

**DESIGN CRITERIA MANUAL
FOR
WATER, SEWER, STORMWATER, AND STREETS
CITY OF SALIDA**



PREPARED BY CITY OF SALIDA
DEPARTMENT OF PUBLIC WORKS

January 2023

SECTION 1.00 - GENERAL PROVISIONS

1.1 ENGINEERED DESIGN

A Registered Professional Engineer licensed to practice in the State of Colorado shall design all road, water, sanitary sewer, and storm sewer public infrastructure improvements and any system modifications within the City of Salida.

A. PLAN SUBMISSION

All water and sewer designs shall be submitted to the City on 24" x 36" sheets and electronic PDF's for review and approval prior to construction.

B. CITY APPROVAL

All designs must be approved by the City prior to commencement of construction. City approval will be given when, in the reviewer's opinion, the proposed plans conform to the City specifications and otherwise meet the needs of the City and applicable engineering standards.

C. AS-BUILT DRAWINGS

When construction has been completed to the satisfaction of the City, the Project Engineer shall submit As-Built Drawings of the project to the City.

D. CERTIFICATE OF COMPLETION

Upon approval and acceptance of the As-Built Drawings by the City, a Certificate of Completion for the project will be issued. The system may then be placed in service.

E. NOTICE OF ACCEPTANCE

Upon request by the Contractor after completion of the warranty period, and after correction of any deficiencies, the City will issue a Notice of Acceptance, relieving the Contractor of any further responsibility for the work.

1.2 AS-BUILT DRAWINGS

A. Prior to issuance of the Certificate of Completion by the City of improvements, the Developer or Contractor shall provide the City with two sets of "AS-BUILT" drawings, one on 24" x 36" sheets; the other in digital form. These drawings shall have been prepared and signed by the Project Engineer, and shall show in sufficient detail all actual "as constructed" station numbers, elevations, dimensions, offsets, and details needed to locate, maintain, and connect to the facilities. Manholes, valve boxes, buried tees, wyes, ells, and services shall be located by station number and offset from centerline. Additionally, water and sewer line appurtenances shall be surveyed by a licensed surveyor. The basis shall be City control points with Northing and Easting and elevation of the appurtenance. This data shall be provided to the City in an electronic format (AutoCAD) and .shp files in State Plane Coordinate system.

B. Satisfactory "AS-BUILT" drawings must be delivered to Public Works before the City will (1) accept the work; (2) issue a Certificate of Completion, (3) release final payment for work performed for the City; (4) issue a Certificate of Occupancy; or (5) issue a lien release for property served by the work. Failure to submit AS-BUILT drawings acceptable to the City may result in termination of City water and sewer service.

TABLE OF CONTENTS

SECTION 1 – GENERAL PROVISIONS

SECTION 2 – WATER DISTRIBUTION

SECTION 3 – SANITARY SEWER

SECTION 4 – STREETS

SECTION 5 – STREETS - CROSS-SECTIONS

SECTION 6 – STREETS – OTHER ELEMENTS

SECTION 7 – STREETS - TABLES

SECTION 8 – STORMWATER

STANDARD DETAILS

SECTION 2.00 - WATER DISTRIBUTION SYSTEM MATERIALS AND INSTALLATION

2.1 SCOPE

Water distribution systems in the City of Salida shall be designed and constructed in accordance with the standards of the American Water Works Association (AWWA), the Ductile Iron Pipe Research Association (DIPRA), the pipe manufacturer's recommendations, and with this specification. All applicable ANSI/AWWA standards apply including but not limited to: C150/A21.50, C150A21.51, C600, C651, AWWA C900 and AWWA C905. The latest editions are applicable.

American Water Works Association

6666 West Quincy Avenue

Denver, Colorado 80235

Handbook of Ductile Iron Pipe, Sixth Edition

Ductile Iron Pipe Research Association

245 Riverchase Parkway East

Birmingham, Alabama 35244

2.2 GENERAL

- A. Materials shall be in accordance with technical specifications and Section 02512 (Site Water Distribution).
- B. Piping for water transmission, distribution and service lines up to 5-ft beyond the meter pit to be installed in easements or public right-of-way under the jurisdiction of the City, shall be designed, fabricated and installed per engineered plans as approved by the City and as hereinafter specified. The specific requirements for excavation and resurfacing over pipelines are detailed elsewhere in these Standard Specifications. Select fill and bedding for water line installations shall be strictly adhered to and followed. The City of Salida Public Works Department or the City Engineer will inspect all installations prior to backfill.
- C. Private unmetered water mains and private hydrants shall be prohibited. Private mains constructed solely for fire line service to buildings may be reviewed and approved on a case by case basis.
- D. Some existing water main lines within the City of Salida are ductile iron. The City of Salida reserves the right to require ductile iron piping for sections of new water main line within the developed portion of the City that will connect to ductile iron at both ends. The intent is to avoid having a distribution system with PVC products sandwiched between ductile iron water main lines.
- E. PVC main line piping shall include tracer wire. See paragraph 8 under PVC piping.
- F. Contractors and developers shall provide as-built record drawings for all water main line installations. Water main line valves, tees and appurtenances shall be survey located and the coordinates provided to the City via the record drawings. The City will provide the coordinate base and datum for this work. (refer to section 2 I)
- G. Water main extensions shall be designed to make continuous loops, connecting to the City water system in at least two points wherever possible to provide alternate sources of supply

2.3 DESIGN CRITERIA

- A. The City will designate connection points for new pipeline extensions, and will provide the project designer with available information on existing pipe size and system pressure at those connection points. The Project Engineer shall size the water main extensions to provide adequate flow rates to properly serve the population of proposed development. New distribution lines shall be no less

than 8-inch diameter. All design calculations and design criteria shall be submitted to the City for review and approval by the City Engineer.

- B. All offsite improvements necessary to accommodate new improvements shall be the responsibility of the developer/applicant.
- C. Water mains shall generally be placed on street centerlines or as determined by the Public Works Director. Water mains shall be installed to maintain five feet (5') of cover from the top of the pipe to the final finished street or landscaped area grade.
- D. Water main extensions for developments of 20 units or more shall be designed to make continuous loops, connecting to the City water system in at least two points to provide redundancy of supply.
- E. In Residential Areas, fire hydrants shall be installed a maximum of 500 linear feet apart, measured along the street, generally at each intersection, with a travel distance of no more than 250 lf from any point on the street to the nearest hydrant. In Business, Commercial, Industrial, and High Density Residential Areas hydrants will be located in conformance with the Uniform Fire Protection Code. Where practical, hydrants shall be set on the side of the street closest to an inbound fire truck. Hydrant locations must be approved by the Public Works Director and by the Fire Chief. The Project Engineer will stake the location and elevation for all hydrants. In general, hydrants will be set centered between the curb and the sidewalk, with the bottom of the hydrant base flange set 1" to 3" above top back of curb.
- F. Service line sizing shall be in accordance with AWWA Manual M22.
- G. Meter Sizing Summary based on GPM calculated using the City of Salida Spreadsheet (see Water Tap Application).
- H. All water mains shall be a minimum of 5-feet from the edge of utility easements.

SECTION 3.00 – SANITARY SEWER SYSTEM MATERIALS AND INSTALLATION

3.1 SCOPE

Sewage collections systems in or for the City of Salida shall be designed and constructed in accordance with the standards promulgated by the Water Quality Control Division of the Colorado Department of Public Health, by the Uni-Bell PVC Pipe Association, and by this specification.

Design Criteria Considered in the Review of Wastewater Treatment Facilities

Policy 96-1

Colorado Department of Public Health & Environment

Water Quality Control Division

4300 Cherry Creek Drive South

Denver, Colorado 80222-1530

Handbook of PVC Pipe 5th Edition

Uni-Bell PVC Pipe Association

2711 LBJ Freeway, Suite 1000

Dallas, Texas 75234

3.2 GENERAL

- A. Materials shall be in accordance with technical specifications and Section 02412 (Site Sanitary Sewer).
- B. Mains and public facilities to be installed in easements or public right-of-way under the jurisdiction of the City, shall be designed, fabricated and installed per engineered plans as approved by the City and as hereinafter specified. The specific requirements for excavation and resurfacing over pipelines are detailed elsewhere in these Standard Specifications. Select fill and bedding for water line installations shall be strictly adhered to and followed. The City of Salida Public Works Department or the City Engineer will inspect all installations prior to backfill.
- C. All offsite improvements necessary to accommodate new improvements shall be the responsibility of the developer/applicant.
- D. Low pressure sanitary sewer system shall be prohibited unless approved on a case by case basis as private infrastructure. Public lift stations shall also be prohibited.
- E. Contractors and developers shall provide as-built record drawings for all public main installations. Mains, manholes, and appurtenances shall be survey located and the coordinates provided to the City via the record drawings. The City will provide the coordinate base and datum for this work. (refer to section 2 I)

3.3 DESIGN CRITERIA

The main collection system for all developments shall be designed and constructed by the developer. Design of the system shall be the responsibility of the developer (or owner) with all plans and design calculations subject to review and approval by the City.

A. PIPELINE MATERIALS

1. All public sewerage collection pipelines shall be constructed of Polyvinyl Chloride (PVC) pipe manufactured in conformance with ASTM D-3034 (SDR 35), having a nominal inside diameter not less than 8".

B. PIPELINE SIZES

1. Sewer collection pipelines shall be sized to carry the Design Flows based upon service area population estimates by the Project Engineer. Should the City conclude that a proposed new pipeline will ultimately serve a larger area and population than is included in an individual project; the City may direct the Project Engineer to design a larger pipeline. .
2. Multiple buildings within a single lot shall each require a singular water and sewer lateral connected to a mainline.
3. The Project Engineer shall design all sewer pipelines. In the absence of defensible design criteria to the contrary, the design shall be based upon the following sewage flow criteria:
 - a. **Average flow** shall be determined by the following:
 - i. Residential - on a basis of 3.5 people per residence and 100 gallons per day per person
 - ii. Multi-family Areas - on a basis of 300 gallons per day per living unit.
 - iii. Commercial Areas - on a basis of 4600 gallons per day per acre or actual usage, whichever is greater. Design criteria for commercial areas shall meet the International Plumbing Code requirements.
 - iv. Industrial Areas - on a basis of 5040 gallons per day per acre or actual usage, whichever is greater. Design criteria for industrial areas shall meet the International Plumbing Code requirements.
 - b. **Peak Flow:** The average flow shall be multiplied by a peaking factor to obtain the peak design flow. The Project Engineer shall submit his peaking factor calculations and assumptions to the City with the plans.
 - c. **Infiltration** shall be estimated using the following method. The larger result obtained using these calculations shall be added to the peak flow to determine the design flow.
 - i. A factor of 75 gallons per inch diameter of pipe per day multiplied by the total length of pipe in miles and the diameter in inches.
 - ii. Engineering estimate based on soils report(s) and proximity of sewer lines to seasonal ground water table.
 - d. **Design Flow:** The sum of the peak flow and the infiltration allowance shall be used to calculate pipeline size.

C. CALCULATIONS

The Project Engineer shall provide the City with copies of his estimates and calculations.

D. GREASE TRAP REQUIREMENTS:

1. For all commercial developments concerning the preparing of food, all fats, oils and grease (FOG) shall be directed through an appropriately designed interceptor or trap. Said device shall be designed and constructed per the latest edition of the International Plumbing Code. Public Works will require that operators of grease traps maintain maintenance records for all grease traps and provide these to the City upon request. Waste grease transporters must be registered with the Colorado Department of Public Health and Environment and provide evidence of this registration to the City along with maintenance records.

3.4 LOCATION, COVER AND SEPARATION

- A. Sewer mains shall generally be located under streets, south and west of street centerlines, or on centerlines of alleys. Sewer mains shall not be designed or installed in easements outside of public rights of way unless written permission is obtained from the City and an easement is provided to the City for all appurtenances that may require City maintenance.

- B. Sewer mains shall be located a minimum of ten (10) feet horizontally from existing or proposed water mains.
- C. Manhole locations shall be shown on the plans by street station number and lateral offset from centerline.
- D. Sewer mains shall be designed deep enough to serve basements and lower level bathroom facilities wherever possible. At a minimum, all sewers within alleys shall be at least four and a half (4-1/2 ft) feet deep, and in the roadway, parallel to water, they shall be at least seven feet deep (7-ft) measured from the top of the pipe to the proposed finish street grade. Sewer in roadways may be required to be deeper to ensure that sewer services are ran under the water main. Where possible, sewers shall be installed deep enough to accommodate all future extensions and connections that can be foreseen.

3.5 ALIGNMENT AND SLOPE

- A. Sewer mains shall be designed such that the full flowing velocity is not less than two (2) feet per second, or greater than ten (10) feet per second. Sewer mains shall be designed so that the pipeline between any two adjacent manholes is on a straight line.

MINIMUM SEWER SLOPE

Minimum Slope in Feet

<u>Sewer Size</u>	<u>per 100 Feet</u>
8-inch	0.40
10-inch	0.30
12-inch	0.28
14-inch	0.25

- B. For all pipelines greater than 14 inches, the maximum velocity at any flow depth shall not exceed 10 feet per second. Minimum velocity, when flowing 75% full shall not be less than 2 feet per second.
- C. The minimum slope of the sewer line shall be 0.5% within 200 linear feet both upstream and downstream of all manholes angled greater than 45 degrees.
- D. All sewer mains shall be a minimum of 5-feet from the edge of utility easements.

SECTION 4.00 - STREET DESIGN CRITERIA

4.1 GENERAL

A. INTRODUCTION

The purpose of this document is to specify established standard principles and practices to be used in the design and construction of streets in order to provide for uniformity of streets within the City of Salida and to ensure the safety of the general public. Designs of streets for construction within the City of Salida shall be approved by the City prior to such construction. The design factors, formulas, and tables are intended to serve as guidelines for street design. All streets shall be designed and drawings stamped by a Colorado Registered Professional Engineer.

Unless modified herein, all designs shall comply with the CDOT (Colorado Department of Transportation) *Pavement Design Guide*, (2013 or latest edition). Other manuals recommended for reference include *A policy on Geometric Design of Highways and Streets* (6th or most current editions). This is also known as the AASHTO "Green Book" and *Guidelines for Geometric Design of Very Low Volume Local Roads* (ADT < 400) both published by AASHTO (American Association of Street Highway and Transportation Officials). Deviation from the requirements of these criteria must be approved by the Public Works Director.

B. STREET CLASSIFICATIONS

The following classifications shall be utilized in determining the criteria under which a street is to be designed.

1. **Local Streets** – Provide primary access to abutting properties.
 - a. Commercial
 - b. Residential
 - c. Residential – Secondary
 - i. Secondary exists in existing locations without primary frontage. Curb and gutter and shall be subject to review and approval by Director of Public Works.
2. **Collector Streets** – Carry traffic from local streets to Arterial Streets, Highways and Principle generators within the community, such as neighboring shopping centers, schools and recreation areas.
3. **Arterial Streets** – Designed for the movement of through traffic and heavy local traffic. Arterials generally connect major traffic generators. In most instances, parking is not allowed on arterials. Having greater than 2000 vehicle trips per day.

C. SOILS AND MATERIALS TESTING

1. All soils and material testing shall be done by a soil/material-testing firm under the supervision of a Colorado Registered Professional Engineer.
2. Improvements made within City ROW shall include soils testing and identification of the existing sub surface conditions. A soils report shall be submitted to the City with recommendations for structural section. Structural sections shall designed in accordance to Section 3, H
3. Improvements within City ROW shall be observed and inspected during construction by a soil/material-testing firm. The work of the field technician shall be supervised by a Colorado registered professional engineer. The testing shall include all subgrade and all materials making up the structural section including the rigid or flexible pavement per the approved design. The firm will be required to provide quality control testing results to the City as the

work progresses. All tests shall meet CDOT requirements. The City shall be notified of any failed tests or unsuitable soils on site. Reports shall be provided to the City on a monthly basis at minimum.

4. If unsuitable soils are encountered, a modified design shall be submitted by engineer responsible for the design to the City for approval.
5. The City may not accept projects or may require a longer warranty period if there are test failures or testing has not been completed according to the requirements of this section or recommendations by the soils-testing firm.

D. DESIGN SPEED

1. The choice of design speed is influenced principally by the character of terrain, type of roadway and traffic volume.
2. Design speeds to be utilized for street design in the City of Salida are listed in Table 3.

E. RIGHT OF WAY

1. The width of rights-of-way (ROW) required depends on the proposed or future street classification, topography in the area, and other physical controls. Minimum ROW widths are listed in Table 2.
2. Additional ROW width may be required to facilitate future widening and other improvements as traffic and development warrants or where it is necessary to meet side slope requirements. A meeting to discuss this with the Salida Community Development Director during the planning and design stage is recommended.

F. PATCHING

Patching on streets in which a trench has been excavated shall consist of a 'T' patch. 'T' patch will be done so that after trench is filled and compacted a strip of asphalt twelve (12) inches wider than trench shall be cut out and replaced with new asphalt. Patch depth shall be the depth of existing asphalt but in no case less than 2 inches. On all cuts within the City ROW the pavement shall be cut by either saw or wheel to neat straight lines.

4.2 BASIC DESIGN PARAMETERS

Roadways shall be designed using the standards in the CDOT *Pavement Design Guide* unless otherwise modified herein. Items not covered in either source shall use *A policy on Geometric Design of Highways and Streets (6th or most current editions)*. This is also known as the AASHTO "Green Book".

A. SIGHT DISTANCE

A primary consideration in the design of a street is to provide adequate sight distance for safe and efficient operation. There are two types of sight distance to be considered, that required for visibility at an intersection, and that required for stopping. AASHTO standards shall be met for these types of sight distance.

B. HORIZONTAL ALIGNMENT

1. *Standard for Curvature*-Table 3 gives minimum centerline radii for curves. The table is based on design speed only. Increased radii may be required if minimum sight distances are not satisfied.
2. *Superelevation*-Refer to the CDOT Design Guide, latest edition. For low speed Local Streets superelevation is generally not used. Consult with the City if superelevation is considered.
3. *Small Deflection Angles*-For small deflection angles, curves should be of sufficient length to avoid the appearance of an angle in the road.

4. *Reversing Curves*-True reversing curves shall not be used in the City of Salida except as noted herein. In cases where curves in opposite directions must be used, a tangent between shall be used. A minimum 100-foot tangent shall be used if at all possible between reverse curves to facilitate steering and control. Lesser tangent lengths may be considered with deflection angle curves less than 10 degrees.
5. *Broken Back Curves*-Broken back curves consisting of two curves in the same direction joined by a tangent less than 50 feet shall not be used in the City of Salida, except on local streets with prior approval from the City Engineer.
6. *Coordination with Vertical Alignment*-To avoid the possibility of introducing serious traffic hazards, coordination is required between horizontal and vertical alignment. Particular care must be exercised to maintain proper sight distances at all times.
7. *Pavement Transition*-A pavement transition is the area of variable pavement width encountered when changing from one roadway width, or section, to another. All pavement transitions shall be based on the following formula:

$$L=WS^2 / 60$$

Where: *L* = length of transition or taper (in feet)

S = posted speed limit (in mph)

W = offset in feet

C. VERTICAL ALIGNMENT

1. *Grade Line*-The grade line is a reference line by which the elevation of the pavement and other features of the roadway are established. The grade line shall coincide with the street centerline for all streets.
2. *Grade*-The minimum and maximum grades as measured at the centerline shall be 0.5% and 7%, respectively.
 - a. Excessive changes in grade which create a roller coaster effect shall not be permitted. Connections with existing streets shall be smooth transitions and existing grades shall be shown in the design for at 150 feet on all sides of a connection.
3. *Vertical Curves*-Properly designed vertical curves should provide adequate sight distance, safety, comfortable driving, good drainage, and pleasing appearance. Vertical curves in the City of Salida shall be parabolic curves.

SECTION 5.00 - CROSS SECTION ELEMENTS

5.1 CONCRETE PANS, CURBS AND GUTTERS (CONCRETE DRAINAGE)

A. GENERAL

Minimum grade in all concrete drainage systems shall be 0.5% measured along flowline. Concrete drainage systems shall be used when justified by sound engineering reasons based on the following:

1. Where required for proper drainage.
2. Where needed for channelization, pavement edge delineation, control of access, pedestrian safety, or other means of improving traffic flow and safety.

B. TYPES

For specifications on types of concrete drainage systems available refer to these Standards and in some cases to CDOT Standard Plans—M & S Standards, latest edition. Refer to these types as specified in that publication on any plans submitted to the City.

C. CROSS PANS

1. Cross pans for drainage, located at stop intersections, shall be a minimum of 4 foot at stop signs and 6 foot on through streets and/or shall be designed to carry the 25 year storm within the structure. Depths shall not be greater than 1/2-in per 1-ft in width.
2. Cross pans are not allowed on Collector streets unless specifically approved by the Public Works Director.
3. Cross pans are not allowed on Arterial streets.
4. Cross pan approaches shall be designed using the appropriate design speeds as given in these specifications.
5. Crown transitions where approaching a cross pan or an intersecting street shall be at maximum of one percent change 25 feet.

D. LOCATION

Where concrete drainage systems are used, street width requirements shall be measured from lip of concrete to lip of concrete. The Public Works Director shall be consulted on the type of concrete drainage to be used at any location in the City.

E. CONCRETE CLASS AND ADDITIVES

Concrete used for concrete drainage and sidewalks shall meet the following minimum requirements.

1. *MixDesign* – A mix design shall be submitted to the City for all concrete to be used within City ROW.
2. *Strength* – *Minimum 4000 psi.*
3. *Fibers* – “Fibermesh” fibers or approved substitute shall be added to the concrete for strength, at the rate of 1.5 pounds of fiber per cubic yard of concrete. The use of fiber mesh, if used in lieu of reinforcing steel shall be accounted for in the design by the project engineer.
4. *Air Entrainment* – Between 5-8%.

5.2 TRAVEL LANE STANDARDS

A. CROSS SLOPE

1. Cross slope on all streets shall be a minimum of 2.0 percent measured from street centerline to edge of asphalt of concrete. In areas of minimum centerline grade, 3.0 percent shall be considered.
2. Temporary unpaved streets shall be crowned to 3.0 percent.
3. When existing streets are overlaid, the maximum cross slope shall not exceed 4.0 percent measured as above.
4. Width
 - a. Street and alley asphalt widths depend on the total number of traveled lanes. Minimums are listed in Table 2.

5.3 SHOULDER STANDARDS

A. WIDTH

The width of improved shoulder will vary with the use and location. The improved shoulder shall consist of 6 inches of compacted road base at grade with the improved roadway surface. If parking is to be allowed by the City 8 foot shoulders shall be used. If parking is not allowed then 3 foot shoulders shall be used and the roadway shall be signed designating no parking. The decision to allow or not allow parking shall be made by the City of Salida.

B. SIDE DITCHES

Side ditches shall be used in all cut sections. All roadside swales shall be sized to handle the historical 25-year storm flows tributary to the street, unless alternate routes for the major runoff are provided. Culvert sizes shall be designed to carry the 25-year historical flows (streets that are State Highways shall follow CDOT guidelines). The slope from the edge of the shoulder to the bottom of the side ditch shall not exceed 3:1

C. SIDE SLOPES

Side slopes shall not exceed 2:1, unless otherwise approved by the City Engineer. Where slopes equal to or greater than 2:1 are used, special provisions for erosion control and re-vegetation shall be made. Any proposal to deviate from a maximum 2:1 slope shall be accompanied by a geotechnical engineering dealing with the slope treatment being proposed.

5.4 MINIMUM CULVERT DIAMETERS

A. SIZE

All culverts installed shall be sized to handle the 25-year (historical) storm flows. The minimum allowable culvert size shall be 12 inches. All culverts shall be installed with flared end sections. HDPE flared end sections shall have a design concrete collar.

B. COVER

Minimum cover over all culvert shall be 12 inches from top of pipe to finish road grade, unless otherwise approved by the Public Works Director.

C. TYPE

For City drainage systems either smooth wall high density polyethylene (HDPE) or reinforced concrete pipe (RCP) shall be used.

5.5 RETAINING WALLS

Where necessary to meet required side slope grades, walls may be utilized. Retaining walls are defined as exposed face walls exceeding 18-inches.

A. HEIGHT

Retaining walls may not exceed 6 feet in height. If a greater height is needed, the wall must be stepped in maximum 6-foot increments with a minimum 4-foot shelf.

B. LOCATION

Retaining walls may not be located closer than ten (10) feet from the traveled lanes (maximum separation is desired).

C. DESIGN

Retaining wall must be designed by a Colorado Registered Professional Engineer and are subject to City review and approval.

5.6 GUARDRAIL

Guardrail requirements shall be as specified in the CDOT Roadway Design Manual, latest edition. Corten steel shall be used for all guardrail installations unless otherwise approved by the City.

5.7 SIGNS

All signs and street markings shall be designed, constructed and placed in accordance with the Manual of Uniform Traffic Control Devices, latest edition, unless otherwise approved by the City.

5.8 PAVEMENT

A. GENERAL

1. Design of the pavement structure is the determination of the thickness of sub-bases, bases, and surfacing to be placed over sub grade soils. The basic purpose is the selection of the most suitable, available materials and their most advantageous use.
2. Pavement shall be designed for a 20-year life and designed by a Colorado Registered Professional Engineer based on design traffic loading (equivalent single axel loads).

B. TYPE OF SURFACING

Both bituminous pavement and concrete are acceptable surfacing for use on streets in the City of Salida. The determination as to which type of surfacing to use is based on several factors including:

1. Traffic loading and volume
2. Soils in the area
3. Life cycle cost analysis
4. Performance of similar materials in the area

C. THICKNESS DESIGN

Thickness design shall be in accordance with City Standards for street designation and may require additional geotechnical investigation.

D. MINIMUM BASE AND ASPHALT THICKNESS

The pavement design shall be used unless the designed thickness is less than the minimum allowable according to the street classification found in Table 2.

E. MINIMUM BASE AND CONCRETE PAVING THICKNESS

Minimum shall be per design analysis based on the CDOT Pavement Design Guide. The minimum shall be 8" for design loading of 1,000,000 equivalent single axel loads (ESAL's) or more and a minimum of 6" for less than 1,000,000 ESAL's. Driveways and approaches shall have a minimum of 6" unless design structural section dictates additional thickness.

F. COMPACTION

All asphalt shall be compacted to 92% - 96% modified proctor.

SECTION 6.00 – STREETS - OTHER ELEMENTS OF DESIGN

6.1 INTERSECTION

A. MINIMUM ANGLE OF INTERSECTION

Intersections shall approximate right angles as closely as possible. The minimum angle allowed for any type of intersection shall be 70 degrees.

B. RADIUS

All intersection shall have a paved radius on all four corners with minimum radius as in Table 1.

C. CROSS STREET STANDARD

All local streets intersecting an Arterial Street shall be constructed to Collector Street standards for a distance of 200 linear feet as measured from the edge of the Arterial ROW. This shall include street width (asphalt and base) and ROW width.

D. GRADES

Grades at intersections shall not exceed two percent (2%) at any point for 100 feet from the edge of the intersecting street, nor shall the grade exceed four percent (4%) overall for 200 feet from the same edge. Maximum grades may be increased beyond five percent (5%) for short distances in extreme terrain, or when existing conditions warrant, when approved by the City of Salida.

E. SEPARATION

1. A proposed street and an existing street which intersect a common third street shall have a centerline no closer than one hundred twenty five feet (125') from one another
2. Any two (2) proposed streets which intersect a common third street shall have a centerline no closer than two hundred fifty feet (250') from one another.
3. No more than two (2) streets shall intersect at any point. A street shall have a minimum straight distance of one hundred feet (100') from the intersection before it may be curved.
4. The length of local streets between intersections shall be a maximum of four hundred feet (400').

6.2 CUL-DE-SACS AND DEAD ENDS

A. CUL-DE-SACS

Cul-de-sacs shall not exceed three hundred feet (300') in length, unless it can be shown, to the satisfaction of the City, that a longer cul-de-sac would not create safety problems. Cul-de-sacs shall have a minimum paved radius of forty-five feet (45') at the closed end. Cul-de-sacs shall be located at least forty feet (40') from intersections.

B. DEAD-END STREETS

Dead-end streets (except for cul-de-sacs) shall be prohibited unless they are designed to connect with future streets on adjacent land that has not been platted. In such case a temporary turn around of at least 80 foot in diameter shall be provided. Use of a hammerhead type turn may be considered in special cases if approved by the Public Works Director.

C. GENERAL

Cul-de-sacs and Dead-end streets shall meet the minimum design standards as in the 2000 International Fire Code, Appendix D, or latest edition and shall be approved by the City Fire Chief.

6.3 PARKING SPACES

A. SIZE OF PARKING STALLS

1. 30 degree to 90 degree—The minimum size for this type of parking shall accommodate an 18.5’ by 9’ rectangle within the stall.
2. Parallel spaces—Shall be 22’ as measured along the street and 8 feet wide
3. Handicap Stalls—Shall be a minimum 8’ wide by 18.5’ long, with a 5’ accessibility lane or 8’ accessibility lane for vans. Handicap stalls placed on an angle shall accommodate an 8’ wide by 18.5’ long rectangle within the stall and accessibility lane as measured perpendicular to the stall.

6.4 DRIVEWAYS (ACCESSES)

A. GENERAL

The term driveway or access are interchangeable terms and refer to the specific locations granted to properties adjacent to City ROW for the purpose of accessing the property through City ROW from City streets for all purposes including parking areas, dumpster enclosures, garages, etc.

B. INTENT OF REQUIREMENTS

Driveway spacing and widths have been established for aesthetic, maintenance purposes, and safety reasons.

C. REQUIREMENTS

A combination of these factors and others such as sight distance and safety has governed the following.

1. *Proximity to an intersection* – Driveways accessing City ROW near an intersection of an Arterial shall be a minimum of 50’ and for all other street classifications shall be a minimum of 35’ from the intersecting street ROW. When this spacing cannot be achieved (for example, due to lot size or topography) every effort will be made to place the access as far from the intersection as possible.
2. *Access to Single Family* – Only one access will be allowed to single family residences. More than one access will be considered by variance on corner lots.
3. *Widths of Driveways* – The width of any driveway connecting an off-street parking area with a public street, alley, or highway shall fall within the ranges as shown below, as measured within the City ROW. Existing conditions or site constraints may be cause for variance.

Single-family homes	9 ft min, 12 ft max
Duplexes or Multi-Units	9 ft min, 12 ft max (one way) 24 ft max (two way)
Commercial/Business	12 ft (one way), 24 ft (two way)

- a. *Angle of intersection* – All driveways shall intersect the access street at 90 degrees.
- b. *Access to Arterial Streets*- No driveways will be allowed onto arterial streets unless no other access to the lot exists. New subdivisions will not be approved on which driveways exit onto Arterial streets.
- c. *Approved materials* – materials approved for driveways include Class 6 road base; 4000psi natural concrete (no color or stamp allowed); Gravel 1 inch or less or Asphalt.
4. *Exemption and Conformity* – Driveways which are to be repaved (existing driveways) can be done to the previous width. Existing gravel driveways, which are to be paved, shall conform to these requirements.

6.5 PEDESTRIAN/BICYCLE FACILITIES

- A. When pedestrian or bicycle pathway are required by the Planning Department, such facilities shall meet the following requirements.
- B. Minimum sidewalk width shall be five feet, six feet on Collectors and Arterials
- C. Minimum Bike pathway width shall be 8-10 feet wide with one foot compacted road base shoulders 6" thick on each side.
- D. Minimum section for both shall be either four-inch concrete with three inch compacted road base on a prepared subgrade or three inches of asphalt with six inches of road base on a prepared subgrade.
- E. Concrete shall comply with requirement in Section 3, A, 5.
- F. Pedestrian/bicycle pathways shall have handicap ramps in compliance with ADA standards.
- G. Reduced widths for bike paths may be considered where ROW widths are limited.

6.6 TEMPORARY UNPAVED STREETS

Under certain circumstances, the Public Works Director may allow either a delay of final paving of a new street, or a delay in the final lift, until the following construction season to allow sufficient time for roadway stabilization or until a certain percentage of build out occurs. In those cases, all street construction up to and including base work shall be completed. Unpaved streets shall be graded to a three percent crown and then regarded and compacted as required by these standards prior to paving. Unpaved streets will not be accepted by the City for maintenance purposes.

6.7 EROSION CONTROL

A. INTRODUCTION

- 1. Care shall be taken in designing streets to minimize the total area disturbed, as well as to have all disturbed areas replanted to prevent future erosion.
- 2. Developer/contractor must follow all State regulations concerning storm water and erosion control.
- 3. An acceptable erosion control plan must be approved by the City of Salida and utilized by the Contractor to prevent excessive erosion during and after construction. If, in the opinion of the Public Works Director, adequate measures to control erosion are not being taken, the contractor may be ordered to stop all work within City ROW until satisfactory arrangements for control are made.

B. RESEEDING

- 1. All areas disturbed within City ROW during street construction shall be covered with 4 inches of topsoil and reseeded with a native seed mix that is certified free of noxious weeds and approved by the City following completion of the Work.
- 2. The mix shall be applied to a smooth base area free from foreign matter and excessive amount of rock (three inch diameter or larger). The mix shall be applied at a rate and in a manner as recommended by the seed supplier. Following seeding, all areas shall be fertilized.
- 3. Reseeding is required unless an alternative is approved by the City during the planning process.
- 4. Immediately following seeding and fertilizing mulch areas with native hay at a rate of two tons per acre. The hay shall be mechanically crimped into the soil or hand tilled.

C. STEEP SLOPES

1. Any slopes 2:1 or greater shall receive, in addition to all requirements above, an approved soil erosion blanket, approved by the Public Works Director. Slopes greater than 2:1 require specific engineering design and are subject to approval by the City.

6.8 OTHER

Any improvements required on any portion of an existing street, which serves as the access for a new development, shall be designed and paid for by the developer of that new development. New and existing roadways shall be designed or improved to handle the additional traffic volume generated.

SECTION 7.00 – STREETS - TABLES

**TABLE 1
INTERSECTION DESIGN**

Design Topic	Street Type			
	<i>Alley</i>	<i>Local</i>	<i>Collector</i>	<i>Arterial</i>
Minimum Curb or Edge of Asphalt Radius (feet)	Per Detail	Per Detail	15	20

TABLE 2

Street Type	Minimum Dedicated ROW (FT)	Minimum Paved Width (FT)	Minimum Allowable Base and Asphalt
ARTERIAL	100	11 ft lanes, bike lanes, parking TBD	4 inch asphalt 6 inch base
COLLECTOR	80	10 ft lanes, bike lanes, parking TBD	3 inch asphalt 6 inch base
LOCAL (COMMERCIAL)	60	Per detail	3 inch asphalt 6 inch base
LOCAL (RESIDENTIAL)	60	Per detail	3 inch asphalt 6 inch base
ALLEYS	20	20 foot paved (commercial)	3 inch asphalt 6 inch base
CUL-DE-SACS	75 radius	45 foot radius paved	3 inch asphalt 6 inch base
PRIVATE STREETS	N/A	N/A	N/A

TABLE 3

Street Type	DESIGN Speed (MPH) (See Note 1)	Minimum Centerline Radius (FT)	Minimum Tangent Between Curves (FT)
<i>Local</i>	25	75	50
<i>Collector</i>	35	300	150
<i>Arterial</i>	35	300	150

NOTES:

1. Design speed is not necessarily posted speed

SECTION 8.00 – STORMWATER DESIGN CRITERIA

INTENT

The Stormwater Design Criteria establish standards implementing the requirements set forth by Section 16-8-60 Stormwater Management Standards. The stormwater management policies of the City of Salida strongly encourage methods to reduce runoff and increase infiltration to attenuate peak flood discharges and improve stormwater quality.

The physical and chemical characteristics of stormwater runoff change as urbanization occurs, requiring comprehensive planning and management to reduce adverse effects on receiving waters. As stormwater flows across roads, rooftops, and other hard surfaces, pollutants are picked up and then discharged to streams and lakes. Additionally, the increased frequency, flow rate, duration, and volume of stormwater discharges due to urbanization can result in the scouring of rivers and streams, degrading the physical integrity of aquatic habitats, stream function, and overall water quality. The Stormwater Design Criteria provides information fundamental to effective stormwater quality management and planning.

8.1 DRAINAGE LAW

B. SUMMARY

Drainage law not only has its basis in law made by the courts and the legislature but also relies to a large extent on the drainage facts that exist in each case. Therefore, a party with the most reliable facts and information will have a distinct advantage in court. Similarly, drainage engineering and design revolves around drainage law as well as the natural law of gravity.

Each property owner and proposed development shall ensure that stormwater drainage is conveyed and released appropriately to adhere to Drainage Law requirements. MHFD-USDCM Volume 1, Chapter 2 provides regulatory requirements, case studies, and other pertinent information on Drainage Law.

C. REFERENCE CRITERIA

- MHFD-USDCM Volume 1, Chapter 2

D. RELEVANT CITY CODE

- None.

8.2 PLANNING

A. SUMMARY

This section provides an overview of drainage planning principals including the different types of drainage plans, description of various planning-stage considerations, and stormwater planning components.

Planning the urban storm runoff system is fundamental for protection of public health, safety, welfare and the environment. The urban storm drainage system is a subsystem of the total urban infrastructure system and should be integrated with other subsystems including transportation, parks, open space, and utilities. When properly planned in concert with other subsystems, the storm drainage system can provide multiple benefits to urban communities.

During the planning process, planners and engineers evaluate hydrology and identify important constraints, areas of open space preservation, needs for easements, opportunities for recreation and other multi-use opportunities, and means of accommodating utility conflicts. The team may develop design alternatives for locations and types of structures and facilities while also evaluating the suitability, type, and location of detention basins and water quality facilities. It is recommended to identify opportunities and criteria to decrease the effective imperviousness of the built watershed through minimizing directly connected impervious areas.

When practical difficulties are involved in meeting the provisions of these Criteria, the City Engineer may alter, modify or waive the application of these Criteria to allow for the reasonable use of land or accommodate special circumstances. Alterations, modifications, or waivers are intended only for the special purposes described, and are not to be routinely considered or approved. Where it is necessary to vary from these Standards, an applicant for design approval must clearly demonstrate that the Criteria of these standards cannot be met and the alteration, modification, or waiver will create the minimum variance necessary to accomplish the intended purpose. Requested variances shall be provided in the Drainage Report.

B. REFERENCE CRITERIA

- MHFD-USDCM Volume 1, Chapter 3

C. RELEVANT CITY CODE

- Section 16-3-50. – Development Plan:
https://library.municode.com/co/salida/codes/code_of_ordinances?nodeId=CH16LAUSD E_ARTIIIAPREPR_S16-3-50DEPL
- Section 16-8-60. – Stormwater Management Standards:
https://library.municode.com/co/salida/codes/code_of_ordinances?nodeId=CH16LAUSD E_ARTVIIIDEST_S16-8-60STMAST

8.3 FLOOD RISK MANAGEMENT

A. SUMMARY

Where developments are proposed within the 100-year regulatory floodplain, as defined on the effective, or best available data, FEMA Flood Insurance Rate Map or CWCB Floodplain Mapping, as applicant for construction approval shall satisfy and comply with all applicable regulations and requirements set forth in Article XI – Flood Control, and any other pertinent local, state and federal regulations.

B. REFERENCE CRITERIA

- None

C. RELEVANT CITY CODE

- Article XI. – Flood Control:
https://library.municode.com/co/salida/codes/code_of_ordinances?nodeId=CH16LAUSD E_ARTXIFLCO

8.4 SUBMITTALS

A. SUMMARY

Developments that have applicability for a Drainage Study as required in Section 16-8-60 shall prepare a Drainage Report and Drainage Plan for the site's drainage system that is certified by a registered State of Colorado Professional Engineer. The Drainage Study shall be reviewed and approved by the City Engineer.

An outline of submittal requirements are provided below. These submittal requirements apply to any stormwater infrastructure design.

- I. Drainage Plan, to scale and fully dimensioned, showing:
 - i. Title block, legend, north arrow and scale
 - ii. Property lines, Right-of-Ways, Easements
 - iii. Existing utilities
 - iv. Existing contours or graphical description of historic drainage patterns

- v. Location of existing Major and minor drainageways, natural drainage features, and regulatory floodplain extents
- vi. Land cover
- vii. Drainage basin major and subbasin boundaries with design points, flow arrows
- viii. Existing and proposed drainage structures (size, slope and material designation)
- ix. Existing and proposed stormwater detention and water quality facilities with drainage area, surface area side slope/wall, and component labels
- x. Routing of offsite drainage, where applicable

II. Drainage Report, signed and sealed, containing the following:

The Drainage Report shall include a certification page with the following statement prepared by a Professional Engineer licensed in the State of Colorado:

I hereby certify that this Drainage Report and Drainage Plan for [Site Name] was prepared by me, or under my direct supervision, in accordance with sound engineering practice and all applicable state, federal and local regulations, including the provisions of the City of Salida Design and Construction Standards.

Registered Professional Engineer (Affix Seal)

State of Colorado No. _____

- i. Cover Page: Site name, site address, date, site owner, and preparing Engineer
- ii. Existing site description; land use, ground cover, soil types and characteristics
- iii. Property description
- iv. Description of existing and post-development drainage patterns and facilities
- v. Drainage Basin Description
 - a. Major Drainage Basins
 - b. Minor (subbasin) Drainage Basins
 - i. Description of each basin (identifier, land covers, area, treatment approaches, conveyance methods)
- vi. Drainage Design Criteria
 - a. Regulation Applicability
 - b. Site Planning and Constraints
 - i. Description of previous drainage studies or master plans
 - ii. Description of site constraints caused by structures, utilities, etc.
- vii. Hydraulic criteria discussion
 - a. Design storm(s)
 - b. Runoff calculations
 - c. Detention storage and discharge calculation methods
 - d. Water quality capture volume calculations and treatment methods
 - e. Velocity and capacity calculation method(s) for inlets and conveyances
- viii. Stream, Wetland and Waterbody Impacts
- ix. Stormwater Conveyance Design
 - a. Inlet design
 - b. Basin and outlet design (storage volumes, release rates, overflow spillway)
 - c. Infiltration design, as applicable (method, infiltration rate assumptions, drainage law applicability)
- x. Easement Requirements

- xi. Maintenance Requirements
- xii. Summary and Conclusions
 - a. Compliance with requirements
 - b. Exclusions and variances
- xiii. References
- xiv. Technical appendix (calculations, charts, graphs, tables, maps, etc.) sufficient to document and support the methods and conclusions presented.

B. REFERENCE CRITERIA

- MHFD-USDCM

C. RELEVANT CITY CODE

- Section 16-3-50. – Development Plan:
https://library.municode.com/co/salida/codes/code_of_ordinances?nodeId=CH16LAUSD E_ARTIIIAPREPR_S16-3-50DEPL
- Section 16-7-90. – Submittal Requirements:
https://library.municode.com/co/salida/codes/code_of_ordinances?nodeId=CH16LAUSD E_ARTVIIPLDE_S16-7-90SURE
- Section 16-8-60. – Stormwater Management Standards:
https://library.municode.com/co/salida/codes/code_of_ordinances?nodeId=CH16LAUSD E_ARTVIIIIDEST_S16-8-60STMAST
- 16-8-70. – Grading and Erosion Control:
https://library.municode.com/co/salida/codes/code_of_ordinances?nodeId=CH16LAUSD E_ARTVIIIIDEST_S16-8-70GRERCO
- Section 16-11-220. – Standards for Subdivision Proposals:
https://library.municode.com/co/salida/codes/code_of_ordinances?nodeId=CH16LAUSD E_ARTXIFLCO_S16-11-220STSUPR

8.5 RAINFALL

A. SUMMARY

This section provides rainfall depth, duration, intensity, and frequency data to develop the rainfall information needed to carry out the hydrological analyses described in Section 8.6. This section includes:

- Intensity-duration-frequency (IDF) data and relationships used in Rational Method hydrologic computations.
- The basis of point precipitation values for locations within the City.
- Temporal distributions of point rainfall to develop hydrographs.

This chapter includes analysis of the 2-, 5-, 10-, 25-, 50-, 100-, and 500-year return storm events. If information is needed regarding other storm return periods, NOAA 14 should be referenced.

B. REFERENCE CRITERIA

- a. NOAA Atlas 14 Point Precipitation Frequency Estimates:
https://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html?bkmrk=co

C. RELEVANT CITY CODE

- Section 16-8-60. – Stormwater Management Standards:
https://library.municode.com/co/salida/codes/code_of_ordinances?nodeId=CH16LAUSD E_ARTVIIIIDEST_S16-8-60STMAST

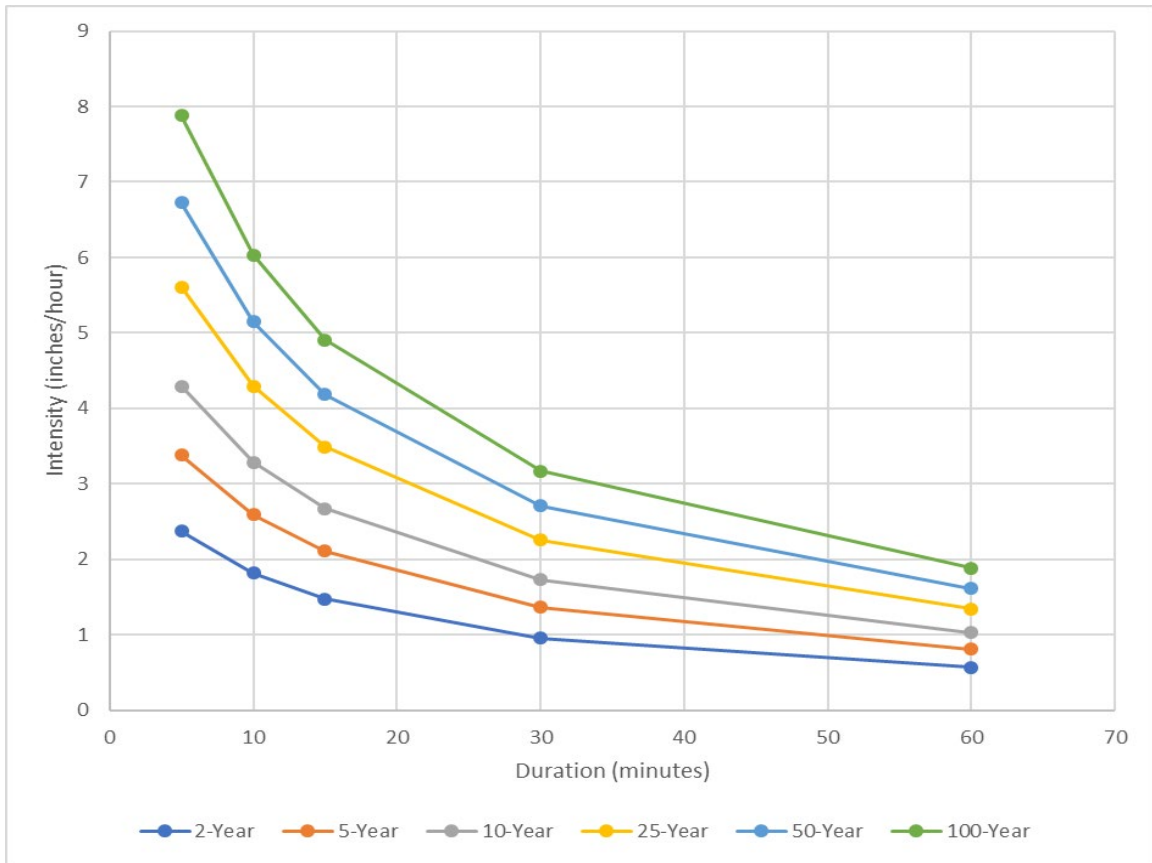
8.5.1 RAINFALL DEPTH, DURATION, FREQUENCY, AND INTENSITY

The rainfall IDF curve is a statistical formula to describe the relationship among the local rainfall characteristics and return periods. The IDF curve is used in the Rational Method for peak runoff predictions for basins smaller than 90 acres. Based on NOAA 14, the IDF curve for the City can be derived according to location and elevation using the data from Station 05-7370 published in NOAA 14. Rainfall intensities were calculated for various frequencies and used to develop the IDF curves shown in Table 1 and Figure 1.

Table 1 - Rainfall Intensity-Duration-Frequency Values for Salida, Colorado

	5-min	10-min	15-min	30-min	60-min	2-hr	6-hr	24-hr
2-Year	2.47	1.81	1.47	0.980	0.596	0.351	0.150	0.056
5-Year	3.31	2.42	1.97	1.37	0.851	0.510	0.205	0.068
10-Year	4.19	3.07	2.50	1.73	1.08	0.645	0.250	0.079
25-Year	5.66	4.15	3.37	2.30	1.41	0.835	0.313	0.094
50-Year	7.00	5.12	4.16	2.80	1.69	0.990	0.365	0.106
100-Year	8.52	6.24	5.08	3.34	1.98	1.15	0.417	0.118

Figure 1 - Rainfall IDF for Salida, Colorado



The data in Table 1 was used to derive the intensity equation (Equation 1) that can be used to calculate intensities for durations not listed in the table. This equation can be used in conjunction with the Rational Method, which is described in 8.6.

Equation 1 – Rainfall Intensity Equation for Salida, Colorado

$$I = \frac{49 * P_1}{(10 + T_d)^{0.927}}$$

Where,

- I= Rainfall intensity (inch/hour).
- P₁ = 1-hour rainfall depth (inches).
- T_d = Storm duration or time of concentration (minutes).

8.5.2 DESIGN RAINFALL DISTRIBUTION

8.5.2.1 2-HOUR DESIGN STORM

For drainage areas larger than 90 acres, where a hydrograph is required, such as a detention facility, a temporal distribution must be assigned to a precipitation event for calculation of runoff. Characteristics of a temporal distribution include storm duration and distribution of rainfall. The MHFD 2-hour design storm depth ratios are provided in MHFD Volume 1 Table 5-2. Design storm depth ratios are percentages of the total one-hour design rainfall depth at a given time increment.

The one-hour point rainfall depths for the City were obtained from NOAA 14 at Station 05-7370 and are provided in .

Table 2 - Rainfall Depths -- NOAA 14 for Station 05-7370, Salida, Colorado

Storm Frequency	1-hour Rainfall (inches)
2-Year	0.596
5-Year	0.851
10-Year	1.08
25-Year	1.41
50-Year	1.69
100-Year	1.98

According to the MHFD-USDCM, Depth reduction factors (DRFs) are typically applied to cumulative watershed models over two square-miles for the two-hour design storm for the 2-, 5-, and 10-year storms. For the 25-, 50-, and 100-year storms, NOAA 14 recommends applying DRFs to cumulative watershed models over 15 square-miles. Depth reduction factors for the 2-, 5-, and 10-year design rainfall events are provided in MHFD Volume 1 Table 5-3. Since there are no areas within the City that are larger than 15 square-miles, the DRFs for the 25-, 50-, and 100-year storms are not applicable.

8.6 RUNOFF

A. SUMMARY

Estimates of peak rate of runoff, runoff volume, and the time distribution of flow provide the basis for all planning, design, and construction of drainage facilities. Erroneous hydrology results in infrastructure that is either undersized, oversized, or out of hydraulic balance. At the same time, it is important to understand that the result of the runoff analysis is an approximation. Thus, the intent of this chapter is to provide a reasonably dependable and consistent method of approximating the characteristics of urban runoff for areas of Colorado.

Design storms will consist of the following:

- Minor Storm: 10-year

Major Storm: 100-year

Snow melt runoff and storage areas shall maintain the safety and functionality of parking and loading areas, and vehicular and pedestrian circulation.

Unless approved by the City Engineer, acceptable methods hydrologic analysis are as follows:

1. The Rational Method. For all basins smaller than 90-acres to calculate runoff for minor and major storms.
2. Colorado Urban Hydrograph Procedure (CUHP) or EPA SWMM: For basins larger than 90-acres, CUHP or EPA SWMM shall be applied with local rainfall conditions.

B. REFERENCE CRITERIA

- MHFD-USDCM Volume 1, Chapter 6
- MHFD-USDCM Detention Sizing Spreadsheet: Current Edition
<https://mhfd.org/resources/software/>

C. RELEVANT CITY CODE

- Section 16-8-60. – Stormwater Management Standards:
https://library.municode.com/co/salida/codes/code_of_ordinances?nodeId=CH16LAUSD_ARTVIIIDEST_S16-8-60STMAST

8.7 STORM DRAINS, INLETS, OUTLET STRUCTURES

A. SUMMARY

The purpose of this chapter is to provide design guidance for stormwater collection and conveyance utilizing streets and storm drains. Procedures and equations are presented for the hydraulic design of street drainage, locating inlets and determining capture capacity, and sizing storm drains. Appropriate pipe end treatment and downstream erosion protection at pipe outfalls is critical to protect the structural integrity of the pipe and to maintain the stability of the adjacent slope. This chapter also includes discussion on placing inlets to minimize the potential for icing (MHFD-USDCM).

Street inlets and storm sewers shall be sized to flow at a minimum to flow the minor storm event flow; and streets conveyance shall be sized such that curbs are not overtopped. During a major storm event, street sections, including right-of-way areas, shall be sized to convey 100-year runoff conveyance. Street / drive sections shall maintain a minimum 10-foot clear space for emergency vehicular access.

Roadside ditches shall have a minimum capacity for the minor storm event. Grass / not permanently stabilized swales shall not have a Froude number greater than 0.5. Driveway culverts shall have a minimum size of 18-inches with appropriate flared end section and erosion protections. Refer to CDOT Roadway Design Manual for CDOT maintained roadways.

Inlets shall conform with the latest standards in the MHFD USDCM and be AASHTO HS-20 traffic loading rated.

Pipe outlets shall be designed with pipe end treatment and erosion protection per MHFD-USDCM.

B. REFERENCE CRITERIA

- MHFD-USDCM Volume 1, Chapter 7
- MHFD-USDCM Volume 2, Chapter 9
- City of Salida Standard Specifications for Construction

C. RELEVANT CITY CODE

- Section 16-3-50. – Development Plan:
https://library.municode.com/co/salida/codes/code_of_ordinances?nodeId=CH16LAUSD E_ARTIIIAPREPR_S16-3-50DEPL
- Section 16-8-20. – Road, Driveway, and Sidewalk Standards:
https://library.municode.com/co/salida/codes/code_of_ordinances?nodeId=CH16LAUSD E_ARTVIIIIDEST_S16-8-20RODRSIST

8.8 BRIDGES

A. SUMMARY

This chapter addresses the hydraulic function of bridges, i.e., conveyance of surface water through embankments such as roadways and railroads. Structural considerations, such as the design requirements to support loads, are not addressed in this chapter and shall follow applicable local, state, and federal design standards.

Bridges serving City right-of-way use shall convey the 100-year storm flows, and provide a minimum of 1-foot of freeboard protection. For bridges within a regulated floodplain, a Hydraulic Analysis shall be produced by a State of Colorado Registered Professional Engineer provided through a Special Flood Hazard Area permit (Floodplain Development Permit). Flow rates can be obtained through CWCB published flow rates. If CWCB does not have published flow rates, HEC-HMS derived flow rates, or other appropriate industry acceptable methodology. A water surface elevation increase on insurable structures are not acceptable. Water surface elevations that result in a water surface elevation rise shall obtain a CLOMR/LOMR as required by CWCB.

Bridge designs shall incorporate appropriate scour and shear stress protections. Refer to latest MHFD USDCM and/or USACE for design guidance.

A private bridge that does not cross a regulated floodplain or placed within a public right-of-way shall be designed for access of emergency personnel, limit the loss of structure during major storm events, and not adversely impact insurable structures.

B. REFERENCE CRITERIA

- MHFD-USDCM Volume 2, Chapter 11

C. RELEVANT CITY CODE

- Section 16-3-50. – Development Plan:
https://library.municode.com/co/salida/codes/code_of_ordinances?nodeId=CH16LAUSD E_ARTIIIAPREPR_S16-3-50DEPL
- Section 16-8-20. – Road, Driveway, and Sidewalk Standards:
https://library.municode.com/co/salida/codes/code_of_ordinances?nodeId=CH16LAUSD E_ARTVIIIIDEST_S16-8-20RODRSIST
- Section 16-8-60. – Stormwater Management Standards:
https://library.municode.com/co/salida/codes/code_of_ordinances?nodeId=CH16LAUSD E_ARTVIIIIDEST_S16-8-60STMAST

8.9 OPEN DRAINAGEWAY CHANNELS

A. SUMMARY

This chapter focuses on the preservation, enhancement, and restoration of stream corridors, constructed channels, swales using natural concepts, and hydraulic structures. Guidance is provided for the hydraulic evaluation of open channels and the design of measures to improve the stability and health of stream systems. These measures include maintaining or establishing an effective planimetric channel form, cross sectional shape, and longitudinal slope; implementing grade control and bank protection; and establishing and maintaining a favorable mix of riparian vegetation.

Design of public improvements for local open drainageway channels shall ensure opportunities to provide for open conveyance corridors that may serve multiple functions, including without limitation, stormwater drainage and flood conveyance, wetlands and water quality enhancement, environmental protection and preservation, open space and wildlife areas, and recreational activities and trail corridors. Stormwater improvements impacting local drainageways shall be designed and constructed to respect, restore and enhance these functions in order to maintain a natural ecology, environment and aesthetic value of such drainageways.

Open Drainageway Channel design shall have a hydraulic analysis report detailing design criteria as defined by MHFD USDCM. Drainageways shall contain a drainage easement which extends to a public access easement or right-of-way that is a minimum 10-foot wide for maintenance and inspection purposes. Drainage easements for drainageways shall be offset from the top of bank to contain the following minimums: 10-foot offset on one side for inspection and maintenance access, and 2-feet on the opposite side.

The MHFD-USDCM criteria should only be used for open channels and ditches within the urbanized areas of the City. If any repair or restoration work is planned for the Arkansas River or South Arkansas River the criteria outlined in CWCB River Corridor Protection and Management guide and Colorado Stream Corridor Construction guide should be used.

B. REFERENCE CRITERIA

- MHFD-USDCM Volume 1, Chapters 8 & 9
- CWCB River Corridor Protection and Management:
https://cwcb.colorado.gov/sites/cwcb/files/CO_RiverCorridorProtectionFS.pdf

C. RELEVANT CITY CODE

- Section 16-11-200. – Alteration of a Watercourse:
https://library.municode.com/co/salida/codes/code_of_ordinances?nodeId=CH16LAUSD_E_ARTXIFLCO_S16-11-200ALWA

8.10 DETENTION STORAGE

A. SUMMARY

Detention storage facilities manage stormwater quantity by attenuating peak flows during flood events. Depending on the design, they can also enhance stormwater quality by incorporating design components to promote sedimentation, infiltration, and biological uptake. This section provides guidance for the analysis and design of storage facilities implemented independently or in combination with stormwater quality facilities (MHFD-USDCM).

Detention shall be provided for all projects that increase the runoff coefficient except for a single family lot not part of a larger development, or runoff that is conveyed directly to the Arkansas or South Arkansas River. All stormwater detention facilities shall contain a drainage easement which extends to a public access easement or right-of-way that is a minimum 10-foot wide for maintenance and inspection purposes. The property owner shall be responsible for maintaining detention facilities.

Detention facilities shall be designed in accordance to MHFD USDCM Volume 2. Utilize current rainfall rates provided by NOAA Atlas 14 Point Precipitation Frequency Estimates. Detention facilities shall be designed to reduce peak developed runoff rates to or below pre-development (i.e. naturally historic) release rates. Over-detention is to be provided to account for undetained site releases. Facility side slopes are not to exceed 4:1 slopes; and necessary walls are to be constructed to provide aesthetic improvement to the site. Walls shall not restrict maintenance access. All facilities shall include an overflow release feature to convey stormwater flows in the event release outlets fail. Developed point discharges are not permissible offsite without City Engineer approval. Release features shall be designed in a direction and manner that will not adversely affect properties downstream.

Detention facilities receiving stormwater with high sediment load that rely on infiltration shall have a forebay designed to MHFD criteria.

B. REFERENCE CRITERIA

- MHFD-USDCM Volume 2, Chapter 12
- MHFD-USDCM Detention Sizing Spreadsheet: Current Edition
<https://mhfd.org/resources/software/>
- NOAA Atlas 14 Point Precipitation Frequency Estimates:
https://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html?bkmrk=co

C. RELEVANT CITY CODE

- Section 16-8-60. – Stormwater Management Standards:
https://library.municode.com/co/salida/codes/code_of_ordinances?nodeId=CH16LAUSD E_ARTVIIIIDEST_S16-8-60STMAST

8.11 POST-CONSTRUCTION STORMWATER QUALITY

A. SUMMARY

This section presents the hydrologic basis and calculations for the Water Quality Capture Volume (WQCV) and discusses the benefits of attenuating this volume or that of the Excess Urban Runoff volume (EURV). This chapter also describes various methods for quantifying volume reduction when using LID practices. Use of these methods should begin during the planning phase for preliminary sizing and development of the site layout. The calculations and procedures in this chapter allow the engineer to determine effective impervious area, calculate the WQCV, and more accurately quantify potential volume reduction benefits of BMPs (MHFD-USDCM).

All new development and redevelopment projects applicable to Section 16-8-60 shall reduce the pollutant impacts from stormwater leaving the site through post-construction stormwater quality management practices.

Applicable sites shall design WQCV measures that best address pollutants of concerns. Infiltration of stormwater using runoff reduction / Low Impact Development (LID) is the preferred approach. WQCV measures shall adhere and be designed to effect MHFD USDCM criteria. All post-construction stormwater quality facilities shall contain a drainage easement which extends to a public access easement or right-of-way that is a minimum 10-foot wide for maintenance and inspection purposes.

Rainfall depth to be 0.4-inches for determining WQCV.

NRCS Hydrologic Soil Group assessments shall be included within the Drainage Report. Infiltration Feasibility shall be provided to determine infiltration rates to confirm infiltration of WQCV.

B. REFERENCE CRITERIA

- MHFD-USDCM Volume 3, Chapter 3

C. RELEVANT CITY CODE

- Section 16-8-60. – Stormwater Management Standards:
https://library.municode.com/co/salida/codes/code_of_ordinances?nodeId=CH16LAUSD E_ARTVIIIIDEST_S16-8-60STMAST

8.12

8.13 CONSTRUCTION STORMWATER MANAGEMENT

A. SUMMARY

Effective management of stormwater runoff during construction activities is critical to the protection of water resources. The Federal Clean Water Act and the Colorado Water Quality Control Act require stormwater discharge permits during construction at development and redevelopment sites that disturb one or more acres of land. Some local governments also require these permits for sites that disturb less than one acre. Both erosion and sediment controls are necessary for effective construction site management as well as effective material management and site management practices. Protection of waterways from construction-related pollution is the ultimate objective of these practices (MHFD-USDCM).

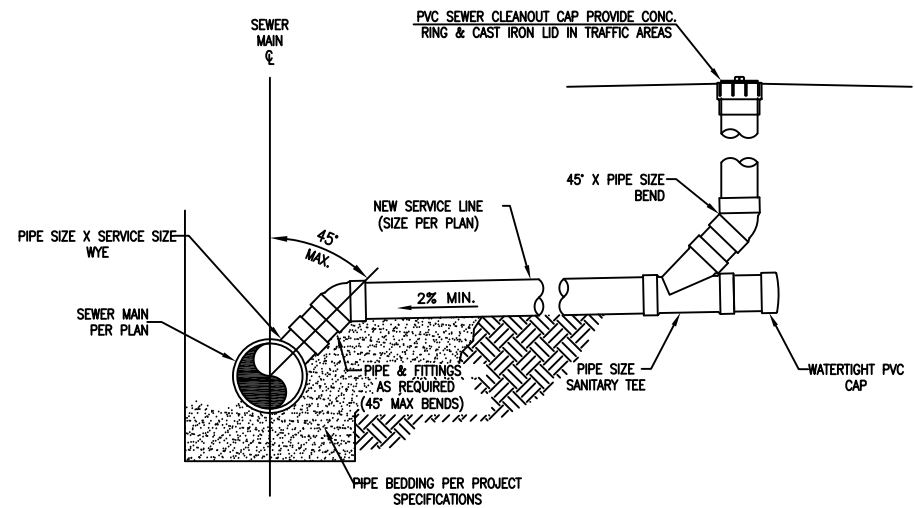
Erosion Control Plan drawings shall be provided to locate and identify all structural and non-structural control measures for erosion and sediment control for the proposed development. The Erosion Control Plan is to be prepared in accordance to the General Permit for Stormwater Discharges Associated with Construction Activity issued by CDPHE. Erosion Control Plans shall include erosion and sediment control detail drawings as provided by MHFD USDCM Volume 3 or CDOT Standard Plans.

B. REFERENCE CRITERIA

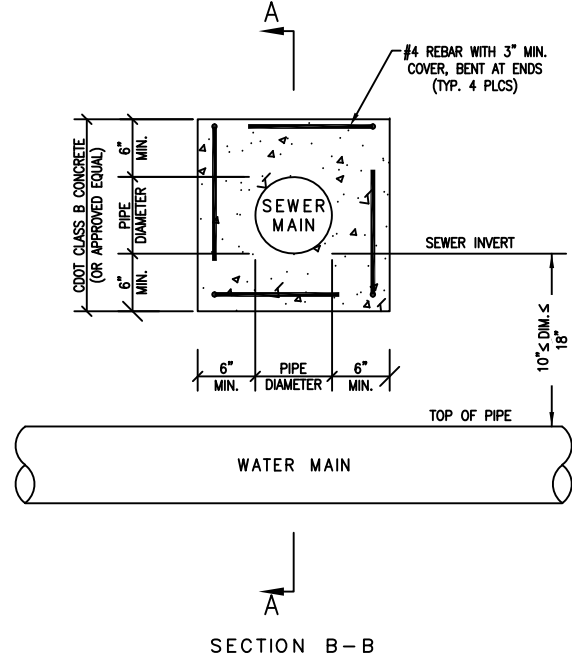
- MHFD-USDCM Volume 3, Chapter 7

C. RELEVANT CITY CODE

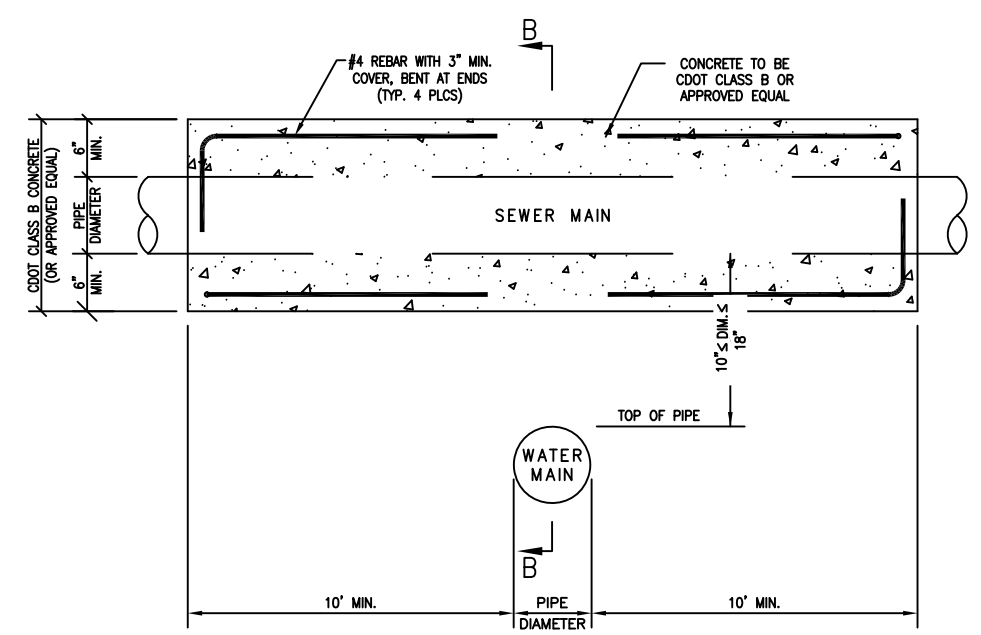
- Section 16-3-50. – Development Plan:
https://library.municode.com/co/salida/codes/code_of_ordinances?nodeId=CH16LAUSD E_ARTIIIAPREPR_S16-3-50DEPL
- 16-8-70. – Grading and Erosion Control:
https://library.municode.com/co/salida/codes/code_of_ordinances?nodeId=CH16LAUSD E_ARTVIIIIDEST_S16-8-70GRERCO
- Section 16-8-90. – Landscaping Standards:
https://library.municode.com/co/salida/codes/code_of_ordinances?nodeId=CH16LAUSD E_ARTVIIIIDEST_S16-8-90LAST
- Section 16-2-60. – Subdivision Improvements Agreements and Development Improvements Agreements:
https://library.municode.com/co/salida/codes/code_of_ordinances?nodeId=CH16LAUSD E_ARTIIADEN_S16-2-60SUIMAGDEIMAG
- Section 16-3-50. – Development Plan:
https://library.municode.com/co/salida/codes/code_of_ordinances?nodeId=CH16LAUSD E_ARTIIIAPREPR_S16-3-50DEPL



SEWER SERVICE TAP
DETAIL



SECTION B-B



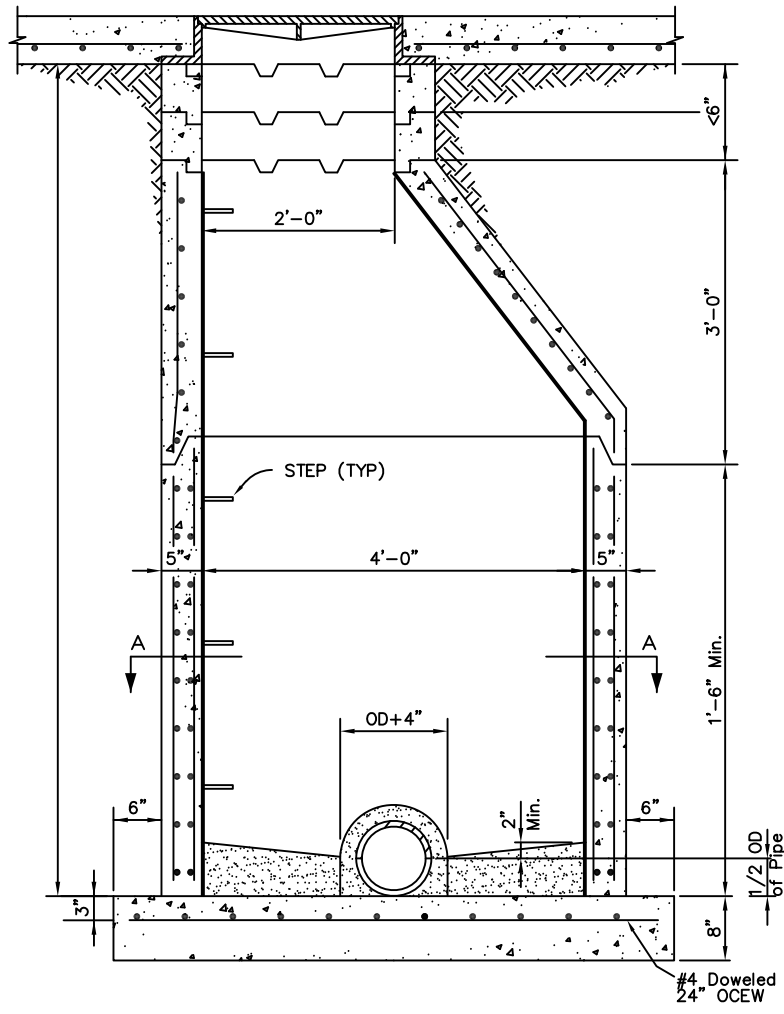
SECTION A-A

STREET MANHOLE RING & COVER:
DEETER 1266 OR APPROVED EQUAL
Street MH Ring & Cover 290 Lb. Min.
Street Manhole Ring & Cover to be Machined.

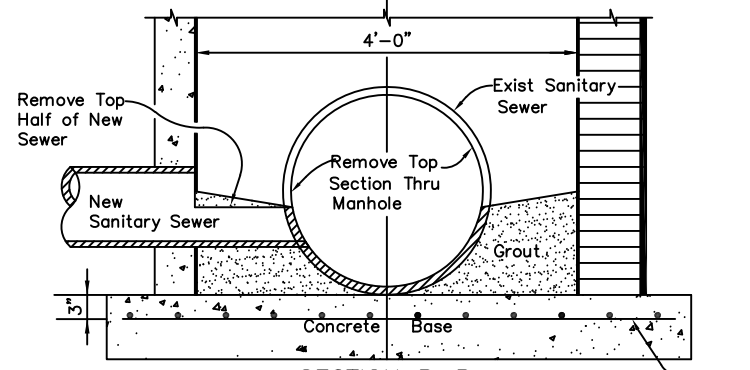
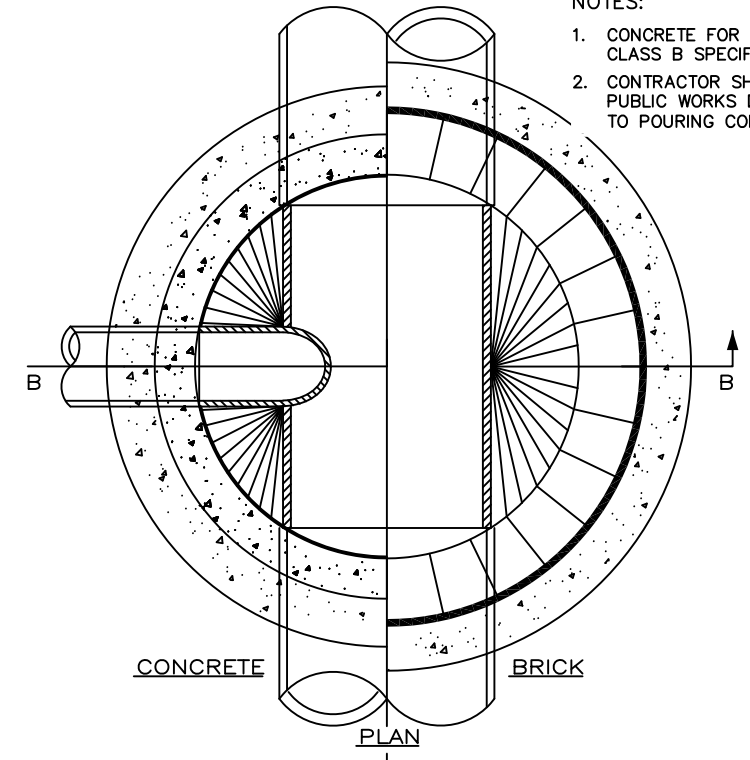
GENERAL NOTE:
Precast Manholes Shall Conform
to ASTM Specification C 478, with
Revisions.
* SANITARY OR STORM SEWER

- NOTES:
1. CONCRETE FOR ENCASEMENT SHALL MEET CDOT CLASS B SPECIFICATIONS.
 2. CONTRACTOR SHALL CONTACT THE CITY OF SALIDA PUBLIC WORKS DEPARTMENT FOR INSPECTION PRIOR TO POURING CONCRETE AND/OR BACKFILLING.

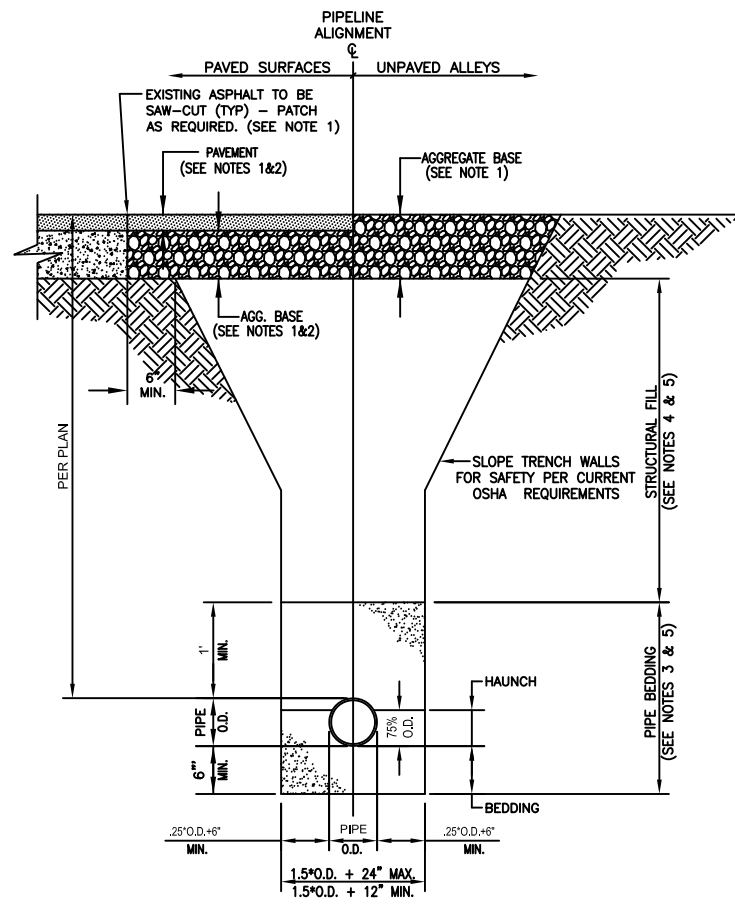
CONCRETE SEWER ENCASEMENT
DETAIL



MANHOLE STANDARD DETAIL



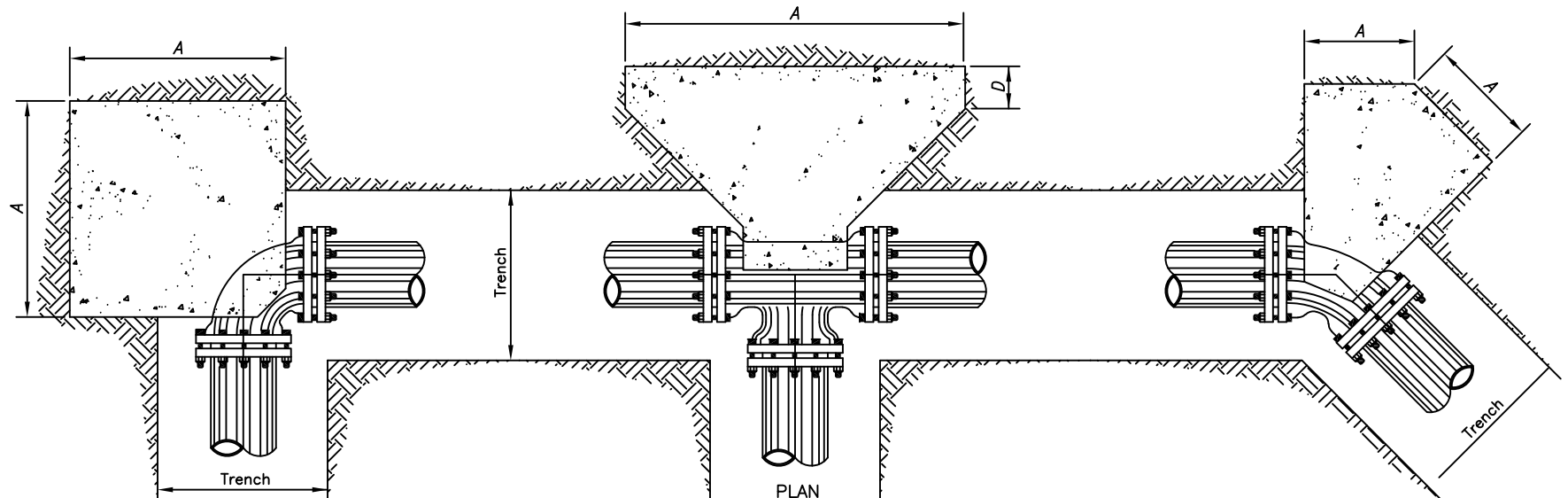
SECTION B-B
NEW SEWER CONNECTION
(Manhole Connected over Exist SS Main)



TRENCH CROSS-SECTION
DETAIL

- TRENCH SECTION NOTES**
1. ASPHALT AND ALLEY PATCHING SHALL COMPLY WITH THE APPROPRIATE CITY OF SALIDA PATCHING STANDARDS.
 2. NEW ASPHALT OR ASPHALT OVERLAYS SHALL COMPLY WITH THE PROJECT SPECIFIC STANDARDS PROVIDED IN THE STREET AND/OR ASPHALT PATCHING NOTES.
 3. PIPE BEDDING SHALL MEET CRUSHED DRAIN ROCK CITY OF SALIDA STANDARDS FOR CONSTRUCTION SECTION 2060.
 4. STRUCTURAL FILL SHALL MEET CDOT CLASS 1 AGGREGATE BASE SPECIFICATIONS.
 5. FILL AND BEDDING MATERIAL TO BE PLACED IN 8-INCH MAXIMUM LIFTS (COMPACTED DEPTH) TO THE FOLLOWING MINIMUM PERCENTAGES UNLESS NOTED OTHERWISE:
 - A. STREETS, PARKING LOTS & ALLEYS: 95% MODIFIED PROCTOR (ASTM D1557)
 - B. UTILITY EASEMENTS OUTSIDE THE STREET SECTION: 90% MODIFIED PROCTOR (ASTM 1557).
 - C. UNDEVELOPED LAND: 80% MODIFIED PROCTOR (ASTM 1557).
 6. THIS DETAIL IS FOR "DRY" TRENCH CONDITIONS, "WET TRENCH CONDITIONS CONTRACTOR SHALL PROVIDE A MINIMUM 4" OF 1.5 INCH MINUS WASHED ROCK UNDER PIPE BEDDING MATERIAL WRAPPED WITH FILTER FABRIC (MIRIF 140N OR APPROVED EQUAL).
 7. EXCAVATED MATERIAL CONTAINING RUBBISH, FROZEN MATERIAL, ORGANIC DEBRIS, ASPHALT, CONCRETE OR OTHER DELETERIOUS MATERIALS NOT SUITABLE FOR STRUCTURAL FILL SHALL BECOME THE PROPERTY OF THE CONTRACTOR. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF MATERIAL IN A FASHION THAT COMPLIES WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS. THE OWNER MAY REQUIRE DOCUMENTATION OF PROPER DISPOSAL AS A CONDITION OF FINAL PAYMENT.
 8. SEE WATER AND/OR SEWER GENERAL NOTES FOR PIPE SPECIFICATIONS.

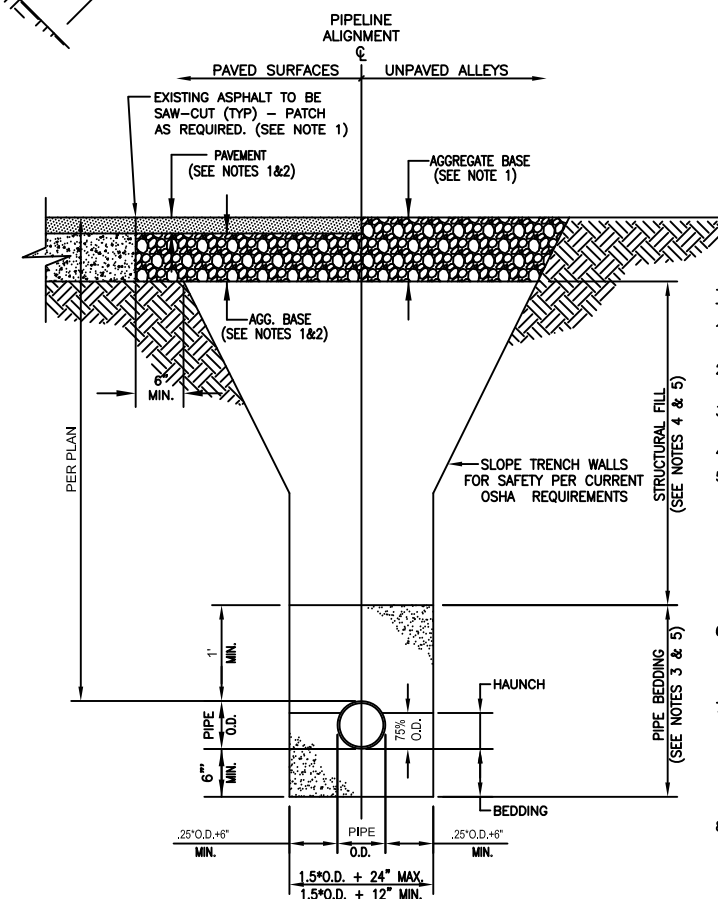
	CITY OF SALIDA, COLORADO PUBLIC WORKS	
	STANDARD DETAILS SANITARY OR STORM SEWER DETAILS	
	DATE: Dec 2022	SCALE: Not to Scale
FILENAME: 10_SALIDA_Sanitary_Sewer_Details.dwg		SHEET: MCL



WD 1 THRUST BLOCK DETAIL

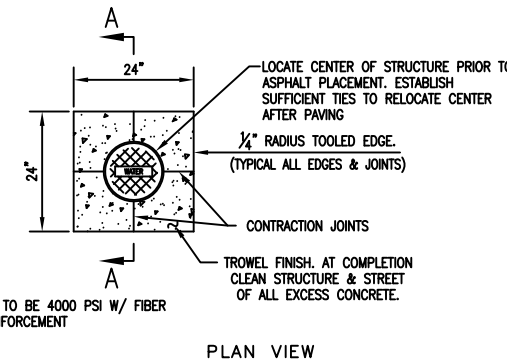
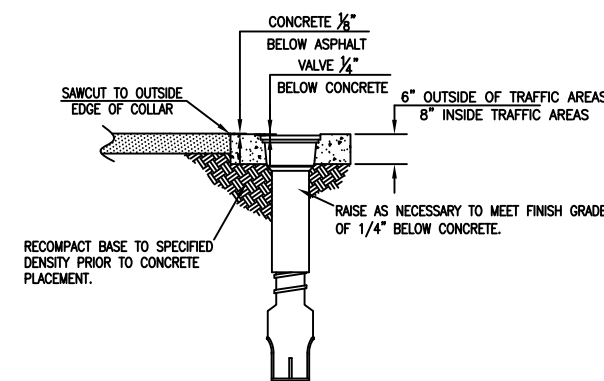
**BLOCKING SCHEDULE
WATER DISTRIBUTION FITTINGS**

PIPE "D"	TEES & PLUGS			90°			45°			22.5°		
	A	B	C	A	B	C	A	B	C	A	B	C
4	16	12	16	12	16	12	16	12	16	12	16	12
6	18	12	18	12	18	12	18	12	18	12	18	12
8	24	16	24	16	24	16	24	16	24	16	24	16
10	30	20	30	16	30	20	30	20	30	20	30	20
12	36	24	36	18	36	24	36	24	36	24	36	24
16	48	32	48	18	48	32	48	32	48	32	48	32
20	60	40	60	18	60	40	60	40	60	40	60	40
24	72	48	72	18	72	48	72	48	72	48	72	48
30	96	64	96	18	96	64	96	64	96	64	96	64

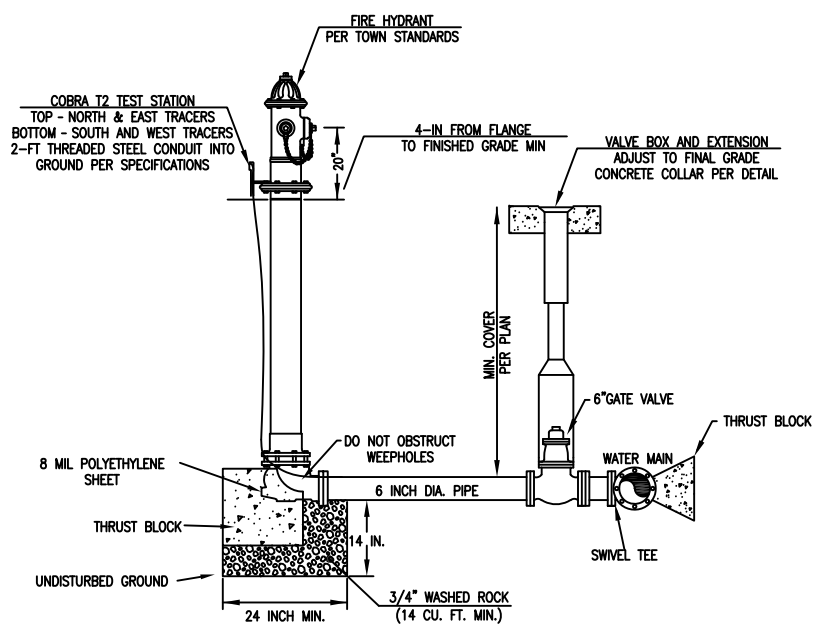


TRENCH SECTION NOTES

- ASPHALT AND ALLEY PATCHING SHALL COMPLY WITH THE APPROPRIATE CITY OF SALIDA PATCHING STANDARDS.
- NEW ASPHALT OR ASPHALT OVERLAYS SHALL COMPLY WITH THE PROJECT SPECIFIC STANDARDS PROVIDED IN THE STREET AND/OR ASPHALT PATCHING NOTES.
- PIPE BEDDING SHALL MEET CRUSHED DRAIN ROCK CITY OF SALIDA STANDARDS FOR CONSTRUCTION SECTION 2060.
- STRUCTURAL FILL SHALL MEET CDOT CLASS 1 AGGREGATE BASE SPECIFICATIONS.
- FILL AND BEDDING MATERIAL TO BE PLACED IN 8-INCH MAXIMUM LIFTS (COMPACTED DEPTH) TO THE FOLLOWING MINIMUM PERCENTAGES UNLESS NOTED OTHERWISE:
 - A. STREETS, PARKING LOTS & ALLEYS: 95% MODIFIED PROCTOR (ASTM D1557)
 - B. UTILITY EASEMENTS OUTSIDE THE STREET SECTION: 90% MODIFIED PROCTOR (ASTM 1557).
 - C. UNDEVELOPED LAND: 80% MODIFIED PROCTOR (ASTM 1557).
- THIS DETAIL IS FOR "DRY" TRENCH CONDITIONS, "WET TRENCH CONDITIONS CONTRACTOR SHALL PROVIDE A MINIMUM 4" OF 1.5 INCH MINUS WASHED ROCK UNDER PIPE BEDDING MATERIAL WRAPPED WITH FILTER FABRIC (MIRIFI 140N OR APPROVED EQUAL).
- EXCAVATED MATERIAL CONTAINING RUBBISH, FROZEN MATERIAL, ORGANIC DEBRIS, ASPHALT, CONCRETE OR OTHER DELETERIOUS MATERIALS NOT SUITABLE FOR STRUCTURAL FILL SHALL BECOME THE PROPERTY OF THE CONTRACTOR. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF MATERIAL IN A FASHION THAT COMPLIES WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS. THE OWNER MAY REQUIRE DOCUMENTATION OF PROPER DISPOSAL AS A CONDITION OF FINAL PAYMENT.
- SEE WATER AND/OR SEWER GENERAL NOTES FOR PIPE SPECIFICATIONS.



WD 3 WATER VALVE CONCRETE COLLAR DETAIL



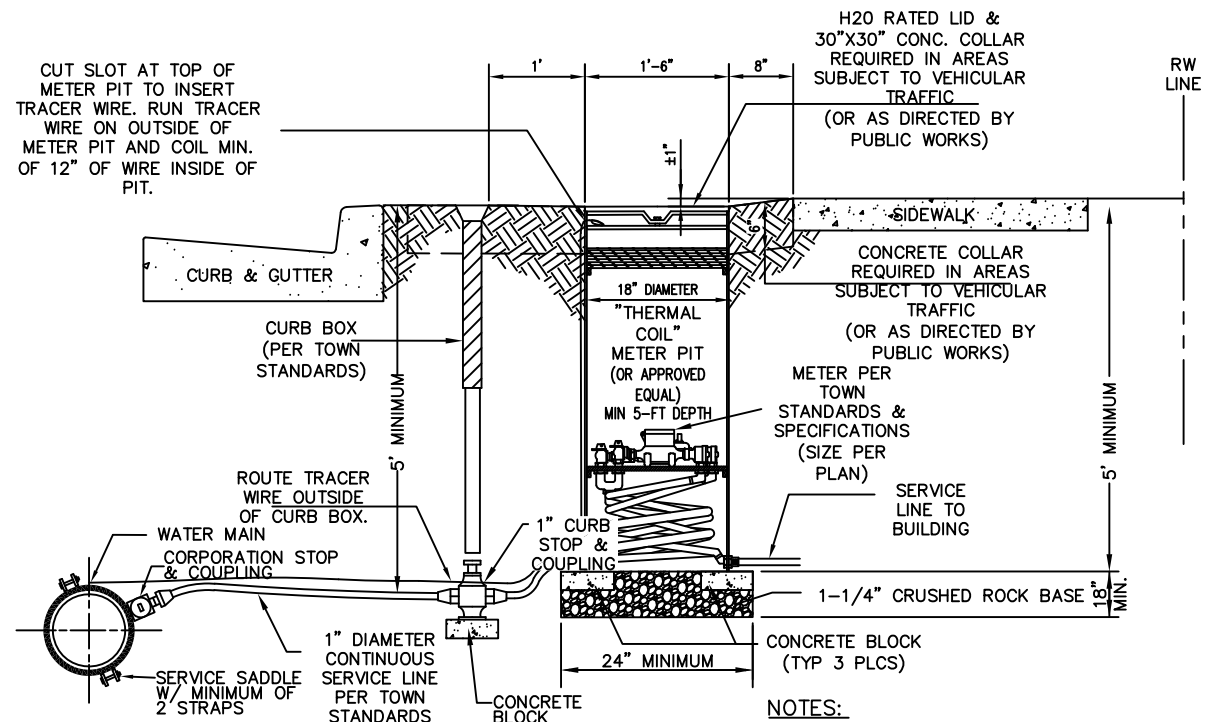
WD 2 FIRE HYDRANT ASSEMBLY DETAIL

WD 4 TRENCH CROSS-SECTION DETAIL

GENERAL NOTES

- Water Lines Shall Have A Minimum Cover Of 4'-6" Or More As Shown On Profiles.
- All Valves On Mains & Fire Hydrant Leads Shall Be Installed With Valve Box Assemblies.
- The Size Of Valve Box Assembly To Be Installed Shall Be Determined By The Type And Size Of Valve.
- Valve Box Caps Shall Have The Word "water" Cast In The Top.

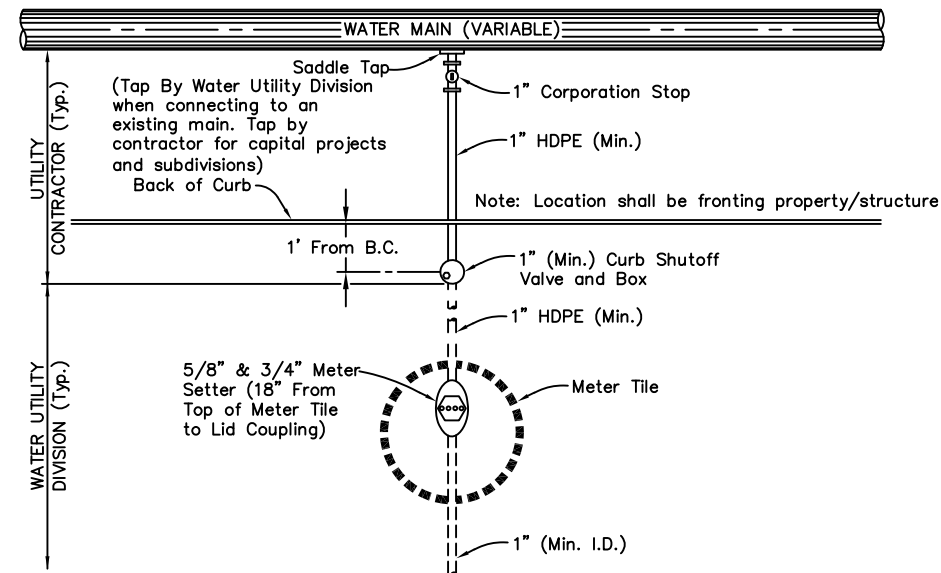
	CITY OF SALIDA, COLORADO PUBLIC WORKS	
	STANDARD DETAILS WATER DISTRIBUTION DETAILS	
	DATE: Dec 2022	SCALE: Not to Scale
FILENAME: 11_Salida_Water_Distribution_Details.dwg		SHEET: BT



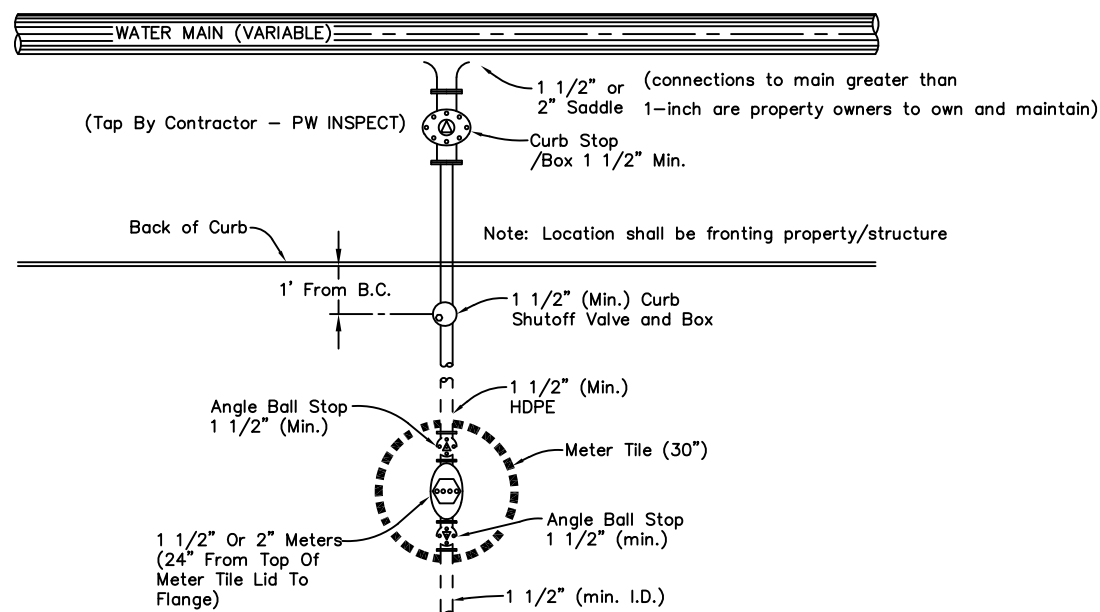
NOTES:

1. 1-INCH HDPE DR9 CTS PIPE TO 3/4"x1" MIP TO COMPRESSION FITTING ON METER PIT.
2. CURB STOP SHALL HAVE 1-INCH BODY.
3. INSTALL TRACER WIRE PER SPECIFICATIONS
4. SETTER RING TO BE LOCATED AT LOWEST LEVEL
5. 6-INCH INSULATION PLUG TO BE PROVIDED WITH STOPPED 18-IN FROM TOP

WS 1 SERVICE AND METER PIT (TYP) **1** DETAIL



WS 2 1-IN AND SMALLER METER **2** DETAIL



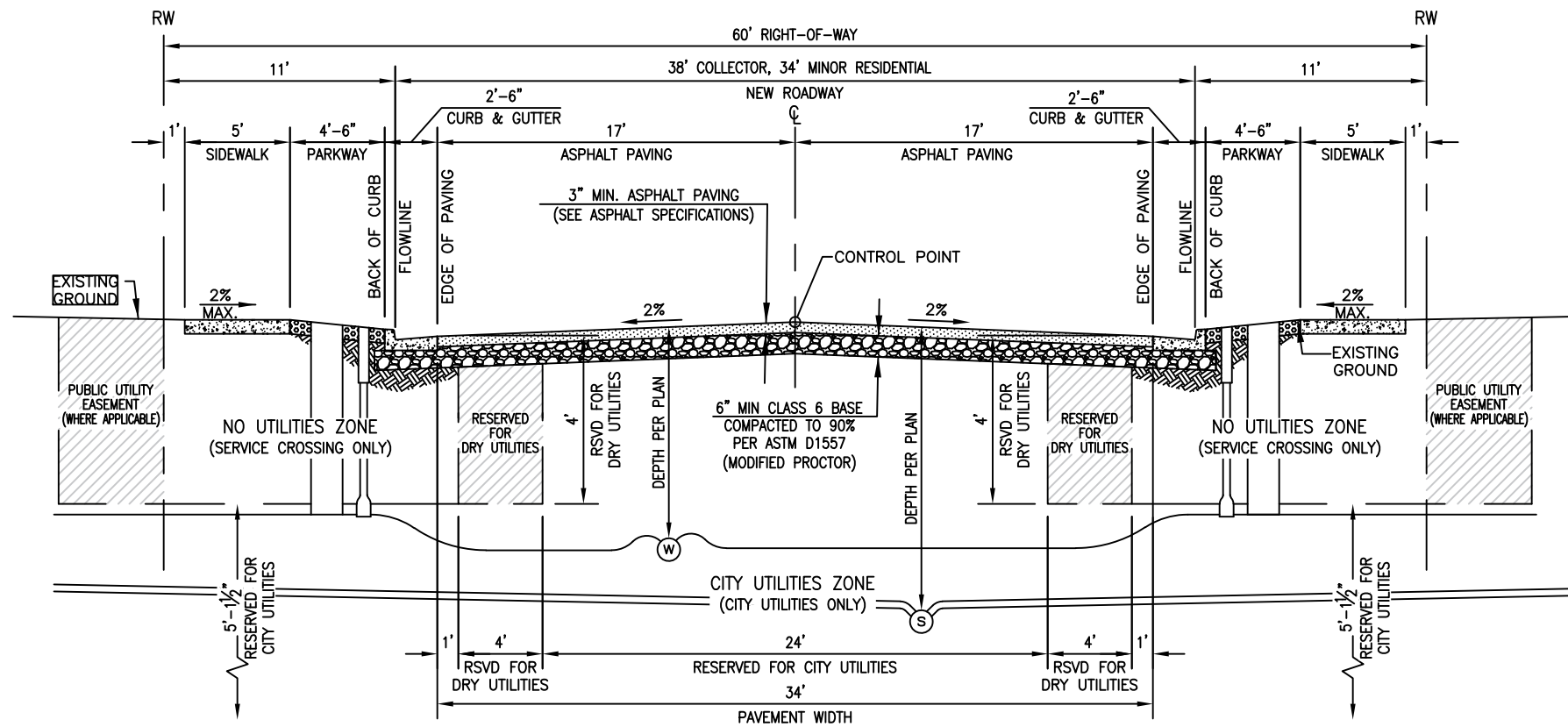
WS 3 1-1/2 AND 2-INCH METER **3** DETAIL



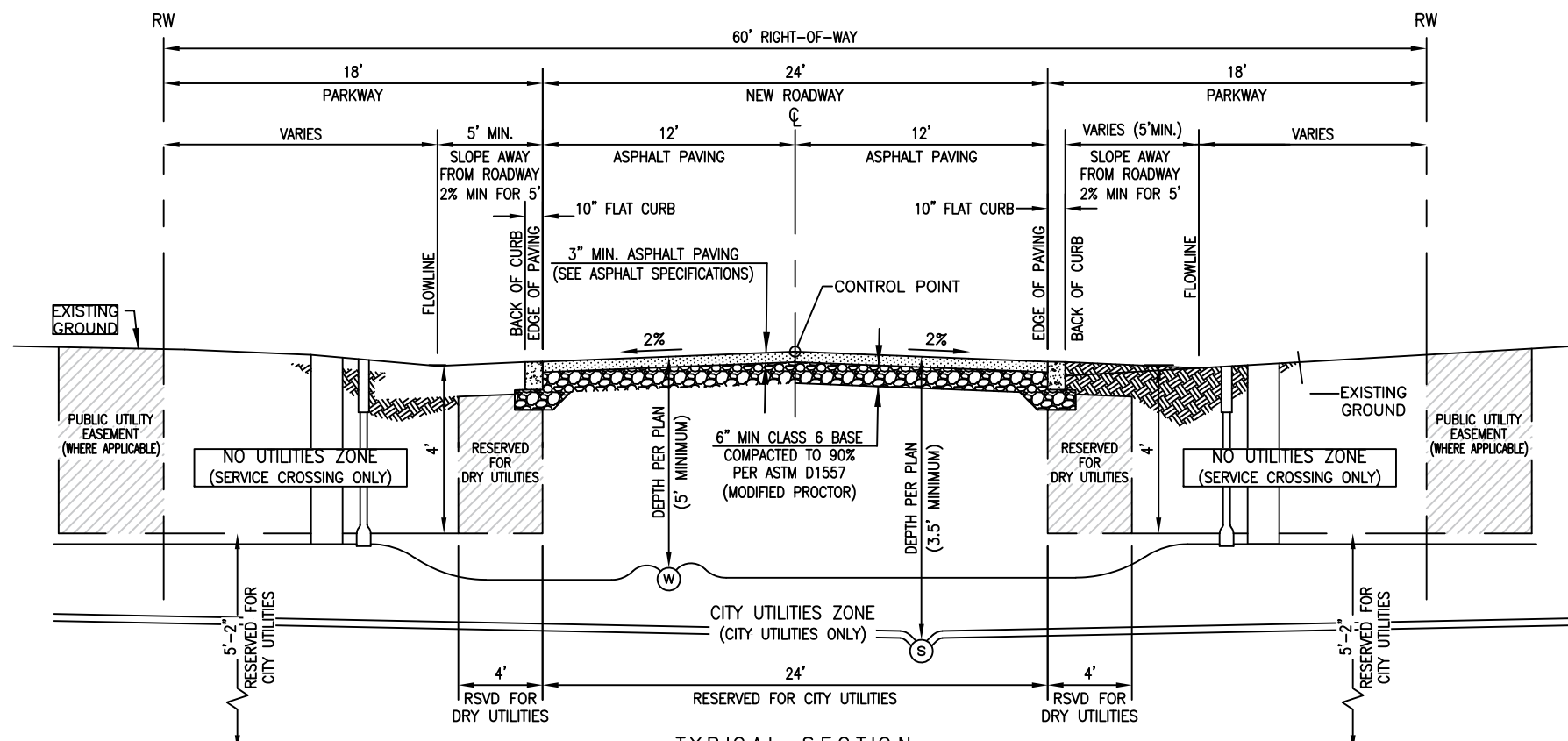
CITY OF SALIDA, COLORADO
PUBLIC WORKS

STANDARD DETAILS
WATER SERVICE DETAILS

DATE: Mar 2023	SCALE: Not to Scale	SHEET: 1
FILENAME: 12_SALIDA_Water_Service_Details.dwg		BY: MCL




TYPICAL SECTION
LOCAL RESIDENTIAL STREET
PRIMARY STREET



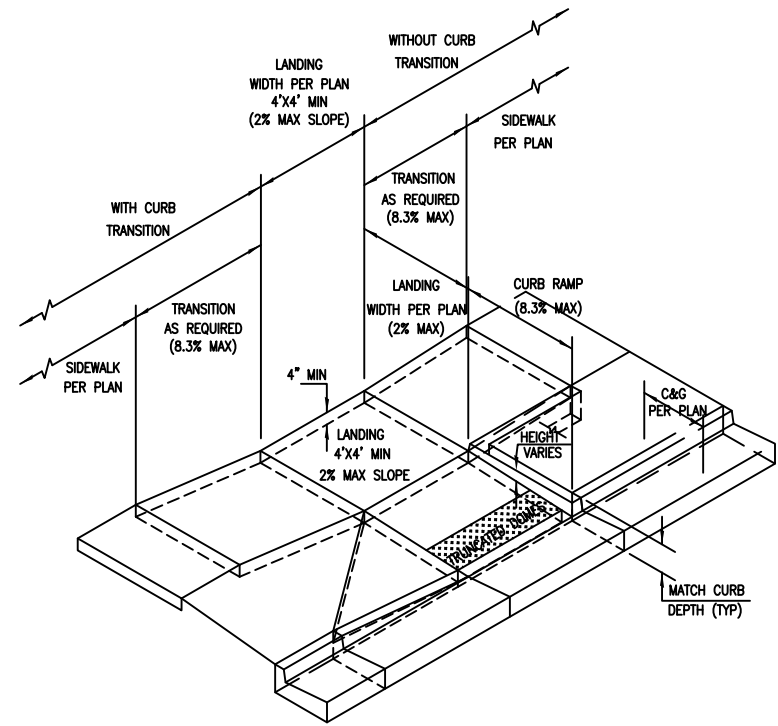
TYPICAL SECTION
LOCAL RESIDENTIAL STREET
SECONDARY STREET

NOTES:

1. DETERMINATION OF STREET TYPE (I.E. PRIMARY, SECONDARY) IS TO BE DETERMINED BY SALIDA PUBLIC WORKS AND PLANNING STAFF.
2. SEE THE CITY OF SALIDA "STANDARD SPECIFICATIONS FOR CONSTRUCTION" FOR REQUIRED MATERIALS SPECIFICATIONS

	CITY OF SALIDA, COLORADO PUBLIC WORKS		
	STANDARD DETAILS STREET DETAILS		
	DATE: Dec 2022	SCALE: Not to Scale	SHEET: BY: MCL

FILENAME: 14_SALIDA_Street_Details.dwg

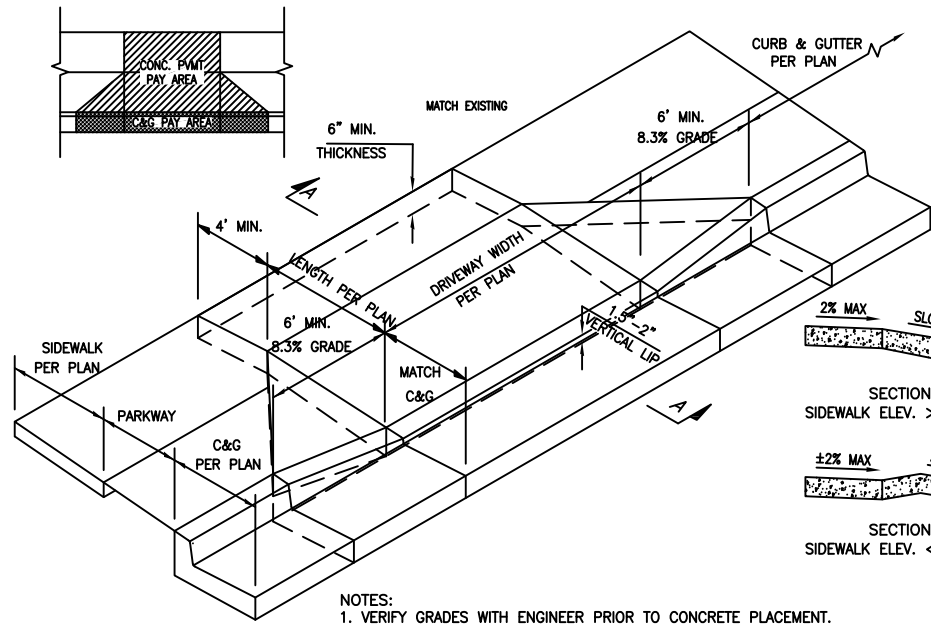


NOTES:

1. TRUNCATED DOMES SHALL BE 24 INCHES WIDE AND EXTEND THE FULL WIDTH OF THE ACCESS RAMP.
2. TRUNCATED DOMES SHALL BE EMBEDDED IN THE FRESH CONCRETE WITH NO AIR SPACE BETWEEN THE CONCRETE AND THE BOTTOM OF THE PLATE. JOINT TO BE TOWELED AT PERIMETER OF DOMES.
3. TRUNCATED DOMES SHALL BE CONSTRUCTED OF UNPAINTED CAST IRON CONFORMING TO ASTM A-48 CLASS 30B.

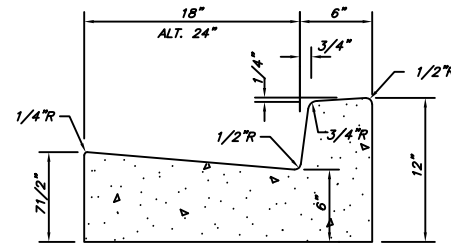
*TYPE 1 PERMITTED ONLY WITH PRIOR APPROVAL BY PUBLIC WORKS
TYPE 2 SHALL BE STANDARD

ST ADA CURB RAMP - TYPE 1
1 DETAIL

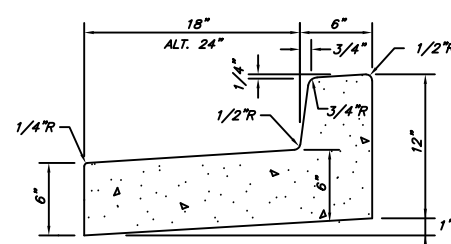


NOTES:
1. VERIFY GRADES WITH ENGINEER PRIOR TO CONCRETE PLACEMENT.

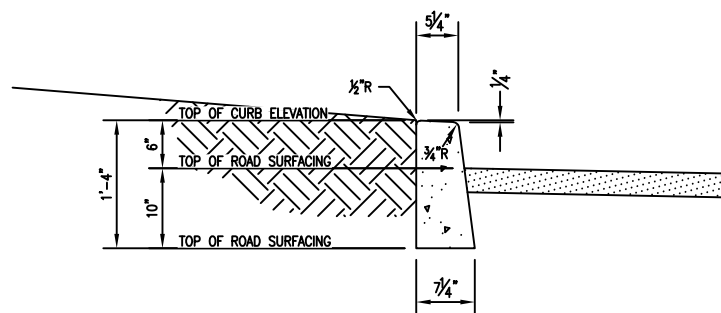
ST TYPE 1 DRIVEWAY
3 DETAIL



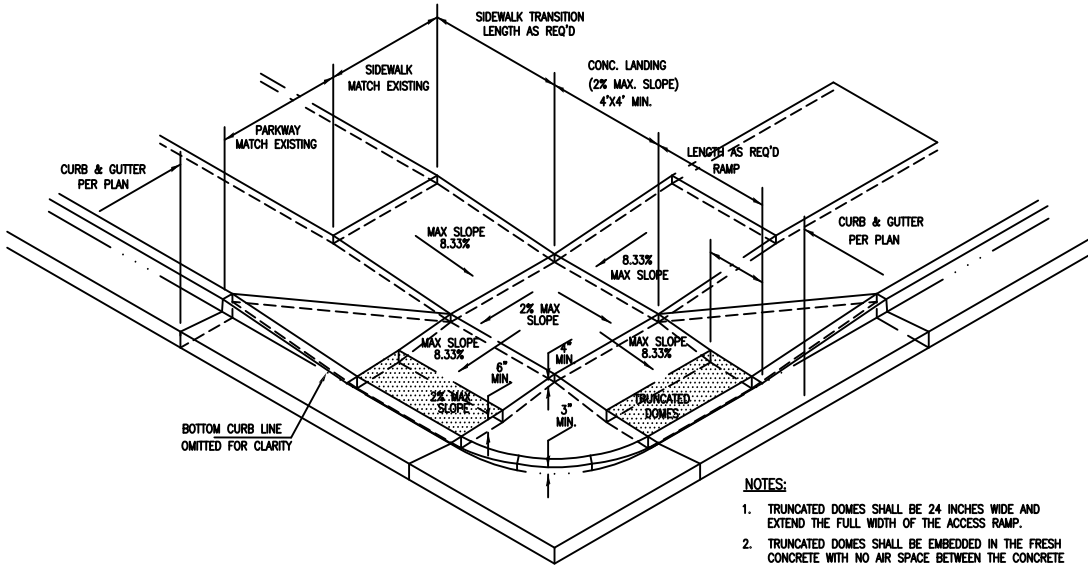
ST STANDARD 24-IN CURB AND GUTTER
4 DETAIL



ST INVERTED 24-IN CURB AND GUTTER
5 DETAIL



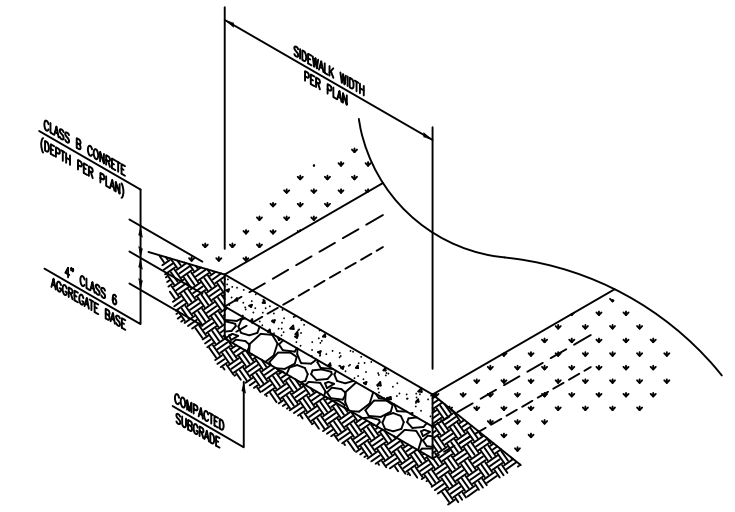
ST 6-IN VERTICAL CURB
6 DETAIL



NOTES:

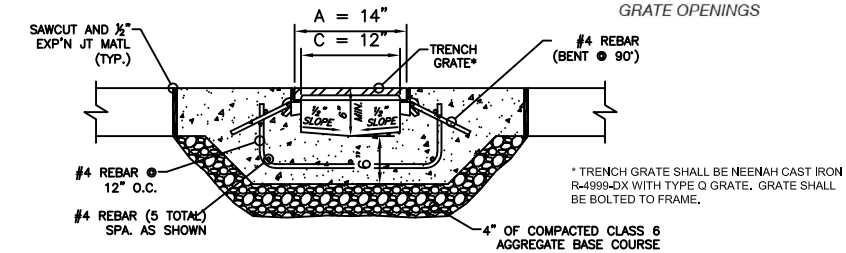
1. TRUNCATED DOMES SHALL BE 24 INCHES WIDE AND EXTEND THE FULL WIDTH OF THE ACCESS RAMP.
2. TRUNCATED DOMES SHALL BE EMBEDDED IN THE FRESH CONCRETE WITH NO AIR SPACE BETWEEN THE CONCRETE AND THE BOTTOM OF THE PLATE.
3. TRUNCATED DOMES SHALL BE CONSTRUCTED OF UNPAINTED CAST IRON CONFORMING TO ASTM A-48 CLASS 30B.

ST ADA CURB RAMP - TYPE 2
2 DETAIL

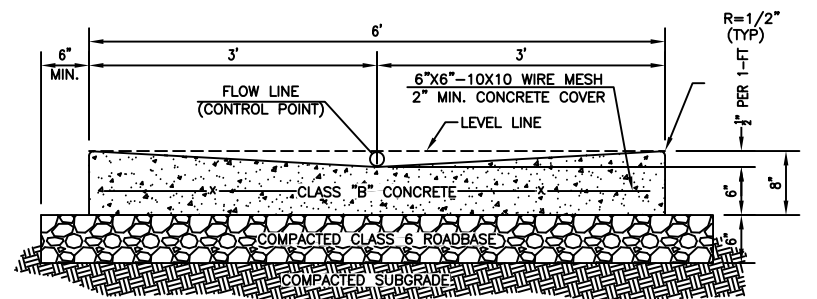


ST SIDEWALK
7 DETAIL

TYPE Q GRATE OPENINGS	
1	2
3	4
5	6
7	8
9	10
11	12
13	14
15	16
17	18
19	20
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95	96
97	98
99	100

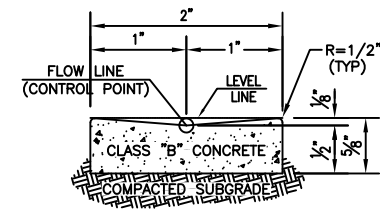


ST SIDEWALK TRENCH DRAIN
8 DETAIL

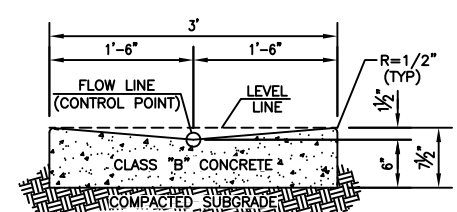


ST 6-FT PAN
9 DETAIL

NOTE: ALL CROSS PANS SHALL HAVE #4 REBAR 12-IN O/C OR EQUIVALENT REBAR MAT



ST 2-FT PAN
10 DETAIL



ST 4-FT PAN
11 DETAIL

	CITY OF SALIDA, COLORADO PUBLIC WORKS	
	STANDARD DETAILS STREET DETAILS	
	DATE: Mar 2023	SCALE: Not to Scale
	FILENAME: 13_SALIDA_Street_Details 1.dwg	SHEET: MCL