

Landscape Development Requirements & Policies (LDRP)



Please note, the Water Efficient Landscape Ordinance (WELO) has been updated by the Department of Water Resources and has been adopted by the City of Fremont as of December 1, 2015. Please refer to <https://water.ca.gov/Programs/Water-Use-And-Efficiency/Urban-Water-Use-Efficiency/Model-Water-Efficient-Landscape-Ordinance> for additional information.

Updated: July 2022
Check on-line for the latest version at:
<https://city.fremont.gov/ldrp>

FREMONT MUNICIPAL CODE SECTIONS:

FMC 18.215 (Tree Preservation)

FMC 18.235 (Design Review)

FMC 18.215 (Trees)

FMC 18.183.010 (Parking, Loading Areas and Vehicle Storage)

FIRE CODE

And

CITYWIDE DESIGN GUIDELINES (CDG)

NPDES PERMIT SECTION C.3

STATE WATER EFFICIENT LANDSCAPE ORDINANCE (WELO)

BAY FRIENDLY LANDSCAPE GUIDELINES (BFL)

CITY LANDSCAPE STANDARD DETAILS (LSD)

Table of Contents

	<u>Page No.</u>
I. Purpose of LDRP and Definitions	2
II. Items Required with Landscape Plan Submittal	4
A. Entitlement	
B. Building Permit Plan Review	
C. Construction and Project Completion	
III. Landscape Plan Checklist – Building Permit & Improvement Plans	5
A. General Project and Submittal Information	
B. Site Layout Requirements	
C. Planting Requirements	
D. Tree Preservation Requirements	
E. Irrigation Requirements	
F. Stormwater Requirements (Landscape-based)	
IV. Required Forms:	
LDRP Form A: Water Efficient Landscape Worksheet	17
LDRP Form B, Part 1: Certificate of Completion	19
LDRP Form B, Part 2: Certificate of Installation	20
LDRP Form C: Prescriptive Compliance Option	21
V. Sample Plans:	
A. Hydrozone Plan	23
B. Tree Survey	24
VI. Requesting Landscape Inspection after Construction	25
VII. Arborist Analysis and Report Standards	26
XIII. Tree Removal Application for Non-Development Projects	27
IX. Resources, Publications and Documents	29
X. Landscape Standard Details (for City Projects and Rights-of-Way)	31

Purpose of LDRP and Definitions

PURPOSE:

Who uses this document:

The Landscape Development Requirements and Policies (LDRP) is intended for the landscape architect preparing construction documents in the form of Building Permit or Improvement Plans, or in preparing preliminary design documents in the form of a Design Review application for review by the City of Fremont. Some items will require coordination with other disciplines such as civil engineer, planner, arborist or others.

What the document does:

The LDRP assembles most of the City of Fremont Council adopted landscape requirements, Regional and State landscape requirements, and Bay-Friendly Landscape requirements (BFL) into one easy to use checklist to assist the applicant/landscape architect when submitting for Building Permit or Improvement Plan approval. The checklist is not required at the time of planning entitlement review (Design Review), but it can assist the design team to develop a plan that will ultimately be subject to these requirements during detailed (construction documents) review. Standalone single-family residential home projects (with less than 500 square feet of landscape area) are not required to complete the checklist unless conditioned through a separate approval.

Why should this document be followed:

The primary reason to use this document is to accelerate the Building Permit and Improvement Plan review process so that applicants can move their project through City approval in the most efficient manner possible. Landscape projects that address all the applicable requirements accurately in their first submittal, along with the completed checklist, should be able to gain approval in 2 or 3 reviews (not withstanding other city permit requirements).

In addition to efficient plan reviews, this document can assist the design team to organize and coordinate the multiple landscape requirements and forms set out in the Fremont Municipal Code, State of California Water Efficient Landscape Ordinance (WELO), Municipal Regional National Pollution Discharge Elimination System Permit Provision C.3 (C.3), City Tree Preservation Ordinance, Bay-Friendly Landscape (BFL) practices, Citywide Design Guidelines (CDG) and other outside agency policies.

DEFINITIONS:

Bay-Friendly Landscape (BFL):

Bay-Friendly Landscape is a holistic approach to the design and maintenance of landscape to support the integrity of the San Francisco Bay watershed through best practices such as designs that include, but are not limited to, strong harmony with the native and natural conditions, reduced waste, reduced runoff, integrated pest management, improved healthy soils with less fertilizers, and water conservation measures. Fremont encourages all landscapes to achieve this goal, but at a minimum, the three required Bay Friendly practices not included in WELO 2015 must be met. (See Planting section of checklist.) Council adopted the requirement in Resolution 2012-34.

WELO:

WELO is the acronym for **Water Efficient Landscape Ordinance**. On December 1, 2015 the State of California revision to WELO became effective for new construction projects with total landscape area equal to or greater than 500 square feet in size and rehabilitated landscape projects with total landscape area of 2,500 square feet or larger. The City of Fremont is required to enforce the State Ordinance through the Building Permit plan review process. WELO establishes many landscape and irrigation water conservation techniques which are included here in this Document. To review the full State Ordinance, visit: <https://water.ca.gov/Programs/Water-Use-And-Efficiency/Urban-Water-Use-Efficiency/Model-Water-Efficient-Landscape-Ordinance>

In summary, WELO applies to the following project types that require building permit or improvement plan review and approval:

- a. New construction projects with total landscape area equal to or greater than 500 square feet in size.
- b. Rehabilitated landscape projects with total landscape area of 2,500 square feet or larger.

Tree Survey Requirements:

The City regulates the removal and destruction of existing trees to preserve the visual beauty that trees provide to the residents and visitors; environmental benefit they provide, such as reducing heat buildup and controlling wind and erosion; and their contribution to property values. Trees have value as individual trees, as groups of trees, and as components of the overall urban forest. To the extent that trees are contributing in these ways to the public welfare of the people of the City of Fremont, trees are protected and preserved through the regulation of their removal and damage to them. The complete Tree Preservation Ordinance is available online at <https://city.fremont.gov/treepreservationordinance>.

Fremont Municipal Code (FMC):

The City Council enacts ordinances that influence and regulate development in Fremont. The citations to the FMC in the checklist are referring to the Zoning code, Tree Preservation code, or Subdivision code. The full Fremont Municipal Code is available for view at: www.fremont.gov/fmc.

Use of Landscape Standard Details (LSDs):

The Landscape Standard Details referenced in the LDRP, and included at the end of this package, must be used for City of Fremont projects, on City of Fremont property, and within City of Fremont rights-of-way. These details are not required for private property landscapes, but are available for use.

Citywide Design Guidelines (CDG) and other Design Guidelines:

The City Council adopted Citywide Design Guidelines to complement its Design Review permitting process (FMC 18.235). The Citywide Design Guidelines contain both "Rules" and "Guidelines." The Rules are mandatory regulations that must be satisfied when applicable. The Guidelines are used to encourage the highest level of design quality while at the same time providing flexibility necessary to encourage creativity on the part of the project designers. Citations to the citywide and other area specific design guidelines are available online at <https://city.fremont.gov/citywidedesignguidelines>.

Municipal Regional National Pollution Discharge Elimination System Permit Provision C.3 (C.3):

The new Municipal Regional National Pollutant Discharge Elimination System Permit (also known as the MRP), issued by the San Francisco Regional Water Quality Control Board, regulates stormwater pollution. The MRP requires 70+ municipalities in the Bay Area, including the City of Fremont, to place conditions on development projects to incorporate site design measures, source controls, treatment measures, and for larger projects, flow duration controls. Permit provision C.3, titled New Development and Redevelopment, gives local responsibility to include low impact development (LID) techniques on projects. The LDRP Checklist is limited to landscape-based LID solutions and coordination of those solutions with other City requirements. The complete City stormwater requirements are available online at <https://city.fremont.gov/stormwaterpermit>.

Items Required with Landscape Plan Submittal

DELIVERABLES by SUBMITTAL STAGE		FORMAT	REFERENCE
A. Entitlement (Design Review):			
1	Landscape Plan (Conceptual Planting and Site Plan)	Plan set	WELO / FMC / BFL
2	Preliminary Landscape-based Stormwater Treatment Plan	Plan set	C.3
3	Tree Survey/Tree Preservation Plan and Tree Species Table	Plan set	FMC
B. Building Permit or Improvement Plan Review (Construction Documents):			
1	Landscape Plan Checklist (see page 5 of this document)	8½ x 11	City of Fremont required
2	Water Efficient Landscape Worksheet	8½ x 11	WELO, See Form A
3	Soil Management Report	8½ x 11	WELO
4	Tree Survey/Tree Preservation Plan and Tree Species Table (may be combined with Demolition Plan or Grading Plan as appropriate)	Plan set	FMC
5	Grading Plan (may be prepared by civil engineer).	Plan set	WELO Section 492.8
6	Planting Plan	Plan set	FMC / WELO Section 492.6
7	Hydrozone Plan with Hydrozone Table	Plan set	WELO, See Form A
8	Irrigation Plan	Plan set	FMC / WELO Section 492.7
C. Project Completion (Prior to Construction Sign-off and Occupancy):			
1	Certificate of Completion by Property Owner	8½ x 11	WELO, See Form B, Part 1
2	Certification of Installation by Landscape Architect - According to the Landscape Documentation Package (WELO)	8½ x 11	WELO, See Form B, Part 2
3	Irrigation Schedule	8½ x 11	WELO, See Form B, Part 2
4	Schedule of Landscape and Irrigation Maintenance	8½ x 11	WELO, See Form B, Part 2
5	Landscape Irrigation Audit Report (Not required if using Form C)	8½ x 11	WELO, See Form B, Part 2

Landscape Plan Checklist

(Submit with Building Permit and/or Improvement Plan Construction Documents)

Project Name: _____

“PLN” Number (Bldg. Permit) or Tract Number (Improvement Plan): _____

Landscape Architect & Firm: _____

CA License Number: _____ Phone Number: _____

Submit the following checklist with First Plan Submittal. Check boxes as they apply.

Complete
Incomplete
Not Applicable

A. GENERAL PROJECT AND SUBMITTAL INFORMATION REQUIRED:

1. Plans are prepared on accurately surveyed site plan(s) to appropriate scale.

Reference: FMC 18.235, CDG (Design Development)

2. Plans include north arrow, graphic and written scale, property lines, street names, and accurate right of way.

Reference: FMC 18.235, CDG (Design Development)

3. Plans show existing and proposed features.

Requirement:

- Plans show existing and proposed buildings, trees, structures, walls, fences, utilities, meters, paved areas, and other site improvements.
- Plans show location of all existing and proposed landscape and street trees including a complete keyed plant list showing quantities, container sizes, and correct botanical designations of all landscape materials.
- Plans include design details for landscape architectural features such as walls, fences, lighting, paving types, arbors, benches, fountains and other features; and complete irrigation plans.

References: FMC 18.70.060 and 18.235

Checklist Legend:

LSD: City Landscape Standard Detail
C.3: NPDES Regional Permit

WELO: State Water Efficient Landscape Ordinance
BFL: Qualifies for Bay-Friendly Landscape

FMC: Fremont Municipal Code
CDG: Citywide Design Guidelines

4. Plans and calculations are prepared by a Landscape Architect.

Requirement: Plans are stamped electronically or otherwise with a valid State of California Landscape Architect's license/stamp including registration number and expiration. Signature required on final set at time of permit issuance.

Reference: FMC 18.205.110. State Business and Professions Code

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Complete
Incomplete
Not Applicable

B. SITE LAYOUT REQUIREMENTS:

- | | | | |
|--------------------------|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <p>1. Parking lot trees – interior.</p> <p>Requirement: The plans show one large canopy tree for every 10 parking stalls. Trees shall be evenly distributed throughout the internal field of the parking lot. Large canopy trees can be substituted with medium sized canopy trees if spaced every 6 parking stalls to meet the intent of shading the parking lot.
<i>Note: See LSD-6 and Planting Requirements for definition of “large” and “medium” trees.</i>
Reference: FMC 18.183.110, CDG 3.81G</p> |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <p>2. Parking lot trees – perimeter.</p> <p>Requirement: The plans show one (1) screen or canopy tree for every three (3) parking stalls between the parking lot and property line, when those stalls are adjacent to the property perimeter.
Reference: FMC 18.183.110, CDG 3.81G</p> |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <p>3. Parking lot – screening from street.</p> <p>Requirement: Parking areas within 50 feet of a public street are screened with one of the following: (CHECK ONE OR MORE):</p> <ul style="list-style-type: none"> <input type="checkbox"/> three (3) foot tall masonry wall, <input type="checkbox"/> three (3) foot tall berm, or <input type="checkbox"/> a continuous shrub planting of 5 gallon plants that will grow to a minimum three (3) feet tall. <p><i>Note: Downtown and other urban districts and settings may be governed by different requirements.</i>
Reference: FMC 18.183.110</p> |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <p>4. Access & circulation, linkages/paving & amenities.</p> <p>Requirement: Durable decorative paving shall be used at crosswalks within a project and when paved areas serve multiple purposes such as when walks or recreational amenities coincide with driving areas. The path of travel from the street, sidewalk, parking areas and bus stops to the building entrances and key areas within the site shall be easily identifiable.
Reference: CDG 3.7R through 3.11R</p> |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <p>5. Minimize hardscape.</p> <p>Requirement: Minimize hardscape to reduce heat gain and reduce stormwater runoff. Consider use of permeable pavers in areas with good drainage.
Reference: CDG 2.1R, 2.4R</p> |

Checklist Legend:

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6. Tree planters – minimum size.

Requirement: Tree planters shall be maximum size feasible to benefit tree growth and provide separation from infrastructure and adjacent paving, curbs, walls, etc. Minimum planter size for trees shall have an interior dimension of six feet in any direction and have no less than 48 square feet of soil surface area overall, which is free of any inorganic material such as utilities, fire hydrants, light poles, signs, subterranean vaults, etc. (hint: an inside planter dimension of 6'x8' is 48 square feet and will fit between two parking stalls.)

Note: Urban tree grate installations are exempt and are governed by LSD-2.

Reference: FMC 18.183.110, CDG 3.77R

7. Play area design complies with the Consumer Product Safety Commission (CPSC) guidelines and American Society for Testing And Materials (ASTM).

Requirement:

- Plans identify safety protection zone(s),
- Plans identify manufacturer and model numbers
- Plans include a note requiring contractor to submit a letter prepared by a Certified Playground Inspector certifying that the installed play area is in compliance with ASTM 1487 and CPSC guidelines. The letter shall confirm the manner in which the assembly and installation of playground equipment complies with the requirements.

8. Pedestrian links between buildings and street provided.

Requirement: Visually distinct pedestrian walkways shall be provided that link buildings to other buildings, and buildings to street sidewalks.

Reference: CDG 3.9R

9. Wetband firebreak provided adjacent to fire areas.

Requirement: For projects in hillside fire areas adjacent to open space or undeveloped land a wetband is required as follows:

- A labeled and dimensioned 30-foot wide irrigated or paved protection zone between structure and open space along rear of property.
- Minimum planting is low growing fire-resistant groundcover or grass.
- High canopy trees may not be closer than 10 feet to any other mature canopy or structure.
- Hardscape surfaces and pools may be in Wetband.
- Large understory shrubs and auxiliary structures are not allowed.

Reference: FMC Fire Code

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Complete
Incomplete
Not Applicable

C. PLANTING REQUIREMENTS:

- | | | | |
|--------------------------|--------------------------|--------------------------|--|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 1. Street trees required. |
| | | | <p>Requirement: Street trees are shown at 24 inch box size and planted within the right of way in front of the each parcel. Street tree placement complies with spacing requirements and distance from utilities as identified in City Standard Detail, LSD-5. Compliance with planting requirements identified in City Standard Details, LSD-1 and LSD-2 is required.</p> <p>Reference: CDG 2.50R, 2.53R, 3.77R, LSD</p> |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 2. Bark mulch required to three inch depth. |
| | | | <p>Requirement: Include a note on plans that three inches of shredded (walk-on) bark mulch is required for all non-sod planting areas. Shredded bark mulch is required in stormwater treatment areas; however, recycled, painted, or dyed mulch is prohibited in stormwater treatment areas.</p> <p><i>Note: "Gorilla hair" mulch is prohibited. Mulch is not a substitute for landscape planting.</i></p> <p>Reference: WELO, BFL, LSD</p> |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 3. Compost incorporated at a minimum of four cubic yards per 1,000 square feet. |
| | | | <p>Requirement: Soil amendments shall be incorporated according to recommendations of the soil report. On engineered slopes, only amended planting holes require amendment. Soils with greater than six percent organic matter in the top six inches of soil are exempt from adding compost.</p> <p>Reference: BFL, WELO</p> |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 4. Trees meet minimum spacing from buildings and utilities. |
| | | | <p>Requirement: Plans show trees with the following minimum clearances to buildings or other built features:</p> <ul style="list-style-type: none"> • Small trees (to 15 feet tall) and columnar trees (to 12' wide) no closer than 6 feet from building or 2 feet from paving, curbs, or walls with a minimum planting area 5 feet wide. • Medium trees (to 35 feet tall) no closer than 10 feet from building or 3 feet from paving, curbs, or walls with a minimum planting area 6 feet wide. • Large trees (above 35 feet tall) no closer than 15 feet from building or 3 feet from paving, curbs, or walls with a minimum planting area 6 feet wide, <u>preferably 8 feet wide.</u> [LSD-6] • Refer to City Standard Detail LSD-5 for required spacing from utilities. <p>Reference: LSD, CDG 3.77R</p> |

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5. Plants meet minimum size requirements.

Requirement: All plants meet the following minimum size standards:

- Trees are 15 gallon or larger, except street trees, which are minimum 24 inch box.
- Shrubs and groundcover plants are minimum 1 gallon size. Forty percent of all shrubs and groundcover must be 5 gallon size or larger.

Reference: FMC 18.50.050(E), 18.183.110 & 18.215.080

6. City standards for work in right of way or public property.

Requirement: All landscape work shown in City right of way or City owned property/easements comply with City of Fremont Landscape Standard Details.

Reference: LSD

7. Restrictions on the use of turf.

- **Requirement:** Turf is limited to no more than 25 percent of the total planted area on the project, as long as the water budget is met.
Note: Use of turf is strongly discouraged to promote water conservation.
Reference: WELO, BFL
- **Requirement:** Turf is prohibited in medians.
Reference: WELO
- **Requirement:** Turf is not used on slopes greater than 4:1
Reference: WELO

8. Select water conserving plants and turf species.

Requirement: Plant List (table/legend) shown on plans shall include the Water Use Classification of Landscape Species (WUCOLS) designation or designation from horticultural researchers with academic or professional associations for the selected species, the spacing for shrub and groundcover species, and the quantity of each plant used.

Note: Use of medium and high water plants is strongly discouraged to promoted water conservation.

Reference: WELO

9. Choose and locate plants to grow to natural size and avoid shearing.

Requirement: No plant species will require shearing. Select species and spacing to allow plants to grow to natural size and shape without shearing at any point in the lifespan of the plant, excluding structural and regular maintenance pruning. Plant spacing shall not allow plants to grow into adjacent buildings, sidewalks, roadways, or adjacent landscape areas.

Reference: Bay-Friendly Scorecard item E.1.a, City Council Resolution 2012-34.

10. Do not plant invasive plant species.

Requirement: None of the plant species listed by CA-IPC as invasive in the San Francisco Bay Area are included in the planting design.

Reference: Bay-Friendly Scorecard item E.2.a, City Council Resolution 2012-34.

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Complete
Incomplete
Not Applicable

D. TREE PRESERVATION REQUIREMENTS [FMC 18.215.120]

1. Tree survey meets minimum plan standards.

Requirement: Plans include a Tree Survey showing the following:

- Existing and proposed site features, including but not limited to buildings, walls, paving, grading, etc.
- Tree(s) with six inch DBH (trunk diameter at 4.5 feet above ground level) and larger are located on plan by a licensed surveyor. Tree trunks must be represented with an accurately scaled dot to show the true bulk of the DBH. Tree canopies must be accurately delineated.
- Trees are labeled by number on the plan and tagged on-site per ISA standards.
- Tree Survey Plan includes a summary table identifying botanical designation, DBH, and elevation of each tree at ground level.

Note: Tree Survey information may be incorporated into a topographic survey or other project plan, provided all the required information is included. If no trees exist on site, provide a statement by the civil engineer, landscape architect or surveyor indicating this, in lieu of the required tree survey.

Reference: FMC 18.215.120

Sample Plan: See the sample Tree Survey on page 24.

2. Tree survey is incorporated into other plans.

Project plans clearly show which trees are proposed for preservation and which trees are proposed for removal. Trees for removal and preservation are shown on ALL the following project (construction) plans:

- Show trees for removal and preservation on the following plans:
 - Grading Plan
 - Demolition Plan
- Show trees for preservation (only) on the following plans:
 - Planting Plan
 - Irrigation Plan
 - Underground Utility Plans and Joint Trench Plan

3. Tree protection fencing shown on plans.

Requirement: Trees designated for preservation comply with City of Fremont Standard Detail: "Tree Protection Fencing," LSD-9, or other tree specific City approved tree protection measures prepared by a International Society of Arboriculture (ISA) Certified Arborist or American Society of Consulting Arborist (ASCA) member in good standing.

Reference: LSD

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Complete
Incomplete
Not Applicable

E. IRRIGATION REQUIREMENTS:

- | | | | |
|--------------------------|--------------------------|--------------------------|--|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <p>1. Meters and valves.</p> <p>Requirement: Plans show location and size of all meters and submeters, points of connection, pumps, isolation valves and remote control valves. Irrigation must be on a dedicated meter or submeter for non-residential projects 1,000 square feet and greater and residential projects 5,000 square feet and greater.
Reference: WELO</p> |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <p>2. Master shut-off valves.</p> <p>Requirement: Plans show locations and types of all master shut-off valves. Landscapes that make use of technologies that allow for the individual control of sprinklers that are individually pressurized in a system equipped with low pressure shut down features are excepted.
Reference: WELO</p> |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <p>3. Flow sensors.</p> <p>Requirement: Plans show flow sensors that detect high flow conditions created by system damage for all non-residential landscapes and residential landscapes of 5,000 square feet and larger.
Reference: WELO</p> |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <p>4. Operating pressure and GPM.</p> <p>Requirement: Maximum GPM (Gallons Per Minute) demand and minimum operating pressure for each point of connection is clearly shown on plan along with the GPM demand for each valve. If the water pressure is below or exceeds the recommended pressure of the specified devices, the installation of a pressure regulating device is required.
Reference: WELO, BFL</p> |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <p>5. Pipes and sleeves.</p> <p>Requirement: Plans show size and location of all pipes including sleeves for the irrigation system
The following minimum requirements are shown on the plans:</p> <ul style="list-style-type: none"> <input type="checkbox"/> All lateral lines shall have 12" cover. <input type="checkbox"/> All main lines shall have 18" cover. <input type="checkbox"/> All main lines and wiring under pavement shall be sleeved with 24" cover. <input type="checkbox"/> All lateral lines under pavement shall be sleeved with 18" cover. |

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Complete
Incomplete
Not Applicable

6. Hose bibs and quick couplers.

Requirement: Plans show location and type of all hose bibs and quick couplers.
Reference: WELO

7. Weather-based controller.

Requirement: Plans show location and type of weather-based controller, which relies on soil moisture sensor, rain gauge or other weather-based controlling device.
Reference: WELO, BFL

8. Backflow prevention device.

Requirement: A Reduced Pressure Backflow Prevention Device (with enclosure) of the same size as the meter shall be installed at every irrigation meter on the project. The model and installation of the Backflow Prevention Unit is subject to approval from the Alameda County Water District. A weather blanket shall be installed on all backflow prevention devices. Use LSD-16 and LSD-17 for irrigation on City of Fremont property and rights-of-way.
Reference: WELO

9. Design details included.

Requirement: Irrigation installation details shall be shown on plans to demonstrate compliance with these irrigation requirements. Use City of Fremont irrigation Landscape Standard Details (LSDs) for areas on City property or rights-of-way.

10. All irrigation equipment must meet ANSI and ASABE/ICC802-2014 standards.

Requirement: All irrigation equipment must meet American National Standards Institute (ANSI), American Society of Agricultural and Biological Engineers/ International Code Council (ASABE/ ICC)802-2014. "Landscape Irrigation Sprinkler and Emitter Standard. All sprinkler heads installed in the landscape must document a distribution uniformity low quarter of .65 or higher using the protocol defined in ASABE/ICC 802-2014.
Reference: WELO

11. Irrigate trees separately.

Requirement: All trees are irrigated by individual bubblers on an irrigation circuit isolated from the main system by a remote control valve.
Reference: WELO

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Not Applicable

12. Limits on use of spray irrigation.

Requirement: Areas less than 10 feet wide shall not use spray irrigation.

Note: Sustainable drip irrigation or bubbler irrigation systems are encouraged and should be designed with rigid subsurface lateral system for durability. Above ground polyethylene piping is not permitted as a long term solution to irrigation.

Reference: WELO

13. No irrigation run-off allowed.

Requirement: Irrigation system (including spray irrigation) is designed for zero run-off onto paved surfaces unless that surface drains to another landscape area (e.g. walkway with landscape on two sides). Spray irrigation must be placed two (2) feet away from impervious surfaces unless that surface drains to another landscape area.

Reference: WELO

14. WELO forms, report, and Hydrozone Plan required.

Requirement: Compliance with the State of California, Water Efficient Landscape Ordinance (WELo) is required for:

- a. New construction projects with total landscape area equal to or greater than 500 feet in size.
- b. Rehabilitated landscape projects with total landscape area of 2,500 square feet or larger.

The following plans, forms and reports are required with the development application. Note: Provide forms in separate 8.5"x 11" format (or other appropriate format) with plans, and do not place forms (except Hydrozone Table) or reports on plans.

- Soil Management Report in compliance with section 492.5 of WELo
- Hydrozone Plan and Information Table.

Sample Plan: See sample Hydrozone Plan on page 23.

- Water Efficient Landscape Worksheet (provide to Alameda County Water District, ACWD), *Form A:* See required form on page 17.

Reference: WELO

15. Alternative Prescriptive Compliance method.

Requirement: The Prescriptive Compliance Requirements may be used as a compliance option to WELo for landscapes with total landscape area of 500 sf to 2,500 sf. Compliance with the entire list, Form C, is mandatory and must be documented on a landscape plan in order to use the prescriptive compliance option. Submit completed Form C with landscape plan. Pages 21-22.

Reference: WELO

Checklist Legend:

LSD: City Landscape Standard Detail
C.3: NPDES Regional Permit

WELo: State Water Efficient Landscape Ordinance
BFL: Qualifies for Bay-Friendly Landscape

FMC: Fremont Municipal Code
CDG: Citywide Design Guidelines

- 16. Separated irrigation system required for City property, easements, and Homeowner Association managed common areas.

Requirement: Back-up landscape or any landscape that will be maintained or owned by the City has a separate meter, backflow prevention device and controller compliant with City Standard Details.

Reference: WELO, LSD

- 17. Include a note on the plans requiring submittal of the Certificates of Completion and Installation and all related documents (Irrigation Scheduling, Schedule of Landscape and Irrigation Maintenance, Landscape Irrigation Audit Report, and Soil Management Report) upon completion of construction, prior to project acceptance.

Requirement: Completion and installation of WELO-compliant landscape and irrigation must be documented via the WELO/LDRP forms. Forms must be signed by the property owner, landscape contractor, and the project landscape architect. Forms are described below.

Reference: WELO, LSD

- 18. Post construction signoff by project landscape architect and owner.

Requirement: The following documents and certifications are required before final occupancy from the Building Official during construction to comply with WELO. Provide forms in separate 8.5" by 11" format (or other appropriate format) with plans. Do not place forms on plans.

Note: The Project Landscape Architect should anticipate inspection during construction to support separate written certifications from him or her, that the installed and completed project complies with the City of Fremont Approved Plans, and complies with the WELO requirements as documented in the plans.

- Certificate of Completion signed by property owner,
Form B, Part 1: See required form, page 19.
- Certificate of Installation signed by the Project Landscape Architect, AND the Project (Licensed) Landscape Contractor.
Form B, Part 2: See required form, page 20.
- Irrigation Scheduling
Form B, Part 3: See required attachment, page 20.
- Schedule of Landscape and Irrigation Maintenance,
Form B, Part 4: See required attachment, page 20.
- Landscape Irrigation Audit Report,
Form B, Part 5: See required attachment, page 20.
- Soil Management Report,
Form B, Part 6: See required attachment, page 20.
- Prescriptive Compliance Checklist,
Form C: See required form, pages 21-22.
Form B, Parts 1, 2, 3, 4, and 6: See required forms, pages 19-20.

Reference: WELO

Checklist Legend:

LSD: City Landscape Standard Detail
C.3: NPDES Regional Permit

WELO: State Water Efficient Landscape Ordinance
BFL: Qualifies for Bay-Friendly Landscape

FMC: Fremont Municipal Code
CDG: Citywide Design Guidelines

Complete
Incomplete
Not Applicable

F. STORMWATER (LANDSCAPE-BASED) REQUIREMENTS:

1. Design of landscape-based stormwater treatment complies with City Standards.

Requirement: The design of stormwater treatment in the right of way complies with City Landscape Standard Details and the Municipal Regional National Pollution Discharge Elimination System Permit Provision C.3 requirements. The City details show options that include a tree well filter and a stormwater planter for use in the right of way. Trash Capture Devices are required upstream of planter with treatment soil in the right of way.

Note: The handbook is available on the Alameda Countywide Clean Water Program website at: http://www.cleanwaterprogram.org/businesses_developers.htm, and City of Fremont Stormwater requirements at <https://city.fremont.gov/stormwaterpermit>.

Reference: LSD, C.3

2. Plans show specifications for treatment soil.

Requirement: Plans show soil specifications in compliance with the Alameda Countywide Clean Water Program C.3 Technical Guide when treatment soil is used on projects.

Reference: C.3, BFL

3. Plans delineate treatment areas.

Requirement: Plans clearly delineate where landscape based stormwater design features are located throughout the site. Place curb or header around landscape-based stormwater features for easy identification when combined with or adjacent to non-stormwater landscape.

Reference: C.3

~ End of Landscape Plan Checklist ~

Checklist Legend:

LSD: City Landscape Standard Detail
C.3: NPDES Regional Permit

WELO: State Water Efficient Landscape Ordinance
BFL: Qualifies for Bay-Friendly Landscape

FMC: Fremont Municipal Code
CDG: Citywide Design Guidelines



LDRP Form A: Water Efficient Landscape Worksheet

This form is equivalent to the MWELO Appendix B Worksheet and must be submitted with the Landscape Documentation Package.

Project Name: _____ PLN #: _____

Reference Evapotranspiration (ET_o) _____

Hydrozone # /Planting Description ^a	Plant Factor (PF)	Irrigation Method ^b	Irrigation Efficiency (IE) ^c	ETAF (PF/IE)	Landscape Area (sq. ft.)	ETAF x Area	Estimated Total Water Use (ETWU) ^e
Regular Landscape Areas							
				Totals	(A)	(B)	
Special Landscape Areas							
				1			
				1			
				1			
				Totals	(C)	(D)	
				ETWU Total			
				Maximum Allowed Water Allowance (MAWA)^e			

^a**Hydrozone #/Planting Description**
E.g
1.) front lawn
2.) low water use plantings
3.) medium water use planting

^b**Irrigation Method**
overhead spray
or drip

^c**Irrigation Efficiency**
0.75 for spray head
0.81 for drip

^d**ETWU (Annual Gallons Required) = Eto**
x 0.62 x ETAF x Area
where 0.62 is a conversion factor that converts acre-inches per acre per year to gallons per square foot per year.

^e**MAWA (Annual Gallons Allowed) = (Eto) (0.62) [(ETAF x LA) + ((1-ETAF) x SLA)]**
where 0.62 is a conversion factor that converts acre-inches per acre per year to gallons per square foot per year, LA is the total landscape area in square feet, SLA is the total special landscape area in square feet, and ETAF is 0.55 for residential areas and 0.45 for non-residential areas.

ETAF Calculations

Regular Landscape Areas

Total ETAF x Area	(B)
Total Area	(A)
Average ETAF	B ÷ A

Average ETAF for Regular Landscape Areas must be 0.55 or below for residential areas, and 0.45 or below for non-residential areas.

All Landscape Areas

Total ETAF x Area	(B+D)
Total Area	(A+C)
Sitewide ETAF	(B+D) ÷ (A+C)

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LDRP Form B, Part 1: Certificate of Completion

This certificate is equivalent to the MWELO Appendix C (Part 1) certificate and is to be filled out by the project applicant upon completion of the landscape project.

Project Name: _____ PLN #: _____

PART 1. PROJECT INFORMATION SHEET

Date		
Project Name		
Name of Project Applicant	Telephone No.	
	Fax No.	
Title	Email Address	
Company	Street Address	
City	State	Zip Code

Project Address and Location:

Street Address	Parcel, tract or lot number, if available.	
City	Latitude/Longitude (optional)	
State	Zip Code	

Property Owner or his/her designee:

Name	Telephone No.	
	Fax No.	
Title	Email Address	
Company	Street Address	
City	State	Zip Code

Property Owner

"I/we certify that I/we have received copies of all the documents within the Landscape Documentation Package and the Certificate of Completion and that it is our responsibility to see that the project is maintained in accordance with the Landscape and Irrigation Maintenance Schedule."

Property Owner Signature

Date

Please answer the questions below:

1. Date the Landscape Documentation Package was submitted to the local agency _____
2. Date the Landscape Documentation Package was approved by the local agency _____
3. Date that a copy of the Water Efficient Landscape Worksheet (including the Water Budget Calculation) was submitted to the local water purveyor _____

LDRP Form B, Part 2: Certificate of Installation According to the Landscape Documentation Package

This certificate is equivalent to the second page of the MWEL0 Appendix C (Part 2) certificate and is to be filled out by the project applicant upon completion of the landscape project.

PART 2. CERTIFICATION OF INSTALLATION ACCORDING TO THE LANDSCAPE DOCUMENTATION PACKAGE

“I/we certify that based upon periodic site observations, the work has been substantially completed in accordance with the ordinance and that the landscape planting and irrigation installation conform with the criteria and specifications of the approved Landscape Documentation Package.”

Signature of Landscape Contractor :		Date	
Name (print)		Telephone No.	
Title		Email Address	
License No. or Certification No.			
Company		Street Address	
City	State	Zip Code	

Signature of Landscape Architect :		Date	
Name (print)		Telephone No.	
Title		Email Address	
License No.			
Company		Street Address	
City	State	Zip Code	

PART 3. IRRIGATION SCHEDULING

Attach parameters for setting the irrigation schedule on controller per ordinance Section 492.10.

PART 4. SCHEDULE OF LANDSCAPE AND IRRIGATION MAINTENANCE

Attach schedule of Landscape and Irrigation Maintenance per ordinance Section 492.11.

PART 5. LANDSCAPE IRRIGATION AUDIT REPORT

Attach Landscape Irrigation Audit Report per ordinance Section 492.12.

PART 6. SOIL MANAGEMENT REPORT

Attach soil analysis report, if not previously submitted with the Landscape Documentation Package per ordinance Section 492.6.

Attach documentation verifying implementation of recommendations from soil analysis report per ordinance Section 492.6.

LDRP Form C: Prescriptive Compliance Option

For Landscape projects that are 500 to 2,500 square feet, the following Prescriptive Compliance Option may be used. If selected, compliance with the following items is mandatory and must be documented on a landscape plan. At the time of final inspection, the permit applicant must provide the City and the owner of the property with a certificate of completion, certificate of installation, irrigation schedule and a schedule of landscape and irrigation maintenance.

Project Name: _____ PLN #: _____

Complete

Incomplete

1. Submit a Landscape Documentation Package which includes the following elements:
 - A. date
 - B. project applicant
 - C. project address (if available, parcel and/or lot number(s))
 - D. total landscape area (square feet), including a breakdown of turf and plant material
 - E. project type (e.g., new, rehabilitated, public, private, cemetery, homeowner- installed)
 - F. water supply type (e.g., potable, recycled, well) and identify the local retail water purveyor if the applicant is not served by a private well
 - G. contact information for the project applicant and property owner
 - H. applicant signature and date with statement, "I agree to comply with the requirements of the prescriptive compliance option of the MWELO."

2. Incorporate compost at a rate of at least four cubic yards per 1,000 square feet to a depth of six (6) inches into landscape area (unless contra-indicated by a soil test).

3. Plant material shall comply with all of the following:
 - A. For residential areas, install climate adapted and native plants that require occasional, little or no summer water (average WUCOLS plant factor 0.3) for seventy five percent (75%) of the plant area excluding edibles and areas using recycled water; For non-residential areas, install climate adapted and native plants that require occasional, little or no summer water (average WUCOLS plant factor 0.3) for 100% of the plant area excluding edibles and areas using recycled water;
 - B. A minimum three inch (3") layer of mulch shall be applied on all exposed soil surfaces of planting areas except in turf areas, creeping or rooting groundcovers, or direct seeding applications where mulch is contraindicated.

4. Turf shall comply with all of the following:
 - A. Turf shall not exceed twenty five percent (25%) of the landscape area in residential areas, and there shall be no turf in non-residential areas;

Complete

Incomplete

- B. Turf shall not be planted on sloped areas which exceed twenty five percent (25%), a slope of one (1) foot vertical elevation change for every four (4) feet of horizontal length; and
- C. Turf is prohibited in parkways less than ten feet (10') wide, unless the parkway is adjacent to a parking strip and used to enter and exit vehicles. Any turf in parkways must be irrigated by sub-surface irrigation or by other technology that creates no overspray or runoff.

5. Irrigation systems shall comply with the following:

- A. Automatic irrigation controllers are required and must use evapotranspiration or soil moisture sensor data and utilize a rain sensor.
- B. Irrigation controllers shall be of a type which does not lose programming data in the event the primary power source is interrupted.
- C. Pressure regulators shall be installed on the irrigation system to ensure the dynamic pressure of the system is within the manufacturer's recommended pressure range.
- D. Manual shut-off valves (such as a gate valve, ball valve, or butterfly valve) shall be installed as close as possible to the point of connection of the water supply.
- E. All irrigation equipment must meet the requirements set in the ANSI standard, ASABE/ICC 802-2014. "Landscape Irrigation Sprinkler and Emitter Standard," All sprinkler heads installed in the landscape must document a distribution uniformity low quarter of 0.65 or higher using the protocol defined in ASABE/ICC 802-2014.
- F. Areas less than ten feet (10') in width in any direction shall be irrigated with subsurface irrigation or other means that produce no runoff or overspray.

- 6. For non-residential projects with landscape areas of 1,000 square feet or more, a private submeter(s) to measure landscape water use shall be installed.

- 7. Alameda County law prohibits disposal of plant debris in county landfills. ACWMA Plant Debris Landfill Ban Ordinance 2008-01 requires landscape professionals, to separate all plant debris from garbage.
<http://www.recyclingrulesac.org/docs/Landfill-Ban-WMA-Ordinance2008-01.pdf>

SAMPLE HYDROZONE PLAN

Firm Name/Logo
Street Address
City, State Zip

PROJECT NAME
FREMONT, CA

HYDROZONE PLAN
SHEET NUMBER
LS-2

SWMBOL	BOTANICAL NAME	COMMON NAME	WATCOLOS	SIZE	SPACING	QTY.
BET PEN	BETULA PENDULA 'JACQUEDANT'	EUROPEAN BIRCH	H	24" BOX	ON PLAN	2
CAP SEN	CUPRESSUS SEMP/PERENS STRICTA	ITALIAN CYPRESS	L	24" BOX	ON PLAN	15
DC ANT	DISCOSYRIA ANTIOTICA	TASMANIAN TREE FERN	L	24" BOX	ON PLAN	2
LAC NAT	LADONOCYBIS INDICA 'NATHAZEE'	WHITE DRAGON PITTURIE	L	24" BOX	ON PLAN	7
LAG DOA	LAGARODENDRON DOORIANI	WESTERN WHITE PINE	L	24" BOX	ON PLAN	2
MAE SNA	MAGNOLIA SALICOIDES 'MAGNOLIA'	FRUITLESS OLIVE	V	24" BOX	ON PLAN	10
ZEL SER	ZELKOVIA SEROTINA	SMALL LEAF ZELKOVA	V	24" BOX	ON PLAN	2
ASP BVA	ASPENIUM BALSIFERUM	MOUNTAIN PINE	H	2 GALL	4" O.C.	25
AUC JAP	AUCUBA JAPONICA 'VARIEGATA'	COLD DUST PLANT	M	5 GALL	3" O.C.	4
AZL MAP	AZALEA MAPLEWOOD	VALET PURPLE AZALEA	M	5 GALL	3" O.C.	40
CHU SAS	CHAMAELIRIUM SASSA PARVA	TOURNEFORT'S RIVER	M	5 GALL	3" O.C.	42
CHU CAL	CHAMAELIRIUM CALIFORNIA	TOURNEFORT'S RIVER	M	5 GALL	3" O.C.	11
CHU TEN	CHAMAELIRIUM TENNESSE	TOURNEFORT'S RIVER	M	5 GALL	3" O.C.	20
COX SNA	CORONILLA SIBIRICA 'NIGHT HYBRID'	FRUITFUL CORONILLA	M	5 GALL	3" O.C.	4
COL SNA	COLONIBIA SIBIRICA 'SUNSET DOLY'	FRUITFUL CORONILLA	M	5 GALL	3" O.C.	4
COX SNA	CORONILLA SIBIRICA 'SUNSET DOLY'	FRUITFUL CORONILLA	M	5 GALL	3" O.C.	4
DIE BEC	DIERIS BECKHAMPTONI	COLD BREATH OF HEAVEN	L	5 GALL	4" O.C.	9
DIE VEG	DIERIS VEGAN	FRUITFUL CORONILLA	L	5 GALL	4" O.C.	9
GAZ AZT	GAZANIA AZTECA	CHEERFUL GAZANIA	M	1 GALL	24" O.C.	200
HAN ZOU	HANZOU ZOUZOU	FRUITFUL CORONILLA	L	2 GALL	3" O.C.	22
HAN CAR	HANZOU CAROLINA	FRUITFUL CORONILLA	L	2 GALL	3" O.C.	9
HAN CAR	HANZOU CAROLINA	FRUITFUL CORONILLA	L	2 GALL	3" O.C.	9
US SNA	USONIA SIBIRICA 'YELLOW'	FRUITFUL CORONILLA	M	5 GALL	3" O.C.	9
US SNA	USONIA SIBIRICA 'YELLOW'	FRUITFUL CORONILLA	M	5 GALL	3" O.C.	9
CAR TUM	CAROLINA TUMULOSA	FRUITFUL CORONILLA	M	2 GALL	4" O.C.	294
HAK HAO	HAKONIA HAKONENSIS	FRUITFUL CORONILLA	M	1 GALL	30" O.C.	16
HAK HAO	HAKONIA HAKONENSIS	FRUITFUL CORONILLA	M	1 GALL	30" O.C.	16
US SNA	USONIA SIBIRICA 'SUNSET DOLY'	FRUITFUL CORONILLA	M	2 GALL	18" O.C.	35
US SNA	USONIA SIBIRICA 'SUNSET DOLY'	FRUITFUL CORONILLA	M	2 GALL	18" O.C.	35
CAL CAR	CALIFORNIA CAROLINA	FRUITFUL CORONILLA	M	5 GALL	3" O.C.	62
PHO SNA	PHOENIX SIBIRICA 'SUNSET DOLY'	FRUITFUL CORONILLA	L	5 GALL	3" O.C.	9
PEN SET	PERNETIA SIBIRICA 'SUNSET DOLY'	FRUITFUL CORONILLA	L	2 GALL	3" O.C.	63

PLANT LIST

• Note: Plants may be shown in groups (instead of individually) on the Hydrozone Plan required at entitlement stage.

LOW WATER USE SPT: 5028 QUANTITY: 255

MEDIUM WATER USE SPT: 1188 QUANTITY: 258

HIGH WATER USE SPT: 741 QUANTITY: 28

TOTAL SPT: 7065 TOTAL QUANTITY: 541

% OF LOW WATER USE PLANTS: 74.5% WATER USE PLANTS: 20.8%

% OF MED AND HIGH WATER USE PLANTS: 25.5%

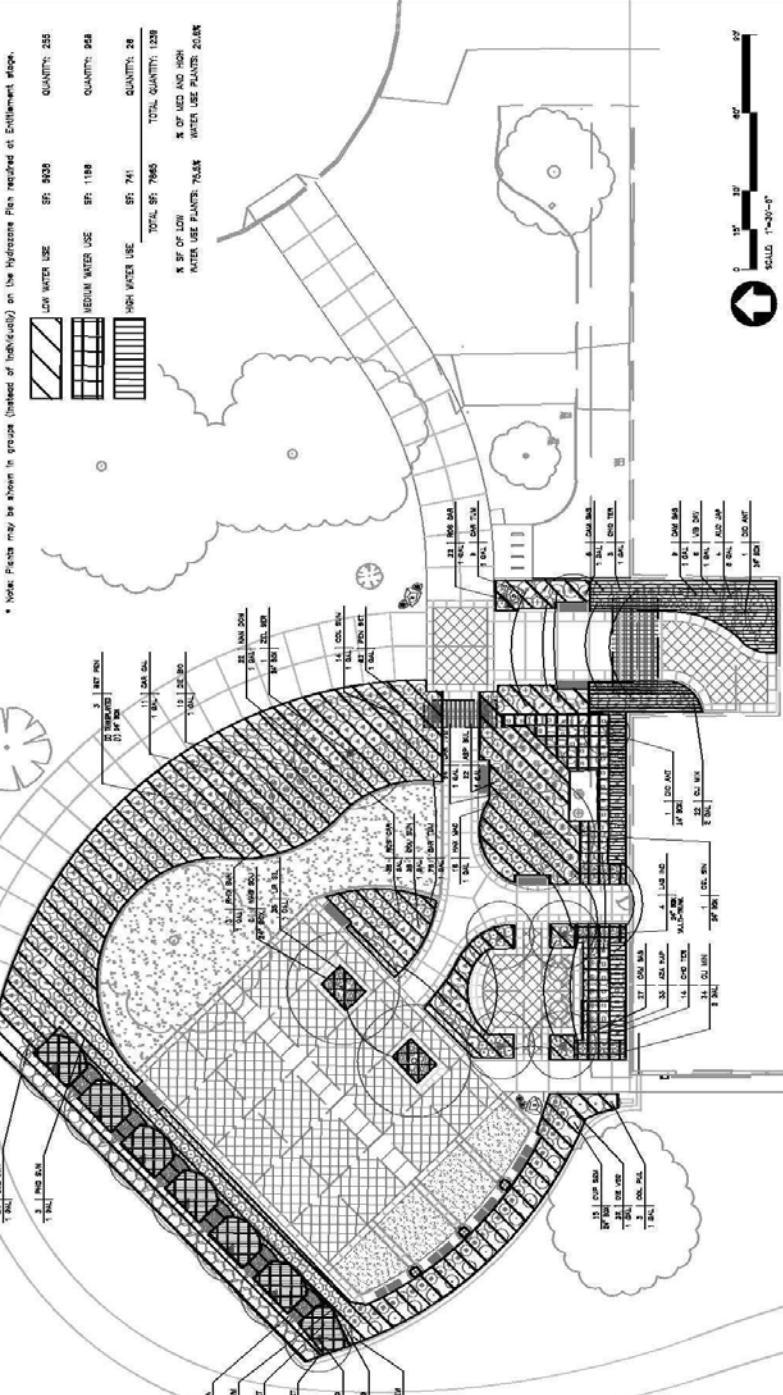
HYDROZONE INFORMATION TABLE

HYDROZONE	TYPE	AREA (SF)	% OF TOTAL
H	1	100	10%
L	2	100	10%
H	3	100	10%
L	4	100	10%
V	5	100	10%
V	6	100	10%
V	7	100	10%
V	8	100	10%
V	9	100	10%
V	10	100	10%
V	11	100	10%
V	12	100	10%

HYDROZONE INFORMATION

H = High Water Use Plants
L = Low Water Use Plants
V = Low Water Use Plants

Impregnation Methods:
S = Micro-sprinkler
R = Rotor
B = Bubble
D = Drip
O = Other



SAMPLE TREE SURVEY / TREE PROTECTION PLAN

Firm Name/
Logo

Street Address
City, State Zip

PROJECT NAME
FREMONT, CA

DATE: / /

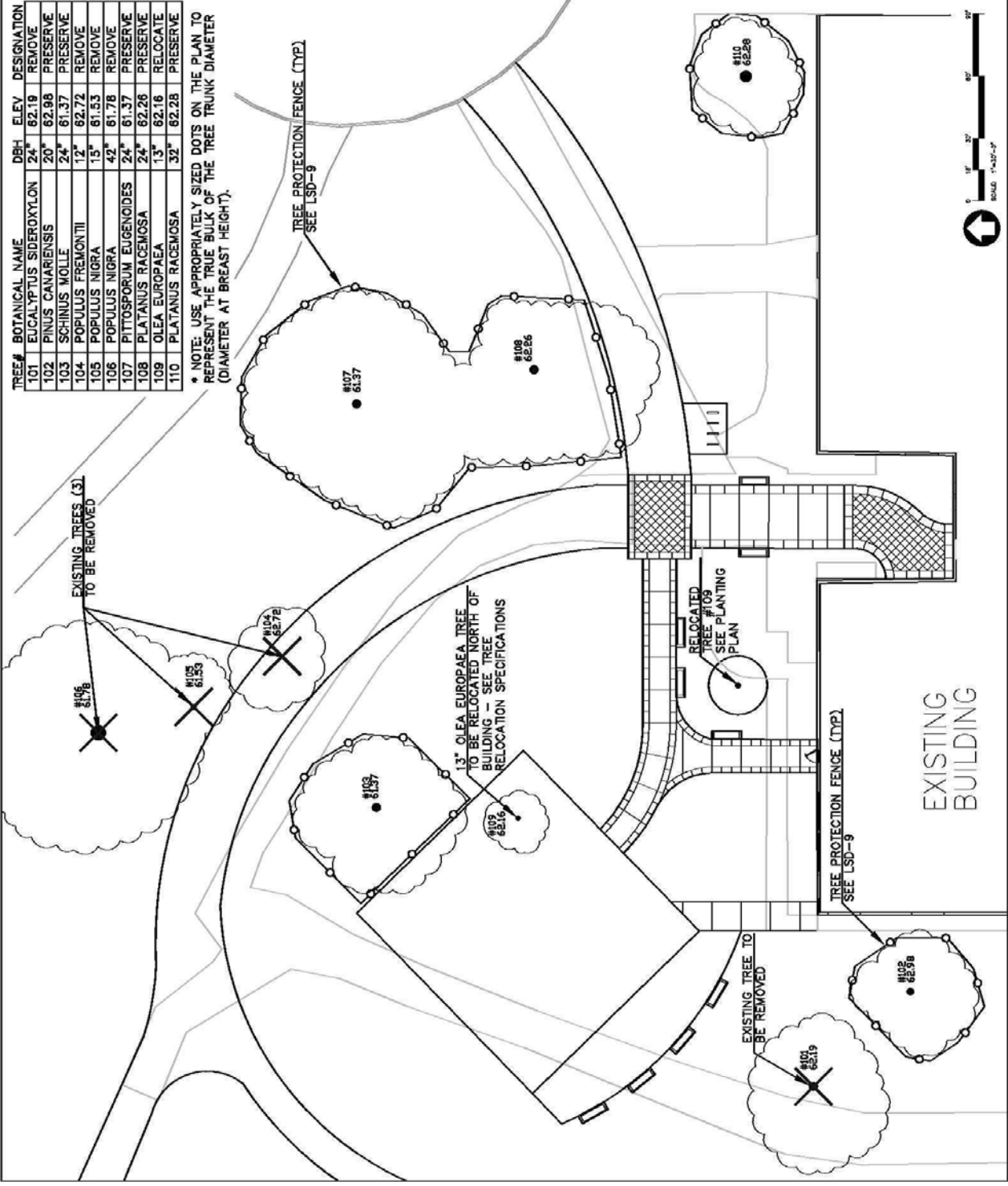
BY: / /

PROJECT NUMBER
LS-1

TREE SURVEY

TREE #	BOTANICAL NAME	DBH	ELEV	DESIGNATION
101	EUCALYPTUS SIDEROXYLON	24"	62.19	REMOVE
102	PINUS CANARIENSIS	20"	62.98	PRESERVE
103	SCHINUS MOLLE	24"	61.37	PRESERVE
104	POPULUS FREMONTII	12"	62.72	REMOVE
105	POPULUS NIGRA	15"	61.53	REMOVE
106	POPULUS NIGRA	42"	61.78	REMOVE
107	PITTIOSPORUM EUGENOIDES	24"	61.37	PRESERVE
108	PLATANUS RACEMOSA	24"	62.26	PRESERVE
109	OLEA EUROPAEA	13"	62.16	RELOCATE
110	PLATANUS RACEMOSA	32"	62.28	PRESERVE

* NOTE: USE APPROPRIATELY SIZED DOTS ON THE PLAN TO REPRESENT THE TRUE BULK OF THE TREE TRUNK DIAMETER (DIAMETER AT BREAST HEIGHT).



Requesting Landscape Inspection of Development Projects

Construction must be 100% complete before requesting inspection for Building Permit (occupancy) or Tract Acceptance. All post construction forms must be completed and submitted to the City with the inspection request.

Forms required:

- **Form B, Part 1:** Certificate of Completion (WELO)
- **Form B, Part 2:** Certificate of Installation (WELO), with following attachments:
- **Form B, Part 3:** Irrigation Scheduling
- **Form B, Part 4:** Schedule of Landscape and Irrigation Maintenance
- **Form B, Part 5:** Landscape Irrigation Audit Report (conducted by a Certified landscape Irrigation Auditor)
- **Form B, Part 6:** Soil Management Report (Include verification of implementation of recommendations from soil analysis report)

For Tract Acceptance:

*Note: Only 15% of production homes require irrigation audit.

Engineering Construction Inspection
Public Works Department
39550 Liberty Street
Fremont, CA 93537-5006
Ph: (510) 494-4700
Fax: (510) 494-4646

For Certificate of Occupancy:

Development Services Technician
Community Development Department
39550 Liberty Street
Fremont, CA 93537-5005
Ph: (510) 494-4480
Fax: (510) 494-4820

Special note for Temporary Occupancy Requests: Temporary Occupancies are handled on a case-by-case basis. At a minimum, landscape must be substantially complete with only minor items remaining. In cases where Temporary Occupancies are considered by the City, the Certificate of Completion (Form B, Part 1) and the Certificate of Installation (Form B, Part 2) may be temporarily substituted for a detailed punch-list prepared by the Project Landscape Architect. The punch list shall document all minor items remaining that must be completed before Final Occupancy. Certificate of Completion (Form B, Part 1) and the Certificate of Installation (Form B, Part 2) and follow-up City inspection is still required before Final Occupancy.

Miscellaneous Landscape Inspection Requests:

City Landscape Architect
Community Services Department
39550 Liberty Street
Fremont, CA 94537-5006
Ph: (510) 494-4700
Fax: (510) 494-4721

Arborist Analysis Report Standards

Note: Arborist analysis is only required if requested by the city and is not a standard submittal item on development projects or as part of a Tree Removal Application. The applicant may choose to provide an arborist analysis at his or her discretion, in advance of a potential request by the city.

An arborist analysis report is required to make a more detailed assessment of an individual tree's suitability for preservation or assessment of a proposed design near an existing tree. The report shall be prepared by an Arborist, certified by the ISA (International Society of Arboriculture) and approved by the City of Fremont. The City will require a deposit (estimated amount) from the applicant in order to cover the cost of the arborist report. If the applicant uses their own approved Arborist, the deposit may be required for a peer review of the Arborist report. Any unused amount of the deposit will be returned to the applicant.

The arborist report will include, at a minimum, the following factors in the evaluation of suitability for preservation:

***Tree health**

Healthy, vigorous trees are better able to tolerate impacts such as root injury, demolition of existing structures, changes in soil grade and moisture, and soil compaction, than are non-vigorous trees.

***Structural Integrity**

Trees with significant amounts of wood decay and other structural defects that cannot be corrected are likely to fail. Such trees will not be preserved in areas where damage to people or property is likely to occur.

***Species response**

There is a wide variation in the response of individual species to construction impacts and changes in the environment.

***Tree age and longevity**

Old trees, while having significant emotional and aesthetic appeal, sometimes have limited physiological capacity to adjust to an altered environment. Young trees are better able to generate new tissue and respond to change. Older trees may require modifications to the development proposal, to achieve preservation.

***Other evaluation as identified by the City**

Each project has unique features that may impact trees. The analysis will explore innovative alternatives in design that promote preservation of quality trees. The City may choose to require tree appraisals on complex projects where significant development may occur near trees to be preserved. Tree appraisals will provide a basis of penalties for destruction of trees during construction and may be used to assess mitigation on projects with significant tree removal.

Give each tree a rating for suitability for preservation based upon its age, health, structural condition, and tree's ability to exist safely within the development environment.



TREE PERMIT & APPLICATION

INSTRUCTIONS

1. Complete all fields of this form as incomplete applications will delay request.
A fee is not required.
2. See additional instructions/requirements on back.
3. Submit completed application to treepermits@fremont.gov.
4. For inquiries, please call the tree permit line at (510) 494-4730

Tree Permit #:
____ - ____ - ____
(For Office Use Only)

APPLICATION DATE: ____/____/____

Permit not valid without City approved signature and date stamp.

PERMIT TYPE:

STREET TREE: *Select one of the following:*

**Note: Leave this section blank if not street tree.*

Planting Permit

Pruning Permit

Removal Permit

Root Pruning Permit

PRIVATE PROTECTED TREE:

**Note: Leave this section blank if not a private tree.*

Removal Permit

OWNER INFORMATION:

Required for all applicants

CONTRACTOR INFORMATION:

Required for street trees only

NAME: _____

STREET ADDRESS: _____

ZIP CODE: _____

TELEPHONE #: _____

EMAIL ADDRESS: _____

I grant the City or City's agent permission to go on property for inspection of tree(s): Yes No

Is any development planned for this property? (If yes, this permit is not valid regardless of approval): Yes No

TREE INFORMATION:

SPECIES: _____

QUANTITY: _____

PREFERRED REPLACEMENT TREE(S): _____

**Replacement tree required.*

REASON FOR REMOVAL: _____

**Please attach picture with application.*

Additional Requirements: All stumps must be ground and removed to a two-foot depth minimum. This permit expires in 6 months from the date of approval (see expiration date below). Install trees per City Standard Detail LSD-1. All pruning must be per International Society of Arboriculture (ISA) standards or ANSI 300.

SECTION TO BE FILLED OUT BY CITY STAFF

REQUIRED MITIGATION

Species:

Total New Trees:

Size:

Mitigation must be complete within 30 days after removal, but before expiration of permit. Call (510) 494-4730 for inspection when mitigation is complete.

Date Stamp:

Permit expires 6 months from stamped date.

To appeal a permit denial before the City Council, contact the City Clerk's office within ten days from the date of this notice. Call (510) 284-4060

Contact:
Tree Permits
39550 Liberty St., P.O. Box 5006 • Fremont, California 94537-5006
Tree Permit Line: (510) 494-4730 Email: treepermits@fremont.gov

(For Office Use Only)

Mitigation Complete: _____ Inspected By: _____
____/____/____

Rev. 05/05/2013

A PERMIT IS REQUIRED PER FMC 4-5100 UNDER THE FOLLOWING CONDITIONS:

YOU DO need a tree removal permit if the tree meets one or more of the following size conditions:

- Any size DBH (any species**) if the tree was required or preserved through a previous development approval,
- 6" DBH* or larger (any species**) if on underdeveloped or vacant land,
- 10" DBH* or larger if native to Fremont***, or
- 18" DBH* or larger (any species**).

... AND the tree is located on one or more of the following types of properties :

- Any City approved development on any size property where the tree was required or the tree was preserved,
- The front yard of any Single Family Home lot 10,000 square feet or less (a side yard facing a street on a corner lot is regulated as a front yard.),
- Any Single Family Home lot larger than 10,000 square feet, or
- Any non-Single Family Home lot in Fremont.

YOU DO NOT need a permit if the tree is:

- located in the rear or side yard of any Single Family Home lot 10,000 square feet or less (unless specifically required by previous development approval or is listed the City Landmark Tree List.)

Notes and Definitions:

- * DBH – Diameter at Breast Height (Trunk diameter measured four and one half feet from ground level).
For multi-trunk trees, DBH is the sum total of all trunks added together (measured 4 ½ feet from ground level).
For low branching trees with substantial branches below four and one half feet from ground level, DBH is measured below the lowest branch attachment.
- ** Exceptions include commercial-type fruit or nut bearing trees, which DO NOT require a permit (except Walnuts and Olives are protected and therefore require permits),
- *** Trees Native to Fremont are regulated starting at 10 " DBH, and includes Oak, Redwood, Buckeye, Madrone, Sycamore, Big-Leaf Maple, Redbud, and Bay. Additionally, a list of non-native trees that have exceptional adaptability to Fremont and are treated as native trees, include Fremont Cottonwood, California Pepper, European Olive, Black Walnut, and Deodar Cedar. For all other tree species refer to table above for permit requirements.

CRITERIA FOR GRANTING PERMITS:

The City promotes options for preservation of mature healthy trees whenever possible. Per FMC 4-5106, tree removal permit will be considered for approval if the tree: 1) is hazardous to person or property and cannot be corrected to be safe, 2) has a short life expectancy, 3) is a host to disease that endangers other trees, 4) is part of a group that is overcrowded, 5) makes reasonable development of the property impossible, 6) makes full enjoyment of an existing structure or utility (gas, water, etc.) impossible., or 7) has been damaged to the extent that it cannot be feasibly restored.

If a permit is granted, a 24" box size replacement tree will be required (15 gallon size tree is required for homeowners). The tree species should be of similar type and size as the tree removed. A subsequent arborist report or tree survey paid by the applicant may be required to determine if tree meets criteria for removal, such as described above.

INSTRUCTIONS FOR COMPLETING APPLICATION:

1. If you have a development application pending or contemplated with the City, do not use this application. Application for tree removals will be considered together with your development.
2. Fill out the top portion of the application on the opposite side of this sheet. A fee is not required. Incomplete applications will delay approval process or application may be returned.
3. Mail (front page only) or bring in person to the City Landscape Architect at:
City of Fremont, Engineering Division
39550 Liberty Street
Fremont, CA 94537-5006,
(or) E-mail pdf of complete application to ravenstad@ci.fremont.ca.us
4. Include your phone number so city staff can call with questions.
5. Expect two to four weeks for a fully processed application unless the City requires additional information. Applications must be made at least 15 days before proposed date for tree removal.
6. Call (510) 494-4700 for final inspection after replacement tree(s) is planted.

Resources, Publications and Documents

1. *Bay-Friendly Landscape Guidelines*(Book), Alameda County Waste Management (aka www.stopwaste.org)
2. *Water Use Classification of Landscape Species (WUCOLS)*, University of California cooperative Extension. (<http://ucanr.edu/sites/WUCOLS>)
3. *City of Fremont Stormwater Treatment Requirements* (<https://city.fremont.gov/stormwaterpermit>)
4. C.3 Stormwater Technical Guidance Manual, Alameda Countywide Clean Water Program (<https://www.cleanwaterprogram.org/businesses/development.html>)
5. *State Water Resources Control Board*. (<http://www.waterboards.ca.gov>)
6. *Sunset Western Garden Book*, Lane Publishing.
7. *Plants and Landscapes for Summer Dry Climates (Book)*, East Bay Municipal Utility District
8. *Trees and Development: A Technical Guide to Preservation of Trees During Land Development (Book)*, International Society of Arboriculture (Matheny, Clark)
9. *California Irrigation Management Information Systems*, State of California, Department of Water Resources, (www.cimis.water.ca.gov)
10. *International Society of Arboriculture*. (www.isa-arbor.com)
11. *American Society of Consulting Arborists*. (www.asca-consultants.org)
12. *Trees are Good*. Professional and consumer information on trees from International Society of Arboriculture (www.treesaregood.org)
13. *Calculate the ecological and financial benefit of your tree*. I-Tree is based on USDA Forest Service “Statum” tree assessment tool. (<http://www.treebenefits.com/calculator/index.cfm>)

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LANDSCAPE STANDARD DETAILS (LSD) FOR CITY PROJECTS AND RIGHT-OF-WAY

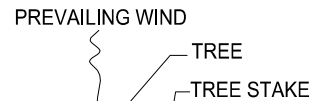
Table of Contents

<u>DETAIL NO.</u>	<u>TITLE</u>
LSD-1	TREE PLANTING AND STAKING (2 pages)
LSD-2	TREE PLANTING WITH TREE GRATE (2 pages)
LSD-3	SHRUB AND GROUNDCOVER PLANTING
LSD-4	SHRUB AND GROUNDCOVER LAYOUT
LSD-5	STREET TREE CLEARANCES
LSD-6	TREE CLEARANCES
LSD-7	MEDIAN COBBLE PAVING
LSD-8	MAINTENANCE BAND
LSD-9	TREE PROTECTION FENCING
LSD-10	TEMPORARY TRUNK WRAP
LSD-11	<i>Not used</i>
LSD-12	TREE AND SHRUB PLANTING ON SLOPE
LSD-13	TREE PLANTING GUIDE (LIST)
LSD-14	IRRIGATION MATERIALS
LSD-15	IRRIGATION CONTROLLER CABINET w/ CALSENSE CONTROLLER
LSD-16	BACKFLOW PREVENTOR UNIT
LSD-17	BACKFLOW PREVENTOR UNIT CAGE
LSD-18	IRRIGATION TRENCH
LSD-19	QUICK COUPLING VALVE IN BOX
LSD-20	IRRIGATION WIRE SPLICE (2 pages)
LSD-21	IRRIGATION ROTOR OR POP-UP
LSD-22	IRRIGATION GATE VALVE
LSD-23	REMOTE CONTROL VALVE W/ GATE VALVE
LSD-24	MASTER VALVE AND FLOW SENSOR
LSD-25	PRESSURE REDUCTION VALVE
LSD-26	IRRIGATION WYE STRAINER
LSD-27	LANDMARK TREE PLAQUE
LSD-28	LANDMARK TREE RAILING
LSD-29	STORMWATER TREETWELL (2 pages)
LSD-30	STORMWATER PLANTER (4 pages)
LSD-31	STORMWATER TRASH CAPTURE INLET (3 pages)

BUBBLER:

1. INSTALL (2) BUBBLERS PER TREE.
2. INSTALL BUBBLERS ON POP-UP BODY, FLEXIBLE TUBE OR AS REQUIRED BY PROJECT AND APPROVED BY CITY LANDSCAPE ARCHITECT.

STAKING AND TYING TREE:



WONDER TREE TIE
Ph.(800) 910-2810

WONDER TREE-TIE MODEL# W14-46, W24-84 OR APPROVED EQUAL. SECURE EXPOSED WIRE ENDS TO OUTSIDE OF STAKE - POUND WIRE ENDS INTO STAKE. ALLOW 3 INCHES OF MOVEMENT OF TREE IN ALL DIRECTIONS.

UNTREATED LODGE POLE PINE TREE STAKES (DO NOT PIERCE ROOT BALL):
2 INCH DIA. - 24" BOX & UNDER,
3 INCH DIA. - 36" BOX & UP

MULCH AND WATER BASIN:

BARK MULCH: 3 INCH DEPTH, KEEP 6" CLEAR FROM TRUNK OF TREE

FINISH GRADE

4 INCH TALL EARTH BERM FOR WATER BASIN:

- 3' DIA. FOR 15-GAL.
- 4' DIA. = 24" BOX
- 5' DIA. = 36" BOX & LARGER

PLANTING HOLE:

BACK FILL MIX (TOP 12 INCHES ONLY): 70% PULVERIZED NATIVE SOIL, 30% COMPOST

FERTILIZER: BEST PAKS (21 GRAM, 20-10-5): 15 GAL. - 9 PAKS, 24" BOX - 25 PAKS, 36" BOX - 30 PAKS

PLANTING HOLE, PULVERIZED NATIVE SOIL BELOW 12-INCHES FROM FINISH GRADE; SCARIFY WALLS

SET ROOT BALL FIRMLY ON UNDISTURBED OR WATER SETTLED NATIVE SOIL. TOP OF ROOT BALL 1 INCH ABOVE FINISH GRADE.

TOP OF STAKE
6 INCHES BELOW HEAD

IRRIGATION AND TUBE NOT REQUIRED FOR PERMITTED REPLACEMENT TREES

DEEP WATERING TUBE: ONE (1) 4" DIAMETER PERFORATED PIPE WITH OPEN GRATE CAP, 30" DEEP. FILL WITH DRAIN ROCK. NO INTERNAL BUBBLER.

TWO (2) 1/2 GPM IRRIGATION BUBBLERS, OFFSET FROM TREE AS DIMENSIONED WHEN REQUIRED ON FLEXIBLE RISER OR POP-UP BUBBLER (IN LAWN ONLY).

STAKE HEIGHT: AS REQUIRED FOR TREE HEIGHT

STAKE DEPTH: 3 FEET

3' MIN. FROM BERM

VARIES

12"

DEPTH OF ROOT BALL
+6" (15 GAL)
+12" (24" & 36")

PVC LATERAL PIPE
(3/4" DIAMETER MIN.)

PLANT HOLE DIAMETERS:

- 15 GAL: 3'-6"
- 24" BOX: 4'-6"
- 36" BOX: 6'-0"
- 48" BOX: 7'-0"
- 60" BOX: 9'-0"

WATERING BY HAND:

WATER TWICE WEEKLY DURING THE GROWING SEASON. APPLY 7 1/2 TO 10 GALLONS DURING EACH WATERING. FILL WATER BASIN SLOWLY TO ALLOW WATER TO SOAK INTO SOIL .

NOTES:

1. KEEP TURF AND PLANTS OUTSIDE CIRCULAR EARTH BERM / WATER BASIN.
2. STREET TREES (TREES WITHIN CITY RIGHT-OF-WAY) SHALL BE:
15 GALLON SIZE FOR SINGLE FAMILY RESIDENCE PERMIT REPLACEMENT TREE
24 INCH BOX SIZE FOR ALL OTHER TREES

General Revision	7/31/22
General Revision	08/2019
Council Revision	12/13/11
General Revision	02/08/10
APPR	REVISED
	DATE
REVISIONS	

**CITY OF FREMONT
STANDARD DETAILS**

**CITY STANDARD
TREE PLANTING & STAKING**

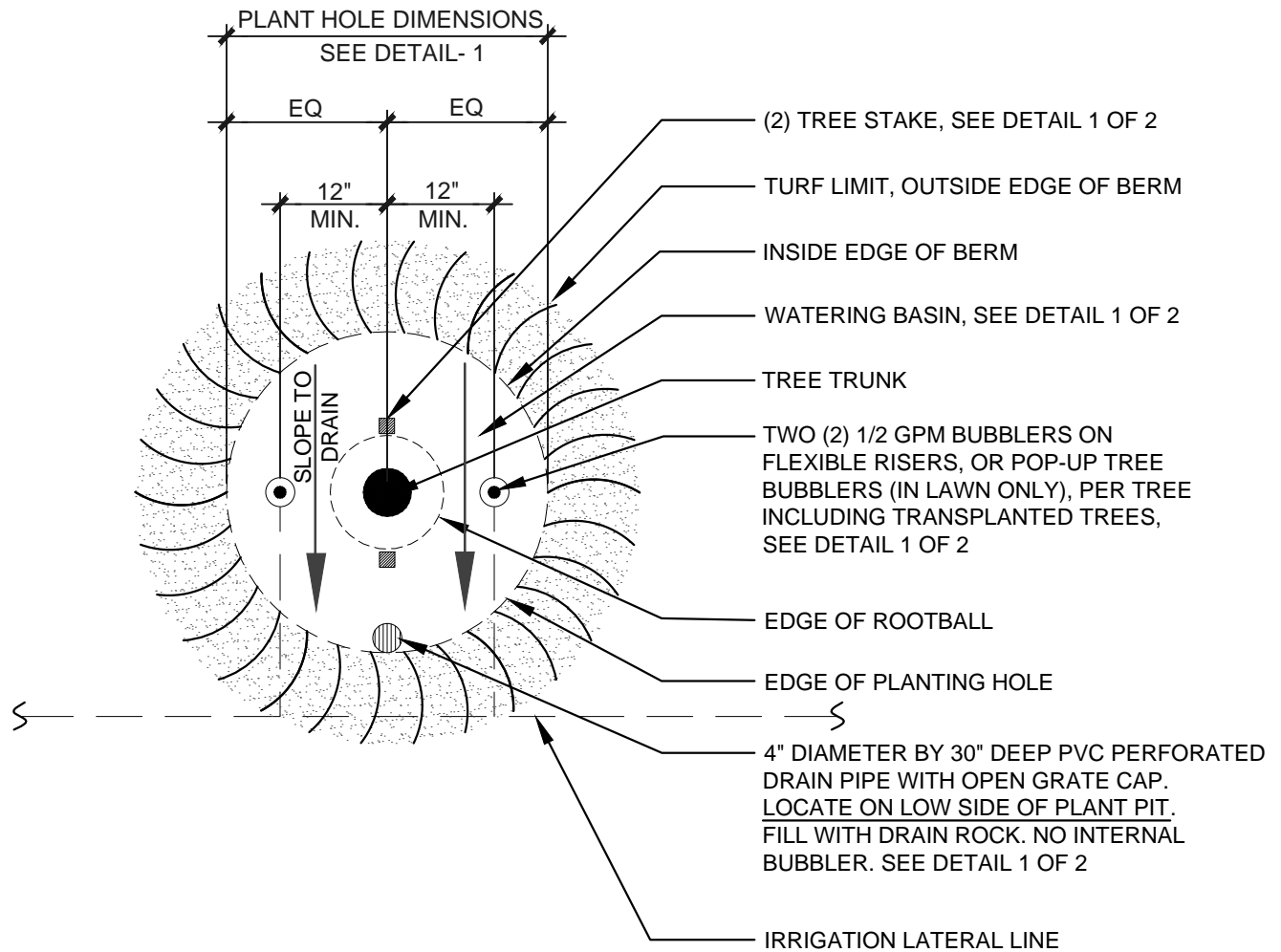
DATE APPROVED BY CITY COUNCIL
12/13/11

RESOLUTION NO. 2006-31

Norm Hughes

CITY ENGINEER

FILE NO. SD-1.DWG	SCALE 3/4" = 1'-0"	DRAWN PM/MM	CHECKED RER	DATE DEC. 2011	DWG NO. LSD - 1	1 of 2
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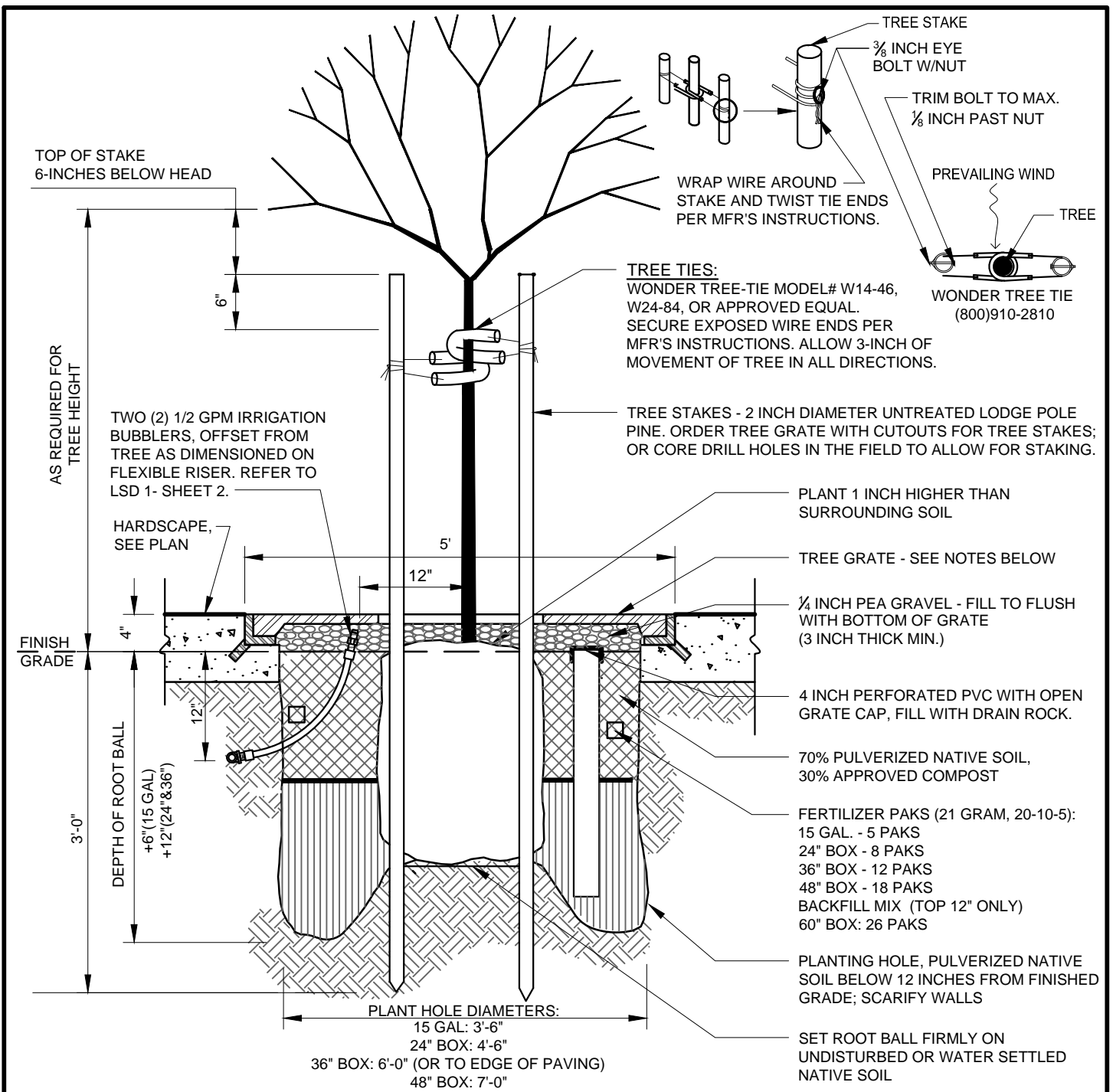


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<i>JER</i>	General Revision	08/2019
<i>JER</i>	Council Revision	12/13/11
<i>JER</i>	General Revision	02/08/10
APPR	REVISED	DATE
REVISIONS		

CITY OF FREMONT
STANDARD DETAILS
CITY STANDARD
TREE PLANTING (PLAN VIEW)

DATE APPROVED BY CITY COUNCIL 12/13/11
RESOLUTION NO. 2006-31
<i>Norm Hughes</i>
CITY ENGINEER

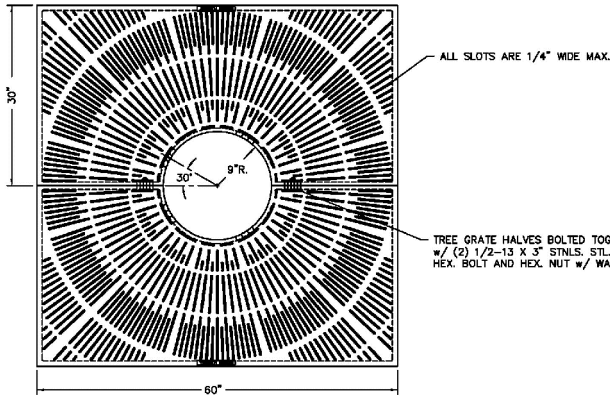
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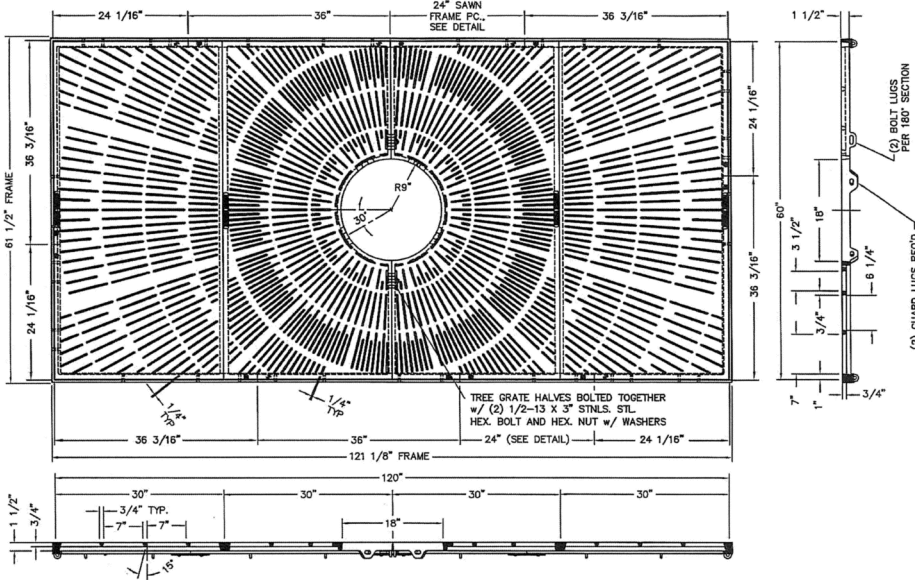
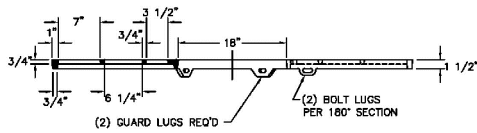
PLANTING AND TREE GRATE NOTES:

1. WHERE REQUIRED, TREE GRATE TO BE FIVE (5) FEET X SQUARE MAKE AND MODEL TO BE NEENAH R-8707 (METROPOLITAN COLLECTION), OR APPROVED EQUAL.
2. WHERE REQUIRED, TREE GRATE TO BE FIVE (5) FEET X TEN (10) FEET. MAKE AND MODEL SHALL BE NEENAH R-8823 (8823-100 METROPOLITAN COLLECTION), OR APPROVED EQUAL.
3. WHERE REQUIRED, TREE GRATE TO BE FIVE (5) FEET X FIFTEEN (15) FEET MAKE AND MODEL SHALL BE NEENAH R-8823 SPECIAL (8823T05 METROPOLITAN COLLECTION), OR APPROVED EQUAL.
4. TREE GRATE TO BE UNFINISHED.
5. REFER TO DETAIL LSD-1 FOR MORE INFORMATION, 1 OF 1 AND 2 OF 2.
6. STREET TREES (TREES WITHIN RIGHT-OF-WAY) SHALL BE 24 INCH BOX SIZE, MINIMUM.
7. ROOT BARRIERS SHALL NOT BE INSTALLED UNLESS DIRECTED BY CITY LANDSCAPE ARCHITECT.

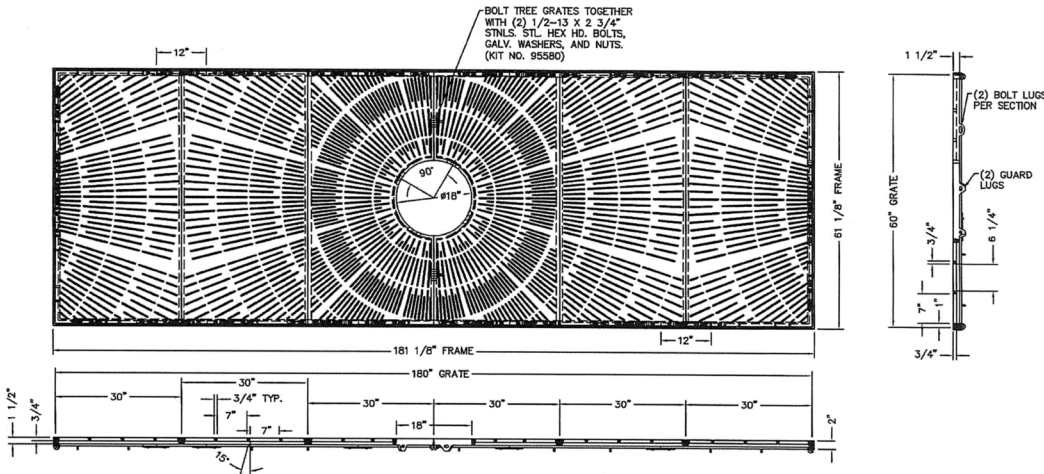
<p align="center">CITY OF FREMONT STANDARD DETAILS</p> <p align="center">CITY STANDARD TREE PLANTING WITH TREE GRATE</p>			DATE APPROVED BY CITY COUNCIL 12/13/11	
			RESOLUTION NO. 2006-31	
<p>General Revision 07/31/22</p> <p>General Revision 08/2019</p> <p>APPR REVISED DATE</p> <p align="center">REVISIONS</p>			<p align="center"><i>Norm Hughes</i></p> <p align="center">CITY ENGINEER</p>	
FILE NO.	SCALE	DRAWN		
LSD-2.DWG	3/4" = 1'-0"	PM/MM	RER	NOV. 2005
			DWG NO.	1 of 2
			LSD-2	



5' X SQUARE TREE GRATE
 MODEL: NEENAH FOUNDRY R-8707-T20,
 METROPOLITAN COLLECTION,
 OR APPROVED EQUAL



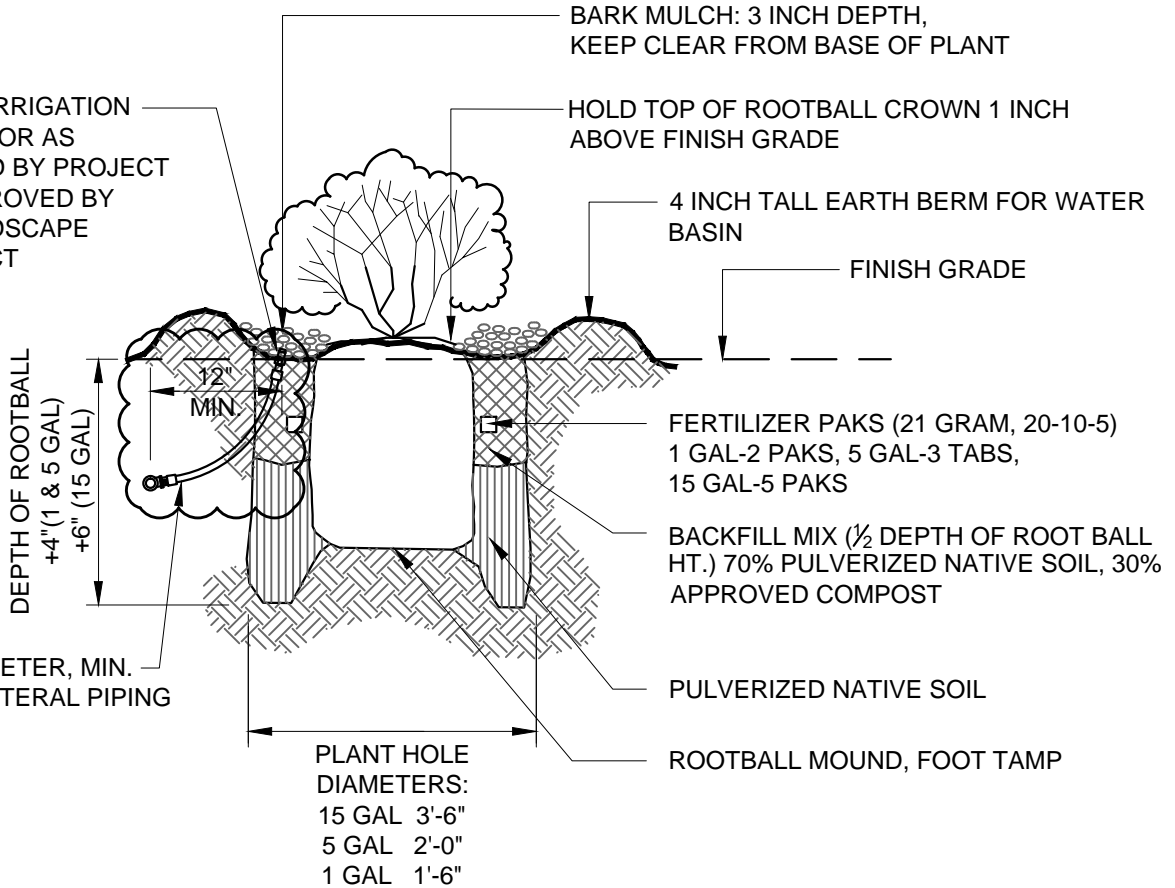
5' X 10' TREE GRATE
 MODEL: NEENAH FOUNDRY R-8823-100
 (WITH EXTENSION PIECES AND FRAME),
 METROPOLITAN COLLECTION,
 OR APPROVED EQUAL



5' X 15' TREE GRATE
 MODEL: NEENAH FOUNDRY R-8823-T05 (WITH EXTENSION PIECES AND FRAME),
 METROPOLITAN COLLECTION,
 OR APPROVED EQUAL

			CITY OF FREMONT STANDARD DETAILS			DATE APPROVED BY CITY COUNCIL 12/13/11									
						RESOLUTION NO. 2006-31									
<table border="1"> <tr> <td>General Revision</td> <td>07/31/22</td> </tr> <tr> <td>General Revision</td> <td>08/2019</td> </tr> <tr> <td>APPR</td> <td>REVISD</td> </tr> <tr> <td colspan="2">DATE</td> </tr> </table>			General Revision	07/31/22	General Revision	08/2019	APPR	REVISD	DATE		CITY STANDARD TREE PLANTING WITH TREE GRATE			<i>Norm Hughes</i>	
General Revision	07/31/22														
General Revision	08/2019														
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DATE															
REVISIONS			CITY ENGINEER												
FILE NO.	SCALE	DRAWN	CHECKED	DATE	DWG NO.										
LSD-2.DWG	3/4" = 1'-0"	PM/MM	RER	APRIL 2019	LSD-2	2 of 2									

1/4 GPM IRRIGATION
BUBBLER OR AS
REQUIRED BY PROJECT
AND APPROVED BY
CITY LANDSCAPE
ARCHITECT



<i>PK</i>	General Revision	07/31/22
<i>PK</i>	General Revision	08/2019
APPR	REVISED	DATE
REVISIONS		

CITY OF FREMONT
STANDARD DETAILS
CITY STANDARD
SHRUB AND GROUNDCOVER
PLANTING

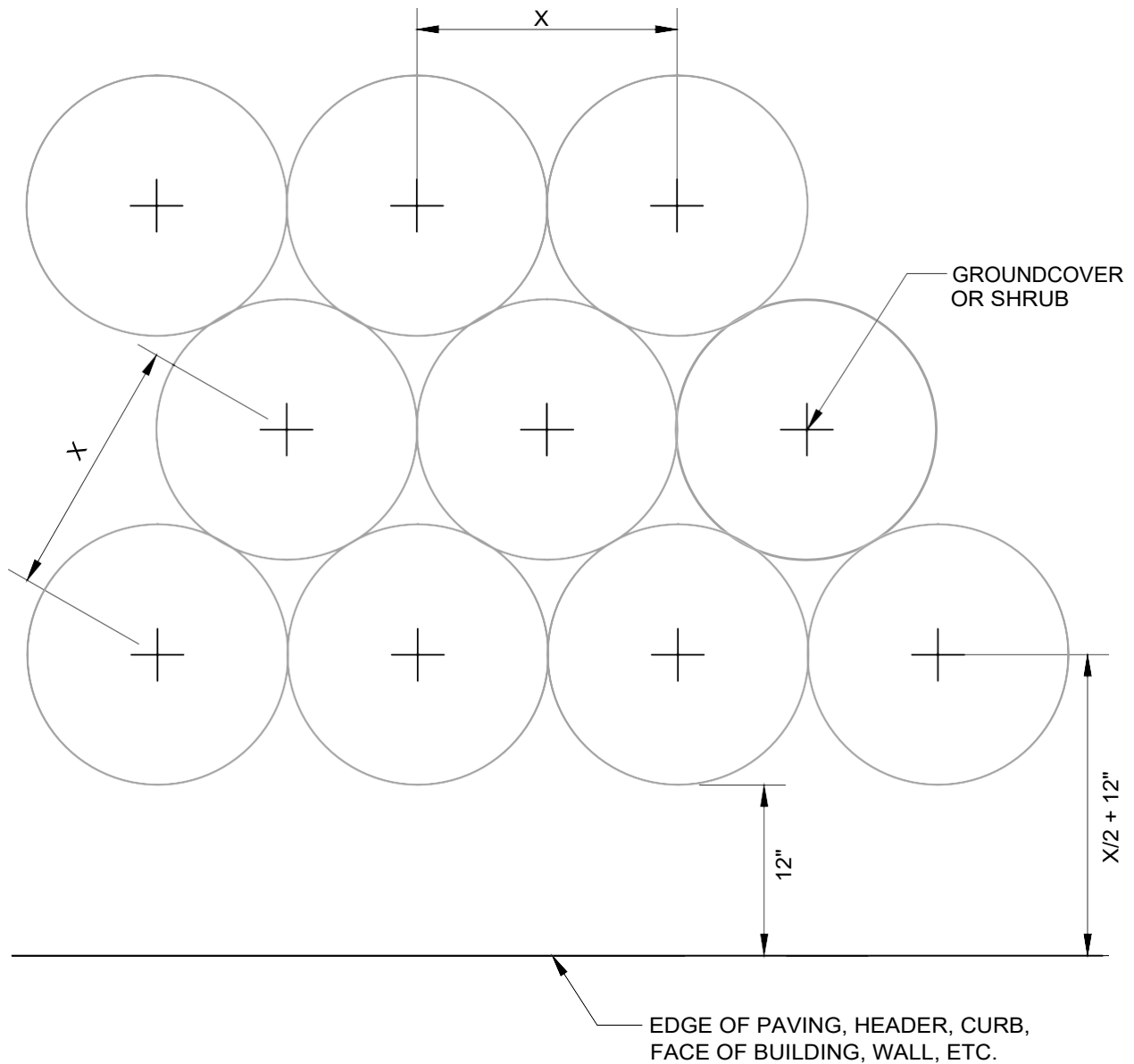
DATE APPROVED BY CITY COUNCIL
12/13/11

RESOLUTION NO. 2006-31

Naam Hughes

CITY ENGINEER

FILE NO. LSD-03.DWG	SCALE 3/4" = 1'-0"	DRAWN PM/MM/AK	CHECKED RER	DATE NOV. 2005	DWG NO. LSD-03	1 of 1
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NOTE:

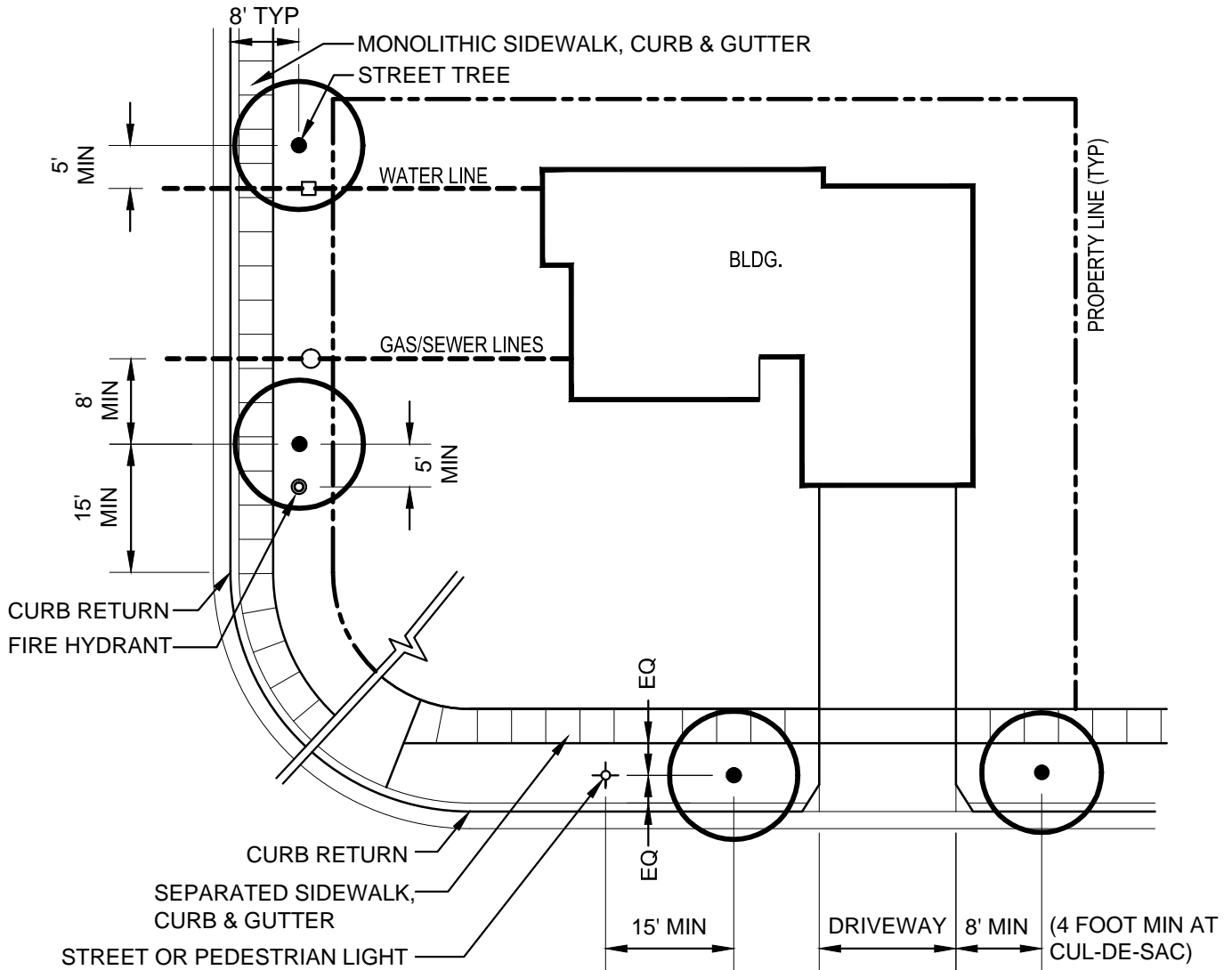
1. 'X' IS GROUNDCOVER AND SHRUB SPACING PER THE LANDSCAPE PLAN, PLANT LIST, AND LEGEND.
2. KEEP MULCH CLEAR OF PLANT BASE (SEE LSD-3 & LSD-12)

<h2 style="margin: 0;">CITY OF FREMONT</h2> <h3 style="margin: 0;">STANDARD DETAILS</h3> <h3 style="margin: 0;">CITY STANDARD</h3> <h2 style="margin: 0;">SHRUB AND GROUNDCOVER</h2> <h2 style="margin: 0;">PLANTING LAYOUT</h2>			DATE APPROVED BY CITY COUNCIL 12/13/11			
			RESOLUTION NO. 2006-31			
			CITY ENGINEER			
FILE NO.	SCALE	DRAWN	CHECKED	DATE	DWG NO.	
LSD-4.DWG	1" = 1'-0"	PM/MM	RER	DEC. 2011	LSD-4	1 of 1


Council Revision	12/13/11	
General Revision	03/17/11	
APPR	REVISED	DATE
REVISIONS		

MINIMUM STREET TREE CLEARANCES

1. STREET TREES SHALL BE LOCATED 8 FEET (MIN) FROM SANITARY SEWER, GAS, AND STORMWATER LINES.
2. STREET TREES SHALL BE LOCATED 5 FEET (MIN) FROM WATER, TELEPHONE AND ELECTRICAL LINES AND UTILITY BOXES.
3. STREET TREES SHALL BE LOCATED 5 FEET (MIN) FROM FIRE HYDRANTS.
4. STREET TREES SHALL BE LOCATED 15 FEET (MIN) FROM STREET LIGHTS.
5. STREET TREES SHALL BE LOCATED 8 FEET (MIN) FROM DRIVEWAYS AND 4 FEET (MIN) AT CUL-DE-SAC.
6. STREET TREES SHALL BE GENERALLY 35 FEET ON CENTER.
7. MINIMUM ONE TREE PER LOT REQUIRED, AND TWO PER CORNER LOT.
8. IF LOT WIDTH EXCEEDS 60 FEET AT THE STREET, ONE TREE IS REQUIRED EVERY 35 FEET OF STREET, EXCLUDING LENGTH OF CURB RETURN.
9. COORDINATE TRAFFIC SIGNS AND SIGNAL LOCATIONS SO THAT THESE ARE NOT OBSTRUCTED BY STREET TREE LOCATIONS.
10. STREET TREES SHALL BE PLACED A MINIMUM OF 50 FEET AWAY FROM NEAREST TRAFFIC SIGNAL POLE IN THE DIRECTION OF TRAVEL.



NOTE:
CURRENT STANDARD DETAIL AT CITY ENGINEERING DIVISION SHALL PREVAIL

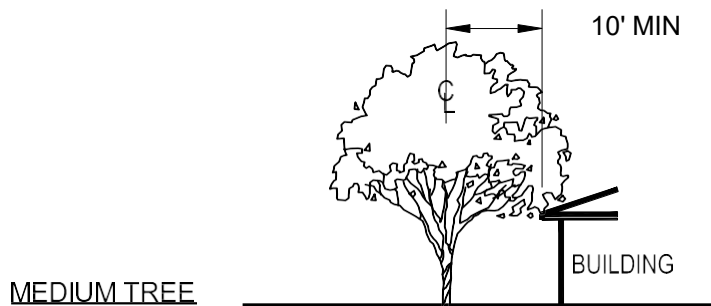
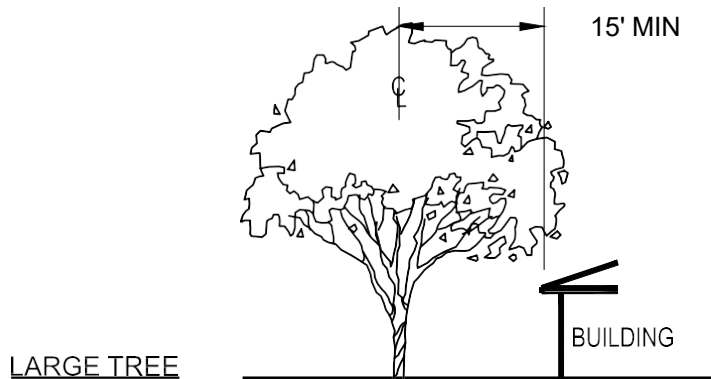
<p>CITY OF FREMONT STANDARD DETAILS <u>CITY STANDARD</u> STREET TREE CLEARANCES</p>			DATE APPROVED BY CITY COUNCIL 12/13/11													
			RESOLUTION NO. 2006-31													
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				General Revision	07/31/22											
	General Revision	08/2019														
APPR	REVISED	DATE														
REVISIONS																
FILE NO. LSD-05.DWG	SCALE 1" = 20'-0"	DRAWN PM/MM	CHECKED RER	DATE OCT. 2005	DWG NO. LSD-5	1 of 1										


MINIMUM TREE CLEARANCES FROM BUILDINGS

BRANCHES FROM MATURE TREES MAY NOT OVERHANG BUILDINGS AND ROOFS. ADEQUATE SPACE TO PLANT TREES ADJACENT TO BUILDINGS OR OTHER BUILT FEATURES MUST BE PROVIDED IN THE FOLLOWING MINIMUM WAYS:

1. SMALL TREES (TO 15 FEET TALL AT MATURITY) NO CLOSER THAN 6 FEET FROM BUILDING OR 2 FEET* FROM PAVING, CURBS, OR WALLS WITH A MINIMUM PLANTING AREA 5 FEET WIDE.
2. MEDIUM TREES (TO 35 FEET TALL AT MATURITY) NO CLOSER THAN 10 FEET FROM BUILDING OR 3 FEET* FROM PAVING, CURBS, OR WALLS WITH A MINIMUM PLANTING AREA 6 FEET WIDE.
3. LARGE TREES (ABOVE 35 FEET TALL AT MATURITY) NO CLOSER THAN 15 FEET FROM BUILDING OR 3 FEET* FROM PAVING, CURBS, OR WALLS WITH A MINIMUM PLANTING AREA 6 FEET WIDE, PREFERABLY 8 FEET WIDE.
4. WHEN ROOF EAVES OR BUILDING PROJECTIONS EXTEND BEYOND FACE OF BUILDING, CLEARANCE SHALL BE MEASURED FROM EDGE OF PROJECTION TO CENTERLINE OF TREE.
5. UPPER STORY OVERHANGS AND BUILDING FEATURES MAY NOT EXTEND WITHIN MINIMUM CLEARANCE EXCEPT FOR MINOR ROOF EAVES.

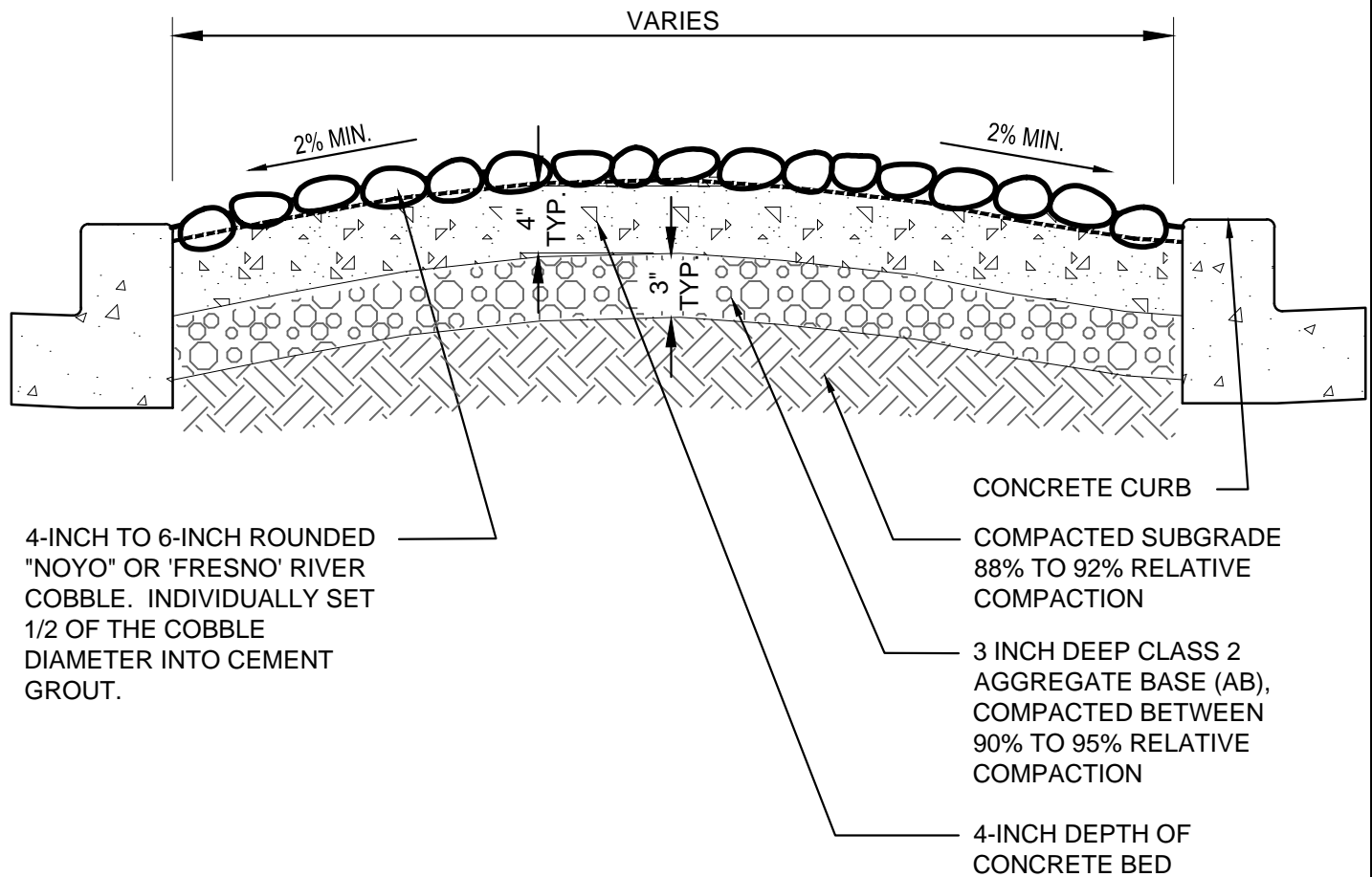
* REFER TO CITY STANDARD DETAIL LSD-05 FOR REQUIRED SPACING FROM UTILITIES.



			CITY OF FREMONT STANDARD DETAILS <u>CITY STANDARD</u> <u>TREE CLEARANCES</u>			DATE APPROVED BY CITY COUNCIL 04/11/06	
						RESOLUTION NO. 2006-31	
						 CITY ENGINEER	
APPR	REVISED	DATE				REVISIONS	
FILE NO.	SCALE	DRAWN	CHECKED	DATE	DWG NO.		
LSD-6.DWG	1"=20'-0"	MQ/MM	RER	NOV. 2005	LSD-6	1 of 1	

NOTES:

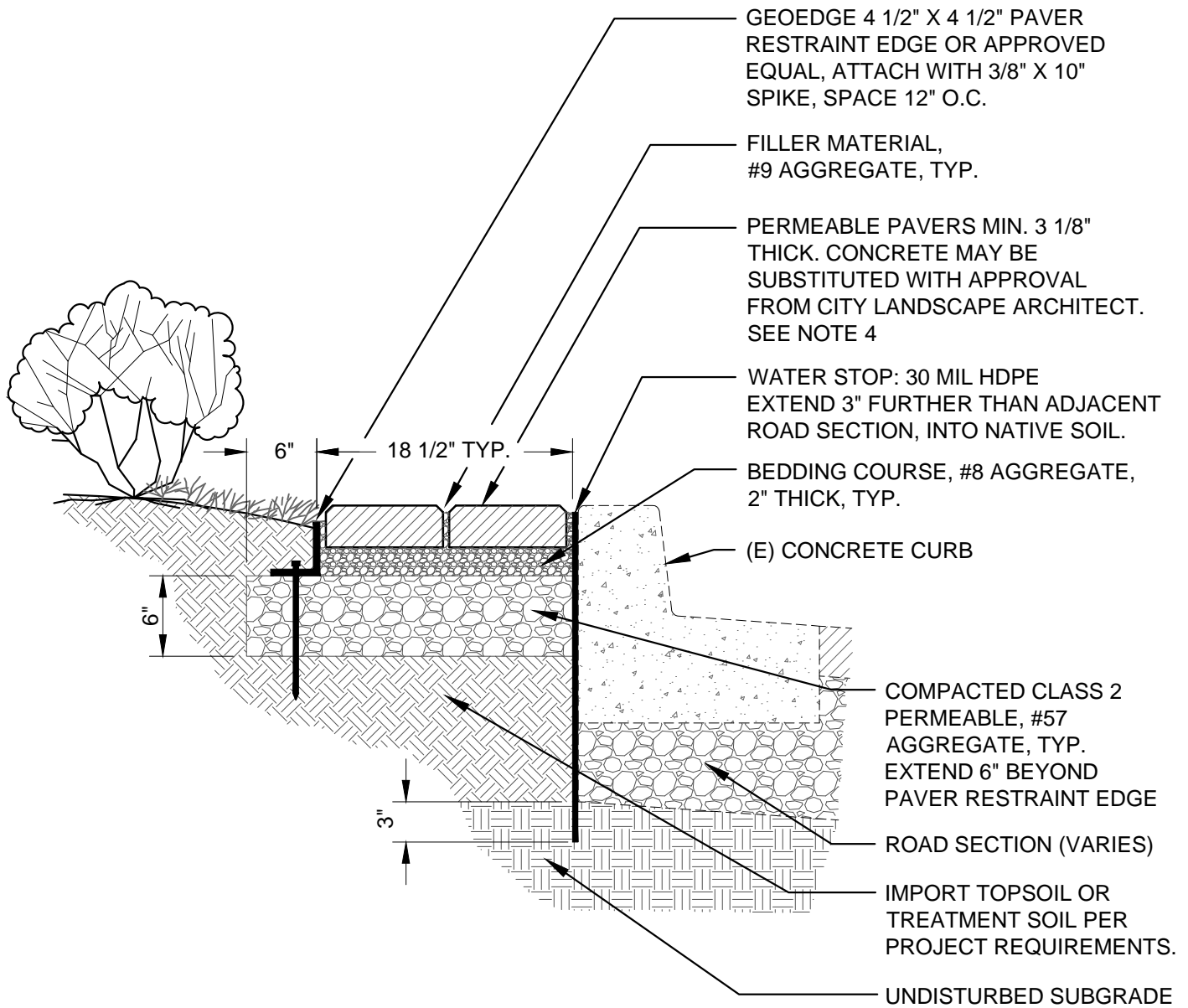
1. CURRENT STANDARD DETAIL AT CITY ENGINEERING DIVISION SHALL PREVAIL.
2. CROWN TO BE ROUNDED WITH NO SHARP GRADE BREAKS.
3. MINIMIZE VISIBLE EXPOSED GROUT AT COBBLE JOINTS.
4. SURFACE OF COBBLE FIELD TO BE SMOOTH AND FLAT TO GRADE WITHOUT VARIATION IN HEIGHT OF INDIVIDUAL COBBLES.
5. COBBLES WITH BREAKS OR FRACTURES ARE NOT ALLOWED.
6. ROCK SHALL BE 'SATURATED SURFACE MOIST' (SSM) PRIOR TO PLACEMENT.
7. CONCRETE BED SHALL HAVE A CEMENT RATIO PER CUBIC YARD OF CONCRETE OF NOT LESS THAN 564 POUNDS; SLUMP MAX. OF 3"; AGGREGATE SIZE 1/4" MAXIMUM.
8. INTEGRAL COLOR ADMIXTURE: COLOR 641-YOSEMITE BROWN, BY DAVIS COLOR, C-21 CHROMIX G & L ADMIXTURE, BY SCOFIELD, OR APPROVED EQUAL. ADMIXTURE CAN BE GRANULAR (G), LIQUID (L), OR POWDERED (P).



4-INCH TO 6-INCH ROUNDED "NOYO" OR 'FRESNO' RIVER COBBLE. INDIVIDUALLY SET 1/2 OF THE COBBLE DIAMETER INTO CEMENT GROUT.

CONCRETE CURB
 COMPACTED SUBGRADE
 88% TO 92% RELATIVE COMPACTION
 3 INCH DEEP CLASS 2 AGGREGATE BASE (AB), COMPACTED BETWEEN 90% TO 95% RELATIVE COMPACTION
 4-INCH DEPTH OF CONCRETE BED

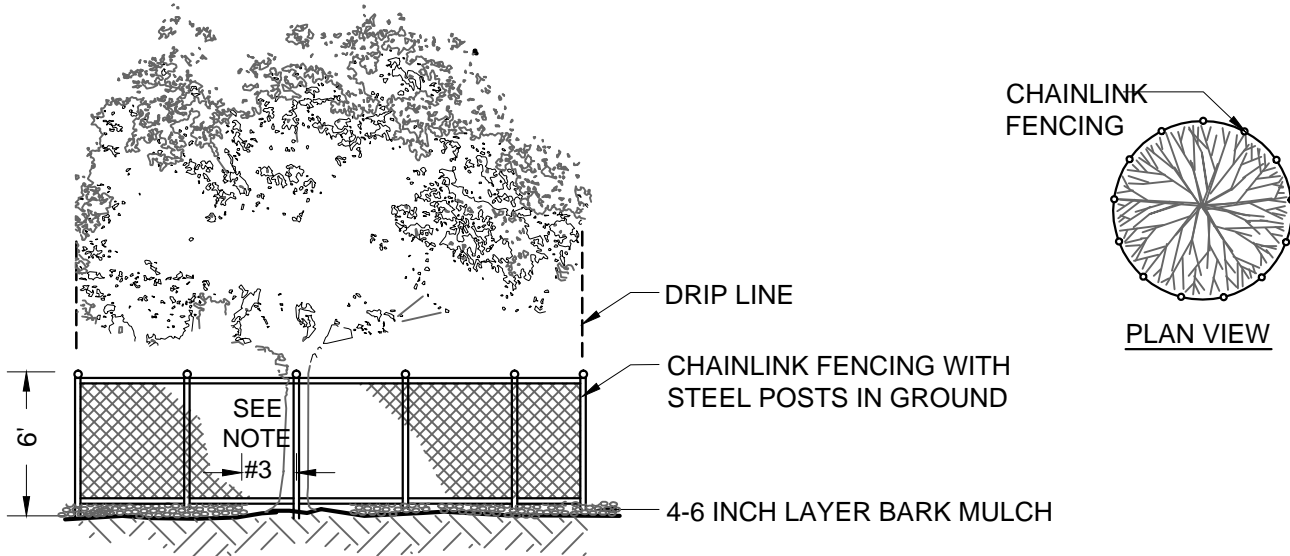
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						RESOLUTION NO. 2006-31													
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;"></td> <td style="width: 33%;">General Revision</td> <td style="width: 33%;">07/31/22</td> </tr> <tr> <td></td> <td>General Revision</td> <td>08/2019</td> </tr> <tr> <td>APPR</td> <td>REVISED</td> <td>DATE</td> </tr> <tr> <td colspan="3" style="text-align: center;">REVISIONS</td> </tr> </table>				General Revision	07/31/22		General Revision	08/2019	APPR	REVISED	DATE	REVISIONS			CITY ENGINEER				
				General Revision	07/31/22														
	General Revision	08/2019																	
APPR	REVISED	DATE																	
REVISIONS																			
FILE NO. LSD-7.DWG	SCALE 1" = 1'-0"	DRAWN PM/MM	CHECKED RER	DATE 10/07/2005	DWG NO. LSD-7	1 of 1													



NOTES:

1. ON MEDIANS LESS THAN 14 FEET WIDE, REPLACE MAINTENANCE BAND WITH 18 INCH MINIMUM WIDTH PLANTING OF WALKABLE GROUNDCOVER.
2. IF CONCRETE, INSTALL DEEP JOINTS TO MATCH CURB & GUTTER DEEP JOINTS. SEE ENGINEERING STANDARD DETAIL 8 FOR DEFINITION OF DEEP JOINT.
3. FOR PAVERS WITHIN THE DRIPLINE OF AN EXISTING TREE, HAND EXCAVATE ALL AREAS. 6" THICK, CLASS 2 PERMEABLE LAYER MAY BE REDUCED OR ELIMINATED, IF NECESSARY. SEE LSD-9 FOR TREE PRESERVATION NOTES.
4. PAVERS TO BE: 6 X 9 X 3 1/8 CALSTONE PERMEABLE PAVING UNITS, COLOR: RUSTIC YELLOW STONE. SUBSTITUTIONS TO BE APPROVED BY THE CITY LANDSCAPE ARCHITECT.

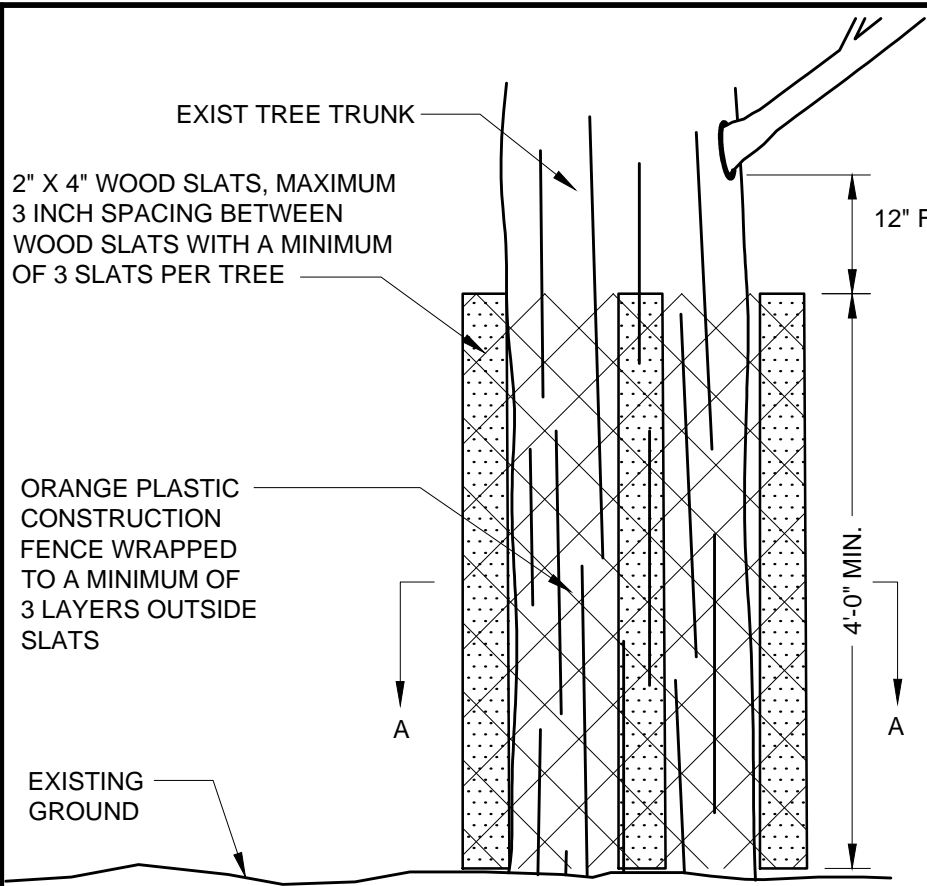
<p>General Revision 07/31/22</p> <p>General Revision 08/2019</p> <p>General Revision 09/05/12</p> <p>Council Revision 12/13/11</p>			<p>CITY OF FREMONT</p> <p>STANDARD DETAILS</p> <p>CITY STANDARD</p> <p>MAINTENANCE BAND</p>			<p>DATE APPROVED BY CITY COUNCIL</p> <p>12/13/11</p>	
<p>APPR REVISED DATE</p> <p>REVISIONS</p>						<p>RESOLUTION NO. 2006-31</p> <p><i>Norm Hughes</i></p> <p>CITY ENGINEER</p>	
FILE NO.	SCALE	DRAWN	CHECKED	DATE	DWG NO.		
LSD-8.DWG	1" = 1'-0"	PM/MM	RER	DEC. 2011	LSD-8	1 of 1	



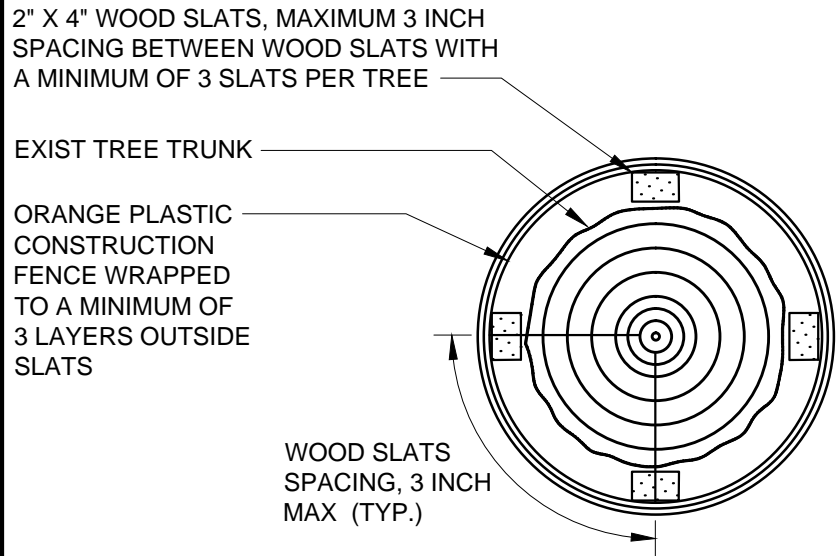
TREE PROTECTION NOTES

1. CURRENT STANDARD DETAIL AT CITY ENGINEERING DIVISION SHALL PREVAIL.
2. TREE PROTECTION MEASURES MUST BE IN PLACE BEFORE CONSTRUCTION, DEMOLITION AND/OR GRADING ACTIVITIES COMMENCE. CITY OF FREMONT WILL STOP CONSTRUCTION IF TREE PROTECTION MEASURES ARE NOT IN PLACE AND MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
3. TREES CALLED OUT FOR PRESERVATION SHALL BE FENCED AT THE DRIPLINE. FENCING MAY OCCUR AT THE COMBINED DRIPLINES OF GROVES OF TREES. PLACE 4-6 INCH BARK MULCH BENEATH DRIPLINES OF TREES TO BE PRESERVED. KEEP BARK 2-3 FEET FROM TREE TRUNK.
4. FENCING SHALL BE 6 FEET TALL CHAIN LINK FENCING WITH STEEL POSTS EMBEDDED IN THE GROUND.
5. NO GRADING SHALL OCCUR WITHIN THE DRIPLINES/FENCED AREA OF EXISTING TREES.
6. NO CONSTRUCTION MATERIALS OR CONSTRUCTION VEHICLES MAY BE STORED WITHIN THE DRIPLINES/FENCED AREA OF EXISTING TREES.
7. CONSTRUCTION VEHICLES OR MACHINERY MAY NOT PASS BETWEEN TWO OR MORE EXISTING TREES IDENTIFIED FOR PRESERVATION IF THEIR CANOPIES ARE WITHIN 10 FEET OF TOUCHING. ADDITIONAL FENCING MAY BE REQUIRED BY THE CITY AS NEEDED.
8. THE CONTRACTOR IS REQUIRED TO HAVE AN ARBORIST CERTIFIED BY THE INTERNATIONAL SOCIETY OF ARBORICULTURE (ISA), APPROVED BY THE CITY, ON SITE IF SITE CONSTRUCTION EFFORTS REQUIRE REMOVAL OF EXISTING ROOTS OR BRANCH PRUNING. ROOTS APPROVED FOR CUTTING MUST BE CUT CLEANLY WITH A SAW. RIPPING OR SHREADING ROOTS SUBJECT TO FINE/PENALTY.
9. UNAUTHORIZED TREE REMOVAL IS SUBJECT TO REPLACEMENT EQUAL TO THE APPRAISED VALUE OF THE TREE LOST PER FMC 4-5108.
10. THE CONTRACTOR IS REQUIRED TO WATER, FERTILIZE AND ATTEND TO OTHER MAINTENANCE NEEDS OF EXISTING TREES TO MAINTAIN HEALTHY GROWTH THROUGHOUT THE CONSTRUCTION PERIOD. AN EARTH BERM MEASURING MINIMUM 6 FEET IN DIAMETER, AND 6 INCHES IN HEIGHT SHALL BE CONSTRUCTED AT THE BASE OF EACH TREE TO FUNCTION AS A TEMPORARY WATERING BASIN DURING THE CONSTRUCTION PERIOD. TREES SHALL BE WATERED ACCORDING TO WEATHER AND TREE SPECIES REQUIREMENTS.
11. IF TREES ARE BEING RELOCATED: RELOCATION OF EXISTING TREES SHALL OCCUR UNDER THE OBSERVATION AND DIRECTION OF A CERTIFIED ARBORIST APPROVED BY THE CITY OF FREMONT.

<h2 style="margin: 0;">CITY OF FREMONT</h2> <h3 style="margin: 0;">STANDARD DETAILS</h3> <h3 style="margin: 0;">CITY STANDARD</h3> <h3 style="margin: 0;">TREE PROTECTION FENCING</h3>			DATE APPROVED BY CITY COUNCIL 12/13/11			
			RESOLUTION NO. 2006-31			
			CITY ENGINEER			
FILE NO.	SCALE	DRAWN	CHECKED	DATE	DWG NO.	
LSD-9.DWG	1/8" = 1'-0"	PM/MM	RER	DEC. 2011	LSD-9	1 of 1



ELEVATION



SECTION A-A

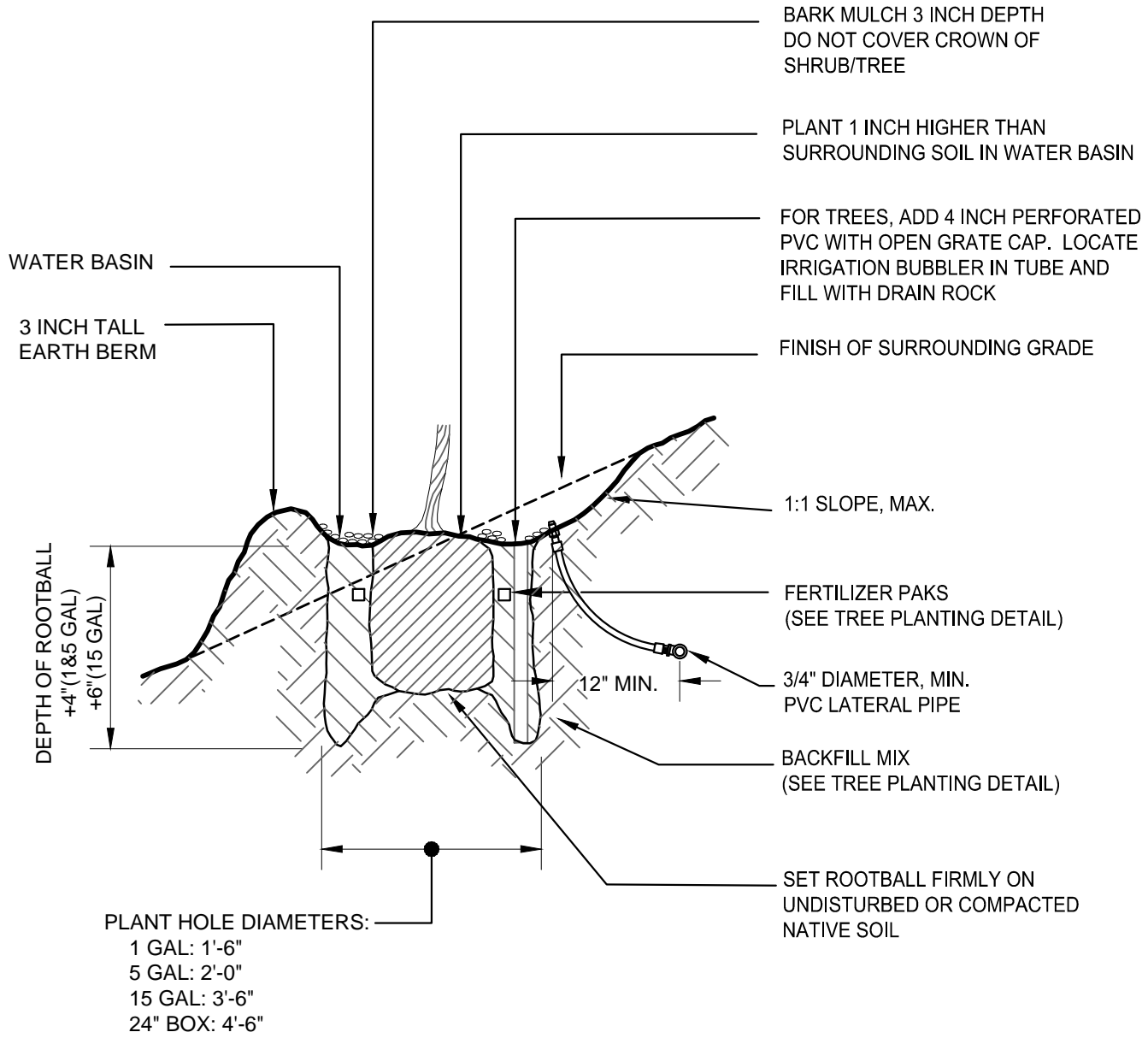
- NOTE:**
1. WRAP ORANGE PLASTIC CONSTRUCTION FENCE ON TOP OF WOOD SLATS WITH AN OVERLAP OF 12 INCHES AND TIE WITH WIRE. SEE SECTION BELOW.
 2. TEMPORARY TRUNK WRAP PROTECTION WILL BE ALLOWED ONLY BY APPROVAL FROM THE SENIOR LANDSCAPE ARCHITECT
 3. DAMAGE TO BRANCHES & ROOTS SUBJECT TO FINE UP TO APPRAISED VALUE OF THE TREE, PER CITY TREE PRESERVATION ORDINANCE (FMC 4-5100).
 4. REFER TO LSD-9 FOR ADDITIONAL TREE PROTECTION REQUIREMENTS APPLICABLE TO THIS DETAIL.
 5. TRUNK WRAP SHALL BE IN PLACE NO MORE THAN 5 WORKING DAYS BEFORE WORK ADJACENT TO TREE, AND REMOVED NO MORE THAN 5 WORKING DAYS AFTER WORK ADJACENT TO THE TREE, UNLESS OTHERWISE APPROVED BY THE CITY.
 6. TRUNK WRAP PROTECTION SHALL OCCUR FOR TREES SITUATED IN SMALL TREE WELLS OR SIDEWALK PLANTERS. THIS FORM OF PROTECTION WILL BE ALLOWED BY APPROVAL FROM SENIOR LANDSCAPE ARCHITECT ONLY.

<i>JPK</i>	General Revision	07/31/22
<i>JPK</i>	General Revision	08/2019
	Council Revision	12/13/11
APPR	REVISED	DATE
REVISIONS		

CITY OF FREMONT
STANDARD DETAILS
CITY STANDARD
TEMPORARY TRUNK WRAP
PROTECTION

DATE APPROVED BY CITY COUNCIL 12/13/11	
RESOLUTION NO. 2006-31	
<i>Norm Hughes</i>	
CITY ENGINEER	

FILE NO. LSD-10.DWG	SCALE 3/4"=1'-0"	DRAWN PN/MM	CHECKED RER	DATE DEC. 2011	DWG NO. LSD-10	1 of 1
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NOTES:

1. KEEP TURF AND PLANTS OUTSIDE THE EARTH BERM/WATER BASIN.
2. SEE TREE PLANTING DETAIL FOR STAKING AND BUBBLER INFORMATION, LSD-01, SHEET 1&2, AND LSD-03.
3. INSTALL BUBBLERS ON UPHILL SIDE OF PLANTING PIT.

<h2 style="margin: 0;">CITY OF FREMONT</h2> <h3 style="margin: 0;">STANDARD DETAILS</h3> <h3 style="margin: 0;">CITY STANDARD TREE AND SHRUB PLANTING AT SLOPE</h3>			DATE APPROVED BY CITY COUNCIL 12/13/11			
			RESOLUTION NO. 2006-31			
			CITY ENGINEER			
FILE NO.	SCALE	DRAWN	CHECKED	DATE	DWG NO.	
LSD-12.DWG	1/4" = 1'-0"	AK/MM/PM	RER	NOV. 2005	LSD-12	1 of 1

Botanical Name: Common Name	TREE CHARACTERISTICS														ENVIRONMENTAL TOLERANCES			PLANTING SPACE REQ'S		
	Type	SHAPE	HEIGHT	SPREAD	VIGOR	ROOTING		LEAF SIZE	SHADE	FALL COLOR	FLOWER	DEBRIS	USEFUL LIFE	SOIL	WATER USE	Yes	No	5+	6+	10+
						Large Vigorous	Deep													
Azadirachta indica: Neem Tree	Evergreen	Columnar	0-15 (small)	35 and over (large)	Slow	Shallow Surface	Root Suckers	Large	Filtered	Yes	Not Showy	Heavy	30 YEARS	Good Drainage	Boron	Yes	No			
Azadirachta indica: Neem Tree	Evergreen	Columnar	0-15 (small)	20-35	Moderate	Shallow Surface	Root Suckers	Medium	Filtered	Yes	Not Showy	Medium	60 YEARS	Good Drainage	Boron	Yes	No			
Azadirachta indica: Neem Tree	Evergreen	Columnar	0-15 (small)	35 and over (large)	Fast	Large Vigorous	Root Suckers	Large	Filtered	Yes	Not Showy	Heavy	100 YEARS	Good Drainage	Boron	Yes	No			
Azadirachta indica: Neem Tree	Evergreen	Columnar	0-15 (small)	35 and over (large)	Slow	Shallow Surface	Root Suckers	Small	Filtered	Yes	Not Showy	Light	100+ YEARS	Good Drainage	Boron	Yes	No			
Azadirachta indica: Neem Tree	Evergreen	Columnar	0-15 (small)	35 and over (large)	Moderate	Large Vigorous	Root Suckers	Medium	Filtered	Yes	Not Showy	Medium	30 YEARS	Good Drainage	Boron	Yes	No			
Azadirachta indica: Neem Tree	Evergreen	Columnar	0-15 (small)	35 and over (large)	Fast	Large Vigorous	Root Suckers	Large	Filtered	Yes	Not Showy	Heavy	60 YEARS	Good Drainage	Boron	Yes	No			
Azadirachta indica: Neem Tree	Evergreen	Columnar	0-15 (small)	35 and over (large)	Slow	Shallow Surface	Root Suckers	Small	Filtered	Yes	Not Showy	Light	100+ YEARS	Good Drainage	Boron	Yes	No			
Azadirachta indica: Neem Tree	Evergreen	Columnar	0-15 (small)	35 and over (large)	Moderate	Large Vigorous	Root Suckers	Medium	Filtered	Yes	Not Showy	Medium	30 YEARS	Good Drainage	Boron	Yes	No			
Azadirachta indica: Neem Tree	Evergreen	Columnar	0-15 (small)	35 and over (large)	Fast	Large Vigorous	Root Suckers	Large	Filtered	Yes	Not Showy	Heavy	60 YEARS	Good Drainage	Boron	Yes	No			
Azadirachta indica: Neem Tree	Evergreen	Columnar	0-15 (small)	35 and over (large)	Slow	Shallow Surface	Root Suckers	Small	Filtered	Yes	Not Showy	Light	100+ YEARS	Good Drainage	Boron	Yes	No			

Note: The following trees are not recommended: Fraxinus oxycarpa (Raywood Ash); Liquidambar styraciflua (Sweet Gum); Populus spp. (Poplar Tree)

TREE CHOICES ARE NOT LIMITED TO THIS LIST. THIS LIST IS ONLY A GUIDE.







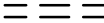





	General Revision	07/31/22
	General Revision	08/2019
	Council Revision	12/13/11
APPR	REVISED	DATE
REVISIONS		

CITY OF FREMONT
STANDARD DETAILS
CITY STANDARD
TREE PLANTING GUIDE LIST





DATE APPROVED BY CITY COUNCIL	12/13/11
RESOLUTION NO.	2006-31
CITY ENGINEER	

FILE NO.	SCALE	DRAWN	CHECKED	DATE	DWG NO.	
LSD-13.DWG	NONE	MM	RER	DEC. 2011	LSD-13	1 of 1

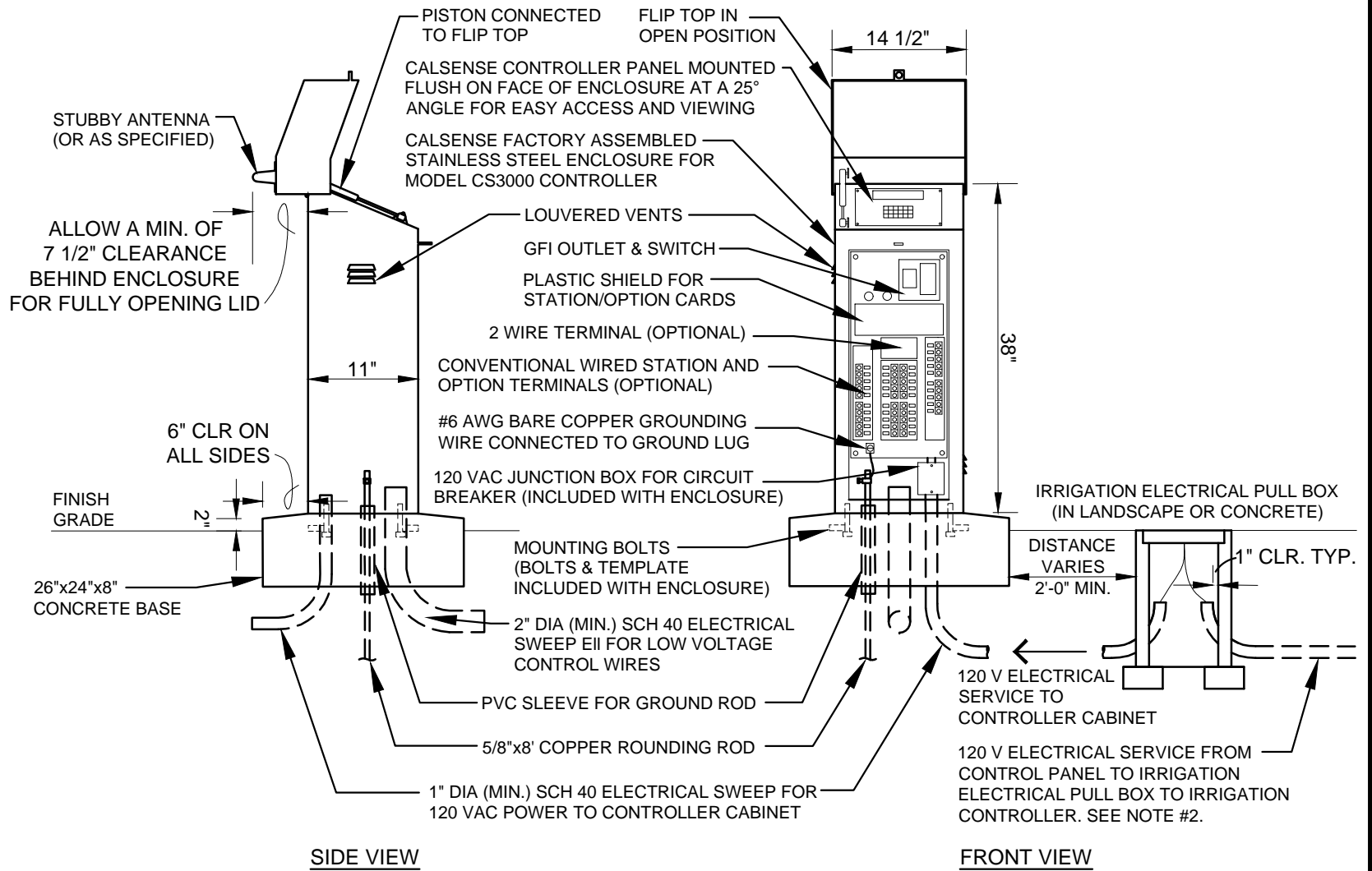
CITY OF FREMONT IRRIGATION STANDARD MATERIALS

STANDARD SYMBOL	DESCRIPTION	MANUFACTURER	MODEL # (if applicable)	COMMENTS	LANDSCAPE STANDARD DETAIL
	Tree Bubblers	Toro	PC-FB-50 570S/PC-FB-50	Trees with flex pipe Trees in lawn with pop-up	LSD-01 & LSD-02
	Flexible Hose	Salcodrip	SLV-PVC-IPS-050-100	1/2" IPS	LSD-01, LSD-02, LSD-03
	Shrub Bubblers	Toro	PC-FB-25	Shrubs	LSD-03
	Irrigation Controller with Enclosure	Calsense 3000	CS3-SSE w/ single controller, 1 antenna, 1 POC - CS3 - XX - S1/CS3 -LR/LR - Stubby/FMXX CS3-SSE wall mount, 1 antenna, 1 POC - CS3 - XX - WM1/CS3-LR/L Stubby/FMXX CS3-SSE with master and slave	Include all applicable software as required by the city, and dome antenna. Provide one remote control per controller. Master: CS3-XX-S1/CS3-LR/LR-Stubby/ CS3-MSSE-KIT/CS3-FL/FMXX Slave: CS3-XX-S/CS3-MSSE-KIT/CS3-FL	LSD-15
	Irrigation Controller Enclosure	Calsense Enclosure Strong Box	SSE PED - 2455, 12" riser SB - 2455, 24" wide enclosure	Heavy-Duty Stainless Steel	LSD-15
	Reduced Pressure-Principle Backflow Preventer with cage and concrete pad	Febco	825-Y		LSD-16
	'Y' Strainer	Febco	650A 1/2"-2"		LSD-16
	Pressure Reducing Valve	Zurn/Wilkins	500 XL	With integral bypass check valve & in-line pressure gauge	LSD-16
	Ball Valve	KBI WATTS	WLT Series, Plastic LFFBV-4 2 Piece, Full Port, Brass, Threaded		LSD-16 & LSD-23
	Backflow Assembly Cage	Guardshack	GS Series	Powdercoat Black	LSD-17
	Irrigation Trench - Mainline		Sch. 40 PVC for 2" & less Class 315 PVC for 2-1/2" and larger	24" below finish grade, min.	LSD-18
	Irrigation Trench - Lateral line		Sch. 40 PVC for line 1" and smaller Class 200 PVC for 1 1/4" and greater	12" min. to 18" max. below finish grade	LSD-18
	Sleeves		Class 315 PVC	See LSD-18 for depth and size	LSD-18
	Quick-Coupling Valve (in box)	Hunter	HQ-44LRC-AW HK-44A (Key) HS-1	Winged body w/ 1" key, locking cover, and key with swivel	LSD-19
	Quick-Coupling Valve Box	Carson Old Castle Pentek	910 Lockable Concrete G05 Superflexon	Round box with lid	LSD-19
	Communication Cable	Paige	P7171D-Rev 5	18 AWG	LSD-20
	Wire Splice	Scotchcast connector 3M Directing Splice Kit	Sealing pack 3570G-N DBR-Y (Kit)	Install per detail LSD-20	LSD-20
	Turf Sprinklers	Toro Hunter	Super 700C Series I-40 OR I-20-06-SS, 360 d, ADJ	Adjustable arc, stainless steel riser, check valve, 8 standard, 4 low angle nozzles	LSD-21
	Turf Sprinklers	Toro	640 Series	Large Turf Areas	LSD-21
	Turf Sprinklers	Toro	570Z-PRX-COM-6P/12P-O-T Precision Series	Small Turf Areas; pressure regulation and x-flow	LSD-21
	Shrub/Groundcover	Toro	570Z-PRX-COM-6P/12P-O-T Precision Series	Shrub/Groundcover Areas; pressure regulation and x-flow	LSD-21
	Gate Valve (in box)	Nibco	T-113-K T-113	Class 125 bronze, screw-in bonnet, threaded, non-stem rising, solid wedge. Class 150 Bronze, bolted bonnet, non-stem rising, split wedge threaded T-136	LSD-22
	Gate Valve Box	Carson Old Castle Pentek	910 Lockable Concrete G05 Superflexon	10" Round box with lid	LSD-22
	Remote Control Valve (in box)	Griswold	2000 Series NC - Solenoid Valve	NC = Normally Closed	LSD-23
	Remote Control Valve Box	Carson Pentek	L Series 1324-12 Lockable Superflexon	13" x 24" 13" x 18" box with lid 14" x 19" box with lid	LSD-23
	ID Tags	Christy	2.25" x 2.669" Standard Tag-2 Sided ID.STD.X2		LSD-23
	Flow Sensor	Calsense	FM-1B, 1.25B, 1.5B, FM2, FM2B, FM3, FM3BX		LSD-24
	Master Valve	Griswold	2160 Series NO - Solenoid Valve	NO = Normally Open	LSD-24

Note: Symbols shown are city standard for those items.

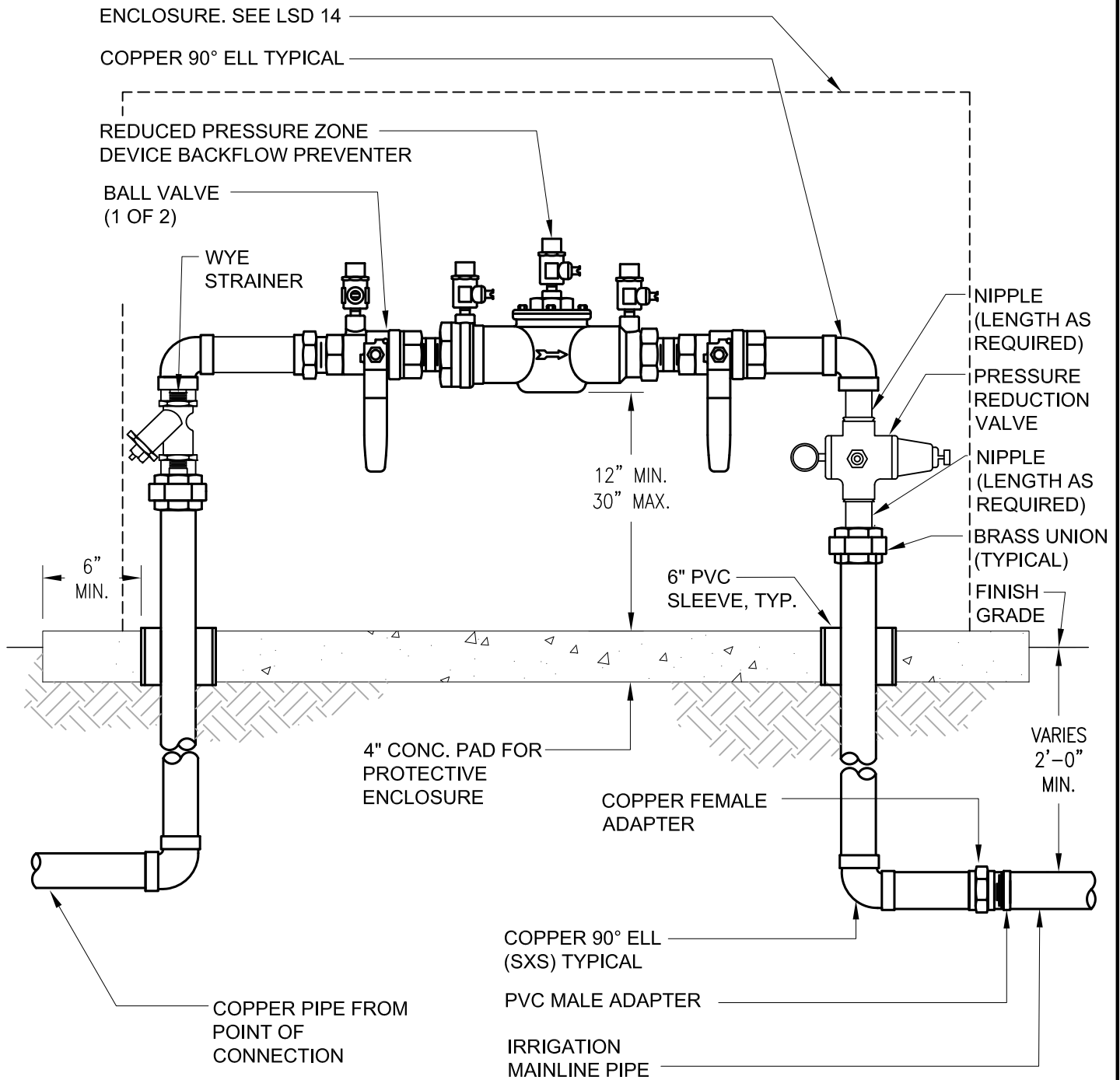
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	General Revision	08/2019		RESOLUTION NO.	2006-31				
	Council Revision	12/13/11							
	General Revision	6/07/10		CITY ENGINEER					
APPR	REVISED	DATE							
REVISIONS			FILE NO.	SCALE	DRAWN	CHECKED	DATE	DWG NO.	
			LSD-14.DWG	NONE	MAM/CC	RER	DEC. 2011	LSD-14	1 of 1

FILE NO. LSD-15 DWG	SCALE 3/4" = 1'-0"	DRAWN AK/MM/PM	CHECKED RER	DATE NOV. 2005	DWG NO. LSD-15	1 of 1
<p align="center">CITY OF FREMONT STANDARD DETAILS CITY STANDARD IRRIGATION CONTROLLER CABINET W/ CALSENSE CONTROLLER</p>						
REVISIONS	DATE	DESCRIPTION				
APPR	DATE	DESCRIPTION				
REVISIED	12/13/11	General Revision				
	08/20/19	General Revision				
	07/31/22	General Revision				
DATE APPROVED BY CITY COUNCIL 12/13/11						
RESOLUTION NO. 2006-31						
CITY ENGINEER <i>Marianne Thompson</i>						



ELECTRICAL SERVICE FOR IRRIGATION CONTROLLER - PULL BOX

1. ALL NOTES RELATED TO UNDERGROUND SERVICE TO ELECTROLIERS SHALL APPLY TO THIS CONDITION FOR SUPPLYING 120 VOLT SERVICE TO IRRIGATION CONTROLLERS IN THE CITY RIGHT OF WAY.
2. IN PACKS OR RIGHT OF WAY WHERE 120V SERVICES FROM AN ELECTRIC POLE, A FUSED CONNECTION SHALL BE PLACED IN TEH BOX TO FACILITATE DE-ENERGIZING THE ELECTRICAL SERVICE LINE AND THE CONTROLLER.
3. ALL UNDERGROUND WIRING SHALL BE IN APPROVED CONDUIT. THE UNDERGROUND CONDUIT AND ALL METAL PARTS SHALL BE CONTINUOUSLY BONDED AND GROUNDED.
4. "IRRIGATION ELECTRICAL" SHALL BE THE TITLE INTEGRATED IN THE LID.
5. USE FELT PAPER TO BLOCK OPENING BETWEEN CONDUITS.
6. 120 VAC POWER AND GROUNING PER NATIONAL AND LOCAL ELECTRICAL CODES.



NOTES:

1. INSTALL BACKFLOW PREVENTER AS REQUIRED BY LOCAL CODES AND HEALTH DEPARTMENT. VERIFY LOCAL REQUIREMENTS PRIOR TO INSTALLATION.
2. INSTALL FREEZE PROTECTION JACKET AND ENCLOSURE. SEE CITY STANDARD DETAIL LSD-17 FOR CAGE DETAIL.
3. REFER TO CITY STANDARD DETAIL LSD-14 FOR ALL MATERIALS

<i>RER</i>	General Revision	09/09/22
<i>RER</i>	General Revision	08/2019
1	MISC REVISIONS	9/09
APPR	REVISED	DATE
REVISIONS		

CITY OF FREMONT STANDARD DETAILS

CITY STANDARD IRRIGATION BACKFLOW PREVENTER UNIT

DATE APPROVED BY CITY COUNCIL
12/13/11

RESOLUTION NO. 2006-31

Nam Hughes

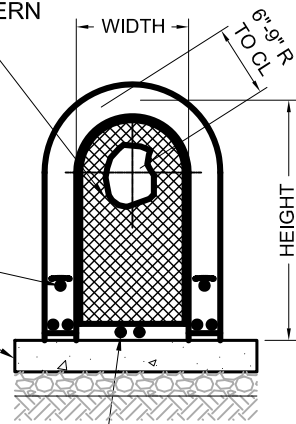
CITY ENGINEER

FILE NO. LSD-16.DWG	SCALE 1" = 1'-0"	DRAWN PM/MM	CHECKED RER	DATE NOV. 2005	DWG NO. LSD-16	1 of 1
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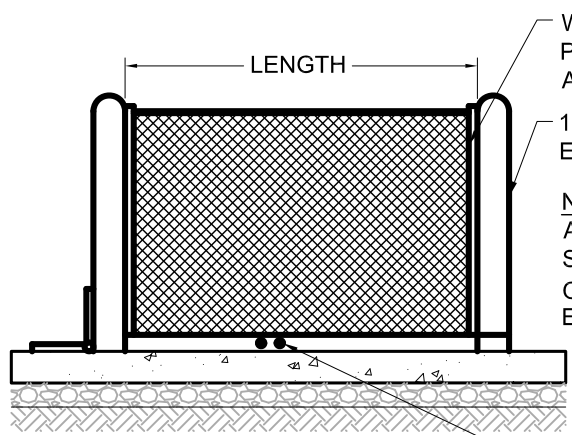
1/2-INCH NO. 13 FLATTED
DIAMOND PATTERN
STEEL MESH

WELD 4-INCH
STL. HINGES (2)
ON GS-3 AND
GS-4

4-INCH
CONCRETE
PAD



- DRILL 2 HOLES AS NOTED
- GS-1 EACH END
 - GS-2 EACH END
 - GS-3 ONE END ONLY
OPPOSITE HINGED END
 - GS-3.5 SAME AS GS-2H
 - GS-4 SAME AS GS-2H



WELD MESH TO
PIPE, ANGLE IRON
AND STEEL STRAP

1-1/4" STD. WT. A-53
E.W. BLK. STL. PIPE

NOTE:
ALL WELDED AREAS
SHALL BE A MINIMUM
OF 1/4 INCH BEAD
EVERY 4 INCHES

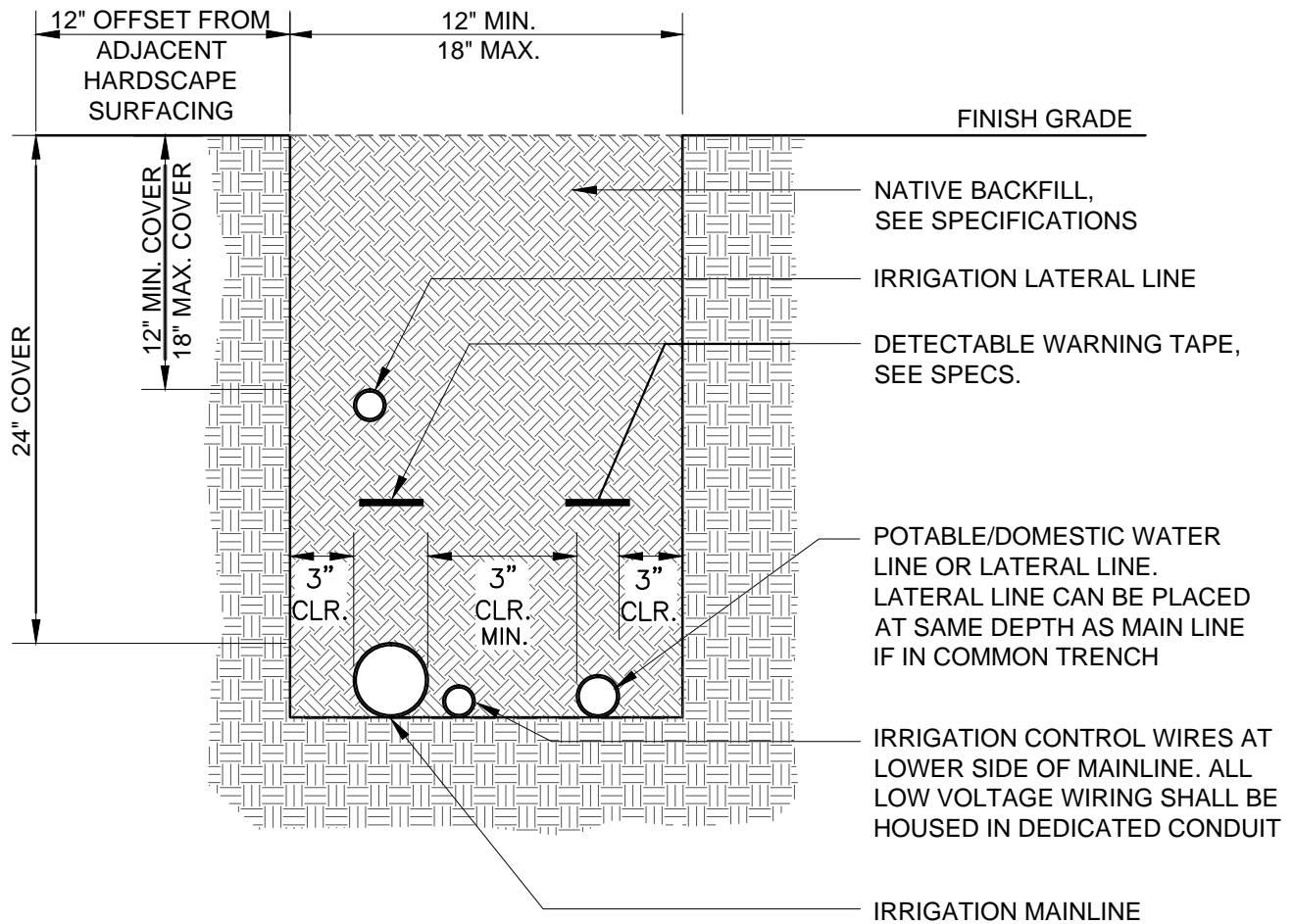
DRILL 2 - 5/16 INCH
HOLES EACH SIDE.
BRACKETS CAN BE
LOCATED ON
SIDES OR ENDS
AND SECURED
WITH TAMPER
PROOF BOLTS

STD. SIZES	INTERNAL DIMENSIONS	TYPE	WEIGHT
GS-.5	10"W x 18"H x 12"L	LIFT OFF UNIT	35
GS-1	10"W x 24"H x 22"L	LIFT OFF UNIT	40
GS-2	10"W x 24"H x 30"L	LIFT OFF UNIT	45
GS-3	10"W x 24"H x 40"L	HINGED UNIT	51
GS-4	16"W x 30"H x 46"L	HINGED UNIT	67

- NOTES:**
- GS = POWDER-COATED STEEL GUARDSHACK OR APPROVED EQUAL.
 - ENCLOSURE DIMENSIONS FOR 1/2"-10" STANDARD BACKFLOW ASSEMBLIES.

- NOTES:**
- AFTER ALL WELDING, ENTIRE UNIT SHALL BE PROCESSED WITH IRON PHOSPHATE PRE-TREATMENT. ELECTROSTATIC APPLICATION OF POWDER SHALL BE FUSION BONDED. POWDERCOAT COLOR SHALL BE BLACK.
 - ALL BOLTS FOR HINGES AND HASPS SHALL BE ZINC-PLATED TAMPER PROOF, EXCEPTION - USE SS HARDWARE FOR SS UNITS.
SS = STAINLESS STEEL
 - REFER TO SPECIFICATIONS FOR MODEL NUMBER
 - REFER TO CITY STANDARD DETAIL LSD-14 FOR ALL MATERIALS

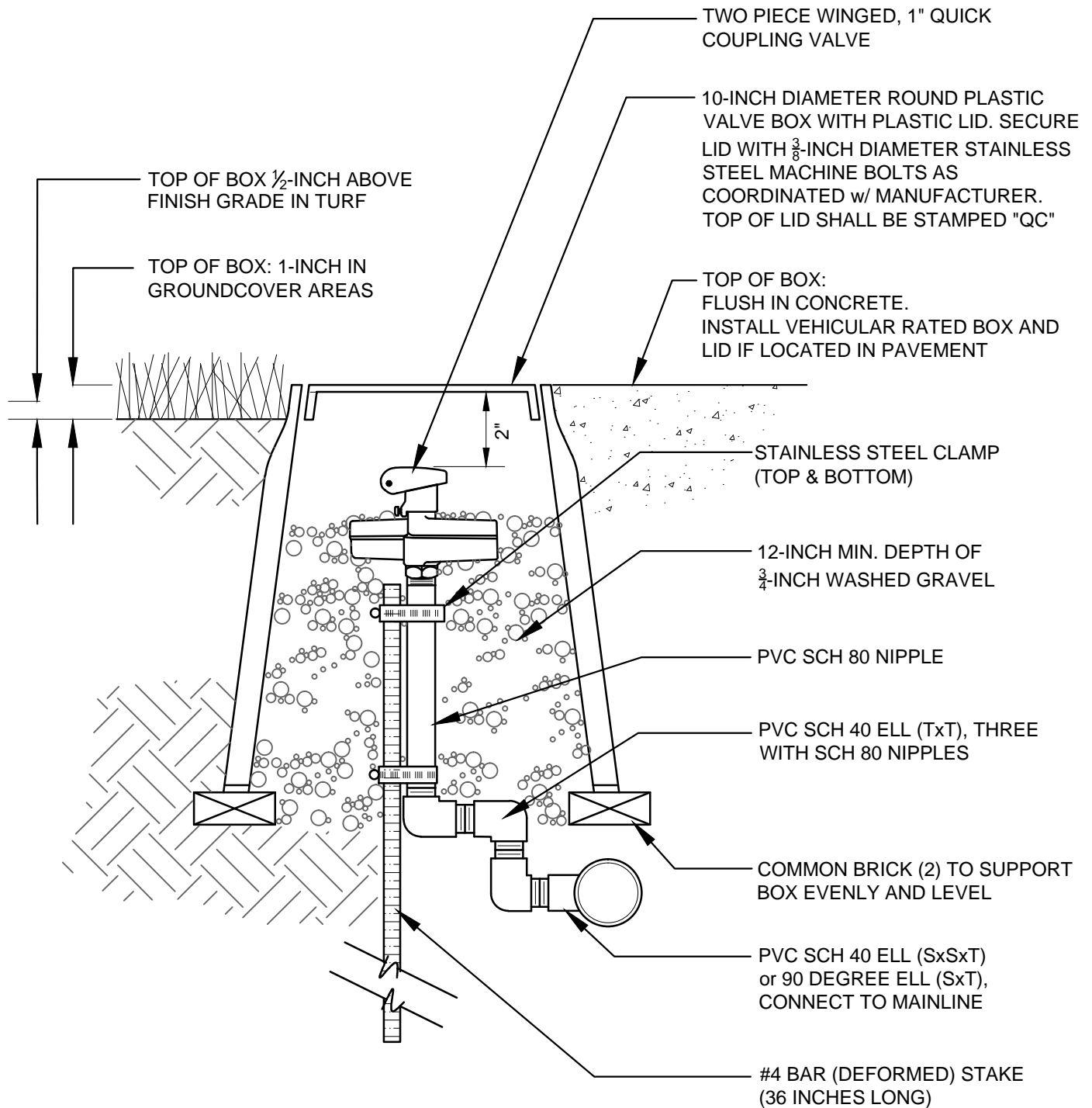
<h2 style="margin: 0;">CITY OF FREMONT</h2> <h3 style="margin: 0;">STANDARD DETAILS</h3> <h3 style="margin: 0;">CITY STANDARD</h3> <h3 style="margin: 0;">BACKFLOW PREVENTOR</h3> <h3 style="margin: 0;">UNIT ENCLOSURE</h3>			DATE APPROVED BY CITY COUNCIL 12/13/11			
			RESOLUTION NO. 2006-31			
			CITY ENGINEER			
FILE NO. LSD-17.DWG	SCALE 1/2" = 1'-0"	DRAWN AK/MM/PN	CHECKED RER	DATE NOV. 2005	DWG NO. LSD-17	1 of 1



NOTES:

1. SLEEVE BELOW ALL HARDSCAPE ELEMENTS WITH CLASS 315 PVC TWICE THE DIAMETER OF THE PIPE OR WIRE CONDUIT WITHIN; BURIAL DEPTH FOR SLEEVES BELOW FINISHED GRADE ARE AS FOLLOWS:
 42 INCH MINIMUM UNDER THOROUGHFARE AND STREETS
 24 INCH MINIMUM UNDER PLANTER AREA
 24 INCH MINIMUM UNDER PARKING LOT
 18 INCH MINIMUM UNDER SIDEWALK
 36 INCH MINIMUM UNDER TRAFFIC CIRCLES (RESIDENTIAL AREAS)
2. ALL SLEEVE BELOW HARDSCAPE SHALL EXTEND 24 INCHES BEYOND HARD SURFACE EDGES.
3. FOR PIPE AND WIRE BURIAL DEPTHS, SEE SPECIFICATIONS, MAINLINE SHALL HAVE MINIMUM COVER OF 24 INCHES, LATERAL SHALL HAVE MINIMUM COVER OF 18 INCHES.
4. SCH 40 PVC FOR MAINLINE 2 INCHES OR SMALLER.
5. CLASS 315 PVC FOR MAINLINE 2 1/2 INCHES AND LARGER.
6. CLASS 200 PVC FOR 2 INCH LATERAL LINES AND SMALLER.
7. SCH 40 PVC FOR QUICK COUPLING LINE 1 INCH MIN. TO 2 INCH MAXIMUM
8. TRENCH BACKFILL SHALL BE NATIVE MATERIAL, COMPACT TO 90% MINIMUM, RELATIVE COMPACTION UNLESS UNDER CONCRETE OR ASPHALT. USE TRENCH BACKFILL PER CITY SPECIFICATION 11A AND 11B UNDER CONCRETE OR ASPHALT.
9. REFER TO DETAIL LSD-14 FOR IRRIGATION MATERIALS LIST.

<h2 style="margin: 0;">CITY OF FREMONT</h2> <h3 style="margin: 0;">STANDARD DETAILS</h3> <h3 style="margin: 0;">CITY STANDARD</h3> <h3 style="margin: 0;">IRRIGATION/POTABLE</h3> <h3 style="margin: 0;">MAIN LINE TRENCH</h3>			DATE APPROVED BY CITY COUNCIL 12/13/11		
			RESOLUTION NO. 2006-31		
			CITY ENGINEER		
			DWG NO. LSD-18		
FILE NO. LSD-18.DWG	SCALE N.T.S.	DRAWN AK/MM/PM	CHECKED RER	DATE DEC. 2011	1 of 1

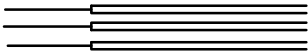


NOTE:

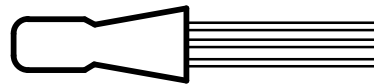
- CONTRACTOR SHALL PROVIDE:
 - (2) VALVE KEYS
 - (2) SWIVEL HOSE-ELLS
- ALL BOXES SHALL BE OFFSET 12-INCHES FROM ANY SIDEWALK, CURB &/or HEADER

<p><i>PK</i> General Revision 07/31/22</p> <p><i>PK</i> General Revision 08/2019</p> <p>Council Revision 12/13/11</p> <p>General Revision 06/07/10</p> <p>APPR REVISED DATE</p> <p>REVISIONS</p>			<p>CITY OF FREMONT</p> <p>STANDARD DETAILS</p> <p>CITY STANDARD IRRIGATION</p> <p>QUICK COUPLING VALVE IN BOX</p>			<p>DATE APPROVED BY CITY COUNCIL 12/13/11</p> <p>RESOLUTION NO. 2006-31</p> <p><i>Norm Hughes</i></p> <p>CITY ENGINEER</p>	
FILE NO.	SCALE	DRAWN	CHECKED	DATE	DWG NO.		
LSD-19.DWG	3" = 1'-0"	AK/MM/PM	RER	DEC. 2011	LSD-19	1 of 1	

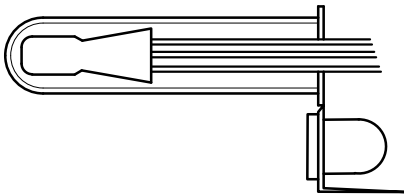
STEP 1: STRIP WIRES ½ INCH FROM ENDS.



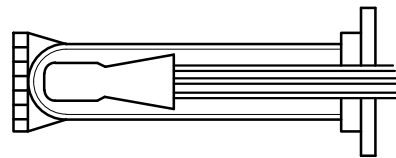
STEP 2: APPLY SCOTCHLOK Y SPRING CONNECTOR IN A CLOCKWISE DIRECTION.



STEP 3: INSERT SPLICE FILLED TO BOTTOM OF GEL-FILLED TUBE, CHECK TO MAKE SURE CONNECTOR HAS BEEN PUSHED PAST LOCKING FINGERS AND IS SEATED AT BOTTOM OF TUBE.




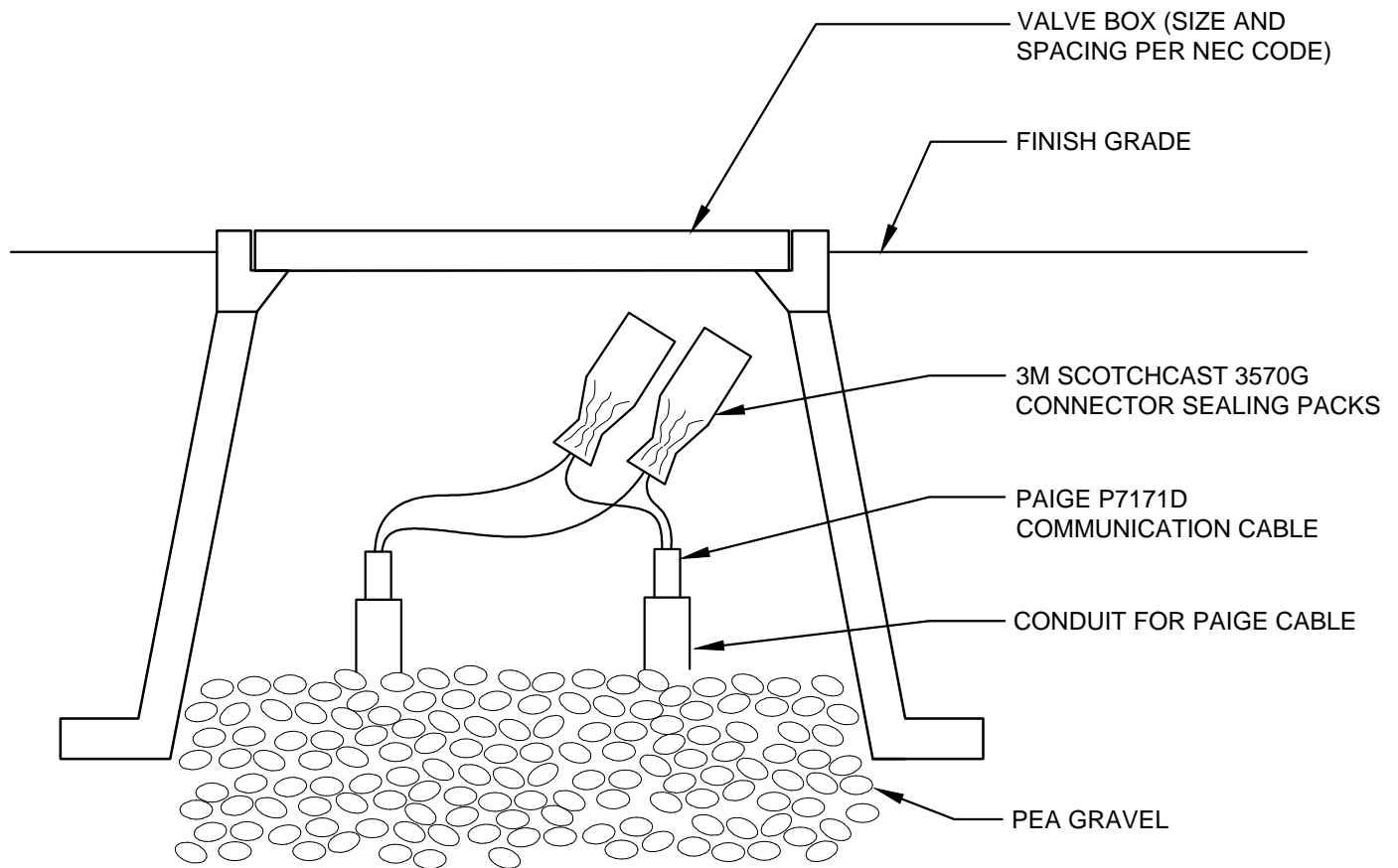
STEP 4: POSITION WIRES IN WIRE CHANNELS AND CLOSE INSULATOR TUBE COVER.




NOTE:

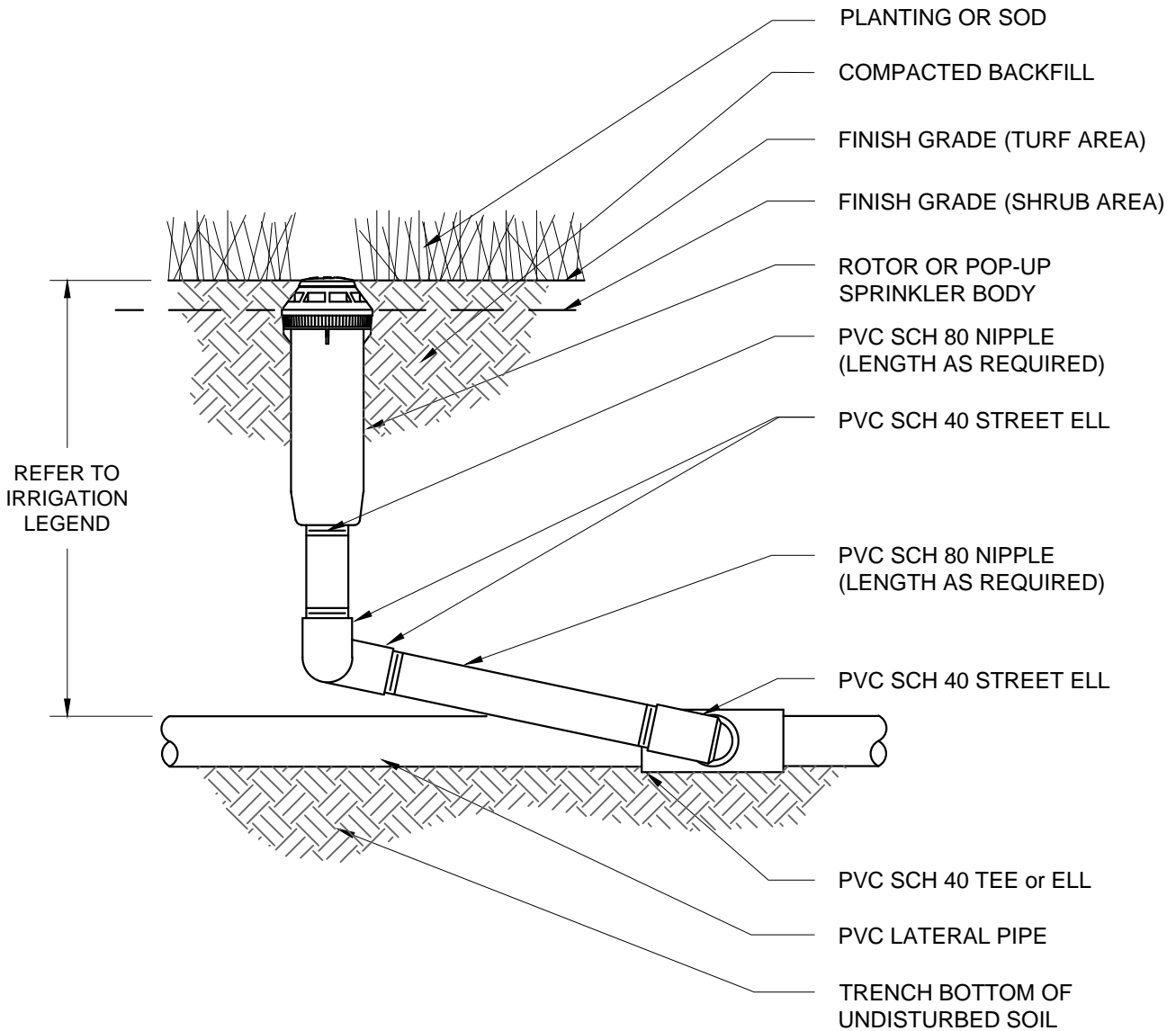
1. MAXIMUM WIRE SIZES PER CONNECTOR ARE 3-#14'S OR 2-#12'S
2. REFER TO CITY STANDARD DETAIL LSD-14 FOR MATERIALS

			CITY OF FREMONT STANDARD DETAILS CITY STANDARD <u>LOW VOLTAGE</u> IRRIGATION WIRE SPLICE			DATE APPROVED BY CITY COUNCIL 12/13/11													
						RESOLUTION NO. 2006-31													
<table border="1"> <tr> <td><i>AK</i></td> <td>General Revision</td> <td>07/31/22</td> </tr> <tr> <td><i>AK</i></td> <td>General Revision</td> <td>08/2019</td> </tr> <tr> <td>APPR</td> <td>REVISED</td> <td>DATE</td> </tr> <tr> <td colspan="3" style="text-align: center;">REVISIONS</td> </tr> </table>			<i>AK</i>	General Revision	07/31/22	<i>AK</i>	General Revision	08/2019	APPR	REVISED	DATE	REVISIONS						 CITY ENGINEER	
<i>AK</i>	General Revision	07/31/22																	
<i>AK</i>	General Revision	08/2019																	
APPR	REVISED	DATE																	
REVISIONS																			
FILE NO.	SCALE	DRAWN	CHECKED	DATE	DWG NO.														
LSD-20.DWG	NONE	AK/MM/PM	RER	NOW. 2005	LSD-20	1 of 2													




NOTE:
 IF SPLICES ARE UNAVOIDABLE, SPLICES MUST BE COMPLETELY INSULATED FROM SOIL AND MOISTURE USING 3M SCOTCHCAST 3570G CONNECTOR SEALING PACK.

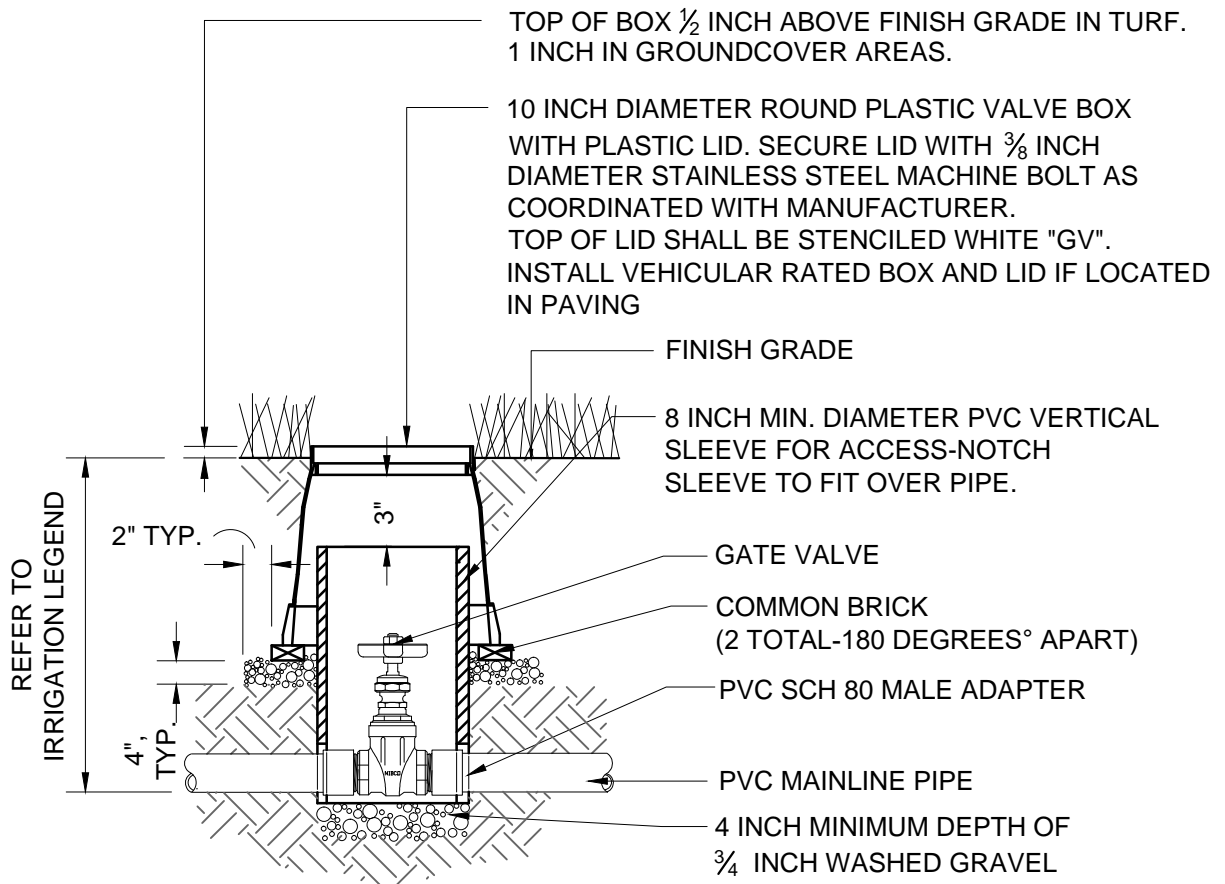
			CITY OF FREMONT STANDARD DETAILS CITY STANDARD PAIGE CABLE WIRE SPLICE			DATE APPROVED BY CITY COUNCIL 12/13/11													
						RESOLUTION NO. 2006-31													
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<i>JPK</i>	General Revision	07/31/22																	
<i>JPK</i>	General Revision	08/2019																	
APPR	REVISED	DATE																	
REVISIONS																			
FILE NO.	SCALE	DRAWN	CHECKED	DATE	DWG NO.														
LSD-20.DWG	NONE	CC	RER	AUG 2019	LSD-20	2 of 2													



NOTE:


1. INSTALL TOP OF POP-UP SPRINKLER 1 INCH ABOVE FINISHED GRADE IN SHRUB AREAS AND FLUSH WITH FINISHED GRADE IN TURF AREAS. IN TURF FINISH GRADE IS THE TOP OF THE SOD ROOT ZONE WHEN INSTALLED. CONTRACTOR TO ACCOMMODATE FOR VARYING SOD THICKNESS, BASED ON SOD SUBMITTAL.
2. ROTOR SHALL BE INSTALLED FLUSH IN TURN AREAS. SEE NOTE #1.
3. REFER TO CITY STANDARD DETAIL LSD-14 FOR MATERIALS
4. INSTALL A MINIMUM OF 9" FROM EDGE OF PAVEMENT IN SHRUB AREAS AND 2" IN TURF AREAS.

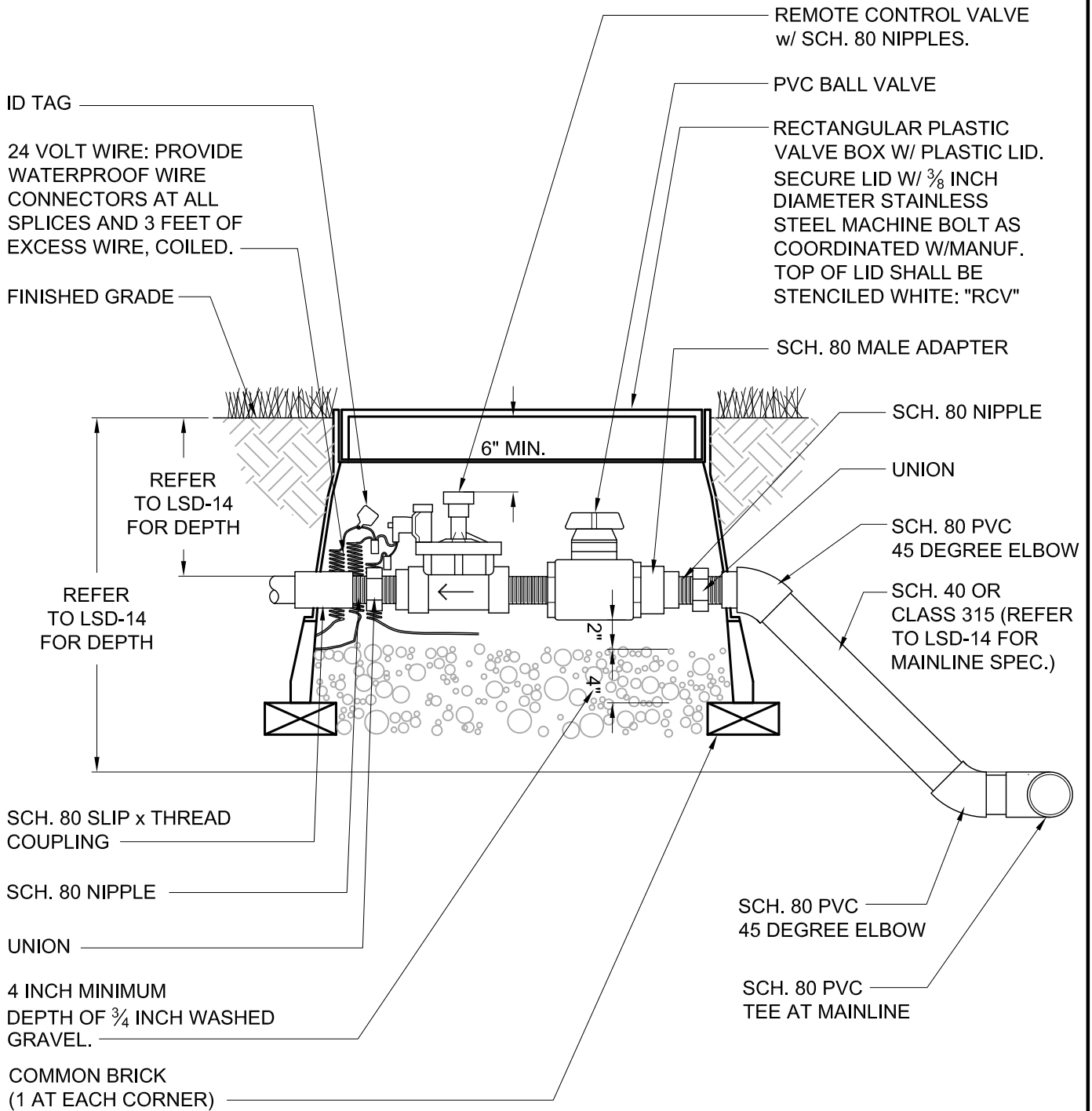
			CITY OF FREMONT			DATE APPROVED BY CITY COUNCIL 12/13/11													
			STANDARD DETAILS			RESOLUTION NO. 2006-31													
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			<i>AK</i>	General Revision	07/31/22														
<i>AK</i>	General Revision	08/2019																	
APPR	REVISED	DATE																	
REVISIONS																			
IRRIGATION ROTOR OR POP-UP																			
FILE NO.	SCALE	DRAWN	CHECKED	DATE	DWG NO.														
LSD-21.DWG	NONE	AK/MM/PM	RER	NOV. 2005	LSD-21	1 of 1													



NOTE:

1. REFER TO CITY STANDARD DETAIL LSD-14 FOR ALL MATERIALS.

			CITY OF FREMONT STANDARD DETAILS CITY STANDARD IRRIGATION GATE VALVE	DATE APPROVED BY CITY COUNCIL 12/13/11	
				RESOLUTION NO. 2006-31	
				 CITY ENGINEER	
APPR	REVISED	DATE			
REVISIONS					
FILE NO.	SCALE	DRAWN	CHECKED	DATE	DWG NO.
LSD-22.DWG	1-1/2" = 1'-0"	AK/MM/PM	RER	NOV. 2005	LSD-22
					1 of 1



NOTE:

1. FOR VALVES 1" TO 1-1/4", ALL BOXES SHALL BE PENTEK SUPERFLEXON 13X18, OR CARSON 1324 OR APPROVED EQUAL.
2. FOR VALVES GREATER THAN 1-1/4", ALL BOXES SHALL BE OF CARSON PENTEK 19X25 1730-24 OR 2636 OR APPROVED EQUAL.
3. REFER TO CITY STANDARD DETAIL LSD-14 FOR ALL MATERIALS.

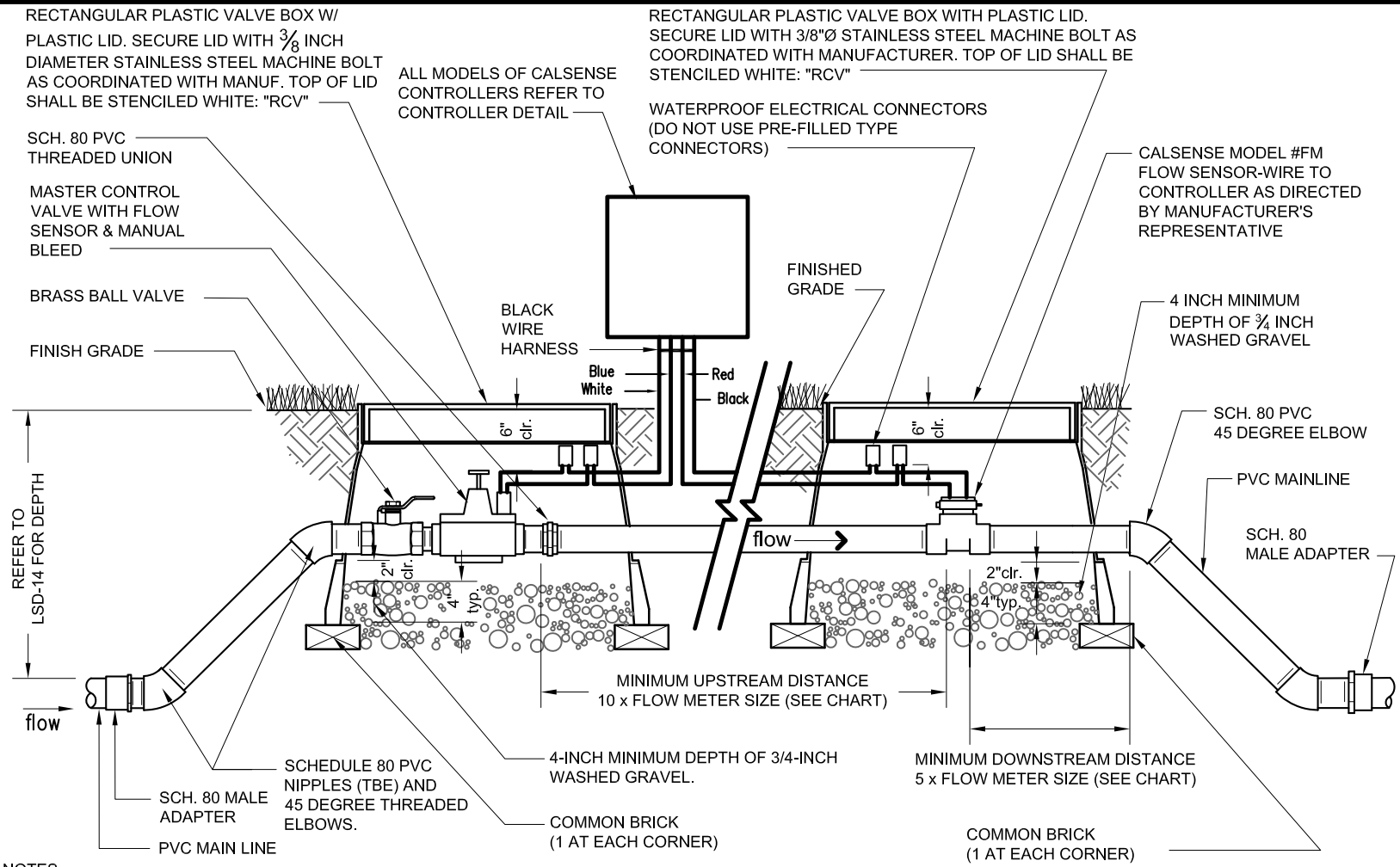
<i>JPK</i>	General Revision	09/08/22
<i>JPK</i>	General Revision	07/31/22
<i>JPK</i>	General Revision	08/2019
APPR	REVISED	DATE
REVISIONS		

CITY OF FREMONT
STANDARD DETAILS
CITY STANDARD
IRRIGATION REMOTE CONTROL
VALVE W/ GATE VALVE

DATE APPROVED BY CITY COUNCIL 12/13/11	
RESOLUTION NO. 2006-31	
<i>Norm Hughes</i>	
CITY ENGINEER	

FILE NO. LSD-23.DWG	SCALE 1" = 1'-0"	DRAWN AK/MM/PM	CHECKED RER	DATE NOV. 2005	DWG NO. LSD-23	1 of 1
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FILE NO. LSD-24.DWG	SCALE 3/4" = 1'-0"	DRAWN AK/MM	CHECKED RER	DATE NOV. 2005	<p>CITY OF FREMONT STANDARD DETAILS CITY STANDARD IRRIGATION MASTER VALVE AND FLOW SENSOR</p>
REVISIONS					
APPR	REVISED	DATE	DATE	DATE	DATE
<i>[Signature]</i>	General Revision	08/20/19	07/31/22		
<i>[Signature]</i>	General Revision	07/31/22			



NOTES:

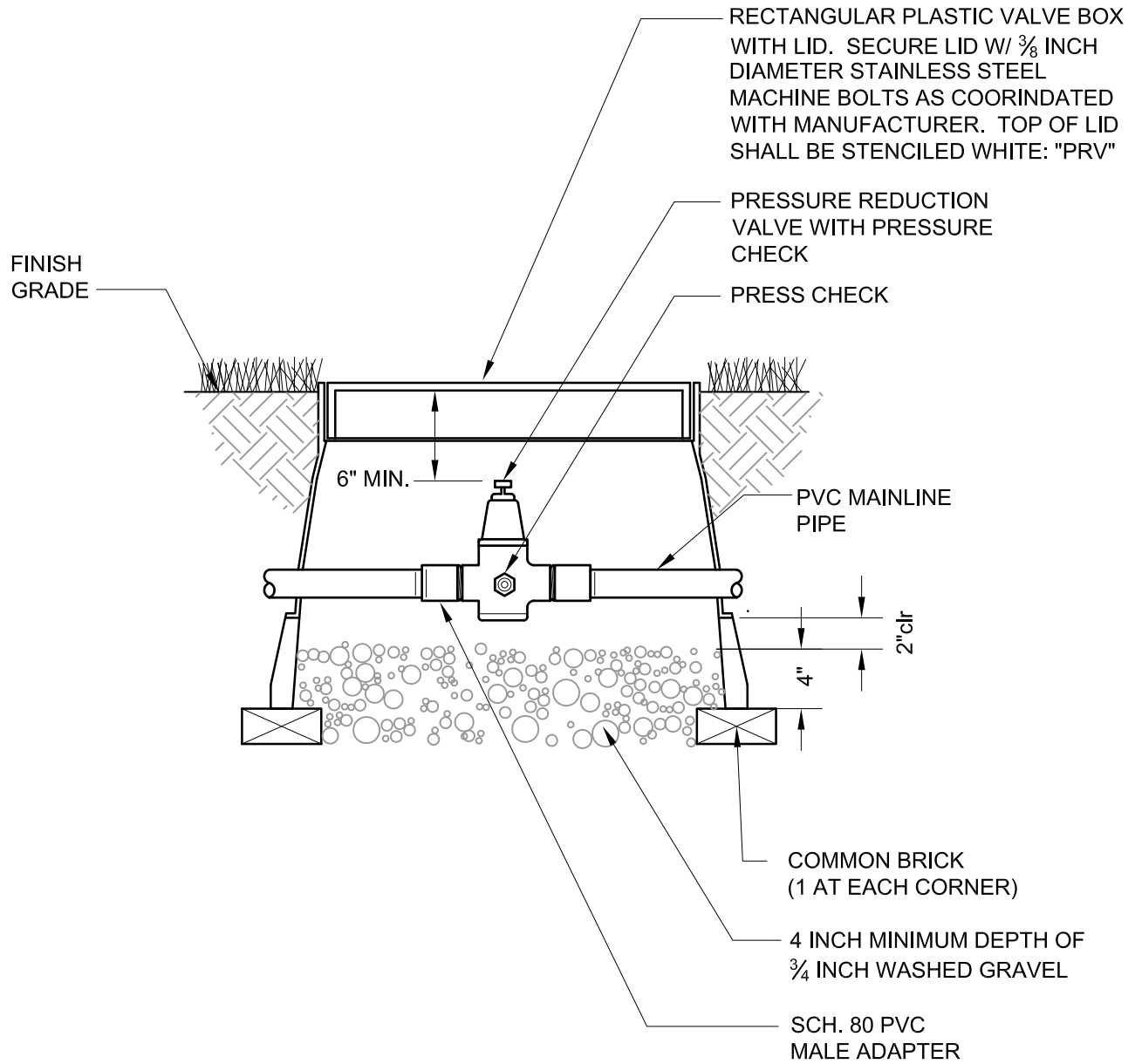
- DISTANCE BETWEEN MASTER CONTROL VALVE AND FLOW SENSOR, FLOW SENSOR AND FIRST DOWNSTREAM ELBOW SHALL BE PER MANUFACTURER'S RECOMMENDATIONS
- ALL BOXES SHALL BE CARSON 1324 OR APPROVED EQUAL.
- REFER TO CITY STANDARD DETAIL LSD-14 FOR ALL MATERIALS
- EXPOSE THE EXISTING IRRIGATION MAIN LINE:
 FOR 3" OR SMALLER, REMOVE A SHORT SECTION OF THE MAIN LINE AND INSTALL A NORMALLY OPEN MASTER VALVE. REFER TO PIPE SIZING CHART FOR MINIMUM LENGTH TO ACCOMMODATE A CALSENS E TEE-TYPE MODEL FM FLOW SENSOR. EXPOSE 48" BEYOND FLOW SENOR TO VERIFY THAT NO CONNECTIONS EXIST ON THE MAIN LINE.

 FOR 4", REMOVE A SHORT SECTION OF 4" MAIN LINE AND INSTALL A 4" NORMALLY OPEN MASTER VALVE. AT 40" DOWN THE MAIN LINE FROM THE MASTER VALVE INSTALL A ROMAC STRAP SADDLE (MODEL 101S). CUT A HOLE IN THE WALL OF THE PIPE TO ACCOMMODATE A CALSENS E MODEL FMBX FLOW SENSOR. EXPOSE 48" BEYOND FLOW SENOR TO VERIFY THAT NO CONNECTIONS EXIST ON THE 4" MAIN LINE.

 FOR 6", REMOVE A SHORT SECTION OF 6" MAIN LINE AND INSTALL A 4" NORMALLY OPEN MASTER VALVE. AT 60" DOWN THE MAIN LINE FROM THE MASTER VALVE INSTALL A ROMAC 4"x2" SINGLE STRAP SADDLE (MODEL 101N). CUT A HOLE IN THE WALL OF THE PIPE TO ACCOMMODATE A CALSENS E MODEL FMBX FLOW SENSOR. EXPOSE 48" BEYOND FLOW SENOR TO VERIFY THAT NO CONNECTIONS EXIST ON THE 6" MAIN LINE.


PIPE SIZING CHART		
FLOW METER SIZE	UPSTREAM LENGTH (10x)	DOWNSTREAM LENGTH (5x)
1"	10"	5"
1.25"	12.5"	6.25"
1.5"	15"	7.5"
2"	20"	10"
3"	30"	15"
4"	40"	20"
6"	60"	30"

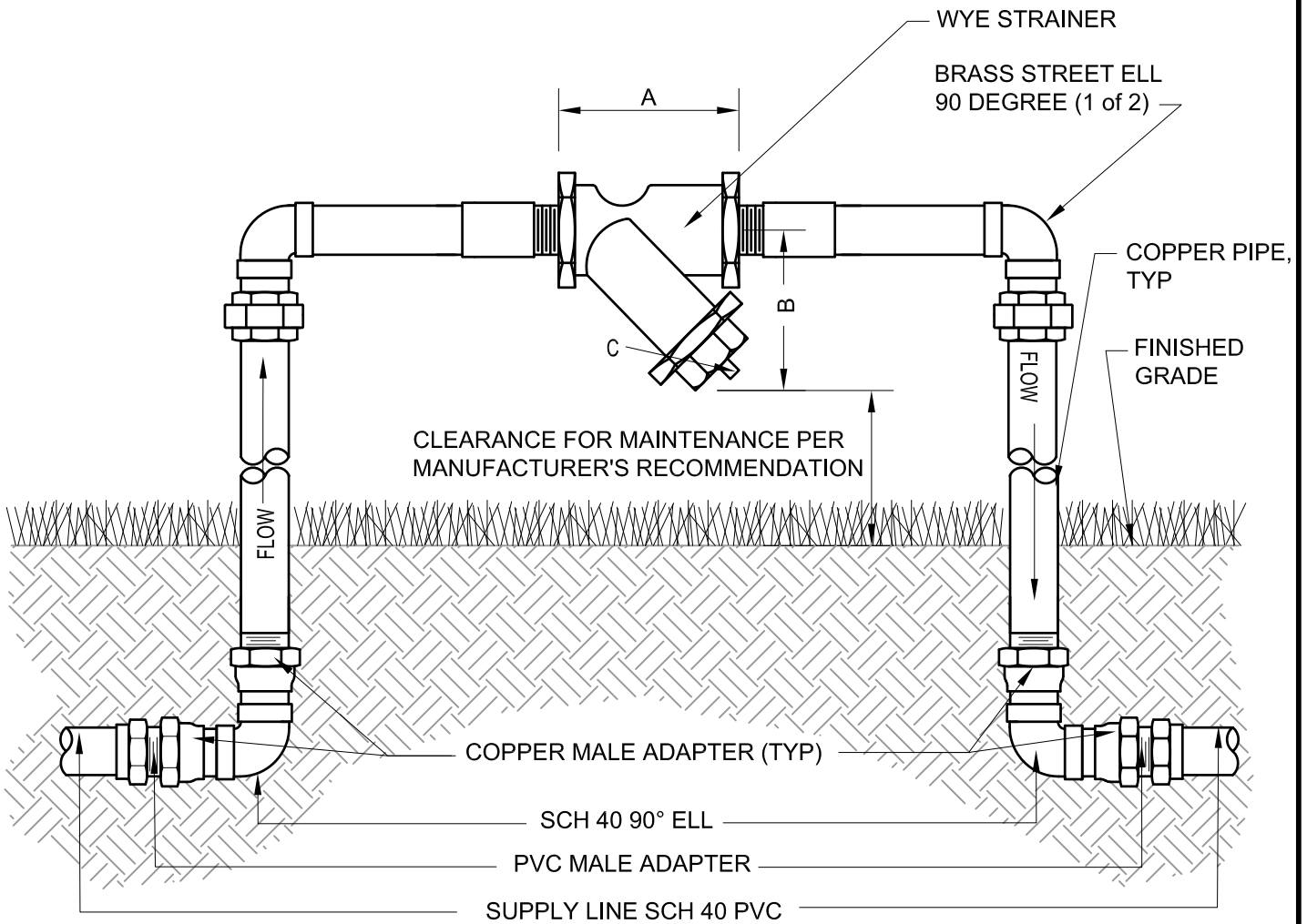
CITY ENGINEER <i>[Signature]</i>	DATE APPROVED BY CITY COUNCIL 12/13/11	RESOLUTION NO. 2006-31	DATE 12/13/11	DWG NO. LSD-24	1 of 1
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NOTES:

1. PRESSURE REDUCING VALVE BODY SHALL BE IRON; SEAT SHALL BE STAINLESS STEEL; INTEGRAL STRAINER SHALL BE STAINLESS STEEL; STEM SHALL BE BRASS; AND, DISK SHALL BE BRASS.
2. ALL BOXES SHALL BE PENTEK SUPERFLEXON 13X18, CARSON 1324 OR APPROVED EQUAL.
3. REFER TO CITY STANDARD DETAIL LSD-14 FOR ALL MATERIALS

			<p align="center">CITY OF FREMONT STANDARD DETAILS CITY STANDARD <u>IRRIGATION PRESSURE</u> <u>REDUCTION VALVE</u></p>			DATE APPROVED BY CITY COUNCIL 12/13/11	
						RESOLUTION NO. 2006-31	
						 CITY ENGINEER	
APPR	REVISED	DATE	REVISIONS				
FILE NO.	SCALE	DRAWN	CHECKED	DATE	DWG NO.		
LSD-25.DWG	1" = 1'-0"	AK/MM/PM	RER	NOV. 2005	LSD-25	1 of 1	



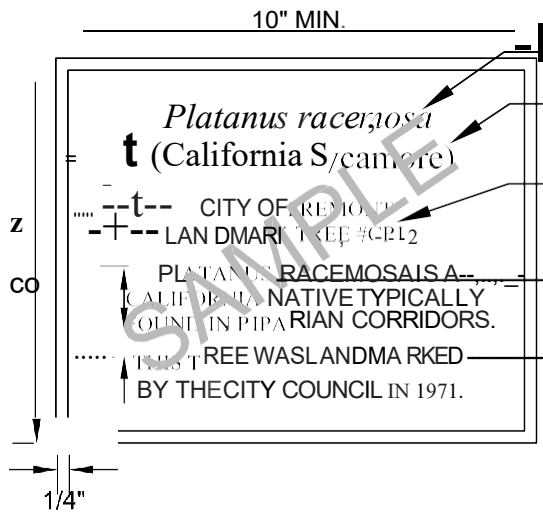
Size	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
A	2 3/4"	3"	3 3/4"	4 7/16"	4 15/16"	6 7/8"
B	2 1/4"	2 9/16"	2 3/4"	3 5/8"	3 7/8"	5 1/8"
C	1/4"	3/8"	3/8"	3/4"	3/4"	1"
Wt	.75	1.38	2.13	3.13	4.5	7

NOTES:

1. BODY AND CAP SHALL BE BRONZE ASTM B62; SCREEN SHALL BE 20 MESH STAINLESS STEEL; GASKET SHALL BE NON-ASBESTOS; ENDS SHALL BE THREADED ANSI/ASME B1.20.1
2. WORKING PRESSURE SHALL BE NON-SHOCK, 200 PSI @ 150 DEGREES
3. REFER TO CITY STANDARD DETAIL LSD-14 FOR ALL MATERIALS

<h2 style="margin: 0;">CITY OF FREMONT</h2> <h3 style="margin: 0;">STANDARD DETAILS</h3> <h3 style="margin: 0;">CITY STANDARD</h3> <h3 style="margin: 0;">IRRIGATION WYE STRAINER</h3>			DATE APPROVED BY CITY COUNCIL 12/13/11			
			RESOLUTION NO. 2006-31			
			CITY ENGINEER			
FILE NO.	SCALE	DRAWN	CHECKED	DATE	DWG NO.	
LSD-26.DWG	1" = 1'-0"	AK/MM/PM	RER	NOV. 2005	LSD-26	1 of 1

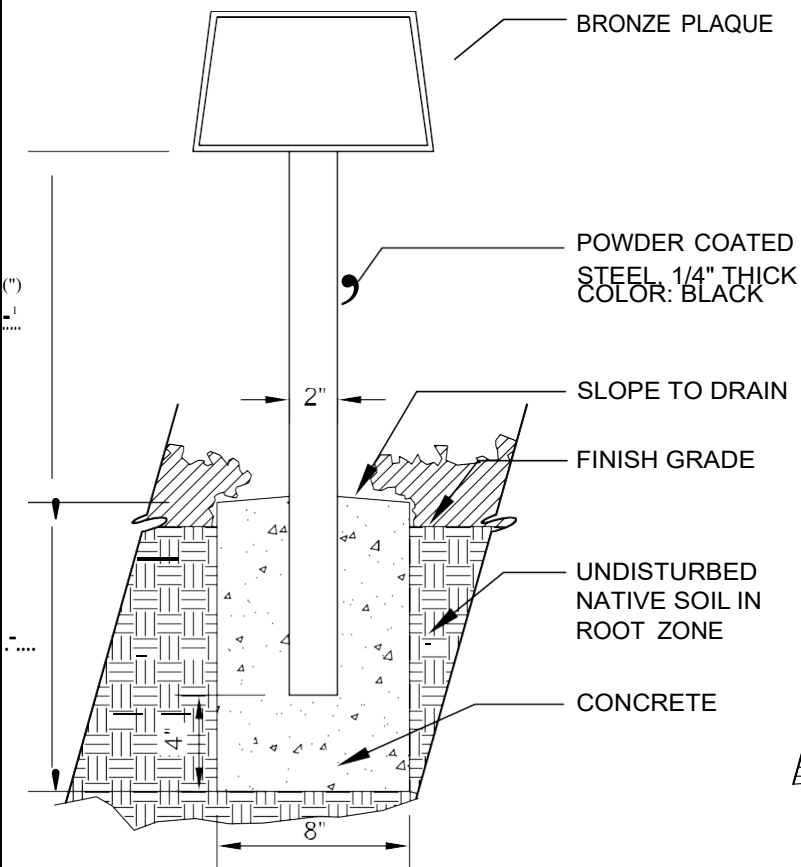
APPR	REVISED	DATE
REVISIONS		



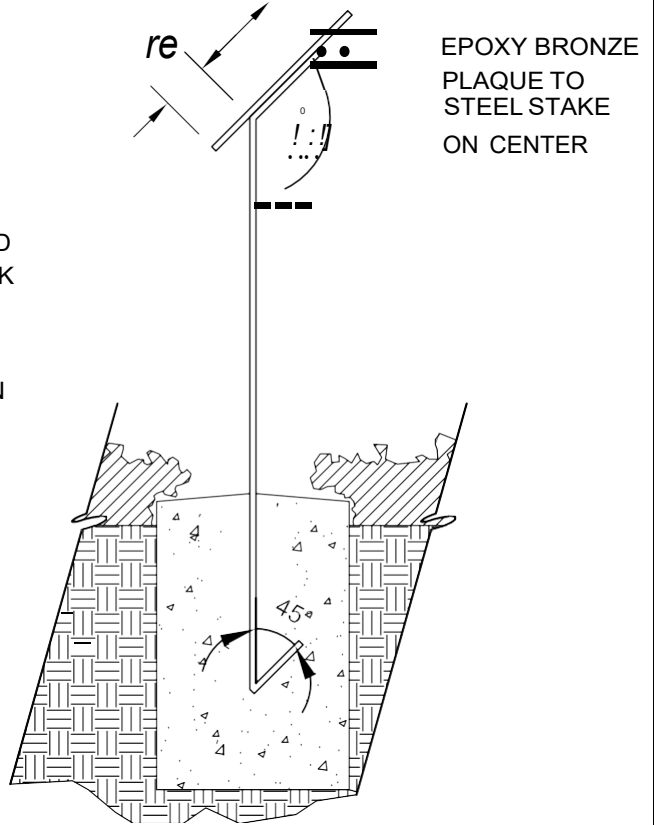
- SCIENTIFIC NAME OF TREE, 1/2" LETTERS, ITALICIZED
- COMMON NAME OF TREE IN PARENTHESES 1/2" LETTERS
- CITY OF FREMONT LANDMARK TREE NUMBER, 3/15" LETTERS, CAPITALIZED
- TREE DESCRIPTION, 3/15" LETTERS, CAPITALIZED. DESCRIPTION TO BE APPROVED BY CITY LANDSCAPE ARCHITECT
- STANDARD TEXT, 3/15" LETTERS, CAPITALIZED

- NOTES :
1. ALL TEXT TO BE TIMES NEW ROMAN, CENTERED ON PLAQUE.
 2. BACKGROUND COLOR SHALL BE DARK OXIDE (DARK BROWN).
 3. BACKGROUND TEXTURE SHALL BE LEATHERETTE.
 4. BORDER SHALL BE SINGLE LINE WITH NO BEVEL.
 5. LETTER AND WORD SPACING AS SHOWN.
 6. SIZE OF PLAQUE MAY VARY ACCORDING TO VARYING WIDTH OF SPECIES NAME.
 7. ANY DEVIATIONS SHALL BE APPROVED BY THE CITY LANDSCAPE ARCHITECT PRIOR TO FABRICATION.

BRONZE PLAQUE
SCALE: 3"=1'-0"



FRONT VIEW
SCALE: 1/2"=1'-0"



SIDE VIEW
SCALE: 1/2"=1'-0"

CITY OF FREMONT
STANDARD DETAILS
CITY STANDARD
LANDMARK TREE PLAQUE

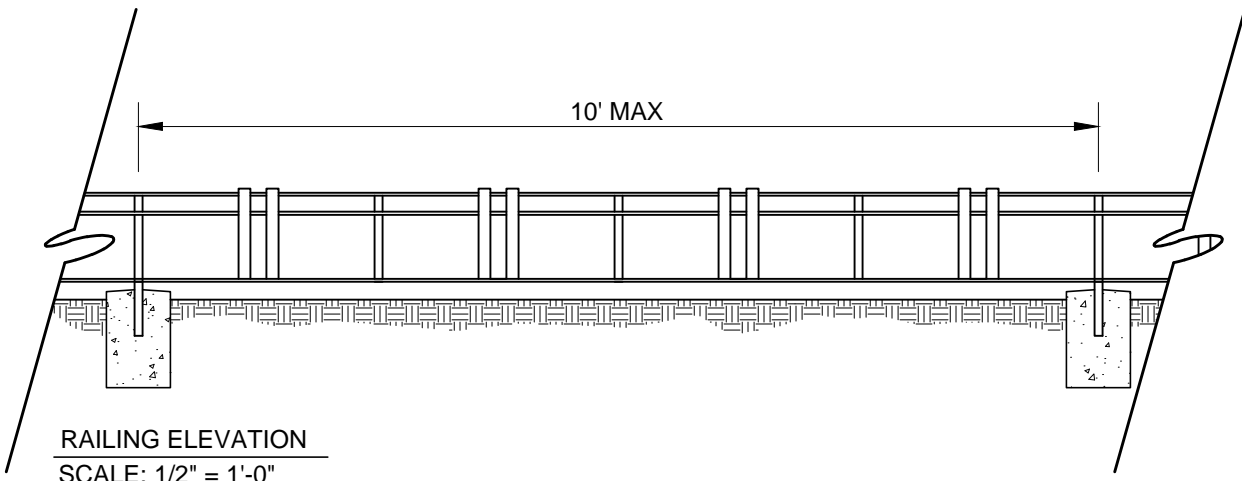
DATE APPROVED BY CITY COUNCIL
12/13/11

RESOLUTION NO. 2006-31

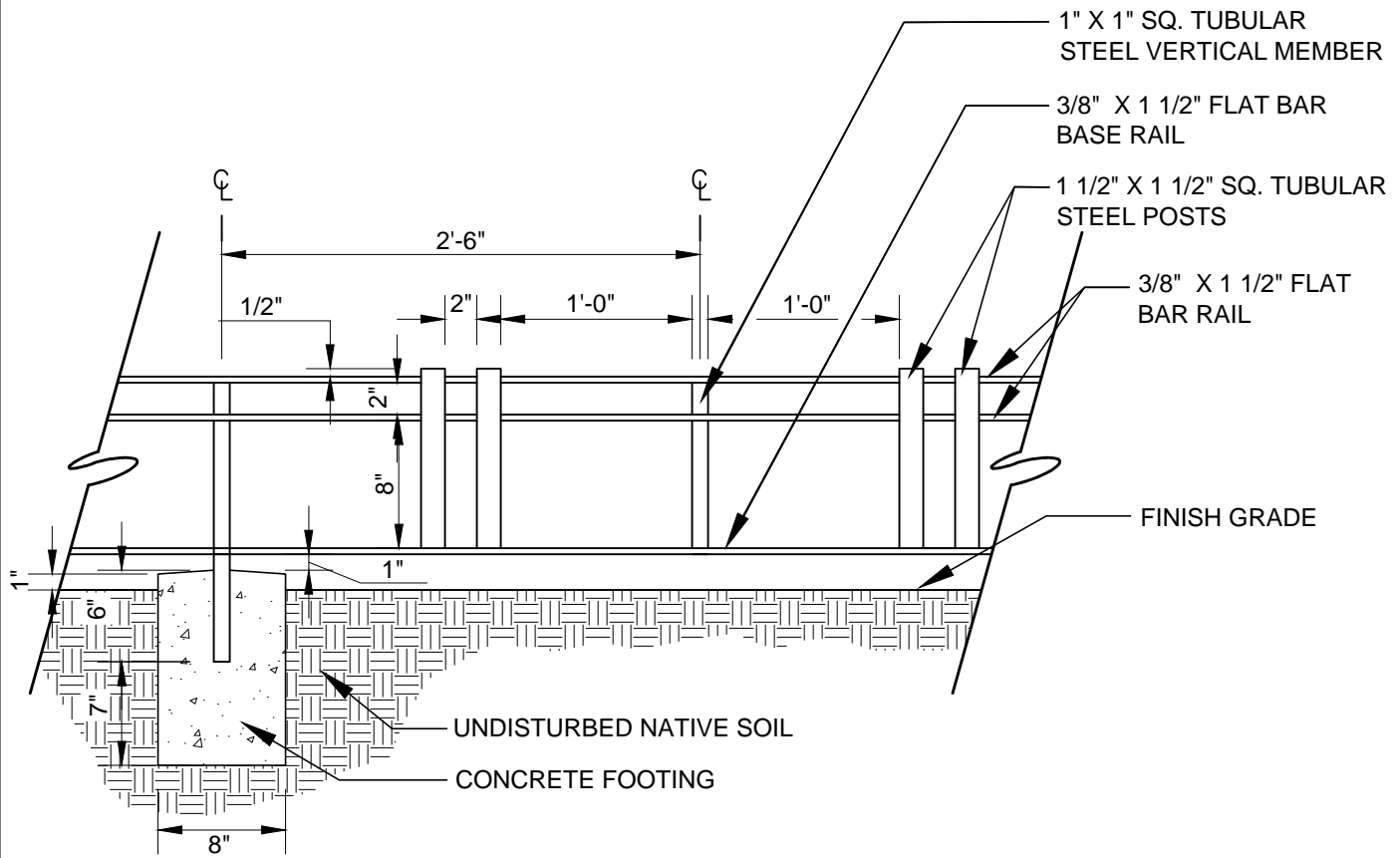
Norm Hughes
CITY ENGINEER

FILE NO.	SCALE	DRAWN	CHECKED	DATE	DWG NO.	
LSD-27.DWG	AS SHOWN	TB	RER	DEC. 2011	LSD-27	1 OF 1

APPR	REVISION	DATE
	Council Revision	12/13/11
REVISIONS		



RAILING ELEVATION
SCALE: 1/2" = 1'-0"



LOW METAL RAILING
SCALE: 1" = 1'-0"

- NOTE:**
1. ALL MEMBERS SOLID STEEL RAILING AND TUBULAR STEEL. FINISH SHALL BE POWDER COATED BLACK STAINLESS STEEL, OR WEATHERING STEEL (CORTEN).
 2. GRIND ALL WELDS SMOOTH PRIOR TO FINISH COAT.
 3. SLOPE TOP OF FOOTING FOR POSITIVE DRAINAGE.

APPR	REVISION	DATE
	General Revision	07/31/22
	General Revision	08/2019
	Council Revision	12/13/11
APPR	REVISED	DATE

REVISIONS

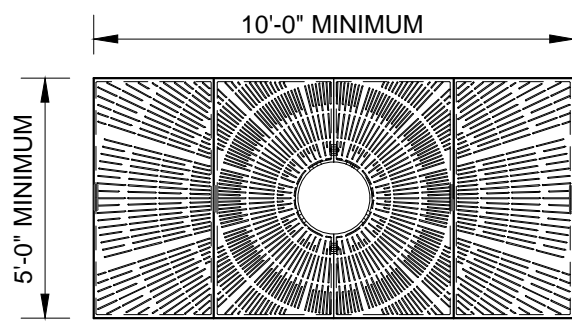
CITY OF FREMONT
STANDARD DETAILS
CITY STANDARD
LANDMARK TREE RAILING

DATE APPROVED BY CITY COUNCIL
12/13/11

RESOLUTION NO. 2006-31

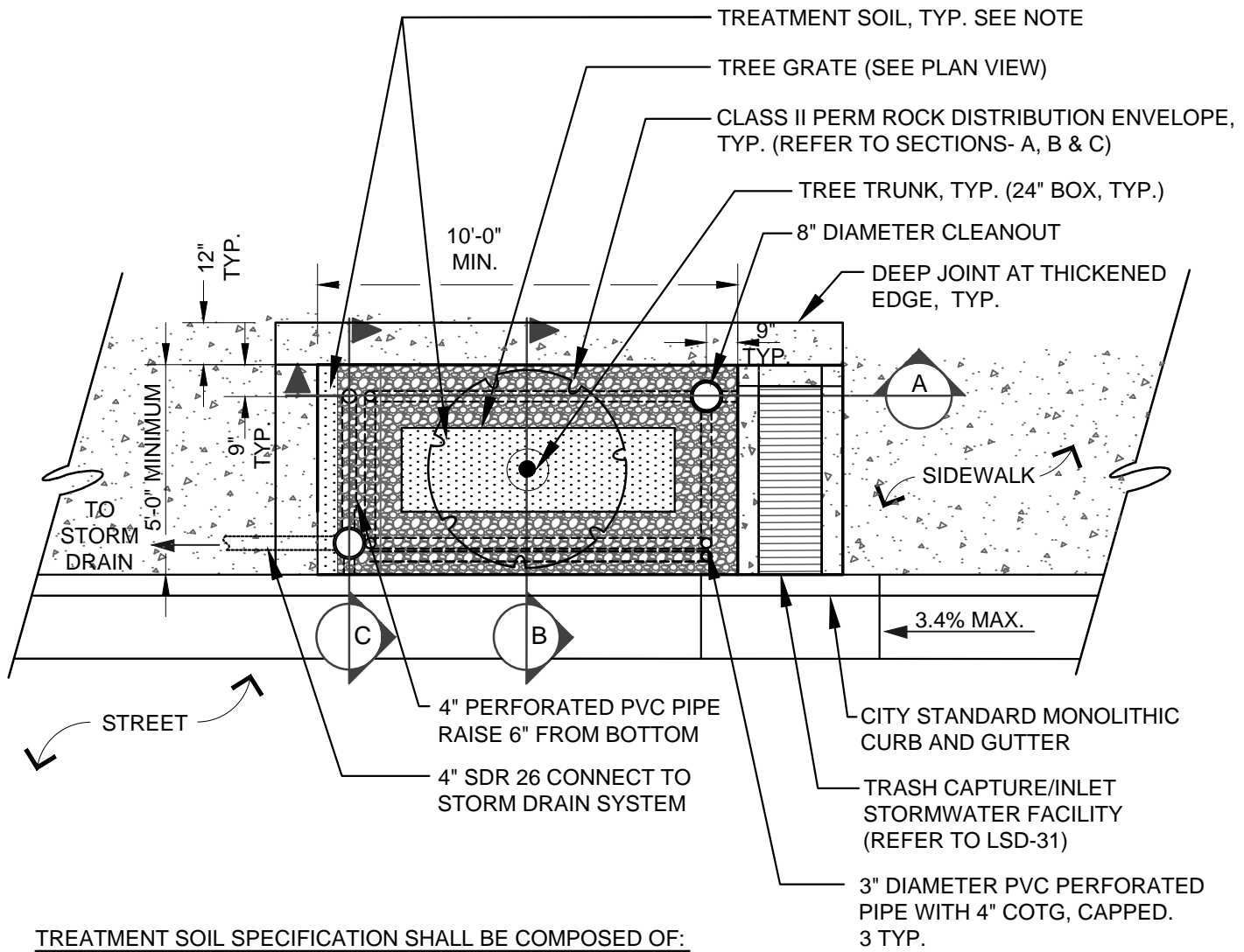
Norm Hughes
CITY ENGINEER

FILE NO. LSD-28.DWG	SCALE VARIES	DRAWN TB	CHECKED RER	DATE DEC. 2011	DWG NO. LSD - 28	1 of 1
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NOTE:
 NEENAH TREE GRATE R-8707-T20
 (WITH EXTENSION PIECES).
 SEE LSD-2, SHEET 2 OF 2, OR
 APPROVED EQUAL.


PLAN VIEW - TREE GRATE



TREATMENT SOIL SPECIFICATION SHALL BE COMPOSED OF:
 60% ASTM C-33 SAND
 30% USCC STA CERTIFIED COMPOST
 10% SMALL WOOD CHIPS

<i>PKP</i>	Council Revision	07/31/22
<i>PKP</i>	Council Revision	12/13/11
APPR	REVISED	DATE
REVISIONS		

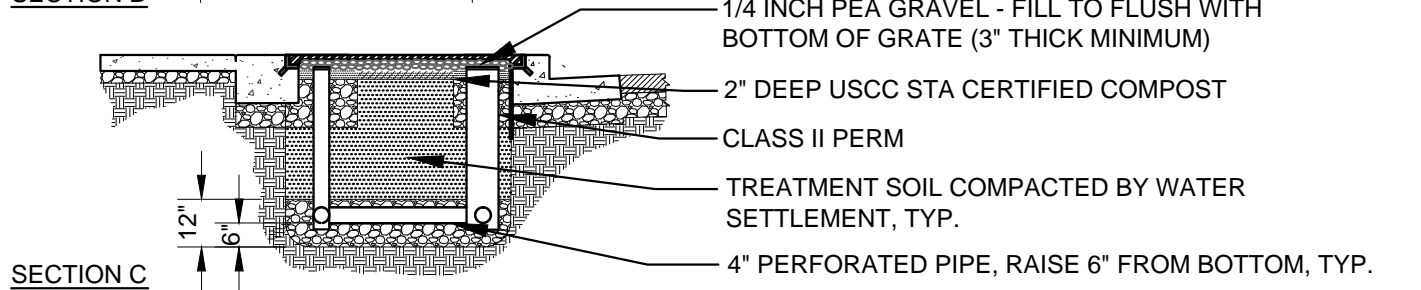
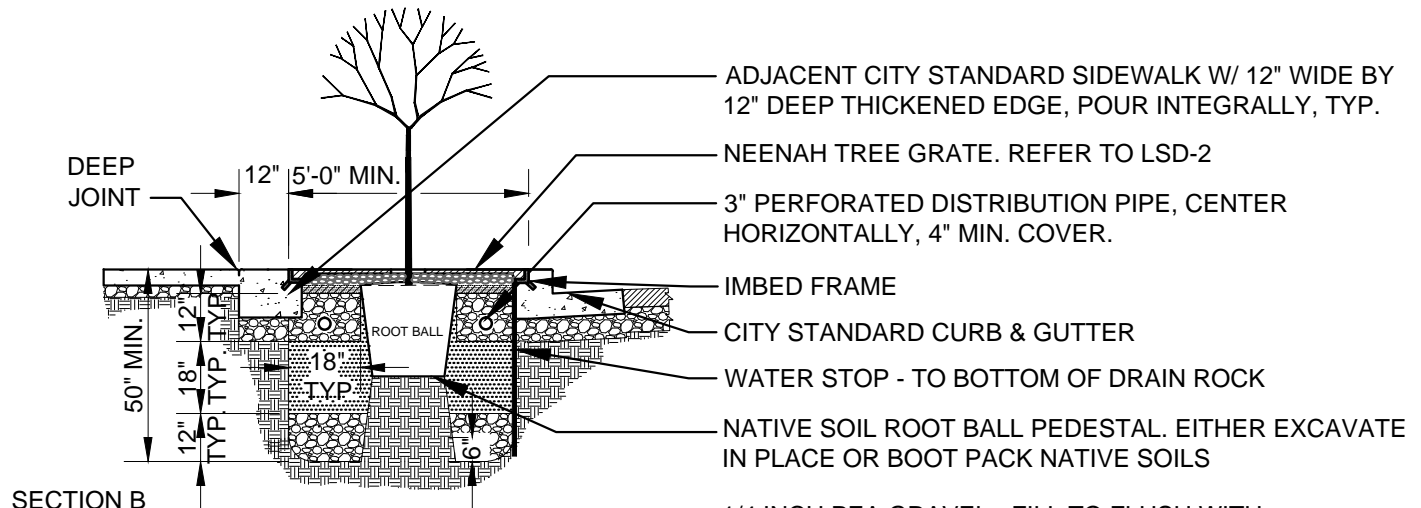
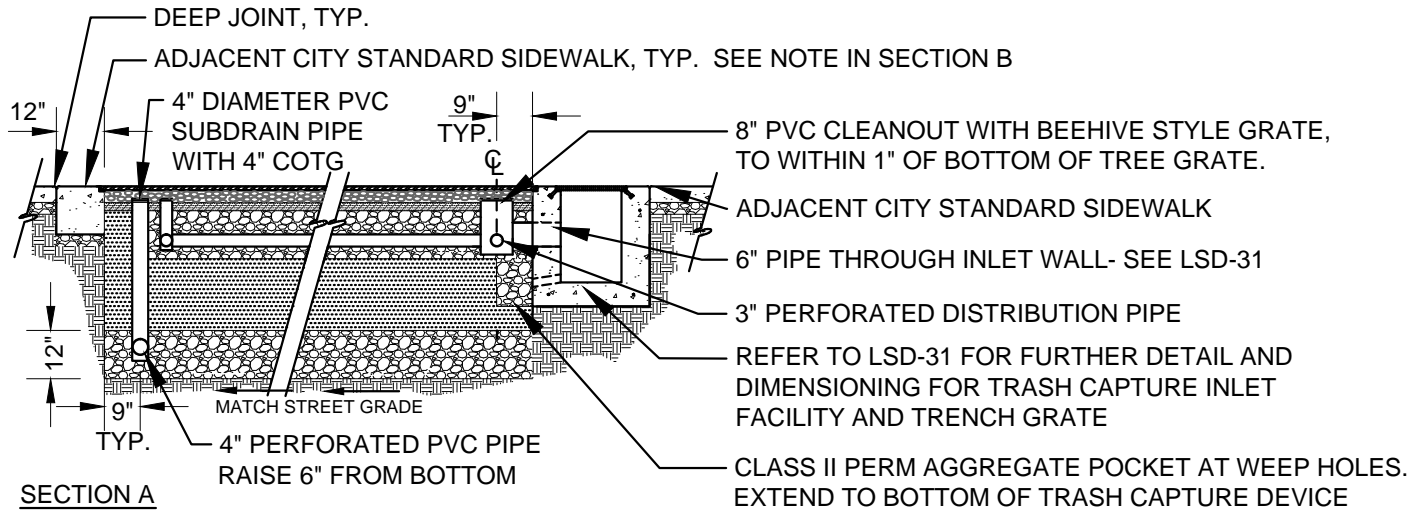
CITY OF FREMONT
STANDARD DETAILS
CITY STANDARD
STORMWATER TREETWELL
PLAN VIEW

DATE APPROVED BY CITY COUNCIL
 12/13/11
 RESOLUTION NO. 2006-31

 CITY ENGINEER

FILE NO. LSD-29.DWG	SCALE 1/4" = 1'-0"	DRAWN EL/TB/CC	CHECKED RER	DATE DEC. 2011	DWG NO. LSD-29	1 OF 2
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SIZING INFORMATION:

1. THE MAXIMUM ALLOWABLE DRAINAGE AREA FOR THIS TREETWELL AS SHOWN (10' x 5') SHALL BE 1,250 SQ. FT. TREETWELL HAS BEEN SIZED USING THE COMBINED FLOW AND VOLUME METHODOLOGY AS DETAILED IN THE ACCWP C.3 STORMWATER TECHNICAL MANUAL. ANY DEVIATION FROM THIS SIZE (10' x 5') WOULD REQUIRE FLOW-VOLUME CALCULATIONS. SUBSURFACE TREETWELL TREATMENT DEVICES WILL NOT BE ACCEPTED USING SIMPLIFIED SIZING CRITERIA OF 4%.
2. THE CURB INLET OPENING OF 15" AS SHOWN IS SUFFICIENT TO CAPTURE 100% OF THE TREATMENT RUNOFF FROM THE MAXIMUM DRAINAGE AREA (1,250 SQ.FT. OF IMPERVIOUS AREA) PERTINENT TO THIS TREETWELL SIZE. THE LENGTH OF CURB OPENING REQUIRED FOR 100% CAPTURE IS DEPENDENT ON THE GUTTER SLOPE (FOR TREETWELLS INSTALLED AT GRADE). STREETS GREATER THAN 3.4% SHALL REQUIRE LONGER OR MULTIPLE CURB OPENINGS BASED ON INLET CAPTURE CALCULATIONS.
3. FOR ADDITIONAL PLANTING AND IRRIGATION REFER TO LSD-2 REQUIREMENTS. TREES MUST BE IRRIGATED.



**CITY OF FREMONT
STANDARD DETAILS
CITY STANDARD
STORMWATER TREETWELL
SECTIONS**

DATE APPROVED BY CITY COUNCIL
12/13/11

RESOLUTION NO. 2006-31

Norm Hughes

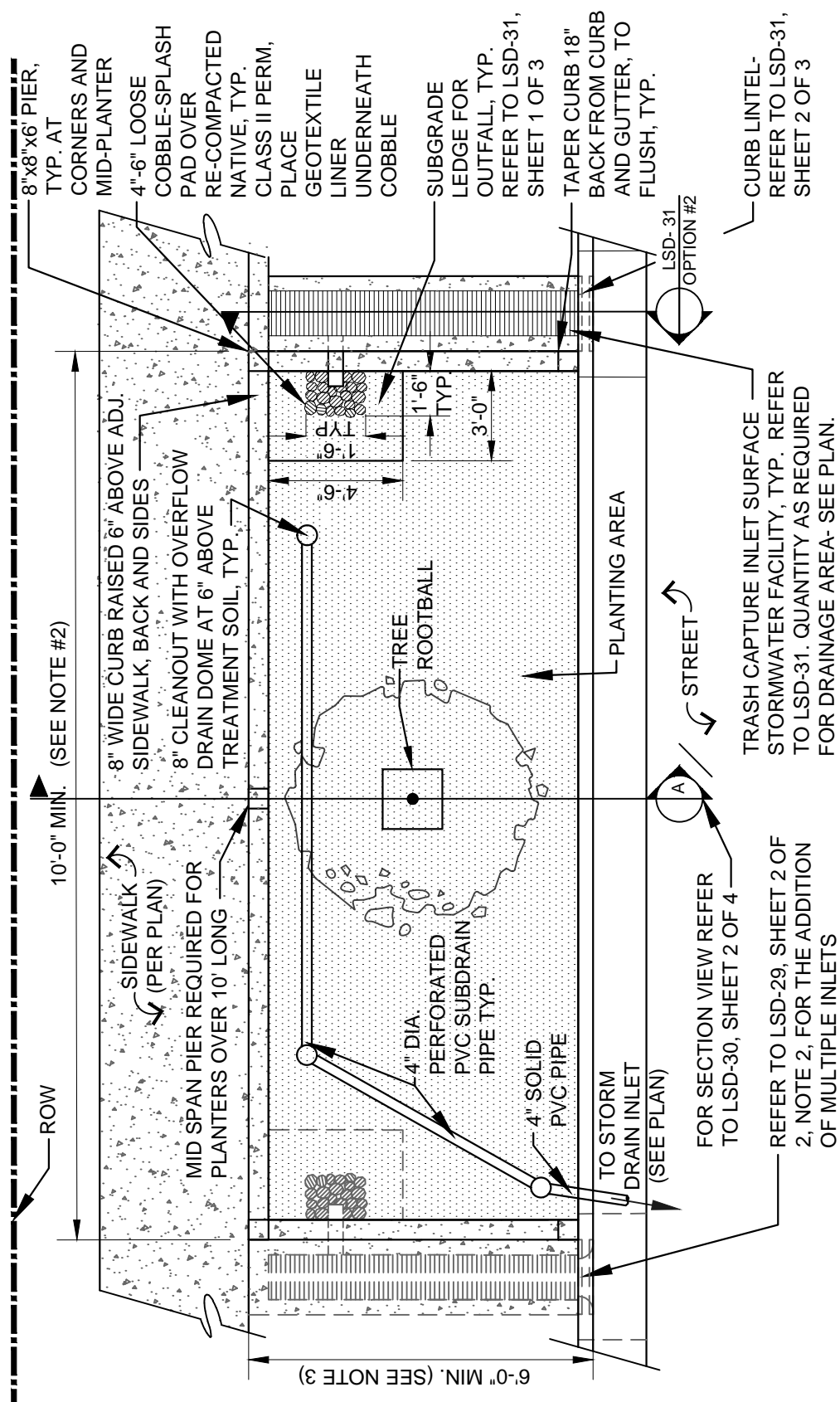
CITY ENGINEER

<i>RFK</i>	General Revision	07/31/22
<i>RFK</i>	General Revision	08/2019
APPR	REVISED	DATE
REVISIONS		

FILE NO. LSD-29.DWG	SCALE 1/4"=1'-0"	DRAWN MAM/TB/CC	CHECKED RER	DATE DEC. 2011	DWG NO. LSD-29	2 OF 2
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SIZING INFORMATION:

- A. SIZE TREETWELL FILTER TO EQUAL 4% OF THE DRAINAGE AREA ENTERING PLANTER. REFER TO ACCWP C.3 STORMWATER TECHNICAL MANUAL.
- B. FOR ADDITIONAL PLANTING AND IRRIGATION REFER TO LSD-2 REQUIREMENTS. TREES MUST BE IRRIGATED.



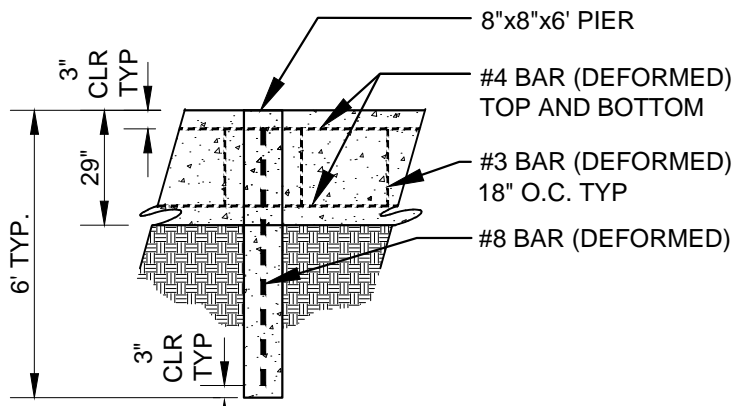
- NOTES:**
1. USE NDS DOME ATRIUM GRATE FOR OVERFLOW DRAINS, OR APPROVED EQUAL. COLOR: BLACK
 2. DIMENSIONS VARY DEPENDING ON SIZE OF DRAINAGE AREA, BUT NOT LESS THAN 5'-0" BY 10'-0"
 3. SEE SHEET 3 OF 4 FOR ALTERNATE MONOLITHIC SIDEWALK DESIGN

APPR	REVISION	DATE
<i>[Signature]</i>	General Revision	07/31/22
<i>[Signature]</i>	General Revision	08/2019
	Council Revision	12/13/11

**CITY OF FREMONT
STANDARD DETAILS
CITY STANDARD
STORMWATER PLANTER
PLAN VIEW**

DATE APPROVED BY CITY COUNCIL 12/13/11	
RESOLUTION NO. 2006-31	
<i>[Signature]</i> CITY ENGINEER	

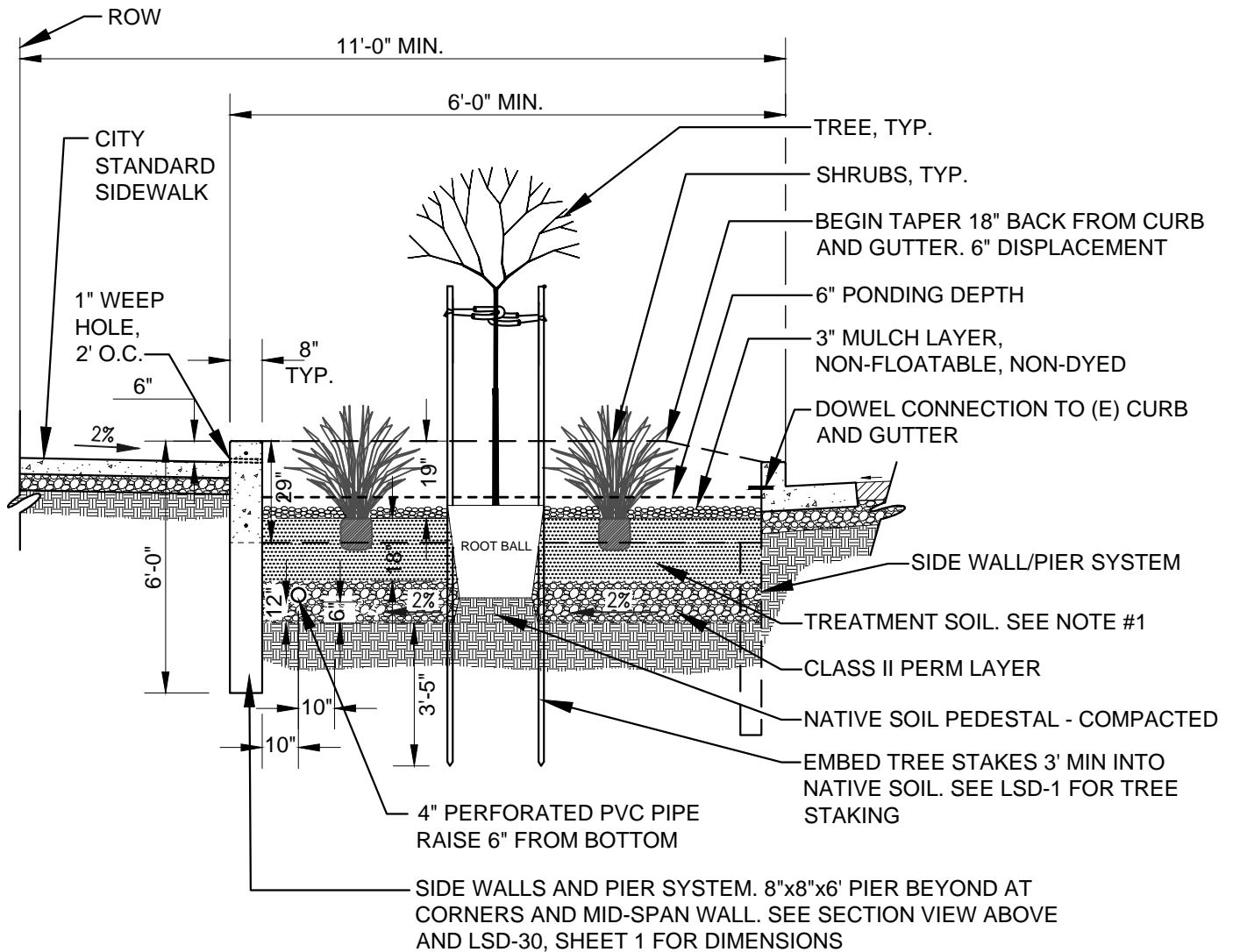
FILE NO. LSD-30.DWG	SCALE 3/16" = 1'-0"	DRAWN MM	CHECKED RER	DATE DEC. 2011	DWG NO. LSD-30	1 OF 4
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SECTION VIEW
8" SIDE WALLS AND PIER INTERFACE

NOTES:

1. TREATMENT SOIL SHALL BE COMPOSED OF:
60% ASTM C-33 SAND
30% USCC STA CERTIFIED COMPOST
10% SMALL WOOD CHIPS
2. CONTRACTOR MUST SUBMIT TEST RESULTS FROM COMPOST FACILITY.
3. PLANTS MUST BE IRRIGATED.



SECTION A

APPR	REVISION	DATE
	REVISIONS	
General Revision		07/31/22
General Revision		08/2019
Council Revision		12/13/11

**CITY OF FREMONT
STANDARD DETAILS
CITY STANDARD
STORMWATER PLANTER
SECTIONS**

DATE APPROVED BY CITY COUNCIL
12/13/11

RESOLUTION NO. 2006-31

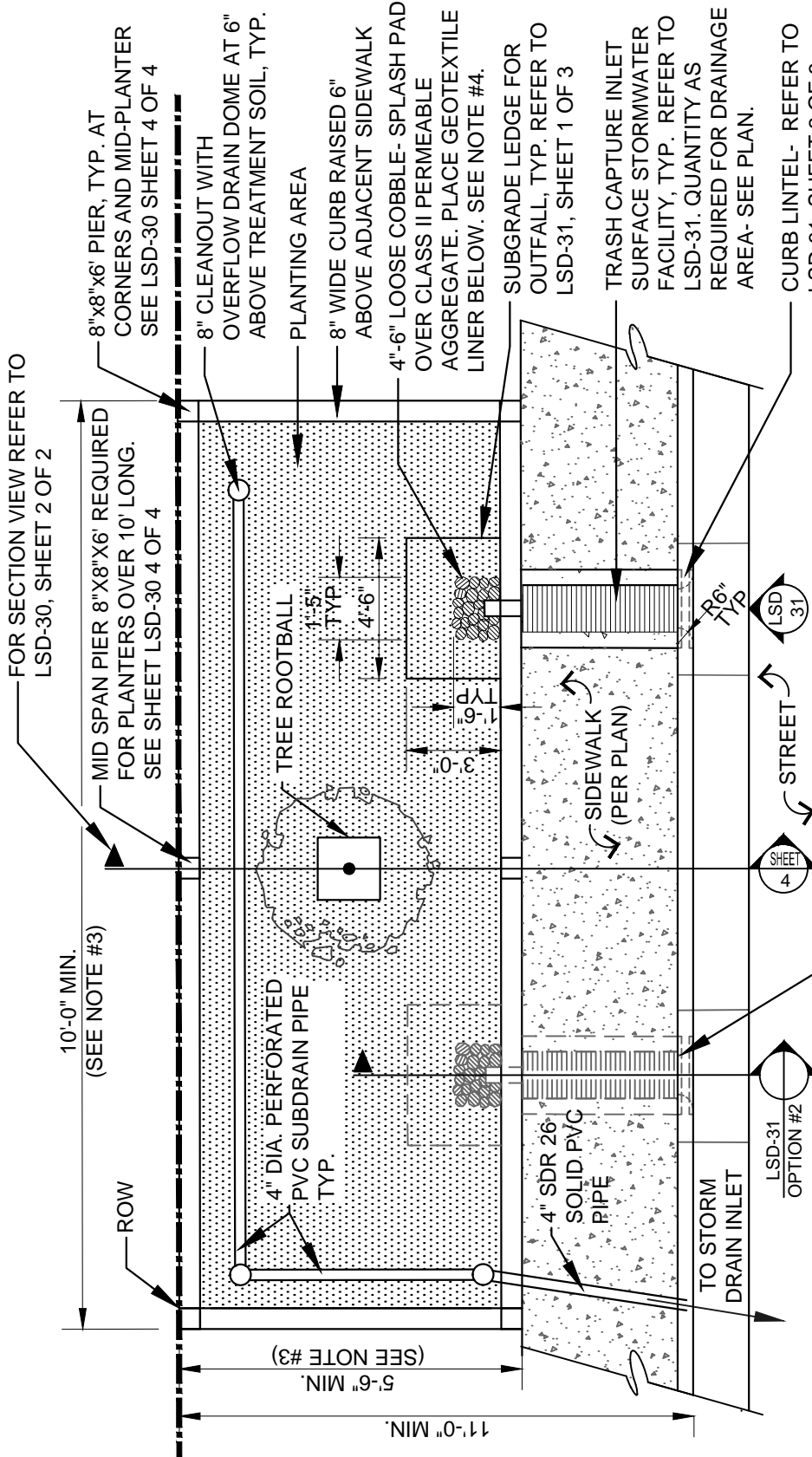
Naam Hughes

CITY ENGINEER

FILE NO. LSD-30.DWG	SCALE N.T.S.	DRAWN MM/CC	CHECKED RER	DATE DEC. 2011	DWG NO. LSD-30	2 OF 4
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SIZING INFORMATION:

- A. SIZE TREEWELL FILTER TO EQUAL 4% OF THE DRAINAGE AREA ENTERING PLANTER. REFER TO ACCWP C.3 STORMWATER TECHNICAL MANUAL.
- B. FOR ADDITIONAL PLANTING AND IRRIGATION REFER TO LSD-2 REQUIREMENTS. TREES MUST BE IRRIGATED.



FOR SECTION VIEW REFER TO LSD-30, SHEET 2 OF 2

NOTES:

- 1. USE NDS DOME ATRIUM GRATE FOR OVERFLOW DRAINS, OR APPROVED EQUAL. COLOR: BLACK
- 2. DIMENSIONS VARY DEPENDING ON SIZE OF DRAINAGE AREA, 5'-0" BY 10'-0" MIN.
- 3. THIS IS AN ALTERNATE DESIGN FROM THE RESIDENTIAL STANDARD AND IS FOR RETROFIT OR MONOLITHIC SITUATIONS ONLY, AS APPROVED BY THE CITY ENGINEER.
- 4. CONSIDER MORTARING ROCK COBBLES IN PLACE TO HELP CONVEY WATER TO THE CENTER OF PLANTER.

REFER TO LSD-29, SHEET 2 OF 2; NOTE 2, FOR THE ADDITION OF MULTIPLE INLETS

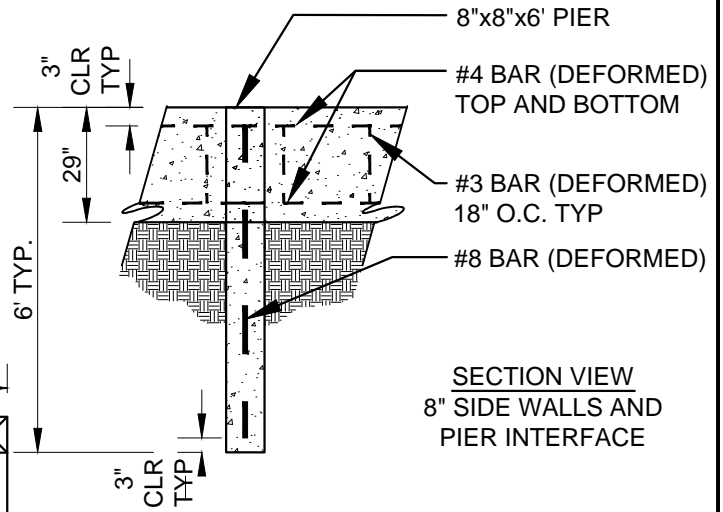
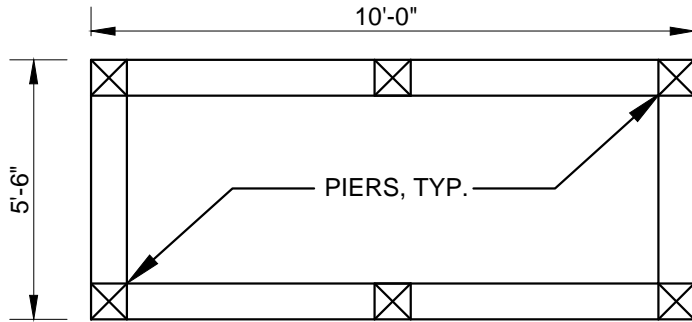
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	REVISOR	DATE
	General Revision	07/31/22
	General Revision	08/2019
	Council Revision	12/13/11
FILE NO.	SCALE	DRAWN
LSD-30.DWG	3/16" = 1'-0"	MM/TB/CC

**CITY OF FREMONT
STANDARD DETAILS
CITY STANDARD
STORMWATER PLANTER
PLAN VIEW - ALTERNATE**

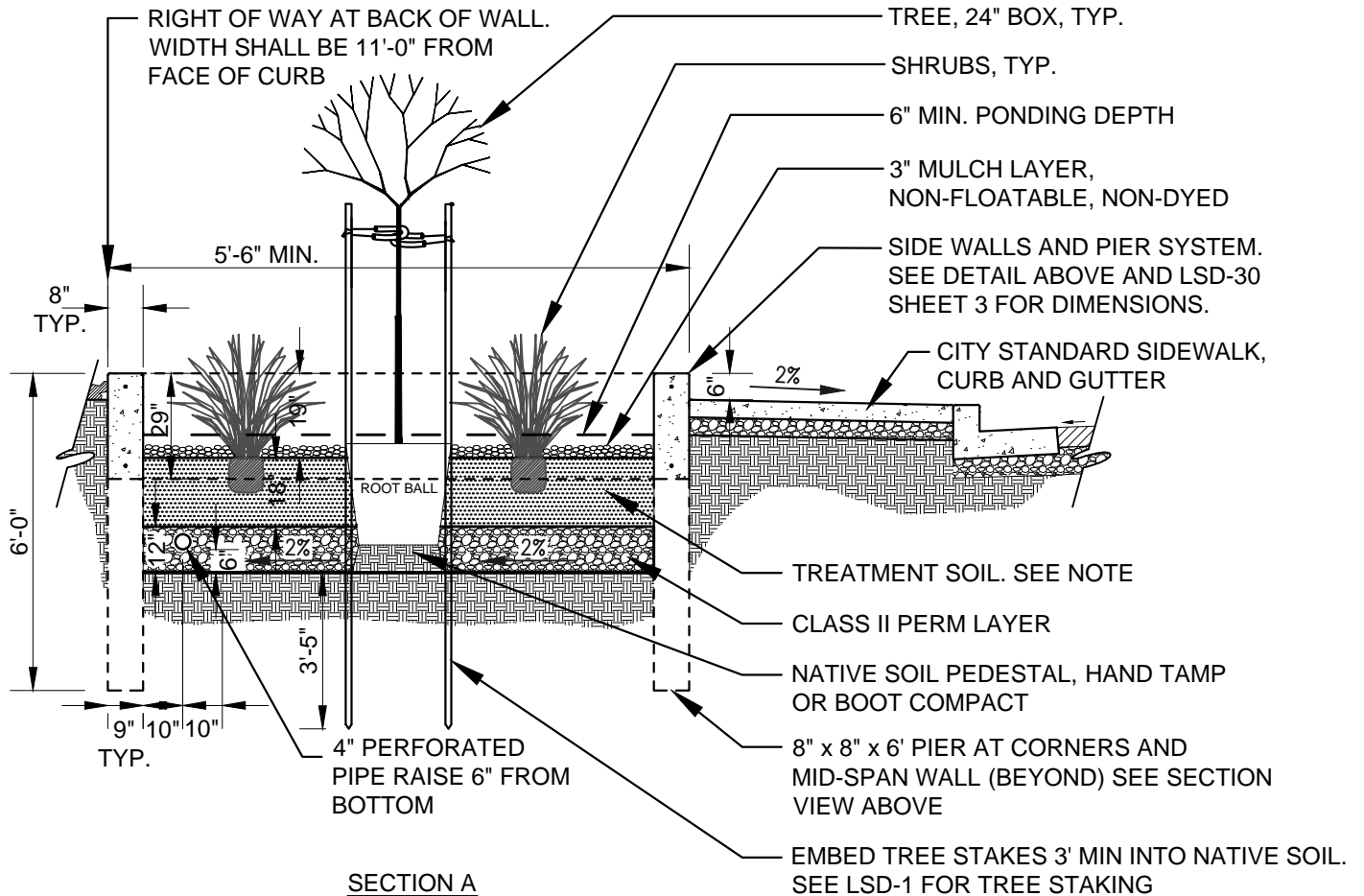
DATE APPROVED BY CITY COUNCIL	12/13/11
RESOLUTION NO.	2006-31
CITY ENGINEER	<i>Naam Hughes</i>
DWG NO.	LSD-30
	3 OF 4

NOTES:

1. TREATMENT SOIL SHALL BE COMPOSED OF:
 60% ASTM C-33 SAND
 30% USCC STA CERTIFIED COMPOST (SEE NOTE 2)
 10% SMALL WOOD CHIPS
2. CONTRACTOR SHALL SUBMIT TEST RESULTS FROM COMPOST FACILITY.
3. PLANTS MUST BE IRRIGATED.
4. THIS IS AN ALTERNATE DESIGN FROM THE RESIDENTIAL STANDARD AND IS FOR RETROFIT OR MONOLITHIC SITUATIONS ONLY, AS APPROVED BY THE CITY ENGINEER.



SECTION VIEW
8" SIDE WALLS AND PIER INTERFACE



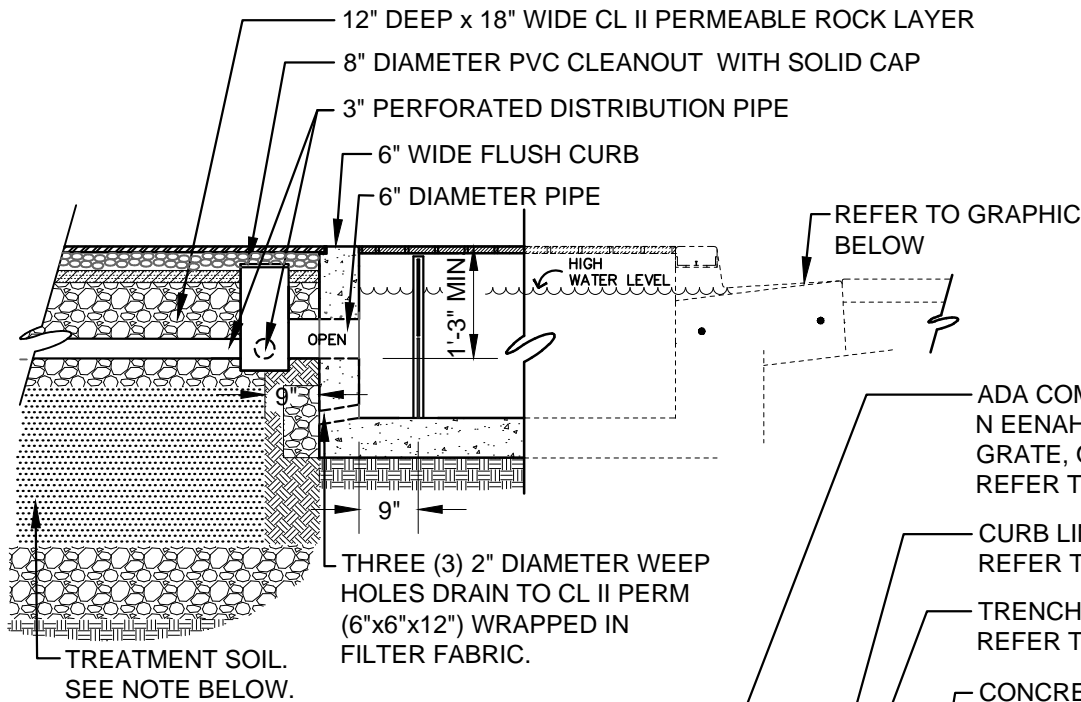
SECTION A

General Revision	07/31/22	
General Revision	08/2019	
Council Revision	12/13/11	
APPR	REVISOR	DATE
REVISIONS		

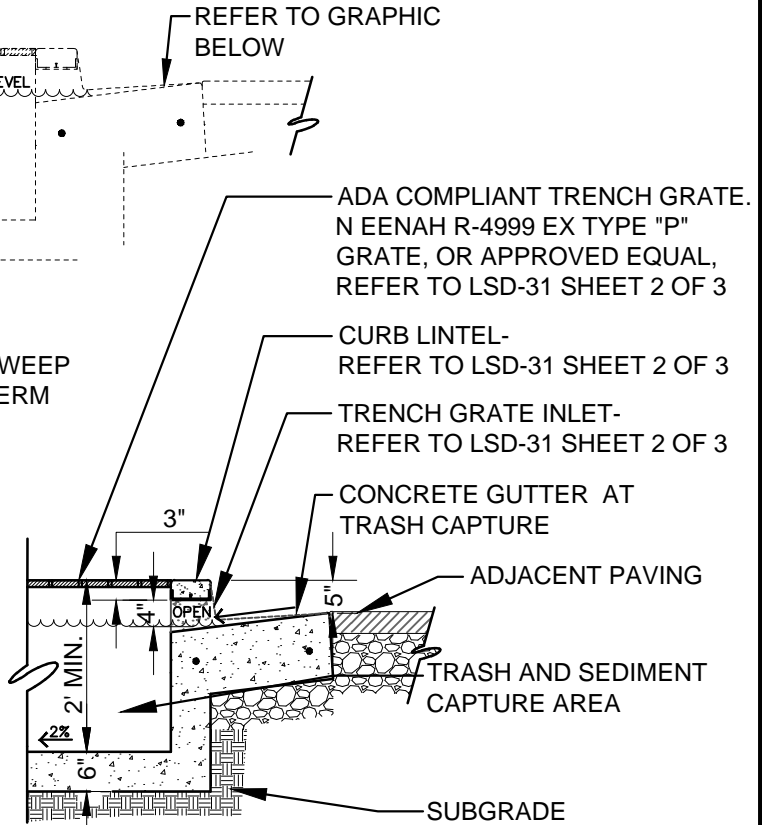
CITY OF FREMONT
STANDARD DETAILS
CITY STANDARD
STORMWATER PLANTER
SECTIONS-ALTERNATE

DATE APPROVED BY CITY COUNCIL 12/13/11	
RESOLUTION NO. 2006-31	
<i>Norm Hughes</i>	
CITY ENGINEER	

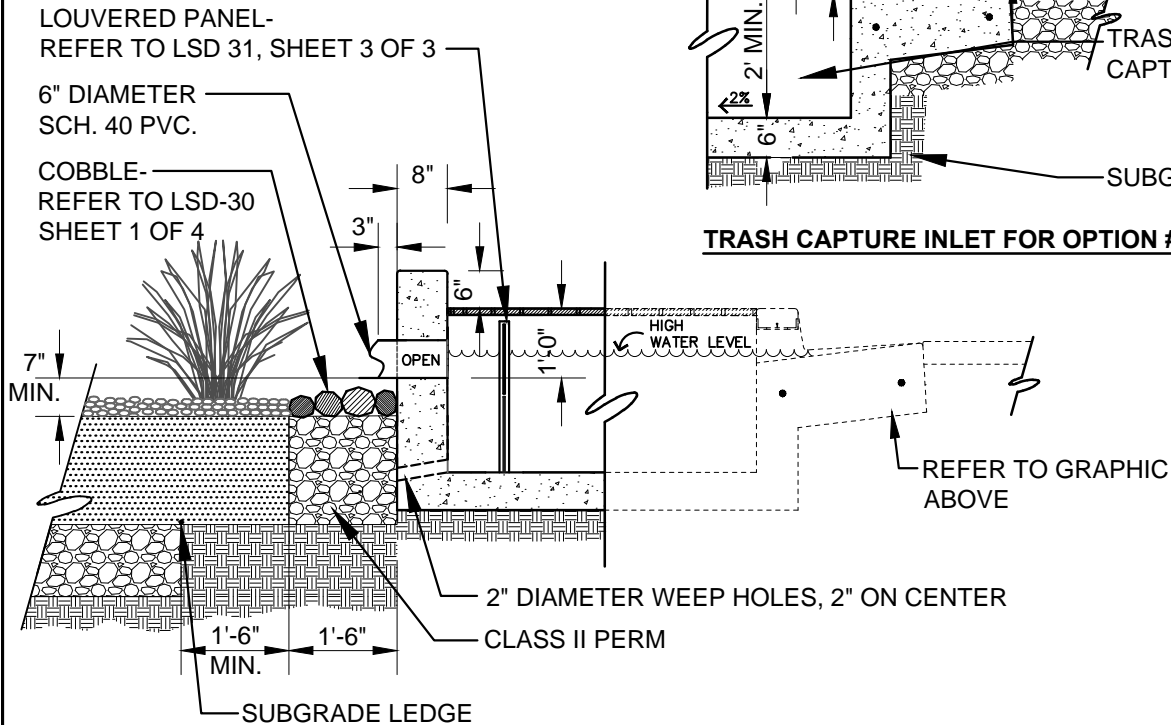
FILE NO. LSD-30.DWG	SCALE N.T.S.	DRAWN PN/TB/CC	CHECKED RER	DATE DEC. 2011	DWG NO. LSD-30	4 OF 4
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**SUBSURFACE STORMWATER FACILITY
OPTION #1**



TRASH CAPTURE INLET FOR OPTION #1 AND #2




**SURFACE STORMWATER FACILITY
OPTION #2**

TREATMENT SOIL SPECIFICATION SHALL BE COMPOSED OF :
 60% ASTM C-33 SAND
 30% USCC STA CERTIFIED COMPOST
 10% SMALL WOOD CHIPS

JK	General Revision	07/31/22
JK	General Revision	08/2019
	Council Revision	12/13/11
APPR	REVISED	DATE
REVISIONS		

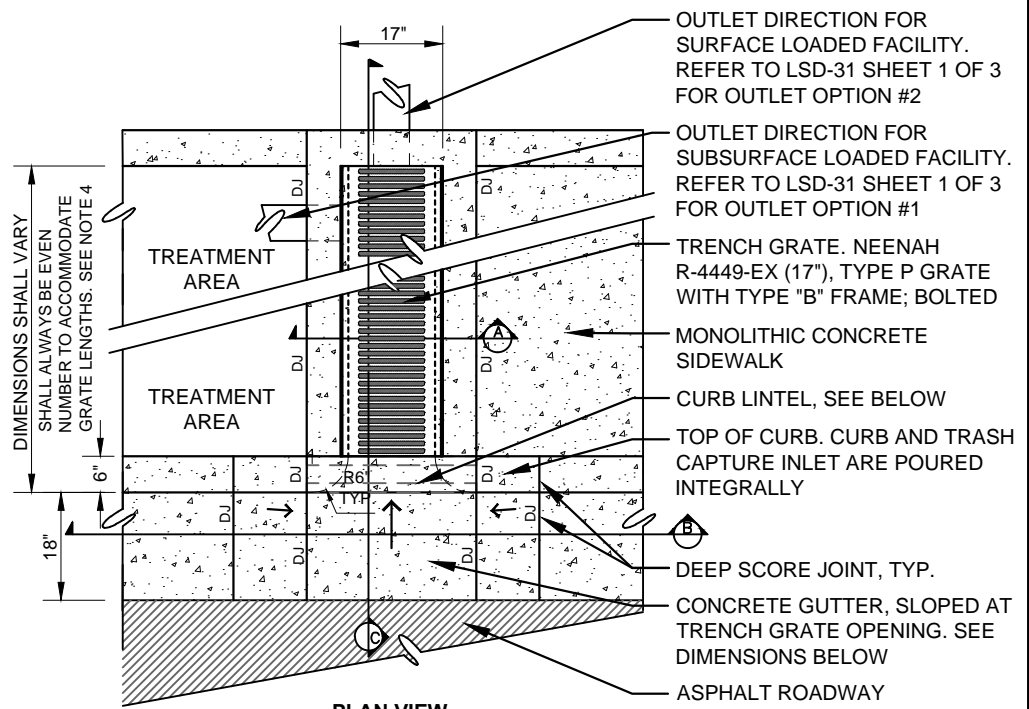
**CITY OF FREMONT
STANDARD DETAILS
CITY STANDARD
STORMWATER TRASH
CAPTURE INLET**

DATE APPROVED BY CITY COUNCIL
12/13/11
 RESOLUTION NO. 2006-31

 CITY ENGINEER

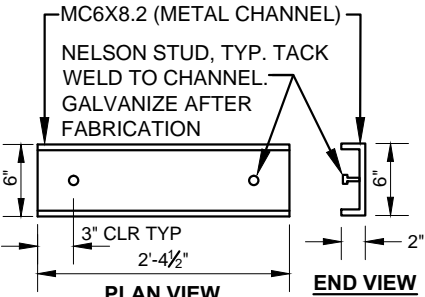
FILE NO. LSD-31.DWG	SCALE 1/2" = 1'-0"	DRAWN TB/CC	CHECKED RER	DATE NOV. 2011	DWG NO. LSD-31	1 OF 3
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NOTES:

- * REFER TO PLANS FOR MINIMUM OPENING WIDTH. VARIABILITY OF MINIMUM OPENING WIDTH IS SUBJECT TO REQUIREMENTS OF DRAINAGE AREA. REFER TO NOTES 1 AND 2 ON LSD-29, SHEET 2 OF 2.
- DURING CONSTRUCTION RAIN EVENTS, TRASH CAPTURE DEVICE OPENING SHALL BE PROTECTED TO PREVENT WATER ENTRY UNTIL DEVICE IS APPROVED FOR USE BY PROJECT LANDSCAPE ARCHITECT.
- REFER TO LSD 31, SHEET 1 OF 3 FOR WEEP HOLES QUANTITY AND DETAIL.
- GRATE COME IN STANDARD 2 FT INCREMENTS AND SHALL NOT BE CUT. ADJUST TRENCH LENGTH TO ENSURE IT IS CONSTRUCTED TO EVEN GRATE LENGTHS.
- GRATES ARE 17" (W) X 24" (L) X 1-1/2" (D), TYP. MAINTAIN 3/16" GAP BETWEEN GRATE AND FRAME ALONG INSTALLATION. GRATE IS BOLTED.
- END PC FRAMES ARE REQUIRED.

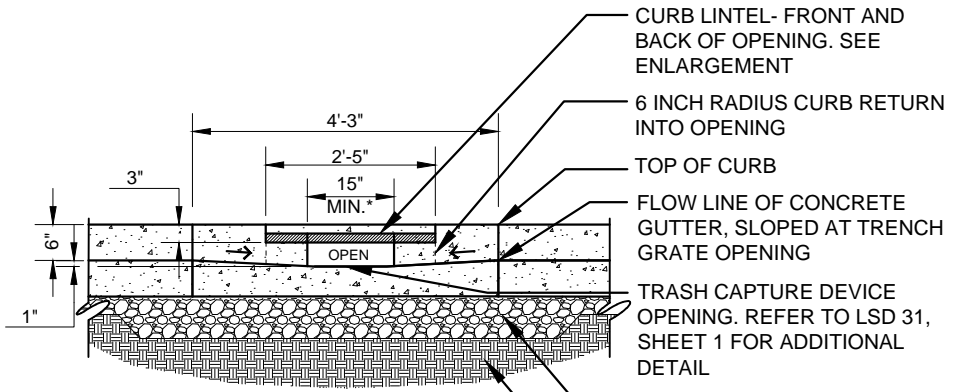


**PLAN VIEW
TRASH CAPTURE INLET AND GRATE**

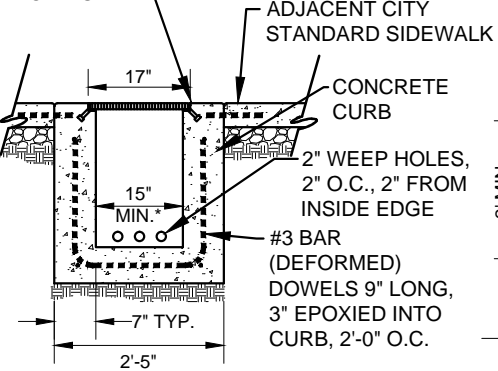


**CURB LINTEL ENLARGEMENT
SCALE: 3/4" = 1'-0"**

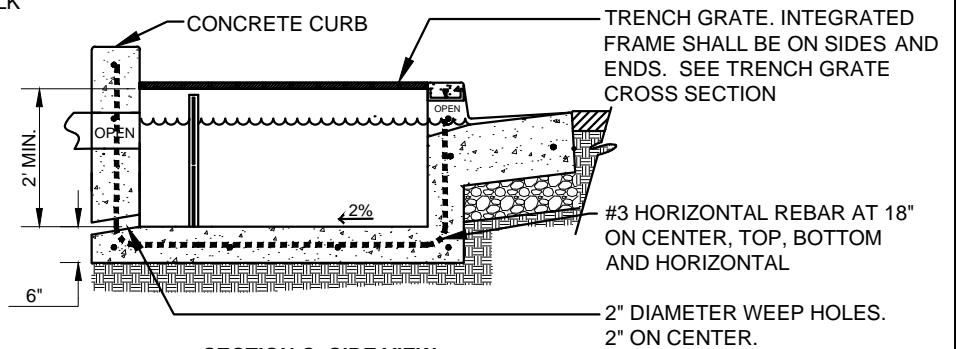
TRENCH GRATE AND INTEGRATED FRAME. FRAME SHALL BE 1/2" TO 1 3/4" ANGLE IRON EMBEDDED INTO TRASH CAPTURE CURB, AND DIMENSIONED FROM OUTSIDE EDGE TO EDGE



**SECTION B
TRENCH GRATE INLET ENLARGEMENT**



**SECTION A
TRENCH GRATE AND CURB CONNECTION**



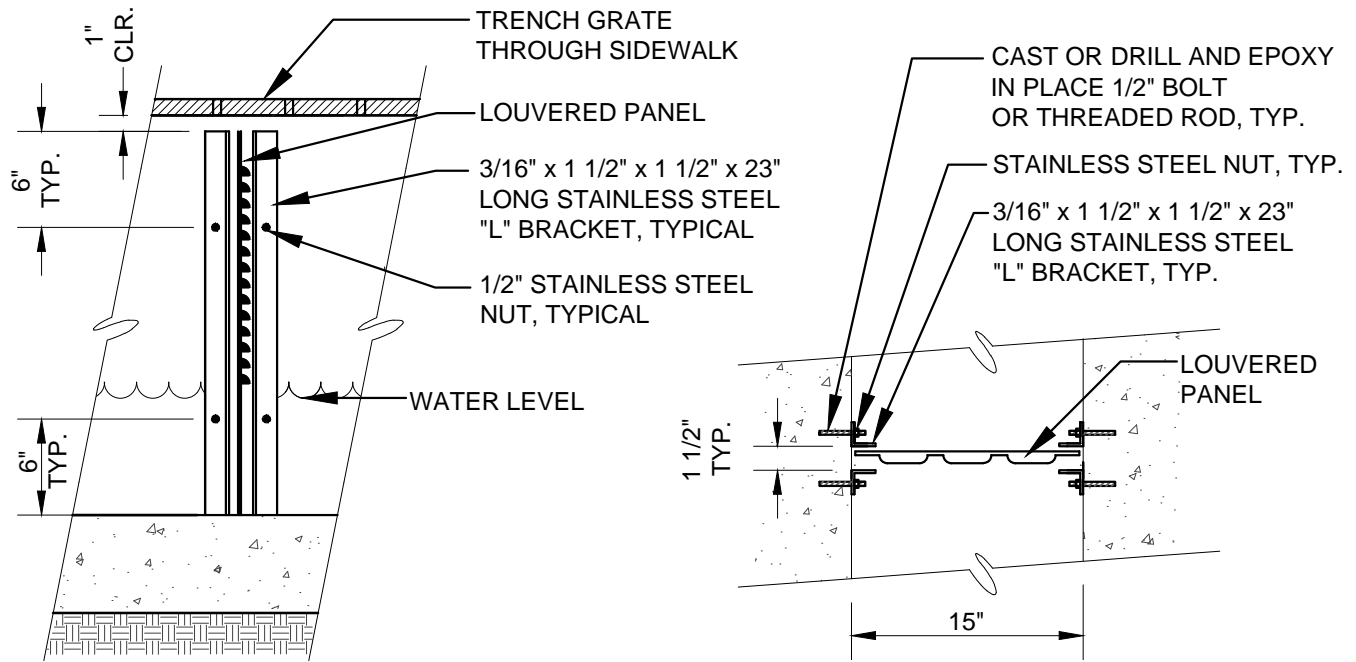
**SECTION C- SIDE VIEW
SURFACE LOADED TRASH CAPTURE INLET**

**CITY OF FREMONT
STANDARD DETAILS
CITY STANDARD
STORMWATER TRASH
CAPTURE INLET**

DATE APPROVED BY CITY COUNCIL
12/13/11
RESOLUTION NO. 2006-31
Norm Hughes
CITY ENGINEER

General Revision	07/31/22
General Revision	08/2019
Council Revision	12/13/11
APPR	REVISD
REVISIONS	DATE

FILE NO.	SCALE	DRAWN	CHECKED	DATE	DWG NO.
LSD-31.DWG	3/8" = 1'-0"	PN/TB/CC	RER	DEC. 2011	LSD-31 2 OF 3

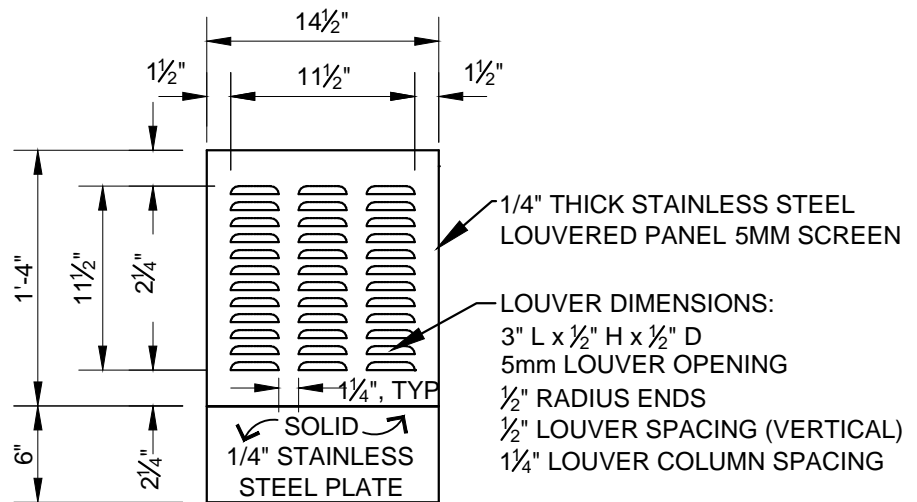


SIDE VIEW
N.T.S.

PLAN VIEW OF INLET CHANNEL

ACCEPTABLE LOUVERED PLATE AND BRACKET SUPPLIER, OR APPROVED EQUAL:

ROSCOE MOSS COMPANY
TYPE 304 STAINLESS STEEL
4360 WORTH STREET
LOS ANGELES, CA 90063
WWW.ROSCOEMOSS.COM



FRONT VIEW

NOTE:

1. LOUVERED PANEL MINIMUM DIMENSION: 22"H x 14 1/2"W x 1/4"T. PANEL SIZES SHALL VARY DEPENDING UPON FACILITY REQUIREMENTS.
2. FIELD VERIFY AND MAINTAIN 1" CLEAR FROM BOTTOM OF TRENCH GRATE.

			CITY OF FREMONT STANDARD DETAILS CITY STANDARD STORMWATER TRASH CAPTURE INLET			DATE APPROVED BY CITY COUNCIL 12/13/11							
						RESOLUTION NO. 2006-31							
<table border="1"> <tr> <td>APPR</td> <td>REVISED</td> <td>DATE</td> </tr> <tr> <td></td> <td></td> <td></td> </tr> </table>			APPR	REVISED	DATE							<i>Norm Hughes</i> CITY ENGINEER	
APPR	REVISED	DATE											
REVISIONS													
FILE NO.	SCALE	DRAWN	CHECKED	DATE	DWG NO.								
LSD-31.DWG	1" = 1'-0"	MAM/CC	RER/MM	NOV. 2011	LSD-31	3 OF 3							