaged to calculate total corridor LOS. The same control delay thresholds defined for individual intersections shall be used to assign corridor LOS (e.g., corridor average control delay of 38 seconds would correspond to LOS D). Based on City input, WSDOT ramp terminal intersections may or may not be included as part of the corridor LOS calculation, and may be evaluated separately as individual intersections.

d. Use of the two-stage gap acceptance methodology for unsignalized intersections requires prior City approval;

e. "Synchro" is the primary traffic software used by the City to model intersection and turn pocket queuing analysis. Depending on the analysis, the City may request other traffic analysis using other modeling software. In addition to Synchro, the Engineer may use the most current version of HCS. Other analysis tools may be utilized with prior City approval if HCM methodology cannot accurately model an intersection;

f. Trip generation data shall be based on the current version of the *ITE Trip Generation Manual*. Trip generation data from studies of similar facilities may be substituted as approved by the City; and,

g. Turning movement counts shall be recorded less than one year prior to submitting a traffic study. Counts less than two years old may be used if no significant development projects or changes to the transportation network have occurred. Counts shall be taken on a Tuesday, Wednesday, or Thursday representing a typical travel day. Counts shall not be taken during a week which contains a holiday or during a week of a significant weather event. Projects near schools may be required to collect turning movement counts during a typical school day. Given the potentially large-scale of corridor LOS evaluation, counts older than one year may be used for intersections along a corridor that are more than one mile away, so long as they are factored using the growth rate identified above. However, the City may request, at its discretion, that the project collect new traffic counts at any intersection along a relevant Major Arterial Corridor in an effort to maintain a relatively current database for TIA review.

3.4.4 TIA REPORT MINIMUM ELEMENTS

The TIA report shall include at least the following:

3.4.4.1 Title Page

The TIA shall include a title page with the following elements:

[1] To clarify, unsignalized project driveway intersections with the Major Arterial Corridor are not part of the corridor LOS calculation since they are not arterial streets.

a. Name of project;

b. City project number/permit number;

c. Applicant's name and address;

d. Engineer's name, address and phone number;

e. Date of study preparation; and,

f. The engineering seal, signed and dated by the engineer who prepared the report.

3.4.4.2 Introduction and Summary

a. Purpose of report and study objectives;

b. Executive summary;

c. Proposed development description;

d. Location and study area;

e. Findings; and,

f. Recommendations and mitigation.

3.4.4.3 Proposed Development

The TIA shall include the following information for the proposed development (this is the same information that is required for the trip letter):

a. Project description;

b. Location and vicinity map;

c. Site plan with building size (square feet);

d. Proposed zoning;

e. Land use;

f. Access points, site circulation, queuing lengths, and parking locations;

g. An estimate of trip generation for the typical weekday, AM peak-hour, and PM peak-hour conditions. Any adjustments for transit use, pass-by trips, and/or diverted trips shall be clearly stated;

h. A distribution pattern for traffic on the adjacent street network, shown in a graphical format; and,

i. Project phasing and timing.

3.4.4.4 Summary of Existing Conditions

The TIA shall provide a summary of existing conditions for the study area that includes the following:

a. Transportation network description, including functional classification, bike/pedestrian facilities and transit routes;

b. Existing zoning;

c. Existing traffic volumes including percent heavy vehicles;

d. Collision history –three years minimum;

e. Posted speed limits (and if known the 85 percentile speed determined from a speed study);

f. Length of existing turn pockets at signalized intersections;

g. Location of the following:

i. On-street parking,

ii. Bus stops, and,

iii. Private and public schools in the area,

h. LOS and safety analysis results.

3.4.4.5 Background Projects

Background project traffic shall include the following:

a. Traffic from newly constructed projects;

b. Projects for which traffic impacts have been tentatively reserved;

c. Projects for which a Concurrency Certificate has been awarded;

d. Non-project, general background traffic increases; and,

e. Vested traffic for vacant buildings that are undergoing redevelopment.

The TIA shall provide the following information for background projects, as identified by the City:

f. Project descriptions;

a. Vicinity map;

b. Trip generation;

c. Trip distribution;

d. Planned transportation improvements (private development and City); and,

e. LOS and safety analysis results.

3.4.4.6 Analysis Scenarios

The TIA shall include the following analysis scenarios:

a. Existing conditions;

b. Build-out year without project;

c. Build-out year with project;

d. Build-out + five year analysis if project is expected to proceed in phases, take more than six years to complete, or if the study intersection is included on the City's Six-Year TIP; and,

e. Major developments with regional impacts may be required to use the current version of the *SRTC Regional Travel Demand Model* and the associated horizon years for analyses, as determined by City staff.

3.4.4.7 Other Analyses

Other analyses may be required as requested by the City, including but not limited to:

a. Queue lengths at driveways and drive-through windows;

b. Noise;

c. Air quality (typically required when physical improvements are proposed and requires electronic submittal of Synchro files);

d. Intersection control warrant analysis (signal, roundabout, four-way stop, yield);

e. Auxiliary lane warrant analysis;

f. Parking study (including vehicles and/or bicycles);

g. Site access; and,

h. Pedestrian access study.

3.4.4.8 Findings

The following shall be addressed in the findings section:

a. Traffic impacts;

b. Compliance with level of service standards;

c. Proposed project modifications; and,

d. Offsite mitigation.

3.4.4.9 Appendices

The following information shall be included in appendices:

a. Definitions;

b. Trip generation sources;

c. Passer-by and origin-destination studies;

d. Volume and turning movement count sheets;

e. Synchro report printouts (electronic submittal may be required);

f. Warrant analysis calculations; and,

a. References.

3.5 MEETINGS

A public meeting(s) may be required for any residential project generating over 100 PM peak-hour trips, commercial projects generating over 100 PM peak-hour trips impacting a residential area, or for other projects at the discretion of the City. The intent of the public meeting is to let the public know about the proposed project and to allow for public input to determine the scope of the TIA. Notice of date, time, place and purpose of the public meeting(s) shall be provided by the following means:

a. One publication in the City's official newspaper at least 15 days prior to the meeting;

b. A mailing to adjacent residents, property owners, neighborhood groups, jurisdictions, and/or organizations within a 400-foot radius of the project boundaries, not less than 15 days prior to the public meeting. Other persons or entities outside of the 400-foot radius may be required to be notified if the City determines they may affected by the proposed project or have requested such notice in writing; and,

c. A sign shall be erected, on the subject property fronting and adjacent to the most heavily traveled public street, at least 15 days prior to the meetings. The sign shall be at least four feet in width and four feet in height and shall have letters three inches in size. The sign shall be easily read by the traveling public from the right-of-way. This sign shall announce the date, time and place of the traffic meetings and provide a brief description of the project.

    a. Proper notification and all associated costs shall be the responsibility of the Applicant. Notification shall be considered satisfied upon receipt of an affidavit provided by the Applicant to the City stating the above requirements have been completed.

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CHAPTER 4 – REQUIREMENTS FOR PLAN SUBMITTAL

Chapter Organization

List of Appendices

4.1 INTRODUCTION

The Applicant is required to submit a complete plan set for all proposed public and private improvements. This chapter provides the minimum plan elements for a complete submittal. To be accepted for review, plans shall be clear, concise and easy to read with all lettering and lines legible. Hand drawn plans are not acceptable. Incomplete plan sets shall not be reviewed and will be returned to the Applicant. State law requires that engineering work be performed by or under the direction of a professional engineer currently licensed in the State of Washington.

4.2 GENERAL REQUIREMENTS

4.2.1 PLAN COMPLETENESS

All plan submittals are assumed to be the final plan set and so all plan sheets for every submittal shall be signed by the Applicant's Engineer pursuant to Section 4.2.4. The Applicant's Engineer shall verify that all minimum requirements specified in the Street Standards and the *Spokane Regional Stormwater Manual* are met and are incorporated in the plan set.

Each submittal of revised plans and supporting documents shall be accompanied by a letter that indicates how each review comment was addressed and provide a brief description of any changes made that were not in direct response to a review comment.

4.2.2 FONTS

Lettering shall be legible to be easily read and understood by the reviewer. Lettering shall be of sufficient size and scale to produce clear, readable images when scanned digitally by an optical scanner.

4.2.3 SHEET SIZE / PLAN MEDIUM

All plan sets shall be plotted or copied on standard drafting paper with dark ink. When the plans or plats are accepted, the City will specify the media type required in the acceptance letter.

All plan sheets shall be 24 inches by 36 inches (D size).

4.2.4 ENGINEER SIGNATURE AND STAMP

All sheets shall include the engineer's signature, stamp, and date of signature pursuant to the regulations established by the State of Washington Board of Registration of Professional Engineers.

4.2.5 SCALE

The scale for all plan and profile sheets shall be:

a. Horizontal: 1 inch = 20, 30, 40, or 50 feet (scales greater than 1 inch = 50 feet shall not be accepted)

b. Vertical: 1 inch = 5 or 10 feet

c. Overall plan: 1 inch = 100 feet, maximum

d. Cross sections: vertical exaggeration ratio shall be 5:1

4.2.6 NORTH ARROW

All design sheets shall have a north arrow oriented toward the top or right side of applicable sheets.

4.2.7 VERTICAL AND HORIZONTAL DATUM

The City of Spokane Valley vertical datum shall be based on the North American Vertical datum (NAVD 1988). The horizontal datum is a coordinate system based on 1983(91) State Plane Coordinates.

4.2.8 UTILITY LOCATE NOTE

All utilities shall be located prior to construction. All sheets shall have the following message:

CALL TWO BUSINESS DAYS BEFORE YOU DIG

811

4.2.9 TITLE BLOCK

A title block is required on every sheet. The title block shall be located in the extreme lower right hand corner, the right side margin, or along the bottom edge of the sheet. The following information shall appear in the title block:

a. Project name and number (including permit number, Short subdivision, Subdivision or Binding Site Plan numbers) provided by the City;

b. The type and location of improvement. (For profile sheets, the title block shall have the name of the street and beginning/end stations);

c. Engineer's name, address, including zip code, telephone number, and fax number;

d. Date and brief description of all revisions;

e. Sheet number and total number of sheets; and,

4.2.10 REQUIRED CIVIL PLAN SHEETS

Civil plan sets are reviewed by Engineering. The civil plan set shall include the following, as applicable:

a. Cover sheet (see Section 4.4);

b. Clearing and grading plan (see Section 4.5);

c. Street improvement plan (see Section 4.6);

d. Onsite improvement plan (see Section 4.7);

e. Drainage plan (see Section 4.8);

f. Temporary erosion and sediment control plan (see Section 4.9); and,

g. Detail sheets, as needed.

4.2.11 REQUIRED TRAFFIC PLAN SHEETS

Traffic plan sets are reviewed by the Traffic Division of the Public Works Department. The traffic plan set shall include the following, as applicable:

a. Permanent traffic control plan (see Section 4.11);

b. Detail sheets, as needed.

4.2.12 OTHER REQUIRED PLAN SHEETS

The site plan of record is reviewed by Engineering and the Planning Division. See Section 4.12 for the requirements from Engineering.

4.3 SPECIFIC REQUIREMENTS FOR PLAN SHEETS

This section incorporates sections 4.4 to 4.12, which outline the minimum required information to be included on specific sheets of the plan set. The sheets are listed in the order they should appear in the plan set. Some sections of the plan set may have more than one sheet, but should be labeled alike.

4.4 Cover Sheet

4.5 Clearing and Grading Plan

4.6 Street Improvements Plan

4.7 On-site improvement Plan

4.8 Drainage Plan

4.9 Temporary Erosion and Sediment Control Plan

4.10 Temporary Traffic Control Plan

4.11 Permanent Traffic Control Plan

4.12 Site Plan of Record

4.4 COVER SHEET

4.4.1 APPLICABILITY

All plan sets shall include a cover sheet.

4.4.2 MINIMUM ELEMENTS

The following shall be included on the cover sheet:

a. The project name and the number (including permit number, Short Subdivision, Subdivision or Binding Site Plan numbers) shown in the top center of the page;

b. A legible vicinity map, approximately 8-½ inches by 11 inches, showing the location and name of all arterial roadways within one mile of the proposed construction, and all other roadways within 1/2 mile of the proposed construction. The project area shall be indicated by shading;

c. An index of all sheets within the plan set;

d. Impervious area quantities for all commercial projects. Quantities shall include the existing, proposed and total rooftop area, pavement area and gravel area, and the overall, total impervious area;

e. Type of roofing material for all commercial projects;

f. Section, Township, and Range;

g. Legend of line types and symbols for all appurtenances related to each type of facility;

h. General construction notes as provided in Appendix 4A;

i. Applicant's signature;

j. The datum used and all benchmarks, which must refer to the established control when available;

k. Private Improvements Statement. The note below shall appear on the cover sheet of the construction plans that include private streets and :

> *The City of Spokane Valley will not be responsible for the maintenance of street and appurtenant improvements, including storm drainage structures and pipes, for the following private streets: (list street names).*

l. Name of owner and Applicant.

4.5 CLEARING AND GRADING PLAN

4.5.1 APPLICABILITY

Clearing and grading sheets are required for projects applying for:

a. A clearing and grubbing permit;

b. A grading only permit;

c. A building permit for all new non-residential development and for residential construction of four or more units per lot;

d. Short subdivisions;

e. Long subdivisions; or

f. Binding Site Plans.

4.5.2 MINIMUM PLAN ELEMENTS

Clearing and grading sheets shall clearly convey design and construction intent and shall depict only the work to be done with the requested permit. Clearing and grading sheets shall include, as applicable:

a. Property limits and accurate contours of existing ground elevations. For existing topography, one-foot contour intervals are preferred unless the City determines that available five-foot contour mapping is adequate and detailed enough to describe current landforms;

b. The extent of clearing and/or grading areas, delineated and labeled "excavation" or "fill";

c. Finish contours to be achieved by the grading and related construction. The contour interval for proposed topography shall be no more than 1- foot, unless the slope is greater than 10%, in which case, the City may accept five-foot contour intervals. Periodically call out the proposed slope. One-foot contours may still be necessary to show certain features such as swales;

d. Existing and proposed surface and subsurface drainage facilities;

e. Footprint of onsite buildings or structures and the location of adjacent buildings or structures located within 15 feet of the property or which may be affected by the proposed grading operations;

f. Cross-section along the proposed and/or existing street, spaced every 50 feet, when required by the City. The cross-sections shall show proposed and existing topography along the street, at tie in points and property boundaries;

g. Information covering construction and material requirements including, but not limited to, specification of the soil compaction to be achieved in any areas of fill placement;

h. Estimated amount and vertical dimensions of cut and fill;

i. Delineation of sensitive areas, floodplains, and critical areas pursuant to SVMC Title 21;

j. The approximate location of all trees eight-inches diameter breast height (dbh) and larger, and a description of the tree protection standards to be implemented during construction;

k. Delineation of any areas to be preserved.

4.6 STREET IMPROVEMENTS PLAN

4.6.1 APPLICABILITY

Street improvements sheets are required for projects:

a. Proposing new or revisions to public or private street or street extensions;

b. Proposing private engineered driveways; or,

c. Required to provide frontage improvements.

4.6.2 MINIMUM PLAN VIEW ELEMENTS

The plan view shall include, at a minimum, the following:

a. Survey lines and stationing lines. Lines shall normally be based on centerline of street. Other profiles may be included but shall be referenced to centerline stationing. Stationing in cul-de-sacs shall be on the centerline to the center of the bulb, with dimensioned slopes along the flowlines within the bulb;

b. Property limits and accurate contours of existing ground elevations. For existing topography, one-foot contour intervals are preferred unless the City determines that available five-foot contour mapping is adequate and detailed enough to describe current landforms;

c. Finish contours to be achieved by the grading and related construction. The contour interval for proposed topography must be no more than one- foot, unless the slope is greater than 10%, in which case, the City may accept five-foot contour intervals. Periodically call out the proposed slope. One-foot contours may still be necessary to show certain features such as swales;

d. Lot lines, lot numbers and block numbers;

e. Proposed and adjoining subdivision names;

f. Existing and proposed street names;

g. Section, Township, and Range;

h. Existing and proposed property and/or right-of-way lines, easements, and/or tracts. All of them shall be labeled and dimensioned;

i. Road alignments with 100-foot stationing, reading from left to right, and stationing at points of curve, tangent, and intersections, with appropriate ties to existing road surveys and stationing, section corners, quarter corners, and

the County GPS control net. Stations shall increase from west to east and from south to north;

~~j.~~ Match lines and stations;

k. Bearings on the road centerline, keyed to an associated plat map;

l. Station and elevation of all horizontal curves including PI, PC's, PT's, etc.; existing and proposed, centerline bearings, distances, and complete curve data;

m. Curve data including radius, delta, arc length and semi-tangent length on all street centerlines and curb returns;

n. Stations and elevations of all curb returns; including beginning, mid-point, and ending elevations of curb returns;

o. Location of all proposed and existing approaches;

p. All existing utilities;

q. All proposed utilities that will be designed and constructed. The plan sheet shall show the extent of the pavement cut for connections;

r. Proposed drainage features including station and type of all structures, direction of flow, size and kind of each drainage channel, ditch or pipe and any other requirements as specified in the *Spokane Regional Stormwater Manual,* as adopted or amended;

s. A thorough search for all survey monuments shall be conducted. Any survey monuments shall be shown;

t. Fire hydrant locations;

u. No Parking signs and locations;

v. Turnaround locations;

w. Fire emergency access easements;

x. Traffic elements such as conduit, junction boxes, signal cabinets, electrical service, signal poles, push-button poles, and loops;

y. Storm drainage flow direction arrows, particularly at intersections and all high and low points; and,

z. Station and critical elevation (flowline, invert of pipe, etc.) of all existing and proposed utility or drainage structures. Location of utilities shall be identified with horizontal and vertical dimensions as measured from roadway centerline profile grade.

4.6.3 MINIMUM PROFILE VIEW ELEMENTS

The profile view shall include, at a minimum, the following:

a. Stationing, shown the same as in the horizontal plan, reading from left to right. It shall include stationing of points of curve, tangent, length, and point of intersection of vertical curves, with elevations to 0.01 feet;

b. Original ground line at 100-foot stations and at significant ground breaks and topographic features, based on field measurement and accurate within 0.1 feet on unpaved surface and 0.01 feet on paved surface;

c. Profiles for curbed streets shall show and label the tops of both curbs and the centerline. Profiles for shouldered streets may show the centerline only. The centerline, top of curb, and existing ground lines of all streets (except cul-de-sacs) shall be continued for 100 feet beyond the proposed construction;

d. High and low point and PI of all vertical curves;

e. Ditch and swale flowlines and drainage structures;

f. A continuous profile for both existing and proposed improvements, shown on a grid of numbered lines;

g. Elevation of vertical grade breaks, K values, grade and length of vertical curves;

h. Storm drainage flow direction arrows, particularly at intersections and all high and low points; and,

i. Station and critical elevation (flowline, invert of pipe, etc.) of all existing and proposed utility or drainage structures. Location of utilities shall be identified with horizontal and vertical dimensions as measured from roadway centerline profile grade.

4.6.4 MINIMUM TYPICAL CROSS SECTION ELEMENTS

A typical street section shall include, at a minimum, the following:

a. A separate full-width, typical section required for each street or portion of the street that differs significantly. The typical section shall be drawn looking in the direction of increasing stations;

b. Station limits;

c. The dimensions of traffic lanes, shoulders, gutters, sidewalks, swales, depths, planting strips, easements, rights-of-way, etc.;

d. The cross slope of elements such as pavement, ditches, sidewalks, etc.;

e. Type of curb;

f. Dimensions and type of structural section material layers; and,

g. Retaining walls, as applicable.

4.7 ONSITE IMPROVEMENT PLAN

4.7.1 APPLICABILITY

Onsite improvement plans are required for projects proposing:

a. New commercial developments;

b. Residential construction of three or more units per lot;

c. Drywells;

d. A project site that will have both of the following:

   i. Any addition or replacement of impervious surface and

   ii. 5000 or more total square feet of impervious surface.

   If both of these criteria are met then the runoff from the new and/or replaced PGIS surfaces and areas hydraulically connected to them will need to be treated prior to disposal. The site includes all of the parcels involved in the project whether or not they are contiguous. Impervious surface includes roofs, paved areas, gravel travel ways, etc. Full build-out includes all the project's phases even if -

   1. The different phases will be constructed under separate contract and/or by separate owners, and/or,

   2. The project is phased over multiple years, but the phases are still under a consistent plan for long term development; and,

e. Increases impervious areas to 5,000 square feet or more;

   i. Alters site access requirements, including adding or removing driveways; or,

   ii. Connects to and impacts City streets and utilities.

4.7.2 MINIMUM ELEMENTS FOR ONSITE IMPROVEMENT PLAN

The onsite improvement plan shall include, at a minimum, the following:

a. Property limits and accurate contours of existing ground elevations. For existing topography, one-foot contour intervals are preferred unless the City determines that available five-foot contour mapping is adequate and detailed enough to describe current landforms;

b. Finish contours or spot elevations to be achieved by the grading and related construction. The contour interval for proposed topography must be no more than 1-foot, unless the slope is greater than 10%, in which case, the City may accept five-foot contour intervals. Periodically call out the proposed slope. One-foot contours may still be necessary to show certain features such as swales;

c. Lot lines, lot numbers and block numbers;

d. Existing street names;

e. Section, Township, and Range;

f. Existing and proposed property and/or right-of-way lines, easements, and/or tracts. Type and dimension of easement or tract shall be clearly labeled. Dimensions of property and right-of-way lines shall be marked.

g. Location of all proposed and existing driveways;

h. All existing utilities;

i. All proposed utilities that will be designed and constructed. The plan shall show the extent of pavement cut(s) for connections;

j. Proposed drainage features including, structure type, locating information, direction of flow, size and kind of each drainage channel, ditch or pipe and any other requirements as specified in the *Spokane Regional Stormwater Manual*, as adopted or amended;

k. Fire hydrant locations;

l. No Parking signs and locations;

m. Turnaround locations;

n. Storm drainage flow direction arrows, particularly at intersections and all high and low points; and,

o. Station and critical elevation (flowline, invert of pipe, etc.) of all existing and proposed utility or drainage structures. Location of utilities shall be identified with horizontal and vertical dimensions as measured from roadway centerline profile grade.

4.8 DRAINAGE PLAN

A drainage plan, showing the location of drainage facilities intended to provide flow control, treatment, and conveyance shall be submitted with the construction plans and shall conform to Section 3.5.2 of the *Spokane Regional Stormwater Manual* (SRSM), as adopted or amended. For small projects, the drainage plan may be included in the Onsite Improvement Plan.

4.9 TEMPORARY EROSION AND SEDIMENT CONTROL PLAN

A Temporary erosion and sediment control (TESC) plan shall be submitted for all projects pursuant to Section 5.3.1, Section 5.3, and the SRSM, as amended. For small projects, the temporary erosion and sediment control plan may be included in the clearing and grading plan.

4.10 TEMPORARY TRAFFIC CONTROL PLAN

A temporary traffic control plan shall be included with the right-of-way permit. The plan shall be in detail appropriate to the complexity of the project pursuant to MUTCD Chapter 6 B.

4.11 PERMANENT TRAFFIC CONTROL PLAN

When required, permanent traffic control plan sheets shall include the components outlined below. Permanent signage and striping shall be complete and in place prior to the acceptance of the certification package.

4.11.1 AREA MAP

Separate signage and striping plans shall consist of an overall area map noting all specific use areas, such as schools, parks, recreation centers, library, commercial, industrial, etc.

4.11.2 ROAD SEGMENT PAGES

The pages following the area map shall be broken down into street segments, for notation of signage and striping details.

4.11.3 SIGNING PLAN

The permanent signing plan shall:

a. Show the longitudinal location of each sign (horizontal offset and station);

b. Specify the sign legend and sign type (from MUTCD and International Fire Code);

c. Specify the sign size and applicable standard plan;

d. Refer to Standard Plan R-140 for post and base dimensions and installation plan;

e. Specify the blank gauge of the sign; and,

f. Note the reflectorization provided.

4.11.4 STRIPING PLAN

The striping plan shall show:

a. Color and type;

b. Lane widths, taper lengths, storage lengths, etc.;

c. Striping/skip interval;

d. Any construction or application notes, (e.g., application temperatures, surface cleaning methods to be used prior to application, etc.);

e. Typical treatments for acceleration/deceleration lanes, turning lanes, and crosswalks;

f. Type of material (epoxy, latex, thermoplastic, etc.); and,

g. Station and offset or dimensions to all angle points, symbol locations, and line terminations.

4.11.5 TRAFFIC SIGNAL PLAN

Traffic signal installation and equipment shall be coordinated with and approved by the Community and Public Works Department. The applicable MUTCD signal warrants shall be met.

4.12 SITE PLAN OF RECORD

The following items shall be included:

a. The footprint of drainage facilities including swales, ponds, channels, detention/retention basins, inlets, drywells, etc.

b. A table providing the following areas in square feet:

   i. total rooftop areas,

   ii. total pavement area,

   iii. total gravel area, and

   iv. total impervious area.

APPENDIX 4-A-GENERAL CONSTRUCTION NOTES

a. All work and materials shall be pursuant to the latest edition of the City of Spokane Valley Street Standards, *Spokane Regional Stormwater Manual* and all other governing agency's standards.

b. Prior to site construction, the Contractor shall be responsible for locating underground utilities. Call the underground utility location service at 811 before you dig.

c. Locations of existing utilities shown in the plans are approximate. The Contractor shall be responsible for locating all underground utilities. Any conflicting utilities shall be relocated prior to construction of road and drainage facilities.

d. The Contractor shall have a complete set of the accepted street and drainage plans on the job site whenever construction is in progress.

e. If the Contractor discovers any discrepancies between the plans and existing conditions encountered, the Contractor shall immediately notify the Applicant's engineer and Onsite Inspector.

f. The Contractor shall take appropriate precautions to protect the infiltration capacity of stormwater facilities (e.g., line the facility with filter fabric, over-excavate upon completion of the infrastructure, etc.)

g. Where directed by the City, the Contractor shall place traffic control devices, the placement and type of which shall be pursuant to the MUTCD.

h. It shall be the Contractor's responsibility to coordinate with and contact all appropriate utilities involved prior to construction.

i. All pavement cuts to connect utilities shall be repaired pursuant to the Regional Pavement Cut Policy.

j. All survey monuments shall be protected during construction by or under the direction of a Licensed Surveyor pursuant to state law.

k. Contractor shall be responsible for scheduling and acquiring electrical inspections required by the State.

l. Contractor shall be responsible for verifying that all required permits have been obtained prior to initiating construction.

m. The Contractor and all subcontractors shall have a current City business registration.

n. The Contractor and all subcontractors shall be licensed by the State of Washington and bonded to do work in the public right-of-way.

o. No work on this project shall commence until a City right-of-way permit has been issued.

p. The Contractor shall protect adjacent properties, public or private, at all times during construction.

q. Contractors shall control dust pursuant to applicable law.

r. Contractor shall remove all construction-related debris to an approved waste disposal site.

s. Fire hydrants shall be installed and functioning prior to the construction of any structures.

t. Contractor shall maintain fire apparatus access to streets during construction.

u. The Contractor shall notify the On-site Inspector one business day before any construction or product placement takes place that requires testing or observation (Refer to Appendix 9A- Minimum Material Testing Frequencies). The On-site Inspector shall determine the time required to satisfactorily achieve the necessary testing, observation and documentation. The On-site Inspector shall be on site 100% of the time during HMA placement, drywell placement, and trench work.

v. Supplemental notes used when applicable:

    i. For any curb grades less than 1.0% (0.01 ft./ft.), a Surveyor shall verify that the curb forms are at the grades noted on the accepted plans, prior to placement of concrete. The Contractor shall arrange and coordinate work with the Surveyor.

    ii. The Contractor shall employ Surveyor to verify that the cross-gutter forms are at the correct plane grade prior to concrete placement.

    iii. Concrete aprons are required at the inlet into any swale or pond. The finish grade of the swale/pond side slope, where the concrete inlet apron ends, shall be a minimum of two inches below the finished elevation of the concrete curb apron extension. This is to allow stormwater runoff to enter the swale/pond unobstructed, without backing up into the street and gutter due to sod overgrowth at the inlet.

    iv. Unlined pond and bio-infiltration swale bottoms are expected to infiltrate via the pond floor, and therefore, shall not be heavily compacted; equipment traffic shall be minimized on the pond bottoms. The facility sub-grade shall be a medium- to well- draining material, with a minimum thickness of 48 inches and a minimum infiltration rate of 0.15 in/hr. The facility shall drain within 72 hours of a storm event. If the pond also serves as a water quality treatment facility, the treatment zone (sod and six inches of treatment soil) shall be a medium- to well-draining material, with a minimum infiltration rate of 0.25-0.50 in/hr. Scarify the finish grade of the pond bottom prior to hydroseeding/sodding. Testing that verifies subgrade minimum infiltration rate may be required by the City prior to construction certification to ensure adequate drainage. Infiltrative testing of the treatment zone is only required if soils other than silty loam or loamy soils are proposed.

    v. If, during final inspection, it is found that the constructed pond or swale does not conform to the accepted design, the system shall be reconstructed so that it does comply. Refer to Appendix 9A of the *Spokane Regional Stormwater Manual* for Erosion and Sediment Control Standard Notes.

vi. Pursuant to Spokane Regional Stormwater Manual methods, a qualified licensed engineer shall evaluate, classify and document the soils in the excavated drywell infiltration zone prior to installation of the filter fabric, drainage rock or drywell barrel and shall determine if the soil's conditions are suitable and capable of infiltrating storm water at the design flow rate. Applicant's Engineer shall submit a copy of the documentation detailing the observations, the conclusions and the basis for the conclusions to the City Engineering Department. If the Applicant's engineer determines that the soils do not meet the design's requirements or that a condition exists preventing the drywell from functioning as designed, the design engineer shall be notified and the design revised to meet existing conditions. Any revisions to the design shall be submitted to the City for review and acceptance.

vii. Construction of every drywell, including fabric and drainrock, shall be observed by the On-site Inspector to confirm that it meets the design details and specifications. Drywells that have not been observed shall have their performance verified by a full-scale drywell test.

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CHAPTER 5 – LAND DISTURBING ACTIVITIES

Chapter Organization

List of Figures

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5.1 INTRODUCTION

The purpose of these requirements is to provide the design criteria necessary to preserve the quality of the City's water courses; minimize surface and ground water quality degradation; protect adjacent and downstream property owners from erosion and flooding; and ensure the safety and stability of the City's streets and right-of-ways. This chapter provides requirements for all land disturbing activities. The design of temporary erosion and sediment control (ESC), clearing and grading plans shall conform to the requirements herein.

Although the construction phase of a project is usually considered a temporary condition, construction work may take place over several seasons. All Best Management Practices (BMPs) used in the course of construction should be of sufficient size, strength, and durability to readily outlast the expected construction schedule and operate properly during the design storm rainfall conditions. Maintenance of these BMPs is mandatory.

Clearing and grubbing permits and grading permits do not allow the disturbance of critical areas per SVMC Title 21.40 without a scientific report backed by professional study and acceptance by the City.

5.2 GEOTECHNICAL EVALUATION

5.2.1 APPLICABILITY

The City shall require a geotechnical evaluation when the proposed land disturbing activity includes one or more of the following situations:

- A proposed design does not adhere to the criteria specified in this chapter;
- Cut or fill slopes 2:1 (horizontal to vertical) or steeper, and heights greater than 2 ½ feet;
- Cuts or fills slopes 10:1 (horizontal to vertical) or steeper with heights 4 feet or greater;
- Slope lengths requiring terraces (see Section 5.7);
- Areas with shallow groundwater or springs;
- Projects that include areas of questionable soil conditions or stability, as determined by the City;
- Areas with erodible soils and/or landslides;
- Slopes with surface water flows,
- Unusual situations are encountered;
- Projects with potential negative affect down stream or to neighboring parcels; or,

- A geotechnical investigation is otherwise required in accordance with the *International Building Code* (IBC), *International Residential Code* (IRC), *Spokane Regional Stormwater Manual* (SRSM), or other sections of these Street Standards.

5.2.2 QUALIFIED PROFESSIONAL

A qualified geotechnical engineer (a professional engineer currently licensed in the State of Washington with geotechnical engineering as a specialty) is required to perform the geotechnical evaluation.

5.2.3 GEOTECHNICAL REPORT

The geotechnical report shall include:

- Project description;
- Soil description, including classification, nature, distribution, erosion hazards, and strength of existing surface and subsurface soils;
- A description of site conditions that have the potential to impact the project design such as limiting layers, shallow groundwater, springs, shallow bedrock, etc.;
- Supporting data and a discussion of the results;
- A map drawn to scale showing the location of sampling points, water features, and features of geotechnical concern;
- Adequacy and stability of the geologic subsurface for cuts and fills, including allowable cut and fill slope inclinations;
- Recommendations for surface and subsurface drainage;
- Recommendations for grading, including site preparation and placement of fill;
- Calculations and recommendations for pavement design;
- Sub-level structure recommendations for projects with shallow groundwater, springs and shallow bedrock per the SRSM;
- Foundation recommendations; and,
- Discussion regarding the finished slope stability.

5.3 CLEARING, GRUBBING & GRADING

This section provides general criteria for clearing, grubbing and grading activities. In general, clearing, grubbing and grading activities shall:

- Not contribute to or create erosion, landslides, accelerated soil creep, settlement of soils, or flooding of public or private property;

- Not contribute to or create flooding, erosion, increased turbidity, or siltation of a watercourse;
- Contain provisions for the preservation of natural features, sensitive and critical areas, and drainage courses;
- Expose the smallest area of soil for the least amount of time;
- Within pipeline hazard areas, identified in SVMC 19.110.040, meet the standards and notification requirements of that section;
- Minimize groundwater and tree disturbance; and,
- Not divert existing watercourses.

If an existing excavation, embankment, fill, or cut is or will become a hazard to life or limb, endanger property, or adversely impact the safety, use or stability of public or private property, drainage channel or natural resource, the Applicant shall repair and/or eliminate such hazard upon receiving notice from the City within the period specified therein. It is the responsibility of the property owner or Applicant to share information defined above with the City.

5.4 EROSION AND SEDIMENT CONTROL REQUIREMENTS

The Applicant for a development permit is ultimately responsible for containing all soil on the project site and must recognize the potential for changing or unexpected site and weather conditions.

The ESC plan shall be prepared in accordance with Chapter 9 - Erosion and Sediment Control Design of the SRSM, as amended. Detailed examples and descriptions of the BMPs referenced in the above chapter are included in Chapter 7 of the *Eastern Washington Stormwater Manual*. The ESC plan shall address and include the following items:

- A narrative addressing information about the site topography, drainage soils, and vegetation; potential erosion problem areas; and actions to be taken in the event the BMPs do not meet performance criteria;
- Construction sequence;
- Construction access route;
- Installation of sediment control;
- Provisions for soil stabilization;
- Protection of drainage structures;
- Control of runoff from construction sites;
- Washout site for concrete trucks and equipment;
- Material storage/stockpiling;
- The proper handling of cut and fill slopes;

- Stabilization of temporary conveyance channels and outlets;
- De-watering of construction site;
- Control of pollutants other than sediment on construction sites, including airborne particulate (dust); and
- Maintenance of BMPs.

A site log shall be completed for the project. The site log shall include the results of all site inspections, sampling, and other records. For sites one acre or larger, inspections must be conducted by a Certified Erosion and Sediment Control Lead (CESCL).

5.5 CUTS AND FILLS

5.5.1 GENERAL REQUIREMENTS

Unless otherwise recommended by a geotechnical evaluation, cut and fill slopes shall conform to the following provisions:

- Cut and fill slopes shall be no steeper than is safe for the intended use;
- Cut slopes shall be rounded off so as to blend in with natural terrain;
- Permanent cut slopes shall not be constructed steeper than 2:1 (horizontal to vertical);
- Cut and fill slopes shall not exceed 20 feet in vertical height or 75 feet in slope length without a terrace break (Figure 5-1). Interceptor ditches may be required if a geotechnical evaluation determines they are needed or as required in Section 5.6.
- Cut and fill slopes shall be stabilized by terracing, cat tracking, jute mat, grass sod, hydroseeding, or by other planting or surfacing materials approved by the City. The erosion control measures shall be installed per the SRSM and shall be maintained by the Applicant;
- Cut and fill slopes and related drainage facilities shall not encroach upon adjoining property without a recorded easement from the adjacent owner;
- Cut and fill slopes shall be provided with subsurface and surface drainage provisions to approved drainage locations;
- Fill slopes shall not be constructed on natural slopes steeper than 2:1 (horizontal to vertical) unless an engineer devises a method of placement which ensures the fill will remain in place;
- Drywells shall not be placed in fill slopes or loosely placed fill on grade (see the SRSM); and,
- Temporary or permanent stormwater runoff shall not be directed onto or near a slope without providing for stabilization. See Section 5.6 for additional requirements.

5.5.2 GROUND PREPARATION AND FILL MATERIAL

Unless otherwise recommended by a geotechnical evaluation approved by the City, grading activities shall conform to the following provisions:

- Prior to any fill being placed, all vegetation, topsoil and other unsuitable material shall be removed;
- Top 6 inches of subgrade shall be scarified and compacted before placing fill;
- Fill material shall be placed in lifts of no more than 12 inches;
- All fills shall be compacted to a minimum relative dry density of 95 percent as determined in accordance with ASTM Standard D-1557-78 Modified Proctor, or as directed by the geotechnical engineer. Verification of field density shall be conducted in accordance with ASTM Standard D-1556-82 or equivalent. Verification shall be submitted for any fill where such fill may support the foundation for a structure. Additional compaction tests may be required by the City at any time;
- Where slopes are 5:1 (horizontal to vertical) or steeper, and the depth of the fill exceeds 5 feet, an engineered key shall be dug into undisturbed, solid component soil or bedrock beneath the toe of the proposed fill. The key shall be engineered (see Figure 5-1);
- Where the depth of the fill exceeds 20 feet, an engineered key shall be provided in conformance with Figure 5-1;
- Fill material shall be free from tree stumps, detrimental amounts of organic matter, frozen soil, trash, garbage, sod, peat, and other similar materials. Rocks larger than 6 inches in greatest dimension shall not be used unless the method of placement is properly devised, continuously inspected, and approved by the City.

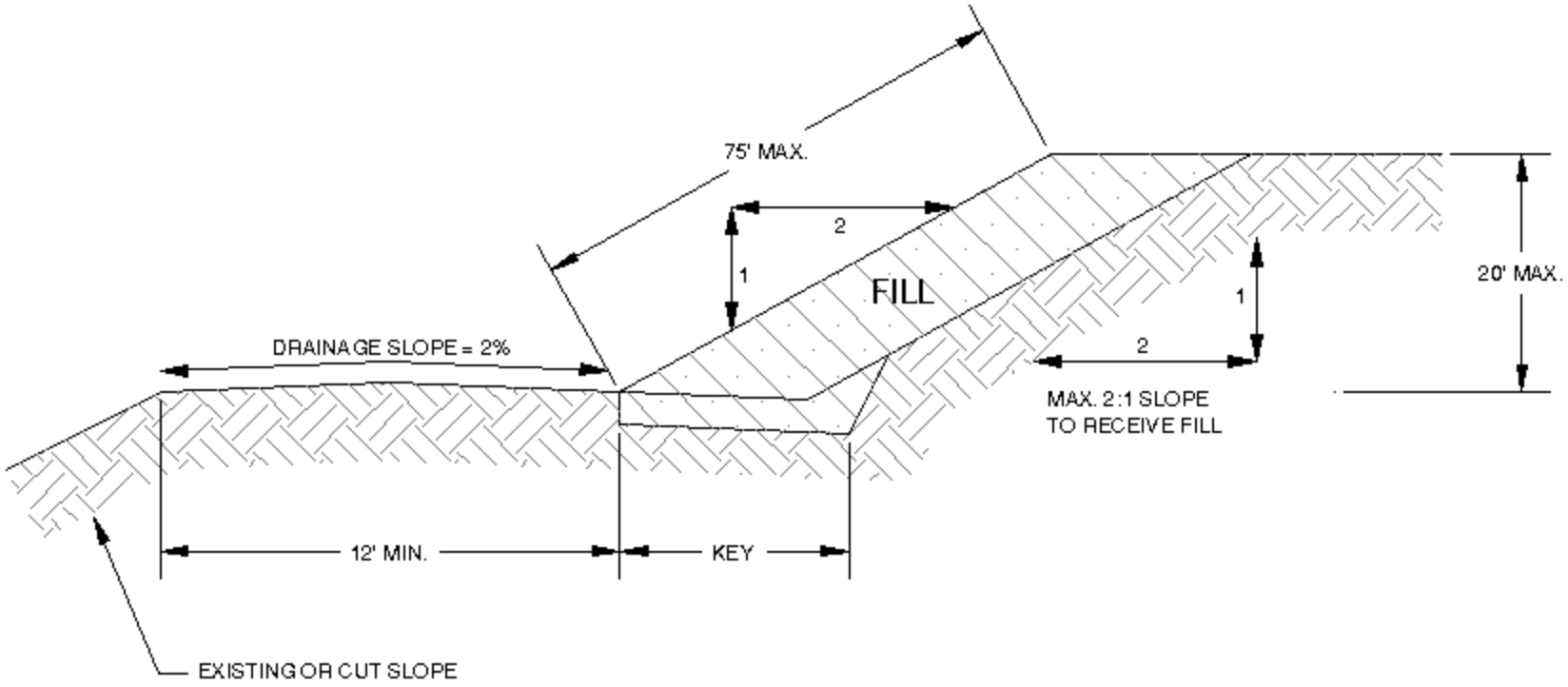


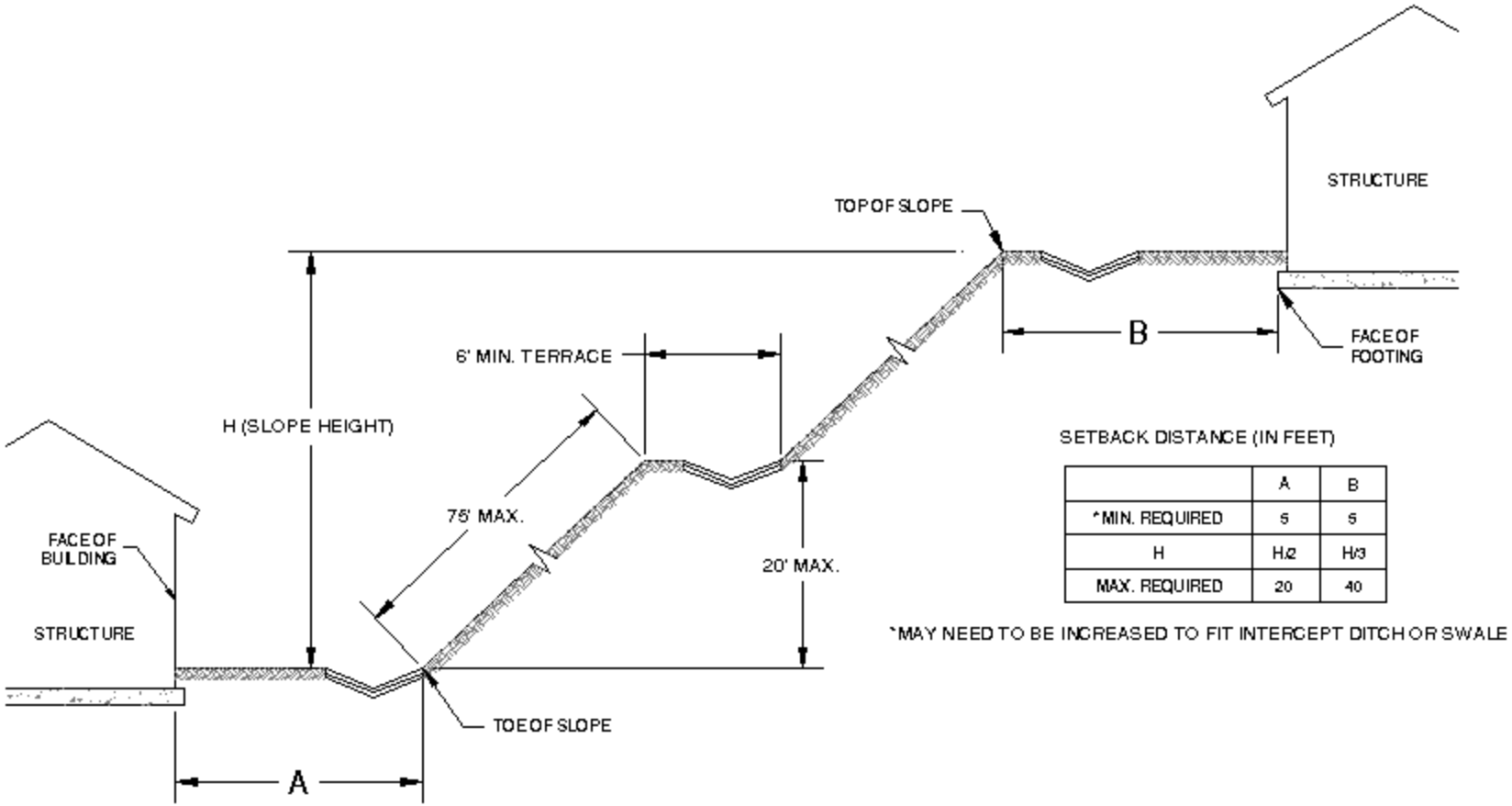
FIGURE 5-1 FILL MINIMUM REQUIREMENTS

5.5.3 CUT AND FILL SETBACKS

Tops and toes of cut and fill slopes shall be set back from property boundaries and structures as far as necessary for the safety of the adjacent properties and to prevent damage resulting from stormwater, flooding, slope erosion or sediment deposition.

If cut and fill slopes meet the applicability listed in Section 5.2, setbacks shall conform to the following provisions:

- Setbacks shall not be less than as shown in Figure 5-2;
- Where a cut or a fill slope is to be located near the property line, additional precautions shall be provided to protect the adjoining property. These include, but are not limited to:
    - The toe of slope shall not be located closer than distances equal to 1/5 the height of the slope (H) to the property line. The setback shall be at least 2 feet but does not need to be more than 20 feet;
    - The top of slope shall not be located closer than a distance equal to 1/5 H to the property line. The setback shall be at least 2 feet but does not need to be more than 10 feet;
    - Provisions for retaining walls;
    - Mechanical or chemical treatment of the fill slope surface to minimize erosion;
    - Provisions for the control of surface waters;
    - Recommendations from a geotechnical engineer.



	A	B
*MIN. REQUIRED	5	5
H	H/2	H/3
MAX. REQUIRED	20	40

FIGURE 5-2 SETBACKS

5.6 TERRACING

A geotechnical engineer shall review all proposed terracing. Unless otherwise recommended by a geotechnical engineer, all terracing shall conform to the provisions of this section:

- Terraces at least 6 feet in width shall be established at not more than 20-foot vertical intervals or 75-foot slope length on all cut or fill slopes to control surface drainage and debris. When only one terrace is required, it shall be at mid-height;
- Swales or ditches shall be provided on terraces. They shall have a minimum gradient of 5 percent and shall be paved with reinforced concrete not less than 3 inches in thickness, or an approved equal. They shall have a minimum depth of 1 foot and a minimum paved width of 5 feet;
- Where more than 2 terraces are required, one terrace located at approximately mid-height, shall be at least 12 feet wide;
- A single run of swale or ditch shall not collect runoff from a tributary area exceeding 13,500 square feet (projected) without discharging into a down drain;
- All drainage facilities shall be designed to carry the 100-year storm event to an approved location. The drainage facility shall include a freeboard consistent with the SRSM. Stormwater runoff shall leave the site in the same manner and location as it did in the pre-developed condition;
- Lots shall be graded so as to drain surface water away from foundation walls; and,
- Paved interceptor drains shall be installed along the top of all cut slopes, where the tributary drainage area above, slopes toward the cut and has a drainage path greater than 40 feet, measured horizontally. Interceptor drains shall be paved with a minimum 3 inches of reinforced concrete, or an approved equivalent. Drains shall have a minimum depth of 1-foot and minimum paved width of 3 feet, measured horizontally across the drain. The slope shall not be less than 2 percent.

5.7 SLOPE EASEMENTS

Slope easements adjacent to the right-of-way for protection and maintenance of cut or fill slopes and drainage facilities may be required on shouldered streets with side slope of 3:1 or steeper. Easement shall be from the catch point plus a minimum of 5 feet and shall include retaining walls and reinforcements, as applicable. This space provides for utility poles, fences, sloped rounding, etc.

5.8 RETAINING WALLS

Retaining walls shall be submitted to the Building Division for review. Retaining walls with a vertical difference of 2.5 feet or greater within 2 feet pedestrian corridors, and areas where maintenance personnel will be required to access, shall require a handrail.

An engineered wall design is required for walls 4 feet or higher, measured from the bottom of the footing to the top of the wall. The engineered design shall include a soils investigation and report by a geotechnical engineer and structural calculations to support the wall design.

Rockeries used as retaining walls shall conform to the requirements of the latest addition of the Associated Rockery Contractors *Rock Wall Construction*.

Unless otherwise recommended by a geotechnical engineer, underdrains are required for all retaining walls over 4 feet in height, measured from the bottom of the footing to the top of the wall. A minimum 6-inch diameter perforated or slotted drainpipe shall be placed in a shallow excavated trench located along the inside edge of the keyway. The pipe shall be bedded on and surrounded by "Gravel Backfill for Drains" (WSDOT/APWA 9-03.12(4)) to a minimum height of 18 inches above the bottom of the pipe. The drain pipe shall drain to a point of discharge indicated on the grading or civil plans.

A filter fabric shall surround the gravel backfill and shall have a minimum of 1-foot overlap along the top surface of the gravel. The perforated pipe shall be connected to a stormwater facility.

A minimum of 18 inches of granular drainage material shall be placed between the undisturbed soil or engineered fill and the wall. The drainage material shall meet criteria for Gravel Backfill for Walls (WSDOT/APWA 9-0.3.12(2).

CHAPTER 6 - UTILITIES

Chapter Organization

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6.1 INTRODUCTION

The design and construction of public and private utilities located within City rights-of-way shall be in conformance with these standards.

6.2 DESIGN CRITERIA

The City has established the following minimum requirements to ensure the efficient construction of utilities with the least impact to City transportation and utility infrastructure.

6.2.1 UTILITIES LOCATED WITHIN RIGHT-OF-WAY

Pursuant to SVMC 20.20.090(M), the short subdivision, subdivision, or binding site plan shall provide underground utilities within all new public rights-of-way, alleys, or utility easements including, but not limited to, those for electricity, communication, and street lighting.

6.2.2 UNDERGROUND UTILITIES

New underground utilities shall meet the following requirements:

a. Private utility lines shall be located within the rights-of-way only when approved by the City. Utility companies shall have a current franchise consistent with the City of Spokane Valley Municipal Code,

b. Private utilities shall be located a minimum horizontal distance of five feet from buildings and public utilities;

c. When crossing public utilities, private utilities shall be located a minimum vertical distance of 12 inches from the public utility;

d. Manhole covers, utility box lids, and all other underground utility and irrigation access covers shall not be located within the sidewalk or driveway approaches;

e. Sewer utility installation shall meet Spokane County *Standards for Road and Sewer Construction*, as adopted or amended, and the Department of Health's *Orange Book*, as adopted or amended;

f. Water line installations or modifications shall satisfy American Water Works Association (AWWA) *Standard Specifications*;

g. End markers shall be installed at the end of all utility stubs or crossings, and locator tape shall be installed at a maximum of six inches above all conduits, pipe and cables; and,

h. The Applicant shall timely notify the applicable utility companies of upcoming street construction so they have the opportunity to upgrade their utilities in conjunction with the development project, if desired.

6.2.3 ABOVEGROUND UTILITIES

On projects where underground requirements do not apply, the following requirements shall be met in locating aboveground utilities:

a. Utilities shall be located pursuant to Standard Plan U-100;

b. Utility poles and other aboveground utility structures located on curbed streets with separated sidewalks shall be installed a minimum of two feet behind the back of curb. When the sidewalk is adjacent to the curb, they shall be located a minimum of two feet behind the sidewalk. For shouldered streets, utility poles and other aboveground utility structures shall be located outside the clear zone pursuant to the AASHTO manual *"A Policy on Geometric Design of Highways and Streets"* as adopted or amended, and Chapter 7 of the Street Standards;

c. Utility poles and other aboveground utility structures shall not be located within the sidewalk. Sidewalks shall have a continuous unobstructed path of at least five feet wide;

d. Utility poles and other aboveground utility structures shall not interfere with driveways, intersections, clear zone, and all other road features. They shall not obstruct sight distance, road signing, traffic signals, culverts, etc. This may require that existing poles be relocated at the Applicant's expense;

e. No utility pole or other aboveground utility structures shall be located in such a way as to pose a hazard to the general public. Utility companies shall locate and replace poles and other structures with primary consideration given to public safety and roadway functionality; and,

f. When an Applicant-driven project requires the relocation of private utilities due to public utility extensions or other City required improvements, the cost of relocation of the private utility shall be borne by the Applicant.

6.2.4 REGIONAL PAVEMENT CUT POLICY

Modification or removal of pavement within the City's rights-of-way is governed by the *Inland Northwest Regional Pavement Cut Policy, or as adopted or amended.* Copies may be obtained from the City Permit Center or City website. General requirements are as follows:

a. Pursuant to SVMC 22.130.060, a right-of-way permit is required for any person or entity cutting pavement within existing City rights-of-way or on City-owned infrastructure;

b. Permit fees are established in the *Spokane Valley Master Fee Schedule* as adopted or amended;

c. A pavement cut moratorium is in effect for three years from the date of pavement or reconstruction of pavement for public streets. For streets beyond the moratorium period, cuts are allowed if the requirements of this policy are met; and,

d. The Applicant shall provide a warranty in accordance with this policy for pavement cuts and other infrastructure affected by the work.

e.

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CHAPTER 7 – STREET ELEMENTS

Chapter Organization

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7.1 INTRODUCTION

The design of streets within the City shall generally conform to AASHTO and WSDOT standards unless modified herein.

Some street designs require technical criteria that are above the scope of these Standards and therefore are not covered. In these cases, design manuals from the above referenced agencies and references listed in Section 1.9 shall be used for a basis of design.

The standard plans referenced in this chapter are located in Chapter 11.

7.2 TERRAIN TYPES

Terrain type can be classified as flat, rolling or mountainous.

Flat terrain is the condition where roadway sight distances, as governed by both horizontal and vertical restrictions, are generally long or could be made to be so without construction difficulty or major expense. The slope of the existing terrain is from 0% to and including 5%.

Rolling terrain is that condition where the natural slope rises above and falls below street grade line consistently. Normal street alignment is restricted some by occasional steep slopes. The slope of the existing terrain is from 5% to and including 15%.

Mountainous terrain is that condition where longitudinal and transverse changes in the elevation of the ground with respect to a street are abrupt and where the roadbed is obtained by frequent benching or side hill excavation. The slope of the existing terrain exceeds 15%.

7.3 STREET TYPES

Streets within the City include public and private streets. Since community needs are usually best served by streets owned and maintained by the City, most projects are required to be accessed via public streets. Private streets may be appropriate for some local accesses in very limited usage.

For the purposes of these Street Standards, the following sections provide additional descriptions of streets.

7.3.1 PUBLIC STREETS

Public streets are owned and maintained by the City. All public streets in the City are classified using the Federal Functional Classification system, which provides a hierarchy, from principal arterials to local access streets, to accommodate existing and anticipated traffic. Street classifications can be found in the City of Spokane Valley Comprehensive Plan.

New public streets may be required by land actions or development permits pursuant to Chapter 2. Public streets, not private streets, shall be used to connect two public streets and shall be designed per Tables 7.1 through 7.3 and the Standard

Plans. Chapter 7 provides additional design criteria and requirements for public streets.

7.3.2 PRIVATE STREETS

Private streets are local access streets, privately owned and maintained. All new private streets shall be approved by the City.

Private streets shall be permitted when all of the following apply:

a. Where connectivity to the public street system is not compromised;

b. Where future through connection to public streets is not possible;

c. The private street does not landlock present or planned parcels;

d. The private street serves from two to nine single family dwelling lots;

e. The private street provides direct access to a public street. Access to and from private streets shall be limited to properties immediately adjacent to the private street; and

f. The private street is not used to connect two public streets.

Private streets shall be designed pursuant to Table 7.3.

The design of a private street shall discourage any through traffic of non-residents. Traffic calming measures may be utilized in the design of private streets. Private streets shall connect to City streets using a standard driveway approach but not a high volume approach.

A legally responsible owner or homeowners association shall be established and identified to maintain private streets and associated drainage facilities in perpetuity. A plat or short plat with private streets shall be required to provide an executed, recorded Private Street Maintenance Agreement and a Stormwater Easement and Maintenance Agreement that obligate future property owners to maintain the infrastructure in perpetuity (see Chapter 10 for requirements).

7.3.3 ALLEYS

Alleys are not typically required. However, certain projects may have the option or may be required to provide alley access by the City's Comprehensive Plan or by an adopted subarea plan.

Design of alleys typically follows the criteria for local streets. The following is a list of design standards that differ from local street elements:

a. Alleys shall have a minimum width of 20 feet of asphalt pavement. If the alley is the only access point to the site, the alley width shall meet the width requirements for local access streets (See Table 7.3);

b. Curb, gutters and sidewalks are not required, unless conditioned otherwise; and,

c. The pavement area may have an inverted crown at centerline to convey stormwater into catch basins located at low points in the invert.

Alleys shall connect to a private or public street at each end. In cases where this is not feasible, adequate turnarounds shall be provided. Alleys may be located in the public rights-of-way or a private easement.

7.3.4 PRIVATE DRIVEWAYS

Private driveways provide vehicular access to one lot. Private driveways shall comply with the following:

a. Private driveways longer than 75 feet but less than 150 feet in length shall meet the requirements for width and grade as private streets (See Table 7.3);

b. Private driveways longer than 150 feet shall be engineered and meet the requirements for width, grade, and signing as private streets (See Table 7.3)*;*

c. Private driveways longer than 750 feet shall only be allowed when approved by the Fire Department.

Structures accessed by a private driveway and which are not visible from the public street shall post an address at the street. Addresses shall be permanent in nature and the numbers shall be a minimum of four inches tall, ½ inch stroke, and contrasting color to the background.

Driveways shall not extend off the end of an arm of the hammerhead turn-around.

7.4 HALF-STREET IMPROVEMENTS

A half-street is required as an interim facility. Half-street improvements are required for a property fronting a public street that is not currently built to City standards. Half-street construction may also be required for property that abuts future streets proposed in the City's Arterial or Local Street Plan.

When half-street improvements are required, the design of the half-street shall be consistent with the existing street classification or as dictated by the City's Six-year TIP or City Street Plans. This requires construction of more than half the street for safety and drainage reasons. Construction in these circumstances requires a minimum of one travel lane on the opposite side of the roadway and frontage improvements on the project side of the street. Dedication of additional right-of-way and border easements are required, unless the existing right-of-way and easement widths are sufficient to fit the improvements.

When half-street improvements are required, a minimum of 28 feet of pavement is required. Street improvements shall be designed to provide drainage for the constructed portion of the street. Provisions shall be made to allow for extension of the storm drainage system to the undeveloped portion of the street for future construction.

Transition tapers are required when the new edges of pavement do not match the existing edge of pavement. Tapers shall conform to Chapter 6 of the MUTCD.

All proposed utilities located within the half-street shall be installed during construction.

The unfinished side of the half-street shall be finished with a gravel shoulder, grassed ditch and/or side slope to ensure proper drainage, bank stability, and pedestrian and traffic safety (see Standard Plans).

When half-streets connect to an intersection, the intersection shall be designed and constructed for the full build-out of the street. The intersection design and construction shall extend for at least 75 feet from the street intersection.

7.5 STREET GEOMETRY

Factors contributing to the geometric conditions of a street are discussed in the following sections.

All public streets in a subdivision, including half-streets, shall be fully constructed to the plat boundaries. Pavement, gutter, curb and sidewalk shall be extended to allow future connections to occur.

7.5.1 DESIGN CRITERIA

Minimum and maximum geometric design elements are set forth in Tables 7.1 through 7.3. Any revision to a geometric element or traffic control on a State Highway requires WSDOT approval. For in-depth design information on the following criteria, refer to *AASHTO Green Book*, latest adopted edition.

TABLE 7.1 ARTERIAL STREET DESIGN CRITERIA

MINIMUM DESIGN ELEMENTS	TERRAIN TYPE	URBAN ARTERIAL SYSTEM				URBAN COLLECTOR SYSTEM	
Classification		Principal		Minor		Collector	
Design Speed (mph)	Flat	40		40		35	
	Rolling	40		35		35	
	Mountainous	35		30		35	
Minimum Horizontal Curve Radius[1, 3] (ft)	Section Type	Crown		Crown		Crown	
		2%	3%	2%	3%	2%	3%
	Flat	765	820	765	820	510	545
	Rolling	765	820	510	545	510	545
	Mountainous	510	545	330	350	510	545
Minimum Tangent Length[2] (ft)	All	150		150		100	
Maximum Superelevation (%)[3]	All	4		4		Not allowed	
Maximum Grade (%) [4]	All	6		8		8	
Acceptable Range Cross-slope (%)	All	2-3		2-3		2-3	
Minimum Crest Vertical Curves[5] (K)	Flat	45		45		30	
	Rolling	45		30		30	
	Mountainous	30		20		30	
Minimum Sag Vertical Curves[5] (K)	Flat	65		65		50	
	Rolling	65		50		50	
	Mountainous	50		40		50	

1. Minimum horizontal curves reflect a crown section. For superelevated sections, the horizontal curve radius shall be re-calculated using AASHTO – Geometric Design of Highway and Speeds. Radius measured to centerline.
2. Minimum tangent required at intersections and between curves.
3. Horizontal curves may be adjusted if a super-elevated section is proposed - use AASHTO – Geometric Design of Highway and Streets.
4. Maximum grades may be exceeded for short distances subject to approval by the City "(+ 2%)".
5. Length in feet per percent of algebraic grade difference (K value). L = K x Algebraic difference in grade. K Shall not exceed 167.

TABLE 7.2 ARTERIAL STREET DESIGN CRITERIA MINIMUM WIDTHS

TYPE		URBAN ARTERIAL SYSTEM			URBAN COLLECTOR SYSTEM
Classification		Principal		Minor	Collector
Curb & Gutter Required		Yes		Yes	Yes
Edge Type		Curb	Shoulder[1]	Curb	Curb
Painted Center/Left-turn lanes[2]		12	12	12	12
Inside lanes (feet)		12	12	12	12
Intermediate lanes (feet)		12	12	12	12
Outside lanes[3] (feet)		12	12	12	12
Minimum Sidewalk (feet)		6	6	6	(5 to 6)[4]
Minimum Intersection return radii (ft)[5]		50	50	40	30
Minimum Asphalt Width (feet) [6]	2 lanes			44[7]	40[3]
	3 lanes	44 or 46	--	44 or 46	--
	4 lanes	56	64	56	--
	5 lanes	68 or 70	78	68 or 70	--
	6 lanes	80	102	--	--
	7 lanes	92 or 94	--	--	--

1. Shoulder section only when approved by the City.
2. Where raised median islands are required, the center lane or left-turn lane shall be fourteen feet in width.
3 Traveled lanes of a two-lane road are shown as outside lanes. If the street is a shared roadway as designated in the Comprehensive Plan, the outside lane shall be 14 feet minimum. For streets with a bike lane as designated in the Comprehensive Plan, increase the lane width by 5 feet 8 inches to allow for a 5-feet bike lane and 8-inch stripe.
4. Minimum sidewalk width is six feet if it is adjacent to the curb and/or if located in a commercial zone.
5. Return radii at face of curb.
6. When asphalt width varies, the larger width is for a raised median.
7. Parking lanes included.

TABLE 7.3 ACCESS STREET DESIGN CRITERIA

DESIGN ELEMENTS	TERRAIN TYPE	INDUSTRIAL/ COMMERCIAL	LOCAL ACCESS		PRIVATE STREET	ALLEY
ADT		All	200+	< 200	All	All
Curb & Gutter Required	All	Yes	Yes	Yes	No	No
Design Speed (mph)	Flat Rolling Mountainous	35 30 25	30 30 25	25 25 20	20 20 20	20 20 20
Minimum Horizontal Curve Radius (ft) [1]	Flat Rolling Mountainous	545 350 210	350 350 210	210 210 110	110 110 110	110 110 110
Minimum Tangent Length (ft) at intersections	All	100	25	25	25	25
Maximum Superelevation Rate (%)	All	Not allowed	Not allowed	Not allowed	2	2
Maximum Grade (%)[2]	All	8	8	8	10	8
Acceptable Range Cross slope (%)	All	2 to 3	2 to 3	2 to 3	2 to 3	2 to 3
Minimum Crest Vertical Curves (K)[3]	Flat Rolling Mountainous	40 30 20	20 20 15	15 15 10	10 10 10	10 10 10
Minimum Sag Vertical Curves (K) [3]	Flat Rolling Mountainous	50 40 30	40 40 30	30 30 20	20 20 20	20 20 20
Minimum Sidewalk Width (ft)[4]	All	6	5	5	Not required	Not required
Min. Asphalt Width (ft)[5]	All	40	30	28[6]	(20-26)[7,8,9]	(20-30)[10]
Minimum Intersection return radii at face of curb (ft)	All	30	30	30	30	30

1. Minimum horizontal curves reflect a crown section with a cross-slope of 3 percent. Other section types should be calculated using AASHTO – Geometric Design of Highway and Speeds. Radius measured to centerline.
2. Maximum grades may be exceeded for short distances subject to approval by the City (+2%).
3 Length in feet per percent of algebraic grade difference (K value). L = K x Algebraic difference in grade. K shall not exceed 167.
4. Minimum sidewalk width is six feet if it is adjacent to the curb and/or if located in a commercial zone.
5. Asphalt width does not include curb and/or gutter section.
6. "No Parking" signs shall be posted on one side of the street.
7. A minimum 10-foot maintenance and utility easement shall be provided on at least one side of the private street.
8. Asphalt width based on the length of the street: up to 500 feet = 20 feet; over 500 feet = 26 feet. The minimum width is 26 feet around a fire hydrant when a fire hydrant is located on the private street, regardless of the street length, per Appendix D of the IFC. 9. Streets 20 to 26 feet wide shall be posted on both sides as a fire lane and with No Parking signs. Pavement widths greater than 26 shall be posted on side of the

street as a fire lane and with No Parking signs. If curb is provided, the curb to curb width can be used to determine if a "No Parking" sign is required.

10. If the alley is the only access point to the site, the alley width is 30 feet unless the ADT is less than 200, then the width is 28 ft.

7.5.2 RIGHT-OF-WAY

The public right-of-way shall extend at a minimum to two feet behind the curb for projects with separated sidewalk. When the sidewalk is adjacent to the curb, the right-of-way shall extend two feet behind the sidewalk. Right-of-way requirements may vary within a street corridor. The required right-of-way width depends on the required street elements, including number of lanes, on-street parking, bike lanes, medians, turn lanes, roadside swales, pedestrian buffer strips and above and below ground utilities. Right-of-way shall be conveyed to the City on a recorded plat or by a right-of-way dedication.

7.5.3 BORDER EASEMENT

Border easements shall be granted to the City on a recorded plat or by a recorded easement. Border easements shall extend from the right-of-way line to the back of sidewalk or the back of public facilities when located behind the sidewalk, whichever is greater. The border easement shall run the total length of the street on both sides.

Fences shall not be constructed inside the border easement. The border easement area shall be kept clear of other objects that may obstruct a driver's view. The sidewalk shall be open for use of pedestrian traffic at all times.

The border easements may be used by the utility companies. Utility and other easements can cross the border easement but cannot be entirely located within the border easement.

7.5.4 GRADE

Minimum longitudinal grade shall be 0.5% for streets with concrete gutters and shouldered roads. The minimum longitudinal grade shall be 0.8% for streets with asphalt gutters. Maximum allowable grade shall be pursuant to Tables 7.1 and 7.3.

7.5.5 CROSS SLOPE

All new streets shall be constructed with a center crown, with the cross slope per Tables 7.1 and 7.3. When widening an existing street, the cross slope may range between 2 and 4.5%.

The cross slope of the higher priority street shall be extended through the intersection. The grade of the cross street shall be adjusted to meet the cross slope of the higher priority street.

When two streets with the same classification meet, the street with the higher ADT shall be selected to act as the higher priority street. The slope of the other street shall be adjusted as required above.

7.5.6 HORIZONTAL CURVES

Curve radii shall be as large as possible; the minimum radii shall be used only where necessary. The minimum allowable centerline radii for horizontal curves shall be pursuant to Tables 7.1 and 7.3. Angle points are not allowed. All changes in direction shall be made using horizontal curves.

Reverse and compound curves should only be used when a single radius curve will not work. For driver safety, compound curves shall have a ratio no greater than 1.5 where the value of the larger radius is divided by the smaller radius.

Whenever two streets intersect, a tangent length (measured from the nearest gutter flowline of the intersected street to the point of curvature in the intersecting street) shall be provided for a safe sight distance and traffic operation. The angle of departure from perpendicular shall not exceed 15 degrees for the length of the tangent. The minimum required tangent length shall be pursuant to Tables 7.1 and 7.3.

For driver safety, horizontal curves shall not begin near the top of a crest vertical curve or the bottom of a sag vertical curve.

Connection with existing streets shall be made to match the existing alignment grade of the existing improvements. The centerline, flowline, and existing ground lines of all streets (except cul-de-sacs) shall be continued for 100 feet beyond the proposed construction.

7.5.7 VERTICAL CURVES

The minimum vertical curve length for public and private local access streets is 50 feet and 100 feet for arterials. A vertical curve is required when the grade break is 1% or greater.

The following guidelines shall be followed when designing a profile:

a. The grade line shall be smooth flowing;

b. The roller coaster type profile should be avoided;

c. A broken-back grade line (successive vertical curves in the same direction) generally shall be avoided;

d. The grade through intersections on streets shall not exceed 6%;

e. A sag vertical or flat grade is desirable in advance of such features as channelization and ramp takeoffs in order to provide good visibility;

f. The approach at street intersections shall be pursuant to Table 7.4;

g. When superelevation is allowed, transitions shall be designed pursuant to the *WSDOT Design Manual* or *AASHTO Policy on Geometric Design of Highways and Streets*. The pivot point should be located at the centerline. The gutter profile along the grade break shall be evaluated for stormwater conveyance. Vertical curves and grades created by and along the transition shall conform to these standards; and,

h. Vertical curves should be avoided at the intersection with streets or approaches.

7.5.8 STREET SURFACING REQUIREMENTS

All travelways shall be paved, including public and private streets, alleys, and private driveways. Paving requirements are specified in Chapter 8.

7.5.9 CURB AND GUTTER

Type B curb and gutter shall be used for all public streets.

When the existing curb is not continuous along the street frontage, the Applicant shall construct curb and/or gutter to provide continuity.

7.5.10 LANDSCAPE STRIP AND SWALES

A grass strip shall be provided between the curb and the sidewalk for all public streets, providing a buffer for pedestrians. The width of the grass strip shall be as follows:

a. Seven feet wide if the grass strip is not used for drainage. In this case, drainage facilities shall be located in a separate tract. Commercial and industrial projects may place drainage facilities within a drainage easement granted to the City; or,

b. Ten feet wide if a continuous roadside swale is provided within the strip. Planting shall conform to Section 7.8.9 of the Spokane Regional Stormwater Manual and SVMC Title 22.

Drainage facilities receiving stormwater from public streets shall be located within the rights-of-way, within a border easement parallel to the street, or within a drainage tract. Drainage facilities receiving stormwater from private streets or engineered driveways shall be located within a drainage easement parallel to the street or a drainage tract.

7.5.11 TURNAROUNDS

All dead-end streets shall have a turnaround that meets the City and Fire Department requirements.

A turnaround is required when:

a. The length is 150 feet or more for all types of travelways. The length is measured from the street intersection (SI) to the terminus of the travelway; or,

b. A public street is longer than the depth of one lot.

Proposed dead-end streets shall be connected to existing streets that terminate at the project boundary where possible, unless it can be demonstrated that such connections would lead to a substantial rerouting of through-traffic onto the street.

Non-motorized paths to adjacent arterials or public facilities, such as schools and parks, shall be provided at the dead-end of the street to shorten walking distances. This shall require right-of-way dedication and/or easements.

7.5.11.1 Temporary Turnarounds

Temporary turnarounds shall be approved by the City and are allowed only when there is the possibility for extending the street to connect adjacent parcels or other streets.

For public streets, the temporary turnaround shall be placed within an easement. Curb, gutter, and sidewalk shall be provided to the locations specified in standard plans. The plan shall include language indicating that the easement is to be vacated when the street is extended across the adjacent parcel. For private streets, the turnaround shall be part of the access easement and not part of the driveway approach. It is the responsibility of the Applicant to verify that setback requirements are satisfied for the lots with the turnaround.

A sign shall be posted at the back of the temporary turnaround stating that the street is planned to be extended in the future (Standard Plan R-142).

7.5.11.2 Permanent Turnarounds

Permanent cul-de-sacs shall be provided for approved dead-end public streets (see Standard Plan R-130). For private streets and driveways, cul-de-sacs are the preferred turnaround; hammerheads or other turnaround types (Standard Plan R-133) shall only be allowed for private streets when approved by the City and the Fire Department. A permanent dead-end street is only allowed when connection to adjacent properties and/or other streets is not needed or possible.

Permanent cul-de-sacs shall be constructed with curb, gutter, sidewalk and swales. The grade of the cul-de-sac bulb shall be a minimum 1% at all places along the gutter lines. As topography permits, drainage shall be directed away from the bulb.

7.5.12 BIKEWAYS

The minimum design standards for bikeways shall be per AAHSTO *Guide for the Development of Bicycle Facilities*. Typically, bikeways are shared with other transportation modes, although they may be provided exclusively for bicycle use. Types of bicycle facilities and planned bicycle facilities within the City can be found in Chapter 3 of the City of Spokane Valley Comprehensive Plan.

7.5.13 INTERSECTIONS

7.5.13.1 General Design

Street intersections shall be laid out so the streets intersect as nearly as possible at right angles. If a right angle is not possible, the skew shall not vary more than 15 degrees from a right angle. Opposite street legs shall lie on a straight line, whenever possible.

For safe design, the following shall be avoided:

a. Intersections with more than four intersecting streets;

b. "Y" type intersections where streets meet at acute angles; and,

c. Intersections adjacent to bridges, horizontal curves, and vertical curves and other sight obstructions.

When a private street intersects a public street, the private street shall be stop-controlled. A private street is prohibited as the fourth leg of the intersection at existing tee intersections.

The minimum return radii shall be pursuant to Tables 7.2 and 7.3.

7.5.13.2 Approach Length

The street approach area is where vehicles store while waiting to enter an intersection, and shall be designed with a nearly flat grade. For public or private streets, the street approach area at an intersection shall have a downgrade approaching the intersection of no greater than 2%. An upgrade approaching the intersection shall be no steeper than 4%. The minimum length of the street approach area, measured from the intersected street's edge of curb face, or traveled way where curbs are not present, pursuant to Table 7.4.

TABLE 7.4 MINIMUM STREET APPROACH LENGTH

Average Daily Traffic (ADT) of Higher Priority Road	**Minimum Road Approach Length (feet) (2% Maximum Downgrade and 4% Maximum Upgrade)**	
	Local Access Streets & Private Roads	Collector Arterials
ADT< 1000	25	50
1000 < ADT < 5,000	50	75
5,000 < ADT < 7,000	75	100
7,000 < ADT < 9,000	75	analysis required

7.5.13.3 Intersection spacing

Arterial spacing shall be per the adopted Arterial Plan.

Local access streets and private streets shall be located at the minimum spacing specified in Table 7.5.

TABLE 7.5 - MINIMUM INTERSECTION SPACING FOR LOCAL ACCESS STREETS

MINOR STREET	MAJOR STREET			
	PRINCIPAL ARTERIAL SEPARATION	MINOR ARTERIAL SEPARATION	COLLECTOR SEPARATION	LOCAL ACCESS SEPARATION
LOCAL ACCESS & PRIVATE STREETS	660 feet	330 feet	330 feet	150 feet

1. Minimum intersection spacing is measured from centerline to centerline.

7.5.14 STREET LAYOUT

The internal local residential street network for a subdivision should be designed to discourage regional through-traffic. Subdivisions shall be planned in a manner that minimizes the number of local street accesses to arterials and collectors.

Street configuration shall conform to the following:

a. Blocks lengths shall not exceed 600 feet except as provided in the zoning regulations for estate lots, unless unique characteristics associated with the land such as creeks, woods, or parks justify a longer length;

b. Public streets, private streets, and driveways shall not be located closer than two feet from any point from an interior property line. The only exceptions to this rule are for public streets which shall extend to the plat boundaries to allow for future connection and for half-streets;

c. Horizontal alignment within intersection area. The horizontal approach to an intersection shall be tangent for a minimum length pursuant to Tables 7.1 and 7.3. Longer tangents are highly desirable. The tangent distance is measured from the curb line of one street to the first point of curvature on the intersecting street;

d. Residential developments with greater than 30 single family dwelling units shall have a minimum of two street accesses that

meet the Fire Department separation requirement to ensure adequate emergency access; and,

e. Multi-family developments with greater than 100 dwelling units shall have a minimum of two street accesses.

7.5.15 SURVEY MONUMENTS

7.5.15.1 General Requirements

Surveys shall conform to all applicable state and SVMC requirements (SVMC Title 20).

Prior to any construction or maintenance activities within City rights-of-way, a Surveyor shall conduct a thorough search for all survey monuments. Any found monuments shall be referenced pursuant to state law and SVMC. A copy of the references shall be filed in the office of the County Engineer. The Surveyor shall comply with WAC chapter 332-120. If monuments are found to be at risk by construction or maintenance activities, an approved copy of the Application Permit filed with the Washington State Department of Natural Resources (DNR) shall be provided to the City.

7.5.15.2 Monumentation

a. The responsible Surveyor shall set permanent monuments pursuant to the Standard Plans with his/her registration number as follows:

   i. For placing new or replacement of section corners, quarter corners, closing corners, witness corners, and meander corners that have been disturbed or destroyed, the minimum acceptable monument is a ¾-inch inside diameter iron pipe or a #5 (5/8-inch) steel reinforcing rod, 24 inches in length. The monument and cap shall be marked in conformance with state laws and regulations. Any of these corners in paved roads shall be covered by a cast iron monument case and lid.

   ii. For placing new or replacement of disturbed road intersection points on arterials, the minimum acceptable monument is a ½-inch inside diameter iron pipe or a #5 (5/8 inch) steel reinforcing rod, 24 inches in length. These monuments shall be covered by a standard cast iron monument case and lid.

   iii. For placing new or replacement of disturbed road centerline angle points, curve points and road intersection points (not identified above), the minimum acceptable monument is a ½-inch inside diameter iron pipe or a #5 (5/8-inch) steel reinforcing rod, 24 inches in length.

   iv. For placing new or replacement of all permanent monuments not covered above, the minimum acceptable monument is a

½-inch inside diameter iron pipe or a #4 (½-inch) steel reinforcing rod, 18 inches in length.

v. If it is impossible to set the above monuments, the City may approve an alternative monumentation method.

b. For each monument being set or established, the responsible Surveyor shall:

i. Identify at least three reference points. The reference points may consist of, in order of preference, cross on curbs, bearing trees or accessories, nearby property corners or an alternate as approved by the City. A completed DNR permit shall be filed with the DNR with a copy supplied to the City.

ii. Show on a Record of Survey, Subdivision, Short subdivision or Binding Site Plan sufficient information to comply with RCW 58.09.120. A filed copy of said Record of Survey, Subdivision, Short Subdivision or Binding Site Plan shall be supplied to the City as needed.

7.5.15.3 Horizontal Control Network

A horizontal control network previously established by the Spokane County Engineer shall be the mapping base for all surveys performed under these Street Standards. Intersections shall also be located and referenced to the current control network as established by the Spokane County GPS control project and that coordinate system. Refer to the SVMC Title 20.40 for additional information.

All survey work done within the City boundaries shall conform to the degree of accuracy required under applicable state laws and professional standards. Adequate supplemental information may be required by the City to ensure accuracy.

7.5.15.4 Temporary Bench Mark

The Surveyor shall provide a temporary bench mark along the roadway every 1,000 feet. These temporary bench marks shall be based on the datum plane approved by the City. Refer to the SVMC Title 20.20 for additional information. If requested by the City, the Surveyor shall submit field notes or a sealed statement, ensuring work according to third order accuracy. Refer to Washington State Department of Transportation Standards (*Highway Surveying Manual M22-97*) for additional information.

7.5.16 TRAFFIC CONTROL DEVICES

The City has adopted the Washington State MUTCD as a guideline for traffic control devices, including pavement marking and signing.

The Applicant shall be responsible for providing and installing all required traffic control devices, including but not limited to street name signs, regulatory

signs (including stop and no parking), warning signs, barricades, crosswalk markings, and bicycle/pedestrian signs.

"No Parking" signs shall be posted on both sides of the street for curb-to-curb widths up to 26 feet, and on one side of the street for curb to curb widths greater than 26 feet and up to 32 feet. If the street has no curb, the pavement width shall be used to determine if "No Parking" signs are required. For private streets and private driveways, a minimum of one "No Parking – Fire Lane" sign shall be installed every 100 feet of frontage or as required by the Fire Department. "No Parking" signs on public streets shall be installed when required by these Street Standards at a separation as required by the City and the Fire Department.

7.6 ROADSIDE ELEMENTS

7.6.1 SIDEWALKS

Sidewalks are required on public streets along both sides for all street classifications.

When approved by the City, the sidewalk may be eliminated on one side of the street if topography or safety prohibits construction. The Applicant shall demonstrate that pedestrian needs are still satisfied. Additionally, sidewalk may not be required on a local access street fronting the project if all of the following are true:

a. The project is in a low-pedestrian zone (zones R-1, R-2, R-3, I-2);

b. There are no other sidewalks within its block; and,

c. Any part of the project is more than one mile radially away from an activity center (which includes but is not limited to parks, schools, large employment centers, religious institutions).

The width of sidewalks shall be pursuant to Tables 7.2 and 7.3. Wider sidewalk may be required to provide corridor continuity. At no location shall a sidewalk provide an unobstructed path of less than the required width.

Wider sidewalk may be required at bus stops to allow bus riders a place to stand without hindering pedestrian movements or handicap access.

When the existing sidewalk is not continuous along the street frontage, the Applicant shall construct sidewalk along the frontage of the project to provide continuity.

The thickness of the sidewalk shall be pursuant to Standard Plan R-103.

Meandering sidewalks may be approved by the City. The design of meandering sidewalks shall address obstructions, including mailbox mountings, street trees, fire hydrants, power poles, driveways, swales and street signs, without deviation from the required design width. Additional right-of-way (or easement) may be required to accommodate the obstructions or the meander of the sidewalk.

7.6.2 PEDESTRIAN RAMPS

Pedestrian ramps shall be provided at all pedestrian crossings having vertical curb sections and shall be pursuant to the Standard Plans. Every pedestrian ramp shall have at least one receiving ramp. This may require construction of "island" landing ramps. In special conditions, pedestrian ramps shall also be provided to enable passage across curbed radius return access points. Pedestrian ramps shall have detectable warning patterns formed with manufactured truncated domes in yellow. Pedestrian ramps shall meet all ADA guidelines.

7.6.3 SIDE SLOPES

Typical slopes for embankments should be 3:1 or flatter. The steepest slope for embankment or excavation shall be 2:1. Refer to Chapter 5 for additional requirements.

On shouldered streets, a minimum space of five feet shall be provided between the catch point of the side slope and the right-of-way line for the installation of utility poles, fences, sloped rounding, etc. Depending on site conditions, this may require additional right-of-way, retaining walls, or other requirements. The maximum slope of this space shall be 3:1.

Slope easements shall be granted to the City when required by terrain or design features.

7.6.4 CLEAR ZONE

Clear zone is defined as a relatively flat area void of fixed objects or obstructions beyond the edge of the traveled way that allows drivers to stop safely or regain control of a vehicle that leaves the traveled way. This area may consist of a shoulder, a recoverable slope, a non-recoverable slope, and/or a clean run-out area. The desired minimum width is dependent upon traffic volumes, traffic speeds, side slopes, and the street geometry.

A recoverable slope is a slope on which a motorist may retain or regain control of a vehicle by slowing or stopping. Slopes flatter than 4:1 are generally considered recoverable.

A non-recoverable slope is considered to be traversable but on which an errant vehicle continues to bottom. Embankment slopes between 3:1 and 4:1 may be considered traversable but non-recoverable if they are smooth and free of fixed objects.

A clear run-out area is the area at the top of a non-recoverable slope available for safe use by an errant vehicle. Slopes steeper than 3:1 are not considered traversable and are not considered part of the clear zone.

For streets with Type B or Type A curb, the following is required:

a. Sidewalk adjacent to the curb - Rigid objects shall be placed two feet behind the sidewalk;

b. Separated sidewalk - Rigid objects shall be no closer than two feet from the back of the curb;

c. No sidewalk - Rigid objects shall be no closer than two feet from the back of the curb;

d. Speed limit 40 mph or less - The clear zone distance is two feet behind the back of the curb.

For all other pavement edges and design speeds, clear zone requirements per AASHTO's *"A Policy on Geometric Design of Highways and Streets"* shall be used.

7.6.5 SIGHT DISTANCE

Sight distance is defined as the length of roadway that is entirely visible to the driver. All roads, intersections, and access points shall be designed to provide adequate sight distance for all normal driving situations and are required to conform to *AASHTO's "A Policy on Geometric Design of Highways and Streets."*.

Stopping sight distance shall be calculated for vehicle crest curves and horizontal curves. The stopping sight distance shall not be less than the distances specified in Table 7.6. These values should be adjusted for grades 3% or greater, more than two lanes, skewed intersections, intersections near vertical or horizontal curves, or for design vehicles other than passenger cars.

TABLE 7.6 MINIMUM STOPPING SIGHT DISTANCE

Design Speed (mph)	Stopping Sight Distance (feet)
20	115
25	155
30	200
35	250
40	305
50	425
55	495

Table 7.7 states the required sight distance for different types of intersections and approaches. These values shall be adjusted for grades with slopes of 3% or greater, number of lanes greater than two, for design vehicles other than passenger cars, using the procedures in the AASHTO design guidelines. For intersections or approaches located near horizontal or vertical curves, the City may require the 85th-percentile speed be used in the sight distance analysis.Sight distance triangles shall be shown in the civil plans for all new intersections and all projects with new

driveway approaches. Sight distance shall be continuous. Non-engineered driveways on local access streets are exempt from this requirement. Sight distance triangles shall be developed by an Engineer with traffic engineering experience developing intersection sight distance triangles.

Fire hydrants shall be visible for at least 50 feet in either direction. A sight distance triangle shall be shown at the location of each fire hydrant in the civil plans and lot plans.

The area within the sight distance triangle shall be free from any sight-obscuring objects pursuant to AASHTO design guidelines. Sight-obscuring objects include but are not limited to buildings, parked vehicles, signs, fences, and landscaping. The City may remove, at the expense of the property owner, any vegetation or objects which obstruct sight distance because such obstructions are hazardous to the life, health, and safety of the public.

The sight distance triangle shall be located completely within an easement or right-of-way, if required by the City. The property owner shall be responsible for removing any objects that become a sight hazard. If an easement is not practical, the City may require additional right-of-way as a condition of development approval to ensure proper maintenance.

TABLE 7.7 MINIMUM INTERSECTION & APPROACH SIGHT DISTANCES

CASE TYPE	THROUGH STREET TYPE	THROUGH STREET SPEED LIMIT (MPH)	DISTANCE FROM TRAVELWAY (FT)	SIGHT DISTANCE[1] (FT)
Case A – Uncontrolled	Local access or lower classification	20	90[2]	90
		25	115[2]	115
Case B – Signal, Stop Control, Commercial Approach & engineered driveways	Any	25	15[3]	280
		30		335
		35		390

1. These values should be adjusted for grades 3% or greater, more than two lanes, skewed intersections, or for design vehicles other than passenger cars.
2. Distance back from center of intersection.
3. Use Figure 7-2.

The following types of intersection and accesses are covered in Table 7.7. Other intersection types shall be analyzed pursuant to Chapter 9 of AASHTO *Green Book*.

a. Case A can be used to analyze uncontrolled intersections which are intersections not controlled by a stop sign, traffic signal or yield sign. They are usually located on streets that carry low volumes and have a 25 mph

speed limit. Figure 7-1 shows the sight distance triangle for this type of intersection.

b. Case B can be used to analyze street approaches controlled by stop signs or a signal, commercial approaches and alleys. Figure 7-2 shows the sight distance triangle for Case B.

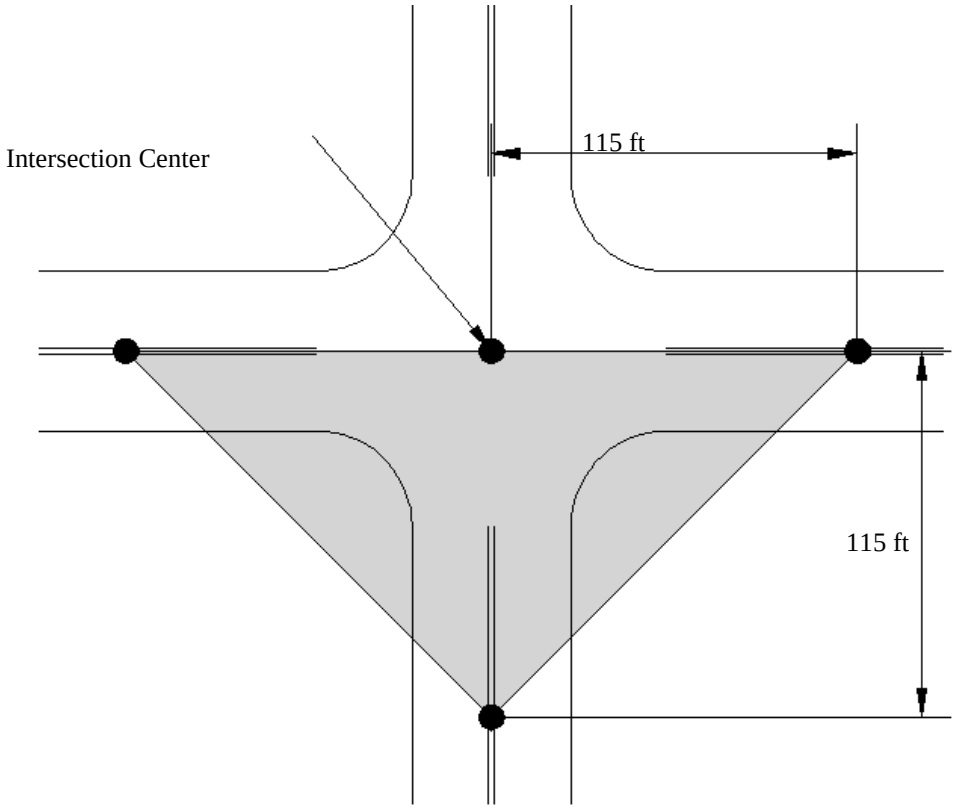

FIGURE 7-1 SIGHT DISTANCE TRIANGLE FOR CASE A

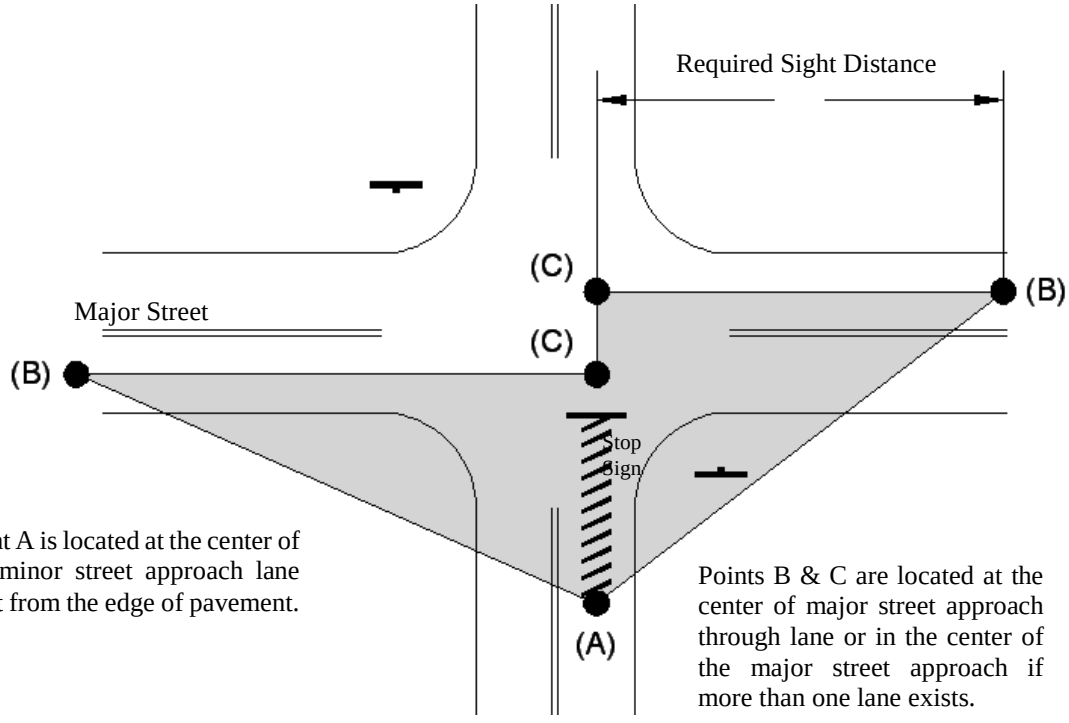

FIGURE 7-2 SIGHT DISTANCE TRIANGLE FOR CASE B

7.7 MISCELLANEOUS FEATURES

7.7.1 STREET NAMES

The City and the Fire Department review proposed street names to conform to established names within the County grid to expedite property identification by emergency services. Street names shall also comply with the US Postal Services addressing standards. Street name designations shall be as follows:

a. All north-south streets shall be called Streets;

b. All east-west streets shall be called Avenues;

c. Streets in large subdivisions that do not have a definite directional course shall be called Drives;

d. A permanent dead-end or cul-de-sac street shall be called a Court;

e. A street that lies diagonally to the east-west, north-south grid system and is an arterial or collector street shall be called a Boulevard;

f. A street that has its ingress and egress on the same street shall be called a Circle; and,

g. A private street shall be called a Lane.

7.7.2 MAILBOXES

Mailbox installation and placement shall comply with AASHTO and US Postal Services guidelines. Mailboxes should not be placed in sight triangles or in clear zones.

7.7.3 GUARDRAIL

Evaluation of embankments for guardrail installations shall be pursuant to Chapter 710 of the *WSDOT Design Manual*.

Guardrail installations shall conform to *WSDOT/APWA Plan C-1, Beam Guardrail Type 1*. End anchors shall conform to *WSDOT/APWA Plan C-6, Beam Guardrail Anchor Type 1*.

7.7.4 BOLLARDS

Points of access shall be closed by a line of bollards when necessary to deny vehicle access to an easement, tract, or trail (except for maintenance or emergency vehicles). Bollards shall be wrapped with reflective tape. Closure shall include one or more fixed bollards on each side of the traveled way and removable, locking bollards across the traveled way. Spacing shall provide one bollard on centerline of the trail and other bollards at a maximum spacing of three feet to preclude vehicular access.

Fire access roads shall not be blocked in this manner without the approval of the Fire Department. Reflective tape and safety striping shall be placed on bollards. Bollards shall be placed 10 feet from the paved edge of roadway.

7.7.5 ROADWAY BARRICADES

Temporary and permanent barricades shall conform to the MUTCD. Type III barricades (see Standard Plan R-142) shall be used at the end of a local access street terminating abruptly without cul-de-sac bulb or on temporarily stubbed off streets. Each such barricade shall be used together with an end-of-road marker and signed future street extension.

7.7.6 ENTRANCE GATES

Entrance gates are prohibited on public streets. Use of entrance gates on private streets requires prior approval by the City and the Fire Department. Minimum gate opening width shall be 20 feet. Proposed gates shall be clearly shown on the street plans.

If a center island is used as part of an entrance gate feature, a minimum 14-foot wide lane between face of curb and center island shall be provided. The center island shall not extend past the end of the gate when it is fully opened.

Gated streets require a queuing area to allow vehicles to exit the connecting street prior to the gate. The queuing length shall be a minimum of 35 feet plus the gate width. Parking shall be prohibited within the queuing area, on either side of the street, for a distance equal to the queuing length. Signage for the "No Parking Zone" shall be placed on both sides of the gate.

Gates shall be required to have a Fire Department emergency access device installed and maintained:

a. A Knox key switch shall be installed on gates that provide access to 20 lots or less; or,

b. An Opticom gate activation device shall be provided for subdivisions with more than 20 lots.

7.8 APPROACH DESIGN CRITERIA

The following section contains design criteria for intersections and driveway approaches. These are minimum requirements and may be modified if traffic volumes (existing and/or projected), topography, design speed, design vehicle requirements, drainage, and other conditions, both existing and projected indicate a more stringent criterion is necessary. The City may require additional provisions to ensure public safety.

All access points to and from City streets, including intersections and driveways shall be approved by the City prior to construction and require an approach permit.

7.8.1 APPLICABILITY

These requirements apply to all new or altered intersection and driveway approaches to City streets.

7.8.2 ACCESS LIMITATIONS

a. While no property is denied access to City streets, direct street access is not guaranteed. When direct access is denied, properties may be required to:

   i. Access the street through an alley;

   ii. Share a single driveway approach with two or more contiguous properties; or,

   iii. Restrict access with a right-in/right-out approach for properties located on arterials and with no available alternate access. Additionally, these properties may be required to construct street improvements to preclude left turning traffic.

b. Properties shall be restricted to one access point on arterials and two access points on local access streets. Engineering may grant one additional arterial access point provided that:

   i. Minimum spacing requirements between access points are met with any driveway approaches;

   ii. The applicant demonstrates that additional access points will result in an improvement to safety or traffic flow both on-site and off-site; and,

   iii. One of the following situations exists:

      1. The PM peak hour volume exceeds 100 PM peak hour vehicles on both directions; or,

      2. Traffic volumes using one driveway would exceed the capacity of a stop sign controlled intersection during the PM peak hour; or,

      3. The ADT using one driveway would exceed 1,000 vehicles both directions.

c. When a property has frontage on two or more streets, and spacing requirements on the major street cannot be met, the driveway approach shall be located on the street with the lowest classification unless safety considerations dictate otherwise.

d. For a development that combines more than one underlying lot, these requirements, including the number and spacing of access points, shall apply to the development as a whole, not to each underlying lot.

e. For all Binding Site Plans, excluding industrial zones, shared access shall be required between the lots. The shared access shall include parking lot travel lane connections or shared driveway approach. If the Applicant adequately demonstrates a site design or building use limitation for installation of the travel lanes or shared approach on the existing property, exceptions to this requirement may be administratively granted. Exceptions may be approved if:

   i. The City finds that the lack of shared access does not negatively impact the present or future function and safety of the parking lot circulation, ingress/egress, or roadway network; and,

ii. The City finds that the lots required to share access have allowable incompatible uses; and,

iii. The property does not have a feasible alternative site design solution.

f. Driveways shall not be allowed where horizontal or vertical curves prevent the roadway from having continuous stopping sight distance or adequate intersection sight distance to safely accommodate the movements in and out of the driveway.

7.8.3 GENERAL DESIGN

Approaches shall be constructed to avoid interference with existing drainage inlets, culverts, lighting, utility poles, traffic regulating devices, fire hydrants, or other facilities. The Applicant shall be responsible for the cost of relocating any of the above. The agency holding authority for the particular structure shall decide how the facility will be relocated, which may require approval of the City.

If at the time of construction the fronting street does not have full width pavement or curb and gutter, a rural driveway approach may be used with the approach starting at the edge of the existing pavement (see the Standard Plans).

Approaches shall not restrict or impound drainage flow in the street. For shouldered streets with ditches, stormwater shall be conveyed under the driveway with a culvert. The minimum culvert size shall be 12 inches. For curbed roads, stormwater shall be conveyed using a culvert or an inverted approach pursuant to the Standard Plans.

If an existing approach is to be altered or abandoned, the unused portion of the original approach shall be removed and replaced with curb, gutter and sidewalk matching that which is adjacent.

Redevelopment projects shall be required to modify or eliminate any existing driveway approach that does not conform to these standards.

7.8.4 DRIVEWAY APPROACH HORIZONTAL AND VERTICAL GRADE

Approaches shall align perpendicular to the street. The angle of intersection to the street shall not be less than 75 degrees. The angle may be reduced to 45 degrees for right-in/right-out driveways where the entering and exiting lanes are separated by a raised “pork chop” island.

The vertical grade of approaches shall not exceed 8 percent within the right-of-way and shall be designed to preclude vehicles dragging when entering or exiting the site. Vertical grades shall not exceed 10% within 10 feet of the right-of-way.

7.8.5 APPROACH WIDTHS

The total approach width shall not be greater than 50% of total lot frontage width.

When approaches are constructed different than that shown on the construction plans, the design engineer shall verify that any impacted street and stormwater facilities still meet the design requirements. If the facilities are inadequate,

measures shall be taken to bring the facilities into compliance prior to their acceptance. Driveway approaches shall be designed pursuant to the Standard Plans.

7.8.5.1 Commercial/Industrial

High volume driveway approaches may be required or permitted when all of the following conditions are present:

a. The access is located along an arterial;

b. Access volumes indicate a need for a radii curb return where the ADT exceeds 500 or where speed change lanes would be required;

c. The access is designed to restrict turning movements, requiring the installation of an access island or center median;

d. The roadway has no curb and gutter;

e. The access serves an industrial property, or provides for commercial deliveries, where large truck movements are required; and,

f. A traffic engineering analysis submitted by the applicant determines that a radii access is necessary to ensure adequate traffic safety and operation.

7.8.6 DRIVEWAY APPROACH ON-SITE LAYOUT

Approaches shall provide access to an off-street parking area located on private property. The driveway shall be of sufficient length so a vehicle in the driveway does not project into the right-of-way, sidewalk, or pathway. Approaches and on-site parking shall be designed such that vehicle-backing maneuvers will not occur into the street/public right-of-way, impede pedestrian access to sidewalk or vehicles in the public street. Driveway approaches shall be designed to allow the largest typical vehicle using the approach (i.e. tractor trailers at large warehouses, delivery trucks at mini marts, etc.) to enter and exit the site without encroaching into opposing traffic.

Whenever possible, the site should be designed for counterclockwise circulation of large trucks as left turns and left-hand backing maneuvers are easier and safer since the driver's position is on the left hand of the vehicle. All parking, loading and maneuvering of trucks shall be conducted on private property.

7.8.6.1 Driveway Stacking Length for Multi-use Properties

Driveway stacking length for multi-use properties is the distance between the right-of-way and the near side of the first intersecting interior aisle or parking space. The driveway stacking length for multi-use properties shall be as follows:

a. 20 feet for parking lots with less than 50 spaces;

b. 50 feet for parking lots with up to 200 spaces; and,

c. 80 feet for parking lots with over 200 spaces.

7.8.6.2 Driveway Stacking Length for Single-use Properties

Driveway stacking length for single-use properties is the distance between the right-of-way and the proposed uses. The minimum length for driveway stacking for drive-thru windows shall be as follows:

a. 150 feet for drive-in banks and drive-thru restaurants;

b. 50 feet for automated tellers (ATM) and drive-in cleaners and repair services;

c. 75 feet for automated car wash and espresso stands; and,

d. 100 feet for controlled access parking.

The City may require a traffic study to determine the stacking and queuing requirements for such uses that include, but are not limited to, service stations, drive-thru restaurants, drive-in banking, etc.

The City may require sites with internal traffic congestion to design approaches with long throat lengths to provide extra storage to avoid impacting City streets.

7.8.7 CORNER CLEARANCE FROM INTERSECTIONS

The following sections provide minimum corner clearances. Greater corner clearances may be required at the discretion of the City based on existing or proposed conditions at the intersection. In general, full access driveways are not allowed within the functional intersection boundary, which can be minimally defined by the length of the turn pockets, but may extend further from the intersection.

Where the driveway location does not meet minimum City criteria, or where a safe driveway location cannot be found, the City may require reasonable mitigation measures to provide for as safe a driveway as feasible.

7.8.7.1 Single Family Residential

Residential driveway approaches may not be located closer than 15 feet from the point of curvature of a curb return.

7.8.7.2 Commercial/Industrial

Commercial driveway approaches may not be located closer than 75 feet from the point of curvature of a curb return.

7.8.8 DRIVEWAY APPROACH SPACING - SAME SIDE OF STREET

Table 7.8 provides the minimum distance allowed between the centerlines of adjacent driveway approaches. The distance is measured from centerline to centerline of each approach.

TABLE 7.8 - DRIVEWAY APPROACH SPACING

STREET CLASSIFICATION	DESIRABLE CONDITIONS SEPARATION (FT)	LIMITING CONDITIONS SEPARATION (FT)
Collector	70	50
Minor Arterial	90	60
Principal Arterial	120	80

Desirable conditions shall be applied when sufficient space or street frontage is available. If sufficient space or street frontage for desirable conditions is not available, then lesser distances, down to, but not less than the requirement for limiting conditions, may be applied.

7.8.9 DRIVEWAY APPROACH METHODS OF MEASUREMENTS

Driveway throat width is measured perpendicular to the centerline of the driveway between lines defined by the radii, whether or not that occurs inside the property lines and is physically marked with curbing.

Driveway throat length is measured along the centerline of the driveway from the back edge of the driveway apron and the nearest vehicle aisle or circulation road.

Dimensions in this section refer to distances from (or along) face of curb. In the absence of a curb, the measurement is considered to be from (or along) the edge of pavement.

Driveway angles are measured between the driveway centerline and centerline of the roadway.

7.8.10 RESTRICTED ACCESS DRIVEWAYS

Restricted access approaches do not allow left-hand turns out of or into the driveway approach. Development or redevelopment of properties, where the required setback from an intersection cannot be achieved in any direction and without other ways to access the site, may be required to use a restricted access driveway. In some cases a raised median may be required down the street centerline.

Restricted access approaches shall only be allowed when approved by the City. The existence of other approaches in the vicinity that do not meet standards is not grounds for allowing further substandard approaches.

7.8.11 ALIGNMENT OF CROSS-STREET DRIVEWAY APPROACHES

Driveways should be placed directly opposite from each other whenever possible. If this is not possible and adequate left-turn storage capacity is not available in

advance of each driveway, combining of driveways on the same side of the street may be required.

The requirement above shall not apply if the street to be accessed has a permanent median and/or traffic control device that prevents any cross-street movement of traffic or if the City determines that adhering to said requirement would be unsafe.

7.8.12 SIGNALIZED DRIVEWAY APPROACHES

If the Traffic Impact Analysis determines that there is or will be a need to signalize proposed access points, then proposed access points shall be aligned directly opposite any existing or proposed access points or T-intersection across the street.

Where driveways are to be signalized, a minimum spacing of 1,320 feet to any other signalized intersection should be maintained or shall be spaced as approved by the City. Roundabouts may be considered as an alternative option by the City.

7.8.13 APPROACHES ON STATE HIGHWAYS

This section contains specific access standards for state highways within the City limits, which are classified as managed access facilities. Managed access is based on the premise that access rights of a property owner are subordinate to the public's right and interest in a safe and efficient highway system.

Pursuant to chapter 47.50 RCW, the City adopts by reference, the provisions of chapter 468-52 WAC, as adopted or amended, in order to regulate and control vehicular access and connection points of ingress to and egress from, the State Highway System within the incorporated areas of the City. State Routes (SR) within the City include SR-27 (Pines Road) and SR-290 (Trent Avenue). The current access classifications for SR-27 and SR-290 are shown in Table 7.9.

TABLE 7.9 STATE ROUTES CLASSIFICATIONS

STATE ROUTE	BEGINNING MILEPOST	ENDING MILEPOST	APPROXIMATE LOCATION	CURRENT ACCESS CLASSIFICATION
27	83.14	84.61	14TH TO CITY LIMITS	M2
27	84.61	86.49	14TH TO ~NORA	M5
27	86.72	87.70	MONTGOMERY TO 290	M5
290	4.31	6.35	FANCHER TO ARGONNE	M5
290	6.35	10.29	ARGONNE TO PROGRESS	M4
290	10.29	12.84	PROGRESS TO CITY LIMITS	M2

7.9 TRAFFIC CALMING

Traffic calming devices improve neighborhood livability by reducing the speed and impact of vehicular traffic on residential streets.

7.9.1 NEW DEVELOPMENT

The internal local access street layout shall be designed to discourage through, high-speed traffic or shall incorporate traffic calming devices in the design. The Applicant may utilize one or more of the traffic calming devices. Proposed devices shall be reviewed and approved by the City at the time of preliminary design review.

Traffic calming devices shall be installed at the expense of the Applicant.

7.9.2 EXISTING DEVELOPMENT

Traffic calming devices are prohibited on arterials. On collectors and local access streets, traffic calming devices are only allowed when warranted by an engineering study and approved by the City.

The installation of devices shall be neighborhood-funded.

7.9.3 TRAFFIC CALMING DEVICES

Currently, the only traffic calming device allowed by the City is the Traffic Circle (see Standard Plan T-101). Alternative devices recommended by the Applicant's Engineer may be permitted with City approval.

CHAPTER 8 – PAVEMENT DESIGN

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8.1 INTRODUCTION

This chapter provides the minimum requirement for the design of pavement sections for streets within the City. The use of these design criteria will ensure that paved transportation corridors are improved in a uniform and consistent manner.

The requirements presented in this chapter have been established to minimize structural failures in streets, due to traffic loadings and/or existing soils conditions.

8.2 STREET CLASSIFICATION

All public streets in the City have been classified using the Federal Functional Classification system, which provides a hierarchy from principal arterials to local access streets, to accommodate existing and anticipated traffic. Street classifications can be found in the City of Spokane Valley's currently-adopted *Comprehensive Plan*.

A street's classification is used to determine the volume and mix of vehicles for which it is designed. In cases where a street has yet to be designated a specific classification, the anticipated traffic volume should be used.

If available, the City may provide the anticipated daily traffic for a street. However, the Applicant may be required to obtain additional traffic information.

8.3 STREET PAVEMENT AND SUBGRADE

8.3.1 RESIDENTIAL ZONES

The requirements of this section apply to local access streets, private streets, alleys, and private driveways located in residential zones.

For the purpose of pavement design, the engineering characteristics of the subgrade soil shall be determined through laboratory testing. Laboratory testing consisting of California Bearing Ratio (CBR) testing, Resilient Modulus (M_r) testing or Resistance Value (R-value) testing may be used to characterize the subgrade soil supporting capability.

A minimum street section of three inches of hot mix asphalt (HMA) over six inches of properly placed and compacted crushed rock is required for local access streets, private streets, and alleys regardless of native soils. A minimum pavement section of two inches of HMA over six inches of crushed rock is required for private driveways.

A soils investigation is required for all projects. The minimum pavement section cannot be used for sites with poor subgrade soils, which are soils that meet any of the criteria below:

a. Have CBR less than three;

b. Have R-values less than 20;

c. Have M_r values less than 3,000 psi; or,

d. Are classified as MH, CL, CH, OL or peat in accordance with the Unified Soil Classification System.

When results of laboratory testing indicate that poor subgrade soils are present, an engineered pavement design is required. Subsurface explorations (borings/test pits) are required for each street to demonstrate the subgrade soils meet the criteria above. Exploration should extend to a depth of at least five feet below proposed pavement subgrade.

8.3.2 NON-RESIDENTIAL ZONES

Engineered pavement design is required for commercial local access streets, commercial alleys, collector arterials, and arterials. The resilient modulus value can be acquired using the following methods:

a. M_r testing: Soil samples shall be obtained and sent to a private lab for testing. The proposed street shall have a minimum of one laboratory test for every 1,000 feet of street and/or for every obvious change in subgrade material (minimum of three tests per street).

b. CBR testing or R-value testing: Soil samples shall be obtained and sent to a private lab for testing. The proposed street shall have a minimum of one laboratory test for every 1,000 feet of street and/or for every obvious change in subgrade material (minimum of three tests per street). A geotechnical engineer shall be retained to provide recommendations for correlations between CBR or R-value results and M_r values.

c. In-situ testing using a non-destructive deflection test method: The Applicant shall obtain approval from the City for the type of non-destructive deflection test method proposed, before conducting the testing. For non-destructive deflection testing, a statistical analysis is needed. The results shall be reported by street stationing. Test results shall include a graph of the resilient modulus values vs. street stationing. The graph shall be included in the pavement design report.

A minimum street section of four inches of HMA over six inches of properly placed and compacted crushed rock is required regardless of the pavement design results in accordance with Section 8.4.

8.3.3 SUBGRADE PREPARATION

Prior to placing any street base material, the subgrade shall be rolled and compacted to a minimum of 95% of the maximum dry density as determined by ASTM D-1557 (Modified Proctor). This degree of compaction shall extend to a depth of at least one foot below pavement subgrade elevation in cut areas. The fill areas shall be compacted to at least 95% of the maximum dry density based on ASTM D1557 and WSDOT Standard Specification 2-03.3(14)C Compacting Earth Embankments, Method C. Fill placed more than two feet below pavement subgrade elevation shall be compacted to at least 95% of the maximum dry density based on ASTM D1557.

Any street section which cannot be compacted to the degree specified above shall be removed to a depth of two feet or to a depth where the pumping ceases, or as directed by the Onsite Inspector, and replaced with granular imported material that can be compacted to at least 95% of the maximum density as determined by ASTM D-1557, or as directed by the onsite Inspector.

Prior to placing any sub-base or base materials, geo-textile fabric on the subgrade may be required if the existing subgrade is a fine-grained soil (ML, CL, MH, or CH). The geotextile fabric shall meet the criteria in Section 9.33 for "Separation" of the most current version of the WSDOT *Standard Specifications*. If the material is unsuitable, the soil shall be excavated below grade and compacted per WSDOT *Standard Specification* 2-03.3(3) and 2-03.3(14) Method C.

8.4 ENGINEERED PAVEMENT PARAMETERS

Engineered pavement designs shall be pursuant to the most current version of the *AASHTO Guide for Design of Pavement Structures* for flexible pavements and the following criteria:

8.4.1 TRAFFIC PARAMETERS

The existing traffic levels shall be increased to match the projected traffic at the end of the street design life. The minimum design life shall be 20 years. The growth rate is 1.5% for residential streets and 3.5% for commercial/industrial streets and arterial streets. The 1.5% growth rate may be waived in closed subdivisions with City approval. This growth rate shall only be used for pavement design purposes and shall not be used for traffic analyses.

The engineer shall submit Equivalent Single-Axle Loads (ESALs) calculations. The truck factors found in Table 8.1 may be used in the absence of other information.

TABLE 8.1 – EQUIVALENT SINGLE AXLE LOADS

VEHICLE TYPE	TRUCK FACTOR (ESALs/VEHICLE)
School Bus	2.87
STA Bus	2.57
Refuse Truck	1.03
All other trucks (averaged)	0.42

8.4.2 RELIABILITY LEVEL

The reliability level (R) for residential streets and local non-residential streets is 75%. For all other street classifications, the reliability level is 90%.

8.4.3 OVERALL STANDARD DEVIATION

The overall standard deviation (S) is 0.45 for new construction and 0.49 for overlay projects.

8.4.4 INITIAL AND TERMINAL SERVICEABILITY INDEXES

The initial and terminal serviceability indexes shall be per Table 8.2.

TABLE 8.2 – INITIAL AND TERMINAL SERVICEABILITY INDEXES

STREET CLASSIFICATION	PSI(INITIAL)	PSI(TERMINAL)
Private streets, alleys, access street, residential streets & local non-residential	4.2	2.00
Collector and minor arterials	4.2	2.25
Principal arterials	4.2	2.50

8.4.5 STRUCTURAL LAYER COEFFICIENTS

Structural Layer Coefficients (aj) for new material shall be in accordance with Table 8.3.

TABLE 8.3 – STRUCTURAL LAYER COEFFICIENTS

MATERIAL	STRUCTURAL COEFFICIENT
HMA	0.42
Crushed rock	0.14
Gravel base	0.10

8.4.6 DRAINAGE LAYER COEFFICIENTS

Drainage coefficients (m_i) for crushed rock and gravel base shall be in accordance with Table 8.4. This coefficient is used to modify the structural layer coefficients of untreated base and sub-basin materials in flexible pavements. If limited information is available regarding drainage conditions, a value of 0.95 may be used.

TABLE 8.4 – RECOMMENDED DRAINAGE COEFFICIENTS

PERCENT OF TIME PAVEMENT STRUCTURE IS EXPOSED TO MOISTURE LEVELS APPROACHING SATURATION				
Quality of Drainage	Less Than 1%	1-5%	5-25%	Greater Than 25%
Excellent	1.40-1.35	1.35-1.30	1.30-1.20	1.20
Good	1.35-1.25	1.25-1.15	1.15-1.00	1.00
Fair	1.25-1.15	1.15-1.05	1.00-0.80	0.80
Poor	1.15-1.05	1.05-0.80	0.80-0.60	0.60
Very Poor	1.05-0.95	0.95-0.75	0.75-0.40	0.40

8.4.7 SUBGRADE EVALUATION

Prior to designing the pavement thickness, the subgrade soil shall be evaluated in accordance with Section 8.3.2 to establish a design M_r value. The following moduli ratios (ratio of seasonal moduli to "summer" module) found in Table 8.5 can be used to determine the effective roadbed (subgrade) resilient modulus value (M_{Reff}):

TABLE 8.5 – MODULI RATIO

SAMPLE COLLECTION PERIOD	MODULI RATIO
Winter (January)	1.00
Winter & Spring (February through May)	0.85
Summer (June through September)	1.00
Fall (October through December)	0.90

8.5 REPORT SUBMITTAL

The Applicant shall submit a geotechnical report for all sites. The report shall be prepared and stamped by an engineer with experience in geotechnical engineering. The report shall include, as applicable:

a. Narrative of the site conditions and soils;

b. Recommended pavement section;

c. Site plan showing soil sample locations;

d. Field data; including boring or test pit logs;

e. Laboratory testing results, including discussion of CBR/modulus subgrade correlation or R value/modulus subgrade correction; and,

f. Pavement design calculations.

8.6 MATERIALS SPECIFICATIONS

The following material requirements refer to or amend the most current version of the WSDOT *Standard Specifications*.

8.6.1 GRAVEL BASE

Gravel base shall be bank run gravel, defined as naturally occurring material having characteristics such that when compacted in place on the street, it provides a course having greater supporting value than the subgrade on which it is placed. It shall be pursuant to Section 9-03.10 of the most current version of the WSDOT *Standard Specifications*.

8.6.2 CRUSHED ROCK

Crushed rock used shall fall under the following two classifications:

a. Crushed Surfacing Top Course (CSTC)

b. Crushed Surfacing Base Course (CSBC)

CSTC and CSBC shall be in accordance with Section 9-03.9(3) of the most current version of the WSDOT *Standard Specifications*, including the following modification:

The crushed aggregate portion which is retained on the No. 4 sieve shall contain not more than 15%, by weight, of flat or elongated pieces as defined in ASTM D 693. The crushed aggregate shall have at least 90% by weight of particles with at least one fractured face. The area of each face shall be equal to at least 75% of the smallest mid-section area of the piece.

8.6.3 ASPHALT OR CONCRETE TREATED BASE

When compaction soils type or moisture content precludes proper compaction, asphalt treated base (ATB) or concrete treated base (CTB) should be utilized.

8.6.4 HOT MIX ASPHALT

Hot mix asphalt shall pursuant to the most current version of the WSDOT *Standard Specifications*. Pavement design calculations shall be performed by an Engineer experienced with performance grade oils and pavement design calculations. Asphalt used in City street construction shall use performance grade asphalt binders, pursuant to AASHTO Designation MP-1. The minimum base binder used shall be PG-64-28. Required base binders based on street type and condition are provided in Table 8.6.

TABLE 8.6 – PERFORMANCE GRADE

STREET CLASSIFICATION	PERFORMANCE GRADE
Local access, private streets, and alleys	64-28
Collectors and arterials	70-28

Aggregate for use in hot mix asphalt shall be Class 1/2–inch in accordance with Section 9-03.8(1) of the current version of the WSDOT *Standard Specifications*.

8.6.5 IN-PLACE MAINLINE ASPHALT COMPACTION TEST REQUIREMENTS

A lot consists of five random individual tests. Minimum density testing requirements are one lot per 400 tons of HMA or one lot per day, whichever results in the greater number of lots. A lot shall be rejected if any of the following occurs:

a. The average compaction of the lot is less than 92% of maximum density, as determined by WSDOT FOP for AASHTO T166 and T209; or;

b. Any individual compaction test in the lot is less than 91% or higher than 96% of the maximum density, as determined by WSDOT FOP for AASHTO T166 and T209.

Additional testing requirements shall be pursuant to Appendix 9-A.

8.6.6 COLD JOINT REQUIREMENTS

Section 5-04.3(10)B of the current version of the WSDOT *Standard Specifications for Road, Bridge, and Municipal Construction* is supplemented as follows:

a. Extreme care shall be exercised in the construction of cold joints to ensure that the joint is properly tacked with a uniform and heavy coating of an approved tacking agent, that the placement of HMA adjacent to the cold joint is properly raked and that the adjacent hot mix is rolled and compacted in such a manner so as to completely seal the joint. The formation of all joints shall be made in such a manner as to ensure a continuous bond between the courses and obtain the required density. All joints shall be the same texture as other sections of the course and meet the requirements for smoothness and grade.

b. If in the opinion of the City, the cold joint has not been properly constructed, the joint shall be sealed with a joint compound sealant pursuant to AASHTO M 324, at the Contractor's expense.

8.6.7 LONGITUDINAL AND TRANSVERSE JOINT REQUIREMENTS

Section 5-04.3(12) Joints of the current version of the WSDOT *Standard Specifications for Road, Bridge, and Municipal Construction* is supplemented as follows:

a. The formation of all joints shall be made in such a manner as to ensure a continuous bond between the courses and obtain the required density. All joints shall be the same texture as other sections of the course and meet the requirements for smoothness and grade.

b. When paving occurs on an arterial street, cold joints will be limited to the centerline of the roadway and shall be constructed pursuant to Standard Plan R-127-Step Wedge Longitudinal Cold Joint. A paving plan shall be submitted, to the City detailing how the work is to be accomplished. Where possible, the Contractor shall use multiple pavers in order to reduce or eliminate longitudinal joints.

8.6.8 TACK COATS – PREPARATION OF EXISTING SURFACES

Section 5-04.3(5)A, paragraph two of the current version of the WSDOT *Standard Specifications for Road, Bridge, and Municipal Construction* is hereby amended as follows:

a. A tack coat of asphalt shall be applied to all paved surfaces on which any course of HMA is to be placed or abutted. Tack coat shall be uniformly applied to cover the existing pavement with a thin film of residual asphalt, free of streaks and bare spots. The application rate shall be 0.02 to 0.08 gallons of retained asphalt per square yard. If the tack coat has been diluted with water, as allowed in this section, then the application rate must be adjusted in order to achieve the retained amount of asphalt required. A heavy application of tack coat will be applied to all joints. Thin lifts of pavement require heavier applications of tack coat to prevent raveling,

spalling and delamination. As a guide, existing surfaces that are coarse, dry or milled require a higher application rate of tack coat than surfaces that appear rich or bleeding. For streets open to traffic, the application of tack coat shall be limited to surfaces that will be paved during the same working shift. The spreading equipment shall be equipped with a thermometer to indicate the temperature of the tack coat material.

8.6.9 COVER ASPHALT LOADS DURING TRANSPORT

Tarpaulin material shall be used to cover asphalt loads during transport from plant to project for all projects when the ambient air temperature is 50°F or less.

8.6.10 BREAKDOWN ROLLING MAXIMUM TEMPERATURE LOSS

Breakdown rolling shall occur before 20°F or greater temperature loss of the mix from the point of laydown. Temperature for basis shall be that observed and recorded in the transport vehicle at time of discharge to the paver.

8.6.11 ASPHALT TEMPERATURE PLACEMENT REQUIREMENTS

Table 8.7 shows the minimum laydown temperatures and rolling times. Vibratory compaction shall not be used after the asphalt mat cools below 175°F. The rolling pattern shall be established in conjunction with asphalt density testing.

TABLE 8.7 RECOMMENDED MINIMUM LAYDOWN TEMPERATURE

	MAT THICKNESS (INCHES)					
Base Temp, F	½	¾	1	1 ½	2	>3
40-50			310	300	285	275
50-60		310	300	295	280	270
60-70	310	300	290	285	275	265
70-80	300	290	285	280	270	265
80-90	290	285	275	270	265	260
< 90	280	275	270	265	260	255
Rolling Time (min)	4	6	8	12	15	15

1. Reference is Table 6-4 from the National Center for Asphalt Technologies, Hot Mix Asphalt, Mixture Design and Construction.
2. Time available between recommended laydown temperature and cessation temperature (175°F) when attempts to compact the mat should cease.
3. These compaction temperatures are estimates and will vary with different asphalt cements and aggregates. For thin mats, the time available for rolling is short. For example, a ¾-inch mat placed at the recommended minimum laydown temperature has only six minutes to be compacted to achieve the target density. The roller speeds cannot be increased significantly without adversely affecting density; hence, additional rollers may be required when paving at low temperatures.
4. Subgrade cannot be frozen for laydown. Subgrade may be required to be protected depending on the outside temperatures. Compaction requirements shall be met.

8.6.12 PAVING DATES & WEATHER LIMITATIONS

WSDOT Section 5-04.3(16) Weather Limitations is amended as follows:

a. HMA shall not be placed on any traveled way between October 1st and April 1st without written approval from the City.

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CHAPTER 9 - INSPECTION & CERTIFICATION

Chapter Organization

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9.1 INTRODUCTION

Inspection oversight is required for the construction of all public and private streets, alleys, driveways, and utility improvements. Water and sewer construction shall also be monitored by the system purveyor and/or agency of system ownership.

The City of Spokane Valley's construction certification process is based on the project construction certification procedures found in the *Project Construction Certification Procedures for Spokane County Road, Drainage, and Sewer Projects,* dated April 2002. Spokane County Department of Public Works and the American Council of Engineering Companies of Washington (a subcommittee named the Spokane County Construction Certification Committee) developed that document.

9.2 APPLICABILITY

The following projects require construction certification:

a. New construction of public streets;

b. New construction of private streets;

c. New construction of engineered driveways;

d. Frontage improvements on public streets, including pavement widening, curb and gutter, sidewalk, and drainage improvements; and,

e. Swales and drywells.

9.3 AUTHORITY TO STOP WORK

The Development Inspector has the authority to stop work when any of the following situations exists:

a. The Contractor is working without a valid permit;

b. The Contractor is executing work not included in the approved plans;

c. Required inspections and tests are not being performed;

d. Test results do not meet required specifications; and,

e. Construction activities have the potential to adversely impact public or private property or human life.

9.4 RESPONSIBILITIES

9.4.1 DEVELOPMENT INSPECTOR

The Development Inspector is a City employee and is responsible for:

a. Coordinating with and reviewing submittals from the On-site Inspector(s);

b. Performing development walk-through on private and public streets for acceptance and surety reductions;

c. Reviewing and accepting certification packages. A project certification will not be accepted if required frequencies for testing are not met or test results do not meet specifications;

d. Reviewing quantity estimates for performance and warranty sureties;

e. Performing final inspections of public streets for surety release and street establishment; and,

f. Inspecting swales located in border easements and/or right-of-way for single family dwellings and duplexes prior to issuing a certificate of occupancy.

9.4.2 ON-SITE INSPECTOR

The Applicant is required to secure the services of an On-site Inspector for all projects requiring certification.

The On-site Inspector is responsible for:

a. Preparing weekly reports;

b. Ensuring that plans and specifications are followed;

c. Inspecting paved areas, curb and gutter, sidewalks, approaches, drainage improvements, and utilities within the right-of-way and border easements. The On-site Inspector shall be present at all times for HMA placement, any trench work within the street prism, and for drywell installation;

d. Coordinating required testing and frequencies (see Appendix 9-A);

e. Monitoring traffic control;

f. Verifying fire hydrants, gates, and No Parking signs were installed at the location shown in the plans;

g. Preparing as-built drawings, and,

h. Preparing the certification package.

9.4.3 APPLICANT'S ENGINEER

The Applicant's Engineer is an Engineer, as defined in the Definitions, hired by the Applicant.

The Applicant's Engineer provides required project modifications that occur during the construction process, coordinating with the Contractor and obtaining City approval when significant modifications are required.

Conflicts arising due to concerns regarding project design or constructability, whether surfaced by the Contractor, On-site Inspector, or Development Inspector, shall be addressed by the Applicant's Engineer. The method of addressing the

concern shall be confirmed by the Development Inspector with specific follow-up oversight by the On-site Inspector.

9.4.4 CONTRACTOR

The Contractor is responsible for:

a. Attending the pre-construction meeting;

b. Providing all licenses, bonds and insurance information at the pre-construction meeting;

c. Construction notification in accordance with Section 9.7;

d. Having knowledge of the testing frequencies and construction items requiring inspection (see Appendix 9-A);

e. Notifying the On-site Inspector and Development Inspector, as applicable, prior to the placement of construction items requiring inspection;

f. Completing all improvements in accordance with the approved plans; and,

g. Correcting deficiencies as identified by the On-site Inspector, the Development Inspector, or the applicant.

9.5 RIGHT-OF-WAY PERMITS

Right-of-way permits are required for all work in the public right-of-way. No person, firm or corporation shall commence work or permit any other person, firm or corporation to commence work on the construction, alteration, repair or removal, cutting and/or paving of any street, alley or other public place in the City without first obtaining a written right-of-way construction permit and approved plans from the City.

The Applicant shall secure the services of an On-site Inspector before securing a right-of-way construction permit for any given project requiring certification.

9.6 PRE-CONSTRUCTION MEETING

A pre-construction meeting is required for the following projects:

a. Subdivisions;

b. Short subdivisions;

c. Binding site plans;

d. Commercial projects with frontage and/or full street improvements; and,

e. Other projects which the City deems a pre-construction meeting is required.

The pre-construction meeting shall be held prior to commencing work. The purpose of the pre-construction meeting is to discuss project concerns or issues, construction notification requirements and certification procedures. The Applicant, Applicant's Engineer, Contractor, HMA and concrete subcontractors, Development Inspector and On-site Inspector are required to attend this meeting. A pre-construction meeting will not be held

if the Contractor, paving and concrete subcontractors, and/or the On-site Inspector are not present.

The Contractor shall bring a properly planned and coordinated project schedule to the pre-construction meeting.

9.7 CONSTRUCTION NOTIFICATION

9.7.1 NOTICES OF UPCOMING CONSTRUCTION

Construction warning signs shall be securely posted 48 days prior to construction of short subdivisions, subdivisions or any other project with street construction. Signs shall be placed at all ingresses to the project area and shall be clearly visible from the right-of-way. A typical sign is included in Figure 9-1. The Contractor shall notify the Development Inspector within 24 hours of installing the sign(s).

The signs shall be posted for the duration of the project and shall conform to the following:

a. The signs shall be made of materials that are able to withstand weather for the duration. The signs shall be maintained to remain readable from the public right-of-way;

b. The sign supports shall meet current safety standards;

c. The bottom of the sign shall be 7 feet above ground;

d. Lettering shall be easily readable and shall be per Table 9.1; and,

e. The signs shall include the information required in Table 9.1.

On large or high profile projects, the Applicant shall provide the proposed project schedule and weekly updates to the City's Public Information Officer to notify the public of the project progress.

FIGURE 9-1 TYPICAL SIGN

Road Work Next 600 Feet
Begin: May 25, 2008 –
End: Oct. 12, 2008
Work Includes: Sewer and Water Installation,
Roadway Widening and Repaving
Contractor: Dee Caterpillar, (999) 636-3333, Pave la Tierra, Inc.
Engineer: Mike Mylar, (999) 111-2233, Pan Global Engineering
Developer: Ima Platter, (999) 555-1212, Progression Homes, LLC
Thank you for your patience.

TABLE 9.1 REQUIRED SIGN INFORMATION

INFORMATION ON SIGN	MINIMUM TEXT HEIGHT
Road Work Next # Miles/Feet	2 ½ inch
Begin: Month, Day Year – End: Month, Day Year	2 inch
Work includes: New Street, Utility Installation, Paving …	1 inch
Contractor: Contact Name, Phone Number, Company Name	1 inch
Engineer: Contact Name, Phone Number, Company Name	1 inch
Developer: Contact Name, Phone Number, Company Name	1 inch
Thank you for your patience.	2 inch

9.7.2 NOTICES OF UTILITY SHUTDOWN AND ACCESS LIMITATIONS

Affected residents and businesses are to be notified at least 24 hours in advance of when their utilities (water, electricity, etc.) will be interrupted and/or when access will be limited. The notification shall include the duration of the interruption.

The Contractor shall provide written notification and hand deliver the notification to the affected residents and businesses. The Contractor shall provide a copy of the notification and a list of the citizens/businesses notified to the Development Inspector. This information shall be included in the weekly reports.

9.7.3 NOTICES FOR INSPECTION

The Contractor shall inform the Development Inspector at least 24 hours in advance of paving operations or installation of drywells. At least 72hours notice is required for work performed during the weekend or on Monday. It is the responsibility of

the Contractor to coordinate with the On-site Inspector for all required inspections and required testing.

Engineering will not accept any improvements failing to meet the minimum number of required tests or failing to meet the required test results.

9.8 FIELD AND LAB TESTING

9.8.1 REPORTING

The On-site Inspector shall prepare weekly project summary reports. All lab and field-testing reports shall be included in these weekly reports and in final certification packages. Test reports that show failing tests shall have follow-up test reports that show passing tests for the area of failure. On-site samples shall be used for testing. Any nonconforming issues shall be fully recorded with subsequent documents detailing how the issue was corrected.

9.8.2 MINIMUM MATERIAL TESTING FREQUENCIES

Material testing is required as specified in Appendix 9-A. The frequency of testing may be increased at the discretion of the On-site Inspector or the Development Inspector. Any known site soil special areas of concern shall be addressed with increased testing frequencies based on sound engineering judgment. Wet weather conditions may also require additional testing frequencies.

The On-site Inspector shall coordinate the number of tests, locations, etc. with an approved materials lab. The Applicant shall be responsible for the testing and laboratory costs.

Engineering will not accept any improvements failing to meet the minimum number of required tests or failing to meet the required test results.

9.8.3 FIELD TESTING AND LAB REQUIREMENTS

A material supplier, the Applicant, or the Contractor may not perform testing for certification purposes. Field testing shall be conducted by personnel that is adequately trained, qualified, and certified in accordance with the applicable test specifications. Field testing and laboratories shall have a national recognized accreditation, for the field and lab tests performed by the firm, such as AASHTO, Washington Association of Building Officials (WABO), American Association of Laboratory Accreditation (A2LA), etc.

The entity in charge of field testing and the laboratory shall submit copies of their accreditation to the On-site Inspector so this information can be included in the certification package.

9.9 REQUIRED INSPECTIONS

The On-site Inspector is required to certify the inspection of the following (See Appendix 9-B for required testing frequency):

a. Placement and maintenance of erosion control. A site log shall be completed for the project;

b. Embankment placement and density control;

c. Trenching backfill and density control;

d. Inspection and testing during pipe installation and pipe zone material placement (see Section 9.8.1 for additional information);

e. Subgrade line and grade/density control;

f. HMA surfacing line and grade/density control (see Section 9.8.3 for additional information);

g. Installation of drainage improvements and any required testing;

h. Installation of curb and gutter and material quality; and,

i. Installation of sidewalks and material quality.

9.9.1 EROSION AND SEDIMENT INSPECTIONS

A site log shall be completed for the project. The site log shall include the results of all site inspections, sampling as applicable and other records. For sites one acre or larger, inspections must be conducted by a Certified Erosion and Sediment Control Lead (CESCL) (See Appendix 9-D).

9.9.2 UTILITY INSPECTIONS

Utility work shall be in accordance with Spokane County Interim Policy Regarding Sewer Construction Inspections, Record Drawings & Engineer's Statement and Spokane County Division of Utilities Protocol for Television Inspection of Sewers.

Whenever pipe installation or pipe zone material placement and compaction are underway, the On-site Inspector shall observe the work on a continual basis.

9.9.3 HMA INSPECTIONS

The On-site Inspector shall be present at all times during paving operations.

9.9.4 DRAINAGE STRUCTURE INSPECTIONS

The On-site Inspector shall be present at all times during the installation of pipe, pipe zone material, drywells (including the geotextile and drainrock surrounding the drywell barrel), catch basins, and other drainage structures or facilities.

9.9.5 DRAINAGE SWALE AND DRAINAGE FACILITIES INSPECTIONS

The On-site Inspector shall verify that the volume of each finished drainage swale equals or exceeds the design volume of the swale at a 6-inch and 1-foot depth. Additionally, the On-site Inspector shall verify that there is adequate and continuous grade from the street to the swale for the effective conveyance of runoff. If these items are deficient, the On-site Inspector shall notify the Contractor and/or Applicant's Engineer to determine a solution. Elevation sensitive aspects of

installed materials, such as drywell rims, etc., shall be verified as being within normal industry tolerances (i.e., drywell rim elevations +/- 5/100').

At the discretion of the City, a test of the facility may be conducted to demonstrate adequate performance. The test shall be performed in the presence of the On-site Inspector and Development Inspector.

All aspects of the drainage facility, including landscaping, irrigation, and establishment of specified vegetation, shall be completed in accordance with the accepted plans. An exception may be granted for single-family or two-family residential subdivisions where the completion of the swales is not practical until such time as the dwellings are constructed. In these cases, the Applicant shall rough-grade the swales to the required volume, install all drywells, inlets, and curb drops and other structures in accordance with the accepted plans.

If the driveway approach width is greater than the width shown in the lot plans, engineering calculations shall be submitted that demonstrate that treatment and storage requirements are met.

Erosion control measures shall be implemented to protect the installed drainage structures and to prevent erosion and/or failure of the swale side slopes. This includes, but is not limited to, lining the swale with geo-fabric that can be removed along with accumulated silt, until the swale is final-graded and vegetated.

Completion of the landscaping, irrigation, and establishment of specified vegetation shall be required prior to issuance of the final Certificate of Occupancy or final inspection for any associated dwelling. For single and two-family dwellings, it shall be the responsibility of the Builder to satisfy these requirements.

Acceptance of performance sureties, in lieu of establishing the vegetation, shall be permitted only when completion of improvements prior to final land action or permanent Certificate of Occupancy is impractical because of cold weather not suitable for the establishment of vegetation.

9.9.6 SWALE INSPECTION DURING WARRANTY PERIOD

The Applicant's Engineer and the Development Inspector shall monitor performance of swales during the construction and warranty periods for proper percolation. Swales that do not percolate properly shall require corrective work or measures and are the financial responsibility of the Applicant.

9.10 MISCELLANEOUS

9.10.1 CHANGES DURING CONSTRUCTION

Changes during construction that affect the scope of the project and/or the accepted individual lot plans shall be submitted for review by the City. The Development Inspector will determine if the change is significant. Minor changes do not require City review, but shall be discussed with the Development Inspector and documented in the daily and weekly inspection reports.

The Development Inspector shall review and approve any significant field changes to the design plans and permits that have prior approval. Review and acceptance of any changes to approved plans for utility, site improvements and street right-of-way work shall require the oversight of both the utility operator as well as the Development Inspector.

9.10.2 CONSTRUCTION COMPLAINTS

Complaints from citizens regarding the project shall be documented and shared with the Development Inspector and resolved by the Applicant.

On more significant or high profile projects, the City may assign a City staff member to notify the public of the project schedule and provide weekly up-dates (See Section 9.6).

9.10.3 CONFLICT RESOLUTION

During the construction process, occasional differences may arise between the Applicant's Engineer and/or Contractor and City staff regarding interpretation of policies, standards or guidance documents. When the Applicant's Engineer or Contractor does not agree with an interpretation made by City staff, the Applicant's Engineer may appeal to the City Engineer. The determination by the City Engineer shall be final.

9.11 FINAL WALK-THROUGH

When requested by the Applicant, the On-site Inspector and Contractor shall prepare a punch list. When the punch list items have been addressed, the Applicant shall schedule a final walk-through with the Development Inspector.

If no deficiencies are found, the On-site Inspector shall then prepare a certification package in accordance with Section 9.13. If deficiencies are found, another final walk-through with the Development Inspector is required. The Applicant shall continue to be responsible for correction of all deficiencies until the City accepts the project unless as noted in Section 9.14. Applicant should consider taking verification photographs immediately following the final walk-through. Verification photographs may be helpful in resolving cases of damage by third parties (utility companies, builders, landscapers).

9.12 RECORD DRAWINGS

All construction changes shall be recorded on a set of approved plans with the original approval stamp from the City. After the final walk-through, the Applicant's Engineer or On-site Inspector shall prepare record drawings for the project. Record drawings shall be stamped and have a signed certification statement saying:

> "I have reviewed the construction and to my knowledge I find it to be in conformance with the approved plans except as noted".

Changes from the originally accepted documents shall be clearly noted with "clouds" on the approved plans and changes shall be noted in the revision block. Revised notes,

elevations, grades or other text shall be lined through. Clean new sheets are not desired. Any changes to easements shall be clearly shown on the record drawings. Record drawings shall be marked "Record Drawings."

If a change represents a deviation from the design intent or system performance in the judgment of the Applicant's Engineer, then it shall be clearly shown. It is recommended that spot elevations (on swales, curb, gutter, etc.) to depict final grades be taken and compared with the final design. Differences shall be noted on the record drawings. Significant changes shall be coordinated with the Applicant's Engineer. Elements of the plans that were not built shall have a design change acceptance from the City prior to final inspection and submittal of record drawings.

9.13 PROJECT CERTIFICATION

The On-site Inspector shall prepare a certification package for the project. The package shall include:

a. Certification letter from Engineer with stamp;

b. Weekly reports;

c. Material test reports;

d. A summary of the test results, including a discussion of how they compare to required specification;

e. The certification checklist (Appendix 9-B);

f. Erosion and Sediment Control Logs (Appendix 9-D);

g. Truck tickets;

h. All related construction documents including correspondence and communication records;

i. Copies of the required accreditation for the field testing staff and testing laboratory in accordance with Section 9.8.3;

j. Copies of drywell registrations; and,

k. One set of record drawings.

The City of Spokane Valley will review the certification package within two weeks and shall notify the Applicant if the project is accepted to go to warranty. This Notice of Substantial Completion is conditioned upon no further deficiencies being discovered before the City accepts the project.

Upon notification that the project is provisionally accepted and upon receipt of the warranty surety, the warranty period shall begin.

9.13.1 CERTIFICATION OF DRAINAGE FACILITIES

Stormwater facilities located in tracts shall be certified prior to final plat approval for plats, short plats and binding site plans. The certification of stormwater facilities located within border easements and rights-of-way for single-family and two-family dwellings may be delayed until the issuance of the final Certificate of Occupancy (Refer to Section 9.9.5).

Drainage facilities associated with a commercial building permit shall be certified, as specified in Section 9.13, prior to issuing a final Certificate of Occupancy.

9.14 PERFORMANCE SURETY

9.14.1 PERFORMANCE SURETY AUTHORIZED

Except as otherwise provided in section 9.14, Applicants shall complete all plan improvements prior to approval of the final plat, short plat, binding site plan or any phase thereof, the issuance of any Certificate of Occupancy (commercial, residential, or otherwise), or performance of a final inspection. The City may authorize the use of performance surety solely pursuant to section 9.14.

9.14.2 PERFORMANCE SURETY CRITERIA

(A) A performance surety in lieu of construction of one or more required plan improvements may only be accepted by the City if:

(1) The required construction cannot be completed due to situations out of human control such as adverse weather, inability to acquire construction materials or other unforeseen complications;

(2) The Applicant submits a completion schedule and the schedule is approved by the City. Non-landscaping items shall be completed no later than nine months after the effective date of the performance surety or July 31st of the following year, whichever is earlier. Completion of landscaping items shall be completed no later than 18 months after the effective date of the performance surety;

(3) Required plan improvements have been made that are sufficiently complete as to allow the needed proper function and operation of the transportation, sewer, water, and stormwater systems, as determined by the City;

(4) All-weather driving surfaces approved by the Fire Department are constructed to all locations of flammables before flammables brought on site; and

(5) The Applicant has no other outstanding project improvements within the City that have been deemed by the City to be untimely, in bad faith, unsatisfactory, or incomplete and the Applicant has provided an acceptable performance surety covering all such outstanding improvements.

(B) All performance sureties shall be in an amount of 125% of the estimated construction cost for all outstanding required plan improvements for the project that

are covered by the performance surety. Performance sureties shall be a letter of credit or cash savings assignment substantially in the form of the City's draft performance surety. The City shall maintain a current acceptable draft form of performance surety. Performance bonds are not allowed as acceptable performance sureties. The Applicant's Engineer or designer of record shall submit quantities for the complete nature of the work to be performed. The Development Inspector shall enter that information into an updated calculation spreadsheet to determine the performance surety amount. Performance surety amounts shall include all construction costs, including erosion and sediment control, critical area mitigations and inspection costs. Note, items such as granting of easements and dedications of right-of-way shall not be covered by a performance surety.

9.14.3 PERFORMANCE SURETY RELEASE

The performance surety shall be released when all of the following conditions have been met:

(A) A certification package is accepted by the City;

(B) The Applicant has paid in full all costs incurred by the City;

(C) All monuments have been reset and referenced by a surveyor; and,

(D) The Applicant has submitted a warranty surety for improvements in the public right-of-way and border easements as specified in Section 9.15.

9.15 WARRANTY SURETY

All projects with improvements in the public rights-of-way or border easements shall submit to the City a warranty surety. The warranty surety shall guarantee against material and/or workmanship defects in street construction, in utility work within the rights-of-way and border easements, and/or in drainage facilities as required by the City. The warranty surety shall guarantee against damages to street infrastructure and drainage facilities.

9.15.1 WARRANTY SURETY AMOUNT

The Applicant's Engineer shall submit quantities for the complete nature of the work to be performed within or on the rights-of-way, border easements, or on the frontage of the City rights-of-way. The Development Inspector shall enter that information into an updated calculation spreadsheet reflecting a total valuation of the work to be performed. The Development Inspector shall then calculate 20% of that total work to be performed and request a warranty surety for that amount from the Applicant.

9.15.2 ACCEPTABLE SURETIES

The warranty surety shall be based on the total warranty amount required for the project as set forth in section 9.15.1. Warranty sureties shall be in the form of a letter of credit, cash savings assignment, or bond substantially in the form of the City's draft warranty surety. The City shall maintain current acceptable draft forms of warranty sureties.

9.15.3 WARRANTY DURATION

A warranty surety shall remain in effect for two years from the date the City provisionally accepts the streets. At least 30 prior to the expiration of the warranty, the Applicant shall retain an Engineer to inspect the improvements. Any deficiencies noted shall be repaired prior to the release of the surety. If the inspection is not conducted and the deficiencies are not repaired, the warranty surety shall be renewed by the Applicant until this requirement is satisfied. The Development Inspector shall conduct a walk-through prior to releasing the warranty surety.

9.15.4 TIME FRAMES TO COMPLETE REPAIR

The warranty surety shall be used to correct deficiencies due to materials and/or workmanship.

At any time before the end of the warranty period, the City may notify the Applicant of needed repairs. If repairs are considered to be an imminent danger to the public's health, safety, and welfare, the Applicant shall act within 24 hours to complete the repair. If the work is not considered a safety issue, the Applicant shall have 10 business days to schedule the work, and 60 calendar days to complete the work. Extensions of time may be considered when necessary due to weather constraints.

When the Applicant's project is accepted and in warranty, or after releasing the warranty surety, the Builder shall be responsible for any damage to the improvements resulting from their project including the construction, operation or maintenance of their project. Any deficiencies shall be corrected by the Builder prior to the final inspection of their project or the issuance of the final Certificate of Occupancy for the structure.

9.15.5 FAILURE TO COMPLETE REPAIR

If the warranty repairs are not completed in the time frame specified, the City may choose to conduct the necessary repairs. The City may either invoice the Applicant or collect from the surety for all costs for the related work, plus a $500 administrative fee.

9.15.6 RESPONSIBILITY FOR MAINTENANCE

The Applicant shall be responsible for maintaining all public improvements, excluding snow plowing, throughout the warranty period.

9.16 STREET ESTABLISHMENT

When the project has been certified and accepted, the Applicant may request to receive provisional acceptance after posting a warranty surety pursuant to Section 9.14. The Applicant shall be responsible to repair failures during the warranty period pursuant to Section 9.15.4. Final acceptance shall be granted after the warranty period assuming all deficiencies have been corrected.

The City Manager is responsible for approving the establishment of new streets. When the project receives final acceptance, the City Engineer shall recommend to the City Manager that the streets be established.

APPENDIX INDEX

APPENDIX 9-A – Minimum Material Testing Frequencies

The following testing frequencies represent the minimum requirements during construction. If individual tests fail to meet specifications, additional testing shall be conducted to assure conformance.

Earth Embankment	1 density test per lift per 500 CY placed
Road Subgrade	1 density test per 100 LF of lane or equivalent
Crushed Rock	1 density test per 100 LF of lane or equivalent per lift
Trench Embankment	1 density test per 150 CY with varying test depths
Crushed Rock under Curb and Sidewalks	1 density test per 100 LF of curb of walk length per lift(Unless tested as part of the roadway crushed rock)
Concrete for Curbs and Sidewalks	1 set (4 cylinders) per 100 CY (Minimum 1 set per day) 1 set of air, slump, temperature, etc. on first truck and with cylinders thereafter
Aggregate Quality	1 gradation test 1 sand equivalent test 1 fractured face test
Asphalt Pavement	1 Lot = 400 tons 5 random density tests per lot (Minimum 5 tests per day) 1 test to verify gradation per 1,000 tons (Minimum 1 test per day) 1 test to verify asphalt content per 1,000 tons (Minimum 1 test per day) 1 test to verify maximum density per 1,000 tons (Minimum 1 test per day)

APPENDIX 9-B – Final Certification Checklist (Sample)

Project:

Certification Letter:

Statement of intent to certify the project.
PE Stamp and Signature.

Record Drawings Mylar Drawings:

PE Stamp and Signature
Lettered certification statement (Section 9.12)

Project Documents:

Daily Inspection Reports:

Field Reports:

Inspection of Asphalt Paving:

100% On site inspection during paving

Compaction Reports:

Sewer trench lifts.

Water trench lifts.

Utility trench lifts.

Crushed Rock lifts.

Material Documents: Field and Laboratory Tests:

	Field	**Test**	**Lab**	**Test**
Concrete		(Slump, Air Content, Temp).		(Break Test)
Subgrade:		(Compaction)		(Gradation, Proctor)
Crushed Rock		(Compaction, Depth)		(Gradation, Proctor)
Asphalt		(Compaction, Thickness)		(Rice, Gradation, Oil Content)

On Site Inspections of Drainage Items:

Drywells:

Gutter Inlets:

Culverts:

Sidewalk Vaults:

Drainage Ditches:

Other:

Incoming/Outgoing Correspondence

APPENDIX 9-C – Removed

APPENDIX 9-D – EROSION AND SEDIMENT CONTROL LOG

The following items are to be included in the daily logs and inspection reports to assure conformance:

a. Date of Inspection.

b. When, where and how the BMPs were installed, removed or modified.

c. Repairs needed or made.

d. Observations of BMP effectiveness and proper placement.

e. Recommendations for improving performance of BMPs.

f. Identify the points where stormwater runoff potentially leaves the site, is collected in a surface water conveyance system, (i.e., road ditch, storm sewer), and enters receiving waters of the state.

g. If water sheet flows from the site, identify the point at which it becomes concentrated in a collection system.

h. Inspect for SWPPP requirements including BMPs as required to ensure adequacy.

CHAPTER 10 – MAINTENANCE

Chapter Organization

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10.1 INTRODUCTION

This chapter establishes the parties responsible to maintain the public and private infrastructure created with development. In addition, it provides a list of documents required to be submitted during project review.

10.2 MAINTENANCE RESPONSIBILITY

10.2.1 PUBLIC STREETS

Upon releasing the warranty surety and acceptance of the public infrastructure, the City maintains all public streets (curb, gutter, and pavement) and public stormwater drainage structures (drywells, inlets and pipes) located within the public rights-of-way and within border easements that serve public street runoff.

The City is not responsible for maintenance of sidewalks or landscaping of swales and grass strips, even if located within the public right-of-way or border easements. Property owners are responsible for the maintenance of these features as described below. Swale maintenance includes preservation of the original area, volume, configuration and function of the stormwater facility as described in the approved plans. Swale maintenance also includes mowing, irrigating, and replacing when necessary the lawn turf within the swales. Property owners are also responsible for maintaining sidewalks free of obstructions and debris, including snow and ice. If the property owners fail to maintain said facilities, the City shall give a notice of such failure to the property owners. If not corrected within the period indicated on said notice, the City has the right to correct the maintenance failure, or have it corrected, at the expense of the property owners.

10.2.2 PRIVATE STREETS AND DRIVEWAYS

The City is not responsible for maintenance of any of the private street or private driveway infrastructure. Private streets and driveways and related facilities shall be contained within a permanently established tract or easement providing legal access to each lot served.

The Applicant shall provide arrangements for the perpetual maintenance of the private streets, private driveways and all elements of the stormwater system (including swales within the right-of-way and border easements), and any other related facilities.

The City shall not furnish, install, or maintain signs for private streets including stop signs or street name signs for private streets intersecting public streets or “No Parking” signs. Signs shall be in accordance with MUTCD. Installation of signs at intersections with public streets require approval from the City..

Access shall be granted to the City to provide emergency maintenance of private facilities. The cost of emergency maintenance shall be the responsibility of the property owners or the Homeowners’ Association in charge of maintenance.

10.3 REQUIRED DOCUMENTS

The following maintenance-related items shall be submitted for all projects with private streets and/or common areas:

a. A copy of the conditions, covenants and restrictions (CC&Rs) for the homeowners' association (HOA) or property owners' association (POA) in charge of operating and maintaining all elements of the private street system (see Section 10.3.1);

b. An operations and maintenance (O&M) manual (see Section 10.3.2);

c. A financial plan outlining the funding mechanism for the operation, maintenance, repair, and replacement of the private street system, related facilities and/or common areas (see Section 10.3.3);

d. Street maintenance agreements, as applicable;

e. Reciprocal use agreements, as applicable; and,

f. Drainage easements, as applicable.

Refer to the *Spokane Regional Stormwater Manual* for maintenance requirements for stormwater facilities.

10.3.1 HOMEOWNERS' AND PROPERTY OWNERS' ASSOCIATIONS

An HOA shall be formed to maintain the private streets, signs, entrance gates, other related facilities and/or common areas. For commercial/industrial and multi-family residential developments with shared access and multiple owners, a POA or similar entity shall be formed, or a reciprocal-use agreement executed.

If the HOA or POA has CC&Rs, a draft copy of the CC&Rs for the HOA or POA shall be submitted with the civil and drainage plans. The CC&Rs shall summarize the maintenance and fiscal responsibilities of the HOA or POA, refer to the O&M Manual, and include a copy of the sinking fund calculations and Financial Plan.

Annual HOA or POA dues shall provide funding for the annual operation and maintenance of private streets, private driveways, related facilities, and common areas. The sinking fund calculations shall also include costs for the maintenance of the stormwater system and all facilities associated with the stormwater system (Refer to Chapter 11 of the *Spokane Regional Stormwater Manual*).

Homeowners' associations and property owners' associations shall be non-profit organizations accepted by the Washington Secretary of State. A standard business license is not acceptable for this purpose.

10.3.2 OPERATION AND MAINTENANCE MANUAL

All projects with private streets and/or common areas used for stormwater management shall have an O&M Manual. Projects with engineered driveways may also be required to submit an O&M Manual. The O&M Manual shall include, at a minimum:

a. Description of the entity responsible for the perpetual maintenance, including legal means of successorship;

b. Description of street maintenance tasks to be performed and their frequency. Street maintenance tasks shall include at a minimum street sweeping, snow plowing, signage repair, crack sealing, pot hole repair, overlay, pavement replacement, etc.;

c. Description of the stormwater maintenance tasks to be performed and their frequency. Tasks shall include, at a minimum, swale maintenance and removing sediment from drywells, catchbasins, and pipe system. Swale maintenance means preservation of the original area, volume, configuration and function of the stormwater facility as described in the plans. Swale maintenance also includes mowing, irrigating, and replacing when necessary the lawn turf within the swales;

d. Description of emergency maintenance tasks to be performed and their frequency, such as gate operation, "No Parking" signs, access to fire hydrants, fire lanes;

e. Description of the source control best management practices (BMPs) such as street sweeping;

f. A list of the expected design life and replacement schedule of each component of the private street and/or stormwater management system;

g. A general site plan (drawn to scale) showing the overall layout of the site; and

h. Contact information for the Engineer.

10.3.3 FINANCIAL PLAN

To provide guidance regarding financial planning for maintenance and replacement costs, a Financial Plan is required. The Financial Plan shall include the following items:

a. A list of all private streets and related facilities, common areas, and/or stormwater management facilities, expected maintenance activities and associated costs;

b. Sinking fund calculations that take into consideration probable inflation over the life of the infrastructure and estimates for the funds needed to be set aside annually; and,

c. A mechanism for initiating and sustaining the sinking fund account demonstrating that perpetual maintenance will be sustained.

10.3.4 CONVERSION FROM PRIVATE TO PUBLIC STREET

The Applicant shall submit written authorization from all property owners, any and all available construction drawings of the subject street, along with an engineer-stamped analysis of the pavement and subgrade as determined from test sites separated no greater than 100 feet apart, or as required by the City. Digital photos at every 50 feet, or as the City requires, shall be submitted with the application. The City shall review the information, visually check the street and determine requirements to bring the street up to current City standards.

A letter of requirements shall be issued by the City. The Applicant(s) shall meet the requirements before the street is accepted as a public right-of-way. The Applicant shall prepare a legal description of the street and execute a deed of trust, transferring the property to the City once the physical deficiencies have been corrected and accepted.

CHAPTER 11 – STANDARD PLANS

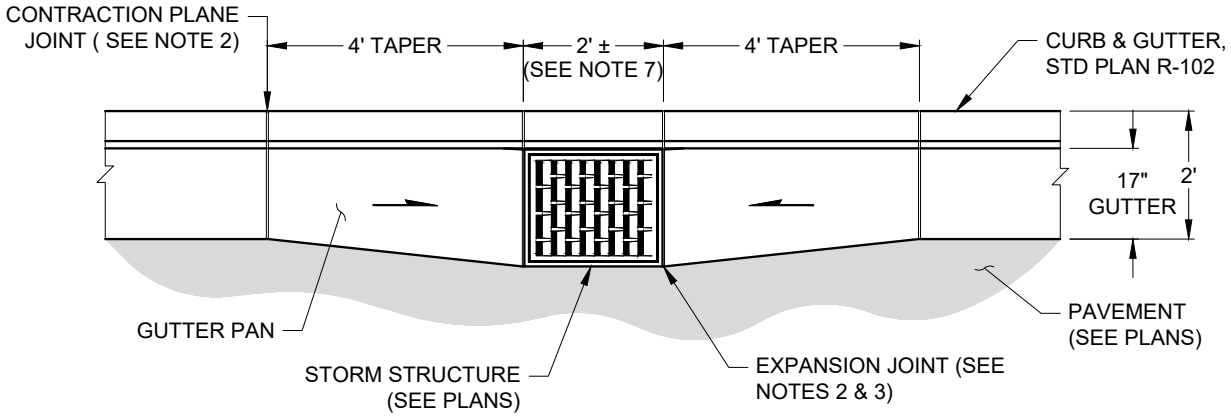
Standard Plans **Last Updated**

Roads/Streets

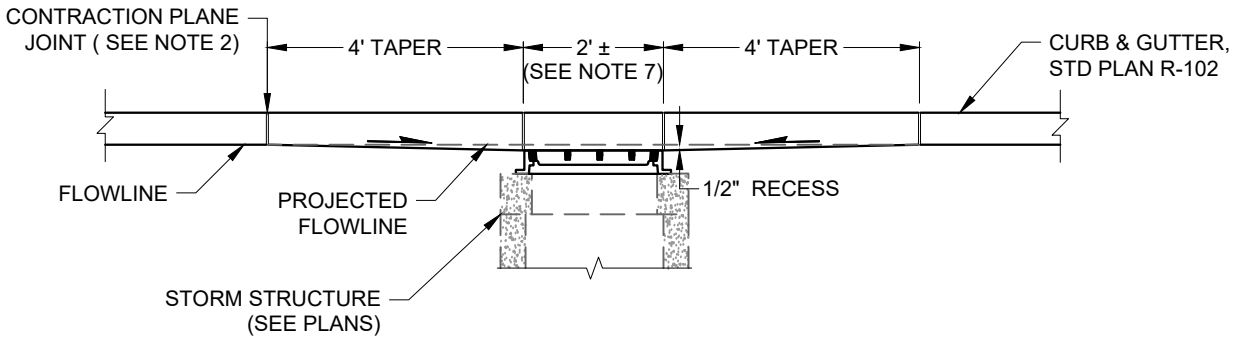
Stormwater

Traffic

Utilities



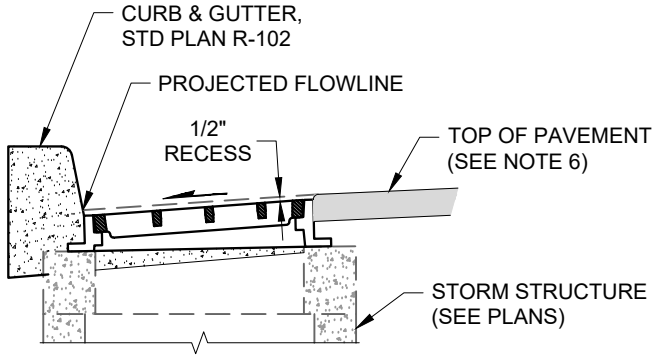
PLAN VIEW



ELEVATION VIEW

GENERAL NOTES:

1. CEMENT CONCRETE SHALL BE CLASS 4,000 CONCRETE PER SECTION 6-02 OF THE WSDOT STANDARD SPECIFICATIONS.
2. CONTRACTION PLANE JOINTS FOR CEMENT CONCRETE SHALL BE PLACED AT 2 TIMES SIDEWALK WIDTH OR 10' MAXIMUM AND SHALL MATCH SCORES IN SIDEWALK WHERE APPLICABLE.
3. 3/8" EXPANSION MATERIAL SHALL BE PLACED AT ANY STRUCTURE. MAXIMUM 100' SPACING. EXPANSION JOINT SHALL EXTEND THE FULL CONCRETE DEPTH.
4. SUBGRADE AND CSTC UNDER ALL CURBING SHALL BE COMPACTED TO 95%.
5. EXCEPT FOR JOINTS AND BROOM FINISHING, NO OTHER MARKINGS ARE PERMITTED ON THE FINISHED SURFACE.
6. MAINTAIN CONSISTENT CROSS SLOPE TO STRUCTURE.
7. IF STORM STRUCTURE REQUIRES A HOODED GRATE SEE STANDARD PLAN S-115 FOR ADDITIONAL INFORMATION.
8. COORDINATE WITH ENGINEER FOR OTHER STRUCTURE TYPES THAT MAY REQUIRE A LONGER TAPER.



PAVEMENT EDGE DETAIL

CITY OF Spokane Valley

APPROVED BY:

ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

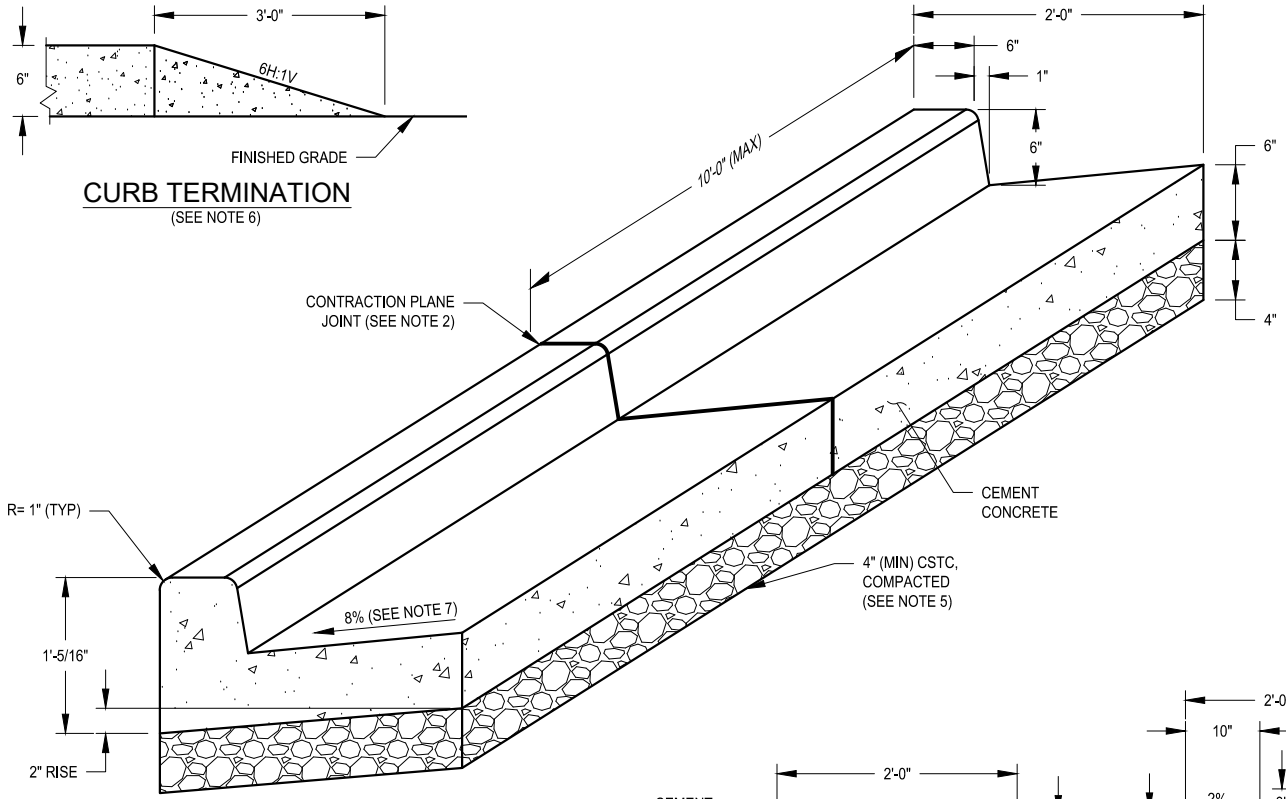
CURB AND GUTTER PAN

STANDARD PLAN NO. R-101

PUBLICATION DATE:	09/2025
REVISION NO.:	00

CREATION: 8/27/2025. REVISED: 8/27/2025 BY: JMORSE

CURB TERMINATION
(SEE NOTE 6)



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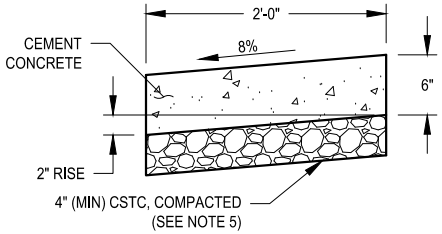

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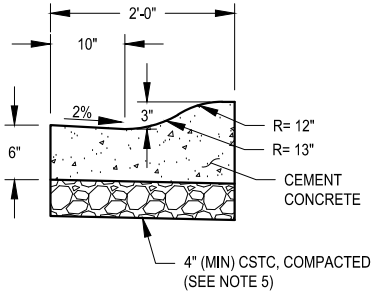

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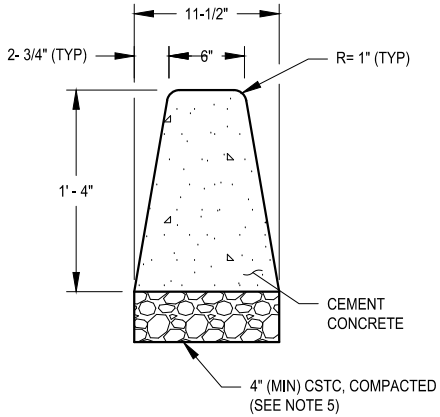

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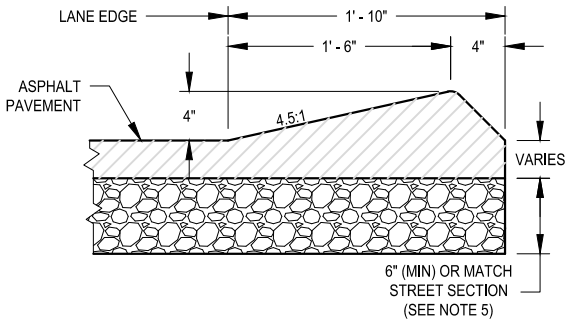

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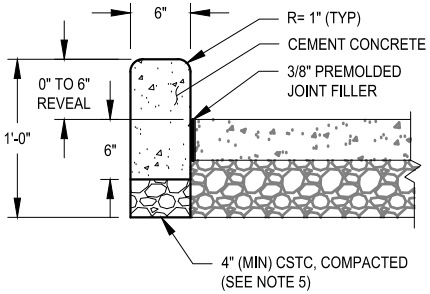


PEDESTRIAN RAMP CURB
(SEE NOTE 9)

GENERAL NOTES:

1. CEMENT CONCRETE SHALL BE CLASS 4,000 CONCRETE PER SECTION 6-02 OF THE WSDOT STANDARD SPECIFICATIONS.
2. CONTRACTION PLANE JOINTS FOR CEMENT CONCRETE SHALL BE PLACED AT 2 TIMES SIDEWALK WIDTH OR 10' MAXIMUM AND SHALL MATCH SCORES IN SIDEWALK WHERE APPLICABLE.
3. 3/8" EXPANSION MATERIAL SHALL BE PLACED AT ALL CURB RETURNS AND AT ANY STRUCTURE. MAXIMUM 100' SPACING. EXPANSION JOINT SHALL EXTEND THE FULL CONCRETE DEPTH.
4. TYPES A, C, R AND S CURBS TO BE USED ONLY IN SPECIAL CASES WITH APPROVAL OF THE CITY ENGINEER.
5. SUBGRADE AND CSTC UNDER ALL CURBING SHALL BE COMPACTED TO 95%.
6. TRANSITION CURB END TO FINISHED GRADE BY SLOPING TOP OF CURB @ 6H:IV.
7. FOR "SPILL" CURB APPLICATIONS, GUTTER SHALL SLOPE AWAY FROM CURB AT 2%.
8. PROVIDE TYPE 1 INLETS AT LOW POINTS SIMILAR TO STANDARD PLAN S-110 AND SPOKANE REGIONAL STORMWATER MANUAL.
9. PEDESTRIAN CURB TO BE USED ONLY AT PEDESTRIAN CURB RAMPS AND LANDINGS.
10. ALL BROKEN, CRACKED, HEAVED, AND SUNKEN CURB SHALL BE REMOVED AND REPLACED FROM JOINT TO JOINT.
11. EXCEPT FOR JOINTS AND BROOM FINISHING, NO OTHER MARKINGS ARE PERMITTED ON THE FINISHED SURFACE.
12. NO NEW UTILITY COVERS, BOXES, LIDS, OTHER THAN STORM STRUCTURES SHALL BE LOCATED WITHIN THE CURB AND GUTTER.

CITY OF Spokane Valley

APPROVED BY:

ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

CURBING

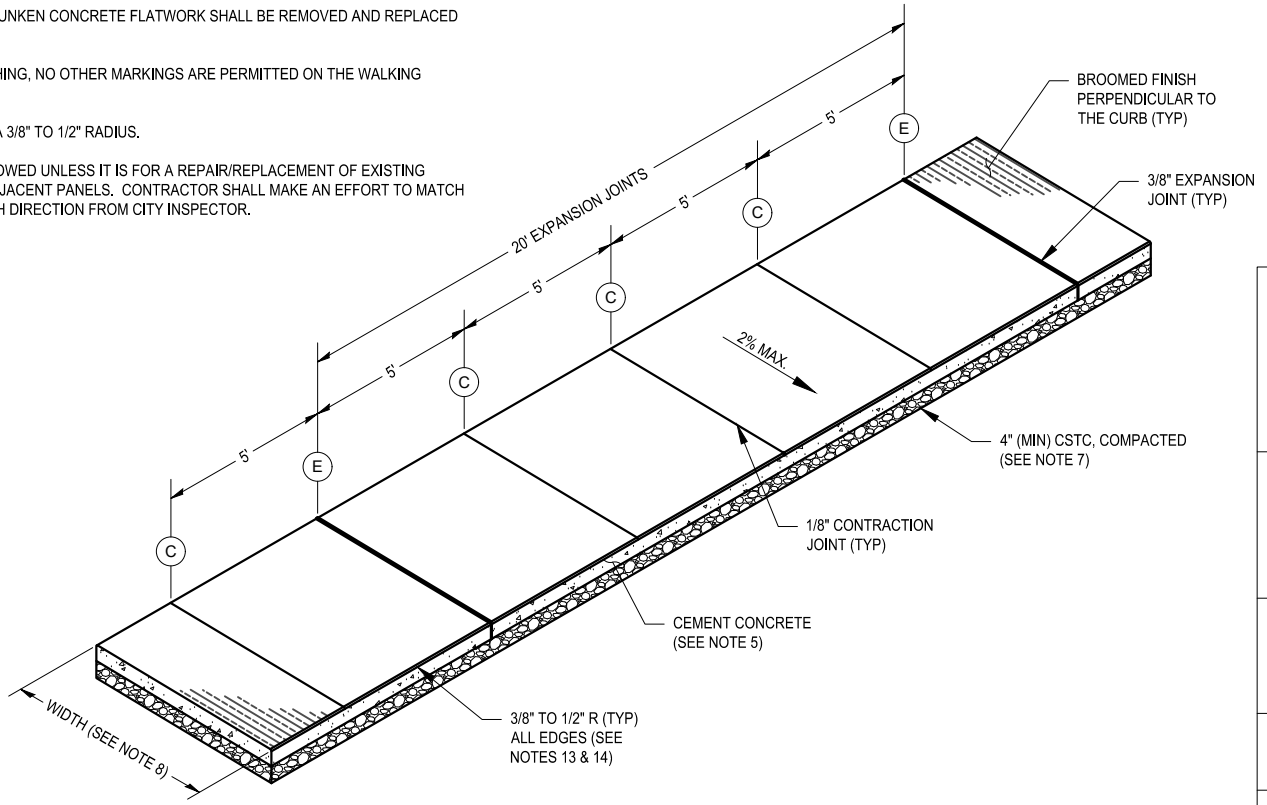
STANDARD PLAN NO. R-102

PUBLICATION DATE:	03/2025
REVISION NO.:	02

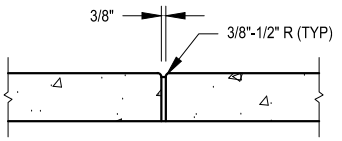
CREATION: 3/24/2025. REVISED: 3/24/2025 BY: JMORSE

GENERAL NOTES:

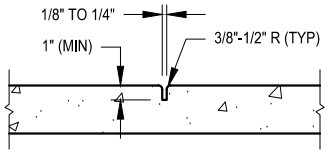
1. CONTRACTION JOINTS SHALL BE PLACED EVERY 5' AND MATCH CURB JOINTS WHEN ADJACENT TO CURB.
2. 3/8" EXPANSION JOINTS SHALL BE PLACED EVERY 20' WITH FELT EXPANSION MATERIAL EXTENDING THE FULL SIDEWALK DEPTH.
3. 3/8" EXPANSION MATERIAL SHALL BE REQUIRED BETWEEN SIDEWALK AND DRIVEWAYS AND/OR DRIVEWAY APPROACH. EXPANSION JOINT MATERIAL SHALL BE SECURED IN PLACE PRIOR TO CONCRETE PLACEMENT AND SHALL COMPLETELY SEPARATE ADJACENT SLABS EXTENDING FROM THE SURFACE TO GRAVEL BASE. PLACEMENT OF EXPANSION JOINT MATERIAL SHALL NOT BE FLOATED OR PRESSED INTO WET CONCRETE AFTER CONCRETE HAS BEEN PLACED.
4. SIDEWALK SHALL SLOPE TOWARDS THE CURB AT 1% TO 2% MAX.
5. SIDEWALKS SHALL BE 6 INCHES IN DEPTH WITHIN CURB RETURNS OF ALL INTERSECTIONS CLASSIFIED AS ARTERIALS OR COLLECTORS. SIDEWALKS SHALL BE 6 INCHES IN DEPTH AS PART OF A DRIVEWAY. SIDEWALKS SHALL BE A MINIMUM OF 4 INCHES IN DEPTH AT ALL OTHER LOCATIONS.
6. STREET SIDE TOP OF WALK SHALL BE LEVEL WITH TOP OF CURB. WHERE TYPE 'S' CURBING IS USED WITH SEPARATED SIDEWALKS AND SWALES, THE STREET SIDE TOP OF WALK SHALL BE SET LEVEL WITH THE STREET SIDE TOP OF TYPE 'S' CURB.
7. SUBGRADE AND CSTC UNDER ALL SIDEWALKS SHALL BE COMPACTED TO 95%.
8. REFER TO TABLES 7.2 & 7.3 IN THE SPOKANE VALLEY STREET STANDARDS FOR SIDEWALK WIDTH.
9. MAXIMUM LONGITUDINAL GRADE OF SIDEWALK IS 5% OR MATCH STREET GRADE, IF ADJACENT.
10. CEMENT CONCRETE SHALL BE CLASS 4,000 CONCRETE PER SECTION 6-02 OF THE WSDOT STANDARD SPECIFICATIONS.
11. ALL BROKEN, CRACKED, HEAVED AND SUNKEN CONCRETE FLATWORK SHALL BE REMOVED AND REPLACED FROM JOINT TO JOINT.
12. EXCEPT FOR JOINTS AND BROOM FINISHING, NO OTHER MARKINGS ARE PERMITTED ON THE WALKING SURFACE.
13. ALL PANEL SHALL BE TROWELED WITH A 3/8" TO 1/2" RADIUS.
14. PERIMETER EDGING SHALL NOT BE ALLOWED UNLESS IT IS FOR A REPAIR/REPLACEMENT OF EXISTING PANELS AND ONLY WHEN MATCHING ADJACENT PANELS. CONTRACTOR SHALL MAKE AN EFFORT TO MATCH EXISTING PANELS IN ACCORDANCE WITH DIRECTION FROM CITY INSPECTOR.



ISOMETRIC VIEW



E EXPANSION JOINT DETAIL



C CONTRACTION JOINT DETAIL

CITY OF Spokane Valley

APPROVED BY:

ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

SIDEWALK

STANDARD PLAN NO. R-103

PUBLICATION DATE:	03/2025
REVISION NO.:	02

CREATION: 3/20/2025. REVISED: 3/20/2025 BY: JMORSE

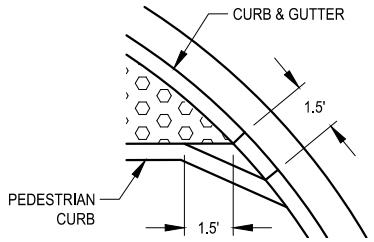
GENERAL NOTES:

1. CURB RAMPS AND RELATED INFRASTRUCTURE SHALL CONFORM WITH THE CURRENT AMERICANS WITH DISABILITIES ACT (ADA) STANDARDS FOR ACCESSIBLE DESIGN GUIDELINES.
2. THE LONGITUDINAL SLOPE OF THE CROSSWALK (MARKED OR UNMARKED) SHALL NOT EXCEED 5%.THE CROSS SLOPE SHALL BE 2% MAXIMUM UNLESS CONTAINED IN A STREET WITHOUT YIELD OR STOP CONTROL, THEN MAXIMUM CROSS SLOPE IS 5%.
3. THE LONGITUDINAL SLOPE OF THE CURB RAMP SHALL BE 0.5% MINIMUM AND 8.33% MAXIMUM, BUT THE RAMP LENGTH IS NOT REQUIRED TO EXCEED 15 FEET. IF THE RAMPS MAXIMUM LENGTH OF 15 FEET IS APPLYING, THE LONGITUDINAL SLOPE IS ALLOWED TO EXCEED 8.33%. THE MAXIMUM CROSS SLOPE SHALL BE 2%.
4. LANDINGS SHALL PROVIDE A 4-FOOT x 5-FOOT TURNING SPACE WITH A 0.5% TO 2.0% SLOPE IN EACH DIRECTION. TURNING SPACES MAY OVERLAP WITH OTHER TURNING SPACES AND CLEAR SPACES.
5. MAXIMUM SLOPES ARE STRICTLY ENFORCED. EXCEEDING THE MAXIMUM SLOPES WILL REQUIRE REMOVAL AND RECONSTRUCTION
6. ALL BROKEN, CRACKED, HEAVED AND SUNKEN CONCRETE SHALL BE REMOVED AND REPLACED FROM JOINT TO JOINT.
7. VERTICAL SURFACE DISCONTINUITIES SHALL BE 1/2" MAXIMUM. VERTICAL SURFACE DISCONTINUITIES BETWEEN 1/4" TO 1/2" SHALL BE BEVELED WITH A SLOPE NOT STEEPER THAN 2H:1V.
8. GRADE BREAKS SHALL NOT BE ALLOWED ON THE SURFACE OF CURB RAMPS OR LANDINGS. GRADE BREAKS SHALL BE PERPENDICULAR TO THE DIRECTION OF TRAVEL.
9. DRAINAGE STRUCTURES, JUNCTIONS BOXES, OR OTHER OBSTRUCTIONS SHALL NOT BE PLACED IN FRONT OF RAMPS
10. CEMENT CONCRETE SHALL BE CLASS 4,000 CONCRETE PER SECTION 6-02 OF THE WSDOT STANDARD SPECIFICATIONS.
11. PEDESTRIAN RAMPS, LANDINGS AND SIDEWALK ADJACENT TO THE CURB SHALL BE 6" THICK WHEN LOCATED WITHIN CURB RETURN.
12. SUBGRADE AND CSTC UNDER ALL RAMPS SHALL BE COMPACTED TO 95%.
13. ALL PANEL EDGES SHALL BE TROWELED WITH 3/8" TO 1/2" RADIUS.
14. PERIMETER EDGING SHALL NOT BE ALLOWED UNLESS IT IS FOR A REPAIR/REPLACEMENT OF EXISTING PANELS AND ONLY WHEN MATCHING ADJACENT PANELS. CONTRACTOR SHALL MAKE AN EFFORT TO MATCH EXISTING PANELS IN ACCORDANCE WITH DIRECTION FROM CITY INSPECTOR.
15. EXCEPT FOR JOINTS AND BROOM FINISHING, NO OTHER MARKINGS ARE PERMITTED ON THE WALKING SURFACE.
16. PEDESTRIAN CURB MAY BE OMITTED IF THE GROUND SURFACE AT THE BACK OF THE CURB RAMP AND/OR LANDING WILL BE AT THE SAME ELEVATION AS THE CURB RAMP OR LANDING AND THERE WILL NOT BE MATERIAL TO RETAIN.
17. PROVIDE FLARED SIDES ON PERPENDICULAR OR COMBINATION CURB RAMPS WHERE A PEDESTRIAN CIRCULATION PATH CROSSES THE RAMP. THE FLARED SIDES ARE PART OF THE PEDESTRIAN CIRCULATION PATH, BUT ARE NOT PART OF THE PEDESTRIAN ACCESS ROUTE. THE SLOPE OF THE FLARED SIDES IS MEASURED PARALLEL TO THE CURB LINE. FLARED SIDES ARE NOT NEEDED OR MAY BE STEPPER WHEN THE PEDESTRIAN CIRCULATION PATH DOES NOT CROSS THE RAMP.
18. DETECTABLE WARNING SURFACES SHALL BE FEDERAL YELLOW IN COLOR. DETECTABLE WARNING SURFACES SHALL BE CAST IN PLACE OR LIQUID APPLIED.
19. DETECTABLE WARNING SURFACES SHALL BE 24" MINIMUM IN THE DIRECTION OF TRAVEL AND EXTEND THE FULL WIDTH OF THE RAMP, LANDING OR OTHER ROADWAY ENTRANCE.
20. THE SIZE AND SPACING OF TRUNCATED DOMES SHALL BE PER WSDOT STANDARD PLAN F-45.10
21. THE ROWS OF TRUNCATED DOMES SHALL BE ALIGNED TO BE PARALLEL TO THE DIRECTION OF TRAVEL AND PERPENDICULAR TO THE GRADE BREAK AT THE BACK OF CURB.
22. WHEN THE GRADE BREAK BETWEEN THE CURB RAMP AND THE LANDING IS LESS THAN OR EQUAL TO 5 FEET FROM THE BACK OF CURB AT ALL POINTS, PLACE THE DETECTABLE WARNING SURFACE ON THE BOTTOM OF THE CURB RAMP DIRECTLY ABOVE THE GRADE BREAK.

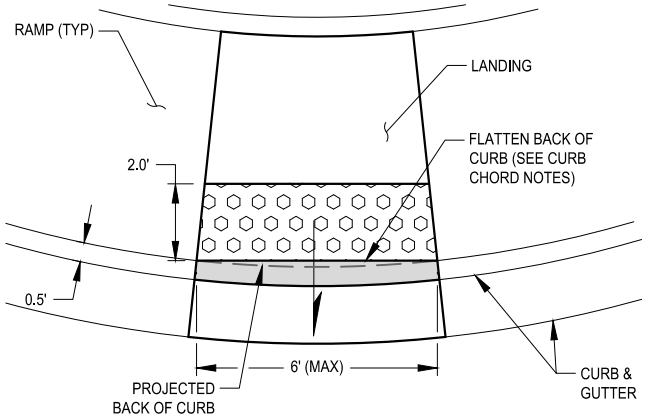
CURB CHORD NOTES:

1. DETECTABLE WARNING SURFACE SHALL BE PLACED ADJACENT TO THE BACK OF CURB AND WITH NO MORE THAN A 2 INCH GAP BETWEEN THE DWS AND THE BACK OF CURB.
2. FOR RAMPS LOCATED WITHIN A CURB RETURN AND WIDER THAN 6 FEET THE DETECTABLE WARNING SURFACES MUST BE LIQUID APPLIED.
3. FOR RAMPS LOCATED WITHIN LARGER CURB RETURNS (>20FT RADIUS) AND 6 FEET IN WIDTH OR LESS, THE BACK OF CURB MAY BE CONSTRUCTED AS A CHORD/STRAIGHT LINE TO ADHERE TO THE 2 INCH GAP REQUIREMENT.

RAMP REQUIREMENTS			
	RECOMMENDED	MINIMUM	MAXIMUM
FLARED SIDE SLOPE (%)	9.5	0.5	10
FLARED SIDE LENGTH (FT)		5	15
RAMP SLOPE (%)	7	0.5	8.33*
RAMP CROSS SLOPE (%)	1	0.5	2*
RAMP LENGTH (FT)		6	15
RAMP WIDTH (FT)		4	-
LANDING WIDTH (FT)		5'	-
LANDING SLOPE (%)	1	0.5	2*
GUTTER SLOPE (%)	4	2	5
CHANGE IN LEVEL (IN)	FLUSH		0.5", SEE NOTE 2
*ADA REQUIREMENT			



CURB FLARE DETAIL



CURB CHORD DETAIL

CITY OF Spokane Valley

APPROVED BY:

ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

PEDESTRIAN RAMPS NOTES AND DETAILS

STANDARD PLAN NO. R-109

PUBLICATION DATE:	03/2025
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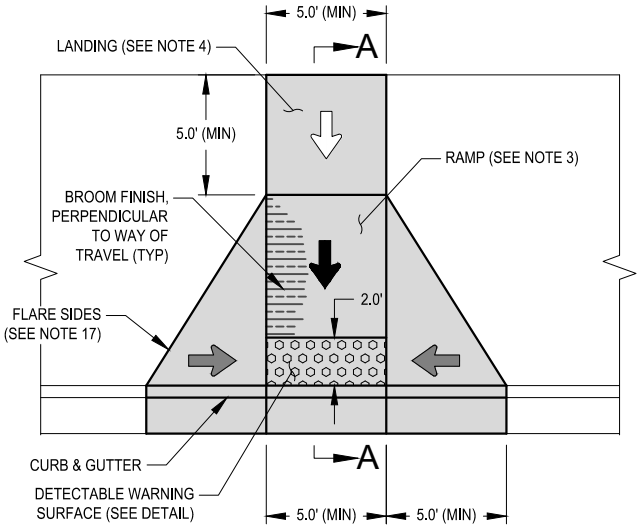
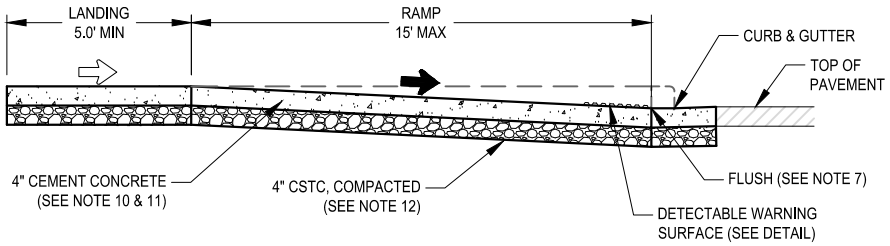
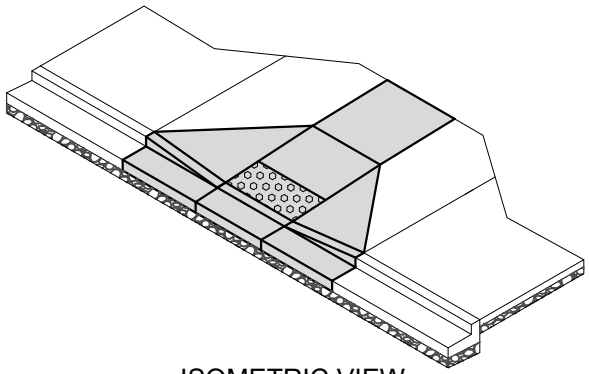
CREATION: 6/12/2025. REVISED: 6/12/2025 BY: JMORSE



PLAN VIEW



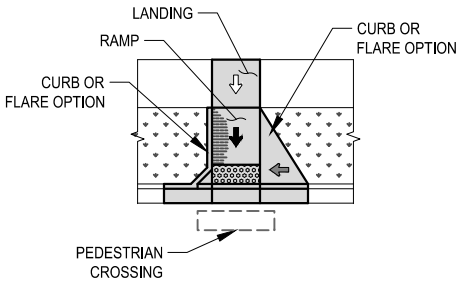
SECTION A-A

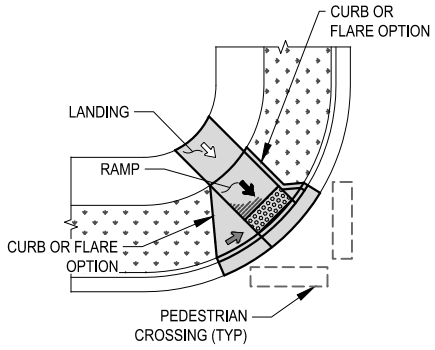


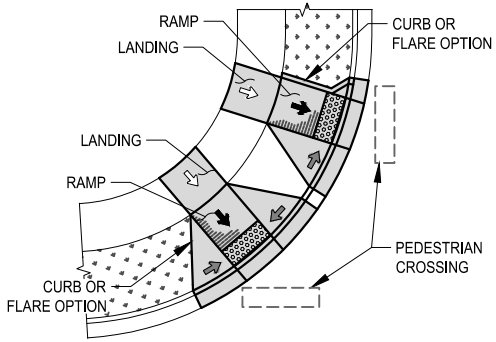
ISOMETRIC VIEW

SYMBOL LEGEND

- 1.0% TO 2.0%
- 5.0% TO 8.3% RUNNING SLOPE 2.0% OR FLATTER CROSS SLOPE
- 10.0% OR FLATTER SLOPE







NOTE: TREAT AS TWO SEPARATE CURB RAMPS

EXAMPLE APPLICATIONS

CITY OF Spokane Valley

APPROVED BY:

ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

PEDESTRIAN RAMPS PERPENDICULAR

STANDARD PLAN NO. R-109

PUBLICATION DATE:	03/2025
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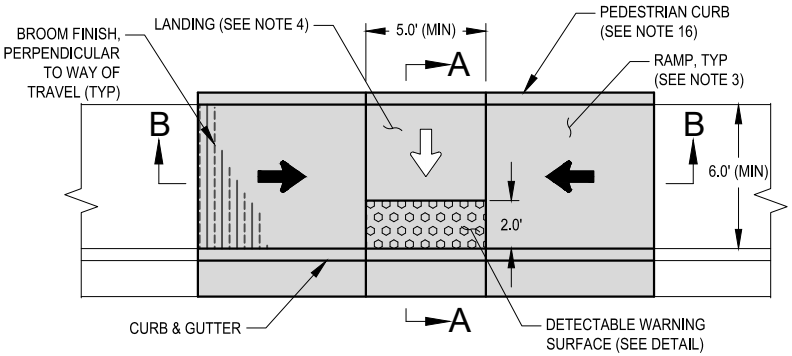
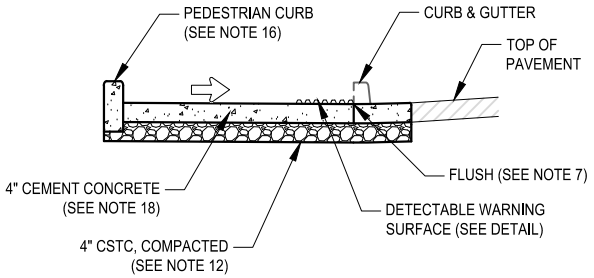
CREATION: 6/12/2025. REVISED: 6/12/2025 BY: JMORSE



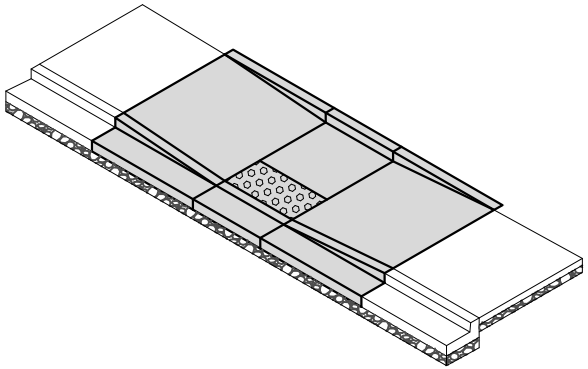
PLAN VIEW



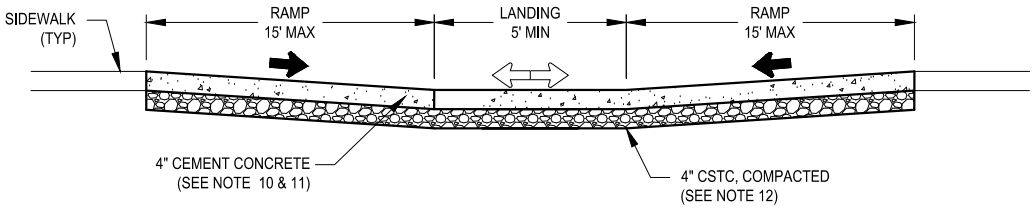
SECTION A-A

SYMBOL LEGEND

- 1.0% TO 2.0%
- 5.0% TO 8.3% RUNNING SLOPE 2.0% OR FLATTER CROSS SLOPE
- 10.0% OR FLATTER SLOPE



ISOMETRIC VIEW



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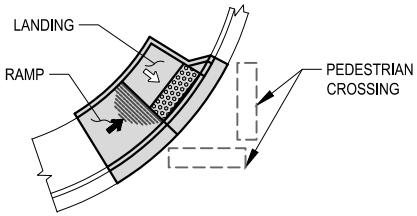

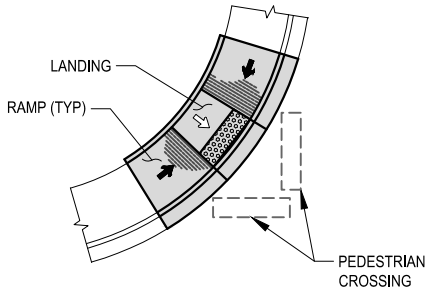

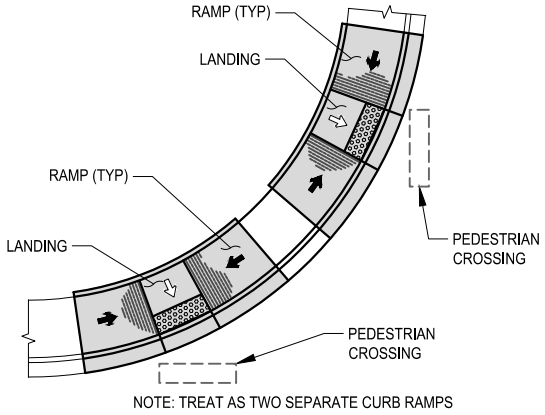

NOTE: TREAT AS TWO SEPARATE CURB RAMPS

EXAMPLE APPLICATIONS

CITY OF Spokane Valley

APPROVED BY:

ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

PEDESTRIAN RAMPS PARALLEL

STANDARD PLAN NO. R-109

PUBLICATION DATE:	03/2025
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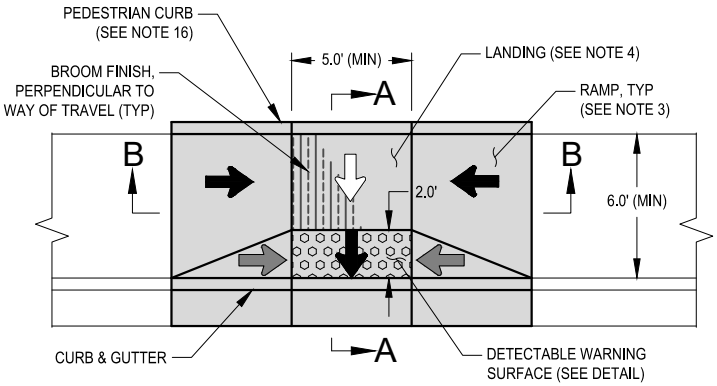
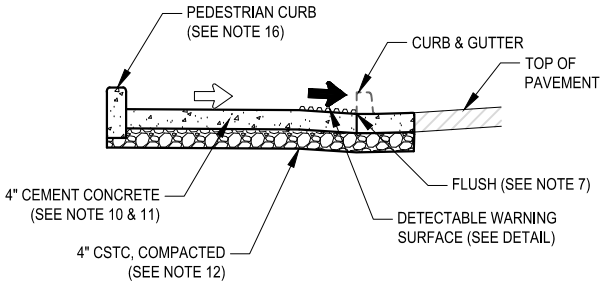
CREATION: 6/12/2025. REVISED: 6/12/2025 BY: JMORSE



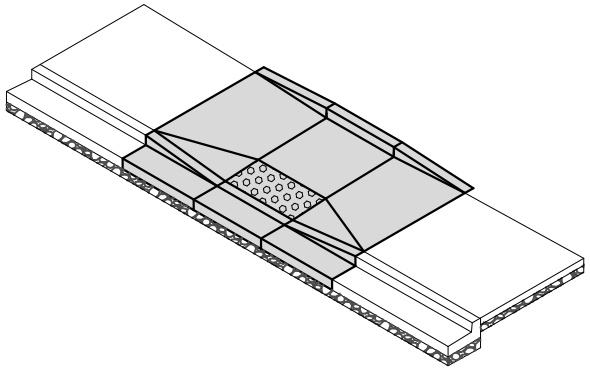
PLAN VIEW



SECTION A-A

SYMBOL LEGEND

- 1.0% TO 2.0%
- 5.0% TO 8.3% RUNNING SLOPE
  2.0% OR FLATTER CROSS SLOPE
- 10.0% OR FLATTER SLOPE



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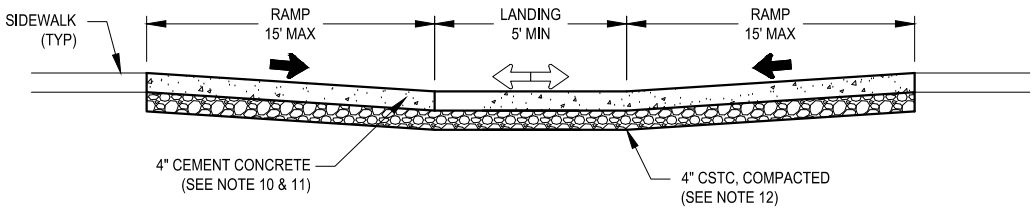

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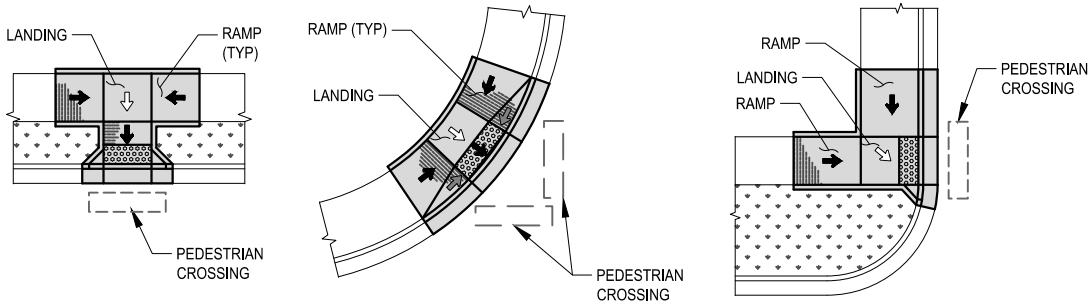

NOTE: TREAT AS TWO SEPARATE CURB RAMPS

EXAMPLE APPLICATIONS

CITY OF Spokane Valley

APPROVED BY:

ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

PEDESTRIAN RAMPS COMBINATION

STANDARD PLAN NO. R-109

PUBLICATION DATE:	03/2025
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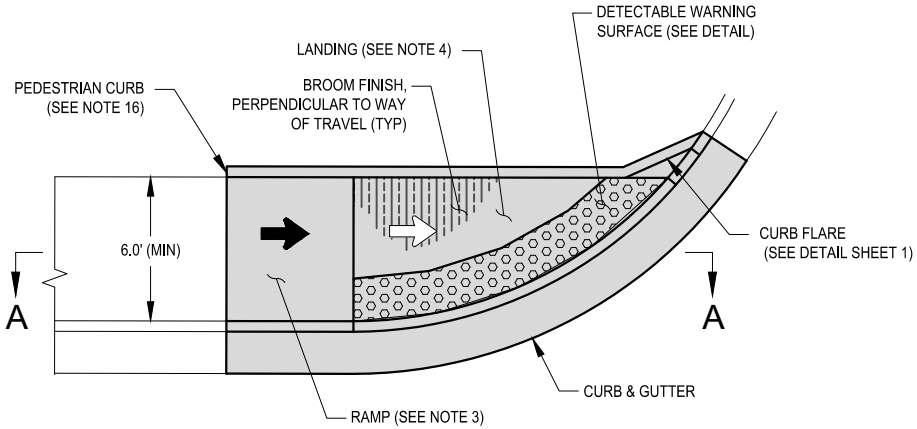
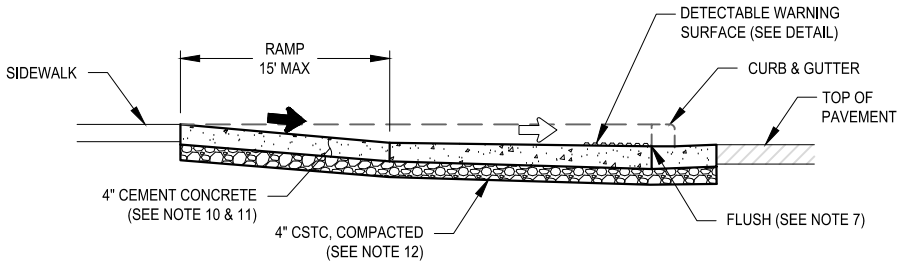
CREATION: 6/12/2025. REVISED: 6/12/2025 BY: JMORSE



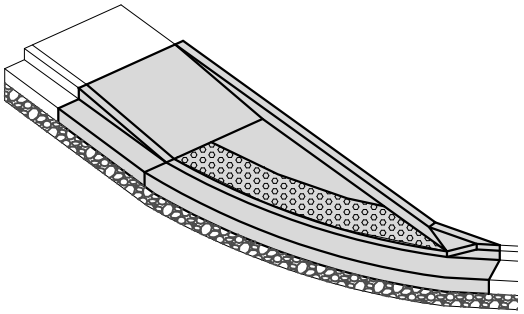
PLAN VIEW

SYMBOL LEGEND

- 1.0% TO 2.0%
- 5.0% TO 8.3% RUNNING SLOPE
  2.0% OR FLATTER CROSS SLOPE
- 10.0% OR FLATTER SLOPE



SECTION A-A



ISOMETRIC VIEW

CITY OF Spokane Valley

APPROVED BY:

ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

PEDESTRIAN RAMPS SINGLE DIRECTION

STANDARD PLAN NO. R-109

PUBLICATION DATE:	03/2025
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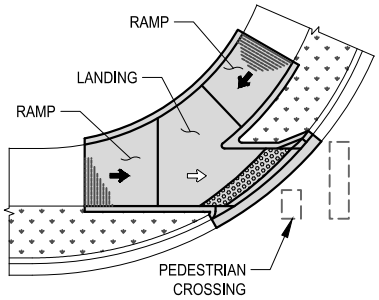
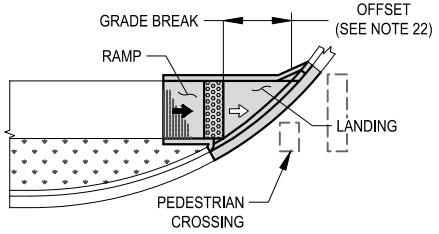
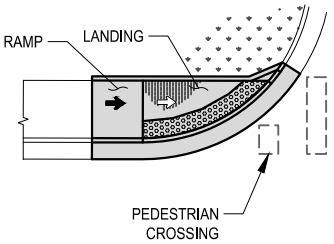
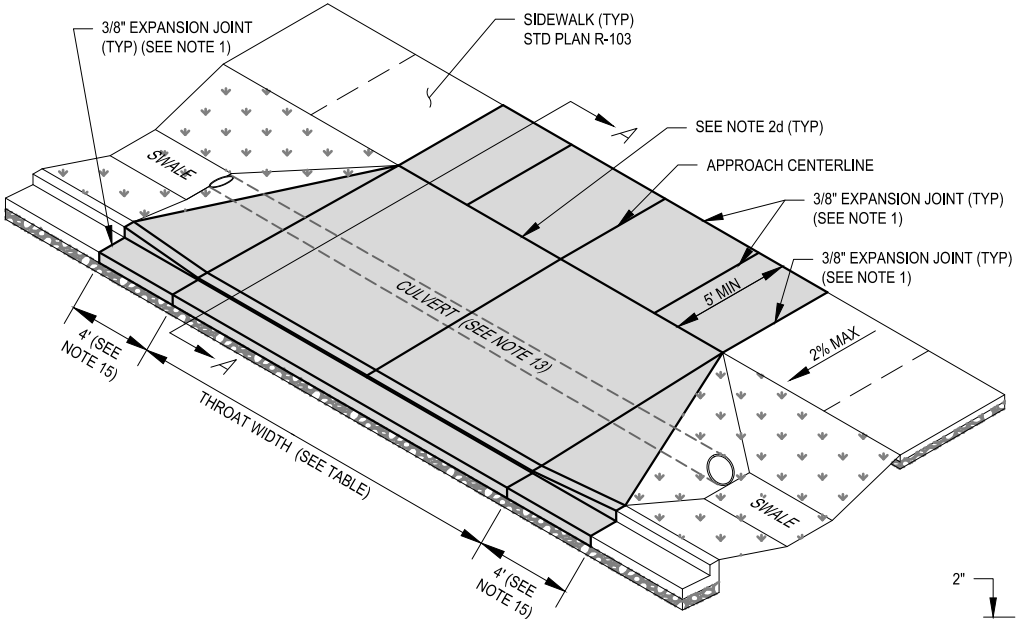


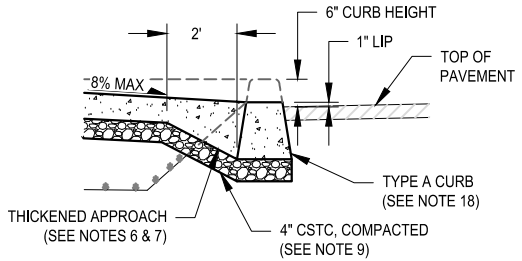




EXAMPLE APPLICATIONS

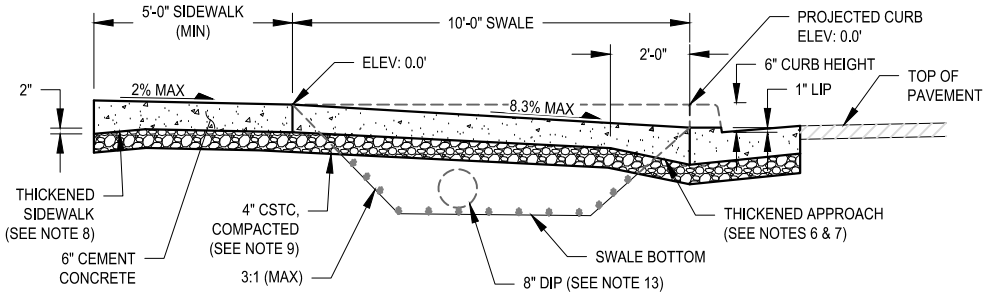


ISOMETRIC VIEW



SECTION VIEW - TYPE A CURB

(SEE NOTE 18)



SECTION A-A

GENERAL NOTES:

1. EXPANSION JOINT MINIMUM REQUIREMENTS:
   a. 3/8" EXPANSION JOINT MATERIAL SHALL BE PLACED AT LEAST EVERY 15' IN WIDTH WITHIN THE DRIVEWAY APPROACH AND SHALL LINE UP WITH SIDEWALK EXPANSION JOINTS IF APPLICABLE.
   b. 3/8" EXPANSION JOINT MATERIAL IS REQUIRED BETWEEN DRIVEWAY SLAB AND THE SIDEWALK AND THE DRIVEWAY APPROACH.
   c. EXPANSION JOINT MATERIAL SHALL BE SECURED IN PLACE PRIOR TO CONCRETE PLACEMENT AND SHALL COMPLETELY SEPARATE ADJACENT SLABS EXTENDING FROM THE SURFACE TO GRAVEL BASE. PLACEMENT OF EXPANSION JOINT MATERIAL SHALL NOT BE FLOATED OR PRESSED INTO WET CONCRETE AFTER CONCRETE HAS BEEN PLACED.
   d. AN ALTERNATIVE TO SETTING EXPANSION JOINT MATERIAL PRIOR TO PLACING CONCRETE WOULD BE TO SAW CUT FULL DEPTH 1/2" WIDE AND FILL WITH APPROVED MASTIC PER WSDOT 9-04.2(2) POURED RUBBER JOINT SEALER.
2. CONTROL JOINTS SHALL BE PLACED AT THE DISCRETION OF THE CONTRACTOR. CRACK REPAIR WITHIN THE WARRANTY PERIOD IS THE RESPONSIBILITY OF THE CONTRACTOR. CONTROL JOINT MINIMUM REQUIREMENTS; CONTROL JOINTS SHALL:
   a. BE NO FARTHER APART THAN 10'.
   b. NOT EXCEED A RATIO OF 1 TO 1.25 LENGTH TO WIDTH.
   c. BE A MINIMUM OF 1" DEEP (FOR TROWEL OR SAW CUT).
   d. BE ADDED AT ALL GRADE BREAKS.
3. CEMENT CONCRETE SHALL BE CLASS 4,000 CONCRETE PER SECTION 6-02 OF THE WSDOT STANDARD SPECIFICATIONS.
4. ALL EXTERNAL EDGES SHALL BE TROWELED WITH A 3/8" TO 1/2" RADIUS.
5. A 4" (MIN) THICK CSTC LAYER SHALL BE PLACED UNDER DRIVE APPROACH.
6. FIRST 2' OF DRIVE APPROACH (AT CURB SIDE) SHALL BE THICKENED TO MATCH BOTTOM OF CURB.
7. WHEN AN ASPHALT APPROACH IS USED THE ASPHALT SHALL BE PLACED IN 0.30' LIFTS PER WSDOT 5-04.3(7)
8. LAST 2' OF SIDEWALK (HOUSE SIDE) WILL BE THICKENED 2 EXTRA INCHES WHEN OTHER HARD SURFACES ARE NOT PROPOSED ADJACENT TO THE APPROACH.
9. SUBGRADE AND CSTC UNDER APPROACH SHALL BE COMPACTED TO 95%.
10. ALL BROKEN, CRACKED, HEAVED AND SUNKEN CONCRETE SHALL BE REMOVED AND REPLACED FROM JOINT TO JOINT.
11. PERIMETER EDGING SHALL NOT BE ALLOWED UNLESS IT IS FOR A REPAIR/REPLACEMENT OF EXISTING PANELS AND ONLY WHEN MATCHING ADJACENT PANELS. CONTRACTOR SHALL MAKE AN EFFORT TO MATCH EXISTING PANELS IN ACCORDANCE WITH DIRECTION FROM CITY INSPECTOR.
12. ALL CHANGES IN LEVEL ACROSS JOINT MUST BE FLUSH WITH A MAXIMUM DIFFERENCE IN ELEVATION OF 3/16".
13. FOR ROADSIDE SWALE APPLICATIONS, INSTALL 8" DIP CULVERT UNDER APPROACH PER SPOKANE REGIONAL STORMWATER MANUAL. ENDS SHALL BE BEVELED TO MATCH SWALE SLOPE. THERE SHALL BE 10" (MIN) OF COVER, INCLUDING CONCRETE AND CSTC, OVER THE CULVERT.
14. MONO-PLACEMENT OF CURBS AND CROSS GUTTER WITH OTHER STRUCTURES SUCH AS SIDEWALKS AND APPROACHES SHALL NOT BE ALLOWED AND SHALL BE SEPARATED WITH EITHER A COLD JOINT OR EXPANSION JOINT SEALED WITH A POURED RUBBER JOINT SEALER PER WSDOT 9-04.2(2).
15. SAWCUTING OF CURB TO CREATE CURB DROP IS NOT ALLOWED.
16. ALL APPROACHES SHALL BE PER CITY STREET STANDARDS 7.3 AND 7.8.
17. EXCEPT FOR JOINTS AND BROOM FINISHING, NO OTHER MARKINGS ARE PERMITTED ON THE WALKING SURFACE.
18. TYPE A CURB TO BE USED ONLY WHEN MATCHING EXISTING CURB AND WITH APPROVAL OF THE CITY ENGINEER.

DESIGN CRITERIA

	RESIDENTIAL	COMMERCIAL
DISTANCE FROM CURB RETURN	15' MIN.	75' MIN.
THROAT WIDTH ***	16' MIN.* ** 30' MAX.**	30' MIN.** 40' MAX.**
SETBACK FROM SIDE PROPERTY LINE AT R.O.W.	5' MIN.	5' MIN.
SETBACK FROM SIDE PROPERTY LINE	2' MIN.	2' MIN.

* 24' MINIMUM WIDTH IF DRIVEWAY LENGTH IS OVER 75', SEE R-117

** THE TOTAL APPROACH WIDTH SHALL NOT BE GREATER THAN 50% OF TOTAL LOT FRONTAGE WIDTH.

*** CONSTRUCT EXPANSION JOINTS PARALLEL WITH APPROACH CENTERLINE AS REQUIRED AT 15' MAX. SPACING WHEN DRIVEWAY WIDTHS EXCEED 30'.

CITY OF Spokane Valley

APPROVED BY:

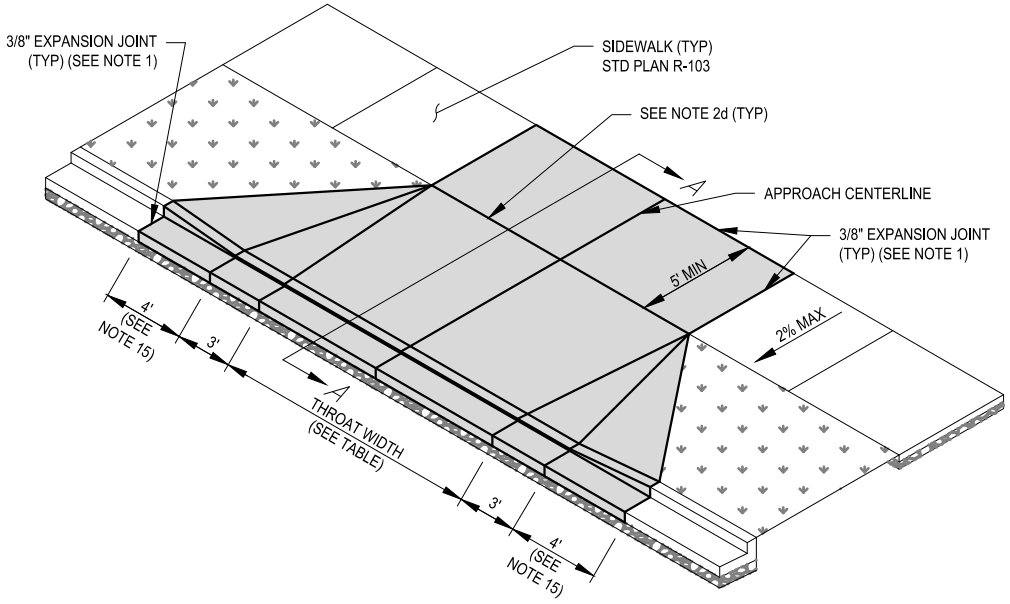
ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

TYPE I CONCRETE APPROACH SEPARATED SIDEWALK

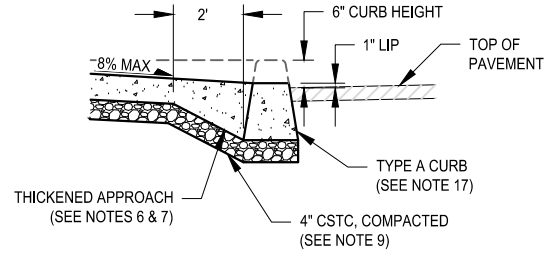
STANDARD PLAN NO. R-110

PUBLICATION DATE:	09/2025
REVISION NO.:	03

CREATION: 8/27/2025. REVISED: 8/27/2025 BY: JMORSE

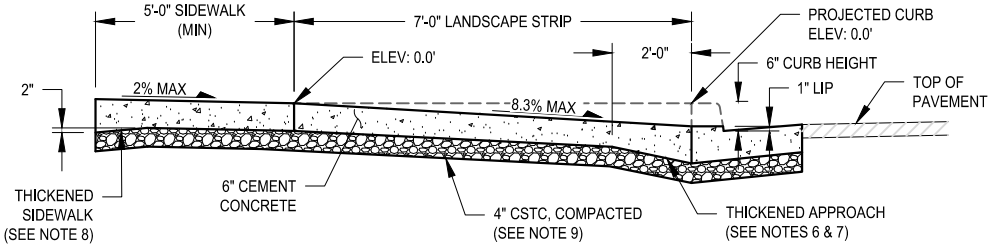


ISOMETRIC VIEW



SECTION VIEW - TYPE A CURB

(SEE NOTE 17)



SECTION A-A

GENERAL NOTES:

1. EXPANSION JOINT MINIMUM REQUIREMENTS:
   a. 3/8" EXPANSION JOINT MATERIAL SHALL BE PLACED AT LEAST EVERY 15' IN WIDTH WITHIN THE DRIVEWAY APPROACH AND SHALL LINE UP WITH SIDEWALK EXPANSION JOINTS IF APPLICABLE.
   b. 3/8" EXPANSION JOINT MATERIAL IS REQUIRED BETWEEN DRIVEWAY SLAB AND THE SIDEWALK AND THE DRIVEWAY APPROACH.
   c. EXPANSION JOINT MATERIAL SHALL BE SECURED IN PLACE PRIOR TO CONCRETE PLACEMENT AND SHALL COMPLETELY SEPARATE ADJACENT SLABS EXTENDING FROM THE SURFACE TO GRAVEL BASE. PLACEMENT OF EXPANSION JOINT MATERIAL SHALL NOT BE FLOATED OR PRESSED INTO WET CONCRETE AFTER CONCRETE HAS BEEN PLACED.
   d. AN ALTERNATIVE TO SETTING EXPANSION JOINT MATERIAL PRIOR TO PLACING CONCRETE WOULD BE TO SAW CUT FULL DEPTH 1/2" WIDE AND FILL WITH APPROVED MASTIC PER WSDOT 9-04.2(2) POURED RUBBER JOINT SEALER.
2. CONTROL JOINTS SHALL BE PLACED AT THE DISCRETION OF THE CONTRACTOR. CRACK REPAIR WITHIN THE WARRANTY PERIOD IS THE RESPONSIBILITY OF THE CONTRACTOR. CONTROL JOINT MINIMUM REQUIREMENTS; CONTROL JOINTS SHALL:
   a. BE NO FARTHER APART THAN 10'.
   b. NOT EXCEED A RATIO OF 1 TO 1.25 LENGTH TO WIDTH.
   c. BE A MINIMUM OF 1" DEEP (FOR TROWEL OR SAW CUT).
   d. BE ADDED AT ALL GRADE BREAKS.
3. CEMENT CONCRETE SHALL BE CLASS 4,000 CONCRETE PER SECTION 6-02 OF THE WSDOT STANDARD SPECIFICATIONS.
4. ALL EXTERNAL EDGES SHALL BE TROWELED WITH A 3/8" TO 1/2" RADIUS.
5. A 4" (MIN) THICK CSTC LAYER SHALL BE PLACED UNDER DRIVE APPROACH.
6. FIRST 2' OF DRIVE APPROACH (AT CURB SIDE) SHALL BE THICKENED TO MATCH BOTTOM OF CURB.
7. WHEN AN ASPHALT APPROACH IS USED THE ASPHALT SHALL BE PLACED IN 0.30' LIFTS PER WSDOT 5-04.3(7)
8. LAST 2' OF SIDEWALK (HOUSE SIDE) WILL BE THICKENED 2 EXTRA INCHES WHEN OTHER HARD SURFACES ARE NOT PROPOSED ADJACENT TO THE APPROACH.
9. SUBGRADE AND CSTC UNDER APPROACH SHALL BE COMPACTED TO 95%.
10. ALL BROKEN, CRACKED, HEAVED AND SUNKEN CONCRETE SHALL BE REMOVED AND REPLACED FROM JOINT TO JOINT.
11. PERIMETER EDGING SHALL NOT BE ALLOWED UNLESS IT IS FOR A REPAIR/REPLACEMENT OF EXISTING PANELS AND ONLY WHEN MATCHING ADJACENT PANELS. CONTRACTOR SHALL MAKE AN EFFORT TO MATCH EXISTING PANELS IN ACCORDANCE WITH DIRECTION FROM CITY INSPECTOR.
12. ALL CHANGES IN LEVEL ACROSS JOINT MUST BE FLUSH WITH A MAXIMUM DIFFERENCE IN ELEVATION OF 3/16".
13. MONO-PLACEMENT OF CURBS AND CROSS GUTTER WITH OTHER STRUCTURES SUCH AS SIDEWALKS AND APPROACHES SHALL NOT BE ALLOWED AND SHALL BE SEPARATED WITH EITHER A COLD JOINT OR EXPANSION JOINT SEALED WITH A POURED RUBBER JOINT SEALER PER WSDOT 9-04.2(2).
14. ALL APPROACHES SHALL BE PER CITY STREET STANDARDS 7.3 AND 7.8.
15. SAWCUTING OF CURB TO CREATE CURB DROP IS NOT ALLOWED.
16. EXCEPT FOR JOINTS AND BROOM FINISHING, NO OTHER MARKINGS ARE PERMITTED ON THE WALKING SURFACE.
17. TYPE A CURB TO BE USED ONLY WHEN MATCHING EXISTING CURB AND WITH APPROVAL OF THE CITY ENGINEER.

DESIGN CRITERIA

	RESIDENTIAL	COMMERCIAL
DISTANCE FROM CURB RETURN	15' MIN.	75' MIN.
THROAT WIDTH ***	16' MIN.* ** 30' MAX.**	30' MIN.** 40' MAX.**
SETBACK FROM SIDE PROPERTY LINE AT R.O.W.	5' MIN.	5' MIN.
SETBACK FROM SIDE PROPERTY LINE	2' MIN.	2' MIN.

* 24' MINIMUM WIDTH IF DRIVEWAY LENGTH IS OVER 75', SEE R-117

** THE TOTAL APPROACH WIDTH SHALL NOT BE GREATER THAN 50% OF TOTAL LOT FRONTAGE WIDTH.

*** CONSTRUCT EXPANSION JOINTS PARALLEL WITH APPROACH CENTERLINE AS REQUIRED AT 15' MAX. SPACING WHEN DRIVEWAY WIDTHS EXCEED 30'.

CITY OF Spokane Valley

APPROVED BY:

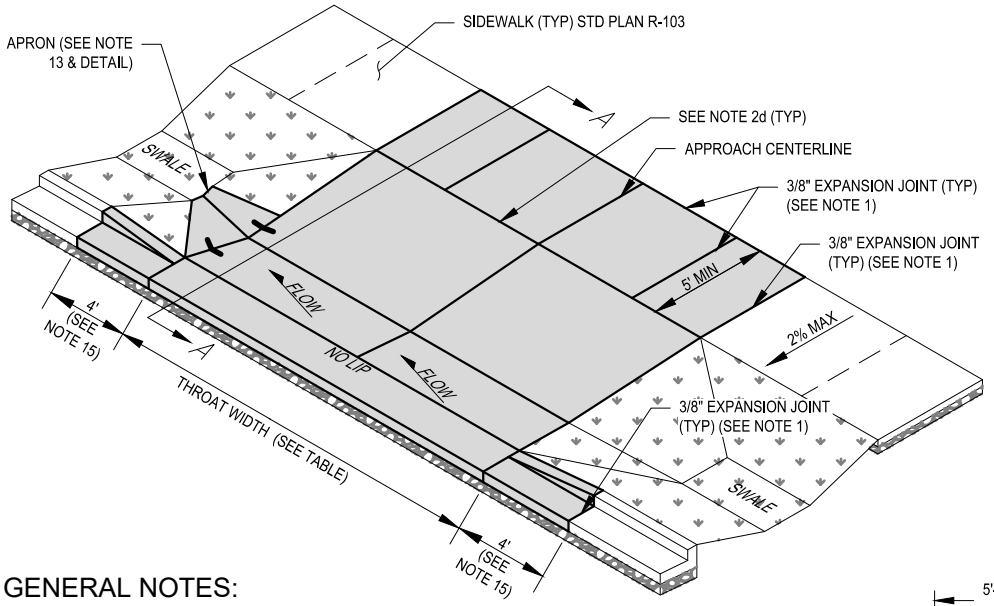
ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

TYPE II CONCRETE APPROACH SEPARATED SIDEWALK

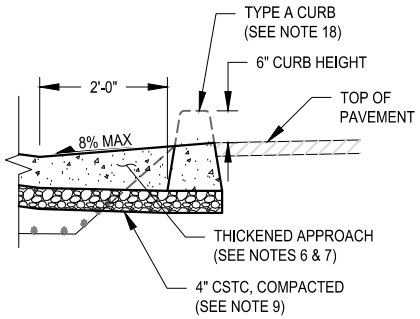
STANDARD PLAN NO. R-111

PUBLICATION DATE:	09/2025
REVISION NO.:	03

CREATION: 8/27/2025. REVISED: 8/27/2025 BY: JMORSE

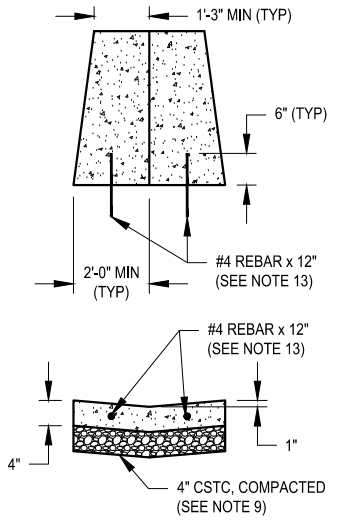


ISOMETRIC VIEW



SECTION VIEW - TYPE A CURB

(SEE NOTE 18)



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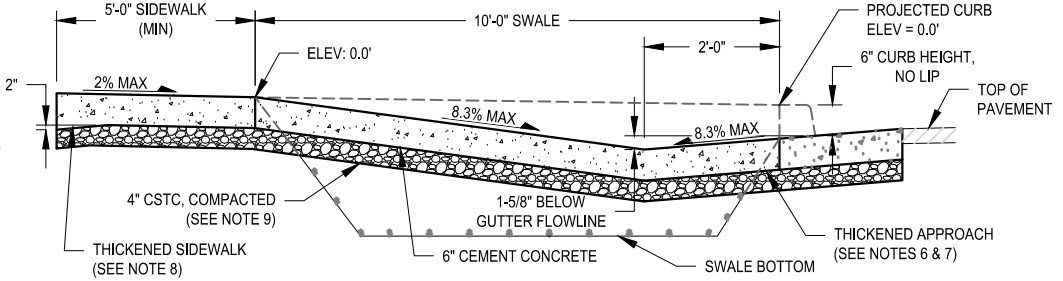

SECTION A-A

GENERAL NOTES:

1. EXPANSION JOINT MINIMUM REQUIREMENTS:
   a. 3/8" EXPANSION JOINT MATERIAL SHALL BE PLACED AT LEAST EVERY 15' IN WIDTH WITHIN THE DRIVEWAY APPROACH AND SHALL LINE UP WITH SIDEWALK EXPANSION JOINTS IF APPLICABLE.
   b. 3/8" EXPANSION JOINT MATERIAL IS REQUIRED BETWEEN DRIVEWAY SLAB AND THE SIDEWALK AND THE DRIVEWAY APPROACH.
   c. EXPANSION JOINT MATERIAL SHALL BE SECURED IN PLACE PRIOR TO CONCRETE PLACEMENT AND SHALL COMPLETELY SEPARATE ADJACENT SLABS EXTENDING FROM THE SURFACE TO GRAVEL BASE. PLACEMENT OF EXPANSION JOINT MATERIAL SHALL NOT BE FLOATED OR PRESSED INTO WET CONCRETE AFTER CONCRETE HAS BEEN PLACED.
   d. AN ALTERNATIVE TO SETTING EXPANSION JOINT MATERIAL PRIOR TO PLACING CONCRETE WOULD BE TO SAW CUT FULL DEPTH 1/2" WIDE AND FILL WITH APPROVED MASTIC PER WSDOT 9-04.2(2) POURED RUBBER JOINT SEALER.
2. CONTROL JOINTS SHALL BE PLACED AT THE DISCRETION OF THE CONTRACTOR. CRACK REPAIR WITHIN THE WARRANTY PERIOD IS THE RESPONSIBILITY OF THE CONTRACTOR. CONTROL JOINT MINIMUM REQUIREMENTS; CONTROL JOINTS SHALL:
   a. BE NO FARTHER APART THAN 10'.
   b. NOT EXCEED A RATIO OF 1 TO 1.25 LENGTH TO WIDTH.
   c. BE A MINIMUM OF 1" DEEP (FOR TROWEL OR SAW CUT).
   d. BE ADDED AT ALL GRADE BREAKS.
3. CEMENT CONCRETE SHALL BE CLASS 4,000 CONCRETE PER SECTION 6-02 OF THE WSDOT STANDARD SPECIFICATIONS.
4. ALL EXTERNAL EDGES SHALL BE TROWELED WITH A 3/8" TO 1/2" RADIUS.
5. A 4" (MIN) THICK CSTC LAYER SHALL BE PLACED UNDER DRIVE APPROACH.
6. FIRST 2' OF DRIVE APPROACH (AT CURB SIDE) SHALL BE THICKENED TO MATCH BOTTOM OF CURB.
7. WHEN AN ASPHALT APPROACH IS USED THE ASPHALT SHALL BE PLACED IN 0.30' LIFTS PER WSDOT 5-04.3(7)
8. LAST 2' OF SIDEWALK (HOUSE SIDE) WILL BE THICKENED 2 EXTRA INCHES WHEN OTHER HARD SURFACES ARE NOT PROPOSED ADJACENT TO THE APPROACH.
9. SUBGRADE AND CSTC UNDER APPROACH SHALL BE COMPACTED TO 95%.
10. ALL BROKEN, CRACKED, HEAVED AND SUNKEN CONCRETE SHALL BE REMOVED AND REPLACED FROM JOINT TO JOINT.
11. PERIMETER EDGING SHALL NOT BE ALLOWED UNLESS IT IS FOR A REPAIR/REPLACEMENT OF EXISTING PANELS AND ONLY WHEN MATCHING ADJACENT PANELS. CONTRACTOR SHALL MAKE AN EFFORT TO MATCH EXISTING PANELS IN ACCORDANCE WITH DIRECTION FROM CITY INSPECTOR.
12. ALL CHANGES IN LEVEL ACROSS JOINT MUST BE FLUSH WITH A MAXIMUM DIFFERENCE IN ELEVATION OF 3/16".
13. APRON SHALL EXTEND TO SWALE BOTTOM AND BE SECURED TO THE DRIVE APPROACH WITH TWO #4 x 12" LONG REBAR, EMBEDDED 6" EACH SIDE.
14. MONO-PLACEMENT OF CURBS AND CROSS GUTTER WITH OTHER STRUCTURES SUCH AS SIDEWALKS AND APPROACHES SHALL NOT BE ALLOWED AND SHALL BE SEPARATED WITH EITHER A COLD JOINT OR EXPANSION JOINT SEALED WITH A POURED RUBBER JOINT SEALER PER WSDOT 9-04.2(2).
15. SAWCUTING OF CURB TO CREATE CURB DROP IS NOT ALLOWED.
16. ALL APPROACHES SHALL BE PER CITY STREET STANDARDS 7.3 AND 7.8.
17. EXCEPT FOR JOINTS AND BROOM FINISHING, NO OTHER MARKINGS ARE PERMITTED ON THE WALKING SURFACE.
18. TYPE A CURB TO BE USED ONLY WHEN MATCHING EXISTING CURB AND WITH APPROVAL OF THE CITY ENGINEER.

DESIGN CRITERIA

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SETBACK FROM SIDE PROPERTY LINE AT R.O.W.	5' MIN.	5' MIN.
SETBACK FROM SIDE PROPERTY LINE	2' MIN.	2' MIN.

* 24' MINIMUM WIDTH IF DRIVEWAY LENGTH IS OVER 75', SEE R-117

** THE TOTAL APPROACH WIDTH SHALL NOT BE GREATER THAN 50% OF TOTAL LOT FRONTAGE WIDTH.

*** CONSTRUCT EXPANSION JOINTS PARALLEL WITH APPROACH CENTERLINE AS REQUIRED AT 15' MAX. SPACING WHEN DRIVEWAY WIDTHS EXCEED 30'.

CITY OF Spokane Valley

APPROVED BY:

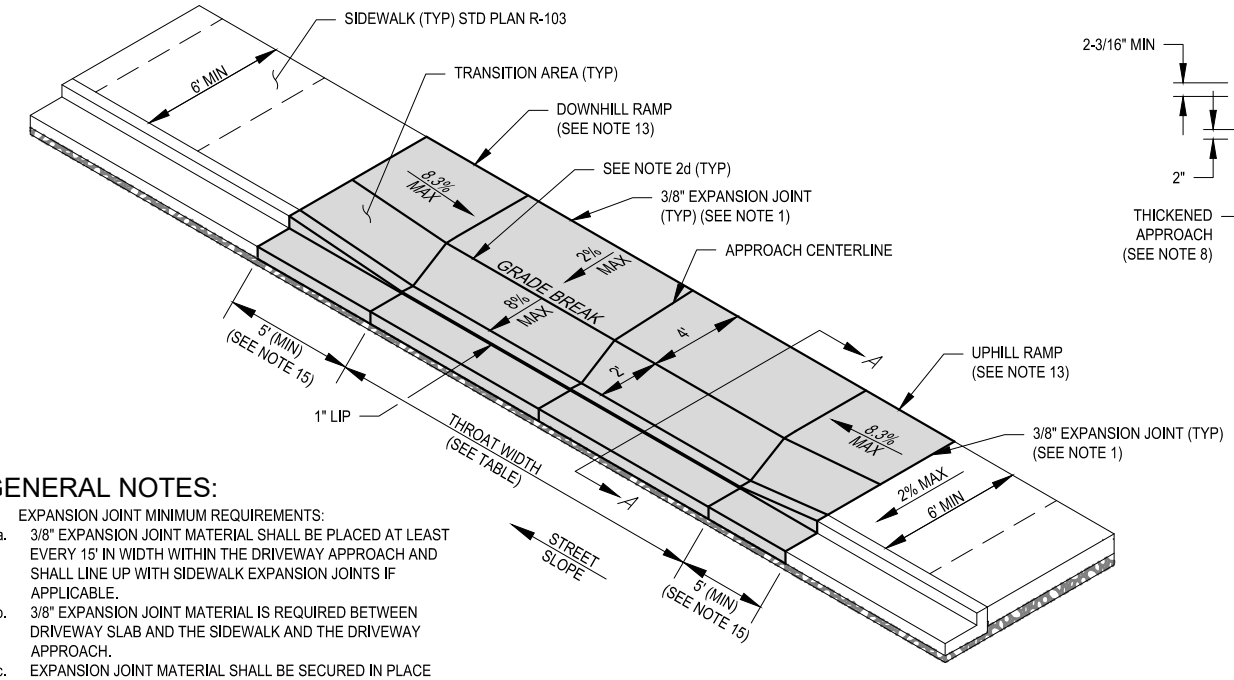
ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

DRIVEWAY APPROACH SWALE INLET

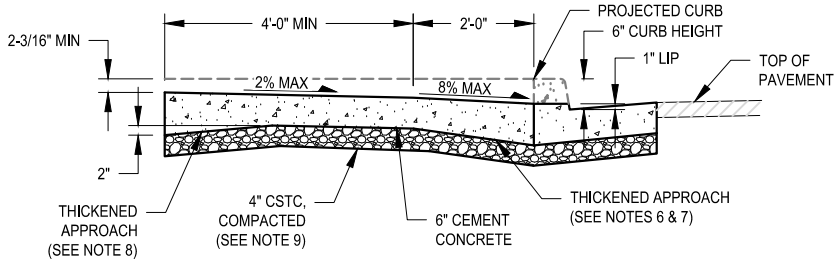
STANDARD PLAN NO. R-112

PUBLICATION DATE:	09/2025
REVISION NO.:	03

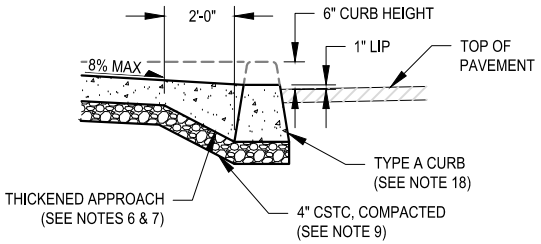
CREATION: 8/27/2025. REVISED: 8/27/2025 BY: JMORSE



ISOMETRIC VIEW



SECTION A-A



SECTION VIEW - TYPE A CURB
(SEE NOTE 18)

GENERAL NOTES:

1. EXPANSION JOINT MINIMUM REQUIREMENTS:
   a. 3/8" EXPANSION JOINT MATERIAL SHALL BE PLACED AT LEAST EVERY 15' IN WIDTH WITHIN THE DRIVEWAY APPROACH AND SHALL LINE UP WITH SIDEWALK EXPANSION JOINTS IF APPLICABLE.
   b. 3/8" EXPANSION JOINT MATERIAL IS REQUIRED BETWEEN DRIVEWAY SLAB AND THE SIDEWALK AND THE DRIVEWAY APPROACH.
   c. EXPANSION JOINT MATERIAL SHALL BE SECURED IN PLACE PRIOR TO CONCRETE PLACEMENT AND SHALL COMPLETELY SEPARATE ADJACENT SLABS EXTENDING FROM THE SURFACE TO GRAVEL BASE. PLACEMENT OF EXPANSION JOINT MATERIAL SHALL NOT BE FLOATED OR PRESSED INTO WET CONCRETE AFTER CONCRETE HAS BEEN PLACED.
   d. AN ALTERNATIVE TO SETTING EXPANSION JOINT MATERIAL PRIOR TO PLACING CONCRETE WOULD BE TO SAW CUT FULL DEPTH 1/2" WIDE AND FILL WITH APPROVED MASTIC PER WSDOT 9-04.2(2) POURED RUBBER JOINT SEALER.
2. CONTROL JOINTS SHALL BE PLACED AT THE DISCRETION OF THE CONTRACTOR. CRACK REPAIR WITHIN THE WARRANTY PERIOD IS THE RESPONSIBILITY OF THE CONTRACTOR. CONTROL JOINT MINIMUM REQUIREMENTS; CONTROL JOINTS SHALL:
   a. BE NO FARTHER APART THAN 10'.
   b. NOT EXCEED A RATIO OF 1 TO 1.25 LENGTH TO WIDTH.
   c. BE A MINIMUM OF 1" DEEP (FOR TROWEL OR SAW CUT).
   d. BE ADDED AT ALL GRADE BREAKS.
3. CEMENT CONCRETE SHALL BE CLASS 4,000 CONCRETE PER SECTION 6-02 OF THE WSDOT STANDARD SPECIFICATIONS.
4. ALL EXTERNAL EDGES SHALL BE TROWELED WITH A 3/8" TO 1/2" RADIUS.
5. A 4" (MIN) THICK CSTC LAYER SHALL BE PLACED UNDER DRIVE APPROACH.
6. FIRST 2' OF DRIVE APPROACH (AT CURB SIDE) SHALL BE THICKENED TO MATCH BOTTOM OF CURB.
7. WHEN AN ASPHALT APPROACH IS USED THE ASPHALT SHALL BE PLACED IN 0.30' LIFTS PER WSDOT 5-04.3(7)
8. LAST 2' OF SIDEWALK (HOUSE SIDE) WILL BE THICKENED 2 EXTRA INCHES WHEN OTHER HARD SURFACES ARE NOT PROPOSED ADJACENT TO THE APPROACH.
9. SUBGRADE AND CSTC UNDER APPROACH SHALL BE COMPACTED TO 95%.
10. ALL BROKEN, CRACKED, HEAVED AND SUNKEN CONCRETE SHALL BE REMOVED AND REPLACED FROM JOINT TO JOINT.
11. PERIMETER EDGING SHALL NOT BE ALLOWED UNLESS IT IS FOR A REPAIR/REPLACEMENT OF EXISTING PANELS AND ONLY WHEN MATCHING ADJACENT PANELS. CONTRACTOR SHALL MAKE AN EFFORT TO MATCH EXISTING PANELS IN ACCORDANCE WITH DIRECTION FROM CITY INSPECTOR.
12. ALL CHANGES IN LEVEL ACROSS JOINT MUST BE FLUSH WITH A MAXIMUM DIFFERENCE IN ELEVATION OF 3/16".
13. LENGTH OF UPHILL RAMP FOR STREETS WITH LONGITUDINAL SLOPES LESS THAN 2.0% SHALL BE 5'. THE MAXIMUM LONGITUDINAL SLOPE SHALL BE 8.3%, BUT THE RAMP LENGTH SHALL NOT BE REQUIRED TO EXCEED 15 FEET. REQUIRED UPHILL RAMP LENGTHS SHALL BE DETERMINED BY DESIGN ENGINEER. DOWNHILL RAMP LENGTHS ARE NOT REQUIRED TO EXCEED 5' AND SHALL BE A MAXIMUM OF 8.3%.
14. MONO-PLACEMENT OF CURBS AND CROSS GUTTER WITH OTHER STRUCTURES SUCH AS SIDEWALKS AND APPROACHES SHALL NOT BE ALLOWED AND SHALL BE SEPARATED WITH EITHER A COLD JOINT OR EXPANSION JOINT SEALED WITH A POURED RUBBER JOINT SEALER PER WSDOT 9-04.2(2).
15. SAWCUTING OF CURB TO CREATE CURB DROP IS NOT ALLOWED.
16. ALL APPROACHES SHALL BE PER CITY STREET STANDARDS 7.3 AND 7.8.
17. EXCEPT FOR JOINTS AND BROOM FINISHING, NO OTHER MARKINGS ARE PERMITTED ON THE WALKING SURFACE.
18. TYPE A CURB TO BE USED ONLY WHEN MATCHING EXISTING CURB AND WITH APPROVAL OF THE CITY ENGINEER.

DESIGN CRITERIA

	RESIDENTIAL	COMMERCIAL
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THROAT WIDTH ***	16' MIN.* ** 30' MAX.**	30' MIN.** 40' MAX.**
SETBACK FROM SIDE PROPERTY LINE AT R.O.W.	5' MIN.	5' MIN.
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* 24' MINIMUM WIDTH IF DRIVEWAY LENGTH IS OVER 75', SEE R-117

** THE TOTAL APPROACH WIDTH SHALL NOT BE GREATER THAN 50% OF TOTAL LOT FRONTAGE WIDTH.

*** CONSTRUCT EXPANSION JOINTS PARALLEL WITH APPROACH CENTERLINE AS REQUIRED AT 15' MAX. SPACING WHEN DRIVEWAY WIDTHS EXCEED 30'.

CITY OF Spokane Valley

APPROVED BY:

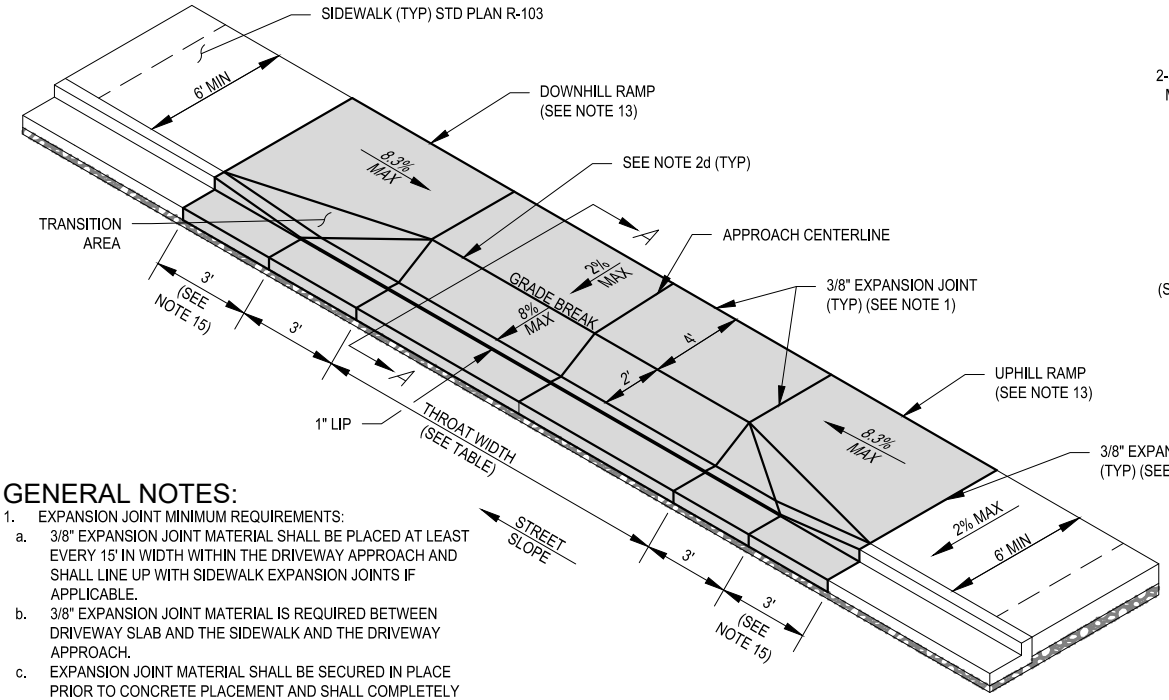
ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

RESIDENTIAL CONCRETE APPROACH ADJACENT SIDEWALK

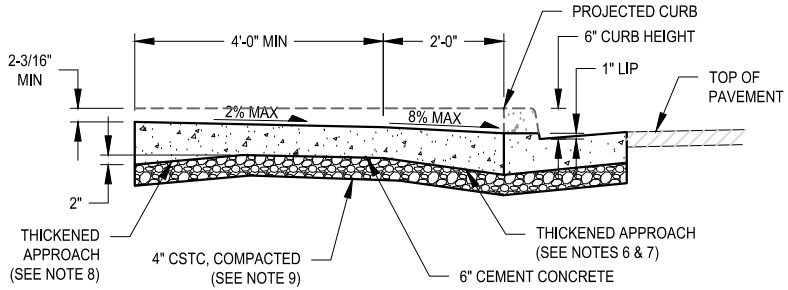
STANDARD PLAN NO. R-113

PUBLICATION DATE:	09/2025
REVISION NO.:	03

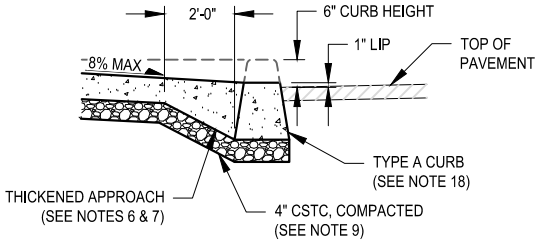
CREATION: 8/27/2025. REVISED: 8/27/2025 BY: JMORSE



ISOMETRIC VIEW



SECTION A-A



SECTION VIEW - TYPE A CURB
(SEE NOTE 18)

GENERAL NOTES:

1. EXPANSION JOINT MINIMUM REQUIREMENTS:
   a. 3/8" EXPANSION JOINT MATERIAL SHALL BE PLACED AT LEAST EVERY 15' IN WIDTH WITHIN THE DRIVEWAY APPROACH AND SHALL LINE UP WITH SIDEWALK EXPANSION JOINTS IF APPLICABLE.
   b. 3/8" EXPANSION JOINT MATERIAL IS REQUIRED BETWEEN DRIVEWAY SLAB AND THE SIDEWALK AND THE DRIVEWAY APPROACH.
   c. EXPANSION JOINT MATERIAL SHALL BE SECURED IN PLACE PRIOR TO CONCRETE PLACEMENT AND SHALL COMPLETELY SEPARATE ADJACENT SLABS EXTENDING FROM THE SURFACE TO GRAVEL BASE. PLACEMENT OF EXPANSION JOINT MATERIAL SHALL NOT BE FLOATED OR PRESSED INTO WET CONCRETE AFTER CONCRETE HAS BEEN PLACED.
   d. AN ALTERNATIVE TO SETTING EXPANSION JOINT MATERIAL PRIOR TO PLACING CONCRETE WOULD BE TO SAW CUT FULL DEPTH 1/2" WIDE AND FILL WITH APPROVED MASTIC PER WSDOT 9-04.2(2) POURED RUBBER JOINT SEALER.
2. CONTROL JOINTS SHALL BE PLACED AT THE DISCRETION OF THE CONTRACTOR. CRACK REPAIR WITHIN THE WARRANTY PERIOD IS THE RESPONSIBILITY OF THE CONTRACTOR. CONTROL JOINT MINIMUM REQUIREMENTS; CONTROL JOINTS SHALL:
   a. BE NO FARTHER APART THAN 10'.
   b. NOT EXCEED A RATIO OF 1 TO 1.25 LENGTH TO WIDTH.
   c. BE A MINIMUM OF 1" DEEP (FOR TROWEL OR SAW CUT).
   d. BE ADDED AT ALL GRADE BREAKS.
3. CEMENT CONCRETE SHALL BE CLASS 4,000 CONCRETE PER SECTION 6-02 OF THE WSDOT STANDARD SPECIFICATIONS.
4. ALL EXTERNAL EDGES SHALL BE TROWELED WITH A 3/8" TO 1/2" RADIUS.
5. A 4" (MIN) THICK CSTC LAYER SHALL BE PLACED UNDER DRIVE APPROACH.
6. FIRST 2' OF DRIVE APPROACH (AT CURB SIDE) SHALL BE THICKENED TO MATCH BOTTOM OF CURB.
7. WHEN AN ASPHALT APPROACH IS USED THE ASPHALT SHALL BE PLACED IN 0.30' LIFTS PER WSDOT 5-04.3(7)
8. LAST 2' OF SIDEWALK (HOUSE SIDE) WILL BE THICKENED 2 EXTRA INCHES WHEN OTHER HARD SURFACES ARE NOT PROPOSED ADJACENT TO THE APPROACH.
9. SUBGRADE AND CSTC UNDER APPROACH SHALL BE COMPACTED TO 95%.
10. ALL BROKEN, CRACKED, HEAVED AND SUNKEN CONCRETE SHALL BE REMOVED AND REPLACED FROM JOINT TO JOINT.
11. PERIMETER EDGING SHALL NOT BE ALLOWED UNLESS IT IS FOR A REPAIR/REPLACEMENT OF EXISTING PANELS AND ONLY WHEN MATCHING ADJACENT PANELS. CONTRACTOR SHALL MAKE AN EFFORT TO MATCH EXISTING PANELS IN ACCORDANCE WITH DIRECTION FROM CITY INSPECTOR.
12. ALL CHANGES IN LEVEL ACROSS JOINT MUST BE FLUSH WITH A MAXIMUM DIFFERENCE IN ELEVATION OF 3/16".
13. LENGTH OF UPHILL RAMP FOR STREETS WITH LONGITUDINAL SLOPES LESS THAN 2.0% SHALL BE 5'. THE MAXIMUM LONGITUDINAL SLOPE SHALL BE 8.3%, BUT THE RAMP LENGTH SHALL NOT BE REQUIRED TO EXCEED 15 FEET. REQUIRED UPHILL RAMP LENGTHS SHALL BE DETERMINED BY DESIGN ENGINEER. DOWNHILL RAMP LENGTHS ARE NOT REQUIRED TO EXCEED 5' AND SHALL BE A MAXIMUM OF 8.3%.
14. MONO-PLACEMENT OF CURBS AND CROSS GUTTER WITH OTHER STRUCTURES SUCH AS SIDEWALKS AND APPROACHES SHALL NOT BE ALLOWED AND SHALL BE SEPARATED WITH EITHER A COLD JOINT OR EXPANSION JOINT SEALED WITH A POURED RUBBER JOINT SEALER PER WSDOT 9-04.2(2).
15. SAWCUTING OF CURB TO CREATE CURB DROP IS NOT ALLOWED.
16. ALL APPROACHES SHALL BE PER CITY STREET STANDARDS 7.3 AND 7.8.
17. EXCEPT FOR JOINTS AND BROOM FINISHING, NO OTHER MARKINGS ARE PERMITTED ON THE WALKING SURFACE.
18. TYPE A CURB TO BE USED ONLY WHEN MATCHING EXISTING CURB AND WITH APPROVAL OF THE CITY ENGINEER.
19. DETECTABLE WARNING SURFACES SHALL BE REQUIRED ON BOTH SIDES OF ANY DRIVEWAY THAT IS YIELD, STOP OR SIGNAL CONTROLLED.

DESIGN CRITERIA

	RESIDENTIAL	COMMERCIAL
DISTANCE FROM CURB RETURN	15' MIN.	75' MIN.
THROAT WIDTH ***	16' MIN.* ** 30' MAX.**	30' MIN.** 40' MAX.**
SETBACK FROM SIDE PROPERTY LINE AT R.O.W.	5' MIN.	5' MIN.
SETBACK FROM SIDE PROPERTY LINE	2' MIN.	2' MIN.

* 24' MINIMUM WIDTH IF DRIVEWAY LENGTH IS OVER 75', SEE R-117

** THE TOTAL APPROACH WIDTH SHALL NOT BE GREATER THAN 50% OF TOTAL LOT FRONTAGE WIDTH.

*** CONSTRUCT EXPANSION JOINTS PARALLEL WITH APPROACH CENTERLINE AS REQUIRED AT 15' MAX. SPACING WHEN DRIVEWAY WIDTHS EXCEED 30'.

CITY OF Spokane Valley

APPROVED BY:

ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

COMMERCIAL CONCRETE APPROACH ADJACENT SIDEWALK

STANDARD PLAN NO. R-114

PUBLICATION DATE:	09/2025
REVISION NO.:	03

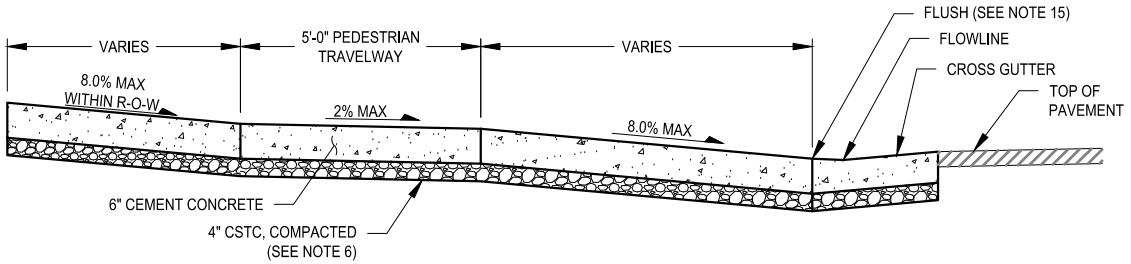
CREATION: 8/27/2025. REVISED: 8/27/2025 BY: JMORSE

GENERAL NOTES:

SEE PAGE 2 OF 2

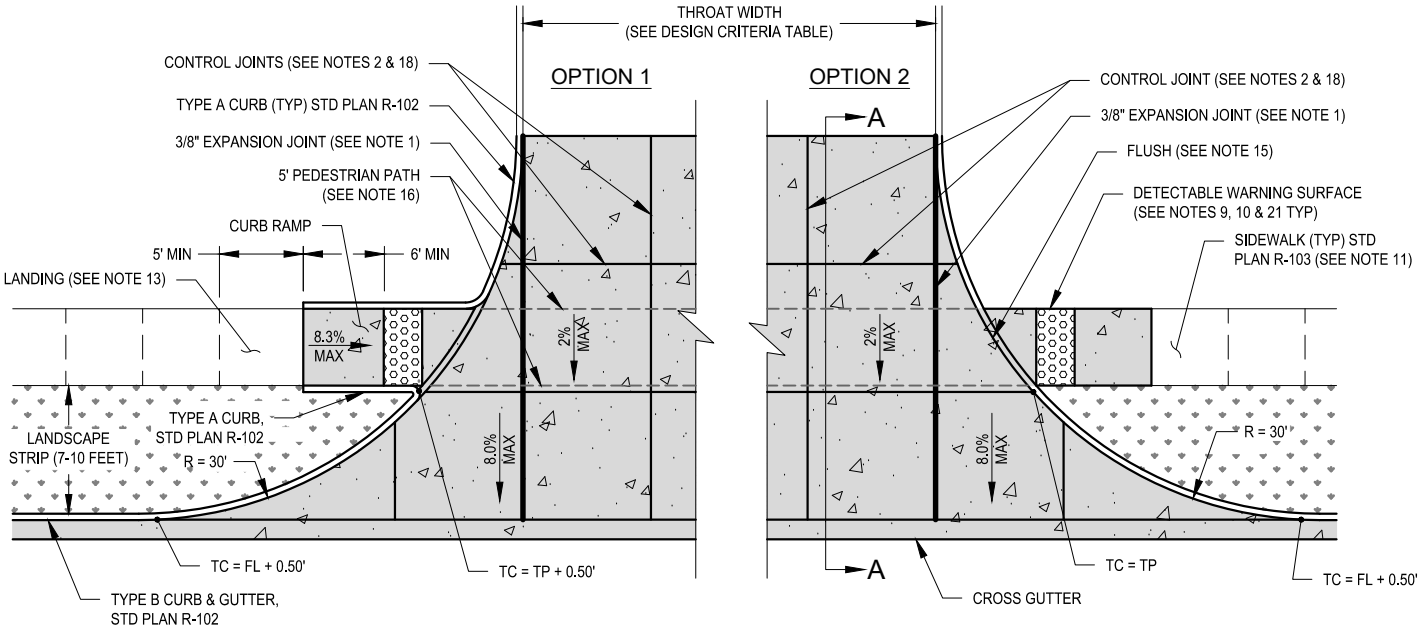
ABBREVIATIONS	
TC	TOP OF CURB
TP	TOP OF PAVEMENT
FL	FLOWLINE

ADA REQUIREMENTS			
	RECOMMENDED	MIN	MAX
FLARED SIDE SLOPE (%)	-	-	-
FLARED SIDE LENGTH (FT)	-	-	-
RAMP SLOPE (%)	7	0.5	8.33
RAMP CROSS SLOPE (%)	1	0.5	2
RAMP LENGTH (FT)	7	6	15
RAMP WIDTH (FT)	5	4	-
LANDING WIDTH (FT)	5	4	-
LANDING SLOPE (%)	1	0.5	2
GUTTER SLOPE (%)	4	2	8
CHANGE IN LEVEL (IN)	FLUSH		0.5" (SEE NOTE 2)



SECTION A-A

DESIGN CRITERIA	
	COMMERCIAL
DISTANCE FROM CURB RETURN	75' MIN.
THROAT WIDTH ***	30' MIN.** 40' MAX.**
SETBACK FROM SIDE PROPERTY LINE AT R.O.W.	5' MIN.
SETBACK FROM SIDE PROPERTY LINE	2' MIN.
* THE TOTAL APPROACH WIDTH SHALL NOT BE GREATER THAN 50% OF THE TOTAL LOT FRONTAGE WIDTH.	
** THE TOTAL APPROACH WIDTH SHALL NOT BE GREATER THAN 50% OF TOTAL LOT FRONTAGE WIDTH.	
*** CONSTRUCT EXPANSION JOINTS PARALLEL WITH APPROACH CENTERLINE AS REQUIRED AT 15' MAX. SPACING WHEN DRIVEWAY WIDTHS EXCEED 30'.	



PLAN VIEW

CITY OF Spokane Valley

APPROVED BY:

ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

HIGH VOLUME CONCRETE APPROACH

(REQUIRES CITY APPROVAL)

STANDARD PLAN NO. R-115

PUBLICATION DATE:	09/2025
REVISION NO.:	03

CREATION: 8/27/2025. REVISED: 8/27/2025 BY: JMORSE

GENERAL NOTES:

1. EXPANSION JOINT MINIMUM REQUIREMENTS:
   a. 3/8" EXPANSION JOINT MATERIAL SHALL BE PLACED AT LEAST EVERY 15' IN WIDTH WITHIN THE DRIVEWAY APPROACH AND SHALL LINE UP WITH SIDEWALK EXPANSION JOINTS IF APPLICABLE.
   b. 3/8" EXPANSION JOINT MATERIAL IS REQUIRED BETWEEN DRIVEWAY SLAB AND THE SIDEWALK AND THE DRIVEWAY APPROACH.
   c. EXPANSION JOINT MATERIAL SHALL BE SECURED IN PLACE PRIOR TO CONCRETE PLACEMENT AND SHALL COMPLETELY SEPARATE ADJACENT SLABS EXTENDING FROM THE SURFACE TO GRAVEL BASE. PLACEMENT OF EXPANSION JOINT MATERIAL SHALL NOT BE FLOATED OR PRESSED INTO WET CONCRETE AFTER CONCRETE HAS BEEN PLACED.
   d. AN ALTERNATIVE TO SETTING EXPANSION JOINT MATERIAL PRIOR TO PLACING CONCRETE WOULD BE TO SAW CUT FULL DEPTH 1/2" WIDE AND FILL WITH APPROVED MASTIC PER WSDOT 9-04.2(2) POURED RUBBER JOINT SEALER.

2. CONTROL JOINTS SHALL BE PLACED AT THE DISCRETION OF THE CONTRACTOR. CRACK REPAIR WITHIN THE WARRANTY PERIOD IS THE RESPONSIBILITY OF THE CONTRACTOR. CONTROL JOINT MINIMUM REQUIREMENTS; CONTROL JOINTS SHALL:
   a. BE NO FARTHER APART THAN 10'.
   b. NOT EXCEED A RATIO OF 1 TO 1.25 LENGTH TO WIDTH.
   c. BE A MINIMUM OF 1" DEEP (FOR TROWEL OR SAW CUT).
   d. BE ADDED AT ALL GRADE BREAKS.

3. CEMENT CONCRETE SHALL BE CLASS 4,000 CONCRETE PER SECTION 6-02 OF THE WSDOT STANDARD SPECIFICATIONS.

4. ALL EXTERNAL EDGES SHALL BE TROWELED WITH A 3/8" TO 1/2" RADIUS.

5. A 4" (MIN) THICK CSTC LAYER SHALL BE PLACED UNDER DRIVE APPROACH.

6. SUBGRADE AND CSTC UNDER APPROACH SHALL BE COMPACTED TO 95%.

7. ALL BROKEN, CRACKED, HEAVED AND SUNKEN CONCRETE SHALL BE REMOVED AND REPLACED FROM JOINT TO JOINT.

8. PERIMETER EDGING SHALL NOT BE ALLOWED UNLESS IT IS FOR A REPAIR/REPLACEMENT OF EXISTING PANELS AND ONLY WHEN MATCHING ADJACENT PANELS. CONTRACTOR SHALL MAKE AN EFFORT TO MATCH EXISTING PANELS IN ACCORDANCE WITH DIRECTION FROM CITY INSPECTOR.

9. DETECTABLE WARNING SURFACES SHALL BE PER WSDOT STANDARD PLAN F-45.10. DETECTABLE WARNING SURFACES SHALL BE 24" MINIMUM IN THE DIRECTION OF TRAVEL AND EXTEND THE FULL WIDTH OF THE RAMP. THE ROWS OF TRUNCATED DOMES SHALL BE ALIGNED TO BE PARALLEL TO THE DIRECTION OF TRAVEL AND PERPENDICULAR TO THE GRADE BREAK AT THE BACK OF CURB.

10. DETECTABLE WARNING SURFACES SHALL BE FEDERAL YELLOW IN COLOR.

11. SIDEWALK LONGITUDINAL SLOPE MATCHES STREET LONGITUDINAL SLOPE.

12. ALL CHANGES IN LEVEL ACROSS JOINTS MUST BE FLUSH WITH A MAXIMUM DIFFERENCE IN ELEVATION OF 3/16".

13. LANDING LONGITUDINAL AND CROSS SLOPE SHALL BE MAX. 2%.

14. MAXIMUM SLOPES ARE STRICTLY ENFORCED. EXCEEDING MAXIMUM SLOPES WILL REQUIRE REMOVAL AND RECONSTRUCTION.

15. VERTICAL SURFACE DISCONTINUITIES SHALL BE 0.5" MAXIMUM. VERTICAL SURFACE DISCONTINUITIES BETWEEN 0.25" - 0.5" SHALL BE BEVELED WITH A SLOPE 2:1 MAX.

16. PEDESTRIAN PATH SHALL MEET ALL CURRENT ADA GUIDELINES.

17. MONO-PLACEMENT OF CURBS AND CROSS GUTTER WITH OTHER STRUCTURES SUCH AS SIDEWALKS AND APPROACHES SHALL NOT BE ALLOWED AND SHALL BE SEPARATED WITH EITHER A COLD JOINT OR EXPANSION JOINT SEALED WITH APPROVED MASTIC PER WSDOT 9-04.2(2).

18. CONTROL JOINTS SHALL BE PLACED AT THE DISCRETION OF THE CONTRACTOR. CRACK REPAIR WITHIN THE WARRANTY PERIOD IS THE RESPONSIBILITY OF THE CONTRACTOR.

19. ALL APPROACHES SHALL BE PER CITY STANDARDS 7.3 AND 7.8.

20. EXCEPT FOR JOINTS AND BROOM FINISHING, NO OTHER MARKINGS ARE PERMITTED ON THE WALKING SURFACE.

21. DETECTABLE WARNING SURFACES SHALL BE REQUIRED ON BOTH SIDES OF ANY DRIVEWAY THAT IS YIELD, STOP OR SIGNAL CONTROLLED.

CITY OF Spokane Valley

APPROVED BY:

ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

HIGH VOLUME CONCRETE APPROACH

(REQUIRES CITY APPROVAL)

STANDARD PLAN NO. R-115

PUBLICATION DATE:	09/2025
REVISION NO.:	03

CREATION: 8/27/2025. REVISED: 8/27/2025 BY: JMORSE

GENERAL NOTES:

1. ONLY TO BE USED IN APPLICATIONS WHERE CURB IS NEITHER EXISTING OR REQUIRED.
2. SHALL BE CONSTRUCTED OF MIN. 3" HMA OVER 6" CSTC OR 6" CONCRETE OVER 4" CSTC. CEMENT CONCRETE SHALL CLASS 4,000 CONCRETE PER SECTION 6-02 OF THE WSDOT STANDARD SPECIFICATIONS.
3. FOR ROADSIDE SWALE AND DITCH APPLICATIONS, INSTALL 8" (MIN) DUCTILE IRON PIPE (DIP) CULVERT UNDER APPROACH PER SPOKANE REGIONAL STORMWATER MANUAL. ENDS SHALL BE BEVELED TO MATCH SWALE SLOPE.
4. SUBGRADE AND CSTC UNDER APPROACH SHALL BE COMPACTED TO 95%.
5. WHEN THE APPROACH IS CONSTRUCTED OF CONCRETE, ALL BROKEN, CRACKED, HEAVED AND SUNKEN CONCRETE SHALL BE REMOVED AND REPLACED FROM JOINT TO JOINT. THE GENERAL NOTES REGARDING CONSTRUCTION JOINTS MATERIALS FROM STANDARD PLAN R-115 SHALL APPLY, SPECIFICALLY NOTES 1 THRU 5.
6. SAWCUT A MINIMUM OF 4" WIDE AT THE EXISTING EDGE OF ASPHALT TO PROVIDE A CLEAN JOINT BETWEEN THE EXISTING ASPHALT AND THE PROPOSED APPROACH. WHEN APPROACH IS CONCRETE, A SAWCUT AND ASPHALT PATCH IS STILL REQUIRED TO PROVIDE A CLEAN JOINT.
7. ALL APPROACHES SHALL BE PER CITY STREET STANDARDS 7.3 AND 7.8.

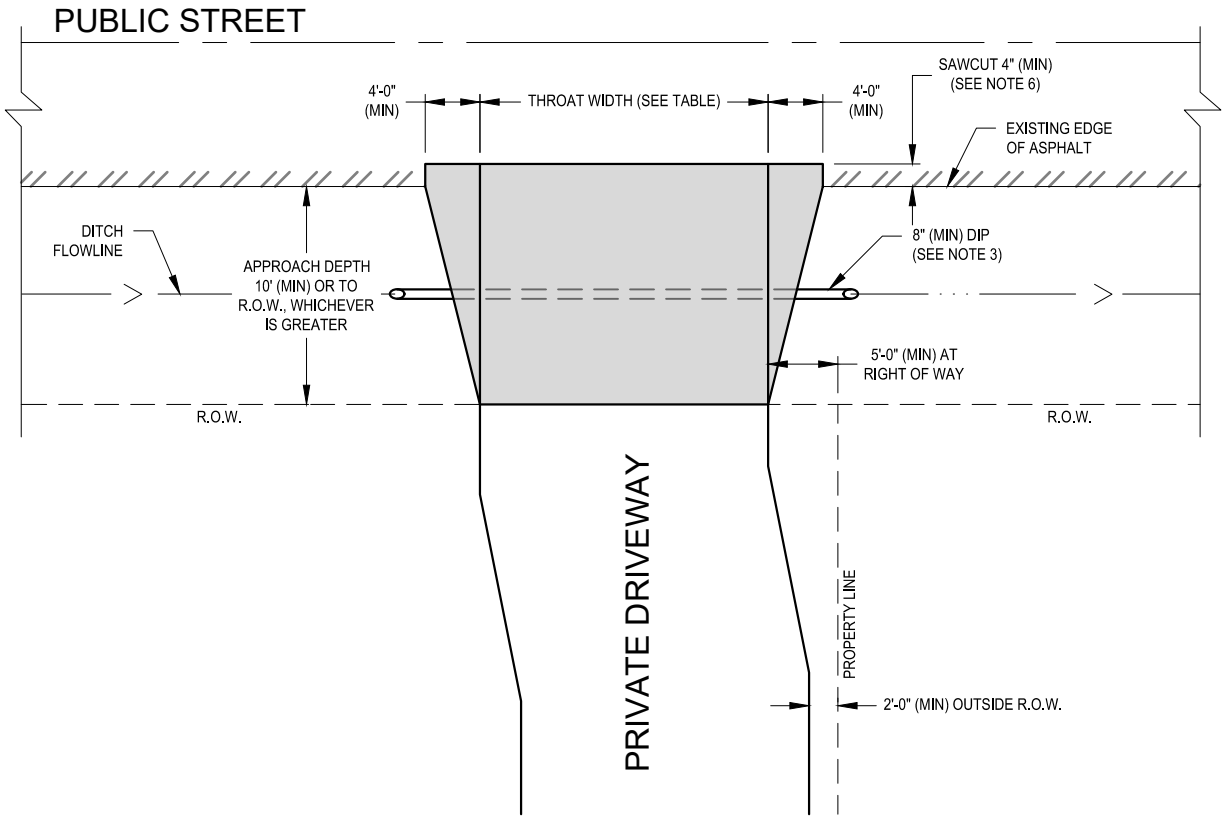
DESIGN CRITERIA

	RESIDENTIAL	COMMERCIAL
DISTANCE FROM CURB RETURN	15' MIN.	75' MIN.
THROAT WIDTH ***	16' MIN.* ** 30' MAX.**	30' MIN.** 40' MAX.**
SETBACK FROM SIDE PROPERTY LINE AT R.O.W.	5' MIN.	5' MIN.
SETBACK FROM SIDE PROPERTY LINE	2' MIN.	2' MIN.

* 24' MINIMUM WIDTH IF DRIVEWAY LENGTH IS OVER 75', SEE R-117

** THE TOTAL APPROACH WIDTH SHALL NOT BE GREATER THAN 50% OF TOTAL LOT FRONTAGE WIDTH.

*** CONSTRUCT EXPANSION JOINTS PARALLEL WITH APPROACH CENTERLINE AS REQUIRED AT 15' MAX. SPACING WHEN DRIVEWAY WIDTHS EXCEED 30'. THIS ONLY APPLIES WHEN APPROACH IS CONSTRUCTED OF CEMENT CONCRETE.



PLAN VIEW

CITY OF Spokane Valley

APPROVED BY:

ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

RURAL APPROACH

STANDARD PLAN NO. R-116

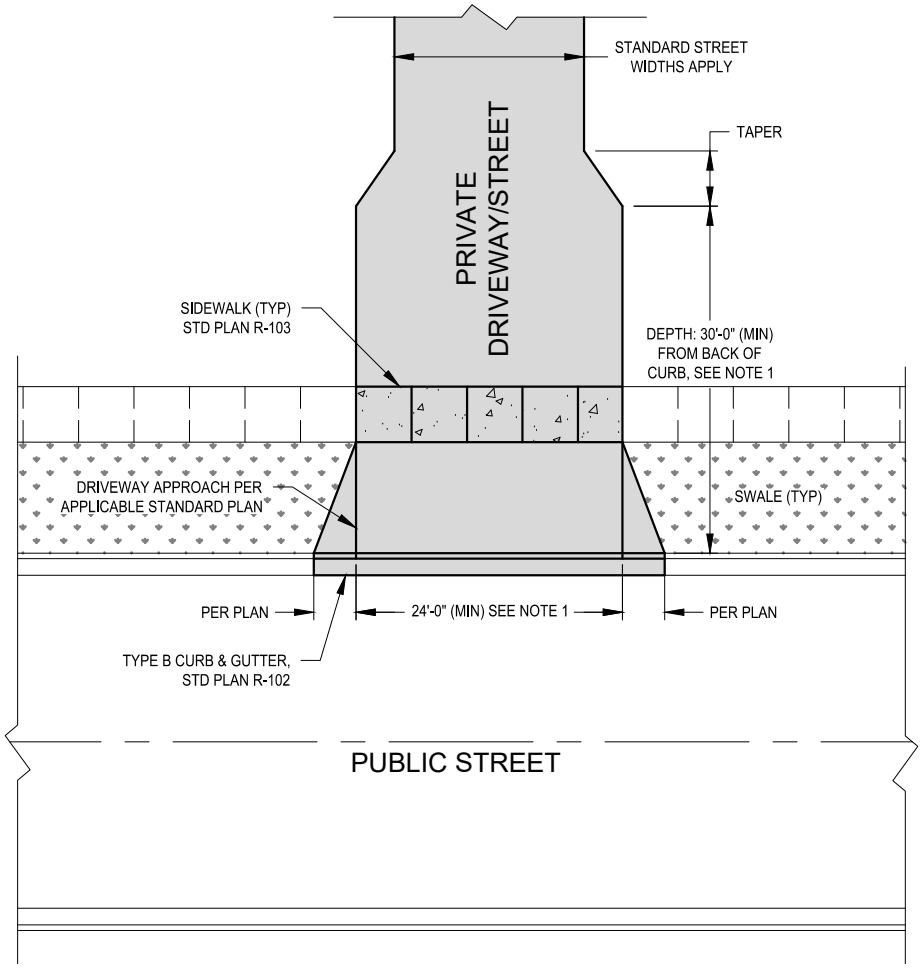
PUBLICATION DATE:	09/2025
REVISION NO.:	03

CREATION: 8/27/2025. REVISED: 9/22/2025 BY: JMORSE

GENERAL NOTES:

1. THE FIRST 30' FROM BACK OF CURB SHALL HAVE AT MINIMUM A 24' WIDE TRAVELWAY, TO PROVIDE ACCESS FOR EMERGENCY VEHICLES, WHEN REQUIRED BY SPOKANE VALLEY FIRE DEPARTMENT. WIDTH BEYOND THE FIRST 30' SHALL BE IN CONFORMANCE WITH APPLICABLE STREET STANDARDS.

2. DETECTABLE WARNING SURFACES SHALL BE REQUIRED ON BOTH SIDES OF ANY DRIVEWAY THAT IS YIELD, STOP OR SIGNAL CONTROLLED.



PLAN VIEW

CITY OF Spokane Valley

APPROVED BY:

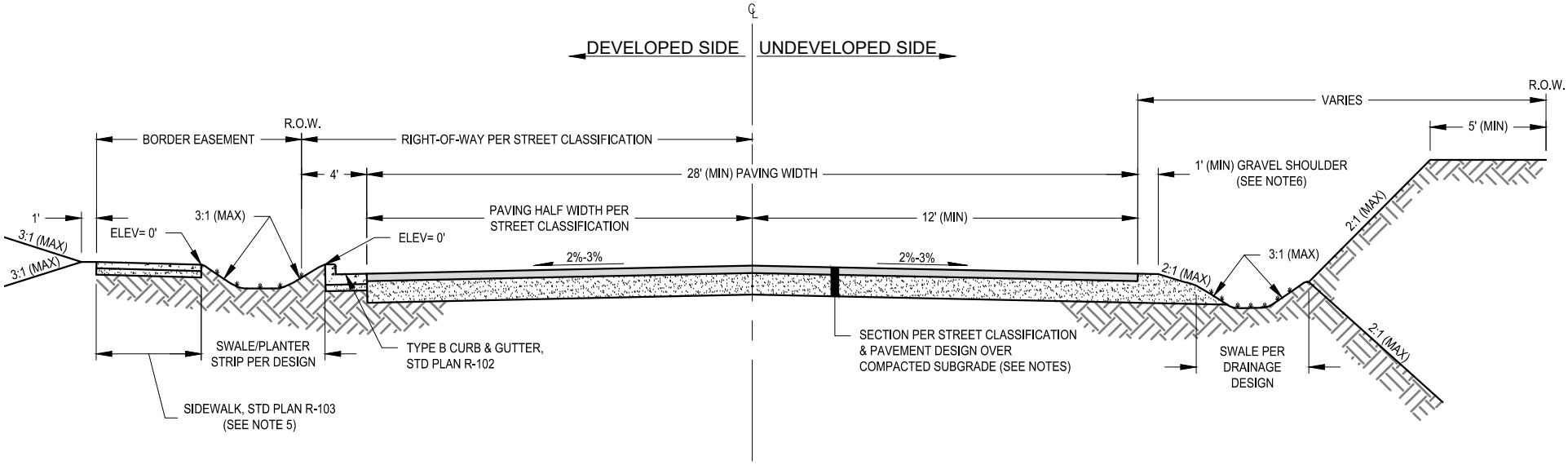
ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

PRIVATE DRIVEWAY OR STREET ACCESS OVER 75' LONG

STANDARD PLAN NO. R-117

PUBLICATION DATE:	03/2025
REVISION NO.:	02

CREATION: 6/11/2025. REVISED: 6/11/2025 BY: JMORSE



GENERAL NOTES

1. RIGHT-OF-WAY WIDTHS AND EASEMENTS SHOWN ARE MINIMUM REQUIREMENTS FOR NEW STREETS. MEASUREMENTS MAY NEED TO BE ADJUSTED TO MATCH EXISTING FACILITIES.
2. PAVED WIDTH IS MEASURED FROM EDGE OF TRAVELWAY (GUTTER).
3. STREET SECTION MAY BE INCREASED BASED ON GEOTECHNICAL EVALUATION AND PAVEMENT DESIGN.
6. SUBGRADE AND CSTC, INCLUDING GRAVEL SHOULDER SHALL BE COMPACTED TO 95%. COMPACTION AND TESTING REQUIREMENTS PER CHAPTER 9 OF SPOKANE VALLEY STREET STANDARDS.
7. SIDEWALK WIDTH SHALL BE PER STREET CLASSIFICATION, ZONING AND STANDARD PLAN R-103.
8. STREET SECTION AND CLASS OF MATERIALS SHALL BE PER CHAPTER 8, PAVEMENT DESIGN.

CREATION: 3/20/2025. REVISED: 4/21/2025 BY: JMORSE

CITY OF Spokane Valley

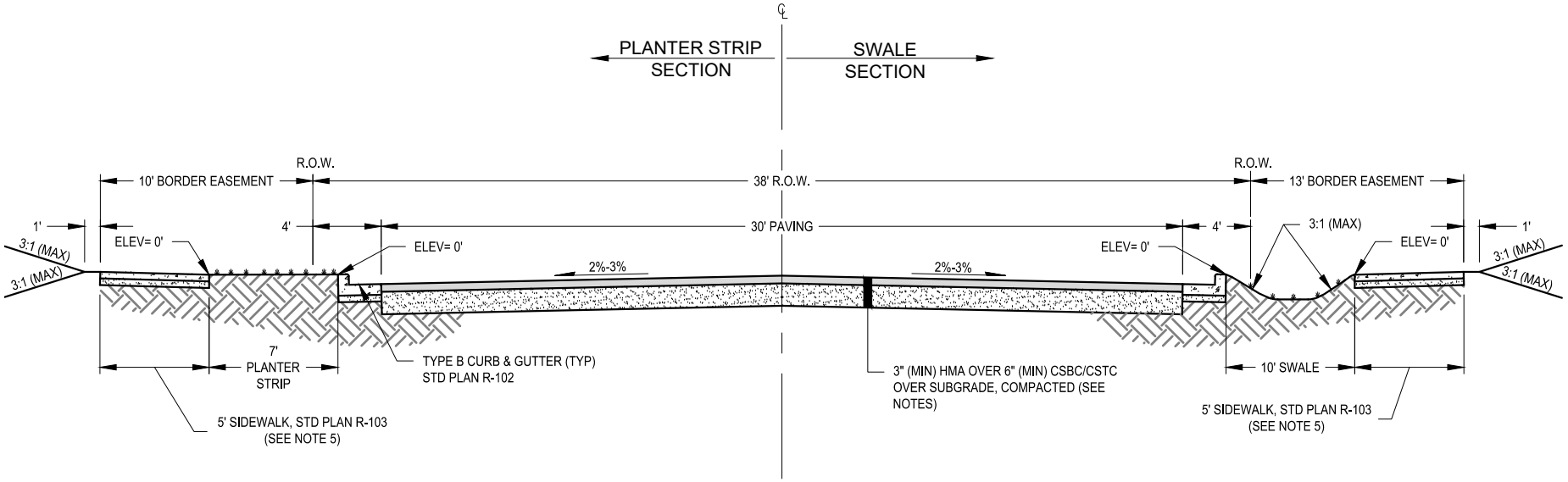
APPROVED BY:

ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

TYPICAL STREET SECTION HALF STREET

STANDARD PLAN NO. R-119

PUBLICATION DATE:	03/2025
REVISION NO.:	01



GENERAL NOTES

1. RIGHT-OF-WAY WIDTHS AND EASEMENTS SHOWN ARE MINIMUM REQUIREMENTS FOR NEW STREETS. MEASUREMENTS MAY NEED TO BE ADJUSTED TO MATCH EXISTING FACILITIES.
2. PAVED WIDTH IS MEASURED FROM EDGE OF TRAVELWAY (GUTTER).
3. STREET SECTION MAY BE INCREASED BASED ON GEOTECHNICAL EVALUATION AND PAVEMENT DESIGN.
6. SUBGRADE AND CSTC, INCLUDING GRAVEL SHOULDER SHALL BE COMPACTED TO 95%. COMPACTION AND TESTING REQUIREMENTS PER CHAPTER 9 OF SPOKANE VALLEY STREET STANDARDS.
7. SIDEWALK WIDTH SHALL BE PER STREET CLASSIFICATION, ZONING AND STANDARD PLAN R-103.
8. STREET SECTION MINIMUMS ARE SHOWN ON PLANS, ACTUAL THICKNESS AND CLASS OF MATERIALS SHALL BE PER CHAPTER 8, PAVEMENT DESIGN.

CREATION: 12/16/2024. REVISED: 4/21/2025 BY: JMORSE

CITY OF Spokane Valley

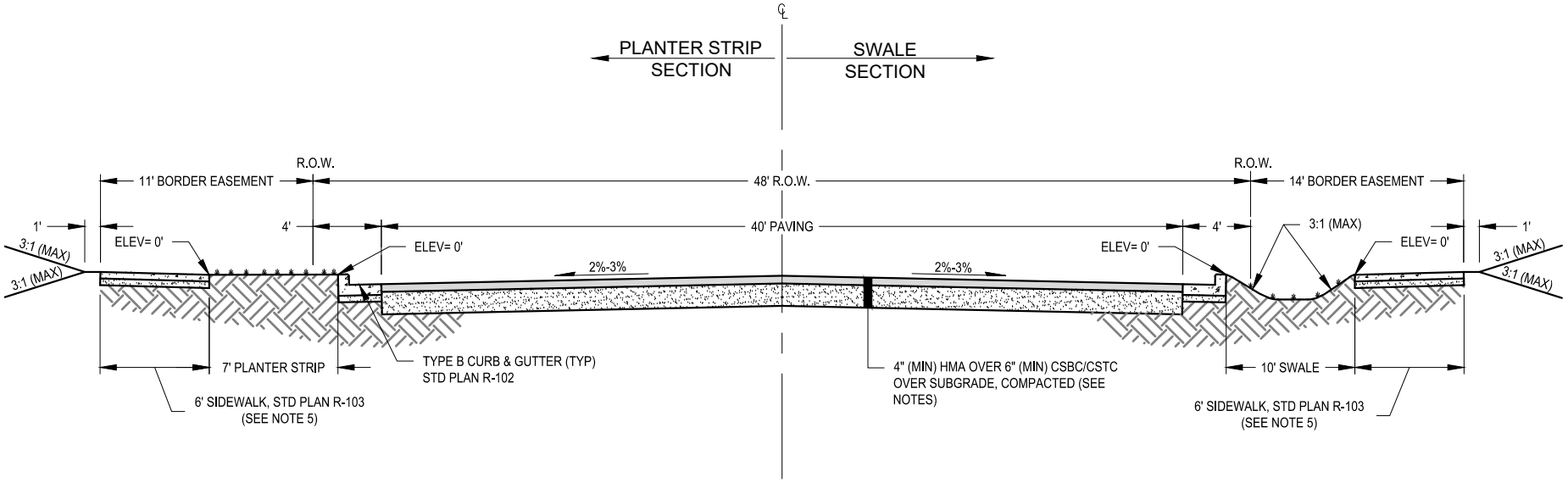
APPROVED BY:

ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

TYPICAL STREET SECTION LOCAL RESIDENTIAL

STANDARD PLAN NO. R-120

PUBLICATION DATE:	03/2025
REVISION NO.:	01



GENERAL NOTES

1. RIGHT-OF-WAY WIDTHS AND EASEMENTS SHOWN ARE MINIMUM REQUIREMENTS FOR NEW STREETS. MEASUREMENTS MAY NEED TO BE ADJUSTED TO MATCH EXISTING FACILITIES.
2. PAVED WIDTH IS MEASURED FROM EDGE OF TRAVELWAY (GUTTER).
3. STREET SECTION MAY BE INCREASED BASED ON GEOTECHNICAL EVALUATION AND PAVEMENT DESIGN.
6. SUBGRADE AND CSTC, INCLUDING GRAVEL SHOULDER SHALL BE COMPACTED TO 95%. COMPACTION AND TESTING REQUIREMENTS PER CHAPTER 9 OF SPOKANE VALLEY STREET STANDARDS.
7. SIDEWALK WIDTH SHALL BE PER STREET CLASSIFICATION, ZONING AND STANDARD PLAN R-103.
8. STREET SECTION MINIMUMS ARE SHOWN ON PLANS, ACTUAL THICKNESS AND CLASS OF MATERIALS SHALL BE PER CHAPTER 8, PAVEMENT DESIGN.

CREATION: 6/12/2024. REVISED: 4/21/2025 BY: JMORSE

CITY OF Spokane Valley

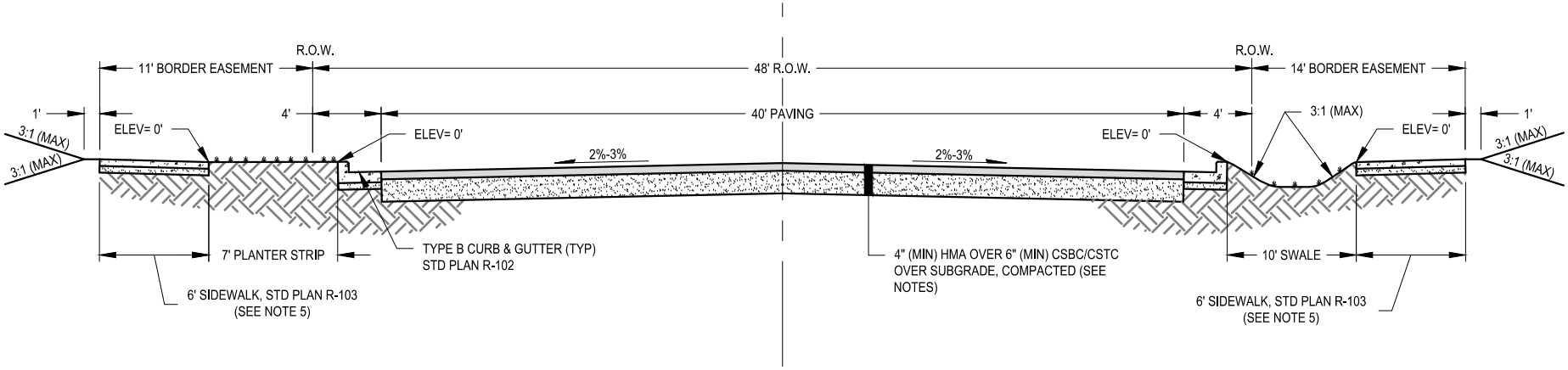
APPROVED BY:

ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

TYPICAL STREET SECTION LOCAL COMMERCIAL

STANDARD PLAN NO. R-121

PUBLICATION DATE:	03/2025
REVISION NO.:	01



GENERAL NOTES

1. RIGHT-OF-WAY WIDTHS AND EASEMENTS SHOWN ARE MINIMUM REQUIREMENTS FOR NEW STREETS. MEASUREMENTS MAY NEED TO BE ADJUSTED TO MATCH EXISTING FACILITIES.
2. PAVED WIDTH IS MEASURED FROM EDGE OF TRAVELWAY (GUTTER).
3. STREET SECTION MAY BE INCREASED BASED ON GEOTECHNICAL EVALUATION AND PAVEMENT DESIGN.
6. SUBGRADE AND CSTC, INCLUDING GRAVEL SHOULDER SHALL BE COMPACTED TO 95%. COMPACTION AND TESTING REQUIREMENTS PER CHAPTER 9 OF SPOKANE VALLEY STREET STANDARDS.
7. SIDEWALK WIDTH SHALL BE PER STREET CLASSIFICATION, ZONING AND STANDARD PLAN R-103.
8. STREET SECTION MINIMUMS ARE SHOWN ON PLANS, ACTUAL THICKNESS AND CLASS OF MATERIALS SHALL BE PER CHAPTER 8, PAVEMENT DESIGN.

CREATION: 10/13/2023. REVISED: 4/21/2025 BY: JMORSE

CITY OF Spokane Valley

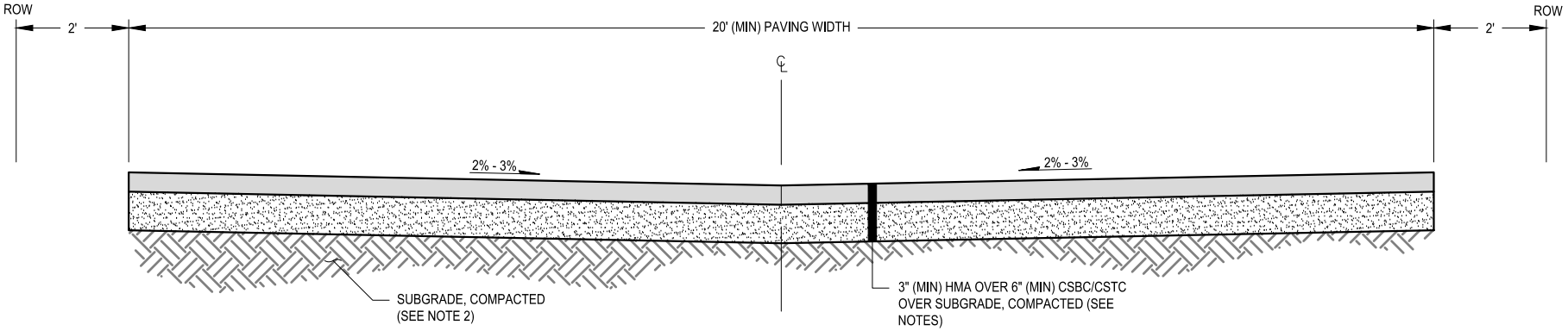
APPROVED BY:

ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

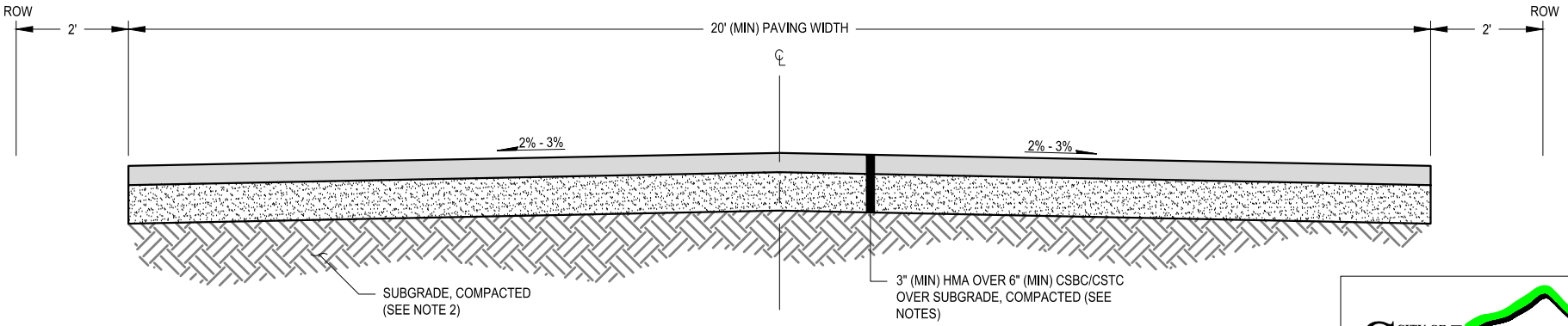
TYPICAL STREET SECTION COLLECTOR

STANDARD PLAN NO. R-122

PUBLICATION DATE:	03/2025
REVISION NO.:	01



CENTER GUTTER



CENTER CROWN

GENERAL NOTES

1. ALLEY SECTION MAY BE INCREASED BASED ON GEOTECHNICAL EVALUATION AND PAVEMENT DESIGN.
2. SUBGRADE AND CSTC, INCLUDING GRAVEL SHOULDER SHALL BE COMPACTED TO 95%. COMPACTION AND TESTING REQUIREMENTS PER CHAPTER 9 OF SPOKANE VALLEY STREET STANDARDS.
3. STREET SECTION MINIMUMS ARE SHOWN ON PLANS, ACTUAL THICKNESS AND CLASS OF MATERIALS SHALL BE PER CHAPTER 8, PAVEMENT DESIGN.
4. IF ALLEY IS RATED AS COMMERCIAL MINIMUM HMA SECTION SHALL BE 4".

CREATION: 5/23/2024. REVISED: 3/20/2025 BY: JMORSE

CITY OF Spokane Valley

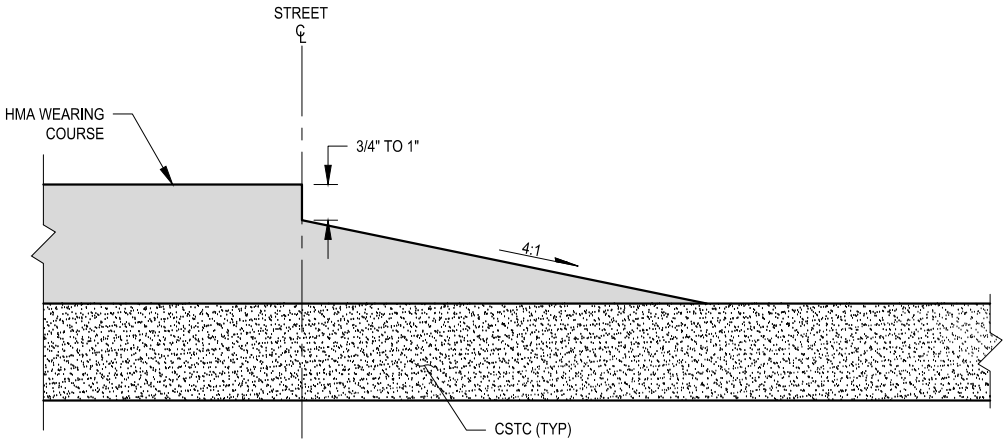
APPROVED BY:

ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

TYPICAL ALLEY SECTION

STANDARD PLAN NO. R-125

PUBLICATION DATE:	03/2025
REVISION NO.:	01



GENERAL NOTES:

1. THE LONGITUDINAL JOINT SHALL BE A CONTINUOUS STEP WEDGE LOCATED ON CENTERLINE OF ROADWAY.
2. THE SLOPED PORTION OF THE WEDGE JOINT SHALL BE UNIFORMLY COMPACTED.
3. THE WEDGE JOINT SHALL RECEIVE AN APPLICATION OF JOINT ADHESIVE WITHIN 24 HRS OF PLACEMENT OF THE ABUTTING PAVEMENT.
4. ALL OTHER LONGITUDINAL JOINTS SHALL BE HOT LAP JOINTS, CONSTRUCTED BY USE OF MULTIPLE PAVERS.
5. ONLY ONE COLD LONGITUDINAL JOINT WILL BE ALLOWED IN WEARING COURSE.

CREATION: 10/2/2023. REVISED: 3/20/2025 BY: JMORSE

CITY OF Spokane Valley®

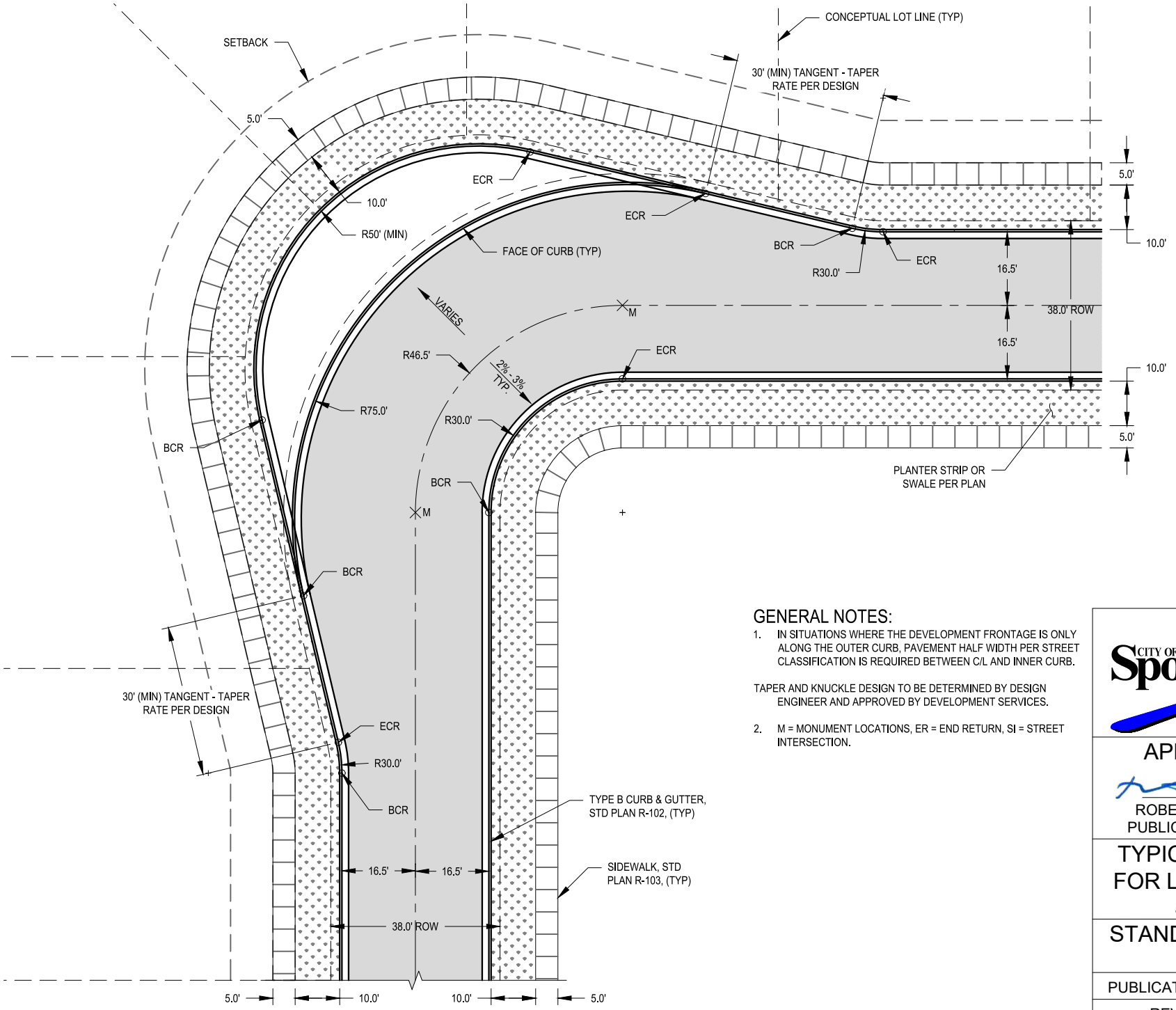
APPROVED BY:

ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

LONGITUDINAL STEP WEDGE COLD JOINT

STANDARD PLAN NO. R-127

PUBLICATION DATE:	03/2025
REVISION NO.:	01



GENERAL NOTES:

1. IN SITUATIONS WHERE THE DEVELOPMENT FRONTAGE IS ONLY ALONG THE OUTER CURB, PAVEMENT HALF WIDTH PER STREET CLASSIFICATION IS REQUIRED BETWEEN C/L AND INNER CURB.

   TAPER AND KNUCKLE DESIGN TO BE DETERMINED BY DESIGN ENGINEER AND APPROVED BY DEVELOPMENT SERVICES.

2. M = MONUMENT LOCATIONS, ER = END RETURN, SI = STREET INTERSECTION.

CITY OF Spokane Valley

APPROVED BY:

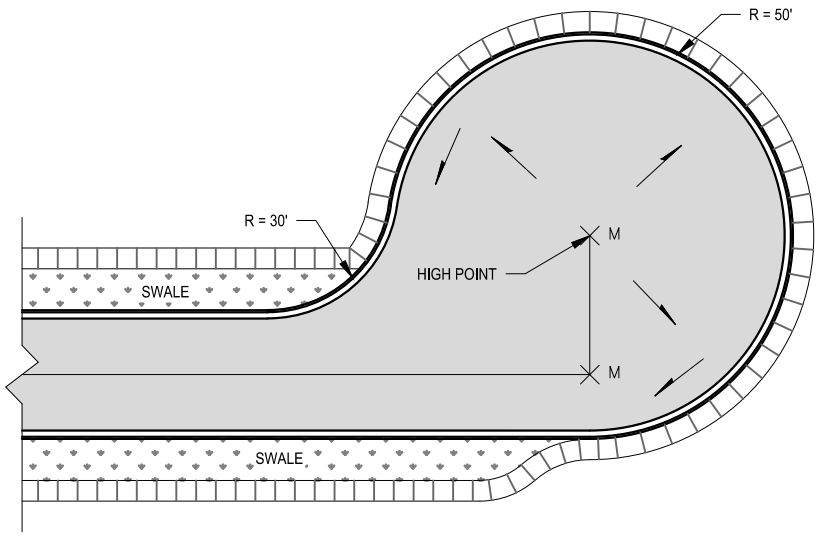
ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

TYPICAL I KNUCKLE FOR LOCAL ACCESS STREETS

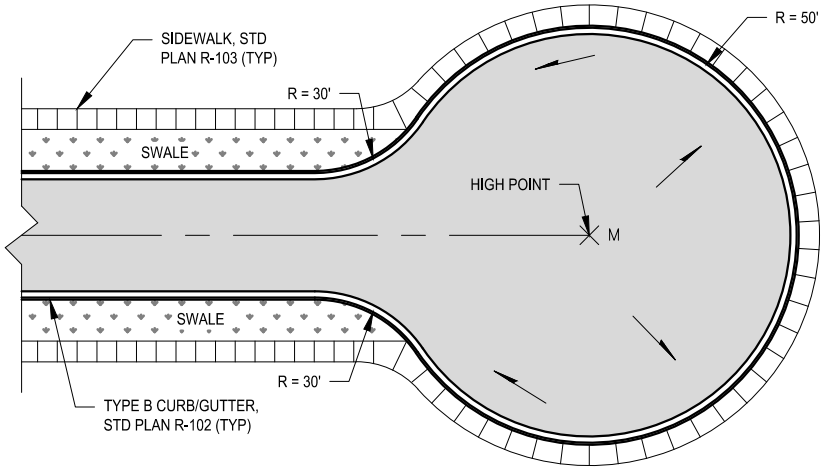
STANDARD PLAN NO. R-129

PUBLICATION DATE:	03/2025
REVISION NO.:	01

CREATION: 4/21/2025. REVISED: 4/21/2025 BY: JMORSE



OFFSET CUL-DE-SAC



TYPICAL CUL-DE-SAC

GENERAL NOTES:

1. M = MONUMENT LOCATIONS, ER = END RETURN, SI = STREET INTERSECTION.
2. ADA RAMPS WILL BE INSTALLED BEFORE THE ER IF THE SIDEWALK IS NOT INSTALLED AROUND CUL-DE-SAC.
3. SIDEWALK AROUND BULB IS OPTIONAL, IF PROVIDED, SIDEWALK MAY BE SEPARATED OR ADJACENT. IF ADJACENT THE SIDEWALK SHALL BE 6.0' WIDE.
4. RADIUS SHOWN IS TO FACE OF CURB.
5. THE WIDTH OF RIGHT-OF-WAY AND THE STREET DIMENSIONS SHALL CONFORM TO THE CLASSIFIED STREET SECTION.
6. MINIMUM CURB GRADES ON CUL-DE-SACS SHALL BE 1%.
7. PUBLIC STREETS W/ STUBS ENDS ARE LIMITED TO 600' MEASURED FROM THE SI TO THE ER OF THE CUL-DE-SAC OR THE TERMINUS OF THE TRAVELWAY.
8. NON-MOTORIZED PATHS (7.5.11) TO ADJACENT ARTERIALS OR PUBLIC FACILITIES, SUCH AS SCHOOLS/PARKS MAY BE REQUIRED AT THE DEAD-END OF THE STREET TO SHORTEN WALKING DISTANCES.

CITY OF Spokane Valley

APPROVED BY:

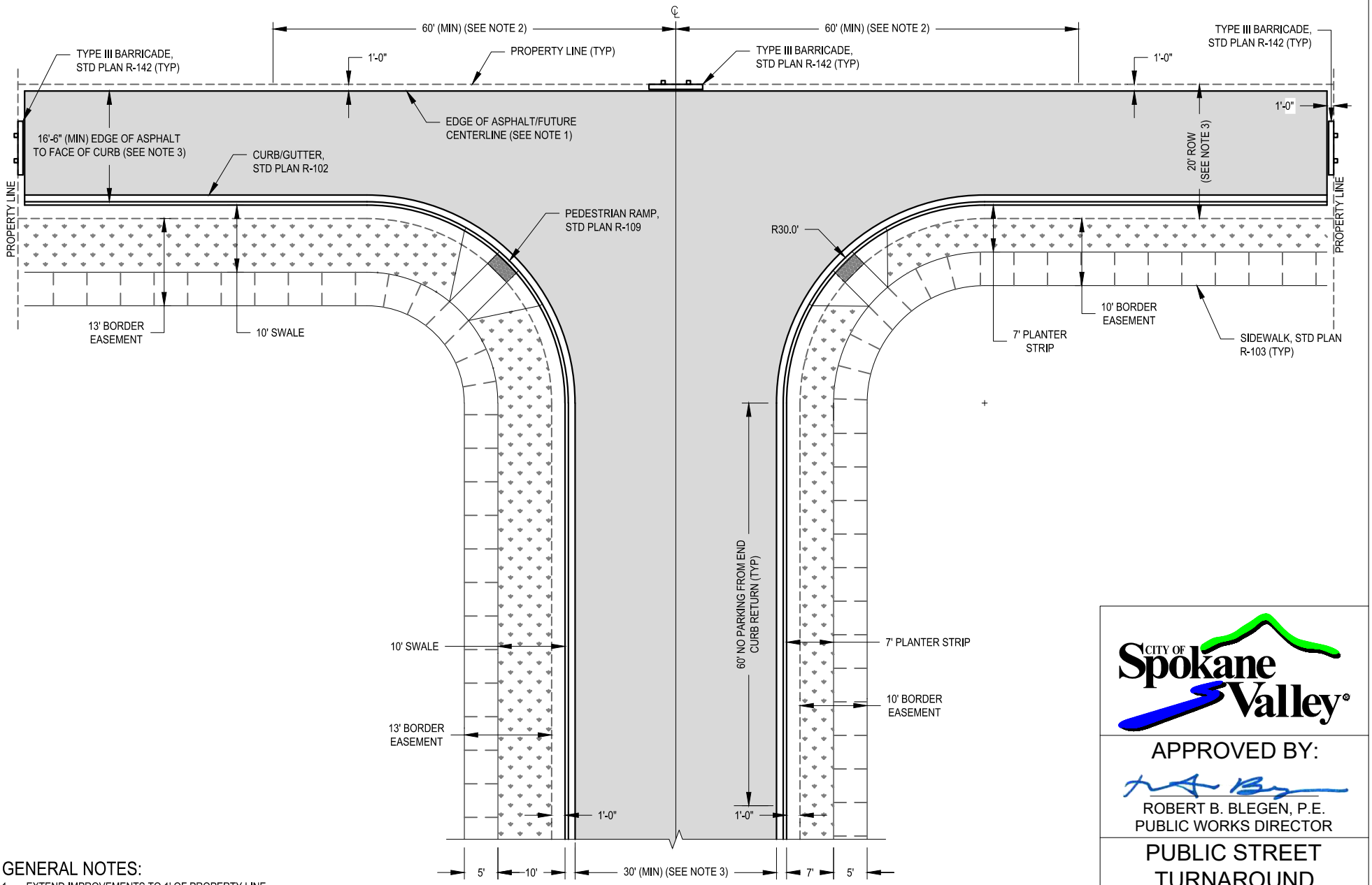
ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

CUL-DE-SAC PUBLIC STREETS

STANDARD PLAN NO. R-130

PUBLICATION DATE:	03/2025
REVISION NO.:	01

CREATION: 7/14/2023. REVISED: 4/21/2025 BY: JMORSE



GENERAL NOTES:

1. EXTEND IMPROVEMENTS TO 1' OF PROPERTY LINE.
2. HAMMERHEAD SHALL BE SIGNED "NO PARKING - FIRE LANE" AS REQUIRED BY THE FIRE DEPARTMENT.
3. STREET WIDTH MAY BE WIDER DEPENDING ON STREET CONFIGURATION.
4. ROW AND BORDER EASEMENT TO EXTEND TO PLAT BOUNDARY/PROPERTY LINE.

CREATION: 10/11/2023. REVISED: 4/21/2025 BY: JMORSE

City of Spokane Valley

APPROVED BY:

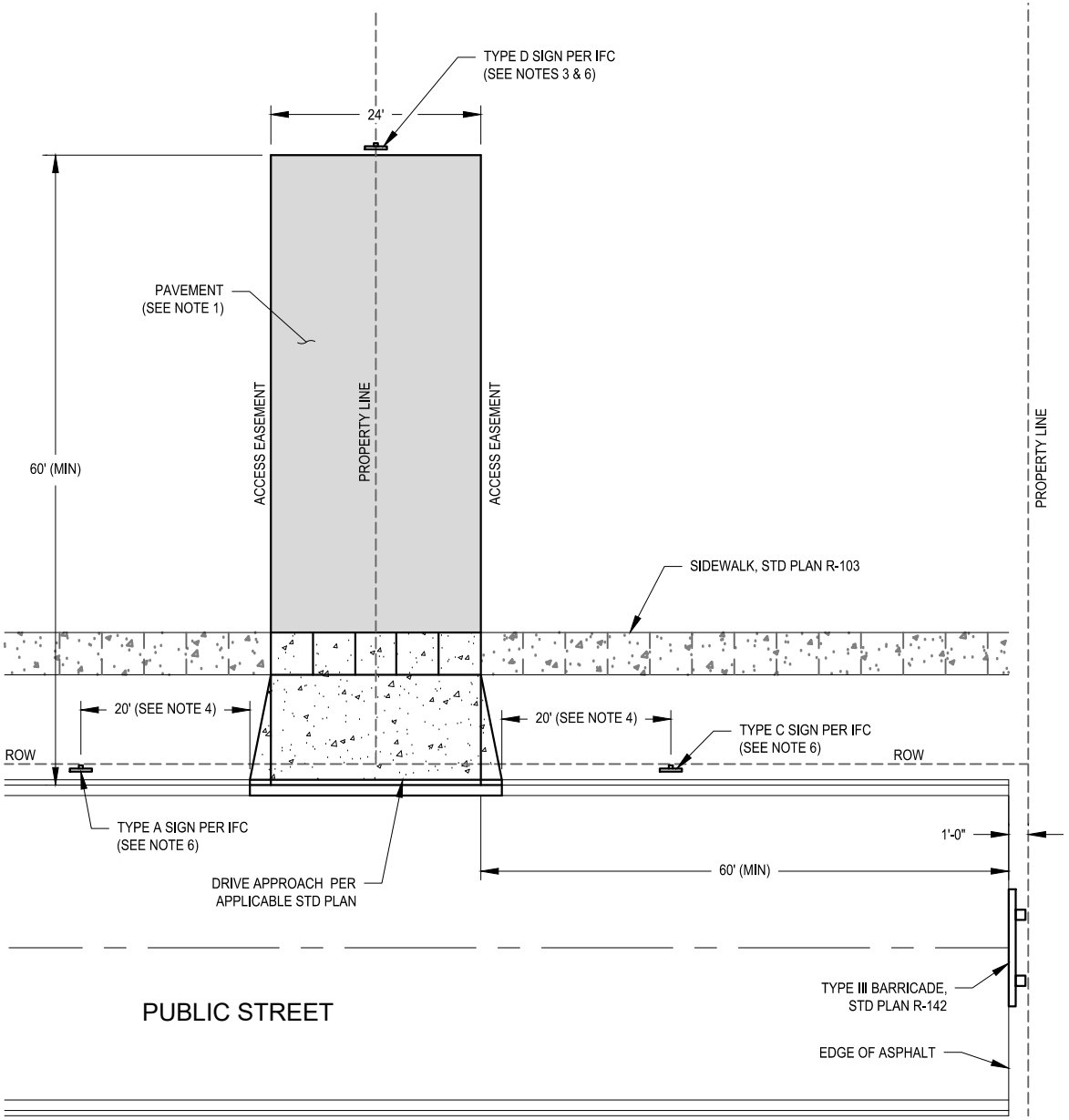
ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

PUBLIC STREET TURNAROUND

(FUTURE INTERSECTION)

STANDARD PLAN NO. R-131

PUBLICATION DATE:	03/2025
REVISION NO.:	01



GENERAL NOTES:

1. TEMPORARY TURNAROUND ASPHALT SHALL BE MIN. 3" HMA OVER 6" COMPACTED CSTC OR 6" CONCRETE OVER 4" CSTC.
2. TURNAROUND TO BE WITHIN PUBLIC ACCESS EASEMENT DEDICATED TO THE CITY OF SPOKANE VALLEY.
3. TURNAROUND TO BE SIGNED "PUBLIC STREET TURNAROUND". OR AS REQUIRED BY FIRE DEPARTMENT.
4. STREET SHALL BE SIGNED "NO PARKING - FIRE LANE" FOR 20' ADJACENT TO DRIVE APPROACH.
5. TURNAROUND IS NOT TO BE USED AS A DRIVEWAY OR FOR DRIVEWAY ACCESS.
6. ALL SIGNS SHALL BE PER IFC.

CITY OF Spokane Valley

APPROVED BY:

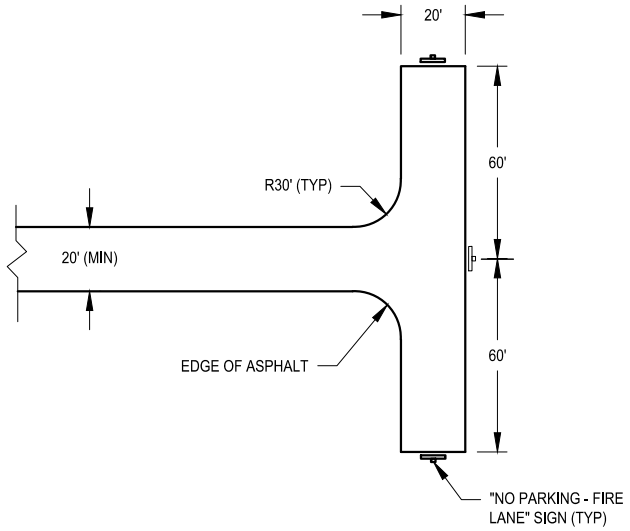
ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

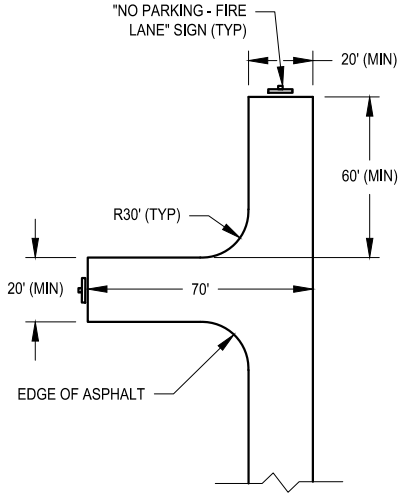
PUBLIC STREET TEMPORARY TURNAROUND

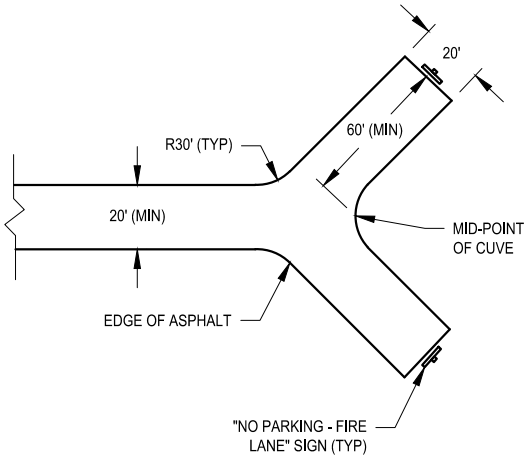
STANDARD PLAN NO. R-132

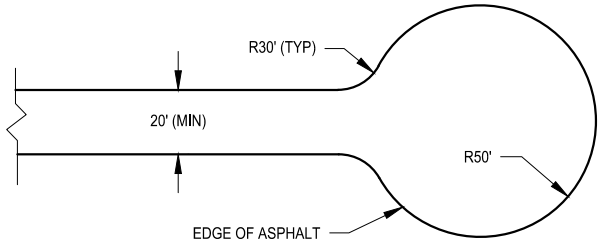
PUBLICATION DATE:	03/2025
REVISION NO.:	01

CREATION: 10/13/2023. REVISED: 4/21/2025 BY: JMORSE









GENERAL NOTES:

1. CUL-DE-SAC IS THE PREFERRED OPTION.
2. TURNAROUND HAMMERHEAD SHALL BE SIGNED "NO PARKING - FIRE LANE" IN LOCATIONS SHOWN. SIGNS SHALL BE PER IFC.
3. ALL ASPHALT EDGES SHALL BE MIN. 2' FROM PROPERTY LINES.
4. ONE LOT ACCESS IS ALLOWED PER HAMMERHEAD LEG.

CREATION: 2/24/2025. REVISED: 3/20/2025 BY: JMORSE

CITY OF Spokane Valley

APPROVED BY:

ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

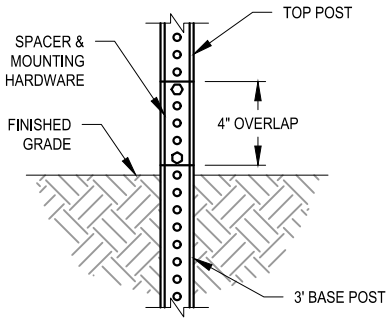
PRIVATE STREET AND DRIVEWAY TURNAROUND

STANDARD PLAN NO. R-133

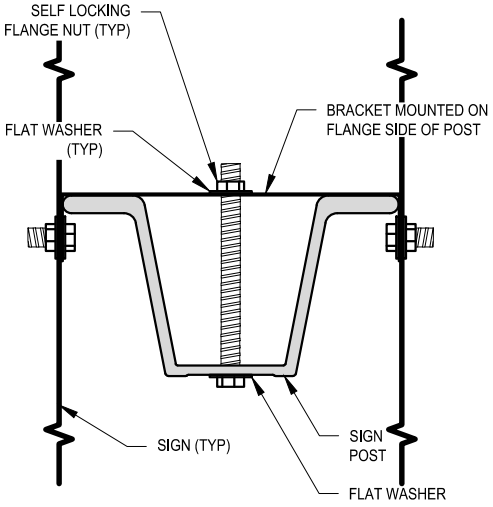
PUBLICATION DATE:	03/2025
REVISION NO.:	01

GENERAL NOTES:

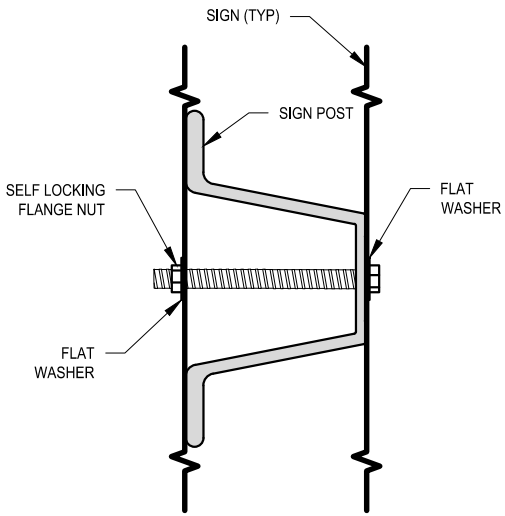
1. SIGN TYPE, INSTALLATION AND APPLICATION SHALL CONFORM TO THE CURRENT EDITION OF THE M.U.T.C.D.
2. POST WEIGHT SHALL BE 3 LBS. PER FOOT.
3. ALL BASE POST AND TOP POST SHALL BE MARION STEEL, 3 LB., GREEN POWDER-COATED RIB-BACK POST.



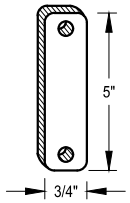
POST CONNECTION



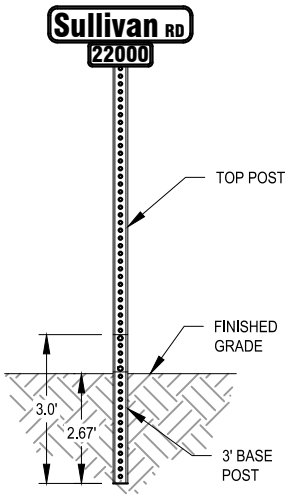
SIGN INSTALLATION
(WITH SIGN BRACKET)



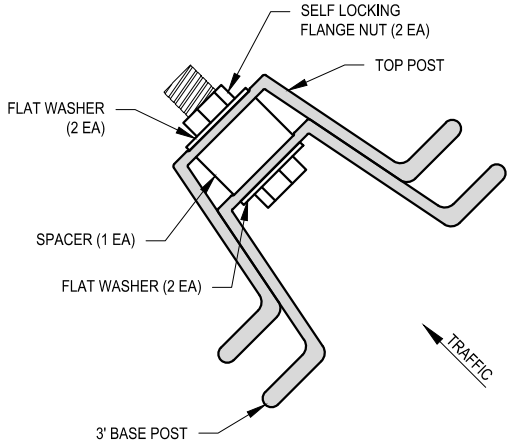
SIGN INSTALLATION
(ON POST)



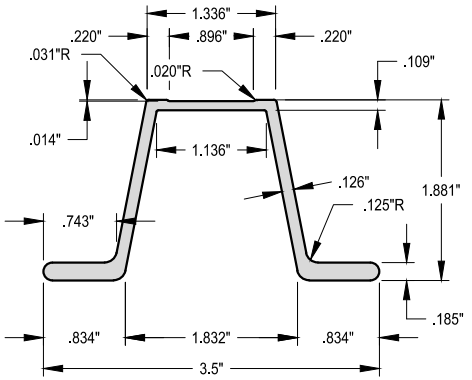
SPACER
(1/2"x 3/4"x 5")



SIGN SUPPORT SYSTEM



SIGN POST LAP SPLICE



WITH 3/8" DIA. HOLE
AREA = 0.840 SQ. FT.

	X - X AXIS	Y - Y AXIS
	Ixx = 0.376	Iyy = 0.376
	Sx = 0.340	Sy = 0.340

POST CROSS SECTION

CITY OF Spokane Valley

APPROVED BY:

ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

SIGN AND POST INSTALLATION

STANDARD PLAN NO. R-139

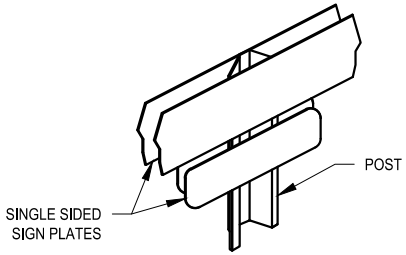
PUBLICATION DATE:	03/2025
REVISION NO.:	00

CREATION: 6/12/2024. REVISED: 3/20/2025 BY: JMORSE

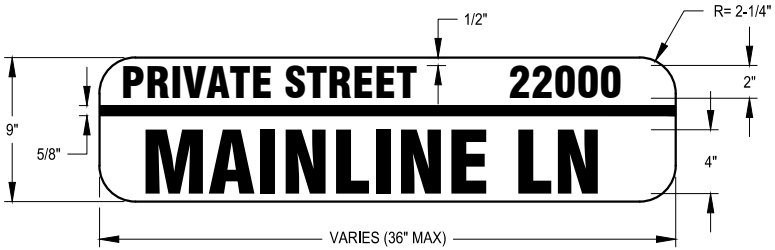
GENERAL NOTES:

1. THIS STANDARD PLAN IS TO BE USED AT ALL ARTERIAL INTERSECTIONS WITH ANY STREET, LANE, OR OTHER ARTERIAL.
2. SIGNS SHALL MEET SPECIFICATIONS FOR FLAT PLATE ALUMINUM, 0.08" THICK, ALODINE 1200 OR EQUAL.
3. THE SIGN SURFACE SHALL BE WHITE LETTERS ON A GREEN BACKGROUND. LETTERS AND BACKGROUND SHALL BE HIGH INTENSITY RETRO-REFLECTIVE SHEETING.
4. LETTERS SHALL BE A BLOCK TYPE FONT.
5. THE ROADWAY LABEL MAY BE OMITTED FOR "STREET", "ROAD", AND "AVENUE". ALL OTHER ROADWAYS SHALL INCLUDE THE ABBREVIATED LABEL (I.E.: COURT - CT, PARKWAY - PKWY, ETC.) ROADWAY LABELS SHALL BE UPPERCASE.
6. SIGN INSTALLATION SHALL CONFORM TO THE CURRENT EDITION OF THE M.U.T.C.D.
7. SIGN POST INSTALLATION AND SIGN MOUNTING SHALL BE PER STANDARD PLAN R-139 SIGN AND POST INSTALLATION.
8. SIGN PLATES ARE SINGLE SIDED.
9. ALL POSTS, UNLESS STREET NAME SIGN ONLY, SHALL HAVE POST MOUNTED 3 INCH x 60 INCH REFLECTIVE SHEETING. COLOR SHALL MATCH SIGN.

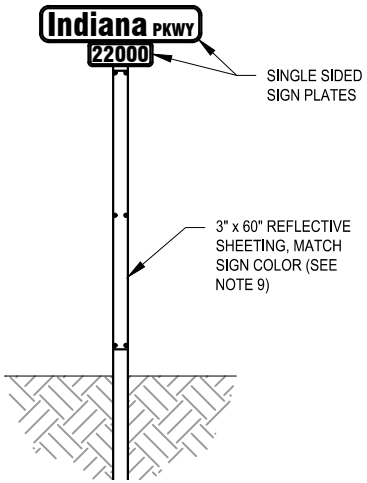
PUBLIC STREET



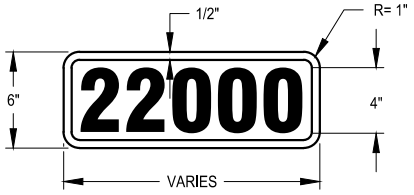
TYPICAL SIGN INSTALLATION
(SINGLE SIDED PLATE MOUNTING)



PRIVATE STREET



POST MOUNTED REFLECTIVE SHEETING



PUBLIC STREET

CITY OF Spokane Valley

APPROVED BY:

ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

STREET SIGN
ARTERIAL
INTERSECTIONS

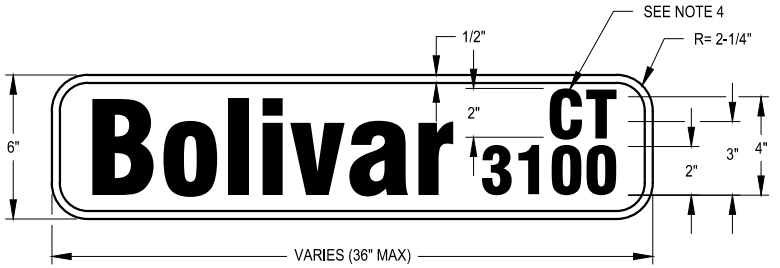
STANDARD PLAN NO.
R-140

PUBLICATION DATE:	03/2025
REVISION NO.:	01

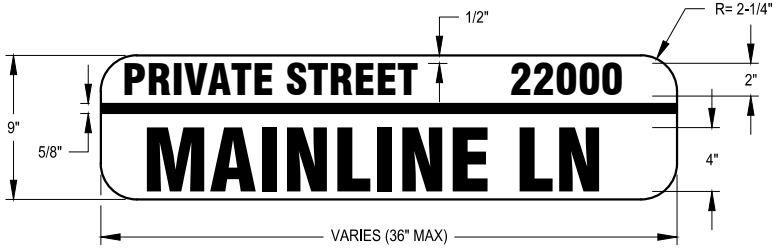
CREATION: 10/12/2023. REVISED: 3/20/2025 BY: JMORSE

GENERAL NOTES:

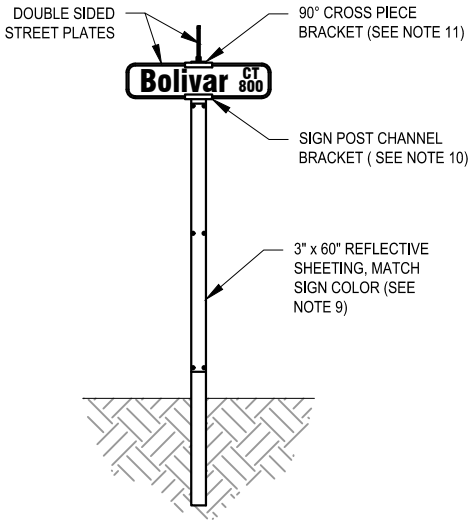
1. THIS STANDARD PLAN IS TO BE USED AT ALL LOCAL/LOCAL AND LOCAL/PRIVATE INTERSECTIONS. FOR ARTERIAL INTERSECTIONS SEE STANDARD PLAN R-140
2. SIGNS SHALL MEET SPECIFICATIONS FOR FLAT PLATE ALUMINUM, 0.08" THICK, ALODINE 1200 OR EQUAL.
3. THE SIGN SURFACE SHALL BE WHITE LETTERS ON A GREEN BACKGROUND. LETTERS AND BACKGROUND SHALL BE HIGH INTENSITY RETRO-REFLECTIVE SHEETING.
4. LETTERS SHALL BE A BLOCK TYPE FONT.
5. THE ROADWAY LABEL MAY BE OMITTED FOR "STREET", "ROAD", AND "AVENUE". ALL OTHER ROADWAYS SHALL INCLUDE THE ABBREVIATED LABEL (I.E.: COURT - CT, PARKWAY - PKWY, ETC.) ROADWAY LABELS SHALL BE UPPERCASE.
6. SIGN INSTALLATION SHALL CONFORM TO THE CURRENT EDITION OF THE M.U.T.C.D.
7. SIGN POST INSTALLATION AND SIGN MOUNTING SHALL BE PER STANDARD PLAN R-139 SIGN & POST INSTALLATION.
8. SIGN PLATES ARE DOUBLE SIDED.
9. ALL SIGNS SHALL HAVE POST MOUNTED 3 INCH x 60 INCH REFLECTIVE SHEETING ON POST. COLOR SHALL MATCH SIGN.
10. STREET PLATE SHALL BE ATTACHED TO SIGN POST USING A STREET SIGN CHANNEL BRACKET WITH A 5.25 IN TO 5.50 IN RECEIVER FOR FLAT PLATES.
11. THE UPPER STREET PLATE SHALL BE ATTACHED TO LOWER STREET PLATE USING A 90° CROSS PIECE BRACKET WITH A 5.25 IN TO 5.50 IN RECEIVER FOR FLAT PLATES.



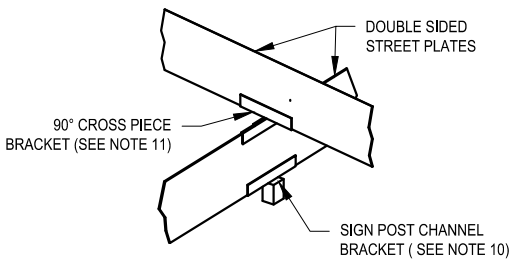
PUBLIC STREET



PRIVATE STREET



POST MOUNTED REFLECTIVE SHEETING



TYPICAL SIGN INSTALLATION
(DOUBLE SIDED PLATE MOUNTING)

CITY OF Spokane Valley

APPROVED BY:

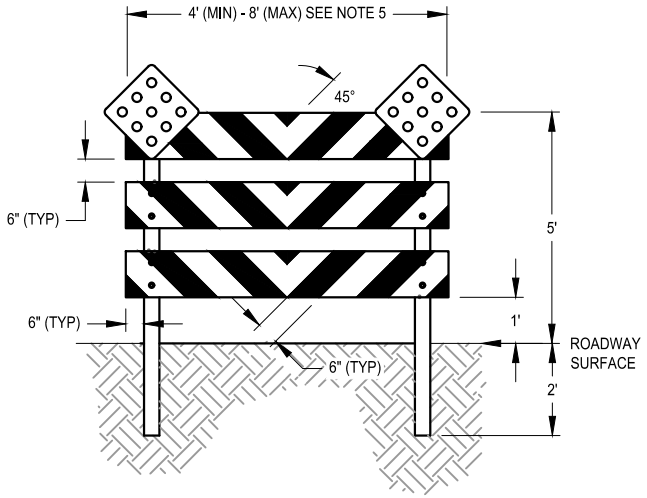
ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

STREET SIGNS LOCAL INTERSECTIONS

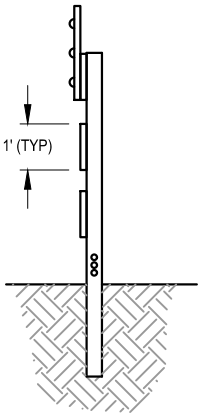
STANDARD PLAN NO. R-141

PUBLICATION DATE:	03/2025
REVISION NO.:	01

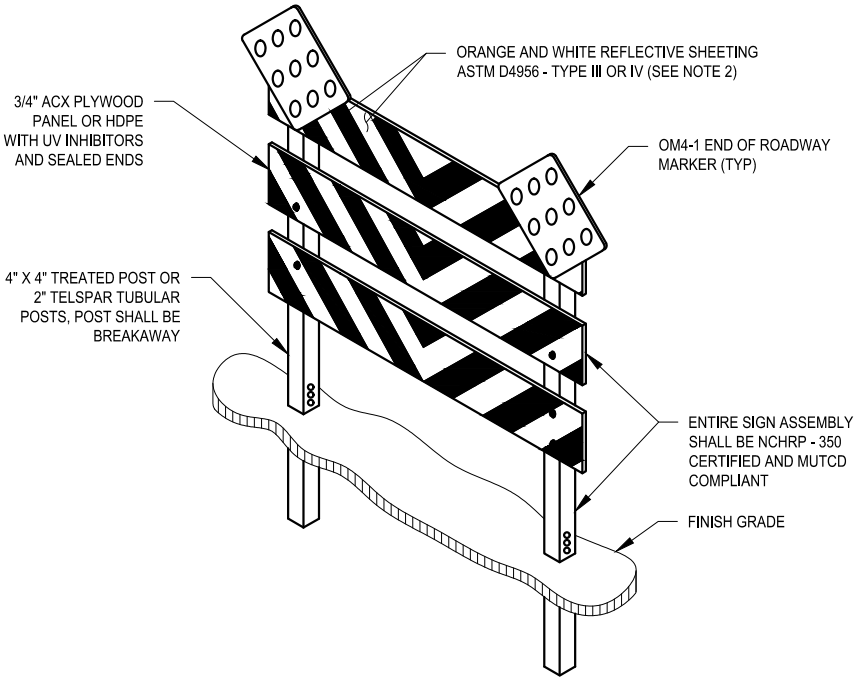
CREATION: 3/24/2025. REVISED: 3/24/2025 BY: JMORSE



ELEVATION VIEW



SIDE VIEW



ISOMETRIC VIEW

GENERAL NOTES:

1. ALL FASTENERS SHALL BE ZINC PLATED, GALVANIZED OR STAINLESS STEEL. ALL STEEL ANGLE AND TUBULAR STEEL SHALL BE HOT-ROLLED, HIGH CARBON STEEL, PAINTED OR GALVANIZED.
2. STRIPES ON BARRICADE RAILS SHALL BE ALTERNATING ORANGE AND WHITE RETRO-REFLECTIVE STRIPS SLOPING DOWNWARD AT AN ANGLE OF 45 DEGREES IN THE DIRECTION TOWARDS THE CENTER.
3. FUTURE CONNECTION SIGN SHALL BE MOUNTED ON BARRICADE WHEN REQUIRED BY THE CITY.
4. WHEN A SIGN IS MOUNTED ON THE BARRICADE, IT SHALL BE SECURELY BOLTED TO AT LEAST TWO PLYWOOD PANELS. THE TOP OF THE SIGN SHALL NOT BE HIGHER THAN THE TOP PANEL OF THE BARRICADE.
5. THE BARRICADE WIDTH SHALL COVER AT LEAST 50% OF THE ROAD WIDTH WITH GAPS NO LARGER THAN 4 FEET BETWEEN BARRICADES.

FUTURE CONNECTION SIGN DETAILS
(SEE NOTES 4 & 5)

CITY OF Spokane Valley

APPROVED BY:

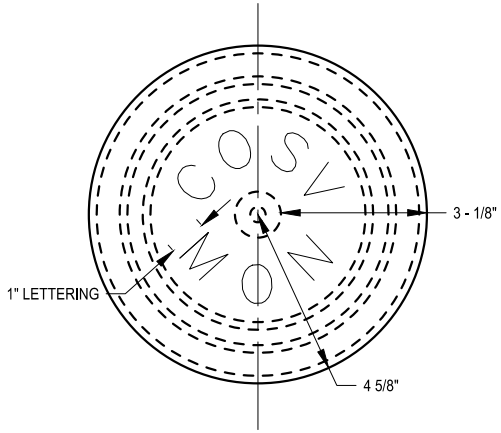
ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

TYPE III BARRICADE

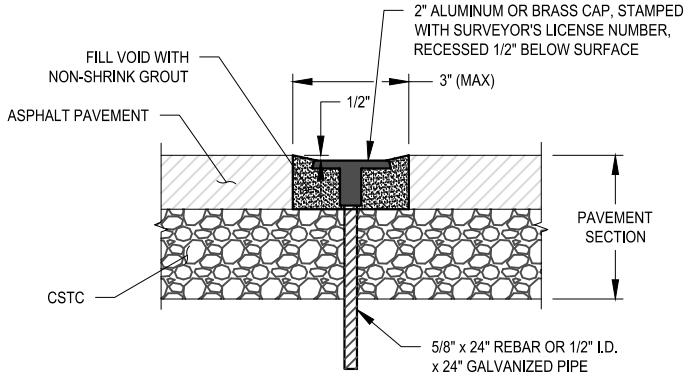
STANDARD PLAN NO. R-142

PUBLICATION DATE:	03/2025
REVISION NO.:	02

CREATION: 3/24/2025. REVISED: 3/24/2025 BY: JMORSE

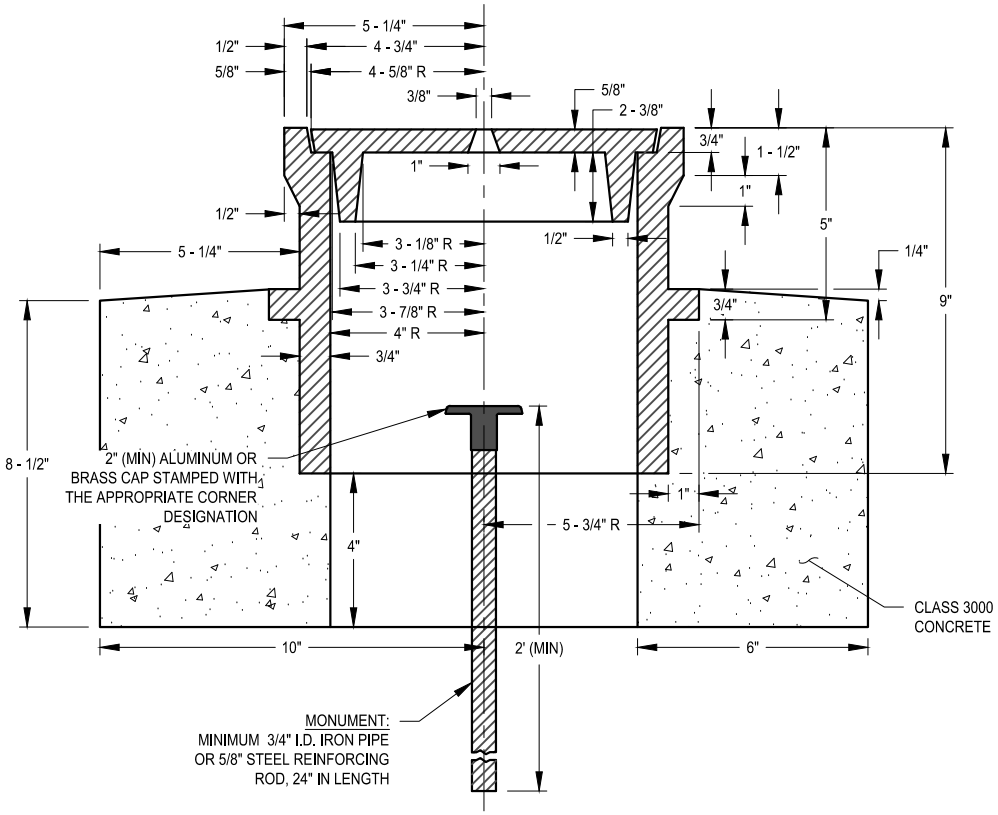


PLAN VIEW OF COVER



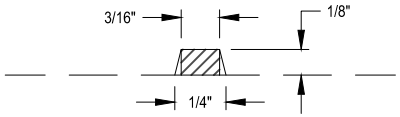
MONUMENT TYPE II

(SEE NOTE 4 & 5)



MONUMENT TYPE I

(SEE NOTE 3)



SECTION OF LETTER

GENERAL NOTES:

1. THE CASTINGS SHALL BE GRAY IRON CASTINGS, AASHTO DESIGNATION M-105, CLASS 30B THE COVER AND SEAT SHALL BE MACHINED SO AS TO HAVE CONTACT AROUND THE ENTIRE CIRCUMFERENCE AND FULL WIDTH OF BEARING SURFACE.
2. WHEN THE MONUMENT CASE AND COVER ARE PLACED IN CEMENT CONCRETE PAVEMENT THE CONCRETE BASE IS NOT NEEDED.
3. MONUMENT TYPE I TO BE USED FOR PLACING NEW OR REPLACEMENT OF SECTION CORNERS. QUARTER CORNERS, CLOSING CORNERS, WITNESS CORNERS, AND MEANDER CORNERS.
4. MONUMENT TYPE II TO BE USED FOR NEW OR REPLACEMENT OF ROAD INTERSECTION POINTS, ROAD CENTERLINE ANGLE POINTS, AND CURVE POINTS.
5. A 5/8" REBAR DRIVEN INTO THE ASPHALT, RECESSED 1/2" WITH A PLASTIC CAP IS AN ACCEPTABLE ALTERNATIVE, FOR A TYPE II MONUMENT, IN NEWLY CONSTRUCTED ROADS. THE PLASTIC CAP SHALL BE STAMPED WITH SURVEYOR'S LICENSE NUMBER .
6. REFER TO SECTION 7.5.15.2 FOR ADDITIONAL DETAILS.

CITY OF Spokane Valley

APPROVED BY:

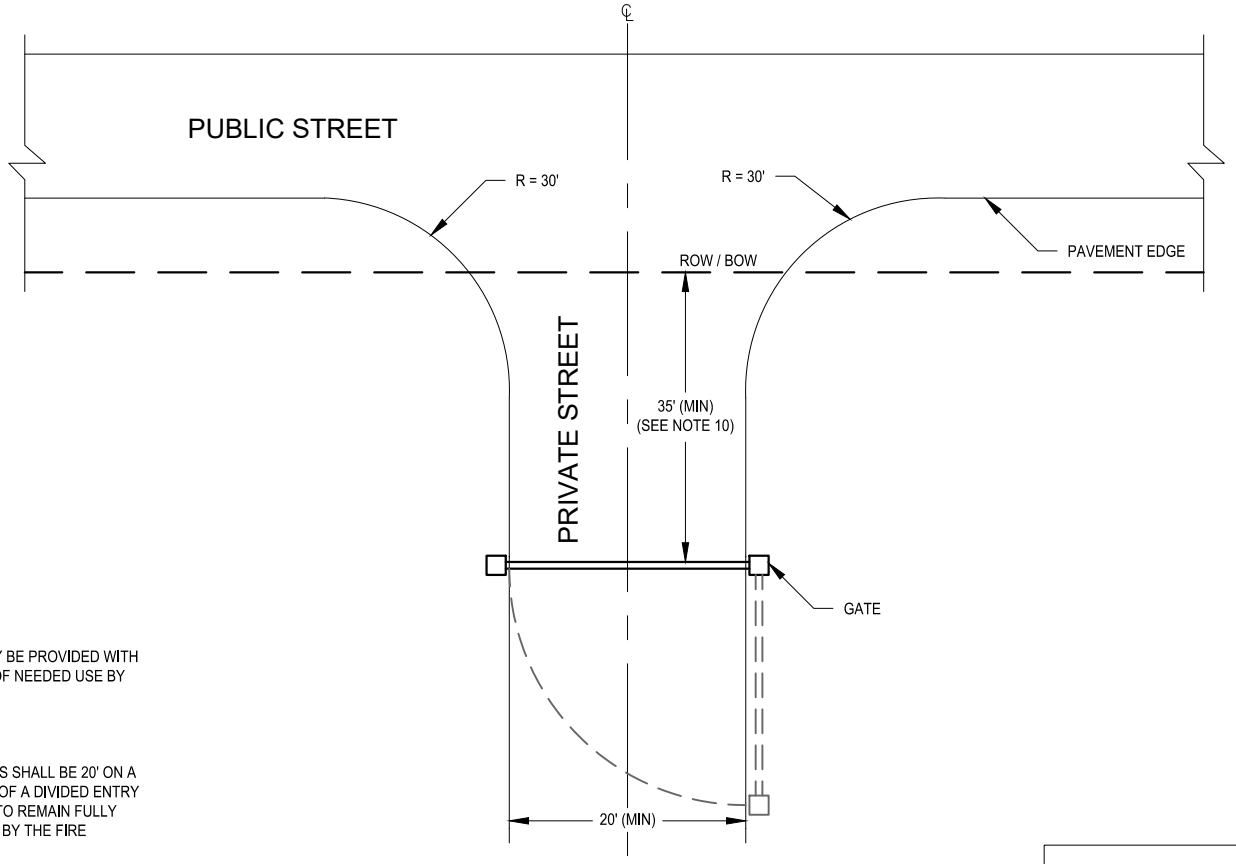
ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

SURVEY MONUMENTS

STANDARD PLAN NO. R-145

PUBLICATION DATE:	03/2025
REVISION NO.:	01

CREATION: 10/2/2023. REVISED: 3/20/2025 BY: JMORSE



PLAN VIEW

GENERAL NOTES:

TEMPORARY ACCESS RESTRICTIONS DURING CONSTRUCTION

1. TEMPORARY GATES ON REQUIRED FIRE LANE ACCESS ROADWAYS MAY BE PROVIDED WITH A CHAIN AND LOCK. THE CHAIN LINK WILL BE SEVERED IN THE EVENT OF NEEDED USE BY THE FIRE DEPARTMENT.

PERMANENT ACCESS RESTRICTING GATES

2. CLEAR UNOBSTRUCTED MINIMUM ACCESS WIDTH OF AUTOMATIC GATES SHALL BE 20' ON A SINGLE GATED ROADWAY WHEN FULLY OPENED; OR 14' ON EACH SIDE OF A DIVIDED ENTRY GATED ROADWAY WHEN FULLY OPENED. GATES SHALL BE DESIGNED TO REMAIN FULLY OPEN ONCE ACTIVATED BY THE FIRE DEPARTMENT AND UNTIL CLOSED BY THE FIRE DEPARTMENT (UNLESS STAFFED 24 HOURS/DAY, 365 DAYS/YEAR).
3. SWINGING GATES SHALL SWING INWARDS AWAY FROM THE PUBLIC STREET AND SHALL NOT INTERFERE WITH MINIMUM EMERGENCY VEHICLE TURNING RADIUS.
4. PERMANENT AUTOMATIC UNATTENDED GATES ON REQUIRED FIRE LANE ACCESS ROADWAYS SHALL BE PROVIDED WITH A KNOX KEY SWITCH UNLESS PROVIDED WITH AN OPTICOM COMPATIBLE STROBE ACTIVATED OPENING DEVICE.
5. ANY FAILURES OF REQUIRED GATE SWITCHES SHALL RESULT IN THE REQUIREMENT THAT THE GATE REMAIN IN THE OPEN POSITION UNTIL REPAIRS ARE COMPLETED.
6. ELECTRICALLY OPERATED GATES SHALL BE MANUALLY OPERABLE IN THE EVENT OF POWER FAILURE UNLESS SUPPLIED WITH BACKUP EMERGENCY POWER.
7. IN THE EVENT A GATE FAILS TO OPERATE, REQUIRING THE FIRE DEPARTMENT TO FORCE THE GATE OPEN FOR ACCESS, THE FIRE DEPARTMENT SHALL NOT BE RESPONSIBLE FOR DAMAGE CAUSED BY OPENING THE GATE.
8. PLANS AND SPECIFICATIONS OF GATE ASSEMBLY AND LOCATION SHALL BE SUBMITTED FOR REVIEW, APPROVAL, AND INSPECTION PRIOR TO CONSTRUCTION. IN THE EVENT THAT A CONFLICT EXISTS IN ACCESS REQUIREMENTS WITH CITY OF SPOKANE VALLEY, THE MORE RESTRICTIVE REQUIREMENT SHALL PREVAIL. GATES SHALL BE APPROVED BY THE FIRE DEPARTMENT AND THE CITY OF SPOKANE VALLEY.
9. FINAL APPROVAL OF A GATE IS CONTINGENT ON FIRE DEPARTMENT TESTING AND ACCEPTANCE. FIRE MARSHAL WILL ARRANGE FOR EMERGENCY APPARATUS TESTING PRIOR TO APPROVAL.
10. 35' MINIMUM FROM RIGHT OF WAY (ROW) OR BACK OF WALK (BOW) WHICHEVER IS GREATER.

CREATION: 3/24/2025. REVISED: 3/24/2025 BY: JMORSE

CITY OF Spokane Valley

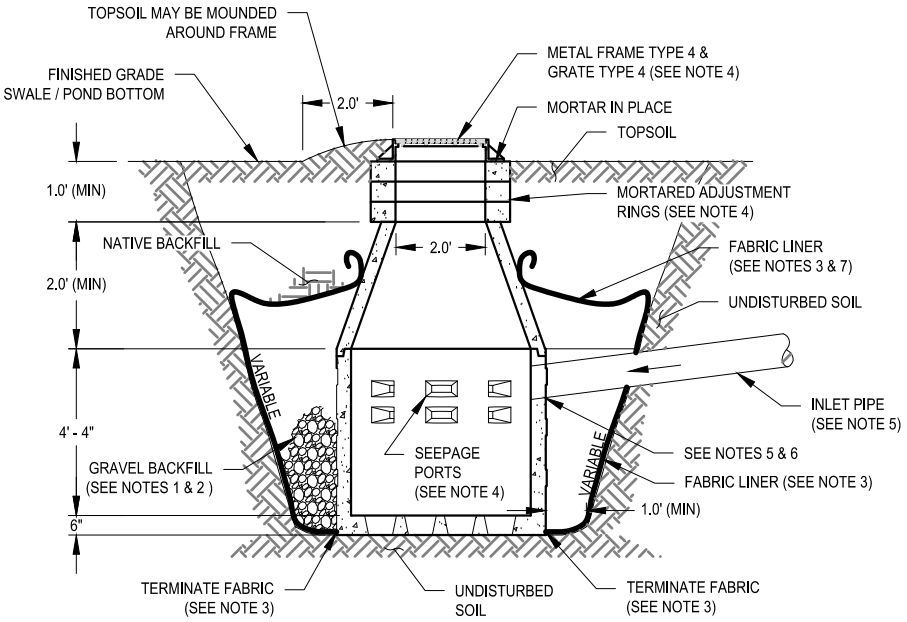
APPROVED BY:

ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

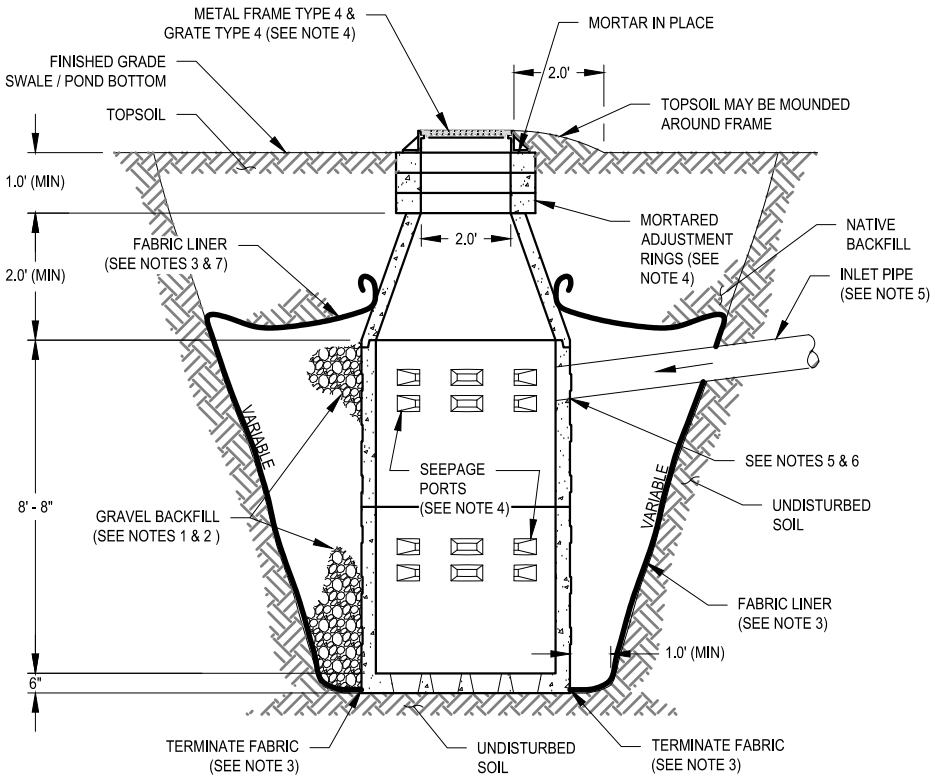
GATED ACCESS REQUIREMENTS

STANDARD PLAN NO. R-150

PUBLICATION DATE:	03/2025
REVISION NO.:	02



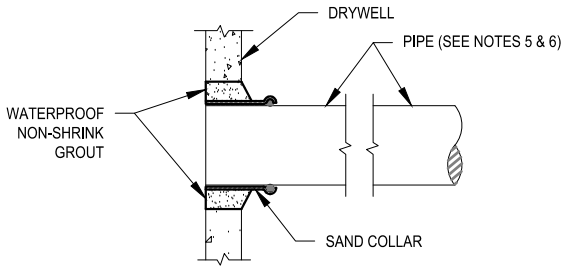
TYPE 'A'



TYPE 'B'

GENERAL NOTES:

1. GRAVEL BACKFILL QUANTITY FOR DRYWELLS:
   TYPE "A" - 30 CUBIC YARDS MINIMUM / 42 TONS.
   TYPE "B" - 40 CUBIC YARDS MINIMUM / 56 TONS.
   OR AS SPECIFIED ON STREET PLANS.
2. GRAVEL BACKFILL FOR DRYWELLS SHALL BE WASHED DRAIN ROCK CONFORMING TO WSDOT STANDARD SPEC. 9-03.12(5).
3. FABRIC SHALL BE MODERATE SURVIVABILITY AS OUTLINED IN WSDOT STANDARD SPEC. 9-33.2(1). FABRIC SHALL NOT BE WRAPPED AROUND DRYWELL BARRELS OR PLACED ON THE BOTTOM OF THE BARREL.
4. SEE PRECAST DRYWELL DETAILS, CITY STANDARD PLANS S-103 AND S-105. PRECAST MORTARED ADJUSTMENT RINGS SHALL BE USED IN LIEU OF ADJUSTING BLOCKS
5. WHEN PVC PIPE IS USED, A SAND COLLAR SHALL BE INSTALLED.
6. PIPES SHALL BE GROUTED INTO DRYWELL WITH WATERPROOF NON-SHRINK GROUT IN ACCORDANCE WITH STANDARD SPECIFICATION 9-20.3.
7. GRAVEL BACKFILL TO BE COMPLETELY COVERED WITH FABRIC.



PVC ADAPTER

CITY OF Spokane Valley

APPROVED BY:

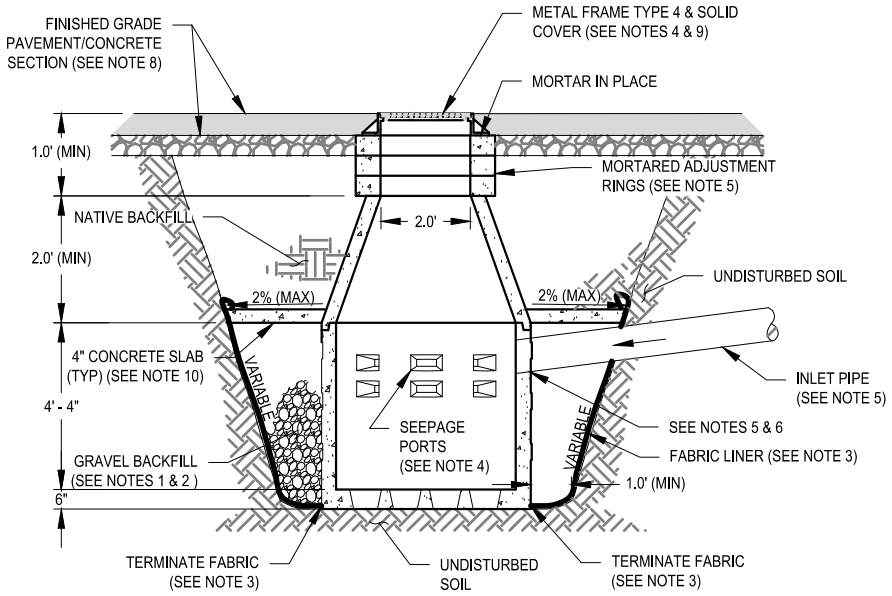
ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

PRECAST DRYWELLS PLACED IN SWALE

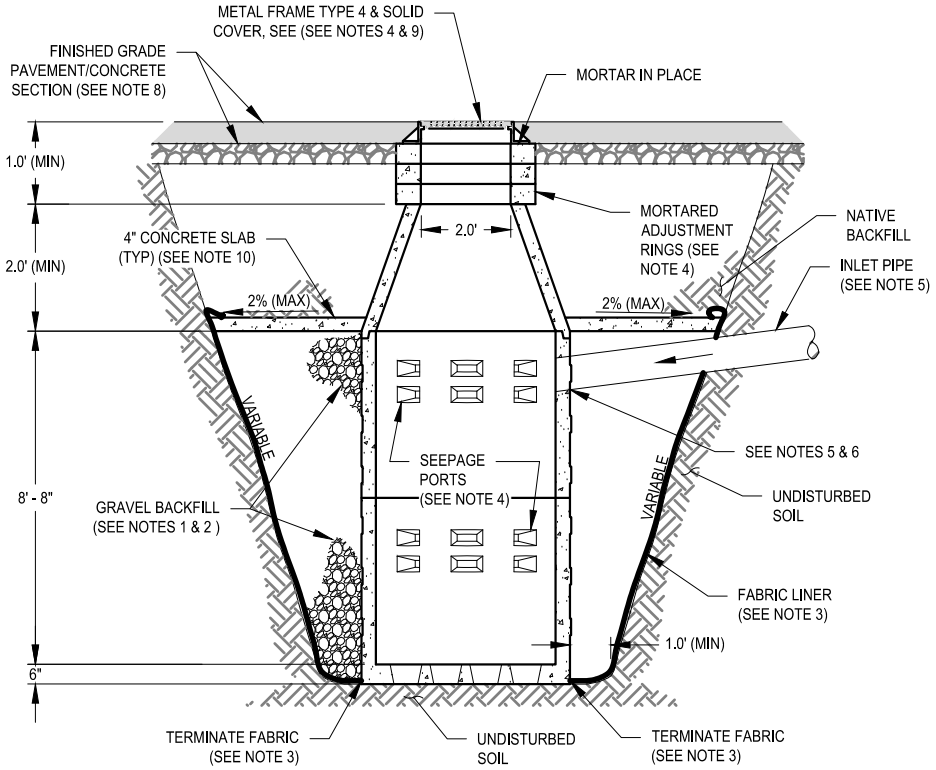
STANDARD PLAN NO. S-101

PUBLICATION DATE:	03/2025
REVISION NO.:	01

CREATION: 4/21/2025. REVISED: 4/21/2025 BY: JMORSE



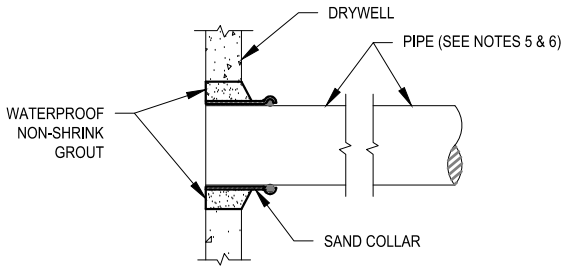
TYPE 'A'



TYPE 'B'

GENERAL NOTES:

1. GRAVEL BACKFILL QUANTITY FOR DRYWELLS:
   TYPE "A" - 30 CUBIC YARDS MINIMUM / 42 TONS.
   TYPE "B" - 40 CUBIC YARDS MINIMUM / 56 TONS.
   OR AS SPECIFIED ON STREET PLANS.
2. GRAVEL BACKFILL FOR DRYWELLS SHALL BE WASHED DRAIN ROCK CONFORMING TO WSDOT STANDARD SPEC. 9-03.12(5).
3. FABRIC SHALL BE MODERATE SURVIVABILITY AS OUTLINED IN WSDOT STANDARD SPEC. 9-33.2(1). FABRIC SHALL NOT BE WRAPPED AROUND DRYWELL BARRELS OR PLACED ON THE BOTTOM OF THE BARREL.
4. SEE PRECAST DRYWELL DETAILS, CITY STANDARD PLANS S-103 AND S-105. PRECAST MORTARED ADJUSTMENT RINGS SHALL BE USED IN LIEU OF ADJUSTING BLOCKS
5. WHEN PVC PIPE IS USED, A SAND COLLAR SHALL BE INSTALLED.
6. PIPES SHALL BE GROUTED INTO DRYWELL WITH WATERPROOF NON-SHRINK GROUT IN ACCORDANCE WITH STANDARD SPECIFICATION 9-20.3.
7. GRAVEL BACKFILL TO BE COMPLETELY COVERED WITH FABRIC.
8. MATERIAL COMPACTION SHALL MEET WSDOT STANDARD SPEC. 2-03.3(14)C, METHOD B.
9. UTILITY ADJUSTMENT SHALL MEET CITY STANDARDS, SEE STANDARD CITY PLAN UTILITY COVER ADJUSTMENT.
10. CONCRETE SLAB SHALL BE CLASS 3000 CONCRETE.



PVC ADAPTER

CITY OF Spokane Valley

APPROVED BY:

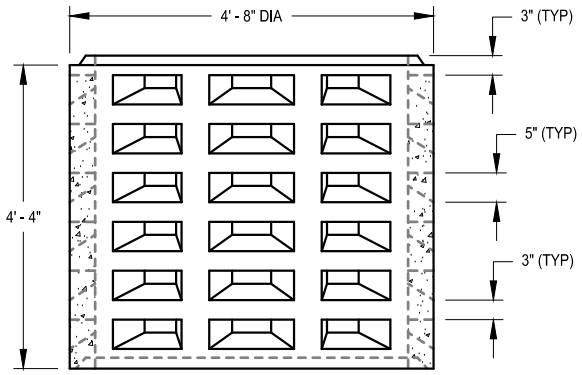
ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

PRECAST DRYWELLS PLACED IN ASPHALT

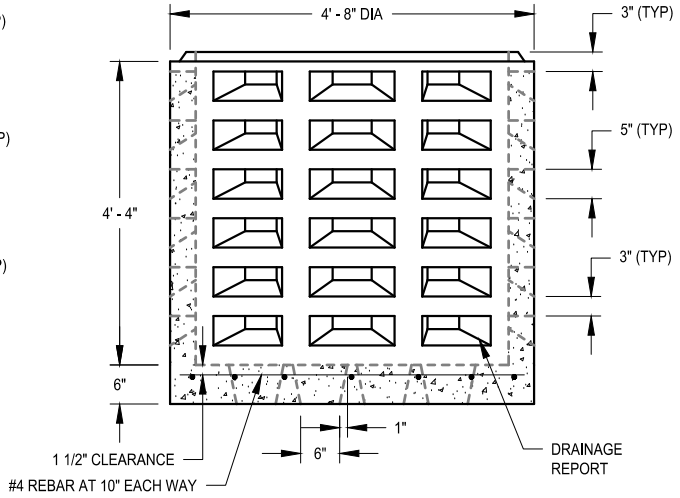
STANDARD PLAN NO. S-102

PUBLICATION DATE:	03/2025
REVISION NO.:	01

CREATION: 4/21/2025. REVISED: 4/21/2025 BY: JMORSE



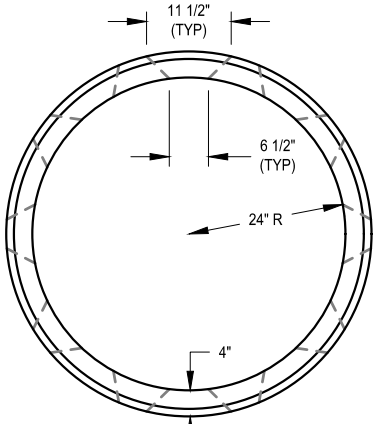
DRYWELL BARREL
(ELEVATION VIEW)



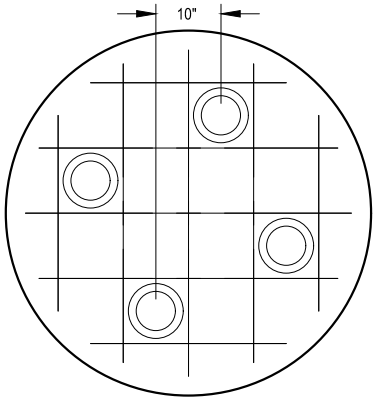
DRYWELL BASE
(ELEVATION VIEW)

GENERAL NOTES:

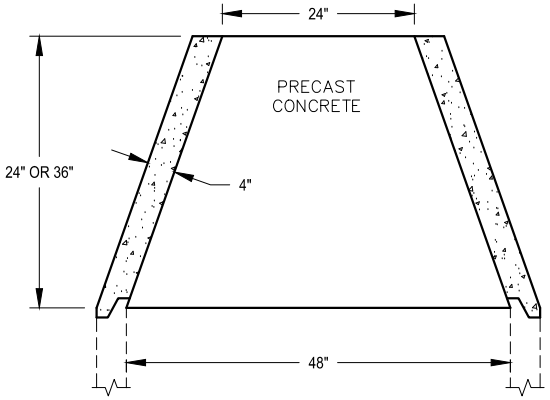
1. CONCRETE DRYWELL ITEMS SHALL BE CONSTRUCTED WITH THE BARRELS AND CONES REINFORCED WITH 0.12 SQ. IN. STEEL GRADE 40, PER LINEAL FOOT OF WALL.
2. TOLERANCE OF DIMENSIONS FOR DRAINAGE PORTS SHALL BE ±1/2".
3. EACH BARREL SECTION SHALL HAVE A MINIMUM OF 6 ROWS OF DRAINAGE PORTS VERTICALLY AND A MINIMUM OF 10 DRAINAGE PORTS AROUND THE CIRCUMFERENCE OF THE BARREL.



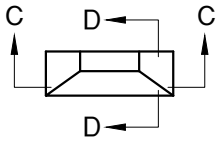
DRYWELL BARREL
(PLAN VIEW)



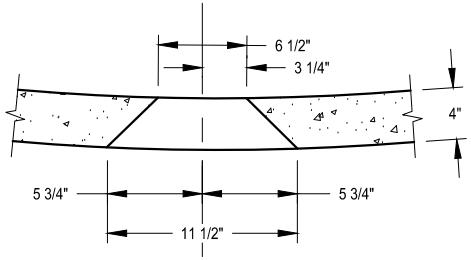
BASE DRAIN HOLE DETAIL
(PLAN VIEW)



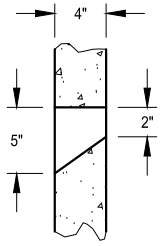
CONCENTRIC CONE



DRAINAGE PORT



SECTION C-C



SECTION D-D

CITY OF Spokane Valley

APPROVED BY:

ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

DRYWELL DETAILS

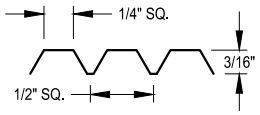
STANDARD PLAN NO. S-103

PUBLICATION DATE:	03/2025
REVISION NO.:	01

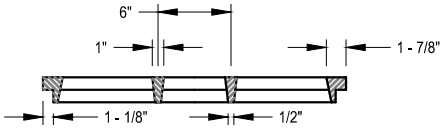
CREATION: 10/2/2023. REVISED: 3/20/2025 BY: JMORSE

GENERAL NOTES:

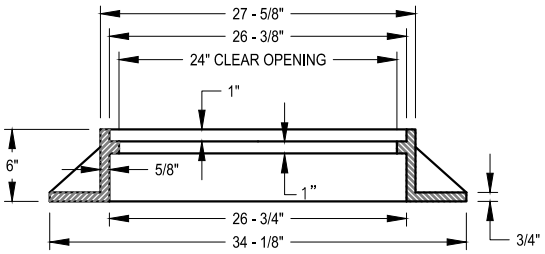
1. FRAME SHALL BE GRAY IRON CONFORMING TO A.S.T.M. A48-90, GRADE 30. THE GRATE SHALL BE DUCTILE IRON CONFORMING TO A.S.T.M. A536-84, CLASS 80-55-06.
2. METAL FRAME AND GRATE TYPE 4 SHALL ONLY BE USED WHERE SHOWN ON THE CONSTRUCTION PLANS. IT SHALL NOT BE USED AT A CURB LINE.
3. DRAINAGE SLOTS SHALL BE PLACED PARALLEL TO THE DIRECTION OF FLOW.
4. FIT TOLERANCE SHALL BE 1/8".
5. WELDING IS NOT PERMITTED.



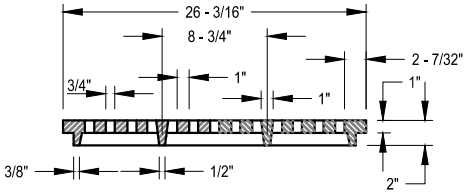
COVER SKID DESIGN DETAIL



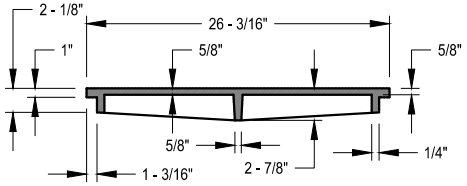
SECTION J-J



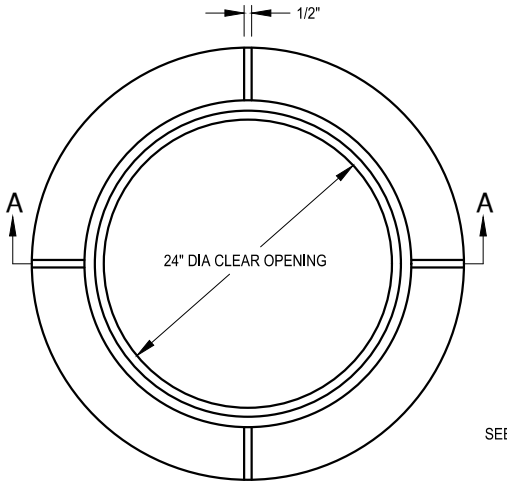
SECTION A-A



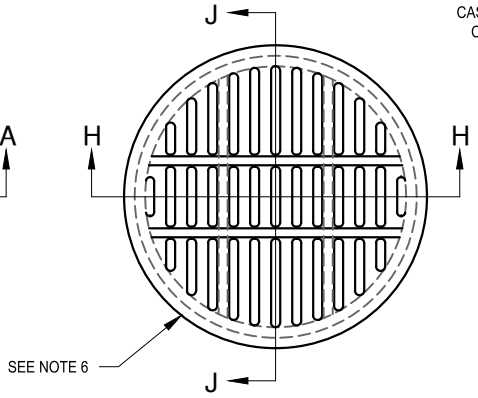
SECTION H-H



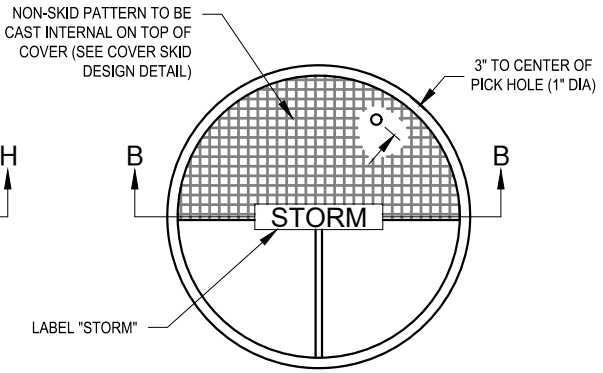
SECTION B-B



FRAME - TYPE 4
MINIMUM WEIGHT: 168 LBS



GRATE - TYPE 4



SOLID COVER
MINIMUM WEIGHT: 118 LBS

CITY OF Spokane Valley

APPROVED BY:

ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

DRYWELL FRAME AND GRATES

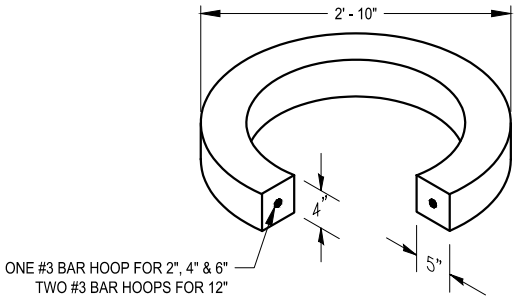
STANDARD PLAN NO. S-104

PUBLICATION DATE:	03/2025
REVISION NO.:	02

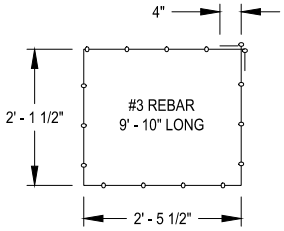
CREATION: 3/24/2025. REVISED: 3/24/2025 BY: JMORSE

GENERAL NOTES:

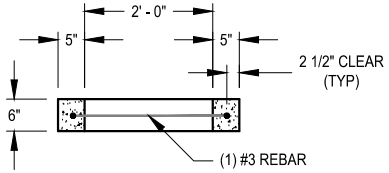
1. CONCRETE ITEMS SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM C-478 (AASHTO M199) & ASTM C-890 UNLESS OTHERWISE SHOWN ON PLANS OR NOTED IN THE PROJECT SPECIAL PROVISIONS.



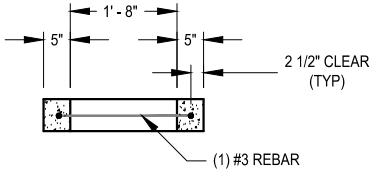
RISER, CIRCULAR



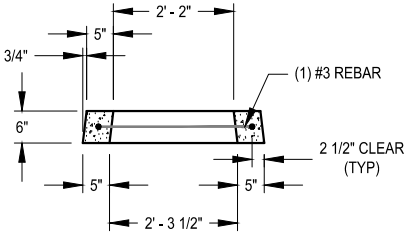
BENDING DETAIL



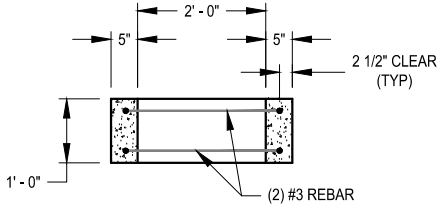
SECTION E-E
6" RISER



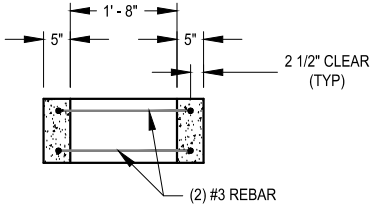
SECTION F-F
6" RISER



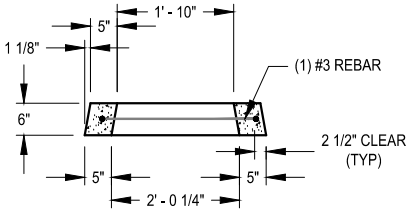
SECTION C-C
6" RISER



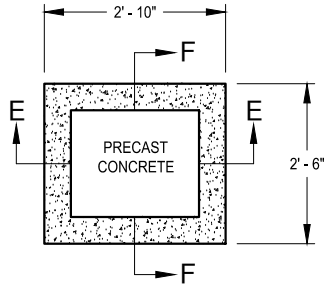
SECTION E-E
1' - 0" RISER



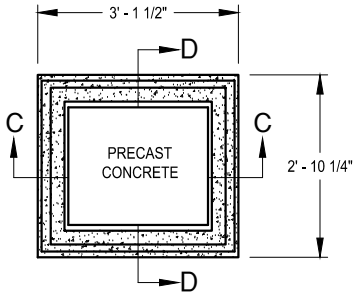
SECTION F-F
1' - 0" RISER



SECTION D-D
6" RISER



RISER, TYPE 1



RISER, TYPE 2

CITY OF Spokane Valley

APPROVED BY:

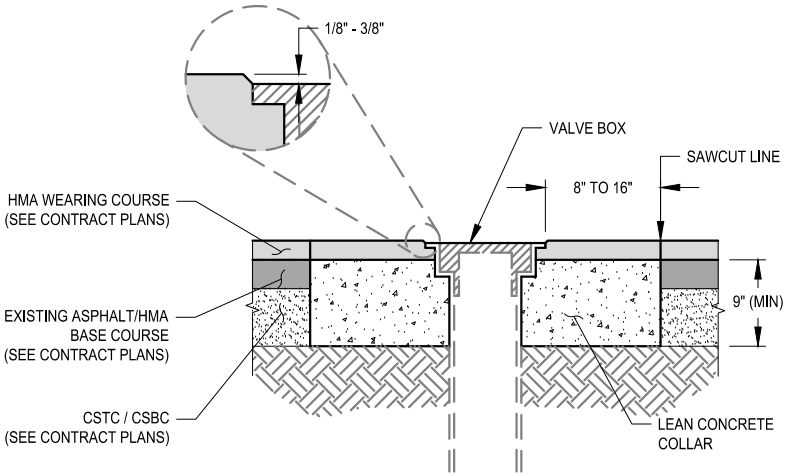
ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

PRECAST RISERS

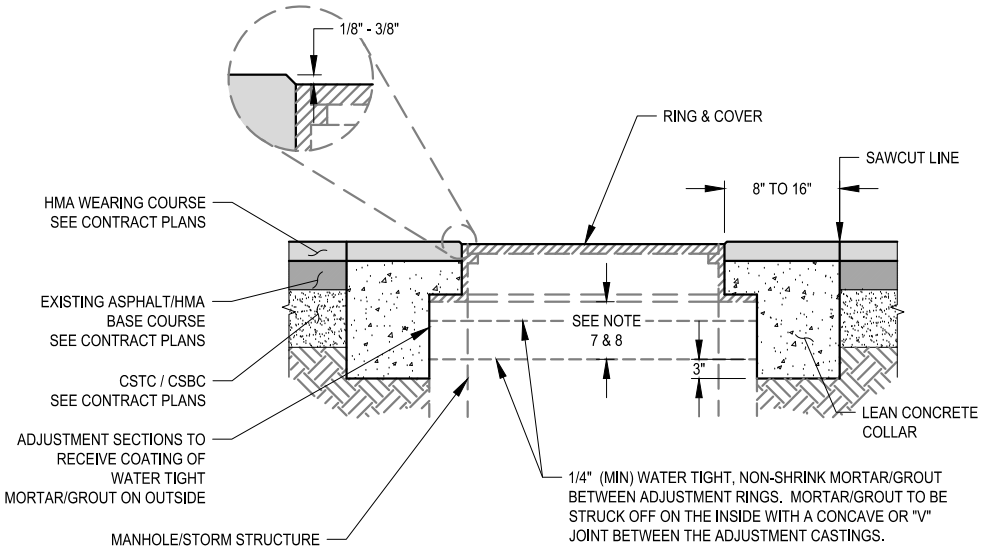
STANDARD PLAN NO. S-105

PUBLICATION DATE:	03/2025
REVISION NO.:	01

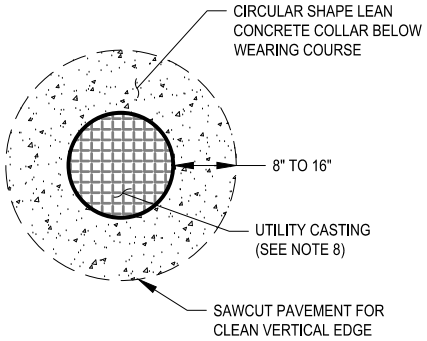
CREATION: 3/24/2025. REVISED: 3/24/2025 BY: JMORSE



ELEVATION VIEW - VALVE



ELEVATION VIEW - MANHOLE/STORM STRUCTURE



PLAN VIEW

GENERAL NOTES:

1. UTILITY ADJUSTMENTS ARE TO BE COMPLETED AFTER PLACING THE FINAL HMA LIFT.
2. UTILITY COVERS SUCH AS FRAMES, GRATES AND LIDS FOR SEWER MANHOLES, STORMWATER MANHOLES AND CATCH BASINS, WATER VALVE BOXES, GAS VALVE BOXES, COMMUNICATION AND POWER VAULTS, MONUMENT CASES, PULL BOXES AND JUNCTION BOXES IN THE ROADWAY SHALL BE SET 1/8 INCH (MIN.) TO 3/8 INCH (MAX.) BELOW THE FINAL TOP OF ASPHALT SURFACE.
3. CATCH BASIN AND INLET GRATES, SET IN OR ADJACENT TO CURBING, SHALL BE SET 1/2 INCH BELOW GUTTER GRADE PER STD. PLAN S-117.
4. THE REQUIRED ELEVATION DIFFERENCE BETWEEN THE PAVEMENT AND UTILITY COVER SHALL BE MEASURED FROM THE BOTTOM OF A 10-FOOT LONG STRAIGHT EDGE TO THE TOP OF THE FRAME. THE STRAIGHT EDGE SHALL BE CHECKED OVER THE FRAME IN BOTH DIRECTIONS (PARALLEL AND AND PERPENDICULAR TO THE TRAVEL WAY).
5. UTILITY COVERS LOCATED WITHIN PEDESTRIAN ACCESS ROUTES SHALL CONFORM WITH ALL CURRENT A.D.A. GUIDELINES, INCLUDING NON-SLIP/SKID RESISTANT SURFACE.
6. A CIRCULAR SHAPE CONCRETE COLLAR IS REQUIRED ON ALL INSTALLATIONS/ADJUSTMENTS. CONCRETE SHALL MEET THE REQUIREMENTS OF LEAN CONCRETE PER WSDOT STANDARD SPECIFICATIONS SECTION 6-02.3(2)D AND HAVE CEMENTITIOUS CONTENT WITHIN THE RANGE OF 280 LBS (MIN.) TO 330 LBS (MAX.).
7. FOR SEWER MANHOLES, THE VERTICAL DISTANCE BETWEEN THE TOP OF STRUCTURE AND BOTTOM OF FRAME SHALL BE A MINIMUM OF 2" AND SHALL NOT TO EXCEED 13".
8. ADJUSTMENTS 1" OR GREATER TO BE MADE WITH PRECAST CONCRETE ADJUSTMENT RINGS ONLY.

CITY OF Spokane Valley

APPROVED BY:

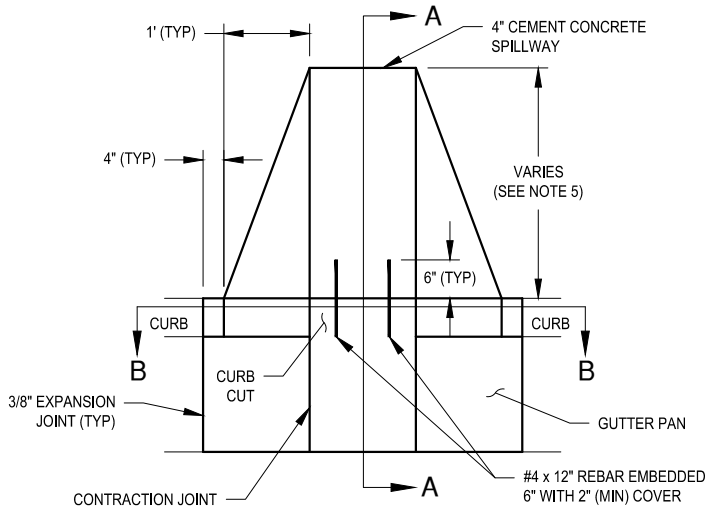
ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

UTILITY COVER ADJUSTMENT

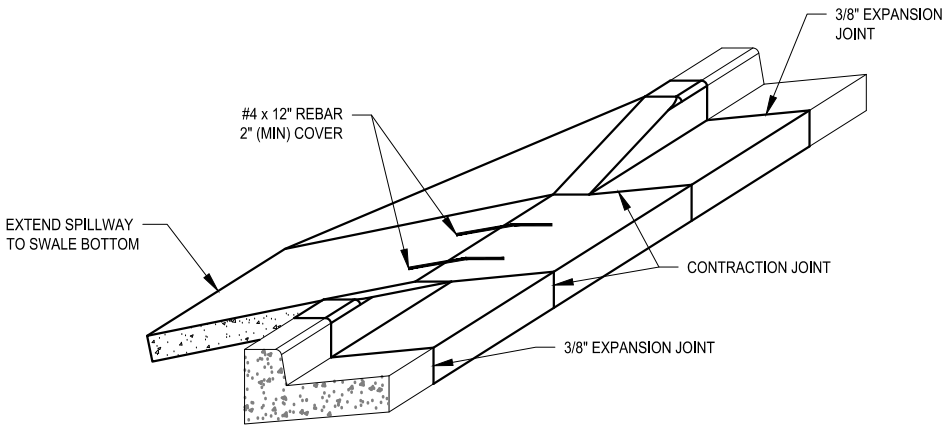
STANDARD PLAN NO. S-106

PUBLICATION DATE:	03/2025
REVISION NO.:	01

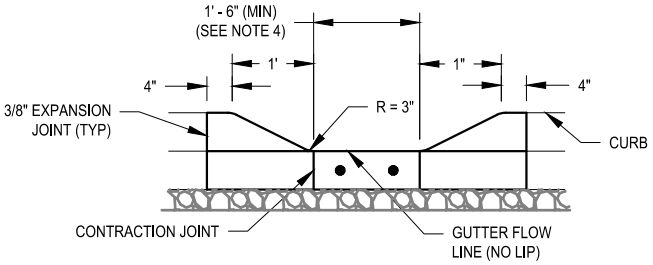
CREATION: 6/11/2025. REVISED: 6/11/2025 BY: JMORSE



TOP VIEW



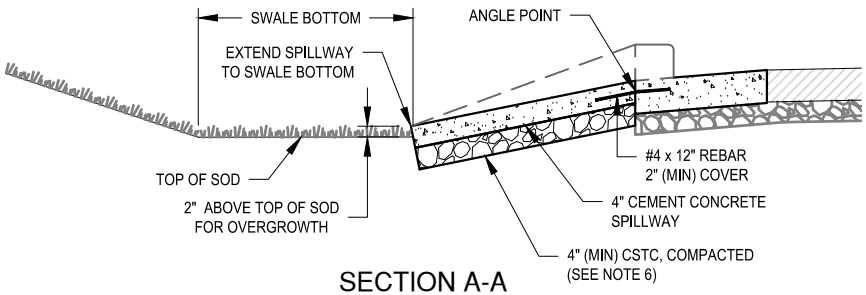
ISOMETRIC VIEW



SECTION B-B

GENERAL NOTES:

1. CURB INLET SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM C-478 (AASHTO M 199) & ASTM C-890 UNLESS OTHERWISE SHOWN ON PLANS OR NOTED IN THE PROJECT SPECIAL PROVISIONS.
2. TOP SURFACE TO BE BROOM FINISHED.
3. ALL EXTERNAL EDGES NO LABELED SHALL BE TROWELED WITH 1/4" RADIUS EDGER.
4. WIDTH TO BE DETERMINED BY DESIGN ENGINEER.
5. CONCRETE SPILLWAY SHALL EXTEND TO SWALE BOTTOM.
6. SUBGRADE AND CRUSHED SURFACE TOP COURSE SHALL BE COMPACTED TO 90%.



SECTION A-A

CITY OF Spokane Valley

APPROVED BY:

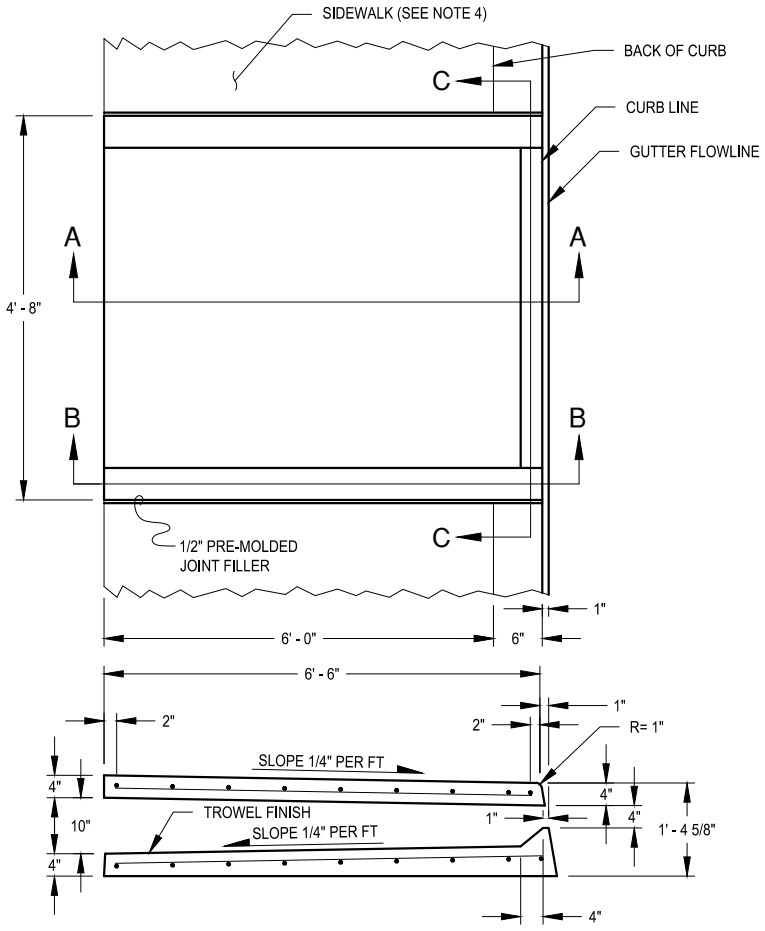
ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

CURB INLET TYPE 1

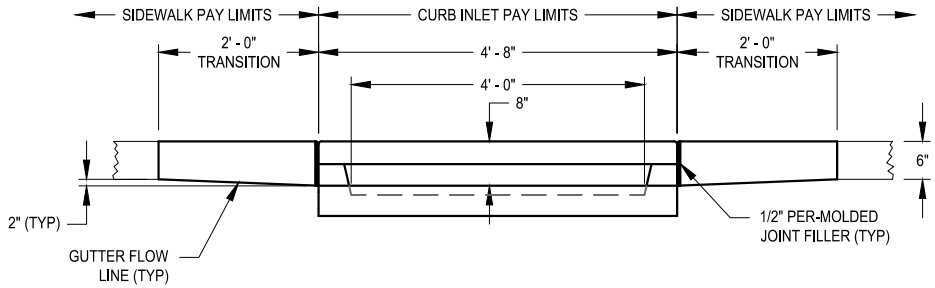
STANDARD PLAN NO. S-110

PUBLICATION DATE:	03/2025
REVISION NO.:	01

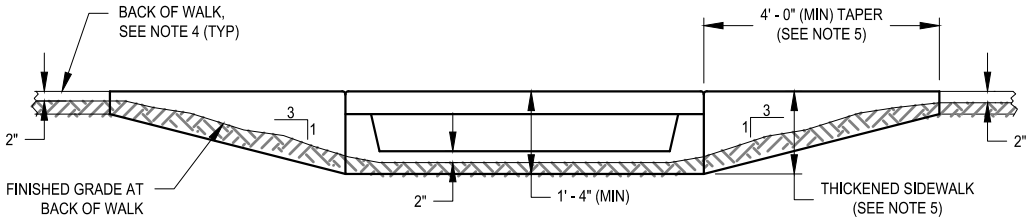
CREATION: 10/17/2024. REVISED: 3/20/2025 BY: JMORSE



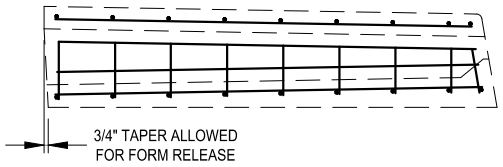
SECTION A-A



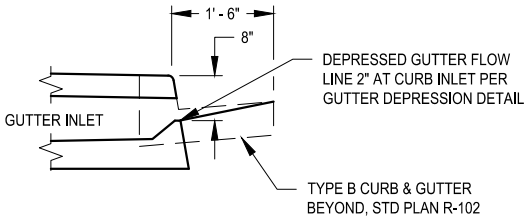
GUTTER DEPRESSION DETAIL



OUTLET SWALE GRADING DETAIL



SECTION B-B
(REBAR PLACEMENT)



CURB INLET

GENERAL NOTES:

1. PRECAST CURB INLETS SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM C-478 (AASHTO M-199) & ASTM C-890.
2. TOP SURFACE TO BE BROOM FINISHED.
3. ALL EXTERNAL EDGES NOT LABELED SHALL BE TROWELED WITH A 3/8" TO 1/2" RADIUS.
4. SEE SIDEWALK, STANDARD PLAN E-103.
5. SIDEWALK TAPER SHALL BE THICKENED TO 1'-4" (MIN) TO MATCH THICKNESS OF TYPE 2 CURB INLET, TYPICAL BOTH SIDES.

CREATION: 3/24/2025. REVISED: 4/21/2025 BY: JMORSE

CITY OF Spokane Valley

APPROVED BY:

ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

CURB INLET TYPE 2

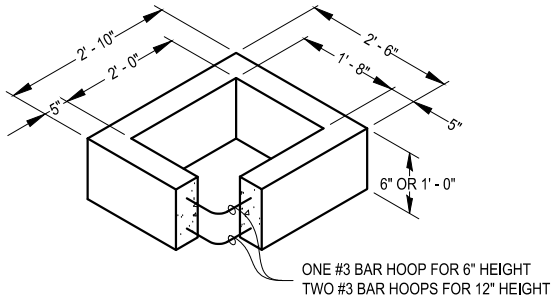
STANDARD PLAN NO.
S-111

PUBLICATION DATE:	03/2025
REVISION NO.:	01

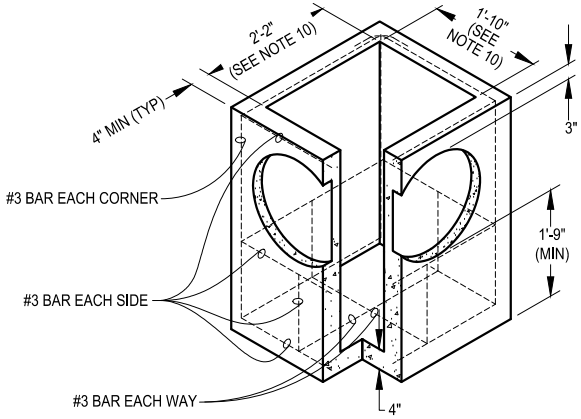
PIPE ALLOWANCES	
PIPE DIAMETER	MAXIMUM INSIDE DIAMETER
REINFORCED OR PLAIN CONCRETE PIPE	12"
ALL METAL PIPE	15"
CPSSP* (STD. SPEC. 9-05.20)	12"
SOLID WALL PVC (STD. SPEC. 9-05.12(1))	15"
PROFILE WALL PVC (STD. SPEC. 9-05.12(2))	15"
* CORRUGATED POLYETHYLENE STORM SEWER PIPE	

GENERAL NOTES:

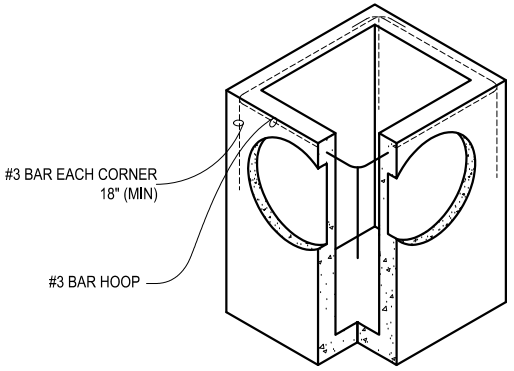
1. CONCRETE CATCH BASIN SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM C-478 (AASHTO M-199) AND ASTM C-890 UNLESS OTHERWISE SHOWN ON PLANS OR NOTED IN THE PROJECT SPECIAL PROVISIONS.
2. AS AN ACCEPTABLE ALTERNATIVES TO THE REBAR SHOWN IN THE PRECAST BASE SECTION, FIBERS (PLACED ACCORDING TO THE STANDARD SPECIFICATIONS), OR WIRE MESH HAVING A MINIMUM AREA OF 0.12 SQUARE INCHES PER FOOT SHALL BE USED IN ADDITION TO THE MINIMUM REQUIRED REBAR SHOWN IN THE ALTERNATE PRECAST BASE SECTION. WIRE MESH SHALL NOT BE PLACED IN THE KNOCKOUTS.
3. THE KNOCKOUT DIAMETER SHALL NOT BE GREATER THAN 1'-8". KNOCKOUTS SHALL HAVE A WALL THICKNESS OF 2" MINIMUM TO 2.5" MAXIMUM. PROVIDE A 1.5" MINIMUM GAP BETWEEN THE KNOCKOUT WALL AND THE OUTSIDE OF THE PIPE.
4. WHEN PVC PIPE IS USED, A SAND COLLAR SHALL BE INSTALLED.
5. AFTER THE PIPE IS INSTALLED, FILL THE GAP WITH NON-SHRINK GROUT IN ACCORDANCE WITH STANDARD SPECIFICATION 9-20.3.
6. CATCH BASIN/INLET SHALL BE SET ON A COMPACTED OR UNDISTURBED LEVEL FOUNDATION.
7. THE MAXIMUM DEPTH FROM THE FINISHED GRADE TO THE LOWEST PIPE INVERT SHALL BE 5'.
8. THE FRAME AND GRATE MAY BE INSTALLED WITH THE FLANGE UP OR DOWN. THE FRAME MAY BE CAST INTO THE ADJUSTMENT SECTION.
9. THE PRECAST BASE SECTION MAY HAVE A ROUNDED FLOOR, AND THE WALLS MAY BE SLOPED AT A RATE OF 1:24 OR STEEPER.
10. THE OPENING SHALL BE MEASURED AT THE TOP OF THE PRECAST BASE SECTION.
11. ALL PICKUP HOLES SHALL BE FULLY GROUTED CLOSED AFTER THE BASIN HAS BEEN PLACED.



RECTANGULAR ADJUSTMENT
SEE STANDARD PLAN S-105



PRECAST BASE SECTION



ALTERNATIVE PRECAST BASE SECTION
(SEE NOTE 2)

CITY OF Spokane Valley

APPROVED BY:

ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

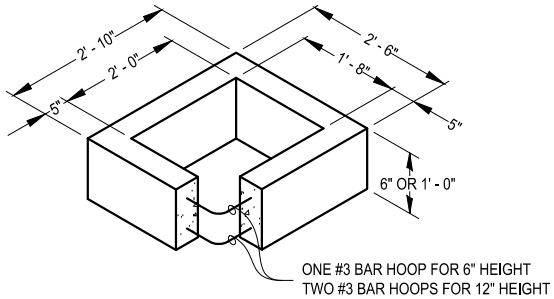
CATCH BASIN TYPE 1

STANDARD PLAN NO. S-112

PUBLICATION DATE:	03/2025
REVISION NO.:	01

CREATION: 3/24/2025. REVISED: 3/24/2025 BY: JMORSE

PIPE ALLOWANCES	
PIPE DIAMETER	MAXIMUM INSIDE DIAMETER
REINFORCED OR PLAIN CONCRETE PIPE	12"
ALL METAL PIPE	15"
CPSSP* (STD. SPEC. 9-05.20)	12"
SOLID WALL PVC (STD. SPEC. 9-05.12(1))	15"
PROFILE WALL PVC (STD. SPEC. 9-05.12(2))	15"
* CORRUGATED POLYETHYLENE STORM SEWER PIPE	

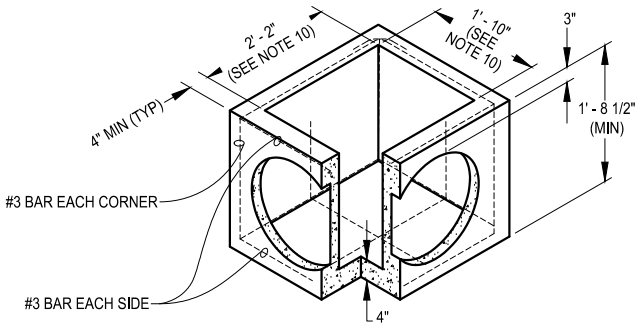


RECTANGULAR ADJUSTMENT

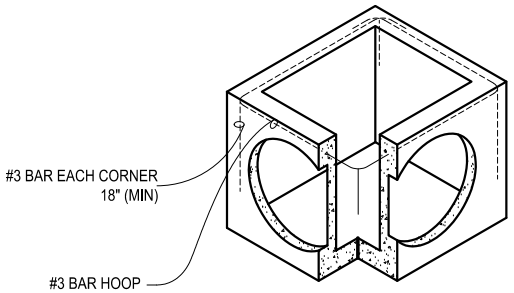
SEE STANDARD PLAN S-105

GENERAL NOTES:

1. CONCRETE INLET SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM C-478 (AASHTO M-199) AND ASTM C-890 UNLESS OTHERWISE SHOWN ON PLANS OR NOTED IN THE PROJECT SPECIAL PROVISIONS.
2. AS AN ACCEPTABLE ALTERNATIVES TO THE REBAR SHOWN IN THE PRECAST BASE SECTION, FIBERS (PLACED ACCORDING TO THE STANDARD SPECIFICATIONS), OR WIRE MESH HAVING A MINIMUM AREA OF 0.12 SQUARE INCHES PER FOOT SHALL BE USED IN ADDITION TO THE MINIMUM REQUIRED REBAR SHOWN IN THE ALTERNATE PRECAST BASE SECTION. WIRE MESH SHALL NOT BE PLACED IN THE KNOCKOUTS.
3. THE KNOCKOUT DIAMETER SHALL NOT BE GREATER THAN 1'-6". KNOCKOUTS SHALL HAVE A WALL THICKNESS OF 2" MINIMUM TO 2.5" MAXIMUM. PROVIDE A 1.5" MINIMUM GAP BETWEEN THE KNOCKOUT WALL AND THE OUTSIDE OF THE PIPE.
4. WHEN PVC PIPE IS USED, A SAND COLLAR SHALL BE INSTALLED.
5. AFTER THE PIPE IS INSTALLED, FILL THE GAP WITH NON-SHRINK GROUT IN ACCORDANCE WITH STANDARD SPECIFICATION 9-20.3.
6. CATCH BASIN/INLET SHALL BE SET ON A COMPACTED OR UNDISTURBED LEVEL FOUNDATION.
7. THE MAXIMUM DEPTH FROM THE FINISHED GRADE TO THE LOWEST PIPE INVERT SHALL BE 5'.
8. THE FRAME AND GRATE MAY BE INSTALLED WITH THE FLANGE UP OR DOWN. THE FRAME MAY BE CAST INTO THE ADJUSTMENT SECTION.
9. THE PRECAST BASE SECTION MAY HAVE A ROUNDED FLOOR, AND THE WALLS MAY BE SLOPED AT A RATE OF 1:24 OR STEEPER.
10. THE OPENING SHALL BE MEASURED AT THE TOP OF THE PRECAST BASE SECTION.
11. ALL PICKUP HOLES SHALL BE FULLY GROUTED CLOSED AFTER THE BASIN HAS BEEN PLACED.



PRECAST BASE SECTION



ALTERNATIVE PRECAST BASE SECTION

(SEE NOTE 2)

CITY OF Spokane Valley

APPROVED BY:

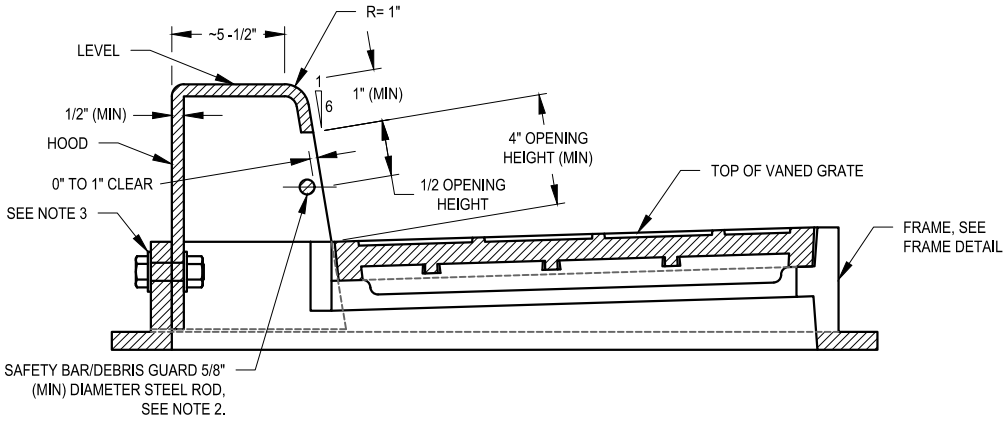
ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

CONCRETE INLET TYPE 1

STANDARD PLAN NO. S-113

PUBLICATION DATE:	03/2025
REVISION NO.:	01

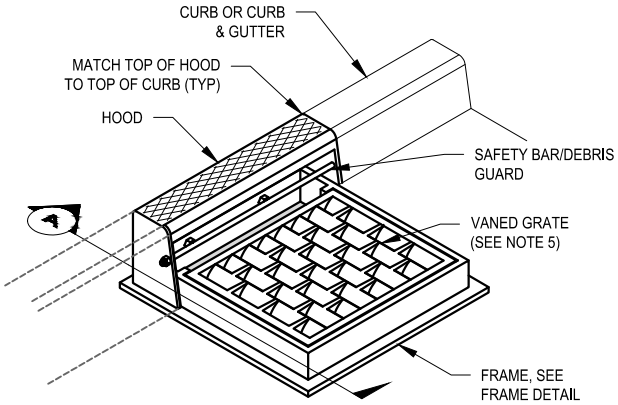
CREATION: 3/24/2025. REVISED: 3/24/2025 BY: JMORSE



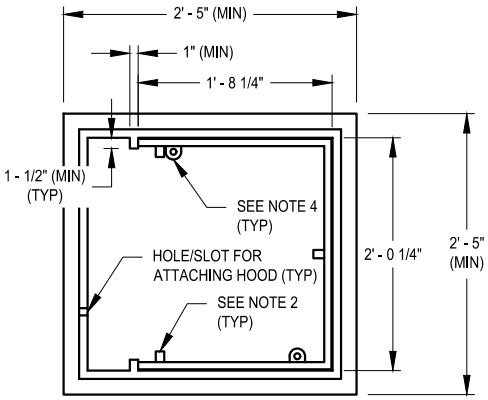
SECTION A
FRAME, HOOD, AND VANED GRATE

GENERAL NOTES:

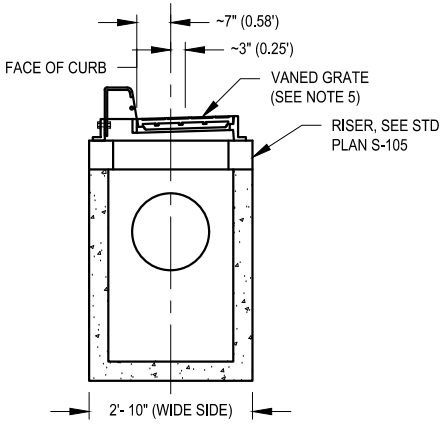
1. THE ASYMMETRY OF THE COMBINATION INLET SHALL BE CONSIDERED WHEN CALCULATING THE OFFSET DISTANCE FOR THE CATCH BASIN.
2. THE DIMENSIONS OF THE FRAME AND HOOD MAY VARY SLIGHTLY AMONG DIFFERENT MANUFACTURERS. THE FRAME MAY HAVE CAST FEATURES INTENDED TO SUPPORT A GRATE GUARD. HOOD UNITS SHALL MOUNT INSIDE OF THE FRAME. THE METHODS FOR FASTENING THE SAFETY BAR/DEBRIS GUARD ROD TO THE HOOD MAY VARY. THE HOOD MAY INCLUDE CASTING LUGS. THE TOP OF THE HOOD MAY BE CAST WITH A PATTERN.
3. ATTACH THE HOOD TO THE FRAME WITH TWO 3/4" X 2" HEX HEAD BOLTS, NUTS, AND OVERSIZE WASHERS. THE WASHERS SHALL HAVE DIAMETERS ADEQUATE TO ASSURE FULL BEARING ACROSS THE SLOTS.
4. WHEN BOLT-DOWN GRATES ARE SPECIFIED IN THE CONTRACT, PROVIDE TWO HOLES IN THE FRAME THAT ARE VERTICALLY ALIGNED WITH THE GRATE SLOTS. TAP EACH HOLE TO ACCEPT A 5/8" X 11 NC X 2" ALLEN HEAD CAP SCREW. LOCATION OF BOLT-DOWN HOLES VARIES AMONG DIFFERENT MANUFACTURERS.
5. ONLY DUCTILE IRON VANED GRATES SHALL BE USED. SEE STANDARD PLANS S-121 AND S-122.
6. THIS PLAN INCLUDES INSTALLATION DETAILS ONLY. FOR FABRICATION DETAILS SEE APPROPRIATE WSDOT STANDARD PLANS AND SPECIFICATIONS.
7. THE TOP OF GRATE SHALL BE INSTALLED 1/2" LOWER THAN THE PROJECTED GUTTER GRADE.



ISOMETRIC VIEW
FRAME, HOOD, AND VANED GRATE



FRAME DETAIL



SECTION A
CATCH BASIN, TYPE 1 (SEE NOTE 1)

CREATION: 3/24/2025. REVISED: 4/21/2025 BY: JMORSE

CITY OF Spokane Valley

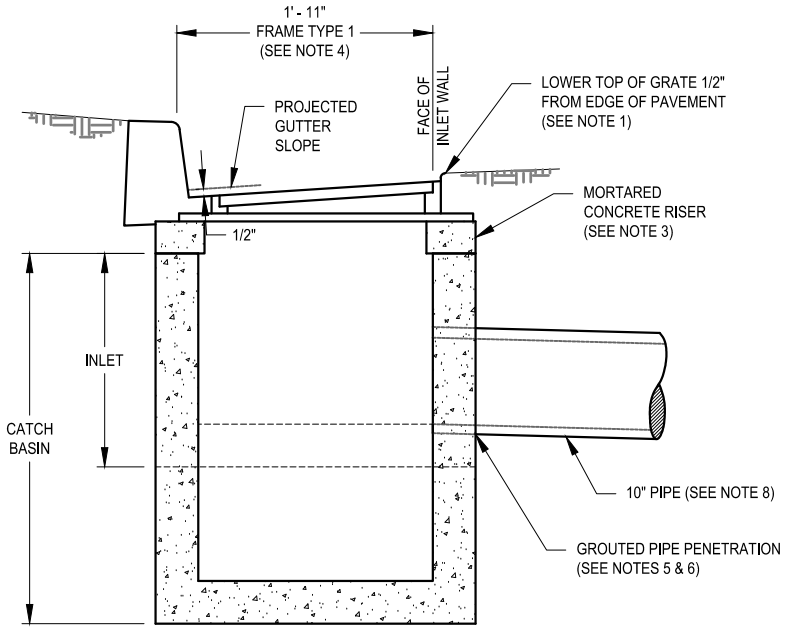
APPROVED BY:

ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

COMBINATION INLET

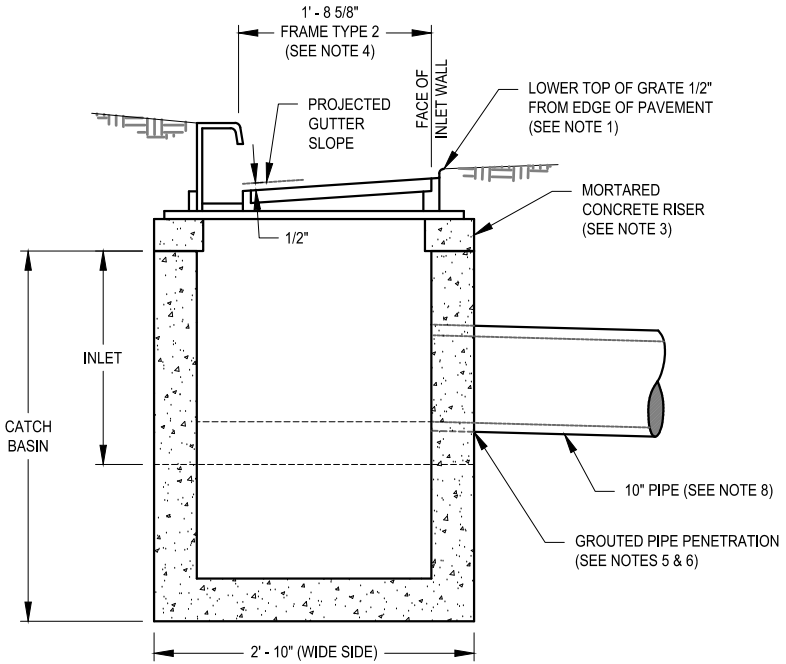
STANDARD PLAN NO. S-115

PUBLICATION DATE:	03/2025
REVISION NO.:	01



TYPE 1 INSTALLATION

NON-HOODED



TYPE 2 INSTALLATION

HOODED

GENERAL NOTES:

1. THE TOP OF GRATE SHALL BE INSTALLED 1/2" LOWER THAN THE PROJECTED GUTTER GRADE.
2. THE PRECAST CONCRETE CATCH BASIN/INLET SHALL BE PLACED ON THE SAME GRADE AS THE CURB.
3. MINIMUM ONE RISER TYPE 1 TO BE USED WITH CATCH BASIN/INLET, SEE STANDARD PLAN S-105.
4. FRAMES TYPE 1 AND TYPE 2, SEE SPOKANE COUNTY STANDARD PLANS B-10 AND B-11.
5. WHEN PVC PIPE IS USED, A SAND COLLAR SHALL BE INSTALLED.
6. PIPES SHALL BE GROUTED INTO DRYWELL WITH WATERPROOF NON-SHRINK GROUT, IN ACCORDANCE WITH STANDARD SPECIFICATIONS 9-20.3.
7. THIS PLAN INCLUDES INSTALLATION DETAILS ONLY. FOR FABRICATION DETAILS SEE APPROPRIATE WSDOT STANDARD PLANS AND SPECIFICATIONS.
8. MINIMUM DIAMETER OF PIPE IS 10". AN 8" DIAMETER PIPE IS ACCEPTABLE FOR A DISTANCE OF 50' OR LESS WITH CITY ENGINEER'S APPROVAL.

CREATION: 5/28/2024. REVISED: 4/21/2025 BY: JMORSE

CITY OF Spokane Valley

APPROVED BY:

ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

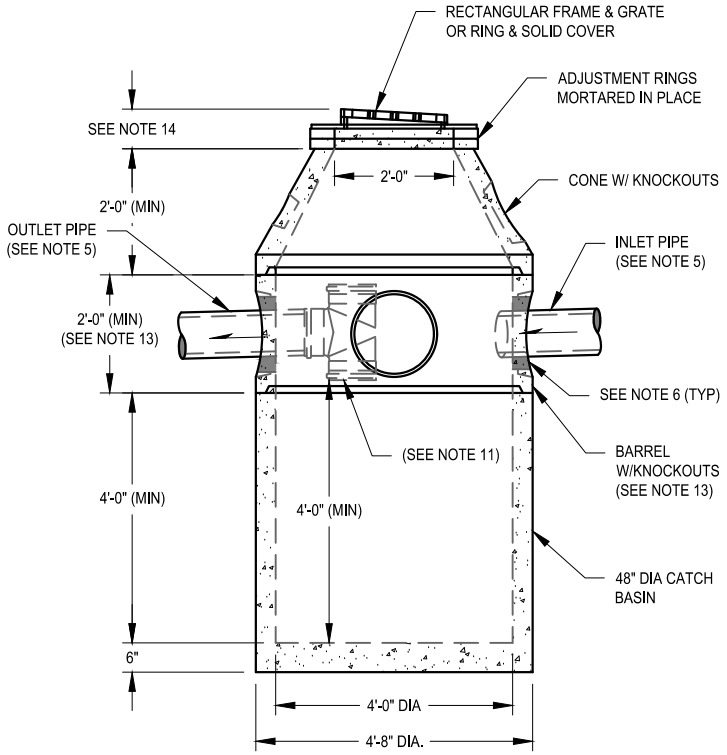
CATCH BASIN AND INLET INSTALLATION

STANDARD PLAN NO. S-117

PUBLICATION DATE:	03/2025
REVISION NO.:	01

GENERAL NOTES:

1. AN ECCENTRIC CONE MAY BE USED WHEN INSTALLING UNDER CURB FOR GRATED APPLICATION.
2. THE TOP OF THE GRATE SHALL BE INSTALLED 1/2" LOWER THAN THE PROJECTED GUTTER GRADE.
3. WHEN PVC PIPE IS USED, A SAND COLLAR SHALL BE INSTALLED.
4. MINIMUM DIAMETER OF PIPE IS 10". AN 8" DIAMETER PIPE IS ACCEPTABLE FOR A DISTANCE OF 50' OR LESS WITH CITY ENGINEER'S APPROVAL.
5. AFTER THE PIPE IS INSTALLED, FILL THE GAP WITH NON-SHRINK GROUT IN ACCORDANCE WITH STANDARD SPECIFICATION 9-20.3.
6. CATCH BASIN/INLET SHALL BE SET ON A COMPACTED OR UNDISTURBED LEVEL FOUNDATION.
7. THE FRAME AND GRATE MAY BE INSTALLED WITH THE FLANGE UP OR DOWN. THE FRAME MAY BE CAST INTO THE ADJUSTMENT SECTION.
8. ALL PICKUP HOLES SHALL BE FULLY GROUTED CLOSED AFTER THE BASIN HAS BEEN PLACED.
9. THIS PLAN IS INTENDED TO SHOW THE INSTALLATION DETAILS OF A MANUFACTURED PRODUCT. IT IS NOT THE INTENT OF THIS PLAN TO SHOW THE SPECIFIC DETAILS NECESSARY TO FABRICATE THE CASTINGS SHOWN ON THIS DRAWING.
10. DOWN TURNED 90 DEGREE ELBOW MAY BE USED IN PLACE OF THE TEE. TEE/ELBOW TO REMAIN REMOVABLE FOR MAINTENANCE. SEE CITY STANDARD PLAN SPILL CONTROL SEPARATOR.
11. VERTICAL PROJECTION OF TEE/ELBOW NOT TO EXTEND BEYOND CENTERLINE OF GRATE OR COVER.
12. BARREL WITH KNOCKOUTS MAY BE NEEDED TO MEET PIPE INVERT REQUIREMENTS OR IF CATCH BASIN LOWER DOES NOT INCLUDE KNOCKOUTS.
13. AT LEAST ONE GRADE RING IS REQUIRED. PRECAST MORTARED ADJUSTMENT RINGS SHALL BE USED IN LIEU OF ADJUSTING BLOCKS.
14. CONCRETE SLAB SHALL BE CLASS 3000 CONCRETE.



ELEVATION VIEW

CREATION: 3/20/2025. REVISED: 4/21/2025 BY: JMORSE

CITY OF Spokane Valley

APPROVED BY:

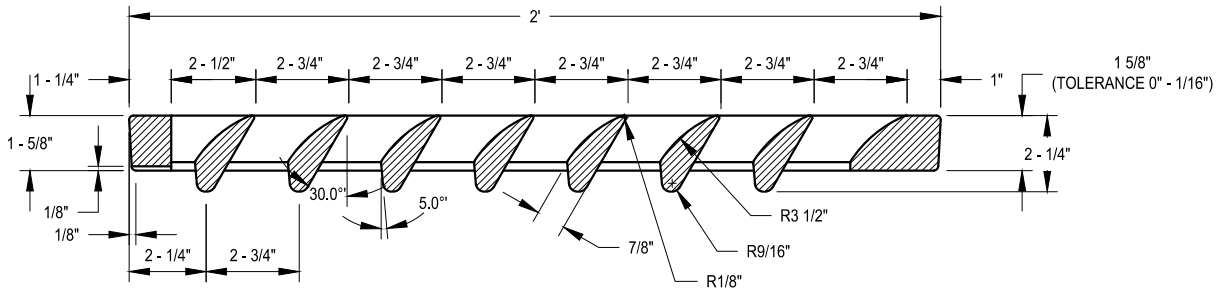
ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

CATCH BASIN TYPE 2 AND TRAP

(SPILL CONTROL SEPARATOR)

STANDARD PLAN NO. S-119

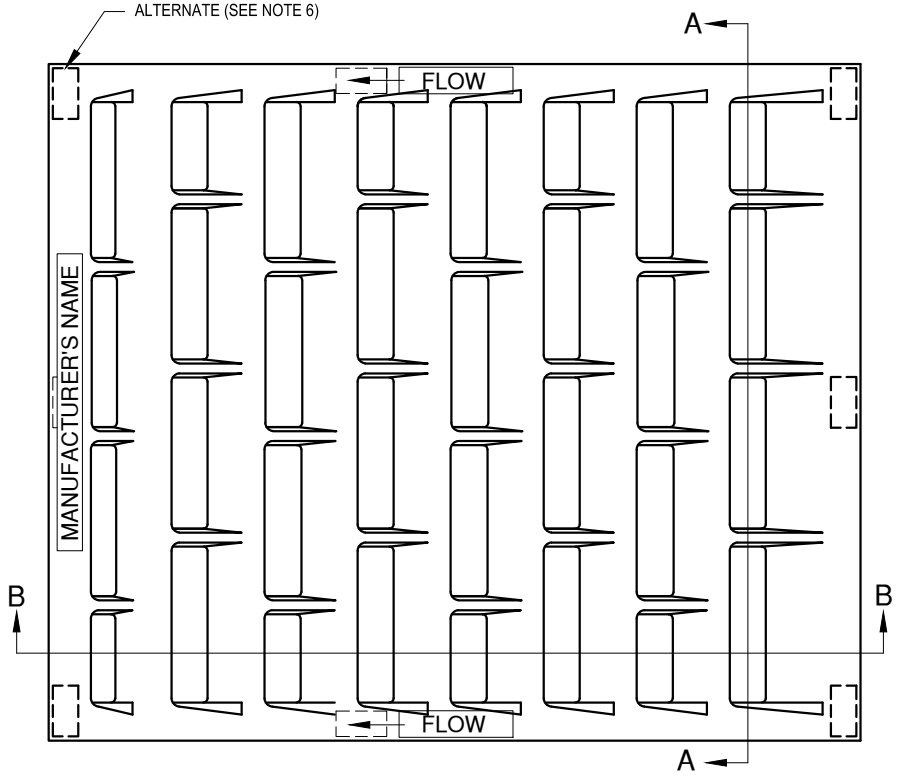
PUBLICATION DATE:	03/2025
REVISION NO.:	00



SECTION B-B

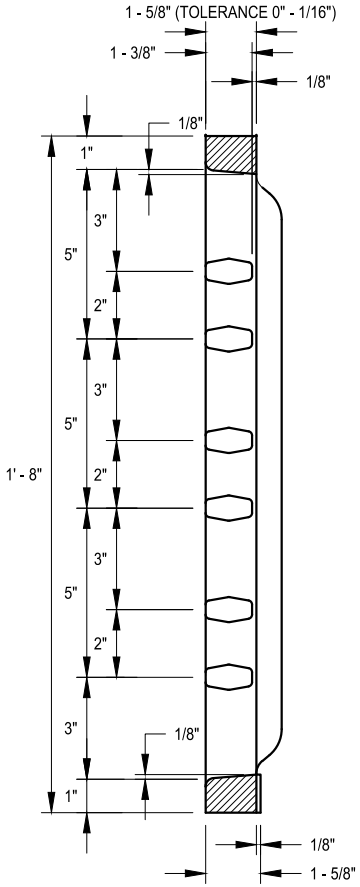
GENERAL NOTES:

1. THE NAME OF THE MANUFACTURER AND DIRECTION OF FLOW SHALL BE EMBOSSED ON THE TOP SURFACE OF EACH GRATE, LETTERING TO BE RECESSED 1/16".
2. FRAME SHALL BE GRAY IRON, AND GRATE SHALL BE DUCTILE IRON, BOTH SHALL CONFORM TO AASHTO M-306.
3. DIMENSIONS SHALL HAVE ±1/16" TOLERANCE, EXCEPT AS NOTED.
4. EDGES SHALL HAVE 1/8" RADIUS, 1/8" CHAMFER OR COMPLETE DE-BURRING.
5. WELDING IS NOT PERMITTED.
6. AS AN ALTERNATE, 8 PADS 1 1/2" X 3/4" X 1/8", INTEGRALLY CAST WITH THE GRATE, MAY BE USED.



PLAN VIEW

APPROXIMATE WEIGHT-101 LBS.



SECTION A-A

CITY OF Spokane Valley

APPROVED BY:

ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

METAL GRATE TYPE 1 (BYPASS)

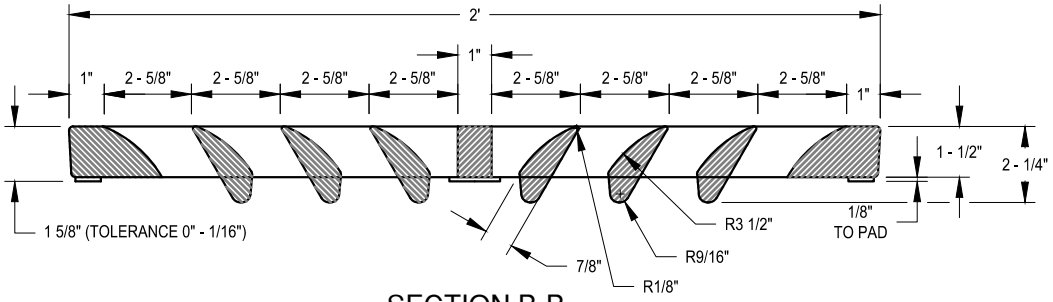
STANDARD PLAN NO. S-121

PUBLICATION DATE:	03/2025
REVISION NO.:	01

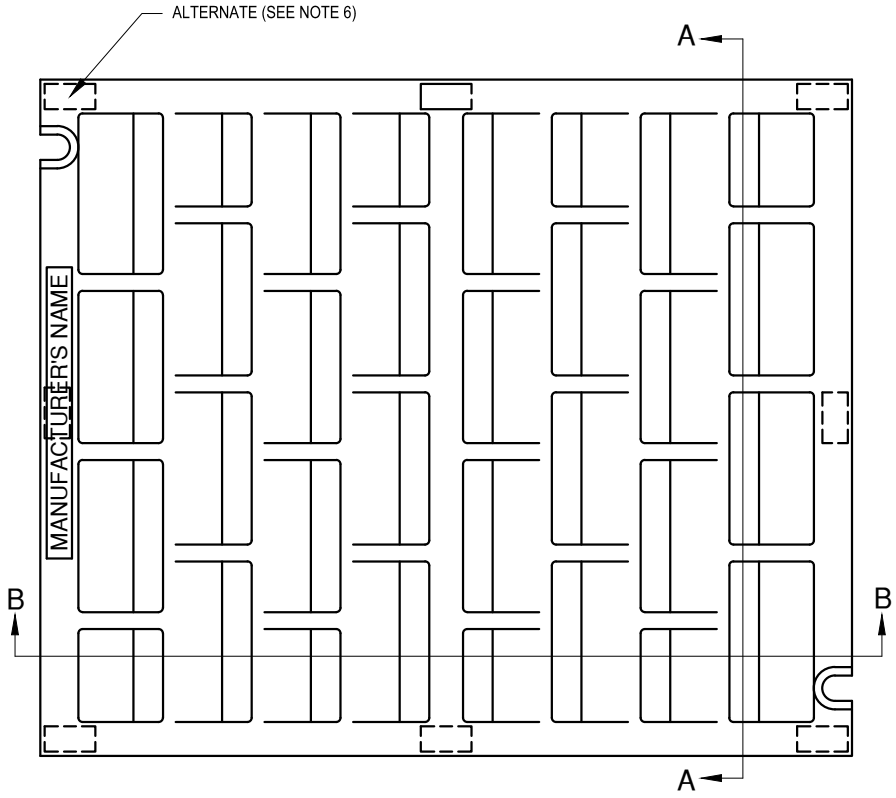
CREATION: 1/22/2025. REVISED: 3/20/2025 BY: JMORSE

GENERAL NOTES:

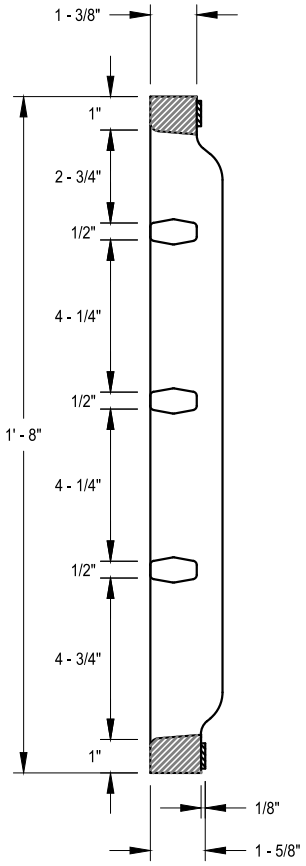
1. THE NAME OF THE MANUFACTURER AND DIRECTION OF FLOW SHALL BE EMBOSSED ON THE TOP SURFACE OF EACH GRATE, LETTERING TO BE RECESSED 1/16".
2. FRAME SHALL BE GRAY IRON, AND GRATE SHALL BE DUCTILE IRON, BOTH SHALL CONFORM TO AASHTO M-306.
3. DIMENSIONS SHALL HAVE ±1/16" TOLERANCE, EXCEPT AS NOTED.
4. EDGES SHALL HAVE 1/8" RADIUS, 1/8" CHAMFER OR COMPLETE DE-BURRING.
5. WELDING IS NOT PERMITTED.
6. AS AN ALTERNATE, 8 PADS 1 1/2" X 3/4" X 1/8", INTEGRALLY CAST WITH THE GRATE, MAY BE USED.



SECTION B-B



PLAN VIEW



SECTION A-A

CITY OF Spokane Valley

APPROVED BY:

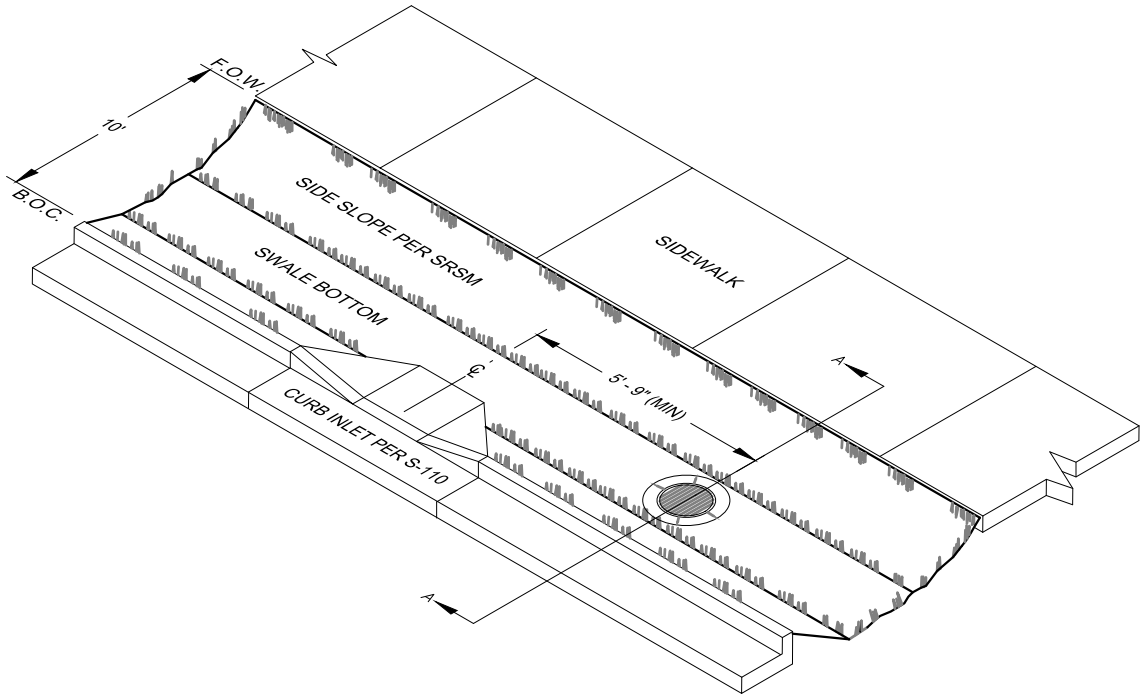
ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

METAL GRATE TYPE 3 (SUMP)

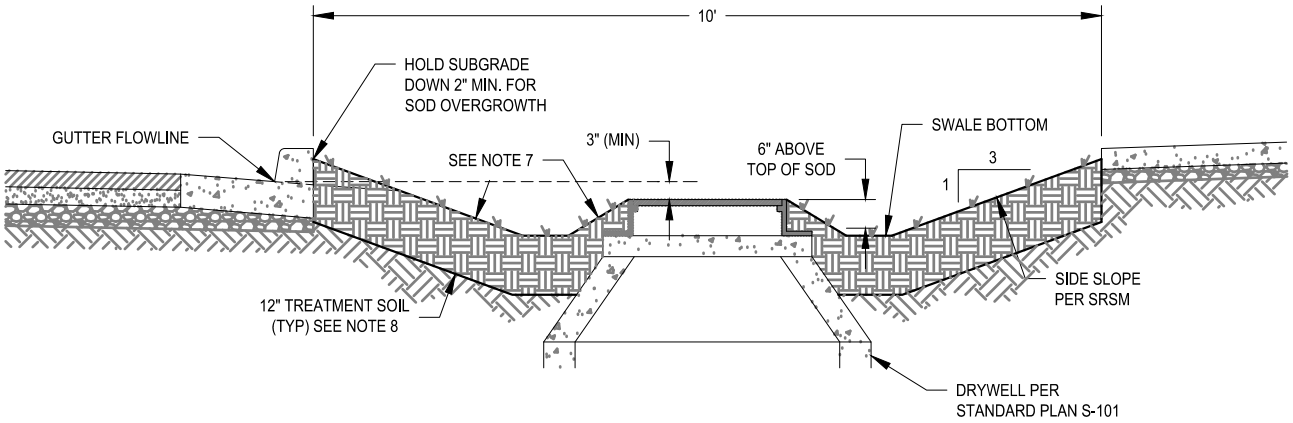
STANDARD PLAN NO. S-122

PUBLICATION DATE:	03/2025
REVISION NO.:	01

CREATION: 8/9/2023. REVISED: 3/20/2025 BY: JMORSE



ISOMETRIC VIEW



SECTION A-A

GENERAL NOTES:

1. SWALES WITH LONGITUDINAL SLOPE GREATER THAN 1% REQUIRE CHECK DAMS.
2. DRYWELLS NOT TO BE WITHIN 5' - 9" OF INLET CENTERLINE.
3. NO MORE THAN 4" OF TOPSOIL OVER UNCOMPACTED NATIVE SOIL.
4. NO COMPACTION IN SWALE BOTTOM.
5. SWALES ARE TO BE GRASSED AND IRRIGATED AS NECESSARY. SWALES WITHOUT IRRIGATION SHALL HAVE DROUGHT-TOLERANT DRYLAND GRASS.
6. SWALES SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE SPOKANE REGIONAL STORMWATER MANUAL (SRSM).
7. TOPSOIL SHALL BE SLOPED AROUND DRYWELL FRAME FROM BOTTOM OF SWALE TO TOP OF FRAME AT 3:1 MAXIMUM SLOPE.
8. THE TOP 12" OF SOIL SHALL CONSIST OF A THOROUGHLY BLENDED MIX OF 50% COMPOST WITH 50% NATIVE SOIL.

CITY OF Spokane Valley

APPROVED BY:

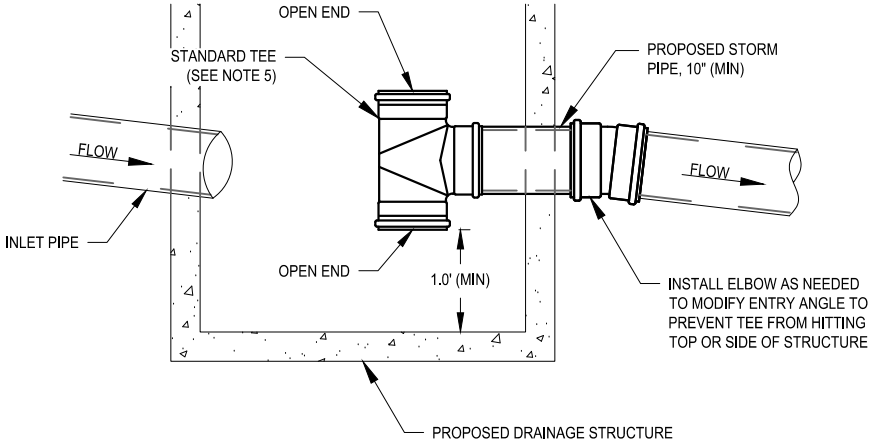
ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

ROADSIDE SWALE

STANDARD PLAN NO. S-130

PUBLICATION DATE:	03/2025
REVISION NO.:	01

CREATION: 1/16/2025. REVISED: 4/21/2025 BY: JMORSE



ELEVATION VIEW

GENERAL NOTES:

1. WHEN PVC PIPE IS USED, A SAND COLLAR SHALL BE INSTALLED.
2. PIPE SHALL BE 10" MINIMUM DIAMETER.
3. AFTER THE PIPE IS INSTALLED, FILL THE GAP WITH NON-SHRINK GROUT IN ACCORDANCE WITH STANDARD SPECIFICATION 9-20.3.
4. THIS PLAN INCLUDES INSTALLATION DETAILS ONLY. FOR FABRICATION DETAILS SEE APPROPRIATE WSDOT STANDARD PLANS AND SPECIFICATIONS.
5. DOWN TURNED 90 DEGREE ELBOW MAY BE USED IN PLACE OF THE TEE. TEE/ELBOW TO REMAIN REMOVABLE FOR MAINTENANCE.

CREATION: 1/22/2025. REVISED: 3/20/2025 BY: JMORSE

CITY OF Spokane Valley

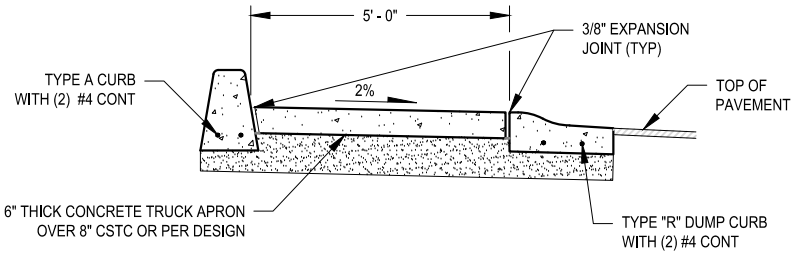
APPROVED BY:

ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

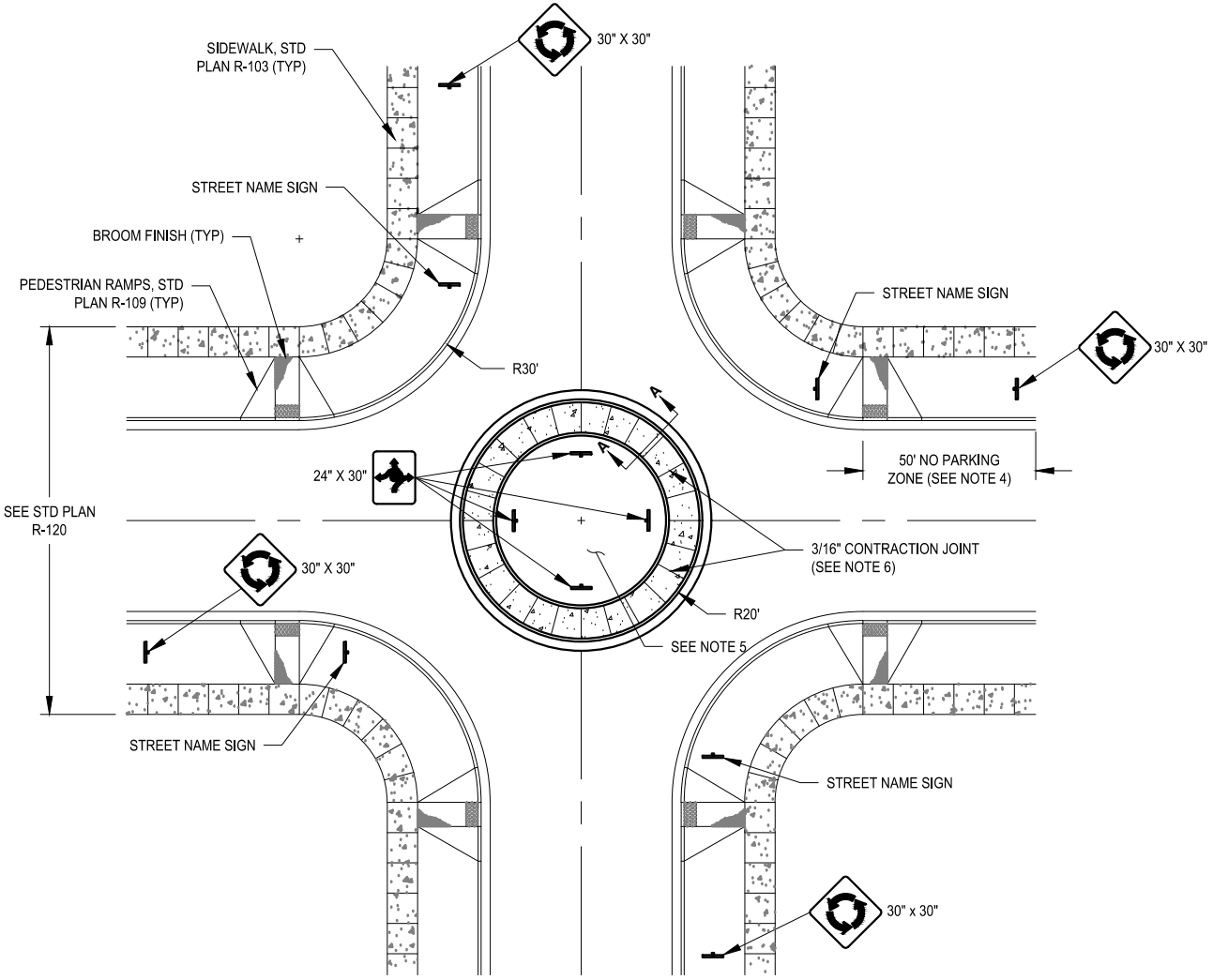
SPILL CONTROL SEPARATOR

STANDARD PLAN NO. S-140

PUBLICATION DATE:	03/2025
REVISION NO.:	01



SECTION A-A



PLAN VIEW

GENERAL NOTES:

1. SIGNAGE PER MUTCD, LATEST EDITION.
2. ALL RADIUS DIMENSIONS ARE TO FACE OF CURB.
3. ONLY TO BE USED ON RESIDENTIAL STREETS.
4. 50' NO PARKING ZONE APPLIES TO EACH LEG OF INTERSECTION BOTH SIDES OF STREET. R7-1 SIGNS WITH DOUBLE ARROWS PER MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
5. CENTER ISLAND LANDSCAPING TO BE PLACED IN CONFORMANCE WITH APPLICABLE SVMC REQUIREMENTS.
6. CONTRACTOR SHALL PLACE #5 TIE BAR x 30" LONG AT 24" O.C., CENTERED UNDER EACH CONTRACTION JOINT AT SLAB MID-DEPTH.

CITY OF Spokane Valley

APPROVED BY:

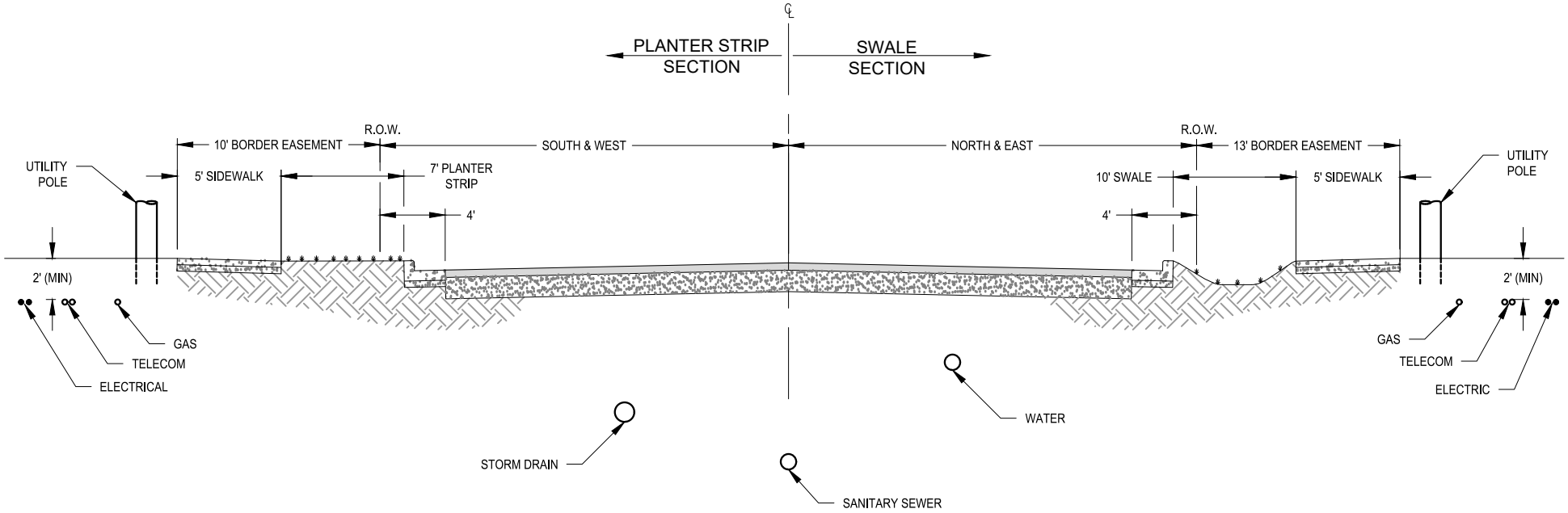
ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

TRAFFIC CIRCLE

STANDARD PLAN NO. T-101

PUBLICATION DATE:	03/2025
REVISION NO.:	01

CREATION: 10/11/2023. REVISED: 4/21/2025 BY: JMORSE



GENERAL NOTES:

1. THIS PLAN SHOWS NORMAL LOCATIONS FOR ALL UTILITY INSTALLATIONS.
2. LOCATIONS OF EXISTING UTILITIES MUST BE FIELD LOCATED WITH THEIR RESPECTIVE OWNERS BEFORE MAKING NEW CONNECTIONS.
3. UTILITY DEPTHS TO BE DETERMINED BY RESPECTIVE AGENCY AND/OR PROVIDER. MINIMUM UTILITY DEPTH BELOW FINISH GRADE SHALL BE 24 INCHES.
4. UNDERGROUND WARNING TAPE SHALL BE PLACED A MINIMUM OF 12 INCHES ABOVE ALL UTILITIES.

CREATION: 3/24/2025. REVISED: 4/21/2025 BY: JMORSE

CITY OF Spokane Valley

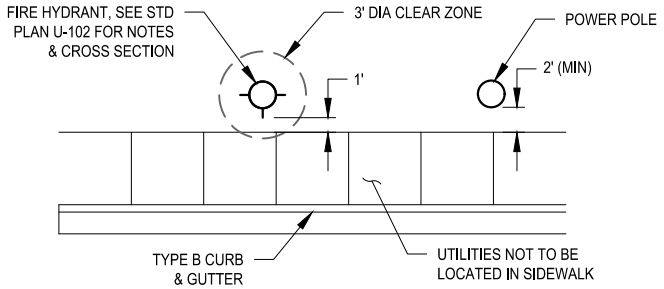
APPROVED BY:

ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

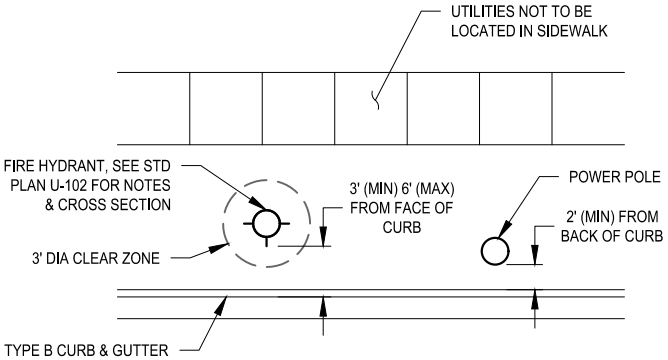
UTILITY LOCATIONS

STANDARD PLAN NO. U-100

PUBLICATION DATE:	03/2025
REVISION NO.:	01



STREETS WITH ADJACENT SIDEWALK



STREETS WITH SEPARATED SIDEWALK

GENERAL NOTES:

1. WHENEVER POSSIBLE, HYDRANTS SHALL BE LOCATED NEAR INTERSECTIONS.
2. PLACEMENT TO MEET ALL APPLICABLE CLEAR ZONE REQUIREMENTS.
3. THE PREFERRED LOCATION OF POWER POLES FOR NEW STREETS WITH SEPARATED SIDEWALK IS BEHIND THE SIDEWALK; HOWEVER, IF THE POWER POLE IS INSTALLED WITHIN THE PLANTER STRIP, THEN THE FACE OF POWER POLE SHALL BE SET 2' (MIN.) FROM BACK OF CURB.

CREATION: 3/24/2025. REVISED: 4/21/2025 BY: JMORSE

City of Spokane Valley

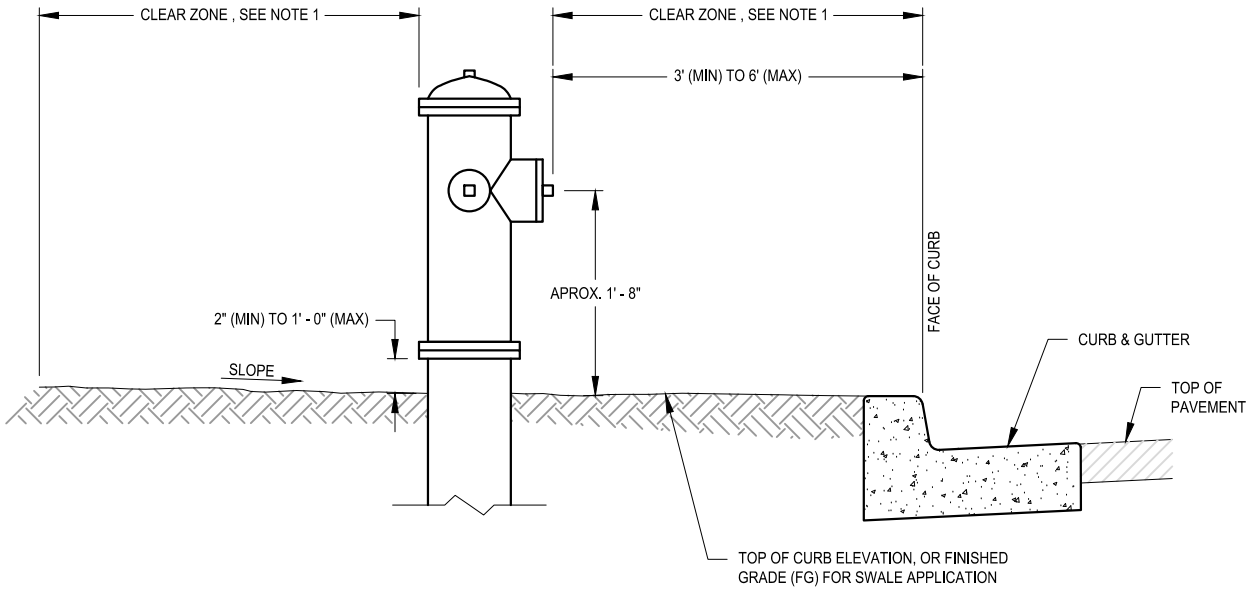
APPROVED BY:

ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

ABOVE GROUND UTILITY LOCATIONS

STANDARD PLAN NO. U-101

PUBLICATION DATE:	03/2025
REVISION NO.:	01



ELEVATION VIEW

GENERAL NOTES:

1. HYDRANTS SHALL STAND PLUMB. THE TRAFFIC BREAKAWAY FLANGE IS TO BE SET WITHIN 2" AT THE FINISHED CURB/GRADE ELEVATION WITH THE LOWEST OUTLET OF THE HYDRANT NO LESS THAN 20" ABOVE THE CURB GRADE. THERE SHALL BE A CLEAR AREA AROUND THE HYDRANT OF NOT LESS THAN 36" AS MEASURED FROM THE OUTSIDE EDGE OF THE BARREL OR OUTLET PORTS, WHICHEVER IS GREATER. HYDRANTS SHALL BE A MINIMUM OF 36" FROM THE FACE OF CURB AND NO MORE THAN 72" FROM THE FACE OF CURB.

2. HYDRANTS SHALL BE LOCATED AT ROADWAY INTERSECTIONS WHENEVER POSSIBLE.

3. ALL FIRE HYDRANTS SHALL HAVE A MINIMUM OF THREE OUTLETS, ONE 4-1/2 INCH INSIDE DIAMETER OUTLET AND TWO 2-1/2 INCH INSIDE DIAMETER OUTLETS. THREADS ON ALL OUTLETS SHALL BE NATIONAL STANDARD THREAD (NST).

4. THE 4-1/2 INCH PORT SHALL FACE THE STREET. WHERE THE STREET CANNOT BE CLEARLY DEFINED (SUCH AS PARKING LOTS) THE PORT SHALL FACE THE MOST LIKELY ROUTE OF APPROACH (E.G., FIRE LANE) AND LOCATION OF THE FIRE APPARATUS WHILE PUMPING, AS DETERMINED BY SPOKANE VALLEY FIRE DEPARTMENT.

5. HYDRANT COLORS SHALL BE AS FOLLOWS:
   a. CHROME YELLOW - HYDRANTS OWNED BY DISTRICTS
   b. RED - PRIVATELY OWNED HYDRANTS

6. CLEAR ZONE SHALL BE FREE OF ALL OBSTRUCTIONS, INCLUDING BOLLARDS, FENCING, TREES, AND SHRUBS.

CREATION: 3/24/2025. REVISED: 3/24/2025 BY: JMORSE

CITY OF Spokane Valley

APPROVED BY:

ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

FIRE DEPARTMENT HYDRENT REQUIREMENTS

STANDARD PLAN NO. U-102

PUBLICATION DATE:	03/2025
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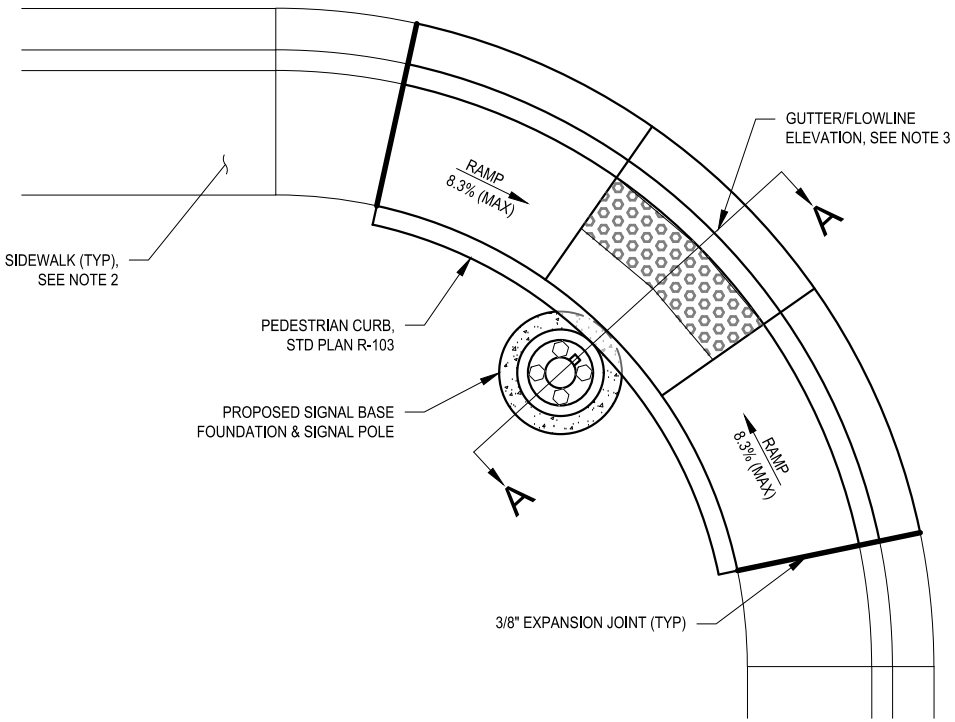
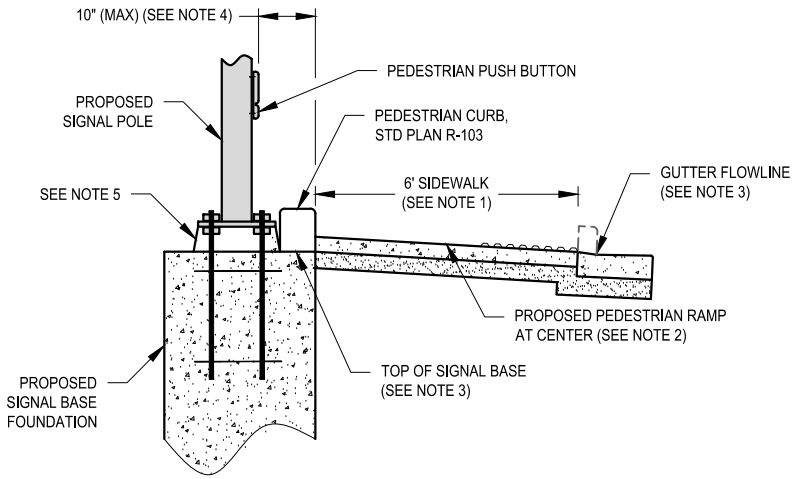


PLAN VIEW



SECTION A-A

GENERAL NOTES:

1. DUE TO VARIOUS RAMP STYLES AND CONFIGURATIONS, THE HORIZONTAL DISTANCE FROM FACE OF CURB TO SIGNAL POLE MAY VARY.
2. CROSS SLOPE IS 1.5% ± 0.5%, 2% MAX. SIDEWALK SHALL NOT EXCEED ADA STANDARDS.
3. SIDEWALK CONFIGURATIONS MAY DIFFER. ALWAYS USE GUTTER/FLOWLINE AT CENTER OF RAMP TO DETERMINE SIGNAL BASE HEIGHT. TOP OF SIGNAL BASE FOUNDATION SHALL BE SET 3" BELOW THE GUTTER FLOWLINE ELEVATION.
4. PEDESTRIAN PUSH BUTTON SHALL NOT BE MORE THAN 10 HORIZONTAL INCHES FROM CLEAR EDGE OF RAMP, PEDESTRIAN WALL, OR OTHER OBSTRUCTIONS.
5. PROVIDE A MINIMUM 1 INCH CLEAR SPACE BELOW LOWER ADJUSTING NUT.
6. SEE STANDARD PLAN R-109 FOR INDIVIDUAL RAMP SPECIFICATIONS.

CITY OF Spokane Valley

APPROVED BY:

ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

SIGNAL POLE BASE AT CURB RAMP

STANDARD PLAN NO. U-103

PUBLICATION DATE:	03/2025
REVISION NO.:	01

CREATION: 3/20/2025. REVISED: 4/21/2025 BY: JMORSE