

1. 2:00 P.M. Agenda

Documents:

[2023-10-18 City Council Regular Meeting Agenda.pdf](#)

2. Meeting Material

[2023-08-Financial-Report-General-Fund](#)

[2023-08-Financial-Report-Debt-Services](#)

[2023-08--Financial-Report-Public-Works](#)

[2023-08-Financial-Report-Urban-Renewal](#)

[2023-08-Financial-Report-FUNDS-100-150-660-670](#)

[2023-08-Financial-Report-Council](#)

Documents:

[PERS Alert October 2023.Pdf](#)

[2023 September Public Works Department Report.pdf](#)

[2023-09-12 Public Works.pdf](#)

[2023 September Water Report.pdf](#)

[2023-08-28 Emergency Preparedness Committee.pdf](#)

[2023-09-07 City Council Work Session.pdf](#)

[2023-09-13 Special City Council Meeting.pdf](#)

[2023-09-20 City Council Work Session - Regular Meeting.pdf](#)

[2023-09-05 Parks And Commons Summary.pdf](#)

[2023-09-12 Planning Commission Work Session.pdf](#)

[Community Services Coordinator Report - October.pdf](#)

[CIP Project Updates 2023-10-17.Pdf](#)

[Q1 July - September 2023 Chamber Report.pdf](#)

[Budget Tourism 2023.2024 July.Sept 2023.Pdf](#)

[Budget VC 2023.2024 July.Sept 2023 City Report.pdf](#)

[Status Report Housing Auth.pdf](#)

[Camping Policy And Proposed Ordinance.pdf](#)

[MAP.pdf](#)

[Grant Presentation City Council.pdf](#)

[ODOE Contract.pdf](#)

[Emergency Preparedness Responsibilities.pdf](#)

[CIP Project Updates 2023-10-17.Pdf](#)

[PW CIP Report 10.17.23.Pdf](#)

[Gimlet Document.pdf](#)

[Water Certifications.pdf](#)

[Toledo Standards - Full Document.pdf](#)



CITY OF YACHATS
441 N Hwy 101, Civic Meeting Room 1
October 18, 2023, at 2:00 pm
To Be Held In-Person & Via Zoom

Join Zoom Meeting

<https://us02web.zoom.us/j/89654498587>

Meeting ID: 896 5449 8587

Regular Council Meeting

- I. Announcements, Proclamations, and Correspondence
- II. Public Comment - limited to items not on the agenda
(5-minute limitation per person)
- III. Consent Agenda – Vote to Approve
 - a. City Manager Report
 - b. Public Works Report
 - c. Commission/Committee Meeting Summary's
 - d. Financial Reports
- IV. New Business
 - a. Chamber Q2 Report – Bobbi Price
 - b. HB4123 Legislative Report – Tim Johnson, County Administrator
 - c. Capital Budget Planning & Perspective
 - d. Camping Policy& Goals
- V. Ongoing Business
 - a. Interim City Manager – Steps moving forward
 - b. Resiliency Report & Update
 - c. Emergency Preparedness Reinvigoration & Scope of Work
 - d. Wetlands Inventory Update
- VI. Other Business
 - a. From the Mayor
 - b. From Council
 - c. From Staff

The Yachats City Council meetings are open to the public and interested citizens are invited to attend via Zoom. These are open meetings under Oregon law, but a work session is not a community forum; audience participation is at the discretion of the Council. Meetings are audio-recorded. The meeting are accessible to persons with disabilities. For accommodations, please call (541) 547-3565, or Oregon Relay 1-800-735-2900 TDD) two days in advance. City of Yachats does not discriminate on the basis of race, color, religion, creed, gender, national origin, age, disability, marital or veteran status, sexual orientation, or any other legally protected status. Sign language or foreign language interpreter may be available, with advance notice. Call City Hall at 541-547-3565 or Oregon Relay 1-800-735-2900 (TDD) two days in advance.

POSTED September 15, 2023 By: Kimmie Jackson Deputy City Recorder

Oregon PERS: Pension fund investments lost money last year. What it could mean for the future

- Updated: Oct. 06, 2023, 1:03 p.m.|
- By [Ted Sickinger](#)| [The Oregonian/OregonLive](#)

The funding deficit in Oregon's public pension system grew by a whopping \$8 billion last year due to its worst investment performance in more than a decade, potentially setting the stage for a bigger strain on government employers in the years ahead.

The Oregon Public Employees Retirement System ended last year with a \$28 billion unfunded liability to meet its projected pension obligations. Cutting the deficit would require some combination of higher investment returns or raising the amount of money contributed by employers like schools, libraries and local governments.

[Lawmakers](#) and policymakers for the state's PERS Board for years have taken steps to [keep financial contributions by employers in check](#). Meager investment returns could complicate those efforts, although consultants for the state have recently become more bullish on the future.

Oregon's pension fund lost 1.55% of its value last year and has increased only 3.86% this year through August, the system's actuary told members of the PERS Board at their regular meeting Friday. State officials projected 6.9% gains in each year. Higher expected payroll growth also increased projected liabilities, further widening the funding gap.

Oregon's pension system was nearly fully funded before the Great Recession but its funding deficit has hovered at or above \$20 billion for the past eight years. This despite investment returns that have averaged nearly 10% annually since that recession, including a massive 20% gain two years ago that sliced Oregon's unfunded liability down from its previous high of \$28 billion and raised hopes of some cost relief for public employers.

Doug Berg, a retired information technology consultant who for years has closely tracked PERS obligations, submitted written public testimony for Friday's meeting. As he has in the past, he criticized the board for squandering opportunities to shore up the system's funded status earlier by failing to adequately raise employer contribution rates when investment returns were good.

"Just one year of bad returns, coming at a time of inflationary pressures, has erased what meager progress there was in taming the unfunded liability, underscoring how easily the system can fall into crisis," he wrote.



Date: October 4, 2023
To: Rick Sant, City Manager
From: Public Works Department
Re: September 2023 Public Works Report

Rainfall at Yachats Public Works:

	2023	<u>Inches</u> 2022	2021	2020
September	3.43	0.69	2.54	2.23
Rain year to date:	37.65	36.48	32.51	40.06

Total water produced: **4,901,400 gallons**

Total water accounted for: **5,205,563 gallons** Water loss efficiency: 102 %

Total wastewater treated: **3,774,000 gallons**

The following is a list of what was done by Public Works staff in September 2023.

Streets:

- Stop signs repaired on Combs Circle and Shellmidden.

Storm Drainage:

- Culvert E. 2nd Street cleaned out.
- CCTV'd Agency Creek culverts.

Water Treatment Plant:

- Water systems operations.
- Plant Maintc.

Distribution Sys:

- Meter reading and rereads.
- Meter replacement and installs.
- Meter maintc.
- Located water service on Blackstone lot.
- Leak checks.
- Water system Lead & Copper sampling.
- Water line repairs on Horizon Hill, Cedar Ave, and Marine Drive.
- Meter test.

Wastewater Treatment Plant:

- Wastewater systems operations.
- Plant maintc. & clean-up.
- Biosolids operations.

Collection Sys:

- Lift station inspections.
- Degrease lift stations.
- Trip to Albany for repaired pump (Pontiac).
- Priming issues with Quiet Water lift station.
- Main lift station failure and repaired.
- Pontiac lift station pumps inspected and cleaned.

Public Works:

- Shop maintc. and clean up.
- Fleet maintc. & repair.
- Equipment maintc. and repair.
- Multiple locates.
- Brush box handling.
- PW administration.
- Piles picked up for Trails crew.
- Garbage removal at the Commons.
- PW yard clean-up.
- City Hall work orders.
- Removed COVID signs.
- U.S. flags removed.
- Newport & Eugene parts run.
- Graffiti removal on guard rail at Ocean View Drive.
- Banners removed.

Public Works & Streets Commission Meeting

Summary

September 12, 2023

- **Start of the meeting.** [0:00](#)
 - o The Public Works and Streets Commission meeting Tuesday, September 12, is called to order.
 - o A grant application for the transport study has been submitted.
- **Highlights of the report.** [2:51](#)
 - o The public works report is a little special because it was mostly Kevin and Rick taking care of the water, plus all the operations.
 - o The crew did a great job in August.
 - o One guy started last Friday and has been very helpful and energetic. Looking forward to the next one to come on the 18th.
 - o Six or seven priority one issues going on.
- **What's going on with Second Street?** [6:21](#)
 - o The CIP projects are all done. Second street is about done, but final payment needs to be made.
 - o The backflow, backwash, recycled program is still stagnant, 34 weeks out...
 - o Going back to 1991 with HDE, they still have the drawings, Westech is doing the study. Started the clarifier rebuild – parts and technology are antiquated.
 - o Bought the Ranger and the lift truck in August, finalized in August.
- **Updates on pump plug installation.** [11:28](#)
 - o Update on the pump plug stuff. Engineering was supposed to have been done last month, but is taking longer than expected.
 - o Water percentages are all screwed up, including utility billing.
 - o There are too many people who have used the program over the last two years or three years, and it is a complicated program that can get messed up easily.
 - o It is important to run this to ground, because it is the fundamental measurement.
 - o There is a City Council meeting tomorrow to discuss going into level one, which is the tourist industrial bubble.
 - o There is also a meeting to discuss water demand.
 - o The city is at 270 gallons a minute right now, and phase one starts at 275, and there is no significant rate through the future.
 - o Tourism is costing the city more than it's benefiting.
- **Highlights of the financial reports.** [22:55](#)
 - o Finance reports quickly loaded up to the website, just now got them, and Diane needs to send them to Linn to upload them.
 - o Water revenue and expenses.
 - o Legal expenses are being charged off to water operation at a total of 7000 compared to 1000 in the beginning of the budget.
 - o Wastewater revenue was 73,594, with some unexpected charges.
- **Emergency Preparedness update.** [28:18](#)

- o Conex at the fire station is getting filled up, only a few items left to arrive, waiting on a few more items tomorrow.
 - o Emergency preparedness, no-cost training and support.
 - o Half of the contract was put into the street fund, and the engineer is on task. They have a scope of work that they're going to fall off.
 - o The submersible pump stations.
 - o Four by six stainless cabinets are four by six, so it's hard to see how to spruce them up.
 - o Stainless is paintable, but its durability is limited.
 - o Adding the Ocean View Road in Lincoln County to the list, and how Public Works will block off the street parking areas by the landmark bet.
 - o How to notify the public in the newsletter.
- **Jersey barriers.** [38:31](#)
 - o Jersey barriers will be set up, three of them may be blocked off that area, and reflective tape will be put on the top.
 - o Southwest Lincoln water district status update.
 - o They are still in the hopeful stage, because they need to go through their board and vote on it. They may even need a public hearing.
 - o The long-term agreement is going to take a lot of work and ironing and may take a year or two years.
 - o Main focus today is looking at utility rates and compensation or lack thereof, and how to relook at this and what might be done.
 - o The first item is the meters.
 - o In terms of procedure, how to change the charge for the four inch to the two inch water rate.
 - o The planning department is looking at ways to subsidize low-income housing.
 - o Another option for future projects is a non-metered sprinkler system, where the building pays for water that is metered instead of holding water for the fire sprinkler.
 - o The Sierra system is good enough.
- **How would you change the base rate for meters?** [51:08](#)
 - o Most of the meters in Springbrook are one and five eighths, so the base rate would be through the meter.
 - o How to get an idea of how much subsidy is to get a basis to bring to the City Council.
- **Industry standards for water rates.** [55:43](#)
 - o The last study was done to the American Water Works Association, and it was a percentage-based program, but the City Manager didn't like it.
 - o The industry standard is important.
 - o How to make an argument to the council that they need to move more aggressively to equalize rates or to get them fair.
 - o The cost of a two-inch water line is about \$700 a month, while a one-inch line is \$170.
- **The base rate for water.** [1:04:22](#)
 - o The base rate has two parts to it, a base rate established by the meter size and two units of water measured at the rate of flow.

- o The two units are charged at the same rate flow that the per unit charge would be otherwise.
- o Vacation rentals have been full all summer long, with washers and dryers going all the time, and a lot of water usage occurring.
- o The second home situation is subsidizing the permanent residents and vacation rentals, and they are paying part of it by paying minimum monthly base with the two units
- o Conservation of water should be encouraged in short term rentals.
- **How much should we charge?** [1:13:53](#)
 - o There are 93 lots in Yachats that have prepaid SDC fees and have no meter. They would like to start paying 50% of what it would cost to have a meter.
 - o Most of the 93 vacant lots in town have the ability to hook up to the wastewater system. Most of them have water and sewer.
- **Spreading the cost of infrastructure improvements.** [1:23:53](#)
 - o Spreading the cost of infrastructure improvements to customers that will benefit from the improvements, including vacant lots and people with meters.
 - o Discussion continued on avenues to look into.
- **Is the Visitors Amenities Fund part of the general fund?** [1:34:05](#)
 - o Is the Visitors Amenities Fund associated with the General Fund or is it actually a separate fund?
 - o The straightforward way to handle the tourist industry is to say you will pay for the cost of water and pass the costs along.
- **Mechanics of the three taxes.** [1:38:53](#)
 - o The mechanics of the three taxes, the rates, transient lodging and the hotel tax, and how the three go together.
- **How to increase water rates for businesses.** [1:44:20](#)
 - o Increase the percentage to those businesses that use additional water, not just before rate increase, but to businesses in general.
 - o Discussion also had regarding fire hydrants.
- **Speed Zones.** [1:48:38](#)
 - o Had a vote on establishing a 25 mile an hour zone for all of 101 through the city, and the major hotel owners are in favor of it and ODOT is willing to consider it.



	7.2022	8.2022	9.2022	10.2022	11.2022	12.2022	1.2023	2.2023	3.2023	4.2023	Apr-23	May-23	23-Jun	23-Jul	23-Aug	23-Sep
Gallons of Water Produced																
Water Plant	4,981,200	5,983,000	5,468,700	4,517,000	4,198,200	3,823,500	4,462,900	3,488,800	3,961,800	4,714,300	4,159,700	4,992,400	4,669,600	5,284,800	5,796,500	4,901,400
Total	4,981,200	5,983,000	5,468,700	4,517,000	4,198,200	3,823,500	4,462,900	3,488,800	3,961,800	4,714,300	4,159,700	4,992,400	4,669,600	5,284,800	5,796,500	4,901,400
Gallons of Accounted for Water																
Reservoir Level Feet	31.5	26.5	28.2	27.8	29.7	29.0	24.3	30.0	29.5	29.5	29.5	29.5	29.6	29.2	29.7	29.4
Reservoir +/- Gallons 41,666 per Foot	579,167	208,330	70,832	16,666	83,332	29,166	196,830	237,496	20,833	0	0	0	4,166	16,666	213,330	12,499
Waterline Flushing Gallons	610,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gallons Sold	3,502,419	5,267,797	4,206,601	4,327,576	2,554,239	3,103,279	3,671,984	3,030,641	3,344,150	7,476,533,580	4,062,701	12,703,904	5,480,797	5,544,211	5,572,472	5080564
Total Water Accounted for	4,691,576	5,059,467	4,277,433	4,310,910	2,637,571	3,132,445	3,867,814	3,268,137	3,364,983	7,476,533,580	4,062,701	12,703,904	5,476,631	5,476,631	5,593,802	5205563
Final Water Report																
Water Loss Efficiency	94%	85%	78%	95%	63%	81%	87%	93%	85%	1585%	98%	254%	117%	103%	96.50%	102%
Unaccounted Gallons per Month	289,624	923,533	1,191,267	206,090	1,560,629	697,045	596,086	220,663	596,817		1					
Unaccounted Gallons per Minute	6.7	21.3	27.6	4.7	36	16	13	5.1	13		2.2					

Emergency Preparedness Committee

Summary – August 28, 2023

- Present: Tom Fisher, Alex Cox, James Sanders, Don Growth, Kimmie Jackson, Deputy Recorder and Rick Sant, Interim City Manager
- **Citizen's concerns.** [0:00](#)
 - o Meetings, call to order announcements, proclamations, correspondence from Tracy Crews, citizens concerns, current business, exercise, storm-ready, tsunami-ready renewals, new business, department of energy grant, emergency preparedness.
 - o Gold bags.
 - o There are two other complexes, one on Radar Road and one south of the river. Tracy Crews had a request from a landowner.
 - o One of three complexes.
- **Checking out the radios in the Conex.** [4:25](#)
 - o Another ham radio operator is an interested member of the Lincoln County Radio amateur radio club and the auxiliary communication service to check radios in existing Conex units. Committee agreed to have the radios checked.
 - o There are eight new walkie talkies now up in the new Conex of the third Conex, so it might be worth doing the same thing with them.
 - o Tom and James discuss tabletop exercise and getting a basic framework for doing it. No response from Jenny.
 - o Bob Bennett sent an outline of the one that he conducted, but it doesn't give much in terms of the focus of that tabletop. James will try to get in touch with Jenny.
 - o FEMA might be a place to go to see if there is a recording of the emergency prep committee meeting online.
- **Planning for a new City Manager.** [12:12](#)
 - o A new city manager will be appointed in October or November.
 - o The next thing on the agenda is about the storm-to-tsunami readiness renewals and how the end result of that went.
 - o The city is trying to find people to hire, especially skilled specialized labor, and is slowly making progress, but needs to find someone to step in and do Rick's jobs.
 - o The city needs to look at the big picture, because Rick is eligible to retire in a couple of years.
- **Oregon Department of Energy Grant - what is refundable and what is not.** [18:31](#)
 - o The \$200,000 is refundable, so they have to pay and then they refunded. The concern is ensuring that they stay within their guidelines. The scope needs to be focused on renewable resources.
 - o Catherine is the subject expert on emergency preparedness, and she will be using her knowledge to help the city.
 - o The Department of Energy is offering money if we can come up with a plan.
 - o A huge part of being prepared for a disaster is having a source of energy. Having some source of power is a huge part.

- o The Fire Department got a grant a few years back for a big diesel generator, but the only diesel fuel is in the reservoir.
- **How to get out of the forest?** [26:02](#)
 - o There are a couple of forest roads that are possible to take from Yachats River Road up to Waldport or all the way out to the south.
 - o The landslide south of town.
 - o The importance of having systems in place to prevent a disaster and keep people calm in the event of an emergency.
 - o When to have the next meeting.
 - o The next meeting will be at the beginning of October, when the city will aim for 30% attendance, a record for any meeting that a committee or commission has had in the city.
 - o The Fire Department Conex will have a key box in the wall of the fire station.

Transcribed by Lorraine Fritz Barrett, October 5, 2023

City Council Work Session & Regular Meeting

Summary

September 7, 2023

- **Introduction of the work session agenda.** [0:00](#)
 - o City Council work session today, followed by regular meeting, with a work session to discuss homelessness in the city and county.
 - o Four steps to address homelessness in Lincoln County.
 - o The fourth element is emergency preparation for this year, and that may have some overlap with some of the other topics.
 - o The Lincoln County homeless response advisory committee.
- **Local and regional coordination of homelessness.** [3:32](#)
 - o Local and regional coordination through a pilot programs across the state, and
 - o How the data will be presented to the council.
- **MaryEllen's nervousness.** [9:30](#)
 - o Lincoln County homeless response advisory board, lc, is a group that is trying to work together to get more clout with the state now that the state is rolling back on some of the funding.
 - o The report in a good handful of acronyms are not defined.
 - o It's an issue of speaking the same language. The chart is all about knowing the language well and making it accessible to the casual reader.
 - o Hb 3115, reasonably objective guide.
- **Camping ordinances and public facilities.** [15:01](#)
 - o You can be very explicit about where camping is not allowed, but you can't ban it every go.
 - o If there's any space that you prohibit camping, you have to have an alternative place for them to go within the city.
- **Practical ways to deal with homelessness.** [22:41](#)
 - o City Hall needs a means of telling someone you can't sleep on the front door of the Commons while kids are going to school.
 - o The fire marshal is the only one who has the authority, but there is no enforcement. The City Manager can call the sheriff, but without an ordinance, they will probably not be able to do anything.
- **Camping ordinances and overnight parking.** [27:57](#)
 - o The Presbyterian Church is being inundated with homeless people. They don't want to be in town, but they don't have a place to stay.
 - o The second side of it, vehicle parking.
 - o They also have signs up in town that are a no overnight, which means they have to enforce that, and it also means they can't ban overnight parking everywhere in town.
 - o They can allow RV camper to park in front of the commons, but not in front.

- **Tent camping and vehicle parking. [33:25](#)**
 - o There's a difference between tent camping and vehicle camping, and they need to address both if they're going to do either.
 - o There's no consensus on how to proceed.
 - o Mary Ellen and John discuss how to address the issue of RV parks. Mary Ellen points out that what they are discussing is an administrative issue, not a planning commission issue.
 - o Mary Ellen talks about the importance of having a regional task force on the issue.
- **Comments from people online on the plan. [39:19](#)**
 - o Jacqueline asks Peggy to come up with an outline of a plan on how to address this issue and who should develop it.
 - o Peggy introduces herself and gives a presentation.
- **How the Rock evaluates performance. [46:50](#)**
 - o HUD is rated and ranked according to a particular set of scoring features, such as how well the continuum does in performance.
 - o The Rock has a Dismal score.
 - o Connecticut is one of the most successful balance of state continuum of care in the nation. Washington DC does not grasp the concept.
 - o The governor's executive order 2302.
 - o The tri county region began a discussion on whether to demand to be included in the 2302 executive order.
 - o Lincoln county applied and got turned down.
- **How everything fits together in the continuum of care. [53:16](#)**
 - o In house bill 4123, Lincoln County got about a million dollars to create a strategic plan for a homeless response system.
 - o Lincoln county homeless advisory board.
 - o A heat map developed by the Lincoln county homeless advisory board.
 - o The impact of COVID-19 on the volunteer work of faith-based organizations and grassroots organizations.
 - o The cost of doing services and providing services for people in Lincoln County is going up.
- **How to work smarter rather than harder. [1:00:35](#)**
 - o A continuum of care allows us to look carefully and shine the light on who is doing what, document who's doing what and figure out how to not duplicate resources and be most efficient with the resources.
 - o The point in time count data goes to the State of Oregon Housing and Community Services
 - o What the board ultimately wants from the board.
- **How the resolution worked with the municipalities. [1:10:09](#)**
 - o How the resolution worked with Marian and East, and why it was important to have all of the municipalities on the board.
 - o The municipalities want to be able to be the voting members of the continuum of care, or at least to be consulted about this.

- o There is no dedicated funding from HUD to support continuum of care, which is a structural problem. Community action agencies are advocating for better access to funding.
- **Where does it all fit in?** [1:15:34](#)
- **Reach out to your contact page.** [1:19:16](#)
- **Lincoln County winter shelter update.** [1:22:52](#)
 - o Lincoln County is moving forward quickly with a winter shelter, and the city and all cities received a letter from Katie Jacobson asking for a contribution.
 - o Five outcomes for the shelter.
 - o Initially, the shelter will be rotated through a couple of churches in Newport, but it will eventually become a permanent fixture in Lincoln City.
 - o There will be an advisory council of community partners to advise and monitor the program, and a warming shelter.
 - o There is plenty of funding coming in, but not enough yet to secure these two locations and keep them operational for the first two years.
 - o The county is going to allocate \$200,000 of AARP funding each year and is also funding the shelter coordinator position.
- **How much will it cost to fund?** [1:31:15](#)
 - o It is not feasible to donate a large sum right away, but there are discussions and plans on how to further fund the entire program.
 - o The relative cost of administering the program is 5% to 10% of the population of the cost of the services.
 - o The criteria for measuring success is the estimated houses count in Lincoln County right now, which could be anywhere between 17,000 and 400 at any given time.
- **Pillars of the Homeless Plan.** [1:37:23](#)
 - o The three pillars of the homeless advisory board, the economics, health, mental health and transportation, and how to fix the transportation problem in Lincoln County.
 - o One of the biggest concerns is the lack of funding for the transportation system in the county.
 - o The four-pronged approach to homelessness in Lincoln County, including harm reduction services, housing, social services and a homeless advisory board.
 - o A shelter coordinator has been hired full-time to make connections and see where the gaps are and what more services are needed.
- **How are you going to look for funding to help?** [1:43:42](#)
 - o The housing authority is in the beginning stages of trying to get there. They have room for up to 10 people, but it is very weather dependent.
 - o The next meeting on September 20.
- **Water status and sustainability plans.** [1:52:13](#)
 - o Water business, water status and sustainability plans. City Manager has formed an advisory committee that consists of concert Scott Rick McClung, Jocelyn Lee and Jolene in camp.
 - o Water sustainability.
 - o Trolly grant status and vote is a little bit awkward, because the application is due prior to the next meeting, and it does have to be submitted.

- o The next step is with a grant application that is due on September 15th.
- **Approving the grant application. [1:58:15](#)**
 - o The council will need to approve the grant, the operational costs and the grant application.
 - o The operational costs of the grant will be left up to the City Manager.
 - o The realistic costs and what that will do to the budget.
 - o How long between the time of the grant and when the grant is awarded and the operational problem.
- **Moving forward with the grant. [2:03:42](#)**
 - o Moving forward with the grant pending review of the City Manager, moving it to the new quarter.
 - o Next order of business is the public work security gate, making it specific to the yard debris dumpster on a controlled basis to protect contractors.
 - o One was for 13,000 and the other one came to just under 10,000. They haven't had either one to do a site visit yet.
 - o The new gate is going over on the other side so that if someone goes in there to dump brush, they can't get into the plant.
- **West Coast Financing. [2:09:55](#)**
 - o West Coast Financing and Coos Bay are two of the bidders for the public works facility.
 - o The finance committee is looking at putting security fencing around the brush box in the facility.
- **Cascade West Area Commission on Transit. [2:18:31](#)**
 - o The budget has been established and can be spent within the budget.
 - o Creating an advisory group for park commons.
- **How to weatherproof the pavilion. [2:23:45](#)**
 - o We're trying to weather-proof the pavilion. There's been dormers on the roof that are getting wind and rain, and people are canceling events there.
 - o The north east entrance is being improved.
 - o A muskrat weighs three pounds and eats nine pounds of vegetation that day. That's a remarkable statistic. The baby ducks didn't last long.
 - o Adam and Tracy discuss the need for additional bathroom facilities.
- **Planning for the Festival. [2:29:14](#)**
 - o The importance of maintaining some of the amenities that have been available for many years.
 - o This year's event is green-room-only, which is not ideal, and there are no facilities specific for the performance.
- **Capital plan includes a commons campus master plan. [2:36:08](#)**
 - o The capital plan includes a commons campus master plan that is expected to get started in April to June.
 - o The finance committee wants the master plan done before March.
- **Updates on public works projects. [2:38:24](#)**
 - o Krystal is focusing on things that are probably not going to change regardless, upgrading lighting, fixing the plumbing. She's gotten more done in the last few months than in the last few years.

- o The heating and cooling units are now operating correctly, which has been a frustration.
- o Department of Transportation is still struggling with internal issues. Public Works needs to hire a young person to step in and replace Rick McClung.
- o Regular meeting of the Yachats City Council is on September 7.

Transcribed by Lorraine Fritz Barrett, September 29, 2023

Special City Council Meeting

Summary

September 13, 2023

- **Resolution 2023 to zero water shortage emergency.** [0:00](#)
 - o Resolution 2023, declaring a water shortage emergency in the City of Yachats, Oregon, declares water shortage in phase one.
 - o Additional restrictions may be imposed based on the measured flow of water.
- **The water shortage emergency trigger.** [2:16](#)
 - o It is not appropriate to rely on the decision of the City Manager to declare a water shortage emergency.
 - o The language in the ordinance is concerning.
 - o If and when there is a long-term agreement with Southwest Lincoln, there may be sufficient water in the reservoirs for temporary suspension of water conservation measures.
- **What does phase one mean?** [6:55](#)
 - o Southwest Lincoln may not be able to save us from a severe drought in a year and a half.
 - o A citizen wants to resurrect the climate change commission.
 - o All watering of lawns, gardens and landscaping must be prohibited between the hours of 10am and 7pm.
 - o All commercial large meter users must post written notice soon.
- **How do you vote on the resolution?** [11:25](#)
 - o Resolution number 2023, water shortage notices will be printed and bound today, and will be sent to all property owners in the county.
 - o No other discussion or questions.
 - o Electronic notification could be implemented as an option to save money and postage. 60% of residents in the system have not been maintained.
 - o Water flow is about 270.
- **Rainfall forecast.** [15:26](#)
 - o The Northwest is one of the few places in the country that is expected to see above average rainfall.
 - o The Northwest will see more rain, but heavier amounts could bring other problems.
 - o Hoping to hear from Pete this week, hoping to have a better idea by the end of next week, but still hopeful there is no signed agreement.
 - o No other comments or discussion.

City Council Work Session & Regular Meeting

Wed, Sep 20, 2023 4:10PM • 2:16:55

SPEAKERS

Present: Catherine Whitten-Carey, Greg Scott, Barry Collins, Mary Ellen O'Shaughnessy, Mayor Berdie, Walter Orchard, Sara Heard, Tracy Altson, Jamie Dunphy, George Giroux, Jim Welch, Shelley Shrock, Joanne Kittel, Kimmie Jackson, Sandy Dunn

Announcements, Proclamations and Correspondence 0:58

Lincoln County Resource Parenting information in the packet.

Mayor Berdie read a proclamation regarding Joanne Kittel and her work for the betterment of the Yachats community. Discussion regarding Joanne's accomplishments and others she has worked with.

Public Comment

Sandy Dunn 11:03

I just have one comment. I read a couple of things lately, that you might be replacing the reader board, which is not a bad idea, but you might make sure you look at the code and make sure that you don't use digital signs because they're prohibited.

Jim Welch 11:37

Yeah, I think you can't use flashing signs, but we'll verify that.

Short conversation regarding safety and those denied a sign previously.

Consent Agenda 12:14

Questions on the consent agenda. We do not have the committee or commission summaries.

City Manager's Report included in packet

Public Works Reports included in packet

Financial Reports included in packet

Kimmie Jackson 12:25

Lorraine and I are getting close with summaries, she's working on them this week.

Kimmie Jackson 12:46

I was just going to mention that the financial reports are attached but have not been approved yet. So just for information purposes.

Mayor Berdie 12:58

I did have a question on something in the City Manager's Report. It was something about the north end of the roof and I think I've mentioned this before, we don't know how many years ago, less than five looking for an entire roof replacement. I was curious why that may have failed. And if there was any warranty for that work.

Rick Sant 13:19

The short answer is yes. There probably is going to be some warranty work done. So the costs will be low. It was mostly a design issue. It wasn't that the work wasn't done well. It just isn't running off the way it should. Continued discussion on items in the City Manager's Report: staff at City Hall, Civic Plus, Go Yachats... tagging is gone, mask signs coming down.

Mayor Berdie 15:30

Alright, before we do that, I do want to note that actually look at the financial reports and there's nothing to be concerned about. the amounts are not large. still, you know, September. we're not we don't get our revenue in till the end of September, but we are running slightly over budget, like for 4% to 6% sort of these little numbers. do I have a motion to approve the consent agenda?

Greg Scott 20:40

So move with the stipulation that the missing item is not included. Motion carried.

Sara Hurd 21:17

I'm Sarah Hurd. I'm an education specialist and our county's Tobacco Prevention and Education Program Coordinator coming county to the public health departments. Presentation on tobacco prevention efforts here in Lincoln County. Looking to pass a county Ordinance regarding tobacco retailers.

Jamie Dunphy, American Cancer Society Cancer Action Network 33:18

An organization, a group of 65 statewide organizations, that have been trying to convince the state legislature to pass a bill to end the sale of all flavored tobacco products in Oregon. Continued presentation with statistics re: underage smoking and measures to lower those numbers.

Mayor Berdie 32:42

So I think we would be supportive of a resolution might suggest working with our city recorder and city manager to get something with some language on our agenda.

Jamie Dunphy 32:54

Thank you very much. Thank you guys.

32:57

Thank you

Mayor Berdie 33:04

talented

Greg Scott 33:09

there we say good looking

Mayor Berdie 33:17

all right. The next item was the Library Commission vote but I see there was two items, sort of related items in the packet. So I wasn't quite sure what where we're at with this. The first item seems to be the sort of a one year anniversary of our administrator update that you lead with that and before we go to the vote of a new

Sandy Dunn 33:41

commissioner prefer to do it. Yeah, why don't you sit up here?

Mayor Berdie 33:47

Give us your name.

Tracy Altson 33:50

All right. I'm Tracy Olson. I've met most of you I am your library administrator. I've been doing this job for a year, as of last Friday. So Rick and I were talking we thought this would be a good time to give you a little bit of a library update. Talk a little bit about what I've done in the past year what the library has added or changed to share. I'm not going to challenge this because I think you know what our challenges or our upcoming challenges are going to be when they make the move and expansion. Moving everything basically four times are we here to comments, partner to warehouse and then back again. So we've got a big year, year and a half ahead of us. But I want to talk about a retrospective on the last four and I'm going to read you some information and I will answer any questions you might have. So my goal has been to keep all the shifts covered at the library we have we are open 26 hours a week, six days a week for approximately three to five hours. Keep the chips covered, bring on new people as needed, have productive meetings and keep the staff happy by ensuring their needs are met. I tried to go beyond their expectations with thank you thank you cards and gift cards and occasionally have food or treats or weed games. So I'm working with volunteers. I try to come from a place of gratitude because they are giving the gift of their time to keep our library going. I have my first or nearly have my first yearly state report under my belt. It's a Whopper with over 1000 different data points. Sure you're familiar with this report. It's huge categories range from financial script or digital library, which obviously is changing to volunteer hours to the size of circulations. Including eBooks and audiobooks. Speaking of volunteer hours, we have 3500 volunteer hours last fiscal year, which is really incredible for a library of our size and a population of our size as reference. 3500 hours is more than Albany Public Library had in the previous fiscal year, which is 21 to 22 while serving a population of over 57,000 Newberg or Newport, which serves 25,017 1000 people respectfully, we have more hours of volunteer time than those libraries. People like Sarah who supports Prince booksale Chuck who writes and rewrites our policies and procedures, Rebecca walk who does our ebook ordering and just trained everyone in our procedures for a new e reader. And Marian and Rose who have picked up lots of extra shifts when we have been short handed all of our standouts, but it takes a village. There are currently 30 volunteers who either have such shifts, or are solely substitutes, some are both new this year has been orderly guests the candy contests which I thought would be fun for the community. We brought

back summer reading of the summer reading program, we've added an e reader. thanks to the Friends of the Library and nine new volunteers. This morning. 11 of us had CPR training. We've increased our visibility on social media and we now have a mission statement. We've also had Narcan training, and we have Narcan in the library for use in the library. But we also will be becoming an official site for distribution of Narcan in ghats working with the harm reduction team and like accounting and these are nasal by the way they're not searched applications. Last but not least I lead a group of 17 people. Somerville library volunteers and others are community members. We walk on Thursday afternoons as part of a two year OHSU study. This strengthens community bonds and is brought in 5000 as yet another marked dollars the library participation. We've held meetings to discuss how we would handle our impending move to the commons. We have a good game plan and for where we move, what we move in terms of the commons versus the warehouse storage and how we handle it and our integrated library system. I'm sure there will be bumps in the road. My hope is that the messaging is timely to our patrons, and many of them because we've had this architectural drawings out for quite some time are already aware that it's coming, but everybody doesn't know the exact timing. So I want to make sure that I stuck with that messaging out. Sure there will be bumps in the road but I think we're on the right path. And that's really all I have aspirationally I'd like to see eventually we have our own website this library. We will need rules for the community rooms will have a new community room with expansions. And I will work with city manager on on that the rules and policies for that room. And then I'm still in the process of finalizing a Patreon policy which sets expectations for our patrons. There continues to be challenges on the largest in the library here in there. Well for the most part, it's it's going okay, but it's also been summer and it's in dryer, the libraries refuge for winter cold and wet days. So it's a balancing act. To make sure that everybody has free and free access but also the patrons that there's there's no we're hearing our patrons who are not on housed and trying to balance their needs and make sure that the library stays warm and welcoming for joining. So that's all good. I think it's good to get in front of you probably yearly. So maybe every September you want to have me on your agenda. We know we have things going going

Jim Welch 39:51

but Trish is a real rock star and you guys need to make sure the city mayor the new city manager takes care of her. You lose her and that's gonna hurt. The reason she's got 500 volunteers is because of the way she handles it. So

Mayor Berdie 40:11

any questions

Joann Kittel 40:12

from comments? City council. I think it's expanding even in terms of like the dark King versus just what I was like it's

Sandy Dunn 40:25

not. Yes, that's relatively new. Thank you.

Mary Eillen O'Shaughnessy 40:29

I've always thought that the good community has a good library that you need a good school system a new park, a good park system and a good library. So I think it is really important in this community in particular, and I came in 2002 My proudest day actually and I don't know if I supposed to get one I use my friend's address, but I gotta Yeah, had a car and went back and showed everybody. So I think libraries are so important to the health and welfare of the communities. And I think you've done some good things to our library has always been good. And I think I think you've moved. You've moved it for no other candy counting has me interested. South by anyway, so thank you so much. And thanks to all the volunteers, many of whom I know. They are fantastic and for dealing with our houseless people because I know there's challenges there but I know they appreciate having a place

Sandy Dunn 41:27

and like I said things are really shifting as the weather changes, hoping we'll have quite a few more probably in as we did last year. But when we move over here, the much smaller space so we'll see how that goes. But thank you

Mayor Berdie 41:41

and I have to see your library is you and the volunteers do such a wonderful job. You've done really great work, reinvigorating the volunteer base. You know, I read other small communities struggling with their libraries or losing their library. We have been so fortunate with tears in our leadership, bribery leadership, that it's not an issue at a strong wonderful, wonderful institution.

Jim Welch 42:11

Thank you. All right.

Mayor Berdie 42:15

There is a second order of business regarding liberty. Speaking of which, we have a application for a new commissioner. And so I wonder if st and could you step forward please? So I see on your application street that there's a lifelong user and your your appreciation also being a structural engineer. Not just a structural engineer, but a building, Denver building department. So could you kind of expand on how those two things tie together in terms of working on the structural side but also just as a general Library Commission.

43:17

You know, my eyes a little blurps I've always been a very young age. I firmly believe it's a

Joann Kittel 43:29

great asset to the community and

43:33

everything. It seems like works on a volunteer basis. And now that we live within the town of y'all heights, I'm eligible to volunteering to help in this position and I'm very interested in that.

Joann Kittel 43:51

Specifically, my background in structural engineering I for 30 plus years as a

44:03

design professional as a consultant architects designing commercial, institutional and residential structures. And being that we have renovation and addition with the library. I thought possibly I could help with that. In addition, as you mentioned, I work for five plus years. The building department and as a planning review, engineer reviewing architectural and structural submittals for permits, I became very familiar with the building code, the Accessibility Code, the energy code specifically and I thought as we go into construction and renovation of library that maybe that knowledge would be helpful

Joann Kittel 44:52

to get us through that project.

Mayor Berdie 44:55

Yeah. Okay. Sounds like a great set of skills, a great skill set to bring to the position so appreciate that questions from any inconstant

Greg Scott 45:07

not a question but impressive resume, so I think you will be a real asset to the team. And as you know, your timing in terms of the building process is perfect. I don't know who recruited you made. The match well done.

Mayor Berdie 45:28

Yes. Okay. Do I have a motion to except St. Joe hot says the kind of look for the seat

Kimmie Jackson 45:40

number CP expiring 2023 The rest of this year. Okay.

Mayor Berdie 45:45

Do I have a motion? So moved. All those in favor say aye. Aye. Opposed? The motion passes. Thank you know, we're gonna have another discussion later where I think structural engineering maybe kept that a secret guys just just just invite recycled next time there's no no written material. This is if you'll excuse me some extended action of mine. And that is that we are this item was brought to my attention by the our Yips, Arif Yachats, invasive plant here. We are having it we are starting to see significant amount of not Himalayan and Japanese knotweed. These plants are highly invasive. They are there's an area connector trail between King Streisand hill that was all BlackBerry five years ago. It is now two thirds, knotweed this plant outcompetes Himalayan Blackberry, it's anything right anything sends its roots down to meters in Oh, seven meters. So digging

Joann Kittel 47:23

Art Foundation. Yeah.

Mayor Berdie 47:26

It it's a it's a scourge. I will know that our community has done a wonderful job of managing gorse and

Greg Scott 47:39

I know actually driving is a big problem

Mayor Berdie 47:42

right now AV is a big problem. Awesome. Some of some weeds we've done a really good job on I'm concerned that if we don't get a jump on Himalayan on the knotweed that we're going to lose the battle very quickly and as a dry to the state. I see some cities where it's just endemic, it's everywhere in their cities. So the reason I want to put it on the table here is that there is only one known control mechanism for that is a sprain with herbicides, or injection or injection. Injection is challenging because you have to inject each plant. And so we have to come to the you know, from my perspective, it's the lesser of who we are. I will stand with anybody in terms of manually controlling weeds and a tremendous amount in my lifetime and I believe in it strongly, but there are some times that it's just not gonna work. Been we've been in communication with the Lincoln County Soil and Water Conservation District. They have very limited resources, but are willing to help us and I have asked of all the orchid to to I will be asking him to help coordinate with them in terms of prioritizing their primary water work primarily want to work on riparian areas. But we've got a lot of riparian areas that are upstream and that stuff just comes floating down. So while he did you have anything to add?

Walter Orchard 49:20

Um, yeah, I think you've pretty much covered it. I should say that. There's more than just two kinds of knotweed. There's there are other species and apparently, even in your hearts, there are one or two places where they are not weird hybrids. So it's, it's quite complex, but they're all bad and it's, it's, there's no no real advantage and distinguishing the different kinds from each other. The place I've really places I'm really concerned about are the the river river itself. Yes. And we're getting knotweed appear in yachts. On the riverbank, and it's all coming down river. It only needs a small fragment of a plant washing down in a storm to land on the bank to start a new a new infestation but north of the Dollar General Store that knotweed they're actually MLA and and Japanese knotweed there and they fighting each other for supremacy. But that has spread tremendously in the time I've been on ya hearts. There's a patch across 101 from Aqua Vista. It's just solid knotweed. And the fire department has serious Japanese knotweed. And the fire department knotweed is a interesting illustration. Of some years ago, they, they, I think they cut down a lot of it and put down weed mature weed cloth material. I don't know exactly what the treatment was. It knocked back the knotweed significantly. But as far as I can see, there's just no follow up. And that's, that's absolutely fatal with knotweed. Persistence is so important. You can't just treat it once and go away. It takes many years just to eradicate knotweed even from a small patch repeated treatments. Yeah, so I'm happy to contribute in any way I can. It's, it's much too big a job for the trails crew to check on any of those major knotweed outbreaks, although we do tackle small outbreaks that are manageable on a scale that doesn't need spraying. So we do what we can but we're not going to tackle any of those big outbreaks. Thank you care for.

Greg Scott 52:20

point of clarification, there have been a couple of references to knotweed flowing down the river. And that's because there's a patch of knotweed further up the river and the beavers. We do have beavers favorite for construction. So they're the ones that are chewing a bunch of it up and cause it flowing down the river. Those of us who live in quiet water Wally's was across the street from me monitor the

river edge in the riparian area. But it's some of the riparian areas hard to get to because of the city's origin. It's about not disturbing that areas. It's it's a bit of a challenge of its own. But it's the beavers that are causing that stuff to come down the

53:04

river. Yeah, so I've just been reading about knotweed and rivers and King County in Washington. I've got a got some excellent information about how to deal with knotweed. But they make the point which is absolutely. You're going to argue with it if you're going to treat knotweed in a river. You'd need to start at the most upstream point and work your way down. Because otherwise, you're just gonna keep keep getting it, getting it feeding down to lower areas. Start at the at the very highest point in the river.

Greg Scott 53:46

You end up with a whack a mole problem here. Yeah.

Mayor Berdie 53:51

So we will coordinate with the Soil and Water Conservation District. At this point, it's just important for awareness that citizens understand it when one plan pops up. You can control it, you can identify it. Be careful, that's, that's where we're at.

Joann Kittel 54:12

I actually have someone on Third Street and it was told to me by Wally do not throw it in your compost bin. You must ask it and throw them in the garbage right volley. Yes,

Mary Ellen O'Shaughnessy 54:32

I'm just reading. I don't know anything about this. The chemical will be used but I am concerned about its impact. on animals. What's the research on that? I only say this because someone took care of my yard while I was gone here for six months and use something and my dog got poisoned in it. He obviously didn't do enough research so I'm a little sensitive to what it does to animals and he sprayed it on it and you know, dogs are out in the grass. So what is the I would like to know that no one else may really want to know it. But I would like to know Wally what is the research there? Does anyone

Joann Kittel 55:12

know? It's suddenly like sometimes it's not spraying but actually when you cut it down then like, inching on.

Mayor Berdie 55:23

Yeah, it's quite a feat. Right. When I was reading material, it actually has to be more diluted than you would get if you went to the store and bought a spray bottle on the research is that more dilution is more effective for some reason. And the most effective is to cut down nice plants get three four meters tall, but to cut it and then spray it immediately after. You know the my understanding. And I understand that it's controversial and some people argue otherwise, is that if you spray it appropriately once it hits the dirt, it essentially neutralizes it Yeah. That's why I'm raising this issue because there are concerns with way we have to treat it. But there's, you know, the alternatives are poor also uninteresting.

56:20

Now it's about but I do. I do have that comes

Mayor Berdie 56:23

just reading and the Soil and Water Conservation District is very sensitive to that. And obviously are the work in riparian areas are working up the odds River Basin and so they'll do the best that they can in their training. best we can. I think early identification is important and really control if possible. So I believe that that's documented on our trails website, or USPS website. So that's good place to get started in their time and resources online. Okay, the next item Commons. I'm sorry, any other discussion? The next item is possible Commons surveys and community events. That's semantic. Did you ever say about that? You'd mentioned it earlier?

Jim Welch 57:18

No, I think we've got a group that's going to talk about

Mayor Berdie 57:21

Okay, so that's that's the broader okay.

Jim Welch 57:27

Maybe not getting into debating

Joann Kittel 57:41

here your dean was supposed to be here, but I know who this is. So don't shrug George Giroux. And we are on the advisory writing group for comments. He says watch the so Mary Ellen. That's Brian. And now Stephen Burrows is also on there and then also Neil crystal and recap, the inverse invest. And then just wanted to say that what how this kind of started is because I'm the last person commentating. It came about that you still have this huge list of things that need to be done in the columns that you need help. And so we we formed this mini

Shelley Shrock 58:58

meeting, and Rick brought up he said before you do anything you need to find out what is the philosophy of the common factor if people want. And so with that, we have very seriously this week, put together this way, which I think we're very close now and finalizing that we're hoping to get it out at the end of this week. But we are asking and we would really like to not just send us a newsletter. We'd like it to go out separate. We would like it to go to the whole 97498 the code because a lot of people are outside the city limits that use the comments. And a lot of our volunteers are outside the city that uses the province and we would like to do more to the area which would involve a little bit more than the hidden costs, of course, but we do see the comments as a community resource access to city resource. So we're looking for broader perspectives in that by sending it to everybody in the zip code. I guess just

Greg Scott 1:00:22

briefly.

Joann Kittel 1:00:25

Survey is broken up into five maybe six sections. A survey,

George Giroux 1:00:35

existing uses such as daily exercise and sport activities on Section recurring arts and entertainment events is the second section, private functions. Those be like weddings, memorials, celebrations, and some meetings, workshops and classes and then like that, and the sixth section is a little more open ended asking people to prioritize among these five what they see as the biggest value for them. And also, there's open ended questions pretty much every second asking people to chime in on what they'd like to see.

Joann Kittel 1:01:12

Going forward with the comments. So that's the general layout of the survey pumped out in the last few days and it hasn't even been spread out to the larger advisory group or maybe it did. I'm just looking for the final feedback and trying to get a final round and see if we're on mark with our questions. Yeah. I think until we really know what the community wants, and we can move ahead. I mean, what do they really want out of this building?

Greg Scott 1:01:54

Yes, it comes to Skype. So I'm interested in to what extent have you looked at the history there have been a number of studies done specifically about the comments, not the least of which was it's been included in at least a couple of updates of the comprehensive plan before we run out and start a new effort. Have you looked at the past tables of documents sort of touch this topic

Joann Kittel 1:02:27

though I'm going to one meeting a public meeting because this we first I think we've set with this how they did with the city. You know how Craig when you did the for the City Park is to do a survey like this and then have a public meeting. Once we can get all the information in but I remember going to public meeting before and at that time, it was more about what does the community need? And I remember it was they wanted medical they wanted a gas station and there was a bank or something. You know, it wasn't specific of just the comments that I remember. And I know just recently Heidi and a public meeting that everyone thought was that's what was going to happen and that was more about getting a grant or something. And so I think at that meeting a lot of things I could not attend that meeting so that count, but from what I heard from a lot of people that want to learn more about what to use the columns for.

Jim Welch 1:03:36

Yeah, I think the last survey is what you're referring to in particular probably was it was almost a little bit of a shotgun approach. And so we look at the data, it's hard to pinpoint anything in particular. It seems to be a little bit more than it was put together. What these guys have done here I think has been they've been able to narrow the focus into categories that is going to give us give us a better as to what, what it is people want. But to me the data that I've seen from the past it's just so all over the board, which is you know, maybe that's what went up again. You can't you can't identify a thing or theme that the common should have so and I will also would like to say that along with this, having this group, really disparate group from across the community, I think is going to help us sort through some of that. And

one thing that I think maybe we should not do is send it to the entire zip code because although you have people coming outside of the city, they're not paying for it. So you need to consider whether the citizens within your house should have more of a say than the people outside although I understand. We want to be inclusive. If not, that's a tough

Sandy Dunn 1:05:08

one. Well, we do have

Joann Kittel 1:05:10

that last page. You haven't broken down where do you live? We have full time residents. Full time Yeah, Hutchinson SEO hubs, city limits, either local time resident or outside Yahad city limits local second home so I think it would kind of help us it would break it down as well if you know what if more people are outside than inside but I think we can bring it down to have if they're checking their full time yeah House resident then we're going to see what they're using. I think we're gonna get both are not eliminating them but we can still separate them.

1:05:55

So when you do that analysis, you use that as one of your

Joann Kittel 1:06:00

points right they all fill that part out.

Mayor Berdie 1:06:05

That made sense putting them first. I would put it

Joann Kittel 1:06:09

first Yeah. But at first it's kinda like before you start answering this. I want to move on. We could do that. But that was my question. Like, you see what people were full time people want and see what people who are part time on and then Yeah.

Mayor Berdie 1:06:27

Your production you may want to think about is what are you willing to pay? So you know, I want a lot of things. But if somebody tells me you know, well, you know, I want to three pickleball courts with illuminated at night etc. In all by the way, that's a \$40,000 ask. I might answer differently than if you just say well, what would you like? But I think that there's the I would suggest some kind of quality items that I think would be especially true for people outside the city. To the point that, you know, we pay for this, and I will I've said this before where a five year period city put in over \$250,000 into this building. So it's very easy for me sitting outside the area where I don't have any tax implication or allocation away from other things that I would like to see. To say I want something without any implication and as a matter of fact, it might be a reasonable question to ask if you live outside of the district, city limits. Would you be willing to pay a tax that form a recreational district? So people that don't live in the city? Were asked would you pay \$300 or \$400 a year have a recreational this fan oh by the way, you get bored of the commons etc. They might answer your questions very differently. That's not to say that we

would improve automatically do that but I'm what I'm trying to do is put some qualifications on this so that it's not just oh yeah. I want that. I want that. I want that without understanding that every item costs.

Greg Scott 1:08:19

So I'm confused about the purpose of the survey. I'm hearing very different. From what divergent thinking about what this is, I thought it was about what kind of activities do residents want to see in the building or how the buildings actually used? Not so much project focused on what we need in terms of infrastructure. So what is the what is the purpose of this

Joann Kittel 1:08:50

survey is to find out what do people want of this building? How would you use it is use do people want more entertainment rather than

Greg Scott 1:09:00

community? Okay, that's kind of where my

Joann Kittel 1:09:02

thinking was. Okay. That's why dropping down. Each one is broken down. It's a good question, because we had conversations about that very subject and I think Rick pointed out that there's a very big list of things to work on in the building, which is different. Well, but it is in the sense that it's it's different. But how you prioritize that bonds may gain insight from this. And so that's kind of how we tease it out and say, Oh, I can see that.

Jim Welch 1:09:36

You could theoretically say we don't want to school here. Hit school out now. I'm not saying that, that I'm just this is just theoretical. If you did that, the way you repaired this building would be totally different. But you have to think about instead of just going on and on and on kind of patchworking things. What is this going to be in the future or does your hearts want to see this as and then if you have that knowledge, then it will help determine do we want this in here or should this be over in City Hall for example? So

Joann Kittel 1:10:13

I mean, I know how much we're put into the other circle. Do you have Yeah, you know, our program is to you know, segregate data. And so for you, or you're going to be overwhelmed with all this material coming back and it's like, oh, now how what do we you know, we don't have to probably be creating a spreadsheet and put it out because many of the questions are rated questions, so there's no point rating system. Some of the questions aren't yes and no, I just got started. You know,

Mayor Berdie 1:10:50

I think I will tell you from experience that data entry is very time consuming. The analysis is difficult. I hope somebody understands pivot tables, for example, to be able to do some of it when you do that, and so, to some extent, you you might want to think about you know, automatically read forms or see what costs for those things are Survey Monkey Survey Monkey exactly online versions of it. You know, that the analysis of even a few 100 is challenging.

Sara Heard 1:11:29

So, if thought had occurred to me that if the survey were online instead of paper, you might still want to send people a letter saying please, please, please go online and do this. But the benefit would be if we could use a data collection and an evaluation system a company that the it might be hard to get the the, the results, it might be hard to get the responses, but the processing would be infinitely better.

Mayor Berdie 1:12:16

The other thing that is can be a challenge is duplicates. I mean, you we saw the other one, it was like obviously, you know, before somebody filled out the form for time so I have no answers how to control that, but I lined mine up yes.

Joann Kittel 1:12:40

Right, right. Well, you can everybody who does do it that way and but you also have the option of doing a paper one, like

Mayor Berdie 1:12:48

so. So just the logistics of it are going to be very

1:12:51

challenging. Yeah. My one concern is Yeah, I think it'll be answered but is it there is a science to how you ask a question. I learned a lot in the research I did because they always had much better ways to say it because I you just think you know how to say and I wish we had someone who they have their own knowledge that that can also end up probably people but how you say it? Yeah. I mean, I was I didn't who knew I mean, but the first big research project I did, boy were they helpful but never survey research

Joann Kittel 1:13:22

lab. Survey Monkey about was that probably

1:13:26

they may I can't use them a long time. Have you?

Mayor Berdie 1:13:30

I haven't used it for a long time. I do have a book my cousin's actually wrote a book on our survey. There we go. But it was written in 1974. He says things like you send it out on green paper, you get better results. And

1:13:45

that is one thing we could do is that if we're gonna send it

Joann Kittel 1:13:48

so just circling back to the incidence versus don't restrict usership to city residents. So we get people outside the city that is using it regularly. It seems like allowing them to chime in, especially if we're

going to start asking questions about us by always returning back people outside of the city. would be interesting to see the difference right? If you get in in you know, residence saying a lot more theater and you have outside people saying oh, we want more rec mean then you know, what was time for him to say? Hey, you know,

Mayor Berdie 1:14:34

it's, I think if you're asking the questions, you know, you can separate the results. I think that'd be good. But again, a lot of there's a survey technique, for example, where you say, Here's five uses and you have \$100 to spend on them. How do you How would you allocate that money? Trying to get to think about something instead of just Yeah, I want that. I want that. I think maybe you've got that in your one thing.

Joann Kittel 1:15:04

We're really one of the things we put at the end is categories, abuses have become until we have asked you to come on please prioritize and number one to five, which are most important to you. So that I think what we're really trying to find out, you know what, nobody wants building anymore. You know, I mean, it could go that far. I don't think it would, but no,

Sandy Dunn 1:15:32

but it's to see if people want more events rather than

Joann Kittel 1:15:36

more activities, you know. And adults, I mean, there's, there's some that would like to join the center from the center and not have any community

Jim Welch 1:15:51

input. One thing was for sure that meeting at Heidi seemed to kind of go sideways a little bit. There was intense interest, intense interest. And I don't think we were ever able to figure out what it was that most people want it. So there's a lot of passion out there and I don't know how you you get that lightning in a bottle. But I think they all felt and I agree with them that a survey is a good way to it certainly isn't going to be final solution that's going to tell us everything we want to know. And I think it's been all next year, this time trying to streamline and perfect the survey. I'm kind of inclined to try things and not overthink them personally. I think we should get out there and see what the community says and if they all say the same thing, then we know we're on to something.

Sara Heard 1:16:59

There's one other element we've been talking about. What do people want are the cons fine and it is a valid question like to see the answers. But one of the requirements to the city is a city is bringing people in. In other words the you might find just as an example, you might find that, you know 80% of the people want more pickleball activities, things like that. But that doesn't bring in visitors who use our restaurants in our in our hotels and whatnot. And that is an important part of our economy. So while I liked the idea of collecting the informations I don't want to lose sight of the value of the Commons is a as a tractor attractor, an attraction people to come into our town and spend money.

Joann Kittel 1:18:12

I think a lot of that has to do with the events that we do all those things that we have because my concern is you know, what are we Is this a community center? Is it an event center, right? What what is this?

1:18:36

Why do we have to choose Why do we have to

Joann Kittel 1:18:39

choose I guess

Greg Scott 1:18:42

adding on to it counselor Collins is saying one of the things I'm not hearing directly is what I content providers who create the content that brings people in like Holly plum it's the events, the music events. We used to have lectures from people at OSU would come in and talk and the geology and atmospheric people. I mean, this community is hungry for that kind of content. So I'm not but I think it's sort of the if you provide it, they will come I like that kind of thinking. So I don't know that they're gonna articulate specifically, the content that interests them. I think they're just hungry for it. We just need to figure out a way to encourage it.

Jim Welch 1:19:29

But the question is, is how much is too much?

Greg Scott 1:19:31

I don't think we've ever hit too much.

Jim Welch 1:19:33

You know that the one thing that I heard at that meeting that Heidi had, I think we're probably going way off into the weeds here. But there was a whole bunch of people that had a great deal of anxieties that we were losing this to outside interests. So I think there is a great anxiety in the community now maybe it's just vocal people.

Greg Scott 1:19:53

I don't know. I think part of it was COVID driven. People felt a comment was inactive for two and a half years and people wanted to return to something that was normal. Yeah, I don't know. I mean, I was involved.

1:20:08

In it. Yes. Back. So yes.

Joann Kittel 1:20:12

So what I decided to do that was fantastic.

1:20:17

We just burned out its agenda. It's an intense, I mean, the people I talked to, it's intense, but I thought it was one of the best things. I mean, we have a lot of good things. But yeah, that's arts. And sciences Academy and the talks were amazing. We had a really good one on wave energy which was so high it's a lot of it's its committee that worked hard out because it's tough work even with so many but if we could find some people to start that that would be great.

Mayor Berdie 1:20:46

So, I'm going to suggest that you proceed with your survey. Give us some information. The cost is not exorbitant as long as you're differentiating between those who pay for the building and those who want to use it. The cost. We move forward, see what we get. Whether we do is terrific. You know, I won't argue with you as but somebody has to do it. That's not going to do that for us and last week. They will not survey will not book people. So um but let's go ahead and see where we're at. And good luck with the

Joann Kittel 1:21:34

excellent. We'll see her eight months later. All right. This has been great.

Mayor Berdie 1:21:40

Okay. I think that this falls this this workgroup falls under the city manager. Report to the city managers from the console has been involved in this by the way

Joann Kittel 1:21:54

just as a side piece. There is a presentation this Sunday, or wait a minute this is all says nevermind. Yeah, sorry. It just came on Brian. Maybe they put too

Mayor Berdie 1:22:18

much we need let's take a five minute break or six minutes. We'll be back at 25 minutes to for trade. Wrap it up. Got a couple fairly good sized items.

Joann Kittel 1:22:31

recording stopped. It's recording cat was just put it out right

1:22:38

now what is its

Joann Kittel 1:22:40

wildlife conflict avoid wild bears and bears raccoons spawn through. It just smells boring, but she put this on. Well, that's. I took a picture of it yesterday. So it's like two days.

Mayor Berdie 1:23:01

This is not

Joann Kittel 1:23:03

for the sandwich. Of what? Oh, I was right. Okay. I was. Is this Sunday? Oh no. Not really advertised. mentioned to me putting something is so our invites. You have questions the thing about it is it is what I mean we have a working group

Mayor Berdie 1:23:46

only working in HBK have

1:23:57

turned violations. Start was that sin code

Mayor Berdie 1:24:08

budget heavy and you're set having your meetings separately

Joann Kittel 1:24:12

rather than that.

Mayor Berdie 1:24:16

So I'll be addressing that. But it's on the agenda.

Joann Kittel 1:24:23

Agenda. Miss Kim, you said it was going to be next.

Mayor Berdie 1:24:29

We know there was a family survey we just did.

Sara Heard 1:24:33

Didn't you think we're gonna be right next?

1:24:36

Oh, the city manager said that they can go on out there. Okay. Okay, that's it. Yeah. Because clearly down on the packet when it was originally intended. Okay, but she wanted under new business. Yeah, yeah. Okay.

Jim Welch 1:24:54

Let me ask you. What's the purpose of saying we're gonna

Mayor Berdie 1:24:58

get what you just said? Well, I think that the intent is good. But

Sandy Dunn 1:25:04

I think by

Joann Kittel 1:25:06

starting

Sara Heard 1:25:08

not to do it today, then I'd rather go and work it with them and get it right. I mean, the thing we want to beyond we really were hoping to collect your codification to secure the tradition of

1:25:24

the city manager.

Joann Kittel 1:25:24

Yeah. That's the whole thing. But yeah, that's been such a kind of a huge because

Sara Heard 1:25:31

unless it's written then you can get it.

Mayor Berdie 1:25:33

You know, yeah, it's a fair point. But the also the other side is an independancy Manager. And if he does, he or she doesn't want to do something or doesn't like exactly what I did in this country is possible. Contradiction except if it's quantified. It says these are the words. See that city managers response rather than a you've

1:26:06

got right. We're talking about hypothetical

Joann Kittel 1:26:10

future. You can be a record city manager by the city manager.

Mayor Berdie 1:26:21

You don't want to be questioned, but I think if it's written in if it's part of our ordinance, he does. Or she does not get it safe.

Joann Kittel 1:26:37

Yes, that's why do we have love years

1:26:44

sponsored by Commissioner City Council empowered on a specific tasks of limited duration working with city staff. Actually, it's really working. Working your reporting reporting. You almost have to remove the commission and a commission or city

Sara Heard 1:27:03

sponsored by city count the city manager. It doesn't but

Joann Kittel 1:27:11

then she ends up sounding manager whether or not

Mayor Berdie 1:27:14

so maybe we need but just like we say you know, these are conditions that we should are also Commission's that are

Joann Kittel 1:27:28

managed by the cost. And

Mayor Berdie 1:27:32

I understand the whole thing that we're working under, you got to read the orange recipe. That's a sample so

Joann Kittel 1:27:43

cabling ahead of time. I say that I'd be happy not to see you guys. You were a couple days. We don't

Mayor Berdie 1:27:54

think we Yeah, I think the context was there and we wouldn't ask doodlee doodling works

Joann Kittel 1:28:04

fine for these. Some are much worse than others. Nice handwriting. We want to thank you. I can write very nicely, but I can also write so poorly. This depends on my mood.

1:28:25

I don't hold my pen right. Hold my pen like this. The nuns used to get specific like this. I'm like okay, do I have good handwriting? Handwriting they can hail their pen up Dr. Lance. Facts. Always want to know who came up with this is the only way you should hold your pen.

Sara Heard 1:28:46

No, as long as it's legible. When we were kids is

1:28:49

how it was No, but it's interesting that someone thought that was important to make every one right the same way.

Joann Kittel 1:28:54

I think there's there's no overwhelming believer to the kids should learn to pursue this as they want and to be able to read it so much prettier. But also to be able to read it they'll find stuff later than looks like grief. To them. Oh, that's what you're

1:29:11

less last week. It came across of letters, handwritten letters he wrote in 1955. And and just like him it

Greg Scott 1:29:27

was so perfect.

Sara Heard 1:29:29

And I thought you know, that's about the time. All right, can I sneak it's when I was in school. Probably learning cursive I certainly didn't keep this

Joann Kittel 1:29:48

son only cheats. Can I say what that was? Do that. Yeah. Yeah, wow. All right. Let's go. Go we got an event in progress. Right

1:30:09

in this batch, and that's what I want. My sister's here.

Mayor Berdie 1:30:16

All right. So we will we're there's gonna be a change in the agenda. Posted by the city manager seems very reasonable. We're going to have a discussion.

Sara Heard 1:30:29

Or

Mayor Berdie 1:30:31

I don't see it in here at all, but it was added subsequent to the publishing concept work groups within the city structure. So we're gonna have, we have three people here. They're talking about their vision of what that would look like. And I have I noted to them I have some pretty serious concerns with the initial proposal, the DACA concepts. All right.

Sara Heard 1:31:02

And Sterling I live on Johnny's way, which drove them on crisis. As one of the smallest cities in the northwest, your past does not generate sufficient revenue to hire staff to take care of all the things that citizens typically expect from the city governments, things like police, Parks and Rec Department, library and many. Fortunately, there is a strong sense of community here and numerous people have been willing to volunteer over the years. Many of these people have skills and experience of America's all tiers have undertaken tasks that benefit the city and have accomplished things that would not have been feasible otherwise, even though not always acknowledged and recognized. The scene has in some cases created and in other cases, allowed for the formation of workgroups. We've talked about a couple of them during this meeting today, in many cases or groups has have successfully implemented projects while supporting facilities and people an ongoing basis. For example, the trails committee and the Library Commission. The use of work groups in this community has proven to be very effective. It has facilitated meaningful interactions between volunteers, city commissions and city staff to accomplish projects, some quite major. Most importantly, the work model has helped create a sense of place that is particular to the city of your eyes, to ensure a consistently high standard of volunteerism and transparency, along with the flexibility needed for diverse

Joann Kittel 1:32:37

projects.

Sara Heard 1:32:38

We propose finding over the barriers and I will just say that by just revising the status information that we received just moments ago, and our new definition is a group of volunteers sponsored by a commission or city council and empowered to undertake a specific task of limited duration. Working with city staff and reporting to the city manager in order to safeguard the tradition of volunteerism in your hearts while providing institutional guidance to ensure continuity from one city manager to the next. We propose that the council codify the concept of workbooks in Section 2.08. We welcome any questions federal accounts.

Mayor Berdie 1:33:29

I'm gonna read it off because I want to be abundantly clear. We need to work we are proposing is skirts Oregon Open Meeting Law. And so we need to be very cautious of Open Meeting Law says that any subgroup of a decision making body needs to follow open meeting laws meaning you have to have an agenda. Now, one's been at the meeting minutes of the meeting in some form or another. And that's unfortunate, but that's the way it is and so the Attorney General's writings on this law itself all say that you are working in any form with a body that has decision making responsibilities that you have to follow all meeting

Greg Scott 1:34:25

rules. Take the council out of the loop. Yeah. Goes what it needs to be. We've been down this road numerous times. If it's as long as the city manager is authorizing it and leading it, then it solves

Sara Heard 1:34:42

the problem. Would it be possible to lie to the extent that would allow there to be slugged and understanding when a new city manager comes on board? That this is a really useful practice of the city,

Jim Welch 1:34:55

you know,

Sara Heard 1:34:57

saying and all the guidelines that the state requires, but just so that it's it's in writing because I think there can be issues from one to another and it's almost unfair to new city managers coming into a city like your hearts were this spirit of volunteerism is almost unique. And so our hope is to allow there to be sort of a solidification of what has been reality. But by putting it in even a general sense. It just gives that city manager the confidence to move forward and say okay, this is good to go. They've done it. They're within state law and it has been somewhat of a tradition here so I want to keep

1:35:41

other calm. How do the four groups form

1:35:46

I mean, that's, that's open to discussion, but

1:35:49

who then has a yes or no, because if I could give some examples of groups that might want to form that would be

Sara Heard 1:35:58

okay, if we weren't assuming it would just be some like an organic effort. Okay. That's what I need to know. It would be really challenging for the city manager now, but

Greg Scott 1:36:10

I have a different take on it. I think it needs to originate with the city manager. I think the Commission's is not the right vehicle for the reasons that the mayor has already stated. So just to cooperate. You were saying keep the council out of it.

Mayor Berdie 1:36:25

It's the Sadow Commission and the Commission's Commission's

Greg Scott 1:36:29

are coming that's true. They're basically will link to the council in terms of policy and decisions. So the whole problem gets really simple and I will say with respect to things that Dan was just saying, it will take the new city manager about 60 seconds to put a light bulb to go on when they begin to understand what our tax base is and what it costs to

Joann Kittel 1:36:52

have. But it didn't before and I think that's the concern.

Jim Welch 1:36:59

That is the worry. That's the reason we're

Joann Kittel 1:37:00

trying to do Yeah. The last city manager, all of the groups, as well as conditions wouldn't be squashed.

Greg Scott 1:37:11

I understand that. But I think though, I mean, I don't really care if if the city van and write something in an administrative policy and about the council bless it. And that's one way to do it. You could define it in administrative policies. I think what we're wanting is something that makes sense, but that's why things haven't worked well. And

Joann Kittel 1:37:36

it's kind of a mix place. So that the city manager does not want to reinvent the wheel so to speak. There's something that lets him or her know, and maybe accelerated from some level in 60 seconds to accept the following. So we need openness cameras, but it's the trails group currently in violation of Perkins Open Meeting Law, most likely, okay. And so I think we this is that city has allowed us we're trying to figure out a way to ease it into the city and a straight up link perhaps, but in a way that makes it evil and understood from from the city. government's perspective, it's understood workgroups here, I'm

going to say the manager comes in and it can be explained to them. We use our volunteers to get things by and this is our effort to do it.

Sara Heard 1:38:39

Because I wonder and just occurred to me so I thought through but if the mayor is concerned is that taking defining in our municipal code, or groups, gives them a some kind of existence that makes it more likely that the light of the light will be shown a spotlight of the Open Meetings Act. Can we accomplish what you want to accomplish in a different way? In other words, is this something that could be written into our city mission statement? You know, something like that, is there is there another vehicle other than the Municipal Code? I was thinking something similar to that even though I would love to see some strong kind of affirmation by the council, and one way might be I don't know how this plays but like a proclamation even I guess I'm worried that like if there is no when

Greg Scott 1:39:50

yours administrative policies are policy, they carry weight, and this is things you can do and can't do. It's a perfect place for this.

Sara Heard 1:40:00

I love that idea. My wondering would be how easy is it to change that

Greg Scott 1:40:05

like, council has to vote on it.

Mayor Berdie 1:40:07

Okay, but only once. Okay, yeah, maybe that is the plan. Yeah, I think I I think that comes from Scott is kind of honing in on something that's a good place to put it in order to

Joann Kittel 1:40:21

avoid open meeting. Constraint.

Mayor Berdie 1:40:24

Please read the open meeting laws. Yes. It's more a function of who would who the group is reporting to in terms of decision of City Manager works at the pleasure of the council so they can make in the budget their their budgetary authority, they can make decisions that's been delegated to, but to anything else, it starts to creep into the Open Meeting lines. So the trails committee is is officially working with the city manager. So there's a policy in place for how much they can spend and when they spend decisions about which projects to work on that starts to get a little bit vague or fake, right. But I don't think rises to the level of major concern for anybody. Somebody could say, where are you working in their yard? Not in my yard or next to their yard, not my yard. How did you make that decision? Well, this would be that's something that has bothered me. We're not really following that. You know, I'm obviously a huge supporter of the trails committee. But there is a gray area. I think officially when it reports to the city manager, the city manager delegates, these decisions. I think that that's acceptable.

Greg Scott 1:41:58

I have bought that some time ago before Heidi left. No, there was a general agreement that the trails committee was going to be known as the trails workgroup

Mayor Berdie 1:42:10

or the city manager

Greg Scott 1:42:11

for yes, it's kind of irrelevant. And while we, we have a lot of documents where there's inconsistencies we've got two documents that say different things, is that the same topic, that's an administrative problem yet yet to be identified and corrected. We know that they're there. I'm still

Joann Kittel 1:42:32

confused. Okay. You helped me I mean, are you saying that if something was formalized at the city manager level, to say that workgroups exist, that's basically the only way this kind of idea can happen? Is that

Greg Scott 1:42:53

what you're saying? But also the council approves? The policy. The council blesses the city manager drafts it, and the council blesses it. That's, and it's, by definition, administrative.

Joann Kittel 1:43:07

So bypass stance, like whoever

Greg Scott 1:43:11

the it's policy until the council changes it.

Sara Heard 1:43:14

The city manager can change it, only the council correct. And I think that sort of answers the question. Any

Greg Scott 1:43:22

one of you be really interested to work with us and together about that?

Sara Heard 1:43:30

Sounds like me. Yeah. Yeah. So if you'll have us

1:43:35

we'd like to just spending

Joann Kittel 1:43:37

endless trouble. This is your first work.

1:43:42

I have a question. I still I do have a question. So the city manager says we got some problems with water. I'm looking from CES for some citizens to work with me, blah. Blah, blah, blah. But we've had in the past people that just come together and say we want to do this. So that can happen too. But then they can go to the city manager and say we think this is what he can say. We don't have the time or the staff right now to do that. That to me is got to be the administrative decision that we don't have the bandwidth right now. But you're you're next up once because you said short term, these aren't long term group. I mean, the trails is but didn't you say there's a kind of this is our problem. We're gonna get in, we're gonna figure out like, what's happening right now with what's what are we gonna do with comments? There'll be an endpoint to

1:44:28

that. Or, for example, to come Public Works was first commissioned by art to get a group together that would sort of survey and monitor the condition of road some steps

1:44:41

that would then go through this city manager. Okay, I just wanted to understand

1:44:45

how one thing that is, certainly is how they get formed. In the form of wanting to see manager wants to see it and it doesn't really solve the problem. Anything chocolate.

1:44:59

Well, what if I decide? Three of us whoever want to look in to an adult who hangs them out, whatever, by them would pitch that I would think this is how the Jura city made her and saying you and I might have some data on the data. You know, and this is why we as citizens think that's important we're willing to work on that's kind of where it comes up. It is organic, and it comes from concerned citizens. That see a problem. They want to do something about it and they have a plan for that. They go to the city manager, the city manager says this is great. Go do what you need to do.

Greg Scott 1:45:31

I see it a little differently. I'm not disagreeing with the process. But I think the decision maker in many of these instances is going to be the council.

1:45:42

In the then I'm confused. I'm confused too. So it's administrative.

Greg Scott 1:45:47

All I'm alone is if it's strictly administrative, I agree. But if it's a committee somebody a community says I want something. They want the city to do something.

1:46:01

All they're saying is we're interested in this issue and we'd like to study it and we'd like to bring some recommendations. They're not that's recommendations. They're not saying

Mayor Berdie 1:46:09

like liquidations

1:46:10

are That's it.

1:46:13

That's okay. How do you How would you you'd have to find the JVM together and say, I want to study this and then it tells you

Mayor Berdie 1:46:20

if it comes to the city manager and the city manager then says we're going to I'm going to bring it to the council and the council will vote on it. Right that's that's a that's the

1:46:30

process. Well, that's what I'm saying. Yeah, but

Mayor Berdie 1:46:33

it doesn't come they don't get together and make a decision and then come to the

Greg Scott 1:46:40

or even a recommendation

Mayor Berdie 1:46:41

or even a recommendation. I mean, the ordinance or the act is quite unclear. But what

1:46:48

what I said is people come together they figure out cash this isn't working the streets and we've got you know how to do this. They then gather some data, which is a better way to get someone to say yes, if you can prove your point and they go to whoever the city manager is, and says, Here's what we want to do. And then it's up to the city manager to say we can do that now or we've got to wait a few months. It's a great idea. But yeah, that's how I envisioned that doesn't come to us.

Greg Scott 1:47:12

It's the what we want to do part that's that's the gray area in my head. What What do you mean? A lot depends on what the what is. So if there's a problem out there that people see and it's not administrative, it could be policy could the safety net that's a different okay, I'm just saying, defining both what is

1:47:34

the critical piece of never gatekeeper the city manager he can

Greg Scott 1:47:37

say that the manager will know what's over here. Yes, get out of my office.

Joann Kittel 1:47:43

Really saying the same thing and it just happened with a survey. Yeah, there were a workgroup. They already went to Rick's and then Rick was the gatekeeper. And when they made a presentation, there a workgroup that was formed or the comments, okay, so that's, that's the example now the point that you made that's really important is the formation of a workgroup can come from it for many commissioners, but it goes to Greg or the city manager, you know, for approval. Gate keeps this stuff I used to go to a council, it's a more policy credo that that's that's that's the thing is that the workbook forms like the the survey group, but the column do they need to advertise it to the public? You know, that piece do they need to have a public forum have minutes and do all that? I think that's the bigger piece is the is the workgroup for the survey and for the covenants advertising.

Greg Scott 1:48:52

So the confusion there is wasn't clear to me what they were asking what they wanted from,

Joann Kittel 1:48:58

what I'm saying is that they need to comply with the law

Greg Scott 1:49:03

that says publishing. It all depends on who they're who if the city manager is directing them to answer is no. Oh, good. Good, guys.

Mayor Berdie 1:49:14

We have a workgroup. We have a water, okay, it's functioning under the functions under the city. Okay, guys got it. And when when when they reach a point that say there's a contract that needs to be signed or an agreement in principle, or whatever it happens to be, then City Manager brings it to the cops. Yeah, basically there

Greg Scott 1:49:34

so we've been hearing something a little bit different. These gentlemen are asking how it's codified to to ensure that we're the next city manager is doesn't have to go through a long learning

1:49:45

process. Right, so that we just figured it out. Write it down, and

1:49:52

I mentioned that someone has questions over here. You sorry. I do a

1:50:01

lot of this started with

Joann Kittel 1:50:05

my involvement in parks and comments and we have special projects. We want to get done. This survey is a prime example. Well, we didn't start as a survey group. We started as an advisory group to help crystal get things done. So if they are

Sara Heard 1:50:21

born

Joann Kittel 1:50:23

from a desire of the commission or born from a desire from the council.

Mayor Berdie 1:50:32

What would be the process then to avoid the Open Meeting Law? And I think just as we've been describing it, there's no decision making being made. It's work that's been done. It's only until it's only it starts to require decision peeking. So and saying to do it, going to make a survey or do you know dig a ditch is not necessarily the decision is that once you say here's the survey, here's the data. Here's what we would recommend. It's that recommendation that has to come from the city manager at that point.

Greg Scott 1:51:11

And if you need budget for mailing, the city manager has a lot of discretion on

Joann Kittel 1:51:17

that area. You don't need to come to the council to the process. Or commission like to get this done and recommend to the city manager that he forms a workgroup, right. And then and you would have the quorum

Mayor Berdie 1:51:34

prohibition. So yes, it couldn't have more than two commissioners. For example, in that way, I think we have a little perspective.

Sara Heard 1:51:46

I think there's something can be done. By way of writing this in such a way that takes us out of the the Open Meeting issue for the for the workgroup, and the because the the the language is there's got to be a governing body. The Governing Body is consists of formal art sent with authority to make decisions or recommendations. And you if we define workgroup in the in the city, even in this port code, and say that they just say they don't have authority. Okay, that's the end. That's, it's pulling the plug in and one of the criteria

Mayor Berdie 1:52:45

we will need to run that through our legal ProStaff there is a lot of case law actually, around this term has to do with people trying to circumvent it by saying oh, they didn't. They they were working with independently but they were actually reporting to a decision making body. It gets great. And my understanding is that the courts are pretty rigorous about. So it was to think,

Jim Welch 1:53:20

well, the ironic thing about this is that what they're actually trying to do is make things more transparent and democratic and more open. So yeah,

Mayor Berdie 1:53:30

I think administrative process is the way to do it and will codify it. And, you know, I have, you know, obviously we could have a city manager that would say, I don't want to do that, particularly, I don't want to do anything. That would be a possibility. But I think if it's in like we have a process, there's a way for the feedback and the council provide, you know, we've got a process we obviously wanted to have this process. And this administrative procedure and you're not executing to the administrative procedures.

Joann Kittel 1:54:06

So we're wanting to get this put in writing. So

Greg Scott 1:54:11

it says an administrative policy. It gets a number.

Mayor Berdie 1:54:16

Yeah, I think that's the cleanest way to do

Joann Kittel 1:54:19

it. Who writes that right?

Greg Scott 1:54:21

Yes, where it starts and council blesses

Jim Welch 1:54:23

it. Well, maybe Barry, you can help me right. It absolutely. will

Joann Kittel 1:54:30

be in the room. Yeah.

Mayor Berdie 1:54:33

You're not making a decision. Your formula looks fine. Yeah.

Sara Heard 1:54:39

Okay, thank you very, very much. Your receptivity we really appreciate and the clarification. That's the open mindedness of everyone to work together to make it better.

Jim Welch 1:54:47

Yeah. So we're thrilled that you guys

Mayor Berdie 1:54:52

can we have the you have the accurate and that is it Brooks. We're gonna move forward. We have another I apologize. It's getting late in and we've been at this a long time, but we do have an important

decision to make. In the packet was a description of Homeless Services. And I will take full responsibility. I did not send the accompany request from missioner key Jacobson asking for Monday. That was in here. It's on the table. Yeah, I brought him Oh, nice. It was that it is been it is now in the packet. Right. Right. Right. Thank you. So the question before us is do we contribute to the county for their warming shelter? It doesn't yet. Not quite clear. If this is for an annual contribution. I think it's really more to get things up and running. But they're going to address this more fully. But they are asking the city via HUDs for approximately \$4,500. To helped and I will lead this discussion up which is not typically my preference, but I will say that see walport Who's been asked for \$10,000 just denied that money or a reason that as it was reported in the paper, the other meaning their money's my position on this is that it's an insurance policy for the city, as well as accessibility to services that are beyond this hockey have shelter people, but we do not have job placement services or job training services. We don't have licensed mental health services in our sheltering facilities, etc. Should we encounter somebody that would benefit from those things and be willing to take those kinds of services? If we are participating in this, we can include bus fare with 250 years or more, and asked that they get off in Newport. So the other use case would be we only have 10 beds. If we exceed 10 beds and somebody needs shelter? We would not. It would not be frowned upon us for saying no, you're gonna have to go up to

Greg Scott 1:57:30

Tinubu Does anybody think this is a bad idea? Do you need a motion?

Mayor Berdie 1:57:37

I need a motion.

Greg Scott 1:57:39

So in the form of a motion would be to approve the amount of \$4,473 to Lincoln County for our Board of County warming shelters. Discussion

Sara Heard 1:57:56

individual I suggest individual votes. So

Mayor Berdie 1:58:02

let's start with contract five. Aye, aye. Yes. And the mirror votes yes. It passes.

Greg Scott 1:58:14

On, which was it? There was 4473. And I agree with the mayor, I think in light of the fact that the county is giving us \$60,000 Or Correctional Services in this particular area to provide shower bathroom sink facilities at the Presbyterian Church for the 10 people that we can support. I think we need to this keeps us in good graces with the county

Sara Heard 1:58:46

it's a it's not a problem. It's a county problem. But it's our problem too. And sports spending

Mayor Berdie 1:58:55

money. Yes, I agree. People Okay, moving on. To the next item was Ocean View Dr. announcement in next steps. I want to thank all the people over all the years that have worked on this issue and recognize them. We have received our last signature for the interview Dr. Turnover from the county to the city. So that is a very mixed blessing but it's ours now. I will it will be the next steps at county will take between 30 to 60 days to complete all the paperwork registration of the deeds etc filing of the deeds and then the County County has to vote on it twice. So there's another 60 days to finalize the giving the ocean view drive to the city. So there is no I don't foresee any issues with this colony has been the one that initiated this. They're gonna want to move it forward as quickly as possible. If the road falls into the ocean, let's hope it happens soon. Because we're going to own that that road and good, good, good, good or not so I think that is obvious. positive thing for any kind of equity project the pocket parks are clearly ours to worry about now. So it is our road in or will be our road in probably the Christmas present. Yeah, there you go. That's about you did the math. Boating about Christmas maybe January. So okay, that's that water restriction phase one we are still in it. The water flow this week was slightly less. But hanging in there. We're still well above phase two. Is getting some rain. Got some rain last night. Hopefully by Friday we'll be getting some more rain. Yeah, and it looks to be a substantial amount. Understand that it takes a while for the rain. To work its way down through the forest. But things are looking up. Additionally, we are still working on as it was shown in the city manager's report. A water agreement that's not been signed. Let's be clear. It will be coming to the Council for signatory signature and maybe a mute point but we will have it it would certainly prevent us from going into phase two. And then we can the work team that reports to the city manager and continue its work on forming a long term relationship which I think is beneficial for everybody. Camping ordinance preliminary update the city manager discuss this with me very quickly. Can you just kind of share what your thinking is.

Jim Welch 2:02:10

Basically we're gonna take wild ports and change as little as possible in it. Identify an area where by the water plant where they can camp but to be honest with you, I've been up to my ears in other stuff. So I haven't done much other than read all ports.

Mayor Berdie 2:02:34

Deal. So yeah, it's, again speaking for myself. It seems like a reasonable approach.

Jim Welch 2:02:43

What changes every two months you know, you spend five days writing something and then you find out No, everything's changed. it's just not worth it to me.

Mayor Berdie 2:02:53

And we're having There were some issues with the lock church museum people park camping, destroying property using our city water etc so we need, we do need, I am a firm believer that we need to do something.

Jim Welch 2:03:19

Go to an appropriate

Mayor Berdie 2:03:20

place, but there is no appropriate place identified.

Jim Welch 2:03:23

And we don't have to identify it.

Mayor Berdie 2:03:27

Had to give them an option, right? We have to think you do. Well, we, in our ordinance, we just have to say where you can't camp. Now there are city properties

Jim Welch 2:03:37

here when they're scattered throughout and upon us. I'll be playing Whack a Mole. They'll go from there over to here and that's not good. No. Okay. Get out of there. And yeah,

Mayor Berdie 2:03:46

I'd rather just say go over there. That's it.

2:03:50

Well, let's talk about that. Some Supreme Court

Mayor Berdie 2:03:54

decision that you had to have a place for them to go before you can tell them not to remember the ordinance only had this provide. The attorney advises that you need to you can you can specify where you can camp but you do not have to specify where you can camp. Whether there are areas for example, there's a water tank on the top of Horizon Hill, that would possibly not be included. So you don't have to say it's easy

Sara Heard 2:04:23

to get to or then it's desirable, right? There's difference between

2:04:28

having a place and advertising. I'm not saying you have to advertise we have to have it you have to designate

Mayor Berdie 2:04:34

that if I ask where do I go? If I say where to not see any city property for example, what we could not say you cannot cut camp on any city property. We can say you cannot camp up it commons, green

Jim Welch 2:04:49

space,

Greg Scott 2:04:50

any facility

Mayor Berdie 2:04:52

either. Is there a decision here that we know there's no decision? So it was really just a report to see where we're at and I don't even see it on the agenda. It's camping ordinance preliminary community and commission participation. Let's see we didn't we also skipped one item and I apologize resiliency Council representation. So the resiliency grant is moving forward and they have a work team that is working on various attributes the it seems like this resiliency grant has become much closer, much more closely defined to forms of energy that will help the city should we be cut off from our power. So I was asked to be on the on the resiliency committee. I'm plenty busy. I wanted to see if there was a counselor that would like to participate in that in my standard. Yeah, I'm happy to do it. I got solar panels on my roof and I think it brings some insight

Jim Welch 2:06:08

that some people seem to think that it's magic

Mayor Berdie 2:06:11

somehow warn you it is a lot of work. Okay. Once I thought it was three or four

Jim Welch 2:06:17

times maybe three or four times on work in addition,

2:06:20

it's it's intense.

Mayor Berdie 2:06:26

My hands are pretty full. So if there was somebody in writing agendas, working on several other projects, you may say again, what, what see managers a better handle.

Jim Welch 2:06:42

Dude, I just got an email today about it. It's basically a grant provided by odo to anyone else connected means for providing energy in case of a disaster of some type. So it's especially I think, valuable, potentially valuable because of where we're located. The one on one will get shut down we'll be on our own for who knows how long they're going to ignore us till the last minute because there'll be busy with everybody else. So it's looking at how to what to harden, how to harden it, where it goes, where the stuff goes. How much are we going to try to reproduce

Sara Heard 2:07:36

if it's the big one, basically priority number one sky mission, but what

Mayor Berdie 2:07:42

is what is our MIDI supposed to be doing? So here's the first letter from our since this grant will give you a chance to design hopefully eventually build a standalone renewable energy system within the area of the commons field in City Hall library wastewater, which be a source of safety and

Greg Scott 2:08:03

information for residents and visitors.

Mayor Berdie 2:08:08

But that assumes that the Commons is even it survives exactly, but that's a large part of the workgroup will be gathering information in the community about community needs case of power outage due to some sort of unforeseen event process of building a technical advisory group, which is what we're looking for the participating community data collection and input for the designers involvement and or representation from your commission or committee involvement or other aspects of the city would provide important information needed to design the best systems for keeping Yachats residents and visitors safe during an unexpected power outage. But I don't think that it's you know, this isn't going to help us in a cataclysmic event. Obviously, create a workforce.

Jim Welch 2:09:02

This is a workgroup working under the city manager.

Mayor Berdie 2:09:06

So we're looking for another member from the council. Okay.

Joann Kittel 2:09:09

Sorry, talking to neighbors.

Jim Welch 2:09:13

I was just wondering who else is the project manager is Katherine Tory Torrance, who ran for city council. Who is outstanding, so thank god she's on it because she's handling all the heavy lifting. You have Jacqueline Dantos from Planning Commission. You've got Mark from the planning commission. You've got me whenever I can get there. You've got a couple of consultants that you're dealing with. How often do they meet? Right now? It's at least once a week. I think goods but see she said

Mayor Berdie 2:10:04

number 27 is the first one I know we have something

Jim Welch 2:10:08

else that was camera. 2727 Bobby has a thing I think on either 27th or 28th

Sara Heard 2:10:16

this thing got moved up a day to the day before.

Mayor Berdie 2:10:22

He doesn't she doesn't really probably going to take the cake is the group will meet approximately four times over the next six months and would be requested you can

Jim Welch 2:10:32

the three community engagement meetings focus groups as well. It's going to be more than that.

Mayor Berdie 2:10:37

Don't count on that. Okay. So then that's the request is trying to figure out you know, do we need medical

Jim Welch 2:10:45

services do we need charging stations, how much how much power? What kind of batteries? Where do they go? You have put some up on the hill and some down here. It's

Joann Kittel 2:11:00

not something about that kind of stuff.

Jim Welch 2:11:02

Because that would be good for you.

Greg Scott 2:11:05

experience for you expand your knowledge. It interests me. I'm spending 25 to 30 hours a week right

Jim Welch 2:11:14

now. Working on the database.

Sara Heard 2:11:17

If no one wants to do it, it's okay. I just don't have the time. You look like you're on the verge this is I'm just getting into my busy season and with the with the Shiva. So if this guy was going to be in it, not going

Mayor Berdie 2:11:38

to start up in December or something and be right it's going now we have six months I think what about sharing is from the console. A follow up

Greg Scott 2:11:53

because I think I do understand it a little bit. In

Jim Welch 2:11:56

fact, you've got solar as like plus it's another way to do this. We can we can periodically sit

Mayor Berdie 2:12:04

down with you until you get some guidance. Okay. Yeah, if I can attend the meetings, okay. Okay. Do you have batteries? Yes, I have a very small battery. And it's important to understand, I mean, this is the kind of thing that you know, relate in the media. here but if you don't have a battery when you're

Greg Scott 2:12:22

in the grid power goes off. You do not get your solar energy.

Mayor Berdie 2:12:26

Well of course there's no way to deliver it. It's no storage. Yeah, so but even if you could, batteries aren't cheap battery. I have the smallest battery that I could buy in order to remain have some power. So I can like power my propane fireplace. So those are the kinds of considerations we do not we will not be able to run our water plant or even our heat pump. So my solar system when I'm off grid, it automatically shuts my heat pump off from my water heater off. Then I'm responsible for not running my dryer. heavy loads. Wow. So you know this idea that we're getting enough solar power to heat the building. We need a lot of power and need a huge amount of the this. Look it up we need about 50 amp hours

Greg Scott 2:13:23

to power up this heat pump over here.

Mayor Berdie 2:13:27

It's a lot that's a room full of batteries. It's a garage so that's the kind of thing that we can bring to the table here to see what what makes sense. And there's some other intriguing ideas

Joann Kittel 2:13:39

too, so Okay,

Mayor Berdie 2:13:40

I will I'll take that in I mean, I'd be able to attend out quick, I don't really have much to say but we're still working on the community and commission participation city manager search. Just be aware that the ninth the 10th I believe it's the 10th is when there will be the staker the ninth is community meeting greet of the candidates on the 10th. One of the events is one of the interviews is a panel comprised of stakeholders in the city that's not yet been defined. We are going to be working with FinCEN and associates to define that. Probably I would be advocating for commission chairs. Key people probably business people try to get as broad but you can only have so many people on the panel. So they have some guidance that they will

Greg Scott 2:14:40

be we'll talk through on Thursday when they know who the candidates are

Mayor Berdie 2:14:44

and the water agreement that was simply that it was in the city manager's report that we're pending signing from the southwest Lincoln water districts and we've agreed to it so once it's signed. There is a question whether the city manager alone can sign that or whether the council has to I looking for advice on what the mayor or the mayor happy to spend.

Greg Scott 2:15:19

It's a contract we the mayor signs other contracts

Sara Heard 2:15:21

so I think that's the logical route.

Mayor Berdie 2:15:24

Yeah. Okay. I'm comfortable with it. Okay, that's it.

Joann Kittel 2:15:32

Other business the mayor has no other business. Anything from the council? One item. I just wanted to back to what I kind of started talking about and then like these big stuffs apparently this Sunday, September 24 At three o'clock in the afternoon here at the commons there is a presentation with a odw presenting on while like kind of like avoiding the bears. Well, they're currently kind of was stimulated from concerns about the recent Cougar sightings. I think that was more nor less. But they're talking about all kinds of critters, and it just sounds interesting. So

Mayor Berdie 2:16:22

apparently it's now on the city website as well. It might be relevant for those people on the edge of town

Joann Kittel 2:16:28

who are putting their food waste

Mayor Berdie 2:16:30

their green. Yeah, the bears. Okay. Anything else? Yeah. Thank you, everybody for your patience. Appreciate and you got an hour to

Joann Kittel 2:16:42

recoup and then we started party recordings stopped by I can't believe I just

Parks & Commons Commission Meeting

Summary – September 5, 2023

- **Start of the meeting.** [0:11](#)
 - Welcome to the September 5, 2023 meeting.
- **Present:** Adam Altson, Michael Hempen, Dean Shrock, George Giroux, Meg Simans, Ron Simans, Dan Sterling
- **Announcements and Correspondence** [1:39](#)
 - Congratulating Joanne Kittel on her recent award from the National Association of State Parks. She will be going to Lake Tahoe to receive the award.
 - David Diamond sent an email regarding speed of e-bikes along the 804 (north) and that there should be a ban of e-bikes on that section.. He was referred to the State Parks.
 - Email from Wetlands regarding ph in wetlands and possible causes.
 - Commissioner advised he could not get into the Commons. Facilities Manager advised there are key fobs that can be checked out at City Hall.
- **No citizens concerns on the agenda this month.**
- **Expanding a restroom in the building.** [6:57](#)
 - Patricia, Director for YYFAP, wants to bring up an idea for the expansion of a restroom in the building. She, as an educator, has concerns about children's privacy.
 - They find that sometimes they need more restroom space, and they've been asked to share their space in the restroom before.
 - Is there somewhere in the building to put another restroom?
- **Discussing the need for a green room.** [11:13](#)
 - There has been some discussion about having a private bathroom for the performers, but it is on the radar for next month.
 - How frequent is there an issue with people using the space, mainly with the Celtic festival to provide that private bathroom.
 - It was brought up that there are many capital grants to be had and those funds would help defray the cost of another rest room.
- **Bathrooms for the library.** [18:31](#)
 - Consider bringing in a small bathroom for the library during this next year, so people can't lose track of who's wandering around in the Commons..
- **Trails report and comments.** [22:08](#)
 - George Messersmith, a gentleman who was nice enough to donate a wheelbarrow to the trails team this past week and bought a new one to keep in the trail storage.
 - Written report included in packet.
 - The City Manager was the one that evaluated the area and told them where they could put the bay boardwalk. He was the authority.
- **Outlook Gmail and downloading reports.** [27:51](#)
 - Five seconds to get to the email and getting it to come up and get the reports, and how to download the pdfs.
 - How to get into the Outlook website.

- o The City Coordinator is doing well, and there was a lot of information in her report.
 - o The six of us have been doing a ton of work this past month.
 - o One or two of us should be part of the workgroup, and someone from Polly Plum would be good.
 - o Shelly is looking for outsiders. One or two outsiders.
 - o Lengthy discussion on how to proceed with developing a work group.
- **Closing in the pavilion. [45:31](#)**
 - o Closing in the pavilion could create a whole new wave of code compliance issues, which might include a second egress or even a sprinkler.
 - o The fire code was not met during stormy nights because it didn't meet fire code, and enclosing it wouldn't have changed that.
- **Closing the end of the building. [48:01](#)**
 - o No feedback on the closing of the building or the advisory committee. No information or feedback on fire in closing the building.
- **Who attends the commission meetings? [54:29](#)**
 - o The City has been approached to put a new cell phone tower at the top of the hill on horizon rising hill in horizon.
 - o The city would get some money from it.
 - o The towers have plenty of room for all the cell companies to share them.
 - o A memorial to Carl Miller for the stage in the multipurpose room is needed.
- **Updates on the exterior of the Commons. [57:49](#)**
 - o No updates on the exterior of the commons. No electrical and lighting updates. No updates on heating and air systems.
 - o No updates for leveling the pavement behind the commons for pickleball and basketball.
 - o The oversight committee was going to present their plan for Friends of the Commons Part II, but has not heard from them.
 - o The meeting of Dan, Neal, Rick and Krystal discussed the idea of articulating things to ensure good communication and relationship with City Hall.
 - o The concept of a miscommunication or lack of communication, and how it applies to the general workgroup, not just the commons committee.
 - o The next step is to review the document.
- **Sunset Park north and south. [1:05:05](#)**
 - o The next section for parks, Sunset park, north and south, there has been continuing work, and the plants are doing better than expected. The benches that are in place for 10 years look brand new because they have stainless.
 - o The speaker is trying to get pricing and delivery dates on the benches.
 - o There is only one company that has stainless that is the Natural Structures from Baker City, and they are a small business part of their business.
 - o Megan and Joanne discuss their products.
- **Looking at benches at public works. [1:10:22](#)**
 - o Look at benches at public works, see if they are good enough to install, or if they will be as good as what has been talked about.
 - o Discussion today should focus on what's been discussed.

- o How many benches are needed at Sunset Park south and north, and how many benches will be needed at Peace Park and the pump station.
 - o Archaeological site evaluations are done.
- **How many benches will we need?** [1:14:25](#)
 - o The new benches will be placed in the pocket parks. Three are already part of the budget.
 - o The process to give authorization for future benches.
 - o Memorials around town should be dedicated to volunteer or nonprofit organizations around town, such as YYFAP and Friends of the Library.
 - o Memorial to a loved one could be purchased.
- **How to get more rocks?** [1:20:37](#)
 - o The Lions Club is looking into using a name and a phrase to replace the birth and death of a loved one to bring interest and history to the memorial.
 - o One dedicated to Parks and Commons Commission and one dedicated to this community of volunteers and beyond. Volunteers have raised \$1.5M
- **How to pay for the benches?** [1:23:22](#)
 - o The City Council has just wanted to do policy-learning or approve the policy or not to approve it. They want to make the final decision and it's done.
 - o Betty Perman what about having a special recognition wall in city hall or the Commons.
- **Deciding on the size of the plaques.** [1:30:17](#)
 - o Deciding on the size of the benches, pre-ordering a set size and creating the plaque after the fact.
- **Formalizing the boardwalks.** [1:33:56](#)
 - o Another opportunity for bricks or other ways to memorialize people.
 - o Joanne suggests that the next 10 benches should be organization-based.
- **Plaques and benches for nonprofit organizations.** [1:41:49](#)
 - o Michael has the expertise or know how the plaques can be attached to the rocks in a relatively permanent box.
 - o The current policy is that permanent plaques should only be used to recognize significant monetary or public service contributions to the city of yachts.
 - o In 2013, there are 20,000 of visitor attractions sponsored by clarity. The first part of the policy needs to be eliminated.
- **Making a decision on benches.** [1:49:10](#)
 - o There are two categories of benches, one for each of the five proposed benches, and one for the peace park.
 - o There is a motion to move toward creating a bench policy or changing the wording of the first section of Joanne's proposal.
- **How do you make a decision about a park?** [1:52:12](#)
- **A question about benches.** [1:58:44](#)
 - o There is a sign on the next page. There is another picture of the advantage, and they wanted to make it even more cozy.
 - o The sub-trail should be filled in.
 - o Need to consult with Dylan Anderson from State Parks, because you may not have the authority to touch that area.
 - o Megan's next slide, complete her homework and look for an additional place.

- **How to get access to the rocks?** [2:02:33](#)
 - o Getting the cement there was tough, but it was a perfect idea, and it's a natural place to carve out a place to sit.
 - o Michael has talked to Public Works on the sign at the pump station and Ocean View.
- **Reaffirming our support for acquiring the landmark.** [2:09:50](#)
 - o Last year, the commission voted to make a recommendation to the City Council that they should look into acquiring the Landmark, and they did. They took it off the market, so it can't go back on the market again.
 - o The commission wants to make it a done deal if it comes up again.
- **How to get nine parking spaces?** [2:12:53](#)
 - o How to get nine parking spaces in the viewing area of the bay boardwalk, and how to get seven parking spaces on the boardwalk.
 - o Agenda planning.
 - o Idea 1, have an agenda planning meeting a week or two after each commission meeting to keep current priority items front and center.
 - o Idea 2, meet quarterly, every other month, or meet four times a month to change the structure of the meetings.
- **Flexibility in planning meetings.** [2:19:24](#)
 - o Take advantage of her offer to help and guarantee that the meetings are read and the only thing that comes up is what comes up.
 - o Four people want to be on the advisory group, and it's time to make a decision on which of the four will be on it (Geo, Ron, Dean and Don)
 - o The idea of agenda planning will begin in November, and Dan wants to jump in with his thoughts on moving items to the advisory committee.

Meeting adjourned at 4:30 pm.

Transcribed by Lorraine Fritz Barrett, September 28, 2023

Planning Commission Work Session

Summary

September 12, 2023

- **Planning and Zoning.** [0:01](#)
 - o Present: Marc Sakamoto, Loren Dickinson, Lance Bloch, Jacqueline Danos, John Theilacker, Katherine Guenther, City Planner, Neal Morphis, City Clerk and Kimmie Jackson, City Recorder
 - o One item on the published agenda, Yachats Municipal Code, working on for a number of months.
 - o Discussion held regarding October meeting and whether there will be a quorum.
 - o The first conditional use permit is required in two years.
- **Planning and Zoning Discussion.** [4:43](#)
 - o Tough time filling the MPC, trying to get it half filled. City Planner Guenther suggested a tiered approach, but some conditional use applications may require more information.
 - o Discussion of the timeline.
- **Sorting conditional uses into different categories.** [9:29](#)
 - o A list of conditional uses referenced in the code and how to sort them into different tiers.
 - o Tiered approaches to site plan stuff in cities.
 - o Conditional use for the purpose of this chapter is to allow uses that are similar to other uses permitted outright in a zone.
 - o The only separate application is for Bed and Breakfasts.
- **Tiered conditional use requirements.** [14:02](#)
 - o It's clear to an applicant what's expected of them if they review the code.
 - o If someone comes in with something that's not on the list, we'll consider it, by comparing it to other buildings and uses.
- **The responsibility of the applicant.** [19:35](#)
 - o The importance of providing necessary information, whether or not it's listed to adequately allow for review, and the onus is on the applicant to provide it.
 - o Mark suggests applying for conditional use as a home occupation, although it might not be the right label for a mixed-use proposal.
- **What is a conditional use permit?** [27:14](#)
 - o There are seven different conditional use permit requirements, including building, conditional use and conditional use.
 - o There are two pieces to a building permit, and there are two separate pieces, which are required when applying for a business license, the building permit.
- **Questions to ask about conditional uses.** [33:19](#)
 - o Applying a particular tier to a particular description can be hazardous, because it doesn't tell the whole story. Start with the specifics of the proposal.
 - o Bed and breakfast vs home occupation.
- **Is a change to the plan substantial?** [36:49](#)

- o The speaker gets to make the call on whether the change from park models to tiny homes is a substantial change or not.
 - o The speaker suggests looking at the language used by Oregon City to see if it makes sense for the next meeting.
- **How do you know what you need to provide?** [41:50](#)
 - o The applicant has a good sense of what is expected before they ever pick up the application. Some people don't bother with that.
 - o Some people felt that some of the requirements were a little over the top of what was necessary, but most people want to give their best shot.
 - o Given the proposal, it may take some fine-tuning as the process goes along. It may be better to start off with something that is prepared that can be looked at and made modifications to.
 - o Under the 120 day rule, if the applicant says that they missed items one, three and five on the list, then the application is complete.
- **We need a good site plan for all land use applications.** [51:02](#)
 - o Site plan for all land use applications going forward, not just conditional use. Site plan needs to be standardized in the code.
 - o The goal was to clean up the municipal code so somebody would know what a site plan is when and what is needed.
- **How to standardize the definition of site plan.** [56:46](#)
 - o It could be as simple as changing the definitions or sometimes just the words, like the term site plan.
 - o Katherine thinks it is appropriate to include a section in the code.
- **Changes that don't need to go before Council.** [1:02:54](#)
 - o A change to the application form does not need to go before Council before the 120 day clock.
 - o The application will be deemed complete upon receipt of all the missing information.
- **A flowchart for planning.** [1:07:54](#)
 - o Identify the decisions to put something in tier one, tier two, tier three and tier four, and then decide which of the exhaustive list of possible documentation from an applicant would go with each of those tiers.
 - o The subcommittee report will be back to the commission next month.

We have cleaned the gutters on the Commons and installed additional downspouts. The gutters on City Hall will be cleaned and evaluated this week.

We have installed a channel drain at the front of the disability parking space by the NE Commons doors.

We have installed dec-o-vent vent covers on the east side of the Commons. This will stop water flowing into the vents under the building.

We have completed the installation of a channel drain in the electrical room. There are active springs in the space, causing high humidity and flooding. This caused a shorter lifespan for our electrical panels and dangerous conditions. The springs are now routed into the channel drain with pipes. The channel drain leads to the sump pump basin outside of the electrical room door. Last year, sediment led to pump failure and flooding in both the electrical room and the basement. To address this, we have added a higher capacity sump pump and basin with a better lid to reduce accumulation of sediment. We will install an alarm for the sump pump soon.

The new sink has been installed in the Pavilion. We are still discussing new lights for the space.

We are still looking for a contractor to construct the eave above the mp room back stairs. We are also still collecting siding bids.

The new playground components are on the way.

We have had trees around city buildings pruned.

The door leading into YYFAP was broken and unusable. The screws were rusted and snapped off, leaving the door inoperable. The door is now fully functional again.

The convection oven in the kitchen has an element that is going out. Plans are under way to get it fixed.

The fan in the preschool bathroom has been fixed.

We will have the fence around the playground repaired soon.

We replaced the rusted and seized fan for the stage cooling unit. We now need to fix the variable speed control for the system as it has just failed.

The installation of the new sound system is complete. We had several components that were partially broken. The system is Bluetooth compatible. We have received quite a bit of positive feedback.

We are installing the new short throw projector this week. This set up will allow projection of images behind performers/presenters without casting a shadow on the screen. The screen is hidden behind the back row of curtains when not in use. The projector will be connected to the sound system for a full movie theatre experience.

The space under the stage now has a subwoofer. The space has needed to be cleaned out for quite a while and that process has started. We have also created a diagram for how to store the ladders and tables under the stage. We are asking people will put tables away after events.

We have disposed of many broken tables that were stacked around the stage in an unsafe manner. There is now much more space.

We now have an HDMI converter that allows people to connect their mac devices to the large tv in the mp room.

We now have cord covers to reduce the risk of tripping when we need to run cords along the ground during events.

We are discussing led stage lights. The idea of changing out the house lights in the multi-purpose room is on the table. There is also talk of a better-quality dimmer.

We plan to install an art hanging system on the east wall of the mp room soon.

We found an extra sound system in storage that we plan to install in room 8. There is also an HDMI port we need to have repaired.

We are planning to build some locking cabinets to keep organized cables and other equipment in the mp room closet and on the far-left wall of the stage.

We are back in contact with the piano tuner. We will have the grand piano regularly tuned. Our next appointment is right before Celtic Festival.

We have new toilets at City Hall.

We have additional porta potties around the Commons. We have started using a second vendor and are hopeful that the porta potties will be kept clean and usable.

The double doors by the civic meeting room don't latch correctly. We have reached out to have the motor for the automatic door opener serviced.

We are still discussing location, design and bids for the new reader board.

The Commons Advisory Group is developing the survey we plan to send out to the community. The data we gather from the survey will help us prioritize repairs and upgrades for the Commons. We have had several long meetings discussing future possibilities for the building and its users.

I'm a member of the ODOE Resiliency Grant. I've assisted with providing information, leading a thorough walk through of the Commons and attending meetings. We have a community engagement meeting this Thursday. We're looking forward to hearing community ideas regarding how to best use the funds.

It's become clear that we need more emergency preparedness committee members. I will be taking classes provided by FEMA. I will be attending the emergency preparedness committee meetings in the future. I need to be aware of how the Commons fits into the plans for our community in the event of a disaster.

The Dark Days Festival went so well. People enjoyed the festival and there is talk of another event in the future.

We now have a hoola hoop class, two more yoga classes and one more pickleball session on the community calendar.

Mushroom Festival, Craft Fair, Celtic Festival and the Cape Perpetua Land-Sea Symposium are fast approaching.

We have flu shot clinics in room 3 at the Commons on October 26th and November 8th. We will not have the covid booster available for these events.

We are exploring a wildlife feeding ordinance with odfw. We have already held one community engagement meeting on best practices living in close proximity with wildlife and how to reduce conflict.

Please feel free to reach out to me with any questions or comments. I'm happy to be of service to our amazing community!

Krystal Geisinger

Community Services Coordinator

citycoordinator@yachatsmail.org

541-272-4213

Project updates 2023/10/17

- Fencing and gates around brush box at Public Works Wastewater Plant should be done this week. Work scheduled for 10/18 and 10/19.
- Little Log Church Museum – Engineer working on Scope of Work.
- Boardwalk – Engineer working on design.
- Hwy 101 delineators- A survey request is in to get some information on the shoulder cross slope and shoulder widths. Survey information to be complete around 11/15. Drawings should be prepared to submit for ODOT review by 12/1.

Yachats Area Chamber of Commerce

241 Hwy 101 N; Box 728, Yachats, OR 97498

[\(541\) 547-2345](tel:5415472345)

Tourism Promotion & Visitor Center

July - September 2023

Quarterly Report

Off Season Events	2023 Mushroom Festival- The Festival is this weekend, October 20-22 There are some great new features this year *A keynote speaker and mushroom-themed dinner as the opening event *Sold out guided hikes, mushroom ID Hall, workshops, speakers, vendors, mushroom cafe. *Doing a treasure hunt with locally made mushroom figures that will be placed in participating local businesses. *Workshops and walks are pre-registered activities; the rest are free and open to the public.
Off-Season Promotion	Mushroom Treasure Hunt- For a Fall/Winter promotion, we have purchased locally made glass and porcelain mushrooms that we will place out on our trails each Saturday morning, October 21-March 2. On the Friday before, we will suggest where their hiding location will be. When they find it, they get to keep it.
Chamber Update	Chamber Mixers- Our September mixer was held at The Drift Inn with wonderful attendance and a presentation on workplace culture. Ribbon Cuttings- The Chamber has held ribbon-cutting ceremonies at two local businesses' grand opening and anniversary celebrations. 1st anniversary of Big Dog BBQ and new business Le Stelle Gallery & Studio Trolley- A great amount of energy went into this proposal to the city council and the community in July, August, and September. The Chamber and the City have submitted grants to Travel Oregon, each for \$100,000. We will know if we are awarded the grant in November and will have until April 2025 to complete the project.
Regional & State Activities	Wheel the World Grant- The group is complete with their audits, and our hotels and trails are listed on www.wheeltheworld.com. They are creating our own Yachats landing page that we will place on the Visit Yachats website and share with our participating stakeholders to also share on their sites. I would initially participate in the Travelability conference as part of the grant. I submitted a modification to the grant team to purchase an e-bike wheelchair that will be available for people to loan in Yachats. It is called The Rig by Not a Wheelchair. We are currently working out how and where to loan this from, insurance, and where we will let

	people use it. All work for the grant is due with the grant by December 31st.
Advertising Negotiation	Traditional Print- We have a new round of purchased and placed Ads or written pieces in The Oregon Coast Inspiration Guide, September Oregon Coast Today Quarterly Magazine with Yachats as the Cover image and center two-page article, Willamette Living. Digital- We have placed Ads with Yachats News, participated in select monthly emails sent out by Travel Oregon and OCVA, and made purchases on Facebook and Instagram. We continue to put a lot of effort into digital content creation. Utilizing local people to write educational pieces being shared, photography to match those stories, and video to help tell the story in a digital world. Attached are social media and website analytics on the efforts in that area. Since it was summer, we slowed down our social media presence to focus on off-season promotion. You will see this in the social media reports. It has picked back up again to promote off-season activities. Website- We have recently hired a new company to keep up on the Visit Yachats website to comb it monthly to see how its SEO is performing well, make regular updates, add blogs and photography as we get them, and make sure it has keywords that connect to what people are searching for in our area. The Chamber believes in investing in things that we can share stories about; The wheelchair, the trolley, and the mushroom hunt, events; it will create a memorable experience for people who are visiting and will tell their friends and share their experience on their own social media which in turn into a high-quality promotional investment.
Promotional / Visitors Material	Yachats Visitor Guide- We have produced and distributed Visit Yachats tri-fold brochures. It has a map, including the Cape Perpetua area, shopping, lodging, and dining. tsunami evacuation areas, restrooms, parking, and wheelchair-accessible locations.
Visitor Center	July visitor count: 2,2182 (A record high) The highest day was Sunday, July 9, with 125. The lowest day was Saturday, July 19, with 46. August visitor count: 2,132 The highest number of visitors was Wednesday, August 2, with 117 The lowest number of visitors was Thursday, August 31, with 41

	September visitor count: 1,389 <u>Closed for 4 days for flooring installation</u> (Tues., Sept. 5 - Friday, Sept. 8) The highest number for one day was Saturday, September 30 with 94 Lowest number for one day was Monday, September 15 with 15
Social Media & Website Performance	Please see the attached Analytic report

YACHATS, OREGON

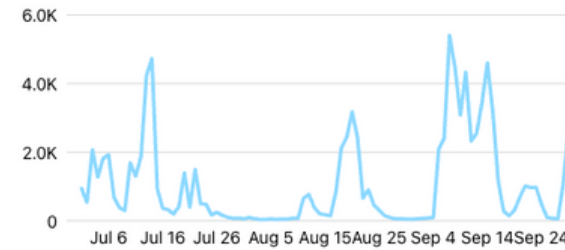
SOCIAL MEDIA INSIGHTS

Account Overview | July - September 2023

Reach

Facebook reach ⓘ

57,663 ↓ 59.7%



Instagram reach ⓘ

9,864 ↓ 25.8%



Facebook Reach 57,663 | -59.7%
Posts 39 | -64%
Stories 0 | -100%

Instagram Reach 9,864 | -25.8%
Posts 25 | -42%
Stories 76 | -43%

Page and profile visits

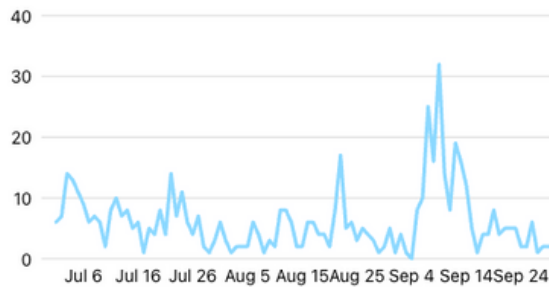
Facebook visits ⓘ

1,898 ↓ 38.4%



Instagram profile visits ⓘ

565 ↓ 33.4%



Facebook Page Visits
1,898 | -38.4%

Instagram Profile Visits
565 | -33.4%

New likes and follows

Facebook Page new likes ⓘ

114 ↓ 18.6%



New Instagram followers ⓘ

138 ↓ 33.3%



Facebook New Likes
114 | -18.6%

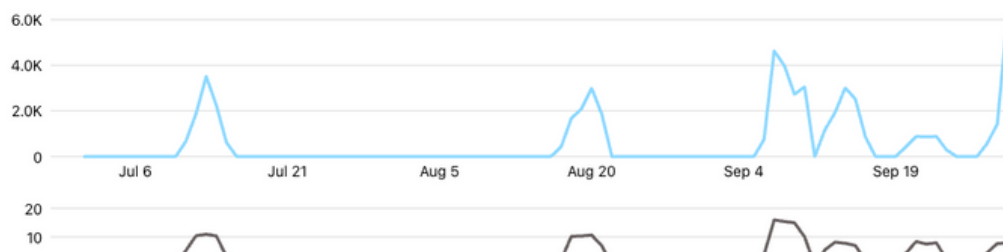
Instagram New Followers 138 | -33.3%

Paid reach ⓘ

44,420 ↑ 98.7%

Paid impressions ⓘ

60,011 ↑ 69.5%



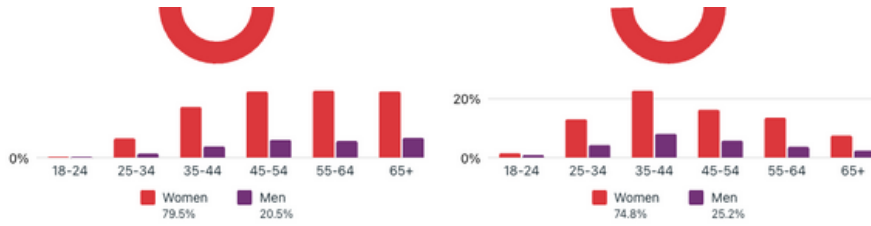
Facebook Ad Trends
Paid Reach
244,420 | +98.7%

Paid Impressions
60,011 | +69.5%

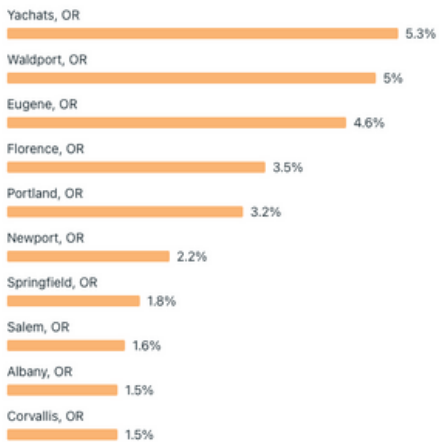
YACHATS, OREGON

SOCIAL MEDIA INSIGHTS

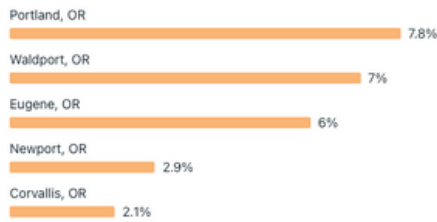
Account Overview | July - September 2023



Top cities



Top cities



Top countries

United States
Canada
Germany
Australia

Top countries

United States
Canada
Nigeria
India



Facebook Best Post
Mushroom Festival
announcement
This post's reach (5,868)
is 702% higher than
your median post reach
(732) on Facebook.



Instagram Best Post
Mushroom Festival Reel
This post's reach (2,700)
is 332% higher than your
median post reach (625)
on Instagram.



YACHATS, OREGON

WEBSIGHT INSIGHTS

Yachats.org Overview | July -September 2023

Traffic

Custom ▼ \$ USD

Traffic Traffic Sources Search Keywords Geography

VISITS

16K

+100% yr/yr

BOUNCE RATE

61.24%

+100% yr/yr

UNIQUE VISITORS

13K

+100% yr/yr

PAGEVIEWS

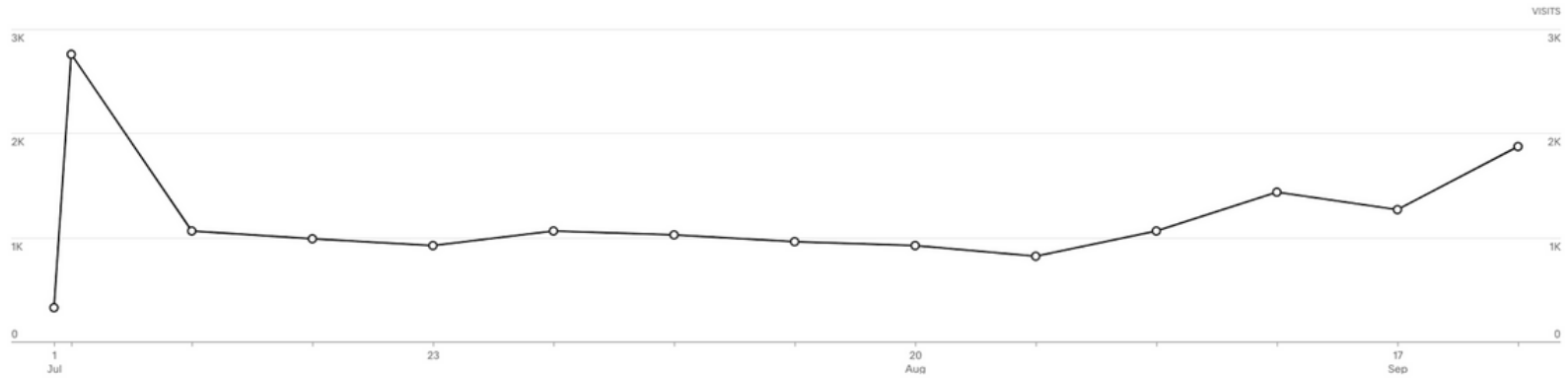
32K

+100% yr/yr

Visits

Jul 1-Sep 30, 2023 • 16,490 Total +100% yr/yr

Weekly ▼



CLICKS

651

+100% mo/mo

IMPRESSIONS

7.9K

+100% mo/mo

CLICK RATE

8.23%

+100% mo/mo

AVG. POSITION

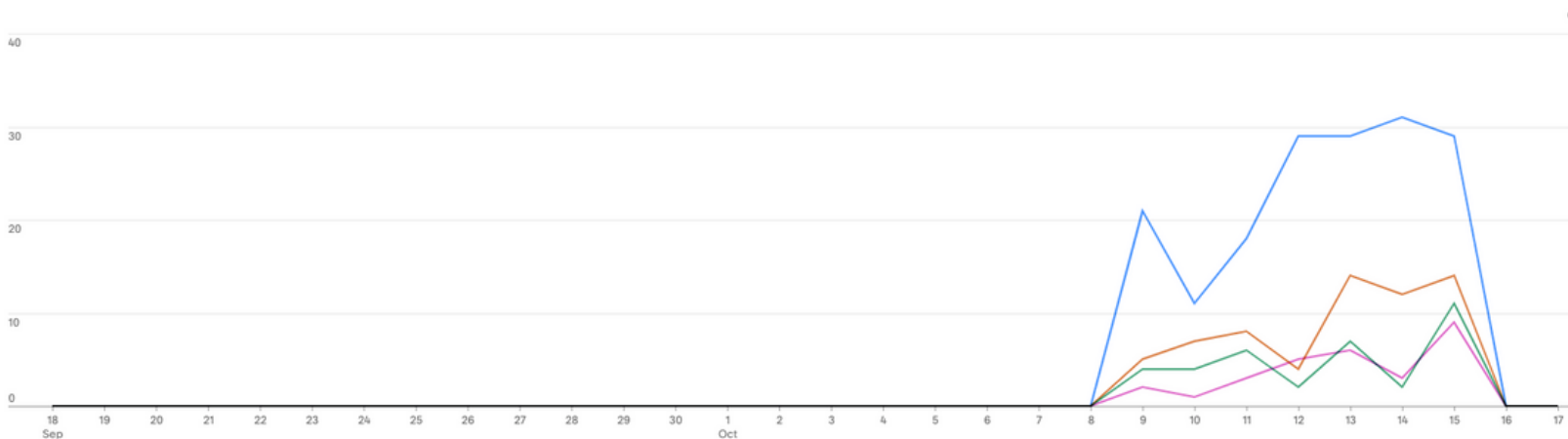
12

+100% mo/mo

Clicks (Keywords) ?

Sep 18-Oct 17, 2023 • 651 Total +100% mo/mo

Daily ▼



YACHATS, OREGON

WEBSIGHT INSIGHTS

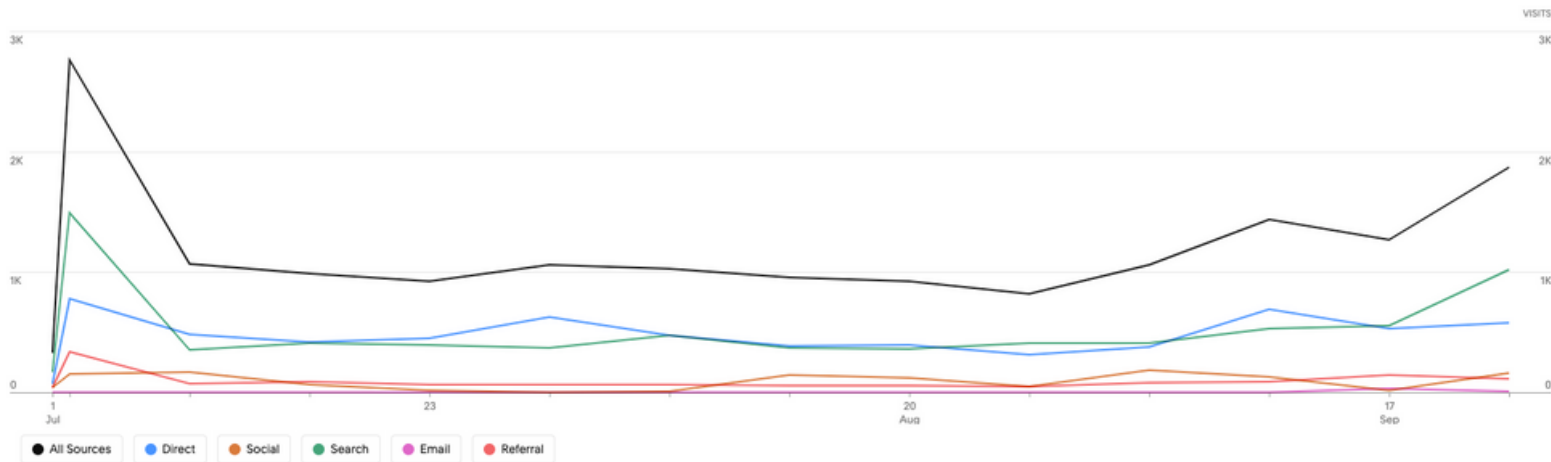
Yachats.org Overview | July - September 2023

VISITS	REVENUE	ORDERS	CONV. RATE	AOV	RPV
16K	\$0	0	0%	\$0	\$0

Visits

Jul 1-Sep 30, 2023 • 16,490 Total

Weekly ▾



Source ▾ Visits

Search	7,312 (44.3%)
Direct	6,560 (39.8%)
Referral	1,316 (7.98%)
Social	1,252 (7.59%)
Email	50 (0.30%)

Referral

1,316 (7.98%)

business.yachats.org	221
yachatsnews.com	215
business.oregonfestivals.org	192
seaperchrvresort.com	105
beachconnection.net	92
oregoncoastmagazine.com	69
oregonlive.com	59
yachatsoregon.org	54
rasaclayworks.com	41
guidetooregon.com	30
traveloregon.com	24



Tourism Marketing
FY 2023/2024 QUARTERLY BUDGET REPORT
submitted

BUDGET ITEM	Tourism Marketing	2023/2024 BUDGET City	FY 2023 Quarter 1 July-Sept 2023	FY 2023 Quarter 2 Oct-Dec 2023	FY 2024 Quarter 3 Jan-Mar 2024	FY 2024 Quarter 4 Apr-June 2024	YEAR TO DATE	Remaining
INCOME								
City Contract		185,000.00	60,000.00				60,000.00	125,000.00
TOTAL INCOME		185,000.00					0.00	185,000.00
EXPENSES								
PERSONNEL/SERVICES/PROMOTION								
Accounting/Taxes		4,100	914.00				0.00	3,186.00
Contracted Executive Director		60,000	15,096.00				15,096.00	44,904.00
Print advertising								
-Ad Design		1,000					0.00	1,000.00
-Purchase		32,000	7,818.00				7,818.00	24,182.00
Digital marketing								
-Ads		19,300	239.98				239.98	19,060.02
Promotional Material (brochures, maps, etc)								
-printing		6,400	1,666.20				0.00	4,733.80
-producing		5,000					0.00	5,000.00
Creative Production								
-Advetorial		5,500					0.00	5,500.00
-Photography		4,500	210				210.00	4,290.00
-Video		6,500					0.00	6,500.00
Fireworks								
-contract		20,000	10,000.00				10,000.00	10,000.00
-additional needs		5,000	2,651.38				2,651.38	2,348.62
Community Grants		15,000	214.00				0.00	14,786.00

Tourism Marketing
FY 2023/2024 QUARTERLY BUDGET REPORT
submitted

TOTAL EXPENSES	184,300.00	38,809.56	0.00	0.00	0.00	36,015.36	145,490.44	
Balance	700.00							

YACHATS VISITORS CENTER
FY 2023/2024 QUARTERLY BUDGET REPORT
submitted

BUDGET ITEM CENTER	2023/2024 BUDGET City	FY 2023 Quarter 1 July-Sept 2023	FY 2023 Quarter 2 Oct-Dec 2023	FY 2024 Quarter 3 Jan-Mar 2024	FY 2024 Quarter 4 Apr-June 2024	YEAR TO DATE	Remaining
INCOME							
City Contract	45,000.00	11250				11,250.00	33,750.00
TOTAL INCOME	45,000.00	11250	0.00	0.00	0.00	11,250.00	33,750.00
EXPENSES							
FACILITY							
Rent	5,080.00	1,275.00				1,275.00	3,805.00
Repair & Maintenance	12,500.00	8,491.85				8,491.85	4,008.15
VC/Restroom - cleaning and supplies	300.00					0.00	300.00
Supplies - Office/Misc	1,500.00	687.89				687.89	812.11
Telecommunications - Phone	1,212.00	301.09				301.09	910.91
Internet	540.00	111.00				111.00	429.00
Cleaning	1,200.00	300.00				300.00	900.00
PERSONNEL/Services							
Contract Visitor Services Manager	18,000.00	4,500.00				4,500.00	13,500.00
Postage	250.00					0.00	250.00
						0.00	
Volunteer Training/Appreciation	1,000.00					0.00	1,000.00
Accounting/Taxes	1,900.00	606.00				606.00	1,294.00
						0.00	
						0.00	
PROMOTION							
Printing	1,500.00	1,434.46				1,434.46	65.54
						0.00	
TOTAL EXPENSES	44,982.00	17,707.29	0.00	0.00	0.00	17,707.29	27,274.71

HOMELESS ADVISORY BOARD

5-Year Strategy Status Report



ACCOMPLISHMENTS

- Selected as of 1 of 8 Communities Awarded State Program
- Formulation of Homeless Advisory Board
 - Declaration of Cooperation
 - IGA
- Selection of Consultants
 - Strategy
 - Homeless Advisory Board



ACCOMPLISHMENTS

- Stood up Advisory Board & Subcommittees
 - Service Provision & Policy
 - Community Engagement
 - Mental Physical Health
 - Finance & Economics
- Unified Program
- Regular Meetings hosted across countywide
- Over 200 participants
- Formulation of Website and Social Media
- HB 4123 & HB 5019 \$1,750,000
- Winter Shelter & Tri-County CoC
- Submission of draft Report to State Dept. of Admin Services

10/16/2023



VISION & MISSION

***“Eliminate Homelessness Countywide
Except due to emergencies and voluntary reasons.”***

***“To ensure that every member of our community has access to the
resources they need, while also working to prevent the circumstances
that lead to homelessness.”***

RESPONSE & PREVENTION ORIENTED



GOALS

- Funding to support the ongoing operations of the System; (Sustainable & Permanent-Mayor Cross)
 - Increasing or streamlining resources and services to people at risk of or experiencing homelessness within the participating cities, county and Tribe;
 - Incorporating national best practices for ending homelessness;
 - Eliminating racial disparities within homeless services within the service area; and
 - Creating pathways to permanent and supportive housing that is affordable to local populations experiencing or at risk of homelessness.
-
- Ensure communication, coordination and accountability between community agencies, local governmental programs and vulnerable populations (Mayor Kaplan)

COUNTYWIDE CHALLENGES & OPPORTUNITIES

- There are over 100 entities helping the homeless. This number climbs when health services are included.
- Nonprofits and faith-based organizations act as primary service providers.
- Most service providers are located along the coast, yet services are needed throughout the county
- Strategy to illustrate how to work together in support of housing, homeless services and economic prosperity



COUNTYWIDE CHALLENGES & OPPORTUNITIES

Housing

Opportunities for Public, Private, Nonprofit Faith-Based and Partnerships

- Emergency
- Transitional
- Supportive
- Affordable
- Market Rate

PRESENTATION OF DRAFT STRATEGY

Preface

Overview

Executive Summary

Identification of Mission, Vision and Required Goals

Background and Analysis

Findings/Challenges

Opportunities

Housing, Services, Economic Prosperity

Budget Resources and Timeline for Implementation

Navigation Center



NEXT STEPS

- Status Report to Cities and County – Late Sept.-Oct
- Publication of draft Strategy-Late Oct.-first of November
- Presentation of Strategy – Late October into December
- Submission of draft to State- November 15th
- Cities and County Approve Strategy - Resolution
- Submission to State of Oregon- end of 2023



IMPLEMENTATION

PHASE II- January/June 2024

- Organizational Operations
- Further thoughtful review and examination by Homeless Advisory Board on Strategy
- Discussion and implementation of workplan
 - Recommendations on sustaining the operation of the Homeless Advisory Board and Navigation Center recommended programs in alignment with goals & objectives

PHASE III – July 2024- 2028

- Implementation of Value Proposition Efforts

Following Programs:

- Homeless Services
- Economics
- Transportation
- Housing Development



THANK YOU



Key policy items regarding permitted camping potential ordinance:

- Camping is allowed on commercial, industrial, public facility, and religious property, provided that the property owner has registered the temporary camping location with the city.
- Camping is also allowed on residential property, within existing ordinances, provided that the campers are family and the owner has registered the temporary camping location with the city .
- Vehicle or tent camping is allowed on commercial, industrial, public entity, and religious property, provided that the accommodations are made free of charge, occupancy is limited to three or fewer vehicles or tents at the same time, and campers are provided access to sanitary facilities.
- Camping is prohibited in certain locations, including certain city property, city parks, open spaces around the city campus, within visual line of sight from a constructed and signed recreational trail on public property, and within 200 feet of a lot or parcel containing an elementary school, secondary school, health care facility, day care facility, or childcare facility.
- Campsites must be maintained in a clean and orderly fashion, with no accumulation of trash or debris around the site.
- The ordinance will reside within Yachats Municipal Code Title Five: Health and Safety
- New definitions will be added only as necessary. Whenever possible, existing definitions in the Code will be referenced.

Penalties for violating the camping code:

- Violations of the camping code are a civil infraction, subject to a class B civil penalty of up to \$600.
- Repeated violations of the camping code may result in trespass from city properties.

Proposed Ordinance

Permitted Camping

All persons participating in a camping program as described this section do so at their own risk, and nothing in this section or chapter creates or establishes any duty or liability for the City or its officers, employees or agents, with respect to any loss related to bodily injury (including death) or property damage, theft or destruction.

A. To allow for legal camping within the city, the prohibitions established in the other sections of this code shall not apply if these allowances are met:

1. The property involved is appropriately zoned Industrial, Public Facility or Commercial in the Yachats Municipal Code AND the property owner has registered the temporary camping location with the city. The city may require the site to be part of a supervised program operated by the owner or its agent; OR
2. Camping is occurring in accordance with a duly executed emergency declaration made pursuant to YMC; OR
3. A special event permit has been issued in accordance with YMC authorizing camping; OR
4. Real property developed and owned by a religious institution, place of worship, regardless of the zoning designation of the property. The city shall require the site to be part of a supervised program operated by the owner or its agent. OR
5. By the owner of a residential zoned property provided the campers are family AND the owner has registered the temporary camping location with the city. (this section is by no means to be interpreted to prevent short term (less than 14 days) camping by family and friends for purposes of recreational usage of one's property unless deemed a nuisance under YMC Chapter 5.08).

B. In addition, and notwithstanding the prohibitions established in other sections of this code, the owner of a commercial or industrial property, a public entity, or a religious institution/place of worship may allow vehicle or tent camping to persons, provided:

1. Such accommodations are made free of charge; AND
2. Occupancy is limited to three (3) or fewer vehicles, tents at the same time, in any combination; AND
3. If children under the age of 18 are involved, occupancy is limited to ONE (1) vehicle or tent and four (4) or fewer campers; AND
4. All items and materials are stored in vehicles or tents or in a separate storage area that is screened from view from adjacent properties and public rights-of- way; AND

5. Campers are provided access to sanitary facilities, including a toilet, hand washing and trash disposal facilities, with such facilities being at least 20 feet from the property line of a residential use if not fully contained within a building; and an inspection is performed by the City to confirm that sanitary facilities are in place, required setbacks are met, and any storage areas are screened, before vehicle or tent camping is commenced; AND
6. A property owner who allows camping pursuant to subsection B of this section may revoke that permission at any time and for any reason; AND
7. Require a tent or camping shelter in a residential backyard to be not less than five feet away from any property line; AND
8. Not require or accept the payment of any monetary charge nor performance of any valuable service in exchange for providing the authorization to camp on the property; provided, however, that nothing in this section will prohibit the property owner from requiring campers to perform services necessary to maintain safe, sanitary, and habitable conditions at the campsite.

C. Notwithstanding the provisions of this chapter, the city manager may:

1. Revoke the right of a property owner to allow camping on property described in subsection A of this section upon finding that the property owner or a camper has violated any applicable law, ordinance, rule, guideline or agreement, or that any activity occurring on that property by a camper is incompatible with the use of the property.
2. Revoke permission for a person to camp on public property upon finding that the person has violated any applicable law, ordinance, rule, guideline or agreement, or that any activity occurring on public property by the person is incompatible with the use of the property.
3. A permission revoked by the city manager is considered an administrative action, and can be appealed to the city council per the process in Chapter 5 similar to a business license hearing, however revocation must be adhered to prior to hearing.

9.50.050 Prohibited Camping Locations

- A. Except as expressly authorized by the Yachats Municipal Code, at all times it is unlawful to establish, use, or occupy a campsite in the following locations:
1. Any City of Yachats park sites developed as a recreational facility or that are designed as public gathering spaces including, but not limited to:
 - a. Green space behind City Hall

- b. Urban Forest and Urban Wetlands including all boardwalks and pathways.
 - c. Prospect Park
 - d. Whale Tail Park
 - e. Sunset and Overlook Parks
 - f. Little Log Museum
 - g. Estuary Boardwalk
- 2. Within visual line of sight from a constructed and signed recreational trail on public property;
- 3. Any public property for which access would require trespass via an easement over private property or restricted city easement;
- 4. The following city-owned facilities, and associated grounds, that are open to the public:
 - a. Yachats Commons
 - b. Yachats Library
 - c. Yachats City Hall
 - d. Public Works Shop
 - e. Wastewater Treatment Plant
 - f. Water Treatment Plant
- 5. Any city property leased to another entity City owned or maintained parking lots unless identified as a vehicle camping lot;
- 6. Public rights-of-way adjacent to, or within 200 feet of a lot or parcel containing an elementary school, secondary school, health care facility, day care facility, or childcare facility;
- 7. Public rights-of-way adjacent to a lot or parcel containing a dwelling;
- 8. On any roadway, sidewalk or walking path or city property closed to the public;
- 9. Public rights-of-way within 100 feet of the edge of pavement of Hwy. 101 or at any municipal facility (Fire Station, Port District, etc) which has not filed the owner registration request as per the initial section of this code.
- 10. Within 25 feet of a riparian zone as identified in YMC 9.52.070

B. Further restrictions:

- 1. Except as expressly authorized by the Yachats Municipal Code, it shall

be unlawful for any person to store unattended personal property within public rights-of-way.

2. Except as expressly authorized by the Yachats Municipal Code or a special event permit, it shall be unlawful to carry out open burning or to have a recreational fire on public property.
3. Any person camping in a motor vehicle or recreational vehicle must adhere to the parking regulations outlined in YMC Section 6.08.010
4. Notwithstanding the provisions of this section, the City Manager may temporarily authorize camping or storage of personal property on public property by written order that specifies the period of time and location upon finding it to be in the public interest and consistent with City Council goals and policies.
5. Camping on any property in which solid waste has accumulated without collection.

9.50.060 Campsite Cleanup

Campsites must be maintained in a clean and orderly fashion, with no accumulation of trash or debris around the site; failing this or failing to adhere to the code in this chapter, will make the campsite deemed unlawful. If a campsite is determined to be unlawful as described above:

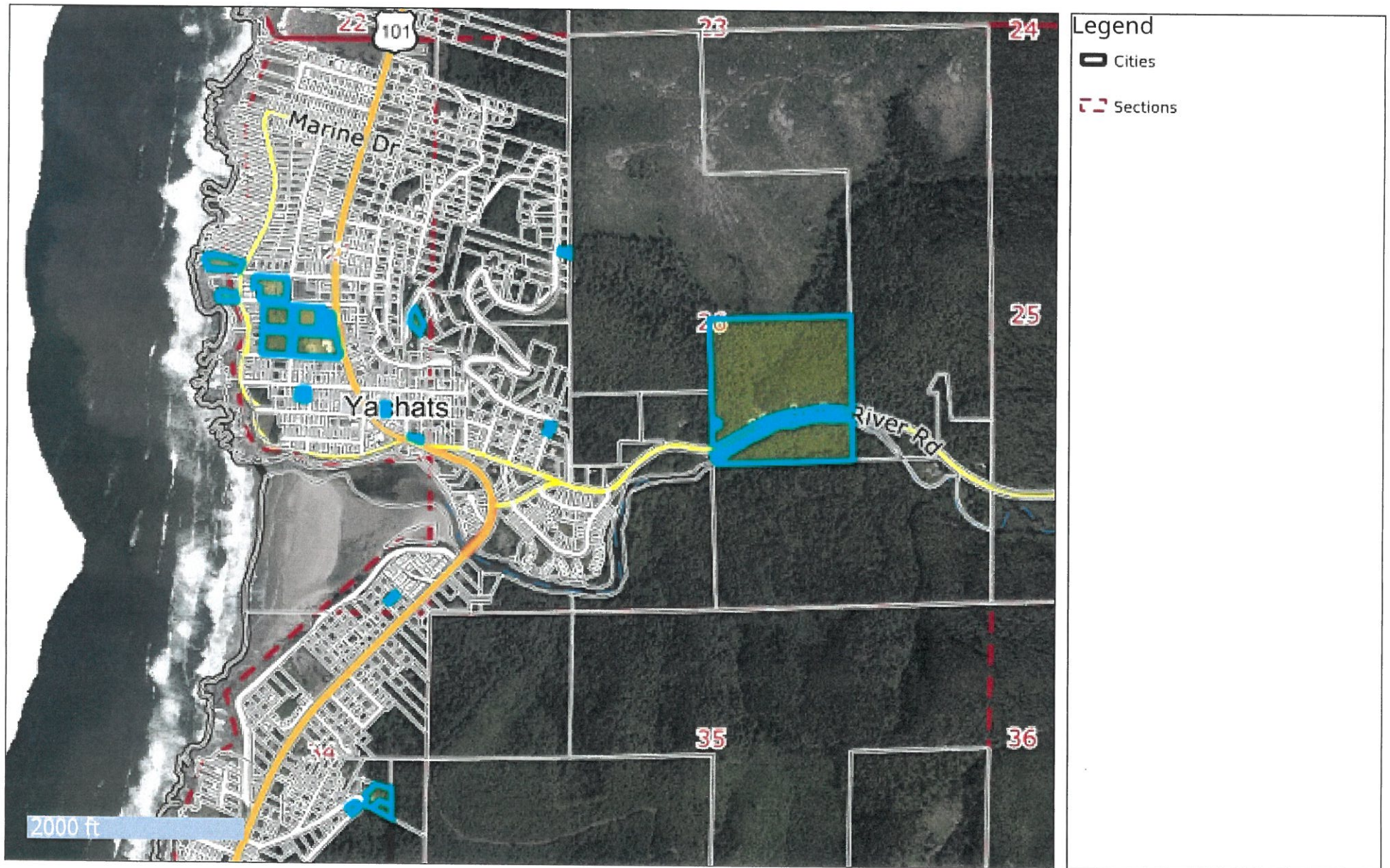
- A. Signs may be posted advising that camping is prohibited. Whether or not a sign is posted, a specific dated and timed notice will be posted and distributed in the area of a scheduled cleanup at least 72 hours before the cleanup.
- B. Notwithstanding previous of this section, cleanup of campsites may occur immediately and without notice if the city manager, Lincoln County sheriff, Oregon state police or designee determine that either of the following conditions exist:
 1. An emergency such as possible site contamination by hazardous materials or where there is an immediate danger to human life or safety;
- C. Illegal activity other than camping. It is unreasonable for the city to determine whether items are of a personal nature or solid waste, as such, at the end of the notice period, all items left at the campsite will be considered waste.
- D. Written notices will be in both English and Spanish.
- E. Copies of all notices shall be provided to the Oregon Department of Human Services and/or the Lincoln County Human Services Department.
- F. Weapons, drug paraphernalia, and items which reasonably appear to be either stolen or evidence of a crime may be retained and/or disposed of by the LCSO in accordance with their department's written policies and procedures.

9.50.070 Penalties And Enforcement

Violations of this chapter:

- A. Are a civil infraction, subject to a class B civil penalty enforced under the rules of YMC, in addition to state laws.
- B. Repeated violations of this title will result in trespass from those city properties unless on business directly with the city department so located.
- C. The City Manager may adopt administrative rules to enforce (Ord. xx)

City-owned Property



Printed on 10 / 17 / 2023

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*ODOE Resiliency Grant
Yachats City Council Update*

October 18, 2023

Community renewable project ?

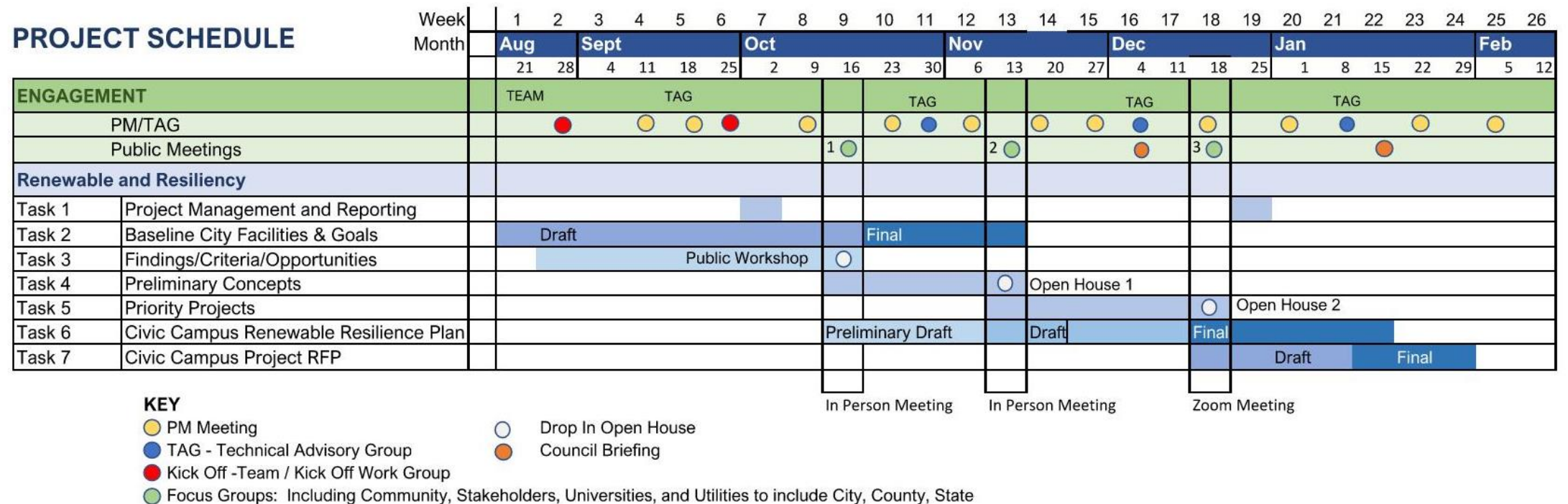
“Community renewable energy project” means one or more renewable energy systems , storage systems, microgrids, or energy related infrastructure that promotes energy resilience, increase renewable energy generation or renewable energy storage capacity and provide a direct benefit to a particular community in the form of increased community energy resilience, local jobs, economic development or direct energy costs savings to families and small business.

Project Participants

[illegible]

ODOE Project Timeline

Community Renewable Energy Planning Grant Schedule



Project Milestones

- City Manager authorization
- Team Kick Off
- Project management and Reporting *October report submitted to ODOE*
- Public Workshop
- Advisory Group meetings
- Preliminary draft due 11/13/2023

Communication

- Yachats Government website [Yachats, OR | Official Website \(yachatsoregon.org\)](http://Yachats, OR | Official Website (yachatsoregon.org))
- Yachats Events Calendar [Yachats, OR | Official Website \(yachatsoregon.org\)](http://Yachats, OR | Official Website (yachatsoregon.org))
- ODOE Grants webpage [Renewable Energy and Resiliency Planning | Yachats, OR \(yachatsoregon.org\)](http://Renewable Energy and Resiliency Planning | Yachats, OR (yachatsoregon.org))
- Yachats News [News Flash • Yachats, OR • CivicEngage \(yachatsoregon.org\)](http://News Flash • Yachats, OR • CivicEngage (yachatsoregon.org))
- Yachats Face book page Facebook - log in or sign up
- Printed fliers distributed around town. [Renewable Energy and Resiliency Planning | Yachats, OR \(yachatsoregon.org\)](http://Renewable Energy and Resiliency Planning | Yachats, OR (yachatsoregon.org))

Next Steps

- Public Forum

October 19, 2023



THURSDAY, OCTOBER 19, 2023

6-8 PM @ THE COMMONS

The City of Yachats invites you to share your priorities for improvements at our Civic Campus

- What role should the Civic Campus play to help strengthen our community, services, and facilities from possible hazard events?
- How might renewable energy and power improvements help increase access, communications and durable power?
- How might improvements benefit emergency response AND provide increased services for our community in our daily lives now?

Food & Refreshments!

Commons Multipurpose Room | 441 Hwy 101 N, Yachats

Learn More & RSVP

www.yachatsoregon.org/418/Renewable-Energy-and-Resiliency-Planning

- Advisory Group Meeting

November 2, 2023

Grant Eligible Costs						
Architecture/Master Planning Consulting Fees Plan Development						
Preliminary Estimate of Costs						
Community Engagement Consulting Fee						
Assessment of Community Goals						
						\$
Engineering Load analysis						
Siting						
Interconnections Studies						
Ensuring Code Compliance						
Transmission Studies						
						\$
Other Expenses (Travel/Printing/Meeting Supplies)						
						\$
						\$
City Contribution						
	Public Works Department					
	Civil Structural Services					
						\$
Grant Request						

Scope of Emergency Preparedness Committee, Mayor, and City Manager (Emergency Operations Plan – April 2019)

Select Abbreviations:

ECC	Emergency Coordination Center
PIO	Public Information Officer
FEMA	Federal Emergency Management Agency
NIMS	National Incident Management System
EOP	Emergency Operations Plan

3.2.1.3 Emergency Preparedness Committee

The Emergency Preparedness Committee supports the City Manager in the day-to-day authority and responsibility for overseeing emergency management programs and activities. The Emergency Preparedness Committee works with the Executive Group to ensure that there are unified objectives with regard to the City's emergency plans and activities, including coordinating all aspects of the City's capabilities. The Emergency Preparedness Committee coordinates all components of the local emergency management program, including assessing the availability and readiness of local resources most likely required during an incident and identifying and correcting any shortfalls. In particular, the Emergency Preparedness Committee is responsible for:

- Leading the City in preparing and establishing plans for emergencies to continue critical operations.
- Maintaining this plan through seeking input and approval from key stakeholders.
- Analyzing the emergency skills required and arranging the training necessary to provide those skills.
- Taking charge of resource inventory, making sure all emergency equipment (such as satellite phones and radios) is working, maintaining call-down lists, supervising the testing of equipment as needed, suggesting new purchases or approaches to emergency preparedness based on regulatory changes, technological changes, or knowledge gained from outcomes of previous emergency situations.
- Identifying, procuring, and administering emergency preparedness grants.
- Assessing the status of the City's compliance with federal and State regulations related to emergency preparedness, including FEMA and NIMS requirements, and seeking to bring the City into compliance as needed.
- Ensuring the operational capability of the City ECC.
- Acting as ECC Committee, which supports the ECC Director, when ECC is activated.
- Presenting reports on emergency preparedness issues to personnel and/or volunteers, elected officials, and media as directed.
- Serving as day-to-day liaison between City and County Emergency Management, as well as between City and Yachats Rural Fire Protection District.
- Maintaining liaison with organized emergency volunteer groups, as well as business, lodging, and community groups, to increase disaster readiness of City residents and visitors.

3.2.1.1 Mayor and City Council

The ultimate responsibility for policy, budget, and political direction for the City government is borne by the City Council. During emergencies, this responsibility includes encouraging citizen involvement and citizen assistance, issuing policy statements as needed to support actions and activities of recovery and response efforts, and providing the political contact needed for visiting State and federal officials. Additionally, the Council will provide elected liaison with the community and other jurisdictions. In the event that declaration of emergency is needed, the Mayor, or designee, will initiate and terminate the state of emergency through a declaration ratified by the Council.

General responsibilities of the Mayor and City Council include:

- Establishing emergency management authority by city ordinance.
- Adopting an EOP and other emergency management–related resolutions.
- Declaring a state of emergency and providing support to the on-scene Incident Commander in requesting assistance through the County.
- Acting as liaison with the community during activation of the City ECC.
- Acting on emergency funding needs.
- Attending Public Information Officer (PIO) briefings.

3.2.1.2 City Manager

The City Manager is designated as the City Emergency Manager and is responsible for continuity of government, overall direction of City emergency operations, and dissemination of public information, including the following tasks:

- Ensuring that all City personnel and/or volunteers develop, maintain, and exercise their respective service annexes to this plan.
- Supporting the overall preparedness program in terms of its budgetary and organizational requirements.
- Implementing the policies and decisions of the governing body.
- Ensuring, through the City Manager, that plans are in place to protect and preserve City records.
- Coordinating the activation of the City ECC which supports the ECC Director, when ECC is activated

Project updates 2023/10/17

- Fencing and gates around brush box at Public Works Wastewater Plant should be done this week. Work scheduled for 10/18 and 10/19.
- Little Log Church Museum – Engineer working on Scope of Work.
- Boardwalk – Engineer working on design.
- Hwy 101 delineators- A survey request is in to get some information on the shoulder cross slope and shoulder widths. Survey information to be complete around 11/15. Drawings should be prepared to submit for ODOT review by 12/1.



City of Yachats

Public Works
500 W. 7th St.
P.O. Box 345
Yachats, OR 97498

Date: October 16th 2023
To: Rick Sant -Interim City Manager
From: Rick McClung, Public Works
Re: 23/24 FY Public Works CIP's **Subject:** Status of Projects

Hi Rick,

In this report I will be going through the highlights of the 23/24 FY Capital Projects status. For only being in the FY for 3.5 months (29% of FY) we have moved mountains to get projects started and a few are complete. Dave and I are producing a lot of results, and we are proud of our accomplishments so far this year. But the engineers have had a hard time keeping up with the huge number of tasks we are delegating to them, and it makes us report delays on projects. We are not the only entity that wants to get projects done after the pandemic. We are currently working with 2 different engineering firms- we might need a 3rd if the city is unhappy with the current project pace.

The 23/24 FY and the 5 year CIP plan has a lot of projects -more than we have ever had.
Thank you,
Rick McClung

Below is the list of Public Works projects and their status.

STREETS	
Loma to River Rd Engineering	Began Engineering Scope of Work
E. 2nd Construction	Complete
Hwy 101 Curve Delineators**	Surveying is schedule
Gimlet Gates	Needs to go through the city process

STORM DRAINS	
E. 2nd Storm Drain Construction	Complete
Stormwater Master Plan	Done by end of year

WASTEWATER	
Hanley Drive Sewer Manholes	Waiting for Standards to be completed
Collection Design Standards	Approved contract
Annual Inflow and Infiltration Rehab	
Multi-VFD Upgrades	Ordered
Submersible Pump Plug Install	In last stages of engineering
Main Pump Station Improve	Discussing with engineer of record
UV Disinfection Control Upgrades	Investigating
Man Doors PW Bldg. #2	Investigating
Public Works Slide Gate	
PW Rehab - Rollup Doors	Investigating
Shop Lighting Update	Complete
GIS Mapping Hardware	Investigating
Actuator Valve (Spare)	Ordered
SBR Waste Pump	Complete
Contingency	

WATER	
Water tank Design Development	not this year
Water Tank Seismic Engineering	Engineering has tasked
Water Plant Clarifier - Rehabilitation	Hired consultant -consultation in 6 weeks
Annual Hydrant Replacements	Fall/summer work
E.2nd Waterline Construction	Complete
Analysis / Engineering SWLCWPUD	Interim team manager
Plant Backwash Recycle System	Estimated completion 11/7/23
WTP Upgrade CIP Annually	Rebuilding CL2 system
SCADA Upgrade	Analyzing ph, ntu, and meter #'s for next update
Service Truck w/Lift	Complete
Service Truck - Ranger	Complete
Public Works Slide Gate	Getting quotes
Property Acquisition	Working with owner -she is getting an agent
Contingency	

Public Works is also working on the following projects.

Delineators –

- We have received a \$20k upfront ODOT grant, and the rest will be reimbursed once the project is complete. The initial ODOT funding is to hire an engineer to oversee the project and hire a contractor. Once the project is complete the remaining grant will pay for the balance.
- We hired an engineer “insert and the scope of work is attached.
- The engineer indicated he needed to finish up weather sensitive projects before starting this project. I think he has scheduled the surveying of the project area and it is going to take a few weeks to happen. The surveying is the very first thing needed to create engineered drawings - which is required in the language of the grant.
- I haven’t heard anything from the engineer in a while -that’s why I sent the email yesterday.
- The exact type of delineator is still an option, might be a good time to get public input on an ODOT approved product.

Boardwalk on Oceanview Dr. from Beach St. to 101

- Hired an engineer to design the structure, apply for an Oregon Parks and Recreation Department (OPRD) \$750k grant and oversee the construction. The engineer’s scope of work is attached.
- The main goal is to gather enough engineering and design information to fill out the extensive ORRD grant application by the end of the year.
- The grant could be from \$0 to \$1,000,000 -we just don’t know. From my point of view the grant results might create a fork in the road that requires the city to make new financial and project decisions.
- Archaeology is required on these native grounds before construction can start. An archaeologist has been hired to examine the construction area for artifacts. Results are not in yet.
- I haven’t heard anything from the engineer in a while -that’s why I sent the email yesterday.
- Undergrounding the electric lines still needs a cost estimate and plan.
- It might be a little early, but there is a lot of community input that will be needed to pick out the lighting of the boardwalk area and street -it’s a little more complicated than you might think.

Little Log Church Museum

- City Manager and I met with engineer to discuss the current structural report and possible options to move forward.
- Engineer wanted to set up a meeting with the Lincoln County planning dept and the city to discuss building code options, but could never get a response from Lincoln County
- The engineer has expressed that there are options to rebuild the museum that do not require conditional use permits from the county and the construction can be straight forward.

Gimlet Drive Gates

This project has been on the back burner for a number of years. Public Works has done what we can, but this project has a lot of complex issues that need to be reviewed by the city before we proceed. **Please read the attached report.**

Public Works Standards

Currently the city has been using the 1991 Lincoln County Standards. Most cities have their own public works standards for construction, and we have tasked Civil West to create this manual. **Attached is an example of a manual.**

1,000,000 Reservoir Seismic Evaluation

This project has been identified in the Water Master Plan and with this information the city will know if a seismic retrofit or a complete replacement is needed. This report is a necessary tool to apply for grants that are currently available on a yearly basis.

Property Purchase Next to Water Plant

I have contacted the property owner, and she is now asking \$220k for the property. Currently she has no representation from a realtor and needs to find one. The city needs to advertise for a realtor to represent the city to make if fair and once selected a contingent offer can be made based on current market comparison and a geotechnical evaluation.

SWLCWPUD

A lot has been happening in the background.

The manager is leaving the PUD and his last day is 10/20/23 (this Friday) They are trying to recruit someone to fill the position. PUD staff and I will be the interim manager. Since their staff doesn't have upper level knowledge and experience I'll be helping the PUD with engineering, project management, plans, grants, budgets, writing technical reports for the Board and the Yachats long term agreement. The immediate focus will be 6 million dollars of water line construction that is half loan and half loan forgiveness.

It is my goal to create a strong and healthy bridge between the City of Yachats and SWLCWPUD. At this point I don't know how time consuming the interim help might be. I might be able to handle it on my own personal time or I might be asking the city to enter into an agreement like they did with the forest service water and wastewater plants operations.

Public Works Staffing & Succession Planning

Public Works has been understaffed since 2012, this is when this city started going through the long process of identifying the need for a city manager. Over the last decade public works understaffing issues have been put on the back burner because of the high turnover of city leadership.

About 3 or 4 years ago Council recognized these issues by approving a budget that included 3 new hires added to public works staffing. Once again, public works has been put on the back burner because of leadership issues.

As time went by, public works had 2 staff move on which caused public works to drop down to the very basics of keeping the water on and the wastewater treated.

Interim City Manager Rick Sant immediately recognized this issue and facilitated the hiring of 2 new employees. These employees need to be trained and it takes time to train. Once the staff is orientated, we will work on hiring the 3 additional FTE's identified in the budget.

The city has a level 3 water plant and level 1 distribution system that is governed by Oregon Health Authority (OHA) The wastewater plant is a level 3 and the collection system is a level 2 governed by the Department of Environmental Quality (DEQ) Although public works is hired by the city, our top tier boss is the OHA & DEQ. **Attached is the qualifications to run a level 3 water plant and a level 1 distribution system.**



DATE: August 26, 2020

TO: W. John Moore, Mayor and
Yachats City Council

FROM: Rick McClung

SUBJECT: Gimlet Drive Gates Mitigation & Type of Gate

Now that Council has approved the new location of the gates, we need to figure out next steps.

Council tasked Public Works with:

- Research Arm Gate w/card lock system
- Cost of installation

Because of the short time between the last Council meeting and the due date of this report the project is just now beginning to gain traction with the research portion of Council request.

Public Works is working with the Cities Engineer of Record to help reduce staff time during the discovery/Research portion of this project. Below are the engineers recommendations.

Rick

I think what you want is referred to as a "Barrier Gate." The photo in your report is a product manufactured by a company called DKS. They are a reputable company that makes all kinds of gate operation solutions. The specific web page for these products is <https://www.doorking.com/consumers/parking>. The local representative for DKS is Outdoor Fence in Salem (<https://outdoorfence.com/>). They are a reputable fencing

company that has done a lot of work on several of our projects over the years. Probably the easiest thing to do is contact Outdoor Fence and just start working with them to figure out the details and get a proposal from them to do the work. They do installation work and can provide more accurate cost information than we can. They also install many automatic gate operator systems, and they may be able to offer some suggestions to work with the gates that you have.

Some concerns we would have would be related to the harsh coastal environment. It would probably worth spending additional money to install the most corrosion resistant products they offer. Even then, some of the mechanical and electrical components might not last as long as you would like. I'm not sure there is anything you can do about that other than install the most corrosion resistant equipment you can.

Let me know if you need any other assistance from us on this project.

Thanks.

Christopher J. Brugato, P.E.

Westech Engineering, Inc.

3841 Fairview Industrial Dr. SE Suite 100

Salem, OR 97302

PH 503.585.2474

FX 503.585.3986

Public Works input

At the time of this report, Public Works has not yet contacted the vendors identified in the engineer's report.

This does not mean we can't keep moving forward while we wait for details

Let us assume the project might cost \$15,000 to \$20,000 -Question then becomes how will the City fund this? The adopted street budget cannot absorb the cost of this project. I feel we have two options.

1. If we want to get the project constructed this year, we will have to amend the Street CIP project list and make this a CIP to fund the project.

2. Keep the gates where they are at “for now” and put community locks on them. Let the discovery process continue to happen and put a well thought out gate project on the books for the next budget year.

My personal preference would be option 2 because of these outstanding tasks that need to be completed before construction.

- Surveying of the 2 gate locations
- Project cost
- Public outreach
- Public Approval
- Funding mechanisms

Council Question:

After review and discussion, how does Council wish to proceed, option 1 or 2?

Historical information from previous Council meetings

8/19/20

The “locked” Gimlet Dr gates have raised the interests of homeowners that live in the Blackstone/Horizon Hill Rd neighborhood. What they are concerned about is if there was a wildfire or natural disaster that blocks Horizon Hill Rd to Spruce Street that there would be no way

for them to exit the neighborhood if the Gimlet Dr. gates are locked, thus blocking an auxiliary exit.

As noted in previous Council reports, the section of Gimlet Dr between the gates is not recognized as a City right-of-way street. The steepness of this section of road ranges 22% to 26% grade and our City code says 20% grade is the maximum allowed. Even with the gates open, there are significant safety issues. Parts of the road receive little sun and become slippery with vegetation growing on the road, creating additional vehicle hazards and safety issues.

Currently, the gates are open as per implementation of resolution 2020-121 adopted by Council on June 24, 2020.

The City met with the Fire Dept to gain knowledge of the history and issues surrounding Gimlet Dr. from their perspective.

- Street is too steep to drive fire trucks on.

- Current gate locations are causing a lot of issues. The Fire Dept has received many calls for help from drivers being stuck at the gates because they cannot turnaround or backup.
- Fire Dept suggested moving the gates to a much more driver friendly location so they can turnaround safely.
- Fire Dept recommended using the same lock system as Hancock Forest Management uses on their gates and they can be re-programmed. This would allow the code holders to be able to open the gate if it is locked

Mitigation Proposal

Gate placement to mitigate vehicle safety

Lower Gate

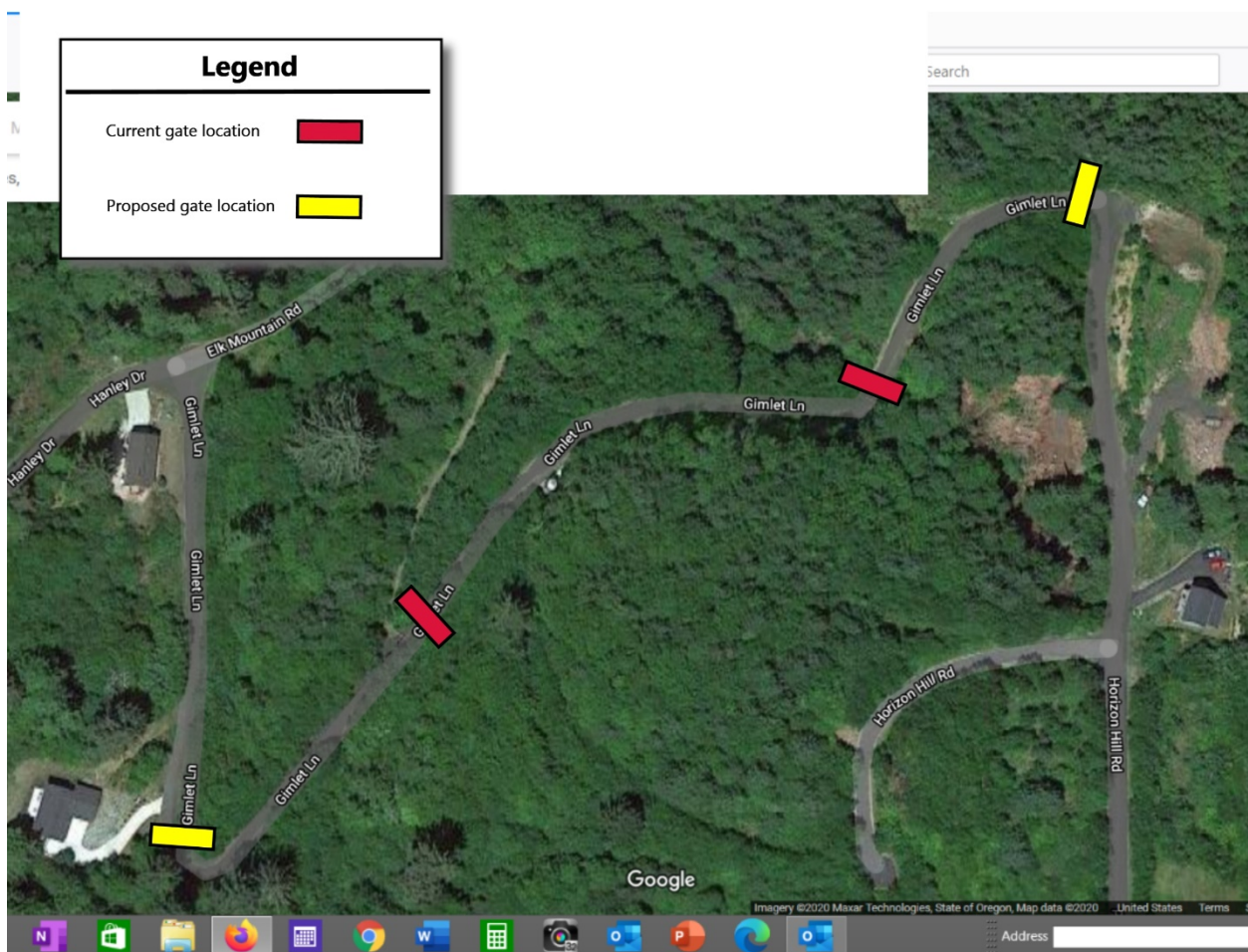
- The proposed gate located on the bottom of Gimlet has been moved so it can be seen as soon as a vehicle enters on to Gimlet.
- This removes the mystery of how far the road goes before it is closed, deterring drivers from going up the road in the first place
- Provides a better area for vehicles to turnaround

Upper Gate

- The Proposed gate location is in the same spot as originally proposed
- Provides adequate vehicle turnaround

Type of Gate

- This is still under consider
- Consider a Card-Lock electric swing arm gate of some sort





DATE: August 19, 2020

TO: W. John Moore, Mayor
Yachats City Council

FROM: Shannon Beaucaire, City Manager

SUBJECT: Gimlet Drive Gates Mitigation

Historical Council information is attached to this memo.

On August 5, 2020, the City Council requested that Mr. McClung and the Yachats Fire Department visit the site and provide information on:

1. Advise on whether to move the same gates or install different gates at the recommended locations.
2. Recommend signage language and location.
3. Provide a topographical map, if possible, to demonstrate slope.

As of August 12, 2020, a site visit was scheduled for August 14, 2020 at 10AM. Additional reporting will occur at the August 19 Council Meeting.

Council Question:

After review and discussion, how does Council wish to proceed?

Historical information from previous Council
meetings



DATE: August 5, 2020

TO: W. John Moore, Mayor
Yachats City Council

FROM: Rick McClung, Public Works

SUBJECT: Blackstone Gimlet Dr Gates Mitigation

The “locked” Gimlet Dr gates have raised the interests of homeowners that live in the Blackstone/Horizon Hill Rd neighborhood. What they are concerned about is if there was a wildfire or natural disaster that blocks Horizon Hill Rd that there would be no way for them to exit the neighborhood if the Gimlet Dr. gates are locked, thus blocking an auxiliary exit.

As noted in previous Council reports, the section of Gimlet Dr between the gates is not recognized as a City right-of-way street. The steepness of this section of road ranges 22% to 26% grade and our City code says 20% grade is the maximum allowed. Even with the road open, there are significant safety issues. Parts of the road receive little sun and become slippery with vegetation growing on the road, creating additional vehicle hazards and safety issues.

Currently, the gates are open as per implementation of resolution 2020-121 adopted by Council on June 24, 2020.

I will be present at the Council meeting to provide additional details and answer questions.

The City met with the Fire Dept to gain knowledge of the history and issues surrounding Gimlet Dr. from their perspective.

- Street is too steep to drive fire trucks on.

- Current gate locations are causing a lot of issues. They have received many calls for help from drivers being stuck at the gates because they cannot turnaround or backup -causing a very dangerous situation.
- Suggested moving the gates to a much more driver friendly location so they can turnaround safely.
- Recommended using the same lock system as Hancock Forest Management uses on their gates so they can be re-programmed. This would allow the neighborhood to be able to open the gate if it is locked.

Two Types of locks on gated roads –(from Hancock Forest Management)

- The first is a combo lock that can be re-programmed. It's a simple lock that can be purchased at Home Depot. These locks are not typically used because they can easily be broken and must be replaced frequently.
- The second type is a Best Lock which uses a key. These locks can be changed by changing out the internal core. That's the standard lock and they're expensive but high quality. You must contact Best Locks to have a specialty key series created for your company/agency.

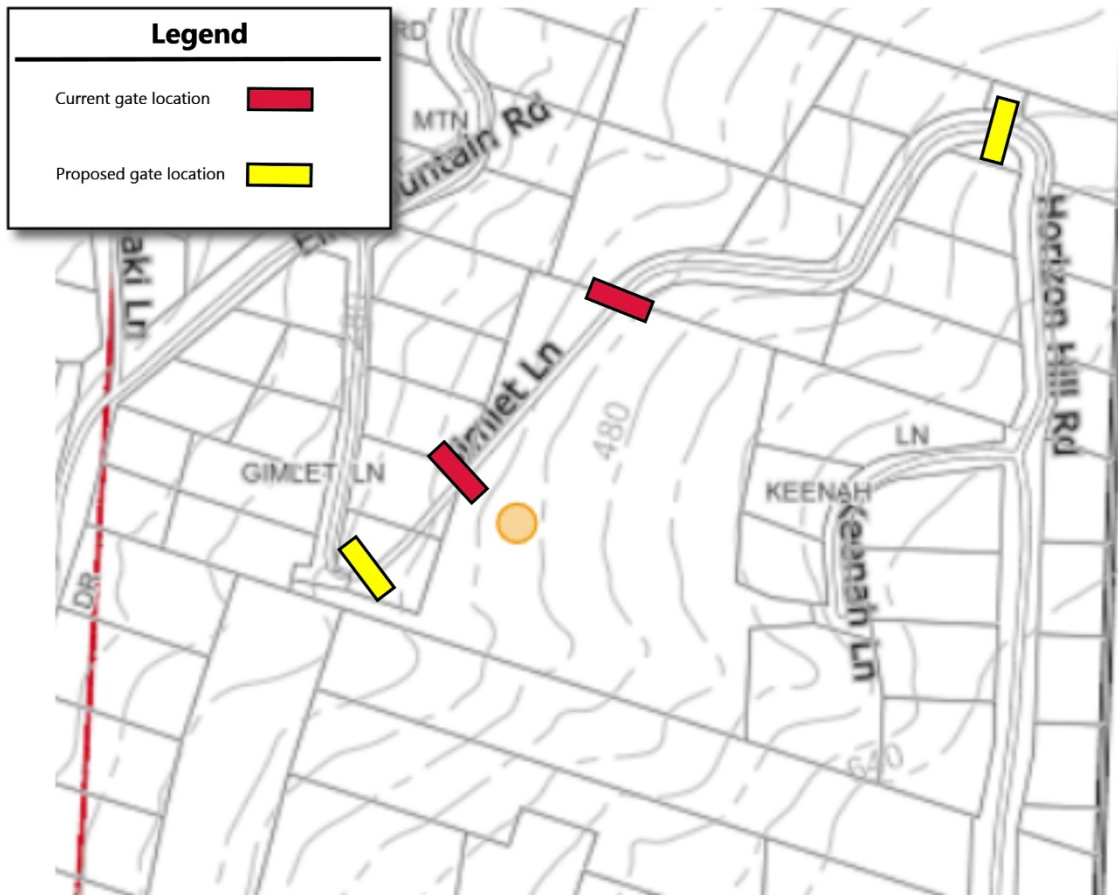
Recommendation after discussion with the Fire Department:

New gate locations/locks

- Keeps drivers off the 22%-26% portion of Gimlet.
- Allows for a driver to turnaround more safely, although the turnaround areas do not meet street standard codes -it helps mitigate driver safety.
- Programmable locks allows for the evolution of different key owners by reprogramming the lock once a year.

Council Question:

1. Does Council authorize the relocation of the gates, and installation of appropriate signage, for turnaround safety and onto City Right of Way?
2. Does Council authorize the purchase of Best Locks, reprogramming once per year, and issuance of keys annually to all homeowners on Horizon Hill Road?





DATE: June 24, 2020

TO: W. John Moore, Mayor
Yachats City Council

FROM: Shannon Beaucaire, City Manager

SUBJECT: Gimlet Lane

Attached, please see the history in the memorandum presented to Council on November 22, 2019. This was originally raised in April 2019 with a concern over access in case of a wildfire.

On December 5, 2019, the City Council authorized working with the Blackstone homeowner's association to turn over gate keys, erect signage, and ensure safe access for emergency purposes.

The City has had discussions with representatives of the homeowner's association and have been unable to come to an agreement. It is once again fire season.

It is recommended at this time, that we install the signage as directed and chain open the gates in order to implement the direction given by Council on December 5, 2019.



**CITY OF YACHATS
RESOLUTION NO. 2020-121
A RESOLUTION OF THE CITY OF YACHATS, OREGON
REGARDING GIMLET LANE**

WHEREAS, on April 16, 2019, the Council was requested to review opening the gated section of Gimlet Lane for emergency access purposes and allow a secondary access in case one access was blocked by fire;

WHEREAS, after consideration of the professional opinions of the City's engineer, attorney, planner, and public works, the City Council again discussed the recommendations and research at its December 5, 2019 meeting and resolved in Resolution 2019-102:

- That the City erect signage on city property indicating that the portion of the road not owned by the City is privately owned and caution should be utilized;
- The City is to work with the Blackstone homeowner's association to turn over gate keys and establish a utility easement; and
- The City will encourage the homeowner's association to work with appropriate entities to encourage safe access for emergency purposes.

WHEREAS, City staff has had discussions with the Blackstone homeowner's association representatives.

NOW THEREFORE, the City of Yachats resolves to install signage and open the gates to allow for emergency access purposes.

Passed and adopted June 24, 2020. This Resolution is effective upon adoption.

CITY OF YACHATS

By: _____
W. John Moore, Mayor

ATTESTED TO BY:

Shannon Beaucaire, City Manager



**CITY OF YACHATS
RESOLUTION NO. 2019-102
A RESOLUTION OF THE CITY OF YACHATS, OREGON
REGARDING GIMLET LANE**

WHEREAS, on April 16, 2019, the Council was requested to review opening the gated section of Gimlet Lane for emergency access purposes;

WHEREAS, after review and research it was determined that the City did not own the gated section of Gimlet Lane (Attachment A);

WHEREAS, after consideration of the professional opinions of the City's engineer, attorney, planner, and public works, the City Council again discussed the recommendations and research at its December 5, 2019 meeting,

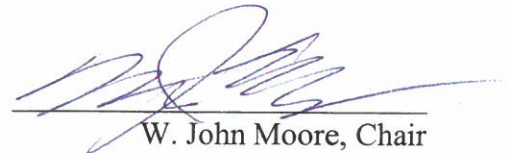
NOW THEREFORE, the City of Yachats resolves as follows:

- That the City erect signage on city property indicating that the portion of the road not owned by the City is privately owned and caution should be utilized;
- The City is to work with the Blackstone homeowner's association to turn over gate keys and establish a utility easement; and
- The City will encourage the homeowner's association to work with appropriate entities to encourage safe access for emergency purposes.

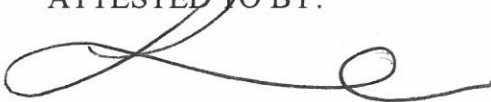
This Resolution memorializes action taken by the Council on December 5, 2019 and is effective as of that date.

CITY OF YACHATS

By: _____


W. John Moore, Chair

ATTESTED TO BY:



Shannon Beaucaire, City Manager



DATE: November 22, 2019

TO: W. John Moore, Mayor
Yachats City Council

FROM: Shannon Beaucaire, City Manager

SUBJECT: Emergency Access on Gimlet

On April 16, 2019, Mr. King and Mr. Hofer requested that the gates on Gimlet Lane be opened for safety reason and to have traffic be allowed one-way going down Horizon Hill Road to Gimlet Lane.

After investigation, it was determined that the portion of the road that was blocked with the gates was not owned by the City but the homeowner's association. Council received testimony on July 3, 2019 from the City's Engineer of Record, Westech that a breakaway gate requires frequent repairs and it was dangerous to open the gate due to the steepness of the road. The safety issue was confirmed by the City's Planner, Dave Mattision. Both the engineer and planner recommended securing an easement for the City's utilities and that the road not be made public. The engineer looked into an electronic gate for vehicles going downhill, the cost upwards of \$10,000 and in an emergency the electronics might fail. The engineer also indicated that they recommended against pedestrian traffic in the area due to the liability.

Rick McClung stated the previous Mayor and Council asked Public Works to install the gates and Public Works has been using that road to service the pump station. The engineer and the City Attorney recommended that an easement be obtained for the City's utilities, installation of private road signs be installed at each end of the roadway, and that the keys to the gates be turned over to the homeowner's association. The Council concurred to get an easement for the properties of concern.

Mr. Lauritzen and Mr. Musial indicated that they recalled that the previous Council accepted the street from the homeowner's association.

Subsequently, numerous team members reviewed materials related to the subdivision. This is a summary of that research:

- Staff Report August 2005 to Planning Commission from Planner Larry Lewis

Gimlet Lane. *Gimlet Lane will be a steep road due to topographic conditions. There is a question whether or not this Gimlet Lane can be constructed with slopes that will allow for regular local traffic, or if it would only accommodate emergency vehicles. Every effort should be made to make this connecting road accessible to local traffic. The ability to accommodate local traffic would alleviate increased traffic on the existing portion of Horizon Hill Road. Yachats street design standards allow for a road to have a maximum slope of 20% however, a reduced slope is preferred. YRFPD has requested that Gimlet Lane have an all-weather surface, i.e. chip-seal, asphalt, etc.*

The 'Gimlet Lane' name needs to be approved by the Yachats Rural Fire Protection District.

Conclusions - Gimlet Lane. *Gimlet Lane shall have a minimum 40 foot right-of-way with a minimum 16 foot wide asphalt road and public walk surface, and maximum 20% slope. The street name shall be approved by YRFPD and the City.*

- Findings and Conclusions September 2005 Order to Applicant – Conditions of Approval

It is ORDERED by the Yachats Planning Commission that Case File #1-S-PC-05 for the requested fourteen (14) lot Black Stone II Subdivision be and is hereby approved. Said approval is subject to the following conditions:

Gimlet Lane. *Gimlet Lane shall have a minimum 40 foot right-of-way with a minimum 16 foot wide asphalt road and public walk surface, and maximum 20% slope. The street name shall be approved by YRFPD and the City.*

Letter from Larry Lewis to Jonathan Monschke

This decision will become effective on Tuesday, October 11, 2005 at 4:30 PM unless an appeal is filed with the City of Yachats.

- December 2011 Council Minutes – gates were installed
- 2013 Letters between Public Works Director Larry Blanchard and Northwest HOA Law Center discussing the fact that the City never accepted ownership of the streets
- 2014 correspondence between Mr. Blanchard and Mr. Musial indicating that the HOA is requesting that the City develop an agreement will pay the City to accept the streets.
 - Mr. Blanchard's correspondence indicates that the payment is \$10,048. Mr. Musial provided a check for \$8,471.20

- The notes listed as Option A refer to Gimlet Way – but do not definitively identify the portion of Gimlet in Question
- December 11, 2014 Council Minutes
 - State that Blackstone HOA agreed to pay \$10,048 for option A. There was discussion about the deficiencies that resulted in the City rejecting the street system in the subdivision. Blanchard said Option A includes only a slurry seal, but if the core samples come back showing that more work would be necessary then Option B would be required to bring the streets up to City Standards. There was consensus to spend \$250 for the core samples so that the Homeowners Association can be told which Option will be necessary before any decisions are made.
- January 8, 2015 Resolution bringing streets in Blackstone Development to City Standards.
- Maps
 - June 2003 showing Gimlet as a nature trail with Emergency vehicle turn around/access
 - July 2004 Showing Gimlet as a trail Connecting Gimlet and Keenah
 - September 2014 Memo Showing a Lincoln County Map the portion of Gimlet in question as the current status shown on a map printed November 22, 2019.

What is missing from all of this documentation is specific information regarding this small portion of Gimlet Lane.

All discussions have focused on safety. Recollections are that that specific portion of Gimlet is too steep to be safely navigated. The road was never conveyed to the City and the Engineer and Attorney have provided their recommendations.

The current recommendation is that the City obtain an easement to maintain its utilities, that signs be placed at either end indicating that the road is private, and turn over the keys to the gate to the HOA. The street is under their ownership and they can determine whether to open the gates.



City of Yachats
PUBLIC WORKS DEPARTMENT
500 W. 7th St.
P.O. Box 345
Yachats, OR 97498

MEMORANDUM

TO: Mayor-Ron Brean, Council President-Greg Scott, Council-members; Sandra Dunn, Barbara Frye

FROM: Larry R. Blanchard, Public Works Director

**DIVISION/
SECTION:** Public Works Department/ Engineering Division/Street Systems Pavement Management

RE: Blackstone Subdivision

SUBJECT: Operations and Maintenance of Blackstone Street System

Lawrence Musial, a Board member of the Blackstone Homeowners Association came before the City Council during the December 11th, 2014 City Council Meeting and asked the City Council to accept the Streets in the Blackstone Subdivision. Acceptance of the Streets would be contingent upon the Blackstone Homeowners Association payment to the City of \$10,048 under the Option "A" Proposal from the June 20th, 2013 letter from the City of Yachats Public Works Director.

The remaining criteria to determine whether Option "A" or Option "B" is acceptable is the completion of Core Sampling of the Asphalt and Crushed Rock. The City Council authorized the Public Works Director to proceed with taking Core Samples of the Asphalt and Crushed Rock under the Asphalt for the Streets in the Blackstone Subdivision.

Core Samples indicate that the Asphalt depths in the 11 sample location average between 1-3/4" to 4-1/2" inches thick, and crushed rock averaged between 6" and 11" inches thick. Street Standards typically require 2-3 inches of Class "C" Hot Mixed Asphalt, and 6" - 8" inches of Compacted Crushed Rock. If repairs are made as recommended by Option "A" the Streets in the Blackstone Subdivision would provide at a minimum Twenty-Year (20) Life prior to the next major Asphalt Deep Patching and/or Asphalt Overlay.

Recommendation

- 1) Accept the offer from the Blackstone Homeowner Association to accept the Streets in the Blackstone Subdivision contingent upon the payment of \$10,048 to the City of Yachats to repair the streets according to Option "A" as described in the June 20th, 2013 Letter from the Public Works Director of the City of Yachats.

- 2) The formal process of accepting the Streets by the City can be researched and the necessary documentation required can be outlined in future correspondence between the Blackstone Homeowners Association and the City.
- 3) The Public Works Department will include the work outlined in Option "A" in the 2014/2015 Street Repair and Rehabilitation Work described in the 2014/2015 Capital Improvements Plan. This work is estimated to be completed prior to June 30th, 2015.

Cc: Pavement Management File
Nancy Batchelder, City Recorder

Attachments: June 20th, 2013 Letter from Yachats PWD
CoringBlackstone12192014 Spreadsheet

CITY OF YACHTS

Cost Item #	Description of Work To Be done	Number of Units	Units	Number of Hours/Units	Cost/Hour or Cost/Unit	Cost of Work
Repair 1)	Hanley Way Saw Cut, Remove AC, Regrade/Compact and Install HMA Class C	70	Square Feet	70	5	\$350.00
Repair 2)	Gimlet/Hanley Saw Cut, Remove AC, Regrade/Compact and Install HMA Class C	16	Square Feet	16	5	\$80.00
Repair 3)	Hanley Saw Cut, Remove AC, Regrade/Compact and Install HMA Class C	225	Square Feet	225	5	\$1,125.00
Repair 4)	Hanley Saw Cut, Remove AC, Regrade/Compact and Install HMA Class C	4	Square Feet	4	5	\$20.00
Repair 5)	Hanley Saw Cut, Remove AC, Regrade/Compact and Install HMA Class C	4	Square Feet	4	5	\$20.00
Repair 6)	Hanley Saw Cut, Remove AC, Regrade/Compact and Install HMA Class C	4	Square Feet	4	5	\$20.00
Repair 7)	Hanley Saw Cut, Remove AC, Regrade/Compact and Install HMA Class C	16	Square Feet	16	5	\$80.00
Repair 8)	Hanley Saw Cut, Remove AC, Regrade/Compact and Install HMA Class C	36	Square Feet	36	5	\$180.00
Repair 11)	Gimlet Way Saw Cut, Remove AC, Regrade/Compact and Install HMA Class C	36	Square Feet	36	5	\$180.00
Repair 12)	Gimlet Way Cut, Remove AC, Regrade/Compact and Install HMA Class C	75	Square Feet	75	5	\$375.00
Repair 13)	Gimlet Way Saw Cut, Remove AC, Regrade/Compact and Install HMA Class C	60	Square Feet	60	5	\$300.00
Repair 14)	Gimlet Way/Horizon Saw Cut, Remove AC, Regrade/Compact and Install HMA Class C	60	Square Feet	60	5	\$300.00
Repair 15)	Core Sample thin areas to determine if a Slurry Seal or Overlay is required to retain @ least a Twenty Year Life	10	Locations	10	25	\$250.00

CITY OF YACHTS

Street Repair and Rehabilitation

Property Owner: Blackstone Development Street R/R
Contractor: Home Owners Association

Page: 2
Date: 12/31/2014

Address and Tax Lot of Property:
Numerous

CITY OF YACHATS

Asphalt Thickness
Crushed Rock Thickness

Coring #	Description of Location of the Coring	Depth of Asphalt	Depth of Rock	Units	Comments
1	Center of the Intersection of Hanley Drive and Saki Lane	2-3/4"	8"	Inches	Standard is 2-3 inches of Class "C" Hot Mix Asphalt over 6-8 inches of 1"-0" Crushed Rock
2	Saki Lane 15' North of Hanley Drive Westside of Saki Lane	4-1/2"	6"	Inches	Standard is 2-3 inches of Class "C" Hot Mix Asphalt over 6-8 inches of 1"-0" Crushed Rock
3	Saki Lane 140' North of Hanley Drive Westside of Saki Lane	1-3/4"	9"	Inches	Standard is 2-3 inches of Class "C" Hot Mix Asphalt over 6-8 inches of 1"-0" Crushed Rock
4	Hanley Drive 176' West of the Intersection of Hanley, Gimlet, and Elk Mtn Road north side of Hanley	1-3/4"	10"	Inches	Standard is 2-3 inches of Class "C" Hot Mix Asphalt over 6-8 inches of 1"-0" Crushed Rock
4-A	Hanley Drive 76' West of the Intersection of Hanley, Gimlet, and Elk Mtn Road Center of Hanley	1-3/4"	9"	Inches	Standard is 2-3 inches of Class "C" Hot Mix Asphalt over 6-8 inches of 1"-0" Crushed Rock
5	Intersection of Gimlet and Horizon Hill Road, Center of Road	3-1/4"	6"	Inches	Standard is 2-3 inches of Class "C" Hot Mix Asphalt over 6-8 inches of 1"-0" Crushed Rock
6	180' North of Gimlet/Horizon Hill Road Center of Horizon Hill Road	1-3/4"	11"	Inches	Standard is 2-3 inches of Class "C" Hot Mix Asphalt over 6-8 inches of 1"-0" Crushed Rock
7	151' North of Gimlet/Horizon Hill Road eastside of Horizon Hill Road	2-1/4"	7"	Inches	Standard is 2-3 inches of Class "C" Hot Mix Asphalt over 6-8 inches of 1"-0" Crushed Rock
8	308' North of Gimlet/Horizon Hill Road westside of Horizon Hill Road	1-3/4"	7"	Inches	Standard is 2-3 inches of Class "C" Hot Mix Asphalt over 6-8 inches of 1"-0" Crushed Rock
9	413' North of Gimlet/Horizon Hill Road eastside of Horizon Hill Road	2-1/4"	6"	Inches	Standard is 2-3 inches of Class "C" Hot Mix Asphalt over 6-8 inches of 1"-0" Crushed Rock
10	550' North of Gimlet/Horizon Hill Road westside of Horizon Hill Road	2"	7"	Inches	Standard is 2-3 inches of Class "C" Hot Mix Asphalt over 6-8 inches of 1"-0" Crushed Rock



City of Yachats

PUBLIC WORKS DEPARTMENT

500 W. 7th St.

P.O. Box 345

Yachats, OR 97498

Laurence Musial
1111 Yachats Way
Yachats, OR 97498

June 20th, 2013

Subject: Blackstone Sub-division Public Improvement Acceptability

Re: Street System Repairs and Rehabilitation Work Prior to City Acceptance for Operations and Maintenance

Dear Mr. Musial;

We discussed earlier this month that the City of Yachats-Public Works Department would be conducting an Overall Condition Index (OCI) evaluation of the street system in the Blackstone Sub-division. As a result of this evaluation I have completed the report and the following work would need to be completed before the City would consider accepting the street infrastructure as complete, and ready for the City of Yachats-Public Works Department to operate and maintain this street system.

It is apparent that there is fairly rapid deterioration of the street infrastructure due to the lack of maintenance of the street systems, therefore we will begin a massive vegetation mowing in the next few days. Also, it is evident that there are some areas especially along Gimlet that need to be either overlaid with HMA Class C Asphalt or it is possible that a Slurry Seal could slow the deterioration by sealing out the moisture penetrating the asphalt into the base rock underneath the asphalt. I have included in the cost estimate funding to complete core sampling of the existing asphalt in ten (10) locations to make sure the City will retain at least a twenty (20) year life from this street system.

I have included two (2) options; 1) Option A-Slurry Seal Gimlet Way, or Option B- Grind and Overlay Gimlet Way with 2"-inches of Class C Hot Mix Asphalt. The determination of the option the City will accept will be based on the core samples taken throughout the street system. In any event the repair work to the asphalt must be completed in either option.

I would like to meet with you to further discuss your next steps. Please contact me at your earliest convenience so we can schedule the meeting, it is imperative complete this work this before winter and to get this work placed on our schedule.

Sincerely;

Larry R. Blanchard

June 20th, 2013

Larry R. Blanchard, Public Works Director

Date

Attachment: Estimate of Cost EOC2013-002

CITY OF YACHTS

Cost Item #	Description of Work To Be done	Number of Units	Units	Number of Hours/Units	Cost/Hour or Cost/Unit	Cost of Work
Repair 1)	Hanley Way Saw Cut, Remove AC, Regrade/Compact and Install HMA Class C	70	Square Feet	70	5	\$350.00
Repair 2)	Gimlet/Hanley Saw Cut, Remove AC, Regrade/Compact and Install HMA Class C	16	Square Feet	16	5	\$80.00
Repair 3)	Hanley Saw Cut, Remove AC, Regrade/Compact and Install HMA Class C	225	Square Feet	225	5	\$1,125.00
Repair 4)	Hanley Saw Cut, Remove AC, Regrade/Compact and Install HMA Class C	4	Square Feet	4	5	\$20.00
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Repair 8)	Hanley Saw Cut, Remove AC, Regrade/Compact and Install HMA Class C	36	Square Feet	36	5	\$180.00
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Repair 12)	Gimlet Way Cut, Remove AC, Regrade/Compact and Install HMA Class C	75	Square Feet	75	5	\$375.00
Repair 13)	Gimlet Way Saw Cut, Remove AC, Regrade/Compact and Install HMA Class C	60	Square Feet	60	5	\$300.00
Repair 14)	Gimlet Way/Horizon Saw Cut, Remove AC, Regrade/Compact and Install HMA Class C	60	Square Feet	60	5	\$300.00
Repair 15)	Core Sample thin areas to determine if a Slurry Seal or Overlay is required to retain @ least a Twenty Year Life	10	Locations	10	25	\$250.00

CITY OF YACHATS
RESOLUTION NO. 2015-01-02
Blackstone Street Agreement

WHEREAS, City Council authorized the Public Works Director to take core samples in order to determine the amount of work required to bring the streets in the Blackstone Development to City Standards;

WHEREAS, core samples showed that there is adequate sub-surface material to go forward with the repairs based on Option A;

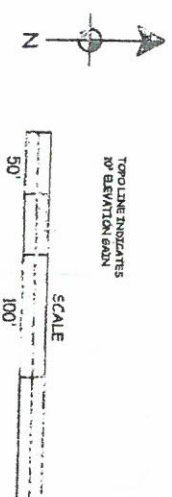
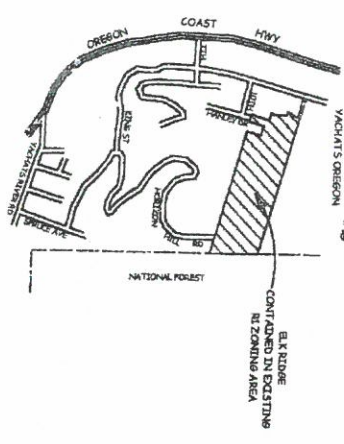
NOW THEREFORE, the City of Yachats resolves to move forward with the repairs as per Option A, attached and marked "Exhibit A", billing the Homeowners Association for the repairs, accepting the streets once the repairs have been completed and establishing a process for accepting streets in developments in the future.

This Resolution is memorializing an action taken by City Council at the January 8, 2015 meeting and was effective as of that date.

Attest:

Ronald L. Brean, Mayor

Nancy Batchelder, City Recorder



HORIZON HILL RD
EXISTING

ALL WEATHER SURFACES
PREDICTED TO BE CONSTRUCTED
TO ROADS WHERE POSSIBLE

DRAWN: JDM
DATE: 6/18/03
SCALE: 1"=50'
DRAWING NO: P1

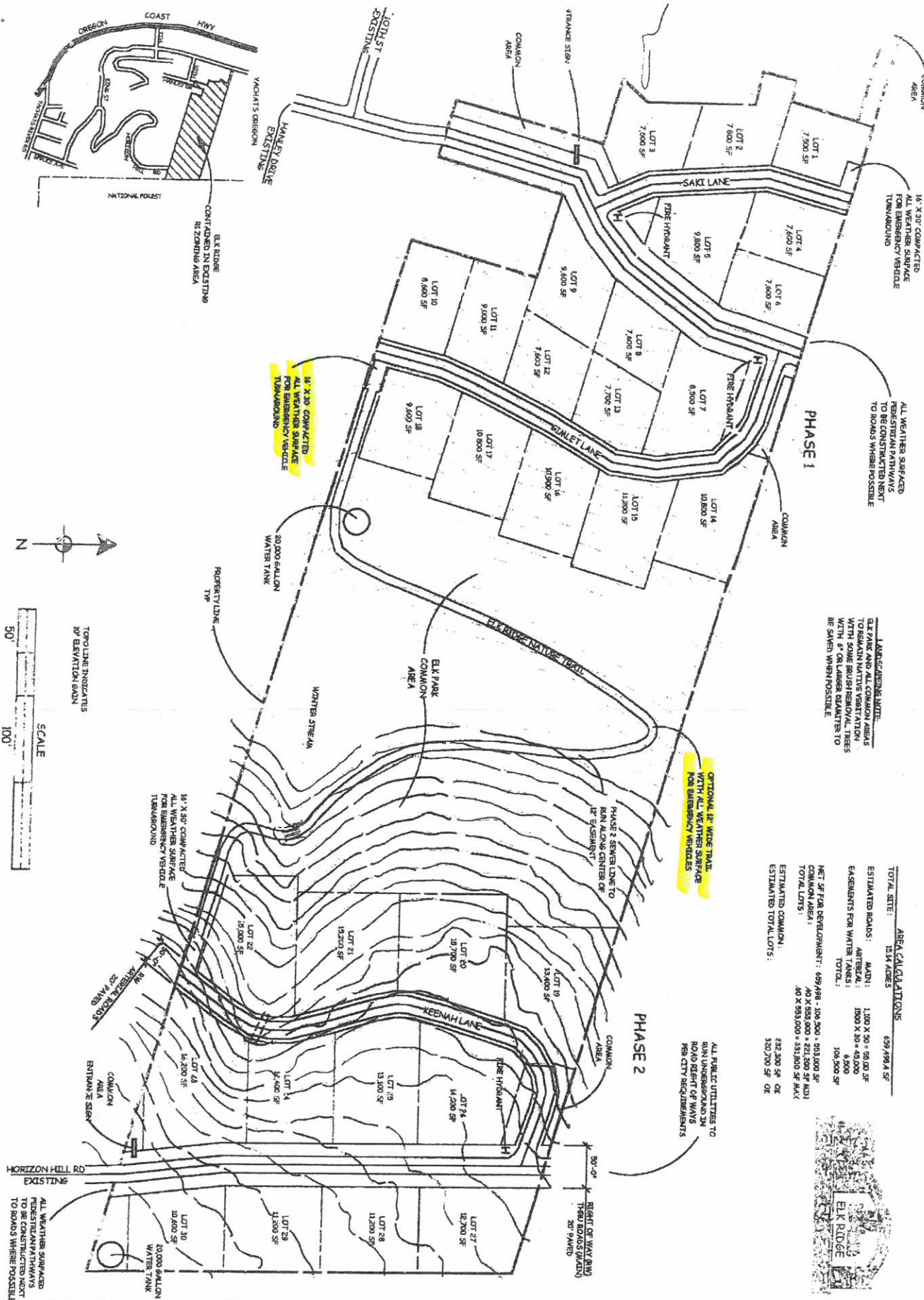
ELK RIDGE YACHATS OREGON PRELIMINARY PLAN

JONATHAN MONSCHKE
PO BOX 2272
NEWPORT OR 97365
monschke@mac.com

TIMBER STONE
DEVELOPMENT
PO BOX 2272
NEWPORT OR 97365
503/702-2287
timberstone@mac.com

AREA CALCULATIONS

TOTAL SITE:	12.14 ACRES	699,498.4 SF
ESTIMATED ROADS:	MAIN: 1,000 X 50' = 50,000 SF	
	ARTERIAL: 1500 X 50' = 45,000 SF	
EASEMENTS FOR WATER TANKS:	6,000 SF	
TOTAL:	100,000 SF	
NET SF FOR DEVELOPMENT:	699,498 - 100,000 = 599,498 SF	
COMMON AREA:	40 X 950,000 = 221,000 SF (ADJ)	
TOTAL LOTS:	40 X 950,000 = 331,000 SF (MCK)	
ESTIMATED COMMON:	232,200 SF OR	
ESTIMATED TOTAL LOTS:	332,700 SF OR	



ALL WEATHER SURFACES
PREDICTED TO BE CONSTRUCTED
TO ROADS WHERE POSSIBLE

ALL WEATHER SURFACES
PREDICTED TO BE CONSTRUCTED
TO ROADS WHERE POSSIBLE

ELK RIDGE NATURAL TRAIL
TO BE CONSTRUCTED
WITH 4" COLLARED DIAMETER TO
BE SAVED WHEN POSSIBLE.

OPTIONAL 12' WIDE TRAIL
WITH ALL WEATHER SURFACE
FOR EMERGENCY VEHICLES

ALL PUBLIC UTILITIES TO
RUN UNDERGROUND IN
ROAD RIGHT OF WAYS
PER CITY REQUIREMENTS

16' X 30' COMPACTED
ALL WEATHER SURFACE
FOR EMERGENCY VEHICLE
TURNAROUND

16' X 30' COMPACTED
ALL WEATHER SURFACE
FOR EMERGENCY VEHICLE
TURNAROUND

PROPERTY LINE
TYP

20,000 GALLON
WATER TANK

WINTER STREAM

ELK PARK
COMMON
AREA

KEENAH LANE

PHASE 2

RIGHT OF WAY RUN
THRU ROADS (MAIN)
20' (PAVED)

DRAWN: JDM
DATE: 6/18/03
SCALE: 1"=50'
DRAWING NO: P1

ELK RIDGE YACHATS OREGON PRELIMINARY PLAN

JONATHAN MONSCHKE
PO BOX 2272
NEWPORT OR 97365
monschke@mac.com

TIMBER STONE
DEVELOPMENT
PO BOX 2272
NEWPORT OR 97365
503/702-2287
timberstone@mac.com

BLACK STONE

FINAL DESIGN
CITY OF YACHTS, LINCOLN COUNTY, OREGON



ELK RIDGE YACHTS, LLC P O BOX 88 YACHTS, OR 97498 PHONE 208.720.2287	STROKER ENGINEERING 74500 OLD CONDOR BRIDGE ROAD CLOVERDALE, OR 97312 PHONE 503.392.3502	MYTHUS SURVEYING, INC. P O BOX 206 TIDEWATER, OR 97391 PHONE 541.528.3234	DATE: JULY 2004 SCALE: 1" = 100 FEET DRAWN: CAM REVISION: 1
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City of Yachats

441 Hwy 101 N.
P O Box 345
Yachats, OR 97498

September 30, 2014

To: Yachats Mayor & City Council
cc: Nancy Batchelder, City Recorder
From: Larry Lewis, City Planner
Re: Tom Rodovsky's Request to Donate Open Space Parcel to the City
Tax Lot 2300 of Tax Map 14-12-26BB

Per your request, here is additional information regarding the above referenced parcel.

OPEN SPACE SYSTEM

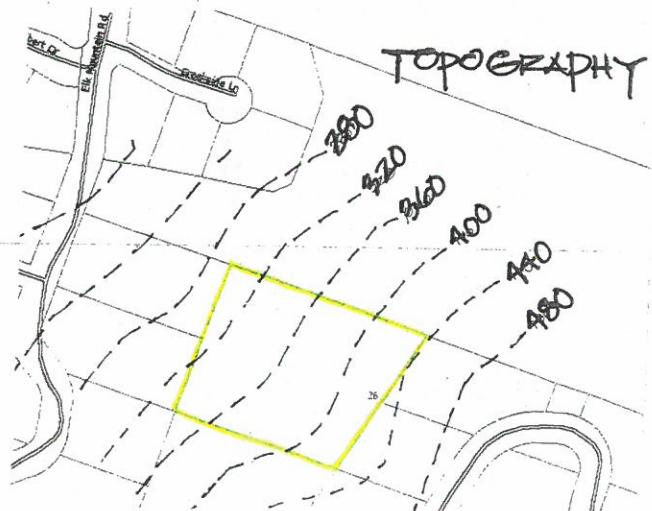
The subject parcel is dedicated as common open space. This is one of four contiguous open space parcels that collectively create a continuous open space system on the east hillside. The other open space parcels were created as part of the Blackstone I and Blackstone II Subdivisions to the south and the Creekside Planned Unit Development to the north. In the past this has been referred to as Elk Mountain Park.

TRAILS

The Village Circulation Plan identifies a continuous north-south oriented 'east side trail'. Constructing a trail through this parcel would be challenging due to the topography. It is more feasible to have a north-south oriented trail west of the parcel (alongside or near Elk Mountain Road) or east of the parcel (extend a trail north of Horizon Hill Road).

TOPOGRAPHY

This parcel has a significant slope downward from east to west. Based on limited topographic data it appears there is a 50% slope across the parcel.



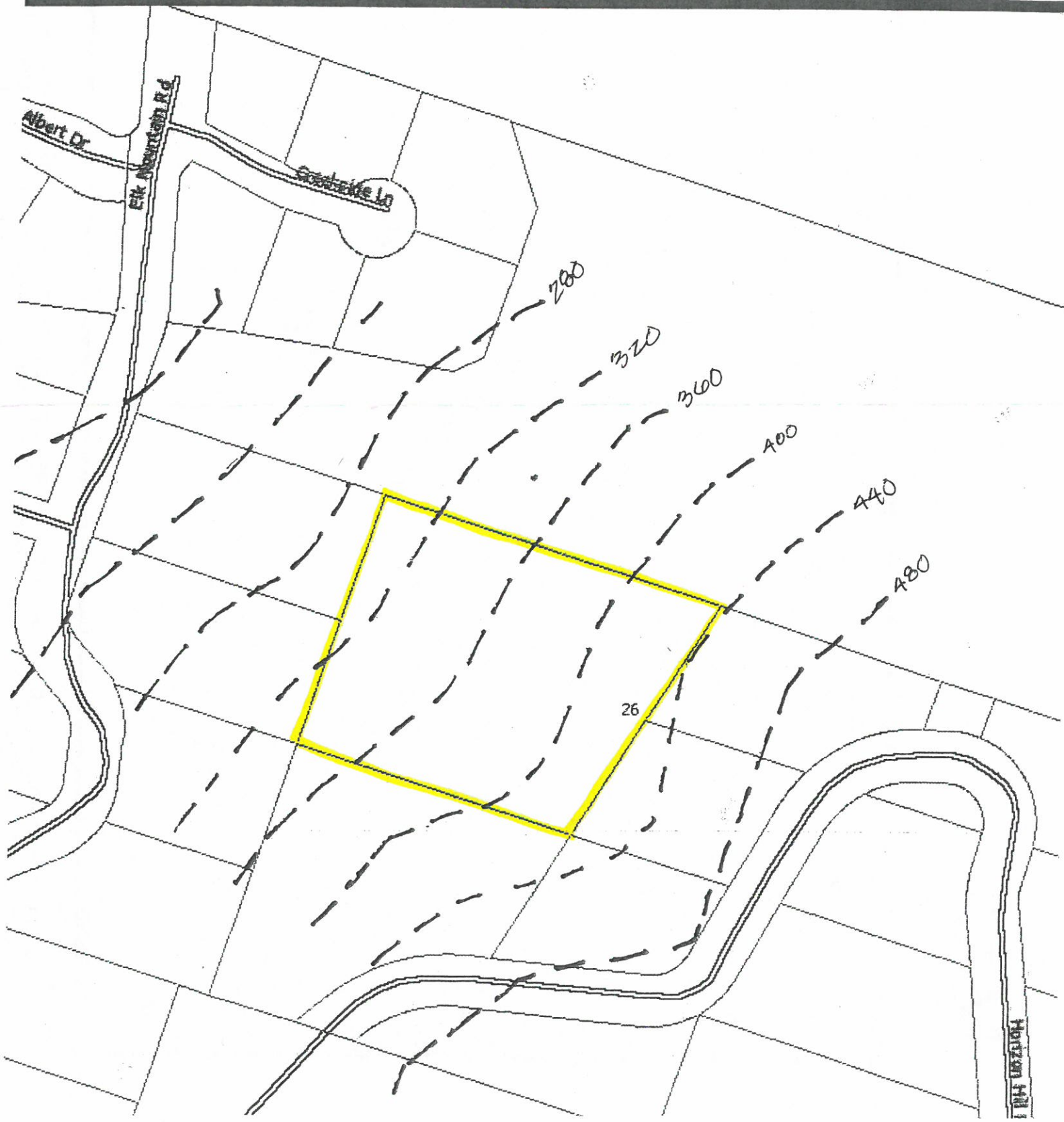
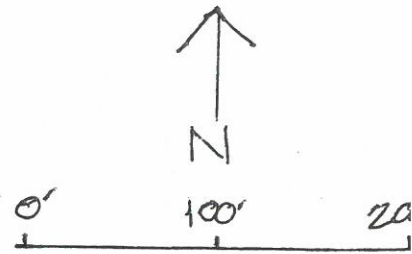
EAST HILLSIDE OPEN SPACE



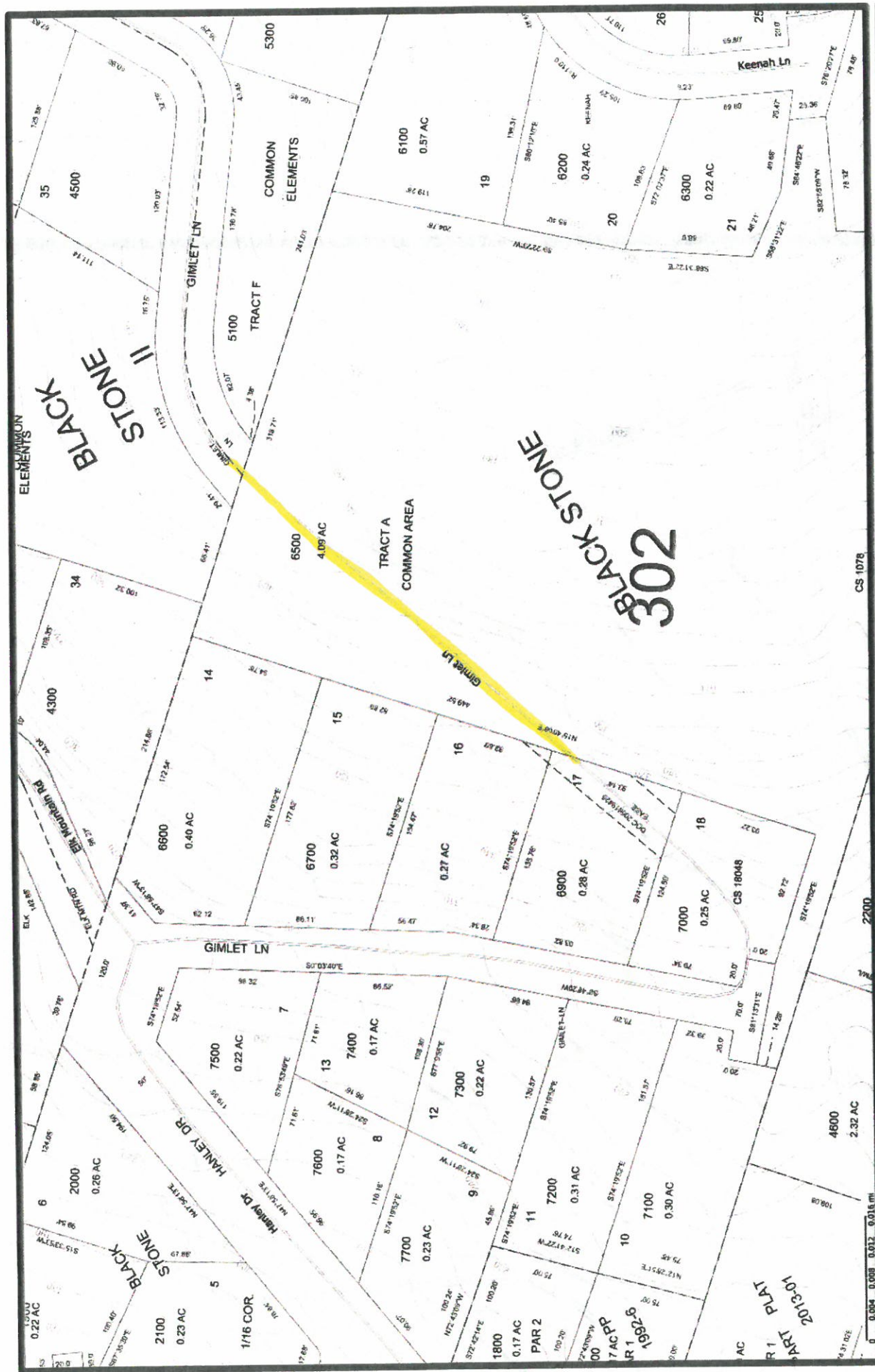
Printed 09/30/2014

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Map



Printed 11/22/2019

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Use this information to help you determine what level of operator certification you should apply for.

Note: A high school diploma, or GED is required for all levels

Operator Type & Level	Experience & Post HS education		Operational Decision Making (ODM)
	Experience	Education	
Small Water System	none	6 hours of approved State training	None
Operator in Training (OIT)	3 months	HS/GED	None
WD/WT Level 1	12 months	None	None
	None	12-month certificate or Associates degree in Authority approved water & environmental technology program	None
WD/WT Level 2	36 months	None	None
	24 months	12 months	None
WD/WT Level 3	96 months	None	30 months
	60 months	12 months	30 months
	48 months	24 months	24 months
	36 months	36 months	18 months
WD/WT Level 4	120 months	None	36 months
	84 months	12 months	30 months
	72 months	24 months	30 months
	60 months	36 months	30 months
	48 months	48 months	24 months
Filtration Endorsement	Level 2 operator		One year at a conventional or direct filtration treatment plant

- One year of experience is equivalent to 12 months of full-time employment with 100% of the applicant's time dedicated to activities directly related to the certification they are applying for. (*See rules regarding substitute experience.*)
- Operating experience earned at a water treatment plant or distribution system is considered qualifying experience for certification up to 1 classification level higher than that of the water system facility where the experience was earned.
- 45 quarter hours or 30 semester hours of professional continuing education can be substituted for 1 year of post high school education.
- Individual contractors must submit a signed contract by both parties to the DWS before work can begin to determine if it meets the DWS rules.
- Small Water System** = Community or non-transient non-community having less than 150 connections using groundwater as its source or purchasing its water without adding any additional treatment
- ODM** = Operational Decision Making
- FE** = Filtration Endorsement (This requires an exam but no additional yearly certification fees.)

A full set of OARs can be found on the website bit.ly/drinkingwaterrules



City of Toledo
LINCOLN COUNTY, OREGON

PUBLIC INFRASTRUCTURE DESIGN
STANDARDS MANUAL
Guidelines for Development

Effective: -----, 2009

Introduction

In all communities, the public right-of-way and public easements are special areas created for public transportation and for placement of storm and sanitary sewer systems and other utilities such as telephone, water and gas. All physical aspects of public infrastructure within the right-of-way and easements should be designed for public safety, efficient operation, and cost effective maintenance.

This document contains design standards, procedures, and standard drawings that are meant to establish, clarify, and assist both the City staff and private engineers and developers in creating safe, efficient, and cost effective water, sewer, street and drainage projects for the City of Toledo. These standards and procedures will apply to both new construction and reconstruction, except where design standards cannot be properly applied because of unique situations. Limited width and available right-of-way, for instance, could elicit a less than standard street width. Unmovable trees or buildings that encroach too close to the public facility may warrant a deviation from the standard. Under circumstances such as these, some flexibility may be necessary to create a design that remains sensitive to the specific needs and character of an existing neighborhood or other physical limitations.

Efforts were made to cover a wide variety of topics and issues related to the development of sewer, water, storm, and streets. If additional items are not covered herein, they will be reviewed by the Public Works Director, City Planner and other City staff during the development review process.

The cost for a printed copy of this manual is \$60.00, and \$15.00 for an electronic copy.

How to Use this Manual

Information in this Manual is organized by the following divisions:

1. Division 1: Water System Standards Manual
2. Division 2: Sewer System Standards Manual
3. Division 3: Transportation System Standards Manual
4. Division 4: Drainage System Standards Manual
5. ~~Division 5: Grading / Fill Design Standards Manual~~

An Engineering Policy Section at the beginning of the manual is intended to provide information and requirements for the Developer and the Developer's engineer. It is recommended that a Developer thoroughly review the entire manual to gain an understanding of the City's standards and requirements as well as the process that must be followed to plan, design, submit, and construct public improvements.

The City may update all or portions of this manual at anytime. It is the responsibility of the Developer and/or the Developer's engineer to ensure that they have the most recent and current version of the standards manual.

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City of Toledo

LINCOLN COUNTY, OREGON

ENGINEERING POLICY
Guidelines for Development

Effective: -----, 2009

1.0 Applicability

- 1.1 This policy applies to applicants developing improvements that involve construction of public utility system improvements. Public utility improvements include improvements to the water, sewer, drainage, or transportation infrastructure within the City. Design of such improvements shall be the responsibility of the applicant in accordance with this Policy, and upon approval and acceptance of the construction by the City, the improvements shall become City owned and maintained.
- 1.2 These standard specifications shall relate only to public works construction in the City and are not to be identified with building codes, zoning ordinances and other regulations for which procedures and standards have been established.
- 1.3 A section on development criteria, hazard overlay zones, and general planning information is provided for the convenience of the developer.

2.0 General

- 2.1 Applicants shall design and construct all required public works improvements to City Standards. These Standards include the latest version in effect at the time of application of the following list of documents: Water System Design Standards Manual, Sanitary Sewer Design Standards Manual, Transportation System Design Standards Manual and the Drainage System Design Standards Manual. The four manuals will collectively form the **City of Toledo Infrastructure Design Standards Manual**. Copies of these Standards are available at the Public Works Office and at City Hall for a nominal price. Designs must also conform to the current Water Master Plan, Wastewater Facilities Plan and other applicable master plans as determined by the City.
- 2.2 A Development Permit must be issued by the City prior to construction of any public works improvement. The Applicant must pay the current Permit Application Fee at the time of application. Reference sample forms for permit application samples and check list.
 - 2.2.1 Other permits as required by the City include a Grading/Fill permit or a Heavy Haul permit as when excavated material is being transferred offsite to another disposal site. ODOT provides the criteria for when a Heavy Haul permit is required.
- 2.3 A Technical Plan Check and Inspection Fee shall be paid before approval of the final engineering plans for the required improvements. City approval of Applicant's construction documents and evidence of County and other agency approval must be obtained prior to the issuance of a Permit.
- 2.4 Applicant shall obtain all other necessary permits from Lincoln County, the Oregon Department of Environmental Quality (1200-C Erosion Control Permit if applicable), and other agencies as required.

- 2.5 No connections to the City’s utility systems for dwellings or other developments will be allowed until the Applicant’s improvements are completed and accepted by the City or a satisfactory Improvement Agreement is entered into.

3.0 Public Utility and Infrastructure Design Standards

3.1 Water System Design Standards

3.1.1 Applicant shall provide water facilities for their development. This includes water mains, valves, fire hydrants, blow-offs, combination air valves, service laterals, meter boxes, pump stations, storage tanks, and other required appurtenances.

3.1.2 All required public water system improvements shall be designed and constructed in accordance with the latest City of Toledo Water System Design Standards Manual.

3.2 Sewer System Design Standards

3.2.1 Applicant shall provide sewer facilities for their development. This includes sewer mains, manholes, clean-outs, service laterals, pump stations, and other required appurtenances.

3.2.2 All required public sanitary sewer system improvements shall be designed and constructed in accordance with the latest City of Toledo Sanitary Sewer Design Standards Manual and according to DEQ requirements and guidelines.

3.3 Street and Drainage Design Standards

3.3.1 Applicant shall provide street and transportation facilities as well as storm drainage facilities for their development. This includes streets, sidewalks, signs, curb, gutter, catch basins, manholes, drainage piping, culverts, inlets, traffic control devices, and other required appurtenances.

3.3.2 All required public transportation and drainage system improvements shall be designed and constructed in accordance with the latest City of Toledo Transportation System and Drainage System Design Standards Manuals and in accordance with County, State, and other requirements as appropriate.

4.0 General Design Requirements

- 4.1 Persons planning to construct development must obtain a Permit from the City of Toledo and pay the necessary engineering review fees in accordance with the “Engineering Policy – Guidelines for Development”. Other permits required may include, a Public Works Construction permit as issued by Lincoln County, a 1200-C Erosion Control Permit from the Oregon Department of Environmental Quality (DEQ) and ODOT, Corps

of Engineers/Department of State Lands, and others as required by Federal, State, laws and regulations.

- 4.2 All surveys for development of public works facilities shall be performed under the direction of a Professional Engineer (PE) or Professional Land Surveyor (PLS) licensed in the State of Oregon. At least one Benchmark shall be established or located within the project limits. Elevations shall be referenced to the NAVD 88 datum. Exceptions shall be made for flood hazard area certifications and related drawings utilizing NGVD 29 datum. Survey shall be sufficient to accurately show existing facilities and topography.
- 4.3 Design drawings, specifications, and calculations shall be conducted by an Oregon licensed professional Engineer.
- 4.4 The engineer preparing the plans shall make necessary arrangements for locates on all underground utilities in the vicinity for use in preparing the plans. Such utilities shall be shown accurately in the plans.

5.0 Design Plan Format

- 5.1 Engineering plans and specifications shall be prepared for all public works improvements. Plans shall be clear and legible and show all improvements in sufficient detail to allow for determination of compliance with City standards, and proper field construction. The Public Works Director or City representative may require additional detail if deemed necessary.
- 5.2 Plans shall be computer generated in an AutoCAD compatible format.
- 5.3 The plans shall be submitted on 22 x 34-inch or 11 x 17-inch sheets unless otherwise pre-approved by City Representative. Plans shall be blackline prints. Blueline copies are not acceptable. Letter size may not be less than 0.08-inches for 22 x 34-inch sheets and not less than 0.06-inches for 11 x 17-inch sheets.
- 5.4 Plans shall be drawn to scale. The scale shall be 1-inch = 2, 3, 4, or 5-feet vertically and 1-inch = 10, 20, 30, 40 or 50-feet horizontally. Details may be drawn at larger scales for clarity. Plan scale shall be called out for each drawing. A graphical scale bar shall be included on each sheet.
- 5.5 A north arrow shall be shown on each plan view sheet and other plan detail oriented differently than the main drawing on the sheet.
- 5.6 A title block shall appear on each sheet of the plan set placed in the lower right-hand corner, across the bottom edge of the sheet, or across the right-

hand edge of the sheet. Title block shall include the name of the project, the engineering firm, the owner, the sheet title, the last revision date and the sheet number.

- 5.7 The seal of the registered Oregon Professional Engineer responsible for the preparation of the plans shall appear on each sheet. Final Plans must be stamped and signed by a Professional Engineer licensed in the State of Oregon. Plan approval will not be granted until final signed sets are received. Approval by the City does not relieve the Applicant's Engineer from the responsibility of the design.
- 5.8 Plans shall begin with a title sheet identifying the project and including a vicinity map showing the location of the project within the City. General notes and a sheet index should also be included.
 - 5.8.1 General notes shall inform the Contractor to contact the Oregon Utility Notification Center for utility locates (1-800-332-2344), also 811, prior to the start of construction.
- 5.9 Plan views must show existing and proposed improvements and features within or adjacent to the project including survey monuments, edge of pavement, road centerline, buildings, curbs, gutters, sidewalks, culverts, ditches, streams, utility poles, and other surface improvements and features. The location of underground utilities including power, gas, water and sewer shall be shown as accurately as possible. Right-of-way, property lines, easements, street names, lot numbers, and other labels shall also be shown. Existing and finish grade contours (2 foot maximum) should be shown where possible.
- 5.10 Plan shall show the location, stationing, and size of all sewer mains and services including appurtenances such as manholes, clean-outs, tees, and wyes. Stationing shall be called out for specific items to be installed. Matchlines shall be used when continuing to other sheets.
- 5.11 At least one composite utility plan shall be included which shows all proposed improvements (water, sewer, streets, sidewalk, curb, culverts, storm drainage, etc.) in one plan view to help avoid or identify conflicts and designate horizontal separations and locations.
- 5.12 Profile view with stationing and elevation shall be provided for sewer mains. Profile shall show existing ground, finish grade, invert and manhole rim elevations, backfill class materials, pipe size and slope, and all existing and proposed utilities crossing the profile. Profile shall be generated along the sewer pipe centerline. Vertical separation shall be shown for crossing utilities.

- 5.13 Detail drawings shall be provided for typical trench sections, manholes, clean-outs, sewer service laterals, and others as required.
- 5.14 Project specifications shall be provided covering materials and workmanship in accordance with this document and standard engineering practice. Specifications not detailed herein shall generally conform to 2002 Oregon Standard Specifications or latest version of. All specifications shall be subject to City approval.

6.0 Construction Provisions

- 6.1 All work within the public right-of-way shall be conducted by a licensed and bonded contractor. This requirement shall be stated on the construction drawings and specifications. A permit and appropriate bond shall be required prior to commencing work.
- 6.2 City shall be notified at least 2 working days in advance prior to commencing construction work.
- 6.3 Traffic control shall be signed, flagged and conducted in a manner conforming to ODOT standards (Manual of Uniform Traffic Control Devices, MUTCD) and approved by the City. If road closures or detours are anticipated, prior approval from the City and ODOT officials must be obtained, as appropriate. Traffic control plans shall be submitted with construction plans for review. Traffic control for projects with duration of 3 days or less shall conform to the ODOT Temporary Controls Handbook.
- 6.4 Safety Requirements. The contractor is responsible for observing the safety of the work and all persons and property coming into contact with the work. The contractor shall conduct his work in a manner complying with the requirements prescribed by OSHA.
- 6.5 Progress. Construction shall proceed in a systematic manner to minimize public inconvenience and disruption of services. All excavations, embankments, stockpiles, waste areas, etc. shall be kept protected. All roads, ditches, etc. shall be kept free from debris and shall be continually cleaned during the work. Dust control measures shall be employed as required and directed by the City.
- 6.6 Periodic inspection of the construction by City representatives shall be required. No concrete shall be poured; asphalt placed, or pipe backfilled without such inspections being made and approvals given. A tentative schedule for inspection shall be established when the permit is issued. The permit holder shall give the City a minimum of 2 working days advance notice before inspections fall due. It shall be the permit holder's responsibility to obtain City inspections and approvals before covering work.

- 6.7 Protection of Existing Improvements. Contractor shall contact the Utility Notification Center at least 48 hours in advance of digging operations to get approximate locations for buried utilities. Exact locations of buried facilities may not be known or shown and contractor is responsible to pot-hole carefully in advance of the work to avoid such facilities. Contractor shall coordinate with all utilities and notify them immediately in the event of any damage. Contractor shall protect, repair, and replace any damaged utilities as directed by the persons responsible for such utility. All landscape, grass, shrubs, signs, pavements, mail boxes, driveways, culverts, gravel surfacing, fencing, etc. shall be protected from damage and returned to conditions as good, or better than existed prior to construction. All costs for protection, repair, and replacement of all existing items shall be borne entirely by the contractor. Contractor shall obtain a release from any property owners for any claims of injury or property damage prior to final acceptance of the work by the City.
- 6.8 All existing survey monuments and control shall be protected, including individual property corner stakes. Any such monuments destroyed or altered during construction shall be restored by the contractor or developer in accordance with Oregon Revised Statutes as applicable.
- 6.9 Any temporary disruption to water or sewer service must be coordinated with, and approved by City and kept to the minimum length of time necessary. The City shall be notified at least 2 working days in advance of when an approved shut-down is desired. Contractor shall not operate any valves or hydrants without the City's approval. Property owners affected by loss of services or utilities shall be given 24 hour notice prior to the disruption of service.
- 6.10 Compaction testing equipment (nuclear gauge) shall be furnished and operated by the contractor or an independent testing firm shall be retained by the contractor or developer to perform compaction testing. Testing shall conform to the ODOT Manual of Field Testing Procedures (MFTP). Compaction testing shall be conducted in the presence of the City's inspector or representative. Sufficient tests, as determined by the City, will be taken to ensure that the materials and compaction efforts being used are adequate to obtain the required density. Several tests shall be taken on each lift placed during the first day of backfill operations. Additional tests will be taken periodically during the work. Alternate materials or methods will be required if adequate compaction is not being obtained.
- 6.11 Construction staking will be provided by the Developer's Engineer for establishing the alignment and grade of the transportation system to be constructed. Offset stakes shall be placed at no more than 100-foot

intervals along the alignment. Grade staking, stationing, and other field layout shall be as required.

- 6.12 Work shall not begin unless City has approved plans and given approval to begin work. Contractor shall have a set of the approved plans on site at all times.
- 6.13 Trench foundation grades shall be constructed to within 0.1 feet of the grade shown in the plans. Surface tolerances shall be within 0.02 feet of plan elevation at any one point.
- 6.14 Open trench length at any one time shall not exceed 300 feet unless otherwise approved. Related resurfacing shall be completed within 800 feet of the open trench limit.

7.0 Dedications and Easements

- 7.1 Applicant shall obtain and record all off-site easements required for the project before City approval of the construction plans. Permanent utility easements shall be granted to the City for future repair and maintenance of all public improvements. Applicant shall coordinate with City to determine adequate easement widths for utilities prior to finalizing easements. The minimum easement width (for piping improvements) is 15 feet. The actual width may be greater than the minimum as the required width shall be at least equal to the point where a theoretical 1:1 slope from the outside edge of the pipe zone would daylight. All costs for obtaining and recording easements created by private development shall be borne by the developer.

8.0 Applicant Engineering Requirements

- 8.1 Applicant shall retain a licensed Oregon Professional Engineer to design and prepare their construction plans and specifications.
- 8.2 Applicant's Engineer shall obtain a copy of the City's Infrastructure Design Standards Manual and adhere to the design and engineering requirements, and standard details and specifications contained therein.
- 8.3 Engineering Plans and Specifications for the work shall be prepared and submitted to the City for review. Plans and specifications must also be submitted and approved by DEQ and the Oregon Drinking Water Program (Health Division), as required and after approval by the City.
- 8.4 Applicant's Engineer shall submit a construction cost estimate for the public utilities to be provided. The costs for public utilities shall be complete and accurate. The cost estimate shall be submitted to the City along with the plans and specifications. The Public Works Director or designee will review the cost estimate for reasonableness and may require updates and modifications. Final plan approval will not be issued until an approved cost estimate is provided.
- 8.5 Applicant's Engineer will provide construction staking to facilitate the construction of the improvements to the proper line and grade.

- 8.6 Applicant's Engineer will provide construction observation and inspection during the project work as required to ensure plan compliance and allow accurate as-builts to be prepared. Daily inspection reports shall be turned in to the City on a weekly basis. Reports shall include date and time of arrival, weather conditions, description of construction activities, and all testing procedures and results. If inspection is significantly deficient, a stop-work order may be issued. Applicant's Engineer shall also provide a reasonable tentative schedule of construction progress.
- 8.7 Applicant's Engineer shall ensure that accurate markups are maintained during construction and shall prepare Record (As-Built) Drawings for the project. Record Drawings shall accurately show the locations and depths of the installed improvements with sufficient tie-out dimensions to permanent objects to allow easy location in the future. Each sheet of the drawings shall be stamped "As-Built". Drawings must be acceptable to the City and Applicant's Engineer shall correct any deficiencies noted by the City. As-Built elevations shall be within 0.1-foot of installed conditions. Horizontal dimensions shall be within 0.5-foot of installed conditions. Two (2) complete printed and signed Mylar sets of Record Drawings shall be delivered to the City upon project completion. An additional complete digital copy of the Record Drawings shall be provided to the City in AutoCAD format on a CD-ROM.
- 8.8 Following completion of construction, Applicant's Engineer shall submit (with the As-Built drawings) a letter certifying completion. The letter shall certify that the work was conducted in accordance with the approved plans and specifications and that the site and adjacent properties are stable with respect to settlement and subsidence, sloughing of cut and fill slopes, and proper erosion control measures have been placed.

9.0 Permit Issuance

- 9.1 Applicant shall apply for a Permit at City Hall to initiate the plan review process. The Permit Application Fee shall be paid at the time of application. The Permit Application Fees are shown in the Fee Schedule.
- 9.2 Applicant must provide evidence of City approval showing the proposed project complies with all City planning, zoning, and other requirements. Evidence of any other permit or approval from other agencies as may be required by law shall also be obtained. Such evidence must be supplied to the City before a Permit will be issued. Preliminary plat approvals should be obtained prior to plan submission.
- 9.3 Applicant shall submit to the City, five (5) copies of detailed construction plans and specifications prepared by the Applicant's Engineer. The City will review the documents for compliance with City Standards and Master Plans following receipt of required Plan Check and Inspection Fee. If acceptable, one (1) copy will be returned to the Applicant with a notice of plan approval. If changes in the documents are required, City will return one (1) copy back to the Applicant with deficiencies noted. The Applicant will then correct the documents and resubmit five (5) corrected copies.

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- 9.4 Applicant shall provide a warranty or maintenance bond or other written guarantee acceptable to the City in the amount of 20% of the construction cost. This bond shall guarantee materials and workmanship for a period of one (1) year following acceptance of the improvements by the City, and it shall ensure the satisfactory repair or replacement of any facility damaged during construction. Bond shall list City as the Obligee and the Developer or Developer's contractor as the Principal.
- 9.5 Applicant shall provide a copy of an insurance certificate showing that the Applicant or each of his/her contractors is covered by general commercial liability and property damage insurance in the amounts of not less than \$1,000,000/\$1,000,000 bodily injury liability/property damage with an aggregate limit of at least \$2,000,000. The policy shall include coverage for contractual liabilities. An insurance certificate shall also be provided showing that each contractor maintains an automobile liability insurance policy with combined single limits of at least \$1,000,000 per occurrence for bodily injury, personal injury, and property damage. Both policies shall include a 30-day notice of cancellation clause and shall include endorsements naming as additional insured "The City of Toledo", its officers, agents, and employees while acting within their official capacity as such.
- 9.6 Contractor shall submit a hold harmless statement which holds the City harmless from all liability and loss based upon or arising out of damage or injury caused by or in connection with the performance of construction.
- 9.7 The City reserves the right to waive Engineering review for very minor improvements, such as projects resulting in a single new home. Professionally Engineered preparation of minor drawings may also be waived at the City's discretion.
- 9.8 A permit shall lapse if construction for which the permit was issued has not commenced within ninety (90) days of the date of issuance. To reinstate the permit, the Applicant shall submit a written request to the City stating reasons for failure to commence, provide a new construction commencement date, and pay a permit reinstatement fee. The City may impose additional conditions deemed necessary for the project at that time.
- 9.9 The Development Permit will be issued and construction may begin after the following steps have been completed satisfactorily:
- 9.9.1 Approval of the construction plans by the City with written notification of plan approval.
 - 9.9.2 Submittal of acceptable calculations and other supporting documents to the Public Works Director (including progress schedule) when requested.
 - 9.9.3 Approval of the detailed cost estimate by the City.
 - 9.9.4 Approval of the warranty or maintenance security by the City.

- 9.9.5 Receipt of Hold Harmless Statement.
- 9.9.6 Approval of all legal documents, easements, and other documents as required by review comments.
- 9.9.7 Submittal of written approval from Lincoln County for the subdivision, plat, streets, land use, etc. as may be applicable.
- 9.9.8 Submittal of evidence of issuance/approval for any required erosion control permits and plans, or other permits as may be required.
- 9.9.9 Receipt of required Engineering Plan Check and Inspection fees.
- 9.9.10 Completion of all appeal periods such as land use approval or floodplain modification notices.
- 9.9.11 Submittal of approval of plan by the Oregon Department of Human Services – Drinking Water Program (Health Division) for potable water related projects.
- 9.9.12 Submittal of approval of plan by the Oregon Department of Environmental Quality for sewer related projects.

10.0 City Engineering Plan Check and Inspection

- 10.1 The initial Plan Check and Inspection Fee deposit is based on a percentage of the City-approved estimated construction cost of the public facilities to be constructed. Applicant's Engineer shall prepare a detailed cost estimate that includes all such facilities that are a part of the project. The Public Works Director or designee will review the cost estimate and modifications may be required before approval of the cost estimate. The cost estimate shall be submitted along with the plans and specifications.
- 10.2 Fees are required to enable the City to thoroughly review the Applicant's plans and specifications to ensure that constructed improvements meet City Standards and comply with the planning efforts of the City. This is required when improvements are constructed that will become permanently owned and maintained by the City.
- 10.3 Periodic inspection of the construction by City representatives shall be required. No concrete shall be poured, asphalt placed, or pipe backfilled without such inspections being made and approvals given. A tentative schedule for inspection shall be established when the permit is issued. The permit holder shall give the City a minimum of 2 working days advance notice before inspections fall due. It shall be the permit holder's responsibility to obtain City inspections and approvals before covering work.
- 10.4 The Plan Check and Inspection Fee deposit will initially be set at 5% of the construction cost with a minimum fee as stated in the Fee Schedule. Half of the fee is due upon submission of the final plans for approval and the other half is due upon approval of the final plans.

- 10.5 The final total fee will be determined by the level of effort required by the City in reviewing plans and providing inspections. Should the Applicant have well prepared plans and specifications that require little or no changes, and Applicant provides suitable inspection such that extensive inspection by the City is not required, the initial deposit may not be fully used and the remaining balance will be returned to the Applicant. Should review and inspection required by the City exceed the initial deposit fee; the Applicant will be required to pay an additional deposit before work can continue. In all cases, the total fee will cover the City's actual expenses for Engineering plan review and inspection and Planning Reviews.

11.0 Project Acceptance

- 11.1 The City shall provide the permit holder a letter formally accepting the improvements for City ownership, operation and maintenance subject to the usual exception as to the 1-year guarantee on materials and workmanship, when the following conditions are met:
- 1) Construction is complete.
 - 2) The City has inspected the finished work and found it acceptable.
 - 3) The permit holder's Engineer submits a certificate of completion.
 - 4) The permit holder's Engineer submits "as-built" Record Drawings according to the requirements herein.
 - 5) Copies of satisfactory passage of water line leakage tests, hydrostatic tests, air tests, deflection tests, and other quality control tests have been furnished to the City.
 - 6) The permit holder furnishes the City with a copy of a non-lien affidavit certifying that all bills in connection with the work have been paid in full.
 - 7) Satisfactory provisions have been made in the form of recorded plats or easements to ensure the City's access to the public works facilities for purposes of operation and maintenance.
 - 8) City furnished copy of legal release from any claims of injury or property damage relating to the project.
- 11.2 The Developer shall provide the City with a maintenance or warranty bond or other appropriate security in the amount of 20% of the total improvement costs to serve as a one-year security for the warranty period.

12.0 Other Conditions

- 12.1 Issuance of a permit or acceptance of completed work does not guarantee that other City facilities will be expanded, enlarged, or altered in response to any increased demand or system loading that occurs because of the work covered under the permit.

-
- 12.2 The City retains the right to terminate public (City) utility service or connections to such service at any time the Applicant or Applicant's Engineer or agent fails to comply with the provisions of the City Standards, this document, or other associated permits and approvals.
- 12.3 The City, nor the Public Works Director, assumes responsibility or liability for the Applicant or Applicants Engineer recommendations or engineering design.
- 12.4 Plan approval means that the plans have been reviewed for reasonableness and compliance with the minimum City standards. This approval does not supercede those standards unless specifically verified in writing by the City. Plan approval does not relieve the Applicant's Engineer from responsibility for errors, omissions, or deficiencies in the plans.
- 12.5 It is intended that the City will provide only spot inspections to satisfy themselves that work is proceeding according to approvals and that adequate inspection is being provided by the Applicant's Engineer. Responsibility for ensuring compliance with approved plans and specifications lies with the Applicant. Should the City feel that inadequate inspection is being provided; the City may issue a stop-work order, or may provide a City representative to inspect the work more regularly. Should additional City inspection be required beyond the normal spot inspections, the Applicant fees for inspection may increase. Applicant's Engineer shall provide a tentative construction schedule to allow City to plan spot inspection dates and times.

Guidelines for Development Engineering Policy

Sample Forms

Development Permit Application
Excavation/Fill Permit Application and Work in Right of Way Permit
Check List
Public Improvement Project Performance Bond
Public Improvements Warranty Bond
Hold Harmless
Development Resolution Form
Development Review Administration Flow Chart

City of Toledo

260 N Main Street

PO Box 220

Toledo, Oregon 97391

(541) 336-2247 Fax: (541) 366-3512



Permit Number

Date Submitted

Received By

Projected Review Date

Development Permit Application For Public Works Improvements

Project Name: _____

Project Address: _____

Description of Project: _____

Number of Lots Served by Project: _____ Immediate _____ Ultimate

Development Permit Application Fee: **\$25.00 Per Lot. Development Permit Reinstatement Fee: \$15.00**

Fee: \$ _____

Received By: _____ Date: _____ Check No. _____

Easements Required: ☐ Yes ☐ No Tax Lots: _____

Applicant / Owner	Engineer / Designer
Name	Name
Address	Address
City/Zip	City/Zip
Phone	Phone
	License #

Contractor: _____ CCB #: _____

Address: _____ Phone: _____

City / Zip: _____

Applicant Signature: _____ Date: _____

Estimated Construction Cost: \$ _____

Approved Estimated Construction Cost: \$ _____

Plan Check/Inspection Fee: \$ _____

(\$2,000.00 minimum or 5% of approved estimated public facilities construction cost)

Initial Deposit (1/2 of total fee, due at time of plan submission): \$ _____

Received By: _____ Date: _____ Check No. _____

Balance Deposit (1/2 of total fee, due upon final plan approval): \$ _____

Received By: _____ Date: _____ Check No. _____

Permit Approved By: _____ Date: _____

Additional Plan Check and Inspection Fees may be necessary as described in the "Engineering Policy – Guidelines for Development" document. Conditions of Permit: All work shall be done in accordance with all applicable provisions of Federal, state, and local law, ordinance, and administrative rules. All work shall conform to City Standards. Applicant shall indemnify, defend, and save harmless the City of Toledo, its officers, employees, and agents from any and all claims arising out of or in connection with any work done under this Permit.

Check List

Plan Review

City received evidence of County approval for (as required)	☐	Date: _____
Plans and Specifications submitted by the Owner/Developer	☐	Date: _____
☐ Site plan (showing existing underground utilities, wells etc and proper separation)		
☐ Storm sewer analyses (as required) provided		
☐ Receiving sanitary sewer analysis provided		
☐ Design Criteria list provided		
☐ Specifications		
☐ All easements and right of ways shown (15 foot minimum easement width)		
☐ Detail sheets (Manholes, cleanouts, trench, appurtenances etc.)		
☐ Plan and profile sheets (line size, pipe material, lengths, slope, depth, manhole invert and lid elevations)		
☐ Grading/fill plan provided		
Grading / Fill permit required	Yes ☐ No ☐	
Heavy Haul permit required	Yes ☐ No ☐	
Estimated construction cost received from Developer/Owner	Yes ☐ No ☐	
Construction cost estimate approved by the City	Yes ☐ No ☐	
Preliminary plan review fee received from Developer/Owner	☐	Date: _____
Plans and Specifications submitted to Public Works Director	☐	Date: _____
Public Works Director comments received and returned to Developer/Owner	☐	Date: _____
Final development plans submitted to the City (Three sets of plans and specifications)	☐	Date: _____
Plans submitted to DEQ for review (Developer/Owner to pay DEQ review fee)	☐	Date: _____
Current Land Use Compatibility (LUCS) provided to City on parcel	☐	Date: _____
NPDES 1200C-Storm water permit included within submittal (Sites of 1 acre or more in size)	☐	Date: _____
DEQ letter of approval obtained	☐	Date: _____
Drinking Water Program approval obtained	☐	Date: _____
Public Liability Insurance Certificate received	☐	Date: _____
Hold Harmless Statement received	☐	Date: _____
City issues approval of plans for construction purposes	☐	Date: _____
Final plan review fee received from Developer/Owner	☐	Date: _____
Construction schedule (for spot inspections) received	☐	Date: _____
Project to begin by:	Date: _____	
Estimated project completion:	Date: _____	
City representative to conduct site visits during construction	Yes ☐ No ☐	
Project Developer/Owner Engineer present at construction	Yes ☐ No ☐	
Documentation of field test(s) received by City	Yes ☐ No ☐	
Waterline leakage test	☐	Date: _____
Hydrostatic test	☐	Date: _____
Air test	☐	Date: _____
Deflection test	☐	Date: _____
Other (as required)	☐	Date: _____

Project Completion / Acceptance

- Project Construction completion date ☐ Date: _____
- City has completed final inspection and found it acceptable ☐ Date: _____
- Permit holders Engineer submits certification of completion and that construction is in accordance with the plans and specifications
☐ Date: _____
- Three copies of as built plans received by the City ☐ Date: _____
- Non-lien affidavit received by the City ☐ Date: _____
- Required off-site easements obtained and recorded ☐ Date: _____
- Warranty or maintenance bond provided to City ☐ Date: _____
- Final approval from Public Works Director received ☐ Date: _____
- Total (actual) cost of Public Works construction ☐ \$ _____

Permit /project check list is intended to provide a general guidelines in the development planning process and is not guaranteed to be complete. The City of Toledo is committed to assisting a developer in completing the planning process in as timely and efficient many as possible.

NOTES:



CITY OF TOLEDO PLANNING DEPARTMENT

- ☐ EXCAVATION/FILL PERMIT APPLICATION
☐ WORK IN THE RIGHT-OF-WAY PERMIT

Date _____

Permit Number _____

Property Address _____, Toledo, OR Zone Designation _____
Assessor's Map No. _____ Tax Lot No. _____ Lot Size _____ sq. ft.

Property Owner(s) _____ Phone _____
Address _____

Applicant's Name _____ Phone _____
Address _____

Contractor No. _____ Expiration Date _____ Toledo Business Lic. No. _____

Location of work to be performed _____

Describe work to be performed _____

1. Is this application associated with an existing land use or building permit application? Yes ____ No ____
If yes, permit # _____
2. Is an excavation/fill permit needed by Corps of Engineers/DSL? Yes ____ No ____
3. Will the work take place in the public right-of-way? Yes ____ No ____
4. Is an engineer review required? Yes ____ No ____
If yes, has an engineer approved plan been submitted? Yes ____ No ____
5. If fill is removed, will it be located on a site that requires a Fill Permit? Yes ____ No ____
If yes, where will fill material be located? _____

The following information is required with this application (2 copies of each drawn to scale):

- A. A Site Plan with the existing contours, proposed contours, cutting areas, filling areas, defined and showing property lines and corner location (recorded survey if available).
- B. Include location and construction drawings for any retaining walls.
- C. Include profiles of any proposed cuts or fills.
- D. Include drainage plans showing impervious surfaces, direction of flow, any proposed containment, facilities/areas and connection to the nearest public storm drainage system.
- E. Include a specific erosion control program and time line.

CALL BEFORE YOU DIG (1-800-332-2344): Oregon law requires you to follow rules adopted by the Oregon Utility Notification Center. Those rules are set forth in OAR952-001-0010 through OAR952-001-0090. You may obtain copies of the rules by calling the Oregon Utility Notification Center at (503) 232-1987 or at the City of Toledo Public Works Department. Note: OAR Chapter 952 is in reference to underground utility requirements.

As part of this application, I agree to pay to the City of Toledo all costs, including a 20% charge for administrative overhead, incurred for repair work performed by the City as a result of damage and/or clean-up by applicant's work to public right-of-way surfaces or city utilities or other facilities. I agree to comply with all requirements as stated in Chapter 70 of the Uniform Building Code. I further agree to comply with the requirements for the replacement of signs and barricades and for other safety measures set forth in the Manual for Uniform Traffic Control Devices. I further agree to defend, indemnify, and hold harmless the City of Toledo, its officers, agents, and employees from any and all claims for injuries to persons and damage to property arising out of the work performed under this permit.

Applicant

Date

****Office Use Only****

**EXCAVATION/FILL PERMIT CHECKLIST
DEPARTMENT REVIEW**

1. Will the work take place in the public right-of-way? Yes ____ No ____
2. Is an engineer review required? Yes ____ No ____
3. Has an engineer approved the plan received? Yes ____ No ____
4. Is a City inspection required for the excavation/backfilling? Yes ____ No ____

Comments _____

Grading Permit Fees \$ _____
Right-of-Way Permit Fee \$35.00 _____

Plan Review Fees \$ _____

REVIEWED AND APPROVED BY:

Public Works Director

Date

Community Development Coordinator

Date

Grading Permit Fee*

Up to 100 cubic yards	\$50.00
101 to 1,000 cubic yards	\$50.00 for the first 100 cubic yards, plus \$15.00 for each additional 100 cubic yards or fraction thereof
1,001 to 10,000 cubic yards	\$185.00 for the first 1,000 cubic yards, plus \$13.00 for each additional 1,000 cubic yards or fraction thereof
10,001 to 100,000 cubic yards	\$302.00 for the first 10,000 cubic yards, plus \$50.00 for each additional 10,000 cubic yards or fraction thereof
100,001 cubic yards or more	\$752.00 for the first 100,000 cubic yards, plus \$30.00 for each additional 10,000 cubic yards or fraction thereof

* The fee for a grading permit authorizing additional work to that under a valid permit shall be the difference between the fee paid for the original permit and the fee shown for the entire project.

**PUBLIC IMPROVEMENT PROJECT
PERFORMANCE BOND**

KNOW ALL MEN BY THESE PRESENTS:

That we, insert name of developer here, as Principal, and insert name of bonding company here, a Corporation organized and doing business under and by virtue of the laws of the State of _____ and duly licensed to conduct a general surety business in the State of Oregon, as Surety, are held and firmly bound unto the City of Toledo, Oregon as Obligee in the sum of

120% of Improvement Cost (\$ _____)
dollars for which payment, well and truly to be made, we bind ourselves, our heirs, executors and successors, jointly and severally firmly by these presents.

THE CONDITIONS OF THE OBLIGATION IS SUCH THAT:

WHEREAS, the above named Principal, as a condition of the Development Permit for development of insert project title here, entered into an Improvement Agreement with said Obligee to complete the improvements specified in said Agreement within the permitted time frame and in compliance with City of Toledo standards and requirements.

NOW THEREFORE, the condition of this obligation is such, that if the above Principal shall well and truly perform said agreement during the original term thereof or of any extension of said term that may be granted by the Obligee with or without notice to the Surety, this obligation shall be void, otherwise it shall remain in full force and effect.

IN WITNESS WHEREOF, the seal and signature of said Principal is hereto affixed and the corporate seal and the name of the said Surety is hereto affixed and attested by its duly authorized Attorney-in-fact _____,
this _____ day of _____, 20____.

PRINCIPAL

SURETY

by: _____

by: _____

SAMPLE

(This document required only if Developer enters into an Improvement Agreement for deferred improvements or as otherwise required by the City of Toledo)

PUBLIC IMPROVEMENT PROJECT
WARRANTY BOND

KNOW ALL MEN BY THESE PRESENTS:

That we, insert name of Developer or Contractor here as Principal, and insert name of Surety here, a Corporation organized and doing business under and by virtue of the laws of the State of _____ and duly licensed to conduct a general surety business in the State of Oregon, as Surety, are held and firmly bound unto the City of Toledo, Oregon as Obligee in the sum of _____ (20% of Improvement Cost) (\$ _____) dollars for which payment, well and truly to be made, we bind ourselves, our heirs, executors and successors, jointly and severally firmly by these presents.

THE CONDITIONS OF THE OBLIGATION IS SUCH THAT:

WHEREAS, the above named Principal, as a condition of the Development Permit for development of _____, has agreed to properly complete said project in compliance with City of Toledo standards and requirements.

WHEREAS, the above named Principal, as a condition of the Development Permit shall guarantee replacement and repair of improvements related to said project for a period of one year following final acceptance of said improvements;

NOW THEREFORE, if the above Principal shall indemnify the Obligee for all loss that Obligee may sustain by reason of any defective materials or workmanship which become apparent during the period of one year from and after acceptance of the said improvements by Obligee, then this obligation shall be void; otherwise it shall remain in full force and effect.

IN WITNESS WHEREOF, the seal and signature of said Principal is hereto affixed and the corporate seal and the name of the said Surety is hereto affixed and attested by its duly authorized Attorney-in-fact,

This _____ day of _____, 20____.

Principal

Surety

Principal Signature

Attorney-in-Fact

SAMPLE

HOLD HARMLESS

To the fullest extent of the law, insert name of prime contractor here, hereinafter referred to as Contractor, will defend, indemnify and hold harmless the City of Toledo, its officials, employees, servants, and agents from and against all claims, demands, and judgments (including attorney fees), made or recovered against them including but not limited to damages to real or tangible personal property or for bodily injury or death to any person, arising out of, or in any manner connected with the performance of work on the Project entitled insert official name of project here, by Contractor, its officers, employees, sub-contractors and agents.

Contractor agrees to provide insurance, as required by the City of Toledo Engineering Policy and by the permit issued by the City of Toledo for construction of the Project.

The insurance certificates shall be submitted to the City of Toledo for approval prior to start of work on the Project and shall include an additional insured endorsement naming the City of Toledo as an additional insured on the liability insurance policy.

Name of Contractor

Signature of Authorized Representative

Title

Date

SAMPLE

The City of Toledo, Lincoln County, Oregon
Resolution No. _____

A RESOLUTION ADOPTING THE CITY OF TOLEDO
ENGINEERING POLICY – GUIDELINES FOR DEVELOPMENT

WHEREAS, The City of Toledo is empowered to set technical and managerial standards for public utility improvements within the City Limits including water, sewer, transportation and drainage improvements; and

WHEREAS, The City finds it necessary to establish and implement uniform engineering design and material standards to aid in the interpretation, application, and implementation of development standards; and

WHEREAS, The City finds it necessary to establish and implement uniform permit application procedures and fee schedules to allow sufficient review and inspection of development plans and specifications by City Staff and the Public Works Director or designee in order protect the integrity and function of the public infrastructure system and the level of service provided to City’s customers,

BE IT RESOLVED BY THE CITY OF TOLEDO CITY COUNCIL, that:

SECTION 1: The provisions of the “The City of Toledo, Engineering Policy – Guidelines for Development” shall be adhered to in accordance with ordinances 1250/1228 for projects involving sanitary sewer system, water system, transportation system, and drainage system improvements within the City’s area of service.

SECTION 2: The officers, agents, and employees of the City of Toledo are authorized to take all actions necessary to effectuate the provisions of this Resolution.

SECTION 3: This Resolution is effective immediately upon passage.

PASSED, ADOPTED AND APPROVED THIS THE ____ DAY OF _____ 200__ BY THE
CITY OF TOLEDO CITY COUNCIL:

AYES: _____ NAYS: _____

APPROVED: _____

(Title) _____

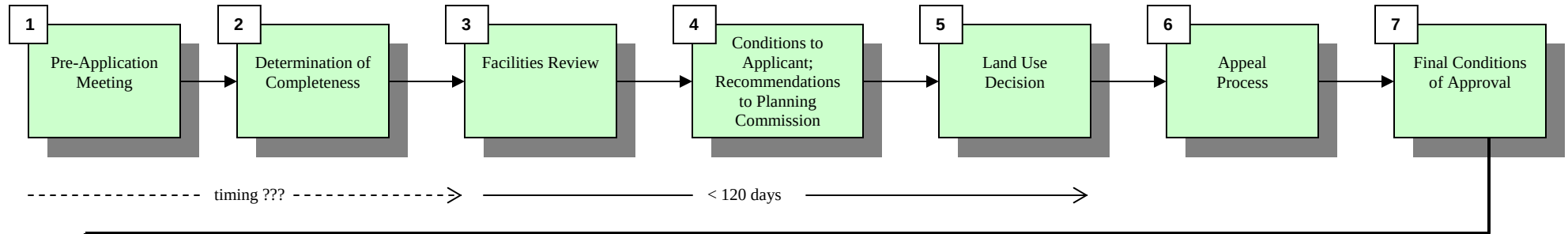
ATTEST: _____

(Title) _____

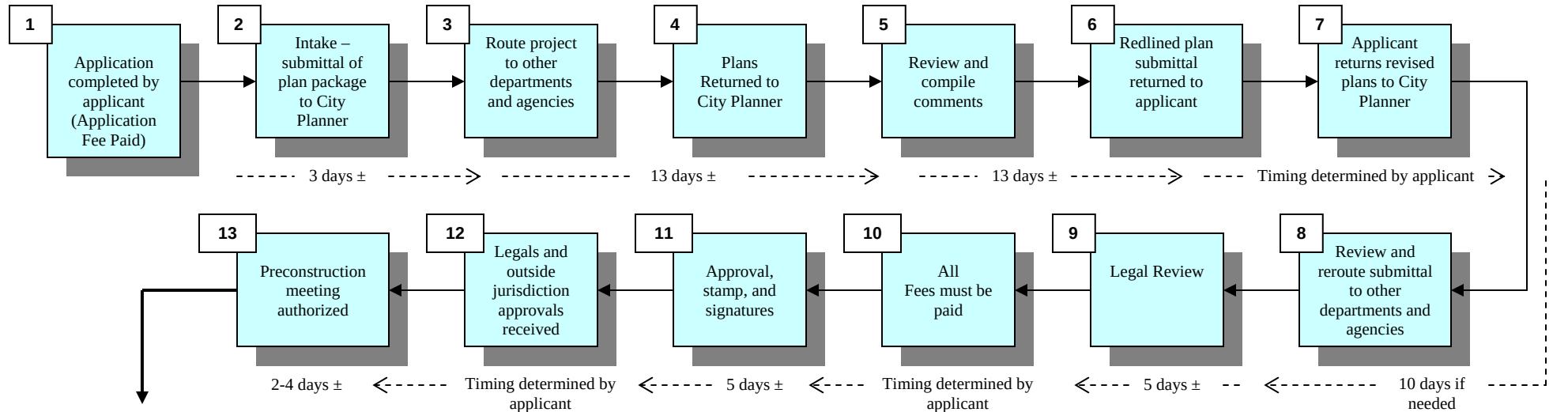
SAMPLE

City of Toledo - SITE DEVELOPMENT AND RELATED PROCESSES (simplified – omits detailed steps)

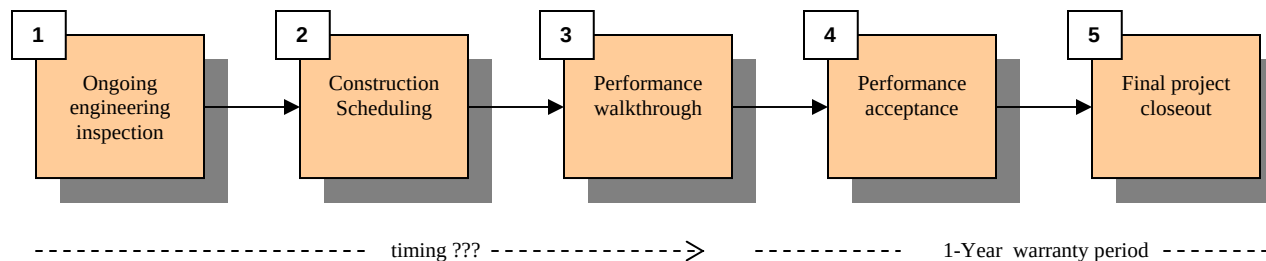
Land Use Permitting Process (If no land use planning issues apply, skip directly to Development Planning Process)



Development Planning Process



Construction and Inspection Process



“Ensuring the integrity of the City of Toledo’s infrastructure”

Flowchart intended to provide general overview of the planning process. Some activities are entirely within the control of the City. Others are not. Estimates of timing for individual activities are provided to assist a developer in determining the approximate amount of time the planning process is likely to take. The estimates are in no way a guarantee as to how long any project will take. The City of Toledo is committed to assisting a developer in completing the planning process in as timely a manner as possible.

Revised: --- --- 2009



City of Toledo
LINCOLN COUNTY, OREGON

DIVISION 1:
WATER SYSTEM DESIGN STANDARDS MANUAL
Guidelines for Development

Effective: -----, 2009

- 1.1 The purpose of this manual is to set standards for the design and construction of water systems improvements to serve new and future development. This manual may be updated periodically and the design engineer shall ensure that they have the latest version.
- 1.2 Materials and details shall conform to the requirements of this manual.
- 1.3 All applicable laws, codes, regulations, and permit requirements shall be complied with.
- 1.4 Upon receiving approval from the City for the plans and specifications, the developer shall submit the plans to the Oregon Department of Environmental Quality for review and approval. The developer will submit proof of DEQ approval of the plans to the City prior to beginning any construction activities.

Section 2 – Design Plan Format

- 2.1 Refer to the City’s “Engineering Policy – Guidelines for Development” document, Section 5.0, for additional requirements and submittal procedures.

Section 3 – Water System Design Requirements

- 3.1 Minimum size for new water mains is 6-inches unless otherwise approved. Water pipe sizes shall also conform to the requirements in the latest Water System Master Plan. Hydraulic calculations shall be provided to show that pipe size is adequate for conveying fire flows during peak demand periods for each specific development.
- 3.2 Peak domestic water demand used in calculations shall be at least 10 gpm per single family dwelling or EDU for developments with 1-10 lots, 5 gpm for 10-25 lots, and 3 gpm for larger developments.
- 3.3 Minimum depth of cover is 36-inches over top of pipe barrel. Individual water services shall have at least 30-inches of cover.
- 3.4 Water piping shall be located 10 feet horizontally away from any sanitary sewer mains or laterals when possible. Vertical separations less than 18-inches shall not be designed into new improvements. All water line and sewer line shall be separated in accordance with OAR 333-061-0050 provisions.
- 3.5 Permanent utility easements shall be provided granting the City access to the public water system improvements for future maintenance and repair. Minimum easement width is 15 feet for a single pipeline at normal depths. Waterlines shall be located at the center of the easement except where the public portion of an individual service terminates at the edge of the easement. Wider easements may be required for deep piping.
- 3.6 Creation of dead-end water mains shall be avoided by looping new piping to connect to existing system piping in at least two locations. If a dead-end is allowed by the City for unusual cases, a fire hydrant shall be provided at the end of the line.
- 3.7 Fire Flow and Hydrant Requirements:

-
- 3.7.1 A minimum flow of 1,000 gpm is required at hydrants for one- and two-family dwellings not exceeding 3,600 square feet and located greater than 10 feet apart. Dwellings 10 feet or closer apart require a flow of 1,500 gpm.
- 3.7.2 Other structures or situations will require greater fire flows. Greater flow shall be determined by using the “Guide for Determination of Needed Fire Flow”, latest edition published by the Insurance Services Office (ISO) to obtain an optimum public protection classification.
- 3.7.3 Fire flow is the flow rate of water supply available measured at the hydrant with at least a 20 psi residual pressure remaining at all points in the system.
- 3.7.4 Fire Hydrants shall be located to provide easy access from streets. Hydrants shall be spaced such that the entire perimeter of all buildings can be reached within a 400-foot radius from a hydrant. A hydrant shall also be available for each 160,000 square feet of developed area.
- 3.7.5 Fire flows and hydrant locations may be subject to Fire Department approval. The City reserves the right to modify fire flow requirements and hydrant spacing on a case-by-case basis.
- 3.8 Provisions for system flushing of all segments of water mains shall be incorporated into the design. Flushing may be accomplished through fire hydrants and/or blow-off assemblies. A velocity of at least 5 feet per second shall be possible in the water main through the operation of the hydrant or blow-off assembly.
- 3.9 Combination air valve (CAV) assemblies shall be placed at all high points in the piping system where air could potentially accumulate. Additional valves may be required on long sections of pipe. Pipelines shall be designed to minimize the number of CAVs required.
- 3.10 Backflow prevention assemblies are required on all domestic lines for commercial buildings, all fire service lines, and all irrigation lines. Backflow prevention assemblies are also required on residential domestic service lines greater than or equal to 2-inches in diameter, or when internal plumbing is greater than 32 feet above the water main, or when the property has a well connected to the domestic plumbing. Other instances may require backflow prevention devices when required by the City. The type of backflow prevention device required is dependent on the degree of hazard and must be approved by the City and in accordance with OAR. Device must be included in the current “Approved Backflow Prevention Assembly List” published by the Oregon Drinking Water Program. All backflow prevention devices shall be located on the applicant’s property and are the property owner’s responsibility to test and maintain in accordance with the manufacturer’s instructions and Oregon statutes. All devices shall be installed downstream from a water meter or shall include flow detectors as applicable. Devices shall be installed as close to the water meter as possible and as directed.
- 3.10.1 Reduced Pressure Backflow Assemblies generally required for:
- Any tax lot with an auxiliary water supply on or available to it, including above or below ground source (wells are most common)
 - Commercial buildings within industrial zones
 - Medical or veterinary centers
 - Dry cleaners and commercial laundries
-

- Any water system which has a pump to supplement pressure
- Sewage pump stations
- Irrigation systems designed to use chemical injection
- Gas stations
- Mortuaries
- Other high hazards as determined by the City

3.10.2 Double Check Backflow Assemblies generally required for:

- Any fire system or water line to a private fire hydrant (see Section 9)
- Multi-story buildings with plumbing in excess of 32 feet above the water main
- Shopping centers or large retail stores
- Restaurants or fast food establishments
- Any water service which is larger than 2-inches in diameter
- Any tax lot served by two water services
- Irrigation systems with pop-up sprinkler heads

- 3.11 Minimum system operating pressures shall be 20 psi at the property line during peak domestic flow conditions and simultaneous fire flows. This minimum pressure applies to the entire distribution system. All public water system improvements shall be designed to provide pressures not less than 40 psi and not greater than 80 psi during normal peak demand periods without fire flows. If minimum pressures cannot be obtained, developer must provide a high-level water system for the development area subject to The City approval. Individual private pressure reducing valves shall be provided for any service with an excess of 80 psi.
- 3.12 All new water services shall be individually metered. Each tax lot shall have a separate water service. Minimum service line size is 5/8-inch. Commercial and industrial user service line sizing greater as required. Services shall be perpendicular to the water main with no horizontal direction changes between the connection and the water meter. Service laterals shall be located close together for two adjoining lots to facilitate quick meter reading. Location of meters is subject to The City approval.
- 3.13 Main extensions shall be installed through new development to allow logical extension of the City waterline grid to allow future development of adjacent undeveloped or underdeveloped properties. This will include the extension of water mains in easements across the property to adjoining properties and across street frontages of the property to adjoining properties when the main is located in the street right-of-way. Property with multiple frontages will be required to extend water along all frontages. This will allow future connection without disrupting improvements constructed for the development.
- 3.14 For pipe placed on slopes steeper than 15%, restrained joint pipe or joint restraint devices shall be installed.
- 3.15 A temporary connection with an approved backflow device is required for flushing and disinfection procedures. Permanent connection to the existing system shall not be made until passing disinfection results are obtained and approved by the City. See Section 7.8.
- 3.16 All details shall conform to the Standard Detail Drawings. Required items or installations for which no detail drawing exists, applicant's engineer shall submit sufficient design data and drawings for The City's approval. All such submitted drawings may require modification prior to approval for use.

Section 4 – Water System Materials

- 4.1 All materials shall be newly manufactured. No rebuilt, reconditioned or used material will be allowed. Materials shall be made in USA unless otherwise approved.
- 4.2 All materials in contact with potable water shall be ANSI/NSF-61 listed.
- 4.3 Oregon Standard Specifications (OSS) – Means the 2002 Oregon Standard Specifications for Construction produced by ODOT and APWA, including latest revisions.
- 4.4 Concrete shall conform to OSS Section 00440, Commercial Grade Concrete. Compressive field strength shall not be less than 3,000 psi at 28 days. Maximum aggregate size shall be 1½-inches. Slump shall be between 2 and 4 inches.
- 4.5 Non-Shrink Grout. Grout shall be Sika 212, Euco N-S, Five Star, or approved equal nonmetallic cementitious commercial grout exhibiting zero shrinkage per ASTM C827. Grout shall not be amended with cement or sand and shall not be reconditioned with water after initial mixing. Nonshrink grout shall be placed and packed only with the use of an approved commercial bonding agent. Unused grout shall be discarded after 20 minutes.
- 4.6 Trench Backfill Materials
 - 4.6.1 Foundation Stabilization: 1½”-0 or 2”-0 aggregate base rock meeting OSS Sections 00641 and 02630. Required when native trench foundation material contains groundwater, or is unsuitable to provide a firm foundation in the opinion of the Public Works Director or designee.
 - 4.6.2 Pipe Bedding and Zone: ¾”-0 dense-graded aggregate, uniformly graded from coarse to fine and meeting OSS Section 02630.10.
 - 4.6.3 Class A Backfill: Native or common excavated material, free from organic or other deleterious material, free from rock larger than 3-inches, and which meets the characteristics required for the specific surface loading or other criteria of the backfill zone in the opinion of the Public Works Director or designee. If stockpiled material becomes saturated or unsuitable, Class B, C or D Backfill shall be substituted.
 - 4.6.4 Class B Backfill: ¾”-0 or 1”-0 dense-graded aggregate, uniformly graded from coarse to fine and meeting OSS Section 02630.10.
 - 4.6.5 Class C Backfill: Clean sand with no particles larger than ¼-inch.
 - 4.6.6 Class D Backfill: Pit run or bar run material, well graded from coarse to fine, with maximum aggregate size of 3 inches.
 - 4.6.7 Class E Backfill (CLSM or CDF): Controlled Low-Strength Material (cement slurry) conforming to OSS Section 00442.

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- 4.6.8 Compaction: Material (except Class E Backfill) shall be compacted in multiple lifts (6-inch maximum lift) to obtain 95% of the maximum dry density as determined by AASHTO T-99.
- 4.6.9 All Backfill within public right-of-ways or within 5 feet of a traveled surface shall be Class B Backfill, except where Class E Backfill is required under pavements by Lincoln County.
- 4.7 Water Pipe Materials
- 4.7.1 Water mains shall generally be constructed of PVC unless ductile iron pipe is called for. Exposed piping in vaults and vault penetration spools shall be ductile iron. PVC and DI pipe shall be made in the USA.
- 4.7.2 PVC pipe, 4- through 12-inch nominal diameter shall be rigid PVC made from class 12454-A or B compounds as defined in ASTM D1784. Pipe shall be NSF 61 approved for use as water distribution piping. Pipe shall be Class 150 meeting DR18, minimum, conforming to all requirements of AWWA C900. Pipe shall integral wall-thickened bells with bonded-in elastomeric gaskets meeting ASTM F477.
- 4.7.3 PVC pipe, 14- through 30-inch nominal diameter pipe shall meet the requirements of AWWA Standard C905 and shall be NSF 61 approved for use as water distribution piping. Pipe shall integral wall-thickened bells with bonded-in elastomeric gaskets meeting ASTM F477. Joint design shall conform to ASTM D3139. Pipe shall be Class 165 meeting DR25, minimum.
- 4.7.4 Ductile iron pipe shall be Class 52 minimum thickness manufactured in accordance with ANSI/AWWA C151/A21.51 under method of design outlined in ANSI/AWWA C150/A21.50. Pipe interior shall be cement mortar lined in accordance with ANSI/AWWA C104/A21.4. External pipe coating shall be an asphaltic coating in accordance with ANSI/AWWA C151/A21.51.
- 4.7.5 Galvanized steel pipe shall be Schedule 40, hot-dipped galvanized, seamless or electric resistance welded type, standard weight, threaded fitting type, conforming to ASTM A53.
- 4.7.6 Polyethylene pipe, $\frac{3}{4}$ - through 2-inch nominal diameter shall be high-density polyethylene pressure rated pipe (PE3408) meeting cell classification 345464A and having NSF 14/61 certification. Pipe shall be compatible with IPS fittings. SIDR 7, 200 psi, meeting the requirements of ASTM D2239 and AWWA C901. Pipe shall have a 50-year manufacturer's warranty.
- 4.8 Fittings
- 4.8.1 Gray and ductile iron fittings shall be used for water main piping. Fittings shall conform to ANSI/AWWA C110/A21.10 Standard (full body) or ANSI/AWWA C153/A21.53 (compact), with 250 psi minimum working pressure rating. Fittings shall be made in the USA as manufactured by U.S. Pipe, Clow, Union, American Ductile Iron Pipe, or Tyler.
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- 4.8.2 All gray and ductile iron fittings shall be cement mortar lined and seal coated inside in accordance with ANSI/AWWA C104/A21.4. Interior seal coat shall be NSF-61 certified. Exterior of fittings shall have an asphaltic coating in accordance with ANSI/AWWA C110/A21.10.
- 4.8.3 Joints and gaskets for mechanical joint fittings shall conform to ANSI/AWWA C111/A21.11 Standard. Gasket material shall be standard SBR rubber, or EPDM.
- 4.8.4 Bolts and hardware for mechanical joint fittings shall be corrosion resistant “T” head bolts and hexagonal nuts conforming to AWWA C111 and ASTM A325. Bolts and nuts for mechanical joints shall be 300 series stainless steel or Cor-Blue coated. Bolts and nuts for flanged fittings, couplings, and other fittings shall be 300 series stainless steel or Cor-Blue coated.
- 4.8.5 Flange fittings shall be faced and drilled to standard 125-pound template per ANSI B16.1 Standard unless otherwise indicated or required to connect to other 250-pound fittings. Flange gaskets shall be virgin SBR rubber, 1/8-inch thick. Gasket shall be full-face cut with holes to pass bolts.
- 4.8.6 Joint restrainers for MJ fittings shall be Megalug by EBAA Iron, or approved equal, specifically designed for the type of pipe material used.
- 4.8.7 Restrained flange adapters shall be Megaflange by EBAA Iron specifically designed for the type of pipe material used.
- 4.8.8 Red brass pipe nipples shall be seamless, M.I.P threaded, rated for 150 psi and conforming to ASTM B43 and ASTM B687. Bronze fittings shall meet the requirements of ASTM B62 with NPT threaded ends conforming to ANSI/ASME B16.15.
- 4.8.9 Galvanized iron fittings shall be 150-lb standard malleable iron fittings with NPT standard threads, conforming to ASTM A53 and ASTM A153.
- 4.8.10 Tapping Sleeves shall have ASTM A240 Type 304/304L stainless steel shell and lugs and ASTM A536 Grade 65-45-12 ductile iron flange. Bolts shall be ASTM A193 Type 304 stainless steel. Nuts shall be ASTM A194 Type 304 stainless steel, heavy hex, coated. Gaskets shall be SBR per ASTM D2000 MAA 610 compounded for water service. Romac Industries “SST”, or approved equal.
- 4.8.11 Couplings shall have ASTM A536 Grade 65-45-12 ductile iron center sleeves and end rings. Bolts and nuts shall be trackhead, heavy hex, rolled thread, high strength, low alloy, corrosion resistant steel per AWWA C111. Gaskets shall be SBR per ASTM D2000 MBA 710, compounded for water service.
- 4.8.12 Service brass shall only be as shown in the Standard Details and as otherwise approved.

4.9 Valves

- 4.9.1 Valves shall be placed at logical locations in accordance with the minimum locations shown in the standard details. Valves shall be sized equivalent to the water piping adjacent to the valve. Valves 8-inch and smaller shall be gate valves. Valves 10-inch and larger shall be butterfly valves. Valves shall be approved by the City.
- 4.9.2 Gate Valves 2-inch through 8-inch shall be iron bodied, resilient wedge, non-rising stem (NRS), O-ring sealed, fusion bonded epoxy lined and coated valves conforming to the latest revision of AWWA C509. Valves shall have a 200 psi working pressure (water, non-shock) rating. Valve ends shall be mechanical joint or flanged joint as applicable. Furnish with standard 2-inch square operating nut when buried and handwheel operator where exposed. Bonnet bolts shall be stainless steel.
- 4.9.3 Butterfly Valves shall be rated for buried service and meet the requirements of the latest revision of Class 150B, AWWA C504. Valves shall have cast iron body, ASTM A126 Class B, resilient Buna-N rubber seat and cast iron disc with stainless steel contacting edge. Shaft shall be 18-8 type 304 stainless steel conforming to ASTM A276. Valve ends shall be mechanical joint or flanged joint as applicable. Furnish with standard 2-inch square operating nut when buried and lever operator where exposed.
- 4.9.4 Bolts and nuts for buried valves shall be 300 series stainless steel or Cor-Blue coated.

4.10 Hydrants

- 4.10.1 Fire hydrants shall meet or exceed AWWA C502, latest revision for dry barrel fire hydrants. Rated working pressure shall be 250 psig. Test pressure shall be 500 psig.
- 4.10.2 Nozzle section, upper and lower standpipes, and hydrant base shall be ductile iron. All exterior fasteners below grade shall be stainless steel.
- 4.10.3 Main valve closure shall be compression type, opening against the pressure and closing with the pressure. Seat diameter shall be 5¼ inches. The seat shall be bronze threaded into bronze mating material for easy field repair.
- 4.10.4 Nozzle section shall be designed for easy 360 degree rotation by the loosening of no more than 4 bolts.
- 4.10.5 Hydrant shall be designed so that removal of all working parts can be accomplished without excavating.
- 4.10.6 The draining system shall be bronze and be positively activated by the main operating rod. Hydrant shall have a sliding bronze drain valve.

- 4.10.7 Hydrant shall have an internal travel stop nut in the top housing. Operating threads shall be factory lubricated and be O-ring sealed from water, moisture, and dirt.
- 4.10.8 Hydrant shall be of the traffic type. A frangible barrel and rod coupling designed to break upon traffic impact will protect the hydrant and connecting piping. Main valve shall remain closed upon impact.
- 4.10.9 Upper operating nut shall be ductile iron, 1½-inch pentagon standard. Opening direction shall be counter-clockwise (CCW).
- 4.10.10 Hydrant shall have two (2) 2½-inch hose nozzles, and one (1) 4½-inch pumper port. Threads shall conform to NFPA National Standard Fire Hose Coupling Screw Threads.
- 4.10.11 Each hydrant shall include a 4-inch Storz Adapter on the pumper port. Storz adapter shall have metal sealing surface designed for permanent mounting on the hydrant. Storz adapter shall be aluminum and shall have a protective cap with stainless steel, plastic coated cable. Storz shall meet the current NFPA-Fire Hose Connection Standard. Adapter shall be Hydra-Shield model HYST-40ST-45NH with SnapCap 4ST (orange) or approved equal.
- 4.10.12 Hydrant bottom connection shall be 6-inch nominal diameter mechanical joint. Flange joint may be approved in some cases due to space constraints.
- 4.10.13 Hydrants shall be painted Fire Hydrant Yellow. Field touch-up will be required if scratched or marred.
- 4.10.14 Hydrants shall be Kennedy Guardian.
- 4.11 Miscellaneous Materials
 - 4.11.1 Tracer wire shall be No. 10 AWG, solid or stranded copper with blue colored insulation. Insulation shall be 30 mil thick HDPE designed for direct bury.
 - 4.11.2 Warning tape shall be 6-inch wide, 4-mil thick, blue color, reading “CAUTION – WATERLINE BURIED BELOW.”
 - 4.11.3 Other materials not covered herein should generally conform to the 2002 Oregon Standard Specifications and are subject to The City’s approval. Service brass shall be as shown in the standard detail drawings.

Section 5 – Water System Installation

- 5.1 Prepare trench in accordance with the standard detail in a safe manner. Place and compact foundation stabilization materials as required. Notify City to allow for inspection of trench bottom.
- 5.2 Place and compact pipe bedding material before placing pipe in the trench. Dig depression for pipe bells to provide uniform bearing along the entire pipe length. Thoroughly compact bedding material.

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- 5.3 Prior to lowering pipe into the trench, the Engineer and City's representative will check for damage to the pipe. The Contractor shall repair or replace, as directed, all damaged or flawed pipe prior to installation.
- 5.4 PVC pipe shall be installed and handled in accordance with the Uni-Bell Plastic Pipe Association standards UNI-B-3, AWWA C605, these specifications and the manufacturer's installation guide. The Contractor shall have on site all proper tools and equipment to properly and safely install the pipe.
- 5.5 Thoroughly clean inside the pipe before laying. Prevent foreign material from entering the pipe while it is being placed in the trench. Remove all foreign material from the inside of the pipe and joint before the next pipe is placed. Keep debris, tools, rags or other materials out of the pipe at all times. When pipe laying is not in progress, cover the exposed end of the pipe using a watertight expanding plug, or by other approved means to prevent entry of trench water or other foreign materials into the pipe.
- 5.6 Lay pipe with bell ends facing the direction of laying. For lines on an appreciable slope, face bells up-grade unless otherwise directed by the City.
- 5.7 Thoroughly clean the ends of the pipe to remove all foreign matter from the pipe joint. Lubricate the bell and spigot ends with NSF approved pipe lubricant, as recommended by the manufacturer. Furnish the gaskets required for the joint being assembled. Install the gasket with uniform tension around the joint groove before placing the pipe in the trench.
- 5.8 Provide concrete thrust blocking at all bends, valves, tees and other fittings in accordance with the Plans, as required to prevent movement due to thrust. Mechanical joint restraints shall also be installed.
- 5.9 At no time shall pipe be deflected, either in the vertical or horizontal plane, in excess of the maximum deflection recommended by the pipe manufacturer. Deflection at any joint shall not exceed $2\frac{1}{2}^{\circ}$. Maximum deviation from grade shall not exceed $\frac{1}{2}$ -inch.
- 5.10 Where new water pipe is installed near existing or new sanitary sewer lines, all provisions of current OAR 333-61-050 (Crossings – Sanitary sewers and waterlines), regarding placement of pipe near, under, or over sanitary sewer lines shall be followed.
- 5.11 Tracer wire shall be brought to the surface and connected at each valve box. All joints and/or splices in the wire shall be made with a designed waterproof splice kit. Wire shall be taped to pipe every 5 feet and shall be run straight with a small amount of slack.
- 5.12 Place materials in the pipe zone in layers not greater than 6 inches thick and in a manner that equalizes the pressure on the pipe and minimizes stress. As required under the haunches of pipe and areas not accessible to mechanical tampers or to testing, compact with hand methods to ensure thorough contact between the material and the pipe. Before placing the pipe zone material, condition, aerate, or wet the material so that the moisture content of each layer is within minus 4% to plus 2% of optimum moisture content.
- 5.13 Provide proper Backfill Class material as required. Backfill the trench above the pipe zone in successive lifts. Do not allow the backfill to free-fall into the trench until at least 3 feet of cover is provided over the top of the pipe. Modify the compaction as necessary to protect the pipe. Compact each lift to not less than 95% of the maximum density.
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- 5.14 Warning tape shall be placed over the pipe zone material, approximately 15 to 18 inches below finish grade, in accordance with the Standard Detail Drawings. Lay tape flat and untwisted, centered over the pipe and with wording facing upwards.
- 5.15 If the specified compaction is not obtained, contractor shall remove material, modify compaction procedures, and/or reduce the thickness of lifts as required. Do not proceed with additional excavation or pipe laying until the backfill can be compacted to the satisfaction of the City.
- 5.16 CLSM. When CLSM Backfill is required, backfill above pipe zone with CLSM material. If the CLSM is to be used as a temporary surfacing, backfill to top of the trench and strike off to provide a smooth surface. If CLSM is not to be used as a temporary surface, backfill to bottom of the proposed resurfacing. Use steel plates to protect the CLSM from traffic a minimum of 24 hours. Comply with Lincoln County requirements.
- 5.17 Restore all surfaces after backfill is complete. Base rock, asphalt paving and concrete paving methods and materials shall conform to Oregon Standard Specifications as approved by the City and Lincoln County.
- 5.18 Do not make permanent connections to existing mains until disinfection is completed. A temporary connection with an approved backflow device is required for flushing and disinfection procedures. Permanent connection to the existing system shall not be made until passing disinfection results are obtained and approved by the City.
- 5.19 Filling and Flushing. After installation of water piping, fill pipes slowly with potable water at a maximum rate of 500 gpm while venting all air. Take all required precautions to prevent entrapping of air in the pipes. Flush all sections of pipe to remove any solids or material that may be in the pipe. If no hydrant is installed at the end of the main, provide a tap large enough to develop sufficient flow rates to achieve a velocity of at least 5 feet per second in the main. If sufficient velocity cannot be obtained, pigging is required. Control and dispose flushing water in a proper manner to avoid erosion, flooding, property damage, and discharge of chlorinated water in an unacceptable manner.
- 5.20 Pigging
- 5.20.1 If a flushing velocity rate of 5 fps is not attainable with the available pipe configuration or fittings, the new piping shall be pigged to obtain a cleansing flush of the piping.
- 5.20.2 Pigging shall be accomplished with at least three (3) polyurethane foam pigs designed for cleaning of waterline piping. Pigs shall be as manufactured by Knapp Polly Pig, Inc. or approved equal.
- 5.20.3 The Contractor shall have the option to run a single pig three times or to run three separate pigs at the same time. If the pigs are rammed at the same time, they shall be numbered so as to identify them when they are ejected from the piping.
- 5.20.4 Necessary fittings, ejection ports, and other facilities shall be designed and shown on the plans.
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- 5.20.5 Contractor shall provide adequate erosion control means to prevent damage from the flushing or pigging process.
- 5.20.6 The City's inspector shall be given 48 hours notice prior to pigging beginning and shall be on-hand to observe and approve the pigging procedure and process that is utilized.
- 5.20.7 If after pigging the new line the bacteriological test fails, the line shall be re-pigged and retested.
- 5.20.8 Pigging can be used as an option to flushing at the Contractor's discretion.
- 5.21 Testing and Disinfection. After flushing, water system shall be tested for leakage and disinfected according to the following Sections. Provide all temporary taps as required. All items not passing tests shall be repaired or replaced as required.

Section 6 – Water System Pressure (Hydrostatic) Testing

- 6.1 All waterlines and service lines shall be subjected to hydrostatic pressure testing. Testing shall be conducted by the Contractor in the presence of the Engineer. City must be notified at least 2 working days in advance.
- 6.2 Testing shall not be commenced until all thrust blocking has been in place for not less than **10 days** and sufficient backfill has been placed to prevent pipe movement.
- 6.3 Furnish and operate all pumps, gauges, plugs, saddles, corporation stops, miscellaneous hose and piping, and measuring equipment necessary for performing the test. Provide certifications of accuracy for gauges from an approved laboratory when requested.
- 6.4 Test Procedure
 - 6.4.1 The test section shall be filled with water and all air expelled from the pipe prior to testing. City will provide water for testing at a time of day when sufficient quantities of water are available for normal system operation.
 - 6.4.2 All valves isolating the test section shall be securely closed and the specified test pressure applied by means of a pump connected near the lower end of the test section.
 - 6.4.3 The test pressure shall be **150 psi** and the duration shall be at least **2-hours** at the test pressure. Provide additional pumping during the test period to continuously maintain pressure within 5 psi of that required. Use a clean container of potable water to supply the pump.
 - 6.4.4 Accurately determine the quantity of water required to maintain and restore the required pressure at the end of the test by pumping through an approved positive displacement water meter.

- 6.4.5 The allowable leakage rate for the test section shall be determined from the following formula:

$$L = \frac{SD\sqrt{p}}{148,000}$$

L = allowable leakage (gph)
S = length of pipe tested
D = nominal diameter of pipe (inches)
p = average test pressure during test (psi)

- 6.4.6 If the amount of water added to the section exceeds the allowable leakage, the Contractor shall, determine the source of leakage, repair or replace the defective elements, and repeat the test until the allowable leakage requirements have been satisfied.
- 6.4.7 All visible leaks on new waterlines shall be repaired, regardless of the amount of leakage.
- 6.4.8 Make all tests with hydrant auxiliary gate valves open and pressure against the hydrant valve. After the pipe test is completed, test each gate valve in turn by closing it and relieving the pressure beyond. This test of the gate valve is acceptable if there is no immediate loss of pressure.

Section 7 – Water System Disinfection

- 7.1 All lines installed or modified under this Contract shall be sterilized prior to connection to the existing system, in accordance with the following procedure, AWWA Standards C651 through C654, and current OAR 333-61-050 (Disinfection of Facilities).
- 7.2 Prior to commencing disinfection procedures, all lines shall be flushed thoroughly to remove dirt, construction debris and other potential contaminants.
- 7.3 The Contractor shall have the option of utilizing either a liquid chlorine gas-water mixture, direct fed chlorine gas, sodium hypochlorite solution, or a calcium hypochlorite and water mixture for disinfection.
- 7.4 Disposal of chlorinated water from a reservoir tank or pipelines shall be performed in conformance with the most recent draft or edition of *Best Management Practices for the Disposal of Chlorinated Water* by the Oregon Department of Environmental Quality. Chlorinated water used for disinfection of waterlines and service lines shall not be directly disposed of into or impair the waters of the State (i.e. lakes, creeks, streams and wetlands).
- 7.5 The Contractor shall provide all equipment, materials, and workmanship required to complete the flushing and disinfection of waterlines and appurtenances.
- 7.6 Disinfection Procedure
- 7.6.1 The Contractor shall inject chlorine solution into the beginning of the waterline through a corporation stop inserted in the horizontal axis of the pipe. Make no connections between the existing distribution system and the non-disinfected pipelines unless a State Drinking Water Program approved backflow preventer is installed in the connecting line.

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- 7.6.2 The solution shall have a free chlorine residual of at least 25 mg/L, but not more than 100 mg/L. All entrapped air shall be discharged from the line and all surfaces wetted. Chlorinated water shall be retained in the pipe for at least 24-hours. A free residual of not less than 10 mg/L shall be found in all parts of the line after the 24-hour period has elapsed.
- 7.6.3 After the 24-hour period, all valves in the mainline shall be operated and all hydrants flushed with a residual of at least 10 mg/L being found. If the residual concentration within any part of the chlorinated section is found to be less than 10 mg/L, the Contractor shall flush, rechlorinate, and retest all sections until a 10 mg/L residual is obtained.
- 7.6.4 Upon obtaining the minimum 10 mg/L residual following the 24-hour disinfection period, the Contractor shall flush the section with potable water until the chlorine residual is equivalent to the residual of the existing system water. A minimum of one sample shall then be taken from the pipe for microbiological analysis.
- 7.7 Microbiological Sampling and Analysis
- 7.7.1 The Contractor is responsible for collecting and submitting samples to a certified independent testing laboratory for microbiological analysis.
- 7.7.2 The Engineer or City representative shall be present to witness the collection of the water samples for testing. Chain of custody procedures shall be utilized during the collection and transport of samples to the laboratory.
- 7.7.3 The Contractor shall bear all costs associated with the required testing, including laboratory fees, materials required, and transportation costs. The Contractor also shall pay for all additional tests required as a result of failing to meet the bacterial limits.
- 7.7.4 If the results of the microbiological analysis indicate that the water is free of coliform organisms, the waterline may be put into service.
- 7.7.5 If the results of the microbiological analysis indicate that coliform organisms are present, then the waterline shall be flushed, rechlorinated, and retested until a coliform-free sample is obtained.
- 7.7.6 A minimum of one sample from each separable structure or pipeline shall be obtained for analysis. The presence of coliform organisms shall be determined using the Colilert 24-hour test, Method MMO-Mug, or other methods approved by the Oregon State Drinking Water Program.
- 7.8 Connections to Existing System
- 7.8.1 New waterlines shall not be connected to the existing system until passing microbiological testing results have been received. An approved double-check backflow device shall be temporarily installed and shall remain until all tests have passed. Device shall be sufficiently large to provide adequate flushing. Merely leaving a valve closed is not acceptable. After disinfection has been
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completed satisfactorily, the tie-in may be made. Tie-in fittings and small section of pipe shall be disinfected as specified below.

- 7.8.2 Where new waterlines connect to existing lines and the tie-in requires a portion of the new construction to be brought into service immediately upon completion of the tie-in, the new piping and appurtenances shall be disinfected by liberally spraying or brushing on 1% hypochlorite solution (i.e. 1 gallon 5.25% bleach mixed with 4 gallons potable water), waiting 10 minutes, and then thoroughly flushing. This is generally limited to cut-in fittings.
- 7.8.3 The Contractor shall take care not to allow foreign material to enter the pipe and appurtenances during installation.
- 7.8.4 Upon completion of the tie-in, the new piping and appurtenances shall be flushed.

Section 8 – Standards for Private Fire Protection Systems

- 8.1 Fire service backflow prevention assemblies shall be installed at the property line, or edge of the public waterline easement as approved by the City. The fire service line from the public right-of-way or utility easement to the backflow assembly will be privately owned and shall meet all City standards. The delineation between the public and private line shall occur as close to the public main as possible and delineated with an in-line public valve in accordance with City standards. A backflow prevention assembly for a fire service line may be installed inside of a building if it can be done within twenty feet of the tapping valve or tee.
- 8.2 Private fire lines shall include a flowmeter and vault located in the public right-of-way or utility easement. Materials and configuration shall be as approved by the City.
- 8.3 Only approved Double Detector Check Backflow Assemblies are to be used for backflow prevention on fire line services.
- 8.4 Only approved resilient seat indicating valves are allowed on fireline assemblies.
- 8.5 Installation must comply with the Oregon Uniform Fire Code as adopted and amended by the State of Oregon Fire Marshal, and City Standards.

Section 9 – Standards for Special Projects

- 9.1 The design of the following are considered special projects and are not covered in detail in this manual.
 - 9.1.1 Water Distribution Pumping Stations
 - 9.1.2 Storage Facilities
 - 9.1.3 Pressure Regulating Stations
- 9.2 Review and approval of special projects will be made on a case by case basis. Developer should coordinate early in the planning stages with the City to determine specific requirements for the site. All aspects of any special project will be designed and constructed as required by the City.

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- 9.3 In general, when adequate pressures are not available by gravity through the existing system a suitable pump station is required to serve the development. Pump stations shall be designed and constructed in accordance with City requirements. When possible, pumping stations will convey water to a high level storage tank. When suitable tank elevations are not possible the City may allow hydropneumatic tank type booster pump stations. When a storage tank cannot be provided, a fire pump will be needed in addition to the normal service pumps. Provisions for fire flows during power outages must be accommodated.
- 9.4 Pump buildings and storage tanks will have adequate site sizing and access.
- 9.5 Pumping stations will normally require 480 volt, 3-phase electrical service. Flowmeters, PLC based control systems, flow and level displays, and SCADA system outputs will be required.
- 9.6 Storage tanks will have a volume equal to at least 120,000 gallons plus 600 gallons per lot served. Tanks will be glass fused to steel of a bolt together design unless otherwise approved by the CITY. Tanks will be designed in conformance with the latest Oregon Structural Specialty Code in effect. Access hatches, exterior aluminum and interior stainless steel ladders, and other appurtenances will be included. Tank water level will be monitored with a submersible pressure transducer. An exterior mechanical tank level device will also be required.

Guidelines for Development Water System Design Standards Manual

Testing and Data Sheets

Hydrostatic Pressure Test Data Sheet

City of Toledo

260 N Main St.

PO Box 220

Toledo, Oregon 97391

(541) 336-2247 Fax: (541) 336-3512



Test Date

Inspector

Hydrostatic Pressure Test Data Sheet Inspection Report Form

Project Name: _____

Contractor: _____

Test Pressure _____ (psi)

Allowable Leakage Rate (L)

$$L = \frac{SD\sqrt{p}}{148,000}$$

L = allowable leakage (gph)
S = length of pipe tested (feet)
D = nominal diameter of pipe (inches)
p = avg test pressure during test (psi)

Allowable Leakage Rate Calculation

	Pipe Segment Description	Length of Pipe (S)	Diameter (D) (in)	Allowable Leakage Rate (L) (gal/hr)
1				
2				
3				
4				
5				
Total Allowable Leakage Rate (gal/ hr):				

Hydrostatic Test Data

Time	Elapsed Time (min)	Pressure (psig)	Water Added (gal)	Pressure After Adding Water (psig)
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Total Elapsed Time:		Total Water Added:		

Actual Leakage Rate:

$$L_{\text{actual}} = \frac{\text{Total Water Added (gal)}}{(\text{Total Elapsed Time (min)} / 60)} = \frac{(\text{gal})}{(\text{min} / 60)} = \text{_____ (gal/hr)}$$

Actual Leakage Rate $\leq$ Allowable Leakage Rate? _____ Yes _____ No

Inspector's Signature: _____ Date: _____

STANDARD DETAIL DRAWINGS INDEX

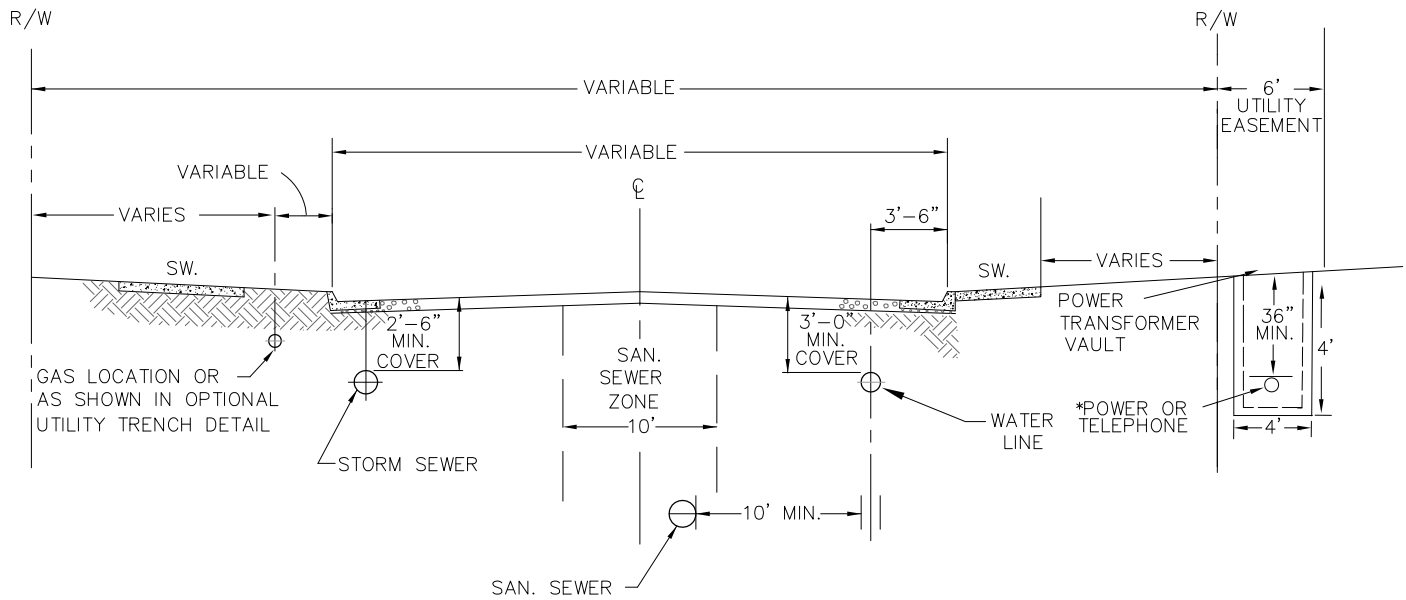
W-050:	STANDARD UTILITY LOCATIONS
W-100:	TYPICAL WATER VALVE LOCATIONS (MINIMUM)
W-150:	TYPICAL WATERLINE TRENCH DETAILS
W-151:	STREET CUT STANDARD DETAIL
W-170:	PIPE ANCHOR / TRENCH CUT-OFF WALL DETAIL
W-200:	STANDARD WATER VALVE SETTING DETAIL
W-205:	VALVE OPERATOR EXTENSION DETAIL
W-300:	STANDARD FIRE HYDRANT ASSEMBLY DETAIL
W-400:	2" BLOW-OFF ASSEMBLY
W-401:	2" BLOW-OFF ASSEMBLY W/ BLOW-OFF HYDRANT
W-405:	4"+ BLOW-OFF ASSEMBLY
W-500:	2" COMBINATION AIR VALVE ASSEMBLY
W-600:	STANDARD 3/4" WATER SERVICE CONNECTION
W-605:	STANDARD 1" WATER SERVICE CONNECTION
W-608:	STANDARD 2" WATER SERVICE CONNECTION
W-700:	CONCRETE THRUST BLOCKING DETAILS
W-800:	REDUCED PRESSURE BACKFLOW ASSEMBLY (3/4" – 2")
W-805:	REDUCED PRESSURE BACKFLOW ASSEMBLY (2½" UP)
W-900:	DOUBLE CHECK VALVE ASSEMBLY (3/4" – 2")
W-905:	DOUBLE CHECK DETECTOR ASSEMBLY (2½" UP)



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STANDARD DETAIL DRAWING INDEX

DETAIL NO.
W-010
04/30/2009



NOTES:

1. WATER LOCATED 3'-6" INSIDE FROM FACE OF CURB OR AS OTHERWISE DIRECTED.
2. 10' HORIZONTAL SEPARATION BETWEEN WATER AND SEWER WHERE POSSIBLE. COMPLY WITH SEPARATION REQUIREMENTS OF OAR 333-061-050.
3. WATER DISTRIBUTION MAINS SHALL HAVE 36" MINIMUM COVER OR AS OTHERWISE DIRECTED.
4. SEWER MAINS SHALL HAVE 5.25' (63") MINIMUM COVER UNLESS OTHERWISE APPROVED TO AVOID CONFLICTS WITH WATER AND OTHER UTILITIES.
5. WATER MAINS SHALL BE LOCATED ON NORTH OR EAST SIDE OF STREET WHEN PRACTICAL.
6. SEWER, STREETS AND DRAINAGE SUBJECT TO CITY STANDARDS.
7. MANHOLE LIDS SHALL NOT BE LOCATED DIRECTLY IN NORMAL WHEEL PATH.
8. ALL LAYOUTS AND LOCATIONS ARE SUBJECT TO CITY APPROVAL.



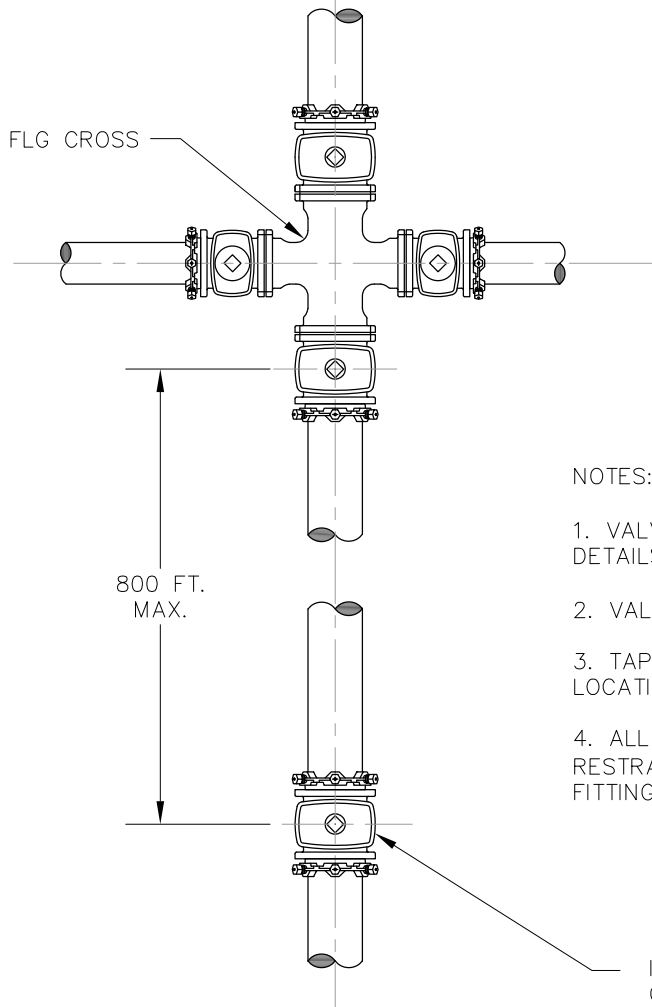
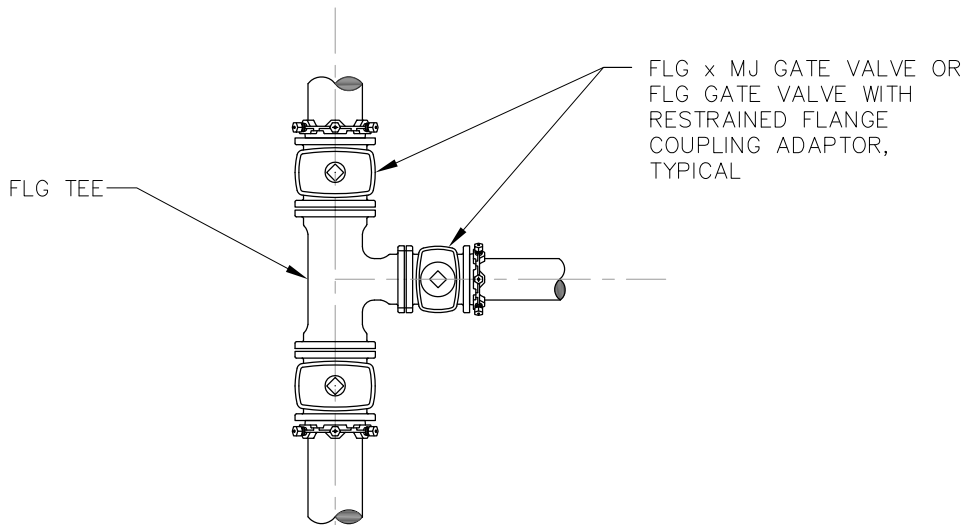
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STANDARD UTILITY LOCATIONS

DETAIL NO.

W-050

04/30/2009



NOTES:

1. VALVE BOXES REQ'D AT EACH VALVE. SEE APPROPRIATE DETAILS.
2. VALVES/BOXES SHALL CONFORM TO CITY STANDARDS.
3. TAPPING TEES WITH VALVE MAY BE USED AT SOME LOCATIONS UPON PRIOR APPROVAL.
4. ALL MJ FITTINGS SHALL BE EQUIPPED WITH APPROVED RESTRAINT GLANDS REQ'D AT EACH VALVE AND NEARBY FITTING.

INLINE VALVES SHALL BE MJ GATE VALVES OR FLG GATE VALVES WITH RESTRAINED FLANGE COUPLING ADAPTER



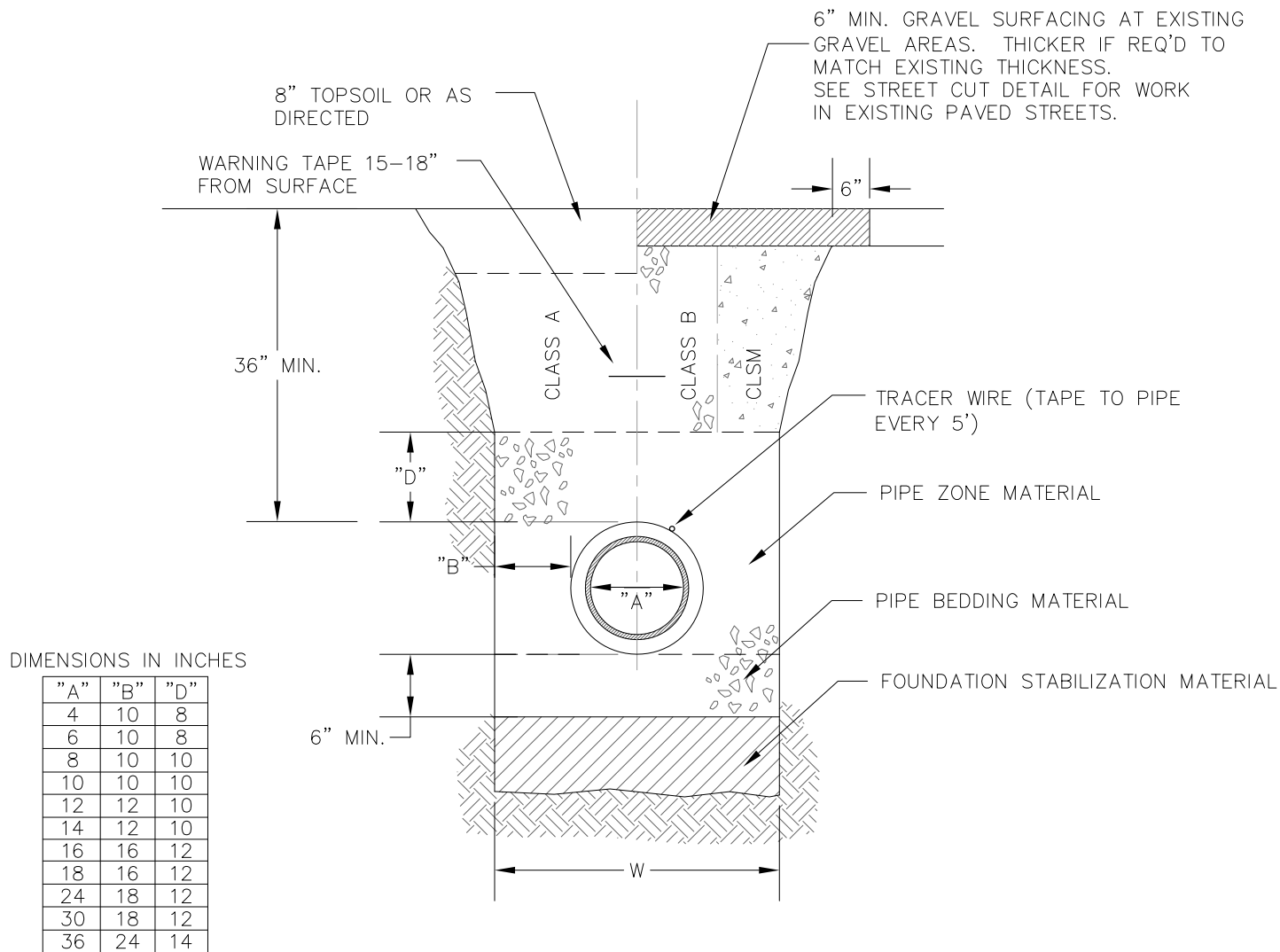
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TYPICAL WATER VALVE LOCATIONS (MINIMUM)

DETAIL NO.

W-100

04/30/2009



NOTES:

1. TRENCH EXCAVATION SHALL BE CONDUCTED IN A SAFE MANNER WITH ALL NECESSARY BRACING AND SHORING PROVIDED FOR COMPLIANCE WITH OSHA.
2. FOUNDATION STABILIZATION SHALL BE PROVIDED WHEN MATERIAL AT BOTTOM OF TRENCH IS UNSUITABLE IN THE OPINION OF THE CITY TO PROVIDE A STABLE TRENCH BASE.
3. CONSTRUCTION IN STATE AND COUNTY RIGHT-OF-WAY SHALL COMPLY WITH STATE AND COUNTY STANDARDS AND CITY STANDARDS.
4. CLASS B BACKFILL REQUIRED IN ALL ROADWAYS AND TRAFFIC PATHS EXCEPT WHERE CDF BACKFILL IS REQUIRED BY COUNTY, STATE, OR CITY.
5. TRACER WIRE REQUIRED AT ALL NON-METALLIC PIPELINES. WIRE SHALL BE 10 GA. MINIMUM SOLID COPPER WIRE WITH BLUE 30 MIL THICK HDPE INSULATION RATED FOR DIRECT BURY. USE APPROVED WATERPROOF SPLICE AT ALL CONNECTIONS.
6. WARNING TAPE SHALL BE 6" WIDE, 4 MIL THICK, APWA BLUE, READING "CAUTION WATER LINE BURIED BELOW".
7. MATERIALS SHALL BE AS SPECIFIED BY THE CITY IN THE STANDARDS MANUAL.
8. COMPACT ALL FILL TO 95% MDD PER ASTM D698. SUFFICIENT COMPACTION TESTS WILL BE REQUIRED TO PROVE METHODS AND COMPACTION EFFORT IS SUFFICIENT.



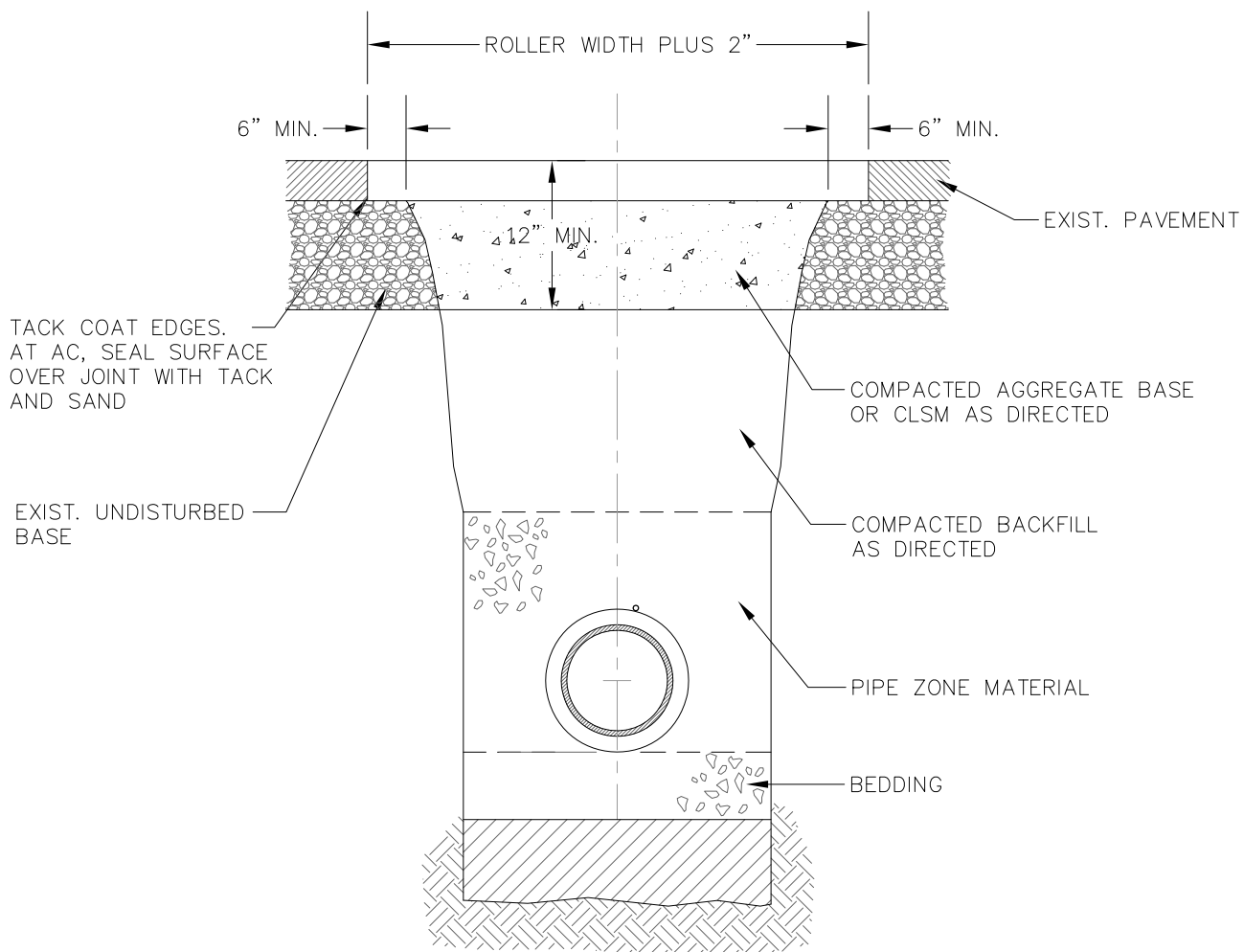
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TYPICAL WATERLINE TRENCH DETAILS

DETAIL NO.

W-150

04/30/2009



NOTES:

1. ALL EXISTING AC OR PCC PAVEMENT SHALL BE SAWCUT IMMEDIATELY PRIOR TO REPAVING.
2. CONCRETE PAVEMENT SHALL BE REPLACED WITH CONCRETE TO A MINIMUM THICKNESS OF 6 INCHES OR TO THE THICKNESS OF REMOVED PAVEMENT, WHICHEVER IS GREATER.
3. PLACE AC MIX TO A MINIMUM THICKNESS OF 4 INCHES OR THE THICKNESS OF REMOVED PAVEMENT, WHICHEVER IS GREATER. COMPACT AS DIRECTED.
4. COMPLY WITH THE REQUIREMENTS OF THE AGENCY HAVING JURISDICTION OVER THE ROAD IN WHICH THE STREET CUT OCCURS.



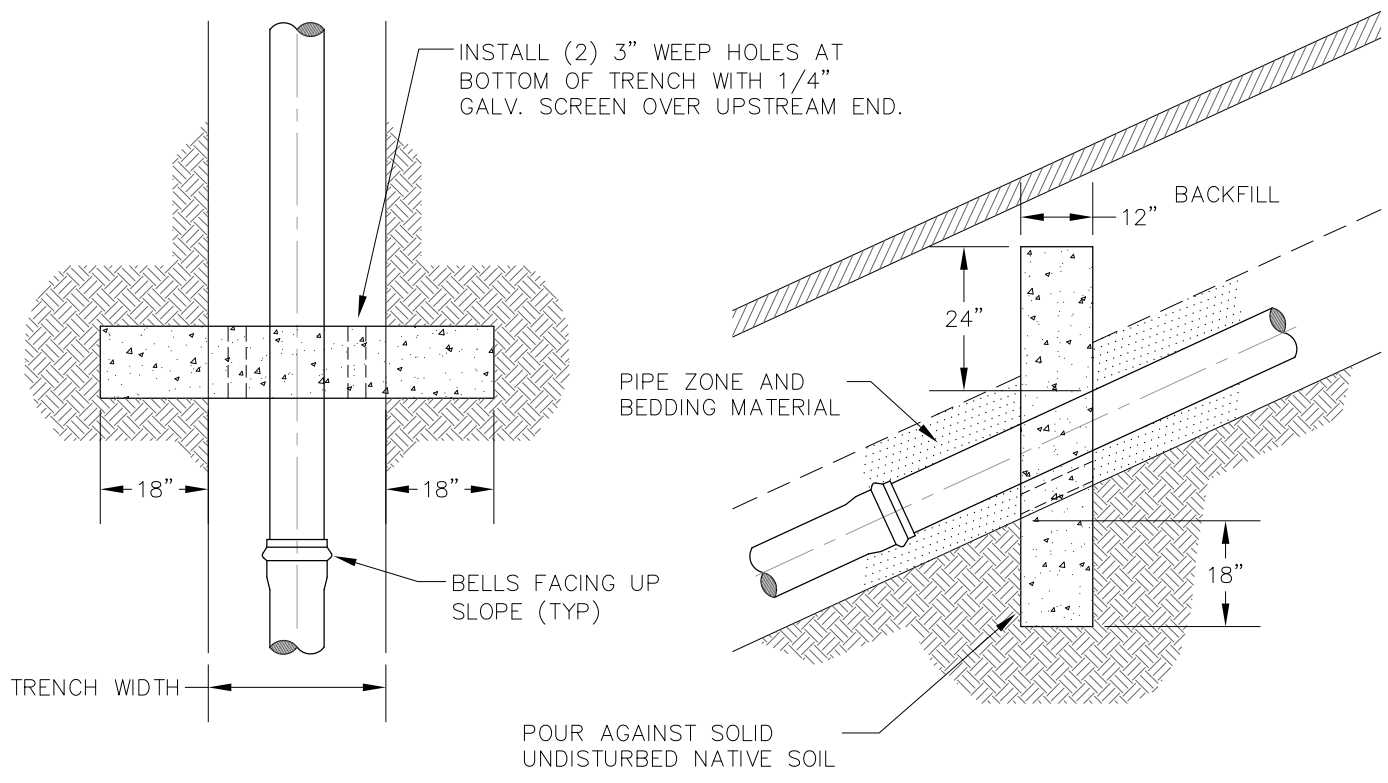
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STREET CUT STANDARD DETAIL

DETAIL NO.

W-151

04/30/2009



NOTES:

1. CUT-OFF WALLS REQ'D AT ALL PIPELINES WHERE SLOPE EXCEEDS 20%.
2. RESTRAINED JOINT PIPE REQUIRED AT SLOPES BETWEEN 15% AND 20%.
3. WALLS SHALL BE FORMED WITHIN TRENCH. REMOVE FORMS PRIOR TO BACKFILLING.
4. CONCRETE SHALL HAVE 3000 PSI COMPRESSIVE STRENGTH MIN. (CLASS 3000).
5. SPACING OF WALLS SHALL BE:

SLOPE	SPACING
20-34%	35 FEET
35-50%	25 FEET
51+ %	15 FEET



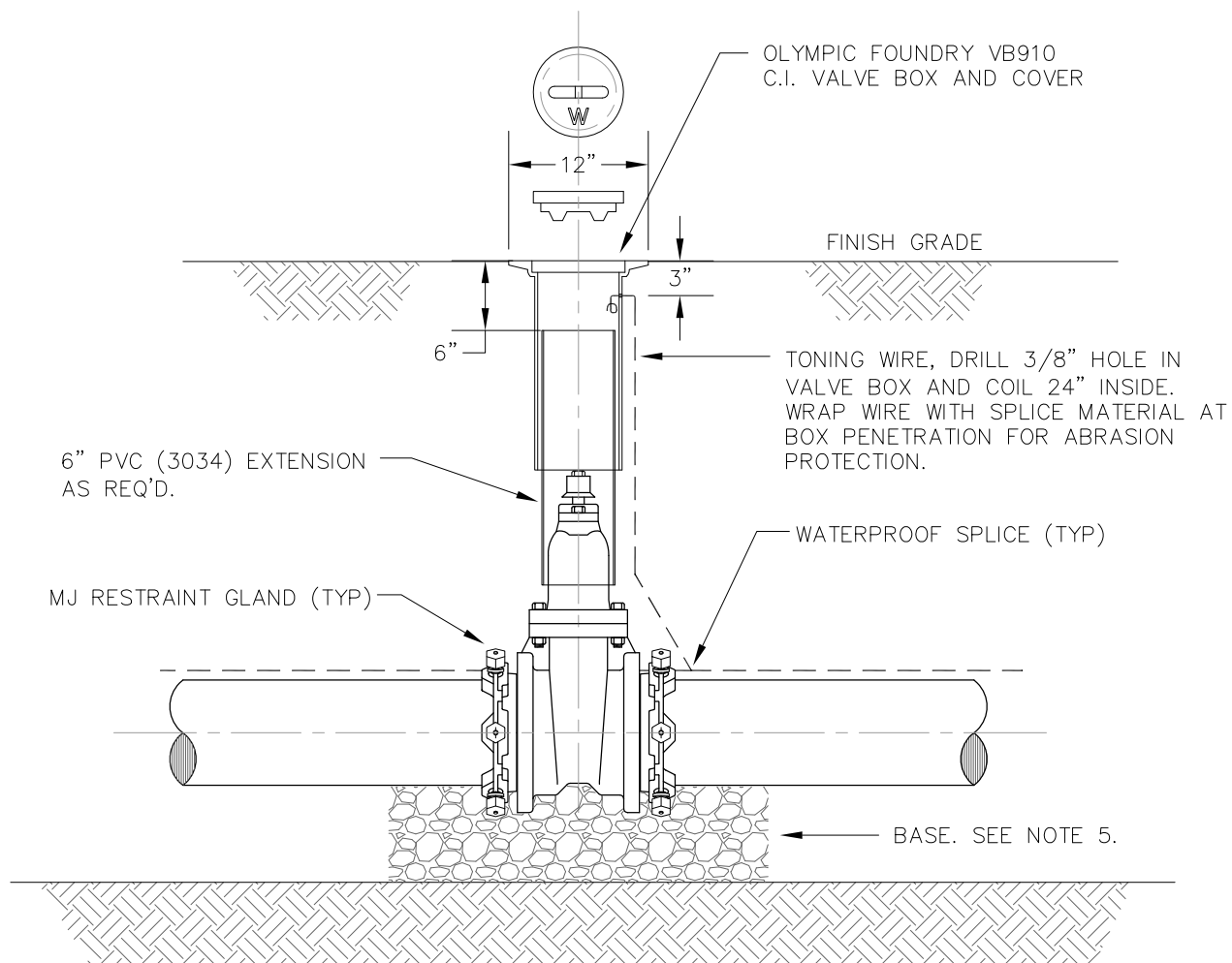
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PIPE ANCHOR / TRENCH CUT-OFF WALL DETAIL

DETAIL NO.

W-170

04/30/2009



NOTES:

1. VALVE BOX SHALL BE CENTERED OVER VALVE OPERATING NUT.
2. PVC EXTENSION SHALL BEGIN AS CLOSE TO VALVE AS POSSIBLE AND SHALL EXTEND TO WITHIN 6" OF GROUND SURFACE.
3. TOP OF VALVE BOX SHALL BE FLUSH WITH FINISH GRADE.
4. VALVE EQUIPPED WITH 2" SQUARE OPERATING NUT LOCATED WITHIN 24" FROM GROUND SURFACE. SEE VALVE OPERATOR EXTENSION DETAIL WHERE REQUIRED.
5. VALVES 12" AND SMALLER SHALL BE PROVIDED WITH CLASS B BASE. VALVES LARGER THAN 12" SHALL BE INSTALLED ON PRECAST CONCRETE PIER BLOCK.
6. NO PIPE JOINTS ALLOWED WITHIN 10' OF IN-LINE VALVES UNLESS JOINT RESTRAINT DEVICE PROVIDED.



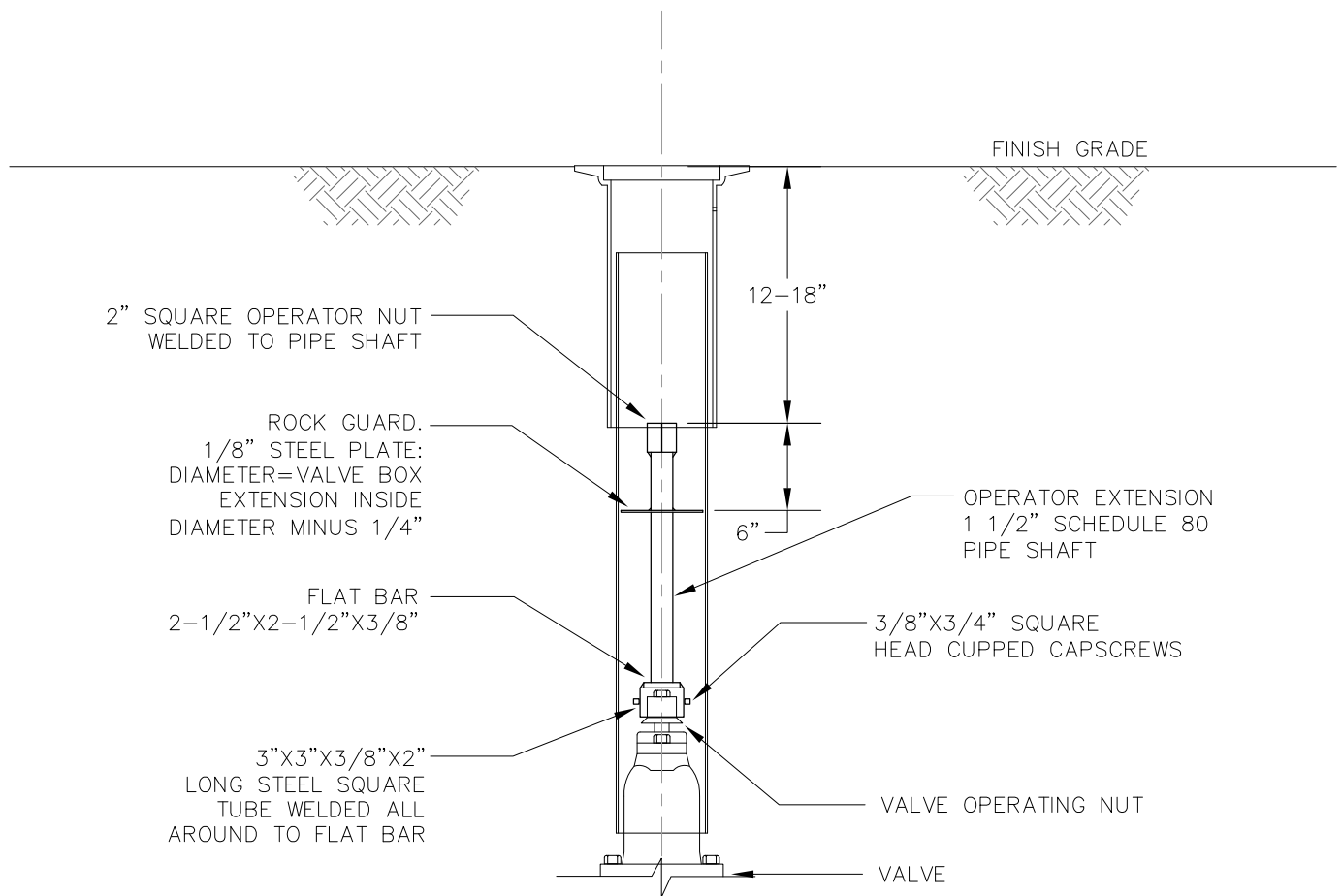
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STANDARD WATER VALVE SETTING DETAIL

DETAIL NO.

W-200

04/30/2009



NOTES:

1. WHERE DEPTH IS OVER 6 FEET, A SECOND ROCK GUARD PLATE IS REQUIRED EQUALLY SPACED BETWEEN THE TOP ROCK GUARD AND THE VALVE NUT.
2. EXTENSION IS REQUIRED WHEN VALVE OPERATING NUT IS GREATER THAN 24 INCHES FROM FINISHED GROUND SURFACE.



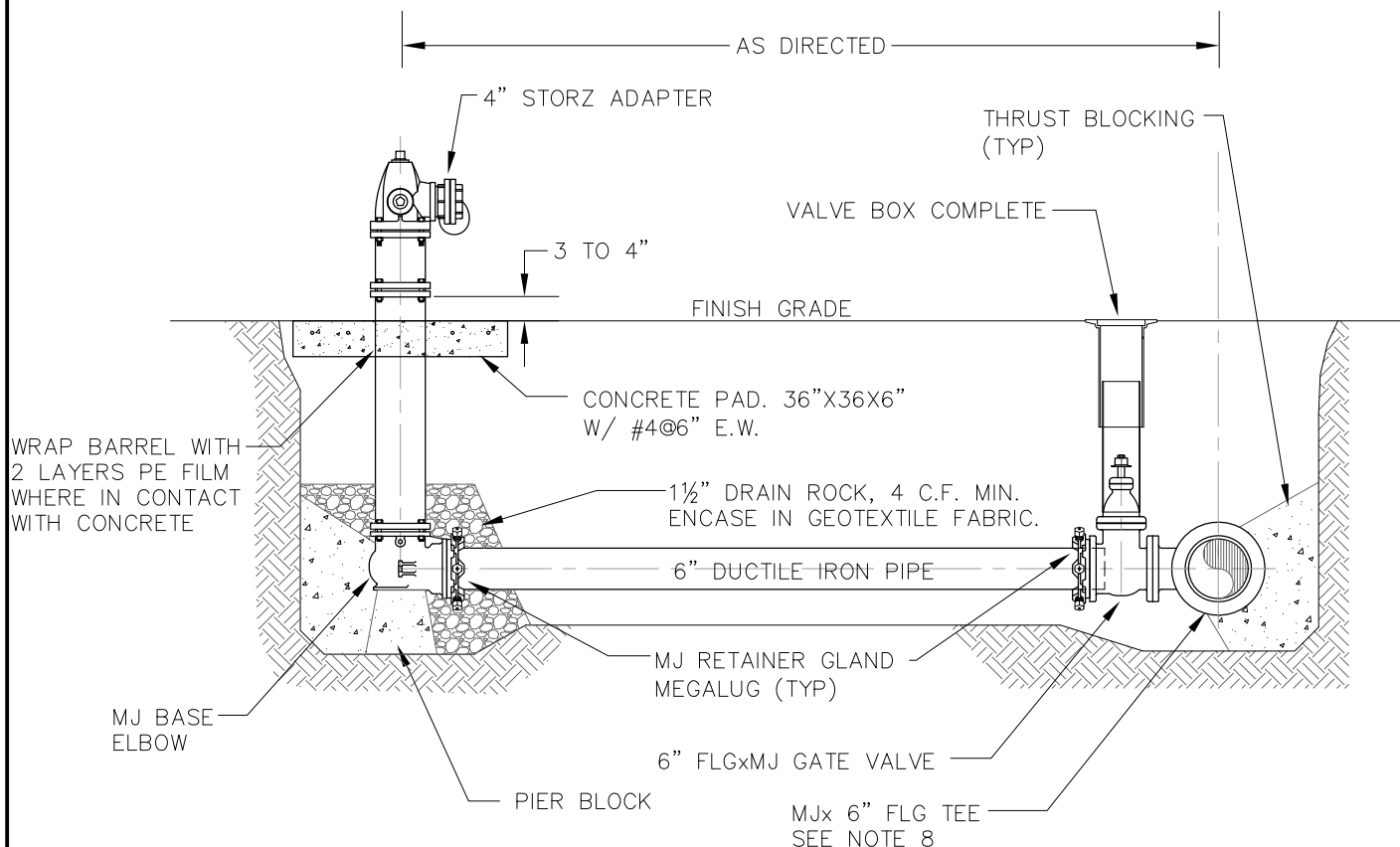
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VALVE OPERATOR EXTENSION DETAIL

DETAIL NO.

W-205

04/30/2009



NOTES:

1. FIELD VERIFY SPOOL LENGTHS AND HYDRANT BARREL LENGTH REQUIRED AT EACH HYDRANT. NO JOINTS ALLOWED WHERE SPOOL LENGTH IS LESS THAN 18 FEET.
2. HYDRANT SHALL BE INSTALLED PLUMB.
3. KEEP DRAIN HOLES CLEAR AND FREE TO DRAIN.
4. SEE DETAILS FOR VALVE SETTING, THRUST BLOCKING, AND TRENCH.
5. HYDRANTS, VALVES AND OTHER MATERIALS SHALL BE AS SPECIFIED IN THE STANDARDS MANUAL.
6. A MINIMUM OF 36" OF CLEAR SPACE AROUND HYDRANTS IS REQUIRED PER UFC (NO POSTS, WALLS, SIGNS, ETC.). 5 FOOT MIN. DESIRED. THERE SHALL BE NO OBSTRUCTIONS DIRECTLY IN LINE WITH ANY OF THE PORTS OF A HYDRANT.
7. HYDRANT PUMPER PORT SHALL FACE DIRECTION OF ACCESS.
8. WHERE WATERMAIN IS LOCATED ON A SIGNIFICANT SLOPE, TEE AND VALVE SHALL BE MJxMJ WITH RESTRAINTS SO THAT VALVE MAY BE INSTALLED PLUMB.



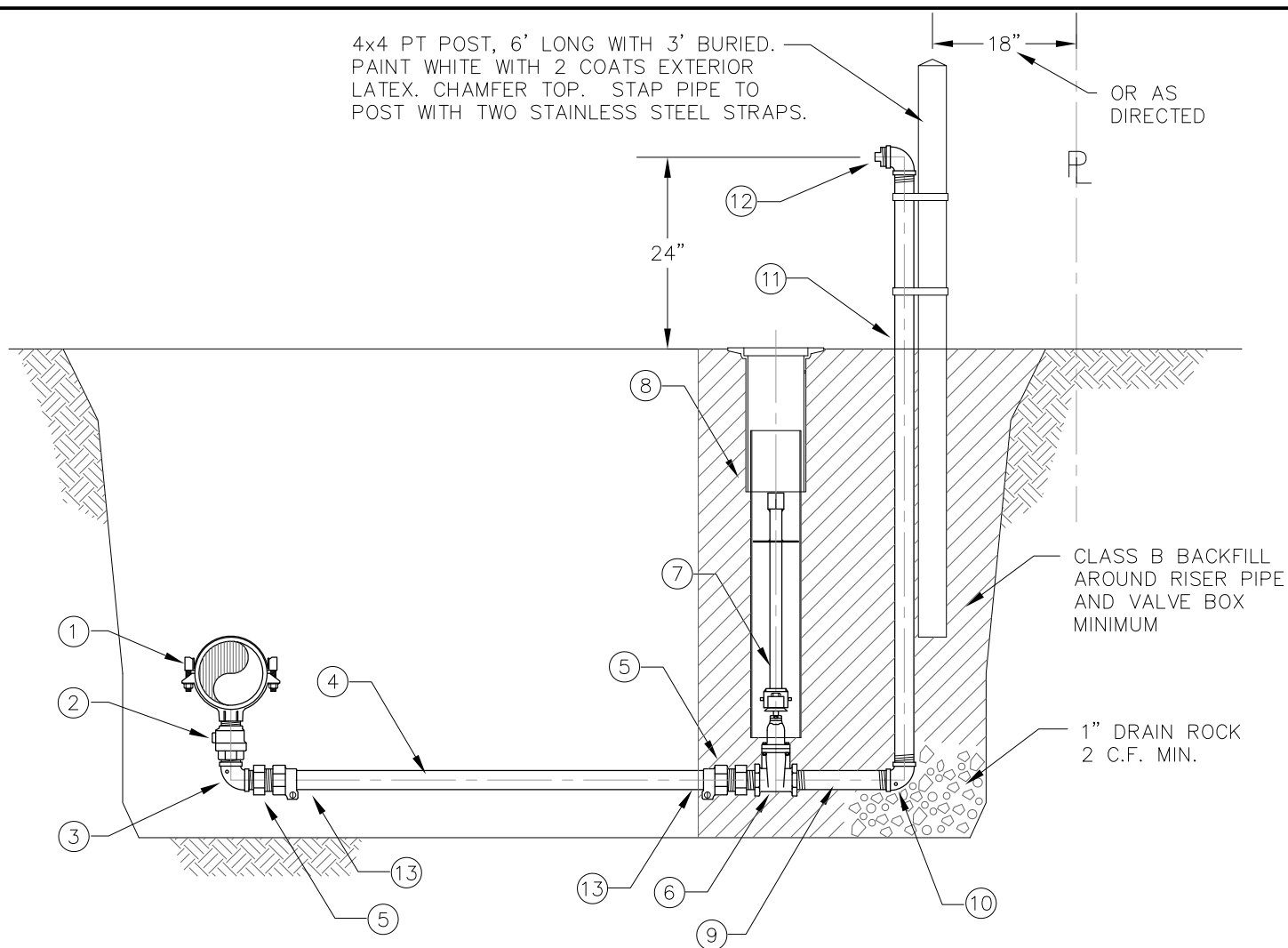
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STANDARD FIRE HYDRANT ASSEMBLY DETAIL

DETAIL NO.

W-300

04/30/2009



ITEM	SIZE	DESCRIPTION	SPECIFICATION
1	AS REQ'D	SADDLE	FORD 202BS, ROMAC 202BS; 2" FIP TAP
2	2"	BALL CORP. STOP	MIP IN x MIP OUT; FORD FB500-7, MUELLER B-2969, McDONALD 3131B
3	2"	ELBOW	304 SS OR BRASS 90° ELBOW
4	2"	PIPE	HDPE (PE 3408), SIDR 7, 200 PSI, IPS FITTING COMPATIBLE, NSF 61
5	2"	PE PJ COUPLING	PEP PJ x MIP; FORD C86-77-IDR7, MUELLER E-15429, McDONALD 4753-33
6	2"	GATE VALVE	AWWA C509 RESILIENT WEDGE GATE VALVE, THRD. ENDS, 2" NUT
7	AS REQ'D	EXTENSION	VALVE OPERATOR EXTENSION
8	N/A	VALVE BOX	VALVE BOX AND COVER
9	2"	NIPPLE	SCH. 40 304 SS OR BRASS THRD. NIPPLE, 12" LONG
10	2"	ELBOW	304 SS OR BRASS 90° ELBOW, DRILL 1/8" HOLE FOR DRAIN
11	2"	PIPE	SCH. 40 304 SS OR BRASS PIPE AS REQ'D
12	2"	ELBOW/PLUG	304 SS OR BRASS ELBOW WITH MIP THRD. PLUG
13	2"	STIFFENER	304 STAINLESS STEEL INSERT STIFFENER

NOTES:

USE ONLY WHERE APPROVED. GENERALLY LOCATED AT LOCAL LOW POINTS IN THE PIPING SYSTEM WHERE HYDRANT IS NOT PRACTICAL. HYDRANTS OR LARGER BLOW-OFF MUST ALSO BE LOCATED NEARBY TO ALLOW PROPER FLUSHING. MAY BE ALLOWED ON 6" AND SMALLER MAINS WHERE LINE PRESSURE EXCEEDS 75 PSI.



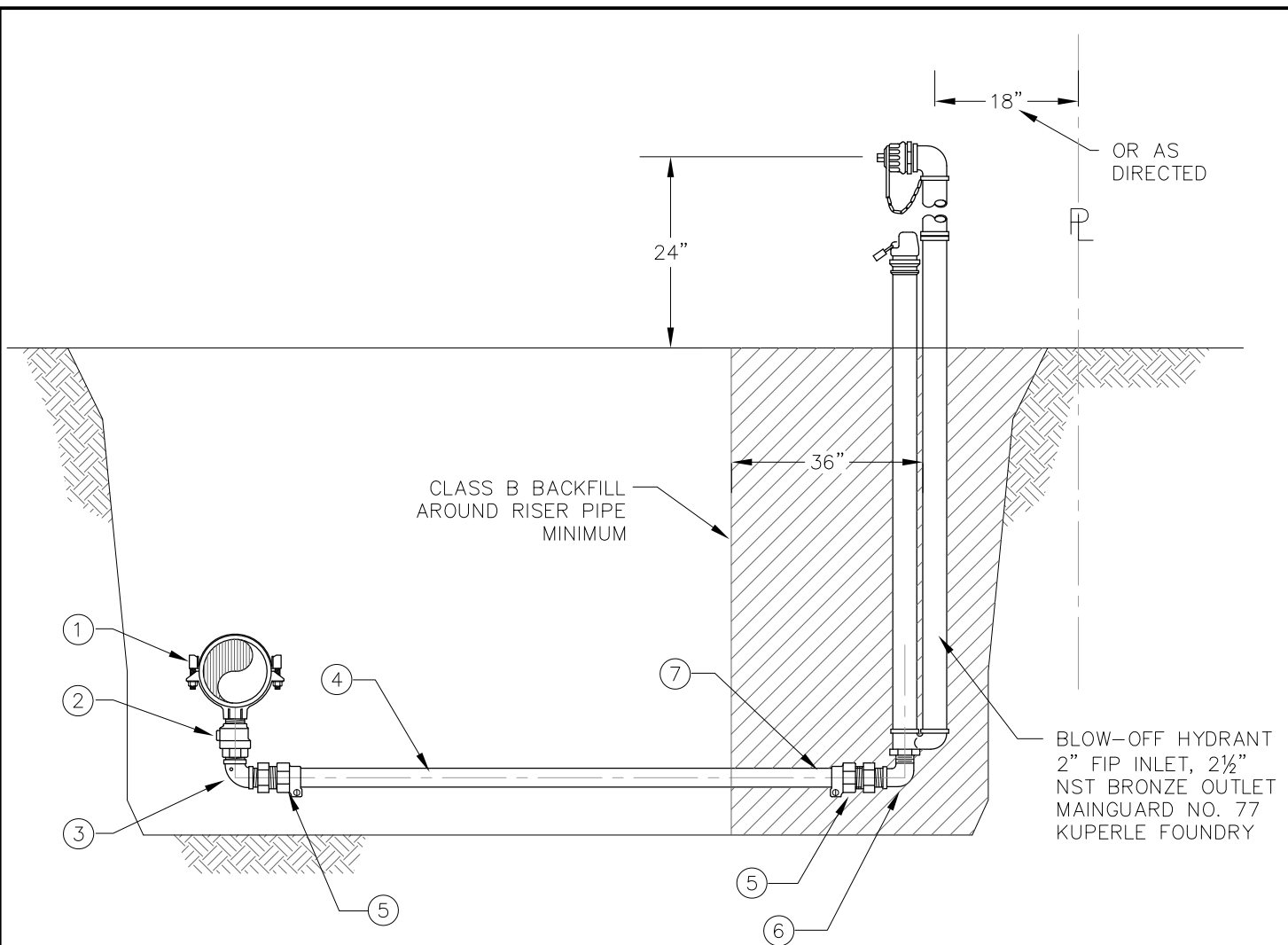
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2" BLOW-OFF ASSEMBLY

DETAIL NO.

W-400

04/30/2009



ITEM	SIZE	DESCRIPTION	SPECIFICATION
1	AS REQ'D	SADDLE	FORD/ROMAC 202BS; 2" FIP TAP
2	2"	BALL CORP. STOP	MIP IN x MIP OUT; FORD FB500-7, MUELLER B-2969, McDONALD 3131B
3	2"	ELBOW	304 SS OR BRASS ELBOW
4	2"	PIPE	HDPE (PE 3408), SIDR 7, 200 PSI, IPS FITTING COMPATIBLE, NSF 61
5	2"	PJ COUPLING	PEP PJ x MIP; FORD C86-77-IDR7, MUELLER E-15429, McDONALD 4753-33
6	2"	STREET ELBOW	304 SS OR BRASS STREET ELBOW
7	2"	STIFFENER	304 STAINLESS STEEL INSERT STIFFENER

NOTES:

USE ONLY WHERE APPROVED. GENERALLY LOCATED AT LOCAL LOW POINTS IN THE PIPING SYSTEM WHERE HYDRANT IS NOT PRACTICAL. HYDRANTS OR LARGER BLOW-OFF MUST ALSO BE LOCATED NEARBY TO ALLOW PROPER FLUSHING. MAY BE ALLOWED ON 6" MAINS WHERE LINE PRESSURE EXCEEDS 75 PSI.



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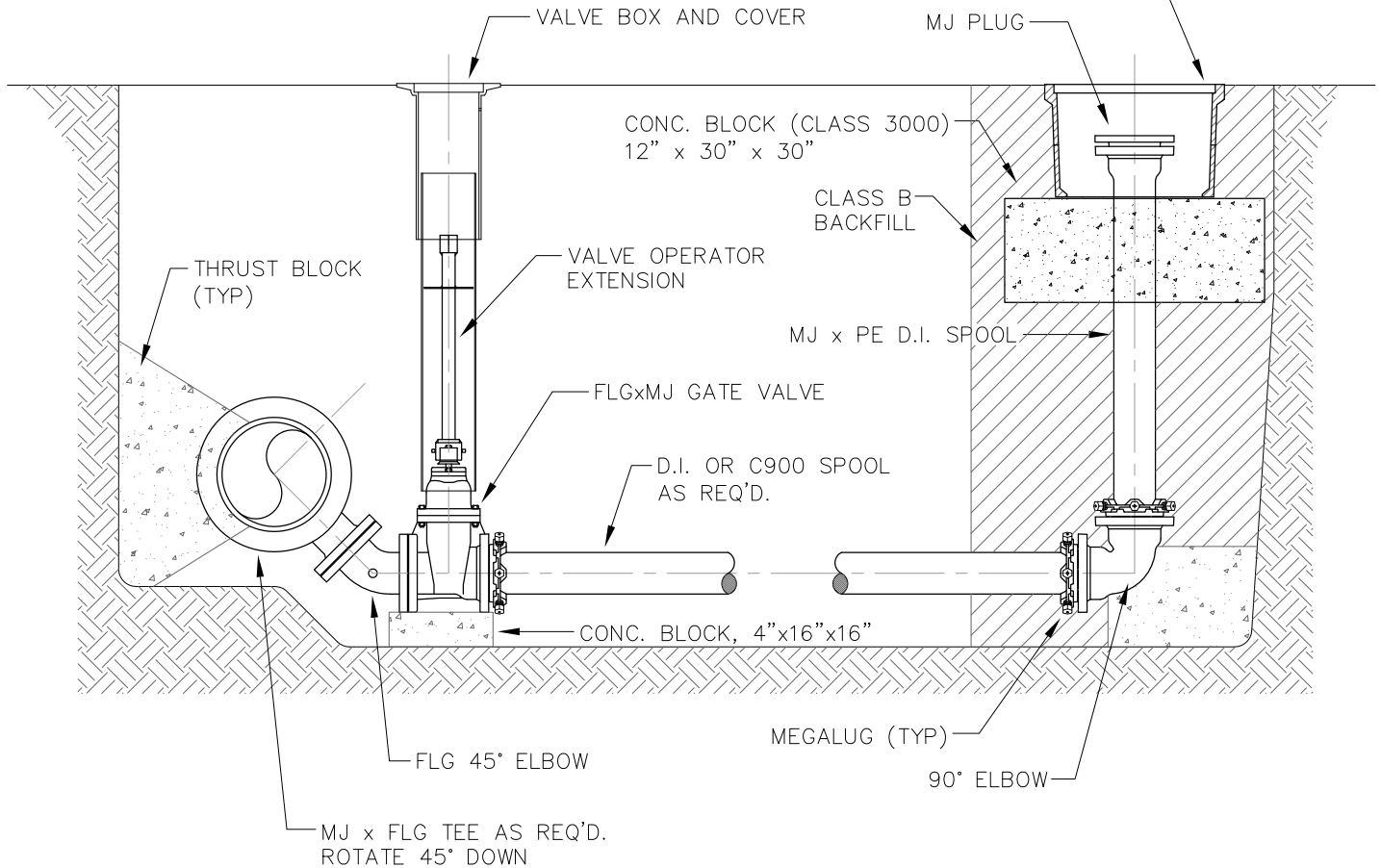
2" BLOW-OFF ASSEMBLY W/ BLOW-OFF HYDRANT

DETAIL NO.

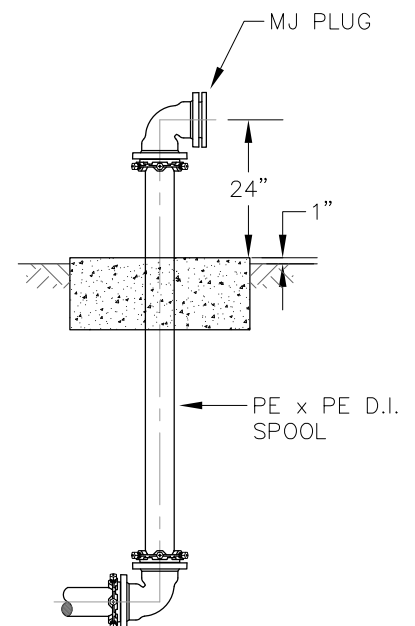
W-401

04/30/2009

METER BOX (12X18X12): ARMORCAST A6001425
COVER: ARMORCAST A6001426T
LOCATE AS DIRECTED.



MAIN SIZE	BLOW-OFF SIZE
6"	4"
8"	4"
10"	6"
12"	6"
14"	8"
16"	8"
18"	10"
20"	10"
24"	12"



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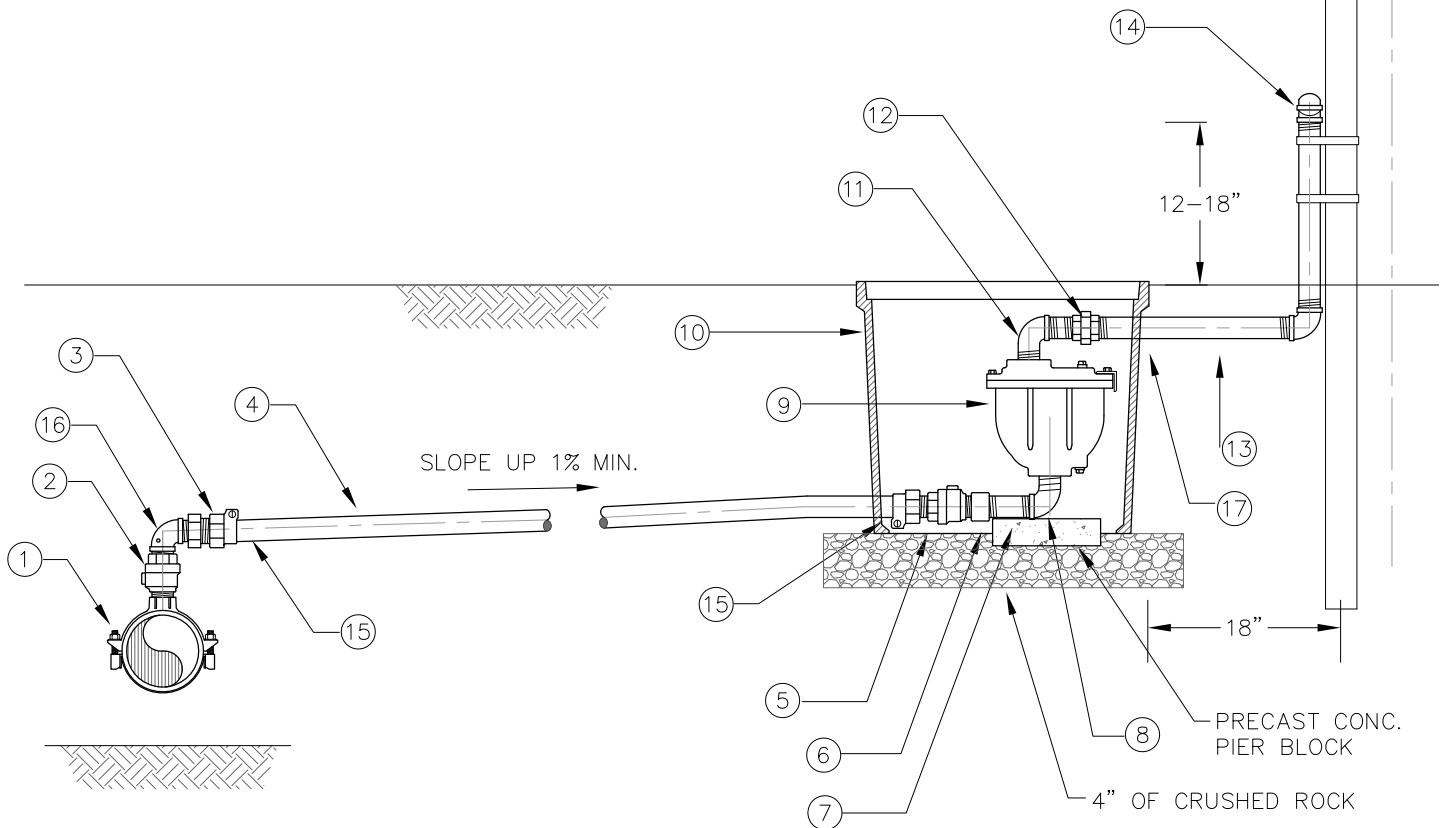
4"+ BLOW-OFF ASSEMBLY

DETAIL NO.

W-405

04/30/2009

4x4 PT POST, 6' LONG WITH 3' BURIED.
PAINT WHITE WITH 2 COATS EXTERIOR
LATEX. CHAMFER TOP. STAP PIPE TO
POST WITH TWO STAINLESS STEEL STRAPS.



ITEM	SIZE	DESCRIPTION	SPECIFICATION
1	AS REQ'D	SADDLE	FORD/ROMAC 202BS; 2" FIP TAP
2	2"	BALL CORP. STOP	MIP IN x MIP OUT; FORD FB500-7, MUELLER B-2969, McDONALD 3131B
3	2"	PJ COUPLING	MIP x PEP PJ; FORD C86-77-IDR7, MUELLER E-15429, McDONALD 4753-33
4	2"	PIPE	HDPE (PE 3408), SIDR 7, 200 PSI, IPS FITTING COMPATIBLE, NSF 61
5	2"	BALL CORP. STOP	PEP PACK JOINT x MIP; FORD FB1101-7, MUELLER E-25029, McDONALD 4704B-33
6	2"	COUPLING	THREADED 304 SS OR BRASS COUPLING, SHORT
7	2"	NIPPLE	THREADED 304 SCH. 40 SS OR BRASS NIPPLE, 6" LONG
8	2"	STREET ELBOW	304 SS OR BRASS 90° STREET ELBOW
9	2"	CAV	COMBINATION AIR VALVE; VAL-MATIC 202C, APCO 145C
10	17"x30"x28"	VAULT	ARMORCAST A6001640TAPCX28 WITH COVER A6001947T
11	2"	STREET ELBOW	304 SS OR BRASS 90° STREET ELBOW AND SHORT SS OR BRASS NIPPLE
12	2"	UNION	STAINLESS STEEL OR BRASS UNION
13	2"	VENT PIPE	SS OR BRASS PIPE AND FITTINGS AS SHOWN
14	2"	TEE VENT	ALUMINUM T-VENT, 20 MESH SS SCREEN, MORRISON BROS. FIG 155
15	2"	STIFFENER	304 STAINLESS STEEL INSERT STIFFENER
16	2"	ELBOW	304 STAINLESS STEEL OR BRASS ELBOW
17	2"	HOLE	CORE DRILL HOLE IN BOX FOR TIGHT FIT AT PIPE USE LINK-SEAL IF NECESSARY TO PREVENT MOVEMENT AND DIRT



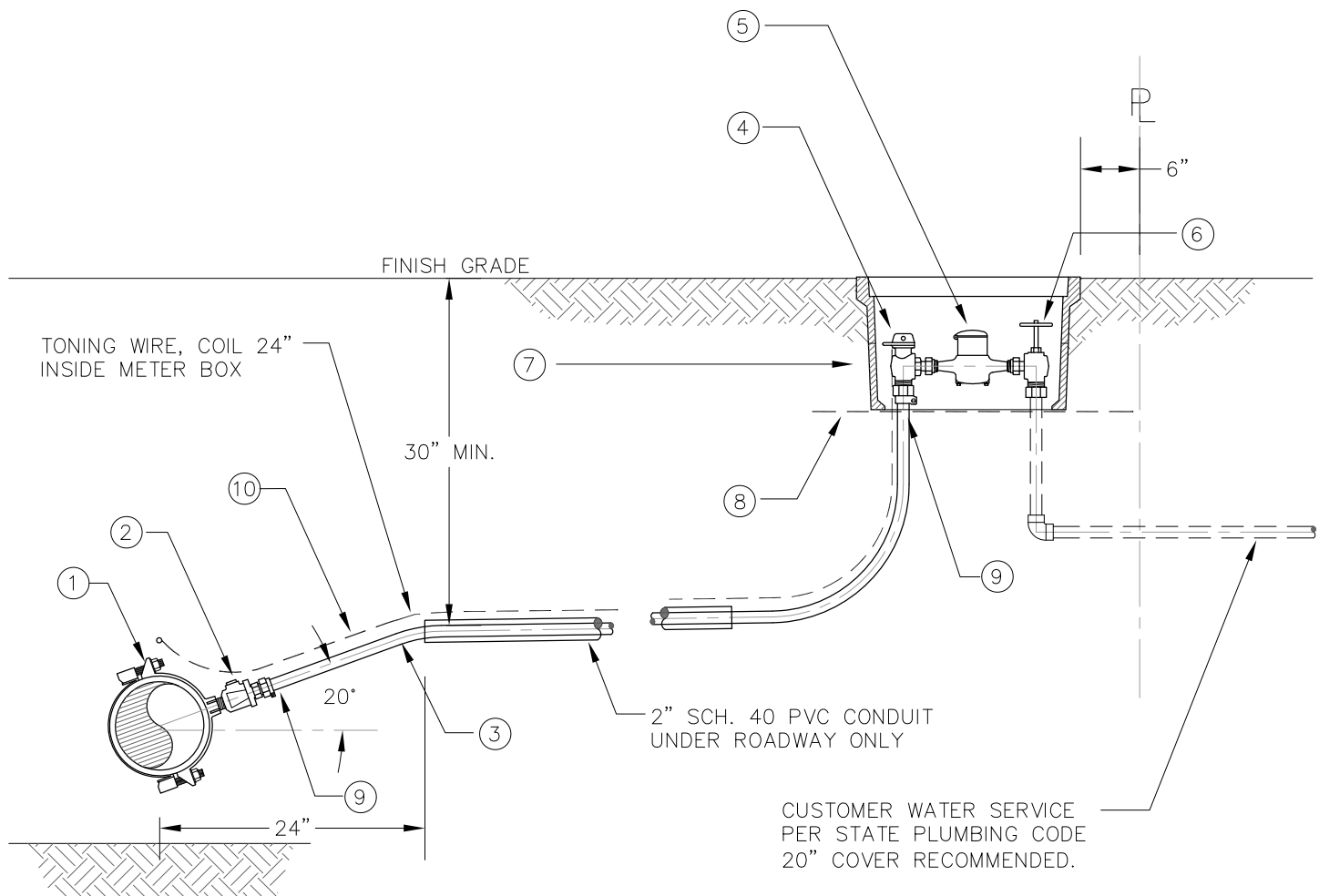
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2" COMBINATION AIR VALVE ASSEMBLY

DETAIL NO.

W-500

04/30/2009



ITEM	SIZE	DESCRIPTION	SPECIFICATION
1	AS REQ'D	SADDLE	FORD/ROMAC 202BS; 3/4" FIP TAP
2	3/4"	BALL CORP. STOP	MIP x PEP PJ; FORD FB1101-3, MUELLER E-25029, McDONALD 4704B-33
3	3/4"	SERVICE PIPE	HDPE (PE 3408), SIDR 7, 200 PSI, IPS FITTING COMPATIBLE, NSF 61
4	3/4"	ANGLE BALL METER VALVE	3/4" PEP PACK JOINT INLET x METER SWIVEL NUT OUTLET FORD BA63-332W, MUELLER E-24259, McDONALD 4602B-33
5	5/8" x 3/4"	WATER METER	SENSUS SR-II, GALLON READ
6	3/4"	SERVICE VALVE ANGLE GLOBE	METER SWIVEL NUT INLET X 3/4" FIP OUTLET FORD GA13-332 (NRWD SUPPLIES)
7	12"x20"x12"	METER BOX	ARMORCAST A6000485, A6000484TDQ (COVER), A6000487T (DROP-IN)
8	16" x 24"	FELT PAPER	90-LB FELT PAPER, ASPHALT SATURATED
9	3/4"	STIFFENER	304 STAINLESS STEEL INSERT STIFFENER
10	10 GA.	TRACER WIRE	10 GA. COPPER WIRE WITH BLUE 30 MIL THICK HDPE INSULATION
			METER BOX/COVER: POLYMER CONCRETE, DROP-IN LID: DUCTILE IRON
			SEE W-150 FOR TRENCH DETAILS



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STANDARD 3/4" WATER SERVICE CONNECTION

DETAIL NO.

W-601

04/30/2009

04/30/2009

SEE W-150 FOR TRENCH DETAILS

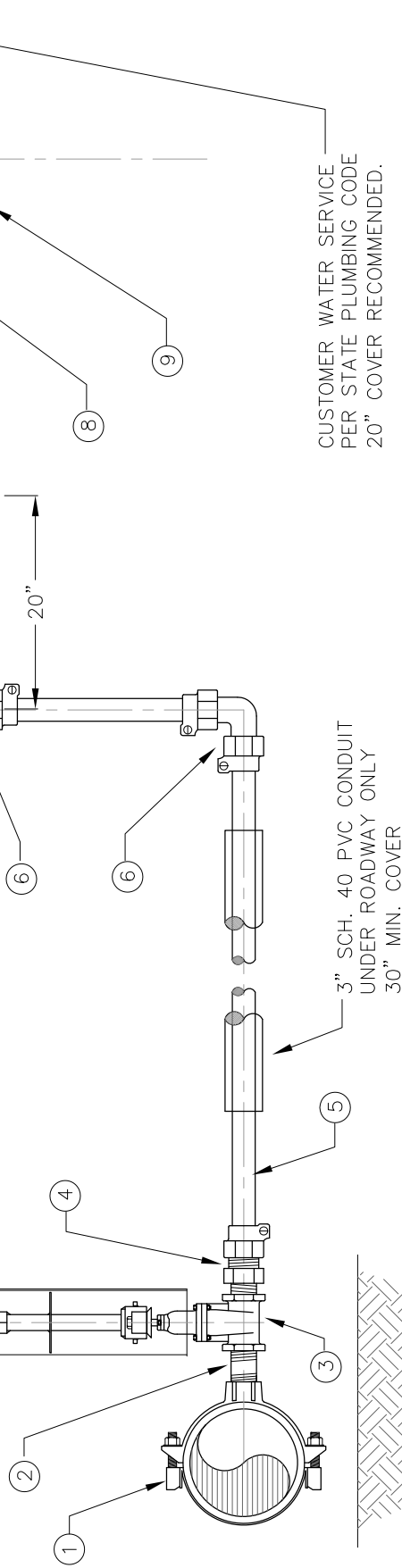
304 STAINLESS STEEL INSERT STIFFENER REQ'D AT EACH PACK JOINT CONNECTION

VALVE BOX AND
PVC RISER PIPE
SEE W-200

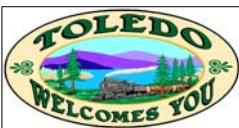
SENSUS SRH COMPOUND METER, GALLON READ

FINISH GRADE

CUSTOMER WATER SERVICE
PER STATE PLUMBING CODE
20" COVER RECOMMENDED.



ITEM	SIZE	DESCRIPTION	SPECIFICATION
1	AS REQ'D	SADDLE	FORD/ROMAC 202BS; 2" FIP TAP
2	2"	NIPPLE	BRASS OR 304 SS NIPPLE, MIPxMIP, 4" LONG
3	2"	GATE VALVE	AWWA C509 RESILIENT WEDGE GATE VALVE, THRD. ENDS, 2" NUT
4	2"	PJ COUPLING	MIP x PEP PJ; FORD C86-77-IDR7, MUELLER E-15429, McDONALD 4753B-33
5	2"	SERVICE PIPE	HDPE (PE 3408), SIDR 7, 200 PSI, IPS FITTING COMPATIBLE, NSF 61
6	2"	PJ ELBOW	PEP PACK JOINT ELBOW; FORD L66-77-IDR7, McDONALD 4761-33
7	2"	ADAPTER	METER FLANGE x 2" FIP OUTLET; FORD CF31-77, McDONALD 610F
8	2"	BALL METER VALVE	METER FLG x FIP; FORD BF13-77W; MUELLER B-24337, McDONALD 6101M
9	24"x36"	FELT PAPER	90-LB FELT PAPER, ASPHALT SATURATED
10	17"x30"x18"	METER BOX	ARMORCAST A6001640PCX18; A6001947TDZ (COVER), A6000482T (DROP-IN)
11	N/A	HANDLE	BALL VALVE HANDLE; FORD HB-67S, McDONALD 6120BS



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STANDARD 2" WATER SERVICE CONNECTION

DETAIL NO.

W-608

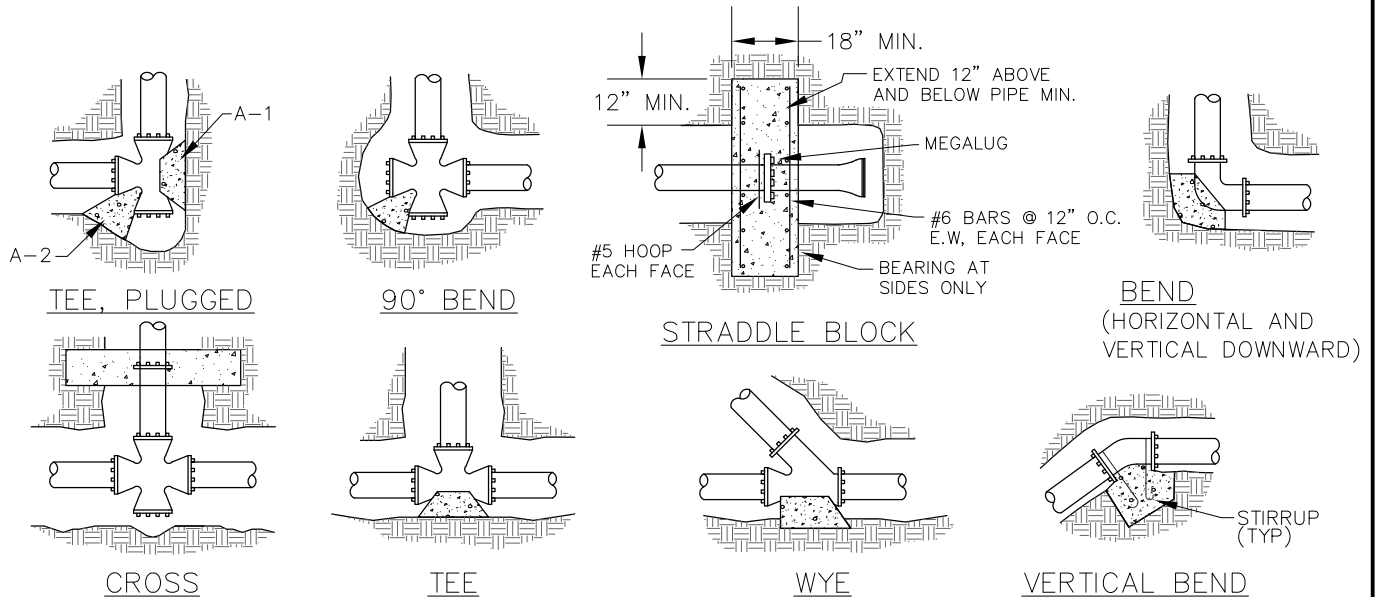
04/30/2009

(HORIZONTAL)
BEARING AREA OF THRUST BLOCKS
IN SQUARE FEET

(VERTICAL UP)
VOLUME OF THRUST
BLOCK IN CUBIC YARDS

FITTING SIZE	TEE, WYE, DEAD END, AND HYDRANT	STRADDLE BLOCK	90° BEND	TEE PLUGGED ON RUN		45° BEND	22-1/2° BEND	11-1/4° BEND	90° BEND	45° BEND	22-1/2° BEND	11-1/4° BEND
				A-1	A-2							
4	1.0	1.0	1.4	1.0	1.4	0.8	0.4	0.2	0.82	0.45	0.23	0.11
6	2.1	2.1	3.0	2.1	3.0	1.6	0.9	0.5	1.85	1.00	0.51	0.26
8	3.8	3.8	5.4	3.8	5.4	2.9	1.5	0.8	3.29	1.78	0.91	0.46
10	5.9	5.9	8.4	5.9	8.4	4.5	2.3	1.2	5.14	2.78	1.42	0.71
12	8.5	8.5	12.0	8.5	12.0	6.5	3.3	1.7	7.40	4.01	2.04	1.03
14	11.6	11.6	16.4	11.6	16.3	8.9	4.5	2.3	10.08	5.45	2.78	1.40
16	15.1	15.1	21.4	15.1	21.3	11.6	5.9	3.0	13.16	7.12	3.63	1.82
18	19.1	19.1	27.0	19.1	27.0	14.6	7.5	3.8	16.66	9.02	4.60	2.31
20	23.6	23.6	33.3	23.6	33.3	18.1	9.2	4.7	20.57	11.13	5.67	2.85
24	34.0	34.0	48.0	34.0	48.0	26.0	13.3	6.7	29.62	16.03	8.17	4.11

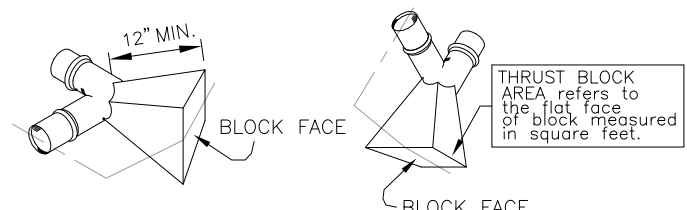
ABOVE BEARING AREAS BASED ON TEST PRESSURE OF 150 PSI AND AN ALLOWABLE SOIL BEARING STRESS OF 2000 POUNDS PER SQUARE FOOT. DESIGNER IS CAUTIONED TO ENSURE THAT 2000 PSF BEARING IS AVAILABLE.



NOTES:

1. CONCRETE BLOCKING TO BE POURED AGAINST UNDISTURBED EARTH.
2. ALL CONCRETE TO BE CLASS 3000 MINIMUM.
3. INSTALL 6 MIL PLASTIC BETWEEN PIPE AND/OR FITTINGS BEFORE POURING CONCRETE BLOCKING.
4. CONCRETE SHALL BE KEPT CLEAR OF ALL JOINTS AND ACCESSORIES.
5. TIE RODS SHALL BE DEFORMED GALVANIZED COLD ROLLED STEEL, 40000 PSI TENSILE STRENGTH (ASTM A615) COAT WITH COAL TAR EPOXY AFTER INSTALLATION.
6. BEARING AREA REQ'D AT REDUCERS IS THE DIFFERENCE BETWEEN VALUES FOR DEAD END FOR EACH END SIZE (IE 6x8 = 3.8-2.1 = 1.7 S.F.)

RODS FOR VERTICAL BENDS		
FITTING SIZE	ROD SIZE	EMBEDMENT
10" AND LESS	#5	17"
12"-16" (11.25')	#5	17"
12"-16" (22.5')	#7	24"
12" (45')	#7	24"
14"-16" (45')	#9	30"



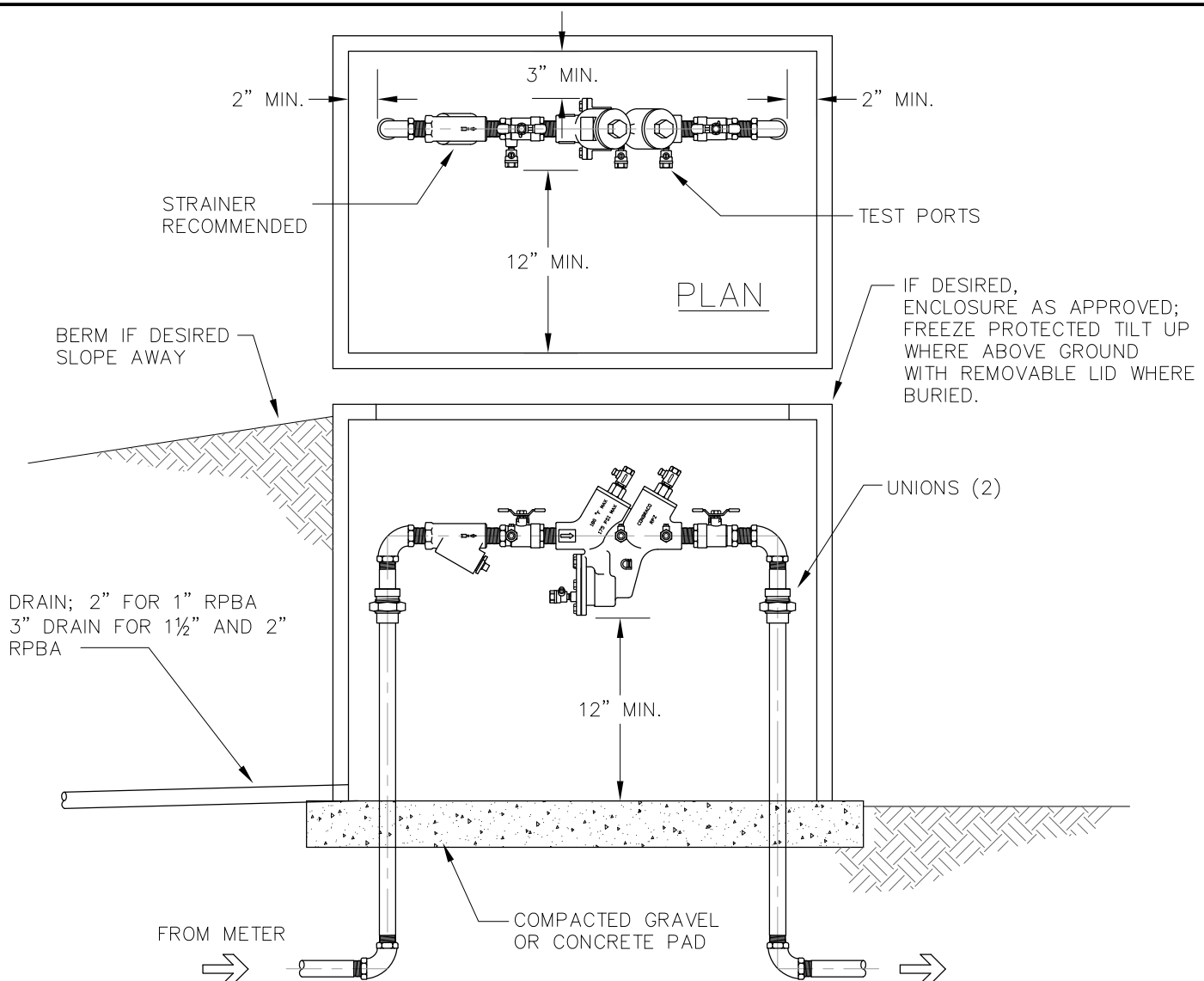
City of Toledo
260 N Main St.
Toledo, Oregon 97391
(541) 336-2247 Fax: (541) 336-3512

CONCRETE THRUST BLOCKING
STANDARD DETAILS

DETAIL NO.

W-700

04/30/2009



1. RPBA MUST BE INSTALLED ABOVE NATURAL GROUND, BUT MAY HAVE A BERM AROUND ENCLOSURE.
2. BOTTOM AND SIDE CLEARANCES ALSO APPLY WHEN ASSEMBLIES ARE INSTALLED INSIDE BUILDING.
3. RPBAs SHALL ALWAYS BE INSTALLED IN HORIZONTAL ORIENTATION UNLESS DEVICE SPECIFICALLY APPROVED FOR VERTICAL INSTALLATION.
4. RPBAs SHALL ALWAYS BE INSTALLED ABOVE THE 100 YEAR FLOOD LEVEL UNLESS OTHERWISE APPROVED.
5. RELIEF VALVES SHALL NOT BE PLUGGED OR EXTENDED.
6. PROVIDE PROTECTION FROM FREEZING.
7. RPBAs SHALL NOT BE INSTALLED IN AN ENCLOSURE UNLESS AN AIR-GAPPED DRAIN TO DAYLIGHT IS PROVIDED AND BRASS OR PLASTIC PLUGS ARE PROVIDED IN ALL TEST PORTS. DRAIN SHALL BE BORE SIGHTED SLOPING 1/8" PER FOOT MIN.
8. MAXIMUM HEIGHT OF INSTALLATION SHALL NOT EXCEED 5 FEET FOR ASSEMBLY UNLESS THERE IS A PERMANENT PLATFORM INSTALLED IN ACCORDANCE WITH OCCUPATIONAL SAFETY AND HEALTH (OSHA) STANDARDS TO FACILITATE SERVICING THE ASSEMBLY.
9. LOCATION OF DEVICE SHALL BE AS DIRECTED BY THE CITY. GENERALLY LOCATED AS CLOSE TO MAIN CONNECTION AS POSSIBLE, IMMEDIATELY AFTER WATER METER.
10. INSTALLATION MAY CREATE CLOSED SYSTEM. CONSULT LOCAL PLUMBING CODES.



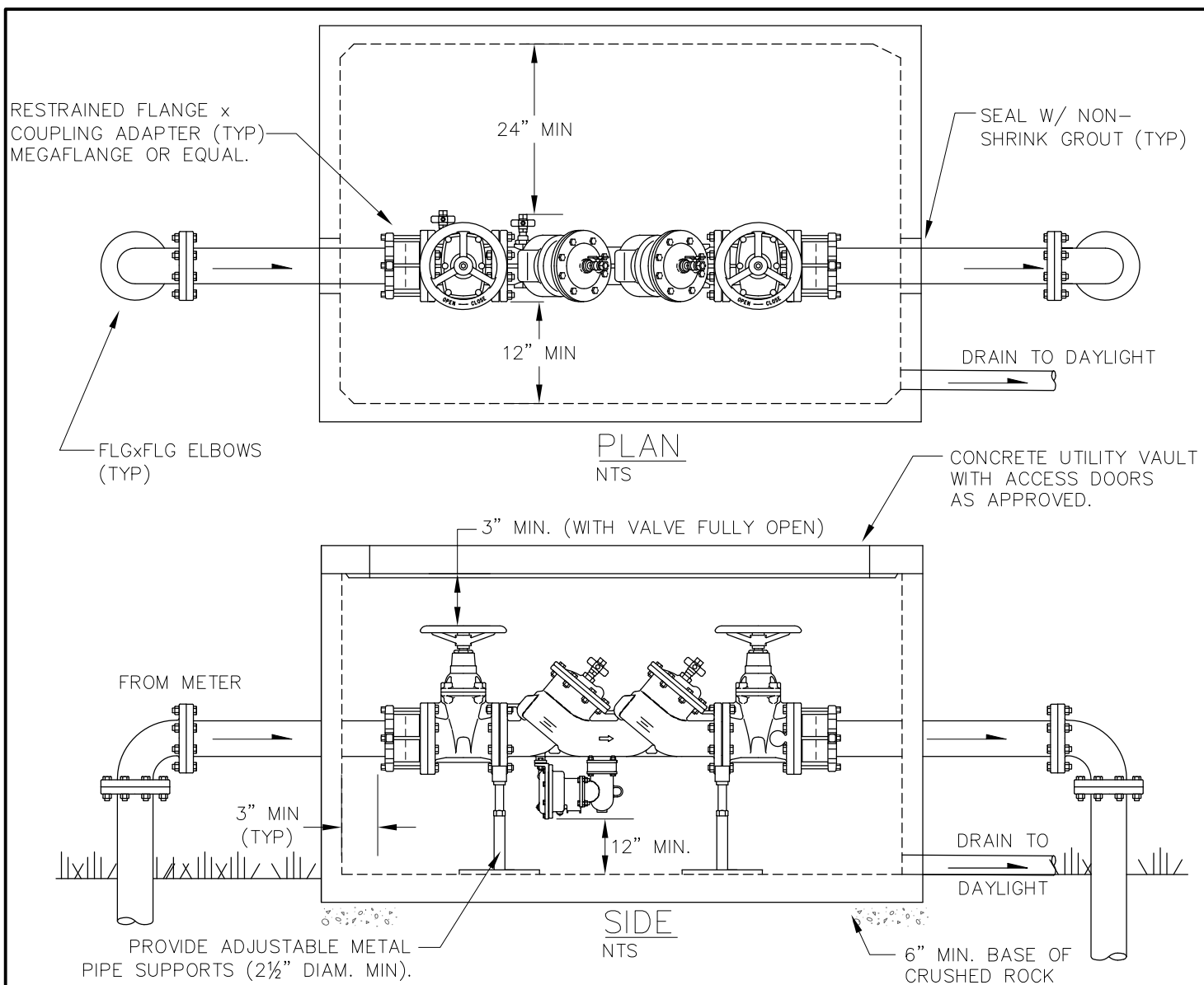
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REDUCED PRESSURE BACKFLOW ASSEMBLY (3/4" - 2")

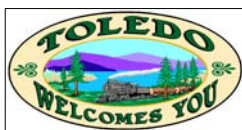
DETAIL NO.

W-800

04/30/2009



1. ASSEMBLY SHALL NOT BE SUBJECT TO FLOODING.
2. RPBA SHALL BE INSTALLED ABOVE THE 100 YEAR FLOOD LEVEL, UNLESS OTHERWISE APPROVED.
3. RPBAs ARE TYPICALLY INSTALLED ABOVE-GRADE IN WELL-DRAINED AREAS, BUT MAY BE INSTALLED BELOW-GRADE IN VAULT IF AN ADEQUATE AIR-GAPPED, BORE-SIGHTED DRAIN (SLOPE 1/8"/FT.) TO DAYLIGHT IS PROVIDED.
4. DRAIN LINES SHALL BE SIZED TO ACCOMMODATE FULL RELIEF VALVE DISCHARGE FLOW.
5. CLEARANCES ALSO APPLY WHEN ASSEMBLIES ARE INSTALLED INSIDE BUILDING.
6. BRASS OR PLASTIC TEST PORT PLUGS ARE REQUIRED FOR ALL VAULT INSTALLATIONS.
7. ALL EXPOSED PIPE AND FITTINGS SHALL BE DUCTILE IRON.
8. RPBA SHALL BE INSTALLED HORIZONTALLY UNLESS DEVICE IS SPECIFICALLY APPROVED FOR VERTICAL INSTALLATION.
9. PROVIDE PROTECTION FROM FREEZING.
10. DO NOT PLUG OR EXTEND RELIEF VALVES.
11. MAXIMUM HEIGHT OF INSTALLATION SHALL NOT EXCEED 5 FEET UNLESS THERE IS A PERMANENTLY INSTALLED PLATFORM MEETING OSHA STANDARDS TO FACILITATE SERVICING THE ASSEMBLY.
12. LOCATION OF DEVICE SHALL BE AS DIRECTED BY THE CITY. GENERALLY LOCATED AS CLOSE TO MAIN CONNECTION AS POSSIBLE, IMMEDIATELY AFTER WATER METER.



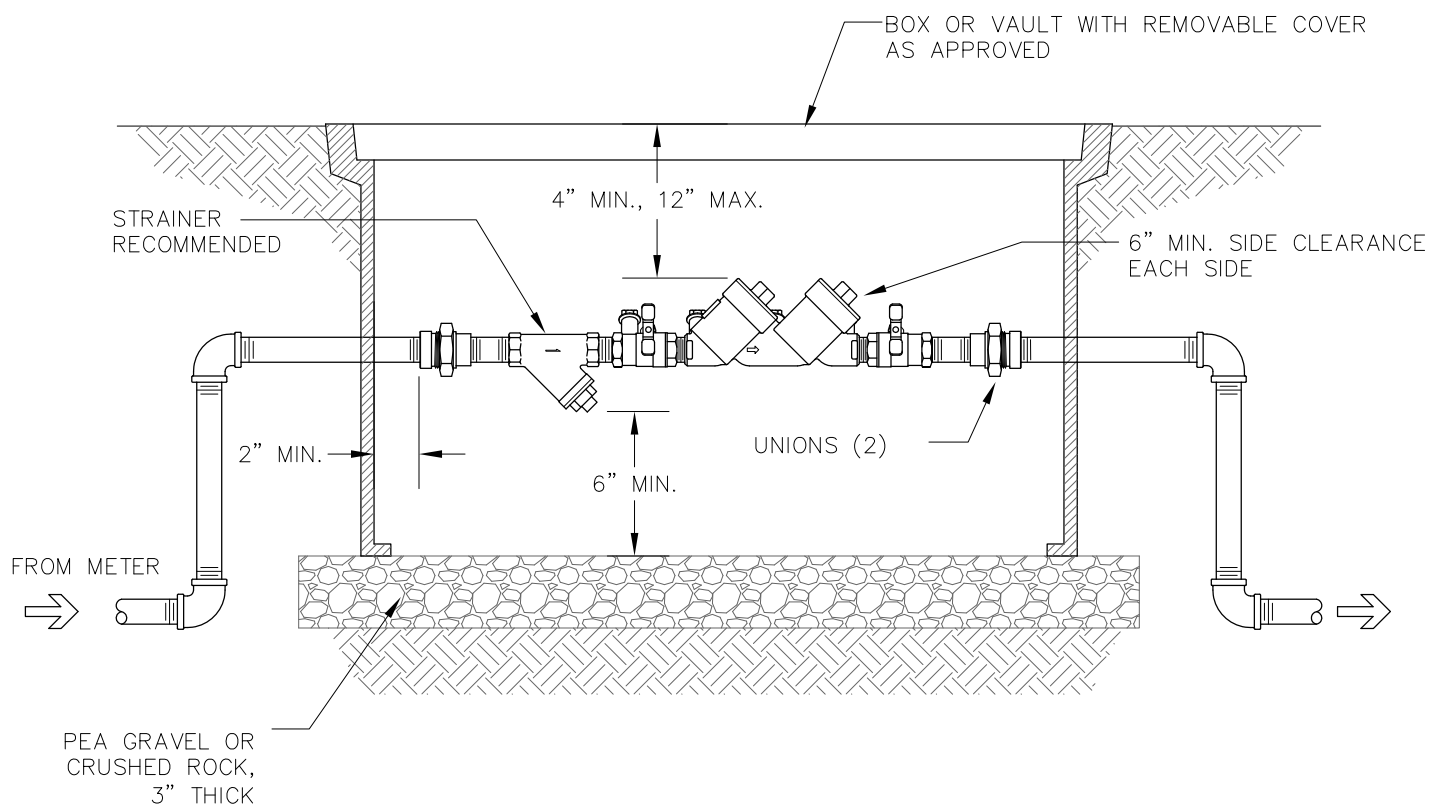
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260 N Main St.
Toledo, Oregon 97391
(541) 336-2247 Fax: (541) 336-3512

REDUCED PRESSURE BACKFLOW ASSEMBLY (2½" UP)

DETAIL NO.

W-805

04/30/2009



1. PROTECTION FROM FREEZING SHALL BE PROVIDED.
2. DCVAs MAY BE INSTALLED BELOW GRADE IN A BOX OR VAULT WITH BRASS OR PLASTIC PLUGS PROVIDED IN ALL TEST PORTS AND ASSEMBLY IS NOT TO BE SUBJECT TO CONTINUOUS IMMERSION.
3. DCVAs SHALL BE PROVIDED WITH ADEQUATE AIR-GAPPED DRAINAGE. DRAIN SHALL NOT BE CONNECTED TO SANITARY OR STORM DRAIN SYSTEMS.
4. LOCATE AS DIRECTED AS CLOSE TO MAINLINE CONNECTION AS POSSIBLE. GENERALLY LOCATED IMMEDIATELY AFTER WATER METER.
5. MAY BE INSTALLED VERTICALLY IF INTERNALLY SPRING LOADED, HAS NORMAL FLOW UPWARD, AND IS RECOMMENDED BY MANUFACTURER FOR VERTICAL INSTALLATION.
6. CLEARANCES SHALL ALSO APPLY WHEN INSTALLED INSIDE BUILDING.
7. SHALL NOT BE INSTALLED AT A HEIGHT GREATER THAN 5 FEET UNLESS THERE IS A PERMANENTLY INSTALLED PLATFORM MEETING OSHA STANDARDS TO FACILITATE SERVICING THE ASSEMBLY.
8. INSTALLATION OF A BACKFLOW ASSEMBLY MAY CREATE A CLOSED SYSTEM. CONSULT LOCAL PLUMBING CODES FOR PRESSURE RELIEF VALVE AND THERMAL EXPANSION REQUIREMENTS.
9. USE ONLY DEVICES LISTED ON CURRENT LIST OF STATE APPROVED DEVICES.



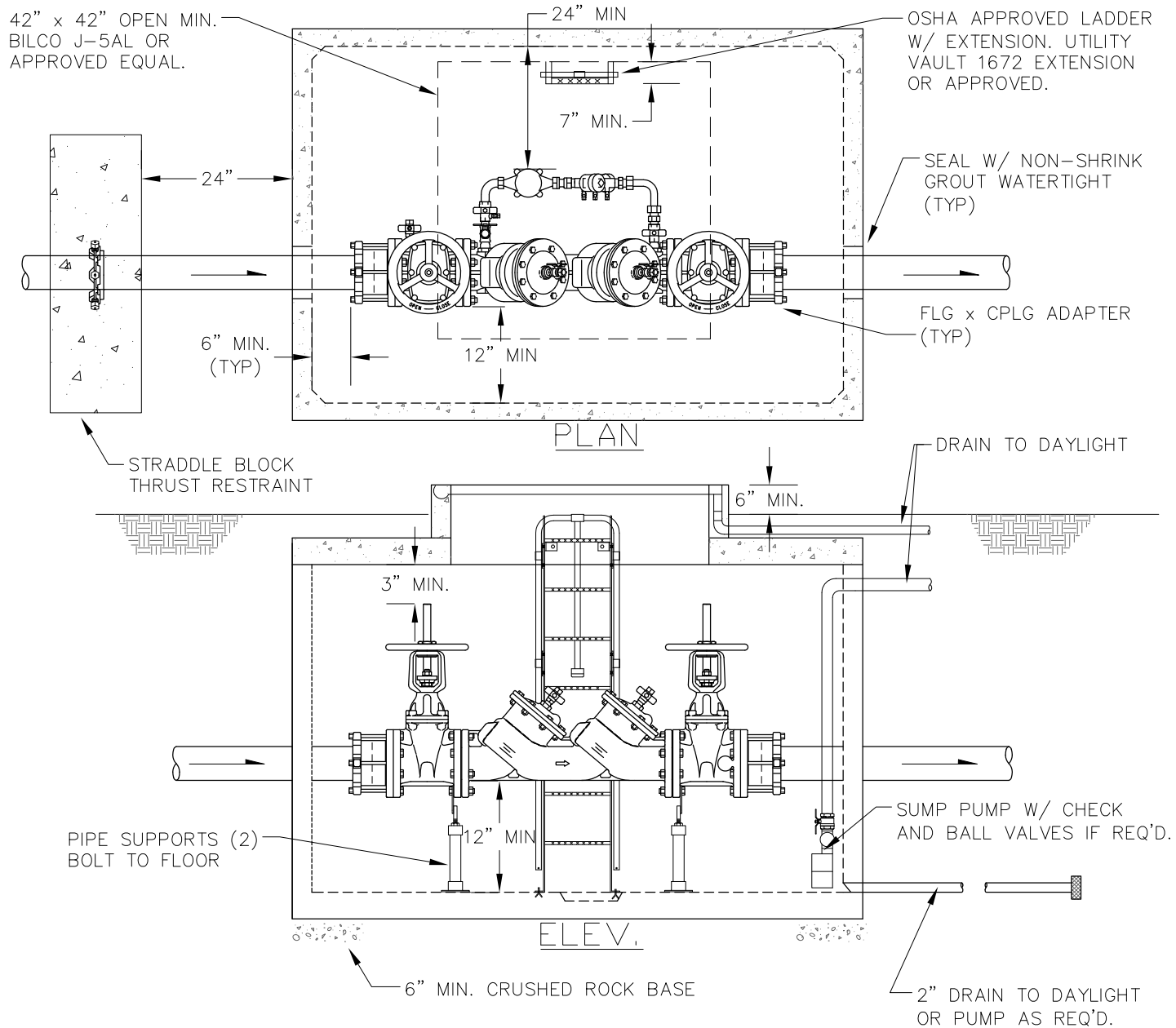
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DOUBLE CHECK VALVE ASSEMBLY (3/4" - 2")

DETAIL NO.

W-900

04/30/2009



NOTE:

1. FOR FIRE LINE INSTALLATIONS. SUBMIT DETAIL DRAWING AND SPECS FOR APPROVAL.
2. ASSEMBLY SHALL NOT BE SUBJECT TO FLOODING.
3. DCDAs ARE TYPICALLY INSTALLED BELOW-GRADE. DRAIN TO DAYLIGHT OR PUMP AS REQUIRED.
4. PUMP SHALL HAVE MIN. CAPACITY OF 5 GPM. DRAIN SHALL HAVE BACKWATER VALVE AND RODENT SCREEN.
5. BRASS OR PLASTIC PLUGS ARE REQUIRED FOR ALL TESTING PORTS.
6. DOMESTIC SERVICE SHALL NOT BE INSTALLED OFF THE FIRE SERVICE UNLESS APPROVED.
7. VAULTS SHALL BE PRECAST CONCRETE AS REQUIRED.
8. ALL EXPOSED PIPE AND FITTINGS SHALL BE DUCTILE IRON.
9. LOCATE AS DIRECTED BY THE CITY. GENERALLY LOCATED AS CLOSE TO MAIN CONNECTION AS POSSIBLE, IMMEDIATELY AFTER WATER METER.



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DOUBLE CHECK DETECTOR ASSEMBLY (2 1/2" UP)

DETAIL NO.

W-905

04/30/2009



City of Toledo
LINCOLN COUNTY, OREGON

DIVISION 2:
SANITARY SEWER DESIGN STANDARDS
MANUAL
Guidelines for Development

Effective: -----, 2009

Section 1 – General Design Requirements

- 1.1 The purpose of this manual is to set standards for the design and construction of sanitary sewer system improvements to serve new and future development. This manual may be updated periodically and the design engineer shall ensure that they have the latest version.
- 1.2 Materials and details shall conform to the requirements of this manual.
- 1.3 All applicable laws, codes, regulations, and permit requirements shall be complied with.
- 1.4 Upon receiving approval from the City for the plans and specifications, the developer shall submit the plans to the Oregon Department of Environmental Quality for review and approval. The developer will submit proof of DEQ approval of the plans to the City prior to beginning any construction activities.

Section 2 – Design Plan Format

- 2.1 Refer to the City’s “Engineering Policy – Guidelines for Development” document for additional requirements and submittal procedures.

Section 3 – Sanitary Sewer System Design Requirements

- 3.1 All sanitary sewers and facilities shall be designed, submitted, reviewed, and constructed in accordance with Oregon DEQ guidelines and City standards. Developer’s engineer should review OAR 340-052, DEQ Sanitary Sewer Design Notes dated 1994, OAR 340-052 Appendix A dated 1981, DEQ Standards for Design and Construction of Wastewater Pump Stations dated May 2001, and other guidelines as applicable. See Oregon DEQ’s website for guidance manuals <http://www.deq.state.or.us/wq/wqrules/Guidance.htm>
- 3.2 Minimum size for new sewer mains is 8-inches unless otherwise approved. Hydraulic calculations shall be performed to ensure that pipe size is adequate for conveying peak instantaneous flows at full development of any subdivision with pipe flow no more than 80% full depth. Capacity shall be based on Manning’s Equation with “n” = 0.013 and pipe flowing at full depth. Minimum slopes required are shown in the table below. Slopes for larger gravity sewers shall be calculated so as to provide a velocity of at least 2.0 ft/sec flowing full or half full.

Pipe I.D. (inches)	Minimum Slope (ft drop per ft length)	Capacity (gpm)
6	0.006	219
8	0.0040	344
10	0.0028	540
12	0.0022	786
15	0.0017	1200

- 3.3 Sewers with minimal flow such as upper reaches of laterals serving few dwellings shall be steepened to provide a 2.0 ft/sec velocity. Actual flows during initial years of use shall be carefully evaluated in this regard.
- 3.4 Pipe size shall not be increased larger than necessary for capacity in order to meet grade requirements, e.g., 10-inch pipe used instead of 8-inch to allow decreased slope.

-
- 3.5 Flows used in design calculations shall be in conformance with acceptable standard practice. For dwellings, a flow of 100 gpcd shall be used (includes normal infiltration) as a design basis for average daily flow. A peaking factor of 3.5 shall be applied for peak instantaneous flows. When requested, Engineer shall submit to City the design calculations used for sizing the proposed sanitary sewer system.
- 3.6 Public sewerage facilities shall be designed to allow the logical service of all parcels or tracts of land within the basin being considered. Sewer lines shall be sized and extended, at the owner's or developer's expense, to all adjacent parcels approximately equal to or higher in elevation to facilitate future development.
- 3.7 Minimum depth of cover is normally 63-inches over top of pipe barrel for gravity sewer mains (based on providing 18-inch vertical separation below an 8-inch water line with 36-inch cover). Shallower depths may be allowed providing at least 18-inches of vertical separation is provided at all water main and water service crossings.
- 3.8 Sanitary sewer piping shall be located 10 feet horizontally away from any parallel water main or service when possible. All water line and sewer line shall be separated in accordance with OAR 333-061-0050 provisions.
- 3.9 No private sanitary sewer shall be located within any lot other than the lot which is the site of the building or structure served by such sewer. Exceptions may include common areas in planned unit developments, and public right-of-ways as approved by the City. Each lot shall have its own service lateral. Shared service laterals are not allowed.
- 3.10 Service laterals shall not be connected to manholes unless approved by the Public Works Director or designee for special conditions such as cul-de-sacs, etc. Connection shall be to gravity sewer pipe in an approved manner. Service laterals shall be new PVC Tees with manufactured bends (Wyes) to the main as shown on the standard details. A clean-out is required on the service lateral in the public right-of-way or easement in accordance with the standard detail. An additional clean-out must be provided at least every 100 feet on the private lateral portion as per the Uniform Plumbing Code.
- 3.11 For pipe placed on slopes steeper than 15%, restrained joint pipe or joint restraint devices shall be installed.
- 3.12 Sewers shall be located in the right-of-way at the street centerline or within 5 feet from centerline, but outside of the traveled wheel lane. Location of sewers skewed across streets where disruption of curbs, gutter or sidewalks would be required for future exposure of the main is prohibited. Sewers in easements will only be allowed after all reasonable attempts to place mains in the right-of-way have been exhausted. Sewer easements shall be a minimum of 15 feet wide with wider easements required for sewers greater than 8 feet deep such that a 1:1 theoretical slope from pipe centerline would daylight within the easement.
- 3.13 Manholes
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- 3.13.1 Manholes shall be spaced no greater than 400 feet apart, and shall be provided at every change in grade or alignment, every change in pipe size, at every intersection or junction, and at the upper end of a sewer lateral. Curved sewers are not allowed.
 - 3.13.2 No manhole shall be placed where future maintenance access cannot be assured. A hard all-weather surface (AC, concrete, or gravel) capable of supporting a 48,000 pound truck shall be constructed (ex.: bikepath) to provide access to manholes in common areas or parks.
 - 3.13.3 Clean-outs will not be substituted for manholes. An exception may be when a section of pipe is extended less than 250 feet to serve 5 or fewer single-family dwellings and no potential for future extension exists. In this case, a permanent clean-out may be provided at the end of the pipe. The pipe may also be 6-inch diameter. Such installations will only be allowed in special cases upon prior approval from the City Public Works Director and the Department of Public Works.
 - 3.13.4 Manhole channels shall be designed for self-cleaning with a minimum drop of 0.2 feet (2.4 inches) from invert in to invert out along a smooth flow channel. Channel width and depth shall be equal to the pipe diameter.
 - 3.13.5 Intersecting sewers and connections shall be designed to avoid backup into the smaller sewer. For intersecting unequal sized sewers in manholes, the water surface elevation at 0.8 of full depth of flow in each sewer pipe shall match. Manhole base channels shall be formed to ensure smooth flow without head-on intersection of opposing flows.
 - 3.13.6 Free fall of sewage into a manhole shall not exceed 24 inches without a special drop manhole. Standard manholes without free fall are preferred although drop manholes may be considered when a considerable amount of additional excavation would be required to construct pipes/manholes without drop.
 - 3.13.7 Where future extensions are planned or likely, stub-outs shall be provided with watertight rubber-gasketed plugs adequately braced against air test pressures. Stub-outs shall be adequately sized as approved. Stub-outs shall be sufficiently long to extend to the limits of new construction or surface improvements. A temporary cleanout shall be installed on the stub-out at the phasing line unless otherwise approved by the Public Works Director or designee.
 - 3.13.8 Manholes shall be located outside the normal wheel travel lanes. Manhole lids are not permitted within designated or future bike lanes. Manholes shall not be located in the curb or gutter. Manholes in sidewalks are not allowed unless otherwise approved by the City.
 - 3.13.9 Watertight manhole covers shall be used when the cover is below the 100-year flood plain or in a location where overland runoff could enter the manhole. Locking, tamper-proof covers are required in easements and off street areas. Must have adaptation for manhole lid pullers.
- 3.14 Pump Stations and Force Mains

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- 3.14.1 Sewage pump stations shall only be provided when gravity service cannot be practically provided. Prior approval from the City is required.
 - 3.14.2 Pump stations shall have concrete wetwells with approved self-cleaning bottom designs. Pumps shall be submersible type with stainless steel rails and hoist for easy removal. EPA Class I reliability is required, including a standby generator. A separate check valve and flow meter vault(s) is required. A heated and ventilated building or approved enclosure shall be included for the controls and electrical equipment. At a minimum, a covered and fenced area shall be provided to protect standby generator from the elements.
 - 3.14.3 Design shall be in accordance with DEQ guidelines and as directed by the City. A pre-design report is required and shall be approved by the City. Following City approval, the pre-design report must be approved by DEQ.
 - 3.14.4 Force mains shall be 4-inch minimum and designed to provide a minimum velocity of 3 feet per second.
 - a. Force mains shall terminate at an approved location and in an approved manner.
 - b. The receiving manhole and gravity system shall be field inspected to identify the condition of the existing system.
 - c. Corrosion proof armoring or durable acid-proof coatings may be required in the receiving manhole and downstream gravity system.
 - d. Surge control measures may be required.
 - 3.14.5 Telemetry and SCADA systems are required at pump stations. Telemetry systems must be compatible with existing City systems or of an approved design that will allow compatibility with future or planned systems.
 - 3.14.6 Coordinate with the City for specific requirements and approved materials and equipment prior to commencing with pre-design report.
- 3.15 Individual Grinder Pump Installations
- 3.15.1 Individual buildings may include individual grinder pump stations when gravity service cannot be made available and a public pump station is not warranted or required by the City. Such installations will generally be limited to fewer than 4 single family dwellings within a development and may only be allowed upon prior approval upon a determination that gravity service is not possible.
 - 3.15.2 Each pump shall be its own individual pressure line from the pump to the public gravity main. Pressure line shall be PVC or HDPE with a 200 psi pressure rating. Connection to gravity main shall be made with an approved saddle, ball check and corporation stop as directed by the City. Connections to manholes are not allowed unless approved by the Public Works Director or designee. Pressure mains shall have a minimum of 18-inch vertical separation under all water lines. Pipe size shall be 1¼-inch or as recommended and designed by the pump manufacturer.

- 3.15.3 Grinder pump systems will be owned and maintained by the private property owner.
- 3.16 Septic Tank Effluent Pumping (STEP) and Septic Tank Effluent Gravity (STEG) systems are not permitted within the City Limits unless otherwise approved.
- 3.17 Oil/Water Separators are required for all facilities (gas stations, parking structures, etc.) where there is the potential for discharge of oily, contaminated waters into the sanitary sewer. No grease, oil, sand, liquid waste containing grease or flammable material or other harmful ingredients shall be discharged into any public sewer. Location shall be on private property. Installation, operation and maintenance shall be by the property owner. Design shall be approved by the City with documentation of maintenance schedule to be submitted to the City.
- 3.18 Grease Interceptors are required for all commercial buildings with kitchen and/or cafeteria facilities or other facilities where excessive discharge of animal fats or vegetable oils can occur. Sizing of the interceptor shall be in accordance with the latest edition of the Uniform Plumbing Code and as approved by the City prior to installation. Location shall be on private property. The owner of the grease generating establishment shall install, operate and maintain the properly sized and designed grease interceptor tank. The interceptors shall be regularly pumped or cleaned out and maintained to ensure that they operate properly.
- 3.18.1 See Uniform Plumbing Code – Grease Interceptor Sizing Worksheet.
- 3.19 All details shall conform to the Standard Detail Drawings. Required items or installations for which no detail drawing exists, applicant's engineer shall submit sufficient design data and drawings for City approval. All such submitted drawings may require modification prior to approval for use.
- 3.20 Eleventh month inspection is required. Eleven months after the project is completed, all facilities constructed as part of the project will be inspected. Developer and/or Developer's Engineer shall be present. All gravity sewer lines will be video inspected per Section 11. All defects will be corrected at the Applicant's expense.

Section 4 – Construction Provisions

- 4.1 All work within the public right-of-way shall be conducted by a licensed and bonded contractor. This requirement shall be stated on the construction drawings and in the project specifications.
- 4.2 City shall be notified at least 3 working days in advance prior to commencing construction work exception shall be made for emergency repairs.
- 4.3 Traffic control shall be signed, flagged and conducted in a manner conforming to ODOT standards (Manual of Uniform Traffic Control Devices, MUTCD) and approved by City. If road closures or detours are anticipated, prior approval from City and/or ODOT, must be obtained, as appropriate.

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- 4.4 Safety Requirements. The contractor is responsible for observing the safety of the work and all persons and property coming into contact with the work. The contractor shall conduct his work in a manner complying with the requirements prescribed by OSHA.
- 4.5 Progress. Construction shall proceed in a systematic manner to minimize public inconvenience and disruption of services. All excavations, embankments, stockpiles, waste areas, etc. shall be kept protected. All roads, ditches, etc. shall be kept free from debris and shall be continually cleaned during the work. Dust control measures shall be employed as required and directed by the City.
- 4.6 Protection of Existing Improvements. Contractor shall contact the Utility Notification Center at least 48 hours in advance of digging operations to get approximate locations for buried utilities. Exact locations of buried facilities may not be known or shown and contractor is responsible to pot-hole carefully in advance of the work to avoid such facilities. Contractor shall coordinate with all utilities and notify them immediately in the event of any damage. Contractor shall protect, repair, and replace any damaged utilities as directed by the persons responsible for such utility. All landscape, grass, shrubs, signs, pavements, mail boxes, driveways, culverts, gravel surfacing, fencing, etc. shall be protected from damage and returned to conditions as good, or better than existed prior to construction. All costs for protection, repair, and replacement of all existing items shall be borne entirely by the contractor. Contractor shall obtain a release from any property owners for any claims of injury or property damage prior to final acceptance of the work by the City.
- 4.7 All existing survey monuments and control shall be protected, including individual property corner stakes. Any such monuments destroyed or altered during construction shall be restored by the contractor or developer in accordance with ORS.
- 4.8 Any temporary disruption to water or sewer service must be coordinated with, and approved by the City and kept to the minimum length of time necessary. City shall be notified at least 2 working days in advance of when an approved shut-down is desired as necessary to make tie-ins.
- 4.9 Trench foundation grades shall be constructed to within 0.1 feet of the grade shown in the plans. Surface tolerances shall be within 0.02 feet of plan elevation at any one point.
- 4.10 For pipelines, vertical deviation from true grade shall not exceed 0.02 feet (0.24 inch). Horizontal tolerance for deviation from line shall be 0.03125 feet (3/8 inch). Depressions or bellies which create the potential for solids deposition are not allowed.
- 4.11 Compaction testing equipment (nuclear gauge) shall be furnished and operated by the contractor or an independent testing firm shall be retained by the contractor or developer to perform compaction testing. Testing shall conform to the ODOT Manual of Field Testing Procedures (MFTP). Compaction testing shall be conducted in the presence of the City's inspector. Sufficient tests will be taken to ensure that the materials and compaction efforts being used are adequate to obtain the required density. Several tests shall be taken on each lift placed during the first day of backfill operations. Additional tests will be taken periodically during the work. At minimum, 2 compaction tests shall be taken for each trenchline (manhole to manhole). Alternate materials or methods will be required if adequate compaction is not being obtained. In no case shall pipe laying continue if inadequate compaction results until a resolution is provided.
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- 4.12 Construction staking will be provided by the Developer's Engineer for establishing the location of the system. Offset stakes shall be placed at no more than 100 foot intervals along the mainline at each manhole. Each lateral location shall be staked.
- 4.13 Open trench length at any time shall not exceed 100 feet unless otherwise approved. Related resurfacing shall be completed within 800 feet of the open trench limit.

Section 5 – Sanitary Sewer System Materials

- 5.1 All materials shall be manufactured in the USA and be newly manufactured. No rebuilt, reconditioned or used material will be allowed.
- 5.2 Oregon Standard Specifications (OSS) – Means the 2002 Oregon Standard Specifications for Construction produced by ODOT and APWA, including latest revisions.
- 5.3 Concrete shall conform to OSS Section 00440, Commercial Grade Concrete. Compressive field strength shall not be less than 3,000 psi at 28 days. Maximum aggregate size shall be 1½-inches. Slump shall be between 2 and 4 inches.
- 5.4 Non-Shrink Grout. Grout shall be Sika 212, Euco N-S, Five Star, or approved equal nonmetallic cementitious commercial grout exhibiting zero shrinkage per ASTM C827. Grout shall not be amended with cement or sand and shall not be reconditioned with water after initial mixing. Nonshrink grout shall be placed and packed only with the use of an approved commercial bonding agent. Unused grout shall be discarded after 20 minutes.
- 5.5 Manholes shall conform to ASTM C478-03 with yard permeability tests passing ASTM C497-03 prior to delivery. Manhole steps shall be plastic with ½" grade 60 steel reinforcing bar encapsulated with injection molded copolymer polypropylene with serrated surfaces. Preformed gaskets shall be Ram-Nek, Kent-Seal No. 2, or approved equal.
- 5.6 Trench Backfill Materials
 - 5.6.1 Foundation Stabilization: 3"-0 to 6"-0 aggregate base rock meeting OSS Sections 00641 and 02630. Required when native trench foundation material contains groundwater, or is unsuitable to provide a firm foundation in the opinion of the Public Works Director or City representative.
 - 5.6.2 Pipe Bedding and Zone: ¾"-0 dense-graded aggregate, uniformly graded from coarse to fine and meeting OSS Section 02630.10.
 - 5.6.3 Class A Backfill: Native or common excavated material, free from organic or other deleterious material, free from rock larger than 3-inches, and which meets the characteristics required for the specific surface loading or other criteria of the backfill zone in the opinion of the Public Works Director or City representative. If stockpiled material becomes saturated or unsuitable, Class B, C or D Backfill shall be substituted.
 - 5.6.4 Class B Backfill: ¾"-0 dense graded aggregate, uniformly graded from coarse to fine and meeting OSS Section 02630.10.

- 5.6.5 Class C Backfill: Clean sand with no particles larger than ¼-inch.
- 5.6.6 Class D Backfill: Pit run or bar run material, well graded from coarse to fine, with maximum aggregate size of 3 inches.
- 5.6.7 Class E Backfill (CLSM): Controlled Low-Strength Material (cement slurry) conforming to OSS Section 00442.
- 5.6.8 Compaction: Material (except Class E Backfill) shall be compacted in multiple lifts (6-inch maximum lift) to obtain 95% of the maximum dry density as determined by AASHTO T-99.
- 5.6.9 All Backfill within public right-of-ways or within 5 feet of a traveled surface shall be Class B Backfill, except where Class E Backfill is required under pavements by City or State requirements.
- 5.7 Sewer Pipe Materials
 - 5.7.1 PVC gravity pipe, 4- through 15-inch nominal diameter shall be rubber gasketed, SDR35 minimum, conforming to all requirements of ASTM D3034 in accordance with ASTM D1784. Pipe shall incorporate integral wall-thickened bells with bonded-in elastomeric gaskets meeting ASTM F477.
 - 5.7.2 PVC gravity pipe, 18- through 27-inch nominal diameter shall be rubber gasketed, SDR35 minimum, conforming to all requirements of ASTM F679 in accordance with ASTM D1784. Pipe shall incorporate integral wall-thickened bells with bonded-in elastomeric gaskets meeting ASTM F477. Larger diameter pipes to be approved by the Public Works Director or City representative on a case by case basis.
 - 5.7.3 Force Mains. PVC pipe, 4- through 12-inch nominal diameter shall be rigid PVC made from class 12454-A or B compounds as defined in ASTM D1784. Pipe shall be Class 150 meeting DR18, minimum, conforming to all requirements of AWWA C900. Pipe shall incorporate integral wall-thickened bells with bonded-in elastomeric gaskets meeting ASTM F477.
 - 5.7.4 Ductile iron pipe shall be Class 50 minimum thickness (Class 51 for 14-inch and larger) manufactured in accordance with ANSI/AWWA C151/A21.51 under method of design outlined in ANSI/AWWA C150/A21.50. Pipe interior shall have a lining suitable for septic sewer service such as Protecto 401 or similar approved lining. External pipe coating shall be an asphaltic coating in accordance with ANSI/AWWA C151/A21.51. Use only where approved by City.
 - 5.7.5 Small diameter pipe for individual grinder pumps shall be Class 200 / SDR 21 PVC pipe meeting ASTM D2241, or PE3408 HDPE / SDR 7, IPS size as required. Proper pack joints and stiffeners required with HDPE pipe.

5.8 Fittings

- 5.8.1 PVC fittings for gravity pipe shall be rubber gasketed sewer fittings meeting ASTM D3034, SDR 35, ASTM F477, and ASTM D3212.
- 5.8.2 Joints for ductile iron pipe and C900 pipe shall be ductile iron mechanical joint (force mains) or push-on type (gravity). Fittings shall conform to ANSI/AWWA C110/A21.10 Standard (full body) or ANSI/AWWA C153/A21.53 (compact), with 250 psi minimum working pressure rating. All gray and ductile iron fittings shall be lined with a coating suitable for septic sewer service such as Protecto 401 or as approved. Exterior of fittings shall have an asphaltic coating in accordance with ANSI/AWWA C110/A21.10. Joints and gaskets for fittings shall conform to ANSI/AWWA C111/A21.11 Standard.
- 5.8.3 Joint restrainers for MJ fittings shall be Megalug by EBAA Iron, or approved equal, specifically designed for the type of pipe material used.
- 5.8.4 Service laterals shall be made by the use of new PVC in-line tees with manufactured bends (Wyes) to the main.
 - 5.8.4.1 Connections to the pipe shall be made with GPK in-line fittings, GPK saddle wyes or “Inserta-Tee” as manufactured by Fowler Manufacturing or approved equal. Installation shall be as manufactures recommendations. PVC Tee Saddle manufactured in accordance with ASTM D3034 with neoprene rubber gasket seal and ASTM F477 lateral pipe seal gasket. Stainless steel bands, series 300, 9/16-inch wide minimum.
 - 5.8.4.2 Cast ductile iron saddle with virgin SBR rubber gasket and adjustable 3½-inch wide stainless steel strap. Romac Style “CB” or approved equal. Not allowed with plastic sewer pipe except C900.
 - 5.8.4.3 Where existing pipe is damaged, interfering joints exist, or other conditions necessitate, or when directed by the City, cut in a regular pipe wye with pipe spools and Fernco type couplings.
 - 5.8.4.4 All taps or connections to the existing main shall be made in the presence of the Public Works Director or City representative.
- 5.8.5 Couplings for gravity sewer piping shall be flexible rubber type with stainless steel bands. Fernco or approved equal. Use only where approved. Rotate so that ‘size’ and ‘type’ information is turned upward to allow for inspection.
- 5.8.6 Manhole Connections
 - 5.8.6.1 Connections to precast manhole sections shall be accurately core-drilled and shall utilize a properly sized flexible rubber boot providing a watertight seal. Adapter shall be factory tested for watertightness up to 10.8 psi. Kor-N-Seal as manufactured by NPC, Inc. or approved equal.

- 5.8.6.2 Connections to cast-in-place concrete shall be made with a rubber waterstop grouting ring. Ring shall clamp to pipe with stainless steel clamp and have waterstop ribs. Waterstop Grouting Ring by Press-Seal Gasket Corp., or approved equal.
- 5.9 Manhole Frames and Covers. Casting shall be tough, close-grained gray iron, smooth and clean, free from blisters, blowholes and all defects and conforming to ASTM A48, Class 30. All bearing surfaces shall be planed, ground or machined to ensure flat, true surfaces. Watertight frames and covers shall be installed at all locations subject to flooding or ponding. Tamperproof frames and covers required in off-street areas and easements. Cap screws for bolt-down covers shall be stainless steel with 60,000 psi minimum tensile strength conforming to ASTM A453.
- 5.10 Cleanouts. Cleanouts shall be constructed of the same PVC material as used to construct the mainline collection system piping. Cleanout size, fittings, and cleanout covers shall be as shown in the City's standard detail drawings. Cleanouts shall not be installed in mainline or substituted for manholes.

Section 6 – Sanitary Sewer Pipe Installation

- 6.1 Prepare trench in accordance with the standard detail in a safe manner. Place and compact foundation stabilization materials as required. Notify City to allow for inspection of the trench bottom.
- 6.2 Place and compact pipe bedding material before placing pipe in the trench. Dig depression for pipe bells to provide uniform bearing along the entire pipe length. Thoroughly compact bedding material to prevent future bellies.
- 6.3 Prior to lowering pipe into the trench, the Engineer and City representative will check for damage to the pipe. The Contractor shall repair or replace, as directed, all damaged or flawed pipe prior to installation.
- 6.4 Thoroughly clean inside the pipe before laying. Prevent foreign material from entering the pipe while it is being placed in the trench. Remove all foreign material from the inside of the pipe and joint before the next pipe is placed. Keep debris, tools, rags or other materials out of the pipe at all times. When pipe laying is not in progress, cover the exposed end of the pipe using a watertight expanding plug, or by other approved means to prevent entry of trench water or other foreign materials into the pipe.
- 6.5 Lay pipe with bell ends facing the direction of laying. For lines on an appreciable slope, face bells up-grade unless otherwise directed by the City. Thoroughly clean the ends of the pipe to remove all foreign matter from the pipe joint. Lubricate the bell and spigot ends with approved pipe lubricant, as recommended by the manufacturer.
- 6.6 PVC pipe shall be installed and handled in accordance with the Uni-Bell Plastic Pipe Association standards UNI-B-3, these specifications and the manufacturer's installation guide. The Contractor shall have on site all proper tools and equipment to properly and safely install the pipe.
- 6.7 Place materials in the pipe zone in layers not greater than 6 inches thick and in a manner that equalizes the pressure on the pipe and minimizes stress. As required under the

- haunches of pipe and areas not accessible to mechanical tampers or to testing, compact with hand methods to ensure thorough contact between the material and the pipe. Before placing the pipe zone material, condition, aerate, or wet the material so that the moisture content of each layer is within minus 4% to plus 2% of optimum moisture content.
- 6.8 Provide proper Backfill Class material as required. Backfill the trench above the pipe zone in successive lifts. Do not allow the backfill to free-fall into the trench until at least 3 feet of cover is provided over the top of the pipe. Modify the compaction as necessary to protect the pipe. Compact each lift to not less than 95% of the maximum density.
- 6.9 If the specified compaction is not obtained, contractor shall remove material, modify compaction procedures, and/or reduce the thickness of lifts as required. Do not proceed with additional excavation or pipe laying until the backfill can be compacted to the satisfaction of the City.
- 6.10 CLSM. When CLSM Backfill is required, backfill above pipe zone with CLSM material. If the CLSM is to be used as a temporary surfacing, backfill to top of the trench and strike off to provide a smooth surface. If CLSM is not to be used as a temporary surface, backfill to bottom of the proposed resurfacing. Use steel plates to protect the CLSM from traffic a minimum of 24 hours.
- 6.11 Provide concrete thrust blocking at all bends, valves, tees and other fittings in accordance with the standard details, as required to prevent movement due to thrust. Mechanical joint restraints shall also be installed.
- 6.12 Where new water pipe is installed near existing or new sanitary sewer lines, all provisions of current OAR 333-61-050 (Crossings – Sanitary sewers and waterlines), regarding placement of pipe near, under, or over sanitary sewer lines shall be followed.
- 6.13 Restore all surfaces after backfill is complete. Base rock, asphalt paving and concrete paving methods and materials shall conform to Oregon Standard Specifications as approved by the City and/or ODOT, as appropriate.
- 6.14 Pressure pipe shall be installed and tested in accordance with City of Toledo Standards contained in this Manual.
- 6.15 Tolerance. For gravity pipelines, vertical deviation from true grade shall not exceed 0.02 feet (0.24 inch). Horizontal tolerance for deviation from line shall be 0.03125 feet (3/8 inch). Depressions or bellies which create the potential for solids deposition are not allowed. If identified during the approval process, bellies will be corrected by the Applicant or the Applicant's Contractor.
- 6.16 Testing. After installation, sewer system shall be tested for exfiltration allowances and defects according to the following Sections. All lines shall also be video inspected in the presence of City representative at Owner/Developers expense, for bellies and defects. Prior to acceptance all pipe sections including laterals and all manholes shall pass the acceptance criteria. All items not passing tests shall be repaired or replaced as required.

Section 7 – Low-Pressure Air Testing of Gravity Sewers (per UNI-B-6-98 / ASTM F1417)

- 7.1 The Contractor shall furnish all equipment, materials and personnel required for properly conducting all required low-pressure air testing under observation of the Engineer. Pressure gauge shall have 0.10 psi increments and an accuracy of 0.0625-psi. Testing equipment must include a pressure relief device designed to relieve pressure at a maximum of 9 psi and must allow continuous monitoring of the test pressure to avoid excessive pressure. All air used shall pass through a single control valve. Only qualified personnel shall be permitted to conduct the test. The Time Pressure Drop Method shall be used.
- 7.2 Testing shall be done in the presence of a City representative. Testing shall be conducted after backfilling and compaction has been completed to finish grade. Notify City at least 2 working days in advance.
- 7.3 Initial Test – A test shall be conducted on the first section of pipe laid by each crew to establish that the pipeline installation is capable of preventing excessive infiltration. The section of pipeline tested shall be at least 300 feet in length. If the test indicates exfiltration exceeding the amount hereinafter specified, all defective materials and/or workmanship shall be corrected and the test rerun until leakage is within the specified limits.
- 7.4 If, in the opinion of the City, the watertightness of the pipe is in question during installation, the City may require the Contractor to test the pipe sections in question. Such testing shall not be considered adequate for final pipe testing, performed after the pipe is installed, backfilled, compacted and cleaned. Thereafter all sewer pipe shall be tested as provided herein.
- 7.5 The Contractor may desire to make air tests prior to complete backfilling, for his own purposes; however, acceptance air test shall be made only after installation of all laterals and backfilling has been completed and compacted. It is recommended that testing be completed and accepted prior to paving in the event that some piping may require excavation for repair of deficiencies.
- 7.6 It is extremely important that all plugs, including end of service laterals, be installed and braced such that blowouts are prevented (ex. 250 lbs force is exerted on an 8" plug at 5 psig). Exercise care to prevent excessive pressures. Keep workers out of manholes until pressure is released.
- 7.7 Testing Procedure
- 7.7.1 Immediately following pipe cleaning, the pipe installation shall be tested with low pressure air. Each pipe section between manholes shall be tested. Service laterals from the main to the property line shall be included in the test.
- 7.7.2 Check the average height of ground water over the pipe invert. The test pressure required below shall be increased 0.433 psi for each foot of average water depth over the pipe (ex. If groundwater is 2.8 feet above pipe invert, add 1.2 psig to test pressures). Method used to determine groundwater depth shall be acceptable to the City (piezometer, excavation, or others).

-
- 7.7.3 Air shall be slowly supplied to the plugged pipe until internal air pressure reaches 4.0 psi greater than the average back pressure of any ground water that may submerge the pipe. Do not exceed a total pressure of 9.0 psig.
- 7.7.4 After the internal test pressure is reached, at least two minutes shall be allowed for the air temperature to stabilize. After the stabilization period, disconnect the air supply.
- 7.7.5 The continuous monitoring pressure gauge shall then be observed while the pressure is decreased to no less than 3.5 psig (greater than average backpressure of any groundwater over the pipe). At a reading of 3.5 psig, or any convenient pressure between 3.5 psig and 4.0 psig (above groundwater pressure), timing shall commence with an accurate stopwatch.
- 7.7.6 Acceptance - The tested section shall be considered acceptable if the required testing time has elapsed before a 1.0 psig pressure drop has occurred. If the pressure drops 1.0 psig before the minimum length of time has elapsed, the air loss rate is considered excessive and the section of pipe has failed the test.
- 7.7.7 Acceptance criteria is based on an allowable air loss of $Q=0.0015$ cfm per ft^2 of internal pipe surface area less than 625 ft^2 . This results in a total allowable loss of $625Q = 0.94$ cfm. The shortest time (T), in seconds, allowed for the air pressure to drop 1.0 psig is calculated with the following formula:
- $$T = 0.085 (DK/0.0015)$$
- $K = 0.000419DL$ but not less than 1.0, D = pipe I.D. in inches, and L = length of pipe tested in feet.
- 7.7.8 Contractor shall record and document the testing procedure and results during the testing process. The UNI-Bell "Air Test Data Sheet" or similar approved equal shall be used and submitted to the Engineer. Record the diameter (in), length (ft), start and end manhole numbers, time, date, pressure drop, and groundwater level on inspection form. Submit to City.
-

Minimum Specified Time Required for 1.0 PSIG Pressure Drop

Pipe ø (in)	T _{min} (min:sec)	L for T _{min} (ft)	T for longer L (sec)	Specification Time for Length (L) Shown (min:sec)							
				100 ft	150 ft	200 ft	250 ft	300 ft	350 ft	400 ft	450 ft
4	3:46	597	.380L	3:46	3:46	3:46	3:46	3:46	3:46	3:46	3:46
6	5:40	398	.854L	5:40	5:40	5:40	5:40	5:40	5:40	5:42	6:24
8	7:34	298	1.520L	7:34	7:34	7:34	7:34	7:36	8:52	10:08	11:24
10	9:26	239	2.374L	9:26	9:26	9:26	9:53	11:52	13:51	15:49	17:48
12	11:20	199	3.418L	11:20	11:20	11:24	14:15	17:05	19:56	22:47	25:38
15	14:10	159	5.342L	14:10	14:10	17:48	22:15	26:42	31:09	35:36	40:04
18	17:00	133	7.692L	17:00	19:13	25:38	32:03	38:27	44:52	51:16	57:41
21	19:50	114	10.470L	19:50	26:10	34:54	43:37	52:21	61:00	69:48	78:31
24	22:40	99	13.674L	22:47	34:11	45:34	56:58	68:22	79:46	91:10	102:33
27	25:30	88	17.306L	28:51	43:16	57:41	72:07	86:32	100:57	115:22	129:48
30	28:20	80	21.366L	35:37	53:25	71:13	89:02	106:50	124:38	142:26	160:15

If no pressure drop (0 psig) has occurred after 1 hour, test may conclude and section passes

- 7.7.9 Service laterals shall be included in test. However the length of service laterals may be ignored and the length of main line only used in the above table. If desired, length of service laterals included in test section may be included in the calculation by following the method outlined in UNI-B-6-98 Section 9.4.

Section 8 – Hydrostatic Testing of Pipe

- 8.1 Contractor shall provide all hose, temporary piping, approved pipe plugs, tank trucks, and other equipment, labor and material required to make the hydrostatic tests, and shall pay for the water used, unless otherwise approved by the City. Testing of the pipe shall be conducted in the presence of a City representative. Testing shall be conducted after backfilling and compaction has been completed to finish grade. Notify City at least 2 working days in advance.
- 8.2 Prior to making exfiltration leakage tests, contractor may fill the pipe with clear water to permit normal absorption into the pipe walls; provided however, that after filling the pipe, leakage testing shall be completed within twenty-four (24) hours after filling. When under test, allowable leakage shall comply with the following requirements:

Leakage shall not exceed 0.04 gallons per hour per inch diameter per one hundred (100) feet of sanitary sewer pipe, with a minimum test pressure of six (6) feet of water column above the highest section of pipe (including service laterals), or above the active ground water table, whichever is higher as determined by the City. The length of pipe tested shall be limited so that the pressure on the invert of the lower end of the section tested shall not exceed 28 feet of water column, and in no case shall be greater than 500 feet. All service connection footage shall be taken into account in computing allowable leakage. Test duration shall be at least 2 hours. Methods of imposing the water column and measuring the water loss shall be acceptable to the City.

Section 9 – Vacuum Testing of Manholes (per ASTM C1244)

- 9.1 Precast concrete manholes shall be tested in accordance with the following procedure. Manhole installations which fail the testing shall be repaired or replaced until passing

- results are obtained. If flexible joint sealant is pulled out during testing, it shall be repaired.
- 9.2 Testing shall be done in the presence of a City representative. Notify City at least 2 working days in advance. Use Report Form approved by City.
- 9.3 All manholes shall be tested for acceptance after the trench has been backfilled, compaction requirements have been met, road base rock has been installed, paving is complete, and concrete manhole collars have been installed. If manhole has passed test and the castings have later been disturbed, manhole shall be re-tested.
- 9.4 Thoroughly clean all manholes prior to testing. Remove all debris and do not allow foreign material to enter downstream piping.
- 9.5 Contractor shall provide all necessary equipment and personnel to conduct the testing, including vacuum equipment and indicating devices.
- 9.6 Procedure
- 9.6.1 Plug all pipes entering manhole. Secure all plugs to prevent movement while vacuum is being drawn.
- 9.6.2 Testing shall include the joint between the manhole cone or riser ring(s) and the manhole cover frame.
- 9.6.3 Installation and operation of vacuum equipment and indicating devices shall be in accordance with the manufacturer's specifications and instructions.
- 9.6.4 Withdraw air from the manhole until a measured vacuum of 10-inches of mercury (10" Hg = 4.9 psi) is established in the manhole interior.
- 9.6.5 Record the time it takes for the vacuum to drop to 9-inches of mercury (9" Hg = 4.4 psi). Acceptance standards are based on this 1-inch of mercury change in negative pressure. Time measured for the 1" Hg (1" Hg = 0.5 psi) pressure change shall be equal to or greater than the values in the following table:

Vacuum Testing Requirements (minimum test times, seconds)

Manhole Depth (ft)	Manhole Diameter (in)				
	42"	48"	54"	60"	72"
8' or less	17	20	23	26	33
10	21	25	29	33	41
12	25	30	35	39	49
14	30	35	41	46	57
16	34	40	46	52	67
18	38	45	52	59	73
20	42	50	53	65	81
22	46	55	64	72	89

- 9.6.6 Hydrostatic testing of manholes may be allowed. Test shall be in accordance with ASTM C497 as modified here. Test will consist of plugging all inlets and outlets and filling the manhole with water to the rim. Leakage in each manhole

shall not exceed 0.2 gallons per hour per foot of head above the invert. Leakage will be determined by refilling to the rim using a calibrated or known volume container. Testing duration shall be at least 2 hours. Testing results shall be recorded on a form approved by the City.

Section 10 – Deflection Testing for Flexible Pipe

- 10.1 In addition to air or hydrostatic testing, the contractor shall conduct deflection tests of sanitary sewers constructed of flexible pipe. Testing will consist of pulling an approved mandrel through the completed pipeline after backfill and compaction to finish grade is complete. Testing shall be conducted in the presence of a City representative.
- 10.2 Diameter of the mandrel shall be at least 95% of the pipe internal diameter. Mandrel shall have at least 6 vanes.
- 10.3 Testing shall be done from manhole to manhole. Pipe shall be thoroughly cleaned and flushed prior to pulling the mandrel. Mandrel shall pass smoothly through the pipe without excessive effort.
- 10.4 Testing shall be conducted only after at least 30 days have elapsed after backfill and compaction was completed. May be conducted concurrently with video inspection.

Section 11 – Video Inspection of Gravity Systems

- 11.1 All gravity sewer lines constructed as part of the project shall be televised and taped at the end of construction prior to acceptance. Taping shall be conducted after all backfill and compaction, but prior to final surface restoration. All pipes shall be thoroughly flushed by the Contractor immediately prior to the video inspection. The video shall be recorded in color on VHS or DVD format (preferable). Sufficient light shall be provided to show detail. Camera speed shall not exceed 3 feet per second. Camera shall have a swivel (pan and tilt) head capable of looking up each service connection. A copy of the video tape and a written TV Inspection Report shall be furnished to the City. Any sections of sewer pipe not meeting specifications or exhibiting defects shall, at the Contractor's expense, be corrected to meet specification. Repaired sections shall be re-televised. All repairs must be completed before acceptance of the project.
- 11.2 The sanitary sewer lines constructed as part of the project will also be video inspected near the end (11th month) of the one-year or two-year warranty period as appropriate to determine if any defects exist in the system. The warranty video inspection will be conducted during a season of high groundwater as close to the end of the warranty period as possible. The warranty period will continue to be in effect, regardless of duration, until all video recordings are received and approved. All defects in the system will be corrected at the developer's or contractor's expense.
- 11.3 Video inspection and taping costs will be borne by the contractor or Applicant unless otherwise approved.
- 11.4 All video inspection and tapping shall be conducted in the presence of a City representative.

Guidelines for Development Sanitary Sewer Designs Standards Manual:

Testing and Data Sheets

Pipe Air Test Data Sheet
Gravity Pipe Hydrostatic Test
Manhole Vacuum Test
Manhole Hydrostatic Test

City of Toledo

PO Box 220

Toledo, Oregon 97391

(541) 336-2247 Fax: (541) 336-3512



Test Date

Inspector for Developer

Witness for City

Date Received by City

Pipe Air Test Data Sheet

Inspection Report Form

Project Name: _____

Contractor: _____

Testing Company: _____

[illegible]

See reverse for procedures and time specification. First two (2) entries above represent example tests.

Inspector's Signature: _____ Date: _____

Testing Procedure

- 1) Immediately following pipe cleaning, the pipe installation shall be tested with low pressure air. Each pipe section between manholes shall be tested. Service laterals from the main to the property line shall be included in the test.
- 2) Check the average height of ground water over the pipe invert. The test pressure required below shall be increased 0.433 psi for each foot of average water depth over the pipe (ex. If groundwater is 2.8 feet above pipe invert, add 1.2 psig to test pressures). Method used to determine groundwater depth shall be acceptable to the City.
- 3) Air shall be slowly supplied to the plugged pipe until internal air pressure reaches 4.0 psi greater than the average back pressure of any ground water that may submerge the pipe. Do not exceed a total pressure of 9.0 psig.
- 4) After the internal test pressure is reached, at least two minutes shall be allowed for the air temperature to stabilize. After the stabilization period, disconnect the air supply.
- 5) The continuous monitoring pressure gauge shall then be observed while the pressure is decreased to no less than 3.5 psig (greater than average backpressure of any groundwater over the pipe). At a reading of 3.5 psig, or any convenient pressure between 3.5 psig and 4.0 psig (above groundwater pressure), timing shall commence with an accurate stop watch.
- 6) Acceptance - The tested section shall be considered acceptable if the required testing time has elapsed before a 1.0 psig pressure drop has occurred. If the pressure drops 1.0 psig before the minimum length of time has elapsed, the air loss rate is considered excessive and the section of pipe has failed the test.
- 7) Acceptance criteria is based on an allowable air loss of $Q=0.0015$ cfm per ft^2 of internal pipe surface area less than 625 ft^2 . This results in a total allowable loss of $625Q = 0.94$ cfm. The shortest time (T), in seconds, allowed for the air pressure to drop 1.0 psig is calculated with the following formula:

$$T = 0.085 (DK/0.0015); K = 0.000419DL \text{ but not less than } 1.0, D = \text{pipe I.D. in inches, and } L = \text{length of pipe tested in feet.}$$
- 8) Contractor shall record and document the testing procedure and results during the testing process. The UNI-Bell "Air Test Data Sheet" or similar approved equal shall be used and submitted to the Engineer. Record the diameter (in), length (ft), start and end manhole numbers, time, date, pressure drop, and groundwater level on inspection form. Submit to City.

Minimum Specified Time Required for 1.0 PSIG Pressure Drop

Pipe $\varnothing$ (in)	$T_{\min}$ (min:sec)	L for $T_{\min}$ (ft)	T for longer L (sec)	Specification Time for Length (L) Shown (min:sec)							
				100 ft	150 ft	200 ft	250 ft	300 ft	350 ft	400 ft	450 ft
4	3:46	597	.380L	3:46	3:46	3:46	3:46	3:46	3:46	3:46	3:46
6	5:40	398	.854L	5:40	5:40	5:40	5:40	5:40	5:40	5:42	6:24
8	7:34	298	1.520L	7:34	7:34	7:34	7:34	7:36	8:52	10:08	11:24
10	9:26	239	2.374L	9:26	9:26	9:26	9:53	11:52	13:51	15:49	17:48
12	11:20	199	3.418L	11:20	11:20	11:24	14:15	17:05	19:56	22:47	25:38
15	14:10	159	5.342L	14:10	14:10	17:48	22:15	26:42	31:09	35:36	40:04
18	17:00	133	7.692L	17:00	19:13	25:38	32:03	38:27	44:52	51:16	57:41
21	19:50	114	10.470L	19:50	26:10	34:54	43:37	52:21	61:00	69:48	78:31
24	22:40	99	13.674L	22:47	34:11	45:34	56:58	68:22	79:46	91:10	102:33
27	25:30	88	17.306L	28:51	43:16	57:41	72:07	86:32	100:57	115:22	129:48
30	28:20	80	21.366L	35:37	53:25	71:13	89:02	106:50	124:38	142:26	160:15

If no pressure drop (0 psig) has occurred after 1 hour, test may conclude and section passes

- 9) Service laterals shall be included in test however the length of service laterals may be ignored and the length of main line only used in the above table. If desired, length of service laterals included in test section may be included in the calculation by following the method outlined in UNI-B-6-98 Section 9.4.

City of Toledo

260 N Main St.

PO Box 220

Toledo, Oregon 97391

(541) 336-2247 Fax: (541) 336-3512



Gravity Pipe Hydrostatic Test Inspection Report Form

Test Date

Inspector for Developer

Witness for City

Date Received by City

Project Name: _____

Contractor: _____

Testing Company: _____

Upstream MH sta #	Downstream MH sta #	Dia. D (in)	Length L (ft)	Total Length of 4" laterals in section LL (ft)	Allowable Loss (gph) $0.04 \times D \times (L/100) +$ $0.04 \times 4 \times (LL/100)$	Actual Loss Total (gallons)	Test Duration (hours)	Actual Loss (gph)	Pass / Fail
example	6+37	8	365	65	1.27 gph	1.85	2.25	0.82	Pass

Fill pipe with water to establish at least 6 feet of head over highest section of piping including laterals. Leakage shall not exceed 0.04 gph per in diameter per 100 feet of pipe. Leakage determined by refilling with calibrated container. Test duration shall be at least 2 hours for each pipe test section.

Inspector's Signature: _____ Date: _____

260 N Main St.
PO Box 220
Toledo, Oregon 97391
(541) 336-2247 Fax: (541) 336-3512



Date Received by City

Testing Company: _____

[illegible]

See reverse for procedures and time specifications

Inspector's Signature: _____ Date: _____

Vacuum Testing of Manholes (per ASTM C1244)

- A. Precast concrete manholes shall be tested in accordance with the following procedure. Manhole installations which fail the testing shall be repaired or replaced until passing results are obtained. If flexible joint sealant is pulled out during testing, it shall be repaired.
- B. Testing shall be done in the presence of a City representative. Notify City at least 48 hours in advance. Use Report Form approved by City.
- C. All manholes shall be tested for acceptance after the trench has been backfilled, compaction requirements have been met, road base rock has been installed, paving is complete, and concrete manhole collars have been installed. If manhole has passed test and the castings have later been disturbed, manhole shall be re-tested.
- D. Thoroughly clean all manholes prior to testing. Remove all debris and do not allow foreign material to enter downstream piping.
- E. Contractor shall provide all necessary equipment and personnel to conduct the testing, including vacuum equipment and indicating devices.
- F. Procedure
 1. Plug all pipes entering manhole. Secure all plugs to prevent movement while vacuum is being drawn.
 2. Testing shall include the joint between the manhole cone or riser ring(s) and the manhole cover frame.
 3. Installation and operation of vacuum equipment and indicating devices shall be in accordance with the manufacturer's specifications and instructions.
 4. Withdraw air from the manhole until a measured vacuum of 10-inches of mercury (10" Hg) is established in the manhole interior.
 5. Record the time it takes for the vacuum to drop to 9-inches of mercury (9" Hg). Acceptance standards are based on this 1-inch of mercury change in negative pressure. Time measured for the 1" Hg pressure change shall be equal to or greater than the values in the following table:

Vacuum Testing Requirements (minimum test times, seconds)

Manhole Depth (ft)	Manhole Diameter (in)				
	42"	48"	54"	60"	72"
8' or less	17	20	23	26	33
10	21	25	29	33	41
12	25	30	35	39	49
14	30	35	41	46	57
16	34	40	46	52	67
18	38	45	52	59	73
20	42	50	53	65	81
22	46	55	64	72	89

(541) 336-2247 Fax: (541) 336-3512



Test Date
Inspector for Developer
Witness for City
Date Received by City

Testing Company: _____

[illegible]

Fill to rim with water. Leakage shall not exceed 0.2 gph per foot of head above pipe invert. Leakage determined by refilling to rim with calibrated container. Test duration shall be at least 2 hours for each manhole.

Inspector's Signature: _____ Date: _____

SEWER SYSTEM

STANDARD DETAIL DRAWINGS INDEX

- S-050: STANDARD UTILITY LOCATIONS
- S-100: TYPICAL SEWER TRENCH DETAIL
- S-105: STREET CUT STANDARD DETAIL
- S-150: PIPE ANCHOR / TRENCH CUT-OFF WALL DETAIL
- S-200: STANDARD MANHOLE
- S-205: FLAT-TOP MANHOLE
- S-210: MANHOLE BASE STANDARD DETAILS
- S-220: STANDARD INSIDE DROP MANHOLE
- S-225: STANDARD OUTSIDE DROP MANHOLE
- S-250: MANHOLE COVER AND FRAME DETAILS
- S-260: MANHOLE FRAME GRADE ADJUSTMENT
- S-300: STANDARD SERVICE CONNECTION AND LATERAL
- S-400: TYPICAL PIPE CASING DETAIL



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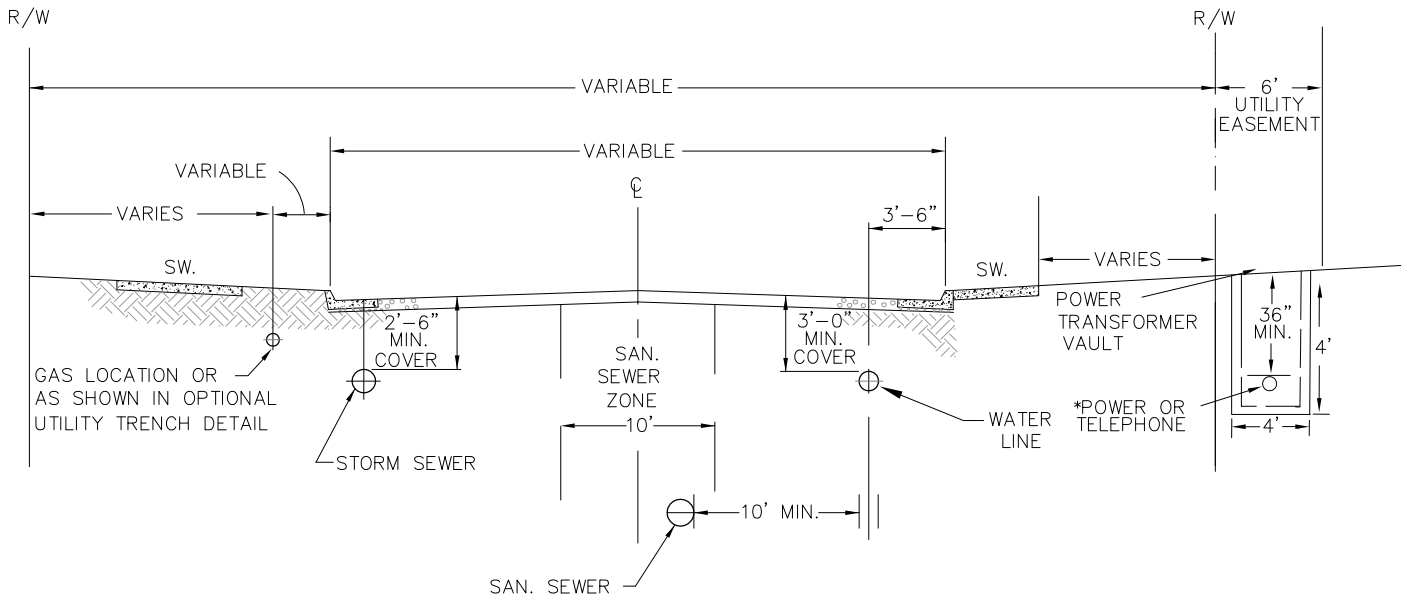
STANDARD DETAIL DRAWING INDEX

DETAIL NO.

S-010

04/30/2009

SEE DWG. T-050 FOR STANDARD STREET WIDTHS AND SECTIONS



NOTES:

1. WATER LOCATED 3'-6" INSIDE FROM FACE OF CURB OR AS OTHERWISE DIRECTED.
2. 10' HORIZONTAL SEPARATION BETWEEN WATER AND SEWER WHERE POSSIBLE. COMPLY WITH SEPARATION REQUIREMENTS OF OAR 333-061-050.
3. WATER DISTRIBUTION MAINS SHALL HAVE 36" MINIMUM COVER OR AS OTHERWISE DIRECTED.
4. SEWER MAINS SHALL HAVE 5.25' (63") MINIMUM COVER UNLESS OTHERWISE APPROVED TO AVOID CONFLICTS WITH WATER AND OTHER UTILITIES.
5. WATER MAINS SHALL BE LOCATED ON NORTH OR EAST SIDE OF STREET WHEN PRACTICAL.
6. WATER, SEWER, STREETS AND DRAINAGE SYSTEMS ARE SUBJECT TO CITY OF TOLEDO STANDARDS AND APPROVAL.
7. MANHOLE LIDS SHALL NOT BE LOCATED DIRECTLY IN NORMAL WHEEL PATH.
8. ALL LAYOUTS AND LOCATIONS ARE SUBJECT TO CITY APPROVAL.



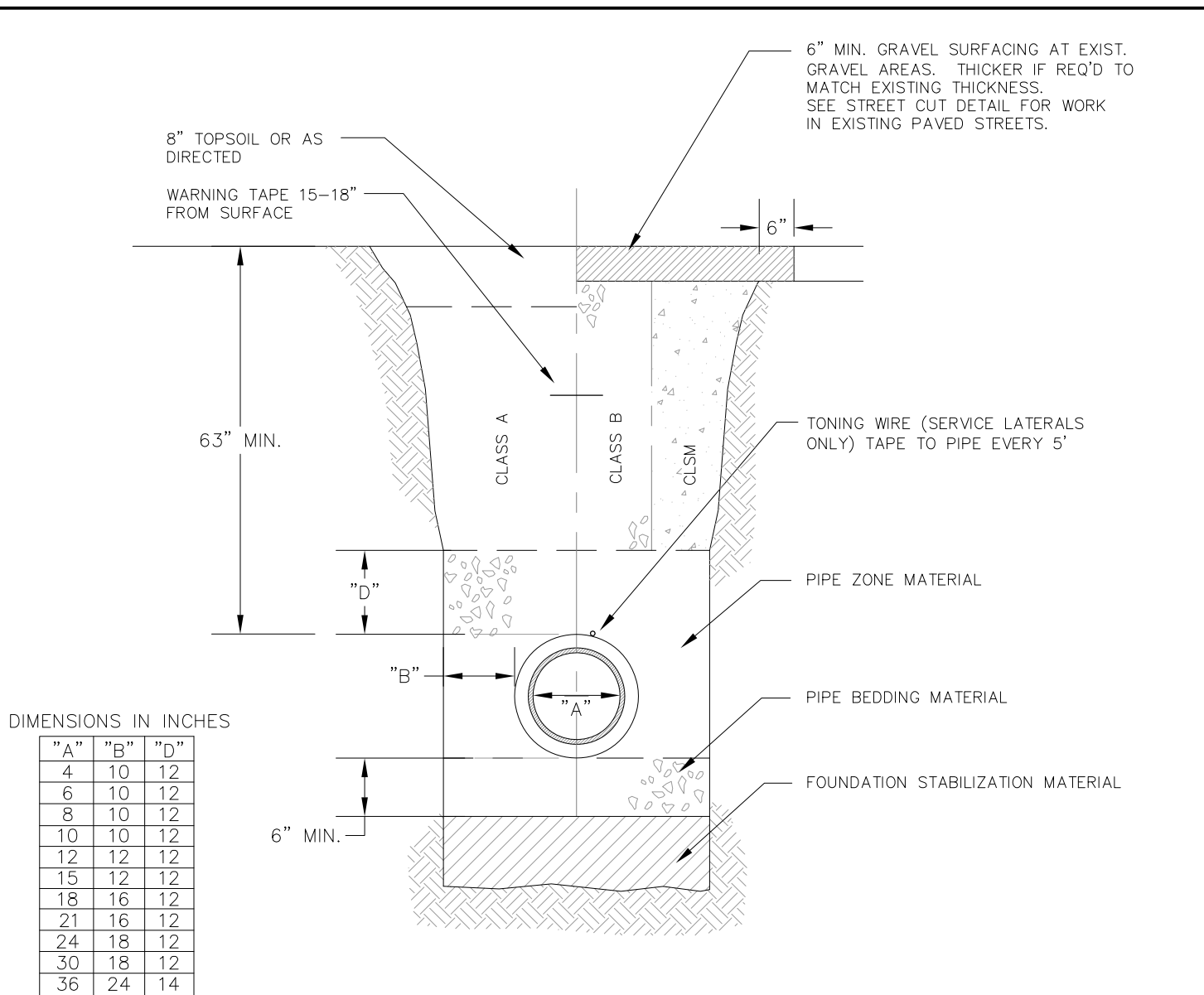
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STANDARD UTILITY LOCATIONS

DETAIL NO.

S-050

04/30/2009



NOTES:

1. TRENCH EXCAVATION SHALL BE CONDUCTED IN A SAFE MANNER WITH ALL NECESSARY BRACING AND SHORING PROVIDED FOR COMPLIANCE WITH OSHA.
2. FOUNDATION STABILIZATION SHALL BE PROVIDED WHEN MATERIAL AT BOTTOM OF TRENCH IS UNSUITABLE IN THE OPINION OF THE CITY TO PROVIDE A STABLE TRENCH BASE.
3. CONSTRUCTION IN PUBLIC RIGHT-OF-WAY SHALL COMPLY WITH CITY STANDARDS.
4. CLASS B BACKFILL REQUIRED IN ALL ROADWAYS AND TRAFFIC PATHS EXCEPT WHERE CLSM BACKFILL IS REQUIRED BY COUNTY, ODOT, OR CITY.
5. TONING WIRE REQUIRED AT SERVICE LATERALS. WIRE SHALL BE 12 GA. MINIMUM SOLID COPPER WIRE WITH GREEN 30 MIL THICK HDPE INSULATION RATED FOR DIRECT BURY. USE APPROVED WATERPROOF SPLICE AT ALL CONNECTIONS.
6. WARNING TAPE SHALL BE 6" WIDE, 4 MIL THICK, APWA GREEN, READING "CAUTION SEWER LINE BURIED BELOW".
7. MATERIALS SHALL BE IN ACCORDANCE WITH THE CITY SANITARY SEWER DESIGN STANDARDS MANUAL.
8. COMPACT ALL FILL AS SPECIFIED.



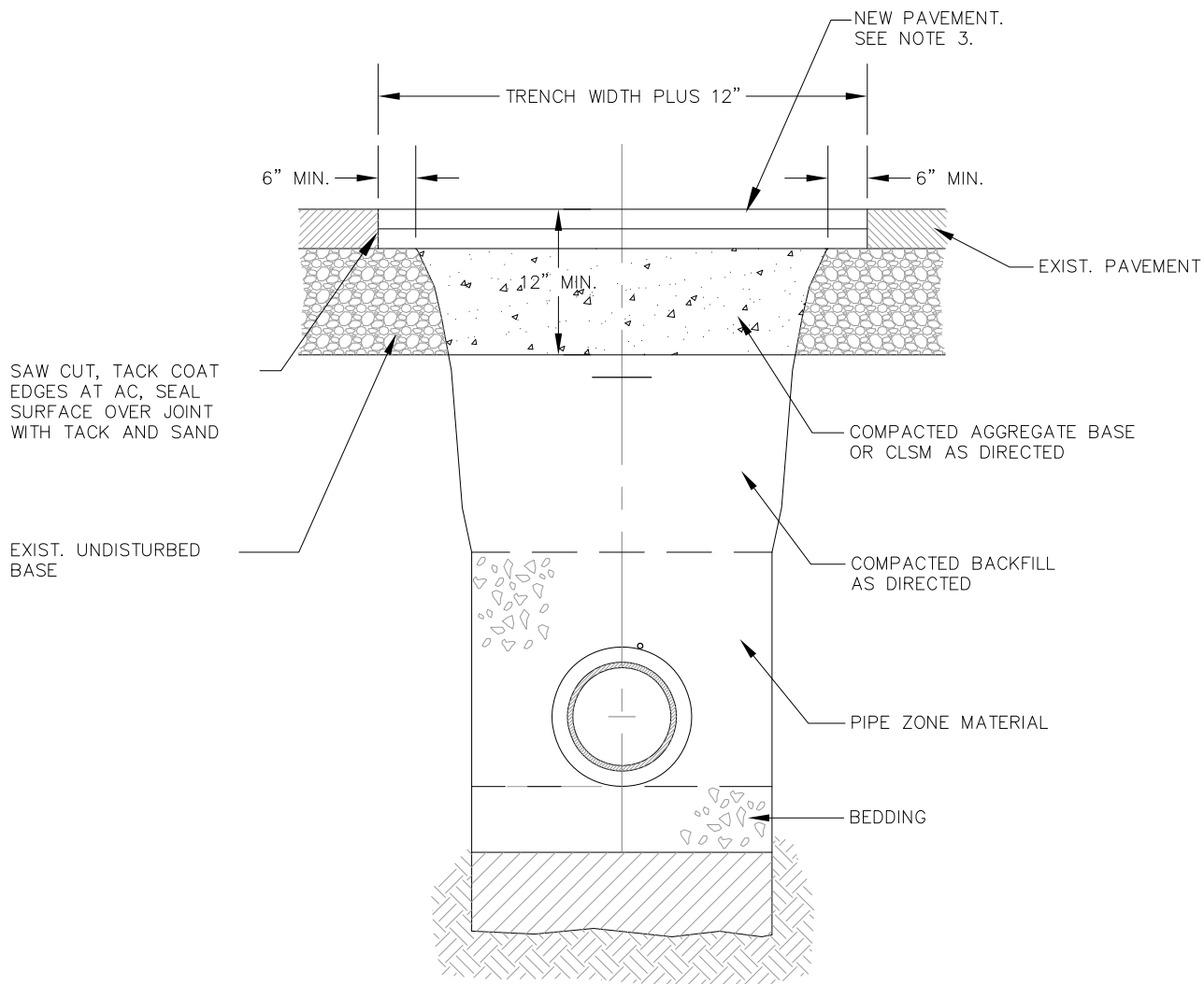
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TYPICAL TRENCH DETAIL SANITARY SEWER

DETAIL NO.

S-100

04/30/2009



NOTES:

1. ALL EXISTING AC OR PCC PAVEMENT SHALL BE SAWCUT IMMEDIATELY PRIOR TO REPAVING.
2. CONCRETE PAVEMENT SHALL BE REPLACED WITH CONCRETE TO A MINIMUM THICKNESS OF 6 INCHES OR TO THE THICKNESS OF REMOVED CONCRETE PAVEMENT, WHICHEVER IS GREATER.
3. PLACE AC MIX TO A MINIMUM THICKNESS OF 4 INCHES OR THE THICKNESS OF REMOVED PAVEMENT, WHICHEVER IS GREATER. COMPACT AS DIRECTED. AC PAVEMENT SHALL BE PLACED IN AT LEAST TWO 2" LIFTS.
4. COMPLY WITH THE REQUIREMENTS OF THE AGENCY HAVING JURISDICTION OVER THE ROAD IN WHICH THE STREET CUT OCCURS.



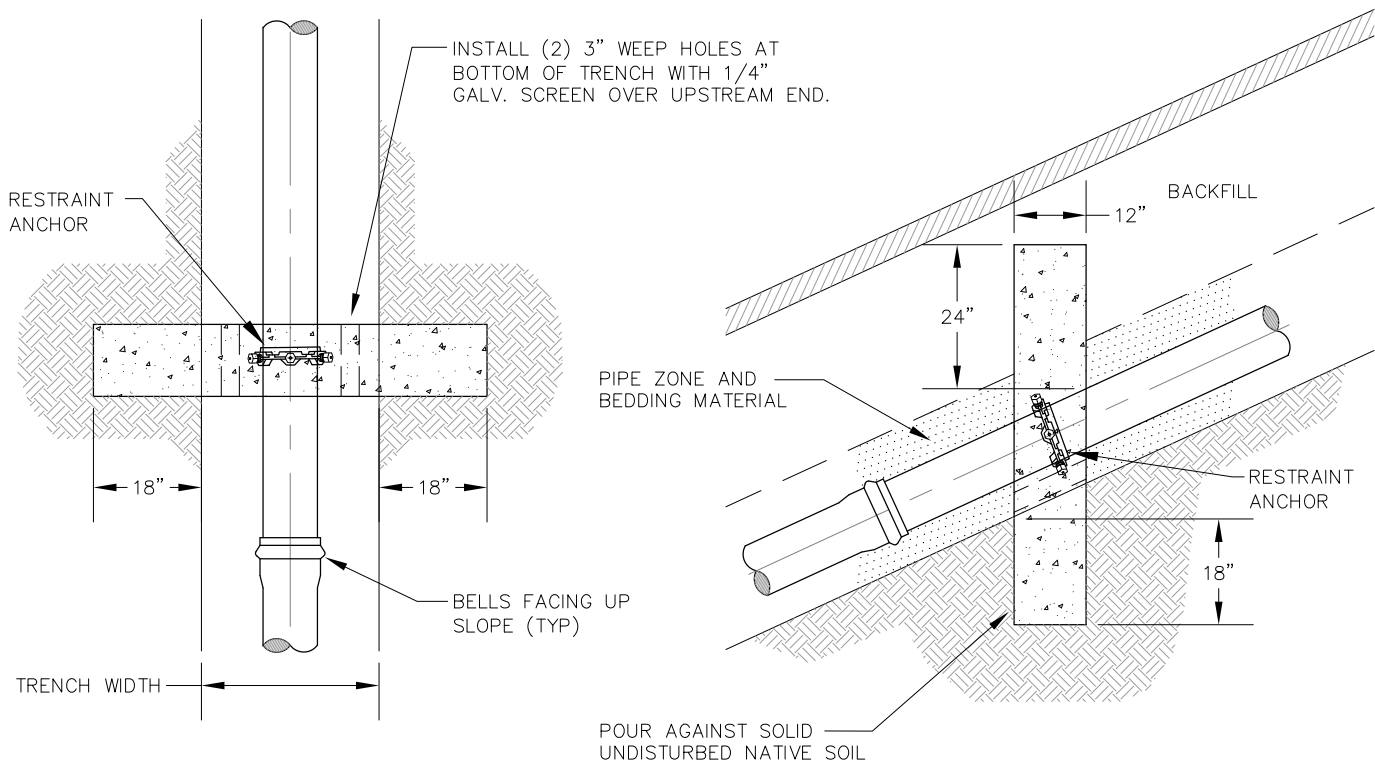
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STREET CUT STANDARD DETAIL

DETAIL NO.

S-105

04/30/2009



NOTES:

1. CUT-OFF WALLS REQ'D AT ALL PIPELINES WHERE SLOPE EXCEEDS 20%.
2. RESTRAINED JOINT PIPE REQUIRED AT SLOPES BETWEEN 15% AND 20%.
3. WALLS SHALL BE FORMED WITHIN TRENCH. REMOVE FORMS PRIOR TO BACKFILLING.
4. CONCRETE SHALL HAVE 3000 PSI COMPRESSIVE STRENGTH MIN. (CLASS 3000).
5. SPACING OF WALLS SHALL BE:

SLOPE	SPACING
20-34%	35 FEET
35-50%	25 FEET
51-+%	15 FEET



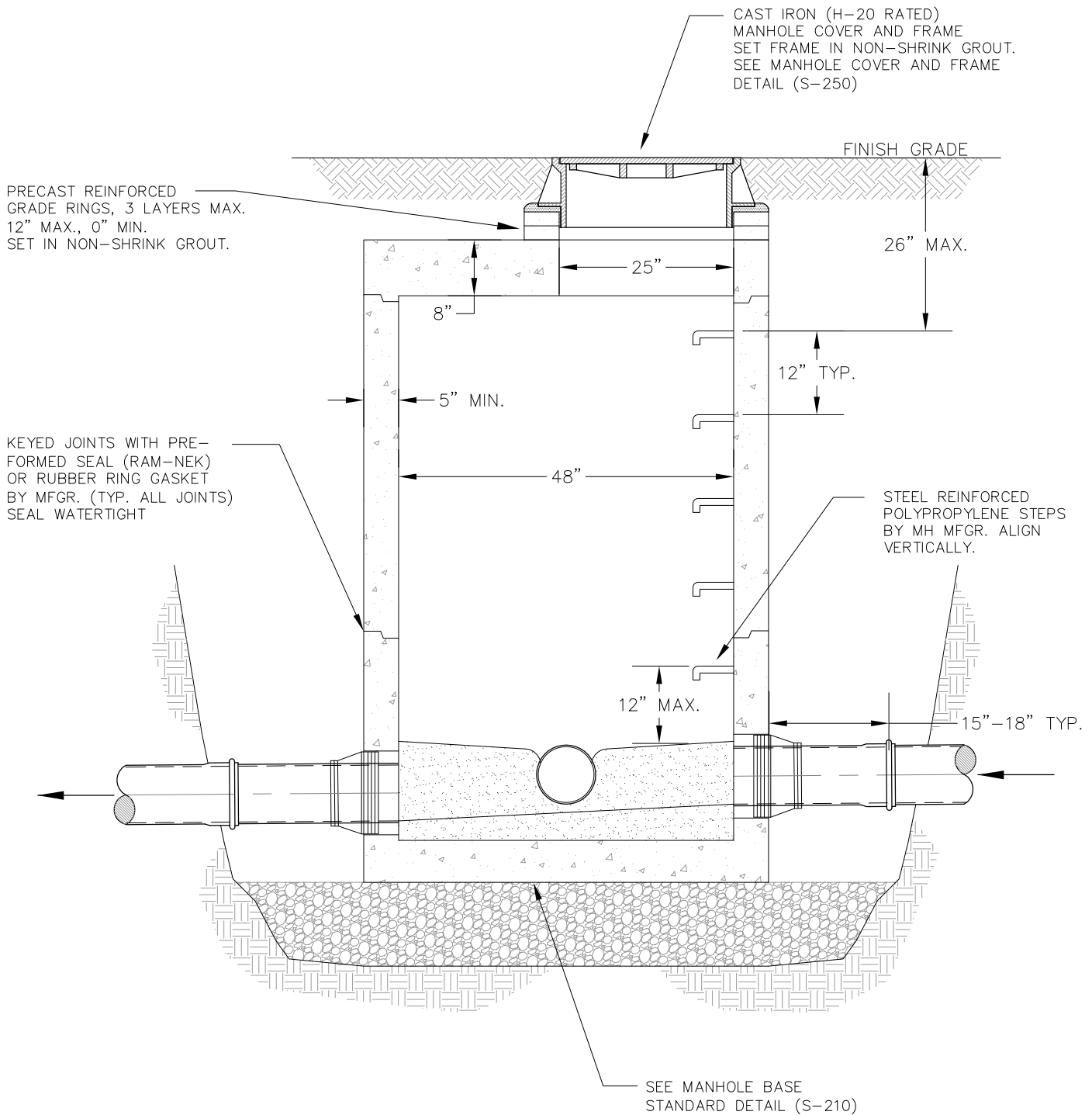
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PIPE ANCHOR / TRENCH CUT-OFF WALL DETAIL

DETAIL NO.

S-150

04/30/2009



NOTE:

- 1) ALL PRECAST MANHOLE SECTIONS SHALL MEET ASTM C-478.
- 2) STANDARD MANHOLE REQUIRED WHEN DEPTH FROM FINISH GRADE TO INVERT IS 6 FEET OR MORE.



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FLAT-TOP MANHOLE PIPES LESS THAN 24" DIAM.

DETAIL NO.

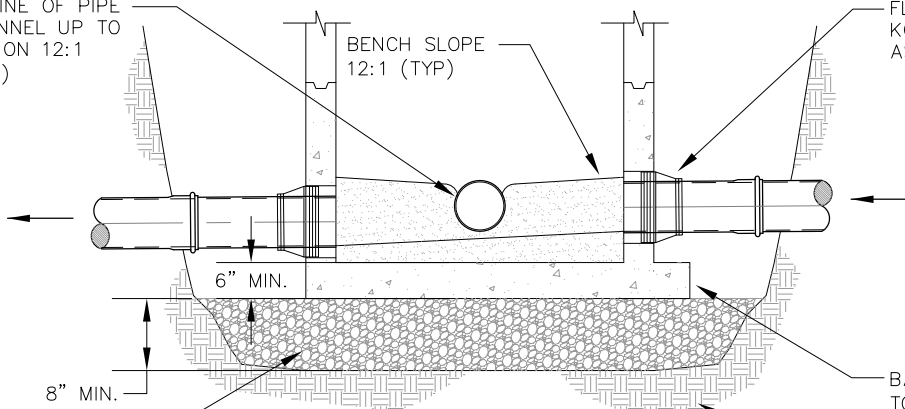
S-205

04/30/2009

AT SPRING LINE OF PIPE
EXTEND CHANNEL UP TO
CROWN LINE ON 12:1
BATTER (TYP)

BENCH SLOPE
12:1 (TYP)

FLEXIBLE RUBBER BOOT
KOR-N-SEAL OR EQUAL
AS APPROVED.



3/4"-0 CRUSHED
ROCK BASE (TYP)

PRECAST BASE

PRECAST BASE HEIGHT
SUFFICIENT TO AVOID
JOINT AT PIPE PENETRATIONS

BASE EXTENSION AS REQ'D
TO PREVENT UPLIFT (TYP)

UNDISTURBED EARTH OR
COMPACT SELECT MATERIAL
AS REQ'D (95%) (TYP)

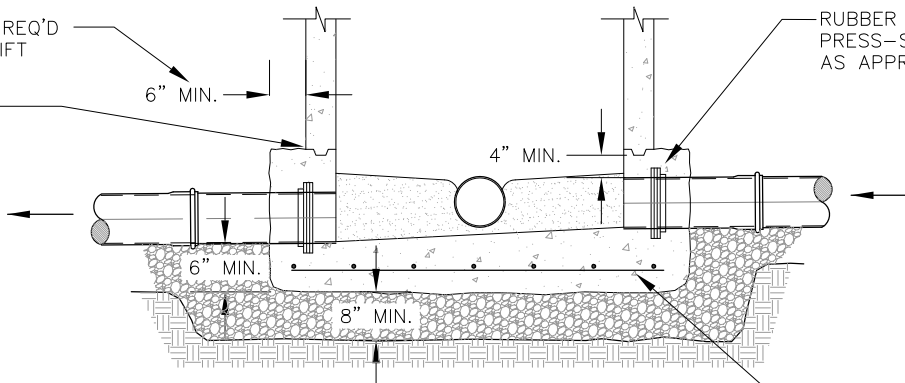
OR GREATER AS REQ'D
TO PREVENT UPLIFT

RAM-NEK SEAL

6" MIN.

RUBBER WATERSTOP GROUT RING
PRESS-SEAL GASKET OR EQUAL
AS APPROVED.

4" MIN.

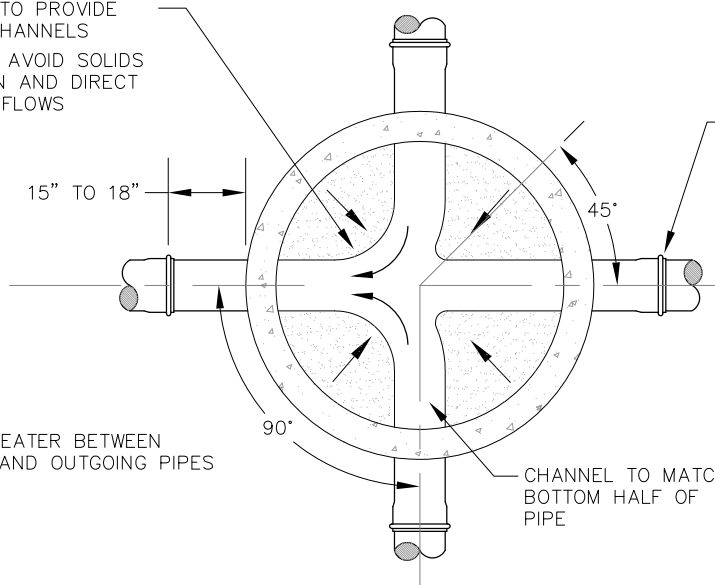


#4 HOOP AND #4 @ 12" E.W.
#5 BARS WHEN DEPTH
EXCEEDS 15'

CAST-IN-PLACE BASE

CONTOUR TO PROVIDE
SMOOTH CHANNELS
SHAPE TO AVOID SOLIDS
DEPOSITION AND DIRECT
HEAD-ON FLOWS

15" TO 18"



PIPE JOINT
FLEXIBLE COUPLING
WHERE CONNECTING
TO EXIST. PIPE

90° OR GREATER BETWEEN
INCOMING AND OUTGOING PIPES

CHANNEL TO MATCH
BOTTOM HALF OF
PIPE

PRECAST OR CAST-IN-PLACE
BASE AT CONTRACTOR'S
OPTION OR AS DIRECTED.

ALL FIELD PLACED CONCRETE
SHALL BE TYPE II PCC WITH
3000 PSI MIN. STRENGTH

MIN. 0.2 FT. INVERT DROP
ACROSS INLET AND OUTLET
PIPES.



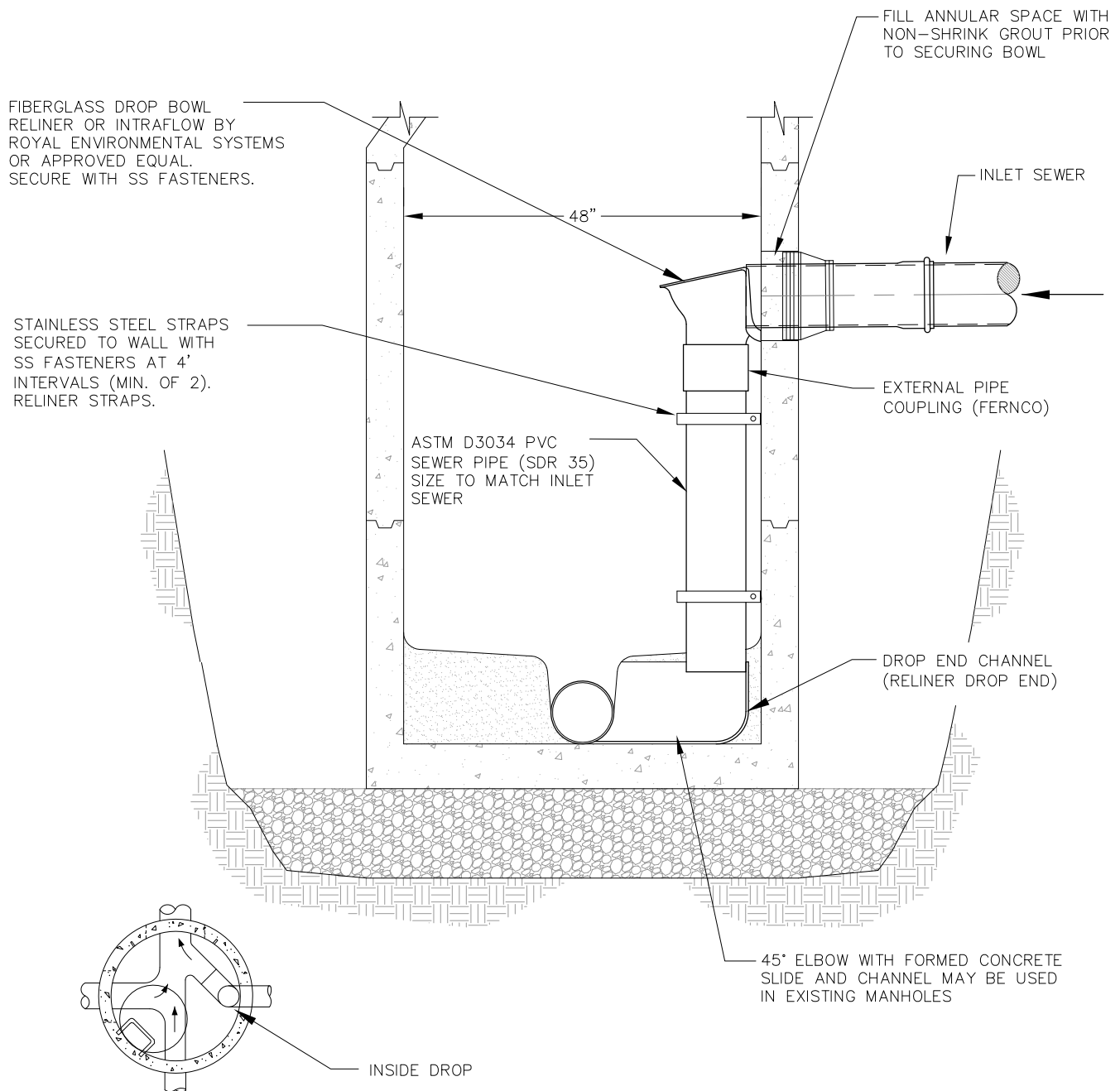
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MANHOLE BASE STANDARD DETAILS

DETAIL NO.

S-210

04/30/2009



NOTES:

1. DROP MANHOLES SHALL ONLY BE USED WITH PRIOR APPROVAL FROM CITY OF COOS BAY.
2. RELINER DROP BOWL, 8" OUTLET (B8) FOR 8" INLET SEWERS. B10 FOR 10" SEWERS. CONSULT CITY ENGINEER FOR LARGER SIZES.
3. EXTEND INLET SEWER PIPE 2" INTO MANHOLE. CUT "V" NOTCH IN BOTTOM OF PIPE PROTRUSION. FOLLOW RELINER INSTRUCTIONS.
4. INTRAFLOW INSIDE DROP SYSTEM ACCOMMODATES 6" TO 12" SEWERS. INTRAFLOW SECTIONS SHALL BE AT LEAST 4" WIDER THAN INLET SEWER. OUTLET ELBOW TO MATCH INLET SEWER SIZE.
5. ONLY ONE DROP ASSEMBLY ALLOWED PER MANHOLE.



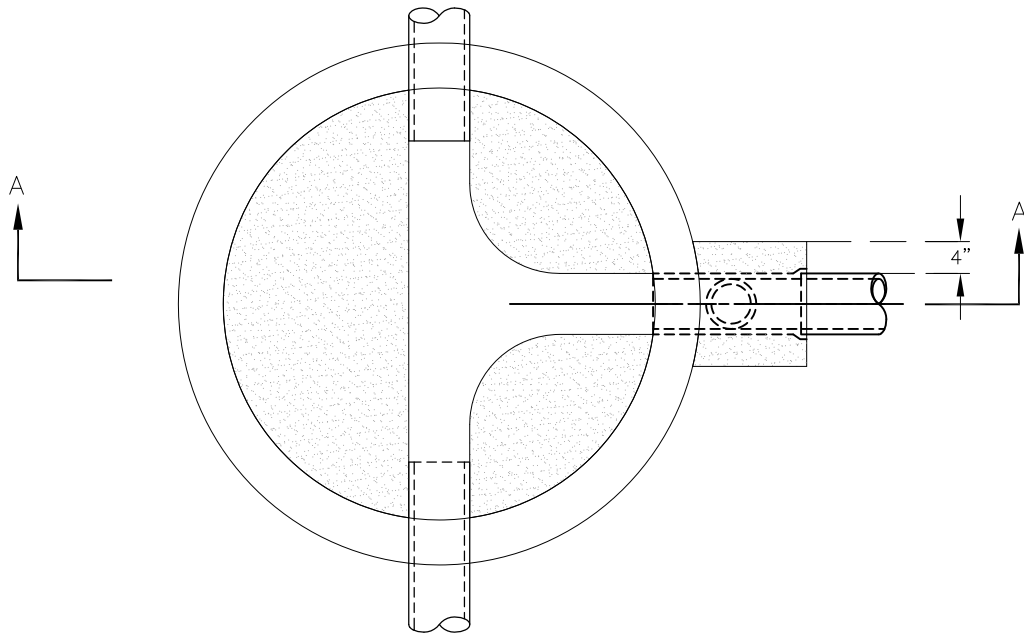
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STANDARD INSIDE DROP MANHOLE

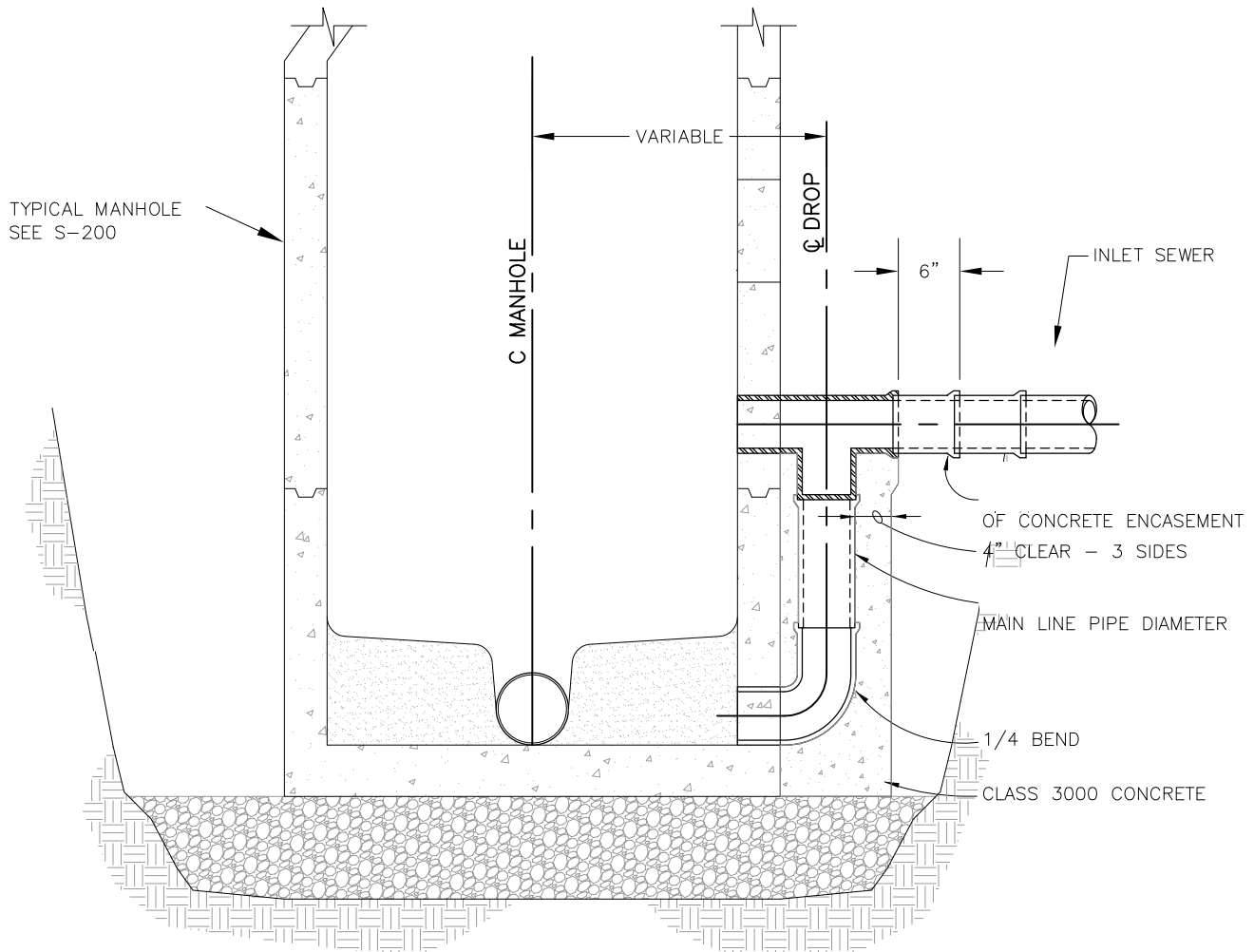
DETAIL NO.

S-220

04/30/2009



PLAN



SECTION A-A



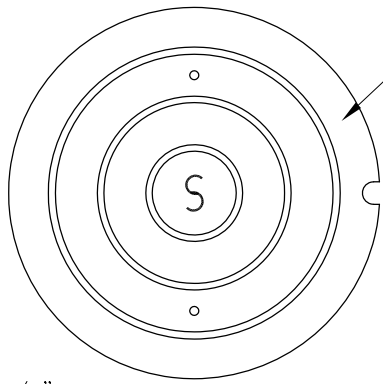
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STANDARD OUTSIDE DROP MANHOLE

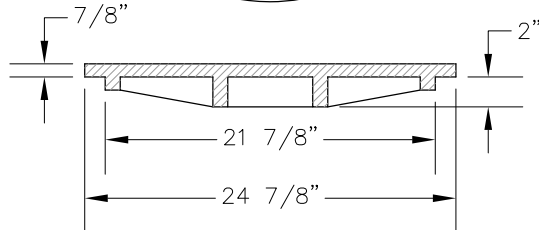
DETAIL NO.

S-225

04/30/2009



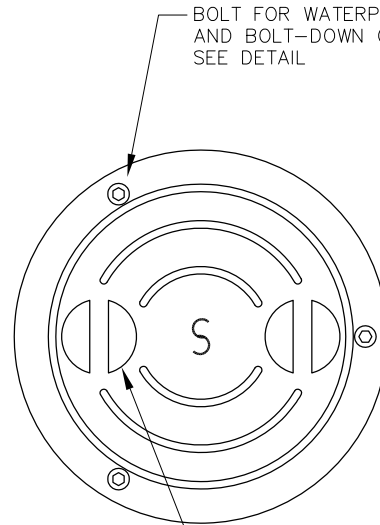
TWO HOLE 'S' COVER STANDARD
NO VENT HOLES IN WATERTIGHT
COVERS



COVER (150 LBS)

(OLYMPIC FOUNDRY MH26S, OR APPROVED EQUAL)

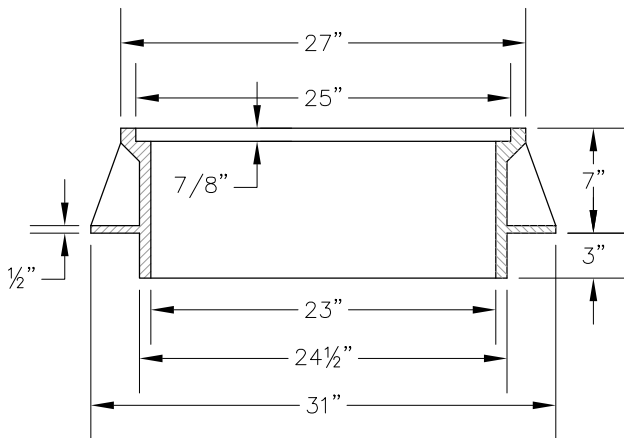
WATERPROOF/BOLT-DOWN COVER
REQUIRED IN ALL EASEMENT AND
OFF STREET AREAS.



BOLT FOR WATERPROOF
AND BOLT-DOWN COVER
SEE DETAIL

DEPRESSED HANDLE

(OLYMPIC FOUNDRY MH26WT, OR APPROVED EQUAL)

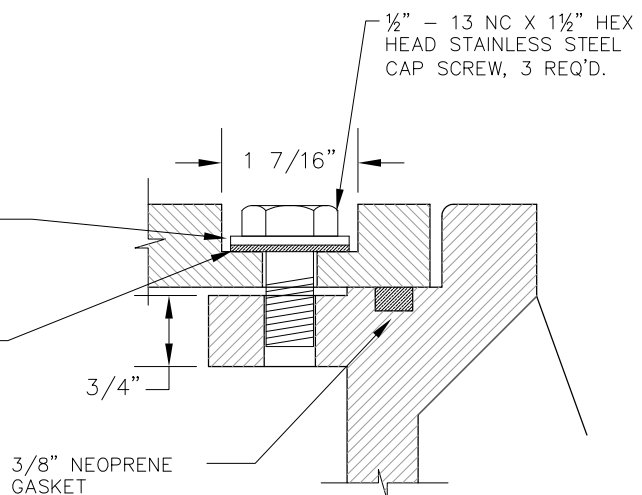


FRAME (237 LBS)

(OLYMPIC FOUNDRY MH26A, OR APPROVED EQUAL)

1 1/4" OD STAINLESS STEEL
WASHER, 3/32" THICK
3 REQ'D

FLAT RUBBER WASHER
3 REQ'D



BOLT DOWN DETAIL

NOTE:

- 1) TAMPER PROOF FRAME AND COVER REQUIRED
OUTSIDE OF RIGHT OF WAY OR IN
UNDEVELOPED AREAS.
- 2) MANHOLE FRAMES AND COVER SHALL HAVE
H-20 RATING



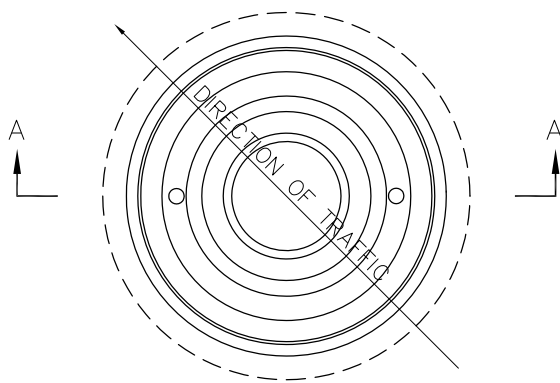
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MANHOLE COVER AND FRAME DETAILS

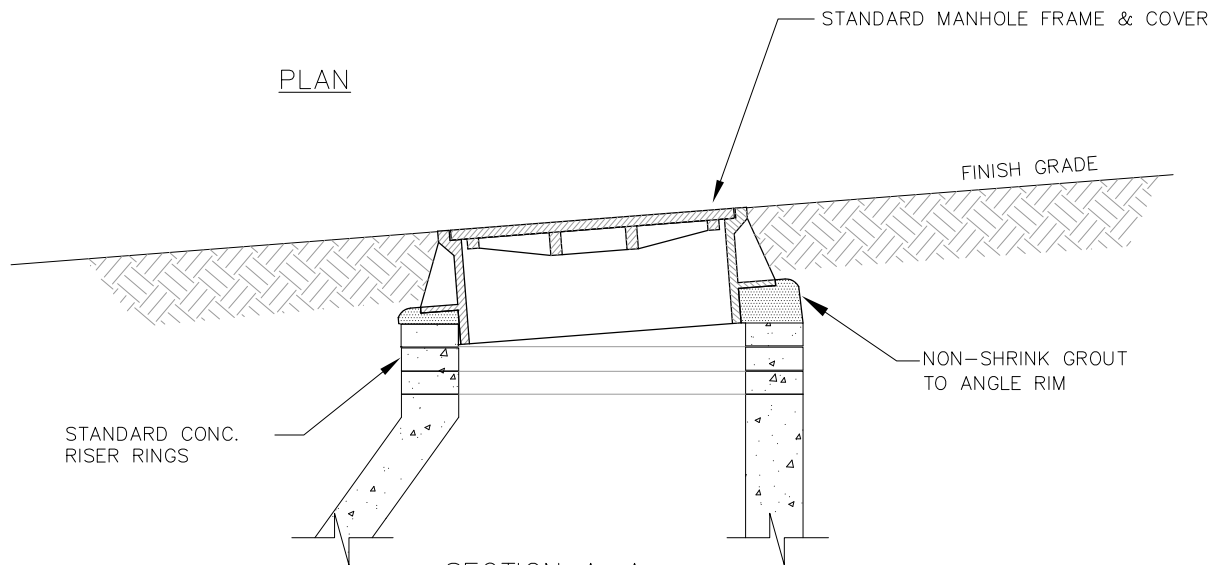
DETAIL NO.

S-250

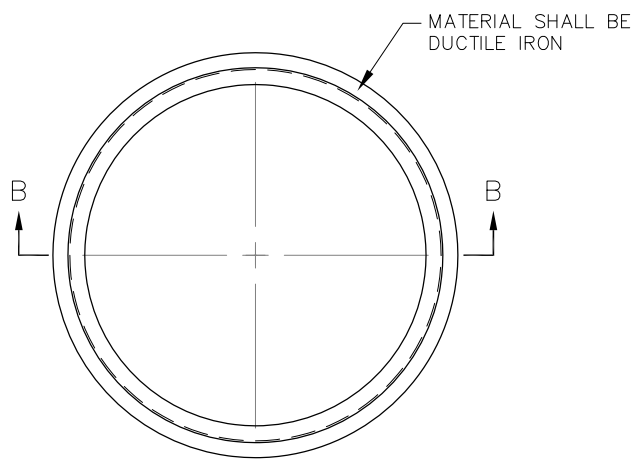
04/30/2009



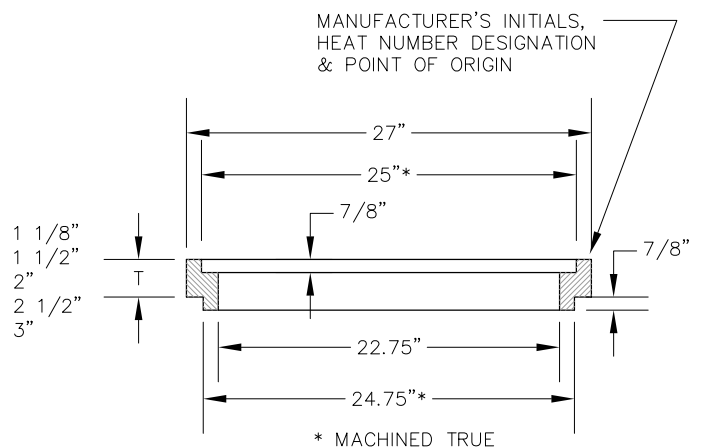
PLAN



SECTION A-A
TYPICAL MANHOLE GRADE ADJUSTMENT IN STREET



MANHOLE ADJUSTMENT RINGS
FOR RESURFACING



SECTION B-B



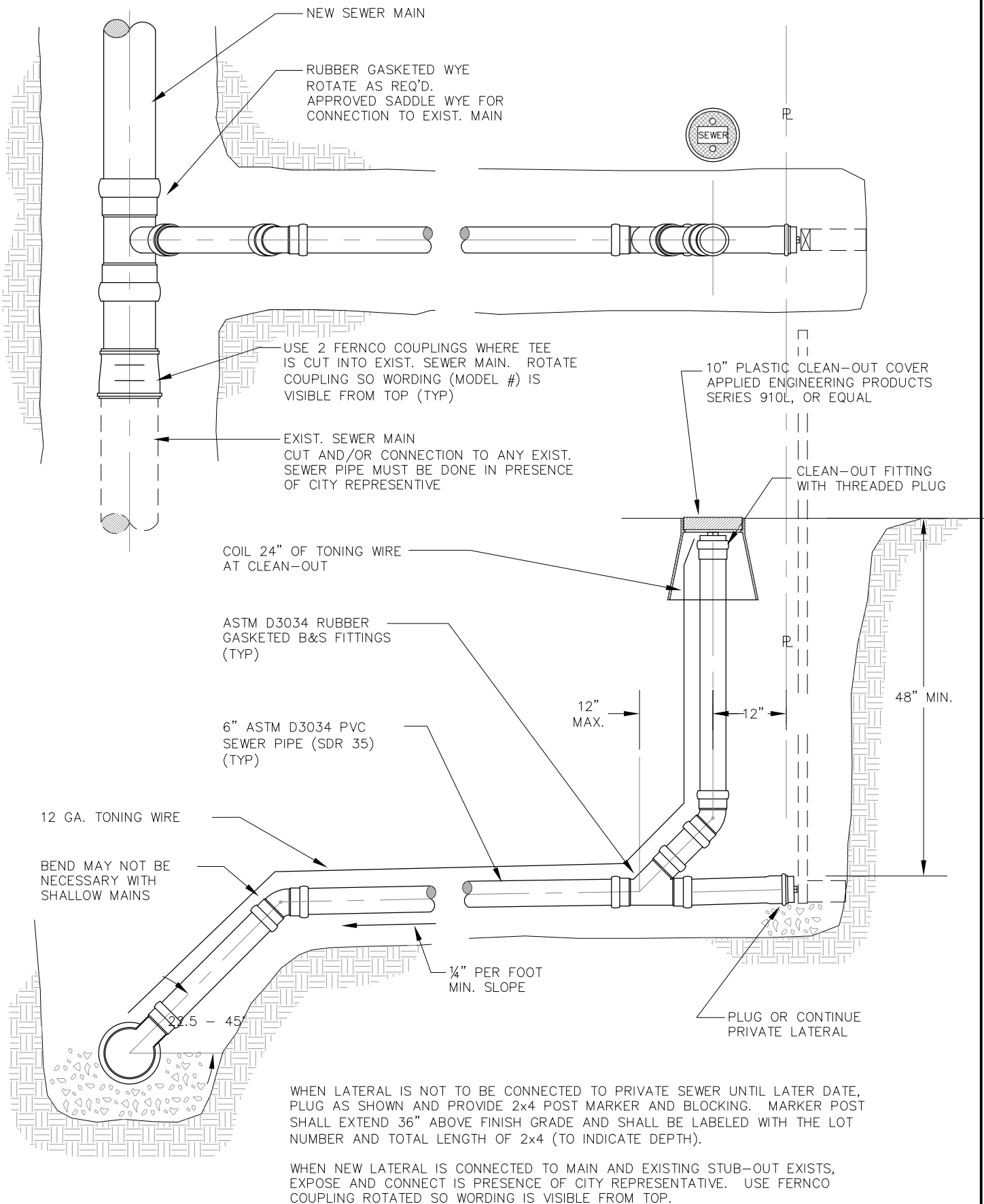
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MANHOLE FRAME GRADE ADJUSTMENT

DETAIL NO.

S-260

04/30/2009



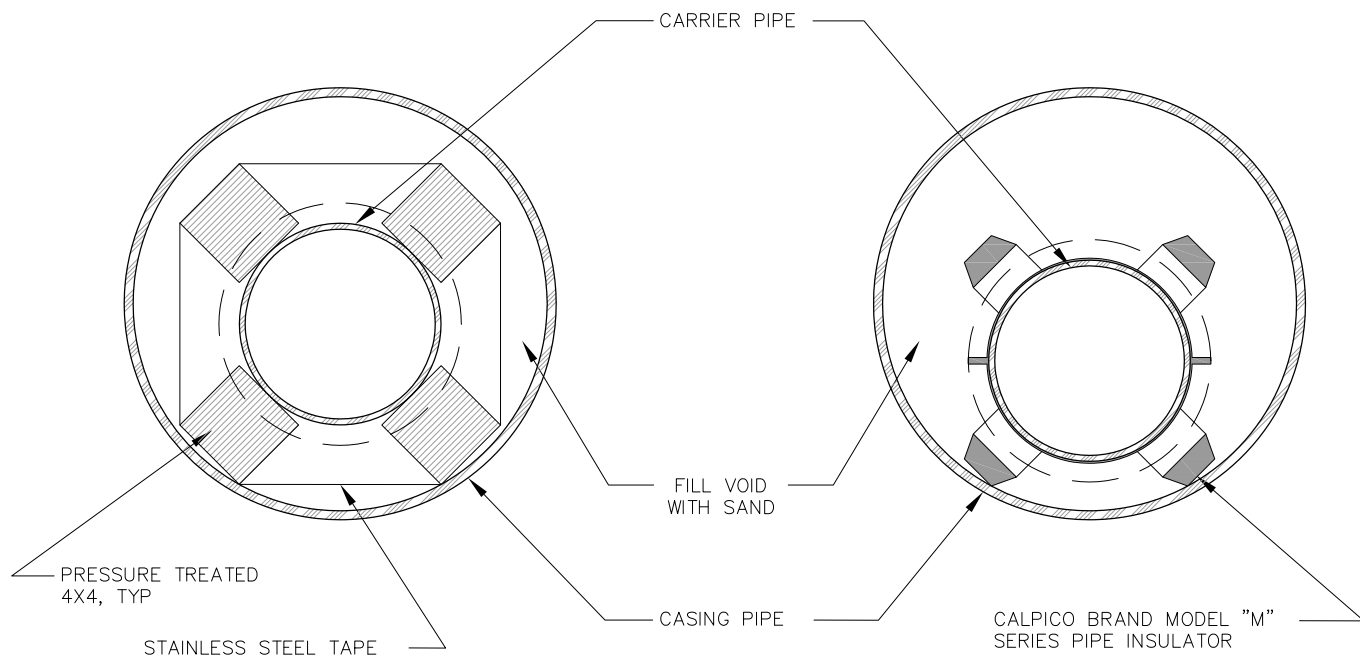
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STANDARD SERVICE CONNECTION AND LATERAL

DETAIL NO.

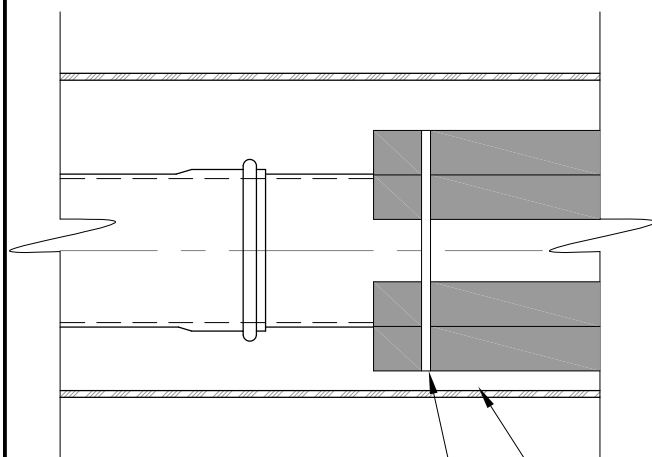
S-300

04/30/2009



CARRIER PIPE WITH
PRESSURE TREATED INSULATOR

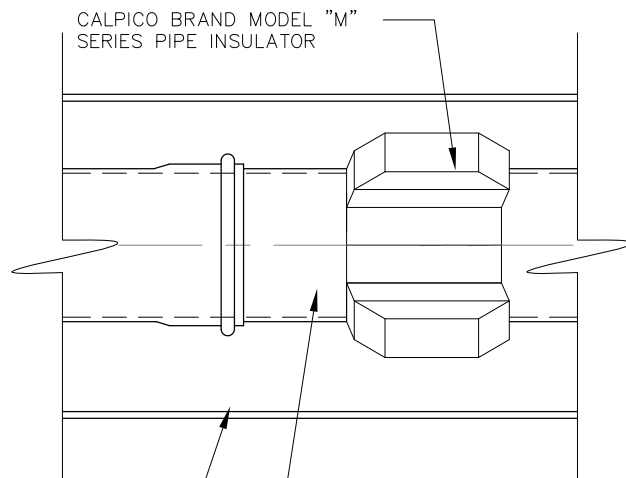
CARRIER PIPE WITH
CALPICP MODEL "M" INSULATOR



PRESSURE TREATED 4X4 TO BE 4'
LONG AND STRAPPED WITH
STAINLESS STEEL TAPE AT BOTH
ENDS

CASING PIPE SHALL BE SMOOTH
STEEL PIPE CONFORMING TO AWWA
C 201 WITH MINIMUM WALL
THICKNESS 3/8"

PROFILE OF CARRIER PIPE WITH
PRESSURE TREATED INSULATOR



4" MIN. CLEAR SPACE
BETWEEN CARRIER PIPE
BELL AND CASING

PROFILE OF CARRIER PIPE WITH
CALPICP MODEL "M" INSULATOR

NOTES:

- 1) CARRIER PIPE SHALL HAVE A MINIMUM OF 2 PRESSURE TREATED INSULATORS OR 3 CALPICO MODEL "M" SERIES PER SECTION OF PIPE.
- 2) CASING PIPE WALL THICKNESS MAY VARY DUE TO APPLICATION AND MUST BE APPROVED BY CITY ENGINEER
- 3) SAND IS TO BE BLOWN IN TO FILL VOIDS BETWEEN CASING PIPE AND CARRIER PIPE.



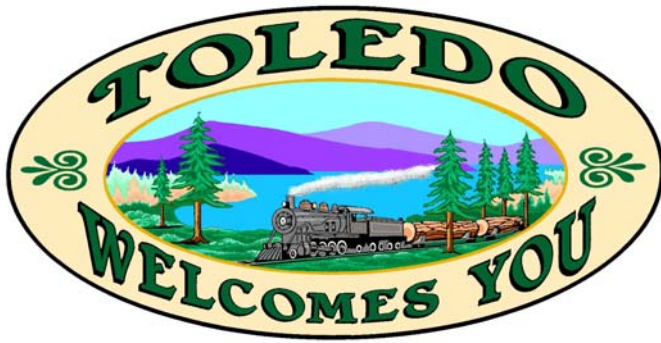
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**TYPICAL PIPE CASING
DETAIL**

DETAIL NO.

S-400

04/30/2009



City of Toledo
LINCOLN COUNTY, OREGON

DIVISION 3:
STREET AND TRANSPORTATION SYSTEM
DESIGN STANDARDS MANUAL
Guidelines for Development

Effective: -----, 2009

Section 1 – General Design Requirements

- 1.1 The purpose of this manual is to set standards for the design and construction of streets, sidewalks, and general transportation system improvements to serve new and future development. This manual may be updated periodically and the design engineer shall ensure that the latest version is being utilized.
- 1.2 Materials and details shall conform to the requirements of this manual.
- 1.3 All applicable laws, codes, regulations, and permit requirements shall be complied with.

Section 2 – Design Plan Format

- 2.1 Refer to the City’s “Engineering Policy – Guidelines for Development” document for additional requirements and submittal procedures.

Section 3 – Street and Transportation System Design Requirements

- 3.1 Creation of Streets
 - 3.1.1 No development may occur unless the development has frontage on or approved access to a public street currently open to traffic. A currently non-opened public right-of-way may be opened by improving it to City Standards.
 - 3.1.2 Streets are to be created in a pattern of interconnection to reduce travel distance, provide multiple travel routes, and promote the use of alternative modes.
 - 3.1.3 Streets (including alleys, driveways, and cul-de-sacs) within and adjacent to a development shall be improved to City Standards and comply with the Uniform Fire Code and the Fire Chief’s discretion. In addition any new street or additional street width planned as a portion of an approved street plan shall be dedicated and improved in accordance with these articles.
 - 3.1.4 Streets are usually created through the approval of a subdivision or partition plat. However, the City Council may also approve the creation of a street by acceptance of a deed.
 - 3.1.5 Where necessary to give access to or permit a satisfactory future subdivision of adjoining land, streets shall be extended to the boundary of the subdivision; and the resulting dead-end streets may be approved without a turnaround. Reserve strips and street plugs may be required to preserve the objectives of street extensions. Typically, the maximum allowable length of a temporary dead-end without a turnaround will be limited to 300-feet, unless otherwise approved by the Public Works Director or designee.
 - 3.1.6 Creation of access easements.
 - A. In general, the creation of access easements between property owners is discouraged. However, there are some instances where an access easement is the only viable method of providing access to a developable

lot. An access easement may be approved when the following criteria are satisfied:

1. No more than two parcels or uses are to be served by the proposed access easement;
2. There is not sufficient room for public right-of-way due to topography, lot configuration, or placement of existing buildings, and,
3. The Public Works Director has determined that there is not a need for a public street with regard to the subject development and location.

3.2 Street Geometry - General

3.2.1 The location, width, and grade of streets shall be considered in their relation to existing and planned streets, topographical conditions, and the planned use of the land to be served by the streets.

3.2.2 Grades, tangents, curves, and intersection angles shall be appropriate for the traffic to be carried, considering the terrain.

3.2.3 As far as practical, streets other than minor streets, shall be in alignment with existing streets by continuations of the centerlines thereof. Staggered street alignment resulting in 'T' intersections shall, whenever practical, leave a minimum distance of 200 feet between the centerlines of streets having approximately the same direction, and otherwise shall not be less than 100 feet long.

3.2.4 Intersections

- A. Streets shall intersect one another at an angle as near to the right angle as is practicable considering topography of the area and previous adjacent layout.
- B. Where not practicable, the right-of-way and street paving within the acute angle shall have a minimum of 30 feet centerline radius where such an angle is not less than 60 degrees.
- C. The intersection of an arterial or collector street with another street shall have at least 100 feet of tangent adjacent to the intersection unless topography requires a lesser distance.
- D. Other streets, except alleys, shall have at least 50 feet of tangent adjacent to the intersection unless topography requires a lesser distance.
- E. Intersections which contain an acute angle of less than 80 degrees or which include an arterial street shall have a minimum corner radius sufficient to allow for a roadway radius of 20 feet and maintain a uniform width between the roadway and the right-of-way line.
- F. On State highways, ODOT standards shall supersede City Standards. The same is true on roads under County jurisdiction.

-
- 3.2.6 Symmetrical street cross sections are preferred, with opposing curbs at the same grades.
- 3.2.7 Tilted, warped, super-elevated, or other cross sections are only allowed under specialized cases and as approved by the Public Works Director or designee.
- 3.2.8 All driveways must be located the maximum distance which is practical from a street intersection and in no instance shall the distance from an intersection be closer than the following as measured from the nearest curb return radius:
- | | | |
|----|------------------|---------|
| A. | Arterial Street | 40 feet |
| B. | Collector Street | 20 feet |
| C. | Local Street | 10 feet |
- 3.3 Cul-de-sacs
- 3.3.1 A cul-de-sac shall be as short as possible and no more than 400 feet long or serving more than 18 dwelling units. Wherever possible, a connection to a parallel side street should be used instead of a cul-de-sac.
- 3.3.2 Each cul-de-sac shall have a circular end with a minimum diameter of right-of-way width for emergency equipment turnaround and paved to the widths discussed later in this section and as shown on the standard detail drawings.
- 3.3.3 Cul-de-sacs are to be graded so that surface water is shed to the outer curbs and gutters. The finished pavement grade from the center point of the cul-de-sac to the gutter line shall be at least 2-percent (negative).
- 3.4 Grades and Curves
- 3.4.1 Grades on streets shall not exceed 6% on arterials, 10% on collector streets, or 12% on any other street. Exception may be made upon approval from Public Works Director or designee.
- 3.4.2 Centerline radii of curves shall not be less than 300 feet on major arterials, 200 feet on collectors, and continuing residential streets, and 100 feet on other streets and alleys and shall be rounded to an even 10 feet.
- 3.4.3 Where existing conditions, particularly topography, make it otherwise impractical to develop buildable lots, the City may accept steeper grades and sharper curves, but only upon review and approval.
- 3.4.5 In flat areas, street grades shall have a minimum slope of 0.25 percent with curb and gutter and 0.4 percent with a full depth standard curb.
- 3.5 Alleys

- 3.5.1 Alleys shall be provided in commercial and industrial districts, unless other permanent provisions for access to off-street parking and loading facilities are approved by the City.
- 3.5.2 Corners of the alley intersection shall have a radius of not less than 12 feet.
- 3.5.3 The City may require adequate and proper alleys to be dedicated to the public by the land divider of such design and in such location as necessary to provide for the access needs of the subdivision, development, or partitions.
- 3.5.4 Width of right-of-way and paving design for alleys shall not be less than 20 feet. Slope easements shall be dedicated as required by the City.
- 3.5.5 Where two alleys intersect, 10 feet corner cut-offs shall be provided.
- 3.5.6 Grades shall not exceed 21% on alleys and centerline radii on curves shall not be less than 100 feet.
- 3.6 Right-of-Way and Roadway Widths
- 3.6.1 All street width requirements shall be reviewed on a case-by-case basis by the Public Works Director or designee.
- 3.6.2 The width and classification of all streets must conform to any approved transportation master plan or recorded subdivision plat.
- 3.6.3 Unless otherwise indicated in an approved Master Plan or subdivision plat, the minimum design widths shall be as shown in the following table:

Table 3.6.3A
Typical Design Widths

Type of street	Minimum ROW Width (ft)	Minimum Paving Width Curb-to-Curb				Sidewalk Curb (ft)
		Motor Vehicle Travel Lane	Median or Center Turn Lane	On-Street Parking	Bike Lane	
Arterial						
3-lane (a)	90'	2@12'	14'	2 @ 8'	2 @ 5'-6'	2 @ 6'-6"
2-lane	50'	2@12'	-	-	2 @ 5'-6'	2 @ 6'-6"
Commercial (a)	86'	2@12'	14'	2 @ 8'	2 @ 5'-6'	2 @ 6'-6"
Local Residential						
Serving 20 or more Dwelling units (a)	66'	2@10'	-	2 @ 8'	2 @ 5'-6'	2 @ 5'-6"
Serving 20 or less Dwelling units	50'	2@10'	-	2 @ 8'	-	2 @ 5'-6"
Dead End (b)	50'	2@10'	-	2 @ 8'	-	2 @ 5'
Cul de Sac	50'	2@10'	-	(c)	-	1 @ 5' (d)
Alley						
1-way	20'	12'	-	-	-	-

- (a) The minimum right of way width includes the option of two 6 ft. wide landscape strips for three lane arterials or two 4 ft. wide strips for commercial streets or local streets serving 20 or more dwelling units.
- (b) A dead end must be less than 300 feet in length
- (c) No parking is permitted at the end of cul de sac which must have adequate space for emergency equipment turn around, typically a 45 ft. unobstructed radius.
- (d) At the end of the cul-de-sac, a 5 ft. sidewalk is required along the perimeter adjacent to the development.
- (e) A variance procedure is required for right of way widths narrower than the standard.

3.6.4 Standard roadway designs and standard details can generally be used for residential streets and collectors streets. Standard sections are only to be considered minimum designs as actual soil conditions may require thicker base rock or pavement installations.

3.7 Design Capacities and Design Speeds

3.7.1 For the purposes of classifying and defining the design capacities of the various street types, the following table shall be used:

**Table 3.7.1
Typical Design Capacities and Speeds**

Type of Street	Design Capacity, Vehicles per Day	Design Speed, mph
Arterial	32,000	40-50
Collector	10,000	35
Commercial/Industrial other than Arterials	12,000	30
Local Streets serving 20 or More Dwellings	7,000	30
Local Streets serving 20 or less Dwellings	1,200	25
Cul-de-sacs	200	NA

3.8 Curb and Gutter

- 3.8.1 Curb tops shall be set slightly below adjacent ground so as to receive surface drainage.
- 3.8.2 Three-inch diameter weep holes shall be provided through the curbs with inverts one inch above gutter line, at the following locations:
 - A. Opposite existing or anticipated roof downspouts (minimum two per lot).
 - B. At 16 foot on center along low areas where curb top is above adjacent ground.
 - C. At 16 foot on centers adjacent to bank areas to receive ground water.
- 3.8.3 Curb shape to conform to standard details. No “glue-down” extruded curbs shall be allowed in the public right-of-way.

- 3.8.4 Machine extruded curbs, as well as formed and poured curbs, shall require a minimum of 2-inches of $\frac{3}{4}$ " minus crushed rock base.
- 3.8.5 Maximum allowable tolerance for finished curbs shall be $\frac{1}{2}$ " on alignment, and $\frac{1}{4}$ " on grade at any point, providing a "bird bath" does not occur.
- 3.8.6 Provide drop curbs for driveways, curb radii, and ambulatory ramps with original curb pour when locations can be determined in advance.
- 3.8.7 No intruding structures, including, but not limited to, manholes, valves, and junction boxes shall be located within two feet of the curb or gutter, unless otherwise approved by Public Works Director or designee.
- 3.8.8 Type 'C' concrete curbs may be used on partial street sections or in special circumstances when approved by the Public Works Director or designee.
- 3.8.9 Valley gutters are not to be used except for in alleys or other special conditions and only upon approval by the Public Works Director or designee.
- 3.8.10 Curb Return Radii
- A. A WB-67 design vehicle shall be used when designing curb radii for all truck routes. A WB-50 vehicle may be used for some local and residential routes as indicated later in this section.
 - B. Unless otherwise required, or approved by the Public Works Director or designee, all other curb radii at public street intersections shall be designed in accordance with Table 3.8.10

TABLE 3.8.10
Minimum Radii and Design Vehicles for Determining Curb Radii

Primary Street Classification	Secondary Street Classification	Zoning	Minimum Radii (ft)	Design Vehicle
Local	Local	Residential	25	Emergency
Local	Local	Non-Residential	25	Emergency
Collector	Local	Residential	25	Emergency
Collector	Local	Non-Residential	25	WB-50
Collector	Local	Residential	25	Emergency
Collector	Collector	Residential	25	WB-50
Minor Arterial	Collector	All	35	WB-67
Minor Arterial	Minor Arterial	All	35	WB-67

3.9 Driveways

- 3.9.1 Driveways shall conform to the Standard Details.
- 3.9.2 Driveways may be deferred until lots are built upon, if approved by the City Planning Commission or City Council.

- A. If the developer chooses to delay the installation of a driveway approach, additional repair of curb and gutter, sidewalk, and other facilities may be required when the driveway is installed.
- B. The cost of installing a driveway approach and the associated repairs to curb and gutter, sidewalk, and other facilities will be borne, solely, by the developer.

3.9.3 Any driveway(s) serving property which is used for purposes other than single family residential or duplexes shall be designed as and built to the standards of a commercial driveway.

3.9.4 A concrete alley apron serving public right-of-way or alley shall be built to the standards of a commercial driveway.

3.9.5 Residential Driveway Approach Standards

- A. A residential driveway approach shall be constructed of Portland cement concrete, minimum of 6-inches in thickness, 3,000 psi field strength, with 2-inches (minimum) compacted $\frac{3}{4}$ "-0" crushed rock base. No rebar or wire mesh is required for residential approaches.
- B. Transition flares shall also be constructed to the same standard as residential driveway approaches.

3.9.6 Commercial Driveway Approach Standards

- A. A commercial driveway approach shall be constructed of Portland cement concrete, minimum 8-inches in thickness, 3,500 psi field strength, with 2-inches (min) compacted $\frac{3}{4}$ "-0" crushed rock base, and placed with No. 4 rebar on 12-inch centers both ways at 2-inches above the bottom of the slab, or place 2 layers of 6x6x10 welded wire mesh at 2-inches above the bottom of the slab.
- B. Transition flares shall be constructed to the same standards for commercial driveway approaches.

3.9.7 No driveway approach slope shall exceed 15-percent.

3.10 Access Ramps

3.10.1 All pedestrian ramps shall conform to the current Americans with Disabilities Act (ADA) federal regulations and to the current Oregon Department of Transportation requirements.

3.10.2 Where applicable, ramp approaches shall be aligned with and be wholly contained within, the crosswalk markings.

3.10.3 Ramp approaches shall not be positioned directly in the path of catch basin grates.

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- 3.10.4 Ramp approaches shall be directly aligned with one another with no offset through the intersection.
 - 3.10.5 Ramp approaches shall be as close as possible to perpendicular to the street they are crossing in order to minimize the crossing distance.
 - 3.10.6 Ramps shall be aligned to point directly to the ramp across the road that is intended to receive the pedestrian.
 - 3.10.7 Obstructions including, but not limited to, mail boxes, water meters, valves, junction boxes, manholes, utility poles, trees, benches, fire hydrants, signs, and bus stops shall not be located within the ramp area or the flares.
 - 3.10.8 Ramp flares may extend beyond the crosswalk markings.
 - 3.10.9 Two ramps shall be provided at each curb radius to allow direct access from the ramps into the street.
 - 3.10.10 At local residential street “T” intersections, driveway approaches designed and constructed to ADA standards may be used to provide pedestrian access provided they are constructed with no lip at the gutter bar.
- 3.11 Sidewalks
- 3.11.1 All development for which land use applications are required must include sidewalks adjacent to public streets. This requirement also applies to new single-family houses and duplexes if they are located on arterial or collector streets or on curbed local streets if there is an existing sidewalk within 500 feet on the same side of the street.
 - 3.11.2 In the case of arterial or collector streets, sidewalks shall be built during their construction and considered during their reconstruction or rehabilitation. This provision shall apply also to local streets that serve commercial and multi-family development.
 - 3.11.3 The provision of sidewalks may be waived where the street serves a use or combination of uses which generate fewer than fifty trips a day (based on ITE standards) and cannot be continued or extended to other properties. A waiver shall only be granted upon review and approval of the Public Works Director or designee.
 - 3.11.4 Design, Width, and Location
 - A. The required width for a sidewalk on an arterial or commercial street is six (6) feet. This width may be reduced to (5) feet if the sidewalk is separated from the curb by a landscaped planter strip at least six (6) feet in width for a three lane arterial street and four (4) feet for a commercial street for those instances when there is inadequate right-of-way.
 - B. In all cases, the right-of-way remaining outside of the sidewalk is to be landscaped and maintained by the adjoining property owner.
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- C. Sidewalks along residential and other local streets must be a minimum of five (5) feet in width. Sidewalk design may be setback or integral as determined by the developer, Public Works Director, or funding agency.
- D. If a setback sidewalk design is selected, a planter strip at least six (6) feet wide shall separate the sidewalk from the street (curb). If trees are to be planted in the planter strip, they must be of an approved variety.
- D. Regardless of other provisions in this standard, any sidewalk project less than 200 feet in length and connects on either end to an existing sidewalk may be designed to match the existing pattern with the approval of the Public Works Director or designee. Generally, sidewalks shall be consistent with the existing sidewalk design in the same block. Transitions should be made at intersections whenever possible.
- E. Where obstructions existing or are proposed (including, but not limited to mail boxes, utility poles, trees, planters, fire hydrants, signs, benches, bus stops, etc.), provisions must be made to maintain a minimum of four feet of unobstructed sidewalk width on local streets, and five feet on collector and arterial streets.
- F. Maintenance of sidewalks and planter strips shall be the continuing obligation of the adjacent property owner except where the lot backs onto an arterial street.
- G. Sidewalks shall be designed to parallel streets in line and grade and shall avoid unnecessary meandering from the curb line and elevation changes except as necessary to avoid significant trees or traverse topographic barriers.
- H. All sidewalks are to be a minimum of four (4) inches thick Portland cement concrete placed on a minimum of two (2) inches compacted $\frac{3}{4}$ "-0" crushed rock base.

3.12 Bikeways

- 3.12.1 Where bikeways are required or planned, bikeways should be separated from other modes of travel, including pedestrian.
- 3.12.2 Minimum widths for bikeways shall be five (5) feet where adjacent to a curb (one-way) and ten feet when not on the roadway (2-way).

3.13 Utilities

- 3.13.1 Except for sanitary and storm sewers all utilities shall be located outside of the paved area if at all possible to avoid future street cuts.
- 3.13.2 On all phased (interim) street improvements, the necessary utilities shall be stubbed across the interim improvements to insure that cuts are not necessary when the road is expanded to its full width.

- 3.13.3 Except for sanitary sewer, storm sewer, and water, underground utilities intended to provide direct service to adjacent properties with future connections shall not be located in the full-width paved section of a street to be constructed. If all service connections are existing and extend beyond the full-width section of a partially improved (or interim) street, underground utilities can be located in the future paved section of the street, if approved by the Public Works Director or designee.
- 3.13.4 Underground utilities being constructed along newly paved streets shall not be located under the existing pavement unless approved by the Public Works Director or designee.
- 3.13.5 Underground utilities that must cross an existing paved street shall not be installed by any method which cuts the pavement or undermines the aggregate base of the street unless approved by the Public Works Director or designee.
- 3.13.6 All underground utilities shall be installed at a minimum bury depth of thirty (30) inches as measured from the finished grade to the top of utility.
- 3.13.7 When new curbing is being placed, (in conjunction with new utility mains or service laterals), a stamp shall be placed in the top of the curb to mark the location where each water and/or sewer service crosses the curb. The method of marking the curb shall be approved by the Public Works Director or designee and noted on the approved construction plans. An imprinting stamp is preferred that is capable of leaving an impression directly into the curing concrete. A “W” shall be used for a water service and an “S” shall be used to designate a sewer service. The stamped impressions should be a minimum of two (2) inches in height, placed on the top of the curb.
- 3.14 Pavement Markings
 - 3.14.1 All pavement traffic markings for lane stripping, railroad crossings, crossings and stop bars shall be thermoplastic and shall conform to the Manual of Uniform Traffic Control Devices, (MUTCD) regulations alternative markings will not be allowed without prior approval from the Public Works Director or representative.
- 3.15 Street Lighting
 - 3.15.1 All new developments and subdivisions are required to provide street lighting systems. Complete wiring diagrams, including spacing of luminaries or the street lighting system must be submitted to the City at the time of plane review, if the system is to be dedicated to the City.
 - 3.15.2 The system will only be transferred to the City after the City has completed its final inspection and the system has been signed off by the Public Works Director or designee and after installation is complete.
- 3.16 Trenching and Street Cuts

- 3.16.1 The City will not allow, without prior approval from the Public Works Director or designee, any street cuts on newly paved or resurfaced streets (paved within the past 12 months).
- 3.16.2 All approved street cuts in streets of higher functional classification than local residential shall be backfilled with Controlled Density Fill (CDF or CLSM as specified in OSS Section 00442) meeting the material requirements of the supplier. However, the Public Works Director may require CDF on residential local streets if conditions warrant.

Section 4 – Construction Provisions

- 4.1 All work within the public right-of-way shall be conducted by a licensed and bonded contractor. This requirement shall be stated on the construction drawings and specifications.
- 4.2 City shall be notified at least 3 working days in advance prior to commencing construction work.
- 4.3 Traffic control shall be signed, flagged and conducted in a manner conforming to ODOT standards (Manual of Uniform Traffic Control Devices, MUTCD) and approved by Lincoln County, where appropriate. If road closures or detours are anticipated, prior approval from City, ODOT, and County officials must be obtained, as appropriate.
- 4.4 Safety Requirements. The contractor is responsible for observing the safety of the work and all persons and property coming into contact with the work. The contractor shall conduct his work in a manner complying with the requirements prescribed by OSHA.
- 4.5 Progress. Construction shall proceed in a systematic manner to minimize public inconvenience and disruption of services. All excavations, embankments, stockpiles, waste areas, etc. shall be kept protected. All roads, ditches, etc. shall be kept free from debris and shall be continually cleaned during the work. Dust control measures shall be employed as required and directed by the City.
- 4.6 Protection of Existing Improvements. Contractor shall contact the Utility Notification Center (1-Call) at least 48 hours in advance of digging operations to get approximate locations for buried utilities. Exact locations of buried facilities may not be known or shown and contractor is responsible to pot-hole carefully in advance of the work to avoid such facilities. Contractor shall coordinate with all utilities and notify them immediately in the event of any damage. Contractor shall protect, repair, and replace any damaged utilities as directed by the persons responsible for such utility. All landscape, grass, shrubs, signs, pavements, mail boxes, driveways, culverts, gravel surfacing, fencing, etc. shall be protected from damage and returned to conditions as good, or better than existed prior to construction. All costs for protection, repair, and replacement of all existing items shall be borne entirely by the contractor. Contractor shall obtain a release from any property owners for any claims of injury or property damage prior to final acceptance of the work by the City.

- 4.7 All existing survey monuments and control shall be protected, including individual property corner stakes. Any such monuments destroyed or altered during construction shall be restored by the contractor or developer in accordance with ORS.
- 4.8 Any temporary disruption to water or sewer service must be coordinated with, and approved by the City and kept to the minimum length of time necessary. The City shall be notified at least 2 working days in advance of when an approved shut-down is desired. Contractor shall not operate any valves or hydrants without City approval.
- 4.9 Compaction testing equipment (nuclear gauge) shall be furnished and operated by the contractor or an independent testing firm shall be retained by the contractor or developer to perform compaction testing. Testing shall conform to the ODOT Manual of Field Testing Procedures (MFTP). Compaction testing shall be conducted in the presence of the City's inspector. Sufficient tests will be taken to ensure that the materials and compaction efforts being used are adequate to obtain the required density. Several tests shall be taken on each lift placed during the first day of backfill operations. Additional tests will be taken periodically during the work. Alternate materials or methods will be required if adequate compaction is not being obtained.
- 4.10 Construction staking will be provided by the Developer's Engineer for establishing the alignment and grade of the transportation system to be constructed. Offset stakes shall be placed at no more than 100-foot intervals along the alignment. Grade staking, stationing, and other field layout shall be as required.

Section 5 – Street and Transportation System Materials

- 5.1 All materials shall be newly manufactured. No rebuilt, reconditioned or used material will be allowed.
- 5.2 Oregon Standard Specifications (OSS) – Means the 2002 Oregon Standard Specifications for Construction produced by ODOT and APWA, including latest revisions. In general, all paving materials, workmanship, and technical data shall conform to the OSS if not specified otherwise.
- 5.3 Portland Cement Concrete Pavement
 - 5.3.1 Concrete shall conform to OSS Section 00440, Commercial Grade Concrete. Compressive field strength shall not be less than 3,500 psi at 28 days.
 - 5.3.2 Maximum aggregate size shall be 1½-inches.
 - 5.3.3 Slump shall be between 2 and 4 inches and shall not exceed 5 inches.
 - 5.3.4 Prior to constructing a roadway or street using Portland cement concrete, the mix design for the concrete shall be provided to the Public Works Director or designee for review and acceptance. Included in the mix design will be a description of the proportions for the ingredients of the mix, including:
 - A. Air entraining admixtures.
 - B. Chemical admixtures.

- C. Each size of aggregate.
- D. Fly ash.
- E. Other admixtures
- F. Water

5.3.5 Concrete used for public street construction will, generally, meet the requirements of Oregon Standard Specifications for Construction (ODOT-OSS), 2002 Edition, Section 2001.

5.4 Asphalt Concrete Pavement

- 5.4.1 Asphalt concrete pavement used for public street improvement projects shall meet or exceed the requirements of OSS Edition 2002, Section 00744.
- 5.4.2 AC pavement on all projects within the City shall be Level 2 HMAC mixtures with qualities typical of what has traditionally be designated a Class B asphalt concrete mix.
- 5.4.3 In the case of an overlay or if patching materials are required, a finer asphalt mix (traditionally referred to as Class C) may be utilized.
- 5.4.4 For areas of higher traffic volume, heavy traffic (weight) ratings, or other special traffic loading, a specific pavement design will be required to be submitted to the engineer for review and approval.

5.5 Base Rock and Surfacing Rock

- 5.5.1 Base rock used to construct a foundation for AC pavement construction shall be 1"-0 crushed rock or crushed gravel conforming to the requirements of OSS Edition 2002, Section 00640.
- 5.5.1 Base rock used for gravel surfacing, shoulders, and other surfacing shall be 1"-0 crushed rock or crushed gravel conforming to the requirements of OSS Edition 2002, Section 00640.

5.6 Overlay Fabric

- 5.6.1 An engineering geotextile fabric shall be utilized for all overlays. The fabric shall be needle-punched, non-woven polypropylene fabric, fused on one side only and having the following minimum physical properties:

Weight, oz/sq. yd.	3.8
Tensile strength (per ASTM D-1682)	90
Elongation at break, %	55
Asphalt retention, gal/sq yd	0.25
Min. melting temp, °F	350

5.7 Asphalt Tack Coat

- 5.7.1 Tack coat shall meet the requirements of OSS, 2002, Section 00730.
- 5.7.2 Acceptable tack products include CSS-1, CSS-1h, CMS-2, CMS-2S, CMS-2h, CRS-1, CRS-2, HFRS-2, or HFMS-2.
- 5.7.3 The Contractor shall provide a submittal to the Public Works Director or designee, for approval, of the type of tack material to be utilized on the project.

5.8 Pavement Markings

- 5.8.1 Thermoplastic pavement markings shall be Type B (preformed fused thermoplastic film) as specified in Section 00850 of the latest addition of ODOT Standard Specifications for highway Construction.

5.9 Street Lighting

- 5.9.1 All new luminaries shall be Holophane Refractopack or RSL-200 Series lighting or approved equal. Decorative lighting and other systems may be acceptable if submitted to and approved by the City. A 5-year warranty and replacement period will be required by the City for lighting systems used other than that as specified above.
- 5.9.2 Poles for new street lighting systems shall be galvanized metal poles mounted on concrete bases. Other poles such as spun aluminum and fiberglass may be acceptable if submitted and prior approval is given by the City.
- 5.9.3 Heights of new luminaries shall be 25 feet for residential and collector streets and 30 feet for arterial and commercial streets.
- 5.9.4 All wiring for the street lighting systems shall be located within the street right of way or easement and shall be placed underground in conduit.
- 5.9.5 Luminaire Sizing
 - Residential Streets 100 watt HPS
 - Collector Streets 200 watt HPS
 - Arterial Street 400 watt HPS

Section 6 – Street and Transportation System Installation (Workmanship)

- 6.1 All excavation, grading/fill within the city limits of Toledo shall comply with the City's Standards, the Oregon Structural Specialty Code Appendix J and DEQ Erosion Control Standards.

6.1.1 When Grading/Fill Permits may be Required

- A. An excavation that is more than two (2) feet in depth or creates a cut slope greater than five (5) feet in height and steeper than one (1) unit vertical in one in one half (1 ½) units horizontal.
- B. A fill of more than one (1) foot in depth and placed on natural terrain with a slope greater than one (1) unit vertical in five (5) units horizontal.

- C. A fill greater than three (3) foot in depth.
- D. A fill intended to support structures.
- E. A fill that exceeds fifty (50) cubic yards on any lot.
- F. Placement of fill obstructs a natural drainage course.
- G. Grading in an area that may create danger to private or public properties.
- H. Grading/Fill permits are required if changes to the existing topology and landscaping are completed prior to the review and issuance of building permits.

6.1.2 Required Elements of Grading

- A. Grading of less than 5,000 cubic yards and do not have any special conditions or hazards, as determined by the Public Works Director or designee or representative shall be considered “regular grading”.
- B. Grading in excess of 5,000 cubic yards shall be performed in accordance with the approved grading plans shall be designated as “engineered grading” and shall be prepared by a Professional Engineer (PE) licensed in the State of Oregon.
- C. Professional inspection and testing may be required by a soils engineer when it is determined that geological factors may be involved, the grading/fill will conform to the requirements of the geotechnical report and engineered plans.
- D. Each application for a development permit shall be accompanied by a grading / fill plan of sufficient clarity to indicate the nature and extent of the proposed work.

6.2 Clearing and Grubbing

- 6.2.1 Clear improvement area of all surface vegetation, stumps, roots, downed timber, brush, weeds, grasses, and deleterious matter necessary to accommodate permanent construction.
- 6.2.2 Protect existing utilities, street surfaces, landscaping, adjacent private development, and survey monuments from damage unless approved by the Public Works Director or designee. Any damage to existing infrastructure shall be repaired immediately.
- 6.2.3 Dispose of clearing and grubbing waste off project site at a location approved by the City. Clearing debris cannot be utilized as fill on the project site.
- 6.2.4 Grub areas under new street sections, curbs, sidewalks and driveways to remove all stumps, roots, buried vegetation, and debris to a depth of at least 8-inches below subgrade. Larger debris that may affect the integrity of the finished road should be removed regardless of depth or as directed by the Public Works Director or designee.

6.3 Earthwork and Embankment

- 6.3.1 Excavate to subgrade lines and grades as required by the approved plans.

- 6.3.2 Advise and coordinate earthwork with utility companies prior to beginning excavation to confirm utility locations and depths and potential conflicts or minimum cover issues. Required relocation of utilities shall be identified during design.
- 6.3.3 Protect existing utilities from damage during excavations. Any utilities damaged during excavation not designated for removal shall be replaced “in kind” at the developer’s expense.
- 6.3.4 Where excavation is required, along edges of pavement or trenches, any raveled or deteriorated pavement edges shall be saw cut clean and straight.
- 6.3.5 Over-excavate to remove soft or otherwise unsuitable subgrade material when directed by the Public Works Director or designee. Backfill with imported base rock or approved native backfill at 95 percent of maximum density (AASHTO T99) as directed by the Engineer. The Public Works Director may require that a geotextile fabric be utilized to provide additional subgrade stabilization.
- 6.3.6 In street embankment areas, all sod, vegetative matter, and debris to be stripped away from under subgrade before embankment is placed.
- 6.3.7 Where rock excavation is required, efforts shall be made to remove rock without blasting whenever possible. If blasting is determined to be required, a blasting plan must be submitted to the Public Works Director, for approval. The blasting plan must include a certificate of insurance for the blasting work, the amount of and type of explosives that are to be used, the methods for placement and ignition, planned safety precautions, and all other pertinent information. Blasting shall not commence until the Public Works Director has provided written clearance for the use of explosives within the City Limits.
- 6.3.8 Approved excavated materials may be used directly in street embankment and site fill grading areas where provided for on the approved plans. Unsuitable material including broken pavement, rubble, large rocks, and debris shall be disposed of offsite by Contractor as approved by the Public Works Director or designee.
- 6.3.9 Topsoil should be selectively excavated and segregated to be used for curb backfill and planting strip area surfacing.
- 6.3.10 Shape and grade all cut and fill slopes. Final slopes shall be smooth, uniform, and compacted in conformance to lines and grades required by plans.
- 6.3.11 Rough grade subgrade prior to utility crossings to 0.20 foot vertical and 0.50 foot horizontal tolerance to design cross section and grades.
- 6.3.12 After utility crossings and curb installations, fine grade subgrade to within 0.10 feet vertically of design grade at any point.
- 6.3.13 All embankment material to be placed in compacted lifts, not to exceed 6-inches in thickness.

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- 6.3.14 Condition fill material with water to attain optimum moisture content prior to placing in embankment. Additional sprinkling of subgrade may be required to achieve compaction and for dust control.
 - 6.3.15 All subgrade, embankment, and backfill of over-excavation lifts shall be compacted to 95-percent of maximum density per AASHTO T-99 test method. The Public Works Director shall approve the condition of subgrade and shall certify testing results prior to placing rock or base materials.
 - 6.3.16 Place top soil backfill behind curbs and dress back disturbed planting strip area, smooth and uniform to the property lines. Compact until firm as evidenced by insignificant deflection under wheel or track loads.
- 6.4 Concrete Curb and Gutter
- 6.4.1 Top of curb stakes to be set at intervals not to exceed 50 feet and at critical radii and grade points, on offset line as required by the Contractor.
 - 6.4.2 Form and poured curbs can be set on compacted subgrade or base rock. Machine laid curbs are required to have a minimum 2-inch lift of compacted base rock.
 - 6.4.3 Concrete curb and gutters shall conform to the dimensions shown on the standard detail drawings.
 - 6.4.4 Construct drop curbs for driveways and bike paths where required or as directed by the Public Works Director or designee.
 - 6.4.5 Install curb weep-holes where required and in conformance with the standard details.
 - 6.4.6 Construction tolerance for curb and gutter is $\frac{1}{2}$ " on line and $\frac{1}{4}$ " on grade.
 - 6.4.7 Include $\frac{1}{2}$ " curb expansion joints at intervals not to exceed 45 feet, at radius points, and at all abutting concrete construction. Cold cutting curb joints on 10' intervals may be allowed in lieu of the above.
 - 6.4.8 Construct $\frac{1}{8}$ " minimum weakened plane contraction joints at intervals not to exceed 15 feet.
 - 6.4.9 Contractor shall notify the Public Works Director for form or grade inspection prior to pouring and allow 48 hours notice for inspection. Any curb or gutter found to be deficient by the Public Works Director or designee shall be removed and replaced at the Contractor's expense.
- 6.5 Sidewalks and Driveways
- 6.5.1 Expansion and contraction joints shall conform to the requirements of the OSS, 2002.
 - 6.5.2 Sidewalk edges shall be tooled with a $\frac{1}{4}$ " radius tool.

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- 6.5.3 A broom or burlap finish shall be applied in a workmanlike manner. An effort shall be made to match adjacent finishes of existing sidewalk if the finish meets the requirements of OSS, 2002.
 - 6.5.4 Sidewalks shall be sloped $\frac{1}{4}$ " per foot up and away from curb to facilitate water draining over the top of the curb.
 - 6.5.5 Sidewalks and driveways shall be laid on prepared subgrade, compacted to 95 percent of maximum density per AASHTO T-99 test method or on compacted $\frac{3}{4}$ "-0 rock fill.
 - 6.5.6 Rock base shall be placed and compacted to refill curb excavation where sidewalks are to be constructed adjacent to curbs.
 - 6.5.7 Sidewalks shall be constructed to within $\frac{1}{2}$ " on-line and $\frac{1}{4}$ " on grade tolerance for smooth, uniform alignment and grade.
 - 6.5.8 Driveways and sidewalks across driveways shall have a minimum concrete thickness of 6-inches. Normal sidewalks shall have a minimum thickness of 4-inches.
 - 6.5.9 Install 3" diameter roof drain pipe under sidewalks where required in alignment with curb weep holes.
 - 6.5.10 Restore top soil and dress back disturbed surfaces within planting strip in manner approved by the Public Works Director or designee.
- 6.6 Base Rock and Surfacing Rock
- 6.6.1 Rocking shall not be performed prior to the Public Works Director's approval of the subgrade conditions.
 - 6.6.2 Compact base rock to 95 percent of relative maximum density per AASHTO T-99.
 - 6.6.3 The maximum compacted thickness of each lift of base rock shall be 6-inches.
 - 6.6.4 Surfacing rock (shoulders, gravel streets, etc) shall be placed in a single lift with a minimum thickness of 2-inches compacted thickness.
 - 6.6.5 Soft or spongy subgrade shall be removed, and the excavation backfilled with approved subgrade materials or base rock compacted to 95-percent of maximum density per AASHTO T-99.
 - 6.6.6 Water shall be applied as necessary to facilitate compaction and aid in dust control.
- 6.7 AC Pavement
- 6.7.1 Paving should only commence after the Public Works Director approved rock surface and compaction, the weather conditions are appropriate, and all other
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preparations have been made. Any AC pavement that is placed in less than ideal conditions or without the Public Works Director's approval may not be accepted.

- 6.7.2 Cut edges of existing pavement clean and straight and apply a tack coat where new pavement will join existing. When necessary, apply a thin layer of blow sand on tack joints to prevent them from being damaged or removed by vehicular traffic. Ragged, uneven, or wandering edges at the intersection of new and existing pavement will not be accepted.
- 6.7.3 Apply a tack coat to manhole frames, valve boxes, catch basins, curbs, gutters, other pavements, or any other component that the new pavement should remain in contact with.
- 6.7.4 Adjust all rims of manholes, catch basins, valve boxes, etc. to conform to finished pavement grade. No such structure shall be paved over.
- 6.7.5 Finish pavement lines and grades shall conform accurately with lines and grades shown on plans and staked in field. Tolerance on grade is 3/8 inch on 16' straightedge at any point.
- 6.7.6 Finished pavement thickness shall be as specified on the approved plans. Minimum thickness of pavement shall be 4 inches (2 – 2" compacted lifts) within collectors and arterials and 2 inches (minimum) on local streets unless otherwise required by the Public Works Director or designee.
- 6.7.7 Blend pavement to meet catch basin inlets, existing pavements, valve boxes, manholes, and similar structures.
- 6.7.8 Traffic should be kept off fresh pavement until it has adequately cooled and set up.
- 6.7.9 Maintain barricades, warning signs, and flaggers for safety during construction.
- 6.8 AC Pavement Overlays
 - 6.8.1 When an AC overlay is required, the surface of the existing road shall be cleaned of all loose debris, gravel, vegetation, or other.
 - 6.8.2 Cracks greater than 1/8" in width are to be filled with a bituminous sealing product meeting the requirements of ASTM D3405 and AASHTOM301 and as approved by the Public Works Director or designee.
 - 6.8.3 Patch existing AC pavement areas as required by and identified by the Public Works Director. Excavation shall be required where identified or directed by the Public Works Director or designee. New base material and AC pavement to be placed in the repair areas per Section 6.6 of this specification.
 - 6.8.4 A tack coat shall be applied to assist the overlay to adhere to the existing surface. The application rate of the tack coat shall be, at a minimum, 0.25 gallons per square yard throughout the overlay area. Application of tack coat will be made

by distributor equipment wherever possible, with hand spraying kept to a minimum.

- 6.8.5 The temperature of the tack material shall be such to facilitate a uniform spray pattern as recommended by the manufacturer. Spray nozzles shall be kept clear and open to avoid “holidays” in the pattern.
 - 6.8.6 The width of the tack spray pattern shall be the width of the paving fabric role plus 6 inches on each side. Overspray, drools, or spills shall be removed from the road surface to avoid flushing, bleeding, or fabric movements.
 - 6.8.7 Adequate tack shall be applied to the road to saturate the fabric to form a membrane but shall not be excessive to cause a slippage plane or flushing of the overlay.
 - 6.8.8 The fabric is to be placed in the tack coating with a minimum of wrinkles prior to the sealant cooling. The fabric should be unrolled with the bearded or fuzzier side down. Excessive wrinkles should be cut and laid flat. The Public Works Director or designee shall observe the placement of the tack and fabric and approve the installation prior to the overlay placement.
 - 6.8.9 Overlays of the fabric shall be minimized though an overlap of 6 to 8 inches is appropriate to insure full closure of a pavement joint. Transverse joints should be “shingled” in the direction of traffic to prevent edge pickup. Additional sealant may be required to secure these edges as necessary.
 - 6.8.10 Placement of the AC overlay should closely follow fabric lay-down. In the event that the tack coat bleeds through the fabric before the hot mix is placed, it may be necessary to blot the sealant by spreading sand or hot mix over the affected areas.
 - 6.8.11 AC Pavement should be machine laid and compacted per OSS, 2002 and Section 6.6 of this specification.
 - 6.8.12 Feather all AC pavement onto existing pavement not receiving overlay. Rake out coarse aggregate on payment feather. Surface of pavement shall be a smooth, well-sealed, tight mat.
- 6.9 Pavement Markings
- 6.9.1 Pavement markings shall be applied prior to allowance of public traffic on the freshly paved surfaces, unless prior approval from Public Works Director or designee.
 - 6.9.2 Pavement surface shall be free of dirt, grease, moisture or any other foreign material prior to placement of striping and pavement markings.
 - 6.9.3 Pavement markings shall be applied in accordance with manufactures recommendations and conform to 5.8 and 3.14 in this manual. The ambient temperature shall be at least 10° C (50° F) and rising.

6.10 Street Lighting

- 6.10.1 Luminaries shall be spaced at least 250 feet apart but at no time greater than 500 feet apart. Street lighting shall be placed within the street right of way at property lines whenever possible.
- 6.10.2 Luminaries shall be installed following manufactures recommendations and guidelines.

STREET AND TRANSPORTATION SYSTEMS

STANDARD DETAIL DRAWINGS INDEX

- T-050: STANDARD PAVED STREET
- T-051: TYPICAL ROADWAY LAYOUT
- T-052: TYPICAL ROADWAY LAYOUT
- T-053: TYPICAL CUL-DE-SAC DETAIL
- T-054: STANDARD UTILITY LOCATIONS
- T-150: RESIDENTIAL DRIVEWAY APPROACH DETAIL
- T-151: COMMERCIAL DRIVEWAY APPROACH DETAIL
- T-201: PEDESTRIAN/BIKE PATH DETAIL
- T-210: STANDARD SIDEWALK DETAILS
- T-211: SIDEWALK AND RAMP DETAIL WITH PLANTER STRIP
- T-212: SIDEWALK AND RAMP DETAIL WITHOUT PLANTER STRIP
- T-213: RAMP AND TEXTURE DETAIL WITH PLANTER STRIP
- T-214: RAMP AND TEXTURE DETAIL WITHOUT PLANTER STRIP
- T-301: CURB AND GUTTER DETAIL
- T-302: VALLEY GUTTER DETAIL
- T-401: STANDARD STREET LIGHT DETAIL
- T-450: STANDARD SIGN DETAIL
- T-451: STREET SIGN AND LETTERING DETAILS
- T-501: STANDARD PERMANENT BARRICADE DETAIL



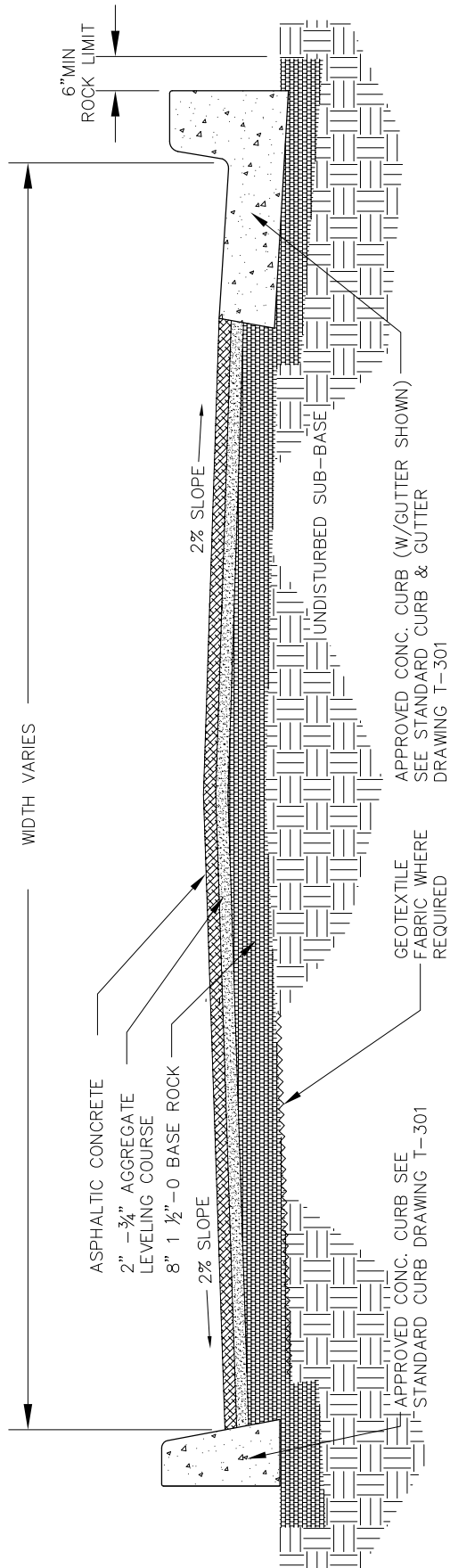
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STANDARD DETAIL DRAWING INDEX

DETAIL NO.

T-010

04/29/2009



NOTES:

- 1) REFERENCE CITY OF TOLEDO DEVELOPMENT STANDARDS FOR MATERIALS
- 2) STREETS SHALL BE PAVED AND CENTERED IN THE PUBLIC RIGHT OF WAY
- 3) DEVELOPER SHALL OBTAIN WRITTEN APPROVAL TO PAVE OVER ANY PUBLIC UTILITIES LOCATED WITHIN RIGHT OF WAYS, AS REQUIRED.
- 4) THE DEVELOPER SHALL OBTAIN A RIGHT OF WAY USE PERMIT AND SUBMIT A COMPLETE SET OF ENGINEERED DRAWINGS SHOWING THE PLAN AND PROFILE VIEWS OF EXISTING CONDITIONS AND PROPOSED WORK. WHEN PROJECT IS COMPLETE, THE DEVELOPER SHALL FURNISH THE CITY WITH A COMPLETE SET OF REPRODUCIBLE DRAWINGS AND CD SHOWING THE "AS CONSTRUCTED" CONDITIONS OF THE COMPLETED PROJECT.
- 5) SEE DESIGN STANDARDS MANUAL FOR COMPACTION OF MATERIALS AND TESTING.
- 6) ASPHALT CONCRETE PAVEMENTS PLACED WITHIN ARTERIAL & COMMERCIAL ROADWAYS SHALL BE PLACED TO A MINIMUM THICKNESS OF 4 INCHES (SET IN 2-2 INCH LIFTS) ASPHALT CONCRETE PAVEMENTS PLACED WITH LOCAL STREETS AND ALLEYS SHALL BE PLACED TO A MINIMUM THICKNESS OF 2 INCHES (SET IN A SINGLE LIFT) UNLESS OTHERWISE SPECIFIED OR DIRECT BY THE CITY.



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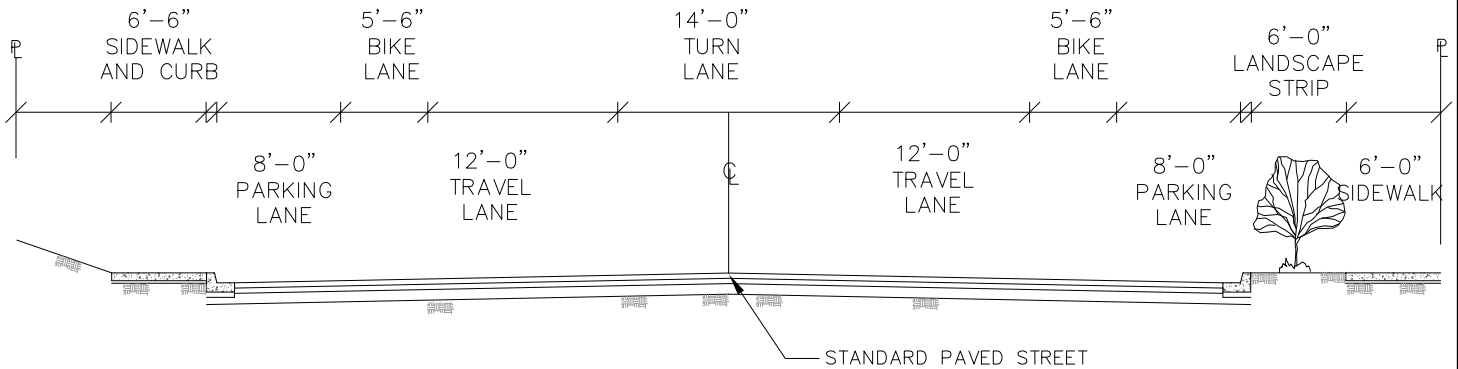
STANDARD PAVED STREET

DETAIL NO.

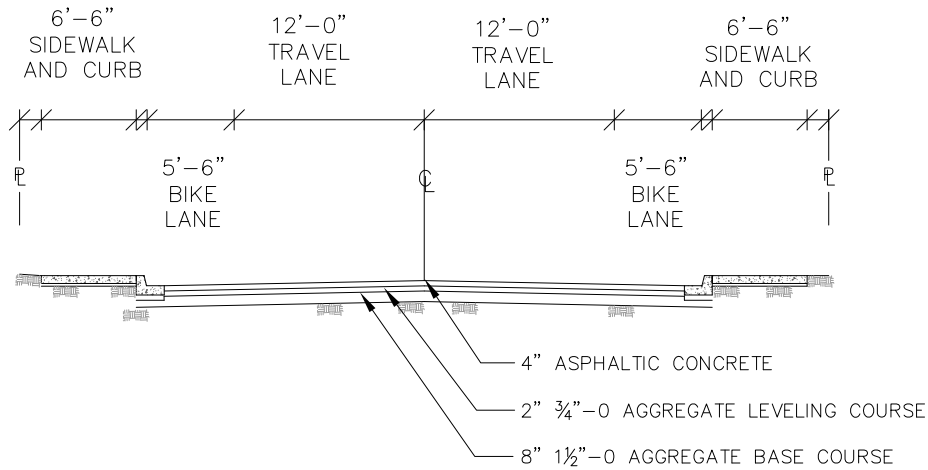
T-050

04/29/2009

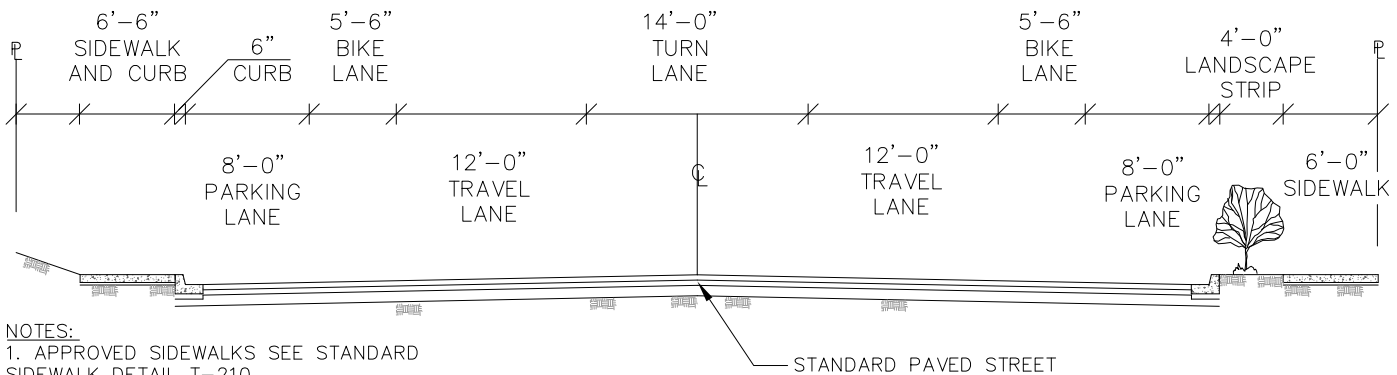
3 LANE ARTERIAL
STANDARD CURB & GUTTER WITH SIDEWALKS
90' right-of-way



2 LANE ARTERIAL
STANDARD CURB & GUTTER WITH SIDEWALKS
50' right-of-way



COMMERCIAL ROADWAY
STANDARD CURB & GUTTER WITH SIDEWALKS
86' right-of-way



NOTES:

1. APPROVED SIDEWALKS SEE STANDARD SIDEWALK DETAIL T-210

2. APPROVED CONCRETE CURB & GUTTER SEE STANDARD CURB & GUTTER DETAIL T-301

3. ALTERNATE STREET LAYOUT SYSTEMS MAY BE ACCEPTABLE IF SUBMITTED TO AND APPROVED BY THE CITY



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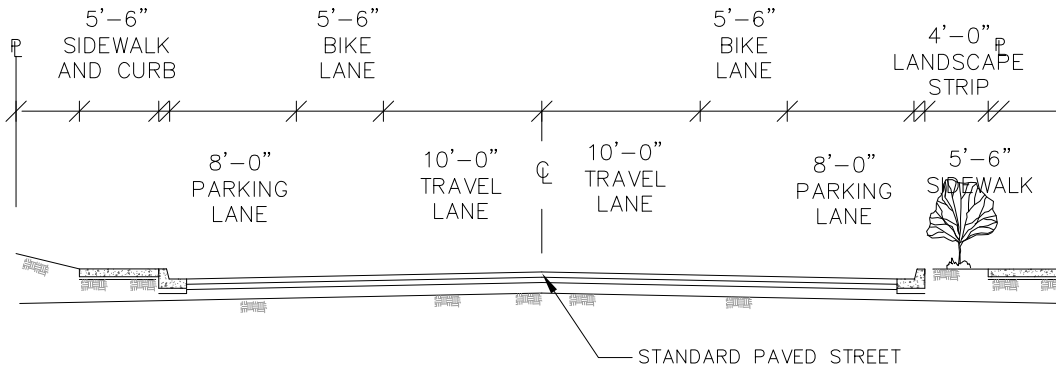
TYPICAL ROADWAY LAYOUTS

DETAIL NO.

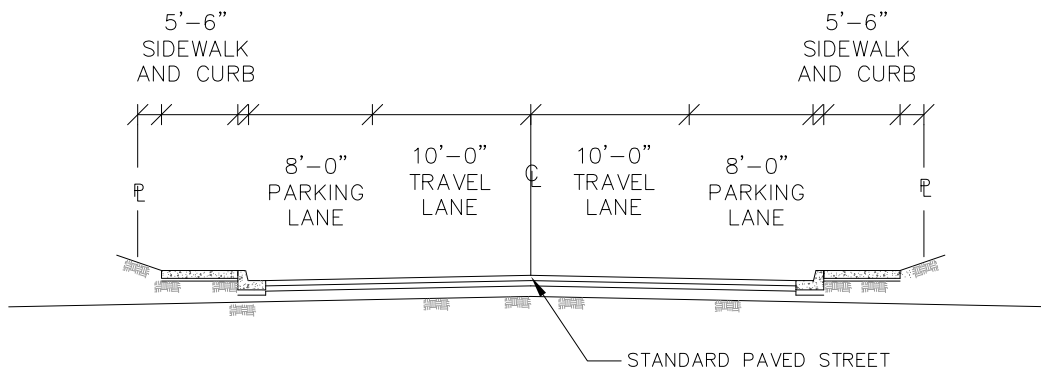
T-051

04/29/2009

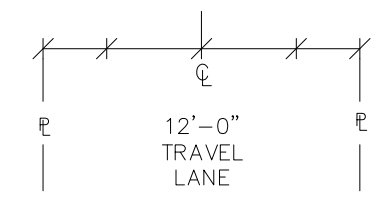
LOCAL STREET
STANDARD CURB & GUTTER WITH SIDEWALKS
Serving more than 20 dwelling units
66' right-of-way



LOCAL STREET
STANDARD CURB & GUTTER WITH SIDEWALKS
Serving less than 20 dwelling units and Dead End Street
50' right-of-way



Alley Way
20 foot right of way



NOTES:

1. APPROVED SIDEWALKS SEE STANDARD SIDEWALK DETAIL T-210

2. APPROVED CONCRETE CURB & GUTTER SEE STANDARD CURB & GUTTER DETAIL T-301

3. ALTERNATE STREET LAYOUT SYSTEMS MAY BE ACCEPTABLE IF SUBMITTED TO AND APPROVED BY THE CITY

2" ASPHALTIC CONCRETE
2" ¾"-0 AGGREGATE LEVELING COURSE
8" 1½"-0 AGGREGATE BASE COURSE



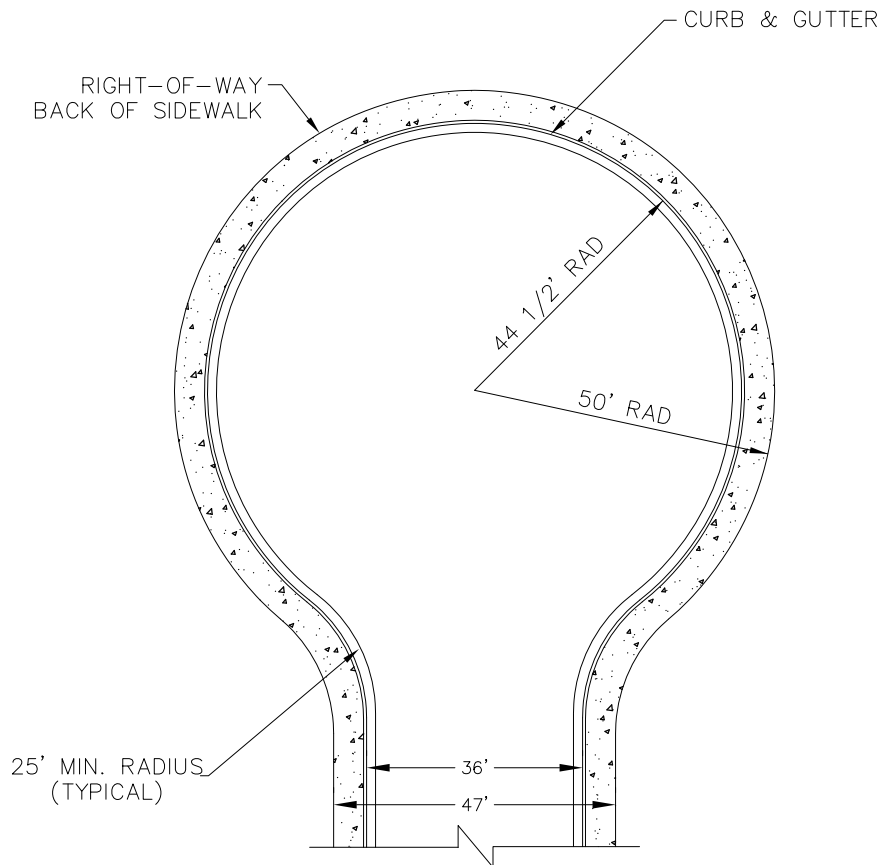
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TYPICAL
ROADWAY LAYOUTS

DETAIL NO.

T-052

04/29/2009



NOTES:

1. ROLLED CURBS ALLOWED IN CUL-DE-SAC ONLY UPON PRIOR APPROVAL BY THE CITY
2. CUL-DE-SAC GEOMETRY SHOWN DOES NOT ALLOW FOR ON-STREET PARKING. IF ON-STREET IS DESIRED, THE RADIUS TO THE FACE OF CURB MUST BE INCREASED TO ACCOUNT FOR A SINGLE PARKING LANE WIDTH. (MINIMUM 8 FEET)



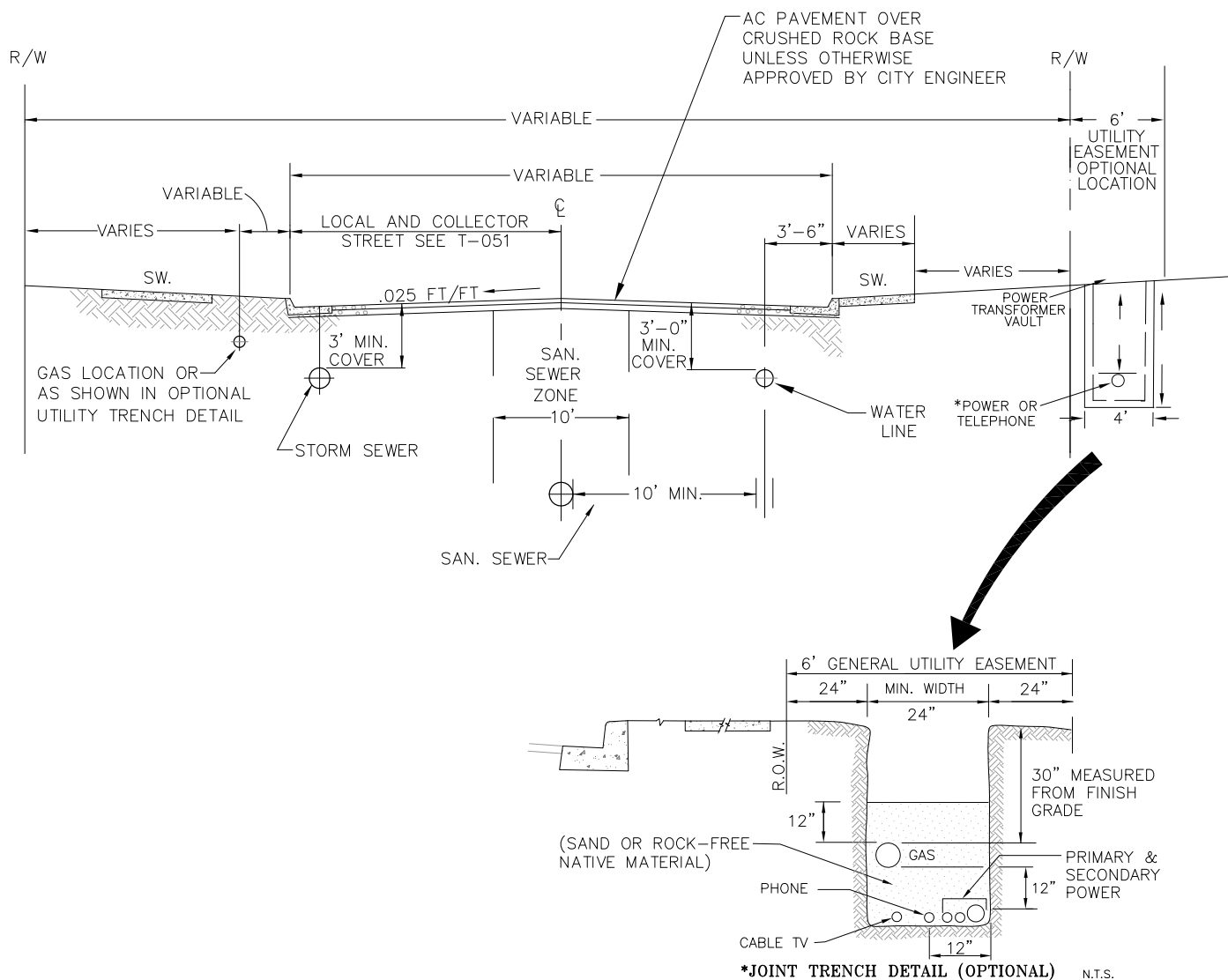
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TYPICAL CUL-DE-SAC DETAIL

DETAIL NO.

T-53

04/29/2009



NOTES:

1. WATER MAIN TO BE LOCATED 3'-6" INSIDE FROM FACE OF CURB OR AS OTHERWISE DIRECTED.
2. 10' HORIZONTAL SEPARATION BETWEEN WATER AND SEWER WHERE POSSIBLE. COMPLY WITH SEPARATION REQUIREMENTS OF OAR 333-061-050.
3. WATER DISTRIBUTION MAINS SHALL HAVE 36" MINIMUM COVER OR AS OTHERWISE DIRECTED.
4. SEWER MAINS SHALL HAVE 5.25' (63") MINIMUM COVER UNLESS OTHERWISE APPROVED TO AVOID CONFLICTS WITH WATER AND OTHER UTILITIES.
5. WATER MAINS TO BE LOCATED ON NORTH OR EAST SIDE OF STREET WHEN PRACTICAL.
6. WATER, SEWER, STREETS AND DRAINAGE SUBJECT TO CITY STANDARDS.
7. MANHOLE LIDS SHALL NOT BE LOCATED DIRECTLY IN NORMAL WHEEL PATH.
8. ALL LAYOUTS AND LOCATIONS ARE SUBJECT TO CITY APPROVAL.



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STANDARD UTILITY LOCATIONS

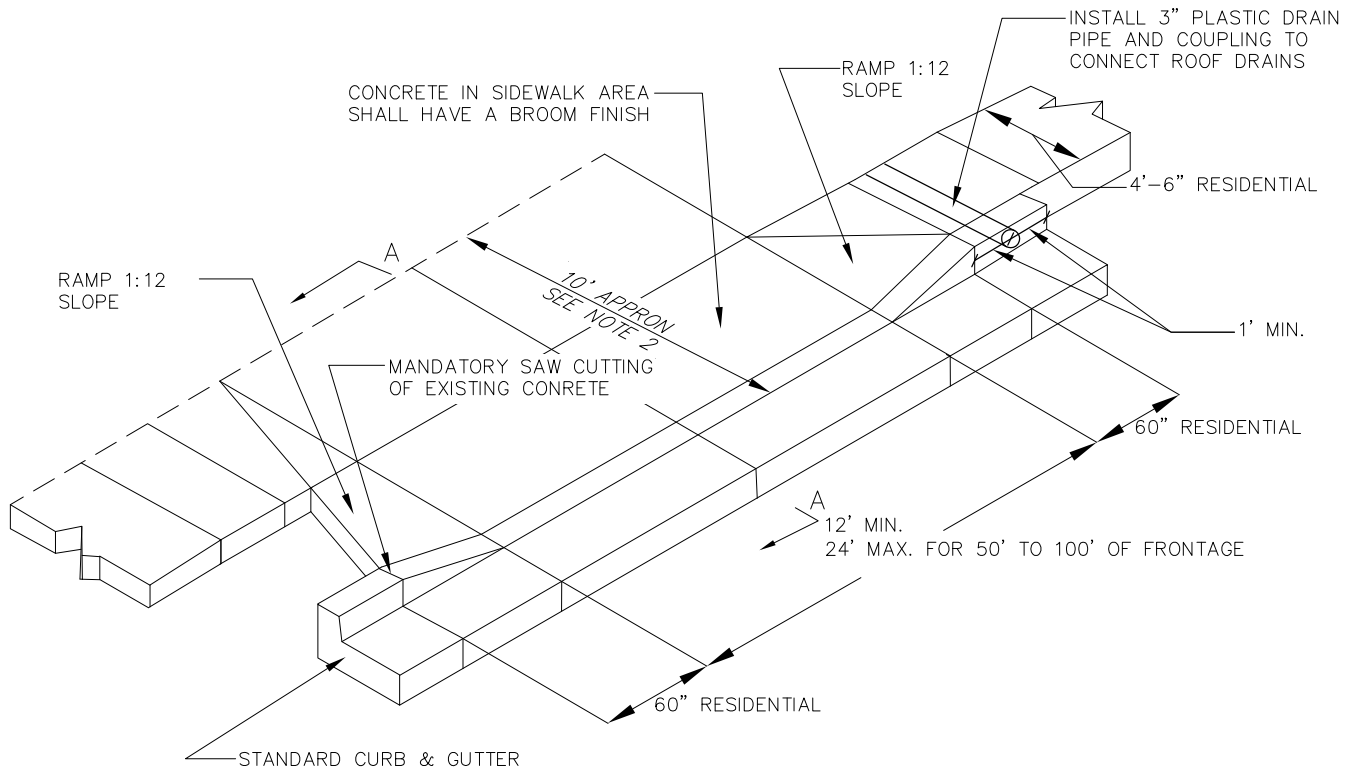
DETAIL NO.

T-054

04/29/2009

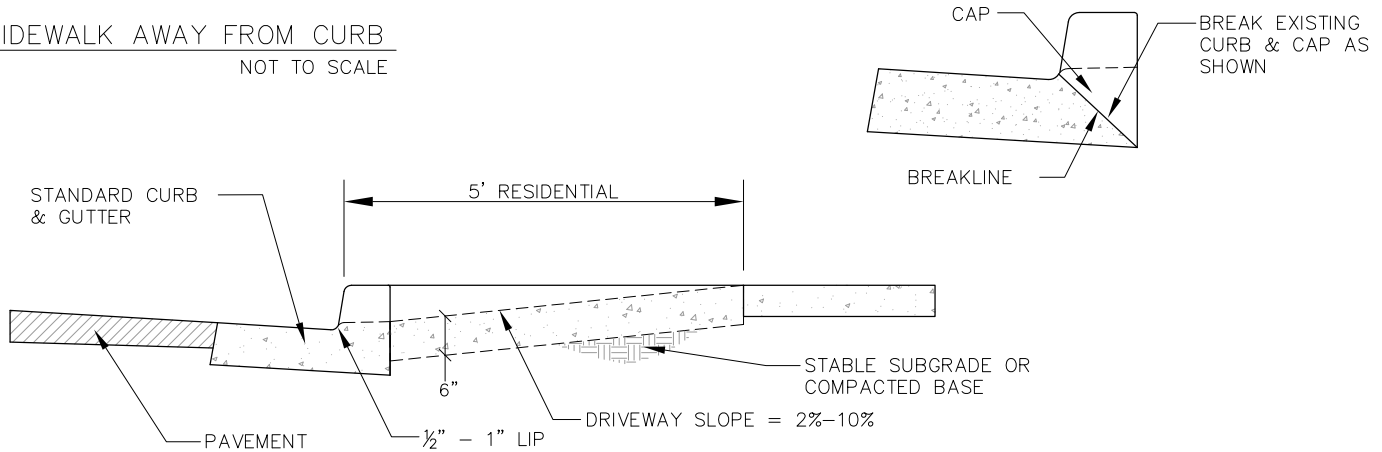
SIDEWALK ADJACENT TO CURB

NOT TO SCALE



SIDEWALK AWAY FROM CURB

NOT TO SCALE



SECTION A-A

NOT TO SCALE

NOTES

- 1) CONCRETE SHALL HAVE A MINIMUM BREAKING STRENGTH OF 3500 PSI AFTER 28 DAYS, FOR ALL DRIVEWAY APRONS (6") AND DRIVEWAY EXTENTIONS (4")
- 2) 10' CONCRETE APRON REQUIRED FOR ALL DRIVEWAYS WHERE NO SIDEWALK IS CONSTRUCTED.
- 3) 4" THICKNESS OF CONCRETE FROM BACK OF SIDEWALK OR DRIVEWAY APRON TO PROPERTY LINE WHERE PRIVATE DRIVE IS CONCRETE
- 4) DRIVEWAY MUST MEET EXISTING STREET GRADE
- 5) CITY APPROVAL REQUIRED FOR DEVIATION FROM WIDTH STANDARDS
- 6) PERMITS AND INSPECTIONS ARE REQUIRED ON NEW AND EXISTING STRUCTURES. THE INSPECTION WILL BE MADE AFTER THE FORMS HAVE BEEN SET
- 7) FOR SIDEWALKS REFER TO STANDARD SIDEWALK DETAIL T-210
- 8) FOR CURB & GUTTER REFER TO STANDARD CURB & GUTTER DETAIL T-301



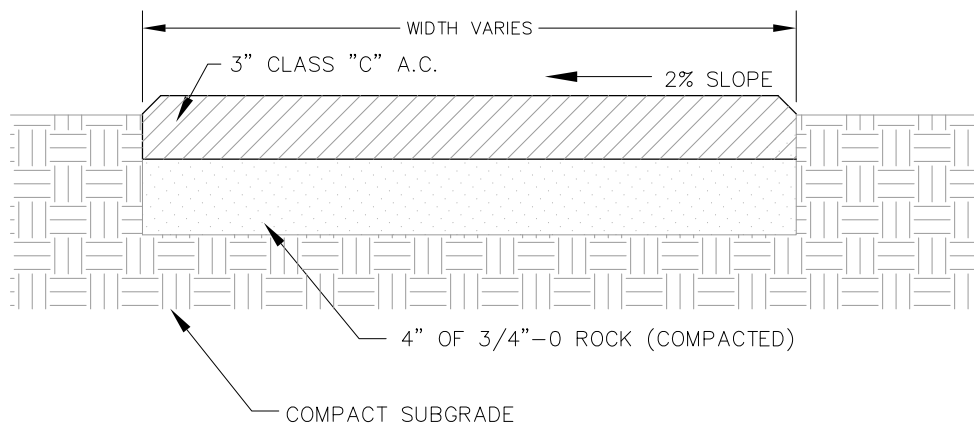
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RESIDENTIAL DRIVEWAY APPROACH DETAIL

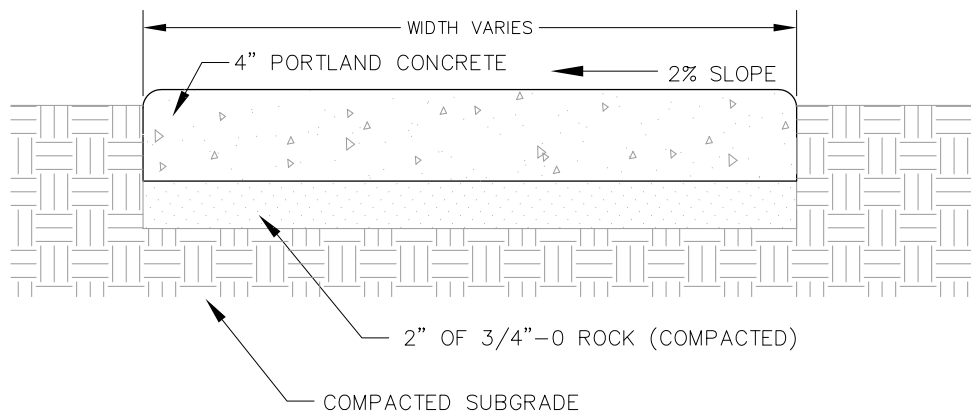
DETAIL NO.

T-150

04/29/2009



—OR—



NOTES

1. CONCRETE TO HAVE 28 DAY COMPRESSIVE STRENGTH OF 3500 PSI
2. SIDEWALK PANELS SHALL BE SQUARE, 3/4" DEEP SCRIBES AT JOINTS, EDGED ON 4 SIDES AND HAVE A LIGHT BROOM FINISH.
3. PEDESTRIAN PATH OR BIKEWAY SHALL HAVE A MINIMUM WIDTH OF 5 FEET (ONE WAY)
A MINIMUM WIDTH OF 10 FEET (TWO WAY)



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PEDESTRIAN / BIKE PATH DETAILS

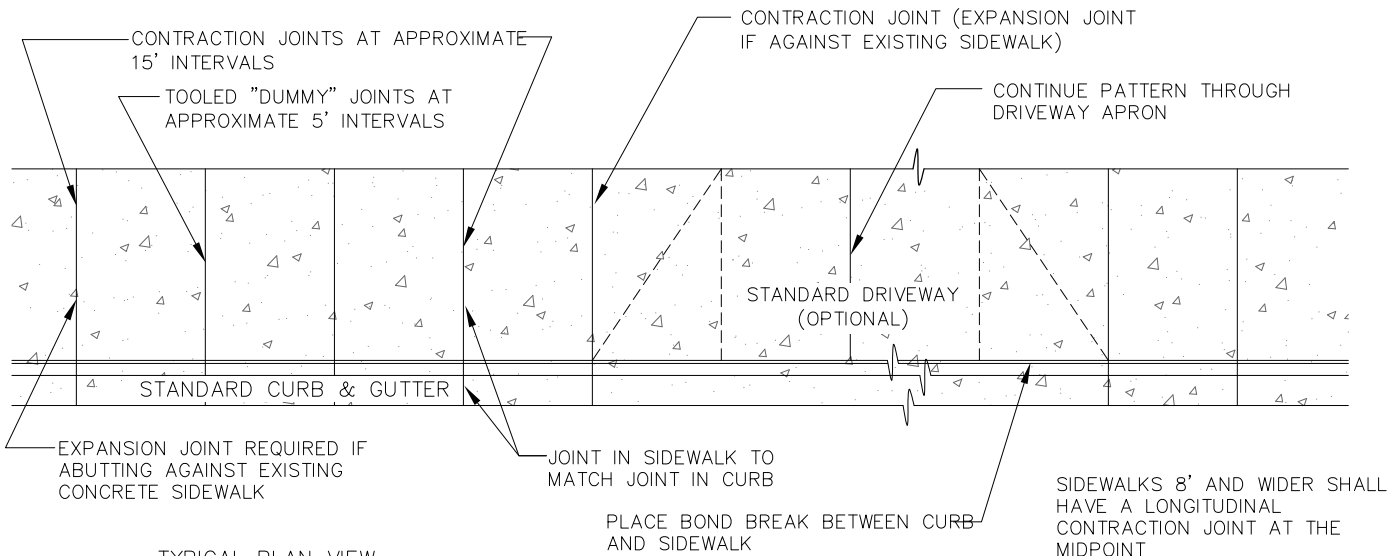
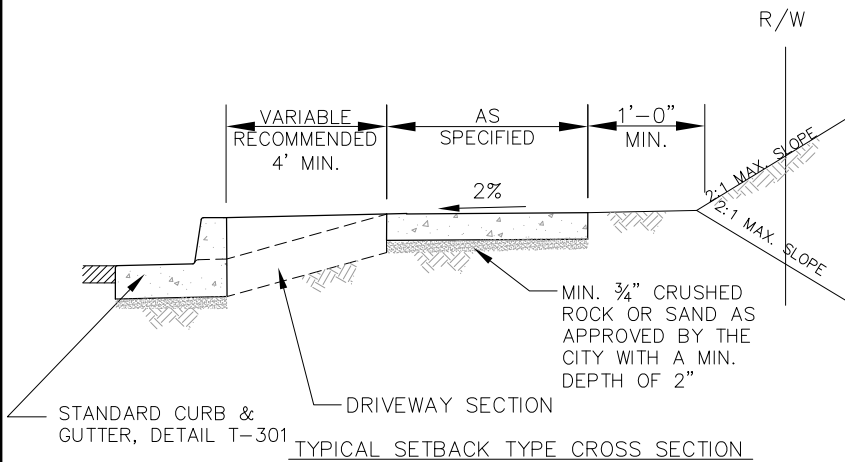
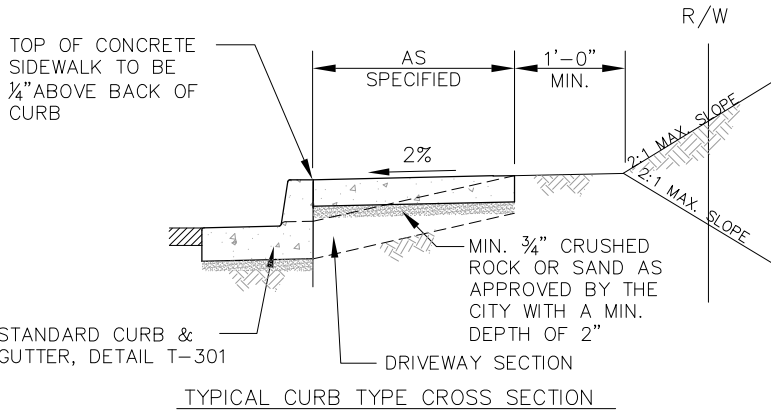
DETAIL NO.

T-201

04/29/2009

NOTES:

- 1) CONCRETE SHALL BE 3500 PSI IN 28 DAYS
- 2) STANDARD SIDEWALK CROSS SLOPE SHALL BE 2%. WHEN THE LOT IS BELOW THE TOP OF THE CURB AND SLOPE DOWN FROM CURB, A MINUS 2% SLOPE MAY BE REQUIRED
- 3) CONCRETE DEPTH FOR SIDEWALKS SHALL BE A NOMINAL 4" MIN. DRIVEWAY SECTIONS INCLUDING SIDEWALKS THROUGH DRIVEWAYS SHALL BE NOMINAL 6" MIN FOR LOCAL STREETS AND 8" FOR ARTERIALS AND COMMERCIAL ROADWAYS
- 4) CONTRACTION JOINTS SHALL BE INSTALLED AT APPROXIMATE INTERVALS OF 15' BY CUTTING AT LEAST $\frac{1}{3}$ OF THE DEPTH OF THE CONCRETE. "DUMMY" JOINTS SHALL BE INSTALLED AT APPROXIMATE INTERVALS OF 5'. EXPANSION JOINTS WITH PREMOLDED FILLER SHALL BE INSTALLED BETWEEN DRIVEWAYS & SIDEWALKS AT THE DIRECTION OF THE ENGINEER, SEE DRIVEWAY STANDARD
- 5) INSTALL A BOND BREAKER OR ISOLATION JOINT BETWEEN BACK OF CURB & SIDEWALK, & AROUND ANY OBSTRUCTION WITHIN SIDEWALK AREA
- 6) DRAIN BLOCKOUTS IN THE CURB SHALL BE EXTENDED TO THE BACK OF THE SIDEWALK WITH A 3" DIA. PLASTIC PIPE AT A 2% SLOPE. A CONTRACTION JOINT SHALL BE PLACED OVER THE PIPE
- 7) SEE STANDARD WHEELCHAIR/BICYCLE RAMP DETAILS FOR SIDEWALK PATTERNS AT INTERSECTION CURB RETURNS
- 8) SEE, ALSO, STANDARD DETAILS FOR DRIVEWAYS, T-150, T-151
- 9) A MIN. SEPARATION OF 4' BETWEEN CURB & SIDEWALK IS RECOMMENDED FOR LANDSCAPE STRIP MAINTENANCE
- 10) SIDEWALKS 8' AND WIDER SHALL HAVE A LONGITUDINAL CONTRACTION JOINT AT THE MIDPOINT



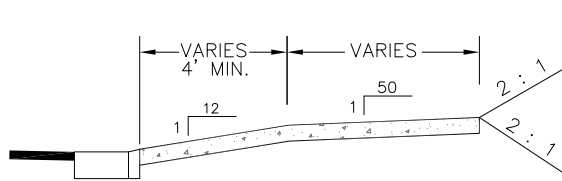
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STANDARD SIDEWALK DETAILS

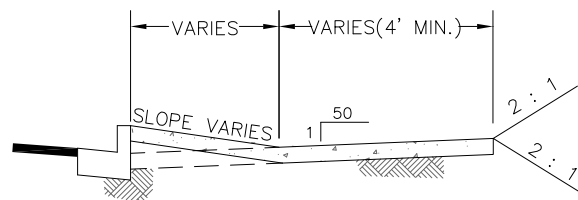
DETAIL NO.

T-210

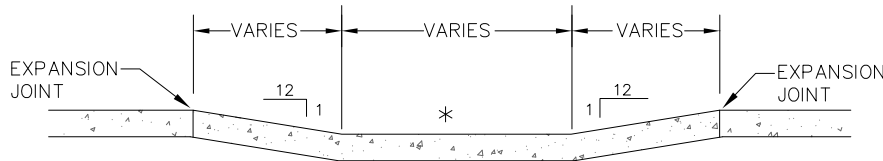
04/29/2009



SECTION A-A



SECTION B-B

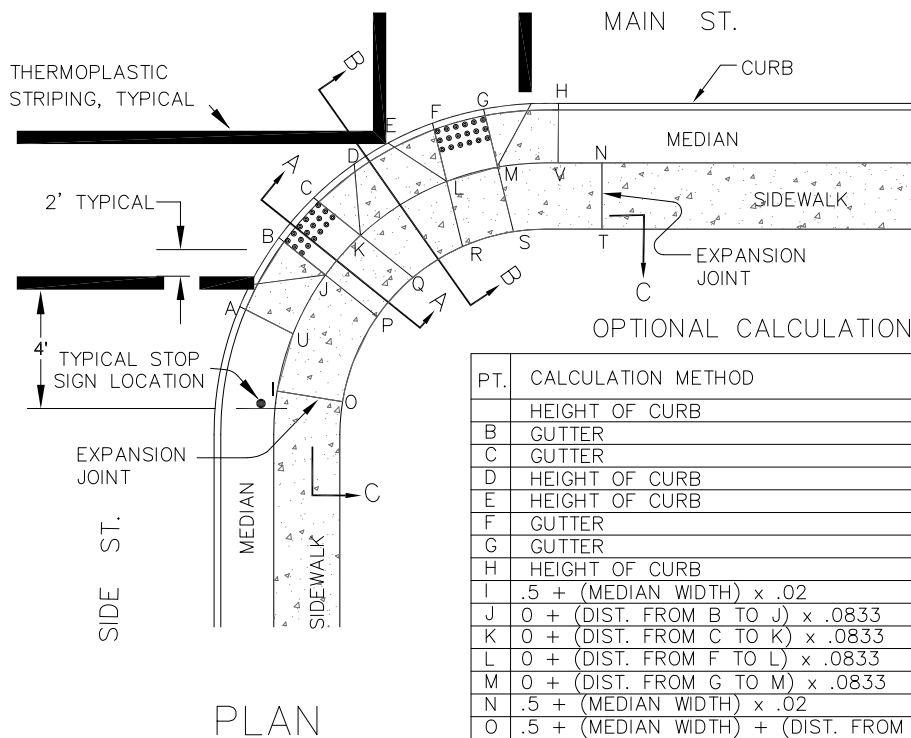


SECTION C-C

* SLOPE SIDEWALK TO PROVIDE POSITIVE DRAINAGE.

NOTE:

1. WHEELCHAIR RAMP GRADES SHALL MEET ADA STANDARDS. THE TABLE PROVIDED BELOW IS TO ASSIST THE DESIGNER AND CONTRACTOR WHO ELECT TO CALCULATE ELEVATIONS TO MEET THOSE STANDARDS.
2. ADDITIONAL INFORMATION REGARDING SLOPE AND RAMP TEXTURING IS PROVIDED ON CITY STANDARD DRAWING NO. T-213.
3. CURB INLET OR CATCH BASIN SHALL NOT BE ALLOWED BETWEEN PTS. B & C OR PTS. F & G.
4. PROVIDE STOP LINE ONLY ON SIDE STREET APPROACHES TO MAIN STREETS WITH CENTERLINE STRIPING. CROSSWALK LINES WHERE REQUIRED MUST BE AS PER STRIPING PLAN APPROVED BY THE CITY ENGINEER.
5. CONCRETE SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 3500 PSI IN 28 DAYS



OPTIONAL CALCULATION TABLE FOR POINT ELEVATIONS

PT.	CALCULATION METHOD	* + FROM GUTTER @ RIGHT ANGLE
	HEIGHT OF CURB	.5
B	GUTTER	0
C	GUTTER	0
D	HEIGHT OF CURB	.5
E	HEIGHT OF CURB	.5
F	GUTTER	0
G	GUTTER	0
H	HEIGHT OF CURB	.5
I	$.5 + (\text{MEDIAN WIDTH}) \times .02$	*
J	$0 + (\text{DIST. FROM B TO J}) \times .0833$	*
K	$0 + (\text{DIST. FROM C TO K}) \times .0833$	*
L	$0 + (\text{DIST. FROM F TO L}) \times .0833$	*
M	$0 + (\text{DIST. FROM G TO M}) \times .0833$	*
N	$.5 + (\text{MEDIAN WIDTH}) \times .02$	*
O	$.5 + (\text{MEDIAN WIDTH}) + (\text{DIST. FROM I TO O}) \times .02$	*
P	$0 + (\text{DIST. FROM B TO J}) \times .0833 + (\text{DIST. FROM J TO P}) \times .02$	*
Q	$0 + (\text{DIST. FROM C TO K}) \times .0833 + (\text{DIST. FROM K TO Q}) \times .02$	*
R	$0 + (\text{DIST. FROM F TO L}) \times .0833 + (\text{DIST. FROM L TO R}) \times .02$	*
S	$0 + (\text{DIST. FROM G TO M}) \times .0833 + (\text{DIST. FROM M TO S}) \times .02$	*
T	$.5 + (\text{MEDIAN WIDTH}) + (\text{DIST. FROM N TO T}) \times .02$	*
U	$J + (\text{DIST. FROM J TO U}) \times .0833$	*
V	$M + (\text{DIST. FROM M TO V}) \times .0833$	*

* DESIGNER MAY CALCULATE ELEVATIONS AT LOCATIONS SHOWN.



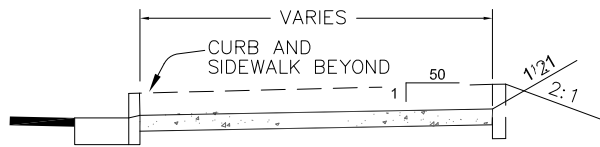
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SIDEWALK AND RAMP DETAIL WITH PLANTER STRIP

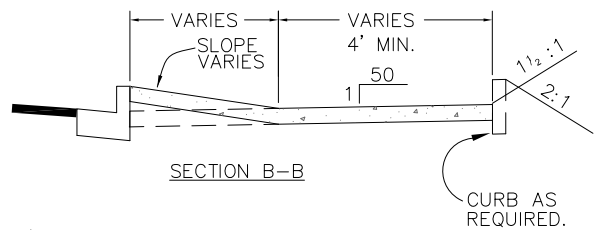
DETAIL NO.

T-211

04/29/2009



SECTION A-A



SECTION B-B

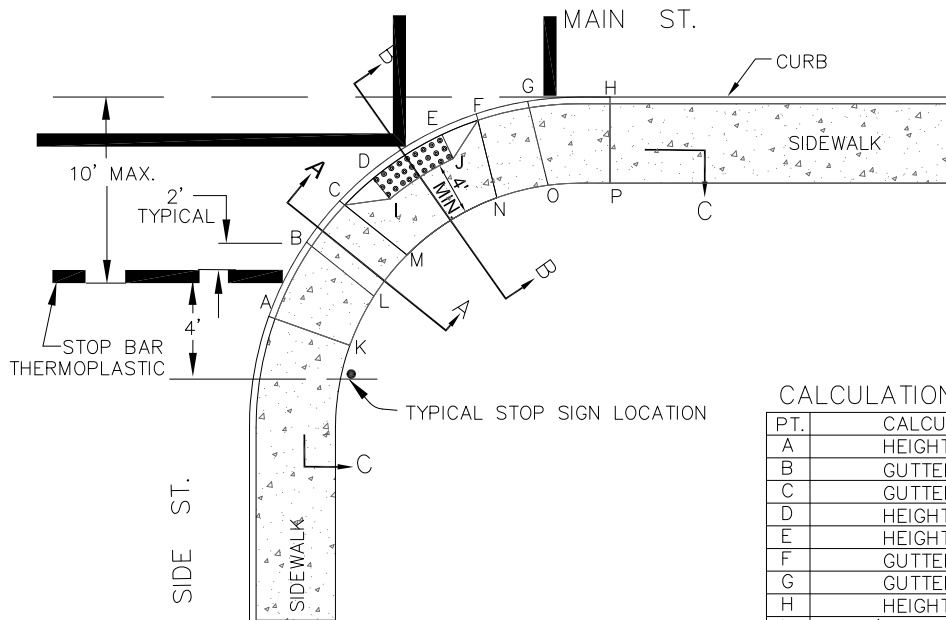


SECTION C-C

* SLOPE SIDEWALK TO PROVIDE POSITIVE DRAINAGE.

NOTE:

1. WHEELCHAIR RAMP GRADES SHALL MEET ADA STANDARDS. THE TABLE BELOW IS PROVIDED TO ASSIST THE DESIGNER AND CONTRACTOR WHO ELECT TO CALCULATE ELEVATIONS TO MEET THOSE STANDARDS.
2. ADDITIONAL INFORMATION REGARDING SLOPE AND RAMP TEXTURING IS PROVIDED ON CITY STANDARD DRAWING NO. T-214.
3. CURB INLET OR CATCH BASIN SHALL NOT BE ALLOWED BETWEEN PTS. B & C OR PTS. F & G.
4. PROVIDE STOP LINE ONLY ON SIDE STREET APPROACHES TO MAIN STREETS WITH CENTERLINE STRIPING. CROSSWALK LINES WHERE REQUIRED MUST BE AS PER STRIPING PLAN APPROVED BY THE CITY ENGINEER.
5. CONCRETE SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 3500 PSI IN 28 DAYS



PLAN

OPTIONAL
CALCULATION TABLE FOR POINT ELEVATIONS

PT.	CALCULATION METHOD	* + FROM GUTTER
A	HEIGHT OF CURB	.5
B	GUTTER	0
C	GUTTER	0
D	HEIGHT OF CURB	.5
E	HEIGHT OF CURB	.5
F	GUTTER	0
G	GUTTER	0
H	HEIGHT OF CURB	.5
I	$0 + (\text{DIST. FROM D TO I}) \times .02$	*
J	$0 + (\text{DIST. FROM E TO J}) \times .02$	*
K	$.5 + (\text{DIST. FROM A TO K}) \times .02$	*
L	$0 + (\text{DIST. FROM B TO L}) \times .02$	*
M	$0 + (\text{DIST. FROM C TO M}) \times .02$	*
N	$0 + (\text{DIST. FROM F TO N}) \times .02$	*
O	$0 + (\text{DIST. FROM G TO O}) \times .02$	*
P	$.5 + (\text{DIST. FROM H TO P}) \times .02$	*

* DESIGNER MAY CALCULATE ELEVATIONS AT LOCATIONS SHOWN.



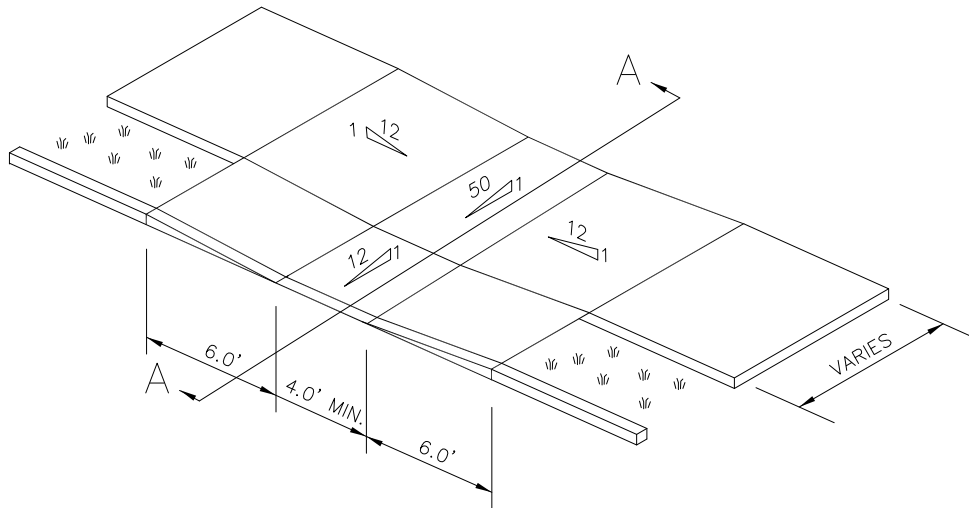
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SIDEWALK AND RAMP DETAIL WITHOUT PLANTER STRIP

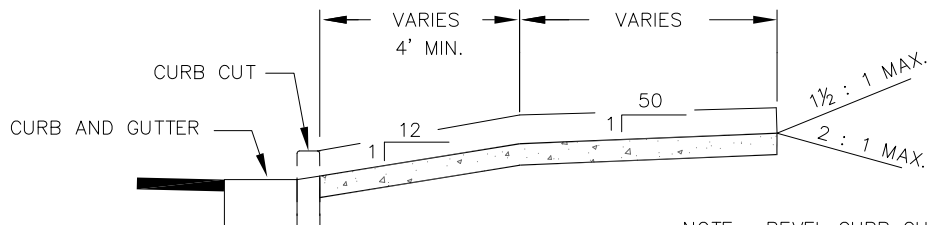
DETAIL NO.

T-212

04/29/2009

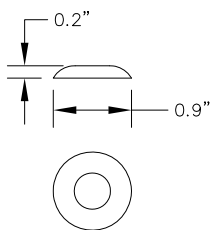


SIDEWALK RAMP DETAIL

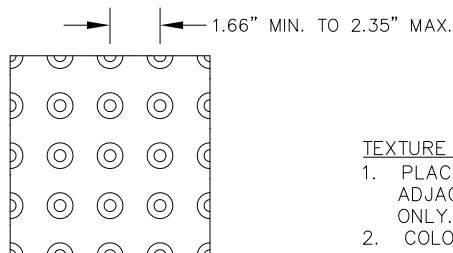


NOTE : BEVEL CURB CUT FROM GUTTER
TO THE BACK OF CURB AT 8.33%

SECTION A-A



TRUNCATED DOME DETAIL



RAMP TEXTURE DETAIL

TEXTURE NOTES:

1. PLACE DOME TEXTURE IN THE LOWER 2' ADJACENT TO TRAFFIC THROAT OF RAMP ONLY.
2. COLOR OF DOMES TO BE SAFETY YELLOW.

RAMP TEXTURE DETAIL



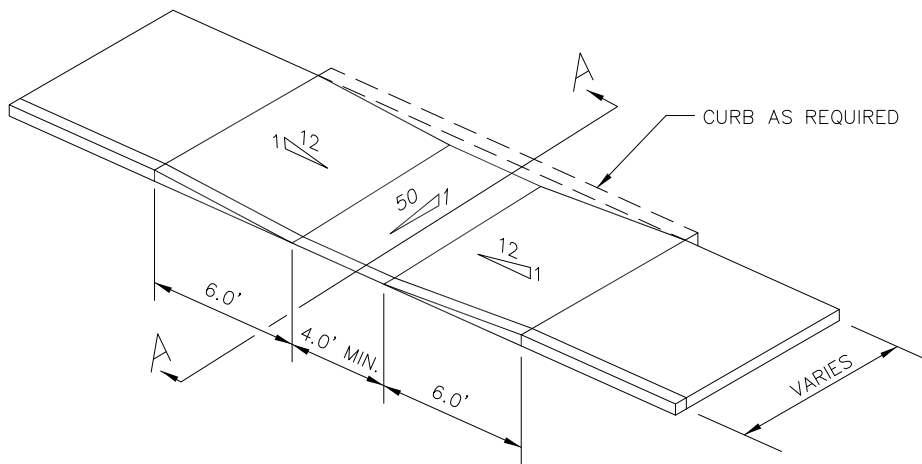
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**RAMP AND TEXTURE DETAIL
WITH PLANTER STRIP**

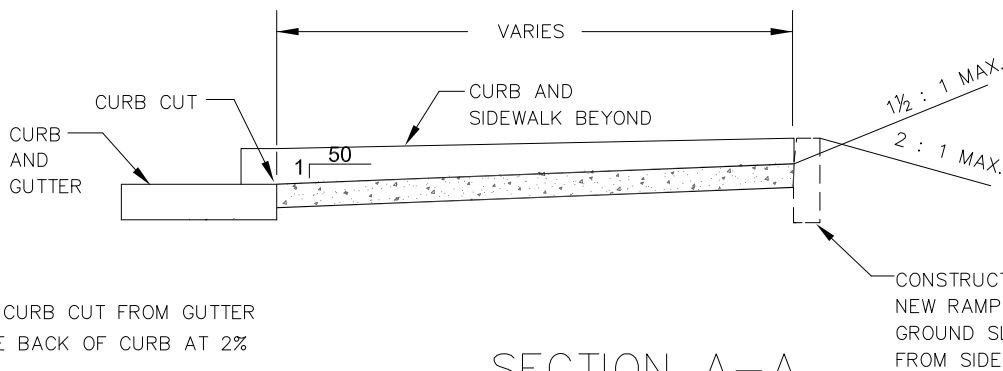
DETAIL NO.

T-213

04/29/2009

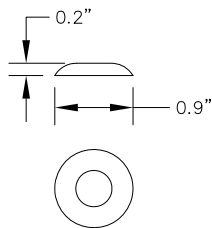


SIDEWALK RAMP DETAIL

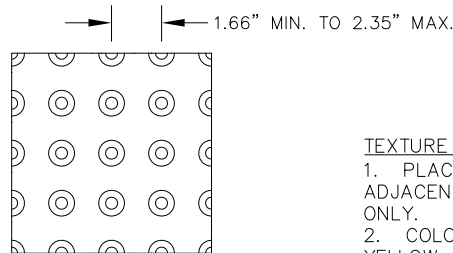


NOTE:
BEVEL CURB CUT FROM GUTTER
TO THE BACK OF CURB AT 2%

SECTION A-A



TRUNCATED DOME DETAIL



RAMP TEXTURE DETAIL

TEXTURE NOTES:

1. PLACE DOME TEXTURE IN THE LOWER 2' ADJACENT TO TRAFFIC THROAT OF RAMP ONLY.
2. COLOR OF DOMES TO BE SAFETY YELLOW.

RAMP TEXTURE DETAIL



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**RAMP AND TEXTURE DETAIL
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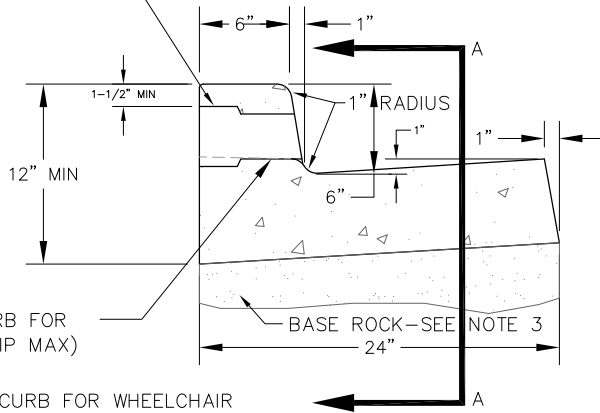
DETAIL NO.

T-214

04/29/2009

WEEPHOLES SHALL BE EXTENDED TO BACK OF WALK WHEN SIDEWALKS ARE CONSTRUCTED

DRAINAGE BLOCKOUT 3" I.D. PVC PIPE TO EXTEND OUTSIDE OF WALK OR CURB

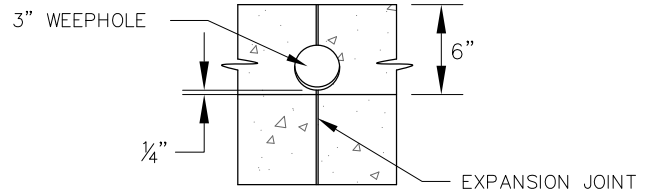


DEPRESSED CURB FOR DRIVEWAY (1" LIP MAX)

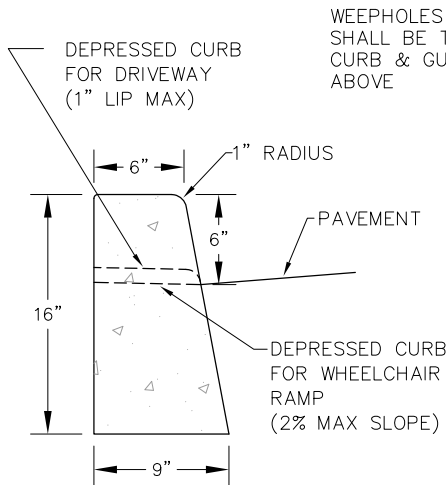
DEPRESSED CURB FOR WHEELCHAIR RAMP 2% MAX SLOPE

TYPICAL INTEGRAL CURB & GUTTER
NOT TO SCALE

WEEPHOLES ARE TO BE CONSTRUCTED USING 3" ID DRAIN PIPE & COUPLING. PLACE WEEPHOLES AT EXPANSION JOINTS WHENEVER POSSIBLE



SECTION AA: WEEPHOLES
NOT TO SCALE

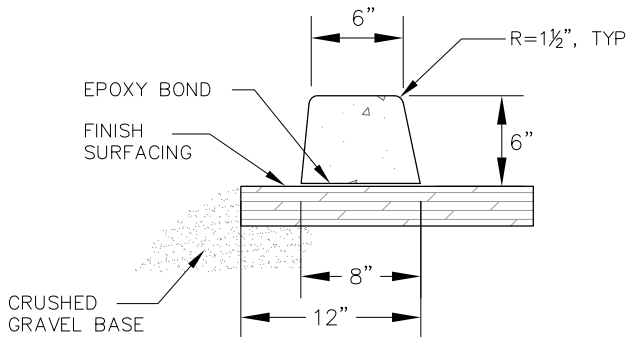


WEEPHOLES CONSTRUCTION SHALL BE THE SAME AS CURB & GUTTER DETAIL ABOVE

TYPICAL STRAIGHT CURB (TYPE C)
NOT TO SCALE

NOTES:

1. CONCRETE SHALL HAVE A BREAKING STRENGTH OF 3500 PSI AFTER 28 DAYS
2. CONTRACTION JOINTS
 - A) TO BE PROVIDED
 - AT EACH POINT OF TANGENCY
 - AT EACH COLD JOINT
 - AT EACH SIDE OF INLET STRUCTURES
 - AT BOTH SIDES OF AN APPROACH
 - B) SPACING TO BE NOT MORE THAN 15 FEET
 - C) THE DEPTH OF THE JOINT SHALL BE AT LEAST 1/3 OF THE THICKNESS OF CONCRETE
 - D) EXPANSION JOINTS IN CURB & GUTTER SHALL BE PLACED AT MAX 45' INTERVALS IN 15' MULTIPLES
3. BASE ROCK - 1-1/2"-0", 95% COMPACTION ROCK SHALL BE TO SUBGRADE OF THE STREET SECTION OR 4" IN DEPTH, WHICHEVER IS GREATER
4. DRAINAGE BLOCK - 3" DIA. PLASTIC PIPE
 - A) DRAINAGE ACCESS THROUGH EXISTING CURBS SHALL BE DONE BY:
 - CORE DRILLING, OR
 - VERTICAL SAWCUT OF CURB 18" EACH SIDE OF DRAIN AND RE-POURED TO FULL DEPTH OF CURB
5. STAMP TOP OF CURB WITH "W" AT WATER SERVICE CROSSING AND "S" AT SANITARY LATERAL CROSSING AS SPECIFIED
6. EXTRUDED BONDED CURBS SHALL NOT BE USED IN PUBLIC RIGHT OF WAYS OR PRIVATE STREET
7. SEE STANDARD CURB CUT DETAIL FOR DRIVEWAY
8. TYPICAL STRAIGHT CURB (TYPE C) ALLOWED FOR REPLACEMENT OF EXISTING TYPE C CURBS AND NOT RECOMENDED FOR NEW CONSTRUCTION



EXTRUDED BONDED CURB (CONC.)
NOT TO SCALE



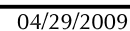
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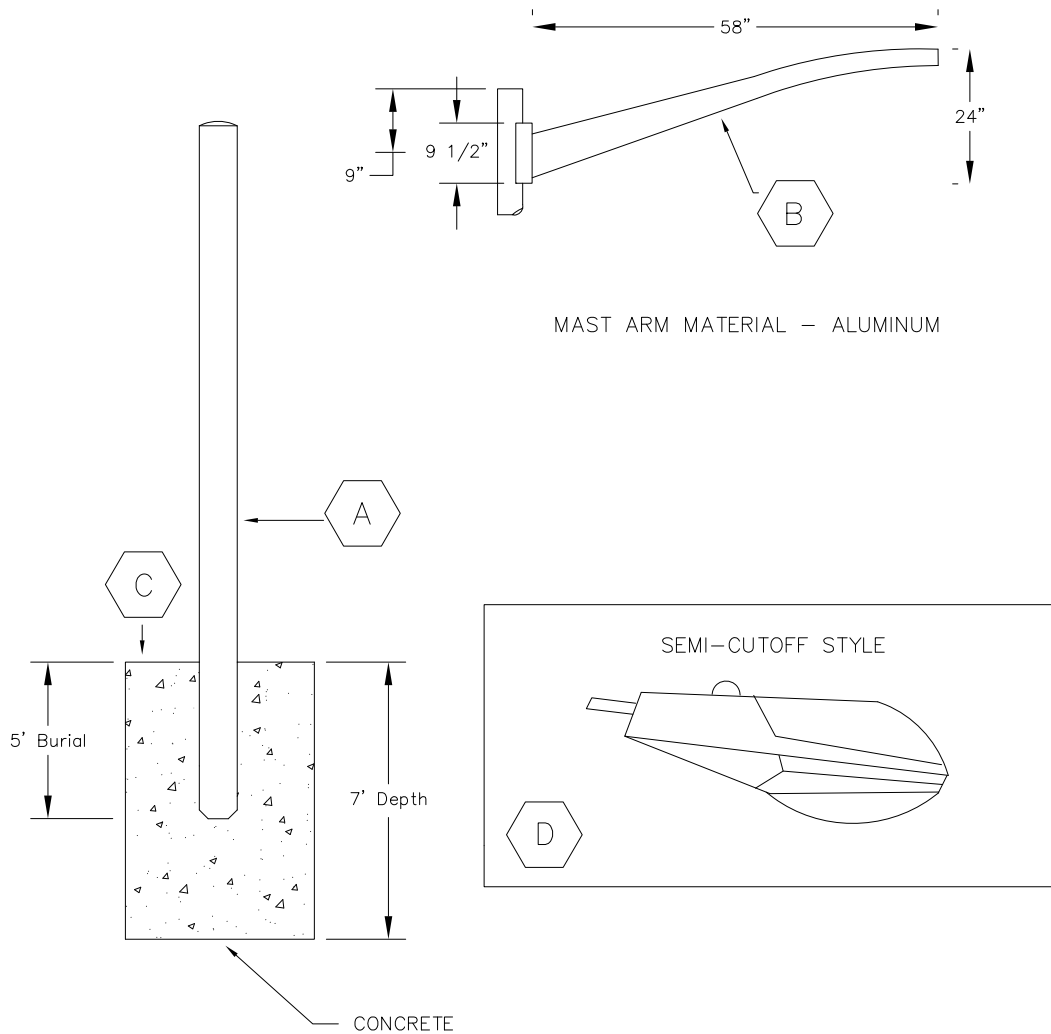
CURB AND GUTTER DETAILS

DETAIL NO.

T-301

04/29/2009





ITEM	DESCRIPTION
A	25' GRAY METAL POLE
B	5' ALUMINUM MAST ARM
C	CONCRETE
D	100 W HPS ROADWAY LAMP (WILL VARY DEPENDING ON LIGHTING REQUIREMENT)

NOTE:
MOUNTING OF POLE AND LIGHT TO COMPLY WITH LOCAL ELECTRICAL UTILITY REQUIREMENTS
AND THE NEC.



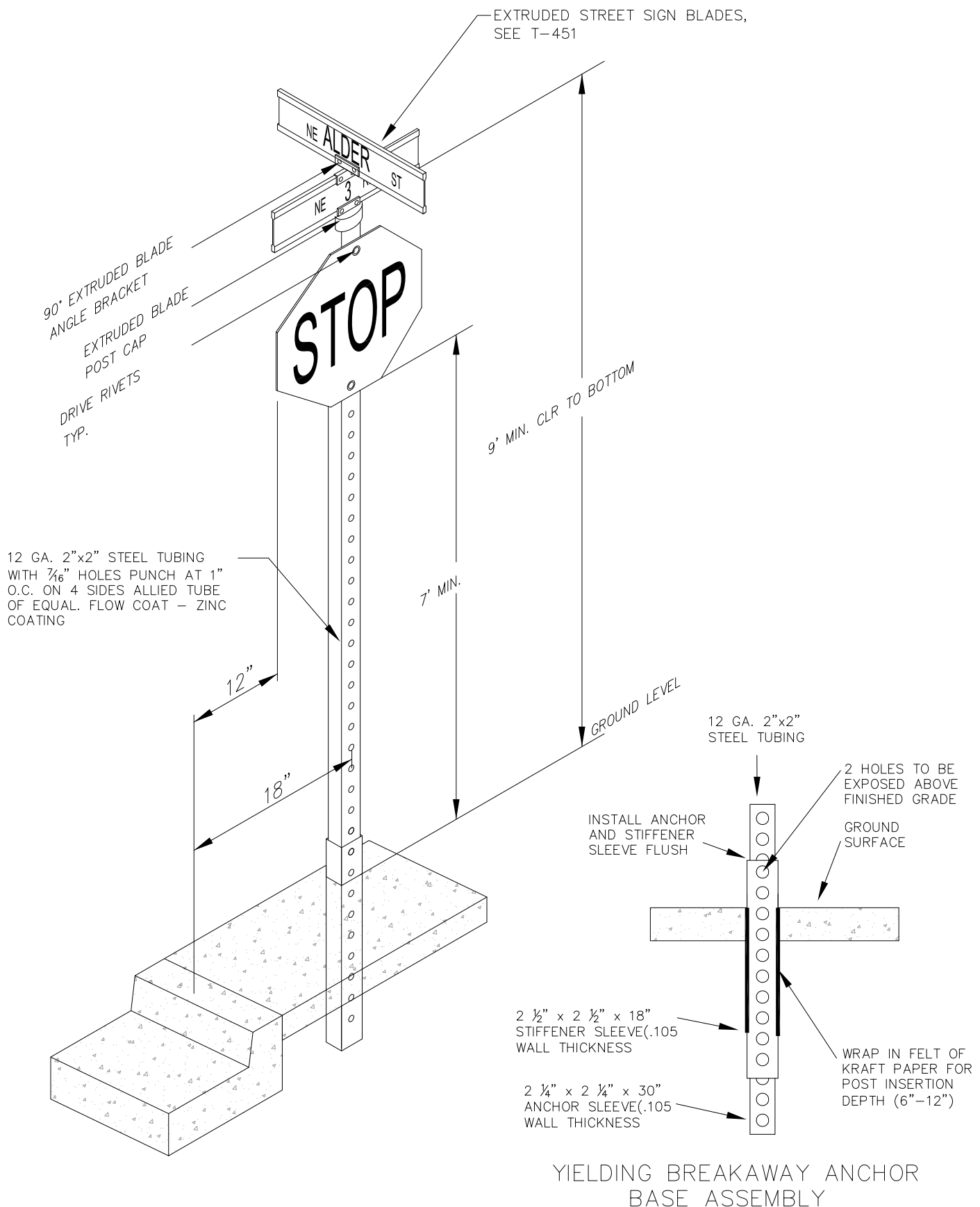
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STANDARD STREET LIGHT DETAIL

DETAIL NO.

T-401

04/29/2009



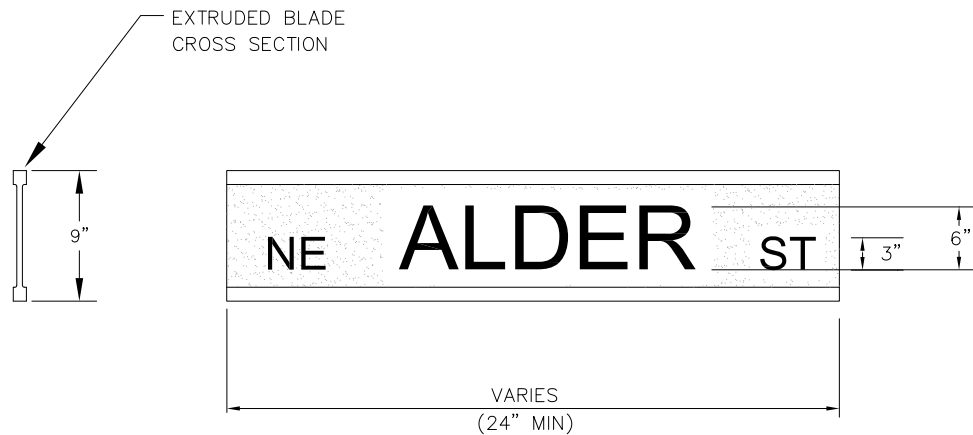
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STANDARD SIGN DETAIL

DETAIL NO.

T-450

04/29/2009



NOTES:

1. MATERIALS

STREET NAME SIGN SHALL BE 9" HEIGHT, EXTRUDED ALUMINUM. THE MINIMUM LENGTH SHALL BE 24" AND MAXIMUM LENGTH SHALL BE 36"
BOTH SIDES OF STREET NAME SIGNS SHALL BE GREEN 3M SCOTCHLITE BRAND HIGH INTENSITY REFLECTIVE SHEETING WITH WHITE BORDER.

2. LETTERING

ALL LETTERS, NUMBERS, AND BORDERS USED TO FABRICATE A STREET NAME SIGN SHALL BE HIGH INTENSITY SILVER USING 3M SCOTCHLITE BRAND. THERE ARE TWO SIZES OF LETTERS THAT MAKE UP A STREET NAME SIGN. FOR PREFIXES, SUFFIXES, AND BLOCK NUMBERS. A 3" SERIES 'C' IS USED. THE ACTUAL NAME OF THE STREET IS A 6" SERIES 'B'. ALL STREET NAME SIGNS SHALL HAVE BLOCK NUMBERS, AS ASSIGNED BY THE CITY, WHEN INSTALLED BY CONTRACTOR.

3. MISCELLANEOUS

STREET NAMES SHALL BE APPROVED BY THE PUBLIC WORKS DIRECTOR PRIOR TO THE SIGNS BEING FABRICATED AND INSTALLED.



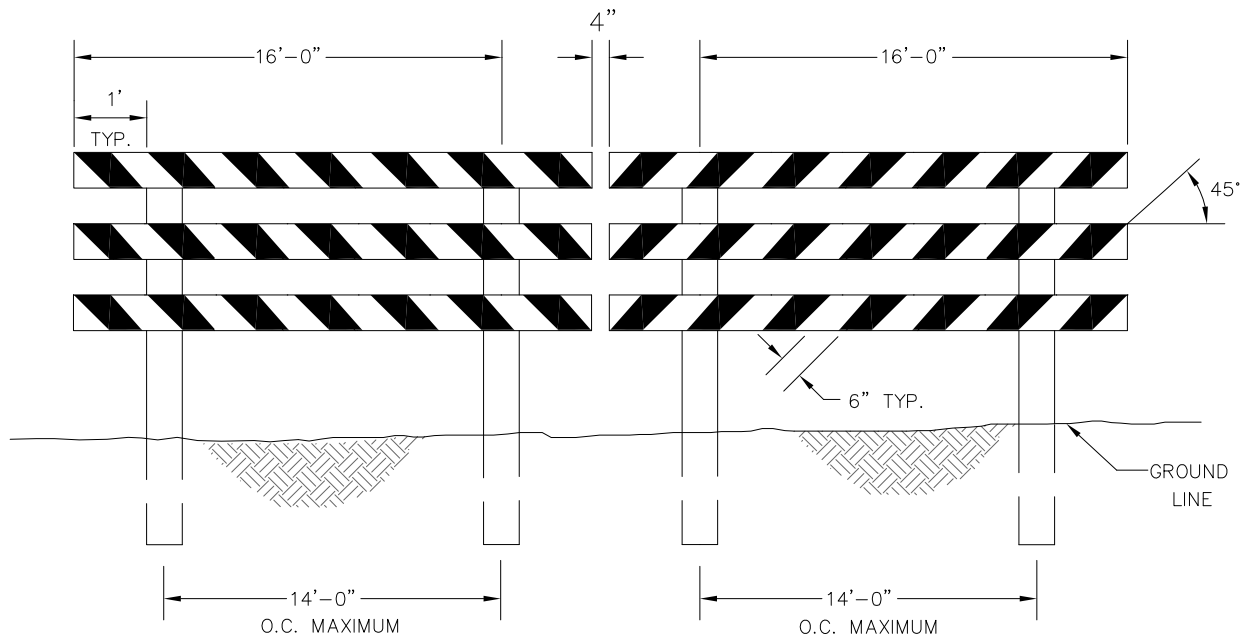
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Toledo, Oregon 97391
(541) 336-2247 Fax: (541) 336-3512

STREET SIGN AND LETTERING DETAILS

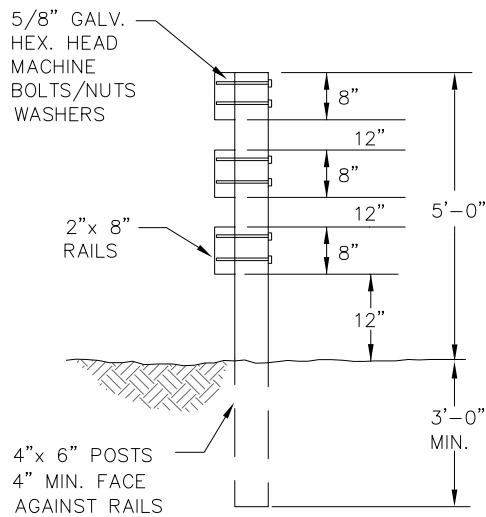
DETAIL NO.

T-451

04/29/2009



ELEVATION



END VIEW

N.T.S.

NOTES:

1. RAILS TO BE RETROREFLECTIVE WHITE AND ORANGE STRIPES. POSTS TO BE PRESSURE TREATED.
2. SEE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS AND THE OREGON SUPPLEMENT.
3F-1 BARRICADES
6C-8 BARRICADE DESIGN
6C-9 BARRICADE APPLICATION
3. ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE CURRENT STATE OF OREGON STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.
4. FOR WIDER APPLICATIONS, MULTIPLE SECTIONS AS SHOWN SHALL BE USED.



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**STANDARD PERMANENT
BARRICADE DETAIL**

DETAIL NO.

T-501

04/29/2009



City of Toledo
LINCOLN COUNTY, OREGON

DIVISION 4:
DRAINAGE SYSTEM DESIGN STANDARDS
MANUAL
Guidelines for Development

- 1.1 The purpose of this manual is to set standards for the design and construction of storm sewer and drainage system improvements to serve new and future development. This manual may be updated periodically and the design engineer shall ensure that they have the latest version.
- 1.2 Storm water, including street, roof, or footing drainage shall not discharge into the sanitary sewer system.
- 1.3 Materials and details shall conform to the requirements of this manual.
- 1.4 All applicable laws, codes, regulations, and permit requirements shall be complied with.

Section 2 – Design Plan Format

- 2.1 Refer to the City’s “Engineering Policy – Guidelines for Development” document for additional requirements and submittal procedures.

Section 3 – Storm Sewer and Drainage System Design Requirements

- 3.1 Storm sewers and related appurtenances shall be provided for new subdivisions, land partitions, and industrial and commercial developments as determined necessary by the Public Works Director or representative.
- 3.2 The applicant shall provide stormwater and detention facilities for their development. This includes the stormwater mains, inlets, manholes, laterals for roof and foundation drains, detention systems (if required), control structures (if required), inflow and outflow devices (if required), and energy dissipaters (if required).
- 3.3 All storm sewer and drainage improvements will be designed in accordance with the City of Toledo Design Standards Manual and current Storm Water Master Plan and shall meet all City standards.
- 3.4 The storm sewer and drainage improvements shall be designed to detain any increased runoff created through the development of the site, as well as convey any existing off-site surface water entering the site from other properties. Facilities shall be sized adequately to convey all necessary flows off site to an approved point of discharge.
- 3.5 The applicant shall submit hydrology/detention calculations to the Public Works Director or designee for review and approval. The applicant shall provide documentation to verify the accuracy of the hydrology and detention calculations.
- 3.6 The applicant shall show the 100-year overflow (storm) path and shall not design the flow to cross any developed properties.
- 3.7 Applicant shall account for all surface and stormwater drainage from the point of origin to the ultimate point of discharge to an appropriate receiving stream or storm drainage system. The impact to facilities downstream of the development must be identified to determine if improvements are required outside of the development. If required, applicant will increase the capacity of downstream facilities or, through detention and attenuation, hold drainage on site and release it in a controlled manner so as not to affect the capacity of the downstream facilities.

-
- 3.8 The applicant shall design and develop a system that provides for the future extension of the drainage facilities to the entire drainage basin taking into consideration current and projected “upstream” conditions.
- 3.9 The applicant’s engineer shall perform studies and prepare designs based on an engineering analysis which takes into consideration water quality issues, runoff rates, pipe flow capacity, hydraulic grade line, soil characteristics, pipe strength, and potential construction problems.
- 3.10 Other agencies (i.e. DEQ, ODOT, Lincoln County) may require some form of drainage review and impose additional drainage requirements that are separate from and in addition to those of the City. The applicant shall coordinate with these other agencies and resolve any conflicts or concerns in drainage requirements and water quality requirements. The City must receive copies of approval letters, review letters, and other relevant documentation as required.
- 3.11 Drainage Study
- 3.11.1 All developments that will increase or modify impervious surface area shall, if further study is not required by the criteria outlined below, submit a drainage study and plan for the development site that provides for system capacity design for a 25 year storm event. The time of concentration for the study shall be determined by using a 10-minute start time and calculated travel times in gutters, pipes and swales for each drainage basin on the development area. The drainage design shall be checked for overflow impacts that may occur in the 25-year storm event and shall include contingency measures to protect both on-site buildings and abutting properties.
- 3.11.2 A complete drainage study, as outlined below, shall be submitted for all developments that generate public and/or private storm drainage from more than one acre of land or generate peak flows in excess of 0.5 cfs. Developments or redevelopments that create 5,000 square feet of new impervious surface or modify an existing drainage system with capacity of 0.5 cfs or greater shall also submit a complete drainage study, as outlined below. All developments containing or adjacent to a floodplain, stream, wetland or natural resource area shall review and report their impact to those systems as part of the drainage study required for the development.
- 3.11.3 If required by the criteria stated above, a complete drainage study shall be provided for a development that is proposed within the City’s planning jurisdiction. The study shall include the following:
- A. A hydrological study map, which shall include, at a minimum, the following:
1. The entire drainage basin, well defined, and an appropriate amount of area beyond the drainage basin limits; 100-foot minimum distance.
 2. Streets important to the Study and the development and street names.
 3. Flow arrows in streets and ditches.

4. Contours or spot elevations for verification of direction of overland flow and pipe cover. Contour intervals shall be as follows:

<u>Slope (%)</u>	<u>Contour Interval (ft)</u>
0-10	2
11-25	5
>25	10

5. Drainage areas of all sub-basins (list acres).
6. Collection points (nodes) at downstream limits of all sub-basins complete with node numbers.
7. A profile of the storm drain system showing invert elevations, manhole top and bottom elevations, existing utilities, and existing and finished ground line elevations.
8. Existing and proposed storm drain pipes and channels with sizes and or cross sections included.
9. Future pipes in the system, complete with proposed sizes, slopes, pipe cover, flow line elevations at manholes, etc.
10. City drainage master plan information (if available) such as node numbers, basin names (numbers), drainage boundaries, etc.
11. North arrow, scale, design firm (engineer) name and logo, designer, date, etc.
12. Environmentally sensitive areas (i.e. gullies, ravines, swales, wetlands, steep slopes, springs, creeks, etc.). For natural drainage features, show direction of flow.
13. 100-year flood plain with flood elevations and 100-year flood way, as applicable.

- B. Hydrologic calculations to establish runoff volumes (see analysis method requirements and design event in following sections regarding drainage study types)

- C. Hydraulic calculations to establish runoff volumes.

- 3.11.4 Unless specifically required by the City for a particular development, development applications will not be required to provide engineering level details for on-site (out of the right-of-way) pipe profiles or other specific details of the “private” side drainage system. Only information on new components in the right-of-way and connections into existing components must be provided.

- 3.11.5 **Drainage Study Types/Categories** - The level of detail and scope of work required for a particular drainage study will be governed by the following criteria:

- A. Small Site Study – A small site study shall be required when all of the following criteria are met:
 1. Study area less than 5 acres in size.
 2. Study area drains into an established public system with available capacity for the peak flow based on the storm event frequency required as described in the Hydraulic Calculations Section later in these Standards.

-
3. The development proposed is a residential development.
 4. Study area does not contain and is not adjacent to a flood plain, stream, wetland or natural resource area.
- B. Mid-Level Development Study – A mid-level drainage study shall be required when the criteria for a Small Site Study cannot be met and when all of the following criteria are met:
1. Study area less than 25 acres in size.
 2. Study area drains to an established public system within the City Limits.
 3. Study area does not contain and is not adjacent to a floodplain, stream, wetland or natural resource area.
- C. Full Drainage Development Study – A full drainage study shall be required when the criteria for a Small Site Study and a Mid-Level Development Study cannot be met. Some examples of when a full study shall be required include, but are not limited to cases where any of the following conditions are met:
1. Study area greater than 25 acres in size.
 2. Developments which require creation of a new outfall and/or exceed existing system capacity.
 3. Study sites which contain or are adjacent to a floodplain, stream, wetland, natural resource area.
 4. Any development which does not qualify for a Small Site or Mid-Level Development Study and which either generates peak flow in excess of 0.5 cfs or greater, or is a redevelopment or development which creates 5,000 square feet or more of new impervious area.
- D. The Public Works Director or representative will make the final determination on the level of study required for any specific development.
- 3.11.6 Hydrologic Calculations – Hydrologic calculations for the various types/categories of drainage studies shall conform to the following minimum guidelines:
- A. Small Site
1. Rational peak flow method. When the ‘C’ factor is 0.5 or greater, the time of concentration and the peak flow from the impervious areas shall be computed separately and compared to the combined area. The higher of the two peak flow rates shall then be used to size the conveyance.
 2. Two-year storm event frequency for volumes up to 5 cfs.
 3. Five-year storm event frequency for volumes from 5 cfs to 20 cfs.
- B. Mid-Level Development
1. Unit Hydrograph Method
 2. Storm event as Small Site and using the ten-year event for volumes of 20 cfs to 40 cfs.
 3. 25-year storm event for detention facilities where necessary to meet downstream capacity issues.
-

4. 50-year storm event for volumes above 40 cfs.

D. Full Drainage Development

1. Unit Hydrograph Method.
2. Floodplain analysis if development impacts a floodplain.
3. Storm event as volumes outlined in Small and Mid-Level above and 100-year flood for areas in floodplain.

3.11.7 Hydraulic Calculations

- A. In each instance, the method of hydraulic calculations shall be subject to Public Works Director or designee approval.
- B. Site development improvement projects shall address on-site and off-site drainage concerns, both upstream and downstream of a project, including but not limited to:
 1. Modifications to the existing on-site storm drainage facilities shall not restrict flows creating backwater onto off-site property to levels greater than the existing situation unless approved by the affected off-site property owners and the City. The affected property owner(s) shall agree to and sign an easement identifying the location of the backwater storage.
 2. Storm drainage facilities shall be designed and constructed to accommodate all flows generated from upstream property and the most recent approved land use plan at full development.
 3. The design of storm drainage facilities shall analyze the impact of restrictions downstream of the project site. Downstream restrictions that create on-site backwater shall be removed by the developer or the on-site backwater shall be addressed in the design of the development's storm system. The removal of downstream obstructions (i.e. control structures, undersized piping, etc) shall not be allowed if this removal creates downstream capacity problems.
- D. Review of Downstream System
 1. The design engineer for each development constructing new impervious surface of more than 5,000 square feet shall submit documentation, for review by the City, of the downstream capacity of any existing storm facilities impacted by the proposed development. The design engineer must perform an analysis of the drainage system downstream of the development to a point in the drainage system where the proposed development site constitutes ten percent or less of the total tributary drainage volume, but in no event less than ¼ mile.
 2. If the capacity of any downstream public storm conveyance system or culvert is surpassed during the Event/CFS (Critical Flow Simulation) level requirements, due directly to the development, the developer shall correct (mitigate) the capacity problem or construct an on-site detention facility unless otherwise approved by the City.
 3. If the projected increase in surface water runoff which will leave a proposed development will cause or contribute to damage from flooding to existing buildings or dwellings, the downstream

stormwater system shall be enlarged to relieve the identified flooding condition prior to development, or the developer must construct an on-site detention facility.

4. Any increase in downstream flow shall be reviewed for erosion potential, defined as downstream channels, ravines, or slopes with evidence of erosion/incision sufficient to pose a sedimentation hazard to downstream conveyance systems or pose a landslide hazard by undercutting adjacent steep slopes.

3.12 Design of Stormwater Facilities

3.12.1 General.

- A. The conveyance system shall be designed to convey and contain at least peak runoff for the Event/CFS design requirements. Structures for proposed pipe systems shall provide a minimum of one foot of freeboard between the hydraulic grade line and the top of the structure or finish grade above pipe for a 25-year peak rate of runoff. Surcharge in pipe systems shall not be allowed if it will cause flooding in portions of a habitable structure, including below-floor crawl spaces.
- B. The design shall be supplemented with an overland conveyance component demonstrating how a 100-year event will be accommodated. This overland component shall not be allowed to flow through or inundate an existing building or dwelling.

3.12.2 Manhole Design

- A. Manholes shall be provided at least every 500 feet, at every grade change, and at every change in alignment and junction of two or more lines. Manhole lids shall have a minimum of six inches clearance from the edge of a curb or gutter and shall not be in a wheel path of the traveled way. Final top elevation of manhole shall be set flush or not greater than ½" above the finish grade of surrounding area.
- B. All manholes shall be a minimum of 48 inches in diameter.
- C. Pipe crowns of branch or trunk lines entering and exiting junctions shall be at the same elevation. If a lateral is placed so its flow is directed against the main flow through the manhole or catch basin, the lateral invert shall be raised to match the crown of the mainline pipe.
- D. Inside drop and water quality manholes shall be at least 60 inches in diameter with 42 inches of clear space.
- E. All manholes shall have a minimum 12-inch ledge on one side of the channel in the base at an elevation of 0.8 of pipe height, except for water quality manholes.
- F. Details shall be submitted with the plans where pipes into or out of a manhole are larger than 24 inches or where more than four mainline connections are made.

- G. Connections to an existing manhole, elevation of the existing ledge, and elevations of existing inlets and outlets shall be submitted with the plans.
- H. Connections are allowed directly into a manhole providing that they are properly channelized. No more than three side laterals shall be connected to a manhole unless otherwise approved by the City. There shall be a minimum of eight inches separating connections as measured from the outside diameter of the pipe.
- I. A manhole may have a free inside drop of up to two feet. Drops over 24 inches must incorporate an appropriate drop assembly as shown in the included standard detail drawings.
- J. Line manholes may be 'T' top design for pipe diameters 42 inches and larger where no side line connections are present or planned.

3.12.3 Water Quality Components

- A. Water quality structures shall be an approved, manufactured unit. All capacity, efficiency, and operation and maintenance data shall be submitted at the time of plan review.
- B. Each water quality component shall be designed for the runoff from the upstream watershed at build-out, based on the applicable comprehensive land use plan. No flow shall be introduced into the manhole in addition to the design amount.
- C. Water quality manholes shall be a minimum of 60 inches in diameter. Other sized structures may be required depending on the type and extent of treatment desired.
- D. Water quality manholes shall not be used in a submerged or surcharged system. The manufacturer's required head losses shall be accommodated for in the system design.
- E. Water quality components will only be required if determined necessary by the Public Works Director or representative or as required by another agency (ODOT, DEQ, etc.)
- F. Water quality components shall be required at last fixture before discharging into stream, lakes or tidal waters.

3.12.4 Piping and Conduit Design

- A. Branch piping in the drainage system shall not be smaller than 10-inches in diameter.
- B. Mainline piping shall be a minimum of 12-inches diameter.

- C. Service laterals for single-family residences (catch basins, etc) shall be a minimum of 6-inches in diameter. All other laterals or branches shall be a minimum of 10-inches diameter. Exception can be made for roof drains which may be 3 or 4 inches in diameter. Drainage sleeves through curbs shall not exceed 3 inches in diameter.
- D. All pipes shall be designed to achieve a minimum velocity of three feet per second (fps) at 0.5 part full based on the following table of 'n' values.

Table 3.12.4A
Manning's 'n' Values for Pipes

Material Type	Uniform Flow (Preliminary Design)	Backwater Flow (Capacity Verification)
Concrete pipe and Lined Corrugated PE pipe	.014	.012
Annular Corrugated Metal pipe:	-	
2-2/3" x 1/2" plain or fully coated	.028	.024
Paved invert	.021	.018
3" x 1" corrugation	.031	.027
6" x 2" corrugation (field bolted)	.035	.030
Helical 2-2/3" x 1/2" corrugation & corrugated PE pipe	.013	.011
Spiral rib metal pipe and PVC pipe	.013	.011
Ductile Iron pipe (cement lined)	.014	.012
Solid Wall PE pipe (butt fused only)	.009	.009
HDPE Smooth Walled Interior	.012	.010

#Note: Corrugated metal pipe must be pre-approved by City.

- G. All pipes exceeding critical flow velocities shall have analysis data submitted showing the effects of hydraulic jump at manholes and downstream water levels for peak flow situations.

H. Pipe Location

1. All storm drain piping shall be located within the public right of way. Exceptions for systems with physical constraints precluding location within the public right-of-way may be granted at the discretion of the Public Works Director or representative.
 - a. Storm pipe located not in a public right-of-way must have a maintained access road acceptance by the City.
2. Storm pipes shall not be located closer than ten feet from the edge of a public street right-of-way, unless otherwise approved by the Public Works Director or representative.
3. Easements for storm drainage pipes shall be a minimum of 15 feet in width with wider easements as required for pipes placed at depths greater than 8 feet such that a 1:1 theoretical slope from the pipe centerline would still daylight within the easement. All storm drainage pipes shall be located at the centerline of easements unless otherwise approved by the Public Works Director or representative.
4. Storm pipes shall be located so that manholes are not in the wheel path unless otherwise approved by the Public Works Director or representative.

5. Drainage laterals shall be provided on the down slope side of all lots in developments where drainage to the street cannot be provided.
- I. Distance between drainage structures
 1. The maximum length of pipe between manholes, catch basins, or other drainage structures shall not exceed 500 feet for piping systems utilizing 24-inch diameter pipe and smaller.
 2. Large diameter trunk systems shall not exceed 600 feet between structures.
- J. Pipe shall be laid on a straight alignment at a uniform grade rate from structure to structure.
- K. Pipe Cover
 1. Pipe cover shall be measured from the finished ground elevation to the top of the outside surface of the pipe in areas located outside paved areas.
 2. In paved areas, the pipe cover shall be measured from the lowest point of the gutter section to the top outside surface of the pipe.
 3. Minimum pipe cover shall be 18-inches for reinforced pipe and 36-inches for plain concrete and plastic pipe materials unless otherwise specified.
 4. Engineered solutions and manufacturer supported submittals may be accepted for pipe or specific installations not able to meet these conditions.
- L. Perforated or “French drain” systems shall be engineered and submitted to the Public Works Director or representative for approval.

3.12.5 Catch Basin/Inlet Design

- A. Trash racks, debris barriers, and/or removable oil and grease traps and 18-inch sumps shall be installed on all inlets to the public storm system.
- B. All inlet and catch basin openings shall be designed to accept flow from a ten-year storm event. Grates shall, as far as practical, be designed to avoid failure due to accumulation of debris.
- C. All catch basins and area drains shall be designed with an 18-inch deep sump as specified by the Uniform Plumbing Code.
- D. A mainline storm pipe shall not pass through a sumped catch basin, unless approved as a manhole /inlet combination.
- E. Flows in streets during the two-year event shall not run deeper than four inches against a curb or extend more than two feet into the travel lane. Streets classed as collector and above and streets in commercial areas shall meet the above requirements for the ten-year event. Inlets in sag location shall be designed with no more than one-foot of depth during the 25-year event.

- F. A catch basin shall be provided just prior to curb returns on streets with a centerline gradient of three percent or more and a street gutter drainage run of 100 feet or more.
- G. Catch basins may connect to main storm lines with a tee connection when the main storm line is at least one size larger than the catch basin line. When the catch basin line is the same size as the main storm line, the connections shall be made at a manhole or other approved structure. The maximum length of pipeline between the catch basin and the mainline shall be 60-feet for 12-inch pipe. Oversize basins (one 30-inch inside dimension) shall be installed when a tee connection is used.
- H. A main storm line shall not pass through a field inlet or ditch inlet.
- I. Ditch inlets shall be located at the upper terminus of a main storm line or shall connect to a main storm line only at a manhole.

3.12.6 Channels and Ditches

- A. Vegetation lined channels are to be used whenever possible.
- B. Rock-lined channels shall be used where a vegetative lining cannot provide adequate protection from erosive velocities.
- C. Constructed open channels shall be sized to pass the required flows and have side slopes no steeper than 3:1. Any proposed constructed channel improvement that does not meet these requirements may be required to be piped, as determined by the Public Works Director or representative.
- D. Channels designed to handle the runoff from a development shall be constructed from the development to an existing public drainage conveyance system with an established outfall to a receiving water body.
- E. Channels shall not contain protruding pipes, culverts, or other structures that reduce or hinder the flow characteristics of the channel, except for structures which are required and designed to dissipate velocities. Channels shall be designed to prevent scouring and erosion.
- F. Channel protection shall be as in the following table:

Table 3.12.6A
Channel Protection for Channel Construction

Velocity Greater than	Velocity Less than or	Required Protection	Thickne ss	Min. Height Above Design
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(FPS)	equal to (FPS)		(ft)	Water Surface (ft)
0	5	Vegetative Lining	N/A	0.5
5	8	Rip Rap Class 50	1	1
8	12	Rip Rap Class 100	2	2
12	20	Gabion or Velocity Dissipaters	Varies	2

- G. Access roads or other suitable access ways for maintenance purposes shall be provided when channels do not abut public right-of-way. Access shall be provided along one side of channel, as necessary for vehicular maintenance access.
- H. Access roads shall have a maximum grade of 15 percent and a maximum cross slope of 3 percent.
- I. A 40-foot minimum outside turning radius shall be provided on the access road.
- L. Access roads shall be a minimum of 15 feet wide on curved sections and 12 feet wide on straight sections.
- M. Access roads less than 400 feet in length shall have a turn-around unless approved by the Public Works Director or representative.
- N. Access roads shall be designed and constructed to support a 20-ton vehicle under all weather conditions.
- O. The roads shall be constructed of gravel, crushed rock, or asphalt.
- P. Roadside ditches shall be constructed with a maximum depth of two feet as measured from the shoulder of the road.
- Q. Side slopes shall be 3:1 or less.
- R. Ditch velocities, when flowing full, shall not exceed the erosive velocity limits of the soil or the lining in the ditch.

3.12.7 Storm Drain Outfalls

- A. All outfalls shall conform to the requirements of all federal, state, and local regulations.
- B. Outfalls shall be above the mean low water level except as approved by the Public Works Director or designee. Installation of tide gates may be required when the outfall is in a tailwater condition.
- C. Erosion must be prevented at the outfall. All outfalls shall be provided with a rock splash or other approved erosion control protection measure. Mechanisms which reduce velocity prior to discharge from an outfall are encouraged and may be required. Examples are drop manholes, energy dissipaters, and rapid expansion into pipes of much larger size.

- D. Other forms of energy dissipation may include stilling basins, drop pools, hydraulic jump basins, baffled aprons, or bucket aprons, shall be provided for outfalls with velocities at design flow greater than 10 FPS.
- E. If required, tidegates, flapgates, or other outlet gates will be installed on specified outfalls. Gates will meet the requirements of the Oregon Department of Fish and Wildlife (ODFW), National Oceanic and Atmospheric Administration (NOAA), and other agencies as applicable. Permitting outfalls shall be the responsibility of the Applicant.

3.12.8 On-site Detention Design - General

- A. Mitigation of the impacts of new development on the downstream drainage system can be accomplished through on-site detention systems or by improving the capacity of the downstream conveyance system.
- B. On-site detention facilities shall be constructed when any of the following conditions exist:
 - 1. An identified downstream deficiency along with upstream detention, rather than downstream conveyance system enlargement, is determined to be the more effective solution.
 - 2. There is an identified regional detention site within the boundary of the development.
 - 3. The need for pre-treatment of stormwater discharge dictates that flows be detained for water quality processes.
 - 4. There is a need to mitigate flow impacts on receiving streams.
 - 5. There is a need for additional detention due to an increase in impermeable surface area.
- C. When required, on-site stormwater detention facilities shall be designed to capture run-off so the run-off rates from the site after development do not exceed the predevelopment conditions, based upon a 25-year, 24-hour return storm. Volume and duration of predevelopment conditions will be considered.
- D. When required, due to an identified downstream deficiency, on-site stormwater detention facilities shall be designed so that peak run-off rates will not exceed predevelopment rates for the specific range of storms that cause the downstream deficiency.
- E. Construction of on-site detention shall not be allowed as an option if such a detention facility would have an adverse effect upon receiving waters in the basin or sub-basin in the event of flooding, or would increase the likelihood or severity of flooding problems downstream of the site.
- F. Impervious Area Calculations
 - 1. For single family and duplex residential subdivisions, stormwater quantity detention facilities shall be used for all impervious areas created by the subdivisions, including all streets, residences on individual lots at a rate of 2,640 square feet of impervious surface

area per dwelling unit, and other impervious areas. Such facilities shall be constructed with the subdivisions public improvements.

2. For all development other than single family and duplex, the sizing of stormwater detention facilities shall be based on the impervious area to be created by the development, including structures and all streets and impervious areas. Impervious surfaces shall be determined based upon building permits, construction plans, aerial mapping, or other appropriate methods as deemed reliable by the Public Works Director or representative.

3.12.9 Detention Pond Design

- A. Detention ponds and other open impoundment facilities such as landscape areas, open playing fields, and parklands, shall comply with the requirements of ORS 537, in general, and more specifically, ORS 537.4.

- B. Facility Geometrics

1. Interior side slopes up to the maximum water surface shall be no steeper than 3H:1V. If interior slopes need to be mowed, the slope shall be 4H:1V
2. Exterior side slopes shall not be steeper than 2H:1V unless analyzed for stability by a geotechnical engineer.
3. Ponds walls and/or dikes may be retaining walls, provided that the design is prepared and stamped by a registered professional engineer and that a fence is provided along the top of the wall and that at least 25 percent of the pond perimeter will be a vegetated soil slope of not greater than 3H:1V.
4. Pond bottoms shall be level, and shall be located a minimum of 0.5 feet below the inlet and outlet to provide sediment storage.
5. Outlet control systems shall utilize gates, valves, weirs, or other control structures and systems to control the outflow from the pond so that the downstream systems are not overwhelmed. If desired, water must be capable of being held in the pond indefinitely.

- C. Overflow/Emergency Spillway

1. A pond overflow system shall provide controlled discharge of the design storm event for developed contributing area without overtopping any part of the pond embankment for exceeding the capacity of the emergency spillway.
2. The design shall provide controlled discharge directly into the downstream conveyance system.
3. An emergency overflow spillway (secondary overflow) shall be provided to safely pass the 100-year, 24-hour design storm event over the pond embankment in the event of control structure failure and for storm/runoff events exceeding design.
4. The spillway shall be located to direct overflows safely towards the downstream conveyance system.
5. The emergency overflow shall be stabilized with riprap or other approved means and shall extend to the toe of each face of the berm embankment.

D. Access/Maintenance

1. Pond access easements and roads shall be provided when the ponds do not abut public right-of-way. Access roads shall provide access to the control structure and along one or both sides of pond as necessary for vehicular maintenance and as determined by the Public Works Director or representative.
2. Access roads shall have a maximum grade of 15 percent and a maximum cross slope of 3 percent.
3. 40 foot minimum outside turning radius shall be provided on the access road.
4. Access roads shall be a minimum of 15 feet wide on curved sections and 12 feet wide on straight sections.
5. Access roads less than 400 feet in length shall have a turn around unless approved by the Public Works Director or representative.
6. Access roads shall be designed and constructed to support a 20-ton vehicle under all weather conditions.
7. The roads shall be constructed of gravel, crushed rock, or asphalt.

E. Slope Stabilization (Detention ponds)

1. Pond berm embankment higher than six-feet shall be designed by a geotechnical engineer.
2. The berm embankment shall have a minimum 15-foot top width, where necessary, for maintenance access; otherwise, top width may vary as recommended by the design engineer, but in no case shall top width be less than four feet.
3. The toe of the exterior slope of the pond berm shall be no closer than five feet from the tract or easement property line.
4. The pond berm embankment shall be constructed on native consolidated (or adequately compacted and stable fill soils analyzed by a geotechnical engineer) free of loose surface soil materials, roots and other organic debris.
5. The pond berm embankments shall be constructed by excavating a 'key' equal to 50 percent of the berm embankment cross-sectional height and width or as designed by a geotechnical engineer.
6. The berm embankment shall be constructed on compacted soil (95 percent minimum dry density per AASHTO T99, placed in 6-inch lifts, with the following characteristics:
 - a. A minimum of 30% clay
 - b. A maximum of 60% sand
 - c. A maximum of 60% silt
 - d. With nominal gravel content
 - e. Or as designed by a geotechnical engineer.
7. Anti-seepage collars shall be placed on pipes in berm embankments that impound water greater than four feet in depth at the design water surface.
8. Exposed earth on the pond bottom and side slopes shall be seeded with seed mixture approved by the Public Works Director or designee.

3.12.10 Miscellaneous

- A. Other facilities may be utilized for emergency or alternative detention structures when approved by the Public Works Director or designee. Examples include:
 - 1. Parking lots
 - 2. Roof structures
 - 3. Underground piping, vaults, or tanks
 - 4. Infiltration facilities
 - 5. Injection wells
 - 6. Parks, fields, or other recreational areas
 - 7. etc.
- B. Storm water pump stations shall only be provided when gravity service cannot be practically provided. Prior approval from the City is required.
- C. Any alternative detention facility must meet all the local, state, and federal design requirements and be approved by the Public Works Director or designee.

Section 4 – Construction Provisions

- 4.1 All work within the public right-of-way shall be conducted by a licensed and bonded contractor. This requirement shall be stated on the construction drawings.
- 4.2 City shall be notified at least 3 working days in advance prior to commencing construction work.
- 4.3 Traffic control shall be signed, flagged and conducted in a manner conforming to ODOT standards (Manual of Uniform Traffic Control Devices, MUTCD) and approved by the City, where appropriate. If road closures or detours are anticipated, prior approval from the City and ODOT officials must be obtained, as appropriate.
- 4.4 Safety Requirements. The contractor is responsible for observing the safety of the work and all persons and property coming into contact with the work. The contractor shall conduct his work in a manner complying with the requirements prescribed by Occupational Safety and Health Administration (OSHA).
- 4.5 Progress. Construction shall proceed in a systematic manner to minimize public inconvenience and disruption of services. All excavations, embankments, stockpiles, waste areas, etc. shall be kept protected. All roads, ditches, etc. shall be kept free from debris and shall be continually cleaned during the work. Dust control measures shall be employed as required and directed by the City.
- 4.6 Protection of Existing Improvements. Contractor shall contact the Utility Notification Center (811) at least 48 hours in advance of digging operations to get approximate locations for buried utilities. Exact locations of buried facilities may not be known or shown and contractor is responsible to pot-hole carefully in advance of the work to avoid such facilities. Contractor shall coordinate with all utilities and notify them immediately in the event of any damage. Contractor shall protect, repair, and replace any damaged utilities as directed by the persons responsible for such utility. All landscape, grass, shrubs, signs, pavements, mail boxes, driveways, culverts, gravel surfacing, fencing, etc.

- shall be protected from damage and returned to conditions as good, or better than existed prior to construction. All costs for protection, repair, and replacement of all existing items shall be borne entirely by the contractor. Contractor shall obtain a release from any property owners for any claims of injury or property damage prior to final acceptance of the work by the City.
- 4.7 All existing survey monuments and control shall be protected, including individual property corner monuments. Any such monuments destroyed or altered during construction shall be restored by the contractor or developer in accordance with Oregon Revised Statutes as applicable.
- 4.8 Any temporary disruption to water or sewer service must be coordinated with, and approved by the City and kept to the minimum length of time necessary. City shall be notified at least 2 working days in advance of when an approved shut-down is desired. Contractor shall not operate any valves or hydrants without the City's approval.
- 4.9 Trench foundation grades shall be constructed to within 0.1 feet of the grade shown in the plans. Surface tolerances shall be within 0.02 feet of plan elevation at any one point.
- 4.10 For pipelines, vertical deviation from true grade shall not exceed 0.02 feet (0.24 inch). Horizontal tolerance for deviation from line shall be 0.03125 feet (3/8 inch). Depressions or bellies which create the potential for solids deposition are not allowed.
- 4.11 Compaction testing equipment (nuclear gauge) shall be furnished and operated by the contractor or an independent testing firm shall be retained by the contractor or developer to perform compaction testing. Testing shall conform to the ODOT Manual of Field Testing Procedures (MFTP). Compaction testing shall be conducted in the presence of the City's inspector, representative or developers engineer. Sufficient tests will be taken to ensure that the materials and compaction efforts being used are adequate to obtain the required density. Several tests shall be taken on each lift placed during the first day of backfill operations. Additional tests will be taken periodically during the work. At minimum, 2 compaction tests shall be taken for each trenchline (manhole to manhole). Alternate materials or methods will be required if adequate compaction is not being obtained. In no case shall pipe laying continue if inadequate compaction results until a resolution is provided.
- 4.12 Construction staking will be provided by the Developer's Engineer for establishing the location of the system. Offset stakes shall be placed at no more than 100 foot intervals along the mainline and at each manhole. Each lateral location shall be staked.
- 4.13 Open trench length at any time shall not exceed 100 feet unless otherwise approved. Related resurfacing shall be completed within 800 feet of the open trench limit.

Section 5 – Storm Sewer and Drainage System Materials

- 5.1 All materials shall be newly manufactured. No rebuilt, reconditioned or used material will be allowed.
- 5.2 Oregon Standard Specifications (OSS) – Means the 2002 Oregon Standard Specifications for Construction produced by ODOT and APWA, including latest revisions.

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- 5.3 Concrete shall conform to OSS Section 00440, Commercial Grade Concrete. Compressive field strength shall not be less than 3,000 psi at 28 days. Maximum aggregate size shall be 1½-inches. Slump shall be between 2 and 4 inches.
- 5.4 Non-Shrink Grout. Grout shall be Sika 212, Euco N-S, Five Star, or approved equal nonmetallic cementitious commercial grout exhibiting zero shrinkage per ASTM C827. Grout shall not be amended with cement or sand and shall not be reconditioned with water after initial mixing. Nonshrink grout shall be placed and packed only with the use of an approved commercial bonding agent. Unused grout shall be discarded after 20 minutes.
- 5.5 Manholes
- 5.5.1 Manholes shall conform to ASTM C478-03 with yard permeability tests passing ASTM C497-03 prior to delivery. Manhole steps shall be plastic with ½” grade 60 steel reinforcing bar encapsulated with injection molded copolymer polypropylene with serrated surfaces. Preformed gaskets shall be Ram-Nek, Kent-Seal No. 2, or approved equal.
- 5.5.2 Manhole Frames and Covers. Casting shall be tough, close-grained gray iron, smooth and clean, free from blisters, blowholes and all defects and conforming to ASTM A48, Class 30. All bearing surfaces shall be planed, ground or machined to ensure flat, true surfaces. Watertight frames and covers shall be installed at all locations subject to flooding or ponding. Tamperproof frames and covers required in off-street areas and easements. Cap screws for bolt-down covers shall be stainless steel with 60,000 psi minimum tensile strength conforming to ASTM A453.
- 5.6 Trench Backfill Materials
- 5.6.1 Foundation Stabilization: 3”-0 to 6”-0 aggregate base rock meeting OSS Sections 00641 and 02630. Required when native trench foundation material contains groundwater, or is unsuitable to provide a firm foundation in the opinion of the Public Works Director or representative.
- 5.6.2 Pipe Bedding and Zone: ¾”-0 dense-graded aggregate, uniformly graded from coarse to fine and meeting OSS Section 02630.10. Clean sand may be substituted for pipe zone.
- 5.6.3 Class A Backfill: Native or common excavated material, free from organic or other deleterious material, free from rock larger than 3-inches, and which meets the characteristics required for the specific surface loading or other criteria of the backfill zone in the opinion of the Public Works Director or representative. If stockpiled material becomes saturated or unsuitable, Class B, C or D Backfill shall be substituted.
- 5.6.4 Class B Backfill: ¾”-0 dense graded aggregate, uniformly graded from coarse to fine and meeting OSS Section 02630.10.
- 5.6.5 Class C Backfill: Clean sand with no particles larger than ¼-inch.

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- 5.6.6 Class D Backfill: Pit run or bar run material, well graded from coarse to fine, with maximum aggregate size of 3 inches.
 - 5.6.7 Class E Backfill (CLSM): Controlled Low-Strength Material (cement slurry) conforming to OSS Section 00442.
 - 5.6.8 Compaction: Material (except Class E Backfill) shall be compacted in multiple lifts (6-inch maximum lift) to obtain 95% of the maximum dry density as determined by AASHTO T-99.
 - 5.6.9 All Backfill within public right-of-ways or within 5 feet of a traveled surface shall be Class B Backfill, except where Class E Backfill is required under pavements as required by the City or State.
- 5.7 Storm Drain Pipe Materials – Design engineer to determine the most appropriate material for the project. Approval of the Public Works Director or representative is required for pipe material choices.
- 5.7.1 PVC gravity pipe, 4- through 15-inch nominal diameter shall be rubber gasketed, SDR35 minimum, conforming to all requirements of ASTM D3034 in accordance with ASTM D1784. Pipe shall integral wall-thickened bells with bonded-in elastomeric gaskets meeting ASTM F477.
 - 5.7.2 PVC gravity pipe, 18- through 27-inch nominal diameter shall be rubber gasketed, SDR35 minimum, conforming to all requirements of ASTM F679 in accordance with ASTM D1784. Pipe shall integral wall-thickened bells with bonded-in elastomeric gaskets meeting ASTM F477.
 - 5.7.3 HDPE gravity pipe shall meet the requirements of AASHTO M-294. Pipe end connections shall be water-tight with rubber or neoprene bell and spigot ends. HDPE shall be corrugated outer walls with smooth and flat inner walls.
 - 5.7.4 Aluminum CMP culverts shall be aluminum spiral ribbed, with 2-2/3" x 1/2" corrugations and conforming to AASHTO M-196. Gauge of pipe shall be per manufacturer recommendations and approved by Public Works Director or designee.
 - 5.7.5 Reinforced Concrete Pipe shall conform to ASTM C-76 Class IV. Joints shall be bell and spigot with rubber gaskets.
- 5.8 Fittings
- 5.8.1 PVC fittings for gravity pipe shall be rubber gasketed sewer fittings meeting ASTM D3034, SDR 35, ASTM F477, and ASTM D3212.
 - 5.8.2 Other fittings shall include tees, bends, and plugs and shall be of the same material as the mainline pipe.
 - 5.8.3 Manhole Connections
 - 5.8.3.1 Connections to precast manhole sections shall be accurately core-drilled and shall utilize a properly sized flexible rubber boot providing a

watertight seal. Adapter shall be factory tested for watertightness up to 10.8 psi. Kor-N-Seal as manufactured by NPC, Inc. or approved equal.

5.8.3.2 Connections to cast-in-place concrete shall be made with a rubber water-stop grout ring. Ring shall clamp to pipe with stainless steel clamp and have water-stop ribs. Water-stop Grouting Ring by Press-Seal Gasket Corp., or approved equal.

5.8.4 Connections for aluminum CMP piping shall be made with 12-inch wide dimple bands of the same material and gauge as the run of pipe. Use minimum of 20' long CMP sections, except for end run.

5.9 Catch Basins

5.9.1 Precast basins and inlets shall be of Portland cement concrete conforming to AASHTO M199M/M (ASTM C478).

5.9.2 Cast-in-place concrete basins and inlets will be allowed. CIP basins will meet the requirements of commercial grade concrete as specified in Section 00440 of the 2002 Oregon Standard Specifications including latest versions of. CIP units shall be equivalent or superior to the specified precast units.

5.9.3 Frames, grates, and covers shall meet the requirements of AASHTO M227, Class 65. Casting shall be tough, close-grained gray iron, smooth and clean, free from blisters, blowholes and all defects. All bearing surfaces shall be planed, ground or machined to ensure flat, true surfaces.

Section 6 – Storm Sewer and Drainage System Installation (Workmanship)

6.1 Prepare trench in accordance with the standard detail in a safe manner. Place and compact foundation stabilization materials as required. Notify City to allow for inspection of the trench bottom.

6.2 Place and compact pipe bedding material before placing pipe in the trench. Dig depression for pipe bells to provide uniform bearing along the entire pipe length. Thoroughly compact bedding material to prevent future bellies.

6.3 Prior to lowering pipe into the trench, the Engineer or City representative will check for damage to the pipe. The Contractor shall repair or replace, as directed, all damaged or flawed pipe prior to installation.

6.4 Place materials in the pipe zone in layers not greater than 6 inches thick and in a manner that equalizes the pressure on the pipe and minimizes stress. As required under the haunches of pipe and areas not accessible to mechanical tampers or to testing, compact with hand methods to ensure thorough contact between the material and the pipe. Before placing the pipe zone material, condition, aerate, or wet the material so that the moisture content of each layer is within minus 4% to plus 2% of optimum moisture content.

6.5 Provide proper Backfill Class material as required. Backfill the trench above the pipe zone in successive lifts. Do not allow the backfill to free-fall into the trench until at least

-
- 3 feet of cover is provided over the top of the pipe. Modify the compaction as necessary to protect the pipe. Compact each lift to not less than 95% of the maximum density.
- 6.6 If the specified compaction is not obtained, contractor shall remove material, modify compaction procedures, and/or reduce the thickness of lifts as required. Do not proceed with additional excavation or pipe laying until the backfill can be compacted to the satisfaction of the City.
- 6.7 When CLSM Backfill is required, backfill above pipe zone with CLSM material. If the CLSM is to be used as a temporary surfacing, backfill to top of the trench and strike off to provide a smooth surface. If CLSM is not to be used as a temporary surface, backfill to bottom of the proposed resurfacing. Use steel plates to protect the CLSM from traffic a minimum of 24 hours.

STORM DRAINAGE

STANDARD DETAIL DRAWINGS INDEX

- D-050: STANDARD UTILITY LOCATIONS
- D-100: TYPICAL STORM DRAIN TRENCH DETAIL
- D-105: STREET CUT STANDARD DETAIL
- D-150: PIPE ANCHOR / TRENCH CUT-OFF WALL DETAIL
- D-200: STANDARD MANHOLE
- D-201: POLLUTION CONTROL MANHOLE
- D-205: FLAT-TOP MANHOLE
- D-210: MANHOLE BASE STANDARD DETAILS
- D-220: STANDARD INSIDE DROP MANHOLE W/ DEFLECTION PLATE
- D-250: MANHOLE COVER AND FRAME DETAILS
- D-260: MANHOLE FRAME GRADE ADJUSTMENT
- D-300: STANDARD INLETS, FRAMES & GRATES
- D-301: TRAPPED/POLLUTION CONTROL CATCH BASIN
- D-302: DITCH INLET
- D-303: AREA DRAIN INLET
- D-304: HEADWALL WITH TIDEGATE



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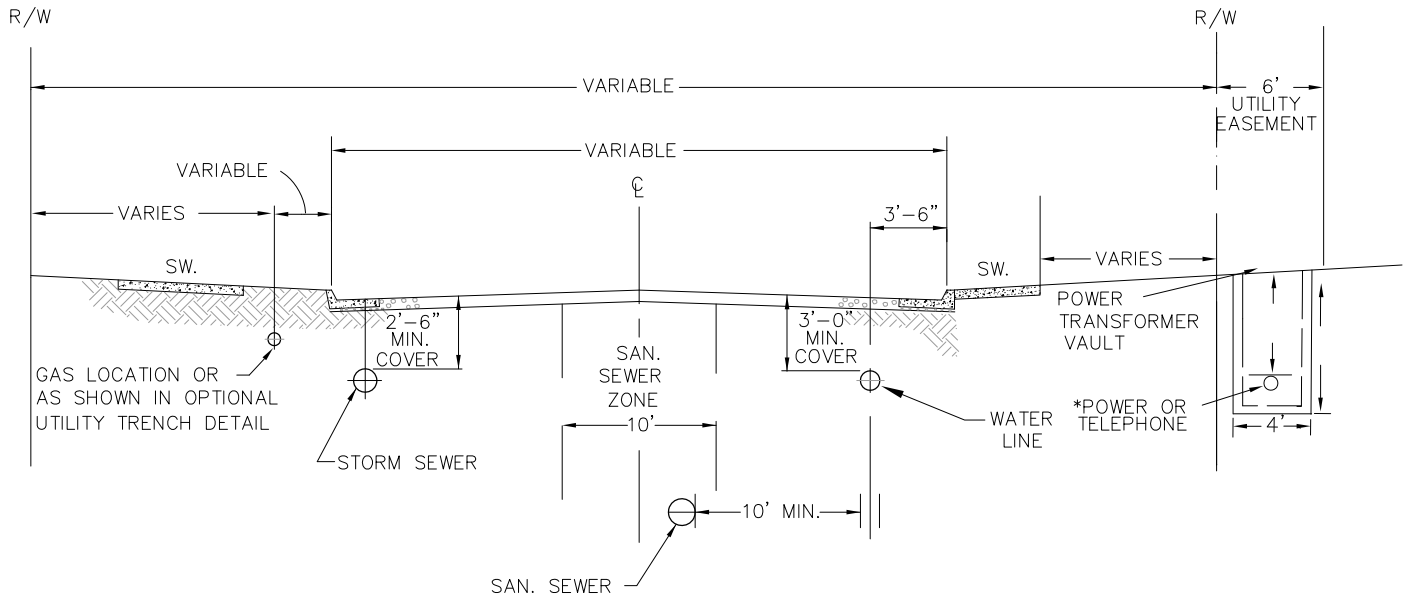
STANDARD DETAIL DRAWING INDEX

DETAIL NO.

D-010

04/29/2009

SEE DWG. T-050 FOR STANDARD STREET WIDTHS AND SECTIONS



NOTES:

1. WATER LOCATED 3'-6" INSIDE FROM FACE OF CURB OR AS OTHERWISE DIRECTED.
2. 10' HORIZONTAL SEPARATION BETWEEN WATER AND SEWER WHERE POSSIBLE. COMPLY WITH SEPARATION REQUIREMENTS OF OAR 333-061-050.
3. WATER DISTRIBUTION MAINS SHALL HAVE 36" MINIMUM COVER OR AS OTHERWISE DIRECTED.
4. SEWER MAINS SHALL HAVE 5.25' (63") MINIMUM COVER UNLESS OTHERWISE APPROVED TO AVOID CONFLICTS WITH WATER AND OTHER UTILITIES.
5. WATER MAINS SHALL BE LOCATED ON NORTH OR EAST SIDE OF STREET WHEN PRACTICAL.
6. WATER, SEWER, STREETS AND DRAINAGE SYSTEMS SHALL BE SUBJECT TO CITY STANDARDS.
7. MANHOLE LIDS SHALL NOT BE LOCATED DIRECTLY IN NORMAL WHEEL PATH.
8. ALL LAYOUTS AND LOCATIONS ARE SUBJECT TO CITY APPROVAL.



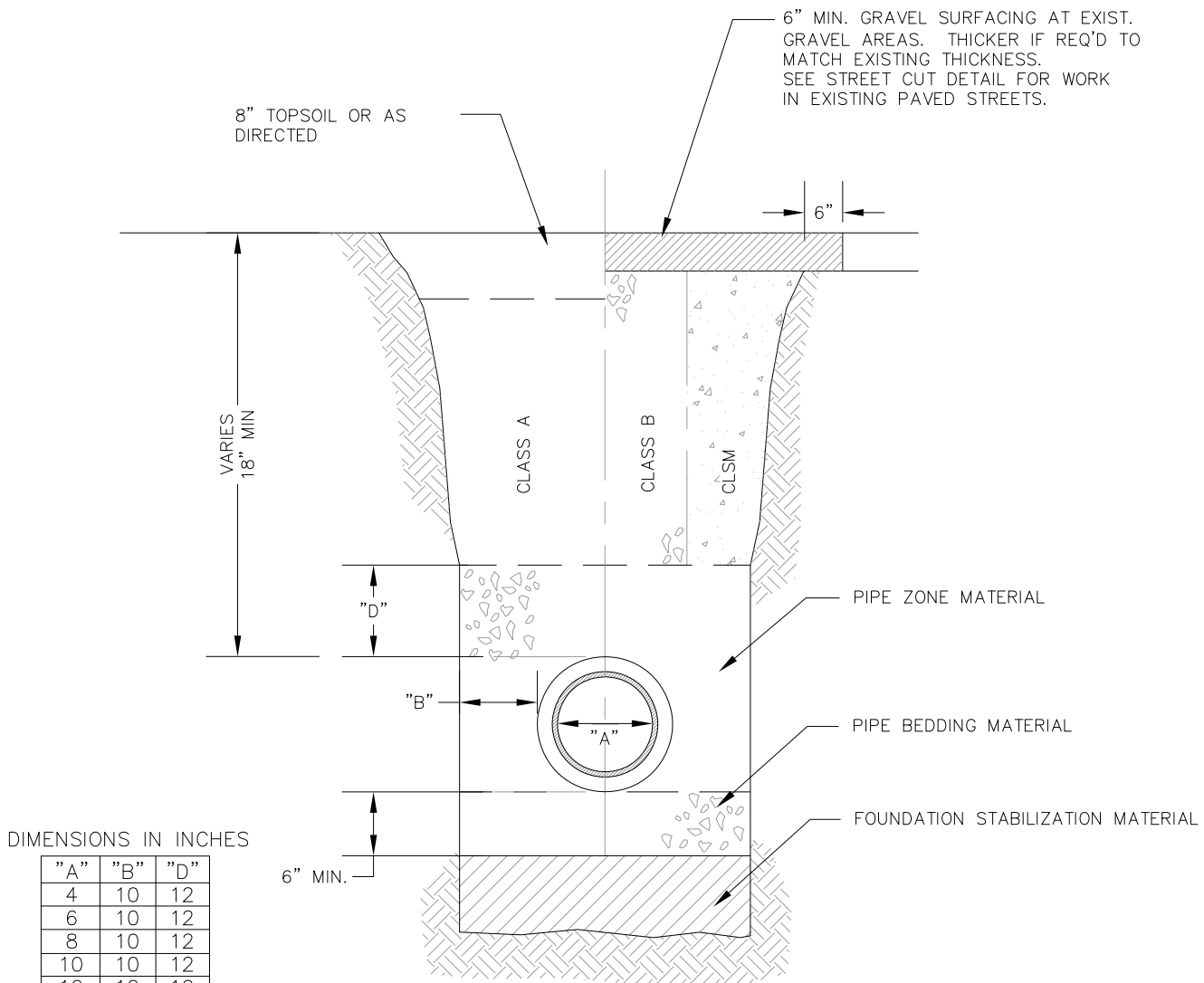
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STANDARD UTILITY LOCATIONS

DETAIL NO.

D-050

04/29/2009



DIMENSIONS IN INCHES

"A"	"B"	"D"
4	10	12
6	10	12
8	10	12
10	10	12
12	12	12
15	12	12
18	16	12
21	16	12
24	18	12
30	18	12
36	24	14

NOTES:

1. TRENCH EXCAVATION SHALL BE CONDUCTED IN A SAFE MANNER WITH ALL NECESSARY BRACING AND SHORING PROVIDED FOR COMPLIANCE WITH OSHA.
2. FOUNDATION STABILIZATION SHALL BE PROVIDED WHEN MATERIAL AT BOTTOM OF TRENCH IS UNSUITABLE IN THE OPINION OF THE CITY TO PROVIDE A STABLE TRENCH BASE.
3. CONSTRUCTION IN PUBLIC RIGHT-OF-WAY SHALL COMPLY WITH CITY STANDARDS.
4. CLASS B BACKFILL REQUIRED IN ALL ROADWAYS AND TRAFFIC PATHS EXCEPT WHERE CLSM BACKFILL IS REQUIRED BY COUNTY, ODOT, COUNTY OR CITY.
5. MATERIALS SHALL BE IN ACCORDANCE WITH THE CITY STORM DRAINAGE DESIGN STANDARDS MANUAL.
6. ALL FILL SHALL BE COMPACTED AS SPECIFIED.



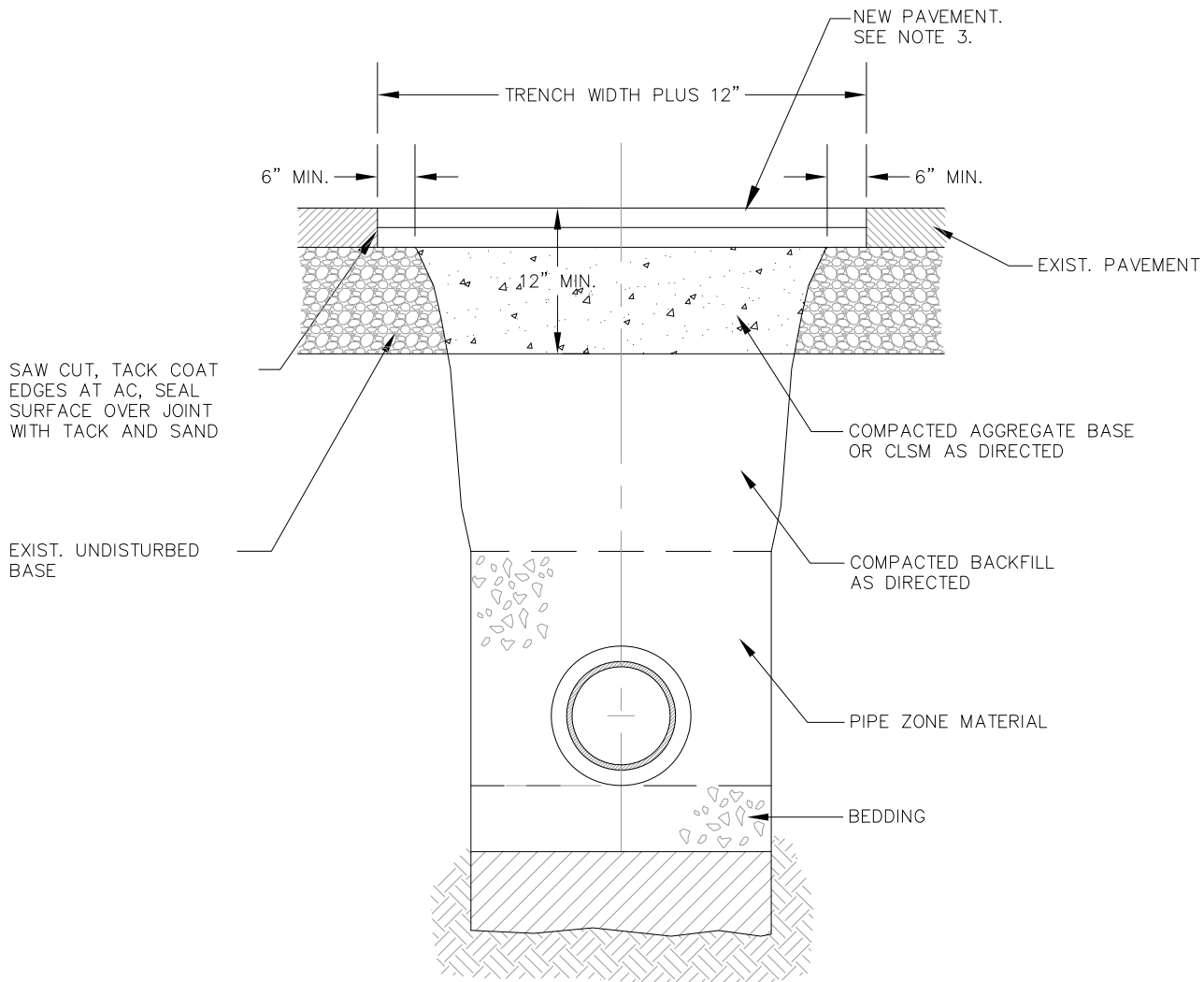
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TYPICAL TRENCH DETAIL STORM DRAINAGE SYSTEM

DETAIL NO.

D-100

04/29/2009



NOTES:

1. ALL EXISTING AC OR PCC PAVEMENT SHALL BE SAWCUT IMMEDIATELY PRIOR TO REPAVING.
2. CONCRETE PAVEMENT SHALL BE REPLACED WITH CONCRETE TO A MINIMUM THICKNESS OF 6 INCHES OR TO THE THICKNESS OF REMOVED PAVEMENT, WHICHEVER IS GREATER.
3. PLACE AC MIX TO A MINIMUM THICKNESS OF 4 INCHES OR THE THICKNESS OF REMOVED PAVEMENT, WHICHEVER IS GREATER. COMPACT AS DIRECTED. AC PAVEMENT SHALL BE PLACED IN AT LEAST TWO 2" LIFTS.
4. COMPLY WITH THE REQUIREMENTS OF THE AGENCY HAVING JURISDICTION OVER THE ROAD IN WHICH THE STREET CUT OCCURS.



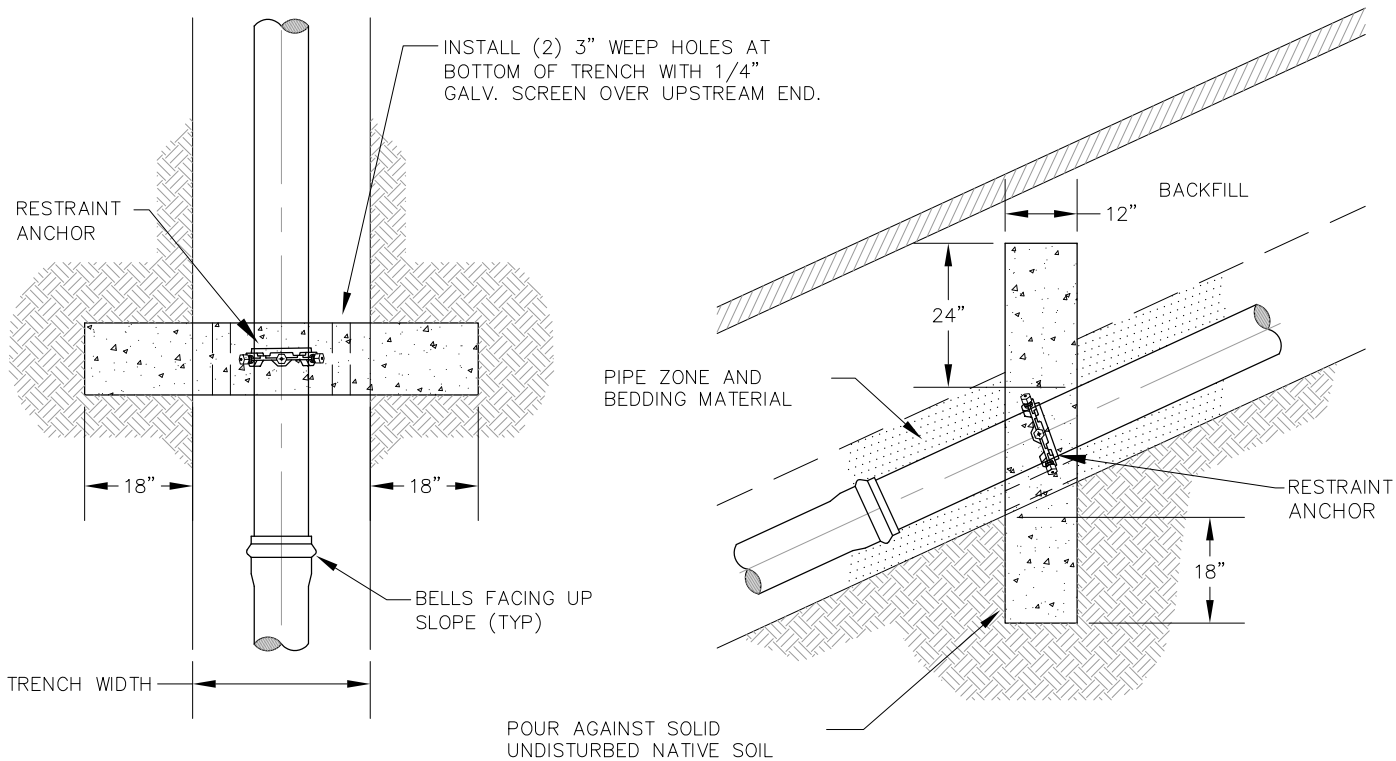
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STREET CUT STANDARD DETAIL

DETAIL NO.

D-105

04/29/2009



NOTES:

1. CUT-OFF WALLS REQ'D AT ALL PIPELINES WHERE SLOPE EXCEEDS 20%.
2. RESTRAINED JOINT PIPE REQUIRED AT SLOPES BETWEEN 15% AND 20%.
3. WALLS SHALL BE FORMED WITHIN TRENCH. REMOVE FORMS PRIOR TO BACKFILLING.
4. CONCRETE SHALL HAVE 3000 PSI COMPRESSIVE STRENGTH MIN. (CLASS 3000).
5. SPACING OF WALLS SHALL BE:

SLOPE	SPACING
20-34%	35 FEET
35-50%	25 FEET
51-+ %	15 FEET



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PIPE ANCHOR / TRENCH CUT-OFF WALL DETAIL

DETAIL NO.

D-150

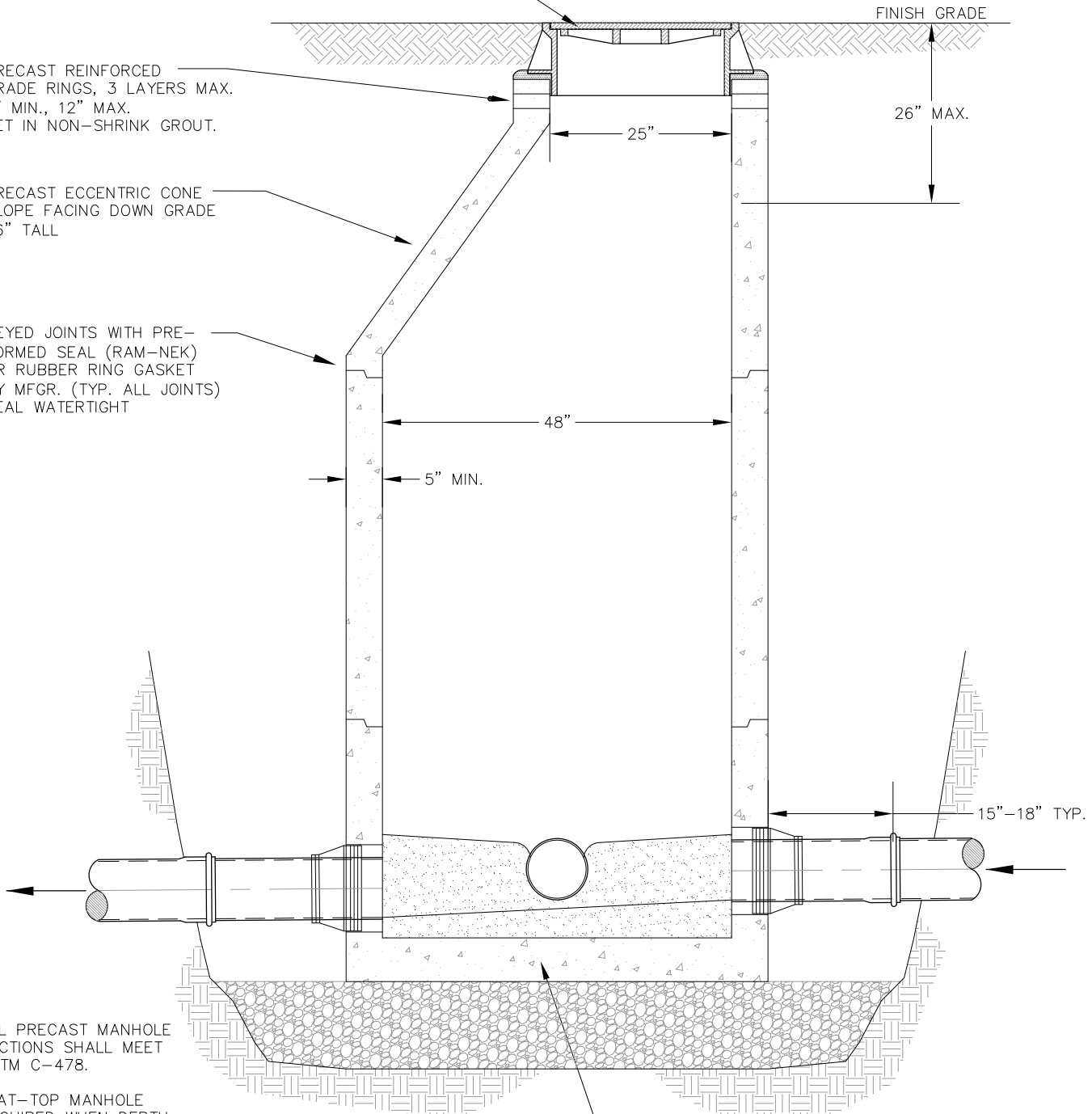
04/29/2009

CAST IRON (H-20 RATED)
MANHOLE COVER AND FRAME SET
FRAME IN NON-SHRINK GROUT,
SEE STANDARD DETAIL D-250

PRECAST REINFORCED
GRADE RINGS, 3 LAYERS MAX.
2" MIN., 12" MAX.
SET IN NON-SHRINK GROUT.

PRECAST ECCENTRIC CONE
SLOPE FACING DOWN GRADE
36" TALL

KEYED JOINTS WITH PRE-
FORMED SEAL (RAM-NEK)
OR RUBBER RING GASKET
BY MFR. (TYP. ALL JOINTS)
SEAL WATERTIGHT



ALL PRECAST MANHOLE
SECTIONS SHALL MEET
ASTM C-478.

FLAT-TOP MANHOLE
REQUIRED WHEN DEPTH
FROM FINISH GRADE TO
INVERT IS LESS THAN
6 FEET.

INTERIOR DROPS EXCEEDING 24"
REQUIRE DROP MANHOLE.

SEE MANHOLE BASE
STANDARD DETAIL D-210

LARGER INLET PIPES
THAN 24" WILL REQUIRE
A SPECIAL DESIGN AND
APPROVAL FROM CITY
ENGINEER



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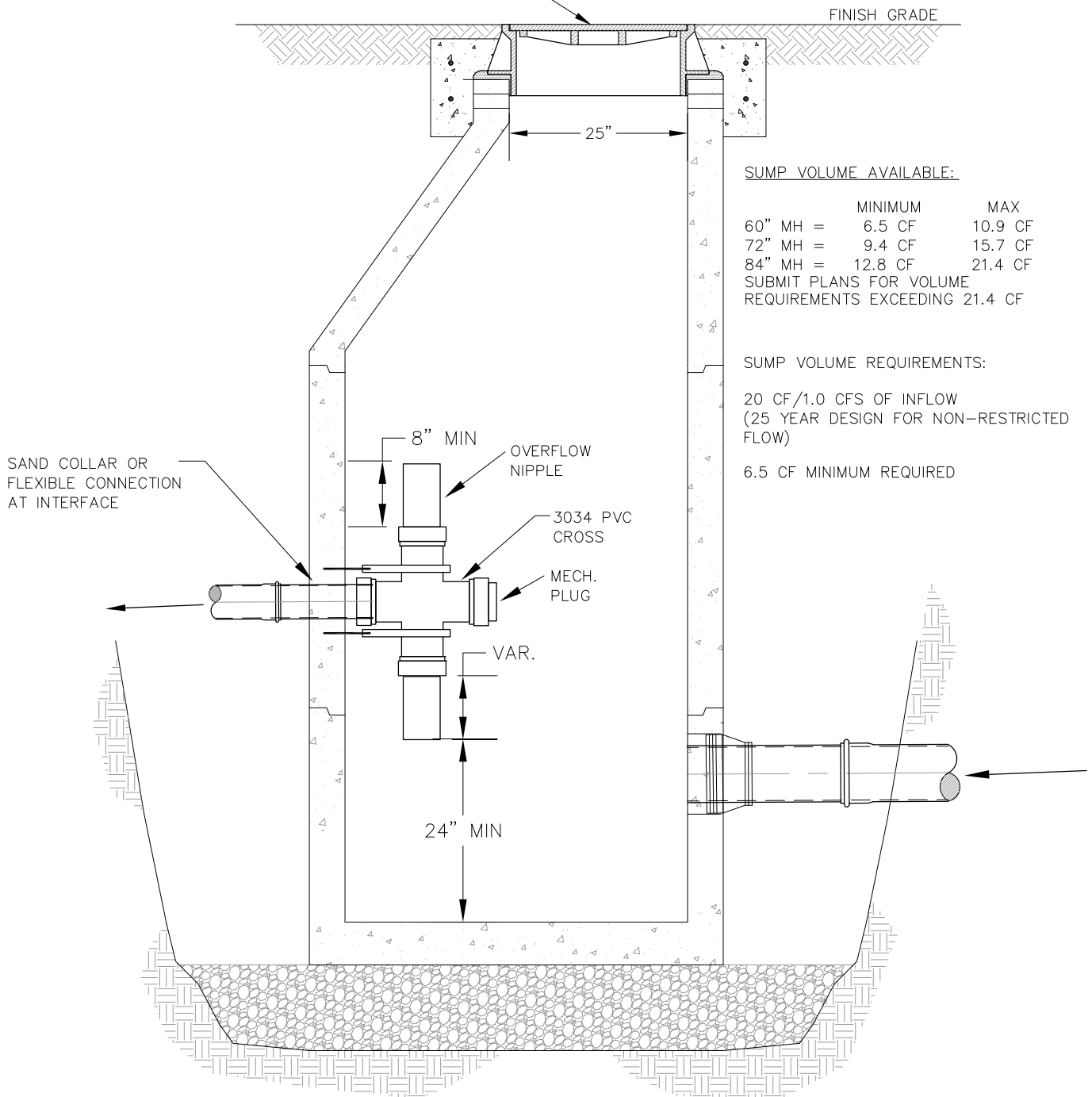
STANDARD MANHOLE PIPES LESS THAN 24" DIAM.

DETAIL NO.

D-200

04/29/2009

CAST IRON (H-20 RATED)
MANHOLE COVER AND FRAME, SEE
STANDARD DETAIL D-250



SUMP VOLUME AVAILABLE:

	MINIMUM	MAX
60" MH =	6.5 CF	10.9 CF
72" MH =	9.4 CF	15.7 CF
84" MH =	12.8 CF	21.4 CF

SUBMIT PLANS FOR VOLUME REQUIREMENTS EXCEEDING 21.4 CF

SUMP VOLUME REQUIREMENTS:

20 CF/1.0 CFS OF INFLOW
(25 YEAR DESIGN FOR NON-RESTRICTED FLOW)

6.5 CF MINIMUM REQUIRED

FOR STANDARD MANHOLE DETAILS,
SEE D-200

FOR FLAT TOP MANHOLE DETAILS,
SEE D-205

INSIDE DROP AND WATER QUALITY MANHOLES SHALL BE AT
LEAST 60"Ø WITH 42" OF CLEAR SPACE



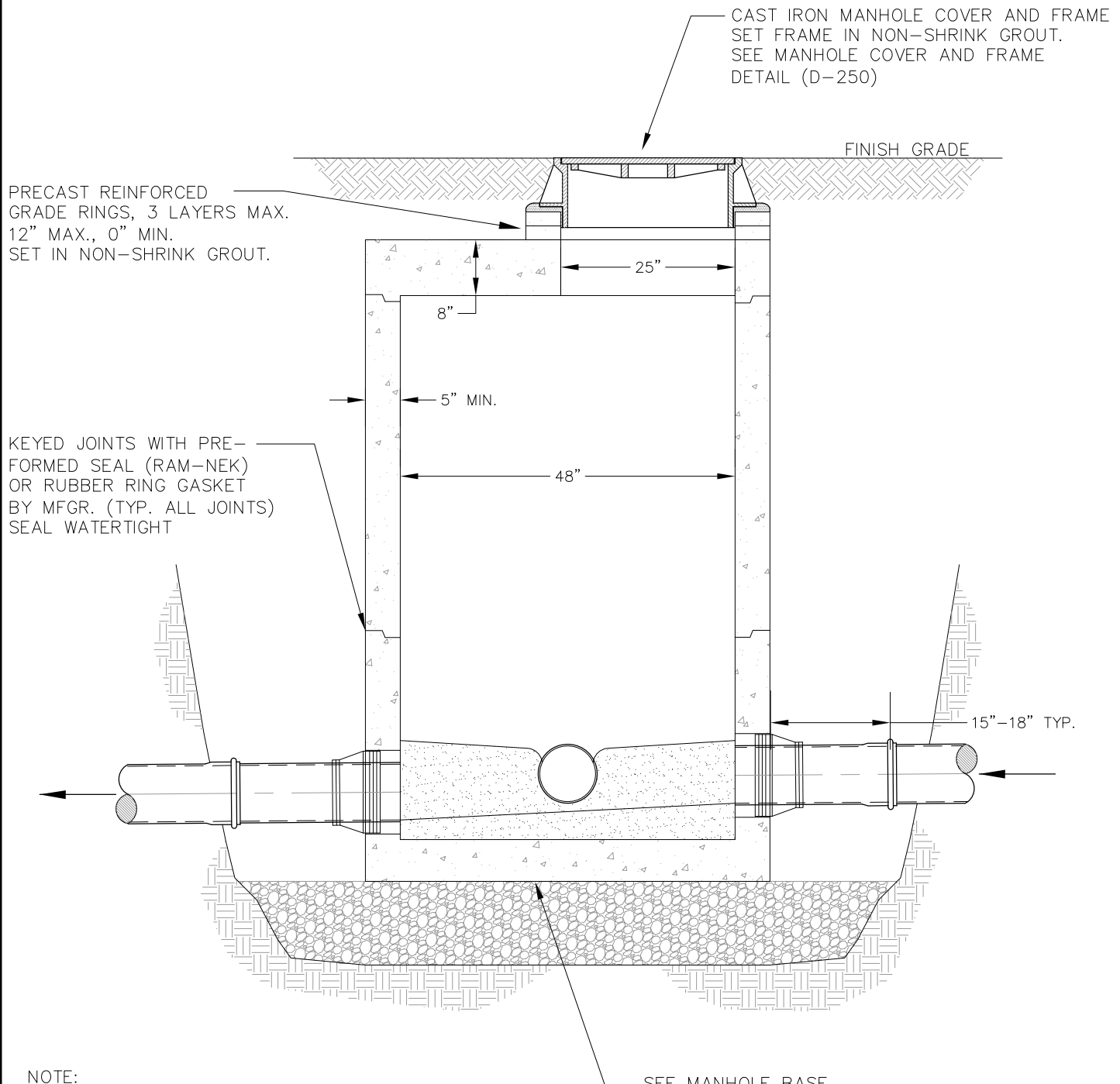
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STORM DRAIN POLLUTION CONTROL MANHOLE

DETAIL NO.

D-201

04/29/2009



NOTE:

- 1) ALL PRECAST MANHOLE SECTIONS SHALL MEET ASTM C-478.
- 2) STANDARD MANHOLE REQUIRED WHEN DEPTH FROM FINISH GRADE TO INVERT IS 6 FEET OR MORE.

SEE MANHOLE BASE
STANDARD DETAIL D-210



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FLAT-TOP MANHOLE PIPES LESS THAN 24" DIAM.

DETAIL NO.

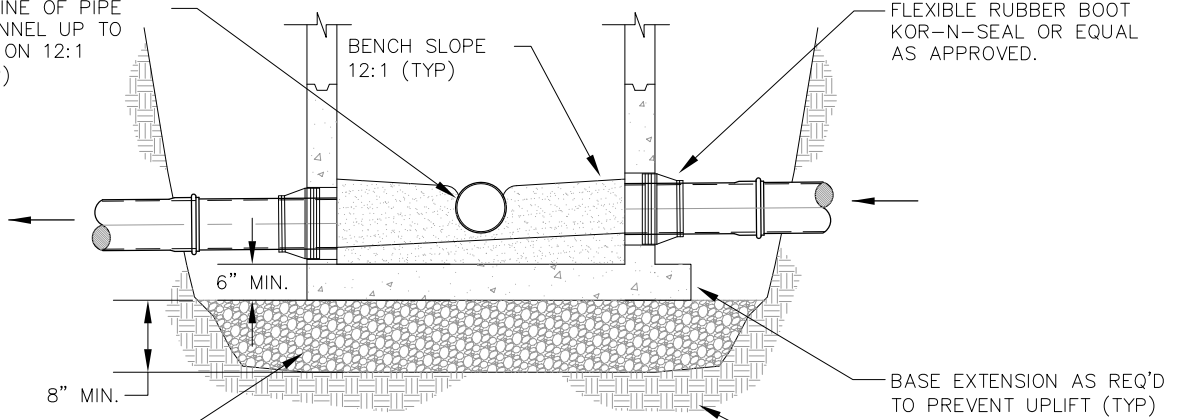
D-205

04/29/2009

AT SPRING LINE OF PIPE
EXTEND CHANNEL UP TO
CROWN LINE ON 12:1
BATTER (TYP)

BENCH SLOPE
12:1 (TYP)

FLEXIBLE RUBBER BOOT
KOR-N-SEAL OR EQUAL
AS APPROVED.



3/4\"-0 CRUSHED
ROCK BASE (TYP)

PRECAST BASE

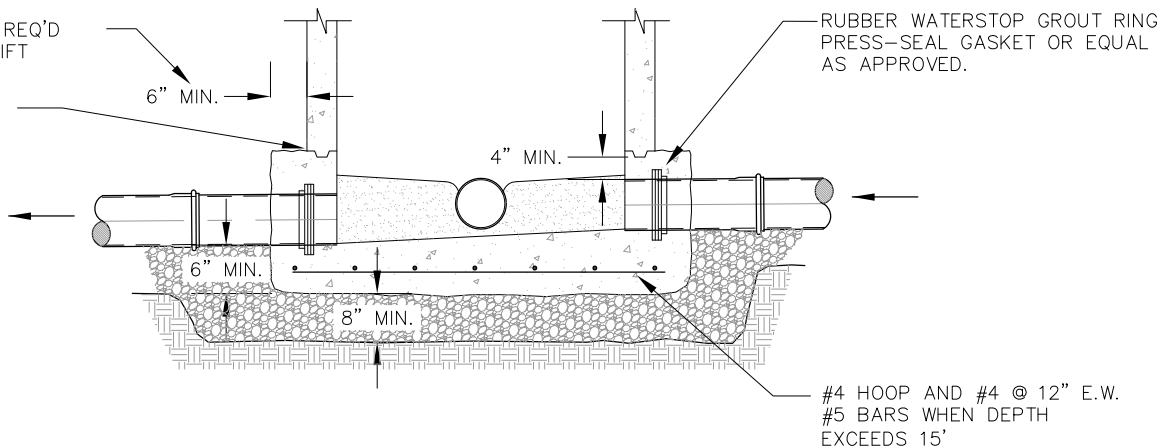
PRECAST BASE HEIGHT
SUFFICIENT TO AVOID
JOINT AT PIPE PENETRATIONS

BASE EXTENSION AS REQ'D
TO PREVENT UPLIFT (TYP)

UNDISTURBED EARTH OR
COMPACT SELECT MATERIAL
AS REQ'D (95%) (TYP)

OR GREATER AS REQ'D
TO PREVENT UPLIFT

RAM-NEK SEAL



CAST-IN-PLACE BASE

CONTOUR TO PROVIDE
SMOOTH CHANNELS
SHAPE TO AVOID SOLIDS
DEPOSITION AND DIRECT
HEAD-ON FLOWS

M.H. STEPS

PIPE JOINT
FLEXIBLE COUPLING
WHERE CONNECTING
TO EXIST. PIPE

15\" TO 18\"

45°

90° OR GREATER BETWEEN
INCOMING AND OUTGOING PIPES

90°

CHANNEL TO MATCH
BOTTOM HALF OF
PIPE

PRECAST OR CAST-IN-PLACE
BASE AT CONTRACTOR'S
OPTION OR AS DIRECTED.

ALL FIELD PLACED CONCRETE
SHALL BE TYPE II PCC WITH
3000 PSI MIN. STRENGTH

MIN. 0.2 FT. INVERT DROP
ACROSS INLET AND OUTLET
PIPES.



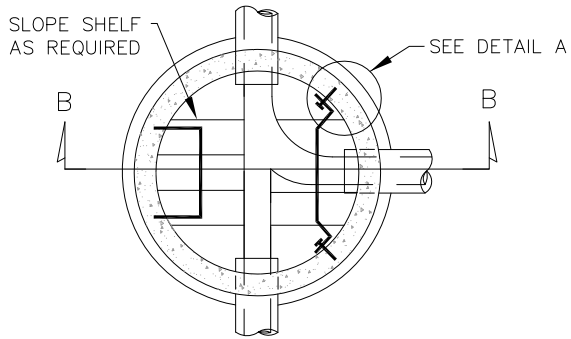
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MANHOLE BASE STANDARD DETAILS

DETAIL NO.

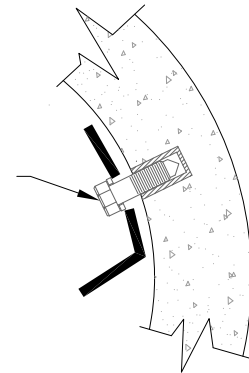
D-210

04/29/2009

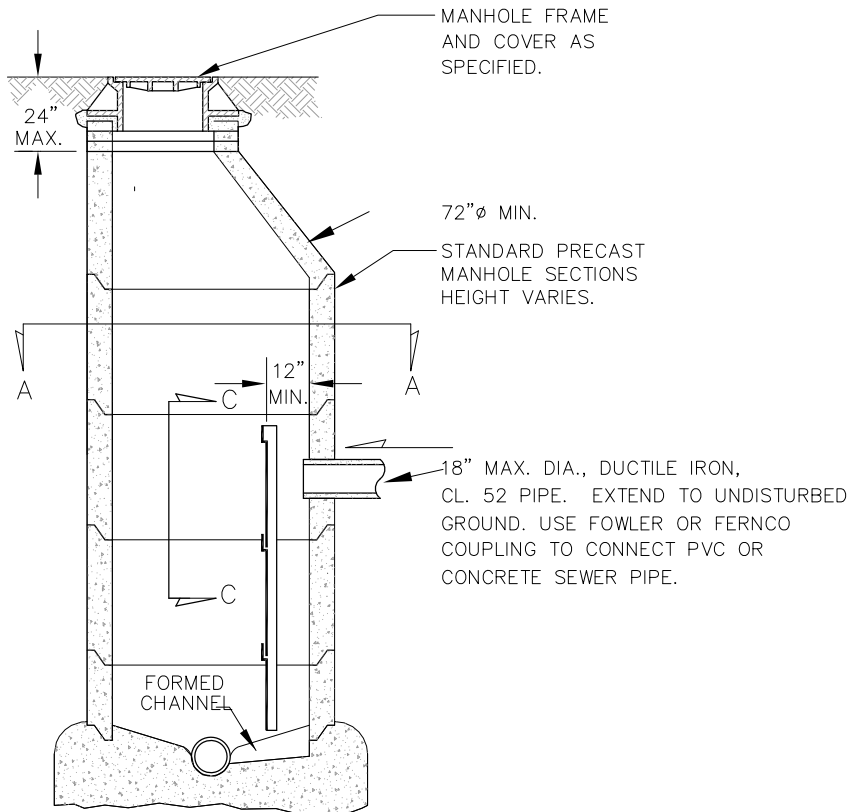


SECTION A-A

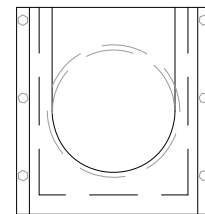
1/2" ϕ SELF TAPPING
CONCRETE ANCHORS,
PHILLIPS S-12 OR
APPROVED EQUAL, w/
1/2" ϕ x 1-1/2" Lg.
STAINLESS STEEL
BOLT & STAINLESS
STEEL LOCK WASHER.



DETAIL A
(PARTITION ATTACHMENT)



SECTION B-B



SECTION C-C

NOTES:

1. INSIDE DROP MANHOLES WITH DEFLECTION PLATE SHALL ONLY BE USED WITH PRIOR APPROVAL FROM CITY.
2. ONLY ONE DROP ASSEMBLY ALLOWED PER MANHOLE.
3. INSIDE DROP AND WATER QUALITY MANHOLES SHALL BE AT LEAST 60" ϕ WITH 42" OF CLEAR SPACE.



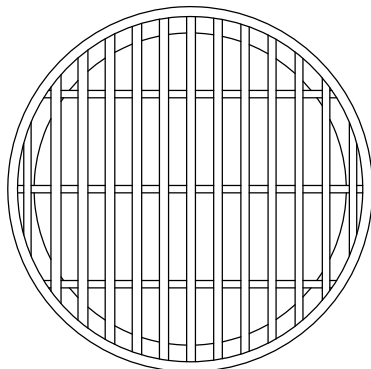
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STANDARD INSIDE DROP M.H. W/ DEFLECTION PLATE

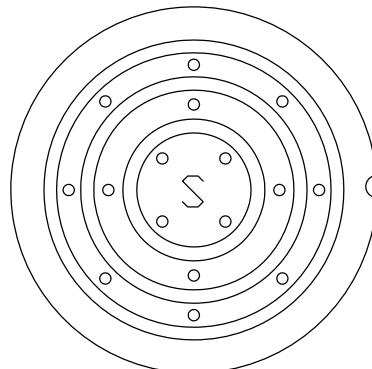
DETAIL NO.

D-220

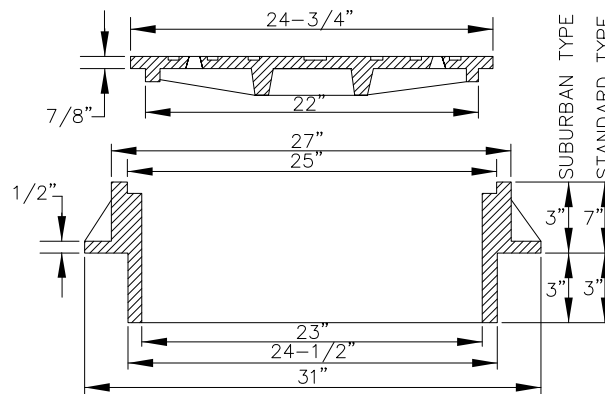
04/29/2009



GRATE
(OLYMPIC FOUNDRY #MH26G,
OR APPROVED EQUAL)



STORM
(OLYMPIC FOUNDRY #MH26P
OR APPROVED EQUAL)



FRAME
(OLYMPIC FOUNDRY #MH26A,
OR APPROVED EQUAL)

NOTES:

1. USE SUBURBAN TYPE ONLY IN NON-TRAFFIC AREAS, AND ONLY WITH APPROVAL BY THE CITY.
2. COVER AND FRAME SHALL BE GRAY CAST IRON ASTM A-48 CLASS 30.
3. COVER AND FRAME TO BE MACHINED TO A TRUE BEARING ALL AROUND.
4. NOTCH LID FOR LIFTING HOOK.
5. OPEN GRATES REQUIRE APPROVAL BY CITY, AND MUST BE BICYCLE SAFE IF USED IN TRAFFIC AREAS.



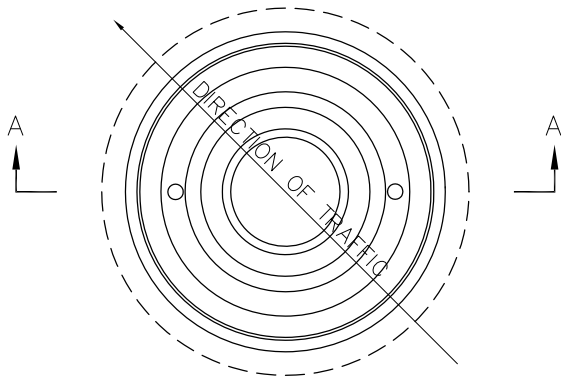
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MANHOLE COVER AND FRAME DETAILS

DETAIL NO.

D-250

04/29/2009



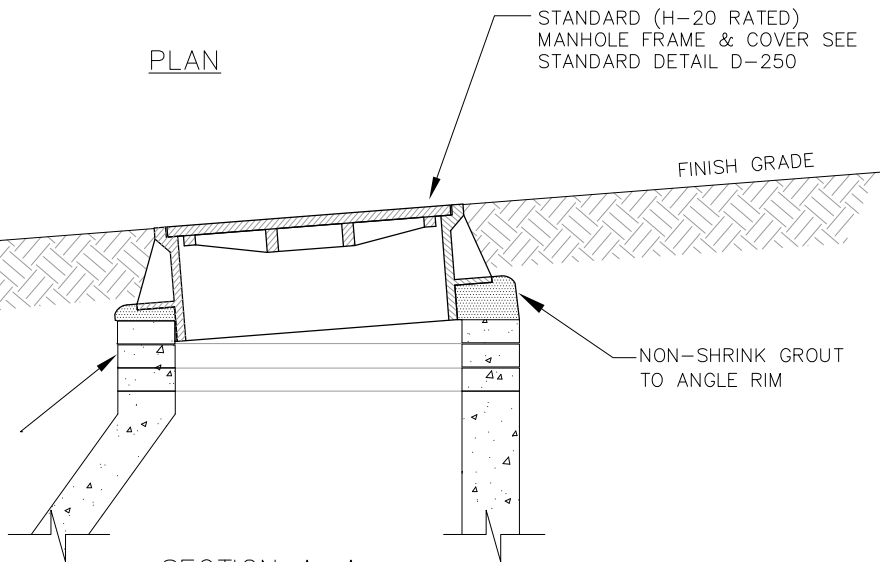
PLAN

STANDARD (H-20 RATED)
MANHOLE FRAME & COVER SEE
STANDARD DETAIL D-250

FINISH GRADE

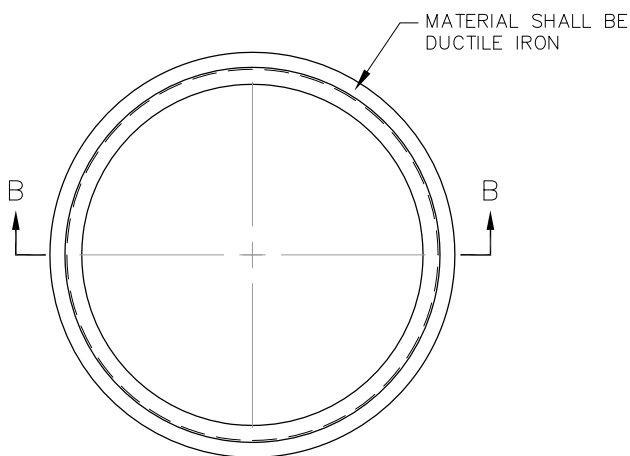
NON-SHRINK GROUT
TO ANGLE RIM

STANDARD CONC.
RISER RINGS



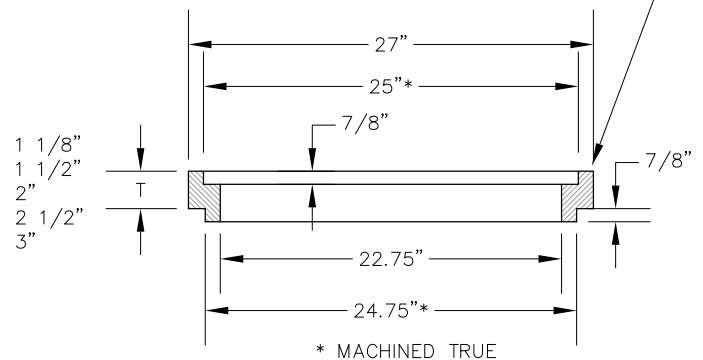
SECTION A-A

TYPICAL MANHOLE GRADE ADJUSTMENT IN STREET



MANHOLE ADJUSTMENT RINGS
FOR RESURFACING

MANUFACTURER'S INITIALS,
HEAT NUMBER DESIGNATION
& POINT OF ORIGIN



SECTION B-B



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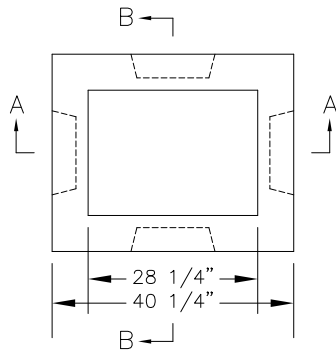
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MANHOLE FRAME GRADE ADJUSTMENT

DETAIL NO.

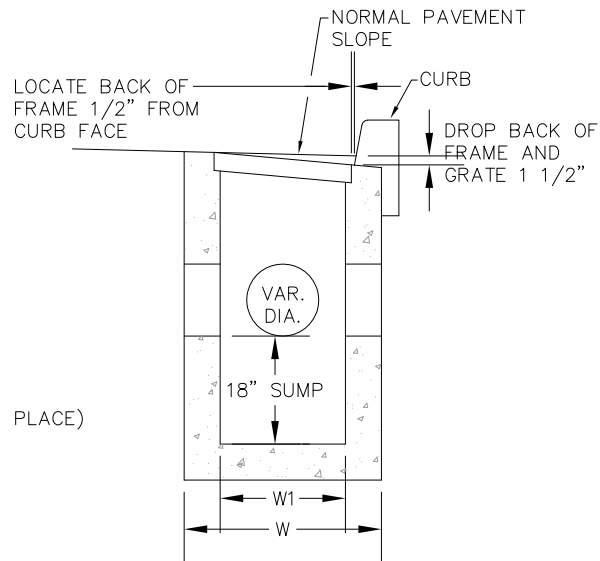
D-260

04/29/2009

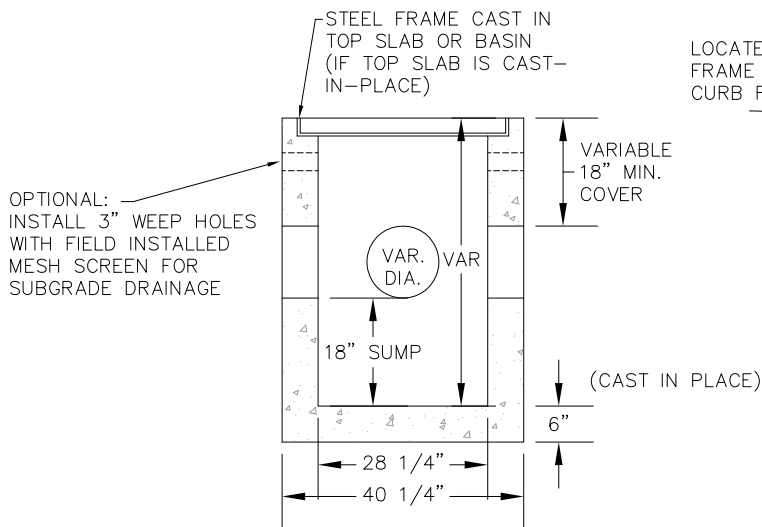


TOP VIEW

INLET TYPE	W	W1
G-1	2' 8-7/8"	1' 8-7/8"
G-2, G-2M	3' 3-3/8"	2' 3-3/8"



SECTION B-B



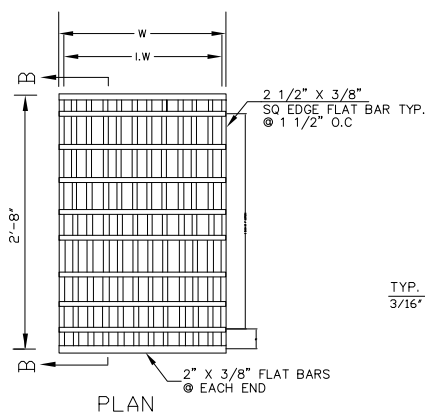
SECTION A-A

NOTES:

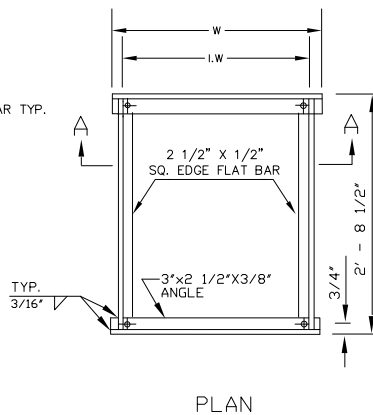
1. CONCRETE STRENGTH SHALL BE 3300 PSI.
2. PRECAST BASE WALLS SHALL BE A MINIMUM 4" THICK. CAST-IN-PLACE BASE WALLS SHALL BE 6" THICK.

TYPE	W	I.W
STANDARD	1'-9"	1'-8 1/4"

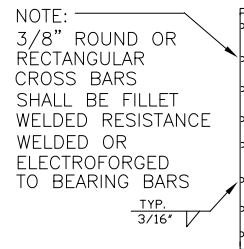
TYPE	DIA. PIPE	W	I.W
STANDARD	10"-12"	1'-10 3/4"	1'-9 3/8"



PLAN

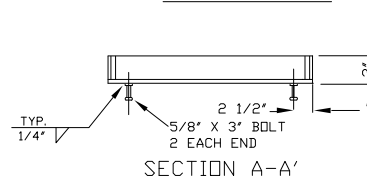


PLAN



SECTION B-B

NOTE:
USE VERTICAL BEADS IN CORNERS,
FILLET WELD JOINT ON BOTTOM OF
FRAME. GRATE MUST REST FLAT ON
FRAME SURFACE.



SECTION A-A'



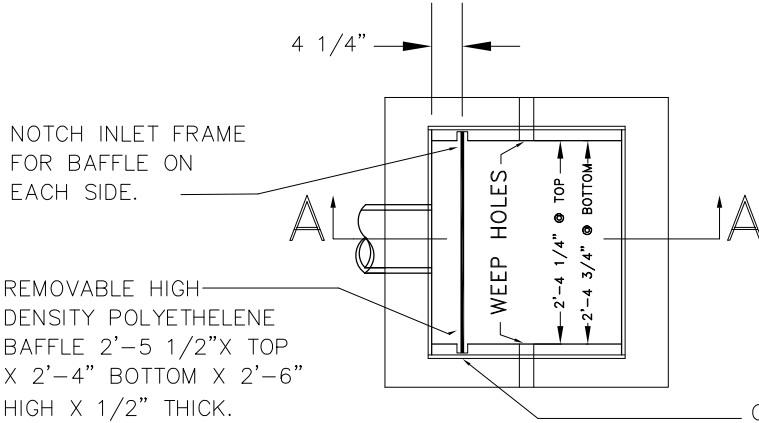
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STANDARD INLETS, FRAMES & GRATES

DETAIL NO.

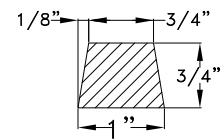
D-300

04/29/2009

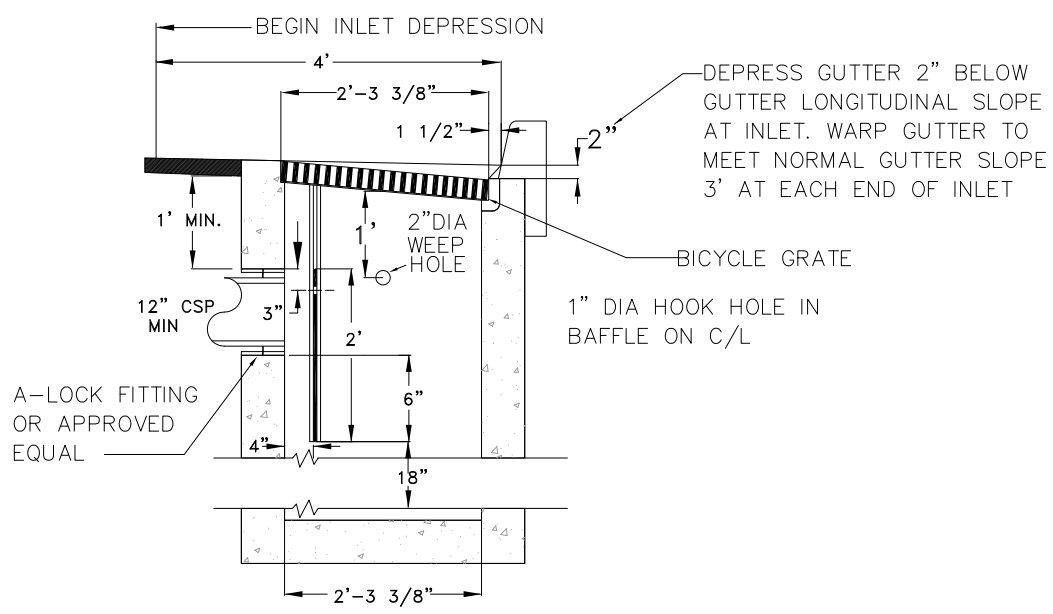


PLAN

NOTES:
USE 3000 LB CONCRETE
2" TO 4" SLUMP



CHANNEL FORMED IN CATCH BASIN WALL USING A WOOD STRIP OF THE DIMENSIONS SHOWN ABOVE.



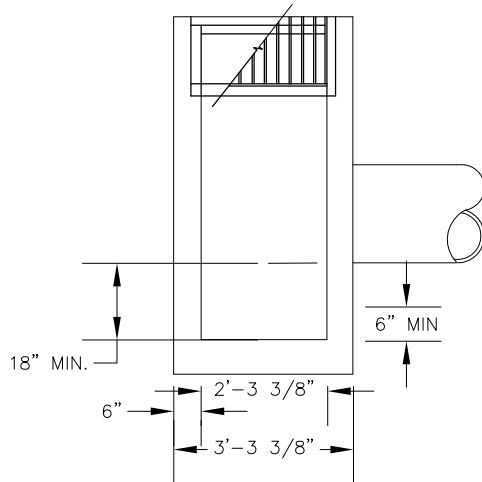
SECTION A-A



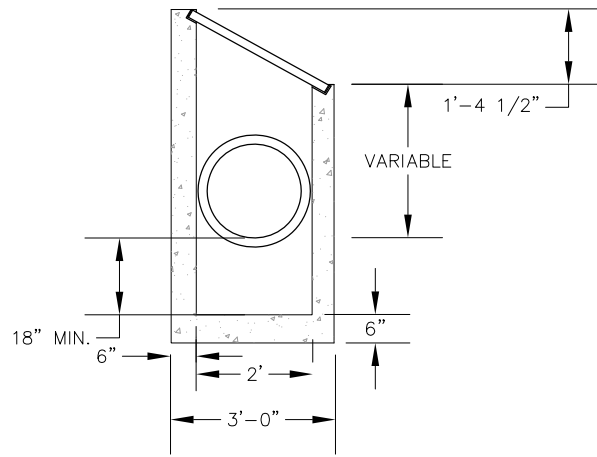
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TRAPPED/POLLUTION CONTROL CATCH BASIN

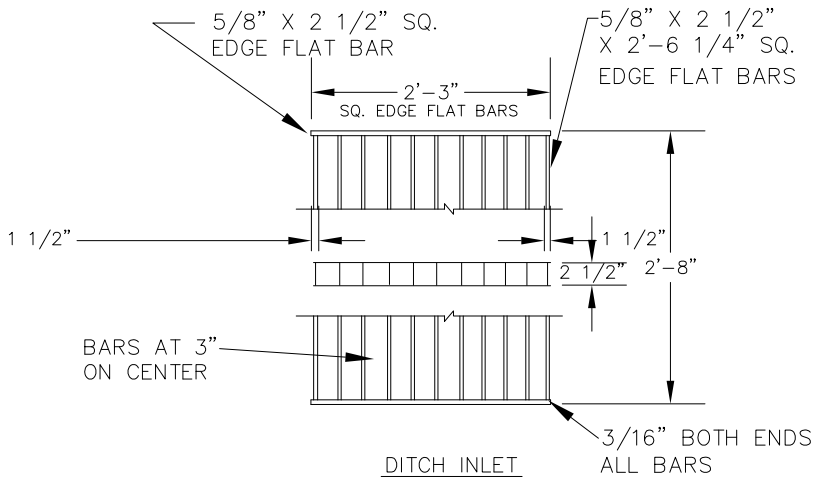
DETAIL NO.
D-301
04/29/2009



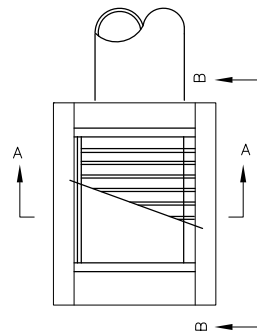
SECTION B-B



SECTION A-A



DITCH INLET



PLAN

NOTES:

1. CONCRETE STRENGTH SHALL BE 3300 PSI.
2. CATCH BASIN, FRAME, AND GRATES SHALL MEET H₂O LOADING.
3. INSIDE FRAME DIMENSIONS: 2'-3 3/8", 2'-8 1/2".
4. 3/8" CROSS BARS SHALL BE FLUSH WITH THE GRATE SURFACE AND MAY BE FILLET WELDED, RESISTANCE WELDED OR ELECTROFORGED TO BEARING BARS.



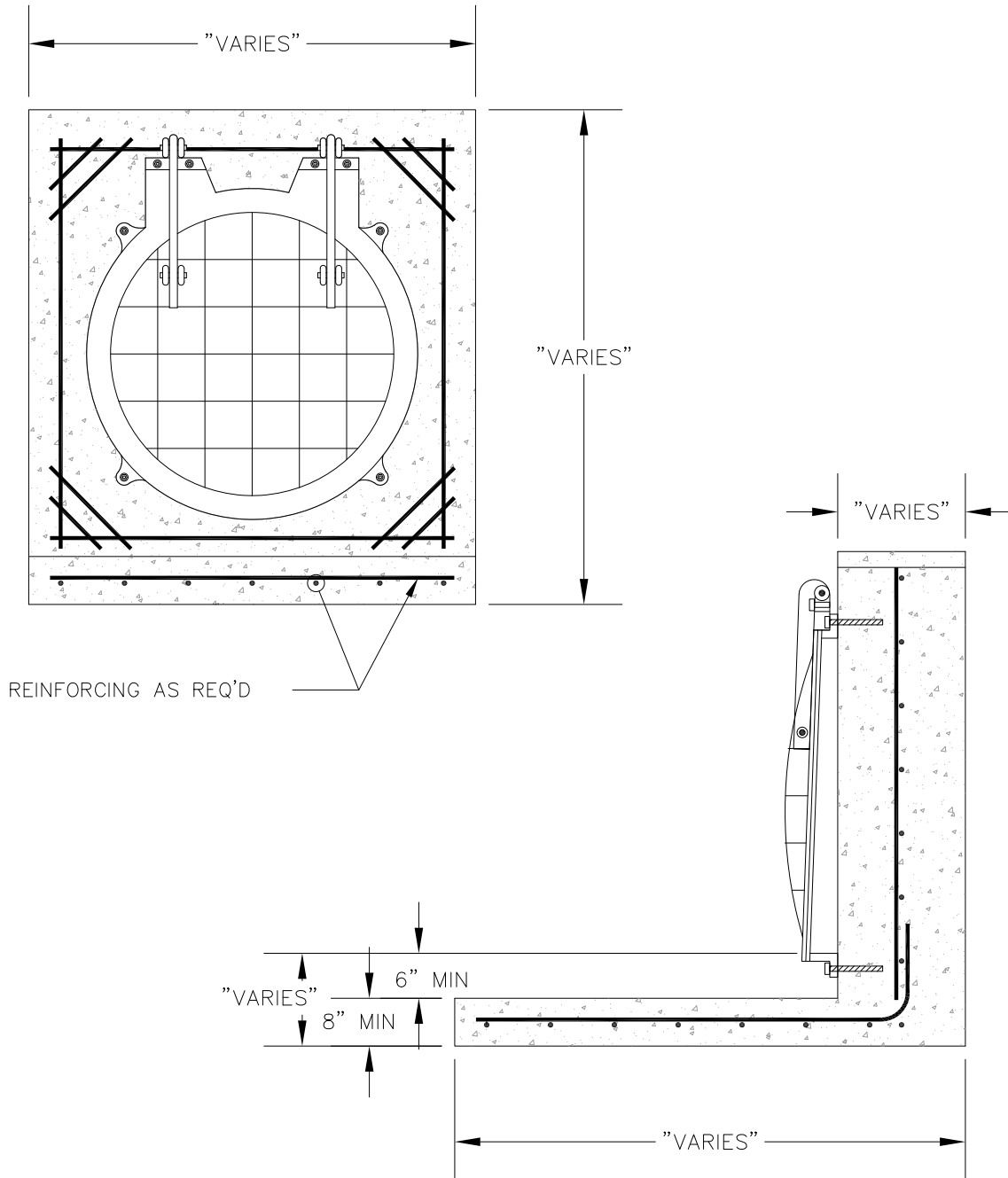
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TYPICAL DITCH INLET AND GRATE

DETAIL NO.

D-302

04/29/2009



NOTE:

- 1) OUTFALL HEADWALL SHOWN FOR CLARITY ONLY — ALL OUTFALLS SHALL BE SITE SPECIFIC AND SHALL CONFORM TO THE REQUIREMENTS OF ALL FEDERAL, STATE AND LOCAL REGULATIONS.
- 2) OUTFALL SHALL BE ABOVE THE MEAN LOW WATER LEVEL EXCEPT AS APPROVED BY CITY ENGINEER. INSTALLATION OF TIDEGATE MAY BE REQUIRED WHEN OUTFALL IS IN A TAILWATER CONDITION.
- 3) ALL TIDEGATES, FLAPGATES OR OTHER OUTLET GATES INSTALLED ON SPECIFIC OUTFALLS SHALL MEET THE REQUIREMENTS OF ODFW, NOAA AND OTHER AGENCIES AS REQUIRED.
- 4) CONCRETE STRENGTH SHALL BE 3,300 PSI AFTER 28 DAYS.
- 5) PROVIDE REINFORCING AS REQUIRED.



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HEADWALL WITH TIDEGATE

DETAIL NO.

D-304

04/29/2009