MEETING AGENDA
CITY OF EAST HELENA
CITY HALL – 306 EAST MAIN - ROOM 110
COUNCIL MEETING: 6:30 PM
DATE: TUESDAY, JULY 15, 2025
JOIN ZOOM MEETING: https://us06web.zoom.us/j/3787705872
CONFERENCE CALL-IN: 1-253-205-0468 MEETING ID: 378 770 5872

MEETING CALLED TO ORDER: Mayor Harris

PLEDGE OF ALLEGIANCE: Councilmember Leland

PUBLIC COMMENTS: Note: This time is set aside for comments from the public on matters that are not on the meeting agenda. Public comments will be taken on agenda items prior to a motion. All public comments will be limited to a reasonable duration. Prior to your comments, please state your name and address in an audible tone of voice for the record.

APPROVAL OF MINUTES: July 1, 2025

CITY COURT REPORT: City Judge Dennis Loveless

DEPARTMENTAL REPORTS:

Administration – Clerk/Treasurer Amy Thorngren
Police Department – Police Chief Mike Sanders
Public Works - Public Works Director Kevin Ore
Volunteer Fire Department - Fire Chief Roger Campbell

NEW BUSINESS:

1. City of East Helena Engineering Standards – Public Works Director Ore
   Action: Approve/Deny/Table
2. Appointment of Molly Holahan to the East Helena Planning Board – Mayor Harris
   Action: Approve/Deny/Table
3. Kleffner Ranch Offer to Purchase JFK Park Walking Bridge Frame – Kleffner Ranch
   Action: Approve/Deny/Table

MAYOR'S REPORT: Mayor Harris

COUNCILMEMBERS' REPORTS:

Don Dahl
Judy Leland
Wesley Feist
Suzanne Ferguson

LEGAL REPORT: City Attorney Elverum

PAYMENT OF BILLS: Action: Approve/Deny/Table

MEETING SCHEDULE:

1. East Helena City Council Meeting, Tuesday, August 5, 6:30 p.m., City Hall Room 110
2. East Helena City Council Meeting, Tuesday, August 19, 6:30 p.m., City Hall Room 110

ADJOURNMENT: Mayor Harris

ADA NOTICE

The City of East Helena is committed to providing access to persons with disabilities for its meetings, in compliance with Title II of the Americans with Disabilities Act and the Montana Human Rights Act. The city will not exclude people with disabilities from participating in its meetings, or otherwise deny them the City's services, programs, or activities. Persons with disabilities requiring accommodations to participate in the City's meetings, services, programs, or activities should contact the City Clerk as soon as possible to allow sufficient time to arrange for the requested accommodation, at any of the following:

(406) 227-5321 or TTY Relay Service 1-800-253-4091 or 711

cityclerk@easthelenamt.us - 306 East Main Street, P.O. Box 1170, East Helena, MT 59635

MEETING MINUTES
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JOIN ZOOM MEETING: https://us06web.zoom.us/j/3787705872
CONFERENCE CALL-IN: 1-253-205-0468 MEETING ID: 378 770 5872

MEETING CALLED TO ORDER: Mayor Harris called the meeting to order at 6:30 p.m. Councilmember Dahl led the Pledge of Allegiance.

CITY OFFICIALS & STAFF PRESENT: Mayor Kelly Harris, Council President Don Dahl, Councilmember Judy Leland, Councilmember Wesley Feist, Clerk/Treasurer Amy Thorngren, City Attorney Pete Elverum, Public Works Director Kevin Ore, Zoning Officer Jeremy Fadness, Deputy Police Chief Ed Royce, Patrol Officer Chris Kirkegaard, Patrol Officer Zack Butler, and Fire Chief Roger Campbell

PUBLIC PRESENT: John Finn, Andrea Eckerson, Maggie Meredith, Jacob Kuntz, Jeff Downhour, Gretchen Krumm, Scott Walter, Troy Maness, Cody Maness, Parker Maness, Dan Rispens, Dan Maness, Jim Stipcich, Callie Aschim, and Josh Buissereth

ABSENT/EXCUSED: City Judge Dennis Loveless, Police Chief Mike Sanders, and Councilmember Suzanne Ferguson

(0:00:35) PUBLIC HEARING:

1. **Request for Variance to Allow the Change of Use of an Existing Accessory Structure (Garage) to a Primary Structure (Single-Family Residential)** – The public notice and staff report were included in the council packet. Zoning Officer Fadness discussed the staff report and recommended approval of the zoning variance. This was an information-only item.
2. **Request for Variance to Allow the Change of Use of an Existing Accessory Structure (Garage) to a Primary Structure (Single-Family Residential)** – Mayor Harris called for public comment on the proposed zoning variance. (0:03:30) Troy Maness commented in favor of the request and answered questions from Council.
3. **Request for Variance to Allow the Change of Use of an Existing Accessory Structure (Garage) to a Primary Structure (Single-Family Residential)** – Councilmember Feist made a motion to approve the zoning variance. Councilmember Leland seconded the motion. The motion passed unanimously.

(0:09:55) PUBLIC COMMENTS: Jacob Kuntz of Helena Area Habitat for Humanity invited Council to attend a home dedication ceremony in the Highland Meadows Subdivision on July 29th.

(0:11:05) APPROVAL OF MINUTES: The draft minutes of the June 17, 2025 meeting were included in the council packet. There was no public comment. Councilmember Leland made a motion to approve the minutes as presented. Councilmember Feist seconded the motion. The motion passed unanimously.

CITY COURT REPORT: City Judge Dennis Loveless was excused.

DEPARTMENTAL REPORTS:

(0:11:35) Administration – Clerk/Treasurer Amy Thorngren reported that the admin department was wrapping up FY25 and getting on with FY26

(0:13:00) Police Department – Police Chief Mike Sanders was excused. Deputy Police Chief Ed Royce reported that the department had received 344 calls-for-service in June; he attended the monthly Tow Truck Association meeting; he attended the 911 Advisory meeting; Officer Kyle Butler participated in field officer training and will be attending firearms training; the department was awarded a bronze plaque from Lexipol for the third year in a row; and that the department was prepared for the Independence Day holiday and rodeo weekend.

(0:16:35) Public Works – A written report was included in the council packet. Public Works Director Kevin Ore reported that the CIPP lining project was finished; the water main replacement at Lewis Street and Montana Avenue was almost complete; and that an updated grant agreement template was received from Federal Highways.

(0:19:15) Volunteer Fire Department - Fire Chief Roger Campbell reported that he had been working on the department's budget; he had coordinated with Prickly Pear Land Trust on access to the new trail area; and that the department was preparing for the Independence Day holiday.

NEW BUSINESS:

1. **(0:21:10) JFK Park Land for New East Helena Branch Library Building** – Copies of the presentation and the feasibility study were included in the council packet. Lewis & Clark Library Director John Finn, East Helena Branch Librarian Andrea Eckerson, and Jeff Downhour of Mosaic Architects gave presentations on the proposed new library. (0:37:20) Scott Walter of the East Helena School Board commented in support of the proposed new library. (0:38:50) Callie Aschim of the Helena Area Chamber of Commerce commented in support of the proposed new library. (0:39:30) East Helena Public Schools Superintendent Dan Rispens commented in support of the proposed new library. Written support for the proposed new library had been received from Montana State Senator Mary Ann Dunwell. City Attorney Elverum noted that the request at hand was not to transfer the land at this time, but approval for the location. Library Director Finn answered questions from Council. Councilmember Feist made a motion to continue working with the Lewis and Clark Library in order to facilitate a transfer of a portion of JFK parkland to be used as a new library branch for the Lewis and Clark Library to serve the residents of

East Helena. Councilmember Leland seconded the motion. The motion passed unanimously.

2. **(0:49:10) Appointment of Josh Buissereth as Patrol Officer** – Relevant MCA and the East Helena Police Commission Certificate of Qualification of Applicant form were included in the council packet. Deputy Police Chief Royce discussed Josh Buissereth's qualifications and requested his appointment as Patrol Officer for the City of East Helena. City Attorney Elverum discussed the process of hiring a patrol officer. There was no public comment. Councilmember Leland made a motion to approve the appointment of Josh Buissereth as Patrol Officer. Councilmember Feist seconded the motion. The motion passed unanimously.
3. **(0:55:25) Resolution of Intent to Modify Existing Lighting District No. 101** – Draft Resolution 620 was on the council room table. City Attorney Elverum explained that once the resolution of intent is passed, adjustments to the Highland Meadows Lighting district could be made by resolution to include new residential properties and cost estimates in the district. The estimated yearly assessment is $30.97 per property. . A public hearing will be held on August 5th. There was no public comment. Councilmember Feist made a motion to approve Resolution 620. Councilmember Leland seconded the motion. The motion passed unanimously.
4. **(1:00:50) Resolution of Intent to Modify Existing Lighting District No. 201** – Draft Resolution 621 was on the council room table. City Attorney Elverum explained that once the resolution of intent is passed, adjustments to the Vigilante Lighting district could be made by resolution to include new residential properties and cost estimates in the district. The estimated yearly assessment is $143.61 per property. A public hearing will be held on August 5th. There was no public comment. Councilmember Dahl made a motion to approve Resolution 621. Councilmember Leland seconded the motion. The motion passed unanimously.
5. **(1:02:50) Resolution of Intent to Modify Existing Street Maintenance District No. 101** – Draft Resolution 622 was on the council room table. City Attorney Elverum explained that once the resolution of intent is passed, adjustments to the Highland Meadows street maintenance district could be made by resolution to include new residential properties and cost estimates in the district. The estimated yearly assessment is $293.09 per property. A public hearing will be held on August 5th. There was no public comment. Councilmember Feist made a motion to approve Resolution 622. Councilmember Dahl seconded the motion. The motion passed unanimously.
6. **(1:05:20) Resolution of Intent to Modify Existing Street Maintenance District No. 201** – Draft Resolution 623 was on the council room table. City Attorney Elverum explained that once the resolution of intent is passed, adjustments to the Vigilante street maintenance district could be made by resolution to include new residential properties and cost estimates in the district. The estimated yearly assessment is $283.15 per property. A public hearing will be held on August 5th.

There was no public comment. Councilmember Leland made a motion to approve Resolution 623. Councilmember Dahl seconded the motion. The motion passed unanimously.

(1:12:35) MAYOR'S REPORT: Mayor Harris reported that he had been working on the FY26 budget; had attended the Board of Health meeting; was interviewed by the Boulder Monitor regarding East Helena's growth; was moving forward with the BUILD grant; had attended two meetings regarding the future of the wastewater treatment plant; and that Tri County Disposal would be changing ownership August 31st.

COUNCILMEMBERS' REPORTS:
(1:17:00) Don Dahl reported that he attended the Hauser Dam OSHA Safety Recognition event and toured the dam.
Judy Leland had nothing to report.
(1:18:00) Wesley Feist reported that he attended the Montana Opioid Abatement Trust meeting and the Helena Area Chamber of Commerce Board meeting.
Suzanne Ferguson was excused.

(1:19:45) LEGAL REPORT: City Attorney Elverum reported that he had attended two meetings regarding the future of the wastewater treatment plant; the transfer of ownership of Tri County Disposal emphasizes the need for a new garbage truck; the court and the police officers are performing well; and that he is prosecuting a case for the City of Helena.

(1:24:10) PAYMENT OF BILLS: Claims 298916 through 298969 were presented for Council's review. Councilmember Leland made a motion to pay the bills. Councilmember Feist seconded the motion. The motion passed unanimously.

MEETING SCHEDULE:
1. East Helena City Council Meeting, Tuesday, July 15, 6:30 p.m., City Hall Rm 110
2. East Helena City Council Meeting, Tuesday, August 5, 6:30 p.m., City Hall Rm 110

ADJOURNMENT: Mayor Harris adjourned the meeting at 7:54 p.m.

ATTEST:

_____ _____

Clerk/Treasurer Mayor

Montana Wool Growers Assoc.
PO Box 1693
Helena, MT 59624

Phone (406) 442-1330
stefanie@mtsheep.org
www.mtsheep.org

July 2, 2025

Dear members of the East Helena City Council,

The Montana Wool Growers Association cordially invites you and to join us at the **2025 Lamb Jam**. This Lamb-tastic event will take place on **August 9th at Kennedy Park** in East Helena from 12pm-4pm. The Lamb jam is a culinary event featuring four Montana chefs who will each be showcasing a different cut of Montana grown lamb with complimenting side dishes for participants to enjoy.

The Lamb Jam also features local producers who will present about the sheep industry during the meal and an array of industry vendors showcasing sheep and wool products. Colter Brown of the Northern Ag Network will be joining us as well as the afternoon's emcee. The event will conclude with a people's choice award bestowed on one of these fantastic chefs.

Please RSVP to Stefanie Leach by August 5th. She can be reached at stefanie@mtsheep.org or by phone at (406)442-1330. We hope to see you there!

Sincerely,

Stefanie Leach
MWGA Executive Secretary

City Clerk

From: John Finn <JFinn@lclibrary.org>
Sent: Thursday, July 10, 2025 8:48 AM
To: City Clerk
Subject: [EXTERNAL] Library Foundation invite

Hi Amy,

It was good to see you last week.

The Library Foundation is hosting their August board meeting in East Helena at JFK park. They will meet at Noon on Thursday August 21. We'll have lunch and have a brief business meeting. I would like to extend an invitation to you and the mayor and city council to join us for lunch. Can you make that invitation known to the team for me?

Stay cool! John

John Finn
Director

LEWIS & CLARK LIBRARY

120 S. Last Chance Gulch
Helena, MT 59601
Phone: 406-447-6699
JFinn@lclibrary.org
www.lclibrary.org

All,

Since July 1, the East Helena Police Department has conducted 153 calls for service, with 5 new cases.

The 4th of July celebration was much quieter this year than last, which was wonderful.

Officer Buissereth started on July 8 and was sworn in by Judge Loveless Wednesday morning. He has been busy with paperwork and policy. He qualified with his duty weapons on Wednesday as well and will be in uniform for this weekend's rodeo.

Officer Zach Butler is in his final stages of FTO and will be out on the streets on his own in the next week or two.

Officer Kyle Butler is currently attending firearms training this week in Helena.

I will be attending the Missouri River Drug Task Force Meeting on the 16th. I have an IT meeting on the 17th, as well as the CJCC meeting on the 22nd, and a two-truck meeting on the 31st. Additionally, all EHPD employees will be attending training with the County Attorney's office sometime during the week of July 17.

East Helena's annual rodeo is this weekend. We have hired Lewis and Clark County Reserve Deputies to assist again this year. They will also be providing a supervisor to monitor their people and duties.

Public Works Department

Proud to serve our Community

July 15th, 2025

1.) WWTP Report

- Construction on headworks building and screw augers is going great. Really positive working relationship with Prospect Construction.
- Trying to get the intersection of Montana and Groschell sewer replacement approved and scheduled. I am getting a little nervous on timing of construction/paving and school starting back up. (Discuss)
- RAS/WAS gate had some failure and caused us not to waste for a few days. Mixed liquor is high but starting to come down. Thanks to Shane and Colten working together on this. A big thanks to Jeremy Perlinski with RPA who is quick to answer and help us through operation glitches. (Discuss)
- Still waiting a response and comments from DEQ for the ground water permit application.

2.) Metal Removal Building

- New reject pump is still on order.

3.) Source Water Report

- Hydrometrics performed our annual water test at Wylie wells.
- M.C. Creek water tank mixer is still out for repairs.

4.) Solid Waste Report

- Nothing new to report on regarding purchase of Tri-County Sanitation by Republic.

5.) Parks

- Parks are staying very busy; we will be replacing tables at Main Street this fall once reservations slow down.

6.) Pool

- Swimming lessons are going great, I'm super proud of the job that Quinn and Maddie have been doing as pool managers this year.
- The chlorine feeder motor is going bad, the replacement feeder will be here early next week. There is no cost for this equipment if we continue to buy Chlorine Tablets from Hawkins. (Discuss)

7.) Streets

- The updated grant agreement is submitted to Gene Kaufman with Federal Highways. Waiting now for his review and comments. (Discuss)
- Council Members Dahl and Ferguson received an email from a resident in the 100 block of Clinton Street stating that they feel the resident that would not agree to dedicating it to public right of way is now willing to discuss. I will be reaching out to them and see where the conversation takes us. (Discuss)
- Crews are repainting crosswalks and curbs. Thanks Jared and Scott, pretty hot work melting in the cross-walk material.

8.) Facilities

- City Halls water service line is leaking; we will be working with Mockel Excavation on getting line dug and replaced. (Discuss)
- Tom is finishing install of A/C at Cities Rec Hall. This work was budgeted and paid for in FY-25.

9.) Resident/City Information and Events

- 4th of July fireworks went well, had some fireworks down around pool/JFK parking lot area, but really one of the cleaner years for people picking up after their fireworks show.
- Next food truck event is August 14th.
- Vigilante West has started to install sewer and water infrastructure. Some service interruptions as they install water mains. Hard Rock Construction is doing a good job notifying residents.

CITY OF EAST HELENA
306 E MAIN ST / PO BOX 1170
EAST HELENA, MT 59635
(406) 227-5321

ORIGINAL COUNCIL MEETING DATE: 07/15/2025

Agenda item:
City of East Helena Engineering Standards

From:
Public Works

Initiated by City: ■YES ☐NO (check one)

Department:
Public Works

Presented by:
Public Works Director Kevin Ore

Action requested:
Approve / Deny / Table

PLEASE PROVIDE A NARRATIVE BACKGROUND OF THE PROPOSED AGENDA ITEM:

City Staff is recommending approval to adopt latest updated version of City of East Helena Engineering Standards. Changes and additions are highlighted in red.

Attachments: ■YES ☐NO (check one)

Date submitted:
July 9, 2025

RECOMMENDATIONS:

			Initial:
Approve for agenda:	☐YES	☐NO	_____
Referred to Dept. Head for resolution:	☐YES	☐NO	_____
Referred to_____:	☐YES	☐NO	_____

Agenda requests must be submitted to East Helena City Hall by noon the Wednesday prior to the Tuesday council meeting.

July 10, 2025

FOR CITY COUNCIL REVIEW

East Helena Engineering Standards

prepared by
Robert Peccia & Associates
3147 Saddle Drive, Helena, MT

prepared for
City of East Helena
East Helena, MT

CITY OF EAST HELENA ENGINEERING STANDARDS

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APPENDICES

APPENDIX A.....HAULED WASTEWATER DISPOSAL APPLICATION

Acronyms

ASTM	American Society for Testing and Materials
AWWA	American Water Works Association
BMP	Best Management Practice
DEQ	Montana Department of Environmental Quality
HDPE	High Density Polyethylene Pipe
MDT	Montana Department of Transportation
MPWSS	Montana Public Works Standard Specifications
PVC	Polyvinyl Chloride Pipe
PWD	Public Works Department
RCP	Reinforced Concrete Pipe
WWTP	Wastewater Treatment Plant

CHAPTER I

GENERAL PROVISIONS

CHAPTER 1: GENERAL PROVISIONS

1.1 Jurisdiction

A. These Standards govern public works projects within the jurisdictional area of the City Council of the City of East Helena.

1.2 Standards

A. All systems shall be constructed in accordance with the current edition of the City of East Helena Engineering Standards (this document), the most current edition of the Montana Public Works Standards and Specifications (MPWSS) as modified by the City of East Helena Special Provisions, or other standards referenced elsewhere in this document. Any conflicts or differences in these documents shall be resolved in favor of the City of East Helena Engineering Standards.

B. See East Helena Engineering Standards Drawings for more details and figures relative to the Engineering Standards.

1.3 Approved "Or Equal" Items

A. "Or Equal" items must be submitted to the City Engineer for consideration.

1.4 City Fees

A. Any party desiring to connect to the water or wastewater system shall be subject to Development Fees as established by City Ordinance Nos. 282 and 283.

1.5 Guarantee for Equipment, Materials, and Workmanship

A. The Contractor shall guarantee all materials and equipment furnished and construction work performed for maintenance and repair work on City infrastructure for a period of 1-year from the date of written acceptance of the work by the City of East Helena.

B. The required one-year warranty period for the final improvements begins on the date of final written acceptance of the installed infrastructure. Any required repairs to the utilities systems approved for interim use will also have a warranty for a one-year period following the final acceptance.

1.6 Interim Use

A. If a developer or owner wishes to begin construction of structures in an approved subdivision or any other property that has required infrastructure improvements, the Public Works Department will require the following items be completed prior to the interim or final use of the facilities:

1. Water, sewer, and storm water utilities must be completely installed, inspected, tested and accessible to City personnel.
2. All temporary and permanent BMP's must be functional and maintained not only at the time of interim acceptance but through final site stabilization.
3. A comprehensive walkthrough with the Public Works Department, City Engineer, Engineer of Record, and developer.

4. Certification from the Engineer of Record that all utilities have been completed in substantial accordance with the plans and specifications. This certification must include a punch list of items that remain to be completed upon the installation of the finished grade or pavement.
5. Copies of required tests throughout construction including but not limited to:

    a. Log and tape of TV sewer inspection
    b. Bacteriological tests
    c. Pressure tests
    d. Other testing as required.

6. Electronic and paper as-built drawings certified by a professional engineer of the underground public utilities to be accepted.
7. Timely repair or replacement of failures due to material problems and/or workmanship.
8. A schedule for the completion of the improvements
9. Copies of inspection logs and construction photographs
10. Record all easements not included in the public right-of-way for the water and sewer.
11. Dedicate all right-of-way to the City for the part of the subdivision that is proposed.
12. Complete roads to finished grade and emergency vehicle accessible.

1.7 Final Acceptance

A. Final acceptance of the water, sewer, storm water, and street systems will occur upon completion and acceptance of all required infrastructure installation. Final acceptance will be granted by the City Engineer upon completion of the following items:

    1. A comprehensive walkthrough with the Public Works Department, City Engineer, Engineer of Record, and developer.
    2. Flow testing the curb, gutter, and asphalt road.
    3. Completion of all punch list items.
    4. Inspection and repair of previously accepted facilities found to be out of compliance with the interim acceptance conditions. The City of East Helena reserves the right to require re-inspection and repair of the conditionally accepted infrastructure if damage from final construction is suspected.
    5. Final certification from the engineer of record that the entire development has been completed in substantial accordance with the approved plans and specifications.
    6. Complete set of daily logs and construction photographs.
    7. Copies of all required testing.

B. Final acceptance of a completed utility system component may be granted prior to completion of the infrastructure development as a whole if the City of East Helena is provided with a financial guarantee (in the form of a bond or irrevocable letter of credit) that the remaining infrastructure components will be completed within a specific time frame and that the completed infrastructure operates independently of the guaranteed portion.

CHAPTER II

WATER SYSTEMS

CHAPTER 2: WATER SYSTEMS

2.1 Design Requirements

A. Water systems shall be designed, constructed, and tested in accordance with the current editions of *Circular DEQ-1* – Montana Department of Environmental Quality –Standards for Water Works and the Montana Public Works Standard Specifications (MPWSS).

2.2 Design Report

A. Design reports must be prepared by or reviewed by a professional engineer licensed in the state of Montana.

B. Engineering Design and the Design Report shall meet the minimum requirements of *MDEQ Circular 1.*

C. Design Report shall include design fire flow requirements, average day demand, max day demand, and system pressures.

D. For design of new water systems, a water usage rate of 444 gallons per day (gpd) per equivalent dwelling unit (EDU) should be utilized unless otherwise approved by the City Engineer.

2.3 Booster Pump Stations

A. Booster pumps are not allowed in any residential service from the public water supply mains in accordance with MDEQ Circular 1.

B. New residential developments shall be pressurized by a storage tank. Booster pump stations will only be permitted in special circumstances and must be approved by the City Engineer on a case-by-case basis.

2.4 Water Service Area

A. The official water service area for the City is that area of the City within the boundaries of the City and currently served by City Water, any areas presently served outside the City and any subsequently approved amendments thereto.

B. All lots created within the City of East Helena shall be served by the City of East Helena public water supply system. no separate water supply systems are permitted within the City of East Helena.

2.5 Offsets

A. Water mains and appurtenances shall maintain horizontal and vertical offsets as required in MDEQ Circular 1. Horizontal offset shall be a minimum of 10 feet from outside edge to outside edge. Vertical offset shall be a minimum of 18 inches from outside edge to outside edge.

B. All underground electrical, gas, phone, fiber, and cable lines must be installed at least three (3) feet horizontally and one (1) foot vertically from water mains and services.

2.6 Water Mains

A. Hydraulic Analysis – The design of all water mains shall be based on a hydraulic analysis showing demands and pressures, unless otherwise approved by the City Engineer. Water mains shall maintain a minimum normal working pressure of 35 psi and a minimum pressure under all flow conditions of 20 psi.

B. Fire Flows – Water mains shall be designed to provide adequate fire flows unless otherwise approved by the City Engineer. Fire flow requirements are 3,000 gpm for three hours.

C. Diameter – the minimum size of a water main providing fire protection and serving fire hydrants shall be 8-inches in diameter (fire hydrant leads shall be a minimum of 6-inches in diameter). Larger mains may be required to meet fire flow and minimum pressure requirements.

D. Looped Water Mains – The layout of all new water mains shall provide a looped system. Water mains that result in dead-ends will not be accepted without prior approval from the City Engineer.

E. Cover

1. The minimum cover for all water mains shall be 6 ½' from finished grade to top of pipe unless otherwise approved by the City Engineer on a case-by-case basis.
2. Rigid insulation may supplement less than 6 ½' of cover in certain cases where the section requiring insulation is less than 50 lineal feet.
3. At all storm sewer crossings with water mains and water service piping where less than 6' of clear distance between the pipes will be provided, two (2) inches of rigid insulation shall be installed between the water and storm sewer.

F. Piping

1. PVC – DR18 (Pressure Class 235 psi) pipe conforming to AWWA C-900 Standards.
2. Ductile Iron – Shall meet current MPWSS material and construction requirements.
   HDPE – DR11 (Pressure Class 160 psi)

   a. Shall only be used in directional drill applications.
   b. Directionally drilled HDPE shall incorporate engineered expansion and contraction restraints, approved by the City Engineer.

3. Other – Only use as approved by the City Engineer.
4. Water main materials shall remain constant through all phases of a project or development, unless otherwise approved by the City Engineer.

G. Joints

1. Shall be push-on.
2. Use nitrile gaskets for areas with hydrocarbon contamination.
3. Pipe shall be oversized to meet or exceed the inside diameter of connecting pipes.

H. Fittings

1. Shall be Ductile Iron.
2. Shall be MJ.

3. Shall meet AWWA C-153 and be Class 350.
4. Provide thrust blocks in accordance with the MPWSS.

I. Mechanical Joint Restraints

1. Shall be Megalug, or approved equal.
2. Mechanical joint restraints shall be provided in addition to MPWSS thrust blocking requirements for all water main fittings, including valves, tees, crosses, caps, plugs, reducers and bends equal to or greater than 11-1/4°.

2.7 Valves

A. Spacing

1. Valves shall be installed at each intersection branch, or
2. A maximum of 800' intervals.

B. Gate Valves

1. Shall be used for installations 12 inches and smaller.
2. Shall be Mueller Resilient Wedge Gate Valves, or an approved equal, conforming to AWWA C-509 Standards.
3. Tapping valves shall be MJ x FL for connection to the tapping sleeve.

C. Butterfly Valves

1. Shall be used for installations larger than 12 inches.
2. Shall be Class 250B MJ x MJ Mueller Lineseal Butterfly Valves, or equal, conforming to AWWA C-504 Standards.

D. Valves shall close in the clockwise direction.

E. All other valves shall be MJ x MJ.

2.8 Valve Boxes

A. Shall be cast iron, slip type adjustment.

1. Tyler 6855 or 7126 series;
2. Star VB-0007; or
3. Equal as approved by the City Engineer.

B. Extensions with a centering donut shall be provided and installed for valves on mains with more than 7-foot of bury.

2.9 Fire Hydrants

A. Spacing shall not exceed 400 feet. In cul-de-sacs which extend further than 350 feet to the furthest point of the cul-de-sac, a hydrant must be placed inside the cul-de-sac. Final locations are subject to the approval of the Fire Chief.

B. Shall be installed with the pumper nozzle facing the pavement.

C. Shall be installed a minimum of 3'-6" behind the curb.

D. Shall close in the clockwise direction.

E. Shall be covered until placed in service.

F. Shall be manufactured by Kennedy. Hydrant body shall be painted "DRESS BLUE" (Sherwin-Williams 9176). Top of hydrant and hydrant caps shall be painted "MINDFUL GREY" (Sherwin-Williams 7016).

2.10 Water Service

A. Service Pipe

1. Shall be SIDR 7 (200 psi) polyethylene pipe conforming to AWWA C-901 (up to 2 inches in diameter).
2. Shall be DR-18 PVC pipe conforming to AWWA C-900 (greater than 2 inches in diameter).
3. Maximum length of water service pipe shall be 200-feet from the water main unless otherwise approved by the City Engineer.

B. Service Saddles

1. Shall be BR2 series Mueller Brass, or equal as approved by the City Engineer.

C. Corporation Stop and Curb Stop Valves

1. Curb stops shall not be located in sidewalks, driveways, or within 5 feet of approaches.
2. Shall be Ford or Mueller.
3. The corporation shall be tapped at a 45-degree vertical angle on the pipe, measured from the horizontal.

D. Service Fittings

1. Shall be Mueller Insta-Tite or 110 Series compression fittings, or equal approved by the City Engineer.
2. If larger than 1-inch and smaller than 4-inch, stainless steel inserts shall be used if recommended by manufacturer.

E. Curb Boxes

1. Shall be 6-inch diameter, round irrigation valve box with green lid labeled "WATER SERVICE".
2. Shall be installed 1'-0" from the property line.

F. Water Meters

1. Shall be Sensus iPERL (up to 1-inch diameter water service)
2. Shall be approved by the City Engineer for services greater than 1-inch in diameter.
3. Shall be purchased from the City of East Helena public works department.

4. Shall be installed by a certified plumber. Once installed, the City will inspect the meter and approve service.

G. Meter Pits/Vaults

1. May be installed where approved by the City Engineer.
2. For new or reconstructed services up to 1-inch in nominal size:

    a. Mueller Thermo-coil meter pits with side-locking composite lids and insulation pads
    b. Ford Coil Pitsetter meter pits with plastic bottom plate, insulation pads, and side-locking composite lids.
    c. Or approved equal by the City Engineer.

3. For new or reconstructed services 1.25-inch to 2-inch in nominal size:

    a. Mueller EZ Vault or approved equal with side-locking composite lids and insulation pads shall be used for new 1.25-inch and 2-inch. Meters shall have travel to within 18 inches of the surface.

4. For new or reconstructed services larger than 2-inch in nominal size:

    a. Meters will require a custom meter pit sized appropriately to accommodate the isolation valves, meter(s), and pertinent backflow prevention device(s). The proposed meter pit design shall include steps and shall be submitted to the City Engineer for review and approval prior to construction.

5. Maintenance bypass lines or other branches shall not be installed before the meter.

6. Backflow preventers shall meet the requirements of the latest version of the Uniform Plumbing Code and be placed downstream of meters.

7. Meter Pit Installation Location:

    a. Shall be located 3 to 5 feet inside of the property line.
    b. Shall not be located in driveways, sidewalks, or within 5 feet of approaches.
    c. No obstructions shall be placed within a 3-foot minimum radius around the meter pit to ensure access to the pit.

2.11 Tapping City Water

A. Tapping Water Mains

1. Water Main Extension

    a. Contractors or developers extending an existing water main via hot tapping will be required to pay all costs included with the tapping of the main, but no additional fee will be required by the City of East Helena.

2. Service Tapping Charge

a. Any person desiring to make a service connection to existing water mains must pay for the cost of tapping in advance as follows:

Service Tap Size (Nominal Pipe and Corporation Cock Diameters)	Tapping Fee
3/4" Service Tap or 1" Service Tap to 3/4" Meter	$200.00
1" Service Tap to 1" Meter	$350.00
1-1/4" Service Tap	$500.00
1-1/2" Service Tap	$750.00
2" Service Tap	$1,000.00

b. For service lines exceeding 2 inches in nominal diameter, the fee will be the 2" service fee charge plus and additional $1,000.00 for each inch over 2 inches in diameter.

3. Permit

a. Any person wanting to tap into the City water system for service shall apply for a permit prior to laying any service or other water pipe.
b. The uniform permit fee is $10.00 and shall be collected by the City Clerk in advance of any tapping.

4. Tapping Sleeves

a. Shall be Romac SST III, or equal approved by the City Engineer for service lines or main extensions larger than 4-inch.
b. Bolts for flange connection on tapping sleeves shall be stainless steel.

2.12 Pipe Bedding

A. Shall be placed in accordance with City of East Helena Standard Drawings, Figure 14.

B. Shall be haunched under pipe with shovel.

C. Shall be a Type 1 Bedding meeting MPWSS requirements.

2.13 Warning Tape

A. Shall be a minimum of 5 mils thick.

B. Shall be 3 inches wide.

C. Shall conform to APWA colors.

D. Shall be buried 12 to 24 inches below the final grade.

2.14 Tracer Wire

A. Shall be 12 AWG TW direct-bury solid copper wire with cross-linked polyethylene insulation.

B. Shall be approved for direct bury.

C. Shall be taped every 5 feet to the top of the water main.

2.15 Marker Posts

A. Shall be used when a main is located outside a paved surface.

B. Shall be APWA compliant Rhino TriView™1, or approved equal.

C. Shall be installed at a maximum spacing of 150 feet.

D. Shall be installed at every valve or valve cluster and every change in direction.

2.16 Sanitary Connections

A. Defined as a section of new main connecting back to an existing main which cannot be pressure tested or bacteriologically tested.

B. Restraining couplings shall not be used at connections to existing cast iron pipe.

C. The length of sanitary connections shall be limited as much as possible in length and shall be submitted to City Engineer for review and approval prior to construction.

2.17 Couplings

A. Romac Macro series, or equal as approved by the City Engineer.

B. Restrained couplings shall not be used when connecting to cast iron pipe.

2.18 Irrigation

A. Backflow Prevention

1. Standard Drawings, Figure 33 provides information on backflow preventers. Backflow prevention shall meet the requirements of the latest version of the Uniform Plumbing Code.

B. Irrigation Meter Pits

1. The City may require irrigation meter pits to be installed under certain circumstances.
2. Shall be precast manholes with monolithic base. Manholes shall meet ASTM C478.
3. Shall have a cast iron frame and cover.
4. Shall include pipe supports installed inside the meter pit vault.
5. No obstruction shall be located within 4’ of the meter pit to allow for access.
6. See Standard Drawings, Figure 33 for more details.

CHAPTER III

SANITARY SEWER SYSTEMS

CHAPTER 3: SANITARY SEWER SYSTEMS

3.1 Design Requirements

A. Sanitary sewer systems shall be designed, constructed, and tested in accordance with the current editions of *Circular DEQ-2* – Montana Department of Environmental Quality – Design Standards for Wastewater Facilities and the Montana Public Works Standard Specifications (MPWSS).

3.2 Design Report

A. Design reports must be prepared by or reviewed by a professional engineer licensed in the state of Montana.

B. Engineering Design and the Design Report shall meet the minimum requirements of *MDEQ Circular 2.*

C. Design Report shall include average daily flows, peak hour flow criteria, wastewater flow rates, peaking factors, pipe slopes, pipe sizes, and velocities.

D. For design of new sanitary sewer systems, a wastewater usage rate of 230 gallons per day (gpd) per equivalent dwelling unit (EDU) should be utilized unless otherwise approved by the City Engineer.

3.3 Wastewater Service Area

A. The official wastewater service area for the City is that area of the City within the boundaries of the City and currently served by City sewer, any areas presently served outside the City and any subsequently approved amendments thereto.

B. All lots created within the City of East Helena shall be served by the City of East Helena public sanitary sewer system. No separate sanitary sewer systems are permitted within the City of East Helena.

3.4 Sanitary Sewer Main

A. Slope – Gravity sewer mains shall be installed with slope adequate to maintain flow velocities of at least 2.0 feet per second (fps) when depth of flow is at or below 0.3 of the sewer main inside diameter, based on Manning's equation with an "n" value of 0.013. Recommended minimum pipe slopes listed in Section of *MDEQ Circular 2* will be considered adequate.

B. Capacity – Public sanitary sewers and appurtenances shall be designed to accommodate peak hourly flows, while flowing no more than half full when no additional connections are possible and a quarter full when future growth is anticipated. The development must upsize the existing mains if the capacity of the sewer main is calculated to be three quarters full. The City may require, at its discretion, the capacity of the sewer to be increased.

C. Diameter – Gravity sewer mains shall have a minimum diameter of 8 inches. Increasing the diameter in order to meet the minimum pipe slope requirements will not be allowed.

D. Flow Direction – All sewer pipes shall be labeled as to the flow direction on all construction drawings.

E. Accessibility – Sewer mains shall be installed in public right-of way wherever possible. Where mains cannot be installed in ROW a 20' wide exclusive easement with a 14' all-weather surface road and turnaround according to Standard Drawings, Figure 34 must be constructed in the easement.

F. Sanitary sewer mains shall be flushed and TV inspected prior to City acceptance.

3.5 Manholes

A. Diameter

1. Shall be a minimum of 48-inch diameter for manholes where the rim elevation to lowest invert elevation is less than 13 feet.
2. Shall be a minimum of 60-inch diameter for where the rim elevation to lowest invert elevation is greater than 13 feet.

B. All manholes shall be precast concrete meeting ASTM C478. Structural strength shall withstand H-20 design load. All manholes installed on lines 15 inches or larger in diameter must have a polyurea liner, or equal as approved by the City Engineer, installed to protect against hydrogen sulfide gas.

C. All sanitary sewer manholes shall be installed in accordance with City of East Helena Standard Drawings, Figure 09 and applicable MPWSS Drawings.

D. Manhole covers shall be labeled “SANITARY SEWER”.

3.6 Sanitary Sewer Main Materials

A. Gravity sanitary sewer pipe 8 inches to 15 inches in diameter shall be:

1. PVC meeting ASTM D3034, SDR-35 for bury depths up to 14 feet. For bury depths greater than 14 feet, PVC meeting ASTM D3034, SDR-26.

B. Gravity sanitary sewer pipe 18 inches and larger in diameter shall be:

1. PVC meeting ASTM D679, PS46 or ASTM F794 for bury depths up to 14 feet. For bury depths greater than 14 feet, PVC meeting ASTM D679, PS115 or ASTM F794

C. Other pipe materials shall be approved by the City Engineer.

3.7 Installation

A. Alignment and Grade – Public sanitary sewers shall be installed with a straight alignment and grade between manholes as required in MPWSS.

B. Location – Municipal wastewater system facilities shall be designed and constructed so that all such facilities are readily accessible for maintenance and repair. In addition, such facilities shall

be situated so as to preclude the entrance of surface water into said facilities. All sewer mains shall be centered in the right-of-way or easement to the greatest extent possible.

C. Depth – Sanitary sewers shall be buried to a depth sufficient to prevent freezing and shall have a minimum depth of 4 feet. Shallower depths may be allowed by the City of East Helena Public Works Department if suitable pipe insulating provisions have been made.

D. Extension - Any extension of an existing City sanitary sewer main must be extended through the entire frontage length of the property to be served, with a standard manhole located at the terminus of the new sewer main. Sewer main extensions shall include all manholes, clean-outs and appurtenances deemed necessary by the City.

3.8 Water Line Crossings

A. Vertical Separation at Crossings

1. A minimum of 18" vertical separation is required when a sanitary sewer main crosses above or below a water main, measured outside to outside of pipe.
2. Less than 18" vertical separation may be allowed with specific authorization from the Montana Department of Environmental Quality and the City of East Helena Public Works Department.
3. No exception of the minimum 18" vertical separation requirement is permitted when the sewage pipe is a force main.

B. Parallel Separation of Sanitary Sewer Mains and Water Mains

1. A minimum of 10 feet of horizontal separation is required when a sanitary sewer main and water main are installed parallel, measured from outside of pipe to outside of pipe.
2. Less than 10 feet of horizontal separation may be allowed with specific authorization from the Montana Department of Environmental Quality and the City of East Helena Public Works Department.

3.9 Sanitary Sewer Service Lines

A. Gravity sewer service piping shall be:

1. PVC meeting ASTM D3034, SDR-35 & -26
2. PVC Schedule 40 – Solvent Weld or SBR Gasket Joint for normal installations
3. PVC Schedule 40 for water main or water service crossing
4. PVC Schedule 40 with acrylonitrile butadiene (NBR) gaskets for installations in areas of hydrocarbon contamination.

B. Pressure sewer service piping shall be:

1. PVC Pressure Pipe, ASTM D2241, Class 200 SDR-21.

C. Installation

1. All sanitary sewer service lines must be so arranged that the discharge from each separately owned house premises, or buildings on separate lots is a separate service line that connects to the main.
2. The owner of each house or premises is liable for the charges for the wastewater service provided by the City to that owner's house or premises.
3. Sewer services up to 12 inches in diameter shall utilize a PVC in-line wye. Sewer services greater than 12 inches in diameter shall utilize an "Inserta-Tee".
4. All sewer service lines shall be installed in accordance with MPWSS with a minimum of 4 feet of cover from the top of service pipe to final finished grade.
5. At all locations where sewer service lines are installed beneath new curb, the face of the curb shall be stamped with an "S" in lettering at least 3 inches tall, for marking the sewer service location.
6. All service line crossings under existing curbs by tunneling are prohibited.
7. Maximum length of sewer service pipe shall 200-feet from the sewer main unless otherwise approved by the City Engineer.

3.10 Non-Sanitary Connections to Sanitary Sewer Main

A. Residential floor drains connecting to sanitary sewer mains shall meet all MDEQ requirements. Residential floor drains not connecting to sanitary sewer mains shall drain to daylight outside of the building. Residential subsurface floor drains are not permitted.

B. Commercial floor drains shall be reviewed and approved by the City Engineer on a case-by-case basis.

3.11 Tapping

A. Existing Mains

1. Taps on existing sewer mains should be in the upper quadrant of the pipe in the 10 o'clock or 2 o'clock positions with an "Inserta-Tee."
2. The party wishing to tap the sewer main shall be responsible for all costs associated with tapping the main, unless otherwise approved by the City of East Helena or the City Engineer.

3.12 Metering When Not on City Water

A. For new city sewer services or extensions which do not use the city water system or whose water consumption or wastewater discharge is not otherwise metered, the East Helena Public Works Director shall require the installation of a suitable metering device in order to determine an equitable charge for sewer services.

CHAPTER IV

LIFT STATIONS

CHAPTER 4: LIFT STATIONS

4.1 Design Requirements

A. Lift Stations shall be designed, constructed, and tested in accordance with the current editions of *Circular DEQ-2* – Montana Department of Environmental Quality – Design Standards for Wastewater Facilities and the Montana Public Works Standard Specifications (MPWSS).

B. All phased developments are required to submit a development plan. Any lift station needed to support a new development must be designed to support the development at full build-out as well as accommodate development at the lower flowrates required for each phase.

C. Development anticipated to be greater than 500 EDU's requires a "Regional Lift Station" and follow a specific set of design requirements. Developments with less than 500 EDU's may construct a "Standard Lift Station" which follow a separate set of design requirements.

4.2 Design Report

A. Design reports must be prepared by or reviewed by a professional engineer licensed in the state of Montana.

B. Engineering Design and the Design Report shall meet the minimum requirements of *MDEQ Circular 2.*

C. Design Report shall include average daily flows, peak hour flow criteria, wastewater flow rates, peaking factors, pipe slopes, pipe sizes, velocities, wet well volume, pump run times, pump horsepower.

4.3 Construction Standards - Regional Lift Station

A. Previous Experience

1. Design Engineer shall provide all necessary information to justify the product being proposed;
2. Design Engineer shall submit a list of 3 pumps of the type proposed which have been in operation at least 5 years.
3. The City of East Helena reserves the right to accept or reject the proposed pump type or manufacturer.

B. Pump Types

1. Self-Priming Centrifugal

    a. Gorman Rupp, Super T Series with Eradicator Solids Management System.

2. Screw Centrifugal

    a. Hayward Gordon, XCS.
    b. Hidrostal Screw Centrifugal.
    c. Or equal as approved by the City Engineer.

C. Redundancy

1. Triplex Systems are required for all regional lift stations.

D. Wet Well

1. Wet wells must be sized such that the pump starts per hour at average daily flow and peak hourly flow do not exceed 4 starts per pump per hour.
2. Circular precast concrete wet wells are acceptable up to a maximum size of 10'-0" diameter.
3. Wet wells above 10'-0" diameter shall be provided as cast-in-place. Multiple wet wells hydraulically connected by piping to meet the required maximum size is not acceptable.
4. Cast-in-place wet wells shall be designed by a professional engineer, and must be provided with an internal polyurea coating or equal as approved by the City Engineer. Precast wet wells do not require an internal coating.

E. Variable Frequency Drives

1. Variable frequency drives shall be provided for each pump motor.
2. Variable frequency drives shall be Allen-Bradley Powerflex.

F. Pump Control Panel

1. Packaged control panels from pump suppliers are not allowed for regional lift stations.
2. Control panel shall be provided with the appropriate NEMA rating for the environment in which it will be installed.
3. Control panel shall be provided with an uninterruptable power supply.
4. Control panel shall be provided with an Allen-Bradely CompactLogix PLC.
5. Developer shall coordinate with the City's integrator regarding any necessary features required to allow for seamless integration of the pump control panel into the City's existing SCADA system. At a minimum this will require provision of a radio within the control panel, and antenna provided at a height acceptable to the integrator to achieve reliable communication signals. If mounting to the lift station building does achieve an acceptable communication signal, a stand-along mast may be required.

4.4 Construction Standards - Standard

A. Manufacturer

1. Flygt;
2. or Equal as approved by The City Engineer.
   a. Design Engineer shall provide all necessary information to justify the product as equal.
   b. Design Engineer shall submit a list of 3 lift stations of the type proposed which have been in operation at least 5 years.
   c. and The City of East Helena reserves the right to accept or reject the proposed lift station.

B. Pump Type

1. Submersible
   a. Model: Flygt Concertor
   b. Or equal as approved by the City Engineer.

C. Redundancy

1. At a minimum, all lift stations shall run as a duplex system.
2. Each motor shall include a VFD.

D. Control Panel

1. Pump manufacturer shall provide their standard control panel.

4.5 Construction Standards – All Lift Stations

A. Influent Pipe

1. Spigot end shall extend 6-inches beyond interior of wet well wall.

B. Pressure Pipe

1. Pressure sewer piping (force mains) shall be PVC meeting ASTM D2241, SDR-26, pressure class 160 psi.

C. Access Road

1. 12-foot minimum width paved for access by sewer maintenance vehicles.
2. Access approach from street per Standards.
3. Must be provided with a paved turnaround per Figure 34.

D. Approaches onto Public Right-of-Way

1. Projects proposing an approach onto public right-of-way shall submit to the City a report certified by a professional engineer addressing the following conditions, both present and future:
   a. Truck turning movements.
   b. Vehicular site vision.
   c. Pedestrian conflicts.
   d. Intersection level of service.

2. Approach permits must be obtained prior to beginning work within the public right-of-way. Permits are subject to fees and approval per City Resolution.

3. Approaches affecting state-designated roadways shall also be approved by the state department of transportation.

4. Approaches shall satisfy all applicable emergency service requirements.

E. Bypass

1. Shall have a dedicated valve.
2. Shall connect downstream of the lift station check valves.
3. Provide a cam-lock style connection with cap.

F. Electrical

1. Wiring

    a. Shall be water resistant inside the lift station and enclosure.

2. Generator.

    a. Manufacturer shall be Generac.
    b. Natural gas fueled.
    c. Noise emissions not to exceed 65 dbA at 20 feet from the power supply.
    d. Shall be installed inside the building.
    e. Shall include an appropriately sized automatic transfer switch, manufactured by the same manufacturer as the generator.
    f. Shall include an O&M manual Manufacturer shall perform training at startup.

3. Alarms

    a. Pump control panel shall be integrated into the existing SCADA system by the City's telemetry provider. This includes provision of a radio, antenna, and mast as recommended by City's telemetry provider to achieve reliable communication.
    b. Alarm Conditions
        i. High water
        ii. Low water
        iii. Seal failure (if applicable)
        iv. Power interruption
        v. High motor temp
        vi. Running on back-up power
        vii. VFD fail (each pump)

4. Controls

    a. Each pump shall have:
        i. Hour meter
        ii. Discharge pressure gauge tap and valve.
    b. Pump run alternator.
    c. Amperage meter on each leg of the electrical wiring.
    d. Lightning protection for the power supply.
    e. Level control
        i. Primary control – Pressure transducer
        ii. Backup control –float switch system, shall be installed and function if primary control is lost.
    f. Automatic transfer switch and control panels shall be placed in the building.

5. Lighting

    a. Exterior illumination shall be provided and connected to the power supply.
    b. Street lighting shall not be considered adequate to meet this requirement.

G. Enclosures

1. Building

    a. Designed and constructed in accordance with East Helena Building codes.
    b. CMU Block (split face finish)
    c. Insulated precast concrete panels. Finish and color shall be approved by City during building design.

2. Walls

    a. 8-foot floor to ceiling height (min)

3. Roof

    a. Gable style.
    b. Trusses spaced at 24-inch maximum.
    c. Designed to meet local snow load requirements.
    d. 4:12 slope.
    e. 5/8-inch OSB sheathing.
    f. Metal roofing.

4. Other

    a. Steel door with deadbolt lock.
    b. Heating and air circulation systems.
    c. Ceiling mounted industrial lights.
    d. All other necessary materials for a finished building.

5. Submittals by Design Engineer required for City of East Helena approval:

    a. Structural plans.
    b. Mechanical plans.
    c. Electrical plans.
    d. Heating and air circulation.

H. Fencing

1. 6-foot chain link security.
2. 3-foot-wide personnel gate.
3. 12-foot-wide gate with two 6-foot leaves.
4. Shall provide adequate room for access and facility maintenance.
5. 3-foot minimum offset from all structures and appurtenances.
6. Gate placement shall promote maintenance vehicle access for pump removal.
7. Gate installations shall include duckbill style gate holdbacks.

I. Landscaping

1. 4-inches of clean 1-inch minus gravel or other landscaping rock as approved by the City Engineer for areas outside of public right-of-way.
2. Areas inside public right-of-way shall meet the requirements of the City of East Helena Municipal Code.

CHAPTER V

STORM DRAINAGE SYSTEMS

CHAPTER 5: STORM DRAINAGE SYSTEMS

5.1 Design Requirements

A. A grading and drainage plan is required and subject to approval by the City Engineer.

B. Storm drainage systems shall be designed, constructed, and tested in accordance with the current editions of Circular DEQ-8 – Montana Department of Environmental Quality – Montana Standards for Subdivision Storm Water Drainage, the Montana Public Works Standard Specifications (MPWSS), and the City of East Helena Engineering Standards.

C. All storm water drainage systems must not discharge into any sanitary sewer facility and must be certified by a professional engineer.

D. Plans for the conveyance and detention of storm water shall be submitted for review and approval by the City Engineer.

E. All storm water drainage improvements shall be certified by a professional engineer in the State of Montana as having been constructed in accordance with the MPWSS and the approved plans and specifications prior to acceptance by the City.

F. Storm Drainage Systems for subdivision and all other developments shall meet the requirements of the City of East Helena Engineering Standards. The City's standards shall take precedence in any situation with discrepancies between standards.

5.2 Construction Standards

A. Curb and Gutter

1. Required for all public streets, unless otherwise approved by the City Engineer.
2. Temporary roadside ditches are not permitted to convey stormwater prior to installation of curb and gutter.
3. Curbs and gutters of adjoining properties must be extended in conformance with current specifications of local and state authorities.
4. For curb and gutter details, see Standard Drawings, Figure 17. For laydown curb details, see Standard Drawings Figure 18.

B. Valley Gutters

1. Shall be constructed in accordance with MPWSS.
2. Minimum width shall be 3 feet.
3. Valley gutters are required for storm water control at intersections where a storm water system is not accessible.
4. For concrete valley gutter details, see Standard Drawings, Figure 19.

C. Storm Water Conveyance Pipe

1. PVC ASTM D3034, SDR-35.
2. Reinforced Concrete Pipe with rubber gasket joints.
3. Shall be a minimum of 12 inches in diameter.

4. Storm water conveyance pipe shall not be buried greater than 15 feet deep.
5. HDPE and metal pipe are not allowed unless approved by the City Engineer.

D. Manholes

1. Shall be precast concrete meeting ASTM C478.
2. Shall meet H-20 load ratings.
3. Covers for storm water manholes shall be labeled “STORM SEWER”.
4. Covers for combination manhole/inlets shall be D&L Foundry C-1172 or approved equal. Covers shall have “OUTFALL TO STREAM, DUMP NO POLLUTANTS” forged in the grate. See Standard Drawings, Figure 26 for more detail.

E. Culverts and Bridges

1. Shall be adequately sized and installed where drainage channels intersect any street or road right-of-way or easement.
2. All culverts and bridges must be constructed and installed according to applicable local and state standards.
3. Culverts, inlets, storm water conveyance pipe, ditches, swales, and other drainage facilities shall be sized to accommodate the 25-year, 24-hour storm event for the upstream drainage area without overtopping the roadway.
4. Culverts and bridges shall be analyzed for impacts to adjacent properties and the roadway for the 100-year, 24-hour storm event.
5. See Standard Drawings, Figure 31 for typical culvert section details.

F. Storm Water Inlets

1. Inlets shall be located to intercept the major curb flow at the point curb flow capacity is exceeded by the storm runoff. Inlets should be aligned with lot lines wherever possible.
2. Storm water inlet spacing in any roadway shall be designed so that the water spread shall not exceed half the distance to the centerline of the road from the gutter flowline for the 25-year, 24-hour storm event.
3. Storm water inlets and spacing shall be analyzed for impacts to adjacent properties and the roadway for the 100-year, 24-hour storm event.
4. See Standard Drawings, Figure 27 for curb inlet details.
5. See Standard Drawings, Figure 28 for valley gutter inlet details.
6. Provide concrete aprons at all inlets per Standard Figure 29.

G. Storm Water Detention Systems

1. Shall be capable of detaining the 25-year, 24-hour storm event.
2. Shall provide an adequate outlet system via a pipe or spillway and must provide for adequate dispersal of water from the outlet to surface water without flooding or adversely affecting adjacent or downstream properties.
3. Detention systems shall be analyzed for impacts to adjacent properties and the roadway for the 100-year, 24-hour storm event.
4. Detention ponds shall have the following design requirements unless otherwise approved by the City Engineer:
    a. Have side slopes no steeper than 3H to 1V.

b. Pond berms and side slopes shall be provided with a minimum of 6-inches of topsoil and be seeded with a native grass mix.
c. Pond bottoms shall be provided with weed barrier fabric and a 12-inch thickness of rock. Rocks shall consist of a clean 3-inch or larger aggregate material that does not contain fines.

H. All storm water improvements shall be warrantied for one year after final acceptance of improvements by the City.

CHAPTER VI

TRANSPORTATION STANDARDS

CHAPTER 6: TRANSPORTATION SYSTEMS

6.1 Definitions

A. Road Classes

1. Arterial – A street or road having the primary function of moving traffic with emphasis on a high level of mobility for through movement and the secondary function of providing access to adjacent land. Arterials generally carry relatively large volumes of traffic. Arterials have two to four lanes of moving traffic and should provide only limited access to abutting property.
2. Collector – A street or road having the equally important functions of moving traffic and providing access to adjacent land. Collector Streets have two moving traffic lanes and up to two parking lanes.
3. Local – A street or road having the primary function of serving abutting properties, and the secondary function of moving traffic. Local streets have two moving lanes of traffic, up to two parking lanes, and provide access to abutting properties.
4. Private - Streets that do not provide access to the external boundaries of a lot or parcel and only provide internal access for purposes of accessing building and structures within the lot or parcel. Private roads are not maintained by the City.

6.2 Design Requirements

A. The arrangement, type, extent, width, grade, and location of all streets must be considered in their relation to existing and planned streets, topographical conditions, public convenience and safety, and the proposed uses of the land to be served by them.

B. At a minimum, roads must meet the design specifications in **Table 6.1**.

Table 6.1: Minimum Road Design Standards

Minimum Design Standards	Private Roads	Collector Roads	Local Roads
Minimum Right-of-Way Width	N/A	68’	66’
Minimum Roadway Width (from Top Back of Curb to Top Back of Curb)	36’	42’	40’
Minimum Boulevard Width	N/A	7’	7’
Minimum Sidewalk Width	N/A	5’	5’
Minimum Distance from Back of Sidewalk to Right-of-Way Line	N/A	1’	1’
Minimum Curb Radius or Edge of Pavement at Intersections	15’	25’	15’
Maximum Grades	10%	8%	10%
Minimum Grades	0.5%	0.5%	0.5%
Minimum Crown Cross Slope	2%	3%	2%
Approaches onto Public Roads a) Minimum Sight Distance	a) 150’	a) 200’	a) 150’

b) Minimum Width c) Maximum Grade for 20’	b) 36’ c) 5%	b) 42’ c) 5%	b) 40’ c) 5%
Curvature a) Design Speed b) Maximum Curve c) Minimum Radius	 a) N/A b) N/A c) N/A	 a) 30 mph b) 23 c) 249’	 a) 20 mph b) 53.5 c) 107’
Residential Cul-de-sac a) Maximum Road Length b) Cul-de-sac: Minimum Outside Right-of-Way Radius c) Cul-de-sac: Minimum Outside Radius to TBC	 a) N/A b) N/A c) N/A	 a) N/A b) N/A c) N/A	 a) 800’ b) 69’ c) 56’
Emergency Turnarounds a) Cul-de-sac Style Turnaround: Minimum Outside Radius b) “T” Turnaround: Backup Lengths (two required)	 a) 48’ b) 60’ each	 a) N/A b) N/A	 a) 48’ b) N/A
New Bridges a) Curb to Curb Widths b) Boulevard c) Sidewalk	 a) 36’ b) N/A c) N/A	 a) 42’ b) N/A c) 5’	 a) 40’ b) N/A c) 5’

C. Emergency Turnarounds

1. See Standard Drawings, Figure 34 for emergency turnaround details.
2. Hammerhead turnarounds shall only be permitted on private roads.

D. Street Maintenance

1. The lands included in all streets, avenues, and alleys must be dedicated to the public for public use.
2. Unless the City of East Helena specifically accepts responsibility for maintenance, the lands included in all streets, avenues, and alleys shall be owned and maintained by an approved property owner’s association.

E. Driveways

1. Residential driveways shall not have direct access to state highways unless approved by the Montana Department of Transportation (MDT).
2. Residential driveways shall not have direct access onto arterial or collector streets, unless otherwise approved.
3. Any subdivision road access onto a state highway must be approved by MDT.
4. For driveway approach details, see Standard Drawings, Figure 16.

F. Half Streets

1. Half streets are prohibited. If an existing half street is adjacent to a tract to be subdivided, the other half of the street must be platted within the new subdivision.

G. Intersections

1. The alignment of all streets, roads, and intersections must provide adequate sight distances and visibility based on the designed operating speeds of the intersecting roadways.
2. Streets must intersect at 90-degree angles except when topography prohibits this alignment. The angle of an intersection may be no less than 60 degrees to the centerline of the roadway being intersected.
3. Two streets meeting a third street form opposite sides must be offset a minimum of 125 feet for local roads and 300 feet for arterials or collectors.
4. No more than two streets may intersect at one point.
5. Intersections of local streets with major arterials or highways are discouraged.
6. Hilltop intersections are prohibited unless no alternatives exist. Intersections on local roads within 100 feet of a hilltop are prohibited. Intersections on arterial and collector roads within 200 feet of a hilltop are prohibited. If no alternative to a hilltop intersection exists, additional traffic control devices will be required.
7. The grade approaches to major highways may not exceed 5% unless otherwise approved.

H. Street Names

1. Names of new streets or roads aligned with existing streets must be the same as those of the existing streets.
2. Proposed street names may not duplicate or cause confusion with existing street names.

6.3 Construction Standards

A. General

1. Roadway systems shall be constructed in accordance with the current edition of the Standards and MPWSS.

B. Materials

1. All new or reconstructed roads shall be paved with a minimum of 3 inches of Type B asphalt and constructed in accordance with current MPWSS.
2. All new or reconstructed roads shall include a minimum of 9 inches of 1-1/2” minus crushed base course.
3. Chip seal aggregate shall meet the gradation as show in in section 02504 of MPWSS for 3/8” seal coat aggregate.
4. Asphalt tack coat shall be emulsified asphalt, CRS-2.

C. Alleys

1. Alley public right-of-way shall be a minimum of 20 feet wide.
2. Alley road width shall be a minimum of 14 feet wide.
3. All new alleys shall be paved with a minimum of 3 inches of Type B asphalt and constructed in accordance with current MPWSS.
4. Other types of roads that are proposed in public right-of-way or public easements for use by City vehicles must also be provided with paved surfaces meeting the requirements of alleys.

D. Street Signs

1. Shall be 0.808-gauge aluminum double sided 6-inch-tall blades with green background, white trim, and white text. Text shall be 4-inch-tall upper case B series. Blades shall have standard radius corners with no punch.
2. Shall be located with a minimum of 2 feet of clearance from face of curb to edge of sign.
3. Where parking or pedestrian movements occur, the sign shall be mounted with a minimum clearance of 7 feet from ground surface to bottom of the primary sign panel.
4. Shall include slip base assembly.
5. Shall be encased in 12-inch diameter non-reinforced concrete foundation. Foundation shall be a minimum of 3 feet in depth.
6. See Standard Drawings, Figure 24 for sign and post installation details.
7. See Standard Drawings, Figure 25 for street sign location details.

E. Pavement Markings

1. Centerlines, bike lanes, and outside lane lines (outside of major intersections) shall utilize epoxy paint per the latest edition of MPWSS.
2. Crosswalks, stop bars, words, symbols, and intersection striping shall utilize 125 mil thick hot-applied preformed thermoplastic material with factory applied surface and intermix beads such as PreMark or HotTape by Ennis-Flint or approved equal.

F. Chip Seal

1. All new or reconstructed roads must be chip sealed in accordance with MPWSS.
2. All chip seal coats must be completed within one year after paving is completed, or as directed by the City, to allow for proper curing of the asphalt surfacing.

G. Mailboxes

1. When required by the United States Postal Service, developers must provide an off-street area for mail delivery.

CHAPTER VII

TRUCKED AND HAULED WASTE

CHAPTER 7: Hauled Wastewater Disposals (including RV Dump Stations)

7.1 Purpose

A. The purpose of this section is to establish uniform standards for permitting the discharge of hauled waste to be discharged into the City of East Helena's wastewater treatment system.

B. The standard is intended to include both discharges that occur at the wastewater treatment plant site and discharges that occur at designated disposal locations which discharge into the collection system.

C. This policy is not intended to include the disposal of septage waste. Septage waste will generally not be accepted by the City of East Helena. Anyone desiring to dispose of septage waste into the City of East Helena wastewater system must have prior approval from the City Engineer on a case-by-case basis.

7.2 Definitions

A. **Biological Oxygen Demand (BOD):** BOD is the amount of oxygen required to stabilize biodegradable organic matter under aerobic conditions.

B. **Discharge Monitoring Report (DMR):** DMR is a federal regulatory term for a water pollution report prepared by facilities discharging to surface waters.

C. **Hauled Wastewater:** Sewage, domestic wastewater, or other types of wastewater that are generated from a source that is not connected to the City of East Helena's Wastewater Treatment System; and are transported to a disposal location that is connected to the City of East Helena's Wastewater Treatment System for disposal.

D. **Montana Pollutant Discharge Elimination System (MPDES):** The system for issuing permits for the discharge of pollutants from point sources into waters of the State of Montana.

E. **Resource Conservation and Recovery Act (RVRA):** Federal law governing the disposal of solid waste and hazardous waste.

7.3 Acceptable Wastewater Disposal

A. RV black and grey water storage tanks.

B. Wastewater generated from portable toilets.

7.4 Prohibited Wastewater Disposal

A. Septage, unless prior approval is provided by the City Engineer.

B. Wastewater from restaurant oil/grease traps.

C. Wastewater with a BOD_5 demand exceeding 2,500 mg/L.

D. Wastewater with pH above 12.5 or less than 5.5 standard units.

E. Wastewater treatment sludge or biosolids.

F. Wastewater classified as an industrial waste.

G. Hazardous wastes as defined in the Federal Resource Conservation and Recovery Act.

7.5 Permitting

A. To become an authorized Hauled Wastewater Disposal permit holder, applicants must complete the Hauled Wastewater Disposal application and pay the required permit fee. The Hauled Wastewater Disposal application can be found in Appendix A.

7.6 Discharge Requirements

A. Discharge of hauled waste must be performed at the designated areas set forth in the permit.

B. Hauled waste received off the WWTP site must be measured by a meter accessible by the City of East Helena.

C. All waste shall be declared on the discharge/manifest forms provided and shall not contain a prohibited discharge.

7.7 Fees

A. Permit fee shall be $200 for two (2) years.

B. Disposal Usage shall be $0.05 per gallon.

C. Permit holders must maintain their account with the City of East Helena in good standing. Any user not paying their account within 20 days of the billed due date will not be allowed further use of the disposal location until such time as the account is paid in full.

CHAPTER VIII

DRY UTILITIES

CHAPTER 8: DRY UTILITES

8.1 Construction Standards

A. All underground electrical, gas, phone, fiber optic, and TV cable lines must be buried at a minumum depth of 24 inches.

B. All underground electrical, gas, phone, fiber optic, and TV cable lines must be installed at least 5 feet horizontally from any water main or service, sanitary sewer main or service, or storm sewer mains, unless otherwise approved by the City Engineer.

C. Microtrenching in the public right-of-way within the City of East Helena is prohibited.

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STANDARD DRAWINGS

***IF NO STANDARD DRAWING IS PROVIDED IN THE CITY OF EAST HELENA ENGINEERING STANDARDS, THE MONTANA PUBLIC WORKS STANDARD DRAWINGS SHALL APPLY.**

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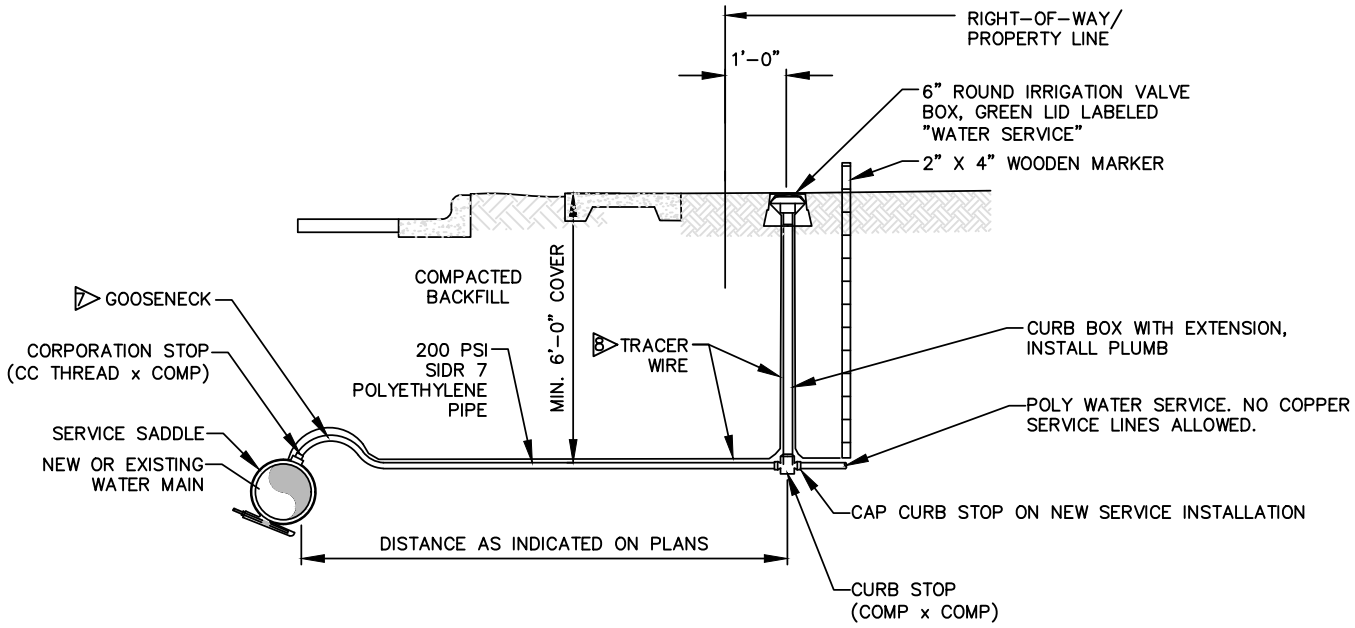


NOTES:

1. CORPORATION STOPS SHALL BE FORD OR MUELLER.
2. CURB STOPS SHALL BE FORD OR MUELLER.
3. THIS DETAIL APPLIES TO SERVICES THAT ARE 2" IN DIAMETER OR SMALLER. SERVICE LINES OVER 2" ARE INSTALLED SIMILAR TO WATER MAINS.
4. WATER SERVICE LINES SHALL BE CONNECTED/INSTALLED WHERE SHOWN ON THE DRAWINGS OR AS SPECIFIED.
5. BEDDING MATERIAL WITHIN 6–INCHES OF THE SERVICE LINE SHALL BE TYPE 1 PIPE BEDDING.
6. THE CURB BOX SHALL BE INSTALLED 1'–0" FROM THE PROPERTY LINE.
7. THE GOOSENECK IN THE SERVICE LINE AT THE CONNECTION TO THE CORPORATION STOP SHALL BE MADE IN THE HORIZONTAL PLANE.
8. TRACER WIRE TO EXTEND FROM MAIN TO STRUCTURE WATER SERVICE ENTRANCE.
9. CURB STOPS SHALL NOT BE LOCATED IN SIDEWALKS, DRIVEWAYS, OR WITHIN 5'–0" OF APPROACHES.
10. THE CORPORATION SHALL BE TAPPED AT 45° VERTICAL ANGLE ON THE PIPE (MEASURED FROM THE HORIZONTAL).
11. CONCRETE AND/OR PAVEMENT REMOVAL AND REPLACEMENT SHALL BE PROVIDED AS NECESSARY.
12. MINIMUM 6'–0" COVER SHALL BE MAINTAINED ALONG THE ENTIRE SERVICE LINE.
13. NO EXTENSION RODS ALLOWED IN CURB BOX.
14. SERVICE CONNECTIONS MUST BE INSPECTED BY CITY PERSONNEL AND ARE SUBJECT TO FEE(S) PER CITY ORDINANCE.

RPA

SCALE: NONE

SHEET TITLE

NEW WATER SERVICE

PROJECT TITLE

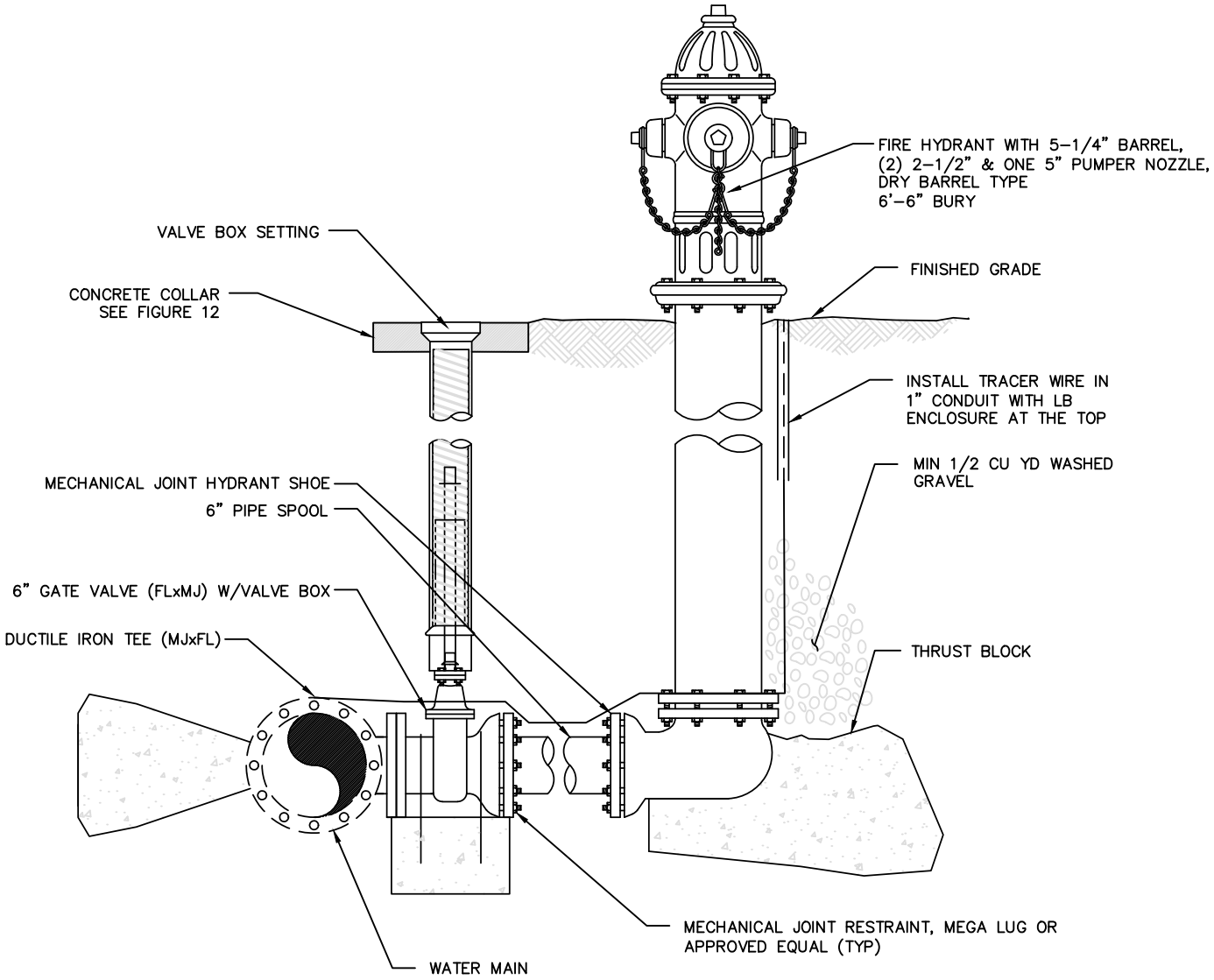
STANDARD DRAWINGS

East Helena, Montana

FIGURE

01

F:\water\EHLN19\Standard Drawings\01_NEW WATER SERVICE.dwg Jul 18, 2023



NOTES:

1. INSTALL HYDRANT W/PUMPER NOZZLE FACING THE PAVEMENT.
2. THRUST RESTRAINTS SHALL BE PROVIDED IN THE FORM OF CONVENTIONAL CONCRETE THRUST BLOCKS ON THE VALVE & HYDRANT.
3. HYDRANT SHALL BE INSTALLED A MIN OF 3'–6" BEHIND THE CURB.
4. HYDRANTS SHALL CLOSE IN THE CLOCKWISE DIRECTION.
5. HYDRANTS TO BE MANUFACTURED BY KENNEDY.
6. HYDRANT BODY SHALL BE PAINTED DRESS BLUE (SHERWIN WILLIAMS 9176) AND THE CAP AND TOP OF HYDRANT SHALL BE PAINTED MINDFUL GRAY (SHERWIN WILLIAMS 7016).

RPA

SCALE: NONE

SHEET TITLE

FIRE HYDRANT INSTALLATION

PROJECT TITLE

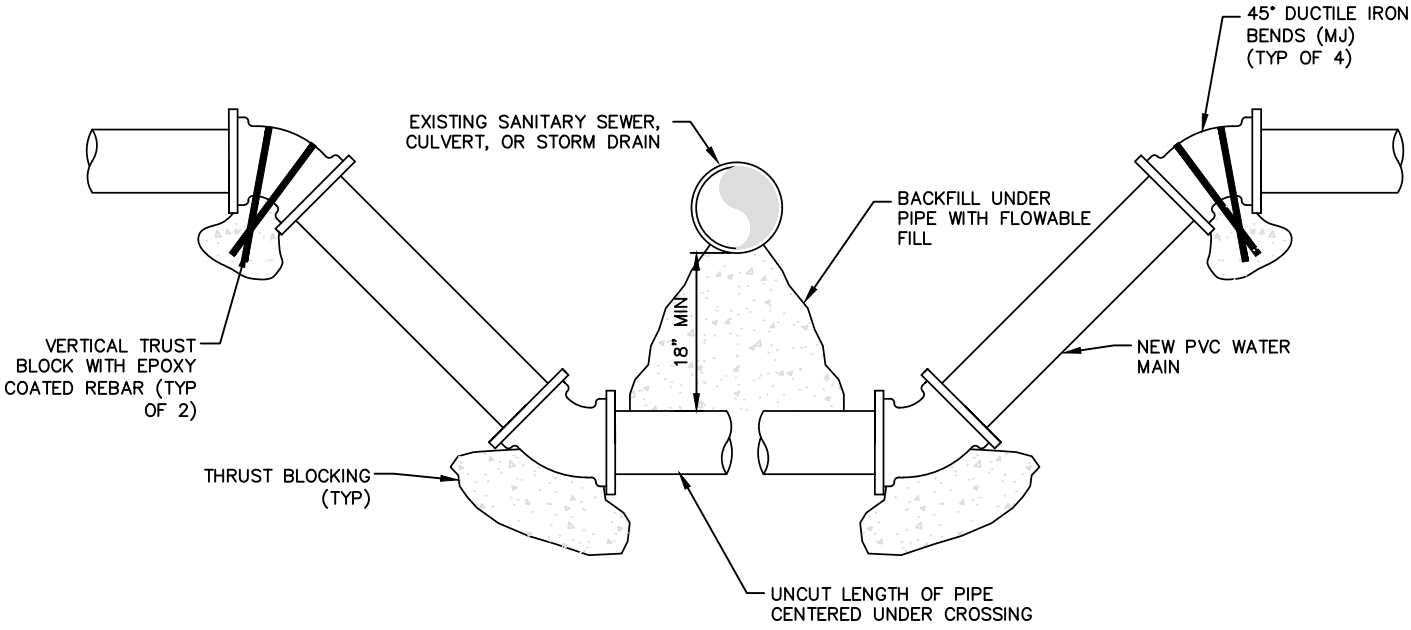
STANDARD DRAWINGS

East Helena, Montana

FIGURE

02

F:\water\EHLN19\Standard Drawings\02_FIRE HYDRANT INSTALLATION.dwg Jul 18, 2023



NOTES:

1. DURING CROSSINGS, STRUCTURAL SUPPORT OF THE SEWER OR STORM DRAIN SHALL BE PROVIDED TO PREVENT DAMAGE TO ANY EXISTING PIPES.

RPA

SCALE: NONE

SHEET TITLE

WATER MAIN VERTICAL ADJUSTMENT

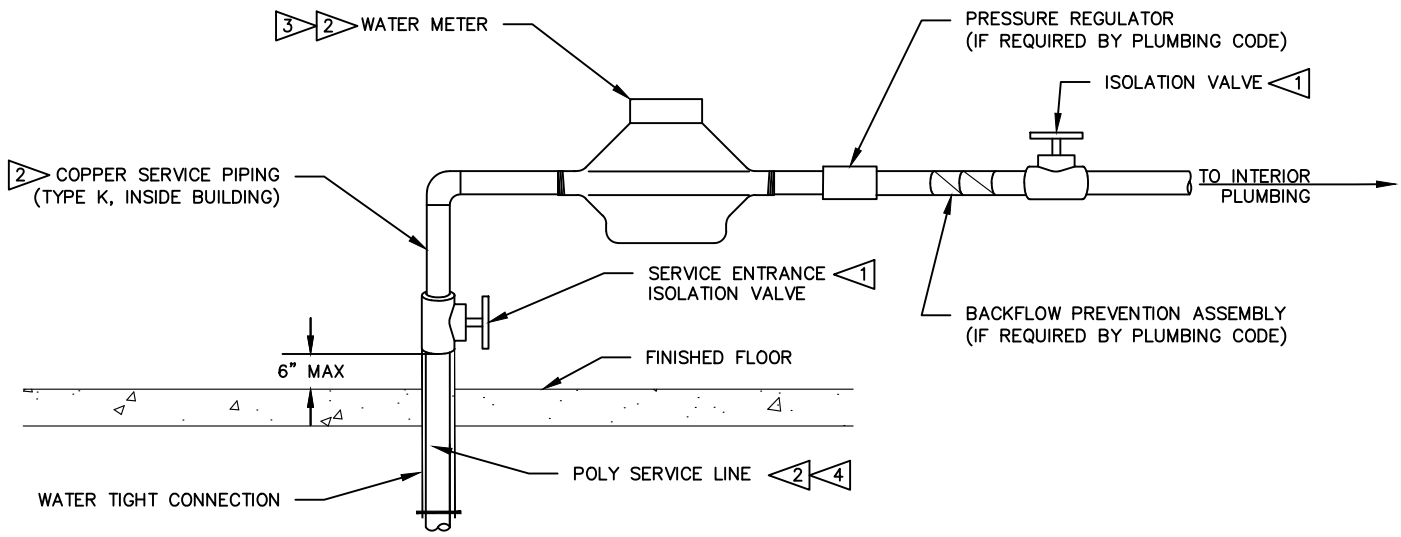
PROJECT TITLE

STANDARD DRAWINGS

East Helena, Montana

FIGURE

03



CONSTRUCTION NOTES:

1. THE FIRST FITTING INSIDE THE BUILDING AND THE ISOLATION VALVE DOWNSTREAM OF THE METER SHALL BE UL LISTED VALVES SIZED THE SAME AS THE SERVICE LINE.
2. METER AND SERVICE PIPING SHALL BE SIZED ACCORDING TO THE TABLE BELOW. METERS SHALL BE PURCHASED FROM THE CITY OF EAST HELENA PUBLIC WORKS DEPARTMENT.
3. **METER SHALL BE LOCATED WITHIN 4'-0" OF CRAWL SPACE OPENING.**
4. THE INCOMING SERVICE LINE SHALL BE A MINIMUM OF 6'–0" BELOW FINISHED GRADE.
5. ALL SERVICE LINE APPURTENANCES SHALL HAVE A MINIMUM WORKING PRESSURE OF 175 PSI.
6. WATER SERVICE LINES AND FIRE SERVICE LINES SHALL BE TWO SEPARATE SERVICES.

POLY SERVICE PIPE SIZE (SIDR 7. 200 PSI)	COPPER SERVICE PIPE SIZE (TYPE K)	METER SIZE*
1"	3/4"	3/4"
1¼"	1"	1"
2"	1½"	1½"

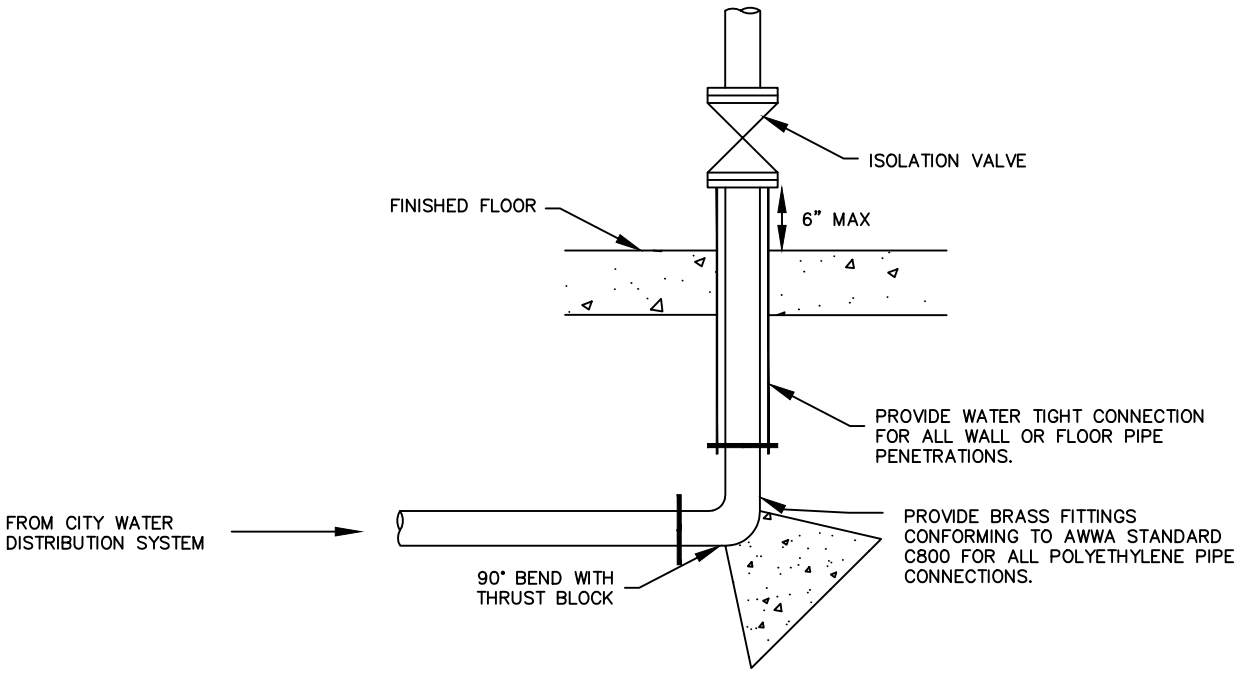
*SEE CITY OF EAST HELENA ORDINANCE 8–3–1, SECTION F.2. FOR METER SIZING REQUIREMENTS

SCALE: NONE

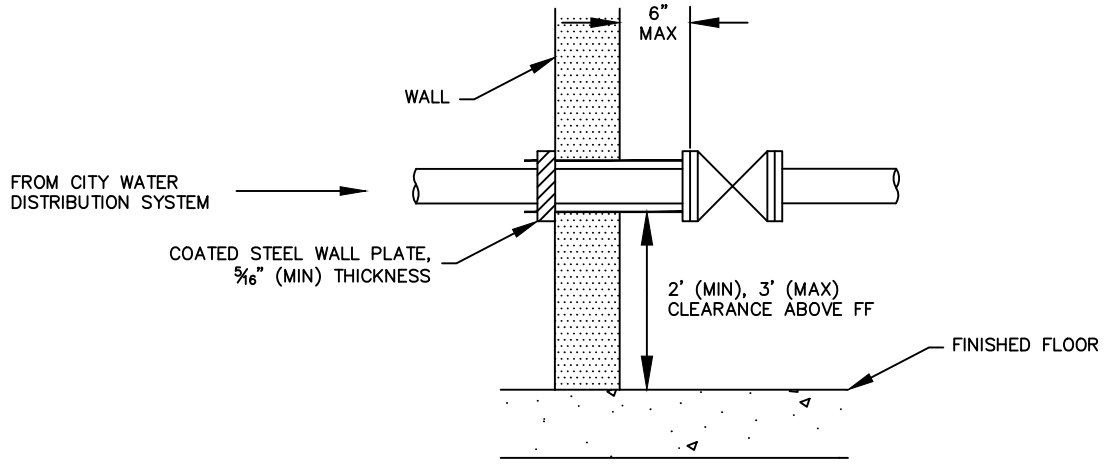
SHEET TITLE: **WATER SERVICE ENTRANCE**

PROJECT TITLE: **STANDARD DRAWINGS**

FIGURE: **04**



FLOOR PENETRATION



WALL PENETRATION

SCALE: NONE

SHEET TITLE

WATER SERVICE ENTRANCE CONFIGURATIONS

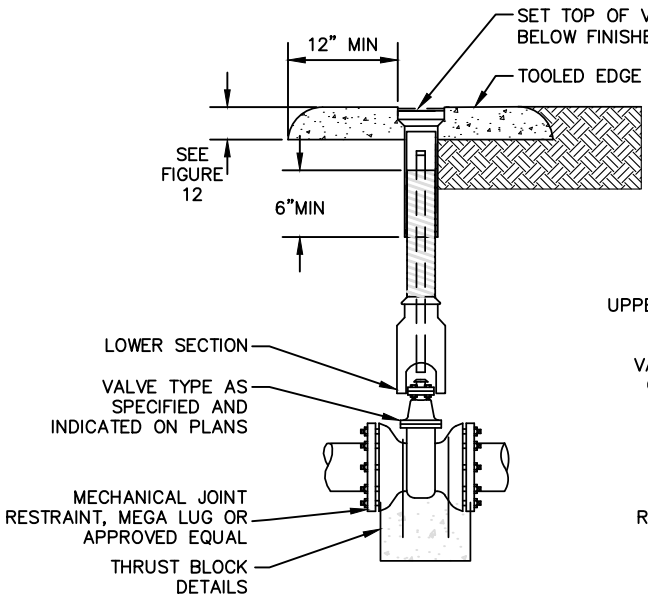
PROJECT TITLE

STANDARD DRAWINGS

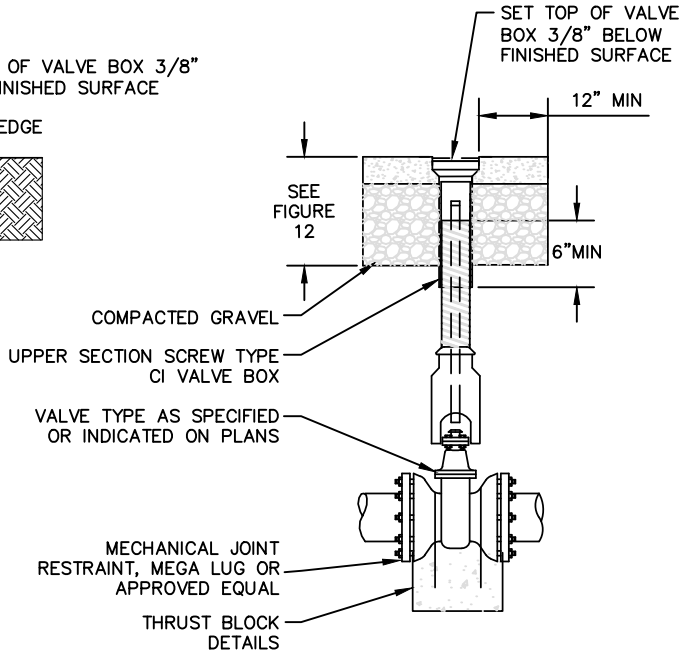
East Helena, Montana

FIGURE

05



SHOULDER OR DIRT ROAD



PAVED/ UNIMPROVED AREAS

NOTES:

1. ADJUST VALVE BOXES UPWARD OR DOWNWARD AS REQUIRED.
2. CONCRETE COLLARS SHALL BE POURED IN PLACE AT EACH WATER VALVE. IN PAVED AREAS CONCRETE COLLARS SHALL BE POURED AFTER PAVING. SEE FIGURE 12 FOR CONCRETE COLLAR DETAILS.
3. COMPACT ALL BACKFILL AROUND THE VALVE BOX UPPER SECTION BY MEANS OF HAND TAMPING.
4. ANY VALVE BOX UNCOVERED BY FINAL GRADING OPERATION SHALL BE PROVIDED WITH A CONCRETE COLLAR AS PER ABOVE DETAIL.
5. VALVES SHALL CLOSE IN THE CLOCKWISE DIRECTION.

RPA

SCALE: NONE

SHEET TITLE

VALVE SETTING

PROJECT TITLE

STANDARD DRAWINGS

East Helena, Montana

FIGURE

06

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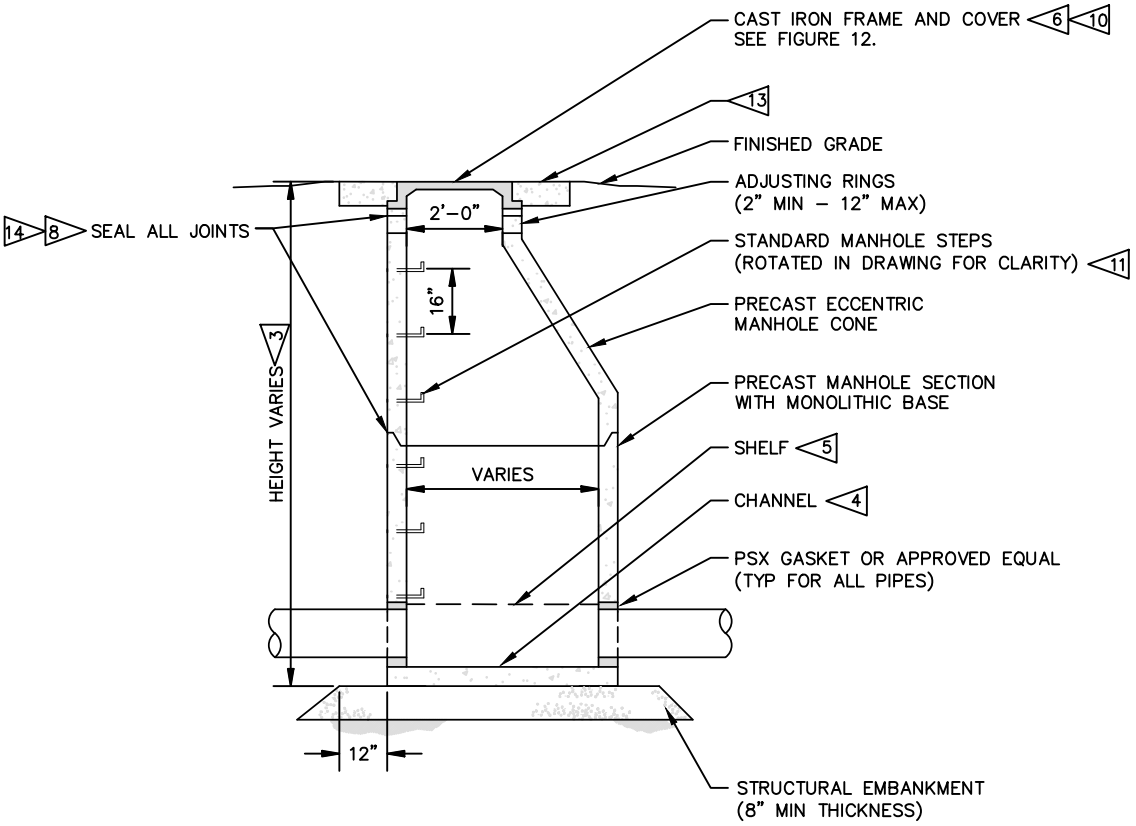


CONSTRUCTION NOTES:

1. PRECAST CONCRETE MANHOLES SHALL CONFORM TO ASTM C478.
2. PROVIDE 3" GROUT SPACE AROUND ALL PIPE. ALL JOINTS SHALL BE GROUTED WATERTIGHT.
3. IF MANHOLE IS LESS THAN 6'–0", OMIT ECCENTRIC CONE AND PROVIDE PRECAST STANDARD STRAIGHT MANHOLE WITH FLAT LID, RISER SECTION, AND COVER.
4. CHANNEL SHALL BE HALF THE DIAMETER OF THE PIPE. CONSTRUCT PER MPW.
5. CONCRETE SHELVES SHALL SLOPE TOWARD THE CHANNEL AT 1" PER FOOT.
6. MANHOLE COVER SHALL BE MARKED "SEWER" FOR THE WASTEWATER MANHOLES.
7. NEW MANHOLES SHALL BE COATED WITH AN EXTERIOR DAMPPROOFING; BITUMINOUS COAT OR COAL TAR EPOXY.
8. JOINT MATERIAL SHALL BE "RUBBER–NEK" OR APPROVED EQUAL.
9. FINISHED MANHOLES SHALL BE IN COMPLIANCE WITH LATEST EDITION OF MPWSS STANDARD SPECIFICATIONS.
10. FIELD SET COVER FLUSH W/ PAVEMENT, CONCRETE AND GRASS OR LAWN SURFACE. FIELD SET COVER 3" BELOW GRADE IN GRAVEL SURFACE.
11. STEPS SHALL BE PLACED AT 90° TO THE LINE OF SEWER PIPE WHERE APPLICABLE.
12. PROVIDE ALL SHORING NECESSARY TO PROTECT EXISTING STRUCTURES AND INFRASTRUCTURE.
13. INSTALL 12" COLLAR (6" THICK) AROUND COVER. INSTALL 2 REBAR HOOPS (#4 BAR).
14. WRAP EXTERIOR MANHOLE JOINTS WITH HIGH STRENGTH, WATERTIGHT ADHESIVE TAPE. ADHESIVE TAPE SHALL BE EZ–WRAP OR APPROVED EQUAL.

RPA

SCALE: NONE

SHEET TITLE

STANDARD MANHOLE

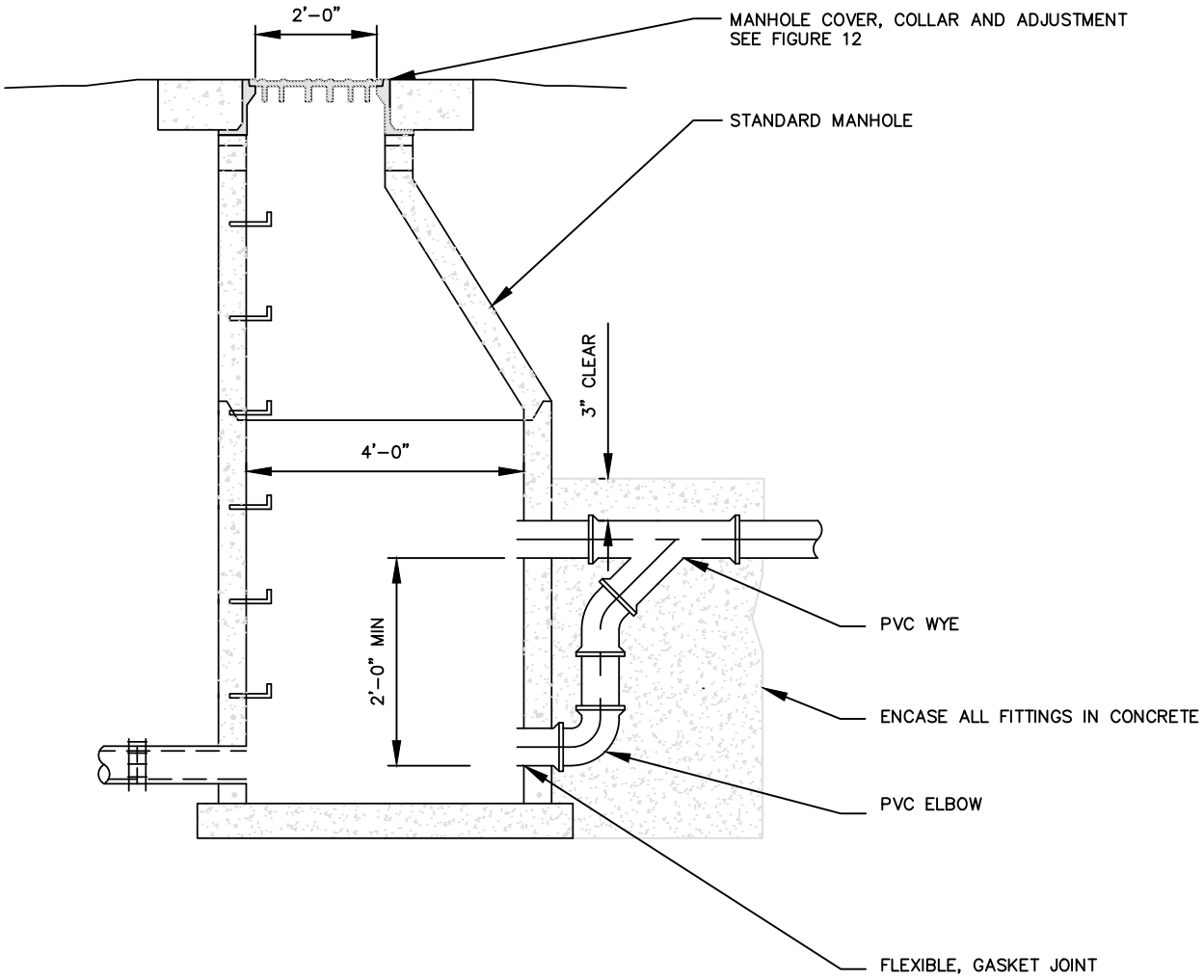
PROJECT TITLE

STANDARD DRAWINGS

East Helena, Montana

FIGURE

07



NOTES:

1. PROVIDE A DROP INLET WHENEVER THE PIPE INVERT IS MORE THAN 2'–0" ABOVE THE LOWEST MANHOLE INVERT.

RPA

SCALE: NONE

SHEET TITLE

DROP MANHOLE

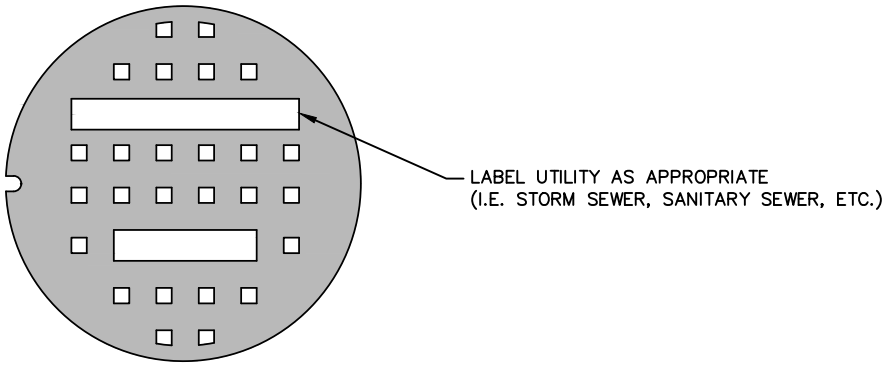
PROJECT TITLE

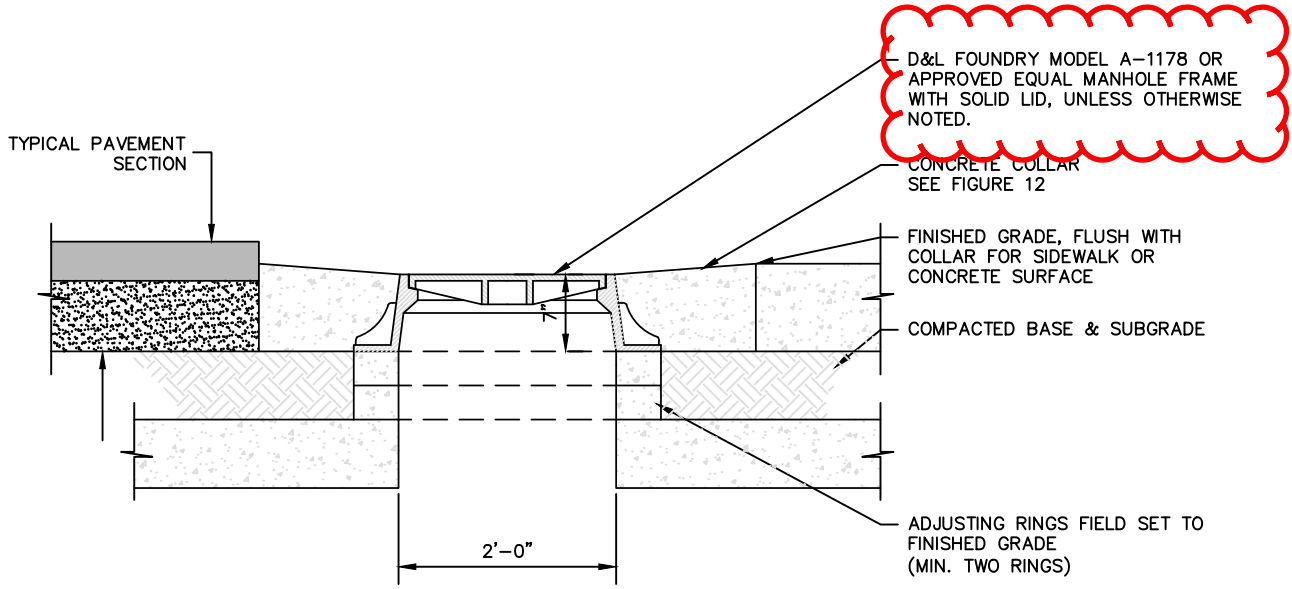
STANDARD DRAWINGS

East Helena, Montana

FIGURE

08





NOTES:

1. ADJUST MANHOLES UPWARD WITH CONCRETE ADJUSTMENT RINGS UNDER FRAME, 2" MINIMUM, 12" MAXIMUM.
2. SLOPE MANHOLE RING AS REQUIRED TO MATCH LONGITUDINAL & TRANSVERSE GRADE ON STREET. NO PAYMENT SHALL BE MADE FOR ADJUSTMENT OF NEW MANHOLES TO FINAL GRADE.
3. INSTALL CONCRETE COLLAR EXTENDING OUT FROM MANHOLE LID ON ALL SIDES, WHETHER IN STREET OR LANDSCAPED CONDITIONS. SEE FIGURE 12.
4. WATERPROOF MANHOLE RINGS & LIDS ARE REQUIRED ON MANHOLES LOCATED IN GUTTER LINES, FLOW LINES, OR OUTSIDE THE ROADWAY.
5. SANITARY SEWER MANHOLE LIDS IN LANDSCAPED AREAS SHALL BE SLOPED TO DRAIN AWAY FROM LID.

RPA

SCALE: NONE

SHEET TITLE

MANHOLE COVER, COLLAR & ADJUSTMENT

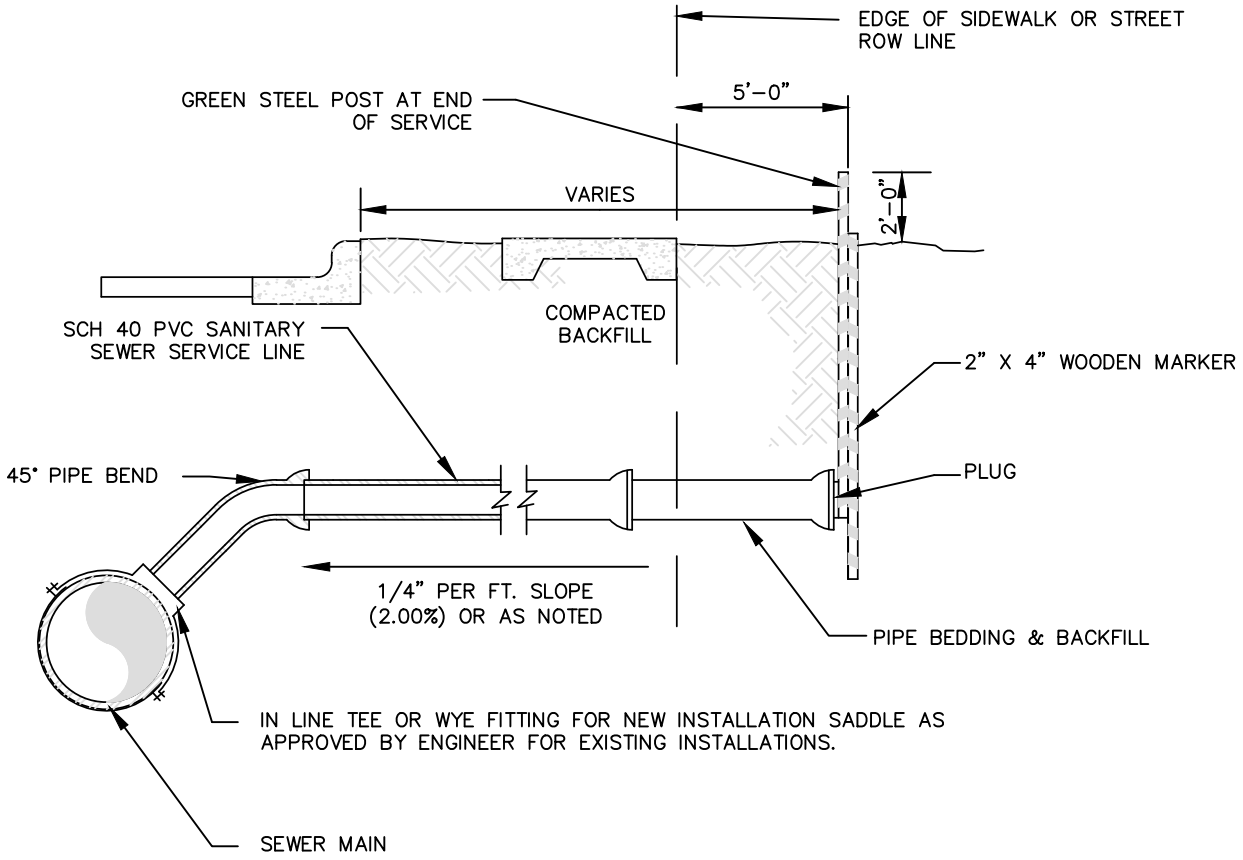
PROJECT TITLE

STANDARD DRAWINGS

East Helena, Montana

FIGURE

09



NOTES:

1. SERVICE CONNECTIONS MUST BE INSPECTED BY CITY PERSONNEL AND ARE SUBJECT TO FEE(S) PER CITY ORDINANCE.

F:\water\EHLN19\Standard Drawings\10_SANITARY SEWER SERVICE LINE INSTALLATION.dwg Jul 18, 2023

RPA

SCALE: NONE

SHEET TITLE

SANITARY SEWER SERVICE LINE INSTALLATION

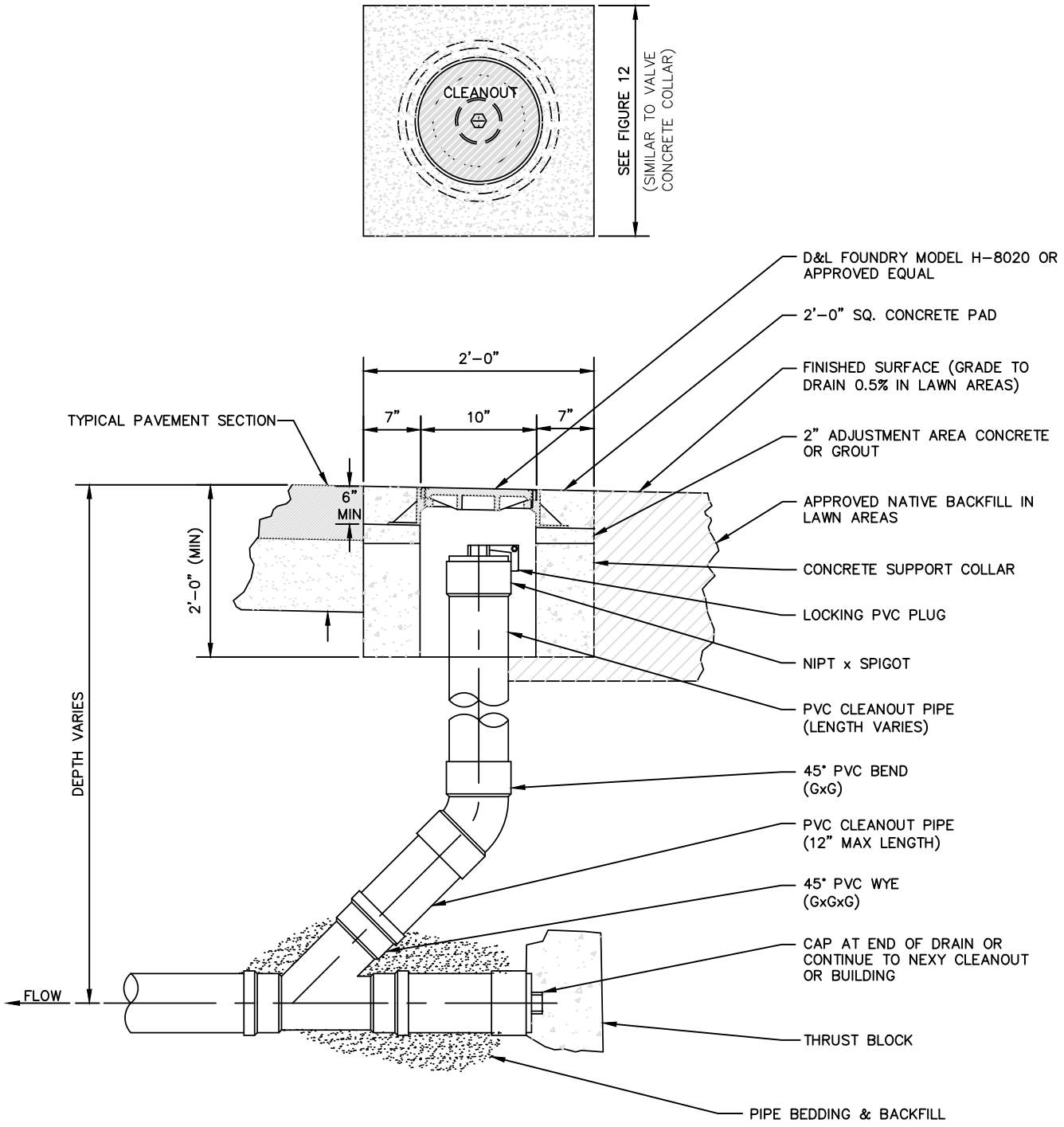
PROJECT TITLE

STANDARD DRAWINGS

East Helena, Montana

FIGURE

10



NOTES:

1. STUB CLEANOUT 6" ABOVE GROUND SURFACE UNTIL FINAL LANDSCAPING/GRADING/PAVING IS COMPLETED, AT WHICH TIME THE STUB CLEANOUT SHALL BE LOWERED TO NO MORE THAN 6" BELOW FINAL GRADE.
2. ADJUST CLEANOUT COVER 1/4" BELOW FINISHED GRADE ON PAVED SURFACE.
3. CLEANOUT SHALL BE LOCATED 5 FT. FROM BUILDING FACE OR AS SPECIFIED ON THE PLANS.
4. PRECAST TRAFFIC BOXES MUST BE RATED FOR HS20 LOADING & MUST BE SUBMITTED FOR APPROVAL IF CLEANOUT IS PLACED IN ANY LOCATION WERE TRAFFIC MAY BE PRESENT.

RPA

SCALE: NONE

SHEET TITLE

CLEANOUT AND COVER

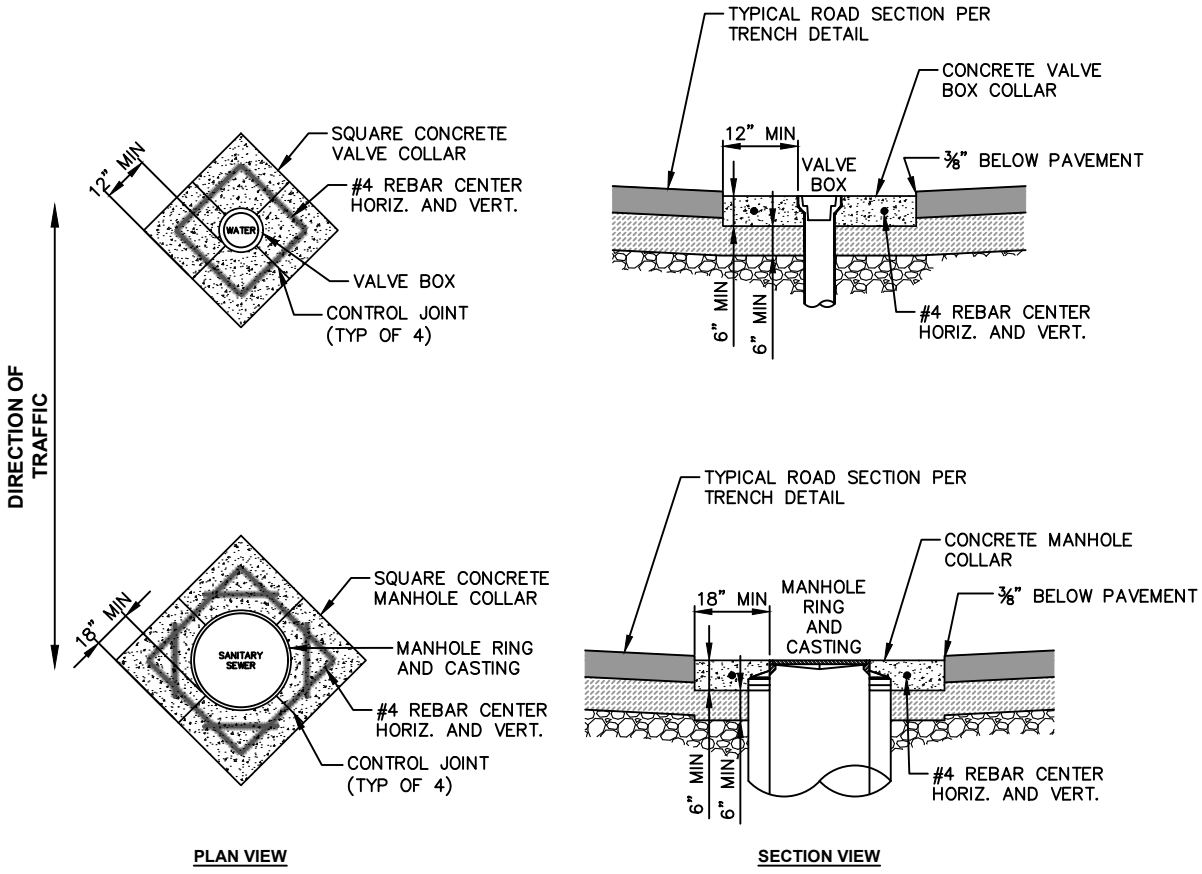
PROJECT TITLE

STANDARD DRAWINGS

East Helena, Montana

FIGURE

11



PLAN VIEW **SECTION VIEW**

NOTE:

1. ALL VISIBLE CONCRETE EDGES AND JOINTS SHALL BE ROUNDED WITH A ¼" RADIUS EDGING TOOL.
2. CONCRETE SHALL BE M–4000 WITH 3/4" MAX. AGGREGATE, MIN. 28 DAY STRENGTH OF 4000 PSI, 6% +/– 1.5% AIR ENTRAINMENT AND MAX SLUMP OF 4".
3. ALL EXISTING ASPHALT AND CONCRETE SHALL BE SAW CUT.
4. IF MANHOLE OR VALVE BOX IS LOCATED IN SIDEWALK OR CONCRETE SURFACE, CONCRETE COLLAR SHALL BE FLUSH WITH SURFACE.

RPA

SCALE: NONE

SHEET TITLE

CONCRETE COLLAR

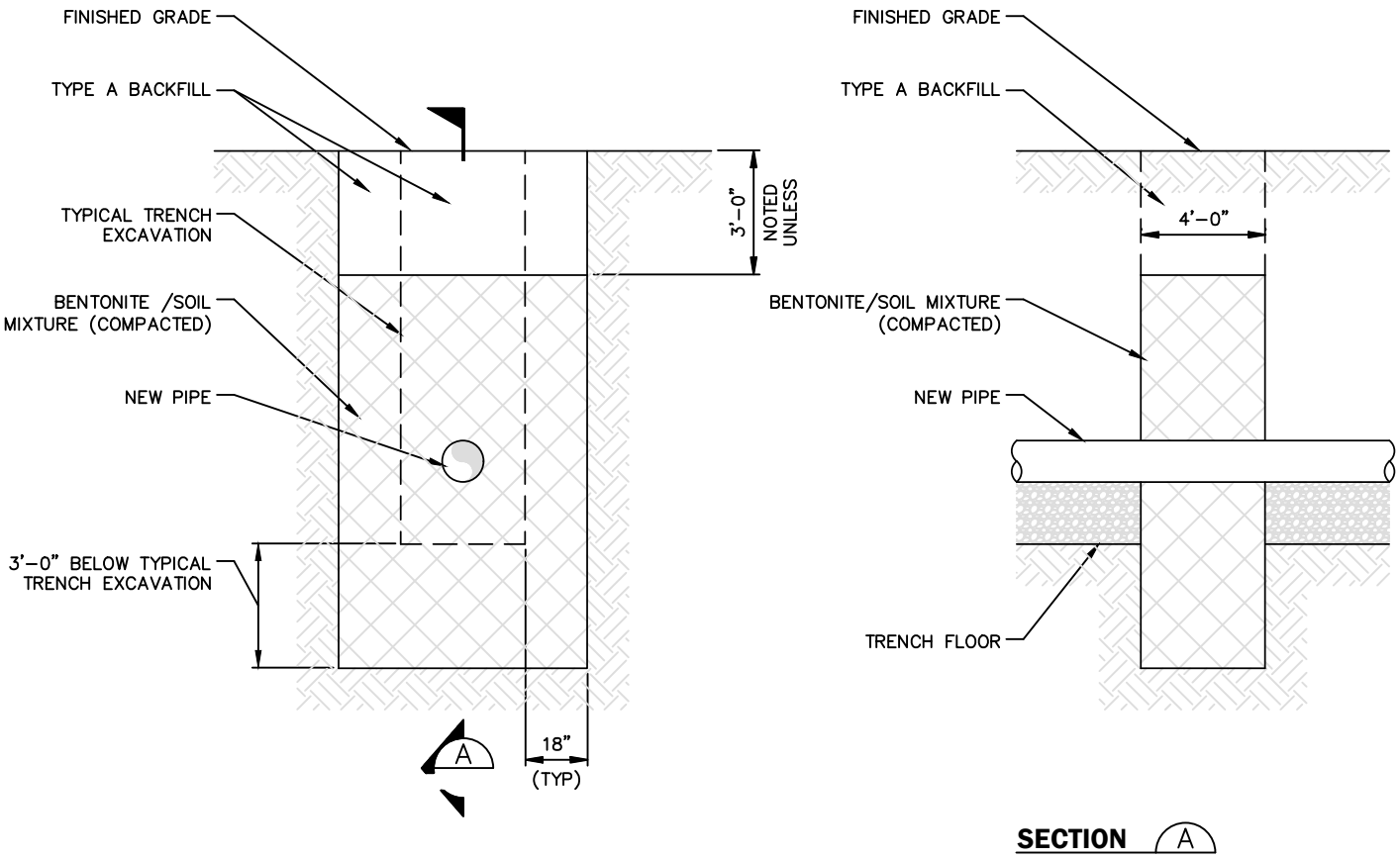
PROJECT TITLE

STANDARD DRAWINGS

East Helena, Montana

FIGURE

12



NOTES:

1. THE PURPOSE OF THE TRENCH WATER STOP IS TO PREVENT TYPE 1 & TYPE 2 BEDDING FROM BECOMING A CONDUIT FOR GROUNDWATER.
2. PROVIDE THE MIXTURE PROPORTIONING OF THE BENTONITE MATERIAL WITH ON–SITE LEAN CLAYS. ALL TRENCH WATER STOPS SHALL BE CONSTRUCTED TO HAVE AN IN–PLACE PERMEABILITY RATE OF 1x10–7 CM/SECOND OR LESS. THE A MIX PROPORTION DESIGN & CERTIFIED TESTING RESULTS FROM A PROFESSIONAL LAB INDICATING THE CONFORMANCE WITH THIS PERMEABILITY RATE SHALL BE SUBMITTED.
3. TRENCH WATER STOPS SHALL BE INSTALLED AT A MINIMUM OF 400'–0" APART, OR CROSSINGS OF STREAMS, DITCHES, OR OTHER SOURCES OF GROUNDWATER.

RPA

SCALE: NONE

SHEET TITLE

TRENCH PLUG

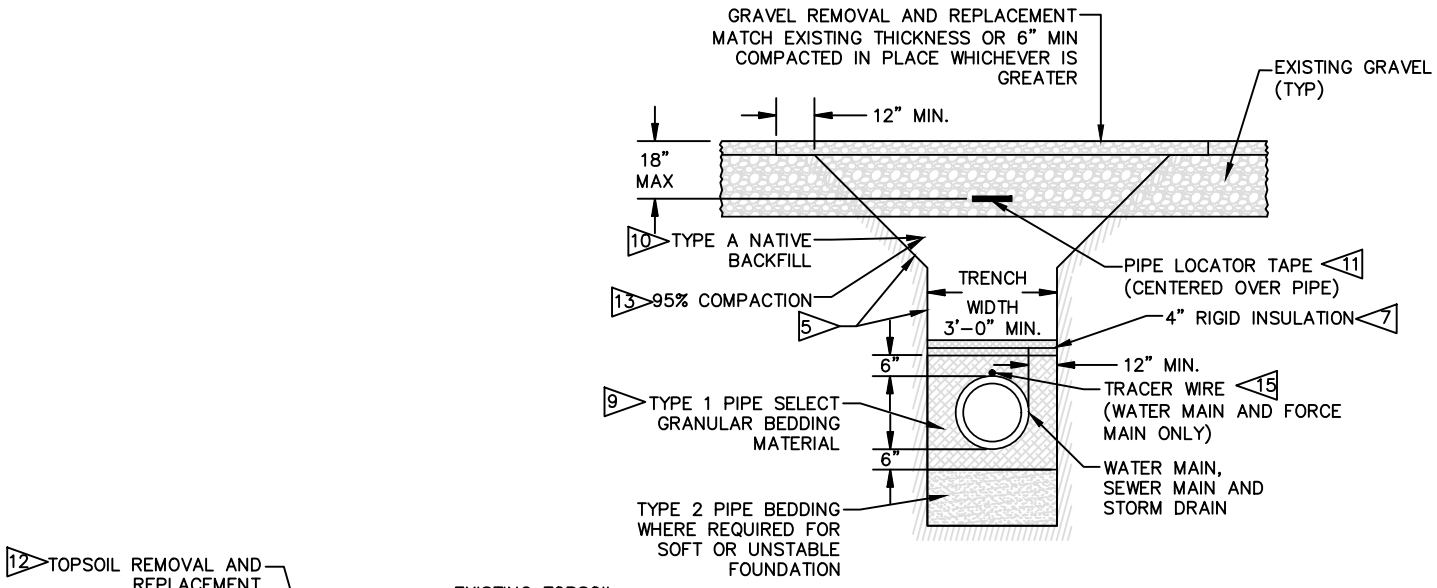
PROJECT TITLE

STANDARD DRAWINGS

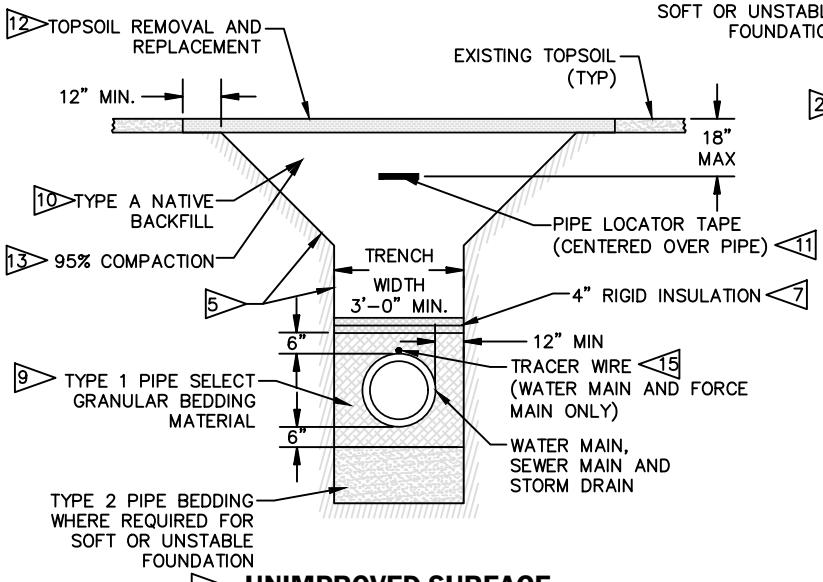
East Helena, Montana

FIGURE

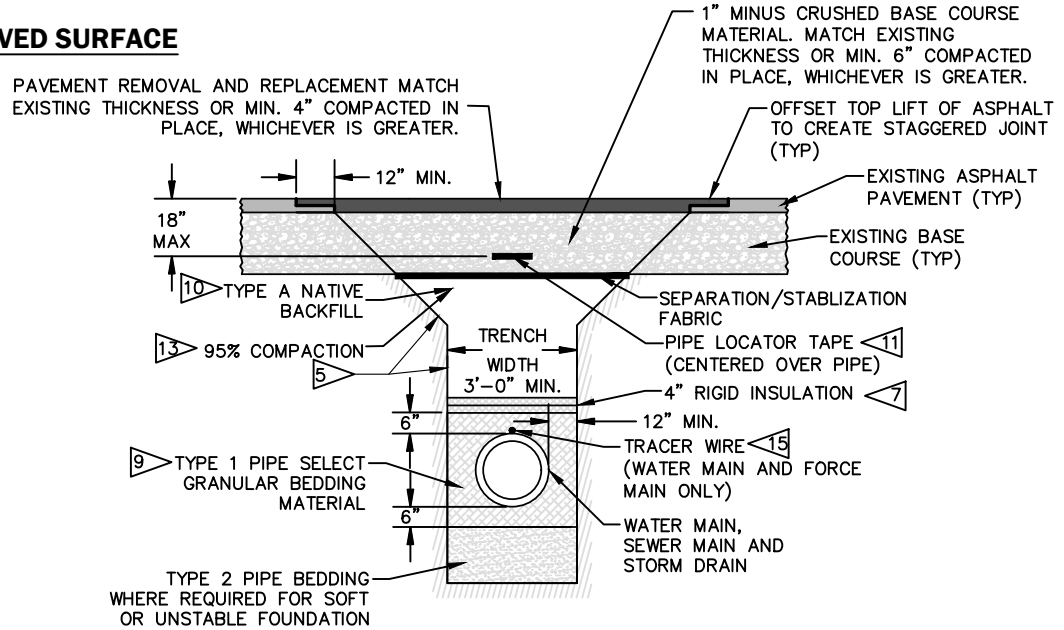
13



2 GRAVELED SURFACE



1 UNIMPROVED SURFACE



3 PAVED SURFACE

NOTES:

SEE SHEET 14A.

RPA

SCALE: NONE

SHEET TITLE

UTILITY TRENCH

PROJECT TITLE

STANDARD DRAWINGS

East Helena, Montana

FIGURE

14

CONSTRUCTION NOTES:

1> WHERE TRENCH PASSES THROUGH UNIMPROVED SURFACES THE TOPSOIL SHALL BE REMOVED AND REPLACED A MAXIMUM OF 20' FROM THE CENTERLINE OF THE PIPE. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES BEYOND THIS WIDTH AT THEIR OWN EXPENSE.

2> WHERE TRENCH PASSES THROUGH EXISTING GRAVEL THE GRAVEL SHALL BE REMOVED AND REPLACED A MAXIMUM OF 10' FROM THE CENTERLINE OF THE PIPE. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES BEYOND THIS WIDTH AT THEIR OWN EXPENSE.

3> WHERE TRENCH PASSES THROUGH EXISTING PAVEMENT THE PAVEMENT SHALL BE CUT ALONG A NEAT VERTICAL LINE A MAXIMUM OF 5' FROM THE CENTERLINE OF THE PIPE. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES BEYOND THIS WIDTH AT THEIR OWN EXPENSE.

4. VERIFY THAT COMPACTION METHODS ARE COMPARABLE WITH PIPE MANUFACTURER'S RECOMMENDATIONS. ANY DAMAGE TO THE PIPE WILL BE THE CONTRACTOR'S RESPONSIBILITY.

5> TRENCH SHALL BE CONSTRUCTED TO OSHA SPECIFICATIONS FOR EXCAVATION. DRAWINGS DO NOT SHOW TRENCH DIMENSIONS OR BACKSLOPES THAT MAY BE REQUIRED. CONTRACTOR REQUIRED TO DETERMINE WHICH OSHA SPECIFICATIONS ARE APPLICABLE.

6. CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND DISPOSAL OF ALL SPOILS.

7> INSTALL 4" OF RIGID INSULATION (BLUEBOARD OR APPROVED EQUAL) THE FULL WIDTH OF THE TRENCH WHEN BURY TO TOP OF PIPE IS LESS THAN 6'–0".

8. ALL ROCKS GREATER THAN 12" IN ANY DIMENSION SHALL BE HAULED OFF SITE AND DISPOSED OF PROPERLY.

9> NO ROCKS OR LUMPS LARGER THAN 2" IN ANY DIMENSION SHALL BE ALLOWED WITHIN 6" OF THE PIPE.

10> USE SUITABLE NATIVE MATERIAL FOR BACKFILL. SEE TECHNICAL SPECIFICATIONS FOR CONDITIONS REQUIRING IMPORTED TRENCH BACKFILL.

11> USE LABELED AND COLOR–CODED TAPE FOR THE APPROPRIATE UTILITY PIPE, PLACED 18" MAXIMUM BELOW FINISHED SURFACE.

12> SEED, FERTILIZE, AND MULCH ALL DISTURBED AREAS WHICH ARE NOT PAVED, CONCRETED, OR GRAVELED PER SPECIFICATIONS.

13> COMPACTION REFERS TO PERCENT OF MAXIMUM DENSITY DETERMINED BY A STANDARD PROCTOR. ASTM D 698–91. TRENCHES EXCEEDING 10 FEET IN DEPTH SHALL BE COMPACTED TO 98% OF MAXIMUM DENSITY PER ASTM D 698–91.

14. FINISHED GRADE MUST MATCH THE ORIGINAL EXISTING GRADE WHERE PIPE IS INSTALLED UNLESS OTHERWISE NOTED.

15> TRACER WIRE SHALL BE 12 AWG TW DIRECT–BURY SOLID COPPER WIRE WITH CROSS–LINKED POLYETHYLENE INSULATION.

F:\water\EHLN19\Standard Drawings\14_UTILITY TRENCH UNIMPROVED SURFACE.dwg Jul 18, 2023

RPA

SCALE: NONE

SHEET TITLE

UTILITY TRENCH DETAILS

PROJECT TITLE

STANDARD DRAWINGS

East Helena, Montana

FIGURE

14A

RPA

SCALE: NONE

SHEET TITLE

THRUST BLOCKING

PROJECT TITLE

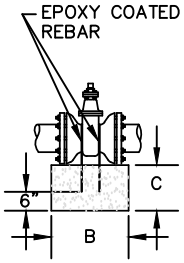
STANDARD DRAWINGS

East Helena, Montana

FIGURE

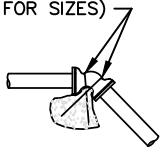
15

VOLUME OF THRUST BLOCK IN CUBIC YARDS (VERTICAL BENDS)			
FITTING SIZE (INCHES)	BEND ANGLE		
	45°	22-1/2°	11-1/4°
4	0.8	0.3	0.1
6	2.0	0.8	0.3
8	3.0	1.1	0.4
10	4.5	1.7	0.7
12	6.4	2.4	1.0
14	8.6	3.2	1.3
16	11.1	4.2	1.7
18	14.1	5.3	2.2
20	17.3	6.6	2.7
24"	24.2	9.2	3.8



VERTICAL BEND REBAR		
FITTING SIZE	ROD SIZE	EMBEDMENT
12" AND LESS	#6	30"
14" – 16"	#8	36"
18" – 20"	#10	36"
24"	#11	42"

EPOXY COATED REBAR OVER FITTING AND EMBEDDED IN CONCRETE (SEE TABLE FOR SIZES)

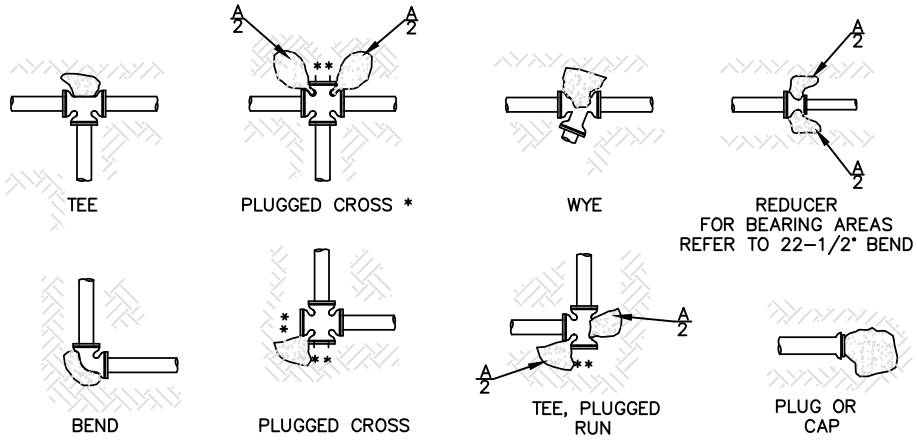


VERTICAL BEND

BEARING AREA OF THRUST BLOCKS IN SQFT (HORIZONTAL BENDS)							
FITTING SIZE (INCHES)	TEE, WYE, PLUG, OR CAP	90° Bend, PLUGGED CROSS	TEE, PLUGGED RUN		BEND ANGLE		
			A_1	A_2	45°	22-1/2°	11-1/4°
4	1.3	1.8	1.3	1.8	1.0	1.0	–
6	3.0	4.2	3.0	4.2	2.3	1.2	1.0
8	5.3	7.6	5.3	7.6	4.1	2.1	1.0
10	8.3	11.8	8.3	11.8	6.4	3.3	1.6
12	12.0	17.0	12.0	17.0	9.2	4.7	2.4
14	16.3	23.1	16.3	23.1	12.5	6.4	3.2
16	21.4	30.2	21.4	30.2	16.3	8.3	4.2
18	27.0	32.0	27.0	32.0	20.7	10.5	5.3
20	33.4	47.2	33.4	47.2	25.5	13.0	6.5
24	40.3	55.0	40.3	55.0	35.7	18.0	9.0

NOTE: DIMENSION 'A' IS WIDTH OF THRUST BLOCK (PERPENDICULAR TO PAGE)

VALVE THRUST BLOCK DIMENSIONS							
VALVE SIZE	REBAR SIZE	100 PSI			150 PSI		
		A	B	C	A	B	C
4"	#6	2.0'	2.0'	2.0'	2.0'	2.0'	2.0'
6"	#6	2.0'	2.0'	2.0'	2.0'	2.0'	2.0'
8"	#6	2.0'	2.0'	2.0'	2.0'	2.0'	2.0'
10"	#6	2.0'	2.0'	2.0'	2.5'	2.5'	2.0'
12"	#6	2.3'	2.0'	2.0'	3.0'	3.0'	2.7'
14"	#8	2.3'	2.0'	2.3'	3.4'	3.0'	3.0'
16"	#9	3.0'	3.0'	2.9'	4.3'	3.0'	3.0'
18"	#10	3.7'	3.0'	3.0'	5.4'	3.0'	3.0'
20"	#10	3.9'	3.3'	3.3'	5.7'	3.3'	3.3'
24"	#11	4.3'	4.0'	4.0'	6.4'	4.0'	4.0'

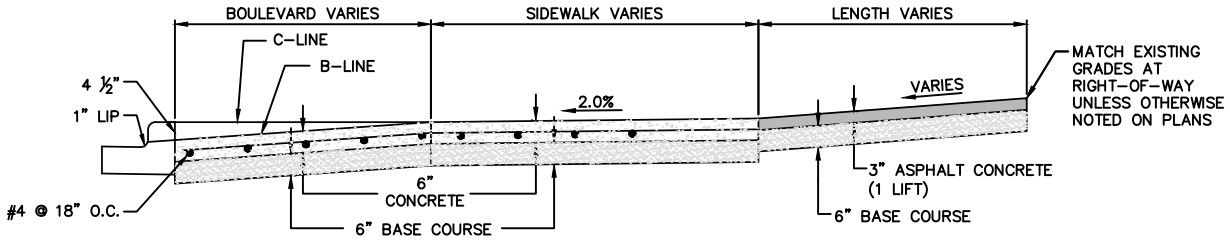


*EACH AREA (A/2) IS 1/2 OF TABULATED TOTAL AREA

** RESTRAINED PLUG

THRUST BLOCK NOTES:

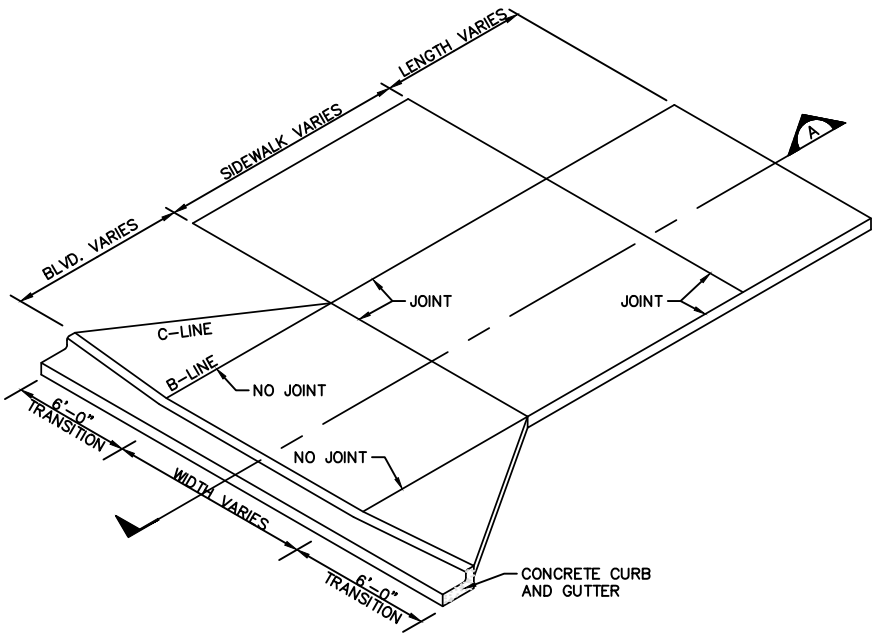
1. KEEP CONCRETE CLEAR OF JOINT AND JOINT ACCESSORIES.
2. POUR THRUST BLOCKING AGAINST UNDISTURBED EARTH.
3. REQUIRED VOLUMES AND BEARING AREAS SHALL BE AS SHOWN IN THE TABLE AND ADJUSTED, IF NECESSARY, TO CONFORM TO THE TEST PRESSURE(S) AND ALLOWABLE SOIL BEARING STRESS OF 2000 LBS/SQFT.
4. BEARING AREAS FOR HORIZONTAL BEND THRUST BLOCKS ARE BASED ON TEST PRESSURE OF 150 PSIG AND AN ALLOWABLE SOIL BEARING STRESS OF 2000 LBS/SQFT. TO COMPUTE BEARING AREAS FOR DIFFERENT TEST PRESSURES USE THE FOLLOWING:
   $B_1 = B(13.33)(P_1/2000)$ WHERE:
   P_1 = ACTUAL TEST PRESSURE, PSIG
   B_1 = COMPUTED BEARING AREA
   B = BEARING AREA FROM TABLE
5. THRUST BLOCK VOLUMES FOR VERTICAL BENDS HAVING UPWARD RESULTANT THRUSTS ARE BASED ON TEST PRESSURE OF 150 PSIG AND THE WEIGHT OF CONCRETE = 4050 LBS/CU YD. TO COMPUTE VOLUMES FOR DIFFERENT TEST PRESSURES USE THE FOLLOWING:
   ACTUAL VOLUME = (TEST PRESSURE/150) X (TABLE VOLUME).
6. VERTICAL BENDS HAVING DOWNWARD RESULTANT THRUSTS AND HORIZONTAL BENDS, HAVE THE SAME THRUST BLOCK REQUIREMENTS.
7. BEARING AREAS, VOLUMES, AND SPECIAL BLOCKING DETAILS SPECIFIED OR SHOWN ELSEWHERE IN THESE PLANS TAKE PRECEDENCE OVER THIS STANDARD DETAIL.
8. THRUST BLOCK BEARING AREA SHALL NOT BE LESS THAN 1.0 SQFT.
9. TEST PRESSURES ARE INDICATED IN THE SPECIFICATIONS AND THE ALLOWABLE SOIL BEARING STRESS IS 2000 LBS/SQFT.
10. CONTRACTOR SHALL PROVIDE THRUST BLOCKING FOR ALL BURIED FITTINGS AND VALVES.



SECTION A

NOTES:

1. PLACE #4 REBAR @ 18" O.C. SUPPORTED BY 3" TALL CHAIRS IN ALL 6" CONCRETE.
2. SEE MPWSS 02529 FOR JOINT REQUIREMENTS.



RPA

SCALE: NONE

SHEET TITLE

DRIVEWAY APPROACH

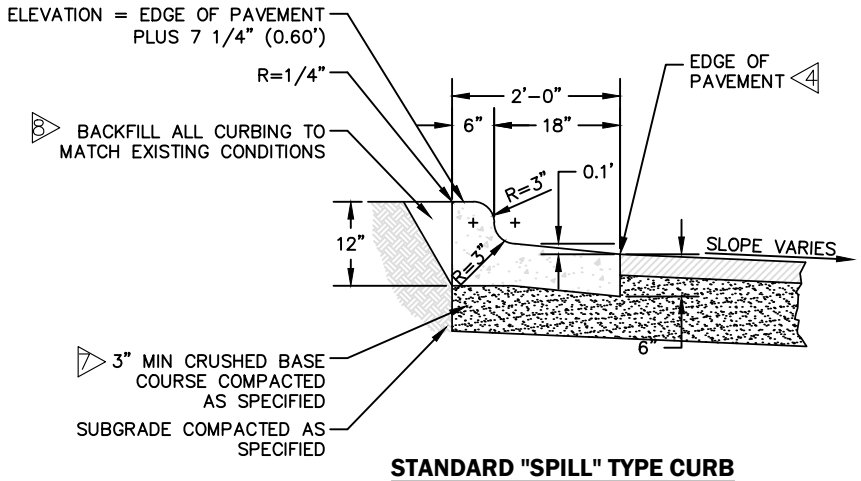
PROJECT TITLE

STANDARD DRAWINGS

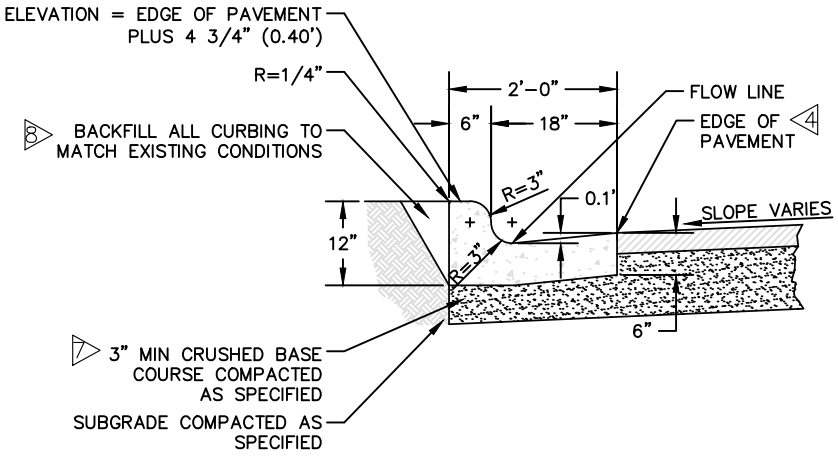
East Helena, Montana

FIGURE

16



STANDARD "SPILL" TYPE CURB



STANDARD "CATCH" TYPE CURB

NOTES:

1. CONTRACTION JOINTS SHALL BE PLACED EVERY 10 FT. IN ACCORDANCE WITH MPWSS 02528. CONTRACTION JOINTS SHALL BE 1 TO 1 ½" DEEP.
2. EXPANSION JOINTS OF 1/2 IN. PRE FORMED MASTIC MATERIAL SHALL BE PLACED AT THE FOLLOWING LOCATIONS: PC'S & PT'S OF CURVE, GRADE BREAKS, JUNCTIONS WITH EXISTING CONCRETE, OPPOSITE TO OR AT EXPANSION JOINTS IN ADJACENT CONCRETE, AT MAXIMUM 300 FT. INTERVALS, 4 IN. ON EITHER SIDE OF A DRAINAGE STRUCTURE, AND AT OTHER LOCATIONS AS SPECIFIED BY THE ENGINEER.
3. UNLESS OTHERWISE SPECIFIED IN THESE PLANS; CONSTRUCTION MATERIALS & PROCEDURES SHALL CONFORM TO MPWSS CURRENT EDITION.

4 FINISHED PAVEMENT SURFACE SHALL BE 1/8" TO 1/4" ABOVE LIP OF CURB ON STANDARD "CATCH" TYPE CURBS & FLUSH WITH END OF CURB ON STANDARD "SPILL" TYPE CURBS.

5. ALL CURBS TO BE "CATCH" TYPE, UNLESS OTHERWISE NOTED.
6. TRANSITION FROM "CATCH" TO "SPILL" CURBS OVER A 10'-0" TRANSITION CENTERED ON THE DIVIDING LINE SHOWN ON THE PLAN SHEET.

7 BASE COURSE BELOW CURB & GUTTER SHALL BE A MINIMUM 3 INCHES THICK OR THE BALANCE OF THE TYPICAL SECTION, WHICH EVER IS GREATER.

8 ALL NEW CURB SHALL BE BACKFILLED IN SUCH A MANNER AS TO MATCH EXISTING OR NEW ADJACENT AREAS.

RPA

SCALE: NONE

SHEET TITLE

CONCRETE CURB & GUTTER

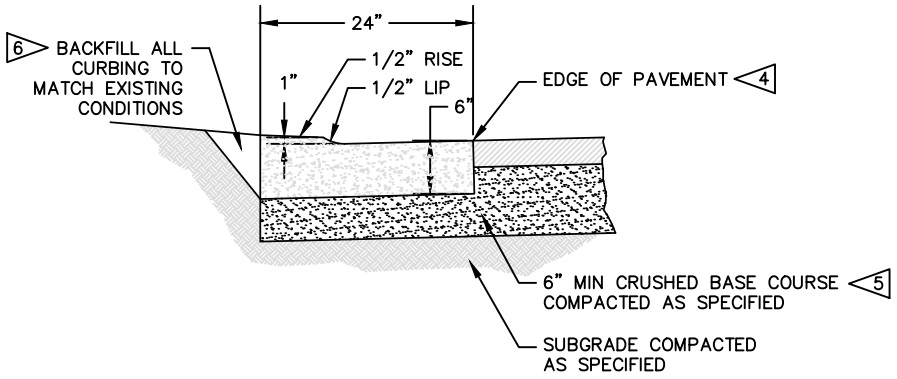
PROJECT TITLE

STANDARD DRAWINGS

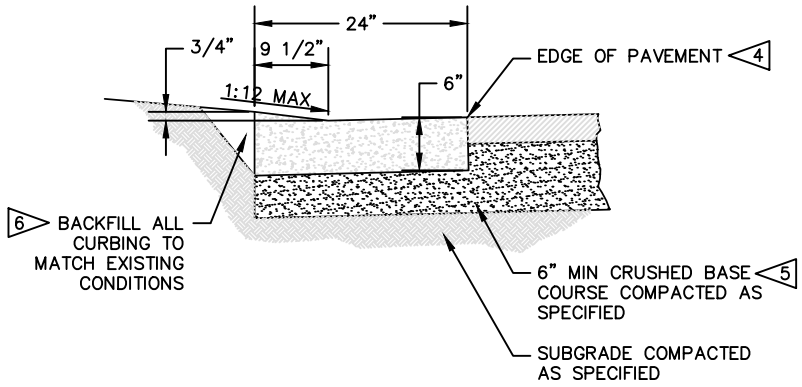
East Helena, Montana

FIGURE

17



STANDARD DRIVEWAY & DUMPSTER LAYDOWN CURB



STANDARD HANDICAP RAMP LAYDOWN CURB

NOTES:

1. CONTRACTION JOINTS SHALL BE PLACED EVERY 10 FT. IN ACCORDANCE WITH MPWSS 02528. CONTRACTION JOINTS SHALL BE 1 TO 1 ½" DEEP.
2. EXPANSION JOINTS OF 1/2 IN. PRE FORMED MASTIC MATERIAL SHALL BE PLACED AT THE FOLLOWING LOCATIONS: PC'S & PT'S OF CURVE, GRADE BREAKS, JUNCTIONS WITH EXISTING CONCRETE, OPPOSITE TO OR AT EXPANSION JOINTS IN ADJACENT CONCRETE, AT MAXIMUM 300 FT. INTERVALS, 4 IN. ON EITHER SIDE OF A DRAINAGE STRUCTURE, AND AT OTHER LOCATIONS AS SPECIFIED BY THE ENGINEER.
3. CONSTRUCTION MATERIALS & PROCEDURES SHALL CONFORM TO MPWSS CURRENT EDITION.

4 FINISHED PAVEMENT SURFACE SHALL BE 1/8" TO 1/4" ABOVE LIP OF CURB ON STANDARD "CATCH" TYPE CURBS & FLUSH WITH END OF CURB ON STANDARD "SPILL" TYPE CURBS.

5 BASE COURSE BELOW CURB & GUTTER SHALL BE A MINIMUM 3 INCHES THICK OR THE BALANCE OF THE TYPICAL SECTION, WHICHEVER IS GREATER.

6 ALL NEW CURB SHALL BE BACKFILLED IN SUCH A MANNER AS TO MATCH EXISTING OR NEW ADJACENT AREAS.

RPA

SCALE: NONE

SHEET TITLE: **LAYDOWN CURB**

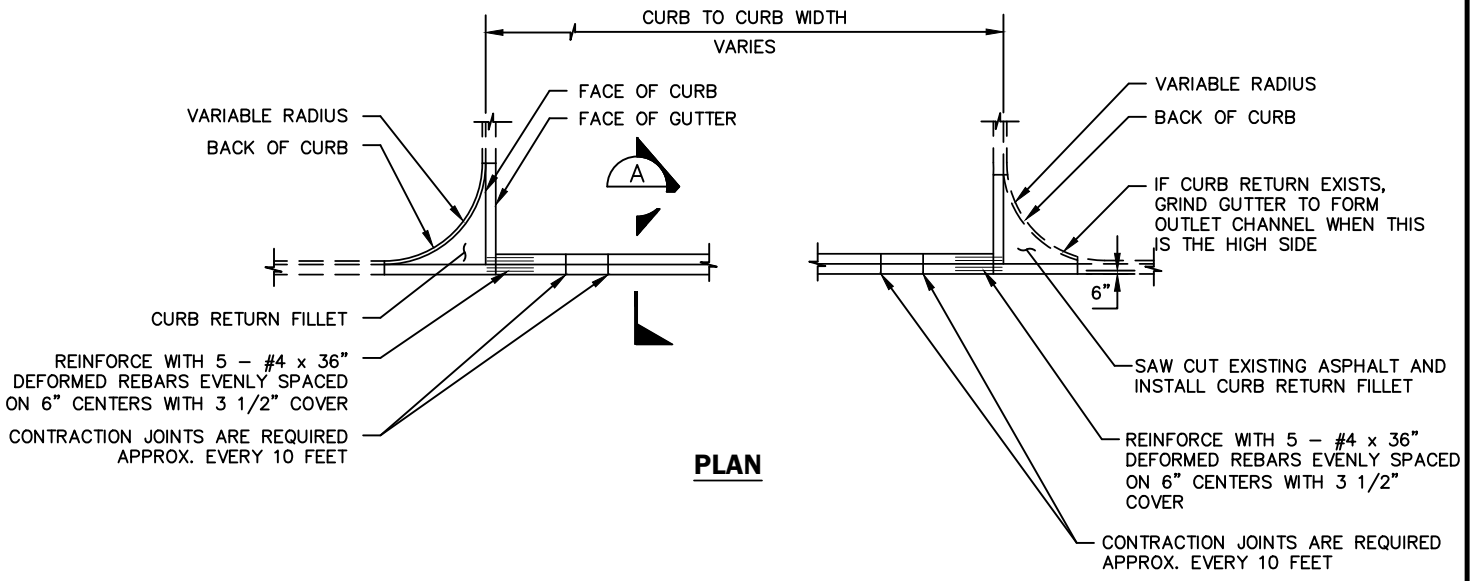
PROJECT TITLE: **STANDARD DRAWINGS**

East Helena, Montana

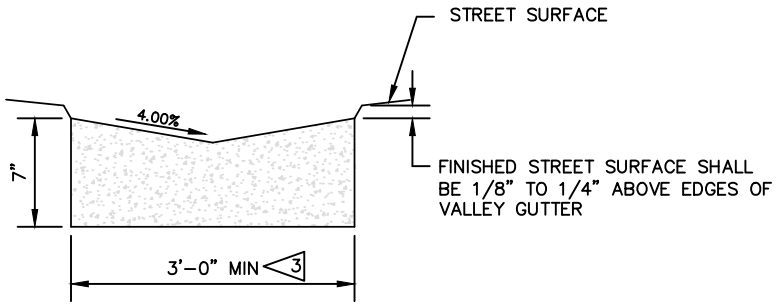
FIGURE: **18**

CURB RETURN FILLET REQUIRED FOR NEW CURB & GUTTER INSTALLATIONS (TYPICAL)

EXISTING CURB & GUTTER INSTALLATION WITHOUT CURB RETURN FILLET



PLAN



SECTION A

NOTES:

1. INSTALL REINFORCEMENT AT ALL CONSTRUCTION JOINTS.
2. CONTRACTION JOINTS ARE 1/8" MIN. AND 3/8" MAX. IN WIDTH. FORM JOINTS BY SAWING OR SCORING TO A MINIMUM DEPTH OF 1". FORM SCORED JOINTS BY A TOOL WHICH WILL LEAVE ROUNDED CORNERS AND DESTROY AGGREGATE INTERLOCK TO A MINIMUM DEPTH OF 1".

3 DIMENSIONS WILL VARY DEPENDING ON FLOW CONDITIONS.

RPA

SCALE: NONE

SHEET TITLE

CONCRETE VALLEY GUTTER

PROJECT TITLE

STANDARD DRAWINGS

East Helena, Montana

FIGURE

19

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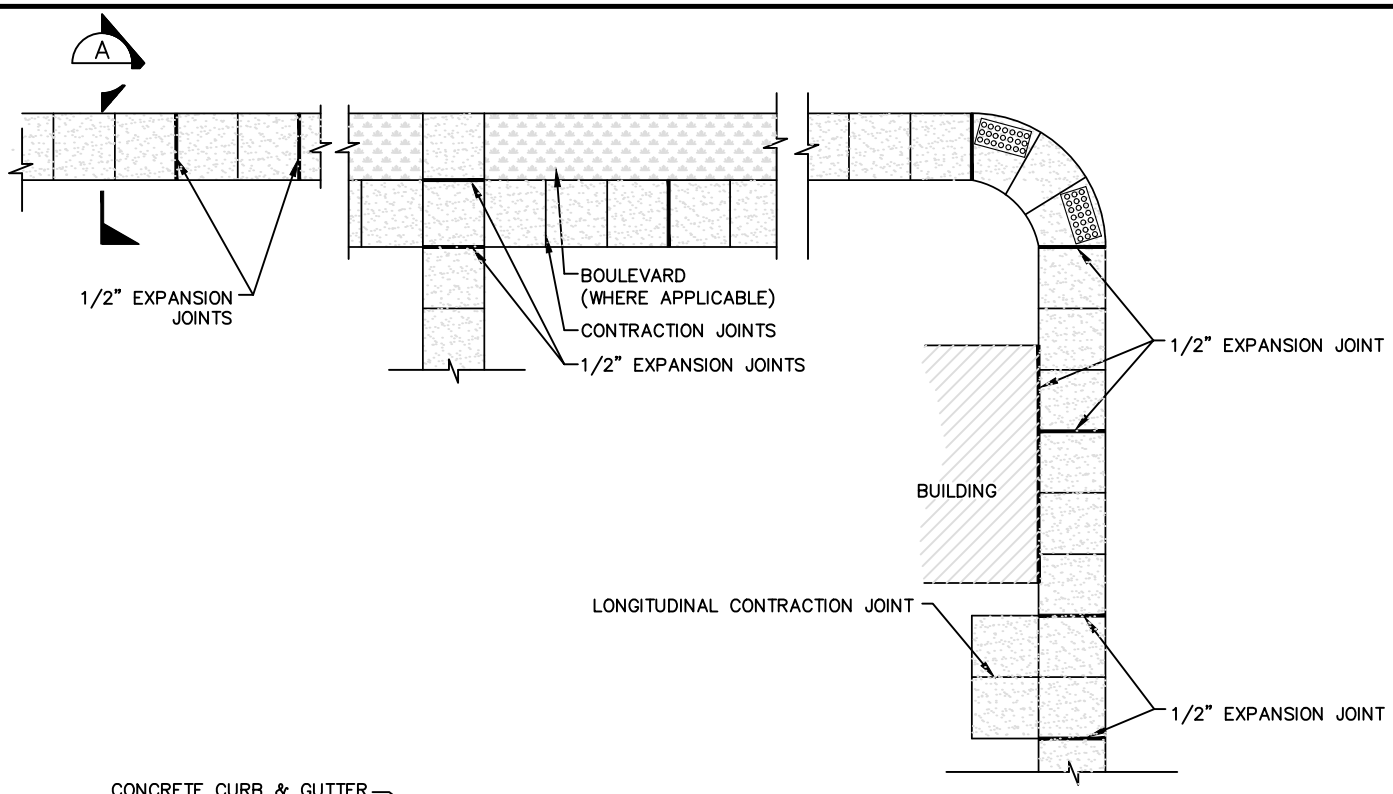

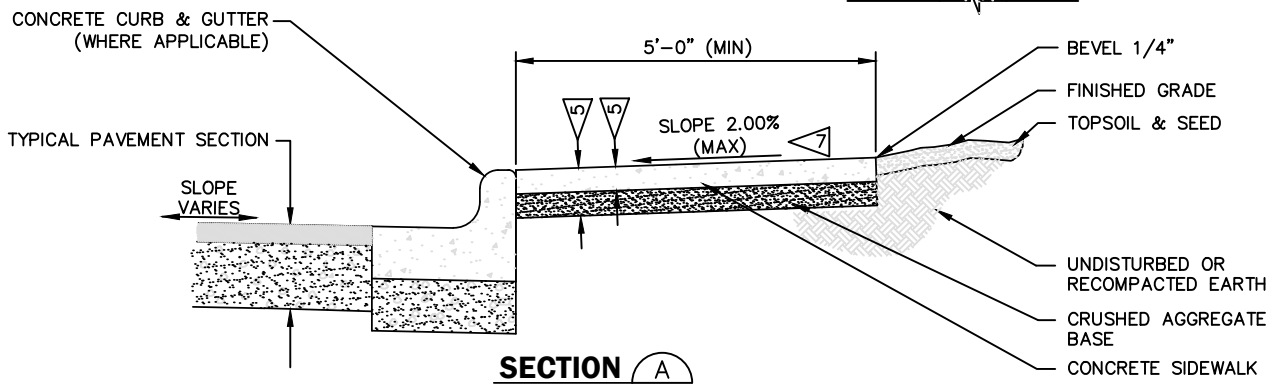

SECTION A

NOTES:

1. PREFORMED SEMI-RIGID, CLOSED-CELL POLYPROPYLENE FOAM JOINT FILLER SHALL BE INSTALLED AT EXPANSION JOINTS FOR THE FULL THICKNESS OF THE SIDEWALK & WILL BE USED AT ALL JOINTS BETWEEN NEW CONCRETE SIDEWALK & STRUCTURES IN PLACE.
2. ALL JOINTS SHALL BE STRAIGHT AND PERPENDICULAR TO THE CENTERLINE & SURFACE OF THE SIDEWALK. ALL JOINTS, WHERE APPLICABLE, SHALL ALIGN WITH LIKE JOINTS IN ADJOINING WORK. JOINTS SHALL BE USED TO OUTLINE ALL PANELS IN THE SIDEWALK, WHICH SHALL BE, SO FAR AS POSSIBLE, SQUARE.
3. CONTRACTION JOINTS SHALL NOT BE MORE THAN 1/8" WIDE AND NOT LESS THAN 1" IN DEPTH & MAY BE CUT BY A GROOVE FORMING TOOL. CONTRACTION JOINTS WITHIN SIDEWALKS SHALL BE REQUIRED AT INTERVALS EQUAL TO THE WIDTH OF THE SIDEWALK OR CENTERLINE CONTRACTION JOINT WIDTH. CONTRACTION JOINTS SHALL HAVE A BEVELED 1/4" RADIUS.
4. ALL SIDEWALKS WIDER THAN 5'-0" SHALL HAVE A LONGITUDINAL CONTRACTION JOINT IN THE CENTERLINE OF THE SIDEWALK.
5. UNLESS OTHERWISE SPECIFIED, ALL SIDEWALKS SHALL BE 4" THICK & SHALL BE UNDERLAIN WITH 6" THICK BASE COURSE AS SPECIFIED OR 3/4" MINUS WASHED ROCK. WHERE SIDEWALKS CROSS DRIVEWAY APPROACHES, OR OTHER TRAFFIC AREAS, THE SIDEWALK SHALL BE 6" THICK UNDERLAIN BY 6" THICK BASE COURSE. ALL 6" THICK CONCRETE TO BE REINFORCED WITH #4 REBAR AT 18" O.C. EACH WAY. SEE FIGURE 16.
6. EXPANSION JOINTS IN SIDEWALKS SHALL BE REQUIRED AT 50'-0" INTERVALS O.C. FOR STRAIGHT SECTIONS. EXPANSION JOINTS ARE NECESSARY AT CHANGES IN SIDEWALK SLOPES, INTERCEPTS WITH DRIVEWAYS, OTHER SIDEWALKS & AT BEGINNING & ENDING LOCATIONS ON EACH POINT-OF-CURVATURE FOR RADII GREATER THAN 10'-0"
7. SLOPE SIDEWALKS 2.00% TO GUTTER OR BOULEVARD.
8. ALL NEW SIDEWALKS SHALL BE BACKFILLED IN SUCH A MANNER AS TO MATCH EXISTING OR NEW ADJACENT AREAS.
9. COMPACT ALL SUBGRADE AND BASE COURSE MATERIALS TO 95% OF STANDARD PROCTOR.
10. FOR SLAB AREAS, CONTRACTION OR CONSTRUCTION JOINTS SHALL BE SPACED A MINIMUM OF 8'-0" ON CENTER.
11. ALL NEW SIDEWALKS SHALL BE BROOM FINISHED. NO STAMPING, COLORING, OR OTHER EMBELLISHMENTS ARE ALLOWED.

RPA

SCALE: NONE

SHEET TITLE: **CONCRETE SIDEWALK**

PROJECT TITLE: **STANDARD DRAWINGS**

East Helena, Montana

FIGURE: **20**

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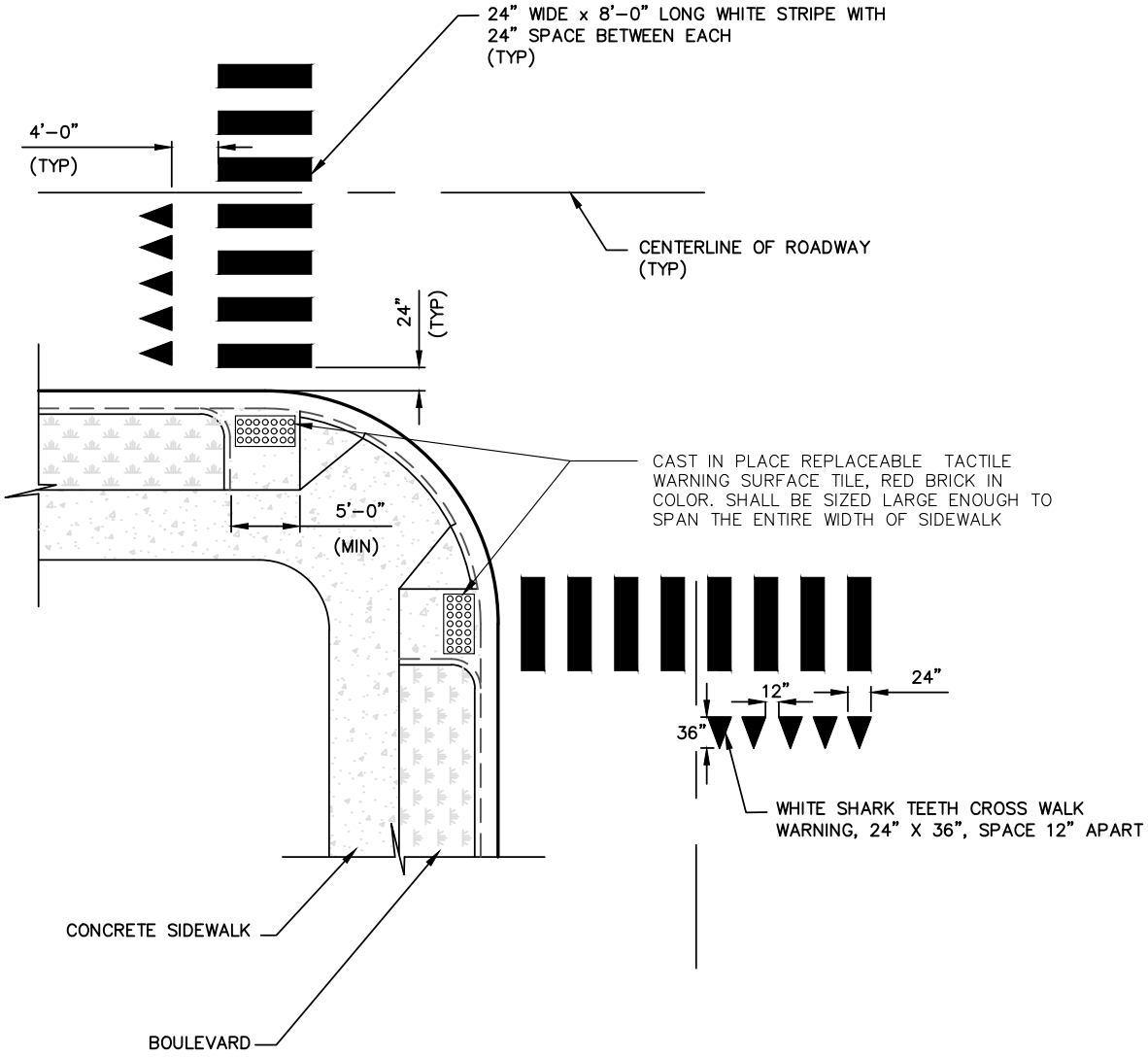


NOTES:

1. CROSSWALK LOCATIONS VARY. LOCATIONS AND STRIPING DIMENSIONS ARE DEPENDANT UPON THE ORIENTATIONS OF THE SIDEWALK AND CURB RAMPS.
2. CROSSWALK AND SHARK TEETH MARKINGS (ONLY) SHALL BE REFLECTIVE THERMOPLASTIC. MATERIALS AND APPLICATION SHALL CONFORM TO SECTIONS 620 AND 714 OF THE MONTANA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS (CURRENT EDITION). THERMOPLASTIC MARKING MATERIAL SHALL BE EXTRUDED INTO CUT OR GROUND GROOVES (INLAID).
3. QUANTITIES OF STRIPES ARE DEPENDANT ON WIDTH OF ROAD.
4. PEDESTRIAN RAMPS SHALL COMPLY WITH THE AMERICANS WITH DISABILITIES ACT/ACCESSIBILITY GUIDELINES FOR BUILDING AND FACILITIES.

RPA

SCALE: NONE

SHEET TITLE

TYPICAL PEDESTRIAN CROSSING

PROJECT TITLE

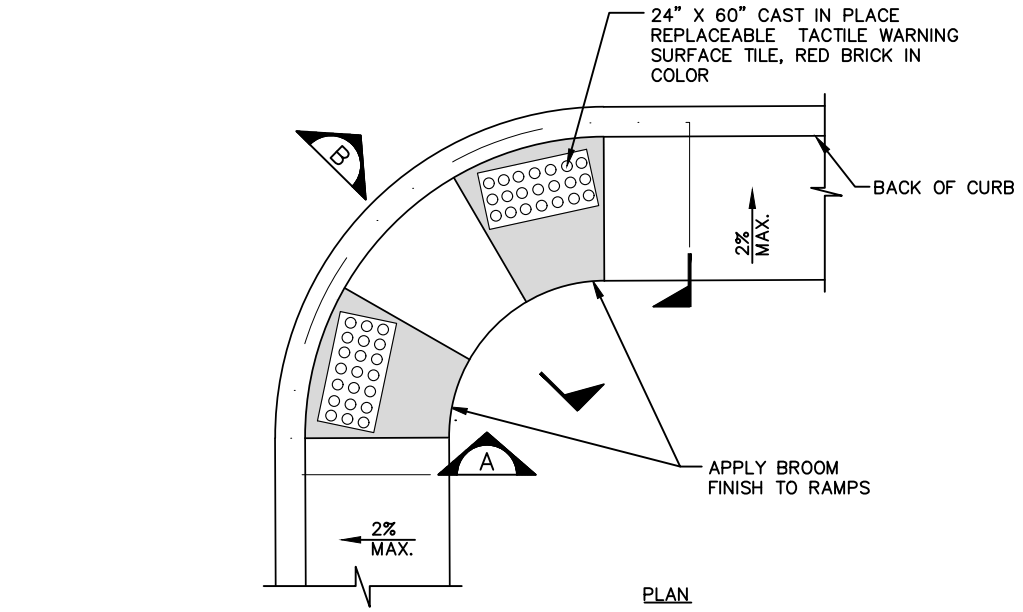
STANDARD DRAWINGS

East Helena, Montana

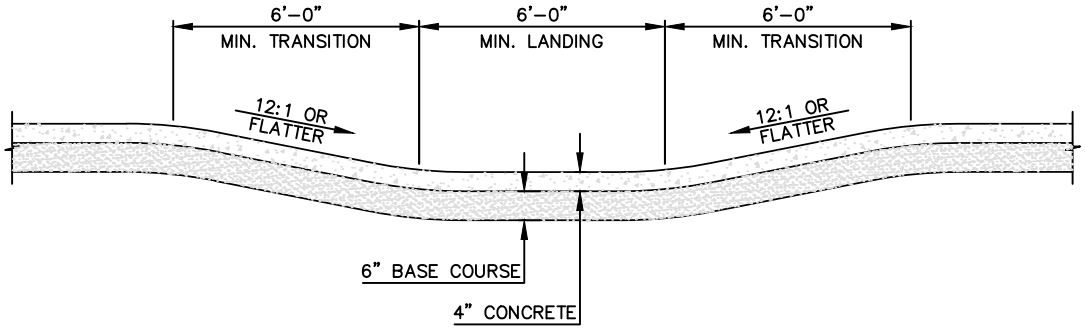
FIGURE

21

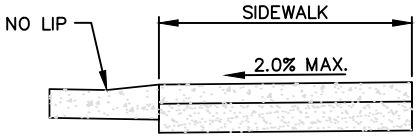
F:\water\EHLN19\Standard Drawings\21_TYPICAL PEDESTRIAN CROSSING.dwg Jul 18, 2023



PLAN



SECTION A



SECTION B

NOTES:

1. THIS DETAIL IS ONLY APPLICABLE IN AREAS WITH NO BOULEVARD.

RPA

SCALE: NONE

SHEET TITLE

PEDESTRIAN RAMP

PROJECT TITLE

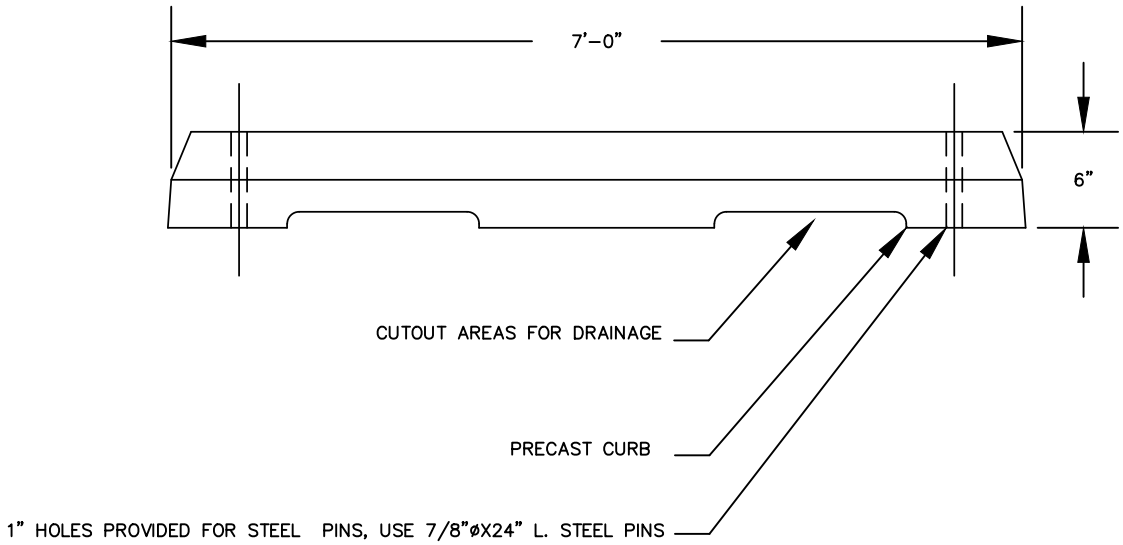
STANDARD DRAWINGS

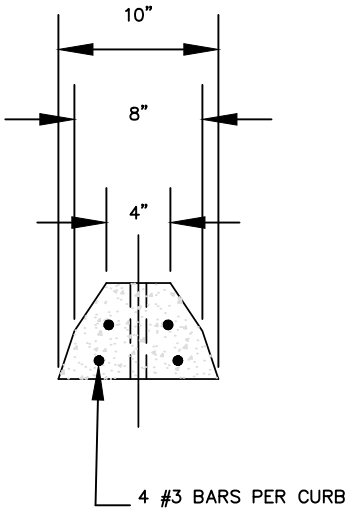
East Helena, Montana

FIGURE

22

F:\water\EHLN19\Standard Drawings\22_PEDESTRIAN RAMP.dwg Jul 18, 2023





RPA

SCALE: NONE

SHEET TITLE

PRECAST CONCRETE PINDOWN CURB

PROJECT TITLE

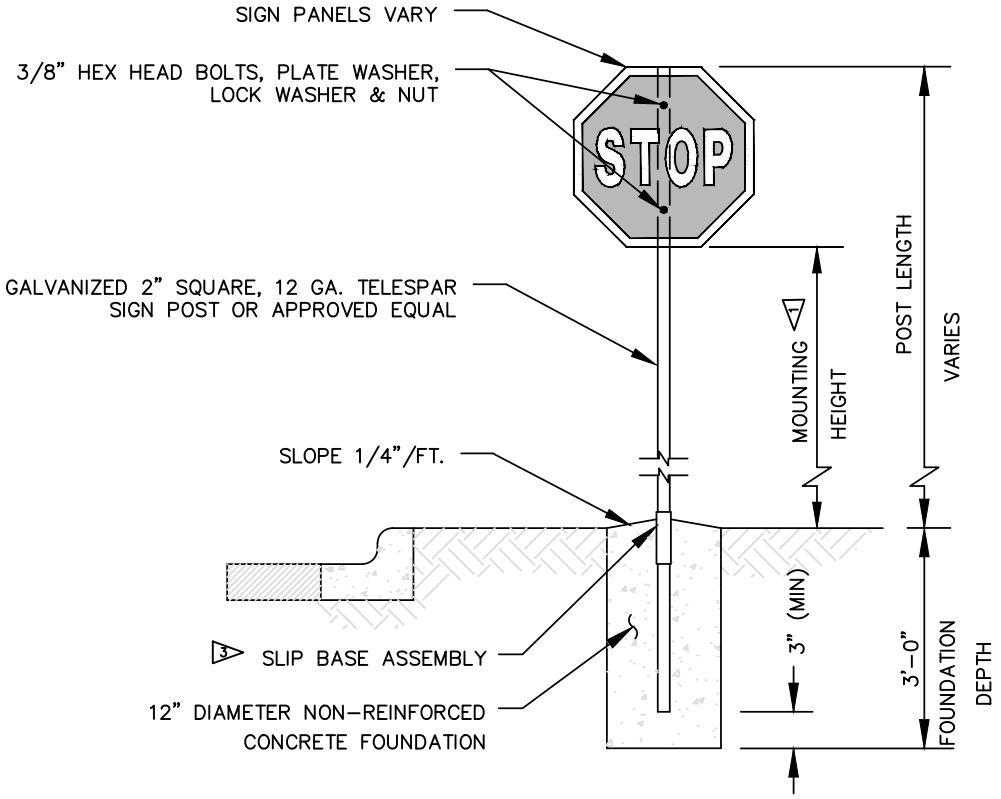
STANDARD DRAWINGS

East Helena, Montana

FIGURE

23

F:\water\EHLN19\Standard Drawings\23_PRECAST CONCRETE PINDOWN CURB.dwg Jul 18, 2023



NOTES:

1. WHERE PARKING OR PEDESTRIAN MOVEMENTS OCCUR, THE SIGN SHALL BE MOUNTED WITH A MINIMUM CLEARANCE OF 7'-0" FROM GROUND SURFACE TO BOTTOM OF THE PRIMARY SIGN PANEL.

2. SIGN PANELS SHALL BE OF SHEET ALUMINUM. ALL SIGNS SHALL BE FABRICATED AND CONSTRUCTED IN ACCORDANCE WITH THE MDT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2014 EDITION.

3. ALL SIGNS SHALL BE PLACED WITH TELESPAR BOLTED SLIP BASE BREAKAWAY ANCHOR ASSEMBLY OR APPROVED EQUAL.

4. COLOR AND SHAPE OF SIGN PANELS SHALL BE IN ACCORDANCE WITH MUTCD, LATEST EDITION.

RPA

SCALE: NONE

SHEET TITLE

SIGN & POST INSTALLATION

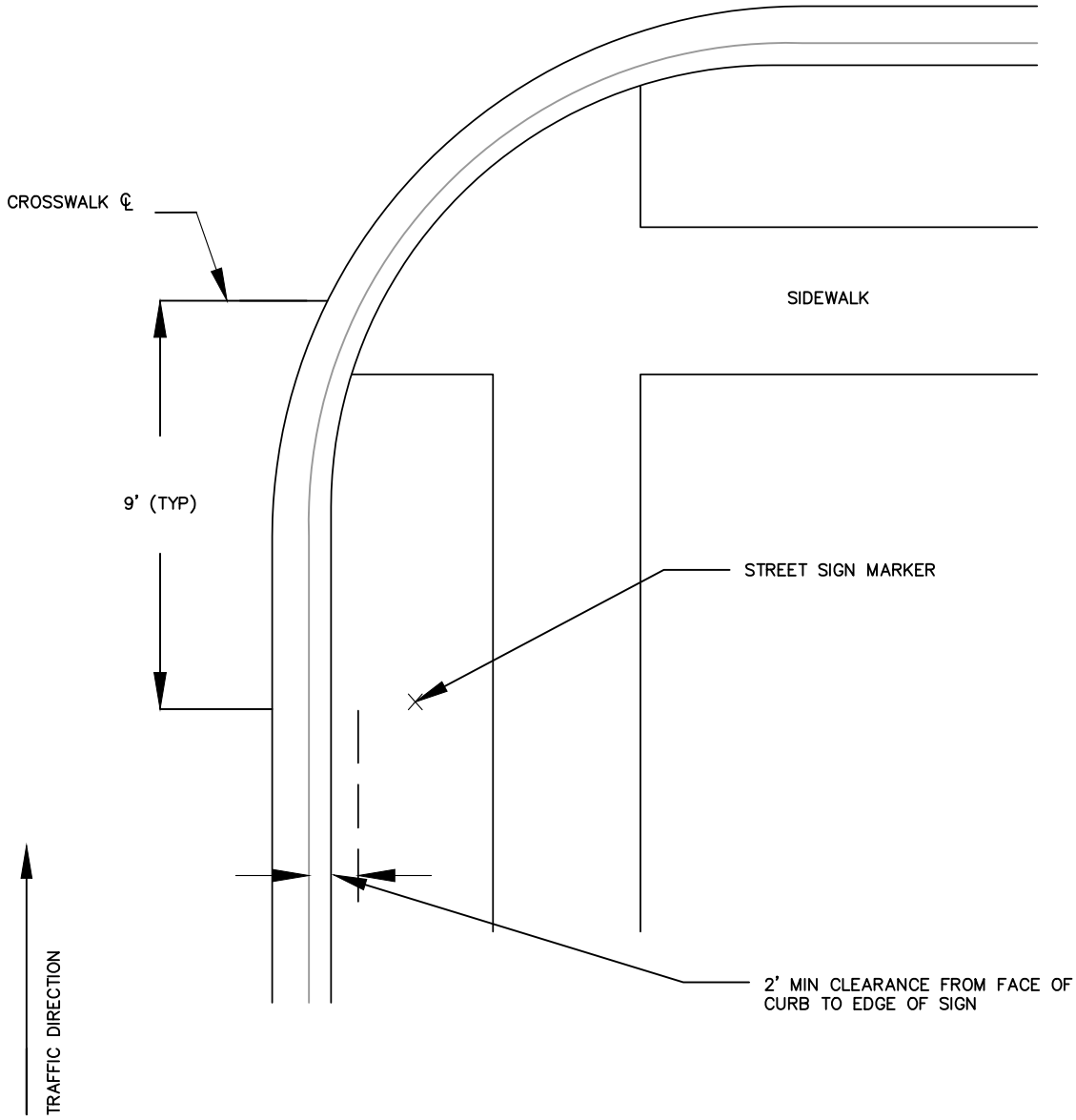
PROJECT TITLE

STANDARD DRAWINGS

East Helena, Montana

FIGURE

24



CONSTRUCTION NOTES:

1. STREET SIGNS SHALL BE .808 GAUGE ALUMINUM DOUBLE SIDED 6" TALL BLADES WITH GREEN BACKGROUND, WHITE TRIM AND WHITE TEXT. TEXT SHALL BE 4" TALL UPPER CASE B SERIES. BLADES SHALL HAVE STANDARD RADIUS CORNERS WITH NO PUNCH.

RPA

SCALE: NONE

SHEET TITLE

STREET SIGN LOCATION

PROJECT TITLE

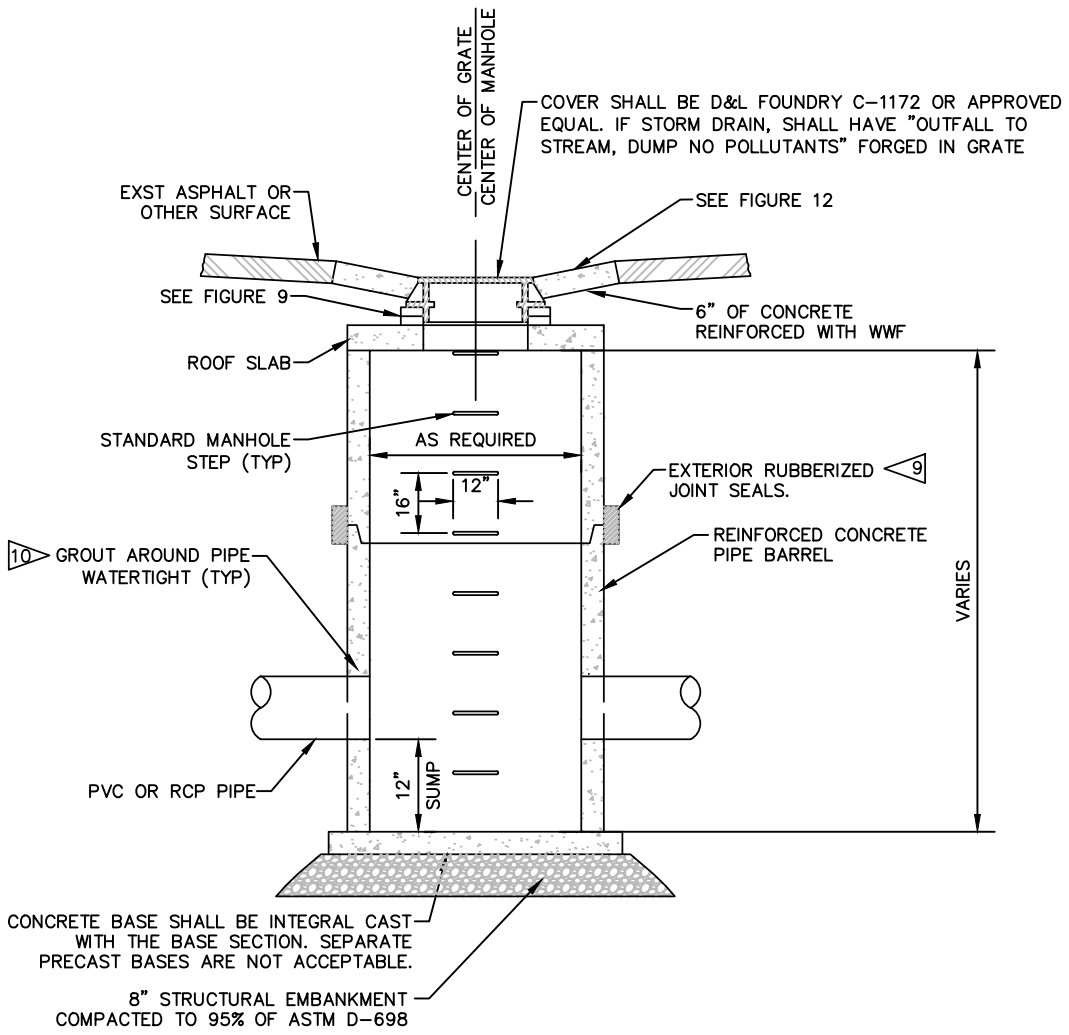
STANDARD DRAWINGS

East Helena, Montana

FIGURE

25

F:\water\EHLN19\Standard Drawings\25_STREET SIGN LOCATION.dwg Jul 18, 2023



NOTES:

1. ALL GRATES SHALL BE D&L FOUNDRY C-1172 OR APPROVED EQUAL.
2. AS DESIGNED AND LAID OUT, GRATES ARE TO BE CENTERED ON MANHOLE BARREL.
3. ALL JOINTS BETWEEN MANHOLE SECTIONS, ADJUSTING RINGS, AND MANHOLE FRAME SHALL BE WATERTIGHT. JOINT MATERIAL SHALL BE "RAM-NEK" OR EQUAL.
4. PRECAST REINFORCED CONCRETE MANHOLES SHALL CONFORM TO ASTM C-478.
5. ALL HOLES IN NEW MANHOLES SHALL BE CAST OR CORED.
6. ALL STORM MANHOLES SHALL BE STRAIGHT MANHOLES.
7. ADJUST FRAME AND GRATE TO MATCH CROWN AND GRADE OF STREET.
8. ALL MANHOLES SHALL BE CONSTRUCTED TO HANDLE HS-20 LOADING.

9 EXTERIOR RUBBERIZED JOINT SEALS, MEETING ASTM C-877. TYPE II WITH A MINIMUM WIDTH OF 9".

10 PSX GASKET SHALL BE USED ON ALL PVC PIPE PENETRATIONS.

RPA

SCALE: NONE

SHEET TITLE

COMBINATION MANHOLE & INLET

PROJECT TITLE

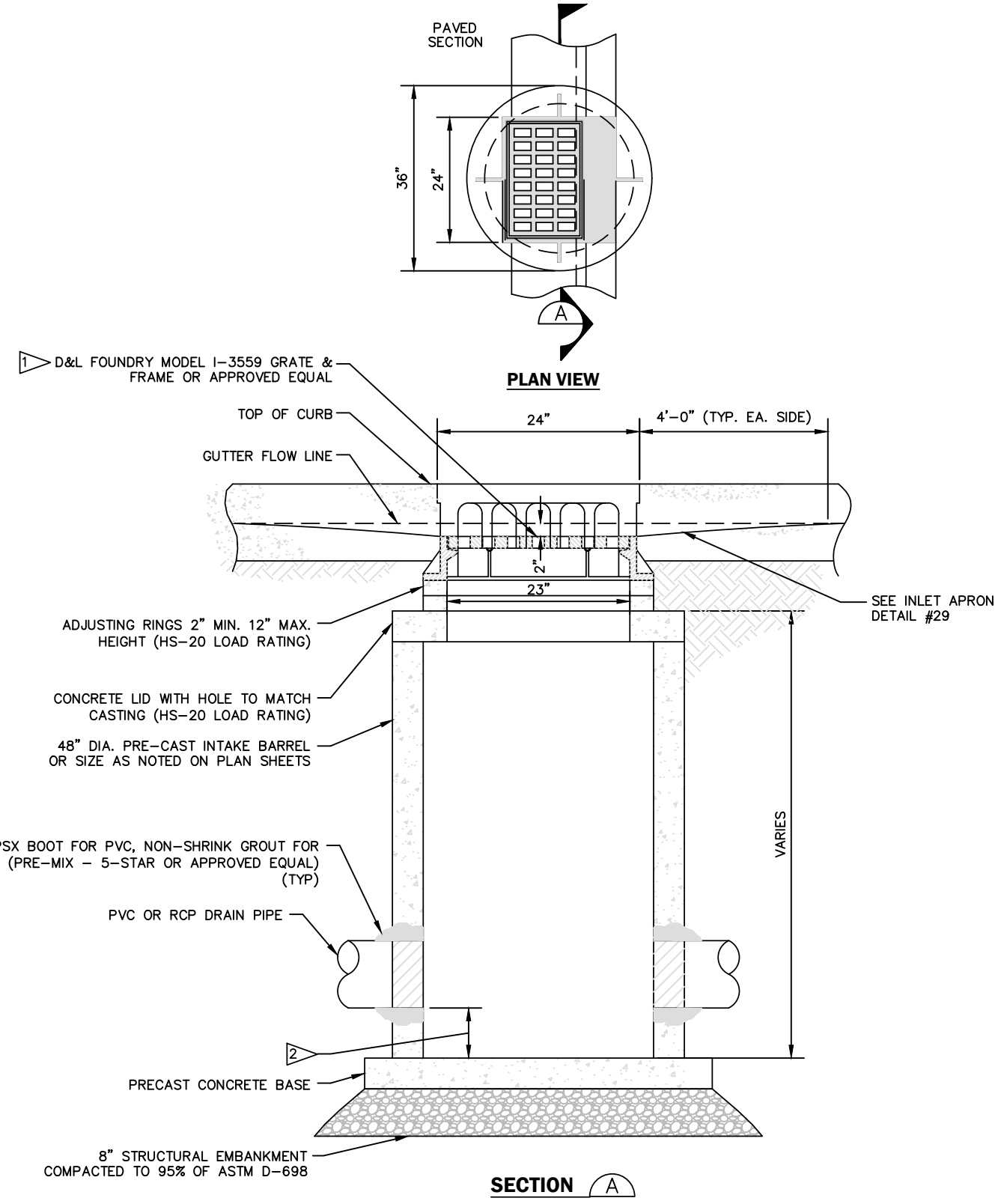
STANDARD DRAWINGS

East Helena, Montana

FIGURE

26

F:\water\EHLN19\Standard Drawings\26_COMBINATION MANHOLE AND INLET.dwg Jul 18, 2023



NOTES:

1. SET TOP OF CURB INLET GRATE 2" BELOW GUTTER GRADE. HANDWORK CONCRETE ON GUTTER FLOW LINE WITHIN 4'-0" ON EACH SIDE TO MATCH GRATE ELEVATION.
2. INLET BARREL SHALL INCLUDE A MINIMUM SUMP OF 12".

RPA

SCALE: NONE

SHEET TITLE

CURB INLET

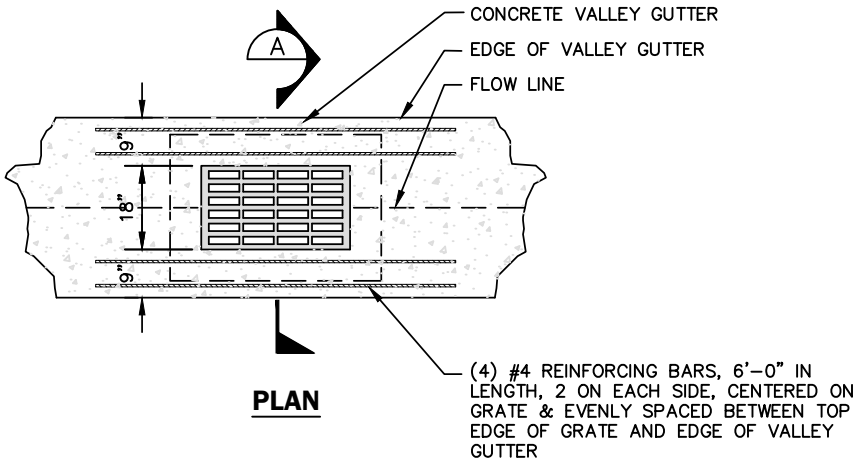
PROJECT TITLE

STANDARD DRAWINGS

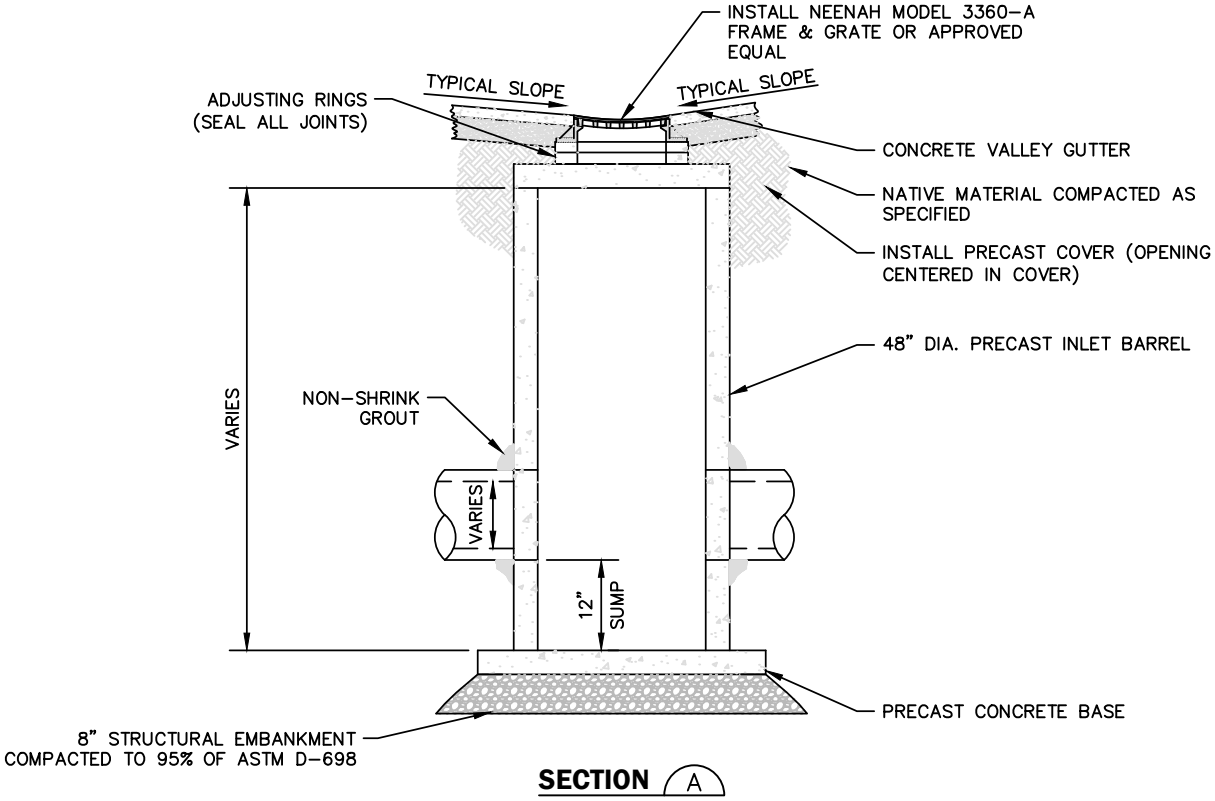
East Helena, Montana

FIGURE

27



PLAN



SECTION (A)

NOTES:

1. PRECAST REINFORCED CONCRETE MANHOLE BARREL MUST MEET ASTM C-478 STANDARDS.
2. ALL JOINTS SHALL BE WATERTIGHT. JOINT MATERIAL SHALL BE "RAM-NEK" OR APPROVED EQUAL.
3. PROVIDE A 3" GROUT SPACE ALL AROUND EACH CONNECTING PIPE.
4. ADJUST GRATE TO PROPER GRADE WITH ADJUSTMENT RINGS PRIOR TO PLACING CONCRETE.
5. MINIMUM SLAB THICKNESS BELOW PIPE SHALL BE 8" FOR POURED-IN-LACE BASE AND 6" FOR PRECAST BASE.
6. PLACE ADJUSTMENT RINGS & FIELD SET TO MATCH PAVEMENT/CONCRETE GRADES (MIN. 2", MAX, 12" RISE HEIGHT).

RPA

SCALE: NONE

SHEET TITLE

VALLEY GUTTER INLET

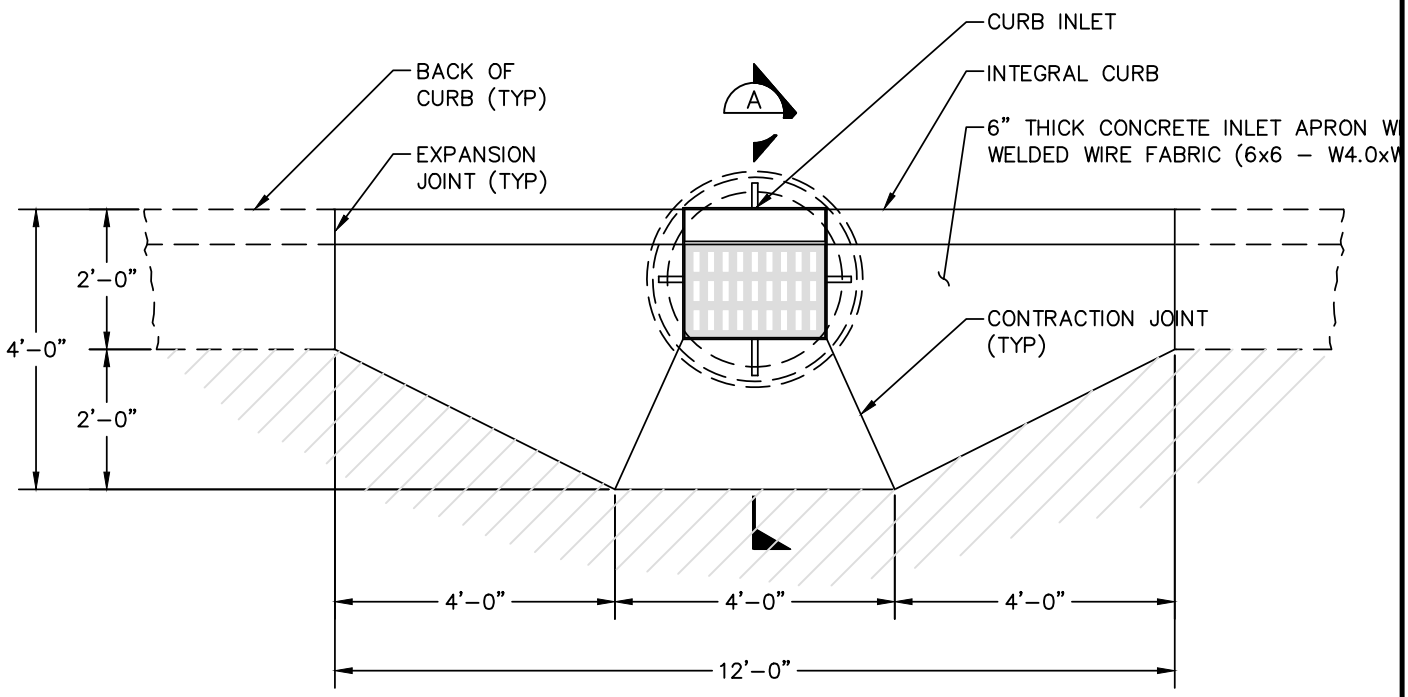
PROJECT TITLE

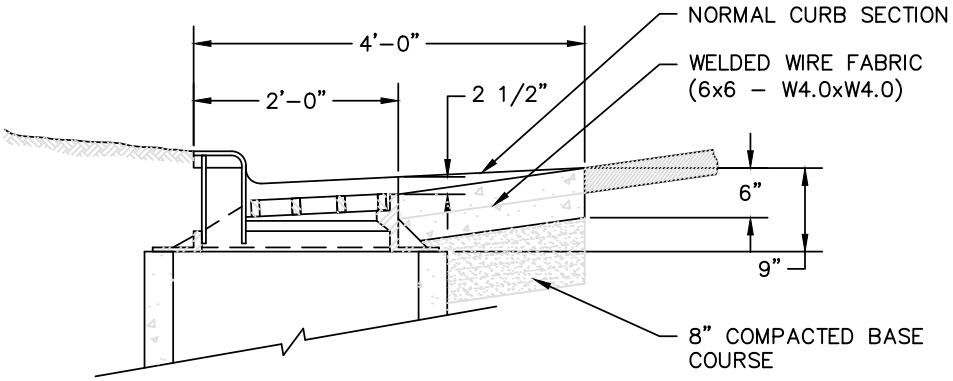
STANDARD DRAWINGS

East Helena, Montana

FIGURE

28





SECTION (A)

NOTES:

1. PROVIDE CONCRETE INLET APRONS AT ALL INLETS.

RPA

SCALE: NONE

SHEET TITLE

INLET APRON

PROJECT TITLE

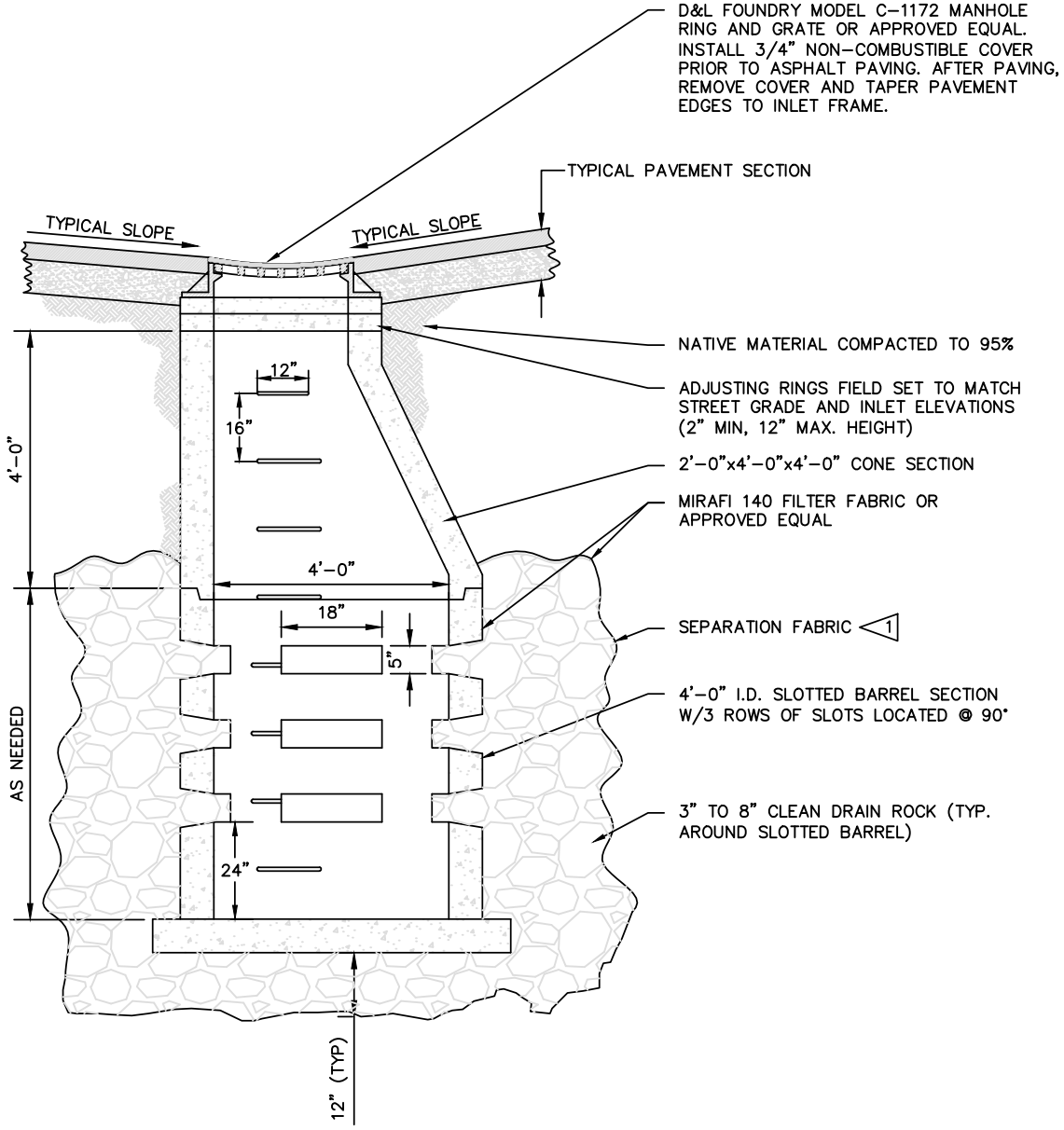
STANDARD DRAWINGS

East Helena, Montana

FIGURE

29

F:\water\EHLN19\Standard Drawings\29_INLET APRON.dwg Jul 18, 2023



CONSTRUCTION NOTES

1. SEPARATION FABRIC SHALL BE MIRAFI 500X, OR APPROVED EQUAL.
2. THIS FIGURE IS INTENDED FOR USE ON EXISTING STREETS ONLY. USE ON NEW STREETS AND SUBDIVISIONS IS PROHIBITED UNLESS PRIOR APPROVAL FROM THE CITY ENGINEER HAS BEEN GRANTED.

RPA

SCALE: NONE

SHEET TITLE

SUBSURFACE DRAIN SUMP

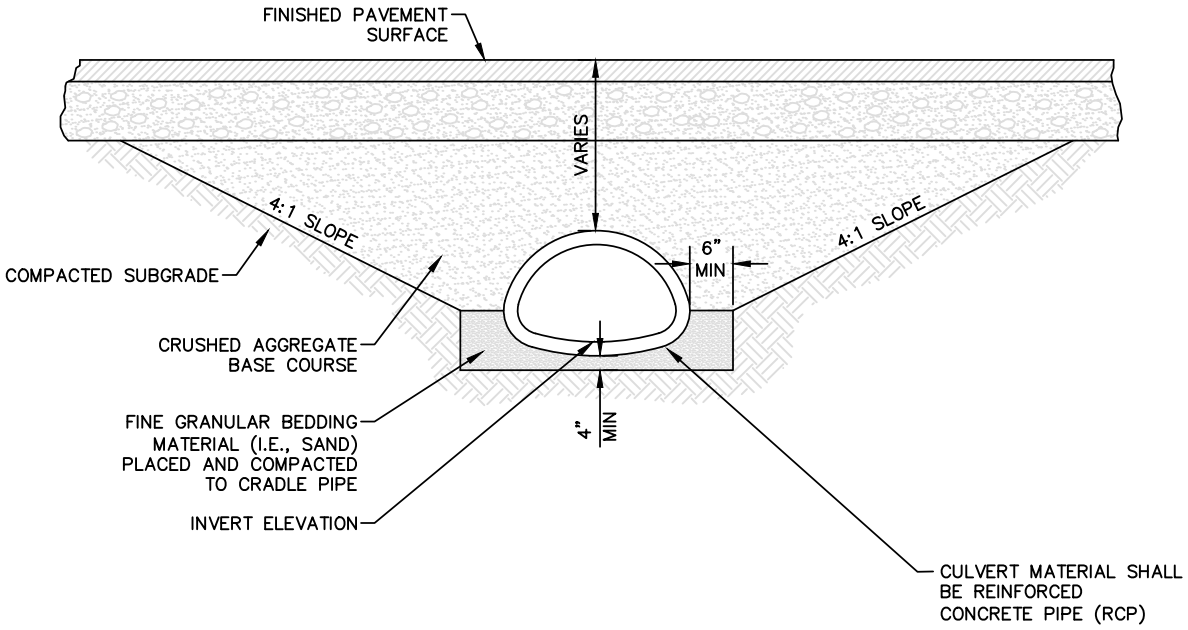
PROJECT TITLE

STANDARD DRAWINGS

East Helena, Montana

FIGURE

30



RPA

SCALE: NONE

SHEET TITLE

TYPICAL CULVERT SECTION

PROJECT TITLE

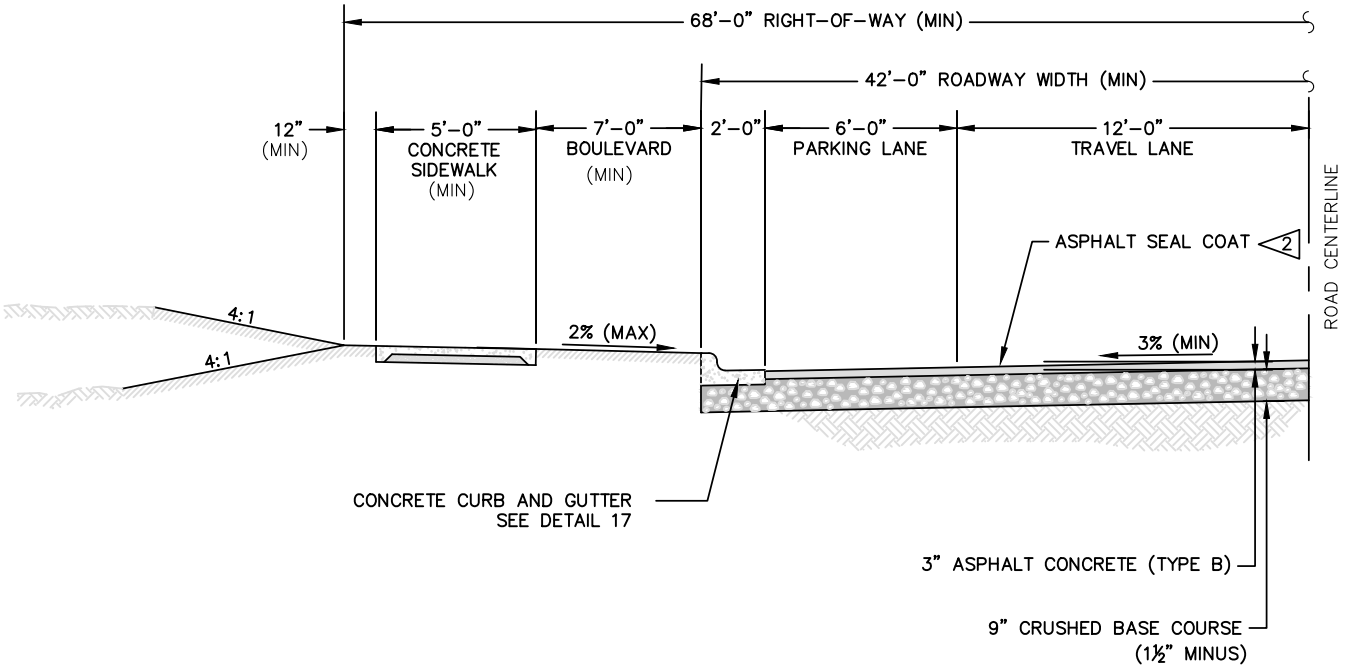
STANDARD DRAWINGS

East Helena, Montana

FIGURE

31

F:\water\EHLN19\Standard Drawings\31_TYPICAL CULVERT SECTION.dwg Jul 18, 2023



NOTES:

1. SEE TABLE 6.1 FOR MINIMUM COLLECTOR AND LOCAL ROAD SLOPE AND WIDTH REQUIREMENTS.

2. ASPHALT SEAL COATING SHALL CONSIST OF A SINGLE APPLICATION OF ASPHALT MATERIAL ON THE PREPARED ASPHALT SURFACE FOLLOWED BY SPREADING A SEAL COAT AGGREGATE. MATERIALS, APPLICATION RATES AND PROCESS SHALL MEET THE REQUIREMENTS OF THE LATEST MONTANA PUBLIC WORKS STANDARD SPECIFICATIONS (MPWSS).

3. CHIP SEAL AGGREGATE SHALL MEET THE GRADATION AS SHOWN IN SECTION 02504 OF MPWSS FOR ⅜" SEAL COAT AGGREGATE.

4. ASPHALT TACK COAT SHALL BE EMULSIFIED ASPHALT, CRS-2.

5. ALL CHIP SEAL COATS MUST BE COMPLETED WITHIN ONE (1) YEAR AFTER PAVING IS COMPLETED, OR AS DIRECTED BY THE CITY, TO ALLOW FOR PROPER CURING OF THE ASPHALT SURFACING.

RPA

SCALE: NONE

SHEET TITLE

TYPICAL COLLECTOR ROAD SECTION

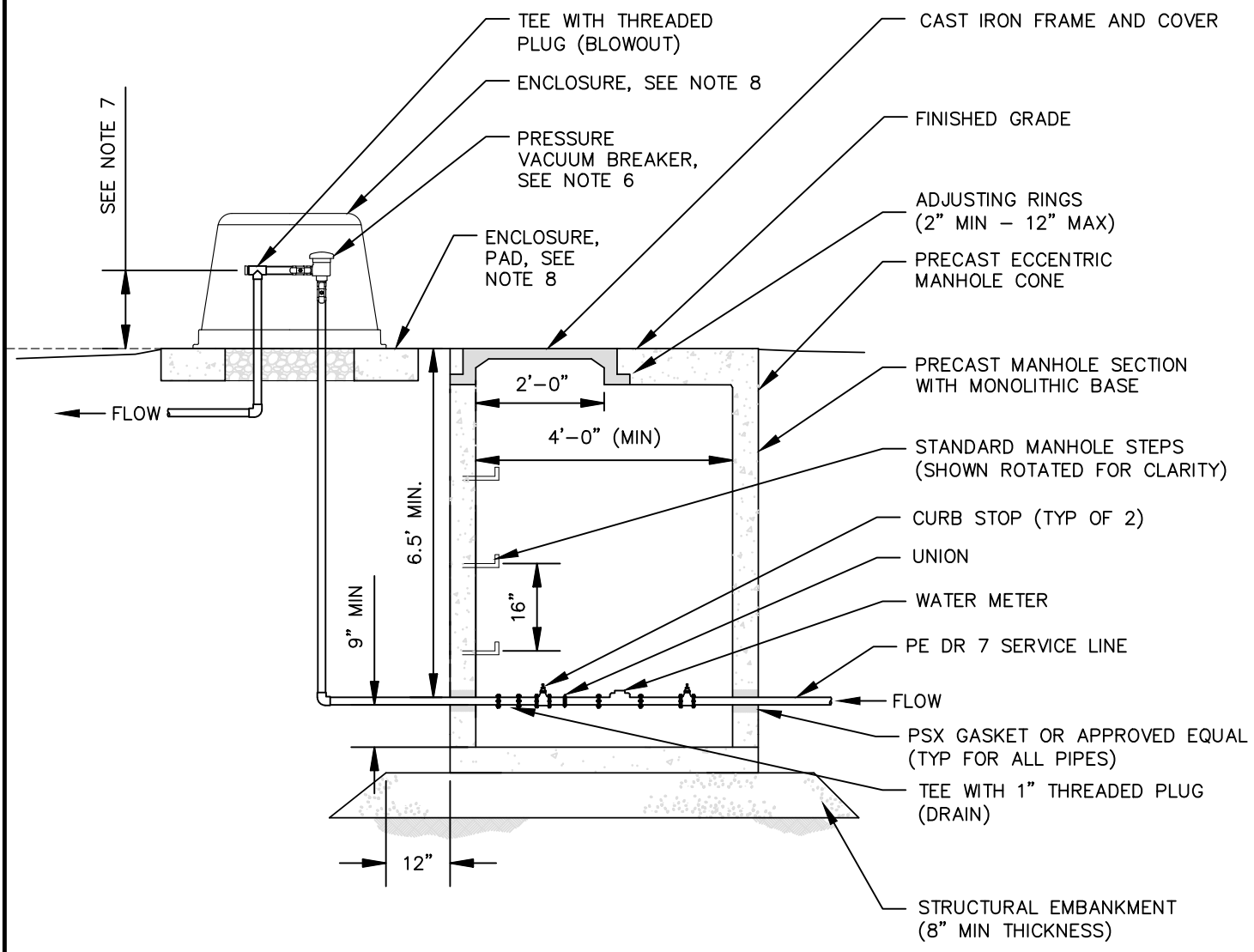
PROJECT TITLE

STANDARD DRAWINGS

East Helena, Montana

FIGURE

32



NOTES:

1. FOR STRUCTURES MAINTAINED BY THE CITY, THE LID SHALL BE FLAT WITH LID CENTERED ON THE STRUCTURE AND VALVES SHALL BE LOCATED DIRECTLY BELOW THE LID.
2. NO OBSTRUCTION SHALL BE LOCATED WITHIN 4' OF THE METER PIT TO ALLOW FOR ACCESS.
3. PIPE SUPPORTS SHALL BE INSTALLED INSIDE THE METER PIT VAULT.
4. PIPE SIZES MAY VARY. THE CITY WILL REVIEW ALL PROPOSED IRRIGATION METER PIT DESIGNS.
5. SERVICE CONNECTION TO THE CITY MAIN MUST FOLLOW FIGURE 01–NEW WATER SERVICE. A CURB STOP SHALL BE PROVIDED BETWEEN THE METER VAULT AND WATER MAIN, INSTALLED WITHIN 5–FEET OF THE METER VAULT.
6. PRESSURE VACUUM BREAKER SHALL BE WATTS LF800M4FR, FEBCO LF767FR, ZURN 420XL OR APPROVED EQUAL. VACUUM BREAKER SHALL BE PROVIDED WITH 2 ISOLATION VALVES AND 2 TEST COCKS.
7. PRESSURE VACUUM BREAKER SHALL BE SET A MINIMUM OF 1' ABOVE THE HIGHEST DOWNSTREAM PIPING, OUTLET, OR 100–YEAR FLOOD ELEVATION.
8. ENCLOSURE SHALL BE HUBBELL HOT BOX PEZ (UNHEATED) OR APPROVED EQUAL. ENCLOSURE SHALL BE CONSTRUCTED OF 1/4" UV STABILIZED HDPE (BEIGE OR GREEN COLOR) WITH 2" OF EXPANDED POLYSTYRENE INSULATION WITH A MINIMUM R–VALUE OF 10.2. ENCLOSURE SHALL BE MOUNTED TO A 4" THICK CONCRETE PAD WITH MANUFACTURER SUPPLIED ANCHOR BRACKETS. PAD DIMENSIONS MUST BE AT LEAST 6" WIDER THAN ENCLOSURE.

RPA

SCALE: NONE

SHEET TITLE

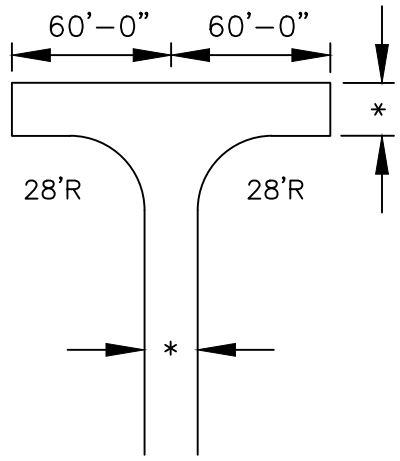
IRRIGATION METER PIT

PROJECT TITLE

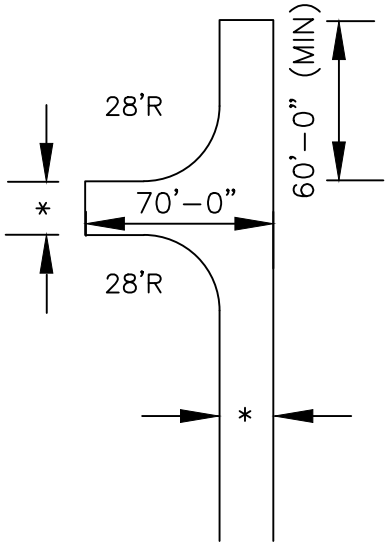
STANDARD DRAWINGS

FIGURE

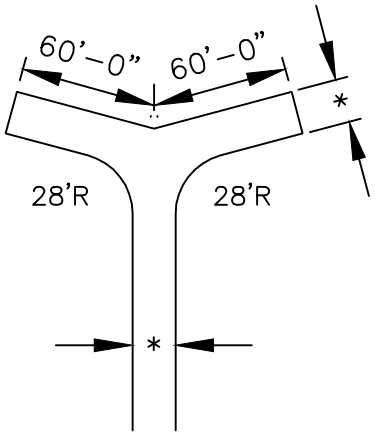
33



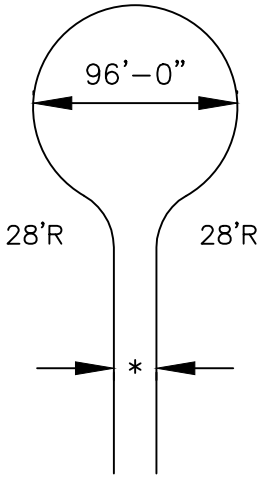
120' HAMMERHEAD



120' HAMMERHEAD ALTERNATIVE



ACCEPTABLE ALTERNATIVE TO 120' HAMMERHEAD



96' CUL–DE–SAC TURNAROUND

NOTES:

1. TURN AROUNDS ARE BASED ON THE INTERNATIONAL FIRE CODE INSTITUTE APPLICATION MANUAL.
2. HAMMERHEAD STYLE TURNAROUNDS ARE ONLY ACCETPABLE ON PRIVATE ROADS.

* ALL STREET DIMENSION ARE BASED ON CITY STREET STANDARDS AND ARE FROM FACE OF CURB.

RPA

SCALE: NONE

SHEET TITLE

TURNAROUND

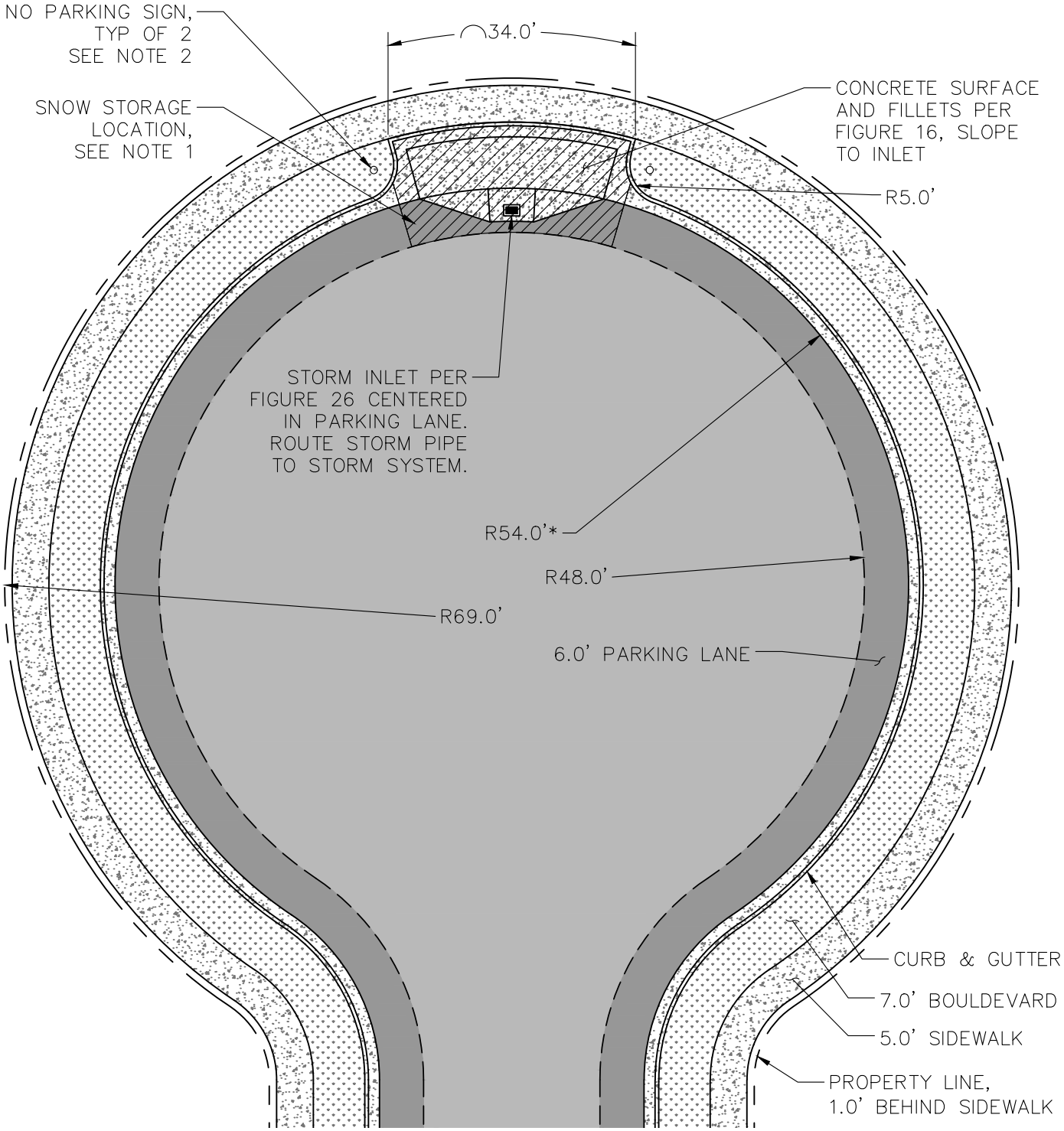
PROJECT TITLE

STANDARD DRAWINGS

East Helena, Montana

FIGURE

34



NOTES:

1. SNOW STORAGE LOCATION SHALL BE OPPOSITE THE CUL–DE–SAC FROM THE INLET/OUTLET STREET. THE AREA SHALL NOT INCLUDE ANY STRUCTURES, DRIVEWAYS, VALVE BOXES, CURB BOXES, TRANSFORMERS, PEDESTALS, JUNCTION BOXES, OR OTHER SURFACE UTILITIES THAT MAY HINDER PLACEMENT OF SNOW IN THIS AREA DURING SNOW REMOVAL OPERATIONS.
2. SIGNS SHALL BE INSTALLED ON EITHER SIDE OF THE SNOW STORAGE LOCATION PER FIGURE 24 THAT READ "NO PARKING BETWEEN SIGNS – OCTOBER THRU APRIL".

*DISTANCE TO FACE OF CURB

RPA

SCALE: NONE

SHEET TITLE

CUL-DE-SAC REQUIREMENTS

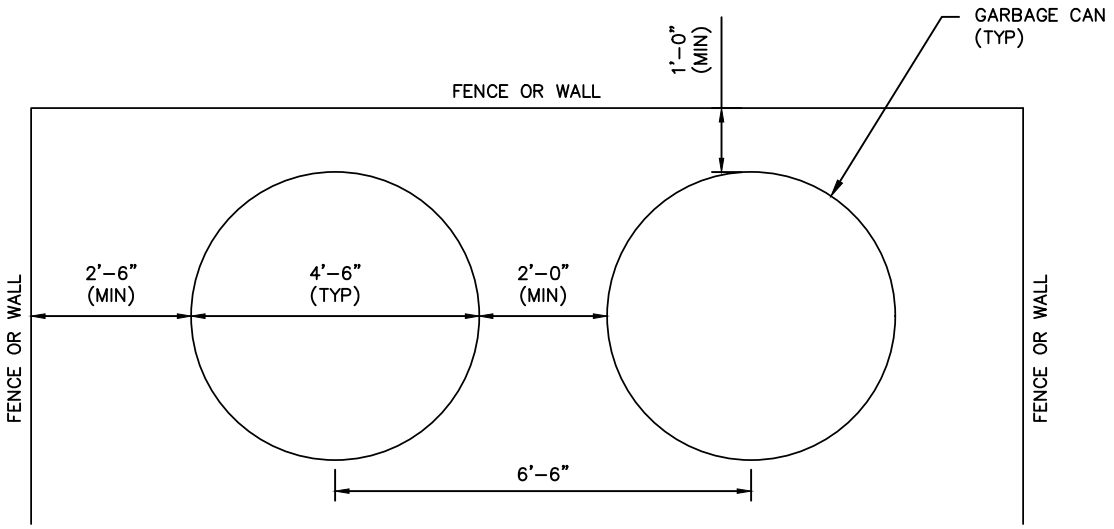
PROJECT TITLE

STANDARD DRAWINGS

East Helena, Montana

FIGURE

35



RPA

SCALE: NONE

SHEET TITLE

COMMERCIAL GARBAGE CAN RACK DETAIL

PROJECT TITLE

STANDARD DRAWINGS

East Helena, Montana

FIGURE

36

APPENDIX A

HAULED WASTEWATER DISPOSAL APPLICATION

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City of East Helena
306 E. Main Street
East Helena, MT 59635
(406) 227-5321

HAULED WASTEWATER DISPOSAL APPLICATION

Applicant Information

Company Name: _____

Owner(s): _____

Address: _____
Street Address *Apartment/Unit #*

_____
City *State* *ZIP Code*

Phone: _____ Email: _____

Type of Wastewater to be Hauled: ☐ RV Black and Grey Water Storage Tank ☐ Wastewater Generated from Portable Toilets ☐ Other

If Other, please explain: _____

_____

Other hauled wastewater(s) must be approved by the City of East Helena.

Proposed Discharge Location: ☐ City of East Helena Wastewater Treatment Plant

☐ Other

Discharge Address if Other: _____

_____

Disclaimer and Signature

Prior to signing, please read and understand Chapter 7: Hauled Wastewater Disposals of the City of East Helena Engineering Standards.

I certify that this information is complete to the best of my knowledge.

If this application is approved and a permit is received, I understand that hauling unapproved waste shall be cause for termination of the waste hauling permit.

Signature: _____ Date: _____

CITY OF EAST HELENA
306 E MAIN ST / PO BOX 1170
EAST HELENA, MT 59635
(406) 227-5321

ORIGINAL COUNCIL MEETING DATE: 07/15/2025

Agenda item:
Appointment of Molly Holahan to the East Helena Planning Board

From:
Mayor Harris

Initiated by City: ■YES ☐NO (check one)

Department:
Executive

Presented by:
Mayor Harris

Action requested:
Approve/Deny/Table

PLEASE PROVIDE A NARRATIVE BACKGROUND OF THE PROPOSED AGENDA ITEM:

Attachment:
MCA 76-1-221

Attachments: ■YES ☐NO (check one)

Date submitted:

RECOMMENDATIONS:

			Initial:
Approve for agenda:	☐YES	☐NO	_____
Referred to Dept. Head for resolution:	☐YES	☐NO	_____
Referred to _____:	☐YES	☐NO	_____

Agenda requests must be submitted to East Helena City Hall by noon the Wednesday prior to the Tuesday council meeting.

Montana Code Annotated 2023

TITLE 76. LAND RESOURCES AND USE
CHAPTER 1. PLANNING BOARDS
Part 2. Membership

Membership Of City Planning Board

76-1-221. Membership of city planning board. (1) A city planning board shall consist of not less than seven members to be appointed as follows:

(a) one member to be appointed by the city council from its membership;

(b) one member to be appointed by the city council, who may in the discretion of the city council be an employee or hold public office in the city or county in which the city is located;

(c) one member to be appointed by the mayor upon the designation by the county commissioners of the county in which the city is located;

(d) four citizen members to be appointed by the mayor, two of whom shall be resident freeholders within the urban area, if any, outside of the city limits over which the planning board has jurisdiction under this chapter and two of whom shall be resident freeholders within the city limits.

(2) The clerk of the city council shall certify members appointed by its body. The certificates shall be sent to and become a part of the records of the planning board. The mayor shall make similar certification for the appointment of citizen members.

History: (1)En. Sec. 4, Ch. 246, L. 1957; amd. Sec. 1, Ch. 271, L. 1959; Sec. 11-3804, R.C.M. 1947; (2)En. Sec. 7, Ch. 246, L. 1957; Sec. 11-3807, R.C.M. 1947; R.C.M. 1947, 11-3804(part), 11-3807.

CITY OF EAST HELENA
306 E MAIN ST / PO BOX 1170
EAST HELENA, MT 59635
(406) 227-5321

ORIGINAL COUNCIL MEETING DATE: 07/15/2025

Agenda item:
Kleffner Ranch Offer to Purchase JFK Park Walking Bridge Frame

From:
Kleffner Ranch

Initiated by City: ☐YES ■NO (check one)

Department:
Parks and Rec.

Presented by:
Kleffner Ranch

Action requested:
Approve / Deny / Table

PLEASE PROVIDE A NARRATIVE BACKGROUND OF THE PROPOSED AGENDA ITEM:

Kleffner Ranch would like to discuss possible purchase of walking path bridge frame. Bridge frame is located at the Wastewater Treatment Plant, and was originally inteded to cross Prickly Pear Creak from JFK Park to Morton Ave.

Attachments: ☐YES ■NO (check one)

Date submitted:
July 9, 2025

RECOMMENDATIONS:

			Initial:
Approve for agenda:	☐YES	☐NO	_____
Referred to Dept. Head for resolution:	☐YES	☐NO	_____
Referred to_____:	☐YES	☐NO	_____

Agenda requests must be submitted to East Helena City Hall by noon the Wednesday prior to the Tuesday council meeting.