

XREF LIST  
 Ltscale: 1  
 Resolved  
 3784--AERIA--2011  
 VICINITY\_MA  
 3784--BASE  
 3784--FROM IS

# SMITH ISLAND ESTUARY RESTORATION SNOHOMISH COUNTY DEPARTMENT OF PUBLIC WORKS

RR49206

FEBRUARY 2017

PHASE 2

## RECORD DRAWINGS

DESIGN REVISIONS MADE DURING CONSTRUCTION HAVE BEEN INCORPORATED INTO THESE "AS-BUILT" DRAWINGS, BUT ARE NOT HIGHLIGHTED/ CLOUDED FOR CLARITY.

THESE "AS-BUILT" PLANS REFLECT DESIGN INFORMATION, INCLUDING PLAN REVISIONS MADE DURING CONSTRUCTION, WITH "AS-BUILT" INFORMATION PROVIDED BY THE COUNTY INSPECTOR. OTAK HAS NOT REVIEWED THE INFORMATION SUPPLIED BY THE COUNTY FOR ACCURACY.

*Dave Stewart*  
 DAVE STEWART, PE

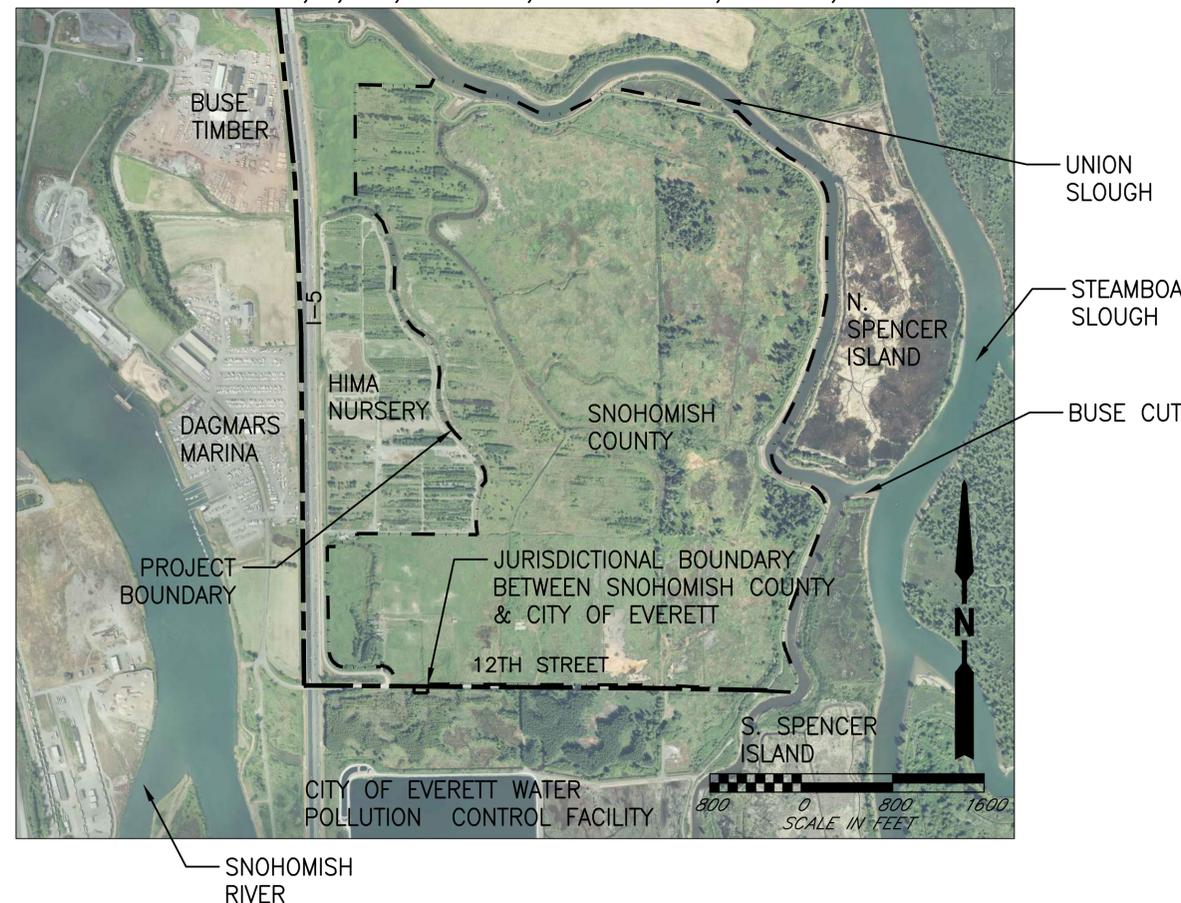


Snohomish County Officials

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SEC. 4,9,10,15&16; TWN.29N; R.5E,W.M.



VICINITY MAP

**DIRECTOR OF PUBLIC WORKS**  
*STEVEN E. THOMSEN, P.E.*

**COUNTY ENGINEER**  
*STEVEN E. THOMSEN, P.E.*

**EXECUTIVE**  
*DAVE SOMERS*

**COUNCIL MEMBERS**  
*NATE NEHRING - DIST. 1*  
*BRIAN SULLIVAN - DIST. 2*  
*STEPHANIE WRIGHT - DIST. 3*  
*TERRY RYAN - DIST. 4*  
*SAM LOW - DIST. 5*

**GENERAL NOTES**

- ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE 2016 EDITION OF THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION/AMERICAN PUBLIC WORKS ASSOCIATION (WSDOT/APWA) STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION AND CURRENT AMENDMENTS (AS AMENDED BY THE SNOHOMISH COUNTY GENERAL PROVISIONS AND THE PROJECT SPECIAL PROVISIONS) AND THE 2012 SNOHOMISH COUNTY ENGINEERING DESIGN AND DEVELOPMENT STANDARDS (EDDS).
- ALL DRAINAGE AND GRADING WORK SHALL COMPLY WITH TITLE 30 OF THE SNOHOMISH COUNTY CODE (SCC)
- ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO PRE-CONSTRUCTION CONDITIONS, OR AS SHOWN ON THE PLANS.
- ALL LOCATIONS OF EXISTING UTILITIES SHOWN HAVE BEEN ESTABLISHED BY FIELD SURVEY OR OBTAINED FROM AVAILABLE RECORDS AND SHOULD BE CONSIDERED APPROXIMATE ONLY AND NOT NECESSARILY COMPLETE. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE ACCURACY OF ALL UTILITY LOCATIONS SHOWN AND AVOID OTHER UTILITIES NOT SHOWN ON THE PLANS. EXISTING UTILITIES SHALL BE PROTECTED, SUPPORTED, OR MAINTAINED DURING CONSTRUCTION.
- CONTACT THE UNDERGROUND UTILITIES LOCATION SERVICE (1-800-424-5555) AT LEAST 48 HOURS PRIOR TO CONSTRUCTION.
- ALL WORK SHALL BE IN ACCORDANCE WITH PERMIT REQUIREMENTS FOR EROSION CONTROL AND DEWATERING. REFER TO SPECIFICATIONS FOR PERMIT REQUIREMENTS.

**TEMPORARY EROSION AND SEDIMENT CONTROL GENERAL NOTES**

- THE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY GRADING OR EXTENSIVE LAND CLEARING IN ACCORDANCE WITH THE PLANS AND AS DIRECTED BY THE ENGINEER. THESE FACILITIES MUST BE SATISFACTORILY MAINTAINED UNTIL CONSTRUCTION AND LANDSCAPING ARE COMPLETED, AND SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION. SEDIMENT LADEN WATERS SHALL NOT ENTER THE NATURAL DRAINAGE SYSTEMS.
- ALL TEMPORARY EROSION AND SEDIMENT CONTROL WORK SHALL BE CONSISTENT WITH PROJECT PERMITS AND THE SWPPP. CONTRACTOR TO PROVIDE STORMWATER POLLUTION PREVENTION PLAN AND UPDATED TEMPORARY EROSION AND SEDIMENT CONTROL PLAN PER THE CONSTRUCTION STORMWATER GENERAL PERMIT REQUIREMENTS.
- ALL CLEARING, GRUBBING, AND GRADING SHALL BE CONTAINED WITHIN THE LIMITS ESTABLISHED BY THE ENGINEER. ALL VEGETATION OUTSIDE DESIGNATED LIMITS SHALL REMAIN UNDISTURBED.

**UTILITY COORDINATION NOTES**

REFER TO GENERAL NOTES FOR ADDITIONAL UTILITY INFORMATION.

- UTILITY PROVIDERS THAT MAY BE AFFECTED BY THE PROPOSED IMPROVEMENTS SHALL BE NOTIFIED IN ADVANCE OF CONSTRUCTION.
- A LIST OF THE UTILITY PROVIDERS IS PROVIDED BELOW.

**GAS**

PUGET SOUND ENERGY  
 DAVID MATULICH  
 P.O. BOX 97034 BOT-01G  
 BELLEVUE, WA 98009-9734  
 (425) 424-6442 (EXT 81-6442)  
 CELL NO. (425) 214-3020

**POWER**

SNOHOMISH COUNTY PUD #1  
 CRAIG SIMPSON  
 P.O. BOX 1107  
 1802 75th STREET SW  
 EVERETT, WA 98206-1107  
 (425)783-8279

**TELECOMMUNICATIONS**

COMCAST  
 CASEY BROWN  
 1525 75TH ST SW #200  
 EVERETT, WA 98203  
 (425) 754-0064

FRONTIER  
 TIM RENNICK  
 1800 41ST AVE WA 010406  
 EVERETT, WA 98206  
 (425) 263-4025

**ABBREVIATIONS**

- |                                       |   |
|---------------------------------------|---|
| APPROX - APPROXIMATELY                | N - NORTH                                     |
| BTM - BOTTOM                          | NAV88 - NORTH AMERICAN VERTICAL DATUM OF 1988 |
| C - CURVE                             | NE - NORTHEAST                                |
| CB - CATCH BASIN                      | NTS - NOT TO SCALE                            |
| CONC - CONCRETE                       | NW - NORTHWEST                                |
| CPEP - CORRUGATED POLYETHYLENE PIPE   | OC - ON CENTER                                |
| CULV - CULVERT                        | OD - OUTSIDE DIAMETER                         |
| DBH - DIAMETER AT BREAST HEIGHT       | OHW - ORDINARY HIGH WATER                     |
| DF - DITCH FILL                       | OHWM - ORDINARY HIGH WATER MARK               |
| DIAM - DIAMETER                       | PC - POINT OF CURVATURE                       |
| E - EAST                              | PI - POINT OF INTERSECTION                    |
| EA - EACH                             | PP - PLAN AND PROFILE                         |
| EL - ELEVATION                        | PT - POINT OF TANGENCY                        |
| ELEV - ELEVATION                      | R - RADIUS                                    |
| EM - EXCAVATED MATERIAL               | R/W - RIGHT OF WAY                            |
| EOP - EDGE OF PAVEMENT                | RT - RIGHT                                    |
| EX - EXISTING                         | SD - STORM DRAIN                              |
| FM - FORCE MAIN                       | SE - SOUTHEAST                                |
| FT - FEET                             | SL - SLOPE                                    |
| HDPE - HIGH DENSITY POLYETHYLENE PIPE | STA - STATION                                 |
| IE - INVERT ELEVATION                 | STD - STANDARD                                |
| JBOX - JUNCTION BOX                   | STR - STRUCTURE                               |
| L - LINE SEGMENT                      | SW - SOUTHWEST                                |
| LF - LINEAL FEET                      | SWC - SMALL WOOD CLUSTER                      |
| LT - LEFT                             | SWPPP - STORMWATER POLLUTION PREVENTION PLAN  |
| LUM - LUMINAIRE                       | TESC - TEMPORARY EROSION AND SEDIMENT CONTROL |
| MAX - MAXIMUM                         | TYP - TYPICAL                                 |
| MH - MANHOLE                          | W - WEST                                      |
| MIC - MONUMENT IN CASE                | WM - WILLIAMETTE MERIDIAN                     |
| MIN - MINIMUM                         | Q - FLOW                                      |

**LEGEND**

LINETYPE	DESCRIPTION
-----	EDGE OF PAVEMENT (EXISTING)
-----	DITCH CENTERLINE (EXISTING)
-----	DITCH/SWALE CENTERLINE (PROPOSED)
-----	FENCE (EXISTING)
-----	GRAVEL (EXISTING)
-----	CLEARING LIMITS
-----	CLEARING AND GRUBBING LIMITS
-----	SILT FENCE
-----	FLOATING SILT CURTAIN
-----	HIGH VISIBILITY FENCE
-----	CONTOUR (MINOR-EXISTING)
-----	CONTOUR (MAJOR-EXISTING)
-----	CONTOUR (MINOR-PROPOSED)
-----	CONTOUR (MAJOR-PROPOSED)
-----	PROPERTY LINE
-----	RIGHT-OF-WAY (EXISTING)
-----	SECTION LINES
-----	QUARTER SECTION LINES
-----	PROJECT LIMITS
-----	JURISDICTIONAL BOUNDARY
-----	ORDINARY HIGH WATER LINE
-----	CUT LINE
-----	FILL LINE
-----	FIBER OPTIC
-----	GAS LINE
-----	OVERHEAD POWER LINE
-----	BURIED POWER LINE
-----	APPROVED TEMPORARY ACCESS ROUTE
-----	TEMPORARY FISH SCREEN
-----	DITCH FILL

**SYMBOL**

EXIST.	PROPOSED	DESCRIPTION
▽	▽	EMBANKMENT
✦	N/A	SECTION CORNER
N/A		QUARRY SPALLS
N/A		RIPRAP
N/A		SUBGRADE/EARTH
	N/A	EXISTING DITCH TO REMAIN
N/A		DIKE BREACH AREA
N/A		REMNANT DIKE AREA
N/A		ACCESS TO EXISTING DITCH
N/A		EXCAVATED MATERIAL PLACEMENT AREAS
N/A		LIMITS OF CHANNEL CONNECTION TO UNION SLOUGH
N/A		3-PILE AND 5-PILE WOOD COMPLEX
N/A		SMALL WOOD CLUSTER

**TIDAL DATUMS**

TIDAL DATUM ARE FROM THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA) STATION 9447659 IN EVERETT, WA.

STATION(FT)	MLLW(FT)	NAV88(FT)
10.8	11.1	9.1
0.0	0.3	-1.8
-0.3	0.0	-2.0

**AS-BUILTS**

CALL BEFORE YOU DIG  
 1-800-424-5555

DATE	NO.	REVISION	BY

Last Saved By: otak May 29, 2019 - 1:24pm			
REGION NO.	STATE	FED. AID PROJ. NO.	SURVEY NO.
10	WASH.		
DESIGNED BY: GSL, DAS		DRAWN BY: AK	
FIELD BOOK(S):		UPI# 12-0171-1	



REFER TO ORIGINAL DRAWINGS FOR SIGNATURES AND SEALS

REVIEWED AND APPROVED BY:

STEVEN E. THOMSEN, P.E.  
 SNOHOMISH COUNTY ENGINEER

DATE APPROVED:

SNOHOMISH COUNTY DEPARTMENT OF PUBLIC WORKS

PROJECT NO. RR49206

**SMITH ISLAND ESTUARY RESTORATION PHASE 2**

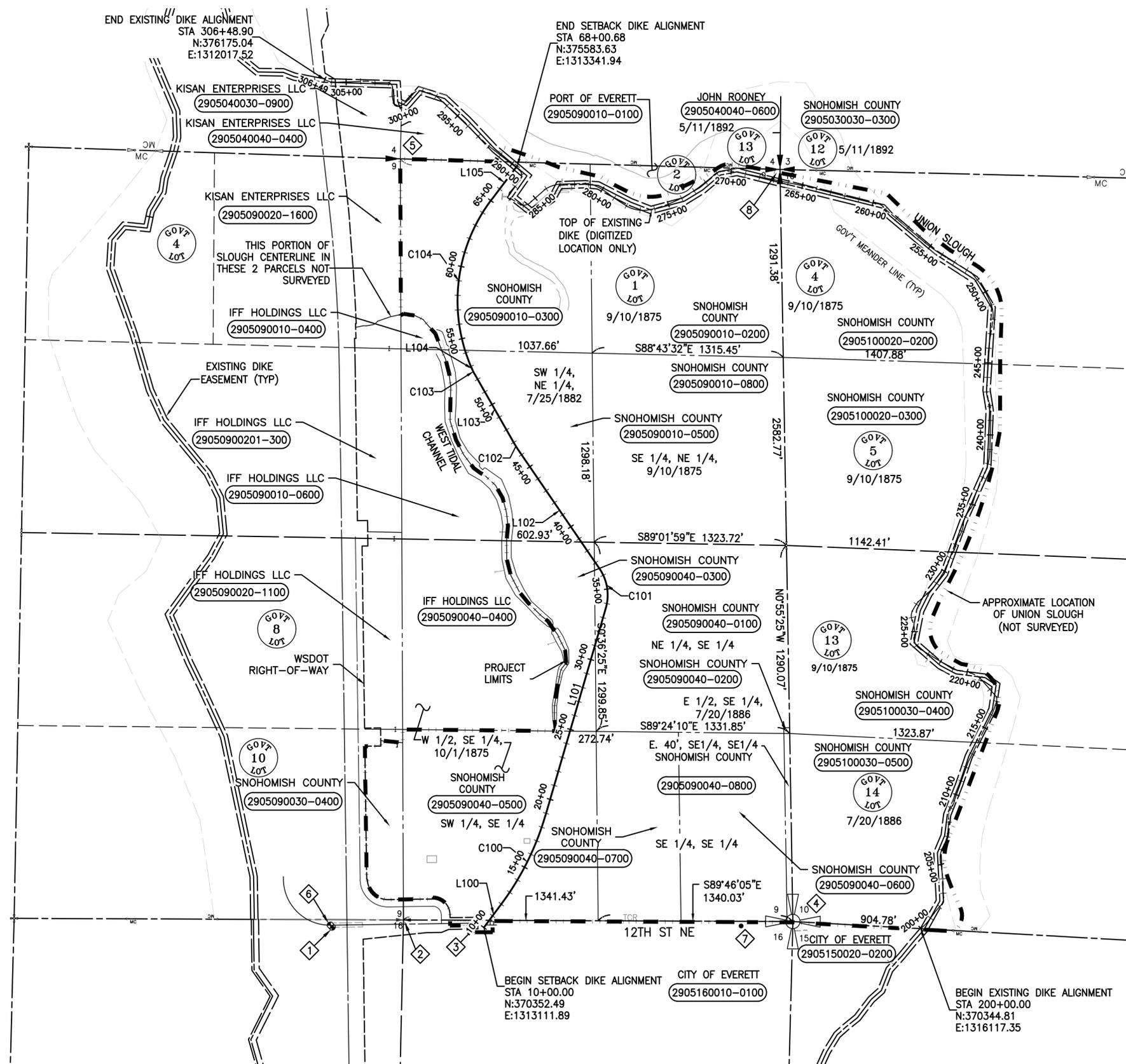
**LEGEND/GENERAL NOTES**

REFERENCE SHEET NO. LA01

SHEET 2 OF 29 SHEETS

A PORTION OF SECTIONS 4,9,10,15,&16, TOWNSHIP 29 NORTH, RANGE 05 EAST, W.M.

XREF LIST  
 Ltscale: 1  
 Resolved  
 TILBLK  
 OSLSICAL  
 3784--TOPO  
 3784--BASE  
 3784--PRJL  
 3784--FROMGIS

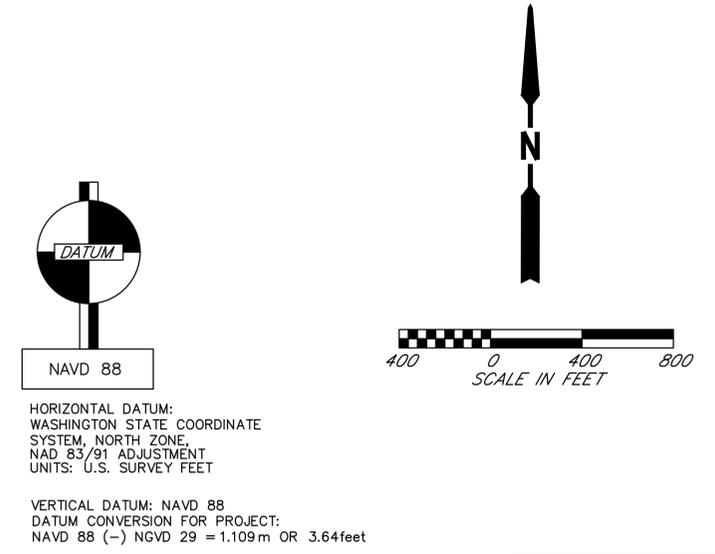


HORIZONTAL AND VERTICAL CONTROL				
POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	370355.43	1312067.38	35.36	SNOHOMISH COUNTY CP #1 BD GW31005-74
2	370404.21	1312557.99	20.42	SNOHOMISH COUNTY CP #2 IP 2905J11
3	370371.40	1313068.28	5.76	SNOHOMISH COUNTY CP #3 MAG WSHR321/1661
4	370393.37	1315238.03	3.59	SNOHOMISH COUNTY CP #6 STONE 341/1661
5	375631.05	1312535.91	4.08	SNOHOMISH COUNTY CP #7 IP 481/1661
6	370368.34	1312055.21	33.88	SNOHOMISH COUNTY CP #8 MIC 371/1661
7	370363.02	1314881.99	4.23	SNOHOMISH COUNTY CP #9 SPK 741/1644
8	375558.39	1315149.36	8.63	SNOHOMISH COUNTY CP #10 IP 221/1739

**NOTE**  
 SEE SHEET CP02 FOR DIKE ALIGNMENT DATA TABLES.

**SOURCE OF INFORMATION**

1. SURVEY CONTROL POINTS AND SURVEY VALUES SHOWN ON PLAN PROVIDED BY SNOHOMISH COUNTY.
2. PROPERTY DATA, SECTIONS, AND EASEMENT LINES PROVIDED BY SNOHOMISH COUNTY.



**AS-BUILTS** CALL BEFORE YOU DIG  
 1-800-424-5555

Last Saved By: joek Feb 06, 2019 - 1:01pm			
REGION NO.	STATE	FED. AID PROJ. NO.	SURVEY NO.
10	WASH.		
DESIGNED BY: GSL, DAS		DRAWN BY: AK	
FIELD BOOK(S):		UPI# 12-0171-1	
DATE	NO.	REVISION	BY



REFER TO ORIGINAL DRAWINGS FOR SIGNATURES AND SEALS

REVIEWED AND APPROVED BY:  
 STEVEN E. THOMSEN, P.E.  
 SNOHOMISH COUNTY ENGINEER

DATE APPROVED:

SNOHOMISH COUNTY  
 DEPARTMENT OF  
 PUBLIC WORKS

PROJECT NO. RR49206

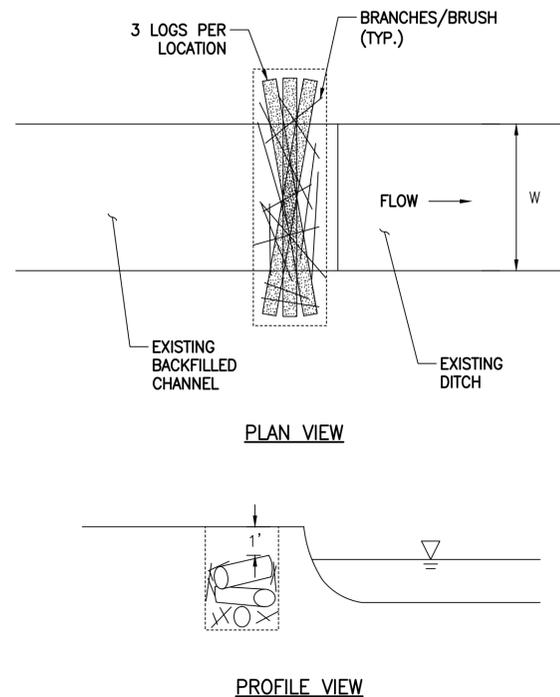
**SMITH ISLAND  
 ESTUARY RESTORATION  
 PHASE 2  
 PROJECT SURVEY CONTROL  
 PLAN**

REFERENCE SHEET NO. CP01  
 SHEET 3 OF 29 SHEETS

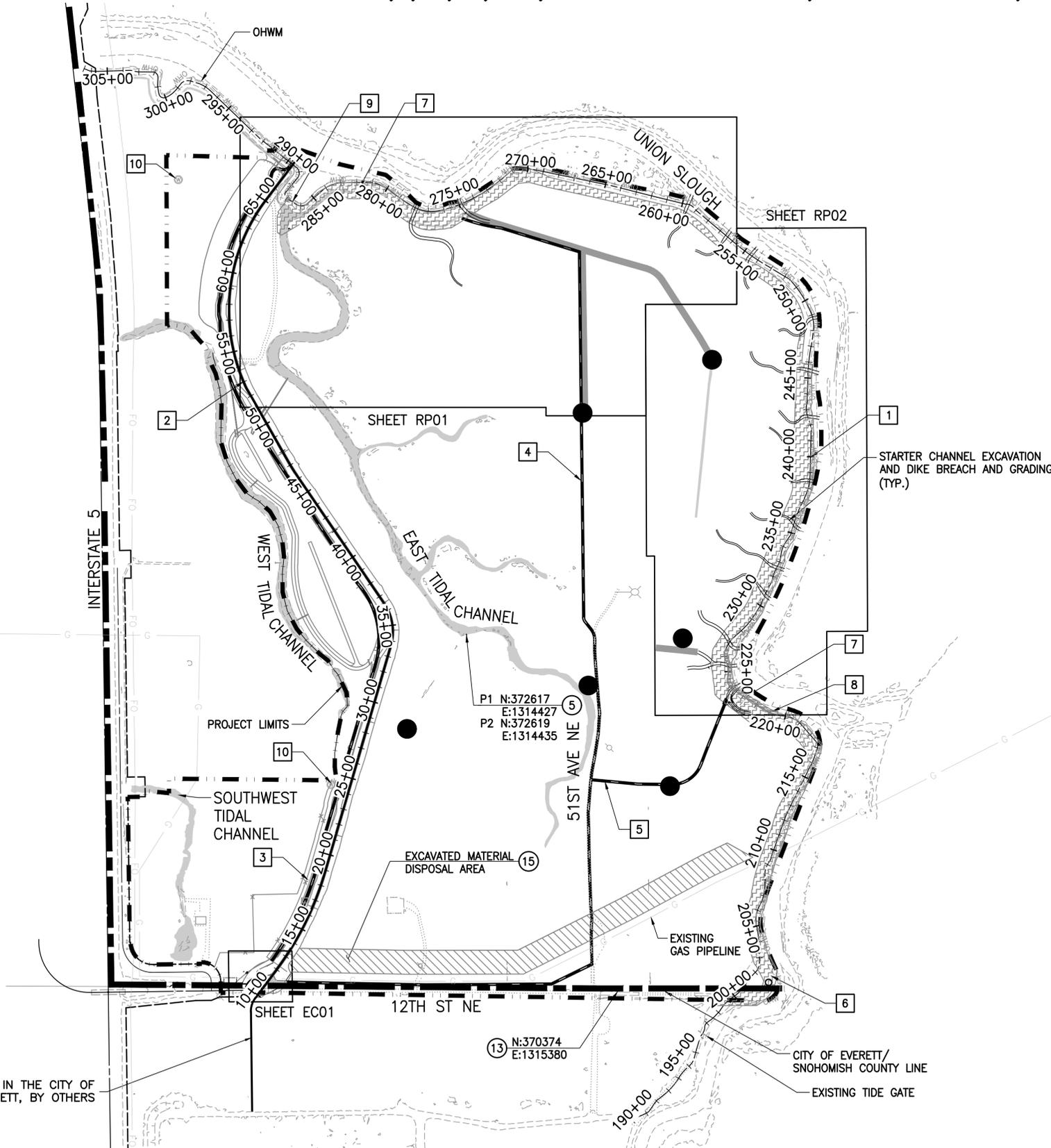
Plotted: May 29, 2019 - 3:22pm  
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A PORTION OF SECTIONS 4,9,10,15,&16, TOWNSHIP 29 NORTH, RANGE 05 EAST, W.M.

XREF LIST  
 Ltscale: 1  
 Resolved  
 3784--BASE  
 TTLBLK  
 GSLSSEAL  
 3784--TOPO  
 3784--PRJL  
 3784--DTCH  
 3784--PDRN  
 3784--PCHN  
 3784--FROMGIS  
 Unresolved  
 3784--GRDG



**INLAND DITCH LOG PLACEMENT**  
 NTS



**REFERENCE NOTES**

- SEE SHEET EC01-EC02 FOR 12TH ST NE TESC PLAN AND IN-WATER WORK TESC DETAILS.
- SEE SHEETS RP01-RP14 FOR RESTORATION PLAN

**OVERALL SITE PLAN NOTES**

- EXISTING DIKE ALIGNMENT. THE NON-FLOOD CONTROL DIKE LIMITS ARE FROM STA 200+00 TO STA 222+00. THE FLOOD CONTROL DIKE LIMITS ARE FROM STA 289+20 TO STA 291+10. THE REMAINDER OF THE ALIGNMENT IS BREACH AREA OR REMNANT DIKE.
- SETBACK DIKE ALIGNMENT. THIS ALIGNMENT IS A FLOOD CONTROL DIKE.
- APPROVED TEMPORARY ACCESS ROUTE A, SETBACK DIKE EXISTING GRAVEL ACCESS ROAD.
- APPROVED TEMPORARY ACCESS ROUTE B, EARTHEN FILL ALONG 51ST AVE NE AND NATIVE SOIL.
- APPROVED TEMPORARY ACCESS ROUTE C, EARTHEN FILL AND NATIVE SOILS.
- NO ACCESS ONTO EXISTING DIKE, UNTIL APPROVAL BY ENGINEER FOR DIKE BREACHING AND GRADING.
- EXISTING CULVERT AND TIDE GATE.
- EXISTING COIR FABRIC AND SOIL ANCHORS.
- EAST TIDAL CHANNEL CONNECTION.
- PROTECT EXISTING GROUNDWATER OBSERVATION WELL.

**CONSTRUCTION NOTES**

- CONSTRUCT 3-PILE WOOD COMPLEX PER SHEET RP10. SEE SHEETS RP01-RP07 FOR OTHER LOCATIONS OF 3-PILE WOOD COMPLEXES.
- REMOVE KNOTWEED AND PLACE IN KNOTWEED DISPOSAL AREA. SEE SPECIFICATIONS.
- EXCAVATED MATERIAL DISPOSAL AREA FOR EAST TIDAL CHANNEL CONNECTION, SEE DETAIL ON SHEET RP14.

**LEGEND**

- PROJECT LIMITS
- JURISDICTIONAL BOUNDARY
- TIDAL CHANNEL CONNECTION EXCAVATED MATERIAL DISPOSAL AREA
- NO ACCESS ONTO EXISTING DIKE UNTIL DIKE BREACHING AND GRADING
- EXISTING DITCH TO REMAIN
- APPROVED TEMPORARY ACCESS ROUTE
- GROUNDWATER OBSERVATION WELLS
- INLAND DITCH LOG PLACEMENT

**INLAND DITCH LOG PLACEMENT NOTES:**

- LOGS TO BE INSTALLED AT THE UPSTREAM ENDS OF DITCHES
- LOG LENGTH TO EXCEED 1.25W OR EMBED 3' MIN INTO BANKS
- MINIMUM LOG DIAMETER = 12 INCHES
- PLACE SMALLER BRANCHES IN AND AROUND LOGS
- BACKFILL DIRT OVER LOGS TO MATCH EXISTING GRADE



**AS-BUILTS**

CALL BEFORE YOU DIG  
 1-800-424-5555

DATE	NO.	REVISION	BY

Last Saved By: otak Jan 29, 2019 - 9:32am			
REGION NO.	STATE	FED. AID PROJ. NO.	SURVEY NO.
10	WASH.		
DESIGNED BY: GSL, DAS		DRAWN BY: AK	
FIELD BOOK(S):		UPI# 12-0171-1	



REFER TO ORIGINAL DRAWINGS FOR SIGNATURES AND SEALS

REVIEWED AND APPROVED BY:  
 STEVEN E. THOMSEN, P.E.  
 SNOHOMISH COUNTY ENGINEER

DATE APPROVED: \_\_\_\_\_

SNOHOMISH COUNTY  
 DEPARTMENT OF  
 PUBLIC WORKS

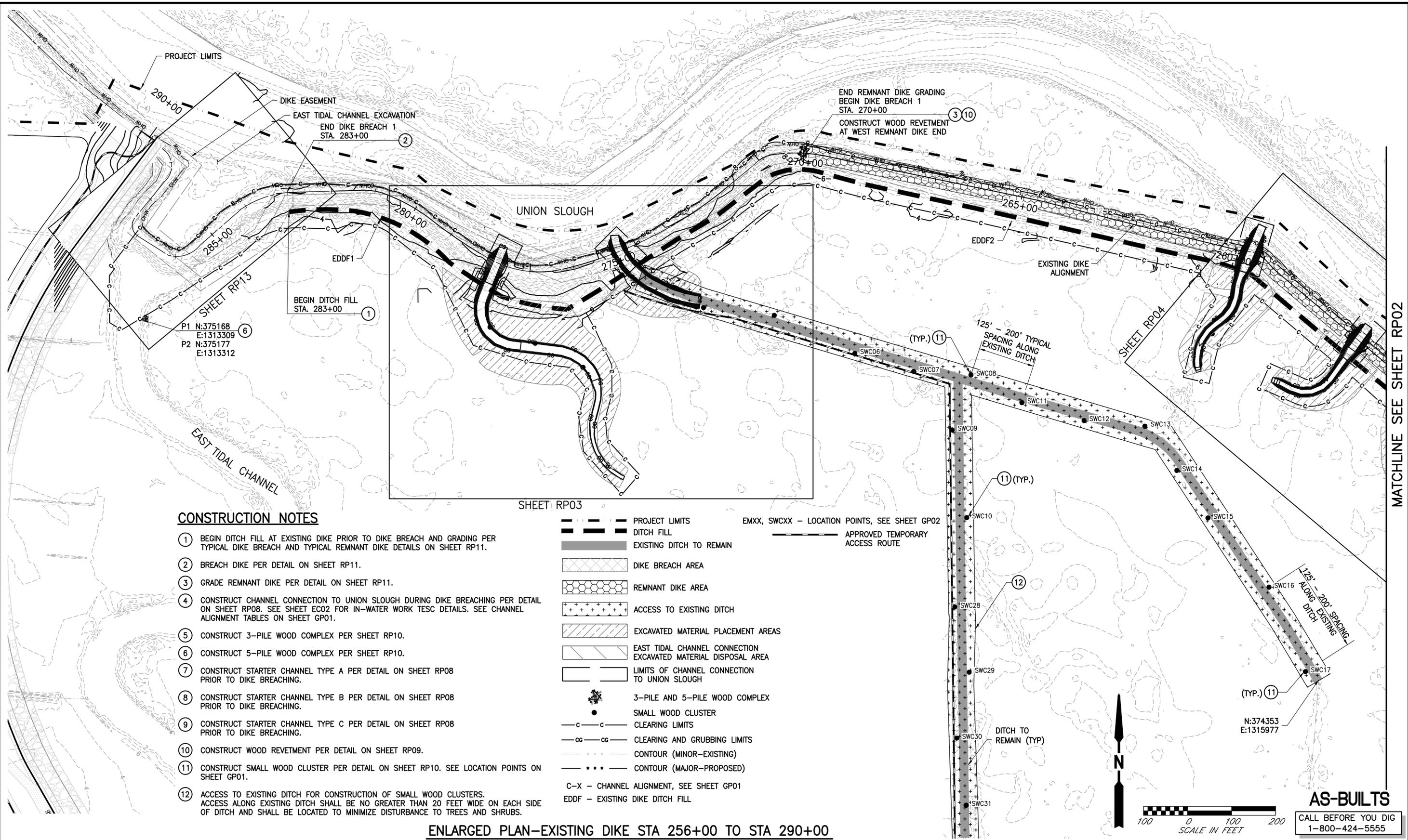
PROJECT NO. RR49206

**SMITH ISLAND  
 ESTUARY RESTORATION  
 PHASE 2  
 OVERALL SITE PLAN**

REFERENCE SHEET NO.  
 SP01

SHEET  
 5  
 OF  
 29  
 SHEETS

Plotted: May 29, 2019 - 3:27pm  
 otak K:\project\31800\31800\Phase2\05\_SPO1.dwg Layout Name: SPO1



**CONSTRUCTION NOTES**

- ① BEGIN DITCH FILL AT EXISTING DIKE PRIOR TO DIKE BREACH AND GRADING PER TYPICAL DIKE BREACH AND TYPICAL REMNANT DIKE DETAILS ON SHEET RP11.
- ② BREACH DIKE PER DETAIL ON SHEET RP11.
- ③ GRADE REMNANT DIKE PER DETAIL ON SHEET RP11.
- ④ CONSTRUCT CHANNEL CONNECTION TO UNION SLOUGH DURING DIKE BREACHING PER DETAIL ON SHEET RP08. SEE SHEET EC02 FOR IN-WATER WORK TESC DETAILS. SEE CHANNEL ALIGNMENT TABLES ON SHEET GP01.
- ⑤ CONSTRUCT 3-PILE WOOD COMPLEX PER SHEET RP10.
- ⑥ CONSTRUCT 5-PILE WOOD COMPLEX PER SHEET RP10.
- ⑦ CONSTRUCT STARTER CHANNEL TYPE A PER DETAIL ON SHEET RP08 PRIOR TO DIKE BREACHING.
- ⑧ CONSTRUCT STARTER CHANNEL TYPE B PER DETAIL ON SHEET RP08 PRIOR TO DIKE BREACHING.
- ⑨ CONSTRUCT STARTER CHANNEL TYPE C PER DETAIL ON SHEET RP08 PRIOR TO DIKE BREACHING.
- ⑩ CONSTRUCT WOOD REVETMENT PER DETAIL ON SHEET RP09.
- ⑪ CONSTRUCT SMALL WOOD CLUSTER PER DETAIL ON SHEET RP10. SEE LOCATION POINTS ON SHEET GP01.
- ⑫ ACCESS TO EXISTING DITCH FOR CONSTRUCTION OF SMALL WOOD CLUSTERS. ACCESS ALONG EXISTING DITCH SHALL BE NO GREATER THAN 20 FEET WIDE ON EACH SIDE OF DITCH AND SHALL BE LOCATED TO MINIMIZE DISTURBANCE TO TREES AND SHRUBS.

EMXX, SWCXX - LOCATION POINTS, SEE SHEET GP02

APPROVED TEMPORARY ACCESS ROUTE

- PROJECT LIMITS
- DITCH FILL
- EXISTING DITCH TO REMAIN
- DIKE BREACH AREA
- REMNANT DIKE AREA
- ACCESS TO EXISTING DITCH
- EXCAVATED MATERIAL PLACEMENT AREAS
- EAST TIDAL CHANNEL CONNECTION EXCAVATED MATERIAL DISPOSAL AREA
- LIMITS OF CHANNEL CONNECTION TO UNION SLOUGH
- 3-PILE AND 5-PILE WOOD COMPLEX
- SMALL WOOD CLUSTER
- CLEARING LIMITS
- CLEARING AND GRUBBING LIMITS
- CONTOUR (MINOR-EXISTING)
- CONTOUR (MAJOR-PROPOSED)
- C-X - CHANNEL ALIGNMENT, SEE SHEET GP01
- EDDF - EXISTING DIKE DITCH FILL

**ENLARGED PLAN-EXISTING DIKE STA 256+00 TO STA 290+00**

N

100 0 100 200  
SCALE IN FEET

N:374353  
E:1315977

125' - 200' TYPICAL SPACING ALONG EXISTING DITCH

125' - 200' TYPICAL SPACING ALONG EXISTING DITCH

**AS-BUILTS**

CALL BEFORE YOU DIG  
1-800-424-5555

Plotted: May 29, 2019 - 3:31pm  
 K:\Project\31800\31800\Phase2\06\_RP01.dwg Layout Name: RP01

DATE	NO.	REVISION	BY

Last Saved By: otak May 29, 2019 - 10:47am			
REGION NO.	STATE	FED. AID PROJ. NO.	SURVEY NO.
10	WASH.		
DESIGNED BY: GSL, DAS		DRAWN BY: AK	
FIELD BOOK(S):		UPI# 12-0171-1	

**otak**

HanmiGlobal Partner

REFER TO ORIGINAL DRAWINGS FOR SIGNATURES AND SEALS

REVIEWED AND APPROVED BY:

STEVEN E. THOMSEN, P.E.  
SNOHOMISH COUNTY ENGINEER

DATE APPROVED:

SNOHOMISH COUNTY  
DEPARTMENT OF  
PUBLIC WORKS

PROJECT NO. RR49206

**SMITH ISLAND  
ESTUARY RESTORATION  
PHASE 2  
RESTORATION PLAN**

REFERENCE SHEET NO.  
RP01

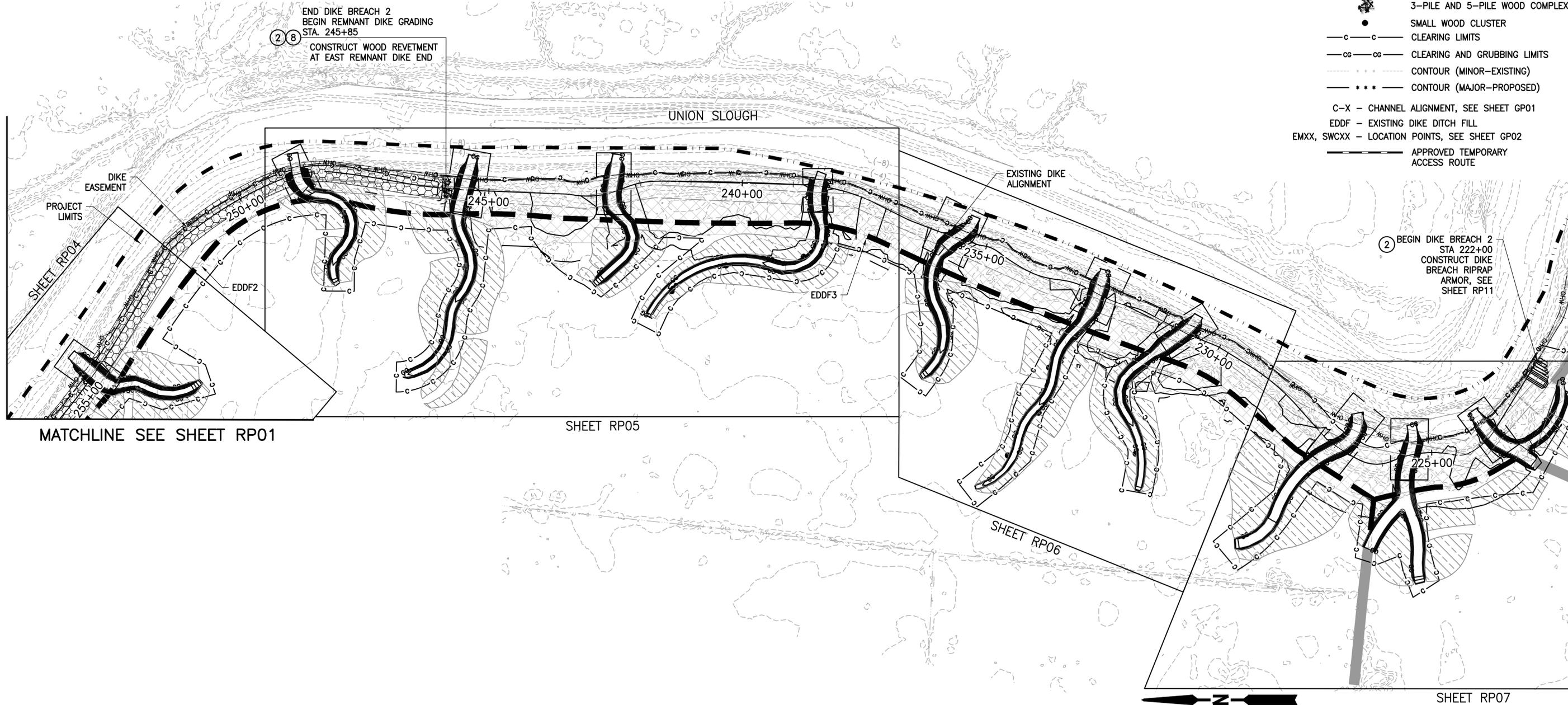
SHEET 6 OF 29 SHEETS

MATCHLINE SEE SHEET RP02

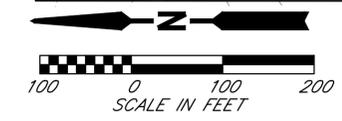
**CONSTRUCTION NOTES**

- ① BEGIN DITCH FILL AT EXISTING DIKE PRIOR TO DIKE BREACH AND GRADING PER TYPICAL DIKE BREACH AND TYPICAL REMNANT DIKE DETAILS ON SHEET RP11.
- ② BREACH DIKE PER DETAIL ON SHEET RP11.
- ③ GRADE REMNANT DIKE PER DETAIL ON SHEET RP11.
- ④ CONSTRUCT CHANNEL CONNECTION TO UNION SLOUGH DURING DIKE BREACHING PER DETAIL ON SHEET RP08. SEE SHEET EC02 FOR IN-WATER WORK TESC DETAILS. SEE CHANNEL ALIGNMENT TABLES ON SHEET GP01.
- ⑤ CONSTRUCT 3-PILE WOOD COMPLEX PER SHEET RP10.
- ⑥ CONSTRUCT 5-PILE WOOD COMPLEX PER SHEET RP10.
- ⑦ CONSTRUCT STARTER CHANNEL TYPE A PER DETAIL ON SHEET RP08 PRIOR TO DIKE BREACHING.
- ⑧ CONSTRUCT STARTER CHANNEL TYPE B PER DETAIL ON SHEET RP08 PRIOR TO DIKE BREACHING.
- ⑨ CONSTRUCT STARTER CHANNEL TYPE C PER DETAIL ON SHEET RP08 PRIOR TO DIKE BREACHING.
- ⑩ CONSTRUCT WOOD REVETMENT PER DETAIL ON SHEET RP09.
- ⑪ CONSTRUCT SMALL WOOD CLUSTER PER DETAIL ON SHEET RP10. SEE LOCATION POINTS ON SHEET GP01.
- ⑫ ACCESS TO EXISTING DITCH FOR CONSTRUCTION OF SMALL WOOD CLUSTERS. ACCESS ALONG EXISTING DITCH SHALL BE NO GREATER THAN 20 FEET WIDE ON EACH SIDE OF DITCH AND SHALL BE LOCATED TO MINIMIZE DISTURBANCE TO TREES AND SHRUBS.

- PROJECT LIMITS
- DITCH FILL
- EXISTING DITCH TO REMAIN
- DIKE BREACH AREA
- REMNANT DIKE AREA
- ACCESS TO EXISTING DITCH
- EXCAVATED MATERIAL PLACEMENT AREAS
- EAST TIDAL CHANNEL CONNECTION EXCAVATED MATERIAL DISPOSAL AREA
- LIMITS OF CHANNEL CONNECTION TO UNION SLOUGH
- 3-PILE AND 5-PILE WOOD COMPLEX
- SMALL WOOD CLUSTER
- CLEARING LIMITS
- CLEARING AND GRUBBING LIMITS
- CONTOUR (MINOR-EXISTING)
- CONTOUR (MAJOR-PROPOSED)
- C-X - CHANNEL ALIGNMENT, SEE SHEET GP01
- EDDF - EXISTING DIKE DITCH FILL
- EMXX, SWCXX - LOCATION POINTS, SEE SHEET GP02
- APPROVED TEMPORARY ACCESS ROUTE



**ENLARGED PLAN-EXISTING DIKE STA 222+00 TO STA 256+00**



**AS-BUILTS** CALL BEFORE YOU DIG  
1-800-424-5555

Plotted: May 29, 2019 - 3:35pm  
 c:\project\31800\31800\Phase2\07\_RP02.dwg  
 Layout Name: RP02

DATE	NO.	REVISION	BY

Last Saved By: chrisc May 13, 2019 - 1:49pm			
REGION NO.	STATE	FED. AID PROJ. NO.	SURVEY NO.
10	WASH.		
DESIGNED BY: GSL, DAS		DRAWN BY: AK	
FIELD BOOK(S):		UPI# 12-0171-1	



REFER TO ORIGINAL DRAWINGS FOR SIGNATURES AND SEALS

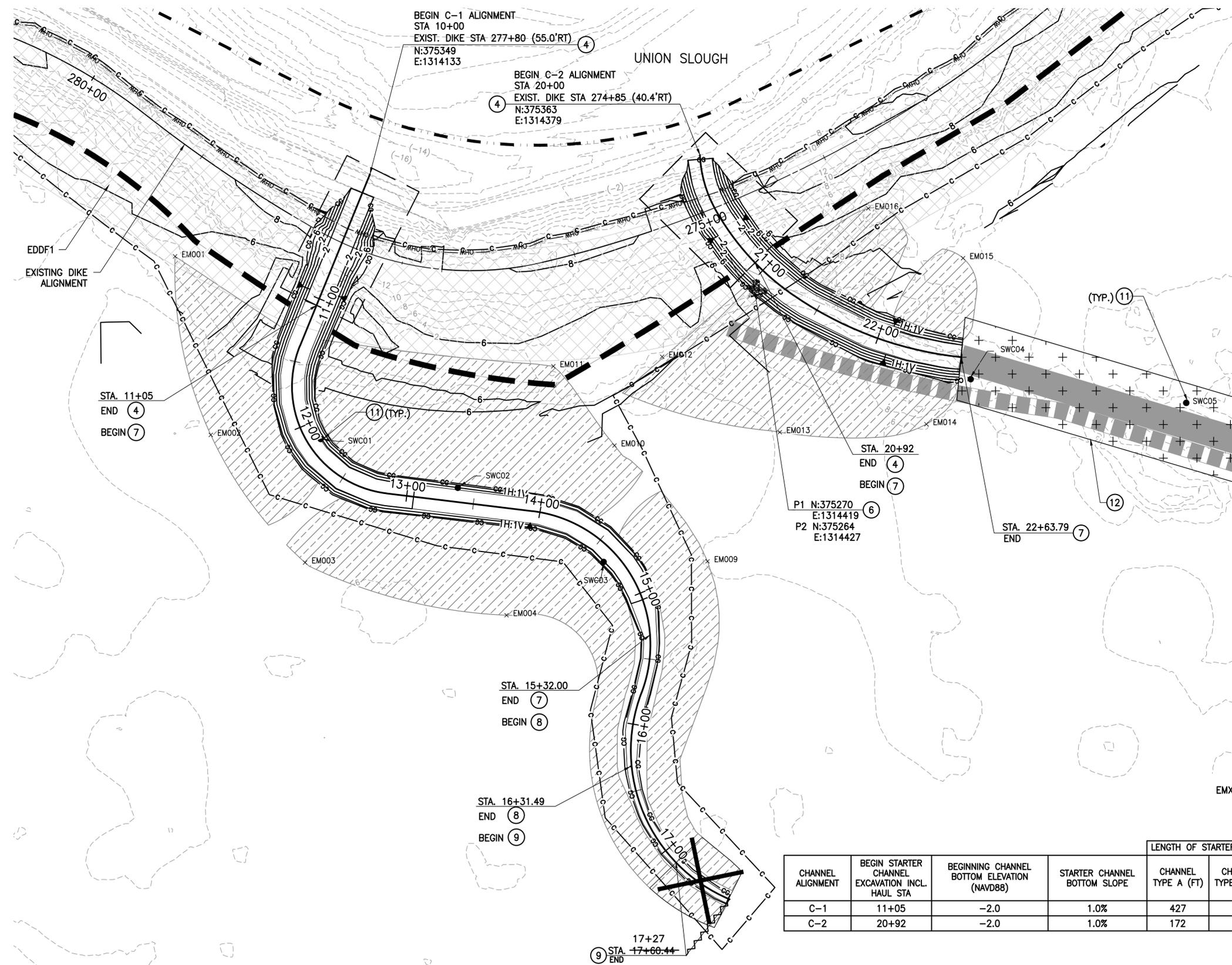
REVIEWED AND APPROVED BY:  
  
STEVEN E. THOMSEN, P.E.  
SNOHOMISH COUNTY ENGINEER  
  
DATE APPROVED:

SNOHOMISH COUNTY  
DEPARTMENT OF  
PUBLIC WORKS  
  
PROJECT NO. RR49206

**SMITH ISLAND  
ESTUARY RESTORATION  
PHASE 2  
RESTORATION PLAN**

REFERENCE SHEET NO.  
RP02  
  
SHEET 7 OF 29 SHEETS

Plotted: May 29, 2019 - 3:38pm  
 otak K:\project\31800\31800\Phase2\08\_RP03\_2.dwg Layout Name: RP03



- ### CONSTRUCTION NOTES
- ① BEGIN DITCH FILL AT EXISTING DIKE PRIOR TO DIKE BREACH AND GRADING PER TYPICAL DIKE BREACH AND TYPICAL REMNANT DIKE DETAILS ON SHEET RP11.
  - ② BREACH DIKE PER DETAIL ON SHEET RP11.
  - ③ GRADE REMNANT DIKE PER DETAIL ON SHEET RP11.
  - ④ CONSTRUCT CHANNEL CONNECTION TO UNION SLOUGH DURING DIKE BREACHING PER DETAIL ON SHEET RP08. SEE SHEET EC02 FOR IN-WATER WORK TESC DETAILS. SEE CHANNEL ALIGNMENT TABLES ON SHEET GP01.
  - ⑤ CONSTRUCT 3-PILE WOOD COMPLEX PER SHEET RP10.
  - ⑥ CONSTRUCT 5-PILE WOOD COMPLEX PER SHEET RP10.
  - ⑦ CONSTRUCT STARTER CHANNEL TYPE A PER DETAIL ON SHEET RP08 PRIOR TO DIKE BREACHING.
  - ⑧ CONSTRUCT STARTER CHANNEL TYPE B PER DETAIL ON SHEET RP08 PRIOR TO DIKE BREACHING.
  - ⑨ CONSTRUCT STARTER CHANNEL TYPE C PER DETAIL ON SHEET RP08 PRIOR TO DIKE BREACHING.
  - ⑩ CONSTRUCT WOOD REVETMENT PER DETAIL ON SHEET RP09.
  - ⑪ CONSTRUCT SMALL WOOD CLUSTER PER DETAIL ON SHEET RP10. SEE LOCATION POINTS ON SHEET GP01.
  - ⑫ ACCESS TO EXISTING DITCH FOR CONSTRUCTION OF SMALL WOOD CLUSTERS. ACCESS ALONG EXISTING DITCH SHALL BE NO GREATER THAN 20 FEET WIDE ON EACH SIDE OF DITCH AND SHALL BE LOCATED TO MINIMIZE DISTURBANCE TO TREES AND SHRUBS.

- ### LEGEND
- PROJECT LIMITS
  - DITCH FILL
  - EXISTING DITCH TO REMAIN
  - DIKE BREACH AREA
  - REMNANT DIKE AREA
  - ACCESS TO EXISTING DITCH
  - EXCAVATED MATERIAL PLACEMENT AREAS
  - EAST TIDAL CHANNEL CONNECTION EXCAVATED MATERIAL DISPOSAL AREA
  - LIMITS OF CHANNEL CONNECTION TO UNION SLOUGH
  - 3-PILE AND 5-PILE WOOD COMPLEX
  - SMALL WOOD CLUSTER
  - CLEARING LIMITS
  - CLEARING AND GRUBBING LIMITS
  - CONTOUR (MINOR-EXISTING)
  - CONTOUR (MAJOR-PROPOSED)
  - CHANNEL ALIGNMENT, SEE SHEET GP01
  - EXISTING DIKE DITCH FILL
  - LOCATION POINTS, SEE SHEET GP02
  - APPROVED TEMPORARY ACCESS ROUTE

CHANNEL ALIGNMENT	BEGIN STARTER CHANNEL EXCAVATION INCL. HAUL STA	BEGINNING CHANNEL BOTTOM ELEVATION (NAVD88)	STARTER CHANNEL BOTTOM SLOPE	LENGTH OF STARTER CHANNEL EXCAVATION			STARTER CHANNEL EXCAVATION VOLUME (CY)	CHANNEL CONNECTION TO UNION SLOUGH EXC. VOLUME (CY)
				CHANNEL TYPE A (FT)	CHANNEL TYPE B (FT)	CHANNEL TYPE C (FT)		
C-1	11+05	-2.0	1.0%	427	99	129	1646	837
C-2	20+92	-2.0	1.0%	172	0	0	886	820



ENLARGED PLAN-EXISTING DIKE STA 280+00 TO STA 273+00

AS-BUILTS CALL BEFORE YOU DIG 1-800-424-5555

DATE	NO.	REVISION	BY

Last Saved By: otak May 29, 2019 - 10:52am			
REGION NO.	STATE	FED. AID PROJ. NO.	SURVEY NO.
10	WASH.		
DESIGNED BY: GSL, DAS		DRAWN BY: AK	
FIELD BOOK(S):		UPI# 12-0171-1	



REFER TO ORIGINAL DRAWINGS FOR SIGNATURES AND SEALS

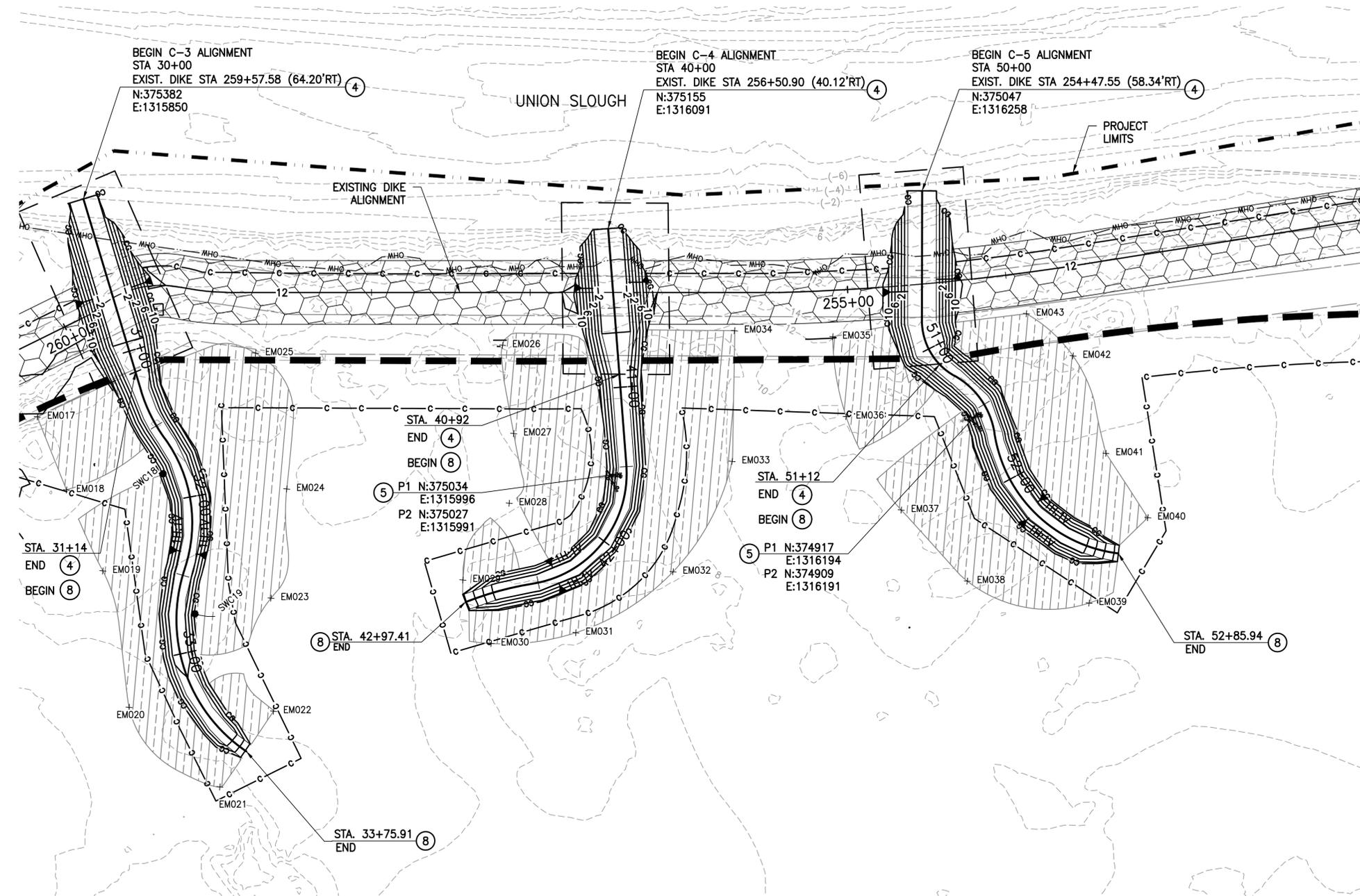
REVIEWED AND APPROVED BY:  
 STEVEN E. THOMSEN, P.E.  
 SNOHOMISH COUNTY ENGINEER

SNOHOMISH COUNTY DEPARTMENT OF PUBLIC WORKS  
 PROJECT NO. RR49206

SMITH ISLAND ESTUARY RESTORATION PHASE 2 RESTORATION PLAN

REFERENCE SHEET NO. RP03  
 SHEET 8 OF 29 SHEETS

Plotted: May 29, 2019 - 3:42pm  
 otak K:\project\31800\31800\Phase2\09\_RPO4\_2.dwg Layout Name: RPO4



**CONSTRUCTION NOTES**

- ① BEGIN DITCH FILL AT EXISTING DIKE PRIOR TO DIKE BREACH AND GRADING PER TYPICAL DIKE BREACH AND TYPICAL REMNANT DIKE DETAILS ON SHEET RP11.
- ② BREACH DIKE PER DETAIL ON SHEET RP11.
- ③ GRADE REMNANT DIKE PER DETAIL ON SHEET RP11.
- ④ CONSTRUCT CHANNEL CONNECTION TO UNION SLOUGH DURING DIKE BREACHING PER DETAIL ON SHEET RP08. SEE SHEET ECO2 FOR IN-WATER WORK TESC DETAILS. SEE CHANNEL ALIGNMENT TABLES ON SHEET GP01.
- ⑤ CONSTRUCT 3-PILE WOOD COMPLEX PER SHEET RP10.
- ⑥ CONSTRUCT 5-PILE WOOD COMPLEX PER SHEET RP10.
- ⑦ CONSTRUCT STARTER CHANNEL TYPE A PER DETAIL ON SHEET RP08 PRIOR TO DIKE BREACHING.
- ⑧ CONSTRUCT STARTER CHANNEL TYPE B PER DETAIL ON SHEET RP08 PRIOR TO DIKE BREACHING.
- ⑨ CONSTRUCT STARTER CHANNEL TYPE C PER DETAIL ON SHEET RP08 PRIOR TO DIKE BREACHING.
- ⑩ CONSTRUCT WOOD REVETMENT PER DETAIL ON SHEET RP09.
- ⑪ CONSTRUCT SMALL WOOD CLUSTER PER DETAIL ON SHEET RP10. SEE LOCATION POINTS ON SHEET GP01.
- ⑫ ACCESS TO EXISTING DITCH FOR CONSTRUCTION OF SMALL WOOD CLUSTERS. ACCESS ALONG EXISTING DITCH SHALL BE NO GREATER THAN 20 FEET WIDE ON EACH SIDE OF DITCH AND SHALL BE LOCATED TO MINIMIZE DISTURBANCE TO TREES AND SHRUBS.

**LEGEND**

- PROJECT LIMITS
- DITCH FILL
- EXISTING DITCH TO REMAIN
- DIKE BREACH AREA
- REMNANT DIKE AREA
- ACCESS TO EXISTING DITCH
- EXCAVATED MATERIAL PLACEMENT AREAS
- EAST TIDAL CHANNEL CONNECTION EXCAVATED MATERIAL DISPOSAL AREA
- LIMITS OF CHANNEL CONNECTION TO UNION SLOUGH
- 3-PILE AND 5-PILE WOOD COMPLEX
- SMALL WOOD CLUSTER
- CLEARING LIMITS
- CLEARING AND GRUBBING LIMITS
- CONTOUR (MINOR-EXISTING)
- CONTOUR (MAJOR-PROPOSED)
- C-X - CHANNEL ALIGNMENT, SEE SHEET GP01
- EDDF - EXISTING DIKE DITCH FILL
- EMXX, SWCXX - LOCATION POINTS, SEE SHEET GP02
- APPROVED TEMPORARY ACCESS ROUTE

CHANNEL ALIGNMENT	BEGIN STARTER CHANNEL EXCAVATION INCL. HAUL STA	BEGINNING CHANNEL BOTTOM ELEVATION (NAVD88)	STARTER CHANNEL BOTTOM SLOPE	LENGTH OF STARTER CHANNEL EXCAVATION			STARTER CHANNEL EXCAVATION VOLUME (CY)	CHANNEL CONNECTION TO UNION SLOUGH EXC. VOLUME (CY)
				CHANNEL TYPE A (FT)	CHANNEL TYPE B (FT)	CHANNEL TYPE C (FT)		
C-3	31+14	-2.0	1.0%	0	262	0	1119	1277
C-4	40+92	-2.0	1.0%	0	206	0	838	1087
C-5	51+12	-2.0	1.0%	0	174	0	892	1263

**ENLARGED PLAN-EXISTING DIKE STA 260+00 TO STA 252+00**



**AS-BUILTS** CALL BEFORE YOU DIG  
1-800-424-5555

DATE	NO.	REVISION	BY

Last Saved By: otak May 29, 2019 - 8:19am			
REGION NO.	STATE	FED. AID PROJ. NO.	SURVEY NO.
10	WASH.		
DESIGNED BY: GSL, DAS		DRAWN BY: AK	
FIELD BOOK(S):		UPI# 12-0171-1	



REFER TO ORIGINAL DRAWINGS FOR SIGNATURES AND SEALS

REVIEWED AND APPROVED BY:  
STEVEN E. THOMSEN, P.E.  
SNOHOMISH COUNTY ENGINEER  
DATE APPROVED:

SNOHOMISH COUNTY DEPARTMENT OF PUBLIC WORKS  
PROJECT NO. RR49206

**SMITH ISLAND ESTUARY RESTORATION PHASE 2 RESTORATION PLAN**

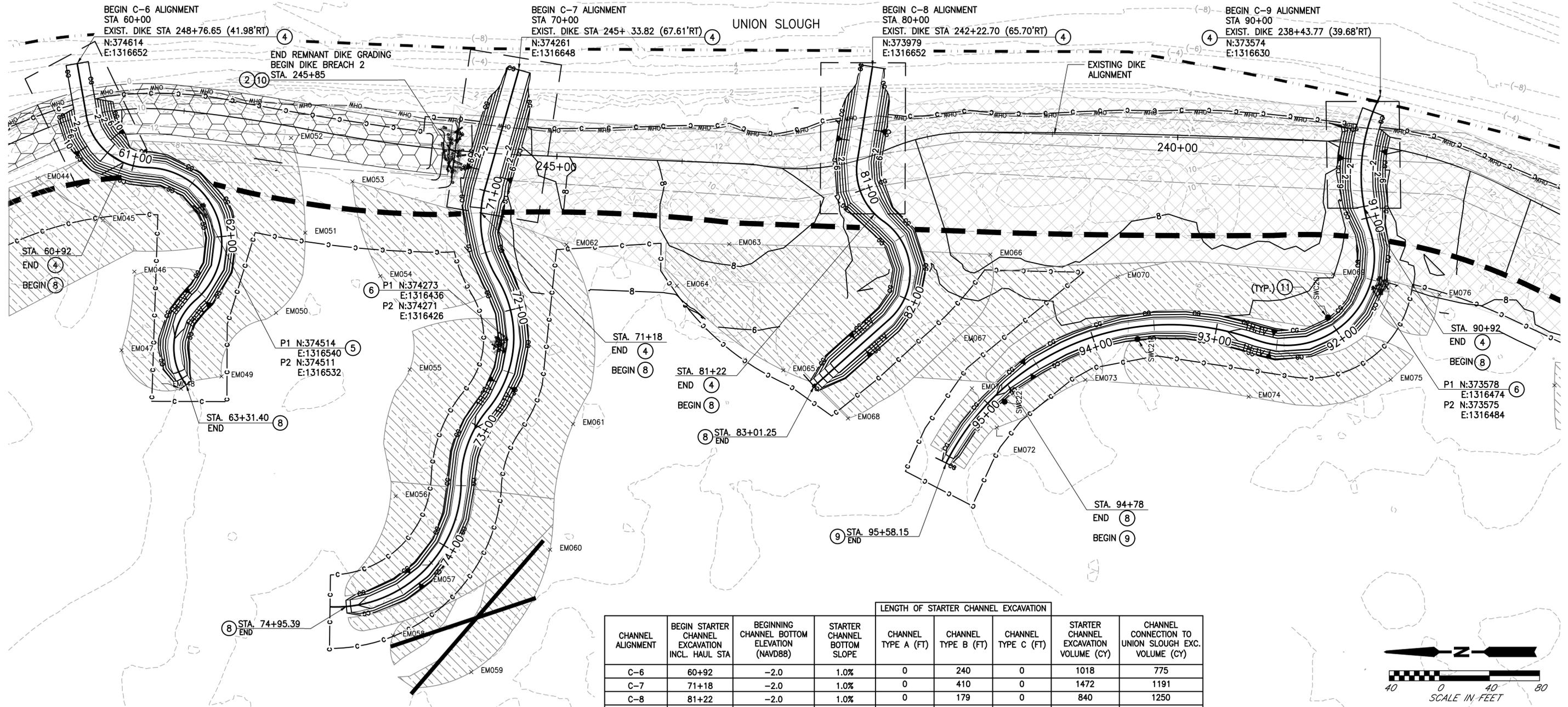
REFERENCE SHEET NO. RPO4  
SHEET 9 OF 29 SHEETS

**CONSTRUCTION NOTES**

- 1 BEGIN DITCH FILL AT EXISTING DIKE PRIOR TO DIKE BREACH AND GRADING PER TYPICAL DIKE BREACH AND TYPICAL REMNANT DIKE DETAILS ON SHEET RP11.
- 2 BREACH DIKE PER DETAIL ON SHEET RP11.
- 3 GRADE REMNANT DIKE PER DETAIL ON SHEET RP11.
- 4 CONSTRUCT CHANNEL CONNECTION TO UNION SLOUGH DURING DIKE BREACHING PER DETAIL ON SHEET RP08. SEE SHEET EC02 FOR IN-WATER WORK TESC DETAILS. SEE CHANNEL ALIGNMENT TABLES ON SHEET GP01.
- 5 CONSTRUCT 3-PILE WOOD COMPLEX PER SHEET RP10.
- 6 CONSTRUCT 5-PILE WOOD COMPLEX PER SHEET RP10.
- 7 CONSTRUCT STARTER CHANNEL TYPE A PER DETAIL ON SHEET RP08 PRIOR TO DIKE BREACHING.
- 8 CONSTRUCT STARTER CHANNEL TYPE B PER DETAIL ON SHEET RP08 PRIOR TO DIKE BREACHING.
- 9 CONSTRUCT STARTER CHANNEL TYPE C PER DETAIL ON SHEET RP08 PRIOR TO DIKE BREACHING.
- 10 CONSTRUCT WOOD REVETMENT PER DETAIL ON SHEET RP09.
- 11 CONSTRUCT SMALL WOOD CLUSTER PER DETAIL ON SHEET RP10. SEE LOCATION POINTS ON SHEET GP01.
- 12 ACCESS TO EXISTING DITCH FOR CONSTRUCTION OF SMALL WOOD CLUSTERS. ACCESS ALONG EXISTING DITCH SHALL BE NO GREATER THAN 20 FEET WIDE ON EACH SIDE OF DITCH AND SHALL BE LOCATED TO MINIMIZE DISTURBANCE TO TREES AND SHRUBS.

**LEGEND**

- PROJECT LIMITS
- DITCH FILL
- EXISTING DITCH TO REMAIN
- DIKE BREACH AREA
- REMNANT DIKE AREA
- ACCESS TO EXISTING DITCH
- EXCAVATED MATERIAL PLACEMENT AREAS
- EAST TIDAL CHANNEL CONNECTION EXCAVATED MATERIAL DISPOSAL AREA
- LIMITS OF CHANNEL CONNECTION TO UNION SLOUGH
- 3-PILE AND 5-PILE WOOD COMPLEX
- SMALL WOOD CLUSTER
- CLEARING LIMITS
- CLEARING AND GRUBBING LIMITS
- CONTOUR (MINOR-EXISTING)
- CONTOUR (MAJOR-PROPOSED)
- C-X - CHANNEL ALIGNMENT, SEE SHEET GP01
- EDDF - EXISTING DIKE DITCH FILL
- EMXX, SWCXX - LOCATION POINTS, SEE SHEET GP02
- APPROVED TEMPORARY ACCESS ROUTE



CHANNEL ALIGNMENT	BEGIN STARTER CHANNEL EXCAVATION INCL. HAUL STA	BEGINNING CHANNEL BOTTOM ELEVATION (NAVD88)	STARTER CHANNEL BOTTOM SLOPE	LENGTH OF STARTER CHANNEL EXCAVATION			STARTER CHANNEL EXCAVATION VOLUME (CY)	CHANNEL CONNECTION TO UNION SLOUGH EXC. VOLUME (CY)
				CHANNEL TYPE A (FT)	CHANNEL TYPE B (FT)	CHANNEL TYPE C (FT)		
C-6	60+92	-2.0	1.0%	0	240	0	1018	775
C-7	71+18	-2.0	1.0%	0	410	0	1472	1191
C-8	81+22	-2.0	1.0%	0	179	0	840	1250
C-9	90+92	-2.0	1.0%	0	386	80	1421	869

**ENLARGED PLAN-EXISTING DIKE STA 249+00 TO STA 237+00**

**AS-BUILTS** CALL BEFORE YOU DIG 1-800-424-5555

Plotted: May 29, 2019 - 3:46pm  
 K:\project\31800\31800\Phase2\10\_RP05\_2.dwg Layout Name: RP05

DATE	NO.	REVISION	BY

Last Saved By: otak May 29, 2019 - 10:57am			
REGION NO.	STATE	FED. AID PROJ. NO.	SURVEY NO.
10	WASH.		
DESIGNED BY: GSL, DAS		DRAWN BY: AK	
FIELD BOOK(S):		UPI# 12-0171-1	



REFER TO ORIGINAL DRAWINGS FOR SIGNATURES AND SEALS

REVIEWED AND APPROVED BY: STEVEN E. THOMSEN, P.E. SNOHOMISH COUNTY ENGINEER

DATE APPROVED: \_\_\_\_\_

SNOHOMISH COUNTY DEPARTMENT OF PUBLIC WORKS

PROJECT NO. RR49206

**SMITH ISLAND ESTUARY RESTORATION PHASE 2 RESTORATION PLAN**

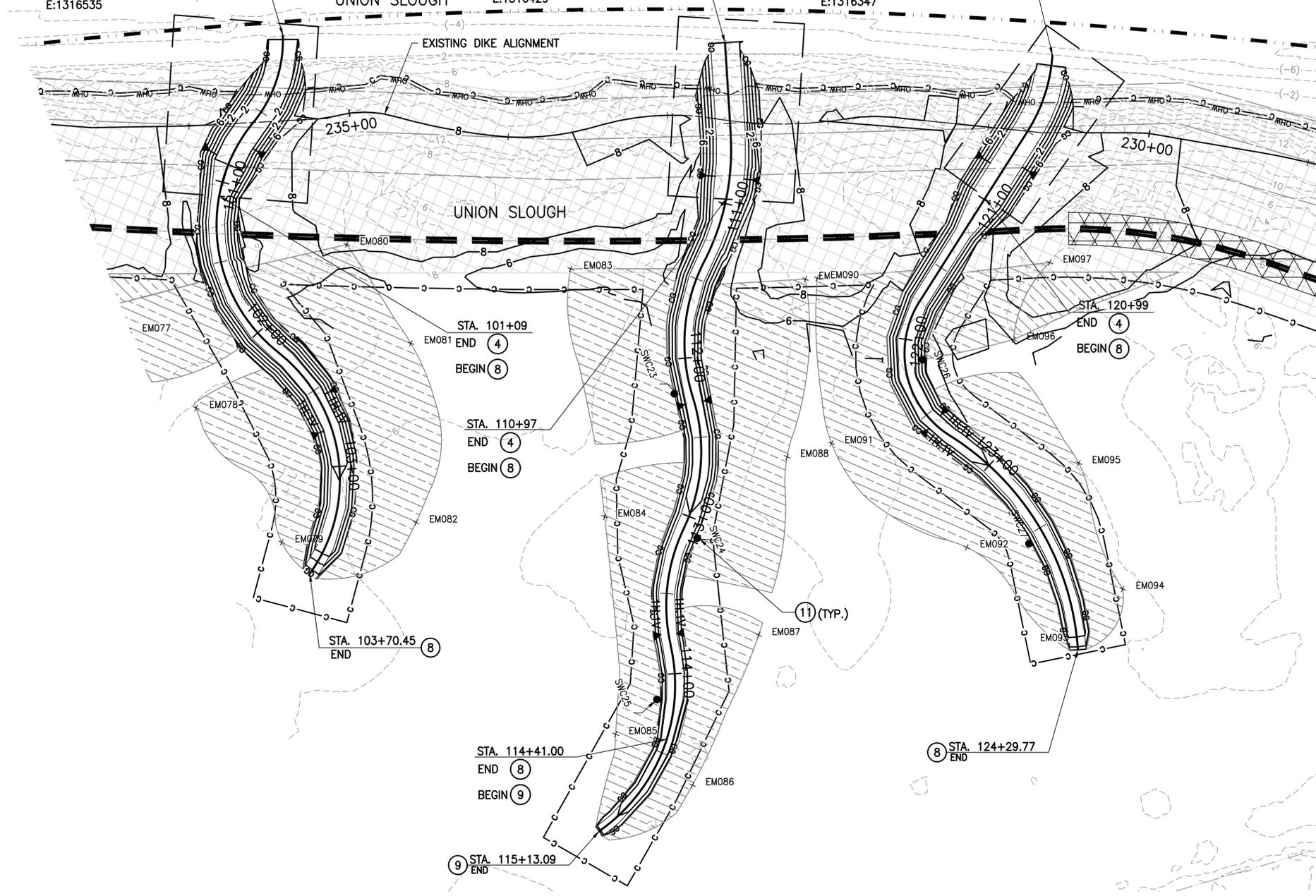
REFERENCE SHEET NO. RP05

SHEET 10 OF 29 SHEETS

BEGIN C-10 ALIGNMENT  
STA 100+00  
EXIST. DIKE STA 235+38.81 (52.74'RT)  
N:373278  
E:1316535

BEGIN C-11 ALIGNMENT  
STATION 110+00  
EXIST. DIKE STA 232+71.46 (47.42'RT)  
N:373024  
E:1316429

BEGIN C-12 ALIGNMENT  
STA 120+00  
EXIST. DIKE STA 230+60.08 (47.89'RT)  
N:372839  
E:1316347



**CONSTRUCTION NOTES**

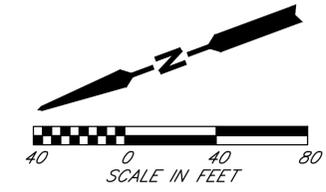
- ① BEGIN DITCH FILL AT EXISTING DIKE PRIOR TO DIKE BREACH AND GRADING PER TYPICAL DIKE BREACH AND TYPICAL REMNANT DIKE DETAILS ON SHEET RP11.
- ② BREACH DIKE PER DETAIL ON SHEET RP11.
- ③ GRADE REMNANT DIKE PER DETAIL ON SHEET RP11.
- ④ CONSTRUCT CHANNEL CONNECTION TO UNION SLOUGH DURING DIKE BREACHING PER DETAIL ON SHEET RP08. SEE SHEET ECO2 FOR IN-WATER WORK TESC DETAILS. SEE CHANNEL ALIGNMENT TABLES ON SHEET GP01.
- ⑤ CONSTRUCT 3-PILE WOOD COMPLEX PER SHEET RP10.
- ⑥ CONSTRUCT 5-PILE WOOD COMPLEX PER SHEET RP10.
- ⑦ CONSTRUCT STARTER CHANNEL TYPE A PER DETAIL ON SHEET RP08 PRIOR TO DIKE BREACHING.
- ⑧ CONSTRUCT STARTER CHANNEL TYPE B PER DETAIL ON SHEET RP08 PRIOR TO DIKE BREACHING.
- ⑨ CONSTRUCT STARTER CHANNEL TYPE C PER DETAIL ON SHEET RP08 PRIOR TO DIKE BREACHING.
- ⑩ CONSTRUCT WOOD REVETMENT PER DETAIL ON SHEET RP09.
- ⑪ CONSTRUCT SMALL WOOD CLUSTER PER DETAIL ON SHEET RP10. SEE LOCATION POINTS ON SHEET GP01.
- ⑫ ACCESS TO EXISTING DITCH FOR CONSTRUCTION OF SMALL WOOD CLUSTERS. ACCESS ALONG EXISTING DITCH SHALL BE NO GREATER THAN 20 FEET WIDE ON EACH SIDE OF DITCH AND SHALL BE LOCATED TO MINIMIZE DISTURBANCE TO TREES AND SHRUBS.

**LEGEND**

- PROJECT LIMITS
- DITCH FILL
- EXISTING DITCH TO REMAIN
- DIKE BREACH AREA
- REMNANT DIKE AREA
- ACCESS TO EXISTING DITCH
- EXCAVATED MATERIAL PLACEMENT AREAS
- EAST TIDAL CHANNEL CONNECTION EXCAVATED MATERIAL DISPOSAL AREA
- LIMITS OF CHANNEL CONNECTION TO UNION SLOUGH
- 3-PILE AND 5-PILE WOOD COMPLEX
- SMALL WOOD CLUSTER
- CLEARING LIMITS
- CLEARING AND GRUBBING LIMITS
- CONTOUR (MINOR-EXISTING)
- CONTOUR (MAJOR-PROPOSED)
- C-X - CHANNEL ALIGNMENT, SEE SHEET GP01
- EDDF - EXISTING DIKE DITCH FILL
- EMXX, SWCXX - LOCATION POINTS, SEE SHEET GP02
- APPROVED TEMPORARY ACCESS ROUTE
- REMOVAL OF KNOTWEED
- KNOTWEED DISPOSAL AREA

CHANNEL ALIGNMENT	BEGIN STARTER CHANNEL EXCAVATION INCL. HAUL STA	BEGINNING CHANNEL BOTTOM ELEVATION (NAVD88)	STARTER CHANNEL BOTTOM SLOPE	LENGTH OF STARTER CHANNEL EXCAVATION			STARTER CHANNEL EXCAVATION VOLUME (CY)	CHANNEL CONNECTION TO UNION SLOUGH EXC. VOLUME (CY)
				CHANNEL TYPE A (FT)	CHANNEL TYPE B (FT)	CHANNEL TYPE C (FT)		
C-10	101+09	-2.0	1.0%	0	261	0	1351	1108
C-11	110+97	-2.0	1.0%	0	344	72	1234	978
C-12	120+99	-2.0	1.0%	0	331	0	1127	998

**ENLARGED PLAN-EXISTING DIKE STA 236+00 TO STA 230+00**



**AS-BUILTS** CALL BEFORE YOU DIG 1-800-424-5555

Plotfile: May 29, 2019 - 3:50pm K:\Project\31800\31800\Phase2\11\_RP06\_2.dwg Layout Name: RP06

DATE	NO.	REVISION	BY

Last Saved By: otak May 29, 2019 - 11:03am			
REGION NO.	STATE	FED. AID PROJ. NO.	SURVEY NO.
10	WASH.		
DESIGNED BY: GSL, DAS		DRAWN BY: AK	
FIELD BOOK(S):		UPI# 12-0171-1	



REFER TO ORIGINAL DRAWINGS FOR SIGNATURES AND SEALS

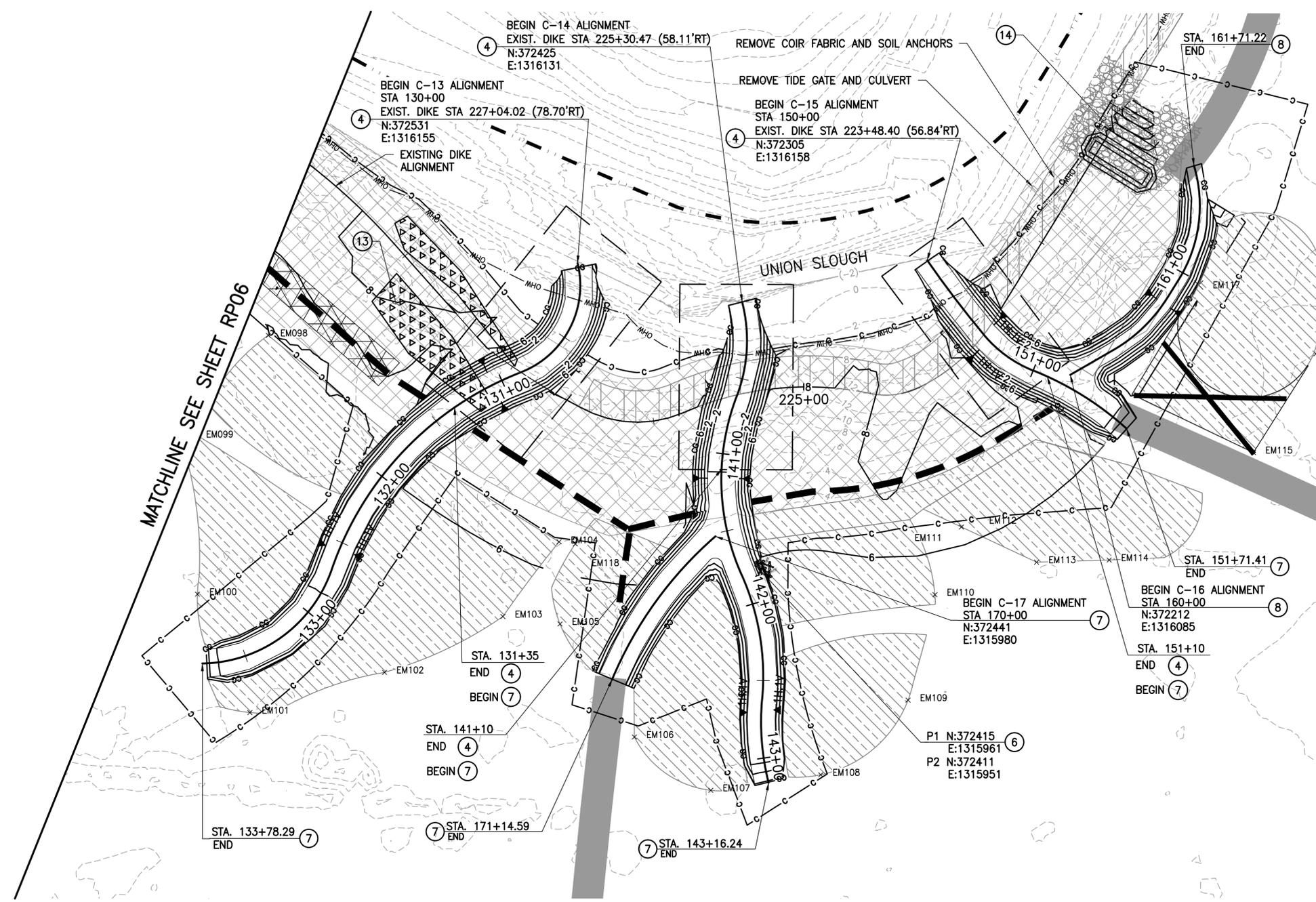
REVIEWED AND APPROVED BY:  
  
STEVEN E. THOMSEN, P.E.  
SNOHOMISH COUNTY ENGINEER  
  
DATE APPROVED:

SNOHOMISH COUNTY  
DEPARTMENT OF  
PUBLIC WORKS  
  
PROJECT NO. RR49206

**SMITH ISLAND  
ESTUARY RESTORATION  
PHASE 2  
RESTORATION PLAN**

REFERENCE SHEET NO. RP06  
  
SHEET 11 OF 29 SHEETS

Plotted: May 29, 2019 - 3:54pm  
 otak K:\project\31800\31800\Phase2\12\_RP07\_2.dwg Layout Name: RP07

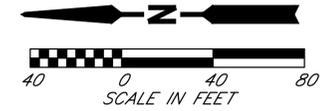


**LEGEND**

- PROJECT LIMITS
- DITCH FILL
- EXISTING DITCH TO REMAIN
- DIKE BREACH AREA
- REMNANT DIKE AREA
- ACCESS TO EXISTING DITCH
- EXCAVATED MATERIAL PLACEMENT AREAS
- EAST TIDAL CHANNEL CONNECTION EXCAVATED MATERIAL DISPOSAL AREA
- LIMITS OF CHANNEL CONNECTION TO UNION SLOUGH
- 3-PILE AND 5-PILE WOOD COMPLEX
- SMALL WOOD CLUSTER
- CLEARING LIMITS
- CLEARING AND GRUBBING LIMITS
- CONTOUR (MINOR-EXISTING)
- CONTOUR (MAJOR-PROPOSED)
- C-X - CHANNEL ALIGNMENT, SEE SHEET GP01
- EDDF - EXISTING DIKE DITCH FILL
- EMXX, SWCXX - LOCATION POINTS, SEE SHEET GP02
- APPROVED TEMPORARY ACCESS ROUTE
- REMOVAL OF KNOTWEED
- KNOTWEED DISPOSAL AREA
- REMOVE EXISTING COIR FABRIC AND SOIL ANCHORS

CHANNEL ALIGNMENT	BEGIN STARTER CHANNEL EXCAVATION INCL. HAUL STA	BEGINNING CHANNEL BOTTOM ELEVATION (NAVD88)	STARTER CHANNEL BOTTOM SLOPE	LENGTH OF STARTER CHANNEL EXCAVATION			STARTER CHANNEL EXCAVATION VOLUME (CY)	CHANNEL CONNECTION TO UNION SLOUGH EXC. VOLUME (CY)
				CHANNEL TYPE A (FT)	CHANNEL TYPE B (FT)	CHANNEL TYPE C (FT)		
C-13	131+35	-2.0	1.0%	244	0	0	1092	1320
C-14	141+10	-2.0	1.0%	206	0	0	1150	1333
C-15	151+10	-2.0	1.0%	61	0	0	256	972
C-16	160+00	-1.9	1.0%	0	173	0	411	0
C-17	170+00	-1.6	1.0%	124	0	0	389	0

**ENLARGED PLAN-EXISTING DIKE STA 228+00 TO STA 223+00**



**AS-BUILTS** CALL BEFORE YOU DIG  
1-800-424-5555

DATE	NO.	REVISION	BY

Last Saved By: otak May 29, 2019 - 11:09am			
REGION NO.	STATE	FED. AID PROJ. NO.	SURVEY NO.
10	WASH.		
DESIGNED BY: GSL, DAS		DRAWN BY: AK	
FIELD BOOK(S):		UPI# 12-0171-1	



REFER TO ORIGINAL DRAWINGS FOR SIGNATURES AND SEALS

REVIEWED AND APPROVED BY:  
  
STEVEN E. THOMSEN, P.E.  
SNOHOMISH COUNTY ENGINEER  
  
DATE APPROVED:

SNOHOMISH COUNTY  
DEPARTMENT OF  
PUBLIC WORKS  
  
PROJECT NO. RR49206

**SMITH ISLAND  
ESTUARY RESTORATION  
PHASE 2  
RESTORATION PLAN**

REFERENCE SHEET NO.  
RP07  
  
SHEET  
12  
OF  
29  
SHEETS

Plotted: May 29, 2019 - 3:58pm  
 c:\project\31800\31800\31800\Phase2\13\_RP08\_2.dwg  
 Layout Name: RP08

3-PILE OR 5-PILE WOOD COMPLEX,  
 SEE DETAIL ON SHEET RP10.  
 FOR LOCATIONS, SEE SHEETS RP01-RP07.

SPREAD EXCAVATED MATERIAL  
 BESIDE CHANNELS.  
 PROVIDE GAPS IN SPREAD  
 MATERIAL, 20' WIDE TYPICAL.  
 SEE SHEETS RP01-RP07  
 FOR LOCATIONS

TRANSITION STARTER CHANNEL TYPE A  
 TO STARTER CHANNEL TYPE B  
 OVER LENGTH OF 25', (TYP.)

CONSTRUCT STARTER  
 CHANNEL TYPE A

CONSTRUCT STARTER  
 CHANNEL TYPE B

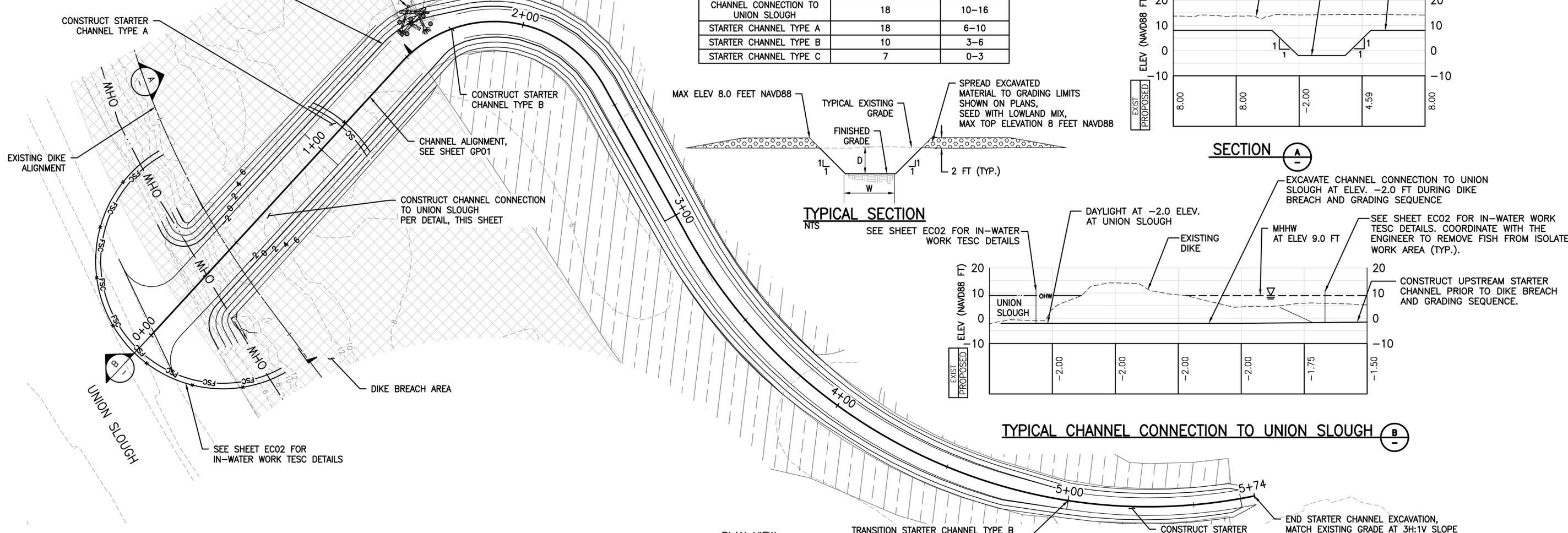
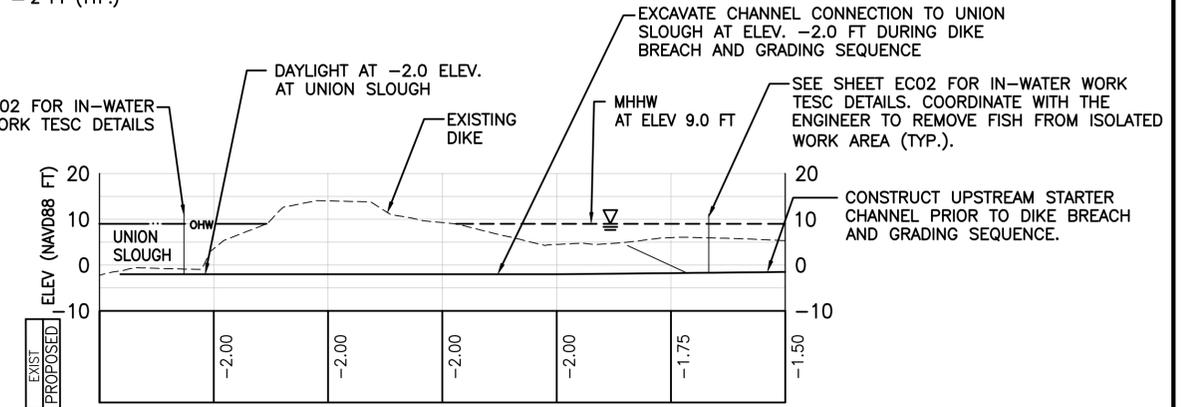
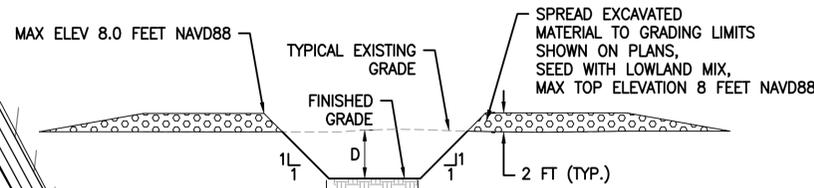
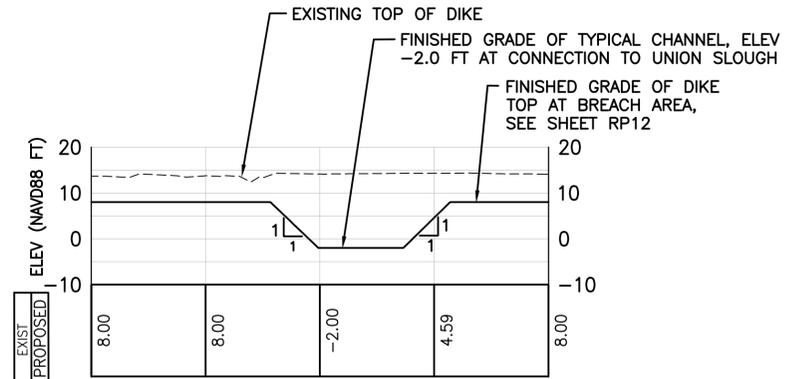
CHANNEL ALIGNMENT,  
 SEE SHEET GP01

CONSTRUCT CHANNEL CONNECTION  
 TO UNION SLOUGH  
 PER DETAIL, THIS SHEET

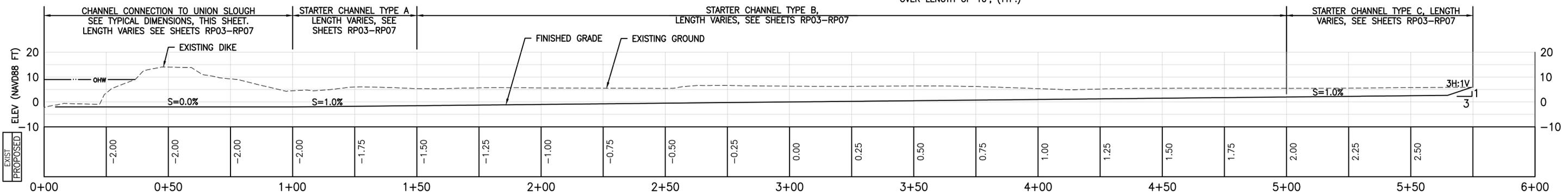
SEE SHEET EC02 FOR  
 IN-WATER WORK TESC DETAILS

DIKE BREACH AREA

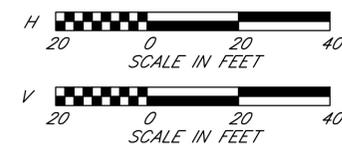
CHANNEL DIMENSIONS		
CROSS SECTION TYPE	BOTTOM WIDTH, W (FT)	DEPTH, D (FT)
CHANNEL CONNECTION TO UNION SLOUGH	18	10-16
STARTER CHANNEL TYPE A	18	6-10
STARTER CHANNEL TYPE B	10	3-6
STARTER CHANNEL TYPE C	7	0-3



PLAN VIEW



TYPICAL STARTER CHANNEL



AS-BUILTS CALL BEFORE YOU DIG  
 1-800-424-5555

DATE	NO.	REVISION	BY

Last Saved By: chris Jan 17, 2019 - 2:21pm			
REGION NO.	STATE	FED. AID PROJ. NO.	SURVEY NO.
10	WASH.		
DESIGNED BY: GSL, DAS		DRAWN BY: AK	
FIELD BOOK(S):		UPI# 12-0171-1	



REFER TO ORIGINAL DRAWINGS FOR SIGNATURES AND SEALS

REVIEWED AND APPROVED BY:  
 STEVEN E. THOMSEN, P.E.  
 SNOHOMISH COUNTY ENGINEER

DATE APPROVED:

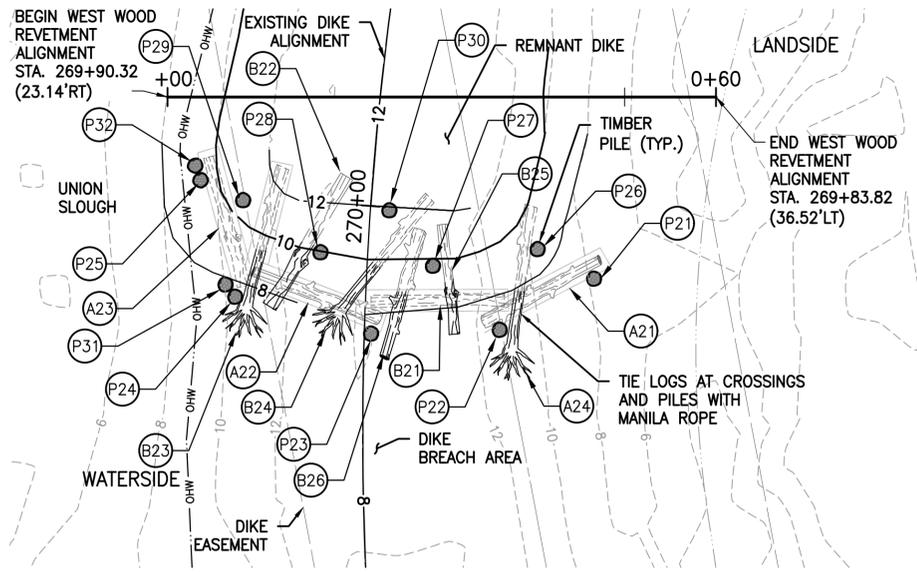
SNOHOMISH COUNTY  
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PROJECT NO. RR49206

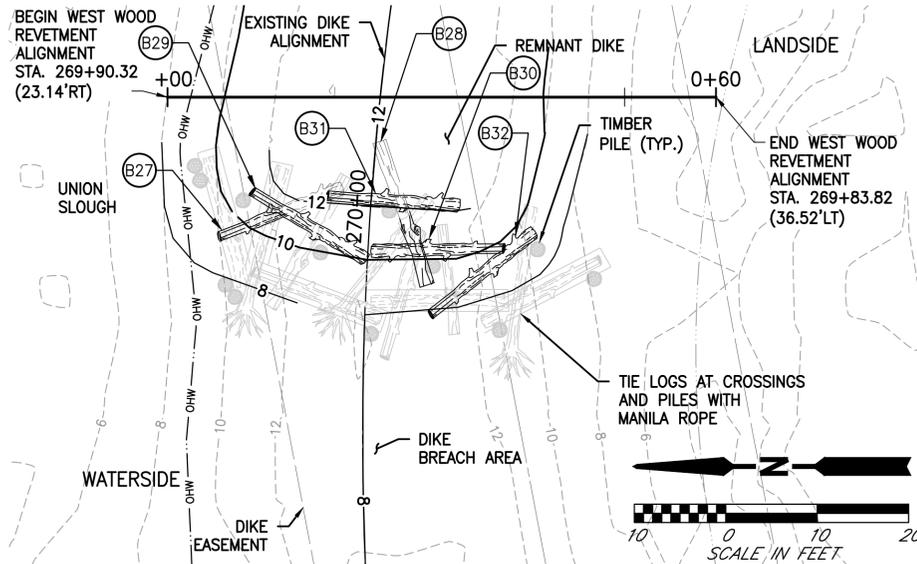
SMITH ISLAND  
 ESTUARY RESTORATION  
 PHASE 2  
 TYPICAL STARTER CHANNELS AND  
 CHANNEL CONNECTIONS  
 TO UNION SLOUGH

REFERENCE SHEET NO.  
 RP08

SHEET  
 13  
 OF  
 29  
 SHEETS



**STEP 1**



**STEP 2  
WEST WOOD REVETMENT**

WEST WOOD REVETMENT LOG TABLE

LOG ID	LOG TYPE	ROOTWAD	WATERSIDE			LANDSIDE		
			STATION	OFFSET	BOTTOM ELEVATION	STATION	OFFSET	BOTTOM ELEVATION
A21	A	NO	0+34.5	24.7	6	0+47.3'	17.7'	6
B21	B	NO	0+22.3	22.4	6	0+36.9	22.2	6
A22	A	NO	0+09.4	19	6	0+23.4	24.3	6
A23	A	NO	0+04.6	6.6	6	0+08.4	20.6	6
A24	A	YES	0+37.6	27.4	8.4	0+39.8	11.9	7.2
B22	B	NO	0+11.2	22.8	7.8	0+19.7	8.7	5.8
B23	B	YES	0+08.5'	22.8'	8.1	0+12.6'	7.7'	5.7
B24	B	YES	0+18.7'	23.5'	7.4	0+28.6'	11.0'	8
B25	B	NO	0+31.4'	25.7'	7.6	0+30.0'	13.9'	7.6
B26	B	NO	0+23.7'	28.2'	7.9	0+27.6'	14.4'	6.8
B27	B	NO	0+05.7'	15.1'	8.4	0+19.1'	9.8'	7.4
B28	B	NO	0+28.4'	20.3'	11.7	0+23.1'	4.9'	8.5
B29	B	NO	0+09.3'	10.2'	9.5	0+21.8'	17.7'	9.2
B30	B	NO	0+22.3'	16.7'	9.9	0+36.6'	16.4'	9.1
B31	B	NO	0+17.5'	10.7'	11.1	0+31.9'	11.9'	11.3
B32	B	NO	0+28.8'	23.6'	8.9	0+40.0'	14.7'	9.5

**WEST WOOD REVETMENT NOTES**

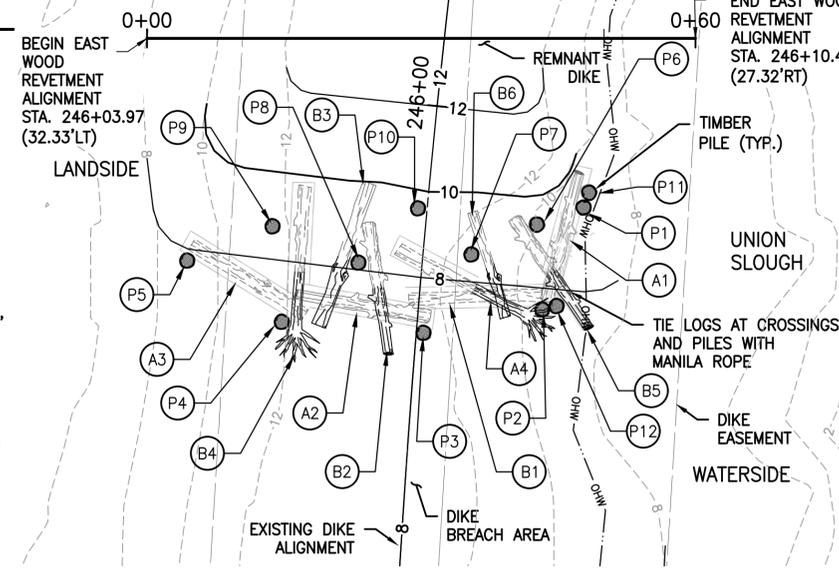
**STEP 1**

1. INSTALL TIMBER PILES P21-P32. TIMBER PILES SHALL BE EMBEDDED TO ELEV -45 FT NAVD88 OR LOWER. TOP ELEVATIONS OF PILES SHALL VARY. ONE PILE PER WOOD REVETMENT SHALL HAVE A MIN. TOP ELEV OF 15 FT NAVD88. TRIM TOPS OF PILES TO UNEVEN SURFACE FOR HABITAT ROOSTS.
2. TRENCH AND INSTALL LOGS A21, B21, A22, AND A23. TIE LOGS WITH MANILA ROPE. SEE SPECIAL PROVISIONS.
3. TRENCH AND INSTALL LOGS A24, B22, B23, B24, B25, AND B26 FIRMLY ON TOP OF LOWER LOGS. TIE LOGS WITH MANILA ROPE. BACKFILL TRENCHES WITH EXCAVATED MATERIAL.

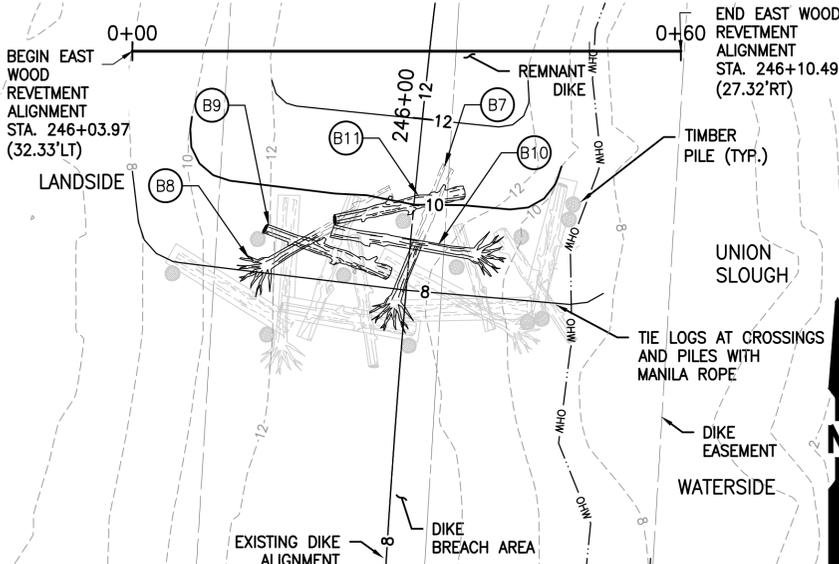
**STEP 2**

1. TRENCH AND INSTALL LOGS B29, B30, B27, AND B28 BY RESTING FIRMLY ON LOWER LOGS. TIE LOGS WITH MANILA ROPE. BACKFILL TRENCHES WITH EXCAVATED MATERIAL.
2. PLACE LOGS B31 AND B32 FIRMLY ON LOWER LOGS. TIE LOGS AT ADJACENT PILES AND CROSSING LOGS WITH MANILA ROPE. SEE SPECIAL PROVISIONS.

ID	STATION/OFFSET	FINAL TIP ELEV
P21	0+46.68 (19.84' R)	-41.5
P22	0+36.32 (25.44' R)	-46.5
P23	0+22.29 (25.83' R)	-43.0
P24	0+07.38 (21.79' R)	-41.5
P25	0+03.67 (9.09' R)	-47.5
P26	0+40.51 (16.60' R)	-40.0
P27	0+28.96 (18.39' R)	-42.0
P28	0+16.75 (16.99' R)	-42.0
P29	0+08.30 (11.28' R)	-44.7
P30	0+24.27 (12.37' R)	-42.3
P31	0+06.30 (20.47' R)	-45.5
P32	0+03.09 (7.38' R)	-47.5



**STEP 1**



**STEP 2  
EAST WOOD REVETMENT**

EAST WOOD REVETMENT LOG TABLE

LOG ID	LOG TYPE	ROOTWAD	WATERSIDE			LANDSIDE		
			STATION	OFFSET	BOTTOM ELEVATION	STATION	OFFSET	BOTTOM ELEVATION
A1	A	NO	0+47.2'	14.6'	6.0	0+44.4'	28.0'	6.0
B1	B	NO	0+43.8'	25.8'	6.0	0+29.5'	28.6'	6.0
A2	A	NO	0+30.9'	30.4'	6.0	0+16.2'	27.9'	6.0
A3	A	NO	0+17.2'	30.2'	6.0	0+04.9'	22.4'	6.0
B2	B	NO	0+26.4'	34.3'	8.5	0+24.2'	20'	7.6
B3	B	NO	0+18.8'	31.4'	8.0	0+24.4'	15.8'	9.1
A4	A	YES	0+41.4'	30.2'	7.2	0+27.5'	22.9'	8.0
B4	B	YES	0+16.3'	31.5'	7.8	0+17.3'	16.1'	8.5
B5	B	NO	0+48.3'	31.6'	8.4	0+40.2'	19.7'	6.8
B6	B	NO	0+39.1'	30.4'	9.8	0+35.6'	19'	10.2
B7	B	YES	0+28.6'	27.4'	12.6	0+34.6'	12.7'	8.3
B8	B	YES	0+14.7'	23.3'	10.1	0+28.3'	15.3'	10.2
B9	B	NO	0+28.2'	24.3'	10.3	0+14.5'	19.4'	9.2
B10	B	YES	0+37.5'	22.3'	11.9	0+21.8'	19.6'	12.4
B11	B	NO	0+22.2'	18.4'	10.9	0+22.2'	18.4'	12.3

**GENERAL NOTES**

**TYPE A AND B LOG MATERIALS**  
THE LOG DIAMETER AT BREAST HEIGHT (DBH) SHALL BE MEASURED 4.5 FEET FROM THE BASE END OF THE LOG. LOG DBH FOR SIZE A SHALL MEASURE 18 TO 36 INCHES AND SIZE B SHALL MEASURE 12 TO 18 INCHES.

**LOCATION TOLERANCES**  
VERTICAL AND HORIZONTAL TOLERANCE IS ±0.5' FOR LOG REFERENCE POINTS. LOG LENGTHS MAY EXTEND BEYOND REFERENCE POINTS.

**TIMBER PILES**  
TIMBER PILES SHALL BE CUT TO A MINIMUM OF 5 FEET LONGER THAN THE DESIGN LENGTH FOR DRIVING. FINAL EMBEDMENT DEPTH WILL BE DETERMINED IN THE FIELD BY THE GEOTECHNICAL ENGINEER. SEE SPECIAL PROVISIONS.

**EAST WOOD REVETMENT NOTES**

**STEP 1**

1. INSTALL TIMBER PILES P1-P10. TIMBER PILES SHALL BE EMBEDDED TO ELEV -45 FT NAVD88 OR LOWER. TOP ELEVATIONS OF PILES SHALL VARY. ONE PILE PER WOOD REVETMENT SHALL HAVE A MIN. TOP ELEV OF 15 FT NAVD88. TRIM TOPS OF PILES TO UNEVEN SURFACE FOR HABITAT ROOSTS.
2. TRENCH AND INSTALL LOGS A1, B1, A2, AND A3. TIE LOGS WITH MANILA ROPE. SEE SPECIAL PROVISIONS.
3. TRENCH AND INSTALL LOGS B2-B6, AND A4 FIRMLY ON TOP OF LOWER LOGS. TIE LOGS WITH MANILA ROPE. BACKFILL TRENCHES WITH EXCAVATED MATERIAL.

**STEP 2**

1. TRENCH AND INSTALL LOGS B7-B8 BY RESTING FIRMLY ON LOWER LOGS. TIE LOGS WITH MANILA ROPE. BACKFILL TRENCHES WITH EXCAVATED MATERIAL.
2. PLACE LOGS B9-B11 FIRMLY ON LOWER LOGS. TIE LOGS AT ADJACENT PILES AND CROSSING LOGS WITH MANILA ROPE. SEE SPECIAL PROVISIONS.

**LEGEND**

- P# TIMBER PILE
- A# TYPE A LOG
- B# TYPE B LOG

ID	STATION/OFFSET	FINAL TIP ELEV.
P1	0+47.79 (18.43' R)	-45.0
P2	0+43.24 (29.64' R)	-45.5
P3	0+30.19 (32.10' R)	-45.6
P4	0+14.74 (30.94' R)	-41.0
P5	0+04.36 (24.19' R)	-45.5
P6	0+42.50 (20.35' R)	-46.0
P7	0+35.47 (23.58' R)	-44.0
P8	0+23.17 (24.46' R)	-45.0
P9	0+13.73 (20.46' R)	-44.5
P10	0+29.65 (18.54' R)	-42.5
P11	0+48.18 (16.75' R)	-45.5
P12	0+44.81 (29.19' R)	-45.0

**AS-BUILTS**

CALL BEFORE YOU DIG  
1-800-424-5555

Plotted: May 29, 2019 - 4:02pm  
 c:\k:\project\31800\31800\31800\Phase2\14\_RP09\_2.dwg  
 Layout Name: RP09

DATE	NO.	REVISION	BY

Last Saved By: chrisc Jan 14, 2019 - 10:47am			
REGION NO.	STATE	FED. AID PROJ. NO.	SURVEY NO.
10	WASH.		
DESIGNED BY: GSL, DAS		DRAWN BY: AK	
FIELD BOOK(S):		UPI# 12-0171-1	



REFER TO ORIGINAL DRAWINGS FOR SIGNATURES AND SEALS

REVIEWED AND APPROVED BY:  
STEVEN E. THOMSEN, P.E.  
SNOHOMISH COUNTY ENGINEER

DATE APPROVED: \_\_\_\_\_

SNOHOMISH COUNTY  
DEPARTMENT OF  
PUBLIC WORKS

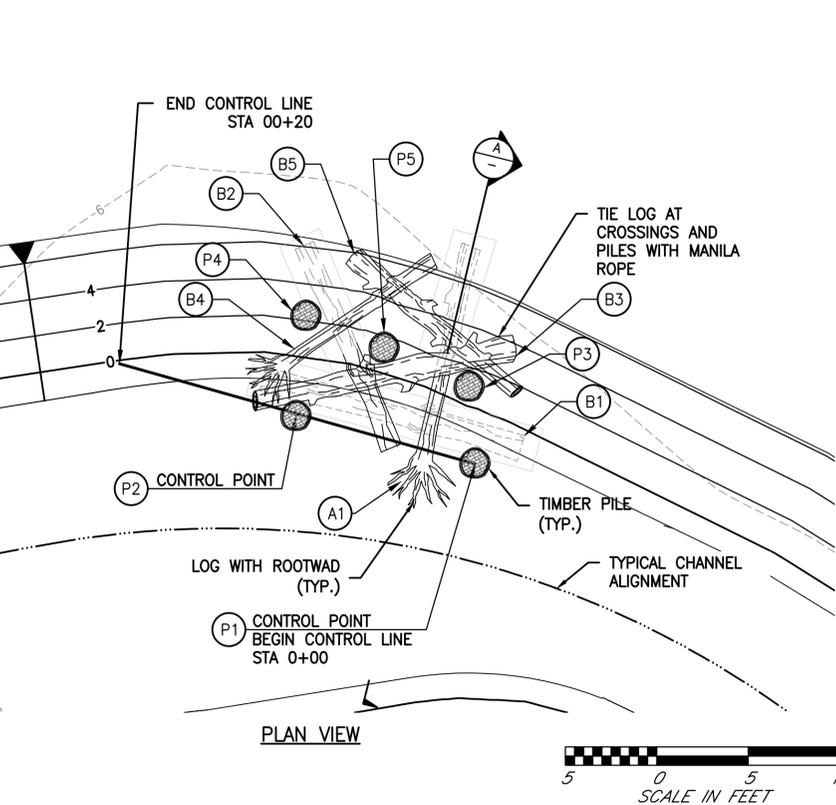
PROJECT NO. RR49206

**SMITH ISLAND  
ESTUARY RESTORATION  
PHASE 2**

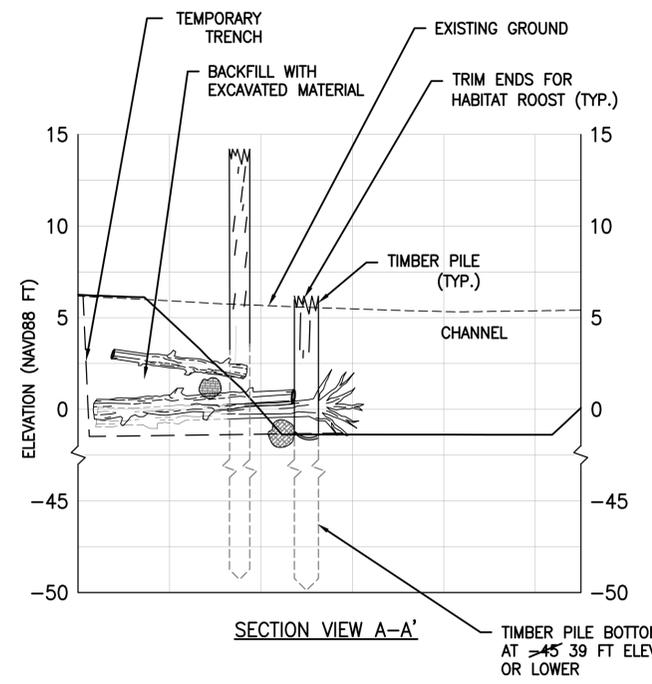
**WOOD REVETMENT DETAILS**

REFERENCE SHEET NO.  
RP09

SHEET  
14  
OF  
29  
SHEETS



**TYPICAL 5-PILE WOOD COMPLEX**  
NTS



**GENERAL NOTES**

**TYPE A AND B LOG MATERIALS**  
THE LOG DIAMETER AT BREST HEIGHT (DBH) SHALL BE MEASURED 4.5 FEET FROM THE BASE END OF THE LOG. LOG DBH FOR SIZE A SHALL MEASURE 18 TO 36 INCHES AND SIZE B SHALL MEASURE 12 TO 18 INCHES.

**TIMBER PILES**  
TIMBER PILES SHALL BE CUT TO A MINIMUM OF 5 FEET LONGER THAN THE DESIGN LENGTH FOR DRIVING. FINAL EMBEDMENT DEPTH WILL BE DETERMINED IN THE FIELD BY THE GEOTECHNICAL ENGINEER. SEE SPECIAL PROVISIONS.

**LEGEND**

- (P#) TIMBER PILE
- (A#) TYPE A LOG
- (B#) TYPE B LOG

**5-PILE WOOD COMPLEX NOTES**

1. INSTALL TIMBER PILES. TIMBER PILES SHALL BE EMBEDDED TO ELEV -45 FT NAVD88 OR LOWER. TOP ELEVATIONS WITHIN WOOD COMPLEXES SHALL VARY. ONE TIMBER PILE PER WOOD COMPLEX SHALL HAVE A MINIMUM TOP ELEVATION OF 15.0 FT NAVD88.
2. TRENCH AND INSTALL LOG B1. TRENCH AND INSTALL LOG A1 AND B2 FIRMLY ON LOG B1 AND TIE WITH MANILA ROPE AT PILES AND LOG CROSSINGS. SEE SPECIAL PROVISIONS.
3. PLACE LOG B3, B4, AND B5 FIRMLY ON LOWER LOGS, TIE WITH MANILA ROPE AT PILES AND LOG CROSSINGS, AND BACKFILL WITH EXCAVATED MATERIAL.

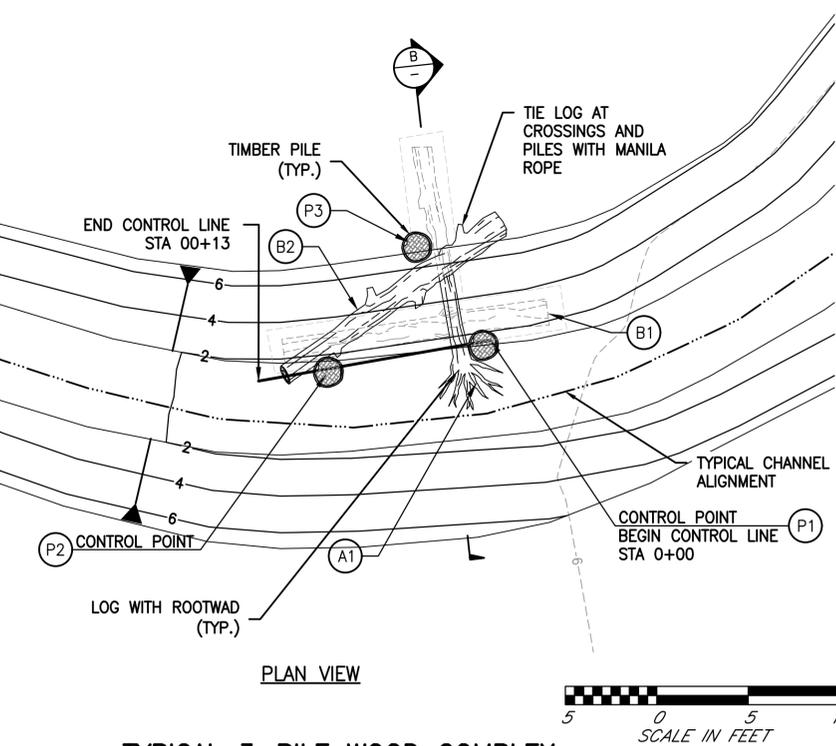
**WOOD MATERIAL QUANTITY TABLE**

STRUCTURES	TYPE A LOGS /W ROOTWAD	TYPE A LOGS PLAIN END	TYPE B LOGS /W ROOTWAD	TYPE B LOGS PLAIN END	TIMBER PILES	TREE LIMBS, MIN 3" DIAM.
3-PILE WOOD COMPLEXES	4	0	0	8	12	0
5-PILE WOOD COMPLEXES	5	0	5	20	25	0
WEST WOOD REVETMENT	1	3	2	10	12	0
EAST WOOD REVETMENT	1	3	4	7	12	0
SMALL WOOD CLUSTERS	0	0	0	0	0	217
<b>TOTAL</b>	<b>11</b>	<b>6</b>	<b>11</b>	<b>45</b>	<b>61</b>	<b>217</b>

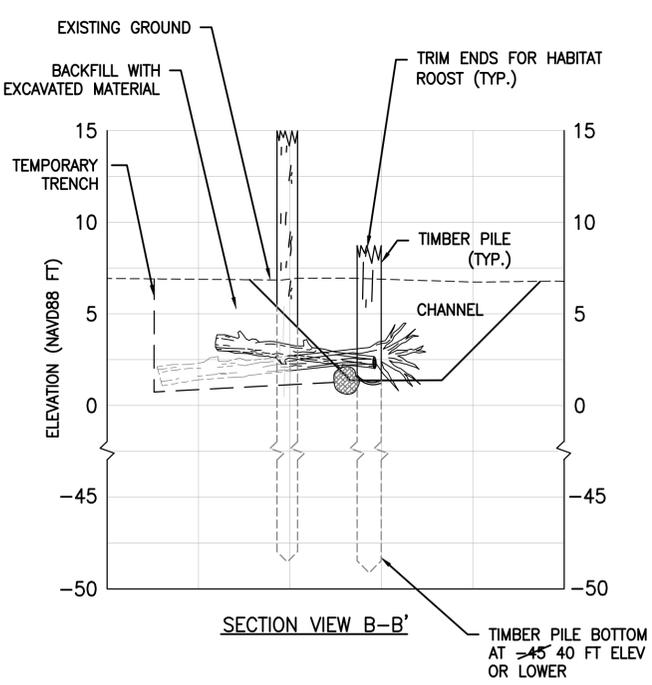
**5-PILE WOOD COMPLEX TABLE**

ID	STATION/OFFSET
P1	0+00.00 (0.00' )
P2	0+10.00 (0.00' )
P3	0+01.49 (4.00' R)
P4	0+11.10 (5.26' R)
P5	0+06.50 (4.76' R)

NOTE: SEE SHEETS RP01-RP07 FOR P1 AND P2 CONTROL POINTS.



**TYPICAL 3-PILE WOOD COMPLEX**  
NTS



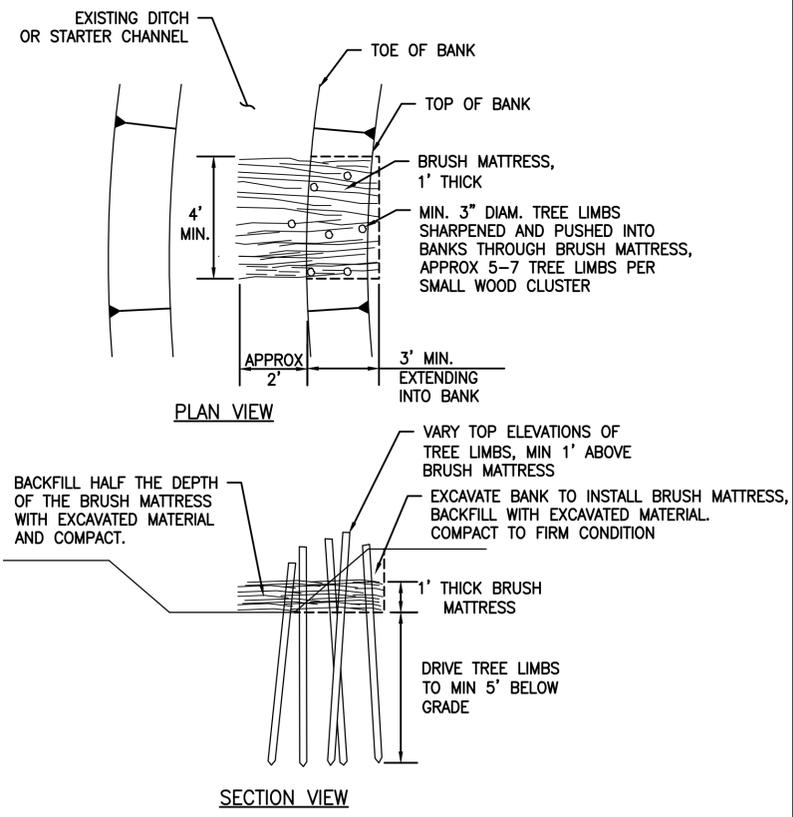
**3-PILE WOOD COMPLEX NOTES**

1. INSTALL TIMBER PILES. TIMBER PILES SHALL BE EMBEDDED TO ELEV -45 FT NAVD88 OR LOWER. TOP ELEVATIONS WITHIN WOOD COMPLEXES SHALL VARY. ONE TIMBER PILE PER WOOD COMPLEX SHALL HAVE A MINIMUM TOP ELEVATION OF 15.0 FT NAVD88.
2. TRENCH AND INSTALL LOG B1. TRENCH AND INSTALL LOG A1 FIRMLY ON LOG B1, AND TIE WITH MANILA ROPE AT PILES AND LOG CROSSINGS. SEE SPECIAL PROVISIONS
3. PLACE B2 FIRMLY ON LOGS A1 AND B1, TIE WITH MANILA ROPE AT PILES AND LOG CROSSINGS AND BACKFILL TRENCHES WITH EXCAVATED MATERIAL.

**3-PILE WOOD COMPLEX TABLE**

ID	STATION/OFFSET
P1	0+00.00 (0.00' )
P2	0+08.59 (0.00' )
P3	0+02.65 (5.89' R)

NOTE: SEE SHEETS RP01-RP07 FOR P1 AND P2 CONTROL POINTS.



**TYPICAL SMALL WOOD CLUSTER**  
NTS

**AS-BUILTS**

CALL BEFORE YOU DIG  
1-800-424-5555

Plotted: May 29, 2019 4:04pm  
 K:\project\31800\31800\Phase2\15\_RP10\_2.dwg  
 Layout Name: RP10  
 otak  
 HanmiGlobal Partner

DATE	NO.	REVISION	BY

Last Saved By: chris Jan 16, 2019 - 9:16am			
REGION NO.	STATE	FED. AID PROJ. NO.	SURVEY NO.
10	WASH.		
DESIGNED BY: GSL, DAS		DRAWN BY: AK	
FIELD BOOK(S):		UPI# 12-0171-1	



REFER TO ORIGINAL DRAWINGS FOR SIGNATURES AND SEALS

REVIEWED AND APPROVED BY:

STEVEN E. THOMSEN, P.E.  
SNOHOMISH COUNTY ENGINEER

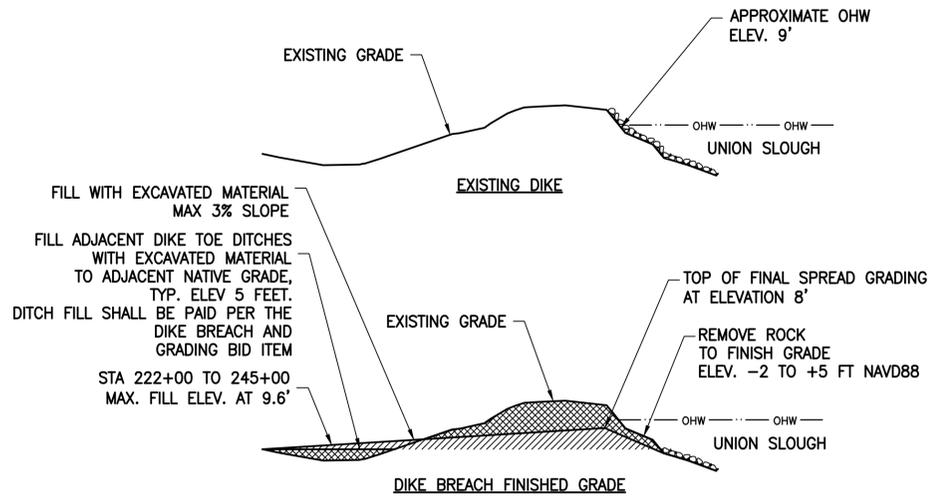
DATE APPROVED:

SNOHOMISH COUNTY  
DEPARTMENT OF  
PUBLIC WORKS

PROJECT NO. RR49206

**SMITH ISLAND  
ESTUARY RESTORATION  
PHASE 2  
3-PILE WOOD COMPLEX,  
5-PILE WOOD COMPLEX, AND  
SMALL WOOD CLUSTER DETAILS**

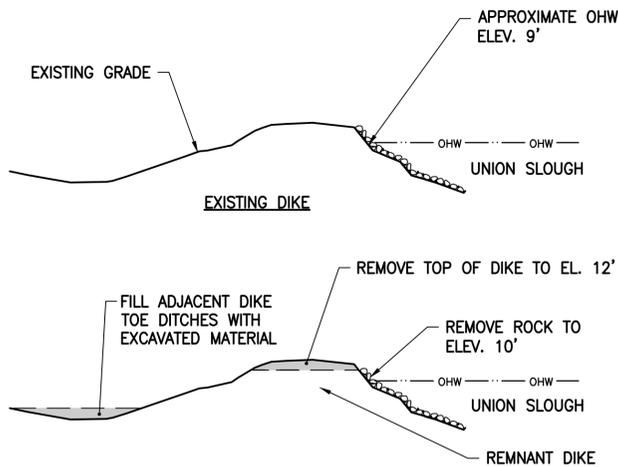
REFERENCE SHEET NO. RP10  
SHEET 15 OF 29 SHEETS



- NOTES**
1. FILL ADJACENT DRAINAGE DITCHES UPSTREAM TO DOWNSTREAM.
  2. DIKE ELEVATIONS SHALL REMAIN ABOVE ELEVATION 12' TO MAINTAIN ACCESS UNTIL GRADING DOWN TO FINISHED GRADE.
  3. DIKE TOP WIDTH SHALL BE 12' OR GREATER DURING REMOVAL.
  4. MAXIMUM LANDWARD SLOPE OF TEMPORARY CUTS SHALL BE NO STEEPER THAN 2H:1V.
  5. THE DIKE BREACH AND GRADING PLAN SHALL BE APPROVED BY THE ENGINEER BEFORE PERFORMING ANY DIKE REMOVAL OR DEMOLITION WORK.

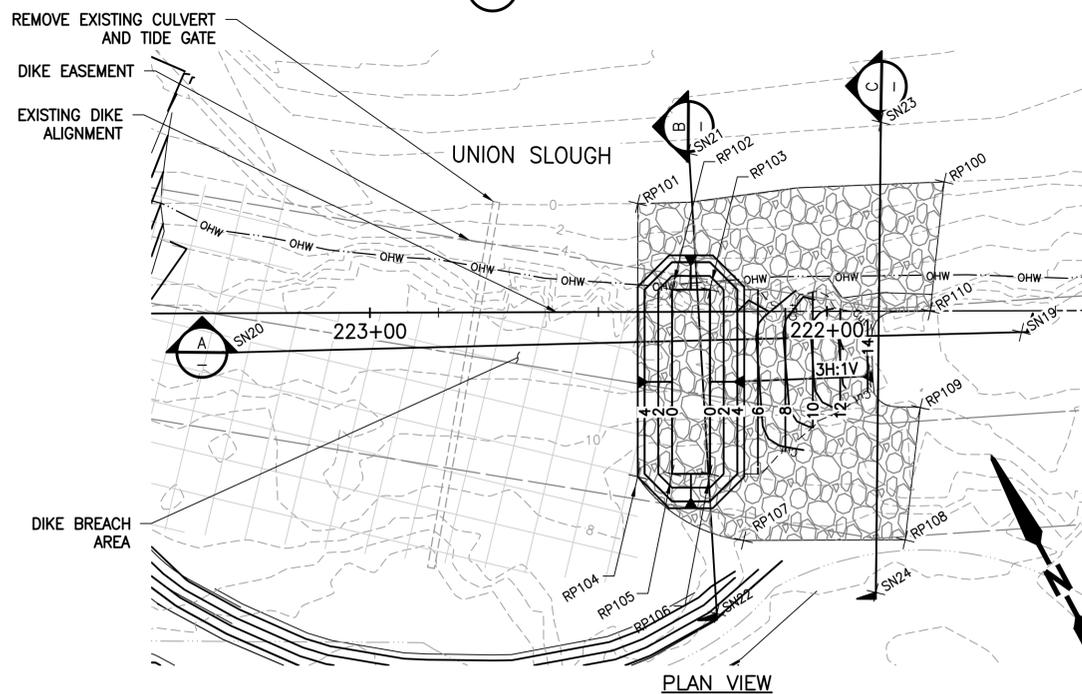
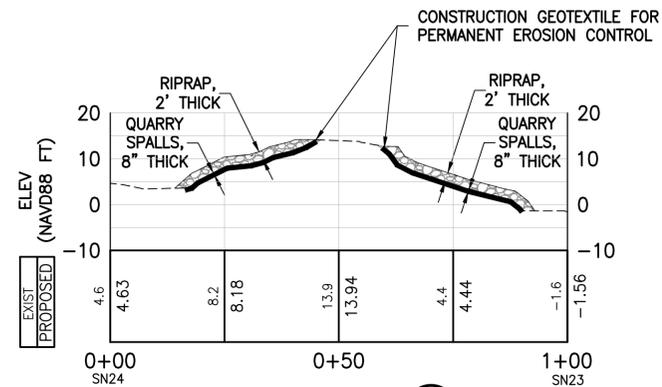
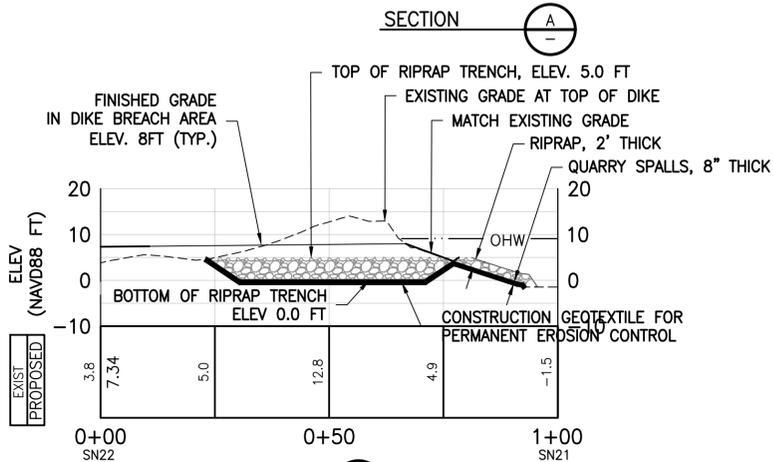
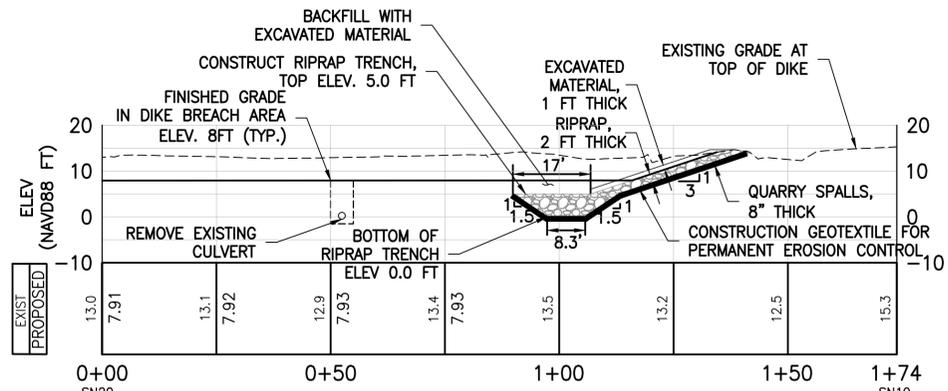
EXISTING DIKE STA 283+00 TO 270+00, AND STA 245+85 TO 222+00

**TYPICAL DIKE BREACH SECTION**  
 NTS



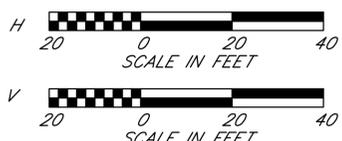
EXISTING DIKE STA 270+00 TO 245+85

**TYPICAL REMNANT DIKE SECTION**  
 NTS



DIKE BREACH ARMOR RIPRAP POINTS		
POINT	NORTHING	EASTING
RP100	372189.7	1316291.6
RP101	372220.9	1316232.0
RP102	372200.9	1316228.5
RP103	372196.6	1316235.6
RP104	372170.1	1316200.7
RP105	372166.7	1316207.4
RP106	372162.3	1316214.5
RP107	372146.1	1316213.1
RP108	372127.6	1316243.3
RP109	372150.5	1316261.3
RP110	372167.3	1316274.2

- NOTES:**
1. PROPOSED CONTOURS IN PLAN VIEW SHOW EXCAVATION LIMITS. RIPRAP, QUARRY SPALL, AND EXCAVATION MATERIAL SHALL BE PLACED ABOVE EXCAVATION LIMITS TO MEET FINISHED GRADE
  2. SEE SHEET GP02 FOR SN LOCATION POINTS.



**DIKE BREACH RIPRAP ARMOR**

**AS-BUILTS** CALL BEFORE YOU DIG 1-800-424-5555

Plotted: May 29, 2019 4:10pm  
 K:\Project\31800\31800\Phase2\16\_RP11\_2.dwg  
 Layout Name: RP11

DATE	NO.	REVISION	BY

Last Saved By: chris Jan 16, 2019 - 9:34am			
REGION NO.	STATE	FED. AID PROJ. NO.	SURVEY NO.
10	WASH.		
DESIGNED BY: GSL, DAS		DRAWN BY: AK	
FIELD BOOK(S):		UPI# 12-0171-1	



REFER TO ORIGINAL DRAWINGS FOR SIGNATURES AND SEALS

REVIEWED AND APPROVED BY:

STEVEN E. THOMSEN, P.E.  
 SNOHOMISH COUNTY ENGINEER

DATE APPROVED:

SNOHOMISH COUNTY DEPARTMENT OF PUBLIC WORKS

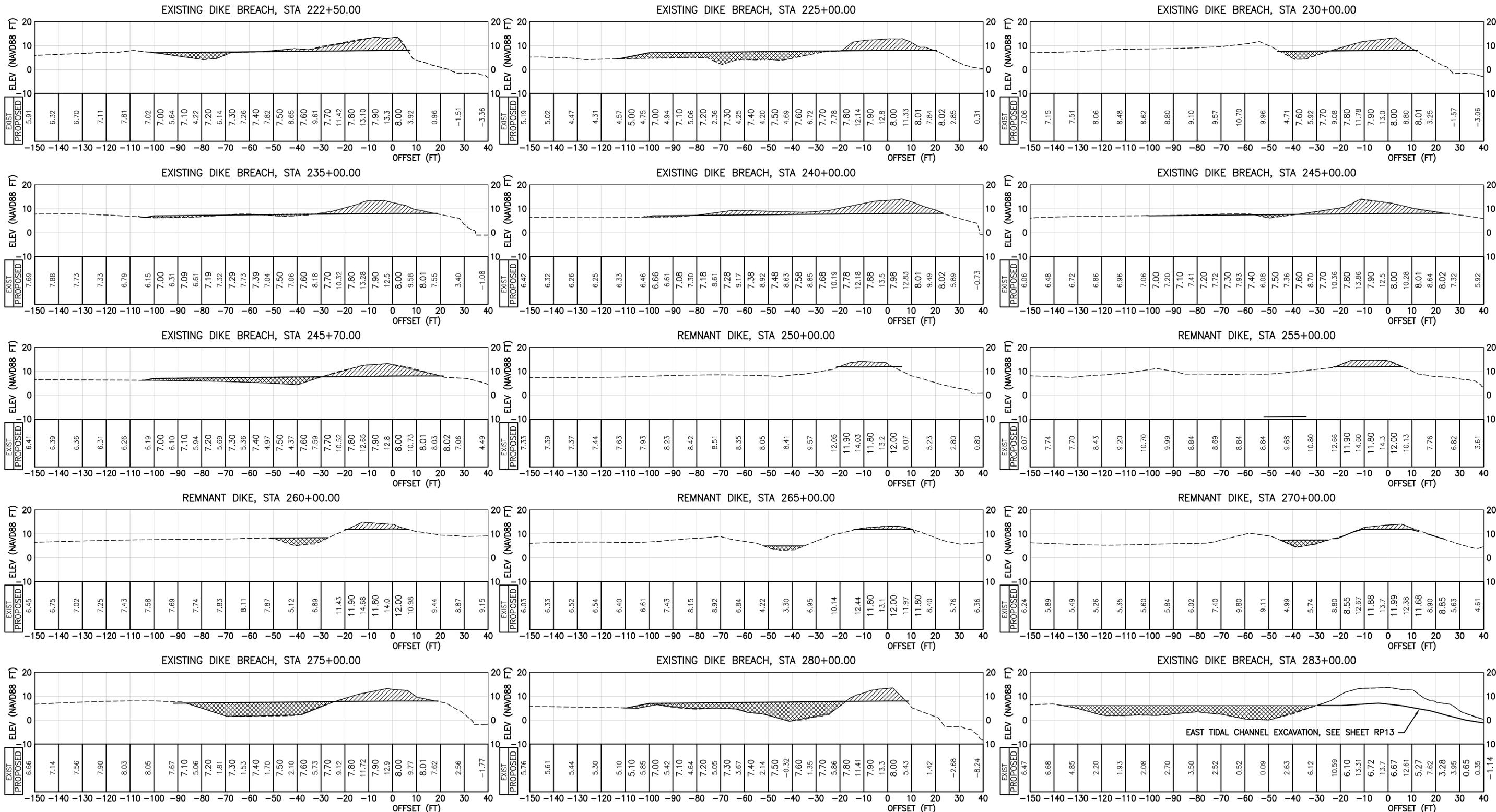
PROJECT NO. RR49206

**SMITH ISLAND ESTUARY RESTORATION PHASE 2 EXISTING DIKE BREACH AND GRADING DETAILS**

REFERENCE SHEET NO. RP11

SHEET 16 OF 29 SHEETS

XREF LIST  
 Ltscale: 1  
 Resolved  
 TLBLK  
 GSLSEAL



**LEGEND**

- DIKE BREACH AND GRADING INCL. HAUL
- AVAILABLE FILL AREAS APPROXIMATED FROM 2009 TOPOGRAPHIC LIDAR DATA



CALL BEFORE YOU DIG  
 1-800-424-5555

Plotted: May 29, 2019 - 4:15pm  
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 Layout Name: RP12

DATE	NO.	REVISION	BY

Last Saved By: chris Jan 17, 2019 - 2:31pm			
REGION NO.	STATE	FED. AID PROJ. NO.	SURVEY NO.
10	WASH.		
DESIGNED BY: GSL, DAS		DRAWN BY: AK	
FIELD BOOK(S):		UPI# 12-0171-1	



REFER TO ORIGINAL DRAWINGS FOR SIGNATURES AND SEALS

REVIEWED AND APPROVED BY:  
 STEVEN E. THOMSEN, P.E.  
 SNOHOMISH COUNTY ENGINEER  
 DATE APPROVED:

SNOHOMISH COUNTY DEPARTMENT OF PUBLIC WORKS  
 PROJECT NO. RR49206

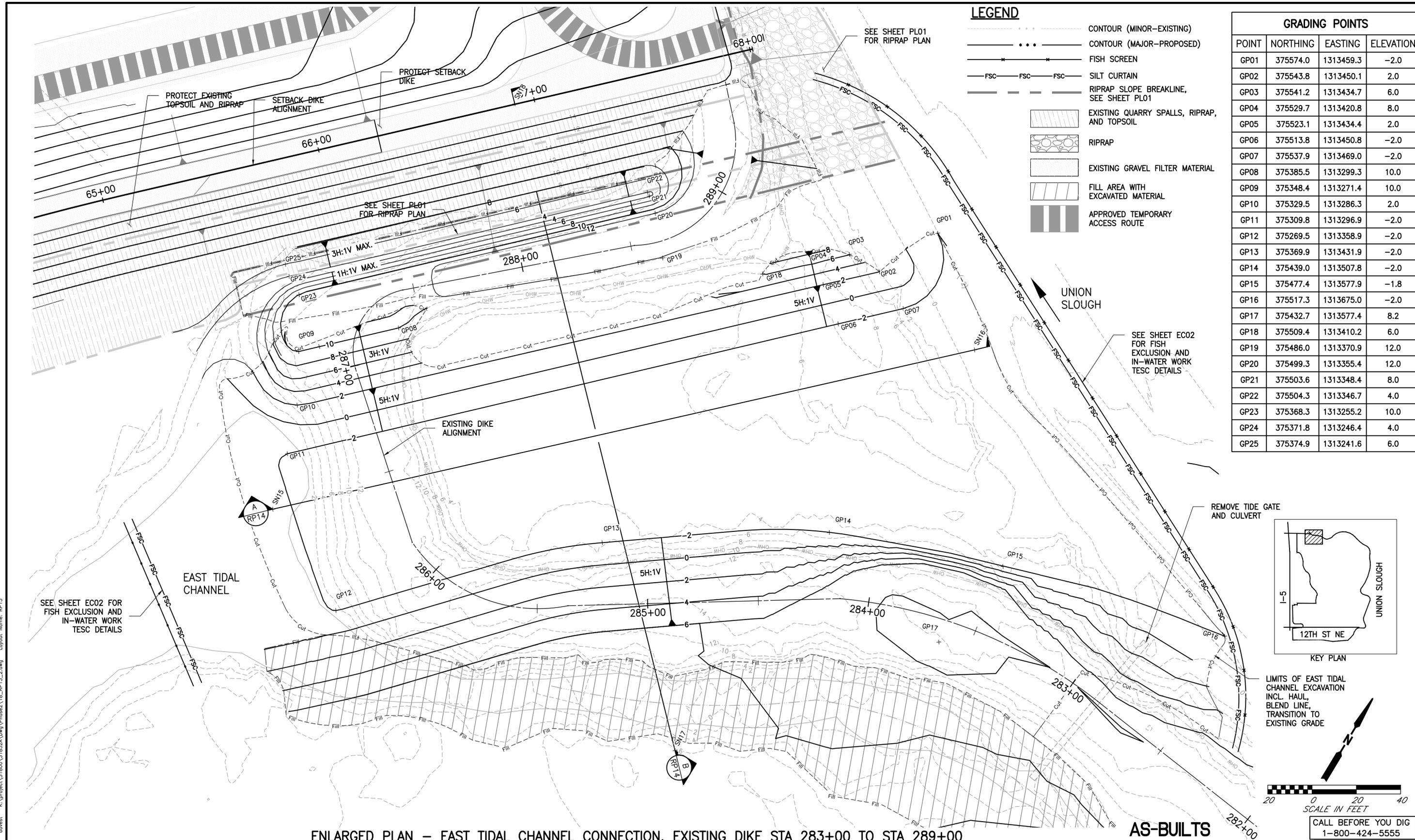
**SMITH ISLAND ESTUARY RESTORATION PHASE 2 EXISTING DIKE BREACH AND GRADING SECTIONS**

REFERENCE SHEET NO. RP12  
 SHEET 17 OF 29 SHEETS

**LEGEND**

- CONTOUR (MINOR-EXISTING)
- CONTOUR (MAJOR-PROPOSED)
- FISH SCREEN
- FSC --- FSC --- FSC SILT CURTAIN
- RIPRAP SLOPE BREAKLINE, SEE SHEET PL01
- [Hatched Box] EXISTING QUARRY SPALLS, RIPRAP, AND TOPSOIL
- [Stippled Box] RIPRAP
- [White Box] EXISTING GRAVEL FILTER MATERIAL
- [Diagonal Lines Box] FILL AREA WITH EXCAVATED MATERIAL
- [Vertical Lines Box] APPROVED TEMPORARY ACCESS ROUTE

GRADING POINTS			
POINT	NORTHING	EASTING	ELEVATION
GP01	375574.0	1313459.3	-2.0
GP02	375543.8	1313450.1	2.0
GP03	375541.2	1313434.7	6.0
GP04	375529.7	1313420.8	8.0
GP05	375523.1	1313434.4	2.0
GP06	375513.8	1313450.8	-2.0
GP07	375537.9	1313469.0	-2.0
GP08	375385.5	1313299.3	10.0
GP09	375348.4	1313271.4	10.0
GP10	375329.5	1313286.3	2.0
GP11	375309.8	1313296.9	-2.0
GP12	375269.5	1313358.9	-2.0
GP13	375369.9	1313431.9	-2.0
GP14	375439.0	1313507.8	-2.0
GP15	375477.4	1313577.9	-1.8
GP16	375517.3	1313675.0	-2.0
GP17	375432.7	1313577.4	8.2
GP18	375509.4	1313410.2	6.0
GP19	375486.0	1313370.9	12.0
GP20	375499.3	1313355.4	12.0
GP21	375503.6	1313348.4	8.0
GP22	375504.3	1313346.7	4.0
GP23	375368.3	1313255.2	10.0
GP24	375371.8	1313246.4	4.0
GP25	375374.9	1313241.6	6.0



**ENLARGED PLAN - EAST TIDAL CHANNEL CONNECTION, EXISTING DIKE STA 283+00 TO STA 289+00**

**AS-BUILTS**

CALL BEFORE YOU DIG  
1-800-424-5555

DATE	NO.	REVISION	BY

Last Saved By: davest May 30, 2019 - 9:14am			
REGION NO.	STATE	FED. AID PROJ. NO.	SURVEY NO.
10	WASH.		
DESIGNED BY: GSL, DAS		DRAWN BY: AK	
FIELD BOOK(S):		UPI# 12-0171-1	



REFER TO ORIGINAL DRAWINGS FOR SIGNATURES AND SEALS

REVIEWED AND APPROVED BY:  
STEVEN E. THOMSEN, P.E.  
SNOHOMISH COUNTY ENGINEER

DATE APPROVED: \_\_\_\_\_

**SNOHOMISH COUNTY DEPARTMENT OF PUBLIC WORKS**

PROJECT NO. RR49206

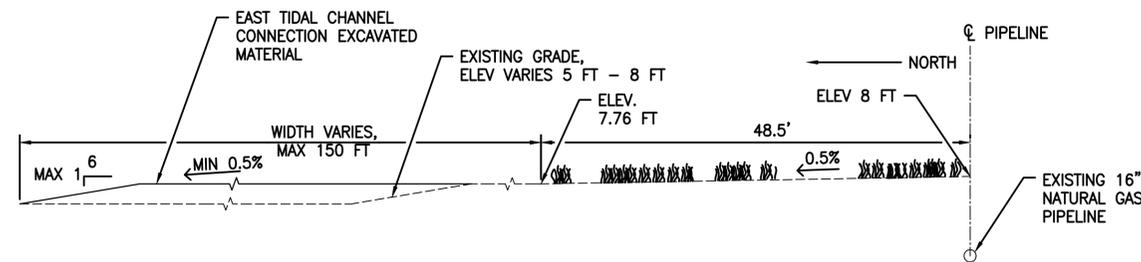
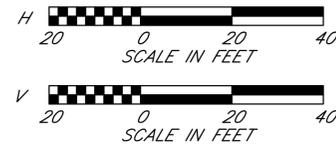
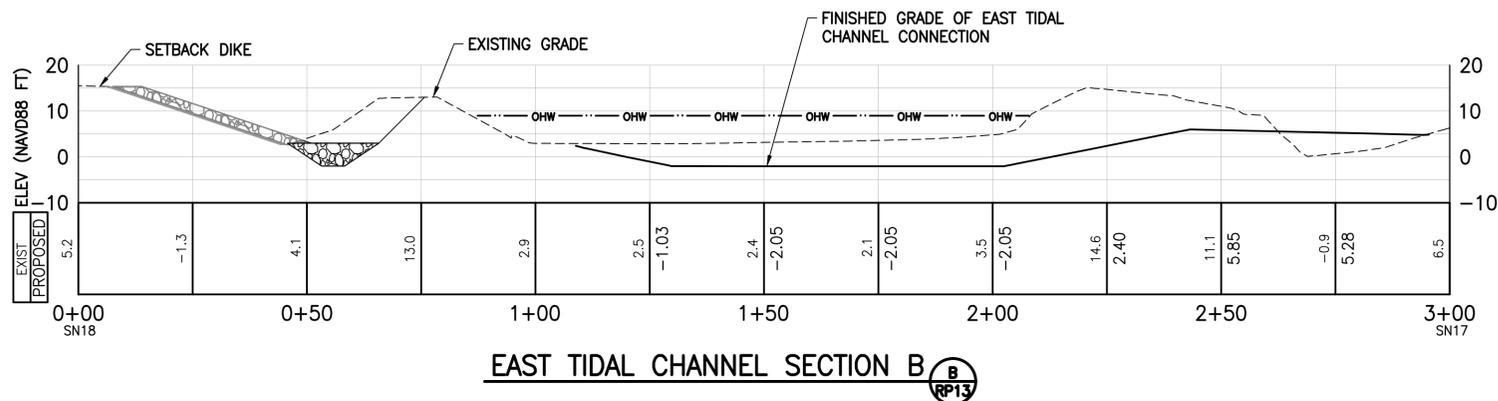
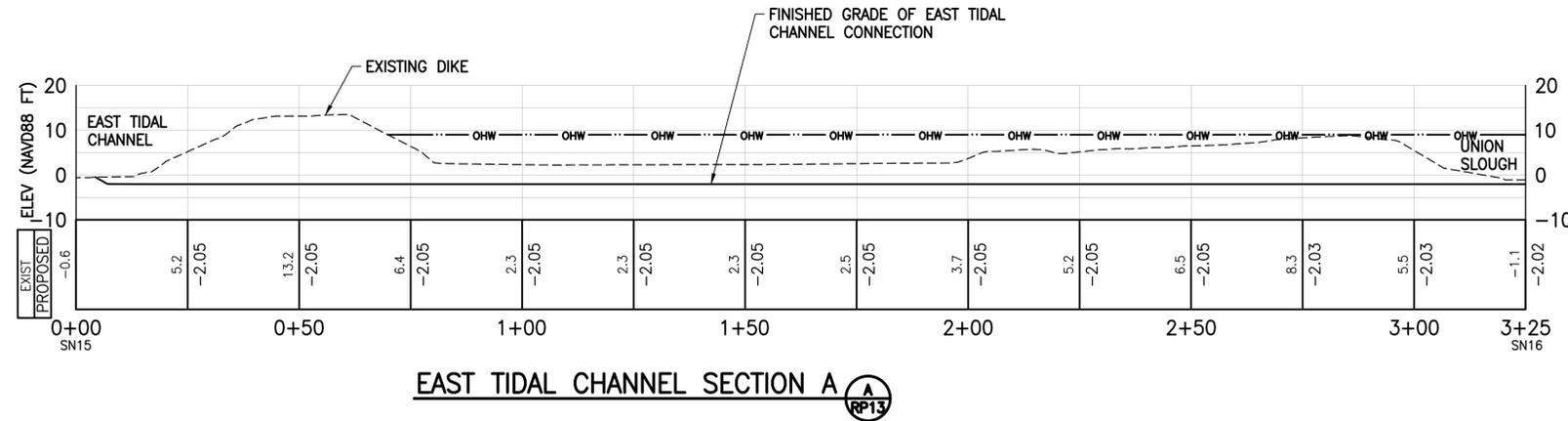
**SMITH ISLAND ESTUARY RESTORATION PHASE 2 EAST TIDAL CHANNEL EXCAVATION AND GRADING PLAN**

REFERENCE SHEET NO. RP13

SHEET 18 OF 29 SHEETS

Plotted: May 30, 2019 - 4:33pm  
 K:\project\31800\31852A.Dwg\Phase2\18\_RP13\_2.dwg Layout Name: RP13

A PORTION OF SECTIONS 4,9,10,15,&16, TOWNSHIP 29 NORTH, RANGE 05 EAST, W.M.



**EAST TIDAL CHANNEL CONNECTION EXCAVATED MATERIAL DISPOSAL AREA**  
NTS

**AS-BUILTS** CALL BEFORE YOU DIG  
1-800-424-5555

DATE	NO.	REVISION	BY

Last Saved By: chrisc Jan 17, 2019 - 2:51pm			
REGION NO.	STATE	FED. AID PROJ. NO.	SURVEY NO.
10	WASH.		
DESIGNED BY: GSL, DAS		DRAWN BY: AK	
FIELD BOOK(S):		UPI# 12-0171-1	



REFER TO ORIGINAL DRAWINGS FOR SIGNATURES AND SEALS

REVIEWED AND APPROVED BY:  
STEVEN E. THOMSEN, P.E.  
SNOHOMISH COUNTY ENGINEER

DATE APPROVED: \_\_\_\_\_

SNOHOMISH COUNTY  
DEPARTMENT OF  
PUBLIC WORKS

PROJECT NO. RR49206

**SMITH ISLAND  
ESTUARY RESTORATION  
PHASE 2  
EAST TIDAL CHANNEL  
SECTIONS**

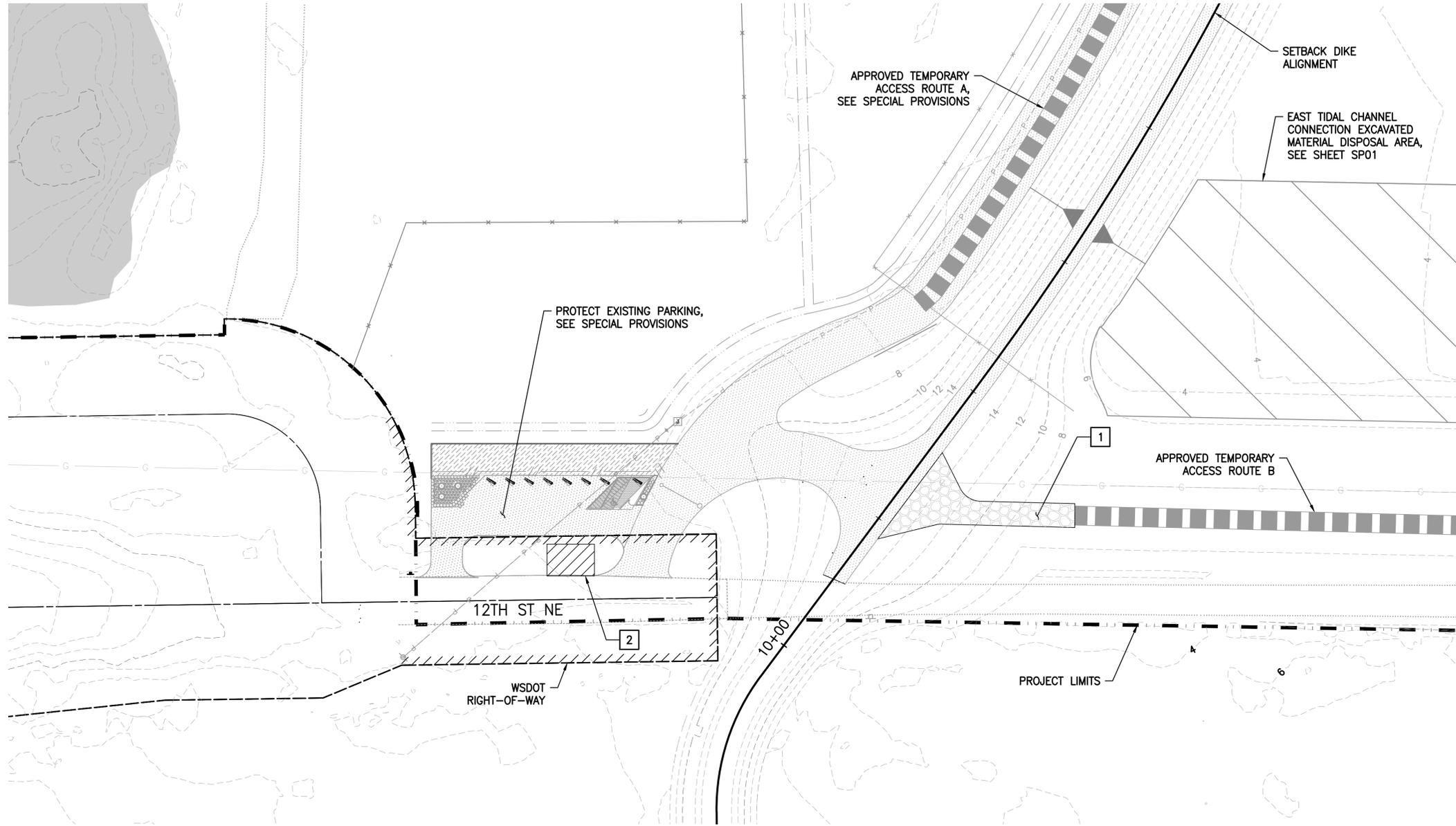
REFERENCE SHEET NO.  
RP14

SHEET  
19  
OF  
29  
SHEETS

Plotted: May 29, 2019 - 4:22pm  
 otak K:\project\31800\31862A\Drawings\Phase2\19\_RP14\_2.dwg Layout Name: RP14

A PORTION OF SECTIONS 4,9,10,15,&16, TOWNSHIP 29 NORTH, RANGE 05 EAST, W.M.

XREF LIST  
 Ltscale: 1  
 Resolved  
 3784--BASE  
 TTBK  
 OSLSSEAL  
 3784--TOPO  
 3784--PRJL  
 3784--DTCH  
 3784--PDRN  
 3784--FROMGIS  
 Unresolved  
 3784--GRDG



12TH ST NE TESC PLAN NOTES

- 1 CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE PER WSDOT STD. PLAN I-80.10-02.
- 2 INSTALL TIRE WASH, SEE SPECIAL PROVISIONS.

LEGEND

- PROJECT LIMITS
- APPROVED TEMPORARY ACCESS ROUTE
- TIRE WASH

Plotted: May 29, 2019 - 4:27pm  
 otak K:\project\31800\31862A\Draw\Phase2\20\_EC01.dwg Layout Name: EC01

N

40' 0 40' 80'  
SCALE IN FEET

**AS-BUILTS**

CALL BEFORE YOU DIG  
1-800-424-5555

DATE	NO.	REVISION	BY

Last Saved By: chrisc Jan 17, 2019 - 3:01pm

REGION NO.	STATE	FED. AID PROJ. NO.	SURVEY NO.
10	WASH.		
DESIGNED BY: GSL, DAS		DRAWN BY: AK	
FIELD BOOK(S):		UPI# 12-0171-1	



REFER TO ORIGINAL DRAWINGS FOR SIGNATURES AND SEALS

REVIEWED AND APPROVED BY:

STEVEN E. THOMSEN, P.E.  
SNOHOMISH COUNTY ENGINEER

DATE APPROVED:

SNOHOMISH COUNTY  
DEPARTMENT OF  
PUBLIC WORKS

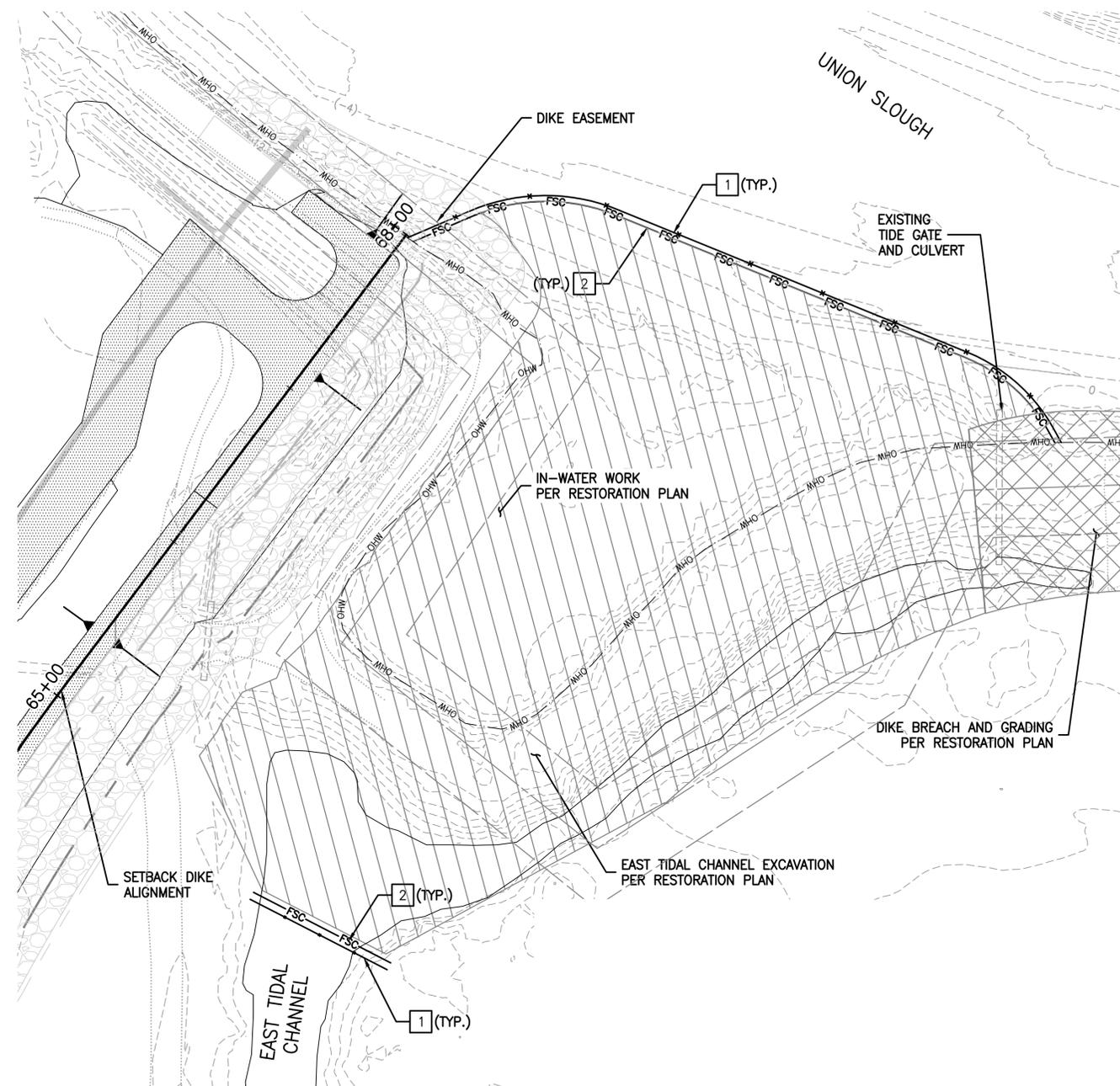
PROJECT NO. RR49206

**SMITH ISLAND  
ESTUARY RESTORATION  
PHASE 2**

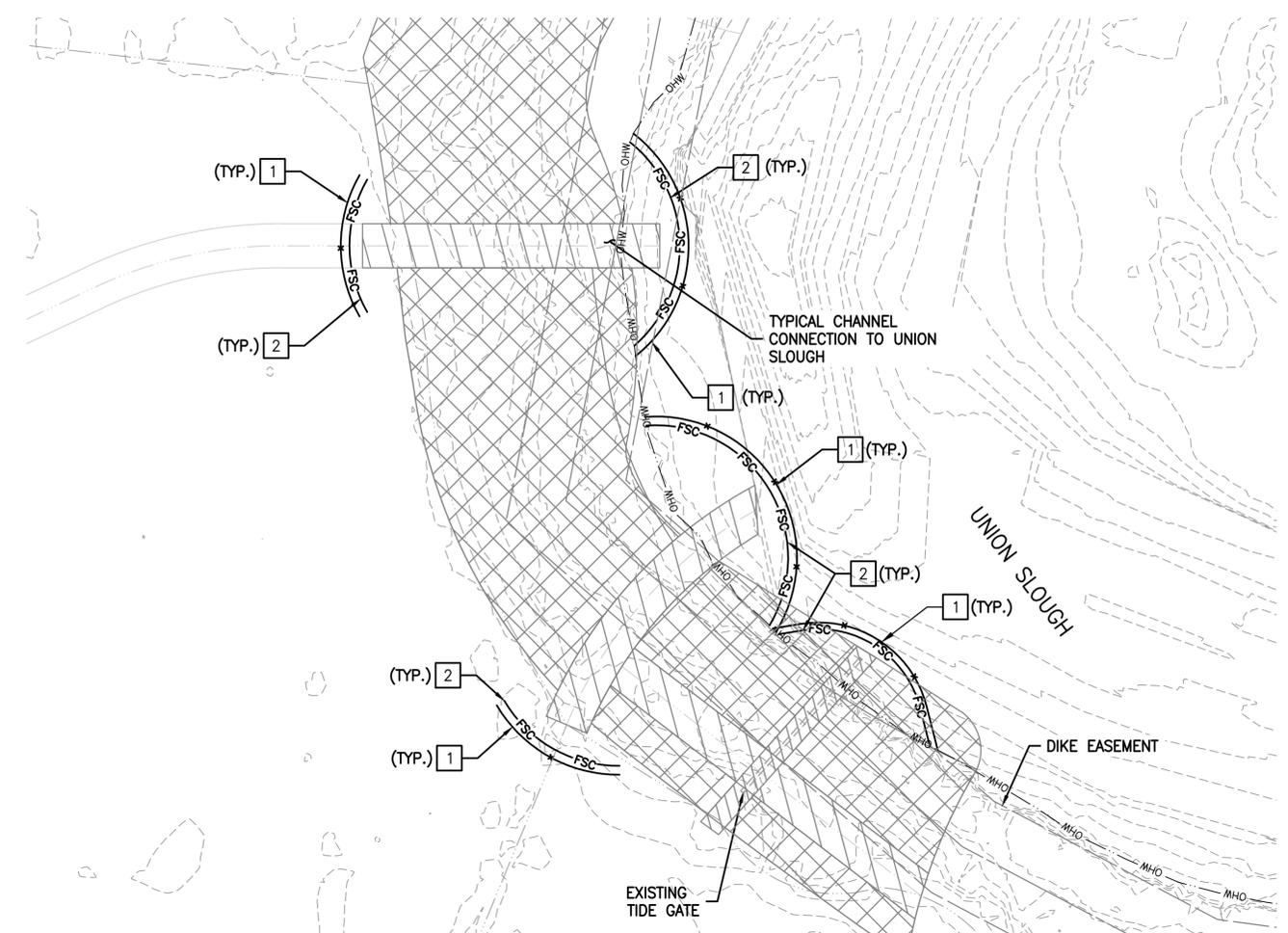
**12TH ST. NE TESC PLAN**

REFERENCE SHEET NO.  
EC01

SHEET 20 OF 29 SHEETS



**FISH EXCLUSION DETAIL AREA 1**



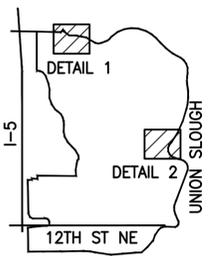
**FISH EXCLUSION DETAIL AREA 2**

**FISH EXCLUSION GENERAL NOTES**

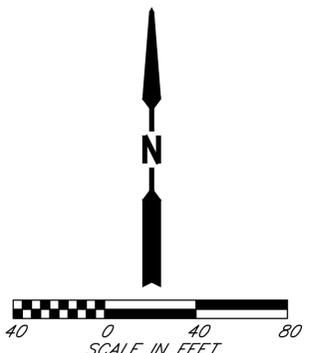
1. INSTALL TEMPORARY EROSION AND SEDIMENT CONTROL AND FISH EXCLUSION IN ACCORDANCE WITH PROJECT PERMITS AND SWPPP.
2. COORDINATE WITH THE ENGINEER FOR FISH REMOVAL PRIOR TO ANY IN-WATER WORK. COUNTY WILL REMOVE FISH FROM THE ISOLATED WORK AREA. SEE SPECIAL PROVISIONS.

**FISH EXCLUSION NOTES**

1. INSTALL TEMPORARY FISH EXCLUSION SCREEN PRIOR TO IN WATER WORK, PER CONTRACTOR SUBMITTAL.
2. INSTALL FLOATING SILT CURTAIN PRIOR TO IN-WATER WORK PER CONTRACTOR SUBMITTAL.



KEYMAP FOR DETAILS 1 AND 2



**LEGEND**

- TEMPORARY FISH SCREEN
- FLOATING SILT CURTAIN
- DIKE BREACH AND GRADING PER RESTORATION PLAN ON SHEETS RP01-RP14
- IN-WATER WORK PER RESTORATION PLAN ON SHEETS RP01-RP14

**AS-BUILTS**

CALL BEFORE YOU DIG  
1-800-424-5555

DATE	NO.	REVISION	BY

Last Saved By: chrisc Jan 17, 2019 - 3:07pm			
REGION NO.	STATE	FED. AID PROJ. NO.	SURVEY NO.
10	WASH.		
DESIGNED BY: GSL, DAS		DRAWN BY: AK	
FIELD BOOK(S):		UPI# 12-0171-1	



REFER TO ORIGINAL DRAWINGS FOR SIGNATURES AND SEALS

REVIEWED AND APPROVED BY:  
  
STEVEN E. THOMSEN, P.E.  
SNOHOMISH COUNTY ENGINEER  
  
DATE APPROVED:

SNOHOMISH COUNTY  
DEPARTMENT OF  
PUBLIC WORKS  
  
PROJECT NO. RR49206

**SMITH ISLAND  
ESTUARY RESTORATION  
PHASE 2  
IN-WATER WORK TESC  
DETAILS**

REFERENCE SHEET NO.  
ECO2  
  
SHEET  
21  
OF  
29  
SHEETS

Plotted: May 29, 2019 - 4:28pm  
 K:\Project\31800\31800\Phase2\21\_ECO2.dwg  
 Layout Name: ECO2

XREF LIST  
 Ltscale: 1  
 Resolved  
 3784--TOPO  
 3784--BASE  
 3784--PCHN  
 TTLBLK  
 OSLSSEAL  
 3784--GRDG  
 3784--PROF  
 3784--DRNG  
 3784--PDRN  
 3784--PDKE  
 3784--FROMGIS

**CONSTRUCTION NOTES**

- 1 PROTECT EXISTING PIPE AND TRASH RACK.
- 2 PROTECT SETBACK DIKE AND EXISTING RIPRAP.
- 3 PROTECT EXISTING DIKE.
- 4 PROTECT EXISTING RIPRAP AND TOPSOIL.
- 5 CONSTRUCT RIPRAP PROTECTION FOR EXISTING DIKE PER TYPICAL DETAIL THIS SHEET AND SECTIONS ON SHEET PLO2.
- 6 CONSTRUCT RIPRAP TRENCH AT EXISTING DIKE PER SECTIONS ON SHEET PLO2.
- 7 EXCAVATE EXISTING DIKE, INSTALL CONSTRUCTION GEOTEXTILE FOR PERMANENT EROSION CONTROL, AND CONSTRUCT RIPRAP ON SLOPE PER SHEET PLO2. BACKFILL AND COMPACT TO FINISHED GRADE PER SHEET RP13.
- 8 REMOVE AND REINSTALL EXISTING RIPRAP AND QUARRY SPALLS.

**LEGEND**

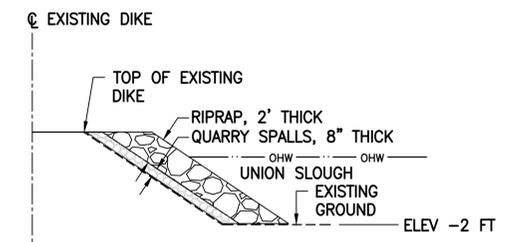
- PROJECT LIMITS
- CONTOUR (MINOR-EXISTING)
- CONTOUR (MAJOR-PROPOSED)
- [Hatched Box] EXISTING TOPSOIL AND RIPRAP
- [Riprap Box] RIPRAP
- [Dotted Box] EXISTING GRAVEL FILTER MATERIAL
- [Spall Box] QUARRY SPALLS
- [Geotextile Box] CONSTRUCTION GEOTEXTILE FOR PERMANENT EROSION CONTROL
- - - EXISTING DIKE EASEMENT
- - - RIPRAP SLOPE BREAK LINE, SEE SHEET PLO2
- \* - FISH SCREEN
- FSC - FSC - FSC - SILT CURTAIN
- [X] RIPRAP SLOPE BREAK, SEE SHEET PLO2 FOR SECTION VIEWS
- SNXX LOCATION POINTS, SEE SHEET GP02

**RIPRAP GRADING LIMITS**

POINT	NORTHING	EASTING
RP01	375645.0	1313241.5
RP02	375648.7	1313244.3
RP03	375667.6	1313258.5
RP04	375606.9	1313290.7
RP05	375611.9	1313294.3
RP06	375638.4	1313313.3
RP07	375569.6	1313337.3
RP08	375578.9	1313344.0
RP09	375614.7	1313369.4
RP10	375525.2	1313379.3
RP11	375531.8	1313384.0
RP12	375591.6	1313426.6
RP13	375502.3	1313336.7
RP14	375498.6	1313341.6

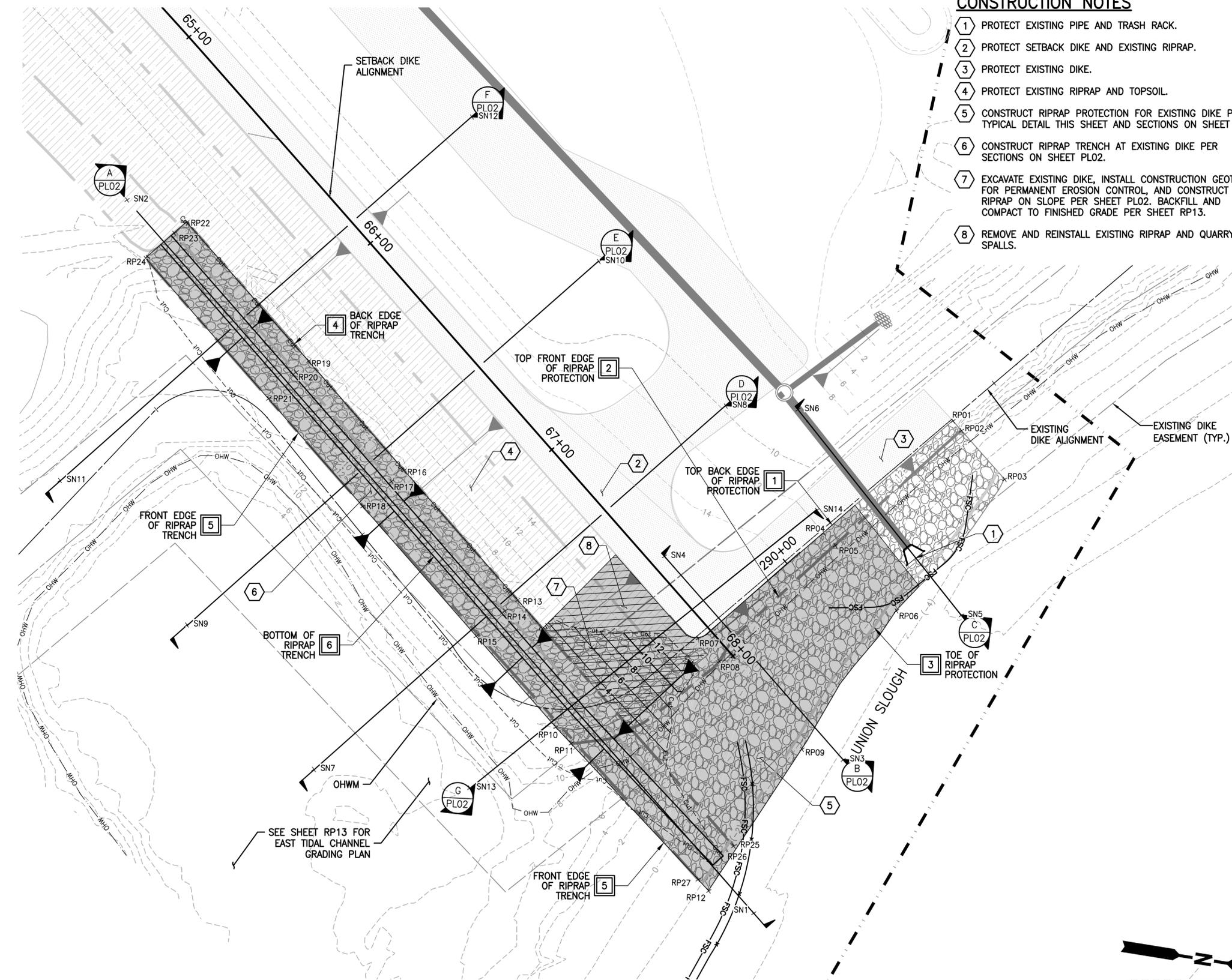
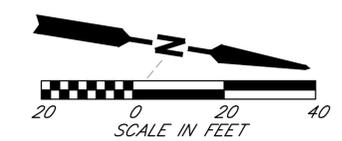
**RIPRAP GRADING LIMITS**

POINT	NORTHING	EASTING
RP15	375490.2	1313352.6
RP16	375452.5	1313298.7
RP17	375448.7	1313303.5
RP18	375440.3	1313314.5
RP19	375410.5	1313266.6
RP20	375406.8	1313271.5
RP21	375398.9	1313283.0
RP22	375357.0	1313225.9
RP23	375353.3	1313230.8
RP24	375344.9	1313241.8
RP25	375597.3	1313408.8
RP26	375593.6	1313414.0
RP27	375587.0	1313423.3



**TYPICAL RIPRAP PROTECTION FOR EXISTING DIKE**

**AS-BUILTS** CALL BEFORE YOU DIG  
 1-800-424-5555



Plotted: May 29, 2019 - 4:29pm  
 otak K:\project\31800\31800\31800\Phase2\22\_PLO1.dwg Layout Name: PLO1

DATE	NO.	REVISION	BY

Last Saved By: otak Jan 15, 2019 - 9:45am			
REGION NO.	STATE	FED. AID PROJ. NO.	SURVEY NO.
10	WASH.		
DESIGNED BY: GSL, DAS		DRAWN BY: AK	
FIELD BOOK(S):		UPI# 12-0171-1	



REFER TO ORIGINAL DRAWINGS FOR SIGNATURES AND SEALS

REVIEWED AND APPROVED BY:  
 STEVEN E. THOMSEN, P.E.  
 SNOHOMISH COUNTY ENGINEER

DATE APPROVED: \_\_\_\_\_

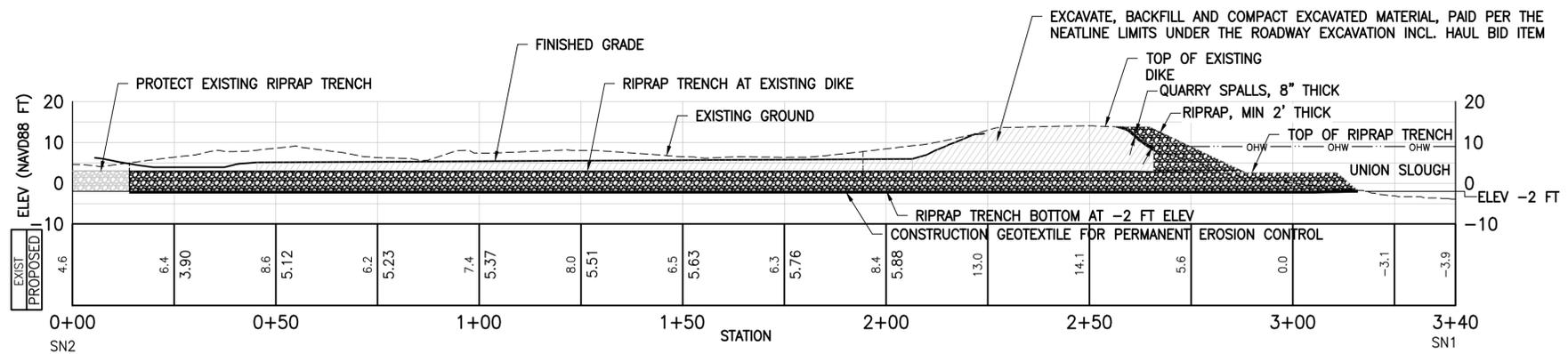
SNOHOMISH COUNTY  
 DEPARTMENT OF  
 PUBLIC WORKS

PROJECT NO. RR49206

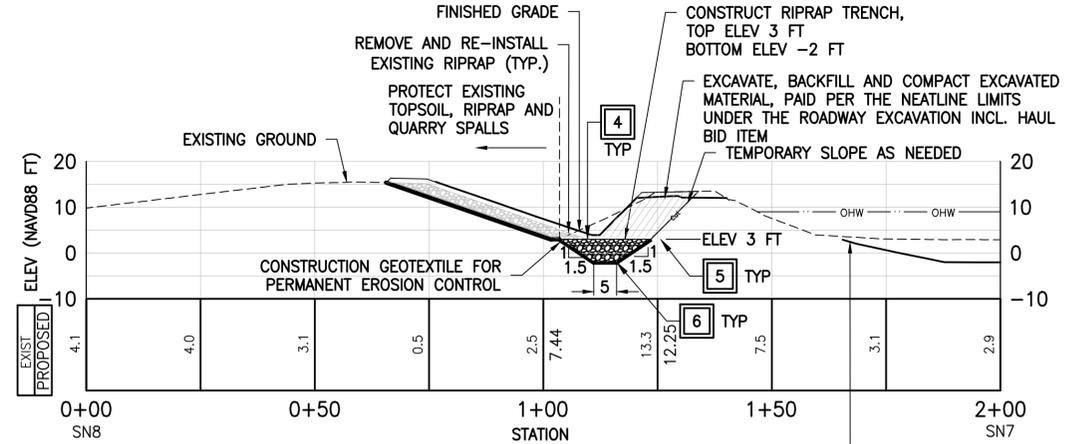
**SMITH ISLAND  
 ESTUARY RESTORATION  
 PHASE 2  
 EXISTING DIKE RIPRAP  
 PLAN**

REFERENCE SHEET NO.  
 PLO1

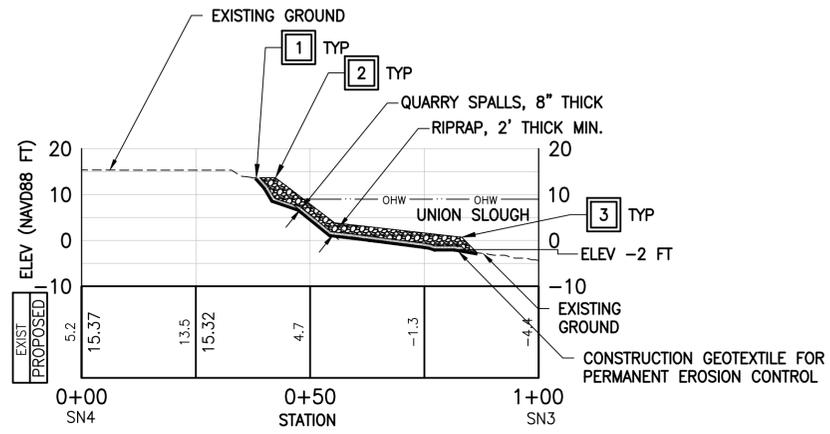
SHEET  
 22  
 OF  
 29  
 SHEETS



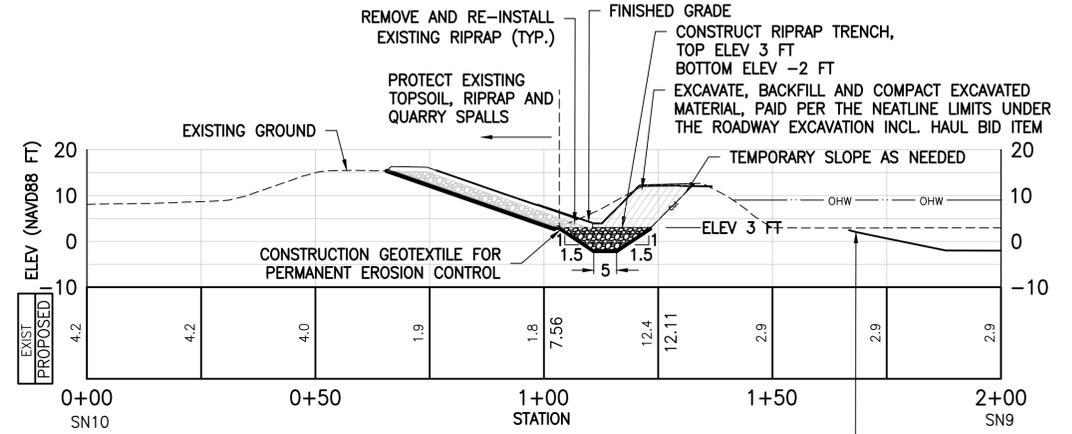
**RIPRAP AT EXISTING DIKE SECTION** (A) PLO1



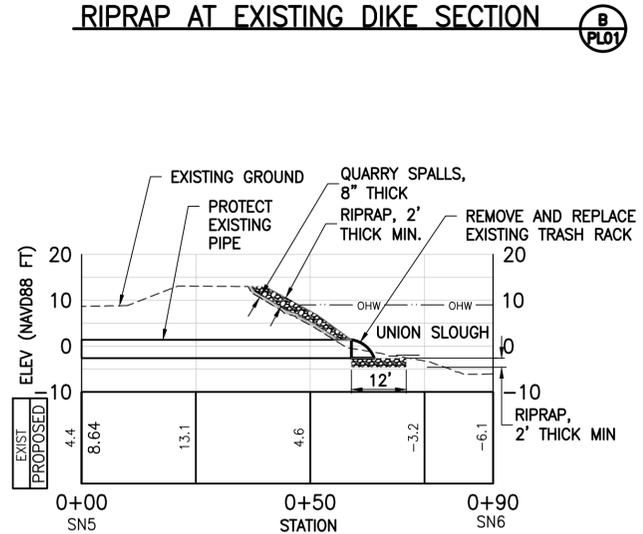
**RIPRAP TRENCH SECTION** (D) PLO1



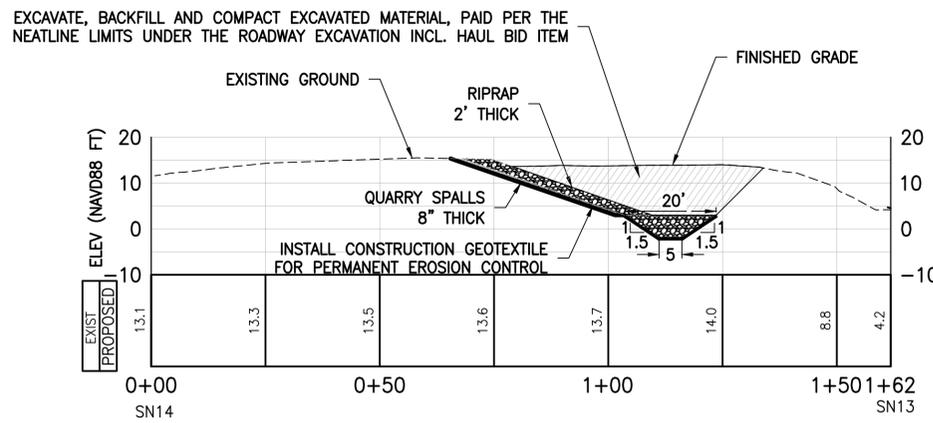
**RIPRAP AT EXISTING DIKE SECTION** (B) PLO1



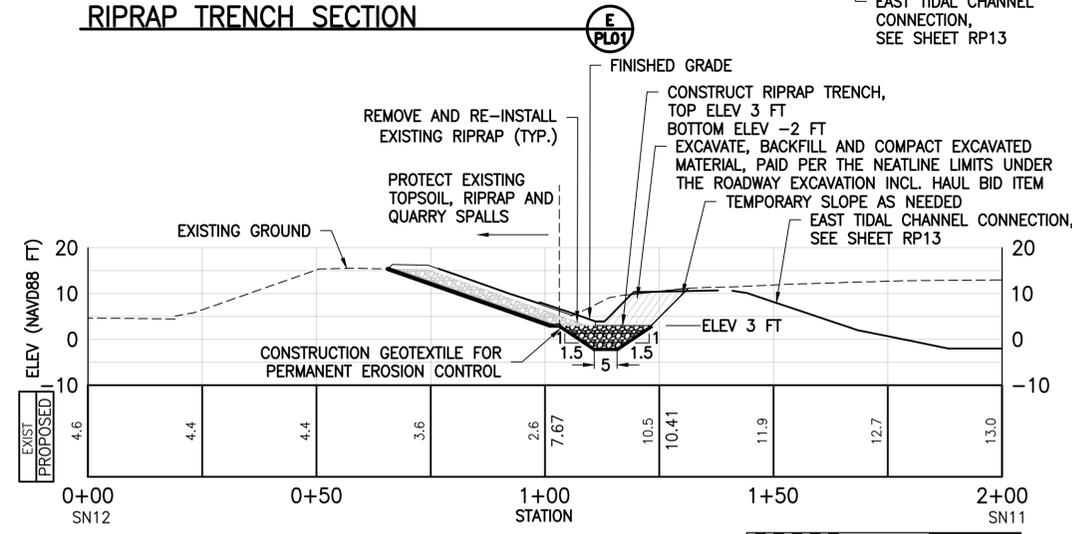
**RIPRAP TRENCH SECTION** (E) PLO1



**RIPRAP AT EXISTING DIKE SECTION** (C) PLO1



**RIPRAP TRENCH SECTION** (G) PLO1

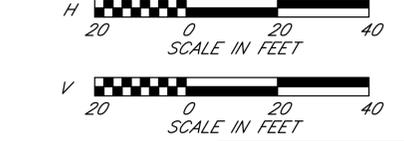


**RIPRAP TRENCH SECTION** (F) PLO1

**LEGEND**



RIPRAP SLOPE BREAK, REFER TO SHEET PLO1 FOR PLAN LOCATION



**AS-BUILTS** CALL BEFORE YOU DIG 1-800-424-5555

Plotfile: May\_29\_2019\_4:31pm K:\Project\31800\318622A\Drawings\Phase2\23\_PLO2.dwg Layout Name: PLO2

DATE	NO.	REVISION	BY

Last Saved By: chris Jan 16, 2019 - 9:44am			
REGION NO.	STATE	FED. AID PROJ. NO.	SURVEY NO.
10	WASH.		
DESIGNED BY: GSL, DAS		DRAWN BY: AK	
FIELD BOOK(S):		UPI# 12-0171-1	



REFER TO ORIGINAL DRAWINGS FOR SIGNATURES AND SEALS

REVIEWED AND APPROVED BY: STEVEN E. THOMSEN, P.E. SNOHOMISH COUNTY ENGINEER

DATE APPROVED: \_\_\_\_\_

SNOHOMISH COUNTY DEPARTMENT OF PUBLIC WORKS

PROJECT NO. RR49206

**SMITH ISLAND ESTUARY RESTORATION PHASE 2 EXISTING DIKE RIPRAP SECTIONS**

REFERENCE SHEET NO. PLO2

SHEET 23 OF 29 SHEETS

Plotted: May 29, 2019 - 4:33pm  
 otak K:\project\31800\318622A\Draw\Phase2\24\_GPO1.dwg Layout Name: GPO1

C-1 ALIGNMENT					
NUMBER	STATION	LENGTH	RADIUS	BEARING	DELTA
L1	10+00.00	137.81'		S22°12'59"W	
C1	11+37.81	147.00'	80.00'	S30°25'24"E	105°16'46"
L2	12+84.81	109.55'		S83°03'47"E	
C2	13+94.36	181.48'	100.00'	S31°04'20"E	103°58'55"
C3	15+75.84	184.60'	120.00'	S23°09'07"E	88°08'31"

C-2 ALIGNMENT					
NUMBER	STATION	LENGTH	RADIUS	BEARING	DELTA
C4	20+00.00	41.87'	90.00'	S15°46'12"E	26°39'09"
C5	20+41.87	87.50'	190.00'	S42°17'22"E	26°23'11"
C6	21+29.37	134.42'	270.00'	S69°44'43"E	28°31'31"

C-3 ALIGNMENT					
NUMBER	STATION	LENGTH	RADIUS	BEARING	DELTA
L3	30+00.00	125.85'		S23°12'19"W	
C7	31+25.85	33.77'	100.00'	S13°31'47"W	19°21'04"
C8	31+59.63	86.02'	90.00'	S31°14'09"W	54°45'47"
C9	32+45.65	130.26'	100.00'	S21°17'59"W	74°38'06"

C-4 ALIGNMENT					
NUMBER	STATION	LENGTH	RADIUS	BEARING	DELTA
L4	40+00.00	149.04'		S35°34'20"W	
C10	41+49.04	104.41'	70.00'	S78°18'08"W	85°27'36"
C11	42+53.45	43.96'	200.00'	N65°15'55"W	12°35'42"

C-5 ALIGNMENT					
NUMBER	STATION	LENGTH	RADIUS	BEARING	DELTA
L5	50+00.00	81.21'		S40°05'34"W	
C12	50+81.21	42.67'	40.00'	S9°32'02"W	61°07'04"
C13	51+23.87	45.54'	50.00'	S5°04'08"W	52°11'15"
C14	51+69.42	116.52'	90.00'	S5°55'42"E	74°10'55"

C-6 ALIGNMENT					
NUMBER	STATION	LENGTH	RADIUS	BEARING	DELTA
L6	60+00.00	42.19'		S79°48'38"W	
C15	60+42.19	69.30'	50.00'	S40°06'15"W	79°24'47"
C16	61+11.50	145.16'	60.00'	S69°42'16"W	138°36'51"
C17	62+56.65	74.75'	50.00'	N83°48'55"W	85°39'14"

C-7 ALIGNMENT					
NUMBER	STATION	LENGTH	RADIUS	BEARING	DELTA
L7	70+00.00	98.34'		N74°19'35"W	
C18	70+98.34	74.29'	90.00'	S82°01'39"W	47°17'34"
C19	71+72.63	112.07'	90.00'	N85°56'44"W	71°20'49"
C20	72+84.70	62.40'	90.00'	N70°08'09"W	39°43'41"
C21	73+47.10	160.93'	100.00'	N43°53'52"W	92°12'15"

C-8 ALIGNMENT					
NUMBER	STATION	LENGTH	RADIUS	BEARING	DELTA
L8	80+00.00	75.10'		N81°02'55"W	
C22	80+75.10	55.97'	50.00'	S66°52'55"W	64°08'19"
C23	81+31.07	90.22'	50.00'	S86°30'22"W	103°23'12"
L9	82+21.29	80.00'		N41°48'02"W	

C-9 ALIGNMENT					
NUMBER	STATION	LENGTH	RADIUS	BEARING	DELTA
C24	90+00.00	40.47'	140.00'	N71°38'22"W	16°33'42"
C25	90+40.47	69.51'	140.00'	S85°51'20"W	28°26'55"
C26	91+09.98	156.77'	70.00'	N44°12'36"W	128°19'03"
C27	92+66.75	291.40'	200.00'	N21°47'30"W	83°28'50"

C-10 ALIGNMENT					
NUMBER	STATION	LENGTH	RADIUS	BEARING	DELTA
C28	100+00.00	58.00'	80.00'	N49°31'47"W	41°32'22"
C29	100+58.00	159.59'	100.00'	N74°28'42"W	91°26'13"
C30	102+17.59	152.86'	100.00'	N76°24'16"W	87°35'06"

C-11 ALIGNMENT					
NUMBER	STATION	LENGTH	RADIUS	BEARING	DELTA
L10	110+00.00	57.23'		N71°55'50"W	
C31	110+57.23	81.02'	150.00'	N56°27'28"W	30°56'44"
C32	111+38.24	86.52'	110.00'	N63°31'02"W	45°03'53"
C33	112+24.76	83.43'	110.00'	N64°19'13"W	43°27'30"
C34	113+08.19	74.17'	110.00'	N61°54'23"W	38°37'51"
C35	113+82.36	130.73'	110.00'	N47°10'29"W	68°05'39"

C-12 ALIGNMENT					
NUMBER	STATION	LENGTH	RADIUS	BEARING	DELTA
C36	120+00.00	50.00'	100.00'	N50°09'17"W	28°38'52"
L11	120+50.00	124.75'		N35°49'51"W	
C37	121+74.75	94.70'	60.00'	N81°02'54"W	90°26'06"
C38	122+69.45	160.32'	170.00'	S80°45'03"W	54°02'00"

C-13 ALIGNMENT					
NUMBER	STATION	LENGTH	RADIUS	BEARING	DELTA
C39	130+00.00	86.55'	60.00'	N62°44'26"W	82°38'51"
C40	130+86.55	181.74'	209.17'	N46°18'29"W	49°46'57"
C41	132+68.29	110.00'	90.00'	N36°11'07"W	70°01'41"

C-14 ALIGNMENT					
NUMBER	STATION	LENGTH	RADIUS	BEARING	DELTA
C42	140+00.00	61.84'	100.00'	N86°57'03"W	35°26'02"
C43	140+61.84	118.05'	150.00'	S88°13'15"W	45°05'25"
C44	141+79.89	82.07'	160.00'	S80°22'15"W	29°23'24"
C45	142+61.96	54.27'	160.00'	S85°20'53"W	19°26'08"

C-15 ALIGNMENT					
NUMBER	STATION	LENGTH	RADIUS	BEARING	DELTA
C46	150+00.00	60.23'	700.00'	S52°28'06"W	4°55'46"
C47	150+60.23	39.91'	80.00'	S35°42'43"W	28°35'00"
C48	151+00.14	71.28'	200.00'	S31°37'48"W	20°25'10"

C-16 ALIGNMENT					
NUMBER	STATION	LENGTH	RADIUS	BEARING	DELTA
L12	160+00.00	31.87'		S30°03'23"E	
C49	160+31.87	49.08'	100.00'	S44°06'56"E	28°07'06"
L13	160+80.95	13.76'		S58°10'29"E	
C50	160+94.71	76.51'	90.00'	S82°31'48"E	48°42'37"

C-17 ALIGNMENT					
NUMBER	STATION	LENGTH	RADIUS	BEARING	DELTA
C51	170+00.00	115.00'	250.00'	N54°20'36"W	26°21'19"

**NOTES**

- SEE SHEETS RP03-RP07 FOR CHANNEL ALIGNMENTS.

**AS-BUILTS**

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DATE	NO.	REVISION	BY

Last Saved By: otak Jan 29, 2019 - 11:55am			
REGION NO.	STATE	FED. AID PROJ. NO.	SURVEY NO.
10	WASH.		
DESIGNED BY: GSL, DAS		DRAWN BY: AK	
FIELD BOOK(S):		UPI# 12-0171-1	



REFER TO ORIGINAL DRAWINGS FOR SIGNATURES AND SEALS

REVIEWED AND APPROVED BY:

STEVEN E. THOMSEN, P.E.  
SNOHOMISH COUNTY ENGINEER

DATE APPROVED:

SNOHOMISH COUNTY  
DEPARTMENT OF  
PUBLIC WORKS

PROJECT NO. RR49206

**SMITH ISLAND  
ESTUARY RESTORATION  
PHASE 2  
CHANNEL ALIGNMENT  
AND LOCATION POINT TABLES**

REFERENCE SHEET NO.  
GPO1

SHEET 24 OF 29 SHEETS

Plotted: May 29, 2019 - 4:35pm  
 c:\project\31800\318622A\Draw\Phase2\25\_GP02.dwg Layout Name: GP02

EXCAVATED MATERIAL LIMITS		
POINT	NORTHING	EASTING
EM001	375288.0	1313987.9
EM002	375155.3	1314014.6
EM003	375060.4	1314084.8
EM004	375021.3	1314234.9
EM005	374928.2	1314296.9
EM006	374789.2	1314389.8
EM007	374832.6	1314408.6
EM008	374937.2	1314372.7
EM009	375061.4	1314384.7
EM010	375147.5	1314315.4
EM011	375206.4	1314269.8
EM012	375213.5	1314350.8
EM013	375157.3	1314438.5
EM014	375163.3	1314547.8
EM015	375286.7	1314575.1
EM016	375323.7	1314504.5
EM017	375295.9	1315739.4
EM018	375248.9	1315723.9
EM019	375195.2	1315708.8
EM020	375118.9	1315666.4
EM021	375043.8	1315678.1
EM022	375058.5	1315734.5
EM023	375114.0	1315779.0
EM024	375160.2	1315830.6
EM025	375238.2	1315870.5
EM026	375142.0	1315992.9
EM027	375095.1	1315962.6
EM028	375063.3	1315932.3
EM029	375045.1	1315878.9
EM030	375003.1	1315866.9
EM031	374974.0	1315912.2
EM032	374964.0	1315983.7
EM033	374993.2	1316056.8
EM034	375055.2	1316110.7
EM035	375012.5	1316155.7
EM036	374968.6	1316129.9
EM037	374901.3	1316118.7
EM038	374840.3	1316122.0
EM039	374780.5	1316171.9
EM040	374797.8	1316234.7
EM041	374845.8	1316240.4
EM042	374906.0	1316263.9
EM043	374945.2	1316258.5
EM044	374645.2	1316560.5
EM045	374592.8	1316527.2

EXCAVATED MATERIAL LIMITS		
POINT	NORTHING	EASTING
EM046	374567.7	1316486.3
EM047	374577.7	1316423.7
EM048	374530.1	1316393.2
EM049	374497.8	1316403.1
EM050	374454.4	1316453.9
EM051	374431.4	1316517.8
EM052	374443.0	1316593.2
EM053	374393.9	1316558.7
EM054	374371.3	1316483.5
EM055	374347.6	1316409.1
EM056	374358.4	1316308.2
EM057	374330.0	1316255.4
EM058	374360.1	1316197.3
EM059	374297.6	1316168.4
EM060	374235.0	1316266.1
EM061	374217.0	1316366.2
EM062	374222.9	1316509.2
EM063	374093.1	1316509.9
EM064	374134.6	1316476.7
EM065	374049.5	1316409.6
EM066	373884.5	1316502.5
EM067	373913.0	1316434.4
EM068	373997.6	1316371.5
EM069	373610.9	1316487.9
EM070	373782.7	1316485.2
EM071	373898.8	1316395.8
EM072	373878.9	1316364.7
EM073	373808.4	1316402.9
EM074	373677.9	1316390.0
EM075	373564.6	1316404.0
EM076	373526.0	1316471.9
EM077	373433.9	1316400.0
EM078	373412.7	1316340.6
EM079	373394.1	1316243.8
EM080	373288.5	1316400.0
EM081	373274.2	1316328.6
EM082	373312.2	1316224.4
EM083	373165.1	1316334.8
EM084	373202.2	1316184.5
EM085	373245.6	1316056.9
EM086	373213.0	1316010.0
EM087	373140.5	1316081.1
EM088	373083.4	1316177.1
EM089	373032.1	1316275.0
EM090	373025.1	1316272.9

EXCAVATED MATERIAL LIMITS		
POINT	NORTHING	EASTING
EM091	373054.7	1316174.6
EM092	373000.6	1316083.8
EM093	372972.9	1316013.7
EM094	372920.2	1316024.2
EM095	372916.7	1316106.5
EM096	372926.1	1316192.5
EM097	372887.6	1316228.6
EM098	372730.4	1316108.1
EM099	372778.0	1316042.7
EM100	372775.5	1315941.2
EM101	372741.3	1315865.1
EM102	372654.5	1315891.3
EM103	372578.2	1315927.6
EM104	372542.1	1315975.9
EM105	372541.3	1315922.9
EM106	372493.0	1315850.3
EM107	372443.6	1315816.2
EM108	372372.6	1315826.4
EM109	372316.4	1315874.7
EM110	372299.3	1315942.7
EM111	372309.6	1315980.0
EM112	372282.4	1315986.3
EM113	372233.8	1315963.8
EM114	372186.9	1315965.4
EM115	372094.0	1316035.0
EM116	372054.0	1316098.7
EM117	372129.8	1316142.8
EM118	372531.6	1315974.5

SMALL WOOD CLUSTER LOCATIONS		
POINT	NORTHING	EASTING
SWC01	375152.3	1314096.4
SWC02	375116.0	1314198.6
SWC03	375061.0	1314307.3
SWC04	375196.8	1314579.8
SWC05	375179.0	1314741.2
SWC06	375093.0	1314923.9
SWC07	375052.2	1315058.3
SWC08	375044.0	1315187.7
SWC09	374919.4	1315145.2
SWC10	374720.6	1315178.3
SWC11	374981.3	1315303.7
SWC12	374941.0	1315444.4
SWC13	374928.8	1315583.4
SWC14	374827.4	1315655.1
SWC15	374719.6	1315725.8
SWC16	374563.3	1315864.2
SWC17	374372.2	1315947.2
SWC18	375217.7	1315777.0
SWC19	375136.7	1315735.9
SWC20	373615.3	1316453.6
SWC21	373766.8	1316435.7
SWC22	373872.9	1316385.3
SWC23	373132.5	1316238.8
SWC24	373154.6	1316151.0
SWC25	373213.7	1316067.4
SWC26	372983.2	1316202.5
SWC27	372963.3	1316071.1
SWC28	374518.1	1315151.5
SWC29	374371.0	1315184.2
SWC30	374221.0	1315155.5
SWC31	374069.1	1315177.2

SECTION VIEW LOCATION POINTS		
POINT	NORTHING	EASTING
SN1	375609.3	1313431.3
SN2	375334.0	1313222.3
SN3	375630.2	1313370.2
SN4	375551.6	1313310.6
SN5	375661.9	1313310.1
SN6	375588.8	1313248.6
SN7	375441.8	1313411.8
SN8	375562.7	1313252.5
SN9	375386.0	1313369.5
SN10	375507.0	1313210.2
SN11	375330.3	1313327.2
SN12	375451.2	1313167.9

SECTION VIEW LOCATION POINTS		
POINT	NORTHING	EASTING
SN13	375498.8	1313407.2
SN14	375602.7	1313283.1
SN15	375286.4	1313307.8
SN16	375544.2	1313505.7
SN17	375318.9	1313517.0
SN18	375496.7	1313275.1
SN19	372152.9	1316288.7
SN20	372240.3	1316138.5
SN21	372224.4	1316247.2
SN22	372135.6	1316199.8
SN23	372208.0	1316286.6
SN24	372121.2	1316231.8

**NOTES**

- SEE SHEETS RP03-RP07 FOR EXCAVATED MATERIAL LIMITS.
- SEE SHEETS RP11, RP13, AND PL01 FOR SECTION VIEW LOCATION POINTS.
- SEE SHEETS RP01-RP07 FOR SMALL WOOD CLUSTER LOCATIONS.

**AS-BUILTS**

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DATE	NO.	REVISION	BY

Last Saved By: chrisc Jan 17, 2019 - 3:16pm			
REGION NO.	STATE	FED. AID PROJ. NO.	SURVEY NO.
10	WASH.		
DESIGNED BY: GSL, DAS		DRAWN BY: AK	
FIELD BOOK(S):		UPI# 12-0171-1	



REFER TO ORIGINAL DRAWINGS FOR SIGNATURES AND SEALS

REVIEWED AND APPROVED BY:

STEVEN E. THOMSEN, P.E.  
SNOHOMISH COUNTY ENGINEER

DATE APPROVED:

SNOHOMISH COUNTY  
DEPARTMENT OF  
PUBLIC WORKS

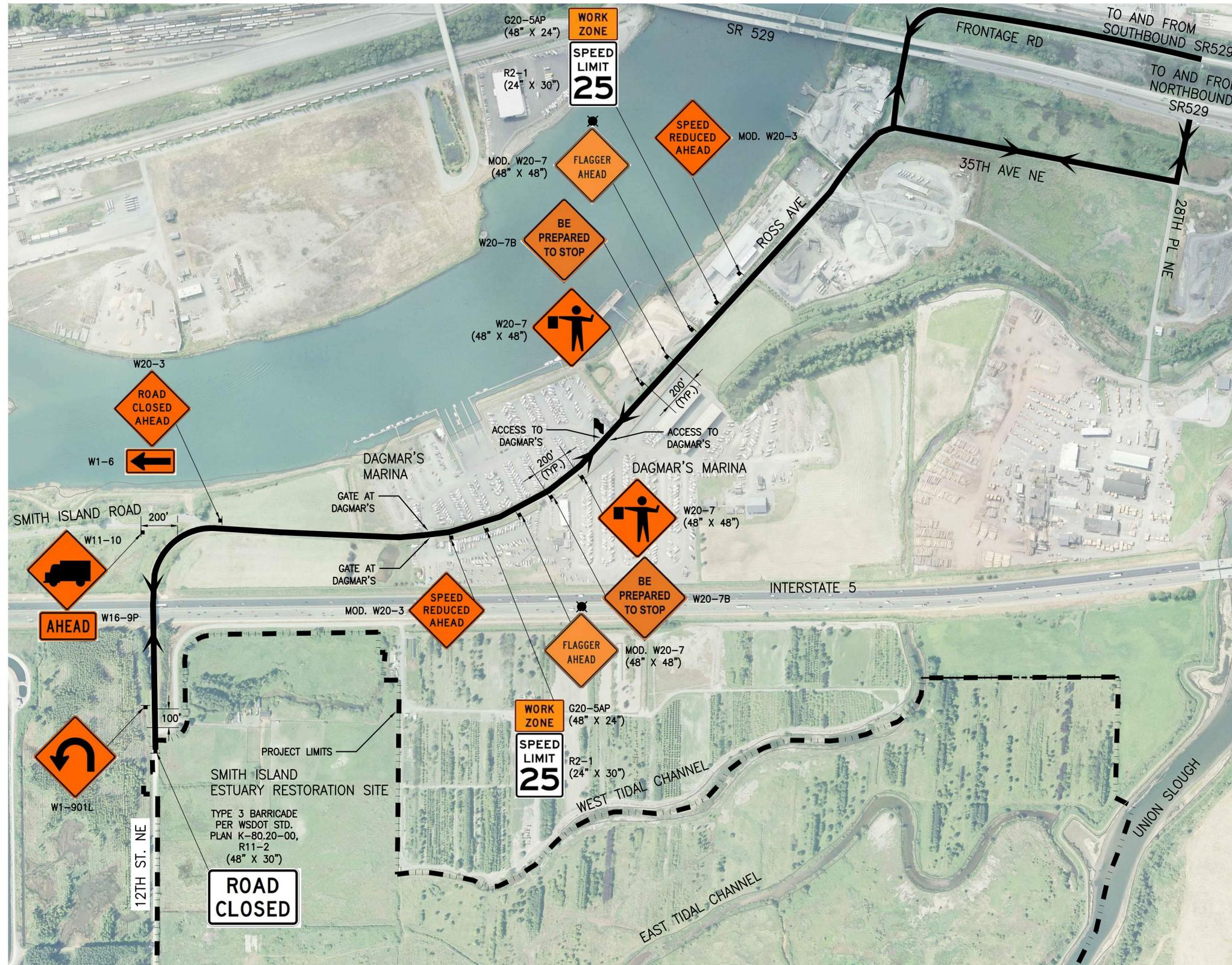
PROJECT NO. RR49206

**SMITH ISLAND  
ESTUARY RESTORATION  
PHASE 2  
CHANNEL ALIGNMENT  
AND LOCATION POINT TABLES**

REFERENCE SHEET NO. GP02  
SHEET 25 OF 29 SHEETS

A PORTION OF SECTIONS 4,9,10,15,&16, TOWNSHIP 29 NORTH, RANGE 05 EAST, W.M.

XREF LIST  
 Ltscale: 1  
 Resolved  
 3784-PRJL  
 3784-RIVER  
 TLBLK  
 VICINITY\_MAP  
 3784-BASE  
 Unresolved  
 GSLSEAL

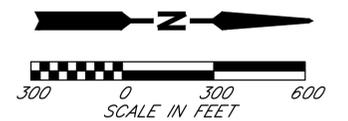


**NOTES**

1. LOCATION OF SIGNS SHOWN ARE APPROXIMATE AND SHALL BE FIELD LOCATED AND/OR AS DIRECTED BY THE ENGINEER. PLACEMENT OF SIGNS SHALL NOT INTERFERE WITH DRIVEWAYS, FIRE HYDRANTS AND EXISTING SIGNS.
2. SEE WSDOT STANDARD SPECIFICATIONS AND PROJECT SPECIAL PROVISIONS SECTION 1-07.23 FOR ADDITIONAL REQUIREMENTS.
3. PROVIDE FLASHING WARNING LIGHT PER SECTION 1-10.3(3) OF WSDOT STD. SPECIFICATIONS.

**LEGEND**

- ACCESS AND HAUL ROUTE
- PROJECT LIMITS
- PROPOSED SIGN
- FLAGGING STATION
- FLASHING WARNING LIGHT (SEE NOTE 3)



**AS-BUILTS** CALL BEFORE YOU DIG  
 1-800-424-5555

Plotted: May 29, 2019 - 4:36pm  
 Date: May 29, 2019 - 4:36pm  
 User: K:\project\31800\31800\Phase2\26\_TC01.dwg  
 Layout Name: TC01

DATE	NO.	REVISION	BY

Last Saved By: chris Jan 17, 2019 - 3:20pm			
REGION NO.	STATE	FED. AID PROJ. NO.	SURVEY NO.
10	WASH.		
DESIGNED BY: GSL, DAS		DRAWN BY: AK	
FIELD BOOK(S):		UPI# 12-0171-1	



REFER TO ORIGINAL DRAWINGS FOR SIGNATURES AND SEALS

REVIEWED AND APPROVED BY:  
 STEVEN E. THOMSEN, P.E.  
 SNOHOMISH COUNTY ENGINEER

DATE APPROVED: \_\_\_\_\_

SNOHOMISH COUNTY  
 DEPARTMENT OF  
 PUBLIC WORKS

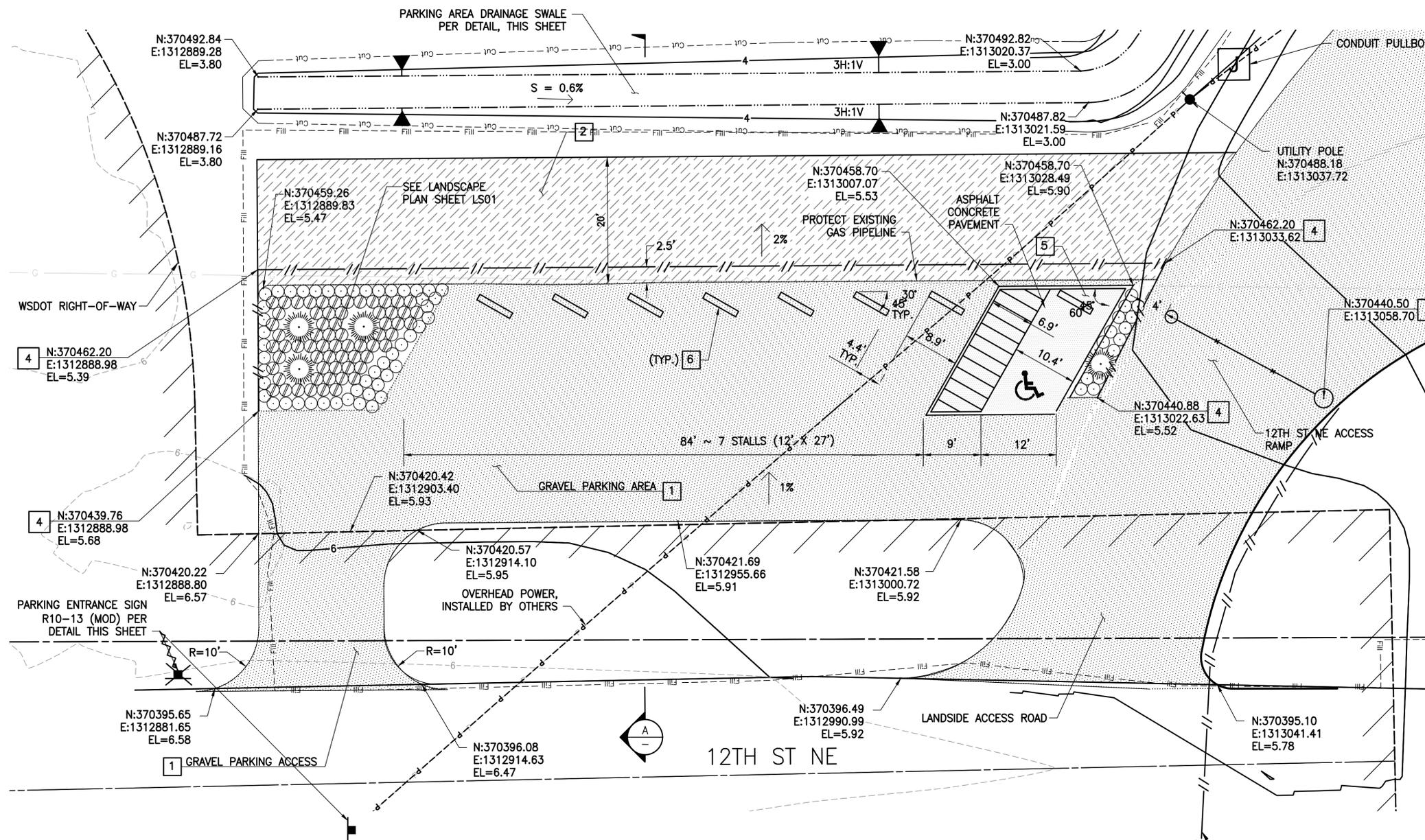
PROJECT NO. RR49206

**SMITH ISLAND  
 ESTUARY RESTORATION  
 PHASE 2  
 ACCESS AND HAUL ROUTE  
 TRAFFIC CONTROL PLAN**

REFERENCE SHEET NO.  
 TC01

SHEET  
 26  
 OF  
 29  
 SHEETS

XREF LIST  
 Ltscale: 1  
 Resolved  
 3784--BASE  
 TILBLK  
 GSLSEAL  
 3784--DTCH  
 3784--PDRN  
 3784--PRUL  
 3784--FROMGIS  
 Unresolved  
 3784--PCHN  
 3784--TOPO



**GENERAL NOTES**

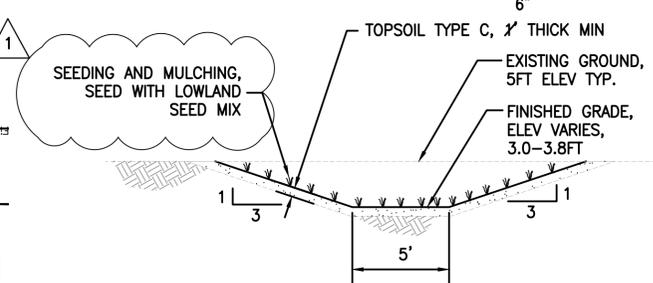
1. ELEVATIONS AND CONTOURS INDICATE FINISHED GRADE. EXCAVATION WILL BE REQUIRED BELOW FINISHED GRADE TO ACCOMMODATE GRAVEL FILTER, AND TOPSOIL.

**CONSTRUCTION NOTES**

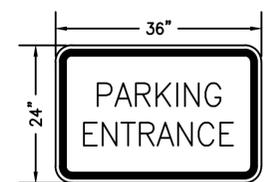
- 1 CONSTRUCT GRAVEL PARKING, 12" COMPACTED DEPTH OF GRAVEL FILTER OVER CONSTRUCTION GEOTEXTILE FOR SOIL STABILIZATION AND CONSTRUCTION GEOSYNTHETIC FOR REINFORCEMENT.
- 2 CONSTRUCT VEGETATED FILTER STRIP PER SHEET GP02.
- 3 CONSTRUCT ACCESS CONTROL GATE PER SHEET GP02.
- 4 CONSTRUCT SPLIT RAIL FENCE PER SHEET GP02.
- 5 STRIPE PARKING PER WSDOT STD. PLAN M-17.10-02. CONSTRUCT ASPHALT PARKING, PAVEMENT SHALL CONSIST OF 3" HMA CL. 1/2" PG 64-22 OVER 6" GRAVEL FILTER.
- 6 INSTALL PRECAST WHEEL STOP PER DETAIL ON SHEET GP02.

**LEGEND**

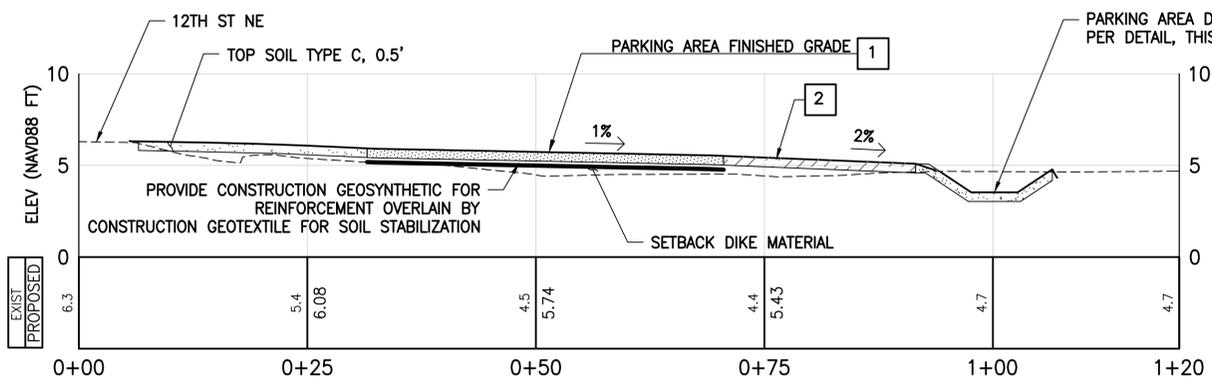
- CONTOUR (MINOR-EXISTING)
- CONTOUR (MAJOR-PROPOSED)
- /// SPLIT RAIL FENCE
- [Hatched Box] ASPHALT CONCRETE PAVEMENT
- [Dotted Box] GRAVEL FILTER
- [Diagonal Lines Box] COMPOST-AMENDED, VEGETATED FILTER STRIP



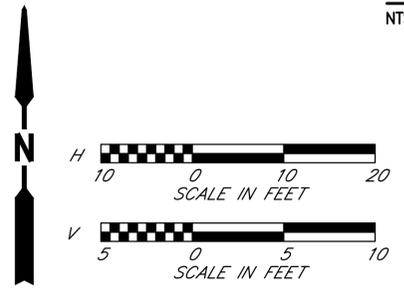
**PARKING AREA DRAINAGE SWALE**  
NTS



**PARKING ENTRANCE SIGN R10-13 (MOD)**  
NTS



**PARKING AREA SECTION**  
A



**AS-BUILTS** CALL BEFORE YOU DIG  
1-800-424-5555

Plotted: May 29, 2019 - 4:41pm  
 otak K:\project\31800\31800\Phase2\40\_GPO1.dwg Layout Name: GPO1

DATE	NO.	REVISION	BY
6/5/15	1	ADDENDUM NO. 2	DAS

Last Saved By: otak Jan 29, 2019 - 9:47am			
REGION NO.	STATE	FED. AID PROJ. NO.	SURVEY NO.
10	WASH.		
DESIGNED BY: GSL, DAS		DRAWN BY: AK	
FIELD BOOK(S):		UPI# 12-0171-1	



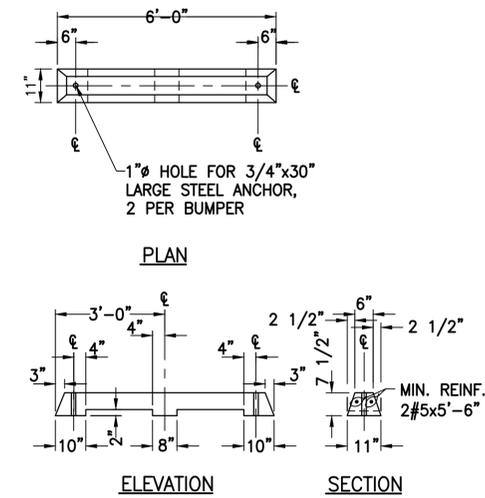
REFER TO ORIGINAL DRAWINGS FOR SIGNATURES AND SEALS

REVIEWED AND APPROVED BY:  
 STEVEN E. THOMSEN, P.E.  
 SNOHOMISH COUNTY ENGINEER  
 DATE APPROVED:

SNOHOMISH COUNTY  
 DEPARTMENT OF  
 PUBLIC WORKS  
 PROJECT NO. RR49206

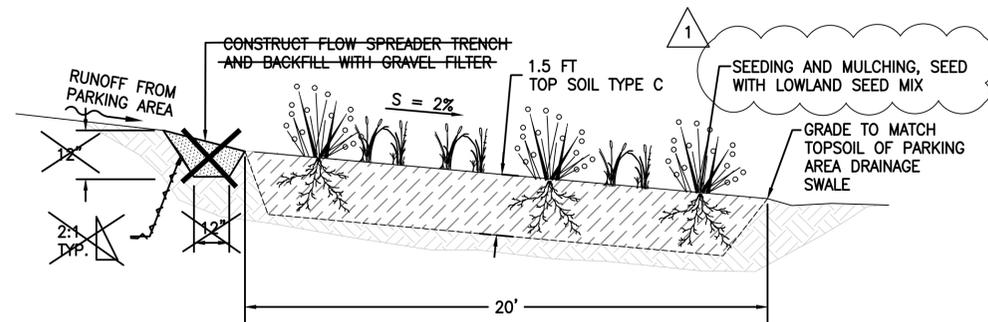
**SMITH ISLAND  
 ESTUARY RESTORATION  
 PHASE 2  
 PARKING AREA PLAN**

REFERENCE SHEET NO. GPO1  
 SHEET 27 OF 29 SHEETS



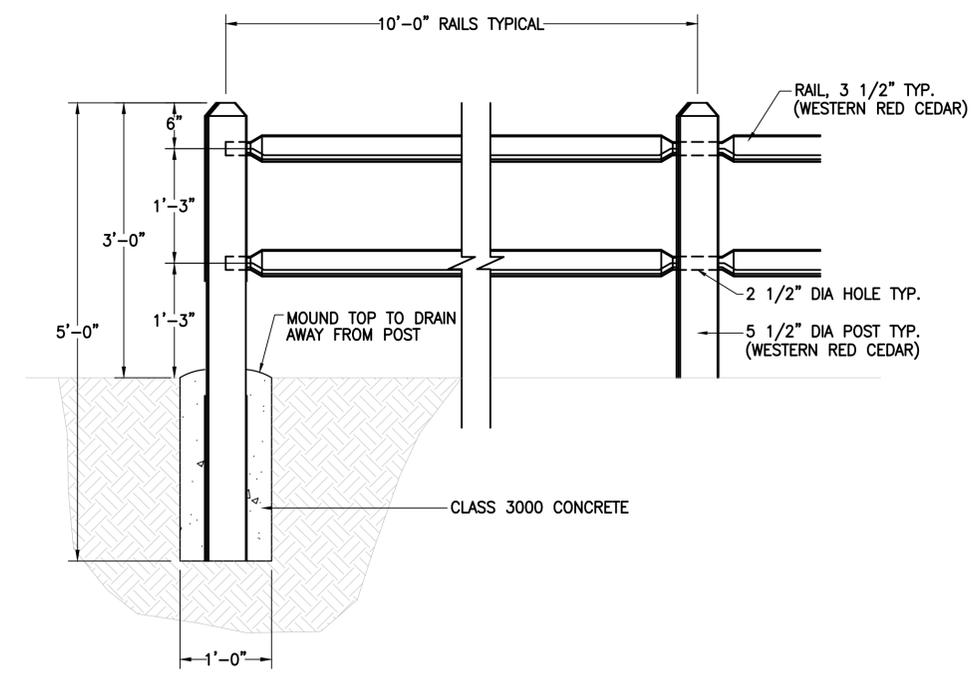
**WHEEL STOP**

NTS



**VEGETATED FILTER STRIP**

NTS



**SPLIT RAIL FENCE**

NTS

**AS-BUILTS**

CALL BEFORE YOU DIG  
1-800-424-5555

6/5/15	1	ADDENDUM NO. 2	DAS
DATE	NO.	REVISION	BY

Last Saved By: otak May 29, 2019 - 2:41pm			
REGION NO.	STATE	FED. AID PROJ. NO.	SURVEY NO.
10	WASH.		
DESIGNED BY: GSL, DAS		DRAWN BY: AK	
FIELD BOOK(S):		UPI# 12-0171-1	



REFER TO ORIGINAL DRAWINGS FOR SIGNATURES AND SEALS

REVIEWED AND APPROVED BY:

STEVEN E. THOMSEN, P.E.  
SNOHOMISH COUNTY ENGINEER

DATE APPROVED:

**SNOHOMISH COUNTY  
DEPARTMENT OF  
PUBLIC WORKS**

PROJECT NO. RR49206

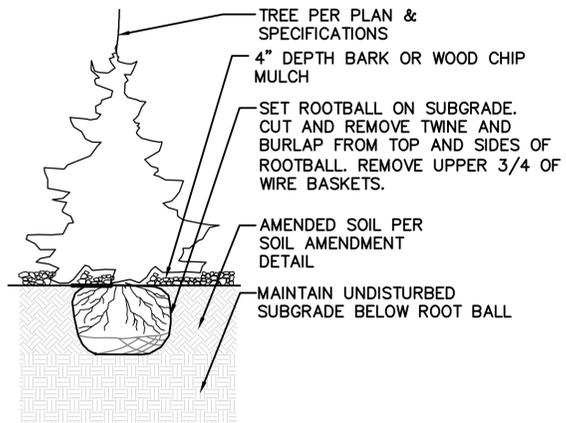
**SMITH ISLAND  
ESTUARY RESTORATION  
PHASE 2**

**PARKING AREA DETAILS**

REFERENCE SHEET NO.  
GP02  
SHEET 28 OF 29 SHEETS

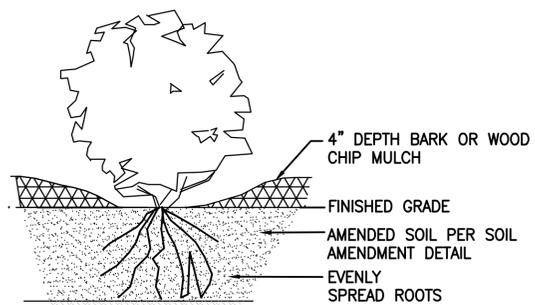
Plotted: May 29, 2019 - 4:42pm  
 otak K:\project\31800\318622A\Draw\Phase2\41\_GP02.dwg Layout Name: GP02

NOTE: ACCEPTABLE TREE PLANTING SHALL HAVE ROOT FLARE FLUSH TO 2" ABOVE SURROUNDING GRADE.



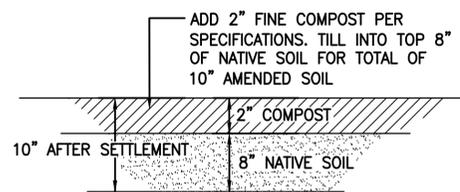
**CONIFEROUS TREE PLANTING DETAIL**

NOT TO SCALE



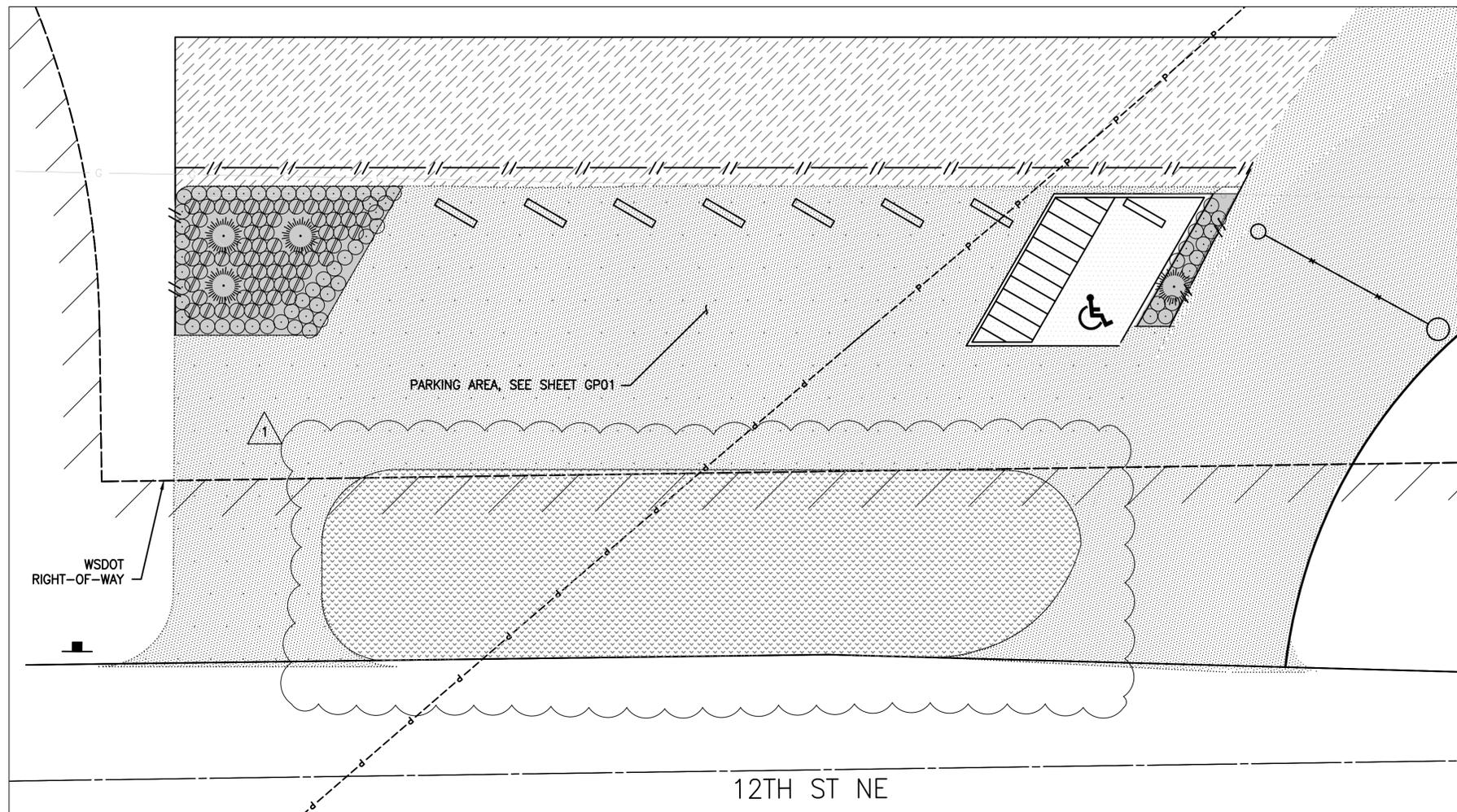
**NATIVE SHRUBS PLANTING DETAIL**

NOT TO SCALE



**SOIL AMENDMENT DETAIL**

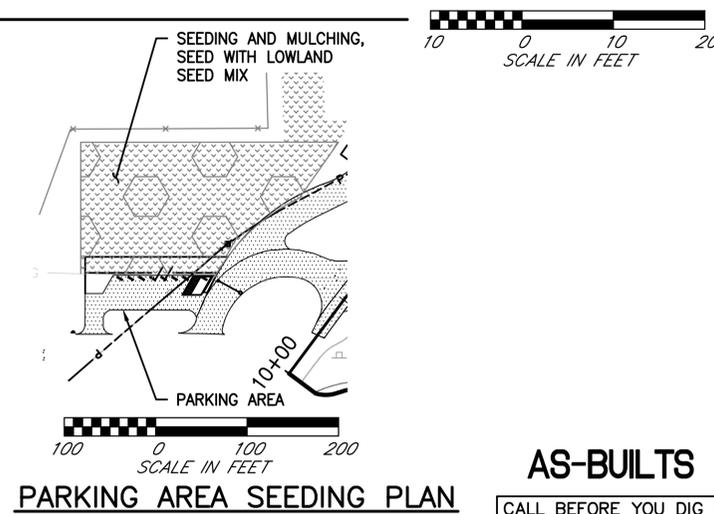
NOT TO SCALE



**PARKING AREA LANDSCAPING PLAN**

**PLANT LEGEND**

SCIENTIFIC NAME	COMMON NAME	SIZE	ESTIMATED QUANTITY
PINUS CONTORTA VAR. CONTORTA	SHORE PINE	8' TALL +	4
SYMPHORICARPOS ALBUS	SNOW BERRY	1 GALLON	74
MAHONIA AQUIFOLIUM	TALL OREGON GRAPE	1 GALLON	65
	SEEDING AND MULCHING, SEED WITH LOWLAND SEED MIX		2750 SF
	COMPOST-AMENDED, VEGETATED FILTER STRIP		
	AMEND SOILS PER SOIL AMENDMENT DETAIL		



**PARKING AREA SEEDING PLAN**

**AS-BUILTS**

CALL BEFORE YOU DIG  
1-800-424-5555

Plotted: May 29, 2019 - 4:42pm  
 otak K:\project\31800\31800\31800\Phase2\42\_LS01.dwg Layout Name: LS01

6/5/15	1	ADDENDUM NO. 2	DAS
DATE	NO.	REVISION	BY

Last Saved By: otak May 29, 2019 - 2:43pm

REGION NO.	STATE	FED. AID PROJ. NO.	SURVEY NO.
10	WASH.		

DESIGNED BY: GSL, DAS  
DRAWN BY: AK

FIELD BOOK(S):  
UPI# 12-0171-1



REFER TO ORIGINAL DRAWINGS FOR SIGNATURES AND SEALS

REVIEWED AND APPROVED BY:  
STEVEN E. THOMSEN, P.E.  
SNOHOMISH COUNTY ENGINEER

DATE APPROVED:

SNOHOMISH COUNTY  
DEPARTMENT OF  
PUBLIC WORKS

PROJECT NO. RR49206

**SMITH ISLAND  
ESTUARY RESTORATION  
PHASE 2  
PARKING AREA  
LANDSCAPING PLAN**

REFERENCE SHEET NO. LS01  
SHEET 29 OF 29 SHEETS