



**Notes:**

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Data Source:

Projection: NAD 1983 StatePlane Washington South FIPS 4602 Feet

**FIGURE 1. Vicinity Map**

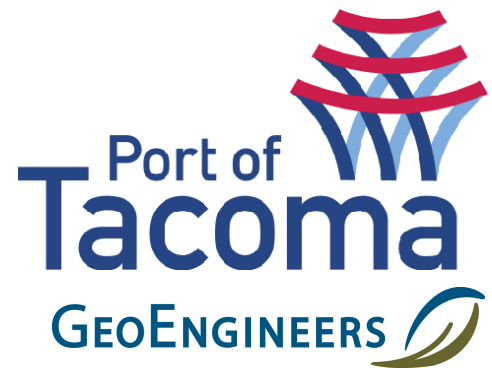
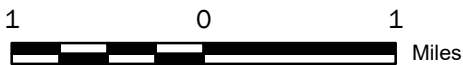
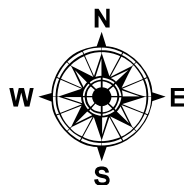
Lower Wapato Creek Habitat Project

Port of Tacoma

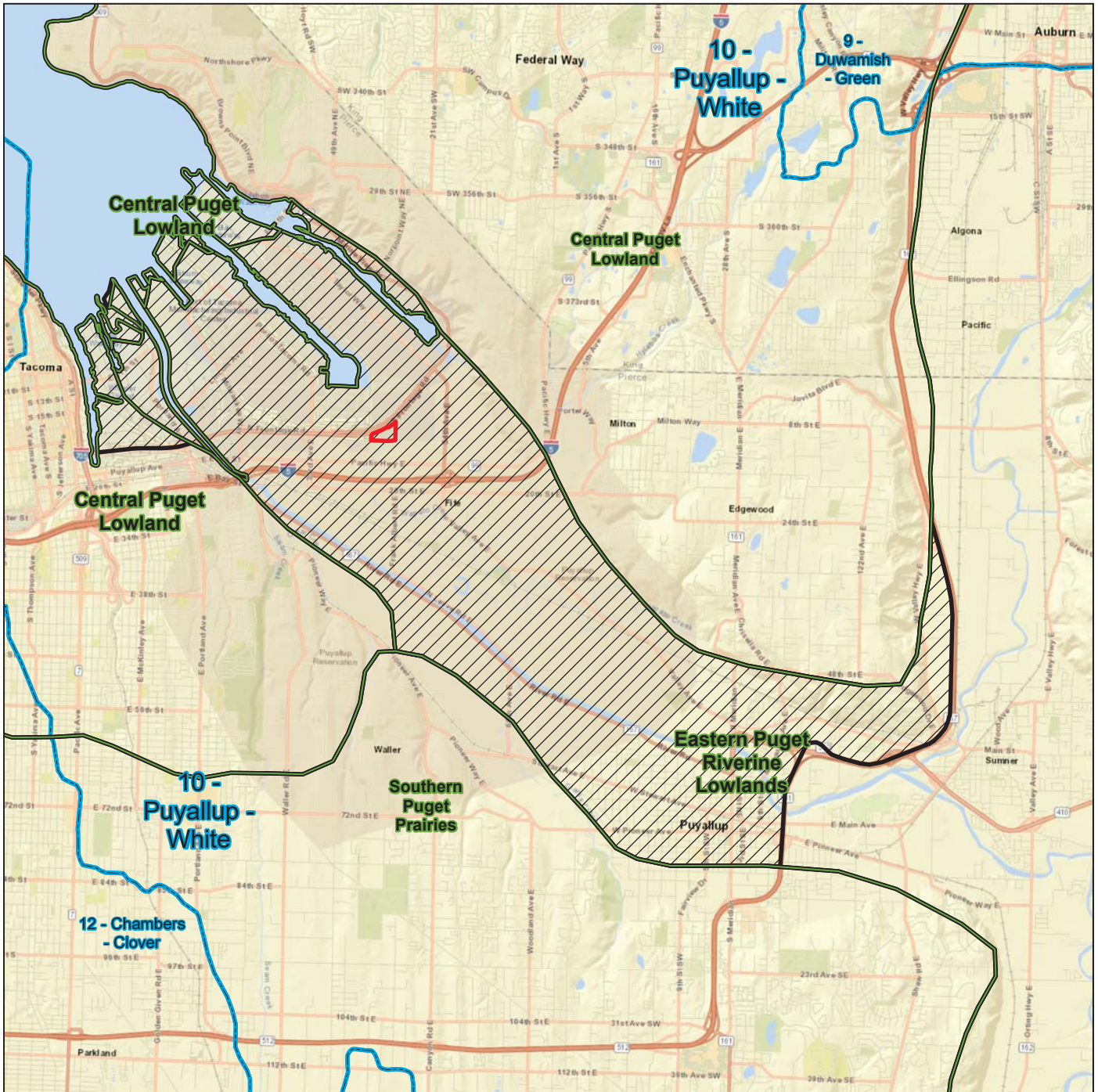
DATE: 1/25/2021

**Legend**

 Project Area







**FIGURE 2. Geographic Service Area**

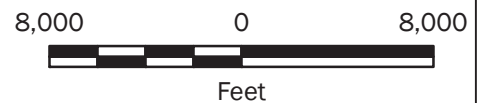
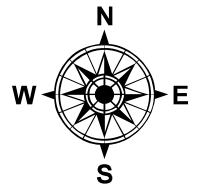
Lower Wapato Creek Habitat Project

Port of Tacoma

DATE: 1/25/2021

**Legend**

- Project Site
- Geographic Service Area
- Ecoregions**
- Water Resource Inventory Areas**



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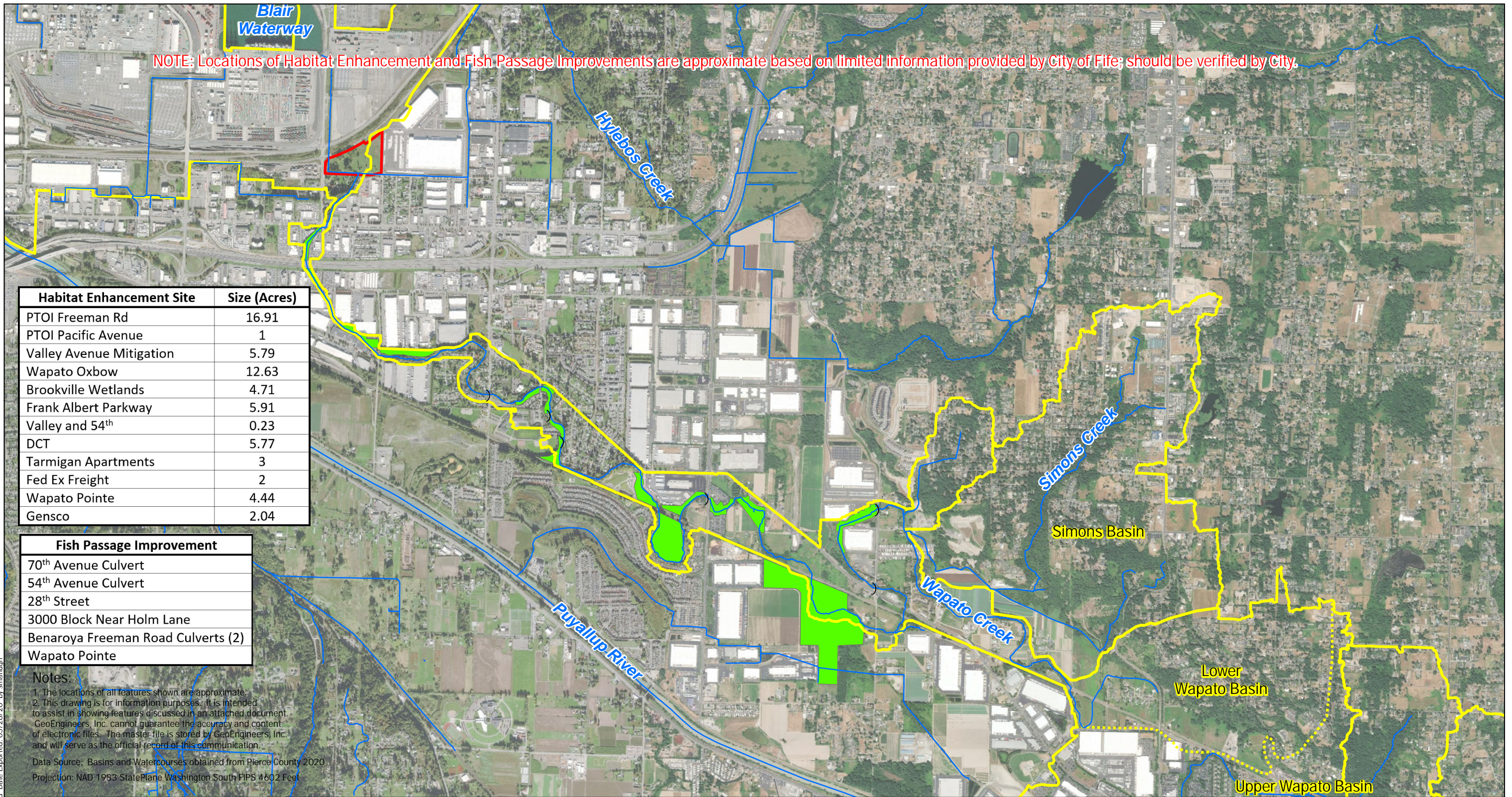
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 Projection: NAD 1983 StatePlane Washington South FIPS 4602 Feet

Document Name: Fig2\_SA\_revised\_11/6/2020 9:56:37 AM smm





NOTE: Locations of Habitat Enhancement and Fish Passage Improvements are approximate based on limited information provided by City of Fife; should be verified by City.



Habitat Enhancement Site	Size (Acres)
PTOI Freeman Rd	16.91
PTOI Pacific Avenue	1
Valley Avenue Mitigation	5.79
Wapato Oxbow	12.63
Brookville Wetlands	4.71
Frank Albert Parkway	5.91
Valley and 54 <sup>th</sup>	0.23
DCT	5.77
Tarmigan Apartments	3
Fed Ex Freight	2
Wapato Pointe	4.44
Gensco	2.04

Fish Passage Improvement
70 <sup>th</sup> Avenue Culvert
54 <sup>th</sup> Avenue Culvert
28 <sup>th</sup> Street
3000 Block Near Holm Lane
Benaroya Freeman Road Culverts (2)
Wapato Pointe

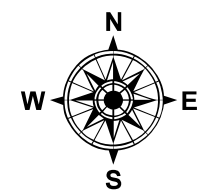
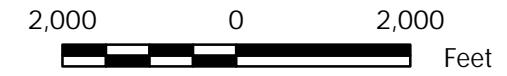
Notes:  
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 Data Source: Basins and Watercourses obtained from Pierce County 2020  
 Projection: NAD 1983 StatePlane Washington South FIPS 4602 Feet

**FIGURE 3. Wapato Creek Watershed**

Lower Wapato Creek Habitat Project

Port of Tacoma

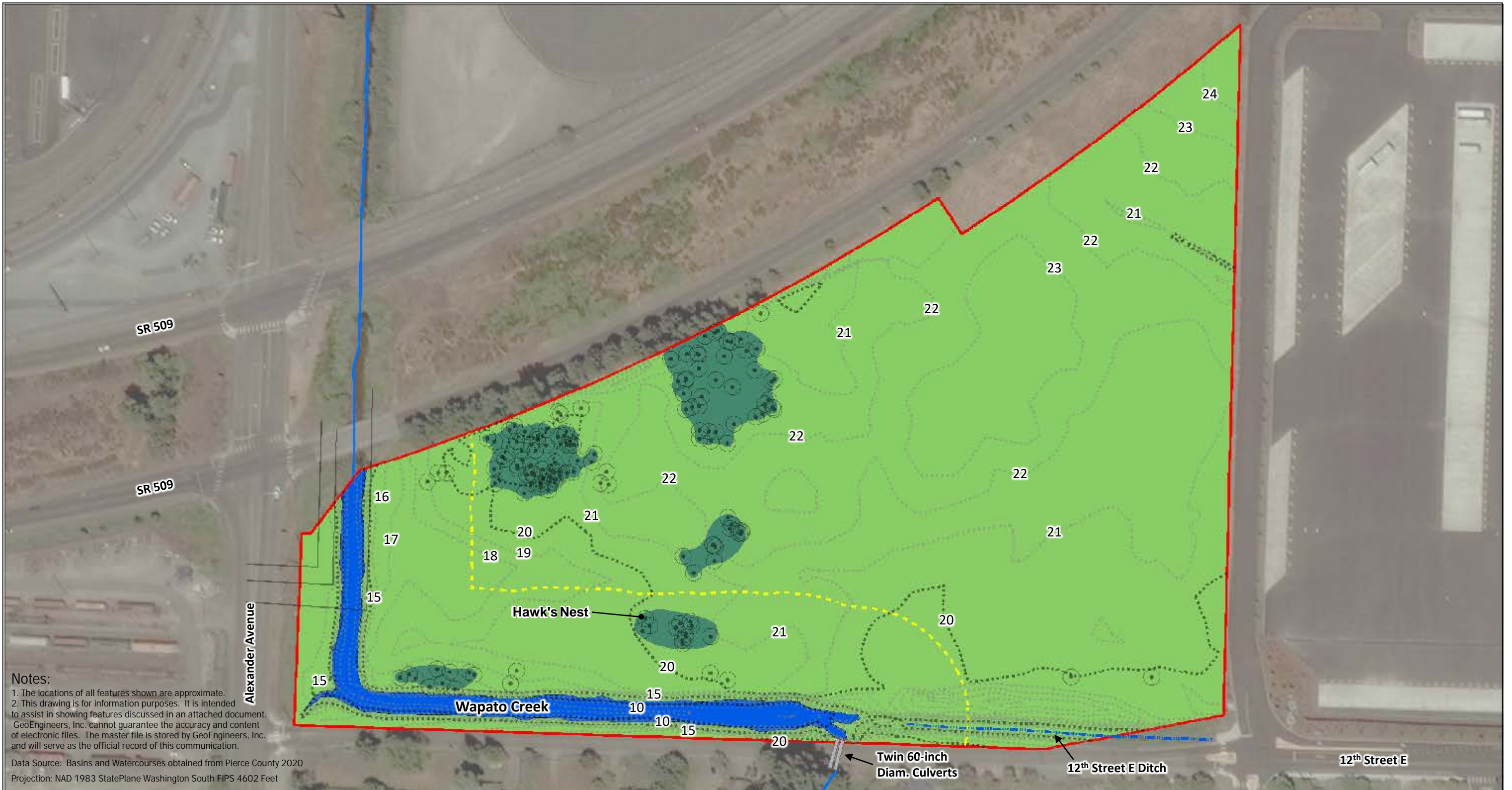
DATE: 1/25/2021



- Legend**
- Project Area
  - Habitat Enhancement (Approximate)
  - Fish Passage Improvement (Approximate)
  - Watercourses
  - Basins
  - Approximate Lower Wapato Basin Boundary

C:\Users\smahugh\MP\Watershed\_NO\_TB.mxd Date Exported: 05/26/20 by smahugh



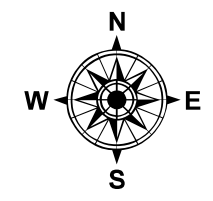


Notes:  
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Data Source: Basins and Watercourses obtained from Pierce County 2020  
 Projection: NAD 1983 StatePlane Washington South FIPS 4602 Feet

**FIGURE 4. Existing Conditions**

Lower Wapato Creek Habitat Project  
 Port of Tacoma  
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**Legend**

- Project Area
- 12th Street Ditch Centerline
- Wapato Creek 150' Buffer
- Upland Grasses with Invasive
- Upland Forested with Invasive Understory
- Wapato Creek (Approx. OHW/HTL)
- Existing Tree
- 1-Foot Contours
- 5-Foot Contours

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 M SiteWorkshop



Notes:

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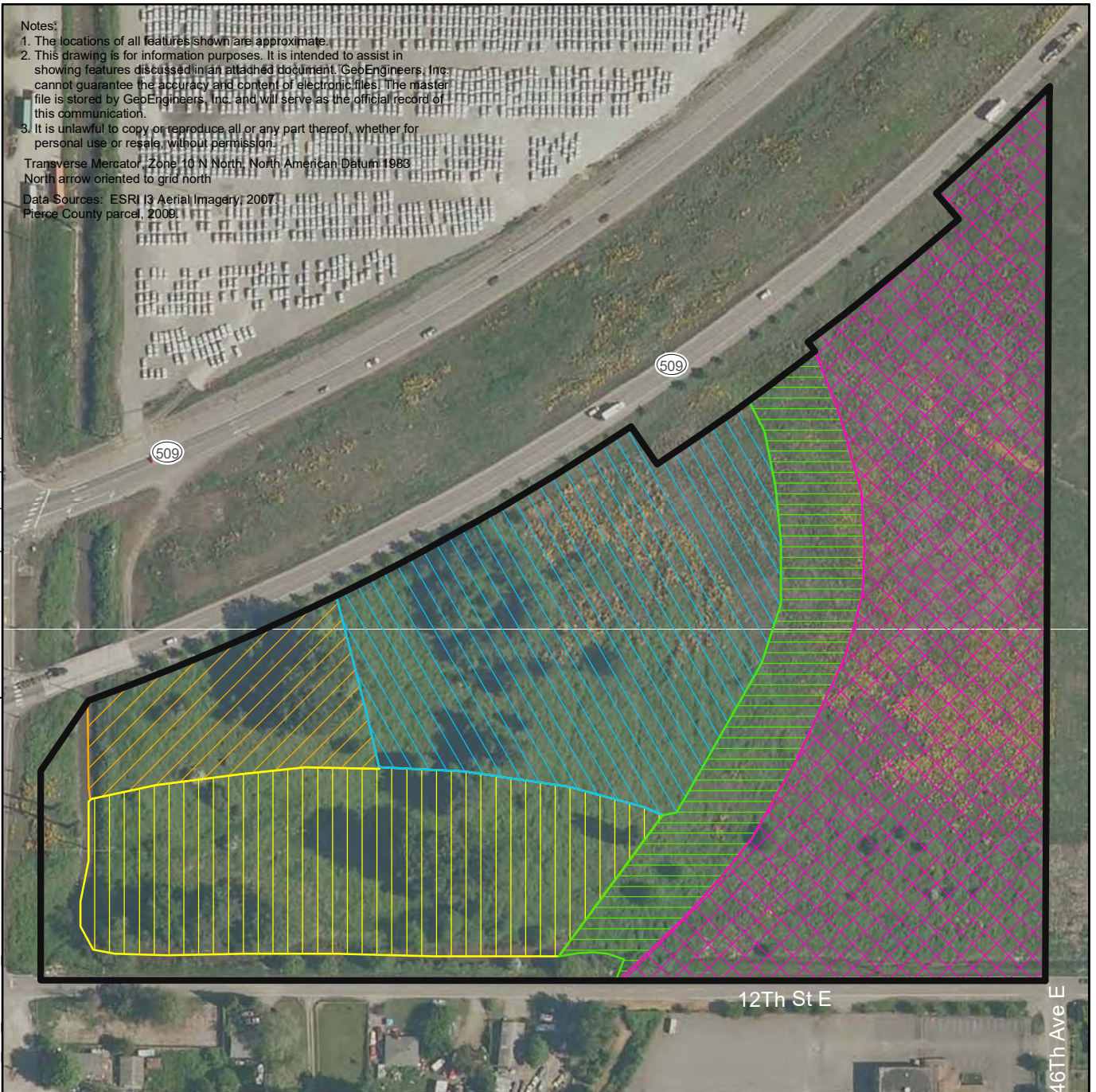
Transverse Mercator, Zone 10 N North, North American Datum 1983  
North arrow oriented to grid north

Data Sources: ESRI (3 Aerial Imagery; 2007)  
Pierce County parcel, 2009

Map Revised: 12/3/10, KKS, dbc, ras, tck

Path: \\Tact\projects\0\0454094\GIS\0454094.15\_F4\_FillLocs\_Parcel\14.mxd

Office: TAC









**FIGURE 5. Approximate Fill Locations, Thicknesses and Sources**

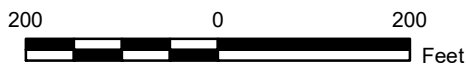
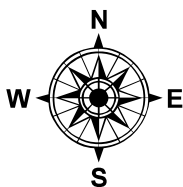
Lower Wapato Creek Habitat Project

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**Legend**

-  Hydraulic fill, generally 4 to 6 feet thick
-  Hydraulic fill, generally 6 to 12 feet thick
-  Hydraulic fill/PORTAC fill, generally 3 to 5 feet thick
-  Unknown fill source, generally 4 to 5 feet thick
-  No fill, mature soil at ground surface
-  Site Boundary









Port of Tacoma

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MOTT MACDONALD LANDSCAPE ARCHITECTURE



# PROPOSED HABITAT TYPES

-  PALUSTRINE FORESTED WETLAND (PFO) - 2.91 AC (CREDITABLE)
-  ESTUARINE EMERGENT WETLAND (EEM) - 4.04 AC (CREDITABLE); 0.05 AC (NON-CREDITABLE)
-  FORESTED RIPARIAN UPLAND (UPL) - 0.84 AC (CREDITABLE); 7.40 (NON-CREDITABLE)
-  WAPATO CREEK / INTERTIDAL MUD FLAT AREA - 2.23 AC (CREDITABLE); 0.20 (NON-CREDITABLE)
-  ROW / VEGETATED FILTER STRIP - 0.85 AC (NON-CREDITABLE)
-  CREDITABLE / NON-CREDITABLE BOUNDARY
  - TOTAL PROPOSED CREDITABLE ACREAGE - 10.02 ACRES
  - TOTAL NON-CREDITABLE BUFFER AREA (ON-SITE) - 7.59 ACRES (EXCLUDING ACCESS PADS)

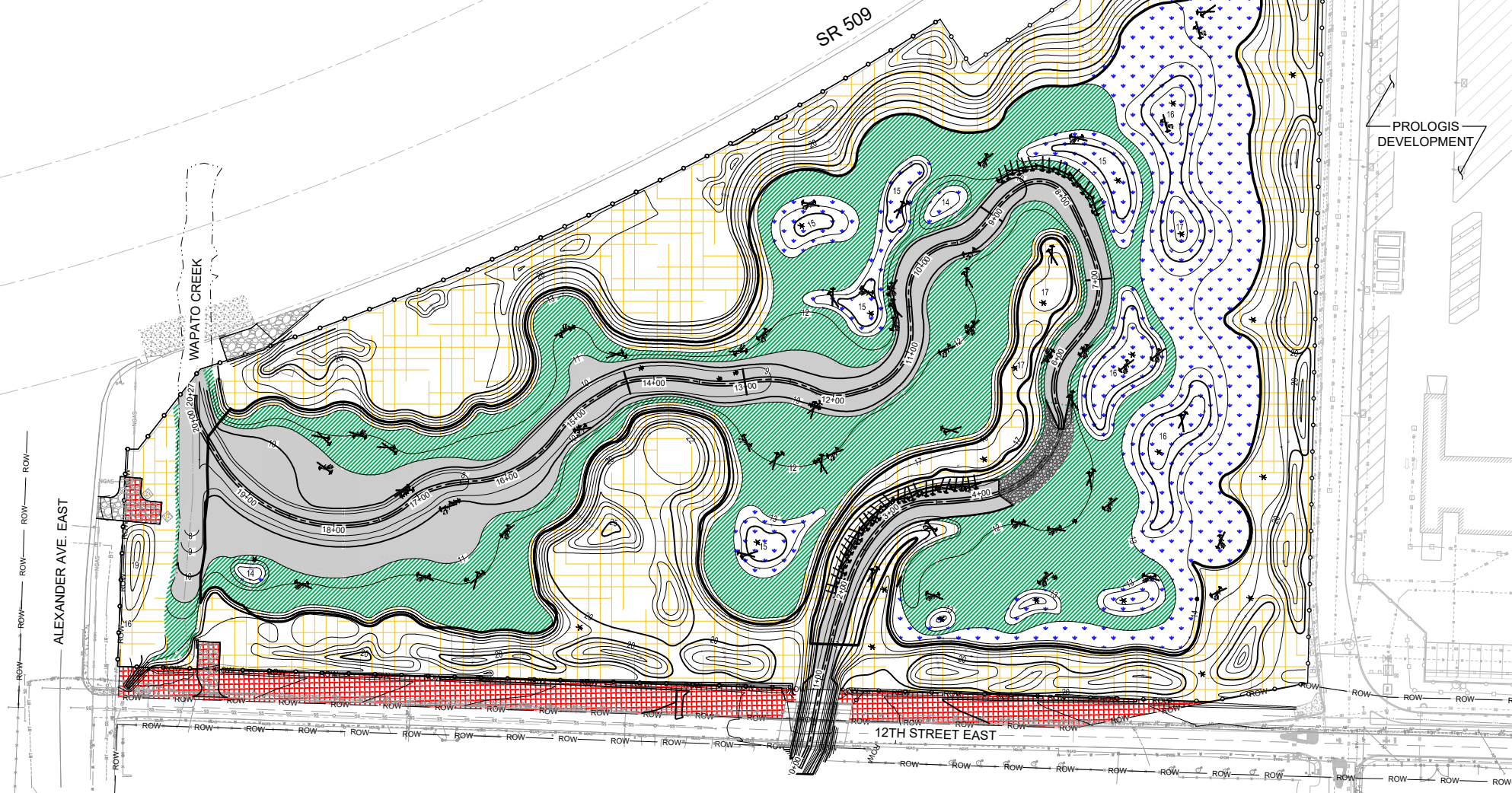
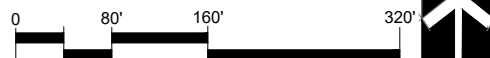


FIGURE 6. PROPOSED HABITAT TYPES





Lower Wapato Creek Habitat Project

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DATE: 1/25/2021

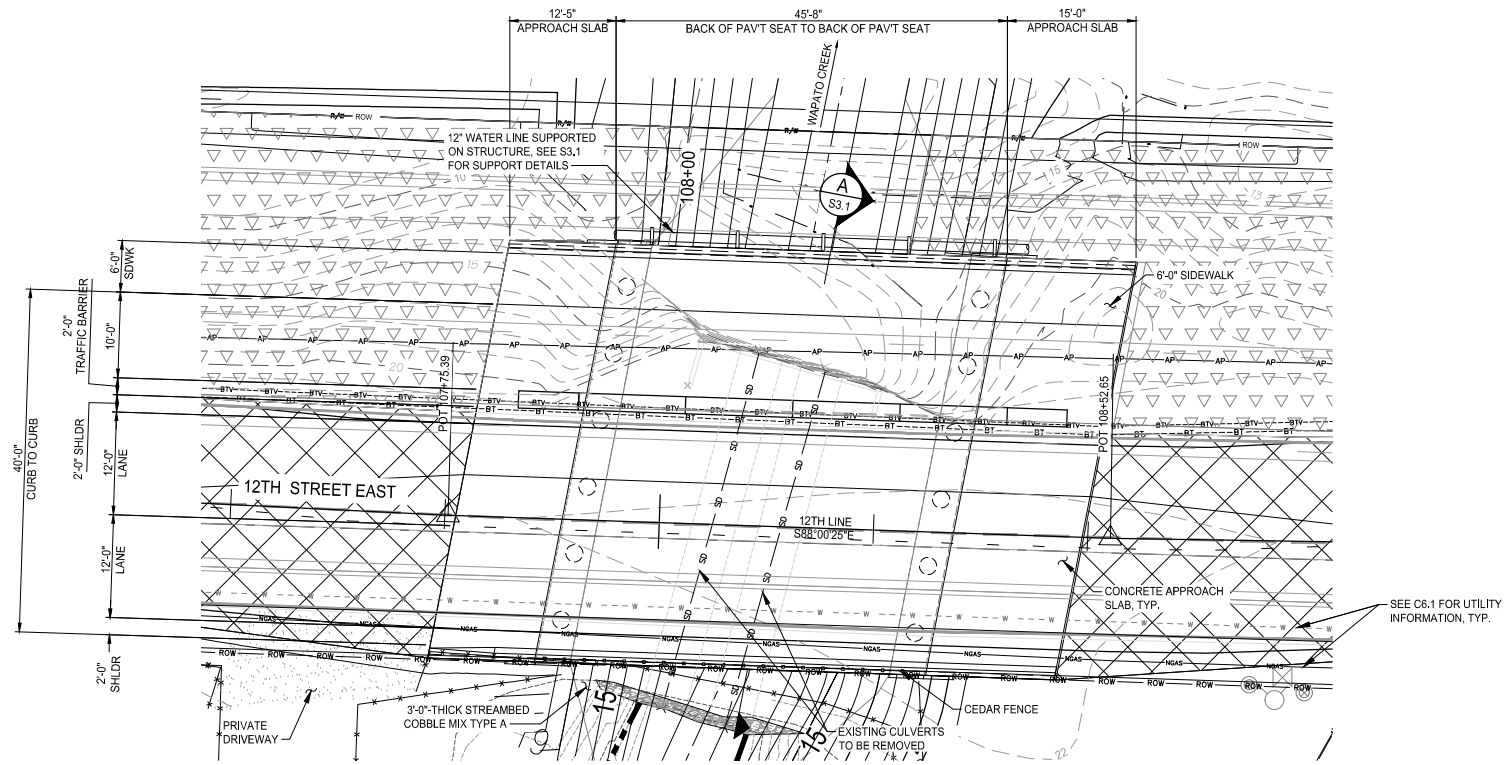


## LEGEND

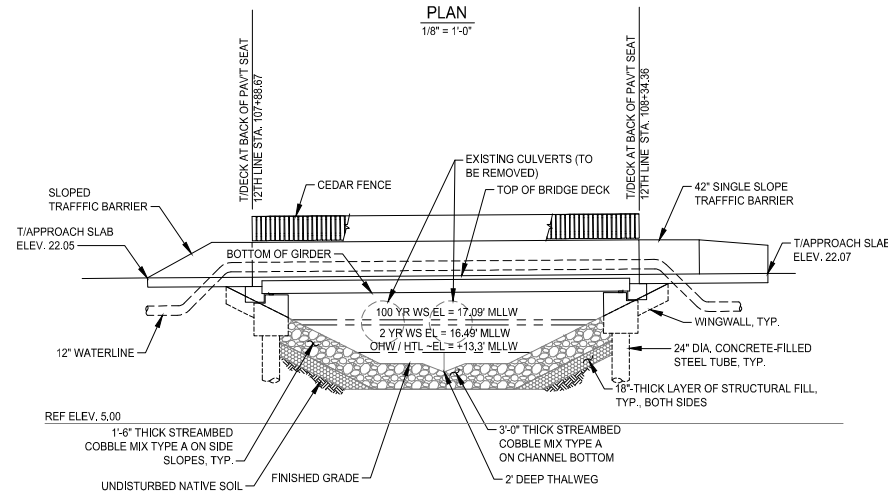
-  # — PROPOSED CONTOUR
-  - - - NEW STREAM CENTERLINE
-  \* SNAG
-  LARGE WOODY MATERIAL







PLAN  
1/8" = 1'-0"



ELEVATION  
1/8" = 1'-0"

FIGURE 7. 12TH STREET EAST BRIDGE CROSSING

Lower Wapato Creek Habitat Project  
Port of Tacoma  
DATE: 1/25/2021

- LEGEND**
- EXISTING CONTOUR
  - # — PROPOSED CONTOUR
  - #+## — NEW STREAM CENTERLINE





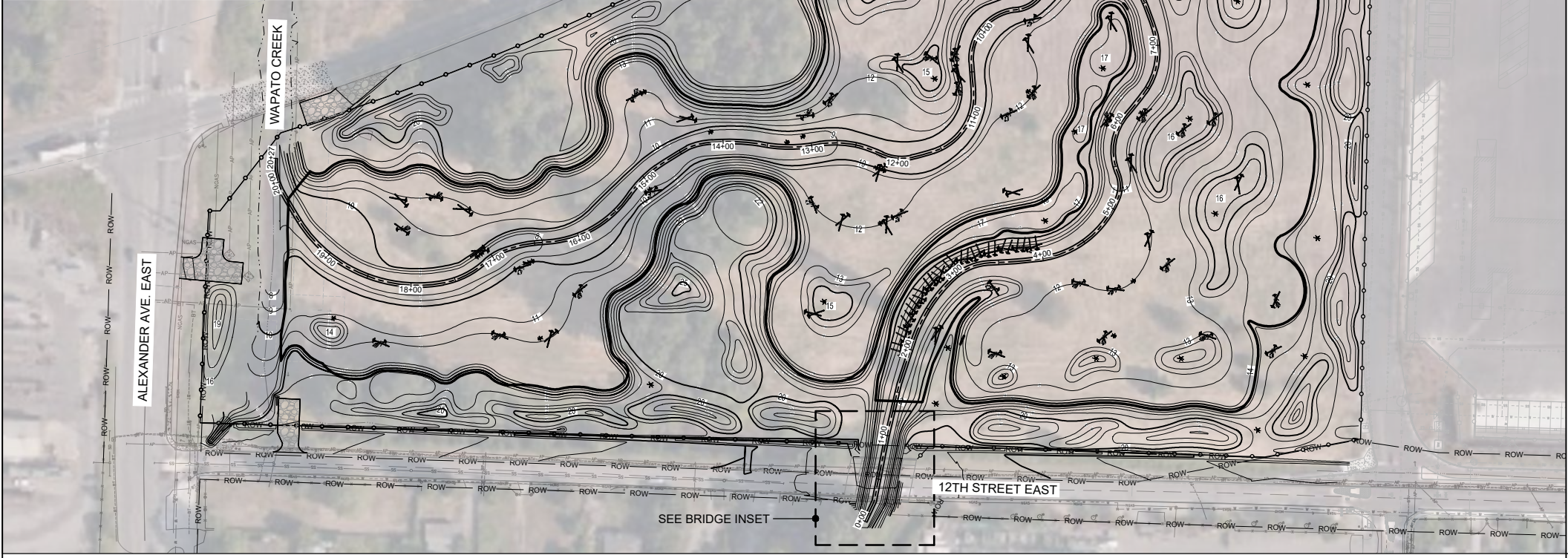
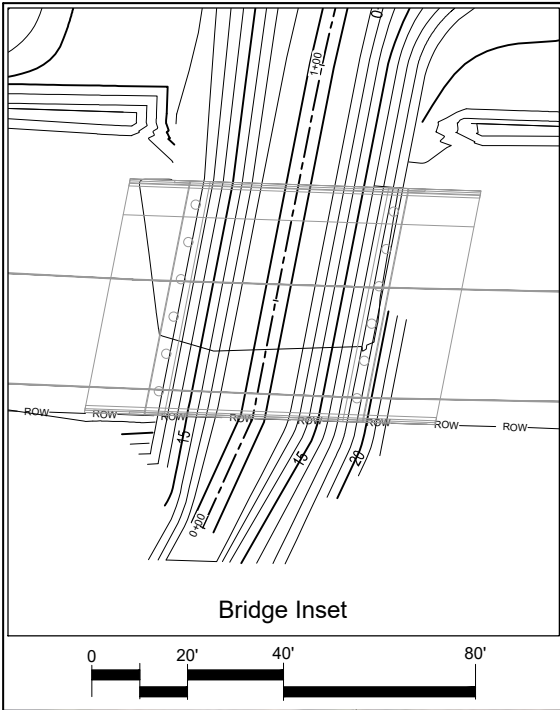
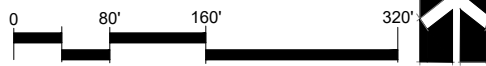


FIGURE 8. GRADING PLAN

Lower Wapato Creek Habitat Project

Port of Tacoma

DATE: 1/25/2021



LEGEND

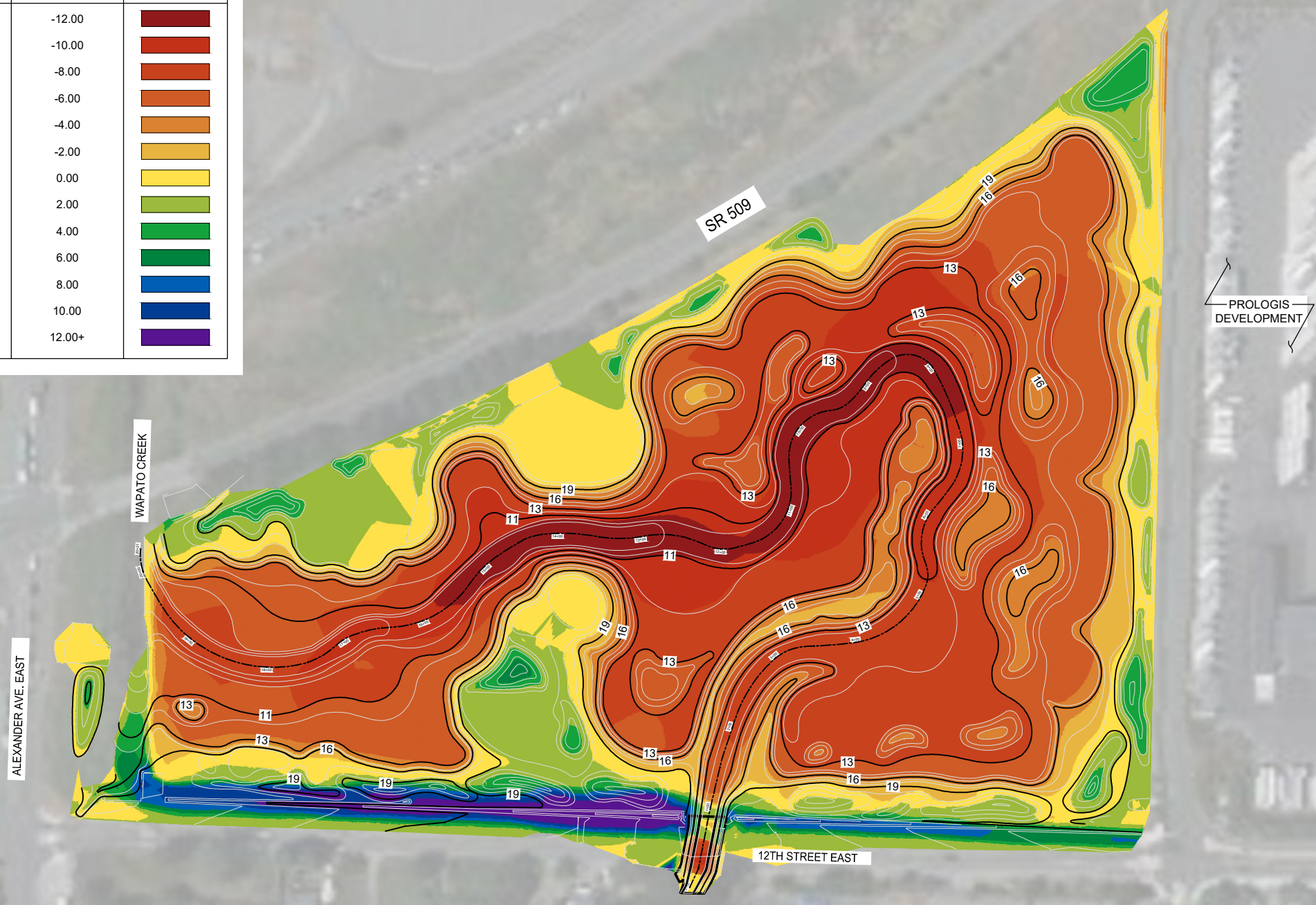
- # — PROPOSED CONTOUR
- #—#— NEW STREAM CENTERLINE
- \* SNAG
- \* LARGE WOODY MATERIAL





**PROPOSED CUT AND FILL RANGES (IN FEET)**

MIN ELEVATION	MAX ELEVATION	COLOR
-16.00	-12.00	Dark Red
-12.00	-10.00	Red
-10.00	-8.00	Dark Orange
-8.00	-6.00	Orange
-6.00	-4.00	Light Orange
-4.00	-2.00	Yellow
-2.00	0.00	Light Green
0.00	2.00	Green
2.00	4.00	Dark Green
4.00	6.00	Blue-Green
6.00	8.00	Blue
8.00	10.00	Dark Blue
10.00	12.00+	Purple



**FIGURE 9. GRADING PLAN HEAT MAP**

Lower Wapato Creek Habitat Project

Port of Tacoma

DATE: 1/25/2021



**LEGEND**

- # — PROPOSED CONTOUR
- #+## — NEW STREAM CENTERLINE
- \* SNAG
- \* LARGE WOODY MATERIAL





# SEED SCHEDULE

(ALL DISTURBED SOIL AREAS ABOVE ELEVATION 11 TO BE SEEDED)

UPPER SEED MIX 9.0 AC TOTAL	LBS PER AC	TOTAL LBS
ACHILLEA MILLEFOLIUM / WHITE YARROW	0.50	4.50
ELYMUS GLAUCUS / BLUE WILDRYE	10.00	90.00
ERIGERON SPECIOSUS / SHOWY FLEABANE	0.50	4.50
LUPINUS POLYPHYLLUS / BIGLEAF LUPINE	4.00	36.00
LUPINUS BICOLOR / TWO COLOR LUPINE	4.00	36.00
HORDEUM BRACHYANTHERUM / MEADOW BARLEY	8.00	72.00
TRITICUM AESTIVUM / STERILE WHEAT	7.00	63.00
GRASS (REGREEN™ OR EQUAL)	3.00	27.00
POA SANBERGII / CANBY BLUEGRASS	0.25	2.25
ARTEMISIA SUKSDORFII	0.05	0.45
ANAPHALIS MARGARITACEA	0.12	1.08
ERIOPHYLLUM LANATUM	1.00	9.00
LUPINUS LITTORALIS	0.05	0.45
FRAGARIA CHILOENSIS	0.03	0.27
AMBROSIA CHAMISSONIS	0.70	6.30
GRINDELIA INTEGRIFOLIA	0.09	0.81
POTENTILLA PACIFICA	0.30	2.70
PRUNELLA VULGARIS VAR. LANCEOLATA	0.25	2.25
SIDALCEA HENDERSONII	0.03	0.27
ASTER SUBSPICATUS	2.00	18.00
DESCHAMPSIA CAESPITOSA	0.16	1.44
PLECTRITIS CONGESTA	0.16	1.44

LOWER SEED MIX 2.9 AC TOTAL	LBS PER AC	TOTAL LBS
BROMINUS CARINATUS / CALIFORNIA BROME GRASS	3.00	8.70
ELYMUS GLAUCUS / BLUE WILDRYE	3.00	8.70
POA SANBERGII / CANBY BLUEGRASS	2.00	5.80
GLYCERIA OCCIDENTALIS / WESTERN MANNA GRASS	4.00	11.16
DECHAMPsia CAESPITOSA / TUFTED HAIR GRASS	3.00	8.70
ELEOCHARIS PALUSTRIS / COMMON SPIKE RUSH	4.00	11.16
CAREX OBNUPTA / SLOUGH SEDGE	5.00	14.50
GRINDELIA INTEGRIFOLIA	0.35	1.02
POTENTILLA PACIFICA	0.09	0.26
SIDALCEA HENDERSONII	0.50	1.45
ASTER SUBSPICATUS	0.05	0.15
LATHYRUS MARITIMUS	0.50	1.45
LATHYRUS LITTORALIS	0.50	1.45
PLECTRITIS CONGESTA	0.16	0.46

EMERGENT SEED MIX 4.1 AC TOTAL	LBS PER AC	TOTAL LBS
CAREX LYNGBYEI / LYNDY'S SEDGE	3.00	12.30
CAREX OBNUPTA / SLOUGH SEDGE	3.60	14.76
CAREX STIPATA / AWWFRUITED SEDGE	1.20	4.92
ELEOCHARIS PALUSTRIS / COMMON SPIKE RUSH	1.20	4.92
JUNCUS ACUMINATUS / TAPERED RUSH	0.06	0.25
JUNCUS BALTICUS / BALTIC RUSH	1.20	4.92
JUNCUS ENSIFOLIUS / DAGGERLEAF RUSH	0.06	0.25
SCIRPUS ACUTUS / HARDSTEM BULRUSH	3.20	13.12
SCIRPUS AMERICANUS / TULE	2.40	9.84
SCIRPUS MARITIMUS / SALTMARSH BULRUSH	3.00	12.30

## LEGEND

- EMERGENT SEED MIX
- LOWER SEED MIX
- UPPER SEED MIX

\*PRIOR TO SEEDING, REMOVE ALL INVASIVE VEGETATION WHILE PRESERVING EXISTING TREE ROOTS

## NOTES

1. COVER ALL SEEDED AREAS WITH JUTE MAT (SEE SPECS)

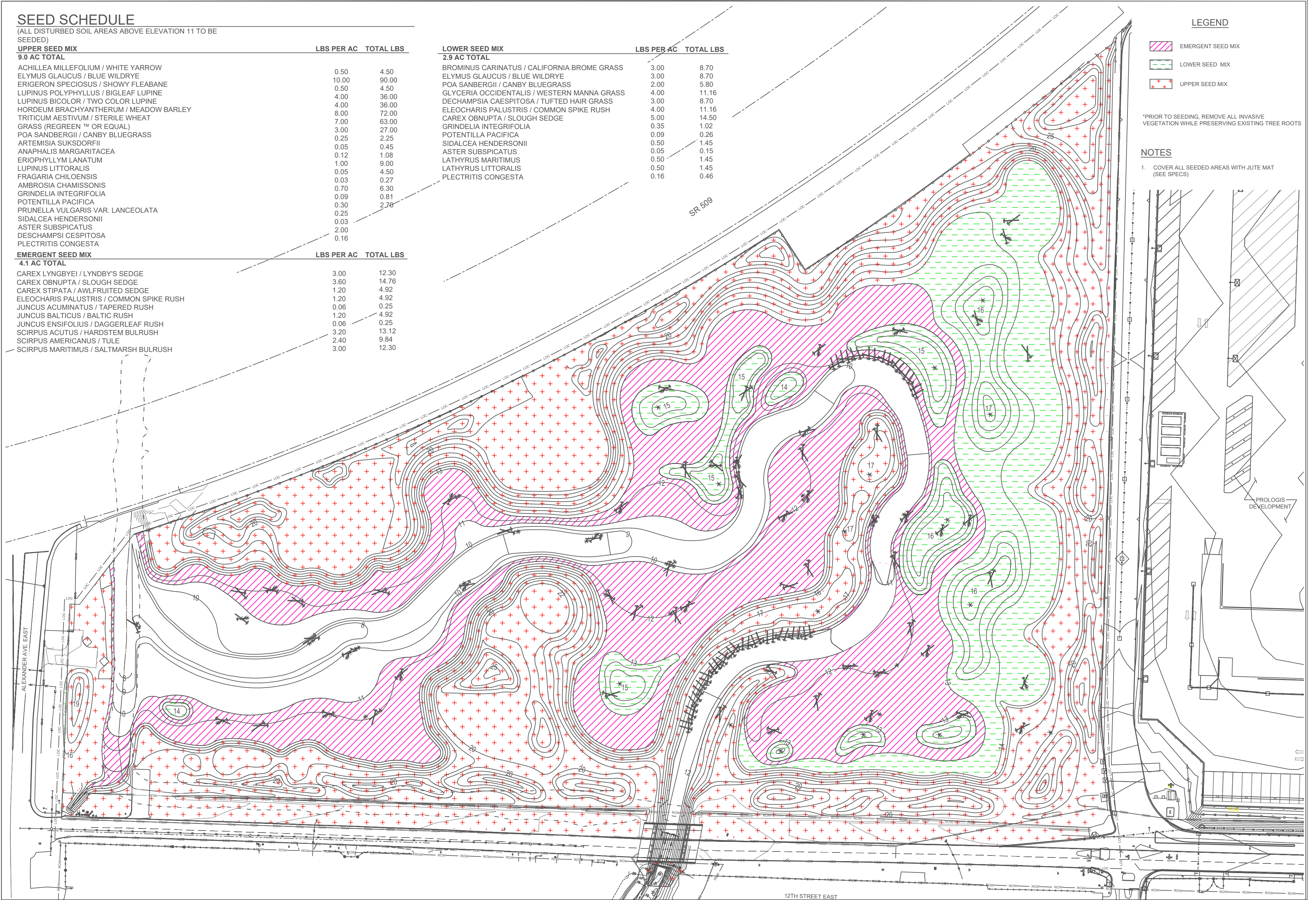


FIGURE 10A. PHASE 1 PLANTING PLAN

Lower Wapato Creek Habitat Project

Port of Tacoma

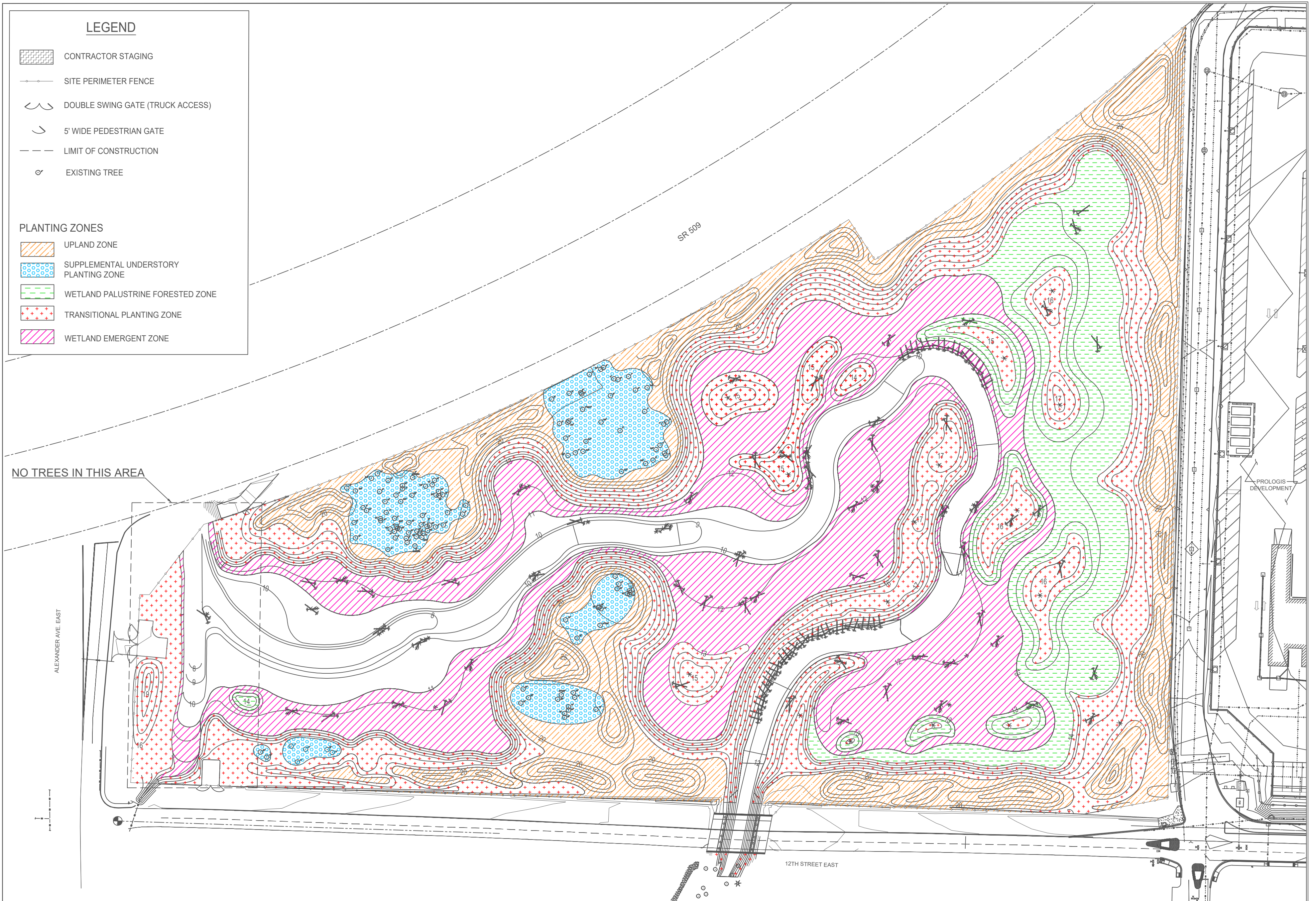
DATE: 1/25/2021

## LEGEND

- # PROPOSED CONTOUR
- #-## NEW STREAM CENTERLINE
- \* SNAG
- LARGE WOODY MATERIAL







**LEGEND**

- CONTRACTOR STAGING
- SITE PERIMETER FENCE
- DOUBLE SWING GATE (TRUCK ACCESS)
- 5' WIDE PEDESTRIAN GATE
- LIMIT OF CONSTRUCTION
- EXISTING TREE

**PLANTING ZONES**

- UPLAND ZONE
- SUPPLEMENTAL UNDERSTORY PLANTING ZONE
- WETLAND PALUSTRINE FORESTED ZONE
- TRANSITIONAL PLANTING ZONE
- WETLAND EMERGENT ZONE

NO TREES IN THIS AREA

ALEXANDER AVE EAST

SR 509

12TH STREET EAST

PROLOGIS DEVELOPMENT

**FIGURE 10B. PHASE 2 PLANTING PLAN**

Lower Wapato Creek Habitat Project  
 Port of Tacoma  
 DATE: 1/25/2021

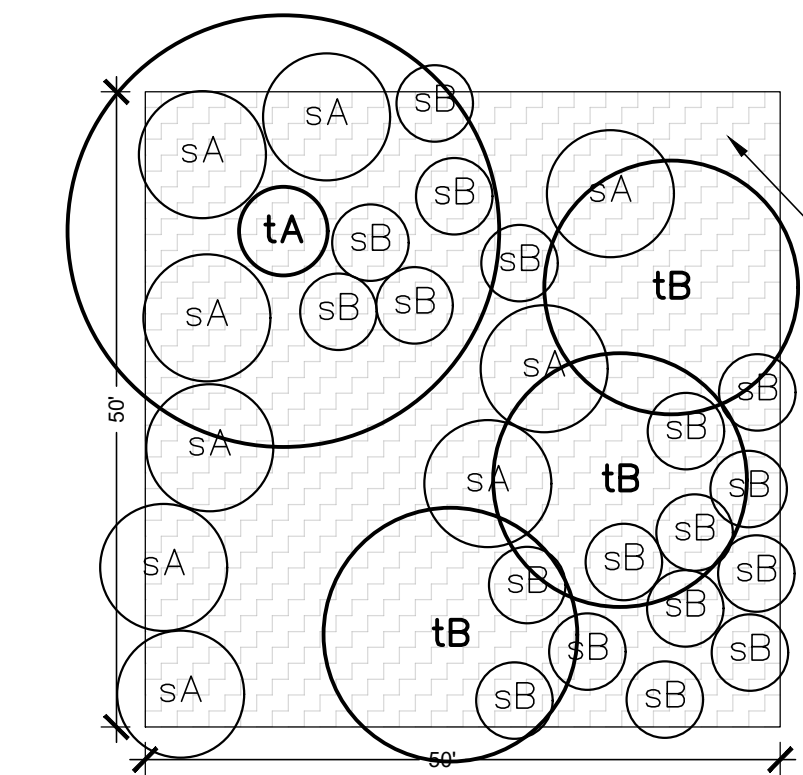


**LEGEND**

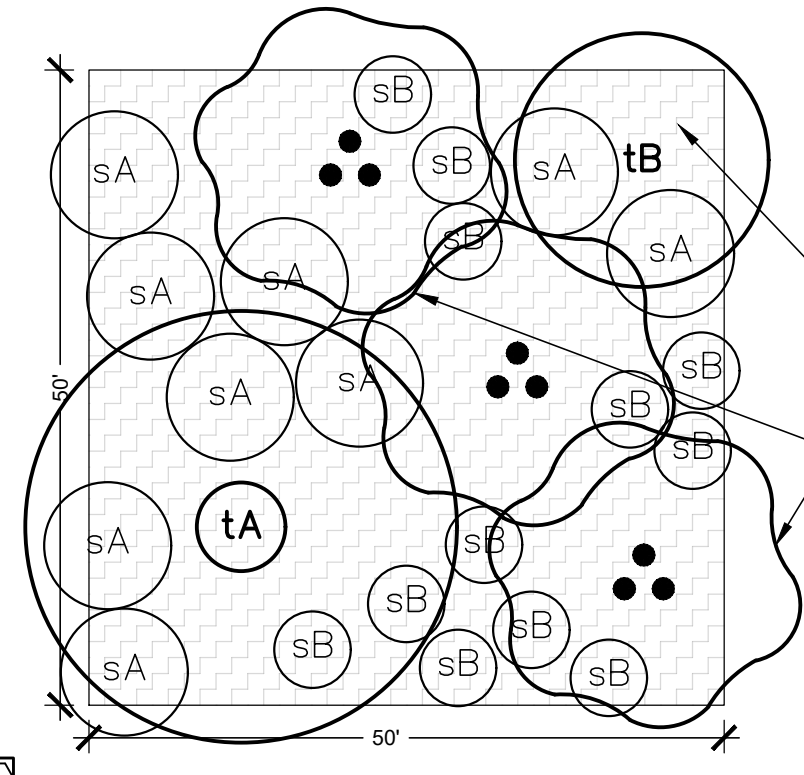
- # PROPOSED CONTOUR
- #-#-# NEW STREAM CENTERLINE
- \* SNAG
- LARGE WOODY MATERIAL







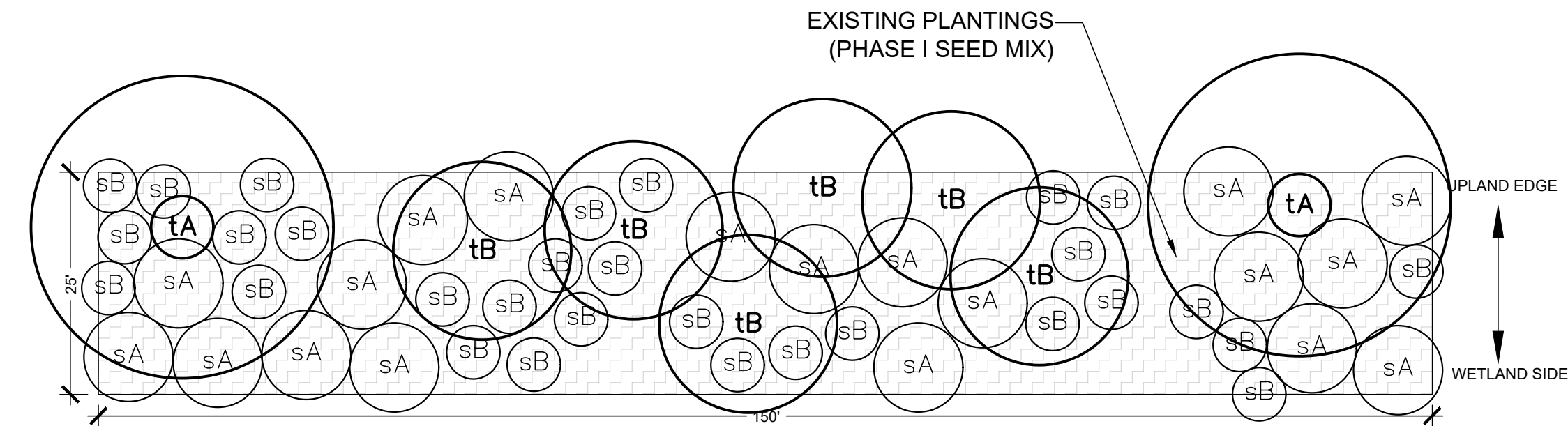
EXISTING PLANTINGS  
(PHASE I SEED MIX)



EXISTING PLANTINGS  
(PHASE I SEED MIX)

EXISTING TREES

SUPPLEMENTAL UNDERSTORY PLANTING ZONE  
(AREAS WITHIN DENSE VEGETATION)

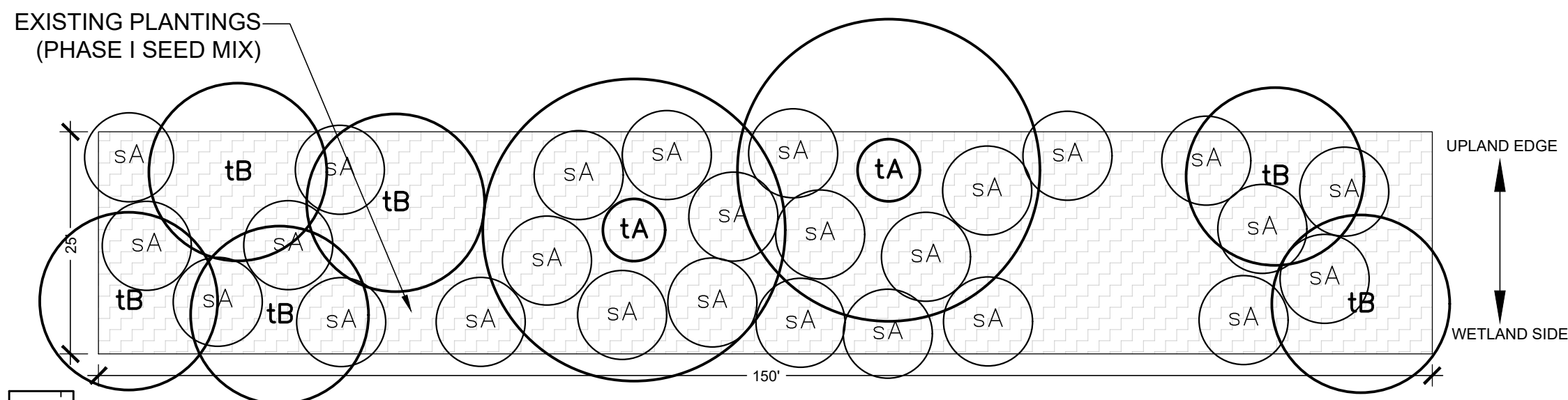


EXISTING PLANTINGS  
(PHASE I SEED MIX)

UPLAND EDGE

WETLAND SIDE

WETLAND PALUSTRINE FORESTED ZONE



EXISTING PLANTINGS  
(PHASE I SEED MIX)

UPLAND EDGE

WETLAND SIDE

TRANSITIONAL PLANTING ZONE

FIGURE 11. TREE AND SHRUB PLANTING ZONES





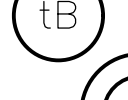

Lower Wapato Creek Habitat Project













Port of Tacoma





DATE: 1/25/2021




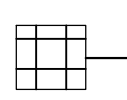









SCIENTIFIC / COMMON NAME	TYPE	ZONE	QTY	SIZE
 ALNUS RUBRA RED ALDER	Tree-B	SUP, U, T	204	10 CU. IN. PLUG
 FRAXINUS LATIFOLIA OREGON ASH	Tree-B	T, W	255	10 CU. IN. PLUG
 PICEA SITCHENSIS SITKA SPRUCE	Tree-A	T, W	70	10 CU. IN. PLUG
 POPULUS BALSAMIFERA BLACK COTTONWOOD	Tree-A	SUP, U	38	10 CU. IN. PLUG
 PSEUDOTSUGA MENZIESII DOUGLAS-FIR	Tree-B	SUP, U	106	10 CU. IN. PLUG
 THUJA PLICATA WESTERN RED CEDAR	Tree-A	SUP, U, T, W	11	10 CU. IN. PLUG

SHRUBS	TYPE	ZONE	QTY	SIZE
 ACER CIRCINATUM VINE MAPLE	Shrub-B	SUP, U	442	10 CU. IN. PLUG
 CORNUS SERICEA RED TWIG DOGWOOD	Shrub-A	W	94	10 CU. IN. PLUG
 CORYLUS CORNUTA WESTERN HAZELNUT	Shrub-B	SUP, U	442	10 CU. IN. PLUG
 CRATAEGUS DOUGLASII BLACK HAWTHORN	Shrub-A	T, W	369	10 CU. IN. PLUG
 LONICERA INVOLUCRATA BLACK TWINBERRY	Shrub-B	W	249	10 CU. IN. PLUG
 MAHONIA AQUIFOLIUM TALL OREGON GRAPE	Shrub-B	SUP, U	444	10 CU. IN. PLUG
 MALUS FUSCA WESTERN CRABAPPLE	Shrub-A	SUP, U	177	10 CU. IN. PLUG
 PHYSOCARPUS CAPITATUS PACIFIC NINEBARK	Shrub-A	T, W	369	10 CU. IN. PLUG
 ROSA GYMNOCARPA BALDHIP ROSE	Shrub-A	SUP, U	177	10 CU. IN. PLUG
 ROSA NUTKANA NOOTKA ROSE	Shrub-A	T, W	369	10 CU. IN. PLUG
 ROSA PISOCARPA PEA-FRUIT ROSE	Shrub-A	SUP, U, T	452	10 CU. IN. PLUG
 SPIRAEA DOUGLASII HARDHACK	Shrub-A	W	95	10 CU. IN. PLUG
 SYMPHORICARPOS ALBUS SNOWBERRY	Shrub-A	SUP, U, T	452	10 CU. IN. PLUG

LIVE CUTTINGS	TYPE	ZONE	QTY	SIZE
 SALIX HOOKERIANA HOOKER'S WILLOW	Shrub-B	W	1240	FIVE (5) 3/4 - 1 1/2" DIA., 36" MIN. LENGTH
 SALIX LUCIDA PACIFIC WILLOW	Tree-A	W	80	FIVE (5) 3/4 - 1 1/2" DIA., 36" MIN. LENGTH
 SALIX SITCHENSIS SITKA WILLOW	Shrub-B	W	1240	FIVE (5) 3/4 - 1 1/2" DIA., 36" MIN. LENGTH
 SALIX SCOULERIANA SCOULER'S WILLOW	Tree-B	T	530	FIVE (5) 3/4 - 1 1/2" DIA., 36" MIN. LENGTH

EMERGENTS - SPACED 24 INCHES O.C.	ZONE	QTY	SIZE
 CAREX LYNGBYEI LYNDBY'S SEDGE	E	6866	10 CU. IN. PLUG
 CAREX OBNUPTA SLOUGH SEDGE	E	6866	10 CU. IN. PLUG
 CAREX STIPATA AWLFRUITED SEDGE	E	6866	10 CU. IN. PLUG
 ELEOCHARIS PALUSTRIS CREEPING SPIKERUSH	E	6866	10 CU. IN. PLUG
 JUNCUS ACUMINATUS TAPERED RUSH	E	6866	10 CU. IN. PLUG
 JUNCUS ENSIFOLIUS DAGGERLEAF RUSH	E	6866	10 CU. IN. PLUG
 SCIRPUS ACUTUS HARDSTEM BULRUSH	E	6866	10 CU. IN. PLUG
 SCIRPUS AMERICANUS TULE	E	6866	10 CU. IN. PLUG
 SCIRPUS MARITIMUM SALTMARSH BULRUSH	E	6866	10 CU. IN. PLUG

SCHEDULE KEY	
<b>ZONES</b>	
SUP:	SUPPLEMENTAL UNDERSTORY PLANTING
U:	UPLAND
T:	TRANSITIONAL
W:	WETLAND PALUSTRINE FORESTED
E:	WETLAND EMERGENT
Tree-A:	SPREADING-TYPE TREE
Tree-B:	GROUPING-TYPE TREE
Shrub-A:	SPREADING-TYPE SHRUB
Shrub-B:	GROUPING-TYPE SHRUB
NOTE: EACH QUANTITY OF LIVE CUTTINGS CONSISTS OF FIVE INDIVIDUAL LIVE CUTTINGS SPACED 1' O.C.	
NOTE: PLANT LAYOUT, QUANTITY, SIZES, & SPACING SUBJECT TO FURTHER REFINEMENT	

FIGURE 12. TREE AND SHRUB PLANTING SCHEDULE

Lower Wapato Creek Habitat Project

Port of Tacoma

DATE: 1/25/2021

