

Stream Buffer Enhancement Plan  
for  
Hicks RV Park  
&  
XXXX Exhibitor Road  
Chehalis, Washington

Prepared for:  
Fuller Designs  
1101 Kresky Ave  
Centralia, WA 98531

Project # 187.15

Prepared by:  
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## **SIGNATURE PAGE**

The technical material and data contained in this document were prepared under the supervision and direction of the undersigned:



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Timothy J. Haderly, Principal Scientist/Owner  
Loowit Consulting Group, LLC

# INTRODUCTION

## Purpose and Need

Loowit Consulting Group, LLC (LCG) was retained by Fuller Designs (Applicants Representative) to complete a stream buffer enhancement plan for a proposed RV park at XXXX Exhibitor Road in northern Chehalis, Washington.

Construction of the RV Park will impact approximately 1,375 sq ft of stream buffer to allow proper design criteria for RV spaces, access roads, and turning radii required for RV parks. Mitigation for proposed impacts is regulated under City of Chehalis Municipal Code (CMC) 17.25 – *Fish and Wildlife Habitat Areas*. This enhancement plan has been designed to satisfy requirements within CMC 17.25.070 – *Mitigation Standards* to achieve a no net loss of habitat functions and values.

## Site Description

The subject site consists of a single parcel totaling approximately 4.20 acres of commercial property. Site specifics include:

Site Address: XXXX Exhibitor Road  
Chehalis, WA

Current Owner: Hicks, Kevin & Melody

Tax Parcel Number: 005605080007

Legal Description: Section 17, Township 14 North, Range 2 West, W.M.

Property Size: Approximately 4.20 acres

Jurisdiction: City of Chehalis

The subject site is located north of Exhibitor Road, east of Gold Street, west of Kresky Avenue, and south of Scott Johnson Road in the northern portion of Chehalis, Washington (Figure 1). The subject site consists of a flat, mowed grass field with a strip of mixed shrubs and a few trees along the northern property boundary, and a mix of shrubs and trees in the riparian area along Salzer Creek (Photograph 1). Salzer Creek flows from north to south in the south east corner of the subject site (Photograph 2) and exits the site beneath a bridge on Exhibitor Road (Photograph 3). The main site access is via Exhibitor Road to the south (Photograph 4), but there is also an access from Scott Johnson Road to the north.

## Enhancement Plan

### Assessment of Impacts

Approximately 1,375 sq ft of stream buffer will be impacted with the construction of the RV Park.

### Mitigation Approach

Impacts to stream buffers will be mitigated by enhancing the existing on-site buffer adjacent to the proposed development area. Existing conditions of the stream buffer is a mowed grass area used as an overflow vehicle parking area for the Fairgrounds and Event Center west of the subject site.

ARW Landscape Design (ARW) was retained by Fuller Designs to develop a project wide landscape plan including the stream buffer area. ARW concentrated on native plants but did include a few non-native trees to add texture and color to the area (see attached landscape drawings). In addition to plantings, a gravel surface pedestrian loop pathway is proposed within the planted buffer. An irrigation system will also be installed according to the schematic contained in the attached landscape drawings.

Table 1 summarizes proposed plantings within buffer areas.

**Table 1: Stream Buffer Enhancement (2,782 ft<sup>2</sup>)**

Common Name	Scientific Name	Material	Spacing/ Size	Number of Pieces
<b>Groundcover</b>				
Kinnikinnick	<i>Arctostaphylos uva-ursi</i>	1-gal	4' o.c.	257
<b>Grass</b>				
Northern Lights Tufted Hair Grass	<i>Deschampsia caespitosa</i>	1-gal	2' o.c.	51
<b>Shrubs</b>				
Black Twinberry	<i>Lonicera involucrata</i>	2-gal	5' o.c.	13
Snowberry	<i>Symphoricarpos albus</i>	2-gal	4' o.c.	52
Evergreen Huckleberry	<i>Rubus ovatum</i>	2-gal	4' o.c.	61
Pacific Ninebark	<i>Physocarpus capitatus</i>	2-gal	10' o.c.	33
Red Currant	<i>Ribes sanguineum</i>	2-gal	4.5' o.c.	67

Spiraea	<i>Spiraea douglasii</i>	2-gal	4.5' o.c.	14
<b>Shrubs</b>				
Autumn Gold Maidenhair Tree	<i>Ginko biloba</i>	2" cal	25' o.c.	5
Bitter Cherry	<i>Prunus emarginata</i>	2" cal	25' o.c.	8
Douglas Fir	<i>Pseudotsuga menziesii</i>	7-8' ht	25' o.c.	23
Oregon Ash	<i>Fraxinus latifolia</i>	2" cal	As shown	6
Paperbark Maple	<i>Acer griseum</i>	2" cal	As shown	4
Vine Maple	<i>Acer circinatum</i>	7-8' ht	20' o.c.	16
Total				646

Installation of trees and shrubs will result in a much improved stream buffer which is currently lacking tree/shrub cover.

### ***Planting Plan***

#### ***Site Enhancement Procedure***

See the attached landscaping drawings for specific notes on planting procedures.

#### ***Buffer Signs***

All-weather signs will be placed every 100 linear feet along the outer buffer boundary and anchored a minimum 4 feet above ground elevation on all-weather posts. Signs will be designed in conformance with design requirements of City of Chehalis.

#### ***Planting Specifications***

Plantings will consist of native trees and shrubs similar to those found in the local area within the Newaukum River drainage. The selected species will encourage development of a dense tree/shrub community and will increase the variety and quality of existing habitat potential of the stream and buffer. Plants will be installed in late fall or early spring to avoid expected loss of plants from dry and hot conditions. Plants will be installed according to the planting scheme container within the attached landscape drawings. A combination of container and bare root stock will be used.

#### ***Plant Material Specifications***

Specifications for plant materials are contained within the attached landscape drawings.

In addition to installing plants,

**Table 3: Summary of Mitigation Measures**

<b>Disturbance</b>	<b>Required Measures to Minimize Impacts</b>
Lights	<ul style="list-style-type: none"> <li>• Direct lights away from streams and buffers.</li> </ul>
Noise	<ul style="list-style-type: none"> <li>• Locate activity that generates noise away from the buffer.</li> <li>• If warranted, enhance existing buffer with native vegetation plantings adjacent to noise source.</li> <li>• For activities that generate relatively continuous, potentially disruptive noise, such as certain heavy industry or mining, establish an additional 10 feet heavily vegetated buffer strip immediately adjacent to the outer stream buffer.</li> </ul>
Toxic runoff	<ul style="list-style-type: none"> <li>• Treat and contain any toxic runoff.</li> <li>• Route all new, untreated runoff away from stream.</li> </ul>
Stormwater runoff	<ul style="list-style-type: none"> <li>• Apply integrated pest management standards.</li> <li>• To improve existing water quality runoff that may be impacting buffer functions. Retrofit existing stormwater detention and treatment for roads and existing adjacent development.</li> <li>• Prevent channelized flow from lawns that directly enters the buffer.</li> <li>• Use Low Intensity Development techniques (per PSAT publication on LID techniques).</li> </ul>
Change in water regime	<ul style="list-style-type: none"> <li>• In order to maintain stream hydrology and discharge only clean stormwater toward the stream. Stormwater should be treated; then infiltrated, detained, and/or dispersed outside the stream buffer for any new runoff from impervious surfaces and new lawns. Permanent improvements to the site hydrology that would improve buffer and functions and not create off-site flooding.</li> </ul>

<b>Disturbance</b>	<b>Required Measures to Minimize Impacts</b>
Pets and human disturbance	<ul style="list-style-type: none"> <li>• Use privacy fencing at buffer edge OR plant dense vegetation to delineate buffer edge and to discourage disturbance using vegetation appropriate for the ecoregion.</li> </ul>
Dust	<ul style="list-style-type: none"> <li>• During construction or for commercial or industrial activities, use best management practices to control dust.</li> </ul>
Disruption of corridors or connections/habitat enhancement	<ul style="list-style-type: none"> <li>• In order to improve habitat quality and connectivity, a vegetation enhancement plan that improves areas with minimal trees and vegetation and proposes removal of invasive vegetation and replacing it with ground cover and shrubs that will provide dense vegetative cover at maturity.</li> <li>• Planting noninvasive plants that provide improved filtration of sediment, excess nutrients, and pollutants that may be present.</li> <li>• Maintain habitat connections to off-site areas that are undisturbed.</li> <li>• Restore corridors or connections to off-site habitats by replanting.</li> </ul>



***Goals, Objectives, and Performance Standards***

The goal of the buffer enhancement will be to increase functions and values over current conditions by the installation of native trees and shrubs, restricting pedestrian encroachment, maintaining plants for a minimum 5 years, and placing the area under a deed restriction for long-term protection. To accomplish these goals, the following objectives and performance standards are appropriate to ensure the success of the restoration area (Table 4):

Objective 1. Enhance 2,782 sq ft of stream buffer by planting native trees/shrubs.

Performance Standard 1a: In Year 0, install plants according to specifications previously listed.

Performance Standard 1b: In Year 0, install irrigation system.

Performance Standard 1c: In Year 0, install buffer signs.

Performance Standard 2a: Two permanent monitoring stations established.

Performance Standard 2b: In Year 1, plantings meet 100% survival.

Performance Standard 2c: In Year 1, invasive species <10% (excluding reed canary grass).

Performance Standard 3a: In Year 2, plantings meet 100% survival.

Performance Standard 3b: In Year 2, invasive species <10% (excluding reed canary grass).

Performance Standard 4a: In Year 3, plantings meet 100% survival.

Performance Standard 4b: In Year 3, invasive species <10% (excluding reed canary grass).

Performance Standard 5a: In Year 5, plantings meet 100% survival.

Performance Standard 5b: In Year 5, invasive species <10% (excluding reed canary grass).

**Table 4: Performance Standard Summary**

<b>Year</b>	<b>Performance Standard</b>
Zero	<ul style="list-style-type: none"> <li>• 1a – Install Plants</li> <li>• 1b – Install irrigation system</li> <li>• 1c – Install buffer signs</li> </ul>
One	<ul style="list-style-type: none"> <li>• 2a – Establish two monitoring stations.</li> <li>• 2b – Plantings meet 100% survival</li> <li>• 2c – Invasive species &lt;10% (excluding reed canary grass)</li> </ul>

Two	<ul style="list-style-type: none"> <li>• 3a – Plantings meet 100% survival</li> <li>• 3b – Invasive species &lt;10% (excluding reed canary grass)</li> </ul>
Three	<ul style="list-style-type: none"> <li>• 4a – Plantings meet 100% survival</li> <li>• 4b – Invasive species &lt;10% (excluding reed canary grass)</li> </ul>
Four	Off year, no monitoring, routine site maintenance
Five	<ul style="list-style-type: none"> <li>• 5a – Plantings meet 90% survival</li> <li>• 5b – Invasive species &lt;10% (excluding reed canary grass)</li> </ul>

**Monitoring Plan**

The stream buffer enhancement area will be monitored for a 5-year period following project construction, in Years 1, 2, 3, 4 & 5. Monitoring reports will be submitted to City of Chehalis by December 31<sup>st</sup> of each monitored year. The Year 1 report shall also serve as the as-built report and contain the necessary drawing. The goal of monitoring is to determine if the previously stated performance standards are being met. The mitigation area will be monitored once a year during the growing season, between March 15 and May 15 (Table 5). Monitoring and photo stations will be established to document the plant growth over time. Individual plants will be counted and recorded each monitoring year to assess the percentage survival rate; plants will be replaced as-needed.

**Table 5: Stream Buffer Maintenance, Monitoring, and Reporting Summary**

Year	Task	Reporting
Zero	<ul style="list-style-type: none"> <li>• Remove invasive species</li> <li>• Install plantings</li> <li>• Install mulch</li> </ul>	<ul style="list-style-type: none"> <li>• Progress letter to City</li> </ul>
One	<ul style="list-style-type: none"> <li>• Routine maintenance</li> <li>• Replace dead plants</li> <li>• Mow invasive plant species</li> <li>• Irrigate as needed</li> <li>• Monitor site between March 15 and May 15</li> </ul>	<ul style="list-style-type: none"> <li>• Year one monitoring report to City by December 31<sup>st</sup></li> <li>• As-built drawing to City by December 31<sup>st</sup></li> </ul>
Two	<ul style="list-style-type: none"> <li>• Routine maintenance</li> <li>• Replace dead plants</li> <li>• Mow invasive plant species</li> <li>• Irrigate as needed</li> <li>• Monitor site between March 15 and May 15</li> </ul>	<ul style="list-style-type: none"> <li>• Year two monitoring report to City by December 31<sup>st</sup></li> </ul>

Three	<ul style="list-style-type: none"> <li>• Routine maintenance</li> <li>• Replace dead plants</li> <li>• Mow invasive plant species</li> <li>• Irrigate as needed</li> <li>• Monitor site between March 15 and May 15</li> </ul>	<ul style="list-style-type: none"> <li>• Year three monitoring report to City by December 31<sup>st</sup></li> </ul>
Four	<ul style="list-style-type: none"> <li>• Routine maintenance</li> <li>• Replace dead plants</li> <li>• Mow invasive plant species</li> <li>• Irrigate as needed</li> </ul>	<ul style="list-style-type: none"> <li>• None</li> </ul>
Five	<ul style="list-style-type: none"> <li>• Routine maintenance</li> <li>• Replace dead plants</li> <li>• Mow invasive plant species</li> <li>• Irrigate as needed</li> <li>• Monitor site between March 15 and May 15</li> </ul>	<ul style="list-style-type: none"> <li>• Year five monitoring report to City by December 31<sup>st</sup></li> </ul>

***Monitoring Report Contents***

The annual monitoring reports will contain at least the following:

1. Location map and as-built drawing.
2. Historic description of project, including dates of plant installation, current year of monitoring, and restatement of restoration goals, objectives, and performance standards.
3. Description of monitoring methods.
4. Documentation of plant survival and overall development of the plant communities.
5. Assessment of non-native, invasive plant species and recommendations for management.
6. Observations of wildlife, including invertebrates, amphibians, reptiles, fish, birds, and mammals.
7. Photo documentation from permanent photo points.
8. Summary of maintenance and contingency measures proposed for the next season and completed for the past season.

***Site Protection***

The enhancement area will be owned, maintained, and managed by the property owner, unless otherwise assigned. The property owner will be responsible for maintenance and monitoring of the restoration areas for the 5-year period. Signage will be installed along the outer perimeter of the mitigation area at 100-foot intervals and will be maintained by the property owner to raise awareness and help limit disturbances.

## ***Maintenance and Contingency Plans***

### ***Maintenance Plan***

Maintenance at the mitigation areas may involve mowing, watering, and re-installing failed plants as necessary. The maintenance will include the following:

1. Irrigate planted species as necessary during the dry season, approximately July 1 through October 15.
2. Mow around the base of the plantings to lessen the competition from non-native herbaceous species, particularly reed canary grass.

If the mitigation area plantings are failing or the performance standards are not met, steps will be taken to rectify the situation in a timely manner. The following steps will be implemented when an area is identified as failing or potentially failing:

1. Identify the cause(s) of the failure or potential failure.
2. Identify the extent of the failure or potential failure.
3. Implement corrective actions by replanting.
4. Document the activities and include this data in the annual monitoring and maintenance reports.
5. Consult with the appropriate agencies in the event that a routine corrective action will not correct the problem.
6. Evaluate recommendations from resource agency staff and implement recommendations in a timely manner.

### ***Contingency Plan***

If the performance standards are not met after ten years following project completion, a contingency plan will be developed and implemented. All contingency actions will be undertaken only after consulting and gaining approval from City of Chehalis. A contingency plan will include: (1) the causes of failure, (2) proposed corrective actions, (3) a schedule for completing corrective actions, and (4) whether additional maintenance and monitoring are necessary.

## **LIMITATIONS**

The findings and conclusions contained in this document were based on information and data available at the time this document was prepared and evaluated using standard Best Professional Judgment. LCG assumes no responsibility for the accuracy of information and data generated by others. Local, State, and Federal regulatory agencies may or may not agree with the findings and conclusions contained in this document.

## REFERENCES

Anderson, P., Meyer, S., Olson, P., Stockdale, E. 2016. Determining the Ordinary High Water Mark for Shoreline Management Act Compliance in Washington State. Shorelands and Environmental Assistance Program Washington State Department of Ecology Olympia, Washington. Publication no. 16-06-029. October 2016 Final Review.

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Washington Department of Fish and Wildlife Salmonscape (<http://apps.wdfw.wa.gov/salmonscape/map.html>).

Washington Department of Fish and Wildlife Priority Habitat and Species (<http://apps.wdfw.wa.gov/phsontheweb/>).

## **FIGURES**

### ARW Landscape Design

L1.1 Landscape Plan, North Area

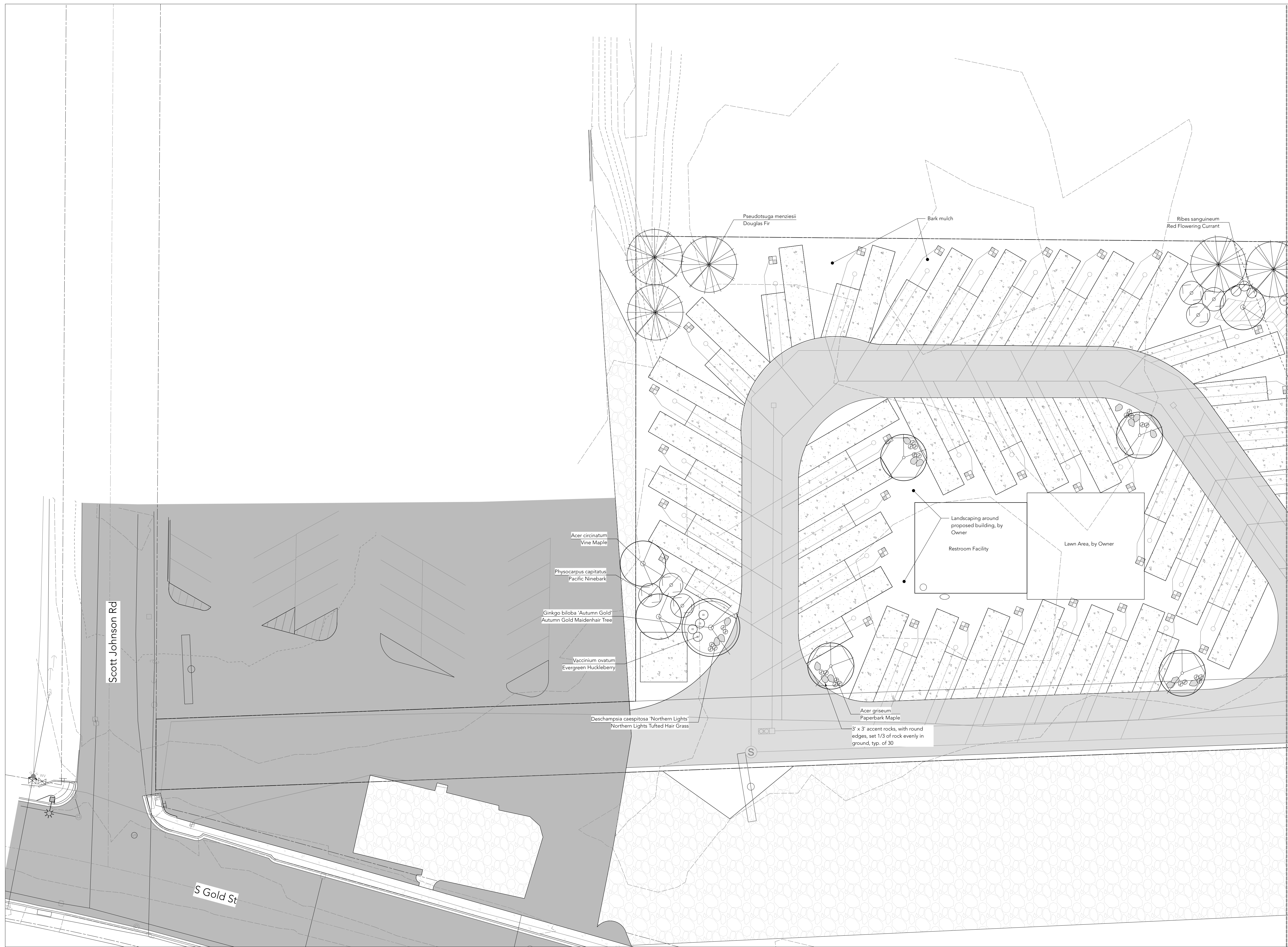
L1.2 Landscape Plan, South Area

L1.3 Plant Schedule, Materials Schedule, and Planting Details

IR1.1 Irrigation Plan, North Area

IR1.2 Irrigation Plan, South Area

IR1.3 Irrigation Details



Client Logo:



# Hicks RV Park

0 Exhibitor Rd.  
Chehalis, Wa.  
98532

## Landscape Plan

Revisions	Date
xx	xx

Project #:  
22-110

Date:  
02/15/22

Sheet Size / Scale:  
34"x22" / 1" = 20'

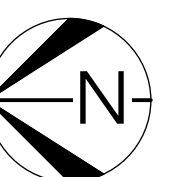
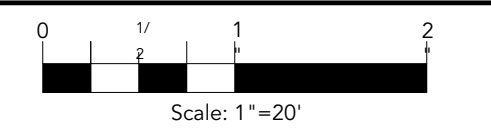
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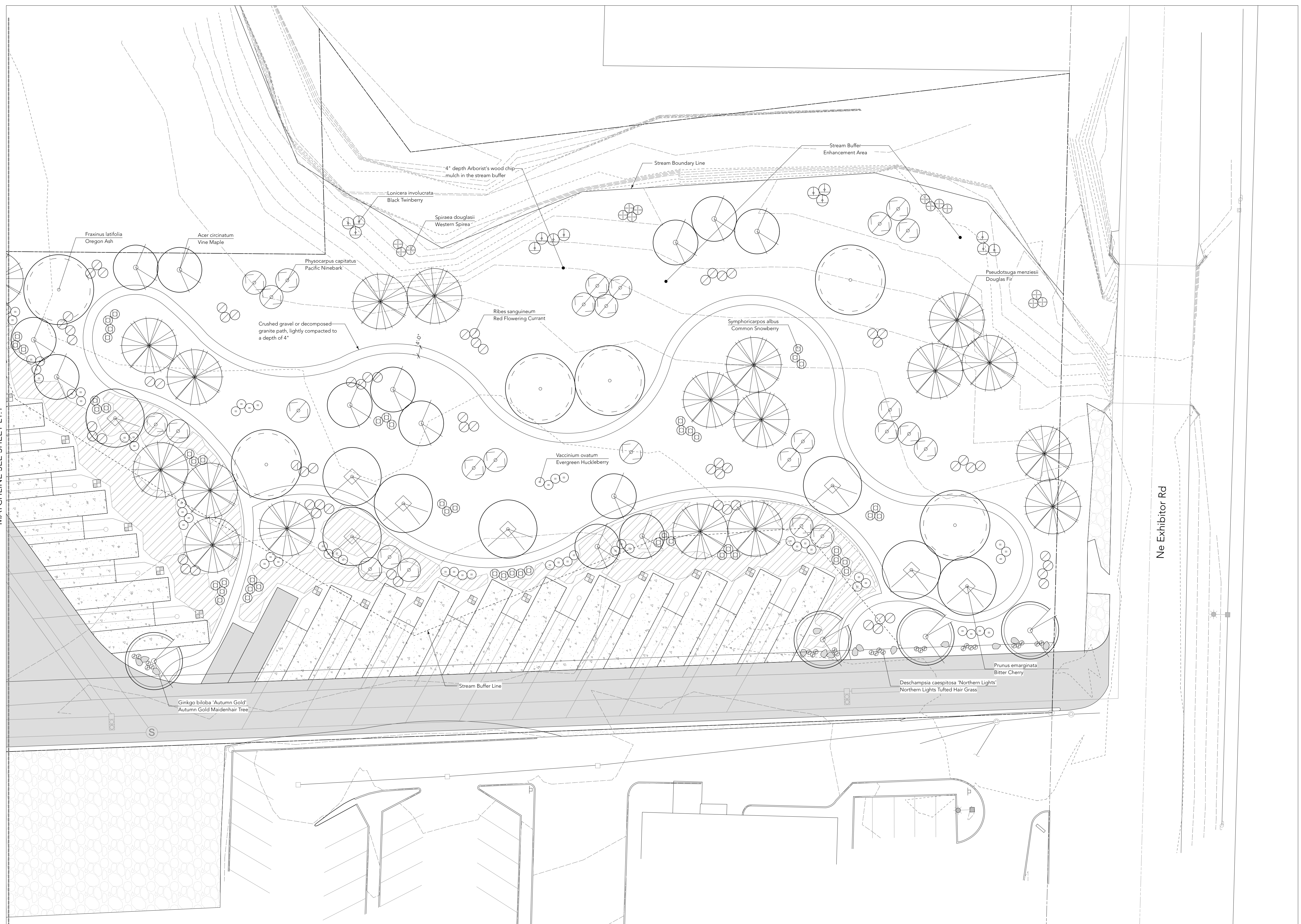


Landscape Architect:

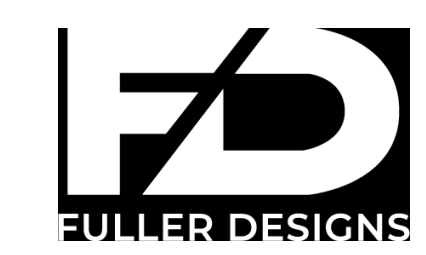


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Client Logo:



# Hicks RV Park

0 Exhibitor Rd.  
Chehalis, Wa.  
98532

## Landscape Plan

Revisions	Date
xx	xx

Project #: 22-110

Date: 02/15/22

Sheet Size / Scale: 34"x22" / 1" = 20'

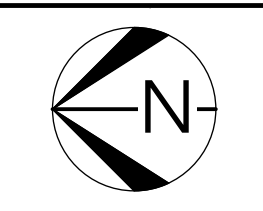
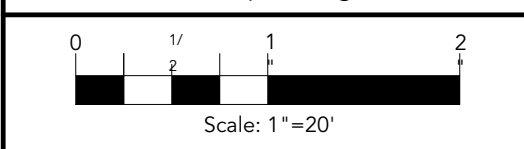
Stamp:



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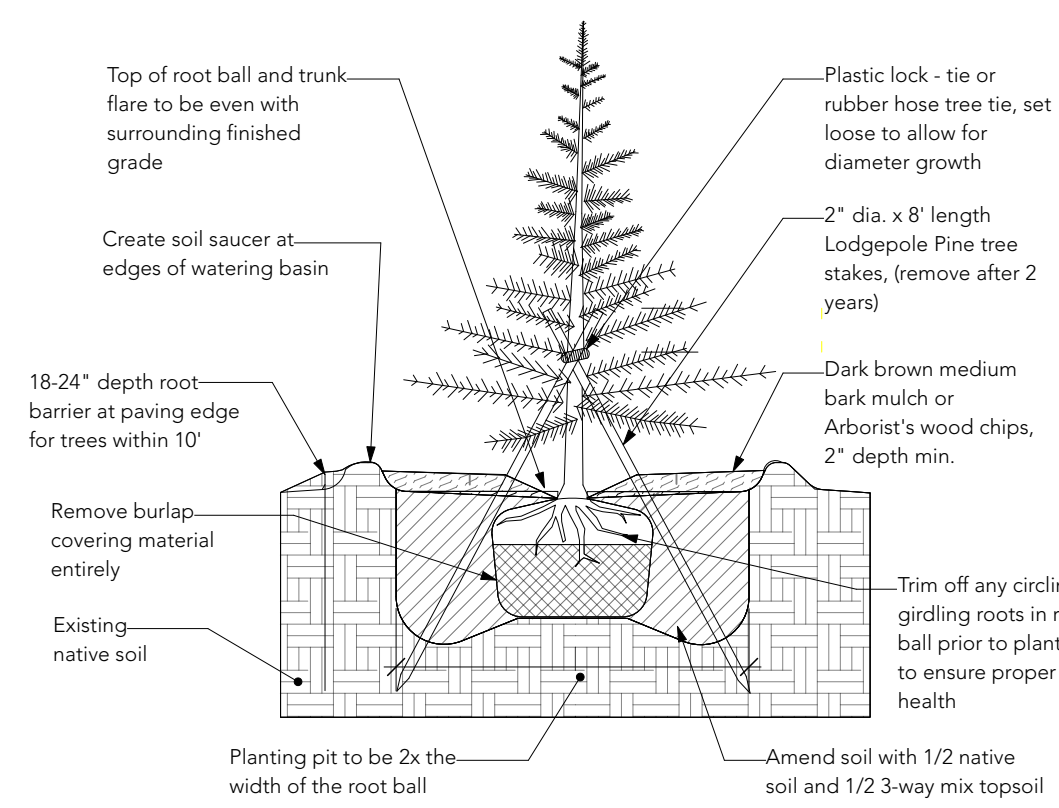




Plant Schedule					
	Qty	Common Name	Botanical Name	Size & Spacing	Comments
<b>Groundcover</b>					
	257	Kinnikinnick	Arctostaphylos uva-ursi	1 gal., 4' o.c.	Nursery grown, evergreen, native, small flowers in spring
<b>Grasses</b>					
	51	Northern Lights Tufted Hair Grass	Deschampsia caespitosa 'Northern Lights'	1 gal., 2' o.c.	Nursery grown, evergreen, trim back only as needed
<b>Shrubs</b>					
	13	Black Twinberry	Lonicera involucrata	2 gal., 5' o.c.	Nursery grown, deciduous, yellow flowers, attracts hummingbirds, do not top
	52	Common Snowberry	Symphoricarpos albus	2 gal., 4' o.c.	Nursery grown, deciduous, native, pink flowers in spring, white berries in fall, do not trim
	61	Evergreen Huckleberry	Vaccinium ovatum	2 gal., 4' o.c.	Nursery grown, evergreen, native, edible blue-black berries, do not top
	33	Pacific Ninebark	Physocarpus capitatus	2 gal., 10' o.c.	Nursery grown, deciduous, native, do not top
	67	Red Flowering Currant	Ribes sanguineum	2 gal., 4.5' o.c.	Nursery grown, deciduous, native, pink flower clusters
	14	Western Spirea	Spiraea douglasii	2 gal., 4' o.c.	Nursery grown, deciduous, native, do not top
<b>Trees</b>					
	5	Autumn Gold Maidenhair Tree	Ginkgo biloba 'Autumn Gold'	2" cal., 45' o.c.	B&B, nursery grown, golden fall foliage, do not top, street tree quality, branched at 5' height
	8	Bitter Cherry	Prunus emarginata	2" cal., 25' o.c.	B&B, nursery grown, deciduous, native, do not top
	23	Douglas Fir	Pseudotsuga menziesii	7-8' ht., 25' o.c.	B&B, nursery grown, evergreen, native, do not top
	6	Oregon Ash	Fraxinus latifolia	2" cal., as shown	Nursery grown, deciduous, native, evenly branched
	4	Paperbark Maple	Acer griseum	2" cal., as shown	B&B, nursery grown, street tree quality, branched at 5' height from the ground, evenly branched, do not top
	16	Vine Maple	Acer circinatum	7-8' ht., 20' o.c.	B&B, nursery grown, deciduous, native, multi-trunk, do not top

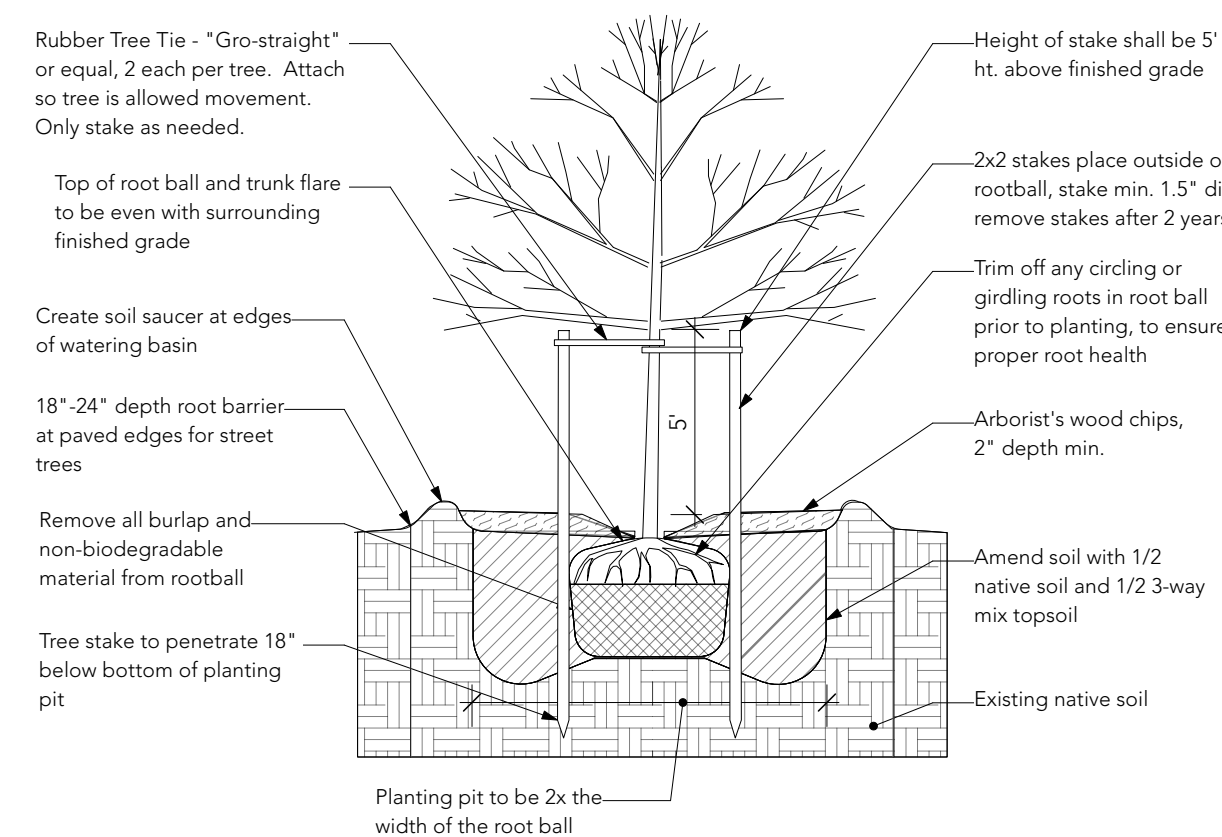
Total Number of Plants = 646

Materials Schedule		
Item	Qty.	Notes
5/8" Crushed Gravel or Decomposed Granite Path, 850' length	42 Cy.	Compact lightly to a depth of 4"
Three Way Mix Topsoil	1100 Cy.	Mix a 4" layer with 1/2 native soil into all new planting beds to a depth of 8"
Dark Brown Medium Bark Mulch or Arborist's Wood Chips for Plants Outside of the Stream Buffer	111 Cy.	Spread a 2" layer evenly around plants
Arborist's Wood Chips for Plants in the Stream Buffer	890 Cy.	Spread a 4" layer evenly around plants



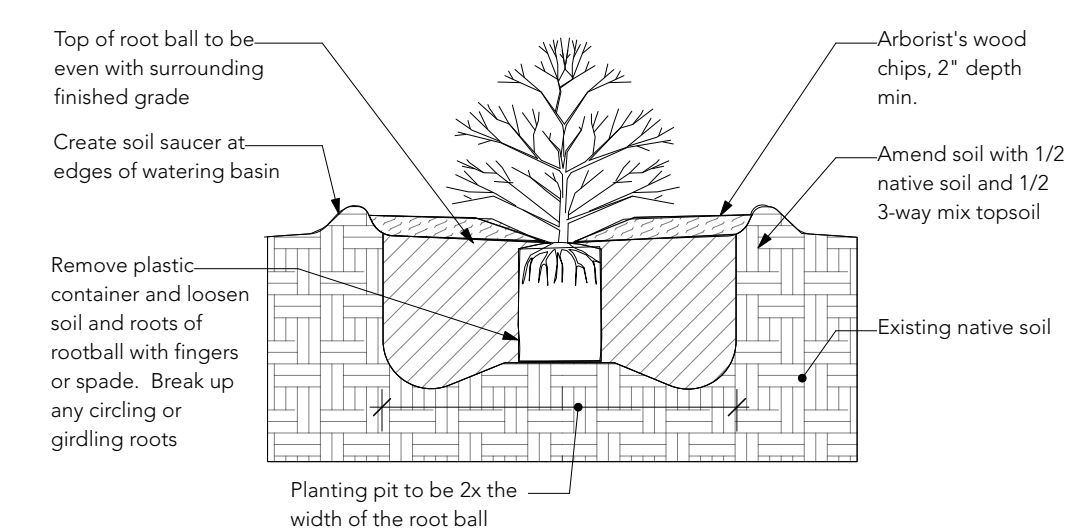
- Notes:**
- 1) Contractor to ensure roots are not kinked, circling, or girdling the trunk, prior to installation.
  - 2) If roots are found to be defective, contractor to correct or replace plant material prior to installation.

**Coniferous Tree Planting Detail**  
NTS

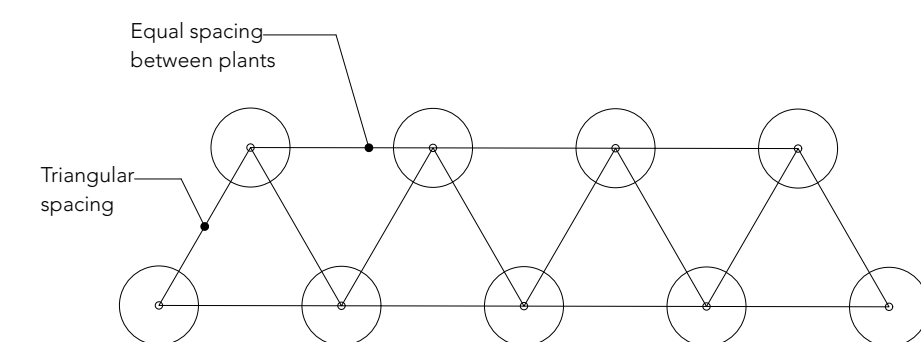


- Notes:**
- 1) Contractor to ensure roots are not kinked, circling, or girdling the trunk, prior to installation.
  - 2) If roots are found to be defective, contractor to correct or replace plant material prior to installation.

**Tree Planting Detail**  
NTS



**Shrub/Ground Cover Planting Detail**  
NTS



**Ground Cover Triangular Spacing Detail**  
NTS

**Landscape Notes:**

1. The landscape bed shall be free of weeds, rocks > 2"Ø, tree stumps and limbs, construction debris, slurry, and other construction material prior to soil preparation of planting beds.
3. The new planting bed shall be de-compacted by roto-tilling, disking or ripping to a depth of at least 8", to thoroughly loosen soil before adding compost to the beds.
4. Contractor to verify proposed tree locations in field and avoid underground and overhead utilities, and adjust tree locations as needed prior to digging.
5. Landscape Architect to be notified of any discrepancies between the planting plan and on site locations of buildings, paving, and utilities that may interfere with the proposed plant layout.
6. Contractor to evaluate soil conditions (pH level, nutrient content, etc.) and correct with proper soil amendment as needed.
7. Landscape Architect to be notified and approve of any plant substitutions prior to delivery. Plant material shall be delivered to the site free of diseases, pests, and damaged or broken branches, trunks or limbs.
9. All plants shall conform to the Z60.1 "American Standard for Nursery Stock" manual as published by the American Association of Nurseryman (AAN).
10. Contractor to guarantee all plants for 1 year and replace any dead or dying plants as notified by the owner.
11. Any damaged plant material delivered on site shall be returned and replaced by the grower or contractor.
12. Landscape Architect to review plant layout locations via photos or on site.
13. All deciduous and coniferous trees shall be placed and installed first, followed by all shrubs, and groundcover.
14. Fertilizer, herbicides, and pesticides are not required or needed for the survival of the newly installed plants.
15. All proposed plants should be allowed to grow naturally. Trimming is not needed, except for the occasional removal of broken, dead, damaged branches.
16. New plants shall be watered weekly in the first growing season or as needed, bi-weekly in the second growing season or as needed, and monthly in the third growing season or as needed, in the spring, summer, and fall months.
17. Check plants for burned or brown leaves, wilting branches or leaves, and dry soil during the summer months and apply irrigation as needed.

Client Logo:



Hicks RV Park

0 Exhibitor Rd.  
Chehalis, Wa.  
98532

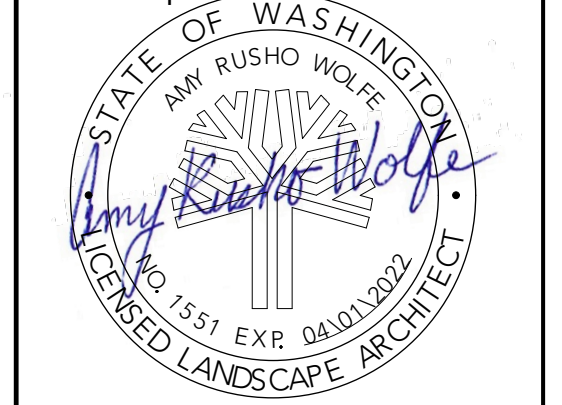
Landscape  
Schedule,  
Notes &  
Details

Revisions	Date
xx	xx
Project #: 22-110	

Date:  
02/15/22

Sheet Size / Scale:  
34"x22" / NTS

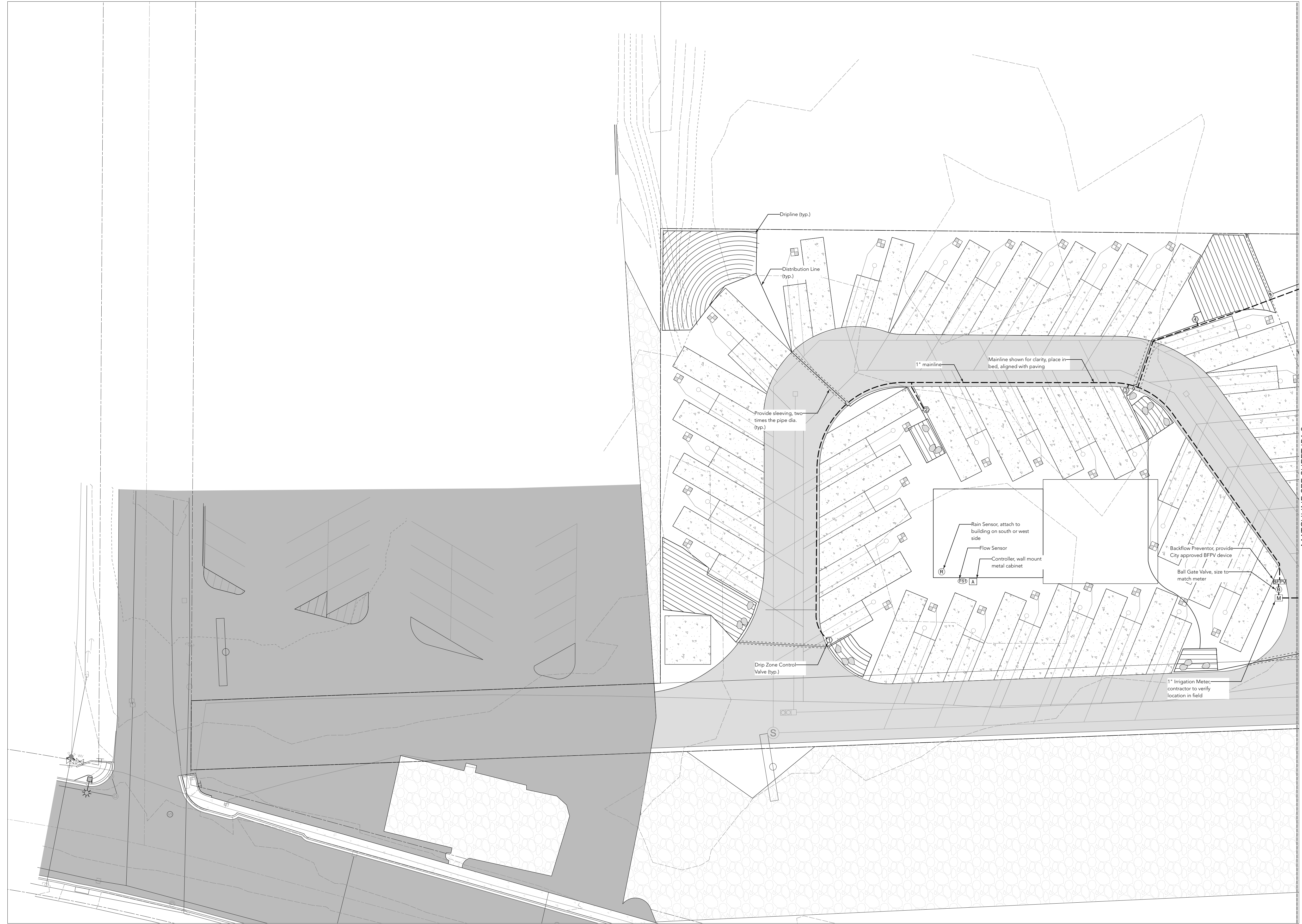
Stamp:



Landscape Architect:

**ARW**  
Landscape  
Design

Amy R. Wolfe, PLA, ASLA  
7530 23rd St W  
University Place, Wa. 98466  
t. 253.223.1162  
e. amy@arwlandscapedesign.com  
www.arwlandscapedesign.com



Client Logo:



# Hicks RV Park

0 Exhibitor Rd.  
Chehalis, Wa.  
98532

## Irrigation Plan

Revisions	Date
xx	xx

Project #:  
22-110

Date:  
02/15/22

Sheet Size / Scale:  
34" x 22" / 1" = 20'

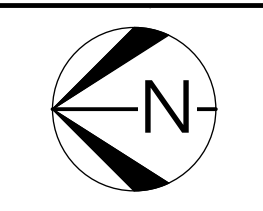
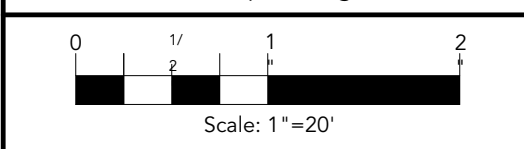
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MATCHLINE SEE SHEET IR1.1

Client Logo:



### Hicks RV Park

0 Exhibitor Rd.  
Chehalis, Wa.  
98532

### Irrigation Plan

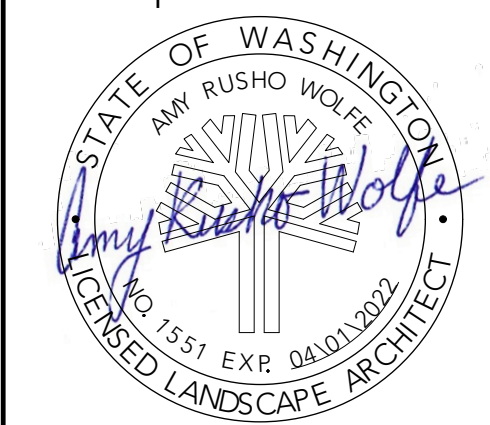
Revisions	Date
xx	xx

Project #:  
22-110

Date:  
02/15/22

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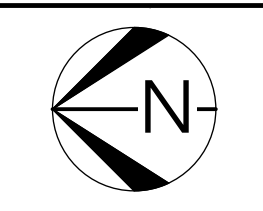
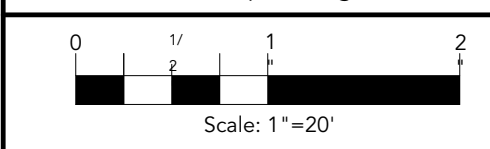
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# Hicks RV Park

0 Exhibitor Rd.  
Chehalis, Wa.  
98532

## Irrigation Schedule, Notes & Details

Revisions      Date

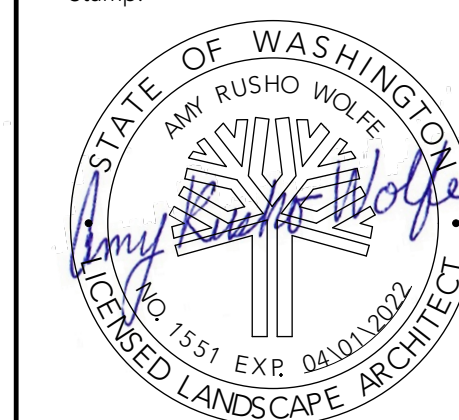
x	x

Project #:  
22-110

Date:  
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IRRIGATION LEGEND			
SYMBOL	MANUFACTURER/ DESCRIPTION	MODEL	COMMENTS
M	1" IRRIGATION METER (BY OTHERS COORDINATE P.O.C. WITH CONSTRUCTION MANAGER)		55 PSI STATIC PRESSURE
B	BRASS GATE VALVE	RUB BALL VALVE, S95F43 (ROUND HANDLE)	SIZE TO FIT MAINLINE
BFPV	1" BACK FLOW PREVENTOR	FEBCO 850	SIZE TO MATCH METER
R	HUNTER RAIN SENSOR	RAIN-CLIK-SGM	WIRELESS RAIN SENSOR W/GUTTER MOUNT
FS1	HUNTER 1" FLOW SENSOR	HFS W/ FCT-150	WIRE DIRECTLY TO CONTROLLER
X	HUNTER 1" AUTOMATIC CONTROL VALVE	ICV-101G WITH PRESSURE REGULATOR	WIRE DIRECTLY TO CONTROLLER, SEE VALVE KEY
A	HUNTER CONTROLLER	I-CORE, IC-600-M & (2) ICM-600 EXPANSION MODULES	WALL MOUNTED METAL CABINET

PIPE			
SYMBOL	MANUFACTURER/ DESCRIPTION	MODEL	COMMENTS
-----	IRRIGATION MAIN LINE 1"	SCH 40 PVC	
-----	IRRIGATION LATERAL LINE SIZE VARIES	SCH 40 PVC	SEE PIPE SIZING LEGEND
-----	PIPE AND WIRE SLEEVING	SCH 40 PVC	DIAMETER TO BE TWICE THE SIZE OF THE PIPE BEING SLEEVED

POP-UP HEADS AND ROTORS				
SYMBOL	MANUFACTURER/ DESCRIPTION	RAD.	MODEL	PSI
⬇	HUNTER MP ROTATOR SPRAY HEAD	8"	MP1000 CORNER HEAD	35
⬆	HUNTER MP ROTATOR SPRAY HEAD	8"	MP1000 HALF HEAD	35
⊙	HUNTER MP ROTATOR SPRAY HEAD	8"	MP1000 FULL HEAD	35
⬇	HUNTER MP ROTATOR SPRAY HEAD	13"	MP1000 CORNER HEAD	35
⬆	HUNTER MP ROTATOR SPRAY HEAD	13"	MP1000 HALF HEAD	35
⊙	HUNTER MP ROTATOR SPRAY HEAD	13"	MP1000 FULL HEAD	35
⬇	HUNTER MP ROTATOR SPRAY HEAD	18"	MP1000 CORNER HEAD	35
⬆	HUNTER MP ROTATOR SPRAY HEAD	18"	MP1000 HALF HEAD	35
⊙	HUNTER MP ROTATOR SPRAY HEAD	18"	MP1000 FULL HEAD	35
⬇	HUNTER MP ROTATOR SPRAY HEAD	28"	MP3000 CORNER HEAD	35
⬆	HUNTER MP ROTATOR SPRAY HEAD	28"	MP3000 HALF HEAD	35
⊙	HUNTER MP ROTATOR SPRAY HEAD	28"	MP3000 FULL HEAD	35

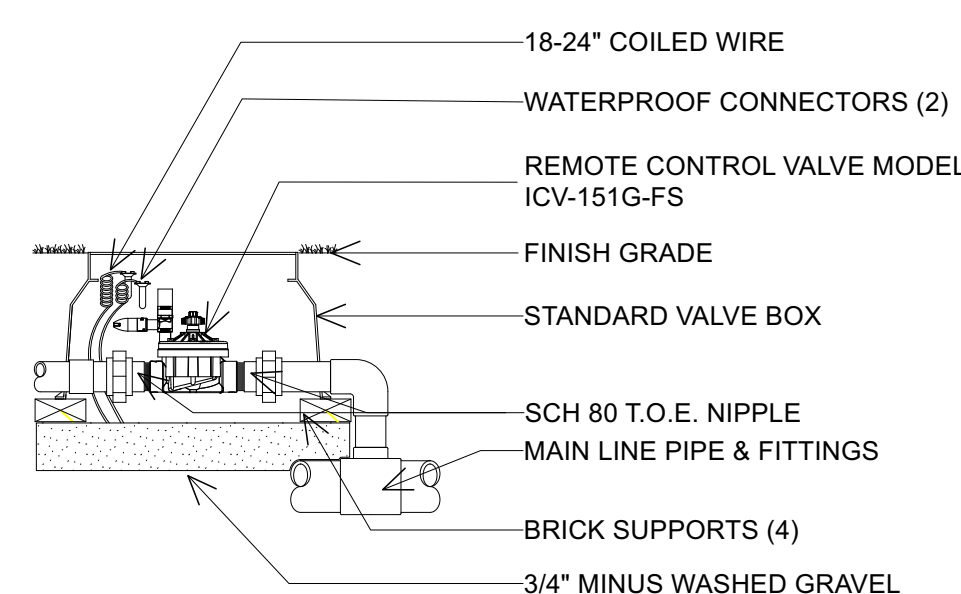
DRIP LINES				
SYMBOL	MANUFACTURER/ DESCRIPTION	MODEL	GPM	PSI
-----	HUNTER MICRO IRRIGATION DRIPLINE SYSTEM	HDL-09-24-250-CV 24" SPACING	.90 GPH	25
-----	DISTRIBUTION LINE	HDL-BLNK-250		25
⊗	HUNTER DRIP CONTROL ZONE KIT	ICZ 1"		25
⊕	HUNTER AIR RELIEF VALVE INSTALL ONE IN EACH ZONE	PLD-ARV		25
⊖	HUNTER AUTOMATIC FLUSH VALVE, INSTALL ONE IN EACH ZONE			25

PIPE SIZING LEGEND	
3/4" SCH 40 PVC	(0-8 GPM)
1" SCH 40 PVC	(8-12 GPM)
1-1/4" SCH 40 PVC	(12-22 GPM)
1-1/2" SCH 40 PVC	(22-30 GPM)
2" SCH 40 PVC	(30-50 GPM)

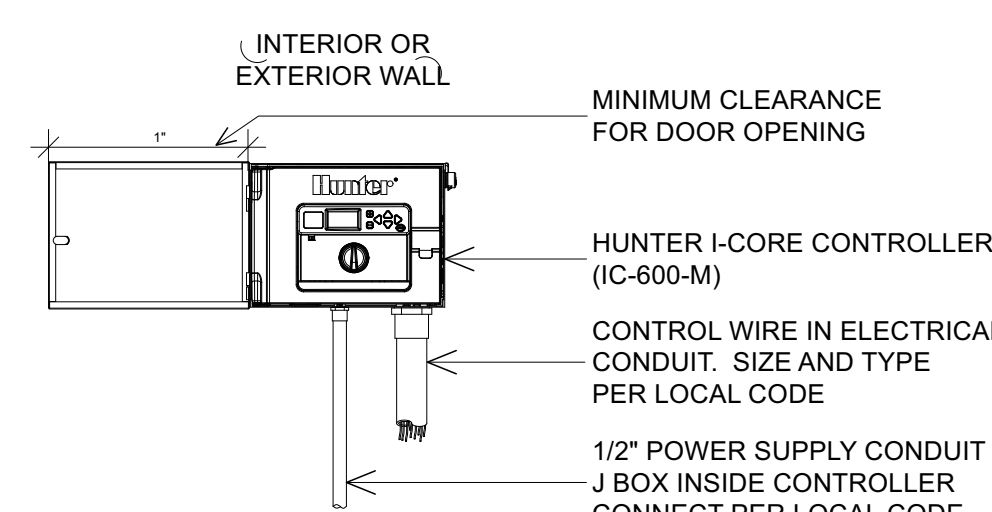
CONTROLLER A VALVE KEY			
VALVE	SIZE	GPM	TYPE
1	1"	2.25	Drip
2	1"	4.9	Drip
3	1"	5.5	Drip
4	1"	3.2	Drip
5	1"	18.7	Spray Heads
6	1"	10.2	Drip
7	1"	14.5	Spray
8	1"	10.3	Drip
9	1"	14.8	Spray
10	1"	8.5	Drip
11	1"	5.6	Drip
12	1"	7.4	Drip
13	1"	9.5	Drip
14	1"	10.5	Drip
15	1"	8.6	Drip
16	1"	7.2	Drip
17	1"	19.6	Spray
18	1"	4.5	Drip

### IRRIGATION NOTES:

- Design assumes static water pressure at the source to be 50 PSI. Notify designer if PSI is below 50 PSI.
- All irrigation laterals, driplines, valves, controllers, and mainlines are shown diagrammatically, align in planting beds next to paved areas.
- Landscape architect is not responsible for correcting any irrigation connections, inconsistencies, or piping layout. Contractor is responsible for verifying all irrigation component locations and layout prior to construction.
- Contractor to provide sleeving under all paved areas for irrigation piping.
- Contractor to verify irrigation sleeve locations under all paving as needed to avoid underground utilities.
- Group at least two control valves in valve boxes, locations shown on the plan are diagrammatic.
- Rain sensor to be mounted on a west or south facing wall, metal cabinet, pole, or gutter.
- Contractor to verify irrigation P.O.C, and at least 50 PSI at the source, and install approved backflow prevention device.
- Contractor to verify irrigation system is functioning properly and will provide full coverage for all planting areas.
- Water new plants immediately after installation, and every other day during the spring and summer months, and as needed in the fall.
- All plants and lawn areas shall be watered for the first three seasons to help plant roots get established. After three seasons, reduce the amount of irrigation applied. Only run irrigation during drought and/or hot summer days.

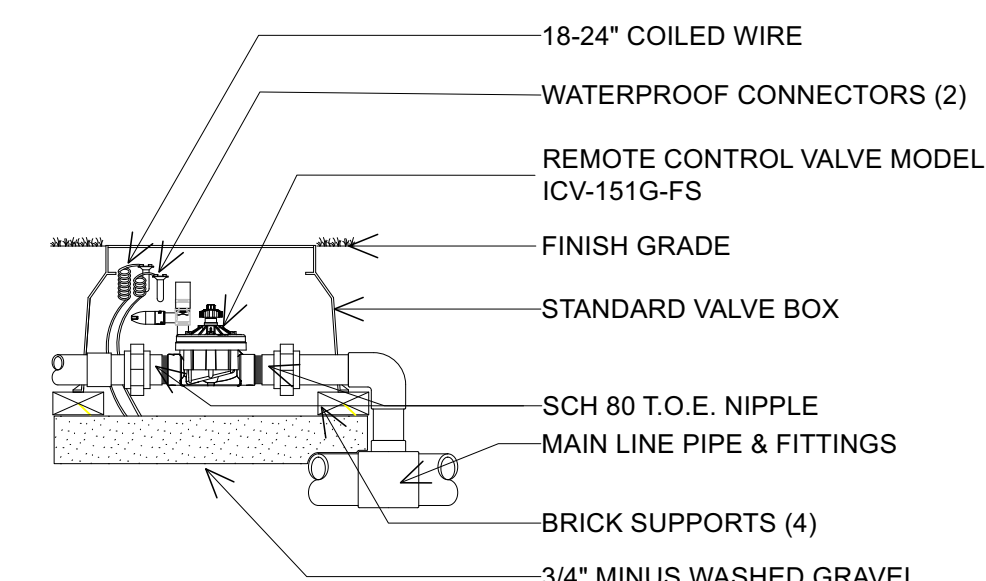


ICV GLOBE VALVE  
NTS

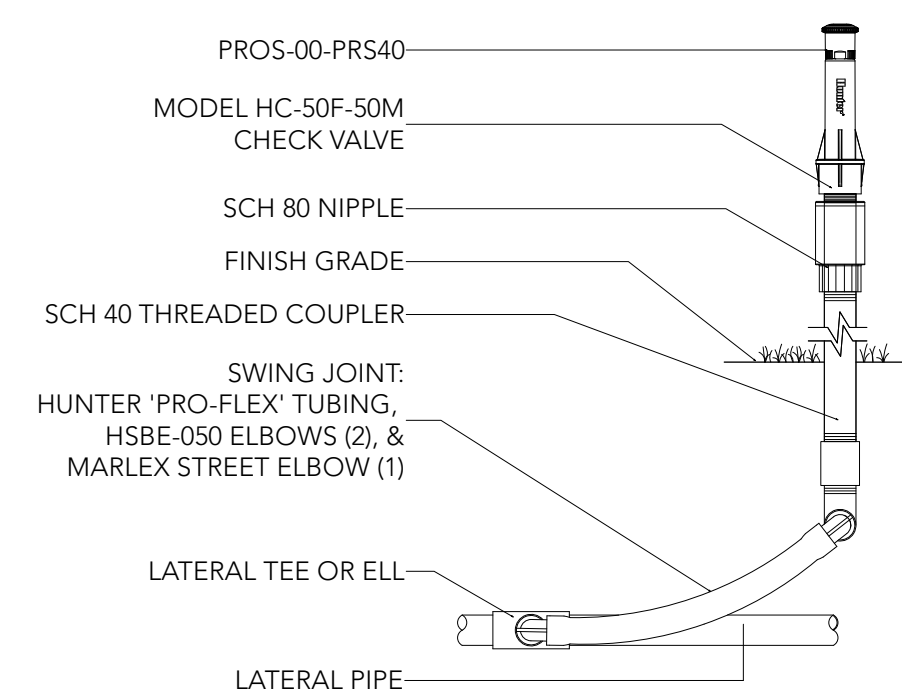


\*NOTE\* SPECIFY 6, 12, 18, 24, 30, 36, 42 STATION MODEL CONTROLLER. MOUNT CONTROLLER WITH LCD SCREEN AT EYE LEVEL. CONTROLLER SHALL BE HARD-WIRED TO GROUNDED 110 or 220 VAC SOURCE.

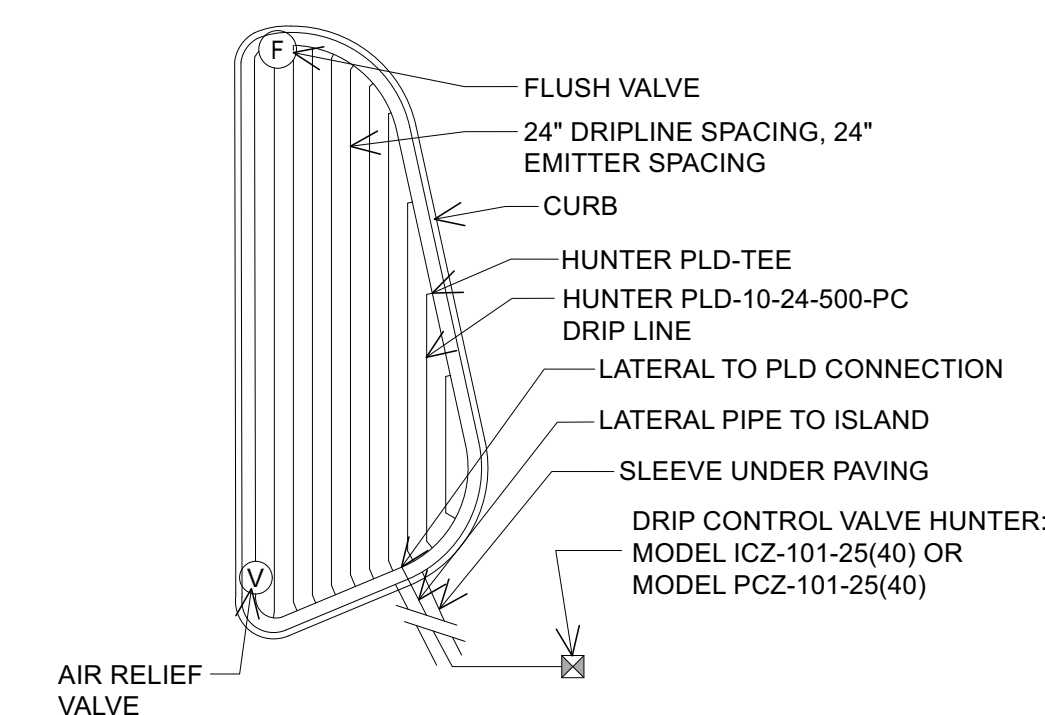
METAL CONTROLLER DETAIL  
NTS



ICZ DRIP CONTROL ZONE KIT  
NTS



MP ROTATOR SPRINKLER DETAIL  
NTS



DRIPLINE LAYOUT DETAIL  
NTS