2024

Environmental Best Management Practices & Design Standards

Prepared By:
City of Bellevue Parks & Community Services
Natural Resource, Resource Management & Planning Divisions

Acknowledgements

Thank you to everyone who contributed to this document's development and creation. It could not have been done without the time, input, and expertise of everyone involved.

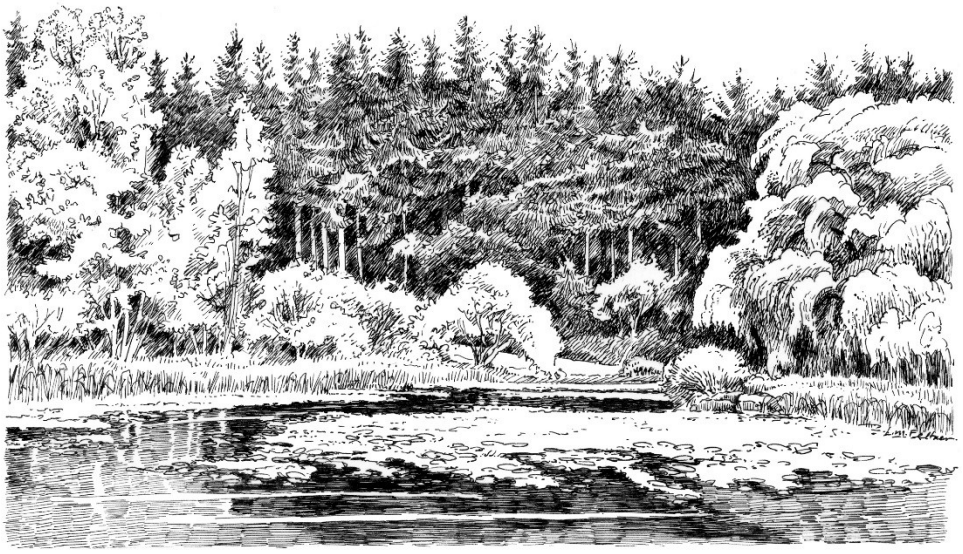
Parks Natural Resource Division

Parks Resource Management Division

Parks Planning Division

Utilities Department

Developmental Services Department



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Introduction

This manual was written to provide clear direction on standard operational procedures and design features to effectively communicate the operational practices of the Parks & Community Services Department to the public and to respond to regional, state and federal environmental issues. Proper care and maintenance, as well as the understanding of certain practices and systems, is essential in perpetuating the longevity and usefulness of our park resources.

The Parks & Community Services Department's mission is to contribute to a healthy community through an integrated system of exceptional parks, open space, recreational, cultural and human services. This mission is based on the Parks and Community Services Department's philosophy to:

- Protect and preserve environmentally sensitive natural areas;
- Provide connections for an integrated open space system;
- Enhance the city's visual character throughout the park system by perpetuating the "City in a Park" ideal;
- To acquire and develop park facilities to meet the present and future needs of the community; and
- To renovate or modify parks for optimum use of resources.

The goals of the Parks & Community Services Department are to ensure the safety of citizens, protect water quality, provide for recreation, preserve wildlife habitat, buffer land uses and improve landscape conditions. All park designers, planners, managers, crews and contractors are required to use water efficiently, implement the principles of IPM, reduce and reuse landscape waste materials, minimize negative impacts on aquatic environments and soil organisms, design and renovate landscape areas to suit the site conditions, and restore, create and protect environmentally rich habitats.

The Parks & Community Services Department is the single largest landowner and manager in Bellevue, with over 2,700 acres of park and open space property. Within the system are 78 neighborhood and community parks with various amenities such as beaches, golf courses, sport-fields/courts, community centers and city buildings. Remaining open space consists primarily of natural areas comprised of forests, steep slopes, wetlands, riparian corridors and meadows. Parks & Community Services also manages 46 acres of farmland and approximately 200 acres of street tree and arterial landscapes within the city's developed right-of-ways.

In order to continue to improve the standard of care and our maintenance practices, the Parks & Community Services Department will review and revise this manual every 4 years. Any changes, modifications, or comments regarding these best management practices should be directed to the Natural Resource, Resource Management and Planning Divisions.

Sincerely,

Michael Shiosaki, Director
Parks & Community Services Department

How to Use This Manual

This manual represents present day ideals and should be seen as a flexible document that can readily adapt to new environmental information and management technologies. The wording of this manual has been carefully selected. "Shall" and "will" have been selected to indicate those activities that are performed as management practices. The verb "should" prescribes practices the Department should be performing to adequately care for the resources base.

In an effort to better organize this information, this manual has been divided into 11 chapters that collectively represent the breadth of the Parks & Community Services Department's maintenance operational responsibilities. Each chapter has a consistent section format, as follows:

Section 1 – Purpose
Discusses the inventory of the resource being managed and describes the level of detail known about the resource. It explains the objectives for which that specific resource is managed and the role it serves in the community. This section also presents any of the environmental risks associated with the management of that resource and the effect it has on air and water quality.

Section 2 – Background
Provides background information about the resource, including design elements considered during creation, renovation or enhancement of the resource, and relevant policies.

Section 3 – BMPs
Outlines the specific Best Management Practices (BMPs) associated with the resource. BMPs can be defined as a clear and consistent set of directions to Parks staff for the management and maintenance of resource areas and the individual assets contained within those areas. Resource areas within the City of Bellevue parklands include landscape, horticulture, urban forest, and agricultural categories. This section also includes safety and risk management procedures and equipment requirements, if applicable.

Section 4 – Training
Notes training needed or required.

CHAPTER 1 –
Construction Site Management

1.1 Purpose

The purpose of this section is to identify the management practices that should be employed at construction sites to guarantee a successful project before, during and through a lifetime of site use and maintenance.

The Bellevue Parks & Community Services Department plans and manages construction sites to control development and renovation schedules, cost, quality, and to the extent feasible, preserve existing vegetation and infrastructure to:

- Ensure public safety and reduce liability.
- Sustain both the function and value of existing vegetation, by avoiding physical injury to existing trees and other vegetation, including subsurface damage, especially to the root systems.
- Sustain both the function and value of existing soils and hydraulic integrity of the entire site by employing strategies to reduce or avoid compaction and soil degradation by providing means and methods for working in critical areas, and root zones, when no feasible alternative is available.
- Provide temporary, new and/or protect existing infrastructure such as irrigation, utilities and underground drainage to ensure value and function.
- Prevent sediment laden and/or polluted runoff from entering drainage systems and water bodies (streams, wetlands, lakes).

- Protect habitat for animals and wildlife, and limit to the extent possible, loss of habitat and ecosystems
- Minimize costs associated with site restoration.

1.2 Background

Many problems encountered in landscape maintenance can be traced to poor planning, construction or management. Planning, including schedule of the work, site access, construction staging, site protection, material quality and construction practices can all inform the success, or not, of a projects landscape. If access is not adequately planned, or if during construction, equipment accidentally strikes or grades over vegetation, those plants often suffer or die. If a site's soil is overly compacted or contaminated, it will not allow the air and water movement essential for healthy root zones and plants. If hydrologic processes on site are disrupted, the site may forever have drainage problems. These and other construction related impacts can produce long-term maintenance problems that can be avoided by following the BMPs set forth in the remainder of this section.

1.3 Best Management Practices

Pre-Construction – Design and Planning

Design and planning are critical steps to every successful construction project. The project manager shall ensure that project construction documentation adequately captures and communicates project parameters. Development of construction plans should begin with an understanding of the site including previous development and existing conditions. This shall include consultation with site manager(s) to confirm understanding of the sites built and natural system functions.

Construction scope, impacts, regulatory requirements, scheduling and funding shall be established prior to initiating construction.

- Construction documents shall be created to the degree necessary to communicate project objectives and requirements.
- The site shall be inventoried and surveyed as necessary. Site inventory includes all aspects of the built and natural environment. As appropriate to the project, features can include: topography, wetlands, streams, construction access and staging, trees (size, species, and number) irrigation and drainage systems; site restrictions and legal requirements (e.g. easements); and problems, if any, of root intrusions into the drainage and other utility systems.

- Construction documents should convey what is to be protected, demolished, and constructed. They should communicate the limits of work area, the work, access and staging, safety, drainage and erosion control plans. Documents may include but are not limited to: survey, TESC, civil, building, electrical, planting and irrigation plan sheets.
- All trees and plants to be removed or preserved and protected shall be identified on plans.
- The project manager and other appropriate park staff shall review plans for quality control purposes prior to submission for permitting and construction.

Permitting

The project manager is responsible for securing all necessary permits for each construction project. The project manager will coordinate work to ensure permit requirements are met, maintained, monitored, reported and removed per regulatory direction (City, State, Federal per DSD, DAHP, DOE etc.).

- Regulatory plans and turbidity monitoring requirements shall be understood and established prior to construction. This includes National Pollutant Discharge Elimination System (NPDES) requirements for erosion control. Specific requirements of NPDES are covered in Chapter 2 – Stormwater Pollution Protection Plan (SWPPP) for Park Operations.
- The project manager shall know and understand the development and building regulations concerning project development including that for tree and vegetation in the area.
- The project manager will ensure that the "Dial-Before-You-Dig" (1-800-424-5555 or 811) to locate any underground utilities onsite occurs before construction begins.

Construction Site Preparation / Landscape BMP

Prior to the initiation of onsite construction, the project manager shall establish communication protocol and reporting to ensure ongoing understanding and compliance with permit requirements, scope of the work, changes in work, schedule and Best Management Practices (BMPs). The project manager is responsible for ensuring compliance with BMPs throughout construction. These BMPs at a minimum shall include:

- Planned Site Temporary Erosion and Sediment Control (TESC) systems are in place and include protection of critical areas and associated buffers, for wetlands, streams and steep slopes.
- Site access and staging areas are established and fenced with chain link or construction fencing to ensure public safety and protect existing trees, plants and their roots. Utility access corridors should be avoided.
- Tree and vegetation protection is in place per plan. Six foot (6') high chain-link fencing, or other approved tree protection fencing, is installed around the tree protection zone (TPZ) and any other vegetation that is to remain onsite. At the discretion of the project manager, the fencing shall be installed at least 1 foot out from the trunk for every inch diameter of the existing trees or farther.
    - If tree protection cannot be installed at the predetermined TPZ because of site constraints, the fencing can be moved no closer than the critical root zone (CRZ) and an adequate root buffer shall be constructed in the affected area of the TPZ.
- Trees and plants in the construction zone have been pruned as necessary to remove deadwood and prevent damage from construction equipment.
    - For alterations to designated tree protection, especially for any root impacts and pruning exercises, a certified arborist should be consulted and BMP followed as noted below.
- Trees/plants to be preserved have been watered and fertilized before and after construction at the discretion of the project manager.
- Irrigation and drainage systems are protected from damage unless plans call for the demolition or renovation of such systems.

Construction / Landscape BMP

The project manager shall regularly monitor construction to ensure ongoing compliance with specifications and BMPs. Unforeseen circumstances and subsequent construction changes are inevitable. It is the project manager's responsibility to manage that change, and ensure those changes comply with BMPs, permitting regulations, and city policies.

The following tree protection BMPs are intended to eliminate undesirable consequences that result from uninformed or careless acts and to preserve both trees and property values. Trees vary in their ability to adapt to altered growing conditions. Mature trees have established stable biological systems in the pre-existing physical environment. Disruption of this environment by construction

activities interrupts the tree's physiological processes causing depletion of energy reserves and a decline in vigor, often resulting in the tree's death. Typically, this reaction may develop from one to seven years after disruption.

The project manager shall stop work if construction site management BMPs are not being maintained by the contractor. The project manager is responsible for approving, or not, unanticipated vegetation removal during construction. The following BMPs, if followed, will reduce the negative impacts of park construction on trees:

- Tree protection fencing shall be placed at the outer limit of the TPZ. If the fencing must enter inside the TPZ, a root buffer will be constructed. One warning sign will be displayed for every 15 feet of lineal fencing, facing toward the work area.
  - Trenching and excavation activities are prohibited within the TPZ.
  - No activity is allowed in the CRZ of the trees being protected.
- On occasion, trees will need to have branches pruned in order to facilitate access to a construction site or the construction of a new facility. Pruning will follow International Society of Arboriculture Pruning Guidelines.
- When utility installation must occur within the TPZ, tunneling shall be the preferred method to install such utilities. The tunnel shall be dug either by hand, air spade, hydraulic vacuum or mechanical tunnel boring under the roots with horizontal directional drill and hydraulic or pneumatic air excavation technology.
- Cement washout pits and chemical holding areas shall be located away from vegetation protection areas, streams and wetlands.
- Contractor parking and material storage shall be limited to already impacted areas away from tree roots.
- To the extent possible, construction equipment shall be kept away from all onsite vegetation, especially those within designated protection areas. Site offices and equipment shall not encroach into vegetation protection areas.
- Whenever possible, control and minimize grade changes within vegetation protection areas. Generally, no changes in grade should occur within the TPZ of any tree to remain on site. This area may be increased at the discretion of the project manager. If the grade must be raised around a desired tree, a dry well shall be constructed around the tree at the drip line or some point farther out.

- Refueling and maintenance areas shall be kept away from trees, native soils, water bodies and drainage systems. Fuel spills will not be tolerated on construction sites. If pollutants leak or are discharged into a waterbody or into the stormwater system, the City of Bellevue Clearing and Grading Inspector and Utilities Department Water Quality Division shall be contacted.
- TESC implementation, maintenance, turbidity monitoring and removal shall follow City and State regulations.

Post-Construction / Landscape Maintenance

Maintaining preserved and establishing new vegetation is the primary focus following construction. This requires identifying problems and treatments that may help preserve these resources. If warranted, severely damaged vegetation should be removed and replaced by the contractor at their expense with new plantings, per warranty. The following practices should be employed to preserve vegetation:

- Weekly water management is most important. At least one inch (1”) per week between May 1st – Sept. 30th, corresponding with drier weather.
- Insure contractor compliance with plant maintenance and establishment warranty period per contact specifications.
- Fertilize with an appropriate product, as needed.
- Wait one growing season for pruning and use minimal nitrogen fertilizer applications. Maintain levels for 3 to 5 years.
- Maintain a depth of 2 to 3 inches of mulch around trees and shrubs, and new plantings.
- Watch closely for pests and changes in plant structure. Preventative treatments may be advisable.
- Maintenance staff shall closely monitor and inspect all new construction throughout the warranty period to ensure plant establishment.
- Special emphasis will be placed on weed control during the plant establishment period (3 to 5 years).
- For enhancement projects completed within Sensitive/Critical Areas or Sensitive/Critical Area Buffers, the project manager shall coordinate all monitoring protocol as established and enforced by the Bellevue Developmental Services Division. Specific information concerning Sensitive/Critical Area management is covered in Chapter 9 – Trees and Natural Areas.

Mitigating Tree Infrastructure Conflicts

Conflicts may occur when tree roots grow adjacent to paving, foundations, sidewalks or curbs (hardscape). Improper or careless extraction of these elements can cause severe injury to the roots and instability or even death of the trees. The following alternatives must first be considered before root pruning within the TPZ of a tree.

1. **Removal of Pavement or Sidewalk**
   Removal of existing pavement over tree roots shall include the following precautions:
   - Break hardscape into manageable pieces with a jackhammer or pick and hand load the pieces onto a loader. The loader must remain outside the TPZ on undisturbed pavement or off exposed roots. Do not remove base rock that has been exploited by established absorbing roots.
   - Apply untreated wood chips over the exposed area within one hour, then wet the chips and base rock and keep moist until overlay surface is applied.

2. **Replacement of pavement or sidewalk**
   An alternative to the severance of roots greater than 2- inches in diameter should be considered before cutting roots. If an alternative is not feasible, remove the sidewalk, as stated above, cut roots with a sharp, clean saw, as approved by the project manager or arborist, and replace sidewalk using #3 dowels at the expansion joint if within 10-feet of a street tree. Use wire mesh reinforcement if within 10-feet of the trunk of a tree.

3. **Alternative methods to prevent root cutting**
   - Grinding a raised sidewalk edge.
   - Ramping the walking surface over the roots or lifted slab with pliable paving. Routing the sidewalk around the tree roots.
   - Install boardwalk, flexible paving or rubberized sections.

4. **Alternatives to conventional pavement and sidewalk materials**
   Substitute permeable materials for typical asphalt or concrete overlay, sub-base, or footings to consider are:
   - Permeable paving materials (such as ECO-Stone or RIMA pavers).
   - Interlocking pavers, flexible paving, wooden walkways and brick or flagstone walkways on sand foundations.

5. **Tree and Infrastructure Conflicts**
   Avoid tree and infrastructure conflicts and associated costs by the following planting practices:

   - Plant deep rooting trees that are proven to be non-invasive.
   - Over soil that shrinks and swells, install a sidewalk with higher strength that has wire mesh and/or expansion slip joint dowel reinforcement.
   - Fracture soil with an air spade and backfill with sand prior to planting to promote deep rooting and improved drainage.
   - Install root barrier only along the hardscape area of the tree and allow roots to use open lawn or planter strip areas.
   - Dedicate at least 10-linear feet of planting space for the growth of each tree.
   - Provide a dedicated irrigation system or zone for the tree so the trees do not have to compete and are not dependent on the turf and shrub irrigation.
   - Avoid planting trees over underground drainage systems where root intrusion will impede function of the system.
   - Consider the use of a soil cell system under hard surfaces to provide adequate volume for healthy root development.

6. **Alternative Base Course Materials**
   When designing hardscape areas near trees, the project architect or engineer should consider the use of recommended base course material such as an engineered structural soil mix. An approved structural soil mix will allow a long-term, cost-effective tree and infrastructure compatibility that is particularly suited for the following types of development projects:

   - Repair or replacement of sidewalk greater than 40-feet in length.
   - Planting areas that are designed over structures or parking garages.
   - Confined parking lot medians and islands or other specialized conditions as warranted.

7. **Tree Removal**
   In some cases, tree removal may be the preferred option if the site does not provide adequate space to account for future growth of the tree.

1.4 Training

Provide training to all construction personnel to make sure they understand all construction site BMPs.

- The project manager and the designated site manager(s) shall receive the most recent training and education dealing with construction site management. This training includes the most recent advances for protecting trees and erosion control on construction sites.
- Urban Foresters and site managers should receive training in appraising and evaluating tree and plant damage according to International Society for Arboriculture standards.

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CHAPTER 2 –

Stormwater Pollution Prevention Plan (SWPPP) for Park Operations

2.1 Purpose

Bordered by Lake Washington & Lake Sammamish, the City of Bellevue has more than 60 miles of streams, 800 acres of wetlands and 3 small lakes (Larson, Phantom, and Bellevue) that provide rich habitat for fish and wildlife as well as a multitude of benefits that enhance the quality of life for Bellevue residents. Protecting these environmentally sensitive assets from the discharge of harmful pollutants is an important goal of the Parks & Community Services Department.

Stormwater accumulates a variety of pollutants as it runs over roofs, lawns, sidewalks, streets, compacted soils and parking lots before entering streams or groundwater. Pollutants commonly found in urban stormwater include heavy metals, pesticides and fertilizers, oil and grease, bacteria and sediment. Stormwater runoff contributes to water quality problems that can endanger human health and wildlife.

Bellevue Parks & Community Services operates three maintenance facilities (Resource Management, Bellefields and Golf Course) that have areas where bulk materials are stored and equipment is washed. Bulk materials are also intermittently stored on a temporary basis at park and open space sites when performing maintenance and renovation operations such as turf topdressing, infield replenishment, trail resurfacing and landscape renovation. In addition, the Parks

Department manages multiple off leash dog facilities where biowaste is produced and routinely washes equipment, buildings, docks, picnic shelters, playgrounds and hard surfaces at various park sites throughout the city. If not properly managed, pollutants can be discharged from these facilities or sites into the city's stormwater system. The purpose of this section is to identify methods and procedures to reduce or eliminate the contamination of stormwater runoff or discharges of pollutants from Bellevue Parks operations. The objectives of a Stormwater Pollution Prevention Plan (SWPPP) are as follows:

- Implement and maintain best management practices that identify, reduce, eliminate and/or prevent the discharge of stormwater pollutants from maintenance facilities and operations.
- Eliminate unpermitted discharges and other illicit discharges into the city's stormwater drainage systems.

2.2 Background

The Washington State Department of Ecology (DOE) requires that the city meet the requirements of the NPDES and State Waste Discharge General Permit and Phase II Municipal Stormwater Permit. Conditions of this permit require that the city implement and maintain a SWPPP for all heavy equipment maintenance or storage yards, and all material storage facilities owned or operated by the city. The permit also requires the city to include periodic visual observation of discharges from the facility to evaluate the effectiveness of the BMPs. The Resource Management, Bellefields and Golf Course maintenance facilities are included in the SWPPP since activities at these three sites can be categorized as heavy equipment maintenance or storage yards or bulk material storage facilities.

The Stormwater Management Manual for Western Washington establishes source control BMPs for various construction, renovation and maintenance tasks to help businesses and municipal agencies comply with the requirements of the NPDES general permit. Relevant source control BMPs applicable to Bellevue Parks operations will also be covered in this chapter.

2.3 Best Management Practices

Park Operational Facilities

Good Housekeeping

"Good housekeeping" is an ongoing approach to improving and maintaining a clean and orderly work environment. Recommendations for good housekeeping are as follows:

- Promptly contain and clean up solid and liquid pollutant leaks and spills including oils, solvents, fuels and dust to prevent contact with any soil, vegetation or paved area exposed to stormwater.
- Sweep paved material handling and storage areas regularly as needed to collect and dispose of dust and debris that could contaminate stormwater. Do not hose down pollutants from any area to the ground, storm drain, conveyance ditch or receiving water unless necessary for dust control purposes to meet air quality regulations and unless the pollutants are conveyed to a treatment system approved by the city.
- Clean accumulations of oils, debris, sludge, etc. from all BMP systems regularly, including catch basins, sedimentation basins, oil/water separators, boomed areas and conveyance systems to prevent the contamination of stormwater.
- Promptly repair or replace all substantially cracked or otherwise damaged paved secondary containment, high-intensity parking, and any other drainage areas, which are subjected to pollutant material leaks or spills.
- Promptly repair or replace all leaking connections, pipes, hoses, valves, etc. which can contaminate stormwater.
- Use solid absorbents and rags for cleanup of liquid spills and leaks where practical.
- Dispose all green waste in appropriate storage bins for regular recycling and disposal. All non-green waste and construction debris should be separated and disposed of separately. Contaminated green waste generated from street and parking lot sweeping should be handled separately and transferred to an appropriate vendor who can accept contaminated waste.

Perform Routine Maintenance

Over time, sediment and pollutants can accumulate in stormwater collection, conveyance, and treatment systems, such as basins, ditches, storm drains and oil/water separators. These pollutants can include sediment and other substances

such as oils, debris and sludge. When a storm event occurs, the pollutants can become mobilized and transported into receiving waters. Regular maintenance of the stormwater drainage system decreases the amount of pollutants available to contaminate stormwater. Routine maintenance elements and recommendations are described as follows:

1. Catch Basins. Catch basins at the Resource Management, Bellefields, and Golf Course facilities shall be inspected annually and maintained according to maintenance standards consistent with the most recent edition of the Stormwater Management Manual for Western Washington. Additional inspections may be warranted following major storm events (e.g. greater than 1 inch of precipitation in a 24-hour period).
2. Parking Lot Sweeping. Sweeping should occur monthly to reduce the amount of potential sediment entering storm catch basins and conveyance systems. This practice will help reduce the costs associated with commercial cleaning and repairs identified through the NPDES Utility inspection program.
3. Stormwater Treatment Facilities. The Resource Management & Golf Course facilities have equipment wash stations that treat stormwater through oil/water separators before discharging into the city's storm conveyance system. These treatment facilities shall be inspected annually and maintained using standards consistent with the most recent edition of the Stormwater Management Manual for Western Washington. The separators shall be vactor cleaned throughout the year as necessary.
4. Drainage Systems/Ponds. Inspection and maintenance of drainage conveyance systems and retention ponds should occur annually. Cleaning of inflow and outflow drains (e.g. removing built up vegetation) should be performed annually. These practices will extend the service life of the system and reduce long-term maintenance costs.

Spill Prevention & Response

Spills can contribute a variety of pollutants to the stormwater drainage system and nearby waterways, but this result is often preventable if appropriate practices for chemical and waste handling and spill response are implemented.

1. Spill Prevention. To reduce the potential for spills, the following practices shall be implemented:
    - Clearly label all containers that contain potential pollutants.
    - Store and transport liquid materials in appropriate containers with tight fitting lids.
    - Place drip pans underneath containers, fittings, valves and any other area where materials are likely to spill or leak.

- Use tarpaulins, ground cloths or drip pans in areas where materials are mixed, carried and applied to capture any spilled materials.

2. Spill Plan. The Resource Management, Bellefields, and Golf course facilities shall implement site specific spill plans to address small spills and leaks. These plans shall be updated annually and posted at appropriate points in the building, such as loading areas, product storage areas and waste storage areas. The spill plan shall include the following information:

    - Facility description including the address and telephone number, the nature of the facility and the general types of chemicals used.
    - Names, addresses and telephone numbers of designated spill response employees who are responsible for implementing the spill cleanup.
    - Site drainage plan showing locations of storage areas for chemicals, storm drains and other relevant drainage or materials information.
    - Description of the emergency cleanup and disposal procedures.
    - Names and telephone numbers of agencies to contact in the event of a spill.

3. Spill Cleanup Kits. Spill cleanup kits shall be stored near areas with a high potential for spills so that they are easily accessible. The spill kit contents must be appropriate to the types and quantities of materials stored or otherwise used at the facility and refilled when materials are used. Spill kits may include the following items:

    - Absorbent pads
    - Sorbent booms
    - Absorbent granular material (e.g. kitty litter)
    - Personal protective equipment (e.g. latex gloves, safety goggles)
    - Thick plastic garbage bags
    - Drain cover

4. Spill Cleanup & Disposal. To minimize release of pollutants into the storm drainage system, the following procedures shall be implemented when there is a spill:

    - Immediately report spills that involve potentially flammable or hazardous substances to the Bellevue Fire Department. Notify the Utilities 24-hour Emergency Response Line (425-452-7840) that an illicit discharge has occurred.
    - Immediately evaluate whether the illicit discharge can be safely contained or prevented from entering the drainage system and/or receiving waters.

- Determine the responsible party, if possible.
- Characterize the nature of the pollutant so that the appropriate personal protective equipment (PPE) can be utilized.
- If you know what the substance is, follow the recommended procedures for containment/cleanup for that substance. If necessary, refer to the material safety data sheet (MSDS) for the substance.
- If the substance is unknown, the following steps shall be taken:
    - If it is safe to do so, attempt to contain the spill. Use physical barriers, such as sandbags, or an absorbent, such as a pad or clay litter.
    - Do not use water or any other substances on the spill unless it is safe to do so.
    - Do not wash or push the substance toward the drain, indoors or out, until it has been identified and a safe cleanup method has been determined.
    - Immediately notify your supervisor of the spill and what steps have been taken to contain it or identify the substance.
- If necessary, place warning signs or barriers around the area to keep people away.
- Do not use a vactor to clean up flammable substances.

Maintenance Facility Inspections

The Resource Management, Bellefields, and Golf Course maintenance facilities shall be regularly inspected by the designated SWPPP manger where heavy equipment and material storage areas are exposed to stormwater. During these inspections, staff shall assess how the stormwater BMPs are operating. Routine visual inspections shall occur at least quarterly during the wet season (October – March) and at least once during the dry season. Some types of equipment, processes and BMPs will require more frequent checks than others. Visual inspections of wash stations should occur monthly with a written log maintained each year of the person who made the inspection, the date of the inspection and what action was taken as a result of the inspection. Removal and clearing debris from the separators should occur immediately after each inspection as required.

Park & Open Space Inspections

The Bellevue Utilities Department annually inspects all managed park and open space sites that contain stormwater systems and detention facilities. Upon completion of these inspections, detailed reports and maps are provided to the Parks Department and correction notices are issued for any systems that are out of

compliance with NPDES standards. Upon receiving these notices, the Parks Department shall initiate appropriate actions to correct any stormwater infrastructure that is out of compliance. Such actions may include sediment extraction from catch basins and stormwater lines, replacement of filtration equipment and repair or installation of erosion control devices. In general, all required corrective measures should be completed within 3 months of notification.

Reporting & Record Keeping

Records shall be kept of all inspections, observations and compliance documentation for each of the Resource Management, Bellefields, and Golf Course facilities as well as inspections of park and open space sites. The results of each visual inspection shall be summarized in an inspection report or checklist and be entered into the city's Maximo database. The visual inspection report shall include the following:

- Scope of the inspection and date.
- Major observations relating to the implementation of the SWPPP.
- Summary of the actions which will be taken to meet NPDES Municipal Stormwater permit requirements.
- Tracking procedures to ensure that an inspection report is prepared, and appropriate corrective actions taken.

Construction Site Management

The construction or refurbishment of park facilities can include demolition work, site grading, import/export of materials, concrete and asphalt work, erection and/or renovation of buildings and playgrounds, installation of fencing, drainage improvements and the installation of irrigation and landscaping as well as many other activities. If not managed properly, these activities can lead to the discharge of sediments and other contaminants into the stormwater system and/or receiving waters.

The City of Bellevue Developmental Services Department is the lead regulatory authority for construction activity in Bellevue and provides a comprehensive list of associated BMPs on the City of Bellevue website.

Building Construction and Renovation

Pollutants of concern include toxic hydrocarbons, hazardous waste, toxic organics, suspended solids, heavy metals, pH, oils and greases. The goal is to control leaks, spills and loose material. Utilize good housekeeping practices and regularly clean up debris that can contaminate stormwater. Protect the drainage system from dirty runoff and loose particles.

- Identify and properly remove hazardous substances from the building prior to beginning renovation activities, such as PCB's, asbestos, lead paint, mercury switches and electronic waste.
- Educate employees about the need to control site activities to prevent stormwater pollution and train them in spill cleanup procedures.
- At all times, have spill cleanup materials appropriate to the chemicals used on site.
- Clean up the work site at the end of each workday. Put away materials (such as solvents) indoors or cover and secure them so that unauthorized personnel will not have access to them.
- Sweep the area daily to collect loose litter, paint chips, grit and dirt.
- Do not dump any substance on pavement, on the ground, in the storm drain, or toward the storm drain, regardless of its content, unless it is clean water only.
- Place a drop cloth, where space and access permits, before beginning wood treating activities. Use drip pans in areas where drips are likely to occur if the area cannot be protected with a drop cloth.
- Use ground or drop cloths underneath scraping and sandblasting work. Use ground cloths, buckets or tubs anywhere that work materials are laid down.

Cleaning Buildings, Structures and Equipment

Exterior cleaning activities conducted at community centers, visitor centers, restrooms, picnic shelters, playgrounds, water spray parks, skate parks, sport courts and surrounding areas where hand scrubbing and pressure washing is involved may release pollutants such as heavy metals, suspended solids, grit and paint chips into the stormwater system. Such cleaning activities may include the washing of siding, awnings, roofs, HVAC equipment, sidewalks, parking lots, retaining walls, picnic tables, benches, signs, fences and garbage cans.

Buildings and Structures

- When feasible, use dry scrubbing or scraping methods to remove lose debris, such as flaking paint, to prepare areas for wet washing. Sweep up or vacuum the debris and remove it from the site prior to introducing water and detergents.
- When using hot water and/or detergents, wastewater shall be discharged to the sanitary sewer system. Using tarps with berms and a wet/dry vacuum can be an effective way to capture wastewater.

- If only using cold water with no detergents, and runoff does not contain pollutants, wastewater may be allowed to drain into surrounding turf/landscaped areas or the stormwater system.
- Wastewater from cleaning rooftops and rooftop equipment, such as exhaust fans and HVAC equipment, shall be captured and discharged to the sanitary sewer system. The use of wet/dry vacuums, temporary berms or containers can be an effective way to capture wastewater on rooftops.

Parking Lots, Driveways, Pathways and Sidewalks

- Sweep, shovel or scrape up large debris and remove it from the site prior to washing.
- When possible, use a street sweeper service to clean driveways and parking lots.
- When using hot water and/or detergents, the wastewater shall be captured and discharged into the sanitary sewer system.
- If only using cold water with no detergents, and runoff does not contain pollutants, wastewater may be allowed to drain into surrounding turf/landscaped areas. Wastewater may also be allowed to drain into the stormwater system if an approved sediment removal device is used, such as a filter sock installed within a catch basin.

Graffiti Removal

- Wastewater generated from graffiti removal shall be captured and discharged to the sanitary sewer system.
- If removing graffiti with a cleaner only, apply sufficient cleaner to do the job and wipe clean without the use of water. This will prevent the discharge of cleaning products into the stormwater system.

Painting Buildings, Structures and Equipment

Surface preparation and the application of paints, finishes and/or coatings to buildings, structures and equipment outdoors can be sources of pollutants. Potential pollutants include organic compounds, oils and greases, heavy metals and suspended solids. Good housekeeping and maintenance practices will prevent the discharge of sanding grit and paint overspray into the stormwater system.

- Train employees in the careful application of paints, finishes and coatings to reduce misuse and overspray. Use drop cloths underneath outdoor painting, scraping, and sandblasting work, and properly clean and temporarily store collected debris daily.
- Do not conduct spraying, blasting or sanding activities over open water or where wind may blow paint into water.

- Wipe up spills with rags and other absorbent materials immediately. Do not hose down the area to a stormwater system, receiving water, or conveyance ditch.
- On dock areas, sweep rather than hose down debris. Collect any hose water generated and discharge to the sanitary sewer system or transport to an appropriate disposal facility.
- Use a catch basin cover, filter sock or other effective runoff control device if dust, grit, wash water or other pollutants may escape the work area and enter a catch basin. The containment device(s) shall be in place at the beginning of the workday. Collect contaminated runoff and solids and properly dispose of such wastes before removing the containment device(s) at the end of the workday.
- Use a ground cloth, pail, drum, drip pan, tarpaulin or other protective device for activities such as outdoor paint mixing and tool cleaning, or where spills can contaminate stormwater.
- Properly dispose of all waste and prevent all uncontrolled releases to the air, ground or water.
- Clean paintbrushes and tools covered with water-based paints in sinks connected to the sanitary sewer system. Do not dump pollutants collected in portable containers into stormwater drains.
- Clean brushes and tools covered with non-water-based paints, finishes or other materials in a manner that allows collection of used solvents (e.g. paint thinner, turpentine, xylol) for recycling or proper disposal.
- Store toxic materials under cover (tarp, etc.) during precipitation events and when not in use to prevent contact with stormwater.

Dock Washing

Washing docks (or wharves, piers, floats and boat ramps) can result in the discharge of dirt, bird feces, soaps and detergents that can be toxic to aquatic life, especially after they take on contaminants while cleaning. Use dry methods and equipment (scraping, sweeping, vacuuming) to remove debris and contaminants prior to cleaning with water to prevent these substances from entering surface water.

Surface Preparation and Spot Cleaning

- Scoop and collect debris and bird feces.
- Sweep, capture and dispose of debris from the dock as solid waste. Sweep or vacuum docks to minimize the need for chemical cleaners.
- During cleaning activities, if debris, substances, or wash water could enter surface waters through drains, temporarily block the drains and collect the water for proper disposal.

- Hose down the area if necessary and collect water as feasible.
- Try spot cleaning with water and a coarse cloth before using soaps or detergents.
- If a cleaner is needed for spot cleaning:
    - Mix it in a bucket and use it to scrub down only the areas that need extra attention.
    - Start with vinegar and baking soda and move to other options as needed. Spot clean using a rag if harsher cleaning products are needed.
    - Avoid or minimize the use of petroleum distillates, chlorinated solvents and ammoniated cleaning agents.
    - Use degreasers or absorbent material to remove residual grease by hand and do not allow this material to enter surface water.
    - Keep cleaners in sealed containers. Keep cleaner containers closed securely when transporting between the shore and docks.
    - Properly dispose of the dirty bucket water.
- Minimize the scour impact of wash water on any exposed soil at the landward end(s) of the dock or below the dock. Place a tarp over exposed soil, plant vegetation or put berms to contain eroded soil.

Washing and Disposal

- To the extent practicable, collect any wash water generated from hosing down, pressure washing, or cleaning dock areas, and dispose of it properly.
- Try pressure washing using light pressure. This uses less water and decreases the need for soap and scrubbing when washing the dock. Avoid using excessive pressure, which may damage the dock or send flakes of paint and other material into the water.
- Do not place any debris and substances resulting from cleaning activities in shoreline areas, riparian areas or on adjacent land where these substances may erode into receiving waters.
- Where treated wood associated with the structure being washed are present, use non-abrasive methods and tools that, to the maximum extent practical, minimize removal of the creosote or treated wood fibers when it removes marine growth from creosote or any other treated wood.
- Do not discharge removed marine growth to receiving waters where such marine growth would accumulate.

Landscaping and Turf/Vegetation Management

Landscaping can include grading, soil transfer, vegetation planting and vegetation removal. Examples include weed control on formal lawns, athletic fields, landscape beds, access roads, parking lots and trails. Proper management of vegetation can minimize excess nutrients and pesticides. The objective shall be to maintain appropriate vegetation to control erosion and the discharge of pollutants into the stormwater system. Where practical, grow plant species appropriate for the site, or adjust the soil properties of the site to grow desired plant species.

- When feasible and practical, install engineered soil/landscape systems to improve the infiltration and regulation of stormwater in landscaped areas.
- Select the right plants for the planting location based on proposed use, available maintenance, soil conditions, sun exposure, water availability, height, sight factors and space available.
- Do not dispose of collected vegetation into waterways or sewer systems.
- Do not blow vegetation or other debris into the drainage system.
- Dispose of collected vegetation such as grass clippings, leaves and branches by composting or recycling.
- Use manual and/or mechanical methods of controlling undesirable vegetation rather than applying herbicides, where practical.
- Use at least an eight-inch "topsoil" layer with at least 8 percent organic matter to provide a sufficient growing medium.
- Select the appropriate turfgrass mixture for the climate and soil type.
- Conduct mulch-mowing whenever practical.
- Use native plants in landscaping.
- Use mulch or other erosion control measures on soils exposed for more than one week during the dry season (May 1 to September 30) or two days during the rainy season (October 1 to April 30).
- When feasible, till a topsoil mix or composted organic material into the soil to create a well-mixed transition layer that encourages deeper root systems and drought-resistant plants.
- When practical, apply an annual topdressing application of 3/8” compost which will enhance soil permeability, provide nutrients to keep trees and shrubs healthy, and will reduce demand for fertilizers and pesticides.
- Disinfect gardening tools after pruning diseased plants to prevent the spread of disease.
- Prune trees and shrubs in a manner appropriate for each species.
- If specific plants have a high mortality rate, assess the cause and replace with another more appropriate species.

- Overseed bare turf areas until the vegetation fully covers the ground surface.
- Plant and protect trees.
- Aerate lawns regularly in areas of heavy use where the soil tends to become compacted.
- Set the mowing height at the highest acceptable level and mow at times and intervals designed to minimize stress on the turf.

Nurseries and Greenhouses

Common practices at nurseries and greenhouses can cause elevated levels of phosphorus, nitrogen, sediment, bacteria and organic material which can contribute to the degradation of water quality. The objective is to minimize the pollutants that leave the site by controlling the placement of materials, stabilizing the site and managing irrigation water.

- Establish composting areas, soil storage bins and mixing areas at least 100 feet away from any stream or body of water and as far away as possible from any onsite stormwater system.
- Do not dispose of collected vegetation into waterways or storm sewer systems. Do not blow, sweep, or otherwise allow vegetation or other debris into the drainage system.
- Regularly clean up spilled potting soil to prevent its movement, especially if fertilizers and pesticides are incorporated.
- Use soil mixing and layering techniques with composted organic material to reduce herbicide use and watering.
- Cover soil storage and compost storage piles.
- Dispose of pathogen-laced potting substrate and diseased plants appropriately.
- Place plants on gravel, geotextile or weed cloth to allow infiltration and minimize erosion, including inside greenhouse structures.
- Properly reuse, recycle or dispose of used polyfilm, containers, and other plastic-based products so that they do not collect stormwater.
- Evaluate and manage irrigation to reduce runoff, sediment transport and erosion.
- Surround soil storage and compost storage areas with a berm or wattles.
- In areas with a large amount of foot traffic, use appropriate aggregate such as rock and gravel for stabilization.

Irrigation

Irrigation consists of discharges from irrigation water lines, landscape irrigation and lawn or athletic field watering. Excessive watering can lead to discharges of chlorinated potable water runoff into drainage systems and erosion. Improper irrigation can encourage pest problems, leach nutrients and make a lawn completely dependent on artificial watering. The objective is to limit the amount and location of watering to prevent runoff and discharges into surrounding drainage systems.

- Irrigate with the minimum amount of water needed. Never water at rates that exceed the infiltration rate of the soil.
- Maintain all irrigation systems so that irrigation water is applied evenly and where it is needed.
- Ensure irrigation heads do not overspray vegetated areas resulting in excess water discharging into the drainage system.
- Inspect irrigated areas for excess watering. Adjust watering times and schedules to ensure that the appropriate amount of water is being used to minimize runoff. Consider factors such as soil structure, grade, time of year and type of plant material in determining the proper amounts of water for a specific area.
- Inspect irrigated areas regularly for signs of erosion and/or discharge.
- Place irrigation heads appropriately so that water is not being sprayed on impervious surfaces instead of vegetation.
- Repair broken or leaking irrigation head nozzles as soon as possible.
- Appropriately irrigate turf and landscaped areas based on the species planted, the available water holding capacity of the soil and the efficiency of the irrigation system.
- Do not irrigate plants during or immediately after fertilizer application. The longer the period between fertilizer application and irrigation, the less fertilizer runoff occurs.
- Do not irrigate plants during or immediately after pesticide application (unless the pesticide label directs such timing).
- For additional irrigation BMPs, see Chapter 4 – Irrigation and Water Management.

Fertilizer Application

Poor application of fertilizers can cause appreciable stormwater contamination. Fertilizers can leach phosphorus and nitrogen which can contribute to algae blooms, increased nutrient concentrations and depletion of oxygen in receiving waters. The goal should be to minimize the amount of fertilizer necessary to maintain vegetation

and control the application of fertilizer to prevent the discharge of stormwater pollution.

- Apply the minimum amount of slow-release fertilizer necessary to achieve successful plant and turf establishment.
- Do not fertilize when the soil is dry or during a drought.
- Avoid applying fertilizers if it is raining or about to rain.
- Do not apply fertilizers within three days prior to forecasted rainfall. The longer the period between fertilizer application and either rainfall or irrigation, the less fertilizer runoff occurs.
- Determine the proper fertilizer application for the types of soil and vegetation involved.
- Follow manufacturers' recommendations and labeled directions.
- Train employees on the proper use and application of fertilizers.
- Keep fertilizer granules off impervious surfaces. Clean up any spills immediately. Do not hose down to a storm drain, conveyance ditch or water body.
- Do not fertilize areas within 50 feet of water bodies including wetlands, ponds and streams.
- Use slow-release fertilizers such as methylene urea, isobutylidene or resin coated fertilizers when appropriate.
- Apply fertilizers in amounts appropriate for the target vegetation and at the time of year that minimizes loss to surface and ground waters.
- Time the fertilizer application to periods of maximum plant uptake.
- Avoid using fertilizers that contain phosphorus.

Pesticides and Integrated Pest Management

Pesticides include herbicides, rodenticides, insecticides, fungicides, etc. Examples of pesticide uses include:

- Weed control in parks, golf courses, access roads, utility corridors and streetscapes.
- Rooftop moss removal.
- Extermination of nuisance rodents.
- Fungicide application to golf greens.

It is possible to discharge pesticides such as pentachlorophenol, carbamates and organometallics into the environment from leaching and dripping of treated parts, container leaks, product misuse and outside storage of pesticide contaminated materials and equipment. Poor management of pesticides can cause appreciable stormwater contamination and unintended impacts to non-target organisms.

Relevant BMPs regarding the Parks Department's integrated pest management program, including pesticide storage, is covered extensively in Chapter 3 – Integrated Pest Management.

Farm and Animal Handling Areas

The Kesley Creek Farm can potentially generate pollutants from manure deposits, animal washing, grazing and other handling activities that could potentially enter the surrounding Kelsey Creek basin if not managed properly. Pollutants can include coliform bacteria, nutrients and suspended solids.

- Regularly sweep and clean animal keeping areas to collect and properly dispose of droppings, uneaten food and other potential stormwater contaminants.
- Do not hose down areas that contain potential stormwater contaminants where they drain to storm drains or to receiving waters.
- Do not discharge any wash water to storm drains or to receiving waters without proper treatment.
- For uncovered and unpaved handling areas, the ground shall have either vegetative cover or some other type of ground cover such as straw, hog fuel or mulch.
- Surround the area where animals are kept with a fence or other means to prevent animals from moving away from the controlled area where BMPs are used.
- For outside surface areas that must be disinfected, use an unsaturated mop to spot clean the area. Do not allow wastewater runoff to enter the drainage system.
- Do not stockpile manure in areas where runoff is allowed to flow into a storm drain or to nearby receiving waters or wetlands.

Pet Waste Management

The Parks Department manages multiple off leash dog facilities where biowaste is produced. If not managed properly, contaminants from pet waste can wash into the stormwater system and make its way into surrounding streams and lakes. Decay of pet waste can reduce oxygen levels and release ammonia into aquatic ecosystems. This combined with warm water can be toxic to aquatic wildlife. Pet waste also contains nutrients that encourage aquatic weed growth and contribute to low oxygen and high pH in waters used for swimming, boating and fishing. Most importantly, pet waste can carry viruses and bacteria that can be harmful to humans.

- Signs shall be posted notifying the public of the Parks & Community Services Facilities Code (BCC 3.43) which requires pet waste to be collected and deposited in an appropriate receptacle (BCC 3.43.140).
- Mutt Mitt® collection bags and waste receptacles shall be provided at all off leash dog facilities as well as areas within the park and open space system that are frequently used by dog owners.
- Signs, Mutt Mitt® collection bags and receptacles should be placed at locations that are clearly visible, accessible, and convenient to use.
- Mutt Mitt® dispensers shall be checked on a regular basis to ensure that they are always stocked.
- Waste receptacles shall be checked and emptied on a regular basis to ensure that they don't overflow. All pet waste shall be properly disposed of at approved solid waste collection center.
- The Park Ranger program shall provide education and incentives to encourage dog owners to pick up and dispose of pet waste properly.

2.4 Training

All staff members shall be trained annually on safe techniques for handling materials, spill control procedures and operations and maintenance of BMPs to prevent illicit discharge of pollutants into the city's stormwater system. All pollution prevention team members shall be trained annually in the operation, maintenance and inspections of BMPs. This training will be documented for compliance with NPDES Municipal Stormwater permit requirements.

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CHAPTER 3 –
Integrated Pest Management (IPM)

3.1 Purpose

The City of Bellevue's parks and natural areas are a reflection of the values of the community. The Parks Department strives to ensure that public landscapes remain attractive and meet the expectations of thousands of users and preserve natural ecosystems for future generations. These green open spaces offer Bellevue residents the opportunity to enjoy a natural environment within their community. Trees, shrubs, flower beds, ponds, streams and lakes make up these open spaces, and require maintenance and protection from damage by both humans as well as biological pests.

Integrated Pest Management (IPM) is a sustainable approach to managing pests by combining biological, cultural, physical and chemical methods in a way that will minimize the effects on the environment, minimize domestic and health risks, while considering budgetary restrictions. The Parks Department adopted an IPM program in 1997, which has been integrated into this manual, which outlines how both passive and active modes of maintenance are vital to the preservation of any environment. The objectives of the Parks Department's IPM program are as follows:

- To protect the health, safety, and welfare of the community.
- To provide efficient cost-effective maintenance of the city's park resources. This includes non-chemical controls whenever possible.

- To design new and renovate existing landscape areas that suit site conditions with sustainable maintenance practices, thus providing a comprehensive stewardship of parks and natural resources.
- To restore, create and protect environmentally valuable areas such as wetlands and riparian areas, aquatic and terrestrial wildlife habitat, forests and meadow areas.

3.2 Background

Policies and Regulations

By legal definition, a pesticide is any substance for which a manufacturer or distributor claims pesticidal value. Today there are more than 30,000 pesticide products registered to destroy, prevent, attract or in some manner control pests.

The Insecticide Act of 1910 was the first legislative action taken in an effort to regulate the use of pesticides. Since then, there has been the Federal Insecticide, Fungicide and Rodenticide Act of 1947 (FIRFA), and more recently, the Federal Environmental Pesticide Control Act of 1972. The major provisions of this act are:

- All pesticides must be registered with the U.S. Environmental Protection Agency (EPA). Qualified states may also register pesticides under special conditions.
- All pesticides will be classified for either general or restricted use.
- Only certified applicators, or those under their supervision, may apply restricted use pesticides. States have the authority to certify applicators.
- Use of pesticide inconsistent with labeling instructions is prohibited.
- Violators may be fined or imprisoned or both.

In order to comply with this act as well as other regulations, the Parks Department ensures that all employees remain informed and receive the proper training when managing pesticides and their application.

Other important regulations pertain to working within protected areas, such as wetlands and riparian corridors, steep slopes and native growth protection areas. Certain activities are restricted in these areas and may require special permits granted by the City of Bellevue Developmental Services Department and other regulatory agencies. Further description of these areas and their restrictions will be described later in this chapter.

Pesticide Use Decision Process

The following agencies and individuals are involved in the determination of when to use pesticides in City of Bellevue managed parks:

- The Washington State Department of Agriculture (WSDA) sets the overall policy for pesticide use in Washington State. The approved chemical list can be seen on their website at www.agr.wa.gov.
- The Washington Department of Ecology (DOE) requires a special permit for all aquatic herbicide applications. This permit allows herbicide control for all listed noxious weeds within an aquatic environment and monitors impact levels on non-target plants.
- The Park Resource Managers, Golf Course Superintendents, Program Supervisors, Contract Administrators and Crew Leaders are responsible for upholding and applying the Parks Department pesticide policies and procedures within their areas of control. They are also responsible for ensuring that any personal protective equipment (PPE) is available and properly fitted for use by applicable staff for any chemical application.
- The Site Managers and Crew Leaders determine the most appropriate control measure for actual landscape pest situations, including selecting the most appropriate pesticide products, if necessary. In golf maintenance, this responsibility rests with the Golf Course Superintendent or their immediate assistant. They are also responsible for the safe storage and handling of pesticides, spill responses and related training.
- The IPM Coordinator is responsible for verifying that all license holders or pesticide operators have completed their mandatory annual recertification training. This position also serves as the primary contact for providing information regarding the Parks Department IPM program to the general public and outside agencies.

Pest Management Guidelines

The following pest management guidelines generally apply to all City of Bellevue Parks & Community Services landscapes:

- Park landscapes will be designed to minimize pest management. Where resources are available and existing design themes will not be compromised, modifying landscapes will be considered to reduce pest management.

- All reasonable, cost effective non-chemical pest control options will be considered first before resorting to the use of pesticides.
- Parks will practice IPM in all pest management situations, understanding that some situations will require the use of a pesticide product.
- Certain levels of pest problems or populations will be accepted within established thresholds. Those thresholds will vary with the pest and the landscape setting.
- Parks will not perform prophylactic or calendar-based pesticide applications.
- Only pesticides approved for that particular use will be used for the prescribed applications. When pesticides are applied, the smallest effective area will be treated and the application will be timed to minimize public contact and the effects on the environment.
- Whenever possible, pesticide applications will be carefully timed to control the pest and reduce the need for retreatment.
- In accordance with Washington State licensing guidelines, all staff and contractors who are engaged in the use, application and storage of pesticides shall have a current Washington State pesticide license. Contractors must notify appropriate Parks Department representatives prior to the application of any pesticide to a park and open space site.
- Parks Department pesticide applicators shall strictly observe all pesticide products labeled requirements. All chemicals used on parks property will have a Material Safety Data Sheet (MSDS) on file, and will be available to all staff, contractors and the public upon request.
- Pesticides shall not be used to control plants with edible fruit during the fruiting season unless the plant being controlled is not of sufficient size to produce fruit, or in a location where there is absolutely no possibility of public access. Fruiting plants such as blackberries may be first cut to the ground, allowed to re-sprout and then chemically controlled before the plant can produce fruit. Plants controlled in this manner will never be allowed to produce fruit in the future.
- All sites where pesticides have been applied shall be posted, as required by the WSDA. As required by the WSDA, all applications of pesticides will be recorded. All application records for the Parks Department will be filed in one central location at the Resource Management office and made readily available to the public upon request.

- When pesticides are used in confined environments such as greenhouses, the facility shall be clearly posted "Closed to Entry" until the re-entry time period has elapsed.
- Parks will continue its aggressive training program for all staff who apply pesticides and will continue to emphasize learning new pest control techniques as they are available.
- Parks will continue to field test alternative controls to pesticide use and will implement successful control options as budget allows.
- To promote public understanding and support of the benefits of the IPM program, educational assistance and information will be made available to the public regarding the use of pesticides.
- The city shall comply with all federal, state and local regulations pertaining to the application, handling, storage and disposal of pesticides.

Components of an IPM Program

IPM involves a structured decision-making process that embodies the philosophy and the components of the IPM system. Through the following applications, as well as the proceeding guidelines, a well-managed IPM program can be implemented.

1. Identification of pest populations: Identify the nature, location, scale, and the intensity of the problem.
2. Determine plant injury levels: Define the tolerance levels for aesthetic and economic injuries. Prescribe the point at which actions must be taken to avoid exceeding the tolerance level.
3. Design and implement the pest management treatment: Research all possible options and design strategies. Non-target organisms must be considered at this time. Use of pesticides is limited to situations where other cultural and biological options are not likely to be successful within the context of available resources. The pesticide chosen shall be the least toxic of those available with as minimal impact possible, as defined by that chemical's use.
4. Evaluate results. Conduct follow-up inspections to support evaluation:
    - Did the pest population decline to acceptable levels?
    - Was there a negative impact on non-target organisms?
    - Do the host plants appear to be able to thrive following a successful treatment?
5. Adjust and extend program as indicated: Decide whether further treatment will be necessary, either on a temporary or permanent basis. If it will be on a permanent basis, plan potential site modifications to eradicate the problem or prevent future recurrences.

6. Create documentation of all research, monitoring and application data: A comprehensive system of forms for monitoring data and documenting treatment is a key component of a successful IPM program.
7. Share pest management information with decision-makers and maintenance staff: Professional staff must know the degree to which landscape pest management programs impact existing staff, maintenance budgets and park assets. Only through such understanding and ongoing communication can the best long-term strategies be developed for managing pest populations.

IPM Control Alternatives Selection Hierarchy

The following selection rationales are used as a guide for determining whether pesticides shall be used in place of other control methods:

- Proper planning and management decisions begin the IPM process.
- Cultural methods of vegetation and pest control are preferred and will be employed first.
- If unsuccessful, mechanical means of vegetation and pest control will be employed next where practical and feasible.
- Biological means of vegetation and pest control will be employed next where they are practical and feasible.
- Pesticides will only be used when no other feasible method exists that will control the pest within the realities of the location, site conditions, budget and other relevant considerations. At the same time, it is recognized that pesticide use is a legitimate element of an IPM program.

3.3 Best Management Practices

Storage and Use Guidelines

Every employee has a personal responsibility to themselves, other staff and the public to follow safe work practices when storing or using pesticides. The following management practices are required:

- Always read and understand the label of the chemical that you will be using.
- Store and handle all chemicals or fertilizers in a manner that minimizes worker exposure and potential for contamination of surface and ground water.

- Always have the correct MSDS on hand for all chemicals or fertilizers at your site (required by law).
- Always check the MSDS for the type of protection needed and the recommended re-entry time before the chemical is applied.
- When possible, purchase the smallest amount of any pesticide and avoid stockpiling of chemicals.
- Store fertilizer in a separate weatherproof area.
- All spray equipment shall be maintained in proper working order and stored in an OSHA approved site.
- All protective gear (masks, filters, rain gear) will be stored separately to avoid any possible contamination.
- Store and mix all chemicals in a WSDA approved storage and mixing area. Label storage area with an NFPA coded sign to protect fire department or hazmat personnel in case of emergency.
- Any pesticides in inventory that are no longer needed for use will be disposed of through hazardous materials disposal practices. The WSDA provides free disposal of unwanted pesticides at various locations throughout the calendar year.
- All chemical containers will be clearly labeled.
- A pesticide inventory will be maintained by the Resource Management Division.

Pesticide Application Equipment

Pesticide application for all listed areas will be carried out by hand with directed, low-volume, single-wand sprayers, wiping, daubing and painting equipment, injection systems or drop spreaders. Typically, applications are done with backpack sprayers, but may also include sprayers with larger fill tanks providing the same kind of hand application method is used. These methods of delivery result in low volume applications at low nozzle pressures. This practice minimizes the formation of fine mists that can result in pesticide drift. These practices also help ensure that the pesticide applied will reach only its intended target. In large open turf areas, boom type sprayers may also be employed. Boom sprayers are efficient and expedient tools used to destroy weed species after they have exceeded the acceptable threshold level. Broadcast applications shall be avoided unless absolutely necessary.

Personal Protective Equipment (PPE)

Table 3.1 shows the personal protective equipment required by city, state, and federal regulations for pesticide use.

Chemical Application near Watercourses & Aquatic Habitats

Generally, the use of chemical products within 50 feet of a watercourse shall be prohibited in favor of an alternative control method. If a pesticide must be applied within the 50-foot buffer, only products registered for use near water bodies shall be used, and great care will be taken to ensure that the product does not migrate into the watercourse either through drift or by overland flow. All applications will be made under the guidelines of the NPDES Aquatic Noxious Weed Management General Permit as issued by the Washington State DOE. Weather conditions must be monitored carefully to avoid applying a chemical near a watercourse immediately before heavy rains. Soil conditions and site topography must also be carefully studied to determine the appropriate timing of a chemical application and/or whether a chemical should even be applied at the site.

Chemical Application in Watercourses

Generally, the use of chemical products within aquatic environments shall be prohibited in favor of alternative control methods. In limited situations, the city may apply herbicides directly to watercourses to control wide spread noxious aquatic vegetation, such as Eurasian Water Milfoil, within public marinas, boat launches and swimming beaches. In such applications, only products registered for use in aquatic environments and approved by the DOE will be used. Chemical applications will be contained to the area of infestation and applied under requirements established through the NPDES Aquatic Plant & Algae Management General Permit issued by the Washington State DOE. Aquatic pesticide applications will generally be contracted out to specialized aquatic weed management agencies and supervised by city staff.

Table 3.1 Personal Protective Equipment (PPE) Guide for Using Pesticides

Form of Pesticide	LABEL SIGNAL WORD		
	CAUTION	WARNING	DANGER
Dry	• long-legged pants • long-sleeved shirt • shoes & socks	• long-legged pants • long-sleeved shirt • shoes & socks • wide-brimmed hat • gloves	• long-legged pants • long-sleeved shirt • shoes & socks • hat • gloves • cartridge or canister respirator if dusts in air or if label precautionary statement says "Poisonous or fatal if inhaled"
Liquid	• long-legged pants • long-sleeved shirt • shoes & socks • wide-brimmed hat • gloves	• long-legged pants • long-sleeved shirt • shoes & socks • wide-brimmed hat • rubber gloves • goggles if required by label precautionary statement • cartridge or canister respirator if label precautionary statement says "Do not breathe vapors or spray mist" or "Poisonous if inhaled"	• long-legged pants • long-sleeved shirt • rubber boots • wide-brimmed hat • rubber gloves or face shield • cartridge or canister respirator if dusts in air or if label precautionary statement says "Poisonous or fatal if inhaled"
Liquid when mixing	• long-legged pants • long-sleeved shirt • shoes & socks • wide-brimmed hat • gloves • rubber apron	• long-legged pants • long-sleeved shirt • shoes & socks • wide-brimmed hat • rubber gloves • goggles or face shield • rubber apron • cartridge or canister respirator if label precautionary statement says "Do not breathe vapors or spray mist" or "Poisonous if inhaled"	• long-legged pants • long-sleeved shirt • rubber boots • wide-brimmed hat • rubber gloves • goggles • rubber apron • cartridge or canister respirator if label precautionary statement says "Do not breathe vapors or spray mist" or "Poisonous if inhaled"
Liquid (prolonged exposure to spray, or application in enclosed area)	• long-legged pants • long-sleeved shirt • boots • rubber gloves • waterproof wide-brimmed hat	• water-repellent long-legged pants & long-sleeved shirt • rubber boots • rubber gloves • rubber apron • waterproof wide-brimmed hat • face shield • cartridge or canister respirator if label precautionary statement says "Do not breathe vapors or spray mist" or "Poisonous if inhaled"	• waterproof suit • rubber boots • rubber gloves • waterproof hood or wide brimmed hat • face shield • cartridge or canister respirator if label precautionary statement says "Do not breathe vapors or spray mist" or "Poisonous if inhaled"

IPM Best Management Practices

Bellevue Parks maintains a wide variety of landscape types, each with unique pest control issues and control measures. For these reasons, the pest control measures specific to each landscape are dealt with separately in this section. If chemical applications are required, only chemicals approved for a specific location will be used in that location. Parks staff only use city approved chemicals on park properties.

Control of Special Pests

Blackberries
An aggressive, invasive plant, Himalayan blackberry will overtake a disturbed site at an alarming rate. Mechanical control is not very effective by itself, but combined with chemical control measures and replanting of the site, effective control can be maintained. Chemical applications shall be kept to the area of infestation. Treatment efforts should include re-vegetating the site with desirable plant species.

Scotch Broom
An unruly plant, it thrives on disturbed sites. It is difficult to control and spreads rapidly. This plant can be toxic to humans, making it a high priority for eradication. Manual control can have some effect, but it must be done at the proper time of year. Chemical control can also be effective, but requires follow up management techniques until full eradication occurs. Chemical applications shall be kept to the area of infestation.

English Ivy
A very aggressive, invasive, introduced plant, Ivy is difficult to control or eradicate. Manual or mechanical control is somewhat effective, but highly time consuming. A combination of mechanical and chemical control is more effective and spread can be kept to a minimum with continuous control measures. Chemical applications shall be kept to the area of infestation.

Horsetail
Although native to the Pacific Northwest region, horsetail is considered by many to be a nuisance and is often controlled like a noxious weed. It is almost impossible to control manually or mechanically. Horsetail can be controlled with herbicides. As with other chemical controls, chemical application shall be contained to the area of infestation. Horsetail is an indication of high-water content in soil, so any use of herbicides should be well thought out and carefully timed.

Eurasian Water Milfoil

Because it is widely distributed and difficult to control, milfoil is considered to be one of the most problematic invasive aquatic plants in Washington State. Milfoil can drastically alter a water body's ecology and significantly interfere with recreational activities such as swimming and boating. Because of its wide distribution, eradication is not practical. Therefore, a "management" approach has been adopted to control the spread of milfoil within public marinas, boat launches and swimming beaches. A combination of manual and chemical control shall be used to achieve the most effective results.

Garlic Mustard

Garlic mustard is an invasive non-native biennial herb that spreads by seed. It is difficult to control once it has established at a site. It out competes native vegetation and it can establish in a relatively stable forest understory. Plant stands can produce more than 62,000 seeds per square meter which can quickly out compete local flora, changing the structure of plant communities on the forest floor. This noxious weed has been discovered within the Coal Creek Natural Area, Eastgate Park and Forest Park Open Space, and is aggressively managed by Bellevue Parks staff in cooperation with King County primarily with herbicide applications.

Pennywort

Although native to the Pacific Northwest region, pennywort has become widespread and problematic at the Mercer Slough Nature Park. Pennywort forms a dense mat of leaves at the water surface which can impede recreational boating. A combination of mechanical and chemical control is the best method for controlling pennywort. The primary focus in controlling pennywort at the Mercer Slough is to maintain access for recreational boaters.

Poison Hemlock

This noxious weed is acutely toxic to people and animals. It is most commonly found along roadsides, in open fields and in natural areas. Unrelated to the native evergreen hemlock tree, poison-hemlock can be deadly. As such, this weed is aggressively managed, typically with use of herbicides, when discovered in Bellevue managed parks.

Tansy Ragwort

This invasive, toxic biennial is most often found in pastures and along roads and trails. Although animals tend to avoid it, they may eat enough of it to cause health problems. Despite efforts to control it, tansy ragwort is widespread in the Pacific Northwest and can be found within some Bellevue

parks. This weed is best controlled by using a combination of manual control and herbicide application.

New Zealand Mud Snails

This invasive species has been discovered in Kelsey Creek (Kelsey Creek Park), Valley Creek (Highland Park), upper Vasa Creek (Horizon Heights Open Space & Whispering Heights Open Space), Sunset Creek (Eastgate Park) and Coal Creek (Coal Creek Natural Area). The city has developed protocol to prevent the further spread of this invasive species. Decontamination of equipment, personal gear and increasing public awareness is the most effective method of controlling the spread of the New Zealand mud snail.

Rats

Rats are only somewhat problematic in Bellevue parks. Bellevue does have some natural predators of rats which help alleviate many of the problems that could occur. They do pose a human health risk and will be controlled in given situations. The common method of control is baiting with an approved rat bait/trap. Extreme caution must be taken to place rat bait in locations where people or domestic animals cannot access it.

Mice

Mice are becoming an increasing human health problem from Hanta virus. Mice control is not currently a major pest control issue in park facilities, but increased control measures may be required in the future based on the history of the virus.

Moles

Moles can cause significant damage and disfigurement to turf areas in developed parks, athletic fields and golf courses. Moles can also destroy flower beds and damage underground utilities. Since mole trapping is outlawed in Washington State, approved mole baits have become the most common control method utilized by the Parks Department. Extreme caution must be taken to place mole baits in locations where people or domestic animals cannot access them.

Yellow Jackets, Hornets and Wasps

These insects often require control in parks. Control is typically through use of an approved insecticide. Only individual nests are treated and only if the nest poses an imminent risk to humans using park facilities.

Vector-borne Disease

Here in the Pacific Northwest, vector-borne diseases have increasingly become an issue. The most significant is mosquito-borne diseases, such as the West Nile Virus (WNV). Complete control of mosquito infestations is nearly

impossible, but cultural control can have some effect, such as removing any standing-stagnant water from any sites. Larvicides may also be used to control mosquito infestations if it's determined that public health concerns warrant their use. As part of the city-wide WNV response plan, surveillance (dipping) for pond facilities will be included during the mosquito season when human cases are reported in the Puget Sound region.

IPM for Greenhouse Operations

Greenhouses are a production operation dealing with large numbers of plants, of similar species, in a closed, non-public environment. Because of these factors, the tolerance threshold for many pest problems is much less in the greenhouse environment than it is in general park landscapes, requiring the use of a broader palette of pesticide products.

Pest Tolerance Thresholds

Weeds are not tolerated in the city greenhouse.

- Insects or disease pests that threaten the health of plant collections or production crops are not tolerated in the greenhouse.
- Display spaces shall be kept free of weeds.

Pest Management Strategies

Weed Control

- Greenhouse operating areas, containers and conservatory shall be maintained through hand/manual weeding.
- Weeds shall be controlled in exterior spaces, building perimeters, shade houses, cold frames and related areas either by hand or mechanically with push type mowers and string trimmers or suppressed with landscape fabrics.
- Exterior areas shall receive pesticide treatments for weed control if they impact interior production.

Insect Control

- Insect pests shall be routinely monitored by visual inspection or the use of "sticky traps."
- Cultural practices including regular irrigating and fertilizing shall be used.
- Insects should be removed by hand or washed off the affected parts of the plants.
- Biological controls, such as beneficial insects and other organisms that attack pest insects, should be used to keep pest populations under

control. Periodic release of beneficial insects helps to suppress and reduce the need for chemical control.
- Spot treatments of the least toxic, yet effective, insecticide shall be directed at specific plant parts for specific pest control.

Disease Control
- Good sanitation techniques shall be provided, including regular removal of plant debris, and keeping tools and work areas clean.
- Plants shall be properly spaced to provide good air circulation.
- Disease resistant plants shall be selected.
- Diseased plants shall be kept away from healthy crops.
- The least toxic, but effective, pesticide product shall be applied to control specific disease pathogens on specific plants or crops.

IPM for Nursery Operations

The Bellevue Nursery, located on SE 16th Street, is a facility for the growing of plants for use on developed and undeveloped park property. It occupies roughly five acres of property and has been in continuous operation for more than 40 years. The plants provided by the nursery operation include natives as well as ornamentals, groundcovers, vines, perennials, shrubs and trees. The plants are grown to support various needs throughout the park system ranging from small in-house planting projects to large capital Improvement projects. Control of pests in the nursery environment is significant since many plants may be affected at one time.

Pest Tolerance Thresholds

Pests that threaten the health of the nursery crops will not be tolerated and will be controlled.

Pest Management Strategies

Surface and Groundwater Protection
- General site runoff is controlled through biofiltration.
- Select the least toxic and most non-leaching chemical products only when necessary.
- Precisely follow all label instructions.

Weed Control
- Most weed control at the nursery is accomplished through hand weeding, mulching, and use of landscape fabrics.
- When other controls have failed, herbicide is used for spot control of weeds.

Insect Control

- Habitat for natural insect pest predators will be encouraged as an environmentally sound means to reduce populations of insect pests.

Disease Control

- Select disease-resistant plant varieties.
- Monitor plant crops for disease outbreaks.
- Practice good cultural practices including watering, fertilizing, pruning and maintaining good air circulation.
- Reduce the potential for transfer of disease through good sanitation techniques. These practices include keeping growing areas, tools and containers clean and removing plant litter and debris in a timely manner.

IPM for Planting Beds

Planting beds are defined as non-turf planted areas that include woody plant material such as shrubs, trees and ground covers. This category also includes floral color displays containing herbaceous plants such as perennials, annuals and bulbs. The most serious pest management issue in planting beds is weed control. If not controlled, weeds not only make a planting bed appear unkept, but more importantly, they can outcompete desirable landscape plants resulting in a loss of assets. The table on the following page shows pest tolerance thresholds and IPM principles that shall be employed in selecting maintenance methods for planting beds.

TABLE 3.2 Pest Tolerance Thresholds for Planting Beds

Area	Weeds	Insects	Disease
General Landscape Beds	• Some weeds acceptable • Goal is for bed areas to be free of weeds for both asset protection and appearance • Weeds will not be allowed to outcompete desirable landscape plants	• Generally tolerated unless particularly valuable plants are threatened	• Occasionally tolerated • Manual and cultural controls preferred • Chemical controls used to save specimens
Highly-visible/ Public facility landscapes/ Bellevue Botanical Gardens	• Generally not acceptable	• Generally tolerated unless they threaten particularly valuable plants • Manual removal of pests is encouraged	• Occasionally tolerated • Manual and cultural controls preferred • Chemical controls used when other means fail
Floral beds	• Generally not acceptable	• Generally tolerated	• Disease problems tolerated • Plants may be replaced when appearance is impacted
Newly-established landscapes	• Weed control is very important to ensure complete establishment of desired plants	• Generally tolerated • Presence of pests may result in host plant being removed and replaced	• Minor disease problems may be tolerated • Presence of disease problems may result in host plant removal and replacement

Pest Management Strategies

Weed Control

- Weeds are controlled by hand pulling, or by mechanical methods in larger planting beds.
- Whenever feasible, planting beds will be mulched after planting to suppress new weed growth.
- Spot treatment with herbicides shall be used as necessary.

Disease Control

- Diseased plants shall be hand pulled from planting beds and discarded appropriately.
- Disease resistant plants shall be planted in all planting beds, whenever possible.

IPM for Trees

Trees are an integral part of most landscapes, whether formal or natural, and are considered an asset. They provide shade, clean the air of pollutants, modify both micro and macro climates and provide visual relief to the urban environment. Because trees are often very large and tall, accessing and managing insects and disease can be quite difficult and costly.

Pest Tolerance Thresholds

In general, insect and disease pests in trees, including trees located in streetscapes, are tolerated.

- Insect or disease pests in selected, high-value specimen trees may be subject to control measures.

Pest Management Strategies

Physical Damage to Trees

- Physical damage to trees can be a major factor in overall loss of trees. This damage most often occurs in one of two ways. One is when trees are repeatedly struck by mowing equipment. A second form of injury is by string trimmers, which can damage bark leading to the intrusion of pathogens and ultimately to tree loss. Many trees are also lost to lack of appropriate care during construction projects within existing parks.
- Removing turf from around the tree base to create tree mulch rings 3 to 4 feet in diameter can substantially reduce damage caused by mowers and trimmers. With tree mulching, a mower or trimmer never has to come close enough to the tree to cause damage. The tree mulch ring will need to be kept free of grass and weeds.
- Following the BMPs in Chapter 1 - Construction Site Management, substantially reduces or eliminates damage from construction activities.
- All pruning for tree health reasons and for hazard reduction will be done in conformance with the International Society of Arboriculture standards.

Insect Control

Parks does not actively control insect pests in trees. This is particularly true of large trees where the control of the pest might require the use of large aerial spray equipment, which carries with it a high probability of the insecticide applied leaving the area due to wind drift. For example, Parks does not spray aphids despite the "honeydew" problem associated with them. When insect pests are controlled in trees, the following measures are used:

- Trees that are highly susceptible to specific insect pests (such as blue spruce and spruce aphids) may be removed from the landscape and replaced with resistant species.
- When possible, the portion of the tree affected by the insect (such as tent caterpillars) can be physically removed, eliminating the pest.
- An insecticide may be applied to control a specific insect pest in very select situations. These situations include pests on specimen quality trees at special gardens or in high visibility locations where the presence of the pest threatens the life of the tree. In these situations, general foliar applications will not be made unless the potential for product drift can be controlled.
- Injection technology when practical may allow for systemic control of certain insect pests with minimal or no impact to human or environmental health.

Disease Control

Dutch Elm Disease and *Anthracnose* on London plane trees are the only tree diseases the Parks Department actively controls with pesticides. Most other diseases are tolerated in trees, unless they lead to a tree becoming a hazard to the surrounding environment. As with insecticides, it is unlikely that parks staff will subscribe to general foliar applications of fungicides or similar pesticide products to control disease pests in trees. The following are control measures that can be performed:

- Trees that are susceptible to particular disease pathogens may be removed from the landscape and replaced with resistant varieties.
- When possible, parts of trees affected by disease should be pruned out and properly disposed to stop the spread of disease within the tree and to adjacent trees.
- An appropriate fungicide may be applied to control a specific disease pathogen in very selected situations. These cases include specimen quality trees in special gardens or in high-visibility park locations where the presence of the disease threatens the life of the tree. In these situations, general foliar applications will not be made unless the potential for product drift can be controlled.
- Injection technology, when practical, may allow for systemic control of certain disease pests with minimal or no impact to human or environmental health.

IPM for Turf

The Parks Department maintains a wide variety of turf types. These include park lawn areas (both formal and informal), athletic fields, golf courses and meadow areas. Each of these turf types has different pest management challenges, and practices may vary accordingly.

Pest Tolerance Thresholds

Some level of weed, insect and disease pests are tolerated in general park lawn areas.

- Weed, insect and disease pests are typically tolerated in general park lawn areas.
- Turf pests in highly maintained areas such as athletic fields, beach parks and other high-visibility/high-use areas are generally controlled through good turf cultural practices.
- Pesticides can be applied to park turf areas only when thresholds for weeds, especially in high profile areas, become unacceptable.
- Because of the unique conditions present on golf courses, a variety of pest control measures are used, including mechanical, cultural and chemical.

Pest Management Strategies

Weed Control

Weeds in turf are tolerated, to some level, with the exception of golf course turf and a few high-visibility park turf areas. When control is necessary, the primary method is through the following cultural practices:

- Careful monitoring of watering practices
- Fertilization
- Aeration
- Top-dressing
- Over-seeding

By performing this preventive maintenance, park turf is healthier and better able to compete with various broadleaf weeds. Chemical weed control may be used for controlling particularly difficult weeds in high-visibility turf areas.

- In these rare situations, the least toxic, least residual pesticide will be used.
- Pesticide use should be avoided near waterways.
- In general, broadcast applications will be avoided.

- The timing of such applications will be made to avoid contact with the public to the greatest extent possible.
- Posting of the site that has been treated will be done as legally required to meet or exceed legal requirements.
- Maintenance of municipal golf courses include treatment of broadleaf weeds through cultural practices and spot application of carefully selected herbicides.

Insect Control

The only insect pest of significance for turf in the Bellevue area is the European Crane Fly. While it can be quite damaging to turf areas, the crane fly is not controlled by prophylactic means in Bellevue managed parks.

- Chemical control is used in limited circumstances for highly visible and valuable turf areas such as golf courses, athletic fields and formal park areas.
- Chemical applications will consist of spot treatments directed specifically at the turf areas containing the pest.
- The preferred initial choice for application in high-use areas will be the least toxic product available.

Wood Brush Control

Woody brush control in meadows may require the use of chemical controls if mechanical control measures are not adequate. Cultural practices, such as frequent mowing, are the preferred methods of control.

Disease Control for General Park Turf

Disease in general park turf is typically tolerated and not actively controlled.

- In high-use/high-visibility park turf areas, disease will be controlled to a considerable degree by performing sound cultural practices.
- Pesticides may be used as a last resort to control disease in park turf areas.

Disease Control for Golf Course Turf

Because turf disease can be a significant problem on golf courses, it must be controlled to preserve the function of this asset. Golf course turf, particularly greens and tees, must perform under extreme conditions of maintenance and use. These conditions make golf course turf more susceptible to disease than general park turf.

- Golf turf disease is controlled through cultural practices to the greatest extent possible.

- Certain diseases are controlled through the application of an appropriate fungicide.
- When used, fungicides are applied to the diseased turf only, such as a green.
- The least toxic and still effective products are used.
- The fungicide used will be rotated annually to reduce the chance of the turf disease developing a resistance to the chemical control.

Grass Trimming Abatement

The control of grass growing along fence lines and around trees, bollards, posts and other landscape features is a regular maintenance activity that helps preserve the asset by allowing large riding lawn mowers to steer clear of objects. This is especially important around trees where impact from mower damage can easily lead to tree loss. At the same time, keeping this grass controlled allows for parks to appear clean and well kept. This grooming affects how the public uses park facilities. Well-maintained parks are subject to less vandalism and related misuse. The following are BMPs for grass trimming abatement:

- Line trimmers or push mowers: The grass is trimmed using gas-powered line trimmers or push-type lawn mowers. This labor-intensive practice is costly and produces noise and air pollution.
- Herbicide: Post-emergent applications may be performed as needed to keep tree rings, planting beds and similar areas weed free. In general, the use of pre-emergent herbicides shall not be used unless absolutely necessary.
- Concrete mow strips: As resources are available, it is sometimes possible to provide a "mow strip" of concrete or a similar low maintenance product around some landscape features to eliminate the need for grass trimming. This control option can be costly and doesn't work in all situations.

IPM for Natural and Sensitive Areas

Natural areas are undeveloped open space properties that are owned and managed by the Parks Department. These properties typically contain sensitive areas such as steep slopes, wetlands and riparian corridors. These sensitive habitats shelter native ecosystems and wildlife habitat and include nearly all classifications in the city's *Sensitive Areas Manual*, including steep slopes and slide prone areas. For the purposes of this BMP manual, these resource assets are divided into three major groups:

- Wetlands, riparian corridors, shorelines and aquatic habitats

- Forests
- Meadows

Pest Tolerance Thresholds

- Invasive plants are generally not tolerated. Invasive plants will be controlled in conjunction with natural resource enhancement efforts in these environments as resources permit and where control can be practically achieved.
- Noxious weeds will not be tolerated and will be controlled when found in conformance with State of Washington and/or King County mandates.
- Only insect pests that pose a risk to the public (such as hornets) or to the resource (such as gypsy moth) will be controlled.
- Plant diseases will generally be tolerated unless: a specific control can be employed that will be effective in ensuring the health of particularly valuable assets; or if they pose a threat to other plant populations outside of the natural area; or if they pose an unacceptable risk to the public.
- Herbicide Use: The use of herbicides in any natural environment must be carefully considered. Herbicides will be used for weed control in natural areas only when other control measures have been tried and failed, and only if control can be achieved through the use of an herbicide, and is imperative to the health of the site. For wetland or aquatic environments, only herbicides approved for aquatic use will be used. When needed, herbicide use practices are as follows:
  - Cut and stem treatment (daubing or painting) is the preferred choice for natural area management.
  - Certain invasive plants are difficult to treat and control in their mature form. If possible, remove existing growth manually or mechanically. Wait for new growth to become established, then treat with the appropriate and approved herbicide.

Pest Management Strategies

Weed Control

An overriding principle of IPM is the maintenance of healthy plant communities. That means weed control of the following types:

- Timed mowing: Carefully timed mowing before seed set can effectively reduce weed seed sources. Frequent mowing can eliminate blackberry and other woody species.

- Mulching: Mulching around the base of plantings is widely accepted as a horticultural practice for soil fertility and weed control. In most instances, composted wood chips or onsite recycled leaf litter are adequate materials. Avoid using wood chips from diseased trees. Mulch should be between 2 to 3 inches deep for the best results.
- Weed monitoring during mulching: Care must be given to not incorporate new weed problems when importing mulch materials.

Woody Brush Control:
The control of woody brush, like blackberry, is very important in certain park locations. Often these plants are found in transition areas between developed park areas and natural areas. If not controlled, woody brush can easily overtake forest-edge environments, eliminating vital habitat opportunities. Control measures for woody brush include the following:

- Manual or mechanical removal using hand tools or gas-powered equipment. Special tools are now available for removing woody brush. In many areas, this can provide effective control.
- Chemical control can be employed when other measures are not mechanically or economically feasible. Spot applications are preferred, whenever possible, over large area applications.

Insect Control:
Insects like the European and Asian Gypsy moth and the Asian Long Horned Beetle can potentially devastate Bellevue's urban forest. Parks will cooperate with state and federal agencies in their monitoring and control programs to prevent the introduction of these pests.

Disease Control – Root Rots:
Even native forests can have serious disease problems. Root rots are the most serious problem, leading often to the death of significant trees. Several strategies help control root rot in forests:

- Inoculate with mycorrhizae
- Remove infected wood
- Plant resistant varieties
- Do not change site conditions on mature trees

Stump Re-Sprouting Control:
Often there is a need to remove small trees and prevent re-sprouting of a stump. Methods for controlling the re-sprouting of stumps include the following:

- If the location of the stump allows access by equipment, then they can be mechanically removed providing the location is not within an environmentally critical area.
- Small stumps may be removed manually providing they are not on steep slopes or in other environmentally critical areas.
- The re-sprouting of stumps can also be controlled by painting newly cut stump surfaces with an herbicide. Care will be taken to limit the application of the selected herbicide to the stump surface only.
- The preferred and most commonly used chemical method for controlling stump re-sprouts is injection with a Lance EZ-Ject tool.

Invasive Plant Control:

Invasive plants have taken over many of the city's forested areas and have radically and negatively impacted natural ecosystems. Attaining long-term control of invasive plants is essential to the recovery and preservation of Bellevue's natural ecosystems. Invasive plant control shall follow the guidelines established by the *King County Noxious Weed Board*. Except in the case of Class A weeds, the goal is suppression of weed populations to below threshold (damage causing) levels. Eradication of certain ecological weeds (blackberry or ivy) in all of the city's natural areas is neither feasible nor cost-effective. However, controlling the spread of the problem and eradicating it in certain priority locations is the goal. Control methods include:

- Use *extent of removal* and *type of habitat* to determine the pest control method.
- Large areas that are totally infested can be mowed. Areas that are interspersed with invasive pests require more selective procedures such as manual removal.
- Heavy equipment or manual removal can be used on firm soils. On either steep or saturated soil, use techniques that will minimize site or slope disturbance.
- Where mechanical or manual removal is neither possible nor practical, but control is essential, careful and selective use of an approved herbicide is permitted.
- Re-establishing a new native planting regime as quickly as possible following the removal of invasive plants is critical to successful forest restoration. These new plantings generally require 3-5 years of watering and maintenance to insure successful establishment.
- Preserve established native plants when possible rather than re-establishing new plants after the clearing of invasives.

- Public education and outreach concerning plant identification and management techniques will also aid the Parks Department in controlling noxious weeds.

Nuisance Wildlife Control:
Mountain beavers, moles, coyotes, beavers, opossums, raccoons, waterfowl and other species can be destructive to natural areas when their activities are excessive. Overall, the Parks Department does not encourage the interference with wildlife and prefers to leave them to their natural behaviors. If control of wildlife is deemed necessary, the Parks Department will work with the most appropriate county (Animal Control) or state (Department of Wildlife) agency to formulate a control solution.

IPM for Trails

Pest Tolerance Thresholds

Invasive plants that invade the trail area are generally not tolerated. Invasive plants will be controlled in conjunction with ecosystem restoration efforts on any park trail as resources permit.

- Noxious weeds will not be tolerated and will be controlled when found in conformance with State of Washington and/or King County mandates.
- Weeds are generally found on trails and many will be tolerated. Weeds that begin to form a hindrance of trail function will be eradicated.
- Only insect pests that pose a risk to the public (e.g. hornets) will be controlled.

Pest Management Strategies

Weed Control:
Weeds on trails are generally tolerated, until they begin to interfere with trail function and safety. When control is necessary, the primary method is increasing mulch on, or re-surfacing, the trail surface. Chemical weed control is often not necessary on trail surfaces but will be used only as a last resort for controlling particularly difficult weeds.

- In these rare situations, the least toxic, least residual herbicide will be used for spot treatments.
- General broadcast treatments will be avoided.
- Timing of such applications will be made to avoid contact with the public to the extent possible.

- Posting of the site that has been treated will be done as legally required.

Insect Control:
Overall, insects on trails are tolerated. Only insects that can cause a health risk are controlled. Wasps and hornets are some of the few insects that will be eradicated immediately when encountered. When this is necessary, chemical control with an approved insecticide is the preferred method, and only individual nests will be treated.

IPM within Agricultural Areas

Pest Tolerance Thresholds

Invasive plants that invade agricultural areas are generally not tolerated. Invasive plants will be controlled as resources allow.

- Noxious weeds will not be tolerated and will be controlled when found in conformance with State of Washington and/or King County mandates.
- Weeds are generally found in agricultural areas and many will be tolerated. Weeds that begin to interfere with crop production will be eradicated.
- Only insect pests that pose a risk to the public (e.g. hornets) will be controlled.

Pest Management Strategies

Weed Control
Generally, weeds are tolerated in agricultural areas. When control is necessary, mechanical practices are the primary methods.

- Mowing
- Hand pulling
- Herbicides are used only in extreme cases

Insect Control
Insects are not a high concern on agricultural farms. In the past, there has been little need to utilize insecticides, except in the case of hornet nests. The selective use of surfactants has proven to be effective for controlling minor insect breakouts.

Disease Control
Most agricultural areas managed by the Parks Department are within wetlands. Disease issues related to that kind of environment make control

more difficult. At the present time, only fungicides approved for a wetland environment have been used to control diseases such as "mummy berry", which is a serious disease on blueberry farms. The following control measures may be performed to prevent spread of diseases:

- Drainage of crop rows to reduce root rot.
- Spot application of an approved fungicide. In these situations, general foliar application will not be made unless the potential for product drift can be controlled.
- Clean cultivation or tilling of the soil around crop plants to bury mummified berries to 1 inch will help prevent the disease from spreading in the following year.

Fertilizer Use
The Parks Department does not use fertilizers on any agricultural lands.

Nuisance Wildlife
There is some need for the control of nuisance wildlife on managed agricultural lands. Most of the farms grow fruits, which are highly appealing to many wildlife populations. Most grazing by wildlife is tolerated, with the exception of Starlings. They pose a major detriment to the farm as they can consume large amounts of foods and are very abundant. The Starling population has risen to such a level that extreme measures of control have been considered. Presently, the Parks Department uses bird calling machines placed throughout the farm areas as a deterrent to Starlings and other birds.

3.4 Training

Because IPM is an ecologically sophisticated process that requires professional expertise in vegetation and pest management, it demands trained field personnel that are knowledgeable about:

1. Ecological interactions and relationships among vegetation and pests;
2. Potential tools and materials that can be used to effectively manage vegetation and pests by manipulating environmental conditions; and
3. Correct timing for implementing specific management practices relative to vegetation and pest biology.

Educational and career opportunities in IPM will enhance crew professionalism, their knowledge of current vegetation and pest management practices, and their stewardship of managed landscapes. Each landscape type will have an individualized training program developed and accessible to all applicable staff.

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CHAPTER 4 –

Irrigation and Water Management

4.1 Purpose

Water resources are an important part of the Parks & Community Services Department's landscape assets. Turf, shrubs and trees all require water to live, but not all require the same amounts. Wise water use must consider both the preservation of landscape assets and the impact on the broader watershed. An efficient irrigation program makes the best use of the resource by not wasting water vital to other natural resources, such as fish, while at the same time preserving landscape assets.

The design and programming of irrigation systems is complex. It requires understanding the principles of hydro-zoning and knowledge of basic hydraulics, site conditions such as soils, slopes and plants, and knowledge of the irrigation system tools themselves. As competition for available water becomes more acute, the department will continue to be equally dedicated to carefully managing this resource.

4.2 Background

Best management practices for irrigation system operations combine activities for maximizing a range of technologies for water control and common field practices.

Irrigated Park Areas

Because the Parks Department's mission is to preserve all landscape assets, most developed landscape areas are irrigated, including the following:

- Athletic fields
- Community and neighborhood parks
- Golf greens, tees and fairways
- Most turf areas
- Most shrub and annual plant beds
- Newly installed landscapes
- Most areas in high-use or high-visibility parks
- Specialty gardens
- City building facilities
- Natural areas under active restoration

Non-Irrigated Park Areas

The following City assets are not irrigated:

- Meadow areas
- Natural areas
- Low visibility and low use turf areas

Design

Irrigation design is the foundation of sound water management. The design process involves determining which sites to irrigate, what portions of each site should be irrigated, and choosing the appropriate automated system. (Note: all new irrigation systems are designed and installed in compliance with City of Bellevue's water budget requirements.)

Choosing an Automatic Irrigation Control Option

The City of Bellevue utilizes a variety of controllers for timing the application of irrigation water. These automatic controllers serve three primary purposes:

1. Operate remotely rather than manually, saving labor hours and water.
2. Accurately time irrigation to specific needs of soils, slopes and plants.

3. Reduce impacts to park use and water loss from evaporation by operating at night.

Types of Irrigation Controllers used in Bellevue Parks

Four types of irrigation controllers are used in Bellevue managed parks and streetscapes:

Electric Controllers

These controllers use electrical circuitry. Advantages of these controllers include relatively low cost, significant programming flexibility and ease of repair. The only disadvantage of these controllers is that they operate as stand-alone units, thereby lacking the savings potential of central computer control. Electric is the preferred controller for parks that will not be connected to central control.

Battery-Operated Controllers

Battery-operated controllers are either mechanical or solid-state controllers that operate from a DC power source. They are typically used at locations where automatic irrigation is desirable but access to electric power is not feasible. The city uses very few of these devices currently as constant monitoring is required to make the systems reliable. Batteries are subject to failure and moisture problems, requiring regular replacement.

Solar Powered Controllers

Solar powered controllers utilize solar energy to provide power for the controller. This technology requires the use of on-site solar panels which are susceptible to vandalism and misuse. The Parks Department has yet to find reliable solar powered equipment, however, will continue to experiment with this technology as newer and improved equipment is made available.

Computer ET Based (Maxicom and IQ)

Maxicom and IQ are the brand name for the centralized computer-controlled ET based irrigation system that the Parks Department uses at those park and streetscape sites where communication linkages are possible. The use of a centralized ET based computer system provides the following advantages as it pertains to irrigation water management:

- Allows our irrigation systems to be programmed remotely without a physical site visit.
- Monitors water use within individual systems and can detect and flag problems and pinpoint them for repair.

- Since the system is linked to a weather station, it can be automatically programmed to withhold water on rainy days.
- Remote systems can be automatically programmed not to water when soil moisture levels indicate water is not needed. These built in sensors can determine where water is being used and where there may be problems.
- Uses flow control monitoring devices that provide valuable data on water usage at each specific park or streetscape site.

Maxicom and IQ are the preferred central control systems for the majority of the city's park and streetscape sites. These systems requires daily monitoring by trained technicians who can make appropriate changes based on water use data and weather conditions. Since they are relatively complicated to operate, only sufficiently trained staff should program and operate centralized computer-controlled controllers. The use of a computer ET based system for medium to large parks and athletic fields is very important and should continue to be a high priority.

Installing Irrigation Systems

All new irrigation systems and renovations shall be designed and installed according to departmental standard specifications and shall comply with the City of Bellevue's water efficiency standards and codes. In order to have water service (meter) provided, a water budget must be prepared and approved by the Utilities Department. To the extent possible, standardized material and products will be used to increase ease of maintenance and reduce inventory confusion and incompatibility problems.

Programming Automatic Irrigation Controllers

Programming automatic irrigation controllers relies more on understanding a site and its plant materials than the mechanics of the system itself. Controllers should be checked bi-weekly to ensure proper operation to maximize watering efficiency. The primary goal of using automatic irrigation controllers is to maintain a consistent soil moisture environment that maximizes plant health and vigor while closely monitoring water use to minimize waste.

Water Auditing and Conservation

As budget allows, the Parks Department may perform occasional water audits on existing systems to determine if water usage exceeds, meets or fails to meet the needs of plant species, soil types and weather conditions. In such cases, usage adjustments are made if a water audit shows that efficiencies can be gained with little or no impact to the plant resources.

During periods of drought, the City of Bellevue follows a water shortage management plan which is based on the voluntary curtailment of water usage by Bellevue residents, as well as a 50% reduction in normal irrigation usages on city property. For a detailed description of the City of Bellevue Parks & Community Services Department's Water Shortage Response Plan, see appendix. The Parks Department, in cooperation with the Utilities Department, also adheres to the City-wide Water Shortage Contingency Plan, adopted in 1994. Water restrictions are kept in effect until resevoirs are returned to safe levels and water quality testing has confirmed that the city's drinking water is safe for the public to consume.

4.3 Best Management Practices

Water use needs of the turf, shrubs and trees shall be researched prior to irrigation.

- Apply no more water each week than required to sustain healthy plants. For turf areas, a general rule of thumb is no more than 1 inch of irrigation water per week, including rainwater.
- Turf should be watered 1–3 times per week, and for longer periods if necessary, to promote deep rooting. Deep rooting leads to healthier, more drought-tolerant grass.
- Soil also plays an important role in irrigation. Soil conditions should be considered, particularly in turf areas with heavy use. Heavier, clay-type soils cannot be watered as long during each watering cycle as can sandy soils.
- Turf and planted areas should be aerated and cultivated to relieve soil compaction and increase water uptake.
- Whenever possible, watering should be avoided during the hottest part of the day. Watering at night is preferred to reduce water loss through evaporation and reduce potential vandalism to equipment and irrigation heads.
- Staff shall not allow manually operated systems to apply water longer than needed. For instance, the system shall not be turned on in the morning and turned off at the end of the day for convenience.
- Special attention shall be paid to verify that manually operated irrigation heads are watering the landscape and not hard surfaces or other non-landscaped areas.
- A water budget should be determined for each site.
- Depending on the availability of resources, a complete system audit should be completed on a 5-year cycle.

- Application of irrigation water shall be carefully monitored to determine when controller settings can be reduced to save water and to reduce runoff.
- A resource management system for irrigation operations should be developed. This system would provide a database from which programming records can be retrieved for annual system reprogramming to avoid starting from scratch.

Other considerations for Irrigation:

- Consider plant species and age when programming the irrigation controller or when applying water manually.
- Site topography plays an important role in irrigation timing. Given their potential for runoff, sloped sites may require multiple applications of irrigation water in shorter timing cycles than required for flat sites.
- Parks staff should become familiar with site specific soil moisture holding capacities and soil infiltration rates.
- To help prevent overwatering and waste, staff should learn what the specific water requirements are of the plant material in each irrigation zone at any given park or streetscape site.
- Staff should become familiar with the attributes for each irrigation zone, such as slope, aspect, soil type and plant nutritional requirements.

Irrigation System Maintenance

The following are preventive maintenance procedures for irrigation system operations:

- Visually check the system to make sure it is operating properly. This includes taking the time to make sure that rotary irrigation heads are rotating fully to the desired arc and adjusting as necessary.
- Perform regular preventive maintenance on heads, valves and controllers.
- Repair the system promptly to reduce water loss and damage to the landscape.
- Make sure heads are set at the proper grade and properly aligned.
- Make sure valves are operating properly.
- Use the system winterization and de-winterization processes as opportunities to make complete system visual checks.
- Keep grass and shrubs trimmed away from heads to allow proper functioning.
- Clean heads as needed to ensure optimum performance.

Upgrades and Replacements

- An existing inventory of the condition of all managed irrigation systems shall be maintained and updated as required.
- A replacement program (major maintenance program) is needed to ensure timely upgrading or replacement of old and antiquated systems. This is currently achieved through the Parks & Community Services 7-year Renovation and Refurbishment Plan.

4.4 Training

Staff training is required in several areas:

Basic Water Conservation

All park maintenance and operations staff should receive training on basic water conservation as part of an overall training program in environmental management. City staff, vendors or state agencies can provide this training. Staff should follow the Parks & Community Services Department drought policy during periods of extreme regional water shortages (see appendix).

Electric Controllers

Programmers for the system are required to become familiar with the unique qualities of each controller. This training should be scheduled when controllers are installed or when staff are unfamiliar with equipment. Training should include all field staff.

Maxicom & IQ

Operation of the Maxicom and IQ systems require training and certification. This training is typically provided by outside vendors.

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CHAPTER 5 –

Nursery Operations

5.1 Purpose

The Bellevue nursery provides a cost-effective way for the Parks Department to meet landscape construction, restoration and plant replacement needs throughout the park and open space system. Parks staff follow strict operational procedures at this facility to produce and maintain high quality and healthy plants. This chapter identifies and defines these best management practices for nursery operations.

5.2 Background

The Parks Department operates a 5-acre nursery located at 15302 SE 16th Street within the Lake Hills Greenbelt. This facility holds ornamentals, groundcovers, vines, perennials, shrubs and trees that are procured from local nurseries and plant growers. These plants are stored at this facility to support various needs throughout the park system ranging from small in-house planting projects to large capital improvement projects.

An increasing number of these plants are Pacific Northwest native species that are grown for use in landscape renovation and open space restoration projects to ensure

variety of plants needed in the sizes required. The following are features of the City of Bellevue Nursery:

- Office and storage building
- Growing frames
- Holding and healing-in area
- Container yards
- Poly and shade houses
- Propagation areas: cold frames, seed beds, poly-house.
- Bulk material storage
- Equipment storage

Basic Operating Plan

- Most of the nursery operation is containerized. Plants are grown and stored in containers of various sizes for eventual planting in parks. A containerized operation is both cleaner and less labor intensive than field growing, particularly when moving plants out of the nursery.
- Plants are field grown to meet specific needs such as large specimen trees.

Plant Selection

- The City of Bellevue's nursery program is not designed to store or carry a large number of plants in its inventory. Surplus plants are not cost effective given the care required to maintain a large inventory.
- The types and quantities of plants selected for procurement and storage are generally determined through requests from Parks Department staff or to meet specific requirements of various capital projects.
- There are some plants that are grown occasionally as test subjects for possible introduction into park landscapes.

5.3 Best Management Practices

The following are standard practices for preparing and maintaining plants grown and/or stored in City of Bellevue nursery operations.

Site Preparation

- All plant growing and storage areas shall have adequate drainage to ensure plants are not sitting in water or saturated soil.
- Field growing soil and imported potting soil shall be tested as needed to determine the need for amendments/nutrients and for the presence of unwanted pathogens.

- The container soil mix shall be compost (20%), peat (15%), pumice (25%) and fine decomposed bark (40%) with 1 lb. calcium nitrate added per cubic yard.
- Soil for field growing shall be a sandy loam with not more than 30% organic material in the form of equal parts of compost and bark (Note: bark in this case is fir or hemlock free of wood waste products. Cedar bark or chipping debris shall not be used).

Site Maintenance

- Noxious weeds shall be controlled or removed from the site during preparation.
- Roads and pathways shall be maintained on an annual basis to ensure accessibility.
- Any exposed soils or bark piles shall be covered with plastic.
- The general public or contractors shall not have access to the nursery grounds unless a pre-approved department staff person is also present.

Cultural Care

The following are preventive maintenance techniques the Parks Department uses to ensure the quality of its nursery plants.

- All plants should be spaced to allow for optimal growth, especially in field growing areas.
- Containerized plants shall be re-potted as needed to prevent encircling roots and to allow them to grow into their desired natural form without girdling.
- All plants shall be watered as needed. The primary method of irrigation is the existing overhead system. This system works well for field growing areas but is modified as needed for watering containerized plants.
- City water used for plant irrigation purposes shall be used efficiently:
    - Plants will be grouped by size and water needs.
    - Watering will be done on an as-needed basis.
    - The most efficient system for watering individual planted areas will be used.
    - Avoid watering nursery areas that are not currently holding plants.
- The nursery shall support recycling:
    - Clean compost will be used whenever possible.
    - Growing containers will be reused or recycled.
    - Plant debris will be sent to a “clean-green” yard waste facility.
    - Used soil from containers will be reused onsite whenever possible.
- Plants shall be fertilized as needed using slow-release types of fertilizers.

- Plant holding areas shall be used for plants that are in transition. While in holding, plants shall be mulched, staked as needed, watered and provided with shade protection if required.
- Winter protection shall be provided for plants as needed through the use of existing greenhouses or “frost blankets." Smaller, more tender plants shall have priority for winter protection.

5.4 Training

The City of Bellevue has developed a basic training program for staff assigned to work in the nursery. This training is also made available to other City of Bellevue staff to broaden their horticultural skill base.

CHAPTER 6 –
Planting Bed Management

6.1 Purpose

Landscape planting beds are often the focal point of a park, streetscape or city buildings. They provide color, texture, space definition, fragrance, wildlife habitat and other benefits enjoyed by park users. In the Pacific Northwest, climatic conditions favor growing a wide variety of ornamental landscape plants and a rich palette of Northwest native plants. These environmental conditions have allowed planners, designers and maintenance staff to create a landscape plant collection of real beauty. Careful management of these assets is required to continue the heritage and maintain the value of this substantial plant collection. The best management practices described in this chapter are applicable to parks, city buildings and streetscapes that have planting areas as a design function.

6.2 Background

Level of visibility and site use dictate maintenance standards for planting beds. Even within the same park, maintenance techniques can differ for formal plantings and high-traffic areas as opposed to remote areas that may remain informal and natural. For that reason, planting bed BMPs are tailored to the specific requirements of plant material and site goals. For example, at a formal site, the desired result may be to promote prolonged bloom in floral displays.

Planting beds can be divided into four categories according to level of visibility and usage:

1. Floral Beds are highly visible and have a high standard of maintenance which includes weekly grooming, weeding and regular site visits.
2. General Landscape Bed Areas have moderate visibility and standards of maintenance which include monthly weeding and seasonal pruning.
3. High-Visibility/Public Facility Landscapes have the highest visibility and the highest standard of maintenance.
4. Newly Established Landscapes will have a high standard of maintenance through the plant establishment period (1-5 years).

Existing Site/Environmental Conditions

Site microclimate considerations are taken into account when planning a new planting or renovating an existing one. The following factors must be weighed:

Current Landscape Condition

The condition of current plant material is a good indicator of existing cultural conditions. Compaction, low nutrients and types of pest populations determine renovation and plant selection options. This is particularly true of soil-borne pathogens such as *Phytophthera* root rot. Selecting resistant plant materials is a must. It is also recommended to select plants that do not require fertilizers or highly specialized care.

Soil Type and Condition

Soil may require amendment to improve drainage or water-holding capacity. Heavy clay or very sandy soils may be improved if desired, but appropriate plant selection is vital to the success of the planting.

Drainage

Irrigation and drainage conditions must be assessed and any improvements included in the design process. Run-off should be eliminated as much as possible. If a site is or has a steep slope, COB standards must be met. (see *City of Bellevue Critical Areas Ordinances*)

Cultural Conditions

Cultural conditions such as exposure to sunlight and reflected light, heat, wind and rainfall apply to plant selection and irrigation installation.

Safety

Safety issues include falling branches, plant growth that blocks pathways, visibility through shrub beds, sightlines at park entrances, and rerouting pedestrian traffic to sidewalks.

Flowers

In floral displays, the maintenance budget for the display must be taken into consideration when selecting plant material. Some annuals and perennials require more grooming than time constraints allow and should only be used where they will receive adequate care.

Species Diversity

Species diversity offers a longer season of interest. Monocultures can be more susceptible to total failure in the case of insect or disease problems.

6.3 Best Management Practices

Site Preparation

Preparing the site is important to the long-term success of a landscape. Making the necessary cultural improvements before planting saves time and money. The following are BMPs for site preparation:

Existing Weeds

To prepare a site for landscaping or renovation, existing weeds and undesirable plant materials should be removed as thoroughly as possible. Weed populations (especially difficult-to-control weeds such as horsetail, morning glory and quack grass) affect planting plans. In a primary bed location, they should be eradicated before installation of new landscapes. If mechanical eradication is not practical, appropriate chemical control will be considered.

Overgrown Plants

Plant material that is too large, or has an expected mature size that is too large for the space, should be replaced with appropriately sized species.

Diseased Plants

Disease and insect-resistant material should be selected and used where the culture will promote healthy growth. In an existing planting bed to be renovated, diseased plants shall be removed and replaced with healthy specimens or treated by appropriate means.

Soil

Soil amendments as required should be added to and incorporated into an entire planting area. Avoid tilling saturated soil, which can damage tilth. Providing adequate soil volumes for newly constructed park facilities and streetscapes is a key component of long-term landscape success.

Water
Irrigation and drainage systems should be installed as needed.

Landscape Features
Install retaining walls, pathways and hardscape features prior to plant installation to avoid subsequent damage.

Rocks and Debris
Excessive rocks and debris must be removed. Rake area to establish finish grade.

Fertilizers
A soil test indicates fertility levels in the soil. Fertilizer, if required, should be applied to the site and incorporated into the soil. Amendments that include un-composted woody material may require nitrogen.

Annuals
Annual flowerbeds must be spaded or tilled at planting time. Amendments such as compost, sand or Perlite can be added to adjust drainage. In containers, the addition of hydrating gel can enable the use of plant material that might not otherwise be appropriate to water requirements.

Planting
The following guidelines for proper installation of plant material ensure good establishment and healthy growth.

Fertilizer
If fertilizer is to be used, it is best to wait until plants are established before adding chemical fertilizers to the soil in order to promote long root growth.

Depth
Plants must be placed at proper depth, taking into consideration the space needed for mulching.

Spacing
Proper spacing with consideration of mature size and spread of plants ensures good establishment. Good air circulation and availability of sunlight, water and nutrients will promote growth and avoid development of disease. Groundcovers and floral plantings should be close enough to provide adequate coverage to compete with weeds and provide effective display without being too crowded at maturity.

Water
Water new plantings to settle soil and reduce transplant shock. Ensure adequate moisture levels during the growing season.

Mulch

Mulch at planting time for maximum efficiency. Rake soil smooth to prevent puddling and then apply mulch. Avoid smothering small plants. A fine mulch is preferred as it will becomes the next season's planting soil.

Edging

The main purpose of edging is to maintain an attractive, manicured edge to the planting bed area. Proper edging also controls weeds along the edge of the planting bed.

- Informal plantings can be maintained mechanically or chemically to control turf and weed encroachment onto mulched areas.
- Formal plantings can be maintained by hand tools, mechanical means or chemically.

Irrigation

Site conditions such as soil type and slope, exposure and moisture requirements of plants dictate both frequency and duration of application.

- Weather conditions, such as temperature and rainfall, require monitoring and response. Generally, most plants require at least 1 inch of water per week. Drought tolerant plants, once established, may need less. Floral plantings, particularly in containers, require considerably more.
- Infrequent deep watering is preferable. Avoid creating runoff.
- Shrubs, groundcovers and flowers planted in the root zones of large trees need more water to balance the competition from the tree roots.
- Consider pedestrian access, park usage and available personnel when establishing irrigation schedules.
- Avoid disease damage by keeping water off of leaves.
- Be sure to begin watering early enough in the spring to prevent plant stress and hydrophobic soil conditions. Continue irrigating until consistent fall rains begin.
- Visually test and monitor the system weekly.

Mulching

Mulching serves to conserve moisture, retain soil, suppress weed growth, moderate soil temperature, reduce compaction and supply nutrients for plants and soil microbes. Mulch is also aesthetically pleasing making it desirable for highly visible locations.

- Materials include bark products, compost, wood chips and other commercial organic products.

- Depth of application varies according to type of plant material, but averages 2 to 3 inches. Keep mulch materials away from contact with trunk or root crown of plants to avoid stem rot.
- Recess edge of beds to avoid drift of mulch materials onto turf or pavement, where necessary.
- Flowerbeds should be mulched with a fine material such as compost, taking care not to smother plant crowns. Generally, mulch in an annual planting is 1 inch deep although a deeper layer of mulch, if possible, will provide better weed suppression.
- Un-composted woodchips can potentially deplete soil nitrogen as they decompose. The use of woodchips may require application of a nitrogen-rich fertilizer.
- The use of fallen leaves as mulch may be appropriate in some areas. Avoid using diseased or insect-infested material. It is important to avoid smothering the roots of the desirable plants with too thick of a layer. A 2-inch layer is considered best. Compost from plants that are known to be diseased shall not be used for mulching purposes.

Fertilizing

Fertilizing, the use of organic or inorganic compounds, shall be tailored to specific requirements for plantings:

- Nutrients: Nutrient requirements differ according to plant type and the desired performance of a plant. Turf grass and showy ornamental plants require more nitrogen than plants grown specifically for flower and seed production. Plants grown for flower and seeds require more phosphorus (P) and potassium (K). Too much nitrogen can cause excess growth, which will be more susceptible to insect and disease damage.
- Application Timing: Timing application to the biological cycle of the plant is important in maintaining optimum growth. Plants just becoming established may require more P and K in the blend to encourage root development. Also, plants benefit most from fertilizer application at the onset of their new growth in the spring. Applications too close to fall may delay dormancy and promote soft growth, which can suffer winter damage.
- Micronutrients: Micronutrients are also important for plant health. It is best to test the soil to determine existing levels of these nutrients because an imbalance can harm plants.
- Soil pH: The pH of the soil will determine whether to use an acid or base formulation of fertilizer, as well as the need for lime applications. Always test for pH before applying any fertilizer or lime.

- Formula: Select a formulation that is best for the soil type and time of year. Cold weather slows the activity of soil microbes that make nutrients available to the plants. Plants require nitrogen, phosphorous, potassium and other nutrients to optimize growth.
- Floral Plantings: Floral plantings can be fertilized at planting time with slow-release fertilizer. Flowers can also be supplemented during growing season with foliar feedings of liquid fertilizer.
- Compost: Compost can be applied as a nutrient source. It must be fully decomposed so that nutrients are made available to plants. Most compost has no more than 3% nitrogen, which is slowly released. Its main benefit is that it encourages beneficial soil microbial growth.

Pruning

Pruning shall be performed according to current ISA and ANSI A300 standards and for the following reasons:

- Encouraging and directing new growth and flowering.
- Removing spent blooms and foliage.
- Removing insect, disease and weather damage.
- Maintaining size and shape.
- Maintaining visibility.
- Improving safety.
- Creating pedestrian and mower access.

Plant Selection

Use appropriate plant materials that grow to the correct size for the space. Plant selection reduces the need for excessive pruning.

Natural Form

A natural form is desirable in most park settings. This is also healthier for the plant and requires fewer pruning frequencies.

Hedge Pruning

Hedge pruning requires careful timing for optimum results:

- First cut should be made as new growth begins to harden off.
- Last hedging should be made no later than mid-August.
- Hedges should be wider at bottom than top.
- Hedge pruning is labor-intensive and is best applied to plants with smaller leaves as they tolerate heavy pruning better.
- Because the intensity of maintenance required, formally-pruned hedges are not desirable in many park locations.

- When major pruning is required of prominent plantings and hedges, neighbors/park users may need to be notified in advance of the work to be done.

Timing

The best timing of pruning for most plant material is following flowering. Workload balancing, however, often dictates dormant season pruning.

Growth Habit

The growth habit of specific plant material will determine optimum pruning method.

6.4 Training

Training in IPM alternatives for planting bed maintenance will be provided to field staff. Staff will receive ongoing training in:

- Basic horticulture care
- Growth standards
- Plant identification
- Soils
- Chemical application

CHAPTER 7 –
Turf Management

7.1 Purpose

Turf provides a forgiving and resilient surface for many recreational activities and is the traditional "green carpet" that visitors associate with parks. Because turf varies substantially in use, so do turf management practices. Appropriate management ensures high quality turf where it is needed, such as on athletic fields and golf courses, and that the designed use of a site is met. The best management practices described in this chapter for turf management would also be applicable for city streetscapes with turf as a component of the landscape.

7.2 Background

The park system offers visitors a wide variety of turf, including lawns (both formal and informal), athletic fields, golf courses and meadows. Each type of turf requires a separate best management practice. The intensity of management ranges from very highly maintained golf course turf to meadow areas that may get mowed only once a year as a fire prevention measure.

Construction Issues

- Turf areas should be constructed with a minimum slope of 2% to promote surface drainage and a maximum of 15% to allow riding mowers to safely access the areas.
- Whenever possible, the existing soil should be amended with sand and a minimum of 6" of topsoil to provide a drier surface area. Dry areas allow easier and earlier (in the mowing season) maintenance.
- Trees, signposts, benches and other park amenities should be carefully placed in turf areas to reduce the need for hand trimming. If possible, these amenities should have the turf immediately surrounding them removed (such as for a tree ring) to protect the amenity and to facilitate more efficient turf care.
- Whenever possible, seeding should occur during the spring or fall months to insure maximum germination.
- Design a natural buffer area (no pesticide or fertilizer use) between turf and water bodies or drainage systems. If possible, this buffer should be at minimum 50 feet.

Plant Selection

Selection of grass species is based on site conditions, expected usage and maintenance standards. Sites with optimum growing conditions and high maintenance standards are seeded with blends of several species of perennial rye grass. Sites with poor drainage, partial shade and limited fertilizer applications require blends of perennial rye grass and red fescues.

7.3 Best Management Practices

The following BMPs apply to all City of Bellevue turf plantings. Some variations may apply to golf course turf.

Mowing

Frequency

The importance of regular mowing for promoting healthy turf cannot be over emphasized. Growth should be monitored, and frequency increased to avoid removing more than 1/3 of the leaf blade. The following is the basic standard for mowing frequency:

Season	Frequency
March - October	Weekly
February & November	Monthly or as needed
December	As needed

Cutting Height

Mowing height should be 2 to 2.5 inches to promote healthier turf. Lower cutting height often results in scalping spots where the ground is uneven.

Mulch Mowing

Grass clippings should rarely be removed from mowed turf areas. The plant nutrients and organic material they contain play an important role in developing a healthy, productive environment for root growth. Mulch mowing can also reduce the need for supplemental fertilization.

- Mowing patterns should be alternated to avoid ruts and compaction from the wheels.
- Avoid driving on frozen turf.
- Avoid driving on wet ground where ruts will remain. Walk the site during wet conditions to do a visual inspection.
- Mowing equipment must be maintained regularly, especially sharpening and adjustment of cutting edges.
- Ensure that grass clippings do not have the potential to be washed into stream or drainage systems which can degrade water quality.

Trimming

- Trimming shall be performed by walk behind mowers and line trimmers in areas that cannot be accessed by riding mowers.
- Trimming should be coordinated to coincide with other mowing activities on the site.

Edging

- Edging shall be performed a minimum of 2 to 4 times per year, depending on the maintenance standard for the site. Turf edging is done to give a finished look to lawn areas that border paved surfaces or planting areas and help reduce encroachment of grass into adjacent planting areas.
- At high visibility locations, edging shall be performed at a higher level of frequency.
- Edging should be performed with metal-bladed equipment whenever possible to prevent damaging turf edges.

Irrigation

- Automatic irrigation effectiveness shall be monitored on a weekly basis or more for sand-based fields. During periods of extreme heat or prolonged drought, daily monitoring may be required. Spot watering may be done during the day to help wilting turf recover during periods of extreme heat.
- Approximately 1 inch of water, including rainwater, shall be applied per week. During spring rainy seasons, irrigation techniques should be modified to fit the weather, as well as in the summer drought months. Theoretically, the irrigation cycle should be extended to the point just before drought stress occurs. This period varies with soil conditions, weather, site usage and maintenance practices.
- Irrigation should be scheduled to promote deep root growth. A general rule of thumb to promote deeper root growth is providing deep and less frequent watering (typically 2-3 times weekly).
- Tools such as soil probes or moisture meters may be used when necessary for greater precision on determining soil moisture levels.
- Irrigation valve boxes should be edged on a regular basis to prevent being overtaken and eventually covered by encroaching turf.
- Irrigation heads should be edged and cleared of turf as needed to ensure proper function and water distribution.

Fertilization

- In general, fertilizer blends containing phosphorus (P) are prohibited. The only exception may be when establishing newly seeded turf.
- Fertilizer shall be a slow-release compound of Nitrogen (N), Iron (Fe) and Potassium (K). The ratio is dependent upon the time of year.
- Fertilized turf shall be pH soil tested as necessary to ensure it is at the level most optimal for nutrient absorption.
- Each application should not exceed 1 lbs. of N per 1000 square feet.
- Applications during heavy rainfall shall be avoided to prevent runoff.
- Applications in very hot weather shall be avoided.
- Irrigation should be operational before growing season applications.
- Irrigation heads should be marked to avoid damaging them during tractor applications.
- Excess fertilizer shall be removed from hard surfaces immediately.
- Micronutrients and lime should be added, as soil tests indicate.
- Site-specific fertilizer restrictions must be observed. Site-specific cautions include not using any fertilizer on turf areas adjacent to streams and wetlands and prohibiting applications within 50 feet of lakes and waterways whenever feasible.

Aeration

- Aeration is a low cost, effective way to reduce soil compaction and enhance drainage in highly used turf areas (e.g. soccer goal areas, sidelines) and opens up the soil profile for enhanced water and fertilizer absorption.
- Aeration shall be done 2 to 3 times per year, or as needed, using .75-inch hollow or solid tines.
    - Best periods: March/April, late June and late August.
    - Technique: Make at least 2 passes at 90-degree angles.
- Areas with drainage problems should be deep-tine aerated 1-2 times per year using 1-inch-by-6-inch hollow or solid tines.
- Irrigation heads should be marked to avoid damaging them with aeration equipment.

Top Dressing

General-use top dressing mix shall be used and should be primarily sand with minimal organic matter. It is best to aerate turf areas prior to topdressing operations.

- Frequency: most effective when done lightly and frequently.
- Each application should be about ¼ inch.
- Heavily top-dressed turf areas may required floating with a boxed float and/or drag mat to shave down high areas and fill in low areas to create a consistent, uniform surface.

Overseeding

Heavily impacted areas should be overseeded at least once per year. The best practice is to overseed in fall and slice seed in spring at a rate of 5 lbs. per 1000 ft^2. The following site characteristics, usage and maintenance practices shall guide seed selection:

- Ideal sites with full sun, good drainage and reasonable fertility are suited for perennial ryegrass blends.
- Turf areas that are in partial shade or poorly drained soils should be seeded with mixes of perennial rye and fescues.
- Remove leaves and debris from turf areas prior to overseeding.
- Keep leaves and debris off turf areas as much as possible after overseeding to promote successful germination of grass seed.

Site Standards

Site standards for turf vary by landscape classification. Landscape classifications include prominent, general and non-irrigated lawn areas, steep slopes, meadows, soil or sand based athletic fields, synthetic athletic fields and bathing beaches.

Prominent Irrigated Lawn Areas

These are high-visibility or high-use landscapes. Some examples are community center lawns, popular picnic or sunbathing areas, lawns adjacent to busy arterials, beach parks, city buildings, community parks and the Bellevue Botanical Garden or smaller neighborhood parks where the lawn is the most significant amenity. Maintenance of these areas should be comparable to an athletic field with additional emphasis on trimming and edging.

- Soil shall be pH tested to determine liming/gypsum requirements. The soil analysis test shall be used to determine fertilizer requirements.
- The application of lime and gypsum products can be used to adjust the pH level in soils to make nutrients more readily available. A pH range of 6.5-7.5 is most ideal for turf areas. Adding more nutrients through fertilization to soils with pH outside of this range is ineffective and wasteful.
- Apply N-K ratio fertilizer at 3 to 5 lbs. N per 1,000 ft^2, in 2-3 applications annually.
- Soil aeration should occur 2 to 3 times per year with conventional 0.75-inch hollow tines.
- Overseed the entire lawn at least once per year at 5 lbs. per 1000 ft^2. Monthly applications should occur in high-use areas.

General Irrigated Lawn Areas

These are lawn areas in parks of various types where irrigation is available.

- Apply N-K ratio fertilizer at 1 to 2 lbs. N per 1000 ft^2, in 1 to 2 applications annually. Preferable fall N-K ratio is 15-0-31 with 6% iron and preferred spring N-K ratio is 22-0-22 with 6% iron.
- Soil aeration should occur 1 to 2 times per year with conventional 0.75-inch hollow tines.
- Overseed as needed. Overseeding is best done in April/May and October.

Non-Irrigated Lawn Areas:

These are lawn areas in parks of various types where irrigation is not available.

- N-K fertilizer should be applied once annually in late spring.
- Overseed as needed. Overseeding is best done in April/May and October.

Steep Slopes

Mowing and maintaining turf on steep slopes can be hazardous. Whenever possible, turf areas on steep slopes should be converted to planting beds. This will greatly reduce maintenance needs and reduce the risk of accidents with mowing equipment. When turf is required on a steep slope, the following management practices should be followed:

- Growth should be controlled mechanically with line trimmers.
- Turf growth regulators should be considered to reduce required trimming frequencies.
- If feasible, consider managing turf on steep slopes as meadows which only require 1 or 2 mowing frequencies per year for fire suppression.

Meadows

Meadows are unique environments that function primarily as wildlife habitat.

- Mowing should be infrequent with the goal being brush suppression and fire control. Analyze site for potential fire threat and fire control strategies.
- Whenever feasible, mowing should be done prior to the emergence of pollinators so not to disrupt local colonies.
- When timing out maintenance frequencies, keep in mind that successful establishment of native species requires that they have the opportunity to set and release seed before mowing.
- Site access routes should consider maintenance, interpretive value and habitat preservation.
- Species selection should be matched with existing available groundwater.
- Location of meadow should attempt to link other wildlife areas into larger contiguous habitat areas.
- Scheduling and timing should minimize impacts to wildlife nesting and habitation.
- One mowing every 2 to 3 years may be sufficient for woody brush control. Firebreak areas may require more frequent mowing to maintain.
- Mowing heights should be 3 to 5 inches.
- Refer to Chapter 9, Trees & Natural Area Management, for additional BMPs regarding meadows.

Soil-Based Athletic Fields

These athletic fields are generally composed of native soil formed onsite with minimal amendment. These facilities are characterized by scheduled play. Drop-in fields are maintained as general irrigated lawn unless there is exceptionally high usage.

- Soil shall be pH tested to determine liming/gypsum requirements. The soil analysis test shall be used to determine fertilizer requirements.
- N-K fertilizer shall be applied at a ratio of 2 to 6 lbs. of N per 1,000 ft^2, in 3 to 4 applications annually.
- Soil aeration should occur 4 times per year with conventional 0.75-inch hollow tines. Fields should be aerated with deep tines every 1 to 2 years.
- Overseed the entire field at least once per year at 5 lbs. per 1000 ft^2, or about 375 lbs. per soccer field. Monthly applications should occur in heavy wear areas, such as the goalmouth, during the playing season.

Sand-Based Athletic Fields

These fields are entirely composed of imported sand and are known for their increased drainage capability.

- Irrigation shall occur more frequently than on soil-based fields.
- Apply N-K ratio fertilizer at 3 to 6 lbs. of N per 1,000 ft^2, in 6 to 8 applications annually, depending on turf type and time of year.
- Soil aeration should occur 2 to 3 times per year with conventional 0.75-inch hollow tines. Deep-tine aerating (6"+) should also be done every 2 to 3 years.
- Overseed the entire field or ballfield at least once per year at 5 lbs. per 1000 ft^2, or about 375 lbs. per soccer field. Monthly applications should occur in heavy wear areas, such as goalmouths, during playing season.

Bathing Beaches

- Apply 2 to 6 lbs. of slow-release N fertilizer per 1,000 ft^2, in 2 to 3 applications annually.
- Special care should be taken to not fertilize in advance of heavy rains or before expected periods of heavy park usage.
- Soil aeration should occur 2 to 3 times per year with conventional 0.75-inch hollow tines.
- Overseed the entire lawn at least once per year at 5 lbs. per 1000 ft^2. Monthly applications should occur in heavy wear areas.

Synthetic Turf Athletic Fields

Since 2008, many of the higher use athletic fields within the park system have been converted from natural turf fields over to synthetic turf fields. Although this conversion reduces and/or eliminates the need for applying supplemental irrigation, aerating, fertilizing and overseeding, synthetic fields still require a high level of maintenance to keep them safe and usable for the public. Maintaining a synthetic turf field is essential for optimum appearance, safety, performance and field longevity. Maintenance of a synthetic field typically consists of cleaning, stain

removal, minor seam repair, grooming, infill material redistribution and management of infill compaction. A regular maintenance schedule should include:

- Debris removal: Daily
- Aggressive surface cleaning: Biannually
- Grooming: Monthly
- Infill replenishment/redistribution: Weekly for high traffic areas on synthetic baseball infields, monthly for all other sports.
- Decompaction: Monthly

The synthetic turf manufacturer/installer should provide detailed written maintenance instructions, suggested warranty guidelines and training of maintenance personnel.

7.4 Training

- All park maintenance field staff should have training in basic turf management.
- Mowing operators have specific training regarding mowing heights, patterns and equipment maintenance.

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CHAPTER 8 –
Streetscape Management

8.1 Purpose

The Street Tree and Arterial Landscapes program currently maintains 200 acres of formal landscaping and over 10,000 street trees in the public right-of-way. For these landscapes to be successful, they must be thoughtfully designed and constructed, meeting stringent safety requirements and aesthetic standards. Once installed, skilled maintenance supports plantings to maturity and increases their value to the public. The Best Management Practices described in this chapter are intended to help streetscapes reach their potential, support city livability policies and contribute to Bellevue's image as a "City in a Park."

8.2 Background

There are three types of right-of-way vegetation identified for the City of Bellevue: formal arterial landscapes, residential landscapes and informal roadside vegetation. The Parks & Community Services Department accepts management responsibility for most formal arterial landscapes, also known as "streetscapes". Streetscapes are landscape improvements in urban centers and along arterial streets. These landscapes require an effective and efficient maintenance program to deliver a high level of value to the community. This chapter describes Parks & Community Services Department maintenance responsibilities for designated streetscapes and not for

other types of right-of-way landscaping that may be the responsibility of other city departments or private property owners. This chapter gives design guidance that is useful for all formal landscaping in the right-of-way.

Attractive roadside landscaping improves livability within our community and contributes to the experience of Bellevue as a "City in a Park". Streetscapes engage pedestrians, provide connectivity for the Parks system and improve the roadway experience for everyone. Nearly 40 years of scientific research documents the positive impact that green infrastructure has on local economies, mental and physical health, public safety and worker productivity.[1] Green infrastructure supports ecosystem services, improves water and air quality and mitigates urban heat island effects. Developing and maintaining safe, attractive and sustainable streetscapes serves important public needs, manages assets wisely and enhances the character of adjacent uses.

Policy Overview

The practices described in this chapter implement policies set out in a variety of planning initiatives and city codes, including but not limited to the City of Bellevue Comprehensive Plan, the Bellevue City Code (BCC), and the City of Bellevue Land Use Code (LUC).

Comprehensive Plan

The Comprehensive Plan is a foundational document that sets out the community's vision for the future, lays out a groundwork of planning policies to guide city actions and provides a framework so that city departments and community organizations work together toward common goals.

Table 8.1
Streetscapes are supported by policies defined by the *City of Bellevue 2015 Comprehensive Plan.*

Environmental Element: Policies 12, 13, 24, 45, 46, 49, 71, 97
• Establishes a 40% citywide tree canopy goal • Promotes preservation of significant trees and canopy loss mitigation • Supports Low Impact Development (LID) • Directs the city to pursue integrated site planning early in project development
Land Use Element: Policies 2, 13, 32, 33
• Directs city to preserve existing tree canopy • Acquire and enhance landscaped areas to improve livability and neighborhood character
Parks, Recreation & Open Space Element: Policies 31, 33
• Directs city to manage street tree resources for long-term vitality • Calls for conserving resources through efficient maintenance and operational procedures

[1] For more information visit *Green Cities: Good Health* at http://depts.washington.edu/hhwb/.

Transportation Element: Policies 51, 111, 139, 144

- Provides sufficient space in the right-of-way for trees and landscaping
- Recognizes the health benefits of walking and bicycling
- Protects and enhances the natural and built environment

Urban Design & the Arts Element: Policies 2, 4, 12, 37, 38, 42, 44, 47, 54-57, 64-71, 74-76

- Promotes the quality and safety of urban environments through the preservation and enhancement of trees, species selection, low-impact development standards, and site design
- Directs use of landscaping to minimize impacts to neighborhoods
- Promotes water conservation through irrigation system design
- Directs city to provide adequate rooting space for trees

Bellevue City Code and Land Use Code

Parks & Community Services may accept responsibility for maintaining streetscapes in the right-of-way, but unless a maintenance agreement exists, responsibility for maintaining landscaping within the right-of-way and easements belongs to the abutting property owner. Compliance with the provisions of the following ordinances is expected:

- Property owners are responsible for maintaining all landscape materials in the right-of-way to industry standards as described in Section 8.3, unless that responsibility has been formally accepted by the City of Bellevue. *BCC 14.06.100 and BCC 14.60.120*
- Trees and landscaping along street frontages may be required to be retained and maintained even if these amenities are on private property. *BCC 14.60.110 and 14.60.120; LUC 20.20.520 and 20.25.060*
- Property owners are responsible for ensuring that landscaping fronting their property does not obstruct driver or pedestrian sight distance as described in the Transportation Department Design Manual. *BCC 14.60.240*
- Illegal clearing, cutting, damaging, topping, pruning that is not in accordance with industry standards, or removing of street trees is a civil violation and subject to monetary penalties. *BCC 1.18.045, 3.43.335, and 14.60.040*
- All work in the right-of-way is subject to Right-of-Way Use Permits and may require Clearing and Grading Permits. To learn more about the permitting needs for your project, call Service First at 425-452-6800.

Technical Standards Overview

In addition to the City of Bellevue Codes and Policies described above, this chapter makes reference to outside documents and technical standards for tree and landscape maintenance, labor, materials and regulatory compliance.

Landscape Maintenance

- ANSI A300 – Industry Standards for Tree Care Practices (American National Standards Institute accredited)

- ANSI Z133 – Safety Requirements for Arboricultural Operations

Materials

- ANSI Z60.1 – American Standard for Nursery Stock
- WSDOT Standard Specifications for Bridge, Road and Municipal Construction 2024
- US Composting Council – Definition of Compost
- Code of Federal Regulations Processes to Further Reduce Pathogens

City of Bellevue Standards

- CoB Transportation Design Manual
- CoB Utilities Department Surface Water Engineering Standards
- CoB Utilities Department Storm and Surface Water Maintenance Standards

Street Tree Selection Considerations

The Street Tree and Arterial Landscape workgroup within the Parks & Community Services Department maintains over 10,000 trees, comprised of over 250 different species and cultivars, in formal arterial landscape areas. Parks staff assist other departments within the city to evaluate existing trees in the right-of-way and select tree species for new plantings.

Tree Selection Criteria

Appropriate tree selection adds to neighborhood character, minimizes conflicts with other infrastructure, ensures adequate clearance over sidewalks and streets, reduces impacts from pests and disease, and helps to soften the transition between urban spaces and Bellevue's natural forest setting.

Trees should be selected for growth characteristics, site adaptation, design objectives and the amount of care they will require. Parks staff emphasize the selection principle, "the right tree for the right place." The following criteria will be considered in tree selection:

- Environmental conditions
  - Soil type
  - Drainage
  - Sun exposure
  - Availability of water
  - Wind
  - Reflected heat
  - Pollution
- Spatial constraints
  - Overhead utilities or structure
  - Underground utilities or structure
  - Adjacent land use

    - Sight distance
    - Soil volume
- Desired botanical characteristics
    - Mature size
    - Branching structure and form
    - Flowers
    - Leaf color
    - Bark texture
- Pest and disease resistance
- Availability of nursery stock

Designated Street Trees

The goal of designating street trees is to define neighborhoods and create cohesive corridors. For some neighborhoods of Bellevue, street tree selection is designated by the Land Use Code. In Downtown, new street trees shall conform to LUC 20.24A.060 Plate B. In the BelRed Subarea, street trees shall be selected according to LUC 20.25D.110 and the BelRed Streetscape Design Guidelines. Small, medium and large categories of trees are identified in order to provide appropriate options for varied site conditions. Sometimes when a streetscape is renovated or redeveloped, existing trees at the site do not conform to the selection in Code. In these cases, retention of healthy mature trees is prioritized as much as possible.

Outside of certain SubAreas, the selection of tree species or cultivars is not specified in Code. The Parks & Community Services Street Tree & Arterial Landscape program manages a comprehensive list of existing trees and makes recommendations based on performance and availability for development on a case-by-case basis. The nursery industry adapts to changes in demand, introduction of new cultivars and species, and novel pests and diseases. Parks staff follow trends in nursery stock availability and are able to recommend species and cultivars to meet a wide range of selection criteria.

Trees Not Recommended for Any Site

Due to susceptibility to pests or disease, the following trees are not recommended for planting anywhere in this region and often require removal and replacement.

Botanical Name	Common Name	Issue
Betula species	Birch species	Bronze birch borer. Betula nigra 'Cully' is resistant and may be used.
Fraxinus species	Ash species	Emerald ash borer
Populus nigra	Lombardy poplars	Vulnerable to fungal leaf spot

Invasive Trees Recommended to Avoid

Invasive species may propagate to areas outside of their intended locations and should be avoided if possible.

Botanical Name	Common Name	Issue
Acer platanoides	Norway maple	Self-seeds into natural areas, over-represented in Bellevue's urban forest inventory
Ailanthus altissima	Tree of Heaven	Class C Noxious weed
Crataegus monogyna	English hawthorn	Class C Noxious weed
Ilex aquifolium	English holly	King County weed of concern
Prunus laurocerasus	English/Cherry laurel	King County weed of concern
Robinia pseudoacacia	Black locust	King County weed of concern
Sorbus aucuparia	European mtn. ash	King County weed of concern

Trees Not Recommended for Streetscapes

Sites adjacent to the roadway have constraints that should be considered in the selection process. The following trees are not recommended for streetscapes or sites adjacent to homes or infrastructure.

Botanical Name	Common Name	Issue
Acer macrophyllum	Bigleaf maple	Decay/other issues increase hazard potential
Acer saccharinum	Silver maple	Weak branches increase hazard potential
Alnus rubra	Red alder	Decay/other issues increase hazard potential
Amelanchier species	Serviceberry	Vulnerable to rust diseases
Cupressus leylandii	Leyland cypress	Canker diseases west of the Rockies; vigorous growth creates hazardous obstructions
Pinus nigra	Austrian pine	Vulnerable to Dothistroma needle blight
Pinus ponderosa	Ponderosa pine	Vulnerable to Dothistroma needle blight
Populus tremuloides	Quaking aspen	Decay/other issues increase hazard potential
Populus trichocarpa	Black cottonwood	Weak branches increase hazard potential; rapid trunk growth may damage infrastructure
Prunus laurocerasus	English/Cherry laurel	Vigorous growth creates hazardous obstructions
Prunus tree species	Flowering cherry	Susceptible to fungal diseases
Pyrus tree species	Flowering pear	Susceptible to fungal rust diseases
Salix species	Willow species	Decay/other issues increase hazard potential

Soil Volume Standards

Urban environments present unique conditions for tree planting. Structures, utilities and competing uses for right-of-way place constraints on the available volume of soil. However, providing ample volume supports the growth of large healthy shade trees that provide maximum environmental benefits without damaging adjacent hardscapes. Minimum soil volumes for street trees in the Downtown SubArea are specified in LU Code 20.25A.060, which requires that all new development shall provide a defined volume of soil growing medium where street trees are planted.

Soil Volume Standards

Soil volume standards are based on the mature size of the tree. Providing the following minimum soil volumes for all new trees is recommended:

- 500 ft^3 : Small trees (10-25ft crown spread, ~8" mature DBH)
- 1000 ft^3 : Medium trees (25-35ft crown spread, ~16" mature DBH)
- 1500 ft^3 : Large trees (35+ft crown spread, ~24" mature DBH)

The total soil volume requirement may be reduced by 30% for trees that share soil, such as with continuous planting beds.

Definitions & Rules for Calculating Soil Volume

The following definitions apply to soil media for trees in the City of Bellevue:

- Open soil exclusively refers to either uncompacted native soils (no greater than 80% Proctor) or amended soils meeting the standards for approved "Type A" topsoil.
- Available open soil is the length by width of a planting bed, multiplied by depth of preparation up to 36 inches deep. Most unprepared urban subgrade is highly compacted and does not qualify as available.
- Covered soil refers to soil volume provided below hardscape or paved surfaces in the form of soil cells or structural soil. Only 25% of the volume of structural soils may be counted.
- Shared soil refers to more than one tree in a planting bed sharing open soil, or an individual tree in a planting bed that is connected to other open soils via Soil Cells or Structural Soil. Areas of shared soil must have continuous root path that does not restrict to less than 4 feet wide or 2 feet deep.
- Isolated soil refers to a tree well or small enclosed planting bed that is not connected to other prepared soil volumes and is totally isolated by hardscape such as driveways, sidewalks or vaults.
- Connected soil refers to two areas of open soil that are connected below hardscape with either soil cells or structural soil. These connected beds can now qualify as shared soil.

The following standards and exceptions apply to calulating soil volumes:

- The total soil volume provided for a tree shall be calculated in cubic feet by adding the available open soil volume to the available covered soil volume within a 50-foot radius of the tree.
- When total soil volume consists of more than one planter bed or open soil area, those areas must be able to be connected by continuous root paths at least 4 feet wide and 2 feet deep.

- Soil volumes for covered soil shall be calculated by using only the space available to soil and may not include the components providing structure. For example, the space occupied by modular decking in a soil cell system and the large aggregate in structural soil are not accessible to tree roots. Only 25% of the total volume of structural soil may be used for covered soil volume calculations.
- Required soil volumes may be reduced up to 30% for trees sharing a continuous planter strip of at least 4 feet in width, or when soil cells form a direct path between planter pits. For example, the total required soil volume for large trees planted to this standard would be 1050 ft^3.

Irrigation Design Standards

Approximately 2,250 irrigation zones and 90,000 sprinkler heads deliver water to the streetscapes that Parks & Community Services manages. Regular maintenance of these systems is cost and resource efficient. Adjustments should be made to accommodate for species needs, seasonal weather and climatic variation. See Chapter 4 – Irrigation and Water Management for more information on equipment standards and BMPs.

Installation of irrigation may be required as a part of street frontage improvements (BCC 14.60.110B). Irrigation installations in the right-of-way shall meet all of the following requirements:

- Low volume efficient spray systems are required within the right-of-way. Use of drip irrigation should be limited to narrow beds under 3’ wide.
- Two tree root watering bubblers should be installed for each new tree. Trees shall be on a separate zone from turf or formal landscape beds.
- If trees are installed adjacent to soil cells, a drip watering system with accessible connections within planter shall be installed in the cell area. See drawing PK-IM-07H Drip Irrigation at Tree Soil Cells.
- A separate meter and controller dedicated to right-of-way irrigation shall be installed at a location determined in consultation with Parks staff.
- City staff must have 24-hour access to the meter and controller.
- Right-of-way irrigation shall use a smart controller that can incorporate evapotranspiration information or sensors to initiate, adjust or suspend irrigation to meet plant water needs and maximize efficiency.
- 6” diameter sleeves shall be installed under all sidewalks and driveways.
- Schedule 40 irrigation pipe is required. Use of class 100 and 200 irrigation pipe is prohibited in the right-of-way.
- Installation and repair shall be performed by experienced or certified irrigation professionals.

- All work on new or existing irrigation systems supplying water to landscaping in the right-of-way shall be inspected and tested by city staff before it is covered by soil.

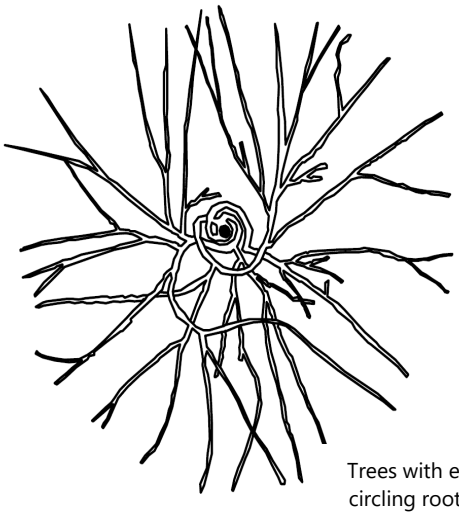
Materials Standards

Plant Quality, Approval and Care

Careful attention during plant installation can prevent common issues that lead to increased maintenance costs. The quality of each plant should be visually checked either at the nursery before shipping or at the time of delivery. Plants should exhibit good form, vigor and shape for their species and be free of major deformities. Roots, whether in balls, grow bags or containers, should be firm but not hard, healthy in appearance and evenly spaced around stems. Root balls should be free of girdling roots or an overabundance of root material for the size of the container. Branches should be evenly spaced throughout the plant and not clustered in one location. All plant materials must be grown in a nursery under climate conditions similar to or hardier than the project site.

All plant materials shall meet or exceed the American Standards for Nursery Stock (ANSI Z60.1) most current version. The following findings shall be considered reason for rejecting plant material upon delivery:

- Plants exhibiting crown form or unbalanced branch structure that cannot be corrected using standard practices will be rejected.
- Plants that arrive on-site with broken leaders will be rejected.
- Plants that have root defects that cannot be corrected using standard practices will be rejected.



Trees with excess circling roots will be rejected.

Soil Specifications

Not all soil is suitable for growing plants. Existing soils within the right-of-way that have been impacted by construction activity are very poor quality. As a result, soil must be installed or amended as part of most new landscape installations. In order to comply with Washington House Bill 2713, locally produced compost products should be considered for use wherever possible and priority is given to products derived from municipal solid waste compost programs meeting quality standards adopted by rule by the Washington State Department of Ecology. The soil

specifications in this section apply to all streetscapes in City of Bellevue right-of-way, including growing media used in soil cells.

The following products are pre-approved "Type A" for streetscape construction projects:

Soil Use	Approved Product (Provider)
Soil additions to established landscapes	Winter Mix (Cedar Grove)
New Construction	Winter Mix (Cedar Grove)

All other products must meet the following specification for "Type A" topsoil:[2]

Sand	Greater than 0.05mm to less than 2mm – 60-70% by volume
Compost	30-40% by volume STA certified compost
Silt	Greater than 0.002mm to less than 0.05mm – maximum of 35%*
Clay	Less than 0.002mm – maximum of 15%*
Organic Content	Percent of dry weight – 10% Minimum
Acidity (pH)	6.0 to 7.5
Physical contaminants (plastic, concrete, ceramics, metal, etc.) shall be less than 0.5 percent by weight. Plastic film shall be less than 0.1 percent by weight.	
Soil shall be free of phytotoxic materials, viable seeds, roots or rhizomes of state listed noxious weeds	
Soluble salt contents shall be less than 3.0 mmhos/cm	

*Clay and Silt combined – no greater than 40%

Specifications for Soil in Soil Cells

All products shall meet specifications of the soil cell product manufacturer and/or project engineer. "Type A" topsoil may be approved for use in non-bioretention soil cells at the discretion of the project engineer.

Compost Specifications

Compost amendment improves the structure and function of soils by adding organic carbon and stimulating microbial activity. Compost may be added directly to streetscape planting areas to improve soil quality. Compost is also indirectly incorporated as a component of topsoil and mulch products. Whether applied directly or indirectly, all compost shall meet the following criteria:

[2] Additional requirements may apply. Products that are not on the Approved Product Provider list must be approved by the city per the "Submittals" section in this document.

- Compost shall be certified in compliance with the U.S. Composting Council STA program.
- Compost shall be manufactured through the controlled aerobic, biological decomposition of biodegradable materials.
- Compost shall have undergone mesophilic and thermophilic temperatures, which significantly reduces the viability of pathogens and weed seeds, and stabilizes the carbon such that it is beneficial to plant growth.
- Compost sanitization through the generation of thermophilic heat shall meet the standards of the Processes to Further Reduce Pathogens (PFRP), as defined by the Code of Federal Regulations Title 40, Part 503, Appendix B, Section B.
- Compost physical contaminants such as plastic, concrete, ceramics or metal, shall be less than 0.5 percent by weight. Plastic film contamination shall be less than 0.1 percent by weight.
- Compost shall be free of phytotoxic materials, viable seeds, roots or rhizomes of state listed noxious weeds.

Mulch Specifications

Mulching serves to conserve moisture, prevent soil erosion, suppress weed growth, moderate soil temperature and reduce compaction. See standard details for information on mulch placement and depth. More information on mulching is also located in Ch. 6 – Planting Bed Management. For right-of-way landscape installations, the following products are pre-approved:

Mulch Use	Approved Product (Provider)
Newly constructed beds, new plantings, beds needing nutrients, and after transplanting into established beds	Landscape Mulch (Cedar Grove)
Formal established landscapes	Landscape Mulch (Cedar Grove)
Semi-formal and informal landscapes	Wood Chip Mulch

All products must meet the following specifications:[2]

- Mulch for newly constructed sites shall be STA certified compost-based and consist of 35%-50% bark and 50%-65% compost.
- Mulch and compost component of mulch shall be free of phytotoxic materials, viable seeds, roots or rhizomes of state listed noxious weeds.
- Compost component of mulch shall meet the standards of the Processes to Further Reduce Pathogens (PFRP), as defined by the Code of Federal Regulations Title 40, Part 503, Appendix B, Section B.

- The bark component shall be derived from Douglas fir, pine or hemlock species and not contain resin, tannin or other compounds in quantities that would be detrimental to plant life.
- Mulch pH shall be between 5.5 and 7.5
- Mulch physical contaminants such as plastic, concrete, ceramics or metal shall be less than 0.5 percent by weight. Plastic film contamination shall be less than 0.1 percent by weight.
- Mulch shall be free of phytotoxic materials, viable seeds, roots or rhizomes of state listed noxious weeds
- Carbon to nitrogen ratio shall be 25:1 to 35:1, as determined using TMECC 04.01 "Total Carbon" and TMECC 04.02D "Total Kjeldhal Nitrogen".

Structural Soil Specifications

When soil volume for trees is limited by urban conditions, structural soils may be used to increase the volume of soil available for tree growth under hardscape or to connect nearby soil volumes under hardscape. This section consists of providing the design, installation and quality assurance of a planting mixture that is capable of both supporting overlaying flatwork while providing voids for root propagation, proper nutrient levels and sufficient planting medium to promote vegetative growth. Structural soil shall be comprised of a uniformly blended mixture of aggregate, growing medium, soil stabilizer and water.

Recommended Ratio of Materials for "Structural Soil"	
4 cy	Aggregate stone
1 cy	Growing medium
4 lbs., or as directed by manufacturer	Stabilizer
46 gal or to 20% by weight of growing medium	Water

Properties of Growing Medium for "Structural Soil"	
Gravel	Greater than 2mm to less than 75mm – 0% by volume
Sand	Greater than 0.05mm to less than 2mm – maximum of 60% by volume
Silt	Greater than 0.002mm to less than 0.05mm – maximum of 35%
Clay	Less than 0.002mm – maximum of 15%
Clay and Silt Combined	Maximum of 40%
Acidity (pH)	6.0 to 7.0

Salinity	Saturated extract conductivity shall not exceed 3.0 mmhos/cm at 25deg C
Organic Content	8-12% dry weight

Aggregate stone shall meet the following criteria:

- Stone shall be clean and of high angularity.
- Stone dimension aspect ratio should approach 1:1:1 with a maximum of 2:1:1.
- Single size stone shall be 60 to 75mm with clear sieve designation "Blasted Quarry Rock" or shall conform to 2" clear crushed aggregate. Cadman 2" clear crushed is pre-approved for use.
- Aggregate material shall be sound, hard, durable, free from salt, thin, elongated or laminated particles, organic material, clay lumps, foreign objects or other substances that would act in a deleterious manner for the intended use.

Soil stabilizer shall be a non-toxic anionic linear polymer per section 9-14.5(1) capable of binding the soil particles to the aggregate during mixing and placement of the structural soil mixture. Cross-linked polymers shall not be permitted. Application shall be per the manufacturer's written instructions. "Stabilizer" from Stabilizer Solutions is pre-approved for use.

Installation Standards

Soil Preparation Procedure

Soil is to be installed per the specifications of the City of Bellevue Transportation Standard Detail SW-130-1.

- Soil shall be installed in lifts and compacted to 85% proctor. "Foot compaction" is often sufficient to meet this standard.
- Finished grade of soil at edges shall be flush with the top of curb and sidewalk.
- Soil shall be crowned at 1 inch per foot of bed width, to a maximum of 10 inches.

Structural Soil Preparation Procedure

Structural soil shall be mixed and installed in the following manner:

- Mixing of aggregate, growing medium, binder and water is to be performed on a clean, flat, hard and level surface using appropriate soil mixing equipment.
- Mix shall not be over-handled, as this can result in separation of the growing medium from the aggregate.

- Mixed structural soil shall be moist but not saturated with water when placed. The target moisture content is 20% by weight of the growing medium component and water in mix shall be adjusted as needed to meet this.
- Mixed structural soil shall be protected from absorbing excess water and from erosion at all times. Mixed structural soil shall not be stored or transported unprotected during rainfall events.
- Delivery to the job site shall occur immediately after mixing. Extended storage or stockpiling of structural soil is not permitted.
- Handling of structural soil should be kept to a minimum to reduce separation of components and variation in moisture content.
- Subgrade of areas designated as 'Structural Soil' are to be prepared to 95% Modified Proctor Density and shall be free of stones, debris, root branches, toxic materials, building materials and other deleterious materials.
- Structural soil shall be installed in lifts not to exceed 6 inches.
- Structural soil shall be compacted with static drum compactor equipment until appropriate compaction is achieved as evidenced by an unyielding subbase. Structural soil shall be protected from vibratory sources until final structure or pavement is in place.
- Structural soil shall be compacted to achieve 95% proctor.

After adequate compaction of the structural soil is confirmed, nonwoven geotextile shall be installed as a separation layer directly above the compacted structural mixture. All fabric seams should overlap and geotextile should wrap beyond edge of structural soil as shown in exhibit PK-IM-07E Planting - R.O.W. Tree with Structural Soil Section.

ASTM Designations for Geotextile	
Grab Tensile Strength ASTM-D-4632	0.400 kN
Tensile Elongation ASTM-D-4632	50%
Mullen Burst ASTM-D-3786	1270 kPa
Flow Rate ASTM-D-4491	6300L/min/m^2

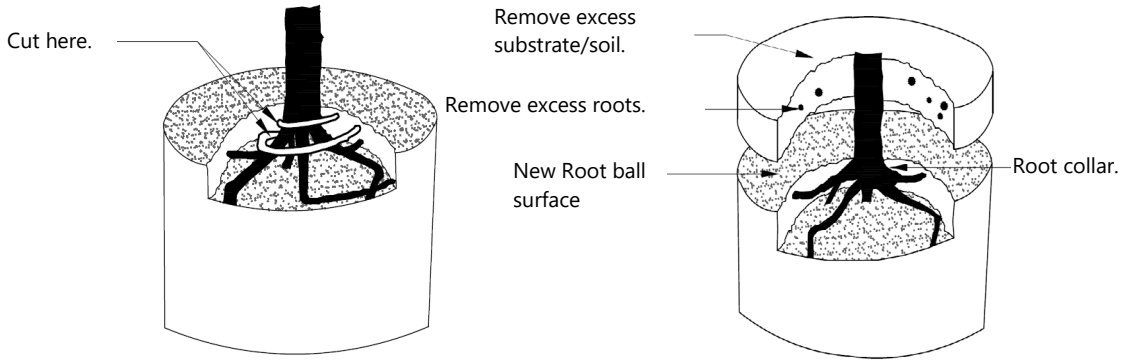
Tree Planting Standard

A tree is a long-term asset. Care should be taken during planting to ensure success. Improperly planted trees may develop root issues that lead to poor stature or appearance, premature decline and death. Tree shall be planted as shown in appendix drawing PK-IM-07B "Planting – R.O.W. Tree".

- The diameter of the planting hole shall be 3X the width of the root ball with sloped sides and rough edges unless otherwise specified in the

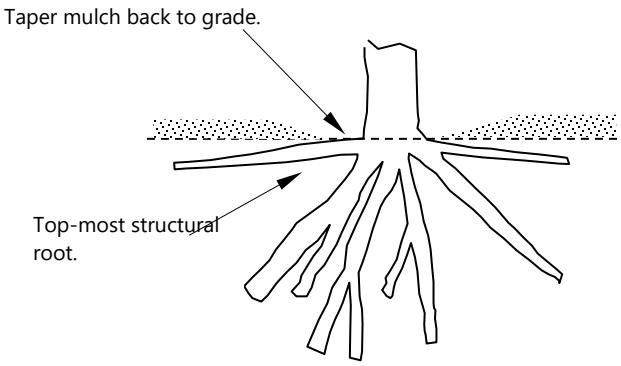
contract drawings. Depth shall be the depth of the root ball. The center of the hole shall be firmly tamped to prevent settling.

- Root ball shall be placed in the planting hole and positioned so that the strongest secondary branches point away from vehicle or pedestrian traffic. Root collar shall be located just above final grade, allowing for minimal settling. Depth of hole may be adjusted as necessary by removing or adding soil.
- Containers and twine shall be removed. If a wire basket or burlap is present, only the top half shall be removed. Leave the remaining wire and burlap in place.
- Project arborist shall locate root collar and confirm that roots do not circle the trunk, make contact with bark or make abrupt turns toward center of root ball. Some root problems may be corrected on-site under the supervision of an arborist. Per WSDOT Standard specifications 9-14.6(2), all plant material must meet the latest edition of the American National Standard for Nursery Stock (ASNS), ANSI Z60.1.



- Planting hole shall be backfilled in 6" lifts and gently tamped after each lift to eliminate voids.
- Planting pit shall be watered thoroughly after backfilling to settle the soil, eliminate air pockets and re-wet the root system.
- Mulch shall be applied over planting area to a depth of 2". Mulch shall taper back to grade at trunk to avoid contact with bark tissue.

- Wrapping materials, ribbons, twine and tag shall all be removed.
- Stakes shall be located outside of planting hole. Stakes and ties shall be removed at the end of the first year after planting.
- Installation of watering bags to water trees through the growing season until establishment is strongly encouraged.



Shrub Planting Standard

Like trees, care should be taken when planting shrubs, grasses and perennials to ensure that the city's investment will return value to the community. Installation shall not be conducted under adverse weather conditions, as decided by city staff. The following conditions shall be met:

- Planting pit shall not be less than two times the width of the root ball diameter. Pits will be inspected by city staff at time of planting.
- Circling roots shall be untangled or pruned as needed.
- Planting pit shall be backfilled with native soil. Root crown shall be level with grade.
- All plants shall be watered in with hose or tank to ensure soil to root contact and to eliminate any voids created during planting.

Mulching Standard

Mulch shall be applied to a depth of 2". Mulch shall not contact tree trunks, nor cover root crowns of shrubs, grasses and perennials. Mulch shall be feathered so that finished grade of the bed is flush with top of curb or sidewalk at edges of planting area. See PK-IM-07B "Planting – R.O.W. Tree" for illustration.

8.3 Best Management Practices

The City of Bellevue maintains over 160 formal landscape sites within the right-of-way or easements, covering 201 acres city-wide. This land includes a wide variety of cover types and landscape features, including concrete walkways, gravel paths, rockeries, landscaped medians, sidewalk planters, turf, groundcover, shrubs and trees. Where the City of Bellevue is responsible for maintenance, that maintenance may be performed by in-house staff or by landscape contractors.

Maintenance Standards

Landscape maintenance in the right-of-way shall generally follow the Best Management Practices described in Section 6.3, with supplemental instruction tailored to specific conditions encountered in the right-of-way. Landscape plants are pruned in order to meet the following:

- Pedestrian or bicycle travel is not impeded.
- Sight distance triangles are maintained to Transportation Design Manual Drawings RL-100-1, RL-110-1 and RL-120-1. Landscape plantings shall have a maximum height of 24" within the setbacks.
- Appropriate timing to encourage flowering or other aesthetic features.
- Appropriate timing to optimize effect and minimize future pruning needs.

All pruning is conducted according to current ANSI Z133 standards.

Ornamental Shrub Pruning

Pruning shrubs supports their growth, while mitigating hazards and infrastructure conflicts. Proper selection and spacing minimize the need of pruning to control size. Shrubs in the right-of-way are typically not maintained in a hedge and natural form should be preserved as much as possible.

Ornamental Grass Pruning

Much like ornamental shrubs, care of ornamental grasses varies between species and cultivars. Pruning shall be appropriate to encourage growth in the warm or cool season.

Perennial Maintenance

Perennial species shall be appropriately winterized and prepared for spring growth.

Watering

Ongoing application of supplemental water is crucial to maintain the city's investment in right-of-way landscaping, even with drought tolerant species. Arterial landscape spaces may experience harsh conditions such as poor soil, limited root space, reflected head, increased wind speed and air pollution. Efficient irrigation systems are installed in many landscapes to meet this need. At a minimum, right-of-way landscapes should be watered weekly through the first three years after installation. Where automatic irrigation is unavailable or insufficient for keeping plantings healthy, water is applied by hand using a tank, hose or other source. Watering bags should be installed on young trees shortly after planting and refilled a minimum of one time per week.

LID Facility Maintenance

Natural Drainage Practices (NDPs) are Low Impact Development (LID) best management practices that are often used to manage stormwater in the right-of-

way. NDPs can improve water quality in lakes, rivers and streams by slowing or infiltrating runoff from streets and sidewalks. LID facilities such as bioswales or rain gardens may trap sediment, nutrients and other pollutants that are detrimental to aquatic life. Maintenance should be performed on these facilities in the streetscapes on a regular basis to ensure high performance. Maintenance plans shall follow standards for LID facilities as described in the City of Bellevue Utilities Department Surface Water Engineering Standards and the Storm and Surface Water Maintenance Standards.

The following items should be checked at each regular landscape maintenance frequency for streetscapes sites:

- Curb cuts and inlets are clear and water can flow in without obstruction
- Facility is free of noxious and invasive weeds
- Litter and debris is removed
- Pet waste is removed
- Outlets are clear and water can flow out without obstruction

Traffic Control

Streetscape maintenance tasks that impact vehicle, bicycle or pedestrian traffic require specialized supervision and permitting. Traffic control plans are developed for this purpose and provided by the city where needed. A certified Traffic Control Supervisor may be required to supervise work on site according to the terms of the permit.

Holiday Lighting

A Right-of-Way Use Permit is required to install holiday lighting on trees or other structures in the right-of-way. Applications can be submitted at www.mybuildingpermit.com. Additional information is available by emailing RightOfWayUse@bellevuewa.gov or calling (425) 452-4189.

- Unless otherwise stated in the Right-of-Way Use Permit, lights must be removed from all trees between February 1st and October 31st.
- Lighting shall not be installed on any branch less than 1" diameter.
- Trees shall not be pruned or altered to attach lighting or decorations.
- Stapling, nailing or other bark puncturing means of attachment are prohibited.
- It is the responsibility of the adjacent property owner to maintain any electrical equipment within the right-of-way and ensure compliance with National Electric Code (NEC) and Bellevue City Code.

Landscape and Maintenance Planning

In order to appropriately provision the maintenance of Bellevue's right-of-way landscapes, the Parks & Community Services Department creates a budget based on a systematic determination of cost.

Workload Plans

Workload plans specify tasks to be performed, frequency of performance, and time standard to complete each task. Task frequency takes into account seasonal changes to maintenance needs. Workload plans reflect the most efficient standards to provide service and maintain the value of landscape assets. Reductions to frequencies or time standards may lead to degradation of the site, and the capital costs of repair are typically greater than the short-term savings in maintenance.

Tasks in the workload plan typically include:

- Turf mowing and edging
- Ornamental shrub and grass pruning
- Weeding
- Removing leaves and other debris from hard surfaces and landscape beds
- Operation and maintenance of above and below ground irrigation systems
- Litter pickup and garbage removal
- Cleaning garbage containers and replacing liners

Activity	Unit of	Inventory	Time		Time Std	Frequency Per Month												Annual	Annual
	Measure	Quantity	Standard		Per Visit	J	F	M	A	M	J	J	A	S	O	N	D	Freq	Hours
Turf																			
Mowing	SQ FT	10000	200	Min	50.0			4	5	4	4	5	4	5	4	1		36	30.00
Trimming	LIN. FT	2500	20	Min	125.0			4	5	4	4	5	4	5	4	1		36	75.00
Edging	LIN. FT	160	85	Min	1.9			2	3	2	2	3	2	2	2			18	0.56
Fertilize Fine Mow	SQ FT	10000	190	Min	52.6			1				1				1		3	2.63
Herbicide (Turf)	SQ FT	10000	160	Min	62.5					1								1	1.04
Rough Mow	SQ FT	5000	300	Min	16.7			2	2	2	2	2	2	2	2			16	4.44
Fertilize Rough Mow	SQ FT	5000	190	Min	26.3			1								1		2	0.88
Shrub Beds																			
Bed Weeding & Hoeing	SQ FT	10000	175	Min	57.1	1	1	3	5	4	4	5	4	5	2	1	1	36	34.3
Bio Filter/Filterra beds	SQ FT	0	25	Min	0.0	1	1	3	5	4	4	5	4	5	2	1	1	36	0.0
Trim G. C.	LIN. FT	2500	50	Min	50.0				1		1		1		1			4	3.3
Prune Shrubs	SQ FT	10000	100	Min	100.0			1		1			1			1		4	6.7
Herbicide (Shrub Beds)	SQ FT	10000	160	Min	62.5					1								1	1.0
Street Trees																			
Tree Grates	Each	0	10	Min	0				1									1	0.0
Tree Pruning	Each	10	30	Min	300.0											1		1	5.0
Tree Fert/Mulching	Each	10	5	Min	50.0			1							1			2	1.7
Hard Surface																			
H. S. Sweep	SQ FT	5480	800	Min	6.9	2	2	4	5	4	4	5	4	5	4			39	4.5
H. S. Weeds	SQ FT	5480	800	Min	6.9			1						1				2	0.23
Leaf/Litter/Debris																			
Leaf Removal (Total Site Ft²)	SQ FT	30480	400	Min	76.2										1	4	4	9	11.4
Litter (Total Site Ft²)	SQ FT	30480	1200	Min	25.4	5	4	4	5	4	4	5	4	5	4			44	18.6
Garbage Collection	Each	0	3	Min	0.0	5	4	4	5	4	4	5	4	5	4	4	4	52	0.0
Encroachment	LIN. FT	160	100	Min	1.6			1		1		1			1			4	0.1
Windfall Debris	Included																		
Lane Closure/TCS services	Each	0	480	Min	0.0			1		1			1			1		4	0.0
Green Machine	SQ FT	5480	100	Min	54.8		1		1		1		1		1		1	6	5.5
Pervious Surface Moss Control	SQ FT	5480	50	Min	109.6										1			1	1.8
Irrigation Labor																			
Start-up/Winterize	Per Zone	4	20	Min	80.0				1						1			2	2.7
Irrigation Repair	Per Zone	4	30	Min	120.0			1	1	1	1	1	1	1				7	14.0
Irrigation Fees																			
Water Billngs (Conventional Zones	Per Zone	3	40	GPM	120.0				100	140	180	200	170	140	100			1030	$ 1,316.97
Water Billngs (Drip Zones)	Per Zone	1	10	GPM	10.0				300	420	540	600	510	420	300			3090	$ 329.24
Irrigation Meter Fees	Each	1.00	74.8	$	$ 74.83		1		1		1		1		1		1	6	$ 448.98
Controller Power Meter Base Rate	Each	1.00	10.7	$	$ 10.72		1		1		1		1		1		1	6	$ 64.32
Drainage Fees	Acre	0.00		$	$ -		1		1		1		1		1		1	6	$ -
Hand Watering (non irrigated areas	SQ FT	0	0.05	$	0.0					2	4	4	4	2				16	$ -
Hand Watering (Gator Bags)	Each	0	20	$	0.0					2	4	4	4	2				16	$ -

Figure 1. ***Example Workload Plan***

Bid and Award Process

When right-of-way landscapes managed by the Parks & Community Services are maintained by private contractors, they are under the direction of a Contract Administrator. Contracts are awarded through a competitive process that takes into account a bidder's ability to successfully complete required tasks, protect the safety of pedestrians and motorists, and the provide cost-effective service.

Inspections

The work of contracted landscape maintenance providers is regularly inspected by city staff to ensure satisfactory performance. Inspections are also used to identify safety hazards, graffiti or other vandalism, and damage to plants, trees, or irrigation systems.

Young Tree Pruning

Training young trees in the years after planting is essential to encourage good form and correct structural flaws that can lead to serious and costly problems later on.

Pruning young trees requires a high level of skill and is performed by trained staff. All new trees planted in Bellevue's managed streetscapes are proactively pruned during the first 5 years after planting.

Standards of Pruning

All trees are to be pruned to ANSI A300 standards.

- During the first two years, prune with clean cuts to remove damaged or crossing branches and train to a single leader.
- Structural branches should be selected to maintain a balanced radial distribution of weight on the stem. Closely spaced branches should be thinned out.
- Gradually remove lower limbs annually to provide clearance to roads and sidewalks, and train branches away from signals, signs and buildings.

Tracking and Assignments

Parks maintains a database of tree location and attributes. Shortly after planting, data is collected and the tree is added to the database and assigned to the young tree program. Trees are assessed and pruned annually while assigned to the young tree program.

Threshold to Mature Tree Pruning

Once appropriate clearance above streets and sidewalks is established, large-statured trees are assigned to a long-term pruning schedule. Small-statured trees may continue to be pruned by in-house city staff.

Mature Tree Pruning

Street Tree Cycle Pruning Program

The purpose of the Street Tree Cycle Pruning Program is to support the health of mature trees, encourage appropriate form and structure, minimize potential safety hazards and to maintain pedestrian and vehicle clearance on adjacent streets and right-of-ways.

Standards of Pruning

All trees are to be pruned to ANSI A300 standards. Cycle pruning addresses the following issues:

- Improvements to health, structure and form of trees
  - Remove multiple leaders, crossing branches and suckers
  - Remove dead or broken branches and diseased tissue
  - Shorten limbs that are imbalanced or have bark inclusions.
- Appropriate clearances over sidewalks and roadways
  - Provide 7' minimum clearance over sidewalks at maturity
  - Provide 14' minimum clearance over streets at maturity

    - Remove branches obstructing pedestrian or bicycle travel
    - Remove obstructions to sight distance triangles
- Mitigation of conflicts with objects in the right-of-way
    - Branches and foliage shall not obstruct traffic signs
    - Branches and foliage should not obstruct street lights
    - Branches should be clear of power lines
    - Branches should be clear of buildings and awnings

Bid and Award Process

Established street trees are pruned on a regular cycle by qualified contractors under the direct supervision of an International Society of Arboriculture (ISA) Certified Arborist, Certified Forester or licensed Landscape Architect. The actual cycle varies depending on funding - typically every 6 to 10 years as needed.

Tracking and Assignments

The Parks Department maintains a database of tree location and attributes. Pruning needs are assessed annually and maintenance activity is tracked. Trees are assigned an attribute for health and trees that are found to be in need of monitoring for health or structural deficiency are inspected annually.

Tree Grate Program

Many street trees are sited in tree wells that have decorative grates installed over the top to increase the walkable surface of a sidewalk. As the trees grow, these grates may shift and cause harm to the tree trunk or create potential tripping hazards for pedestrians. Tree wells must be regularly inspected and maintained.

Standards of Tree Well Maintenance

The following maintenance actions are undertaken to maintain pedestrian safety and tree health:

- Grate aperture is increased to accommodate tree growth.
- Unstable grates are adjusted or removed.
- Weeds and debris are removed from tree wells.
- Suckers, girdling and adventitious roots are removed from trees.

Inspections, Tracking and Assignments

- Respond to reports and complaints of broken or unstable grates.
- Conduct annual inspections and maintenance.
- Root strapping, girdling roots, adventitious roots, suckers and irrigation damage are identified and addressed.
- Evaluate trees for additional needs, such as pruning for pedestrian clearance, vehicle clearance, sight distance or road signage.

Streetscape Renovation Program

Planting Bed Renovation

Even with regular maintenance, streetscape planting beds have a life cycle of 15-25 years. Bed renovation is prioritized based on age, condition, visibility, available funding and the opportunity to pursue revitalization projects in partnership with other departments. Renovation may include amending and improving the soil, revitalizing broken irrigation systems and installing new plant material.

Tree Removal and Replacement

The Street Tree Replacement Program contributes to the maintenance of healthy tree canopy throughout the city. The Street Trees and Arterial Landscapes group identifies and removes hazards from dead, damaged and dying trees in order to support safe and inviting pedestrian environments. Staff or contracted tree service providers perform the following tasks for right-of-way trees that Parks & Community Services manages:

- Maintain an inventory of right-of-way trees managed by the Parks & Community Services, including dead, dying and missing trees.
- Inspect all trees in the streetscapes inventory at least once per year either during site inspections or during tree status updates.
- Remove and replace dead or hazardous trees as needed.
- Replace trees in vacant planting locations.
- Collect compensation for trees killed or damaged by vandalism or vehicle impacts per BCC 1.18.045.

Thresholds for Tree Removal

Like any living plant, trees have a life cycle and inevitably decline as they age. All trees are susceptible to disease, physical damage, insect infestation and drought. Targeted tree removal restricts the spread of disease and reduces the possibility of injury or property damage. When a tree that the Parks & Community Services Department manages is damaged or visibly declining, city staff or a professional arborist will evaluate the tree to determine if removal is warranted or necessary.

Occasionally, healthy trees may be considered for removal. A healthy tree may be removed for the following reasons:

- Approved construction will compromise the health of the tree.
- Tree is creating an unsafe obstruction within sight distance triangles.
- Tree cannot be kept clear of overhead utilities without excessive topping.
- Tree presents a risk to safety or to public or private property.

The City of Bellevue has been losing tree canopy for the last few decades. In the 2015 Comprehensive Plan, the City of Bellevue adopted a goal to achieve 40% tree

canopy coverage city-wide. One part of the toolkit for reversing the downward trend and reaching the goal is a tree replacement fund, provisioned through BCC 1.18.045 and BCC 14.60.120. The city shall be reimbursed for the value of illegally damaged or removed trees, and may be reimbursed for the value of trees or landscaping removed in development that cannot otherwise be replaced or restored. The penalty or reimbursement is typically put into a fund dedicated to planting trees in appropriate locations. Tree value is determined using the industry standard Guide for Establishing Value of Trees and Other Plants, published by the International Society of Arboriculture, which takes into account species, size, health, site conditions, existing conflicts and replacement cost.

8.4 Training

- All staff involved in construction activities should be trained on best management practices for construction sites.
- Site managers and inspectors shall receive education and training pertinent to the maintenance of formal landscapes and working safely in the right-of-way.
- Parks staff that prune trees will have ISA Arborist or Forester certification. Contracted workers shall have ISA Arborist certification or be supervised by an ISA Arborist or Forester.
- Contracted workers or volunteers will be instructed in proper shrub pruning and planting techniques by parks staff.
- Contract Administrators and Lead Workers will receive ATSSA traffic control training. All contracted work crews shall have at least one ATSSA Certified Flagger.
- Parks staff or contracted workers on sites where a permitted alteration of traffic flow such as a lane closure or shift is required must be supervised at all times by an ATSSA Certified Traffic Control Supervisor for setup, management and removal of traffic control devices.

CHAPTER 9 –
Trees and Natural Areas

9.1 Purpose

Trees and natural areas provide a multitude of benefits that enhance the quality of our lives. The maintenance and management of these valuable resources is essential for the long-term health and welfare of Bellevue and its residents. The health of the urban forest is a major indicator of the health of our ecosystem. This chapter identifies and defines the best management practices required to ensure a healthy urban forest.

9.2 Background

The Bellevue Parks Department manages approximately 2,000 acres of undeveloped natural areas consisting of forests, steep slopes, wetlands, riparian corridors, shorelines and meadows. The management and preservation of the city's natural areas is a long-term investment into the urban environment that must be managed with the same skill and diligence as any other city asset.

Public trees and forests in Bellevue can be classified into three categories:

1. Street Trees: Are part of improvements made within the City of Bellevue right-of-way through either capital improvement program projects or private

development. A detailed treatment of the BMPs and City Codes associated with this resource is provided in Chapter 8 of this manual.

2. Formal Park Areas: These trees require frequent maintenance and have a high likelihood of tree/people interaction. These trees also have a potential for mechanical injury and demand a high level of care and consideration during design and construction activities.

3. Natural Areas and Peripheries of Formal Park Areas: These trees require the least amount of maintenance because of their often remote and sheltered locations. The trees in these areas are managed not as individual trees, but rather as stands of trees linked to the associated plants and sites on which they reside. These trees can come into conflict with people when they occur along property lines, adjacent to man-made structures or near gathering places.

Design

Selection

Selecting trees that adapt well to their site and fulfill their landscape function is extremely important to the success and maintenance of a planting. The quality of young plants is also crucial. A plant species should be selected based on its functional uses, its adaptation to the site and the amount of care it will require.

Landscape Functions

There are four main functions to consider when selecting trees to include in the landscape design:

1. Architectural Features: Privacy, view enhancement and space articulation.
2. Engineering: Reduce glare, direct traffic, filter air, reduce soil erosion and attenuate noise.
3. Climatic Influences: Transpirational cooling; interception of solar radiation, reflection and re-radiation; and modification of rain, fog and snow deposition.
4. Aesthetic Uses: Form, color and texture.

Site Adaptation

It is important to plant the right tree in the right place. The intended landscape use and nature of a site should be considered when selecting for growth habit and ultimate size. Mature size is an important consideration. The tree should not outgrow its allotted space given such constraints as vistas and powerlines. Table 9.1 may be used as a guide in selecting the right tree.

Table 9.1 Tree Selection Factors

Feature	Benefit
Rate of Growth	Fast-growing trees tolerate difficult sites, are usually weak-wooded and subject to limb breakage, and are generally shorter lived. The opposite is generally true for slow-growing trees.
Wood Strength	When a tree decays or weakens, it can become a hazard to the surrounding area. Strength is based on the trees' ability to withstand wind loads, snow bearing loads, water saturation or drought, ability to compartmentalize decay and its adaptability to its surroundings.
Rooting	Roots keep the tree anchored in the ground. Through them pass nutrients and water that nourish and support the tree. Stressors such as: drought, flooding, disturbance, disease or damage can greatly affect tree roots and the health of the tree.
Plant Features	• Leaves: Color, size, persistence • Thorns and prickly foliage: Enhanced security vs. maintenance problems • Flowers and fruit: Aesthetic consideration, fragrance and wildlife habitat. Potentially increased maintenance.
Climate Adaptation	• Plant hardiness and local minimum temperatures • Moisture – natural or irrigated • Light – reflect or allow for winter heating • Wind – deflect or channel wind patterns
Soils	Poor soils can cause tree failure. Amendment not desirable or feasible. Match tree to soil condition.
Air pollution	Choose trees with appropriate tolerance level.
Pest Resistance	Trees resistant to pests and disease will reduce maintenance.
Native Plants	Native or indigenous trees may not perform as well as exotic or non-native species. Most urban landscape sites are no longer "native." Soils, microclimates and water regimes have changed.
Selecting Quality Stock	Selection of quality planting stock is as important to success as selection of proper species, planting and maintenance. Root and shoot quality can determine not only performance but also survival.
Root Defects	Kinked and girdling (circling) roots can eventually "choke" a tree.
Top & Trunk Characteristics	• Height-to-Caliper ratio (see ANSI Z60.1 specs.) • Crown configuration • Branching pattern

9.3 Best Management Practices

The management and maintenance of trees by the City of Bellevue Parks & Community Services Department consists of a number of practices. The practices are covered in the following section and include: planting, pruning, removal, inventory and routine inspections, irrigation, fertilization and pest management. Activities associated with the protection and management of trees and vegetation before and during construction are covered in Chapter 1 of this manual.

Formal Park Tree Planting

- All plant material shall be nursery grown under climate conditions similar to or hardier than at the site and meet or exceed The American Standards for Nursery Stock (ANSI Z60.1).
- Ideal planting hole should be 2 to 5 times the diameter of the root spread or root ball.
- Minimum planting hole shall be 12 inches wider in diameter than root spread or root ball.
- The hole shall be no deeper than the ball and the ball shall sit firmly on undisturbed subsoil.
- Native soil shall be used to backfill the planting hole except in situations where the existing soil is contaminated or filled with rubble or pure clay.
- Balled-and-burlapped (B&B) trees shall be placed in the hole and plumbed vertically. All rope shall be removed from around the trunk of the tree and the top 1/2 of the burlap shall be folded back down into the hole. Whenever possible, remove the top 1/2 of burlap by cutting it away with a sharp knife. Trees in wire baskets shall have the wire completely removed, using bolt cutters, before backfilling.
- B&B packaging material shall not be removed until the tree is placed in the hole and securely plumbed into its final position.
- Soil should be backfilled in lifts of 4 to 6 inches at a time with compaction of each layer. Do not compact saturated soil. Water thoroughly after backfilling to settle the soil, eliminate air pockets and re-wet the root system.
- Trees planted in sandy or loamy soils should have a 3-inch-high berm erected just past the perimeter of the planting hole to funnel water to the root ball and wet the hole or sidewall interface. Berms should not be constructed in clay soils or on heavily compacted sites.
- All trees shall be mulched with 3 to 4 inches of organic mulch or arborist chips immediately after backfilling. Whenever possible, maintain 3 to 4 inches of mulch annually.

- Mulch shall extend past the diameter of the tree planting pit at least 6 inches.
- Mulch shall be kept away from the tree trunk. Mulch shall taper from the 3-4 inch depth back to grade right at the trunk to avoid decay of bark tissues.
- Newly planted trees shall be watered weekly through the first 3-5 growing seasons.
- Trees shall receive approximately 1 inch of water per week including rainfall.
- Weeds should be suppressed within the mulch ring to eliminate competition and for aesthetics in formal parks and along streets.
- Weeds and/or turf shall not be allowed to grow up to the tree trunk at any time. This increases the likelihood of mechanical trunk injury.
- Ideal months for planting are October through April, as long as the ground is unfrozen.
- Stake only in situations where normal planting procedures do not provide a stable plant. Otherwise, staking is generally not required.
- Stakes and ties shall be removed at the end of the first year.
- Root flare shall be at or slightly above grade to allow for slight settling.
- Tree trunks shall not be wrapped.
- Tree trunk wrapping materials, tags, and all ties shall be removed at time of planting.

Natural Area Planting

- All plant material shall be nursery grown under climate conditions similar to or hardier than at the site and meet or exceed The American Standards for Nursery Stock (ANSI Z60.1).
- A 5-by-5-foot area should be free of competing vegetation for 3-5 years.
- Staking of newly planted trees is generally not necessary. If staking is necessary because of size or conditions, stakes shall be removed at the end of the first year.
- New trees shall be watered bi-weekly, or as required, during summer drought stress periods for the first 3-5 establishment seasons.

Container/Bare Root Planting

- All plant material shall be nursery grown under climate conditions similar to or hardier than the planting site and meet or exceed The American Standards for Nursery Stock (ANSI Z60.1). Container plants shall have the container removed prior to placement in the planting pit.

- Loosen pot-bound roots with hands or tools prior to final placement in planting pit. Kinked and girdled roots shall be pruned.
- Bare root plants shall be protected from root drying prior to and immediately after planting.
- Cleanly prune exceptionally long roots to create a uniform root mass.
- Plant bare root stock at the same grade as grown in the nursery.

Tree Removal

Due to the economic, environmental and social benefits of trees, their removal must be well thought out and documented. At times, trees may be removed for new park construction, access or other issues not related to tree viability.

Like any living plant, trees have a life cycle and eventually decline as they age. All trees are subject to diseases, physical damage, insect infestation and drought conditions. Any one of these factors, alone or in combination, can contribute to the decline of a healthy tree. Quick removal restricts the spread of disease and reduces the possibility of human injury or property damage. When a tree is either dead or visibly declining, city staff or a professional arborist will evaluate the tree to determine if removal is warranted or necessary. Not all declining or dead trees will be removed, particularly if the tree doesn't present a danger to the public or to property. Where appropriate, trees will be left as wildlife snags in natural areas and new trees should be planted as a replacement.

Occasionally, healthy trees, without any known or apparent defects, will be removed from park property. If a tree is blocking roadway site lines, disrupting underground utilities, interfering with overhead utilities, damaging hard surfaces or presenting a risk to the public, it may be considered for removal. If tree pruning can address the site line issues, pruning will be considered as a first option before removal. Some urban trees are problematic based on species. Cottonwood (*Populus trichocarpa*), red alder (*Alnus rubra*) and big leaf maple (*Acer macrophyllum*) are all prone to limb failure, short life span and disease. These tree species may be removed based on consideration of future growth characteristics and issues associated with their location.

Hazard Trees

- Tree risk assessments shall be performed by qualified personnel to the standards established by the International Society of Arboriculture.
- High risk trees that cannot be made safe or functional by appropriate mitigation shall be candidates for removal.
- Tree risk ratings shall be the first determining factor in removal decisions.

Tree Removal Permitting

In general, tree removal in the City of Bellevue is regulated by BCC 23.76. A clearing and grading permit is required to remove one or more trees if the total canopy area covers 1,000 square feet or greater on the ground. A tree with a diameter of 24 inches or greater is considered a landmark tree and requires a permit for removal. In sensitive areas, such as steep slopes, riparian corridors or along shorelines, all tree removals must be permitted through the Developmental Services Department. In addition, all tree removals occurring in the public right-of-way must be accompanied by a right-of-way use permit, regardless of the amount of canopy area.

Thinning

As a normal practice, new trees are planted in forested areas relatively close to each other. In Western Washington, it is common for the forest in early successional stages to be overcrowded with dense stands of young trees competing for air, light and nutrients. As the surviving trees mature, selective thinning is required to improve air circulation, encourage understory light and to provide adequate space for the future growth of the remaining trees. An effort to diversify tree species is a priority and diversity is a consideration for selecting the trees that will be removed. Trees should be removed early enough to promote healthy conditions for the remaining trees.

Stump Removal

In developed park areas, stumps should be removed to make the area more aesthetically acceptable and to eliminate hazards. Stump removal involves the grinding out of all stumps to a depth of 12 to 24 inches below the surface, leveling the entire area and top dressing with soil. In natural areas, stumps are generally left in place to provide wildlife habitat except in situations where it is necessary to control the spread of disease, such as laminated root rot.

Adjacent Property Tree Issues

When city staff becomes aware of a dangerous tree on private property, which could impact park infrastructure or public safety, a letter will be sent to the property owner notifying them of the city's concern and putting them on notice for future liability. When a property owner contacts the city regarding a potentially dangerous park tree, staff will investigate the request and follow up with a written response or will coordinate a site meeting with the property owner to discuss their concerns. Requests for removal or pruning based on increasing light, safety and building preservation will be addressed with the property owner on site to develop an action plan. The city will try to accommodate the property owner's requests whenever it's practical or reasonable. The city will not prune or remove park trees due to: trees having pollen, cones, seedpods and needles; trees blocking views from adjacent property; or trees creating conditions that might be considered a nuisance. It has

been established in Washington State through case law that a landowner has the legal right and obligation to engage in self-help by pruning encroaching branches and/or roots of a neighbor's tree that encroaches onto his or her property back to the legal boundary line as long as such action does not cause irreparable harm resulting in a tree's death. As such, the city is not legally required or obligated to prune tree branches or roots that encroach onto adjacent properties from city managed park and open space sites. However, any such pruning request that is made by an adjacent property owner will be evaluated on a case-by-case basis, and in some instances, the city may elect to provide such pruning services if it is in the best interest of a tree's long-term health (e.g. pruning back to a branch collar).

There are many instances, especially within natural areas, where a tree may be growing directly on the legal property boundary between city property and an adjacent private property creating a situation where there is shared ownership of the tree. Under these circumstances, the city will generally take on the full maintenance responsibility of the tree since the city has more technical expertise and experience regarding tree care. If a conflict exists where such a tree is damaging infrastructure (e.g. fencing, building foundation) on the adjacent property, and the property owner submits a request to have the tree pruned or removed, the following actions shall be taken:

- The city will determine the location of the legal property boundary to verify tree ownership. This may require having a professional survey completed.
- Once it is verified that the tree is fully or partially located on city property, the city may initiate action to have the health of the tree assessed either by a city arborist or by a 3rd party consulting arborist.
- If the tree is determined to be in a state of decline and/or has a short life expectancy, the city may initiate action to have the tree removed, thus alleviating the conflict.
- If the tree is determined to be healthy, the city will meet with the adjacent property owner to discuss noninvasive options that would alleviate the conflict without harming the tree. An example would be relocating a section of private fence to allow more room for the tree to grow, just as long as the fence remains on private property.
- If the tree is healthy, and the infrastructure cannot be relocated, the city may consider initiating action to prune the tree if such action would alleviate the conflict.
- If the tree is healthy, and pruning initiated by the city would not alleviate the conflict, then the city may consider allowing the adjacent property owner to implement the necessary mitigation (e.g. root pruning) to

alleviate the conflict if the work can be done in such a manner as to cause no irreparable harm to the health of the tree. The city will require that any such work be performed by an ISA Certified Arborist. If such action did cause irreparable harm and loss of the tree, the city may seek compensation for the lost value.

- If the tree is healthy, and there are no options available to mitigate the conflict without removing the tree, and the adjacent property owner is insistent on having the tree removed, then the city may consider the following actions:
  - The city will determine the estimated cost of removing the tree.
  - The city will determine the appraised value of the tree using the latest edition of the *Guide for Plant Appraisal* (Council of Tree & Landscape Appraisers).
  - The city may consider removing the tree if the property owner agrees to pay for all removal expenses and compensate the city for the full appraised value of the tree.
  - It is advisable that parks staff consult with the City Attorney's Office to obtain legal advice under these circumstances.
- It should be emphasized that all the actions described above will only be considered in situations where trees conflict with infrastructure. In no way will these actions be considered for situations where an adjacent property owner submits a request to prune or remove a tree specifically for the purpose of creating, maintaining or enhancing private territorial views.

Tree Failure & Liability

If a tree located on private property falls onto park property, the city will clear debris and remove limbs up to the park property line. If a tree located on parks property falls onto private property, the city will only clear debris and remove limbs up to the park property line. Under no circumstances shall city staff enter privately owned property to remove, clear or prune trees, or parts of trees regardless of origin. Any adjacent property that is damaged during a weather-related event by trees that were originally located on parks property shall be referred to the city's Risk Management Office.

Transplanting

If trees are smaller than 10 to 12 inches in diameter, it is possible to transplant them with an appropriately sized tree spade. The cost of transplanting should be weighed against the cost of replacing the tree with a new smaller caliper tree. Establishment of large trees is often less successful than planting a new one of smaller size. The value of the tree to be transplanted should also be considered when deciding on

removal or replacement rather than transplanting. Different methods of appraising value are reviewed in the most recent edition of the *Guide for Plant Appraisal* produced by the Council of Tree and Landscape Appraisers.

Irrigation

In general, established trees do not require supplemental irrigation except during periods of extreme drought.

- Valuable specimen trees may be irrigated during periods of extreme drought.
- Turf irrigation around established trees shall be modified to accommodate the water requirements of the trees.
- Excessive water spray on tree trunks can lead to decay in some species. See Chapter 4, Irrigation and Water Management, for additional information on irrigation best management practices.

Pruning

Pruning is sometimes necessary for young trees. Branches that grow into a pedestrian pathway can be dangerous. Generally, branches that grow below 7 feet above a pathway or below 14 feet above a parking lot or driveway entrance shall be clearance pruned. Dead branches should be pruned to restore vigor to a tree. All pruning shall be performed to current ANSI A300 standards.

Learning the proper method is important as you can seriously wound or even kill a tree if pruning is not done correctly. The best time to prune live branches is late in the dormant season or very early in spring before leaves form. Dead and dying branches can be pruned anytime. Use clean sharp tools and make clean cuts. When pruning multiple trees, tools should be sanitized in between trees to prevent the spread of disease. Do not:

- Leave living or dead stubs
- Injure or remove the branch collar
- Paint cuts

Topping and/or heading cuts shall be prohibited.

Forest and Natural Area Management

Natural Resource Enhancement Plans

A Natural Resource Enhancement Plan is based on an analysis of the ecosystem and the interrelationships of the different components of natural systems, as well as the human impact on their functions. Natural Resource Enhancement Plans are created based on information gathered about the site both in the field and through available

background data. This information is then utilized to reflect the goals of the community and the City of Bellevue. Identified within an Enhancement Plan are the overall intentions for the property.

A Natural Resource Enhancement Plan for a specific site contains the following elements, with maps to illustrate where possible:

- Property description and site history
- Sensitive area classifications
- Soils and topography
- Existing vegetation
- Liability trees and situations
- Wildlife
- Recreation
- Management prescriptions

Boundary Surveys and Staking

- Upon purchase/transfer of a new property to the City of Bellevue or when a property has not previously been surveyed, a boundary line survey shall be conducted so both the city and the adjacent property owners are aware of the location of the property lines.
- Boundary surveys shall be conducted by a professional survey firm or City of Bellevue survey staff.
- Following a boundary survey, carsonite or pog posts with city information shall be installed at all surveyed property corners to aid in the future identification of shared property lines and management of city assets. When the stakes are installed, care should be taken to ensure that the stakes are placed accurately on legally surveyed monuments and aligned so that the decal, with city information, faces toward adjacent parcels. Ideally, it is best to have the professional survey company install the carsonite posts while they are actively performing the survey.

Site Inventory

The first task in managing our resources following acquisition and liability mitigation is a thorough inventory of the resource itself. The resources needed to accomplish the site inventory include:

- Deeds and purchase documents
- City and county plat maps
- Recorded surveys and easements
- Topographic maps
- Aerial photos

Start with an inventory of the ownership. Locate the original closing papers, recorded easements, deeds of trust or any conveyance documents that describe the property. The goal is to discover the boundaries, legal histories and easement restrictions on the land to be managed. If files on the site are incomplete, the County Property or Records Department may prove helpful. Be sure to provide any parcel numbers, legal descriptions, plat names and even street addresses to assist in the research.

The next step in a site inventory is to collect site-specific information. Site-specific inventory information will help direct the implementation of operational activities necessary in maximizing open space objectives. The site-specific inventory information shall include:

- Site history
- Boundary delineation
- Site liabilities and encroachments
- Vegetation habitat type and successional stage
- Soils, aspect and topography
- Fish and wildlife habitat
- Recreation opportunities
- Sensitive areas

All of the site inventory information should be documented and stored for future reference and the development of Natural Resource Enhancement plans.

Routine Site Inspections

All forest and natural areas shall be inspected on an annual basis. There are, however, two levels of inspection detail that the inspector may use, first and second-priority inspections.

The most detailed and comprehensive inspection is referred to as a first-priority inspection. First-priority inspections are conducted on sites scheduled to receive enhancements for the year or sites that are politically or environmentally sensitive.

As the names imply, first-priority inspections occur ahead of second-priority inspections. This is because first-priority inspections are meant to identify forest management areas of concerns and enhancement tasks, verify the existence of all boundary markers, discover any trespass issues (encroachments, dumping, or illegal tree cutting) and monitor the progress of past enhancement projects. A second-priority inspection, although not as time-consuming, is still comprehensive and well documented. Second-priority inspections cover the balance of open space properties and consist of a general site reconnaissance. Second-priority inspections are focused on the discovery of potential liability situations.

While conducting a site inspection, it is important to respect the adjacent property owners' rights and concerns. The inspector is a representative of the City of Bellevue and should be polite, courteous and professional at all times. Inspection staff shall wear high visibility vests and clothing with clear markings that identify them as City of Bellevue employees. If questioned by adjacent property owners, inspection staff shall present credentials (city ID badge) to verify identification as a city employee.

Inspection Procedure

Pre-inspection planning needs to be done to ensure a safe, productive and successful inspection. Spending a few minutes planning and discussing the inspection will help eliminate wasting time over something forgotten.

- Before leaving the office, get a picture of the site characteristics and location.
- Determine whether you need to be carrying out a first or second-priority inspection and get answers to any questions you might have.
- Let someone in the office know your work plans and location, preferably your supervisor.

Property inspections can be a slow and demanding process. Thick vegetation, steep slopes, unmarked property lines and bad weather all conspire to make the inspection process challenging.

- Use aerial photos to identify your location by looking for identifiable structures or rooflines.
- Inspect the property line and document all property markers and liability trees.
- Look for and document with pictures any encroachments, dumping, vegetation removal and unauthorized tree cutting. Identify the location on the map. The use of a GIS geodatabase through a mobile collection application will help streamline this process.
- If unlawful camps or other illegal activities are discovered, notify the proper authorities for removal.

If there are trails on the property, walk the trails and record their general level of upkeep. This brief walkthrough can help the trails crew address maintenance issues.

Clean and sanitize any tools that were used during the inspection process. Report any significant findings to your supervisor that require follow-up with an adjacent property owner.

Liability Tree Monitoring

Once a tree is designated as a liability tree it shall become the burden of the staff at hand. Although it may be easier and less complicated to simply remove all liabilities, the conservation of trees is something that must be considered until the tree can either be replaced or the tree becomes too great of a liability and must be removed.

Trespass Enforcement

Trespass enforcement consists of remedying any of the following actions on park property: clearing of vegetation, including the topping of trees; dumping of debris; and encroachment by construction or developed structures. In 1993, the Parks & Community Services Department developed a Parks Department Encroachment Policy in response to numerous encroachment issues. In the years that followed, the Parks Department clearly identified many of its property boundaries by installing boundary markers. Inasmuch as the installation of these markers greatly reduces the number of trespass situations that arise, they still occur on a regular basis.

The Parks Department Encroachment Policy, although developed specifically for encroachment issues, can be applied to all trespass situations. The three steps the policy outlines for the enforcement of encroachment issues are as follows:

1. Voluntary Removal of Encroachment. This would primarily be facilitated by Bellevue Parks staff working directly with the property owner to find a mutually agreeable restoration plan and the implementation of such a plan. The interaction with the property owner is usually a mixture of both on-site visits and formal letters.
2. Boundary Line Adjustment. This option will only be considered a possibility in a situation where the property owner is able to "exchange" land of equal size, value and condition for the land that is encroached. All costs associated with a Boundary Line Adjustment would be borne by the property owner. For clearing or dumping situations, this option would not be considered. Bellevue Council has final approval of all Boundary Line Adjustment decisions. In general, boundary line adjustments are only pursued if there is a clear public benefit to be gained.
3. Legal Action. This option is necessary in the rare case where the property owner refuses to accept the trespass as true or refuses to remedy the situation voluntarily. The city manager's approval is required for the use of legal action for enforcement of a trespass.

Natural Resource Enhancement Implementation

This task should be utilized for all activities related to the implementation of a Natural Resource Enhancement Plan. This includes but is not limited to the following:

- Debris removal & cleanup

- Liability tree removal
- Preparation and planting of enhancement sites with native plant species
- Silvicultural prescriptions
- Trail construction or upgrades

Silvicultural Prescriptions

Silvicultural prescriptions are also known as forest management practices. These shall be implemented in accordance with the City of Bellevue's land use policies for open space. Sound forest management practices support park functions by maintaining and enhancing a biologically diverse community consisting of a mixture of age classes and plant species, as well as wildlife habitat and recreational opportunities.

The management goals for most parks are as follows:

- Public safety
- Improve forest conditions
- Protect and enhance wildlife
- Provide recreation
- Buffer land uses
- Protect water quality

Sensitive/Critical Area Management

Sensitive or critical areas are defined as those areas that can be adversely affected by any non-natural process, causing degradation to that area, or its biological processes. The City of Bellevue Land Use Code and The Critical Areas Handbook define critical areas as:

- Areas of special flood hazard
- Riparian corridors, excluding Type C and D
- Wetlands, excluding Type C
- Areas of colluvial or landslide deposits on slopes of 15% or more
- Slopes of 40% or more
- Areas potentially affected by abandoned coal mines
- Shorelines and aquatic habitats

The Bellevue Parks & Community Services Department recognizes the special importance of these areas, as well as others not defined by the Land Use Code, that fall under its stewardship. These sensitive habitats, their plant and animal communities, have a direct link with other habitats and waterways, affecting entire ecosystems. The goal is to preserve these areas to the fullest possible extent, for the preservation of these species and for the good of the community.

There are many regulations regarding working in these areas, and therefore, multiple federal, state, and/or local permits may be required. For further information, contact

the Developmental Services Department or refer to the City or Bellevue Land Use Code.

Water Quality Monitoring

Water quality is another important aspect for maintaining a healthy park system and urban environment. In Bellevue, many departments and outside agencies work together and communicate with Bellevue Parks to ensure that monitoring and regulation of water quality and surrounding habitat persists. These include Bellevue's Developmental Services Department, Utilities Departments, the Washington State Department of Ecology, and the Washington State Department of Fish and Wildlife.

Riparian Corridors

Riparian corridors are sensitive areas that include an interactive vegetation community integrated with a water course ecosystem which provides food, shelter, breeding and rearing areas for aquatic and terrestrial animals and birds. They encompass the area that runs along both sides of the water body, ranging from 10 - 50 feet wide, depending on the sensitivity classification. Included are wetlands and meadows.

- Improper clearing can have serious effects on the ecosystem, allowing for increased runoff, toxin accumulation, oxygen reduction to surrounding plants and water systems, and overall habitat destruction.
- Native vegetation is usually preserved or planted to mitigate any negative effects.
- If the corridor is located within a Native Growth Protection Area (NGPA), it must be registered with the City of Bellevue.

Shoreline and Bank Stability

Reinforcing or protecting a shoreline should consider the least impact necessary to achieve reasonable stability. These practices include, but are not limited to:

- Traditional use of riprap should be used only as a last resort. Softer treatments, such as log placement and bioengineering plantings, are preferred where feasible and practical.
- Treatments should consider seasonal differences, such as the Chittendon Locks operations, and regular seasonal water level changes.

Steep Slopes

Steep slopes are defined as any slope over 40% and are considered sensitive or critical areas. An exception are areas of colluvial or landslide deposits, in which case the minimum slope is 15% or greater. The surface slope, soil layers and ground water layers all can impact how stable a slope is. To minimize impacts to a slope and the surrounding area:

- Removing vegetation from the ground layer should be minimized and plantings should be stabilized with appropriate bioengineering techniques (e.g. netting, wattling, hydro-mulching, etc.).
- Revegetation should be evaluated so as not to cause more damage or disturbance to soil layers.
- Slide areas, or areas suspected of being slide-prone, should be evaluated by a geotechnical expert before extensive restoration begins.
- Stormwater runoff must be prevented from saturating or loading steep slopes. The appropriate drainage system should be in place and adequately maintained to intercept runoff flows before reaching the slope.

Slide Areas

Slide areas, or those suspected of being slide-prone, shall be evaluated by a geotechnical expert before extensive restoration is initiated. Strategies can be developed to help maintain or even improve slope stability. The standard practice of hydroseeding repaired slide areas is prudent but does not restore stability. To restore stability and prevent further soil erosion, subsurface hydrology must be considered and woody vegetation re-established.

Wetlands

Wetlands are those sensitive areas that are a transition between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is covered by shallow water.

The plants that inhabit a wetland are hydrophytic, and adapted to living in hydric soils, sometimes underwater. Wetlands serve an important function in that they act as a natural reservoir for stormwater runoff, offer flood control, recharge ground waters and filter toxins that would otherwise find their way into the water table. They also provide necessary habitat for various wildlife species unique to any other habitat type.

Most wetlands found within the Bellevue Parks system are treated as sensitive areas and managed with the goal of maintaining the natural environment with the least amount of impact.

- Only invasive and noxious weeds are controlled through mechanical or cultural methods.
- Approved wetland herbicides are used only when necessary and never near standing water. Such applications are made under an approved Aquatic Noxious Weed Control NPDES General Permit.
- Only native species are planted within a wetland area, unless the wetland is part of one of the agricultural areas that are preserved within the parks system.

- Trails are kept to a minimum and specially designed to decrease habitat disturbance.

Meadows

Meadows serve an important role in natural and sensitive areas. They provide necessary wildlife habitat, reduce flooding potential downstream or in low lying areas, and act as a natural filter as water passes through supplying needed nutrients to the area. The Bellevue Parks & Community Services Department has adopted many restorative and maintenance practices regarding meadows and wetland areas. They include grassland vegetative cover, meadow preservation, meadow restoration, habitat preservation and fire prevention.

Grassland Vegetative Cover

Healthy vegetative cover is important for erosion control, habitat and noxious weed control.

Exotic Grasses

Most urban meadow sites are previously disturbed sites resulting in regrowth of primarily exotic grasses. Once established, these exotic species should be accepted as the primary component of the vegetative cover.

Native Meadow Plants

Preservation of native plants should be attempted whenever possible.

Wet Meadows

Many meadow areas in this region remain in a saturated condition for 6 months or more. Avoiding significant maintenance activities during this period is recommended. Preservation and introduction of appropriate native plants into these sites will help ensure a healthy vegetative cover.

To preserve a grassland, wet meadow or perennial meadow in the Pacific Northwest requires an ongoing maintenance program.

- Disturbance: Avoid creating holes in the vegetative cover because it will open opportunities for noxious weeds to invade.
- Meadow Succession: The natural evolutionary process of forest/meadow succession will eventually colonize meadow areas with shrubs and trees. The management of this process will have a major impact on the character and longevity of the meadow. The desired character of a meadow area should be defined. The meadow should be managed to prevent the establishment of exotic trees and shrubs.
- Exotic Weed and Brush Control: Scotch broom and other noxious weeds colonize many meadow areas, especially if the vegetative cover is weak or not intact. If invasive brush is a minor problem, hand grubbing, use of

weed wrenches or spot spraying with a broadleaf herbicide are options. When invasive brush is a major problem, it may be necessary to mow the meadow on an annual basis. Mowing should be timed to avoid disturbing wildlife. Spring should be avoided to allow protection for ground nesting birds. The site should be monitored for other wildlife activity before mowing occurs. Mowing should also be done before seed set of the targeted species. Mowing heights should be a minimum of 6 inches high to prevent excessive grass clippings and to minimize exposing bare ground.

Restoration and Construction of Meadows

The restoration or new construction of a meadow should consider the following:

- Hydrologic Study of the Site: Available moisture is the determining factor in appropriate plant selection.
- Soil Study: Many native plants require specific soil requirements to succeed.
- Existing Vegetation: The site should be assessed for desirable species as well as undesirable species. A small test plot can also help determine the potential weed seed bank in the soil profile. A thorough inventory of existing species can provide valuable information for selection of appropriate species.
- Natural Succession: Whenever possible, attempt to emulate the natural succession process by initially introducing primarily pioneering plant species and gradually expanding into later successional species as cultural conditions allow.
- Wildlife Habitat: The management practices of meadow areas should reflect the goal of preserving and enhancing desirable wildlife species.
- Maintenance Activities: Maintenance activities should be evaluated as to their impact on wildlife and appropriate decisions made.
- Enhancements: Many desirable species can be attracted by enhancements such as nesting boxes, brush piles, rock piles, stumps, snags and specific plants.
- Environmental Education/Interpretation: When resources are available, it is important to address environmental education. Educated park users are much more likely to preserve and protect a site.

Organic Debris

Organic debris from maintenance practices will remain on site, as long as it does not interfere with other landscape functions and/or create a fire hazard. Types of interference include blocking trails, forming unstable cornices, diverting drainages and smothering desirable vegetation. Wherever possible, use the following practices:

- Organic debris should be cut and dispersed to maximize ground contact which helps accelerate decomposition.
- Chipping woody debris is useful as long as debris is left in a depth of 3-inches or less.
- Leave uncut branches and logs in place to restrict traffic into natural areas.
- Stabilize logs to prevent sliding or rolling.
- Remove invasive species from the site.

Fire Prevention

A healthy, diverse plant community is fire resistant, but woody plant debris must be managed in any urban landscape. The following practices encourage fire prevention in natural and sensitive areas:

- Excessive accumulations of dead woody plant debris should be avoided. Thinly scatter this debris away from park use areas.
- If tree pruning or removal debris remains in a native woodland site, the material should be cut, slashed and scattered well enough to directly contact the ground. Ground contact helps expedite the decomposition process.
- Maintain transitions to developed landscapes to provide interruptions to the normal path that fire usually travels. This practice creates a more defensible landscape.
- Hydrants should be located along the edge of natural areas to provide immediate access for firefighting.
- Service roads into large woodland tracts should be maintained to allow access to Fire Department tanker trucks.
- Large woodland tracts with high fire potential should be studied for possible development of service roads.
- Areas of known homeless encampments should be frequently inspected and cleaned up to minimize the potential for wildfires.

9.4 Training

- Provide training to all construction personnel to make sure they understand all construction site BMPs, including streambed and bank protection, steep slopes and wetland protection.
- The site manager and other designated site managers shall receive the most recent training and education dealing with construction site

management. This training includes the most recent advances for protecting trees on construction sites.

- Urban forestry and site managers should receive training in appraising and evaluating tree and plant damage according to International Society for Arboriculture standards and natural area preservation techniques.
- Foresters and tree workers shall be ISA certified.
- All contracted or volunteer planting crews shall be trained in proper planting techniques by the site manager.

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CHAPTER 10 –
Trail System Management

10.1 Purpose

Trails play an integral role within the park and open space system. Trails are the most widely used recreational facility managed by the Parks & Community Services Department. They are used and supported by nearly 90% of Bellevue residents. Trails provide non-motorized and recreational opportunities for walkers, bicyclists, joggers, hikers and birdwatchers. They are the string that physically connects parklands, neighborhoods, schools and businesses. Trails also provide staff access for maintenance and management of the park and open space system. Bellevue's trails are designed and constructed in an environmentally sensitive manner to reduce soil compaction, erosion and runoff to protect sensitive areas from degradation.

10.2 Background

Bellevue's trail program oversees trail planning and development, project management, development mitigation, workload planning and maintenance of over 98 miles of pedestrian, equestrian and multi-purpose trails located on park property and public easements. Attention to trail planning and design has resulted in a system of pathways which provides a spectrum of opportunities for different users.

Bellevue's trail system provides a physical link for residents to value and appreciate the natural attributes of our open space and greenway system. Trails are constructed in a manner that minimizes the impact of human traffic in park natural areas and protects sensitive wildlife habitat while at the same time enhancing the visitor experience. Human contact with nature fosters community support for the overall goals and objectives of the city's park and open space system plan and the natural resource management program.

Trail Design and Construction

Trail construction is guided by park development standards that consider drainage, slope, width, clearing limits, surface material and habitat value. The use of geotextiles on trail surfaces and water diversion BMPs provides effective drainage, soil stabilization and weed control. Stair and boardwalk construction provides access through narrow corridors, over wet ground and on steep slopes with less impact than traditional trail structures. The following considerations are reviewed based on site conditions and contraints.

Design Elements in Wetlands

Design and implementation of trails in a wetland environment requires consideration of certain risks associated with this type of sensitive area, such as:

- Water quality impacts
- Sedimentation
- Introduction of toxins
- Increase in nutrient loading
- Changes in pH, salinity and oxygen balance
- Increases in suspended and dissolved solids and turbidity
- Impediment of movement of stormwaters (including soil compaction)
- Habitat impacts
- Fish and wildlife disturbances
- Aesthetic impacts
- Illicit access off developed trails (social trails)

To minimize impacts from trails in a wetland:

- When possible, higher ground shall be chosen for trail location.
- Stream crossings shall be at a minimum, but if necessary, shall be done at 90 degree angles.
- Culverts or bridges, if necessary, shall be used in such a way that the existing drainage will not be altered and passage for fish will not be affected.
- Culvert size is based upon maximum stream flow and site conditions.

- Streambanks and other sensitive areas will be minimally impacted, if at all.
- Geotextile fabric may be used in construction to increase the bearing strength of the trail and minimize fill requirements, disturbance and maintenance costs.
- Trail grades should range from 0 to 6% with a 3% or less side slope to ensure adequate drainage, minimize surface water velocities and discourage rutting and erosion. Based on site conditions and site constraints, trails may be constructed with grades ranging from 15% to 20%. Steeper grades may require stairs to avoid erosion and other site impacts.

Design Elements in Upland Park Sites

Consideration shall be given regarding impact on neighboring properties, drainage, slope, width, clearing limits and surface materials for each individual park.

- If narrow corridors are present, stairs shall be considered.
- Steep slopes and wet areas shall be avoided, if possible, for trail development. If necessary, stairs and/or cantilevered boardwalks shall be utilized to decrease surface impact.
- Trail width shall be a minimum of 4 feet. Steeper upland sites may only allow for 3 feet due to topographical constraints.
- Trails should follow slope contours to decrease disturbance as much as possible.
- Trail slope shall be based on site conditions and decided upon by the site manager.
- Trail grades should range from 0 to 6% with a 3% or less side slope to ensure adequate drainage, minimize surface water velocities and discourage rutting and erosion. Based on site conditions and site constraints, trails may be constructed with grades ranging from 15% to 20%. Steeper grades may require stairs to avoid erosion and other site impacts.

10.3 Best Management Practices

Bark Trails

- Prior to surfacing, trails shall be manually grubbed out taking care not to disturb surrounding vegetation. Native plant species that occur within the proposed trail alignment will be transplanted on site as part of the trail construction process. Trail surface retaining poles may be used in areas

that are prone to sloughing and erosion, usually on the outsides of corners and in areas of grade change.

- Woody debris removed from the trail grade will be randomly scattered on site and will be left in ground contact oriented across slope. On sites with a high volume of debris during construction, mobile on-site chipping will be implemented and resulting chips will be used as an underlayment trail surfacing material.
- All trail work will be conducted within trail alignment to minimize side of trail disturbance and degradation.
- Surface drainage techniques shall be utilized, such as:
    - Crowning
    - In-sloping and out-sloping at 3% or less grade
    - Culvert installation
    - Slope exposed gutters.
    - Turn pike/ French drain systems.
- Trails shall maintain a 2-foot minimum horizontal clearance to any obstruction.
- Trails shall maintain a 7-foot minimum vertical clearance from trail surface, across the horizontal clearance width.
- Side-slope shall be graded no greater than a 3:1 slope and covered with jute fabric and stapled. Grading shall be done so that accumulation of run-off does not collect at bottom of slope. A 2-foot-wide transition edge is required prior to start of side-slope. Where required, toe of slope exposed gutters are used to route trail water runoff to culverts.
- Geotextile fabric shall be laid between subgrade and base course prior to surfacing, where needed. This is applicable to wetland sites and sites that have a soft base.
- Subgrade shall consist of undisturbed native soil. Subgrade shall never be compacted.
- Surface shall be grubbed to level trail grade to 3% or less to ensure trail drainage.
- Trail surfacing shall consist of medium fine bark applied to a depth of 4 inches and raked out smoothly. If necessary, the area adjacent to trail shall be revegetated or properly landscaped with native shrub, tree and groundcover species.
- Trailheads will have developed signage, and if necessary, post and rail fencing along with a native shrub/tree palette (see associated standard details and/or specifications).

Crushed Rock/Gravel Trails

- Prior to surfacing, the trail shall be manually grubbed out taking care not to disturb surrounding vegetation. Native plant species that occur within the proposed trail alignment will be transplanted on site as part of the trail construction process. Trail surface retaining poles may be used in areas that are prone to sloughing and erosion, usually on the outsides of corners and in areas of grade change.
- Woody debris removed from the trail grade will be randomly scattered on site and will be left in ground contact oriented across slope. On sites with a high volume of debris during construction, mobile on-site chipping will be implemented and resulting chips will be used as an underlayment trail surfacing material.
- All trail work will be conducted within trail alignment to minimize side of trail disturbance and degradation.
- Surface drainage techniques shall be utilized, such as:
    - Crowning
    - In-sloping and out-sloping at a 2% grade
    - Culvert installation
    - Slope exposed gutters
    - Turn pike/ French drain systems
- Trails shall maintain a 2-foot minimum horizontal clearance to any obstruction.
- Trails shall maintain a 7-foot minimum vertical clearance from trail surface, across the horizontal clearance width.
- Side-slope shall be graded to a 3:1 slope when possible. Grading shall be done so that accumulation of run-off does not collect at bottom of slope.
- Geotextile fabric is not usually used in park rock/gravel trails.
- Subgrade shall be 5/8-inch crushed rock, compacted to 95% density. Disturbed native soil subgrade should be compacted to 95% density.
- Surfacing base shall be 4 inches of 5/8 minus crushed rock. The trail surface shall be 2 inches of compacted 3/8 minus crushed rock.
- If necessary, the area adjacent to trail shall be revegetated or properly landscaped with native shrubs, trees and groundcover species.
- Trailheads will have developed signage, and if necessary, post and rail fencing along with a native shrub/tree palette (see associated standard details and/or specifications).

Asphalt Trails

- Prior to surfacing, the trail shall be grubbed out by mechanical or manual means. Any areas adjacent to the trail where vegetation was removed or damaged shall be replanted with native species.
- All hazard trees and tree limbs shall be removed from trail site.
- Subgrade shall consist of undisturbed native soil. If soil is disturbed, soil shall be compacted to 95% density.
- Geotextile fabric shall be laid between subgrade and base course.
- Root barrier, if necessary, shall be installed prior to installation of asphalt. Root pruning, when necessary, shall be done by an ISA Certified Arborist.
- Side-slope shall be graded to a 3:1 slope, when possible. Bottom of side-slope shall be graded to prevent accumulation of run-off.
- The trail surface slope shall be a maximum of 3%. Edges shall be thickened to 6 inches deep by 10 inches wide for erosion protection.
- Trees shall be maintained for a 7-foot vertical clearance from trail surface, across the horizontal clearance width. Equestrian trails shall be maintained for a vertical clearance of 10 feet.
- Unless otherwise specified, asphalt top course shall be class "B" asphalt with a minimum thickness of 2.5 inches, and a maximum thickness of 4 inches.
- Base course shall be 5/8 inch minus crushed rock, compacted to 95% density, with a minimum thickness of 4 inches.
- Trail width shall be between 4-14 feet, depending on site conditions and designed functionality. Wider trails are not usually installed in Bellevue parks, but consideration will be made if necessary.
- If necessary, the area adjacent to trail shall be revegetated with native shrubs, trees and groundcover species. If the trail crosses a turf area, disturbed turf shall be replaced.
- Trailheads will have developed signage, and if necessary, post and rail fencing along with a native shrub/tree palette (see associated standard details and/or specifications).

Stairs, Boardwalks & Retention Peeler Poles

- All trail structures will be constructed to Parks & Community Services standards and specifications.
- All treated wood materials used for construction shall not leach hazardous materials and will be dark tinted ACQ/CBA pressure treated.
- All rough sawn and dimensional wood shall be of HEM-FIR #2 grade or better. All wood used for railings will be appearance grade non-incised.
- Boardwalk footings and stairs shall be placed on stable subgrade.

- Landings shall be composed of fill consisting of 3/8" minus crushed rock, compacted by hand. Railings will be used if edge is 30 inches or greater from grade or is deemed necessary. Railings shall be installed on the right-hand side heading upstairs.
- Trail retention peeler poles and stakes shall be lodge pole pine with ACQ/CBA treatment.

10.4 Training

All maintenance crew members are trained in proper trail planning, design, construction and maintenance. Crew members and staff are also trained ISA Certified Arborists and WSDA licensed pesticide applicators.

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CHAPTER 11 – Agricultural Areas

11.1 Purpose

The City of Bellevue Parks & Community Services Department manages the last remaining farmlands within the city. These lands are comprised of approximately 42 acres and are located in the rich peat soils of the Lake Hills Greenbelt and Mercer Slough Nature Park. These farmlands were established in the late 19th and early 20th centuries after clearing and draining opened the land for agriculture. Today these historic agricultural lands help preserve Bellevue's agricultural past, provide community gathering spaces and increase wildlife habitat. The continued management of these agricultural lands is identified as a component of the master plans for each park. They are managed as farmed wetlands in an environmentally sensitive manner under the same set of multiple use goals consistent with other open spaces land to maximize public benefits.

11.2 Background

All remaining agricultural lands within the city are located within the Lake Hills Greenbelt and Mercer Slough Nature Park. Agriculture in the Lake Hills Greenbelt was established in the late 19th century when early pioneers drained the land between Larsen and Phantom lakes by diverting natural flows into Lake Sammamish.

Agriculture in the Mercer Slough Farm was established shortly after the creation of the Chittenden Locks lowered the level of Lake Washington 9-12 feet in 1917. The blueberry farms were established in the 1940's. Current city managed farms include the following:

- Larsen Lake Blueberry Farm (14 acres)
- Lake Hills Greenbelt Truck Farms (10 acres)
- Mercer Slough Blueberry Farm (18 acres)

Existing Site/Environmental Conditions

Current Landscape and Field Condition

All agricultural fields are located in wetlands associated with the Kelsey Creek drainage that have been converted to agriculture during the late 19th and early 20th centuries. The condition of current plant material may be a good indicator of existing cultural conditions. Master plans, soil types, moisture regimes, nutrient levels and types of pest populations determine farm renovation and plant selection options. Because of the wet soil condition and low air circulation associated with these sites, special attention must be given to cultural practices to help reduce root-rotting fungus such as *Phytophthora* and berry-infecting fungus such as *Monilinai vaccinii-corymbosi* (Mummy berry).

Soil Type and Condition

Soil type can ultimately determine the longevity, mortality and health of the crop plants. The soils that make up both farms are predominately peats and/or mucks. Although blueberries like wet and acidic soil conditions, excessive water may cause root rot problems and must be carefully monitored and controlled through drainage.

Drainage

Because of the high water table that exist at both sites, irrigation is typically not necessary. Drainage, however, is essential in helping to prevent disease and allowing access to the fields for maintenance activities. The maintenance of existing ditches and cross tiles is essential to help maximize yields and reduce disease.

Cultural Conditions

Cultural conditions such as existing plant health, soil, moisture, sunlight, wind, rainfall, pests and disease all have an important role in plant health. Environmentally sensitive cultural practices such as mowing, weeding, pruning, mulching, pollination and drainage are used to increase plant vigor.

Safety

The safety of Bellevue residents and farm workers is paramount in farm operations. Designation of U-pick areas, adequate signage, plantation design, plant maintenance, proper materials storage, harvesting coordination and elimination of undesirable pest populations all help to create a safe environment.

Cultivar Selection/Diversity

Species diversity offers a longer harvesting season and cross-pollination. Monocultures can be more susceptible to total failure in case of insect or disease problems.

11.3 Best Management Practices

The farms are components of Master Plans for both the Lake Hills Greenbelt and Mercer Slough Nature Park. BMPs for farm operations take into account the multiple use aspects of the parks and utilize environmentally sensitive cultural practices to help maximize public benefit and protect the environment. The uses of pesticides on the farms are extremely limited and, although not certified, the farms are operated using organic farming techniques.

Major horticulture decisions regarding blueberry farms include nutrition, water management, pruning, pollination, harvesting, and weed and pest management. Many cultural operations are timed to the annual growth cycle of the plants, which varies from year to year with climate and soil conditions. Table 11.1 shows a typical blueberry yearly calendar planning guide. It should be noted, however, that the use of pesticides will be only considered as a last alternative.

Table 11.1 Annual planning guide for blueberry fields

Growth Period	Approximate Dates	Cultural Operations
Dormant	Nov.—mid March	Prune, apply dormant spray for scale growth if necessary, apply copper for bacteria canker if necessary and remove diseased and winter-injured tissue.
Leaf and flower bud break	Late March—late April	Apply fungicide for primarily mummy-berry if needed, control weeds and apply copper if needed.
Bloom Period	Late April—late May	Apply fungicides for mummy-berry if needed, apply insecticides to control aphids if needed, introduce bees for pollination.
Fruit Development	June and July	Cultivate or spray for weed control in between rows, install bird damage control devices.
Harvest	July—Sept.	Harvest and market fruit.
Post-harvest Growth	Sept.—mid October	Cultivate to control weeds, remove bird damage control devices.

Water Management

Blueberry plants have most of their effective root system in the upper 18 inches of soil. Normally, this would subject the plants to drought injury in the hot summer months when water availability decreases, however, the Lake Hills Greenbelt and Mercer Slough farms are located within wetlands comprised of hydric, peat soils which essentially eliminates the need for irrigation. The need for adequate drainage, however, becomes increasingly important for maintaining plant vigor.

Water management at the Mercer Slough farm faces additional drainage issues. Mercer Slough is an adjacent wetland to Lake Washington and the water level is artificially controlled by the Army Corps of Engineers through the operation of the Chittenden Locks in Seattle. The water level manipulation by the Corps creates a reverse hydrological effect in the wetland, keeping the level artificially higher in the summer months. This artificial hydrologic environment further exacerbates drainage issues that contribute to root rot and mummy-berry.

To assist with drainage, the slough was dredged in the early 20th century and an earthen dike running parallel to the channel was constructed. Individual blocks of berries are separated by dammed drainage ditches that flow east into the channel. Cross tiles running perpendicular to the drainage ditches pull ground water from the fields into the ditches. Water is pumped out of the ditches into the Mercer Slough via two lift stations with two, 3 phase, 230 volt trash pumps in each station. These pumps have a pumping capacity of approximately 360 gallons/min through 4" PVC pipes. These pumps utilize float valves triggered by rising water levels to control water levels. They also have the ability to grind up small woody debris to prevent clogging. Proper water management helps ensure fruit production, good floral initiation for next year's crop and that fruit skin moisture is maintained to prevent cracking or shriveling.

Pruning

Annual pruning is essential to maintain blueberry plant vigor, increase productivity, aid in pest management, maintain fruit quality and develop appropriate growth habits. Annual moderate pruning produces bushes with the fewest canes, but greatest yields. Proper pruning balances the production of new wood while maintaining fruit production. Although the best time to prune is during late winter dormancy as carbohydrates produced in late fall have had sufficient time to be stored and winter injured wood can be easily removed, blueberries can be pruned anytime between the end of fall harvest and spring bud break. Disinfect loppers and pruners between bushes to help prevent the spread of disease.

Pruning Technique

Pruning with newly established plantings (1-2 years old) will primarily be directed at shaping the plant into an upright habit and encouraging new vegetative growth and vigor. Remove the older, twiggy growth from the base of the plants and strip blossoms off to accelerate plant and root growth.

In subsequent years (2-5), prune lightly to remove injured wood and twisted or low growing canes to promote new growth. Remove all but 2-3 newly produced canes at crown level. At 7 years old, plants should have 10 – 20 canes of different ages.

Pruning mature plants consists of cutting out old, larger, low producing canes and eliminating weak, twiggy growth in the top or outer areas of the bushes to facilitate aeration and encourage increased budding and large berries. In very mature neglected plantings, it may be beneficial to simply crown prune the entire plant at the base and start from scratch. The following represents a systematic approach to pruning:

- In older plantings, remove 20% of older wood to stimulate new shoot growth.
- Remove low growth that would touch the ground when loaded with fruit.
- Cut off excess new growth that you don't want to develop.
- Remove any damaged canes and twigs.
- Cut out weak, twiggy growth from the top and outer parts of the plant to allow for light penetration and aeration through the plant.
- Prune to shape plant for appropriate harvest method (machine vs. hand picking).

Pollination

Although blueberry bushes are capable of setting fruit on 100% of their flowers, 80% is considered a full crop. The conservation of wild bee habitat such as fallen logs, ditch banks and natural areas close to the field enhances wild bee populations. Honeybee pollination, however, is essential for sustainable yields. The following standards ensure a high probability that proper pollination will occur:

- Make sure the crop is an attractive crop. This entails making sure that pruning cultivates plants with high bud counts, and the chosen cultivar has desirable corollas (shorter corollas have proven to be more attractive to honeybees than longer corollas).
- Ensure that there are at least 4-8 bees/plant at any time during the warmest part of the day during bloom.
- Hives must be in place when a minimum of 5% and a maximum of 25% of the flowers have opened.
- Hives must be placed in a wind-sheltered sunny location and preferably facing East.
- Proper pollination requires a minimum of 1-3 hives/2 acres, depending on cultivar.
- Hives should be distributed evenly throughout the field: 300ft. apart along every 10th row.
- Remove all competition from plant areas (e.g. dandelions, clover, etc.)
- Additional efforts to encourage native mason bee population are also utilized.

Harvesting

U-pick and hand harvesting are done in both the Lake Hills Greenbelt and Mercer Slough Nature Park blueberry fields. Clearly designate blocks, varietals and U-pick areas for the public.

Diseases

- Disease problems shall be accurately identified and management strategies shall be tailored to actual diseases present in the field in current season.
- Disease resistant cultivars shall be used when planting new sites.
- Mummy-berry incidence and severity shall be documented and mapped (noting varietal differences) by determining number of strikes/bush for primary infection and percent infected fruit for secondary infections.
- One or more of the following strategies shall be used to suppress primary infection of mummy-berry (where needed):
    1. Apply a thick layer (3-4") of organic mulch beneath bushes to cover fallen fruit in mid-spring.
    2. Rake, disk or cultivate soil beneath bushes in spring prior to budbreak to disrupt mummy-berry spores.
    3. Apply 200 lbs/acre 50% urea pills beneath plants in spring prior to budbreak to `burn' mummy-berry spores. Despite a strong offensive, Lime Sulphur may also be effective at burning spores.
- Diseased wood shall be pruned and destroyed. Pruning tools shall be sanitized between cuts.

Insects

- Insect problems shall be accurately identified and management strategies tailored to actual insect pests present in the field in the current season.
- Insects that vector viral and MLO diseases (e.g. aphids and leafhoppers) shall be controlled, if necessary.
- Other insect pests (e.g. leaf rollers, gypsy moth, sawfly, Japanese beetle, spotted wing drosophila) will be monitored and controlled, if necessary.

Weeds

- Noxious weeds will not be tolerated and shall be removed from the sight wherever possible.
- Frequent mowing between rows shall be used to reduce weed competition.
- Invasive weeds may be somewhat tolerated, but shall be controlled through cultural and mechanical methods whenever possible.

Vertebrates

- Bird depredation may be managed with the use of a scare device (usually audio).
- Bellevue Parks does not currently have depredation problems with deer or other large ungulates.
- Rodent depredation is generally tolerated on farm fields, but shall be monitored and controlled if necessary.

11.5 Training

Full and part-time crew personnel will be trained on all mowing and weed eating operations as well as correct pruning techniques.

Glossary of Terms

Agricultural Area – An area set aside for the use of growing and producing a crop.

As-built Drawings – Final drawings of the actual installation of structures, materials and equipment.

Biological Control – The use of biological agents, such as insects, to control weeds.

Block – A designated number of rows of typically similar crop cultivars.

Caliper – An instrument for determining the diameter of a tree.

Call-Before-You-Dig – A statewide system that allows contractors to locate underground utilities before construction. This contact is mandatory. The phone number is **1-800-424-5555** or **811**.

Catch Basin – A reservoir for collecting surface drainage or runoff. Most catch basins have some storage capacity in the bottom to trap sediments, debris and other particles that can settle out of stormwater.

Certified Arborist – An individual who has demonstrated knowledge and competency through obtainment of the current International Society of Arboriculture arborist certification, or who is a member of the American Society of Consulting Arborists.

Certified Forester – An individual who has a professional degree from an accredited forestry program and has demonstrated the education and knowledge required by the Society of American Foresters (SAF) to be certified through the SAF Certified Forester Program.

Chemical Control – The use of pesticides, both pre-and post-emergent.

Clean Green – Refers to various plant debris such as leaves, pruned limbs, etc. that has not been contaminated with garbage and is suitable for recycling and composting.

City's Storm Drainage System – A conveyance, or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels or storm drains) that are owned by the City or used for collecting or conveying stormwater; which is not combined with sewer; and which is not part of a publicly owned treatment works (POTW).

Compaction – An increase in the density of something, through the act of crushing or compressing.

Construction Site Management – Refers to the management of construction activities during three phases of site development: pre-construction, construction and post-development. These include BMPs for erosion control, shrubs, trees, drainage patterns and irrigation systems. Tree preservation is a special concern during construction because tree roots can often extend throughout an entire site, and mature trees increase property value.

Courtesy Strips – Hard surface strips running parallel to the curb that provide a place for motorists to exit without stepping in the planter strip.

Critical Root Zone (CRZ) – Commonly defined as the area between the tree trunk and the outer edge of a tree's canopy, or drip line, where the majority of primary, or critical, roots reside. However, it is important to recognize that root systems vary in depth and spread based on the size of the tree, species, soil conditions, water table and other related factors. A commonly accepted method of calculating the outer edge of the CRZ is by multiplying the measured DBH by 12.

Crop – A cultivated plant or agricultural good that produces a yield in a particular season.

Cultivar – A variety of a plant that has been created or selected intentionally, from a natural species, and maintained through cultivation. Varieties are created to enhance a specific characteristic, such as the fruit size, disease resistance, ability to withstand frost, color, etc.

Developmental Services Division (DSD) – City department that establishes land use and zoning guidelines, provides code enforcement, issues permits and provides inspections for construction, renovation and enhancement projects.

Diameter at Breast Height (DBH) – The diameter of the tree trunk at four and one-half feet (or 54 inches) above natural grade level. The diameter may be calculated by using the following formula: DBH= circumference at 4.5-feet divided by 3.14. To determine the DBH of multi-trunk trees or measuring trees on slopes, consult the current *Guide for Plant Appraisa*l, published by the Council of Tree and Landscape Appraisers.

Disease Control – The maintenance of healthy plants accomplished by good cultural practices.

Easements – BCC 14.60 defines an "easement" as a "grant of an interest in land by the property owner for a designated use by another person or entity or the public in general." See "Right-of-Way."

Edging – Grass removal along the edges of turf areas.

Evapotranspiration – The sum of water lost from the soil surface (evaporation) and the amount of water used by the plant (transpiration).

Geotextile fabric – A synthetic woven fabric used to reinforce and support surface materials and enhance drainage.

Grade – The degree of inclination of the trail surface, measured from ground/base level. Grade also relates to the degree of trail side slope.

Hazardous Tree – A tree that possesses a structural defect which poses an imminent risk if the tree or part of the tree could fall on someone or something of value (target).

Fertilizing – The use of organic or inorganic materials to adjust fertility levels in the soil.

Formal Beds – Planting beds that may include ornamentals, annuals and perennials as part of a landscape design. Formal beds are often irrigated.

Informal Beds – Planting beds that may include native plantings without a formalized landscape design. Informal beds are often not irrigated.

Insect Control – The suppression or eradication of harmful insects in the landscape.

Integrated Pest Management – A decision-making process to determine if, where, when and how pest problems will be managed. An IPM program includes all potential pest control strategies, but focuses on non-chemical controls whenever possible, in order to perpetuate a sustainable environment.

Irrigation – The supply of water to plantings, either through automatic irrigation systems or manual systems.

Low-Impact-Development (LID) – A set of principles and design strategies that emphasize conservation, use of on-site natural features and site planning to minimize impervious surfaces, native vegetation loss and stormwater runoff.

Manual or Mechanical Control – The use of hand and power tools to remove unwanted vegetation.

Monitor Tree – A tree that, because of its value, warrants further monitoring to determine an appropriate management strategy.

MSDS – Material Safety Data Sheets or MSDS are prepared by manufacturers of chemical products to relay the necessary safety and protective information to users about the said chemical compounds.

Mulch Mowing – Grass clippings left after mowing, that provide nutrients and organic matter to the soils.

National Pollutant Discharge Elimination System (NPDES) – Permitting program that is a requirement of the federal Clean Water Act, which is intended to protect and restore waters for "fishable, swimmable" uses. The Federal Environmental Protection Agency (EPA) has delegated permit authority to state environmental agencies. In Washington, the NPDES-delegated permit authority is the Washington State Department of Ecology (DOE).

Nursery – A facility for the propagation, growing and storage of plants for use on developed and undeveloped park property.

Pest – The word "pest" has been broadly defined in this document to include "injurious" insect species, plant pathogens, noxious or invasive vegetation, vertebrate animals such as rodents, structural pests or any other factor that creates an unhealthy environment for landscapes and structures.

Pesticide – Any material including agricultural chemicals, herbicides, insecticides and fungicides, or biological agents applied to a target pest as a control measure.

Planting Beds – Planting beds are non-turf, planted areas that include woody plant material such as shrubs, trees and ground covers. Planting beds also include floral color displays containing herbaceous plants such as perennials, annuals and bulbs.

Plant Materials – All living plants used in landscape design, including grasses, groundcover, flowers, vines, shrubs and trees.

Poly-house or Shade House – Terms for greenhouse-type structure that provides a minimal level of cold weather or sun protection required by nursery crops.

Project Arborist – Depending on the situation, the role of Project Arborist as determined by the city may be filled by any number of people, including city staff, ISA or SAF certified staff from third party companies, or qualified staff from landscape architect firms.

Project Manager – Refers to either the person assigned to the construction project by the department or the contractor who is responsible for managing the overall project. Project management duties include schedule, budget and related logistics, including construction site management.

Right-of-Way – Public land that is open to the general public. In the Definitions section of the Transportation Development Code, BCC 14.60, a Right-of-Way is defined as: "All public streets and property dedicated to public use for streets together with public property reserved for public utilities, transmission lines and extensions, walkways, sidewalks, bikeways or equestrian trails."

Root Buffer – A temporary layer of material to protect the soil texture and roots. The buffer shall consist of a base course of wood chips spread over the root area to a minimum of 6-inch depth, capped by a layer of 3/4-inch quarry gravel to stabilize 3/4-inch plywood on top.

Row – Straight line of crops placed next to each other possibly designated with a number for easy identification and placement.

Senior Gardening Staff – Resource management staff person responsible for managing the nursery. Senior gardeners are "journey-level" positions, possessing a broad range of horticultural knowledge and skills.

Sensitive Area – An area mapped or defined in the City of Bellevue Sensitive Area Handbook as a sensitive area including areas of special flood hazard, wetlands, riparian corridors and slopes equal to or exceeding 15 percent.

Setback –The distance which a building or other structure is set back from another object deemed to need protection, such as a utility, viewshed, right-of-way or property line.

Significant Tree – A healthy evergreen or deciduous tree, 8" in diameter or greater, measured four feet above existing grade (LUC 20.50.046).

Snag – Any standing dead tree.

Soil Compaction – The compression of soil particles that may result from the movement of heavy machinery and trucks, storage of construction materials, structures, paving, etc. within the *tree protection zon*e. Soil compaction can result in atrophy of roots and potential death of the tree, with symptoms often taking 3 to 10 years to manifest.

Stormwater Pollution Prevention Plan (SWPPP) – Provides BMPs on how to reduce pollutants in stormwater discharges to comply with the National Pollutant Discharge Elimination Systems (NPDES).

Street Frontage – Any part of private or public property which borders a public street or includes a right-of-way easement (BCC 14.60).

Street Tree – Any tree or large shrub growing within the public right-of-way or easement. A Right-of-Way Use Permit from the City of Bellevue Transportation Department is required prior to any work on or around these trees.

Synthetic Turf – Artificial grass, or synthetic turf, is a man-made product manufactured to look like natural grass. Artificial grass is a carpet-like material used for a variety of indoor and outdoor surfaces and is made of recycled and/or synthetic material.

Target – A term used to include people, vehicles, structures or something subject to damage by a tree. A tree cannot be a hazard if a target is absent within the falling distance of a tree or its parts. A defective tree in a non-populated area away from pathways may not be considered a hazard.

Temporary Erosion & Sedimentation Control (TESC) – Any temporary measures taken to reduce erosion; control siltation and sedimentation; and ensure that sediment-laden water does not leave the site.

Threshold (IPM) – The point at which pest injury can no longer be tolerated without compromising the health or aesthetic value of a plant, ecosystem or other assets of value including human health. Once a threshold is being approached, some control measure may be necessary to suppress pest activity to acceptable levels.

Topping – The reduction of a tree's size using heading cuts that shorten limbs or branches back to a predetermined crown limit.

Trail – Refers to a formally constructed and maintained pathway or a socially created and non-maintained pathway, going through or connecting destinations.

Tree Appraisal – A method of determining the monetary value of a tree as it relates to the real estate value of the property, neighborhood or community. When required, a Certified Arborist or Forester determines the appraisal by adjusting a tree's basic value by its condition, location and species using the most recent edition of the *Guide for Plant Appraisal*, published by the Council of Tree and Landscape Appraisers.

Tree Protection Fencing – A temporary enclosure erected around a tree to be protected at the boundary of the tree protection zone. Tree protection fencing should consist of five or six foot high chain link (or construction) fence, mounted on two inch diameter galvanized iron posts, driven into the ground to a depth of at least 2-feet at no more than 10-foot spacing. The fence serves three primary functions: 1) to keep the crown, branch structure and trunk clear from direct contact and damage by equipment, materials or disturbances; 2) to preserve roots and soil in an intact and non-compacted state; and 3) to identify the tree protection zone in which no soil disturbance is permitted and activities are restricted.

Tree Protection Zone (TPZ) – The area of ground around the base of the tree, as determined by tree species, size, condition, site history and soil conditions, deemed necessary to ensure the safety and health of the tree during and after construction. As a general guideline, the TPZ should be 1 foot diameter for each inch of trunk diameter. This distance may be increased for older trees with moderate to poor construction tolerances.

Trenching – Any excavation to provide irrigation, install foundations, utility lines, services, pipe, drainage or other property improvements below grade.

Trimming – Mowing and grass removal in areas that cannot be accessed by large riding mowers.

Turf – Any lawn or grasses grown in developed parks, streetscapes or public facilities. Turf areas vary widely in type of use from highly maintained athletic fields and golf courses to rough mow areas.

U-pick – Refers to the act of letting the customers pick the amount or type of produce desired. This reduces farm labor costs, assists with bird control, allows for more even ripening and provides a recreational opportunity.

Vertical Mulching – Auguring, hydraulic or air excavation of vertical holes within a tree's root zone to loosen and aerate the soil, typically to mitigate compacted soil. Holes are typically penetrated 4 to 6 feet on center, 2 to 3 feet deep, 2 to 6 inches in diameter and backfilled with either perlite, vermiculite, peat moss or a mixture thereof.

Weed Control – The control of undesirable plant species.

Water Management – Term for the efficient use of supplemental irrigation water required for most landscapes in the Puget Sound region.

Warning Sign – A warning sign shall be prominently displayed on each fence. The sign shall be a minimum of 8.5 x 11-inches and clearly state: "WARNING – *Tree Protection Zone* - This fence shall not be removed and any injury to this or these trees is subject to penalty according to BCC 14.06.100."

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References

Some of the information found in this manual has been based on materials extracted from the following sources:

- American Society of Landscape Architects (ASLA) - www.asla.org
- City of Seattle, Department of Parks & Recreation - www.seattle.gov/parks
- Environmental Protection Agency (EPA) - www.epa.gov
- International Society of Arboriculture - www.isa-arbor.com
- Irrigation Association (IA) - www.irrigation.org
- King County Noxious Weed Control Board - www.kingcounty.gov
- National Arbor Day Foundation (NAF) - www.arborday.org
- National Recreation and Park Association (NRPA) - www.nrpa.org
- Society of American Foresters (SAF) - www.safnet.org
- Washington Department of Ecology (DOE) - www.ecy.wa.gov
- Washington Department of Fish and Wildlife (WDFW) - wdfw.wa.gov
- Washington Food and Drug Administration (WFDA) - www.fda.gov
- Washington State Department of Agriculture (WSDA) - agr.wa.gov
- Washington State Department of Natural Resources (WDNR) - www.dnr.wa.gov

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Appendix 1 - Water Shortage Response Plan

The following information details the water shortage response plan specific to sites managed by the Bellevue Parks & Community Services Department. For information regarding the citywide water shortage response plan, please see the latest version of the City of Bellevue Utilities Water Shortage Contingency Plan (WSCP).

The Bellevue Parks & Community Services Department, in cooperation with the Bellevue Utilities Department, has adopted an aggressive, proactive response plan to meet the demands of our current regional water shortage. The actions outlined in the Parks Water Shortage Response Plan, based on practices implemented during drought conditions in 1992, 2001, and 2015, will allow the department to meet all our conservation goals, and model desired behavior for the community. We encourage others to adopt similar procedures and conservation measures as they may apply. Together we can minimize impacts to our landscapes, and our daily lives, during these challenging times.

This water shortage response plan serves as our immediate response to the Voluntary Stage of phased curtailment of water consumption. It will reduce normal irrigation use by 15%. It allows us to protect our investment in expensive trees and shrubs, and the many benefits they provide, while dramatically reducing irrigation to turf areas.

This plan meets water conservation goals while still allowing select green spaces for the public to enjoy. It has built-in flexibility to reduce irrigation consumption should the water crisis escalate or resume typical managed irrigation should regional supplies allow. The Parks & Community Services Department will work closely with the Bellevue Utilities Department to monitor regional water supplies and respond to any changes that occur.

BACKGROUND:

The City of Bellevue has had an active Water Conservation Program in place for over 30 years. It is an integral facet of our planning processes and our Parks Capital Improvement and Renovation Plan. Historically, water conservation has been taken into careful consideration during the design and planning of all park construction and renovation projects. Parks are designed to require a minimal amount of maintenance, which includes watering.

WATER USE IN PARKS:

- The Bellevue Parks & Community Services Department manages over 2,700 acres of public property. Only about 16% (approx. 445 acres) is irrigated by domestic water supply.
- Over two thirds of the park and open space system is comprised of undeveloped natural areas that don't require supplemental irrigation.
- The Bellevue Golf Course is irrigated using an on-site well and reservoir system.
- Newcastle Beach Park and Clyde Beach Park are irrigated by pumping water from Lake Washington through an approved permit with the Washington State Department of Ecology.
- Irrigation at the largest park sites is efficiently controlled through a central computer system linked to an on-site weather station. The system calculates the evapotranspiration (ET) rate for any given period and delivers only the proper amount of water, eliminating waste.
- Most water features in our parks are recirculating systems.
- Plumbing fixtures in all parks and city facilities are low flow/low volume fixtures.

In 1992 and 2001, Bellevue found itself in the midst of a drought situation that resulted in mandatory water rationing. During those events, the Parks & Community Services Department implemented water conservation measures that resulted in a significant reduction in water consumption. Since that time, we have made many system improvements that enable us to control irrigation on plant zones and reduce the risk of tree and shrub loss in city managed parks and streetscapes. Initial drought response efforts will affect turf areas that are less costly to renovate than trees and shrubs. Select green spaces will still be preserved selectively throughout our system for residents to enjoy.

The following describes in more detail the specific conditions that will apply to the four stages of the Parks & Community Services Water Shortage Response Plan.

PLAN IMPLEMENTATION

When there is notice of a drought emergency, Parks & Community Services will implement a Water Shortage Response Plan. The Parks & Community Services Department will manage the city's park resource system according to the following guidelines until the Utilities Department determines that water supplies are adequate to resume additional irrigation in parks. This plan is designed to provide flexibility to modify park irrigation usage up or down as the drought conditions become more or less severe.

PHASE 1 – ADVISORY STAGE

Irrigation systems will be programmed to reduce irrigation to turf and planting areas on streetscapes, utility sites, and city parks except as designated below. These measures, expected to reduce system-wide water use by up to 15%, will remain in effect until the water supply forecast improves. Activated irrigation systems are proactively monitored and tested to ensure that system watering times and amounts are functioning efficiently with no breaks in underground lines. During this stage you may see irrigation systems within the park system operating during the daytime for testing and system repair.

Turf Area Exceptions: Reduced irrigation (95% of evapotranspiration rate) at:

- Inner circle of Downtown Park
- Chism, Clyde, Enatai, Meydenbauer, and Newcastle Beach Parks
- Robinswood Park - lawn between house and pond, Cabana lawn
- Newly planted turf areas that are not fully established
- Athletic fields – minimal watering for safety
- Crossroads Park

PHASE II - VOLUNTARY STAGE

Irrigation systems will be programmed to reduce irrigation to turf and planting areas on streetscapes, utility sites, and city parks except as designated below. These measures, expected to reduce system-wide water use an additional 10%, will remain in effect until the water supply forecast improves.

Turf Area Exceptions: Reduced irrigation (90% of evapotranspiration rate) at:

- Inner circle of Downtown Park
- Chism, Clyde, Enatai, Meydenbauer, and Newcastle Beach Parks
- Robinswood Park – House Cabana and lawn between House and pond
- Newly planted turf areas that are not fully established
- Athletic fields – minimal watering for safety
- Crossroads Park
- The water feature at the Lake Hills Ranger station will be shut off.

New projects not under contract will be deferred.

PHASE III – MANDATORY STAGE

Phase III actions will further reduce irrigation by an appropriate percentage of the estimated total in accordance with supply forecasts. Bellevue Golf Courses - irrigate greens and tees; reduced irrigation (90% of estimated total) on fairways.

Streetscape, utility sites and park site turf area irrigation will be shut off except those sites designated below. Shrubs and trees will be irrigated by hand or with updated,

efficient irrigation systems such as drip, bubbler or computer-controlled systems designed to separate turf areas from tree and shrub zones. The goal is to keep tree and shrub bed plant material alive to protect the public's investment.

In addition, water use will be reduced at park water features as designated below.

Park Water Features:

- Downtown Park - Belvedere fountain will be turned off.
- Downtown Park - canal will remain operating (recirculating system) in order to maintain water quality. Signage advising park visitors of the new hours will be posted.
- Downtown Park - waterfall operation hours will be reduced. Signage advising park visitors of the new hours will be posted.
- Downtown Park - spray park hours will be reduced. Daily operation will be from 12:00pm to 7:00pm. Signage advising park visitors of the new hours will be posted.
- Crossroad Park - spray park hours will be reduced. Daily operation will be from 12:00pm to 7:00pm. Signage advising park visitors of the new hours will be posted.
- Bellevue Botanical Garden - water features will operate daily from 8:00am to 4:00pm. Signage to educate park visitors about the water conservation efforts will be posted.

Turf Area Exceptions: Reduced irrigation (85% of evapotranspiration rate) at:

- Inner circle of Downtown Park
- Chism, Clyde, Enatai, Meydenbauer, and Newcastle Beach Parks
- Robinswood Park - House Cabana and lawn between House and pond
- Newly planted turf areas that are not fully established
- Athletic fields – minimal watering for safety
- Crossroads Park
- The water feature at the Lake Hills Ranger station will be shut down.

PHASE IV – EMERGENCY CURTAILMENT STAGE

During Phase IV, shrubbery and planter bed irrigation systems will be shut off and/or significantly reduced (with the exception of the collections at the Bellevue Botanical Garden). Tree irrigation will be reduced and monitored, "survival watering", with the use of manual watering or through appropriately zoned irrigation systems.

Lawn irrigation at exempted parks will be further reduced and/or shut off on an incremental basis dependent upon the severity of the water shortage and demand reduction needed, as determined by the Utilities and Parks & Community Services

Departments. Further restrictions on water features will be implemented, or features will be shut off.

- Downtown Park Center Circle
- Chism, Clyde, Enatai, Meydenbauer, and Newcastle Beach Parks
- Robinswood House Cabana area lawn
- Bellevue Botanical Garden plant collections
- Athletic field activity areas
- Crossroads International circle

CONTACTS:

Parks & Community Services Department:	(425) 452-6855
Utilities Department:	(425) 452-4127

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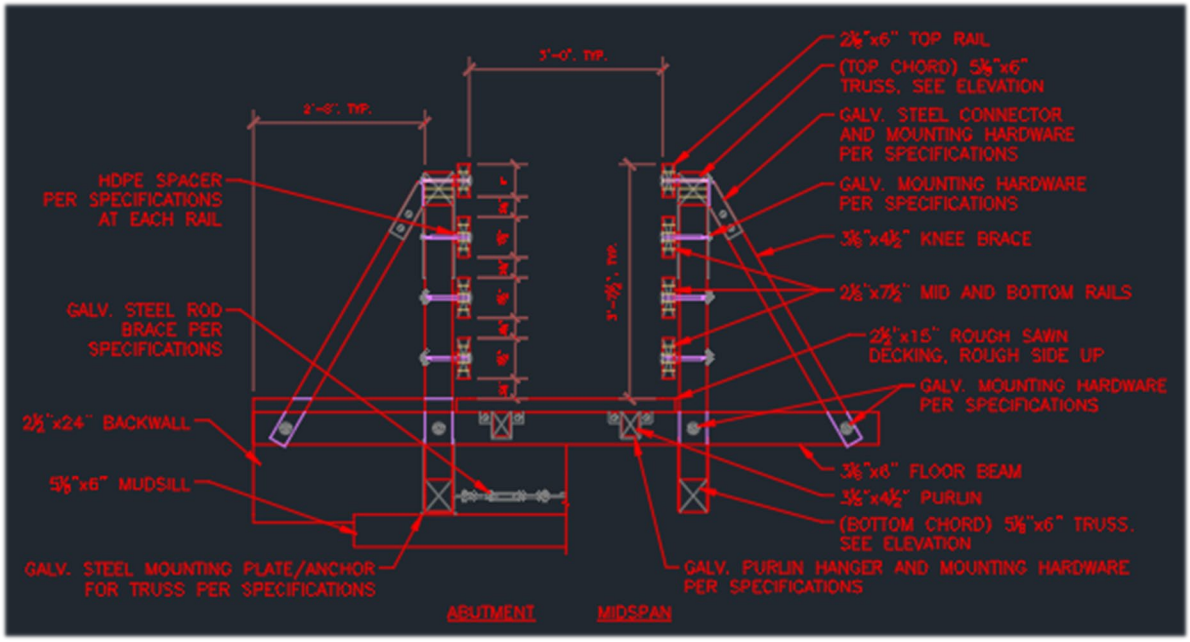
Appendix 2 – Standard Detail Drawings



The following inventory of standard detail drawings is up to date as of November 2023. To obtain copies of the most current drawings, visit the City of Bellevue's Environmental Best Management Practices website. To request the associated CAD (.dwg) file, please contact Parks & Community Services at (425) 452-6855 or at parksweb@bellevuewa.gov.

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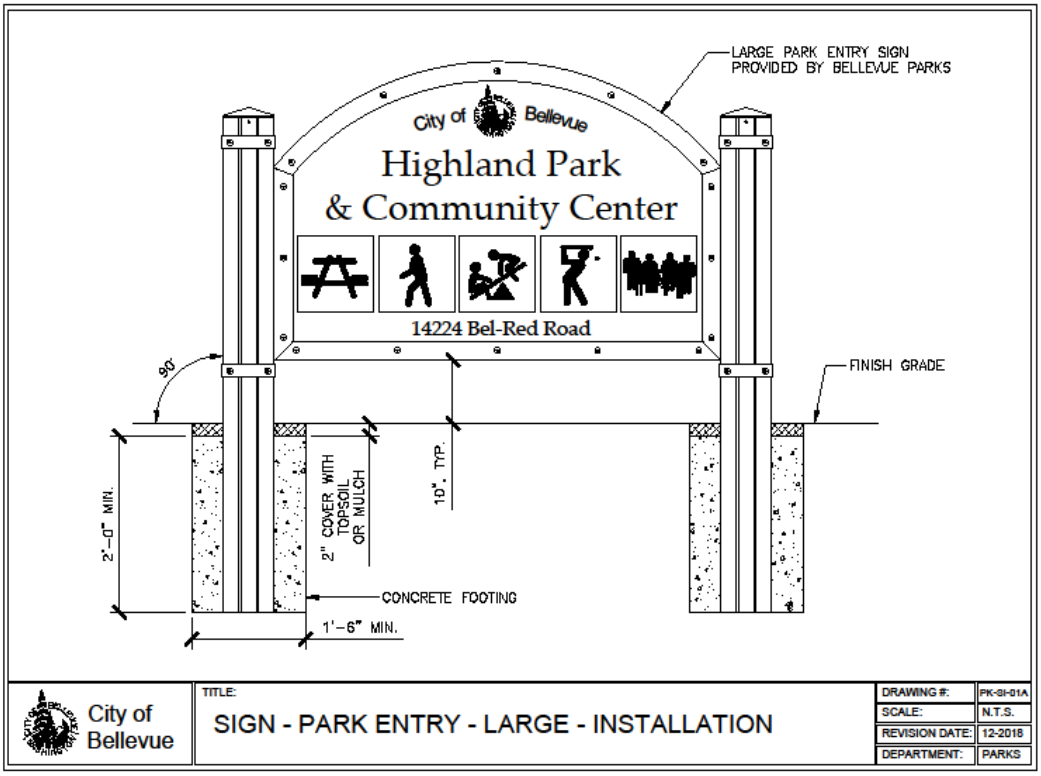
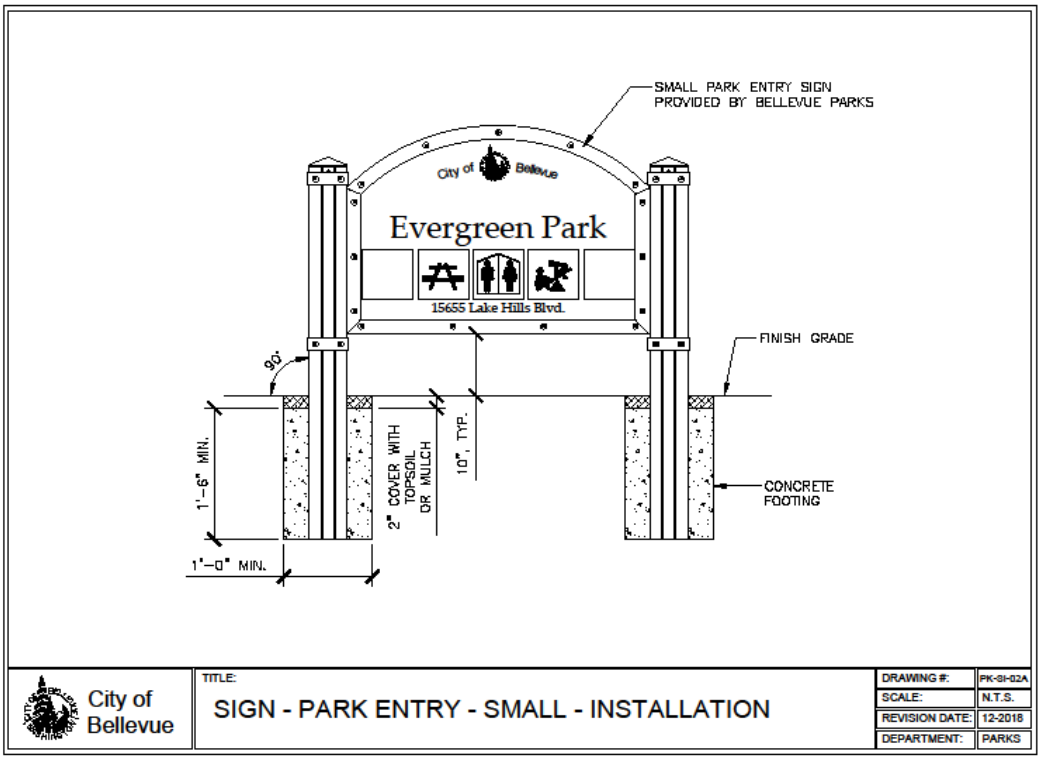
Signs


City of Bellevue
Bellevue
Botanical Garden
12001 Main Street


LARGE PARK ENTRY SIGN
PROVIDED BY BELLEVUE PARKS
City of Bellevue
Highland Park
& Community Center
14224 Bel-Red Road
90°
FINISH GRADE
2'-0" MIN.
2" COVER WITH
TOPSOIL
OR MULCH
10", TYP.
CONCRETE FOOTING
1'-6" MIN.
City of
Bellevue
TITLE:
SIGN - PARK ENTRY - LARGE - INSTALLATION
DRAWING #: PK-SI-01A
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS


SMALL PARK ENTRY SIGN
PROVIDED BY BELLEVUE PARKS
City of Bellevue
Evergreen Park
15655 Lake Hills Blvd.
90°
FINISH GRADE
1'-6" MIN.
2" COVER WITH
TOPSOIL
OR MULCH
10", TYP.
CONCRETE
FOOTING
1'-0" MIN.
City of
Bellevue
TITLE:
SIGN - PARK ENTRY - SMALL - INSTALLATION
DRAWING #: PK-SI-02A
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS

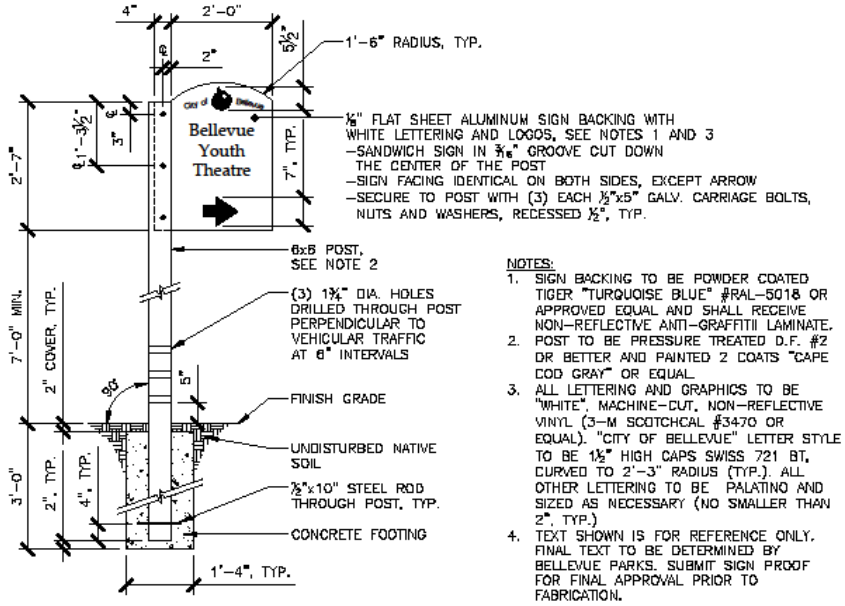
NOTE: ANY SYMBOL NOT SHOWN SHALL BE REVIEWED AND APPROVED BY BELLEVUE PARKS BEFORE USE ON PARK ENTRY SIGNS.

City of Bellevue

TITLE:

SIGN - PARK ENTRY - APPROVED SYMBOLS

DRAWING #:	PK-SI-03
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS



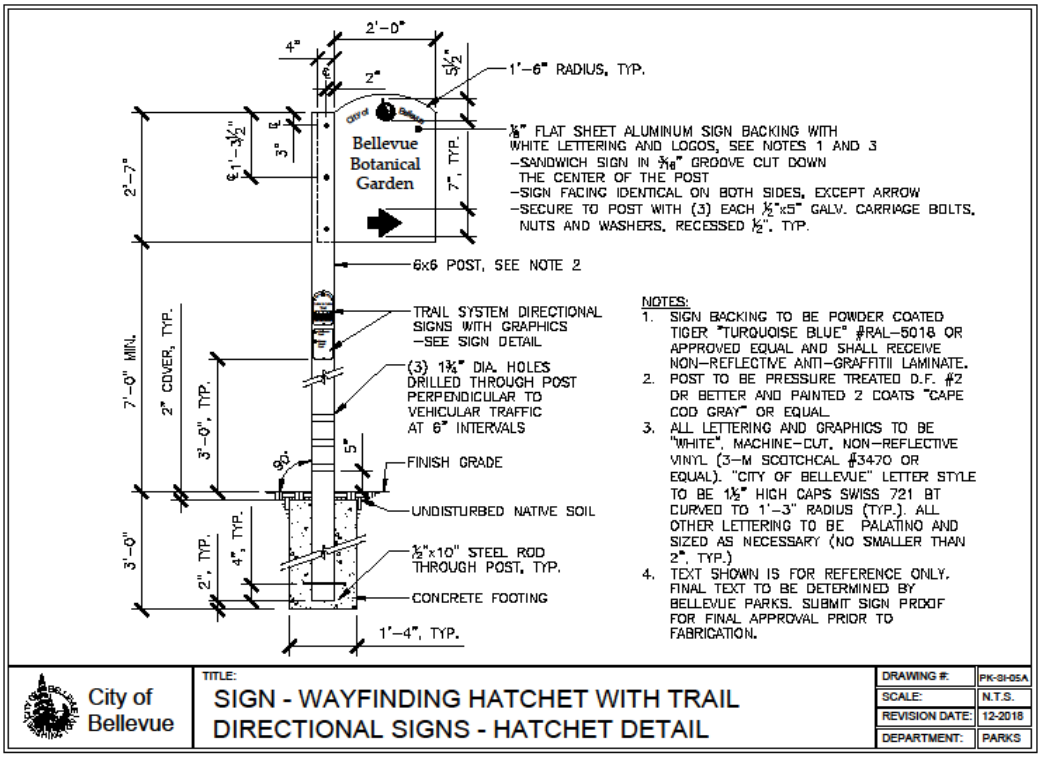
NOTES:
1. SIGN BACKING TO BE POWDER COATED TIGER "TURQUOISE BLUE" #RAL-5018 OR APPROVED EQUAL AND SHALL RECEIVE NON-REFLECTIVE ANTI-GRAFFITII LAMINATE.
2. POST TO BE PRESSURE TREATED D.F. #2 OR BETTER AND PAINTED 2 COATS "CAPE COD GRAY" OR EQUAL.
3. ALL LETTERING AND GRAPHICS TO BE "WHITE", MACHINE-CUT, NON-REFLECTIVE VINYL (3-M SCOTCHCAL #3470 OR EQUAL). "CITY OF BELLEVUE" LETTER STYLE TO BE 1½" HIGH CAPS SWISS 721 BT, CURVED TO 2'-3" RADIUS (TYP.). ALL OTHER LETTERING TO BE PALATINO AND SIZED AS NECESSARY (NO SMALLER THAN 2", TYP.)
4. TEXT SHOWN IS FOR REFERENCE ONLY. FINAL TEXT TO BE DETERMINED BY BELLEVUE PARKS. SUBMIT SIGN PROOF FOR FINAL APPROVAL PRIOR TO FABRICATION.

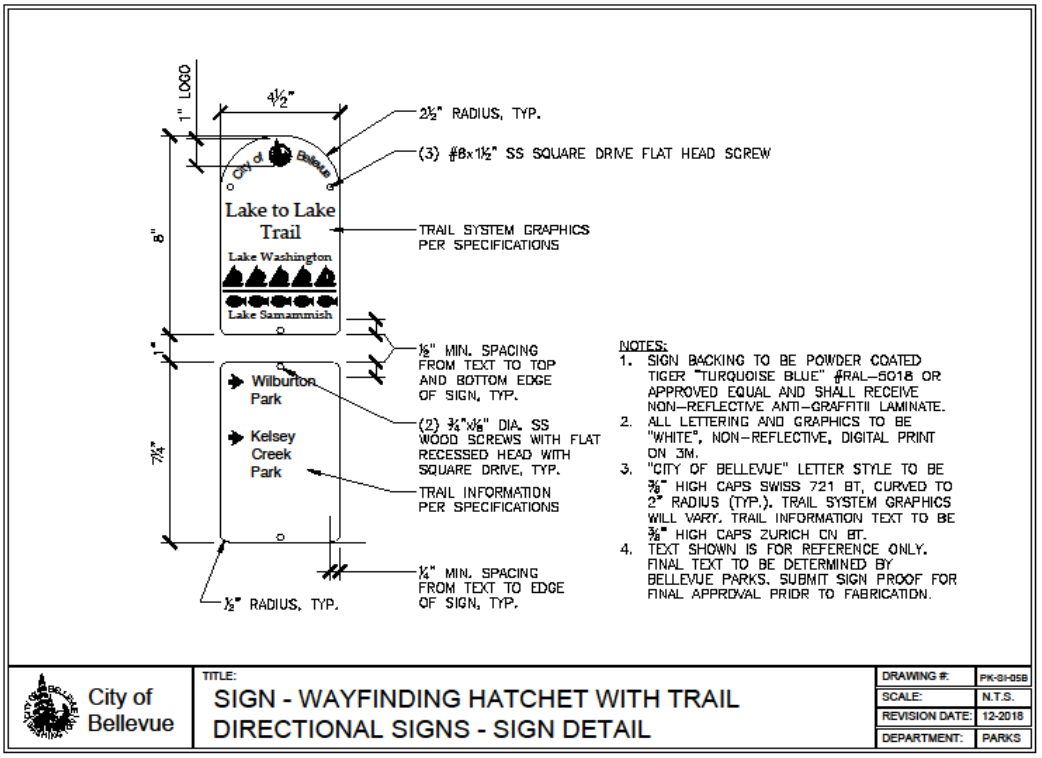
City of Bellevue

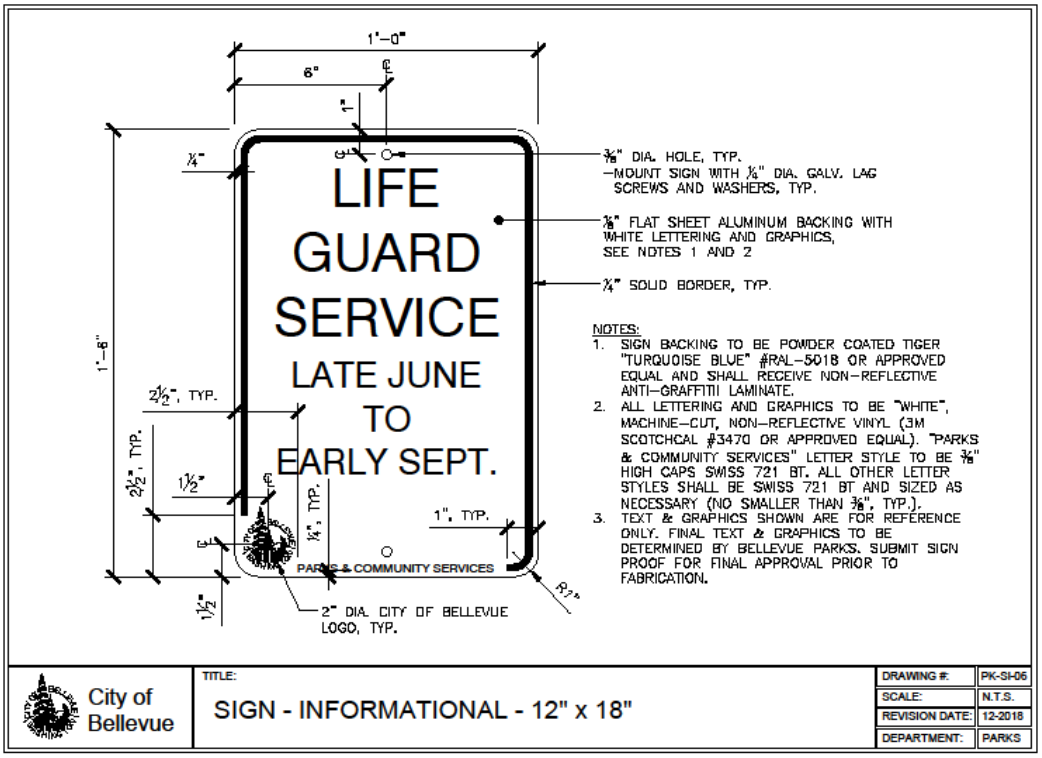
TITLE:

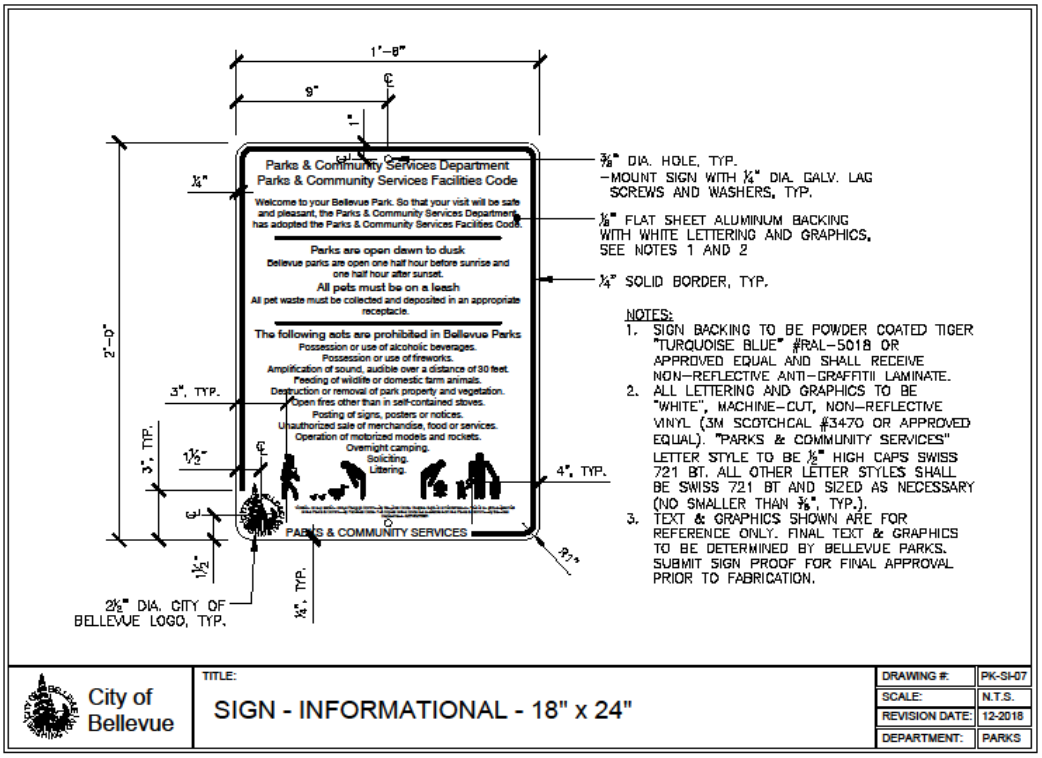
SIGN - WAYFINDING HATCHET

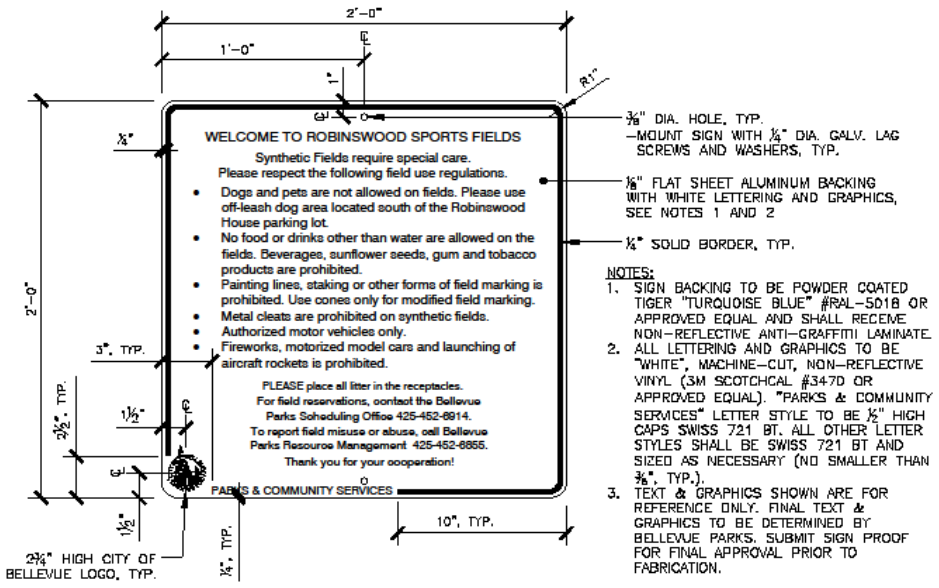
DRAWING #:	PK-SI-04
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS


2'-0"
4"
2"
5½"
1'-6" RADIUS, TYP.
⅛" FLAT SHEET ALUMINUM SIGN BACKING WITH WHITE LETTERING AND LOGOS, SEE NOTES 1 AND 3
-SANDWICH SIGN IN 3/16" GROOVE CUT DOWN THE CENTER OF THE POST
-SIGN FACING IDENTICAL ON BOTH SIDES, EXCEPT ARROW
-SECURE TO POST WITH (3) EACH ½"x5" GALV. CARRIAGE BOLTS, NUTS AND WASHERS, RECESSED ½". TYP.
Bellevue Botanical Garden
6'-1-3½"
3"
7", TYP.
2'-7"
6x6 POST, SEE NOTE 2
TRAIL SYSTEM DIRECTIONAL SIGNS WITH GRAPHICS -SEE SIGN DETAIL
7'-0" MIN.
2" COVER, TYP.
3'-0", TYP.
(3) 1¾" DIA. HOLES DRILLED THROUGH POST PERPENDICULAR TO VEHICULAR TRAFFIC AT 6" INTERVALS
90°
5"
FINISH GRADE
UNDISTURBED NATIVE SOIL
3'-0"
2", TYP.
4", TYP.
½"x10" STEEL ROD THROUGH POST, TYP.
CONCRETE FOOTING
1'-4", TYP.
NOTES:
1. SIGN BACKING TO BE POWDER COATED TIGER "TURQUOISE BLUE" #RAL-5018 OR APPROVED EQUAL AND SHALL RECEIVE NON-REFLECTIVE ANTI-GRAFFITII LAMINATE.
2. POST TO BE PRESSURE TREATED D.F. #2 OR BETTER AND PAINTED 2 COATS "CAPE COD GRAY" OR EQUAL.
3. ALL LETTERING AND GRAPHICS TO BE "WHITE", MACHINE-CUT, NON-REFLECTIVE VINYL (3-M SCOTCHCAL #3470 OR EQUAL). "CITY OF BELLEVUE" LETTER STYLE TO BE 1½" HIGH CAPS SWISS 721 BT CURVED TO 1'-3" RADIUS (TYP.). ALL OTHER LETTERING TO BE PALATINO AND SIZED AS NECESSARY (NO SMALLER THAN 2", TYP.)
4. TEXT SHOWN IS FOR REFERENCE ONLY. FINAL TEXT TO BE DETERMINED BY BELLEVUE PARKS. SUBMIT SIGN PROOF FOR FINAL APPROVAL PRIOR TO FABRICATION.
City of Bellevue
TITLE:
SIGN - WAYFINDING HATCHET WITH TRAIL DIRECTIONAL SIGNS - HATCHET DETAIL
DRAWING #: PK-SI-05A
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS


1" LOGO
4½"
2½" RADIUS, TYP.
(3) #8x1½" SS SQUARE DRIVE FLAT HEAD SCREW
Lake to Lake Trail
Lake Washington
Lake Samammish
8"
TRAIL SYSTEM GRAPHICS PER SPECIFICATIONS
1"
½" MIN. SPACING FROM TEXT TO TOP AND BOTTOM EDGE OF SIGN, TYP.
Wilburton Park
Kelsey Creek Park
7¾"
(2) ¾"x⅜" DIA. SS WOOD SCREWS WITH FLAT RECESSED HEAD WITH SQUARE DRIVE, TYP.
TRAIL INFORMATION PER SPECIFICATIONS
¼" MIN. SPACING FROM TEXT TO EDGE OF SIGN, TYP.
½" RADIUS, TYP.
NOTES:
1. SIGN BACKING TO BE POWDER COATED TIGER "TURQUOISE BLUE" #RAL-5018 OR APPROVED EQUAL AND SHALL RECEIVE NON-REFLECTIVE ANTI-GRAFFITII LAMINATE.
2. ALL LETTERING AND GRAPHICS TO BE "WHITE", NON-REFLECTIVE, DIGITAL PRINT ON 3M.
3. "CITY OF BELLEVUE" LETTER STYLE TO BE ⅜" HIGH CAPS SWISS 721 BT, CURVED TO 2" RADIUS (TYP.). TRAIL SYSTEM GRAPHICS WILL VARY. TRAIL INFORMATION TEXT TO BE ⅜" HIGH CAPS ZURICH CN BT.
4. TEXT SHOWN IS FOR REFERENCE ONLY. FINAL TEXT TO BE DETERMINED BY BELLEVUE PARKS. SUBMIT SIGN PROOF FOR FINAL APPROVAL PRIOR TO FABRICATION.
City of Bellevue
TITLE:
SIGN - WAYFINDING HATCHET WITH TRAIL DIRECTIONAL SIGNS - SIGN DETAIL
DRAWING #: PK-SI-05B
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS


1'-0"
6"
1"
¼"
LIFE
GUARD
SERVICE
LATE JUNE
TO
EARLY SEPT.
1'-6"
2½", TYP.
2½", TYP.
1½"
¼", TYP.
1", TYP.
PARKS & COMMUNITY SERVICES
1½"
2" DIA. CITY OF BELLEVUE LOGO, TYP.
⅜" DIA. HOLE, TYP.
—MOUNT SIGN WITH ¼" DIA. GALV. LAG SCREWS AND WASHERS, TYP.
⅛" FLAT SHEET ALUMINUM BACKING WITH WHITE LETTERING AND GRAPHICS, SEE NOTES 1 AND 2
¼" SOLID BORDER, TYP.
NOTES:
1. SIGN BACKING TO BE POWDER COATED TIGER "TURQUOISE BLUE" #RAL-5018 OR APPROVED EQUAL AND SHALL RECEIVE NON-REFLECTIVE ANTI-GRAFFITII LAMINATE.
2. ALL LETTERING AND GRAPHICS TO BE "WHITE", MACHINE-CUT, NON-REFLECTIVE VINYL (3M SCOTCHCAL #3470 OR APPROVED EQUAL). "PARKS & COMMUNITY SERVICES" LETTER STYLE TO BE ⅜" HIGH CAPS SWISS 721 BT. ALL OTHER LETTER STYLES SHALL BE SWISS 721 BT AND SIZED AS NECESSARY (NO SMALLER THAN ⅜", TYP.).
3. TEXT & GRAPHICS SHOWN ARE FOR REFERENCE ONLY. FINAL TEXT & GRAPHICS TO BE DETERMINED BY BELLEVUE PARKS. SUBMIT SIGN PROOF FOR FINAL APPROVAL PRIOR TO FABRICATION.
City of Bellevue
TITLE:
SIGN - INFORMATIONAL - 12" x 18"
DRAWING #: PK-SI-06
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS

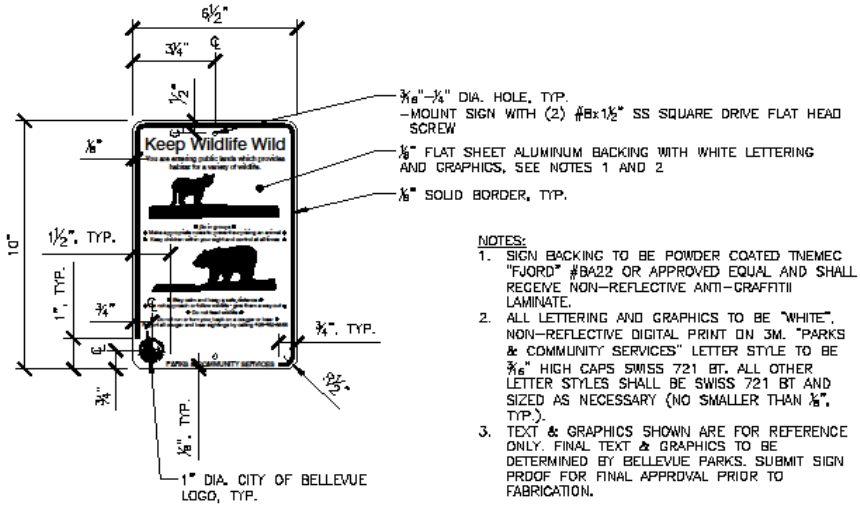

1'-8"
9"
1"
¼"
Parks & Community Services Department
Parks & Community Services Facilities Code
Welcome to your Bellevue Park. So that your visit will be safe and pleasant, the Parks & Community Services Department has adopted the Parks & Community Services Facilities Code.
Parks are open dawn to dusk
Bellevue parks are open one half hour before sunrise and one half hour after sunset.
All pets must be on a leash
All pet waste must be collected and deposited in an appropriate receptacle.
The following acts are prohibited in Bellevue Parks
Possession or use of alcoholic beverages.
Possession or use of fireworks.
Amplification of sound, audible over a distance of 30 feet.
Feeding of wildlife or domestic farm animals.
Destruction or removal of park property and vegetation.
Open fires other than in self-contained stoves.
Posting of signs, posters or notices.
Unauthorized sale of merchandise, food or services.
Operation of motorized models and rockets.
Overnight camping.
Soliciting.
Littering.
PARKS & COMMUNITY SERVICES
2'-0"
3", TYP.
3", TYP.
1½"
4", TYP.
1½"
2⅛" DIA. CITY OF BELLEVUE LOGO, TYP.
¼", TYP.
⅜" DIA. HOLE, TYP.
—MOUNT SIGN WITH ¼" DIA. GALV. LAG SCREWS AND WASHERS, TYP.
⅛" FLAT SHEET ALUMINUM BACKING WITH WHITE LETTERING AND GRAPHICS, SEE NOTES 1 AND 2
¼" SOLID BORDER, TYP.
NOTES:
1. SIGN BACKING TO BE POWDER COATED TIGER "TURQUOISE BLUE" #RAL-5018 OR APPROVED EQUAL AND SHALL RECEIVE NON-REFLECTIVE ANTI-GRAFFITII LAMINATE.
2. ALL LETTERING AND GRAPHICS TO BE "WHITE", MACHINE-CUT, NON-REFLECTIVE VINYL (3M SCOTCHCAL #3470 OR APPROVED EQUAL). "PARKS & COMMUNITY SERVICES" LETTER STYLE TO BE ½" HIGH CAPS SWISS 721 BT. ALL OTHER LETTER STYLES SHALL BE SWISS 721 BT AND SIZED AS NECESSARY (NO SMALLER THAN ⅜", TYP.).
3. TEXT & GRAPHICS SHOWN ARE FOR REFERENCE ONLY. FINAL TEXT & GRAPHICS TO BE DETERMINED BY BELLEVUE PARKS. SUBMIT SIGN PROOF FOR FINAL APPROVAL PRIOR TO FABRICATION.
City of Bellevue
TITLE:
SIGN - INFORMATIONAL - 18" x 24"
DRAWING #: PK-SI-07
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS



City of Bellevue

TITLE: SIGN - INFORMATIONAL - 24" x 24"

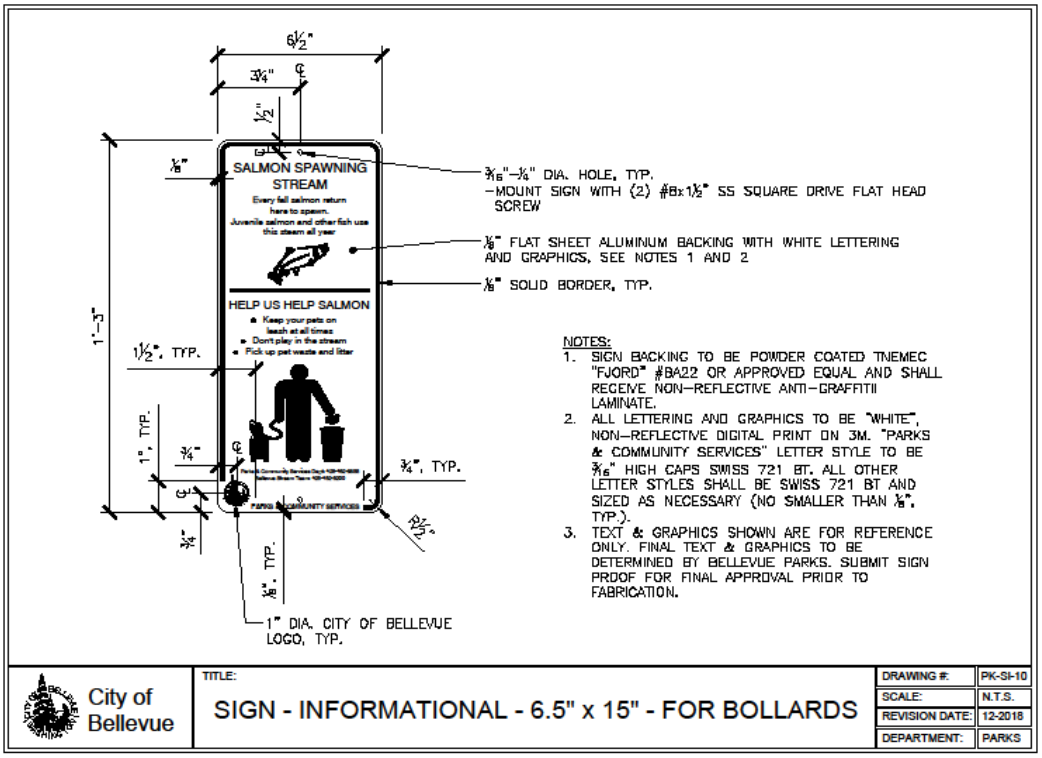
DRAWING #:	PK-SI-08
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS

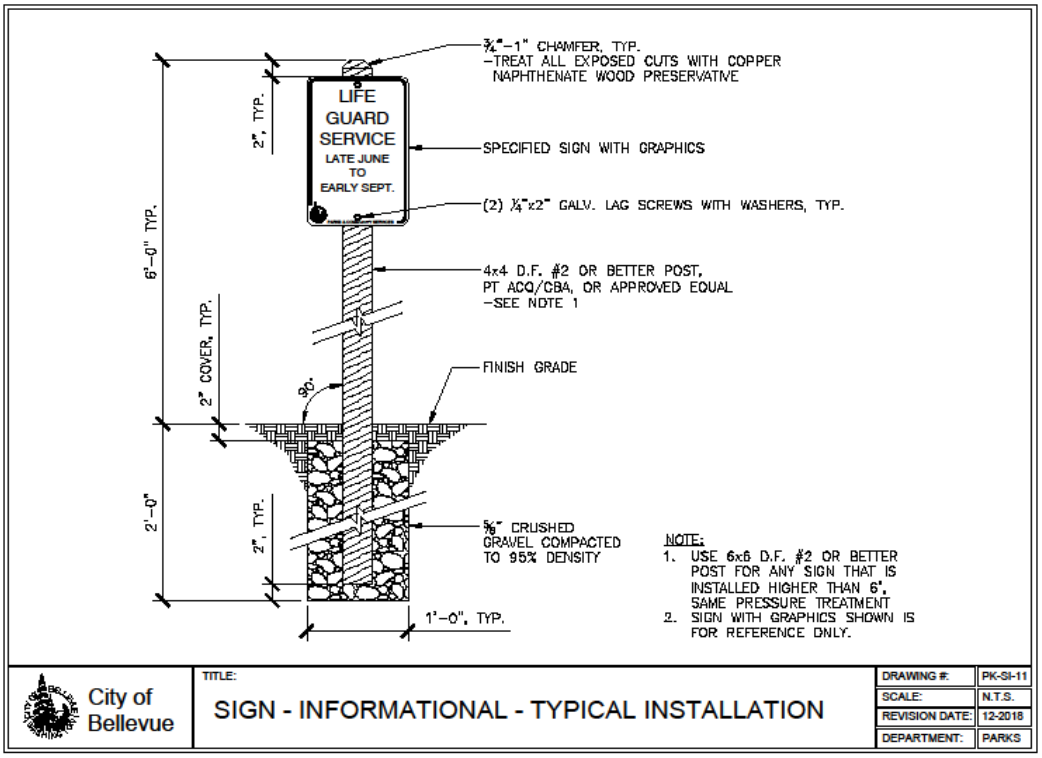


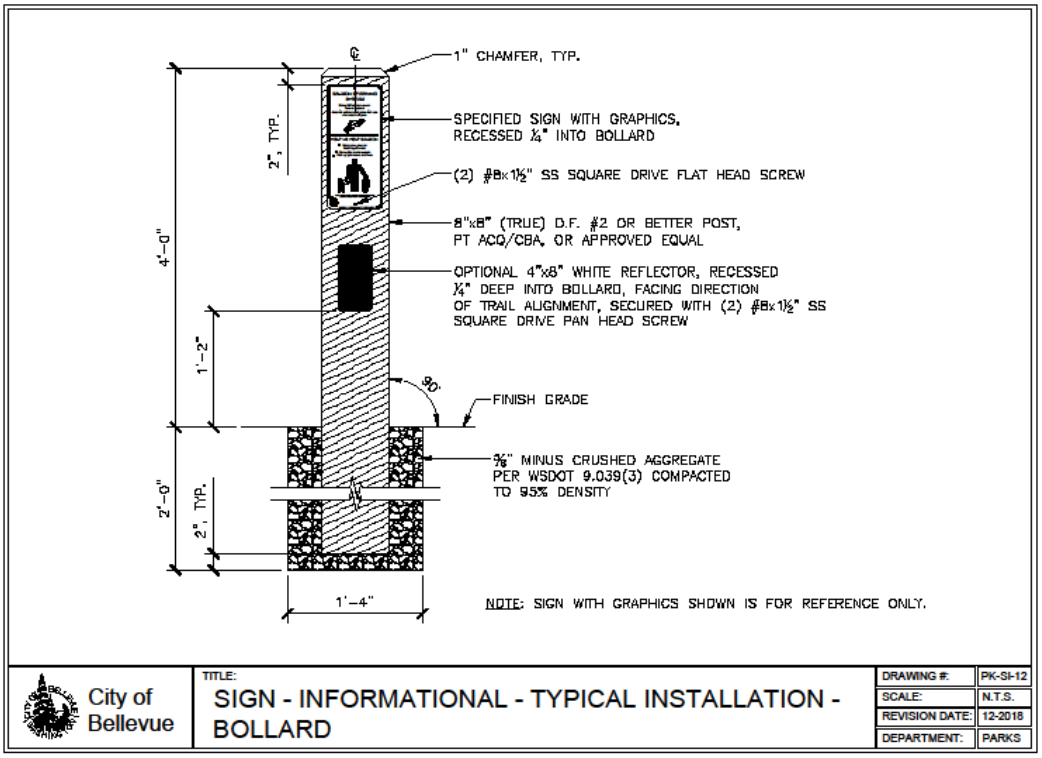
City of Bellevue

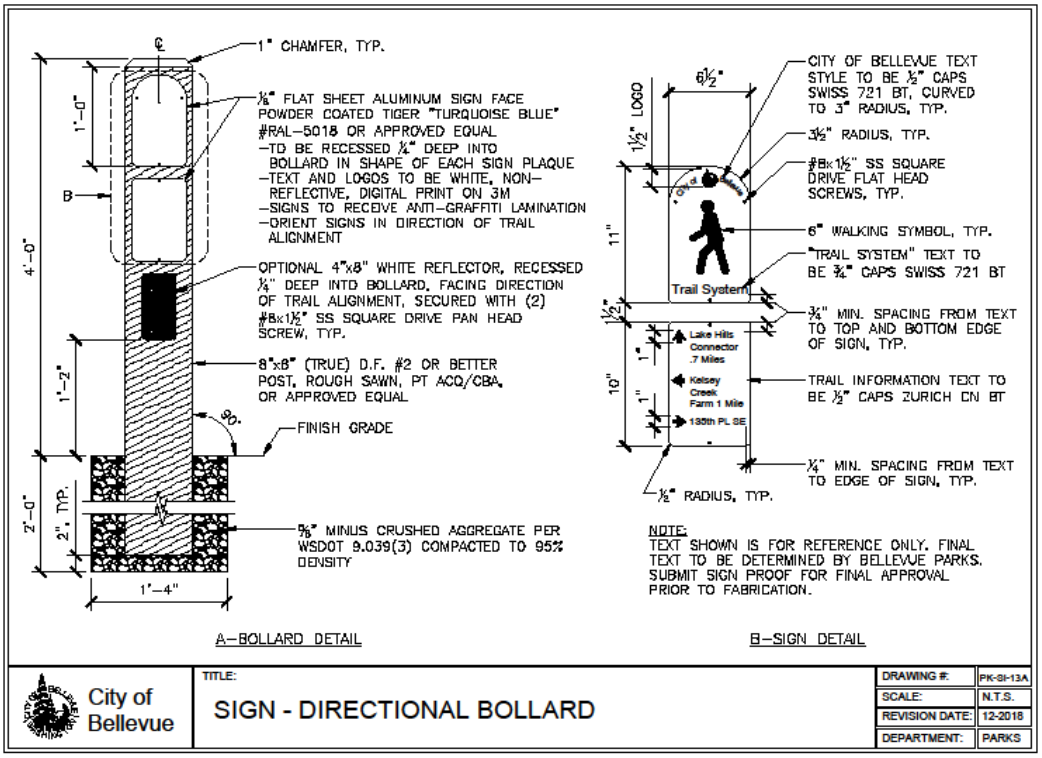
TITLE: SIGN - INFORMATIONAL - 6.5" x 10" - FOR BOLLARDS

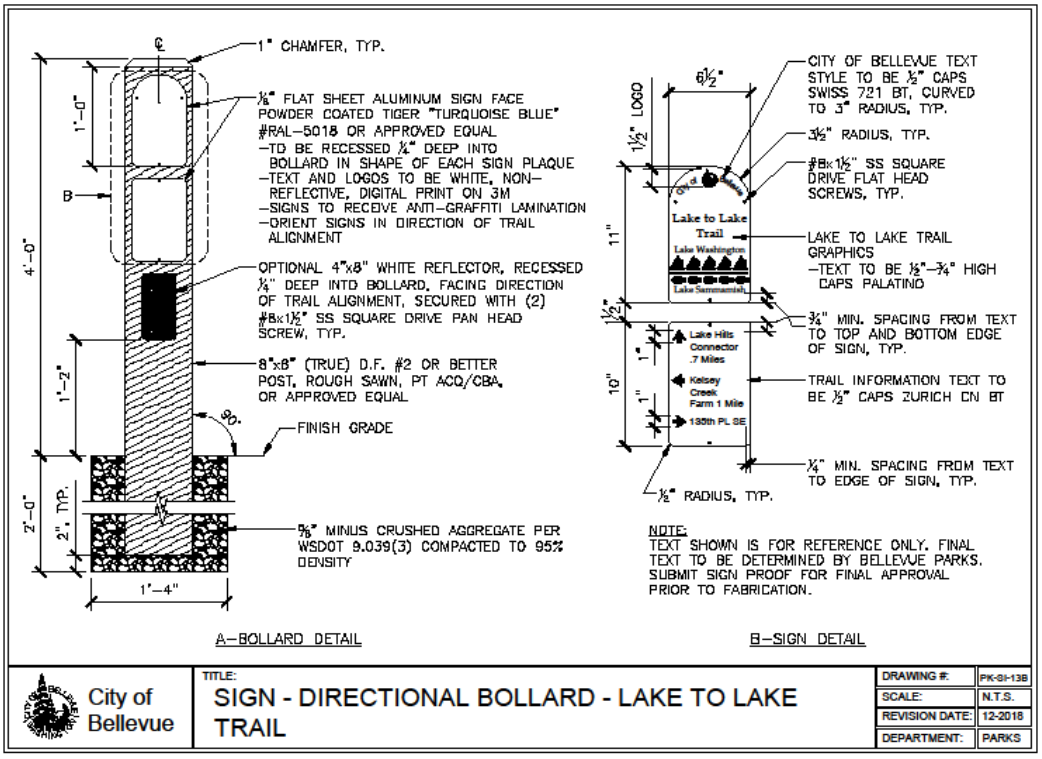
DRAWING #:	PK-SI-09
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS

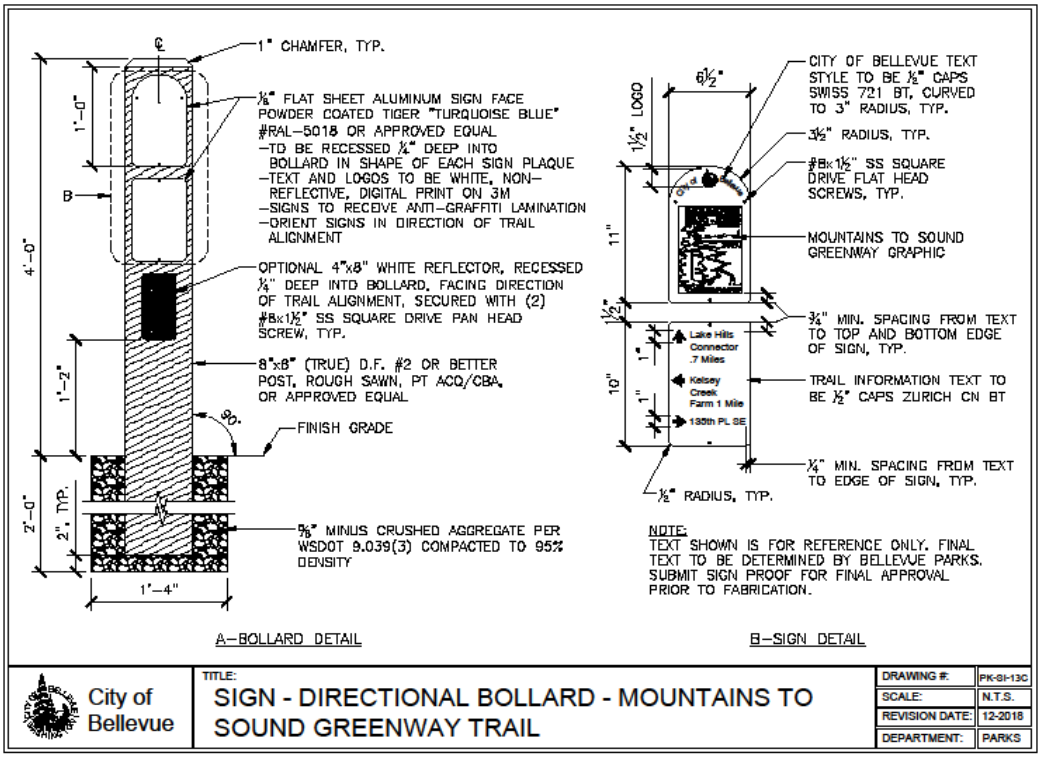

6½"
¾"
½"
⅛"
SALMON SPAWNING STREAM
Every fall salmon return here to spawn.
Juvenile salmon and other fish use this stream all year
HELP US HELP SALMON
Keep your pets on leash at all times
Don't play in the stream
Pick up pet waste and litter
PARKS & COMMUNITY SERVICES
1'-3"
1½", TYP.
1", TYP.
¾"
¾", TYP.
¾"
⅛", TYP.
⅜"–¼" DIA. HOLE, TYP.
–MOUNT SIGN WITH (2) #8x1½" SS SQUARE DRIVE FLAT HEAD SCREW
⅛" FLAT SHEET ALUMINUM BACKING WITH WHITE LETTERING AND GRAPHICS, SEE NOTES 1 AND 2
⅛" SOLID BORDER, TYP.
1" DIA. CITY OF BELLEVUE LOGO, TYP.
NOTES:
1. SIGN BACKING TO BE POWDER COATED TNEMEC "FJORD" #BA22 OR APPROVED EQUAL AND SHALL RECEIVE NON–REFLECTIVE ANTI–GRAFFITII LAMINATE.
2. ALL LETTERING AND GRAPHICS TO BE "WHITE", NON–REFLECTIVE DIGITAL PRINT ON 3M. "PARKS & COMMUNITY SERVICES" LETTER STYLE TO BE ⅜" HIGH CAPS SWISS 721 BT. ALL OTHER LETTER STYLES SHALL BE SWISS 721 BT AND SIZED AS NECESSARY (NO SMALLER THAN ⅛", TYP.).
3. TEXT & GRAPHICS SHOWN ARE FOR REFERENCE ONLY. FINAL TEXT & GRAPHICS TO BE DETERMINED BY BELLEVUE PARKS. SUBMIT SIGN PROOF FOR FINAL APPROVAL PRIOR TO FABRICATION.
City of Bellevue
TITLE:
SIGN - INFORMATIONAL - 6.5" x 15" - FOR BOLLARDS
DRAWING #: PK-SI-10
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS

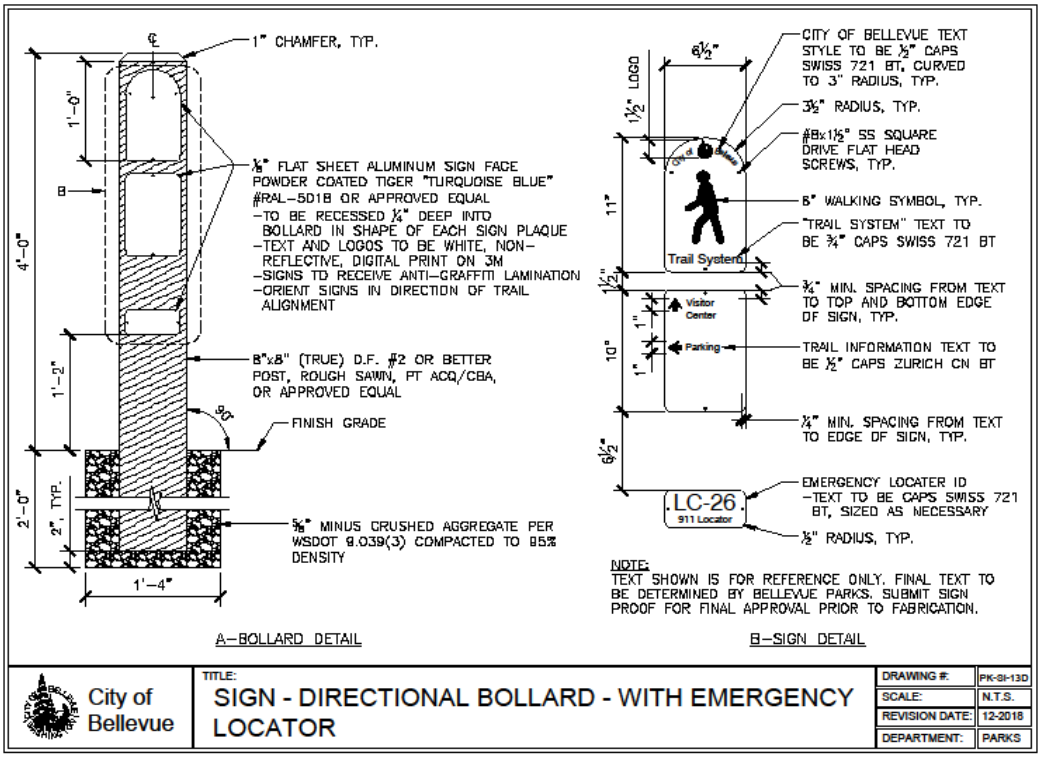

¾"–1" CHAMFER, TYP.
–TREAT ALL EXPOSED CUTS WITH COPPER NAPHTHENATE WOOD PRESERVATIVE
2", TYP.
LIFE GUARD SERVICE
LATE JUNE TO EARLY SEPT.
SPECIFIED SIGN WITH GRAPHICS
(2) ¼"x2" GALV. LAG SCREWS WITH WASHERS, TYP.
6'–0" TYP.
4x4 D.F. #2 OR BETTER POST, PT ACQ/CBA, OR APPROVED EQUAL
–SEE NOTE 1
2" COVER, TYP.
FINISH GRADE
2'–0"
2", TYP.
⅜" CRUSHED GRAVEL COMPACTED TO 95% DENSITY
1'–0", TYP.
NOTE:
1. USE 6x6 D.F. #2 OR BETTER POST FOR ANY SIGN THAT IS INSTALLED HIGHER THAN 6', SAME PRESSURE TREATMENT
2. SIGN WITH GRAPHICS SHOWN IS FOR REFERENCE ONLY.
City of Bellevue
TITLE:
SIGN - INFORMATIONAL - TYPICAL INSTALLATION
DRAWING #: PK-SI-11
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS

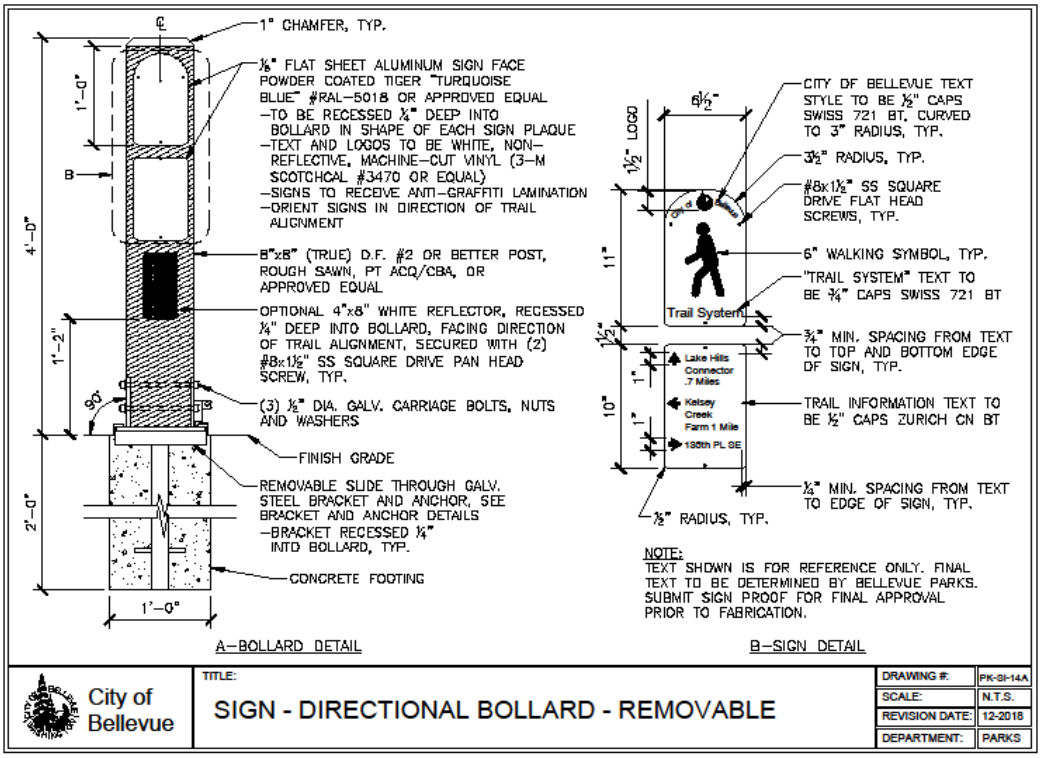

1" CHAMFER, TYP.
SPECIFIED SIGN WITH GRAPHICS, RECESSED ¼" INTO BOLLARD
(2) #8x1½" SS SQUARE DRIVE FLAT HEAD SCREW
8"x8" (TRUE) D.F. #2 OR BETTER POST, PT ACQ/CBA, OR APPROVED EQUAL
OPTIONAL 4"x8" WHITE REFLECTOR, RECESSED ¼" DEEP INTO BOLLARD, FACING DIRECTION OF TRAIL ALIGNMENT, SECURED WITH (2) #8x1½" SS SQUARE DRIVE PAN HEAD SCREW
FINISH GRADE
⅜" MINUS CRUSHED AGGREGATE PER WSDOT 9.039(3) COMPACTED TO 95% DENSITY
2", TYP.
4'-0"
1'-2"
2'-0"
2", TYP.
1'-4"
90°
NOTE: SIGN WITH GRAPHICS SHOWN IS FOR REFERENCE ONLY.
City of Bellevue
TITLE:
SIGN - INFORMATIONAL - TYPICAL INSTALLATION - BOLLARD
DRAWING #: PK-SI-12
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS

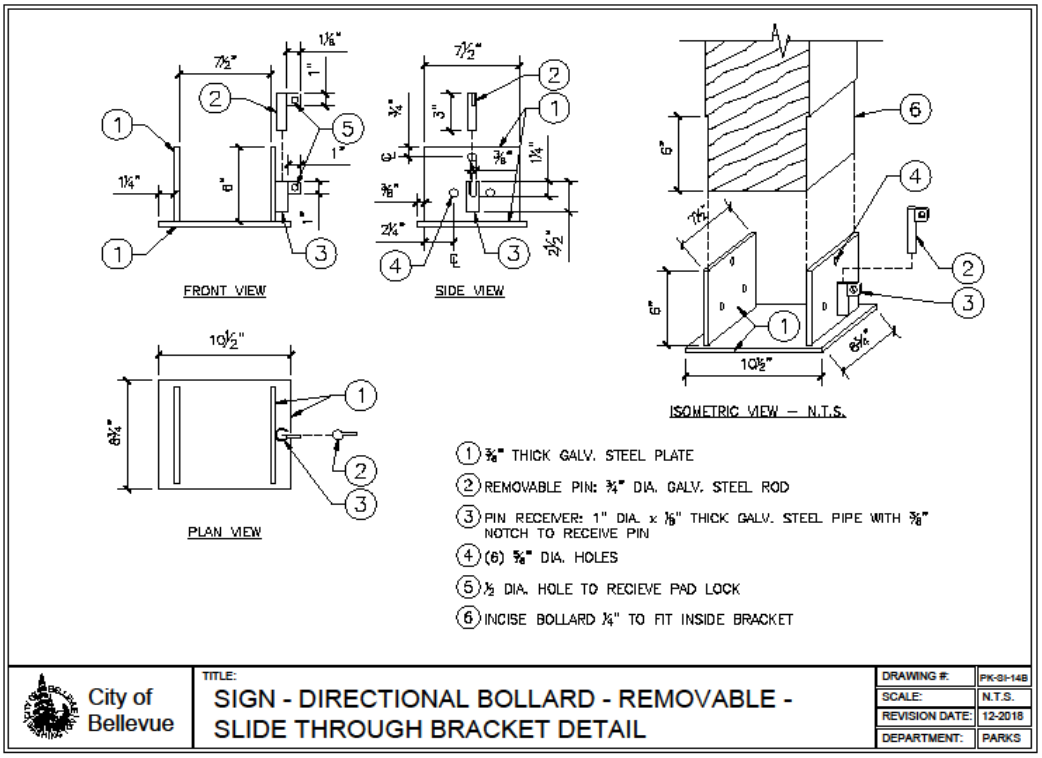

1" CHAMFER, TYP.
⅛" FLAT SHEET ALUMINUM SIGN FACE POWDER COATED TIGER "TURQUOISE BLUE" #RAL-5018 OR APPROVED EQUAL
-TO BE RECESSED ¼" DEEP INTO BOLLARD IN SHAPE OF EACH SIGN PLAQUE
-TEXT AND LOGOS TO BE WHITE, NON-REFLECTIVE, DIGITAL PRINT ON 3M
-SIGNS TO RECEIVE ANTI-GRAFFITI LAMINATION
-ORIENT SIGNS IN DIRECTION OF TRAIL ALIGNMENT
OPTIONAL 4"x8" WHITE REFLECTOR, RECESSED ¼" DEEP INTO BOLLARD, FACING DIRECTION OF TRAIL ALIGNMENT, SECURED WITH (2) #8x1½" SS SQUARE DRIVE PAN HEAD SCREW, TYP.
8"x8" (TRUE) D.F. #2 OR BETTER POST, ROUGH SAWN, PT ACQ/CBA, OR APPROVED EQUAL
FINISH GRADE
⅜" MINUS CRUSHED AGGREGATE PER WSDOT 9.039(3) COMPACTED TO 95% DENSITY
1'-0"
B
4'-0"
1'-2"
2'-0"
2", TYP.
1'-4"
90°
A-BOLLARD DETAIL
6½"
1½" LOGO
CITY OF BELLEVUE TEXT STYLE TO BE ½" CAPS SWISS 721 BT, CURVED TO 3" RADIUS, TYP.
3½" RADIUS, TYP.
#8x1½" SS SQUARE DRIVE FLAT HEAD SCREWS, TYP.
6" WALKING SYMBOL, TYP.
"TRAIL SYSTEM" TEXT TO BE ¾" CAPS SWISS 721 BT
Trail System
¾" MIN. SPACING FROM TEXT TO TOP AND BOTTOM EDGE OF SIGN, TYP.
Lake Hills Connector .7 Miles
Kelsey Creek Farm 1 Mile
135th PL SE
TRAIL INFORMATION TEXT TO BE ½" CAPS ZURICH CN BT
11"
1½"
1"
1"
10"
¼" MIN. SPACING FROM TEXT TO EDGE OF SIGN, TYP.
½" RADIUS, TYP.
NOTE:
TEXT SHOWN IS FOR REFERENCE ONLY. FINAL TEXT TO BE DETERMINED BY BELLEVUE PARKS. SUBMIT SIGN PROOF FOR FINAL APPROVAL PRIOR TO FABRICATION.
B-SIGN DETAIL
City of Bellevue
TITLE:
SIGN - DIRECTIONAL BOLLARD
DRAWING #: PK-SI-13A
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS

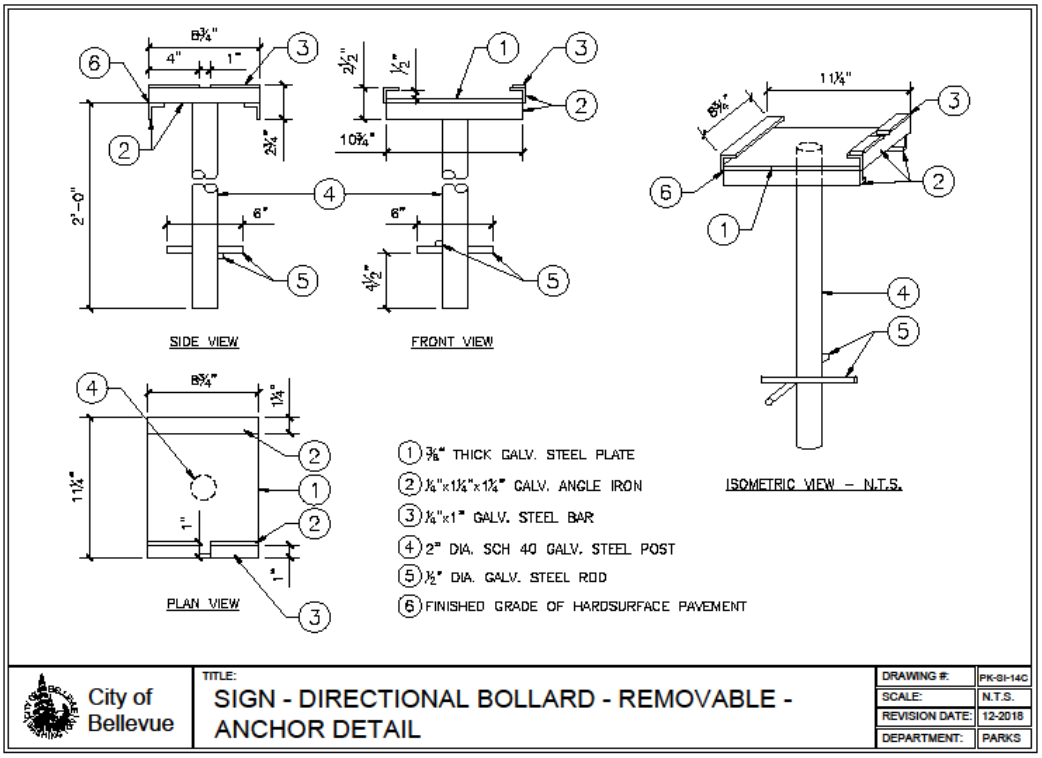

1" CHAMFER, TYP.
⅛" FLAT SHEET ALUMINUM SIGN FACE POWDER COATED TIGER "TURQUOISE BLUE" #RAL-5018 OR APPROVED EQUAL
-TO BE RECESSED ¼" DEEP INTO BOLLARD IN SHAPE OF EACH SIGN PLAQUE
-TEXT AND LOGOS TO BE WHITE, NON-REFLECTIVE, DIGITAL PRINT ON 3M
-SIGNS TO RECEIVE ANTI-GRAFFITI LAMINATION
-ORIENT SIGNS IN DIRECTION OF TRAIL ALIGNMENT
OPTIONAL 4"x8" WHITE REFLECTOR, RECESSED ¼" DEEP INTO BOLLARD, FACING DIRECTION OF TRAIL ALIGNMENT, SECURED WITH (2) #8x1½" SS SQUARE DRIVE PAN HEAD SCREW, TYP.
8"x8" (TRUE) D.F. #2 OR BETTER POST, ROUGH SAWN, PT ACQ/CBA, OR APPROVED EQUAL
FINISH GRADE
⅜" MINUS CRUSHED AGGREGATE PER WSDOT 9.039(3) COMPACTED TO 95% DENSITY
1'-0"
B
4'-0"
1'-2"
2'-0"
2", TYP.
1'-4"
A-BOLLARD DETAIL
6½"
1½" LOGO
CITY OF BELLEVUE TEXT STYLE TO BE ½" CAPS SWISS 721 BT, CURVED TO 3" RADIUS, TYP.
3½" RADIUS, TYP.
#8x1½" SS SQUARE DRIVE FLAT HEAD SCREWS, TYP.
Lake to Lake Trail
Lake Washington
Lake Sammamish
LAKE TO LAKE TRAIL GRAPHICS
-TEXT TO BE ½"-¾" HIGH CAPS PALATINO
11"
½"
¾" MIN. SPACING FROM TEXT TO TOP AND BOTTOM EDGE OF SIGN, TYP.
1"
Lake Hills Connector .7 Miles
Kelsey Creek Farm 1 Mile
135th PL SE
10"
TRAIL INFORMATION TEXT TO BE ½" CAPS ZURICH CN BT
¼" MIN. SPACING FROM TEXT TO EDGE OF SIGN, TYP.
½" RADIUS, TYP.
NOTE:
TEXT SHOWN IS FOR REFERENCE ONLY. FINAL TEXT TO BE DETERMINED BY BELLEVUE PARKS. SUBMIT SIGN PROOF FOR FINAL APPROVAL PRIOR TO FABRICATION.
B-SIGN DETAIL
City of Bellevue
TITLE:
SIGN - DIRECTIONAL BOLLARD - LAKE TO LAKE TRAIL
DRAWING #: PK-SI-13B
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS

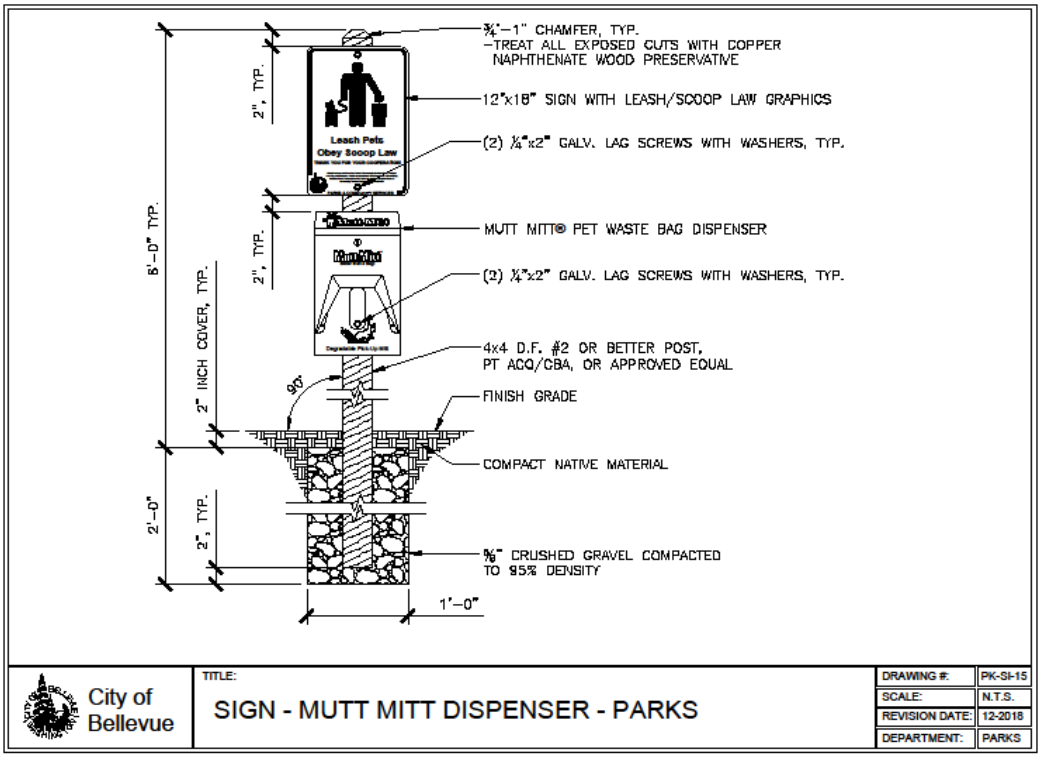

1" CHAMFER, TYP.
⅛" FLAT SHEET ALUMINUM SIGN FACE POWDER COATED TIGER "TURQUOISE BLUE" #RAL-5018 OR APPROVED EQUAL
-TO BE RECESSED ¼" DEEP INTO BOLLARD IN SHAPE OF EACH SIGN PLAQUE
-TEXT AND LOGOS TO BE WHITE, NON-REFLECTIVE, DIGITAL PRINT ON 3M
-SIGNS TO RECEIVE ANTI-GRAFFITI LAMINATION
-ORIENT SIGNS IN DIRECTION OF TRAIL ALIGNMENT
OPTIONAL 4"x8" WHITE REFLECTOR, RECESSED ¼" DEEP INTO BOLLARD, FACING DIRECTION OF TRAIL ALIGNMENT, SECURED WITH (2) #8x1½" SS SQUARE DRIVE PAN HEAD SCREW, TYP.
8"x8" (TRUE) D.F. #2 OR BETTER POST, ROUGH SAWN, PT ACQ/CBA, OR APPROVED EQUAL
FINISH GRADE
⅜" MINUS CRUSHED AGGREGATE PER WSDOT 9.039(3) COMPACTED TO 95% DENSITY
1'-0"
B
4'-0"
1'-2"
2'-0"
2", TYP.
1'-4"
A-BOLLARD DETAIL
6½"
1½" LOGO
CITY OF BELLEVUE TEXT STYLE TO BE ½" CAPS SWISS 721 BT, CURVED TO 3" RADIUS, TYP.
3½" RADIUS, TYP.
#8x1½" SS SQUARE DRIVE FLAT HEAD SCREWS, TYP.
MOUNTAINS TO SOUND GREENWAY GRAPHIC
11"
½"
¾" MIN. SPACING FROM TEXT TO TOP AND BOTTOM EDGE OF SIGN, TYP.
1"
Lake Hills Connector .7 Miles
Kelsey Creek Farm 1 Mile
135th PL SE
10"
TRAIL INFORMATION TEXT TO BE ½" CAPS ZURICH CN BT
¼" MIN. SPACING FROM TEXT TO EDGE OF SIGN, TYP.
½" RADIUS, TYP.
NOTE:
TEXT SHOWN IS FOR REFERENCE ONLY. FINAL TEXT TO BE DETERMINED BY BELLEVUE PARKS. SUBMIT SIGN PROOF FOR FINAL APPROVAL PRIOR TO FABRICATION.
B-SIGN DETAIL
City of Bellevue
TITLE:
SIGN - DIRECTIONAL BOLLARD - MOUNTAINS TO SOUND GREENWAY TRAIL
DRAWING #: PK-SI-13C
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS

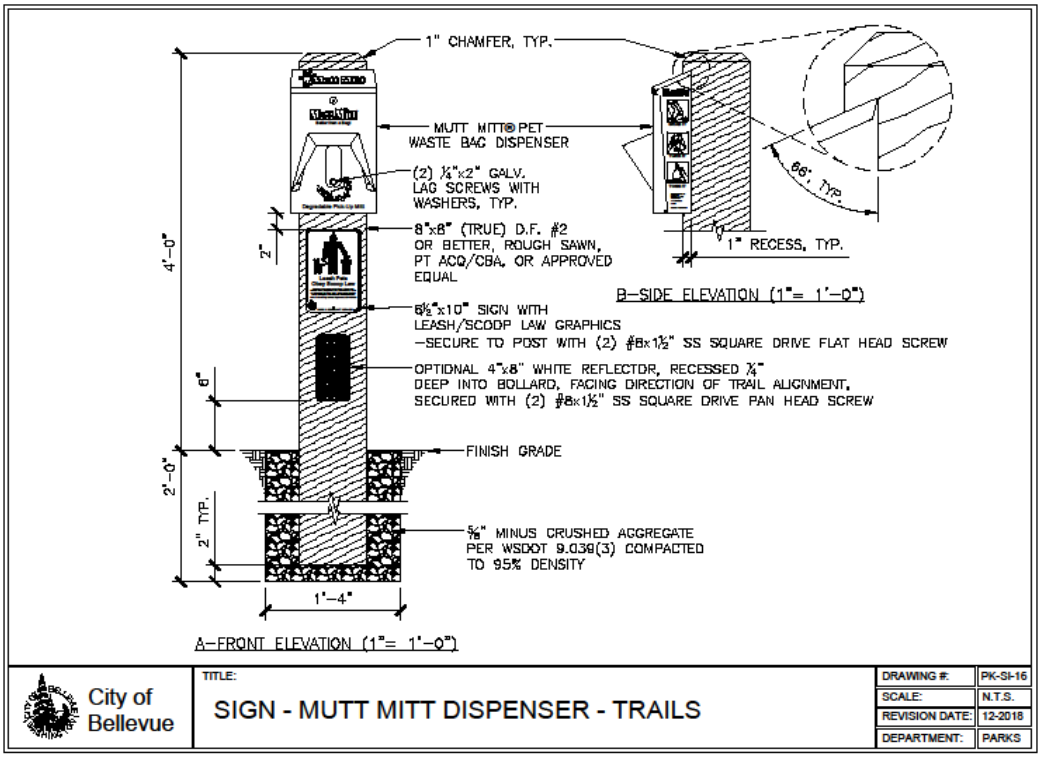

1" CHAMFER, TYP.
1'-0"
B
4'-0"
1'-2"
2'-0"
2", TYP.
1'-4"
⅛" FLAT SHEET ALUMINUM SIGN FACE POWDER COATED TIGER "TURQUOISE BLUE" #RAL-5018 OR APPROVED EQUAL
-TO BE RECESSED ¼" DEEP INTO BOLLARD IN SHAPE OF EACH SIGN PLAQUE
-TEXT AND LOGOS TO BE WHITE, NON-REFLECTIVE, DIGITAL PRINT ON 3M
-SIGNS TO RECEIVE ANTI-GRAFFITI LAMINATION
-ORIENT SIGNS IN DIRECTION OF TRAIL ALIGNMENT
8"x8" (TRUE) D.F. #2 OR BETTER POST, ROUGH SAWN, PT ACQ/CBA, OR APPROVED EQUAL
90°
FINISH GRADE
⅝" MINUS CRUSHED AGGREGATE PER WSDOT 9.03(3) COMPACTED TO 95% DENSITY
A-BOLLARD DETAIL
6½"
1½" LOGO
11"
1½"
1"
10"
1"
6½"
Trail System
Visitor Center
Parking
LC-26
911 Locator
CITY OF BELLEVUE TEXT STYLE TO BE ½" CAPS SWISS 721 BT, CURVED TO 3" RADIUS, TYP.
3½" RADIUS, TYP.
#8x1½" SS SQUARE DRIVE FLAT HEAD SCREWS, TYP.
6" WALKING SYMBOL, TYP.
"TRAIL SYSTEM" TEXT TO BE ¾" CAPS SWISS 721 BT
¾" MIN. SPACING FROM TEXT TO TOP AND BOTTOM EDGE OF SIGN, TYP.
TRAIL INFORMATION TEXT TO BE ½" CAPS ZURICH CN BT
¼" MIN. SPACING FROM TEXT TO EDGE OF SIGN, TYP.
EMERGENCY LOCATER ID -TEXT TO BE CAPS SWISS 721 BT, SIZED AS NECESSARY
½" RADIUS, TYP.
NOTE:
TEXT SHOWN IS FOR REFERENCE ONLY. FINAL TEXT TO BE DETERMINED BY BELLEVUE PARKS. SUBMIT SIGN PROOF FOR FINAL APPROVAL PRIOR TO FABRICATION.
B-SIGN DETAIL
City of Bellevue
TITLE:
SIGN - DIRECTIONAL BOLLARD - WITH EMERGENCY LOCATOR
DRAWING #: PK-SI-13D
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS

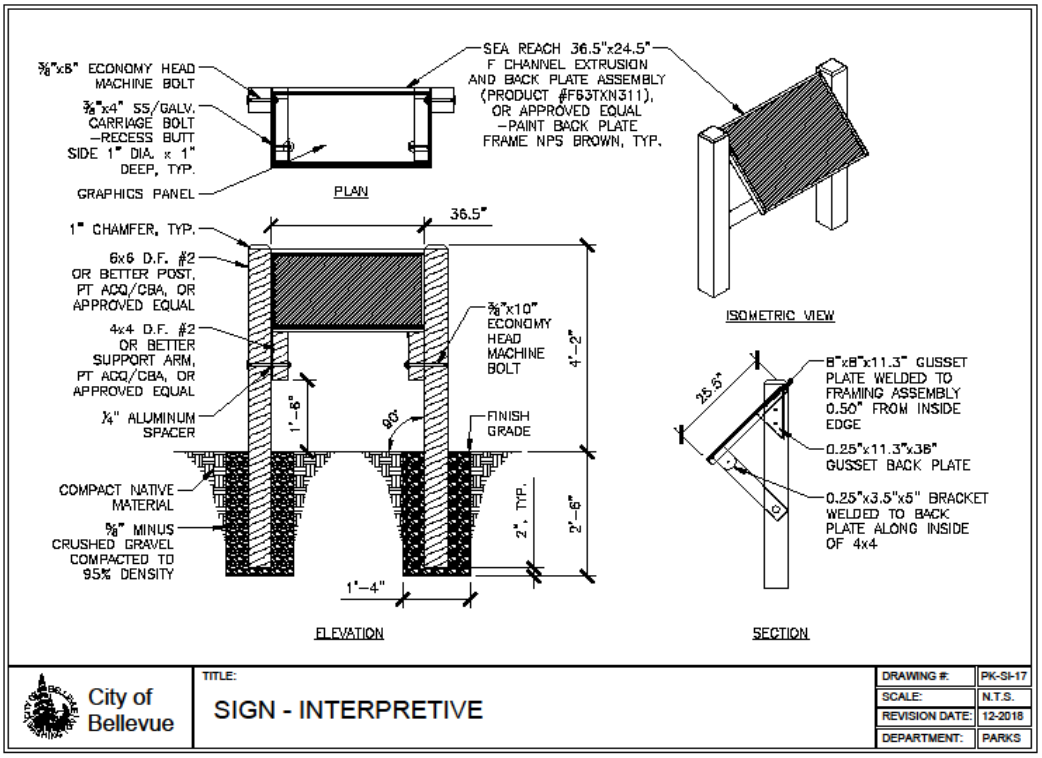

1" CHAMFER, TYP.
1'-0"
B
4'-0"
1'-2"
2'-0"
1'-0"
⅛" FLAT SHEET ALUMINUM SIGN FACE POWDER COATED TIGER "TURQUOISE BLUE" #RAL-5018 OR APPROVED EQUAL
-TO BE RECESSED ¼" DEEP INTO BOLLARD IN SHAPE OF EACH SIGN PLAQUE
-TEXT AND LOGOS TO BE WHITE, NON-REFLECTIVE, MACHINE-CUT VINYL (3-M SCOTCHCAL #3470 OR EQUAL)
-SIGNS TO RECEIVE ANTI-GRAFFITI LAMINATION
-ORIENT SIGNS IN DIRECTION OF TRAIL ALIGNMENT
8"x8" (TRUE) D.F. #2 OR BETTER POST, ROUGH SAWN, PT ACQ/CBA, OR APPROVED EQUAL
OPTIONAL 4"x8" WHITE REFLECTOR, RECESSED ¼" DEEP INTO BOLLARD, FACING DIRECTION OF TRAIL ALIGNMENT, SECURED WITH (2) #8x1½" SS SQUARE DRIVE PAN HEAD SCREW, TYP.
90°
(3) ½" DIA. GALV. CARRIAGE BOLTS, NUTS AND WASHERS
FINISH GRADE
REMOVABLE SLIDE THROUGH GALV. STEEL BRACKET AND ANCHOR, SEE BRACKET AND ANCHOR DETAILS
-BRACKET RECESSED ¼" INTO BOLLARD, TYP.
CONCRETE FOOTING
1'-0"
A-BOLLARD DETAIL
6½"
1½" LOGO
11"
1½"
1"
10"
1"
Trail System
Lake Hills Connector .7 Miles
Kelsey Creek Farm 1 Mile
135th PL SE
CITY OF BELLEVUE TEXT STYLE TO BE ½" CAPS SWISS 721 BT, CURVED TO 3" RADIUS, TYP.
3½" RADIUS, TYP.
#8x1½" SS SQUARE DRIVE FLAT HEAD SCREWS, TYP.
6" WALKING SYMBOL, TYP.
"TRAIL SYSTEM" TEXT TO BE ¾" CAPS SWISS 721 BT
¾" MIN. SPACING FROM TEXT TO TOP AND BOTTOM EDGE OF SIGN, TYP.
TRAIL INFORMATION TEXT TO BE ½" CAPS ZURICH CN BT
¼" MIN. SPACING FROM TEXT TO EDGE OF SIGN, TYP.
½" RADIUS, TYP.
NOTE:
TEXT SHOWN IS FOR REFERENCE ONLY. FINAL TEXT TO BE DETERMINED BY BELLEVUE PARKS. SUBMIT SIGN PROOF FOR FINAL APPROVAL PRIOR TO FABRICATION.
B-SIGN DETAIL
City of Bellevue
TITLE:
SIGN - DIRECTIONAL BOLLARD - REMOVABLE
DRAWING #: PK-SI-14A
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS

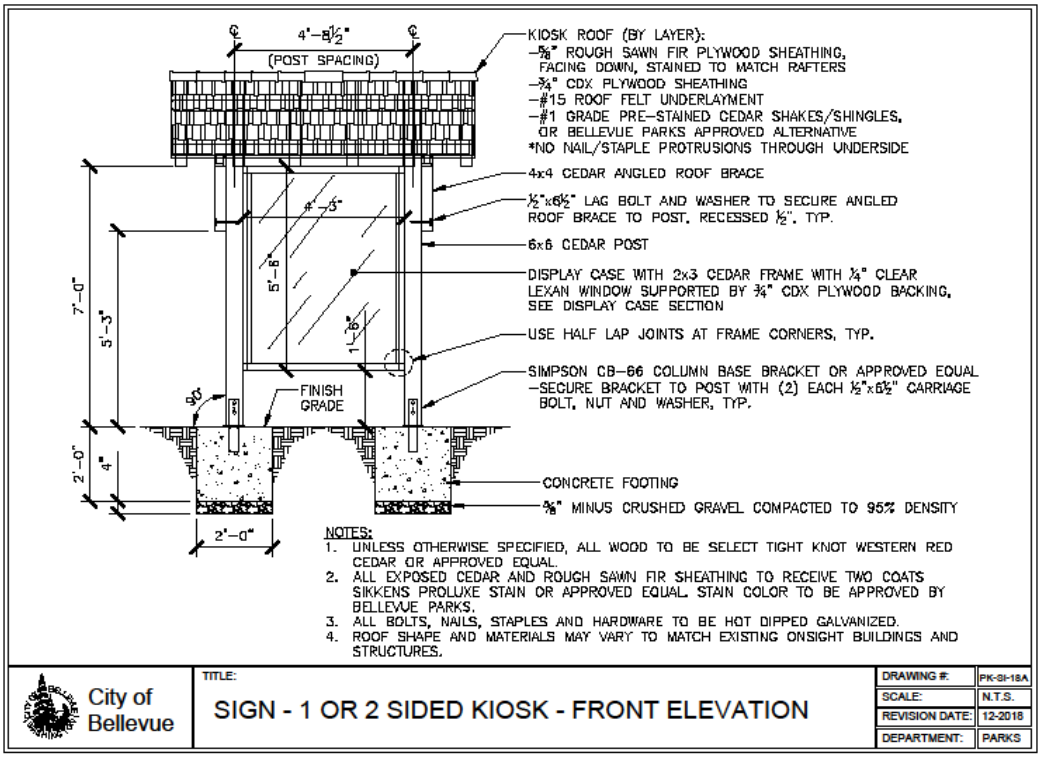

FRONT VIEW
SIDE VIEW
ISOMETRIC VIEW – N.T.S.
PLAN VIEW
1 ⅜" THICK GALV. STEEL PLATE
2 REMOVABLE PIN: ¾" DIA. GALV. STEEL ROD
3 PIN RECEIVER: 1" DIA. x ⅛" THICK GALV. STEEL PIPE WITH ⅜" NOTCH TO RECEIVE PIN
4 (6) ⅝" DIA. HOLES
5 ½ DIA. HOLE TO RECIEVE PAD LOCK
6 INCISE BOLLARD ¼" TO FIT INSIDE BRACKET
City of Bellevue
TITLE:
SIGN - DIRECTIONAL BOLLARD - REMOVABLE - SLIDE THROUGH BRACKET DETAIL
DRAWING #: PK-SI-14B
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS

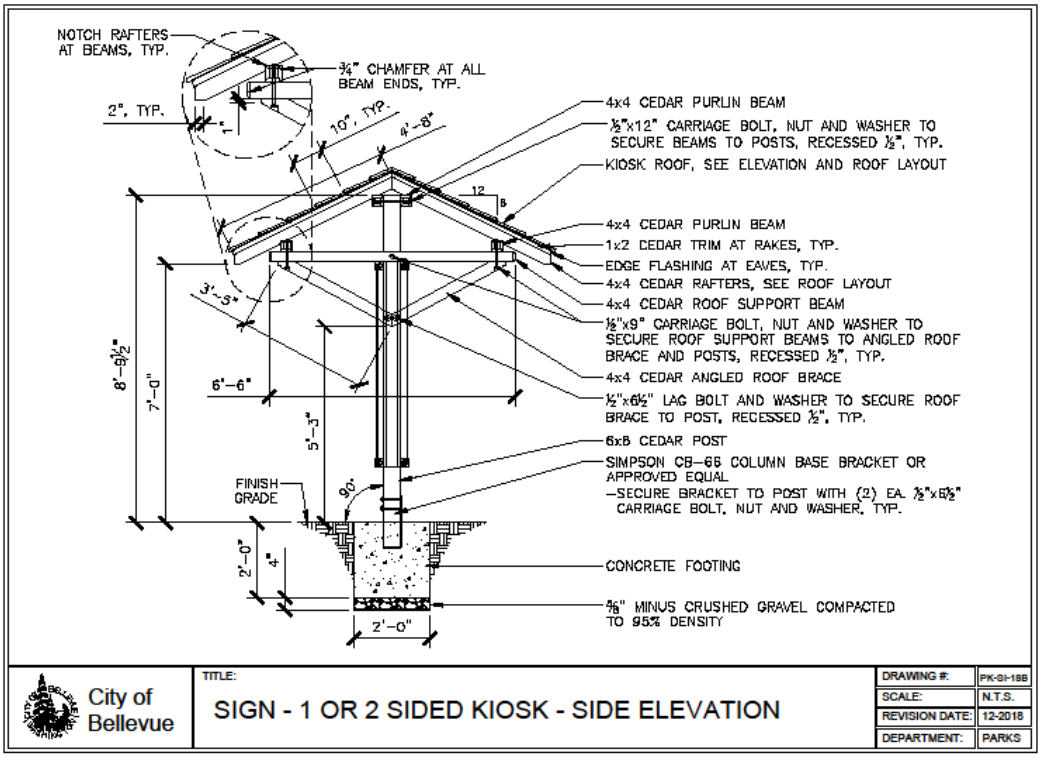

SIDE VIEW
FRONT VIEW
ISOMETRIC VIEW – N.T.S.
PLAN VIEW
1 ⅜" THICK GALV. STEEL PLATE
2 ¼"x1¼"x1¼" GALV. ANGLE IRON
3 ¼"x1" GALV. STEEL BAR
4 2" DIA. SCH 40 GALV. STEEL POST
5 ½" DIA. GALV. STEEL ROD
6 FINISHED GRADE OF HARDSURFACE PAVEMENT
City of Bellevue
TITLE:
SIGN - DIRECTIONAL BOLLARD - REMOVABLE - ANCHOR DETAIL
DRAWING #: PK-SI-14C
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS

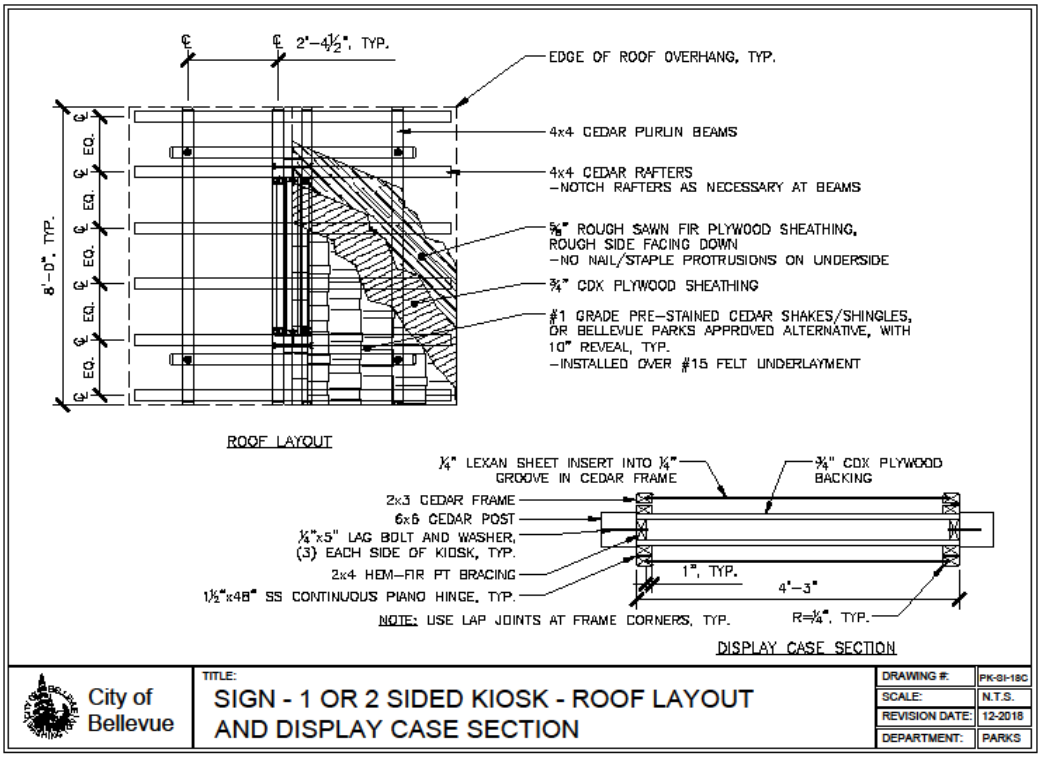

¾"–1" CHAMFER, TYP.
–TREAT ALL EXPOSED CUTS WITH COPPER NAPHTHENATE WOOD PRESERVATIVE
12"x18" SIGN WITH LEASH/SCOOP LAW GRAPHICS
(2) ¼"x2" GALV. LAG SCREWS WITH WASHERS, TYP.
MUTT MITT® PET WASTE BAG DISPENSER
(2) ¼"x2" GALV. LAG SCREWS WITH WASHERS, TYP.
4x4 D.F. #2 OR BETTER POST, PT ACQ/CBA, OR APPROVED EQUAL
FINISH GRADE
COMPACT NATIVE MATERIAL
⅜" CRUSHED GRAVEL COMPACTED TO 95% DENSITY
1'–0"
2", TYP.
2", TYP.
6'–0" TYP.
2" INCH COVER, TYP.
2'–0"
2", TYP.
90°
Leash Pets
Obey Scoop Law
City of Bellevue
TITLE:
SIGN - MUTT MITT DISPENSER - PARKS
DRAWING #: PK-SI-15
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS

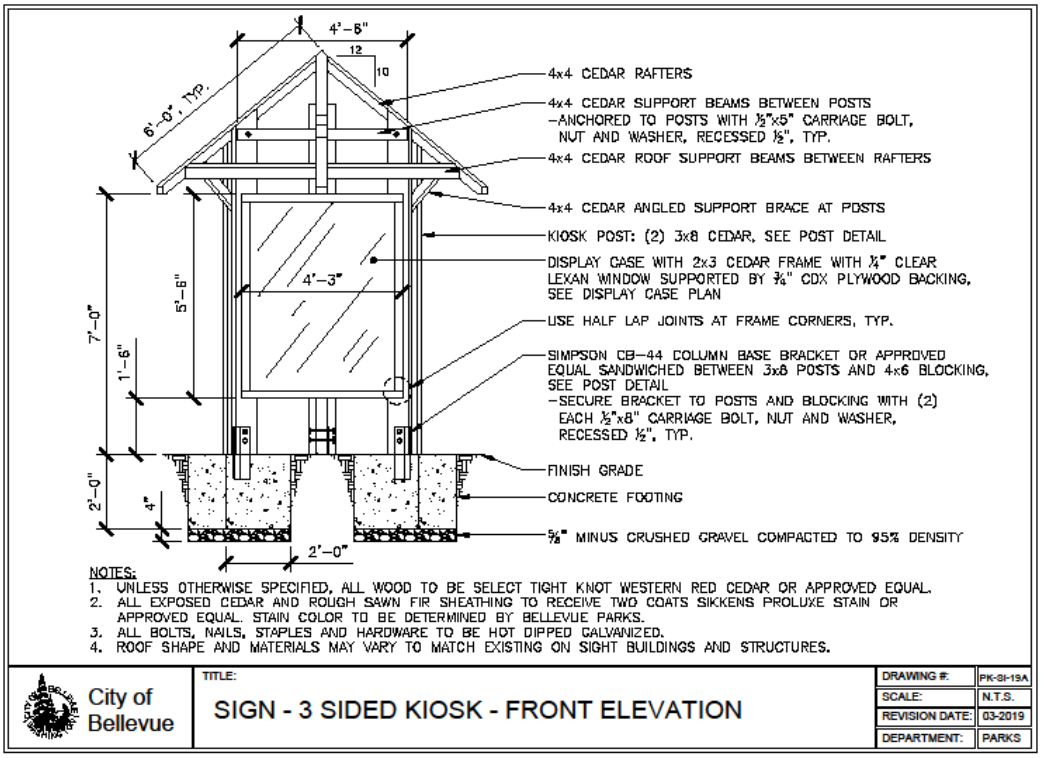

1" CHAMFER, TYP.
MUTT MITT® PET WASTE BAG DISPENSER
(2) ¼"x2" GALV. LAG SCREWS WITH WASHERS, TYP.
8"x8" (TRUE) D.F. #2 OR BETTER, ROUGH SAWN, PT ACQ/CBA, OR APPROVED EQUAL
8½"x10" SIGN WITH LEASH/SCOOP LAW GRAPHICS
–SECURE TO POST WITH (2) #8x1½" SS SQUARE DRIVE FLAT HEAD SCREW
OPTIONAL 4"x8" WHITE REFLECTOR, RECESSED ¼" DEEP INTO BOLLARD, FACING DIRECTION OF TRAIL ALIGNMENT, SECURED WITH (2) #8x1½" SS SQUARE DRIVE PAN HEAD SCREW
FINISH GRADE
⅝" MINUS CRUSHED AGGREGATE PER WSDOT 9.03(3) COMPACTED TO 95% DENSITY
1'–4"
4'–0"
2"
6"
2'–0"
2" TYP.
68°, TYP.
1" RECESS, TYP.
B–SIDE ELEVATION (1"= 1'–0")
A–FRONT ELEVATION (1"= 1'–0")
City of Bellevue
TITLE:
SIGN - MUTT MITT DISPENSER - TRAILS
DRAWING #: PK-SI-16
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS

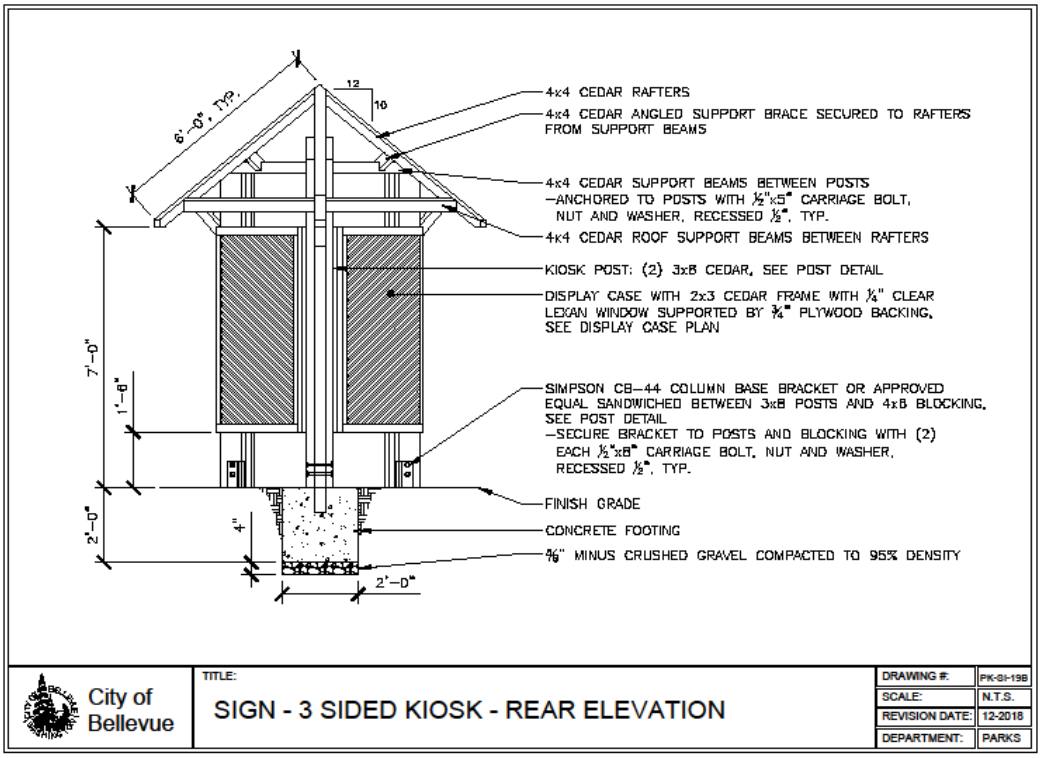

⅜"x8" ECONOMY HEAD MACHINE BOLT
⅜"x4" SS/GALV. CARRIAGE BOLT –RECESS BUTT SIDE 1" DIA. x 1" DEEP, TYP.
GRAPHICS PANEL
SEA REACH 36.5"x24.5" F CHANNEL EXTRUSION AND BACK PLATE ASSEMBLY (PRODUCT #F63TXN311), OR APPROVED EQUAL –PAINT BACK PLATE FRAME NPS BROWN, TYP.
PLAN
ISOMETRIC VIEW
36.5"
1" CHAMFER, TYP.
6x6 D.F. #2 OR BETTER POST, PT ACQ/CBA, OR APPROVED EQUAL
4x4 D.F. #2 OR BETTER SUPPORT ARM, PT ACQ/CBA, OR APPROVED EQUAL
¼" ALUMINUM SPACER
⅜"x10" ECONOMY HEAD MACHINE BOLT
4'-2"
1'-6"
FINISH GRADE
COMPACT NATIVE MATERIAL
⅝" MINUS CRUSHED GRAVEL COMPACTED TO 95% DENSITY
2", TYP.
2'-6"
1'-4"
ELEVATION
25.3°
8"x8"x11.3" GUSSET PLATE WELDED TO FRAMING ASSEMBLY 0.50" FROM INSIDE EDGE
0.25"x11.3"x38" GUSSET BACK PLATE
0.25"x3.5"x5" BRACKET WELDED TO BACK PLATE ALONG INSIDE OF 4x4
SECTION
City of Bellevue
TITLE:
SIGN - INTERPRETIVE
DRAWING #: PK-SI-17
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS

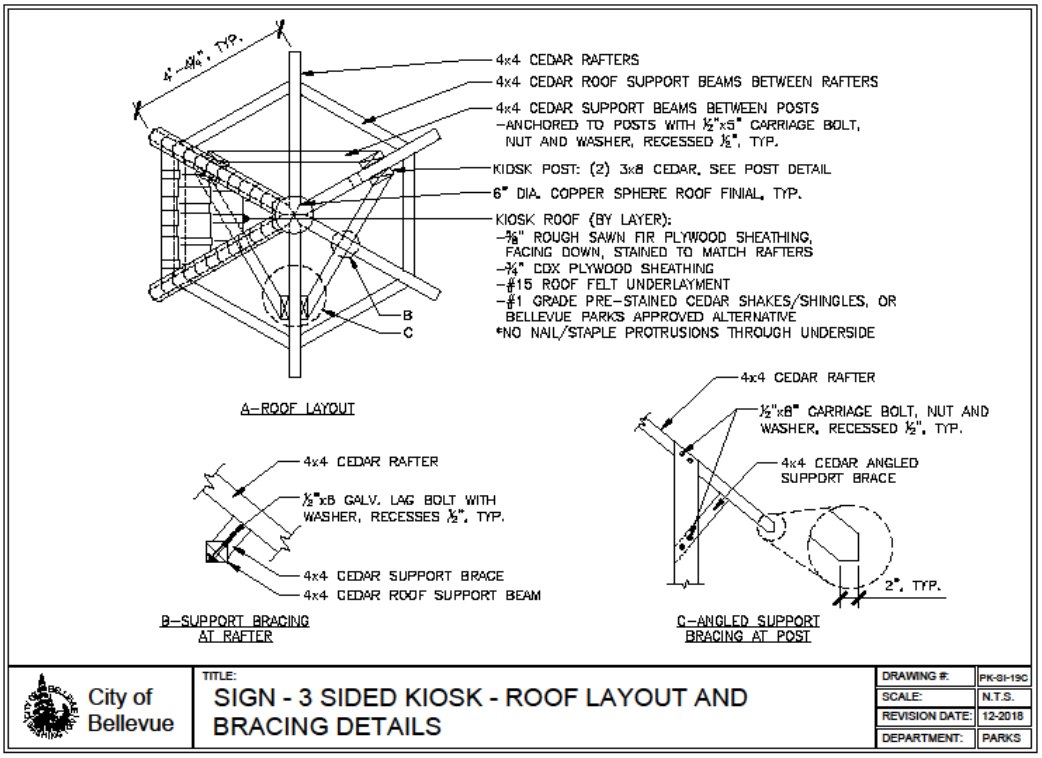

4'-8½" (POST SPACING)
KIOSK ROOF (BY LAYER):
–⅝" ROUGH SAWN FIR PLYWOOD SHEATHING, FACING DOWN, STAINED TO MATCH RAFTERS
–¾" CDX PLYWOOD SHEATHING
–#15 ROOF FELT UNDERLAYMENT
–#1 GRADE PRE–STAINED CEDAR SHAKES/SHINGLES, OR BELLEVUE PARKS APPROVED ALTERNATIVE
*NO NAIL/STAPLE PROTRUSIONS THROUGH UNDERSIDE
4x4 CEDAR ANGLED ROOF BRACE
½"x6½" LAG BOLT AND WASHER TO SECURE ANGLED ROOF BRACE TO POST, RECESSED ½", TYP.
6x6 CEDAR POST
DISPLAY CASE WITH 2x3 CEDAR FRAME WITH ¼" CLEAR LEXAN WINDOW SUPPORTED BY ¾" CDX PLYWOOD BACKING, SEE DISPLAY CASE SECTION
USE HALF LAP JOINTS AT FRAME CORNERS, TYP.
SIMPSON CB–66 COLUMN BASE BRACKET OR APPROVED EQUAL –SECURE BRACKET TO POST WITH (2) EACH ½"x6½" CARRIAGE BOLT, NUT AND WASHER, TYP.
4'-7"
5'-6"
1'-6"
7'-0"
5'-3"
FINISH GRADE
2'-0"
4"
2'-0"
CONCRETE FOOTING
⅝" MINUS CRUSHED GRAVEL COMPACTED TO 95% DENSITY
NOTES:
1. UNLESS OTHERWISE SPECIFIED, ALL WOOD TO BE SELECT TIGHT KNOT WESTERN RED CEDAR OR APPROVED EQUAL.
2. ALL EXPOSED CEDAR AND ROUGH SAWN FIR SHEATHING TO RECEIVE TWO COATS SIKKENS PROLUXE STAIN OR APPROVED EQUAL. STAIN COLOR TO BE APPROVED BY BELLEVUE PARKS.
3. ALL BOLTS, NAILS, STAPLES AND HARDWARE TO BE HOT DIPPED GALVANIZED.
4. ROOF SHAPE AND MATERIALS MAY VARY TO MATCH EXISTING ONSIGHT BUILDINGS AND STRUCTURES.
City of Bellevue
TITLE:
SIGN - 1 OR 2 SIDED KIOSK - FRONT ELEVATION
DRAWING #: PK-SI-18A
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS

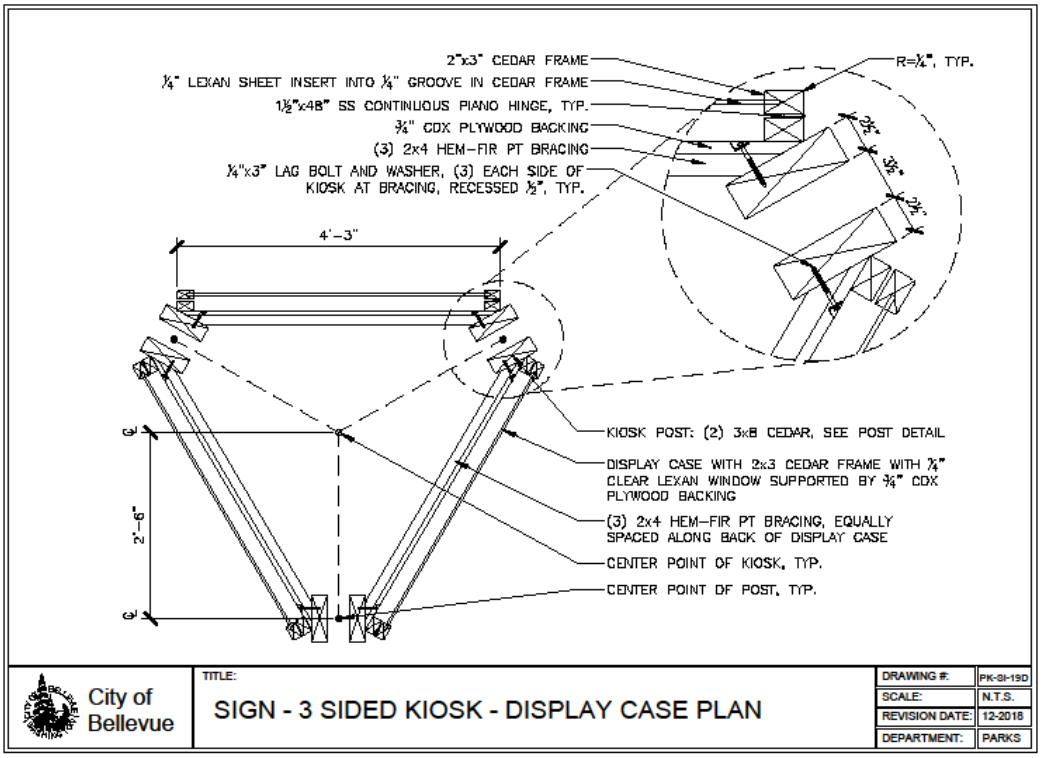

NOTCH RAFTERS AT BEAMS, TYP.
¾" CHAMFER AT ALL BEAM ENDS, TYP.
2", TYP.
10", TYP.
4'-8"
4x4 CEDAR PURLIN BEAM
½"x12" CARRIAGE BOLT, NUT AND WASHER TO SECURE BEAMS TO POSTS, RECESSED ½", TYP.
KIOSK ROOF, SEE ELEVATION AND ROOF LAYOUT
12
8
4x4 CEDAR PURLIN BEAM
1x2 CEDAR TRIM AT RAKES, TYP.
EDGE FLASHING AT EAVES, TYP.
4x4 CEDAR RAFTERS, SEE ROOF LAYOUT
4x4 CEDAR ROOF SUPPORT BEAM
½"x9" CARRIAGE BOLT, NUT AND WASHER TO SECURE ROOF SUPPORT BEAMS TO ANGLED ROOF BRACE AND POSTS, RECESSED ½", TYP.
3'-5"
8'-6½"
7'-0"
6'-6"
4x4 CEDAR ANGLED ROOF BRACE
½"x6½" LAG BOLT AND WASHER TO SECURE ROOF BRACE TO POST, RECESSED ½", TYP.
5'-3"
6x6 CEDAR POST
SIMPSON CB-66 COLUMN BASE BRACKET OR APPROVED EQUAL
-SECURE BRACKET TO POST WITH (2) EA. ½"x6½" CARRIAGE BOLT, NUT AND WASHER, TYP.
FINISH GRADE
90°
2'-0"
4"
CONCRETE FOOTING
⅜" MINUS CRUSHED GRAVEL COMPACTED TO 95% DENSITY
2'-0"
City of Bellevue
TITLE:
SIGN - 1 OR 2 SIDED KIOSK - SIDE ELEVATION
DRAWING #: PK-SI-18B
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS

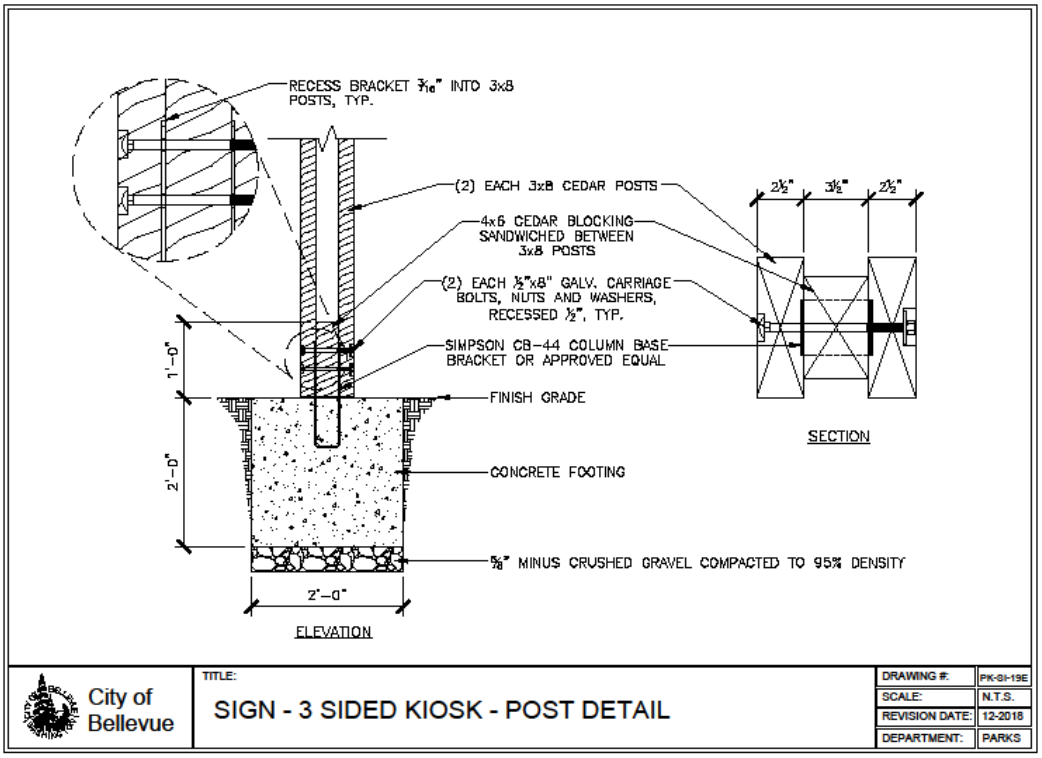

℄
℄ 2'-4½", TYP.
EDGE OF ROOF OVERHANG, TYP.
4x4 CEDAR PURLIN BEAMS
4x4 CEDAR RAFTERS
-NOTCH RAFTERS AS NECESSARY AT BEAMS
⅝" ROUGH SAWN FIR PLYWOOD SHEATHING, ROUGH SIDE FACING DOWN
-NO NAIL/STAPLE PROTRUSIONS ON UNDERSIDE
¾" CDX PLYWOOD SHEATHING
#1 GRADE PRE-STAINED CEDAR SHAKES/SHINGLES, OR BELLEVUE PARKS APPROVED ALTERNATIVE, WITH 10" REVEAL, TYP.
-INSTALLED OVER #15 FELT UNDERLAYMENT
8'-0", TYP.
6" EQ.
ROOF LAYOUT
¼" LEXAN SHEET INSERT INTO ¼" GROOVE IN CEDAR FRAME
¾" CDX PLYWOOD BACKING
2x3 CEDAR FRAME
6x6 CEDAR POST
½"x5" LAG BOLT AND WASHER, (3) EACH SIDE OF KIOSK, TYP.
2x4 HEM-FIR PT BRACING
1½"x48" SS CONTINUOUS PIANO HINGE, TYP.
NOTE: USE LAP JOINTS AT FRAME CORNERS, TYP.
1", TYP.
4'-3"
R=¼", TYP.
DISPLAY CASE SECTION
City of Bellevue
TITLE:
SIGN - 1 OR 2 SIDED KIOSK - ROOF LAYOUT AND DISPLAY CASE SECTION
DRAWING #: PK-SI-18C
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS


4'-6"
12
10
6'-0", TYP.
4x4 CEDAR RAFTERS
4x4 CEDAR SUPPORT BEAMS BETWEEN POSTS
-ANCHORED TO POSTS WITH ½"x5" CARRIAGE BOLT, NUT AND WASHER, RECESSED ½", TYP.
4x4 CEDAR ROOF SUPPORT BEAMS BETWEEN RAFTERS
4x4 CEDAR ANGLED SUPPORT BRACE AT POSTS
KIOSK POST: (2) 3x8 CEDAR, SEE POST DETAIL
DISPLAY CASE WITH 2x3 CEDAR FRAME WITH ¼" CLEAR LEXAN WINDOW SUPPORTED BY ¾" CDX PLYWOOD BACKING, SEE DISPLAY CASE PLAN
4'-3"
5'-6"
7'-0"
1'-6"
USE HALF LAP JOINTS AT FRAME CORNERS, TYP.
SIMPSON CB-44 COLUMN BASE BRACKET OR APPROVED EQUAL SANDWICHED BETWEEN 3x8 POSTS AND 4x6 BLOCKING, SEE POST DETAIL
-SECURE BRACKET TO POSTS AND BLOCKING WITH (2) EACH ½"x8" CARRIAGE BOLT, NUT AND WASHER, RECESSED ½", TYP.
FINISH GRADE
CONCRETE FOOTING
⅝" MINUS CRUSHED GRAVEL COMPACTED TO 95% DENSITY
2'-0"
4"
2'-0"
NOTES:
1. UNLESS OTHERWISE SPECIFIED, ALL WOOD TO BE SELECT TIGHT KNOT WESTERN RED CEDAR OR APPROVED EQUAL.
2. ALL EXPOSED CEDAR AND ROUGH SAWN FIR SHEATHING TO RECEIVE TWO COATS SIKKENS PROLUXE STAIN OR APPROVED EQUAL. STAIN COLOR TO BE DETERMINED BY BELLEVUE PARKS.
3. ALL BOLTS, NAILS, STAPLES AND HARDWARE TO BE HOT DIPPED GALVANIZED.
4. ROOF SHAPE AND MATERIALS MAY VARY TO MATCH EXISTING ON SIGHT BUILDINGS AND STRUCTURES.
City of Bellevue
TITLE:
SIGN - 3 SIDED KIOSK - FRONT ELEVATION
DRAWING #: PK-SI-19A
SCALE: N.T.S.
REVISION DATE: 03-2019
DEPARTMENT: PARKS

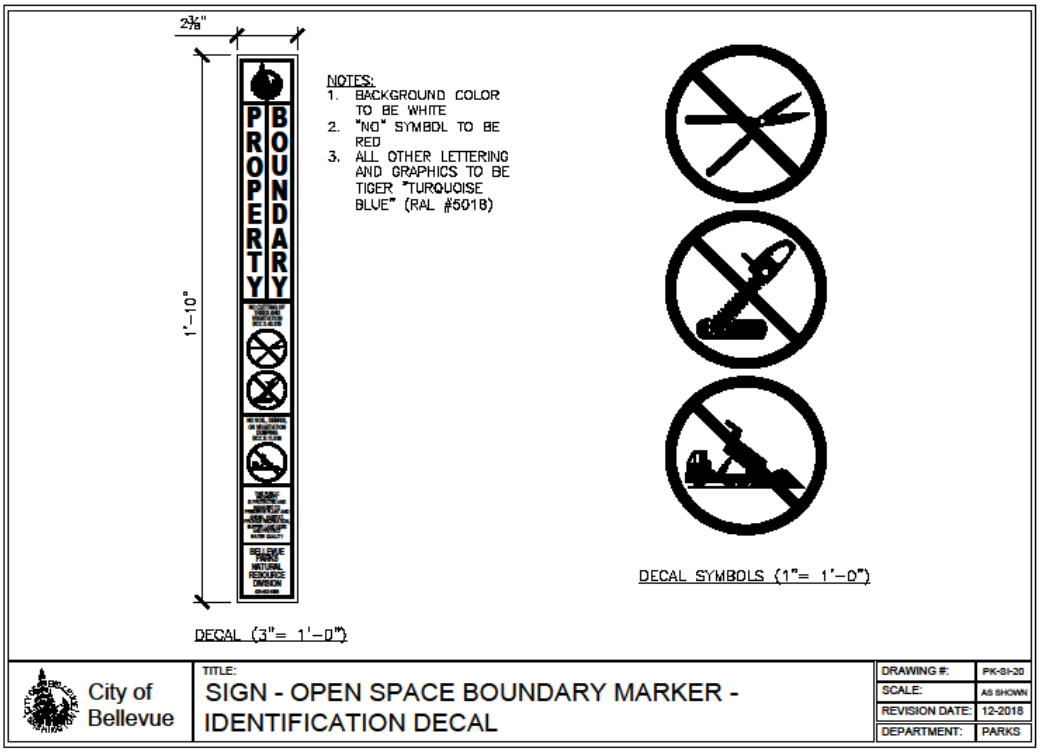

12
10
6'-0", TYP.
4x4 CEDAR RAFTERS
4x4 CEDAR ANGLED SUPPORT BRACE SECURED TO RAFTERS FROM SUPPORT BEAMS
4x4 CEDAR SUPPORT BEAMS BETWEEN POSTS
-ANCHORED TO POSTS WITH ½"x5" CARRIAGE BOLT, NUT AND WASHER, RECESSED ½", TYP.
4x4 CEDAR ROOF SUPPORT BEAMS BETWEEN RAFTERS
KIOSK POST: (2) 3x8 CEDAR, SEE POST DETAIL
DISPLAY CASE WITH 2x3 CEDAR FRAME WITH ¼" CLEAR LEXAN WINDOW SUPPORTED BY ¾" PLYWOOD BACKING, SEE DISPLAY CASE PLAN
7'-0"
1'-6"
SIMPSON CB-44 COLUMN BASE BRACKET OR APPROVED EQUAL SANDWICHED BETWEEN 3x8 POSTS AND 4x6 BLOCKING, SEE POST DETAIL
-SECURE BRACKET TO POSTS AND BLOCKING WITH (2) EACH ½"x8" CARRIAGE BOLT, NUT AND WASHER, RECESSED ½", TYP.
FINISH GRADE
CONCRETE FOOTING
⅝" MINUS CRUSHED GRAVEL COMPACTED TO 95% DENSITY
2'-0"
4"
2'-0"
City of Bellevue
TITLE:
SIGN - 3 SIDED KIOSK - REAR ELEVATION
DRAWING #: PK-SI-19B
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS


4'-4¼", TYP.
4x4 CEDAR RAFTERS
4x4 CEDAR ROOF SUPPORT BEAMS BETWEEN RAFTERS
4x4 CEDAR SUPPORT BEAMS BETWEEN POSTS
-ANCHORED TO POSTS WITH ½"x5" CARRIAGE BOLT, NUT AND WASHER, RECESSED ½", TYP.
KIOSK POST: (2) 3x8 CEDAR, SEE POST DETAIL
6" DIA. COPPER SPHERE ROOF FINIAL, TYP.
KIOSK ROOF (BY LAYER):
-⅜" ROUGH SAWN FIR PLYWOOD SHEATHING, FACING DOWN, STAINED TO MATCH RAFTERS
-¾" CDX PLYWOOD SHEATHING
-#15 ROOF FELT UNDERLAYMENT
-#1 GRADE PRE-STAINED CEDAR SHAKES/SHINGLES, OR BELLEVUE PARKS APPROVED ALTERNATIVE
*NO NAIL/STAPLE PROTRUSIONS THROUGH UNDERSIDE
B
C
A-ROOF LAYOUT
4x4 CEDAR RAFTER
½"xB GALV. LAG BOLT WITH WASHER, RECESSES ½", TYP.
4x4 CEDAR SUPPORT BRACE
4x4 CEDAR ROOF SUPPORT BEAM
B-SUPPORT BRACING AT RAFTER
4x4 CEDAR RAFTER
½"xB" CARRIAGE BOLT, NUT AND WASHER, RECESSED ½", TYP.
4x4 CEDAR ANGLED SUPPORT BRACE
2", TYP.
C-ANGLED SUPPORT BRACING AT POST
City of Bellevue
TITLE:
SIGN - 3 SIDED KIOSK - ROOF LAYOUT AND BRACING DETAILS
DRAWING #: PK-SI-19C
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS

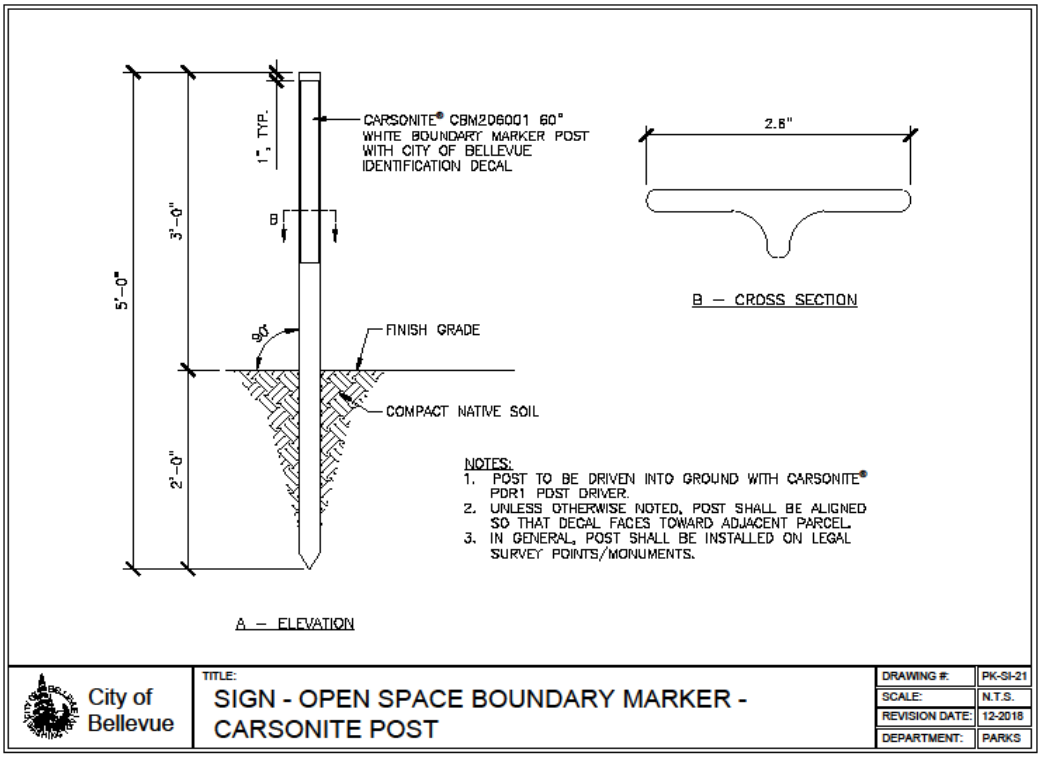

2"x3" CEDAR FRAME
¼" LEXAN SHEET INSERT INTO ¼" GROOVE IN CEDAR FRAME
1½"x48" SS CONTINUOUS PIANO HINGE, TYP.
¾" CDX PLYWOOD BACKING
(3) 2x4 HEM-FIR PT BRACING
¼"x3" LAG BOLT AND WASHER, (3) EACH SIDE OF KIOSK AT BRACING, RECESSED ½", TYP.
R=¼", TYP.
4'-3"
2'-6"
KIOSK POST: (2) 3x8 CEDAR, SEE POST DETAIL
DISPLAY CASE WITH 2x3 CEDAR FRAME WITH ¼" CLEAR LEXAN WINDOW SUPPORTED BY ¾" CDX PLYWOOD BACKING
(3) 2x4 HEM-FIR PT BRACING, EQUALLY SPACED ALONG BACK OF DISPLAY CASE
CENTER POINT OF KIOSK, TYP.
CENTER POINT OF POST, TYP.
City of Bellevue
TITLE:
SIGN - 3 SIDED KIOSK - DISPLAY CASE PLAN
DRAWING #: PK-SI-19D
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS

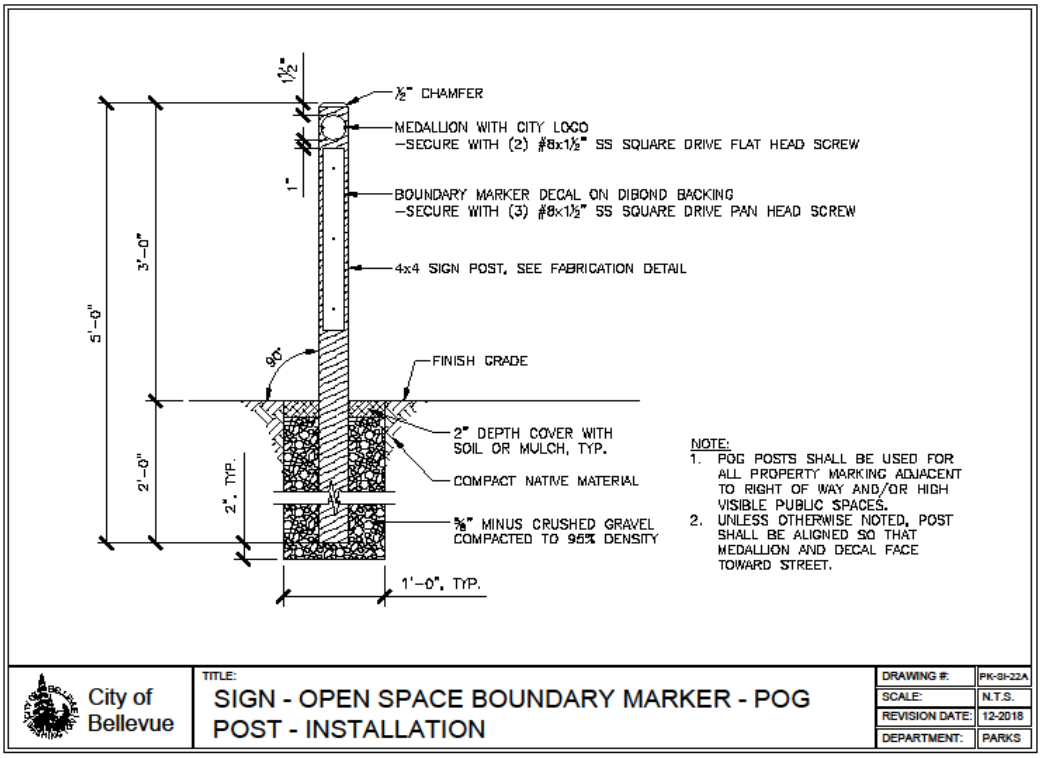


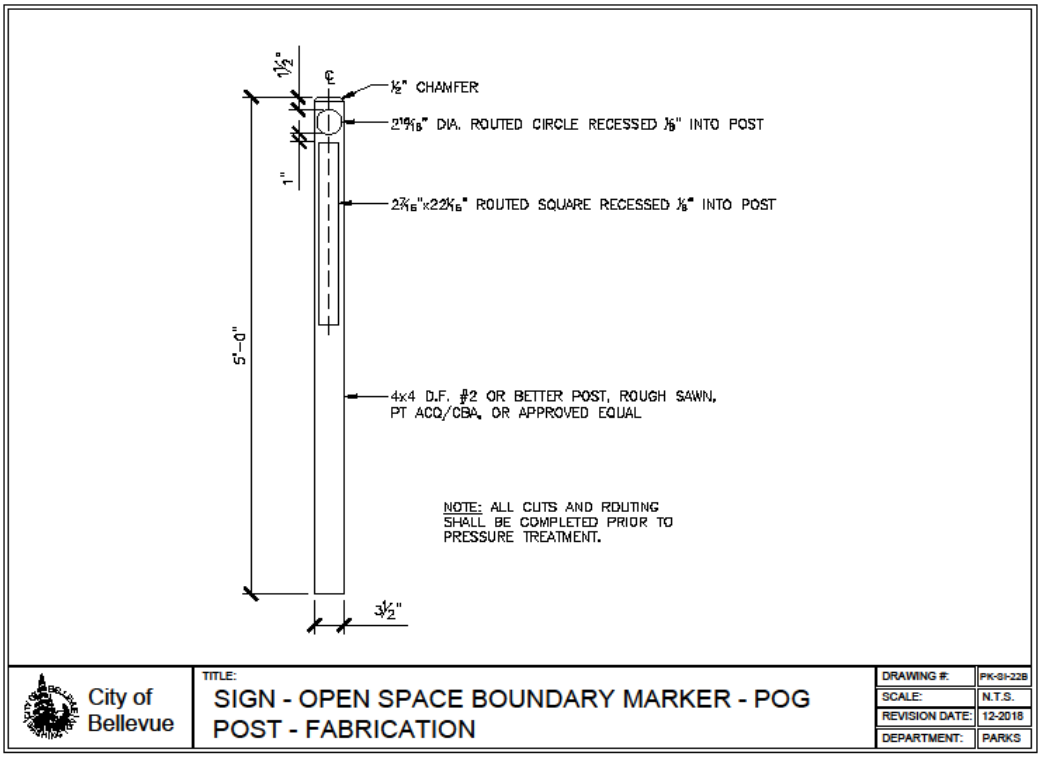
City of Bellevue	TITLE: SIGN - 3 SIDED KIOSK - POST DETAIL	DRAWING #: PK-SI-19E SCALE: N.T.S. REVISION DATE: 12-2018 DEPARTMENT: PARKS

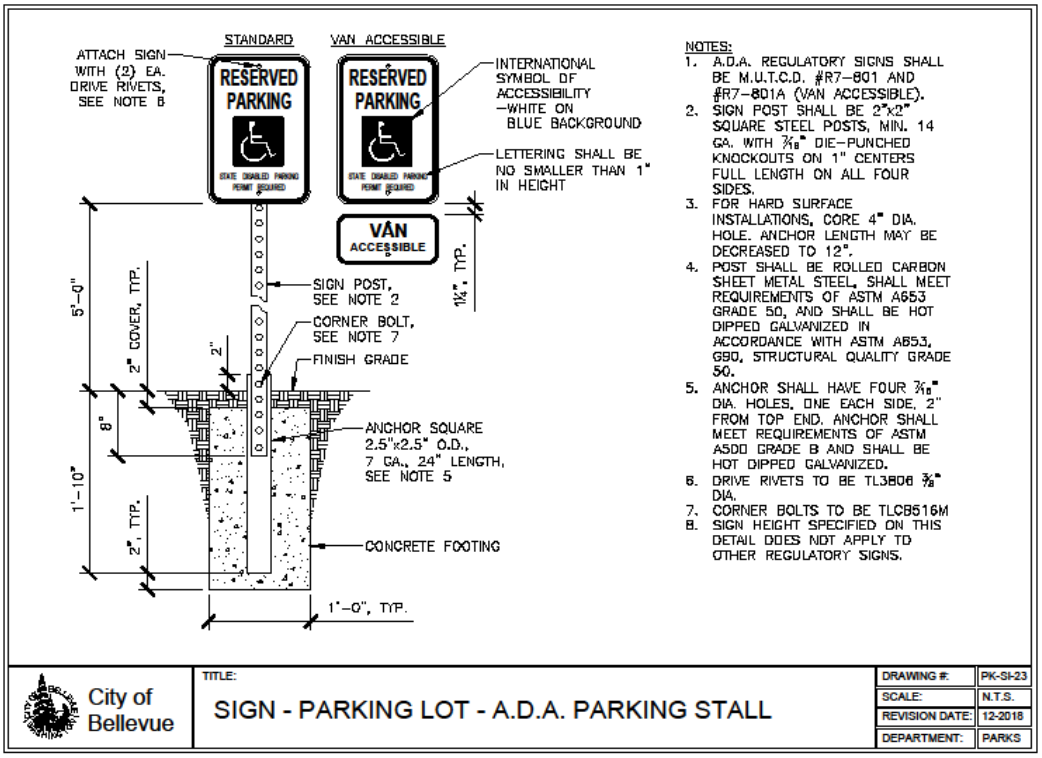


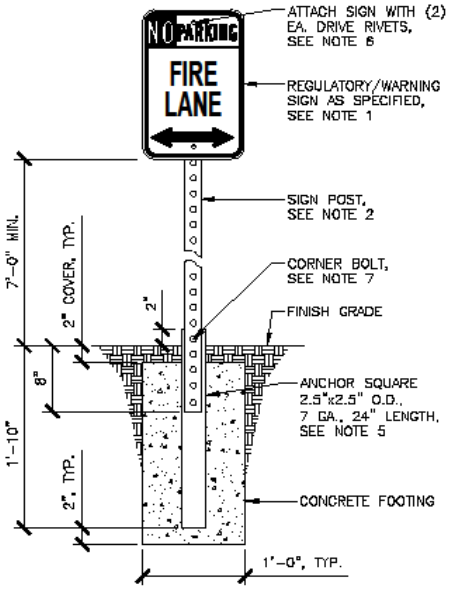
City of Bellevue	TITLE: SIGN - OPEN SPACE BOUNDARY MARKER - IDENTIFICATION DECAL	DRAWING #: PK-SI-20 SCALE: AS SHOWN REVISION DATE: 12-2018 DEPARTMENT: PARKS


CARSONITE® CBM206001 60" WHITE BOUNDARY MARKER POST WITH CITY OF BELLEVUE IDENTIFICATION DECAL
1", TYP.
3'-0"
5'-0"
2'-0"
B
90°
FINISH GRADE
COMPACT NATIVE SOIL
2.8"
B — CROSS SECTION
NOTES:
1. POST TO BE DRIVEN INTO GROUND WITH CARSONITE® PDR1 POST DRIVER.
2. UNLESS OTHERWISE NOTED, POST SHALL BE ALIGNED SO THAT DECAL FACES TOWARD ADJACENT PARCEL.
3. IN GENERAL, POST SHALL BE INSTALLED ON LEGAL SURVEY POINTS/MONUMENTS.
A — ELEVATION
City of Bellevue
TITLE:
SIGN - OPEN SPACE BOUNDARY MARKER - CARSONITE POST
DRAWING #: PK-SI-21
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS


1½"
½" CHAMFER
MEDALLION WITH CITY LOGO
—SECURE WITH (2) #8x1½" SS SQUARE DRIVE FLAT HEAD SCREW
1"
BOUNDARY MARKER DECAL ON DIBOND BACKING
—SECURE WITH (3) #8x1½" SS SQUARE DRIVE PAN HEAD SCREW
4x4 SIGN POST, SEE FABRICATION DETAIL
3'-0"
5'-0"
90°
FINISH GRADE
2" DEPTH COVER WITH SOIL OR MULCH, TYP.
COMPACT NATIVE MATERIAL
2'-0"
2", TYP.
⅜" MINUS CRUSHED GRAVEL COMPACTED TO 95% DENSITY
1'-0", TYP.
NOTE:
1. POG POSTS SHALL BE USED FOR ALL PROPERTY MARKING ADJACENT TO RIGHT OF WAY AND/OR HIGH VISIBLE PUBLIC SPACES.
2. UNLESS OTHERWISE NOTED, POST SHALL BE ALIGNED SO THAT MEDALLION AND DECAL FACE TOWARD STREET.
City of Bellevue
TITLE:
SIGN - OPEN SPACE BOUNDARY MARKER - POG POST - INSTALLATION
DRAWING #: PK-SI-22A
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS


1½"
℄
½" CHAMFER
2 19/16" DIA. ROUTED CIRCLE RECESSED ⅛" INTO POST
1"
2 7/16"x2 2 1/16" ROUTED SQUARE RECESSED ⅛" INTO POST
5'-0"
4x4 D.F. #2 OR BETTER POST, ROUGH SAWN, PT ACQ/CBA, OR APPROVED EQUAL
NOTE: ALL CUTS AND ROUTING SHALL BE COMPLETED PRIOR TO PRESSURE TREATMENT.
3½"
City of Bellevue
TITLE:
SIGN - OPEN SPACE BOUNDARY MARKER - POG POST - FABRICATION
DRAWING #: PK-SI-22B
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS

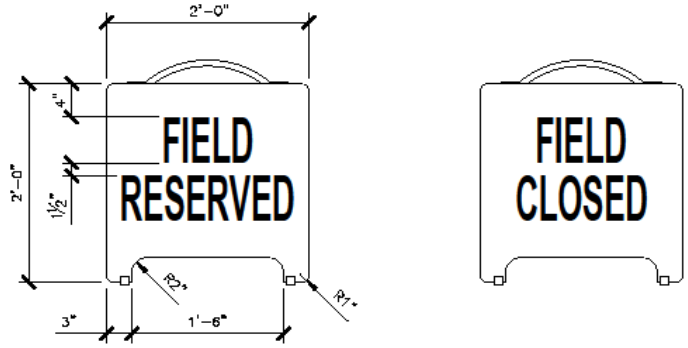

STANDARD
VAN ACCESSIBLE
ATTACH SIGN WITH (2) EA. DRIVE RIVETS, SEE NOTE 8
RESERVED PARKING
STATE DISABLED PARKING PERMIT REQUIRED
INTERNATIONAL SYMBOL OF ACCESSIBILITY —WHITE ON BLUE BACKGROUND
LETTERING SHALL BE NO SMALLER THAN 1" IN HEIGHT
VAN ACCESSIBLE
1¼" TYP.
SIGN POST, SEE NOTE 2
CORNER BOLT, SEE NOTE 7
FINISH GRADE
2" COVER, TYP.
2"
5'-0"
8"
1'-10"
2", TYP.
ANCHOR SQUARE 2.5"x2.5" O.D., 7 GA., 24" LENGTH, SEE NOTE 5
CONCRETE FOOTING
1'-0", TYP.
NOTES:
1. A.D.A. REGULATORY SIGNS SHALL BE M.U.T.C.D. #R7-801 AND #R7-801A (VAN ACCESSIBLE).
2. SIGN POST SHALL BE 2"x2" SQUARE STEEL POSTS, MIN. 14 GA. WITH 3/16" DIE-PUNCHED KNOCKOUTS ON 1" CENTERS FULL LENGTH ON ALL FOUR SIDES.
3. FOR HARD SURFACE INSTALLATIONS, CORE 4" DIA. HOLE. ANCHOR LENGTH MAY BE DECREASED TO 12".
4. POST SHALL BE ROLLED CARBON SHEET METAL STEEL, SHALL MEET REQUIREMENTS OF ASTM A653 GRADE 50, AND SHALL BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A653, G90, STRUCTURAL QUALITY GRADE 50.
5. ANCHOR SHALL HAVE FOUR 3/16" DIA. HOLES, ONE EACH SIDE, 2" FROM TOP END. ANCHOR SHALL MEET REQUIREMENTS OF ASTM A500 GRADE B AND SHALL BE HOT DIPPED GALVANIZED.
6. DRIVE RIVETS TO BE TL3808 3/8" DIA.
7. CORNER BOLTS TO BE TLCB516M
8. SIGN HEIGHT SPECIFIED ON THIS DETAIL DOES NOT APPLY TO OTHER REGULATORY SIGNS.
City of Bellevue
TITLE:
SIGN - PARKING LOT - A.D.A. PARKING STALL
DRAWING #: PK-SI-23
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS



NOTES:

1. SIGNS SHALL MEET ALL REQUIREMENTS AS ESTABLISHED IN THE LATEST EDITION OF THE FEDERAL HIGHWAY ADMINISTRATION'S MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.).
2. SIGN POST SHALL BE 2"x2" SQUARE STEEL POSTS, MIN. 14 GA. WITH 7/16" DIE-PUNCHED KNOCKOUTS ON 1" CENTERS FULL LENGTH ON ALL FOUR SIDES.
3. FOR HARD SURFACE INSTALLATIONS, CORE 4" DIA. HOLE. ANCHOR LENGTH MAY BE DECREASED TO 12".
4. POST SHALL BE ROLLED CARBON SHEET METAL STEEL, SHALL MEET REQUIREMENTS OF ASTM A653 GRADE 50, AND SHALL BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A653, G90, STRUCTURAL QUALITY GRADE 50.
5. ANCHOR SHALL HAVE FOUR 7/16" DIA. HOLES, ONE EACH SIDE, 2" FROM TOP END. ANCHOR SHALL MEET REQUIREMENTS OF ASTM A500 GRADE B AND SHALL BE HOT DIPPED GALVANIZED.
6. DRIVE RIVETS TO BE TL3806 3/8" DIA.
7. CORNER BOLTS TO BE TLCB516M
8. SIGN HEIGHT SHALL BE 6' FROM BOTTOM OF LOWER SIGN TO GRADE FOR MULTIPLE SIGNS ON ONE POST.
9. SIGN HEIGHTS SPECIFIED ON THIS DETAIL DO NOT APPLY TO A.D.A. PARKING SIGNS.

City of Bellevue	TITLE: SIGN - PARKING LOT - TYPICAL INSTALLATION	DRAWING #:	PK-SI-24
		SCALE:	N.T.S.
		REVISION DATE:	12-2018
		DEPARTMENT:	PARKS



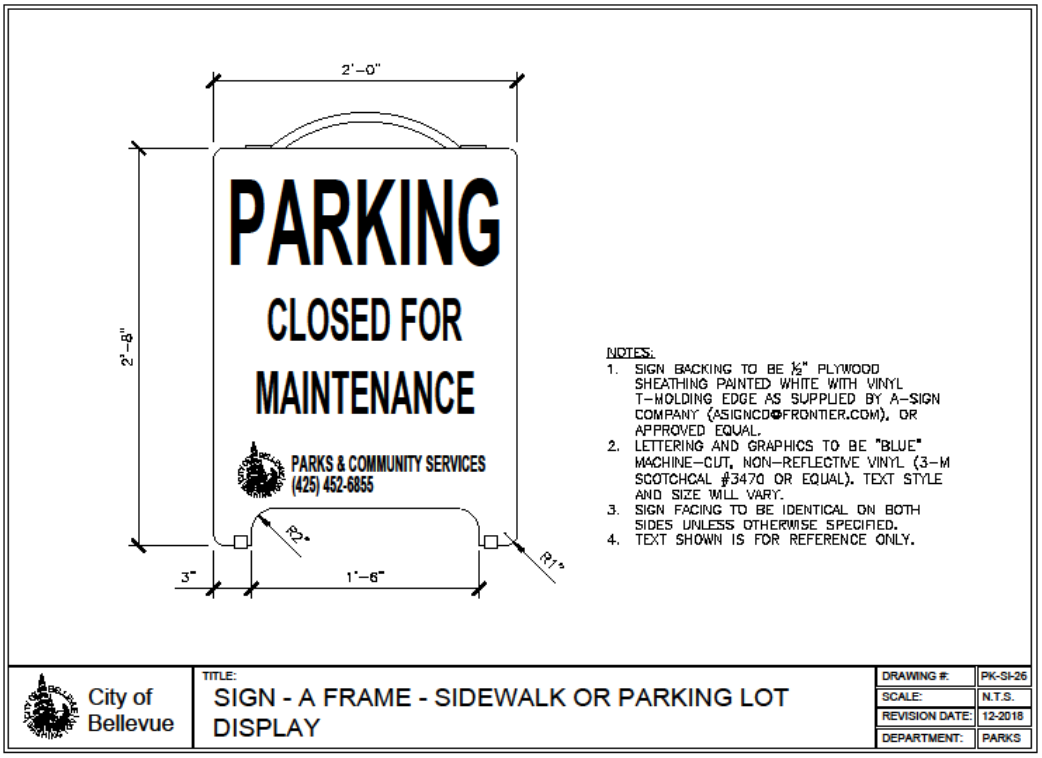
FIELD RESERVED

FIELD CLOSED

NOTES:

1. SIGN BACKING TO BE ¾" PLYWOOD SHEATHING PAINTED WHITE WITH VINYL T-MOLDING EDGE AS SUPPLIED BY A-SIGN COMPANY (ASIGNCO@FRONTIER.COM), OR APPROVED EQUAL.
2. LETTERING TO BE MACHINE-CUT, NON-REFLECTIVE VINYL (3-M SCOTCHCAL #3470 OR EQUAL). TEXT STYLE TO BE SWISS 721 BT OR APPROVED EQUAL. "FIELD RESERVED" TEXT TO BE BLUE. "FIELD CLOSED" TEXT TO BE RED.
3. SIGN FACING TO BE IDENTICAL ON BOTH SIDES.

City of Bellevue	TITLE: SIGN - A FRAME - SPORT FIELD RESERVED/CLOSED	DRAWING #:	PK-SI-25
		SCALE:	N.T.S.
		REVISION DATE:	12-2018
		DEPARTMENT:	PARKS



NOTES:
1. SIGN BACKING TO BE ½" PLYWOOD SHEATHING PAINTED WHITE WITH VINYL T-MOLDING EDGE AS SUPPLIED BY A-SIGN COMPANY (ASIGNCO@FRONTIER.COM), OR APPROVED EQUAL.
2. LETTERING AND GRAPHICS TO BE "BLUE" MACHINE-CUT, NON-REFLECTIVE VINYL (3-M SCOTCHCAL #3470 OR EQUAL). TEXT STYLE AND SIZE WILL VARY.
3. SIGN FACING TO BE IDENTICAL ON BOTH SIDES UNLESS OTHERWISE SPECIFIED.
4. TEXT SHOWN IS FOR REFERENCE ONLY.

City of Bellevue	TITLE: SIGN - A FRAME - SIDEWALK OR PARKING LOT DISPLAY	DRAWING #:	PK-SI-26
		SCALE:	N.T.S.
		REVISION DATE:	12-2018
		DEPARTMENT:	PARKS

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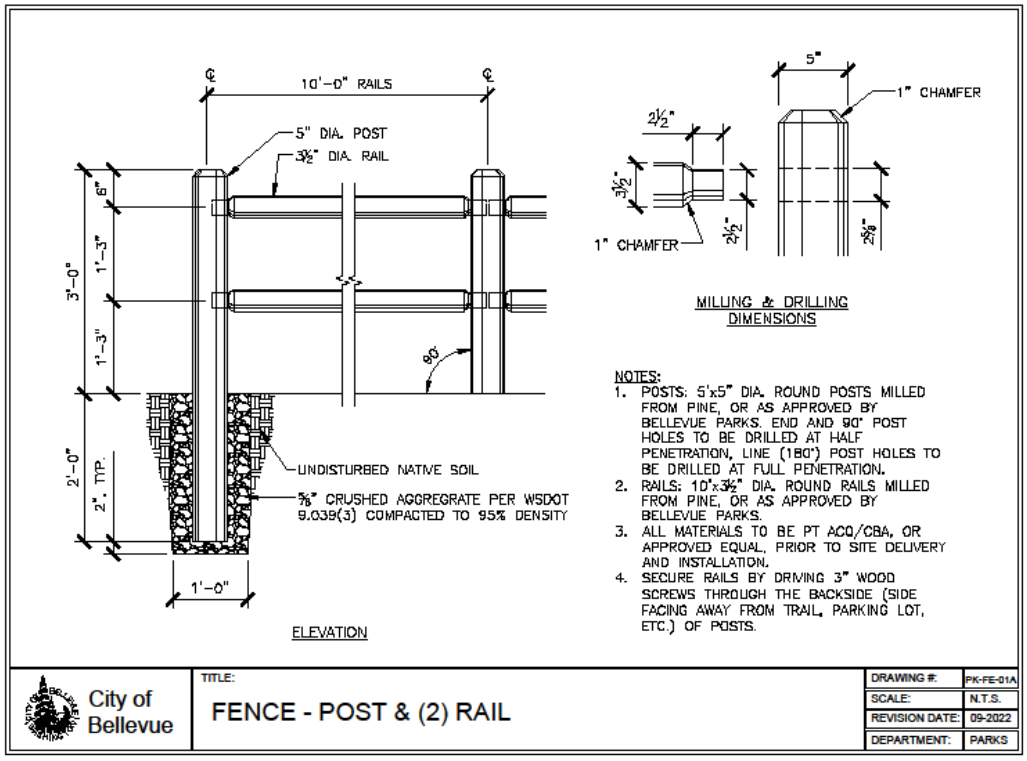
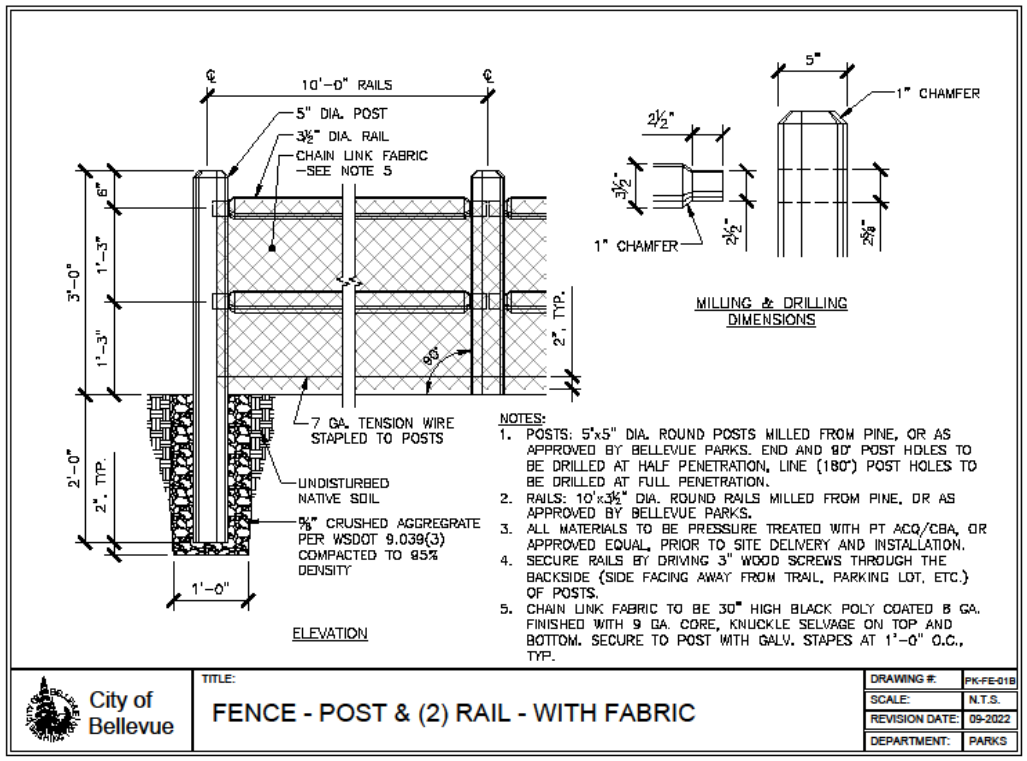
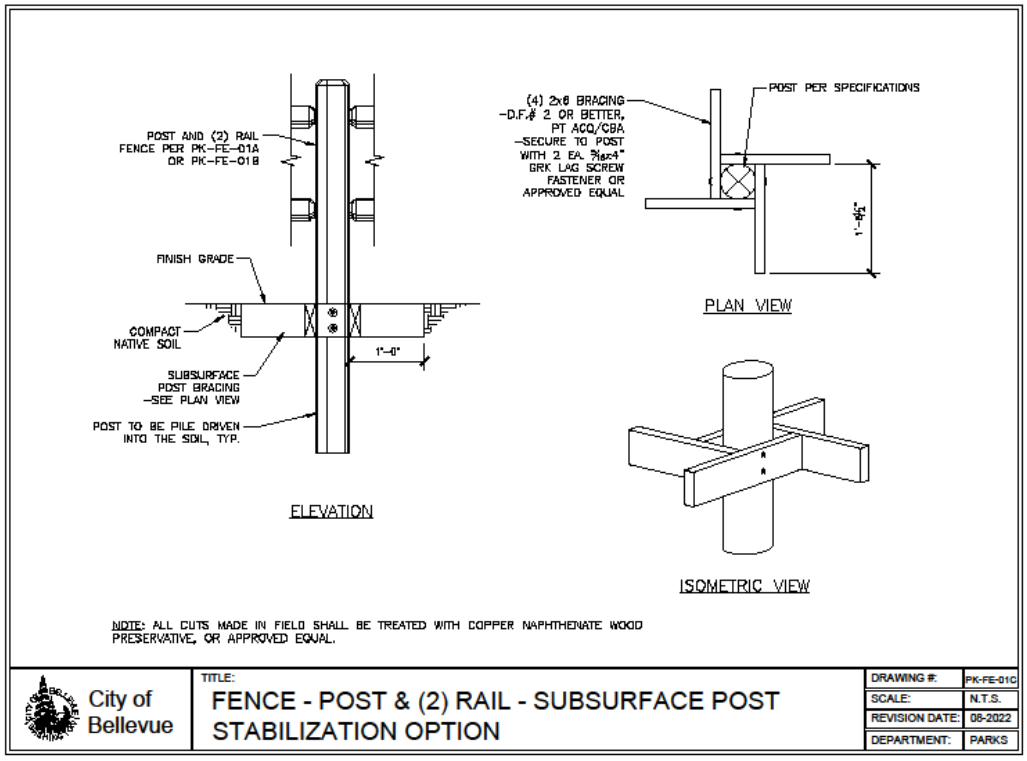
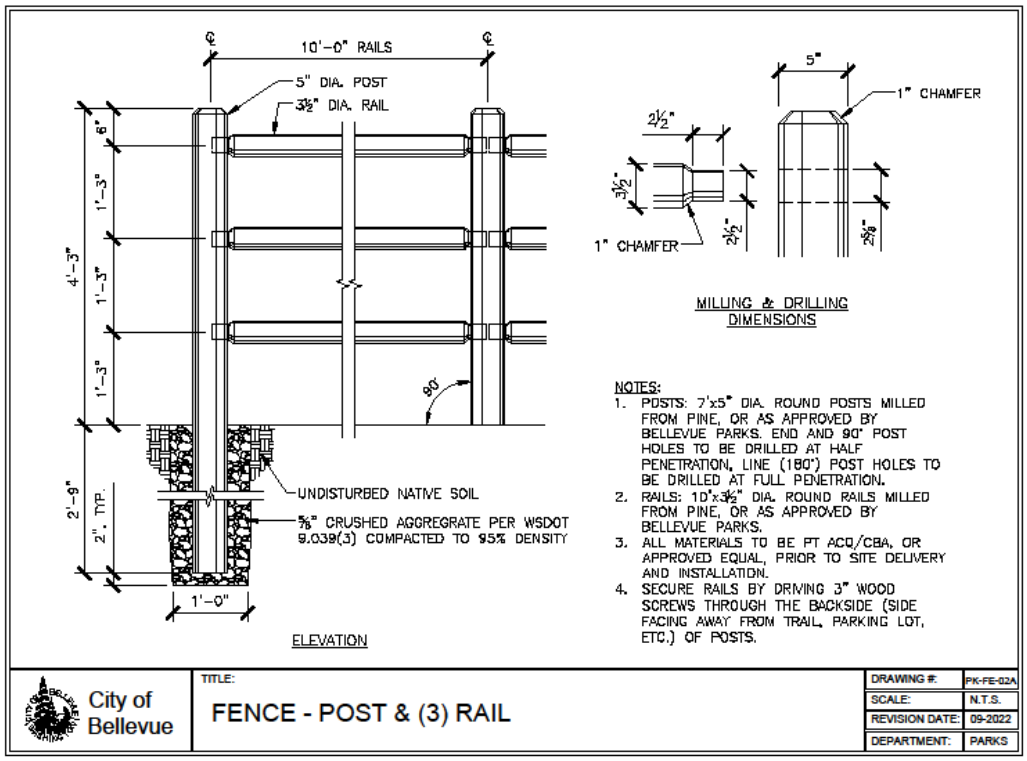
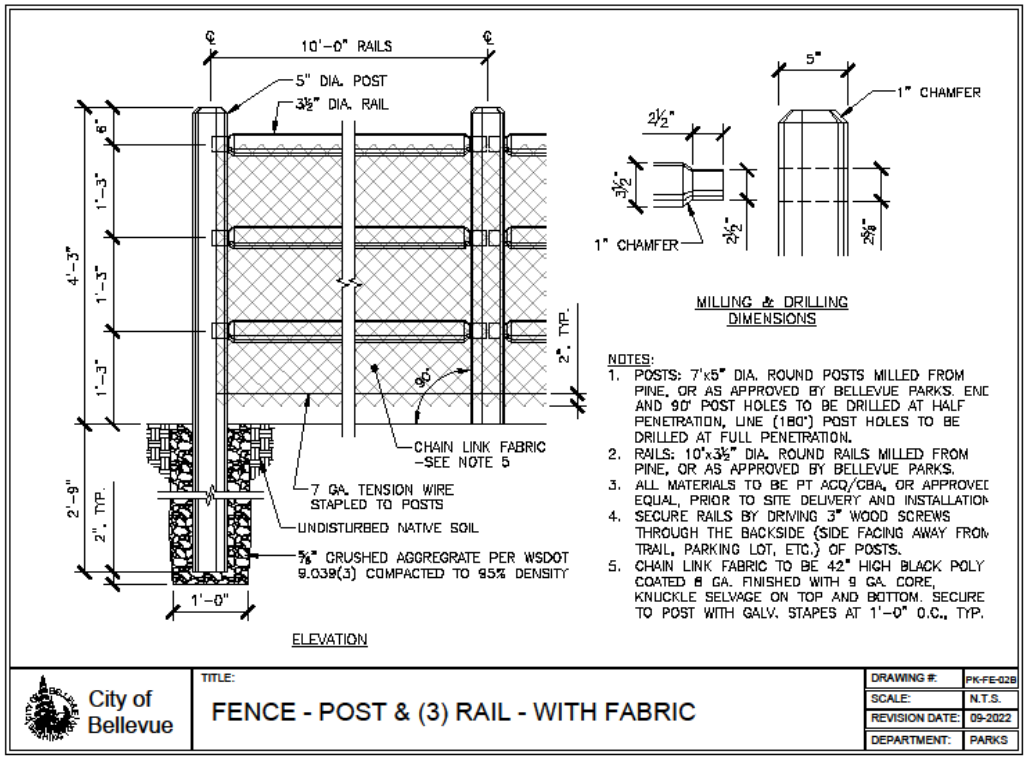
Fencing

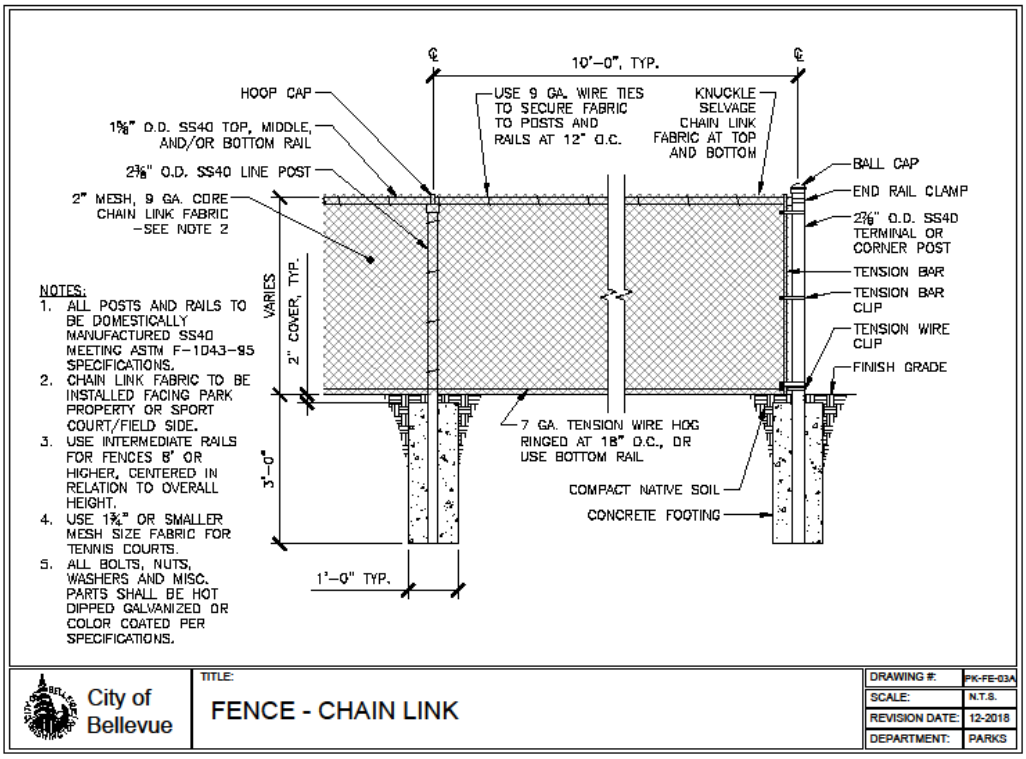

℄
10'-0" RAILS
℄
5" DIA. POST
3½" DIA. RAIL
6"
1'-3"
1'-3"
3'-0"
2'-0"
2", TYP.
90°
UNDISTURBED NATIVE SOIL
⅝" CRUSHED AGGREGRATE PER WSDOT 9.039(3) COMPACTED TO 95% DENSITY
1'-0"
ELEVATION
5"
1" CHAMFER
2½"
3½"
1" CHAMFER
2½"
2⅝"
MILLING & DRILLING DIMENSIONS
NOTES:
1. POSTS: 5"x5" DIA. ROUND POSTS MILLED FROM PINE, OR AS APPROVED BY BELLEVUE PARKS. END AND 90° POST HOLES TO BE DRILLED AT HALF PENETRATION, LINE (180°) POST HOLES TO BE DRILLED AT FULL PENETRATION.
2. RAILS: 10'x3½" DIA. ROUND RAILS MILLED FROM PINE, OR AS APPROVED BY BELLEVUE PARKS.
3. ALL MATERIALS TO BE PT ACQ/CBA, OR APPROVED EQUAL, PRIOR TO SITE DELIVERY AND INSTALLATION.
4. SECURE RAILS BY DRIVING 3" WOOD SCREWS THROUGH THE BACKSIDE (SIDE FACING AWAY FROM TRAIL, PARKING LOT, ETC.) OF POSTS.
City of Bellevue
TITLE:
FENCE - POST & (2) RAIL
DRAWING #: PK-FE-01A
SCALE: N.T.S.
REVISION DATE: 09-2022
DEPARTMENT: PARKS

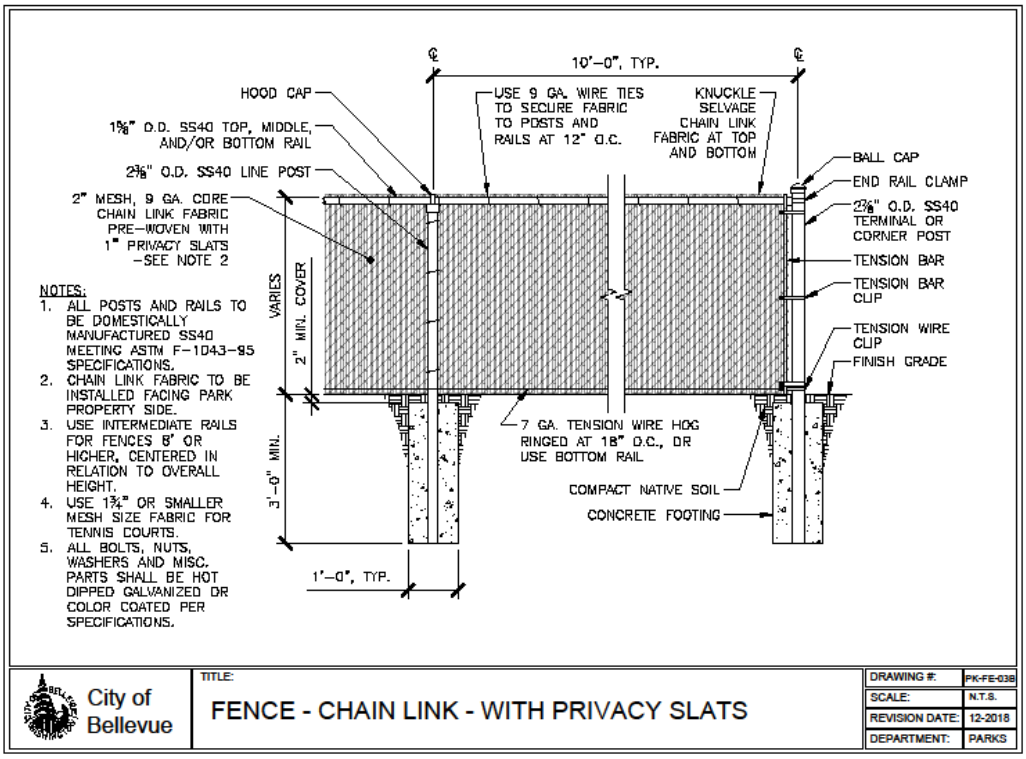

℄
10'-0" RAILS
℄
5" DIA. POST
3½" DIA. RAIL
CHAIN LINK FABRIC -SEE NOTE 5
6"
1'-3"
1'-3"
3'-0"
2'-0"
2", TYP.
2", TYP.
90°
7 GA. TENSION WIRE STAPLED TO POSTS
UNDISTURBED NATIVE SOIL
⅝" CRUSHED AGGREGRATE PER WSDOT 9.039(3) COMPACTED TO 95% DENSITY
1'-0"
ELEVATION
5"
1" CHAMFER
2½"
3½"
1" CHAMFER
2½"
2⅝"
MILLING & DRILLING DIMENSIONS
NOTES:
1. POSTS: 5"x5" DIA. ROUND POSTS MILLED FROM PINE, OR AS APPROVED BY BELLEVUE PARKS. END AND 90° POST HOLES TO BE DRILLED AT HALF PENETRATION, LINE (180°) POST HOLES TO BE DRILLED AT FULL PENETRATION.
2. RAILS: 10'x3½" DIA. ROUND RAILS MILLED FROM PINE, OR AS APPROVED BY BELLEVUE PARKS.
3. ALL MATERIALS TO BE PRESSURE TREATED WITH PT ACQ/CBA, OR APPROVED EQUAL, PRIOR TO SITE DELIVERY AND INSTALLATION.
4. SECURE RAILS BY DRIVING 3" WOOD SCREWS THROUGH THE BACKSIDE (SIDE FACING AWAY FROM TRAIL, PARKING LOT, ETC.) OF POSTS.
5. CHAIN LINK FABRIC TO BE 30" HIGH BLACK POLY COATED 6 GA. FINISHED WITH 9 GA. CORE, KNUCKLE SELVAGE ON TOP AND BOTTOM. SECURE TO POST WITH GALV. STAPES AT 1'-0" O.C., TYP.
City of Bellevue
TITLE:
FENCE - POST & (2) RAIL - WITH FABRIC
DRAWING #: PK-FE-01B
SCALE: N.T.S.
REVISION DATE: 09-2022
DEPARTMENT: PARKS

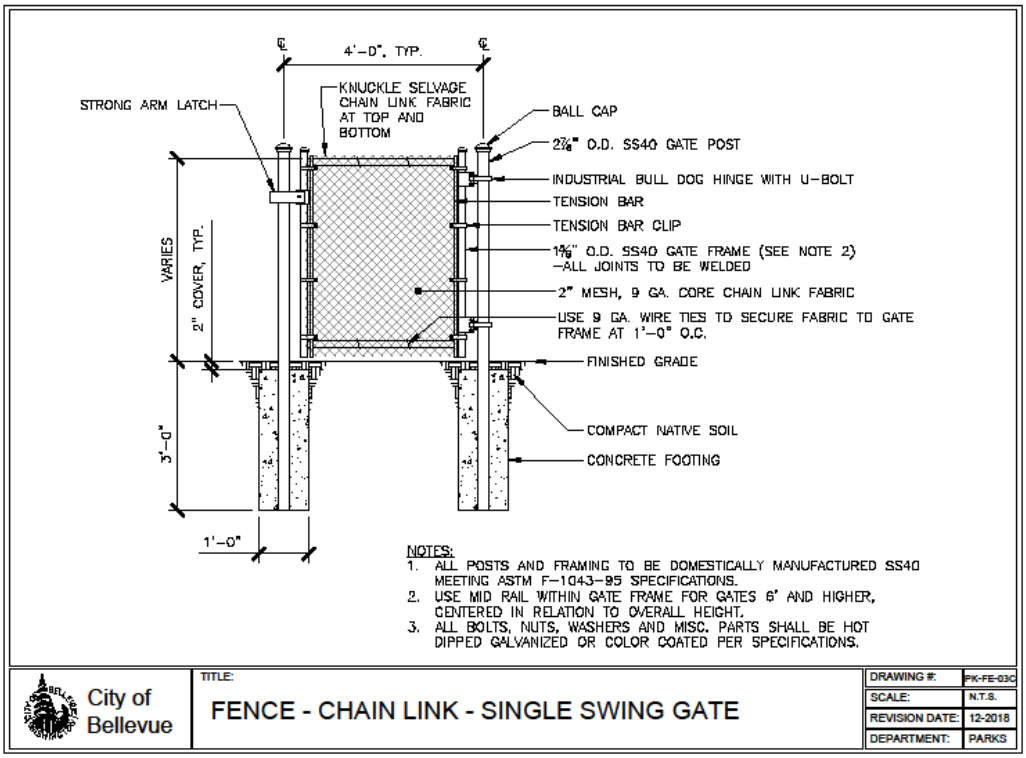

POST AND (2) RAIL FENCE PER PK-FE-01A OR PK-FE-01B
FINISH GRADE
COMPACT NATIVE SOIL
SUBSURFACE POST BRACING -SEE PLAN VIEW
POST TO BE PILE DRIVEN INTO THE SOIL, TYP.
1'-0"
ELEVATION
(4) 2x8 BRACING -D.F.# 2 OR BETTER, PT ACQ/CBA -SECURE TO POST WITH 2 EA. 5/16x4" GRK LAG SCREW FASTENER OR APPROVED EQUAL
POST PER SPECIFICATIONS
1'-6½"
PLAN VIEW
ISOMETRIC VIEW
NOTE: ALL CUTS MADE IN FIELD SHALL BE TREATED WITH COPPER NAPHTHENATE WOOD PRESERVATIVE, OR APPROVED EQUAL.
City of Bellevue
TITLE:
FENCE - POST & (2) RAIL - SUBSURFACE POST STABILIZATION OPTION
DRAWING #: PK-FE-01C
SCALE: N.T.S.
REVISION DATE: 08-2022
DEPARTMENT: PARKS

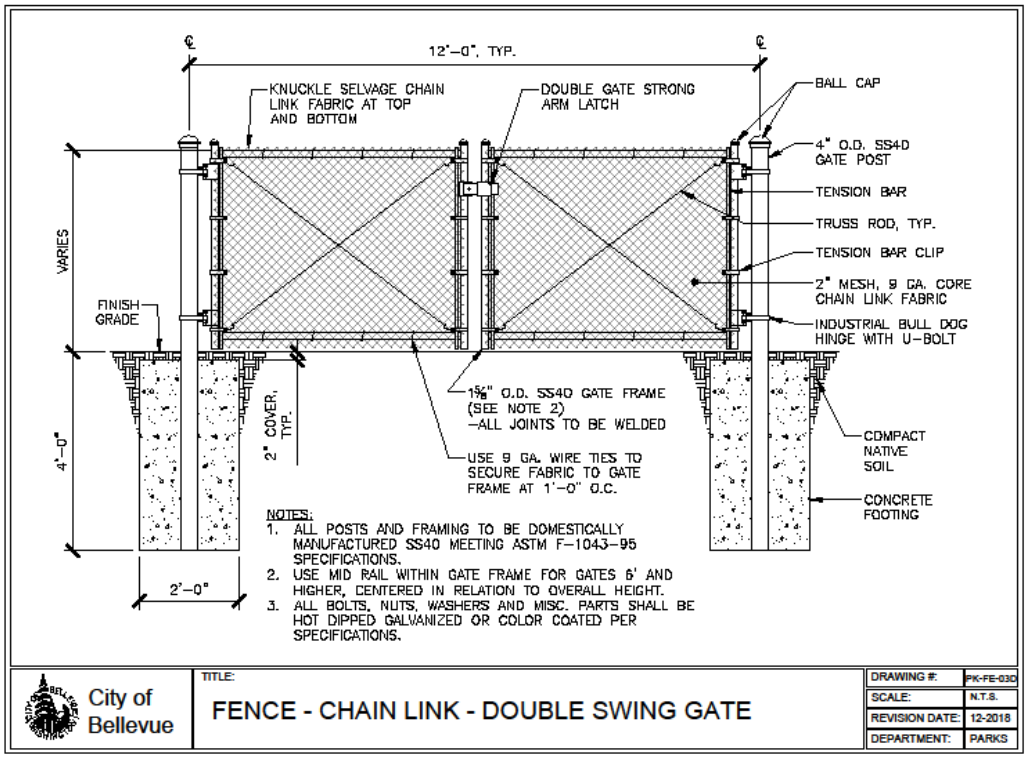

℄
10'-0" RAILS
℄
5" DIA. POST
3½" DIA. RAIL
6"
1'-3"
1'-3"
1'-3"
4'-3"
2'-9"
2" TYP.
90°
UNDISTURBED NATIVE SOIL
⅝" CRUSHED AGGREGRATE PER WSDOT 9.03(3) COMPACTED TO 95% DENSITY
1'-0"
ELEVATION
5"
1" CHAMFER
2½"
3½"
1" CHAMFER
2½"
2⅝"
MILLING & DRILLING DIMENSIONS
NOTES:
1. POSTS: 7'x5" DIA. ROUND POSTS MILLED FROM PINE, OR AS APPROVED BY BELLEVUE PARKS. END AND 90° POST HOLES TO BE DRILLED AT HALF PENETRATION, LINE (180°) POST HOLES TO BE DRILLED AT FULL PENETRATION.
2. RAILS: 10'x3½" DIA. ROUND RAILS MILLED FROM PINE, OR AS APPROVED BY BELLEVUE PARKS.
3. ALL MATERIALS TO BE PT ACQ/CBA, OR APPROVED EQUAL, PRIOR TO SITE DELIVERY AND INSTALLATION.
4. SECURE RAILS BY DRIVING 3" WOOD SCREWS THROUGH THE BACKSIDE (SIDE FACING AWAY FROM TRAIL, PARKING LOT, ETC.) OF POSTS.
City of Bellevue
TITLE:
FENCE - POST & (3) RAIL
DRAWING #: PK-FE-02A
SCALE: N.T.S.
REVISION DATE: 09-2022
DEPARTMENT: PARKS

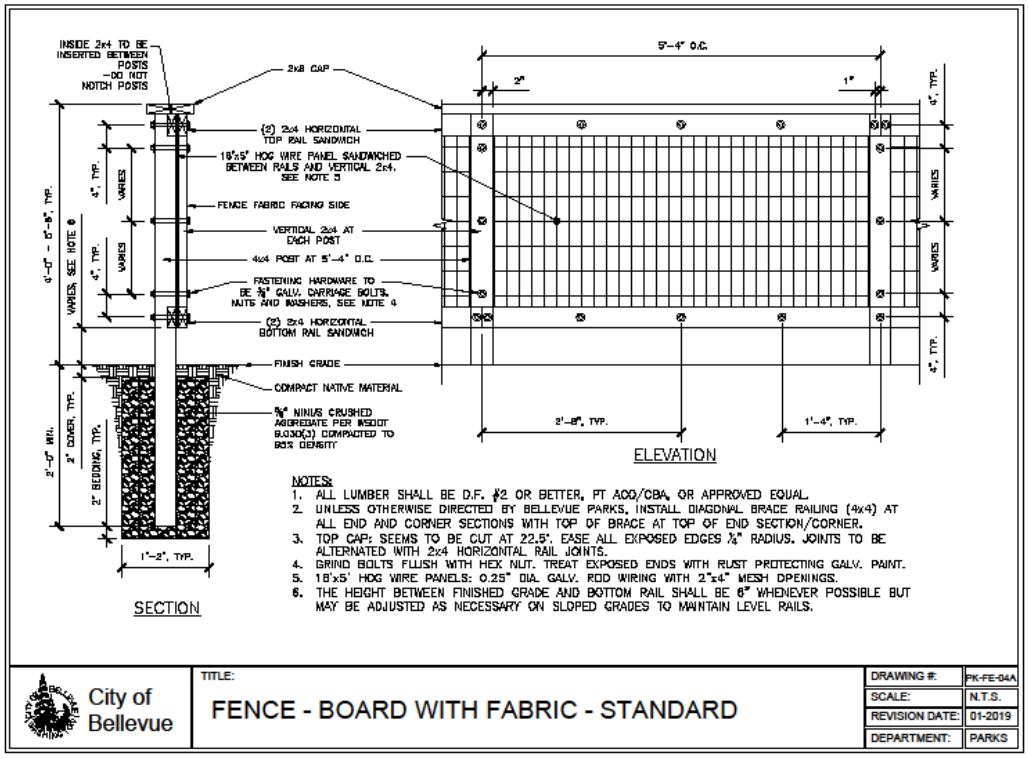

10'-0" RAILS
5" DIA. POST
3½" DIA. RAIL
6"
1'-3"
1'-3"
1'-3"
4'-3"
2'-9"
2" TYP.
2" TYP.
90°
CHAIN LINK FABRIC -SEE NOTE 5
7 GA. TENSION WIRE STAPLED TO POSTS
UNDISTURBED NATIVE SOIL
⅝" CRUSHED AGGREGRATE PER WSDOT 9.03(3) COMPACTED TO 95% DENSITY
1'-0"
ELEVATION
5"
1" CHAMFER
2½"
3½"
1" CHAMFER
2½"
2⅝"
MILLING & DRILLING DIMENSIONS
NOTES:
1. POSTS: 7'x5" DIA. ROUND POSTS MILLED FROM PINE, OR AS APPROVED BY BELLEVUE PARKS. END AND 90° POST HOLES TO BE DRILLED AT HALF PENETRATION. LINE (180°) POST HOLES TO BE DRILLED AT FULL PENETRATION.
2. RAILS: 10'x3½" DIA. ROUND RAILS MILLED FROM PINE, OR AS APPROVED BY BELLEVUE PARKS.
3. ALL MATERIALS TO BE PT ACQ/CBA, OR APPROVED EQUAL, PRIOR TO SITE DELIVERY AND INSTALLATION
4. SECURE RAILS BY DRIVING 3" WOOD SCREWS THROUGH THE BACKSIDE (SIDE FACING AWAY FROM TRAIL, PARKING LOT, ETC.) OF POSTS.
5. CHAIN LINK FABRIC TO BE 42" HIGH BLACK POLY COATED 6 GA. FINISHED WITH 9 GA. CORE, KNUCKLE SELVAGE ON TOP AND BOTTOM. SECURE TO POST WITH GALV. STAPES AT 1'-0" O.C., TYP.
City of Bellevue
TITLE:
FENCE - POST & (3) RAIL - WITH FABRIC
DRAWING #: PK-FE-02B
SCALE: N.T.S.
REVISION DATE: 09-2022
DEPARTMENT: PARKS

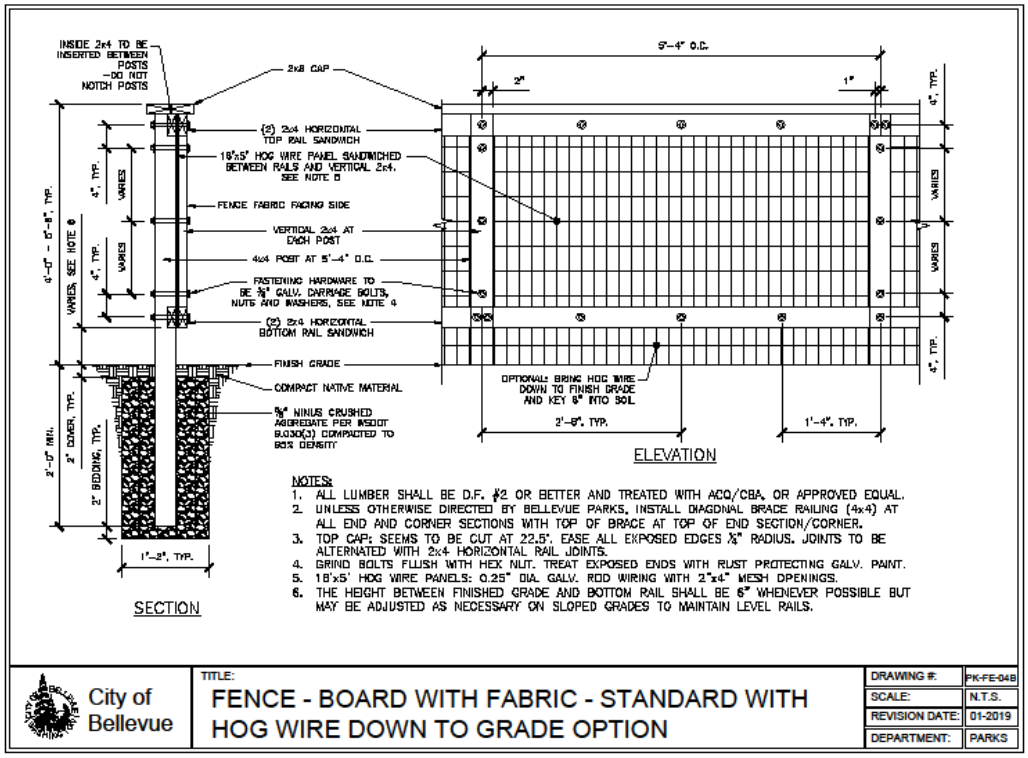

10'-0", TYP.
HOOP CAP
1⅝" O.D. SS40 TOP, MIDDLE, AND/OR BOTTOM RAIL
2⅜" O.D. SS40 LINE POST
2" MESH, 9 GA. CORE CHAIN LINK FABRIC -SEE NOTE 2
USE 9 GA. WIRE TIES TO SECURE FABRIC TO POSTS AND RAILS AT 12" O.C.
KNUCKLE SELVAGE CHAIN LINK FABRIC AT TOP AND BOTTOM
BALL CAP
END RAIL CLAMP
2⅜" O.D. SS40 TERMINAL OR CORNER POST
TENSION BAR
TENSION BAR CLIP
TENSION WIRE CLIP
FINISH GRADE
VARIES
2" COVER, TYP.
3'-0"
7 GA. TENSION WIRE HOG RINGED AT 18" O.C., OR USE BOTTOM RAIL
COMPACT NATIVE SOIL
CONCRETE FOOTING
1'-0" TYP.
NOTES:
1. ALL POSTS AND RAILS TO BE DOMESTICALLY MANUFACTURED SS40 MEETING ASTM F-1043-95 SPECIFICATIONS.
2. CHAIN LINK FABRIC TO BE INSTALLED FACING PARK PROPERTY OR SPORT COURT/FIELD SIDE.
3. USE INTERMEDIATE RAILS FOR FENCES 8' OR HIGHER, CENTERED IN RELATION TO OVERALL HEIGHT.
4. USE 1¾" OR SMALLER MESH SIZE FABRIC FOR TENNIS COURTS.
5. ALL BOLTS, NUTS, WASHERS AND MISC. PARTS SHALL BE HOT DIPPED GALVANIZED OR COLOR COATED PER SPECIFICATIONS.
City of Bellevue
TITLE:
FENCE - CHAIN LINK
DRAWING #: PK-FE-03A
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS

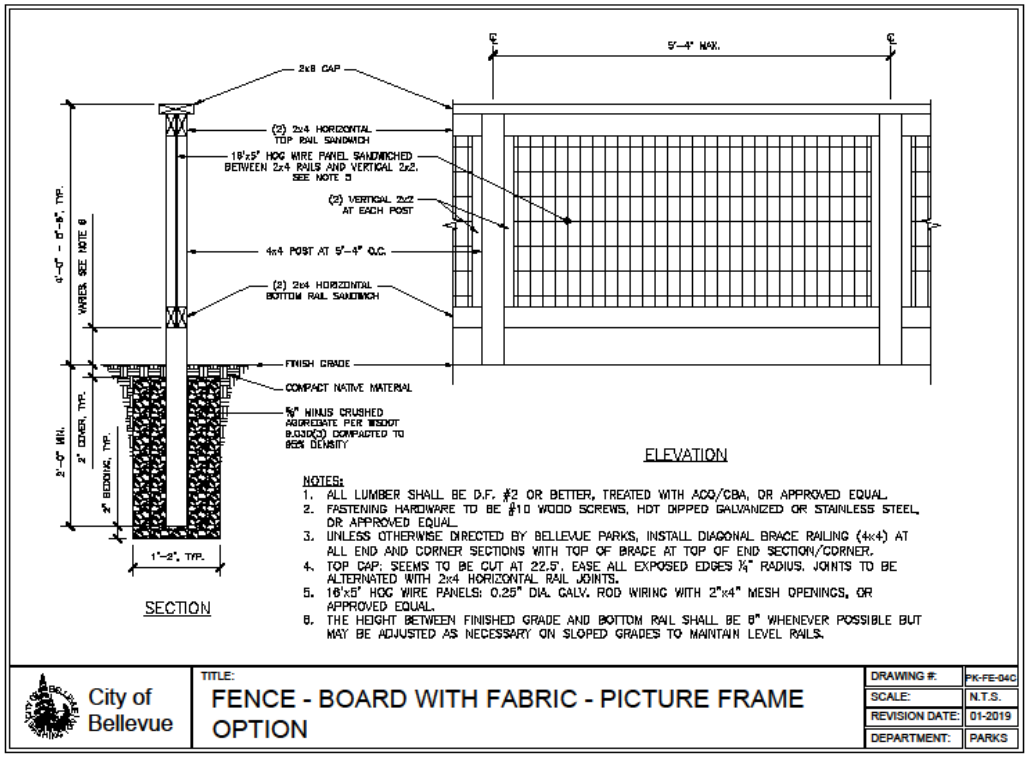

10'-0", TYP.
HOOD CAP
1⅝" O.D. SS40 TOP, MIDDLE, AND/OR BOTTOM RAIL
2⅜" O.D. SS40 LINE POST
2" MESH, 9 GA. CORE CHAIN LINK FABRIC PRE-WOVEN WITH 1" PRIVACY SLATS -SEE NOTE 2
USE 9 GA. WIRE TIES TO SECURE FABRIC TO POSTS AND RAILS AT 12" O.C.
KNUCKLE SELVAGE CHAIN LINK FABRIC AT TOP AND BOTTOM
BALL CAP
END RAIL CLAMP
2⅜" O.D. SS40 TERMINAL OR CORNER POST
TENSION BAR
TENSION BAR CLIP
TENSION WIRE CLIP
FINISH GRADE
VARIES
2" MIN. COVER
3'-0" MIN.
7 GA. TENSION WIRE HOG RINGED AT 18" O.C., OR USE BOTTOM RAIL
COMPACT NATIVE SOIL
CONCRETE FOOTING
1'-0", TYP.
NOTES:
1. ALL POSTS AND RAILS TO BE DOMESTICALLY MANUFACTURED SS40 MEETING ASTM F-1043-95 SPECIFICATIONS.
2. CHAIN LINK FABRIC TO BE INSTALLED FACING PARK PROPERTY SIDE.
3. USE INTERMEDIATE RAILS FOR FENCES 8' OR HIGHER, CENTERED IN RELATION TO OVERALL HEIGHT.
4. USE 1¾" OR SMALLER MESH SIZE FABRIC FOR TENNIS COURTS.
5. ALL BOLTS, NUTS, WASHERS AND MISC. PARTS SHALL BE HOT DIPPED GALVANIZED OR COLOR COATED PER SPECIFICATIONS.
City of Bellevue
TITLE:
FENCE - CHAIN LINK - WITH PRIVACY SLATS
DRAWING #: PK-FE-03B
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS

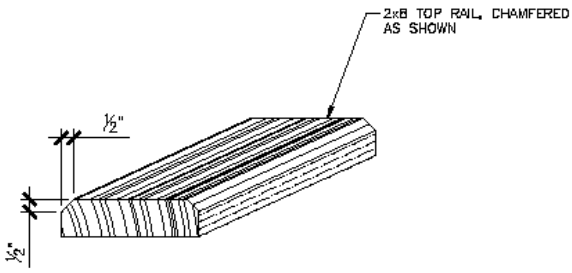

4'-0", TYP.
STRONG ARM LATCH
KNUCKLE SELVAGE CHAIN LINK FABRIC AT TOP AND BOTTOM
BALL CAP
2⅜" O.D. SS40 GATE POST
INDUSTRIAL BULL DOG HINGE WITH U-BOLT
TENSION BAR
TENSION BAR CLIP
1⅝" O.D. SS40 GATE FRAME (SEE NOTE 2) -ALL JOINTS TO BE WELDED
2" MESH, 9 GA. CORE CHAIN LINK FABRIC
USE 9 GA. WIRE TIES TO SECURE FABRIC TO GATE FRAME AT 1'-0" O.C.
FINISHED GRADE
COMPACT NATIVE SOIL
CONCRETE FOOTING
VARIES
2" COVER, TYP.
3'-0"
1'-0"
NOTES:
1. ALL POSTS AND FRAMING TO BE DOMESTICALLY MANUFACTURED SS40 MEETING ASTM F-1043-95 SPECIFICATIONS.
2. USE MID RAIL WITHIN GATE FRAME FOR GATES 6' AND HIGHER, CENTERED IN RELATION TO OVERALL HEIGHT.
3. ALL BOLTS, NUTS, WASHERS AND MISC. PARTS SHALL BE HOT DIPPED GALVANIZED OR COLOR COATED PER SPECIFICATIONS.
City of Bellevue
TITLE:
FENCE - CHAIN LINK - SINGLE SWING GATE
DRAWING #: PK-FE-03C
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS


℄
12'-0", TYP.
℄
KNUCKLE SELVAGE CHAIN LINK FABRIC AT TOP AND BOTTOM
DOUBLE GATE STRONG ARM LATCH
BALL CAP
4" O.D. SS40 GATE POST
TENSION BAR
TRUSS ROD, TYP.
TENSION BAR CLIP
2" MESH, 9 GA. CORE CHAIN LINK FABRIC
INDUSTRIAL BULL DOG HINGE WITH U-BOLT
VARIES
FINISH GRADE
4'-0"
2" COVER, TYP.
1⅝" O.D. SS40 GATE FRAME (SEE NOTE 2) -ALL JOINTS TO BE WELDED
USE 9 GA. WIRE TIES TO SECURE FABRIC TO GATE FRAME AT 1'-0" O.C.
COMPACT NATIVE SOIL
CONCRETE FOOTING
2'-0"
NOTES:
1. ALL POSTS AND FRAMING TO BE DOMESTICALLY MANUFACTURED SS40 MEETING ASTM F-1043-95 SPECIFICATIONS.
2. USE MID RAIL WITHIN GATE FRAME FOR GATES 6' AND HIGHER, CENTERED IN RELATION TO OVERALL HEIGHT.
3. ALL BOLTS, NUTS, WASHERS AND MISC. PARTS SHALL BE HOT DIPPED GALVANIZED OR COLOR COATED PER SPECIFICATIONS.
City of Bellevue
TITLE:
FENCE - CHAIN LINK - DOUBLE SWING GATE
DRAWING #: PK-FE-03D
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS


INSIDE 2x4 TO BE INSERTED BETWEEN POSTS -DO NOT NOTCH POSTS
2x8 CAP
(2) 2x4 HORIZONTAL TOP RAIL SANDWICH
18"x5' HOG WIRE PANEL SANDWICHED BETWEEN RAILS AND VERTICAL 2x4, SEE NOTE 5
FENCE FABRIC FACING SIDE
VERTICAL 2x4 AT EACH POST
4x4 POST AT 5'-4" O.C.
FASTENING HARDWARE TO BE ⅜" GALV. CARRIAGE BOLTS, NUTS AND WASHERS, SEE NOTE 4
(2) 2x4 HORIZONTAL BOTTOM RAIL SANDWICH
FINISH GRADE
COMPACT NATIVE MATERIAL
¾" MINUS CRUSHED AGGREGATE PER WSDOT 9.03.01(3) COMPACTED TO 95% DENSITY
5'-4" O.C.
2"
1"
4", TYP.
VARIES
4", TYP.
VARIES, SEE NOTE 6
1'-0" - 1'-6", TYP.
2'-0" MIN.
2" COVER, TYP.
2" BEDDING, TYP.
1'-2", TYP.
2'-8", TYP.
1'-4", TYP.
SECTION
ELEVATION
NOTES:
1. ALL LUMBER SHALL BE D.F. #2 OR BETTER, PT ACQ/CBA, OR APPROVED EQUAL.
2. UNLESS OTHERWISE DIRECTED BY BELLEVUE PARKS, INSTALL DIAGONAL BRACE RAILING (4x4) AT ALL END AND CORNER SECTIONS WITH TOP OF BRACE AT TOP OF END SECTION/CORNER.
3. TOP CAP: SEEMS TO BE CUT AT 22.5°. EASE ALL EXPOSED EDGES ¼" RADIUS. JOINTS TO BE ALTERNATED WITH 2x4 HORIZONTAL RAIL JOINTS.
4. GRIND BOLTS FLUSH WITH HEX NUT. TREAT EXPOSED ENDS WITH RUST PROTECTING GALV. PAINT.
5. 18'x5' HOG WIRE PANELS: 0.25" DIA. GALV. ROD WIRING WITH 2"x4" MESH OPENINGS.
6. THE HEIGHT BETWEEN FINISHED GRADE AND BOTTOM RAIL SHALL BE 6" WHENEVER POSSIBLE BUT MAY BE ADJUSTED AS NECESSARY ON SLOPED GRADES TO MAINTAIN LEVEL RAILS.
City of Bellevue
TITLE:
FENCE - BOARD WITH FABRIC - STANDARD
DRAWING #: PK-FE-04A
SCALE: N.T.S.
REVISION DATE: 01-2019
DEPARTMENT: PARKS


INSIDE 2x4 TO BE INSERTED BETWEEN POSTS —DO NOT NOTCH POSTS
2x8 CAP
(2) 2x4 HORIZONTAL TOP RAIL SANDWICH
18'x5' HOG WIRE PANEL SANDWICHED BETWEEN RAILS AND VERTICAL 2x4. SEE NOTE 5
FENCE FABRIC FACING SIDE
VERTICAL 2x4 AT EACH POST
4x4 POST AT 5'-4" O.C.
FASTENING HARDWARE TO BE ⅜" GALV. CARRIAGE BOLTS, NUTS AND WASHERS, SEE NOTE 4
(2) 2x4 HORIZONTAL BOTTOM RAIL SANDWICH
FINISH GRADE
COMPACT NATIVE MATERIAL
⅝" MINUS CRUSHED AGGREGATE PER WSDOT 9.03.1(3) COMPACTED TO 95% DENSITY
5'-4" O.C.
2"
1"
4", TYP.
VARIES
OPTIONAL: BRING HOG WIRE DOWN TO FINISH GRADE AND KEY 6" INTO SOIL
2'-8", TYP.
1'-4", TYP.
ELEVATION
SECTION
NOTES:
1. ALL LUMBER SHALL BE D.F. #2 OR BETTER AND TREATED WITH ACQ/CBA, OR APPROVED EQUAL.
2. UNLESS OTHERWISE DIRECTED BY BELLEVUE PARKS, INSTALL DIAGONAL BRACE RAILING (4x4) AT ALL END AND CORNER SECTIONS WITH TOP OF BRACE AT TOP OF END SECTION/CORNER.
3. TOP CAP: SEEMS TO BE CUT AT 22.5°. EASE ALL EXPOSED EDGES ¼" RADIUS. JOINTS TO BE ALTERNATED WITH 2x4 HORIZONTAL RAIL JOINTS.
4. GRIND BOLTS FLUSH WITH HEX NUT. TREAT EXPOSED ENDS WITH RUST PROTECTING GALV. PAINT.
5. 18'x5' HOG WIRE PANELS: 0.25" DIA. GALV. ROD WIRING WITH 2"x4" MESH OPENINGS.
6. THE HEIGHT BETWEEN FINISHED GRADE AND BOTTOM RAIL SHALL BE 6" WHENEVER POSSIBLE BUT MAY BE ADJUSTED AS NECESSARY ON SLOPED GRADES TO MAINTAIN LEVEL RAILS.
City of Bellevue
TITLE:
FENCE - BOARD WITH FABRIC - STANDARD WITH HOG WIRE DOWN TO GRADE OPTION
DRAWING #: PK-FE-04B
SCALE: N.T.S.
REVISION DATE: 01-2019
DEPARTMENT: PARKS


2x8 CAP
(2) 2x4 HORIZONTAL TOP RAIL SANDWICH
18'x5' HOG WIRE PANEL SANDWICHED BETWEEN 2x4 RAILS AND VERTICAL 2x2. SEE NOTE 5
(2) VERTICAL 2x2 AT EACH POST
4x4 POST AT 5'-4" O.C.
(2) 2x4 HORIZONTAL BOTTOM RAIL SANDWICH
FINISH GRADE
COMPACT NATIVE MATERIAL
⅝" MINUS CRUSHED AGGREGATE PER WSDOT 9.03.1(3) COMPACTED TO 95% DENSITY
5'-4" MAX.
ELEVATION
SECTION
NOTES:
1. ALL LUMBER SHALL BE D.F. #2 OR BETTER, TREATED WITH ACQ/CBA, OR APPROVED EQUAL.
2. FASTENING HARDWARE TO BE #10 WOOD SCREWS, HOT DIPPED GALVANIZED OR STAINLESS STEEL, OR APPROVED EQUAL.
3. UNLESS OTHERWISE DIRECTED BY BELLEVUE PARKS, INSTALL DIAGONAL BRACE RAILING (4x4) AT ALL END AND CORNER SECTIONS WITH TOP OF BRACE AT TOP OF END SECTION/CORNER.
4. TOP CAP: SEEMS TO BE CUT AT 22.5°. EASE ALL EXPOSED EDGES ¼" RADIUS. JOINTS TO BE ALTERNATED WITH 2x4 HORIZONTAL RAIL JOINTS.
5. 16'x5' HOG WIRE PANELS: 0.25" DIA. GALV. ROD WIRING WITH 2"x4" MESH OPENINGS, OR APPROVED EQUAL.
6. THE HEIGHT BETWEEN FINISHED GRADE AND BOTTOM RAIL SHALL BE 6" WHENEVER POSSIBLE BUT MAY BE ADJUSTED AS NECESSARY ON SLOPED GRADES TO MAINTAIN LEVEL RAILS.
City of Bellevue
TITLE:
FENCE - BOARD WITH FABRIC - PICTURE FRAME OPTION
DRAWING #: PK-FE-04C
SCALE: N.T.S.
REVISION DATE: 01-2019
DEPARTMENT: PARKS

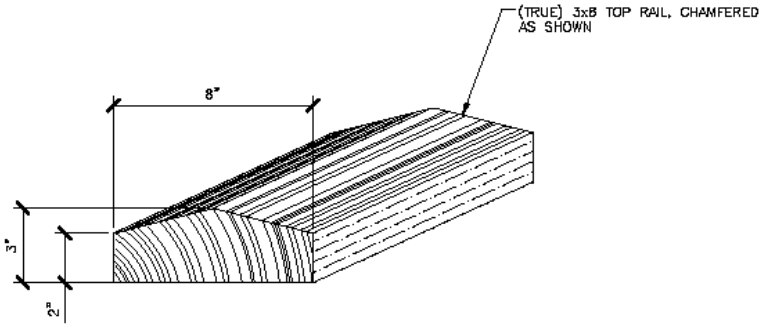


NOTES:
1. UNLESS OTHERWISE SPECIFIED, CAP MATERIAL TO BE D.F. #2 OR BETTER, PT ACQ/CBA, OR APPROVED EQUAL.
2. TREATMENT SHALL TAKE PLACE AFTER CHAMFER HAS BEEN CUT.

City of Bellevue

TITLE: FENCE - BOARD WITH FABRIC - ALTERNATIVE CAP 1

DRAWING #:	PK-FE-04D
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS

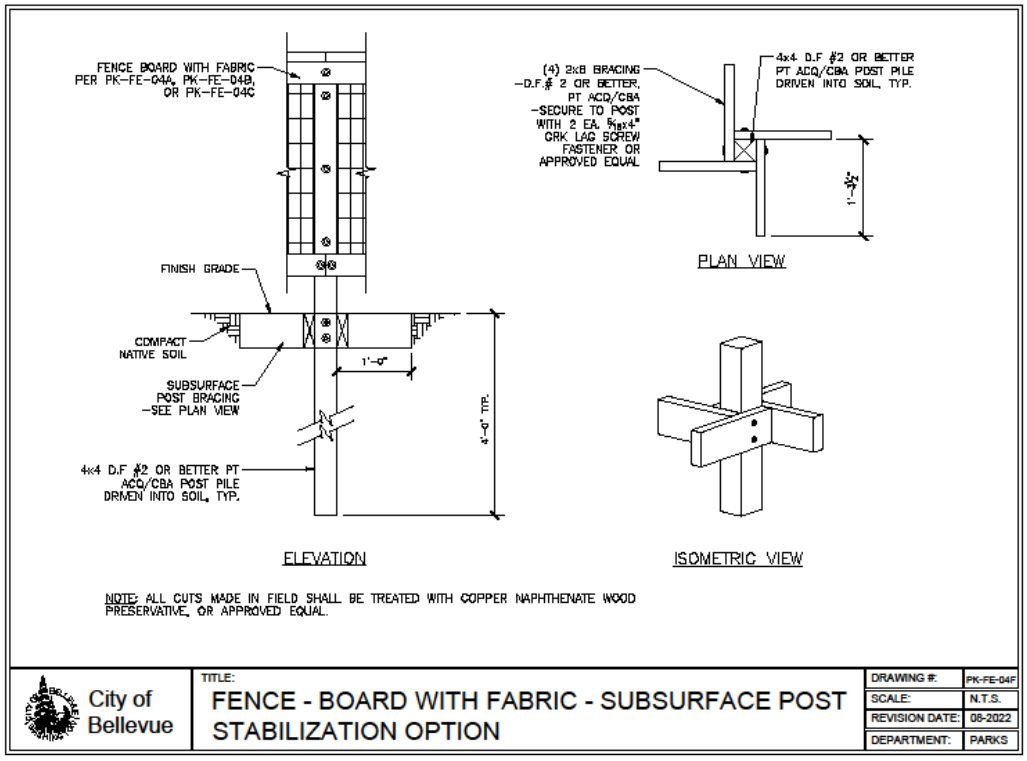


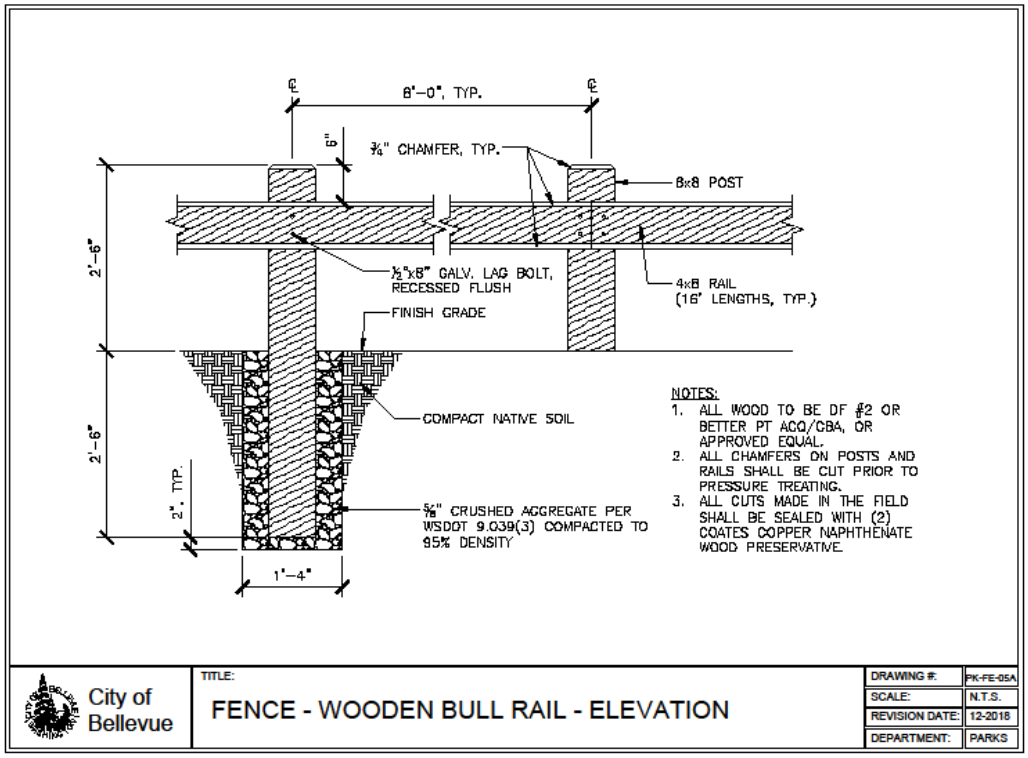
NOTES:
1. UNLESS OTHERWISE SPECIFIED, CAP MATERIAL TO BE D.F. #2 OR BETTER, PT ACQ/CBA, OR APPROVED EQUAL.
2. TREATMENT SHALL TAKE PLACE AFTER CHAMFER HAS BEEN CUT.

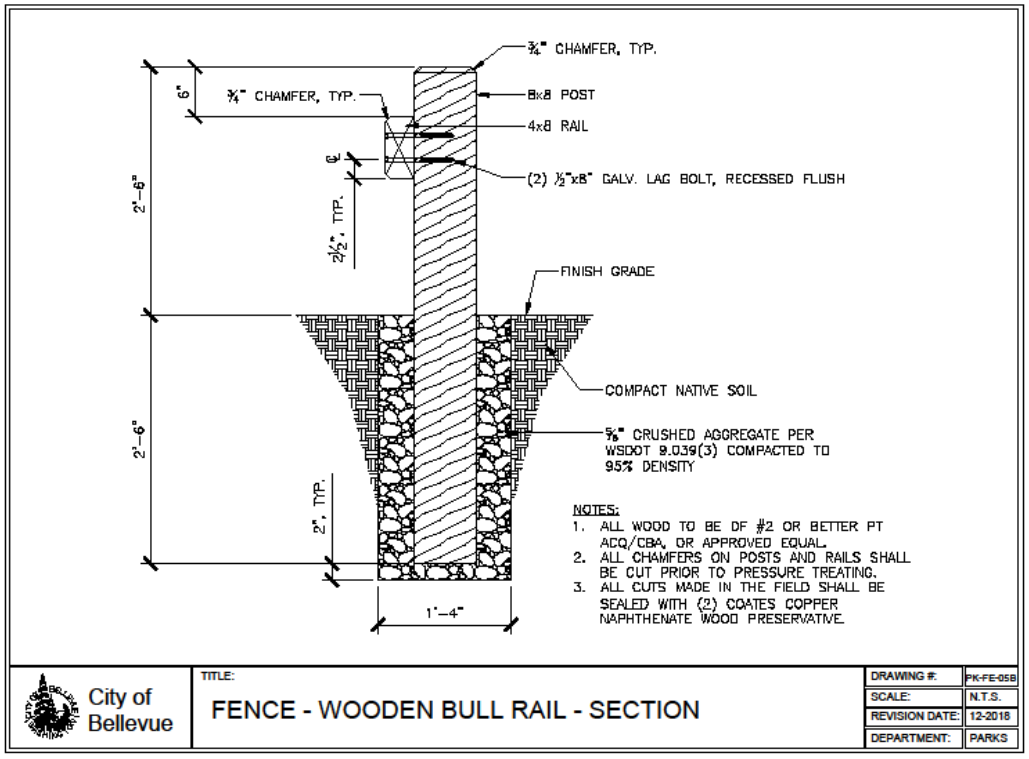
City of Bellevue

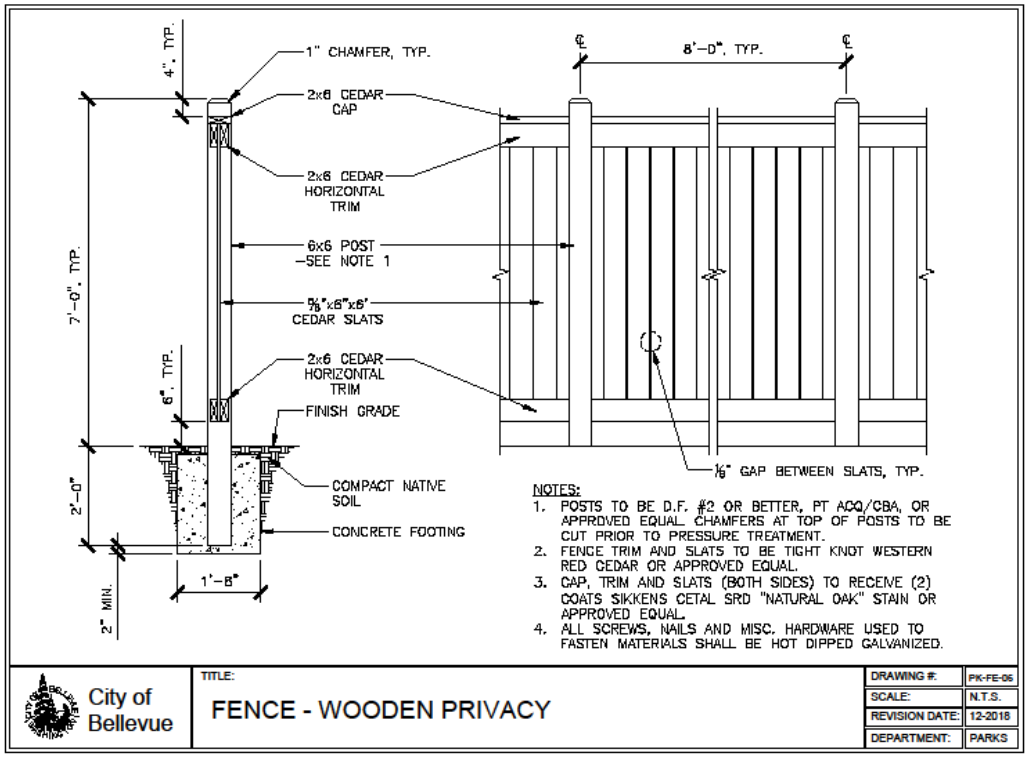
TITLE: FENCE - BOARD WITH FABRIC - ALTERNATIVE CAP 2

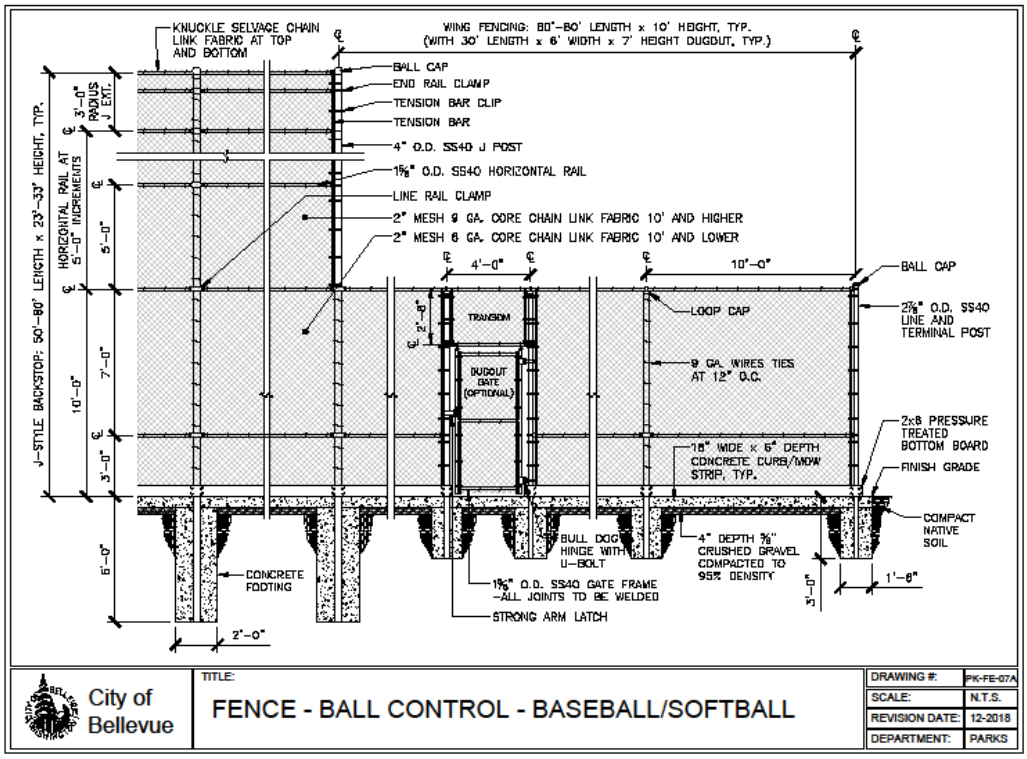
DRAWING #:	PK-FE-04E
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS

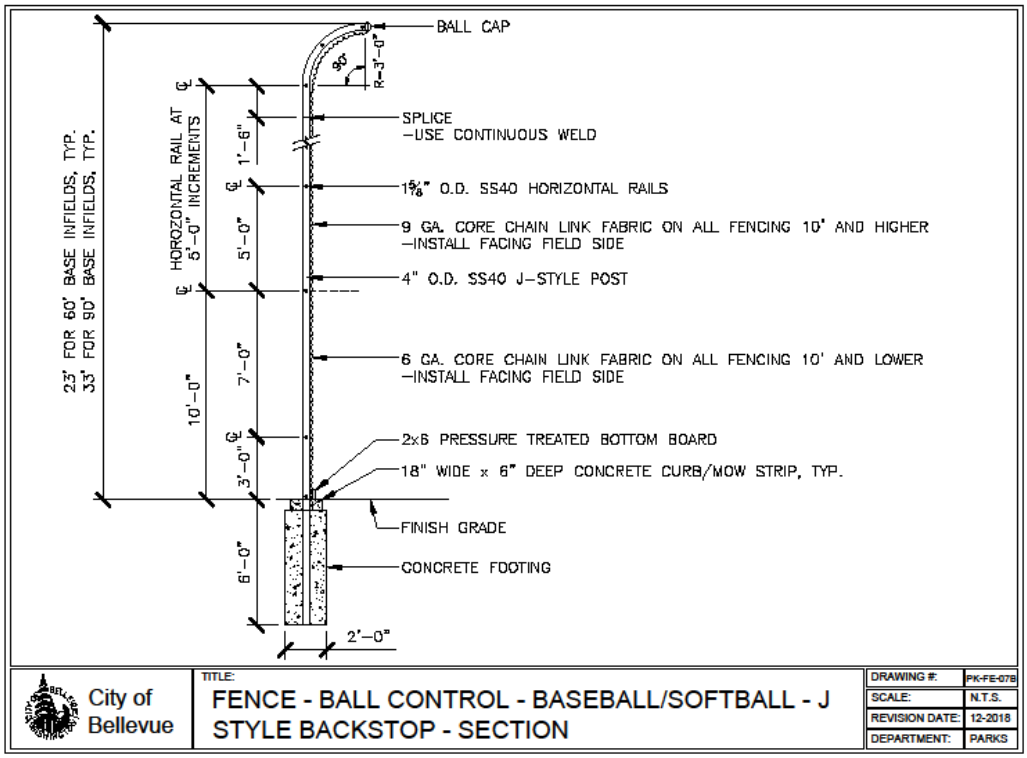

FENCE BOARD WITH FABRIC PER PK-FE-04A, PK-FE-04B, OR PK-FE-04C
FINISH GRADE
COMPACT NATIVE SOIL
SUBSURFACE POST BRACING -SEE PLAN VIEW
4x4 D.F #2 OR BETTER PT ACQ/CBA POST PILE DRIVEN INTO SOIL, TYP.
1'-0"
4'-0" TYP.
ELEVATION
(4) 2x8 BRACING -D.F.# 2 OR BETTER, PT ACQ/CBA -SECURE TO POST WITH 2 EA. 5/16"x4" CRK LAG SCREW FASTENER OR APPROVED EQUAL
4x4 D.F #2 OR BETTER PT ACQ/CBA POST PILE DRIVEN INTO SOIL, TYP.
1'-3½"
PLAN VIEW
ISOMETRIC VIEW
NOTE: ALL CUTS MADE IN FIELD SHALL BE TREATED WITH COPPER NAPHTHENATE WOOD PRESERVATIVE, OR APPROVED EQUAL.
City of Bellevue
TITLE:
FENCE - BOARD WITH FABRIC - SUBSURFACE POST STABILIZATION OPTION
DRAWING #: PK-FE-04F
SCALE: N.T.S.
REVISION DATE: 08-2022
DEPARTMENT: PARKS

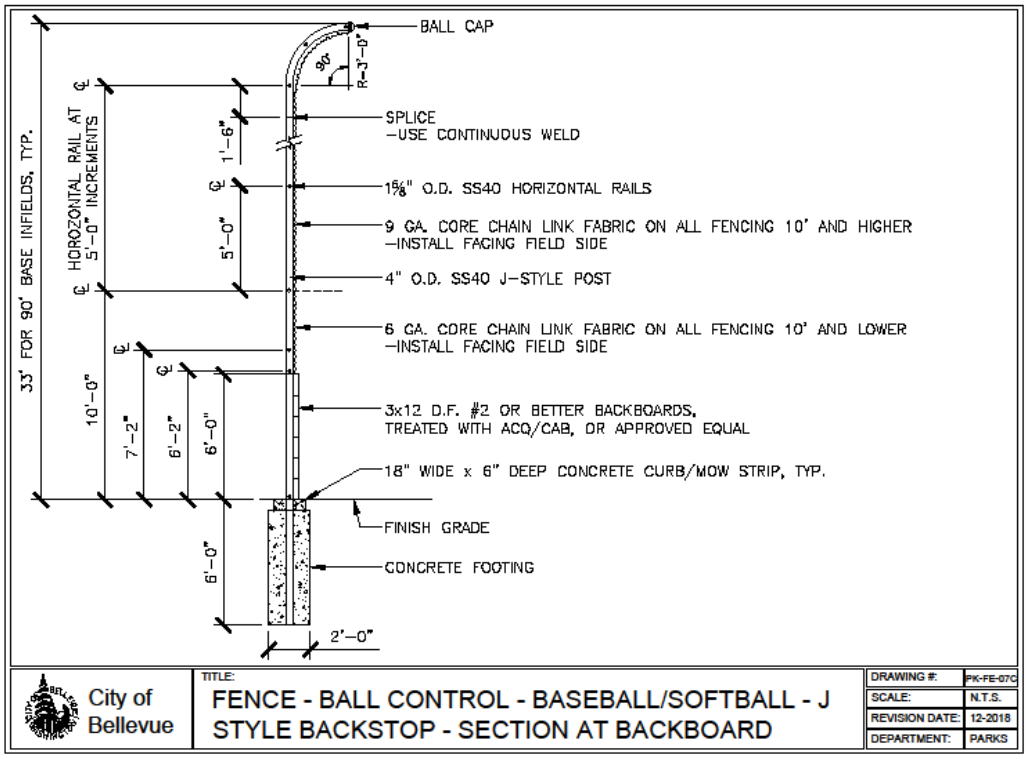

8'-0", TYP.
6"
¾" CHAMFER, TYP.
8x8 POST
½"x8" GALV. LAG BOLT, RECESSED FLUSH
4x8 RAIL (16' LENGTHS, TYP.)
FINISH GRADE
2'-6"
2'-6"
COMPACT NATIVE SOIL
2", TYP.
⅝" CRUSHED AGGREGATE PER WSDOT 9.03.9(3) COMPACTED TO 95% DENSITY
1'-4"
NOTES:
1. ALL WOOD TO BE DF #2 OR BETTER PT ACQ/CBA, OR APPROVED EQUAL.
2. ALL CHAMFERS ON POSTS AND RAILS SHALL BE CUT PRIOR TO PRESSURE TREATING.
3. ALL CUTS MADE IN THE FIELD SHALL BE SEALED WITH (2) COATES COPPER NAPHTHENATE WOOD PRESERVATIVE.
City of Bellevue
TITLE:
FENCE - WOODEN BULL RAIL - ELEVATION
DRAWING #: PK-FE-05A
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS

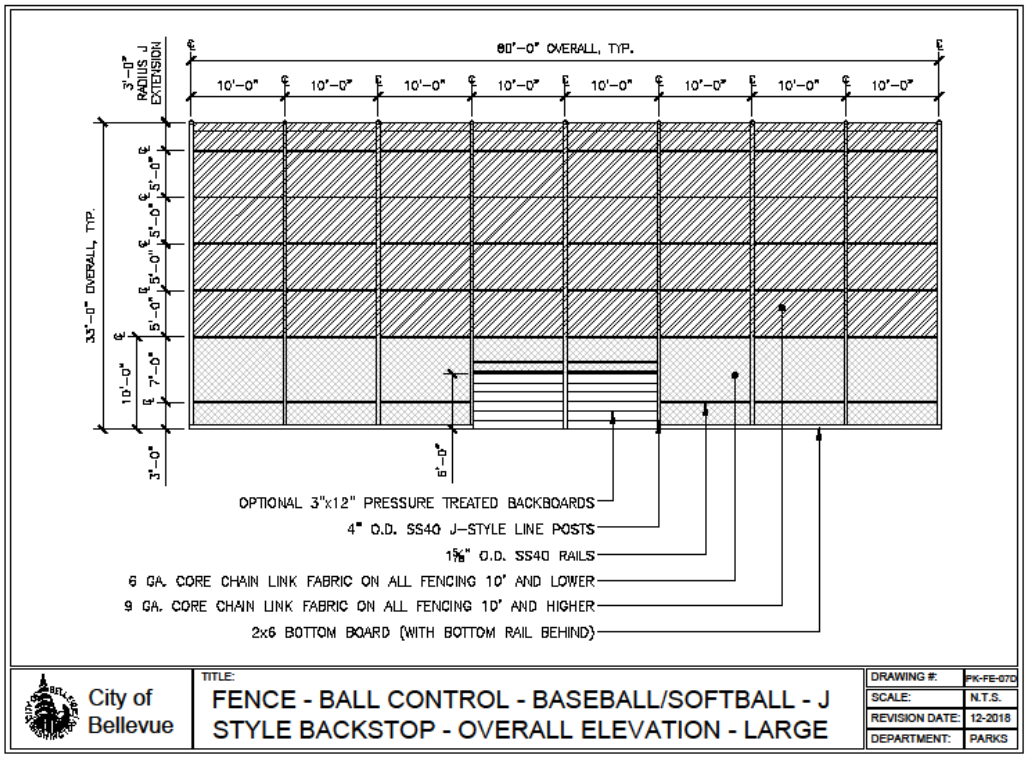

¾" CHAMFER, TYP.
8x8 POST
4x8 RAIL
(2) ½"x8" GALV. LAG BOLT, RECESSED FLUSH
FINISH GRADE
COMPACT NATIVE SOIL
⅜" CRUSHED AGGREGATE PER WSDOT 9.039(3) COMPACTED TO 95% DENSITY
6"
2'-6"
2½", TYP.
2", TYP.
1'-4"
NOTES:
1. ALL WOOD TO BE DF #2 OR BETTER PT ACQ/CBA, OR APPROVED EQUAL.
2. ALL CHAMFERS ON POSTS AND RAILS SHALL BE CUT PRIOR TO PRESSURE TREATING.
3. ALL CUTS MADE IN THE FIELD SHALL BE SEALED WITH (2) COATES COPPER NAPHTHENATE WOOD PRESERVATIVE.
City of Bellevue
TITLE:
FENCE - WOODEN BULL RAIL - SECTION
DRAWING #: PK-FE-05B
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS

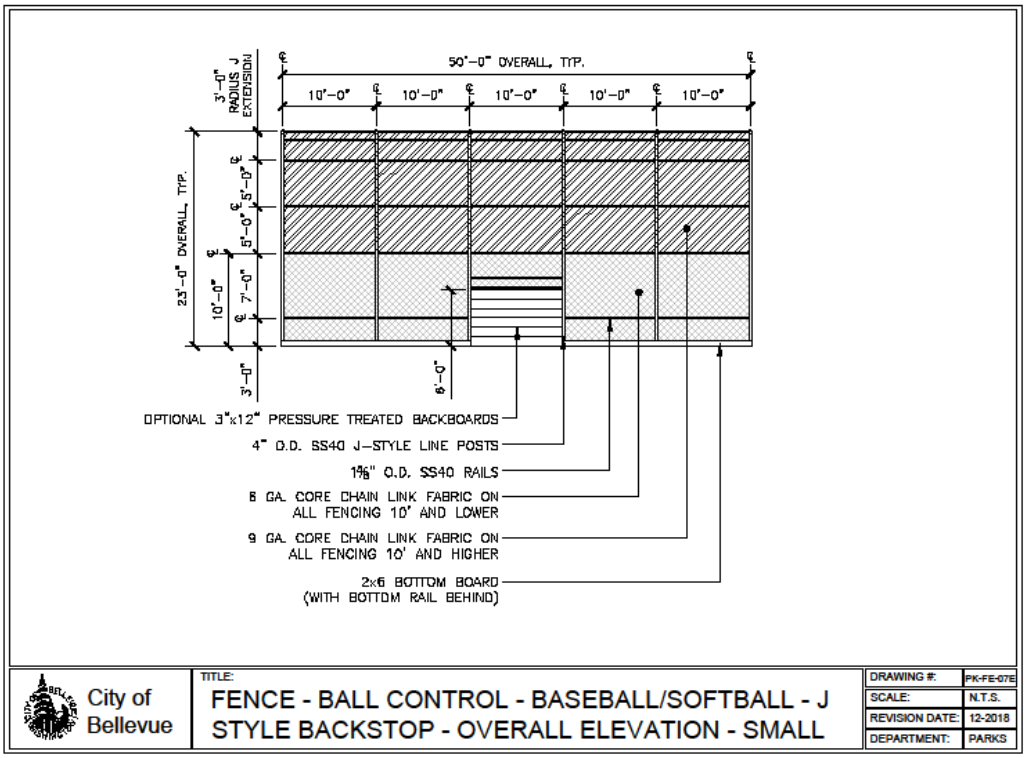

1" CHAMFER, TYP.
4", TYP.
2x6 CEDAR CAP
2x6 CEDAR HORIZONTAL TRIM
6x6 POST –SEE NOTE 1
⅝"x6"x6' CEDAR SLATS
6", TYP.
FINISH GRADE
COMPACT NATIVE SOIL
CONCRETE FOOTING
7'-0", TYP.
2'-0"
2" MIN.
1'-8"
8'-0", TYP.
⅛" GAP BETWEEN SLATS, TYP.
NOTES:
1. POSTS TO BE D.F. #2 OR BETTER, PT ACQ/CBA, OR APPROVED EQUAL. CHAMFERS AT TOP OF POSTS TO BE CUT PRIOR TO PRESSURE TREATMENT.
2. FENCE TRIM AND SLATS TO BE TIGHT KNOT WESTERN RED CEDAR OR APPROVED EQUAL.
3. CAP, TRIM AND SLATS (BOTH SIDES) TO RECEIVE (2) COATS SIKKENS CETAL SRD "NATURAL OAK" STAIN OR APPROVED EQUAL.
4. ALL SCREWS, NAILS AND MISC. HARDWARE USED TO FASTEN MATERIALS SHALL BE HOT DIPPED GALVANIZED.
City of Bellevue
TITLE:
FENCE - WOODEN PRIVACY
DRAWING #: PK-FE-05
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS

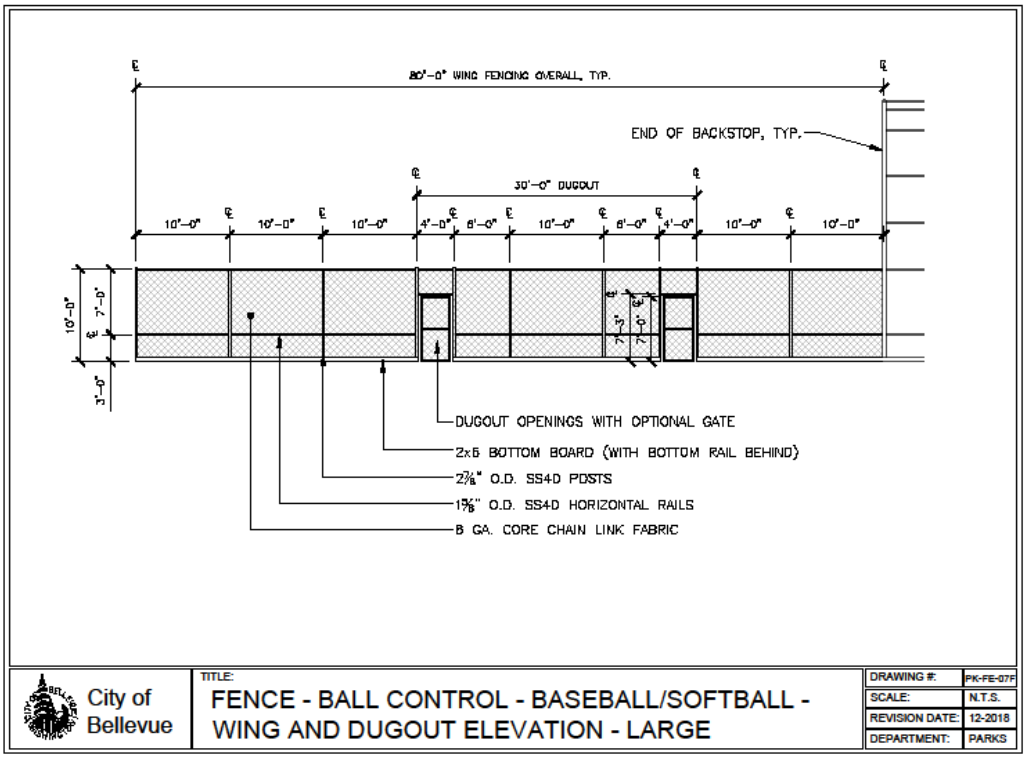

KNUCKLE SELVAGE CHAIN LINK FABRIC AT TOP AND BOTTOM
WING FENCING: 80'-80' LENGTH x 10' HEIGHT, TYP. (WITH 30' LENGTH x 6' WIDTH x 7' HEIGHT DUGOUT, TYP.)
BALL CAP
END RAIL CLAMP
TENSION BAR CLIP
TENSION BAR
4" O.D. SS40 J POST
1⅝" O.D. SS40 HORIZONTAL RAIL
LINE RAIL CLAMP
2" MESH 9 GA. CORE CHAIN LINK FABRIC 10' AND HIGHER
2" MESH 6 GA. CORE CHAIN LINK FABRIC 10' AND LOWER
J-STYLE BACKSTOP: 50'-80' LENGTH x 23'-33' HEIGHT, TYP.
3'-0" RADIUS J EXT.
HORIZONTAL RAIL AT 5'-0" INCREMENTS
5'-0"
7'-0"
10'-0"
3'-0"
6'-0"
4'-0"
10'-0"
TRANSOM
2'-6"
DUGOUT GATE (OPTIONAL)
BALL CAP
LOOP CAP
2⅞" O.D. SS40 LINE AND TERMINAL POST
9 GA. WIRES TIES AT 12" O.C.
2x8 PRESSURE TREATED BOTTOM BOARD
18" WIDE x 6" DEPTH CONCRETE CURB/MOW STRIP, TYP.
FINISH GRADE
COMPACT NATIVE SOIL
BULL DOG HINGE WITH U-BOLT
4" DEPTH ⅜" CRUSHED GRAVEL COMPACTED TO 95% DENSITY
3'-0"
1'-6"
CONCRETE FOOTING
1⅝" O.D. SS40 GATE FRAME -ALL JOINTS TO BE WELDED
STRONG ARM LATCH
2'-0"
City of Bellevue
TITLE:
FENCE - BALL CONTROL - BASEBALL/SOFTBALL
DRAWING #: PK-FE-07A
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS

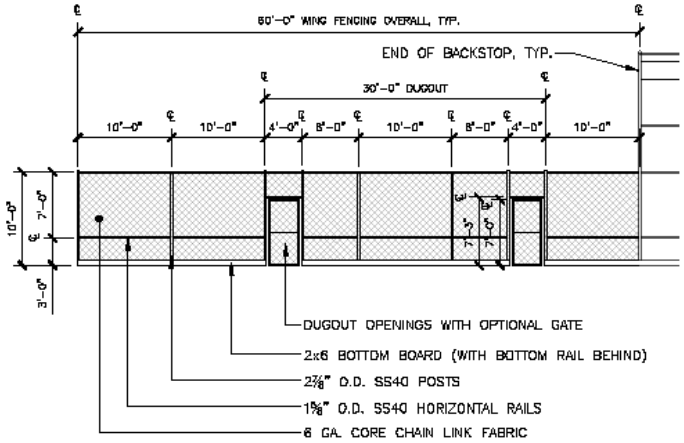

BALL CAP
90°
R=3'-0"
SPLICE -USE CONTINUOUS WELD
1⅝" O.D. SS40 HORIZONTAL RAILS
9 GA. CORE CHAIN LINK FABRIC ON ALL FENCING 10' AND HIGHER -INSTALL FACING FIELD SIDE
4" O.D. SS40 J-STYLE POST
6 GA. CORE CHAIN LINK FABRIC ON ALL FENCING 10' AND LOWER -INSTALL FACING FIELD SIDE
2x6 PRESSURE TREATED BOTTOM BOARD
18" WIDE x 6" DEEP CONCRETE CURB/MOW STRIP, TYP.
FINISH GRADE
CONCRETE FOOTING
2'-0"
23' FOR 60' BASE INFIELDS, TYP.
33' FOR 90' BASE INFIELDS, TYP.
HORIZONTAL RAIL AT 5'-0" INCREMENTS
1'-6"
5'-0"
7'-0"
10'-0"
3'-0"
6'-0"
City of Bellevue
TITLE:
FENCE - BALL CONTROL - BASEBALL/SOFTBALL - J STYLE BACKSTOP - SECTION
DRAWING #: PK-FE-07B
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS


BALL CAP
R=3'-0"
90°
SPLICE
-USE CONTINUOUS WELD
1⅝" O.D. SS40 HORIZONTAL RAILS
9 GA. CORE CHAIN LINK FABRIC ON ALL FENCING 10' AND HIGHER
-INSTALL FACING FIELD SIDE
4" O.D. SS40 J-STYLE POST
6 GA. CORE CHAIN LINK FABRIC ON ALL FENCING 10' AND LOWER
-INSTALL FACING FIELD SIDE
3x12 D.F. #2 OR BETTER BACKBOARDS,
TREATED WITH ACQ/CAB, OR APPROVED EQUAL
18" WIDE x 6" DEEP CONCRETE CURB/MOW STRIP, TYP.
FINISH GRADE
CONCRETE FOOTING
33' FOR 90' BASE INFIELDS, TYP.
HORIZONTAL RAIL AT 5'-0" INCREMENTS
1'-6"
5'-0"
10'-0"
7'-2"
6'-2"
6'-0"
6'-0"
2'-0"
City of Bellevue
TITLE:
FENCE - BALL CONTROL - BASEBALL/SOFTBALL - J STYLE BACKSTOP - SECTION AT BACKBOARD
DRAWING #: PK-FE-07C
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS


80'-0" OVERALL, TYP.
10'-0"
3'-0" RADIUS J EXTENSION
33'-0" OVERALL, TYP.
5'-0"
7'-0"
6'-0"
OPTIONAL 3"x12" PRESSURE TREATED BACKBOARDS
4" O.D. SS40 J-STYLE LINE POSTS
1⅝" O.D. SS40 RAILS
6 GA. CORE CHAIN LINK FABRIC ON ALL FENCING 10' AND LOWER
9 GA. CORE CHAIN LINK FABRIC ON ALL FENCING 10' AND HIGHER
2x6 BOTTOM BOARD (WITH BOTTOM RAIL BEHIND)
City of Bellevue
TITLE:
FENCE - BALL CONTROL - BASEBALL/SOFTBALL - J STYLE BACKSTOP - OVERALL ELEVATION - LARGE
DRAWING #: PK-FE-07D
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS


50'-0" OVERALL, TYP.
10'-0"
10'-0"
10'-0"
10'-0"
10'-0"
3'-0" RADIUS J EXTENSION
23'-0" OVERALL, TYP.
5'-0"
5'-0"
7'-0"
10'-0"
3'-0"
6'-0"
OPTIONAL 3"x12" PRESSURE TREATED BACKBOARDS
4" O.D. SS40 J-STYLE LINE POSTS
1⅝" O.D. SS40 RAILS
8 GA. CORE CHAIN LINK FABRIC ON ALL FENCING 10' AND LOWER
9 GA. CORE CHAIN LINK FABRIC ON ALL FENCING 10' AND HIGHER
2x6 BOTTOM BOARD (WITH BOTTOM RAIL BEHIND)
City of Bellevue
TITLE:
FENCE - BALL CONTROL - BASEBALL/SOFTBALL - J STYLE BACKSTOP - OVERALL ELEVATION - SMALL
DRAWING #: PK-FE-07E
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS

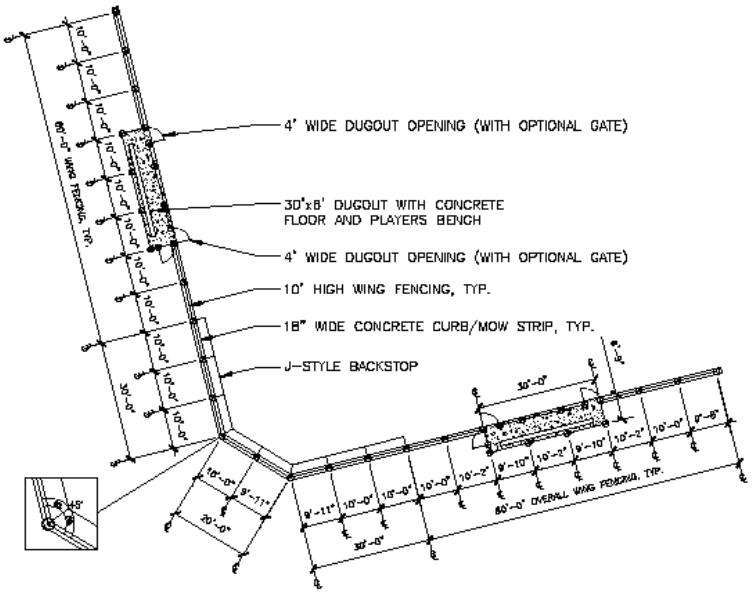

80'-0" WING FENCING OVERALL, TYP.
END OF BACKSTOP, TYP.
30'-0" DUGOUT
10'-0"
10'-0"
10'-0"
4'-0"
8'-0"
10'-0"
8'-0"
4'-0"
10'-0"
10'-0"
10'-0"
7'-0"
3'-0"
DUGOUT OPENINGS WITH OPTIONAL GATE
2x6 BOTTOM BOARD (WITH BOTTOM RAIL BEHIND)
2⅞" O.D. SS40 POSTS
1⅝" O.D. SS40 HORIZONTAL RAILS
8 GA. CORE CHAIN LINK FABRIC
City of Bellevue
TITLE:
FENCE - BALL CONTROL - BASEBALL/SOFTBALL - WING AND DUGOUT ELEVATION - LARGE
DRAWING #: PK-FE-07F
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS



City of Bellevue

TITLE:
FENCE - BALL CONTROL - BASEBALL/SOFTBALL - WING AND DUGOUT ELEVATION - SMALL

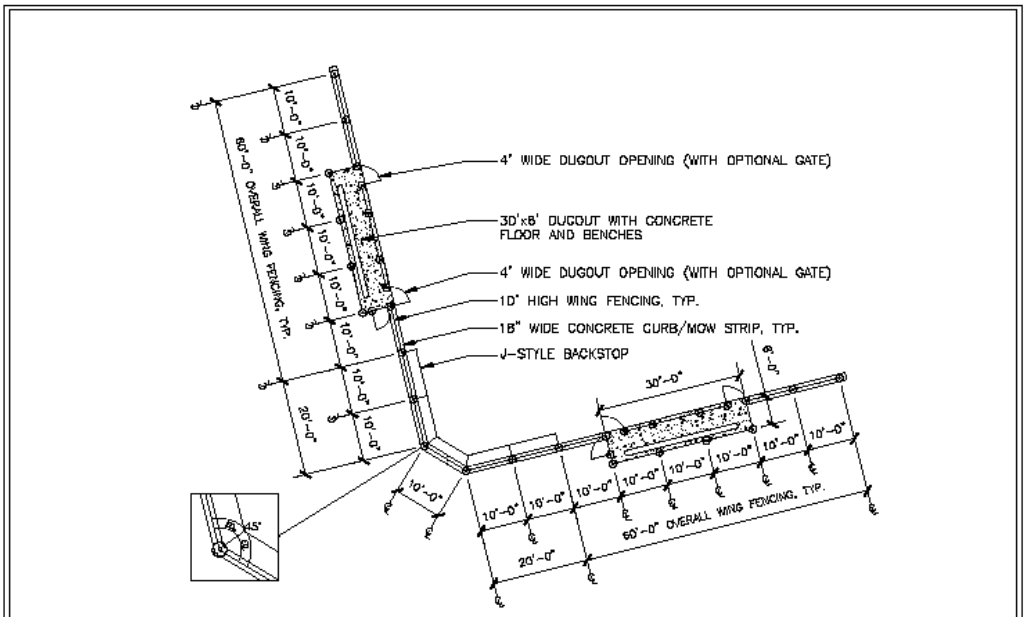
DRAWING #:	PK-FE-07G
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS



City of Bellevue

TITLE:
FENCE - BALL CONTROL - BASEBALL/SOFTBALL - OVERALL LAYOUT - LARGE

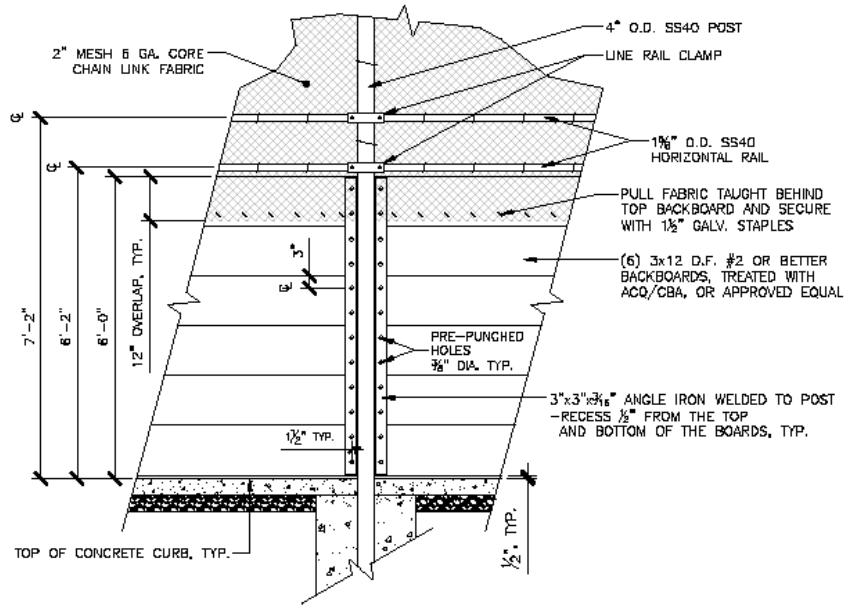
DRAWING #:	PK-FE-07H
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS



City of Bellevue

TITLE: FENCE - BALL CONTROL - BASEBALL/SOFTBALL - OVERALL LAYOUT - SMALL

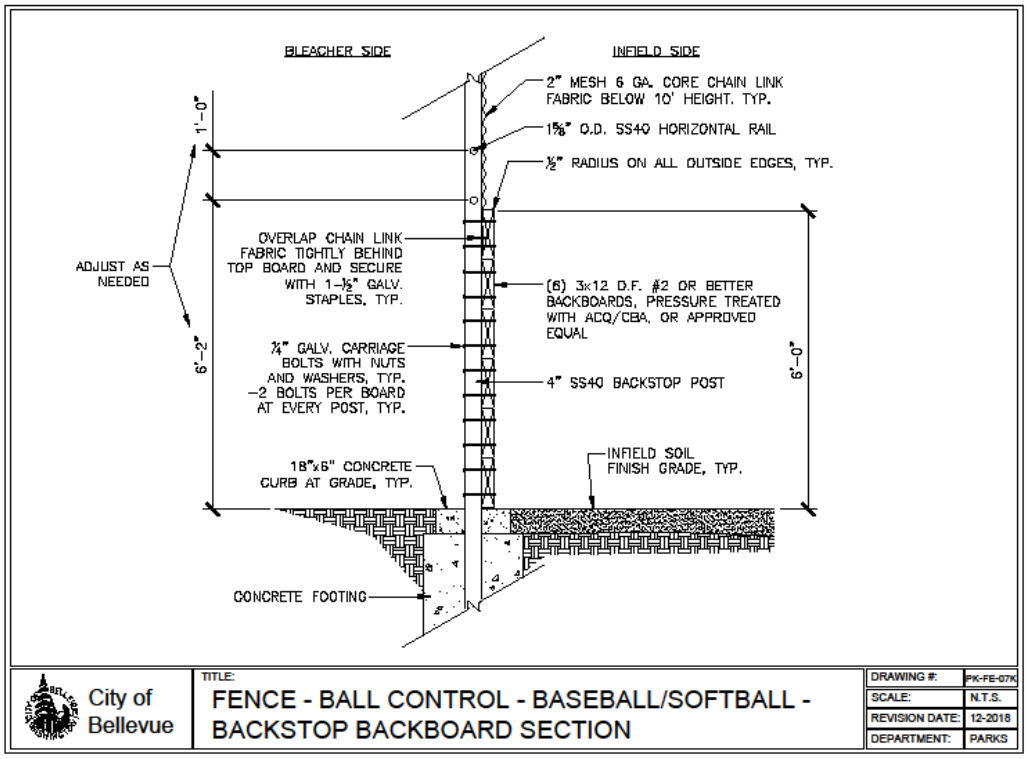
DRAWING #:	PK-FE-07I
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS

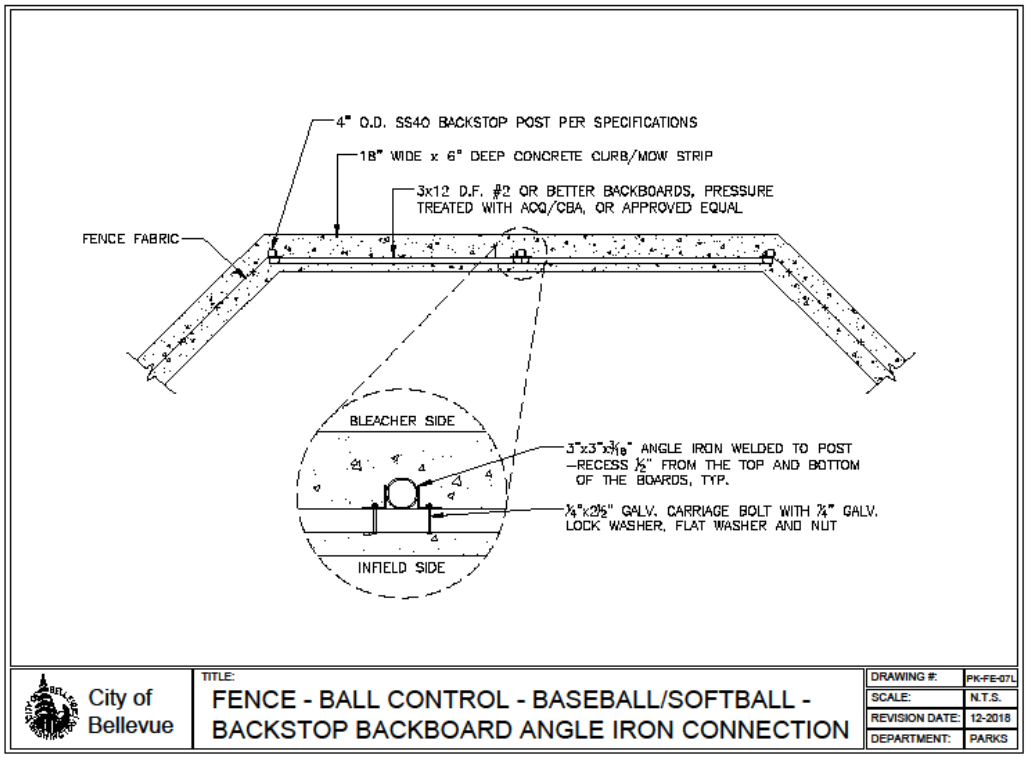


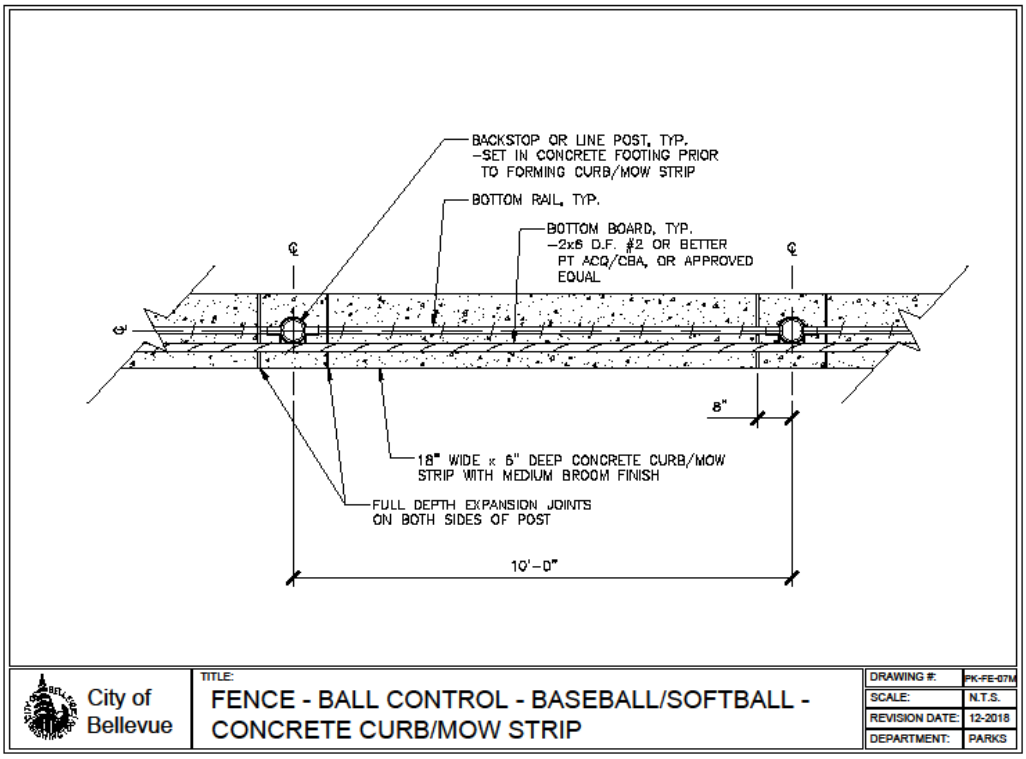
City of Bellevue

TITLE: FENCE - BALL CONTROL - BASEBALL/SOFTBALL - BACKSTOP BACKBOARD REAR ELEVATION

DRAWING #:	PK-FE-07J
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS


BLEACHER SIDE
INFIELD SIDE
2" MESH 6 GA. CORE CHAIN LINK FABRIC BELOW 10' HEIGHT. TYP.
1⅝" O.D. SS40 HORIZONTAL RAIL
½" RADIUS ON ALL OUTSIDE EDGES, TYP.
1'-0"
ADJUST AS NEEDED
6'-2"
OVERLAP CHAIN LINK FABRIC TIGHTLY BEHIND TOP BOARD AND SECURE WITH 1-½" GALV. STAPLES, TYP.
¾" GALV. CARRIAGE BOLTS WITH NUTS AND WASHERS, TYP. -2 BOLTS PER BOARD AT EVERY POST, TYP.
(6) 3x12 D.F. #2 OR BETTER BACKBOARDS, PRESSURE TREATED WITH ACQ/CBA, OR APPROVED EQUAL
4" SS40 BACKSTOP POST
6'-0"
18"x6" CONCRETE CURB AT GRADE, TYP.
INFIELD SOIL FINISH GRADE, TYP.
CONCRETE FOOTING
City of Bellevue
TITLE:
FENCE - BALL CONTROL - BASEBALL/SOFTBALL - BACKSTOP BACKBOARD SECTION
DRAWING #: PK-FE-07K
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS

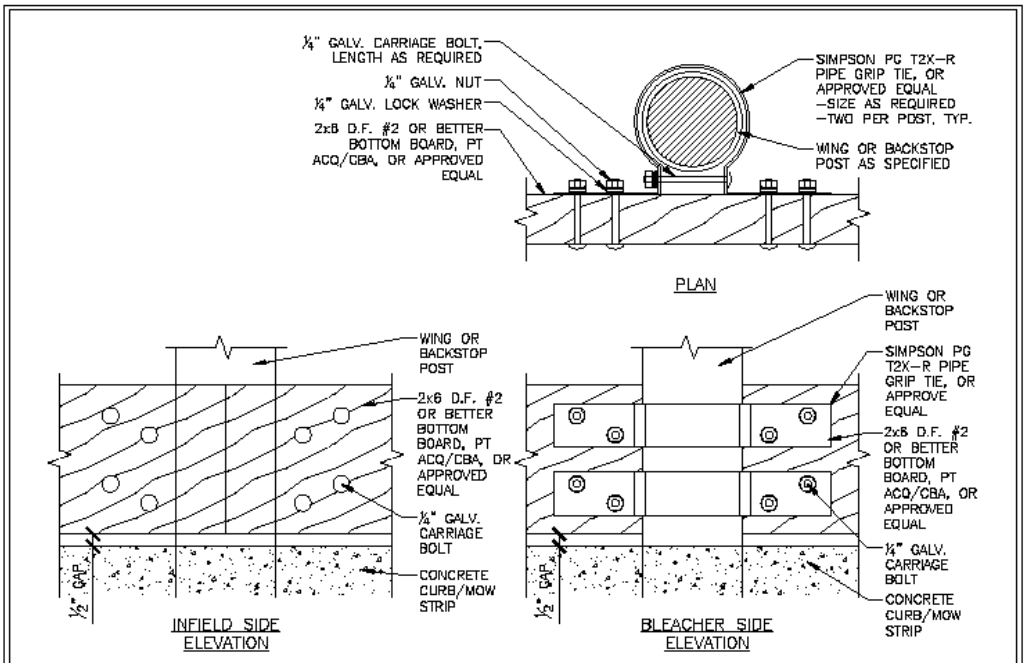

4" O.D. SS40 BACKSTOP POST PER SPECIFICATIONS
18" WIDE x 6" DEEP CONCRETE CURB/MOW STRIP
3x12 D.F. #2 OR BETTER BACKBOARDS, PRESSURE TREATED WITH ACQ/CBA, OR APPROVED EQUAL
FENCE FABRIC
BLEACHER SIDE
3"x3"x3/16" ANGLE IRON WELDED TO POST -RECESS ½" FROM THE TOP AND BOTTOM OF THE BOARDS, TYP.
⅜"x2½" GALV. CARRIAGE BOLT WITH ¾" GALV. LOCK WASHER, FLAT WASHER AND NUT
INFIELD SIDE
City of Bellevue
TITLE:
FENCE - BALL CONTROL - BASEBALL/SOFTBALL - BACKSTOP BACKBOARD ANGLE IRON CONNECTION
DRAWING #: PK-FE-07L
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS



City of Bellevue

TITLE:
FENCE - BALL CONTROL - BASEBALL/SOFTBALL - CONCRETE CURB/MOW STRIP

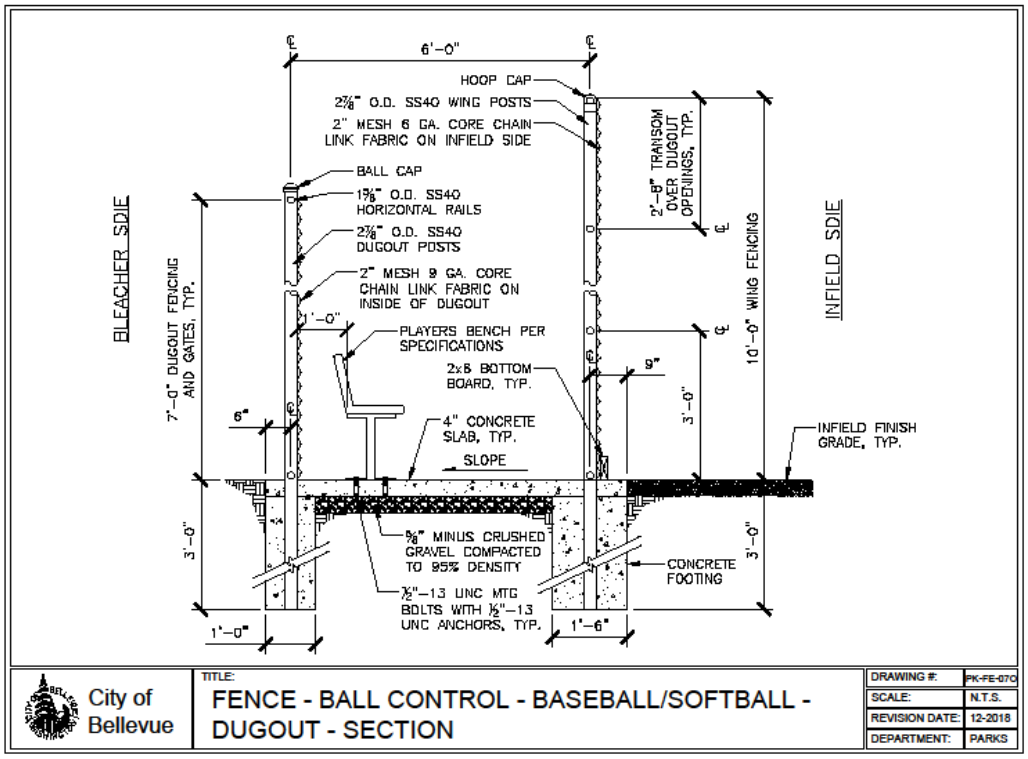
DRAWING #:	PK-FE-07M
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS

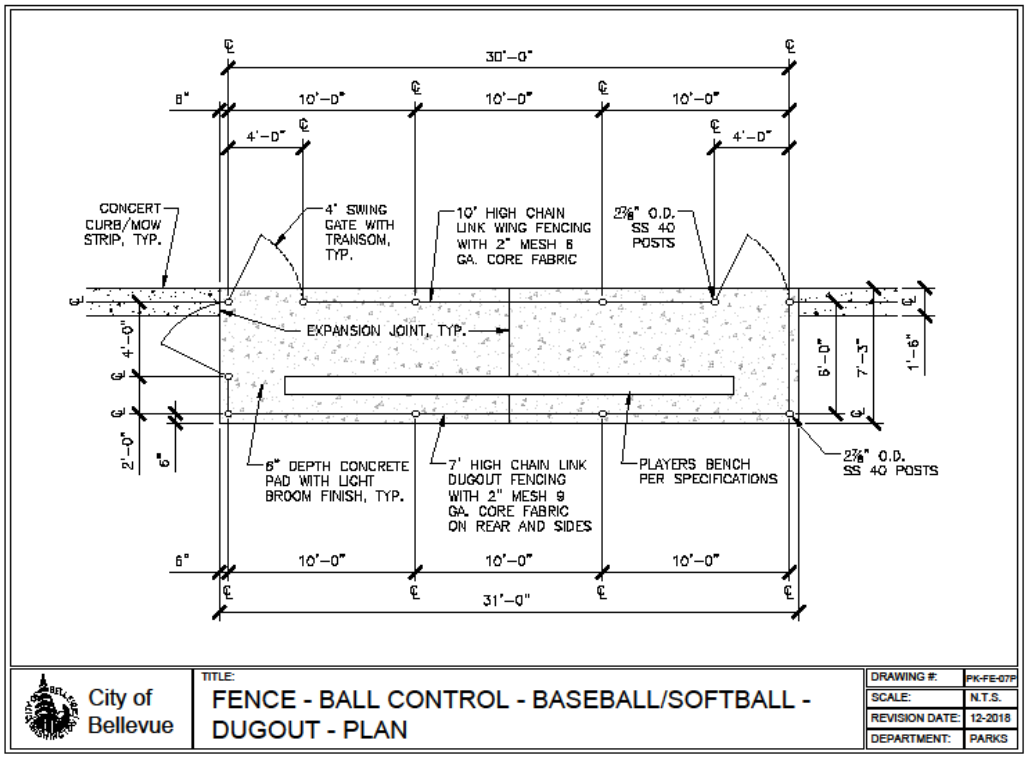


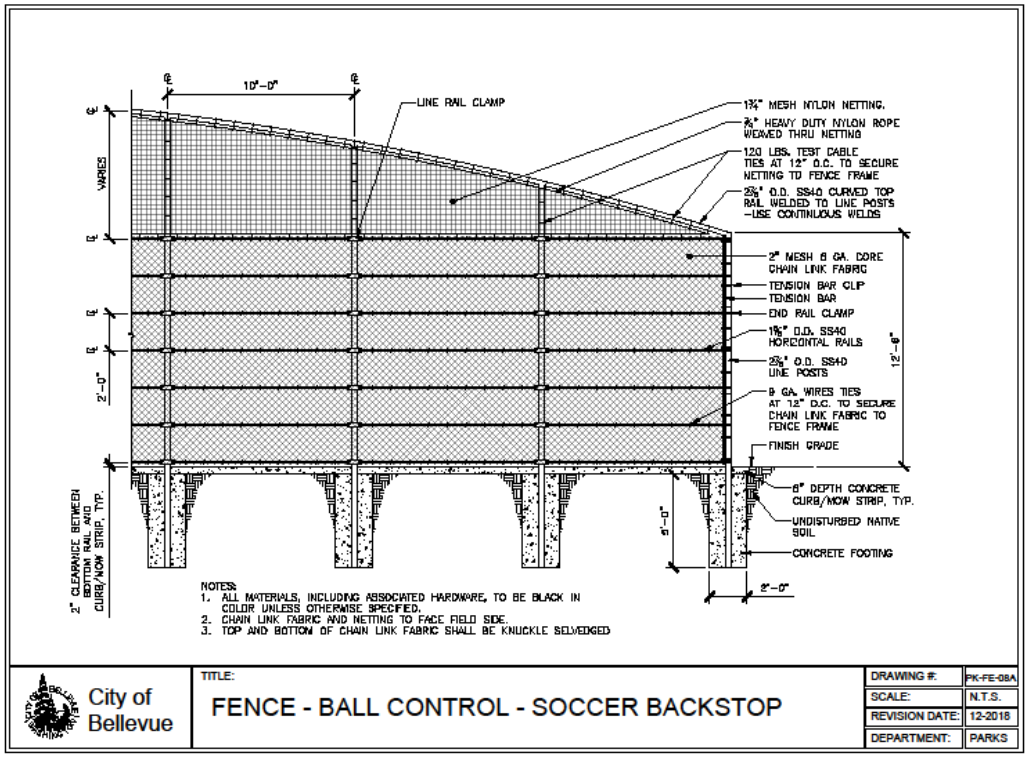
City of Bellevue

TITLE:
FENCE - BALL CONTROL - BASEBALL/SOFTBALL - BOTTOM BOARD CONNECTION

DRAWING #:	PK-FE-07N
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS


6'-0"
HOOP CAP
2⅞" O.D. SS40 WING POSTS
2" MESH 6 GA. CORE CHAIN LINK FABRIC ON INFIELD SIDE
BALL CAP
1⅝" O.D. SS40 HORIZONTAL RAILS
2⅞" O.D. SS40 DUGOUT POSTS
2" MESH 9 GA. CORE CHAIN LINK FABRIC ON INSIDE OF DUGOUT
1'-0"
PLAYERS BENCH PER SPECIFICATIONS
2x6 BOTTOM BOARD, TYP.
9"
6"
4" CONCRETE SLAB, TYP.
SLOPE
⅝" MINUS CRUSHED GRAVEL COMPACTED TO 95% DENSITY
½"-13 UNC MTG BOLTS WITH ½"-13 UNC ANCHORS, TYP.
1'-0"
1'-6"
3'-0"
3'-0"
3'-0"
2'-8" TRANSOM OVER DUGOUT OPENINGS, TYP.
10'-0" WING FENCING
7'-0" DUGOUT FENCING AND GATES, TYP.
BLEACHER SIDE
INFIELD SIDE
INFIELD FINISH GRADE, TYP.
CONCRETE FOOTING
City of Bellevue
TITLE:
FENCE - BALL CONTROL - BASEBALL/SOFTBALL - DUGOUT - SECTION
DRAWING #: PK-FE-07O
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS


30'-0"
8"
10'-0"
10'-0"
10'-0"
4'-0"
4'-0"
CONCERT CURB/MOW STRIP, TYP.
4' SWING GATE WITH TRANSOM, TYP.
10' HIGH CHAIN LINK WING FENCING WITH 2" MESH 6 GA. CORE FABRIC
2⅞" O.D. SS 40 POSTS
EXPANSION JOINT, TYP.
4'-0"
2'-0"
6"
6'-0"
7'-3"
1'-6"
6" DEPTH CONCRETE PAD WITH LIGHT BROOM FINISH, TYP.
7' HIGH CHAIN LINK DUGOUT FENCING WITH 2" MESH 9 GA. CORE FABRIC ON REAR AND SIDES
PLAYERS BENCH PER SPECIFICATIONS
2⅞" O.D. SS 40 POSTS
8"
10'-0"
10'-0"
10'-0"
31'-0"
City of Bellevue
TITLE:
FENCE - BALL CONTROL - BASEBALL/SOFTBALL - DUGOUT - PLAN
DRAWING #: PK-FE-07P
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS

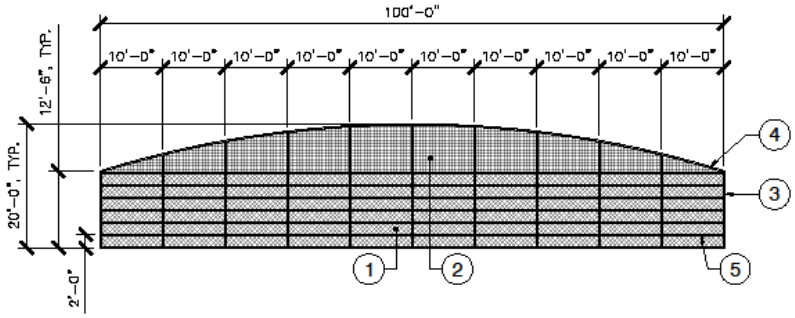


City of Bellevue

TITLE:

FENCE - BALL CONTROL - SOCCER BACKSTOP

DRAWING #:	PK-FE-08A
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS



1. 6 GA. CORE CHAIN LINK FABRIC
2. 1-3/4" NYLON NETTING
3. 2-7/8" O.D. SS40 LINE POSTS, 10'-0" O.C.
4. 2-7/8" O.D. SS40 CURVED TOP RAIL WELDED TO LINE POSTS
5. 1-5/8" O.D. SS40 RAILS, 2'-0" O.C.

City of Bellevue

TITLE:

FENCE - BALL CONTROL - SOCCER BACKSTOP - OVERALL ELEVATION

DRAWING #:	PK-FE-08B
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS

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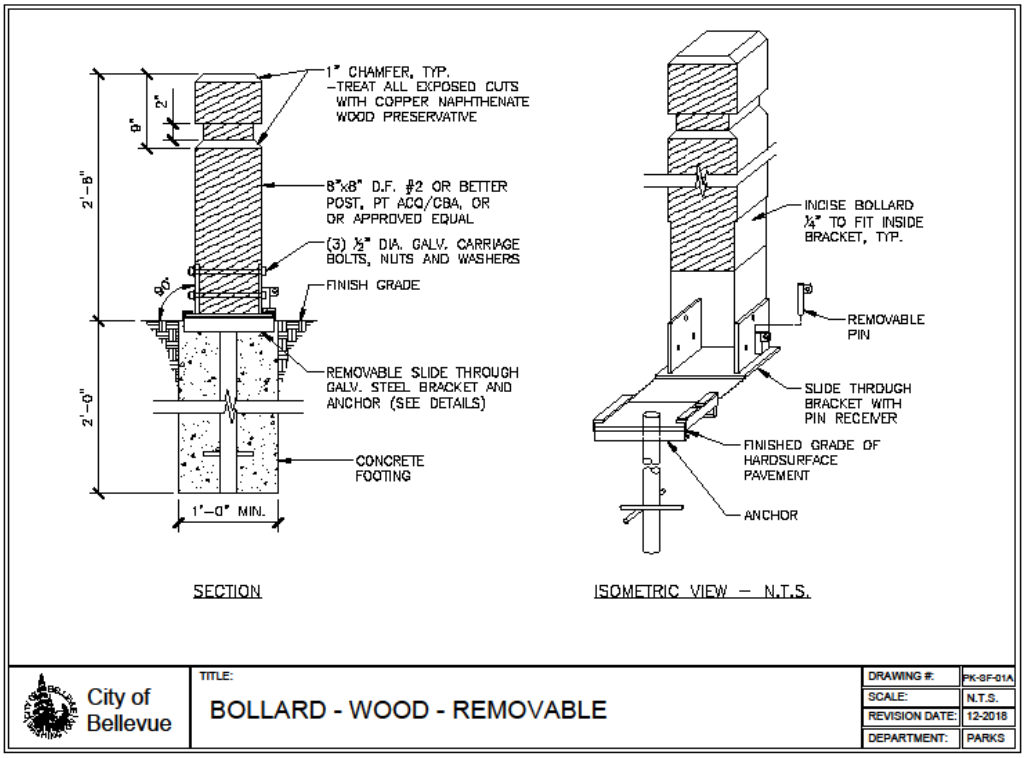
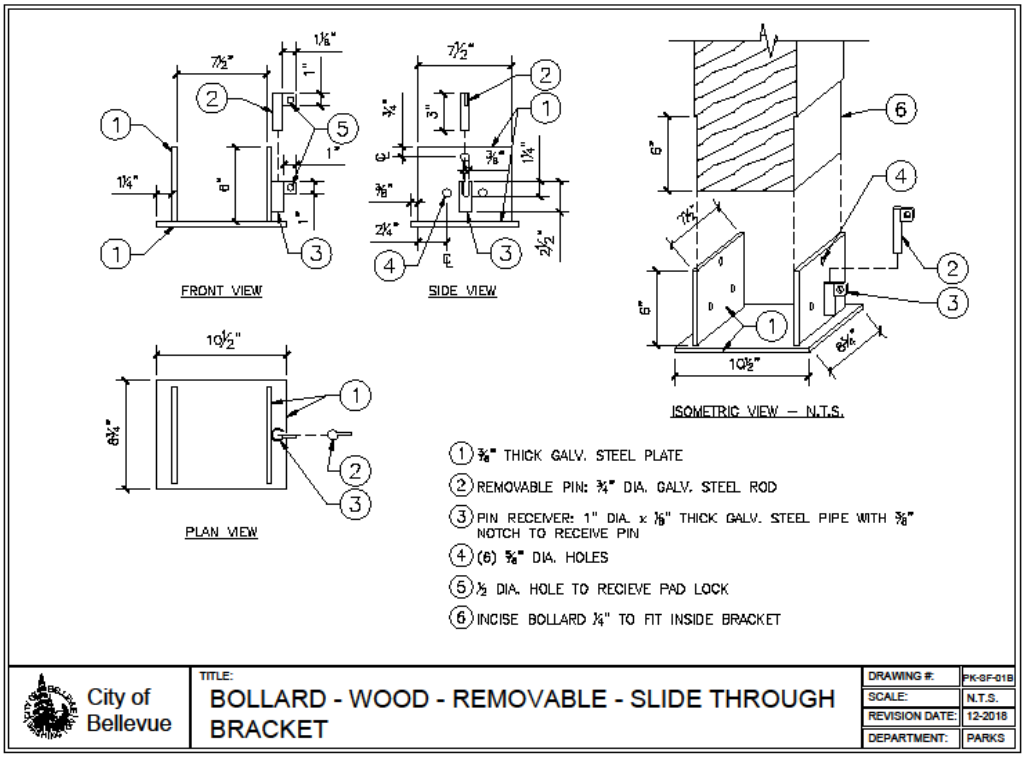
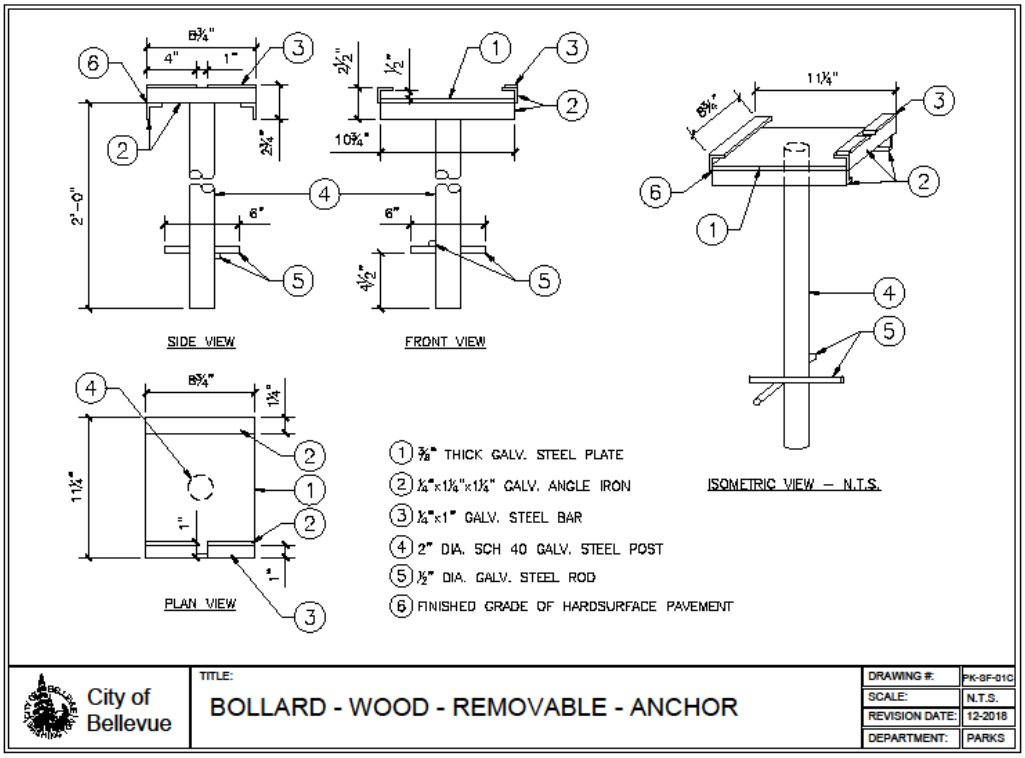
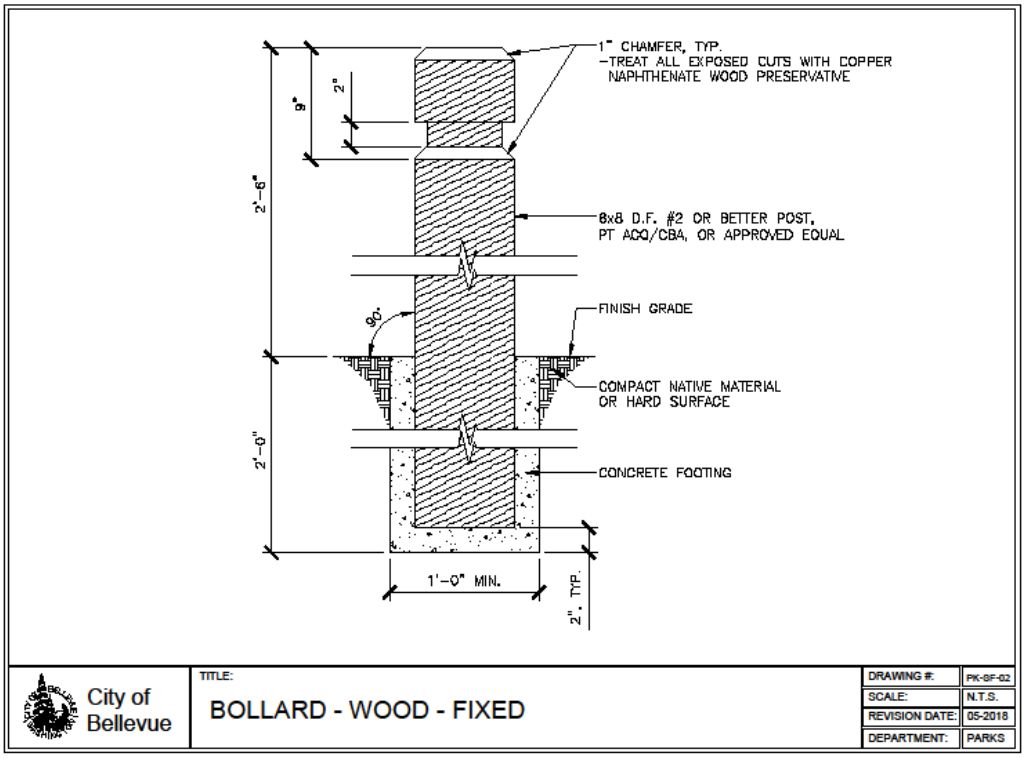
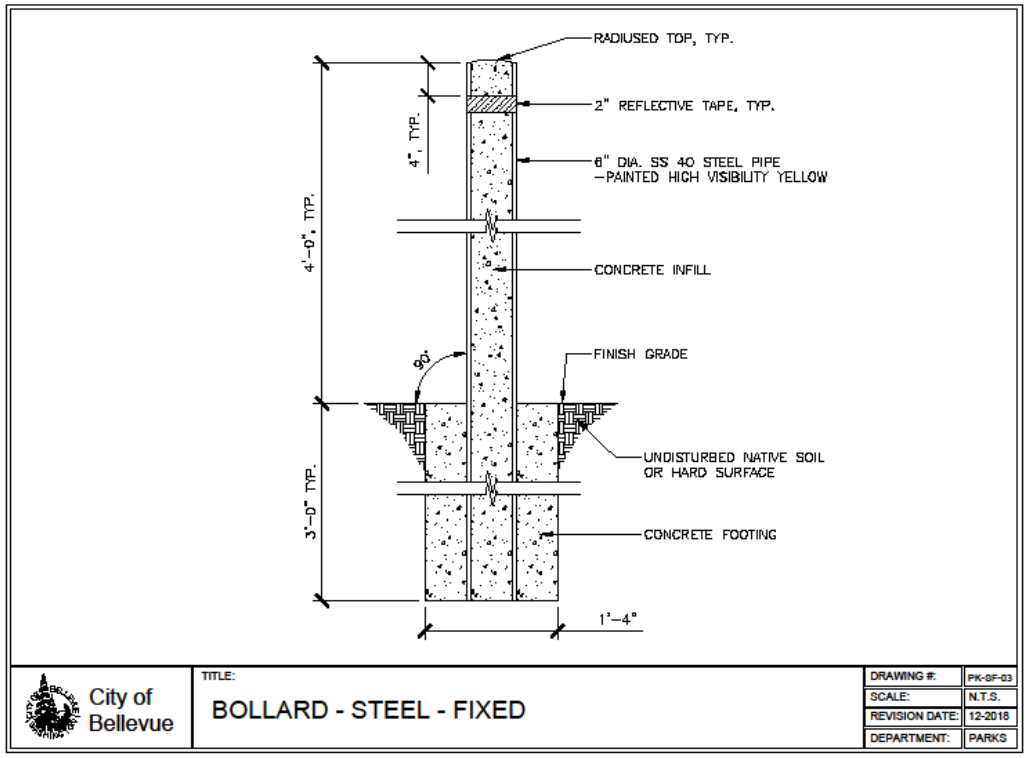
Site Furnishings


1" CHAMFER, TYP.
–TREAT ALL EXPOSED CUTS WITH COPPER NAPHTHENATE WOOD PRESERVATIVE
8"x8" D.F. #2 OR BETTER POST, PT ACQ/CBA, OR OR APPROVED EQUAL
(3) ½" DIA. GALV. CARRIAGE BOLTS, NUTS AND WASHERS
FINISH GRADE
REMOVABLE SLIDE THROUGH GALV. STEEL BRACKET AND ANCHOR (SEE DETAILS)
CONCRETE FOOTING
1'–0" MIN.
2'–8"
2'–0"
8"
2"
INCISE BOLLARD ¼" TO FIT INSIDE BRACKET, TYP.
REMOVABLE PIN
SLIDE THROUGH BRACKET WITH PIN RECEIVER
FINISHED GRADE OF HARDSURFACE PAVEMENT
ANCHOR
SECTION
ISOMETRIC VIEW – N.T.S.
City of Bellevue
TITLE:
BOLLARD - WOOD - REMOVABLE
DRAWING #: PK-SF-01A
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS


FRONT VIEW
SIDE VIEW
PLAN VIEW
ISOMETRIC VIEW – N.T.S.
(1) ⅜" THICK GALV. STEEL PLATE
(2) REMOVABLE PIN: ¾" DIA. GALV. STEEL ROD
(3) PIN RECEIVER: 1" DIA. x ⅛" THICK GALV. STEEL PIPE WITH ⅜" NOTCH TO RECEIVE PIN
(4) (6) ⅝" DIA. HOLES
(5) ½ DIA. HOLE TO RECIEVE PAD LOCK
(6) INCISE BOLLARD ¼" TO FIT INSIDE BRACKET
City of Bellevue
TITLE:
BOLLARD - WOOD - REMOVABLE - SLIDE THROUGH BRACKET
DRAWING #: PK-SF-01B
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS


SIDE VIEW
FRONT VIEW
ISOMETRIC VIEW – N.T.S.
PLAN VIEW
1 3/8" THICK GALV. STEEL PLATE
2 1/4"x1 1/2"x1 1/4" GALV. ANGLE IRON
3 1/4"x1" GALV. STEEL BAR
4 2" DIA. SCH 40 GALV. STEEL POST
5 1/2" DIA. GALV. STEEL ROD
6 FINISHED GRADE OF HARDSURFACE PAVEMENT
City of Bellevue
TITLE:
BOLLARD - WOOD - REMOVABLE - ANCHOR
DRAWING #: PK-SF-01C
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS

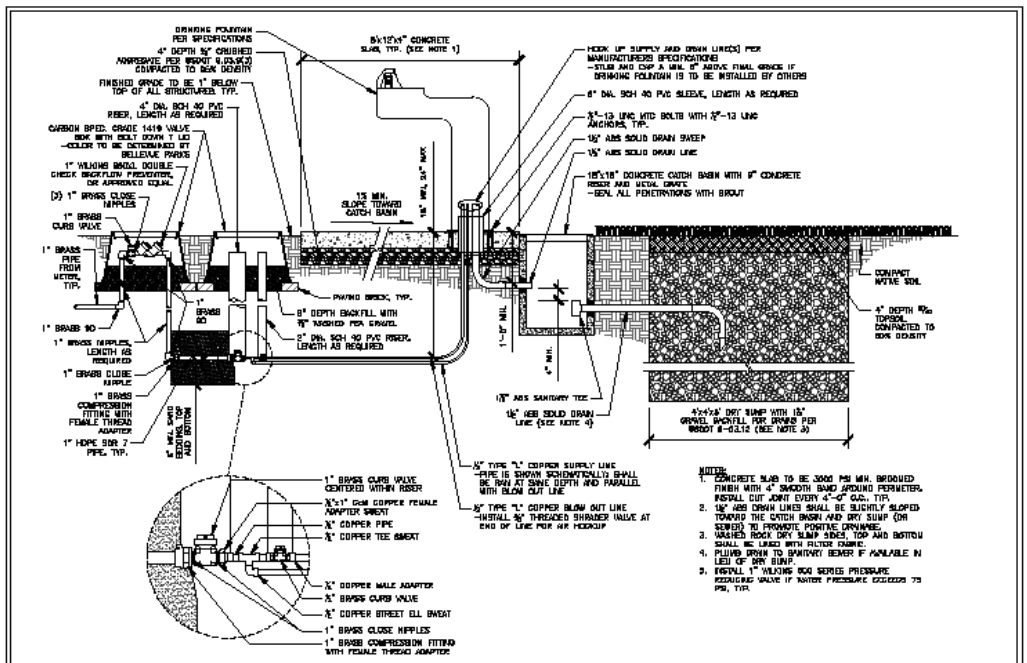

1" CHAMFER, TYP.
–TREAT ALL EXPOSED CUTS WITH COPPER NAPHTHENATE WOOD PRESERVATIVE
8x8 D.F. #2 OR BETTER POST, PT ACQ/CBA, OR APPROVED EQUAL
FINISH GRADE
COMPACT NATIVE MATERIAL OR HARD SURFACE
CONCRETE FOOTING
1'–0" MIN.
2" TYP.
City of Bellevue
TITLE:
BOLLARD - WOOD - FIXED
DRAWING #: PK-SF-02
SCALE: N.T.S.
REVISION DATE: 05-2018
DEPARTMENT: PARKS



City of Bellevue

TITLE: BOLLARD - STEEL - FIXED

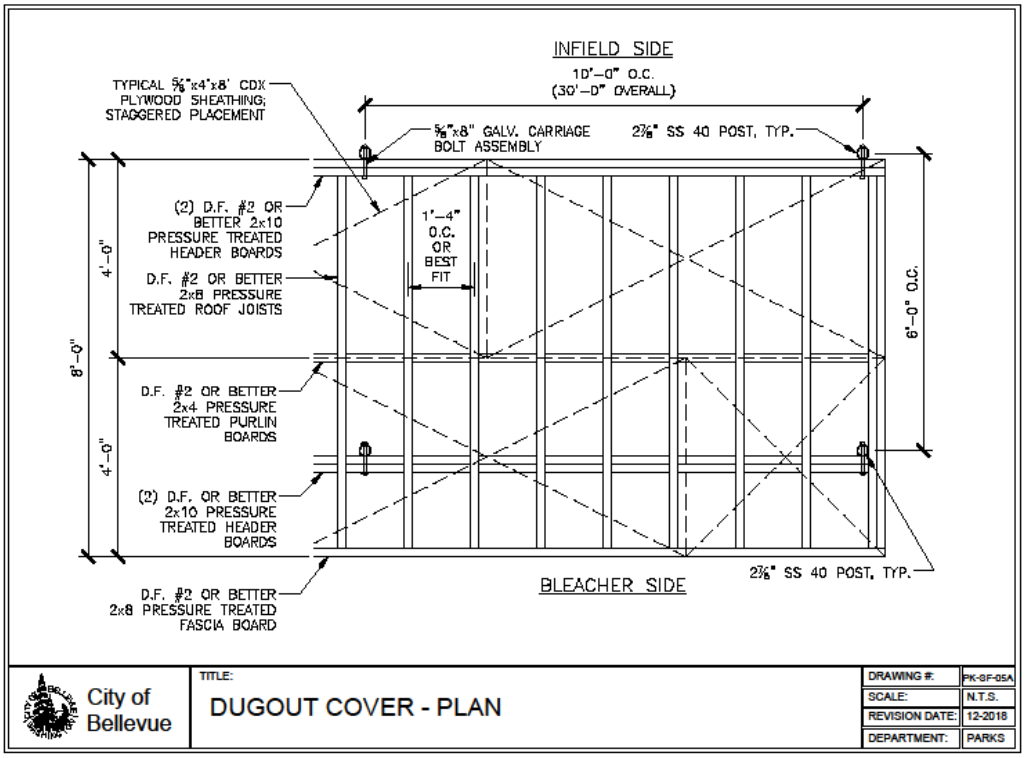
DRAWING #:	PK-SF-03
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS

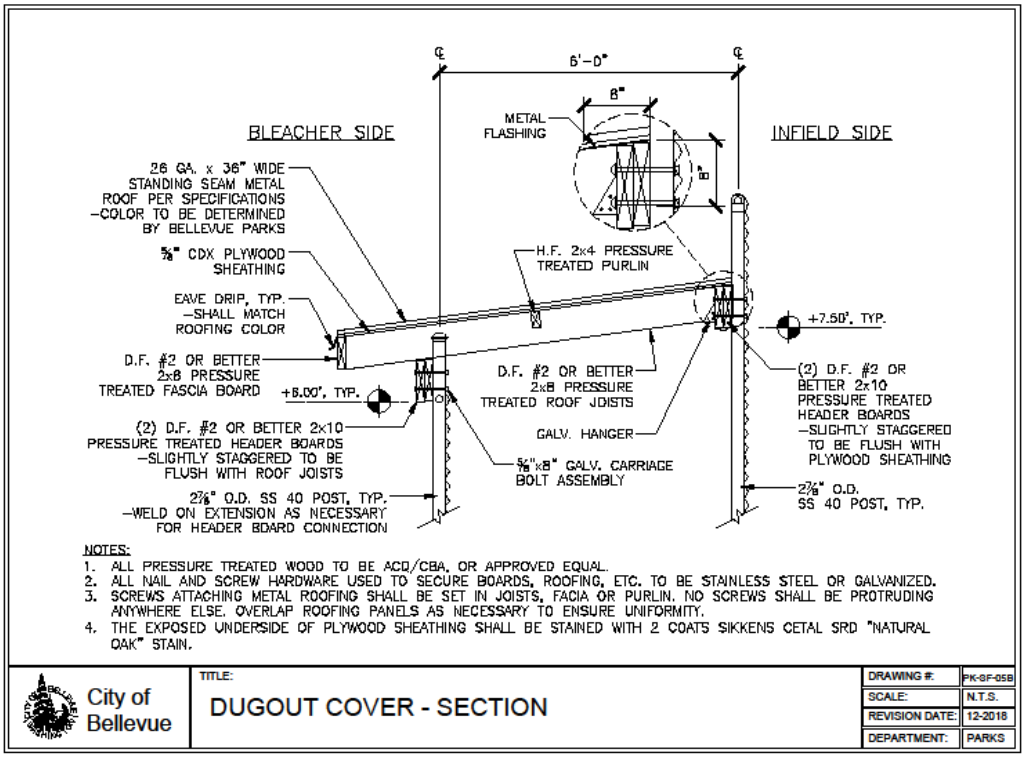


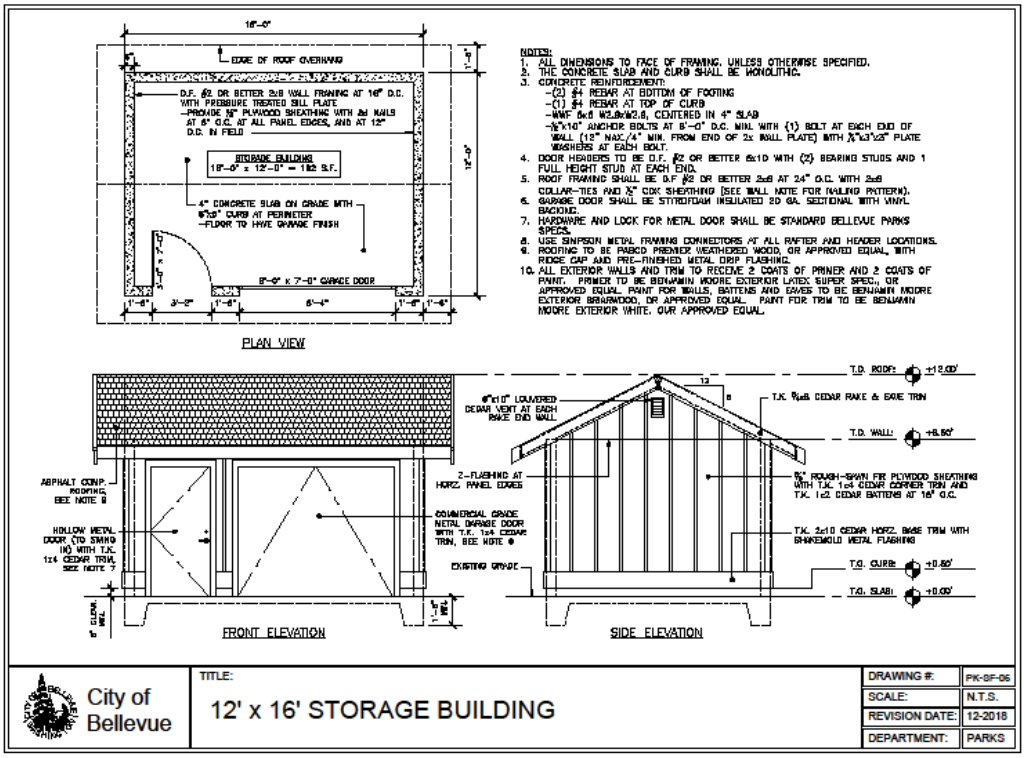
City of Bellevue

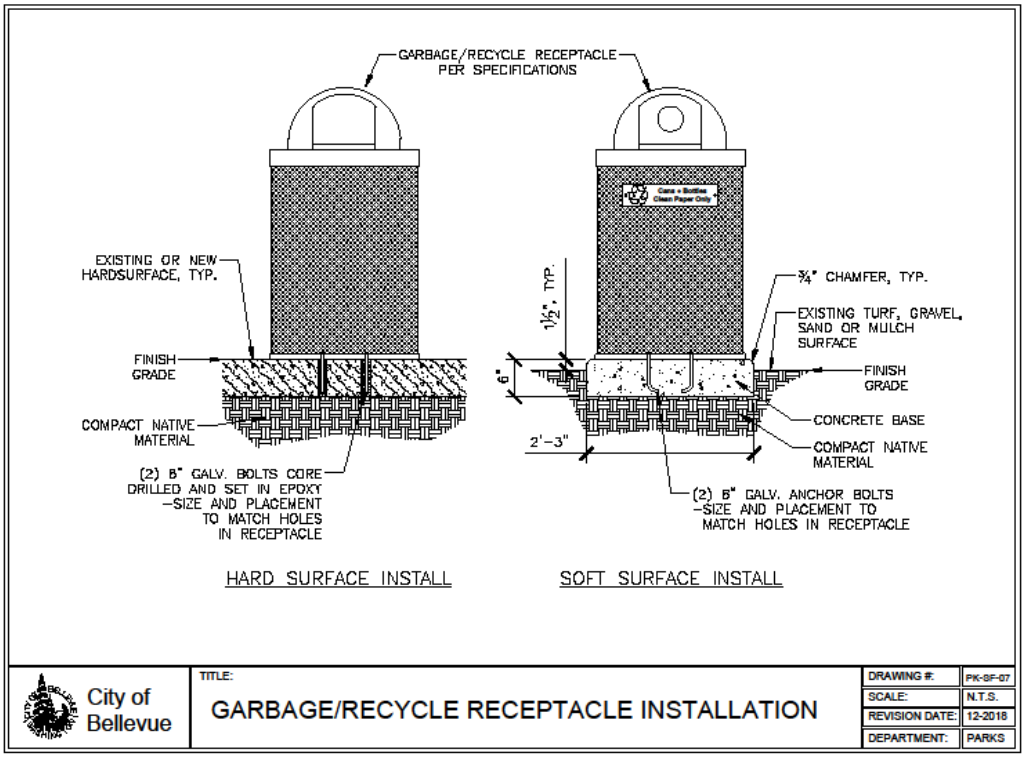
TITLE: DRINKING FOUNTAIN INSTALLATION

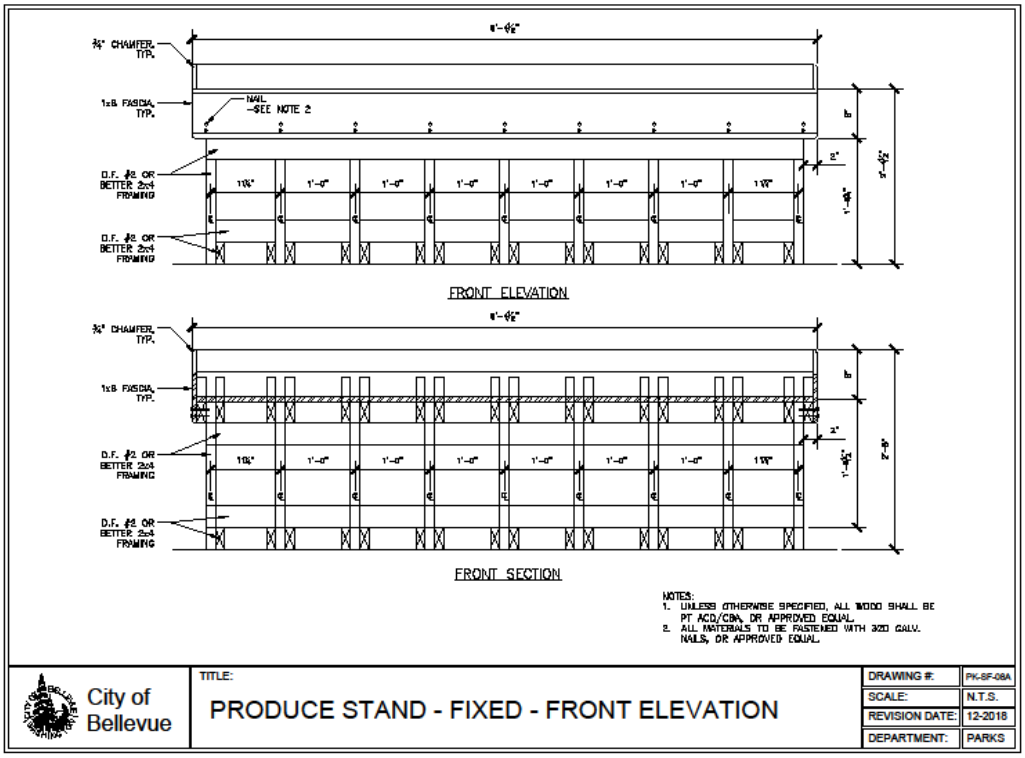
DRAWING #:	PK-SF-04
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS

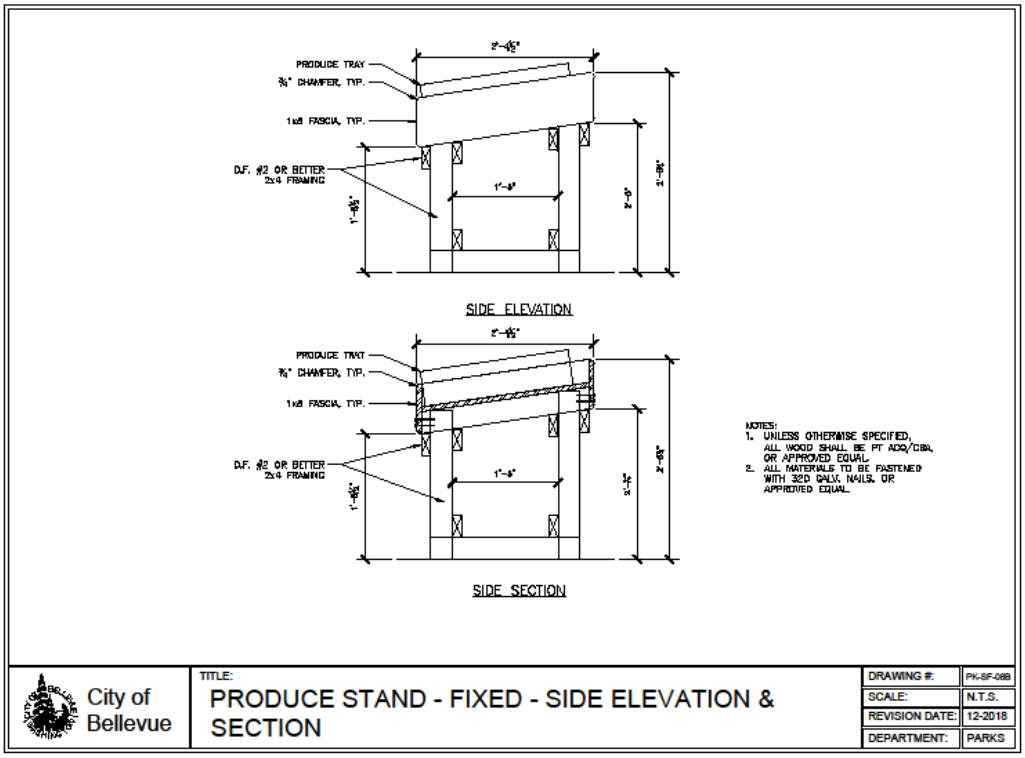

INFIELD SIDE
10'-0" O.C.
(30'-0" OVERALL)
TYPICAL 5/8"x4'x8' CDX PLYWOOD SHEATHING; STAGGERED PLACEMENT
5/8"x8" GALV. CARRIAGE BOLT ASSEMBLY
2 7/8" SS 40 POST, TYP.
(2) D.F. #2 OR BETTER 2x10 PRESSURE TREATED HEADER BOARDS
D.F. #2 OR BETTER 2x8 PRESSURE TREATED ROOF JOISTS
1'-4" O.C. OR BEST FIT
D.F. #2 OR BETTER 2x4 PRESSURE TREATED PURLIN BOARDS
(2) D.F. #2 OR BETTER 2x10 PRESSURE TREATED HEADER BOARDS
D.F. #2 OR BETTER 2x8 PRESSURE TREATED FASCIA BOARD
4'-0"
4'-0"
8'-0"
6'-0" O.C.
2 7/8" SS 40 POST, TYP.
BLEACHER SIDE
City of Bellevue
TITLE:
DUGOUT COVER - PLAN
DRAWING #: PK-SF-05A
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS

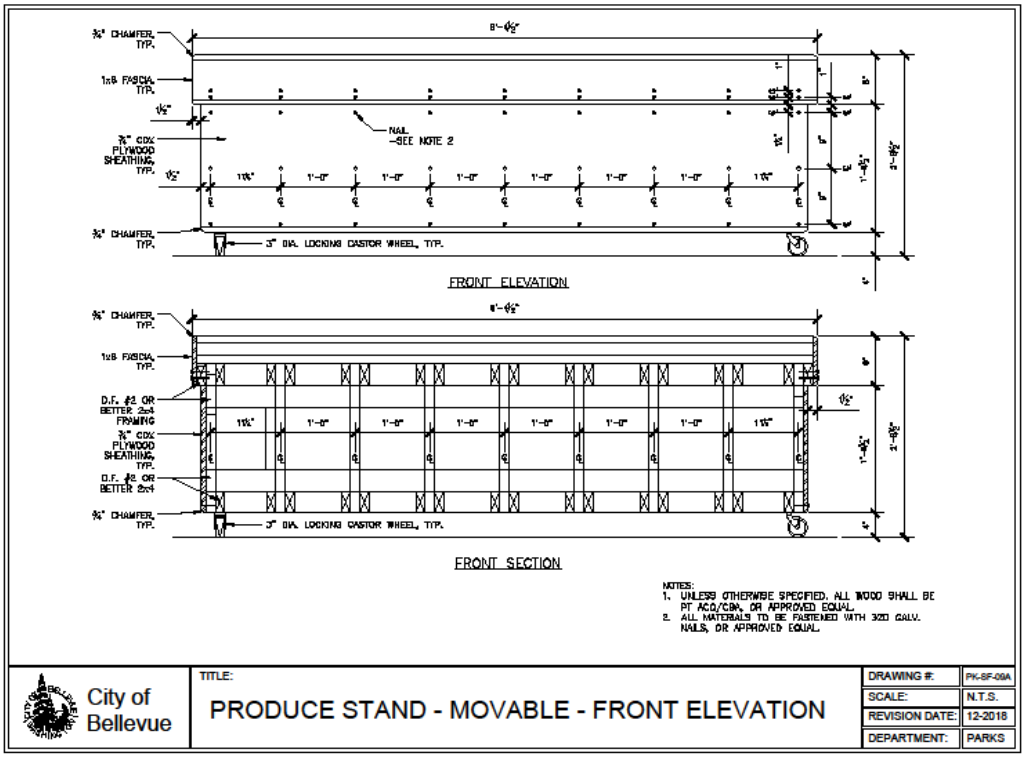

℄
6'-0"
℄
8"
BLEACHER SIDE
METAL FLASHING
INFIELD SIDE
26 GA. x 36" WIDE STANDING SEAM METAL ROOF PER SPECIFICATIONS -COLOR TO BE DETERMINED BY BELLEVUE PARKS
5/8" CDX PLYWOOD SHEATHING
H.F. 2x4 PRESSURE TREATED PURLIN
EAVE DRIP, TYP. -SHALL MATCH ROOFING COLOR
+7.50', TYP.
D.F. #2 OR BETTER 2x8 PRESSURE TREATED FASCIA BOARD
+8.00', TYP.
D.F. #2 OR BETTER 2x8 PRESSURE TREATED ROOF JOISTS
(2) D.F. #2 OR BETTER 2x10 PRESSURE TREATED HEADER BOARDS -SLIGHTLY STAGGERED TO BE FLUSH WITH PLYWOOD SHEATHING
(2) D.F. #2 OR BETTER 2x10 PRESSURE TREATED HEADER BOARDS -SLIGHTLY STAGGERED TO BE FLUSH WITH ROOF JOISTS
GALV. HANGER
5/8"x8" GALV. CARRIAGE BOLT ASSEMBLY
2 7/8" O.D. SS 40 POST, TYP. -WELD ON EXTENSION AS NECESSARY FOR HEADER BOARD CONNECTION
2 7/8" O.D. SS 40 POST, TYP.
NOTES:
1. ALL PRESSURE TREATED WOOD TO BE ACQ/CBA, OR APPROVED EQUAL.
2. ALL NAIL AND SCREW HARDWARE USED TO SECURE BOARDS, ROOFING, ETC. TO BE STAINLESS STEEL OR GALVANIZED.
3. SCREWS ATTACHING METAL ROOFING SHALL BE SET IN JOISTS, FACIA OR PURLIN. NO SCREWS SHALL BE PROTRUDING ANYWHERE ELSE. OVERLAP ROOFING PANELS AS NECESSARY TO ENSURE UNIFORMITY.
4. THE EXPOSED UNDERSIDE OF PLYWOOD SHEATHING SHALL BE STAINED WITH 2 COATS SIKKENS CETAL SRD "NATURAL OAK" STAIN.
City of Bellevue
TITLE:
DUGOUT COVER - SECTION
DRAWING #: PK-SF-05B
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS

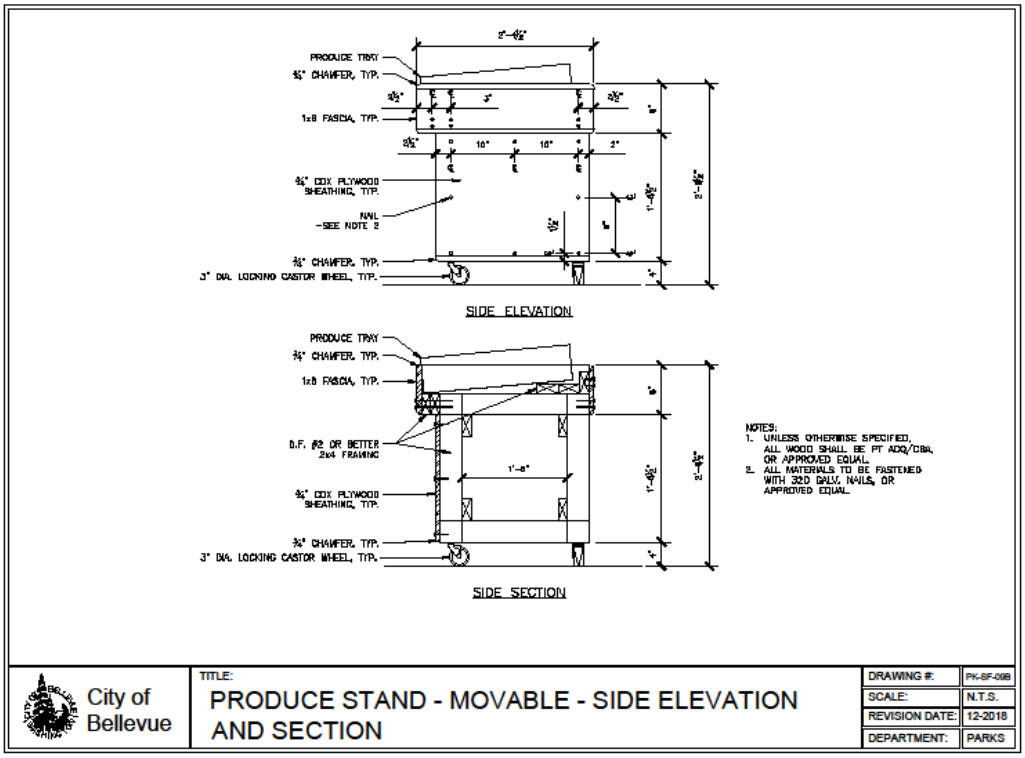

PLAN VIEW
FRONT ELEVATION
SIDE ELEVATION
NOTES:
1. ALL DIMENSIONS TO FACE OF FRAMING, UNLESS OTHERWISE SPECIFIED.
2. THE CONCRETE SLAB AND CURB SHALL BE MONOLITHIC.
3. CONCRETE REINFORCEMENT:
-(2) #4 REBAR AT BOTTOM OF FOOTING
-(1) #4 REBAR AT TOP OF CURB
-WWF 6x6 W2.9xW2.9, CENTERED IN 4" SLAB
-½"x10" ANCHOR BOLTS AT 6'-0" O.C. MIN. WITH (1) BOLT AT EACH END OF WALL (18" MAX./4" MIN. FROM END OF 2x WALL PLATE) WITH 2"x2"x¼" PLATE WASHERS AT EACH BOLT.
4. DOOR HEADERS TO BE D.F. #2 OR BETTER 6x10 WITH (2) BEARING STUDS AND 1 FULL HEIGHT STUD AT EACH END.
5. ROOF FRAMING SHALL BE D.F #2 OR BETTER 2x6 AT 24" O.C. WITH 2x6 COLLAR-TIES AND ½" CDX SHEATHING (SEE WALL NOTE FOR NAILING PATTERN).
6. GARAGE DOOR SHALL BE STYROFOAM INSULATED 20 GA. SECTIONAL WITH VINYL BACKING.
7. HARDWARE AND LOCK FOR METAL DOOR SHALL BE STANDARD BELLEVUE PARKS SPECS.
8. USE SIMPSON METAL FRAMING CONNECTORS AT ALL RAFTER AND HEADER LOCATIONS.
9. ROOFING TO BE PABCO PREMIER WEATHERED WOOD, OR APPROVED EQUAL, WITH RIDGE CAP AND PRE-FINISHED METAL DRIP FLASHING.
10. ALL EXTERIOR WALLS AND TRIM TO RECEIVE 2 COATS OF PRIMER AND 2 COATS OF PAINT. PRIMER TO BE BENJAMIN MOORE EXTERIOR LATEX SUPER SPEC., OR APPROVED EQUAL. PAINT FOR WALLS, BATTENS AND EAVES TO BE BENJAMIN MOORE EXTERIOR BRIARWOOD, OR APPROVED EQUAL. PAINT FOR TRIM TO BE BENJAMIN MOORE EXTERIOR WHITE, OR APPROVED EQUAL.
EDGE OF ROOF OVERHANG
D.F. #2 OR BETTER 2x6 WALL FRAMING AT 16" O.C. WITH PRESSURE TREATED SILL PLATE
-PROVIDE ½" PLYWOOD SHEATHING WITH 8d NAILS AT 6" O.C. AT ALL PANEL EDGES, AND AT 12" O.C. IN FIELD
STORAGE BUILDING
12'-0" x 16'-0" = 192 S.F.
4" CONCRETE SLAB ON GRADE WITH 6"x6" CURB AT PERIMETER
-FLOOR TO HAVE GARAGE FINISH
8'-0" x 7'-0" GARAGE DOOR
T.O. ROOF: ±12.00'
T.O. WALL: ±8.50'
T.O. CURB: ±0.50'
T.O. SLAB: ±0.00'
6"x10" LOUVERED CEDAR VENT AT EACH RAKE END WALL
T.K. ¾x6 CEDAR RAKE & EAVE TRIM
2-FLASHING AT HORZ. PANEL EDGES
⅝" ROUGH-SAWN FIR PLYWOOD SHEATHING WITH T.K. 1x4 CEDAR CORNER TRIM AND T.K. 1x2 CEDAR BATTENS AT 16" O.C.
COMMERCIAL GRADE METAL GARAGE DOOR WITH T.K. 1x4 CEDAR TRIM, SEE NOTE 6
T.K. 2x10 CEDAR HORZ. BASE TRIM WITH SHAKEMOLD METAL FLASHING
EXISTING GRADE
ASPHALT COMP. ROOFING, SEE NOTE 8
HOLLOW METAL DOOR (TO SWING IN) WITH T.K. 1x4 CEDAR TRIM, SEE NOTE 7
City of Bellevue
TITLE:
12' x 16' STORAGE BUILDING
DRAWING #: PK-SF-06
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS

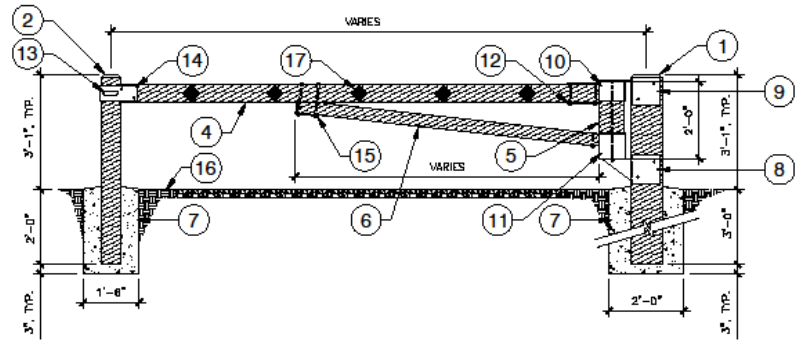

GARBAGE/RECYCLE RECEPTACLE PER SPECIFICATIONS
EXISTING OR NEW HARDSURFACE, TYP.
FINISH GRADE
COMPACT NATIVE MATERIAL
(2) 8" GALV. BOLTS CORE DRILLED AND SET IN EPOXY -SIZE AND PLACEMENT TO MATCH HOLES IN RECEPTACLE
HARD SURFACE INSTALL
½", TYP.
6"
¾" CHAMFER, TYP.
EXISTING TURF, GRAVEL, SAND OR MULCH SURFACE
FINISH GRADE
CONCRETE BASE
2'-3"
COMPACT NATIVE MATERIAL
(2) 8" GALV. ANCHOR BOLTS -SIZE AND PLACEMENT TO MATCH HOLES IN RECEPTACLE
SOFT SURFACE INSTALL
City of Bellevue
TITLE:
GARBAGE/RECYCLE RECEPTACLE INSTALLATION
DRAWING #: PK-SF-07
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS


¾" CHAMFER, TYP.
1x8 FASCIA, TYP.
NAIL, -SEE NOTE 2
D.F. #2 OR BETTER 2x4 FRAMING
D.F. #2 OR BETTER 2x4 FRAMING
FRONT ELEVATION
FRONT SECTION
NOTES:
1. UNLESS OTHERWISE SPECIFIED, ALL WOOD SHALL BE PT ACQ/CBA, OR APPROVED EQUAL.
2. ALL MATERIALS TO BE FASTENED WITH 32D GALV. NAILS, OR APPROVED EQUAL.
City of Bellevue
TITLE:
PRODUCE STAND - FIXED - FRONT ELEVATION
DRAWING #: PK-SF-08A
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS


PRODUCE TRAY
¾" CHAMFER, TYP.
1x8 FASCIA, TYP.
D.F. #2 OR BETTER 2x4 FRAMING
SIDE ELEVATION
SIDE SECTION
NOTES:
1. UNLESS OTHERWISE SPECIFIED, ALL WOOD SHALL BE PT ACQ/CBA, OR APPROVED EQUAL.
2. ALL MATERIALS TO BE FASTENED WITH 32D GALV. NAILS, OR APPROVED EQUAL.
City of Bellevue
TITLE:
PRODUCE STAND - FIXED - SIDE ELEVATION & SECTION
DRAWING #: PK-SF-08B
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS


¾" CHAMFER, TYP.
1x8 FASCIA, TYP.
½"
NAIL -SEE NOTE 2
¾" CDX PLYWOOD SHEATHING, TYP.
3" DIA. LOCKING CASTOR WHEEL, TYP.
FRONT ELEVATION
D.F. #2 OR BETTER 2x4 FRAMING
FRONT SECTION
NOTES:
1. UNLESS OTHERWISE SPECIFIED, ALL WOOD SHALL BE PT ACQ/CBA, OR APPROVED EQUAL.
2. ALL MATERIALS TO BE FASTENED WITH 32D GALV. NAILS, OR APPROVED EQUAL.
City of Bellevue
TITLE:
PRODUCE STAND - MOVABLE - FRONT ELEVATION
DRAWING #: PK-SF-09A
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS


PRODUCE TRAY
¾" CHAMFER, TYP.
1x8 FASCIA, TYP.
¾" CDX PLYWOOD SHEATHING, TYP.
NAIL -SEE NOTE 2
3" DIA. LOCKING CASTOR WHEEL, TYP.
SIDE ELEVATION
D.F. #2 OR BETTER 2x4 FRAMING
SIDE SECTION
NOTES:
1. UNLESS OTHERWISE SPECIFIED, ALL WOOD SHALL BE PT ACQ/CBA, OR APPROVED EQUAL.
2. ALL MATERIALS TO BE FASTENED WITH 32D GALV. NAILS, OR APPROVED EQUAL.
City of Bellevue
TITLE:
PRODUCE STAND - MOVABLE - SIDE ELEVATION AND SECTION
DRAWING #: PK-SF-09B
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS



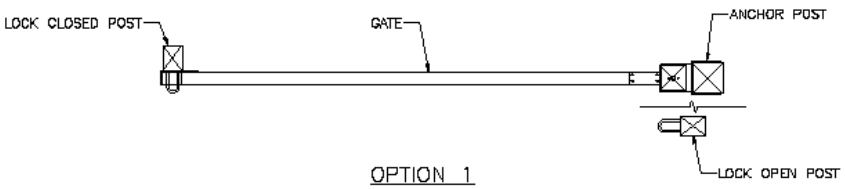
1. 10x10 WOOD ANCHOR POST
2. 8x8 WOOD LOCK CLOSED POST
3. 8x8 WOOD LOCK OPEN POST —NOT SHOWN, SEE LAYOUT (PK-SF-10B)
4. 4x8 WOOD SWING GATE
5. 8x8 WOOD GATE POST
6. 4x8 WOOD BRACING
7. CONCRETE FOOTING
8. BOTTOM ANCHOR POST HINGE (PK-SF-10C)
9. TOP ANCHOR POST HINGE (PK-SF-10D)
10. TOP GATE HINGE (PK-SF-10E)
11. BOTTOM GATE HINGE (PK-SF-10F)
12. GATE CONNECTION BRACKET (PK-SF-10G)
13. GATE LATCH (PK-SF-10I)
14. GATE LATCH RECEIVER (PK-SF-10H)
15. BRACE CONNECTION BRACKET (PK-SF-10J)
16. FINISH GRADE
17. RED REFLECTORS, TYP.

NOTES:
1. ALL GATE HINGES, BRACKETS, LATCHES AND RECEIVERS TO BE PROVIDED BY BELLEVUE PARKS.
2. ALL LUMBER TO BE D.F. #2 OR BETTER, PT ACQ/CBA, OR APPROVED EQUAL.
3. UNLESS OTHERWISE SPECIFIED, ALL MOUNTING HARDWARE SHALL BE ½" DIA. HOT DIPPED GALVANIZED STEEL LAG SCREWS, RODS, CARRIAGE BOLTS, NUTS AND WASHERS AS REQUIRED TO INSTALL GATE BRACKETS, LENGTH AS REQUIRED.

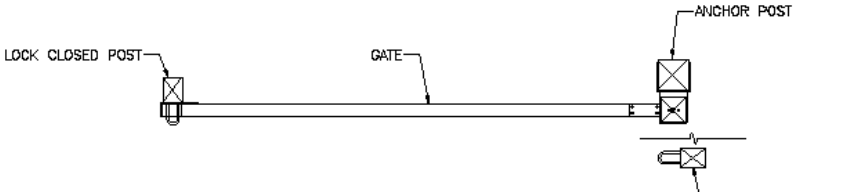
City of Bellevue

TITLE: WOOD GATE - ELEVATION

DRAWING #:	PK-SF-10A
SCALE:	N.T.S.
REVISION DATE:	08-2022
DEPARTMENT:	PARKS



OPTION 1

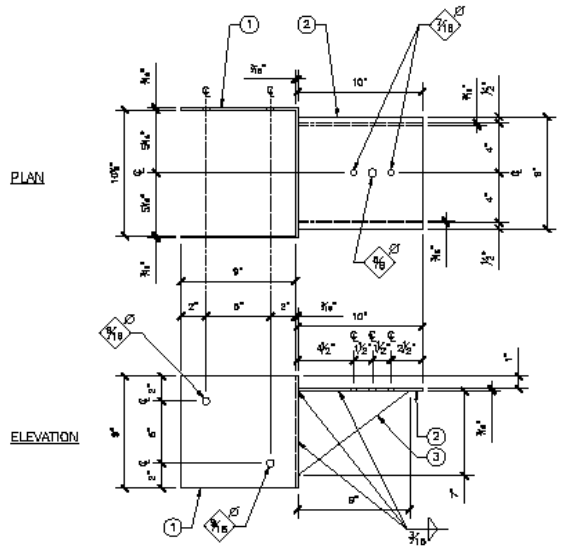


OPTION 2

City of Bellevue

TITLE: WOOD GATE - PLAN - LAYOUT OPTIONS

DRAWING #:	PK-SF-10B
SCALE:	N.T.S.
REVISION DATE:	08-2022
DEPARTMENT:	PARKS



BILL OF MATERIAL

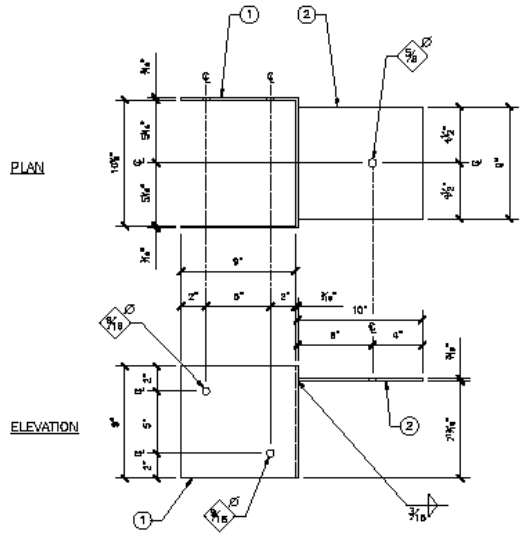
CALL OUT	ITEM	LENGTH	REMARKS
1	FB⅜ x 9	2'-4½"	BEND
2	FB⅜ x 9	10"	
3	FB⅜ x 9	7"	

NOTES:
1. ALL WELDING JOINTS SHALL MEET WABO STANDARDS.
2. BRACKET TO BE POWDER COATED BLACK.

City of Bellevue

TITLE:
WOOD GATE - BRACKET- BOTTOM ANCHOR POST HINGE

DRAWING #:	PK-SF-10C
SCALE:	N.T.S.
REVISION DATE:	08-2022
DEPARTMENT:	PARKS



BILL OF MATERIAL

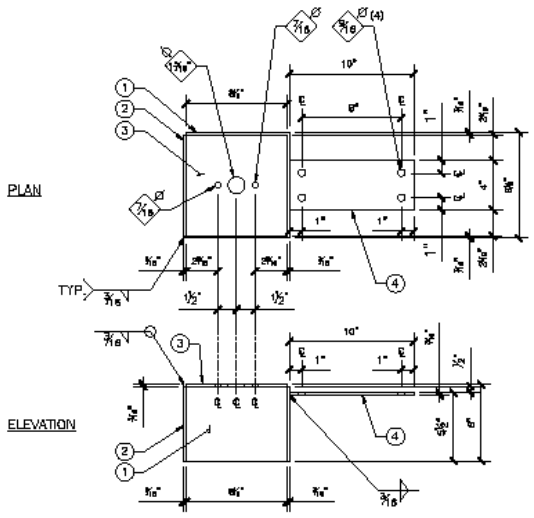
CALL OUT	ITEM	LENGTH	REMARKS
1	FB⅜ x 9	2'-4½"	BEND
2	FB⅜ x 9	10"	

NOTES:
1. ALL WELDING JOINTS SHALL MEET WABO STANDARDS.
2. BRACKET TO BE POWDER COATED BLACK.

City of Bellevue

TITLE:
WOOD GATE - BRACKET- TOP ANCHOR POST HINGE

DRAWING #:	PK-SF-10D
SCALE:	N.T.S.
REVISION DATE:	08-2022
DEPARTMENT:	PARKS



BILL OF MATERIAL

CALL OUT	ITEM	LENGTH	REMARKS
1	FB¾ x 6	2'-0⅜"	BEND
2	FB¾ x 6	8⅛"	
3	PL3/16 x 8⅛	8⅛"	
4	FB¾ x 4	10"	

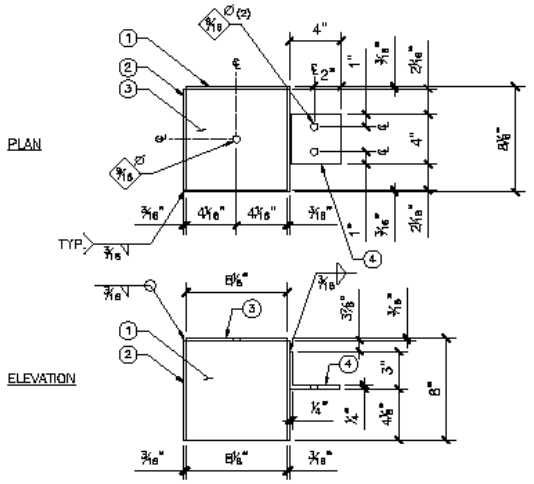
NOTES:
1. ALL WELDING JOINTS SHALL MEET WABO STANDARDS.
2. BRACKET TO BE POWDER COATED BLACK.

City of Bellevue

TITLE:

WOOD GATE - BRACKET- TOP GATE HINGE

DRAWING #:	PK-SF-10E
SCALE:	N.T.S.
REVISION DATE:	08-2022
DEPARTMENT:	PARKS



BILL OF MATERIAL

CALL OUT	ITEM	LENGTH	REMARKS
1	FB¾ x 6	2'-0⅜"	BEND
2	FB¾ x 6	8⅛"	
3	PL3/16 x 8⅛	8⅛"	
4	L4x4x¼"	4"	

NOTES:
1. ALL WELDING JOINTS SHALL MEET WABO STANDARDS.
2. BRACKET TO BE POWDER COATED BLACK.

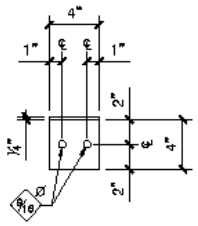
City of Bellevue

TITLE:

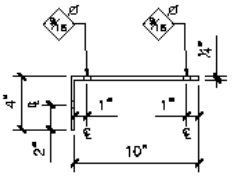
WOOD GATE - BRACKET- BOTTOM GATE HINGE

DRAWING #:	PK-SF-10F
SCALE:	N.T.S.
REVISION DATE:	08-2022
DEPARTMENT:	PARKS

FRONT ELEVATION



SIDE ELEVATION



BILL OF MATERIAL

CALL OUT	ITEM	LENGTH	REMARKS
	FB¼ x 4	1'-2"	BEND

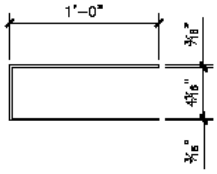
NOTES:
1. ALL WELDING JOINTS SHALL MEET WABO STANDARDS.
2. BRACKET TO BE POWDER COATED BLACK.

City of Bellevue

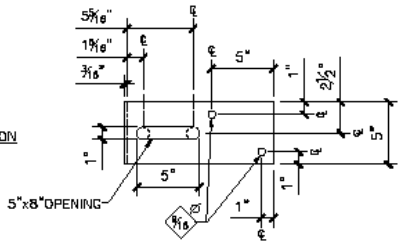
TITLE: WOOD GATE - BRACKET- GATE CONNECTION

DRAWING #:	PK-SF-10G
SCALE:	N.T.S.
REVISION DATE:	08-2022
DEPARTMENT:	PARKS

PLAN



ELEVATION



BILL OF MATERIAL

CALL OUT	ITEM	LENGTH	REMARKS
	FB5/8 x 5	2'-4 5/16"	BEND

NOTES:
1. ALL WELDING JOINTS SHALL MEET WABO STANDARDS.
2. BRACKET TO BE POWDER COATED BLACK.

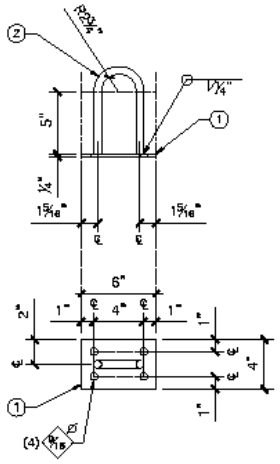
City of Bellevue

TITLE: WOOD GATE - BRACKET- LATCH RECEIVER

DRAWING #:	PK-SF-10H
SCALE:	N.T.S.
REVISION DATE:	08-2022
DEPARTMENT:	PARKS

PLAN

ELEVATION



BILL OF MATERIAL

CALL OUT	ITEM	LENGTH	REMARKS
①	FB¾ x 4	6"	
②	RB⅝ø	1'– 3⅜"	BEND

NOTES:
1. ALL WELDING JOINTS SHALL MEET WABO STANDARDS.
2. BRACKET TO BE POWDER COATED BLACK.

City of Bellevue

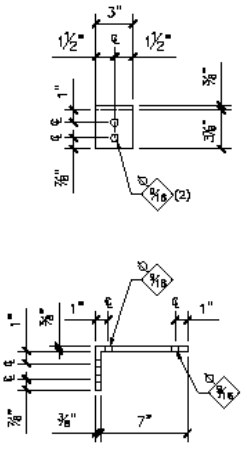
TITLE:

WOOD GATE - BRACKET- LATCH

DRAWING #:	PK-SF-10I
SCALE:	N.T.S.
REVISION DATE:	08-2022
DEPARTMENT:	PARKS

FRONT ELEVATION

SIDE ELEVATION



BILL OF MATERIAL

CALL OUT	ITEM	LENGTH	REMARKS
	FB⅜ x 3	10⅛"	BEND

NOTES:
1. ALL WELDING JOINTS SHALL MEET WABO STANDARDS.
2. BRACKET TO BE POWDER COATED BLACK.

City of Bellevue

TITLE:

WOOD GATE - BRACKET- BRACE CONNECTION

DRAWING #:	PK-SF-10J
SCALE:	N.T.S.
REVISION DATE:	08-2022
DEPARTMENT:	PARKS

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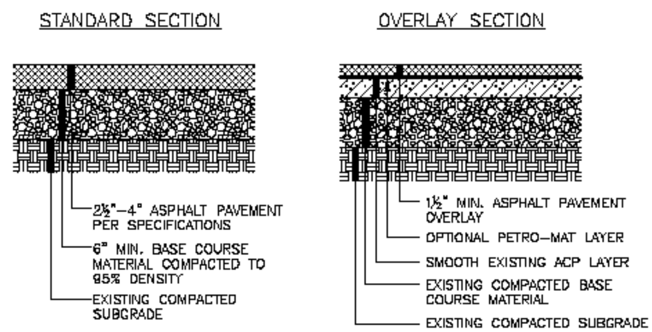
Hard Surfaces



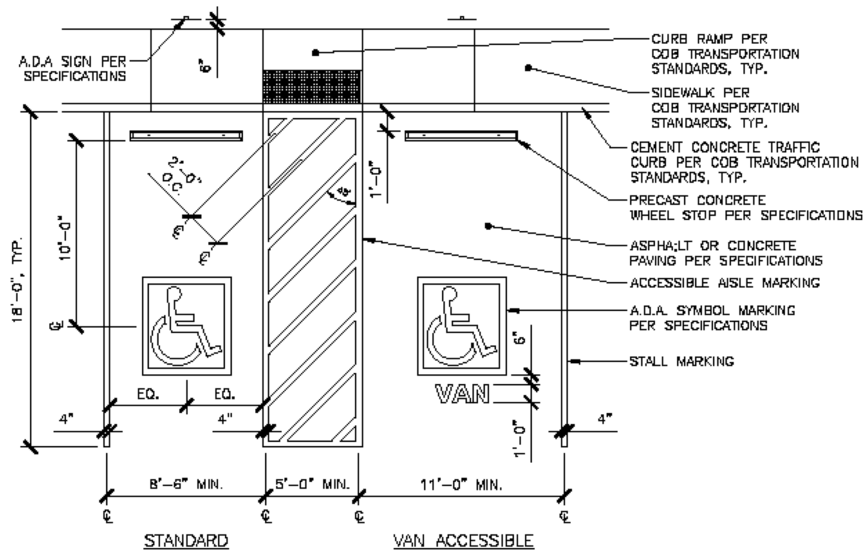
NOTES:

1. ASHPALT MIX SHALL BE HMA CLASS ½" PG 58H–22 WEARING COURSE OR APPROVED EQUAL WITH INSTALLATION TEMPERATURES RANGING BETWEEN 275°–300°F.
2. MINIMUM ASPHALT THICKNESS FOR PEDESTRIAN ONLY PATHWAYS SHALL BE 2½". MINIMUM ASPHALT THICKNESS FOR PARKING LOTS, DRIVEWAYS AND PATHWAYS THAT ACCOMMODATE VEHICULAR TRAFFIC SHALL BE 4".
3. BASE COURSE MATERIAL SHALL MEET WSDOT 2–09.3(1)E STANDARDS.
4. ALL SAW CUTS MADE FOR REPAIRS/PATCHING SHALL BE VERTICAL AND IN STRAIGHT LINES. TACK ASPHALT FACES OF SAW CUTS AND SEAL ALL JOINTS WITH PG 64–22 OIL OR APPROVED EQUAL.

City of Bellevue

TITLE: TYPICAL ASPHALT PAVEMENT SECTIONS

DRAWING #:	PK-HS-01
SCALE:	N.T.S.
REVISION DATE:	08-2022
DEPARTMENT:	PARKS



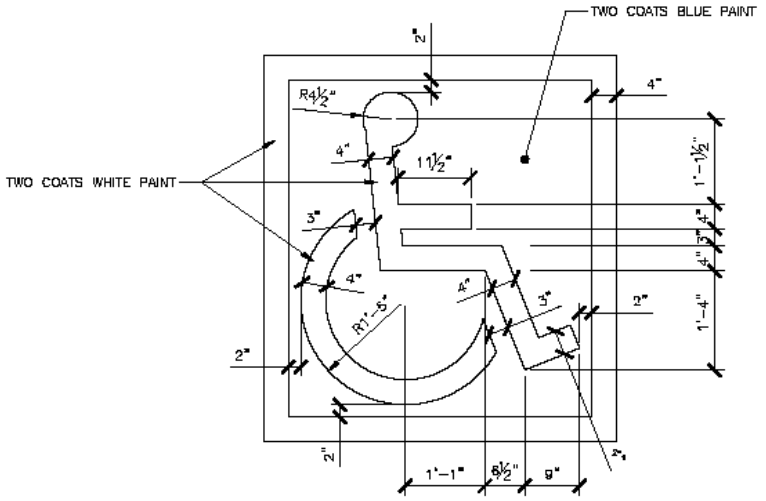
NOTES:

1. ALL MARKING PAINT SHALL BE LOW V.O.C. WATERBORNE PER WSDOT SECTION 9–34, OR APPROVED EQUAL. UNLESS OTHERWISE SPECIFICIED, USE TWO COATS OF PAINT FOR ALL P–LOT MARKINGS AND SYMBOLS.
2. ALL PAVEMENT MARKINGS TO BE INSTALLED IN CONFORMANCE WITH WSDOT SECTION 8–22.

City of Bellevue

TITLE: PARKING LOT - A.D.A. RESERVED STALL

DRAWING #:	PK-HS-02
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS

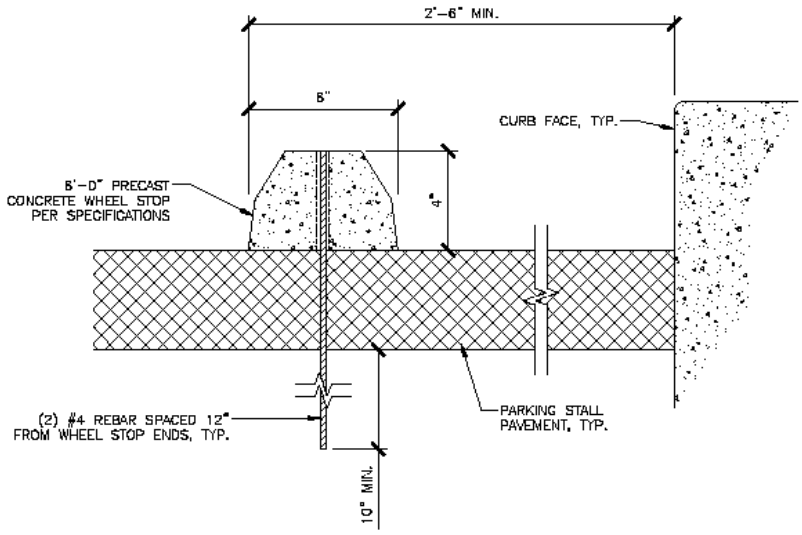


NOTES:
1. ALL MARKING PAINT SHALL BE LOW V.O.C. WATERBORNE PER WSDOT SECTION 9-34, OR APPROVED EQUAL.
2. ALL PAVEMENT MARKINGS TO BE INSTALLED IN CONFORMANCE WITH WSDOT SECTION 8-22.

City of Bellevue

TITLE: PARKING LOT - A.D.A. RESERVED PARKING SYMBOL

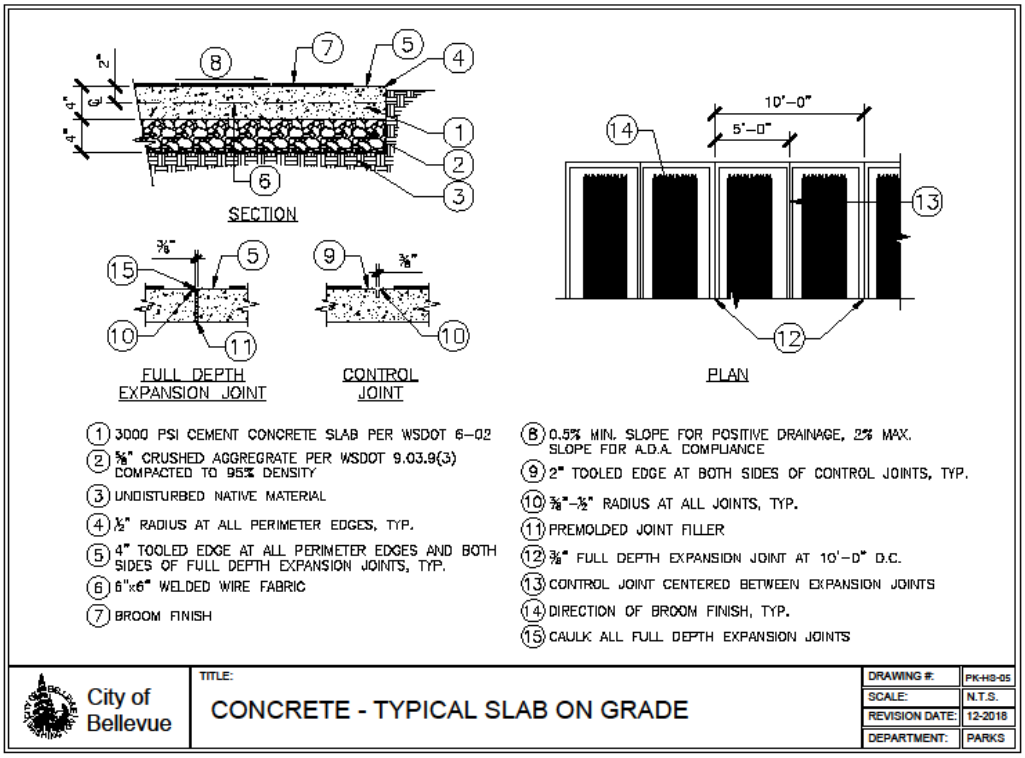
DRAWING #:	PK-HS-03
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS



City of Bellevue

TITLE: PARKING LOT - TYPICAL CONCRETE WHEEL STOP INSTALLATION

DRAWING #:	PK-HS-04
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS

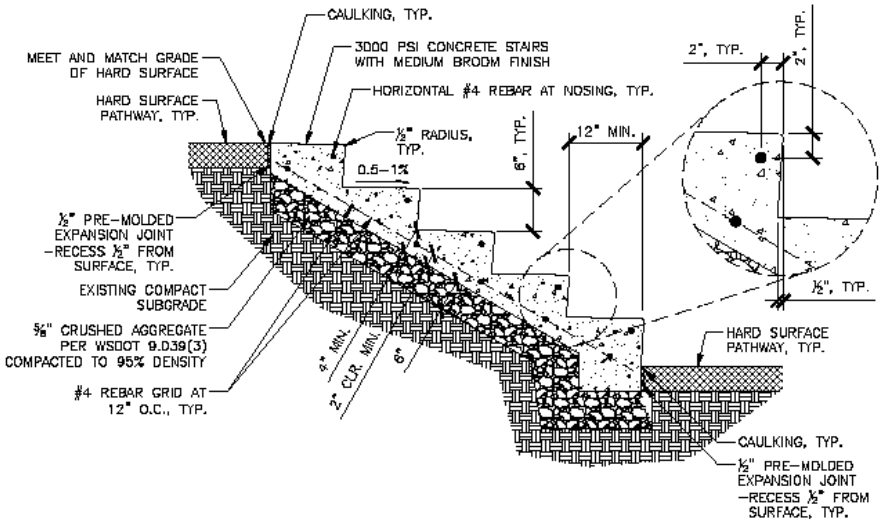


1. 3000 PSI CEMENT CONCRETE SLAB PER WSDOT 6-02
2. ⅝" CRUSHED AGGREGRATE PER WSDOT 9.03.9(3) COMPACTED TO 95% DENSITY
3. UNDISTURBED NATIVE MATERIAL
4. ½" RADIUS AT ALL PERIMETER EDGES, TYP.
5. 4" TOOLED EDGE AT ALL PERIMETER EDGES AND BOTH SIDES OF FULL DEPTH EXPANSION JOINTS, TYP.
6. 6"x6" WELDED WIRE FABRIC
7. BROOM FINISH
8. 0.5% MIN. SLOPE FOR POSITIVE DRAINAGE, 2% MAX. SLOPE FOR A.D.A. COMPLIANCE
9. 2" TOOLED EDGE AT BOTH SIDES OF CONTROL JOINTS, TYP.
10. ⅜"-½" RADIUS AT ALL JOINTS, TYP.
11. PREMOLDED JOINT FILLER
12. ⅜" FULL DEPTH EXPANSION JOINT AT 10'-0" O.C.
13. CONTROL JOINT CENTERED BETWEEN EXPANSION JOINTS
14. DIRECTION OF BROOM FINISH, TYP.
15. CAULK ALL FULL DEPTH EXPANSION JOINTS

City of Bellevue

TITLE: CONCRETE - TYPICAL SLAB ON GRADE

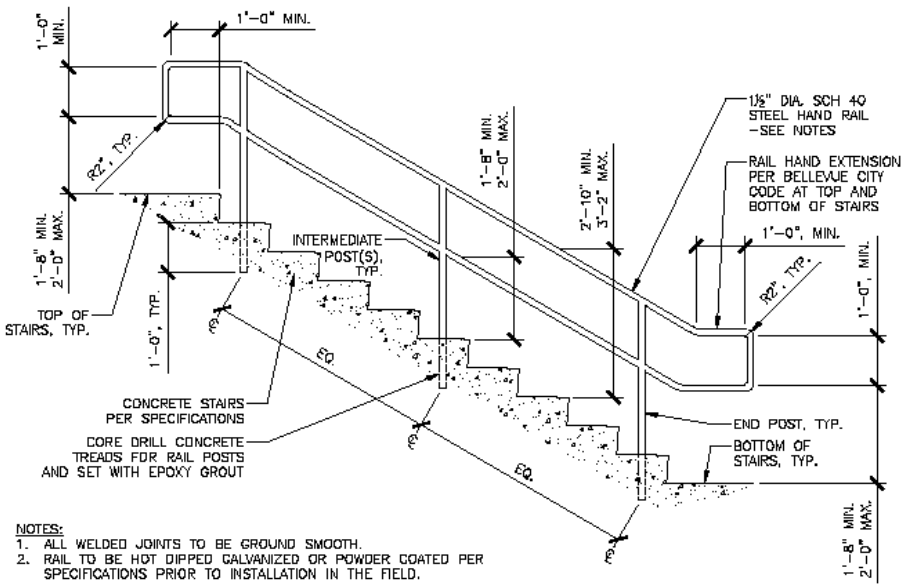
DRAWING #:	PK-HG-05
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS



City of Bellevue

TITLE: CONCRETE - TYPICAL STAIRS

DRAWING #:	PK-HG-06
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS



NOTES:
1. ALL WELDED JOINTS TO BE GROUND SMOOTH.
2. RAIL TO BE HOT DIPPED GALVANIZED OR POWDER COATED PER SPECIFICATIONS PRIOR TO INSTALLATION IN THE FIELD.

City of Bellevue

TITLE: CONCRETE - STEEL HAND RAIL FOR STAIRS

DRAWING #:	PK-HS-07
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS

*If viewing in PDF, click on text to open reference material

CITY OF BELLEVUE TRANSPORTATION REFERENCE DRAWINGS FOR HARD SURFACE CONSTRUCTION ON PARKS PROPERTY:

SW-100-1: CEMENT CONCRETE CURBS
SW-110-1: SIDEWALK
SW-140-1: DRIVEWAY OR PRIVATE ROAD APPROACH WITH SIDEWALK - OPTION 1
SW-150-1: DRIVEWAY OR PRIVATE ROAD APPROACH WITH SIDEWALK - OPTION 2
SW-160-1: DRIVEWAY OR PRIVATE ROAD APPROACH WITH SIDEWALK - OPTION 3
SW-170-1: DRIVEWAY OR PRIVATE ROAD APPROACH WITH SIDEWALK - OPTION 4
SW-180-1: DRIVEWAY APPROACH WHERE CURB-GUTTER EXITS (NO SIDEWALK)
SW-190-1: DRIVEWAY APPROACH WHERE NO CURB-GUTTER EXISTS
SW-200-1: CURB RAMP CONSTRUCTION NOTES
SW-210-1: PARALLEL CEMENT CONCRETE CURB RAMP (TYPE 2)
SW-220-1: COMBINATION RAMP
SW-230-1: PERPENDICULAR CEMENT CONCRETE CURB RAMP (TYPE 1)
SW-240-1: DIRECTIONAL CEMENT CONCRETE CURB RAMP (TYPE 3)
SW-250-1: DETECTABLE WARNING SURFACES
SW-260-1: DETECTABLE WARNING SURFACE PLACEMENT
CW-100-1: CROSSWALK MARKINGS
CH-170-1: PAVEMENT ARROW MARKINGS

City of Bellevue

TITLE: HARD SURFACE REFERENCE MATERIAL

DRAWING #:	PK-HS-08
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS

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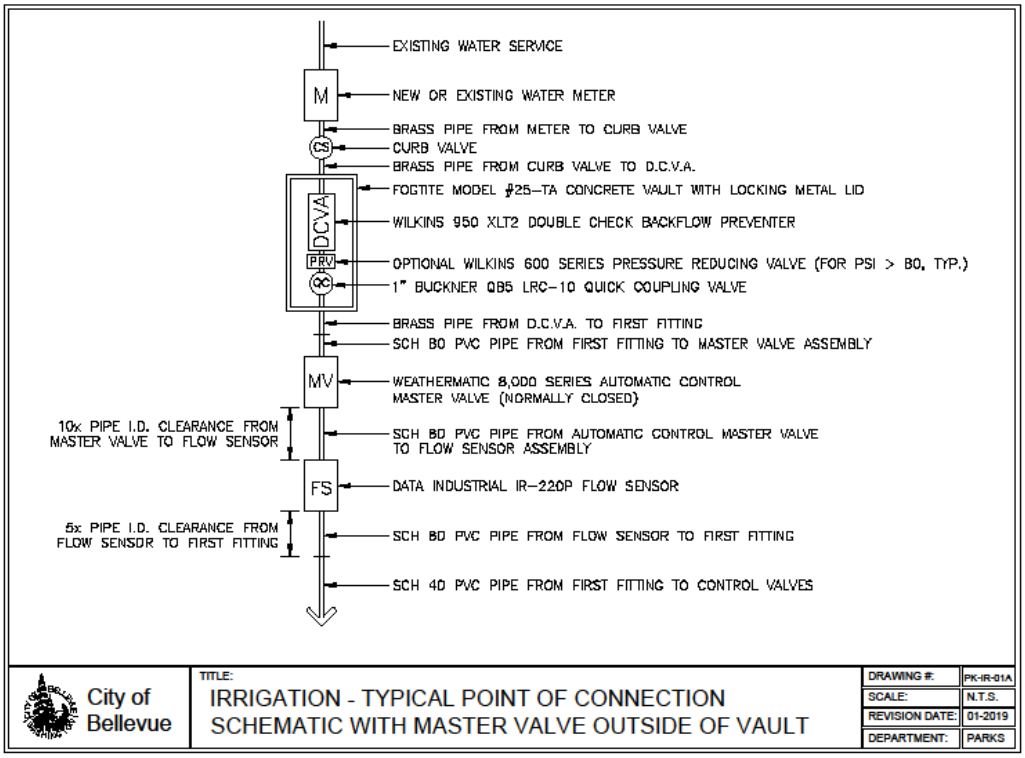
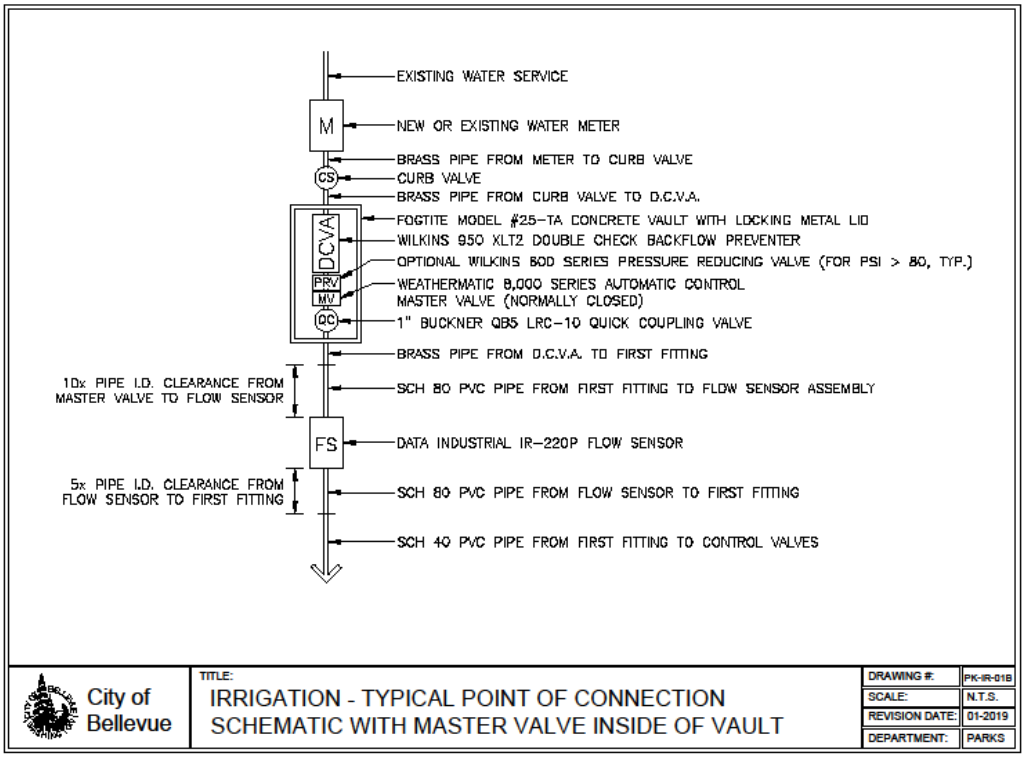
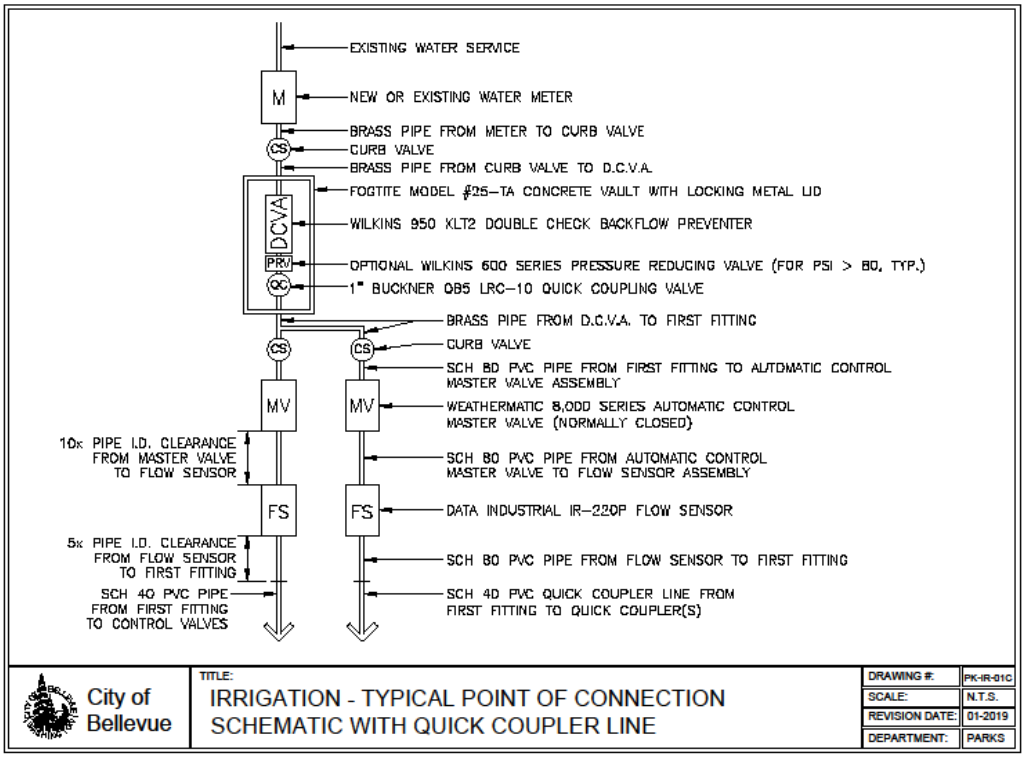
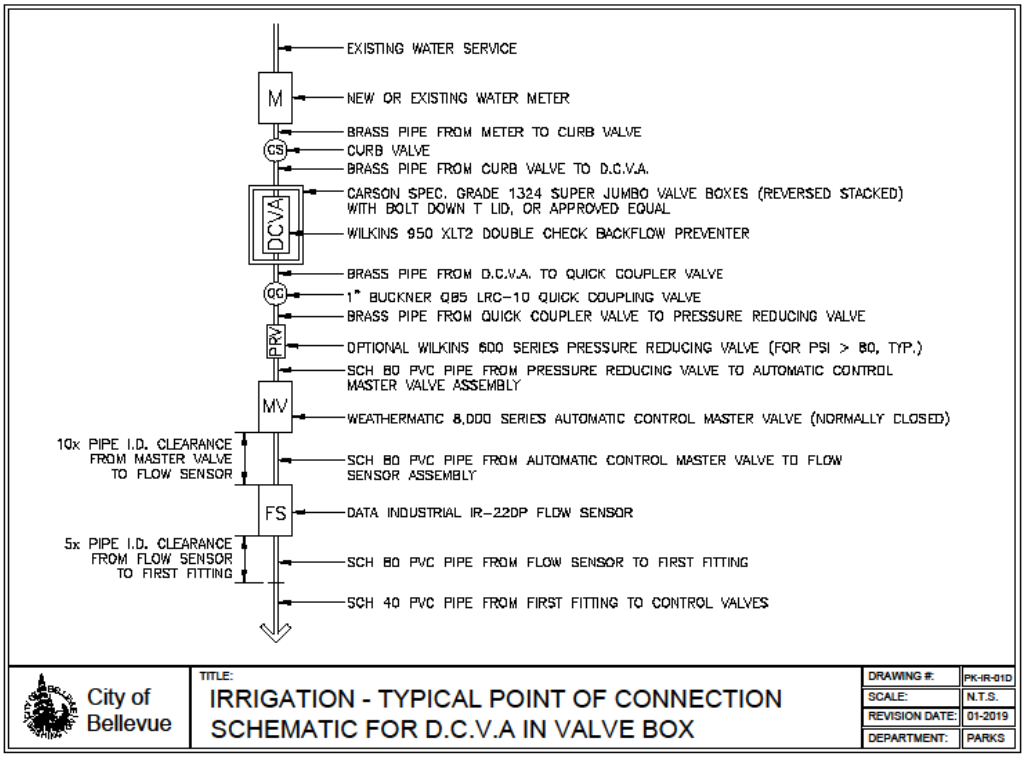
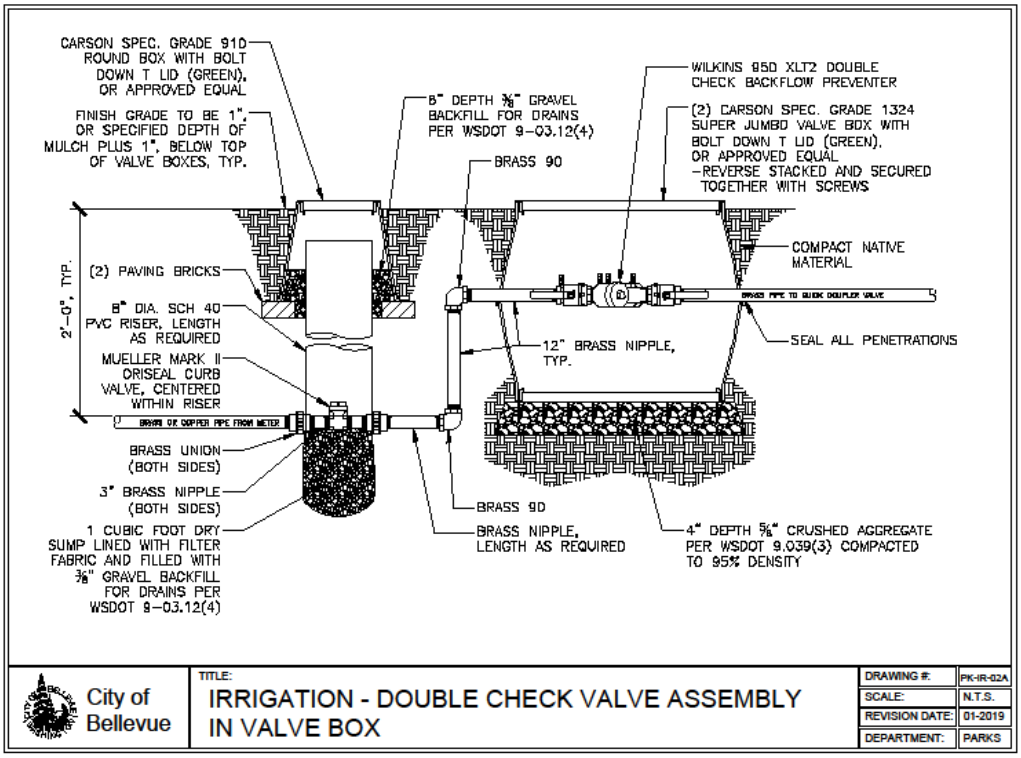
Irrigation

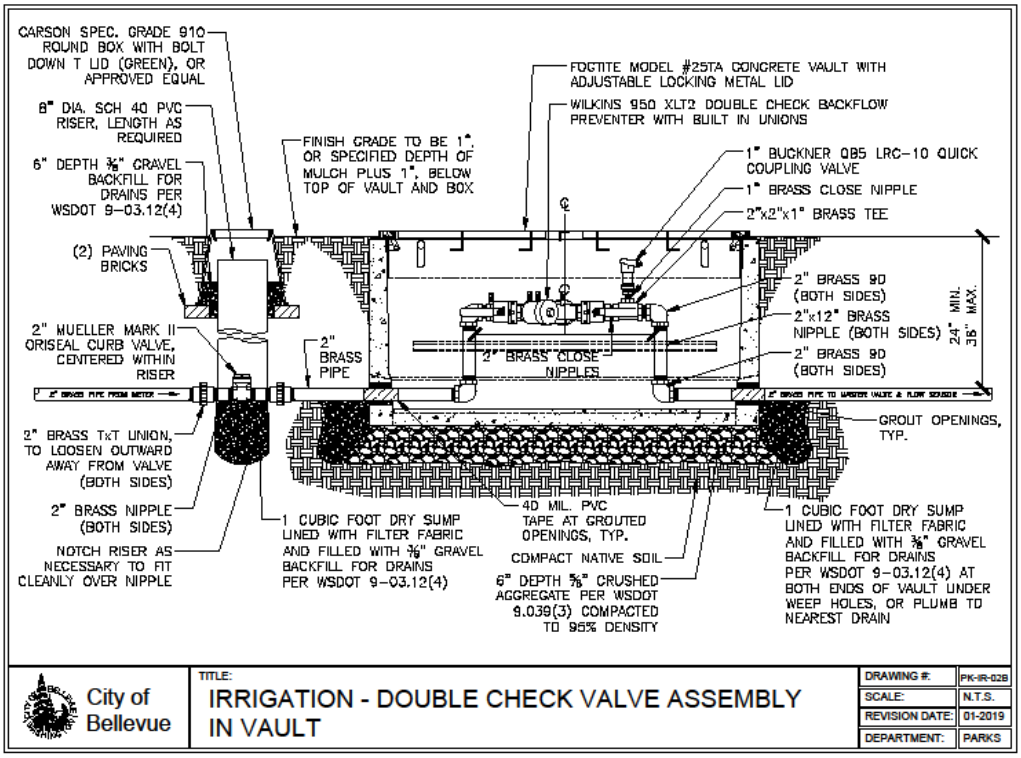

EXISTING WATER SERVICE
M
NEW OR EXISTING WATER METER
BRASS PIPE FROM METER TO CURB VALVE
CS
CURB VALVE
BRASS PIPE FROM CURB VALVE TO D.C.V.A.
FOGTITE MODEL #25-TA CONCRETE VAULT WITH LOCKING METAL LID
DCVA
WILKINS 950 XLT2 DOUBLE CHECK BACKFLOW PREVENTER
PRV
OPTIONAL WILKINS 600 SERIES PRESSURE REDUCING VALVE (FOR PSI > 80, TYP.)
QC
1" BUCKNER QB5 LRC-10 QUICK COUPLING VALVE
BRASS PIPE FROM D.C.V.A. TO FIRST FITTING
SCH 80 PVC PIPE FROM FIRST FITTING TO MASTER VALVE ASSEMBLY
MV
WEATHERMATIC 8,000 SERIES AUTOMATIC CONTROL MASTER VALVE (NORMALLY CLOSED)
10x PIPE I.D. CLEARANCE FROM MASTER VALVE TO FLOW SENSOR
SCH 80 PVC PIPE FROM AUTOMATIC CONTROL MASTER VALVE TO FLOW SENSOR ASSEMBLY
FS
DATA INDUSTRIAL IR-220P FLOW SENSOR
5x PIPE I.D. CLEARANCE FROM FLOW SENSOR TO FIRST FITTING
SCH 80 PVC PIPE FROM FLOW SENSOR TO FIRST FITTING
SCH 40 PVC PIPE FROM FIRST FITTING TO CONTROL VALVES
City of Bellevue
TITLE:
IRRIGATION - TYPICAL POINT OF CONNECTION
SCHEMATIC WITH MASTER VALVE OUTSIDE OF VAULT
DRAWING #: PK-IR-01A
SCALE: N.T.S.
REVISION DATE: 01-2019
DEPARTMENT: PARKS

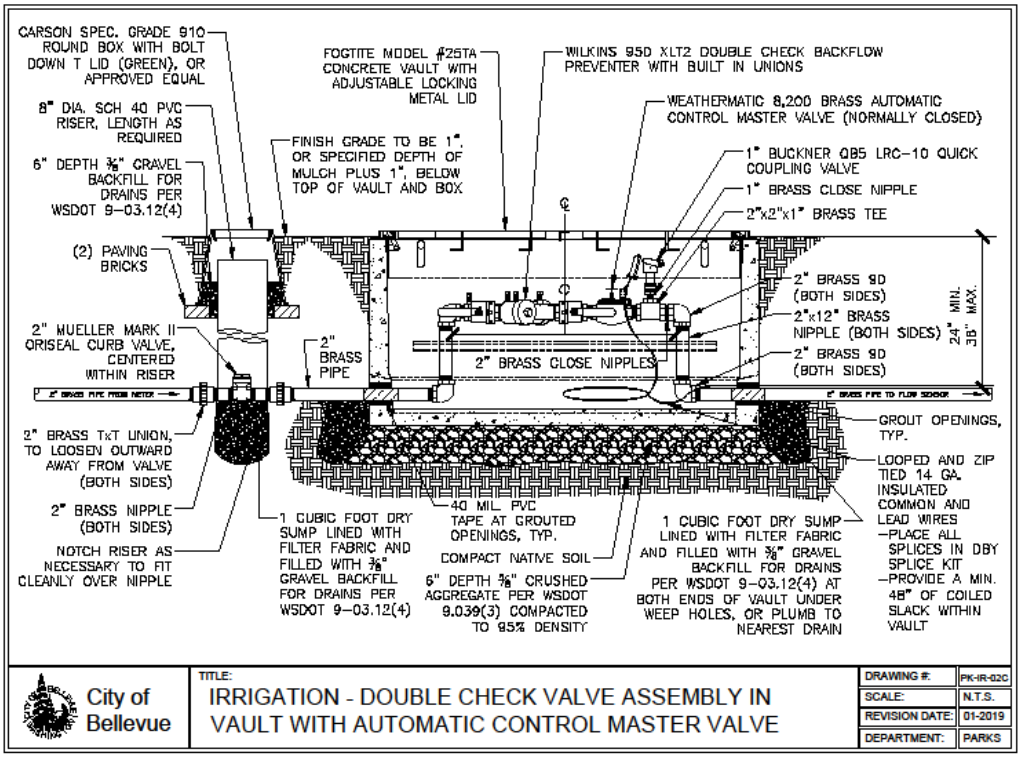

EXISTING WATER SERVICE
M
NEW OR EXISTING WATER METER
BRASS PIPE FROM METER TO CURB VALVE
CS
CURB VALVE
BRASS PIPE FROM CURB VALVE TO D.C.V.A.
FOGTITE MODEL #25-TA CONCRETE VAULT WITH LOCKING METAL LID
DCVA
WILKINS 950 XLT2 DOUBLE CHECK BACKFLOW PREVENTER
OPTIONAL WILKINS 800 SERIES PRESSURE REDUCING VALVE (FOR PSI > 80, TYP.)
PRV
MV
WEATHERMATIC 8,000 SERIES AUTOMATIC CONTROL MASTER VALVE (NORMALLY CLOSED)
QC
1" BUCKNER QB5 LRC-10 QUICK COUPLING VALVE
BRASS PIPE FROM D.C.V.A. TO FIRST FITTING
10x PIPE I.D. CLEARANCE FROM MASTER VALVE TO FLOW SENSOR
SCH 80 PVC PIPE FROM FIRST FITTING TO FLOW SENSOR ASSEMBLY
FS
DATA INDUSTRIAL IR-220P FLOW SENSOR
5x PIPE I.D. CLEARANCE FROM FLOW SENSOR TO FIRST FITTING
SCH 80 PVC PIPE FROM FLOW SENSOR TO FIRST FITTING
SCH 40 PVC PIPE FROM FIRST FITTING TO CONTROL VALVES
City of Bellevue
TITLE:
IRRIGATION - TYPICAL POINT OF CONNECTION
SCHEMATIC WITH MASTER VALVE INSIDE OF VAULT
DRAWING #: PK-IR-01B
SCALE: N.T.S.
REVISION DATE: 01-2019
DEPARTMENT: PARKS

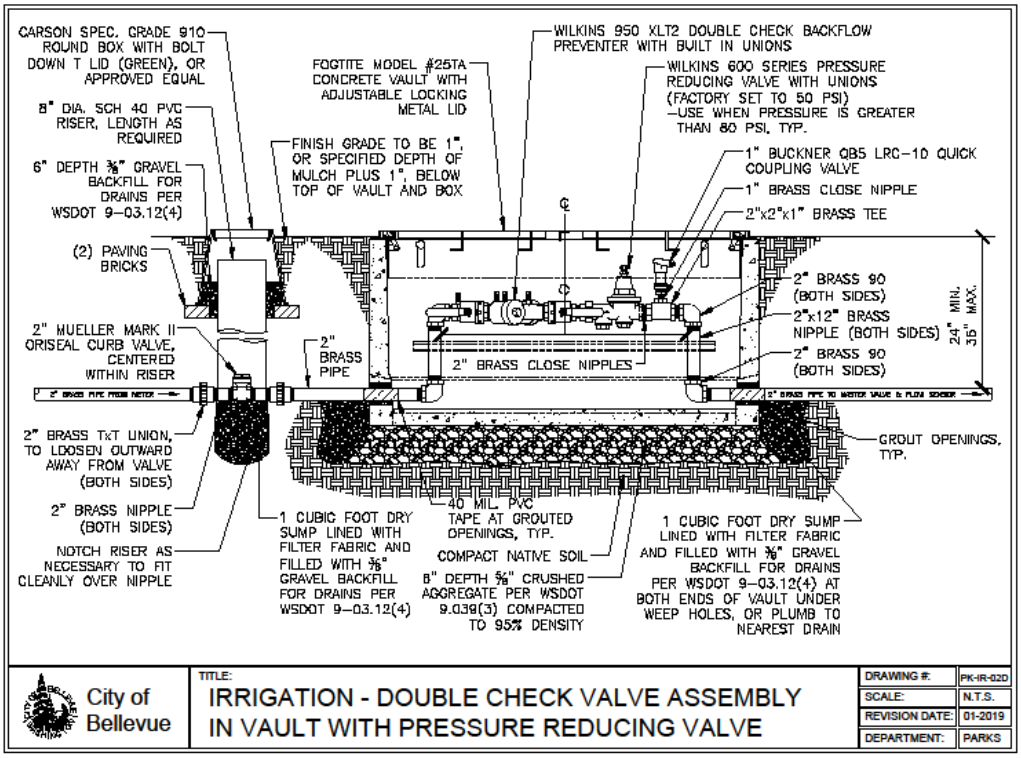

EXISTING WATER SERVICE
M
NEW OR EXISTING WATER METER
BRASS PIPE FROM METER TO CURB VALVE
CS
CURB VALVE
BRASS PIPE FROM CURB VALVE TO D.C.V.A.
DCVA
FOGTITE MODEL #25-TA CONCRETE VAULT WITH LOCKING METAL LID
WILKINS 950 XLT2 DOUBLE CHECK BACKFLOW PREVENTER
PRV
OPTIONAL WILKINS 600 SERIES PRESSURE REDUCING VALVE (FOR PSI > 80, TYP.)
QC
1" BUCKNER Q85 LRC-10 QUICK COUPLING VALVE
BRASS PIPE FROM D.C.V.A. TO FIRST FITTING
CS
CS
CURB VALVE
SCH 80 PVC PIPE FROM FIRST FITTING TO AUTOMATIC CONTROL MASTER VALVE ASSEMBLY
MV
MV
WEATHERMATIC 8,000 SERIES AUTOMATIC CONTROL MASTER VALVE (NORMALLY CLOSED)
10x PIPE I.D. CLEARANCE FROM MASTER VALVE TO FLOW SENSOR
SCH 80 PVC PIPE FROM AUTOMATIC CONTROL MASTER VALVE TO FLOW SENSOR ASSEMBLY
FS
FS
DATA INDUSTRIAL IR-220P FLOW SENSOR
5x PIPE I.D. CLEARANCE FROM FLOW SENSOR TO FIRST FITTING
SCH 80 PVC PIPE FROM FLOW SENSOR TO FIRST FITTING
SCH 40 PVC PIPE FROM FIRST FITTING TO CONTROL VALVES
SCH 40 PVC QUICK COUPLER LINE FROM FIRST FITTING TO QUICK COUPLER(S)
City of Bellevue
TITLE:
IRRIGATION - TYPICAL POINT OF CONNECTION SCHEMATIC WITH QUICK COUPLER LINE
DRAWING #: PK-IR-01C
SCALE: N.T.S.
REVISION DATE: 01-2019
DEPARTMENT: PARKS

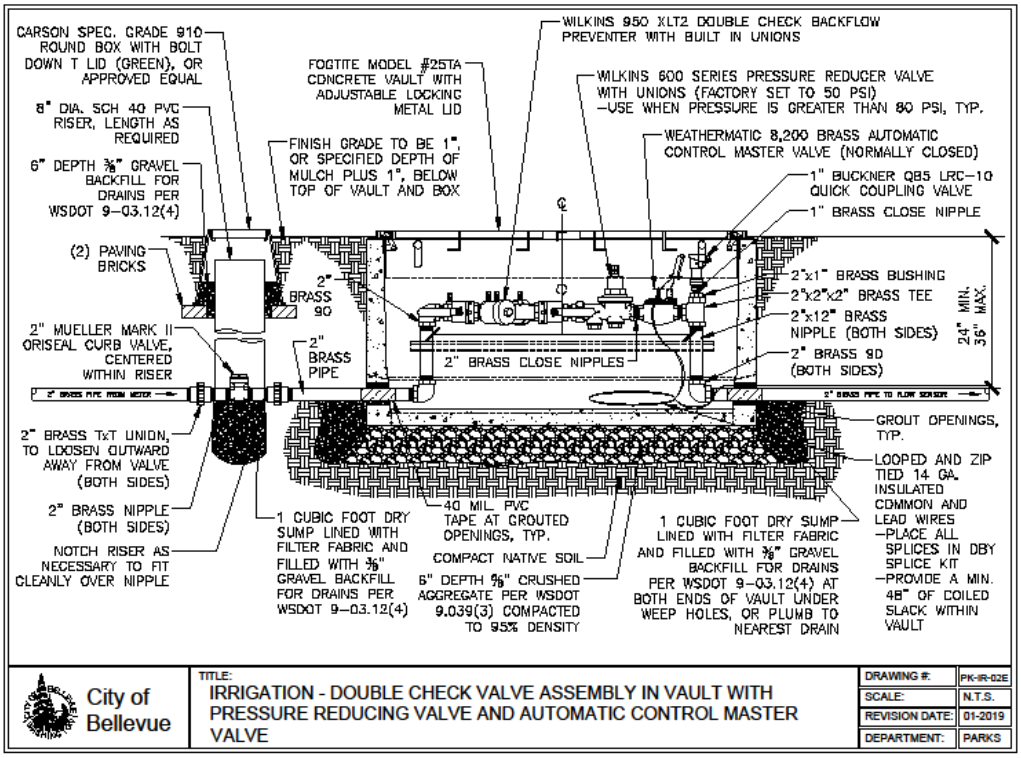

EXISTING WATER SERVICE
M
NEW OR EXISTING WATER METER
BRASS PIPE FROM METER TO CURB VALVE
CS
CURB VALVE
BRASS PIPE FROM CURB VALVE TO D.C.V.A.
DCVA
CARSON SPEC. GRADE 1324 SUPER JUMBO VALVE BOXES (REVERSED STACKED) WITH BOLT DOWN T LID, OR APPROVED EQUAL
WILKINS 950 XLT2 DOUBLE CHECK BACKFLOW PREVENTER
BRASS PIPE FROM D.C.V.A. TO QUICK COUPLER VALVE
QC
1" BUCKNER Q85 LRC-10 QUICK COUPLING VALVE
BRASS PIPE FROM QUICK COUPLER VALVE TO PRESSURE REDUCING VALVE
PRV
OPTIONAL WILKINS 600 SERIES PRESSURE REDUCING VALVE (FOR PSI > 80, TYP.)
SCH 80 PVC PIPE FROM PRESSURE REDUCING VALVE TO AUTOMATIC CONTROL MASTER VALVE ASSEMBLY
MV
WEATHERMATIC 8,000 SERIES AUTOMATIC CONTROL MASTER VALVE (NORMALLY CLOSED)
10x PIPE I.D. CLEARANCE FROM MASTER VALVE TO FLOW SENSOR
SCH 80 PVC PIPE FROM AUTOMATIC CONTROL MASTER VALVE TO FLOW SENSOR ASSEMBLY
FS
DATA INDUSTRIAL IR-220P FLOW SENSOR
5x PIPE I.D. CLEARANCE FROM FLOW SENSOR TO FIRST FITTING
SCH 80 PVC PIPE FROM FLOW SENSOR TO FIRST FITTING
SCH 40 PVC PIPE FROM FIRST FITTING TO CONTROL VALVES
City of Bellevue
TITLE:
IRRIGATION - TYPICAL POINT OF CONNECTION SCHEMATIC FOR D.C.V.A IN VALVE BOX
DRAWING #: PK-IR-01D
SCALE: N.T.S.
REVISION DATE: 01-2019
DEPARTMENT: PARKS

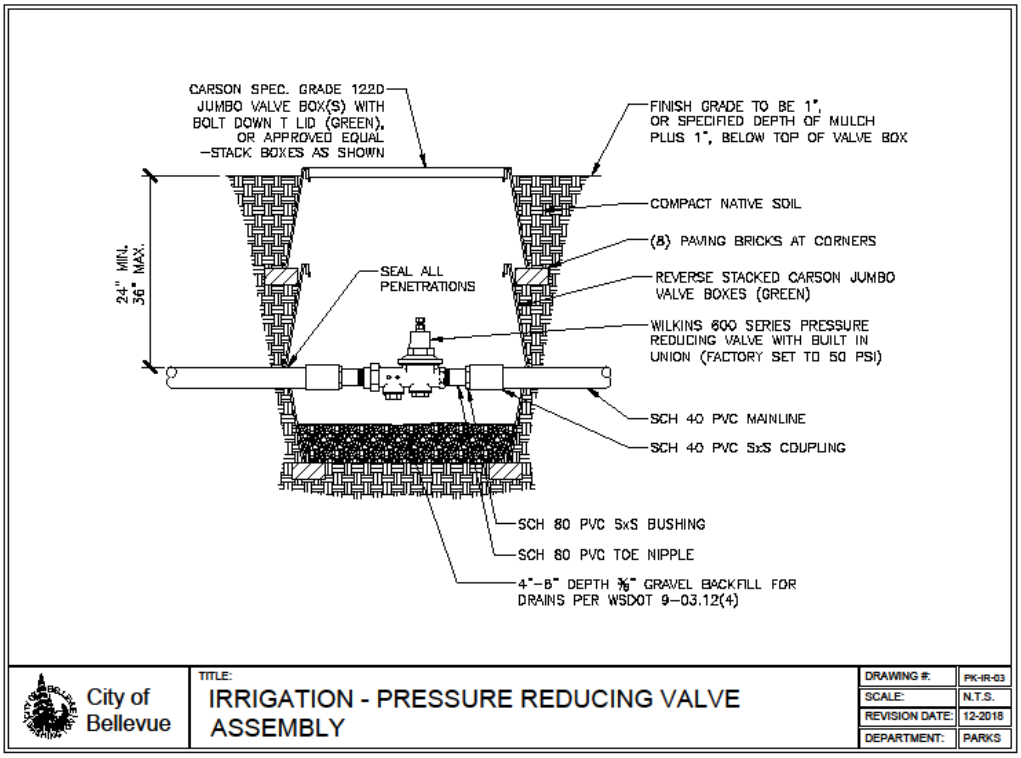

CARSON SPEC. GRADE 910 ROUND BOX WITH BOLT DOWN T LID (GREEN), OR APPROVED EQUAL
FINISH GRADE TO BE 1", OR SPECIFIED DEPTH OF MULCH PLUS 1", BELOW TOP OF VALVE BOXES, TYP.
6" DEPTH ⅜" GRAVEL BACKFILL FOR DRAINS PER WSDOT 9-03.12(4)
BRASS 90
WILKINS 950 XLT2 DOUBLE CHECK BACKFLOW PREVENTER
(2) CARSON SPEC. GRADE 1324 SUPER JUMBO VALVE BOX WITH BOLT DOWN T LID (GREEN), OR APPROVED EQUAL -REVERSE STACKED AND SECURED TOGETHER WITH SCREWS
COMPACT NATIVE MATERIAL
2'-0", TYP.
(2) PAVING BRICKS
8" DIA. SCH 40 PVC RISER, LENGTH AS REQUIRED
MUELLER MARK II ORISEAL CURB VALVE, CENTERED WITHIN RISER
BRASS OR COPPER PIPE FROM METER
12" BRASS NIPPLE, TYP.
BRASS PIPE TO QUICK COUPLER VALVE
SEAL ALL PENETRATIONS
BRASS UNION (BOTH SIDES)
3" BRASS NIPPLE (BOTH SIDES)
1 CUBIC FOOT DRY SUMP LINED WITH FILTER FABRIC AND FILLED WITH ⅜" GRAVEL BACKFILL FOR DRAINS PER WSDOT 9-03.12(4)
BRASS 90
BRASS NIPPLE, LENGTH AS REQUIRED
4" DEPTH ⅝" CRUSHED AGGREGATE PER WSDOT 9.039(3) COMPACTED TO 95% DENSITY
City of Bellevue
TITLE:
IRRIGATION - DOUBLE CHECK VALVE ASSEMBLY IN VALVE BOX
DRAWING #: PK-IR-02A
SCALE: N.T.S.
REVISION DATE: 01-2019
DEPARTMENT: PARKS

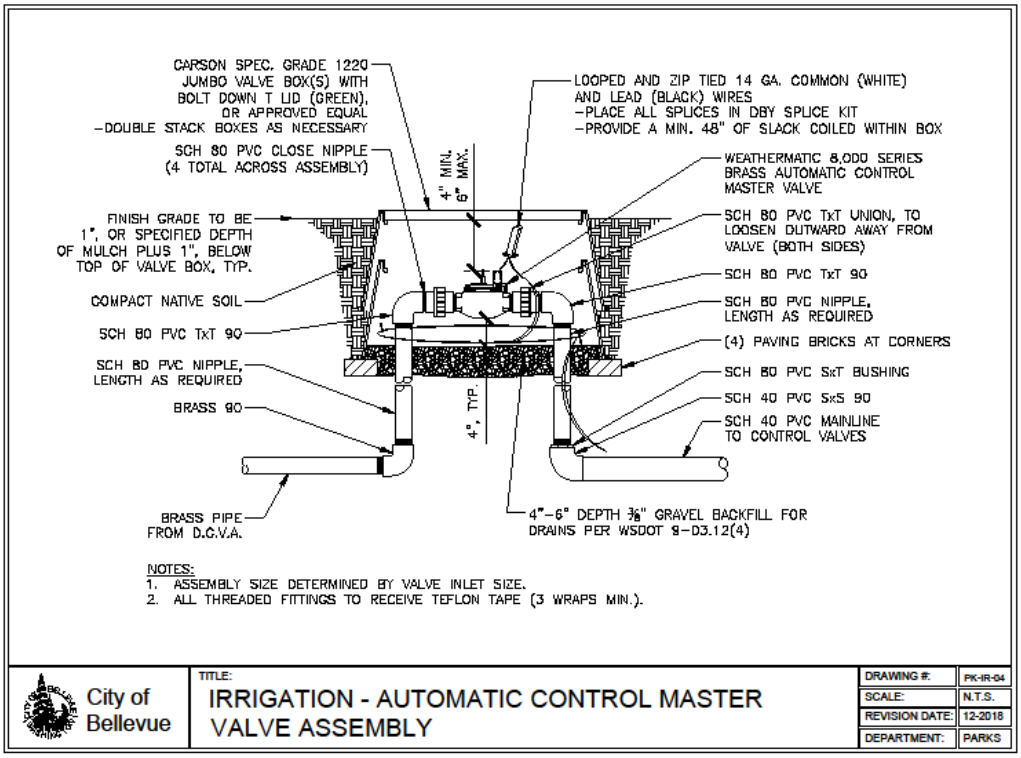

CARSON SPEC. GRADE 910 ROUND BOX WITH BOLT DOWN T LID (GREEN), OR APPROVED EQUAL
FOOTITE MODEL #25TA CONCRETE VAULT WITH ADJUSTABLE LOCKING METAL LID
WILKINS 950 XLT2 DOUBLE CHECK BACKFLOW PREVENTER WITH BUILT IN UNIONS
8" DIA. SCH 40 PVC RISER, LENGTH AS REQUIRED
FINISH GRADE TO BE 1", OR SPECIFIED DEPTH OF MULCH PLUS 1", BELOW TOP OF VAULT AND BOX
1" BUCKNER 085 LRC-10 QUICK COUPLING VALVE
1" BRASS CLOSE NIPPLE
2"x2"x1" BRASS TEE
6" DEPTH ⅜" GRAVEL BACKFILL FOR DRAINS PER WSDOT 9-03.12(4)
(2) PAVING BRICKS
2" BRASS 90 (BOTH SIDES)
2"x12" BRASS NIPPLE (BOTH SIDES)
2" BRASS 90 (BOTH SIDES)
24" MIN. 36" MAX.
2" MUELLER MARK II ORISEAL CURB VALVE, CENTERED WITHIN RISER
2" BRASS PIPE
2" BRASS CLOSE NIPPLES
2" BRASS PIPE FROM METER
2" BRASS PIPE TO MASTER VALVE & FLOW SENSOR
GROUT OPENINGS, TYP.
2" BRASS TxT UNION, TO LOOSEN OUTWARD AWAY FROM VALVE (BOTH SIDES)
2" BRASS NIPPLE (BOTH SIDES)
NOTCH RISER AS NECESSARY TO FIT CLEANLY OVER NIPPLE
1 CUBIC FOOT DRY SUMP LINED WITH FILTER FABRIC AND FILLED WITH ⅜" GRAVEL BACKFILL FOR DRAINS PER WSDOT 9-03.12(4)
40 MIL. PVC TAPE AT GROUTED OPENINGS, TYP.
COMPACT NATIVE SOIL
6" DEPTH ⅝" CRUSHED AGGREGATE PER WSDOT 9.039(3) COMPACTED TO 95% DENSITY
1 CUBIC FOOT DRY SUMP LINED WITH FILTER FABRIC AND FILLED WITH ⅜" GRAVEL BACKFILL FOR DRAINS PER WSDOT 9-03.12(4) AT BOTH ENDS OF VAULT UNDER WEEP HOLES, OR PLUMB TO NEAREST DRAIN
City of Bellevue
TITLE:
IRRIGATION - DOUBLE CHECK VALVE ASSEMBLY IN VAULT
DRAWING #: PK-IR-02B
SCALE: N.T.S.
REVISION DATE: 01-2019
DEPARTMENT: PARKS

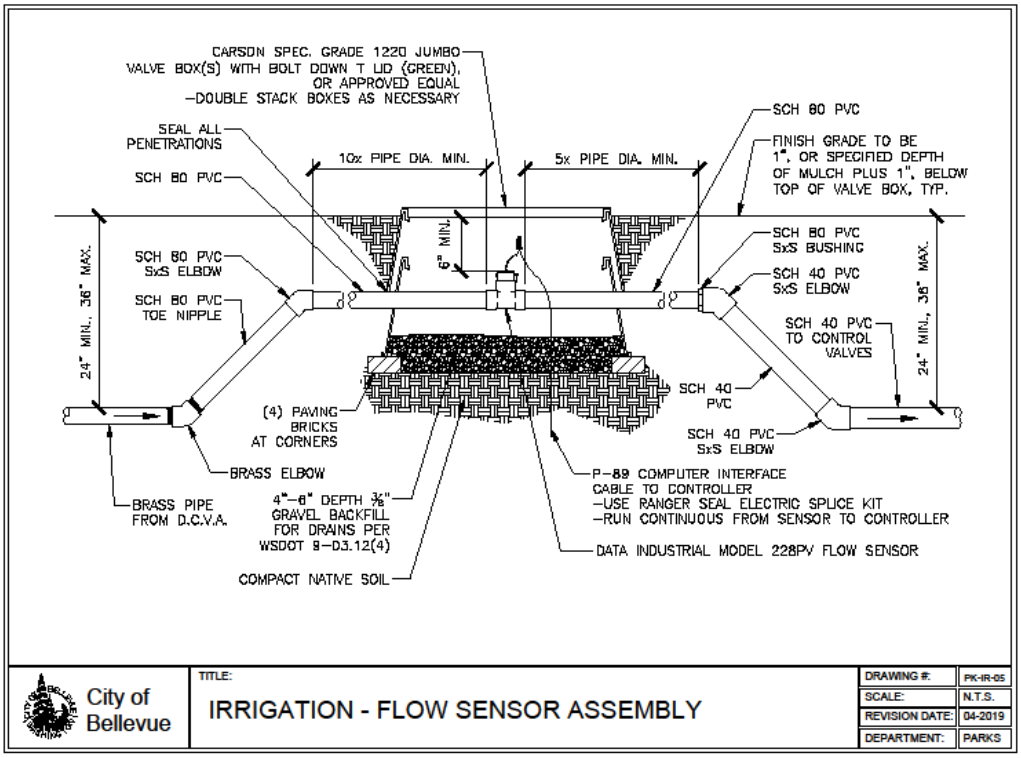

CARSON SPEC. GRADE 910 ROUND BOX WITH BOLT DOWN T LID (GREEN), OR APPROVED EQUAL
8" DIA. SCH 40 PVC RISER, LENGTH AS REQUIRED
6" DEPTH ⅜" GRAVEL BACKFILL FOR DRAINS PER WSDOT 9-03.12(4)
(2) PAVING BRICKS
2" MUELLER MARK II ORISEAL CURB VALVE, CENTERED WITHIN RISER
2" BRASS T&T UNION, TO LOOSEN OUTWARD AWAY FROM VALVE (BOTH SIDES)
2" BRASS NIPPLE (BOTH SIDES)
NOTCH RISER AS NECESSARY TO FIT CLEANLY OVER NIPPLE
FOGTITE MODEL #25TA CONCRETE VAULT WITH ADJUSTABLE LOCKING METAL LID
FINISH GRADE TO BE 1", OR SPECIFIED DEPTH OF MULCH PLUS 1", BELOW TOP OF VAULT AND BOX
WILKINS 950 XLT2 DOUBLE CHECK BACKFLOW PREVENTER WITH BUILT IN UNIONS
WEATHERMATIC 8,200 BRASS AUTOMATIC CONTROL MASTER VALVE (NORMALLY CLOSED)
1" BUCKNER QB5 LRC-10 QUICK COUPLING VALVE
1" BRASS CLOSE NIPPLE
2"x2"x1" BRASS TEE
2" BRASS 90 (BOTH SIDES)
2"x12" BRASS NIPPLE (BOTH SIDES)
2" BRASS 90 (BOTH SIDES)
24" MIN. 36" MAX.
2" BRASS PIPE
2" BRASS CLOSE NIPPLES
2" BRASS PIPE FROM METER
2" BRASS PIPE TO FLOW SENSOR
GROUT OPENINGS, TYP.
LOOPED AND ZIP TIED 14 GA. INSULATED COMMON AND LEAD WIRES
-PLACE ALL SPLICES IN DBY SPLICE KIT
-PROVIDE A MIN. 48" OF COILED SLACK WITHIN VAULT
1 CUBIC FOOT DRY SUMP LINED WITH FILTER FABRIC AND FILLED WITH ⅜" GRAVEL BACKFILL FOR DRAINS PER WSDOT 9-03.12(4)
40 MIL. PVC TAPE AT GROUTED OPENINGS, TYP.
COMPACT NATIVE SOIL
6" DEPTH ⅝" CRUSHED AGGREGATE PER WSDOT 9.039(3) COMPACTED TO 95% DENSITY
1 CUBIC FOOT DRY SUMP LINED WITH FILTER FABRIC AND FILLED WITH ⅜" GRAVEL BACKFILL FOR DRAINS PER WSDOT 9-03.12(4) AT BOTH ENDS OF VAULT UNDER WEEP HOLES, OR PLUMB TO NEAREST DRAIN
City of Bellevue
TITLE:
IRRIGATION - DOUBLE CHECK VALVE ASSEMBLY IN VAULT WITH AUTOMATIC CONTROL MASTER VALVE
DRAWING #: PK-IR-02C
SCALE: N.T.S.
REVISION DATE: 01-2019
DEPARTMENT: PARKS

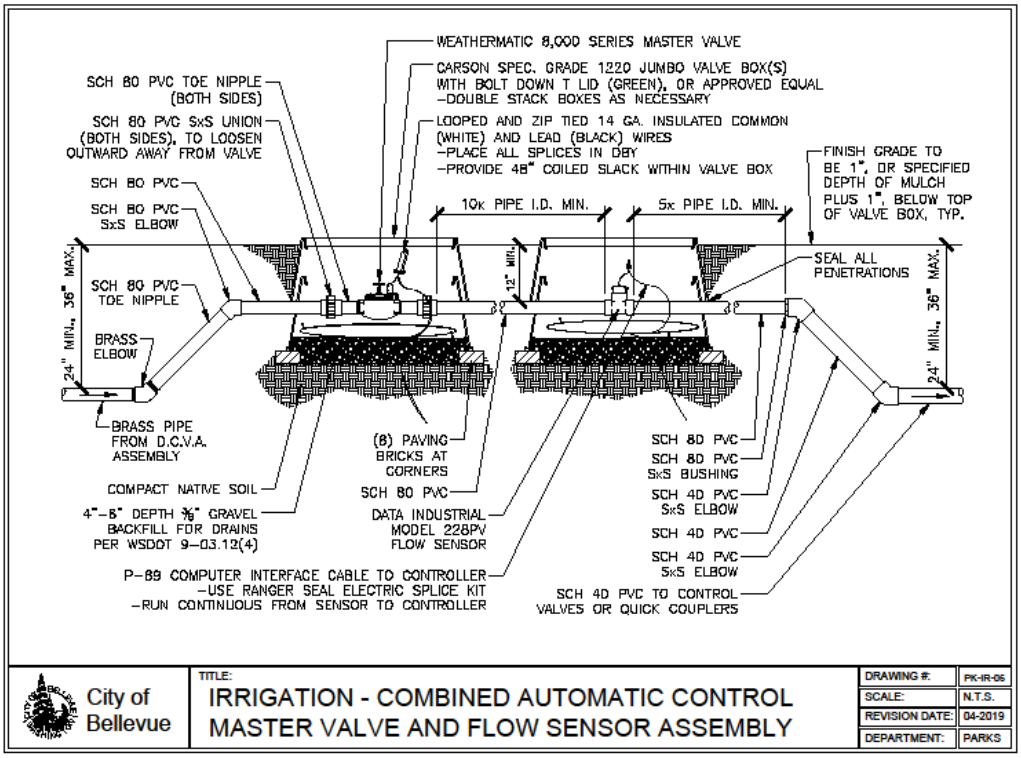

CARSON SPEC. GRADE 910 ROUND BOX WITH BOLT DOWN T LID (GREEN), OR APPROVED EQUAL
8" DIA. SCH 40 PVC RISER, LENGTH AS REQUIRED
6" DEPTH ⅜" GRAVEL BACKFILL FOR DRAINS PER WSDOT 9-03.12(4)
(2) PAVING BRICKS
2" MUELLER MARK II ORISEAL CURB VALVE, CENTERED WITHIN RISER
2" BRASS T&T UNION, TO LOOSEN OUTWARD AWAY FROM VALVE (BOTH SIDES)
2" BRASS NIPPLE (BOTH SIDES)
NOTCH RISER AS NECESSARY TO FIT CLEANLY OVER NIPPLE
FOGTITE MODEL #25TA CONCRETE VAULT WITH ADJUSTABLE LOCKING METAL LID
FINISH GRADE TO BE 1", OR SPECIFIED DEPTH OF MULCH PLUS 1", BELOW TOP OF VAULT AND BOX
WILKINS 950 XLT2 DOUBLE CHECK BACKFLOW PREVENTER WITH BUILT IN UNIONS
WILKINS 600 SERIES PRESSURE REDUCING VALVE WITH UNIONS (FACTORY SET TO 50 PSI) -USE WHEN PRESSURE IS GREATER THAN 80 PSI, TYP.
1" BUCKNER QB5 LRC-10 QUICK COUPLING VALVE
1" BRASS CLOSE NIPPLE
2"x2"x1" BRASS TEE
2" BRASS 90 (BOTH SIDES)
2"x12" BRASS NIPPLE (BOTH SIDES)
2" BRASS 90 (BOTH SIDES)
24" MIN. 36" MAX.
2" BRASS PIPE
2" BRASS CLOSE NIPPLES
2" BRASS PIPE FROM METER
2" BRASS PIPE TO MASTER VALVE & FLOW SENSOR
GROUT OPENINGS, TYP.
1 CUBIC FOOT DRY SUMP LINED WITH FILTER FABRIC AND FILLED WITH ⅜" GRAVEL BACKFILL FOR DRAINS PER WSDOT 9-03.12(4)
40 MIL. PVC TAPE AT GROUTED OPENINGS, TYP.
COMPACT NATIVE SOIL
8" DEPTH ⅝" CRUSHED AGGREGATE PER WSDOT 9.039(3) COMPACTED TO 95% DENSITY
1 CUBIC FOOT DRY SUMP LINED WITH FILTER FABRIC AND FILLED WITH ⅜" GRAVEL BACKFILL FOR DRAINS PER WSDOT 9-03.12(4) AT BOTH ENDS OF VAULT UNDER WEEP HOLES, OR PLUMB TO NEAREST DRAIN
City of Bellevue
TITLE:
IRRIGATION - DOUBLE CHECK VALVE ASSEMBLY IN VAULT WITH PRESSURE REDUCING VALVE
DRAWING #: PK-IR-02D
SCALE: N.T.S.
REVISION DATE: 01-2019
DEPARTMENT: PARKS


CARSON SPEC. GRADE 910 ROUND BOX WITH BOLT DOWN T LID (GREEN), OR APPROVED EQUAL
8" DIA. SCH 40 PVC RISER, LENGTH AS REQUIRED
6" DEPTH ⅜" GRAVEL BACKFILL FOR DRAINS PER WSDOT 9-03.12(4)
(2) PAVING BRICKS
2" MUELLER MARK II ORISEAL CURB VALVE, CENTERED WITHIN RISER
2" BRASS TxT UNION, TO LOOSEN OUTWARD AWAY FROM VALVE (BOTH SIDES)
2" BRASS NIPPLE (BOTH SIDES)
NOTCH RISER AS NECESSARY TO FIT CLEANLY OVER NIPPLE
FOGTITE MODEL #25TA CONCRETE VAULT WITH ADJUSTABLE LOCKING METAL LID
FINISH GRADE TO BE 1", OR SPECIFIED DEPTH OF MULCH PLUS 1", BELOW TOP OF VAULT AND BOX
2" BRASS 90
2" BRASS PIPE
1 CUBIC FOOT DRY SUMP LINED WITH FILTER FABRIC AND FILLED WITH ⅜" GRAVEL BACKFILL FOR DRAINS PER WSDOT 9-03.12(4)
WILKINS 950 XLT2 DOUBLE CHECK BACKFLOW PREVENTER WITH BUILT IN UNIONS
WILKINS 600 SERIES PRESSURE REDUCER VALVE WITH UNIONS (FACTORY SET TO 50 PSI) -USE WHEN PRESSURE IS GREATER THAN 80 PSI, TYP.
WEATHERMATIC 8,200 BRASS AUTOMATIC CONTROL MASTER VALVE (NORMALLY CLOSED)
1" BUCKNER Q85 LRC-10 QUICK COUPLING VALVE
1" BRASS CLOSE NIPPLE
2"x1" BRASS BUSHING
2"x2"x2" BRASS TEE
2"x12" BRASS NIPPLE (BOTH SIDES)
2" BRASS 90 (BOTH SIDES)
2" BRASS CLOSE NIPPLES
24" MIN. 36" MAX.
40 MIL PVC TAPE AT GROUTED OPENINGS, TYP.
COMPACT NATIVE SOIL
6" DEPTH ⅝" CRUSHED AGGREGATE PER WSDOT 9.039(3) COMPACTED TO 95% DENSITY
1 CUBIC FOOT DRY SUMP LINED WITH FILTER FABRIC AND FILLED WITH ⅜" GRAVEL BACKFILL FOR DRAINS PER WSDOT 9-03.12(4) AT BOTH ENDS OF VAULT UNDER WEEP HOLES, OR PLUMB TO NEAREST DRAIN
GROUT OPENINGS, TYP.
LOOPED AND ZIP TIED 14 GA. INSULATED COMMON AND LEAD WIRES -PLACE ALL SPLICES IN DBY SPLICE KIT -PROVIDE A MIN. 48" OF COILED SLACK WITHIN VAULT
City of Bellevue
TITLE:
IRRIGATION - DOUBLE CHECK VALVE ASSEMBLY IN VAULT WITH PRESSURE REDUCING VALVE AND AUTOMATIC CONTROL MASTER VALVE
DRAWING #: PK-IR-02E
SCALE: N.T.S.
REVISION DATE: 01-2019
DEPARTMENT: PARKS


CARSON SPEC. GRADE 122D JUMBO VALVE BOX(S) WITH BOLT DOWN T LID (GREEN), OR APPROVED EQUAL -STACK BOXES AS SHOWN
FINISH GRADE TO BE 1", OR SPECIFIED DEPTH OF MULCH PLUS 1", BELOW TOP OF VALVE BOX
COMPACT NATIVE SOIL
(8) PAVING BRICKS AT CORNERS
REVERSE STACKED CARSON JUMBO VALVE BOXES (GREEN)
SEAL ALL PENETRATIONS
24" MIN. 36" MAX.
WILKINS 600 SERIES PRESSURE REDUCING VALVE WITH BUILT IN UNION (FACTORY SET TO 50 PSI)
SCH 40 PVC MAINLINE
SCH 40 PVC SxS COUPLING
SCH 80 PVC SxS BUSHING
SCH 80 PVC TOE NIPPLE
4"-8" DEPTH ⅜" GRAVEL BACKFILL FOR DRAINS PER WSDOT 9-03.12(4)
City of Bellevue
TITLE:
IRRIGATION - PRESSURE REDUCING VALVE ASSEMBLY
DRAWING #: PK-IR-03
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS


CARSON SPEC. GRADE 1220 JUMBO VALVE BOX(S) WITH BOLT DOWN T LID (GREEN), OR APPROVED EQUAL
-DOUBLE STACK BOXES AS NECESSARY
SCH 80 PVC CLOSE NIPPLE (4 TOTAL ACROSS ASSEMBLY)
FINISH GRADE TO BE 1", OR SPECIFIED DEPTH OF MULCH PLUS 1", BELOW TOP OF VALVE BOX, TYP.
COMPACT NATIVE SOIL
SCH 80 PVC TxT 90
SCH 80 PVC NIPPLE, LENGTH AS REQUIRED
BRASS 90
BRASS PIPE FROM D.C.V.A.
4" MIN. 6" MAX.
4", TYP.
LOOPED AND ZIP TIED 14 GA. COMMON (WHITE) AND LEAD (BLACK) WIRES
-PLACE ALL SPLICES IN DBY SPLICE KIT
-PROVIDE A MIN. 48" OF SLACK COILED WITHIN BOX
WEATHERMATIC 8,000 SERIES BRASS AUTOMATIC CONTROL MASTER VALVE
SCH 80 PVC TxT UNION, TO LOOSEN OUTWARD AWAY FROM VALVE (BOTH SIDES)
SCH 80 PVC TxT 90
SCH 80 PVC NIPPLE, LENGTH AS REQUIRED
(4) PAVING BRICKS AT CORNERS
SCH 80 PVC SxT BUSHING
SCH 40 PVC SxS 90
SCH 40 PVC MAINLINE TO CONTROL VALVES
4"-6" DEPTH 3/8" GRAVEL BACKFILL FOR DRAINS PER WSDOT 9-03.12(4)
NOTES:
1. ASSEMBLY SIZE DETERMINED BY VALVE INLET SIZE.
2. ALL THREADED FITTINGS TO RECEIVE TEFLON TAPE (3 WRAPS MIN.).
City of Bellevue
TITLE:
IRRIGATION - AUTOMATIC CONTROL MASTER VALVE ASSEMBLY
DRAWING #: PK-IR-04
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS

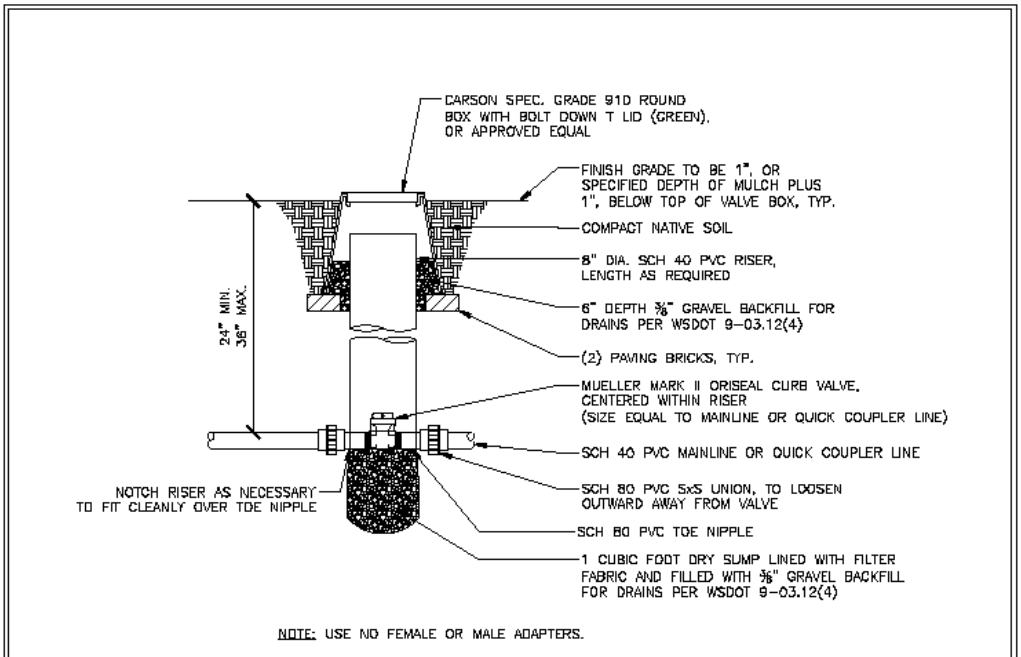

CARSON SPEC. GRADE 1220 JUMBO VALVE BOX(S) WITH BOLT DOWN T LID (GREEN), OR APPROVED EQUAL
-DOUBLE STACK BOXES AS NECESSARY
SEAL ALL PENETRATIONS
SCH 80 PVC
10x PIPE DIA. MIN.
5x PIPE DIA. MIN.
SCH 80 PVC
FINISH GRADE TO BE 1", OR SPECIFIED DEPTH OF MULCH PLUS 1", BELOW TOP OF VALVE BOX, TYP.
6" MIN.
24" MIN., 36" MAX.
SCH 80 PVC SxS ELBOW
SCH 80 PVC TOE NIPPLE
SCH 80 PVC SxS BUSHING
SCH 40 PVC SxS ELBOW
SCH 40 PVC TO CONTROL VALVES
24" MIN., 36" MAX.
(4) PAVING BRICKS AT CORNERS
SCH 40 PVC
SCH 40 PVC SxS ELBOW
BRASS ELBOW
BRASS PIPE FROM D.C.V.A.
4"-6" DEPTH 3/8" GRAVEL BACKFILL FOR DRAINS PER WSDOT 9-03.12(4)
COMPACT NATIVE SOIL
P-89 COMPUTER INTERFACE CABLE TO CONTROLLER
-USE RANGER SEAL ELECTRIC SPLICE KIT
-RUN CONTINUOUS FROM SENSOR TO CONTROLLER
DATA INDUSTRIAL MODEL 228PV FLOW SENSOR
City of Bellevue
TITLE:
IRRIGATION - FLOW SENSOR ASSEMBLY
DRAWING #: PK-IR-05
SCALE: N.T.S.
REVISION DATE: 04-2019
DEPARTMENT: PARKS



City of Bellevue

TITLE:
IRRIGATION - COMBINED AUTOMATIC CONTROL MASTER VALVE AND FLOW SENSOR ASSEMBLY

DRAWING #:	PK-IR-06
SCALE:	N.T.S.
REVISION DATE:	04-2019
DEPARTMENT:	PARKS

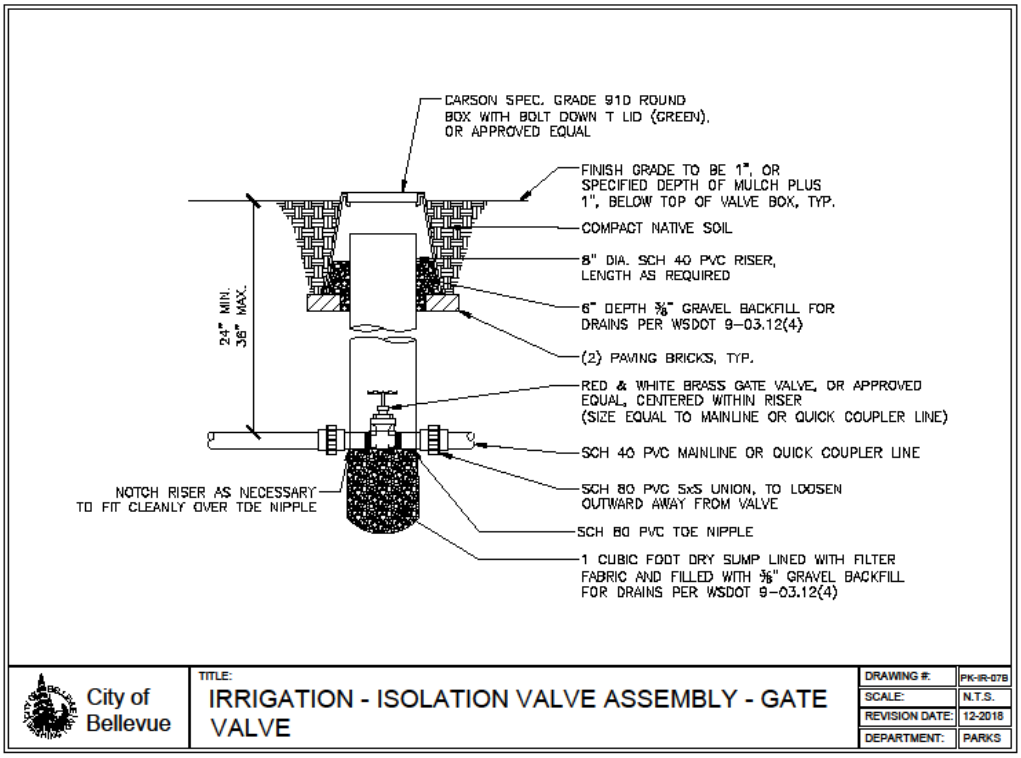


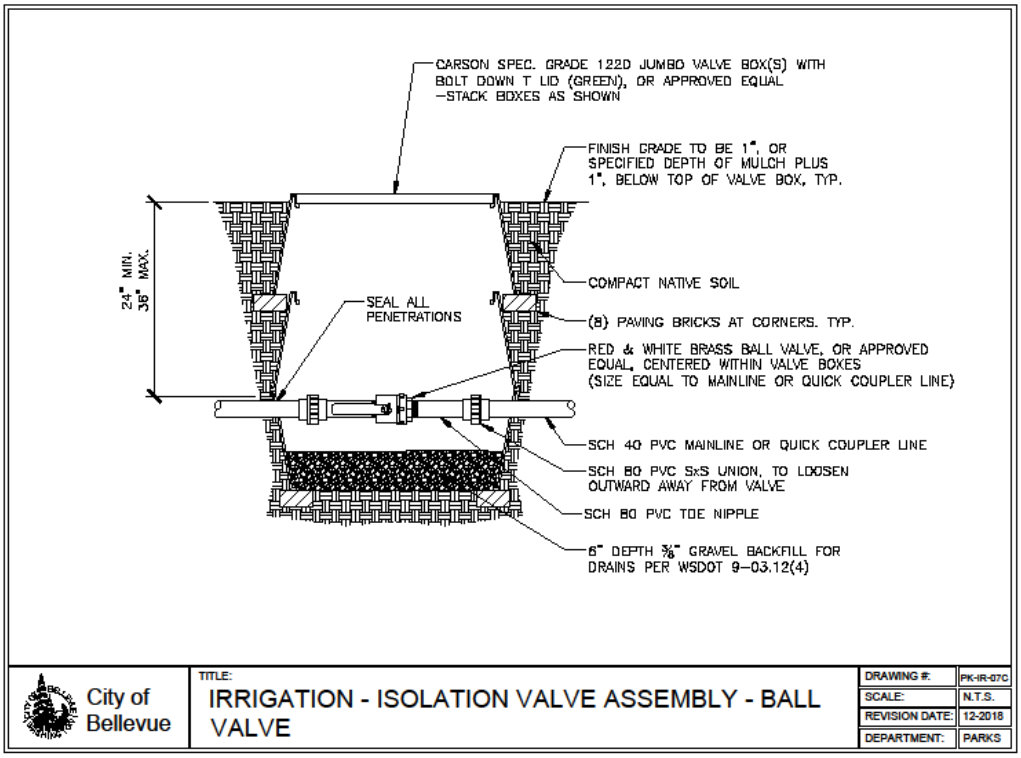
NOTE: USE NO FEMALE OR MALE ADAPTERS.

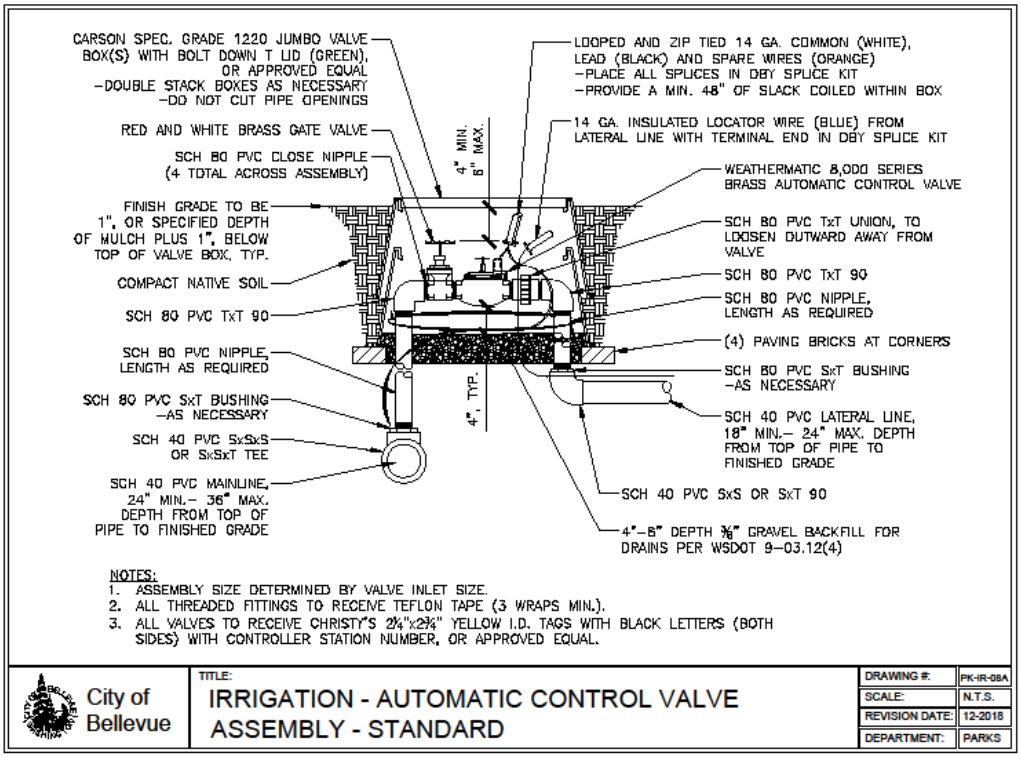
City of Bellevue

TITLE:
IRRIGATION - ISOLATION VALVE ASSEMBLY - CURB STOP VALVE

DRAWING #:	PK-IR-07A
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS


CARSON SPEC. GRADE 910 ROUND BOX WITH BOLT DOWN T LID (GREEN), OR APPROVED EQUAL
FINISH GRADE TO BE 1", OR SPECIFIED DEPTH OF MULCH PLUS 1", BELOW TOP OF VALVE BOX, TYP.
COMPACT NATIVE SOIL
8" DIA. SCH 40 PVC RISER, LENGTH AS REQUIRED
6" DEPTH ⅜" GRAVEL BACKFILL FOR DRAINS PER WSDOT 9-03.12(4)
(2) PAVING BRICKS, TYP.
RED & WHITE BRASS GATE VALVE, OR APPROVED EQUAL, CENTERED WITHIN RISER (SIZE EQUAL TO MAINLINE OR QUICK COUPLER LINE)
SCH 40 PVC MAINLINE OR QUICK COUPLER LINE
SCH 80 PVC SxS UNION, TO LOOSEN OUTWARD AWAY FROM VALVE
SCH 80 PVC TOE NIPPLE
1 CUBIC FOOT DRY SUMP LINED WITH FILTER FABRIC AND FILLED WITH ⅜" GRAVEL BACKFILL FOR DRAINS PER WSDOT 9-03.12(4)
24" MIN. 36" MAX.
NOTCH RISER AS NECESSARY TO FIT CLEANLY OVER TOE NIPPLE
City of Bellevue
TITLE:
IRRIGATION - ISOLATION VALVE ASSEMBLY - GATE VALVE
DRAWING #: PK-IR-07B
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS


CARSON SPEC. GRADE 122D JUMBO VALVE BOX(S) WITH BOLT DOWN T LID (GREEN), OR APPROVED EQUAL -STACK BOXES AS SHOWN
FINISH GRADE TO BE 1", OR SPECIFIED DEPTH OF MULCH PLUS 1", BELOW TOP OF VALVE BOX, TYP.
COMPACT NATIVE SOIL
(8) PAVING BRICKS AT CORNERS. TYP.
RED & WHITE BRASS BALL VALVE, OR APPROVED EQUAL, CENTERED WITHIN VALVE BOXES (SIZE EQUAL TO MAINLINE OR QUICK COUPLER LINE)
SCH 40 PVC MAINLINE OR QUICK COUPLER LINE
SCH 80 PVC SxS UNION, TO LOOSEN OUTWARD AWAY FROM VALVE
SCH 80 PVC TOE NIPPLE
6" DEPTH ⅜" GRAVEL BACKFILL FOR DRAINS PER WSDOT 9-03.12(4)
SEAL ALL PENETRATIONS
24" MIN. 36" MAX.
City of Bellevue
TITLE:
IRRIGATION - ISOLATION VALVE ASSEMBLY - BALL VALVE
DRAWING #: PK-IR-07C
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS

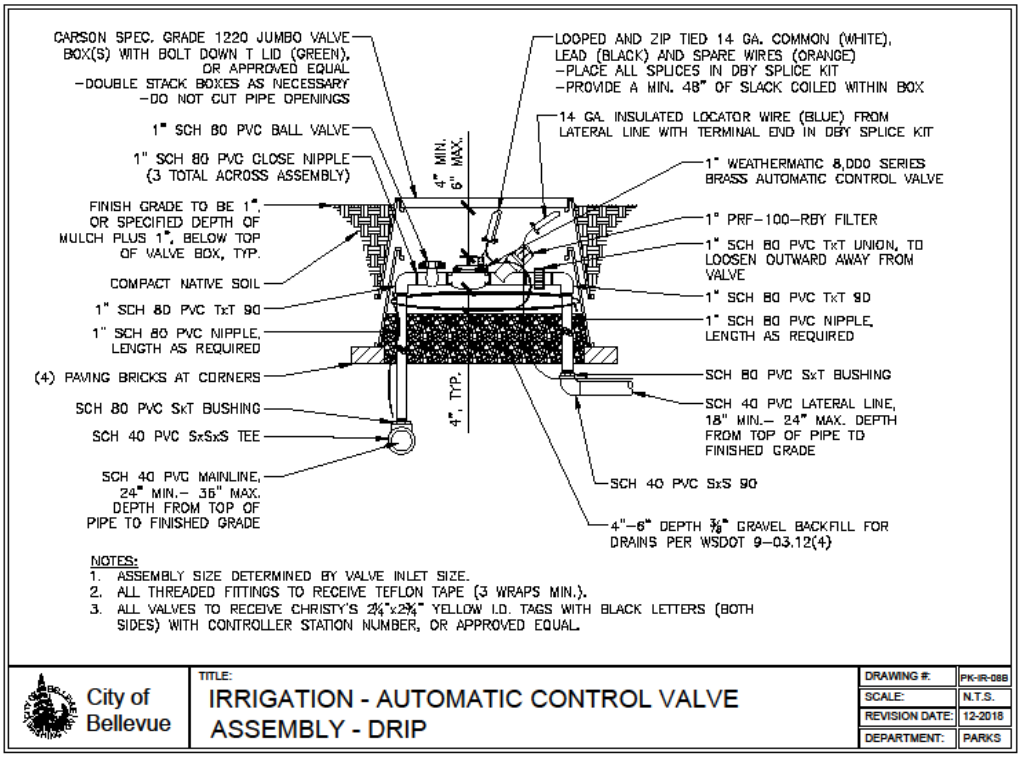


NOTES:
1. ASSEMBLY SIZE DETERMINED BY VALVE INLET SIZE.
2. ALL THREADED FITTINGS TO RECEIVE TEFLON TAPE (3 WRAPS MIN.).
3. ALL VALVES TO RECEIVE CHRISTY'S 2¾"x2¾" YELLOW I.D. TAGS WITH BLACK LETTERS (BOTH SIDES) WITH CONTROLLER STATION NUMBER, OR APPROVED EQUAL.

City of Bellevue

TITLE: IRRIGATION - AUTOMATIC CONTROL VALVE ASSEMBLY - STANDARD

DRAWING #:	PK-IR-08A
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS

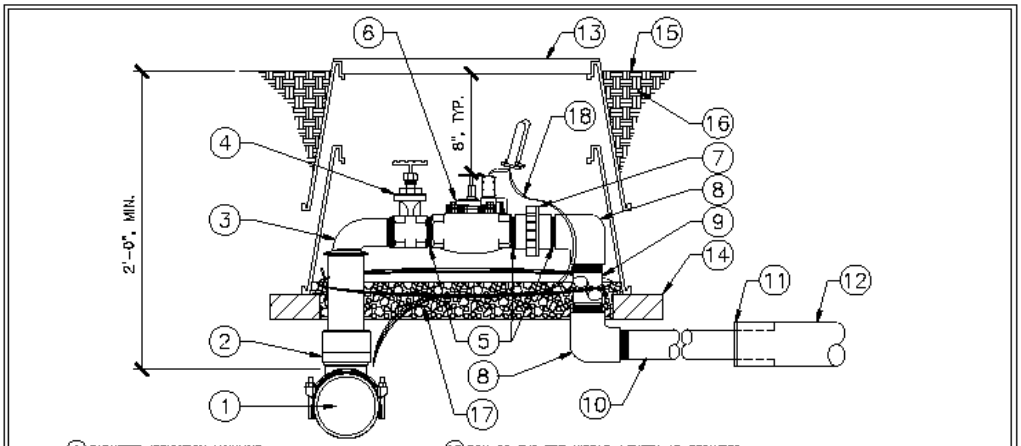


NOTES:
1. ASSEMBLY SIZE DETERMINED BY VALVE INLET SIZE.
2. ALL THREADED FITTINGS TO RECEIVE TEFLON TAPE (3 WRAPS MIN.).
3. ALL VALVES TO RECEIVE CHRISTY'S 2¾"x2¾" YELLOW I.D. TAGS WITH BLACK LETTERS (BOTH SIDES) WITH CONTROLLER STATION NUMBER, OR APPROVED EQUAL.

City of Bellevue

TITLE: IRRIGATION - AUTOMATIC CONTROL VALVE ASSEMBLY - DRIP

DRAWING #:	PK-IR-08B
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS



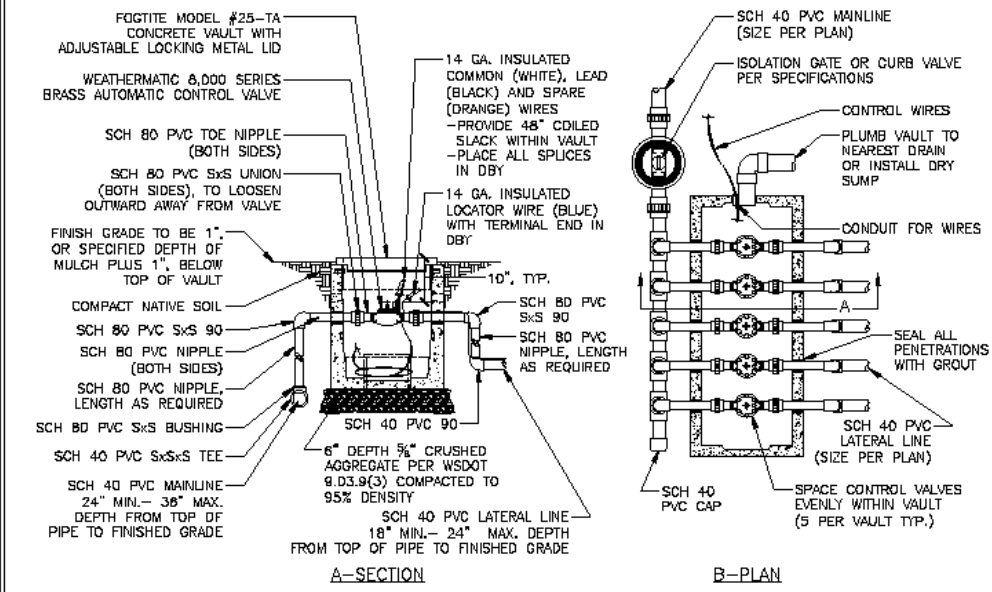
1. GASKETED IRRIGATION MAINLINE
2. HARCO FEMALE SWIVEL SADDLE
3. HARCO STANDARD MALE NPT x MALE SWIVEL LATERAL 90
4. RED AND WHITE BRASS GATE VALVE
5. SCH 80 PVC CLOSE NIPPLE
6. WEATHERMATIC 8,200 SERIES BRASS AUTOMATIC CONTROL VALVE
7. SCH 80 PVC TxT UNION (TO LOOSEN OUTWARD AWAY FROM VALVE)
8. SCH 80 PVC TxT 90
9. SCH 80 PVC NIPPLE, LENGTH AS REQUIRED
10. SCH 80 PVC TOE NIPPLE, LENGTH AS REQUIRED
11. SCH 40 PVC SxS BUSHING, TYP.
12. SOLVENT WELD IRRIGATION LATERAL LINE PER PLAN
13. (2) CARSON SPEC. GRADE 1220 JUMBO VALVE BOXES (GREEN) WITH BOLT DOWN T LID OR APPROVED EQUAL (DOUBLE STACKED AS SHOWN)
14. (4) PAVING BRICKS AT CORNERS, TYP.
15. FINISH GRADE TO BE 1" BELOW TOP OF VALVE BOX
16. COMPACT NATIVE SOIL
17. 4" DEPTH 3/8 WASHED DRAIN ROCK
18. LOOPED AND ZIPPED TIED 14 GA. COMMON (WHITE), LEAD (BLACK) AND SPARE (ORANGE) WIRES. PLACE ALL SPLICES IN DBY. PROVIDE 48" MIN. SLACK COILED INSIDE BOX

City of Bellevue

TITLE: IRRIGATION - AUTOMATIC CONTROL VALVE ASSEMBLY - GASKETED MAINLINE

DRAWING #:	PK-IR-08C
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS

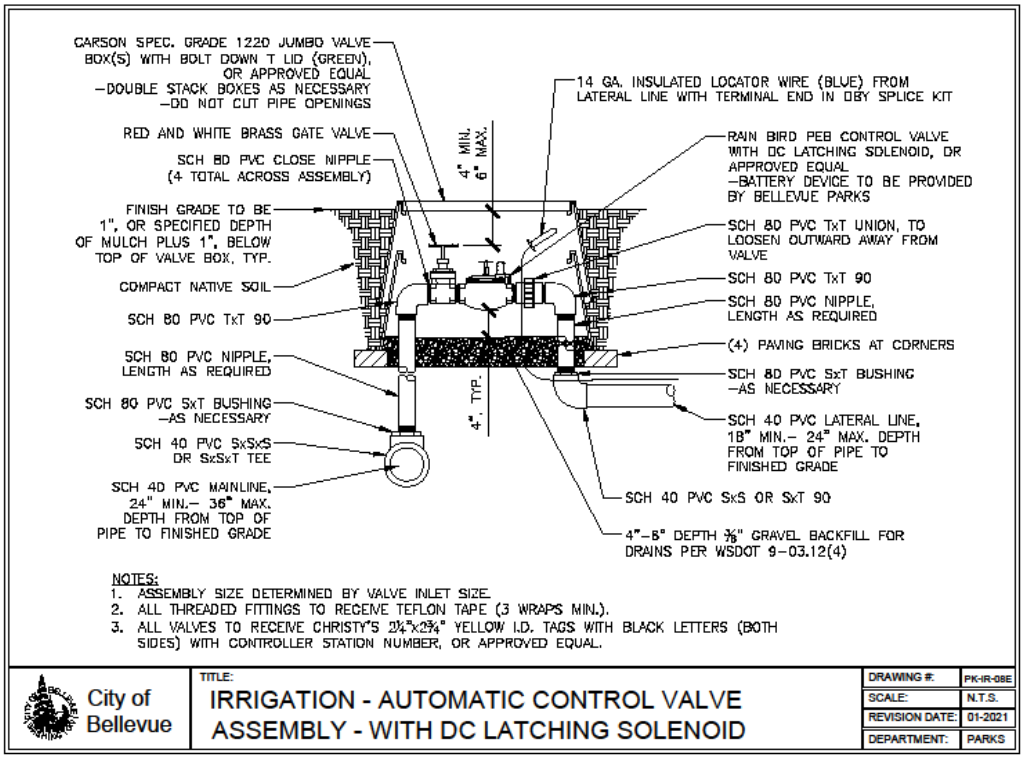
NOTE: ASSEMBLY SIZE DETERMINED BY VALVE INLET SIZE. ALL THREADED FITTINGS TO RECEIVE TEFLON TAPE (3 WRAPS MIN.)



City of Bellevue

TITLE: IRRIGATION - AUTOMATIC CONTROL VALVE ASSEMBLY - STANDARD IN VAULT

DRAWING #:	PK-IR-08D
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS

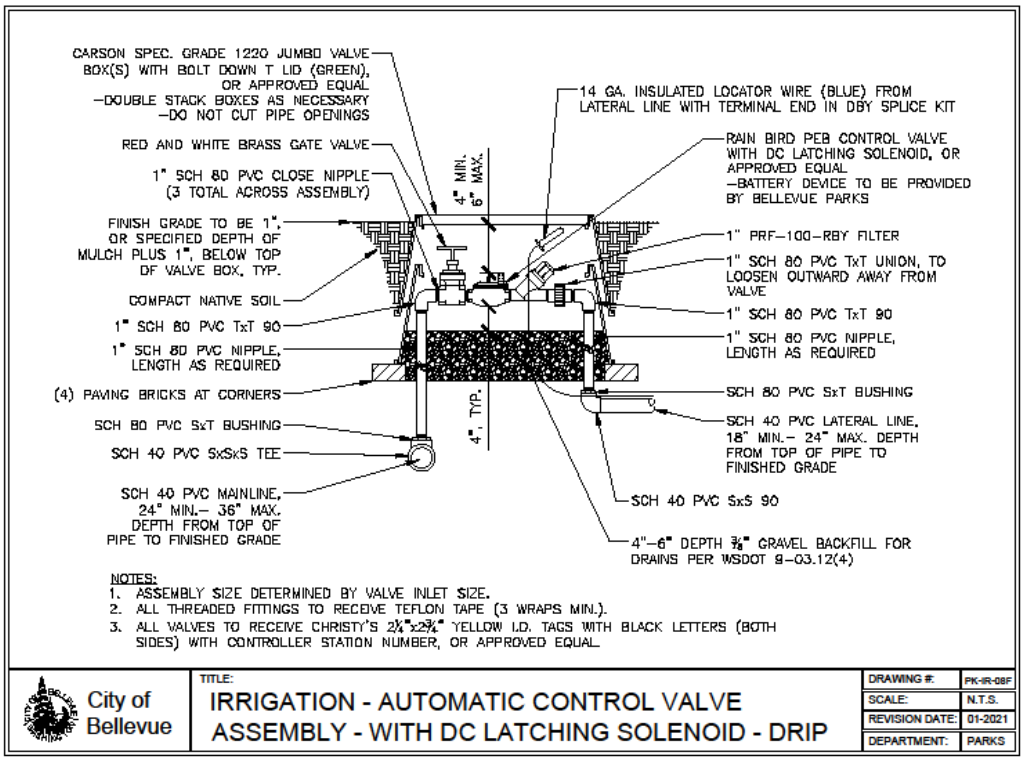


NOTES:
1. ASSEMBLY SIZE DETERMINED BY VALVE INLET SIZE.
2. ALL THREADED FITTINGS TO RECEIVE TEFLON TAPE (3 WRAPS MIN.).
3. ALL VALVES TO RECEIVE CHRISTY'S 2¼"x2¾" YELLOW I.D. TAGS WITH BLACK LETTERS (BOTH SIDES) WITH CONTROLLER STATION NUMBER, OR APPROVED EQUAL.

City of Bellevue

TITLE: IRRIGATION - AUTOMATIC CONTROL VALVE ASSEMBLY - WITH DC LATCHING SOLENOID

DRAWING #:	PK-IR-08E
SCALE:	N.T.S.
REVISION DATE:	01-2021
DEPARTMENT:	PARKS

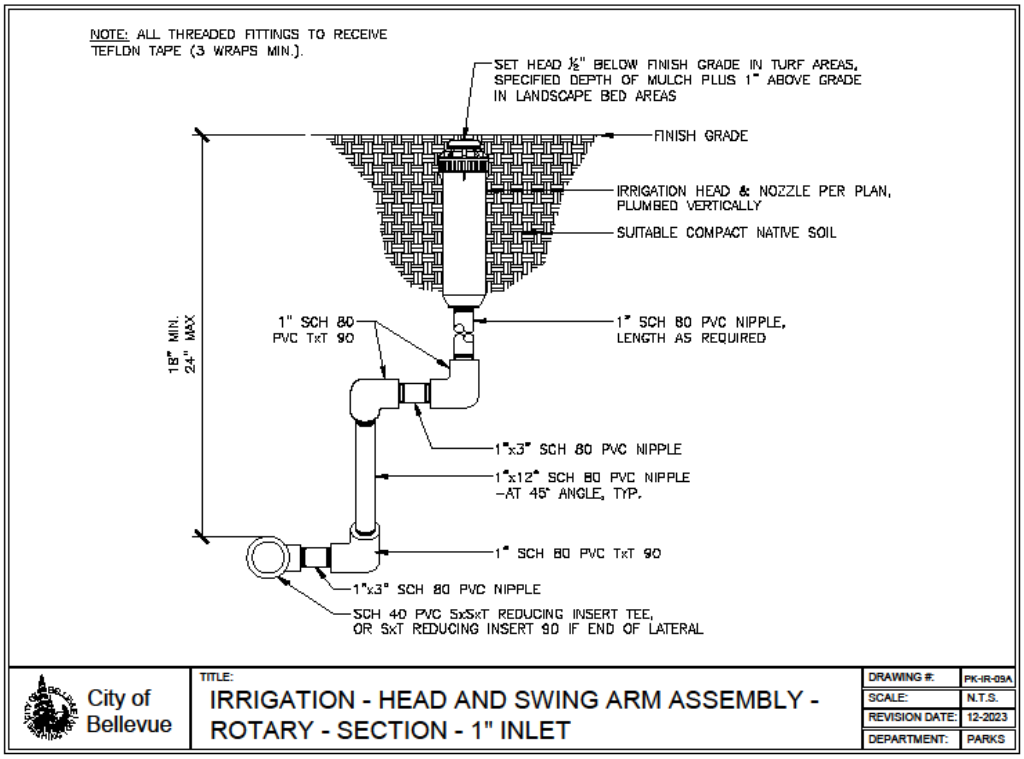


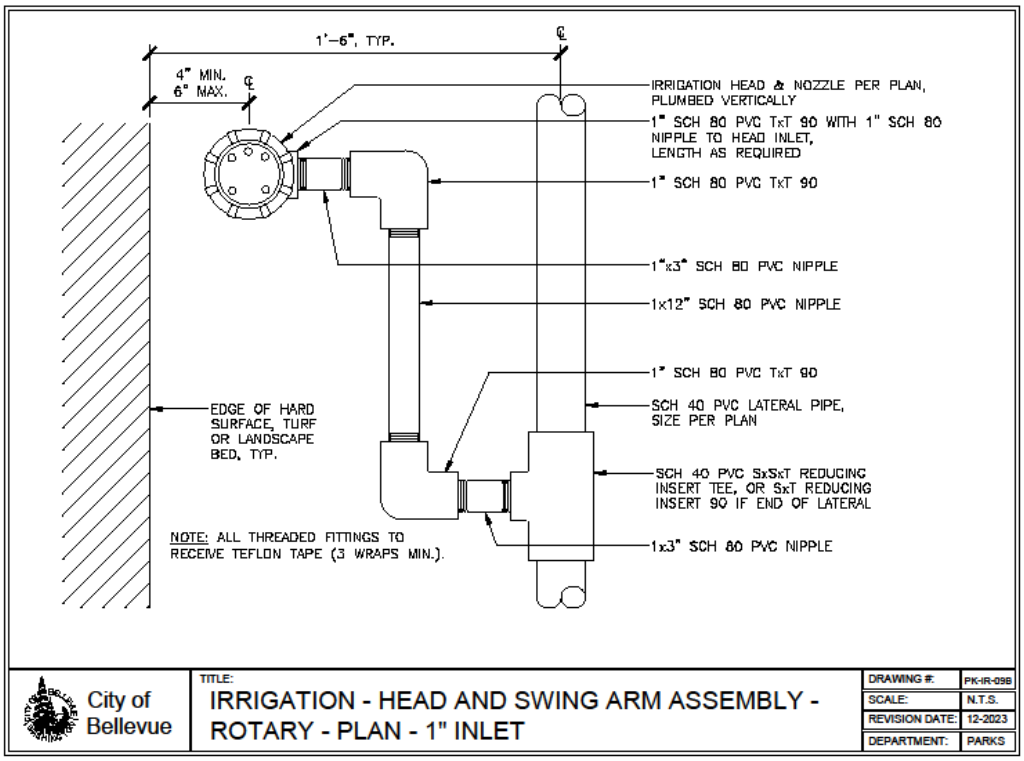
NOTES:
1. ASSEMBLY SIZE DETERMINED BY VALVE INLET SIZE.
2. ALL THREADED FITTINGS TO RECEIVE TEFLON TAPE (3 WRAPS MIN.).
3. ALL VALVES TO RECEIVE CHRISTY'S 2¼"x2¾" YELLOW I.D. TAGS WITH BLACK LETTERS (BOTH SIDES) WITH CONTROLLER STATION NUMBER, OR APPROVED EQUAL.

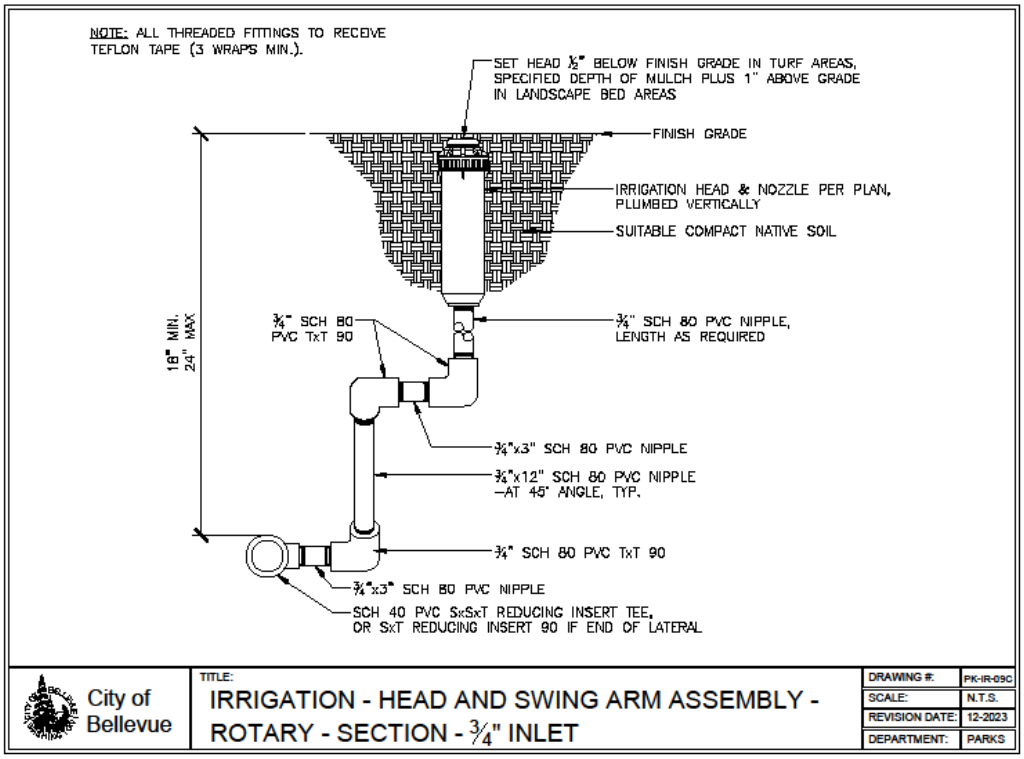
City of Bellevue

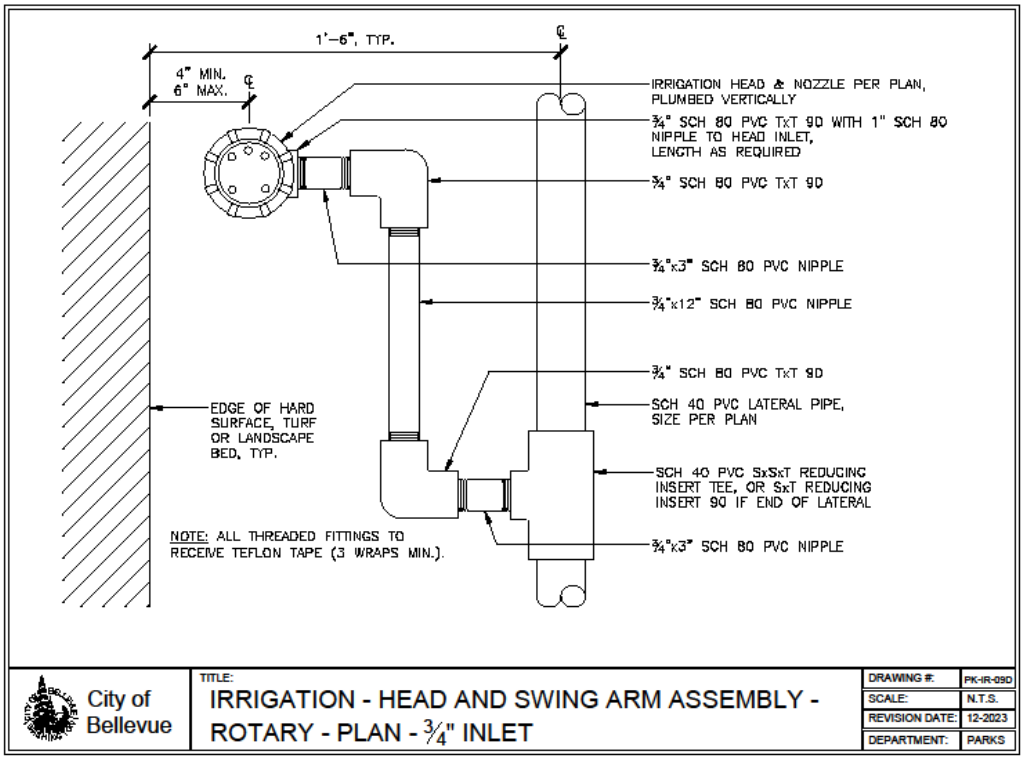
TITLE: IRRIGATION - AUTOMATIC CONTROL VALVE ASSEMBLY - WITH DC LATCHING SOLENOID - DRIP

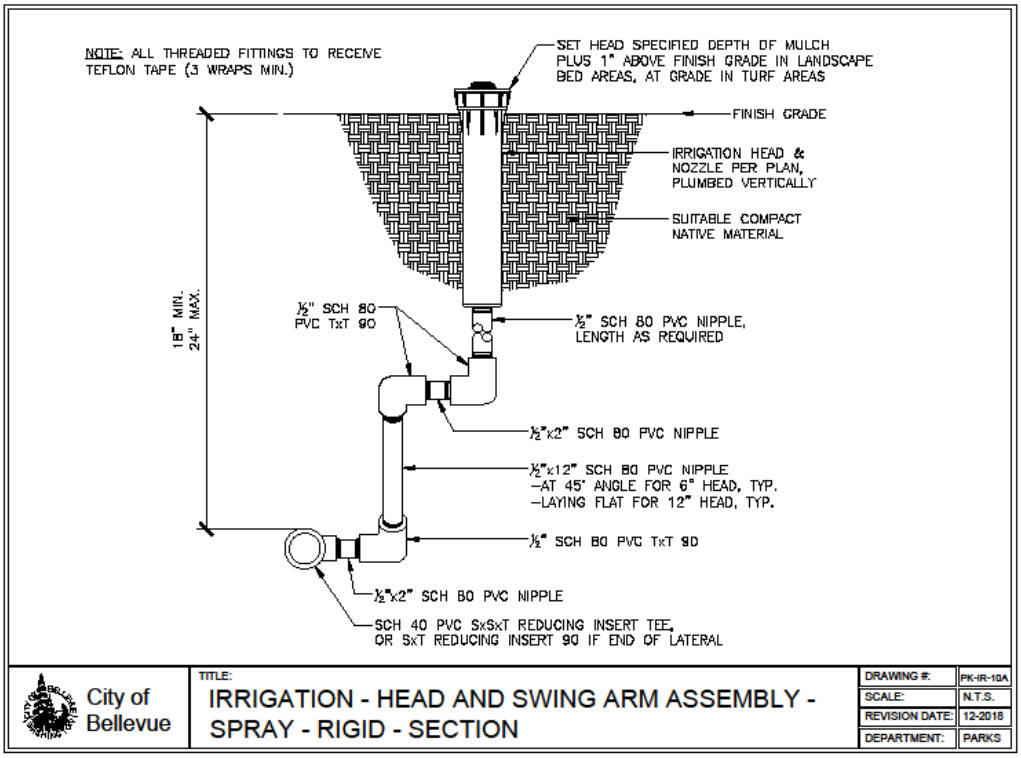
DRAWING #:	PK-IR-08F
SCALE:	N.T.S.
REVISION DATE:	01-2021
DEPARTMENT:	PARKS

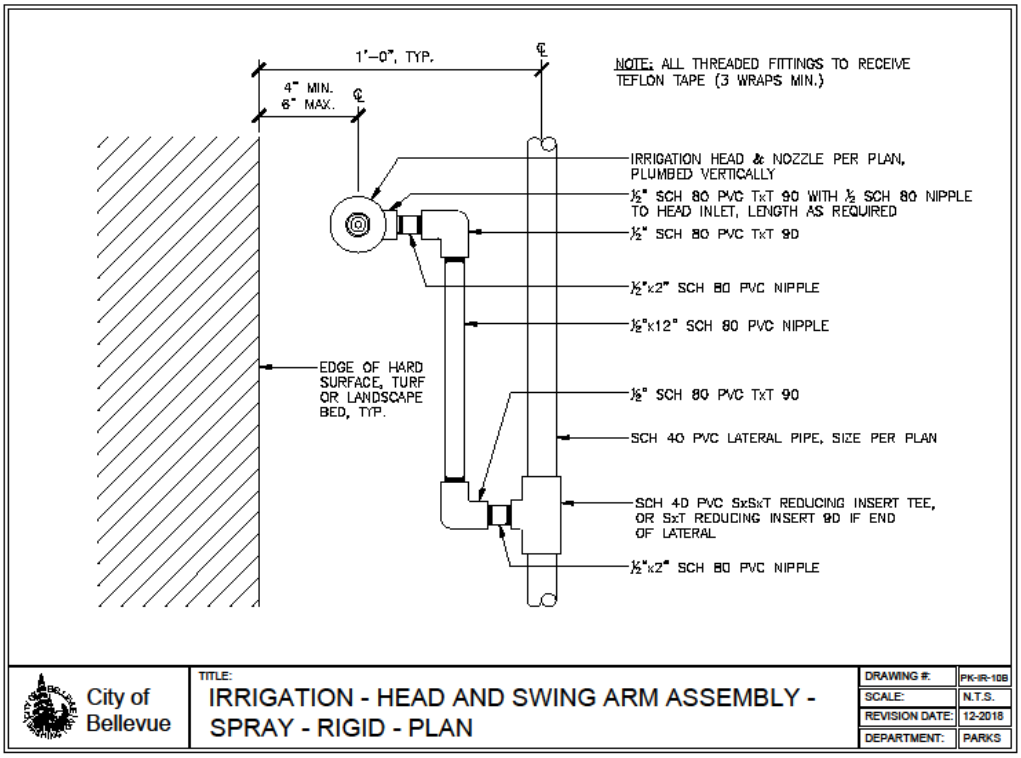

NOTE: ALL THREADED FITTINGS TO RECEIVE TEFLON TAPE (3 WRAPS MIN.).
SET HEAD ½" BELOW FINISH GRADE IN TURF AREAS, SPECIFIED DEPTH OF MULCH PLUS 1" ABOVE GRADE IN LANDSCAPE BED AREAS
FINISH GRADE
IRRIGATION HEAD & NOZZLE PER PLAN, PLUMBED VERTICALLY
SUITABLE COMPACT NATIVE SOIL
18" MIN. 24" MAX
1" SCH 80 PVC TxT 90
1" SCH 80 PVC NIPPLE, LENGTH AS REQUIRED
1"x3" SCH 80 PVC NIPPLE
1"x12" SCH 80 PVC NIPPLE -AT 45° ANGLE, TYP.
1" SCH 80 PVC TxT 90
1"x3" SCH 80 PVC NIPPLE
SCH 40 PVC SxSxT REDUCING INSERT TEE, OR SxT REDUCING INSERT 90 IF END OF LATERAL
City of Bellevue
TITLE:
IRRIGATION - HEAD AND SWING ARM ASSEMBLY - ROTARY - SECTION - 1" INLET
DRAWING #: PK-IR-09A
SCALE: N.T.S.
REVISION DATE: 12-2023
DEPARTMENT: PARKS

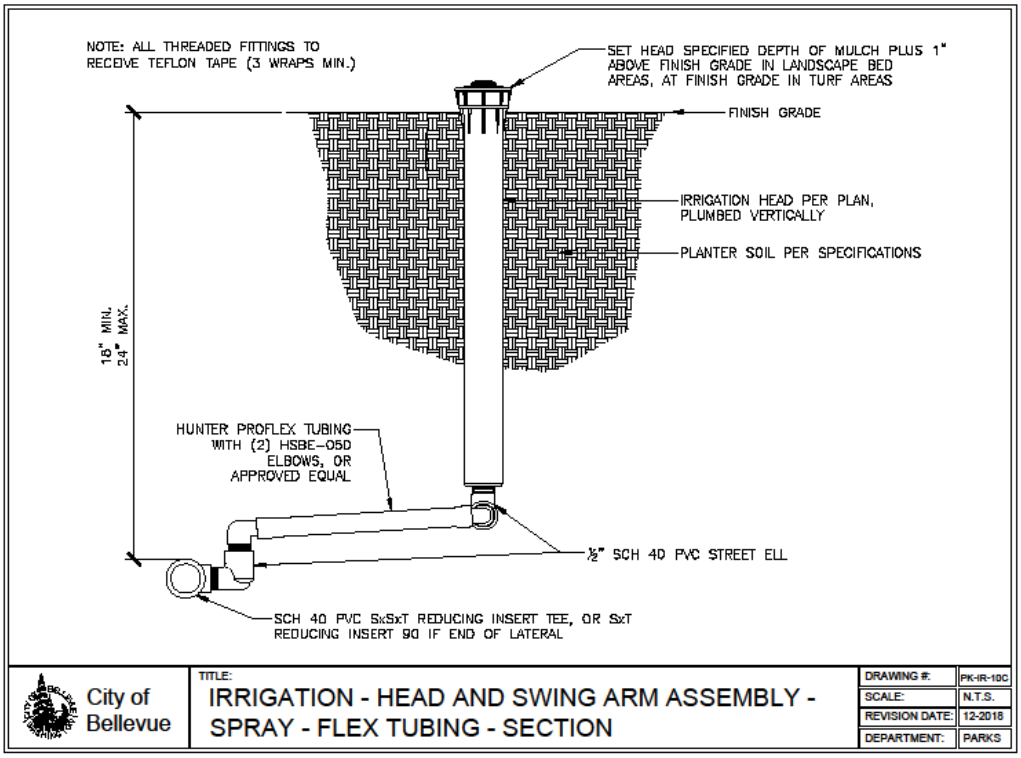

1'-6", TYP.
4" MIN. 6" MAX.
IRRIGATION HEAD & NOZZLE PER PLAN, PLUMBED VERTICALLY
1" SCH 80 PVC TxT 90 WITH 1" SCH 80 NIPPLE TO HEAD INLET, LENGTH AS REQUIRED
1" SCH 80 PVC TxT 90
1"x3" SCH 80 PVC NIPPLE
1x12" SCH 80 PVC NIPPLE
1" SCH 80 PVC TxT 90
SCH 40 PVC LATERAL PIPE, SIZE PER PLAN
EDGE OF HARD SURFACE, TURF OR LANDSCAPE BED, TYP.
SCH 40 PVC SxSxT REDUCING INSERT TEE, OR SxT REDUCING INSERT 90 IF END OF LATERAL
NOTE: ALL THREADED FITTINGS TO RECEIVE TEFLON TAPE (3 WRAPS MIN.).
1x3" SCH 80 PVC NIPPLE
City of Bellevue
TITLE:
IRRIGATION - HEAD AND SWING ARM ASSEMBLY - ROTARY - PLAN - 1" INLET
DRAWING #: PK-IR-09B
SCALE: N.T.S.
REVISION DATE: 12-2023
DEPARTMENT: PARKS

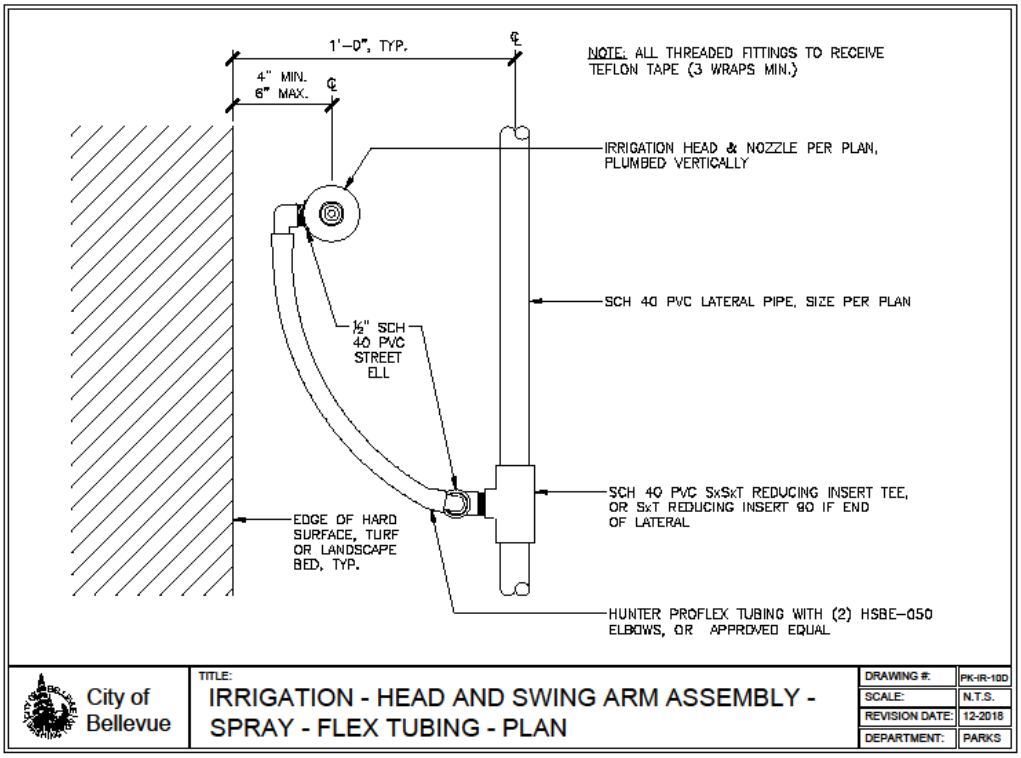

NOTE: ALL THREADED FITTINGS TO RECEIVE TEFLON TAPE (3 WRAPS MIN.).
SET HEAD ½" BELOW FINISH GRADE IN TURF AREAS, SPECIFIED DEPTH OF MULCH PLUS 1" ABOVE GRADE IN LANDSCAPE BED AREAS
FINISH GRADE
IRRIGATION HEAD & NOZZLE PER PLAN, PLUMBED VERTICALLY
SUITABLE COMPACT NATIVE SOIL
18" MIN. 24" MAX
¾" SCH 80 PVC TxT 90
¾" SCH 80 PVC NIPPLE, LENGTH AS REQUIRED
¾"x3" SCH 80 PVC NIPPLE
¾"x12" SCH 80 PVC NIPPLE –AT 45° ANGLE, TYP.
¾" SCH 80 PVC TxT 90
¾"x3" SCH 80 PVC NIPPLE
SCH 40 PVC SxSxT REDUCING INSERT TEE, OR SxT REDUCING INSERT 90 IF END OF LATERAL
City of Bellevue
TITLE:
IRRIGATION - HEAD AND SWING ARM ASSEMBLY - ROTARY - SECTION - ¾" INLET
DRAWING #: PK-IR-09C
SCALE: N.T.S.
REVISION DATE: 12-2023
DEPARTMENT: PARKS

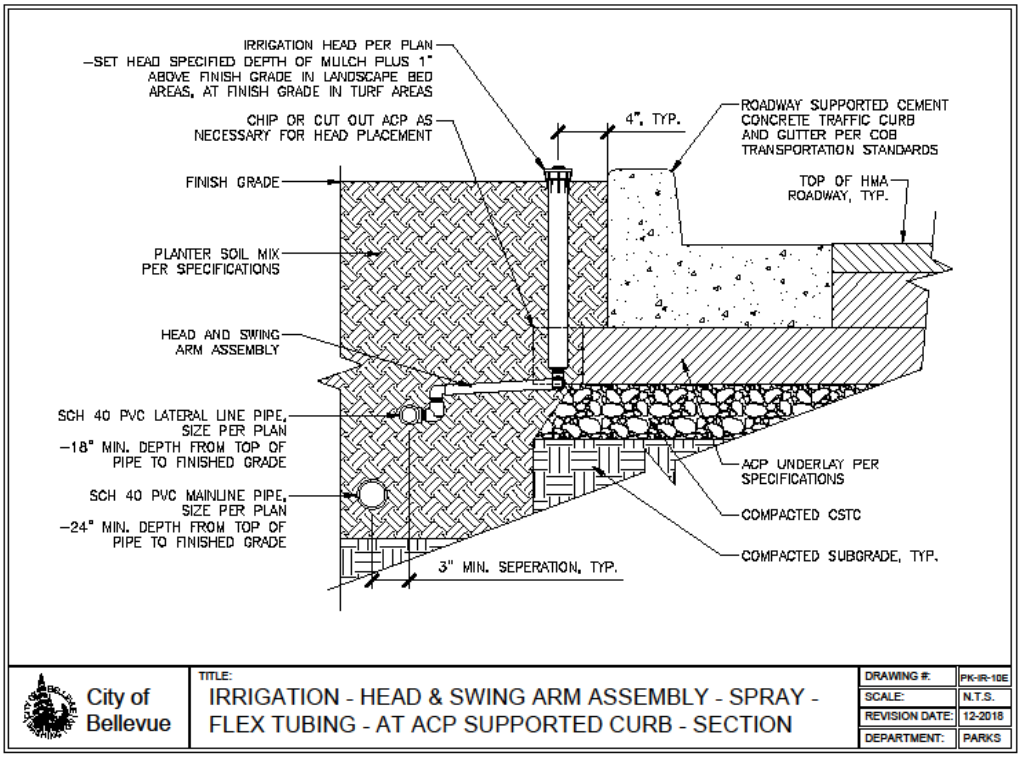

1'–6", TYP.
4" MIN. 6" MAX.
IRRIGATION HEAD & NOZZLE PER PLAN, PLUMBED VERTICALLY
¾" SCH 80 PVC TxT 90 WITH 1" SCH 80 NIPPLE TO HEAD INLET, LENGTH AS REQUIRED
¾" SCH 80 PVC TxT 90
¾"x3" SCH 80 PVC NIPPLE
¾"x12" SCH 80 PVC NIPPLE
¾" SCH 80 PVC TxT 90
SCH 40 PVC LATERAL PIPE, SIZE PER PLAN
EDGE OF HARD SURFACE, TURF OR LANDSCAPE BED, TYP.
SCH 40 PVC SxSxT REDUCING INSERT TEE, OR SxT REDUCING INSERT 90 IF END OF LATERAL
NOTE: ALL THREADED FITTINGS TO RECEIVE TEFLON TAPE (3 WRAPS MIN.).
¾"x3" SCH 80 PVC NIPPLE
City of Bellevue
TITLE:
IRRIGATION - HEAD AND SWING ARM ASSEMBLY - ROTARY - PLAN - ¾" INLET
DRAWING #: PK-IR-09D
SCALE: N.T.S.
REVISION DATE: 12-2023
DEPARTMENT: PARKS

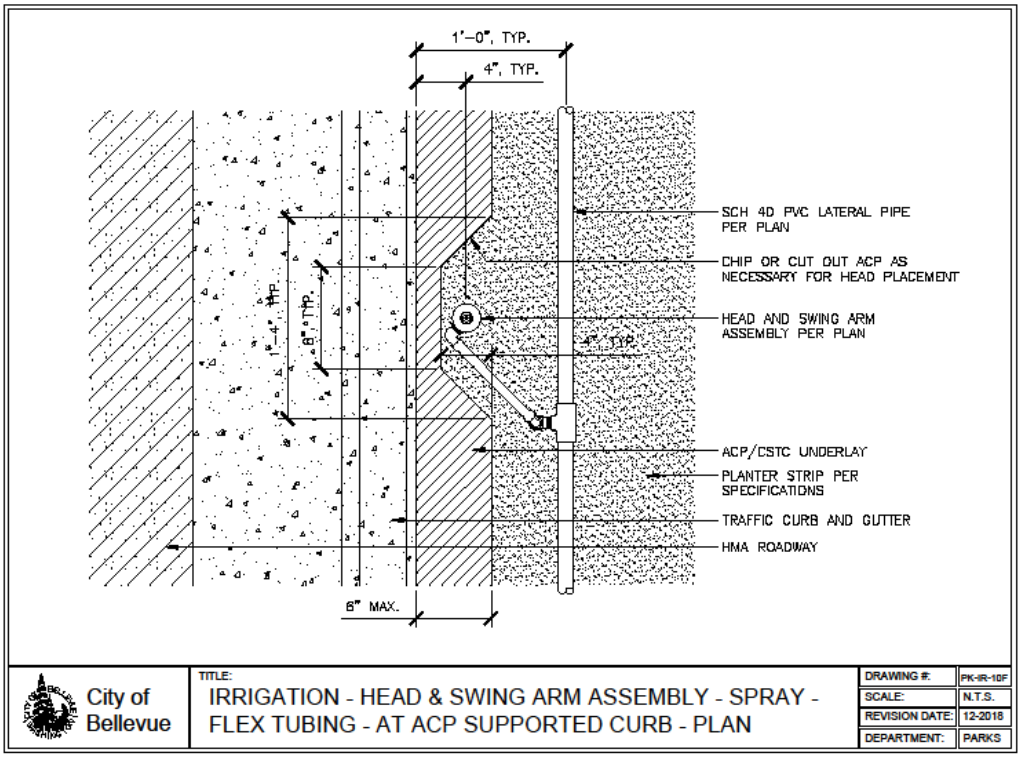

NOTE: ALL THREADED FITTINGS TO RECEIVE TEFLON TAPE (3 WRAPS MIN.)
SET HEAD SPECIFIED DEPTH OF MULCH PLUS 1" ABOVE FINISH GRADE IN LANDSCAPE BED AREAS, AT GRADE IN TURF AREAS
FINISH GRADE
IRRIGATION HEAD & NOZZLE PER PLAN, PLUMBED VERTICALLY
SUITABLE COMPACT NATIVE MATERIAL
18" MIN. 24" MAX.
½" SCH 80 PVC TxT 90
½" SCH 80 PVC NIPPLE, LENGTH AS REQUIRED
½"x2" SCH 80 PVC NIPPLE
½"x12" SCH 80 PVC NIPPLE
–AT 45° ANGLE FOR 6" HEAD, TYP.
–LAYING FLAT FOR 12" HEAD, TYP.
½" SCH 80 PVC TxT 90
½"x2" SCH 80 PVC NIPPLE
SCH 40 PVC SxSxT REDUCING INSERT TEE, OR SxT REDUCING INSERT 90 IF END OF LATERAL
City of Bellevue
TITLE:
IRRIGATION - HEAD AND SWING ARM ASSEMBLY - SPRAY - RIGID - SECTION
DRAWING #: PK-IR-10A
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS

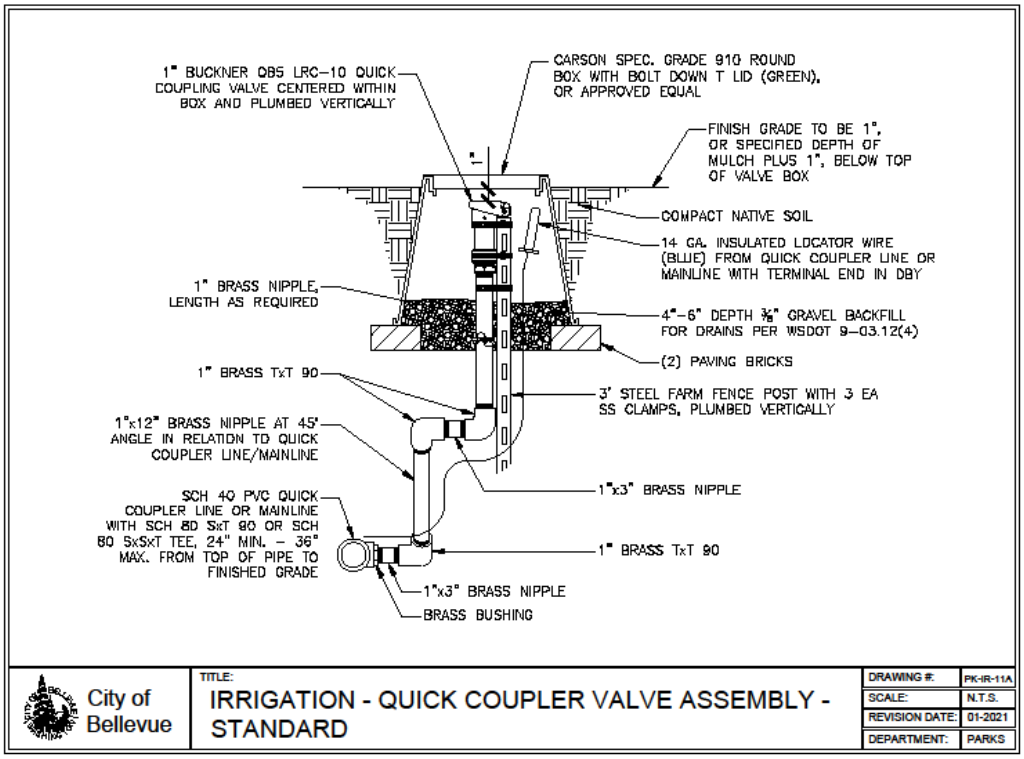

1'–0", TYP.
4" MIN. 6" MAX.
NOTE: ALL THREADED FITTINGS TO RECEIVE TEFLON TAPE (3 WRAPS MIN.)
IRRIGATION HEAD & NOZZLE PER PLAN, PLUMBED VERTICALLY
½" SCH 80 PVC TxT 90 WITH ½ SCH 80 NIPPLE TO HEAD INLET, LENGTH AS REQUIRED
½" SCH 80 PVC TxT 90
½"x2" SCH 80 PVC NIPPLE
½"x12" SCH 80 PVC NIPPLE
EDGE OF HARD SURFACE, TURF OR LANDSCAPE BED, TYP.
½" SCH 80 PVC TxT 90
SCH 40 PVC LATERAL PIPE, SIZE PER PLAN
SCH 40 PVC SxSxT REDUCING INSERT TEE, OR SxT REDUCING INSERT 90 IF END OF LATERAL
½"x2" SCH 80 PVC NIPPLE
City of Bellevue
TITLE:
IRRIGATION - HEAD AND SWING ARM ASSEMBLY - SPRAY - RIGID - PLAN
DRAWING #: PK-IR-10B
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS

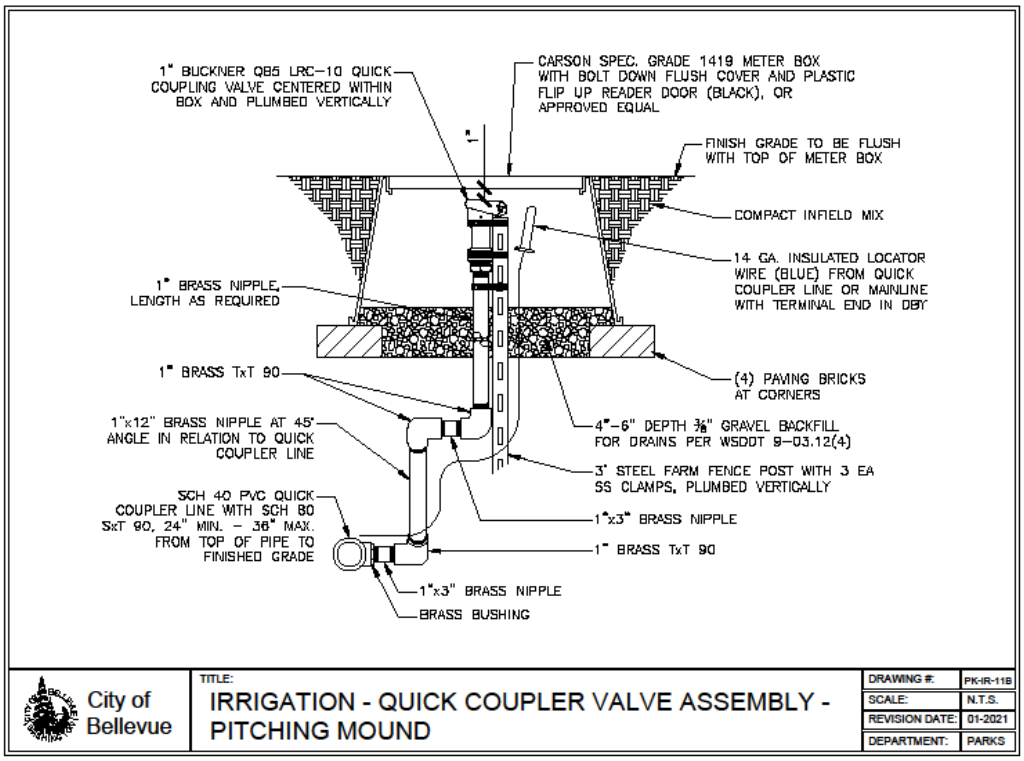

NOTE: ALL THREADED FITTINGS TO RECEIVE TEFLON TAPE (3 WRAPS MIN.)
SET HEAD SPECIFIED DEPTH OF MULCH PLUS 1" ABOVE FINISH GRADE IN LANDSCAPE BED AREAS, AT FINISH GRADE IN TURF AREAS
FINISH GRADE
IRRIGATION HEAD PER PLAN, PLUMBED VERTICALLY
PLANTER SOIL PER SPECIFICATIONS
18" MIN. 24" MAX.
HUNTER PROFLEX TUBING WITH (2) HSBE-050 ELBOWS, OR APPROVED EQUAL
½" SCH 40 PVC STREET ELL
SCH 40 PVC SxSxT REDUCING INSERT TEE, OR SxT REDUCING INSERT 90 IF END OF LATERAL
City of Bellevue
TITLE:
IRRIGATION - HEAD AND SWING ARM ASSEMBLY - SPRAY - FLEX TUBING - SECTION
DRAWING #: PK-IR-10C
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS

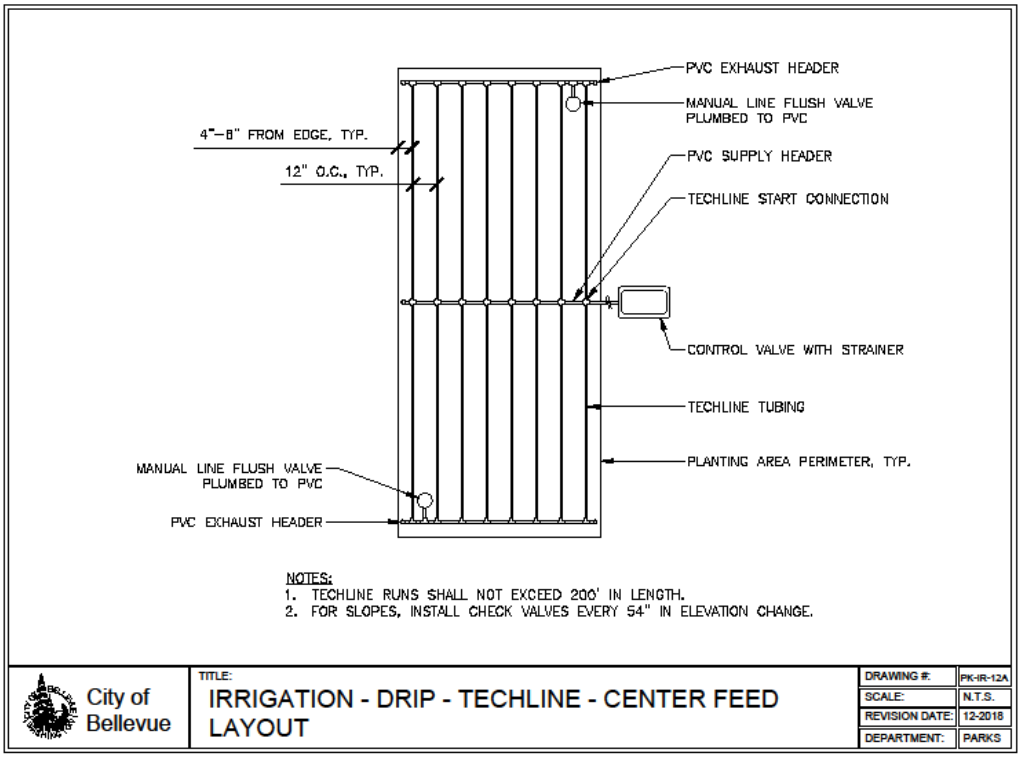

1'-0", TYP.
4" MIN. 6" MAX.
NOTE: ALL THREADED FITTINGS TO RECEIVE TEFLON TAPE (3 WRAPS MIN.)
IRRIGATION HEAD & NOZZLE PER PLAN, PLUMBED VERTICALLY
SCH 40 PVC LATERAL PIPE, SIZE PER PLAN
½" SCH 40 PVC STREET ELL
SCH 40 PVC SxSxT REDUCING INSERT TEE, OR SxT REDUCING INSERT 90 IF END OF LATERAL
EDGE OF HARD SURFACE, TURF OR LANDSCAPE BED, TYP.
HUNTER PROFLEX TUBING WITH (2) HSBE-050 ELBOWS, OR APPROVED EQUAL
City of Bellevue
TITLE:
IRRIGATION - HEAD AND SWING ARM ASSEMBLY - SPRAY - FLEX TUBING - PLAN
DRAWING #: PK-IR-10D
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS

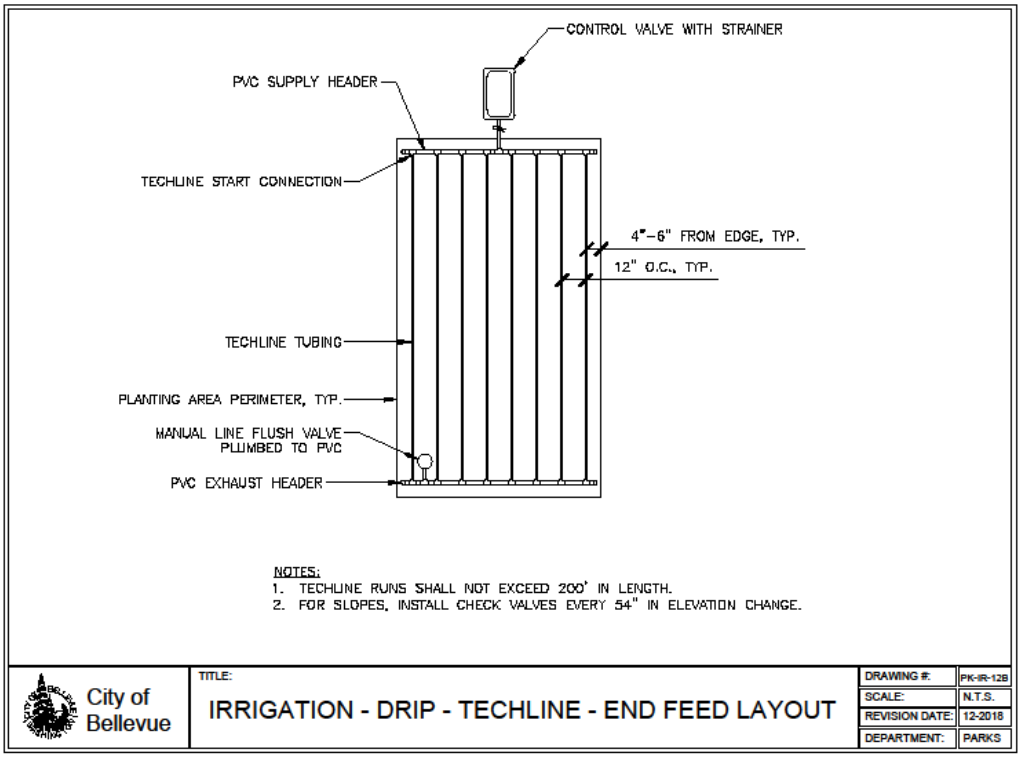

IRRIGATION HEAD PER PLAN
–SET HEAD SPECIFIED DEPTH OF MULCH PLUS 1" ABOVE FINISH GRADE IN LANDSCAPE BED AREAS, AT FINISH GRADE IN TURF AREAS
CHIP OR CUT OUT ACP AS NECESSARY FOR HEAD PLACEMENT
FINISH GRADE
PLANTER SOIL MIX PER SPECIFICATIONS
HEAD AND SWING ARM ASSEMBLY
SCH 40 PVC LATERAL LINE PIPE, SIZE PER PLAN –18" MIN. DEPTH FROM TOP OF PIPE TO FINISHED GRADE
SCH 40 PVC MAINLINE PIPE, SIZE PER PLAN –24" MIN. DEPTH FROM TOP OF PIPE TO FINISHED GRADE
4", TYP.
ROADWAY SUPPORTED CEMENT CONCRETE TRAFFIC CURB AND GUTTER PER COB TRANSPORTATION STANDARDS
TOP OF HMA ROADWAY, TYP.
ACP UNDERLAY PER SPECIFICATIONS
COMPACTED CSTC
COMPACTED SUBGRADE, TYP.
3" MIN. SEPERATION, TYP.
City of Bellevue
TITLE:
IRRIGATION - HEAD & SWING ARM ASSEMBLY - SPRAY - FLEX TUBING - AT ACP SUPPORTED CURB - SECTION
DRAWING #: PK-IR-10E
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS

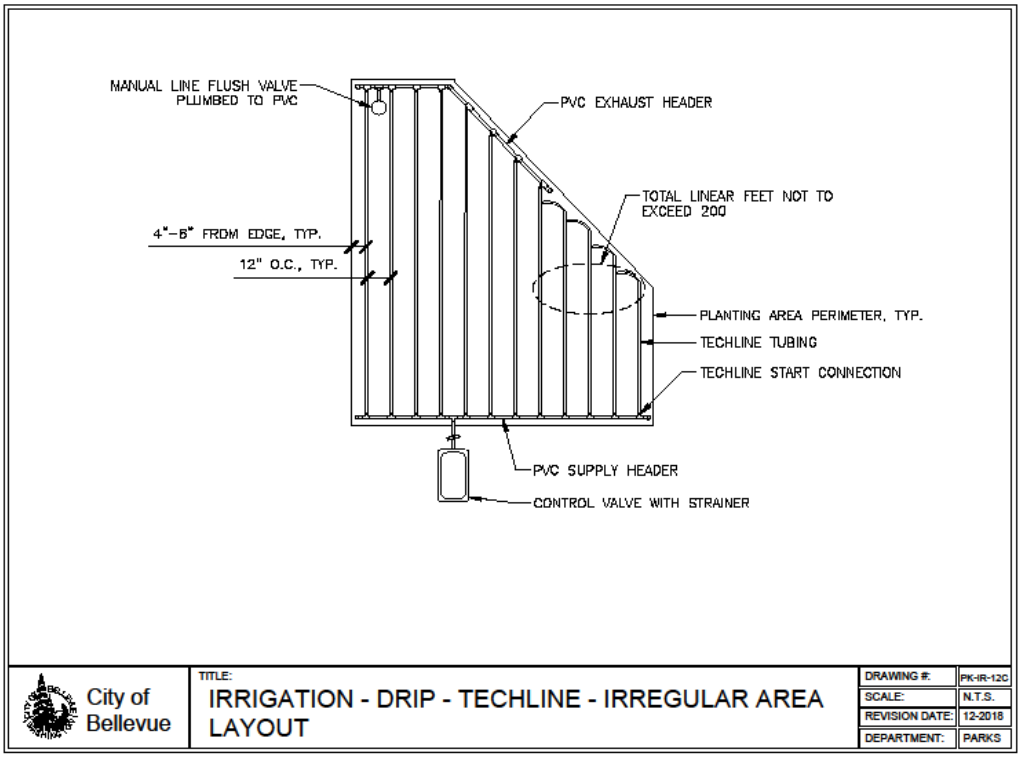

1'–0", TYP.
4", TYP.
1'–4", TYP.
8", TYP.
4" TYP.
SCH 40 PVC LATERAL PIPE PER PLAN
CHIP OR CUT OUT ACP AS NECESSARY FOR HEAD PLACEMENT
HEAD AND SWING ARM ASSEMBLY PER PLAN
ACP/CSTC UNDERLAY
PLANTER STRIP PER SPECIFICATIONS
TRAFFIC CURB AND GUTTER
HMA ROADWAY
8" MAX.
City of Bellevue
TITLE:
IRRIGATION - HEAD & SWING ARM ASSEMBLY - SPRAY - FLEX TUBING - AT ACP SUPPORTED CURB - PLAN
DRAWING #: PK-IR-10F
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS

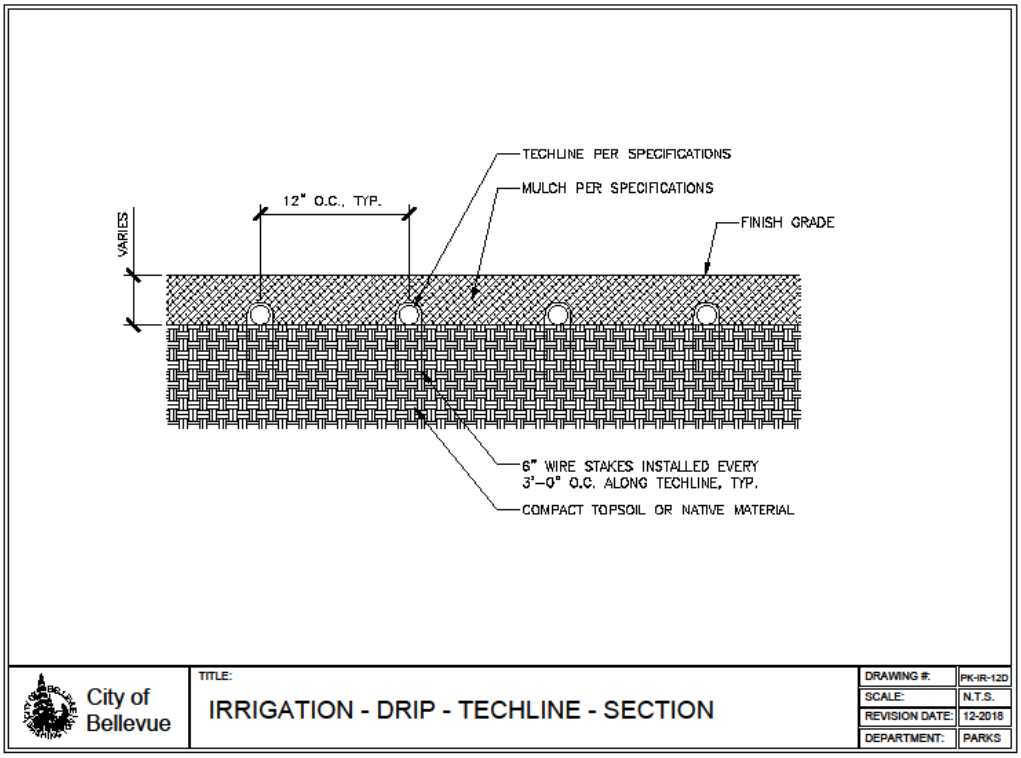

1" BUCKNER QB5 LRC-10 QUICK COUPLING VALVE CENTERED WITHIN BOX AND PLUMBED VERTICALLY
CARSON SPEC. GRADE 910 ROUND BOX WITH BOLT DOWN T LID (GREEN), OR APPROVED EQUAL
FINISH GRADE TO BE 1", OR SPECIFIED DEPTH OF MULCH PLUS 1", BELOW TOP OF VALVE BOX
COMPACT NATIVE SOIL
14 GA. INSULATED LOCATOR WIRE (BLUE) FROM QUICK COUPLER LINE OR MAINLINE WITH TERMINAL END IN DBY
1" BRASS NIPPLE, LENGTH AS REQUIRED
4"-6" DEPTH 3/8" GRAVEL BACKFILL FOR DRAINS PER WSDOT 9-03.12(4)
(2) PAVING BRICKS
1" BRASS TxT 90
3' STEEL FARM FENCE POST WITH 3 EA SS CLAMPS, PLUMBED VERTICALLY
1"x12" BRASS NIPPLE AT 45° ANGLE IN RELATION TO QUICK COUPLER LINE/MAINLINE
1"x3" BRASS NIPPLE
SCH 40 PVC QUICK COUPLER LINE OR MAINLINE WITH SCH 80 SxT 90 OR SCH 80 SxSxT TEE, 24" MIN. - 36" MAX. FROM TOP OF PIPE TO FINISHED GRADE
1" BRASS TxT 90
1"x3" BRASS NIPPLE
BRASS BUSHING
City of Bellevue
TITLE:
IRRIGATION - QUICK COUPLER VALVE ASSEMBLY - STANDARD
DRAWING #: PK-IR-11A
SCALE: N.T.S.
REVISION DATE: 01-2021
DEPARTMENT: PARKS

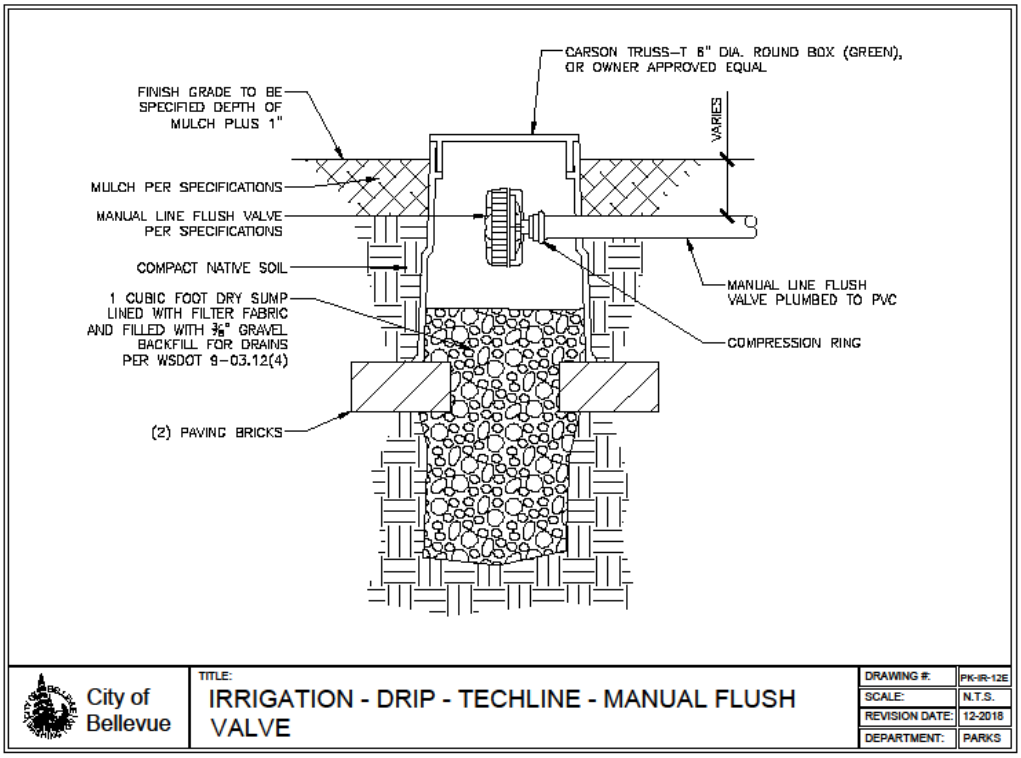

1" BUCKNER QB5 LRC-10 QUICK COUPLING VALVE CENTERED WITHIN BOX AND PLUMBED VERTICALLY
CARSON SPEC. GRADE 1419 METER BOX WITH BOLT DOWN FLUSH COVER AND PLASTIC FLIP UP READER DOOR (BLACK), OR APPROVED EQUAL
FINISH GRADE TO BE FLUSH WITH TOP OF METER BOX
COMPACT INFIELD MIX
14 GA. INSULATED LOCATOR WIRE (BLUE) FROM QUICK COUPLER LINE OR MAINLINE WITH TERMINAL END IN DBY
1" BRASS NIPPLE, LENGTH AS REQUIRED
1" BRASS TxT 90
(4) PAVING BRICKS AT CORNERS
1"x12" BRASS NIPPLE AT 45° ANGLE IN RELATION TO QUICK COUPLER LINE
4"-6" DEPTH 3/8" GRAVEL BACKFILL FOR DRAINS PER WSDOT 9-03.12(4)
3' STEEL FARM FENCE POST WITH 3 EA SS CLAMPS, PLUMBED VERTICALLY
SCH 40 PVC QUICK COUPLER LINE WITH SCH 80 SxT 90, 24" MIN. - 36" MAX. FROM TOP OF PIPE TO FINISHED GRADE
1"x3" BRASS NIPPLE
1" BRASS TxT 90
1"x3" BRASS NIPPLE
BRASS BUSHING
City of Bellevue
TITLE:
IRRIGATION - QUICK COUPLER VALVE ASSEMBLY - PITCHING MOUND
DRAWING #: PK-IR-11B
SCALE: N.T.S.
REVISION DATE: 01-2021
DEPARTMENT: PARKS

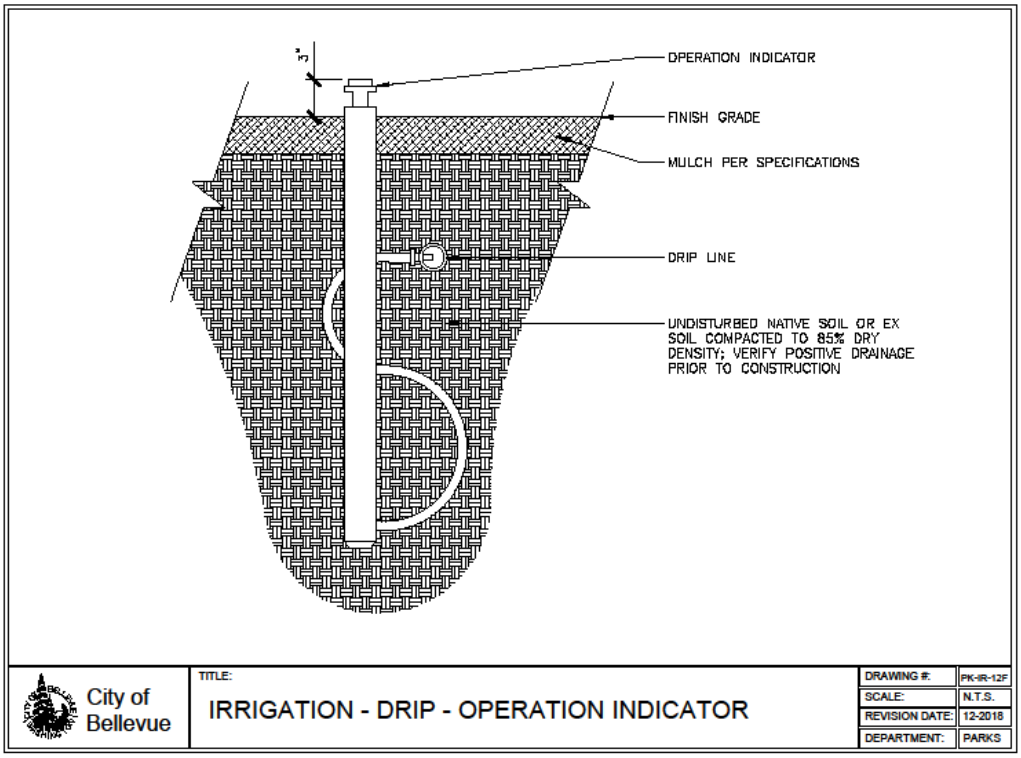

PVC EXHAUST HEADER
MANUAL LINE FLUSH VALVE PLUMBED TO PVC
4"–8" FROM EDGE, TYP.
12" O.C., TYP.
PVC SUPPLY HEADER
TECHLINE START CONNECTION
CONTROL VALVE WITH STRAINER
TECHLINE TUBING
PLANTING AREA PERIMETER, TYP.
MANUAL LINE FLUSH VALVE PLUMBED TO PVC
PVC EXHAUST HEADER
NOTES:
1. TECHLINE RUNS SHALL NOT EXCEED 200' IN LENGTH.
2. FOR SLOPES, INSTALL CHECK VALVES EVERY 54" IN ELEVATION CHANGE.
City of Bellevue
TITLE:
IRRIGATION - DRIP - TECHLINE - CENTER FEED LAYOUT
DRAWING #: PK-IR-12A
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS

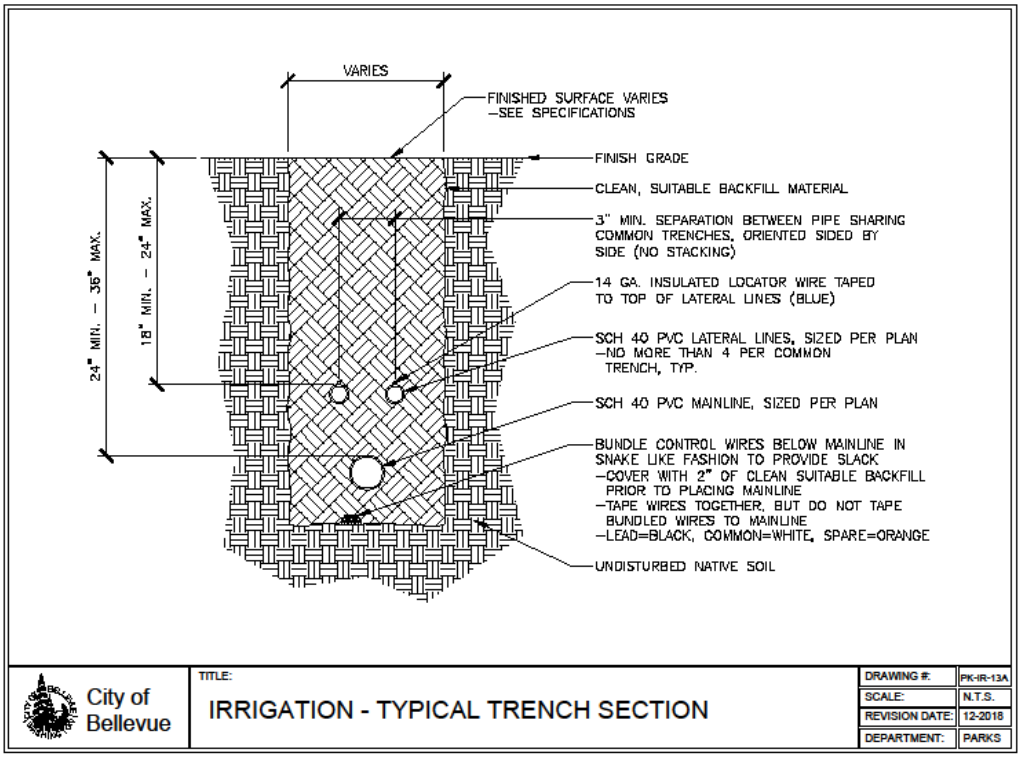

CONTROL VALVE WITH STRAINER
PVC SUPPLY HEADER
TECHLINE START CONNECTION
4"–6" FROM EDGE, TYP.
12" O.C., TYP.
TECHLINE TUBING
PLANTING AREA PERIMETER, TYP.
MANUAL LINE FLUSH VALVE PLUMBED TO PVC
PVC EXHAUST HEADER
NOTES:
1. TECHLINE RUNS SHALL NOT EXCEED 200' IN LENGTH.
2. FOR SLOPES, INSTALL CHECK VALVES EVERY 54" IN ELEVATION CHANGE.
City of Bellevue
TITLE:
IRRIGATION - DRIP - TECHLINE - END FEED LAYOUT
DRAWING #: PK-IR-12B
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS

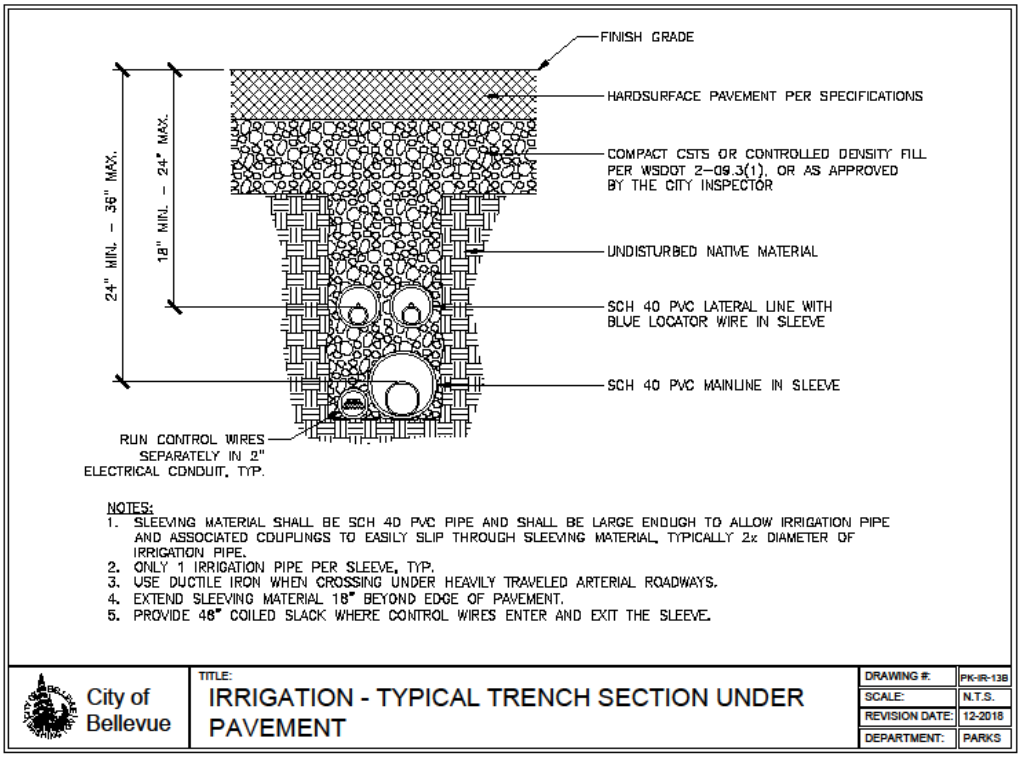

MANUAL LINE FLUSH VALVE PLUMBED TO PVC
PVC EXHAUST HEADER
TOTAL LINEAR FEET NOT TO EXCEED 200
4"–6" FROM EDGE, TYP.
12" O.C., TYP.
PLANTING AREA PERIMETER, TYP.
TECHLINE TUBING
TECHLINE START CONNECTION
PVC SUPPLY HEADER
CONTROL VALVE WITH STRAINER
City of Bellevue
TITLE:
IRRIGATION - DRIP - TECHLINE - IRREGULAR AREA LAYOUT
DRAWING #: PK-IR-12C
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS

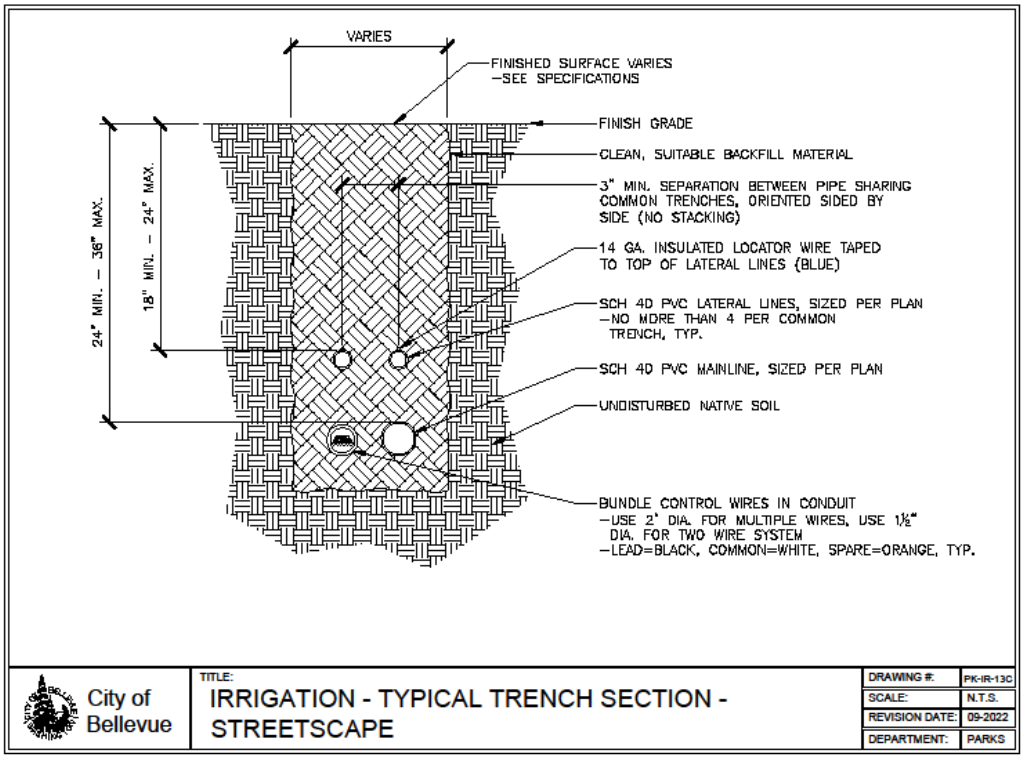

TECHLINE PER SPECIFICATIONS
MULCH PER SPECIFICATIONS
12" O.C., TYP.
FINISH GRADE
VARIES
6" WIRE STAKES INSTALLED EVERY 3'–0" O.C. ALONG TECHLINE, TYP.
COMPACT TOPSOIL OR NATIVE MATERIAL
City of Bellevue
TITLE:
IRRIGATION - DRIP - TECHLINE - SECTION
DRAWING #: PK-IR-12D
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS


CARSON TRUSS–T 8" DIA. ROUND BOX (GREEN), OR OWNER APPROVED EQUAL
FINISH GRADE TO BE SPECIFIED DEPTH OF MULCH PLUS 1"
VARIES
MULCH PER SPECIFICATIONS
MANUAL LINE FLUSH VALVE PER SPECIFICATIONS
COMPACT NATIVE SOIL
1 CUBIC FOOT DRY SUMP LINED WITH FILTER FABRIC AND FILLED WITH 3/8" GRAVEL BACKFILL FOR DRAINS PER WSDOT 9-03.12(4)
(2) PAVING BRICKS
MANUAL LINE FLUSH VALVE PLUMBED TO PVC
COMPRESSION RING
City of Bellevue
TITLE:
IRRIGATION - DRIP - TECHLINE - MANUAL FLUSH VALVE
DRAWING #: PK-IR-12E
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS


3"
OPERATION INDICATOR
FINISH GRADE
MULCH PER SPECIFICATIONS
DRIP LINE
UNDISTURBED NATIVE SOIL OR EX SOIL COMPACTED TO 85% DRY DENSITY; VERIFY POSITIVE DRAINAGE PRIOR TO CONSTRUCTION
City of Bellevue
TITLE:
IRRIGATION - DRIP - OPERATION INDICATOR
DRAWING #: PK-IR-12F
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS


VARIES
FINISHED SURFACE VARIES
–SEE SPECIFICATIONS
FINISH GRADE
CLEAN, SUITABLE BACKFILL MATERIAL
3" MIN. SEPARATION BETWEEN PIPE SHARING COMMON TRENCHES, ORIENTED SIDED BY SIDE (NO STACKING)
14 GA. INSULATED LOCATOR WIRE TAPED TO TOP OF LATERAL LINES (BLUE)
SCH 40 PVC LATERAL LINES, SIZED PER PLAN
–NO MORE THAN 4 PER COMMON TRENCH, TYP.
SCH 40 PVC MAINLINE, SIZED PER PLAN
BUNDLE CONTROL WIRES BELOW MAINLINE IN SNAKE LIKE FASHION TO PROVIDE SLACK
–COVER WITH 2" OF CLEAN SUITABLE BACKFILL PRIOR TO PLACING MAINLINE
–TAPE WIRES TOGETHER, BUT DO NOT TAPE BUNDLED WIRES TO MAINLINE
–LEAD=BLACK, COMMON=WHITE, SPARE=ORANGE
UNDISTURBED NATIVE SOIL
24" MIN. – 36" MAX.
18" MIN. – 24" MAX.
City of Bellevue
TITLE:
IRRIGATION - TYPICAL TRENCH SECTION
DRAWING #: PK-IR-13A
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS

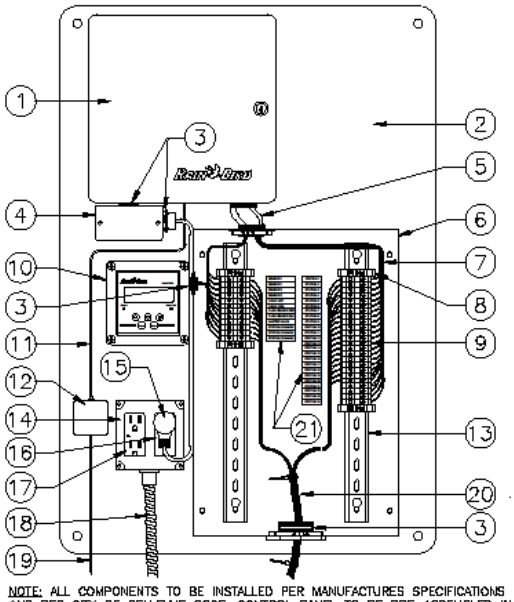

FINISH GRADE
HARDSURFACE PAVEMENT PER SPECIFICATIONS
COMPACT CSTS OR CONTROLLED DENSITY FILL PER WSDOT 2–09.3(1), OR AS APPROVED BY THE CITY INSPECTOR
UNDISTURBED NATIVE MATERIAL
SCH 40 PVC LATERAL LINE WITH BLUE LOCATOR WIRE IN SLEEVE
SCH 40 PVC MAINLINE IN SLEEVE
RUN CONTROL WIRES SEPARATELY IN 2" ELECTRICAL CONDUIT, TYP.
24" MIN. – 36" MAX.
18" MIN. – 24" MAX.
NOTES:
1. SLEEVING MATERIAL SHALL BE SCH 40 PVC PIPE AND SHALL BE LARGE ENOUGH TO ALLOW IRRIGATION PIPE AND ASSOCIATED COUPLINGS TO EASILY SLIP THROUGH SLEEVING MATERIAL, TYPICALLY 2x DIAMETER OF IRRIGATION PIPE.
2. ONLY 1 IRRIGATION PIPE PER SLEEVE, TYP.
3. USE DUCTILE IRON WHEN CROSSING UNDER HEAVILY TRAVELED ARTERIAL ROADWAYS.
4. EXTEND SLEEVING MATERIAL 18" BEYOND EDGE OF PAVEMENT.
5. PROVIDE 48" COILED SLACK WHERE CONTROL WIRES ENTER AND EXIT THE SLEEVE.
City of Bellevue
TITLE:
IRRIGATION - TYPICAL TRENCH SECTION UNDER PAVEMENT
DRAWING #: PK-IR-13B
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS



City of Bellevue

TITLE:
IRRIGATION - TYPICAL TRENCH SECTION - STREETSCAPE

DRAWING #:	PK-IR-13C
SCALE:	N.T.S.
REVISION DATE:	09-2022
DEPARTMENT:	PARKS



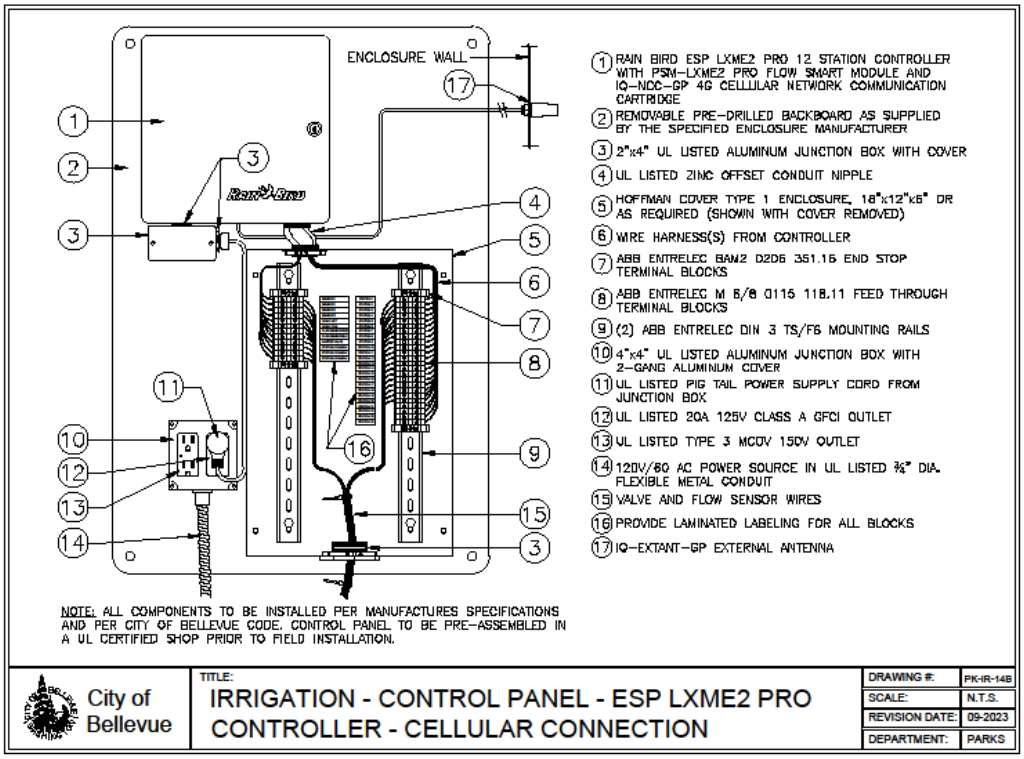
1. SPECIFIED RAIN BIRD ESP SITE CONTROLLER WITH MAXICOM INTERFACE BOARD
2. REMOVABLE PRE–DRILLED BACKBOARD AS SUPPLIED BY THE SPECIFIED ENCLOSURE MANUFACTURER
3. UL LISTED ZINC CONDUIT HUB OR NIPPLE
4. 2"x4" UL LISTED ALUMINUM JUNCTION BOX WITH COVER
5. UL LISTED ZINC OFFSET CONDUIT NIPPLE
6. HOFFMAN COVER TYPE 1 ENCLOSURE, 16"x12"x6" OR AS REQUIRED (SHOWN WITH COVER REMOVED)
7. WIRE HARNESS(S) FROM CONTROLLER
8. ABB ENTRELEC BAM2 0208 351.16 END STOP TERMINAL BLOCKS
9. ABB ENTRELEC M 8/8 0115 118.11 FEED THROUGH TERMINAL BLOCKS
10. RAIN BIRD PT3002 PULSE TRANSMITTER WITH LCD DISPLAY IN RAIN BIRD NEMACAB–NEMA ENCLOSURE
11. TELEPHONE LINE CORD TO CONTROLLER
12. RJ–11 PHONE JACK
13. (2) ABB ENTRELEC DIN 3 TS/F6 MOUNTING RAILS
14. 4"x4" UL LISTED ALUMINUM JUNCTION BOX WITH 2–GANG ALUMINUM COVER
15. UL LISTED PIG TAIL POWER SUPPLY CORD FROM JUNCTION BOX
16. UL LISTED 20A 125V CLASS A GFCI OUTLET
17. UL LISTED TYPE 3 MCOV 150V OUTLET
18. 120V/60 AC POWER SOURCE IN UL LISTED ¾" DIA. FLEXIBLE METAL CONDUIT
19. TELEPHONE WIRE FROM LAND LINE SOURCE
20. VALVE AND FLOW SENSOR WIRES
21. PROVIDE LAMINATED LABELING FOR ALL BLOCKS

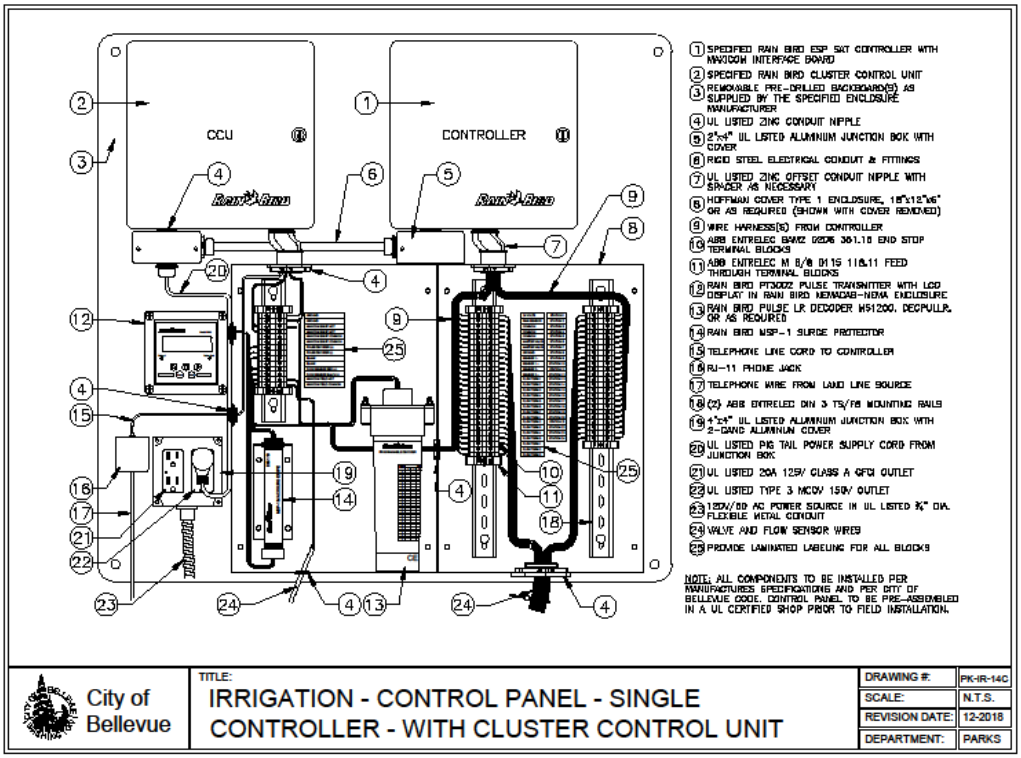
NOTE: ALL COMPONENTS TO BE INSTALLED PER MANUFACTURES SPECIFICATIONS AND PER CITY OF BELLEVUE CODE. CONTROL PANEL TO BE PRE–ASSEMBLED IN A UL CERTIFIED SHOP PRIOR TO FIELD INSTALLATION.

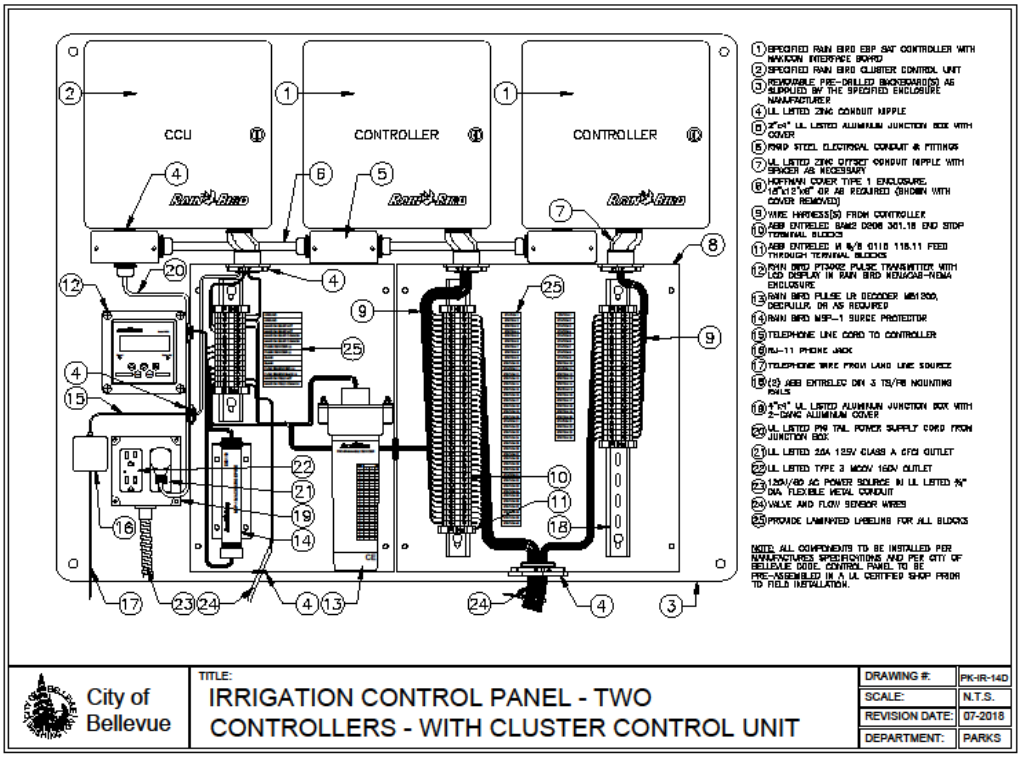
City of Bellevue

TITLE:
IRRIGATION - CONTROL PANEL - SINGLE CONTROLLER - LAND LINE CONNECTION

DRAWING #:	PK-IR-14A
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS


ENCLOSURE WALL
1 RAIN BIRD ESP LXME2 PRO 12 STATION CONTROLLER WITH PSM-LXME2 PRO FLOW SMART MODULE AND IQ-NCC-GP 4G CELLULAR NETWORK COMMUNICATION CARTRIDGE
2 REMOVABLE PRE-DRILLED BACKBOARD AS SUPPLIED BY THE SPECIFIED ENCLOSURE MANUFACTURER
3 2"x4" UL LISTED ALUMINUM JUNCTION BOX WITH COVER
4 UL LISTED ZINC OFFSET CONDUIT NIPPLE
5 HOFFMAN COVER TYPE 1 ENCLOSURE, 18"x12"x8" OR AS REQUIRED (SHOWN WITH COVER REMOVED)
6 WIRE HARNESS(S) FROM CONTROLLER
7 ABB ENTRELEC BAM2 D2D6 351.16 END STOP TERMINAL BLOCKS
8 ABB ENTRELEC M 8/8 0116 116.11 FEED THROUGH TERMINAL BLOCKS
9 (2) ABB ENTRELEC DIN 3 TS/F6 MOUNTING RAILS
10 4"x4" UL LISTED ALUMINUM JUNCTION BOX WITH 2-GANG ALUMINUM COVER
11 UL LISTED PIG TAIL POWER SUPPLY CORD FROM JUNCTION BOX
12 UL LISTED 20A 125V CLASS A GFCI OUTLET
13 UL LISTED TYPE 3 MCOV 150V OUTLET
14 120V/60 AC POWER SOURCE IN UL LISTED ¾" DIA. FLEXIBLE METAL CONDUIT
15 VALVE AND FLOW SENSOR WIRES
16 PROVIDE LAMINATED LABELING FOR ALL BLOCKS
17 IQ-EXTANT-GP EXTERNAL ANTENNA
NOTE: ALL COMPONENTS TO BE INSTALLED PER MANUFACTURES SPECIFICATIONS AND PER CITY OF BELLEVUE CODE. CONTROL PANEL TO BE PRE-ASSEMBLED IN A UL CERTIFIED SHOP PRIOR TO FIELD INSTALLATION.
City of Bellevue
TITLE:
IRRIGATION - CONTROL PANEL - ESP LXME2 PRO CONTROLLER - CELLULAR CONNECTION
DRAWING #: PK-IR-14B
SCALE: N.T.S.
REVISION DATE: 09-2023
DEPARTMENT: PARKS

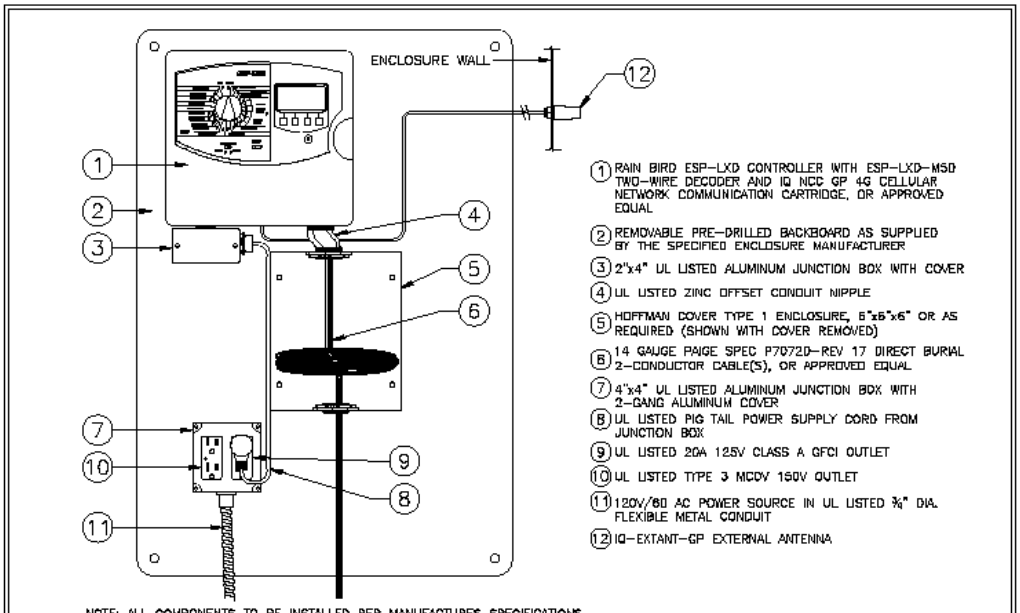

CCU
CONTROLLER
1 SPECIFIED RAIN BIRD ESP SXT CONTROLLER WITH MWIDOW INTERFACE BOARD
2 SPECIFIED RAIN BIRD CLUSTER CONTROL UNIT
3 REMOVABLE PRE-DRILLED BACKBOARD(S) AS SUPPLIED BY THE SPECIFIED ENCLOSURE MANUFACTURER
4 UL LISTED ZINC CONDUIT NIPPLE
5 2"x4" UL LISTED ALUMINUM JUNCTION BOX WITH COVER
6 RIGID STEEL ELECTRICAL CONDUIT & FITTINGS
7 UL LISTED ZINC OFFSET CONDUIT NIPPLE WITH SPACER AS NECESSARY
8 HOFFMAN COVER TYPE 1 ENCLOSURE, 18"x12"x6" OR AS REQUIRED (SHOWN WITH COVER REMOVED)
9 WIRE HARNESS(S) FROM CONTROLLER
10 ABB ENTRELEC BAM2 D2D6 351.16 END STOP TERMINAL BLOCKS
11 ABB ENTRELEC M 8/8 0116 116.11 FEED THROUGH TERMINAL BLOCKS
12 RAIN BIRD PTSOOZZ PULSE TRANSMITTER WITH LCD DISPLAY IN RAIN BIRD NEMA24B-NEMA ENCLOSURE
13 RAIN BIRD PULSE LR DECODER WS1200, DECPULR, OR AS REQUIRED
14 RAIN BIRD WSP-1 SURGE PROTECTOR
15 TELEPHONE LINE CORD TO CONTROLLER
16 RJ-11 PHONE JACK
17 TELEPHONE WIRE FROM LAND LINE SOURCE
18 (2) ABB ENTRELEC DIN 3 TS/F6 MOUNTING RAILS
19 4"x4" UL LISTED ALUMINUM JUNCTION BOX WITH 2-GANG ALUMINUM COVER
20 UL LISTED PIG TAIL POWER SUPPLY CORD FROM JUNCTION BOX
21 UL LISTED 20A 125V CLASS A GFCI OUTLET
22 UL LISTED TYPE 3 MCOV 150V OUTLET
23 120V/60 AC POWER SOURCE IN UL LISTED ¾" DIA. FLEXIBLE METAL CONDUIT
24 VALVE AND FLOW SENSOR WIRES
25 PROVIDE LAMINATED LABELING FOR ALL BLOCKS
NOTE: ALL COMPONENTS TO BE INSTALLED PER MANUFACTURES SPECIFICATIONS AND PER CITY OF BELLEVUE CODE. CONTROL PANEL TO BE PRE-ASSEMBLED IN A UL CERTIFIED SHOP PRIOR TO FIELD INSTALLATION.
City of Bellevue
TITLE:
IRRIGATION - CONTROL PANEL - SINGLE CONTROLLER - WITH CLUSTER CONTROL UNIT
DRAWING #: PK-IR-14C
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS



City of Bellevue

TITLE: IRRIGATION CONTROL PANEL - TWO CONTROLLERS - WITH CLUSTER CONTROL UNIT

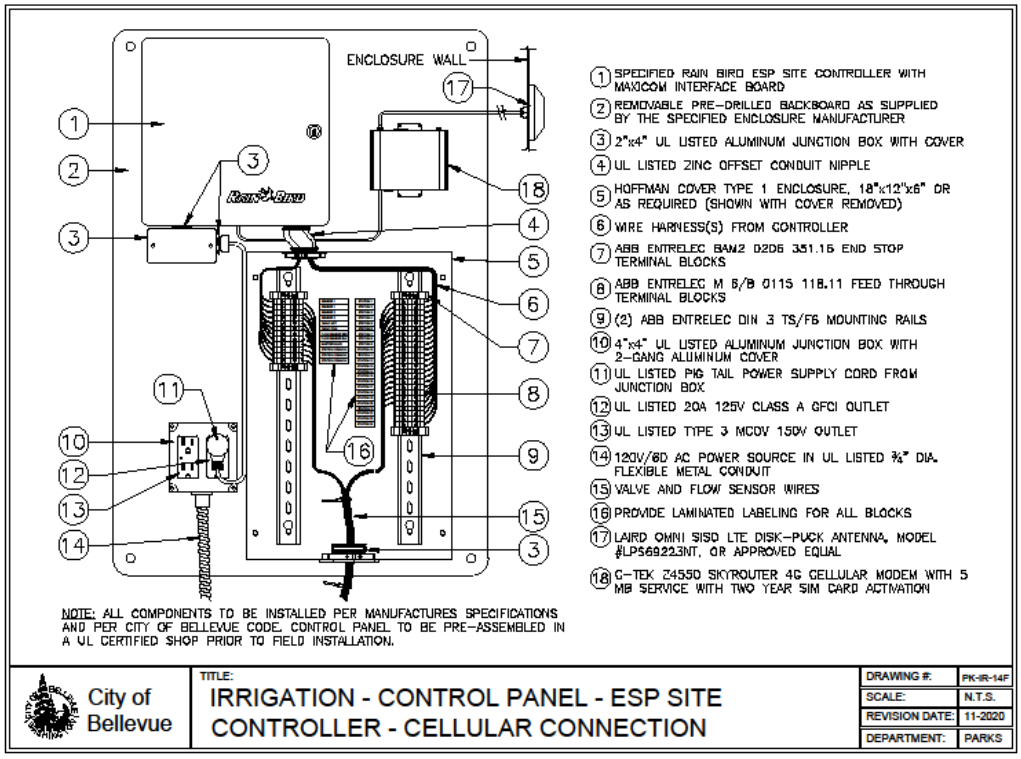
DRAWING #:	PK-IR-14D
SCALE:	N.T.S.
REVISION DATE:	07-2018
DEPARTMENT:	PARKS

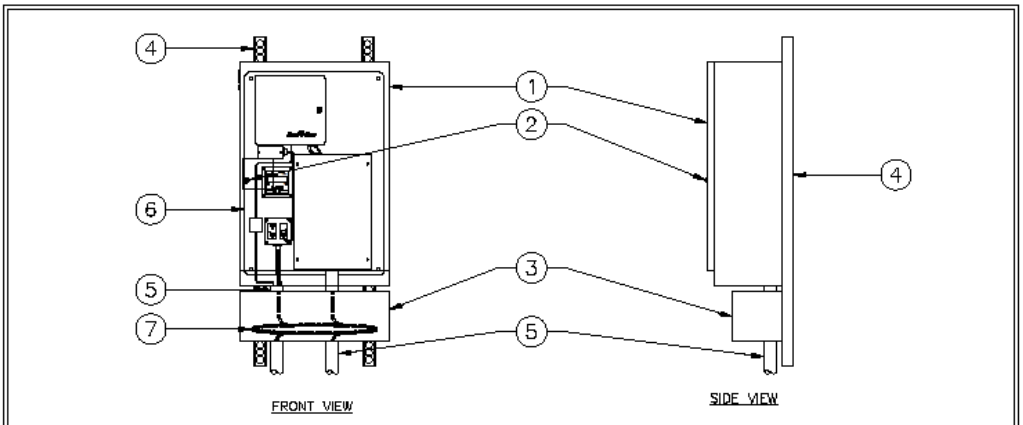


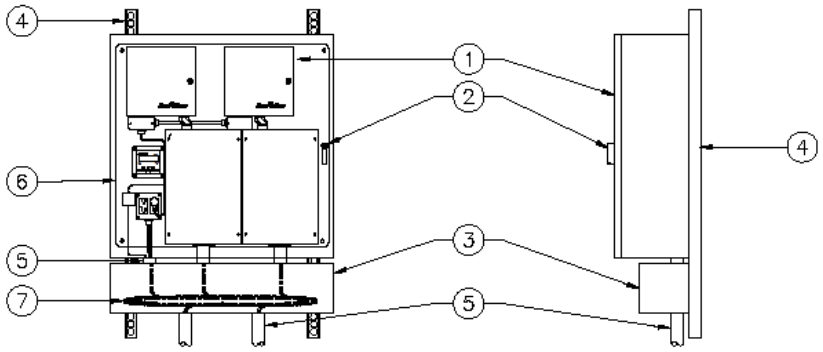
City of Bellevue

TITLE: IRRIGATION - CONTROL PANEL - SINGLE CONTROLLER - FOR TWO WIRE CONDUCTOR CABLE - CELLULAR CONNECTION

DRAWING #:	PK-IR-14E
SCALE:	N.T.S.
REVISION DATE:	11-2020
DEPARTMENT:	PARKS


ENCLOSURE WALL
1 SPECIFIED RAIN BIRD ESP SITE CONTROLLER WITH MAXICOM INTERFACE BOARD
2 REMOVABLE PRE-DRILLED BACKBOARD AS SUPPLIED BY THE SPECIFIED ENCLOSURE MANUFACTURER
3 2"x4" UL LISTED ALUMINUM JUNCTION BOX WITH COVER
4 UL LISTED ZINC OFFSET CONDUIT NIPPLE
5 HOFFMAN COVER TYPE 1 ENCLOSURE, 18"x12"x8" OR AS REQUIRED (SHOWN WITH COVER REMOVED)
6 WIRE HARNESS(S) FROM CONTROLLER
7 ABB ENTRELEC BAN2 0206 351.15 END STOP TERMINAL BLOCKS
8 ABB ENTRELEC M 6/8 0115 118.11 FEED THROUGH TERMINAL BLOCKS
9 (2) ABB ENTRELEC DIN 3 TS/F6 MOUNTING RAILS
10 4"x4" UL LISTED ALUMINUM JUNCTION BOX WITH 2-GANG ALUMINUM COVER
11 UL LISTED PIG TAIL POWER SUPPLY CORD FROM JUNCTION BOX
12 UL LISTED 20A 125V CLASS A GFCI OUTLET
13 UL LISTED TYPE 3 MCOV 150V OUTLET
14 120V/6D AC POWER SOURCE IN UL LISTED ¾" DIA. FLEXIBLE METAL CONDUIT
15 VALVE AND FLOW SENSOR WIRES
16 PROVIDE LAMINATED LABELING FOR ALL BLOCKS
17 LAIRD OMNI SISO LTE DISK-PUCK ANTENNA, MODEL #LPS6922.3NT, OR APPROVED EQUAL
18 C-TEK Z455D SKYROUTER 4G CELLULAR MODEM WITH 5 MB SERVICE WITH TWO YEAR SIM CARD ACTIVATION
NOTE: ALL COMPONENTS TO BE INSTALLED PER MANUFACTURES SPECIFICATIONS AND PER CITY OF BELLEVUE CODE. CONTROL PANEL TO BE PRE-ASSEMBLED IN A UL CERTIFIED SHOP PRIOR TO FIELD INSTALLATION.
City of Bellevue
TITLE:
IRRIGATION - CONTROL PANEL - ESP SITE CONTROLLER - CELLULAR CONNECTION
DRAWING #: PK-IR-14F
SCALE: N.T.S.
REVISION DATE: 11-2020
DEPARTMENT: PARKS


FRONT VIEW
SIDE VIEW
1 STRONGBOX MODEL SB24SSW NEMA TYPE 3R WEATHERPROOF WALL MOUNT ENCLOSURE, OR APPROVED EQUAL
2 #CH751 RAIN BIRD KEY CORE
3 HOFFMAN 8x8" NEMA TYPE 4 CARBON STEEL WIRE TROUGH, OR APPROVED EQUAL
4 HEAVY GAUGE UNISTRUT CHANNEL, CLAMPS AND HARDWARE FOR MOUNTING ENCLOSURE TO WALL
5 ELECTRICAL CONDUIT AS REQUIRED TO BRING POWER, COMMUNICATION AND VALVE WIRES INTO ENCLOSURE AND TROUGH
6 CONTROL PANEL PER SPECIFICATIONS
7 PROVIDE 48" MIN. COILED SLACK FOR ALL COMMUNICATION AND VALVE WIRES WITHIN TROUGH
City of Bellevue
TITLE:
IRRIGATION - WALL MOUNT CONTROL ENCLOSURE - SINGLE CONTROLLER
DRAWING #: PK-IR-15A
SCALE: N.T.S.
REVISION DATE: 04-2022
DEPARTMENT: PARKS

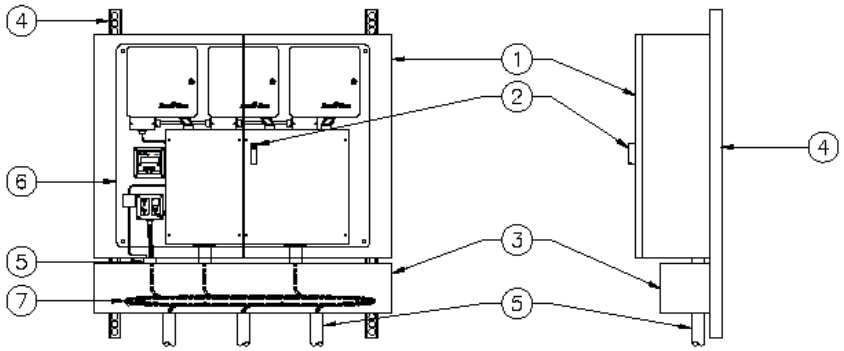


1. HOFFMAN MODEL CSD 363612 NEMA TYPE 4 CARBON STEEL WALL MOUNT ENCLOSURE, OR APPROVED EQUAL
2. HOFFMAN CWHPTO PADLOCK LATCH, OR APPROVED EQUAL
3. HOFFMAN 6x8" NEMA TYPE 4 CARBON STEEL WIRE TROUGH, OR APPROVED EQUAL
4. HEAVY GAUGE UNISTRUT CHANNEL, CLAMPS AND HARDWARE FOR MOUNTING ENCLOSURE TO WALL
5. ELECTRICAL CONDUIT AS REQUIRED TO BRING POWER, COMMUNICATION AND VALVE WIRES INTO ENCLOSURE AND TROUGH
6. CONTROL PANEL PER SPECIFICATIONS
7. PROVIDE 48" MIN. COILED SLACK FOR ALL COMMUNICATION AND VALVE WIRES WITHIN TROUGH

City of Bellevue

TITLE: IRRIGATION - WALL MOUNT CONTROL ENCLOSURE - SINGLE CONTROLLER WITH CLUSTER CONTROL UNIT

DRAWING #:	PK-IR-15B
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS

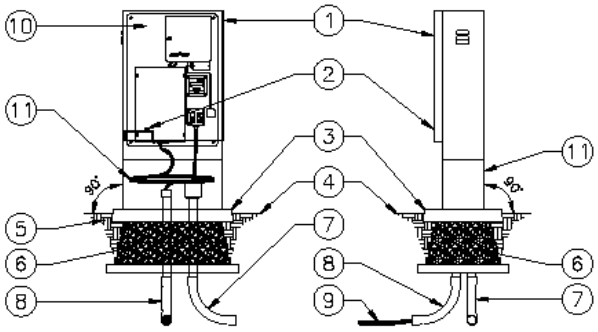


1. HOFFMAN MODEL CTD 364812 NEMA TYPE 4 CARBON STEEL WALL MOUNT ENCLOSURE, OR APPROVED EQUAL
2. HOFFMAN CWHPTO PADLOCK LATCH, OR APPROVED EQUAL
3. HOFFMAN 6x8" NEMA TYPE 4 CARBON STEEL WIRE TROUGH, OR APPROVED EQUAL
4. HEAVY GAUGE UNISTRUT CHANNEL, CLAMPS AND HARDWARE FOR MOUNTING ENCLOSURE TO WALL
5. ELECTRICAL CONDUIT AS REQUIRED TO BRING POWER, COMMUNICATION AND VALVE WIRES INTO ENCLOSURE AND TROUGH
6. CONTROL PANEL PER SPECIFICATIONS
7. PROVIDE 48" MIN. COILED SLACK FOR ALL COMMUNICATION AND VALVE WIRES WITHIN TROUGH

City of Bellevue

TITLE: IRRIGATION - WALL MOUNT CONTROL ENCLOSURE - TWO CONTROLLERS WITH CLUSTER CONTROL UNIT

DRAWING #:	PK-IR-15C
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS



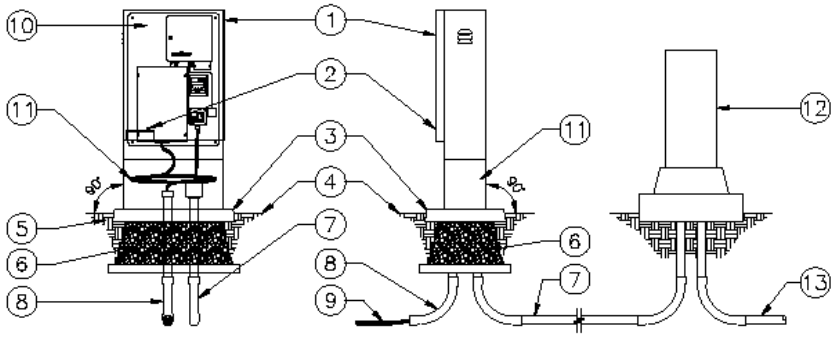
FRONT VIEW SIDE VIEW

1. STRONG BOX MODEL #SB-24SS STAINLESS STEEL ENCLOSURE WITH PED-24SS STAINLESS STEEL RISER, OR APPROVED EQUALS
2. #CH751 RAIN BIRD KEY CORE
3. STRONG BOX MODEL #QP-24 ENCLOSURE MOUNTING PAD WITH SUPPORT BASE, OR APPROVED EQUAL
4. FINISHED GRADE TO BE 1", OR SPECIFIED DEPTH OF MULCH PLUS 1", BELOW TOP OF MOUNTING PAD, TYP.
5. COMPACTED NATIVE SOIL
6. ⅜" GRAVEL BACKFILL FOR DRAINS PER WSDOT 9-03.12(4)
7. CONDUIT AND WIRE FROM POWER SOURCE
8. 2" CONDUIT FOR COMMUNICATION AND VALVE WIRE FEED INTO CONTROL PANEL
9. DIRECT BURIAL COMMUNICATION AND VALVE WIRES
10. CONTROL PANEL PER SPECIFICATIONS
11. PROVIDE 48" MIN. COILED SLACK FOR ALL COMMUNICATION AND VALVE WIRES WITHIN RISER

City of Bellevue

TITLE: IRRIGATION - CONTROL PEDESTAL - SINGLE SIDED

DRAWING #:	PK-IR-16A
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS



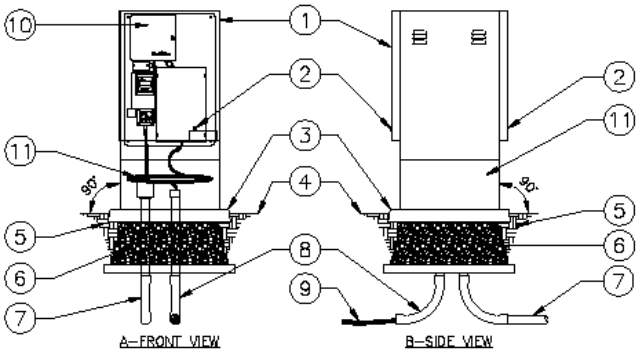
FRONT VIEW SIDE VIEW

1. STRONG BOX MODEL #SB-24SS STAINLESS STEEL ENCLOSURE WITH PED-24SS STAINLESS STEEL RISER, OR APPROVED EQUALS
2. #CH751 RAIN BIRD KEY CORE
3. STRONG BOX MODEL #QP-24 ENCLOSURE MOUNTING PAD WITH SUPPORT BASE, OR APPROVED EQUAL
4. FINISHED GRADE TO BE 1", OR SPECIFIED DEPTH OF MULCH PLUS 1", BELOW TOP OF MOUNTING PAD, TYP.
5. COMPACTED NATIVE SOIL
6. ⅜" GRAVEL BACKFILL FOR DRAINS PER WSDOT 9-03.12(4)
7. CONDUIT AND WIRE FROM SERVICE PEDESTAL
8. 2" CONDUIT FOR COMMUNICATION AND VALVE WIRE FEED INTO CONTROL PANEL
9. DIRECT BURIAL COMMUNICATION AND VALVE WIRES
10. CONTROL PANEL PER SPECIFICATIONS
11. PROVIDE 48" MIN. COILED SLACK FOR ALL COMMUNICATION AND VALVE WIRES WITHIN RISER
12. SKYLINE SERIES #B5348 "TINY SERVICE CABINET" AND FOUNDATION PER CITY OF BELLEVUE TRANSPORTATION STANDARDS SL-221-1 AND SL-212-1
13. CONDUIT AND WIRE FROM POWER SOURCE (LOAD)
14. PAD LOCK TO BE PLACED ON SERVICE CABINET BY PUGET SOUND ENERGY AFTER METER HAS BEEN INSTALLED AND CHARGED
15. CONTRACTOR SHALL PROVIDE ALL CONDUIT, WIRES, POLE MOUNTING BRACKETS, WEATHERHEADS AND ALL OTHER MISC. EQUIPMENT REQUIRED FOR PUGET SOUND ENERGY TO CONNECT CABINET TO POWER SOURCE (LOAD) AND CHARGE METER

City of Bellevue

TITLE: IRRIGATION - CONTROL PEDESTAL - SINGLE SIDED WITH POWER SERVICE PEDESTAL

DRAWING #:	PK-IR-16B
SCALE:	N.T.S.
REVISION DATE:	03-2023
DEPARTMENT:	PARKS

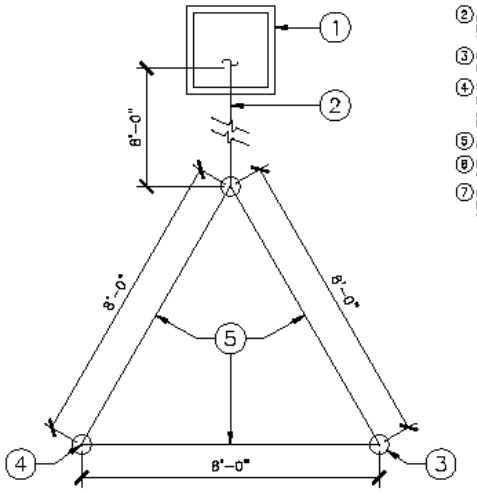


1. STRONG BOX MODEL #SB–24DSS STAINLESS STEEL TWO SIDED ENCLOSURE WITH PED–24DSS STAINLESS STEEL RISER, OR APPROVED EQUALS
2. #CH751 RAIN BIRD KEY CORE
3. STRONG BOX MODEL #QP–240 ENCLOSURE MOUNTING PAD WITH SUPPORT BASE, OR APPROVED EQUAL
4. FINISH GRADE TO BE 1", OR SPECIFIED DEPTH OF MULCH PLUS 1", BELOW TOP OF MOUNTING PAD, TYP.
5. COMPACTED NATIVE SOIL
6. ⅜" GRAVEL BACKFILL FOR DRAINS PER WSDOT 8–03.12(4)
7. CONDUIT AND WIRE FROM POWER SOURCE
8. 2" CONDUIT FOR VALVE AND FLOW SENSOR WIRE FEED INTO IRRIGATION CONTROL PANEL
9. DIRECT BURIAL VALVE AND FLOW SENSOR WIRES
10. IRRIGATION CONTROL PANEL(S) PER SPECIFICATIONS
11. PROVIDE 48" MIN. COILED SLACK FOR ALL COMMUNICATION AND VALVE WIRES WITHIN RISER

City of Bellevue

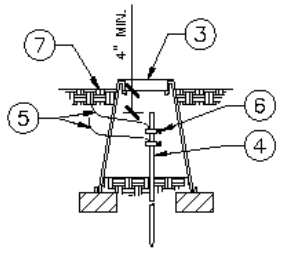
TITLE: IRRIGATION - CONTROL PEDESTAL - TWO SIDED

DRAWING #:	PK-IR-16C
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS



GROUND ROD LAYOUT

1. PEDESTAL CABINET ENCLOSURE PER SPECIFICATIONS WITH CONTROLLER OR CLUSTER CONTROL UNIT (CCU).
2. #10 AWG SOLID BARE COPPER WIRE FROM CONTROLLER (OR CCU) TO GROUNDING RODS.
3. COVER GROUNDING RODS WITH CARSON SPEC. GRADE 910 9" DIA. ROUND BOX (GREEN).
4. ⅝"x8' COPPER CLAD GROUNDING ROD. INSTALL RODS IN SOIL IN A TRIANGULAR PATTERN SPACED A MINIMUM 8'–0" APART. GROUNDING GRID TO HAVE A RESISTANCE OF 10 OHMS OR LESS.
5. #10 AWG BARE COPPER WIRE BETWEEN GROUNDING RODS.
6. BRASS WIRE CLAMP. USE SEPERATE CLAMP FOR EACH WIRE.
7. FINISHED GRADE TO BE 1", OR SPECIFIED DEPTH OF MULCH PLUS 1", BELOW TOP OF VALVE BOX.



GROUND ROD ASSEMBLY (N.T.S.)

City of Bellevue

TITLE: IRRIGATION - CONTROL PEDESTAL - TYPICAL GROUNDING ROD LAYOUT

DRAWING #:	PK-IR-16D
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS

*If viewing in PDF, click on text to open reference material

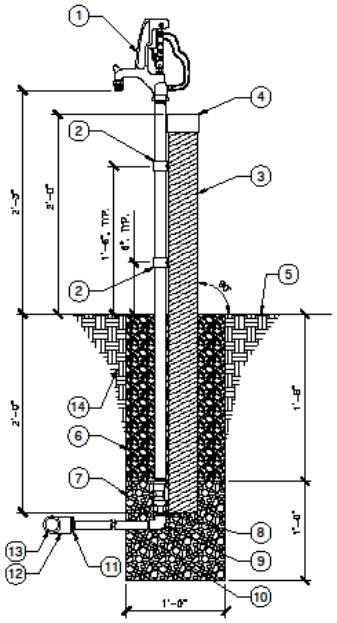
CITY OF BELLEVUE UTILITIES REFERENCE DRAWINGS FOR IRRIGATION CONSTRUCTION ON PARKS PROPERTY:

W-06: TYPICAL TRENCH DETAIL
W-23: 1"x1" SINGLE WATER SERVICE OR DOMESTIC IRRIGATION SERVICE (HORIZONTAL METER SETTER)
W-28: 1-1/2" IRRIGATION WATER SERVICE (COMMERCIAL AND MULTI-FAMILY)
W-31: 2" IRRIGATION WATER SERVICE

City of Bellevue

TITLE: IRRIGATION - REFERENCE MATERIAL

DRAWING #:	PK-IR-17
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS



1. Y34-2 WOODFORD FROST PROOF YARD HYDRANT, OR APPROVED EQUAL
2. 1" HEAVY DUTY GALV. STEEL PIPE STRAP SECURED TO POST WITH (2) 2½" GALV. WOOD SCREWS
3. 4x4 D.F. #2 OR BETTER ANCHOR POST, PT ACQ/CBA, OR APPROVED EQUAL
4. 4x4 GALV. STEEL OR ALUMINUM POST CAP
5. FINISH GRADE
6. ⅝" CRUSHED AGGREGRATE PER WSDOT 9.03.9(3) COMPACTED TO 95% DENSITY, OR APPROVED EQUAL
7. ⅜" GRAVEL BACKFILL FOR DRAINS PER WSDOT 9-03.12 (4), OR APPROVED EQUAL
8. ¾" BRASS CLOSE NIPPLE
9. ¾" BRASS 90
10. ¾" BRASS NIPPLE, LENGTH AS REQUIRED
11. X-¾" BRASS BUSHING, SIZE AS REQUIRED
12. BRASS TEE OR 90, SIZE AS REQUIRED
13. SCH 40 PVC OR SDR 7 HDPE SUPPLY LINE, SIZE PER PLAN
14. COMPACT NATIVE MATERIAL

City of Bellevue

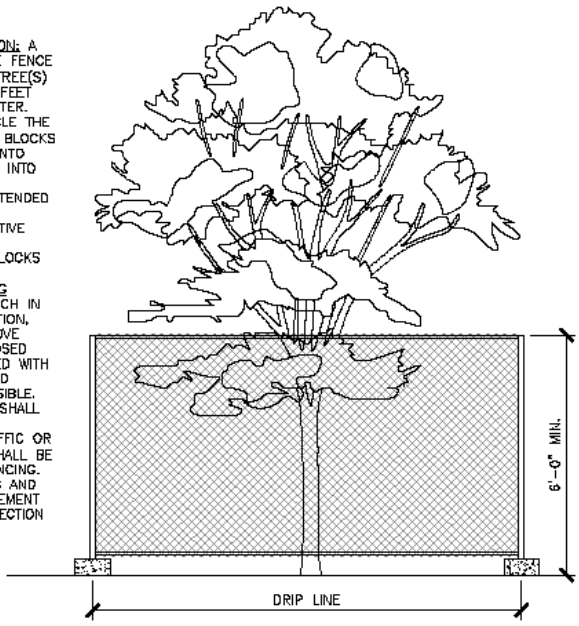
TITLE: IRRIGATION - FROST PROOF YARD HYDRANT

DRAWING #:	PK-IR-18
SCALE:	N.T.S.
REVISION DATE:	11-2020
DEPARTMENT:	PARKS

Site Improvements

NOTES:

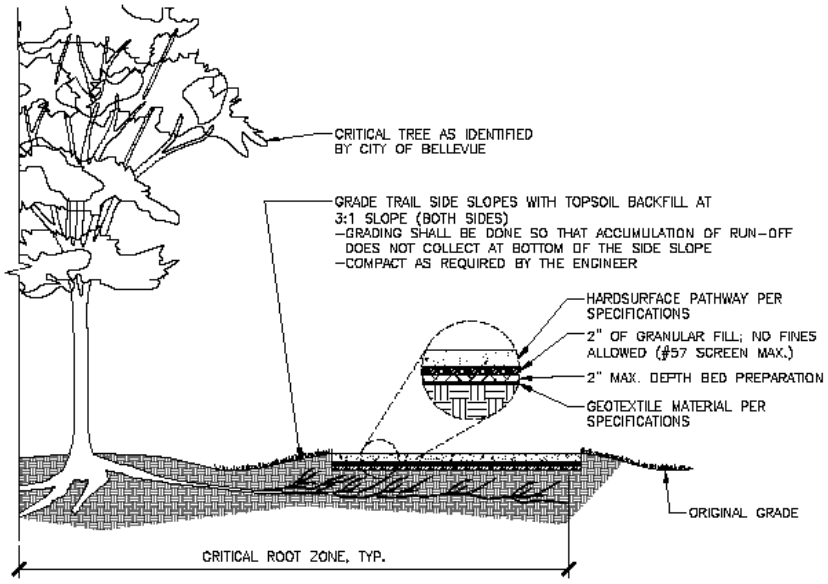
1. TREE PROTECTION DURING CONSTRUCTION: A SIX FOOT HIGH TEMPORARY CHAIN LINK FENCE SHALL BE ERECTED AT DRIP LINE OF TREE(S) TO BE SAVED, OR A DISTANCE OF 15 FEET FROM THE TRUNK, WHICHEVER IS GREATER. THE FENCE SHALL COMPLETELY ENCIRCLE THE TREE(S). INSTALL FENCE POSTS USING BLOCKS ONLY. IF INSTALLING POSTS DIRECTLY INTO GROUND IS NECESSARY, AVOID DRIVING INTO MAJOR ROOTS. AT THE DISCRETION OF BELLEVUE PARKS, FENCING MAY BE EXTENDED BEYOND THE DRIP LINE OR 15 FEET. BELLEVUE PARKS MAY PERMIT ALTERNATIVE FENCING METHODS IF SITE CONDITIONS PROHIBIT THE INSTALLATION OF PIER BLOCKS (STEEP SLOPES, SOFT SOILS, ETC.).
2. TREATMENT OF ROOTS EXPOSED DURING CONSTRUCTION: FOR ROOTS OVER 1 INCH IN DIAMETER DAMAGED DURING CONSTRUCTION, MAKE A CLEAN STRAIGHT CUT TO REMOVE DAMAGED PORTION OF ROOT. ALL EXPOSED ROOTS SHALL BE TEMPORARILY COVERED WITH MOIST BURLAP TO PREVENT DRYING AND COVERED WITH SOIL AS SOON AS POSSIBLE.
3. WORK WITHIN THE PROTECTION FENCE SHALL BE DONE MANUALLY. NO EXCAVATION, MATERIAL STOCKPILING, VEHICULAR TRAFFIC OR STORAGE OF EQUIPMENT/MACHINERY SHALL BE ALLOWED WITHIN THE LIMIT OF THE FENCING.
4. REFER TO CITY OF BELLEVUE CLEARING AND GRADING STANDARDS AND BEST MANAGEMENT PRACTICES FOR ADDITIONAL TREE PROTECTION REQUIREMENTS.



City of Bellevue

TITLE:
SITE PROTECTION - TREE PROTECTION DURING CONSTRUCTION

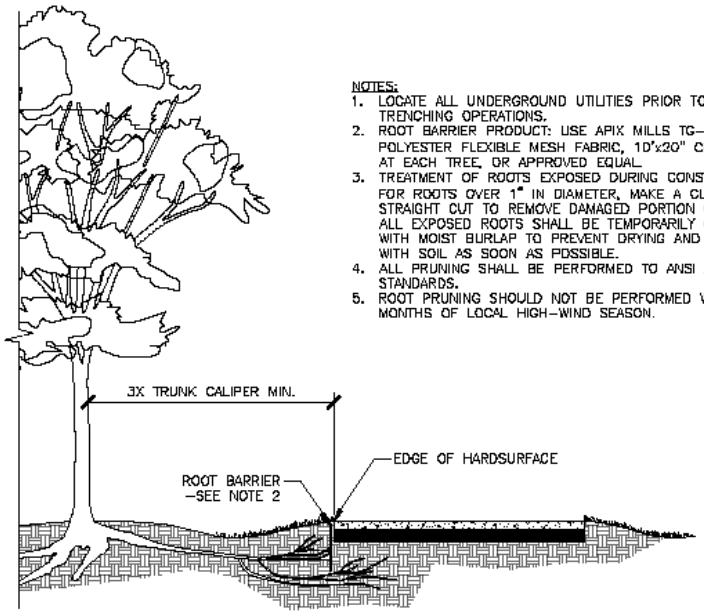
DRAWING #:	PK-IM-01A
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS



City of Bellevue

TITLE:
SITE PROTECTION - TREE CRITICAL ROOT ZONE UNDER HARD SURFACE PATHWAY

DRAWING #:	PK-IM-01B
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS



NOTES:
1. LOCATE ALL UNDERGROUND UTILITIES PRIOR TO TRENCHING OPERATIONS.
2. ROOT BARRIER PRODUCT: USE APIX MILLS TG–18 POLYESTER FLEXIBLE MESH FABRIC, 10'x20" CENTERED AT EACH TREE, OR APPROVED EQUAL.
3. TREATMENT OF ROOTS EXPOSED DURING CONSTRUCTION: FOR ROOTS OVER 1" IN DIAMETER, MAKE A CLEAN, STRAIGHT CUT TO REMOVE DAMAGED PORTION OF ROOT. ALL EXPOSED ROOTS SHALL BE TEMPORARILY COVERED WITH MOIST BURLAP TO PREVENT DRYING AND COVERED WITH SOIL AS SOON AS POSSIBLE.
4. ALL PRUNING SHALL BE PERFORMED TO ANSI A300 STANDARDS.
5. ROOT PRUNING SHOULD NOT BE PERFORMED WITHIN 5 MONTHS OF LOCAL HIGH–WIND SEASON.

City of Bellevue

TITLE:

SITE PROTECTION - TREE ROOT BARRIER

DRAWING #:	PK-IM-01C
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS

CITY OF BELLEVUE CLEARING & GRADING BMP'S FOR SITE IMPROVEMENTS ON PARKS PROPERTY:

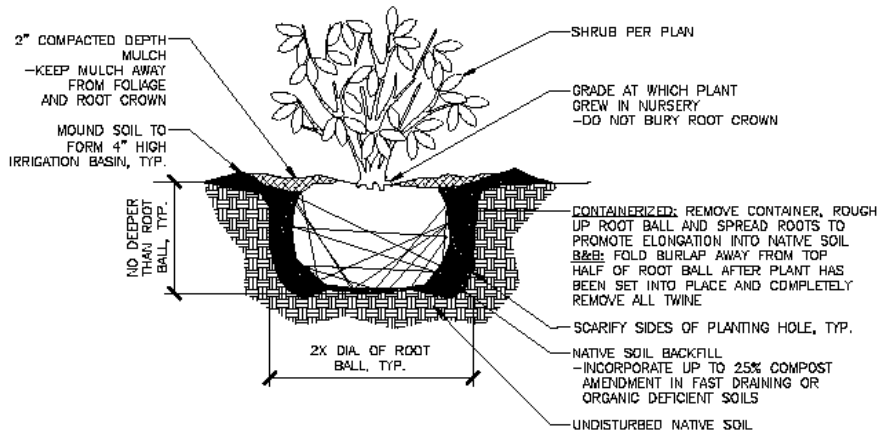
BMP-C101: PRESERVING NATURAL VEGETATION
BMP-C102: BUFFER ZONES
BMP-C103: HIGH VISIBILITY FENCE
BMP-C105: STABILIZED CONSTRUCTION ENTRANCE/EXIT
BMP-C106: WHEEL WASH
BMP-C107: CONSTRUCTION ROAD/PARKING STABILIZATION
BMP-C120: TEMPORARY AND PERMANENT SEEDING
BMP-C121: MULCHING
BMP-C122: NETS AND BLANKETS
BMP-C123: PLASTIC COVERING
BMP-C124: SODDING
BMP-C125: TOPSOILING/COMPOSTING
BMP-C126: POLYACRYLAMIDE (PAM) FOR SOIL PROTECTION
BMP-C130: SURFACE ROUGHENING
BMP-C131: GRADIENT TERRACES
BMP-C140: DUST CONTROL
BMP-C150: MATERIALS ON HAND
BMP-C151: CONCRETE HANDLING
BMP-C152: SAWCUTTING AND SURFACE POLLUTION PREVENETION
BMP-C153: MATERIAL DELIVERY, STORAGE AND CONTAINMENT
BMP-C154: CONCRETE WASHOUT AREA
BMP-C160: CERTIFIED EROSION AND SEDIMENT CONTROL LEAD
BMP-C162: SCHEDULING
BMP-C200: INTERCEPTOR DIKE AND SWALE
BMP-C201: GRASS-LINED CHANNELS
BMP-C202: CHANNEL LINING
BMP-C203: WATER BARS
BMP-C204: PIPE SLOPE DRAINS
BMP-C205: SUBSURFACE DRAINS
BMP-C206: LEVEL SPREADER
BMP-C207: CHECK DAMS
BMP-C208: TRIANGULAR SILT DIKE (TSD)
BMP-C209: OUTLET PROTECTION
BMP-C220: STORM DRAIN INLET PROTECTION
BMP-C231: BRUSH BARRIER
BMP-C232: GRAVEL FILTER BERM
BMP-C233: SILT FENCE
BMP-C234: VEGETATIVE STRIP
BMP-C235: WATTLES
BMP-C236: VEGETATIVE FILTRATION
BMP-C240: SEDIMENT TRAP
BMP-C241: TEMPORARY SEDIMENT POND
BMP-C250: CONSTRUCTION STORMWATER CHEMICAL TREATMENT
BMP-C251: CONSTRUCTION STORMWATER FILTRATION
BMP-C252: HIGH PH NEUTRALIZATION USING CO2
BMP-C253: PH CONTROL FOR HIGH PH WATER
BMP-T101: TREE PROTECTION REQUIREMENTS
BMP-T5.13: POST CONSTRUCTION SOIL QUALITY DEPTH

City of Bellevue

TITLE:

SITE PROTECTION - REFERENCE MATERIAL

DRAWING #:	PK-IM-04D
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS

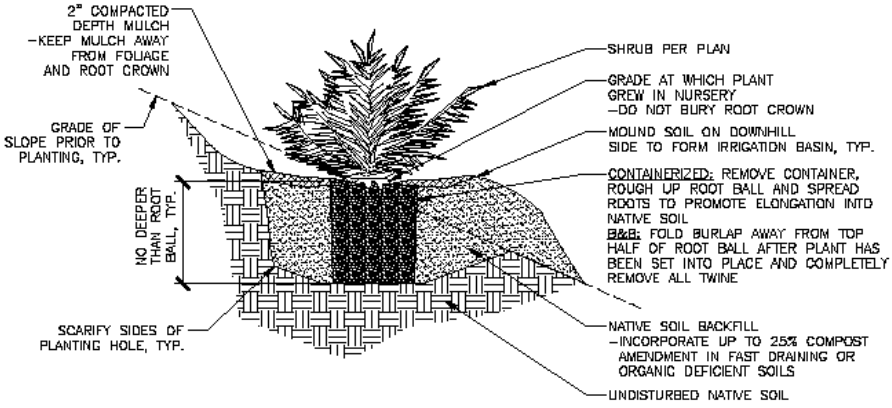


NOTE: PLANT MATERIAL SHALL BE INSPECTED AND APPROVED BY BELLEVUE PARKS PRIOR TO INSTALLATION.

City of Bellevue

TITLE: PLANTING - SHRUB

DRAWING #:	PK-IM-02A
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS

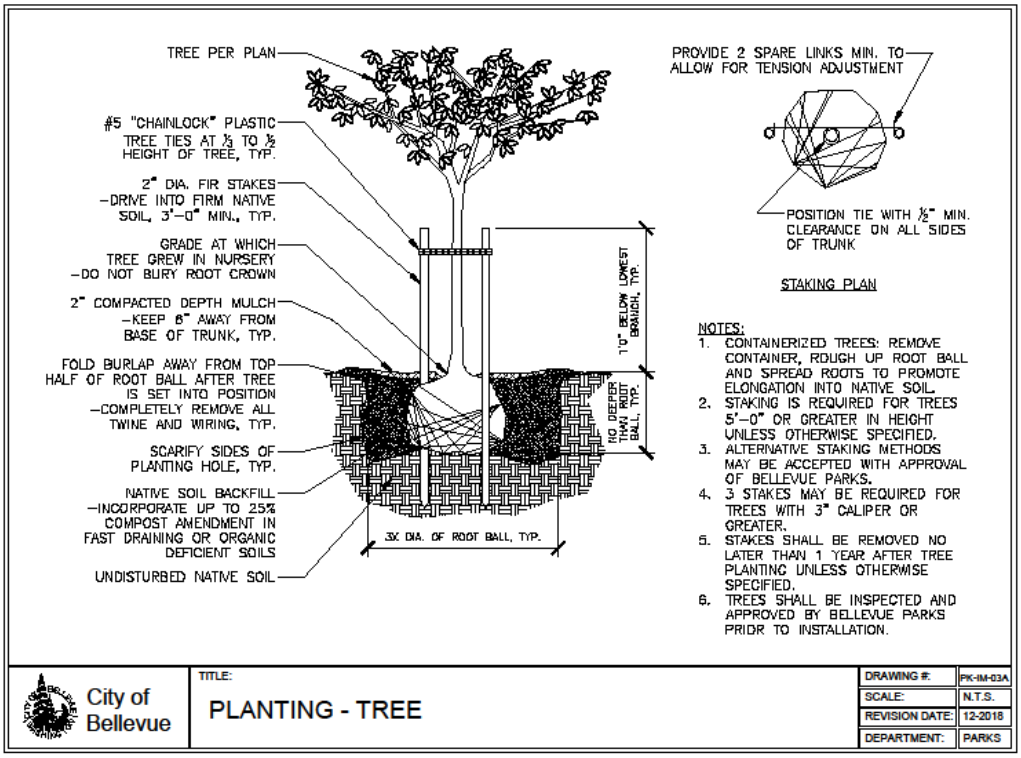


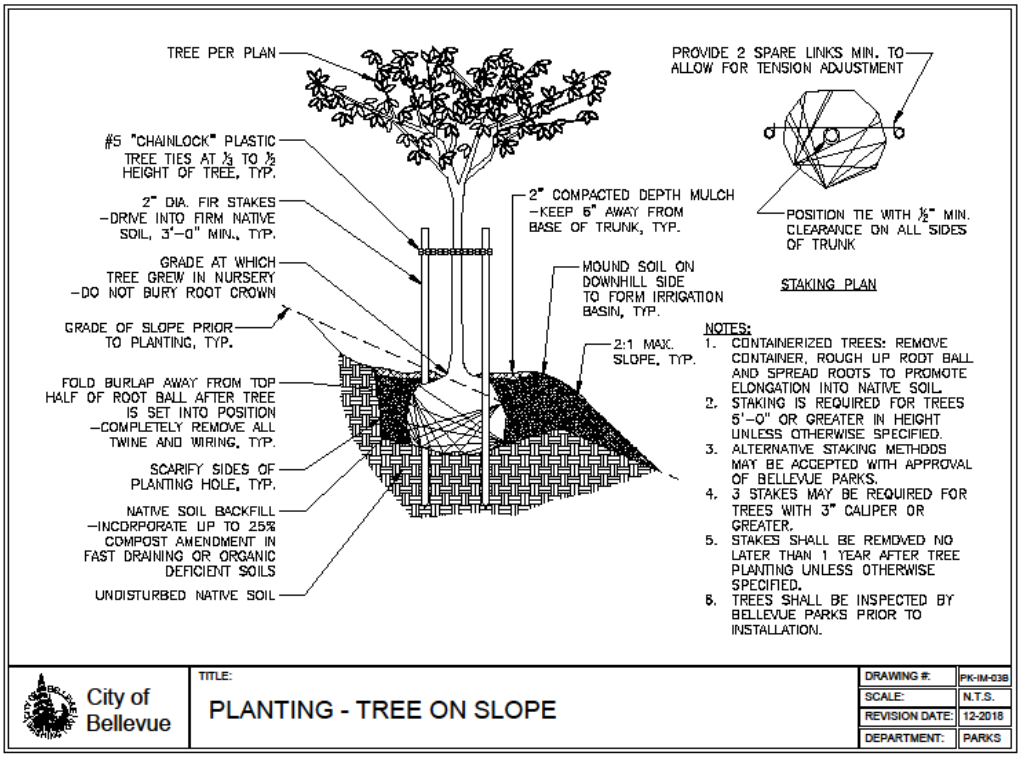
NOTE: PLANT MATERIAL SHALL BE INSPECTED AND APPROVED BY BELLEVUE PARKS PRIOR TO INSTALLATION.

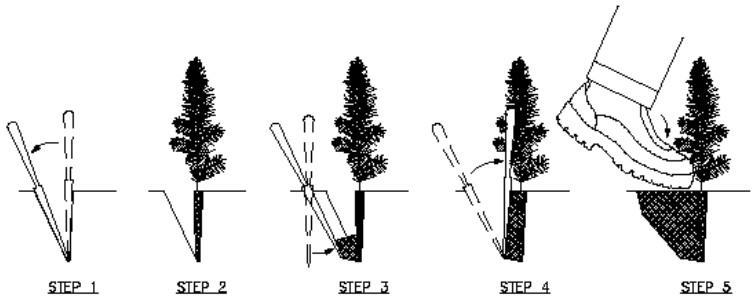
City of Bellevue

TITLE: PLANTING - SHRUB ON SLOPE

DRAWING #:	PK-IM-02B
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS


TREE PER PLAN
#5 "CHAINLOCK" PLASTIC TREE TIES AT ⅓ TO ½ HEIGHT OF TREE, TYP.
2" DIA. FIR STAKES –DRIVE INTO FIRM NATIVE SOIL, 3'–0" MIN., TYP.
GRADE AT WHICH TREE GREW IN NURSERY –DO NOT BURY ROOT CROWN
2" COMPACTED DEPTH MULCH –KEEP 6" AWAY FROM BASE OF TRUNK, TYP.
FOLD BURLAP AWAY FROM TOP HALF OF ROOT BALL AFTER TREE IS SET INTO POSITION –COMPLETELY REMOVE ALL TWINE AND WIRING, TYP.
SCARIFY SIDES OF PLANTING HOLE, TYP.
NATIVE SOIL BACKFILL –INCORPORATE UP TO 25% COMPOST AMENDMENT IN FAST DRAINING OR ORGANIC DEFICIENT SOILS
UNDISTURBED NATIVE SOIL
1'-0" BELOW LOWEST BRANCH, TYP.
NO DEEPER THAN ROOT BALL, TYP.
3X DIA. OF ROOT BALL, TYP.
PROVIDE 2 SPARE LINKS MIN. TO ALLOW FOR TENSION ADJUSTMENT
POSITION TIE WITH ½" MIN. CLEARANCE ON ALL SIDES OF TRUNK
STAKING PLAN
NOTES:
1. CONTAINERIZED TREES: REMOVE CONTAINER, ROUGH UP ROOT BALL AND SPREAD ROOTS TO PROMOTE ELONGATION INTO NATIVE SOIL.
2. STAKING IS REQUIRED FOR TREES 5'–0" OR GREATER IN HEIGHT UNLESS OTHERWISE SPECIFIED.
3. ALTERNATIVE STAKING METHODS MAY BE ACCEPTED WITH APPROVAL OF BELLEVUE PARKS.
4. 3 STAKES MAY BE REQUIRED FOR TREES WITH 3" CALIPER OR GREATER.
5. STAKES SHALL BE REMOVED NO LATER THAN 1 YEAR AFTER TREE PLANTING UNLESS OTHERWISE SPECIFIED.
6. TREES SHALL BE INSPECTED AND APPROVED BY BELLEVUE PARKS PRIOR TO INSTALLATION.
City of Bellevue
TITLE:
PLANTING - TREE
DRAWING #: PK-IM-03A
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS


TREE PER PLAN
#5 "CHAINLOCK" PLASTIC TREE TIES AT ⅓ TO ½ HEIGHT OF TREE, TYP.
2" DIA. FIR STAKES –DRIVE INTO FIRM NATIVE SOIL, 3'–0" MIN., TYP.
GRADE AT WHICH TREE GREW IN NURSERY –DO NOT BURY ROOT CROWN
GRADE OF SLOPE PRIOR TO PLANTING, TYP.
FOLD BURLAP AWAY FROM TOP HALF OF ROOT BALL AFTER TREE IS SET INTO POSITION –COMPLETELY REMOVE ALL TWINE AND WIRING, TYP.
SCARIFY SIDES OF PLANTING HOLE, TYP.
NATIVE SOIL BACKFILL –INCORPORATE UP TO 25% COMPOST AMENDMENT IN FAST DRAINING OR ORGANIC DEFICIENT SOILS
UNDISTURBED NATIVE SOIL
2" COMPACTED DEPTH MULCH –KEEP 6" AWAY FROM BASE OF TRUNK, TYP.
MOUND SOIL ON DOWNHILL SIDE TO FORM IRRIGATION BASIN, TYP.
2:1 MAX. SLOPE, TYP.
PROVIDE 2 SPARE LINKS MIN. TO ALLOW FOR TENSION ADJUSTMENT
POSITION TIE WITH ½" MIN. CLEARANCE ON ALL SIDES OF TRUNK
STAKING PLAN
NOTES:
1. CONTAINERIZED TREES: REMOVE CONTAINER, ROUGH UP ROOT BALL AND SPREAD ROOTS TO PROMOTE ELONGATION INTO NATIVE SOIL.
2. STAKING IS REQUIRED FOR TREES 5'–0" OR GREATER IN HEIGHT UNLESS OTHERWISE SPECIFIED.
3. ALTERNATIVE STAKING METHODS MAY BE ACCEPTED WITH APPROVAL OF BELLEVUE PARKS.
4. 3 STAKES MAY BE REQUIRED FOR TREES WITH 3" CALIPER OR GREATER.
5. STAKES SHALL BE REMOVED NO LATER THAN 1 YEAR AFTER TREE PLANTING UNLESS OTHERWISE SPECIFIED.
6. TREES SHALL BE INSPECTED BY BELLEVUE PARKS PRIOR TO INSTALLATION.
City of Bellevue
TITLE:
PLANTING - TREE ON SLOPE
DRAWING #: PK-IM-03B
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS



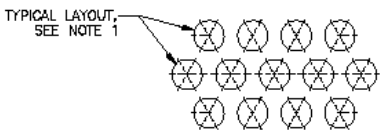
PLANTING SEQUENCE:

STEP	DESCRIPTION
1	PERPENDICULAR TO THE GROUND, INSERT DIGGING TOOL INTO THE SOIL AND PULL BACK TO CREATE A "V" SHAPED PLANTING HOLE.
2	PLACE SEEDLING INSIDE PLANTING HOLE AT THE SAME DEPTH THAT THE SEEDLING GREW AT THE NURSERY. TAKE CARE NOT TO BURY THE ROOT COLLAR.
3	INSERT DIGGING TOOL INTO SOIL APPROX. 6 INCHES BEHIND OPENING AND PULL HANDLE BACK TO CLOSE UP THE BOTTOM OF THE HOLE FIRMLY AROUND THE BOTTOM ROOTS.
4	PUSH THE DIGGING TOOL FORWARD TO CLOSE UP THE TOP OF THE PLANTING HOLE FIRMLY AROUND THE REMAINING ROOTS.
5	USE FOOT TO FIRMLY HEAL IN THE SOIL AROUND THE SEEDLING ROOT COLLAR.

City of Bellevue

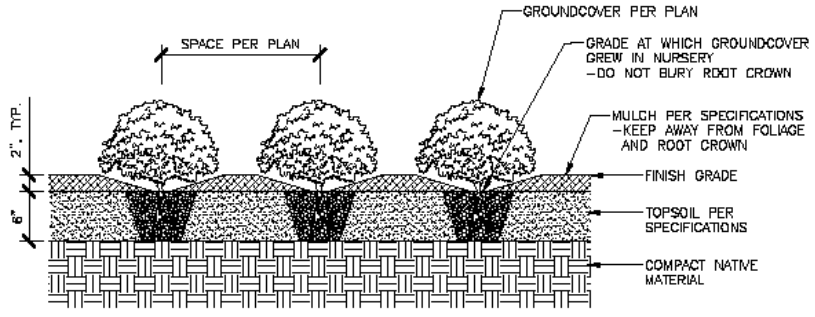
TITLE: PLANTING - CONIFER SEEDLING

DRAWING #:	PK-IM-03C
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS



PLAN

NOTES:
1. GROUNDCOVER SHALL BE PLANTED AT EQUAL TRIANGULAR SPACING OR AS SPECIFIED ON PLAN.
2. LOCATE GROUNDCOVER ONE HALF OF SPECIFIED SPACING DISTANCE FROM ANY CURB OR HARD SURFACE.
3. PLANT MATERIAL SHALL BE INSPECTED AND APPROVED BY BELLEVUE PARKS PRIOR TO INSTALLATION.

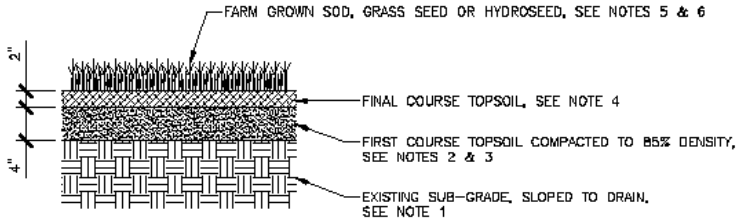


SECTION

City of Bellevue

TITLE: PLANTING - GROUNDCOVER

DRAWING #:	PK-IM-04
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS



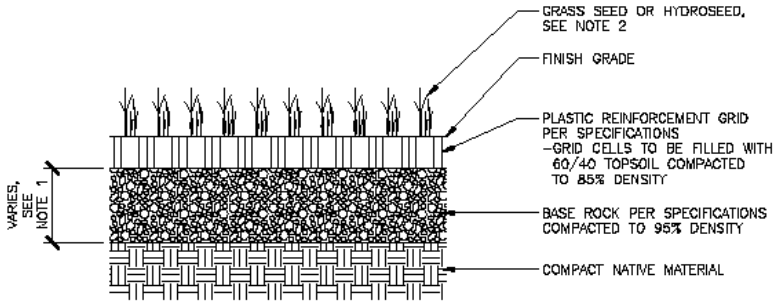
NOTES:

1. SUB-GRADE SHALL BE RIPPED AND TILLED TO A MIN. DEPTH OF 8 INCHES. REMOVE ALL FOREIGN DEBRIS AND ANY ROCK LARGER THAN 2 INCHES FROM SURFACE OF SUB-GRADE PRIOR TO THE INSTALLATION OF FIRST COURSE.
2. FOR GENERAL LANDSCAPE AREAS, FIRST COURSE SHALL CONSIST OF 3-WAY TOPSOIL. FOR SPORT FIELD APPLICATIONS (NON-SAND BASED), FIRST COURSE SHALL CONSIST OF 60% SAND AND 40% COMPOSTED ORGANIC MATERIAL BY VOLUME. SOILS SHALL BE THOROUGHLY MIXED OFFSITE AND DELIVERED TO PROJECT SITE IN LOOSE, BLENDED, WELL-GRADED MIX.
3. PLACE FIRST COURSE OF TOPSOIL ON EXISTING SUB-GRADE AND TILL INTERFACE TO A 4" MIN. DEPTH.
4. FINAL COURSE SHALL CONSIST OF 60% SAND AND 40% COMPOSTED ORGANIC MATERIAL BY VOLUME. SOIL SHALL BE THOROUGHLY MIXED OFFSITE AND DELIVERED TO PROJECT SITE IN LOOSE, BLENDED, WELL-GRADED MIX. FINAL COURSE SHALL BE GRADED AND COMPACTED SUFFICIENTLY ENOUGH TO PROVIDE STABLE AND UNIFORM SURFACE.
5. FARM GROWN SOD SHALL BE PERENNIAL RYE GROWN LOCALLY IN THE PACIFIC NORTHWEST REGION WITHIN A MEDIUM CONTAINING NO NETTING AND LESS THAN 15% CLAY CONTENT. SOD SHALL BE CUT FROM THE SUPPLIER'S FIELD, DELIVERED TO THE PROJECT SITE AND INSTALLED WITHIN A 48 HOUR WINDOW. SOD SHALL BE INSPECTED AND APPROVED BY BELLEVUE PARKS PRIOR TO INSTALLATION.
6. GRASS SEED AND/OR HYDROSEED SHALL BE A PERENNIAL RYE MIX CONTAINING NO LESS THAN 98% PURE RYEGRASS SEED AND NO MORE THAN 0.5% WEED SEED.

City of Bellevue

TITLE: PLANTING - TURF

DRAWING #:	PK-IM-05A
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS



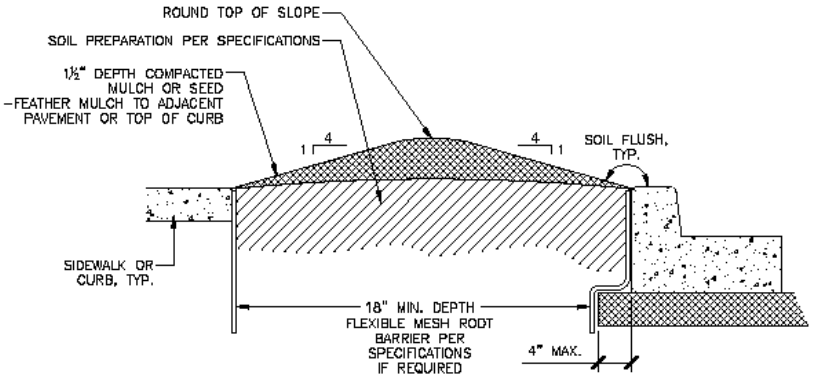
NOTES:

1. DEPTH AND COMPOSITION OF BASE ROCK MATERIAL WILL BE DEPENDENT ON GRID MANUFACTURERS SPECIFICATIONS.
2. GRASS SEED AND/OR HYDROSEED SHALL BE A PERENNIAL RYE MIX CONTAINING NO LESS THAN 98% PURE RYEGRASS SEED AND NO MORE THAN 0.5% WEED SEED.

City of Bellevue

TITLE: PLANTING - TURF WITH REINFORCEMENT GRID

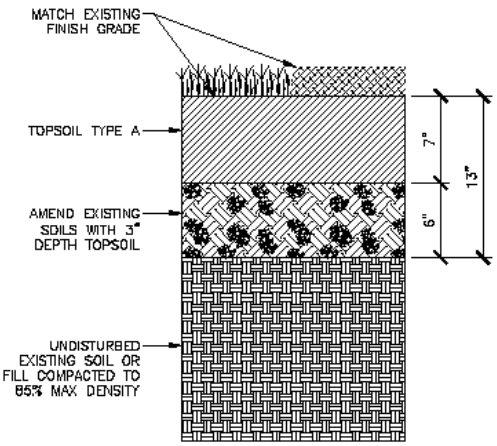
DRAWING #:	PK-IM-05B
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS



City of Bellevue

TITLE:
PLANTING - STREETSCAPE MEDIANS - PLANTER STRIP GRADING

DRAWING #:	PK-IM-06A
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS



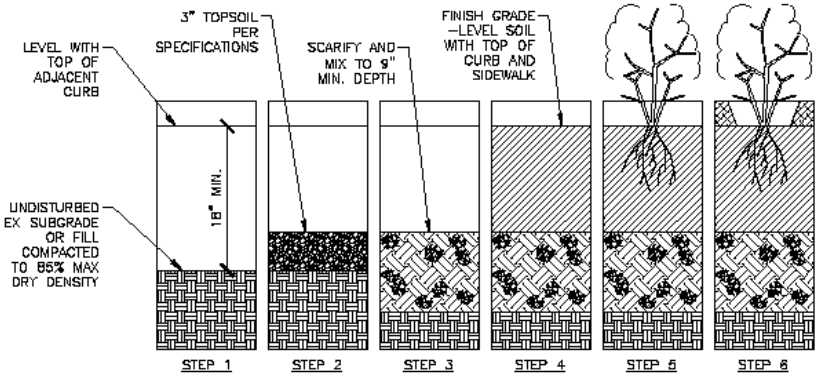
TYPE 1 PREPARATION SEQUENCE:

STEP	DESCRIPTION
1	SET SUBGRADE 10" BELOW FINISH GRADE.
2	REMOVE ALL DEBRIS INCLUDING STUMPS, STICKS, ROOTS AND ROCKS OVER 1" AND DISPOSE OFF SITE. ENGINEER SHALL REVIEW AND APPROVE SUBGRADE PRIOR TO PROCEEDING WITH WORK.
3	PLACE 3" DEPTH TOPSOIL AND SCARIFY TO A DEPTH OF 6".
4	INSTALL 6" DEPTH COMPACTED TOPSOIL TYPE A. COMPACT TO 85% MAXIMUM DRY DENSITY. ENGINEER SHALL REVIEW AND APPROVE TOPSOIL INSTALLATION PRIOR TO PROCEEDING WITH WORK.
5	INSTALL SEED OR 1½" DEPTH MULCH PER SPECIFICATIONS.

City of Bellevue

TITLE:
PLANTING - STREETSCAPE MEDIANS - TYPE 1 SOIL PREPARATION

DRAWING #:	PK-IM-06B
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS



TYPE 2 PREPARATION SEQUENCE:

STEP	DESCRIPTION
1	EXCAVATE EX SOIL TO 18" MIN. DEPTH BELOW FINISH GRADE. AVOID UNDERMINING NEARBY FEATURES.
2	INSTALL 3" DEPTH FINE COMPOST.
3	SCARIFY TOPSOIL TO A 9" DEPTH. ENGINEER SHALL REVIEW & APPROVE SCARIFICATION PRIOR TO PROCEEDING TO STEP 4.
4	INSTALL 15" MIN. DEPTH TOPSOIL TYPE A AND REVIEW FINISH GRADE WITH ENGINEER PRIOR TO PLANTING.
5	INSTALL PLANTS, MATERIALS & IRRIGATION PER SPECIFICATIONS.
6	INSTALL 1½" DEPTH MULCH PER SPECIFICATIONS (NO WOOD CHIPS)

NOTES:
1. ALL DIMENSIONS INDICATE COMPACTED DEPTHS. TOPSOIL TYPE A & MULCH SHALL BE COMPACTED TO 85% DRY DENSITY.
2. INCREASE DEPTH OF EXCAVATION & TOPSOIL TO ACCOMODATE TREE ROOT BALL DEPTHS OF 18"–30".
3. MOUND TOPSOIL IN PLANTER STRIPS AND MEDIANS PER SPECIFICATIONS.

City of Bellevue

TITLE:
PLANTING - STREETSCAPE MEDIANS - TYPE 2 SOIL PREPARATION

DRAWING #:	PK-IM-06C
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS

NOTES:
1. CRITICAL ROOT ZONE (CRZ):
MEASURED AT 1' RADIUS FOR EVERY DIAMETER INCH OF TRUNK MEASURED AT BREAST HEIGHT (DBH).

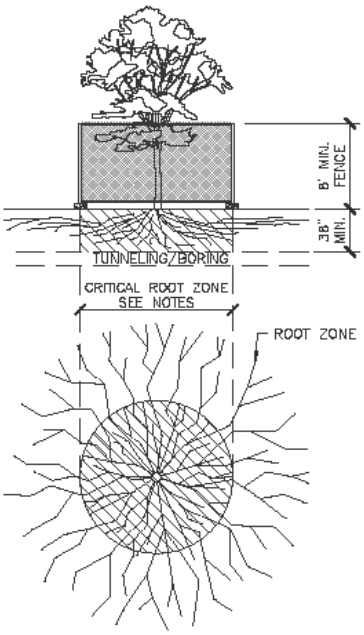
2. TREE PROTECTION DURING CONSTRUCTION:
A 8' HIGH TEMPORARY CHAIN LINK OR PROJECT ENGINEER APPROVED FENCE SHALL BE ERECTED AT THE CRZ OF TREE(S) TO BE SAVED, OR AS APPROVED BY INSPECTOR. THE FENCE SHALL COMPLETELY ENCIRCLE THE TREE(S). INSTALL FENCE POSTS USING PIER BLOCKS ONLY. IF INSTALLING POSTS DIRECTLY INTO GROUND IS NECESSARY, AVOID DRIVING POSTS INTO MAJOR ROOTS.

3. ENTRY:
THE CONTRACTOR SHALL CONTACT THE CITY INSPECTOR PRIOR TO ENTERING THE TREE PROTECTION AREA. NO EXCAVATION, MATERIAL STOCKPILING, VEHICULAR TRAFFIC OR STORAGE OF EQUIPMENT /MACHINERY SHALL BE ALLOWED WITHIN THE LIMIT OF FENCING, INCLUDING DURING FENCE INSTALLATION AND REMOVAL.

4. ADJUSTMENT:
CITY INSPECTOR MAY ADJUST FENCE LOCATION FOR DIFFERENT PHASES OF CONSTRUCTION OR TO ACCOMODATE PEDESTRIAN USE OF ROW, AS NEEDED.

5. TREATMENT OF ROOTS EXPOSED DURING CONSTRUCTION:
FOR ROOTS OVER 1" IN DIAMETER DAMAGED DURING CONSTRUCTION, MAKE A CLEAN STRAIGHT CUT TO REMOVE DAMAGED PORTION OF ROOT. ALL EXPOSED ROOTS SHALL BE TEMPORARILY COVERED WITH MOIST BURLAP TO PREVENT DRYING AND COVERED WITH SOIL AS SOON AS POSSIBLE. SEVERANCE OF ROOTS LARGER THAN 2" DIA. REQUIRES APPROVAL FROM THE CITY INSPECTOR.

6. TUNNELING/BORING:
TUNNELING OR BORING WITHIN A TREE'S CRZ SHALL OCCUR AT LEAST 36" BELOW GRADE OR DEEPER IF DIRECTED BY THE CITY INSPECTOR.

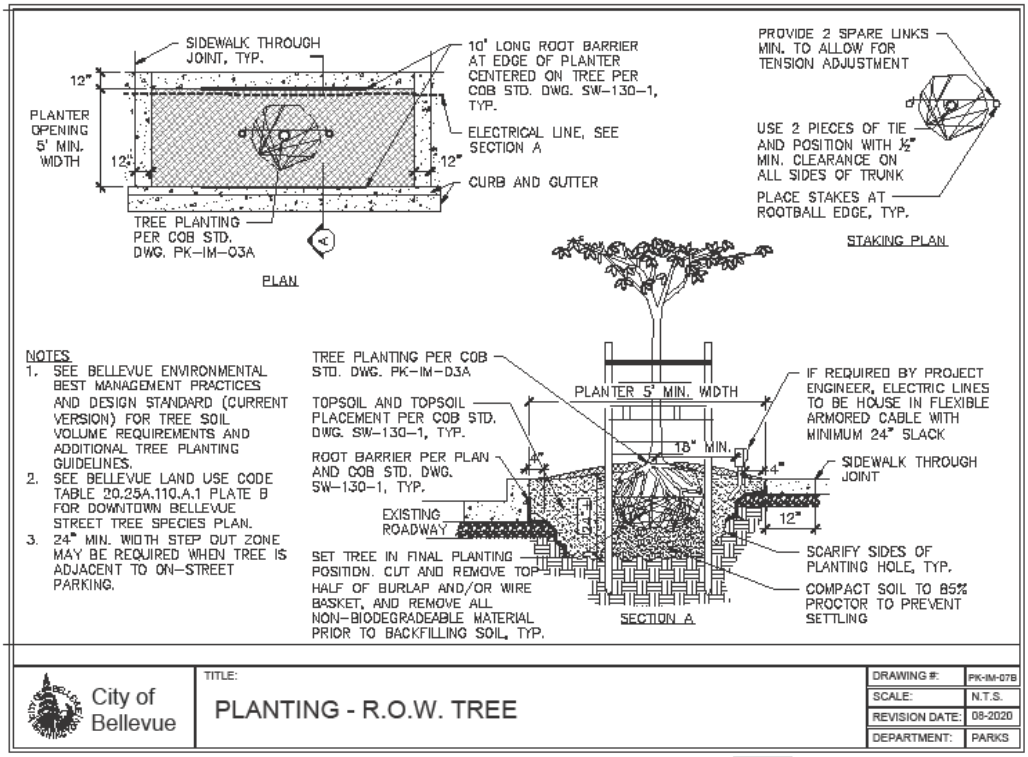


City of Bellevue

TITLE:
PLANTING - TREE PROTECTION IN ROW

DRAWING #:	PK-IM-07A
SCALE:	N.T.S.
REVISION DATE:	08-2020
DEPARTMENT:	PARKS

Standard detail revised with support of King Conservation District

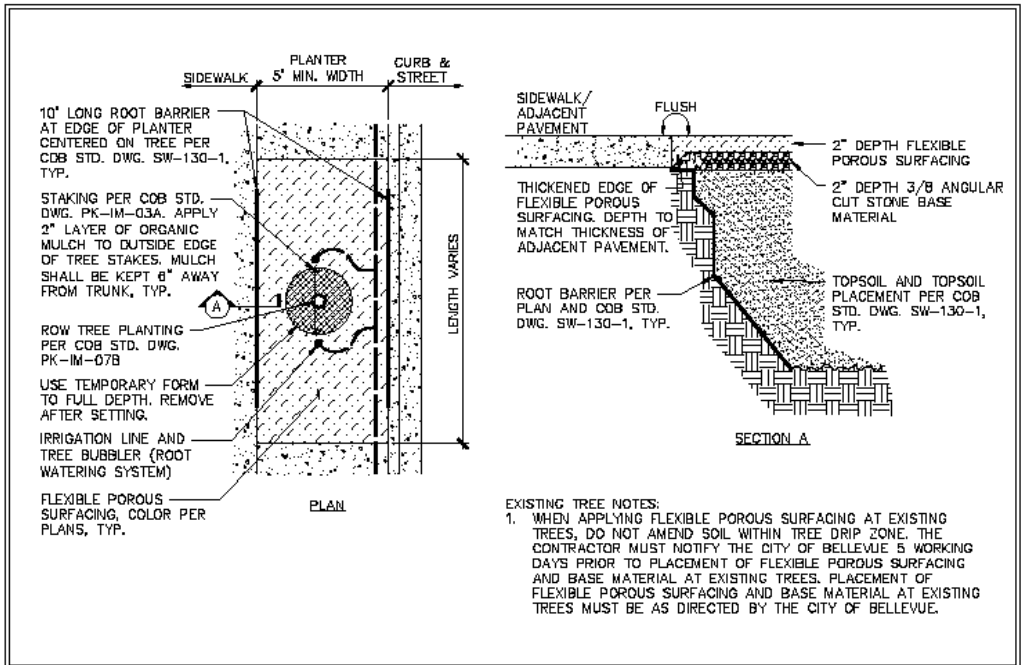


City of Bellevue

TITLE: PLANTING - R.O.W. TREE

DRAWING #:	PK-IM-07B
SCALE:	N.T.S.
REVISION DATE:	08-2020
DEPARTMENT:	PARKS

Standard detail revised with support of King Conservation District



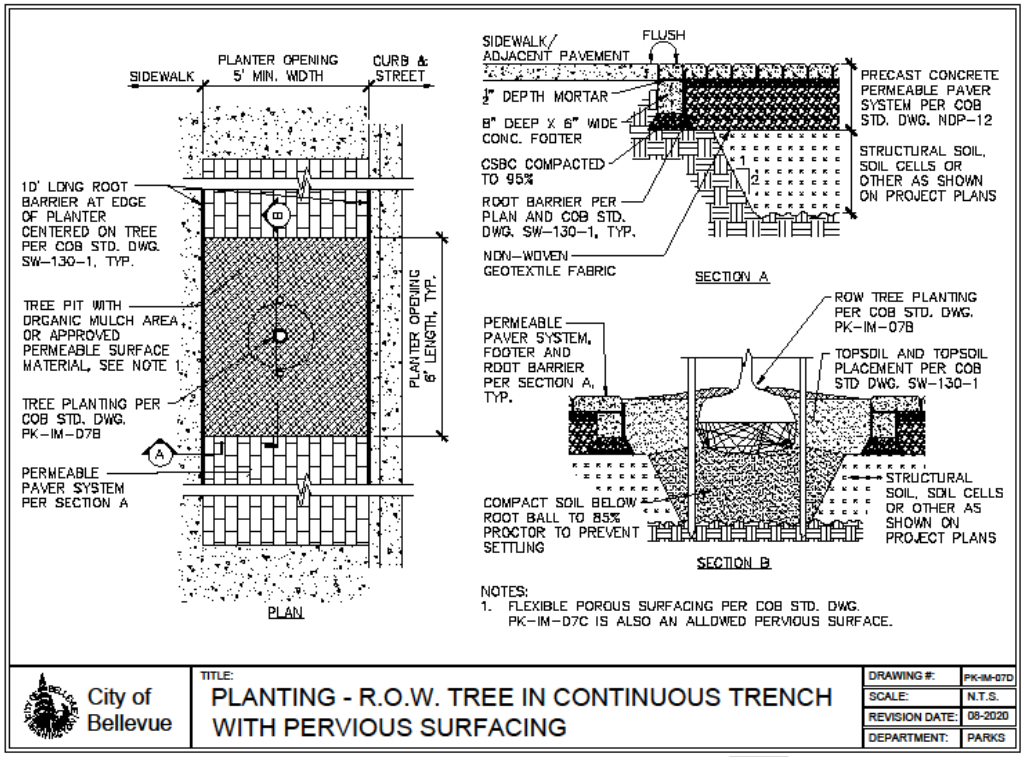
EXISTING TREE NOTES:
1. WHEN APPLYING FLEXIBLE POROUS SURFACING AT EXISTING TREES, DO NOT AMEND SOIL WITHIN TREE DRIP ZONE. THE CONTRACTOR MUST NOTIFY THE CITY OF BELLEVUE 5 WORKING DAYS PRIOR TO PLACEMENT OF FLEXIBLE POROUS SURFACING AND BASE MATERIAL AT EXISTING TREES. PLACEMENT OF FLEXIBLE POROUS SURFACING AND BASE MATERIAL AT EXISTING TREES MUST BE AS DIRECTED BY THE CITY OF BELLEVUE.

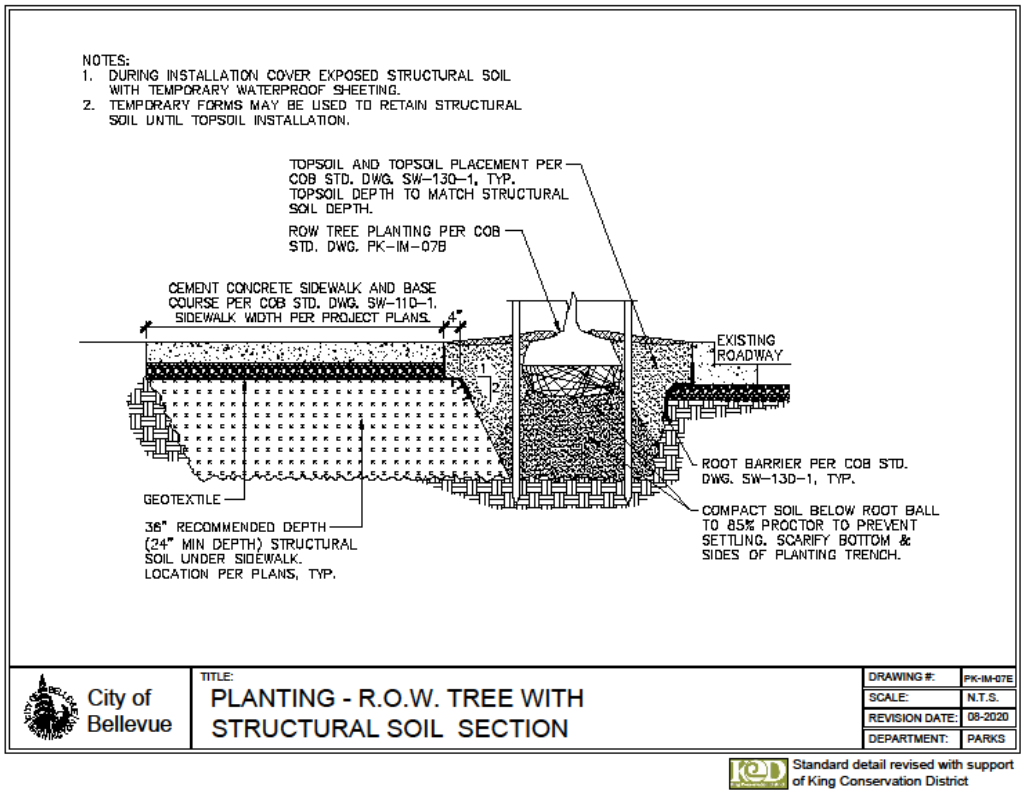
City of Bellevue

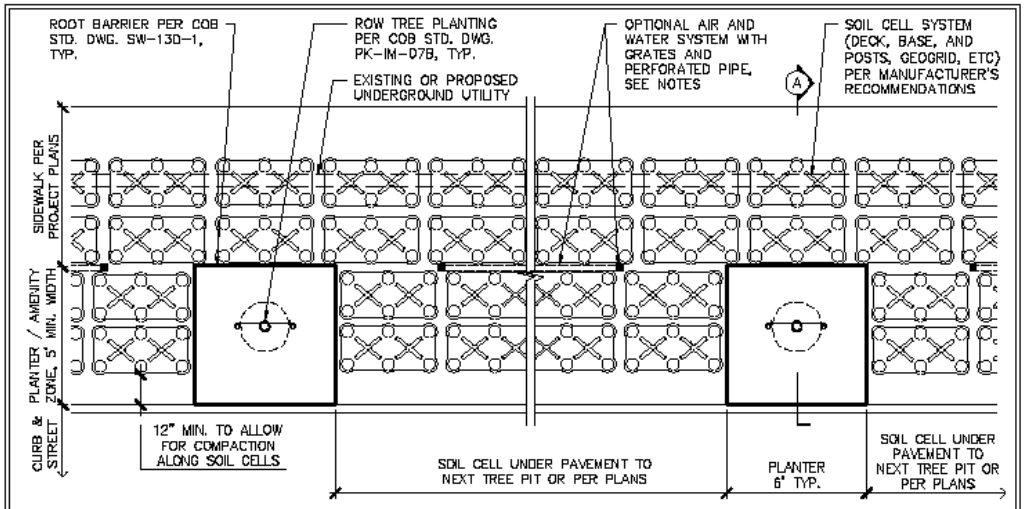
TITLE: FLEXIBLE POROUS SURFACING AT TREE PLANTER

DRAWING #:	PK-IM-07C
SCALE:	N.T.S.
REVISION DATE:	08-2020
DEPARTMENT:	PARKS

Standard detail revised with support of King Conservation District


SIDEWALK
PLANTER OPENING
5' MIN. WIDTH
CURB & STREET
10' LONG ROOT BARRIER AT EDGE OF PLANTER CENTERED ON TREE PER COB STD. DWG. SW-130-1, TYP.
TREE PIT WITH ORGANIC MULCH AREA OR APPROVED PERMEABLE SURFACE MATERIAL, SEE NOTE 1.
TREE PLANTING PER COB STD. DWG. PK-IM-07B
PERMEABLE PAVER SYSTEM PER SECTION A
PLANTER OPENING 6' LENGTH, TYP.
PLAN
SIDEWALK/ ADJACENT PAVEMENT
FLUSH
1" DEPTH MORTAR
8" DEEP X 6" WIDE CONC. FOOTER
CSBC COMPACTED TO 95%
ROOT BARRIER PER PLAN AND COB STD. DWG. SW-130-1, TYP.
NON-WOVEN GEOTEXTILE FABRIC
PRECAST CONCRETE PERMEABLE PAVER SYSTEM PER COB STD. DWG. NDP-12
STRUCTURAL SOIL, SOIL CELLS OR OTHER AS SHOWN ON PROJECT PLANS
SECTION A
PERMEABLE PAVER SYSTEM, FOOTER AND ROOT BARRIER PER SECTION A, TYP.
ROW TREE PLANTING PER COB STD. DWG. PK-IM-07B
TOPSOIL AND TOPSOIL PLACEMENT PER COB STD DWG. SW-130-1
STRUCTURAL SOIL, SOIL CELLS OR OTHER AS SHOWN ON PROJECT PLANS
COMPACT SOIL BELOW ROOT BALL TO 85% PROCTOR TO PREVENT SETTLING
SECTION B
NOTES:
1. FLEXIBLE POROUS SURFACING PER COB STD. DWG. PK-IM-D7C IS ALSO AN ALLOWED PERVIOUS SURFACE.
City of Bellevue
TITLE:
PLANTING - R.O.W. TREE IN CONTINUOUS TRENCH WITH PERVIOUS SURFACING
DRAWING #: PK-IM-07D
SCALE: N.T.S.
REVISION DATE: 08-2020
DEPARTMENT: PARKS
Standard detail revised with support of King Conservation District


NOTES:
1. DURING INSTALLATION COVER EXPOSED STRUCTURAL SOIL WITH TEMPORARY WATERPROOF SHEETING.
2. TEMPORARY FORMS MAY BE USED TO RETAIN STRUCTURAL SOIL UNTIL TOPSOIL INSTALLATION.
TOPSOIL AND TOPSOIL PLACEMENT PER COB STD. DWG. SW-130-1, TYP. TOPSOIL DEPTH TO MATCH STRUCTURAL SOIL DEPTH.
ROW TREE PLANTING PER COB STD. DWG. PK-IM-07B
CEMENT CONCRETE SIDEWALK AND BASE COURSE PER COB STD. DWG. SW-110-1. SIDEWALK WIDTH PER PROJECT PLANS.
4"
EXISTING ROADWAY
ROOT BARRIER PER COB STD. DWG. SW-130-1, TYP.
COMPACT SOIL BELOW ROOT BALL TO 85% PROCTOR TO PREVENT SETTLING. SCARIFY BOTTOM & SIDES OF PLANTING TRENCH.
GEOTEXTILE
36" RECOMMENDED DEPTH (24" MIN DEPTH) STRUCTURAL SOIL UNDER SIDEWALK. LOCATION PER PLANS, TYP.
City of Bellevue
TITLE:
PLANTING - R.O.W. TREE WITH STRUCTURAL SOIL SECTION
DRAWING #: PK-IM-07E
SCALE: N.T.S.
REVISION DATE: 08-2020
DEPARTMENT: PARKS
Standard detail revised with support of King Conservation District



PLAN

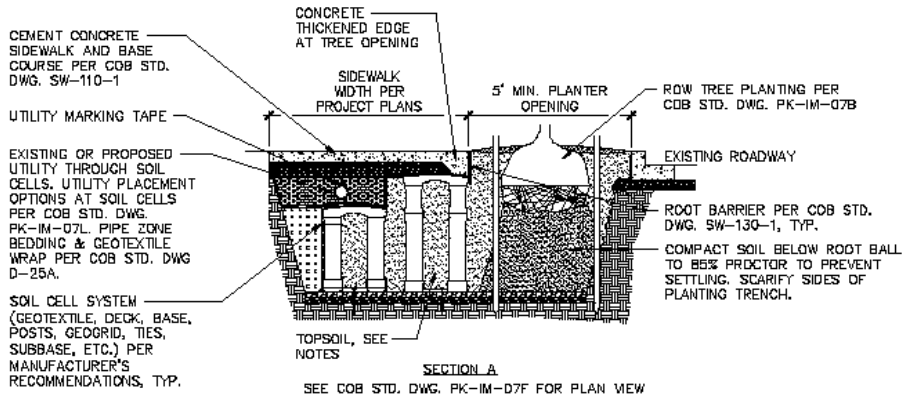
NOTES:
1. SEE COB STD. DWG. PK-IM-07G FOR TYPICAL SOIL CELL SECTION AND ADDITIONAL SOIL CELL NOTES.
2. AIR AND WATER SYSTEM CAN BE USED WHEN SOIL CELLS DO NOT HAVE DRIP IRRIGATION OR ARE UNDER IMPERVIOUS PAVEMENT. LAY OUT PIPE AND VENTS IN A STRAIGHT LINE FOR PIPE MAINTENANCE CLEANING.
3. TOPSOIL PER COB STD. DWG. SW-130-1. TOPSOIL TO BE PLACED IN SOIL CELLS PER SOIL CELL MANUFACTURER'S SPECIFICATIONS.

City of Bellevue

TITLE: PLANTING - R.O.W. TREE WITH SOIL CELLS PLAN

DRAWING #:	PK-IM-07F
SCALE:	N.T.S.
REVISION DATE:	08-2020
DEPARTMENT:	PARKS

Standard detail revised with support of King Conservation District



SECTION A

SEE COB STD. DWG. PK-IM-07F FOR PLAN VIEW

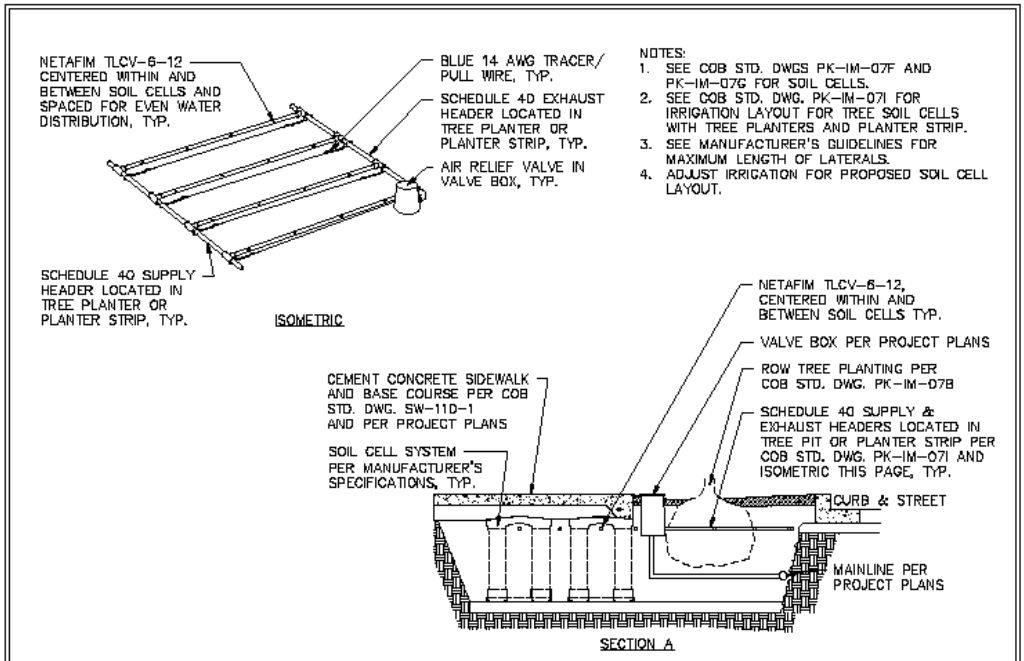
NOTES
1. SOIL CELL PLAN VIEW AND ADDITIONAL SOIL CELL NOTES PER COB STD. DWG. PK-IM-07F.
2. SOIL CELL DRIP IRRIGATION PER COB STD. DWG. PK-IM-07H.
3. SOIL CELL SYSTEM DEPTH AND EXTENTS VARY BY PROJECT.
4. SOIL CELL INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
5. OPTIONAL AIR AND WATER SYSTEM CAN BE USED WHEN SOIL CELLS DO NOT HAVE DRIP IRRIGATION OR ARE UNDER IMPERVIOUS PAVEMENT. SEE SYSTEM LAYOUT PER COB STD. DWG. PK-IM-07I.
6. TOPSOIL PER COB STD. DWG. SW-130-1. TOPSOIL TO BE PLACED IN SOIL CELLS PER SOIL CELL MANUFACTURER'S SPECIFICATIONS.

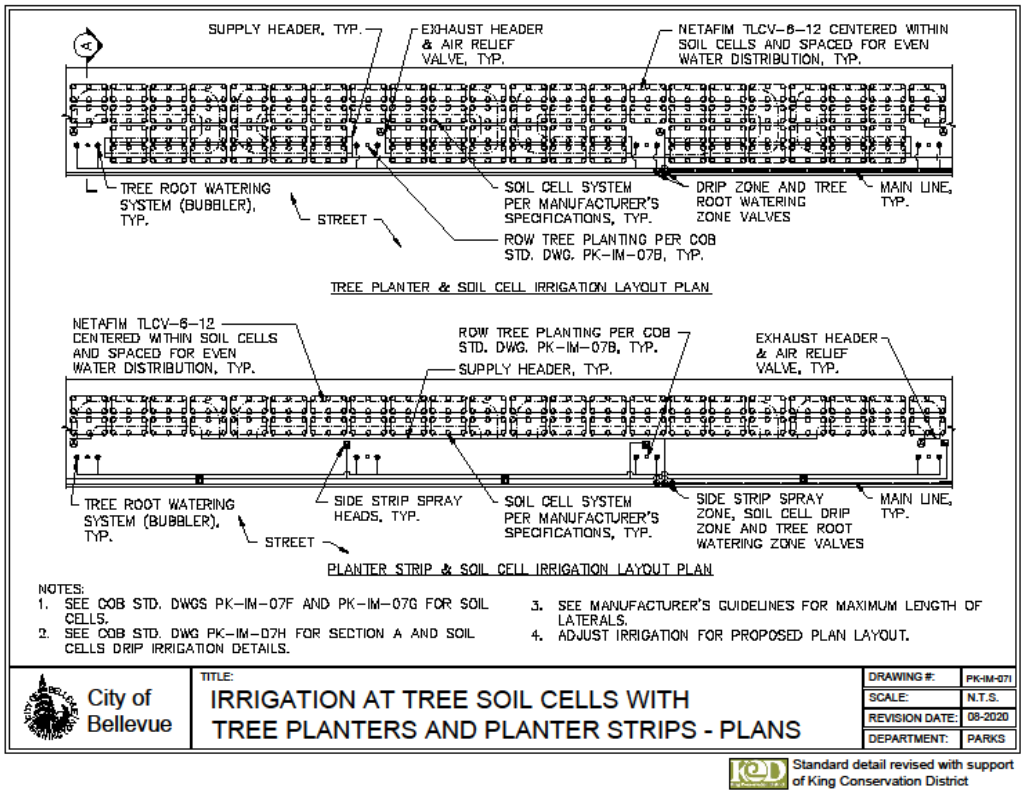
City of Bellevue

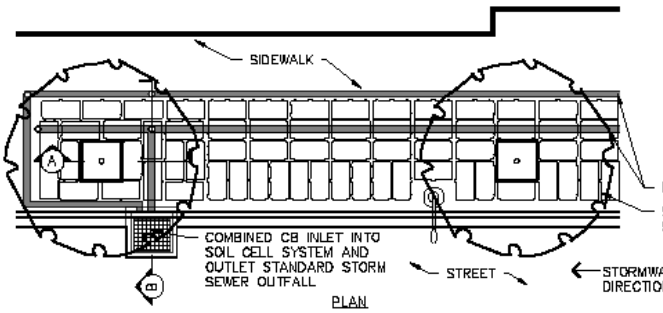
TITLE: PLANTING - R.O.W. TREE WITH SOIL CELLS SECTION

DRAWING #:	PK-IM-07G
SCALE:	N.T.S.
REVISION DATE:	08-2020
DEPARTMENT:	PARKS

Standard detail revised with support of King Conservation District


NETAFIM TLCV-6-12 CENTERED WITHIN AND BETWEEN SOIL CELLS AND SPACED FOR EVEN WATER DISTRIBUTION, TYP.
BLUE 14 AWG TRACER/ PULL WIRE, TYP.
SCHEDULE 40 EXHAUST HEADER LOCATED IN TREE PLANTER OR PLANTER STRIP, TYP.
AIR RELIEF VALVE IN VALVE BOX, TYP.
SCHEDULE 40 SUPPLY HEADER LOCATED IN TREE PLANTER OR PLANTER STRIP, TYP.
ISOMETRIC
NOTES:
1. SEE COB STD. DWGS PK-IM-07F AND PK-IM-07G FOR SOIL CELLS.
2. SEE COB STD. DWG. PK-IM-07I FOR IRRIGATION LAYOUT FOR TREE SOIL CELLS WITH TREE PLANTERS AND PLANTER STRIP.
3. SEE MANUFACTURER'S GUIDELINES FOR MAXIMUM LENGTH OF LATERALS.
4. ADJUST IRRIGATION FOR PROPOSED SOIL CELL LAYOUT.
NETAFIM TLCV-6-12, CENTERED WITHIN AND BETWEEN SOIL CELLS TYP.
VALVE BOX PER PROJECT PLANS
ROW TREE PLANTING PER COB STD. DWG. PK-IM-07B
SCHEDULE 40 SUPPLY & EXHAUST HEADERS LOCATED IN TREE PIT OR PLANTER STRIP PER COB STD. DWG. PK-IM-07I AND ISOMETRIC THIS PAGE, TYP.
CEMENT CONCRETE SIDEWALK AND BASE COURSE PER COB STD. DWG. SW-11D-1 AND PER PROJECT PLANS
SOIL CELL SYSTEM PER MANUFACTURER'S SPECIFICATIONS, TYP.
CURB & STREET
MAINLINE PER PROJECT PLANS
SECTION A
City of Bellevue
TITLE:
DRIP IRRIGATION AT TREE SOIL CELLS
DRAWING #: PK-IM-07H
SCALE: N.T.S.
REVISION DATE: 08-2020
DEPARTMENT: PARKS
Standard detail revised with support of King Conservation District

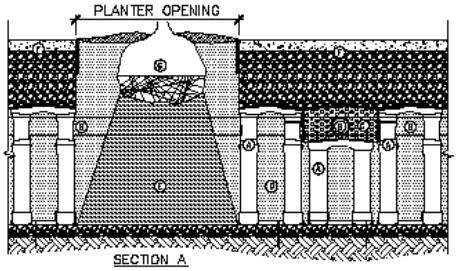

SUPPLY HEADER, TYP.
EXHAUST HEADER & AIR RELIEF VALVE, TYP.
NETAFIM TLCV-6-12 CENTERED WITHIN SOIL CELLS AND SPACED FOR EVEN WATER DISTRIBUTION, TYP.
TREE ROOT WATERING SYSTEM (BUBBLER), TYP.
STREET
SOIL CELL SYSTEM PER MANUFACTURER'S SPECIFICATIONS, TYP.
ROW TREE PLANTING PER COB STD. DWG. PK-IM-07B, TYP.
DRIP ZONE AND TREE ROOT WATERING ZONE VALVES
MAIN LINE, TYP.
TREE PLANTER & SOIL CELL IRRIGATION LAYOUT PLAN
NETAFIM TLCV-6-12 CENTERED WITHIN SOIL CELLS AND SPACED FOR EVEN WATER DISTRIBUTION, TYP.
ROW TREE PLANTING PER COB STD. DWG. PK-IM-07B, TYP.
SUPPLY HEADER, TYP.
EXHAUST HEADER & AIR RELIEF VALVE, TYP.
TREE ROOT WATERING SYSTEM (BUBBLER), TYP.
STREET
SIDE STRIP SPRAY HEADS, TYP.
SOIL CELL SYSTEM PER MANUFACTURER'S SPECIFICATIONS, TYP.
SIDE STRIP SPRAY ZONE, SOIL CELL DRIP ZONE AND TREE ROOT WATERING ZONE VALVES
MAIN LINE, TYP.
PLANTER STRIP & SOIL CELL IRRIGATION LAYOUT PLAN
NOTES:
1. SEE COB STD. DWGS PK-IM-07F AND PK-IM-07G FOR SOIL CELLS.
2. SEE COB STD. DWG PK-IM-07H FOR SECTION A AND SOIL CELLS DRIP IRRIGATION DETAILS.
3. SEE MANUFACTURER'S GUIDELINES FOR MAXIMUM LENGTH OF LATERALS.
4. ADJUST IRRIGATION FOR PROPOSED PLAN LAYOUT.
City of Bellevue
TITLE:
IRRIGATION AT TREE SOIL CELLS WITH TREE PLANTERS AND PLANTER STRIPS - PLANS
DRAWING #: PK-IM-07I
SCALE: N.T.S.
REVISION DATE: 08-2020
DEPARTMENT: PARKS
Standard detail revised with support of King Conservation District



NOTES:
1. SEE COB STD. DWG. PK-IM-07K FOR SECTION B
2. SOIL CELL INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
3. TREE AND CATCH BASIN PLACEMENT TO MEET COB STANDARDS

DISTRIBUTION PIPE, TYP.

SOIL CELL PER COB STD. DWG. PK-IM-07G



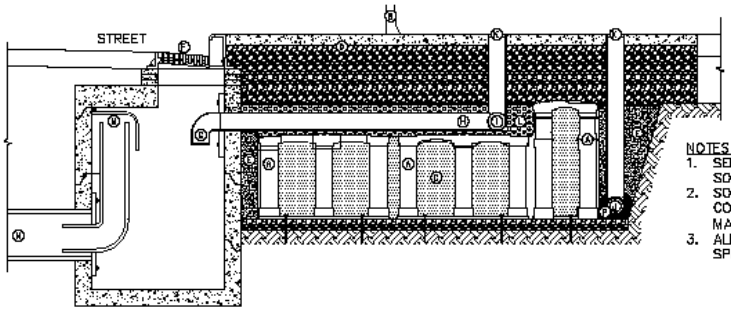
SECTION A KEY NOTES:
- Ⓐ SOIL CELL SYSTEM (DECK, BASE, AND POSTS, ETC.) PER MANUFACTURER'S SPECIFICATIONS
- Ⓑ DISTRIBUTION PIPE ASSEMBLY
- Ⓒ CLEAR STONE AGGREGATE
- Ⓓ BIORETENTION SOIL.
- Ⓔ COMPACT BIORETENTION SOIL UNDER ROOT BALL TO 85% PROCTOR TO PREVENT SETTLING.
- Ⓕ PAVEMENT SECTION PER PROJECT
- Ⓖ TREE PLANTING PER COB STD. DWG. PK-IM-02

City of Bellevue

TITLE: TREE SOIL CELLS FOR BIORETENTION - PLAN AND SECTION A

DRAWING #:	PK-IM-07J
SCALE:	N.T.S.
REVISION DATE:	08-2020
DEPARTMENT:	PARKS

Standard detail revised with support of King Conservation District



NOTES
1. SEE COB STD. DWGS. PK-IM-07J FOR SOIL CELL PLAN AND SECTION A.
2. SOIL CELL INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
3. ALL STORMWATER ELEMENTS TO BE SPECIFIED BY PROJECT ENGINEER.

KEY NOTES
- Ⓐ SOIL CELL SYSTEM (DECK, BASE, AND POSTS)
- Ⓑ ROW TREE PLANTING (BEHIND) PER COB STD. DWG. PK-IM-07B
- Ⓒ BIORETENTION PLANTING SOIL, PER PROJECT
- Ⓓ PAVEMENT SECTION, PER PROJECT
- Ⓔ BACKFILL, PER PROJECT SPECIFICATIONS
- Ⓕ CATCH BASIN WITH CURB INLET AND GRATE PER PROJECT PLAN
- Ⓖ STORMWATER DISTRIBUTION PIPE INLET INTO SOIL CELLS WITH TRASH FILTER, SIZE AND MATERIAL PER PROJECT
- Ⓗ SOLID PIPE INTO SOIL CELL SYSTEM.
- Ⓘ PERFORATED DISTRIBUTION PIPE IN AGGREGATE CLEAR STONE.
- Ⓙ UNDERDRAIN, ENSURE POSITIVE DRAINAGE TO STORMWATER OUTFALL
- Ⓚ CLEANOUT PIPE WITH CAP PER PROJECT, SECURE TO PAVEMENT AT SURFACE
- Ⓛ CLEAR STONE AGGREGATE, PER PROJECT
- Ⓜ OVERFLOW
- Ⓝ OUTLET PIPE

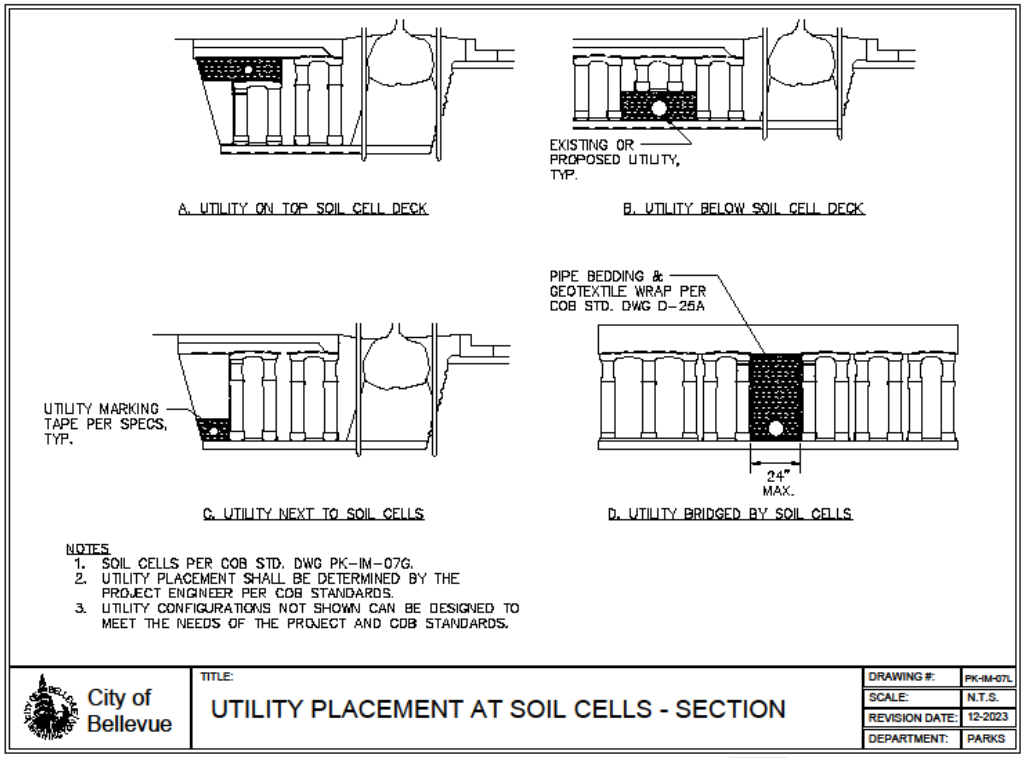
SECTION B

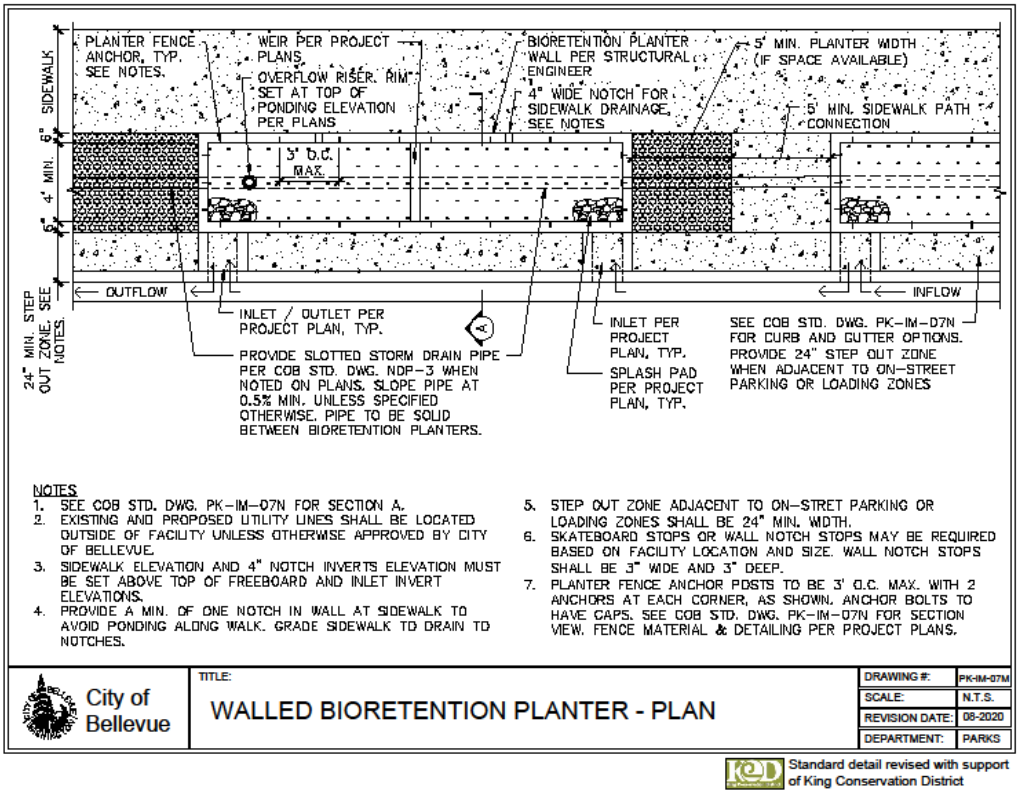
City of Bellevue

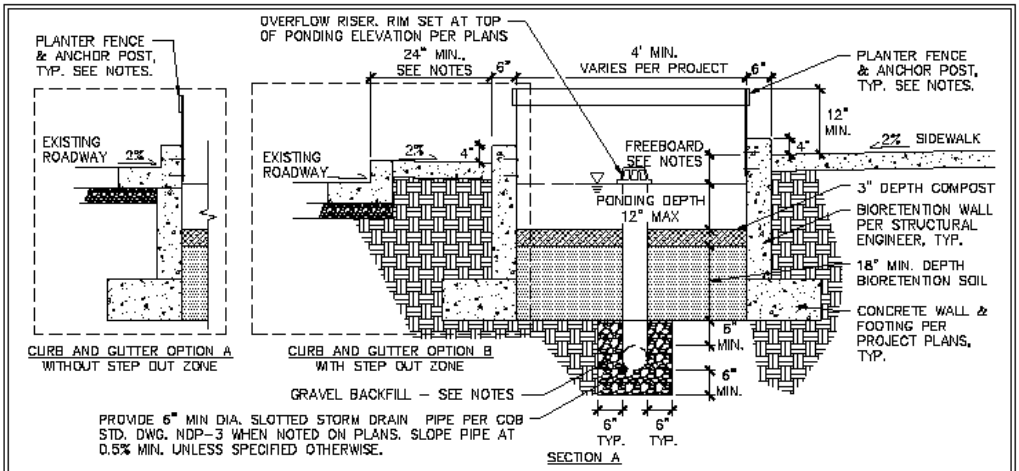
TITLE: TREE SOIL CELLS FOR BIORETENTION - SECTION B

DRAWING #:	PK-IM-07K
SCALE:	N.T.S.
REVISION DATE:	08-2020
DEPARTMENT:	PARKS

Standard detail revised with support of King Conservation District


EXISTING OR PROPOSED UTILITY, TYP.
A. UTILITY ON TOP SOIL CELL DECK
B. UTILITY BELOW SOIL CELL DECK
PIPE BEDDING & GEOTEXTILE WRAP PER COB STD. DWG D-25A
UTILITY MARKING TAPE PER SPECS, TYP.
24" MAX.
C. UTILITY NEXT TO SOIL CELLS
D. UTILITY BRIDGED BY SOIL CELLS
NOTES
1. SOIL CELLS PER COB STD. DWG PK-IM-07G.
2. UTILITY PLACEMENT SHALL BE DETERMINED BY THE PROJECT ENGINEER PER COB STANDARDS.
3. UTILITY CONFIGURATIONS NOT SHOWN CAN BE DESIGNED TO MEET THE NEEDS OF THE PROJECT AND COB STANDARDS.
City of Bellevue
TITLE:
UTILITY PLACEMENT AT SOIL CELLS - SECTION
DRAWING #: PK-IM-07L
SCALE: N.T.S.
REVISION DATE: 12-2023
DEPARTMENT: PARKS
Standard detail revised with support of King Conservation District


PLANTER FENCE ANCHOR, TYP. SEE NOTES.
WEIR PER PROJECT PLANS
OVERFLOW RISER. RIM SET AT TOP OF PONDING ELEVATION PER PLANS
BIORETENTION PLANTER WALL PER STRUCTURAL ENGINEER
4" WIDE NOTCH FOR SIDEWALK DRAINAGE. SEE NOTES
5' MIN. PLANTER WIDTH (IF SPACE AVAILABLE)
5' MIN. SIDEWALK PATH CONNECTION
SIDEWALK
6"
4' MIN.
6"
5' O.C. MAX.
24" MIN. STEP OUT ZONE. SEE NOTES
OUTFLOW
INFLOW
INLET / OUTLET PER PROJECT PLAN, TYP.
PROVIDE SLOTTED STORM DRAIN PIPE PER COB STD. DWG. NDP-3 WHEN NOTED ON PLANS. SLOPE PIPE AT 0.5% MIN. UNLESS SPECIFIED OTHERWISE. PIPE TO BE SOLID BETWEEN BIORETENTION PLANTERS.
INLET PER PROJECT PLAN, TYP.
SPLASH PAD PER PROJECT PLAN, TYP.
SEE COB STD. DWG. PK-IM-07N FOR CURB AND GUTTER OPTIONS. PROVIDE 24" STEP OUT ZONE WHEN ADJACENT TO ON-STREET PARKING OR LOADING ZONES
NOTES
1. SEE COB STD. DWG. PK-IM-07N FOR SECTION A.
2. EXISTING AND PROPOSED UTILITY LINES SHALL BE LOCATED OUTSIDE OF FACILITY UNLESS OTHERWISE APPROVED BY CITY OF BELLEVUE.
3. SIDEWALK ELEVATION AND 4" NOTCH INVERTS ELEVATION MUST BE SET ABOVE TOP OF FREEBOARD AND INLET INVERT ELEVATIONS.
4. PROVIDE A MIN. OF ONE NOTCH IN WALL AT SIDEWALK TO AVOID PONDING ALONG WALK. GRADE SIDEWALK TO DRAIN TO NOTCHES.
5. STEP OUT ZONE ADJACENT TO ON-STRET PARKING OR LOADING ZONES SHALL BE 24" MIN. WIDTH.
6. SKATEBOARD STOPS OR WALL NOTCH STOPS MAY BE REQUIRED BASED ON FACILITY LOCATION AND SIZE. WALL NOTCH STOPS SHALL BE 3" WIDE AND 3" DEEP.
7. PLANTER FENCE ANCHOR POSTS TO BE 3' O.C. MAX. WITH 2 ANCHORS AT EACH CORNER, AS SHOWN. ANCHOR BOLTS TO HAVE CAPS. SEE COB STD. DWG. PK-IM-07N FOR SECTION VIEW. FENCE MATERIAL & DETAILING PER PROJECT PLANS.
City of Bellevue
TITLE:
WALLED BIORETENTION PLANTER - PLAN
DRAWING #: PK-IM-07M
SCALE: N.T.S.
REVISION DATE: 08-2020
DEPARTMENT: PARKS
Standard detail revised with support of King Conservation District



NOTES

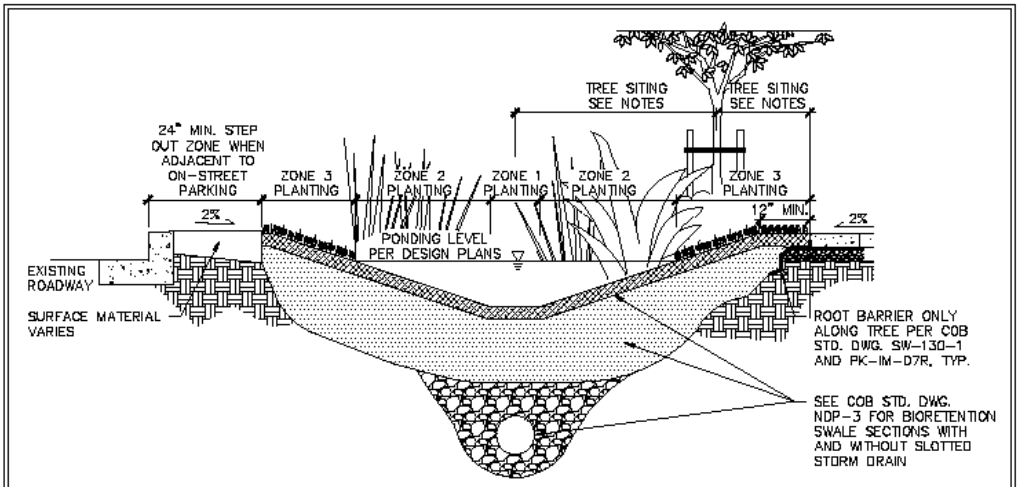
1. SEE COB STD. DWG. PK-IM-07M FOR PLAN AND ADDITIONAL NOTES.
2. FREEBOARD TO BE 6" MAX. AND VARIES PER PROJECT.
3. SEE CITY OF BELLEVUE STORM AND SURFACE WATER ENGINEERING STANDARDS (CURRENT EDITION) FOR MATERIALS.
4. OPTIONAL WATERPROOF LINER MAY BE REQUIRED AS DIRECTED BY ENGINEER.
5. STEP OUT ZONE MAY BE REQUIRED WHEN ADJACENT TO ON-STREET PARKING.
6. SMALL TREES MAY BE ALLOWED IN WALLED BIORETENTION PLANTERS WHEN LOCATED 5' FROM UNDERDRAIN.
7. OPTIONAL WATERPROOF LINER MAY BE PROVIDED FOR NON-INFILTRATING FACILITIES. GEOMEMBRANE LINER SHALL BE PVC WITH A MIN. THICKNESS OF 30 MILS AND SHALL BE IN ACCORDANCE WITH ASTM D7176. SEAMS AND LINER SHALL BE WATERPROOF TO TOP OF FREEBOARD. WATERPROOF LINER TO EXTEND TO TOP OF FREEBOARD AND SECURED PER LINER MANUFACTURER. SUBGRADE FOR LINER PER ENGINEER. GEOTEXTILE UNDER LINER PER LINER MANUFACTURER.
8. PLANTER FENCE TO BE 12" MIN. ABOVE SIDEWALK GRADE. SEE COB STD. DWG. PK-IM-07M FOR PLAN VIEW. FENCE MATERIAL & DETAILING PER PROJECT PLANS.

City of Bellevue

TITLE: WALLED BIORETENTION PLANTER - SECTION

DRAWING #:	PK-IM-07N
SCALE:	N.T.S.
REVISION DATE:	08-2020
DEPARTMENT:	PARKS

Standard detail revised with support of King Conservation District



NOTES

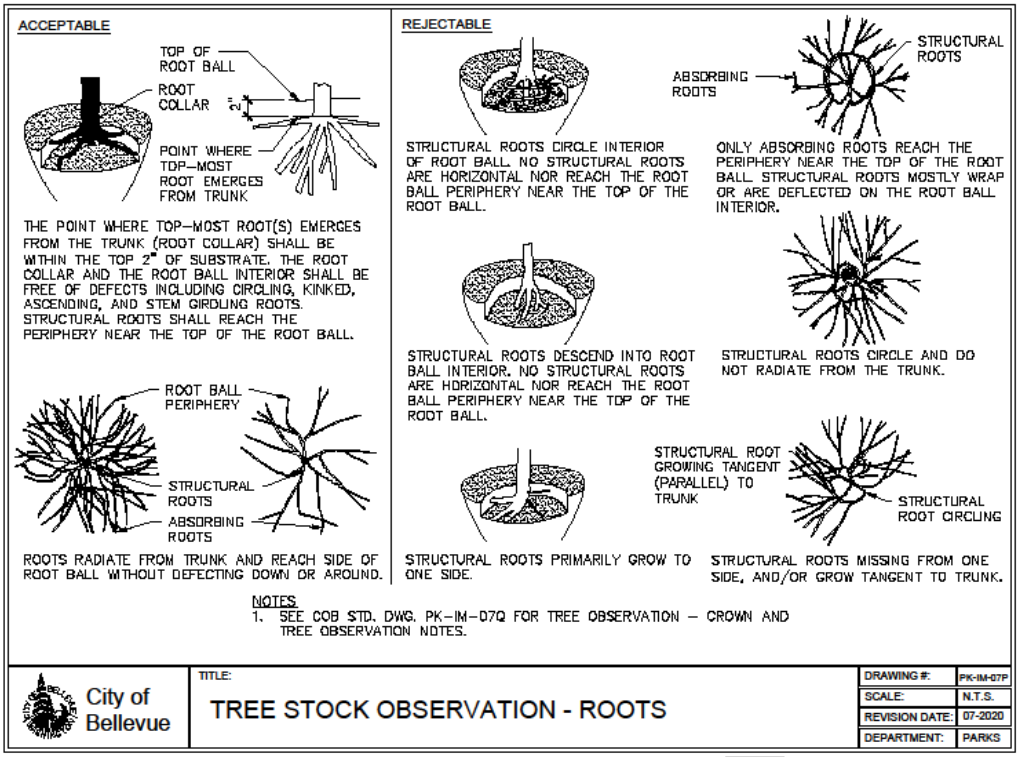
1. TREE TO BE 5' MIN. FROM UNDERDRAIN, 2' MIN FROM EDGE OF SIDEWALK AND 3' MIN FROM BACK OF CURB.
2. BIORETENTION SWALE PLANTING ZONES. SEE APPENDIX A IN THE "RAIN GARDEN HANDBOOK FOR WESTERN WASHINGTON" (JUNE 2013) FOR A LIST OF PLANTS.
   - ZONE 1 – RAIN GARDEN FLAT BOTTOM AREA, WETTEST PORTION OF THE FACILITY
   - ZONE 2 – LOWER SIDE SLOPE WITH OCCASIONAL STANDING WATER
   - ZONE 3 – UPPER SIDE SLOPE ABOVE PONDING LEVEL, DRIEST PORTION OF THE BIORETENTION SWALE
3. PLANTING PER PROJECT PLANS.
4. PROVIDE MIN. 5' WIDE PEDESTRIAN CROSSING ZONES AT SIDEWALK GRADE BETWEEN BIORETENTION SWALES.

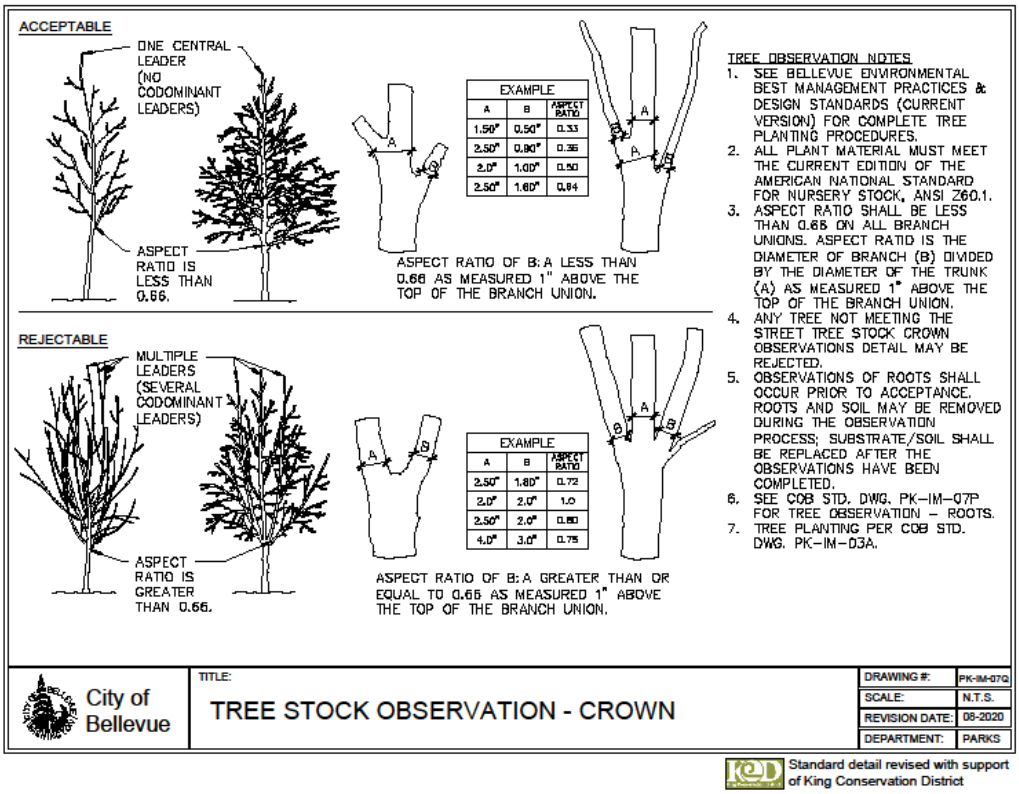
City of Bellevue

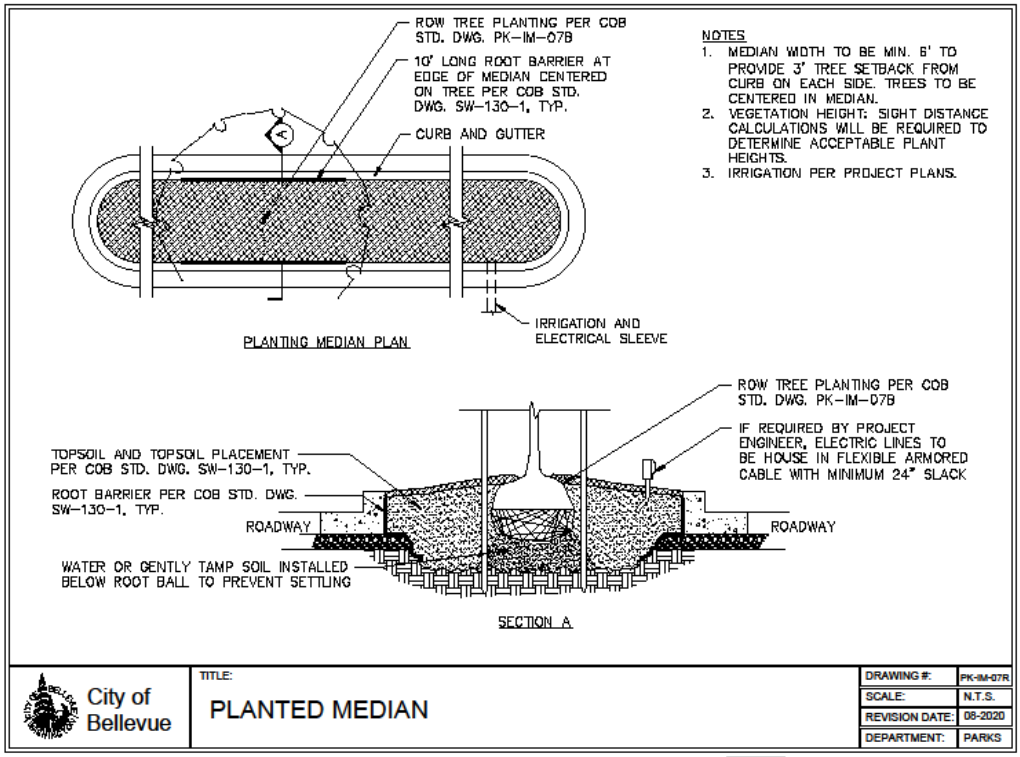
TITLE: PLANTING - BIORETENTION SWALE IN R.O.W. SECTION

DRAWING #:	PK-IM-07O
SCALE:	N.T.S.
REVISION DATE:	08-2020
DEPARTMENT:	PARKS

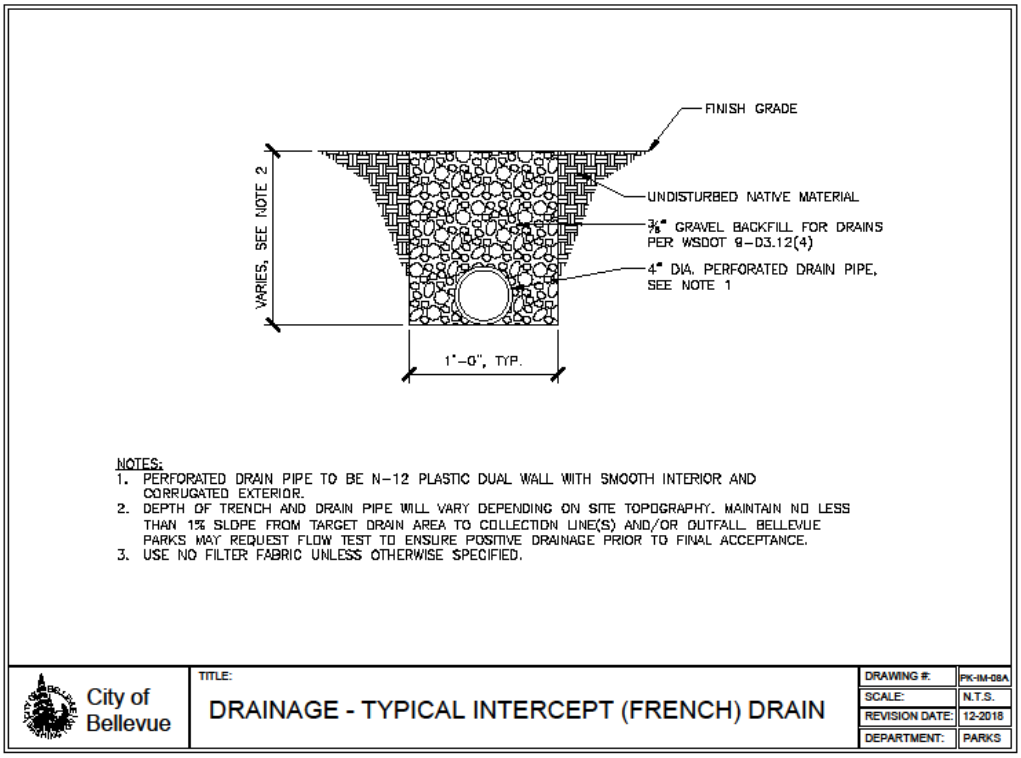
Standard detail revised with support of King Conservation District

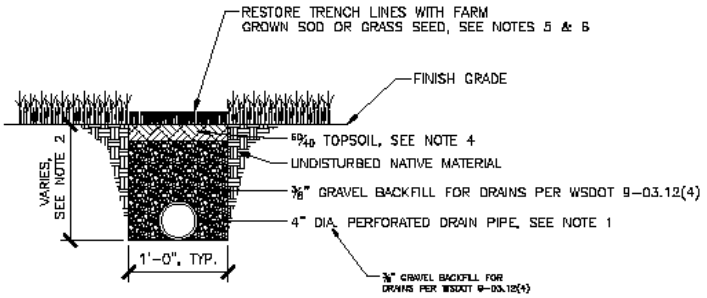

ACCEPTABLE
TOP OF ROOT BALL
ROOT COLLAR
POINT WHERE TOP-MOST ROOT EMERGES FROM TRUNK
THE POINT WHERE TOP-MOST ROOT(S) EMERGES FROM THE TRUNK (ROOT COLLAR) SHALL BE WITHIN THE TOP 2" OF SUBSTRATE. THE ROOT COLLAR AND THE ROOT BALL INTERIOR SHALL BE FREE OF DEFECTS INCLUDING CIRCLING, KINKED, ASCENDING, AND STEM GIRDLING ROOTS. STRUCTURAL ROOTS SHALL REACH THE PERIPHERY NEAR THE TOP OF THE ROOT BALL.
ROOT BALL PERIPHERY
STRUCTURAL ROOTS
ABSORBING ROOTS
ROOTS RADIATE FROM TRUNK AND REACH SIDE OF ROOT BALL WITHOUT DEFECTING DOWN OR AROUND.
REJECTABLE
STRUCTURAL ROOTS CIRCLE INTERIOR OF ROOT BALL. NO STRUCTURAL ROOTS ARE HORIZONTAL NOR REACH THE ROOT BALL PERIPHERY NEAR THE TOP OF THE ROOT BALL.
ABSORBING ROOTS
STRUCTURAL ROOTS
ONLY ABSORBING ROOTS REACH THE PERIPHERY NEAR THE TOP OF THE ROOT BALL. STRUCTURAL ROOTS MOSTLY WRAP OR ARE DEFLECTED ON THE ROOT BALL INTERIOR.
STRUCTURAL ROOTS DESCEND INTO ROOT BALL INTERIOR. NO STRUCTURAL ROOTS ARE HORIZONTAL NOR REACH THE ROOT BALL PERIPHERY NEAR THE TOP OF THE ROOT BALL.
STRUCTURAL ROOTS CIRCLE AND DO NOT RADIATE FROM THE TRUNK.
STRUCTURAL ROOTS PRIMARILY GROW TO ONE SIDE.
STRUCTURAL ROOT GROWING TANGENT (PARALLEL) TO TRUNK
STRUCTURAL ROOT CIRCLING
STRUCTURAL ROOTS MISSING FROM ONE SIDE, AND/OR GROW TANGENT TO TRUNK.
NOTES
1. SEE COB STD. DWG. PK-IM-07Q FOR TREE OBSERVATION - CROWN AND TREE OBSERVATION NOTES.
City of Bellevue
TITLE:
TREE STOCK OBSERVATION - ROOTS
DRAWING #: PK-IM-07P
SCALE: N.T.S.
REVISION DATE: 07-2020
DEPARTMENT: PARKS
Standard detail revised with support of King Conservation District


ACCEPTABLE
ONE CENTRAL LEADER (NO CODOMINANT LEADERS)
ASPECT RATIO IS LESS THAN 0.66.
EXAMPLE
A | B | ASPECT RATIO
1.50" | 0.50" | 0.33
2.50" | 0.90" | 0.36
2.0" | 1.00" | 0.50
2.50" | 1.60" | 0.64
ASPECT RATIO OF B:A LESS THAN 0.66 AS MEASURED 1" ABOVE THE TOP OF THE BRANCH UNION.
REJECTABLE
MULTIPLE LEADERS (SEVERAL CODOMINANT LEADERS)
ASPECT RATIO IS GREATER THAN 0.66.
EXAMPLE
A | B | ASPECT RATIO
2.50" | 1.80" | 0.72
2.0" | 2.0" | 1.0
2.50" | 2.0" | 0.80
4.0" | 3.0" | 0.75
ASPECT RATIO OF B:A GREATER THAN OR EQUAL TO 0.66 AS MEASURED 1" ABOVE THE TOP OF THE BRANCH UNION.
TREE OBSERVATION NOTES
1. SEE BELLEVUE ENVIRONMENTAL BEST MANAGEMENT PRACTICES & DESIGN STANDARDS (CURRENT VERSION) FOR COMPLETE TREE PLANTING PROCEDURES.
2. ALL PLANT MATERIAL MUST MEET THE CURRENT EDITION OF THE AMERICAN NATIONAL STANDARD FOR NURSERY STOCK, ANSI Z60.1.
3. ASPECT RATIO SHALL BE LESS THAN 0.66 ON ALL BRANCH UNIONS. ASPECT RATIO IS THE DIAMETER OF BRANCH (B) DIVIDED BY THE DIAMETER OF THE TRUNK (A) AS MEASURED 1" ABOVE THE TOP OF THE BRANCH UNION.
4. ANY TREE NOT MEETING THE STREET TREE STOCK CROWN OBSERVATIONS DETAIL MAY BE REJECTED.
5. OBSERVATIONS OF ROOTS SHALL OCCUR PRIOR TO ACCEPTANCE. ROOTS AND SOIL MAY BE REMOVED DURING THE OBSERVATION PROCESS; SUBSTRATE/SOIL SHALL BE REPLACED AFTER THE OBSERVATIONS HAVE BEEN COMPLETED.
6. SEE COB STD. DWG. PK-IM-07P FOR TREE OBSERVATION - ROOTS.
7. TREE PLANTING PER COB STD. DWG. PK-IM-03A.
City of Bellevue
TITLE:
TREE STOCK OBSERVATION - CROWN
DRAWING #: PK-IM-07Q
SCALE: N.T.S.
REVISION DATE: 08-2020
DEPARTMENT: PARKS
Standard detail revised with support of King Conservation District



Standard detail revised with support of King Conservation District



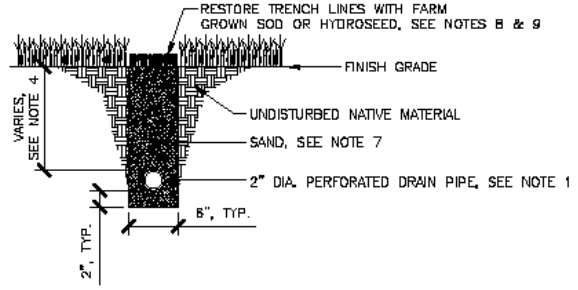


NOTES:
1. PERFORATED DRAIN PIPE TO BE N-12 PLASTIC DUAL WALL WITH SMOOTH INTERIOR AND CORRUGATED EXTERIOR. TYPICAL PIPE SPACING TO BE 15'-0" O.C. THROUGHOUT TARGET DRAIN AREA. USE 4" DIA. PLASTIC N-12 DUAL WALL SOLID PIPE FOR COLLECTION LINE(S).
2. DEPTH OF TRENCH AND DRAIN PIPE WILL VARY DEPENDING ON SITE TOPOGRAPHY. MAINTAIN NO LESS THAN 1% SLOPE FROM TARGET DRAIN AREA TO COLLECTION LINE(S) AND/OR OUTFALL. BELLEVUE PARKS MAY REQUEST FLOW TEST TO ENSURE POSITIVE DRAINAGE PRIOR TO FINAL ACCEPTANCE.
3. USE NO FILTER FABRIC UNLESS OTHERWISE SPECIFIED.
4. TOPSOIL TO BE 60% SAND, 40% COMPOST MIX FROM OWNER APPROVED VENDOR AND SHALL BE SUFFICIENTLY COMPACTED SO TO MINIMIZE SETTLING. SOIL MAY BE SLIGHTLY BERMED ABOVE FINISHED GRADE TO ACCOUNT FOR SETTLING.
5. FARM GROWN SOD SHALL BE PERENNIAL RYE GROWN LOCALLY IN THE PACIFIC NORTHWEST REGION WITHIN A MEDIUM CONTAINING NO NETTING AND LESS THAN 15% CLAY CONTENT. SOD SHALL BE CUT FROM THE SUPPLIER'S FIELD, DELIVERED TO THE PROJECT SITE AND INSTALLED WITHIN A 48 HOUR WINDOW. SOD SHALL BE INSPECTED AND APPROVED BY BELLEVUE PARKS PRIOR TO INSTALLATION.
6. GRASS SEED SHALL BE A PERENNIAL RYE MIX CONTAINING NO LESS THAN 98% PURE RYEGRASS SEED AND NO MORE THAN 0.5% WEED SEED.

City of Bellevue

TITLE: DRAINAGE - SUBSURFACE DRAIN FOR GENERAL TURF AREAS

DRAWING #:	PK-IM-08B
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS

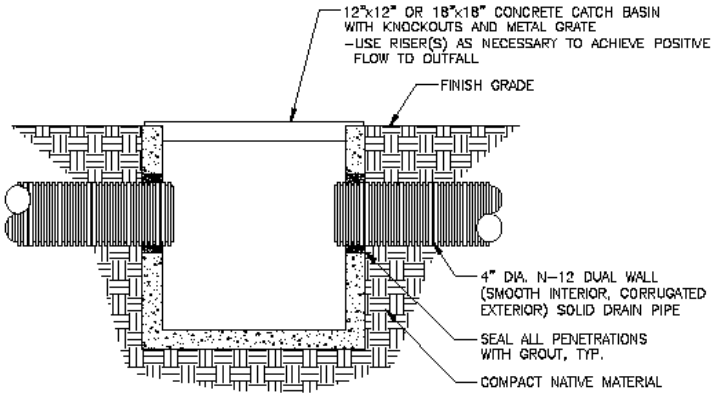


NOTES:
1. PERFORATED DRAIN PIPE TO BE NDS PLASTIC FLEXIBLE CORRUGATED SINGLE WALL DELIVERED TO THE SITE IN MIN. 250 LF ROLLS. PIPE TO BE SEAMLESS PER TRENCH RUN AND INSTALLED AT 10'-0" O.C. THROUGHOUT TARGET DRAIN AREA. USE 4" DIA. PLASTIC N-12 DUAL WALL (SMOOTH INTERIOR, CORRUGATED EXTERIOR) SOLID PIPE FOR COLLECTION LINE(S).
2. TRENCHING OPERATIONS SHALL BE PERFORMED SO THAT ALL SPOILS ARE ELEVATED BY A MEANS OF CONVEYANCE AND REMOVED FROM SITE WITHOUT TURF CONTACT. ALL TRENCHING SHALL BE AN AUTOMATED ONE STEP OPERATION TO MINIMIZE SITE COMPACTION AND DISTURBANCE.
3. PIPE SHALL BE MECHANICALLY INSTALLED TO ENSURE PRECISE ENVELOP OF FILL MATERIAL AND TO ENSURE THAT PIPE INSTALLATION IS ABOVE TRENCH BOTTOM AND CENTERED BETWEEN TRENCH WALLS. BACKFILL MEDIUM TO BE COMPACTED IN LIFTS/LAYERS TO PREVENT SETTLING. PIPE PLACEMENT TO BE AN AUTOMATED ONE STEP PROCESS TO MINIMIZE SITE COMPACTION AND DISTURBANCE.
4. DEPTH OF TRENCH WILL VARY DEPENDING ON SITE TOPOGRAPHY. MAINTAIN A MIN. 8" COVER OVER ALL DRAIN PIPE. MAINTAIN NO LESS THAN 1% SLOPE FROM TARGET DRAIN AREA TO COLLECTION LINE(S). TRENCHING SHALL EMPLOY AUTOMATED LASER GUIDE TO ENSURE POSITIVE FLOW.
5. ALL INSTALLATION EQUIPMENT SHALL BE TURF RATED SO NOT TO EXCEED GROUND PRESSURE OF 15 PSI, LOADED.
6. USE NO FILTER FABRIC UNLESS OTHERWISE SPECIFIED.
7. SAND MEDIUM BACKFILL MATERIAL SHALL MEET SIEVE ANALYSIS AS ESTABLISHED BY THE UNITED STATES GOLF ASSOCIATION (USGA) STANDARDS, OR APPROVED EQUAL.
8. FARM GROWN SOD SHALL BE PERENNIAL RYE GROWN LOCALLY IN THE PACIFIC NORTHWEST/BRITISH COLUMBIA REGION WITHIN A MEDIUM CONTAINING NO LESS THAN 95% SAND AND NO NETTING. SOD SHALL BE CUT FROM THE SUPPLIER'S FIELD, DELIVERED TO THE PROJECT SITE AND INSTALLED WITHIN A 48 HOUR WINDOW.
9. HYDROSEED SHALL BE A PERENNIAL RYE MIX CONTAINING NO LESS THAN 98% PURE RYEGRASS SEED AND NO MORE THAN 0.5% WEED SEED.

City of Bellevue

TITLE: DRAINAGE - SUBSURFACE DRAIN FOR NATURAL SPORT FIELD TURF AREAS

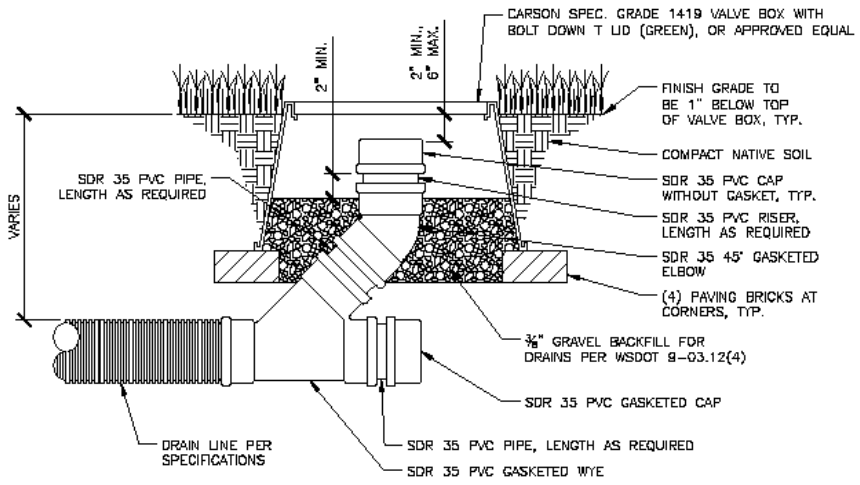
DRAWING #:	PK-IM-08C
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS



City of Bellevue

TITLE: DRAINAGE - CONCRETE CATCH BASIN WITH METAL GRATE

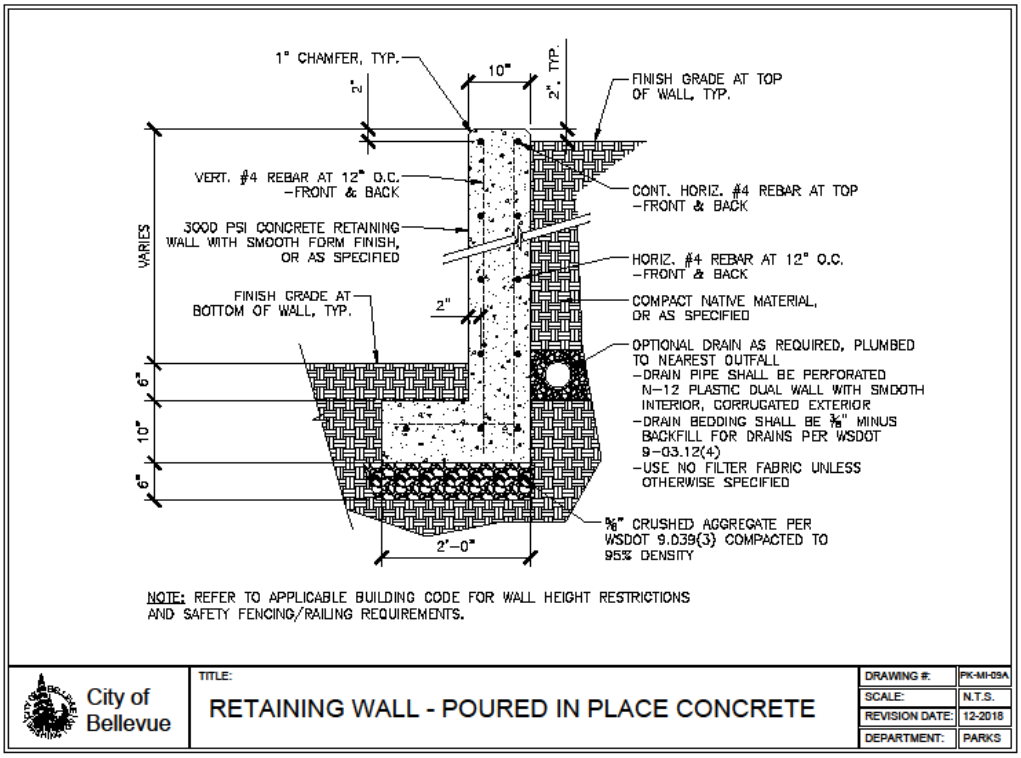
DRAWING #:	PK-IM-08D
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS

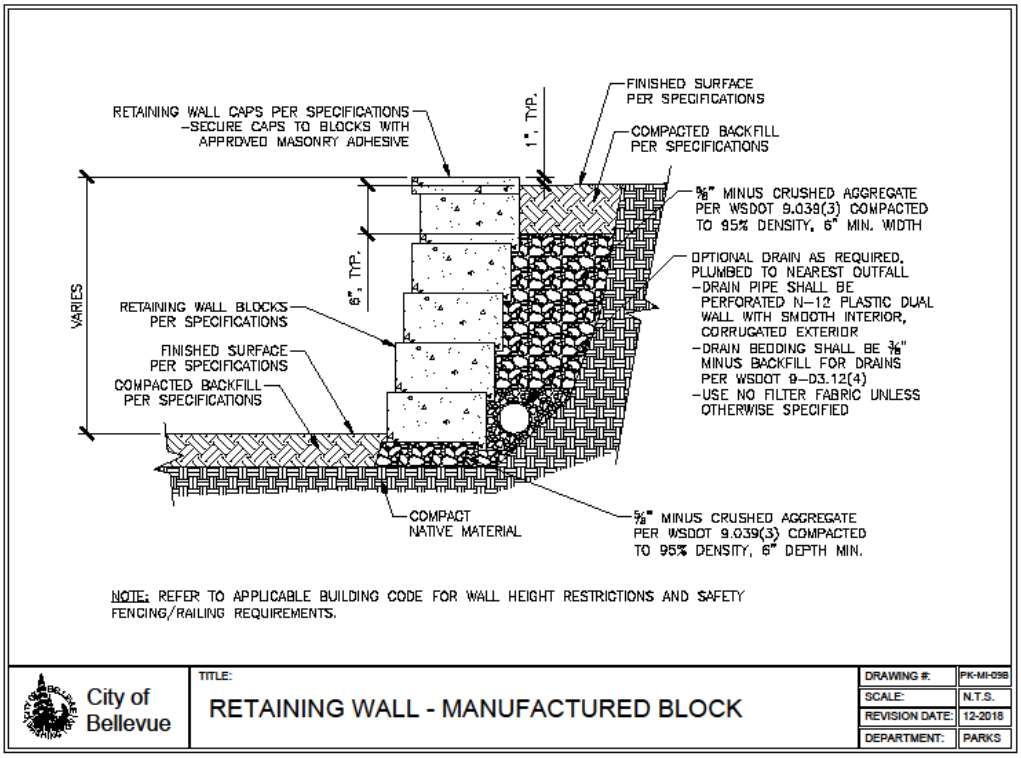


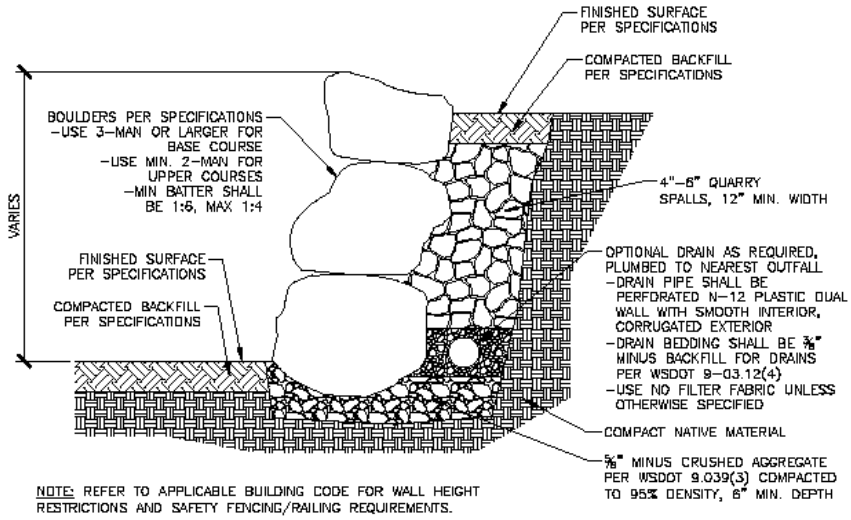
City of Bellevue

TITLE: DRAINAGE - TYPICAL CLEANOUT

DRAWING #:	PK-IM-08E
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS


1" CHAMFER, TYP.
2"
10"
2", TYP.
FINISH GRADE AT TOP OF WALL, TYP.
VERT. #4 REBAR AT 12" O.C. –FRONT & BACK
CONT. HORIZ. #4 REBAR AT TOP –FRONT & BACK
3000 PSI CONCRETE RETAINING WALL WITH SMOOTH FORM FINISH, OR AS SPECIFIED
HORIZ. #4 REBAR AT 12" O.C. –FRONT & BACK
FINISH GRADE AT BOTTOM OF WALL, TYP.
2"
COMPACT NATIVE MATERIAL, OR AS SPECIFIED
OPTIONAL DRAIN AS REQUIRED, PLUMBED TO NEAREST OUTFALL
–DRAIN PIPE SHALL BE PERFORATED N–12 PLASTIC DUAL WALL WITH SMOOTH INTERIOR, CORRUGATED EXTERIOR
–DRAIN BEDDING SHALL BE ⅜" MINUS BACKFILL FOR DRAINS PER WSDOT 9–03.12(4)
–USE NO FILTER FABRIC UNLESS OTHERWISE SPECIFIED
VARIES
6"
10"
6"
⅝" CRUSHED AGGREGATE PER WSDOT 9.039(3) COMPACTED TO 95% DENSITY
2'–0"
NOTE: REFER TO APPLICABLE BUILDING CODE FOR WALL HEIGHT RESTRICTIONS AND SAFETY FENCING/RAILING REQUIREMENTS.
City of Bellevue
TITLE:
RETAINING WALL - POURED IN PLACE CONCRETE
DRAWING #: PK-MI-09A
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS


RETAINING WALL CAPS PER SPECIFICATIONS –SECURE CAPS TO BLOCKS WITH APPROVED MASONRY ADHESIVE
1", TYP.
FINISHED SURFACE PER SPECIFICATIONS
COMPACTED BACKFILL PER SPECIFICATIONS
⅝" MINUS CRUSHED AGGREGATE PER WSDOT 9.039(3) COMPACTED TO 95% DENSITY, 6" MIN. WIDTH
OPTIONAL DRAIN AS REQUIRED, PLUMBED TO NEAREST OUTFALL
–DRAIN PIPE SHALL BE PERFORATED N–12 PLASTIC DUAL WALL WITH SMOOTH INTERIOR, CORRUGATED EXTERIOR
–DRAIN BEDDING SHALL BE ⅜" MINUS BACKFILL FOR DRAINS PER WSDOT 9–03.12(4)
–USE NO FILTER FABRIC UNLESS OTHERWISE SPECIFIED
6", TYP.
VARIES
RETAINING WALL BLOCKS PER SPECIFICATIONS
FINISHED SURFACE PER SPECIFICATIONS
COMPACTED BACKFILL PER SPECIFICATIONS
COMPACT NATIVE MATERIAL
⅝" MINUS CRUSHED AGGREGATE PER WSDOT 9.039(3) COMPACTED TO 95% DENSITY, 6" DEPTH MIN.
NOTE: REFER TO APPLICABLE BUILDING CODE FOR WALL HEIGHT RESTRICTIONS AND SAFETY FENCING/RAILING REQUIREMENTS.
City of Bellevue
TITLE:
RETAINING WALL - MANUFACTURED BLOCK
DRAWING #: PK-MI-09B
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS



City of Bellevue	TITLE: RETAINING WALL - ROCKERY	DRAWING #:	PK-MI-09C
		SCALE:	N.T.S.
		REVISION DATE:	12-2018
		DEPARTMENT:	PARKS

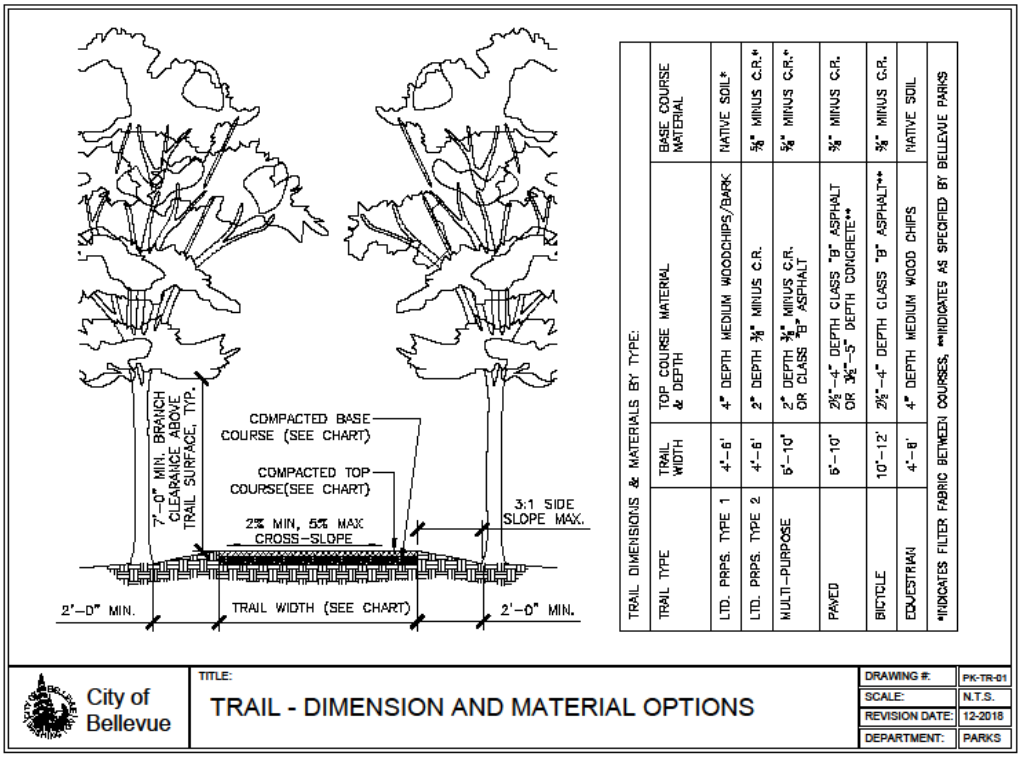
*If viewing in PDF, click on text to open reference material

CITY OF BELLEVUE CRITICAL AREAS HANDBOOK

KING COUNTY NATIVE PLANT LANDSCAPE PLANS

City of Bellevue	TITLE: SITE IMPROVEMENTS - REFERENCE MATERIAL	DRAWING #:	PK-IM-10
		SCALE:	N.T.S.
		REVISION DATE:	12-2018
		DEPARTMENT:	PARKS

Trails



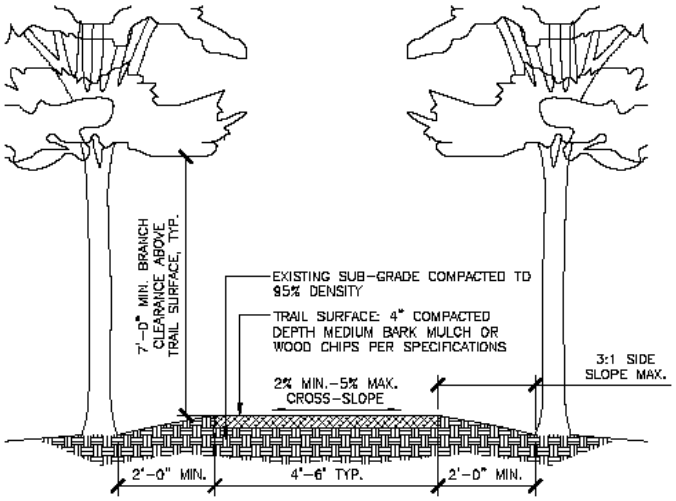
TRAIL DIMENSIONS & MATERIALS BY TYPE:			
TRAIL TYPE	TRAIL WIDTH	TOP COURSE MATERIAL & DEPTH	BASE COURSE MATERIAL
LTD. PRPS. TYPE 1	4'-6'	4" DEPTH MEDIUM WOODCHIPS/BARK	NATIVE SOIL*
LTD. PRPS. TYPE 2	4'-6'	2" DEPTH ⅜" MINUS C.R.	⅝" MINUS C.R.*
MULTI-PURPOSE	6'-10'	2" DEPTH ½" MINUS C.R. OR CLASS "B" ASPHALT	⅝" MINUS C.R.*
PAVED	6'-10'	2½"-4" DEPTH CLASS "B" ASPHALT OR 3½"-5" DEPTH CONCRETE**	⅝" MINUS C.R.
BICYCLE	10'-12'	2½"-4" DEPTH CLASS "B" ASPHALT**	⅝" MINUS C.R.
EQUESTRIAN	4'-8'	4" DEPTH MEDIUM WOOD CHIPS	NATIVE SOIL

*INDICATES FILTER FABRIC BETWEEN COURSES, **INDICATES AS SPECIFIED BY BELLEVUE PARKS

City of Bellevue

TITLE: TRAIL - DIMENSION AND MATERIAL OPTIONS

DRAWING #:	PK-TR-01
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS

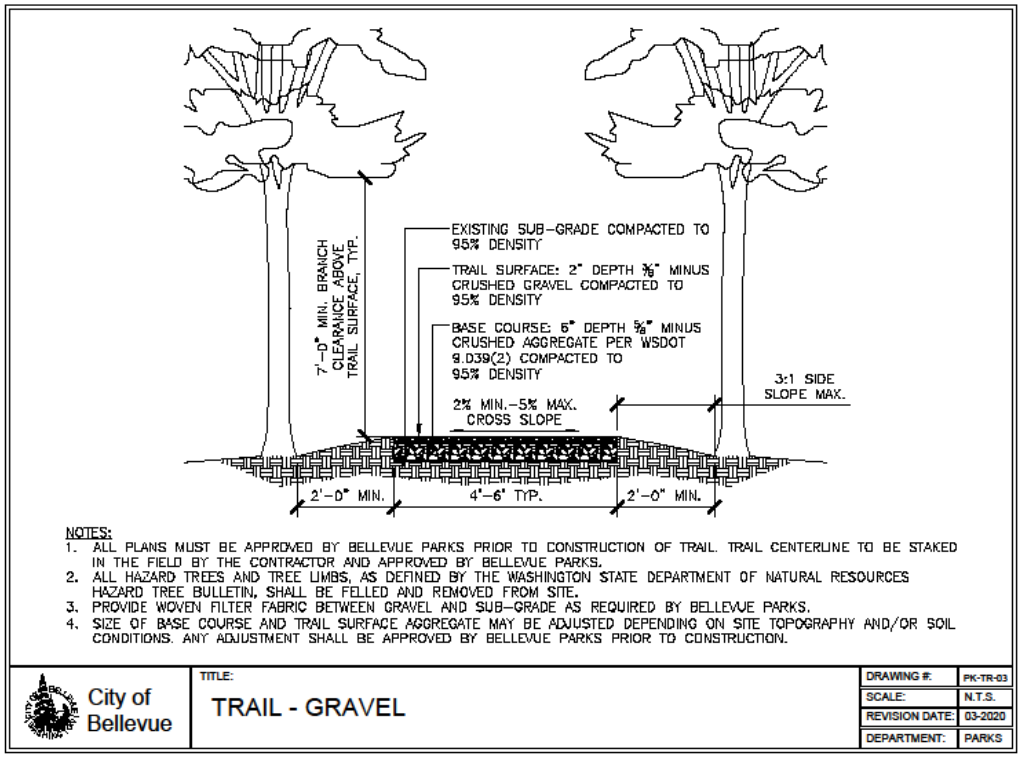


NOTES:
1. ALL PLANS MUST BE APPROVED BY BELLEVUE PARKS PRIOR TO CONSTRUCTION OF TRAIL. TRAIL CENTERLINE TO BE STAKED IN THE FIELD BY THE CONTRACTOR AND APPROVED BY BELLEVUE PARKS.
2. ALL HAZARD TREES AND TREE LIMBS, AS DEFINED BY THE WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES HAZARD TREE BULLETIN, SHALL BE FELLED AND REMOVED FROM SITE.
3. PROVIDE WOVEN FILTER FABRIC BETWEEN MULCH AND SUB-GRADE AS REQUIRED BY BELLEVUE PARKS.

City of Bellevue

TITLE: TRAIL - MULCH

DRAWING #:	PK-TR-02
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS

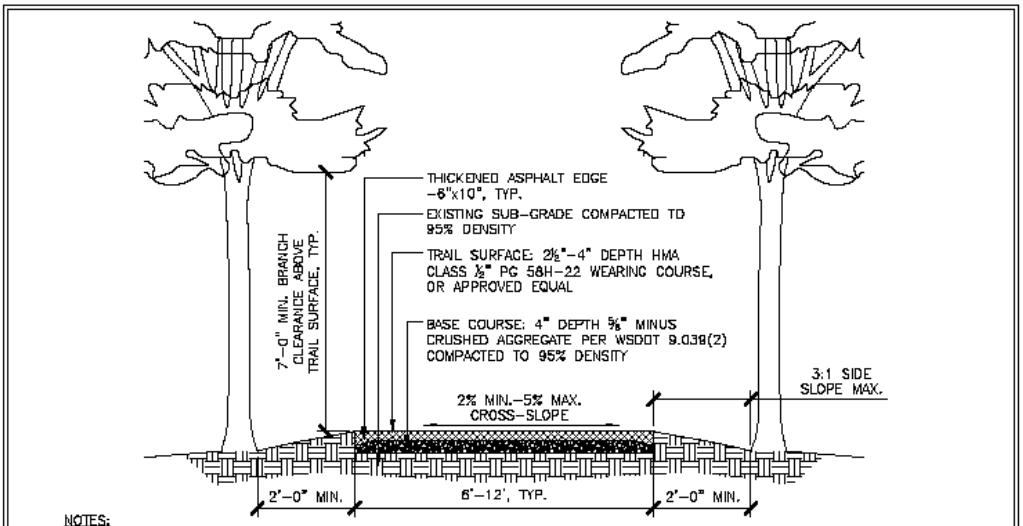


NOTES:
1. ALL PLANS MUST BE APPROVED BY BELLEVUE PARKS PRIOR TO CONSTRUCTION OF TRAIL. TRAIL CENTERLINE TO BE STAKED IN THE FIELD BY THE CONTRACTOR AND APPROVED BY BELLEVUE PARKS.
2. ALL HAZARD TREES AND TREE LIMBS, AS DEFINED BY THE WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES HAZARD TREE BULLETIN, SHALL BE FELLED AND REMOVED FROM SITE.
3. PROVIDE WOVEN FILTER FABRIC BETWEEN GRAVEL AND SUB-GRADE AS REQUIRED BY BELLEVUE PARKS.
4. SIZE OF BASE COURSE AND TRAIL SURFACE AGGREGATE MAY BE ADJUSTED DEPENDING ON SITE TOPOGRAPHY AND/OR SOIL CONDITIONS. ANY ADJUSTMENT SHALL BE APPROVED BY BELLEVUE PARKS PRIOR TO CONSTRUCTION.

City of Bellevue

TITLE: TRAIL - GRAVEL

DRAWING #:	PK-TR-03
SCALE:	N.T.S.
REVISION DATE:	03-2020
DEPARTMENT:	PARKS

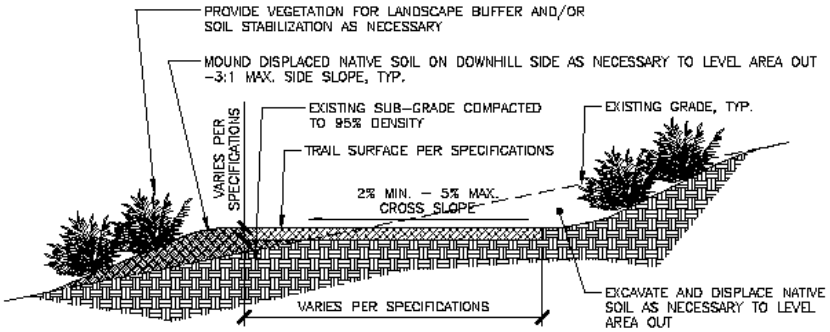


NOTES:
1. ALL PLANS MUST BE APPROVED BY BELLEVUE PARKS PRIOR TO CONSTRUCTION OF TRAIL. TRAIL CENTERLINE TO BE STAKED IN THE FIELD BY THE CONTRACTOR AND APPROVED BY BELLEVUE PARKS.
2. ALL HAZARD TREES AND TREE LIMBS, AS DEFINED BY THE WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES HAZARD TREE BULLETIN, SHALL BE FELLED AND REMOVED FROM SITE.
3. ONE-WAY BIKE PATH TO BE A MINIMUM OF 8 FEET WIDE.
4. TYPICAL MULTI PURPOSE: 6'-10' PAVED PATH, 6'-10' BIKE PATH, 10'-12' TOTAL WIDTH AS SPECIFIED BY CITY.

City of Bellevue

TITLE: TRAIL - ASPHALT

DRAWING #:	PK-TR-04
SCALE:	N.T.S.
REVISION DATE:	08-2022
DEPARTMENT:	PARKS

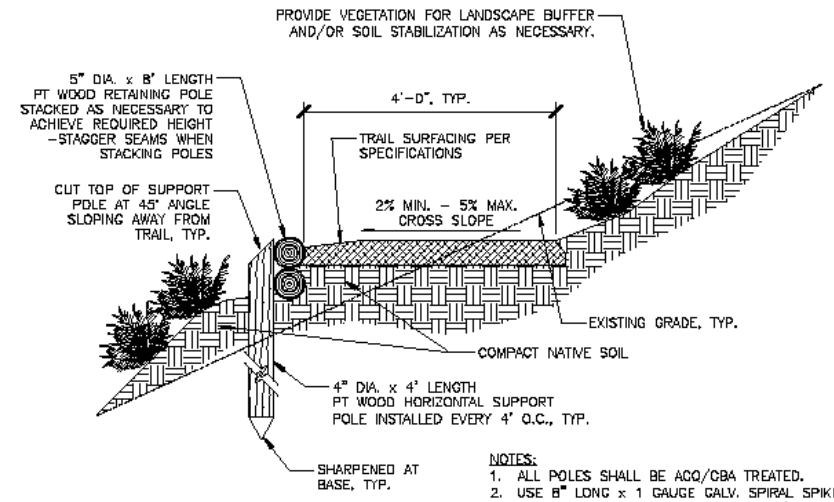


NOTES:
1. ALL PLANS MUST BE APPROVED BY BELLEVUE PARKS PRIOR TO CONSTRUCTION OF TRAIL. TRAIL CENTERLINE TO BE STAKED IN THE FIELD BY THE CONTRACTOR AND APPROVED BY BELLEVUE PARKS.
2. ALL HAZARD TREES AND TREE LIMBS, AS DEFINED BY THE WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES HAZARD TREE BULLETIN, SHALL BE FELLED AND REMOVED FROM SITE.
3. MAINTAIN MIN. 2'-0" CLEARANCE FROM ADJACENT TREE TRUNKS AND 7'-0" HEIGHT CLEARANCE FROM BOTTOM TREE BRANCHES TO TOP OF TRAIL SURFACE.

City of Bellevue

TITLE: TRAIL - ON SLOPE

DRAWING #:	PK-TR-05A
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS

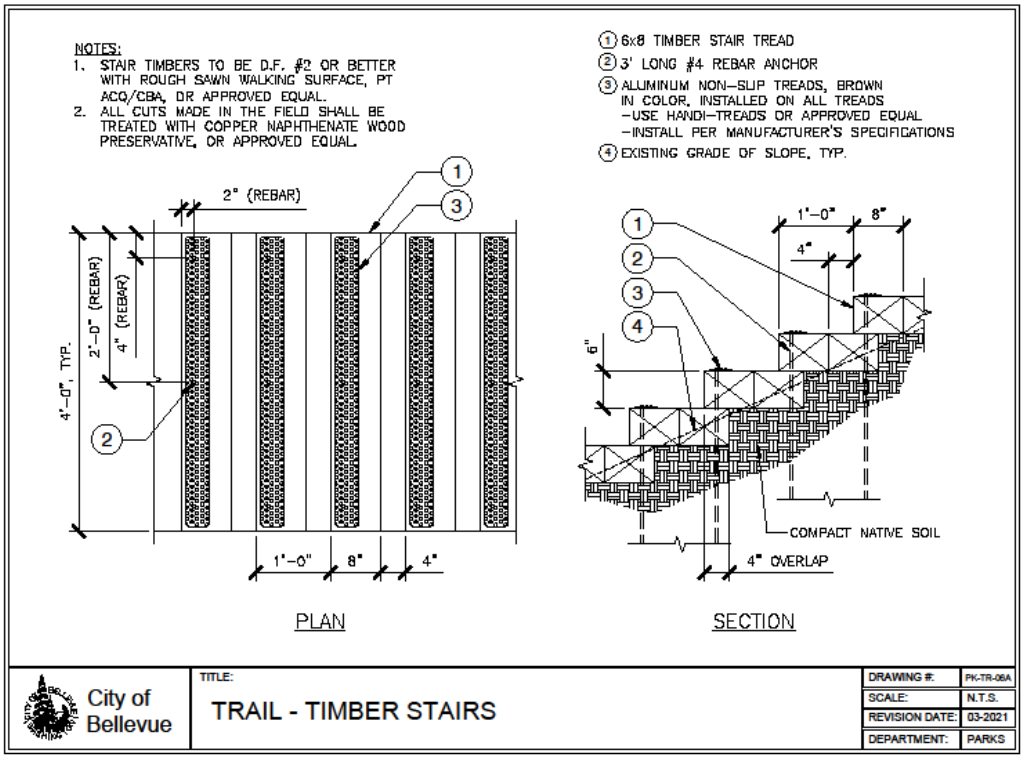


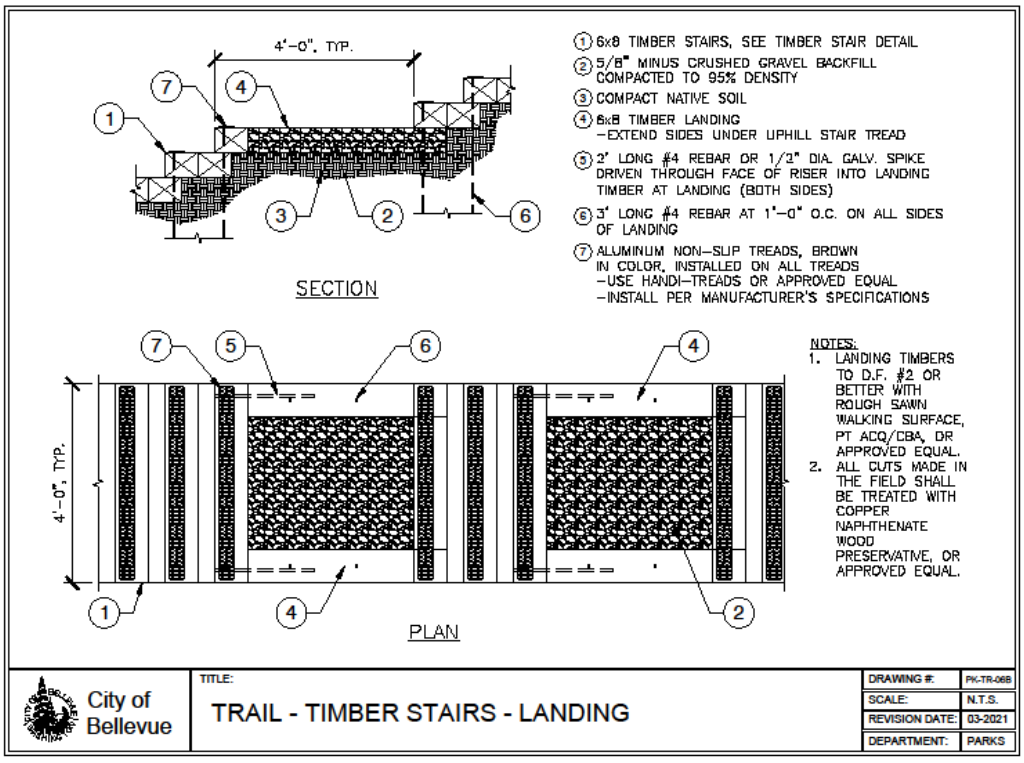
NOTES:
1. ALL POLES SHALL BE ACQ/CBA TREATED.
2. USE 8" LONG x 1 GAUGE GALV. SPIRAL SPIKES TO SECURE STACKED POLES TOGETHER, 4' O.C., TYP.

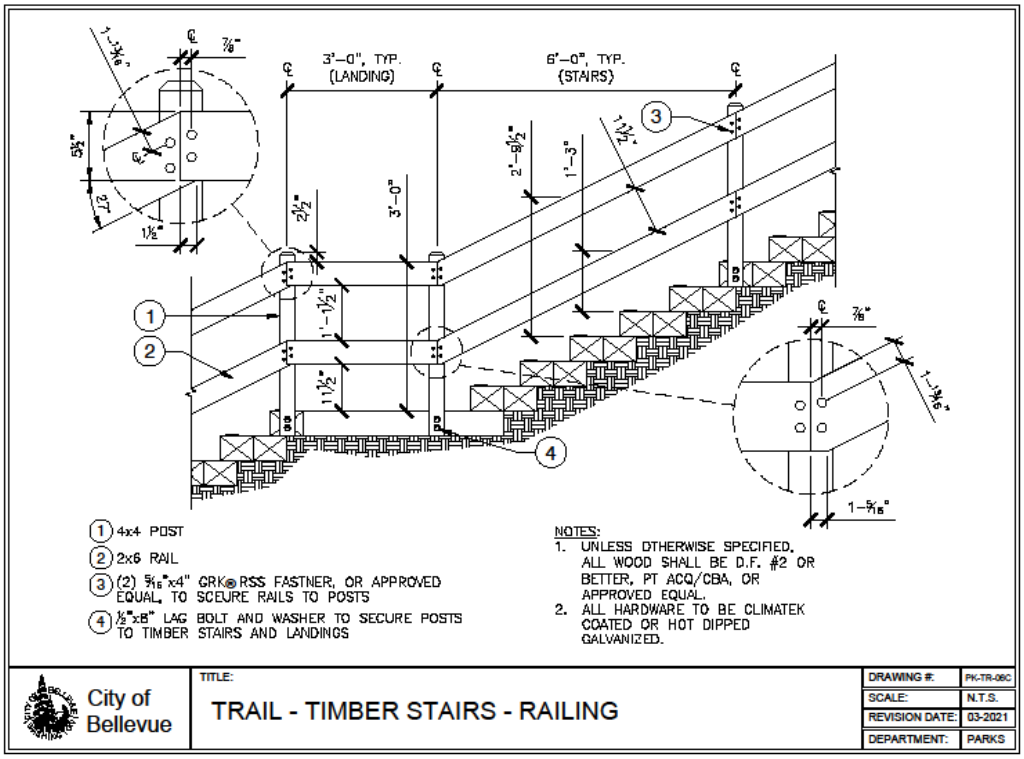
City of Bellevue

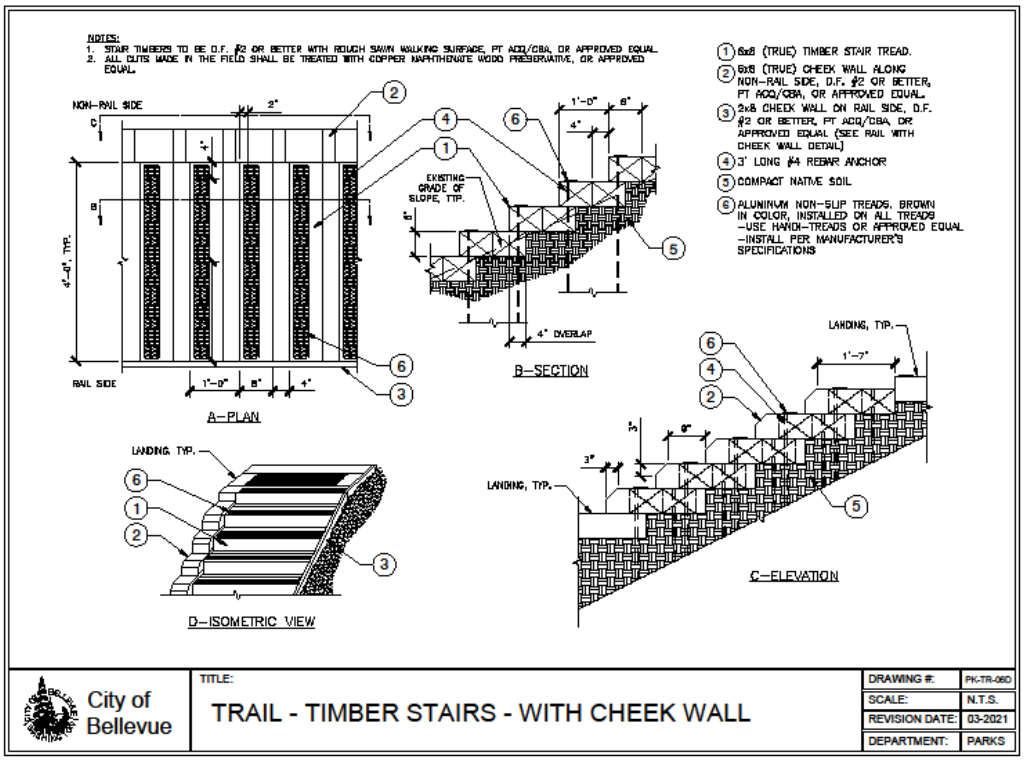
TITLE: TRAIL - ON SLOPE WITH RETAINING POLES

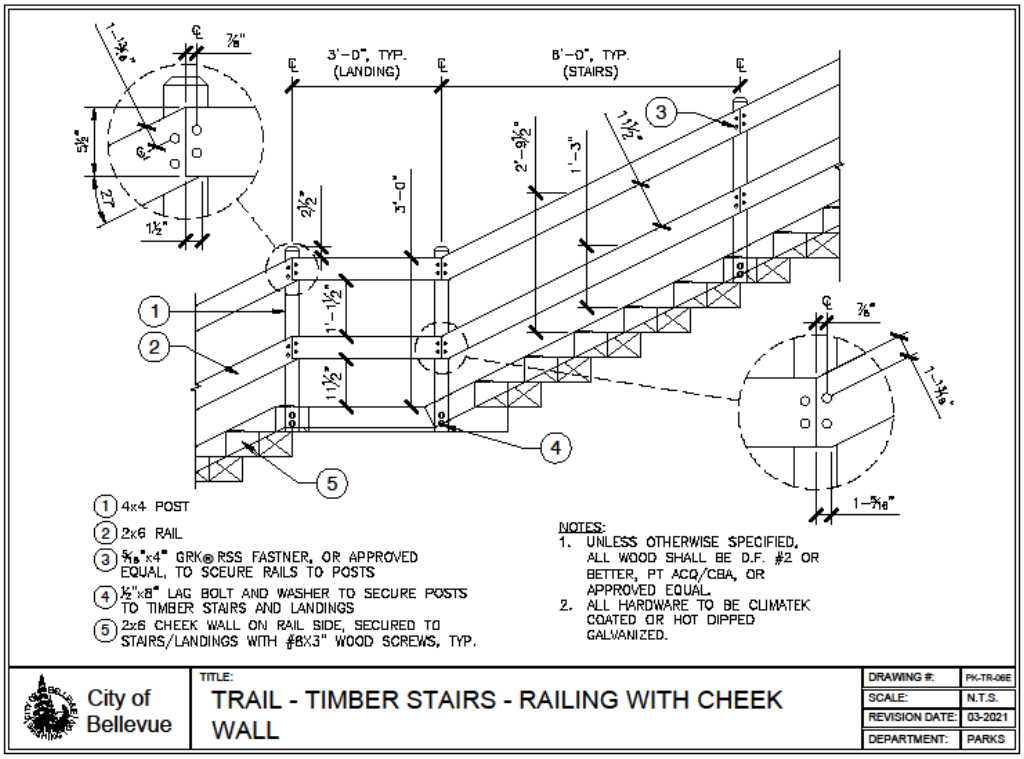
DRAWING #:	PK-TR-05B
SCALE:	N.T.S.
REVISION DATE:	04-2020
DEPARTMENT:	PARKS

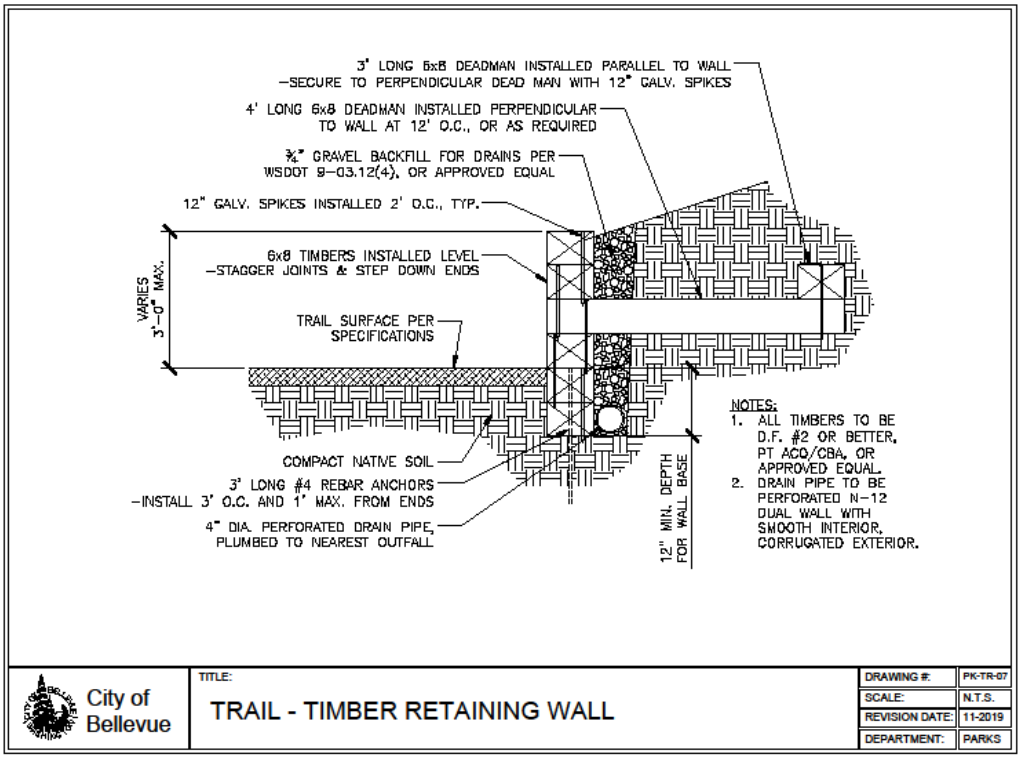

NOTES:
1. STAIR TIMBERS TO BE D.F. #2 OR BETTER WITH ROUGH SAWN WALKING SURFACE, PT ACQ/CBA, OR APPROVED EQUAL.
2. ALL CUTS MADE IN THE FIELD SHALL BE TREATED WITH COPPER NAPHTHENATE WOOD PRESERVATIVE, OR APPROVED EQUAL.
1 6x8 TIMBER STAIR TREAD
2 3' LONG #4 REBAR ANCHOR
3 ALUMINUM NON-SLIP TREADS, BROWN IN COLOR, INSTALLED ON ALL TREADS -USE HANDI-TREADS OR APPROVED EQUAL -INSTALL PER MANUFACTURER'S SPECIFICATIONS
4 EXISTING GRADE OF SLOPE, TYP.
2" (REBAR)
2'-0" (REBAR)
4" (REBAR)
4'-0", TYP.
1'-0"
8"
4"
PLAN
1'-0"
8"
4"
6"
COMPACT NATIVE SOIL
4" OVERLAP
SECTION
City of Bellevue
TITLE:
TRAIL - TIMBER STAIRS
DRAWING #: PK-TR-06A
SCALE: N.T.S.
REVISION DATE: 03-2021
DEPARTMENT: PARKS

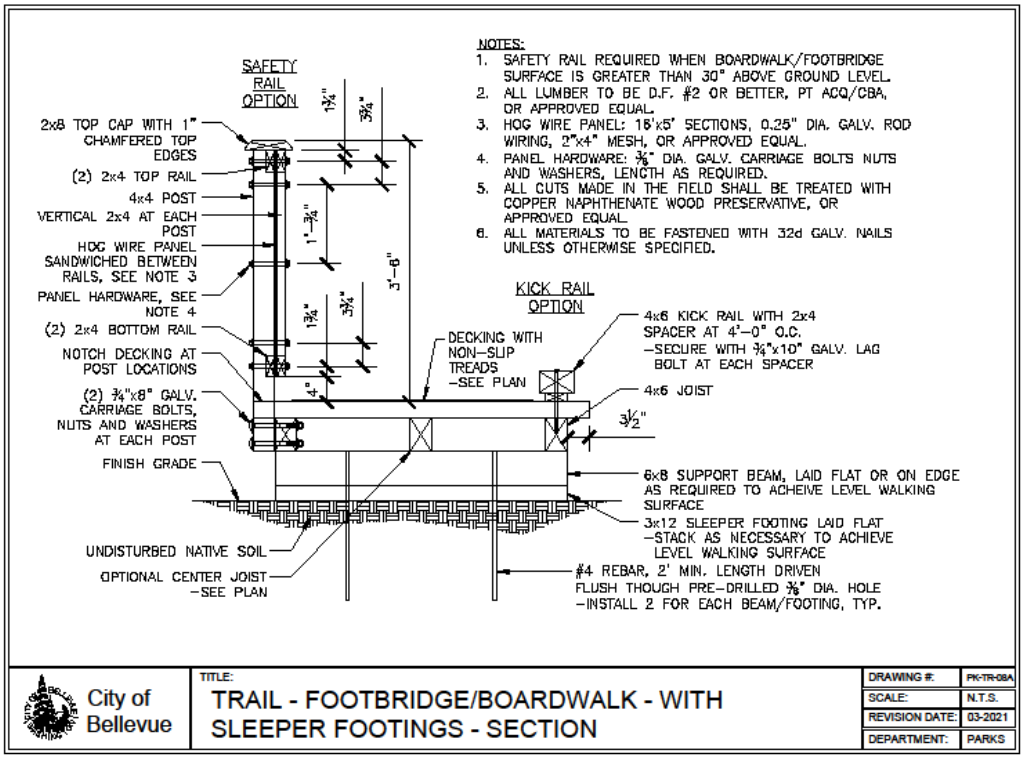

4'-0", TYP.
SECTION
1 6x8 TIMBER STAIRS, SEE TIMBER STAIR DETAIL
2 5/8" MINUS CRUSHED GRAVEL BACKFILL COMPACTED TO 95% DENSITY
3 COMPACT NATIVE SOIL
4 6x8 TIMBER LANDING -EXTEND SIDES UNDER UPHILL STAIR TREAD
5 2' LONG #4 REBAR OR 1/2" DIA. GALV. SPIKE DRIVEN THROUGH FACE OF RISER INTO LANDING TIMBER AT LANDING (BOTH SIDES)
6 3' LONG #4 REBAR AT 1'-0" O.C. ON ALL SIDES OF LANDING
7 ALUMINUM NON-SLIP TREADS, BROWN IN COLOR, INSTALLED ON ALL TREADS -USE HANDI-TREADS OR APPROVED EQUAL -INSTALL PER MANUFACTURER'S SPECIFICATIONS
4'-0", TYP.
PLAN
NOTES:
1. LANDING TIMBERS TO D.F. #2 OR BETTER WITH ROUGH SAWN WALKING SURFACE, PT ACQ/CBA, OR APPROVED EQUAL.
2. ALL CUTS MADE IN THE FIELD SHALL BE TREATED WITH COPPER NAPHTHENATE WOOD PRESERVATIVE, OR APPROVED EQUAL.
City of Bellevue
TITLE:
TRAIL - TIMBER STAIRS - LANDING
DRAWING #: PK-TR-06B
SCALE: N.T.S.
REVISION DATE: 03-2021
DEPARTMENT: PARKS

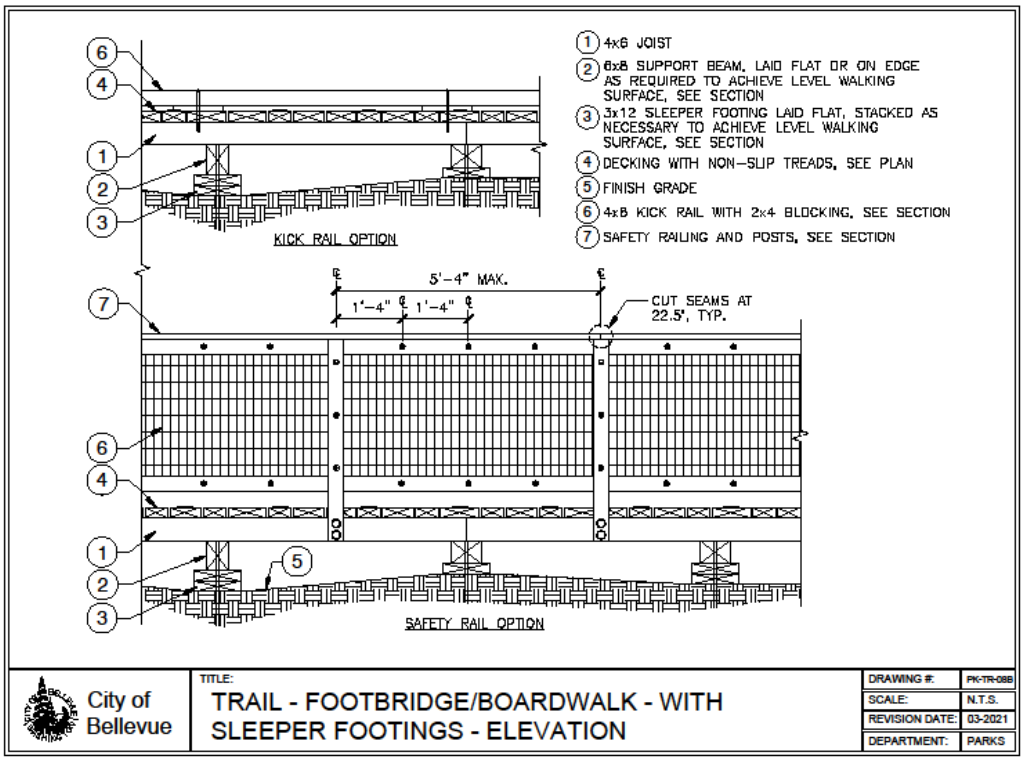

3'-0", TYP. (LANDING)
6'-0", TYP. (STAIRS)
1 4x4 POST
2 2x6 RAIL
3 (2) 5/16"x4" GRK® RSS FASTNER, OR APPROVED EQUAL, TO SECURE RAILS TO POSTS
4 1/2"x8" LAG BOLT AND WASHER TO SECURE POSTS TO TIMBER STAIRS AND LANDINGS
NOTES:
1. UNLESS OTHERWISE SPECIFIED, ALL WOOD SHALL BE D.F. #2 OR BETTER, PT ACQ/CBA, OR APPROVED EQUAL.
2. ALL HARDWARE TO BE CLIMATEK COATED OR HOT DIPPED GALVANIZED.
City of Bellevue
TITLE:
TRAIL - TIMBER STAIRS - RAILING
DRAWING #: PK-TR-06C
SCALE: N.T.S.
REVISION DATE: 03-2021
DEPARTMENT: PARKS

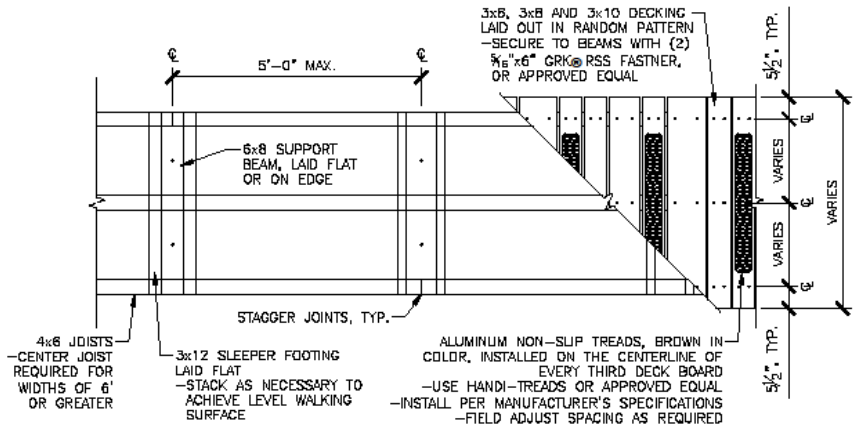

NOTES:
1. STAIR TIMBERS TO BE D.F. #2 OR BETTER WITH ROUGH SAWN WALKING SURFACE, PT ACQ/CBA, OR APPROVED EQUAL.
2. ALL CUTS MADE IN THE FIELD SHALL BE TREATED WITH COPPER NAPHTHENATE WOOD PRESERVATIVE, OR APPROVED EQUAL.
1 6x8 (TRUE) TIMBER STAIR TREAD.
2 6x8 (TRUE) CHEEK WALL ALONG NON-RAIL SIDE, D.F. #2 OR BETTER, PT ACQ/CBA, OR APPROVED EQUAL.
3 2x8 CHEEK WALL ON RAIL SIDE, D.F. #2 OR BETTER, PT ACQ/CBA, OR APPROVED EQUAL (SEE RAIL WITH CHEEK WALL DETAIL)
4 3' LONG #4 REBAR ANCHOR
5 COMPACT NATIVE SOIL
6 ALUMINUM NON-SLIP TREADS, BROWN IN COLOR, INSTALLED ON ALL TREADS -USE HANDI-TREADS OR APPROVED EQUAL -INSTALL PER MANUFACTURER'S SPECIFICATIONS
NON-RAIL SIDE
RAIL SIDE
4'-0", TYP.
A-PLAN
EXISTING GRADE OF SLOPE, TYP.
4" OVERLAP
B-SECTION
LANDING, TYP.
C-ELEVATION
D-ISOMETRIC VIEW
City of Bellevue
TITLE:
TRAIL - TIMBER STAIRS - WITH CHEEK WALL
DRAWING #: PK-TR-06D
SCALE: N.T.S.
REVISION DATE: 03-2021
DEPARTMENT: PARKS


3'-0", TYP. (LANDING)
8'-0", TYP. (STAIRS)
1 4x4 POST
2 2x6 RAIL
3 5/16"x4" GRK® RSS FASTNER, OR APPROVED EQUAL, TO SCEURE RAILS TO POSTS
4 1/2"x8" LAG BOLT AND WASHER TO SECURE POSTS TO TIMBER STAIRS AND LANDINGS
5 2x6 CHEEK WALL ON RAIL SIDE, SECURED TO STAIRS/LANDINGS WITH #8X3" WOOD SCREWS, TYP.
NOTES:
1. UNLESS OTHERWISE SPECIFIED, ALL WOOD SHALL BE D.F. #2 OR BETTER, PT ACQ/CBA, OR APPROVED EQUAL.
2. ALL HARDWARE TO BE CLIMATEK COATED OR HOT DIPPED GALVANIZED.
City of Bellevue
TITLE:
TRAIL - TIMBER STAIRS - RAILING WITH CHEEK WALL
DRAWING #: PK-TR-06E
SCALE: N.T.S.
REVISION DATE: 03-2021
DEPARTMENT: PARKS


3" LONG 6x8 DEADMAN INSTALLED PARALLEL TO WALL –SECURE TO PERPENDICULAR DEAD MAN WITH 12" GALV. SPIKES
4' LONG 6x8 DEADMAN INSTALLED PERPENDICULAR TO WALL AT 12' O.C., OR AS REQUIRED
¾" GRAVEL BACKFILL FOR DRAINS PER WSDOT 9-03.12(4), OR APPROVED EQUAL
12" GALV. SPIKES INSTALLED 2' O.C., TYP.
6x8 TIMBERS INSTALLED LEVEL –STAGGER JOINTS & STEP DOWN ENDS
VARIES 3'-0" MAX.
TRAIL SURFACE PER SPECIFICATIONS
COMPACT NATIVE SOIL
3' LONG #4 REBAR ANCHORS –INSTALL 3' O.C. AND 1' MAX. FROM ENDS
4" DIA. PERFORATED DRAIN PIPE, PLUMBED TO NEAREST OUTFALL
12" MIN. DEPTH FOR WALL BASE
NOTES:
1. ALL TIMBERS TO BE D.F. #2 OR BETTER, PT ACQ/CBA, OR APPROVED EQUAL.
2. DRAIN PIPE TO BE PERFORATED N-12 DUAL WALL WITH SMOOTH INTERIOR, CORRUGATED EXTERIOR.
City of Bellevue
TITLE:
TRAIL - TIMBER RETAINING WALL
DRAWING #: PK-TR-07
SCALE: N.T.S.
REVISION DATE: 11-2019
DEPARTMENT: PARKS


NOTES:
1. SAFETY RAIL REQUIRED WHEN BOARDWALK/FOOTBRIDGE SURFACE IS GREATER THAN 30" ABOVE GROUND LEVEL.
2. ALL LUMBER TO BE D.F. #2 OR BETTER, PT ACQ/CBA, OR APPROVED EQUAL.
3. HOG WIRE PANEL: 18'x5' SECTIONS, 0.25" DIA. GALV. ROD WIRING, 2"x4" MESH, OR APPROVED EQUAL.
4. PANEL HARDWARE: ⅜" DIA. GALV. CARRIAGE BOLTS NUTS AND WASHERS, LENGTH AS REQUIRED.
5. ALL CUTS MADE IN THE FIELD SHALL BE TREATED WITH COPPER NAPHTHENATE WOOD PRESERVATIVE, OR APPROVED EQUAL.
6. ALL MATERIALS TO BE FASTENED WITH 32d GALV. NAILS UNLESS OTHERWISE SPECIFIED.
SAFETY RAIL OPTION
1¾"
3¾"
2x8 TOP CAP WITH 1" CHAMFERED TOP EDGES
(2) 2x4 TOP RAIL
4x4 POST
VERTICAL 2x4 AT EACH POST
HOG WIRE PANEL SANDWICHED BETWEEN RAILS, SEE NOTE 3
PANEL HARDWARE, SEE NOTE 4
1'-3¾"
3'-6"
1¾"
3¾"
(2) 2x4 BOTTOM RAIL
NOTCH DECKING AT POST LOCATIONS
(2) ¾"x8" GALV. CARRIAGE BOLTS, NUTS AND WASHERS AT EACH POST
4"
FINISH GRADE
UNDISTURBED NATIVE SOIL
OPTIONAL CENTER JOIST -SEE PLAN
KICK RAIL OPTION
DECKING WITH NON-SLIP TREADS -SEE PLAN
4x6 KICK RAIL WITH 2x4 SPACER AT 4'-0" O.C. -SECURE WITH ¾"x10" GALV. LAG BOLT AT EACH SPACER
4x6 JOIST
3½"
6x8 SUPPORT BEAM, LAID FLAT OR ON EDGE AS REQUIRED TO ACHIEVE LEVEL WALKING SURFACE
3x12 SLEEPER FOOTING LAID FLAT -STACK AS NECESSARY TO ACHIEVE LEVEL WALKING SURFACE
#4 REBAR, 2' MIN. LENGTH DRIVEN FLUSH THOUGH PRE-DRILLED ⅝" DIA. HOLE -INSTALL 2 FOR EACH BEAM/FOOTING, TYP.
City of Bellevue
TITLE:
TRAIL - FOOTBRIDGE/BOARDWALK - WITH SLEEPER FOOTINGS - SECTION
DRAWING #: PK-TR-08A
SCALE: N.T.S.
REVISION DATE: 03-2021
DEPARTMENT: PARKS


1 4x6 JOIST
2 6x8 SUPPORT BEAM, LAID FLAT OR ON EDGE AS REQUIRED TO ACHIEVE LEVEL WALKING SURFACE, SEE SECTION
3 3x12 SLEEPER FOOTING LAID FLAT, STACKED AS NECESSARY TO ACHIEVE LEVEL WALKING SURFACE, SEE SECTION
4 DECKING WITH NON-SLIP TREADS, SEE PLAN
5 FINISH GRADE
6 4x8 KICK RAIL WITH 2x4 BLOCKING, SEE SECTION
7 SAFETY RAILING AND POSTS, SEE SECTION
KICK RAIL OPTION
5'-4" MAX.
1'-4"
1'-4"
CUT SEAMS AT 22.5°, TYP.
SAFETY RAIL OPTION
City of Bellevue
TITLE:
TRAIL - FOOTBRIDGE/BOARDWALK - WITH SLEEPER FOOTINGS - ELEVATION
DRAWING #: PK-TR-08B
SCALE: N.T.S.
REVISION DATE: 03-2021
DEPARTMENT: PARKS

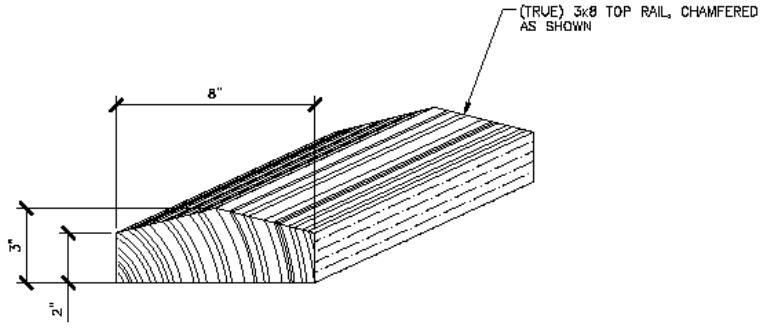


NOTES:
1. ALL JOISTS, BEAMS, FOOTINGS (SLEEPERS) AND KICK RAIL TO BE D.F. #2 OR BETTER, PT ACQ/CBA, OR APPROVED EQUAL.
2. ALL DECKING TO BE D.F. #2 OR BETTER, ROUGH SAWN (SIDE FACING UP), PT ACQ/CBA, OR APPROVED EQUAL.
3. ALL CUTS MADE IN THE FIELD SHALL BE TREATED WITH COPPER NAPHTHENATE WOOD PRESERVATIVE, OR APPROVED EQUAL.
4. ALL MATERIALS TO BE FASTENED WITH 32d GALV. NAILS UNLESS OTHERWISE SPECIFIED.

City of Bellevue

TITLE: TRAIL - FOOTBRIDGE/BOARDWALK - WITH SLEEPER FOOTINGS - PLAN

DRAWING #:	PK-TR-08C
SCALE:	N.T.S.
REVISION DATE:	03-2021
DEPARTMENT:	PARKS

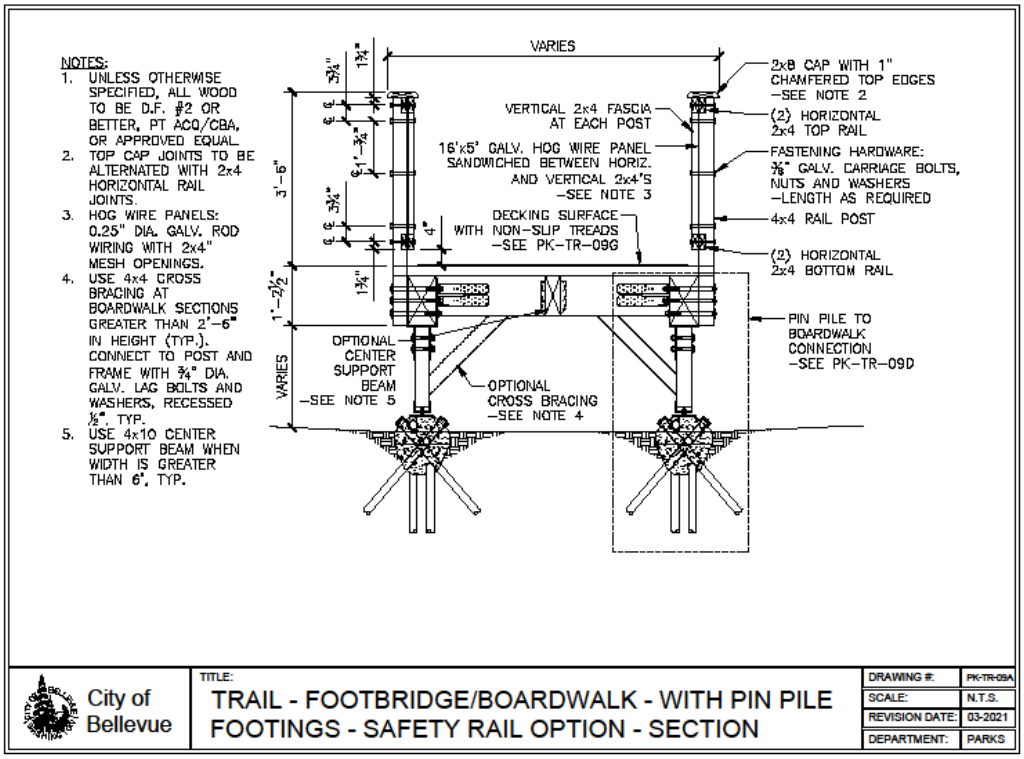


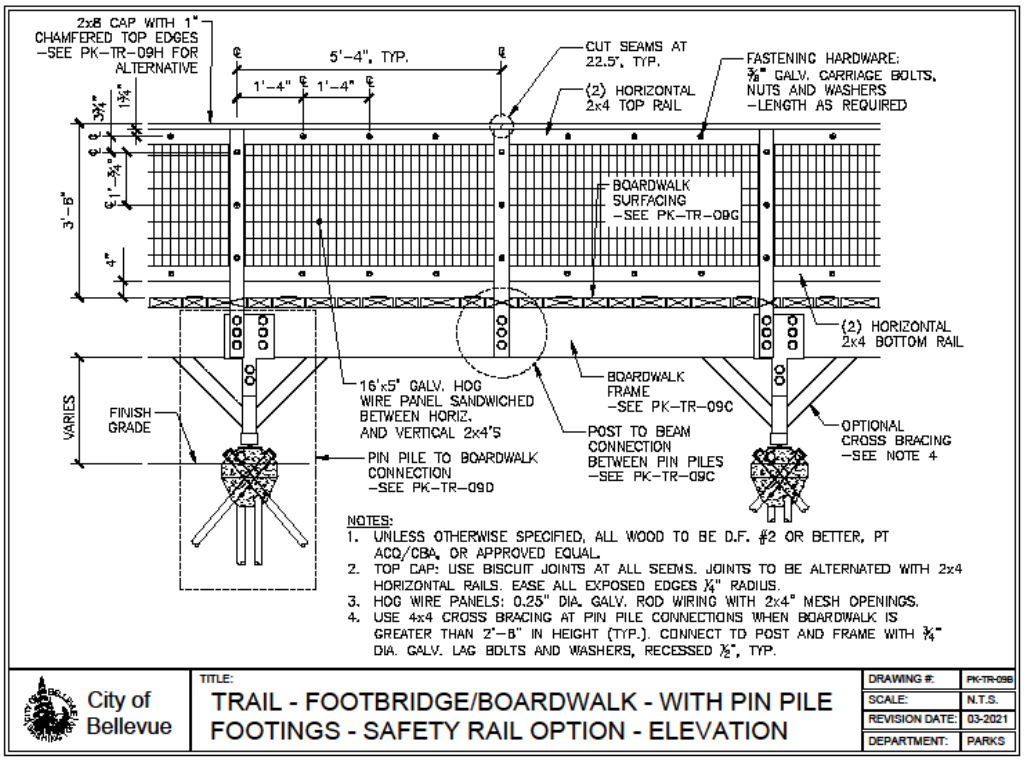
NOTES:
1. UNLESS OTHERWISE SPECIFIED, CAP MATERIAL TO BE D.F. #2 OR BETTER, PT ACQ/CBA, OR APPROVED EQUAL.
2. TREATMENT SHALL TAKE PLACE AFTER CHAMFER HAS BEEN CUT.

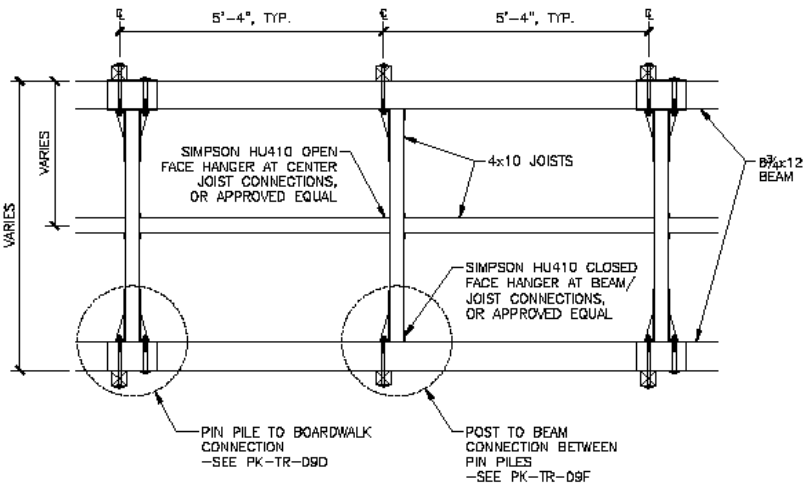
City of Bellevue

TITLE: TRAIL - FOOTBRIDGE/BOARDWALK - WITH SLEEPER FOOTINGS - ALTERNATIVE SAFETY RAIL CAP

DRAWING #:	PK-TR-08D
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS


NOTES:
1. UNLESS OTHERWISE SPECIFIED, ALL WOOD TO BE D.F. #2 OR BETTER, PT ACQ/CBA, OR APPROVED EQUAL.
2. TOP CAP JOINTS TO BE ALTERNATED WITH 2x4 HORIZONTAL RAIL JOINTS.
3. HOG WIRE PANELS: 0.25" DIA. GALV. ROD WIRING WITH 2x4" MESH OPENINGS.
4. USE 4x4 CROSS BRACING AT BOARDWALK SECTIONS GREATER THAN 2'-6" IN HEIGHT (TYP.). CONNECT TO POST AND FRAME WITH ¾" DIA. GALV. LAG BOLTS AND WASHERS, RECESSED ½", TYP.
5. USE 4x10 CENTER SUPPORT BEAM WHEN WIDTH IS GREATER THAN 6', TYP.
VARIES
2x8 CAP WITH 1" CHAMFERED TOP EDGES -SEE NOTE 2
VERTICAL 2x4 FASCIA AT EACH POST
(2) HORIZONTAL 2x4 TOP RAIL
16'x5' GALV. HOG WIRE PANEL SANDWICHED BETWEEN HORIZ. AND VERTICAL 2x4'S -SEE NOTE 3
FASTENING HARDWARE: ⅜" GALV. CARRIAGE BOLTS, NUTS AND WASHERS -LENGTH AS REQUIRED
4x4 RAIL POST
DECKING SURFACE WITH NON-SLIP TREADS -SEE PK-TR-09G
(2) HORIZONTAL 2x4 BOTTOM RAIL
PIN PILE TO BOARDWALK CONNECTION -SEE PK-TR-09D
OPTIONAL CENTER SUPPORT BEAM -SEE NOTE 5
OPTIONAL CROSS BRACING -SEE NOTE 4
3'-6"
1'-2½"
VARIES
3¾"
1¾"
6"
1'-3¾"
4"
City of Bellevue
TITLE:
TRAIL - FOOTBRIDGE/BOARDWALK - WITH PIN PILE FOOTINGS - SAFETY RAIL OPTION - SECTION
DRAWING #: PK-TR-09A
SCALE: N.T.S.
REVISION DATE: 03-2021
DEPARTMENT: PARKS


2x8 CAP WITH 1" CHAMFERED TOP EDGES -SEE PK-TR-09H FOR ALTERNATIVE
5'-4", TYP.
1'-4"
1'-4"
CUT SEAMS AT 22.5°, TYP.
(2) HORIZONTAL 2x4 TOP RAIL
FASTENING HARDWARE: ⅜" GALV. CARRIAGE BOLTS, NUTS AND WASHERS -LENGTH AS REQUIRED
BOARDWALK SURFACING -SEE PK-TR-09G
(2) HORIZONTAL 2x4 BOTTOM RAIL
16'x5' GALV. HOG WIRE PANEL SANDWICHED BETWEEN HORIZ. AND VERTICAL 2x4'S
BOARDWALK FRAME -SEE PK-TR-09C
POST TO BEAM CONNECTION BETWEEN PIN PILES -SEE PK-TR-09C
OPTIONAL CROSS BRACING -SEE NOTE 4
FINISH GRADE
PIN PILE TO BOARDWALK CONNECTION -SEE PK-TR-09D
VARIES
3'-6"
3¾"
1¾"
6"
1'-3¾"
4"
NOTES:
1. UNLESS OTHERWISE SPECIFIED, ALL WOOD TO BE D.F. #2 OR BETTER, PT ACQ/CBA, OR APPROVED EQUAL.
2. TOP CAP: USE BISCUIT JOINTS AT ALL SEAMS. JOINTS TO BE ALTERNATED WITH 2x4 HORIZONTAL RAILS. EASE ALL EXPOSED EDGES ¼" RADIUS.
3. HOG WIRE PANELS: 0.25" DIA. GALV. ROD WIRING WITH 2x4" MESH OPENINGS.
4. USE 4x4 CROSS BRACING AT PIN PILE CONNECTIONS WHEN BOARDWALK IS GREATER THAN 2'-6" IN HEIGHT (TYP.). CONNECT TO POST AND FRAME WITH ¾" DIA. GALV. LAG BOLTS AND WASHERS, RECESSED ½", TYP.
City of Bellevue
TITLE:
TRAIL - FOOTBRIDGE/BOARDWALK - WITH PIN PILE FOOTINGS - SAFETY RAIL OPTION - ELEVATION
DRAWING #: PK-TR-09B
SCALE: N.T.S.
REVISION DATE: 03-2021
DEPARTMENT: PARKS

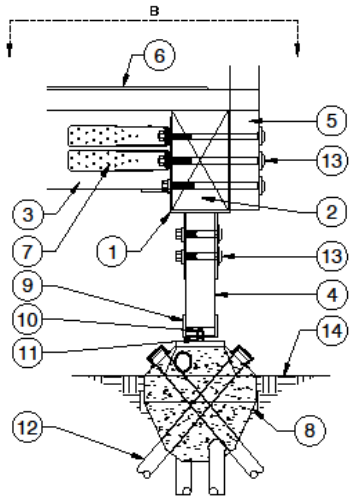


NOTES:
1. UNLESS OTHERWISE SPECIFIED, ALL WOOD TO BE D.F. #2 OR BETTER, PT ACQ/CBA, OR APPROVED EQUAL.
2. USE 4x10 CENTER JOIST WHEN BOARDWALK WIDTH IS 6 FEET OR GREATER.
3. UNLESS OTHERWISE SPECIFIED, USE SIMPSON #10x1½" STRUCTURAL CONNECTOR SCREWS, OR APPROVED EQUAL, FOR SECURING HANGERS TO JOISTS.

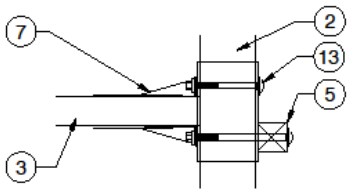
City of Bellevue

TITLE: TRAIL - FOOTBRIDGE/BOARDWALK - WITH PIN PILE FOOTINGS - SAFETY RAIL OPTION - FRAMING PLAN

DRAWING #:	PK-TR-09C
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS



A – SECTION



B – PLAN

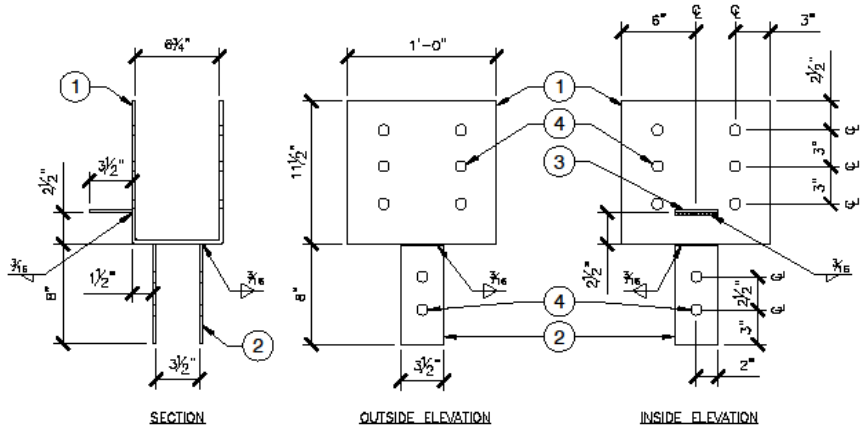
1. CONNECTOR, SEE PK-TR-09E
2. 6¾"x12" BEAM
3. 4x10 JOIST
4. 4x4 FRAME POST
5. 4X4 RAIL POST
6. DECKING WITH NON-SLIP TREADS
7. (4) SIMPSON HTT4 TENSION TIE, OR APPROVED EQUAL
8. DIAMOND PIER DP100 PIN FOUNDATION, OR APPROVED EQUAL
9. SIMPSON ABE44 POST BRACKET, OR APPROVED EQUAL
10. EMBEDDED GALV. ANCHOR BOLT, TO BE SIZED BY MANUF.
11. GALV. LEVELING NUT
12. (4) 1.5" SCH 40 GALV. PINS, 84" LENGTH, DRIVEN TO REQUIRED DEPTH
13. ¾" GALV. CARRIAGE BOLTS, NUTS AND WASHERS, LENGTH AS REQUIRED
14. FINISH GRADE

NOTES:
1. UNLESS OTHERWISE SPECIFIED, ALL WOOD TO BE D.F. #2 OR BETTER, PT ACQ/CBA, OR APPROVED EQUAL.
2. UNLESS OTHERWISE SPECIFIED, USE SIMPSON #10x1½" STRUCTURAL CONNECTOR SCREWS, OR APPROVED EQUAL, FOR SECURING TENSION TIES TO JOISTS.

City of Bellevue

TITLE: TRAIL - FOOTBRIDGE/BOARDWALK - WITH PIN PILE FOOTINGS - SAFETY RAIL OPTION - PIN PILE TO BOARDWALK CONNECTION

DRAWING #:	PK-TR-09D
SCALE:	N.T.S.
REVISION DATE:	03-2021
DEPARTMENT:	PARKS



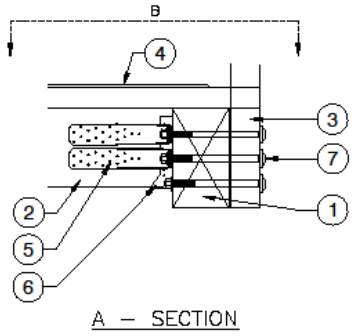
1. ¼" GALV. STEEL PLATE, BENT TO SPECIFIED DIMENSIONS
2. (2) ¼"x3"x8" GALV. STEEL PLATE, WELDED TO BENT PLATE
3. ¼"x3½"x3½" GALV. STEEL PLATE, WELDED TO BENT PLATE
4. ⅞" DIA. HOLES

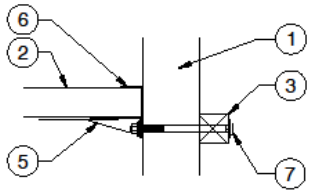
NOTES:
1. CONNECTOR SHALL BE PREFABRICATED IN A WABO CERTIFIED FABRICATION SHOP. FIELD WELDING WILL NOT BE PERMITTED.
2. CONNECTOR SHALL BE HOT DIPPED GALVANIZED FOLLOWING FABRICATION.

City of Bellevue

TITLE: TRAIL - FOOTBRIDGE/BOARDWALK - WITH PIN PILE FOOTINGS - SAFETY RAIL OPTION - CONNECTOR DETAIL

DRAWING #:	PK-TR-09E
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS





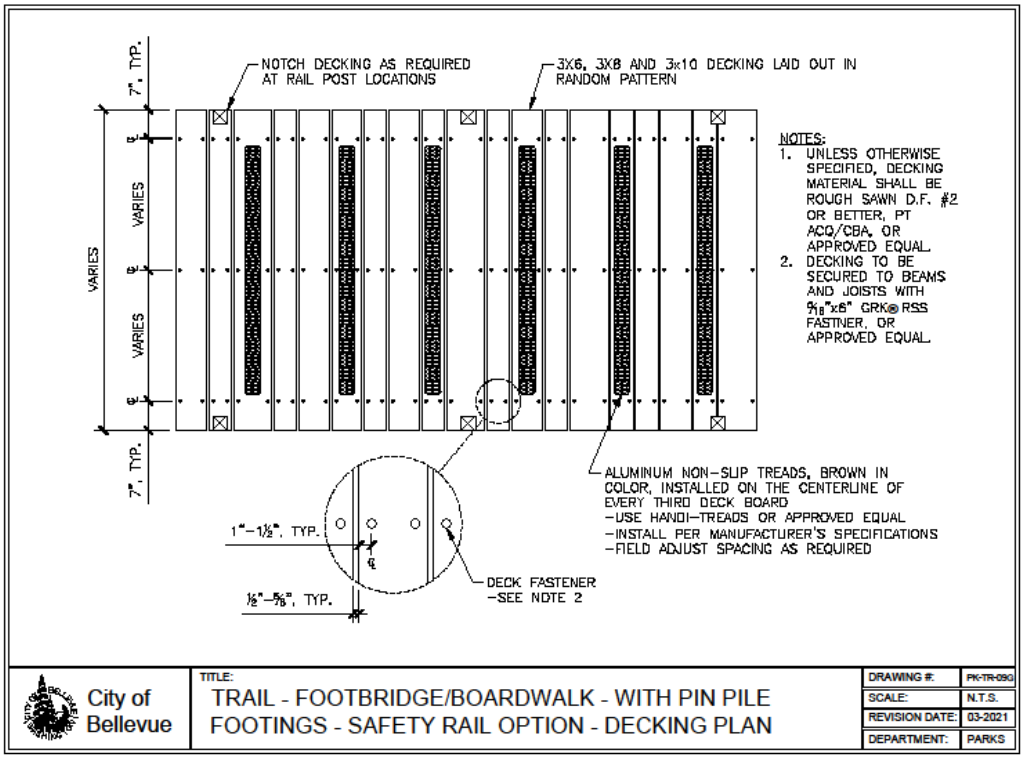
NOTES:
1. UNLESS OTHERWISE SPECIFIED, ALL WOOD TO BE D.F. #2 OR BETTER, PT ACQ/CBA, OR APPROVED EQUAL.
2. UNLESS OTHERWISE SPECIFIED, USE SIMPSON #10x1½" STRUCTURAL CONNECTOR SCREWS, OR APPROVED EQUAL, FOR SECURING TENSION TIES TO JOISTS.

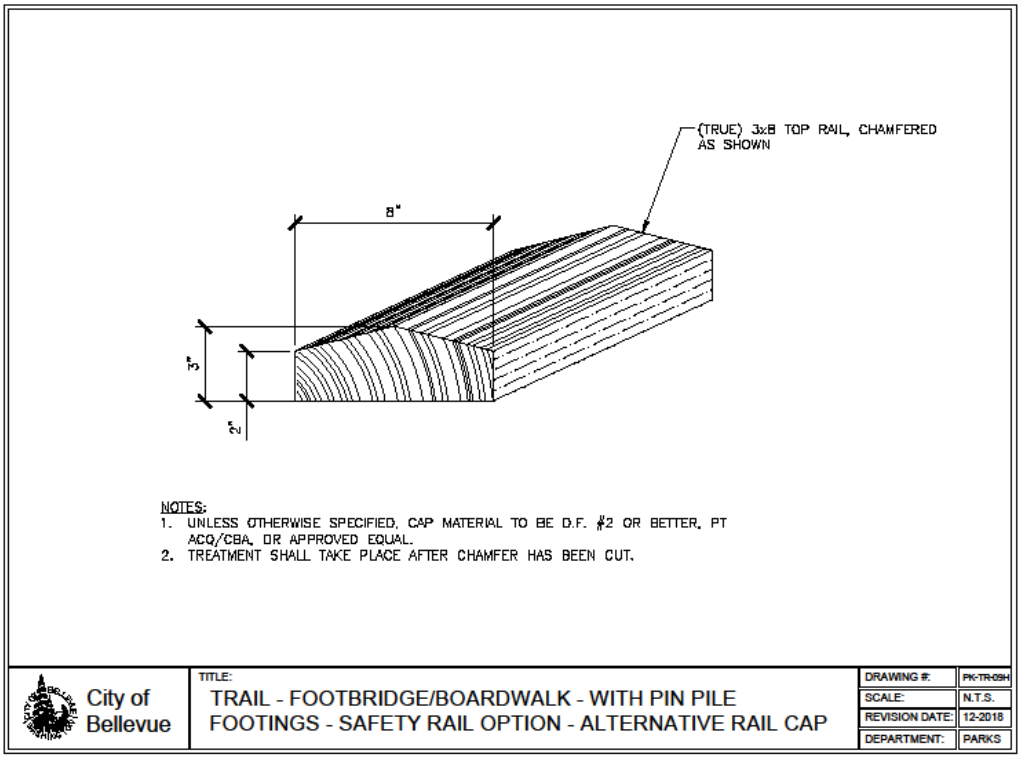
1. 6¾"x12" BEAM
2. 4x10 JOIST
3. 4X4 RAIL POST
4. DECKING WITH NON-SLIP TREADS
5. (2) SIMPSON HTT4 TENSION TIE, OR APPROVED EQUAL
6. SIMPSON HU410 CLOSED FACE HANGER, OR APPROVED EQUAL
7. ¾" GALV. CARRIAGE BOLTS, NUTS AND WASHERS, LENGTH AS REQUIRED

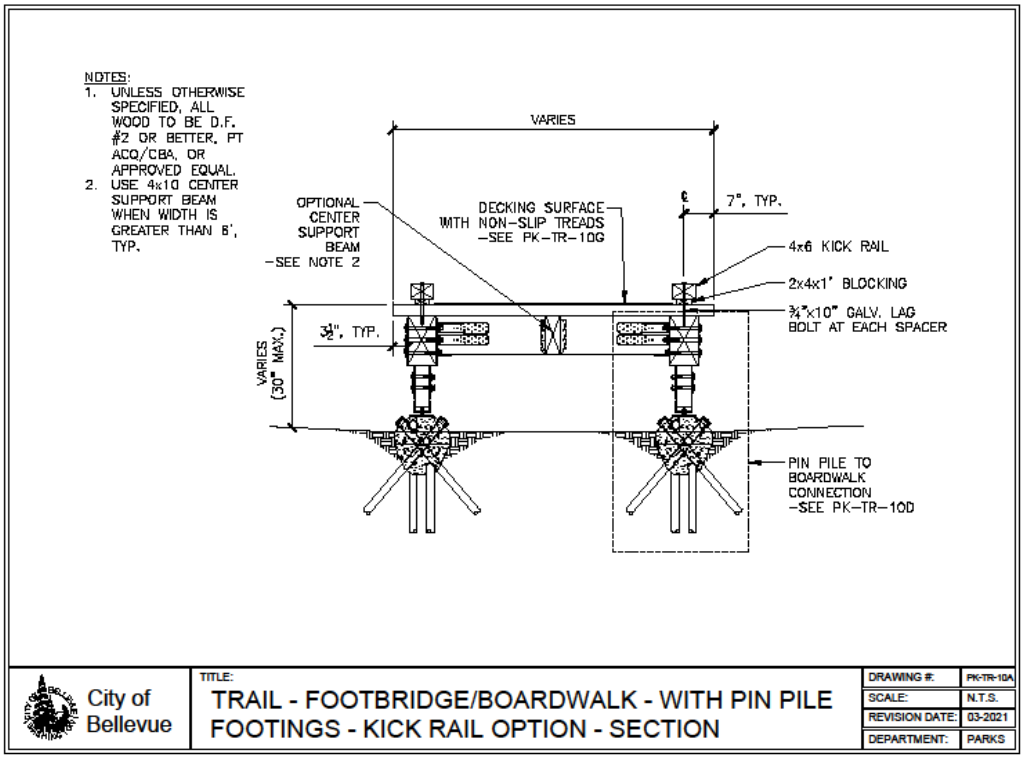
City of Bellevue

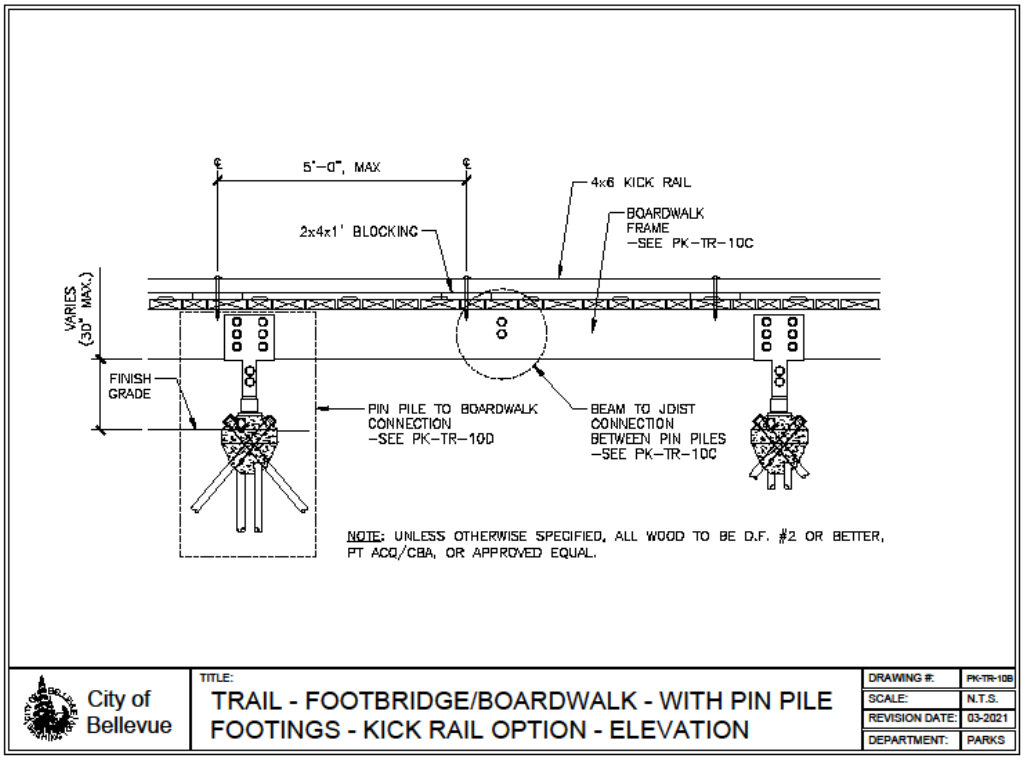
TITLE: TRAIL - FOOTBRIDGE/BOARDWALK - WITH PIN PILE FOOTINGS - SAFETY RAIL OPTION - POST TO BEAM CONN.

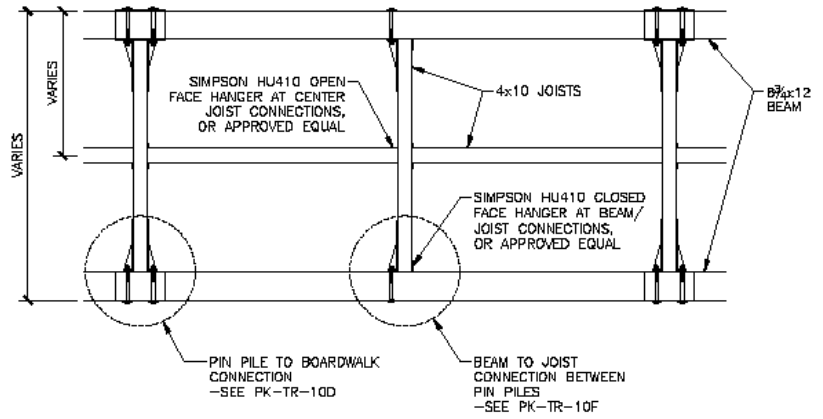
DRAWING #:	PK-TR-09F
SCALE:	N.T.S.
REVISION DATE:	03-2021
DEPARTMENT:	PARKS


NOTCH DECKING AS REQUIRED AT RAIL POST LOCATIONS
3X6, 3X8 AND 3X10 DECKING LAID OUT IN RANDOM PATTERN
7", TYP.
VARIES
VARIES
VARIES
7", TYP.
NOTES:
1. UNLESS OTHERWISE SPECIFIED, DECKING MATERIAL SHALL BE ROUGH SAWN D.F. #2 OR BETTER, PT ACQ/CBA, OR APPROVED EQUAL.
2. DECKING TO BE SECURED TO BEAMS AND JOISTS WITH 5/16"x6" GRK® RSS FASTNER, OR APPROVED EQUAL.
ALUMINUM NON-SLIP TREADS, BROWN IN COLOR, INSTALLED ON THE CENTERLINE OF EVERY THIRD DECK BOARD
-USE HANDI-TREADS OR APPROVED EQUAL
-INSTALL PER MANUFACTURER'S SPECIFICATIONS
-FIELD ADJUST SPACING AS REQUIRED
1"-1½", TYP.
DECK FASTENER -SEE NOTE 2
½"-⅝", TYP.
City of Bellevue
TITLE:
TRAIL - FOOTBRIDGE/BOARDWALK - WITH PIN PILE FOOTINGS - SAFETY RAIL OPTION - DECKING PLAN
DRAWING #: PK-TR-09G
SCALE: N.T.S.
REVISION DATE: 03-2021
DEPARTMENT: PARKS


(TRUE) 3x8 TOP RAIL, CHAMFERED AS SHOWN
8"
3"
2"
NOTES:
1. UNLESS OTHERWISE SPECIFIED, CAP MATERIAL TO BE D.F. #2 OR BETTER, PT ACQ/CBA, OR APPROVED EQUAL.
2. TREATMENT SHALL TAKE PLACE AFTER CHAMFER HAS BEEN CUT.
City of Bellevue
TITLE:
TRAIL - FOOTBRIDGE/BOARDWALK - WITH PIN PILE FOOTINGS - SAFETY RAIL OPTION - ALTERNATIVE RAIL CAP
DRAWING #: PK-TR-09H
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS


NOTES:
1. UNLESS OTHERWISE SPECIFIED, ALL WOOD TO BE D.F. #2 OR BETTER, PT ACQ/CBA, OR APPROVED EQUAL.
2. USE 4x10 CENTER SUPPORT BEAM WHEN WIDTH IS GREATER THAN 8', TYP.
VARIES
OPTIONAL CENTER SUPPORT BEAM -SEE NOTE 2
DECKING SURFACE WITH NON-SLIP TREADS -SEE PK-TR-10G
℄
7", TYP.
4x6 KICK RAIL
2x4x1' BLOCKING
¾"x10" GALV. LAG BOLT AT EACH SPACER
½", TYP.
VARIES (30" MAX.)
PIN PILE TO BOARDWALK CONNECTION -SEE PK-TR-10D
City of Bellevue
TITLE:
TRAIL - FOOTBRIDGE/BOARDWALK - WITH PIN PILE FOOTINGS - KICK RAIL OPTION - SECTION
DRAWING #: PK-TR-10A
SCALE: N.T.S.
REVISION DATE: 03-2021
DEPARTMENT: PARKS


℄
5'-0", MAX
℄
4x6 KICK RAIL
2x4x1' BLOCKING
BOARDWALK FRAME -SEE PK-TR-10C
VARIES (30" MAX.)
FINISH GRADE
PIN PILE TO BOARDWALK CONNECTION -SEE PK-TR-10D
BEAM TO JOIST CONNECTION BETWEEN PIN PILES -SEE PK-TR-10C
NOTE: UNLESS OTHERWISE SPECIFIED, ALL WOOD TO BE D.F. #2 OR BETTER, PT ACQ/CBA, OR APPROVED EQUAL.
City of Bellevue
TITLE:
TRAIL - FOOTBRIDGE/BOARDWALK - WITH PIN PILE FOOTINGS - KICK RAIL OPTION - ELEVATION
DRAWING #: PK-TR-10B
SCALE: N.T.S.
REVISION DATE: 03-2021
DEPARTMENT: PARKS

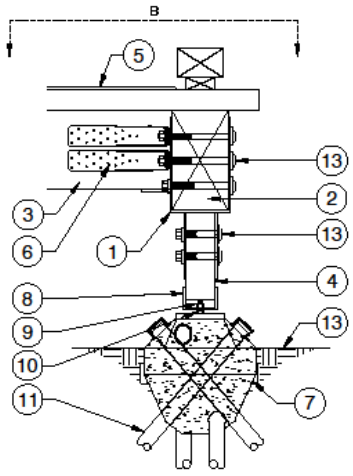


NOTES:
1. UNLESS OTHERWISE SPECIFIED, ALL WOOD TO BE D.F. #2 OR BETTER, PT ACQ/CBA, OR APPROVED EQUAL.
2. USE 4x10 CENTER JOIST WHEN BOARDWALK WIDTH IS 6 FEET OR GREATER.
3. UNLESS OTHERWISE SPECIFIED, USE SIMPSON #10x1½" STRUCTURAL CONNECTOR SCREWS, OR APPROVED EQUAL, FOR SECURING HANGERS TO JOISTS.

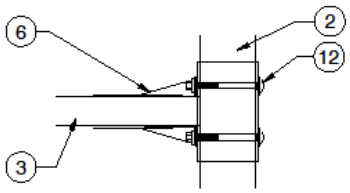
City of Bellevue

TITLE: TRAIL - FOOTBRIDGE/BOARDWALK - WITH PIN PILE FOOTINGS - KICK RAIL OPTION - FRAMING PLAN

DRAWING #:	PK-TR-10C
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS



A – SECTION



B – PLAN

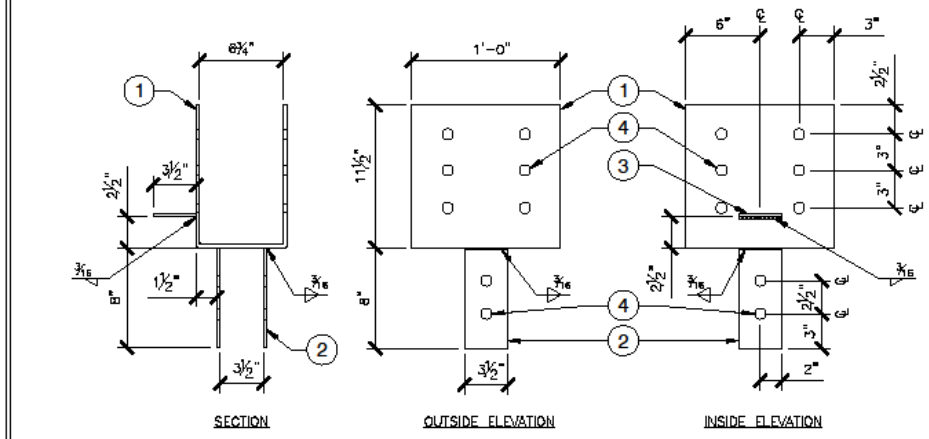
1. CONNECTOR, SEE PK–TR–10E
2. 6¾"x12" BEAM
3. 4x10 JOIST
4. 4x4 FRAME POST
5. DECKING
6. (4) SIMPSON HTT4 TENSION TIE, OR APPROVED EQUAL
7. DIAMOND PIER DP1DD PIN FOUNDATION, OR APPROVED EQUAL
8. SIMPSON ABE44 POST BRACKET, OR APPROVED EQUAL
9. EMBEDDED GALV. ANCHOR BOLT, TO BE SIZED BY MANUF.
10. GALV. LEVELING NUT
11. (4) 1.5" SCH 40 GALV. PINS, 84" LENGTH, DRIVEN TO REQUIRED DEPTH
12. ¾" GALV. CARRIAGE BOLTS, NUTS AND WASHERS, LENGTH AS REQUIRED
13. FINISH GRADE

NOTES:
1. UNLESS OTHERWISE SPECIFIED, ALL WOOD TO BE D.F. #2 OR BETTER, PT ACQ/CBA, OR APPROVED EQUAL.
2. UNLESS OTHERWISE SPECIFIED, USE SIMPSON #10x1½" STRUCTURAL CONNECTOR SCREWS, OR APPROVED EQUAL, FOR SECURING TENSION TIES TO JOISTS.

City of Bellevue

TITLE: TRAIL - FOOTBRIDGE/BOARDWALK - WITH PIN PILE FOOTINGS - KICK RAIL OPTION - PIN PILE TO BOARDWALK CONNECTION

DRAWING #:	PK-TR-10D
SCALE:	N.T.S.
REVISION DATE:	03-2021
DEPARTMENT:	PARKS



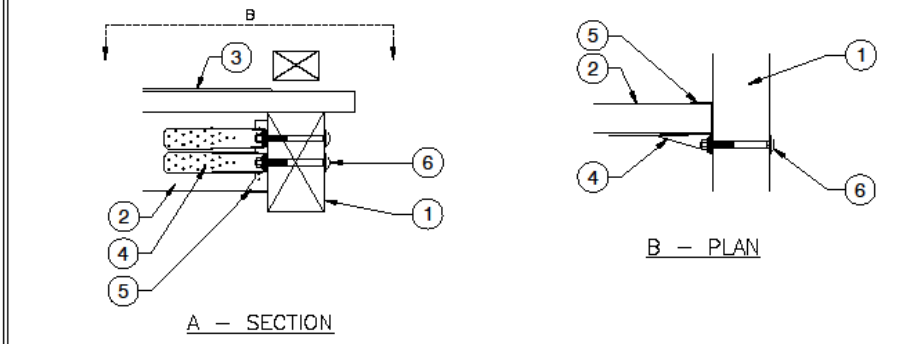
1. ¼" GALV. STEEL PLATE, BENT TO SPECIFIED DIMENSIONS
2. (2) ¼"x3"x8" GALV. STEEL PLATE, WELDED TO BENT PLATE
3. ¼"x3½"x3½" GALV. STEEL PLATE, WELDED TO BENT PLATE
4. ⅞" DIA. HOLES

NOTES:
1. CONNECTOR SHALL BE PREFABRICATED IN A WABO CERTIFIED FABRICATION SHOP. FIELD WELDING WILL NOT BE PERMITTED.
2. CONNECTOR SHALL BE HOT DIPPED GALVANIZED FOLLOWING FABRICATION.

City of Bellevue

TITLE: TRAIL - FOOTBRIDGE/BOARDWALK - WITH PIN PILE FOOTINGS - KICK RAIL OPTION - CONNECTOR DETAIL

DRAWING #:	PK-TR-10E
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS



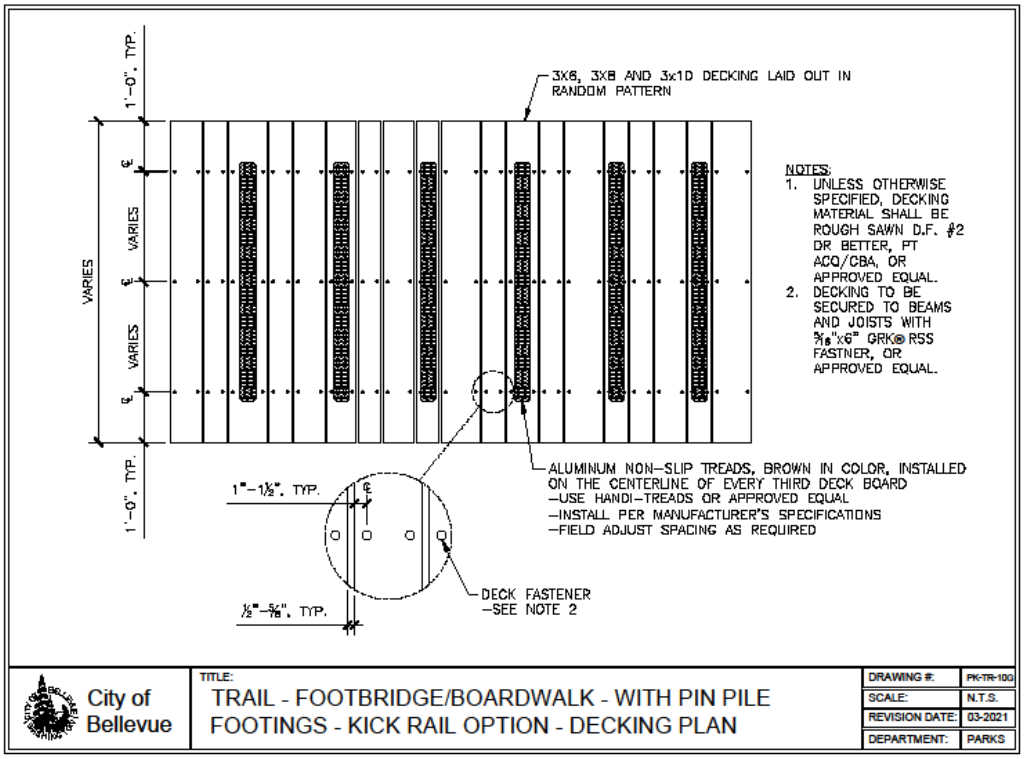
NOTES:
1. UNLESS OTHERWISE SPECIFIED, ALL WOOD TO BE D.F. #2 OR BETTER, PT ACQ/CBA, OR APPROVED EQUAL.
2. UNLESS OTHERWISE SPECIFIED, USE SIMPSON #10x1½" STRUCTURAL CONNECTOR SCREWS, OR APPROVED EQUAL, FOR SECURING TENSION TIES TO JOISTS.

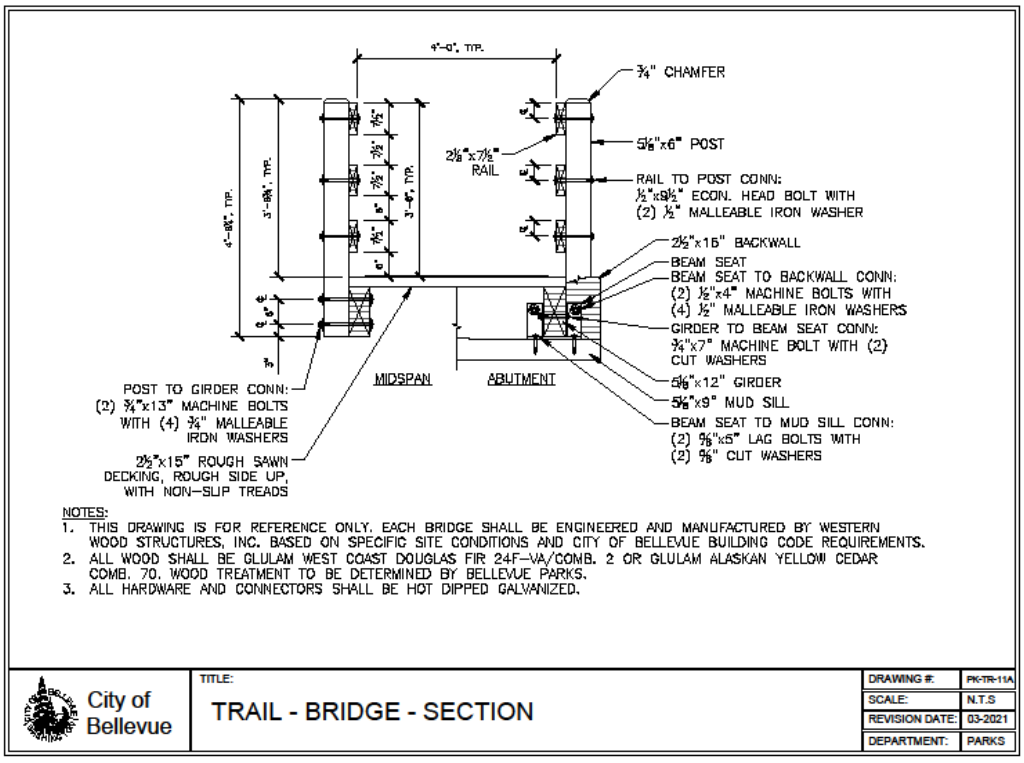
1. 6¾"x12" BEAM
2. 4x10 JOIST
3. DECKING
4. (2) SIMPSON HTT4 TENSION TIE, OR APPROVED EQUAL
5. SIMPSON HU410 CLOSED FACE HANGER, OR APPROVED EQUAL
6. ¾" GALV. CARRIAGE BOLTS, NUTS AND WASHERS, LENGTH AS REQUIRED

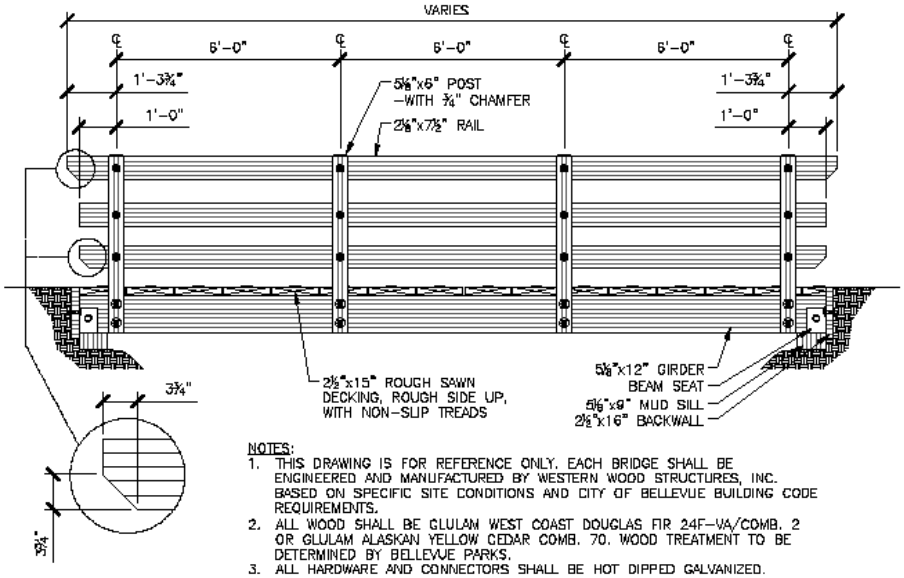
City of Bellevue

TITLE: TRAIL - FOOTBRIDGE/BOARDWALK - WITH PIN PILE FOOTINGS - KICK RAIL OPTION - JOIST TO BEAM CONN.

DRAWING #:	PK-TR-10F
SCALE:	N.T.S.
REVISION DATE:	12-2023
DEPARTMENT:	PARKS


1'-0", TYP.
VARIES
VARIES
VARIES
1'-0", TYP.
3X6, 3X8 AND 3x10 DECKING LAID OUT IN RANDOM PATTERN
NOTES:
1. UNLESS OTHERWISE SPECIFIED, DECKING MATERIAL SHALL BE ROUGH SAWN D.F. #2 OR BETTER, PT ACQ/CBA, OR APPROVED EQUAL.
2. DECKING TO BE SECURED TO BEAMS AND JOISTS WITH 5/16"x6" GRK® RSS FASTNER, OR APPROVED EQUAL.
ALUMINUM NON-SLIP TREADS, BROWN IN COLOR, INSTALLED ON THE CENTERLINE OF EVERY THIRD DECK BOARD
-USE HANDI-TREADS OR APPROVED EQUAL
-INSTALL PER MANUFACTURER'S SPECIFICATIONS
-FIELD ADJUST SPACING AS REQUIRED
1"-1½", TYP.
½"-⅝", TYP.
DECK FASTENER -SEE NOTE 2
City of Bellevue
TITLE:
TRAIL - FOOTBRIDGE/BOARDWALK - WITH PIN PILE FOOTINGS - KICK RAIL OPTION - DECKING PLAN
DRAWING #: PK-TR-10G
SCALE: N.T.S.
REVISION DATE: 03-2021
DEPARTMENT: PARKS


4'-0", TYP.
¾" CHAMFER
5½"x6" POST
2½"x7½" RAIL
RAIL TO POST CONN: ½"x9½" ECON. HEAD BOLT WITH (2) ½" MALLEABLE IRON WASHER
2½"x16" BACKWALL
BEAM SEAT
BEAM SEAT TO BACKWALL CONN: (2) ½"x4" MACHINE BOLTS WITH (4) ½" MALLEABLE IRON WASHERS
GIRDER TO BEAM SEAT CONN: ¾"x7" MACHINE BOLT WITH (2) CUT WASHERS
5½"x12" GIRDER
5½"x9" MUD SILL
BEAM SEAT TO MUD SILL CONN: (2) ⅝"x5" LAG BOLTS WITH (2) ⅝" CUT WASHERS
4'-8½", TYP.
3'-8½", TYP.
3'-4", TYP.
MIDSPAN
ABUTMENT
POST TO GIRDER CONN: (2) ¾"x13" MACHINE BOLTS WITH (4) ¾" MALLEABLE IRON WASHERS
2½"x15" ROUGH SAWN DECKING, ROUGH SIDE UP, WITH NON-SLIP TREADS
NOTES:
1. THIS DRAWING IS FOR REFERENCE ONLY. EACH BRIDGE SHALL BE ENGINEERED AND MANUFACTURED BY WESTERN WOOD STRUCTURES, INC. BASED ON SPECIFIC SITE CONDITIONS AND CITY OF BELLEVUE BUILDING CODE REQUIREMENTS.
2. ALL WOOD SHALL BE GLULAM WEST COAST DOUGLAS FIR 24F-V4/COMB. 2 OR GLULAM ALASKAN YELLOW CEDAR COMB. 70. WOOD TREATMENT TO BE DETERMINED BY BELLEVUE PARKS.
3. ALL HARDWARE AND CONNECTORS SHALL BE HOT DIPPED GALVANIZED.
City of Bellevue
TITLE:
TRAIL - BRIDGE - SECTION
DRAWING #: PK-TR-11A
SCALE: N.T.S
REVISION DATE: 03-2021
DEPARTMENT: PARKS

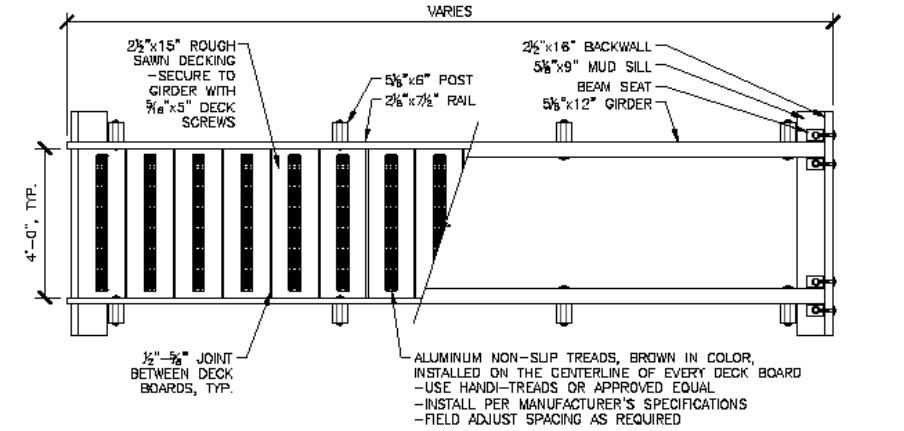


NOTES:
1. THIS DRAWING IS FOR REFERENCE ONLY. EACH BRIDGE SHALL BE ENGINEERED AND MANUFACTURED BY WESTERN WOOD STRUCTURES, INC. BASED ON SPECIFIC SITE CONDITIONS AND CITY OF BELLEVUE BUILDING CODE REQUIREMENTS.
2. ALL WOOD SHALL BE GLULAM WEST COAST DOUGLAS FIR 24F-V4/COMB. 2 OR GLULAM ALASKAN YELLOW CEDAR COMB. 70. WOOD TREATMENT TO BE DETERMINED BY BELLEVUE PARKS.
3. ALL HARDWARE AND CONNECTORS SHALL BE HOT DIPPED GALVANIZED.

City of Bellevue

TITLE: TRAIL - BRIDGE - ELEVATION

DRAWING #:	PK-TR-11B
SCALE:	N.T.S.
REVISION DATE:	03-2021
DEPARTMENT:	PARKS

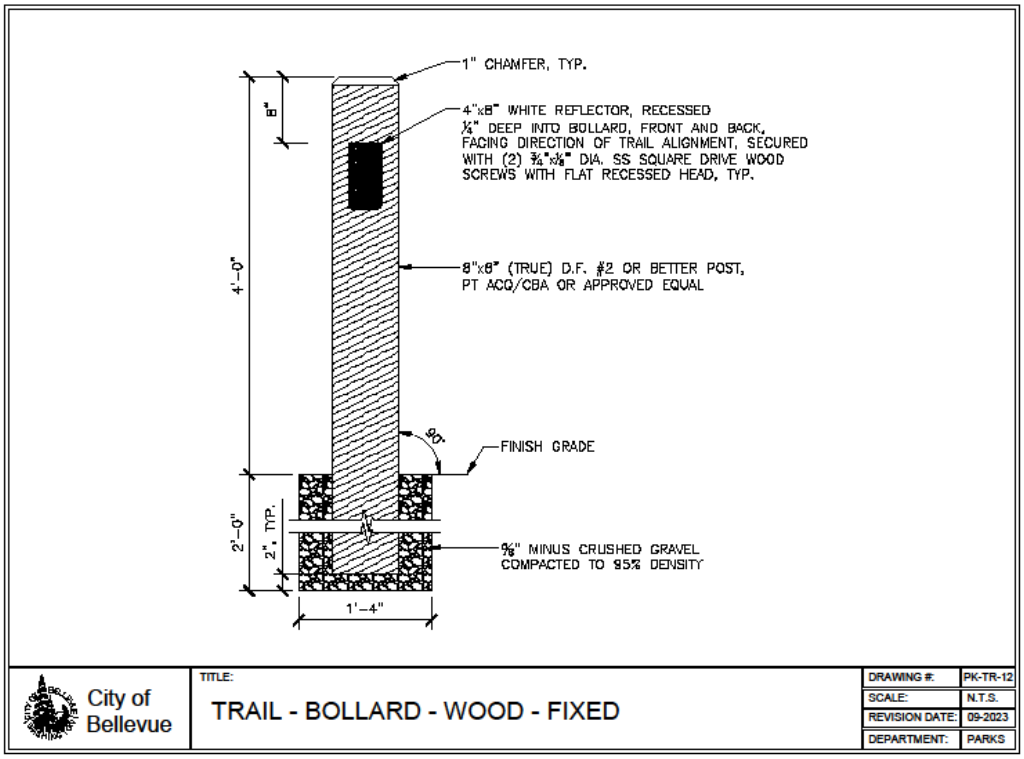


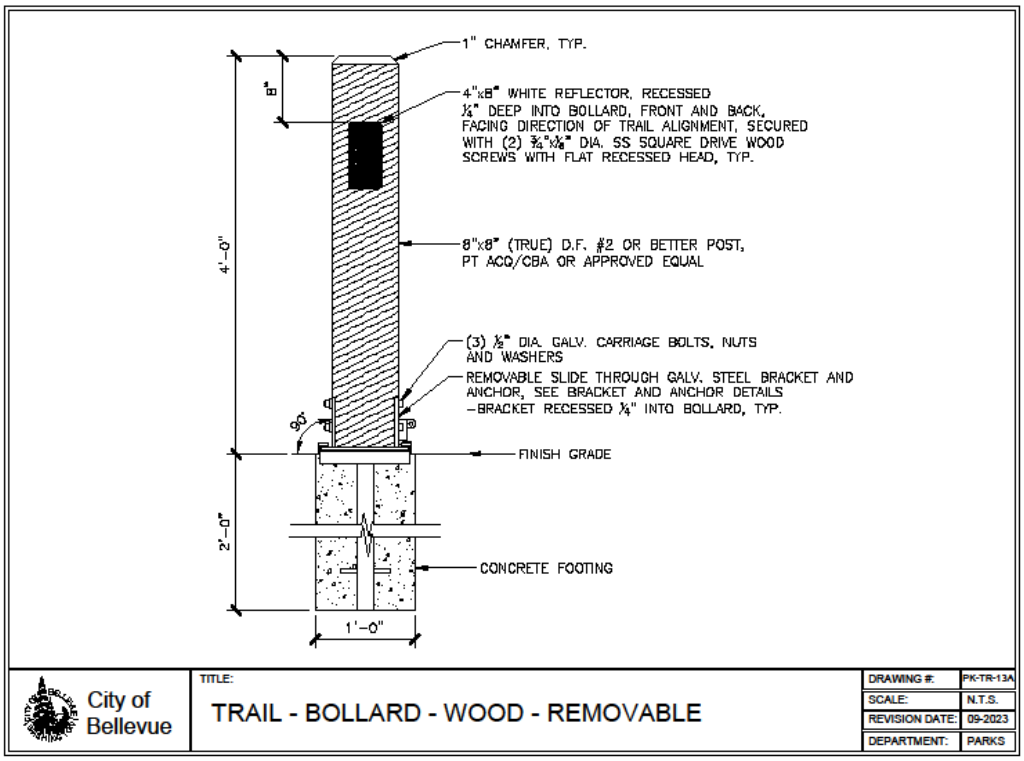
NOTES:
1. THIS DRAWING IS FOR REFERENCE ONLY. EACH BRIDGE SHALL BE ENGINEERED AND MANUFACTURED BY WESTERN WOOD STRUCTURES, INC. BASED ON SPECIFIC SITE CONDITIONS AND CITY OF BELLEVUE BUILDING CODE REQUIREMENTS.
2. ALL WOOD SHALL BE GLULAM WEST COAST DOUGLAS FIR 24F-V4/COMB. 2 OR GLULAM ALASKAN YELLOW CEDAR COMB. 70. WOOD TREATMENT TO BE DETERMINED BY BELLEVUE PARKS.
3. ALL HARDWARE AND CONNECTORS SHALL BE HOT DIPPED GALVANIZED.

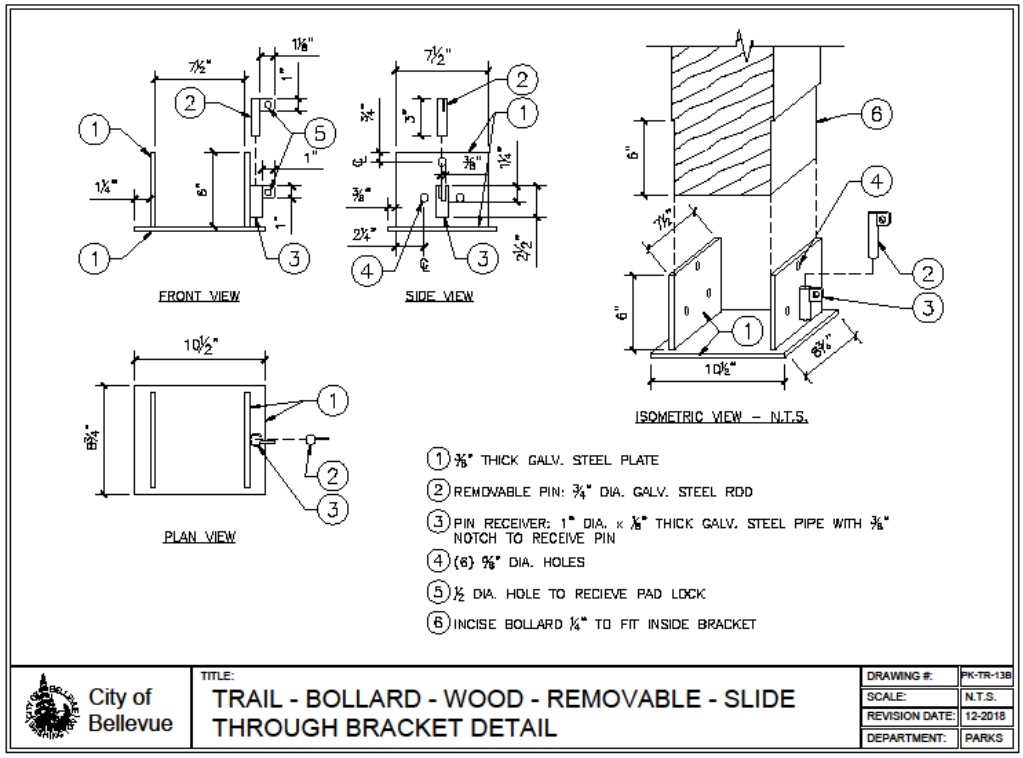
City of Bellevue

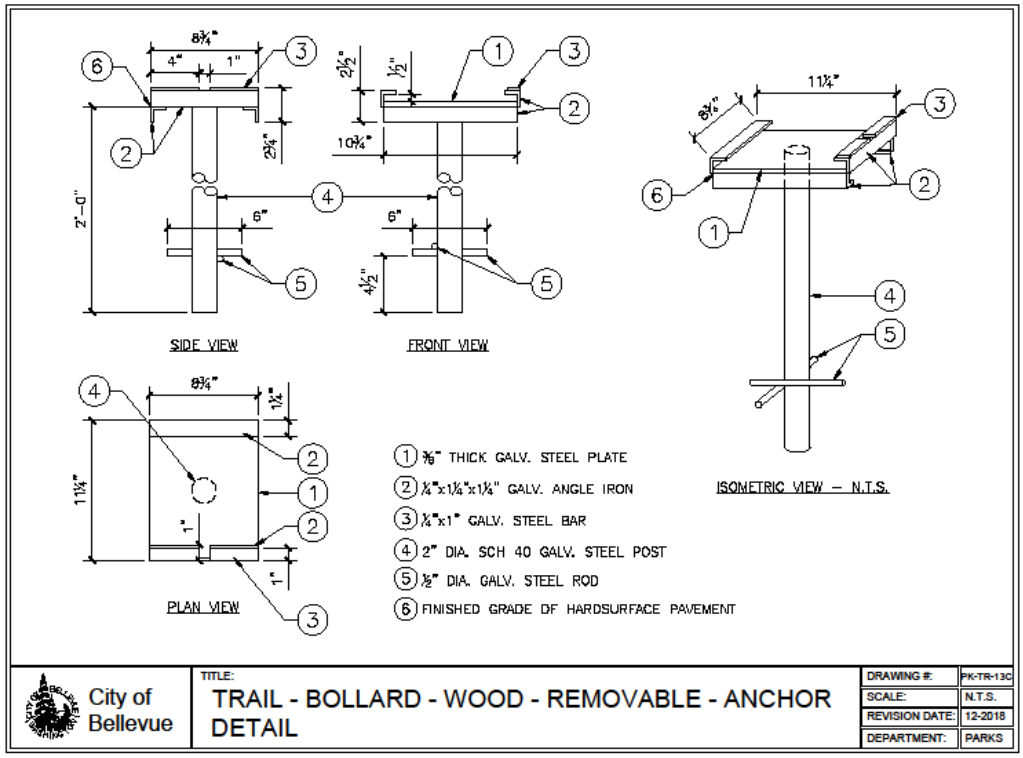
TITLE: TRAIL - BRIDGE - PLAN

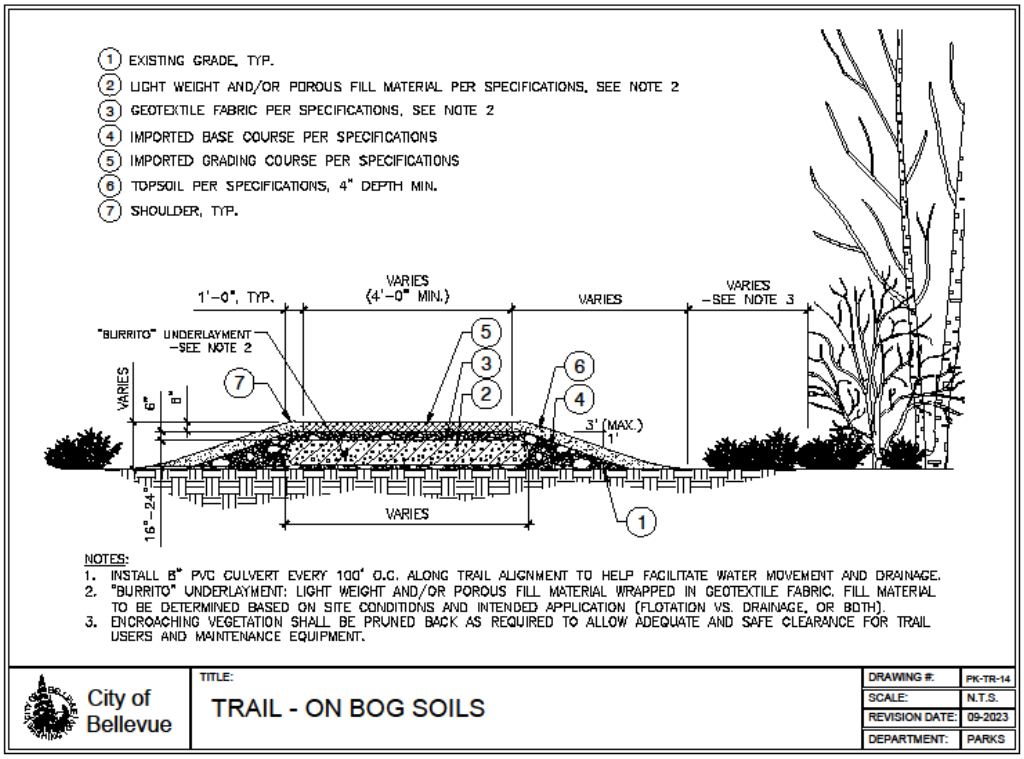
DRAWING #:	PK-TR-11C
SCALE:	N.T.S
REVISION DATE:	03-2021
DEPARTMENT:	PARKS


1" CHAMFER, TYP.
8"
4"x8" WHITE REFLECTOR, RECESSED
½" DEEP INTO BOLLARD, FRONT AND BACK,
FACING DIRECTION OF TRAIL ALIGNMENT, SECURED
WITH (2) ¾"x⅜" DIA. SS SQUARE DRIVE WOOD
SCREWS WITH FLAT RECESSED HEAD, TYP.
4'-0"
8"x8" (TRUE) D.F. #2 OR BETTER POST,
PT ACQ/CBA OR APPROVED EQUAL
90°
FINISH GRADE
2'-0"
2", TYP.
⅝" MINUS CRUSHED GRAVEL
COMPACTED TO 95% DENSITY
1'-4"
City of Bellevue
TITLE:
TRAIL - BOLLARD - WOOD - FIXED
DRAWING #: PK-TR-12
SCALE: N.T.S.
REVISION DATE: 09-2023
DEPARTMENT: PARKS


1" CHAMFER, TYP.
8"
4"x8" WHITE REFLECTOR, RECESSED
½" DEEP INTO BOLLARD, FRONT AND BACK,
FACING DIRECTION OF TRAIL ALIGNMENT, SECURED
WITH (2) ¾"x⅜" DIA. SS SQUARE DRIVE WOOD
SCREWS WITH FLAT RECESSED HEAD, TYP.
4'-0"
8"x8" (TRUE) D.F. #2 OR BETTER POST,
PT ACQ/CBA OR APPROVED EQUAL
(3) ½" DIA. GALV. CARRIAGE BOLTS, NUTS
AND WASHERS
REMOVABLE SLIDE THROUGH GALV. STEEL BRACKET AND
ANCHOR, SEE BRACKET AND ANCHOR DETAILS
-BRACKET RECESSED ¼" INTO BOLLARD, TYP.
90°
FINISH GRADE
2'-0"
CONCRETE FOOTING
1'-0"
City of Bellevue
TITLE:
TRAIL - BOLLARD - WOOD - REMOVABLE
DRAWING #: PK-TR-13A
SCALE: N.T.S.
REVISION DATE: 09-2023
DEPARTMENT: PARKS


FRONT VIEW
SIDE VIEW
ISOMETRIC VIEW – N.T.S.
PLAN VIEW
1 3/8" THICK GALV. STEEL PLATE
2 REMOVABLE PIN: 3/4" DIA. GALV. STEEL ROD
3 PIN RECEIVER: 1" DIA. x 1/8" THICK GALV. STEEL PIPE WITH 3/8" NOTCH TO RECEIVE PIN
4 (6) 9/16" DIA. HOLES
5 1/2 DIA. HOLE TO RECIEVE PAD LOCK
6 INCISE BOLLARD 1/4" TO FIT INSIDE BRACKET
City of Bellevue
TITLE:
TRAIL - BOLLARD - WOOD - REMOVABLE - SLIDE THROUGH BRACKET DETAIL
DRAWING #: PK-TR-13B
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS


SIDE VIEW
FRONT VIEW
ISOMETRIC VIEW – N.T.S.
PLAN VIEW
1 3/8" THICK GALV. STEEL PLATE
2 1/4"x1 1/4"x1 1/4" GALV. ANGLE IRON
3 1/4"x1" GALV. STEEL BAR
4 2" DIA. SCH 40 GALV. STEEL POST
5 1/2" DIA. GALV. STEEL ROD
6 FINISHED GRADE OF HARDSURFACE PAVEMENT
City of Bellevue
TITLE:
TRAIL - BOLLARD - WOOD - REMOVABLE - ANCHOR DETAIL
DRAWING #: PK-TR-13C
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS


1 EXISTING GRADE, TYP.
2 LIGHT WEIGHT AND/OR POROUS FILL MATERIAL PER SPECIFICATIONS, SEE NOTE 2
3 GEOTEXTILE FABRIC PER SPECIFICATIONS, SEE NOTE 2
4 IMPORTED BASE COURSE PER SPECIFICATIONS
5 IMPORTED GRADING COURSE PER SPECIFICATIONS
6 TOPSOIL PER SPECIFICATIONS, 4" DEPTH MIN.
7 SHOULDER, TYP.
1'-0", TYP.
VARIES (4'-0" MIN.)
VARIES
VARIES -SEE NOTE 3
"BURRITO" UNDERLAYMENT -SEE NOTE 2
VARIES
6"
8"
3' (MAX.)
1'
16"-24"
VARIES
NOTES:
1. INSTALL 8" PVC CULVERT EVERY 100' O.C. ALONG TRAIL ALIGNMENT TO HELP FACILITATE WATER MOVEMENT AND DRAINAGE.
2. "BURRITO" UNDERLAYMENT: LIGHT WEIGHT AND/OR POROUS FILL MATERIAL WRAPPED IN GEOTEXTILE FABRIC. FILL MATERIAL TO BE DETERMINED BASED ON SITE CONDITIONS AND INTENDED APPLICATION (FLOTATION VS. DRAINAGE, OR BOTH).
3. ENCROACHING VEGETATION SHALL BE PRUNED BACK AS REQUIRED TO ALLOW ADEQUATE AND SAFE CLEARANCE FOR TRAIL USERS AND MAINTENANCE EQUIPMENT.
City of Bellevue
TITLE:
TRAIL - ON BOG SOILS
DRAWING #: PK-TR-14
SCALE: N.T.S.
REVISION DATE: 09-2023
DEPARTMENT: PARKS

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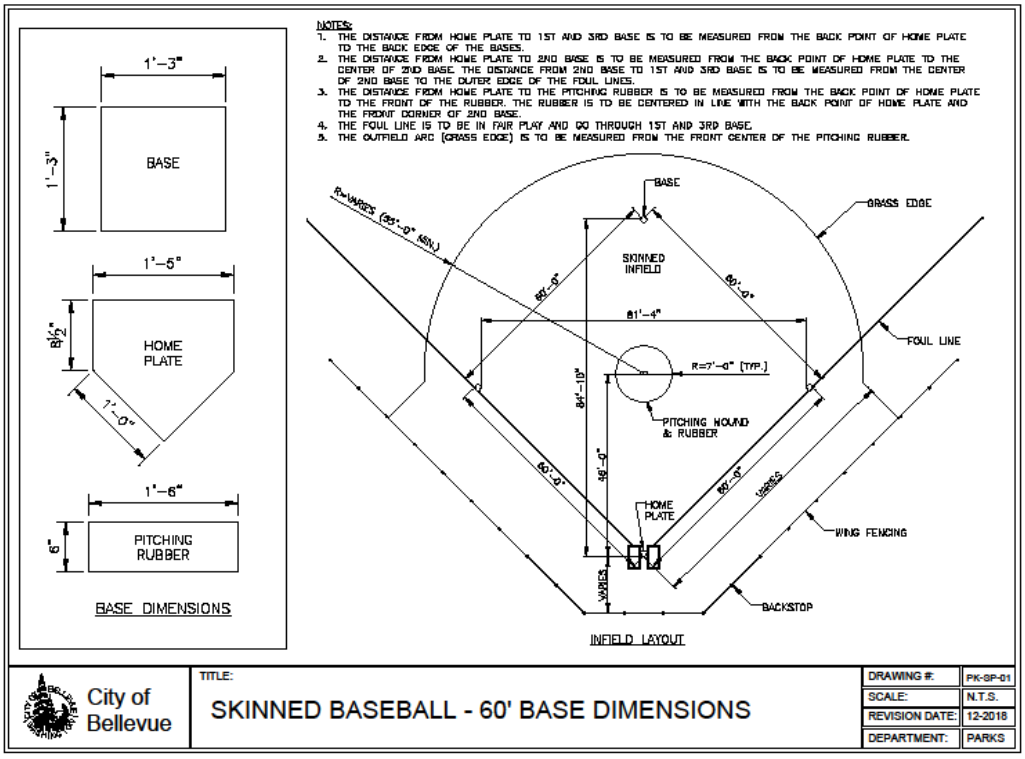
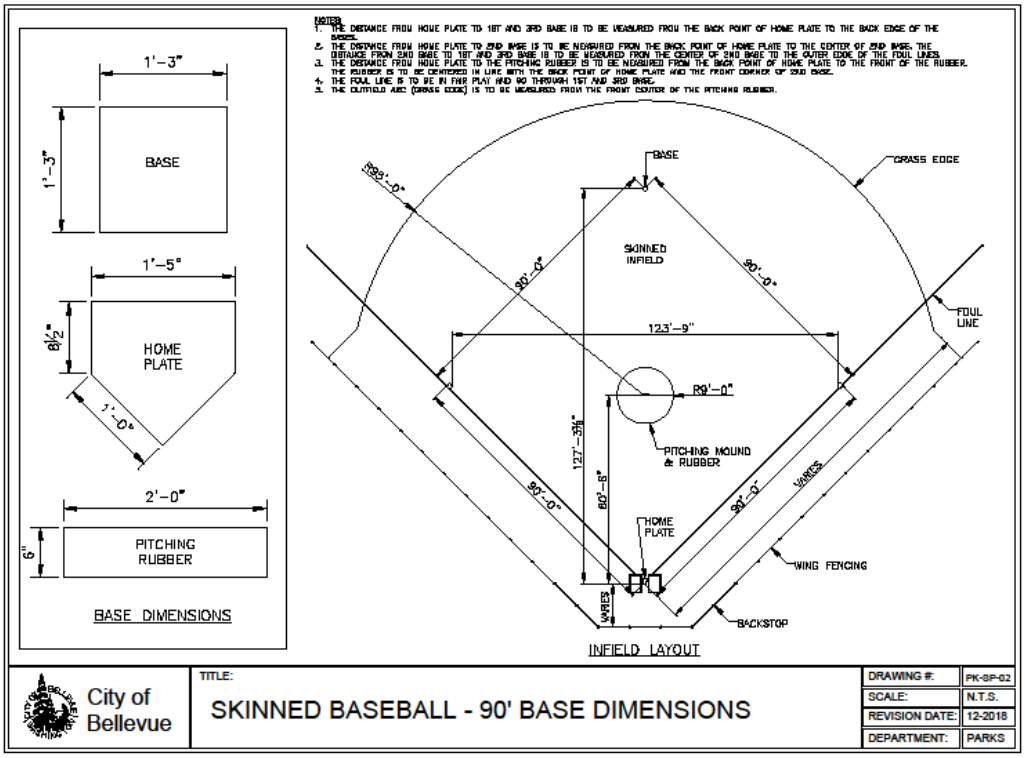
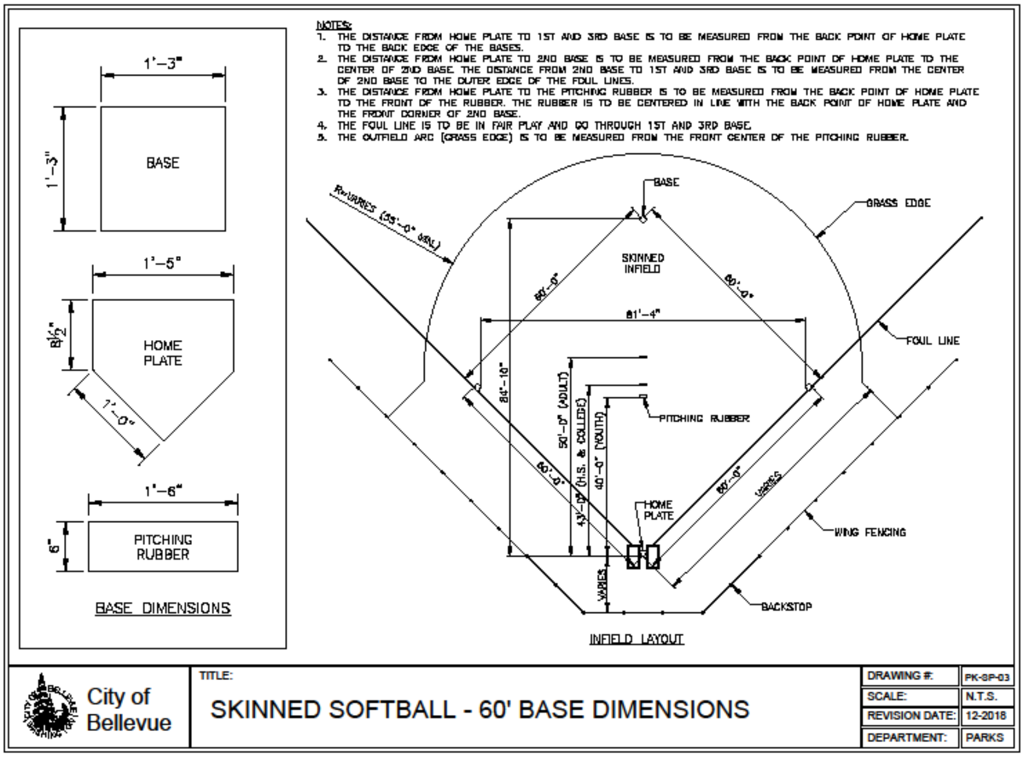
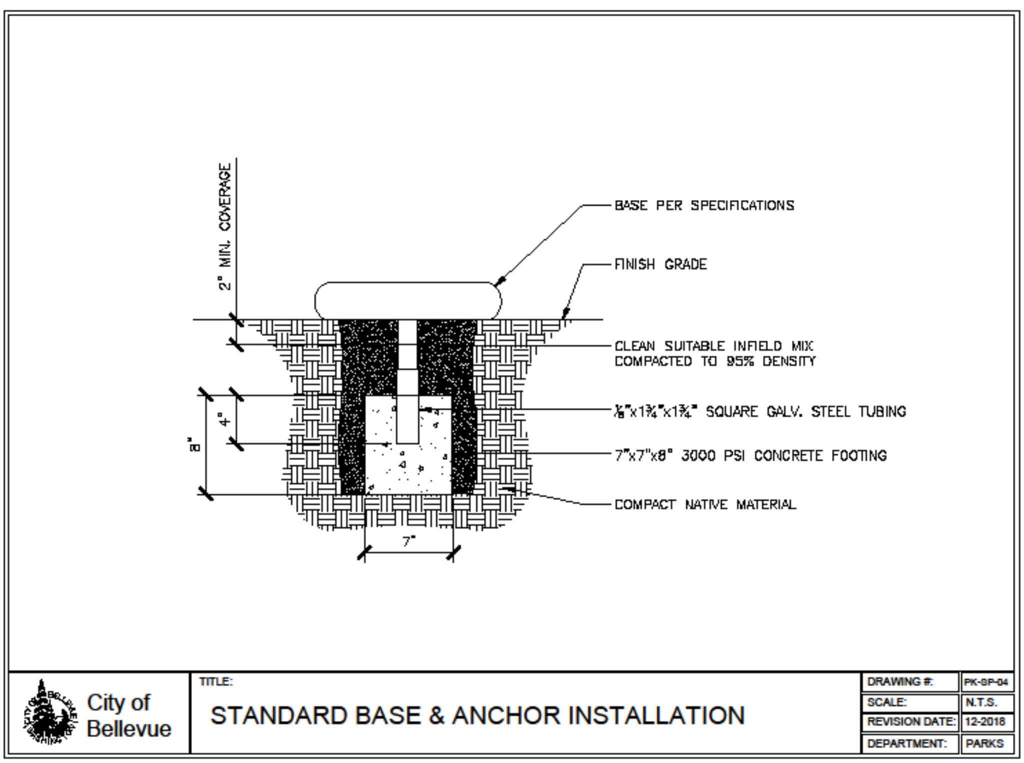
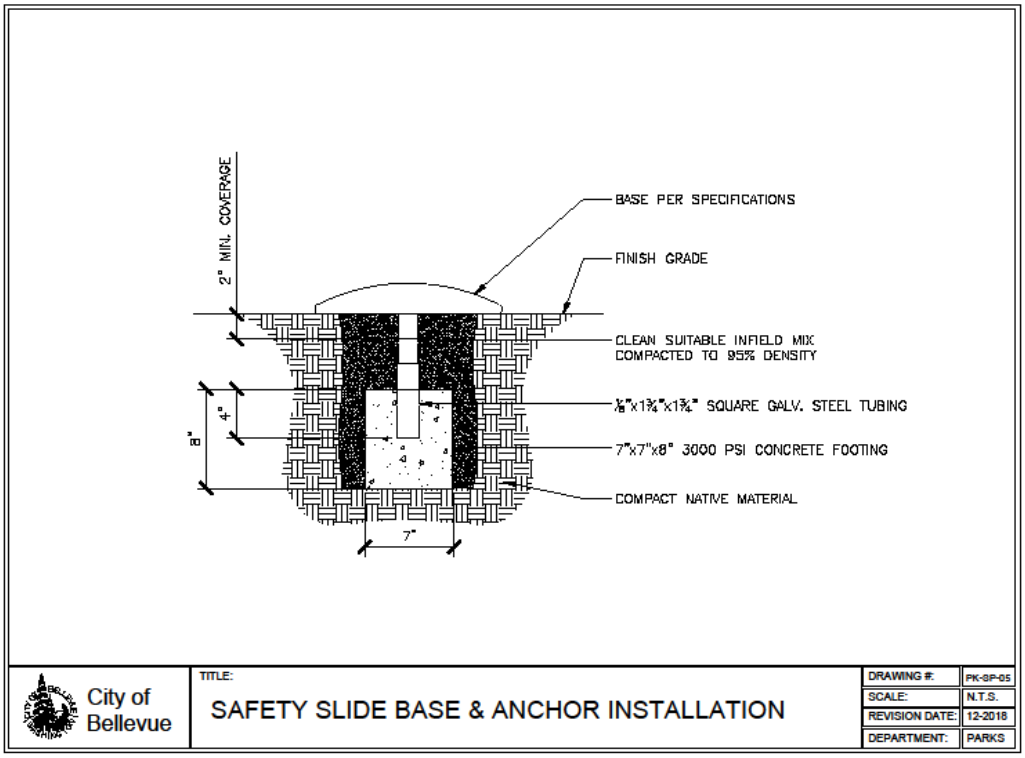
Sport Fields

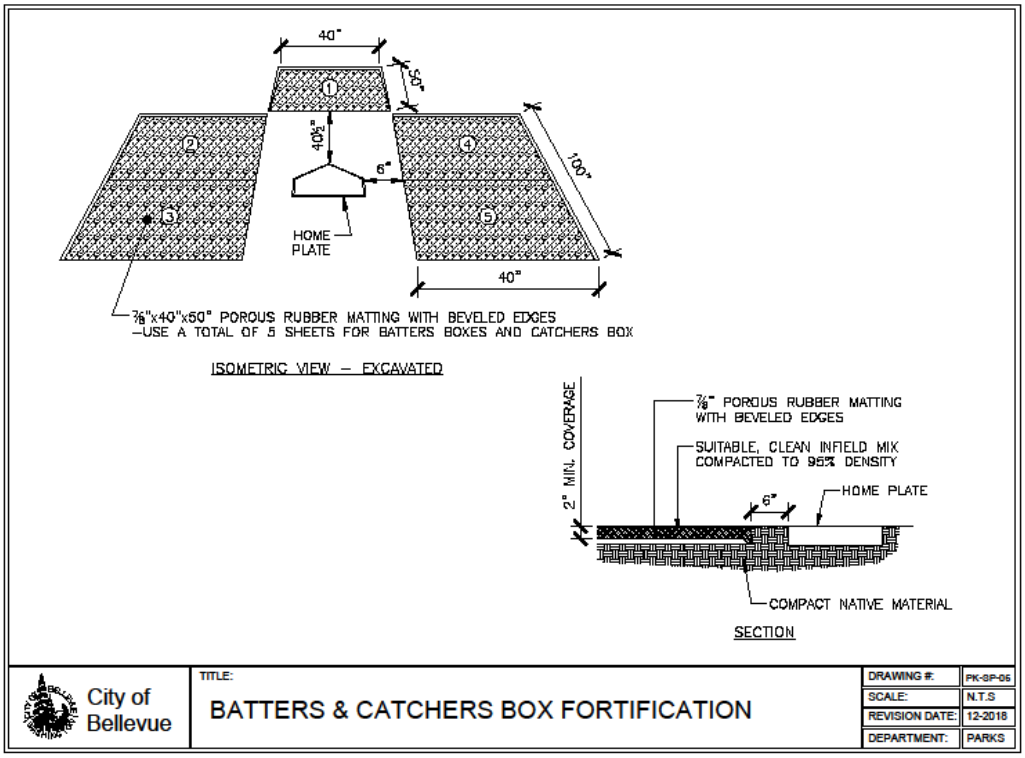

NOTES:
1. THE DISTANCE FROM HOME PLATE TO 1ST AND 3RD BASE IS TO BE MEASURED FROM THE BACK POINT OF HOME PLATE TO THE BACK EDGE OF THE BASES.
2. THE DISTANCE FROM HOME PLATE TO 2ND BASE IS TO BE MEASURED FROM THE BACK POINT OF HOME PLATE TO THE CENTER OF 2ND BASE. THE DISTANCE FROM 2ND BASE TO 1ST AND 3RD BASE IS TO BE MEASURED FROM THE CENTER OF 2ND BASE TO THE OUTER EDGE OF THE FOUL LINES.
3. THE DISTANCE FROM HOME PLATE TO THE PITCHING RUBBER IS TO BE MEASURED FROM THE BACK POINT OF HOME PLATE TO THE FRONT OF THE RUBBER. THE RUBBER IS TO BE CENTERED IN LINE WITH THE BACK POINT OF HOME PLATE AND THE FRONT CORNER OF 2ND BASE.
4. THE FOUL LINE IS TO BE IN FAIR PLAY AND GO THROUGH 1ST AND 3RD BASE.
5. THE OUTFIELD ARC (GRASS EDGE) IS TO BE MEASURED FROM THE FRONT CENTER OF THE PITCHING RUBBER.
1'-3"
1'-3"
BASE
1'-5"
8½"
HOME PLATE
1'-0"
1'-6"
6"
PITCHING RUBBER
BASE DIMENSIONS
R=VARIES (95'-0" MIN.)
BASE
GRASS EDGE
SKINNED INFIELD
90'-0"
90'-0"
81'-4"
FOUL LINE
R=7'-0" (TYP.)
84'-10"
PITCHING MOUND & RUBBER
60'-0"
46'-0"
90'-0"
VARIES
HOME PLATE
WING FENCING
VARIES
BACKSTOP
INFIELD LAYOUT
City of Bellevue
TITLE:
SKINNED BASEBALL - 60' BASE DIMENSIONS
DRAWING #: PK-SP-01
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS

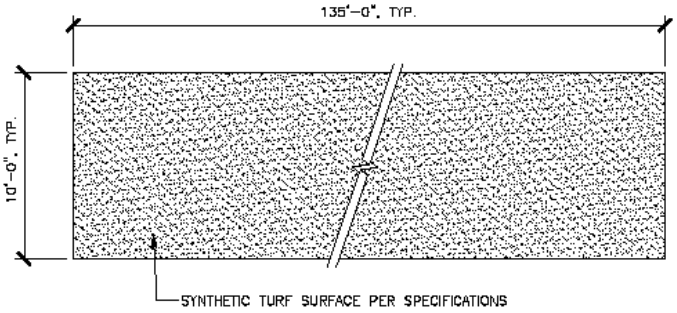

NOTES:
1. THE DISTANCE FROM HOME PLATE TO 1ST AND 3RD BASE IS TO BE MEASURED FROM THE BACK POINT OF HOME PLATE TO THE BACK EDGE OF THE BASES.
2. THE DISTANCE FROM HOME PLATE TO 2ND BASE IS TO BE MEASURED FROM THE BACK POINT OF HOME PLATE TO THE CENTER OF 2ND BASE. THE DISTANCE FROM 2ND BASE TO 1ST AND 3RD BASE IS TO BE MEASURED FROM THE CENTER OF 2ND BASE TO THE OUTER EDGE OF THE FOUL LINES.
3. THE DISTANCE FROM HOME PLATE TO THE PITCHING RUBBER IS TO BE MEASURED FROM THE BACK POINT OF HOME PLATE TO THE FRONT OF THE RUBBER. THE RUBBER IS TO BE CENTERED IN LINE WITH THE BACK POINT OF HOME PLATE AND THE FRONT CORNER OF 2ND BASE.
4. THE FOUL LINE IS TO BE IN FAIR PLAY AND GO THROUGH 1ST AND 3RD BASE.
5. THE OUTFIELD ARC (GRASS EDGE) IS TO BE MEASURED FROM THE FRONT CENTER OF THE PITCHING RUBBER.
1'-3"
1'-3"
BASE
1'-5"
8½"
HOME PLATE
1'-0"
2'-0"
6"
PITCHING RUBBER
BASE DIMENSIONS
R89'-0"
BASE
GRASS EDGE
SKINNED INFIELD
90'-0"
90'-0"
123'-9"
FOUL LINE
R9'-0"
127'-3⅝"
PITCHING MOUND & RUBBER
90'-0"
60'-6"
90'-0"
VARIES
HOME PLATE
WING FENCING
VARIES
BACKSTOP
INFIELD LAYOUT
City of Bellevue
TITLE:
SKINNED BASEBALL - 90' BASE DIMENSIONS
DRAWING #: PK-SP-02
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS


NOTES:
1. THE DISTANCE FROM HOME PLATE TO 1ST AND 3RD BASE IS TO BE MEASURED FROM THE BACK POINT OF HOME PLATE TO THE BACK EDGE OF THE BASES.
2. THE DISTANCE FROM HOME PLATE TO 2ND BASE IS TO BE MEASURED FROM THE BACK POINT OF HOME PLATE TO THE CENTER OF 2ND BASE. THE DISTANCE FROM 2ND BASE TO 1ST AND 3RD BASE IS TO BE MEASURED FROM THE CENTER OF 2ND BASE TO THE OUTER EDGE OF THE FOUL LINES.
3. THE DISTANCE FROM HOME PLATE TO THE PITCHING RUBBER IS TO BE MEASURED FROM THE BACK POINT OF HOME PLATE TO THE FRONT OF THE RUBBER. THE RUBBER IS TO BE CENTERED IN LINE WITH THE BACK POINT OF HOME PLATE AND THE FRONT CORNER OF 2ND BASE.
4. THE FOUL LINE IS TO BE IN FAIR PLAY AND GO THROUGH 1ST AND 3RD BASE.
5. THE OUTFIELD ARC (GRASS EDGE) IS TO BE MEASURED FROM THE FRONT CENTER OF THE PITCHING RUBBER.
1'–3"
BASE
1'–5"
HOME PLATE
1'–0"
1'–6"
6"
PITCHING RUBBER
BASE DIMENSIONS
R=VARIES (55'–0" MIN.)
BASE
GRASS EDGE
SKINNED INFIELD
60'–0"
81'–4"
84'–10"
FOUL LINE
50'–0" (ADULT)
43'–0" (H.S. & COLLEGE)
40'–0" (YOUTH)
PITCHING RUBBER
HOME PLATE
VARIES
WING FENCING
BACKSTOP
INFIELD LAYOUT
City of Bellevue
TITLE:
SKINNED SOFTBALL - 60' BASE DIMENSIONS
DRAWING #: PK-SP-03
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS


2" MIN. COVERAGE
BASE PER SPECIFICATIONS
FINISH GRADE
CLEAN SUITABLE INFIELD MIX COMPACTED TO 95% DENSITY
⅛"x1¾"x1¾" SQUARE GALV. STEEL TUBING
7"x7"x8" 3000 PSI CONCRETE FOOTING
COMPACT NATIVE MATERIAL
4"
8"
7"
City of Bellevue
TITLE:
STANDARD BASE & ANCHOR INSTALLATION
DRAWING #: PK-SP-04
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS


2" MIN. COVERAGE
BASE PER SPECIFICATIONS
FINISH GRADE
CLEAN SUITABLE INFIELD MIX
COMPACTED TO 95% DENSITY
⅛"x1¾"x1¾" SQUARE GALV. STEEL TUBING
7"x7"x8" 3000 PSI CONCRETE FOOTING
COMPACT NATIVE MATERIAL
8"
4"
7"
City of Bellevue
TITLE:
SAFETY SLIDE BASE & ANCHOR INSTALLATION
DRAWING #: PK-SP-05
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS


40"
50"
40½"
6"
100"
HOME PLATE
40"
⅞"x40"x50" POROUS RUBBER MATTING WITH BEVELED EDGES
–USE A TOTAL OF 5 SHEETS FOR BATTERS BOXES AND CATCHERS BOX
ISOMETRIC VIEW – EXCAVATED
⅞" POROUS RUBBER MATTING
WITH BEVELED EDGES
SUITABLE, CLEAN INFIELD MIX
COMPACTED TO 95% DENSITY
HOME PLATE
6"
2" MIN. COVERAGE
COMPACT NATIVE MATERIAL
SECTION
City of Bellevue
TITLE:
BATTERS & CATCHERS BOX FORTIFICATION
DRAWING #: PK-SP-06
SCALE: N.T.S
REVISION DATE: 12-2018
DEPARTMENT: PARKS

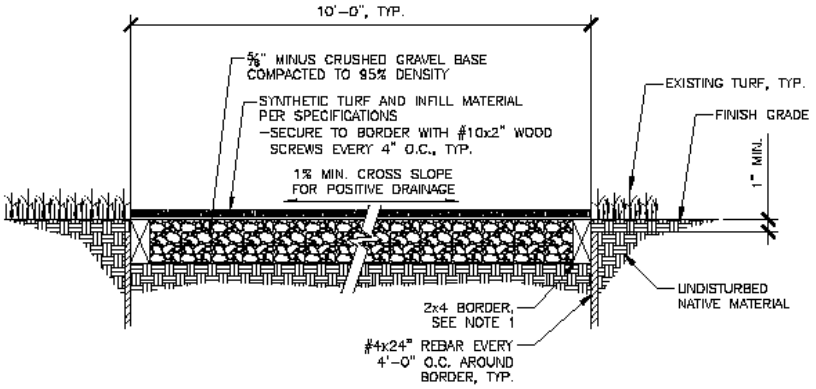


NOTE: DIMENSIONS MAY VARY BASED ON SPECIFIC SITE CONDITIONS, SITE RESTRICTIONS AND/OR USER GROUP PREFERENCES/REQUIREMENTS.

City of Bellevue

TITLE: SYNTHETIC CRICKET PITCH - TYPICAL LAYOUT

DRAWING #:	PK-SP-07A
SCALE:	N.T.S
REVISION DATE:	12-2018
DEPARTMENT:	PARKS

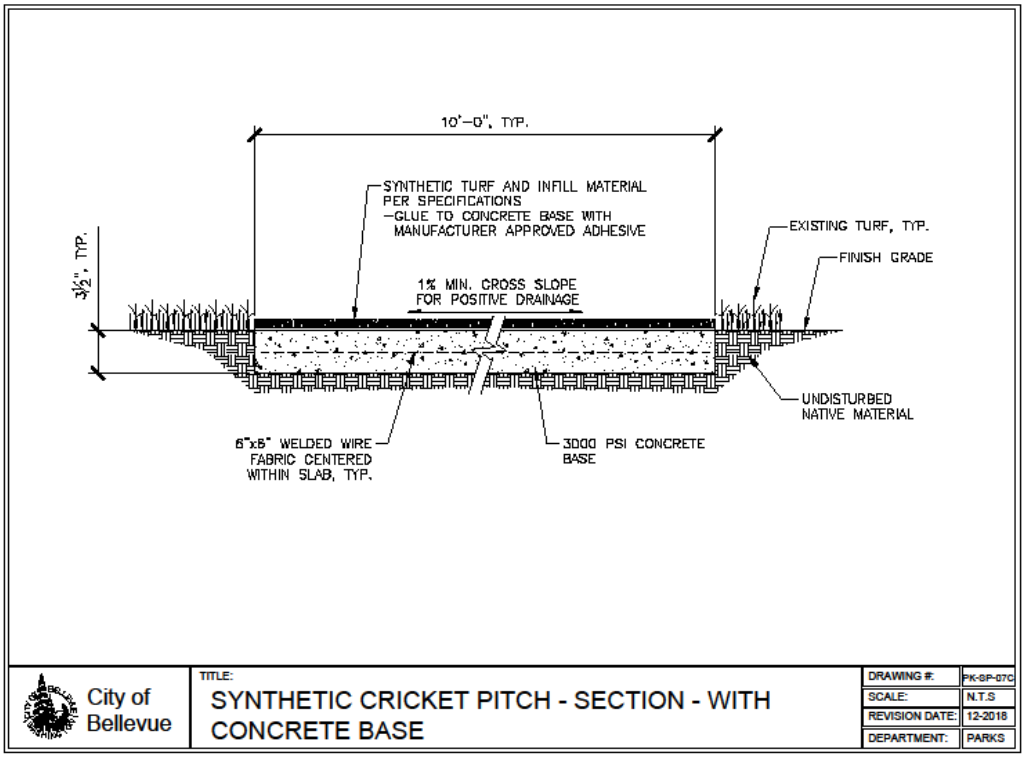


NOTES:
1. BORDER MATERIAL TO BE D.F. #2 OR BETTER, PT ACQ/CBA, OR APPROVED EQUAL.
2. USE SIMPSON Z-MAX 3"x7" 16 GA. GALV. HEAVY TIE PLATES, OR APPROVED EQUAL, WITH 1½" WOOD SCREWS TO ATTACHED 2x4 BORDER MEMBERS TOGETHER.

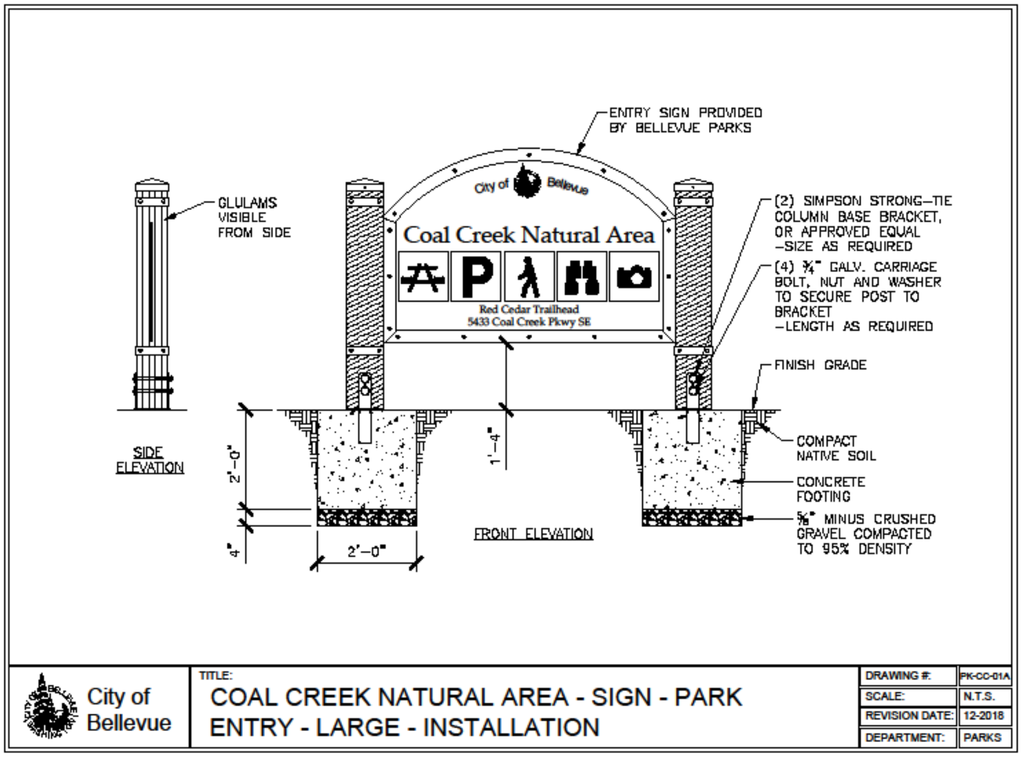
City of Bellevue

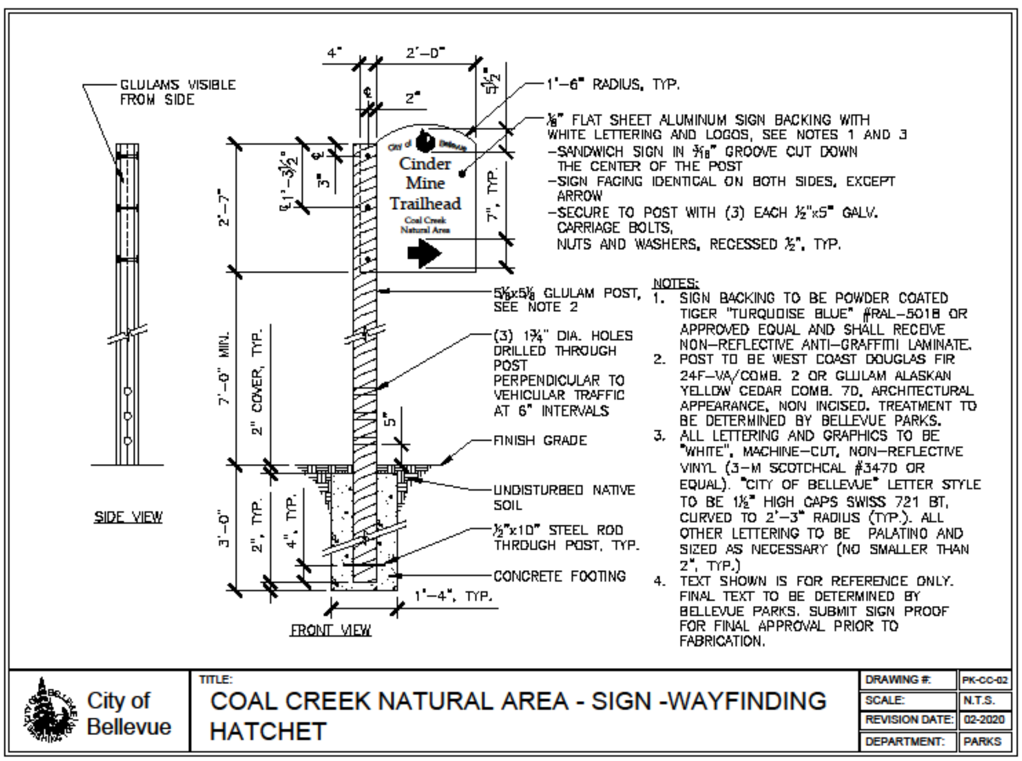
TITLE: SYNTHETIC CRICKET PITCH - SECTION - WITH GRAVEL BASE

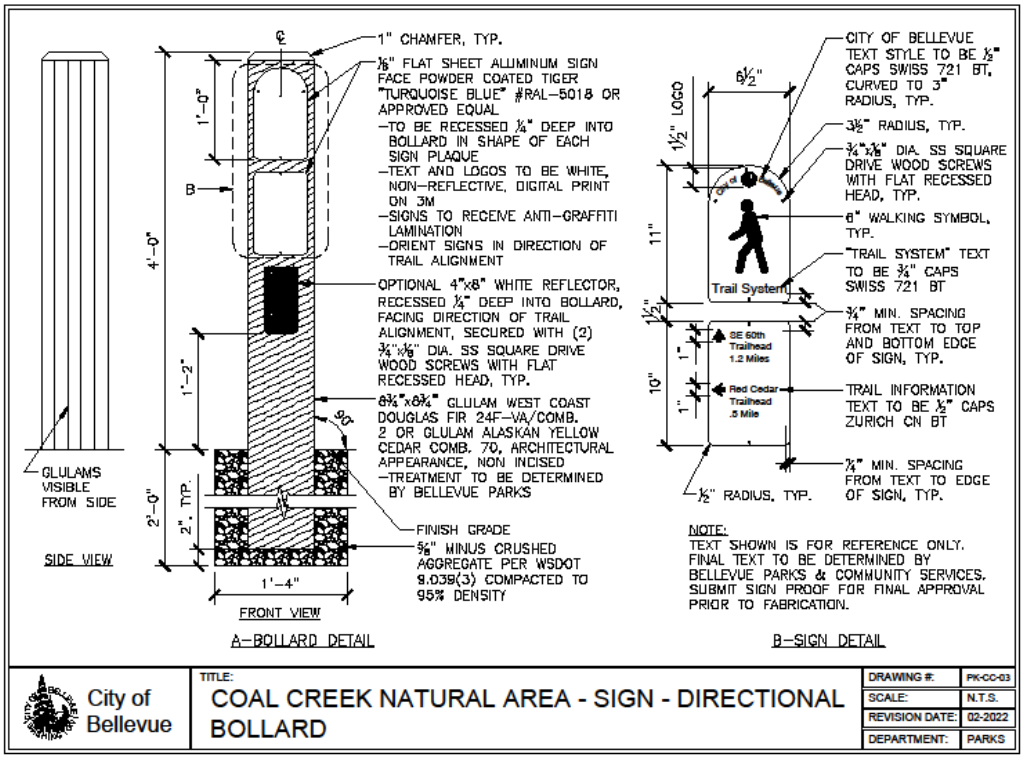
DRAWING #:	PK-SP-07B
SCALE:	N.T.S
REVISION DATE:	12-2018
DEPARTMENT:	PARKS

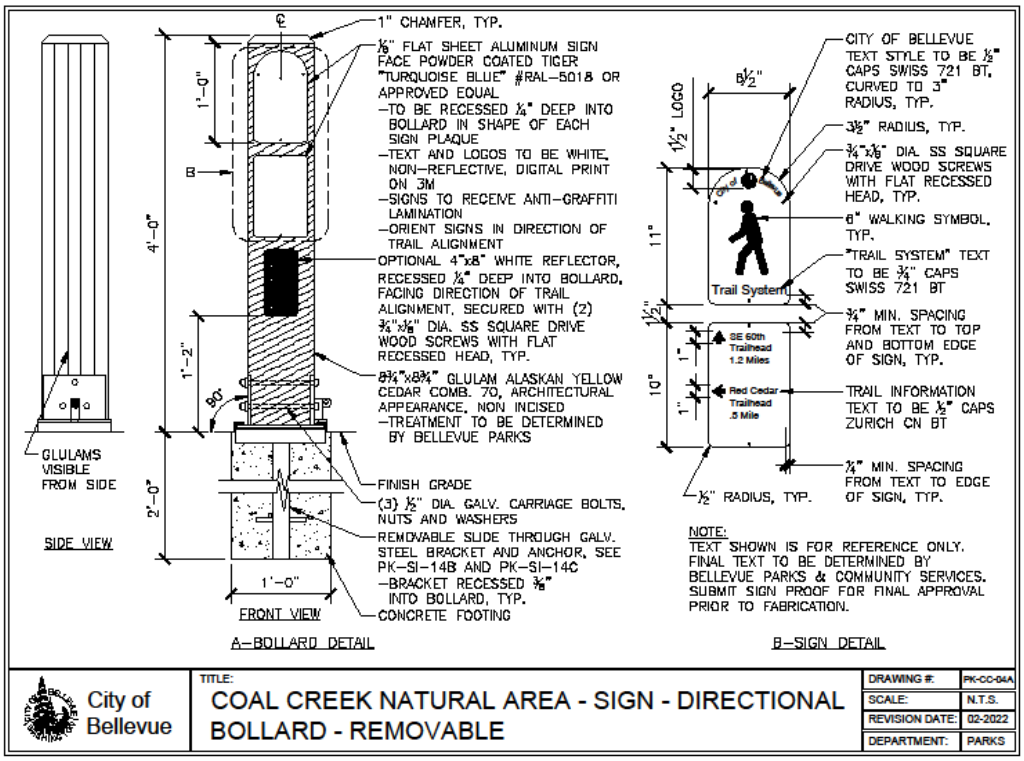

10'-0", TYP.
SYNTHETIC TURF AND INFILL MATERIAL PER SPECIFICATIONS
-GLUE TO CONCRETE BASE WITH MANUFACTURER APPROVED ADHESIVE
EXISTING TURF, TYP.
FINISH GRADE
3½", TYP.
1% MIN. CROSS SLOPE FOR POSITIVE DRAINAGE
UNDISTURBED NATIVE MATERIAL
6"x6" WELDED WIRE FABRIC CENTERED WITHIN SLAB, TYP.
3000 PSI CONCRETE BASE
City of Bellevue
TITLE:
SYNTHETIC CRICKET PITCH - SECTION - WITH CONCRETE BASE
DRAWING #: PK-SP-07C
SCALE: N.T.S
REVISION DATE: 12-2018
DEPARTMENT: PARKS

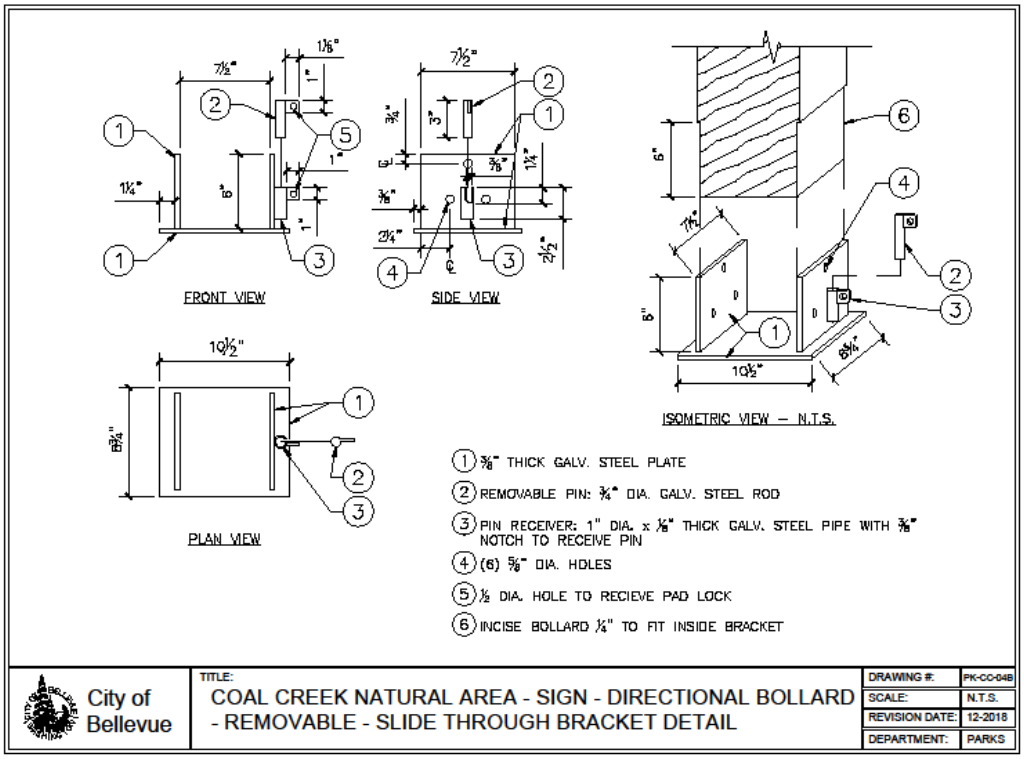
Coal Creek Natural Area

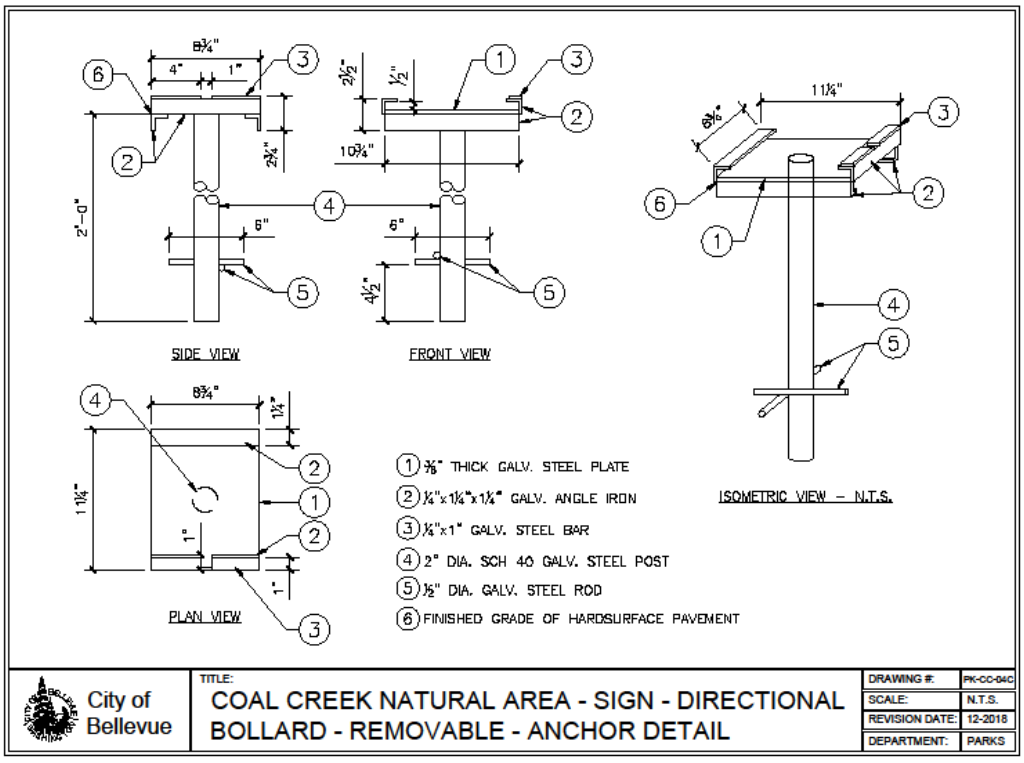

ENTRY SIGN PROVIDED BY BELLEVUE PARKS
GLULAMS VISIBLE FROM SIDE
City of Bellevue
Coal Creek Natural Area
Red Cedar Trailhead
5433 Coal Creek Pkwy SE
(2) SIMPSON STRONG-TIE COLUMN BASE BRACKET, OR APPROVED EQUAL -SIZE AS REQUIRED
(4) ¾" GALV. CARRIAGE BOLT, NUT AND WASHER TO SECURE POST TO BRACKET -LENGTH AS REQUIRED
FINISH GRADE
COMPACT NATIVE SOIL
CONCRETE FOOTING
⅝" MINUS CRUSHED GRAVEL COMPACTED TO 95% DENSITY
SIDE ELEVATION
FRONT ELEVATION
2'-0"
1'-4"
4"
2'-0"
City of Bellevue
TITLE:
COAL CREEK NATURAL AREA - SIGN - PARK ENTRY - LARGE - INSTALLATION
DRAWING #: PK-CC-01A
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS

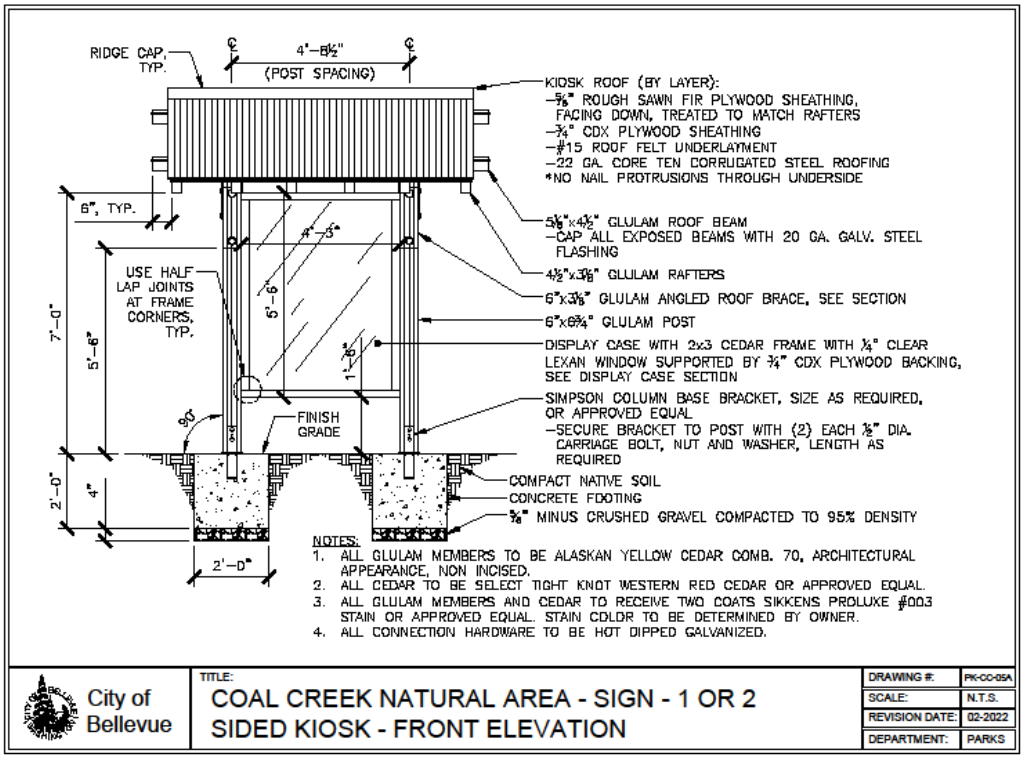

GLULAMS VISIBLE FROM SIDE
4"
2'-0"
2"
5½"
1'-6" RADIUS, TYP.
⅛" FLAT SHEET ALUMINUM SIGN BACKING WITH WHITE LETTERING AND LOGOS, SEE NOTES 1 AND 3
-SANDWICH SIGN IN 3⁄16" GROOVE CUT DOWN THE CENTER OF THE POST
-SIGN FACING IDENTICAL ON BOTH SIDES, EXCEPT ARROW
-SECURE TO POST WITH (3) EACH ½"x5" GALV. CARRIAGE BOLTS, NUTS AND WASHERS, RECESSED ½", TYP.
City of Bellevue
Cinder Mine Trailhead
Coal Creek Natural Area
2'-7"
1'-3½"
3"
7", TYP.
5⅛x5⅛ GLULAM POST, SEE NOTE 2
(3) 1¾" DIA. HOLES DRILLED THROUGH POST PERPENDICULAR TO VEHICULAR TRAFFIC AT 6" INTERVALS
7'-6" MIN.
2" COVER, TYP.
5"
FINISH GRADE
UNDISTURBED NATIVE SOIL
½"x10" STEEL ROD THROUGH POST, TYP.
CONCRETE FOOTING
3'-0"
2", TYP.
4", TYP.
1'-4", TYP.
SIDE VIEW
FRONT VIEW
NOTES:
1. SIGN BACKING TO BE POWDER COATED TIGER "TURQUOISE BLUE" #RAL-5018 OR APPROVED EQUAL AND SHALL RECEIVE NON-REFLECTIVE ANTI-GRAFFITI LAMINATE.
2. POST TO BE WEST COAST DOUGLAS FIR 24F-V4/COMB. 2 OR GLULAM ALASKAN YELLOW CEDAR COMB. 7D, ARCHITECTURAL APPEARANCE, NON INCISED. TREATMENT TO BE DETERMINED BY BELLEVUE PARKS.
3. ALL LETTERING AND GRAPHICS TO BE "WHITE", MACHINE-CUT, NON-REFLECTIVE VINYL (3-M SCOTCHCAL #3470 OR EQUAL). "CITY OF BELLEVUE" LETTER STYLE TO BE 1½" HIGH CAPS SWISS 721 BT, CURVED TO 2'-3" RADIUS (TYP.). ALL OTHER LETTERING TO BE PALATINO AND SIZED AS NECESSARY (NO SMALLER THAN 2", TYP.)
4. TEXT SHOWN IS FOR REFERENCE ONLY. FINAL TEXT TO BE DETERMINED BY BELLEVUE PARKS. SUBMIT SIGN PROOF FOR FINAL APPROVAL PRIOR TO FABRICATION.
City of Bellevue
TITLE:
COAL CREEK NATURAL AREA - SIGN -WAYFINDING HATCHET
DRAWING #: PK-CC-02
SCALE: N.T.S.
REVISION DATE: 02-2020
DEPARTMENT: PARKS

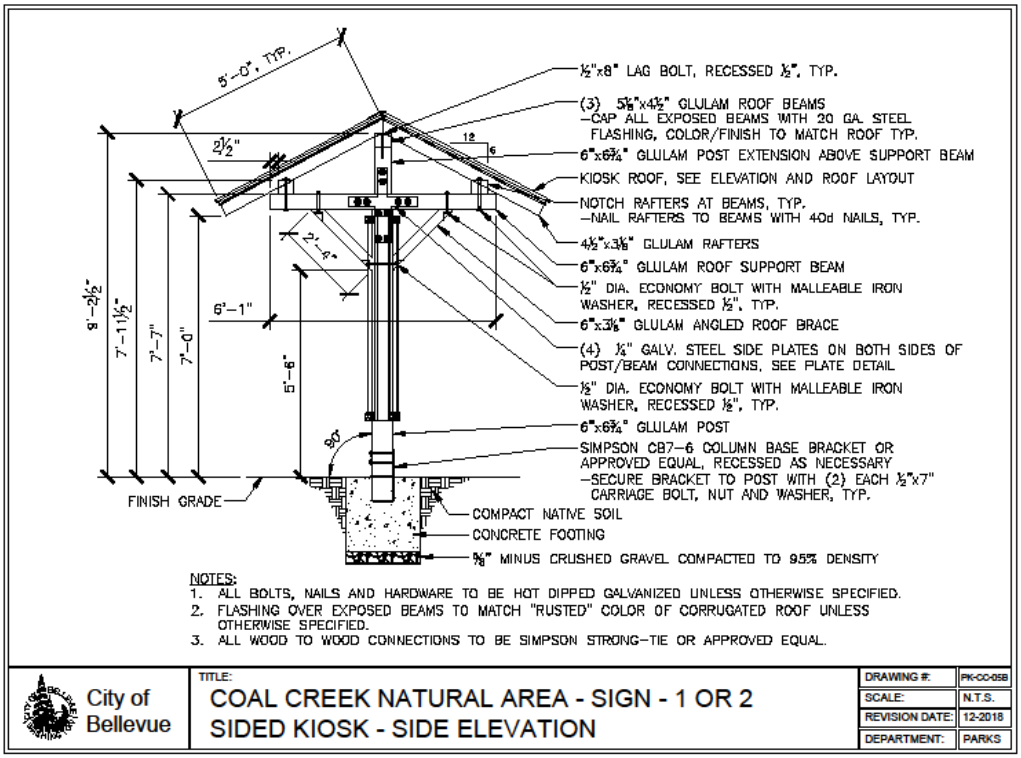

1" CHAMFER, TYP.
⅛" FLAT SHEET ALUMINUM SIGN FACE POWDER COATED TIGER "TURQUOISE BLUE" #RAL-5018 OR APPROVED EQUAL
-TO BE RECESSED ¼" DEEP INTO BOLLARD IN SHAPE OF EACH SIGN PLAQUE
-TEXT AND LOGOS TO BE WHITE, NON-REFLECTIVE, DIGITAL PRINT ON 3M
-SIGNS TO RECEIVE ANTI-GRAFFITI LAMINATION
-ORIENT SIGNS IN DIRECTION OF TRAIL ALIGNMENT
OPTIONAL 4"x8" WHITE REFLECTOR, RECESSED ¼" DEEP INTO BOLLARD, FACING DIRECTION OF TRAIL ALIGNMENT, SECURED WITH (2) ¾"x⅛" DIA. SS SQUARE DRIVE WOOD SCREWS WITH FLAT RECESSED HEAD, TYP.
8¾"x8¾" GLULAM WEST COAST DOUGLAS FIR 24F-V4/COMB. 2 OR GLULAM ALASKAN YELLOW CEDAR COMB. 70, ARCHITECTURAL APPEARANCE, NON INCISED
-TREATMENT TO BE DETERMINED BY BELLEVUE PARKS
FINISH GRADE
⅝" MINUS CRUSHED AGGREGATE PER WSDOT 9.03(3) COMPACTED TO 95% DENSITY
GLULAMS VISIBLE FROM SIDE
SIDE VIEW
FRONT VIEW
A-BOLLARD DETAIL
CITY OF BELLEVUE TEXT STYLE TO BE ½" CAPS SWISS 721 BT, CURVED TO 3" RADIUS, TYP.
3½" RADIUS, TYP.
¾"x⅛" DIA. SS SQUARE DRIVE WOOD SCREWS WITH FLAT RECESSED HEAD, TYP.
6" WALKING SYMBOL, TYP.
"TRAIL SYSTEM" TEXT TO BE ¾" CAPS SWISS 721 BT
¾" MIN. SPACING FROM TEXT TO TOP AND BOTTOM EDGE OF SIGN, TYP.
TRAIL INFORMATION TEXT TO BE ½" CAPS ZURICH CN BT
¾" MIN. SPACING FROM TEXT TO EDGE OF SIGN, TYP.
½" RADIUS, TYP.
Trail System
SE 60th Trailhead 1.2 Miles
Red Cedar Trailhead .5 Mile
NOTE:
TEXT SHOWN IS FOR REFERENCE ONLY. FINAL TEXT TO BE DETERMINED BY BELLEVUE PARKS & COMMUNITY SERVICES. SUBMIT SIGN PROOF FOR FINAL APPROVAL PRIOR TO FABRICATION.
B-SIGN DETAIL
City of Bellevue
TITLE:
COAL CREEK NATURAL AREA - SIGN - DIRECTIONAL BOLLARD
DRAWING #: PK-CC-03
SCALE: N.T.S.
REVISION DATE: 02-2022
DEPARTMENT: PARKS

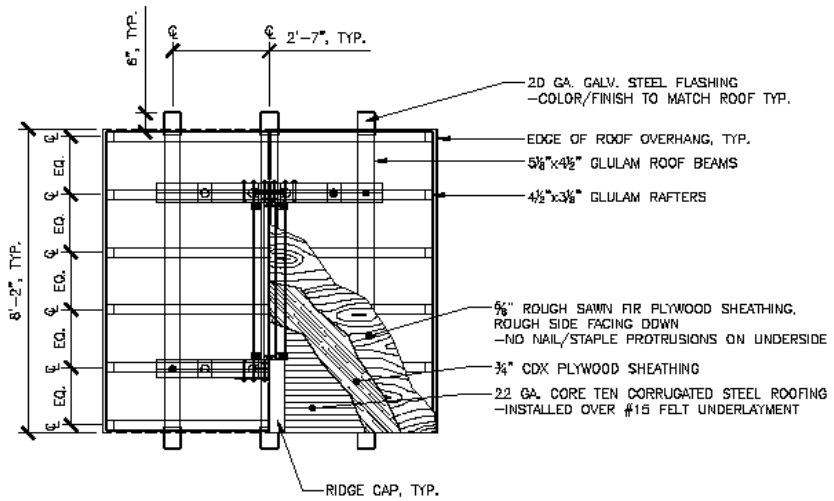

1" CHAMFER, TYP.
⅛" FLAT SHEET ALUMINUM SIGN FACE POWDER COATED TIGER "TURQUOISE BLUE" #RAL-5018 OR APPROVED EQUAL
-TO BE RECESSED ¼" DEEP INTO BOLLARD IN SHAPE OF EACH SIGN PLAQUE
-TEXT AND LOGOS TO BE WHITE, NON-REFLECTIVE, DIGITAL PRINT ON 3M
-SIGNS TO RECEIVE ANTI-GRAFFITI LAMINATION
-ORIENT SIGNS IN DIRECTION OF TRAIL ALIGNMENT
OPTIONAL 4"x8" WHITE REFLECTOR, RECESSED ¼" DEEP INTO BOLLARD, FACING DIRECTION OF TRAIL ALIGNMENT, SECURED WITH (2) ¾"x⅛" DIA. SS SQUARE DRIVE WOOD SCREWS WITH FLAT RECESSED HEAD, TYP.
8¾"x8¾" GLULAM ALASKAN YELLOW CEDAR COMB. 70, ARCHITECTURAL APPEARANCE, NON INCISED
-TREATMENT TO BE DETERMINED BY BELLEVUE PARKS
FINISH GRADE
(3) ½" DIA. GALV. CARRIAGE BOLTS, NUTS AND WASHERS
REMOVABLE SLIDE THROUGH GALV. STEEL BRACKET AND ANCHOR, SEE PK-SI-14B AND PK-SI-14C
-BRACKET RECESSED ⅜" INTO BOLLARD, TYP.
CONCRETE FOOTING
GLULAMS VISIBLE FROM SIDE
SIDE VIEW
FRONT VIEW
A-BOLLARD DETAIL
CITY OF BELLEVUE TEXT STYLE TO BE ½" CAPS SWISS 721 BT, CURVED TO 3" RADIUS, TYP.
3½" RADIUS, TYP.
¾"x⅛" DIA. SS SQUARE DRIVE WOOD SCREWS WITH FLAT RECESSED HEAD, TYP.
6" WALKING SYMBOL, TYP.
"TRAIL SYSTEM" TEXT TO BE ¾" CAPS SWISS 721 BT
¾" MIN. SPACING FROM TEXT TO TOP AND BOTTOM EDGE OF SIGN, TYP.
TRAIL INFORMATION TEXT TO BE ½" CAPS ZURICH CN BT
¾" MIN. SPACING FROM TEXT TO EDGE OF SIGN, TYP.
½" RADIUS, TYP.
Trail System
SE 60th Trailhead 1.2 Miles
Red Cedar Trailhead .5 Mile
NOTE:
TEXT SHOWN IS FOR REFERENCE ONLY. FINAL TEXT TO BE DETERMINED BY BELLEVUE PARKS & COMMUNITY SERVICES. SUBMIT SIGN PROOF FOR FINAL APPROVAL PRIOR TO FABRICATION.
B-SIGN DETAIL
City of Bellevue
TITLE:
COAL CREEK NATURAL AREA - SIGN - DIRECTIONAL BOLLARD - REMOVABLE
DRAWING #: PK-CC-04A
SCALE: N.T.S.
REVISION DATE: 02-2022
DEPARTMENT: PARKS


FRONT VIEW
SIDE VIEW
ISOMETRIC VIEW – N.T.S.
PLAN VIEW
1 ⅜" THICK GALV. STEEL PLATE
2 REMOVABLE PIN: ¾" DIA. GALV. STEEL ROD
3 PIN RECEIVER: 1" DIA. x ⅛" THICK GALV. STEEL PIPE WITH ⅜" NOTCH TO RECEIVE PIN
4 (6) ⅝" DIA. HOLES
5 ½ DIA. HOLE TO RECIEVE PAD LOCK
6 INCISE BOLLARD ¼" TO FIT INSIDE BRACKET
City of Bellevue
TITLE:
COAL CREEK NATURAL AREA - SIGN - DIRECTIONAL BOLLARD - REMOVABLE - SLIDE THROUGH BRACKET DETAIL
DRAWING #: PK-CC-04B
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS


SIDE VIEW
FRONT VIEW
ISOMETRIC VIEW – N.T.S.
PLAN VIEW
1 ⅜" THICK GALV. STEEL PLATE
2 ¼"x1¼"x1¼" GALV. ANGLE IRON
3 ¼"x1" GALV. STEEL BAR
4 2" DIA. SCH 40 GALV. STEEL POST
5 ½" DIA. GALV. STEEL ROD
6 FINISHED GRADE OF HARDSURFACE PAVEMENT
City of Bellevue
TITLE:
COAL CREEK NATURAL AREA - SIGN - DIRECTIONAL BOLLARD - REMOVABLE - ANCHOR DETAIL
DRAWING #: PK-CC-04C
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS


RIDGE CAP, TYP.
4'-8½" (POST SPACING)
KIOSK ROOF (BY LAYER):
-⅝" ROUGH SAWN FIR PLYWOOD SHEATHING, FACING DOWN, TREATED TO MATCH RAFTERS
-¾" CDX PLYWOOD SHEATHING
-#15 ROOF FELT UNDERLAYMENT
-22 GA. CORE TEN CORRUGATED STEEL ROOFING
*NO NAIL PROTRUSIONS THROUGH UNDERSIDE
6", TYP.
5⅛"x4½" GLULAM ROOF BEAM
-CAP ALL EXPOSED BEAMS WITH 20 GA. GALV. STEEL FLASHING
4½"x3⅛" GLULAM RAFTERS
6"x3⅛" GLULAM ANGLED ROOF BRACE, SEE SECTION
6"x6¾" GLULAM POST
USE HALF LAP JOINTS AT FRAME CORNERS, TYP.
DISPLAY CASE WITH 2x3 CEDAR FRAME WITH ¼" CLEAR LEXAN WINDOW SUPPORTED BY ¾" CDX PLYWOOD BACKING, SEE DISPLAY CASE SECTION
SIMPSON COLUMN BASE BRACKET, SIZE AS REQUIRED, OR APPROVED EQUAL
-SECURE BRACKET TO POST WITH (2) EACH ½" DIA. CARRIAGE BOLT, NUT AND WASHER, LENGTH AS REQUIRED
FINISH GRADE
COMPACT NATIVE SOIL
CONCRETE FOOTING
⅜" MINUS CRUSHED GRAVEL COMPACTED TO 95% DENSITY
7'-0"
5'-6"
2'-0"
4"
2'-0"
NOTES:
1. ALL GLULAM MEMBERS TO BE ALASKAN YELLOW CEDAR COMB. 70, ARCHITECTURAL APPEARANCE, NON INCISED.
2. ALL CEDAR TO BE SELECT TIGHT KNOT WESTERN RED CEDAR OR APPROVED EQUAL.
3. ALL GLULAM MEMBERS AND CEDAR TO RECEIVE TWO COATS SIKKENS PROLUXE #003 STAIN OR APPROVED EQUAL. STAIN COLOR TO BE DETERMINED BY OWNER.
4. ALL CONNECTION HARDWARE TO BE HOT DIPPED GALVANIZED.
City of Bellevue
TITLE:
COAL CREEK NATURAL AREA - SIGN - 1 OR 2 SIDED KIOSK - FRONT ELEVATION
DRAWING #: PK-CC-05A
SCALE: N.T.S.
REVISION DATE: 02-2022
DEPARTMENT: PARKS

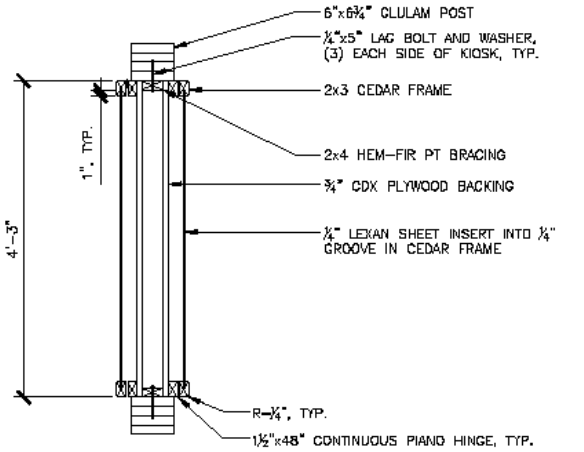

5'-0", TYP.
½"x8" LAG BOLT, RECESSED ½", TYP.
(3) 5⅛"x4½" GLULAM ROOF BEAMS
-CAP ALL EXPOSED BEAMS WITH 20 GA. STEEL FLASHING, COLOR/FINISH TO MATCH ROOF TYP.
2½"
6"x6¾" GLULAM POST EXTENSION ABOVE SUPPORT BEAM
KIOSK ROOF, SEE ELEVATION AND ROOF LAYOUT
NOTCH RAFTERS AT BEAMS, TYP.
-NAIL RAFTERS TO BEAMS WITH 40d NAILS, TYP.
4½"x3⅛" GLULAM RAFTERS
6"x6¾" GLULAM ROOF SUPPORT BEAM
½" DIA. ECONOMY BOLT WITH MALLEABLE IRON WASHER, RECESSED ½", TYP.
6"x3⅛" GLULAM ANGLED ROOF BRACE
(4) ¼" GALV. STEEL SIDE PLATES ON BOTH SIDES OF POST/BEAM CONNECTIONS, SEE PLATE DETAIL
½" DIA. ECONOMY BOLT WITH MALLEABLE IRON WASHER, RECESSED ½", TYP.
6"x6¾" GLULAM POST
SIMPSON CB7-6 COLUMN BASE BRACKET OR APPROVED EQUAL, RECESSED AS NECESSARY
-SECURE BRACKET TO POST WITH (2) EACH ½"x7" CARRIAGE BOLT, NUT AND WASHER, TYP.
FINISH GRADE
COMPACT NATIVE SOIL
CONCRETE FOOTING
⅜" MINUS CRUSHED GRAVEL COMPACTED TO 95% DENSITY
9'-2½"
7'-1½"
7'-7"
7'-0"
6'-1"
5'-6"
NOTES:
1. ALL BOLTS, NAILS AND HARDWARE TO BE HOT DIPPED GALVANIZED UNLESS OTHERWISE SPECIFIED.
2. FLASHING OVER EXPOSED BEAMS TO MATCH "RUSTED" COLOR OF CORRUGATED ROOF UNLESS OTHERWISE SPECIFIED.
3. ALL WOOD TO WOOD CONNECTIONS TO BE SIMPSON STRONG-TIE OR APPROVED EQUAL.
City of Bellevue
TITLE:
COAL CREEK NATURAL AREA - SIGN - 1 OR 2 SIDED KIOSK - SIDE ELEVATION
DRAWING #: PK-CC-05B
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS



City of Bellevue

TITLE:
COAL CREEK NATURAL AREA - SIGN - 1 OR 2 SIDED KIOSK - ROOF LAYOUT

DRAWING #:	PK-CC-05C
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS

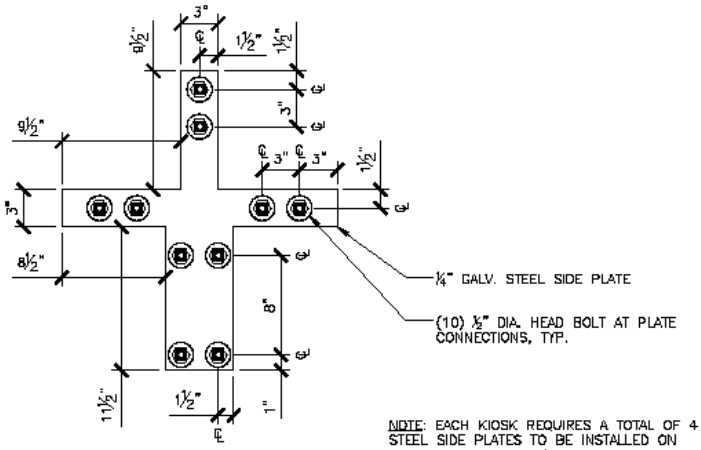


NOTES:
1. USE LAP JOINTS AT FRAME CORNERS, TYP.
2. USE 40d GALV. NAILS TO SECURE PLYWOOD BACKING TO BRACING.

City of Bellevue

TITLE:
COAL CREEK NATURAL AREA - SIGN - 1 OR 2 SIDED KIOSK - DISPLAY CASE SECTION

DRAWING #:	PK-CC-05D
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS

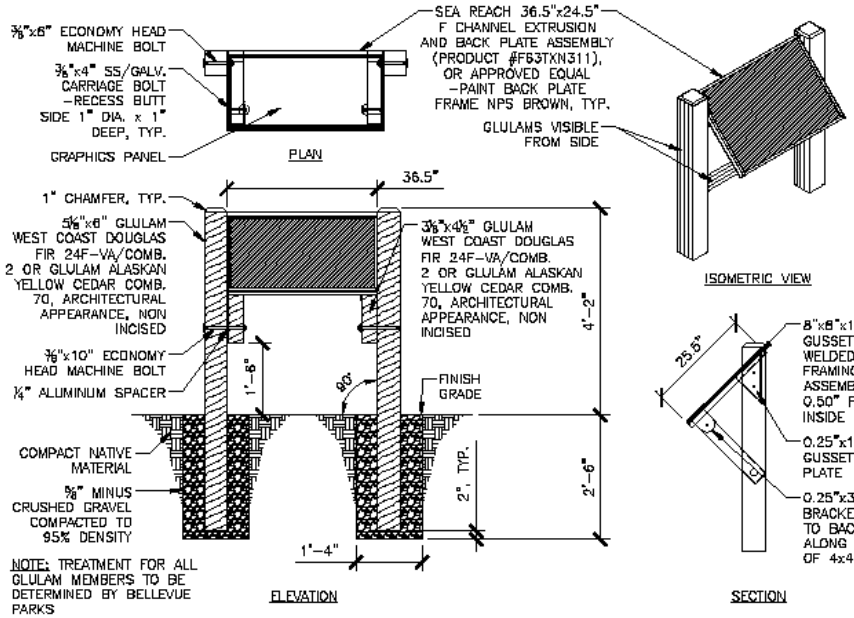


NOTE: EACH KIOSK REQUIRES A TOTAL OF 4 STEEL SIDE PLATES TO BE INSTALLED ON BOTH SIDES OF POST/BEAM CONNECTIONS.

City of Bellevue

TITLE: COAL CREEK NATURAL AREA - SIGN - 1 OR 2 SIDED KIOSK - POST/BEAM/PLATE CONNECTION

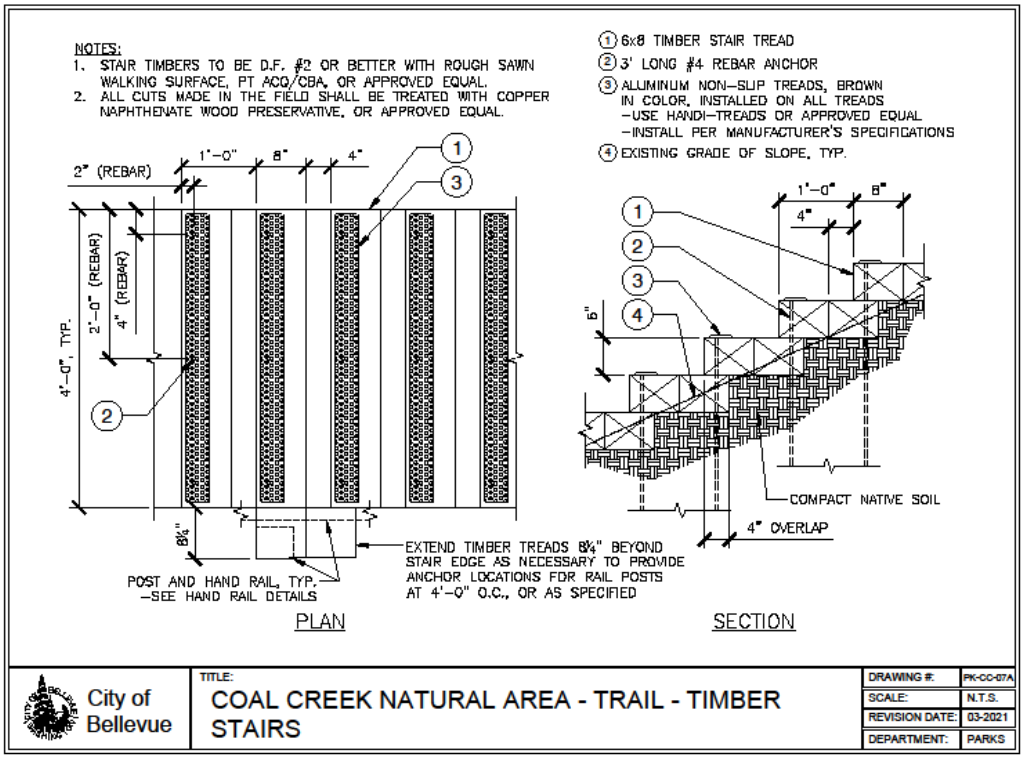
DRAWING #:	PK-CC-05E
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS

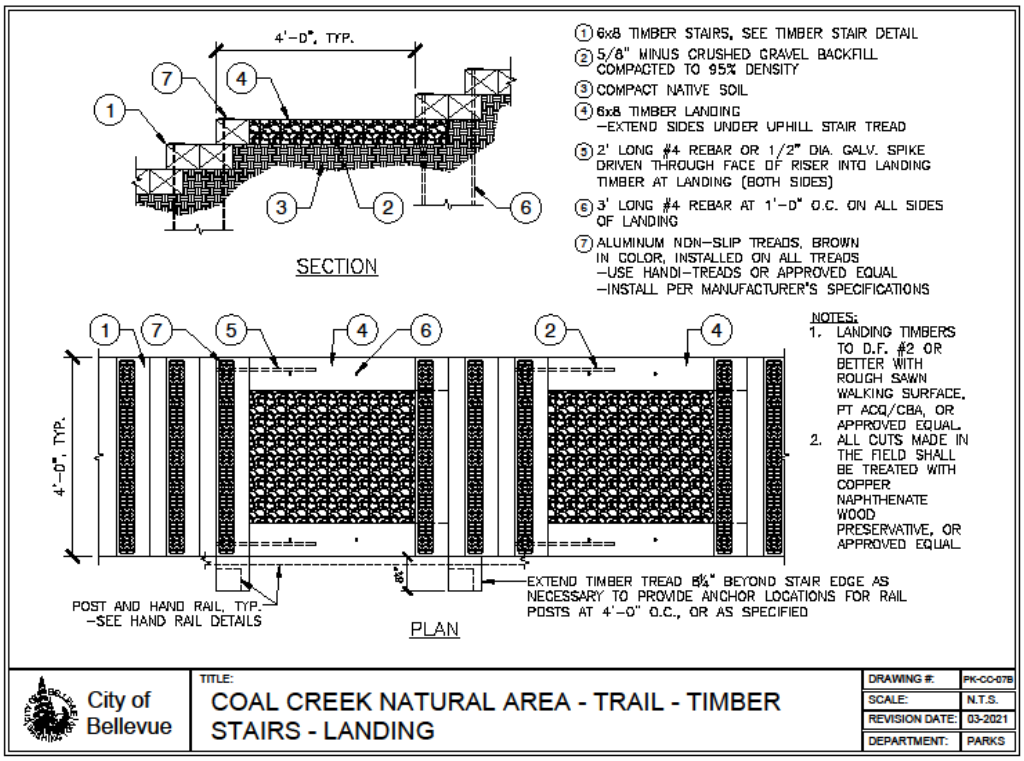


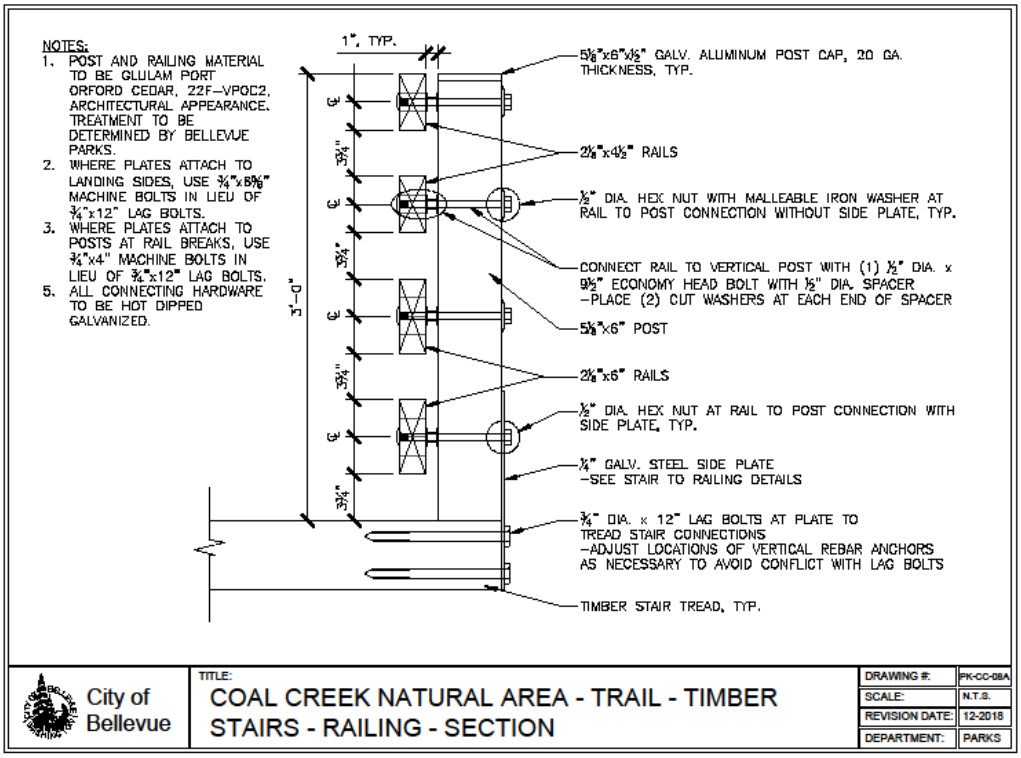
City of Bellevue

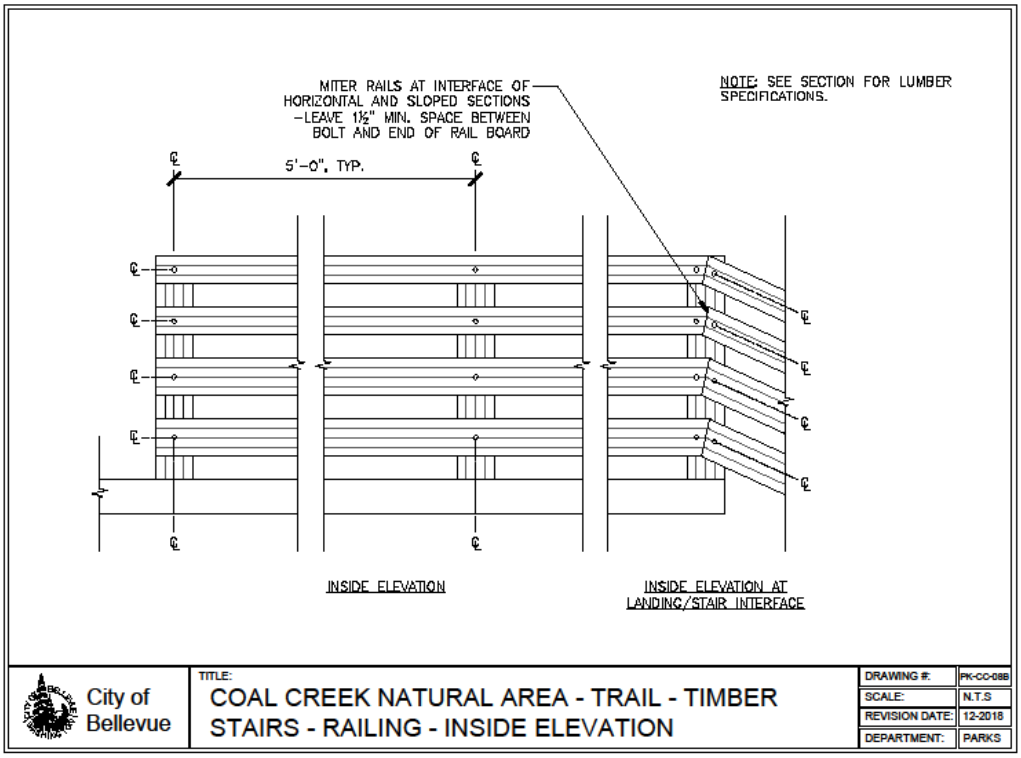
TITLE: COAL CREEK NATURAL AREA - SIGN - INTERPRETIVE

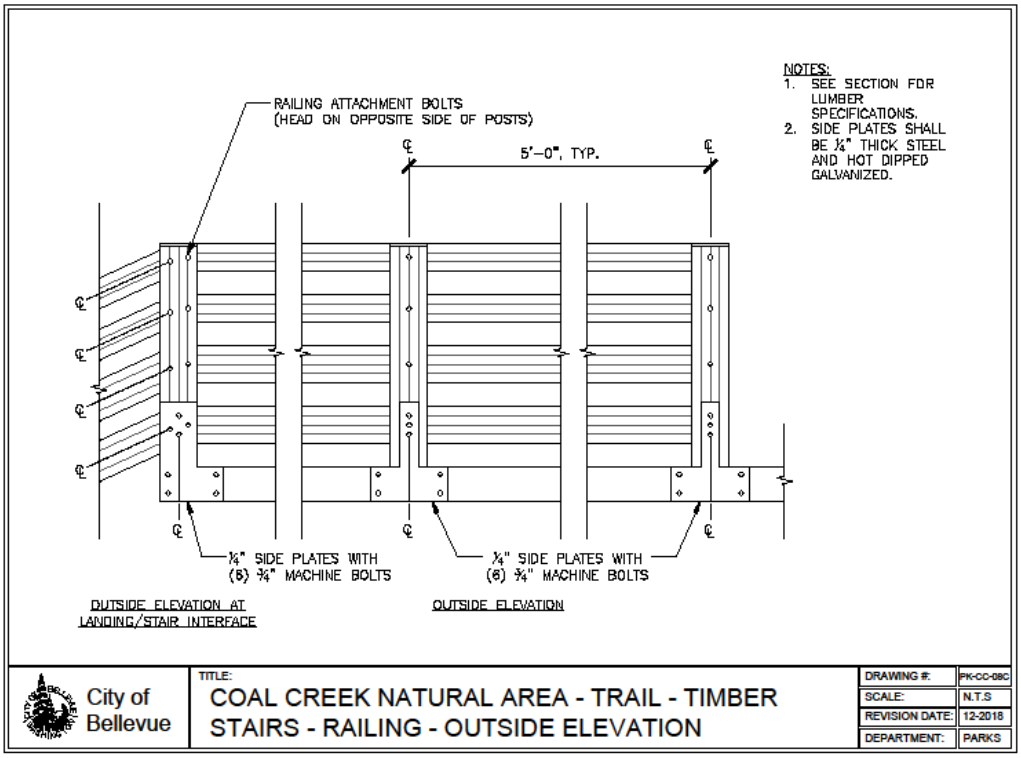
DRAWING #:	PK-CC-06
SCALE:	N.T.S.
REVISION DATE:	01-2020
DEPARTMENT:	PARKS

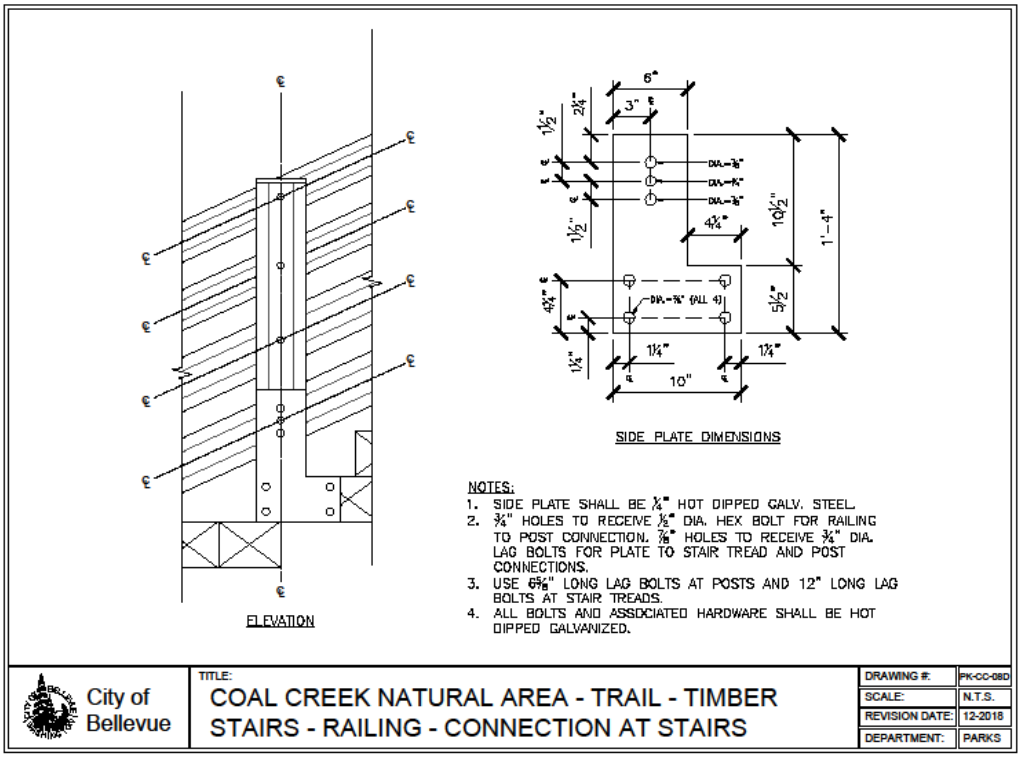

NOTES:
1. STAIR TIMBERS TO BE D.F. #2 OR BETTER WITH ROUGH SAWN WALKING SURFACE, PT ACQ/CBA, OR APPROVED EQUAL.
2. ALL CUTS MADE IN THE FIELD SHALL BE TREATED WITH COPPER NAPHTHENATE WOOD PRESERVATIVE, OR APPROVED EQUAL.
1 6x8 TIMBER STAIR TREAD
2 3' LONG #4 REBAR ANCHOR
3 ALUMINUM NON-SLIP TREADS, BROWN IN COLOR, INSTALLED ON ALL TREADS -USE HANDI-TREADS OR APPROVED EQUAL -INSTALL PER MANUFACTURER'S SPECIFICATIONS
4 EXISTING GRADE OF SLOPE, TYP.
2" (REBAR)
1'-0"
8"
4"
2'-0" (REBAR)
4" (REBAR)
4'-0", TYP.
6¾"
POST AND HAND RAIL, TYP. -SEE HAND RAIL DETAILS
EXTEND TIMBER TREADS 6¾" BEYOND STAIR EDGE AS NECESSARY TO PROVIDE ANCHOR LOCATIONS FOR RAIL POSTS AT 4'-0" O.C., OR AS SPECIFIED
PLAN
5"
COMPACT NATIVE SOIL
4" OVERLAP
SECTION
City of Bellevue
TITLE:
COAL CREEK NATURAL AREA - TRAIL - TIMBER STAIRS
DRAWING #: PK-CC-07A
SCALE: N.T.S.
REVISION DATE: 03-2021
DEPARTMENT: PARKS

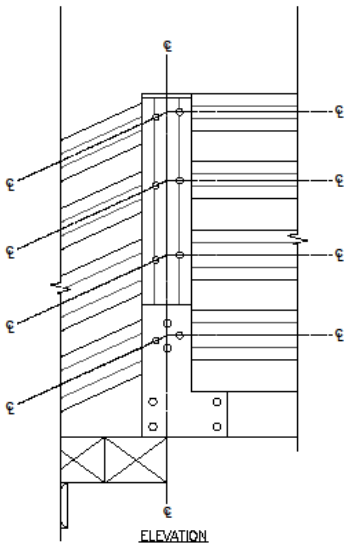

4'-0", TYP.
1 6x8 TIMBER STAIRS, SEE TIMBER STAIR DETAIL
2 5/8" MINUS CRUSHED GRAVEL BACKFILL COMPACTED TO 95% DENSITY
3 COMPACT NATIVE SOIL
4 6x8 TIMBER LANDING -EXTEND SIDES UNDER UPHILL STAIR TREAD
5 2' LONG #4 REBAR OR 1/2" DIA. GALV. SPIKE DRIVEN THROUGH FACE OF RISER INTO LANDING TIMBER AT LANDING (BOTH SIDES)
6 3' LONG #4 REBAR AT 1'-0" O.C. ON ALL SIDES OF LANDING
7 ALUMINUM NON-SLIP TREADS, BROWN IN COLOR, INSTALLED ON ALL TREADS -USE HANDI-TREADS OR APPROVED EQUAL -INSTALL PER MANUFACTURER'S SPECIFICATIONS
SECTION
NOTES:
1. LANDING TIMBERS TO D.F. #2 OR BETTER WITH ROUGH SAWN WALKING SURFACE, PT ACQ/CBA, OR APPROVED EQUAL.
2. ALL CUTS MADE IN THE FIELD SHALL BE TREATED WITH COPPER NAPHTHENATE WOOD PRESERVATIVE, OR APPROVED EQUAL.
4'-0", TYP.
POST AND HAND RAIL, TYP. -SEE HAND RAIL DETAILS
EXTEND TIMBER TREAD 6¾" BEYOND STAIR EDGE AS NECESSARY TO PROVIDE ANCHOR LOCATIONS FOR RAIL POSTS AT 4'-0" O.C., OR AS SPECIFIED
PLAN
City of Bellevue
TITLE:
COAL CREEK NATURAL AREA - TRAIL - TIMBER STAIRS - LANDING
DRAWING #: PK-CC-07B
SCALE: N.T.S.
REVISION DATE: 03-2021
DEPARTMENT: PARKS


NOTES:
1. POST AND RAILING MATERIAL TO BE GLULAM PORT ORFORD CEDAR, 22F-VPOC2, ARCHITECTURAL APPEARANCE. TREATMENT TO BE DETERMINED BY BELLEVUE PARKS.
2. WHERE PLATES ATTACH TO LANDING SIDES, USE ⅜"x8⅝" MACHINE BOLTS IN LIEU OF ¾"x12" LAG BOLTS.
3. WHERE PLATES ATTACH TO POSTS AT RAIL BREAKS, USE ¾"x4" MACHINE BOLTS IN LIEU OF ¾"x12" LAG BOLTS.
5. ALL CONNECTING HARDWARE TO BE HOT DIPPED GALVANIZED.
1", TYP.
3'-0"
5⅛"x6"x½" GALV. ALUMINUM POST CAP, 20 GA. THICKNESS, TYP.
2⅛"x4½" RAILS
½" DIA. HEX NUT WITH MALLEABLE IRON WASHER AT RAIL TO POST CONNECTION WITHOUT SIDE PLATE, TYP.
CONNECT RAIL TO VERTICAL POST WITH (1) ½" DIA. x 9½" ECONOMY HEAD BOLT WITH ½" DIA. SPACER -PLACE (2) CUT WASHERS AT EACH END OF SPACER
5⅛"x6" POST
2⅛"x6" RAILS
½" DIA. HEX NUT AT RAIL TO POST CONNECTION WITH SIDE PLATE, TYP.
¼" GALV. STEEL SIDE PLATE -SEE STAIR TO RAILING DETAILS
¾" DIA. x 12" LAG BOLTS AT PLATE TO TREAD STAIR CONNECTIONS -ADJUST LOCATIONS OF VERTICAL REBAR ANCHORS AS NECESSARY TO AVOID CONFLICT WITH LAG BOLTS
TIMBER STAIR TREAD, TYP.
City of Bellevue
TITLE:
COAL CREEK NATURAL AREA - TRAIL - TIMBER STAIRS - RAILING - SECTION
DRAWING #: PK-CC-08A
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS

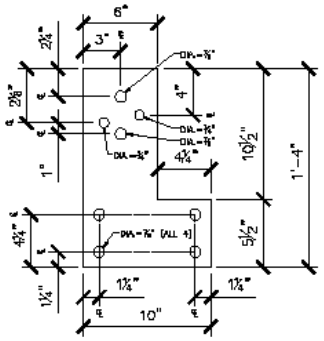

MITER RAILS AT INTERFACE OF HORIZONTAL AND SLOPED SECTIONS -LEAVE 1½" MIN. SPACE BETWEEN BOLT AND END OF RAIL BOARD
NOTE: SEE SECTION FOR LUMBER SPECIFICATIONS.
5'-0", TYP.
INSIDE ELEVATION
INSIDE ELEVATION AT LANDING/STAIR INTERFACE
City of Bellevue
TITLE:
COAL CREEK NATURAL AREA - TRAIL - TIMBER STAIRS - RAILING - INSIDE ELEVATION
DRAWING #: PK-CC-08B
SCALE: N.T.S
REVISION DATE: 12-2018
DEPARTMENT: PARKS


NOTES:
1. SEE SECTION FOR LUMBER SPECIFICATIONS.
2. SIDE PLATES SHALL BE ¼" THICK STEEL AND HOT DIPPED GALVANIZED.
RAILING ATTACHMENT BOLTS (HEAD ON OPPOSITE SIDE OF POSTS)
5'-0", TYP.
¼" SIDE PLATES WITH (5) ¾" MACHINE BOLTS
¼" SIDE PLATES WITH (6) ¾" MACHINE BOLTS
OUTSIDE ELEVATION AT LANDING/STAIR INTERFACE
OUTSIDE ELEVATION
City of Bellevue
TITLE:
COAL CREEK NATURAL AREA - TRAIL - TIMBER STAIRS - RAILING - OUTSIDE ELEVATION
DRAWING #: PK-CC-08C
SCALE: N.T.S
REVISION DATE: 12-2018
DEPARTMENT: PARKS


ELEVATION
SIDE PLATE DIMENSIONS
NOTES:
1. SIDE PLATE SHALL BE ¼" HOT DIPPED GALV. STEEL.
2. ¾" HOLES TO RECEIVE ½" DIA. HEX BOLT FOR RAILING TO POST CONNECTION. ⅜" HOLES TO RECEIVE ¾" DIA. LAG BOLTS FOR PLATE TO STAIR TREAD AND POST CONNECTIONS.
3. USE 6⅝" LONG LAG BOLTS AT POSTS AND 12" LONG LAG BOLTS AT STAIR TREADS.
4. ALL BOLTS AND ASSOCIATED HARDWARE SHALL BE HOT DIPPED GALVANIZED.
City of Bellevue
TITLE:
COAL CREEK NATURAL AREA - TRAIL - TIMBER STAIRS - RAILING - CONNECTION AT STAIRS
DRAWING #: PK-CC-08D
SCALE: N.T.S.
REVISION DATE: 12-2018
DEPARTMENT: PARKS



ELEVATION



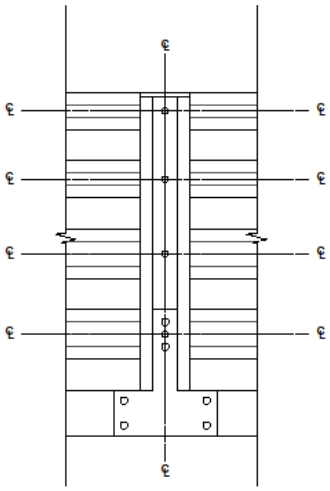
SIDE PLATE DIMENSIONS

NOTES:
1. SIDE PLATE SHALL BE ¼" HOT DIPPED GALV. STEEL.
2. ¾" HOLES TO RECEIVE ½" DIA. HEX BOLT FOR RAILING TO POST CONNECTION. ⅜" HOLES TO RECEIVE ¾" DIA. LAG BOLTS FOR PLATE TO STAIR TREAD AND POST CONNECTIONS.
3. USE 6⅝" LONG LAG BOLTS AT POSTS AND 12" LONG LAG BOLTS AT STAIR TREADS.
4. ALL BOLTS AND ASSOCIATED HARDWARE SHALL BE HOT DIPPED GALVANIZED.

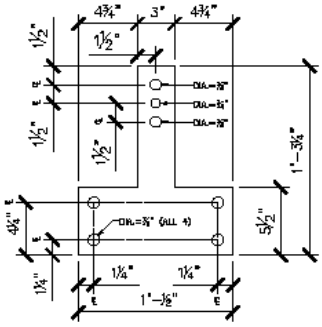
City of Bellevue

TITLE:
COAL CREEK NATURAL AREA - TRAIL - TIMBER STAIRS - RAILING - CONNECTION AT TOP OF STAIRS

DRAWING #:	PK-CC-08E
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS



ELEVATION



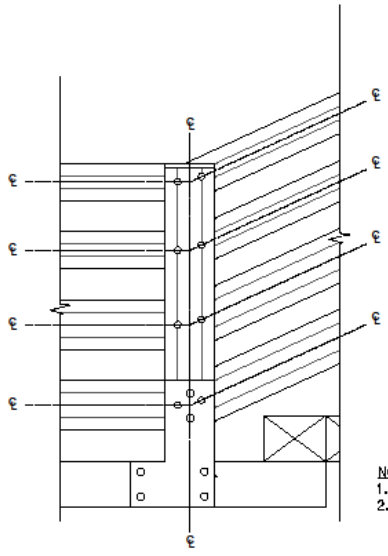
SIDE PLATE DIMENSIONS

NOTES:
1. SIDE PLATE SHALL BE ¼" HOT DIPPED GALV. STEEL.
2. ¾" HOLES TO RECEIVE ½" DIA. HEX BOLT FOR RAILING TO POST CONNECTION. ⅜" HOLES TO RECEIVE ¾" DIA. LAG BOLTS FOR PLATE TO STAIR TREAD AND POST CONNECTIONS.
3. USE 6⅝" LONG LAG BOLTS AT POSTS AND 12" LONG LAG BOLTS AT STAIR TREADS.
4. ALL BOLTS AND ASSOCIATED HARDWARE SHALL BE HOT DIPPED GALVANIZED.

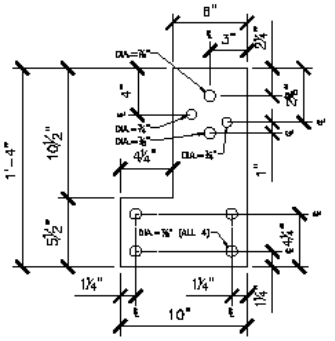
City of Bellevue

TITLE:
COAL CREEK NATURAL AREA - TRAIL - TIMBER STAIRS - RAILING - CONNECTION AT LANDING

DRAWING #:	PK-CC-08F
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS



ELEVATION



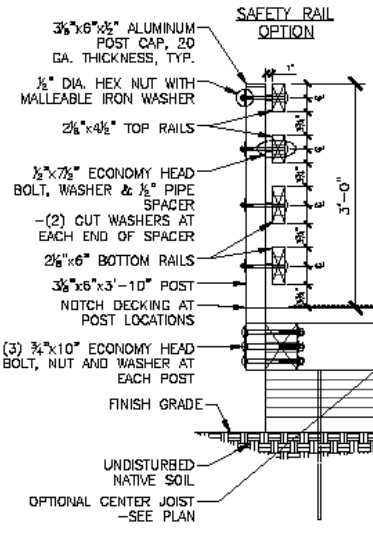
SIDE PLATE DIMENSIONS

NOTES:
1. SIDE PLATE SHALL BE ¼" HOT DIPPED GALV. STEEL.
2. ¾" HOLES TO RECEIVE ½" DIA. HEX BOLT FOR RAILING TO POST CONNECTION. ⅞" HOLES TO RECEIVE ¾" DIA. LAG BOLTS FOR PLATE TO STAIR TREAD AND POST CONNECTIONS.
3. USE 6⅝" LONG LAG BOLTS AT POSTS AND 12" LONG LAG BOLTS AT STAIR TREADS.
4. ALL BOLTS AND ASSOCIATED HARDWARE SHALL BE HOT DIPPED GALVANIZED.

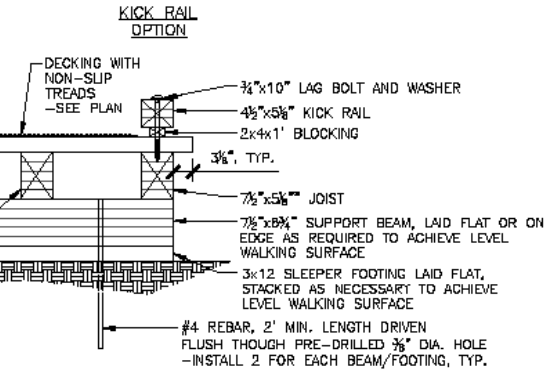
City of Bellevue

TITLE:
COAL CREEK NATURAL AREA - TRAIL - TIMBER STAIRS - RAILING - CONNECTION AT BOTTOM OF STAIRS

DRAWING #:	PK-CC-08G
SCALE:	N.T.S.
REVISION DATE:	12-2018
DEPARTMENT:	PARKS



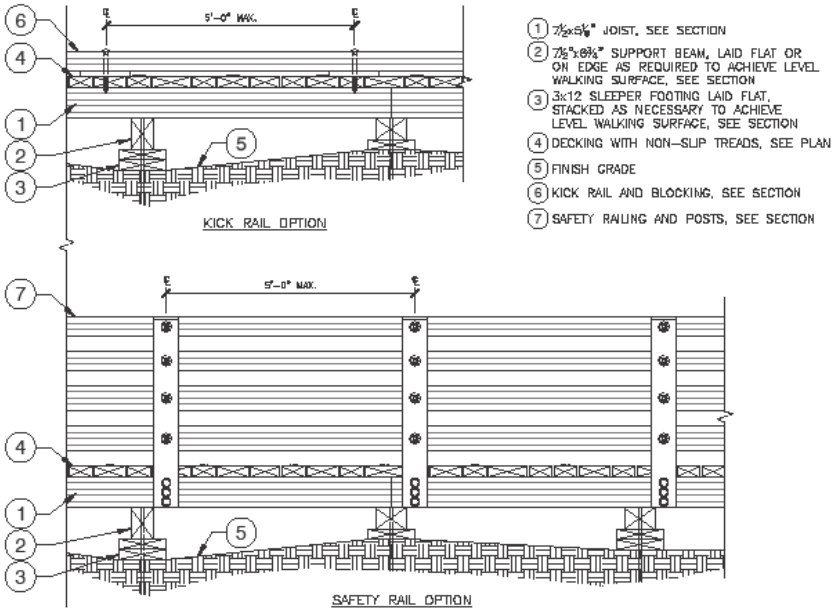
NOTES:
1. SAFETY RAIL REQUIRED WHEN BOARDWALK/FOOTBRIDGE SURFACE IS GREATER THAN 30" ABOVE GROUND LEVEL.
2. ALL JOISTS AND BEAMS TO BE GLULAM WEST COAST DOUGLAS FIR 24F-V4/COMB. 2 OR GLULAM ALASKAN YELLOW CEDAR COMB. 7O, INDUSTRIAL APPEARANCE. TREATMENT TO BE DETERMINED BY BELLEVUE PARKS.
3. RAIL POSTS, RAIL BOARDS AND KICK RAIL TO BE GLULAM PORT ORFORD CEDAR, 22F-VPOC2, ARCHITECTURAL APPEARANCE. TREATMENT TO BE DETERMINED BY BELLEVUE PARKS.
4. KICK RAIL BLOCKING AND SLEEPER FOOTINGS TO BE D.F. #2 OR BETTER, PT ACQ/CBA OR AS SPECIFIED.
5. ALL CONNECTING HARDWARE TO BE HOT DIPPED GALVANIZED.



City of Bellevue

TITLE:
COAL CREEK NATURAL AREA - TRAIL - FOOTBRIDGE/BOARDWALK - SECTION

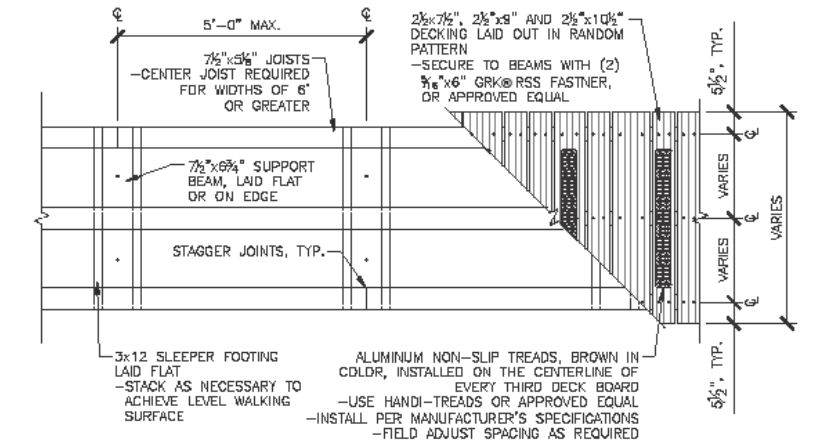
DRAWING #:	PK-CC-09A
SCALE:	N.T.S.
REVISION DATE:	03-2021
DEPARTMENT:	PARKS



City of Bellevue

TITLE:
COAL CREEK NATURAL AREA - TRAIL - FOOTBRIDGE/BOARDWALK - ELEVATION

DRAWING #:	PK-CC-09B
SCALE:	N.T.S.
REVISION DATE:	03-2021
DEPARTMENT:	PARKS

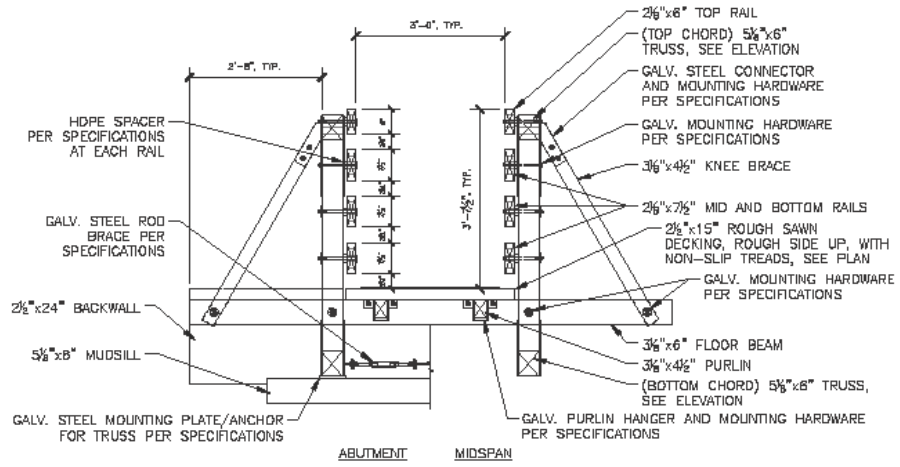


NOTES:
1. ALL JOISTS AND BEAMS TO BE GLULAM WEST COAST DOUGLAS FIR 24F-VA/COMB. 2 OR GLULAM ALASKAN YELLOW CEDAR COMB. 70, INDUSTRIAL APPEARANCE. TREATMENT TO BE DETERMINED BY BELLEVUE PARKS.
2. DECKING TO BE GLULAM PORT ORFORD CEDAR, 22F-VPOC2, ARCHITECTURAL APPEARANCE. TREATMENT TO BE DETERMINED BY BELLEVUE PARKS.
3. SLEEPER FOOTINGS TO BE D.F. #2 OR BETTER, PT ACQ/CBA OR AS SPECIFIED.

City of Bellevue

TITLE:
COAL CREEK NATURAL AREA - TRAIL - FOOTBRIDGE/BOARDWALK - PLAN

DRAWING #:	PK-CC-09C
SCALE:	N.T.S.
REVISION DATE:	03-2021
DEPARTMENT:	PARKS

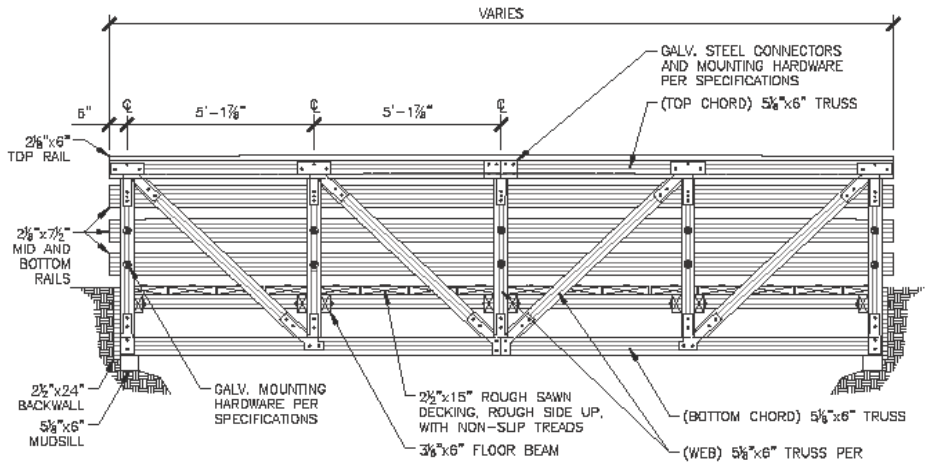


NOTES:
1. THIS DRAWING IS FOR REFERENCE ONLY. EACH BRIDGE SHALL BE ENGINEERED AND MANUFACTURED BY WESTERN WOOD STRUCTURES, INC. BASED ON SPECIFIC SITE CONDITIONS AND CITY OF BELLEVUE BUILDING CODE REQUIREMENTS.
2. ALL WOOD SHALL BE GLULAM WEST COAST DOUGLAS FIR 24F-V4/COMB. 2 OR GLULAM ALASKAN YELLOW CEDAR COMB. 70. WOOD TREATMENT TO BE DETERMINED BY BELLEVUE PARKS.
3. ALL HARDWARE AND CONNECTORS SHALL BE HOT DIPPED GALVANIZED.

City of Bellevue

TITLE: COAL CREEK NATURAL AREA - TRAIL - BRIDGE - SECTION

DRAWING #:	PK-CC-10A
SCALE:	N.T.S
REVISION DATE:	03-2021
DEPARTMENT:	PARKS



NOTES:
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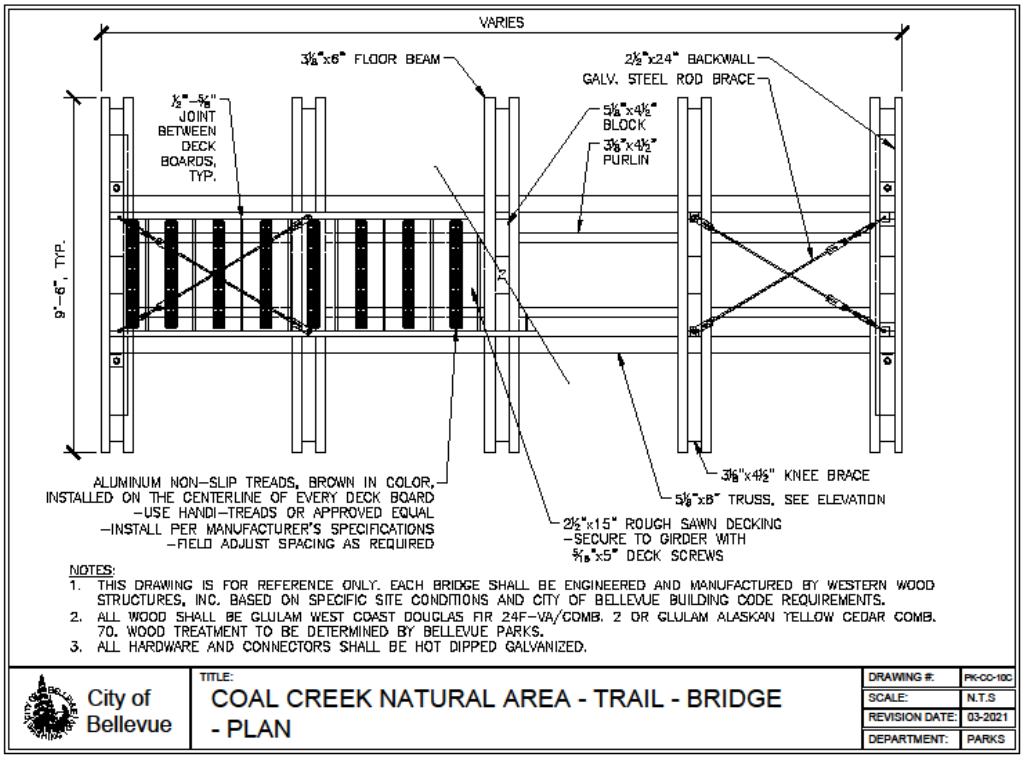
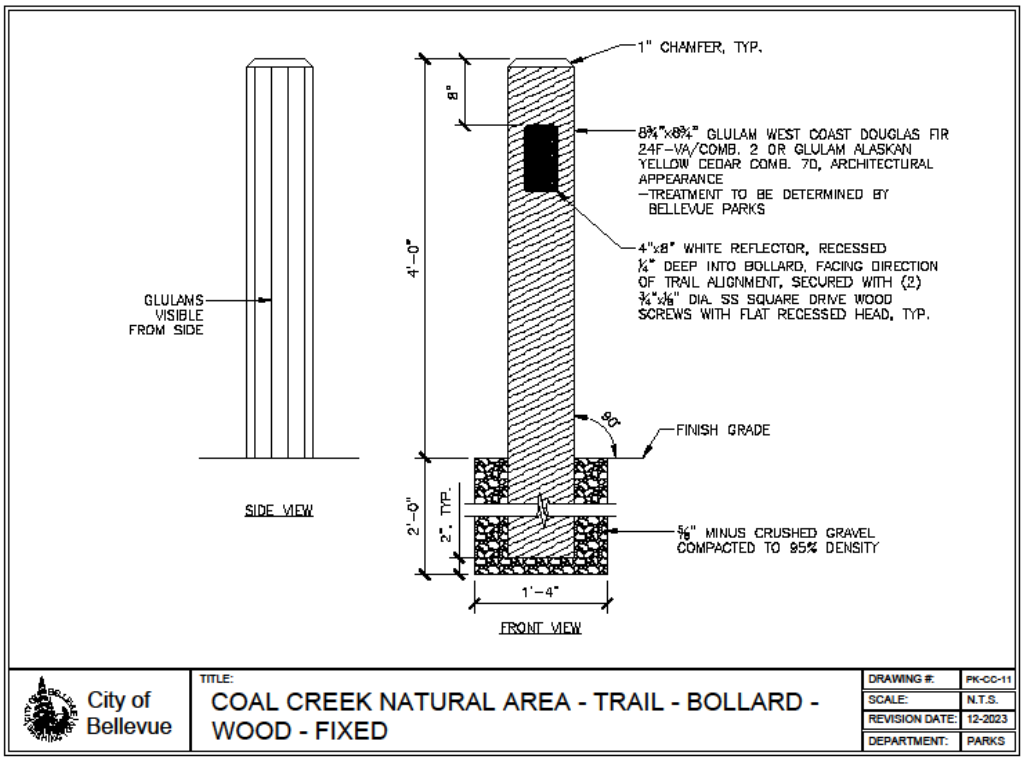
2. ALL WOOD SHALL BE GLULAM WEST COAST DOUGLAS FIR 24F-V4/COMB. 2 OR GLULAM ALASKAN YELLOW CEDAR COMB. 70. WOOD TREATMENT TO BE DETERMINED BY BELLEVUE PARKS.
3. ALL HARDWARE AND CONNECTORS SHALL BE HOT DIPPED GALVANIZED.

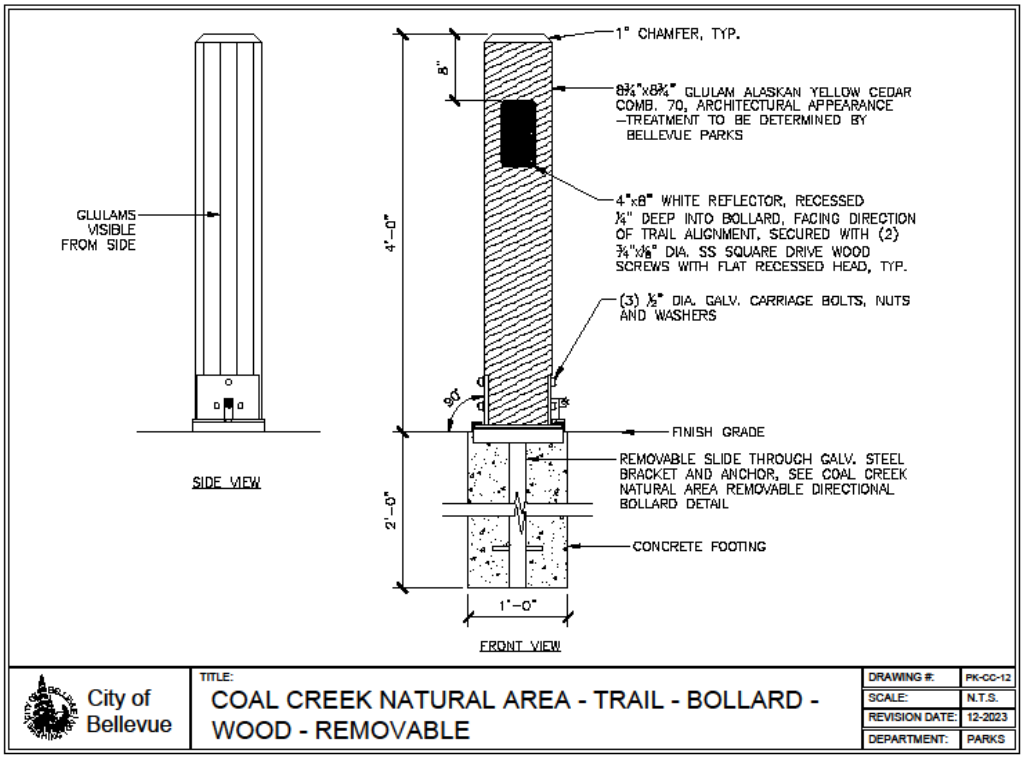
City of Bellevue

TITLE: COAL CREEK NATURAL AREA - TRAIL - BRIDGE - ELEVATION

DRAWING #:	PK-CC-10B
SCALE:	N.T.S.
REVISION DATE:	03-2021
DEPARTMENT:	PARKS


VARIES
3½"x6" FLOOR BEAM
2½"x24" BACKWALL
GALV. STEEL ROD BRACE
½"–⅝" JOINT BETWEEN DECK BOARDS, TYP.
5⅛"x4½" BLOCK
3⅛"x4½" PURLIN
9'–6", TYP.
ALUMINUM NON–SLIP TREADS, BROWN IN COLOR, INSTALLED ON THE CENTERLINE OF EVERY DECK BOARD
–USE HANDI–TREADS OR APPROVED EQUAL
–INSTALL PER MANUFACTURER'S SPECIFICATIONS
–FIELD ADJUST SPACING AS REQUIRED
3⅛"x4½" KNEE BRACE
5⅛"x8" TRUSS, SEE ELEVATION
2½"x15" ROUGH SAWN DECKING
–SECURE TO GIRDER WITH
⅝"x5" DECK SCREWS
NOTES:
1. THIS DRAWING IS FOR REFERENCE ONLY. EACH BRIDGE SHALL BE ENGINEERED AND MANUFACTURED BY WESTERN WOOD STRUCTURES, INC. BASED ON SPECIFIC SITE CONDITIONS AND CITY OF BELLEVUE BUILDING CODE REQUIREMENTS.
2. ALL WOOD SHALL BE GLULAM WEST COAST DOUGLAS FIR 24F–VA/COMB. 2 OR GLULAM ALASKAN YELLOW CEDAR COMB. 70. WOOD TREATMENT TO BE DETERMINED BY BELLEVUE PARKS.
3. ALL HARDWARE AND CONNECTORS SHALL BE HOT DIPPED GALVANIZED.
City of Bellevue
TITLE:
COAL CREEK NATURAL AREA - TRAIL - BRIDGE - PLAN
DRAWING #: PK-CC-10C
SCALE: N.T.S
REVISION DATE: 03-2021
DEPARTMENT: PARKS


1" CHAMFER, TYP.
8"
8¾"x8¾" GLULAM WEST COAST DOUGLAS FIR 24F–VA/COMB. 2 OR GLULAM ALASKAN YELLOW CEDAR COMB. 70, ARCHITECTURAL APPEARANCE
–TREATMENT TO BE DETERMINED BY BELLEVUE PARKS
4'–0"
4"x8" WHITE REFLECTOR, RECESSED ¼" DEEP INTO BOLLARD, FACING DIRECTION OF TRAIL ALIGNMENT, SECURED WITH (2) ¾"x⅛" DIA. SS SQUARE DRIVE WOOD SCREWS WITH FLAT RECESSED HEAD, TYP.
GLULAMS VISIBLE FROM SIDE
FINISH GRADE
SIDE VIEW
2'–0"
2", TYP.
⅝" MINUS CRUSHED GRAVEL COMPACTED TO 95% DENSITY
1'–4"
FRONT VIEW
City of Bellevue
TITLE:
COAL CREEK NATURAL AREA - TRAIL - BOLLARD - WOOD - FIXED
DRAWING #: PK-CC-11
SCALE: N.T.S.
REVISION DATE: 12-2023
DEPARTMENT: PARKS


GLULAMS VISIBLE FROM SIDE
SIDE VIEW
1" CHAMFER, TYP.
8"
8¾"x8¾" GLULAM ALASKAN YELLOW CEDAR COMB. 70, ARCHITECTURAL APPEARANCE –TREATMENT TO BE DETERMINED BY BELLEVUE PARKS
4"x8" WHITE REFLECTOR, RECESSED ¼" DEEP INTO BOLLARD, FACING DIRECTION OF TRAIL ALIGNMENT. SECURED WITH (2) ¾"x⅛" DIA. SS SQUARE DRIVE WOOD SCREWS WITH FLAT RECESSED HEAD, TYP.
(3) ⅝" DIA. GALV. CARRIAGE BOLTS, NUTS AND WASHERS
4'-0"
8"
FINISH GRADE
REMOVABLE SLIDE THROUGH GALV. STEEL BRACKET AND ANCHOR, SEE COAL CREEK NATURAL AREA REMOVABLE DIRECTIONAL BOLLARD DETAIL
2'-0"
CONCRETE FOOTING
1'-0"
FRONT VIEW
City of Bellevue
TITLE:
COAL CREEK NATURAL AREA - TRAIL - BOLLARD - WOOD - REMOVABLE
DRAWING #: PK-CC-12
SCALE: N.T.S.
REVISION DATE: 12-2023
DEPARTMENT: PARKS