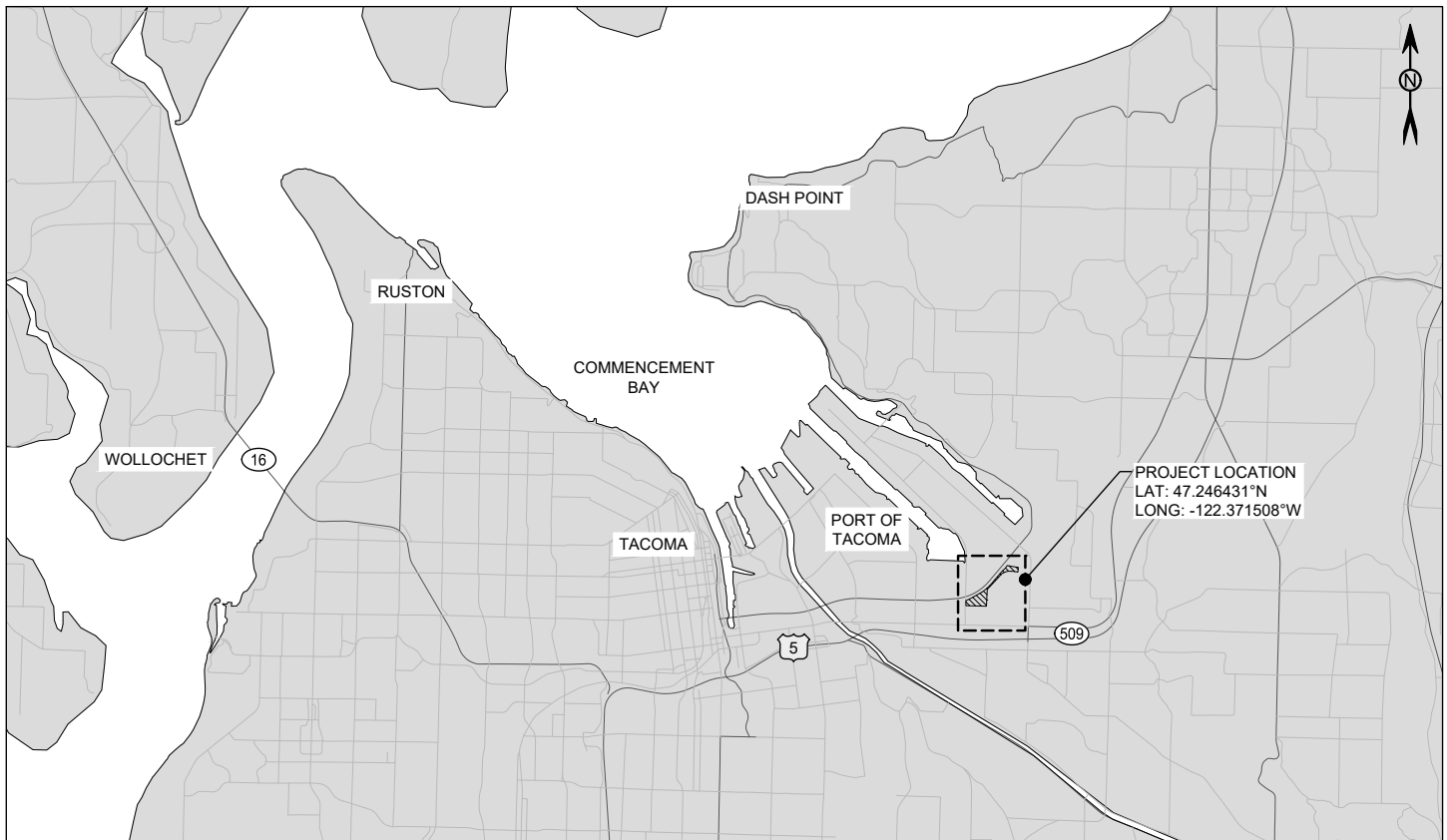
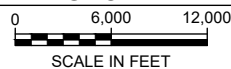


**WASHINGTON KEY MAP**

SHEET INDEX	
SHEET NO.	TITLE
1	COVER SHEET
2	DEMOLITION & TESC PLAN 1
3	DEMOLITION & TESC PLAN 2
4	DISPOSAL SITE PLAN
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26	STREAM PROFILE - BRIDGE CROSSING
27	CIVIL / SITE PLAN AREA 1
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30	PLANTING PLAN 1
31	PLANTING PLAN 2 & SEED SCHEDULE
32	PLANTING TYPICALS 1
33	PLANTING TYPICALS 2
34	PLANTING SCHEDULE



**WASHINGTON KEY MAP**



**PARCEL #:** 0320011117, 03200130055, 0320013157, 0320013158, & 0320017003  
**DATUM:** VERT. MLLW (PORT OF TACOMA TIDAL DATUM)  
**REFERENCE #:** NWS 2020-457-WRD

**ADJACENT PROPERTY OWNERS:**  
 1. SEE JARPA APPLICATION

**SITE LOCATION ADDRESS**  
 NE CORNER OF ALEXANDER AVE. EAST AND 12TH STREET EAST

## LOWER WAPATO CREEK HABITAT PROJECT

### COVER SHEET

APPLICANT: PORT OF TACOMA

**PROPOSED:** REPLACE CULVERTS & RESTORE STREAM, ESTUARY AND WETLANDS TO SECURE ADVANCE MITIGATION CREDIT

**IN:** WAPATO CREEK  
**AT:** TACOMA/FIFE, WA  
**COUNTY:** PIERCE


SHEET 1 OF 34

**DATE:** JUNE 1, 2020

PARCEL # 032001117, 03200130055, 0320013157, 0320013158 & 0320017003  
 DATUM: VERT. MLLW (PORT OF TACOMA TIDAL DATUM)  
 REFERENCE #: NWS 2020-457-WFD  
 ADJACENT PROPERTY OWNERS:  
 1. SEE JARPA APPLICATION  
 SITE LOCATION ADDRESS  
 NE CORNER OF ALEXANDER AVE. EAST AND 12TH STREET EAST  
 LOWER WAPATO CREEK HABITAT PROJECT  
 DEMOLITION & TESC PLAN 1  
 APPLICANT: PORT OF TACOMA  
 PROPOSED: REPLACE CULVERTS & RESTORE STREAM, ESTUARY AND WETLANDS TO SECURE ADVANCE MITIGATION CREDIT WAPATO CREEK  
 COUNTY: PIERCE  
 TACOMA/PIE, WA  
 SHEET 2 OF 34  
 DATE: JUNE 1, 2020

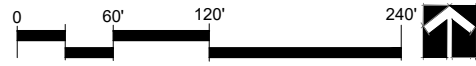
### LEGEND

- #— EXISTING CONTOUR
- #— PROPOSED CONTOUR
- · - · - EXISTING STREAM OHWM
- ###— PROPOSED STREAM CENTER LINE
- x TREE PROTECTION FENCE (B 5)
- HIGH VISIBILITY OR TEMPORARY CHAIN LINK FENCE (D 5)
- SF— SILT FENCE (A 3)
- EXISTING TREE TO REMAIN ON-SITE (154)
- ⊗ EXISTING TREE TO BE REMOVED ON-SITE (59)
- ▨ STOCKPILE AREA
- ROW— EXISTING RIGHT OF WAY (ROW)
- - - - - PARCEL LINE
- A— DISPOSAL SITE ACCESS ROUTE


**SUMP AND COLLECTION / INFILTRATION AREA**  
 SUMP AND COLLECTION / INFILTRATION AREA. CONTRACTOR TO INFILTRATE WATER DISCHARGE IN VEGETATED AREA PER BMP C236 - VEGETATIVE FILTRATION OF VOL. II OF THE CONSTRUCTION STORMWATER MANAGEMENT MANUAL FOR WESTERN WASHINGTON. AREA TO BE SURROUNDED BY WATTLES PER BMP C235. SEE NOTE 1

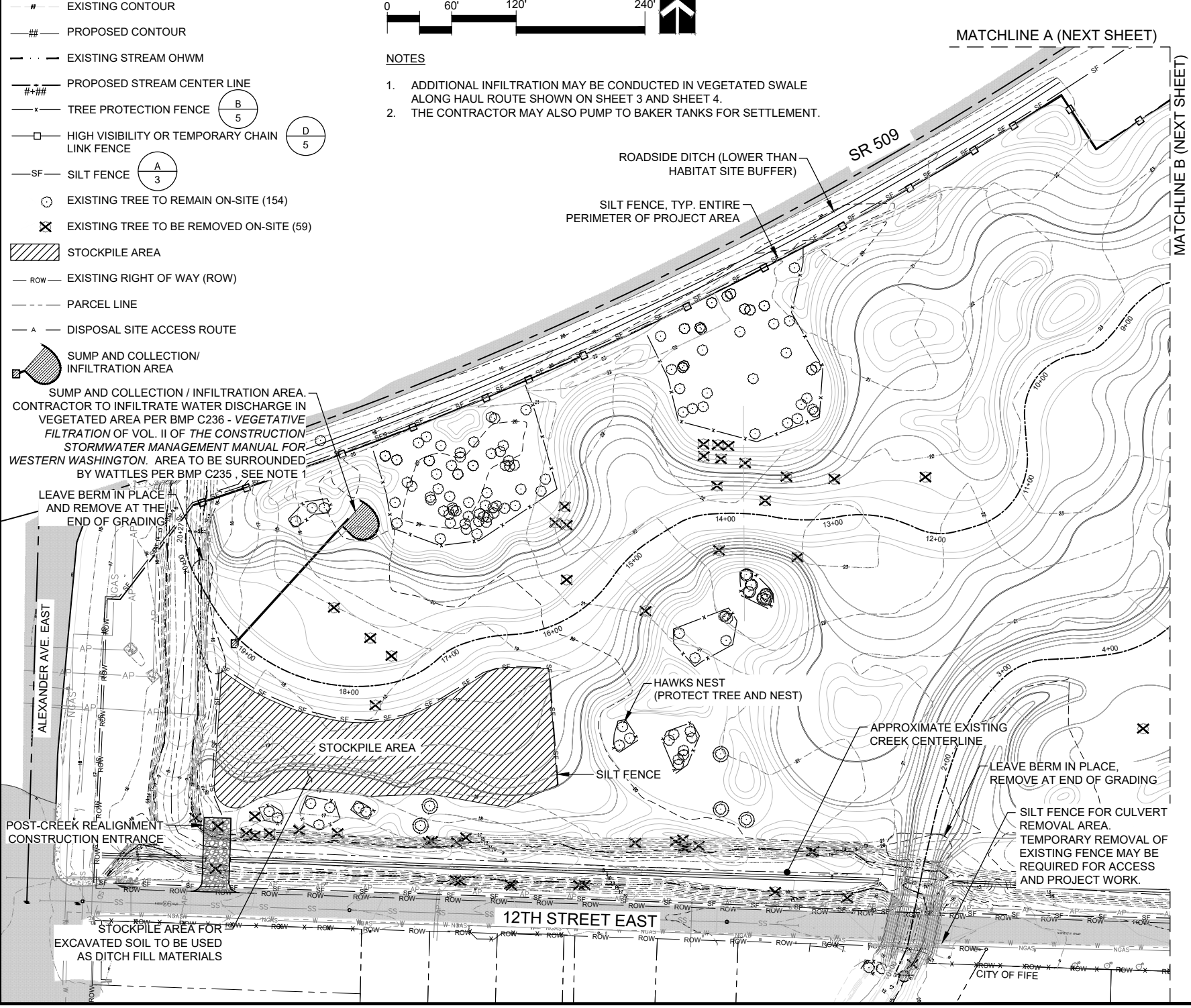
LEAVE BERM IN PLACE AND REMOVE AT THE END OF GRADING

STOCKPILE AREA FOR EXCAVATED SOIL TO BE USED AS DITCH FILL MATERIALS



### NOTES

1. ADDITIONAL INFILTRATION MAY BE CONDUCTED IN VEGETATED SWALE ALONG HAUL ROUTE SHOWN ON SHEET 3 AND SHEET 4.
2. THE CONTRACTOR MAY ALSO PUMP TO BAKER TANKS FOR SETTLEMENT.



ROADSIDE DITCH (LOWER THAN HABITAT SITE BUFFER)  
 SILT FENCE, TYP. ENTIRE PERIMETER OF PROJECT AREA

HAWKS NEST (PROTECT TREE AND NEST)

APPROXIMATE EXISTING CREEK CENTERLINE

LEAVE BERM IN PLACE, REMOVE AT END OF GRADING

SILT FENCE FOR CULVERT REMOVAL AREA. TEMPORARY REMOVAL OF EXISTING FENCE MAY BE REQUIRED FOR ACCESS AND PROJECT WORK.

12TH STREET EAST

MATCHLINE A (NEXT SHEET)

MATCHLINE B (NEXT SHEET)

POST-CREEK REALIGNMENT CONSTRUCTION ENTRANCE

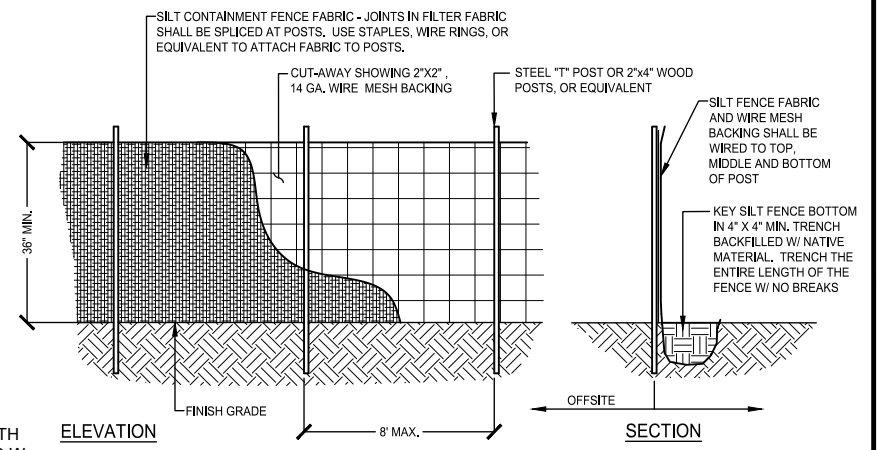
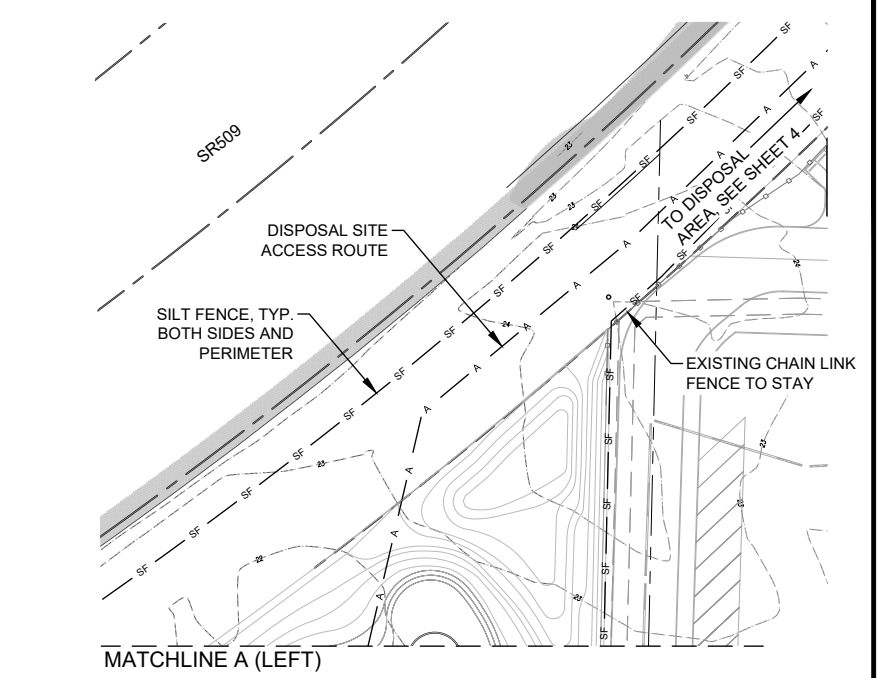
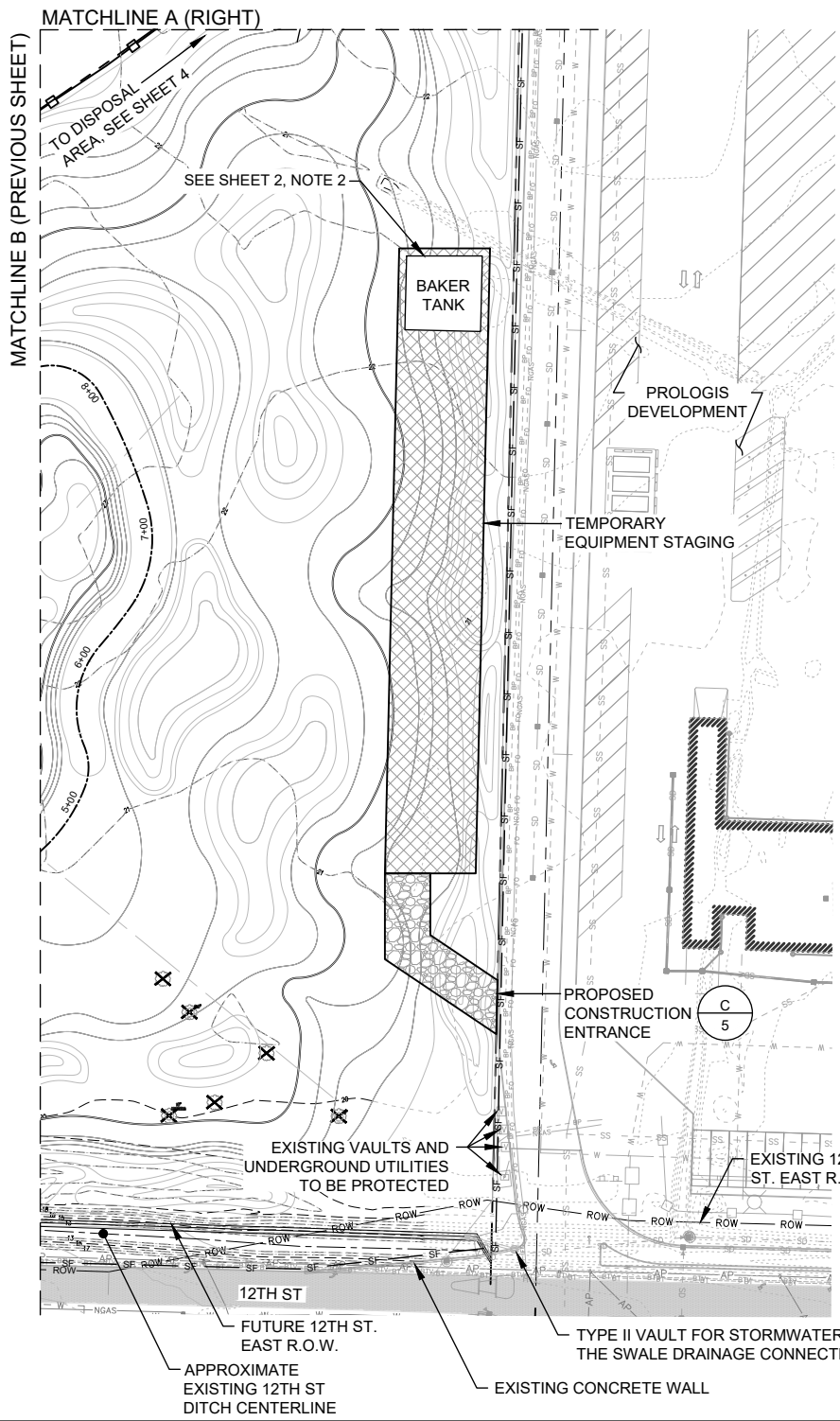
STOCKPILE AREA FOR EXCAVATED SOIL TO BE USED AS DITCH FILL MATERIALS

CITY OF PIERCE

PARCEL #: 032001117, 03200130055, 0320013157,  
 0320013158, & 0320017003  
 DATUM: VERT. MLLW (PORT OF TACOMA TIDAL DATUM)  
 REFERENCE #: NWS 2020-457-MRD  
 ADJACENT PROPERTY OWNERS:  
 1. SEE JARPA APPLICATION  
 SITE LOCATION ADDRESS  
 NE CORNER OF ALEXANDER AVE EAST AND 12TH STREET EAST

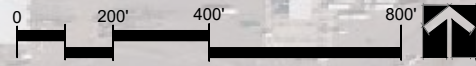
**LOWER WAPATO  
 CREEK HABITAT PROJECT**  
**DEMOLITION & TESC PLAN 2**  
 APPLICANT: PORT OF TACOMA

PROPOSED: REPLACE CULVERTS & RESTORE STREAM,  
 ESTUARY AND WETLANDS TO SECURE  
 ADVANCE MITIGATION CREDIT  
 WAPATO CREEK  
 TACOMA/PIFE, WA  
 COUNTY: PIERCE  
 SHEET 3 OF 34  
 DATE: JUNE 1, 2020

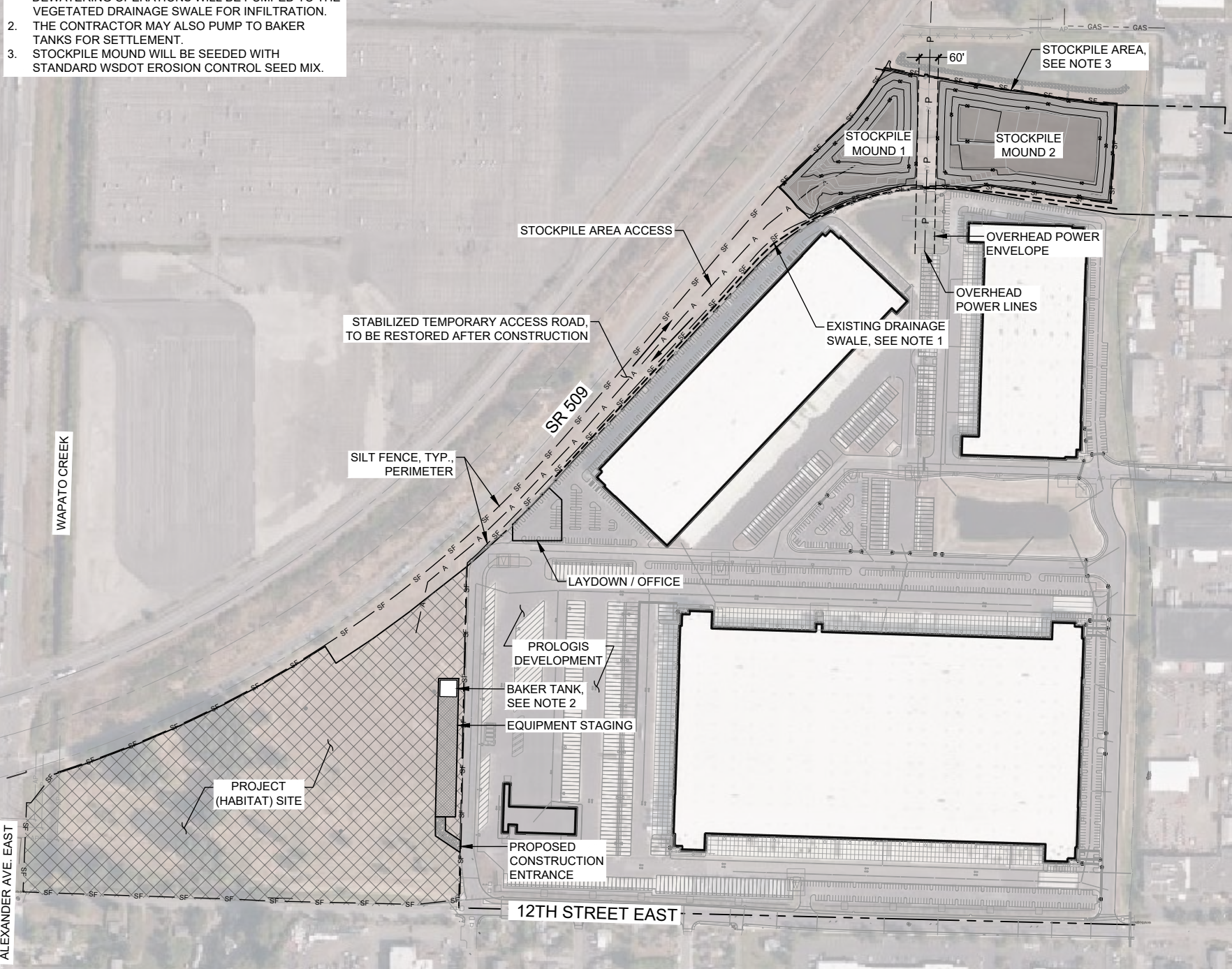


**SILT FENCE MAINTENANCE STANDARDS:**  
 1. ANY DAMAGE SHALL BE REPAIRED IMMEDIATELY.  
 2. SEDIMENT SHALL BE REMOVED WHEN ACCUMULATION EXCEEDS 6" IN DEPTH.  
**SILT FENCE**  
 N.T.S.





- NOTES**
1. WATER FROM HABITAT AREA CONSTRUCTION DEWATERING OPERATIONS WILL BE PUMPED TO THE VEGETATED DRAINAGE SWALE FOR INFILTRATION.
  2. THE CONTRACTOR MAY ALSO PUMP TO BAKER TANKS FOR SETTLEMENT.
  3. STOCKPILE MOUND WILL BE SEEDED WITH STANDARD WSDOT EROSION CONTROL SEED MIX.



PARCEL #: 0320011117, 03200130055, 0320013157,  
 0320013158, & 0320017003  
 DATUM: VERT. MLLW (PORT OF TACOMA TIDAL DATUM)  
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 ADJACENT PROPERTY OWNERS:  
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 SITE LOCATION ADDRESS  
 NE CORNER OF ALEXANDER AVE. EAST AND 12TH STREET EAST

**LOWER WAPATO  
 CREEK HABITAT PROJECT  
 DISPOSAL SITE PLAN**  
 APPLICANT: PORT OF TACOMA

PROPOSED: REPLACE CULVERTS & RESTORE STREAM,  
 ESTUARY AND WETLANDS TO SECURE  
 ADVANCE MITIGATION CREDIT  
 WAPATO CREEK  
 TACOMA/PIERCE, WA  
 COUNTY: PIERCE  
 SHEET 4 OF 34  
 DATE: JUNE 1, 2020

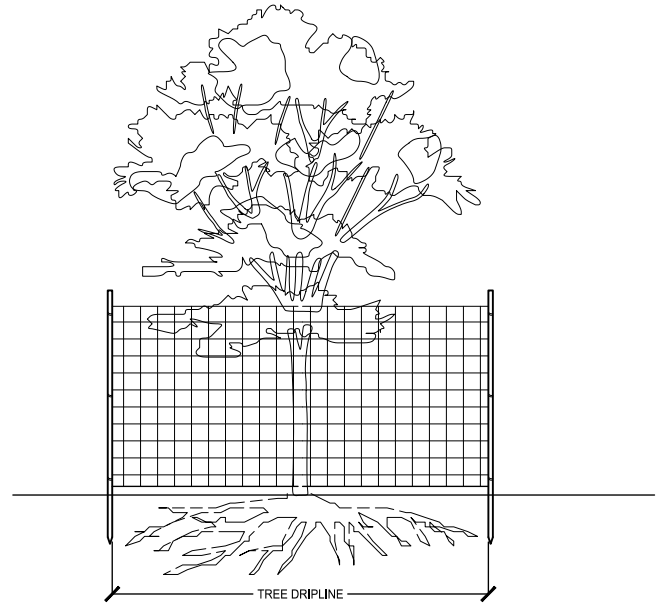
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 SITE LOCATION ADDRESS  
 NE CORNER OF ALEXANDER AVE EAST AND 12TH STREET EAST

**LOWER WAPATO  
 CREEK HABITAT PROJECT**

**TESC DETAILS**

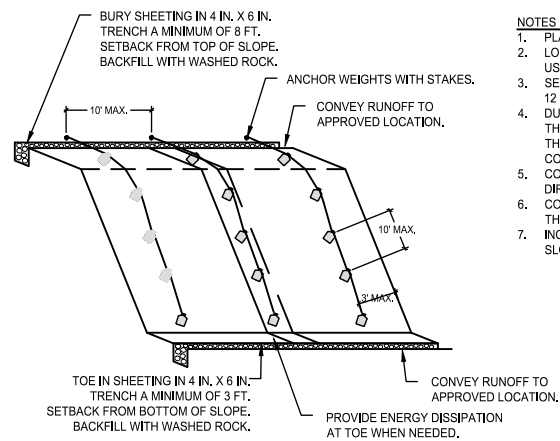
APPLICANT: PORT OF TACOMA

PROPOSED: REPLACE CULVERTS & RESTORE STREAM,  
 ESTUARY AND WETLANDS TO SECURE  
 ADVANCE MITIGATION CREDIT  
 WAPATO CREEK  
 TACOMA/FIFE, WA  
 COUNTY: PIERCE  
 SHEET 5 OF 34  
 DATE: JUNE 1, 2020



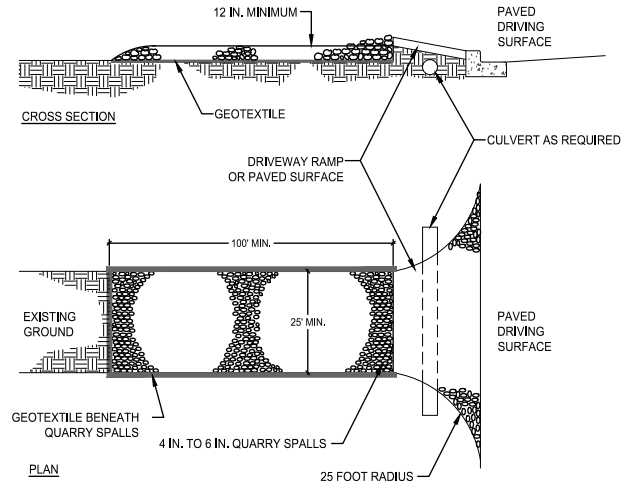
- NOTES:**
- TREE PROTECTION FENCING SHALL BE MADE OF HIGH VISIBILITY FENCE AT LOCATIONS SHOWN ON THE TESC PLAN. SEE HIGH VISIBILITY FENCE DETAIL FOR INSTALLATION INSTRUCTIONS. AVOID DRIVING STAKES INTO TREE ROOTS. INSTALL TREE PROTECTION AREA SIGNS ON ALL SIDES OF FENCED TREE PROTECTION AREAS.
  - FOR ROOTS OVER 14IN DIA. THAT ARE DAMAGED DURING CONSTRUCTION, MAKE A CLEAN, STRAIGHT CUT TO REMOVE THE DAMAGED PORTION. ALL EXPOSED ROOTS SHALL BE TEMPORARILY COVERED WITH DAMP BURLAP TO PREVENT DRYING, AND SHALL BE COVERED WITH SOIL AS SOON AS POSSIBLE.
  - WORK WITHIN PROTECTION FENCE SHALL BE CONDUCTED BY HAND OR WITH SMALL EQUIPMENT TO PROTECT SMALLER TREE CLUSTERS AND INDIVIDUAL TREES. NO STOCKPILING OF MATERIALS, VEHICULAR TRAFFIC, OR STORAGE OF EQUIPMENT OR MACHINERY SHALL BE ALLOWED WITHIN THE LIMIT OF THE FENCING.

**B TREE PROTECTION FENCE**  
 N.T.S.



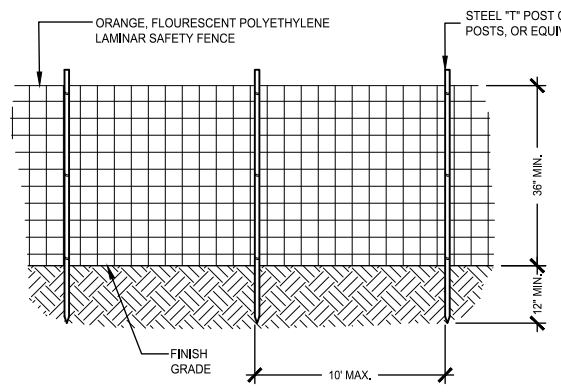
**E PLASTIC ON SLOPE (FOR TEMPORARY STOCKPILES)**  
 N.T.S.

- NOTES**
- PLASTIC SHEETING TO BE MIN. THICKNESS OF 0.06 MM.
  - LOGS, STONES, SANDBAGS, OR EQUIVALENT MAY BE USED TO WEIGHT PLASTIC SHEETING.
  - SEAMS BETWEEN SHEETS MUST OVERLAP A MINIMUM OF 12 IN. AND BE WEIGHTED OR TAPED.
  - DUE TO RAPID RUNOFF CAUSED BY PLASTIC SHEETING, THIS METHOD SHALL NOT BE USED UPSLOPE OF AREAS THAT MIGHT BE ADVERSELY IMPACTED BY CONCENTRATED RUNOFF.
  - CONSTRUCT BERM OR SWALE AT TOP OF SLOPE AS DIRECTED BY THE PORT.
  - CONSTRUCT DITCH AT BASE OF SLOPE AS REQUIRED BY THE PORT, DISCHARGE TO APPROVED LOCATION.
  - INCORPORATE WATTLE WHERE NEEDED FOR STEEPER SLOPE STABILIZATION.



- NOTES**
- PAD SHALL BE REMOVED AND REPLACED WHEN SOIL IS EVIDENT ON THE SURFACE OF THE PAD OR AS DIRECTED BY THE PORT.
  - PAD SHALL BE INSTALLED IN PLANTING STRIP AS APPROPRIATE.
  - PAD THICKNESS SHALL BE INCREASED IF SOIL CONDITIONS DICTATE OR PER THE DIRECTION OF THE PORT.
  - MINIMUM DIMENSIONS MAY BE MODIFIED AS REQUIRED BY SITE CONDITIONS UPON APPROVAL OF THE PORT.
  - PROTECT CONCRETE CURB FROM DAMAGE.

**C CONSTRUCTION ENTRANCE**  
 N.T.S.



- NOTES:**
- DO NOT NAIL OR STAPLE FENCE TO EXISTING TREES OR UTILITY POLES.
  - ANY DAMAGE TO THE FENCE SHALL BE REPAIRED IMMEDIATELY.

**D HIGH VISIBILITY CONSTRUCTION FENCE**  
 N.T.S.

PROJECT: 2019-2020 PORT OF TACOMA WAPATO CREEK HABITAT RESTORATION PROJECT (PORT OF TACOMA WAPATO CREEK HABITAT RESTORATION PROJECT) SHEET: 1 OF 3 DATE: 06/01/2020

## CITY OF FIFE STANDARD TESC AND CONSTRUCTION NOTES

### GENERAL NOTES

1. ALL SPECIFICATIONS, MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE CITY OF FIFE MUNICIPAL CODE, THE LATEST EDITION OF THE WSDOT/APWA STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
2. PLANS AND DETAILS SHALL BE IN ACCORDANCE WITH THE CITY OF FIFE MUNICIPAL CODE AND THE LATEST EDITION OF THE WSDOT/APWA STANDARD PLANS.
3. A COPY OF THE APPROVED PLANS SHALL BE ON SITE DURING CONSTRUCTION.
4. CONSTRUCTION OF PROPOSED IMPROVEMENTS SHALL BE IN ACCORDANCE WITH THE APPROVED PLANS. ANY CHANGES FROM THE "APPROVED" PLANS WILL REQUIRE APPROVAL FROM THE PORT ENGINEER AND THE CITY OF FIFE.
5. A PRE-CONSTRUCTION MEETING AND ANY REQUIRED PERMITS SHALL BE REQUIRED PRIOR TO ANY WORK ACTIVITY. THE PRE-CONSTRUCTION MEETING SHALL BE HELD AT FIFE CITY HALL, 5411 23<sup>D</sup> STREET EAST, FIFE, WA.
6. DURING CONSTRUCTION, THE CONTRACTOR SHALL BE REQUIRED TO CONTROL ON-SITE STORM WATER RUNOFF BY USING APPROVED TEMPORARY OR PERMANENT DRAINAGE EROSION/SILTATION CONTROL PROCEDURES. THE CITY OF FIFE HAS ADOPTED THE STORMWATER MANAGEMENT MANUAL FOR THE PUGET SOUND BASIN (THE TECHNICAL MANUAL) DEVELOPED BY THE DEPARTMENT OF ECOLOGY.
7. PRIOR TO STARTING CONSTRUCTION, THE CONTRACTOR SHALL CALL ONE-CALL (1-800-425-5555) FOR UTILITY LOCATIONS (WATER, SANITARY SEWER, STORM SEWER, GAS, POWER, TELEPHONE AND CABLE 1V).
8. LOCATIONS OF EXISTING UTILITIES ARE APPROXIMATE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE TRUE ELEVATIONS AND LOCATIONS OF EXISTING UTILITIES. ANY UTILITY RELOCATIONS SHALL BE AT THE EXPENSE OF THE APPLICANT AND MUST BE IN ACCORDANCE WITH CITY OF FIFE STANDARDS.
9. NO SAW CUTTING IN THE RIGHT-OF-WAY WILL BE ALLOWED WITHOUT PRIOR APPROVAL FROM THE CITY OF FIFE. ONCE APPROVED, EXISTING PAVEMENT SURFACES SHALL BE SAW CUT FULL DEPTH WITH STRAIGHT, UNIFORM EDGES TWELVE INCHES (12") OUT FROM THE EDGE OF EXCAVATION. IF SLOUGHING OCCURS DURING EXCAVATION, THE EXISTING PAVEMENT SHALL BE SAW CUT TO ACHIEVE THE REQUIRED TWELVE INCHES (12") FROM THE EDGE OF EXCAVATION.
10. LANE CLOSURES SHALL BE RESTRICTED TO 9:00A.M. TO 3:00P.M. MONDAY THRU FRIDAY. ONE LANE (MINIMUM) SHALL BE RESERVED FOR TRAFFIC (BOTH DIRECTIONS) AT ALL TIMES. WORK IN THE RIGHT-OF-WAY REQUIRES A RIGHT-OF-WAY PERMIT. NIGHT, WEEKEND, OR WORK HOURS OTHER THAN HOURS MENTIONED ABOVE WILL REQUIRE THE CITY OF PORT ENGINEER'S APPROVAL. A THREE-DAY ADVANCE NOTICE IS REQUIRED. ACCESS TO EXISTING DRIVEWAYS SHALL BE MAINTAINED AT ALL TIMES.
11. IF WORK IS REQUIRED IN THE RIGHT-OF-WAY, THE CONTRACTOR SHALL PROVIDE PROOF OF LIABILITY INSURANCE IN AN AMOUNT NO LESS THAN ONE (1) MILLION DOLLARS PER OCCURRENCE AND A \$5,000 RESTORATION/DEFECT BOND ON CITY OF FIFE FORMS. THE CONTRACTOR SHALL ALSO PROVIDE A TRAFFIC CONTROL PLAN FOR REVIEW AND APPROVAL A MINIMUM OF FIVE (5) DAYS PRIOR TO STARTING THE WORK. ALL TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".
12. THE CONTRACTOR SHALL CONTACT PIERCE COUNTY TRANSIT AND THE FIFE SCHOOL DISTRICT FOR COORDINATING BUS STOP OPERATIONS DURING CONSTRUCTION, IF NECESSARY.
13. NO CONSTRUCTION, EXCAVATION, HAULING OR REMOVAL OF FILL SHALL BE PERMITTED BETWEEN THE HOURS OF 10:00 P.M. AND 7:00 A.M. WEEKDAYS OR 10:00 P.M. AND 9:00A.M. ON WEEKENDS.
14. THE CONTRACTOR WILL BE REQUIRED TO WATER THE SITE, AS NECESSARY, TO REDUCE EMISSIONS AS A RESULT OF CONSTRUCTION ACTIVITY. A HYDRANT PERMIT IS REQUIRED TO OBTAIN WATER FROM THE CITY OF FIFE WATER SYSTEM. THE CONTRACTOR SHALL SWEEP ALL AFFECTED PUBLIC ROADS, AS NECESSARY, OR AS DIRECTED BY THE CITY, TO REMOVE MUD DEPOSITS AS A RESULT OF CONSTRUCTION ACTIVITY.
15. CUT SLOPES SHALL NOT BE STEEPER THAN 2 HORIZONTAL TO 1 VERTICAL AND FILL SLOPES SHALL NOT BE STEEPER THAN 1-1/2 HORIZONTAL TO 1 VERTICAL, OR AS RECOMMENDED BY THE PORT ENGINEER. THE CATCH POINTS OF THE TOP OF CUT SLOPES AND BOTTOM OF FILL SLOPES SHALL BE SET BACK FROM THE SITE BOUNDARY LINES IN ACCORDANCE WITH THE FOLLOWING TABLE, UNLESS A RETAINING WALL IS DESIGNED BY THE PORT ENGINEER AND CONSTRUCTED FOR THE PROJECT:
 

CUT / FILL DEPTH	SET BACK DISTANCE
UNDER 5 FEET	2 FEET
5 FEET AND OVER	HEIGHT /2

16. ISSUANCE OF A PERMIT BY THE CITY OF FIFE DOES NOT IMPLY OR SIGNIFY THAT THE PROPOSED WORK COMPLIES WITH THE REQUIREMENTS OF OR IS ALLOWED BY OTHER COUNTY, STATE OR FEDERAL LAWS, ORDINANCES OR REGULATIONS. APPLICANT WILL ACCEPT SOLE RESPONSIBILITY AND LIABILITY FOR COMPLIANCE WITH ALL LOCAL, STATE, AND FEDERAL REQUIREMENTS.
17. "AS BUILT" DRAWINGS, CERTIFIED BY A LICENSED LAND SURVEYOR OR PROFESSIONAL ENGINEER, ARE REQUIRED FOR RIGHT-OF-WAY IMPROVEMENTS AND ANY SITE CIVIL WORK. THESE DRAWINGS SHALL BE SUBMITTED ON 24" X 36" MYLAR AND ON CD IN ELECTRONIC FORMAT AS APPROVED BY THE CITY, AND RECEIVE APPROVAL FROM THE CITY BEFORE A CERTIFICATE OF OCCUPANCY IS ISSUED.
18. ALL STORM PIPE SHALL BE INSTALLED WITH RUBBER GASKETED JOINTS. PIPES SHALL NOT ALLOW THE INTRUSION OF GROUND WATER INTO THE STORM SYSTEM. ALL CORRUGATED METAL PIPE USED FOR STORM WATER DETENTION SHALL BE ALUMINIZED STEEL OR HAVE TREATMENT 1 COATING. PIPE SHALL BE INSTALLED WATERTIGHT, USING 2-FOOT WIDE BANDS AND 3/8" INCH GASKETS.
19. ALL SANITARY SEWER MAINS SHALL BE VIDEO INSPECTED. ANY CONDITIONS FOUND TO BE UNACCEPTABLE BY THE CITY SHALL BE REMEDIATED PRIOR TO ACCEPTANCE BY THE CITY. REMEDIATED SECTIONS OF PIPE SHALL BE RE-INSPECTED WITH VIDEO EQUIPMENT. COST OF VIDEO INSPECTIONS SHALL BE BORNE BY THE DEVELOPER. THE CITY SHALL BE PROVIDED A COPY OF A TAPE OF THE VIDEO INSPECTION.
20. ALL EXCAVATIONS IN ROADWAYS SHALL BE BACKFILLED FULL-DEPTH WITH CRUSHED ROCK BASE COURSE COMPACTED TO 95% MOD.
21. CURB AND GUTTER SECTIONS IN THE RIGHT-OF-WAY SHALL BE CONSTRUCTED USING FORMS. EXTRUDED APPLICATIONS SHALL NOT BE ACCEPTED.

## CITY OF TACOMA STANDARD TESC AND CONSTRUCTION NOTES

1. THE IMPLEMENTATION OF THESE TESC PLANS AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF TESC FACILITIES IS THE RESPONSIBILITY OF THE APPLICANT/CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED, VEGETATION/LANDSCAPING IS ESTABLISHED AND THE ENTIRE SITE IS STABILIZED.
2. THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN SHALL BE CLEARLY FLAGGED IN THE FIELD PRIOR TO CONSTRUCTION. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE FLAGGED CLEARING LIMITS SHALL BE PERMITTED. THE FLAGGING SHALL BE MAINTAINED BY THE APPLICANT/CONTRACTOR FOR THE DURATION OF CONSTRUCTION.
3. THE TESC FACILITIES SHOWN ON THIS PLAN SHALL BE CONSTRUCTED PRIOR TO AND/OR IN CONJUNCTION WITH ALL CLEARING AND GRADING ACTIVITIES, AND IN SUCH A MANNER AS TO ENSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DO NOT ENTER THE DRAINAGE SYSTEM OR ROADWAYS, OR VIOLATE APPLICABLE WATER STANDARDS.
4. THE TESC FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, TESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT-LADEN WATER DO NOT LEAVE THE SITE.
5. THE TESC FACILITIES SHALL BE INSPECTED DAILY BY THE APPLICANT/CONTRACTOR AND MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTION.
6. THE TESC FACILITIES ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A MONTH OR WITHIN THE 48 HOURS FOLLOWING A MAJOR STORM EVENT OR AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTION.
7. AT NO TIME SHALL MORE THAN ONE FOOT OF SEDIMENT BE ALLOWED TO ACCUMULATE WITHIN A CATCH BASIN SEDIMENT TRAP.

**PARCEL #:** 032001117, 03200130055, 0320013157,  
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**DATUM:** VERT. MLLW (PORT OF TACOMA TIDAL DATUM)  
**REFERENCE #:** NWS 2020-457-WFD  
**ADJACENT PROPERTY OWNERS:**  
 1. SEE JARPA APPLICATION  
**SITE LOCATION ADDRESS**  
 NE CORNER OF ALEXANDER AVE EAST AND 12TH STREET EAST

**LOWER WAPATO  
CREEK HABITAT PROJECT**  
  
**TESC AND  
CONSTRUCTION NOTES**  
 APPLICANT: PORT OF TACOMA

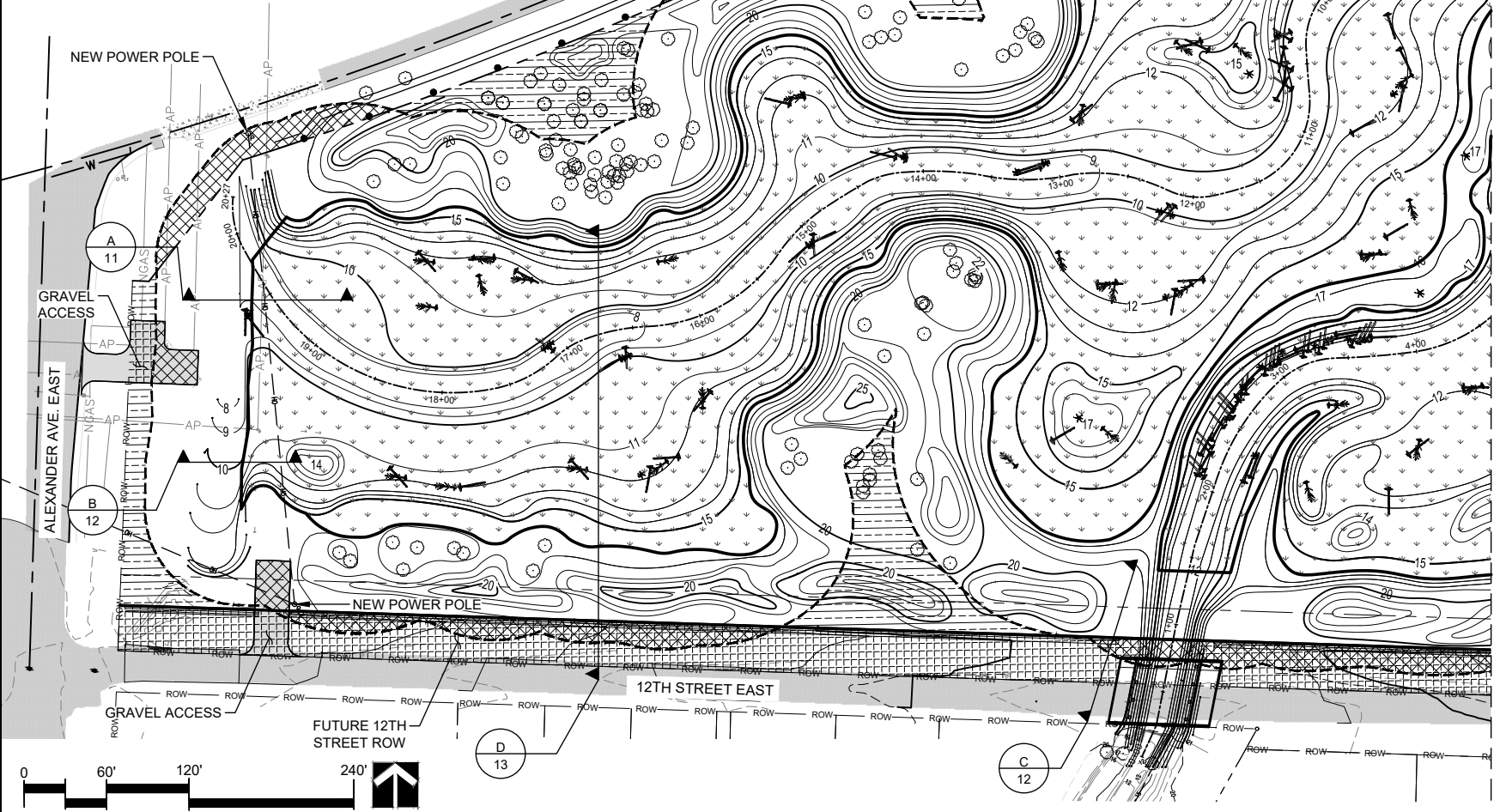
**PROPOSED:** REPLACE CULVERTS & RESTORE STREAM,  
 ESTUARY AND WETLANDS TO SECURE  
 ADVANCE MITIGATION CREDIT  
 WAPATO CREEK  
**AT:** TACOMA/FIFE, WA  
**COUNTY:** PIERCE  
**SHEET** 6 **OF** 34  
**DATE:** JUNE 1, 2020

MATCHLINE A (NEXT SHEET)

MATCHLINE B (NEXT SHEET)

**LEGEND**

- EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING STREAM OHWM
- PROPOSED STREAM CENTER LINE
- PROPOSED CREDITABLE WETLAND RE-ESTABLISHMENT - 10.02 AC TOTAL INCLUDES 5.51 AC PFO, 2.35 AC EEM, 2.16 AC STREAM CHANNEL / MUDFLAT AREA
- 70' WETLAND BUFFER BEFORE BUFFER AVERAGING (7.26 AC)
- AREA OF WETLAND BUFFER REDUCTION (0.69 AC)
- AREA OF BUFFER GAIN TO (1.02 AC) (TOTAL BUFFER AREA AFTER AVERAGING = 7.59 AC)
- SNAG (29)
- LARGE WOODY MATERIAL (172)
- EXISTING TREE TO REMAIN ON-SITE (154)
- ROW - RIGHT OF WAY (ROW)
- PARCEL LINE
- ROW / VEGETATED FILTER STRIP - 0.91 AC



PARCEL #: 0320011117, 03200130055, 0320013157,  
0320013158, & 0320017003  
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NE CORNER OF ALEXANDER AVE. EAST AND 12TH STREET EAST

**LOWER WAPATO  
CREEK HABITAT PROJECT**

**PROJECT OVERVIEW 1**

APPLICANT: PORT OF TACOMA

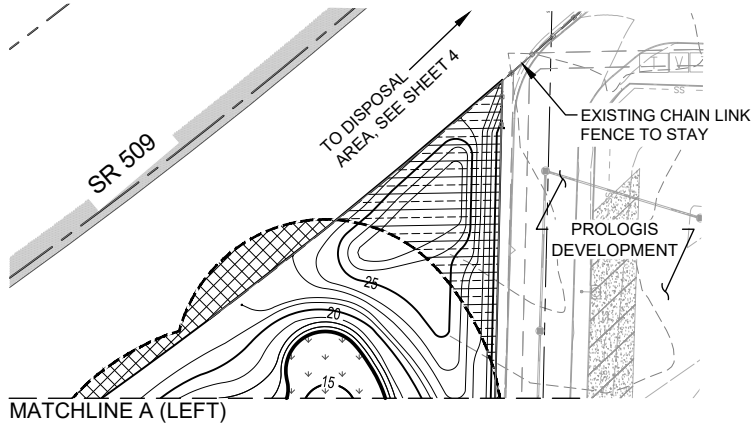
PROPOSED: REPLACE CULVERTS & RESTORE STREAM,  
ESTUARY AND WETLANDS TO SECURE  
ADVANCE MITIGATION CREDIT  
WAPATO CREEK

IN: TACOMA/PIE, WA  
AT: PIERCE  
COUNTY: PIERCE

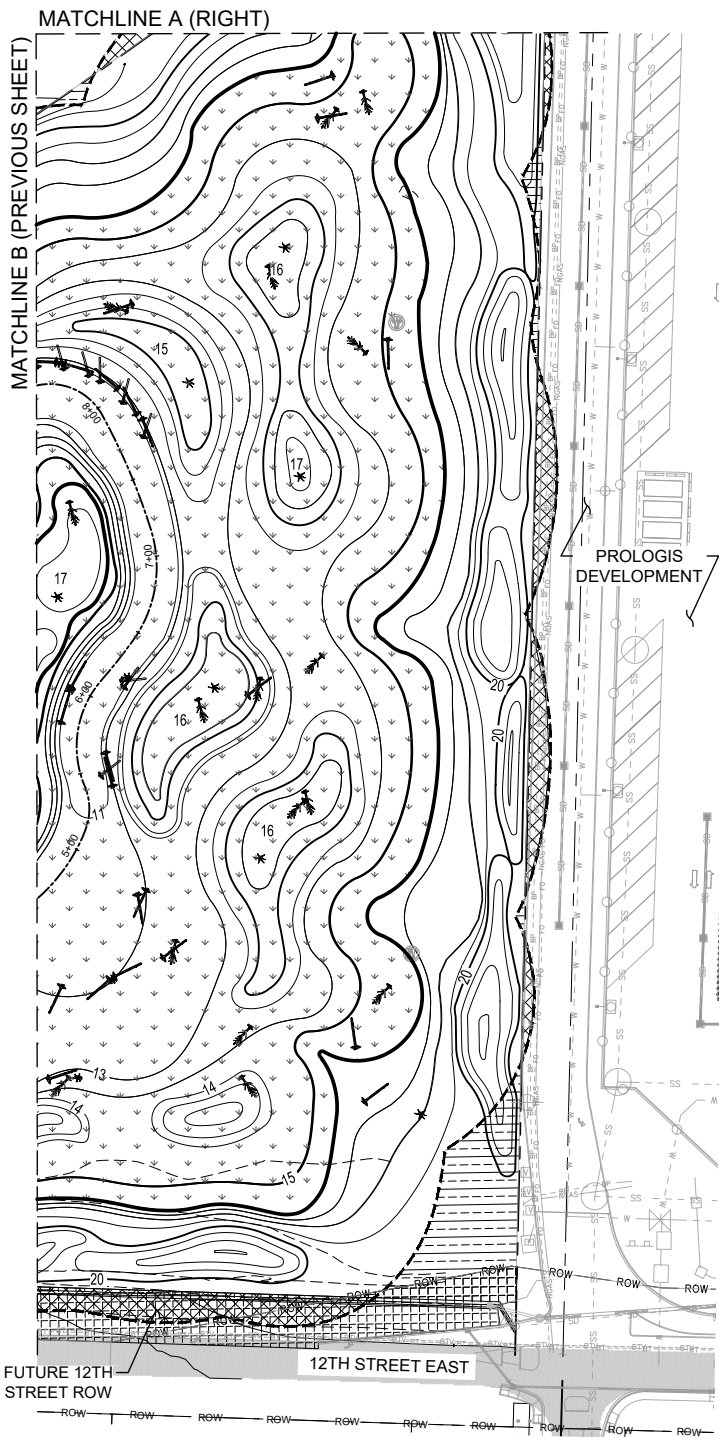
SHEET 7 OF 34

DATE: JUNE 1, 2020

PROJECT OVERVIEW 1: LOWER WAPATO CREEK HABITAT PROJECT, PORT OF TACOMA, WASHINGTON. PREPARED BY: TACOMA WAPATO CREEK HABITAT APPLICATION TEAM, 14. 2020. 1: 3000 (AS SHOWN)



- ### LEGEND
- EXISTING CONTOUR
  - PROPOSED CONTOUR
  - EXISTING STREAM OHWM
  - PROPOSED STREAM CENTER LINE
  - PROPOSED CREDITABLE WETLAND RE-ESTABLISHMENT - 10.02 AC TOTAL INCLUDES 5.51 AC PFO, 2.35 AC EEM, 2.16 AC STREAM CHANNEL / MUDFLAT AREA
  - 70' WETLAND BUFFER BEFORE BUFFER AVERAGING (7.26 AC)
  - AREA OF WETLAND BUFFER REDUCTION (0.69 AC)
  - AREA OF BUFFER GAIN TO (1.02 AC) (TOTAL BUFFER AREA AFTER AVERAGING = 7.59 AC)
  - SNAG (29)
  - LARGE WOODY MATERIAL (172)
  - EXISTING TREE TO REMAIN ON-SITE (154)
  - RIGHT OF WAY (ROW)
  - PARCEL LINE
  - ROW / VEGETATED FILTER STRIP - 0.91 AC



PARCEL #: 0320011117, 03200130055, 0320013157,  
 0320013158, & 0320017003  
 DATUM: VERT. MLLW (PORT OF TACOMA TIDAL DATUM)  
 REFERENCE #: NWS 2020-457-WFD  
 ADJACENT PROPERTY OWNERS:  
 1. SEE JARPA APPLICATION  
 SITE LOCATION ADDRESS  
 NE CORNER OF ALEXANDER AVE, EAST AND 12TH STREET EAST

## LOWER WAPATO CREEK HABITAT PROJECT

### PROJECT OVERVIEW 2

APPLICANT: PORT OF TACOMA

**PROPOSED:** REPLACE CULVERTS & RESTORE STREAM, ESTUARY AND WETLANDS TO SECURE ADVANCE MITIGATION CREDIT  
 WAPATO CREEK  
 TACOMA/FIFE, WA  
 COUNTY: PIERCE  
 SHEET 8 OF 34  
 DATE: JUNE 1, 2020



PROJECT: LOWER WAPATO CREEK HABITAT PROJECT, PORT OF TACOMA, WASHINGTON. PREPARED BY: JACOBUS ENGINEERING, INC. DATE: 06/01/2020. SHEET: 8 OF 34.



MATCHLINE A (NEXT SHEET)

MATCHLINE B (NEXT SHEET)

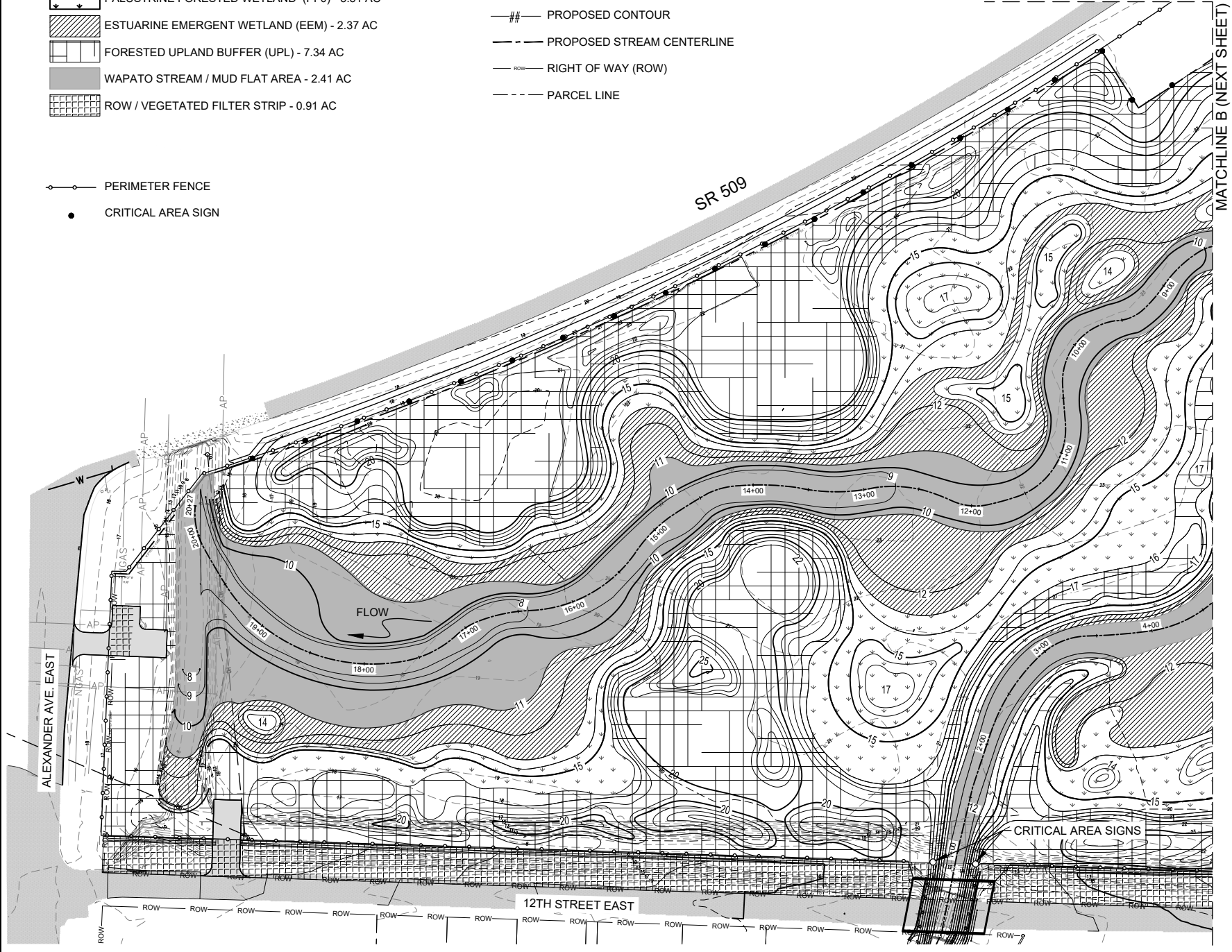
### PLAN LEGEND

- #-#- EXISTING CONTOUR
- ##-#- PROPOSED CONTOUR
- - - - PROPOSED STREAM CENTERLINE
- ROW- RIGHT OF WAY (ROW)
- - - - PARCEL LINE

### HABITAT TYPES

- PALUSTRINE FORESTED WETLAND (PF0) - 5.51 AC
- ESTUARINE EMERGENT WETLAND (EEM) - 2.37 AC
- FORESTED UPLAND BUFFER (UPL) - 7.34 AC
- WAPATO STREAM / MUD FLAT AREA - 2.41 AC
- ROW / VEGETATED FILTER STRIP - 0.91 AC

- PERIMETER FENCE
- CRITICAL AREA SIGN



PARCEL #: 0320011117, 03200130055, 0320013157,  
0320013158, & 0320017003  
DATUM: VERT. MLLW (PORT OF TACOMA TIDAL DATUM)  
REFERENCE #: NWS 2020-457-WPD

ADJACENT PROPERTY OWNERS:  
1. SEE JARPA APPLICATION

SITE LOCATION ADDRESS  
NE CORNER OF ALEXANDER AVE. EAST AND 12TH STREET EAST

**LOWER WAPATO  
CREEK HABITAT PROJECT**

**HABITAT TYPES PLAN 1**

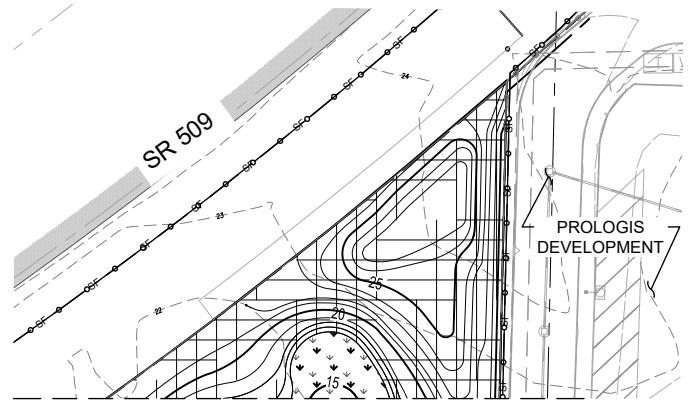
APPLICANT: PORT OF TACOMA

PROPOSED: REPLACE CULVERTS & RESTORE STREAM,  
ESTUARY AND WETLANDS TO SECURE  
ADVANCE MITIGATION CREDIT  
WAPATO CREEK

AT: TACOMA/FIFE, WA  
COUNTY: PIERCE

SHEET 9 OF 34      DATE: JUNE 1, 2020

PREPARED BY: ENVIRONMENTAL CONSULTANTS, INC. FOR THE PORT OF TACOMA. HABITAT TYPES PLAN 1. DATE: JUNE 1, 2020. 11:00AM. 10/20/20. 11:00AM. 10/20/20.



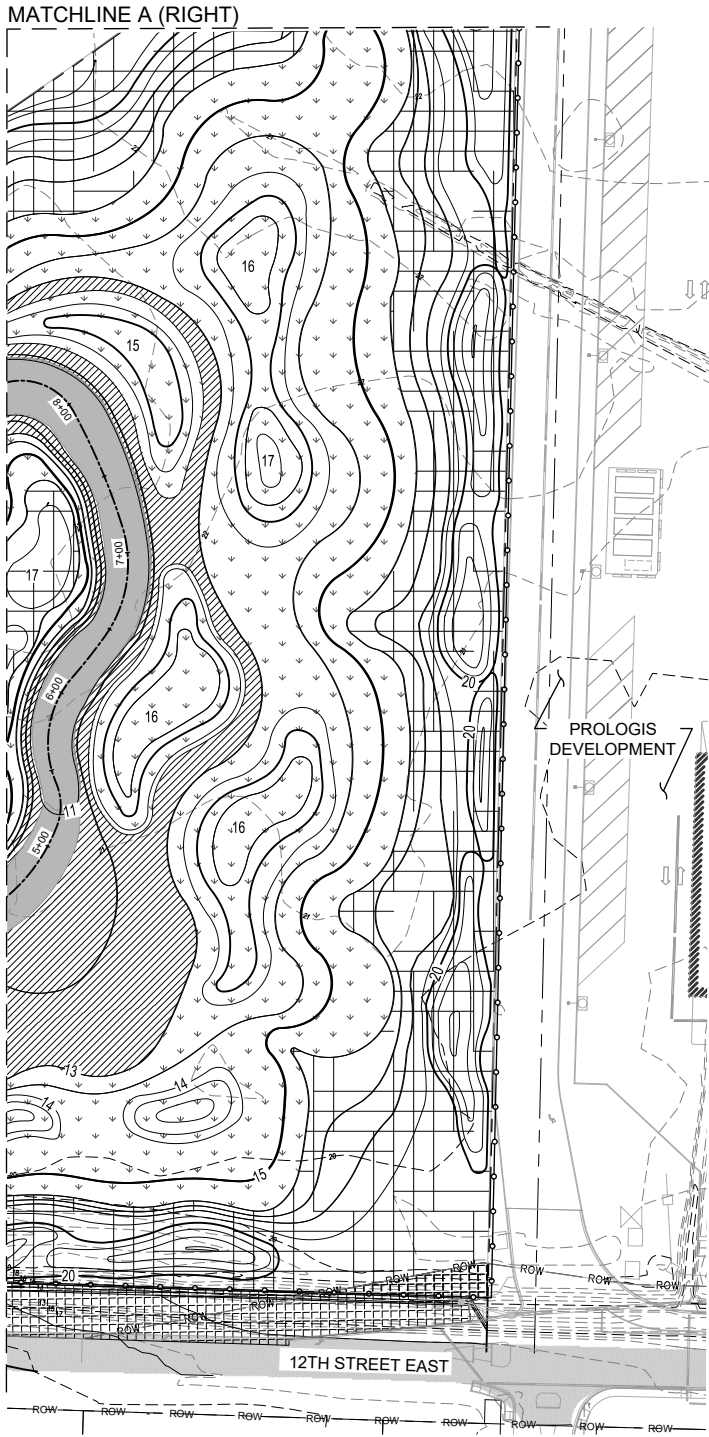
MATCHLINE A (LEFT)

### PLAN LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED STREAM CENTERLINE
- RIGHT OF WAY (ROW)
- PARCEL LINE

### HABITAT TYPES

- PALUSTRINE FORESTED WETLAND (PF0) - 5.51 AC
  - ESTUARINE EMERGENT WETLAND (EEM) - 2.37 AC
  - FORESTED UPLAND BUFFER (UPL) - 7.34 AC
  - WAPATO STREAM / MUD FLAT AREA - 2.41 AC
  - ROW / VEGETATED FILTER STRIP - 0.91 AC
- 
- PERIMETER FENCE
  - CRITICAL AREA SIGN



MATCHLINE A (RIGHT)

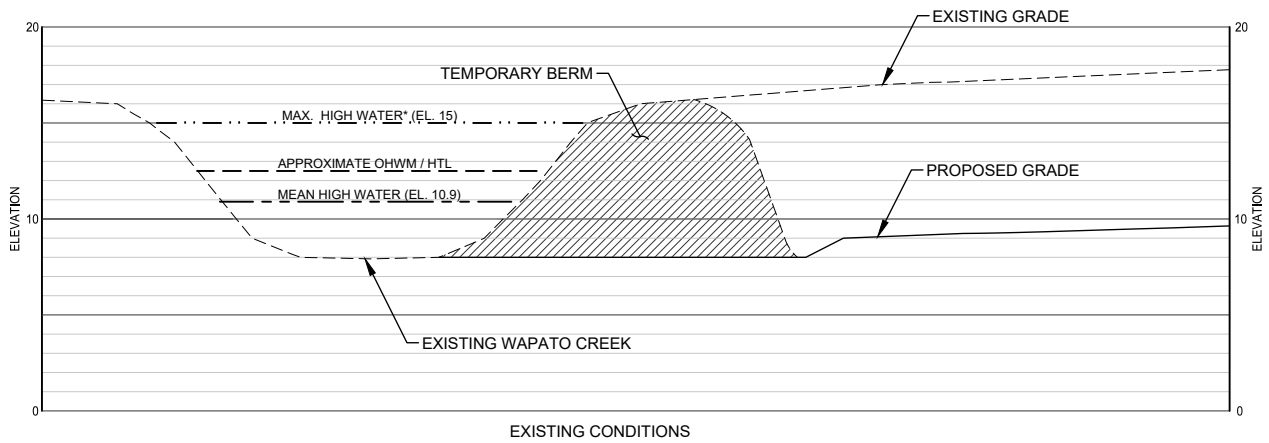
MATCHLINE B (PREVIOUS SHEET)

PARCEL #: 0320011117, 03200130055, 0320013157,  
 0320013158, & 0320017003  
 DATUM: VERT. MLLW (PORT OF TACOMA TIDAL DATUM)  
 REFERENCE #: NWS 2020-457-WPD  
 ADJACENT PROPERTY OWNERS:  
 1. SEE JARPA APPLICATION  
 SITE LOCATION ADDRESS  
 NE CORNER OF ALEXANDER AVE. EAST AND 12TH STREET EAST

**LOWER WAPATO  
 CREEK HABITAT PROJECT**  
**HABITAT TYPES PLAN 2**  
 APPLICANT: PORT OF TACOMA

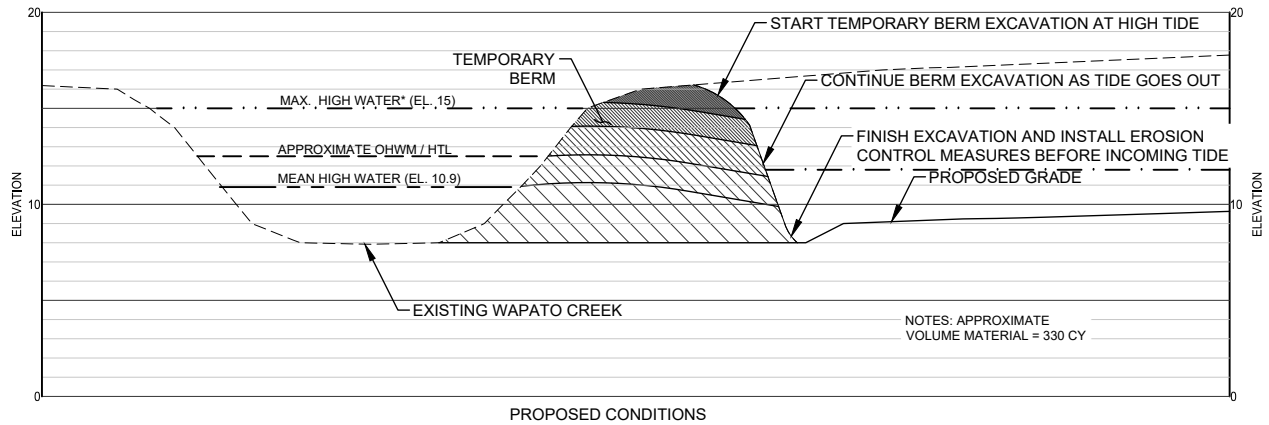
**PROPOSED:** REPLACE CULVERTS & RESTORE STREAM,  
 ESTUARY AND WETLANDS TO SECURE  
 ADVANCE MITIGATION CREDIT  
 WAPATO CREEK  
 TACOMA/PIERCE, WA  
**IN:** TACOMA/PIERCE, WA  
**AT:** WAPATO CREEK  
**COUNTY:** PIERCE  
 SHEET 10 OF 34  
 DATE: JUNE 1, 2020

PLAN DATE: 06/01/2020 11:11 AM  
 DRAWN BY: J. W. WILSON  
 CHECKED BY: J. W. WILSON  
 PROJECT: LOWER WAPATO CREEK HABITAT PROJECT  
 SHEET: 10 OF 34  
 DATE: 06/01/2020 11:11 AM



**SECTION A: STATION 19+00 CONNECTION DETAIL**

HORIZONTAL SCALE: 1"=20', VERTICAL SCALE 1"=10'



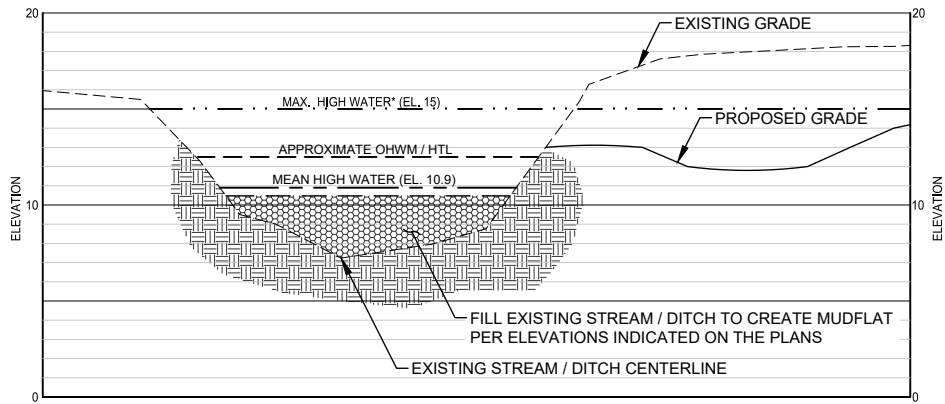
**SECTION A: STATION 19+00 CONNECTION DETAIL**

HORIZONTAL SCALE: 1"=20', VERTICAL SCALE 1"=10'

PARCEL #: 0320011117, 03200130055, 0320013157,  
0320013158, & 0320017003  
DATUM: VERT. MLLW (PORT OF TACOMA TIDAL DATUM)  
REFERENCE #: NWS 2020-457-WPD  
ADJACENT PROPERTY OWNERS:  
1. SEE JARPA APPLICATION  
SITE LOCATION ADDRESS  
NE CORNER OF ALEXANDER AVE. EAST AND 12TH STREET EAST

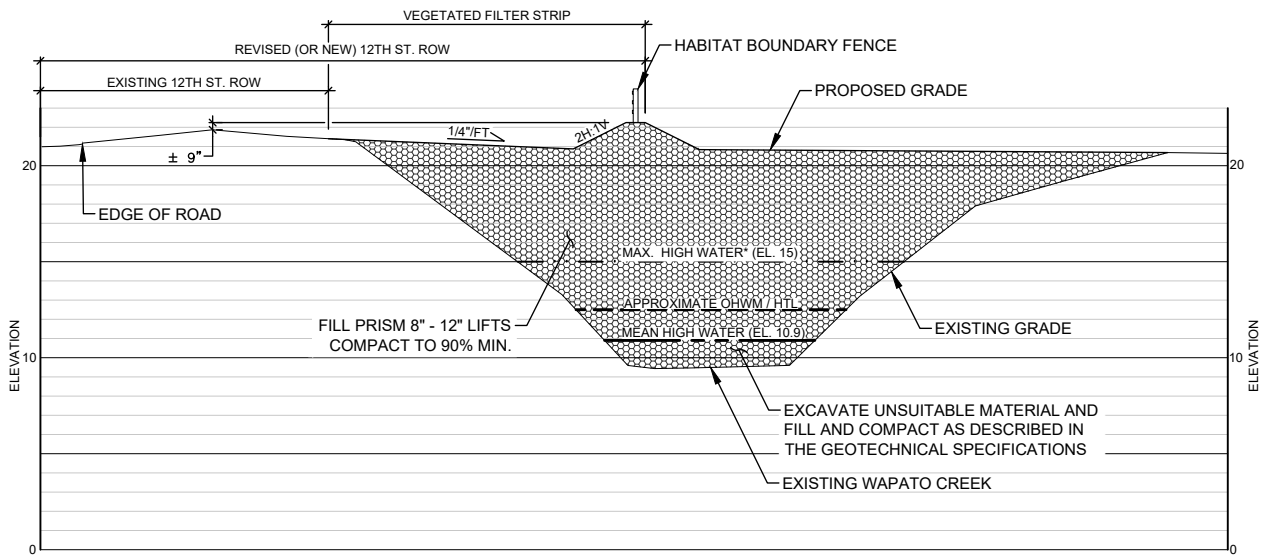
**LOWER WAPATO  
CREEK HABITAT PROJECT**  
**CONSTRUCTION CROSS  
SECTIONS 1**  
APPLICANT: PORT OF TACOMA

**PROPOSED:** REPLACE CULVERTS & RESTORE STREAM,  
ESTUARY AND WETLANDS TO SECURE  
ADVANCE MITIGATION CREDIT  
WAPATO CREEK  
TACOMA/PIERCE, WA  
AT: PIERCE  
COUNTY: PIERCE  
SHEET 11 OF 34  
DATE: JUNE 1, 2020



**SECTION B: STREAM FILL TO MUDFLAT DETAIL**

HORIZONTAL SCALE: 1"=20', VERTICAL SCALE 1"=10'



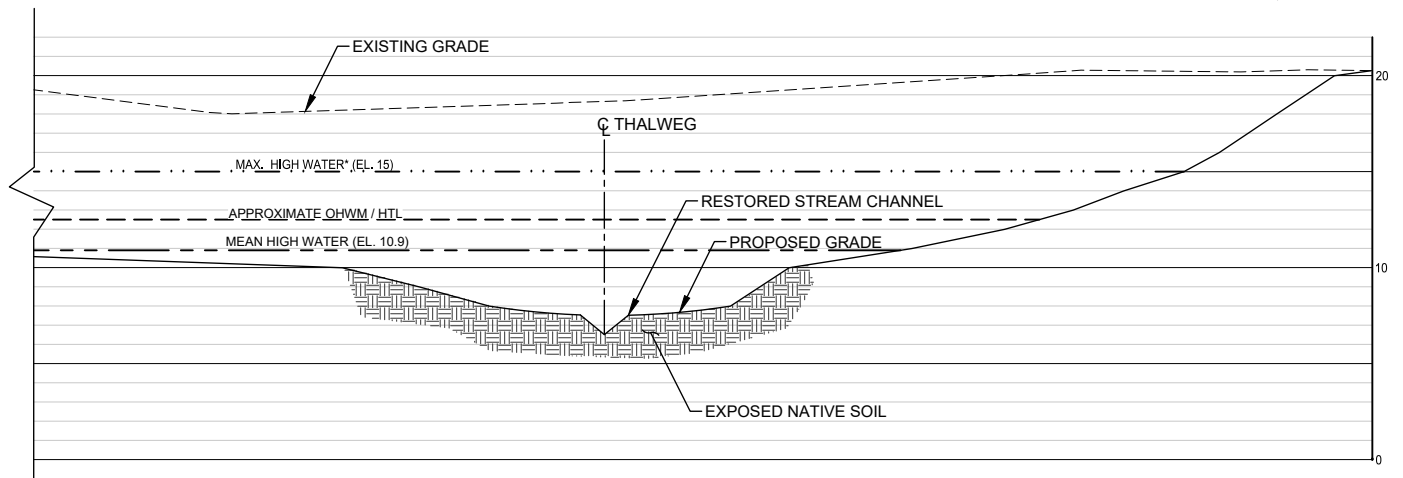
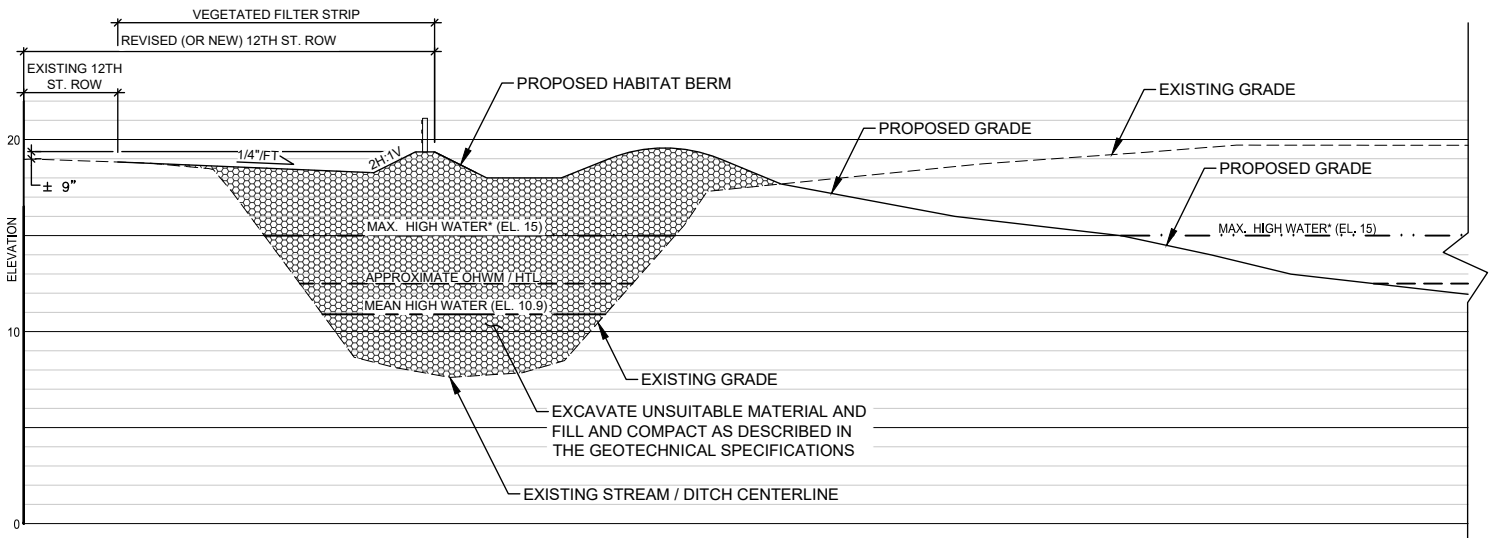
**SECTION C: UPSTREAM CONNECTION DETAIL**

HORIZONTAL SCALE: 1"=20', VERTICAL SCALE 1"=10'

PARCEL #: 0320011117, 03200130055, 03200131517,  
0320013158, & 0320017003  
DATUM: VERT. MLLW (PORT OF TACOMA TIDAL DATUM)  
REFERENCE #: NWS 2020-457-WRD  
ADJACENT PROPERTY OWNERS:  
1. SEE JARPA APPLICATION  
SITE LOCATION ADDRESS  
NE CORNER OF ALEXANDER AVE. EAST AND 12TH STREET EAST

**LOWER WAPATO  
CREEK HABITAT PROJECT**  
**CONSTRUCTION CROSS  
SECTIONS 2**  
APPLICANT: PORT OF TACOMA

PROPOSED: REPLACE CULVERTS & RESTORE STREAM,  
ESTUARY AND WETLANDS TO SECURE  
ADVANCE MITIGATION CREDIT  
WAPATO CREEK  
IN: TACOMA/PIERCE, WA  
AT: PIERCE  
COUNTY: PIERCE  
SHEET 12 OF 34  
DATE: JUNE 1, 2020



**SECTION D: STREAM/DITCH FILL FOR ROADWAY PRISM**

HORIZONTAL SCALE: 1"=20', VERTICAL SCALE 1"=10'

PARCEL #: 0320011117, 03200130055, 0320013157,  
0320013158 & 0320017003  
DATUM: VERT. MLLW (PORT OF TACOMA TIDAL DATUM)  
REFERENCE #: NWS 2020-457-W/ND  
ADJACENT PROPERTY OWNERS:  
1. SEE JARPA APPLICATION  
SITE LOCATION ADDRESS  
NE CORNER OF ALEXANDER AVE. EAST AND 12TH STREET EAST

**LOWER WAPATO CREEK HABITAT PROJECT**  
**CONSTRUCTION CROSS SECTIONS 3**

APPLICANT: PORT OF TACOMA

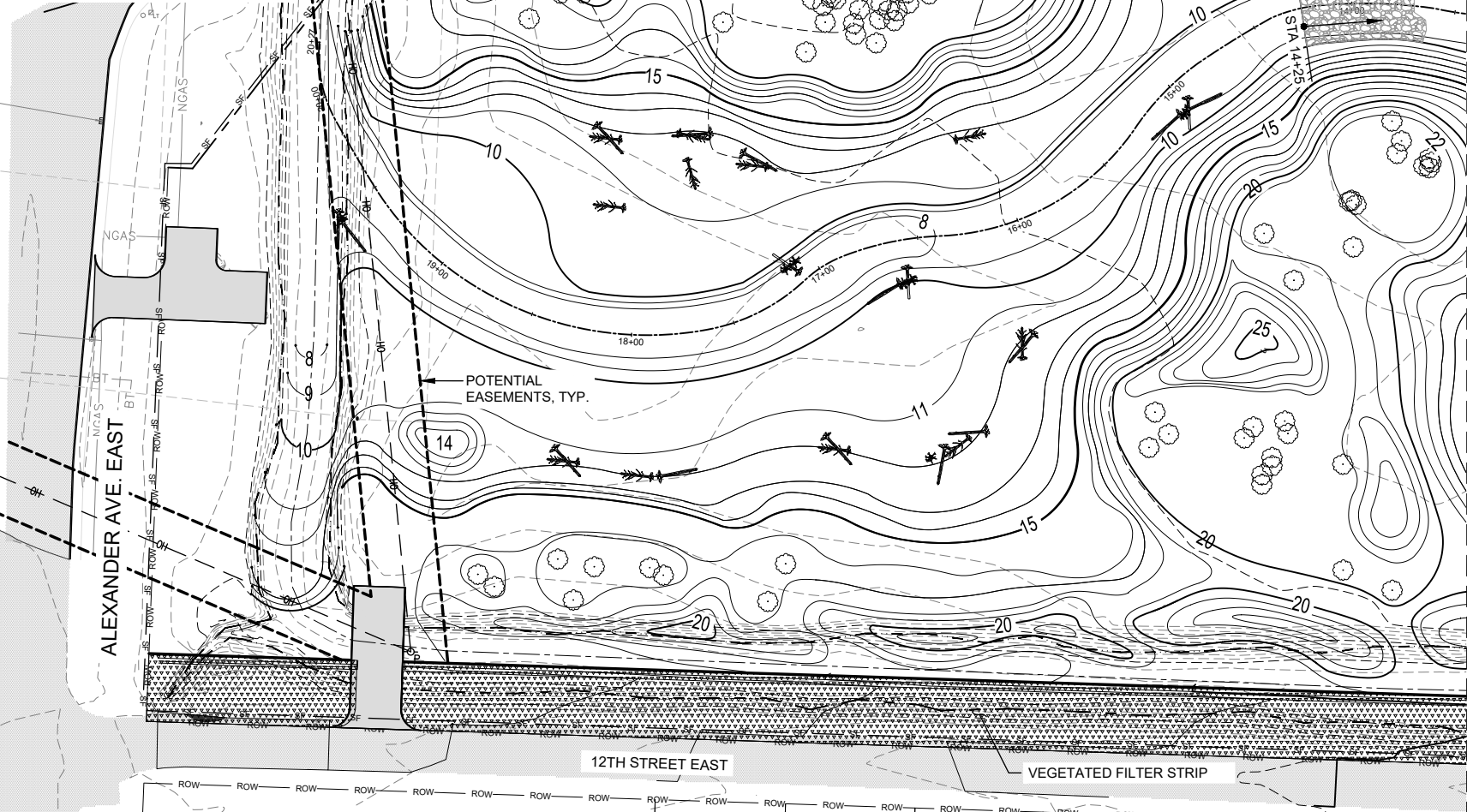
PROPOSED: REPLACE CULVERTS & RESTORE STREAM, ESTUARY AND WETLANDS TO SECURE ADVANCE MITIGATION CREDIT  
IN: WAPATO CREEK  
AT: TACOMAN/IFE, WA  
COUNTY: PIERCE

SHEET 13 OF 34

DATE: JUNE 1, 2020

**LEGEND**

- ## EXISTING CONTOUR
- PROPOSED CONTOUR
- - - EXISTING STREAM OHWM
- - - PROPOSED STREAM CENTER LINE
- SNAG (29)
- FALLEN TREE (48)
- BANK LOG (80)
- REVETMENT LOG (44)
- ROOTWAD (29)
- ROW — RIGHT OF WAY (ROW)
- PARCEL LINE
- PROPOSED VEGETATED FILTER STRIP



PARCEL #: 0320011117, 03200130055, 0320013157,  
0320013158, & 0320017003  
DATUM: VERT. MLLW (PORT OF TACOMA TIDAL DATUM)  
REFERENCE #: NWS 2020-457-WFD

ADJACENT PROPERTY OWNERS:  
1. SEE JARPA APPLICATION

SITE LOCATION ADDRESS  
NE CORNER OF ALEXANDER AVE. EAST AND 12TH STREET EAST

**LOWER WAPATO  
CREEK HABITAT PROJECT**

**GRADING PLAN 1**

APPLICANT: PORT OF TACOMA

PROPOSED: REPLACE CULVERTS & RESTORE STREAM,  
ESTUARY AND WETLANDS TO SECURE  
ADVANCE MITIGATION CREDIT  
WAPATO CREEK

IN: TACOMA/PIE, WA  
AT: TACOMA/PIE, WA  
COUNTY: PIERCE

SHEET 14 OF 34

DATE: JUNE 1, 2020

PROJECT: LOWER WAPATO CREEK HABITAT PROJECT, PORT OF TACOMA HABITAT RESTORATION AND WETLANDS RESTORATION PROJECT, 12TH STREET AND ALEXANDER AVE. NE CORNER, TACOMA, WASHINGTON. DRAWING NO. 14 OF 34. DATE: JUNE 1, 2020.

PROLOGIS DEVELOPMENT

STREAMBED MATERIAL  
ENTIRE LENGTH OF  
CHANNEL THIS SHEET. SEE  
SHEET 19 FOR DETAILS

LWM BANK  
STABILIZATION.  
SEE NOTE 1

PROPOSED BRIDGE ABUTMENT  
TYPICAL (TO BE DESIGNED)  
FOR BRIDGE DETAILS,  
SEE SHEETS 24-26

VEGETATED FILTER STRIP

TYPE II VAULT FOR STORMWATER TO TIE INTO  
THE SWALE DRAINAGE CONNECTION POINT

NOTES:

1. LWM BANK STABILIZATION TO BE COMBINATION BANK LOG (B), ROODWAD (C), AND REVETMENT LOG (E) FORMED INTO A LWM MATRIX BACKFILLED WITH STREAMBED GRAVEL.



MATCHLINE SHEET 14

# LOWER WAPATO CREEK HABITAT PROJECT

## GRADING PLAN 2

APPLICANT: PORT OF TACOMA

PROPOSED: REPLACE CULVERTS & RESTORE STREAM, ESTUARY AND WETLANDS TO SECURE ADVANCE MITIGATION CREDIT  
WAPATO CREEK  
TACOMA/PIFE, WA

IN: \_\_\_\_\_  
AT: \_\_\_\_\_  
COUNTY: PIERCE

SHEET 15 OF 34      DATE: JUNE 1, 2020

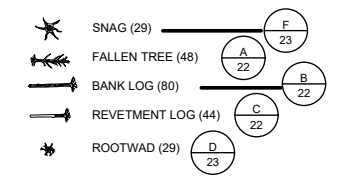
ADJACENT PROPERTY OWNERS:  
1. SEE JARPA APPLICATION

SITE LOCATION ADDRESS  
NE CORNER OF ALEXANDER AVE. EAST AND 12TH STREET EAST

PARCEL #: 0320011117, 03200130055, 0320013157,  
0320013158, & 0320017003  
DATUM: VERT. MLLW (PORT OF TACOMA TIDAL DATUM)  
REFERENCE #: NWS 2020-457-WRD

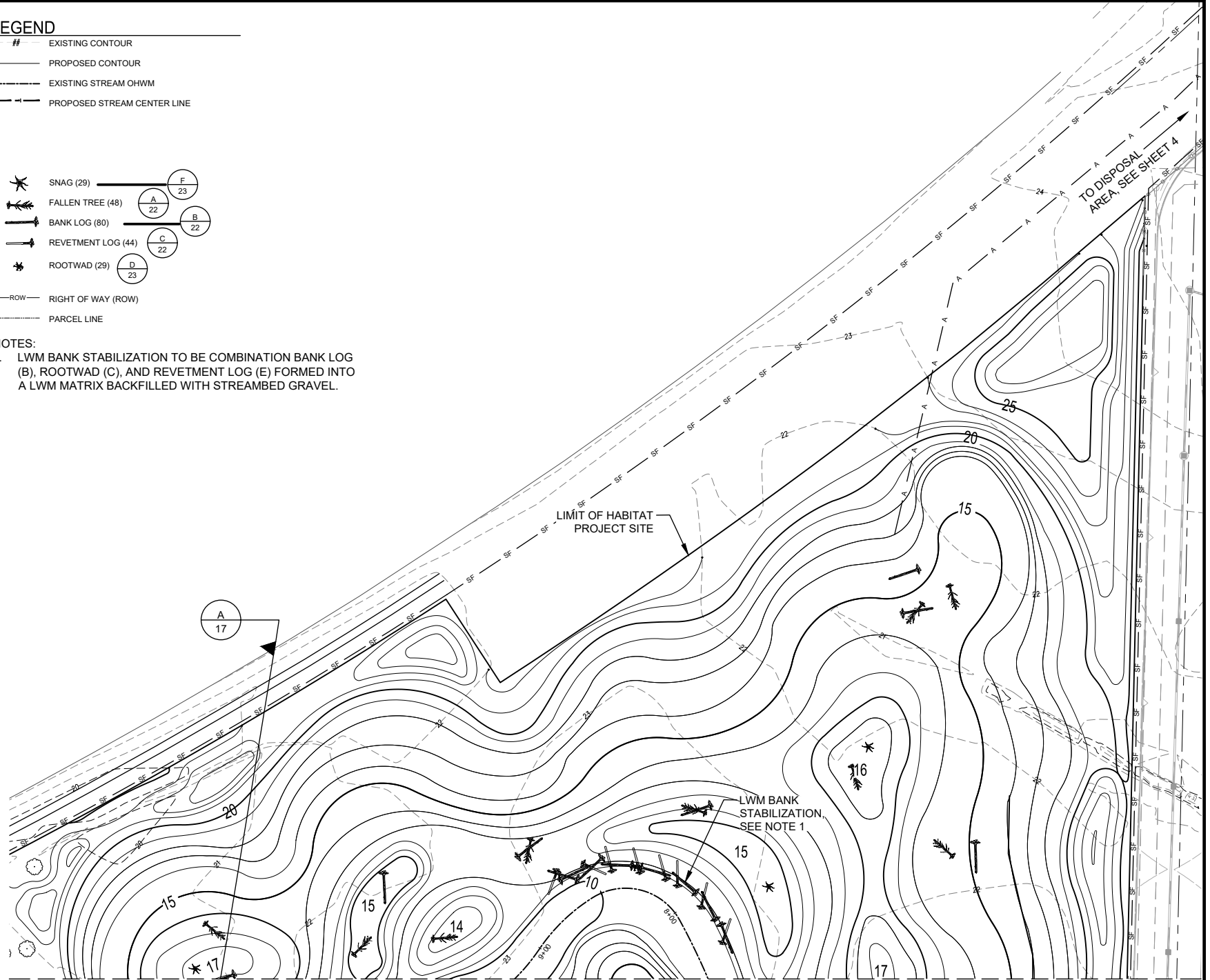
PARCEL LINE: 0320011117, 03200130055, 0320013157, 0320013158, & 0320017003  
 DATE: JUNE 1, 2020  
 COUNTY: PIERCE  
 CITY: TACOMA  
 PROJECT: LOWER WAPATO CREEK HABITAT PROJECT  
 SHEET: 16 OF 34

- LEGEND**
- ## EXISTING CONTOUR
  - PROPOSED CONTOUR
  - - - EXISTING STREAM OHWM
  - - - PROPOSED STREAM CENTER LINE



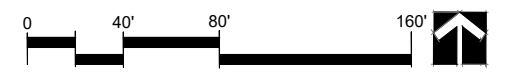
— ROW — RIGHT OF WAY (ROW)  
 - - - PARCEL LINE

**NOTES:**  
 1. LWM BANK STABILIZATION TO BE COMBINATION BANK LOG (B), ROOTWAD (C), AND REVETMENT LOG (E) FORMED INTO A LWM MATRIX BACKFILLED WITH STREAMBED GRAVEL.



MATCHLINE SHEET 14

MATCHLINE SHEET 15

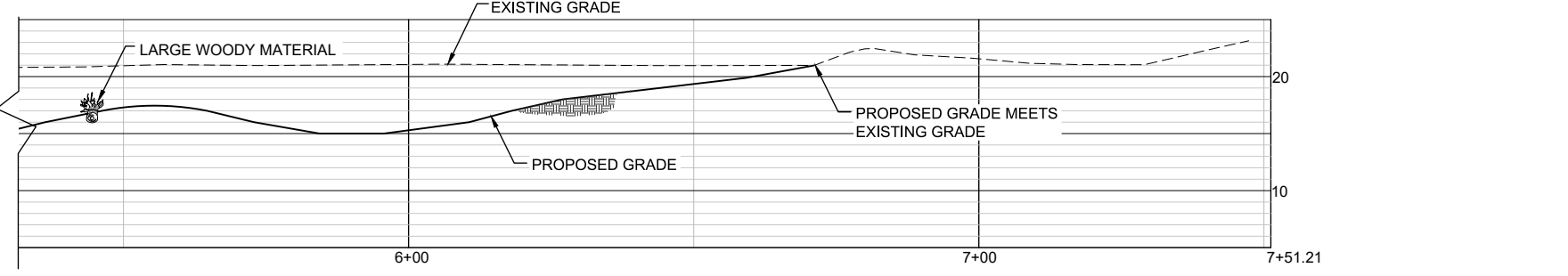
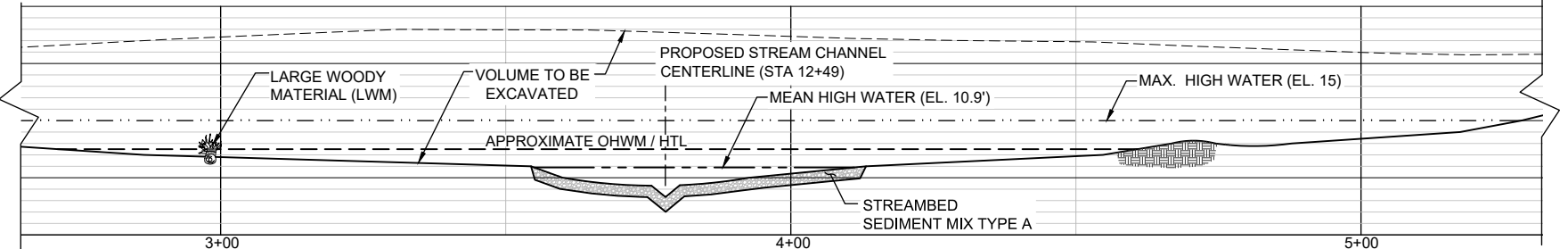
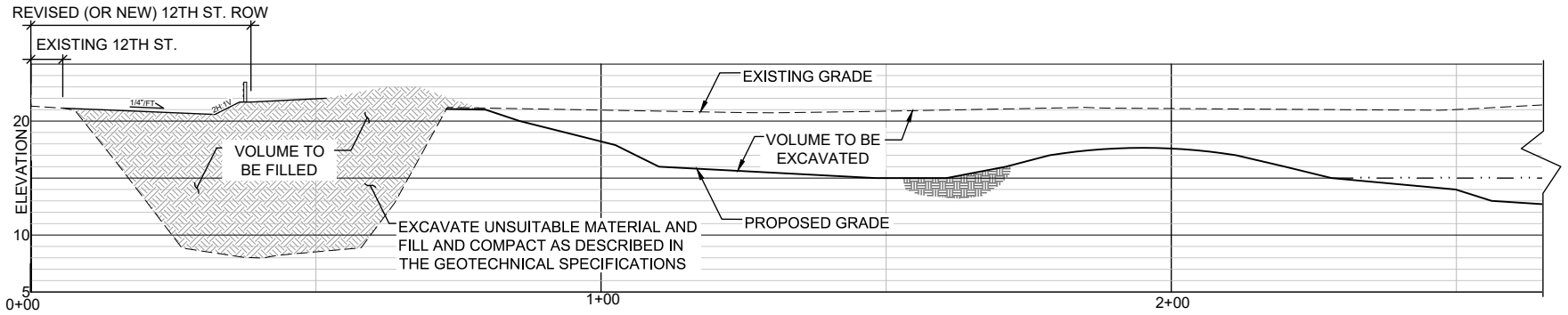


**PARCEL #:** 0320011117, 03200130055, 0320013157,  
 0320013158, & 0320017003  
**DATUM:** VERT. MLLW (PORT OF TACOMA TIDAL DATUM)  
**REFERENCE #:** NWS 2020-457-WRD  
**ADJACENT PROPERTY OWNERS:**  
 1. SEE JARPA APPLICATION  
**SITE LOCATION ADDRESS**  
 NE CORNER OF ALEXANDER AVE, EAST AND 12TH STREET EAST

**LOWER WAPATO  
 CREEK HABITAT PROJECT**  
**GRADING PLAN 3**  
 APPLICANT: PORT OF TACOMA

**PROPOSED:** REPLACE CULVERTS & RESTORE STREAM,  
 ESTUARY AND WETLANDS TO SECURE  
 ADVANCE MITIGATION CREDIT  
 WAPATO CREEK  
**IN:** TACOMA/FIFE, WA  
**AT:**  
**COUNTY:** PIERCE  
**SHEET** 16 OF 34  
**DATE:** JUNE 1, 2020





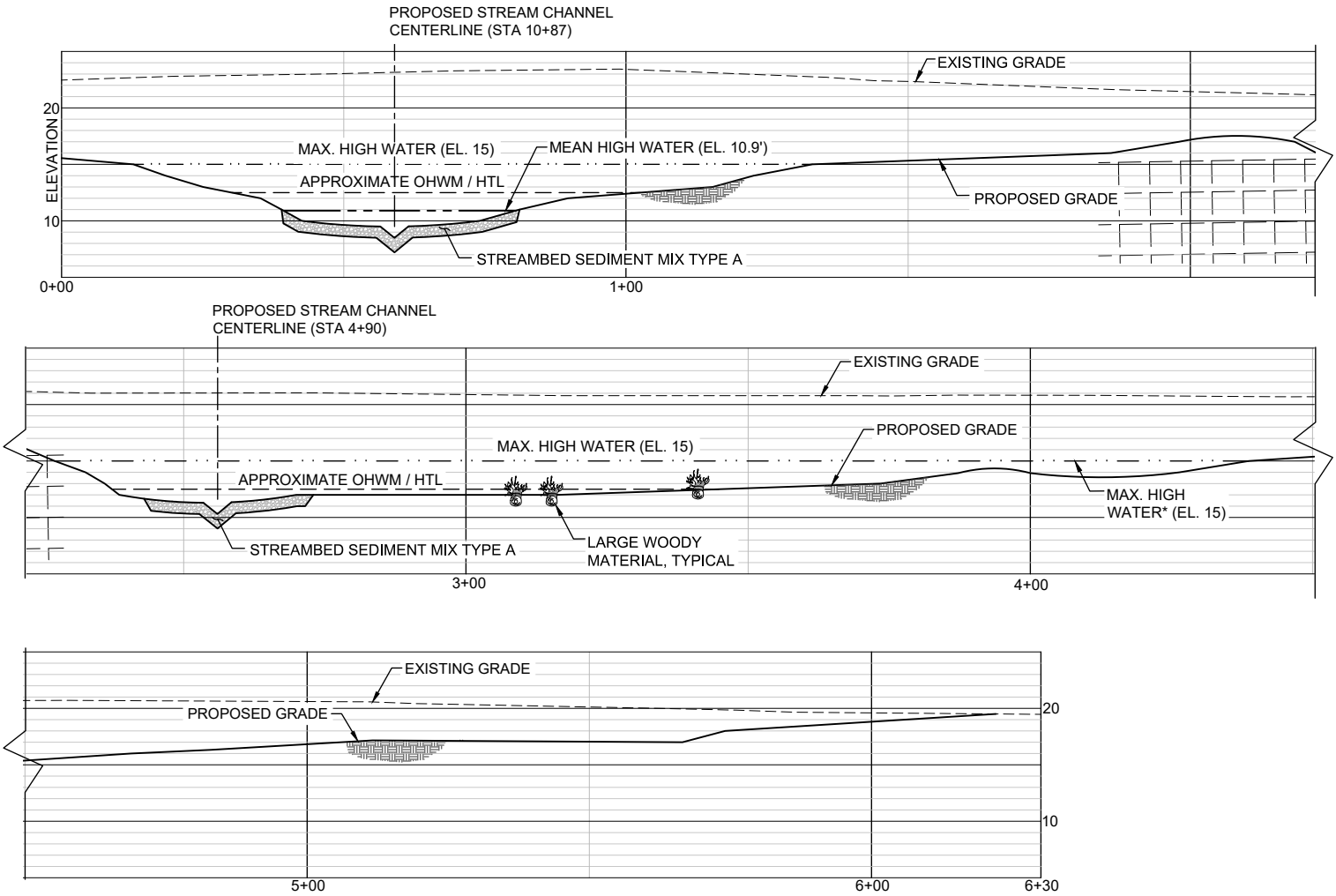
**SECTION A**  
 HORIZONTAL SCALE: 1"=30', VERTICAL SCALE 1"=15'

PARCEL #: 0320011117, 03200130055, 0320013157,  
 0320013158, & 0320017003  
 DATUM: VERT. MLLW (PORT OF TACOMA TIDAL DATUM)  
 REFERENCE #: NWS 2020-457-WPD  
 ADJACENT PROPERTY OWNERS:  
 1. SEE JARPA APPLICATION  
 SITE LOCATION ADDRESS  
 NE CORNER OF ALEXANDER AVE. EAST AND 12TH STREET EAST

**LOWER WAPATO  
 CREEK HABITAT PROJECT**  
**GRADING SECTION A**  
 APPLICANT: PORT OF TACOMA

PROPOSED: REPLACE CULVERTS & RESTORE STREAM,  
 ESTUARY AND WETLANDS TO SECURE  
 ADVANCE MITIGATION CREDIT  
 WAPATO CREEK  
 TACOMA/PIE, WA  
 COUNTY: PIERCE  
 SHEET 17 OF 34  
 DATE: JUNE 1, 2020

W:\PROJECTS\ESTUARY WETLANDS\DOCUMENTS\2020\PORT OF TACOMA HABITAT MITIGATION\DESIGN\MOBILE\13. WAPATO DESIGN\03 - PRELIM\17010201 TACOMA HABITAT MITIGATION.DWG (REV 13.2020) - 13.DWG (13.06.2020)



**SECTION B**  
 HORIZONTAL SCALE: 1"=30', VERTICAL SCALE 1"=15'

PARCEL #: 0320011117, 03200130055, 0320013157,  
 0320013158, & 0320017003  
 DATUM: VERT. MLLW (PORT OF TACOMA TIDAL DATUM)  
 REFERENCE #: NWS 2020-457-WRD  
 ADJACENT PROPERTY OWNERS:  
 1. SEE JARPA APPLICATION  
 SITE LOCATION ADDRESS  
 NE CORNER OF ALEXANDER AVE. EAST AND 12TH STREET EAST

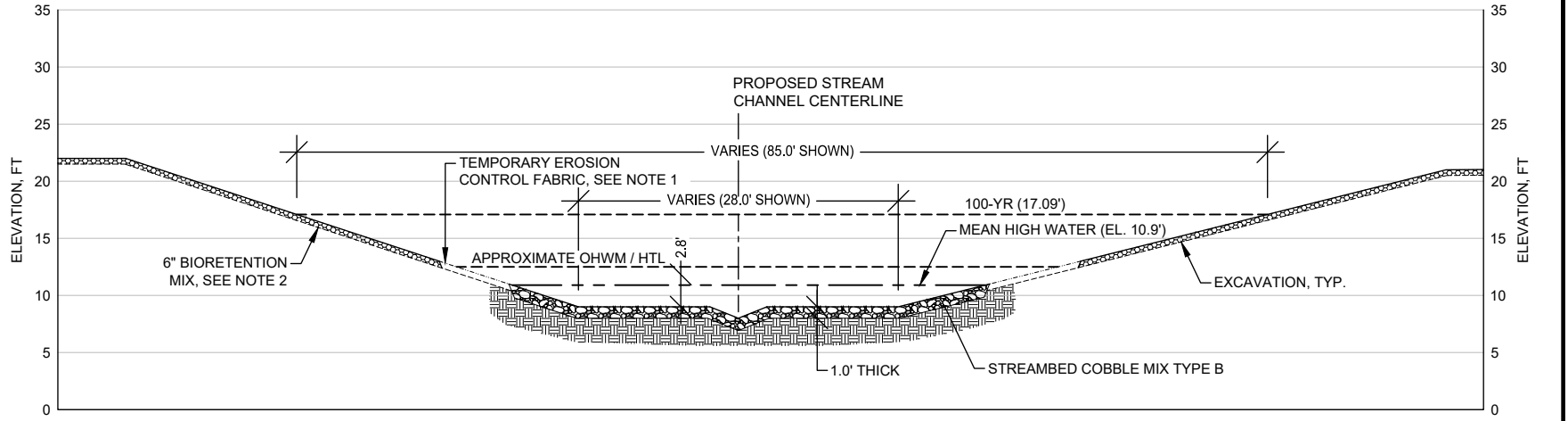
**LOWER WAPATO  
 CREEK HABITAT PROJECT**

**GRADING SECTION B**

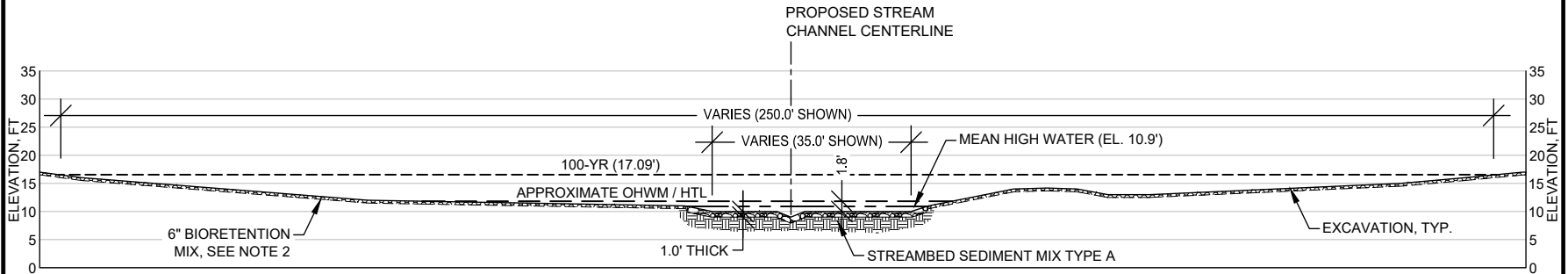
APPLICANT: PORT OF TACOMA

**PROPOSED:** REPLACE CULVERTS & RESTORE STREAM,  
 ESTUARY AND WETLANDS TO SECURE  
 ADVANCE MITIGATION CREDIT  
 WAPATO CREEK  
 TACOMA/FIFE, WA  
 COUNTY: PIERCE  
 SHEET 18 OF 34  
 DATE: JUNE 1, 2020

WAPATO CREEK HABITAT PROJECT - PRELIMINARY GRADING PLAN - 18 OF 34 SHEETS - 11/19/2019



**STREAM CROSS SECTION TYPICAL (STA 2+00 TO STA 3+75, STA 7+50 TO STA 8+50, AND STA 13+00 TO STA 14+50)**  
SCALE 1" = 15'-0"



**STREAM CROSS SECTION TYPICAL (STA 3+75 TO STA 7+50, AND STA 8+50 TO STA 13+00)**  
SCALE 1" = 30'-0"

APPROXIMATE STATION	SUBSTRATE MATERIAL
0 TO 2+00	STREAMBED COBBLE MIX TYPE A
2+00 TO 3+75	STREAMBED COBBLE MIX TYPE B
3+75 TO 7+50	STREAMBED SEDIMENT MIX TYPE A
7+50 TO 8+50	STREAMBED COBBLE MIX TYPE B
8+50 TO 13+00	STREAMBED SEDIMENT MIX TYPE A
13+00 TO 14+25	STREAMBED COBBLE MIX TYPE B

**NOTES:**

- TEMPORARY EROSION CONTROL FABRIC ON 3H:1V SLOPES OR STEEPER BETWEEN EL. 11.0' AND 13.0'.
- 6" BIORETENTION MIX (WALRATH OR SIMILAR) FROM EL. 13.0' TO TIE IN WITH EXISTING GRADES.

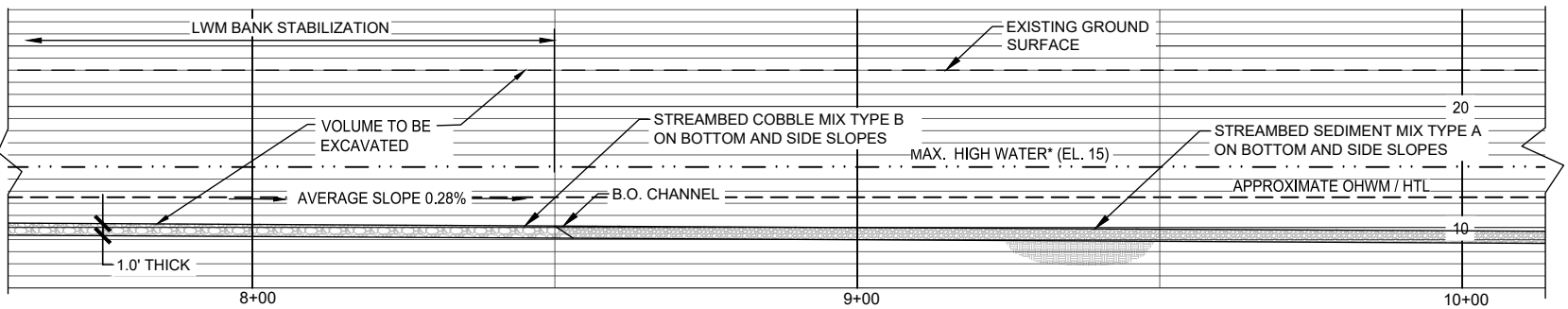
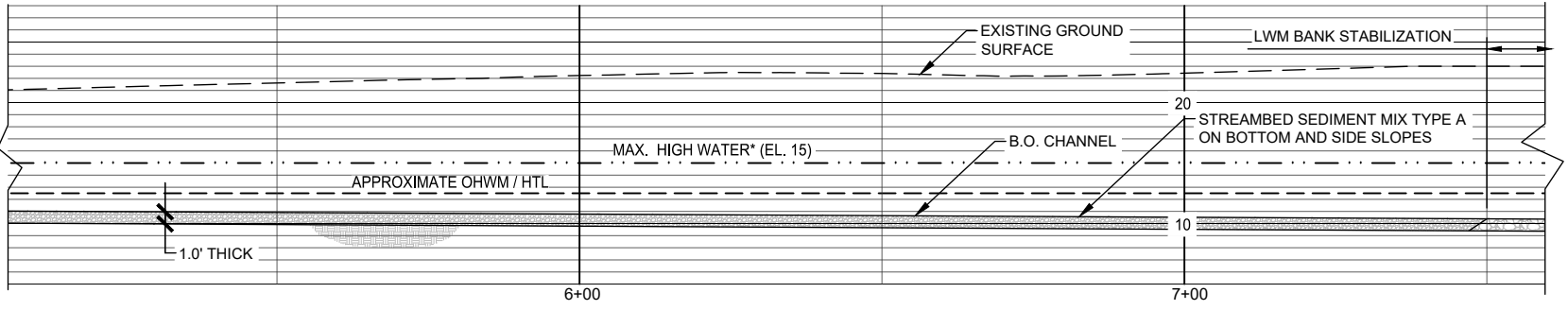
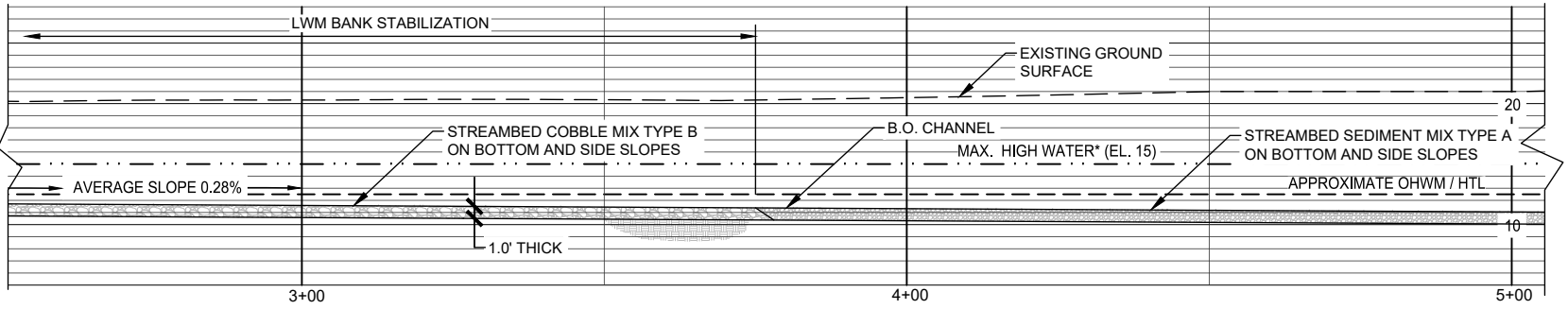
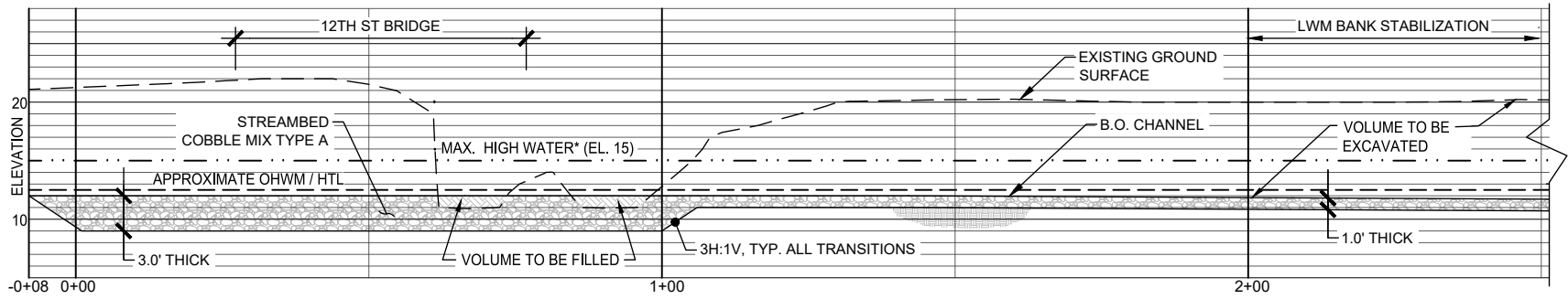
**SUBSTRATE DESCRIPTIONS**

- STREAMBED COBBLE MIX TYPE A - MIX OF WSDOT 4" STREAMBED COBBLES W/ STREAMBED SEDIMENT (COARSER). COBBLE/GRAVEL/SAND
- STREAMBED COBBLE MIX TYPE B - MIX OF WSDOT 4" STREAMBED COBBLES W/ STREAMBED SEDIMENT (FINER). GRAVEL/SAND W/ COBBLE
- STREAMBED SEDIMENT MIX TYPE A - MIX OF WSDOT STREAMBED SEDIMENT WITH SMALL PROPORTION OF 4" STREAMBED COBBLES. SAND/GRAVEL W/ COBBLE

PARCEL #: 0320011117, 03200130055, 03200131157,  
0320013158, & 0320017003  
DATUM: VERT. MLLW (PORT OF TACOMA TIDAL DATUM)  
REFERENCE #: NWS 2020-457-WFD  
ADJACENT PROPERTY OWNERS:  
1. SEE JARPA APPLICATION  
SITE LOCATION ADDRESS  
NE CORNER OF ALEXANDER AVE. EAST AND 12TH STREET EAST

**LOWER WAPATO  
CREEK HABITAT PROJECT**  
**TYPICAL STREAM  
CROSS SECTIONS**  
APPLICANT: PORT OF TACOMA

PROPOSED: REPLACE CULVERTS & RESTORE STREAM,  
ESTUARY AND WETLANDS TO SECURE  
ADVANCE MITIGATION CREDIT  
WAPATO CREEK  
TACOMA/PIERCE, WA  
COUNTY: PIERCE  
SHEET 19 OF 34  
DATE: JUNE 1, 2020



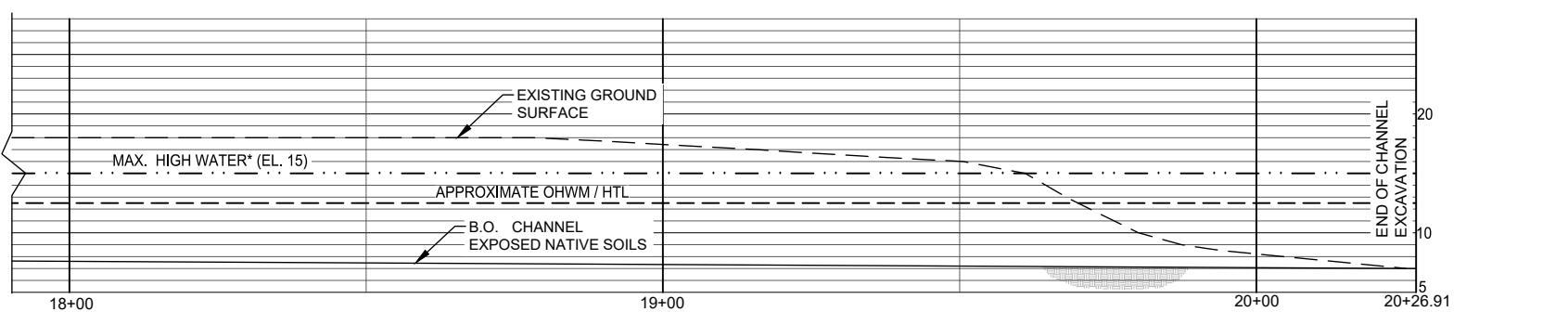
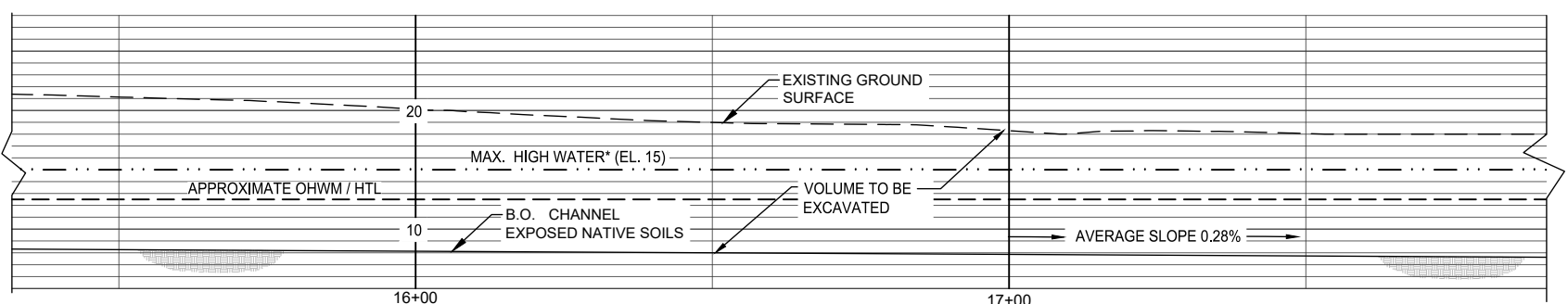
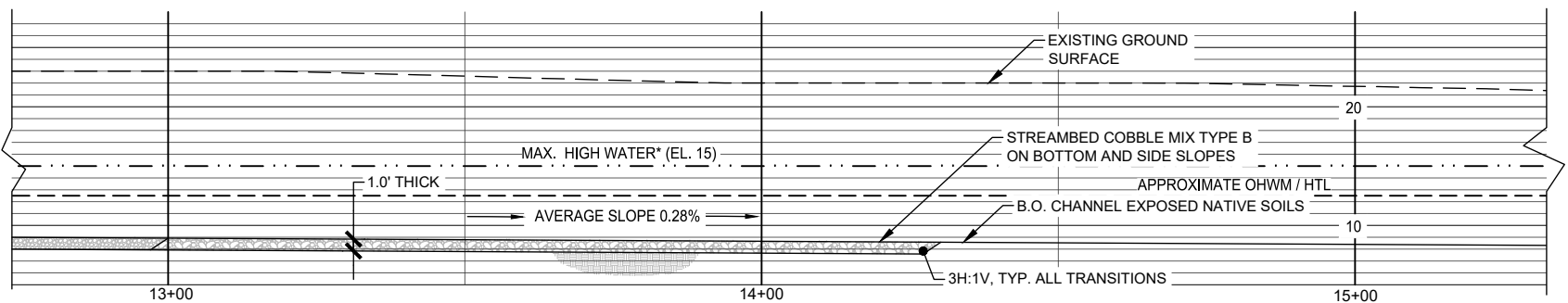
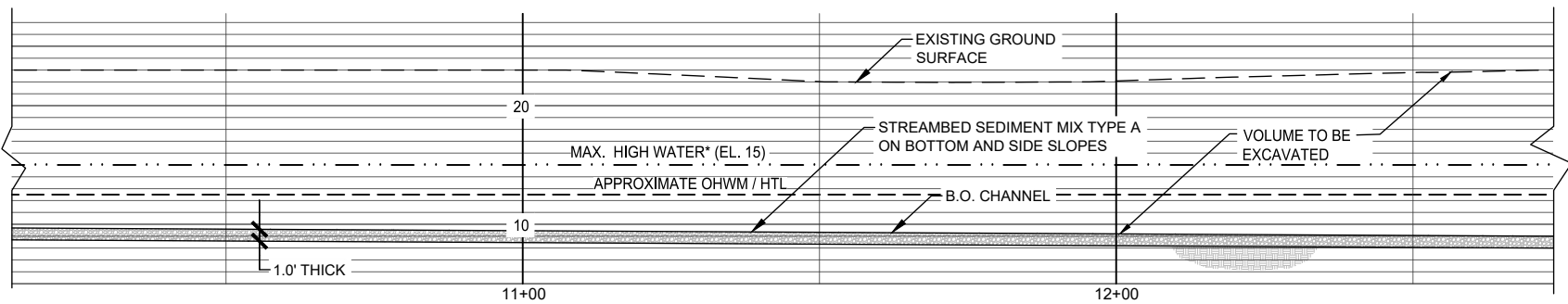
**STREAM PROFILE**  
 HORIZONTAL SCALE: 1"=30', VERTICAL SCALE 1"=15'

PARCEL #: 0320011117, 03200130055, 0320013157,  
 0320013158, & 0320017003  
 DATUM: VERT. MLLW (PORT OF TACOMA TIDAL DATUM)  
 REFERENCE #: NWS 2020-457-WFD  
 ADJACENT PROPERTY OWNERS:  
 1. SEE JARPA APPLICATION  
 SITE LOCATION ADDRESS  
 NE CORNER OF ALEXANDER AVE. EAST AND 12TH STREET EAST

**LOWER WAPATO  
 CREEK HABITAT PROJECT**  
**STREAM PROFILE 1**  
 APPLICANT: PORT OF TACOMA

PROPOSED: REPLACE CULVERTS & RESTORE STREAM,  
 ESTUARY AND WETLANDS TO SECURE  
 ADVANCE MITIGATION CREDIT  
 WAPATO CREEK  
 TACOMA/FIFE, WA  
 COUNTY: PIERCE  
 SHEET 20 OF 34  
 DATE: JUNE 1, 2020

PROJECT: LOWER WAPATO CREEK HABITAT PROJECT, PORT OF TACOMA, WASHINGTON, MODEL: 12.0, DATE: 06/01/2020, 11:30 AM, 10/08/2020



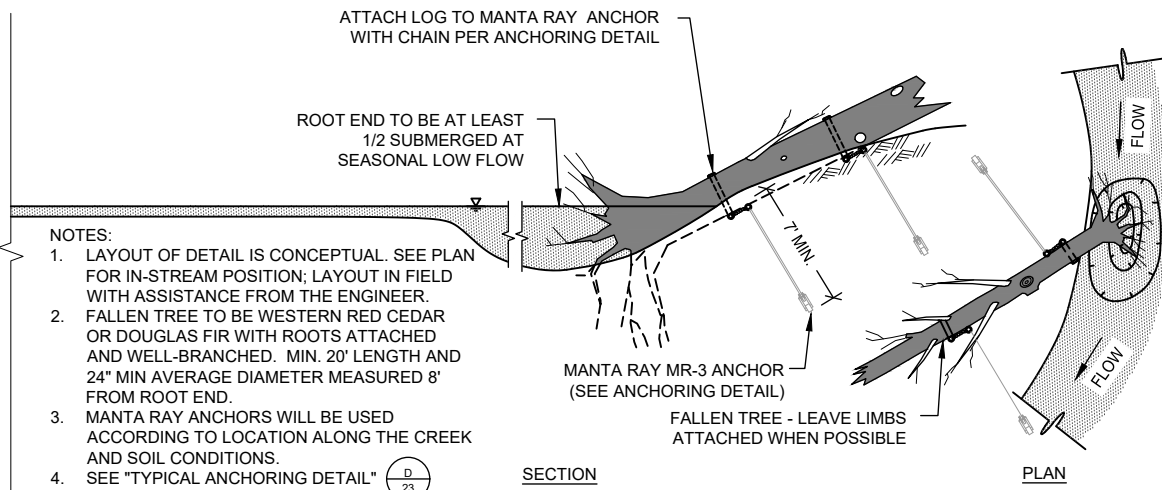
**STREAM PROFILE**  
 HORIZONTAL SCALE: 1"=30', VERTICAL SCALE 1"=15'

PARCEL #: 0320011117, 03200130055, 0320013157,  
 0320013158, & 0320017003  
 DATUM: VERT. MLLW (PORT OF TACOMA TIDAL DATUM)  
 REFERENCE #: NWS 2020-457-WPD  
 ADJACENT PROPERTY OWNERS:  
 1. SEE JARPA APPLICATION  
 SITE LOCATION ADDRESS  
 NE CORNER OF ALEXANDER AVE. EAST AND 12TH STREET EAST

**LOWER WAPATO  
 CREEK HABITAT PROJECT**  
**STREAM PROFILE 2**  
 APPLICANT: PORT OF TACOMA

PROPOSED: REPLACE CULVERTS & RESTORE STREAM,  
 ESTUARY AND WETLANDS TO SECURE  
 ADVANCE MITIGATION CREDIT  
 WAPATO CREEK  
 TACOMA/FIFE, WA  
 COUNTY: PIERCE  
 SHEET 21 OF 34  
 DATE: JUNE 1, 2020

P:\MORTENSEN\PROJECTS\2020\PORT OF TACOMA\HABITAT\_MITIGATION\NWS\2020-457-WPD\13\_STREAM\_PROFILE\_2.dwg 13:20:11 30 JUN 2020

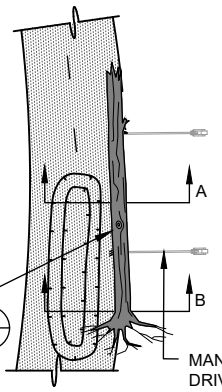


- NOTES:**
- LAYOUT OF DETAIL IS CONCEPTUAL. SEE PLAN FOR IN-STREAM POSITION; LAYOUT IN FIELD WITH ASSISTANCE FROM THE ENGINEER.
  - FALLEN TREE TO BE WESTERN RED CEDAR OR DOUGLAS FIR WITH ROOTS ATTACHED AND WELL-BRANCHED. MIN. 20' LENGTH AND 24" MIN AVERAGE DIAMETER MEASURED 8' FROM ROOT END.
  - MANTA RAY ANCHORS WILL BE USED ACCORDING TO LOCATION ALONG THE CREEK AND SOIL CONDITIONS.
  - SEE "TYPICAL ANCHORING DETAIL" (D 23)

**(A) FALLEN TREE**  
N.T.S.

- NOTES:**
- LAYOUT OF DETAIL IS CONCEPTUAL. SEE PLAN FOR IN-STREAM POSITION; LAYOUT IN FIELD WITH ASSISTANCE FROM THE ENGINEER. SEE "TYPICAL ANCHORING DETAIL" FOR LOG SPECIFICATIONS AND ANCHORING INFORMATION.
  - BANK LOG TO BE WESTERN RED CEDAR OR DOUGLAS FIR W/ ROOTS ATTACHED AND NO BRANCHES. MIN. 20' LENGTH AND 12" - 16" MIN AVERAGE DIAMETER MEASURED 8' FROM ROOT END.

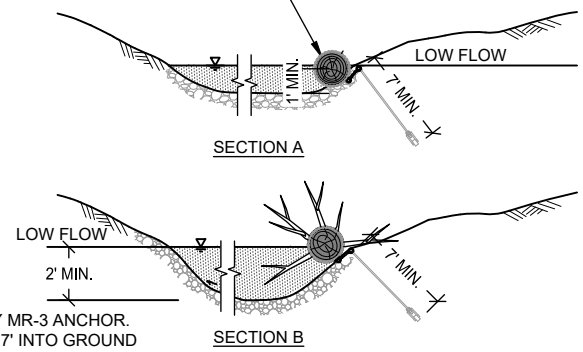
ATTACH BANK LOG TO MANTA RAY ANCHORS, ONE AT EACH END, PER ANCHORING DETAIL (D 23)



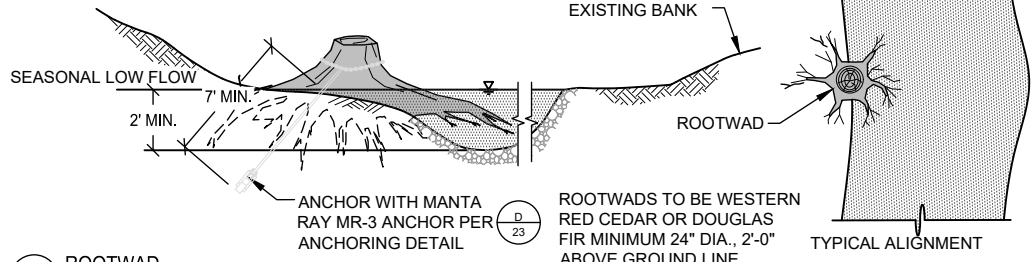
MANTA RAY MR-3 ANCHOR. DRIVE MIN. 7" INTO GROUND

**(B) BANK LOG**  
N.T.S.

**NOTE: STREAMBED MATERIAL AS DESCRIBED ON SHEET 19 SHALL BE USED UNDERNEATH WOODY MATERIAL BASED ON CHANNEL STATIONING**



**NOTE: STREAMBED MATERIAL AS DESCRIBED ON SHEET 19 SHALL BE USED UNDERNEATH WOODY MATERIAL BASED ON CHANNEL STATIONING**



**(C) ROOTWAD**  
N.T.S.

- GENERAL NOTES**
- THE PROJECT AREA SHALL BE ENHANCED THROUGH THE PLACEMENT OF LARGE WOODY MATERIAL (LWM). RAW WOOD SHALL BE USED; LWM FOR THIS PROJECT SHALL NOT BE TREATED WITH PRESERVATIVES. LWM SHALL CONSIST OF FIR, CEDAR, OR ANOTHER APPROVED CONIFEROUS SPECIES.
  - LWM SHALL BE INSTALLED PRIOR TO FABRIC INSTALLATION.
  - DETAILS SHOWN ARE FOR LWM ADJACENT TO STREAM CHANNEL, SIMILAR CONFIGURATION OF LWM ANCHORING WILL BE PROVIDED FOR WETLAND re-establishment AREA.
  - LOW FLOW IS APPROXIMATELY MHW.

PARCEL #: 0320011117, 03200130055, 0320013157,  
0320013158, & 0320017003  
DATUM: VERT. MLLW (PORT OF TACOMA TIDAL DATUM)  
REFERENCE #: NWS 2020-457-WFD  
ADJACENT PROPERTY OWNERS:  
1. SEE JARPA APPLICATION  
SITE LOCATION ADDRESS  
NE CORNER OF ALEXANDER AVE. EAST AND 12TH STREET EAST

**LOWER WAPATO CREEK HABITAT PROJECT**  
**LARGE WOODY MATERIAL DETAILS 1**  
APPLICANT: PORT OF TACOMA

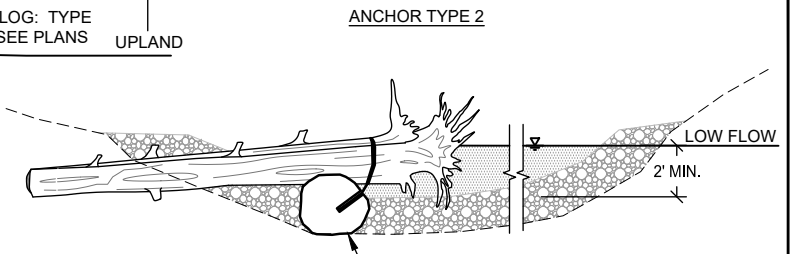
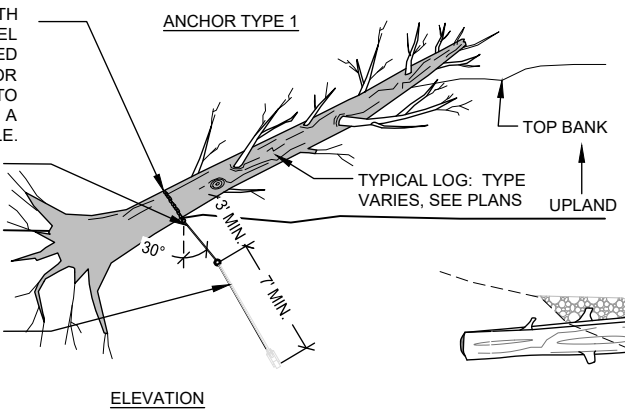
**PROPOSED:** REPLACE CULVERTS & RESTORE STREAM, ESTUARY AND WETLANDS TO SECURE ADVANCE MITIGATION CREDIT WAPATO CREEK  
**IN:** TACOMA/PIFE, WA  
**AT:** PIERCE  
**COUNTY:** PIERCE  
SHEET 22 OF 34  
DATE: JUNE 1, 2020

PARCEL #: 0320011117, 03200130055, 0320013157,  
 0320013158, & 0320017003  
 DATUM: VERT. MLLW (PORT OF TACOMA TIDAL DATUM)  
 REFERENCE #: NWS 2020-457-MRD  
 ADJACENT PROPERTY OWNERS:  
 1. SEE JARPA APPLICATION  
 SITE LOCATION ADDRESS  
 NE CORNER OF ALEXANDER AVE EAST AND 12TH STREET EAST

**LOWER WAPATO CREEK HABITAT PROJECT**  
**LARGE WOODY MATERIAL DETAILS 2**  
 APPLICANT: PORT OF TACOMA

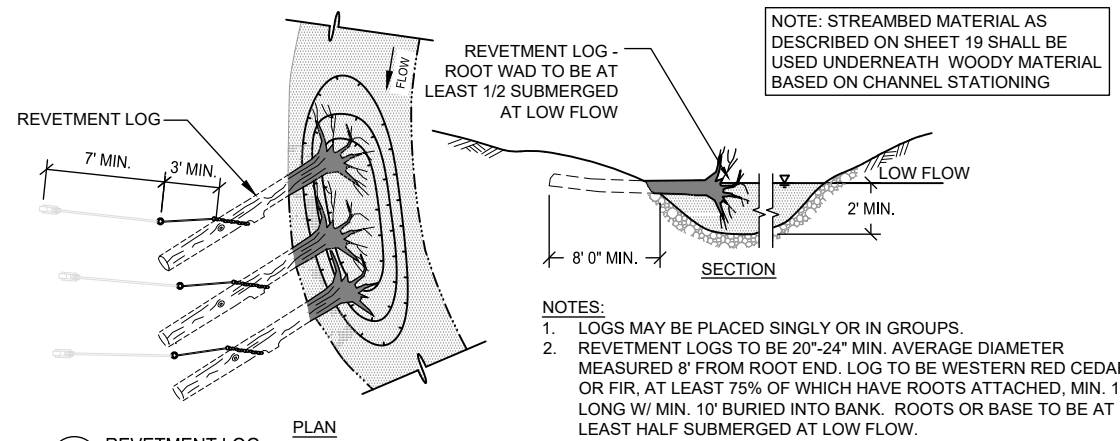
PROPOSED: REPLACE CULVERTS & RESTORE STREAM, ESTUARY AND WETLANDS TO SECURE ADVANCE MITIGATION CREDIT  
 WAPATO CREEK  
 TACOMA/PIERCE, WA  
 COUNTY: PIERCE  
 SHEET 23 OF 34  
 DATE: JUNE 1, 2020

LOGS SHALL BE SECURED WITH HEAVY, NON-GALVANIZED #316 STAINLESS STEEL CHAIN (SUCH AS 3/8" OR 1/2" LONG LINK SELF COLORED LASHING CHAIN) WITH WORKING LOAD OF 7,000 LBS OR MORE. LOGS TO BE DOUBLE-WRAPPED, SCORED TO PARTIALLY RECESS CHAIN, AND THE LOOP CLOSED WITH A HEAVY #316 STAINLESS STEEL SHACKLE. SHACKLE TO BE CABLED TO A 7' MIN. LENGTH #316 STAINLESS STEEL THREADED ROD TOPPED WITH A THREADED EYE IN TURN ATTACHED TO A MANTA RAY MR3 ANCHOR (OR OTHER APPROVED DEVICE) CAPABLE OF HOLDING 7,000 LBS MIN. CABLE TO BE 3/4" #316 STAINLESS STEEL FITTED WITH A #316 STAINLESS STEEL EYE AT EACH END. DRIVE MANTA RAY MR3 ANCHORS APPROX. 30° FROM VERTICAL AND 30° LANDWARD FROM A LINE PARALLEL TO THE BANK (I.E. AIMED UPSTREAM AND INTO THE BANK). DRIVE ANCHORS MIN. 7' INTO THE GROUND, 2 ANCHORS MIN. PER LOG.



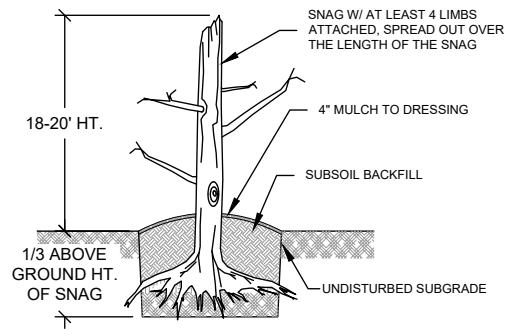
ANCHORAGE SYSTEM WILL BE A COMBINATION OF BOULDER AND ANCHOR DEPENDING ON LOCATION ALONG THE CREEK AND SOIL CONDITIONS.

**D** TYPICAL LOG ANCHORING DETAIL  
 N.T.S.



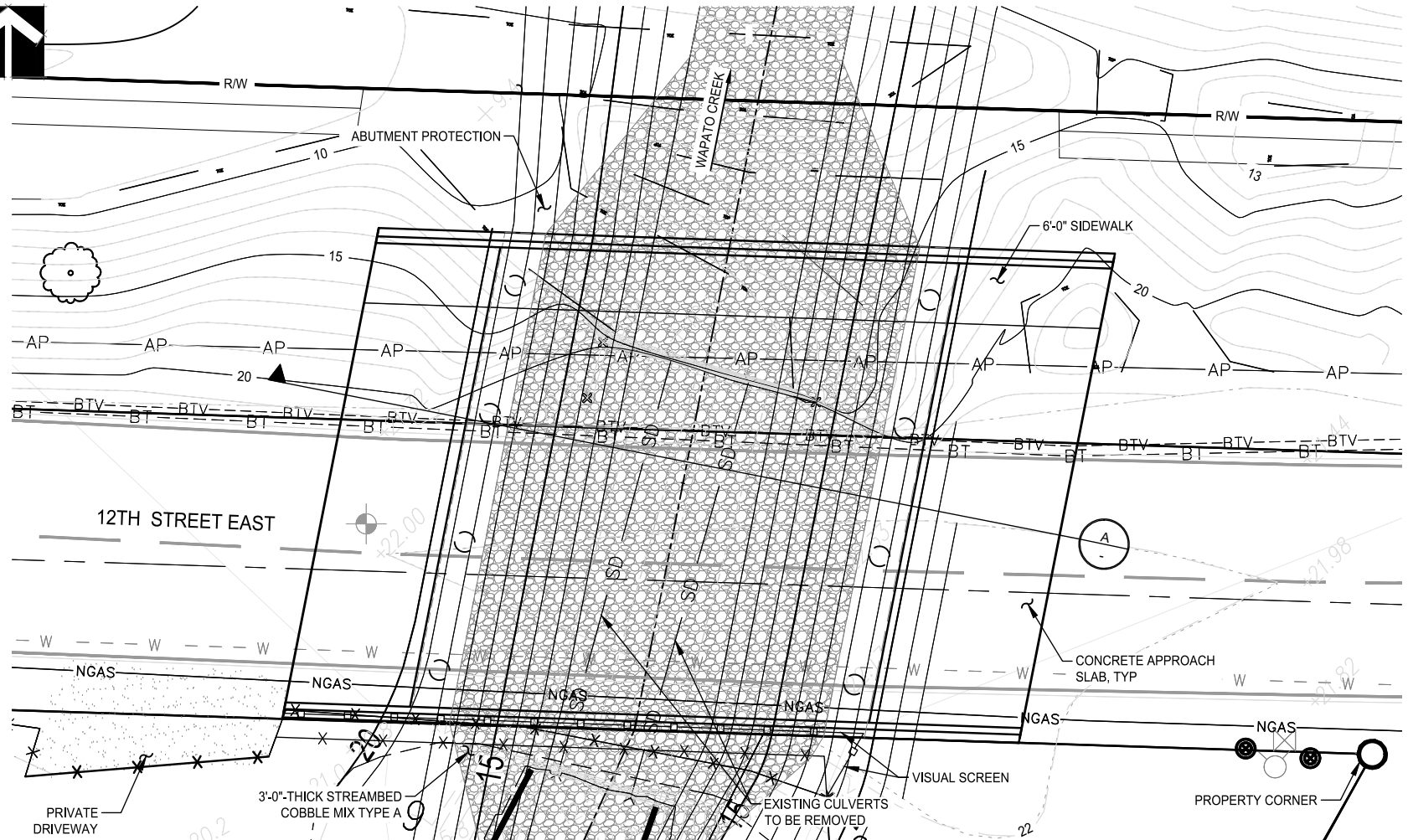
**NOTES:**  
 1. LOGS MAY BE PLACED SINGLY OR IN GROUPS.  
 2. REVETMENT LOGS TO BE 20"-24" MIN. AVERAGE DIAMETER MEASURED 8' FROM ROOT END. LOG TO BE WESTERN RED CEDAR OR FIR, AT LEAST 75% OF WHICH HAVE ROOTS ATTACHED, MIN. 18' LONG W/ MIN. 10' BURIED INTO BANK. ROOTS OR BASE TO BE AT LEAST HALF SUBMERGED AT LOW FLOW.

**E** REVETMENT LOG  
 N.T.S.

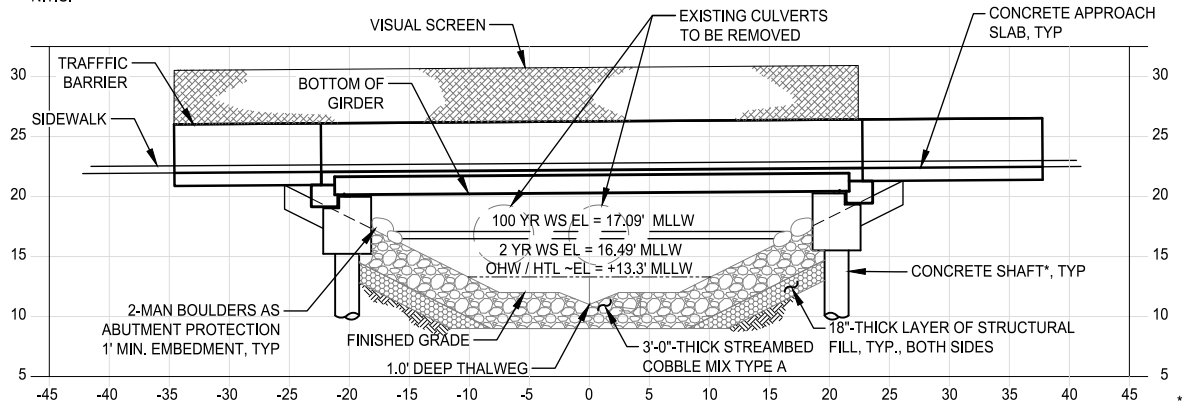


**NOTES**  
 1. UPRIGHT SNAGS ARE TO BE PLACED AT THE LOCATIONS SHOWN ON THE PLAN.  
 2. ALL SNAGS SHALL BE WESTERN RED CEDAR OR DOUGLAS-FIR TREES WITH A SUBSTANTIAL PORTION OF THEIR LIMBS LEFT INTACT. DO NOT TRIM TOPS, DAMAGED OR BROKEN TOPS ARE PREFERRED. PROVIDE LOGS WITH NUMEROUS UNTRIMMED LIMBS. LOGS USED FOR SNAGS MAY BE PARTIALLY HOLLOW AND CONTAIN CAVITIES AS LONG AS THEY ARE GENERALLY SOUND.  
 3. SNAGS SHALL BE A MINIMUM OF 24 INCHES IN DIAMETER AT GROUND SURFACE WHEN INSTALLED AND SHALL BE PLACED TO A DEPTH INTO THE GROUND EQUAL TO 1/3RD OF THEIR ABOVE-GROUND HEIGHT.  
 4. SNAGS WITH SUBSTANTIAL ROOT MASSES ATTACHED MAY BE PLACED TO THE DEPTH INDICATED AND BACKFILLED WITH COMPACTED SOIL ONLY UPON APPROVAL OF EACH SNAG INDIVIDUALLY BY THE ENGINEER.  
 5. ADDITIONAL LIMBS MAY BE INSTALLED AT THE DIRECTION OF THE ENGINEER.  
 6. MINIMUM NUMBER OF BRANCHES TO BE SPECIFIED PER SNAG IN FINAL DESIGN.

**F** SNAG DETAIL  
 N.T.S.



**PLAN**  
N.T.S.



**SECTION A**  
1" = 15'-0" FEET

\* CONCRETE DRILLED SHAFT CONFIGURATION SHOWN. FOUNDATION MAY CHANGE TO BE DRIVEN PILES DURING FINAL DESIGN

PARCEL #: 0320011117, 03200130055, 0320013157,  
0320013158, & 0320017003  
DATUM: VERT. MLLW (PORT OF TACOMA TIDAL DATUM)  
REFERENCE #: NWS 2020-457-WRD  
ADJACENT PROPERTY OWNERS:  
1. SEE JARPA APPLICATION  
SITE LOCATION ADDRESS  
NE CORNER OF ALEXANDER AVE, EAST AND 12TH STREET EAST

# LOWER WAPATO CREEK HABITAT PROJECT

## BRIDGE LAYOUT

APPLICANT: PORT OF TACOMA

PROPOSED: REPLACE CULVERTS & RESTORE STREAM,  
ESTUARY AND WETLANDS TO SECURE  
ADVANCE MITIGATION CREDIT

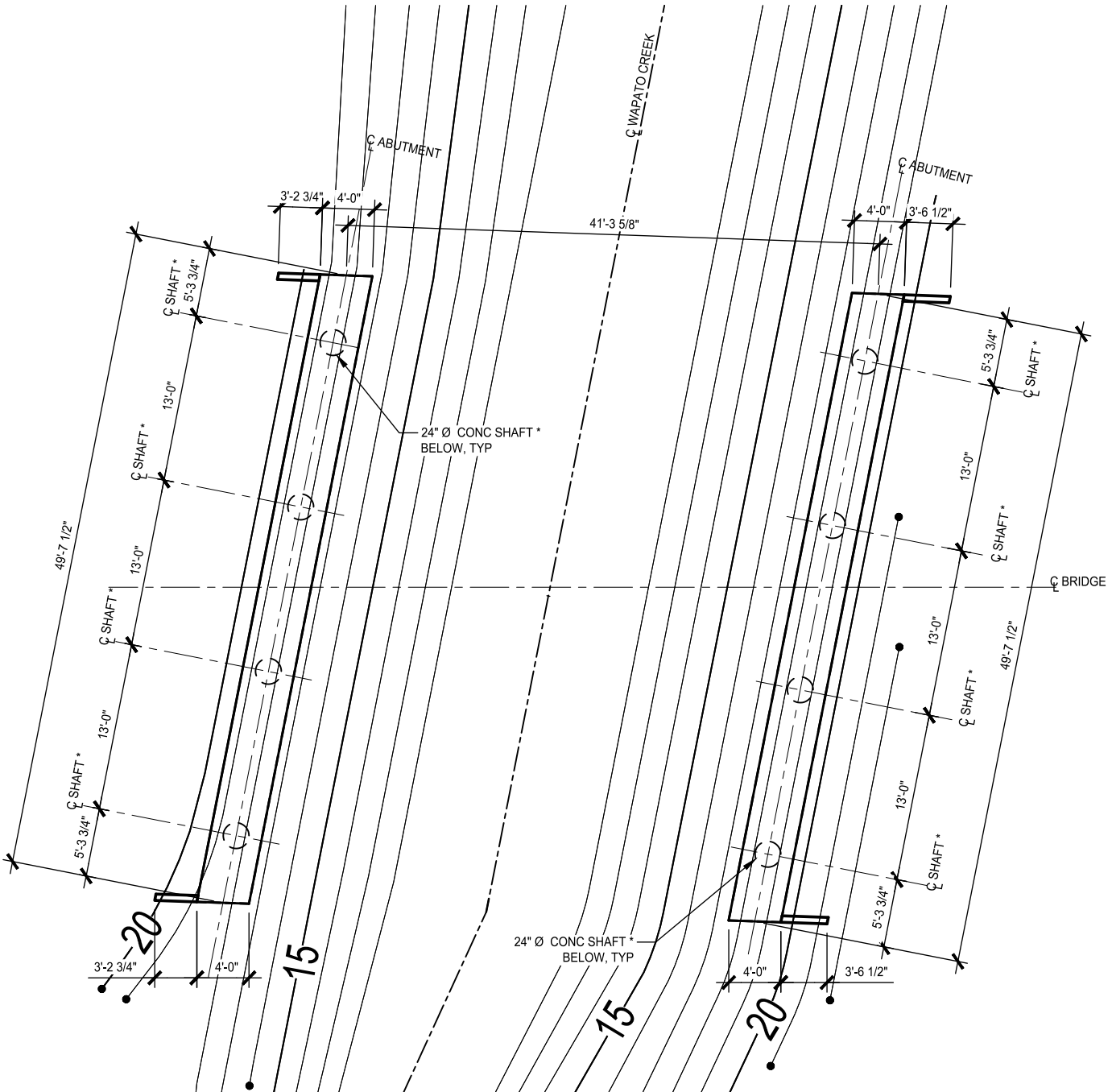
IN: WAPATO CREEK  
AT: TACOMA/PIE, WA  
COUNTY: PIERCE

SHEET 24 OF 34

DATE: JUNE 1, 2020

PROJECT: 20190614-1117-03200130055-0320013158-0320017003-PORT OF TACOMA HABITAT RESTORATION; JURIST: JIM LINDNER; DESIGNATOR: PERMIT/STANDARD; TACOMA\_HABITAT\_RESTORATION\_SHEET\_24\_OF\_34\_2020-06-01\_SHEW-0000000





**FOUNDATION PLAN**  
N.T.S.

\* CONCRETE DRILLED SHAFT CONFIGURATION SHOWN. FOUNDATION MAY CHANGE TO BE DRIVEN PILES DURING FINAL DESIGN



PARCEL #: 0320011117, 03200130055, 0320013157,  
0320013158, & 0320017003  
DATUM: VERT. MLLW (PORT OF TACOMA TIDAL DATUM)  
REFERENCE #: NWS 2020-457-WPFD  
ADJACENT PROPERTY OWNERS:  
1. SEE JARPA APPLICATION  
SITE LOCATION ADDRESS  
NE CORNER OF ALEXANDER AVE. EAST AND 12TH STREET EAST

**LOWER WAPATO  
CREEK HABITAT PROJECT**

**FOUNDATION PLAN**

APPLICANT: PORT OF TACOMA

PROPOSED: REPLACE CULVERTS & RESTORE STREAM,  
ESTUARY AND WETLANDS TO SECURE  
ADVANCE MITIGATION CREDIT  
WAPATO CREEK  
TACOMA/FIFE, WA  
COUNTY: PIERCE  
SHEET 25 OF 34  
DATE: JUNE 1, 2020

PARCEL #: 0320011117, 03200130055, 03200131157,  
 03200131158, & 0320017003  
 DATUM: VERT. MLLW (PORT OF TACOMA TIDAL DATUM)  
 REFERENCE #: NWS 2020-457-WRD

ADJACENT PROPERTY OWNERS:  
 1. SEE JARPA APPLICATION

SITE LOCATION ADDRESS  
 NE CORNER OF ALEXANDER AVE. EAST AND 12TH STREET EAST

**LOWER WAPATO  
 CREEK HABITAT PROJECT**

**STREAM PROFILE -  
 BRIDGE CROSSING**

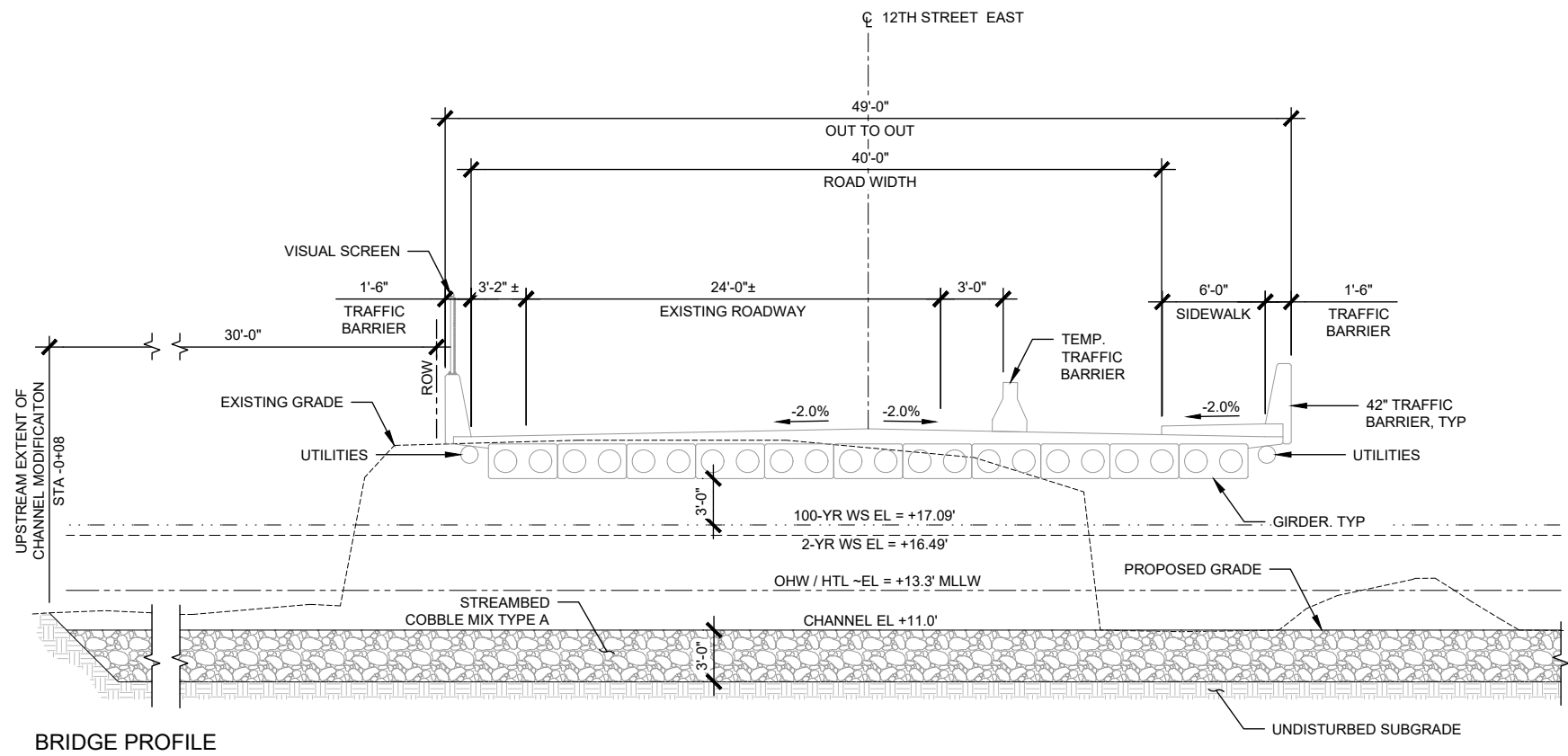
APPLICANT: PORT OF TACOMA

PROPOSED: REPLACE CULVERTS & RESTORE STREAM,  
 ESTUARY AND WETLANDS TO SECURE  
 ADVANCE MITIGATION CREDIT  
 WAPATO CREEK

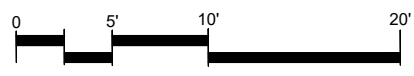
IN: TACOMA/PIE  
 AT: TACOMA/PIE, WA  
 COUNTY: PIERCE

SHEET 26 OF 34

DATE: JUNE 1, 2020



**BRIDGE PROFILE**






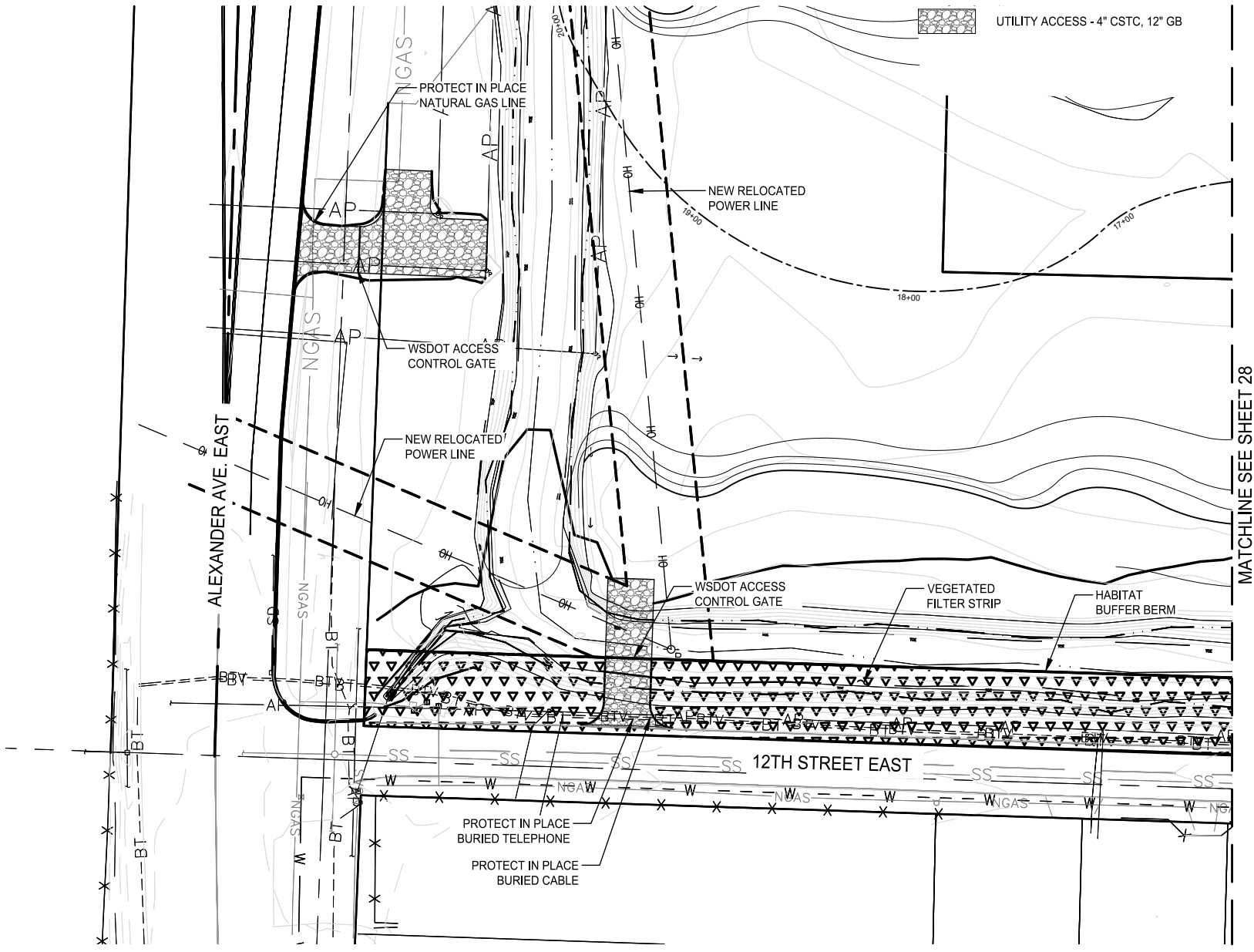
**NOTES**

- CONSTRUCTION SPECIFICATIONS: MATERIALS, CONSTRUCTION AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE PROJECT PLANS AND SPECIFICATIONS.
- MATERIALS:
  - CONCRETE: SHALL CONFORM TO THE REQUIREMENTS OF SECTION 03 30 00 OF THE PROJECT SPECIFICATION
    - APPROACH SLAB = CLASS 4000A
    - BRIDGE DECK = CLASS 4000D
    - TRAFFIC BARRIER, ABUTMENTS = CLASS 4000
    - DRILLED SHAFTS = CLASS 5000P
    - PRECAST PRESTRESSED GIRDERS AT RELEASE = 5000
    - PRECAST PRESTRESSED GIRDERS AT 28 DAYS = CLASS 6000
    - SHAFT SPIRAL REINFORCING STEEL: ASTM A706, GRADE 60-WELDABLE
    - ALL OTHER REINFORCING STEEL: ASTM A615, GRADE 60
  - PRESTRESSING STRANDS: AASHTO M203 GRADE 270 0.6" DIAMETER LOW RELAXATION 7-WIRE STRAND,  $F_{pu} = 270$  KSI
  - SELECT STRUCTURAL FILL AND BACKFILL: MATERIAL SHALL CONSIST OF WELL-GRADED SAND AND GRAVEL OR CRUSHED ROCK, EITHER NATURALLY OCCURRING OR PROCESSED. MATERIAL SHALL BE GRADED BETWEEN THE LIMITS SPECIFIED BELOW:
 

SIEVE SIZE	PERCENT PASSING (BY WEIGHT)
4-INCH	99-100
2-INCH	75-100
U.S. NO. 4	22-66
U.S. NO. 200	0-5
- THICKNESS OF STREAMBED COBBLE MIX TYPE A WILL TRANSITION UPSTREAM AND DOWNSTREAM OF THE BRIDGE AT THE DIRECTION OF THE ENGINEER TO MAINTAIN A STABLE CREEK CHANNEL.

**LEGEND**

-  NEW ASPHALT PAVEMENT - 6" HMA, 8" CSBC
-  VEGETATED FILTER STRIP
-  UTILITY ACCESS - 4" CSTC, 12" GB



MATCHLINE SEE SHEET 28

**SITE PLAN - AREA 1**  
N.T.S.






**PARCEL #:** 0320011117, 03200130055, 0320013157,  
 0320013158, & 0320017003  
**DATUM:** VERT. MLLW (PORT OF TACOMA TIDAL DATUM)  
**REFERENCE #:** NWS 2020-457-WPD  
**ADJACENT PROPERTY OWNERS:**  
 1. SEE JARPA APPLICATION  
**SITE LOCATION ADDRESS**  
 NE CORNER OF ALEXANDER AVE. EAST AND 12TH STREET EAST

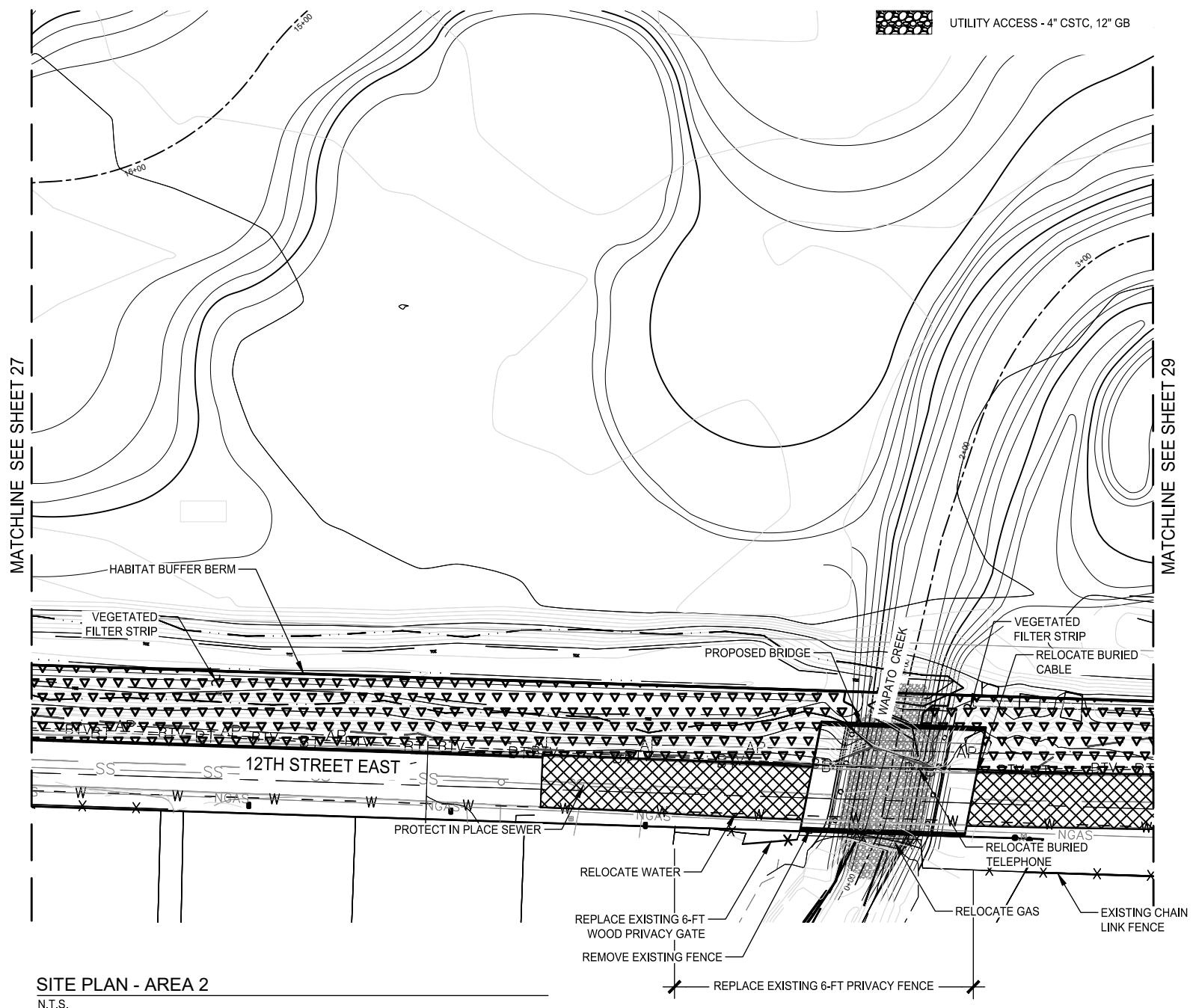
**LOWER WAPATO  
 CREEK HABITAT PROJECT**  
**CIVIL / SITE PLAN**  
**AREA 1**  
 APPLICANT: PORT OF TACOMA

**PROPOSED:** REPLACE CULVERTS & RESTORE STREAM,  
 ESTUARY AND WETLANDS TO SECURE  
 ADVANCE MITIGATION CREDIT  
**IN:** WAPATO CREEK  
**AT:** TACOMA/IFE, WA  
**COUNTY:** PIERCE  
**SHEET 27 OF 34**  
**DATE:** JUNE 1, 2020

PROJECT: SEWELLVILLE.COM\PORT OF TACOMA\HABITAT\PROJECTS\WAPATO\AREA 1\CIVIL\DWG\DWG\_27.dwg, DATE: 13-JUN-2020 10:58 AM, USER: JARPA

**LEGEND**

-  NEW ASPHALT PAVEMENT - 6" HMA, 8" CSBC
-  VEGETATED FILTER STRIP
-  UTILITY ACCESS - 4" CSTC, 12" GB



**SITE PLAN - AREA 2**  
N.T.S.




PARCEL #: 0320011117, 03200130055, 0320013157,  
0320013158 & 0320017003  
DATUM: VERT. MLLW (PORT OF TACOMA TIDAL DATUM)  
REFERENCE #: NWS 2020-457-WPD  
ADJACENT PROPERTY OWNERS:  
1. SEE JARPA APPLICATION  
SITE LOCATION ADDRESS  
NE CORNER OF ALEXANDER AVE. EAST AND 12TH STREET EAST

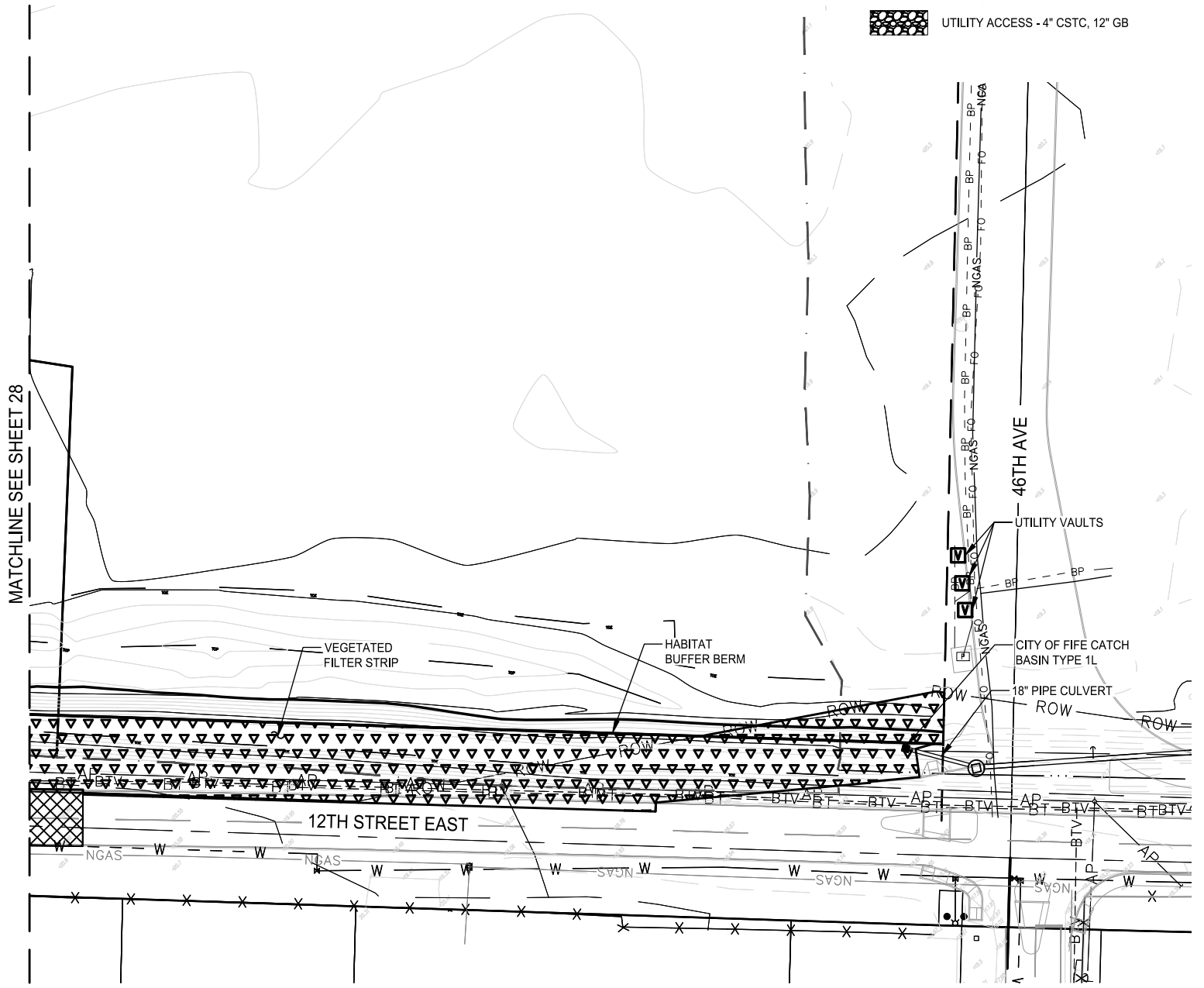
**LOWER WAPATO  
CREEK HABITAT PROJECT  
CIVIL / SITE PLAN  
AREA 2**

APPLICANT: PORT OF TACOMA  
**PROPOSED:** REPLACE CULVERTS & RESTORE STREAM,  
ESTUARY AND WETLANDS TO SECURE  
ADVANCE MITIGATION CREDIT  
WAPATO CREEK  
TACOMA/PIE, WA  
DATE: JUNE 1, 2020  
SHEET 28 OF 34

PROJECT: SEWERLINE, COM/NOT/FISH/WETLANDS/ESTUARY/PORT OF TACOMA HABITAT MITIGATION/ADVANCE MITIGATION/JUNE 1, 2020 - 3:30 PM (COMMISSIONER)

**LEGEND**

-  NEW ASPHALT PAVEMENT - 6" HMA, 8" CSBC
-  VEGETATED FILTER STRIP
-  UTILITY ACCESS - 4" CSTC, 12" GB



**SITE PLAN - AREA 3**  
N.T.S.

PARCEL #: 0320011117, 03200130055, 0320013157,  
0320013158, & 0320017003  
DATUM: VERT. MLLW (PORT OF TACOMA TIDAL DATUM)  
REFERENCE #: NWS 2020-457-WPD  
ADJACENT PROPERTY OWNERS:  
1. SEE JARPA APPLICATION  
SITE LOCATION ADDRESS  
NE CORNER OF ALEXANDER AVE, EAST AND 12TH STREET EAST

**LOWER WAPATO  
CREEK HABITAT PROJECT**

**CIVIL / SITE PLAN  
AREA 3**








APPLICANT: PORT OF TACOMA

**PROPOSED:** REPLACE CULVERTS & RESTORE STREAM,  
ESTUARY AND WETLANDS TO SECURE  
ADVANCE MITIGATION CREDIT  
WAPATO CREEK  
TACOMA/FIFE, WA  
**AT:**  
COUNTY: PIERCE  
**SHEET** 29 OF 34  
**DATE:** JUNE 1, 2020








MATCHLINE A (NEXT SHEET)

MATCHLINE B (NEXT SHEET)

### PLANTING ZONES

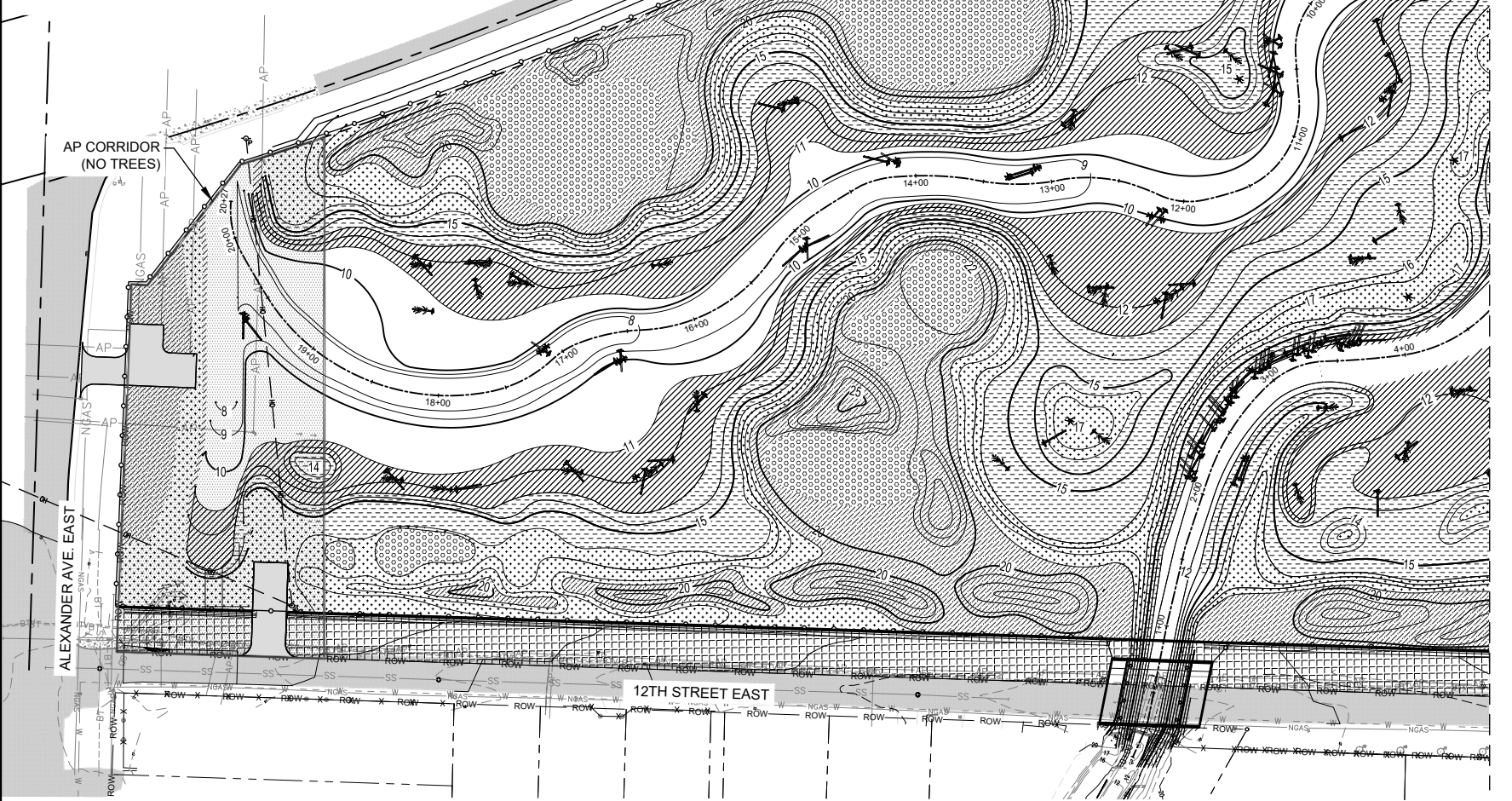
-  WETLAND EMERGENT ZONE
-  WETLAND PALUSTRINE FORESTED ZONE
-  TRANSITIONAL PLANTING ZONE
-  UPLAND ZONE
-  UPLAND ENHANCEMENT ZONE
-  VEGETATED FILTER STRIP
-  AP CORRIDOR - NO TREES

### PLAN LEGEND

-  EXISTING CONTOUR
-  PROPOSED CONTOUR
-  EXISTING STREAM OHWM
-  PROPOSED STREAM CENTER LINE
-  RIGHT OF WAY (ROW)
-  PARCEL LINE
-  PERIMETER FENCE

PARCEL #: 0320011117, 03200130055, 0320013157,  
 0320013158, & 0320017003  
 DATUM: VERT. MLLW (PORT OF TACOMA TIDAL DATUM)  
 REFERENCE #: NWS 2020-457-WFD

ADJACENT PROPERTY OWNERS:  
 1. SEE JARPA APPLICATION  
 SITE LOCATION ADDRESS  
 NE CORNER OF ALEXANDER AVE EAST AND 12TH STREET EAST



PLANTING TYPICALS  
ON PAGE 31

## LOWER WAPATO CREEK HABITAT PROJECT

### PLANTING PLAN 1

APPLICANT: PORT OF TACOMA

PROPOSED: REPLACE CULVERTS & RESTORE STREAM,  
ESTUARY AND WETLANDS TO SECURE  
ADVANCE MITIGATION CREDIT

IN: WAPATO CREEK  
 AT: TACOMA/PIE, WA  
 COUNTY: PIERCE

SHEET 30 OF 34

DATE: JUNE 1, 2020

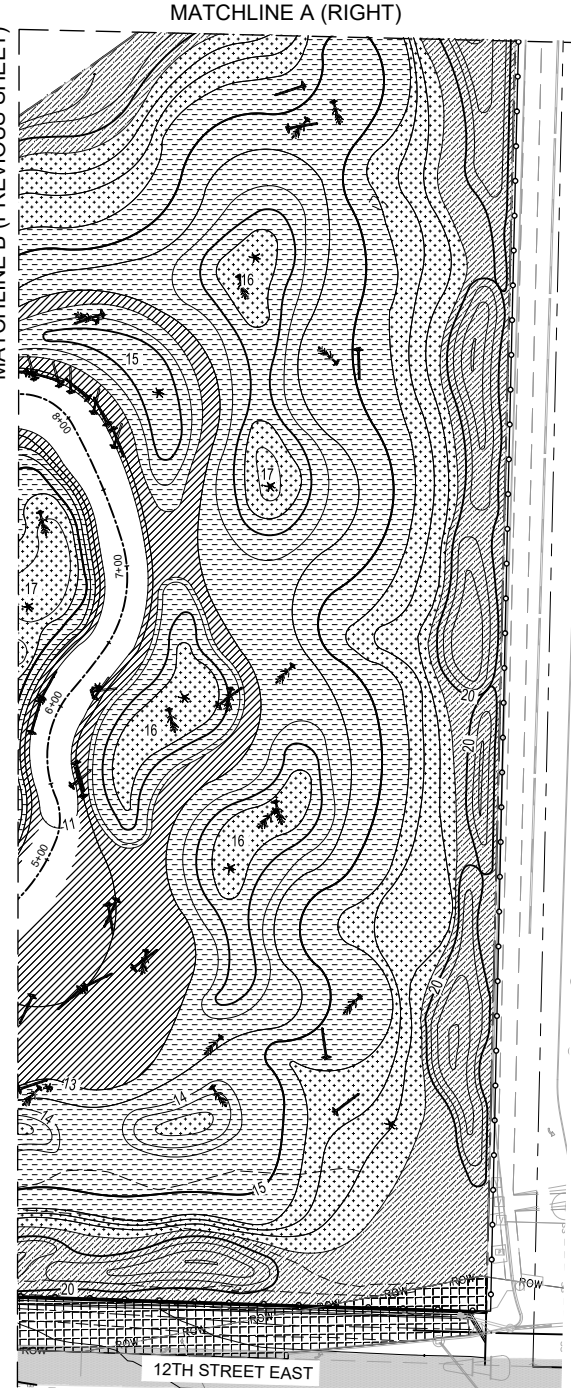
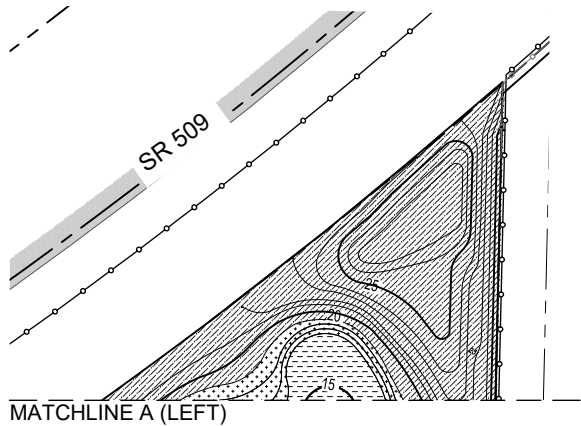
PROJECT: LOWER WAPATO CREEK HABITAT PROJECT; SHEET: PLANTING PLAN 1; DATE: 06/01/2020; SCALE: AS SHOWN; DRAWN BY: [unreadable]; CHECKED BY: [unreadable]; APPROVED BY: [unreadable]

### PLAN LEGEND

- EXISTING CONTOUR
- ## PROPOSED CONTOUR
- - - EXISTING STREAM OHWM
- \*-\*- PROPOSED STREAM CENTER LINE
- ROW — RIGHT OF WAY (ROW)
- - - PARCEL LINE
- PERIMETER FENCE

### PLANTING ZONES

-  WETLAND EMERGENT ZONE
-  WETLAND PALUSTRINE FORESTED ZONE
-  TRANSITIONAL PLANTING ZONE
-  UPLAND ZONE
-  UPLAND ENHANCEMENT ZONE
-  VEGETATED FILTER STRIP



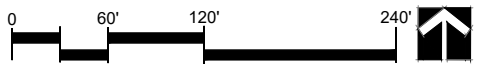
### SEED SCHEDULE

(ALL DISTURBED SOIL AREAS ABOVE ELEVATION 13 TO BE HYDROSEEDED)

SEED MIX FOR DISTURBED AREAS AND VEGETATED FILTER STRIP (ELEVATIONS 19 AND ABOVE) : 4.39 AC TOTAL	LBS PER AC	TOTAL LBS
ACHILLEA MILLEFOLIUM / WHITE YARROW	.5	2.20
ELYMUS GLAUCUS / BLUE WILD RYE	10	43.90
ERIGERON SPECIOSUS / SHOWY FLEABANE	.5	2.20
LUPINUS POLYPHYLLUS / BIGLEAF LUPINE	4	17.56
LUPINUS BICOLOR / TWO COLOR LUPINE	4	17.56
HORDEUM BRACHYANTHERUM / MEADOW BARLEY	10	43.90
TRITICUM AESTIVUM / STERILE WHEAT GRASS (REGREEN™ OR EQUAL)	10	43.90
POA SANDBERGII / CANBY BLUEGRASS	2	8.78

SEED MIX FOR DISTURBED AREAS (ELEVATIONS 13 TO 19) : 7.72 AC TOTAL	LBS PER AC	TOTAL LBS
BROMINUS CARINATUS / CALIFORNIA BROME GRASS	3	23.16
ELYMUS GLAUCUS / BLUE WILD RYE	3	23.16
POA SANBERGII / CANBY BLUEGRASS	2	15.44
GLYCERIA OCCIDENTALIS / WESTERN MANNA GRASS	4	30.88
DECHAMPسيا CAESPITOSA / TUFTED HAIR GRASS	3	23.16
ELEOCHARIS PALUSTRIS / COMMON SPIKE RUSH	4	30.88
CAREX OBNUPTA / SLOUGH SEDGE	6	46.32

SEED MIX FOR EMERGENT AREAS (ELEVATIONS 11 TO 13) : 3.36 AC TOTAL	LBS PER AC	TOTAL LBS
CAREX LYNGBYEI / LYNDBY'S SEDGE	3.0	10.08
CAREX OBNUPTA / SLOUGH SEDGE	3.6	12.10
CAREX STIPATA / AWLFRUITED SEDGE	1.2	4.03
ELEOCHARIS PALUSTRIS / CREEPING SPIKERUSH	1.2	4.03
JUNCUS ACUMINATUS / TAPERED RUSH	0.06	0.20
JUNCUS BALTICUS / BALTIC RUSH	1.2	4.03
JUNCUS ENSIFOLIUS / DAGGERLEAF RUSH	0.06	0.20
SCIRPUS ACUTUS / HARDSTEM BULRUSH	3.2	10.75
SCIRPUS AMERICANUS / TULE	2.4	8.06
SCIRPUS MARITIMUS / SALT MARSH BULRUSH	3.0	10.08



PLANTING TYPICALS  
ON NEXT PAGE

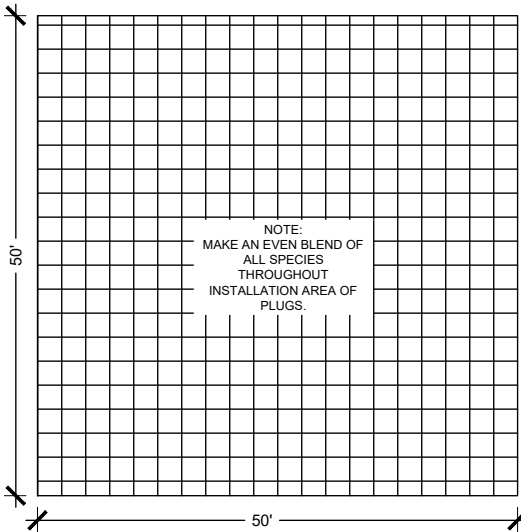
PARCEL #: 0320011117, 03200130055, 0320013157,  
0320013158, & 0320017003  
DATUM: VERT. MLLW (PORT OF TACOMA TIDAL DATUM)  
REFERENCE #: NWS 2020-457-WMD  
ADJACENT PROPERTY OWNERS:  
1. SEE JARPA APPLICATION  
SITE LOCATION ADDRESS  
NE CORNER OF ALEXANDER AVE. EAST AND 12TH STREET EAST

LOWER WAPATO  
CREEK HABITAT PROJECT  
PLANTING PLAN 2 &  
SEED SCHEDULE  
APPLICANT: PORT OF TACOMA

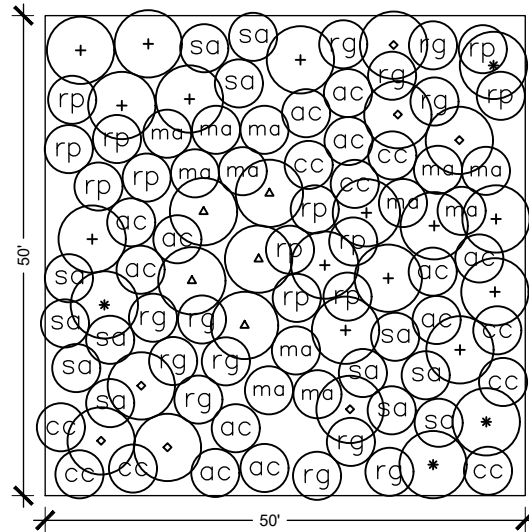
PROPOSED: REPLACE CULVERTS & RESTORE STREAM,  
ESTUARY AND WETLANDS TO SECURE  
ADVANCE MITIGATION CREDIT  
WAPATO CREEK  
TACOMAN/FE, WA  
AT: PIERCE  
COUNTY: PIERCE  
SHEET 31 OF 34  
DATE: JUNE 1, 2020

PROJECT: LOWER WAPATO CREEK HABITAT PROJECT, PORT OF TACOMA HARBOR, TACOMA, WASHINGTON. DRAWING NO: WAPATO PLANTING PLAN 2 & SEED SCHEDULE. SHEET 31 OF 34. DATE: JUNE 1, 2020.

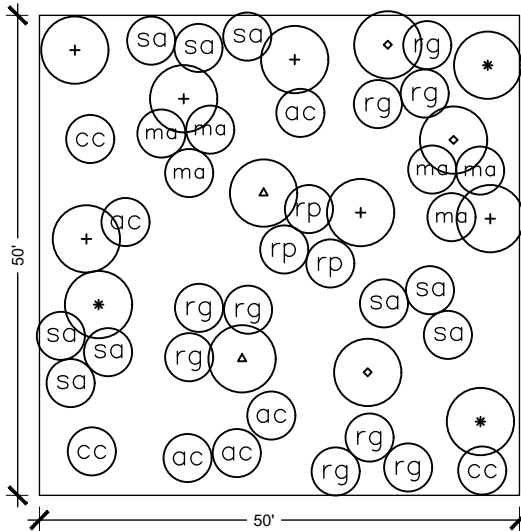
UPLAND EDGE ← → STREAM SIDE



WETLAND EMERGENT ZONE (ABOVE ELEVATION 11 AND BELOW ELEVATION 13)



UPLAND ZONE (ABOVE ELEVATION 19)



UPLAND ENHANCEMENT ZONE (AREAS WITHIN DENSE EXISTING VEGETATION)



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0320013158, & 0320017003

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REFERENCE #: NWS 2020-457-WFD

ADJACENT PROPERTY OWNERS:

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SITE LOCATION ADDRESS

NE CORNER OF ALEXANDER AVE, EAST AND 12TH STREET EAST

## LOWER WAPATO CREEK HABITAT PROJECT

### PLANTING TYPICALS 1

APPLICANT: PORT OF TACOMA

PROPOSED: REPLACE CULVERTS & RESTORE STREAM, ESTUARY AND WETLANDS TO SECURE ADVANCE MITIGATION CREDIT

WAPATO CREEK

TACOMA/FIFE, WA

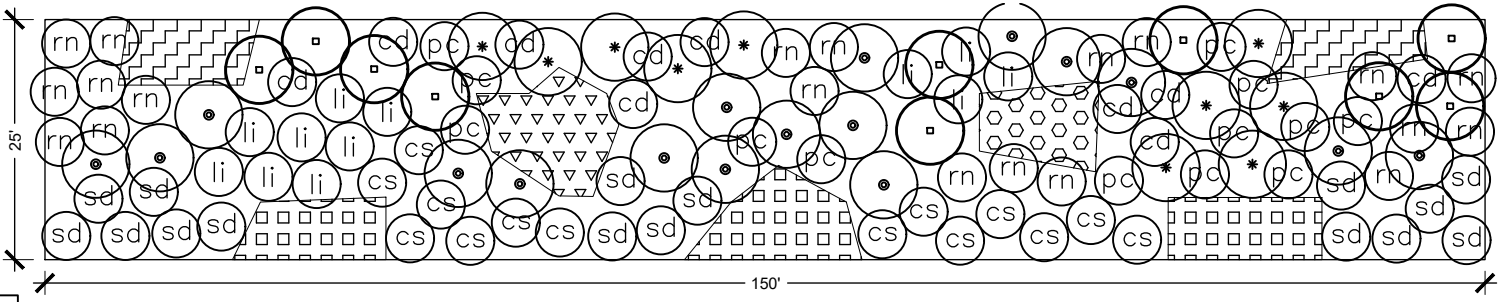
PIERCE

SHEET 32 OF 34

DATE: JUNE 1, 2020

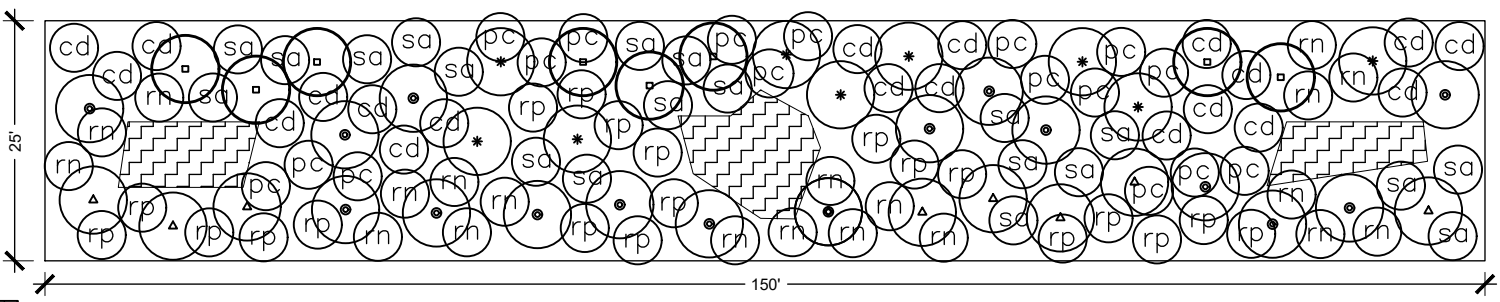


UPLAND EDGE  
 ↑  
 ↓  
 WETLAND SIDE



WETLAND PALUSTRINE FORESTED ZONE (ABOVE ELEVATION 13 AND BELOW ELEVATION 16)

UPLAND EDGE  
 ↑  
 ↓  
 WETLAND SIDE



TRANSITIONAL PLANTING ZONE (ABOVE ELEVATION 16 AND BELOW ELEVATION 19)



PLANTING SCHEDULE  
 ON NEXT PAGE

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LOWER WAPATO  
 CREEK HABITAT PROJECT

PLANTING TYPICALS 2

APPLICANT: PORT OF TACOMA

PROPOSED: REPLACE CULVERTS & RESTORE STREAM,  
 ESTUARY AND WETLANDS TO SECURE  
 ADVANCE MITIGATION CREDIT

WAPATO CREEK

TACOMA/FIFE, WA

PIERCE

SHEET 33 OF 34

DATE: JUNE 1, 2020

**PLANT SCHEDULE**

**SCIENTIFIC / COMMON NAME QTY SIZE**  
**TREES - ALL TREES TO BE HEALTHY & WELL BRANCHED**

	ALNUS RUBRA RED ALDER	651	2 GAL
	FRAXINUS LATIFOLIA OREGON ASH	832	2 GAL
	PICEA SITCHENSIS SITKA SPRUCE	1313	2 GAL
	POPULUS BALSAMIFERA BLACK COTTONWOOD	499	2 GAL
	PSEUDOTSUGA MENZIESII DOUGLAS-FIR	998	2 GAL
	THUJA PLICATA WESTERN RED CEDAR	1,234	2 GAL

**SHRUBS - ALL SHRUBS TO BE HEALTHY & VIGOROUS**

	ACER CIRCINATUM VINE MAPLE	853	1 GAL
	CORNUS SERICEA RED TWIG DOGWOOD	844	1 GAL
	CORYLUS CORNUTA WESTERN HAZELNUT	628	2 GAL
	CRATAEGUS DOUGLASII BLACK HAWTHORN	1,326	1 GAL
	LONICERA INVOLUCRATA BLACK TWINBERRY	723	1 GAL
	MAHONIA AQUIFOLIUM TALL OREGON GRAPE	869	1 GAL
	PHYSOCARPUS CAPITATUS PACIFIC NINEBARK	1,398	1 GAL
	ROSA GYMNOCARPA BALDHIP ROSE	917	1 GAL
	ROSA NUTKANA NOOTKA ROSE	1,928	1 GAL
	ROSA PISOCARPA PEA-FRUIT ROSE	1,545	1 GAL
	SPIRAEA DOUGLASII HARDHACK	965	1 GAL
	SYMPHORICARPOS ALBUS SNOWBERRY	1,704	1 GAL

**LIVE CUTTINGS - ALL HEALTHY, SPACED 12 INCHES ON CENTER**

	SALIX HOOKERIANA HOOKER'S WILLOW	7,367	3/4 - 1 1/2" DIA., 36" MIN. LENGTH, SPACED APPROX. 1' ON CENTER
	SALIX LUCIDA PACIFIC WILLOW	24,218	3/4 - 1 1/2" DIA., 36" MIN. LENGTH, SPACED APPROX. 1' ON CENTER
	SALIX SITCHENSIS SITKA WILLOW	10,111	3/4 - 1 1/2" DIA., 36" MIN. LENGTH, SPACED APPROX. 1' ON CENTER
	SALIX SCOULERIANA SCOULER'S WILLOW	27,915	3/4 - 1 1/2" DIA., 36" MIN. LENGTH, SPACED APPROX. 1' ON CENTER

**EMERGENTS - ALL HEALTHY & WELL ROOTED, SPACED 24 INCHES ON CENTER**

	CAREX LYNGBYEI LYNDBY'S SEDGE	7,437	10 CUBIC INCH PLUG
	CAREX OBNUPTA SLOUGH SEDGE	7,437	10 CUBIC INCH PLUG
	CAREX STIPATA AWLFRUITED SEDGE	7,437	10 CUBIC INCH PLUG
	ELEOCHARIS PALUSTRIS CREEPING SPIKERUSH	7,437	10 CUBIC INCH PLUG
	JUNCUS ACUMINATUS TAPERED RUSH	7,437	10 CUBIC INCH PLUG
	JUNCUS ENSIFOLIUS DAGGERLEAF RUSH	7,437	10 CUBIC INCH PLUG
	SCIRPUS ACUTUS HARDSTEM BULRUSH	7,437	10 CUBIC INCH PLUG
	SCIRPUS AMERICANUS TULE	7,437	10 CUBIC INCH PLUG
	SCIRPUS MARITIMUM SALTMARSH BULRUSH	7,437	10 CUBIC INCH PLUG

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**LOWER WAPATO  
 CREEK HABITAT PROJECT**

**PLANTING SCHEDULE**

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 WAPATO CREEK  
 TACOMA/PIERCE, WA  
 COUNTY: PIERCE  
 SHEET 34 OF 34  
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