

DIVISION 1: GENERAL

1.1 GENERAL REQUIREMENTS FOR PUBLIC IMPROVEMENTS

A. APPLICABILITY

1. These Design Standards are applicable to all improvements within existing and proposed public right-of-way and public utility easements, all improvements which are or will be maintained by the City, and all improvements that require approval by the City according to the Dundee Development Code.

B. GENERAL

1. All work which these Design Standards do not discuss but for which they apply shall conform to the latest revision of the Oregon Standard Specifications for Construction (OSSC).
2. These Dundee Design Standards will be cited routinely in the text as the "Design Standards."
3. These Design Standards cannot provide for all situations. They are intended to assist but not to substitute for competent work by design professionals. The Design Standards are also not intended to limit unreasonably any innovative or creative effort which could result in increased quality, cost savings, or both.
4. The City Engineer has the authority to supersede any standards within this document.
5. Wherever specific supplementary standards (i.e. AWWA C-150, ASTM C-857) and manuals are indicated, it shall be understood to mean the latest revision thereof.
6. The provisions of these Design Standards are binding on owners, contractors and developers in the performance of any work covered under these Design Standards. Where minimum values are stated, greater values should be used whenever practical; where maximum values are stated, lesser values should be used whenever practical.
7. All other utility improvements, including telephone, electrical power, gas and cable TV shall meet the current standards of the appropriate agency as well as these Design Standards.
8. Traffic control devices shall meet the standards of the current Manual on Uniform Traffic Control Devices (MUTCD), including Oregon amendments.
9. These Design Standards are not to be intended to replace building codes, development or zoning ordinances and other regulations for which procedures and standards have been established. Planning, zoning and related matters shall be satisfied prior to submitting an application for a public works construction permit.
10. All construction resulting from these Design Standards shall conform to the most recent addition of the OSSC.

C. ENGINEERING POLICY

1. The engineering policy of the City of Dundee requires compliance with Oregon Revised Statute 672 for professional engineers. The following requirements shall be applicable to the design of streets, parking lots, grading plans, sanitary sewers, storm drain systems, detention ponds, water quality facilities or enhancements and water distribution and storage facilities.
2. All engineering drawings, reports, or documents designated herein shall be prepared by a professional Civil Engineer registered in the state of Oregon, or by a subordinate employee under his direction, and shall be signed by him and stamped with his seal to indicate responsibility for them.
3. It shall be the Design Engineer's responsibility to review any proposed extension, modification or improvement of a public utility system with the City prior to final engineering and design work to determine any special requirements or whether the proposal is permissible. A preliminary review and/or approval of the drawings for construction for any project does not in any way relieve the Design Engineer of his responsibility to meet all requirements of the City or the obligation to protect life, health and property of the public. The drawings for any project shall be revised or supplemented at any time it is determined that the full requirements of the City have not been met.

D. CONTRACTING POLICY

1. The policy of the City for construction of public improvements covered under these Design Standards requires that the contractor be registered with the Oregon Construction Contractors Board.

E. ABBREVIATIONS, DEFINITIONS AND TERMS

1. Refer to Section 00110 of the current Standard Specifications for Construction, for abbreviations, definitions and terms not listed below:

100 Year Flood	The flood event having a 1% chance of being equaled or exceeded in any given year.
ADA	Americans with Disabilities Act Of 1990.
ADT	Average Daily Traffic.
Air Gap Separation:	A physical vertical separation between the free-flowing discharge end of a potable water supply and the rim of any open, non-pressurized receiving vessel.
Alley	A public right-of-way not more than 20 feet and not less than ten (10) feet in width, which intersects with a public street.
Alta	American land title association.
Approved Backflow Prevention Assembly:	An assembly that has been investigated and approved by the Oregon Health Authority - Public Health Division for preventing backflow.
Appurtenance	Any fixed object located adjacent to the roadway and deemed to be a possible safety hazard.

Arterial Street	A street of considerable continuity which is used for moving large volumes of traffic to and from the highway and for interconnection between major areas of the City.
As-Built Drawings	Drawings prepared by the Design Engineer, signed and dated by the City representative indicating the drawings have been reviewed and revised, if necessary, to accurately show all as-built conditions and construction details.
Backflow	The flow of water or other fluids in a direction opposite to the normal flow.
BES	City Of Portland Bureau of Environmental Services
Bicycle Facilities	A general term denoting improvements and provisions which accommodate or encourage bicycling, including parking facilities, maps, signs, pathways, bike lanes, widened sidewalks, bikeways, and shared roadways designated for bicycle use.
Bicycle Path (Off-Street Pathway)	A paved pathway physically separated from motorized vehicular traffic by an open space or barrier within an independent right-of-way.
Bicycle Route (Bike Route)	A segment of a system of bikeways designated by the jurisdiction having authority with appropriate directional and informational markers, with or without a specific bicycle route number, or as designated on a bicycle map, brochure, or guidebook.
Building Sewer:	That part of the horizontal piping of the drainage system which extends from the end of the building drain and which receives the discharge of the building drain and conveys it to a public sanitary sewer system, private sanitary sewer system, individual sewage disposal system, or other approved point of disposal.
Building Supply:	The pipe carrying potable water from the water meter or other source of water supply to a building or other point of use or distribution on the lot. Building supply shall also mean customer line.
CARV	Combination Air and Vacuum Release Valve.
Catch Basin, CB	An approved receptacle designed to receive surface drainage and direct it to a stormwater collection system.
CBE	Crushed base equivalent (cbe) is the number that directly relates the traffic coefficient to the required number of inches of rock for street structural sections.
CBR	California Bearing Ratio.
CI	Cast Iron
City	City of Dundee, Oregon
City Engineer	City Engineer for the City of Dundee.
Clear Vision Area	A triangular area on a lot at the intersection of two streets or a street and a railroad, the sides of which are lines measured from the corner intersection of the right-of-way lines. The third side of the triangle is a line across the corner of the lot joining the ends of the other two sides. Where the lines at the intersections have rounded corners, the right-of-way lines will be extended in a straight line to the point of intersection.
CMP	Corrugated Metal Pipe (aluminum)

Collection Sewer:	Lateral and mainline sanitary sewers.
Collection System:	Facilities maintained by the City for the collecting, conveying, pumping and controlling of wastewater.
Collector Street	A centrally located street for moving traffic from arterials to local streets.
Contractor	Any individual, firm, co-partnership, corporation or any combination thereof who has or have been named on a public works construction permit as the person responsible for the construction of the subject work, or who have entered into a contract with the City for a particular project.
Construction Drawings	Drawings prepared by a registered professional engineer, including site plans, plan and profile views of utilities, cross sections, detailed drawings, etc. Or reproductions thereof, approved by the City Engineer, which show the location, character, dimensions and details for the work to be done.
Contact Cooling Water:	Water used as a medium for carrying away excess heat which, in the course of cooling process, comes in direct contact with the product, is mixed or co-mingled with any other substance or used as a means of carrying off any other substance, in suspension or in solution.
Cul-de-sac	A dead-end street with only one inlet/outlet
Cut Sheets	Construction submittals as required by section 1.3 of these Design Standards.
Creek	Any and all surface water generally consisting of a channel having a bed, banks, and/or sides in which surface waters flow to drain higher land to lower land, both perennial and intermittent, excluding flows which do not persist for more than 24-hours after the cessation of ½-inch of rainfall in a 24-hour period from October through March.
Cross Connection	Any connection or arrangement, physical or otherwise, Between a potable water supply system and any plumbing fixture or any tank, receptacle, equipment or devise, through which it may be possible for non-potable, used, unclean, polluted and contaminated water, or other substances, to enter into any part of such potable water system under any condition.
Customer Water Supply System	The water supply system of a building, premises or private system consists of the all supply pipe and appurtenances from the customer side of the water meter.
Design Engineer	The engineer licensed by the State of Oregon as a civil engineer under whose direction plans, profiles and details for work are prepared and submitted to the City for review and approval.
Detention	The holding of runoff for a short period of time while releasing it to the downstream drainage system at a controlled rate.
Developer	The owner and/or their agents or contractors responsible for a given project.
DI	Ductile Iron

Distribution Mains	All mains which are not designated as transmission mains, and which are used for supply to individual consumers. As a general rule these are the smaller mains in the water supply system.
Distribution System	Distribution main pipelines, pumping stations, valves and ancillary equipment used to transmit water from the supply source to the service line.
Domestic Sewage	The liquid and water borne waste derived from the ordinary living processes, free from industrial wastes, and of such character to permit satisfactory disposal, without special treatment into the public sanitary sewer or by means of private sanitary sewage disposal systems.
Double Check Valve Assembly	An assembly composed of two single, independently acting check valves, including tightly closing shut-off valves located at each end of the assembly and fitted with properly located test ports.
Double Detector Check Valve Assembly	A line-sized approved double check valve assembly with a parallel meter and meter-sized approved double check valve assembly.
Downstream Intersection	The nearest intersection from a driveway located in the direction of traffic flow of the nearest lane of the abutting street.
Drainage Basin	The area of contributing runoff from the discharge to the most remote point of the entire city system.
Drainage Facilities/System	Pipes, ditches, detention basins, creeks, culverts, etc. Used singularly or in combination with each other for the purpose of conveying or storing stormwater runoff.
Drainage Waste	Stormwater, groundwater, surface drainage, subsurface drainage, spring water, well overflow, roof drainage, or other like drainage other than sewage or industrial waste.
Dwelling Unit	A facility designed for permanent or semi-permanent occupancy and provided with minimum kitchen, sleeping and sanitary facilities for one family.
Easement	Areas along the line of public utilities which are outside of dedicated right-of-way. Easements shall be prepared on City forms granting rights along the public utility line to the City.
Expansion Joint	A joint to control cracking in the pavement structure and filled with preformed expansion joint filler.
FEMA	Federal Emergency Management Agency.
Fire Department Connection	A connection through which the fire department can pump supplemental water into the sprinkler system, standpipe, or other system, furnishing water for fire extinguishment to supplement existing water supplies.
Fire Protection Service	A connection to the public water main intended only for the extinguishment of fires.
Fixture Unit Equivalents	The unit equivalent of plumbing fixtures as tabulated in chapter 4 of the uniform plumbing code.
GPS	Global Positioning System.
Grade	The degree of inclination of a road or slope.

HDPE	High Density Polyethylene
Health Division	Oregon Health Authority, Public Health Division. (OHA PHD)
Hydrant Lead	The line connecting the fire hydrant to the City main or private fire line.
IE	Invert Elevation.
Impervious Areas/Surfaces	Those hard surface areas located which either prevent percolation of water or reduce the percolation rate which existed under natural conditions prior to development
Industrial Waste	Waterborne waste and wastewater from an industrial user.
Inspector	The authorized representative of the City whose instructions and decisions shall be limited to the particular duties and responsibilities entrusted to him/her in making detailed inspections of any or all portions of the work or materials.
Intersection	The meeting point of two streets having at least three legs.
IPC	International Plumbing Code With Oregon Amendments.
Irrigation Service	A metered connection intended for seasonal use and delivering water which is not discharged to the sanitary sewer.
Lateral Sewer	Any public sanitary sewer which has no other common sanitary sewers discharging into it.
Local Or Residential Street	A facility not designed as an arterial or collector. It serves primarily to provide direct access to abutting land and offers the lowest level of traffic mobility. Through traffic movement is deliberately discouraged.
Longitudinal Joint	A joint which follows a course approximately parallel to the centerline of the roadway.
Mainline Hydrant Valve	The isolation valve between the City water main or private fire line and the fire hydrant.
Mainline Sewer	Any public sanitary sewer which receives flow from one or more lateral sewers.
Multiple Family Dwelling	A building or portion designed thereof for occupancy by two or more families, living independently of each other.
Multi-Use Trail	A pathway designated for pedestrian or bicycle use.
Natural Grade:	The grade with the land in an undisturbed state.
Noncontact Cooling Water:	Water other than sewage or industrial waste which is used as a medium for carrying away excess heat from apparatus, appliance, mechanism or device.
OHA PHD	Oregon Health Authority – Public Health Division
One-Way Driveway:	A driveway of either ingress or egress, but not both.
On-Site Detention:	The storage of excess runoff on the development site and gradual release of the stored runoff into a public storm drain system after the peak of the runoff has passed.
OSSC	The most current version of the Oregon Standard Specifications for Construction published jointly by the Oregon Chapter of APWA and the Oregon Department of Transportation (ODOT).

Owner	Any Individual, Partnership, Firm Or Corporation By Whom The Design Engineer Has Been Retained Or Who, As A Property Owner, Is Making Arrangements With The City.
Parking Lot	Paved surfaces on private property intended for the movement and storage of six (6) or more vehicles.
Parking Space:	A designated space in a parking area for the parking of one motor vehicle.
PCC	Portland Cement Concrete
Peak Discharge:	The maximum water runoff rate determined for the design storm.
Person	Individual, Firm, Corporation, Association, Agency Or Other Entity.
PGE	Portland General Electric
Plans	See Construction Drawings.
Plumbing System	All plumbing fixtures and traps, or soil, waste, special waste and vent pipes within a building and to a point five feet outside the building foundation thereof.
Potable Water	Water which is satisfactory for drinking, culinary and domestic purposes.
Private Collection System/Private Sewer	A privately owned and maintained sanitary sewer system.
Private Distribution System	A privately owned and maintained water distribution system.
Private Storm Drain	A storm drain located on private property serving more than one structure, and not operated or maintained by the City.
PROWAG	Public Right-of-way Accessibility Guidelines.
PRV	Pressure Reducing Valve.
Public Sewer:	Any sanitary sewer in the public right-of-way or easement operated and maintained by the City.
Public Storm Drain:	Any storm drain in a public right-of-way or easement operated and maintained by the City.
PVC	Polyvinyl Chloride
RCP	Reinforced Concrete Pipe
Receiving Body Of Water	Creeks, streams, lakes, and other bodies of water into which runoff is naturally or artificially directed.
Release Rate	The controlled rate of release of drainage and runoff water from property, storage ponds, detention basins, or other facility during and following a storm event.
Residential User	The owner, lessee, or occupant of a single dwelling unit in one structure.
Retention Facility	Facilities which hold water for a considerable length of time and then consume it by evaporation, plant transpiration, or infiltration into the soil.
Roadway	All of that portion of the right-of-way used, for vehicle movement, which exists between the curbs or proposed curbs or proposed curb lines.

Right-Of-Way (ROW)	All land or interest therein which by deed, conveyance, agreement, easement, dedication, usage, or process of law is reserved for or dedicated to the use of the general public free of all encumbrances, within which the City shall have the exclusive right to install and maintain streets and public utilities.
Sedimentation	Deposition of debris or soil sediment displaced by erosion.
Service Lateral	That portion of the building sewer from the right-of-way line to a public sanitary sewer, private sanitary sewer, individual sanitary sewage disposal system, or other point of disposal.
Service Line	The waterline or pipe extending from the distribution main to the water meter, backflow prevention device, or private fire system double check valve
Sewage	The wastewater derived from human habitation and use of buildings for residential, institutional or commercial purposes, excluding storm waters and industrial waste.
Sidewalk	The portion of a street designed for preferential use by pedestrians.
Single Family Dwelling	Any residential building designed to house one family.
Standard Details	The drawings of structures or devices commonly used on work within the City of Dundee and referred to on the construction drawings. Also called standard drawings.
Standards	City of Dundee Design Standards.
Standard Specifications	The most current version of the Oregon Standard Specifications for Construction published jointly by the Oregon Chapter of APWA and the Oregon Department of Transportation (ODOT)
Street	A public or private way which affords the principal means of access to abutting property.
Street or Road	Any public highway, road, street, avenue, alley, way, easement or right-of-way to be used for vehicle movement.
Superelevation	The vertical distance between the heights of the inner and outer edges of pavement on horizontal curves.
Survey Cut Sheets	Sheets of tabulated survey data, indicating stationing, structures, fittings, angel points, beginning of curve, points on curve, end of curves, staking offset, various elevations and offset utility cuts.
Terrace	A relatively level step constructed in the face of a slope for drainage, erosion control and maintenance purposes.
Three-Quarter (3/4) Street:	A ± 75 percent portion of the ultimate width of a Street, but not less than 28 feet from face of curb to edge of pavement, usually along the edge of a development, where the remaining portion or tile street shall be provided when adjacent property is developed.
Traffic Coefficient	A number used in determining the structural section of a street.
Trail (Bike Or Pedestrian)	In the context of the general plan - "trail" is synonymous with bicycle path (off-street pathway).
Transition	The taper between portions of a street with different pavement widths.

Transmission Mains (Supply Lines):	Mains which are used for transporting water from the source of supply and storage reservoirs to the centralized point of distribution and distribution reservoirs.
Transverse Joint:	A joint which follows a course approximately perpendicular to the centerline of the roadway.
Trunk Drainage System:	That portion of the drainage system which receives waters from upstream land areas requiring in excess of 18" diameter pipe. The drainage system may consist of watercourses or manmade facilities such as pipes, ditches, and culverts.
Trunk Sewer:	A public sanitary sewer ten inches or larger which has been or is being constructed to receive the flow of more than one mainline sewer.
Turnaround Area:	A paved area of sufficient size and configuration that emergency vehicles may maneuver around to head in the opposite direction without having to move in reverse more than once.
Turnpike Street:	Any public street, road or right-of-way which has been paved for vehicular movement and does not have curbs, sidewalks or piped storm drainage facilities.
Two Way Driveway:	A driveway functioning as both an exit and entrance.
UGB	Urban Growth Boundary
Upstream Intersection	The nearest intersection from a driveway located in the direction opposite the traffic flow of the nearest lane of the abutting street.
Water Main	A water-supply pipe for public or community use.
Water Master Plan	The water system evaluation and master plan for the City of Dundee, Oregon, most recent revisions.
Work	All material, labor, tools, equipment, and all appliances, machinery, transportation, and appurtenances necessary to perform and complete the contract, and such additional items not specifically indicated or described which can be reasonably inferred as belonging to the item described or indicated and as required by good practice to provide a complete and satisfactory system or structure.

F. LOCATION OF UTILITIES WITHIN RIGHT-OF-WAY

1. The Standard Details indicate the general required location for each utility within the public right-of-way.
2. Installation of private utilities in a common trench with water, sanitary sewer or storm drain mainlines is prohibited.

G. PROVIDING FOR FUTURE DEVELOPMENT

1. Water, storm drain and sanitary sewers systems shall be sized to accommodate the entire drainage basin or immediate service area which they will ultimately serve.
2. Utilities and street improvements shall be extended to the boundaries of the development to provide for future extensions to the adjoining areas and prevent adjoining properties from becoming landlocked. In the case of utilities, this shall include extension to the far side of streets fronting or adjacent to the development as required to avoid work within or under these streets in the future
3. The City has the authority to require over-sizing of utility lines to accommodate future growth of the City.
4. Where existing City utility lines and/or roadways do not adjoin the proposed development or the capacity of existing lines is inadequate, the developer will be required to extend new improvements to the development as necessary, and extend them to provide for service to adjacent properties.
5. As a condition of water service, all developments will be required to provide public water mains of sufficient size for fire protection to adjacent parcel. This shall include the extension of water mains in easements across the property to adjoining properties and across the street frontage of the property to adjoining properties when the main is located in the street right-of-way. This shall include extension to the far side of streets fronting or adjacent to the development as required to avoid work within or under these streets in the future. This shall include waterlines that are oversized to provide capacity for required fire flows.

H. PERMITS

1. Permits, approvals, or agreements are required by the City, and sometimes other jurisdictions or agencies prior to initiating any construction or demolition work elements described within these Design Standards.
2. No developer, person or organization (other than the City of Dundee) shall begin to construct, reconstruct, cut, excavate, repair, modify, alter, or grade any sidewalks, curb, curb-cut, driveway, parking area, street, or begin to lay and install any sanitary sewer, water mainline, storm sewer, including appurtenances or service laterals, or other private or franchise utility within any public right-of-way, public utility easement or private property within the jurisdiction of the City without first obtaining approvals from the Public Works Supervisor and the City Engineer as required by these Design Standards, paying any required plan review and construction permit fees, depositing any required performance security, and obtaining a street/utility construction permit therefore as provided herein.
3. The majority of work covered under these Design Standards will require multiple permit authority review and approvals. Several types of permits and approvals require prior approval from the authority before a building or other substantial permit can be issued. Any questions regarding information about permits, approvals, and agreements should be directed to the City Engineer.

4. A Street or utility construction permit is required for, but not limited to the following types of work. This list is not all inclusive. The intent is that any work covered under the Design Standards will require a utility/street construction permit prior to construction.
 - a. Streets: A permit shall be required for any work on a public street, dedicated fire lane, sidewalk, curb, curb-cut, driveways and driveway approaches within a public right-of-way, or within an existing or proposed public easement or fire lane, including signs, traffic markings and traffic control devices.
 - b. Storm sewer: A permit shall be required for any work to lay and install any storm sewer and storm sewer appurtenances, including detention ponds, water quality facilities and storm drainage service lateral(s), within any public right-of-way, existing or proposed public utility easement and on all private property (except single family residential).
 - c. Sanitary Sewer: A permit shall be required for any work to lay and install any sanitary sewer pipeline and appurtenances, including sanitary sewer service lateral(s), within any public right-of-way or within any existing or proposed public utility easement.
 - d. Water: A permit shall be required for any work to lay and install any water main and appurtenances, including water service lines and meter boxes, within any public right-of-way or within any existing or proposed public utility easement, or any improvements attached to the City water system.
 - e. Parking Lots, Private Streets, Common Use Driveways and Public Accessways: a permit shall be required for any work on a parking lot, private street, common use driveway or public accessway, both vehicular and pedestrian, that takes access from a Public City street, that discharges storm drainage to a public storm drain system, or that overlies a public sanitary sewer or water line. A City utility/street construction permit is not required for the portion of single family residential driveways (serving a single residence or duplex) that is outside the public right-of-way or public utility easements.
 - f. Site grading and filling. A permit shall be required for any site grading, filling or fill stockpiling operations as follows:
 - i. Projects that require site grading, filling or fill stockpiling operations associated with development of the property.
 - ii. Site grading, filling or fill stockpiling operations over existing public sanitary sewer, storm drain or water distribution lines, or such operations within existing or proposed public utility easements.
 - g. Street Closure: In the event any of the above activities or any activities related to the construction of a building, structure, or parking lot, which requires the temporary closure of a street, alley, lane of traffic, or sidewalk to vehicle or pedestrian flow, a permit shall be obtained from the City for said closure.
 - h. Franchise Utilities: A permit covering any work on underground franchise utilities within any public right-of-way or within any existing or proposed public utility easements. Permits will not be required for work on overhead or above grade franchise utilities which do not involve excavation within the areas specified herein

unless it includes the placement of improvements into the ground (i.e.: poles, guys, etc.).

I. APPROVAL OF CONSTRUCTION DRAWINGS REQUIRED

1. Construction drawings (plans) shall be submitted for review and approval prior to issuance of permits required by these Design Standards. Permits shall have the written approval of the Public Works Supervisor or his designated representative and the City Engineer prior to issuance of the permit. For subdivisions and other developments requiring improvements to public streets and/or multiple public utility systems, construction drawings for sewer, water, streets, and storm drains shall be submitted simultaneously to facilitate checking for conflicts.
2. Construction drawings submitted for approval shall be subject to the standards, specifications, policies and procedures, plan check, and permit fees of the Public Works Department in effect at the time of application or reapplication for plan check.
3. Except as provided below, such construction drawing approval shall be void upon expiration of six months from the date of written approval. Resubmittal of construction drawings will require that they be updated to reflect current City Design Standards.
4. Upon a written verification by the City Engineer that the facts upon which the plan approval was based have not changed to an extent sufficient to warrant a new review of construction drawings, the plan approval may be extended for a period not to exceed six additional months. No more than two such six month extensions shall be granted for any one development or project, resulting in a maximum time extension of one year. Reapplication for plan check must be upon expiration of said six month period, or extension periods provided herein, if the project is not completed within said approval or extension period.
5. All plans, reports, or documents for public utility improvements required by these Design Standards or the City Development Ordinances or other City ordinances shall be prepared by and certified by a registered professional civil engineer licensed by the State of Oregon.

J. SUBMITTAL REQUIREMENTS

1. GENERAL

- a. Submittal requirements consist of design plans, grading plans (where required), erosion control plans (where required), drainage calculations, geotechnical reports, and other information as required. Letters of transmittal referencing the project name shall accompany all submittals.
- b. The developer shall obtain a construction permit and begin construction within six (6) months from the time the construction drawings are approved by the City Engineer. If construction does not begin within this period, the approvals or the construction drawings shall be null and void. Renewal of the construction permit may result in additional conditions to meet new standards, changed conditions or new information discovered since the original approval.

2. PHASED DEVELOPMENT

- a. In the case of a development approved to be constructed in phases, the construction drawings for each phase shall be capable of standing alone.
- b. Approval by the City Engineer of construction drawings for each phase of a phased development shall be independent.

3. SUBMITTAL PLAN REVIEW PROCESS AND REVIEW FEES

- a. All plans must be legible and easy to read and understand.
- b. Pre-Design Conference: the developer is encouraged to meet with the City Engineer prior to final design of the proposed improvements. It shall be the developer's responsibility to provide the City Engineer with base maps showing existing utilities and proposed street improvement limits prior to the pre-design conference.

c. PLAN CHECK SUBMITTAL

- i. The submittal for plan check shall be filed by the responsible party (the Design Engineer for any improvements) with the City Engineer for any permits required by these Design Standards. Such submittal for plan check shall include the following as applicable, incomplete submittals may be returned without review:
 - 1) Name and address of the owner or owners of the property;
 - 2) Name and address of the developer of the property;
 - 3) Name, address, and phone number of the designer (Design Engineer for improvements);
 - 4) Description of the work area location, including addresses and tax lot numbers as applicable;
 - 5) Three sets of complete construction drawings, design reports and any supporting calculations.
 - 6) Estimated construction cost of the proposed project, or estimates based on the construction cost estimate schedule established by the Public Works Supervisor or the City Engineer.
 - 7) Plan review fees as prescribed by resolution of the City Council
 - 8) Required review fees are nonrefundable, and are required to support permit plan review. Additional fees may be charged to cover the actual plan review expenses.
 - 9) Evidence that all federal and state laws and regulations have been complied with, including a copy of any permits required by federal, state, or county agencies.
 - 10) Such other information as the City shall find reasonably necessary for the determination of whether plans should be approved for permit.

- d. Upon completion of the preliminary review, the City will return one (1) set of drawings outlining the required revisions. In order to be entitled to further review, the applicant's engineer must respond to each comment of the prior review. Resubmittals shall consist of a minimum of three (3) sets of drawings and/or calculations as necessary.
- e. Once the preliminary review has been completed and required revisions made, the developer shall circulate the drawings to all utility service companies within the City and other agencies as required.
- f. Prior to final approval of the construction drawings, all proposed drawings from utility service companies must be received and approved by the City. Approvals from other agencies with jurisdiction must also be received, including but not limited to the Oregon Health Authority – Public Health Division (OHA PHD), Department of Environmental Quality (DEQ), Department of Transportation (ODOT) and Yamhill County wherein each has jurisdiction.
- g. The applicant is responsible for the coordination with the various utilities and agencies during design and construction.
- h. Upon final approval of the drawings, submit a minimum of five (5) hard copies and one electronic copy of the revised drawings to the City to be stamped as approved for construction. Additional sets may be submitted at the developer's option.

4. SHEET SIZE AND SCALE

- a. All construction plans shall be on sheets measuring 22 x 34 inches (11x17, half-size reduction) or 11x17. The scale shall be 1"=10', 20', 40' or 50' horizontal and 1"=2', 4' or 5' vertical for all drawings except architectural, structural or mechanical drawings. The scale of corresponding plan views and profiles shall be the same. Scale shall be shown with north arrow and within a title block. Letter size shall not be smaller than 0.08 inch high

5. REQUIRED SHEETS

Construction plan submittals shall contain the following minimum sheets: title sheet (unless not required by the City Engineer), plan and profile sheet(s) for street, storm sewer, water, and wastewater sewer, overall utility plan (existing and proposed), proposed grading, temporary and permanent erosion control, and detail sheet(s) plus any other relevant construction details.

a. TITLE SHEET(S)

- i. All projects shall have a title sheet as the first page of the construction plans. This sheet shall contain the following minimum information:
 - 1) Site plan of entire project at a 1" = 100' scale. A 1" = 200' scale may be used if project size is too large. The site plan may also be a composite utility plan showing all properties served by proposed sewer, water, and storm facilities, in addition to the proposed facility.
 - 2) Vicinity map at a 1" = 1000' scale or greater.
 - 3) Index of sheets.

- 4) Complete legend of symbols used.
- 5) General and construction notes pertinent to project.
- 6) Temporary and/or permanent benchmarks used along with their descriptions, elevations of benchmark, and datum (when topographic survey is presented separately, show this information on that sheet.).
- 7) Engineer's name, address, phone number including emergency contact information, fax number, email, and seal.
- 8) Developer's/owner's name, address and phone number including emergency contact information.
- 9) Statement referencing City of Dundee Standard Specifications.
- 10) Contact phone number for all affected utility companies including the City.

b. EROSION CONTROL PLAN

- i. The erosion control plan shall address the measures as defined in Division 6 – Erosion Control.
- ii. The plan shall include existing contours at two (2) foot intervals, or as approved by the City, including location of erosion control facilities, outlet structures and existing public and private utilities.

c. PLAN SHEET(S)

- i. The plan view of each sheet shall be drawn at the appropriate scale showing the following minimum information:
 - 1) Street curbs, property lines, right-of-way lines, utility easements referenced to property lines, street centerlines, and intersections. Show property corner and curb elevations to determine water service level, serviceability of lot/property for wastewater sewer, points of disposal for building storm drains, and how new curbs will join to existing curbs.
 - 2) Location of all underground utilities within 100 feet of project (if they are affected by the project), existing power/telephone poles and guy anchors, valves, manholes, catch basins, fire hydrants, meter boxes and vaults, signs, etc. Location of nearest street light(s) and fire hydrant(s) even if distance is greater than 100 feet.
 - 3) Location of all water courses, railroad crossings, culverts, bridges, large water transmission pipes, sewers, and/or storm drainage facilities within 200 feet of proposed sewer and storm drain extensions. All water courses shall show the 100-year flood plain as indicated on FEMA maps and any current or proposed wetlands.

- 4) On sewer and storm drain plans, each manhole, catch basin, and cleanout shall be numbered and stationed. Stationing shall tie to existing street monuments, property corners, or manholes. Stationing for each line shall increase from left to right on the plan sheet. This typically results in north pointing to the top or to the right of the sheet.
- 5) On street plans, horizontal stationing shall show points of tangency and curvature for centerline; curve data shall show tangent, length, radius, distance, centerline curve length, and delta angle. Centerline intersection stationing, in both directions, shall be shown. Provide ¼ point elevations for curb returns.
- 6) Where streets are being widened, edge of pavement elevations shall be shown to determine pavement cross-slope to new curb or pavement edge.
- 7) On water plans, all fittings and valves shall be shown and identified by type (i.e., MJ x MJ, FLG x MJ, etc.); fire hydrants shown; intersection details for valves and fittings are required when scale of plans is smaller than 1" = 20' (i.e., 1" = 40').
- 8) Lot or parcel numbers, street names and other identifying labels (including tax lot and address numbers for all existing properties shown).

d. PROFILE SHEET(S)

- i. Profiles for construction plans shall be the same horizontal scale as the plan sheet. Profiles are typically drawn on the same sheet as the plan view and shall be immediately below the plan view. Stationing shall increase from left to right with lower stations to the left. The following minimum information shall be shown:
 - 1) For sewers and storm drains, show locations of manholes, catch basins, and cleanouts, with each numbered and stationed.
 - 2) Existing profile at centerline of proposed utility or street.
 - 3) Proposed profile grade, as appropriate, for all sewers, storm drains, and waterlines, giving pipe size, length between structures or fittings, slope, backfill and pipe material, sewer inverts, rim elevations, etc.
 - 4) Existing underground utility that crosses the alignment of the proposed facility.
 - 5) Beginning of all vertical curves, points of vertical intersection, end of vertical curve, low point of sag curve, and length of vertical curve. Profiles of existing centerline grade shall extend a minimum of 250 feet beyond the end of the improvement.
 - 6) Clearly show all potential conflicts with existing public and private utilities that impact proposed design.
- ii. SPECIAL NOTE: As-built records are only to be used as an aid to the engineer. The engineer shall field locate and verify the alignment, depth, and inverts of all existing facilities shown on the plans that will be crossed by the proposed facility.

e. **DETAIL SHEETS**

- i. Detailed drawings shall be included with all construction plans where City of Dundee Standard Specifications and Standard Drawings do not exist. If a standard drawing, such as sewer manholes, must be modified to fit existing or unique conditions, the modified drawing shall be shown on the plans. When City standard drawing appurtenances or construction installations are to be used, a reference to the specific standard drawing number shall be made on the relevant sheet.

6. **SUPPORTING INFORMATION**

- a. The engineer shall submit sufficient supporting information to justify the proposed design. Such information shall include, but not be limited to, the following:
 - i. Design calculations.
 - ii. Hydrology and hydraulic calculations with basin maps for storm drainage.
 - iii. Alternate materials specifications including manufacturer's design application recommendation.
 - iv. Grading plan support information to include as appropriate:
 - 1) Soils engineering report
 - 2) Hydrology report
 - 3) Engineering geology report
 - v. Stormwater facility calculations and description, including its intended functionality, and an explanation of how the outlet(s) function to meet requirements of peak velocity, flow control and water quality treatment.
 - vi. Water model calculations and fire flow calculations for waterline systems.
 - vii. Documentation of proper protection and/or replacement of Record Survey Monuments. If, in the course of construction of the proposed development, a record survey monument shall be removed, disturbed, or destroyed, a registered professional land surveyor shall replace the monument within 90 days in accordance with ORS 209.140 – ORS 209.156.

7. **PLAN SUBMITTAL**

Construction plans for all privately financed facility improvements shall be submitted to the City Engineer. The City Engineer will coordinate the plan review and approval of all construction plans which will include review for compliance with all Dundee standard specifications, the Dundee development code, and other City codes and ordinances.

8. **VARIANCES TO DESIGN/CONSTRUCTION STANDARDS**

Variances to specifications or standards may be requested as outlined below. It is to be noted that if the requested variance involves public safety, the City will rule in favor of safety.

- a. Variance process
 - i. Submittal
 - 1) Requests to modify City Standards shall be submitted in writing by the applicant's engineer to the City Engineer. This written request shall state the desired modification(s), the reason(s) for the request(s) and a comparison between the specification(s), standard(s), and the modification(s).
 - 2) Any request for modification or variance of City Standards should be documented with reference to nationally accepted specifications/standards.
 - ii. Review
 - 1) The request to modify shall be reviewed by the City Engineer, who shall consult the appropriate review authorities and make one of the following decisions:
 - Approve as is,
 - Approve with changes, or
 - Deny with an explanation.
 - 2) The modification, if approved, is for project specific use. Approval of a request shall not constitute a precedent.
 - iii. Appeal
 - 1) The applicant may appeal the City Engineer's decision to the City Council.
 - iv. Criteria for Modification of Specification Standards
 - 1) The City Engineer may grant a modification to the adopted specifications or standards when any one of the following conditions are met:
 - The specification or standard does not apply in the particular application.
 - Topography, right-of-way, or other geographic conditions impose an unusual or unique hardship on the applicant and an equivalent alternative which can accomplish the same design is available that does not compromise public safety or accessibility for the disabled.
 - A change to a specification or standard is required to address a specific design or construction problem which if not enacted will result in an undue hardship or would jeopardize public safety.

K. SPECIAL DESIGN PROBLEMS

1. Special applications not covered in these Design Standards require review and approval by the City Engineer. Submittal of full design calculations, supplemental drawings, and information will be required prior to any approval.

Such applications that may occur requiring special review and approval include, but not limited to, the following:

Sewer force mains	Water distribution pump stations
Relining of existing sewers	Relining of existing water mains
Internal sealing of existing sewers	Water pressure regulating devices
Wastewater regulatory devices	Energy dissipaters
Wastewater pump stations	Water reservoirs
Sewer siphons	Water treatment plants
Wastewater treatment plants	Water flow
Wastewater flow measurement/monitoring device	Measurement/monitoring/telemetry device

L. CONSTRUCTION PERMIT APPLICATION

1. Prior to issuance of construction permits, the developer shall provide the City with the following:
 - a. Copy of an approved (by City Attorney) Developer/City agreement for improvements signed and notarized by the developer and the developer's engineer.
 - b. Completed construction permit application including the following:
 - i. Name and address of the owner or owners of the property.
 - ii. Name and address of the developer of the property.
 - iii. Name and address of the designer (Design Engineer for public improvements).
 - iv. Name and address of the party doing the work, including subcontractors.
 - v. Location of the work area, including addresses as applicable.
 - c. Pay all construction permit fees
 - d. Recorded copies of all easements. Executed and notarized copies of easements for all public utilities which are constructed prior to the recording of a final plat or final acceptance.
 - e. A detailed unit price construction cost estimate for the proposed project.
 - f. Proposed construction schedule.
 - g. Proposed traffic control plan.
 - h. Certificates of insurance, minimum limits as outlined in the Standard Specifications. City of Dundee and City Engineer shall be named as additional insured.
 - i. Evidence of workman's compensation coverage from contractor performing the work.

- j. Any required Waiver of Remonstrance Agreements.
- k. Executed and recorded copies of any Construction Deferral and/or Waiver of Remonstrance Agreements required as a condition of the development, except for subdivisions or partitions where the agreements will be recorded in conjunction with the final plat.
- l. Such other information specific to the project as the Public Works Supervisor or the City Engineer shall find necessary for the determination of whether a permit should be issued.

M. CONSTRUCTION PERMIT FEES.

1. The construction permit fee shall be as prescribed by resolution of the City Council.
2. Permit fees are required to support permit issuance, testing, and inspection. Additional permit fees may be charged to cover actual expenses.
3. In computing the constructions permit fees, the estimated value of proposed construction shall be comparable with current bid prices for City contract projects, and shall be approved by the City prior to issuing the permit.
4. Work being done under contract with the City shall be exempt from permit fees.
5. Work being done by franchise utilities shall be exempt from permit fees to the extent provided by the franchise agreements with the City.
6. Where work for which a permit is required by these Design Standards has commenced prior to obtaining said permit, the construction permit fees shall be doubled, but the payment of such double fee shall not relieve any person from fully complying with the requirements of these Design Standards and other applicable City codes, standards and ordinances in the execution of the work nor from any other penalties prescribed herein.
7. Permits required by these Design Standards shall be non-transferable. Any change in applicant, such as a subdivision sale, will require re-application for permit. If six months has elapsed since plan approval, reapplication for plan review shall be made. If previous plan review deposit provided by the applicant is insufficient to cover the costs of the new review, the City may assess an additional review fee which will, in the opinion of the City Administrator, cover the estimated cost for the new review.

N. CONSTRUCTION AGREEMENT & PERFORMANCE GUARANTEE

1. Except as otherwise provided below, a performance guarantee shall be provided for all work for which a permit is required. Depending on the type of project, the performance guarantee may consist of a restriction on the issuance of a building permit(s), a restriction on the recording of a plat, or a financial security. Acceptable performance guarantees shall be as outlined below for the different classes of project listed.
2. Work being done by franchise utilities shall be exempt from performance guarantee requirements only to the extent provided by the franchise agreements with the City.

3. The performance guarantee may consist of one of the following, and shall be in a form as required by the City.
 - a. If a building permit is requested before all improvements within the public right-of-way or utility easements are completed and approved by the City, the developer shall provide a financial security acceptable to the City to guarantee the completion of all work covered under the permit. The financial security shall be 110% of the estimated construction cost, or \$500, whichever is greater, and may consist of cash, or it may be a bond or irrevocable letter of credit as outlined in Subsection D below. Occupancy of structures and permanent connection to City water and sewer service will not be allowed until all permitted improvements have been completed and approved by the City.
 - b. If the applicant fails to complete all improvements for which a performance surety bond or letter of credit were provided, the City shall estimate the cost of completing any required improvement, call on the bond or letter of credit for the funds necessary to complete the improvement, and complete the improvement to the extent of the funds obtained upon call of the bond or letter of credit. If the amount obtained is insufficient to complete the improvement, the City may either hold the collected funds until additional funds are authorized for the improvement or expend the collected funds on a revised improvement or on a portion of the improvement as determined reasonable by the City.

O. CONDUCT AND PROGRESS OF THE WORK

1. All work under said permits shall be completed in conformity with the provisions of these Design Standards, the terms of the applications and construction permits, and under the supervision and subject to the approval of the person designated by the City. Immediately upon completion of work, all surplus earth, debris, rubbish or other materials shall be removed immediately and the street and utilities restored to a condition as good as or better than existed prior to the work.
2. Timeframe for Restoration of Existing Street Surfaces.
 - a. Unless authorized in writing by the City Administrator prior to the start of the work, no work within any existing public roadway shall disrupt traffic flow for more than 14 consecutive days.
 - b. Unless authorized in writing by the City Engineer prior to the start of the work, trenching within existing paved streets shall be backfilled and repaved within 14 days of the start of excavation unless the trenches are repaired with cold patch. In addition, trenching within existing streets shall be plated or repaired with cold patch at the end of each work day, unless otherwise approved by the City Engineer. Trenching within existing major streets (collector or commercial-industrial streets) shall always be plated or repaired with cold patch at the end of each work day. Trenching within existing gravel streets will be restored or plated at the end of each work day. Failure to maintain any temporary cold mix trench patching in a smooth condition will result in the City requiring the cold mix to be removed and replaced with hot mix AC for

temporary patching. Such replacement shall occur within 4 days of written notice by the City.

- c. Unless authorized in writing by the City Administrator prior to the start of the work, the timeframes specified herein shall apply independently and separately to each block or intersection where trenching work occurs. In all cases, trenches within each block or intersection shall be permanently repaved within 21 days of the start of excavation, except where the street will be reconstructed as part of the project.
3. The contractor is responsible for the coordination with the various utilities and agencies during construction.
4. The Design Engineer shall note the requirements above on the construction plans as necessary.

P. ADHERENCE TO AND EXHIBITION OF PERMITS

1. No work shall be undertaken other than that specified in the application and permit for the particular cut or excavation. Upon demand of the City Engineer, Public Works Supervisor or his designate or any City Police Officer, the permits shall be produced at the place where the work is in progress, or such work will be stopped until the permit is produced.

Q. EXPIRATION OR SUSPENSION OF PERMIT, STOP WORK ORDER, APPEAL

1. EXPIRATION OF PERMIT

- a. Street/utility construction permits shall lapse if construction for which the permit was issued has not commenced within six (6) months of the date of issuance.
- b. To reinstate the permit, the applicant shall submit a written request for reinstatement to the City giving the reasons for failure to begin construction, pay a reinstatement fee and provide a date when construction will be commenced.
- c. In reinstating the permit, the City may impose additional requirements or conditions deemed necessary for the project to conform to current City Standards.

2. SUSPENSION OF PERMIT

- a. At any time after the issuance of a construction permit required by these Design Standards, the City may suspend the same upon a finding that any of the following grounds exist:
 - i. False, misleading, or erroneous data or information submitted by the applicant in connection with securing the permit.
 - ii. Materials or workmanship do not meet specification for the construction or installation of any non-permitted improvement; or construction or installation varies from the approved plan or design of the improvements.
 - iii. Violation of any of the provisions of the City development ordinances governing the work being done under the permit.

- b. Upon suspension of a construction permit as provided in Subsection (a) of this Section, the City shall cause to be issued a written "Stop Work Order", one copy of which shall be sent by regular mail to the permittee at the address shown on the permit application, one copy of which shall be sent by regular mail to the permittee's engineer overseeing the work, if known, and one copy of which shall be personally delivered to the person in charge of any work in progress.
- c. It shall be unlawful for any person to cause, suffer, or permit any work to be done for which a permit is required by these Design Standards when a "Stop Work Order" has been issued as provided in Subsection (b) of this section.
- d. An applicant whose permit has been suspended as provided in Subsection (a) of this section may appeal such action to the City Administrator through the City's established appeal process. Notwithstanding the provisions for appeal to the City Administrator, the filing of an appeal shall not stay the effect of a "Stop Work Order" issued under Subsection (b) of this section.

R. NOTICE OF COMPLETION OF WORK, FINAL INSPECTIONS

- 1. Within 72 hours of completion of the work for which a permit was required under these Design Standards, all in accordance with the approved construction drawings and City Standards, the person or organization to whom the permit to do such work was issued shall submit written notice to the City Engineer stating that the work has been completed and give such other information as may be required by the City, and request a preliminary final inspection of the work.
- 2. As a minimum, the following must be submitted to the Public Works Supervisor or the City Engineer as applicable prior to the preliminary final inspection.
 - a. All exterior property pins and street monumentation set (partitions & subdivisions).
 - b. All set property pins exposed and all property corners marked with appropriate markers (partitions & subdivisions).
 - c. All easement limits (except PUES parallel with R/W) marked with labeled lath.
 - d. Paper copy of as-built drawings submitted to City Engineer a minimum of 48 hours prior to final inspection, including distance ties to all utility stub ends.
 - e. Written copies of all required utility test reports (compaction, mandrel, pressure, vacuum, etc.), as well as video tapes of any required pipeline TV inspections.
 - f. Completion report from Design Engineer including written copies of all utility test reports (compaction, mandrel, pressure, vacuum, etc.), as well as inspection reports of any required TV inspections. Submitted compaction tests shall include certification of engineered fills, base rock and AC pavement tests for streets and trench patching, as well as soil compaction results for all lots with fills.
 - g. Certification that the areas within the building envelopes of all lots conform to compaction requirements of the Oregon International Building Code (IBC).

3. Any corrective work items identified during the preliminary final inspection (i.e. punch list items) shall be completed prior to the City's conditional acceptance of any of the public streets or utilities. Failure by the City to include items on the preliminary punch list shall not, in any way, relieve the contractor from any obligation to perform the work in strict compliance with the approved plans and City Standards. Additional items discovered during subsequent inspections must be corrected prior to provisional acceptance of the improvements by the City.
4. Upon completion of all corrective work to the satisfaction of the Public Works Supervisor and the City Engineer, including a final inspection by the City, the developer shall provide the following prior to provisional acceptance of the public improvements by the City.
 - a. Paper and PDF copy of as-built drawings (based from an as-built survey) for permitted improvements.
 - b. Acceptable maintenance bond valued at a minimum of 40 percent of the estimated construction costs for permitted improvements. The period of the bond shall be for the full period of the warranty period, as outlined in section 1.1(S) below, but not to be less than one (1) year, and require release by the City. The warranty period shall not commence prior to provisional acceptance of the public improvements by the City.
 - c. Photocopies of any recorded easements required in conjunction with the improvements, except for on-site easements that will be recorded after the plat is recorded.
 - d. Other items required as conditions of the land use planning approval, where applicable.
5. In no case shall the City issue written provisional acceptance of the work until as-built drawings (for public improvements) and maintenance bonds (if required) are submitted to and accepted by the City. Final acceptance by the City shall not occur until the end of the warranty period.
6. **AS-BUILT PLAN REQUIREMENTS**
 - a. For all public works facility improvements the engineer shall submit certified as-built drawings for all plans that were approved for construction. As-built drawings shall meet the requirements of these Design Standards and shall be of archival quality. Submittal shall include full size paper and electronic copies, including the original CADD files.
 - b. The engineer shall submit, along with the as-built drawings, a statement certifying that all work for which plans were approved has been completed in accordance with the Dundee Design Standards and Standard Specifications. No disclaimer to the accuracy of the as-built records is allowed.
 - c. The words "as-built drawing" shall appear as the last entry in the revision block along with the month, day, and year the as-built drawing was prepared.
 - d. Actual location and depth from finish grade of any other utilities encountered during construction shall be shown and noted on both plan and profile of the as-built plans.
 - e. Street

- i. The following minimum information shall be noted on street as-built drawings:
 - 1) Change in horizontal alignment, curve data, and stationing of primary control points (e.g., PC, PI, PT, PRC, and PCC).
 - 2) Vertical curve or grade changes; change in location of low point in sag vertical curve.
 - 3) Change to approved thickness for street structural section components. Show station limits where changes in structural section have occurred.
 - 4) Change to driveway locations or widths, or construction materials.
 - 5) Other change(s) altering the approved plans.

f. Storm Drains

- i. The following minimum information shall be noted on storm drain as-built drawings:
 - 1) Station of wye or tee connection into main line; tie end of branch line to nearest property corner at right-of-way line and distance back from the face of curb.
 - 2) Show alignment changes, grade changes, and changes in construction materials. If changed alignment results in station changes, a station equation shall be shown as appropriate at a manhole.
 - 3) Other change(s) altering the approved plans.

g. Wastewater

- i. The following minimum information shall be noted on wastewater as-built drawings:
 - 1) Station of wye or tee into main line. Tie end of service lateral to nearest property corner at right-of-way line and distance back from the face of curb.
 - 2) Depth at the end of service lateral measured from existing ground to invert of pipe. When required by the City Engineer, invert elevations shall be noted.
 - 3) Length of service lateral measured from centerline of sewer main to end of pipe.
 - 4) Show alignment changes, grade changes, and changes in construction materials. If changed alignment results in station changes, a station equation shall be shown as appropriate at a manhole.
 - 5) Other change(s) altering the approved plans.
 - 6) Type of pipe, backfill material and location.

- h. Water main
- i. The following minimum information shall be noted on water main as-built drawings:
 - 1) Station and/or property line/corner to valves (not at standard location), all fittings, blow-offs, and dead-ended lines.
 - 2) All changes from standard 36-inch depth cover. Limits shall be shown on plan with annotated reason for change. Actual pipe elevation (top of pipe) will be taken at every fitting.
 - 3) Show alignment changes, grade changes, and changes in construction materials. If changed alignment results in station changes, a station equation shall be shown as appropriate at a valve.
 - 4) Provide manufacturer of all valves and hydrants; identify types of fittings (i.e., MJ x MJ, FLG x MJ, etc.).
 - 5) Other change altering the approved plans.
 - 6) Provide design calculations and complete pressure/leak test results to the city engineer.

S. CITY POLICY FOR ACCEPTING NEW OR RECONSTRUCTED STREETS AND PUBLIC UTILITIES

- 1. The City will accept developer-built public street, sanitary sewer, storm sewer and water distribution improvements constructed in conformance with these Design Standards subject to the following procedures:
 - a. After construction of the total project has been completed, all final inspections have been completed, and any required bonds and as-builts have been submitted and accepted by the City, the Public Works Supervisor or the City Engineer will provide a memo to the City Administrator recommending that the City provisionally accept the public street, sanitary sewer, storm drainage and/or water system improvements, with final acceptance to occur at the end of the warranty period.
 - b. The standard warranty period for public sanitary sewer, storm drainage and/or water system improvements that are not listed as "special items" for design by the PWDS shall be a minimum of two (2) years from the date of provisional acceptance of the improvements by the City.
 - c. The standard warranty period for public street improvements shall be 3 years from the date of provisional acceptance of the improvements by the City, or until construction is completed on 90% of the lots within the development, whichever is shorter, except that the warranty period shall not be less than two (2) years. Any damage to the street pavement, curbing, sidewalks, street lights, etc. During the warranty period shall be corrected prior to final acceptance by the City and release of the warranty.
 - d. The standard warranty period for sanitary sewer, storm drainage and/or water system improvements that are listed as "special items" for design by the PWDS shall be a minimum of two (2) years from the date of provisional acceptance of the improvements by the City.

- e. The warranty period may be extended at the discretion of the City Administrator if the Public Works Supervisor or the City Engineer identifies construction materials or methods that differ from City Standards, but which the City does not require to be removed and replaced. This authority granted to the City Administrator shall in no way obligate the City to accept any work that is not constructed in full conformance with the approved plans and these Design Standards, nor shall it be construed as establishing a precedent.
- f. Prior to the end of the warranty period, Public Works Supervisor and/or the City Engineer will make warranty inspection(s) and investigations as deemed necessary by the City to identify any defective work that must be corrected prior to final acceptance of the improvements by the City. The developer will be notified in writing of any required corrective work. All required corrective work shall be completed by no later than 21 days from the date of such written notification. Any delay in correcting the identified deficiencies will result in a delay in final acceptance by the City.

T. PENALTY, CONTINUING VIOLATIONS

- 1. Failure to comply with any provision of these Design Standards, or with any restrictions or conditions imposed hereunder, or failure to comply with the conditions of a construction permit issued by the City, shall subject the person, firm or corporation who violates, disobeys, omits, neglects, or refuses to comply with any of the provisions of these Design Standards to civil penalties as prescribed by the City.

1.2 GENERAL MATERIAL REQUIREMENTS

- A. Materials for construction of public works infrastructure are included in each applicable section. Reference OSSC for any materials not covered within these Design Standards.
- B. The approval of any alternate material not approved in the applicable division will be considered for approval based on the requirements of that division's design criteria section. Alternate materials shall meet or exceed the minimum requirements of these Design Standards.
- C. The project engineer must apply in writing to the City Engineer for approval of any alternate material.
- D. The written application for use of alternate materials shall include, but not be limited to, the manufacturer's specifications and testing results, design drawings, calculations, and other pertinent information.
- E. Any deviations or special problems shall be reviewed on a case-by-case basis and approved by the City Engineer.

- F. It is not the intent of these Design Standards to exclude other equipment or materials of equal value, quality, or merit. Whenever a product is designated, or manufacturer's name, brand, or item designation is given or described, it shall be understood that the words "or approved equal" follows such name, designation, or description, whether in fact they do so or not. Determination of quality in reference to the project design requirement will be made by the City Engineer. A contractor shall not use an "equal" product without prior written approval of the City Engineer.
- G. Construction submittals for materials & equipment incorporated into the work shall generally conform to the requirements outlined in Section 1.3.

1.3 CONSTRUCTION SUBMITTALS

A. GENERAL

1. SCOPE

- a. This section includes requirements for construction submittals for public works projects which will be turned over to the City for operation and maintenance, including but not limited to streets, public utility pipelines, pump stations, treatment facilities (water, sewer or storm), storage reservoirs, bridges, etc.
- b. Coordination of Submittals
 - i. All submittals to the City, with the exception of the laboratory test certificates, shall be made only by the Design Engineer. Direct submittals from contractors, subcontractors or suppliers will not be accepted unless otherwise noted herein or approved in writing by the City Engineer.
 - ii. All submittals shall reference the specification item that it covers. The Design Engineer and contractor's name, the project title and location, and the date of submission. Submittal shall also indicate whether the information is for the City's review and approval, for record purposes or for the fulfillment of the operation and maintenance requirements.
 - iii. Prior to submitting information to the City Engineer:
 - 1) The Design Engineer and contractor shall carefully review the correctness and thoroughness of the material, verify all field measurements, and coordinate all aspects of each item being submitted.
 - 2) The Design Engineer and contractor shall carefully review and ensure that all submittals are tailored to the project by highlighting appropriate information and/or deleting or crossing out non-applicable information, and that all options and equipment furnished are indicated.
 - 3) The Design Engineer shall verify his review by affixing his stamp of approval and signature to the front page of each submittal.

B. PRODUCTS

1. GENERAL

- a. All submittals shall be accompanied by a completed copy of the submittal report included under subsection 4 of this section.
- i. All submittal reports shall be numbered sequentially. Resubmittals shall be designated with the same number as the original submittal followed by a designation letter (i.e. submittal "5a" for the first resubmittal of submittals, submittal "5b" for second, etc.).
- ii. A separate submittal report shall be prepared for each submittal. Generally, items under a single specification section can be included on the same submittal report. Each submittal report shall clearly designate the specification section(s) that apply to the material or equipment being submitted on.
- iii. Except in the case of operations and maintenance manuals or as otherwise approved by the engineer, a single submittal report shall not be used for items under different specification sections or material categories.
- b. Three Categories of Information are Normally Required:
 - i. Information for record.
 - ii. Information for the City's review and approval.
 - iii. Operation and maintenance information.
- c. All submittals shall be tailored to the project by highlighting appropriate information and/or deleting or crossing out non-applicable information. All options and equipment furnished shall be so indicated.
- d. Manufacturers submitting proposals for equipment, which will require changes to the design shown on the drawings, or specified herein, shall also include detailed information on structural, electrical, mechanical and other miscellaneous changes or modifications required to adapt their equipment to the design shown.

2. INFORMATION FOR RECORD

- a. **Laboratory Certificates:** Certificates shall include the results of tests by an independent laboratory for comparison to specification requirements, mix design data and approval, plan inspection reports and certification, and other required information from the laboratory. All information submitted shall be signed by an authorized agent of the laboratory.
- b. **Licenses and Permits:** The contractor shall obtain all licenses and permits required by local, state and federal laws and submit copies of them to the City.
- c. **Installation and Calibration Certificates:** Certificates shall be submitted for equipment as indicated in the individual sections. These certificates shall indicate manufacturer's satisfaction with the installation, the accuracy of calibration and alignment, and the operation of the equipment. An authorized agent of the manufacturer must sign such certificates.

3. INFORMATION FOR THE CITY'S REVIEW AND APPROVAL

- a. Construction Schedules: The contractor shall submit construction schedules directly to the City and the City Engineer.
- b. Material and Equipment Submittals:
 - i. The Design Engineer shall indicate on the submittals all variances from the requirements in the specifications or on the drawings. Failure to note variances from the specification requirements may result in the submittal being returned without review.
 - ii. All submittals shall be tailored to the project by highlighting appropriate information and/or deleting or crossing out non-applicable information. All options furnished shall be indicated. Failure to follow these instructions will result in the submittal being returned without review.
 - iii. If the proposed equipment includes modifications from standard features or options typically provided by the manufacturer for similar applications, these shall be clearly noted on the submittal.
 - iv. Submittals for all materials and equipment used by the contractor in the performance of the work shall include the following as applicable.
 - 1) Manufacturer's Literature: Literature indicating the compliance of the product with the specifications shall be included with all submittals. This shall include catalog sheets and other descriptive bulletins. Manufacturer's literature shall also include, but not be limited to the following:
 - Manufacturer's catalog data
 - Materials of construction
 - Manufacturer's name and model number
 - Installation instructions and drawings
 - 2) Manufacturers' or Suppliers' Certificates: Certificates shall state that the products have been sampled and tested in accordance with the proper industrial and governmental standards and meet the requirements of the approved construction drawings and these Design Standards. An authorized agent of the manufacturer shall sign certificates.
 - 3) Design Data: Design data shall include the calculations, supporting theories, safety factors and assumptions used in designing the product.
 - 4) Samples: Samples shall be provided as required in the individual sections. Samples shall be of the precise material proposed to be furnished. The number of samples and sample size shall be of the industry standard unless otherwise stated in the individual sections.

5) Shop Drawings: Shop drawings shall include the following as applicable to the equipment or system along with any special requirements listed in the individual specification sections:

- Scaled details
- Scaled dimensional drawings
- Sectional assembly drawings
- Fabrication information
- Wiring schematics with termination point identification
- Motor information
- Piping schematics

v. Substitutions:

- 1) Submittals for substitute materials or equipment shall include but not be limited to manufacturer's literature, design criteria, dimensions and installation instruction.
- 2) The submittal shall include any certifications or test results required to demonstrate that the proposed materials or equipment meets the requirements of the specifications and is equivalent or better than the specified materials or equipment.
- 3) If the substitution requires a change in the design, the submittal shall include all pertinent design information and details for the required design change, with supporting documentation

4. OPERATION AND MAINTENANCE INFORMATION

- a. The Design Engineer shall furnish five (5) copies of O&M manuals with information on all equipment requiring maintenance. The work shall not be considered to be substantially complete until all associated O&M information is submitted and accepted by the City.
- b. Review copies of the O&M manuals shall be complete volumes organized and indexed for all associated items of equipment to be included in that volume, with colored pages inserted for items to be inserted. The O&M information for individual equipment items is not to be submitted piecemeal. Where O&M manuals have multiple volumes, the different volumes (mechanical, electrical, scada, etc.) can be submitted separately for review, but the volumes must be numbered and accompanied by a draft overall index covering all volumes.
- c. The final O&M manuals will be accepted only if complete, properly identified with contract section numbers and only after revised, where necessary, to conform to the City's notes on previous submittals that have been marked "furnish as corrected." the contractor shall be responsible for submitting the O&M manuals far enough prior to the end of the contract period to allow the City adequate time to review the manuals.

- d. A table of contents and index tabs shall be furnished for all manuals containing data for three or more items of equipment. Index tabs shall separate and each system or major equipment item. Where an index tab section for a system includes three or more separate items of equipment, an index table of contents shall be provided at the front of the index tab section.
- e. All manuals shall be tailored to the project by high lighting appropriate information and/or deleting or crossing out non-applicable information. All options furnished shall be indicated.
- f. Manuals shall be printed on heavy, first quality paper, 8-1/2" x 11" size with standard three hole punching
- g. A complete manual shall be provided for each site in 3-ring binder(s) with index tabs between all sections, as well as between each system and major equipment item. Binders shall be locking o-ring, view style binders, with exterior view pockets on the front, back and spine of the binder. Multiple volumes are acceptable if required, although single volumes are preferred for each site if possible. If multiple volumes are provided, they need to be labeled as volume 1, 2, etc. With labels that indicate generally what is included in the manual. The manuals should be labeled on the front cover, the spine, as well as a title page inside the front cover. For multiple volumes, copies of a table of contents showing the general content of all manuals shall be included at the front of each binder.
- h. Drawings shall be reduced to 11" x 17". Where reduction is not possible, larger drawings shall be folded separately and placed in envelopes, which are bound into the manual.
- i. Field modifications to equipment during installation shall be included in the manual so that the manual reflects as-built conditions. Revisions to the manual may be submitted for incorporation into the manual where appropriate. However, the City reserves the right to return all manuals to the Design Engineer for revision to reflect as-built conditions.
- j. O&M manuals shall include but not be limited to the following:
 - i. Certificate of completion (in letter form) from the contractor certifying that all materials, equipment and workmanship incorporated into the project are in accordance with the drawings and specifications, and that all work is free of defects and in proper operating condition at the time of project completion. Any exceptions (if any) must be listed and the justification for the exceptions given. The certificate of completion shall also include a written warranty against defect for the full of the warranty period from the date of substantial completion covering all workmanship and materials used in the project.
 - ii. Summary sheet listing each supplier's name, address and telephone number along with manufacturer's job number and/or purchase order number for all equipment supplied. This summary shall be included at the front of the manual. The supplier information shall also be included at the front of each individual section of the manual.
 - iii. Photocopies of building, plumbing, mechanical and/or electrical permits, as well as photocopies of the final inspection certificates for each. Photocopies of laboratory and field test reports.

- iv. Copies of all required or provided warranties shall be included at the front of each applicable section. Provide photocopies of warranty registration cards filled out with the appropriate information.
- v. Copies of any service contracts provided.
- vi. Copies of factory, startup and field test reports required by the individual specification sections.
- vii. Overview of topics covered during training provided as required by the individual specification sections.
- viii. Copies of all submittals for the project on equipment that may require maintenance or replacement, including a copy of the City's submittal review letter or comments. At the front of each section, provide a complete list of equipment and appurtenances included, complete with manufacturer and model number (i.e. bill of materials). If there are any differences between the bill of materials included in the submittal information and that provided, provide a corrected bill of materials. Include written confirmation specifically indicating the manner in which each correction noted on shop drawings or submittals approved subject to conditions was addressed.
- ix. Descriptive literature, bulletins or other data covering the equipment or system shall include, but not be limited to the following, either in the included submittal data or in the O&M information.
 - 1) General arrangement drawing.
 - 2) Sectional assembly.
 - 3) Dimension print.
 - 4) Materials of construction.
 - 5) Parts list with assembly drawings.
 - 6) Recommended spare parts list with part and catalog number.
 - 7) Utility requirements.
 - 8) Lubrication recommendations and instructions.
 - 9) Drive dimensions and data.
 - 10) Pump seal data.
- x. Performance guarantee, including certified performance curve(s) where applicable.
- xi. Description of equipment controls and associated instrumentation.
- xii. Assembly, installation, alignment, adjustment and checking instructions.
- xiii. Operating instructions.
- xiv. Maintenance instructions including trouble-shooting guidelines, lubrication and preventive maintenance instructions with task schedule.
- xv. Special tools and equipment required for operation and maintenance.
- xvi. Schematic wiring diagrams.
- xvii. Schematic piping diagrams, where applicable.

- xviii. Programming instructions for any controllers or other programmable equipment. Copies of the any required software, including registration cards, shall be provided with the O&M manuals. Printout and electronic copy of any programming for controllers or other programmable equipment.

5. OTHER SUBMITTALS

- a. Other submittals are required under various sections of the specifications.

C. EXECUTION

1. GENERAL

- a. Delivery prior to approval of any material or equipment for which submittals are required will be at the contractor's risk. Material or equipment for which submittals are required shall not be incorporated into the work until after the submittals have been reviewed and approved.
- b. Any material or equipment on-site which is rejected by the City after review of submittals shall be removed from the job site by the contractor within two working days of notification of rejection.

2. DISTRIBUTION

- a. Distribution of submittals shall be as follows unless otherwise directed in the individual sections:
 - i. Information for Record - The contractor or the laboratory shall submit one copy of all test certificates, licenses, permits and installation and calibration certificates directly to the City.
 - ii. Information for City's review and approval
 - 1) The Design Engineer shall submit to the City four copies of all documents requiring the City's review.
 - 2) The City will review the submittals with reasonable promptness for their compliance with the design concept, the approved construction drawings and these Design Standards.
 - 3) If the submittals are found insufficient three copies will be returned to the Design Engineer for correction. The Design Engineer shall than resubmit four copies of the corrected information.
 - 4) Upon acceptance, the City Engineer will retain one copy and distribute marked copies as follows:
 - One copy-City
 - Two copies - Design Engineer and contractor

1.4 GENERAL CONSTRUCTION REQUIREMENTS

A. PRECONSTRUCTION CONFERENCE

1. A preconstruction conference shall be scheduled before issuance of the public utility construction permits. The meeting is to include the developer's representative, developer's engineer and prime contractor, and all affected utility companies. The purpose of the conference is to discuss the construction schedule and times of the work which require special coordination.
2. The developer/contractor shall be responsible for notifying the private utility companies of the time and location of the preconstruction conference, and requesting that a representative of each utility be present. The developer may be required to submit proof of notification to the City prior to the preconstruction conference. Copies of notification letters sent to the utility companies by the developer are acceptable.
3. Specific requirements for the construction of public works infrastructure are included in each applicable section.
4. Any alternate construction method not explicitly approved in each applicable section will be considered for approval based on the applicable design criteria section. Any alternate construction method must result in a product that meets or exceeds the minimum requirements of these Design Standards.

B. SAFETY REQUIREMENTS

1. The contractor is responsible for observing the safety of the work and all persons and property coming into contact with the work. The contractor shall conduct his/her work in such a manner as to comply with all the requirements prescribed by OSHA.
2. The City Project Inspector's role is not one of supervision or safety management, but is one of observation only. Nothing contained in this section or elsewhere in the book shall be interpreted to obligate the City to act in any situation, nor shift the owner's responsibility for safety compliance to the City. No responsibility for the safety of the work or for construction means, methods, techniques, sequences, or procedures shall attach to the City by virtue of its action or inaction.

C. PROTECTION OF PROPERTY

1. The contractor shall exercise all due care in protecting property along the route of the improvement. This protection shall include, but not be limited to, trees, yards, fences, drainage lines, mailboxes, driveways, shrubs, and lawns. If any of the above has been disturbed, they shall be restored to as near their original condition as possible or replaced to the owners approval.

D. INSPECTION

1. GENERAL REQUIREMENTS

- a. Work performed within the public right-of-way, or as described in these Design Standards, whether by or for private applicant, by City forces, or by a City contractor, shall be done to the satisfaction of the City and in accordance with the OSSC, any approved plans, and these Design Standards. Unless otherwise approved, any revision to construction plans must be approved by the City before being implemented.
- b. The City shall have authority to enforce the standards as well as other referenced or pertinent specifications. The City will appoint project engineers, assistants, and inspectors as necessary to inspect the work and they will exercise such authority as the City Engineer may delegate.
- c. It is the responsibility of the applicant, contractor, or their agents to have an approved set of plans, and/or permits on the job site wherever work is being accomplished.
- d. It is the responsibility of the applicant, contractor, or their agents to notify the City in advance of the commencement of any authorized work. A preconstruction conference and/or field review shall be required before the commencement of any work per the requirements of these Design Standards.
- e. Failure to comply with the provisions of these Design Standards may result in stop work orders, removal of work accomplished, or other penalties as established by ordinance.

2. CITY INSPECTOR'S ACTIVITIES

- a. Inspecting services provided by the City shall include:
 - i. Monitoring both work progress and performance testing results.
 - ii. Performance of administrative and coordination activities as required supporting the processing and completion of the project.
 - iii. Issuance of a corrective notice to the contractor/engineer to make corrections to the work. The City's Project Inspector, at the discretion of the City Engineer or Public Works Supervisor, may post a stop work order.
 - iv. Maintaining a completion file containing the following:
 - 1) The original of the project completion certification; and
 - 2) A complete copy of the report file initialed by the City's Project Inspector; and
 - 3) The results of material tests, compaction tests, and soil analysis as detailed in the construction file.

- v. Informing the City Engineer of all proposed plan changes, material changes, corrective notices, stop work orders, or errors or omissions in the approved plans or specifications as soon as practical. Any revision to the approved plans must be at the direction of the engineer. It shall be at the discretion of the City's Project Inspector as to whether the revision is significant enough to warrant review by the City Engineer. If so, the developer's engineer shall submit five (5) copies of the revised plans to the City for approval. No work affected by the revision shall be done until approved by the City Engineer.

3. CONTRACTOR'S RESPONSIBILITY FOR SCHEDULING

a. Sequence of Operations

- i. The contractor shall plan construction work and execute operations with a minimum of interference with the operation of the existing public facilities, including but not limited to, water, sewer, and roads. It may be necessary to perform certain parts of the construction work outside normal working hours in order to avoid undesirable conditions, and it shall be the obligation of the contractor to perform this work at such times. This scheduling, however, is subject to the City's approval and does not relieve the contractor from making work available for inspection.
- ii. The contractor shall notify the City at least 48 hours (two full working days) prior to any City inspection. Connections between existing work and new work shall not be made until necessary inspection and tests have been completed on the new work and it is found to conform in all respects to the requirements of the plans and specifications.

b. Inspections Steps

- i. The following items of work shall be inspected by the City:
 - 1) Street or sidewalk work and subgrade (also tested by the contractor) prior to placement of crushed surfacing.
 - 2) Crushed surfacing (also tested by the contractor) prior to placement of paving, curb, or sidewalks.
 - 3) Notify the City prior to the placement of any paving, curb, or sidewalks.
- ii. Other items of inspection notification are included under the various items of work outlined in these Design Standards.

c. Progress of Construction

- i. Construction shall proceed in a systematic manner that will result in a minimum of inconvenience to the public.
- ii. In the case of a pipe-laying job for sanitary sewer, storm drainage, and water improvements the trenching equipment at no time shall be greater than 100 feet ahead of the pipe-laying crew, without written permission from the City Engineer.

- iii. The trench shall be backfilled so that no section of the trench or pipe is left open longer than 24 hours. Trenches located in a right-of-way or Public Street shall be completely backfilled or plated before the contractor leaves the site each day. All piping is to be plugged with a serviceable expansion plug at the end of each workday.

4. CONTRACTOR'S REQUIREMENT FOR TESTING

a. General

- i. Testing shall be performed in accordance with OSSC by a certified independent testing lab hired by the developer or developer's contractor with the results being supplied to the City Engineer. The developer shall pay the cost of all required testing.
- ii. Refer to the OSSC Field-Tested Materials Acceptance Guide and the OSSC Non field-Tested Materials Acceptance Guide for material testing procedures and requirements.
- iii. The testing is not intended to relieve the contractor from any liability for the work. It is intended to show the inspector and the City that the improvements meet these specifications.

b. Asphalt Testing

- i. Compaction of all lifts of asphalt as specified in the OSSC Standard Specifications with the following modifications:
 - a. Thin Pavements:
 - 1) Thin lift pavements shall be considered to be less than 1.5”.
 - b. Other Areas:
 - 1) For surface restoration of utility trenches less than 8 feet wide provide one (1) test per every 200 feet of trench.
- c. Subgrade and Crushed Surfacing Testing
 - i. Compaction testing as specified in the OSSC Standard Specifications. Number of tests required:
 - 1) For streets, provide one test of the subgrade and one test of the crushed surfacing for every 5,000 square feet of surface area of pavement, curb, and sidewalk.
- d. Bedding and Backfill for Utility Trenches
 - i. Compaction testing as specified in the OSSC Standard Specifications. Number of tests required:
 - 1) For utility trenches provide one test at top of bedding for every 500 feet of trench.
 - 2) For utility trenches provide one test for each lift of backfill and for every 500 feet of trench.

e. Earthwork Compaction Testing

- i. Number of tests required: for each location where the fill is deeper than two (2) feet or greater than 300 cubic yards, provide one test per every two (2) vertical feet and every 500 cubic yards.