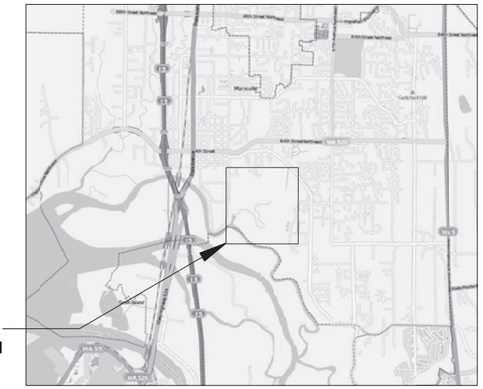
QWULOOLT
TIDAL WETLAND RESTORATION
MARYSVILLE, WASHINGTON
CONSTRUCTION SET

VICINITY MAP
N.T.S.



LOCATION MAP
MARYSVILLE N.T.S.

ABBREVIATIONS

APPROX.	APPROXIMATE	NIC	NOT IN CONTRACT
℄	CENTERLINE	NTS	NOT TO SCALE
(D), DEMO	DEMOLISH	PIP	PROTECT IN PLACE
DS	DOWNSTREAM	PWA	PHILIP WILLIAMS & ASSOCIATES
EL, ELEV.	ELEVATION	RC	RELATIVE COMPACTION
(E), EXIST.	EXISTING	SPECS	SPECIFICATIONS
EG	EXISTING GRADE	SWPPP	STORMWATER POLLUTION PREVENTION PLAN
FG	FINISHED GRADE	3:1	SLOPE, HORIZONTAL:VERTICAL
FT	FOOT, FEET	TESC	TEMPORARY EROSION & SEDIMENT CONTROL
GB	GRADE BREAK	TBD	TO BE DETERMINED
LF	LINEAR FEET	TYP.	TYPICAL
MIN.	MINIMUM	VIF	VERIFY IN FIELD
MAX.	MAXIMUM	WWTP	WASTEWATER TREATMENT PLANT
(N)	NEW		

INDEX OF DRAWINGS

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	SITE OVERVIEW – EXISTING CONDITIONS
3	SITE MAP – PROPOSED CONDITIONS OVERVIEW
4	PLAN VIEW GRADING
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6	PLAN VIEW GRADING
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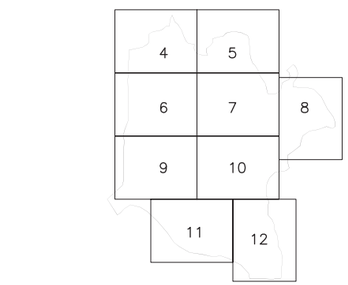
8	PLAN VIEW GRADING
9	PLAN VIEW GRADING
10	PLAN VIEW GRADING
11A	PLAN VIEW GRADING – PHASE 1
11B	PLAN VIEW GRADING – PHASE 2
12	PLAN VIEW GRADING
13	NORTHERN ALLEN CREEK SECTIONS AND PROFILE
14	ALLEN–JONES CONNECTOR SECTIONS AND PROFILE
15	PARTIAL OUTLET CHANNEL SECTION AND PROFILE
16	BERM DETAILS
17	MISC. DETAILS



KEY MAP - PLAN VIEW GRADING
N.T.S.

LEGEND

- SD — (E) STORM DRAIN
- SS — (E) SANITARY SEWERS LINE
- W — (E) WATER LINE
- EXISTING GRADE SECTION AND PROFILE
- CENTERLINE
- DESIGN GRADE SECTION AND PROFILE
- WETLAND BERM
- RIPARIAN BERM
- EXISTING FIRST ORDER CHANNEL
- TRIBUTARY CHANNEL
- (E) FILLED DITCH
- FILL (E) DITCH
- 0+00 1+00 — STATION BASELINE
- X — FENCE
- SILT FENCE
- HVF — HIGH VISIBILITY FENCE
- 4 — NEW CONTOUR
- 4 — EXISTING CONTOUR
- PROJECT BOUNDARY
- PROPOSED LEVEE FOOTPRINT (NIC)
- TOP OF SLOPE / TOE OF SLOPE
- CONSTRUCTION STAGING AREA
- × 9.36 — SPOT ELEVATION
- 203 — CONTROL POINT
- APPROXIMATE WATER LEVEL
- 1 / 2 — 1 INDICATES DETAIL NUMBER; 2 INDICATES SHEET NUMBER ON WHICH SECTION OR DETAIL APPEARS
- EXISTING GROUND (PLAN & SECTION)
- EXCAVATION (PLAN & SECTION)
- FILL (PLAN & SECTION)
- 1/4, 4:1 — BANK SLOPE
- ACCESS — CONSTRUCTION ACCESS

As-constructed markup
S. Winter
ESA November 2015

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PREPARED FOR: TULALIP TRUSTEES

SHEET TITLE: COVER SHEET

PROJECT: QWULOOLT ESTUARY TIDAL WETLAND RESTORATION

APPROVED

DESIGNED	S. WINTER
DRAWN	S. WINTER
INCHARGE	B. BATTALIO License 42109
SCALE	AS SHOWN
ESA JOB #	D209584.01
PROJECT #	D209584.01
DATE	AUG. 27, 2012
SHEET	1 OF 17

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GENERAL NOTES

1. TOPOGRAPHY SHOWN IS A COMBINATION OF MAPPING PREPARED BY DUANE HARTMAN AND ASSOCIATES USING AERIAL PHOTOGRAMMETRIC METHODS AND DOWNING AND ASSOCIATES USING FIELD METHODS. HARTMAN AERIAL PHOTOGRAPH DATED JUNE 19, 2005. DOWNING DATA COLLECTION OCCURRED IN 2011. DOWNING DATA INCLUDES ADDITIONAL CHANNEL THALWEG ELEVATIONS USED FOR DESIGN.
2. ELEVATIONS ARE APPROXIMATE, AND MAY NOT BE SHOWN ACCURATELY IN AREAS PONDED WHEN PHOTOGRAPH WAS TAKEN.
3. OWNER WILL PROVIDE SURVEY FOR QUANTITY CALCULATION AND GRADE STAKING.
4. ALL ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) IN FEET. HORIZONTAL DATUM AT SITE IS NORTH AMERICAN DATUM OF 1983 (NAD83) STATE PLANE WASHINGTON NORTH IN FEET USING GRID COORDINATES.
5. ASSUME THAT ALL AREAS BELOW 10 FEET NAVD 88 WITHIN THE SITE ARE JURISDICTIONAL WETLAND.
6. LIMITED TIDAL INFLUENCE TO DITCHES DUE TO LEAKY TIDE GATES.
7. SITE CONDITIONS MAY REQUIRE SPECIAL EQUIPMENT SUCH AS LOW GROUND PRESSURE EQUIPMENT.
8. PROJECT ELEMENTS SHOWN ON THESE PLANS ARE ANTICIPATED TO BE CONSTRUCTED IN TWO PHASES WITH PHASE 1 IN 2012 AND PHASE 2 IN 2013. SEE SHEET 3 FOR PHASING.
9. CONCURRENT PROJECTS WILL BE ONGOING TO CONSTRUCT THE SETBACK LEVEE UNDER SEPARATE CONTRACT. BOTH CONTRACTORS WILL HAVE THE SAME SITE ACCESS POINTS. COORDINATION SHALL OCCUR THROUGH THE PROJECT REPRESENTATIVE.
10. FILL PAD, SET BACK LEVEE, AND BREACH ARE NOT IN THIS CONTRACT. LOCATION AND EXTENT SHOWN ON DRAWINGS IS APPROXIMATE.
11. ACCESS IS LIMITED. CONTRACTOR TO USE CAUTION MOBILIZING AND DEMOBILIZING. OVERHEAD ELECTRIC LINES NOT SHOWN.
12. EXISTING EXCAVATED CHANNELS HAVE BEEN SHOWN IN APPROXIMATE LOCATIONS.

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PROJECT CONTROL

ID	NORTHING (FT)	EASTING (FT)	ELEVATION (FT NAVD 88)	TYPE
WSDOT GP31529-169	385512.7300	1311593.7020	16.65	BRASS DISK LEVEL WITH CONCRETE
10	32380.1005	1314559.7561	12.59	SPIKE SET ON NORTH SIDE OF LEVEE
33	382443.6265	1313933.5571	11.84	RED CAP REBAR
100	386293.0956	1314932.6933	16.12	MAG NAIL ON NORTH SIDE OF SUNNYSIDE DRIVE

N

0 150 300 600
SCALE (FEET)

REVISIONS

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PREPARED FOR: TULALIP TRUSTEES

SHEET TITLE: SITE OVERVIEW - EXISTING CONDITIONS

PROJECT: QWULOOLT ESTUARY TIDAL WETLAND RESTORATION

APPROVED

DESIGNED S. WINTER
DRAWN S. WINTER
INCHARGE B. BATTALIO License 42109

SCALE AS SHOWN
ESA JOB # D209584.01
PROJECT # D209584.01
DATE AUG. 27, 2012
SHEET 2 OF 17

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Berm Number	Northing (ft)	Easting (ft)	Length (ft)	Type
1	382851	1315093	540	Wetland
2	384053	1315125	670	Riparian
3	384514	1314786	440	Riparian
4	384884	1315470	380	Riparian
5	385550	1315360	235	Riparian
6	385231	1315634	290	Riparian
7	385115	1315898	290	Riparian
8	385124	1316195	155	Riparian
9	385155	1316825	400	Riparian
10	384681	1316978	400	Riparian
11	384169	1316372	465	Riparian
12	383670	1315829	255	Wetland
13	383496	1316828	420	Wetland
14	383050	1316380	390	Wetland
15	383516	1318318	480	Riparian
16	383021	1317711	480	Riparian
17	382803	1317378	230	Riparian
18	382517	1317426	155	Riparian
19	382224	1317296	480	Riparian
20	381512	1317286	800	Riparian
21	380514	1317465	800	Riparian
22	380959	1317150	375	Wetland
23	381563	1316935	345	Wetland
24	382411	1316892	350	Wetland
25	381820	1316373	520	Wetland
26	381322	1316525	355	Wetland
27	381006	1316144	355	Wetland
28	381682	1315788	285	Wetland
29	383086	1315733	565	Wetland

PHASING NOTES

1. PHASE 2 CONSTRUCTION SHALL NOT PROCEED WITHOUT WRITTEN AUTHORIZATION FROM OWNER. PHASE 2 CONSTRUCTION IS REQUIRED IMMEDIATELY PRIOR TO BREACHING.
2. CONSTRUCT BERMS AND FILL DITCHES WITH MATERIAL GENERATED FROM EXCAVATION OF CHANNELS AND/OR FROM IMPORTED MATERIAL, ALL PLACEMENTS TO BE STAKED IN THE FIELD FOR APPROVAL BY PROJECT REPRESENTATIVE.
3. RIPARIAN BERMS TO BE INSTALLED DURING PHASE 1.
4. WETLAND BERMS TO BE INSTALLED IN BOTH PHASE 1 AND 2, EFFORT SHALL BE SCALED TO AMOUNT OF FILL GENERATED THROUGH EXCAVATION. SEE TABLES THIS SHEET FOR APPROXIMATE QUANTITIES.

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PHASE 1 MATERIALS

EXCAVATION SOURCE	VOLUME (CY IN BANK)	NOTES
NEW OUTLET	26,700	EXCAVATION MAY EXTEND BELOW WATER TABLE TO SATURATED OR HIGH MOISTURE CONTENT SOILS
ALLEN - JONES CONNECTOR	11,600	
NORTH ALLEN CREEK RE-ALIGNMENT	12,200	
SUBTOTAL	**50,500**	MINIMUM

PHASE 2 MATERIALS

EXCAVATION SOURCE	VOLUME (CY IN BANK)	NOTES
LEVEE STRIPPINGS	21,430	EXCAVATION BY OTHERS; TO BE STOCKPILED ALONG LEVEE ALIGNMENT
STORMWATER POND EXCAVATION	13,310	EXCAVATION BY OTHERS; TO BE STOCKPILED ALONG LEVEE ALIGNMENT
PHASE 2 OUTLET CHANNEL	14,300	EXCAVATION MAY EXTEND BELOW WATER TABLE TO SATURATED OR HIGH MOISTURE CONTENT SOILS
EXCESS SURCHARGE	5,000 TO 10,000	EXCAVATION BY OTHERS
SUBTOTAL	**54,040**	MINIMUM

N

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SCALE (FEET)

REVISIONS

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PREPARED FOR:
TULALIP TRUSTEES

SHEET TITLE
SITE MAP - PROPOSED CONDITION OVERVIEW

PROJECT
QWULOOLT ESTUARY
TIDAL WETLAND RESTORATION

APPROVED

DESIGNED	S. WINTER
DRAWN	S. WINTER
INCHARGE	B. BATTALIO License 42109

SCALE	AS SHOWN
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PROJECT #	D209584.01
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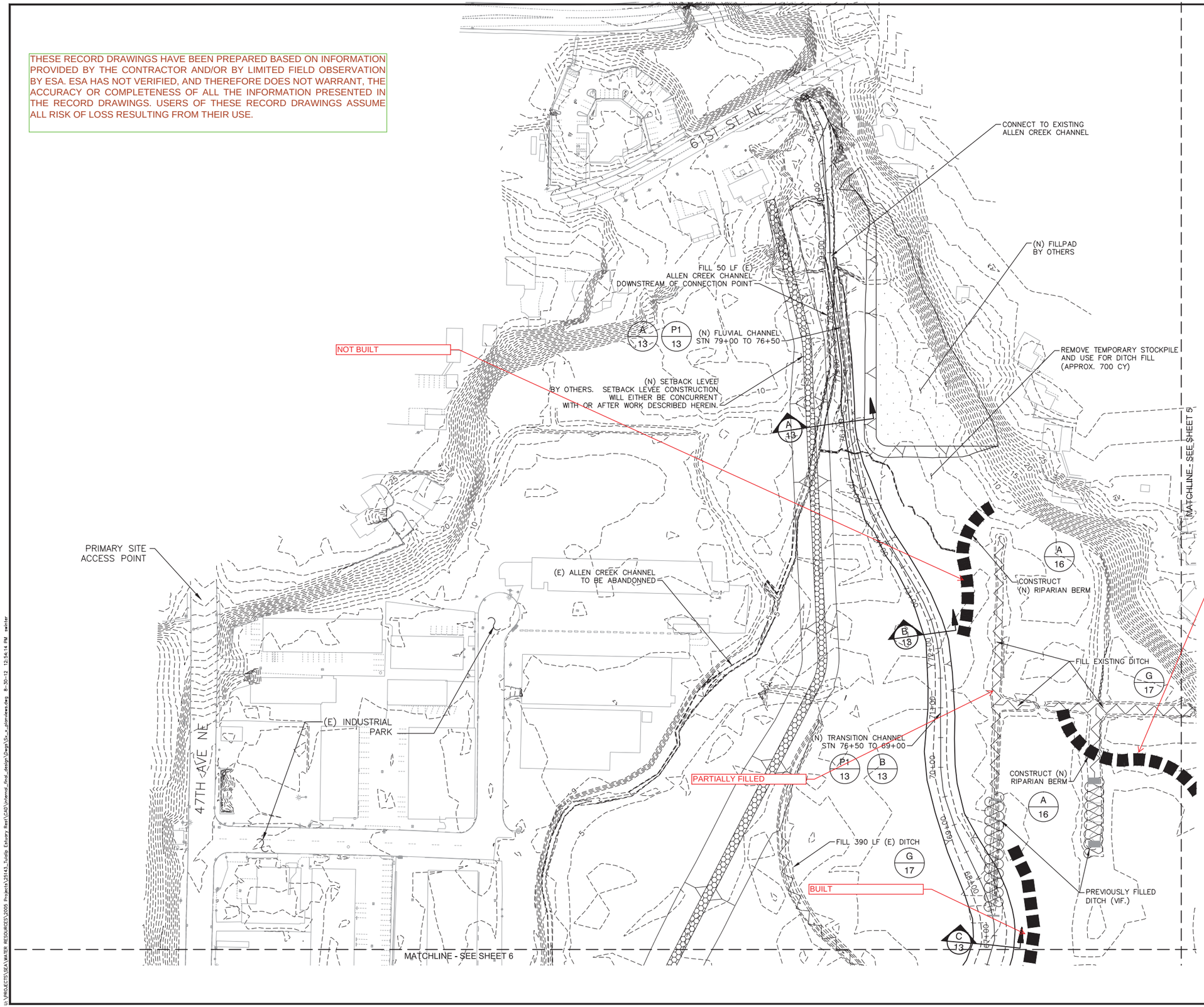

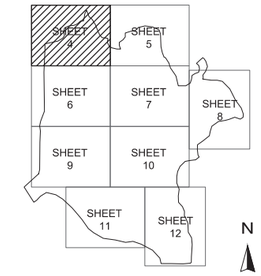

KEY MAP

CREEK SEQUENCING NOTES:

1. LEAVE FLOW IN EXISTING ALLEN CREEK CHANNEL DURING NEW CHANNEL CONSTRUCTION. LEAVE EXISTING SOIL IN PLACE AT CONNECTION POINTS TO PREVENT FLOW THROUGH ACTIVE EXCAVATION.
2. DIVERT ALLEN CREEK PRIOR TO EXCAVATING UP– AND DOWN–STREAM CONNECTION POINTS.
3. PROVIDE PROJECT REPRESENTATIVE WITH AT LEAST 10 BUSINESS DAYS NOTICE PRIOR TO CHANNEL SWITCH TO FACILITATE FISH REMOVAL ACTIVITIES.

CONSTRUCTION NOTES:

1. DEWATER EXISTING ALLEN CREEK CHANNEL ONLY AS NECESSARY TO CONNECT NEW CHANNEL
2. CONTRACTOR TO SUBMIT DE–WATERING PLAN AT LEAST TEN BUSINESS DAYS PRIOR TO WORK.
3. ENGINEER TO DETERMINE EXTENT OF DITCH FILL.
4. TEMPORARY STOCKPILE GENERATED BY OTHERS, COORDINATE WITH PROJECT REPRESENTATIVE FOR AVAILABILITY.
5. SEE SHEET 3 FOR ALLEN CREEK PHASING NOTES

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SCALE (FEET)

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SHEET TITLE: PLAN VIEW GRADING

PROJECT: QWULOOLT ESTUARY TIDAL WETLAND RESTORATION

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INCHARGE	B. BATTALIO License 42109
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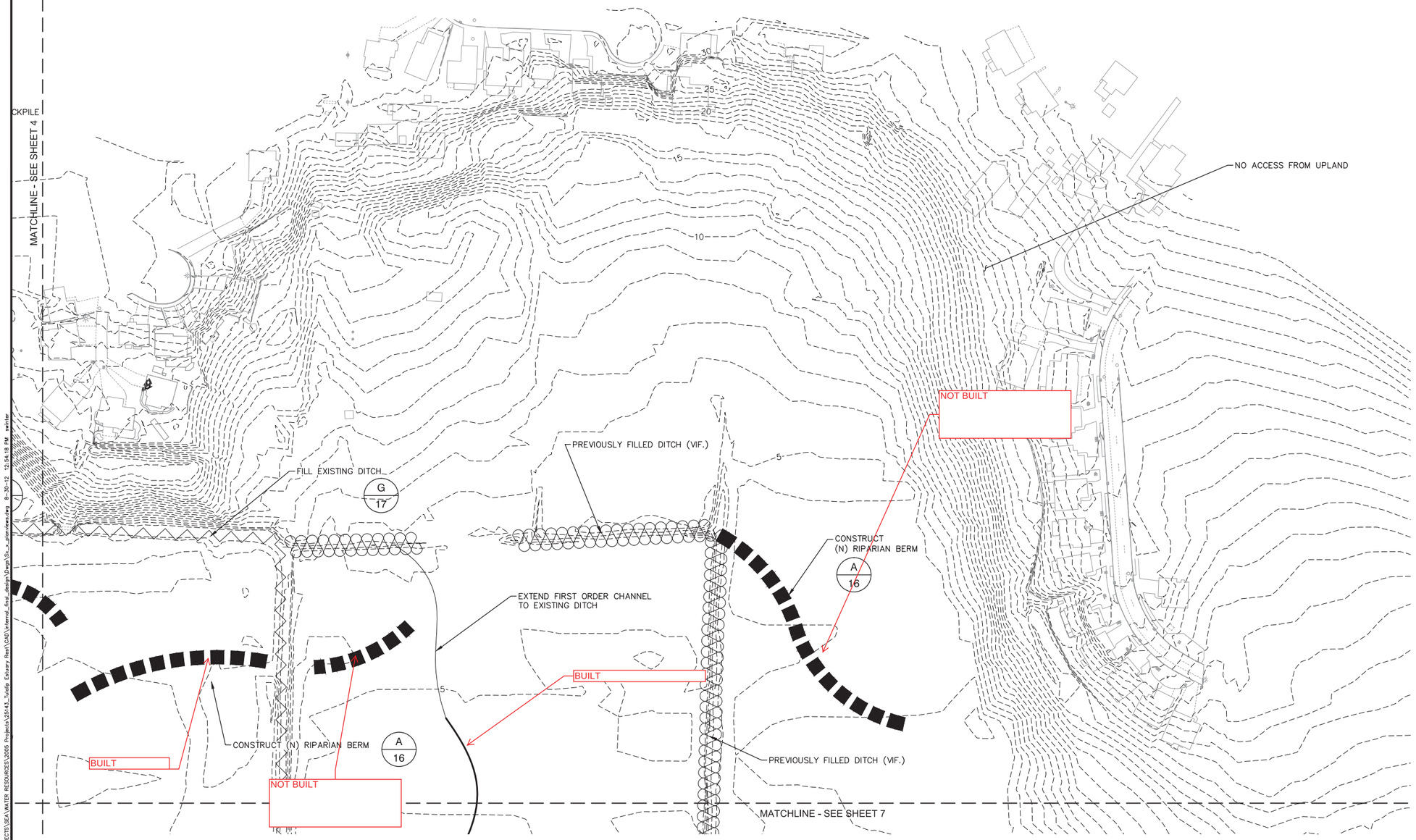

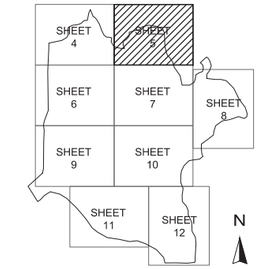

KEY MAP

CONSTRUCTION NOTES:

1. NO ACCESS FROM NORTHEAST.
2. VERIFY CHANNEL ALIGNMENT IN FIELD.
3. PROJECT REPRESENTATIVE TO DETERMINE EXTENT OF DITCH TO BE FILLED.

N

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SCALE (FEET)

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SHEET TITLE

PLAN VIEW GRADING

PROJECT

QWULOOLT ESTUARY
TIDAL WETLAND RESTORATION

APPROVED

DESIGNED S. WINTER

DRAWN S. WINTER

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MATCHLINE - SEE SHEET 4

PRIMARY ACCESS FROM 47TH AVE NE

ALLEN CREEK

SOUTHERN 141 FEET BUILT; REST INTERSECTS WITH LEVEE

(E) ALLEN CREEK CHANNEL TO REMAIN

G 17 FILL 390 LF (E) DITCH

PLACE COIR CLOTH ON BACKFILLED CHANNEL BANK

(N) EXPANSION CHANNEL FROM STN 56+50 TO 61+50

P1 13

D 13

C 13

A 16 CONSTRUCT (N) RIPARIAN BERM

CONSTRUCT (N) RIPARIAN BERM

A 16 CONSTRUCT (N) RIPARIAN BERM

(N) TIDAL CHANNEL FROM STN 61+50 TO 69+00

BUILT

MATCH (E) GRADE IN RELICT CHANNEL AT STN 56+50

DITCH CONNECTION TO LOW AREA

B 14

WHERE NECESSARY, EXCAVATE NOTCH IN (E) RELICT CHANNEL TO ALLOW FOR POSITIVE DRAINAGE FROM STN 56+50 TO 41+00.

BUILT WITH NOTCH TO ALLOW DRAINAGE FROM LOW AREA

MATCHLINE - SEE SHEET 7

MATCHLINE - SEE SHEET 9

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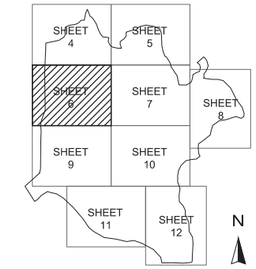

KEY MAP

CONSTRUCTION NOTES:

1. ENGINEER TO DETERMINE EXTENT OF DITCH TO BE FILLED.
2. SEE SHEET 3 FOR ALLEN CREEK PHASING NOTES.

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SCALE (FEET)

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PREPARED FOR: TULALIP TRUSTEES

SHEET TITLE: PLAN VIEW GRADING

PROJECT: QWULOOLT ESTUARY TIDAL WETLAND RESTORATION

APPROVED

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DRAWN S. WINTER

INCHARGE B. BATTALIO License 42109

SCALE AS SHOWN

ESA JOB # D209584.01

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MATCHLINE - SEE SHEET 5

NOT FILLED

CONSTRUCT (N) RIPARIAN BERM

A / 16

NOT BUILT

PREVIOUSLY FILLED DITCH (VIF.)

BUILT

CONSTRUCT (N) RIPARIAN BERM

A / 16

BUILT

BUILT

B / 16

CONSTRUCT (N) WETLAND BERM

APPROX 300 FEET BUILT

BUILT

NOT BUILT

PREVIOUSLY EXCAVATED SECONDARY CHANNEL (VIF.)

BUILT IN REVISED LOCATION

JONES CREEK

B / 16

CONSTRUCT (N) WETLAND BERM

MATCHLINE - SEE SHEET 6

MATCHLINE - SEE SHEET 8

MATCHLINE - SEE SHEET 10

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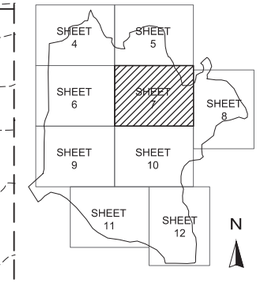

KEY MAP

CONSTRUCTION NOTES:

1. VERIFY PREVIOUSLY EXCAVATED CHANNEL ALIGNMENTS IN FIELD.
2. ENGINEER TO DETERMINE EXTENT OF BERM INSTALLATION AND DITCH FILL.

N

0 40 80 160

SCALE (FEET)

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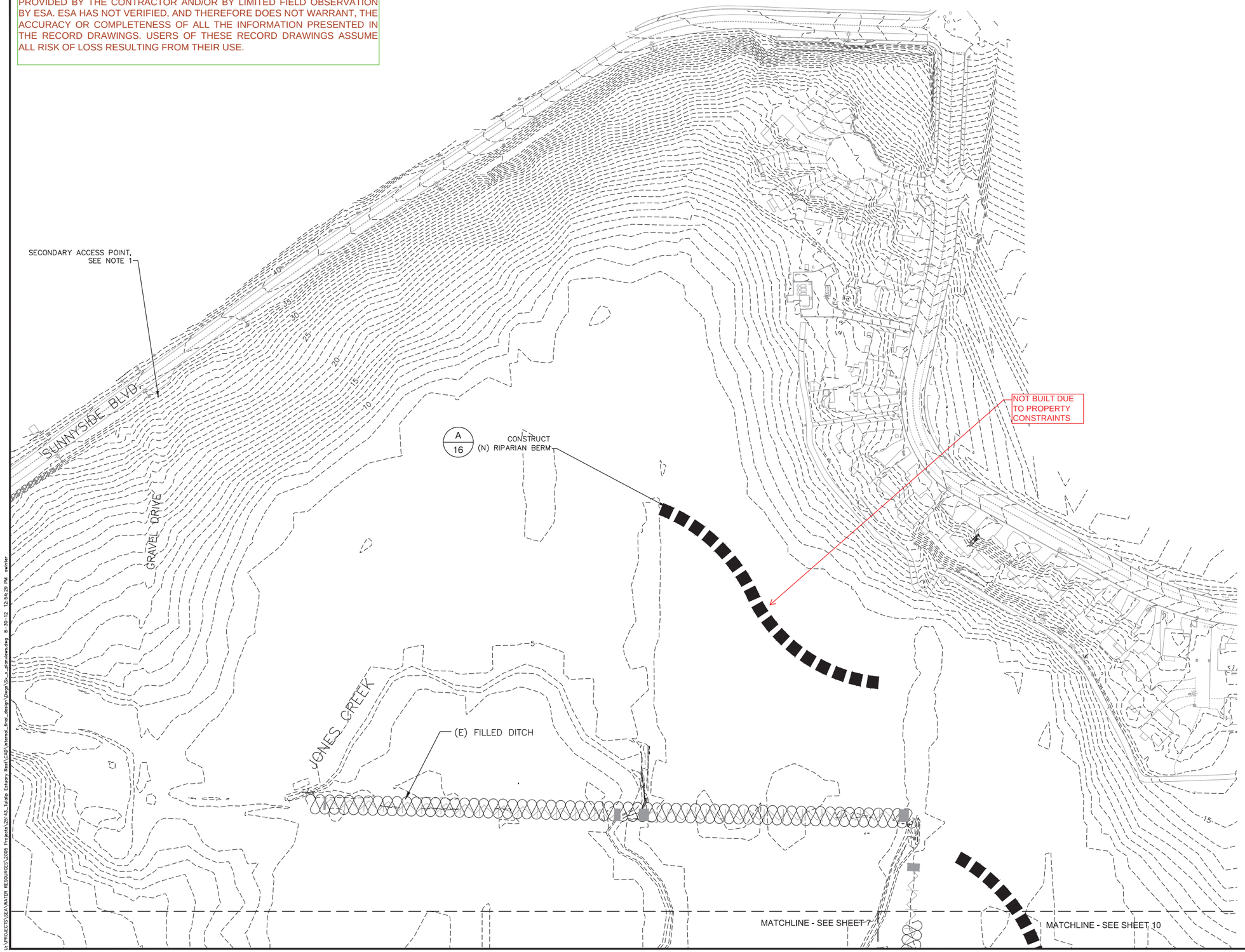

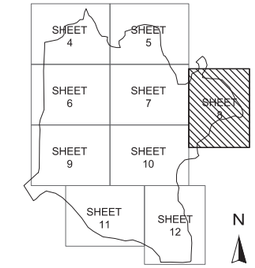

KEY MAP

CONSTRUCTION NOTES:

1. SECONDARY ACCESS POINT TO BE USED ONLY WITH ENGINEER PERMISSION

REVISIONS

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PREPARED FOR:

TULALIP TRUSTEES

SHEET TITLE

PLAN VIEW GRADING

PROJECT

QWULOOLT ESTUARY
TIDAL WETLAND RESTORATION

APPROVED	
DESIGNED	S. WINTER
DRAWN	S. WINTER
INCHARGE	B. BATTALIO License 42109
SCALE	AS SHOWN
ESA JOB #	D209584.01
PROJECT #	D209584.01
DATE	AUG. 27, 2012
SHEET	8 OF 17

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MATCHLINE - SEE SHEET 6

BLEND CUT SLOPE TO EXISTING BANK

DAYLIGHT (N) CHANNEL IN (E) ALLEN CREEK AT EL −2.0, VIF

INSTALL DITCH BLOCK IN CHANNEL

PHASE 1: EXCAVATE (N) ALLEN–JONES CONNECTOR CHANNEL

CONSTRUCT (N) WETLAND BERM

BUILT IN TWO SECTIONS

BLEND CUT SLOPE TO EXISTING BANK

CONSTRUCT (N) WETLAND BERM

(N) SETBACK LEVEE BY OTHERS. SETBACK LEVEE CONSTRUCTION WILL EITHER BE CONCURRENT WITH OR AFTER WORK DESCRIBED HEREIN.

MINOR EXCAVATION AS NEEDED TO ALLOW CHANNEL TO DRAIN SOUTH

DAYLIGHT (N) CHANNEL IN (E) JONES CREEK AT EL −4.5, VIF

BUILT AS RIPARIAN BERM

(E) TIDEGATES TO BE PLUGGED BY OTHERS AFTER COMPLETION OF PHASE 2

NOT BUILT

CONSTRUCT (N) WETLAND BERM

ALLEN CREEK

JONES CREEK

EBEY SLOUGH

MATCHLINE - SEE SHEET 10

MATCHLINE - SEE SHEET 11

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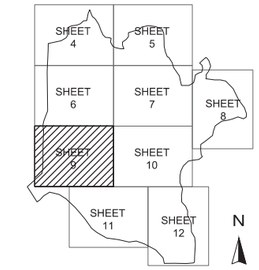

KEY MAP

CONSTRUCTION NOTES:

1. INSTALL TEMPORARY SANDBAG BERM PRIOR TO DIVERTING WATER INTO NEW CHANNEL.
2. SEE SHEET 3 FOR ALLEN CREEK PHASING NOTES.

N

0 40 80 160

SCALE (FEET)

REVISIONS			
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PREPARED FOR: TULALIP TRUSTEES

SHEET TITLE: PLAN VIEW GRADING

PROJECT: QWULOOLT ESTUARY TIDAL WETLAND RESTORATION

APPROVED

DESIGNED S. WINTER

DRAWN S. WINTER

INCHARGE B. BATTALIO License 42109

SCALE AS SHOWN

ESA JOB # D209584.01

PROJECT # D209584.01

DATE AUG. 27, 2012

SHEET 9 OF 17

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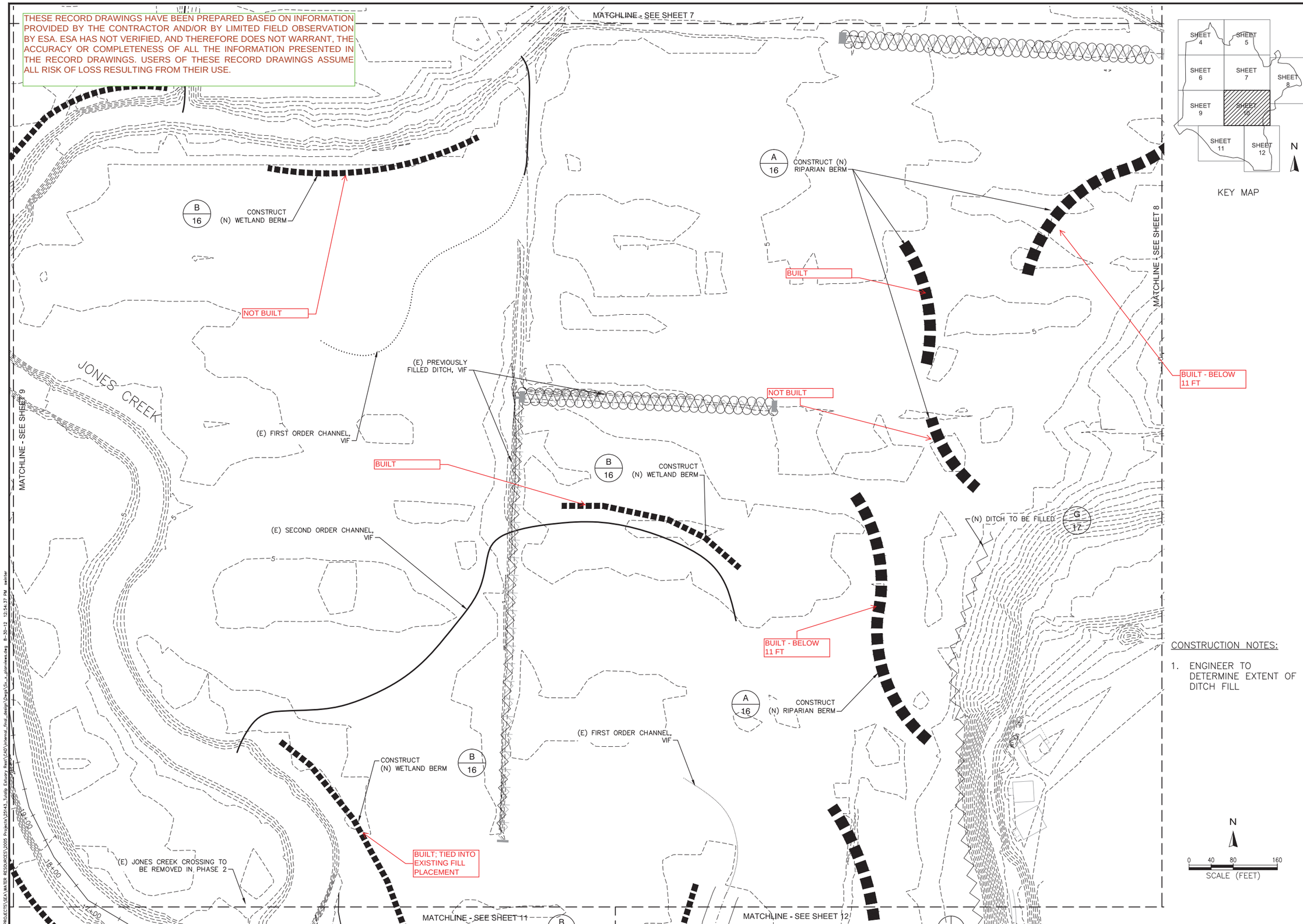

KEY MAP

CONSTRUCTION NOTES:

1. ENGINEER TO DETERMINE EXTENT OF DITCH FILL

REVISIONS

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5			
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PREPARED BY: ESA

PREPARED FOR: TULALIP TRUSTEES

SHEET TITLE: PLAN VIEW GRADING

PROJECT: QWULOOLT ESTUARY TIDAL WETLAND RESTORATION

APPROVED

DESIGNED S. WINTER

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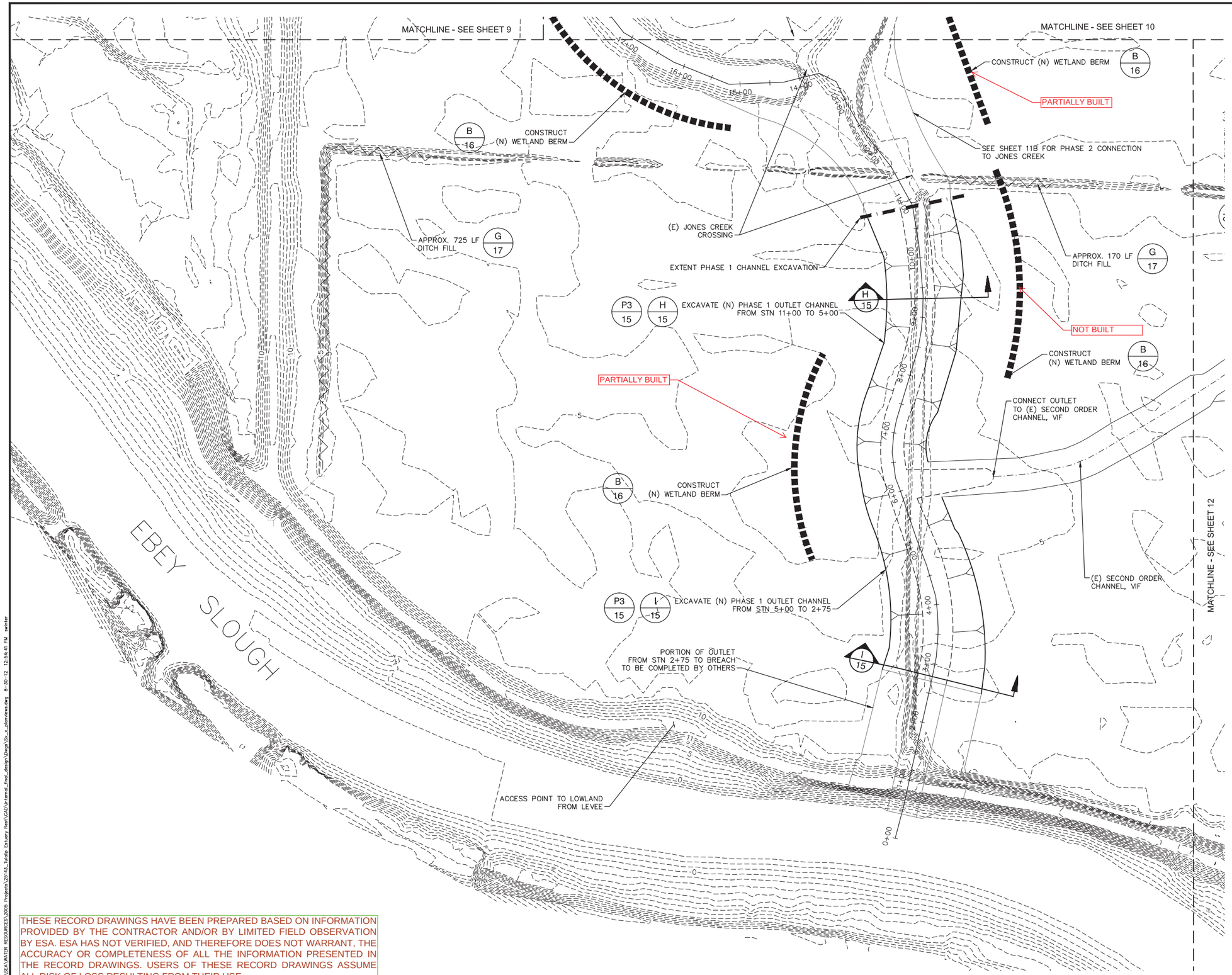
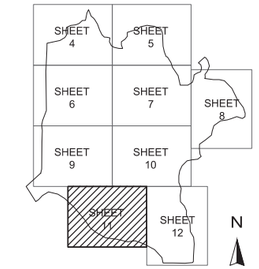
PROJECT # D209584.01

DATE AUG. 27, 2012

SHEET 10 OF 17





KEY MAP

CONSTRUCTION NOTES:

1. LEAVE AT LEAST 250 FEET FROM EXISTING EBEY SLOUGH LEVEE AT SOUTH END OF PHASE 1 OUTLET CHANNEL.
2. NO EXCAVATION SHALL OCCUR CLOSER THAN 250 FEET TO THE EBEY SLOUGH LEVEE.
3. STOCKPILE EXCAVATED MATERIALS IN APPROVED LOCATION AT DIRECTION OF PROJECT REPRESENTATIVE.
4. DO NOT IMPEDE ACCESS TO EXISTING CROSSING ON JONES CREEK.
5. SEE SHEET 11B FOR PHASE 2 OUTLET EXCAVATION PLAN.

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SHEET TITLE

PLAN VIEW GRADING - PHASE 1

PROJECT

QWULOOLT ESTUARY TIDAL WETLAND RESTORATION

APPROVED

DESIGNED S. WINTER

DRAWN S. WINTER

INCHARGE B. BATTALIO License 42109

SCALE AS SHOWN

ESA JOB # D209584.01

PROJECT # D209584.01

DATE AUG. 27, 2012

SHEET 11A OF 17

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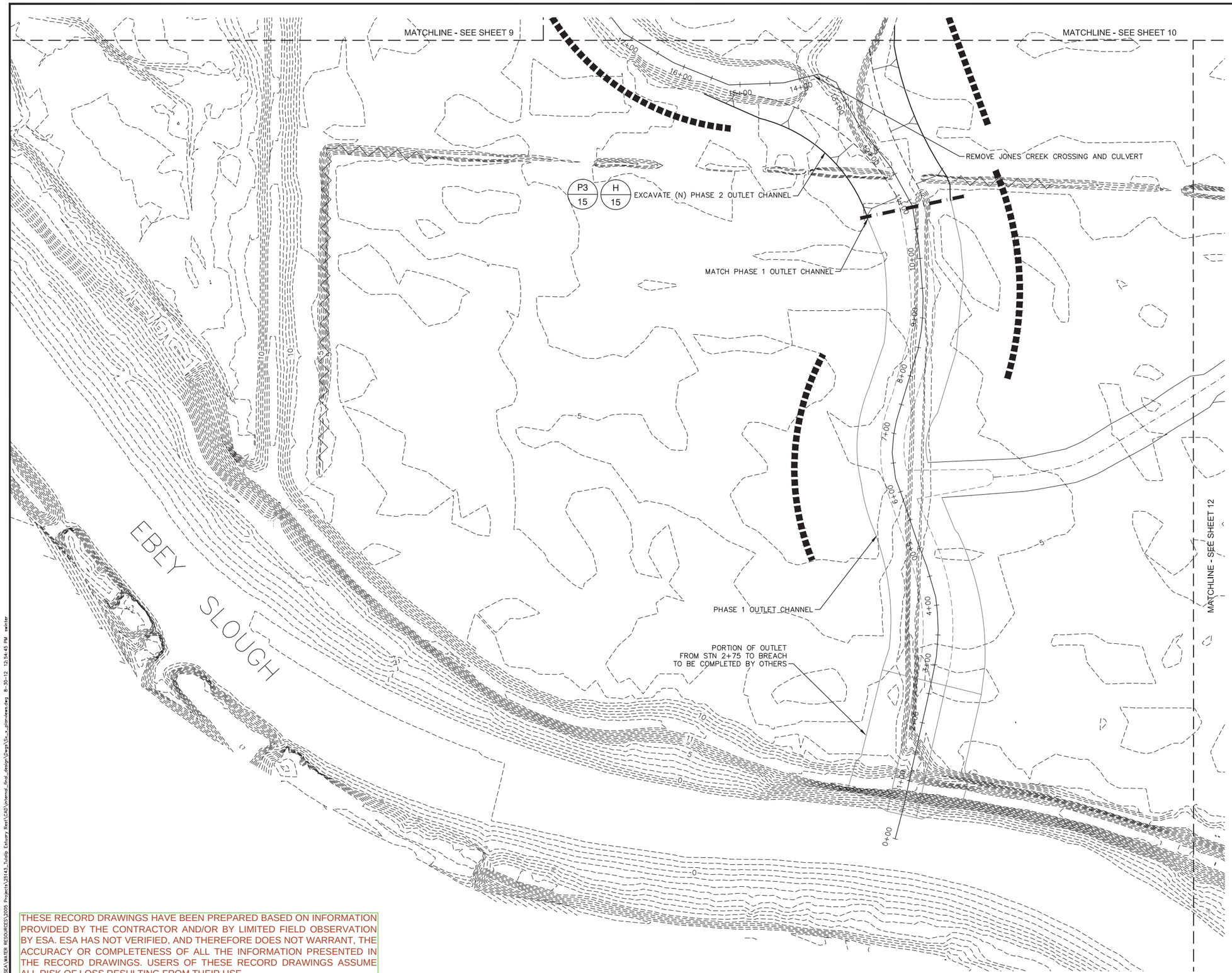

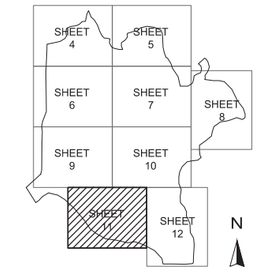

KEY MAP

CONSTRUCTION NOTES:

1. PHASE 2 OUTLET CHANNEL TO BE EXCAVATED ONLY AT DIRECTION OF ENGINEER/OWNER.
2. STOCKPILE OR UTILIZE EXCAVATED MATERIALS IN APPROVED LOCATION AT DIRECTION OF ENGINEER.
3. PHASE 2 OUTLET EXCAVATION SHALL BE COMPLETE PRIOR TO BREACH (NIC)
4. CONTRACTOR TO DIVERT FLOWING WATER AROUND WORKSITE DURING PHASE 2 CONNECTION.

N

0 40 80 160
SCALE (FEET)

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SHEET TITLE
PLAN VIEW GRADING - PHASE 2

PROJECT
QWULOOLT ESTUARY
TIDAL WETLAND RESTORATION

APPROVED	
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SCALE	AS SHOWN
ESA JOB #	D209584.01
PROJECT #	D209584.01
DATE	AUG. 27, 2012
SHEET	11B OF 17

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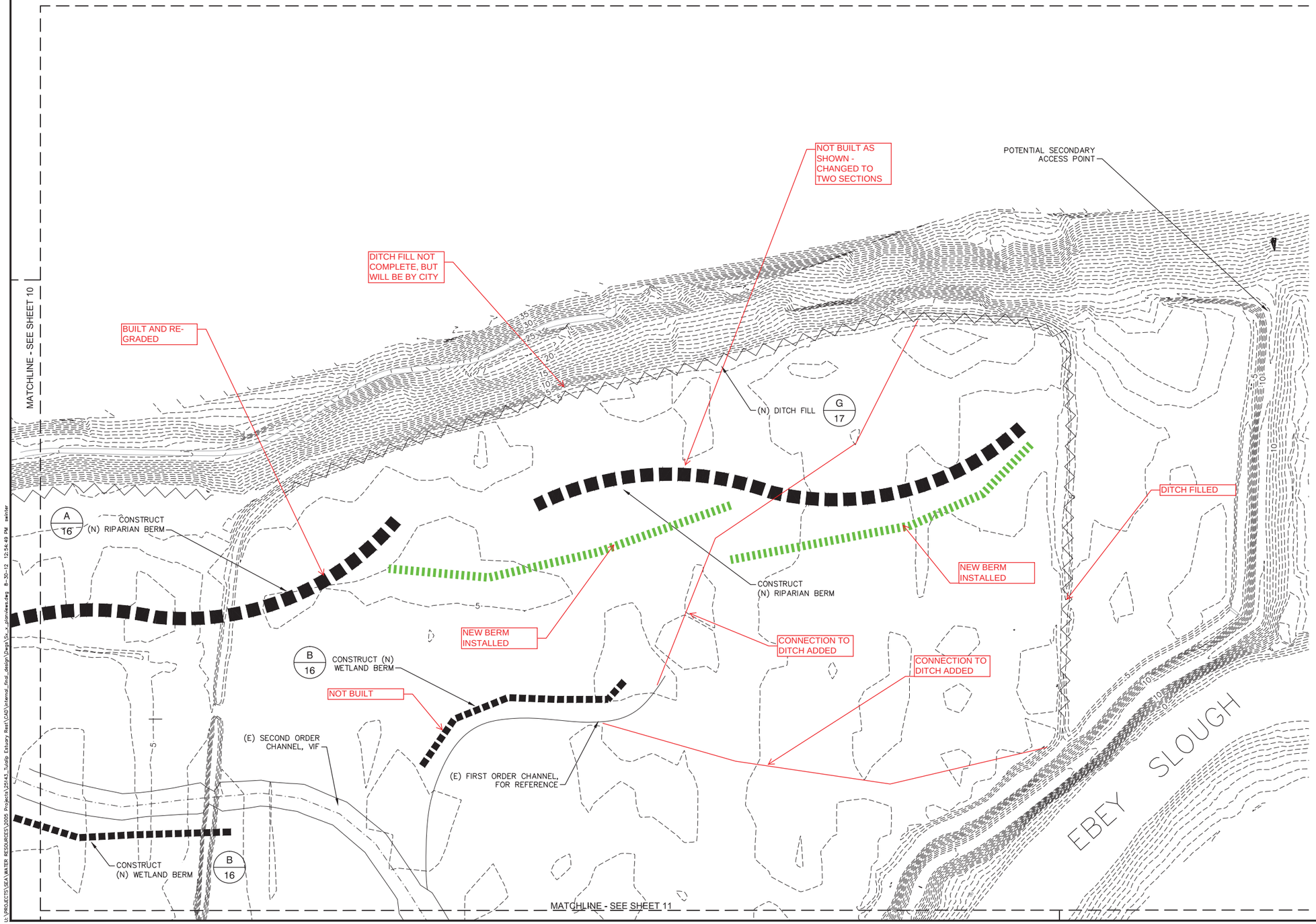

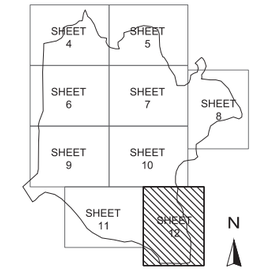

KEY MAP

CONSTRUCTION NOTES:

1. SECONDARY CONSTRUCTION ACCESS SHOWN THIS SHEET TO ONLY BE USED WITH PERMISSION OF ENGINEER/OWNER.

REVISIONS

NO.	DESCRIPTION	BY	DATE
5			
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PREPARED BY: ESA

PREPARED FOR: TULALIP TRUSTEES

SHEET TITLE: PLAN VIEW GRADING

PROJECT: QWULOOLT ESTUARY TIDAL WETLAND RESTORATION

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DRAWN S. WINTER

INCHARGE B. BATTALIO License 42109

SCALE AS SHOWN

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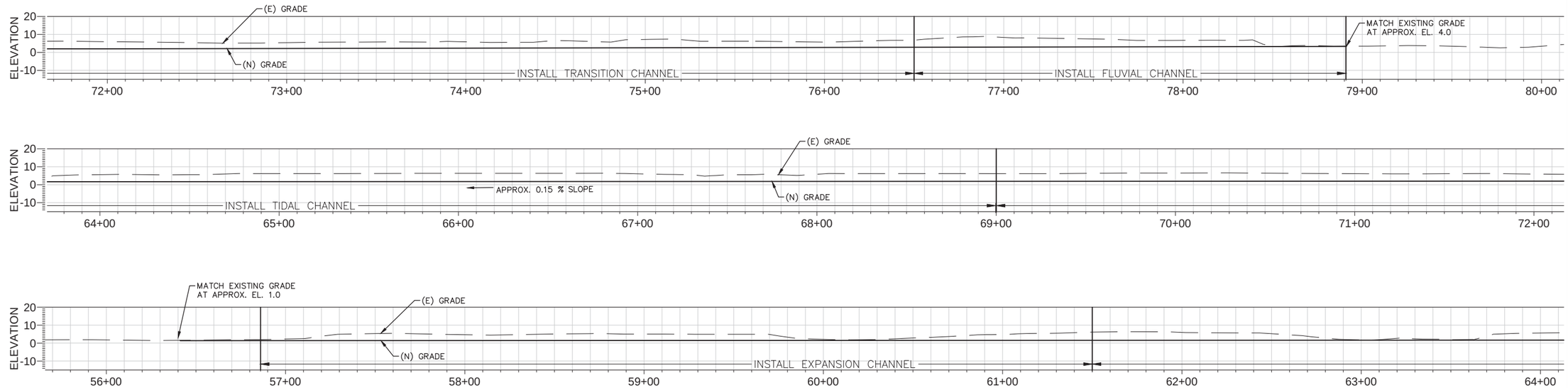
PROJECT # D209584.01

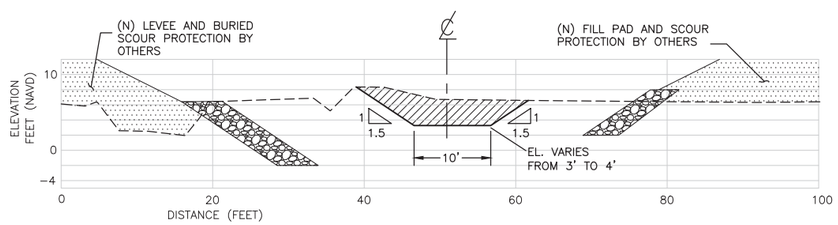
DATE AUG. 27, 2012

SHEET 12 OF 17



P1 ALLEN CREEK PROFILE - NORTH

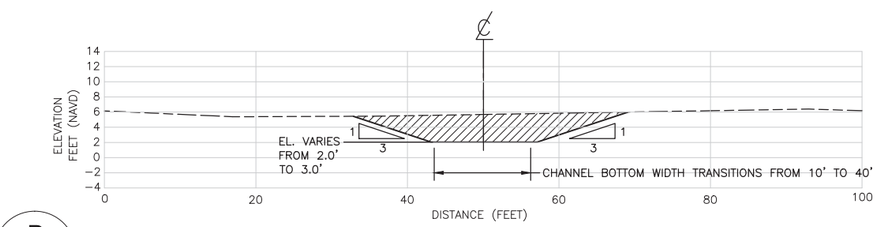
SCALE: 1"=30'



A/4 ALLEN CREEK TYP FLUVIAL SECTION

STN 76+60

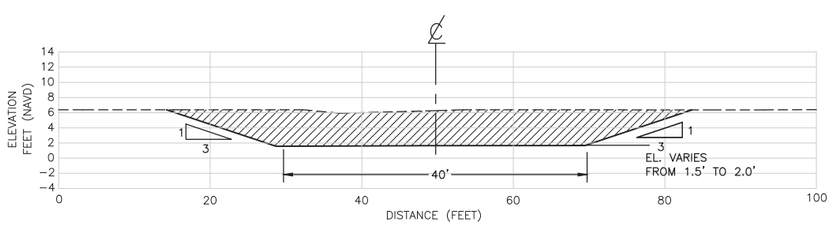
SCALE: 1"=10'



B/4 ALLEN CREEK TYP TRANSITION SECTION

STN 72+26

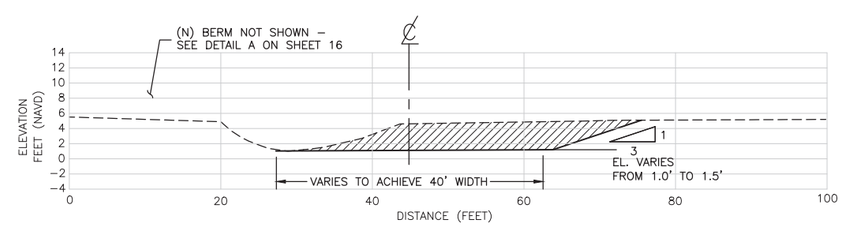
SCALE: 1"=10'



C/4 ALLEN CREEK TYP TIDAL SECTION

STN 66+92

SCALE: 1"=10'



D/6 ALLEN CREEK TYP EXPANSION SECTION

STN 59+80

SCALE: 1"=10'

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SHEET TITLE: NORTHERN ALLEN CREEK SECTIONS AND PROFILE

PROJECT: QWULOOLT ESTUARY TIDAL WETLAND RESTORATION

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SCALE	AS SHOWN
ESA JOB #	D209584.01
PROJECT #	D209584.01
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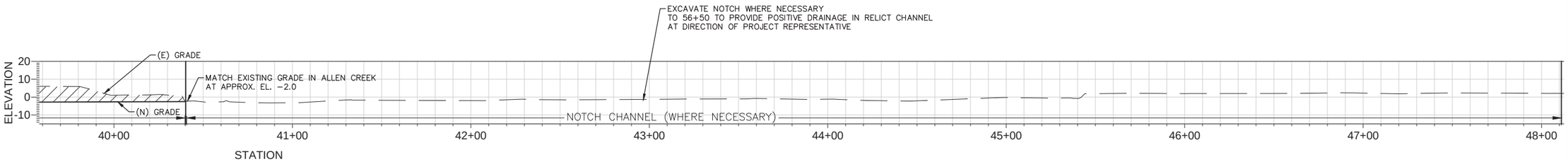
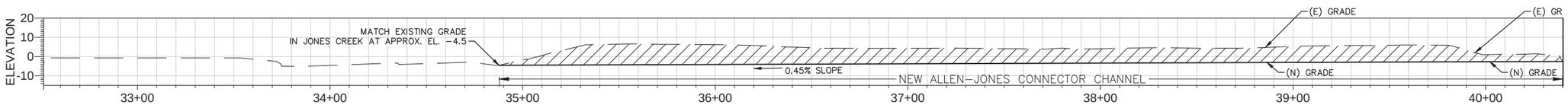
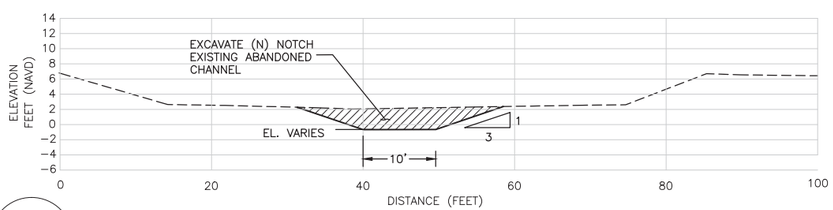




P2 **ALLEN-JONES CONNECTOR PROFILE**

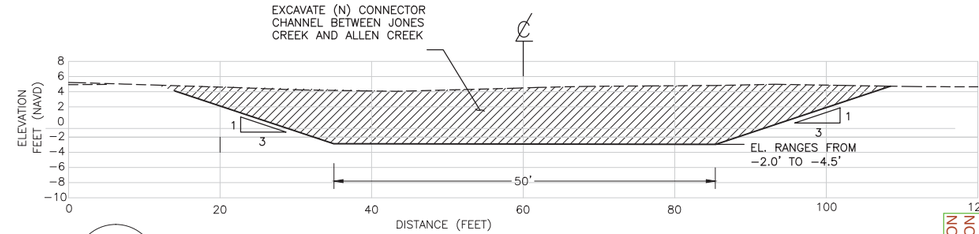
SCALE: 1"=30'



E 6 **ALLEN-JONES NOTCH TYP. SECTION**

IF NECESSARY

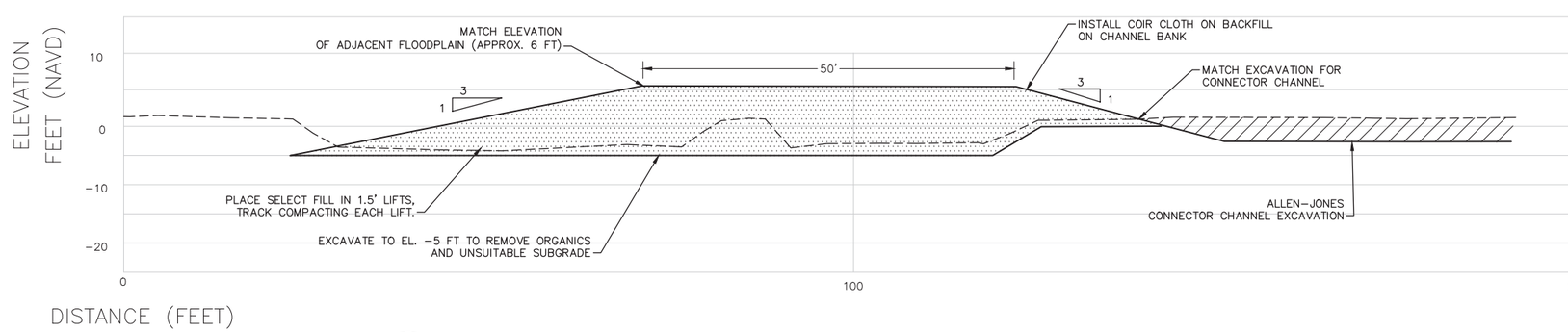
SCALE: 1"=10'



F 9 **ALLEN-JONES CONNECTOR TYP. SECTION**

STN 37+80

SCALE: 1"=10'



G 9 **ALLEN-JONES DITCH BLOCK SECTION**

STN 40+40

SCALE: 1"=10'

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SHEET TITLE: ALLEN-JONES CONNECTOR SECTIONS AND PROFILE

PROJECT: QWULOOLT ESTUARY TIDAL WETLAND RESTORATION

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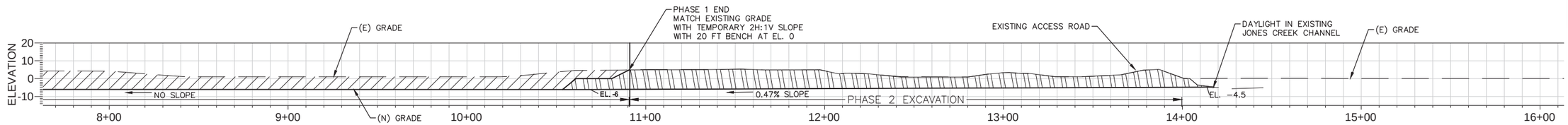
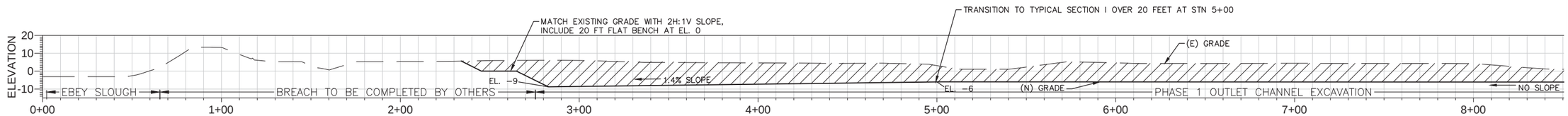
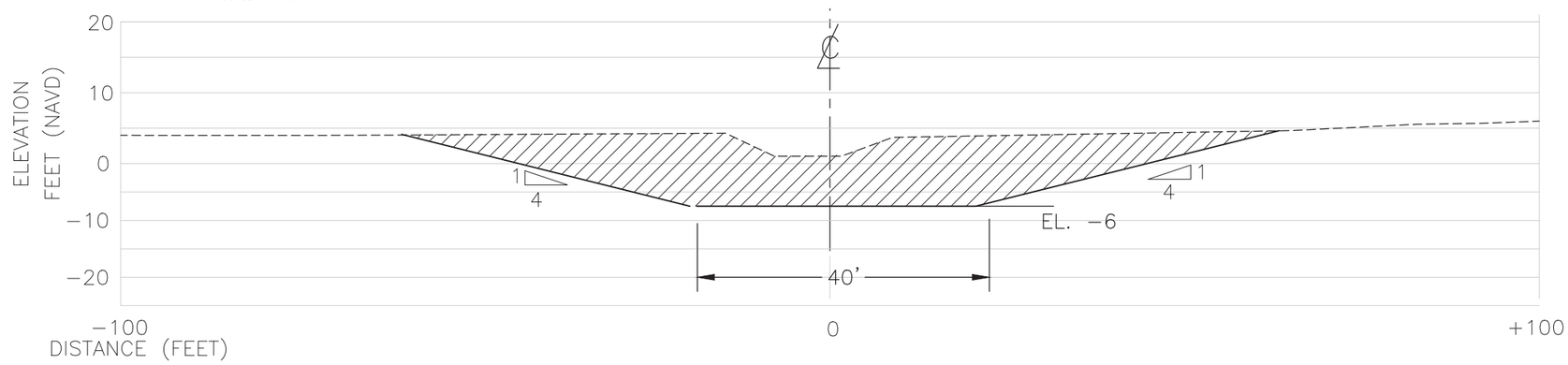




P3 **NEW OUTLET CHANNEL PROFILE**

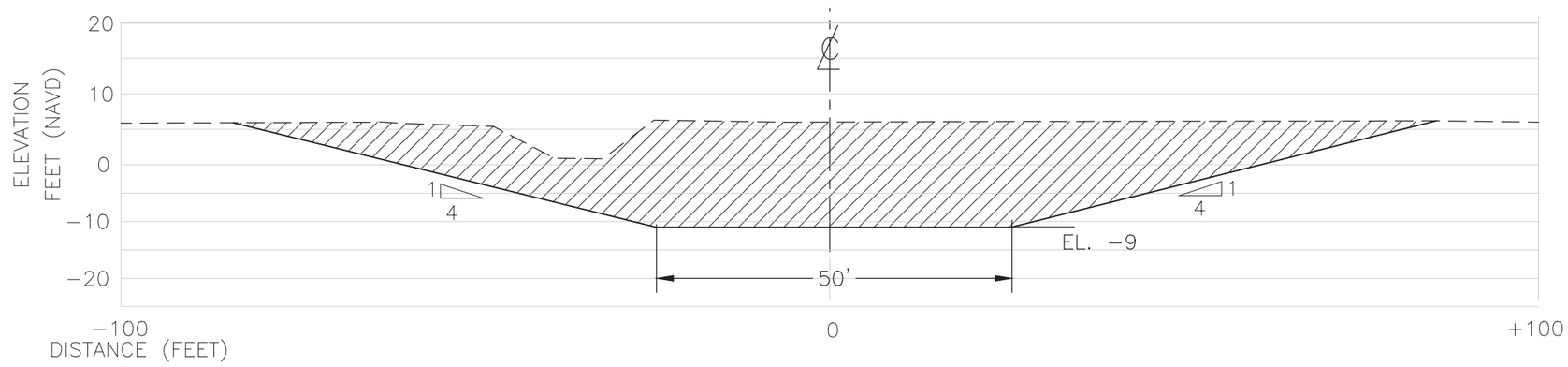
SCALE: 1"=30'



H / 11 **PARTIAL OUTLET CHANNEL TYP. SECTION**

STN 9+27

SCALE: 1"=10'



I / 11 **PARTIAL OUTLET CHANNEL END SECTION**

STN 2+84

SCALE: 1"=10'

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SHEET TITLE

PARTIAL OUTLET CHANNEL SECTIONS AND PROFILE

PROJECT

QWULOOLT ESTUARY TIDAL WETLAND RESTORATION

APPROVED	
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SCALE	AS SHOWN
ESA JOB #	D209584.01
PROJECT #	D209584.01
DATE	AUG. 27, 2012
SHEET	15 OF 17

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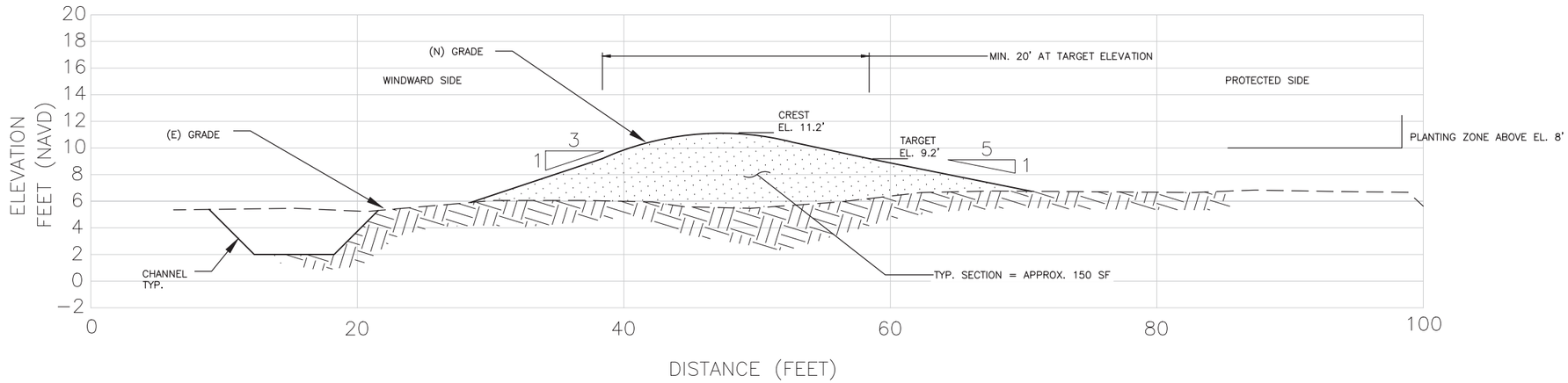


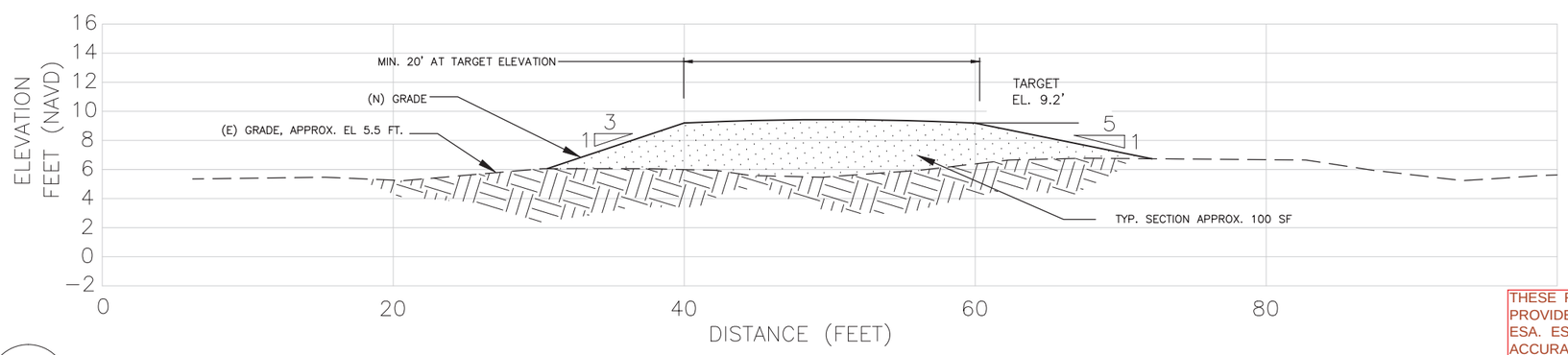
RIPARIAN BERM NOTES:
1. BERMS TO BE PLACED AS SHOWN ON PLANS AS APPROVED BY ENGINEER.
2. CONTRACTOR TO STAKE THREE POINTS AS SHOWN ON PLANS FOR APPROVAL BY ENGINEER.
3. BERM MATERIALS TO BE GENERATED BY ON-SITE EXCAVATIONS.
4. PLACE BERMS IN 1.0 FOOT LIFTS.
5. WHERE POSSIBLE, COMPLETE BERMS WITH TOPSOIL TYPE A (SEE SPECIFICATIONS).
6. BUCKET COMPACT EACH LIFT.
7. PLANT LIVESTAKES AT 3 FOOT ON-CENTER SPACING WITH THE SPECIES AND ELEVATION RANGES SHOWN HERE.
8. CONTRACTOR TO PROVIDE SURVEY AS-BUILT OF BERM: TOE, TARGET, TOP, AND TOE ELEVATIONS AT 75 FT INTERVALS TO DETERMINE PLANTING AREAS.
9. PLANTING NOT IN THIS CONTRACT.

Plant Material Schedule - RIPARIAN BERM PLANTING

Scientific Name	Common Name	Type	Spacing	Approx. Plants/100 feet of berm	Elevation Zone	
Salix hookeriana	Hooker's willow	livestake	3 ft. o.c.	150	8 to top of berm	C 17
Salix scouleriana	Scouler's willow	livestake	3 ft. o.c.	150	8 to top of berm	C 17
Salix sitchensis	Sitka willow	livestake	3 ft. o.c.	150	8 to top of berm	C 17
Spiraea douglasii	Hardhack	1 gal. cont.	4 ft. o.c.	25	9 to 10	E 17
Total Shrubs				**250**		

Notes: BB - ; o.c. - on center; ' - feet; " - inches; gal. - gallon; cont. - container

A **RIPARIAN BERM TYP. SECTION AND PLANTING** SCALE: 1"=5'



WETLAND BERM NOTES:
1. BERMS TO BE PLACED AS SHOWN ON PLANS AND/OR AS APPROVED BY ENGINEER.
2. CONTRACTOR TO STAKE THREE POINTS AS SHOWN ON PLANS FOR APPROVAL BY ENGINEER.
3. BERM MATERIALS TO BE GENERATED BY ON-SITE EXCAVATIONS.
4. PLACE BERMS IN 1.0 FOOT LIFTS.
5. BUCKET COMPACT EACH LIFT.

B **WETLAND BERM TYP. SECTION** SCALE: 1"=5'

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REVISIONS

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PREPARED FOR: TULALIP TRUSTEES

SHEET TITLE: BERM DETAILS

PROJECT: QWULOOLT ESTUARY TIDAL WETLAND RESTORATION

APPROVED

DESIGNED S. WINTER
DRAWN S. WINTER
INCHARGE B. BATTALIO License 42109

SCALE AS SHOWN
ESA JOB # D209584.01
PROJECT # D209584.01
DATE AUG. 27, 2012
SHEET 16 OF 17

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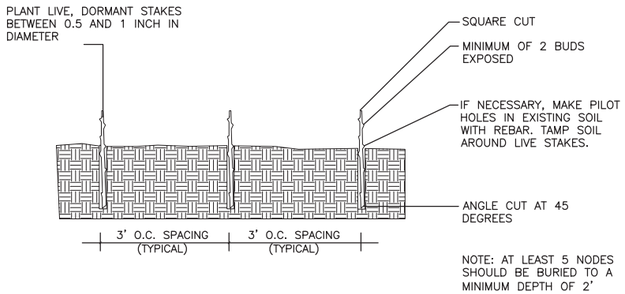
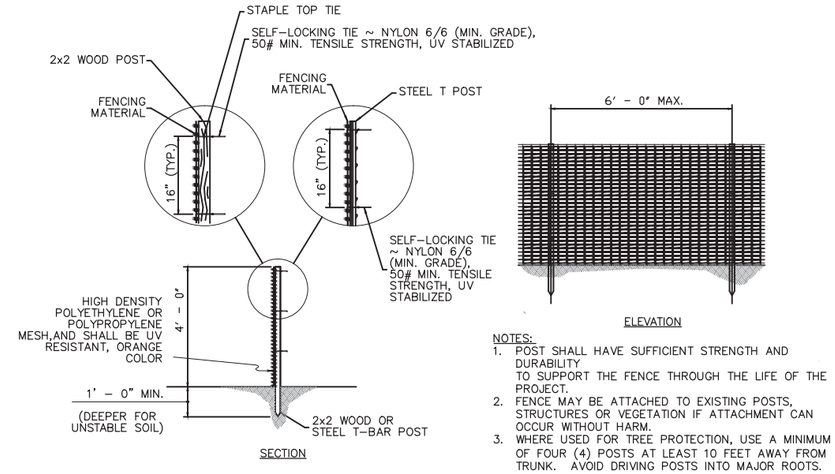


C LIVESTAKE INSTALLATION DETAIL

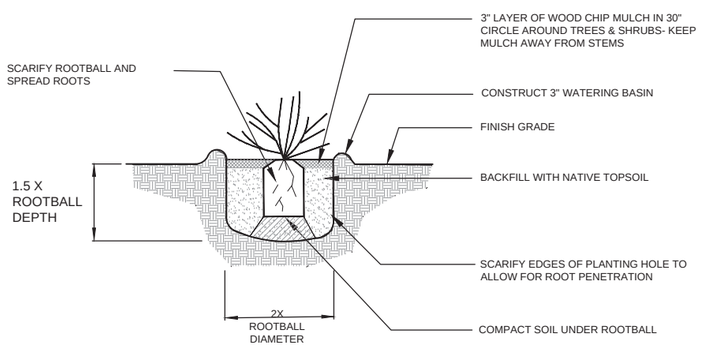
NOT TO SCALE



NOTES:
1. POST SHALL HAVE SUFFICIENT STRENGTH AND DURABILITY TO SUPPORT THE FENCE THROUGH THE LIFE OF THE PROJECT.
2. FENCE MAY BE ATTACHED TO EXISTING POSTS, STRUCTURES OR VEGETATION IF ATTACHMENT CAN OCCUR WITHOUT HARM.
3. WHERE USED FOR TREE PROTECTION, USE A MINIMUM OF FOUR (4) POSTS AT LEAST 10 FEET AWAY FROM TRUNK. AVOID DRIVING POSTS INTO MAJOR ROOTS.

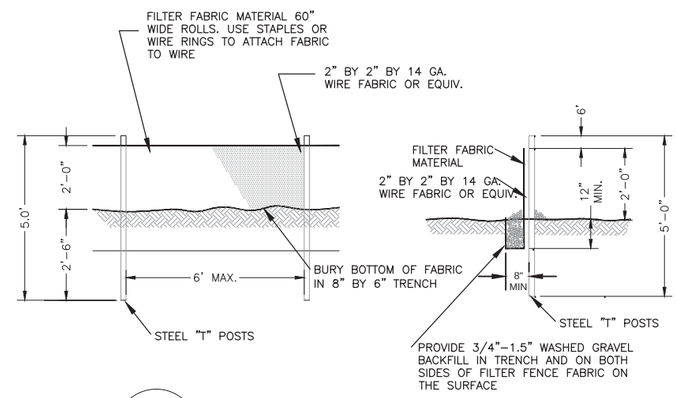
D HIGH VISIBILITY FENCE DETAIL

(NOTE 1)
NOT TO SCALE



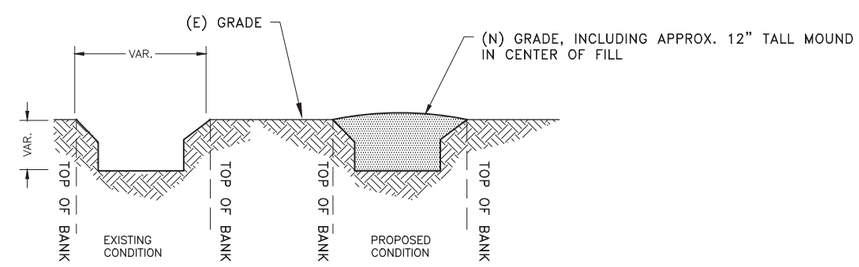
E SHRUB PLANTING DETAIL

NOT TO SCALE



F SILT FENCE DETAIL

(NOTE 1)
NOT TO SCALE



G DITCH FILL DETAIL

NOT TO SCALE

NOTES:
1. 1.THE SPECIFIC LOCATIONS FOR INSTALLATION OF THE HIGH VISIBILITY FENCE (DETAIL D) AND THE SILT FENCE (DETAIL E) ARE NOT SHOWN IN THE PLANS. THESE DETAILS ARE PROVIDED TO SUPPORT INSTALLATION OF TYPICAL TESC MEASURES AS OUTLINED IN THE SWPPP.

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SHEET TITLE: MISC. DETAILS

PROJECT: QWULOOLT ESTUARY TIDAL WETLAND RESTORATION

APPROVED

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DRAWN	S. WINTER
INCHARGE	B. BATTALIO License 42109
SCALE	AS SHOWN
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