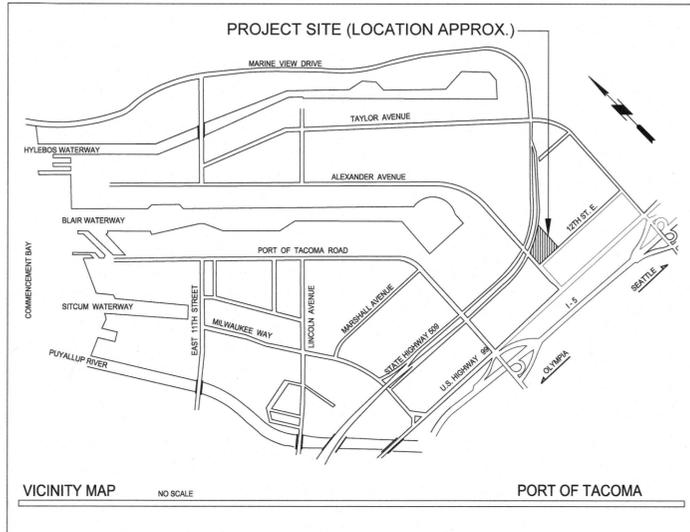


PORT OF TACOMA

LOWER WAPATO CREEK HABITAT PROJECT

MASTER ID #101449.01

CONTRACT #071447



PORT COMMISSIONERS:

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DRAWING LIST		
SHEET DESIGNATION	SHEET #	SHEET TITLE
GENERAL		
G1.0	1	COVER SHEET
G2.0	2	GENERAL NOTES
G3.0	3	EXISTING SITE PLAN
G4.0	4	PHOTOS 1
G4.1	5	PHOTOS 2
G5.0	6	PROPOSED OVERALL SITE PLAN
G5.1	7	STOCKPILE SITE CROSS SECTIONS
G6.0	8	TESC AND DEMOLITION PLAN 1
G6.1	9	TESC AND DEMOLITION PLAN 2
G6.2	10	TESC AND DEMOLITION NOTES AND DETAILS
G7.0	11	SITE ACCESS AND FLOW DIVERSION PLAN
CIVIL		
C1.0	12	OVERALL GRADING PLAN
C1.1	13	GRADING PLAN 1
C1.2	14	GRADING PLAN 2
C1.3	15	GRADING PLAN 3
C2.0	16	GRADING SECTIONS 1
C2.1	17	GRADING SECTIONS 2
C3.0	18	STREAM CROSS SECTIONS 1
C3.1	19	STREAM CROSS SECTIONS 2 - BRIDGE CROSSING
C4.0	20	STREAM PROFILE 1
C4.1	21	STREAM PROFILE 2
C4.2	22	STREAM PROFILE 3
C4.3	23	STREAM PROFILE 4 - BRIDGE CROSSING
C5.0	24	LARGE WOODY MATERIAL DETAILS 1
C5.1	25	LARGE WOODY MATERIAL DETAILS 2
C6.0	26	CIVIL / ROADWAY PLAN 1
C6.1	27	CIVIL / ROADWAY PLAN 2
C6.2	28	CIVIL / ROADWAY PLAN 3
C6.3	29	FENCE PLAN AND DETAILS
C7.0	30	ROADWAY GRADING 1
C7.1	31	ACCESS GRADING
C7.2	32	ROADWAY DETAILS 1
C7.3	33	ROADWAY DETAILS 2

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DRAWING LIST		
SHEET DESIGNATION	SHEET #	SHEET TITLE
STRUCTURAL		
S1.1	34	BRIDGE GENERAL NOTES
S1.2	35	BRIDGE LAYOUT
S2.1	36	FOUNDATION PLAN
S2.2	37	TYPICAL PILE DETAILS
S2.3	38	ABUTMENT DETAILS
S2.4	39	WINGWALL DETAILS
S3.1	40	TYPICAL SECTION
S3.2	41	FRAMING PLAN AND CAMBER DIAPHRAGM
S3.3	42	GIRDER DETAILS 1 OF 2
S3.4	43	GIRDER DETAILS 2 OF 2
S4.1	44	APPROACH SLAB DETAILS 1 OF 3
S4.2	45	APPROACH SLAB DETAILS 2 OF 3
S4.3	46	APPROACH SLAB DETAILS 3 OF 3
S4.4	47	TRAFFIC BARRIER DETAILS 1 OF 3
S4.5	48	TRAFFIC BARRIER DETAILS 2 OF 3
S4.6	49	TRAFFIC BARRIER DETAILS 3 OF 3
S4.7	50	FENCE DETAILS
S5.1	51	BAR BENDING DIAGRAM
LANDSCAPING		
L1.0	52	SOILS PLAN
L2.0	53	OVERALL LANDSCAPE PLAN
L2.1	54	LANDSCAPE PLAN 1
L2.2	55	LANDSCAPE PLAN 2
L2.3	56	LANDSCAPE PLAN 3
L2.4	57	LANDSCAPE PLAN 4
DISPOSAL		
D1.0	58	ARSENIC CLEANUP AREAS
D2.0	59	ARSENIC CLEANUP AND DISPOSAL PLAN

DRAWING LIST		
SHEET DESIGNATION	SHEET #	SHEET TITLE
TRANSMISSION DRAWINGS		
DH851	60	BILL OF MATERIAL (SHEET 1)
DH852	61	BILL OF MATERIAL (SHEET 2)
DH853	62	TEMPORARY PLAN & PROFILE
DH854	63	FUTURE PLAN & PROFILE
DH855	64	REMOVAL STAKING TABLE
DH856	65	INSTALLATION STAKING TABLE
DH857-1	66	115KV VERTICAL SELF-SUPPORTING DEAD-END (STRUCTURE 1) STEEL POLE FRAMING - SHEET 1
DH857-2	67	115KV VERTICAL SELF-SUPPORTING DEAD-END (STRUCTURE 1) STEEL POLE FRAMING - SHEET 2
DH857-3	68	115KV VERTICAL SELF-SUPPORTING DEAD-END (STRUCTURE 1) STEEL POLE FRAMING - SHEET 3
DH858-1	69	115KV VERTICAL SELF-SUPPORTING DEAD-END (STRUCTURE 2) STEEL POLE FRAMING - SHEET 1
DH858-2	70	115KV VERTICAL SELF-SUPPORTING DEAD-END (STRUCTURE 2) STEEL POLE FRAMING - SHEET 2
DH858-3	71	115KV VERTICAL SELF-SUPPORTING DEAD-END (STRUCTURE 2) STEEL POLE FRAMING - SHEET 3
DH859-1	72	115KV VERTICAL SELF-SUPPORTING DEAD-END (STRUCTURE 3) STEEL POLE FRAMING - SHEET 1
DH859-2	73	115KV VERTICAL SELF-SUPPORTING DEAD-END (STRUCTURE 3) STEEL POLE FRAMING - SHEET 2
DH859-3	74	115KV VERTICAL SELF-SUPPORTING DEAD-END (STRUCTURE 3) STEEL POLE FRAMING - SHEET 3
DH861	75	STEEL POLE PIER FOUNDATION DETAILS
DH862	76	PUSH GUY DETAIL
DH864	77	STRINGING CHARTS FOR TRANSMISSION CONDUCTOR
DH865	78	STRINGING CHARTS FOR DISTRIBUTION CONDUCTOR
DH866	79	STRINGING CHARTS FOR COMMUNICATION FIBER
DH867	80	ALEXANDER AVE CROSSING DETAIL
DH868	81	HIGHWAY 509 CROSSING DETAIL
DH869	82	STAGGERED WOOD TANGENT POLE



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LOWER WAPATO CREEK
 HABITAT PROJECT
 COVER SHEET

6656
G1.0
 1 OF 82

CONT/CONS: 071447
 M. ID: 101449.01
 PHASE: BID SET

TOWNSHIP: 20N
 RANGE: 3E
 SECTION: 1
 DAT-HRZ: WA83-SF
 VERT: MLW (PORT OF TACOMA TIDAL)
 PARCEL: 14
 DRAWING SCALE: AS NOTED

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BINDING EDGE

PORT OF TACOMA FILE: C:\pwworking\hmm\ports_harbors\more6830\dms48094\Wapato Creek Habitat - Cover

GENERAL NOTES

- ALL WORK SHALL CONFORM TO THESE PLANS AND SPECIFICATIONS. ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH THE PROJECT PERMITS AND ALL FEDERAL, STATE, AND LOCAL REQUIREMENTS PERTAINING TO DEMOLITION AND DISPOSAL.
- CONTRACTOR SHALL PROVIDE THE ENGINEER WITH A DETAILED WORK PLAN, PRIOR TO COMMENCING WORK. SEE SPECIFICATIONS.
- THE CONTRACT DOCUMENTS AND SPECIFICATIONS REPRESENT THE SCOPE OF WORK, UNLESS OTHERWISE SHOWN THEY DO NOT INDICATE THE METHOD OF WORK. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES.
- THE CONTRACTOR SHALL KEEP ALL STREETS, AND VEHICULAR TRAFFIC AREAS CLEAN.
- CONTRACTOR IS RESPONSIBLE FOR ANY TRAFFIC CONTROLS REQUIRED DURING THE DURATION OF THE PROJECT, SEE SPECIFICATIONS.
- THE CONTRACTOR SHALL INSTALL AND MAINTAIN PERIMETER FENCING AS REQUIRED TO MAINTAIN SECURITY OF SITES.
- CONTRACTOR SHALL PROTECT-IN-PLACE ALL STRUCTURES, UTILITIES AND OBJECTS NOT CALLED OUT AS BEING DEMOLISHED ON THE PLANS. ANY DAMAGE TO ITEMS NOT BEING DEMOLISHED SHALL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE.
- THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO STRICTLY CONTAIN THE WORK WITHIN THE LIMITS SHOWN ON THE PLANS, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. ANY DAMAGE TO UTILITIES, OTHER FACILITIES, OR EQUIPMENT DUE TO THE CONTRACTOR'S NEGLIGENCE SHALL BE PROMPTLY REPAIRED AT HIS EXPENSE. THIS INCLUDES ITEMS OUTSIDE THE WORK AREA THAT ARE DAMAGED BY CONSTRUCTION ACTIVITIES DURING EXECUTION OF THIS CONTRACT.
- ALL LOCATIONS OF EXISTING UNDERGROUND UTILITIES SHOWN HEREIN HAVE BEEN ESTABLISHED BY FIELD OBSERVATIONS OR OBTAINED FROM REVIEW OF AVAILABLE RECORDS AND SHOULD, THEREFORE, BE CONSIDERED APPROXIMATE ONLY AND NOT NECESSARILY COMPLETE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INDEPENDENTLY VERIFY THE ACCURACY OF ALL UTILITY LOCATIONS SHOWN AND TO FURTHER DISCOVER AND AVOID OTHER UTILITIES NOT SHOWN HEREIN WHICH MAY BE AFFECTED BY THE IMPLEMENTATIONS OF THIS PLAN. THE CONTRACTOR SHALL BRING ANY CONFLICTS BETWEEN EXISTING UTILITIES AND NEW WORK TO THE ENGINEERS ATTENTION. UTILITY LOCATE PHONE NUMBER 1-800-424-5555.
- THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES PRIOR TO COMMENCING WORK IN ACCORDANCE WITH STATE AND LOCAL REQUIREMENTS.
- PRIOR TO COMMENCING DEMOLITION ACTIVITIES CONTRACTOR SHALL IMPLEMENT TEMPORARY EROSION AND SEDIMENTATION CONTROLS. NO DEMOLITION MATERIALS OR DEBRIS SHALL BE ALLOWED TO ENTER THE WATERWAY, SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

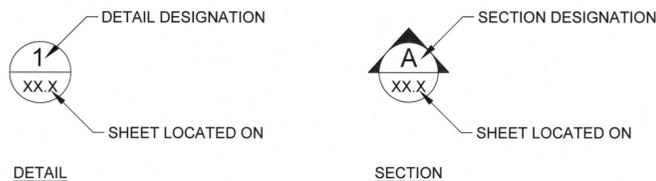
PROJECT DATUM AND SURVEY INFORMATION

- DATUM REFERENCE DATA TAKEN FROM SURVEY DATA COLLECTED BY SITTS AND HILL. SURVEY DATA CAN ONLY BE CONSIDERED REPRESENTATIVE OF THE CONDITIONS AT THE TIME OF THE SURVEY.
- HORIZONTAL DATUM: NAD83/2007 WASHINGTON STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, US SURVEY FEET.
- VERTICAL DATUM: MEAN LOWER LOW WATER PER PORT OF TACOMA PUBLISHED VERTICAL DATA.
- PORT OF TACOMA BENCHMARK: 2-1/2 INCH BRASS DISK ON THE SOUTHEAST CORNER OF MILWAUKEE WAY AND N FRONTAGE RD. BENCHMARK NO. 846 ELEVATION=15.26'
- ALL ELEVATIONS ARE REFERENCED TO MLLW (PORT OF TACOMA TIDAL DATUM).
- WATER LEVELS SHOWN ARE ONLY FOR REFERENCE AND MAY NOT REPRESENT CONDITIONS DURING CONSTRUCTION.

EXISTING MONUMENTS				
ID	NORTHING	EASTING	ELEVATION	DESCRIPTION
TBM A	705778.99	1178025.67	13.82	REBAR & CONTROL CAP
TBM B	705754.87	1178587.59	13.72	MAGNETIC NAIL
TBM C	705759.46	1177773.43	24.48	REBAR & CONTROL CAP
TBM D	703585.29	1176681.35	20.97	REBAR & CONTROL CAP

SEE DRAWING G-5 FOR BENCHMARK LOCATIONS

SHEET SYMBOLS



WATER LEVEL SUMMARY

- WATER LEVELS WITHIN THE PROJECT AREA LIMITS VARY BASED ON THE DISCHARGE FROM THE CREEK AND TIDAL WATER LEVELS. WATER LEVELS CAN BE HIGHLY VARIABLE DURING TIME PERIODS OF HIGHER CREEK DISCHARGE. APPROXIMATE TIDE ELEVATIONS (WITHOUT CREEK FLOW OR STORM INFLUENCE) ARE PROVIDED IN THE FOLLOWING TABLE.

APPROXIMATE TIDE ELEVATIONS (FT)		
	NOAA STATION 9446484 (FT, MLLW)	PORT OF TACOMA (FT, MLLW)
MAX TIDE	14.87	15.15
HAT	13.78	14.06
MHHW	11.78	12.06
MHW	10.9	11.18
MSL	6.84	7.12
MLW	2.84	3.12
MLLW (NOAA)	0	0.28
MLLW (POT)	-0.28	0

- NOAA STATION 9446484 TACOMA, WA. EPOCH: 1983-2001.
- TO CONVERT FROM NOAA STATION VALUES TO PORT OF TACOMA VALUES ADD 0.28 FT.

WAPATO CREEK ESTIMATED DISCHARGE

- WAPATO CREEK DISCHARGE VARIES DEPENDING ON THE TIME OF YEAR, PRECIPITATION, AND OTHER FACTORS. THE ESTIMATED 2-YR, 100-YR, AND 500-YR DISCHARGE FOR WAPATO CREEK ARE AS FOLLOWS:

RECURRENCE INTERVAL (YEAR)	DISCHARGE (CFS)
500	540
100	390
2	147

- THE ESTIMATED DISCHARGES ARE SCALED VALUES FROM AN ADJACENT PROXY CREEK AND ARE NOT ACTUAL MEASURED VALUES FROM WAPATO CREEK.

SUGGESTED CONSTRUCTION SEQUENCING

NOTE: THE CONTRACTOR MUST SUBMIT A SEQUENCING PLAN AS PART OF THE WORK PLAN. THE CONTRACTOR MAY SUBMIT AN ALTERNATIVE SEQUENCING PLAN THAN THE ONE LISTED BELOW.

- SITE PREPARATION AND TESC
 - ENSURE COPIES OF ALL PERMITS, CONDITIONS FROM LOCAL, STATE, AND FEDERAL AGENCIES AND THE PROJECT INADVERTENT DISCOVERY PLAN ARE PRESENT ON-SITE FOR THE DURATION OF THE WORK.
 - HOLD A PRE-CONSTRUCTION MEETING WITH THE PORT OF TACOMA, CITY OF TACOMA, CITY OF FIFE, AND OTHER AGENCIES IN ACCORDANCE WITH PERMIT REQUIREMENTS.
 - ESTABLISH CLEARING LIMITS, AND INSTALL SILT FENCE, SEDIMENT AND EROSION CONTROL SYSTEMS, AND TREE PROTECTION FENCING AS SHOWN ON THESE PLANS. REMOVE WEED VEGETATION FROM WITHIN TREE RETENTION ZONE.
 - INSTALL CONSTRUCTION ENTRANCE AND STAGING AREA.
 - LOCATE, RELOCATE, OR PROTECT EXISTING UTILITIES WITHIN THE PROJECT AREA.
 - CLEAR AND GRUB AREA DESIGNATED FOR EXCAVATION AND CONSTRUCTION AND WITHIN THE AREAS INDICATED ON THESE PLANS. DISPOSE OF OFFSITE AT DESIGNATED DISPOSAL AREA AS NOTED HEREIN.
- NEW CHANNEL CONSTRUCTION (IN PARALLEL WITH NEW STEEL MONOPOLE CONSTRUCTION AND BRIDGE CONSTRUCTION)
 - CONSTRUCT NEW WAPATO CREEK ALIGNMENT THROUGH THE HABITAT AREA, LEAVING BERM OF MATERIAL TO ISOLATE GRADING ACTIVITIES FROM THE EXISTING STREAM CHANNEL.
 - INSTALL LARGE WOODY MATERIAL AND STREAMBED MIXES.
 - INSTALL SOIL AMENDMENT, SEED, AND JUTE MESH.
 - LEAVE BERMS AT UPSTREAM AND DOWNSTREAM ENDS OF THE NEW CHANNEL TO PREVENT WATER FROM FLOWING INTO THE GRADED SITE UNTIL READY TO REROUTE WAPATO CREEK INTO THE NEW CHANNEL.
 - DISPOSE OF EXCESS EXCAVATED SPOILS AT THE DESIGNATED DISPOSAL/STOCKPILE SITES.
 - DEWATER AND PUMP ANY TURBID WATER COLLECTING IN THE DEPRESSION DURING CONSTRUCTION TO A TEMPORARY INFILTRATION AREAS AS SHOWN. THIS WATER WILL NOT BE DISCHARGED INTO WAPATO CREEK.
 - INSTALL SEEDING AND JUTE MESH AS GRADING IS COMPLETED PER THE CONTRACT DOCUMENTS.
- NEW POWER POLE CONSTRUCTION (IN PARALLEL WITH NEW CHANNEL CONSTRUCTION AND BRIDGE CONSTRUCTION)
 - ISOLATE POLE REPLACEMENT WORK AREA IN EXISTING WAPATO CREEK ADJACENT TO NEW STEEL MONOPOLE ("STRUCTURE 2" PER POLE PLANS) WITH SUPERSACK COFFER DAMS UPSTREAM AND DOWNSTREAM AND INSTALL TEMPORARY FLOW DIVERSION SYSTEM SUFFICIENT TO CARRY FLOW AROUND THE WORK AREA TO A POINT DOWNSTREAM.
 - PRIOR TO OR DURING DEWATERING OF THE WORK AREA, EXCLUDE AND REMOVE FISH PER WDFW HYDRAULIC PROJECT APPROVAL INSTRUCTIONS USING QUALIFIED PROFESSIONALS.
 - FILL IN LOCALIZED AREA OF WAPATO CREEK PER THE CONTRACT DOCUMENTS.
 - DRILL AND INSTALL DRILLED SHAFT FOUNDATIONS PER PLANS AND GEOTECHNICAL ENGINEER'S RECOMMENDATIONS.
 - INSTALL STEEL MONOPOLES AND THEIR APPURTENANCES PER THE CONTRACT DOCUMENTS.
 - TRANSFER POWER LINES AND OTHER UTILITY LINES PER THE CONTRACT DOCUMENTS. SHOOFLY TO BE DONE BY OTHERS.
 - REMOVE EXISTING POWER POLES PER THE CONTRACT DOCUMENTS. INCLUDING STRUCTURES 1 AND 3, PUSH POLE, AND REPLACEMENT WOOD POLE ON PROGRESS RAIL SITE.

SUGGESTED CONSTRUCTION SEQUENCING (CONTINUED)

- BRIDGE CONSTRUCTION (IN PARALLEL WITH NEW MONOPOLE CONSTRUCTION AND NEW CHANNEL CONSTRUCTION)
 - ISOLATE CULVERT REPLACEMENT WORK AREA WITH TEMPORARY FLOW DIVERSION SYSTEM SUFFICIENT TO CARRY FLOW AROUND THE WORK AREA TO A POINT DOWNSTREAM.
 - PRIOR TO OR DURING DEWATERING OF THE WORK AREA, EXCLUDE AND REMOVE FISH PER WDFW HYDRAULIC PROJECT APPROVAL INSTRUCTIONS USING QUALIFIED PROFESSIONALS.
 - TEMPORARILY RELOCATE AND SUPPORT UTILITIES TO BE SUPPORTED ON BRIDGE.
 - EXCAVATE ROADWAY AND ROADWAY EMBANKMENT.
 - REMOVE AND DISPOSE OF EXISTING CULVERTS.
 - INSTALL STEEL PILE FOUNDATIONS PER CONTRACT DOCUMENTS AND GEOTECHNICAL ENGINEER'S RECOMMENDATIONS.
 - FORM, INSTALL REINFORCING STEEL, AND POUR CONCRETE FOR ABUTMENT PILE CAPS, AND WINGWALLS.
 - INSTALL STREAMBED MATERIALS UNDER BRIDGE TO THE EXTENT POSSIBLE GIVEN THE FLOW DIVERSION SYSTEM.
 - BACKFILL ROADWAY SUBGRADE, ABUTMENTS, AND WINGWALLS.
 - SET PRECAST CONCRETE SLAB ELEMENTS FOR BRIDGE.
 - FORM, INSTALL REINFORCING STEEL, AND POUR CONCRETE FOR BRIDGE DECK AND END DIAPHRAGMS.
 - FORM, INSTALL REINFORCING STEEL, AND POUR CONCRETE FOR APPROACH SLABS.
 - CONSTRUCT ROADWAY SUBGRADE AND FINISHED ROADWAY.
 - FORM, INSTALL REINFORCING STEEL, AND POUR CONCRETE FOR BRIDGE PARAPETS.
 - INSTALL CHAIN LINK FENCE ON CONCRETE PARAPET.
 - REROUTE, INSTALL, AND CONNECT UTILITIES SUPPORTED ON BRIDGE.
 - COMPLETE FINAL GRADING AND INSTALLATION OF STREAMBED MATERIAL.
 - REMOVE TEMPORARY FLOW BYPASS SYSTEM WHEN APPLICABLE TO THE ENTIRE PROJECT FOLLOWING APPROVED FLOW DIVERSION WORK PLAN AND REQUIREMENT OF THE PERMITS.
- TRIMMING AND CLEANUP
 - INSTALL SEEDING AND JUTE MESH IN REMAINING LOCATIONS.
 - REMOVE TESC SYSTEM WHEN APPLICABLE.

ABBREVIATIONS

AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS	GIR	GIRDER	REINF	REINFORCEMENT
ABUT	ABUTMENT	HDPE	HIGH DENSITY POLYETHYLENE	REQ/REQ'D	REQUIRED
ALUM	ALUMINUM	HMA	HOT-MIX ASPHALT	REV	REVISION
APPROX	APPROXIMATE	HORIZ	HORIZONTAL	ROW	RIGHT OF WAY
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	HW	HIGH WATER	RT	RIGHT
B/	BOTTOM	ID	INNER DIAMETER	SD	STORMDRAIN
BM	BENCHMARK	IE	INVERT ELEVATION	SDWK	SIDEWALK
BMP	BEST MANAGEMENT PRACTICE	IN	INCH	SE	SOUTHWEST
B.O.	BOTTOM OF	KSI	KIPS PER SQUARE INCH	SHLDR	SHOULDER
BRG	BEARING	LB/LBS	POUNDS	SQ	SQUARE
BTM	BOTTOM	LOC	LIMIT OF CONSTRUCTION	SIM	SIMILAR
CF	CUBIC FEET	LT	LEFT	SS	STAINLESS STEEL OR SEWER SYSTEM OR SANITARY SEWER
CF	CUBIC FEET PER SECOND	MAX	MAXIMUM	STA	STATION
CIP	CAST-IN-PLACE	MHW	MEAN HIGH WATER	STD	STANDARD
CJ	CONSTRUCTION JOINT	MHHW	MEAN HIGHER HIGH WATER	SW	SOUTHWEST
CJP	COMPLETE JOINT PENETRATION	MIN	MINIMUM	SWDM	SURFACE WATER DESIGN MANUAL
CL	CENTERLINE	MSL	MEAN SEA LEVEL	SWPPS	STORMWATER POLLUTION PREVENTION PLANS
CLR	CLEAR	MLW	MEAN LOW WATER	T	THICK
COL	COLUMN	MLLW	MEAN LOWER LOW WATER	T/	TOP
CONC	CONCRETE	N	NORTH/NORTHING	TEMP	TEMPORARY
CONT	CONTINUOUS	NAD83	NORTH AMERICAN DATUM OF 1983	TESC	TEMPORARY EROSION AND SEDIMENT CONTROL
CP	CONTROL POINT	NE	NORTHEAST	TO	TOP OF
CPEP	CORRUGATED POLYETHYLENE PIPE	NGAS	NATURAL GAS	TYP	TYPICAL
CTR	CENTER	NO	NUMBER	UNO	UNLESS NOTED OTHERWISE
CU	CUBIC	NTS	NOT TO SCALE	VC	VERTICAL CURVE
Ø/DIA	DIAMETER	NW	NORTHWEST	VERT	VERTICAL
DWG	DRAWING	OC	ON CENTER	W	WATER LINE
E	EAST/EASTING	OD	OUTER DIAMETER	WP	WORKING POINT
EA	EACH	OHV	ORDINARY HIGH WATER	W/	WITH
EF	EACH FACE	OHVWM	ORDINARY HIGH WATER MARK	WS	WATER SURFACE
EL / ELEV	ELEVATION	OPP	OPPOSITE	WSDOT	WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
EOP	EDGE OF PAVEMENT	PAV'T	PAVEMENT	YR	YEAR
EQ	EQUAL	PC	PRECAST	@	AT
EX	EXISTING	PG	PERFORMANCE GRADING	'	MIN OR FEET
EXP	EXPANSION	PSI	POUNDS PER SQUARE INCH	°	SECONDS OR INCHES
FT	FEET	PSF	POUNDS PER SQUARE FOOT	%	PERCENT
GA	GAUGE	PVC	POINT OF VERTICAL CURVATURE		
GALV	GALVANIZED	PVI	POINT OF VERTICAL INTERSECTION		
		PVT	POINT OF VERTICAL TANGENCY		
		RECT	RECTANGLE		
		REF	FOR REFERENCE ONLY		

UTILITY CONTACT INFORMATION

TACOMA PUBLIC UTILITIES - POWER JOE REMPE	253-307-2749
PUGET SOUND ENERGY DANNY HERBST	425-736-7318
LUMEN (CENTURYLINK) ROB BLAIR	253-831-2059
COMCAST BRIAN HOBACK	253-254-1366
RAINIER CONNECT BRIAN MUNSON	253-312-2819
ZAYO JASON TESDAL	253-221-7585
FIFE WATER ART GREGG	253-922-9315
WSDOT PUYALLUP DISPOSAL SITE CRAIG DAVIES (WITH OLSEN BROTHERS)	253-792-1167
TACOMA PUBLIC UTILITIES - COMMUNICATION KIM QUINONES - ENGINEERING SUPERVISOR	253-502-8131
KEN MATHES - SECTION SUPERVISOR	253-502-8851



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DATE: May 27, 2021

PRINTED BY: MORG8830
PORT ADDRESS: 1 SITCOM PLAZA
TACOMA, WA 98421

APPROVED: *John Mott Macdonald*
DIRECTOR ENGR. DATE: 5/28/21

SECTION: 1
RANGE: 3E
VERT: MLLW (PORT OF TACOMA TIDAL)

GENERAL NOTES
DRAWING SCALE: AS NOTED

TOWNSHIP: 20N
DATE-HRZ: WA83-SF
PARCEL: 14

6656
G2.0
OF 82
CONTR/CONS: 071447
M. ID: 101449.01
PHASE: BID SET

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LEGEND

- EXISTING TREES
- TREES TO BE REMOVED
- WELLS TO BE REMOVED
- PHOTO LOCATION
- EXISTING PAVING
- FLOW DIRECTION
- 100-YR FLOOD ZONE AND REGULATORY FLOODWAY LIMIT
- EXISTING CONTOUR
- EXISTING RIGHT-OF-WAY
- ORDINARY HIGH WATER (OHW)
- OVERHEAD POWER LINE
- BURIED POWER LINE
- BURIED TELEPHONE LINE
- APPROX. BURIED CABLE LINE
- BURIED NATURAL GAS LINE
- STORM LINE
- SANITARY SEWER LINE
- ORDINARY HIGH WATER (OHW)
- TACOMA COMMUNICATION LINE
- WATER LINE
- FENCE LINE
- LIMIT OF CONSTRUCTION (LOC)

NOTES

- HAWK'S NEST TO BE LOCATED PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR MUST FIELD LOCATE THE TREE WITH THE HAWK'S NEST AND PROTECT THE TREE THROUGH THE DURATION OF CONSTRUCTION WITH TREE PROTECTION FENCING.
- EXISTING TREES TO BE REMOVED MAY BE CHIPPED, STOCKPILED, AND INSTALLED AS THE WOOD CHIP AMENDMENT AS PART OF THE SOIL AMENDMENT AFTER GRADING IS COMPLETE ABOVE ELEVATION 13 FT ACROSS THE SITE. ALL NATURAL HABITAT FEATURES LARGER THAN 12 INCHES MUST BE RETAINED ON SITE PER THE PERMIT DOCUMENTS IN APPENDIX A. NATURAL HABITAT FEATURES INCLUDE TREES, STUMPS, LOGS, AND LARGE ROCKS.
- DECOMMISSIONING AND DEMOLITION OF EXISTING MONITORING WELLS TO BE COMPLETED IN ACCORDANCE WITH WASHINGTON ADMINISTRATIVE CODE (WAC) 173-160-460.2.A.
- TACOMA POWER WILL CONSTRUCT SHOO-FLY AND RELOCATE DISTRIBUTION SERVICE. COMCAST WILL RELOCATE AERIAL LINES TO SHOO-FLY AND ZAYO WILL RELOCATE EXISTING BURIED LINES TO SHOO-FLY. ALL SHOO-FLY CONSTRUCTION AND UTILITY RELOCATION WILL OCCUR PRIOR TO BRIDGE CONSTRUCTION. FOLLOWING CONSTRUCTION THE UTILITIES WILL RELOCATE THEIR RESPECTIVE SERVICE BACK TO 12TH STREET.



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M	M	MOTT	MACDONALD	BY:
APPROVED: J. Dawson		CHECKED BY: A. Mitchell	DATE: 5/28/21	REVISION: 5/28/21
DIRECTOR ENG. DATE: MOR69830 May 27, 2021		PROJ. ENGR DATE: T. SITCOM PLAZA	DATE: 5/28/21	MARK:
PRINTED BY: MOR69830 May 27, 2021		PORT ADDRESS: T. SITCOM PLAZA	DATE: 5/28/21	MARK:
TACOMA, WA 98421		DRAWING SCALE: AS NOTED		
LOWER WAPATO CREEK HABITAT PROJECT		TOWNSHIP: 20N	SECTION: 1	DATE: 5/28/21
EXISTING SITE PLAN		RANGE: 3E	VERT: MLLW (PORT OF TACOMA TIDAL)	DATE: 5/28/21
6656		DAT-HRZ: WA83-SF	PARCEL: 14	DATE: 5/28/21
G3.0		DRAWING IS THE PROPERTY OF THE PORT OF TACOMA AND SHALL NOT BE USED ON OTHER WORK, DISCLOSED, COPIED, IN WHOLE OR IN PART, WITHOUT WRITTEN PERMISSION		
3 OF 82		THIS DRAWING IS THE PROPERTY OF THE PORT OF TACOMA AND SHALL NOT BE USED ON OTHER WORK, DISCLOSED, COPIED, IN WHOLE OR IN PART, WITHOUT WRITTEN PERMISSION		
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PHOTO 1
PANORAMIC VIEW FROM THE NORTHEAST CORNER OF THE PROJECT SITE - LOOKING WEST (270° PHOTO)



PHOTO 2
PANORAMIC VIEW - LOOKING NORTH

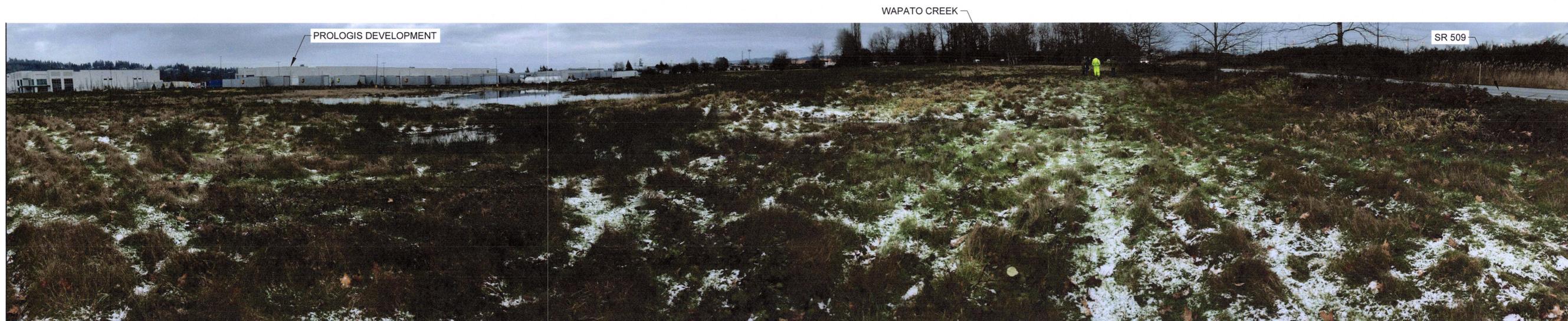


PHOTO 3
PANORAMIC VIEW - LOOKING SOUTH



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LOWER WAPATO CREEK
HABITAT PROJECT
PHOTOS 1

TOWNSHIP: 20N RANGE: 3E SECTION: 1
VERT: MLLW (PORT OF TACOMA TIDAL)
DAT-HRZ: WA83-SF
PARCEL: 14
DRAWING SCALE: AS NOTED

6656
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4 OF 82

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PHOTO 4
WAPATO CREEK UPSTREAM OF 12TH STREET - LOOKING SOUTH



PHOTO 5
NORTH OF 12TH STREET - LOOKING EAST



PHOTO 6
NORTH OF 12TH STREET - LOOKING WEST



PHOTO 7
WAPATO CREEK - LOOKING SOUTHWEST



PHOTO 8
WAPATO CREEK - LOOKING NORTHWEST



PHOTO 9
PROPOSED ACCESS ROUTE TO DISPOSAL SITE - LOOKING EAST

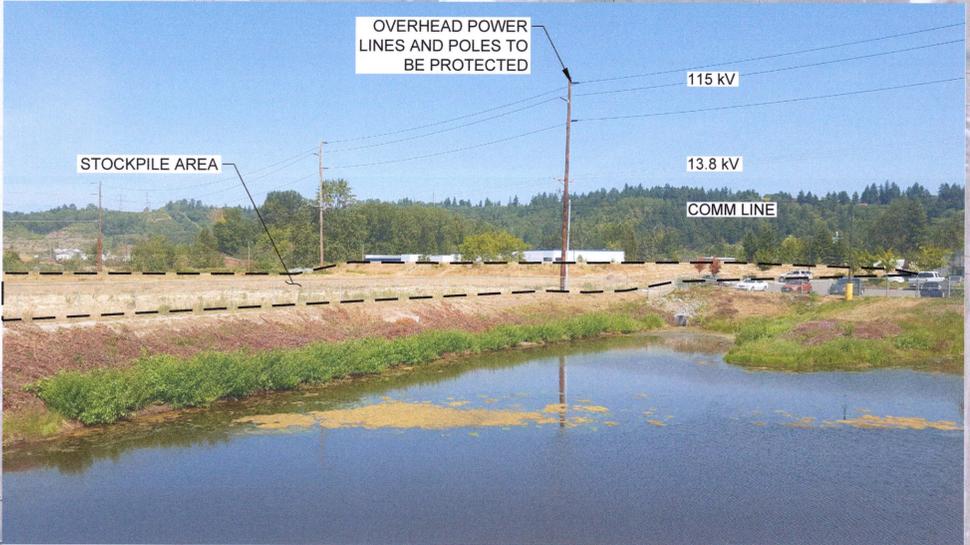
6656 G4.1 5 OF 82	TOWNSHIP: 20N		SECTION: 1	RANGE: 3E	
	M. ID: 101449.01		DATE-HRZ: WA83-SF		VERT: MLLW (PORT OF TACOMA TIDAL)
PHASE: BID SET		PARCEL: 14		DRAWING SCALE: AS NOTED	
APPROVED:			J. Dawson	5/28/21	DATE
DIRECTOR ENG. DATE: 5/28/21			A. Mitchell	5/28/21	DATE
PRINTED BY: MOR69830			May 27, 2021	DATE	
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LOWER WAPATO CREEK HABITAT PROJECT PHOTOS 2					
Port of Tacoma P.O. BOX 1837 TACOMA, WA 98401 (253)385-8641					
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MOTT MACDONALD		MARK:	REVISION:	BY:	DATE:

LEGEND

- TEMPORARY BENCHMARK (TBM)
- STAGING AREA
- CONSTRUCTION ENTRANCE
- EXISTING DRAINAGE
- OVERHEAD POWER ENVELOPE
- OVERHEAD POWER LINE
- ACCESS ROUTE
- RIGHT-OF-WAY
- SILT FENCE
- LIMIT OF CONSTRUCTION (LOC)

NOTES

- FOR DEWATERING OPERATIONS, THE CONTRACTOR IS REQUIRED TO INSTALL BMPS, AS NECESSARY, IN ACCORDANCE WITH THE APPLICABLE PERMITS. THE USE OF BAKER TANKS AND / OR OTHER EQUIPMENT MAY BE REQUIRED TO MEET WATER QUALITY REQUIREMENTS.
- THE CONTRACTOR MAY PUMP WATER FROM THE DEWATERING OPERATIONS TO THE VEGETATED SWALE FOR INFILTRATION.
- STOCKPILE MOUND WILL BE SEEDED WITH STANDARD WSDOT EROSION CONTROL SEED MIX.
- OVERHEAD POWER LINES INCLUDE 13.8 KV DISTRIBUTION LINE, 115 KV TRANSMISSION LINE, TPWR HFC FIBER LOOP.
- STOCKPILE MOUND CONTROL POINTS ARE APPROXIMATE AND SHALL BE STAKED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER IN THE FIELD PRIOR TO PLACEMENT OF MATERIALS.



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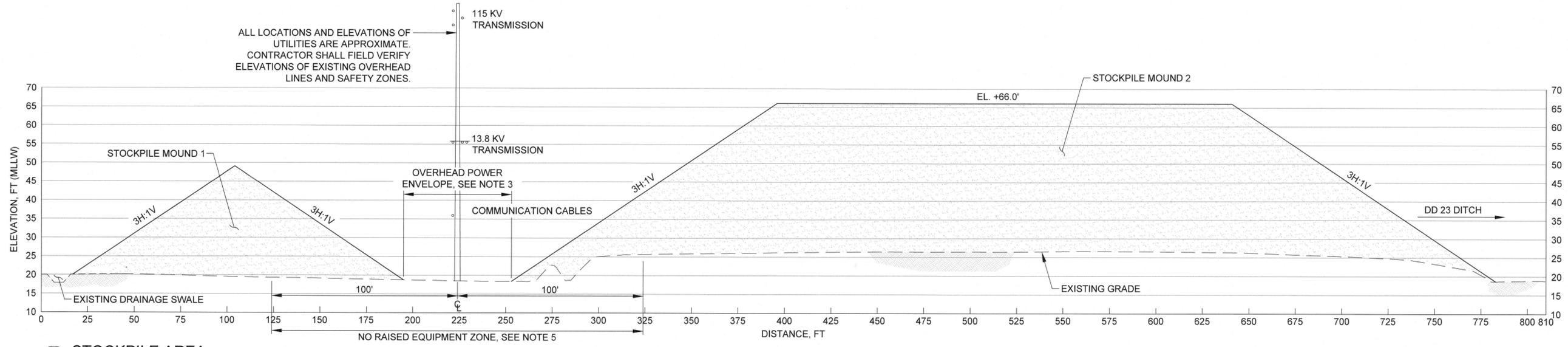


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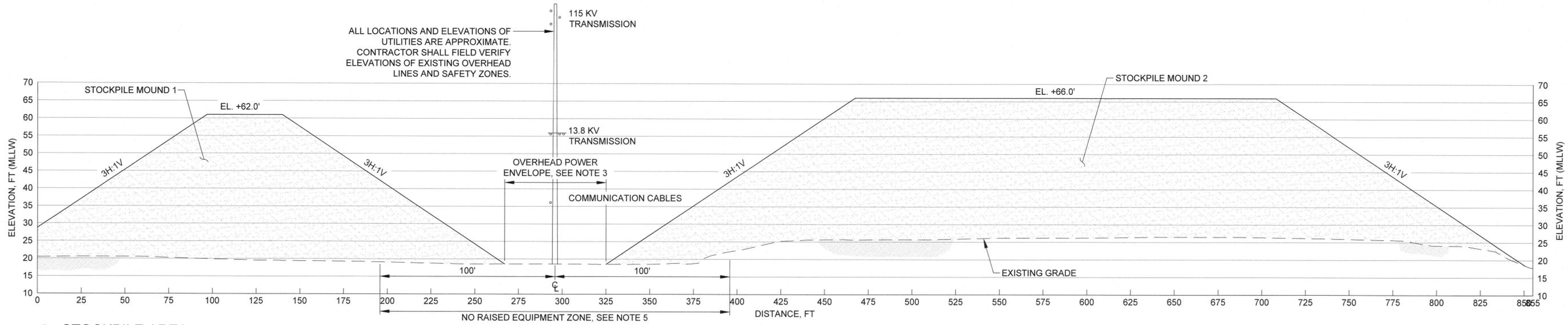
LOWER WAPATO CREEK HABITAT PROJECT
PROPOSED OVERALL SITE PLAN

TOWNSHIP: 20N RANGE: 3E SECTION: 1
 DAT-HRZ: WA83-SF VERT: MILLW (PORT OF TACOMA TIDAL)
 PARCEL: 14 DRAWING SCALE: AS NOTED

6656 **G5.0** 6 OF 82
 CONT/CONS: 071447
 M. ID: 101449.01
 PHASE: BID SET



A STOCKPILE AREA
 HORIZONTAL SCALE: 1" = 30', VERTICAL SCALE: 1" = 15'



B STOCKPILE AREA
 HORIZONTAL SCALE: 1" = 30', VERTICAL SCALE: 1" = 15'

NOTES

- EARTH EMBANKMENT SHALL BE CONSTRUCTED TO MEET THE REQUIREMENTS PROVIDED IN THE SPECIFICATIONS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES DURING CONSTRUCTION.
- OVERHEAD POWER LINES INCLUDE 13.8 KV DISTRIBUTION LINE, 115 KV TRANSMISSION LINE, TPWR HRC FIBER LOOP.
- IF HRC FIBER LOOP IS DAMAGED, CONTACT LUMEN AND TACOMA COMMUNICATION, SEE G2.0 FOR CONTRACT INFORMATION. IF POWER OR TRANSMISSION LINES ARE DAMAGED, CONTACT TPU, SEE G2.0 FOR CONTACT INFORMATION.
- LOWER TRUCK BEDS BEFORE ENTERING, LOWER EXCAVATOR BOOMS AND LOADER BUCKETS.
- STOCKPILE MOUND ELEVATIONS SHOWN ARE REPRESENTATIVE OF THE MAXIMUM CROSS SECTION AREA. ESTIMATED ELEVATIONS ARE REPRESENTED ON SHEET G5.0.



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LOWER WAPATO CREEK HABITAT PROJECT
 STOCKPILE SITE CROSS SECTIONS

TOWNSHIP: 20N RANGE: 3E SECTION: 1
 DAT-HRZ: WA83-SF VERT: MLLW (PORT OF TACOMA TIDAL)
 PARCEL: 14 DRAWING SCALE: AS NOTED

6656
G5.1
 7 OF 82
 CONT/CONS: 071447
 M. ID: 101449.01
 PHASE: BID SET

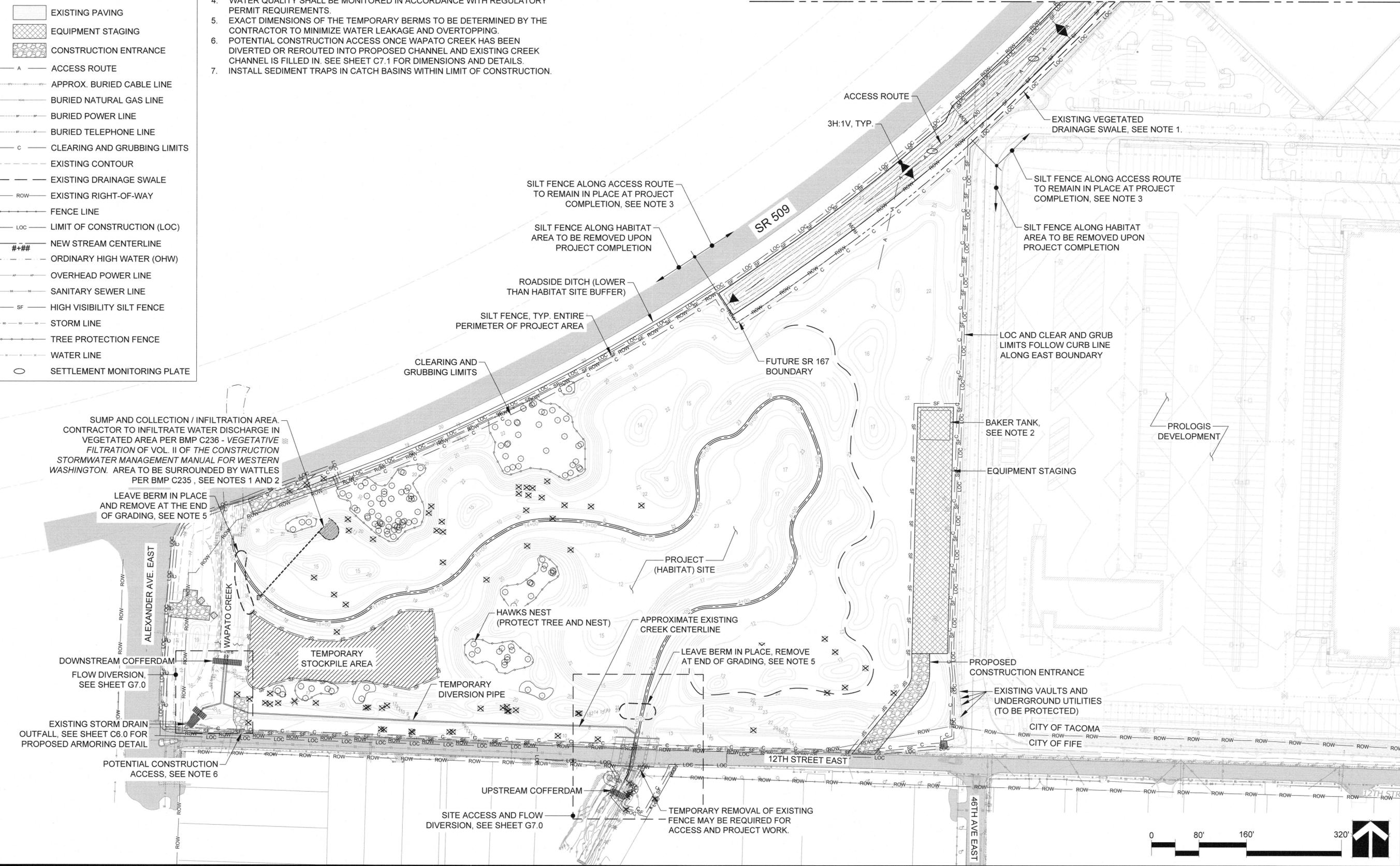
LEGEND

- *o EXISTING TREES
- X TREES TO BE REMOVED
- SUMP AND COLLECTION / INFILTRATION AREA
- EXISTING PAVING
- EQUIPMENT STAGING
- CONSTRUCTION ENTRANCE
- A ACCESS ROUTE
- APPROX. BURIED CABLE LINE
- BURIED NATURAL GAS LINE
- BURIED POWER LINE
- BURIED TELEPHONE LINE
- C CLEARING AND GRUBBING LIMITS
- EXISTING CONTOUR
- EXISTING DRAINAGE SWALE
- ROW EXISTING RIGHT-OF-WAY
- FENCE LINE
- LOC LIMIT OF CONSTRUCTION (LOC)
- ### NEW STREAM CENTERLINE
- ORDINARY HIGH WATER (OHW)
- OVERHEAD POWER LINE
- SANITARY SEWER LINE
- SF HIGH VISIBILITY SILT FENCE
- STORM LINE
- TREE PROTECTION FENCE
- WATER LINE
- o SETTLEMENT MONITORING PLATE

NOTES

1. ADDITIONAL INFILTRATION MAY BE CONDUCTED IN VEGETATED SWALE ALONG HAUL ROUTE.
2. THE CONTRACTOR MAY ALSO PUMP TO BAKER TANKS FOR SETTLEMENT.
3. SILT FENCE ALONG ACCESS ROUTE AND AROUND STOCKPILE AREA TO REMAIN IN PLACE AT PROJECT COMPLETION. ANY DAMAGED SECTIONS SHALL BE REPAIRED PRIOR TO TURN OVER.
4. WATER QUALITY SHALL BE MONITORED IN ACCORDANCE WITH REGULATORY PERMIT REQUIREMENTS.
5. EXACT DIMENSIONS OF THE TEMPORARY BERMS TO BE DETERMINED BY THE CONTRACTOR TO MINIMIZE WATER LEAKAGE AND OVERTOPPING.
6. POTENTIAL CONSTRUCTION ACCESS ONCE WAPATO CREEK HAS BEEN DIVERTED OR REROUTED INTO PROPOSED CHANNEL AND EXISTING CREEK CHANNEL IS FILLED IN. SEE SHEET C7.1 FOR DIMENSIONS AND DETAILS.
7. INSTALL SEDIMENT TRAPS IN CATCH BASINS WITHIN LIMIT OF CONSTRUCTION.

MATCHLINE A (SEE SHEET 9)



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		<p>5/28/21</p>
<p>APPROVED: _____</p>	<p>5/28/21</p>	<p>DATE</p>
<p>DIRECTOR ENGR. DATE: MOR69830 May 27, 2021</p>	<p>5/28/21</p>	<p>DATE</p>
<p>PRINTED BY: MOR69830 May 27, 2021</p>	<p>1 SITCOM PLAZA</p>	<p>DATE</p>
<p>PORT ADDRESS: 1 SITCOM PLAZA</p>	<p>TACOMA, WA 98421</p>	<p>DATE</p>
<p>6656 LOWER WAPATO CREEK HABITAT PROJECT TESC AND DEMOLITION PLAN 1</p>		
<p>TOWNSHIP: 20N</p>	<p>RANGE: 3E</p>	<p>SECTION: 1</p>
<p>DAT-HRZ: WA83-SF</p>	<p>VERT: MLLW (PORT OF TACOMA TIDAL)</p>	<p>DRAWING SCALE: AS NOTED</p>
<p>PARCEL: 14</p>	<p>8 OF 82</p>	<p>CONTR/CONS: 071447</p>
<p>PHASE: BID SET</p>	<p>M. ID: 101449.01</p>	<p>THIS DRAWING IS THE PROPERTY OF THE PORT OF TACOMA AND SHALL NOT BE USED ON OTHER WORK, DISCLOSED, COPIED, IN WHOLE OR IN PART, WITHOUT WRITTEN PERMISSION.</p>

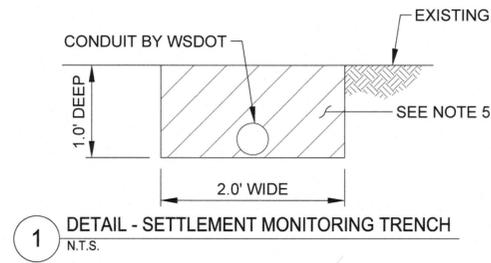


LEGEND

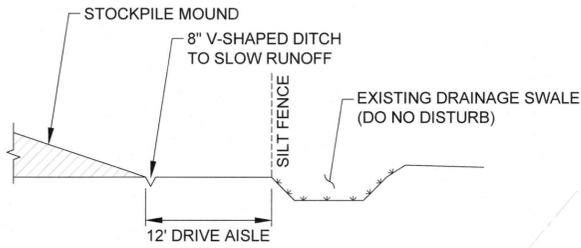
- * O EXISTING TREES
- [Hatched Box] EXISTING PAVING
- [Diagonal Lines Box] STOCKPILE AREA
- A — ACCESS ROUTE
- BURIED CABLE LINE
- BURIED NATURAL GAS LINE
- BURIED POWER LINE
- BURIED TELEPHONE LINE
- EXISTING CONTOUR
- EXISTING DRAINAGE SWALE
- ROW EXISTING RIGHT-OF-WAY
- FENCE LINE
- LOC LIMIT OF CONSTRUCTION (LOC)
- OVERHEAD POWER LINE
- SANITARY SEWER LINE
- SF HIGH VISIBILITY SILT FENCE
- STORM LINE
- WATER LINE
- O SETTLEMENT MONITORING PLATE

NOTES

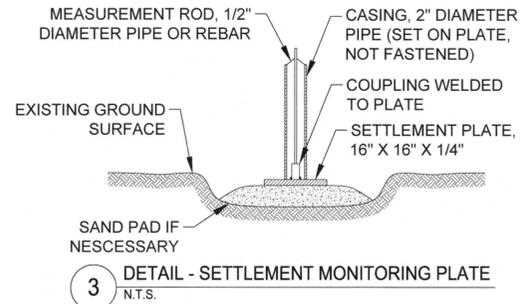
1. ADDITIONAL INFILTRATION MAY BE CONDUCTED IN VEGETATED SWALE ALONG HAUL ROUTE.
2. THE CONTRACTOR MAY ALSO PUMP TO BAKER TANKS FOR SETTLEMENT.
3. STOCKPILE MOUNDS TO BE SEEDED WITH STANDARD WSDOT EROSION CONTROL SEED MIX.
4. ALL SILT FENCE SHOWN ON THIS SHEET TO REMAIN IN PLACE AT PROJECT COMPLETION. ANY DAMAGED SECTIONS SHALL BE REPAIRED PRIOR TO TURN OVER.
5. BACKFILL TRENCH WITH EXCAVATED MATERIAL AFTER CONDUIT INSTALLATION BY WSDOT. PROTECT CONDUIT FROM DAMAGE DURING BACKFILL OPERATIONS. REMOVE STONES OVER 3" DIAMETER FROM CONTACT WITH CONDUIT.
6. REMOVE QUARRY SPALLS FROM FOOTPRINT OF STOCKPILE MOUNDS PRIOR TO PLACEMENT OF FILL. THE CONTRACTOR MAY BENEFICIALLY REUSE THE QUARRY SPALLS MATERIAL.
7. SETTLEMENT MONITORING TRENCH AND SETTLEMENT MONITORING PLATES SHALL BE INSTALLED PRIOR TO PLACING FILL.



1 DETAIL - SETTLEMENT MONITORING TRENCH N.T.S.



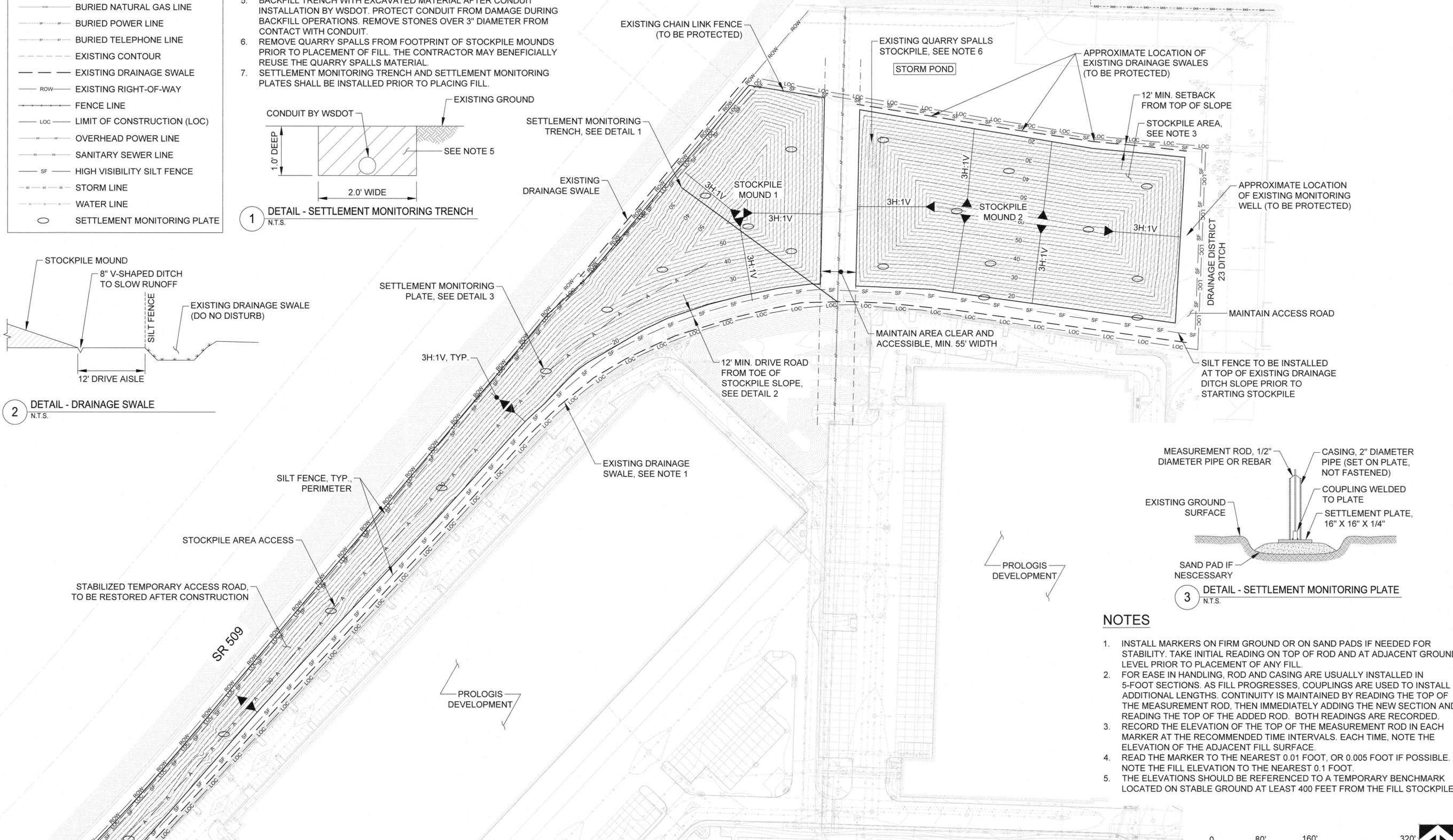
2 DETAIL - DRAINAGE SWALE N.T.S.



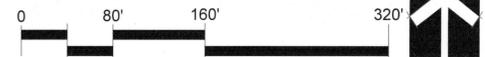
3 DETAIL - SETTLEMENT MONITORING PLATE N.T.S.

NOTES

1. INSTALL MARKERS ON FIRM GROUND OR ON SAND PADS IF NEEDED FOR STABILITY. TAKE INITIAL READING ON TOP OF ROD AND AT ADJACENT GROUND LEVEL PRIOR TO PLACEMENT OF ANY FILL.
2. FOR EASE IN HANDLING, ROD AND CASING ARE USUALLY INSTALLED IN 5-FOOT SECTIONS. AS FILL PROGRESSES, COUPLINGS ARE USED TO INSTALL ADDITIONAL LENGTHS. CONTINUITY IS MAINTAINED BY READING THE TOP OF THE MEASUREMENT ROD, THEN IMMEDIATELY ADDING THE NEW SECTION AND READING THE TOP OF THE ADDED ROD. BOTH READINGS ARE RECORDED.
3. RECORD THE ELEVATION OF THE TOP OF THE MEASUREMENT ROD IN EACH MARKER AT THE RECOMMENDED TIME INTERVALS. EACH TIME, NOTE THE ELEVATION OF THE ADJACENT FILL SURFACE.
4. READ THE MARKER TO THE NEAREST 0.01 FOOT, OR 0.005 FOOT IF POSSIBLE. NOTE THE FILL ELEVATION TO THE NEAREST 0.1 FOOT.
5. THE ELEVATIONS SHOULD BE REFERENCED TO A TEMPORARY BENCHMARK LOCATED ON STABLE GROUND AT LEAST 400 FEET FROM THE FILL STOCKPILE.



MATCHLINE A (SEE SHEET 8)



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REVISION:
BY:
DATE:

JOHN GARRETT
REGISTERED PROFESSIONAL ENGINEER
NO. 53187
WASHINGTON STATE

5/28/21

APPROVED: J. Dawson

CHECKED BY: A. Mitchell

DATE: 5/28/21

DATE: 5/28/21

DIRECTOR ENG. DATE: MOR69830 May 27, 2021

PRINTED BY: 1 SITCOM PLAZA

PORT ADDRESS: TACOMA, WA 98421

TACOMA, WA 98421

LOWER WAPATO CREEK HABITAT PROJECT
TESC AND DEMOLITION PLAN 2

TOWNSHIP: 20N RANGE: 3E SECTION: 1

DAT-HRZ: WA83-SF

PARCEL: 14

6656

G6.1

9 OF 82

CONTR: 071447

M. I. D.: 101449.01

PHASE: BID SET

DRAWING SCALE: AS NOTED

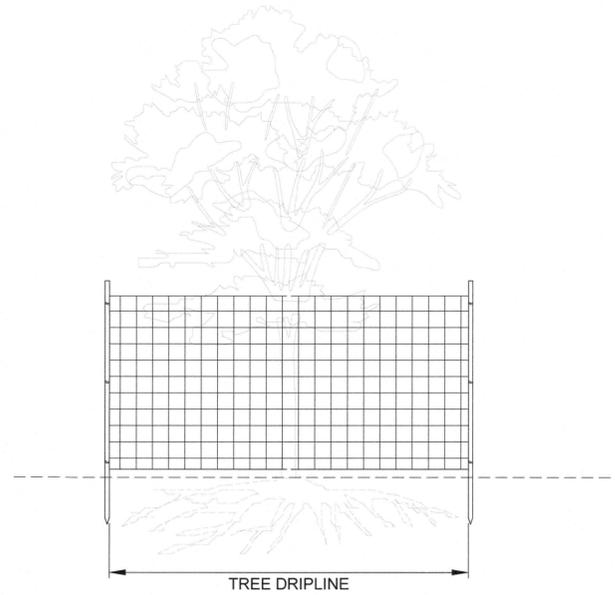
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CITY OF TACOMA STANDARD TESC NOTES

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

GENERAL TESC NOTES

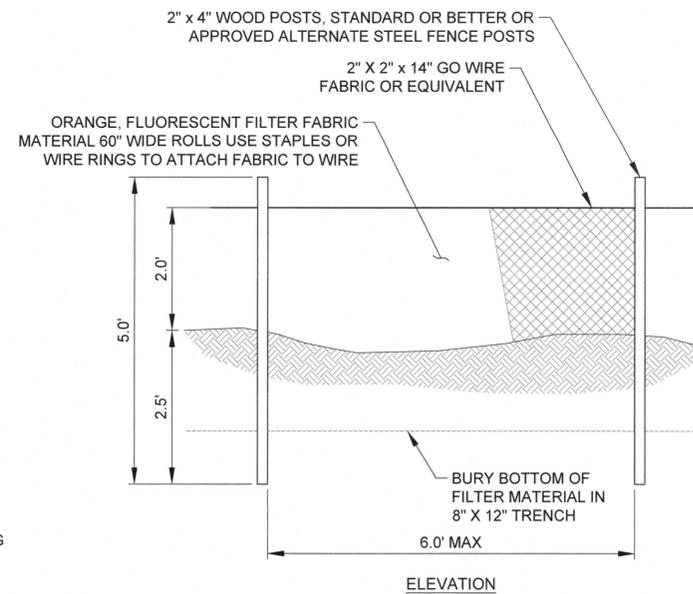
1. STOCKPILE SLOPES TO BE TRACK WALKED IN A MANNER TO CREATE A HORIZONTAL PATTERN PARALLEL TO GRADING CONTOURS.
2. STRAW WATTLES TO BE INSTALLED IN AN OFFSET PATTERN AND BE SLIGHTLY BURIED INTO THE SURFACE TO PREVENT WATER FROM RUNNING UNDER THEM.
3. THE PORT HAS OBTAINED THE CONSTRUCTION STORMWATER PERMIT FROM ECOLOGY. THIS PERMIT WILL BE TRANSFERRED TO THE CONTRACTOR PRIOR TO CONSTRUCTION. AT THE COMPLETION OF CONSTRUCTION THE CONTRACTOR SHALL TERMINATE THIS PERMIT. THE CONTRACTOR SHALL ADHERE TO ALL REQUIREMENT OF THIS PERMIT.



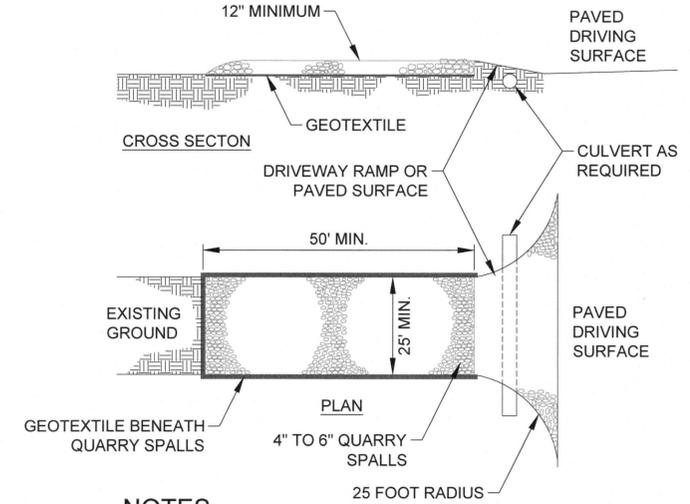
NOTES

1. TREE PROTECTION FENCING SHALL BE MADE OF HIGH VISIBILITY FENCE AND INSTALLED AT LOCATIONS SHOWN ON THE TESC PLAN. SEE HIGH VISIBILITY FENCE DETAIL FOR INSTALLATION INSTRUCTIONS. AVOID DRIVING STAKES INTO TREE ROOTS. INSTALL TREE RETENTION AREA SIGNS ON ALL SIDES OF FENCED TREE RETENTION AREAS.
2. FOR ROOTS OVER 1-IN DIA. THAT ARE DAMAGED DURING CONSTRUCTION, MAKE A CLEAN, STRAIGHT CUT TO REMOVE THE DAMAGED PORTION. ALL EXPOSED ROOTS SHALL BE TEMPORARILY COVERED WITH DAMP BURLAP TO PREVENT DRYING, AND SHALL BE COVERED WITH SOIL AS SOON AS POSSIBLE.
3. WORK WITHIN PROTECTION FENCE SHALL BE CONDUCTED BY HAND TO PROTECT SMALLER TREE CLUSTERS AND INDIVIDUAL TREES. NO STOCKPILING OF MATERIALS, VEHICULAR TRAFFIC, OR STORAGE OF EQUIPMENT OR MACHINERY SHALL BE ALLOWED WITHIN THE LIMIT OF THE FENCING.

A TREE PROTECTION FENCE N.T.S.



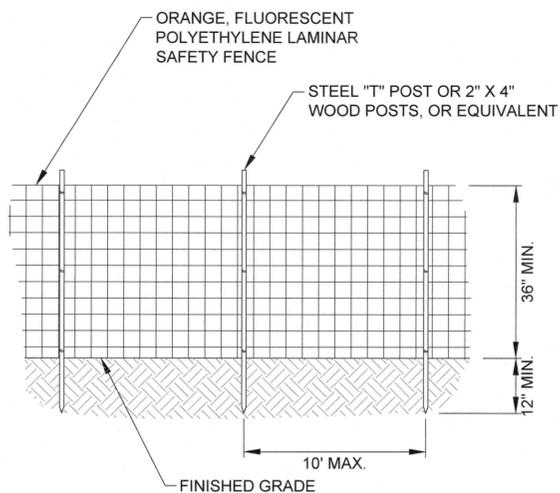
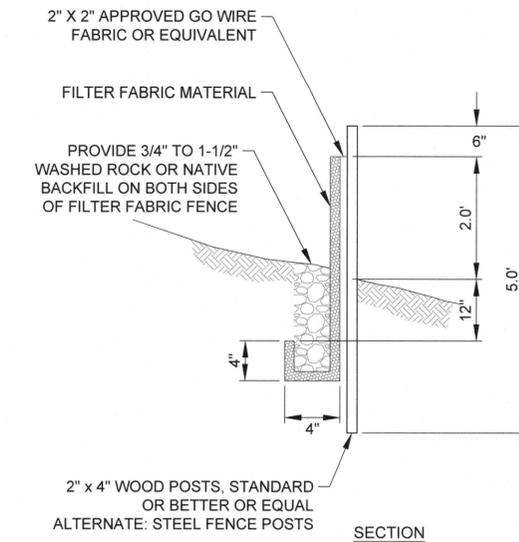
E HIGH VISIBILITY SILT FENCE N.T.S.



NOTES

1. PAD SHALL BE REMOVED AND REPLACED WHEN SOIL IS EVIDENT ON THE SURFACE OF THE PAD OR AS DIRECTED BY THE PORT.
2. PAD SHALL BE INSTALLED IN PLANTING STRIP AS APPROPRIATE.
3. PAD THICKNESS SHALL BE INCREASED IF SOIL CONDITIONS DICTATE OR PER THE DIRECTION OF THE PORT.
4. MINIMUM DIMENSIONS MAY BE MODIFIED AS REQUIRED BY SITE CONDITIONS UPON APPROVAL OF THE PORT.

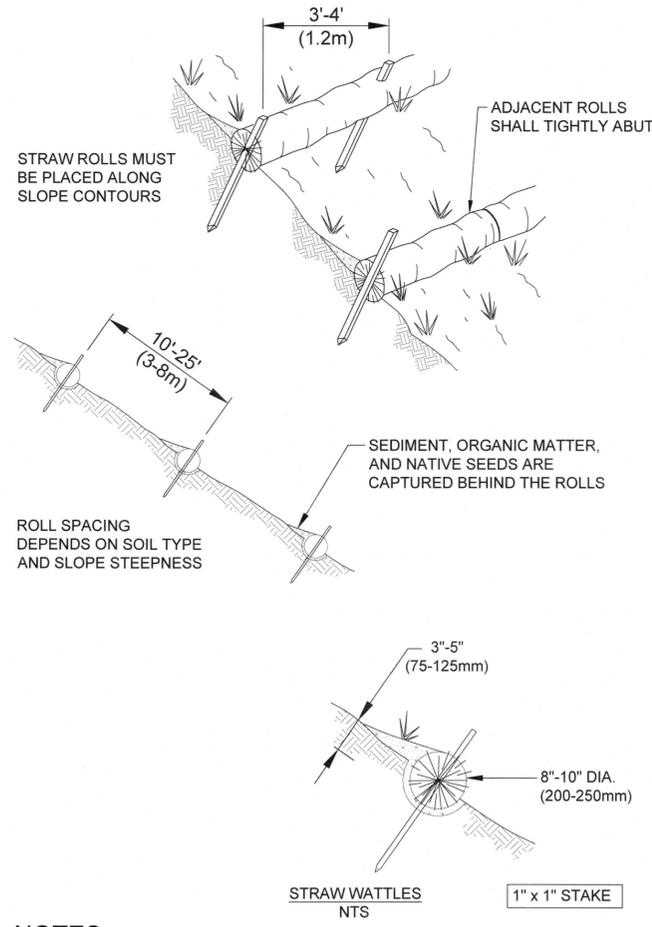
B CONSTRUCTION ENTRANCE N.T.S.



NOTES

1. DO NOT NAIL OR STAPLE FENCE TO EXISTING TREES OR UTILITY POLES.
2. ANY DAMAGE TO THE FENCE SHALL BE REPAIRED IMMEDIATELY.

C HIGH VISIBILITY CONSTRUCTION FENCE N.T.S.



NOTES

1. STRAW ROLL INSTALLATION REQUIRES THE PLACEMENT AND SECURE STAKING OF THE ROLL IN A TRENCH, 3" x 5" (75-125mm) DEEP, DUG ON CONTOUR.
2. RUNOFF MUST NOT BE ALLOWED TO RUN UNDER OR AROUND ROLL.

D STRAW WATTLES (FOR STOCKPILES) N.T.S.

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M MOTT MACDONALD

APPROVED: *J. Dawson* 5/28/21
CHECKED BY: *A. Mitchell* 5/28/21
DIRECTOR ENG. DATE: MOR69830 May 27, 2021
PRINTED BY: MOR69830 May 27, 2021
PORT ADDRESS: 1 SITCOM PLAZA
TACOMA, WA 98421

LOWER WAPATO CREEK HABITAT PROJECT
TESC AND DEMOLITION NOTES AND DETAILS

6656 **G6.2** 10 OF 82
CONT/CONS: 071447
M. ID: 101449.01
PHASE: BID SET

TOWNSHIP: 20N RANGE: 3E SECTION: 1
DAT-HRZ: WA83-SF VERT: MLW (PORT OF TACOMA TIDAL)
PARCEL: 14 DRAWING SCALE: AS NOTED

APPROVED: *John Barrett* 5/28/21
REGISTERED PROFESSIONAL ENGINEER
STATE OF WASHINGTON
NO. 10000

DATE: 5/28/21
BY: 5/28/21
REVISION: 5/28/21
MARK: 5/28/21

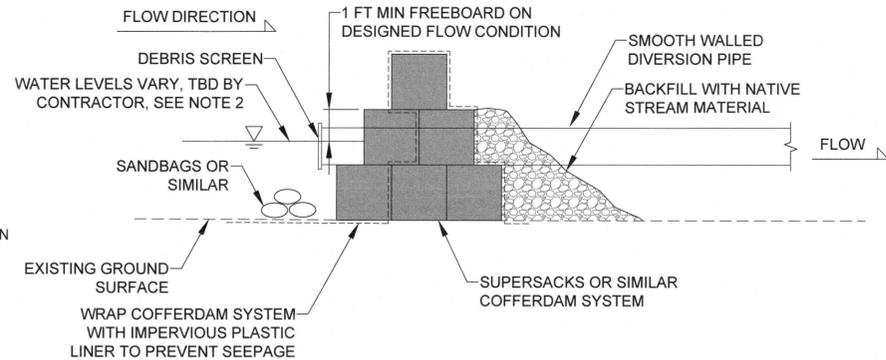
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CONSTRUCTION ACCESS NOTES

1. CONTRACTOR ACCESS OUTSIDE OF THE INDICATED CONSTRUCTION ENTRANCES, ACCESS ROUTES AND PROJECT LIMITS WILL NOT BE ALLOWED WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
2. CONSTRUCTION ENTRANCES TO HAVE CHAIN LINK SECURITY FENCING AND GATE TO PRECLUDE PUBLIC ACCESS DURING NON-WORKING HOURS.
3. HIGH VISIBILITY OR TEMPORARY CHAIN LINK FENCING SHALL BE INSTALLED ALONG PERIMETER OF THE PROJECT SITE.
4. CONTRACTOR SHALL RETAIN SITE SECURITY ON PROPERTIES SOUTH OF 12TH STREET.

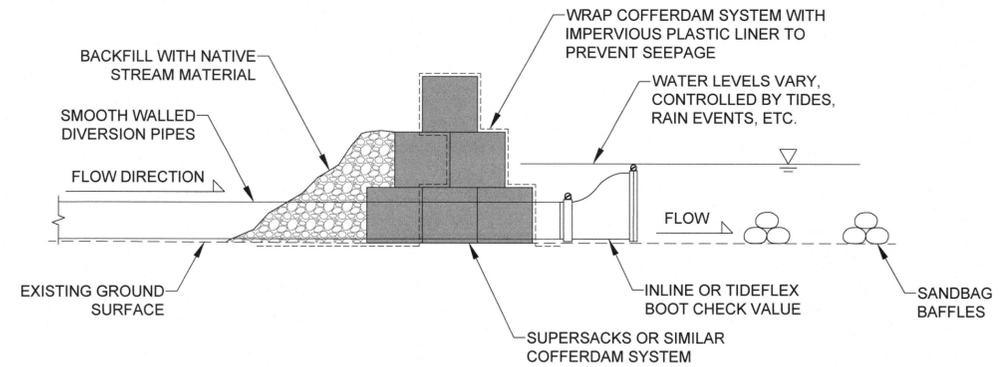
FLOW DIVERSION NOTES

1. THE CONTRACTOR SHALL HAVE A PROFESSIONAL ENGINEER PREPARE A FLOW DIVERSION PLAN, SEE CONTRACT DOCUMENTS. FLOW DIVERSION PLAN SHALL INCLUDE A FISH EXCLUSION AND RECOVERY PLAN TO ENSURE SAFE CAPTURE AND RELOCATION OF FISH.
2. FLOW DIVERSION SYSTEM SHALL BE DESIGNED FOR, AT A MINIMUM, 2-YR PEAK FLOW CONDITIONS OR THE REQUIREMENTS OF THE HPA, WHICHEVER IS STRICTER.
3. THE PHASING AND DESIGN OF THE FLOW DIVERSION WITH RESPECT TO THE WORK SHALL BE DESIGNED BY THE CONTRACTOR (SEE CONTRACT DOCUMENTS FOR REQUIREMENTS).
4. INSTALLATION OF A DIVERSION PIPE OUTSIDE THE DIVERSION PIPE CORRIDOR WILL NOT BE ALLOWED WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
5. GRADING MAY BE REQUIRED DOWNSTREAM OF THE CULVERTS PRIOR TO INSTALLATION OF THE DIVERSION PIPE.
6. ALL PUMPS REQUIRE FISH SCREENS DESIGNED TO WASHINGTON STATE SPECIFICATIONS TO PREVENT HARM TO FISH, SEE HPA PERMIT FOR ADDITIONAL REQUIREMENTS.
7. PUMPED FLOW DIVERSION IS ONLY PERMITTED ON EAST SIDE OF BRIDGE CONSTRUCTION AREA. EXACT ALIGNMENT TO BE DETERMINED BY THE CONTRACTOR.
8. WATER LEVEL MAY BE AFFECTED BY THE TIDES, CREEK FLOW, AND STORMS.
9. DEWATER WORK AREA BETWEEN COFFERDAMS AND TREAT EFFLUENT PER THE CONTRACT DOCUMENTS AND PERMIT REQUIREMENTS.



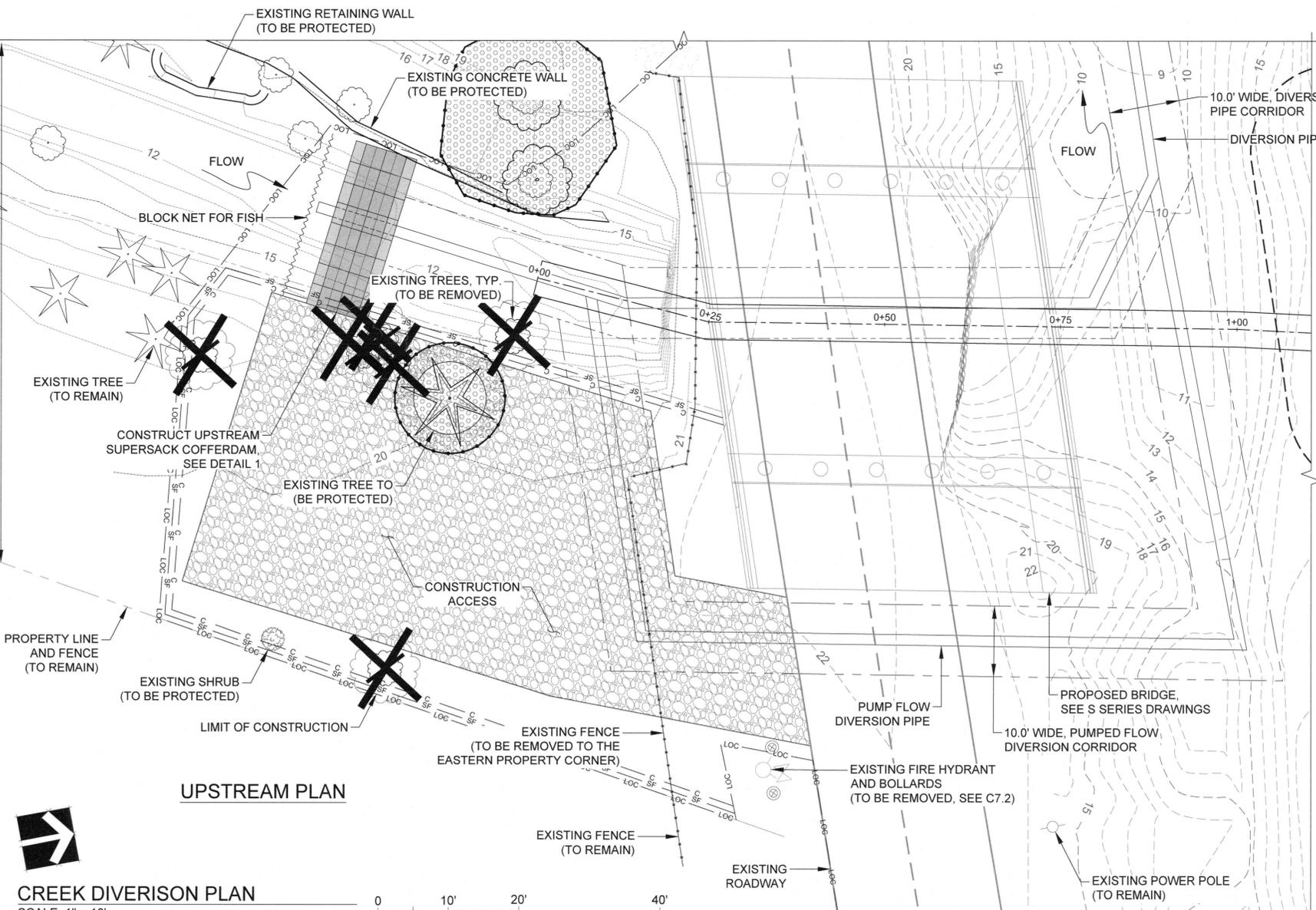
DETAIL 1 - UPSTREAM COFFERDAM

SCALE: 1" = 5'



DETAIL 2 - DOWNSTREAM COFFERDAM

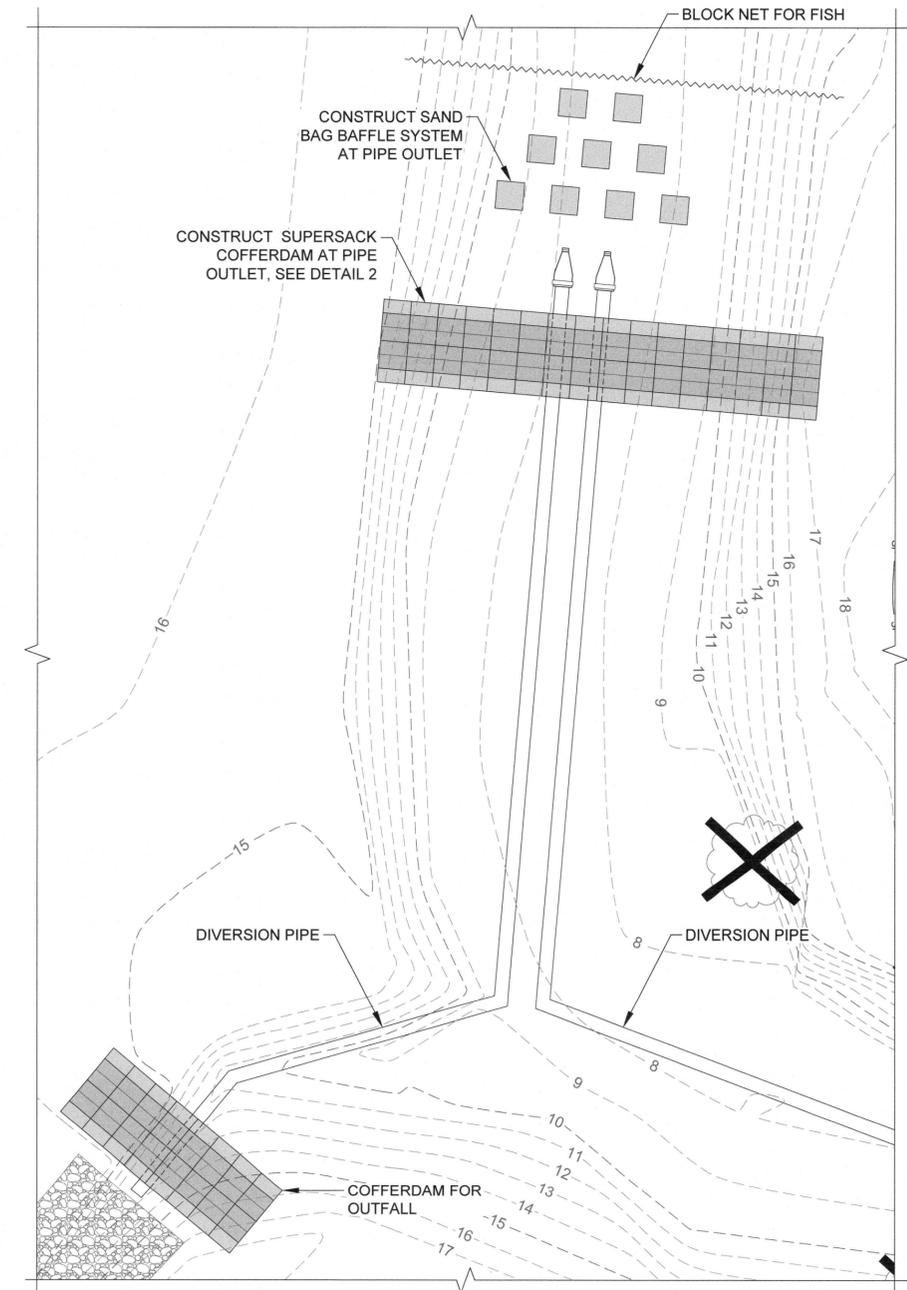
SCALE: 1" = 5'



UPSTREAM PLAN

CREEK DIVERSION PLAN

SCALE: 1" = 10'



DOWNSTREAM PLAN



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DIRECTOR ENG. DATE:	MOR6830	May 27, 2021
PRINTED BY:	T. SITCOM PLAZA	TACOMA, WA 98421

**LOWER WAPATO CREEK
HABITAT PROJECT**
SITE ACCESS AND FLOW DIVERSION PLAN

TOWNSHIP:	20N	RANGE:	3E	SECTION:	1
DAT-HRZ:	WA83-SF	VERT:	MILLW (PORT OF TACOMA TIDAL)	DRAWING SCALE:	AS NOTED
PARCEL:	14				

6656
G7.0
11 OF 82

CONTRACT NO: 071447
M. I.D.: 101449.01
PHASE: BID SET

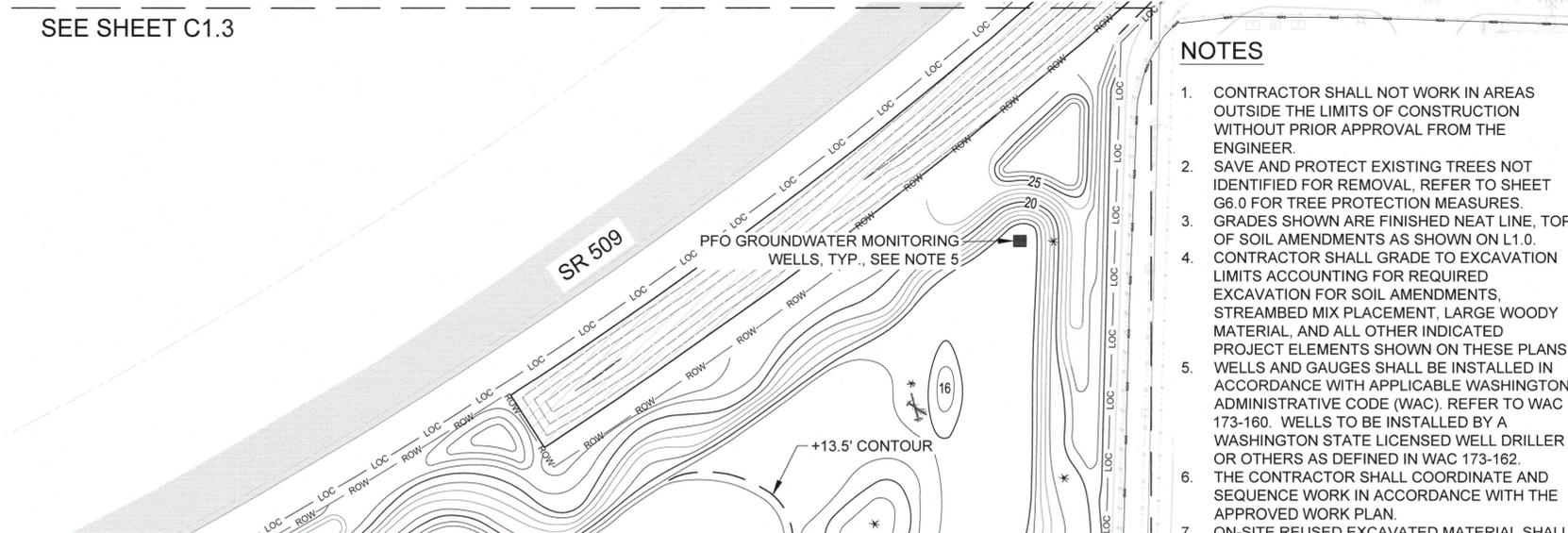
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PORT OF TACOMA FILE: C:\pwworking\hmm\ports_harbors\mor69830\dms48094\Wapato Creek Habitat - Site Plan

CHANNEL CENTERLINE CONTROL POINTS

POINT ID	NORTHING	EASTING	STATIONING	*CHANNEL EL. (FT)	DESCRIPTION
1	703070.2153	1176051.6799	-0+7.76	12.0	START STREAMBED MIX TYPE A
2	703077.1247	1176055.5396	0+00.00	12.0	START CHANNEL CENTERLINE
3	703099.7935	1176065.9293	0+25.00	12.0	BRIDGE
4	703148.5570	1176075.5300	0+75.00	12.0	BRIDGE
5	703155.5466	1176076.9036	0+81.76	12.0	STREAM GAUGE 1
6	703179.5719	1176081.8609	1+06.30	12.0	TRANSITION FROM 3' TO 1' THICK STREAMBED MIX TYPE A
7	703377.1301	1176274.8153	4+20.00	11.2	TRANSITION STREAMBED MIX TYPE A TO TYPE B
8	703563.8071	1176372.9164	6+50.00	10.6	TRANSITION STREAMBED MIX TYPE B TO TYPE A
9	703718.7560	1176312.3738	8+40.00	10.0	TRANSITION STREAMBED MIX TYPE A TO TYPE B
10	703682.9137	1176265.9851	9+00.00	9.9	TRANSITION STREAMBED MIX TYPE B TO TYPE C
11	703581.7152	1176175.7357	10+50.00	9.5	STREAM GAUGE 2
12	703509.2552	1175995.7515	13+00.00	8.9	TRANSITION STREAMBED MIX TYPE C TO TYPE B
13	703503.7330	1175871.9207	14+25.00	8.6	END STREAMBED MIX TYPE B
14	703484.8549	1175393.8936	20+28.56	8.0	END CHANNEL CENTERLINE

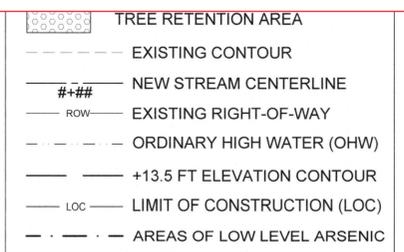
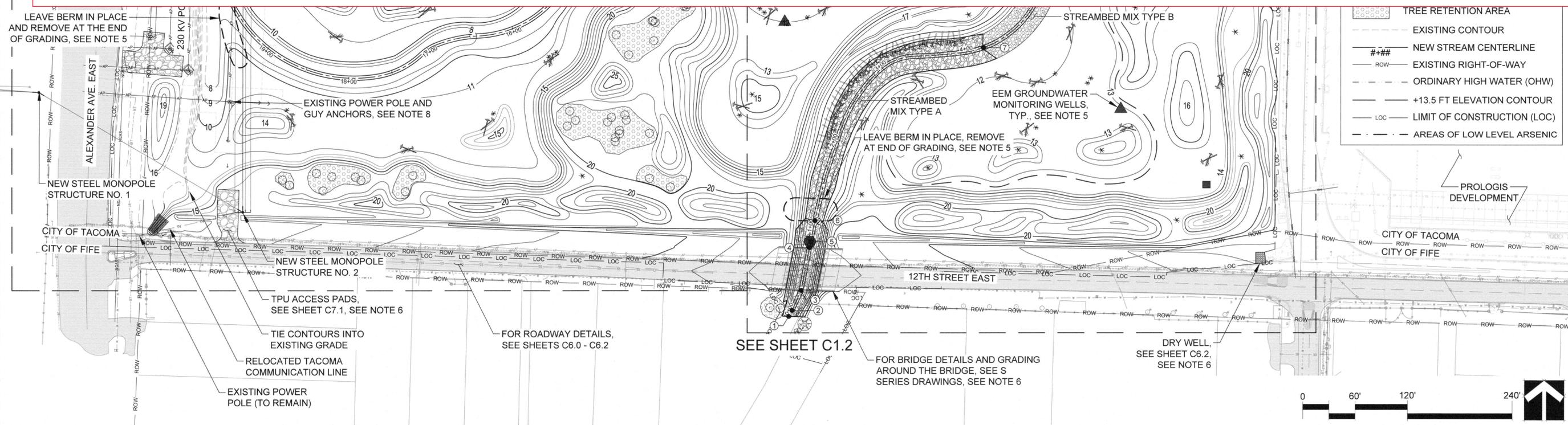
SEE SHEET C1.3



NOTES

- CONTRACTOR SHALL NOT WORK IN AREAS OUTSIDE THE LIMITS OF CONSTRUCTION WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- SAVE AND PROTECT EXISTING TREES NOT IDENTIFIED FOR REMOVAL, REFER TO SHEET G6.0 FOR TREE PROTECTION MEASURES.
- GRADES SHOWN ARE FINISHED NEAT LINE, TOP OF SOIL AMENDMENTS AS SHOWN ON L1.0. CONTRACTOR SHALL GRADE TO EXCAVATION LIMITS ACCOUNTING FOR REQUIRED EXCAVATION FOR SOIL AMENDMENTS, STREAMBED MIX PLACEMENT, LARGE WOODY MATERIAL, AND ALL OTHER INDICATED PROJECT ELEMENTS SHOWN ON THESE PLANS.
- WELLS AND GAUGES SHALL BE INSTALLED IN ACCORDANCE WITH APPLICABLE WASHINGTON ADMINISTRATIVE CODE (WAC). REFER TO WAC 173-160. WELLS TO BE INSTALLED BY A WASHINGTON STATE LICENSED WELL DRILLER OR OTHERS AS DEFINED IN WAC 173-162.
- THE CONTRACTOR SHALL COORDINATE AND SEQUENCE WORK IN ACCORDANCE WITH THE APPROVED WORK PLAN.
- ON-SITE REUSED EXCAVATED MATERIAL SHALL

REPLACED BY BID ADDENDUM 1.



LOWER WAPATO CREEK HABITAT PROJECT OVERALL GRADING PLAN

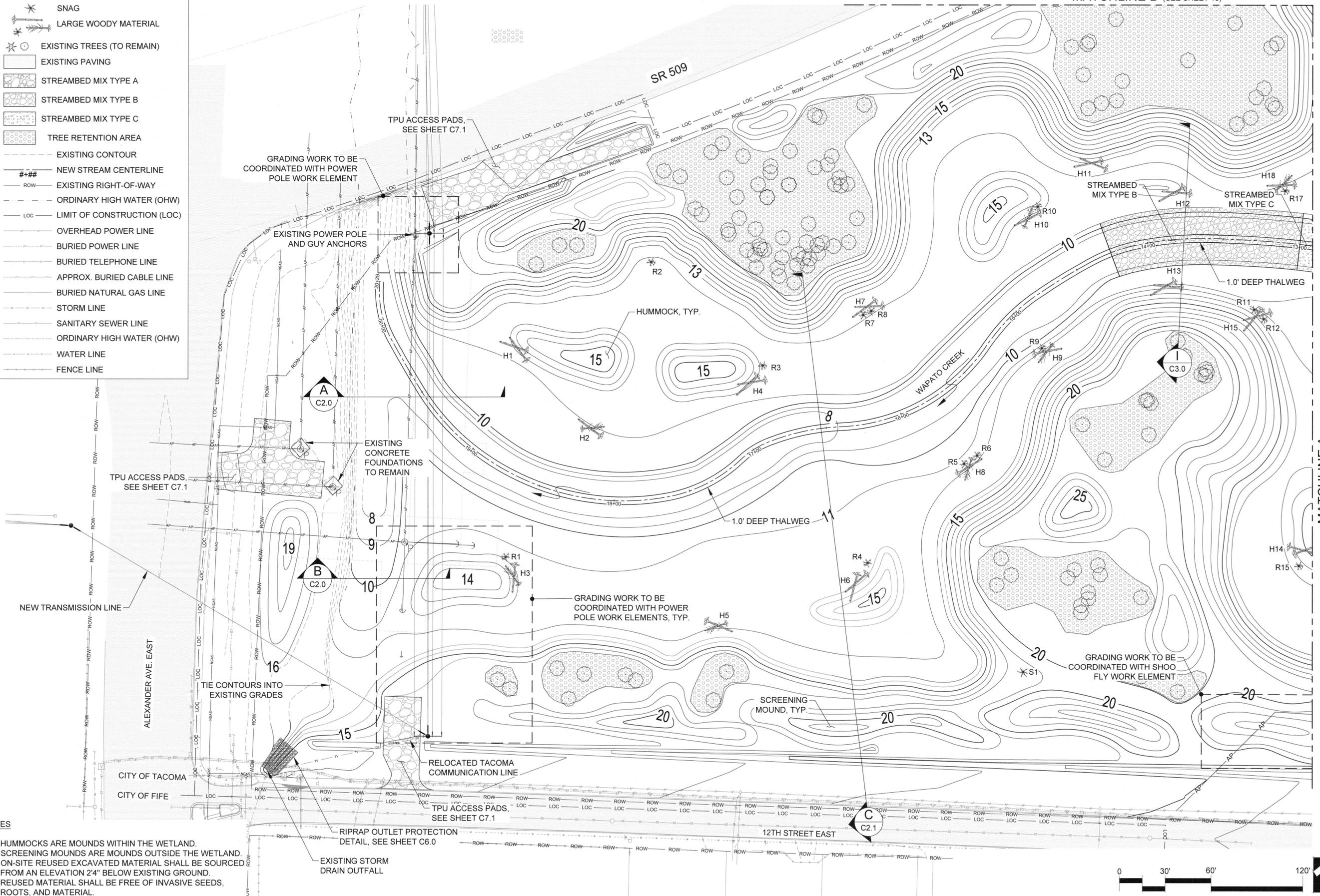
6656 C1.0 12 OF 82

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 REGISTERED PROFESSIONAL ENGINEER
 53187
 5/28/21
 PRINTED BY: MOR69830 May 27, 2021
 PORT ADDRESS: 1 SITCOM PLAZA
 TACOMA, WA 98421
 TOWNSHIP: 20N SECTION: 1
 RANGE: 3E VERT: MLW (PORT OF TACOMA TIDAL)
 DAT-HRZ: WA83-SF DRAWING SCALE: AS NOTED
 PARCEL: 14
 CONT/CONS: 071447
 M ID: 101449.01
 PHASE: BID SET

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LEGEND

- SNAG
- LARGE WOODY MATERIAL
- EXISTING TREES (TO REMAIN)
- EXISTING PAVING
- STREAMBED MIX TYPE A
- STREAMBED MIX TYPE B
- STREAMBED MIX TYPE C
- TREE RETENTION AREA
- EXISTING CONTOUR
- NEW STREAM CENTERLINE
- EXISTING RIGHT-OF-WAY
- ORDINARY HIGH WATER (OHW)
- LIMIT OF CONSTRUCTION (LOC)
- OVERHEAD POWER LINE
- BURIED POWER LINE
- BURIED TELEPHONE LINE
- APPROX. BURIED CABLE LINE
- BURIED NATURAL GAS LINE
- STORM LINE
- SANITARY SEWER LINE
- ORDINARY HIGH WATER (OHW)
- WATER LINE
- FENCE LINE



- NOTES
- HUMMOCKS ARE MOUNDS WITHIN THE WETLAND. SCREENING MOUNDS ARE MOUNDS OUTSIDE THE WETLAND. ON-SITE REUSED EXCAVATED MATERIAL SHALL BE SOURCED FROM AN ELEVATION 2'4" BELOW EXISTING GROUND. REUSED MATERIAL SHALL BE FREE OF INVASIVE SEEDS, ROOTS, AND MATERIAL.



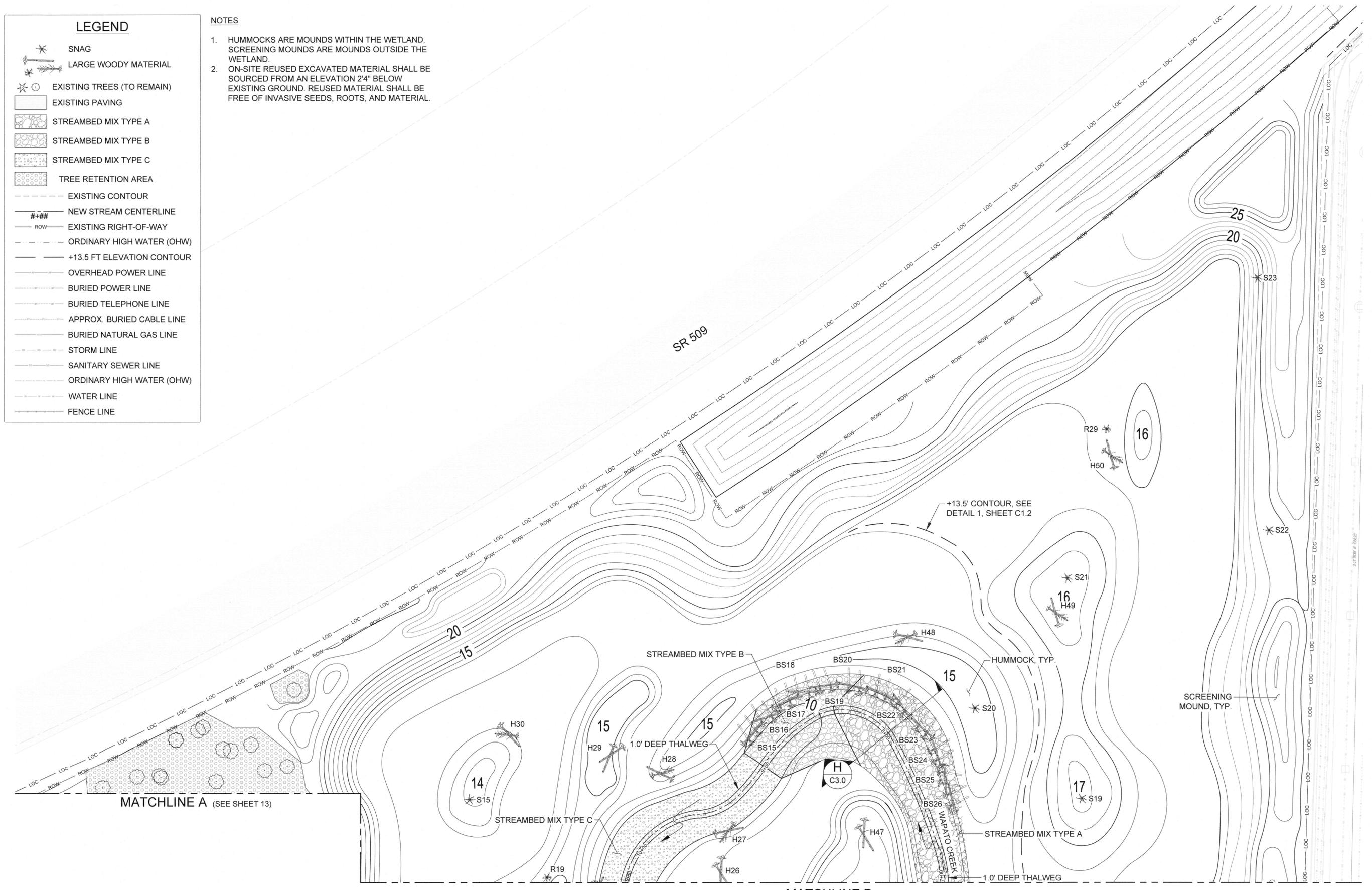
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			M. ID: 101449.01	DAT-HRZ: WA83-SF	VERT: MLLW (PORT OF TACOMA TIDAL)	DRAWING SCALE: AS NOTED
PHASE: BID SET			DRAWING SCALE: AS NOTED			
LOWER WAPATO CREEK HABITAT PROJECT GRADING PLAN 1			APPROVED: J. Dawson			
5/28/21			CHECKED BY: A. Mitchell			
5/28/21			DATE: 5/28/21			
MOTT MACDONALD			PROJECT ENGR: MOR69830 May 27, 2021			
MARK: REVISION:			PORT ADDRESS: 1 SITCOM PLAZA			
BY: TACOMA, WA 98421			DATE: 5/28/21			
APPR: DATE:			TACOMA, WA 98421			
1601 6th Avenue, Suite 800, Seattle, Washington 98101			T +1 (425) 776 6243			
P.O. BOX 1837 TACOMA, WA 98401 (253)85-9941			DATE:			

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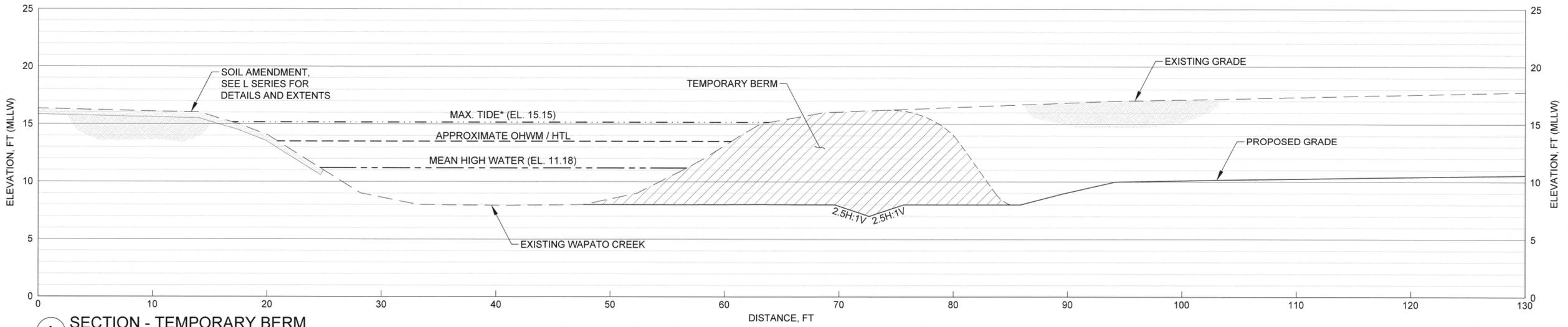
LEGEND

- SNAG
- LARGE WOODY MATERIAL
- EXISTING TREES (TO REMAIN)
- EXISTING PAVING
- STREAMBED MIX TYPE A
- STREAMBED MIX TYPE B
- STREAMBED MIX TYPE C
- TREE RETENTION AREA
- EXISTING CONTOUR
- NEW STREAM CENTERLINE
- EXISTING RIGHT-OF-WAY
- ORDINARY HIGH WATER (OHW)
- +13.5 FT ELEVATION CONTOUR
- OVERHEAD POWER LINE
- BURIED POWER LINE
- BURIED TELEPHONE LINE
- APPROX. BURIED CABLE LINE
- BURIED NATURAL GAS LINE
- STORM LINE
- SANITARY SEWER LINE
- ORDINARY HIGH WATER (OHW)
- WATER LINE
- FENCE LINE

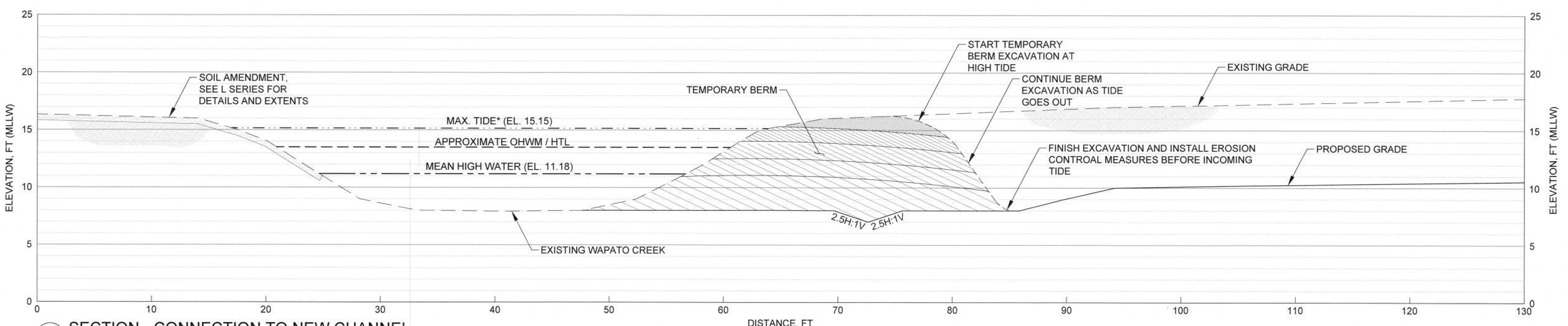
- NOTES**
- HUMMOCKS ARE MOUNDS WITHIN THE WETLAND. SCREENING MOUNDS ARE MOUNDS OUTSIDE THE WETLAND.
 - ON-SITE REUSED EXCAVATED MATERIAL SHALL BE SOURCED FROM AN ELEVATION 2'4" BELOW EXISTING GROUND. REUSED MATERIAL SHALL BE FREE OF INVASIVE SEEDS, ROOTS, AND MATERIAL.



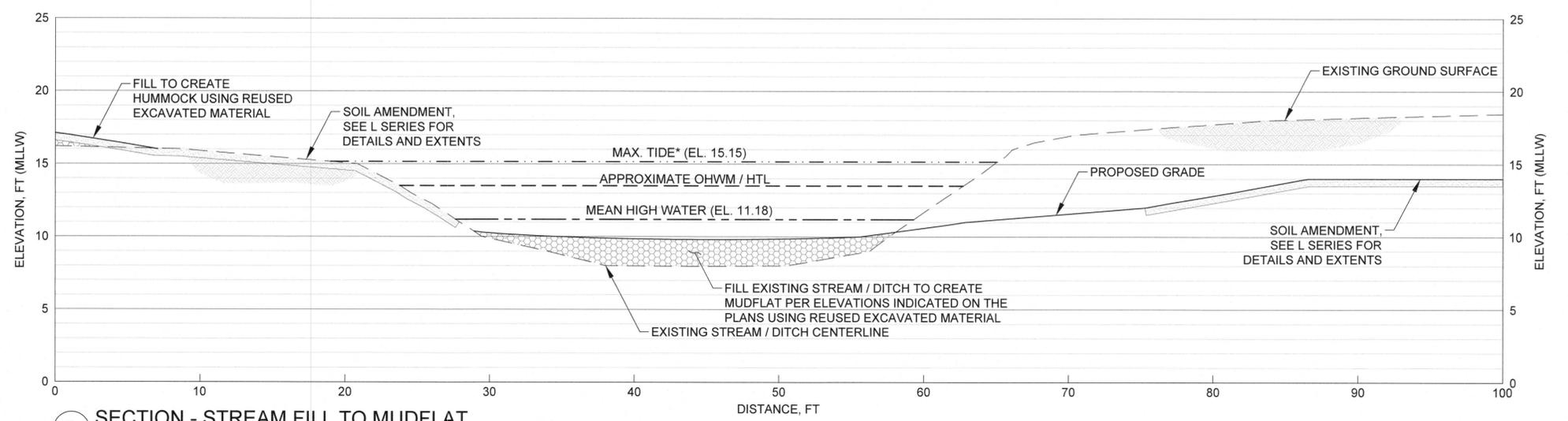
 1601 5th Avenue Suite 800 Seattle, Washington 98101 T +1 (425) 778 6243		M M MOTT MACDONALD	REVISION: BY: DATE:
		MARK: REVISION: BY: DATE:	APPROX: 5/28/21 CHECKED BY: J. Dawson DIRECTOR ENG. DATE: 5/28/21 PROJECT ENGR DATE: 5/28/21 PRINTED BY: MOR69830 May 27, 2021 PORT ADDRESS: 1 SITCOM PLAZA TACOMA, WA 98421
LOWER WAPATO CREEK HABITAT PROJECT GRADING PLAN 3		TOWNSHIP: 20N RANGE: 3E SECTION: 1 DAT-HRZ: WA85-SF VERT: MLLW (PORT OF TACOMA TIDAL) PARCEL: 14	DRAWING SCALE: AS NOTED
6656 C1.3 15 OF 82	CONT/CONS: 071447 M. ID: 101449.01 PHASE: BID SET	THIS DRAWING IS THE PROPERTY OF THE PORT OF TACOMA AND SHALL NOT BE USED ON OTHER WORK, DISCLOSED, COPIED, IN WHOLE OR IN PART, WITHOUT WRITTEN PERMISSION	



A SECTION - TEMPORARY BERM
SCALE: 1" = 5'



A SECTION - CONNECTION TO NEW CHANNEL
SCALE: 1" = 5'



B SECTION - STREAM FILL TO MUDFLAT
SCALE: 1" = 5'

NOTES

- 1. ON-SITE REUSED EXCAVATED MATERIAL SHALL BE SOURCED FROM AN ELEVATION 2'-4" BELOW EXISTING GROUND. REUSED MATERIAL SHALL BE FREE OF INVASIVE SEEDS, ROOTS, AND MATERIAL.



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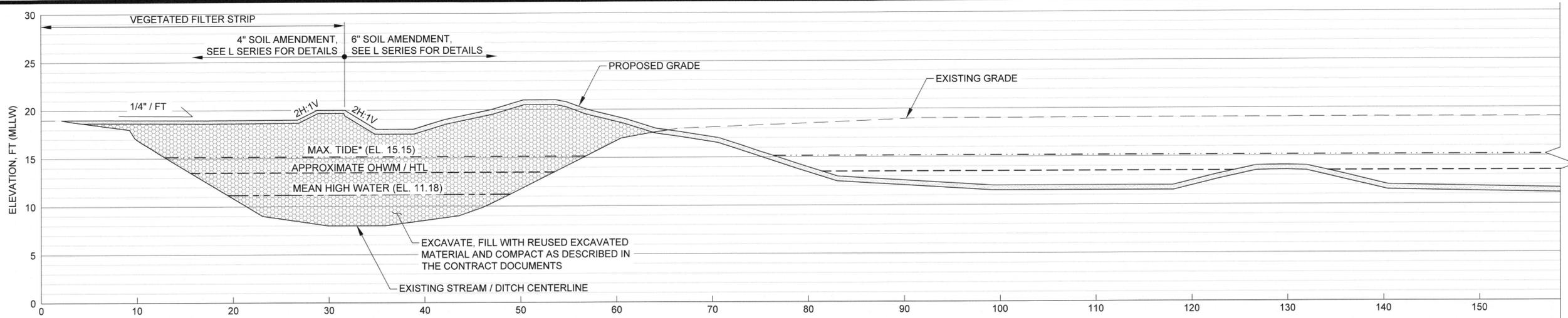


APPROVED: J. Dawson 5/28/21
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DIRECTOR ENG. DATE: MOR69830 May 27, 2021
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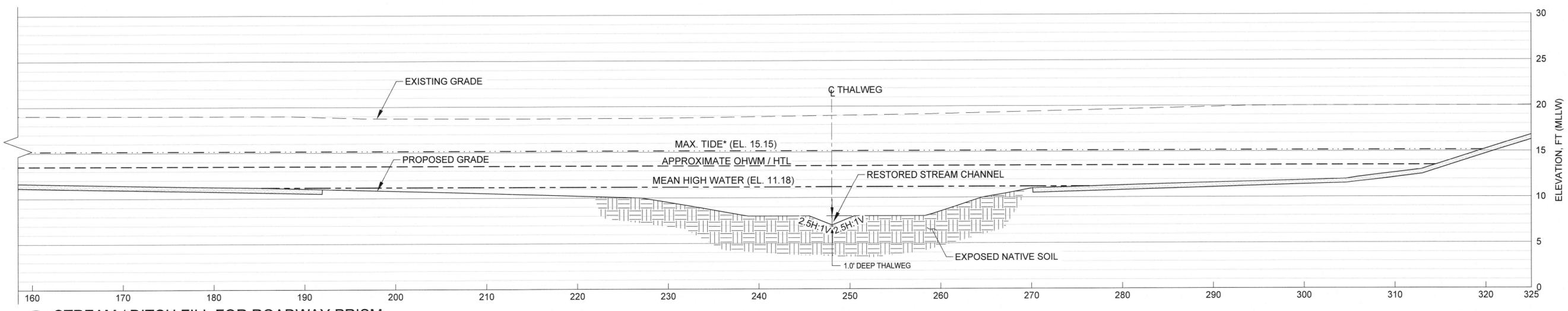
LOWER WAPATO CREEK
HABITAT PROJECT
GRADING SECTIONS 1

TOWNSHIP: 20N SECTION: 1
RANGE: 3E
VERT: MLLW (PORT OF TACOMA TIDAL)
DATE-HRZ: WA83-SF
PARCEL: 14
DRAWING SCALE: AS NOTED

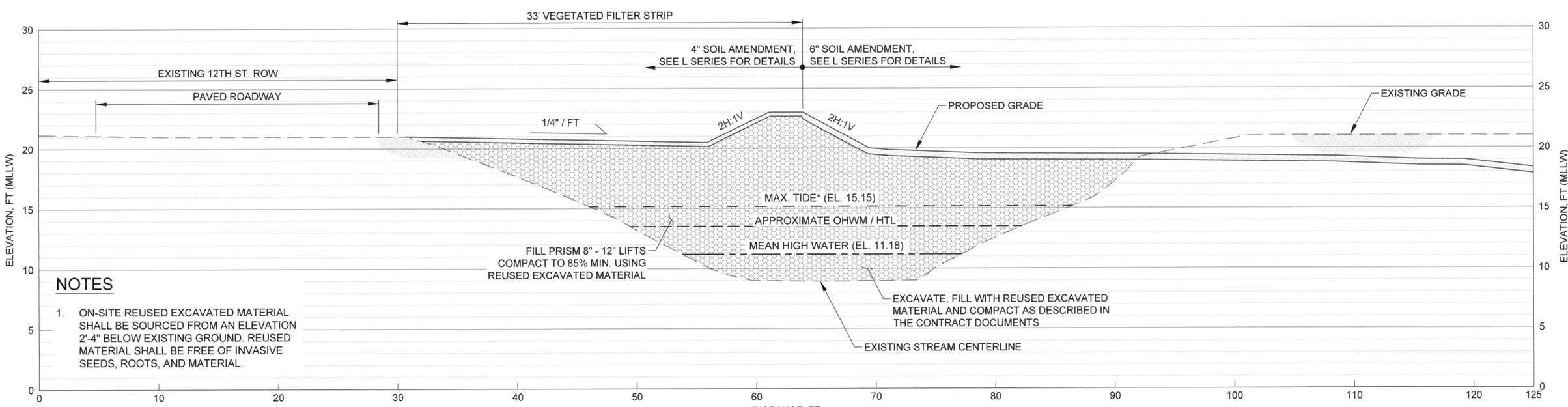
6656
C2.0
16 OF 82
CONT/CONS: 071447
M. ID: 101449.01
PHASE: BID SET



C STREAM / DITCH FILL FOR ROADWAY PRISM
SCALE: 1" = 6'



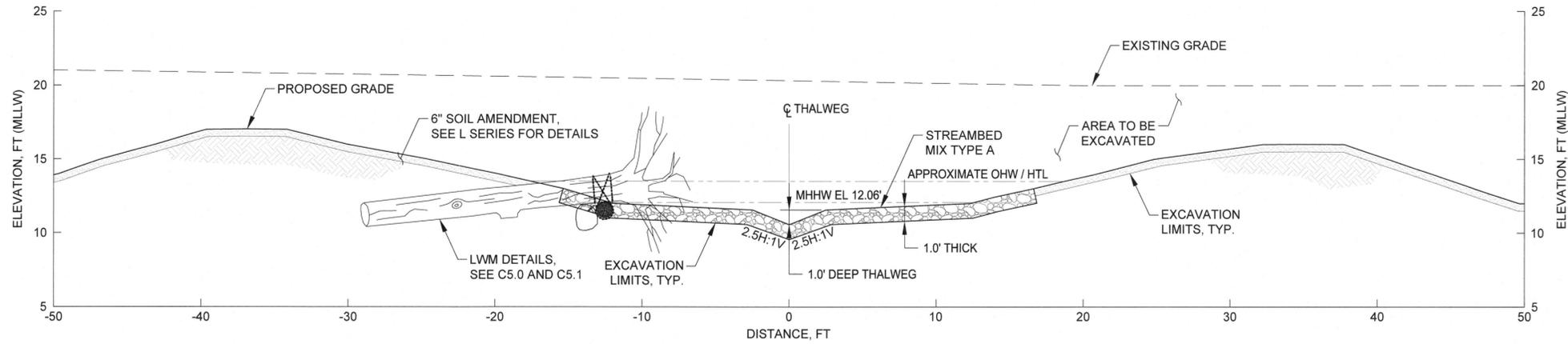
C STREAM / DITCH FILL FOR ROADWAY PRISM
SCALE: 1" = 6'



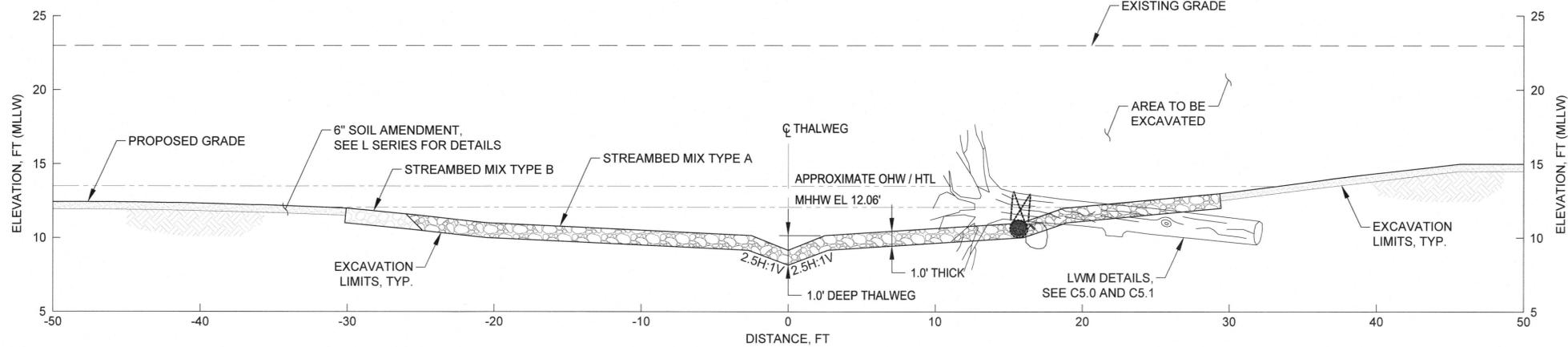
D UPSTREAM CONNECTION DETAIL
SCALE: 1" = 5'

- NOTES**
- ON-SITE REUSED EXCAVATED MATERIAL SHALL BE SOURCED FROM AN ELEVATION 2'-4" BELOW EXISTING GROUND. REUSED MATERIAL SHALL BE FREE OF INVASIVE SEEDS, ROOTS, AND MATERIAL.

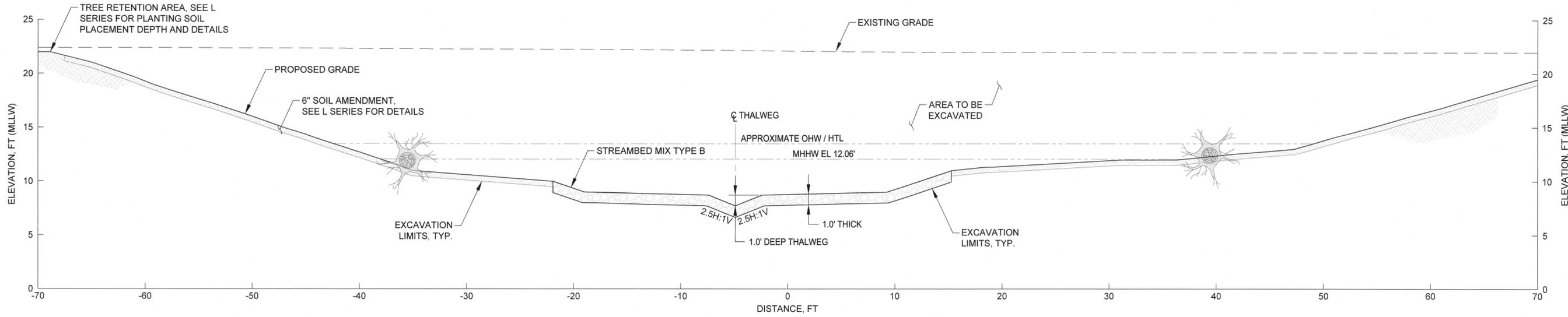
		1601 5th Avenue Suite 800 Seattle, Washington 98101 T +1 (425) 778 6243		DATE: APPR: BY:
M M MOTT MACDONALD	MARK: REVISION:			
APPROVED: 	CHECKED BY: A. Mitchell	DATE: 5/28/21	DATE: 5/28/21	PROJECT ENGR: MOR69830 May 27, 2021
DIRECTOR ENGR. DATE: MOR69830 May 27, 2021		PORT ADDRESS: 1 SITCOM PLAZA TACOMA, WA 98421		
LOWER WAPATO CREEK HABITAT PROJECT GRADING SECTIONS 2		TOWNSHIP: 20N RANGE: 3E DAT-HRZ: WA83-SF	SECTION: 1 VERT: MLLW (PORT OF TACOMA TIDAL) DRAWING SCALE: AS NOTED	PARCEL: 14
6656 C2.1 17 OF 82	CONT/CONS: 071447 M. ID: 101449.01 PHASE: BID SET	THIS DRAWING IS THE PROPERTY OF THE PORT OF TACOMA AND SHALL NOT BE USED ON OTHER WORK, DISCLOSED, COPIED, IN WHOLE OR IN PART, WITHOUT WRITTEN PERMISSION		



G SECTION - NEW CHANNEL AT STATION 2+90
SCALE: 1" = 5'



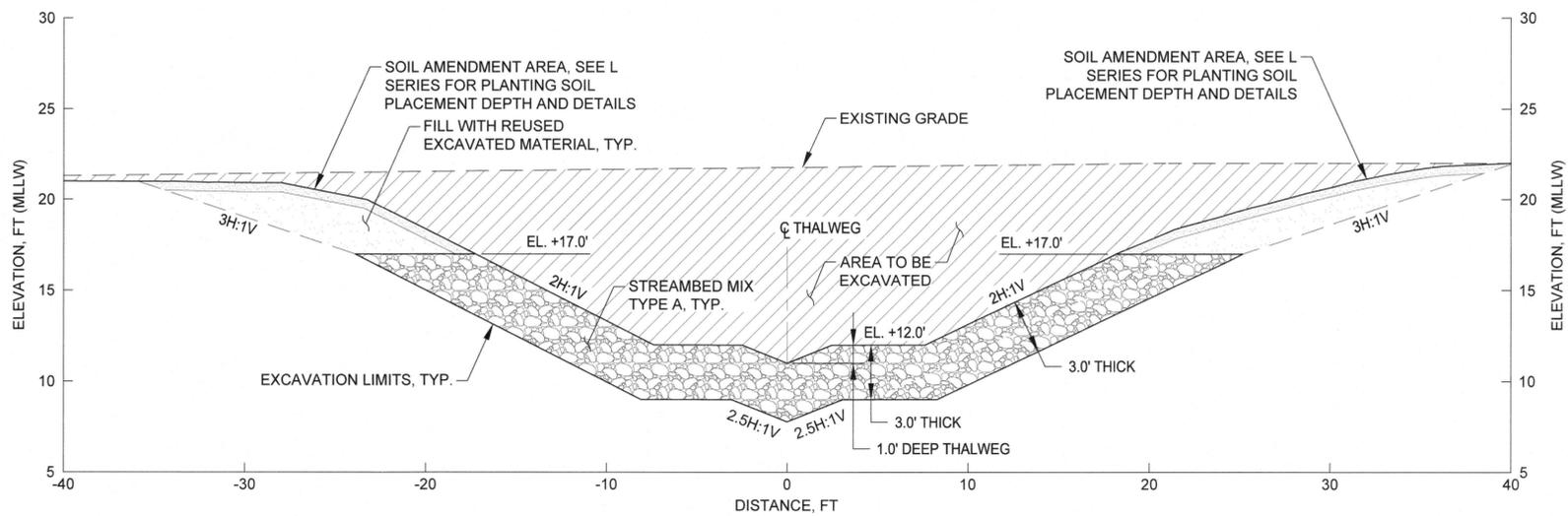
H SECTION - NEW CHANNEL AT STATION 8+00
SCALE: 1" = 5'



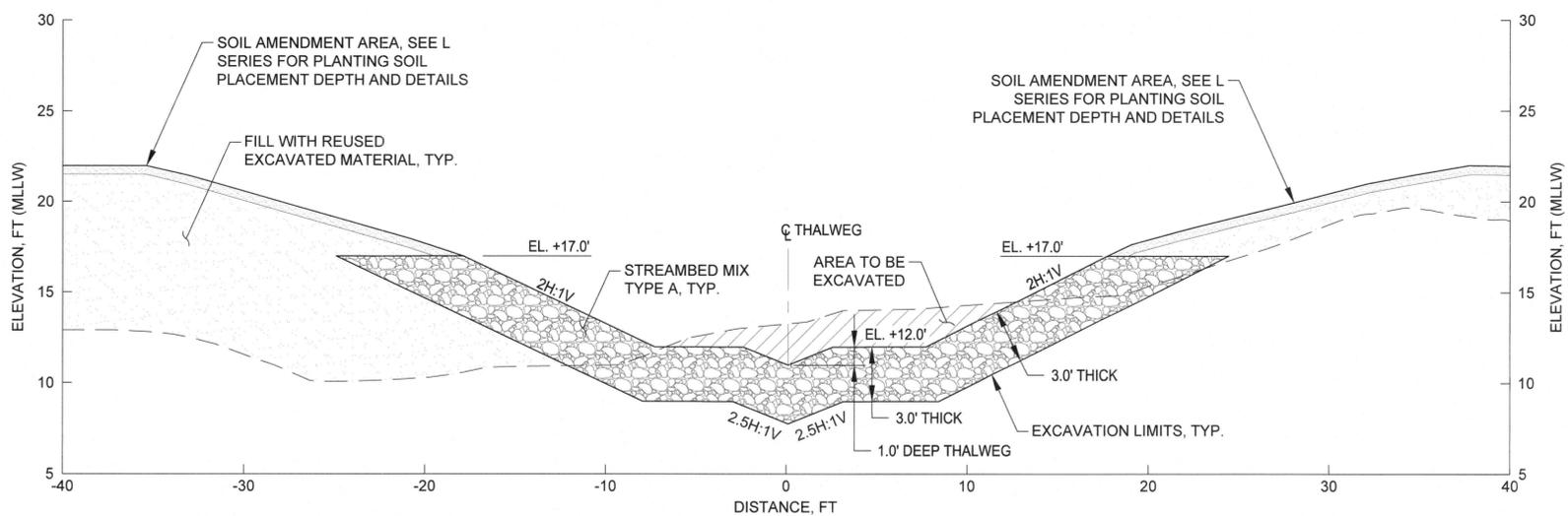
I SECTION - NEW CHANNEL AT STATION 13+75
SCALE: 1" = 5'



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M MOTT MACDONALD	REVISION: _____ MARK: _____
APPROVED: J. Dawson CHECKED BY: A. Mitchell DIRECTOR ENG. DATE: MOR69830 5-28-21 PRINTED BY: MOR69830 May 27, 2021 PORT ADDRESS: 1 SITCOM PLAZA TACOMA, WA 98421	5/28/21 DATE: 5/28/21 DATE: 5/28/21
LOWER WAPATO CREEK HABITAT PROJECT STREAM CROSS SECTIONS 1	
6656 C3.0 18 OF 82	TOWNSHIP: 20N RANGE: 3E SECTION: 1 DAT-HRZ: WA83-SF VERT: MLLW (PORT OF TACOMA TIDAL) PARCEL: 14 DRAWING SCALE: AS NOTED
CONT/CONS: 071447 M. ID: 101448.01 PHASE: BID SET	THIS DRAWING IS THE PROPERTY OF THE PORT OF TACOMA AND SHALL NOT BE USED ON OTHER WORK, DISCLOSED, COPIED, IN WHOLE OR IN PART, WITHOUT WRITTEN PERMISSION.



E SECTION - NEW CHANNEL AT BRIDGE (UPSTREAM)
SCALE: 1" = 5'



F SECTION - NEW CHANNEL AT BRIDGE (DOWNSTREAM)
SCALE: 1" = 5'

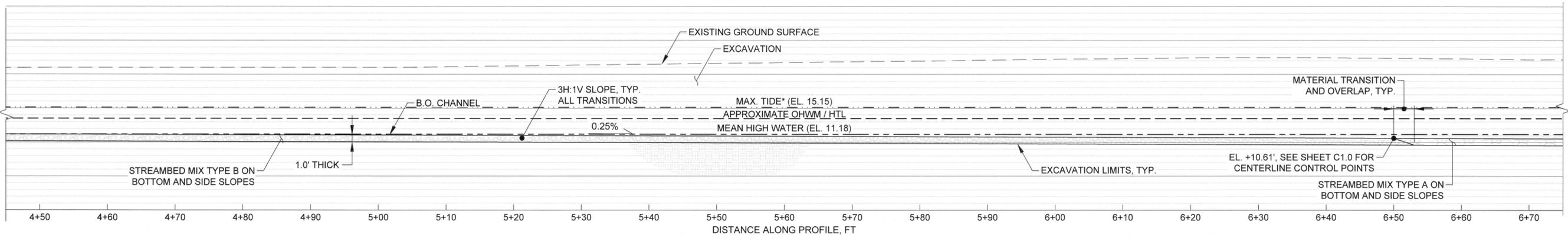
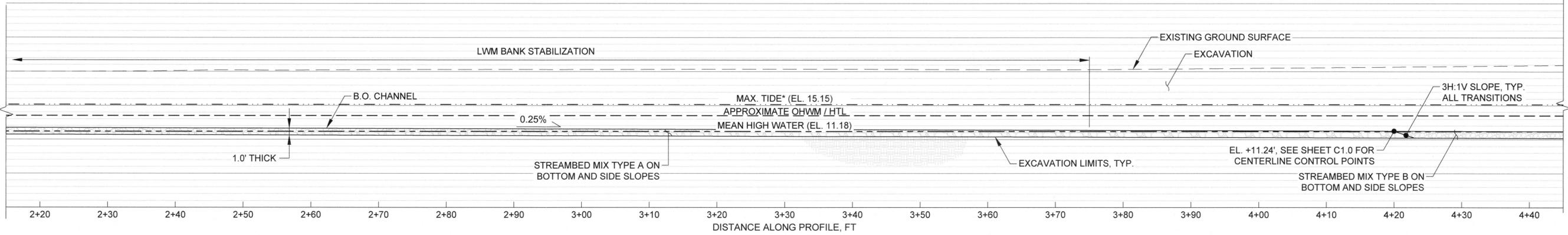
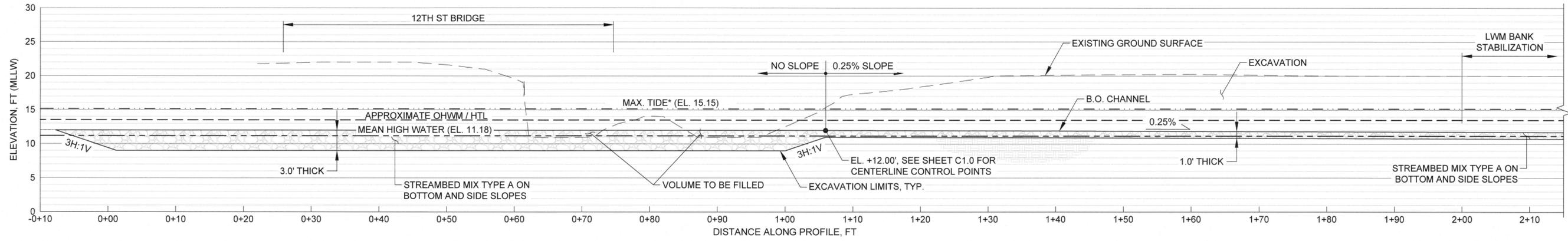
NOTES

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6656 C3.1 19 OF 82	LOWER WAPATO CREEK HABITAT PROJECT		APPROVED: J. Dawson	5/28/21
	STREAM CROSS SECTIONS 2 - BRIDGE CROSSING		CHECKED BY: A. Mitchell	5/28/21
CONT/CONS: 071447	TOWNSHIP: 20N	RANGE: 3E	SECTION: 1	
M. ID: 101449.01	DAT-HRZ: WA83-SF	VERT: MLLW (PORT OF TACOMA TIDAL)	PRINTED BY: MOR69830 May 27, 2021	
PHASE: BID SET	PARCEL: 14	DRAWING SCALE: AS NOTED	PORT ADDRESS: 1 SITCOM PLAZA TACOMA, WA 98421	
		DATE: 5/28/21 APPR: MOTT MACDONALD BY: T +1 (425) 778 6243 REVISION:		
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STREAM PROFILE
SCALE: 1" = 8'

CONSTRUCTION NOTES

- 1. FOR CLARITY, CHANNEL PROFILE DOES NOT SHOW THALWEG. CONTRACTOR SHALL ACCOUNT FOR A 1.0' DEEP THALWEG DURING EXCAVATION, GRADING AND FILL WORKS, SEE SHEETS C1.0 THROUGH C3.1.



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REVISION: _____
MARK: _____



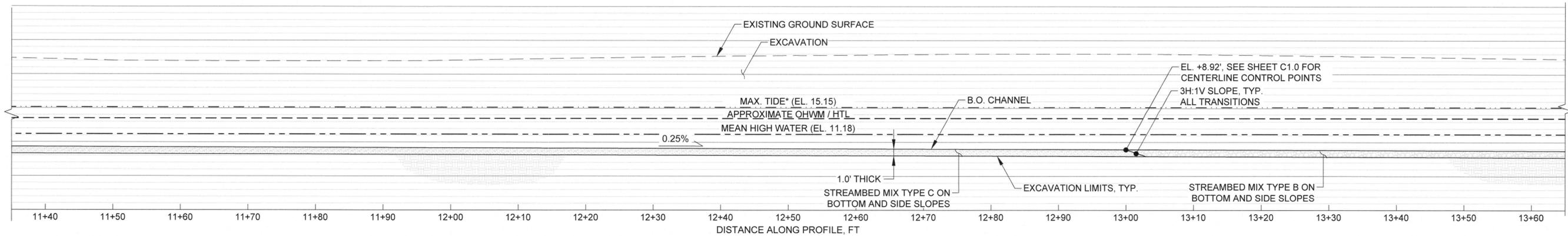
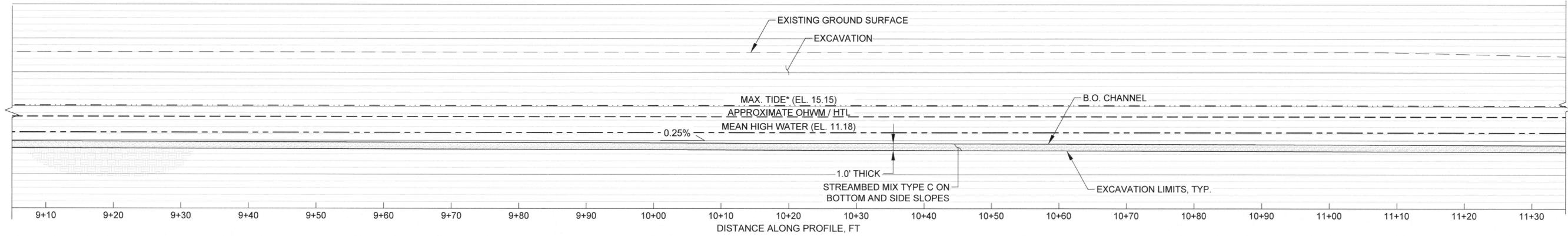
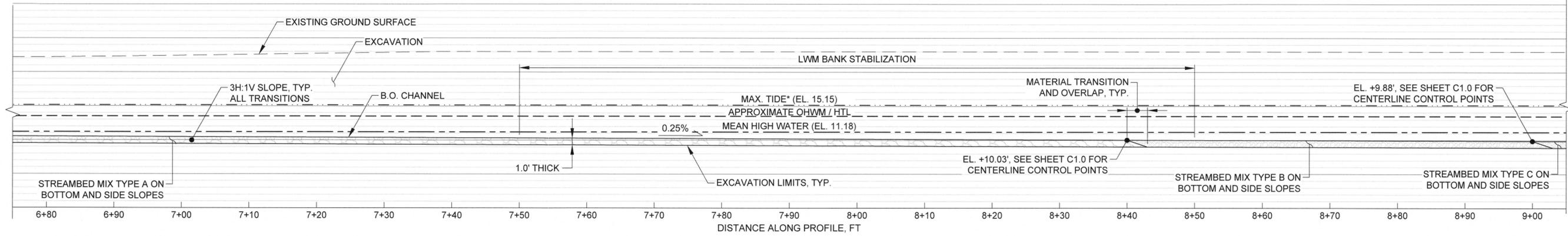
APPROVED: J. Dawson 5/28/21
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DIRECTOR ENGR. DATE: MOR69830 May 27, 2021
PRINTED BY: T SITCOM PLAZA
PORT ADDRESS: 1 SITCOM PLAZA
TACOMA, WA 98421

LOWER WAPATO CREEK
HABITAT PROJECT
STREAM PROFILE 1

TOWNSHIP: 20N SECTION: 1
RANGE: 3E
VERT: MLLW (PORT OF TACOMA TIDAL)
DRAWING SCALE: AS NOTED

6656
C4.0
20 OF 82

CONT/CONS: 071447
M. ID: 101449.01
PHASE: BID SET



STREAM PROFILE
SCALE: 1" = 8'

CONSTRUCTION NOTES

- FOR CLARITY, CHANNEL PROFILE DOES NOT SHOW THALWEG. CONTRACTOR SHALL ACCOUNT FOR A 1.0' DEEP THALWEG DURING EXCAVATION, GRADING AND FILL WORKS, SEE SHEETS C1.0 THROUGH C3.1.



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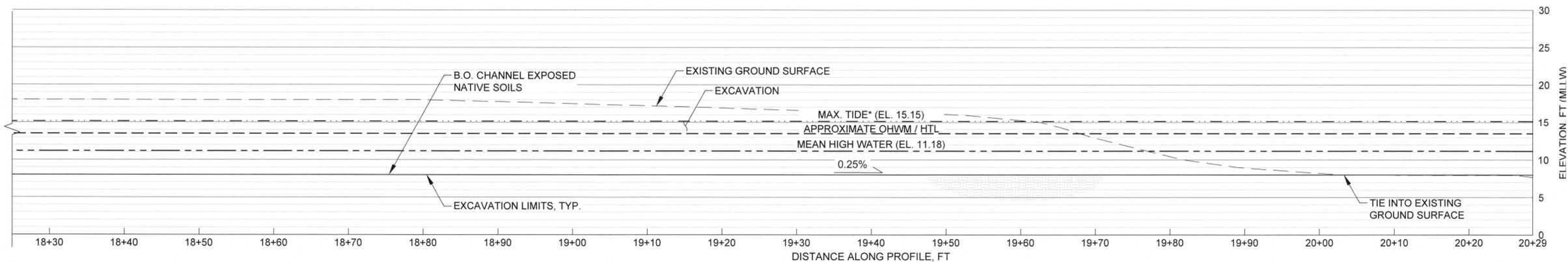
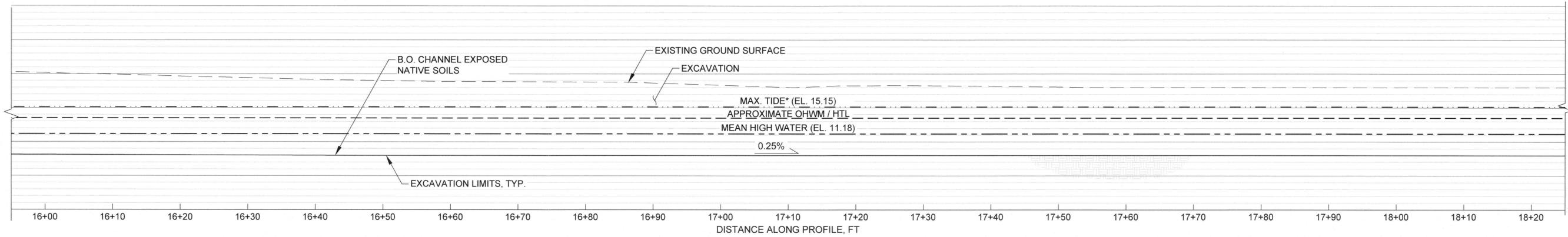
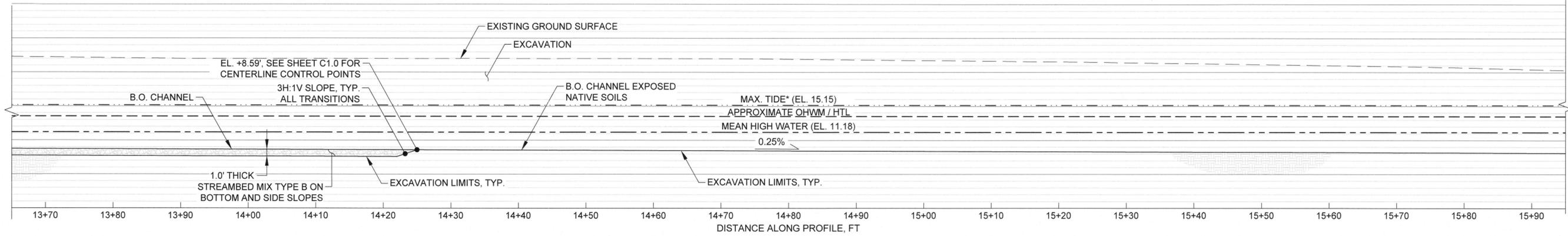
APPROVED: J. Dawson 5/28/21
CHECKED BY: A. Mitchell 5/28/21
DIRECTOR ENG. DATE: MOR69830 May 27, 2021
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PORT ADDRESS: 1 SITCOM PLAZA
TACOMA, WA 98421

LOWER WAPATO CREEK
HABITAT PROJECT
STREAM PROFILE 2

RANGE: 3E SECTION: 1
TOWNSHIP: 20N VERT: MLW (PORT OF TACOMA TIDAL)
DATE: HRZ: WA83-SF
PARCEL: 14 DRAWING SCALE: AS NOTED

6656
C4.1
21 OF 82
CONT'CONS: 071447
M. ID: 101449.01
PHASE: BID SET

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STREAM PROFILE
SCALE: 1" = 10'

CONSTRUCTION NOTES

- 1. FOR CLARITY, CHANNEL PROFILE DOES NOT SHOW THALWEG. CONTRACTOR SHALL ACCOUNT FOR A 1.0' DEEP THALWEG DURING EXCAVATION, GRADING AND FILL WORKS, SEE SHEETS C1.0 THROUGH C3.1.



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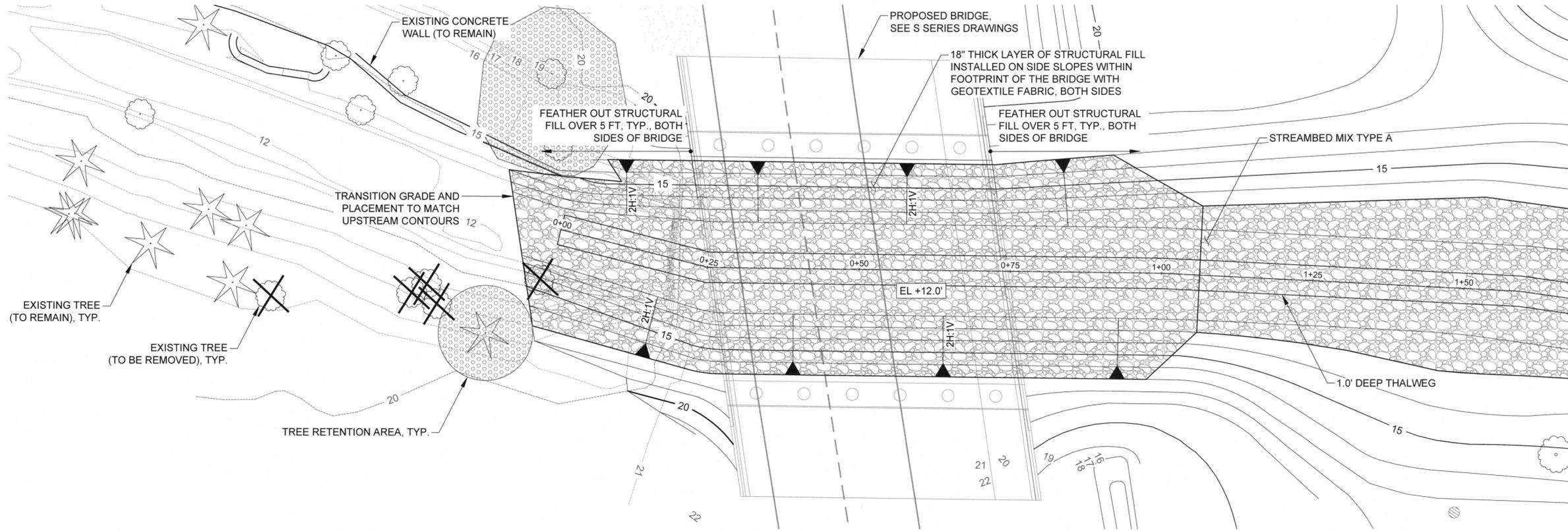
APPROVED:	J. Dawson	5/28/21
CHECKED BY:	A. Mitchell	5/28/21
DIRECTOR ENG. DATE:	MOR69830	May 27, 2021
PRINTED BY:	1 SITCOM PLAZA	TACOMA, WA 98421

**LOWER WAPATO CREEK
HABITAT PROJECT**
STREAM PROFILE 3

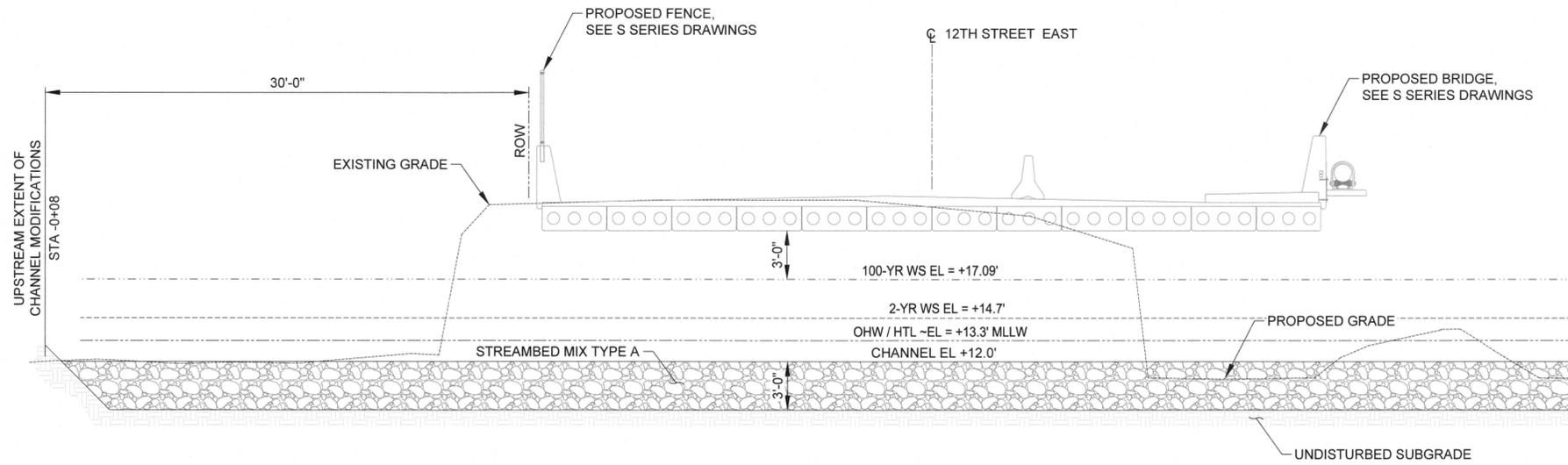
TOWNSHIP: 20N RANGE: 3E SECTION: 1
 DAT-HRZ: WA83-SF VERT: MLW (PORT OF TACOMA TIDAL)
 PARCEL: 14 DRAWING SCALE: AS NOTED

6656
C4.2
22 OF 82

CONT/CONS: 07/447
M. ID: 101449.01
PHASE: BID SET



BRIDGE PLAN
SCALE: 1" = 10'



BRIDGE PROFILE
SCALE: 1" = 5'

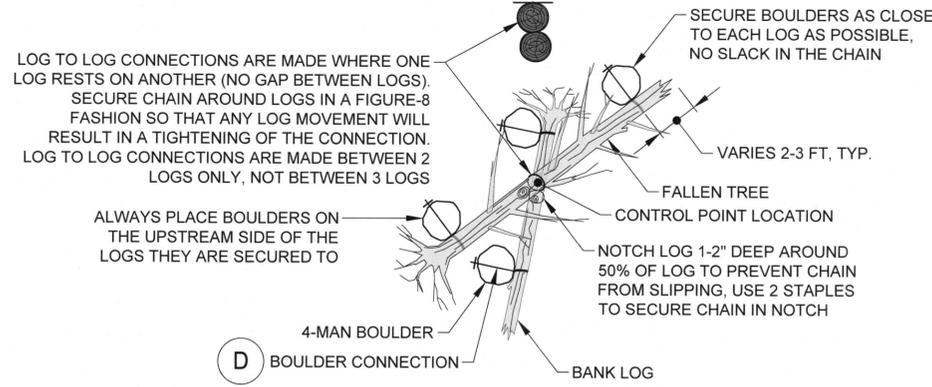
CONSTRUCTION NOTES

1. FOR CLARITY, BRIDGE PROFILE DOES NOT SHOW THALWEG. CONTRACTOR SHALL ACCOUNT FOR A 1.0' DEEP THALWEG DURING EXCAVATION, GRADING AND FILL WORKS. SEE SHEETS C1.0 THROUGH C3.1.
2. PROTECT AND PRESERVE EXISTING TREES AS SHOWN.

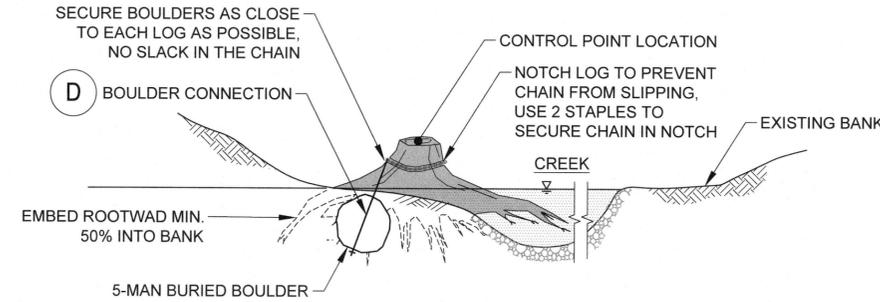


6656 C4.3 23 OF 82	LOWER WAPATO CREEK HABITAT PROJECT STREAM PROFILE 4 - BRIDGE CROSSING		APPROVED: <i>[Signature]</i> DATE: 5/28/21
	TOWNSHIP: 20N RANGE: 3E SECTION: 1	DAT-HRZ: WA83-SF VERT: MLLW (PORT OF TACOMA TIDAL) DRAWING SCALE: AS NOTED	CHECKED BY: A. Mitchell PROJECT ENGR: MOR69830 DATE: May 27, 2021
M. ID: 101449.01 PHASE: BID SET	PORT OF TACOMA 1601 6th Avenue Suite 800 Seattle, Washington 98101 T +1 (425) 778 6243	MOTT MACDONALD MARK: REVISION: BY: DATE:	APPR: DATE:

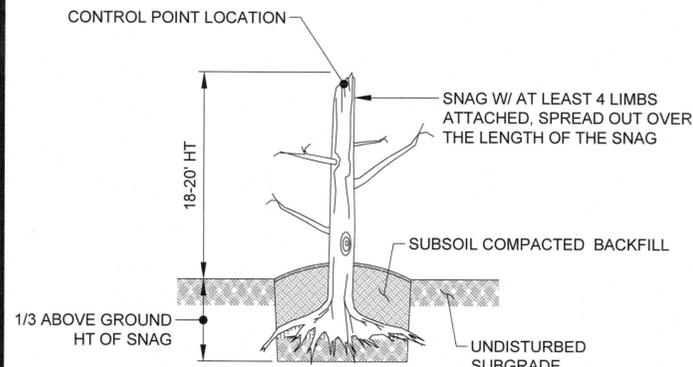
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A HABITAT LOG STRUCTURE PLAN VIEW
N.T.S.



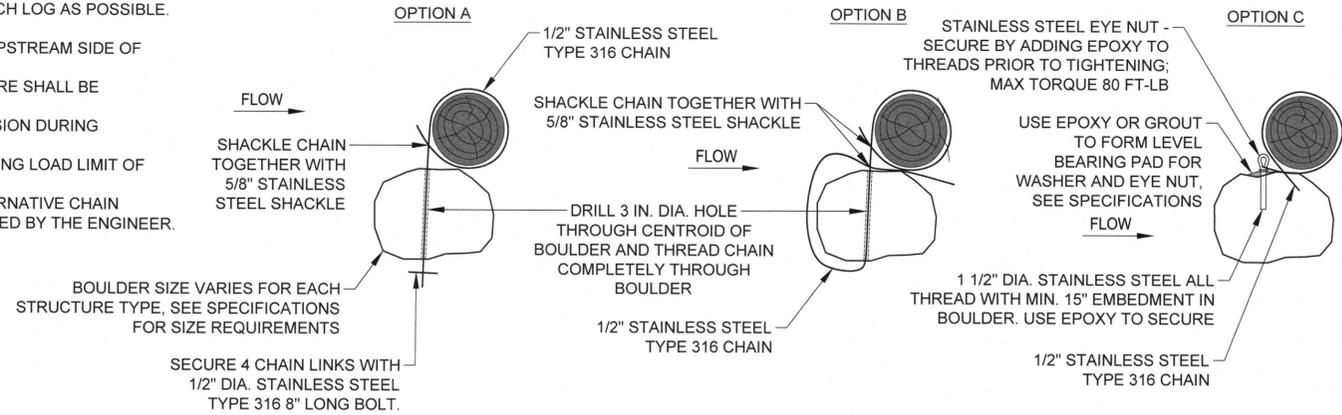
B ROOTWAD
N.T.S.



C SNAG DETAIL
N.T.S.

NOTES

1. SECURE BOULDERS AS CLOSE TO EACH LOG AS POSSIBLE. NO SLACK IN THE CHAIN.
2. ALWAYS PLACE BOULDERS ON THE UPSTREAM SIDE OF THE LOGS THEY ARE SECURED TO.
3. ALL BOULDER CONNECTION HARDWARE SHALL BE STAINLESS STEEL TYPE 316.
4. CHAIN SYSTEM SHALL BE PUT IN TENSION DURING SHACKLING.
5. CHAIN SHALL HAVE A MINIMUM WORKING LOAD LIMIT OF 4,000 LBS.
6. THE CONTRACTOR MAY SUBMIT ALTERNATIVE CHAIN CONNECTION SYSTEM TO BE APPROVED BY THE ENGINEER.



D BOULDER CONNECTION
N.T.S.

HABITAT LOG STRUCTURE CONTROL POINTS

STRUCTURE NO.	NORTHING	EASTING
H1	703441.88	1175483.68
H2	703389.52	1175531.64
H3	703292.28	1175481.91
H4	703419.16	1175636.01
H5	703260.92	1175615.67
H6	703288.13	1175704.86
H7	703468.77	1175712.70
H8	703364.60	1175779.58
H9	703439.65	1175830.41
H10	703525.52	1175817.70
H11	703562.00	1175859.25
H12	703543.00	1175913.73
H13	703481.91	1175908.15
H14	703310.07	1175998.54
H15	703462.02	1175966.59
H16	703414.73	1176029.41
H17	703421.81	1176094.42
H18	703547.57	1175983.78

HABITAT LOG STRUCTURE CONTROL POINTS

STRUCTURE NO.	NORTHING	EASTING
H19	703571.21	1176022.00
H20	703597.31	1176130.48
H21	703602.33	1176157.31
H22	703579.24	1176159.56
H23	703564.58	1176159.82
H24	703534.89	1176217.02
H25	703560.03	1176245.23
H26	703613.11	1176238.83
H27	703640.89	1176243.69
H28	703677.92	1176199.11
H29	703689.73	1176166.41
H30	703702.78	1176100.83
H31	703446.20	1176221.33
H32	703338.93	1176200.32
H33	703287.39	1176135.12
H34	703265.22	1176203.18
H35	703284.72	1176324.60
H36	703344.57	1176297.19

HABITAT LOG STRUCTURE CONTROL POINTS

STRUCTURE NO.	NORTHING	EASTING
H37	703337.73	1176336.74
H38	703393.53	1176373.55
H39	703285.09	1176440.23
H40	703250.25	1176533.34
H41	703339.49	1176546.28
H42	703456.36	1176474.34
H43	703478.51	1176354.31
H44	703527.18	1176327.17
H45	703534.48	1176369.20
H46	703529.72	1176448.06
H47	703637.75	1176331.85
H48	703766.23	1176360.67
H49	703782.26	1176456.48
H50	703884.46	1176492.36

SNAG CONTROL POINTS

STRUCTURE NO.	NORTHING	EASTING
S1	703230.63	1175815.00
S2	703323.90	1176009.64
S3	703209.44	1176135.03
S4	703272.22	1176148.38
S5	703239.80	1176211.23
S6	703260.24	1176314.85
S7	703259.95	1176410.18
S8	703179.72	1176496.48
S9	703252.62	1176570.25
S10	703395.36	1176563.39
S11	703422.83	1176448.79
S12	703417.09	1176260.56

SNAG CONTROL POINTS

STRUCTURE NO.	NORTHING	EASTING
S13	703514.77	1176291.65
S14	703574.34	1176133.64
S15	703661.07	1176074.94
S16	703586.10	1176322.54
S17	703529.46	1176420.08
S18	703590.15	1176575.60
S19	703661.49	1176473.69
S20	703720.09	1176404.19
S21	703804.55	1176464.33
S22	703835.67	1176595.56
S23	703999.04	1176588.05

NOTES

1. UPRIGHT SNAGS ARE TO BE PLACED AT THE LOCATIONS SHOWN ON THE PLAN.
2. ALL SNAGS SHALL BE FIR, CEDAR OR OTHER CONIFEROUS SPECIES WITH AT LEAST 2.5' LONG WITH A 2.5" MIN DIAMETER LIMBS LEFT INTACT. DO NOT TRIM TOPS, DAMAGED OR BROKEN TOPS ARE PREFERRED. PROVIDE LOGS WITH UNTRIMMED LIMBS. LOGS USED FOR SNAGS MAY BE PARTIALLY HOLLOW AND CONTAIN CAVITIES AS LONG AS THEY ARE GENERALLY SOUND.
3. SNAGS SHALL BE A MINIMUM OF 24 INCHES IN DIAMETER AT GROUND SURFACE WHEN INSTALLED AND SHALL BE PLACED TO A DEPTH INTO THE GROUND EQUAL TO 1/3RD OF THEIR ABOVE-GROUND HEIGHT.
4. SNAGS WITH SUBSTANTIAL ROOT MASSES ATTACHED MAY BE PLACED TO THE DEPTH INDICATED AND BACKFILLED WITH COMPACTED SOIL ONLY UPON APPROVAL OF EACH SNAG INDIVIDUALLY BY THE ENGINEER.
5. ADDITIONAL LIMBS SHALL BE 3' MIN IN LENGTH AND 2" TO 2.5" IN DIAMETER. DRILL HOLE MIN 6" DEEP AND MAXIMUM 5 DEGREE ANGLE. FILL WITH EPOXY AND EMBED BRANCH INTO HOLE.
6. MIN. 2 LIMBS ON EACH HALF OF THE CIRCUMFERENCE.

NOTE

1. STRUCTURE CONTROL POINTS DESIGNATE THE CENTER OF THE STRUCTURE.

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DATE: _____
APPR: _____
BY: _____
REVISION: _____
MARK: _____

APPROVED: J. Dawson
CHECKED BY: A. Mitchell
DIRECTOR/ENGR. DATE: 5/28/21

5/28/21
DATE
5/28/21
DATE
MOR69830 May 27, 2021
PROJECT
1 SITCOM PLAZA
TACOMA, WA 98421

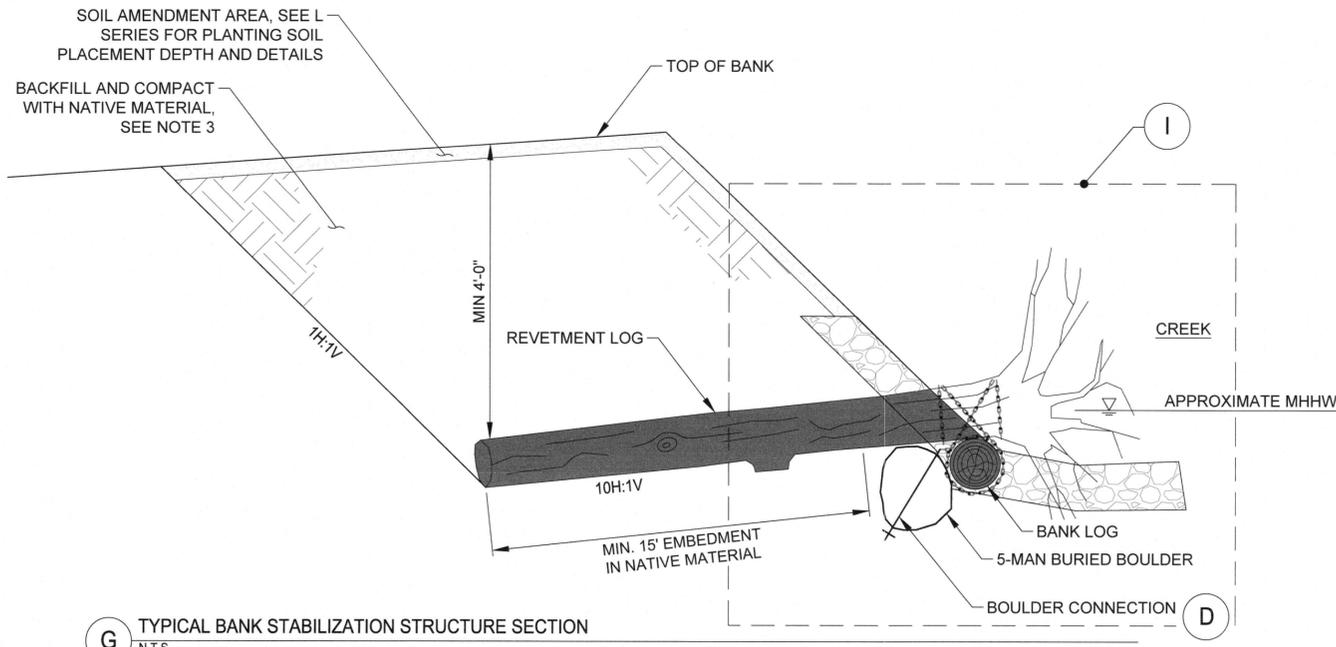
LOWER WAPATO CREEK HABITAT PROJECT
LARGE WOODY MATERIAL DETAILS 1

SECTION: 1
TOWNSHIP: 20N
RANGE: 3E
DATE-HRZ: WA83-SF
VERT: MILLW (PORT OF TACOMA TIDAL)
DRAWING SCALE: AS NOTED
PARCEL: 14

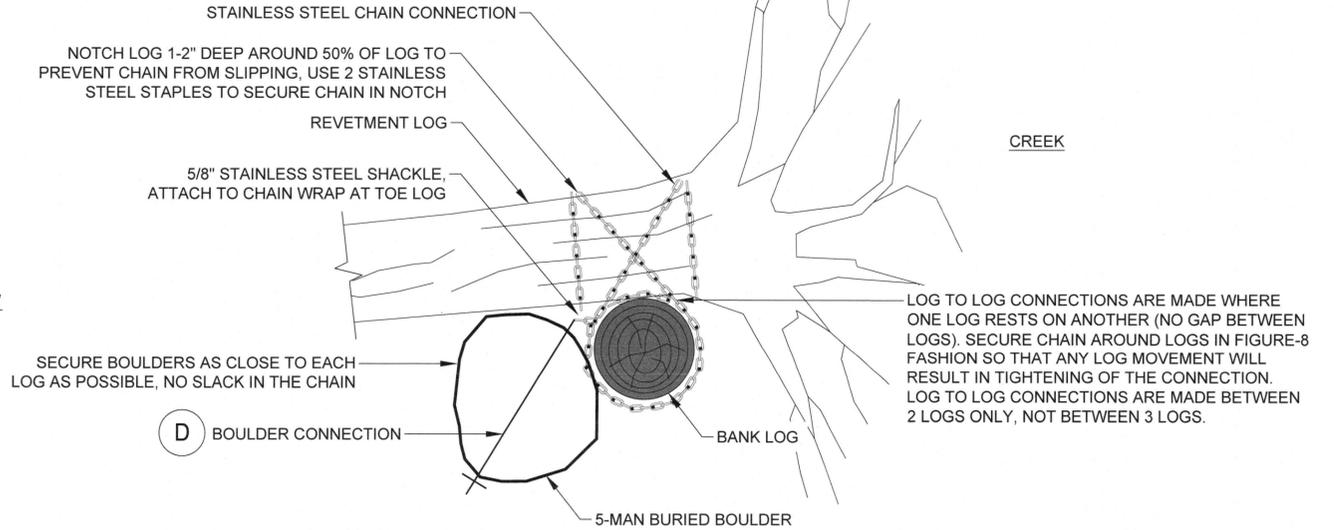
6656
CONT/CONS: 071447
M. ID: 101449.01
PHASE: BID SET

C5.0
24 OF 82

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G TYPICAL BANK STABILIZATION STRUCTURE SECTION
N.T.S.

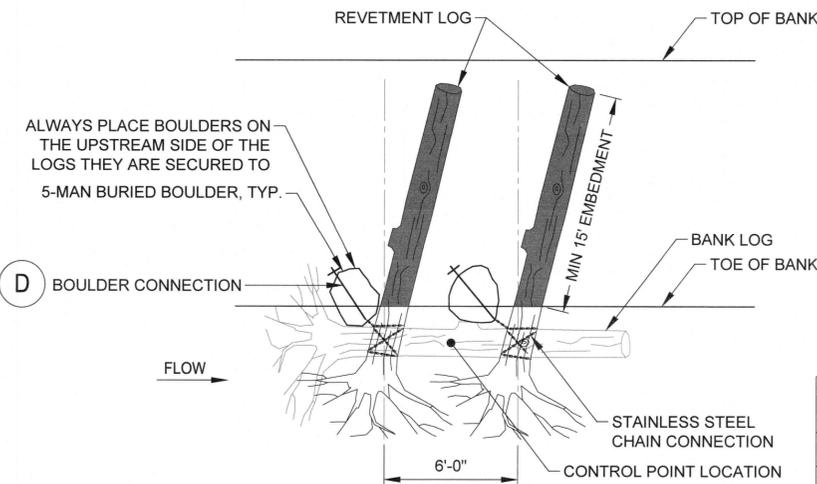


I BANK STABILIZATION STRUCTURE ANCHOR DETAIL
N.T.S.

LOG SCHEDULE			
LOG TYPE	DIA. (IN)	LENGTH (FT)	TOTAL QUANTITY
REVTMENT LOG	16 - 18	20	52
BANK LOG	12 - 16	20	95
FALLEN TREE	16 - 18	20	31
ROOTWAD	18 - 24	-	29
SNAGS	24\"/>		

NOTES

- ALL LARGE WOODY MATERIAL (LWM) TO BE FIR, CEDAR OR OTHER CONIFEROUS SPECIES WITH ROOTWAD ATTACHED.
- LOG DIAMETER TO BE MEASURED 8' FROM THE ROOTWAD.
- LWM SHALL NOT BE TREATED WITH PRESERVATIVES.
- LENGTH INCLUDES ROOTWAD.



H TYPICAL BANK STABILIZATION STRUCTURE PLAN
N.T.S.

BANK STABILIZATION CONSTRUCTION SEQUENCE

- EXCAVATE BANK SUFFICIENTLY TO INSTALL STRUCTURE
- INSTALL BANK LOG
- INSTALL REVETMENT LOGS, ADJUST EXCAVATION AS NEEDED
- INSTALL BOULDER AND BOULDER CONNECTIONS
- BACKFILL AND COMPACT BANK WITH NATIVE MATERIAL

BANK STABILIZATION CONSTRUCTION NOTES

- EXCAVATION LIMITS SHOWN ARE APPROXIMATE AND WILL VARY BASED ON CONSTRUCTION MEANS AND METHODS, SUBSURFACE CONDITIONS AND LOCATION OF STRUCTURE. CONTRACTOR SHALL ADJUST EXCAVATION LIMITS AS NECESSARY TO COMPLETE CONSTRUCTION.
- BANK STABILIZATION STRUCTURES TO BE CONTINUOUS PLACEMENT, NO GAPS OR BREAKS BETWEEN STRUCTURES.
- BACKFILL IN 6 INCH LIFTS TO ~85% COMPACTION, MINIMUM 4 FT FILL OVER REVETMENT LOGS.
- BANK LOG TO BE SEMI-PARALLEL TO FLOW WITH ROOTWAD FACING UPSTREAM.
- REVTMENT LOG TO BE SEMI-PERPENDICULAR TO FLOW EMBEDDED A MINIMUM OF 15 FT INTO BANK.

BANK STABILIZATION CONTROL POINTS		
STRUCTURE NO.	NORTHING	EASTING
BS1	703271.83	1176095.72
BS2	703287.62	1176101.45
BS3	703303.01	1176105.89
BS4	703317.68	1176111.97
BS5	703331.10	1176120.04
BS6	703344.15	1176130.51
BS7	703354.86	1176141.21
BS8	703364.98	1176153.19
BS9	703371.49	1176167.50
BS10	703376.36	1176181.96
BS11	703379.62	1176198.37
BS12	703383.03	1176213.82
BS13	703384.71	1176230.24

BANK STABILIZATION CONTROL POINTS		
STRUCTURE NO.	NORTHING	EASTING
BS14	703385.48	1176245.30
BS15	703703.71	1176258.98
BS16	703713.93	1176267.52
BS17	703724.19	1176280.39
BS18	703730.93	1176291.84
BS19	703734.74	1176305.84
BS20	703734.35	1176325.05
BS21	703729.88	1176342.69
BS22	703721.58	1176356.54
BS23	703706.98	1176370.07
BS24	703690.98	1176379.17
BS25	703674.47	1176384.84
BS26	703661.80	1176389.11

ROOTWAD CONTROL POINTS		
STRUCTURE NO.	NORTHING	EASTING
R1	703305.65	1175476.34
R2	703497.57	1175571.43
R3	703430.21	1175644.40
R4	703301.80	1175713.09
R5	703366.25	1175776.33
R6	703371.66	1175784.83
R7	703463.36	1175710.13
R8	703465.79	1175715.38
R9	703441.48	1175826.90
R10	703533.63	1175824.24
R11	703466.60	1175965.84
R12	703460.53	1175972.06
R13	703421.78	1176018.21
R14	703417.21	1176023.54
R15	703299.89	1175995.23

ROOTWAD CONTROL POINTS		
STRUCTURE NO.	NORTHING	EASTING
R16	703411.77	1176073.22
R17	703544.02	1175986.12
R18	703580.97	1176027.71
R19	703610.38	1176125.53
R20	703602.44	1176154.28
R21	703559.78	1176239.08
R22	703285.51	1176335.03
R23	703346.87	1176356.86
R24	703336.31	1176393.92
R25	703341.80	1176397.73
R26	703479.52	1176358.18
R27	703527.58	1176330.08
R28	703535.83	1176365.98
R29	703900.91	1176489.72

6656
C5.1
25 OF 82

CONT/CONS: 071447
M. ID: 101449.01
PHASE: BID SET

LOWER WAPATO CREEK HABITAT PROJECT
LARGE WOODY MATERIAL DETAILS 2

TOWNSHIP: 20N
DAT-HRZ: WA83-SF
PARCEL: 14

SECTION: 1
RANGE: 3E
VERT: MILLW (PORT OF TACOMA TIDAL)
DRAWING SCALE: AS NOTED

APPROVED: *J. Dawson* 5/28/21
CHECKED BY: *A. Mitchell* 5/28/21
DIRECTOR ENGR. DATE: MOR69830 May 27, 2021
PRINTED BY: 1 SITCOM PLAZA
PORT ADDRESS: TACOMA, WA 98421

5/28/21 DATE
J. Dawson CHECKED BY
A. Mitchell 5/28/21 DATE
MOR69830 May 27, 2021
1 SITCOM PLAZA
TACOMA, WA 98421

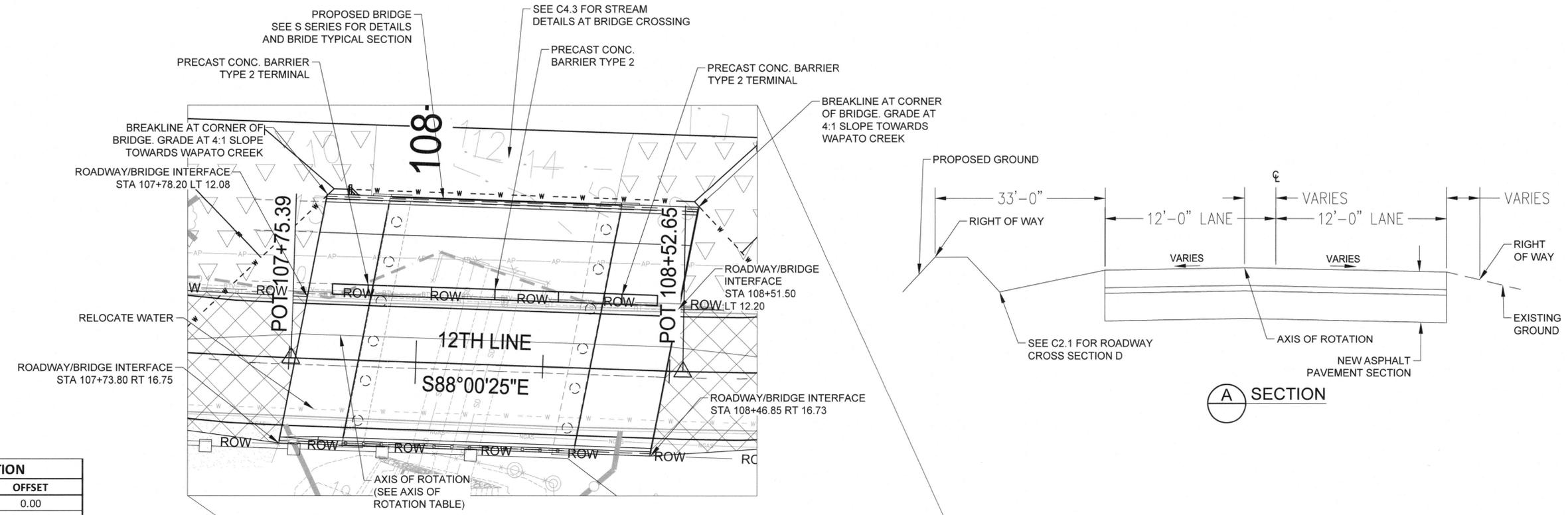
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Seattle, Washington 98101
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Part of Tacoma
MOTT MACDONALD
P.O. BOX 1837 TACOMA, WA 98401 (253)931-9441

REVISION: BY: APPR: DATE:

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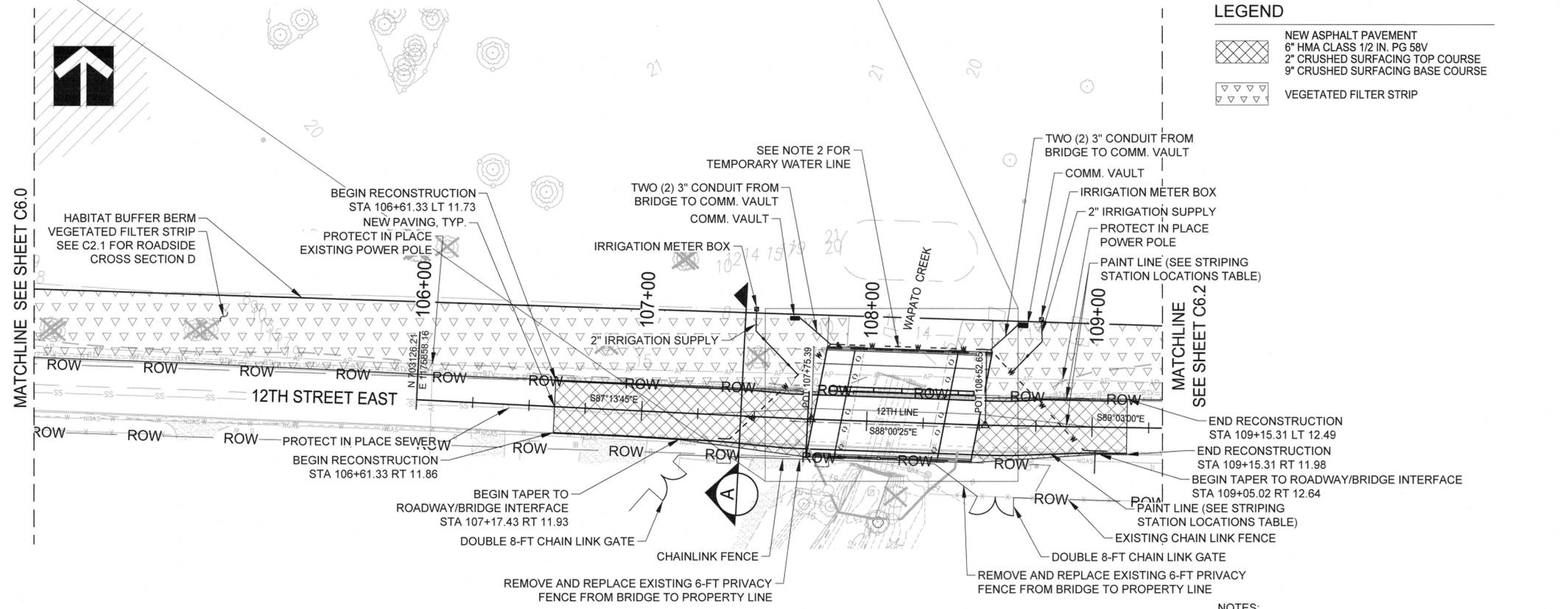


AXIS OF ROTATION		
STATION	LT/RT	OFFSET
107+27.02	RT	0.00
107+77.02	LT	4.77
108+50.30	LT	4.77
109+00.30	RT	0.00

LEGEND

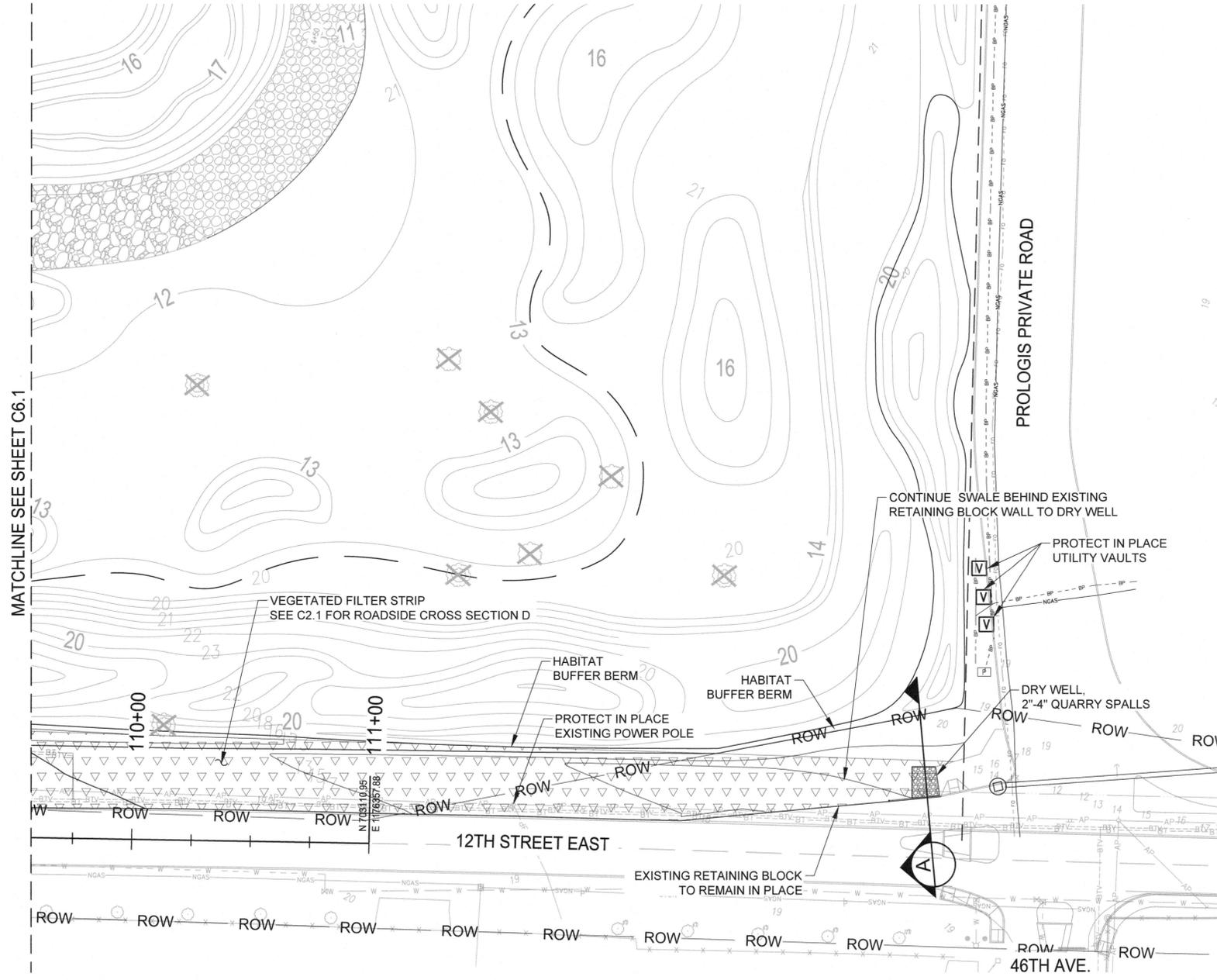
	NEW ASPHALT PAVEMENT 6" HMA CLASS 1/2 IN. PG 58V 2" CRUSHED SURFACING TOP COURSE 9" CRUSHED SURFACING BASE COURSE
	VEGETATED FILTER STRIP

STRIPING STATION LOCATIONS			
STATION	LT/RT	OFFSET	LINE TYPE
106+61.33	LT	11.39	SOLID WHITE
107+49.88	LT	11.48	SOLID WHITE
107+64.02	LT	10.77	SOLID WHITE
108+64.02	LT	10.77	SOLID WHITE
108+77.54	LT	11.67	SOLID WHITE
109+15.31	LT	11.67	SOLID WHITE
106+61.33	RT	0.00	BROKEN YELLOW
107+39.42	RT	0.00	BROKEN YELLOW
107+64.02	RT	1.23	BROKEN YELLOW
108+64.02	RT	1.23	BROKEN YELLOW
108+88.62	RT	0.00	BROKEN YELLOW
109+15.31	RT	0.00	BROKEN YELLOW
106+61.33	RT	11.54	SOLID WHITE
107+32.32	RT	11.65	SOLID WHITE
107+64.02	RT	13.23	SOLID WHITE
108+64.02	RT	13.23	SOLID WHITE
108+99.42	RT	11.46	SOLID WHITE
109+15.31	RT	11.46	SOLID WHITE



SITE PLAN - AREA 2
1" = 30' SCALE

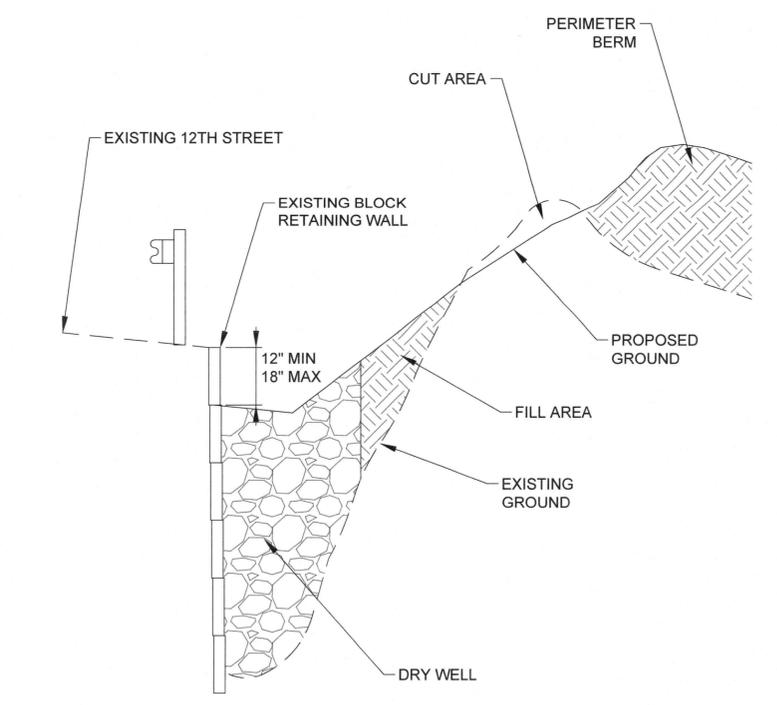
- NOTES:**
- CONTRACTOR TO COORDINATE WITH PSE FOR GAS LINE RELOCATION.
 - CONTRACTOR TO PROVIDE TEMPORARY SUPPORT FOR WATER LINE OVER WAPATO CREEK PER CONTRACT DOCUMENT.
 - SEE SHEET L3.0 FOR FENCE DETAILS.



SITE PLAN - AREA 3
1" = 30' SCALE

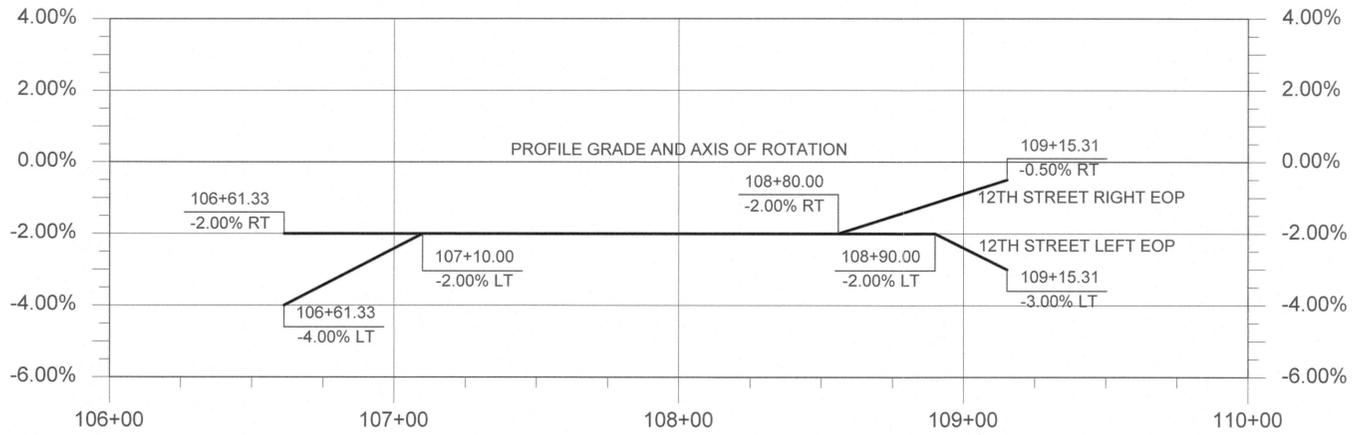
LEGEND

VEGETATED FILTER STRIP

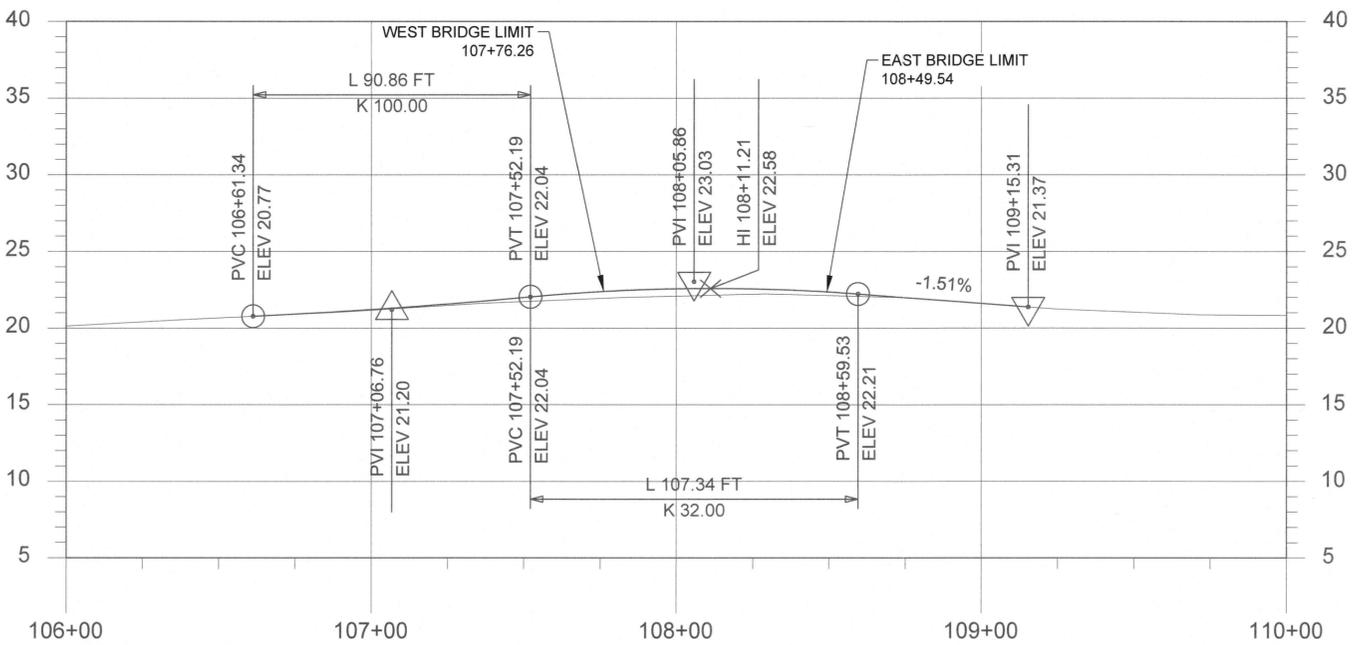


SECTION A

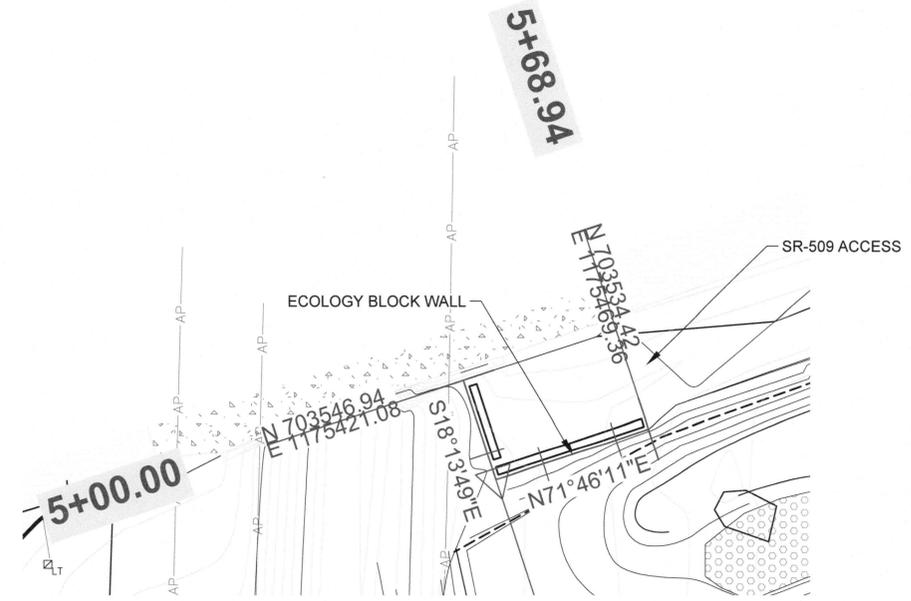
<p>6656 C6.2 28 OF 82</p>	<p>CONTRICONS: 071447</p>	<p>TOWNSHIP: 20N</p>	<p>RANGE: 3E</p>	<p>SECTION: 1</p>	<p>APPROVED: J. Dawson</p>	<p>5/28/21</p>	<p>DATE</p>
	<p>M. ID: 101449.01</p>	<p>DAT-HRZ: WA83-SF</p>	<p>VERT: MLLW (PORT OF TACOMA TIDAL)</p>	<p>DRAWING SCALE: AS NOTED</p>	<p>LOWER WAPATO CREEK HABITAT PROJECT CIVIL / ROADWAY PLAN 3</p>	<p>5/28/21</p>	<p>DATE</p>
<p>PHASE: BID SET</p>	<p>PARCEL: 14</p>	<p>PORT ADDRESS: 1 SITCOM PLAZA TACOMA, WA 98421</p>	<p>PRINTED BY: OliveSta May 28, 2021</p>	<p>PROJ. ENGR DATE</p>	<p>5/28/21</p>	<p>DATE</p>	<p>BY: [Signature]</p>
<p>MARK: MOTT MACDONALD</p>	<p>REVISION:</p>	<p>BY:</p>	<p>APPR: [Signature]</p>	<p>DATE:</p>	<p>1601 6th Avenue Suite 800 Seattle, Washington 98101 T +1 (425) 778 6243</p>	<p>APPR: [Signature]</p>	<p>DATE:</p>
<p>BRITANNIA KAY PATAN ENGINEER 20103785 PROF. REG. NO. 20103785</p>							
<p>Port of Tacoma P.O. BOX 1887 TACOMA, WA 98401 (206)935-8641</p>							



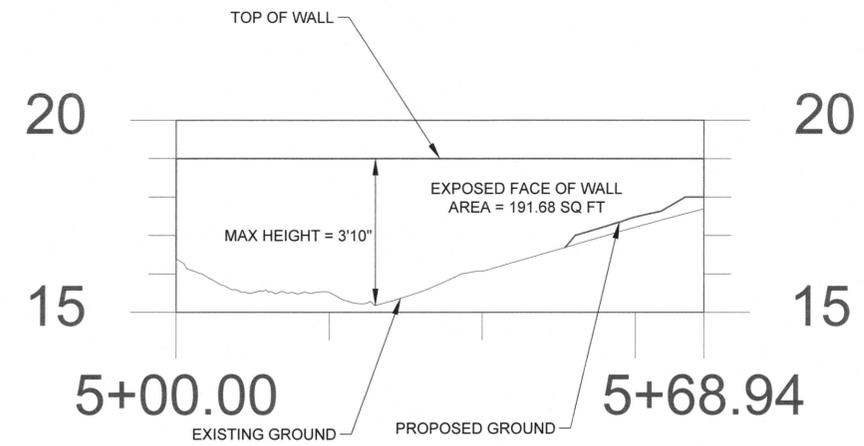
12TH STREET SUPERELEVATION DIAGRAM



12TH STREET ROADWAY PROFILE

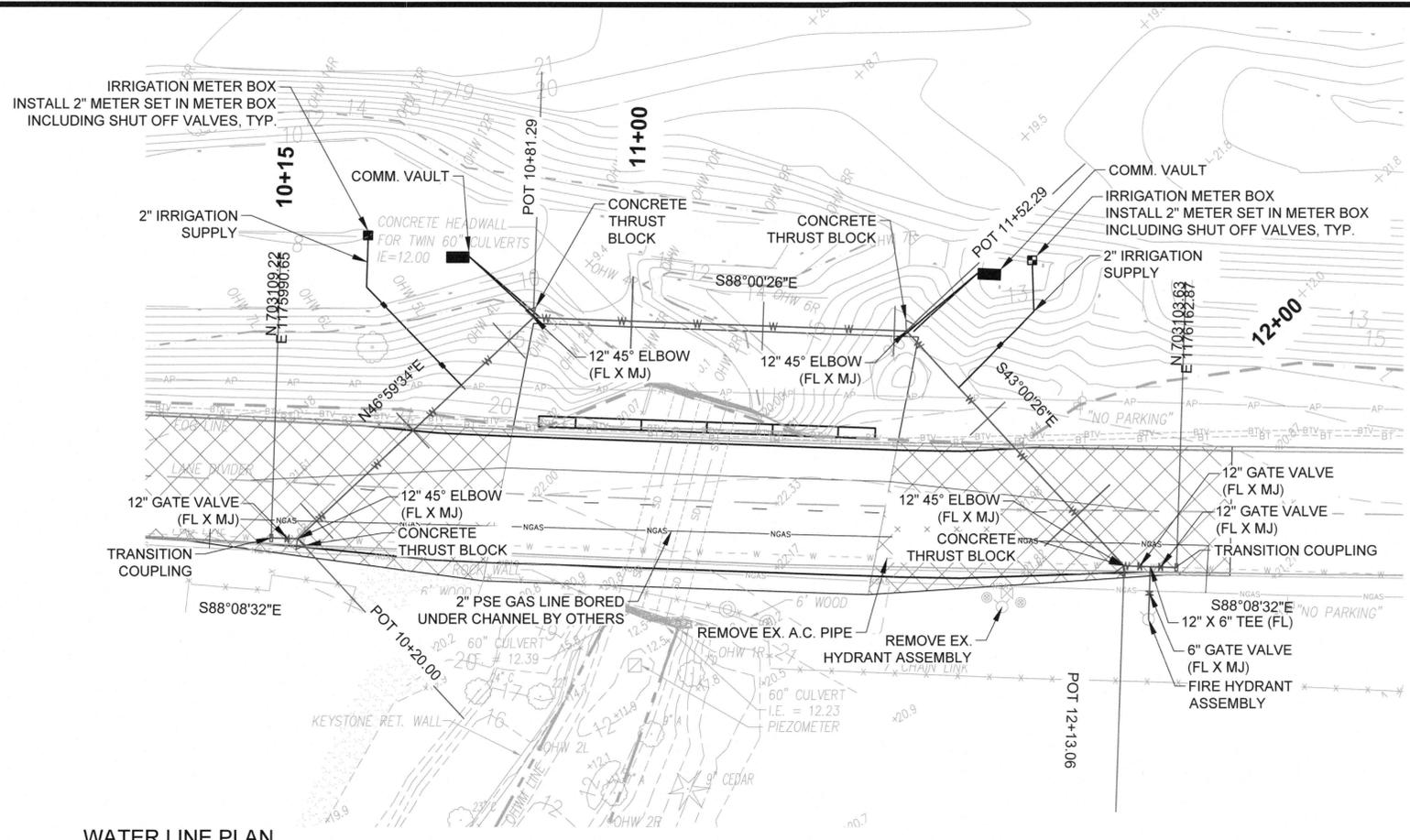


SR-509 ACCESS ECOLOGY BLOCK WALL PLAN

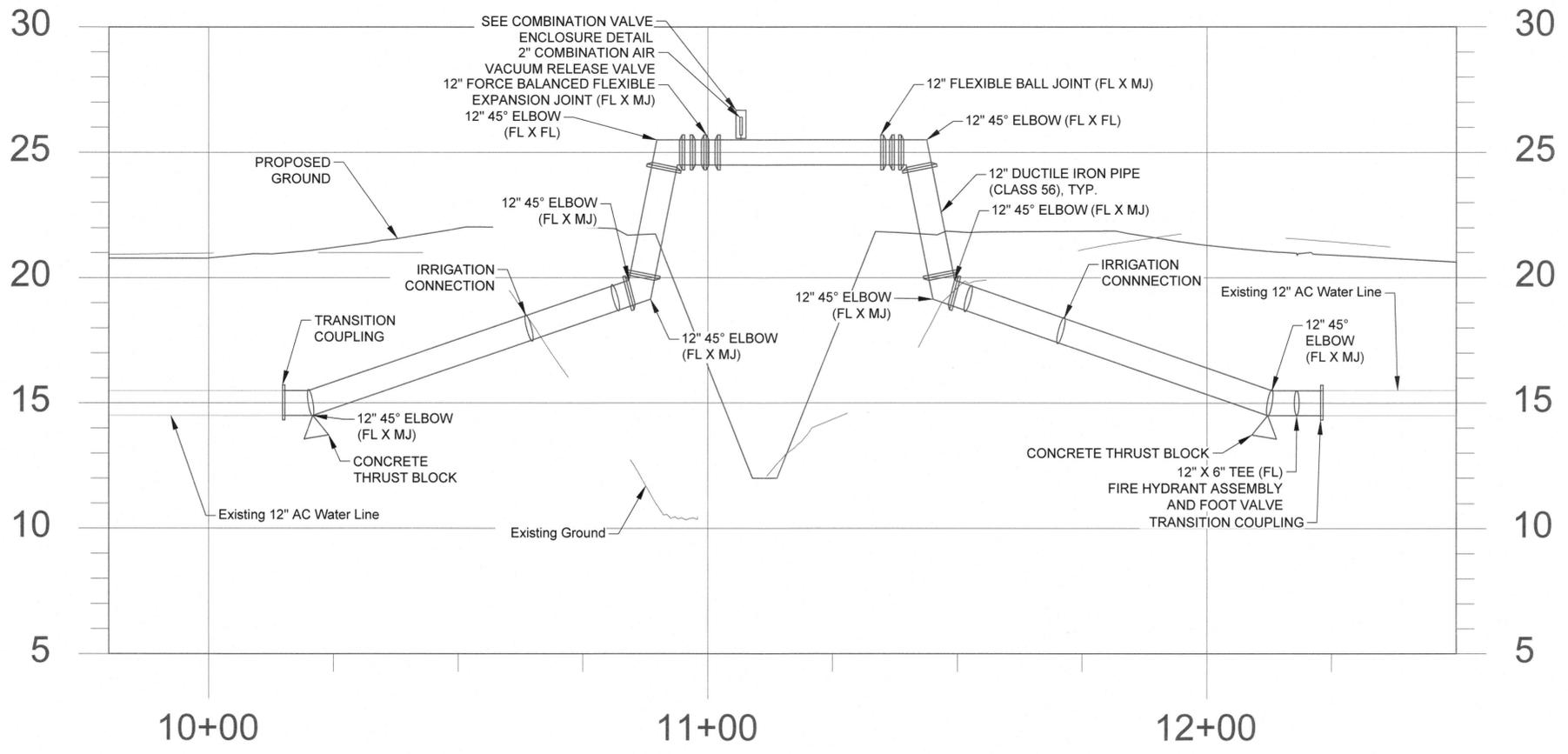


SR-509 ACCESS ECOLOGY BLOCK WALL PROFILE





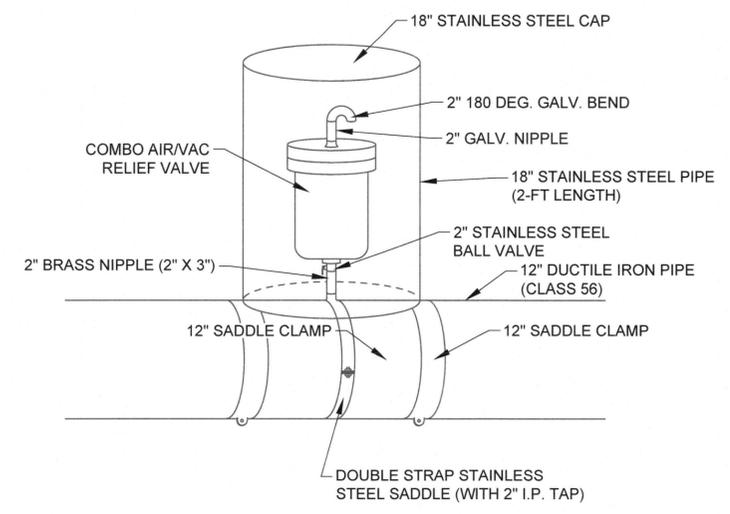
WATER LINE PLAN



WATER LINE PROFILE

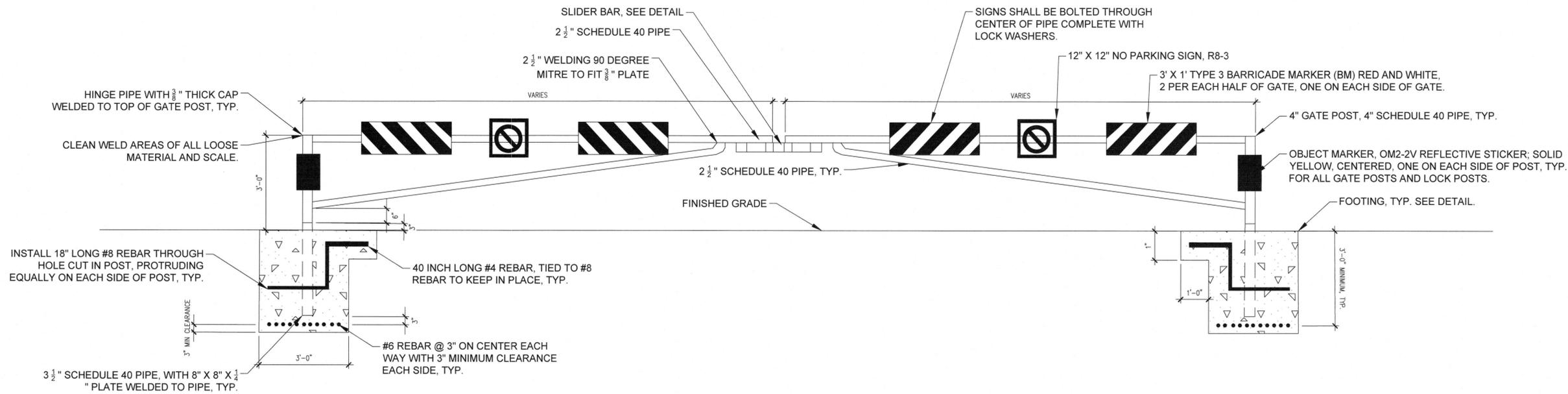
NOTES:

1. WELD CAP TO STAINLESS STEEL PIPE.
2. WELD PIPE TO SADDLE CLAMP AS SHOWN.
3. CUT PIPE SQUARE TO ALLOW BOTTOM OF PIPE AN OPENING FOR AIR FLOW.
4. INSULATE ENCLOSURE WITH SAME INSULATION USED ON DUCTILE IRON MAINLINE PIPE.

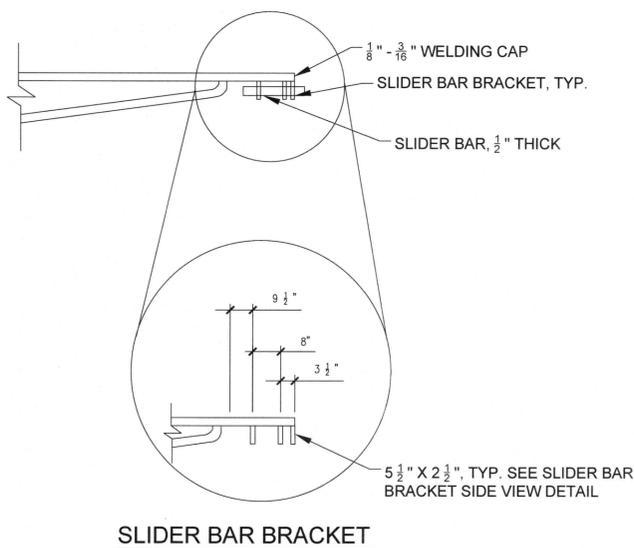


COMBINATION VALVE ENCLOSURE DETAIL

	1601 6th Avenue Suite 800 Seattle, Washington 98101 T +1 (425) 778 6243	BY: _____ DATE: _____
	M M MOTT MACDONALD	REVISION: _____ APPR: _____
J. Dawson CHECKED BY: A. Mitchell DIRECTOR ENG. DATE: 5/28/21	DATE: 5/28/21 PROJ. ENGR DATE: 5/28/21 PRINTED BY: OliveSta May 28, 2021 PORT ADDRESS: 1 SITCOM PLAZA TACOMA, WA 98421	APPROVED: _____ DATE: 5/28/21
LOWER WAPATO CREEK HABITAT PROJECT WATERLINE DETAILS		
6656 C7.2 32 OF 82	TOWNSHIP: 20N RANGE: 3E SECTION: 1 DATE: 07/14/47 DAT-HRZ: WA83-SF M. ID: 101449.01 PHASE: BID SET	DRAWING SCALE: AS NOTED

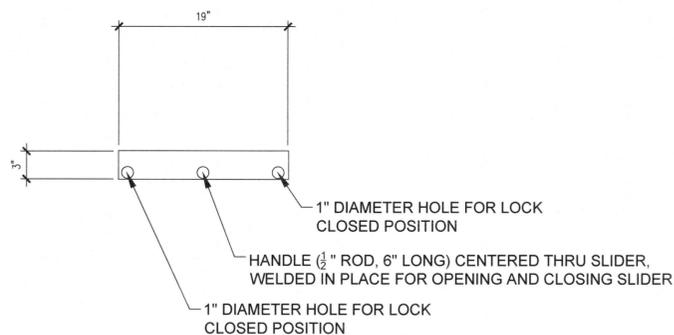


DOUBLE STEEL ACCESS CONTROL GATE AND FOOTING LAYOUT

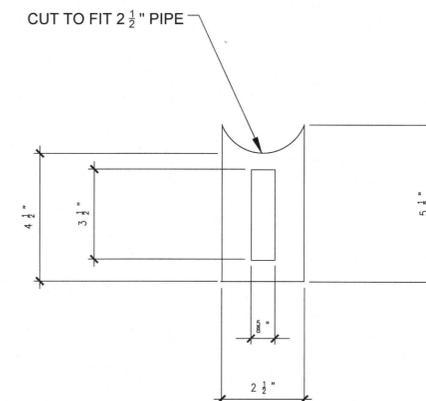


SLIDER BAR BRACKET

SLIDER BAR DETAILS



SLIDER BAR BRACKET



NOTE: 3 PIECES, EACH WELDED TO GATE PIPE

SLIDER BAR BRACKET SIDE VIEW

DOUBLE STEEL ACCESS CONTROL GATE NOTES:

1. TOP AND BOTTOM 12" OF GATE HINGE PIPE AND RIDING SURFACES TO BE LIBERALLY COATED WITH LITHIUM BASED MOLYBDENUM DISULFIDE TYPE GREASE.
2. BARRICADE AND OBJECT MARKERS TO BE INSTALLED IN ACCORDANCE WITH MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
3. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INVESTIGATE EXISTING SITE CONDITIONS TO ENSURE EACH POST MEETS THE MIN 3 FT OF EMBEDMENT IN CONCRETE.
4. FINAL LOCATION AS APPROVED BY ENGINEER WITH CONSIDERATION FOR DIRECTION OF SWING AND SIDE OF ROAD PLACEMENT. THE LOCK POST AND LOCK OPEN POST FINAL LOCATIONS SHALL BE MEASURED AND VERIFIED BY CONTRACTOR TO ENSURE PROPER ALIGNMENT OF LATCH.
5. ALL REBAR AND PIPE EMBEDDED IN CONCRETE SHALL HAVE A 3 INCH MINIMUM COVER.
6. CONCRETE SHALL BE MINIMUM OF 3000 PSI AND SHALL BE INSTALLED IN ACCORDANCE WITH CONTRACT DOCUMENTS. CONTRACTOR SHALL ALLOW CONCRETE TO SET A MINIMUM OF 7 DAYS BEFORE HANGING GATE ON GATE POST. GATE SHALL BE PROTECTED FROM TRAFFIC AND DAMAGE DURING INSTALLATION AND CURING DAYS.
7. CONCRETE SUPPORTS SHALL BE USED TO SET ALL POSTS AND REBAR BEFORE CONCRETE PLACEMENT, TO PROVIDE 3 INCH MIN COVER.
8. POSTS SHALL BE SET VERTICALLY LEVELED AND CENTERED IN THE MIDDLE OF THE FOOTING HOLE.
9. GATES AND ALL POSTS FINISH SHALL BE POWDER COATED COLOR BLACK. NO POWDER COAT ON BOTTOM 3 FT OF GATE POSTS AND LOCK POSTS.
10. ALL EXPOSED PIPE ENDS SHALL BE GROUND SMOOTH.
11. CONTRACTOR SHALL PROVIDE ALL SIGNS AND REFLECTIVE STICKERS AND ATTACH WITH ANTI-VANDAL HARDWARE.

<p>6656 C7.3 33 OF 82</p>	<p>CONTRACTOR: 071447</p>	<p>TOWNSHIP: 20N</p>	<p>RANGE: 3E</p>	<p>SECTION: 1</p>	<p>DATE: 5/28/21</p>	<p>DATE: 5/28/21</p>
	<p>M. ID: 101449.01</p>	<p>DAT-HRZ: WA83-SF</p>	<p>VERT: MILLW (PORT OF TACOMA TIDAL)</p>	<p>PORT ADDRESS: 1 SITCOM PLAZA</p>	<p>TACOMA, WA 98421</p>	<p>DATE: 5/28/21</p>
<p>PHASE: BID SET</p>	<p>PARCEL: 14</p>	<p>DRAWING SCALE: AS NOTED</p>	<p>APPROVED: J. Dawson</p>	<p>CHECKED BY: A. Mitchell</p>	<p>DATE: 5/28/21</p>	<p>DATE: 5/28/21</p>
<p>MARK: MOTT MACDONALD</p>	<p>REVISION:</p>	<p>BY:</p>	<p>APPR:</p>	<p>DATE:</p>	<p>1601 6th Avenue Suite 800 Seattle, Washington 98101</p>	<p>Port of Tacoma P.O. BOX 1837 TACOMA, WA 98401 (206) 835-0441</p>

BRIDGE GENERAL STRUCTURAL DESIGN NOTES

BRIDGE DESIGN SPECIFICATIONS
THE BRIDGE DESIGN IS IN ACCORDANCE WITH THE FOLLOWING DESIGN SPECIFICATIONS:

1. AASHTO LRFD BRIDGE DESIGN SPECIFICATION, 8TH EDITION (2017).
2. WSDOT STANDARD SPECIFICATION LATEST EDITION.
3. WSDOT BRIDGE DESIGN MANUAL.

BRIDGE DESIGN PROCEDURES

1. TRAFFIC BARRIER AND RAILING IS DESIGNED TO MEET THE TEST LEVEL FIVE CRITERIA SET FORTH IN AASHTO LRFD BDS SECTION 13.7.2 AND RELATED SECTIONS.
2. ABUTMENT AND PILE FOUNDATION DESIGN IS IN ACCORDANCE WITH THE FORCE BASED SEISMIC DESIGN PROCEDURES SET FORTH IN THE 2014 AASHTO SEISMIC GUIDE SPECIFICATIONS.

BRIDGE DESIGN GEOTECHNICAL PARAMETERS

1. FOR DETAILED GEOTECHNICAL REPORT SEE GEOTECHNICAL REPORT - DATED FEBRUARY 2, 2021 BY GEOENGINEERS, INC.

BRIDGE GENERAL CONSTRUCTION NOTES

1. CONSTRUCTION SPECIFICATIONS: MATERIALS, CONSTRUCTION AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE PROJECT CONSTRUCT DOCUMENTS.
2. MATERIALS:
 - (A) CONCRETE: SHALL CONFORM TO THE REQUIREMENTS OF SECTION 03 30 00 OF THE PROJECT SPECIFICATION
 - APPROACH SLAB = CLASS 4000A
 - BRIDGE DECK = CLASS 4000D
 - TRAFFIC BARRIER, ABUTMENTS = CLASS 4000
 - CONCRETE-FILLED STEEL TUBES = CLASS 4000P
 - PRECAST PRESTRESSED GIRDERS AT RELEASE = CLASS 6000
 - PRECAST PRESTRESSED GIRDERS AT 28 DAYS = CLASS 7000
 - CONCRETE-FILLED STEEL TUBE REINFORCING: ASTM A706, GRADE 60-WELDABLE
 - ALL OTHER REINFORCING STEEL: ASTM A615, GRADE 60
 - (B) PRESTRESSING STRANDS: AASHTO M203 GRADE 270 0.6" DIAMETER LOW RELAXATION 7-WIRE STRAND, $F_{pu} = 270$ KSI
 - (C) STAGGER ALL CAP SPLICES IN ADJACENT BARS BY ONE SPLICE LENGTH + 1'-0" MINIMUM, NO MORE THAN 50% OF REINFORCING BARS IN ANY LAYER SHALL BE SPLICED AT ONE LOCATION.
 - (D) THE PRECAST PRESTRESSED GIRDERS SHALL CONFORM TO SECTION 03 40 00 OF THE PROJECT SPECIFICATIONS. THE TYPE OF LIFTING DEVICE FOR PRECAST MEMBERS SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER. PRECAST PRESTRESSED GIRDERS SHALL BE LIFTED NEAR REARING POINTS.
 - (E) UNLESS OTHERWISE NOTED, CONCRETE COVER SHALL BE AS FOLLOWS:
 - CONCRETE CAST AGAINST AND PERMANENTLY IN CONTACT WITH THE GROUND.....3" CLR
 - CONCRETE IN CONTACT WITH GROUND OR EXPOSED TO WEATHER.....2" CLR

SPECIAL INSPECTION SCHEDULE

ESTABLISHED PER IBC 2015 CHAPTER 17

ITEMS	CONTINUOUS INSPECTION	PERIODIC INSPECTION	COMMENTS
SOILS			
GRADING, EXCAVATION & FILL		X	BY GEOTECHNICAL ENGINEER
GRADING, EXCAVATION & FILL		X	BY GEOTECHNICAL ENGINEER
STEEL PILES - INSTALLATION & TESTING	X		BY GEOTECHNICAL ENGINEER
CONCRETE			
REINFORCING PLACEMENT		X	
REINFORCING WELDING	X		
REINFORCING COUPLING	X	X	REF. NOTE 5
ANCHOR BOLTS & INSERTS		X	
FORMWORK		X	
PREPARATION OF MIX DESIGNS		X	
PREPARATION OF TEST SPECIMENS	X		
CONCRETE PLACEMENT	X		
EMBEDDED STEEL ITEMS		X	
CURING		X	
PRECAST CONCRETE ERECTION		X	
STRUCTURAL STEEL			
SINGLE PASS FILLET WELDS $\leq 5/16''$		X	REF. NOTE 6
PARTIAL/COMPLETE PENETRATION WELD	X		REF. NOTE 7
OTHER WELDING			
WELDING OF ANCHORS AND STUDS		X	REF. NOTE 8
PREFABRICATED CONSTRUCTION			REF. NOTE 4

INSPECTION SCHEDULE NOTES:

1. THE ITEMS CHECKED WITH AN "X" SHALL BE INSPECTED IN ACCORDANCE WITH IBC CHAPTER 17 BY A CERTIFIED SPECIAL INSPECTOR FORMAN APPROVED TESTING AGENCY. FOR MATERIAL SAMPLING AND TESTING REQUIREMENTS, REFER TO PROJECT SPECIFICATIONS THE STRUCTURAL NOTES AND THE NOTES BELOW. THE TESTING AGENCY SHALL SEND COPIES OF ALL STRUCTURAL TESTING AND INSPECTION REPORTS DIRECTLY TO THE ARCHITECT, ENGINEER, CONTRACTOR AND BUILDING OFFICIAL. ANY MATERIALS WHICH FAIL TO MEET THE PROJECT SPECIFICATIONS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER. SPECIAL INSPECTION TESTING REQUIREMENTS APPLY EQUALLY TO ALL BIDDER DESIGNED COMPONENTS. INSPECTION AND TESTING REQUIREMENTS FOR SYSTEMS DESIGNED BY OTHERS SHALL BE DEFINED BY THE REGISTERED DESIGN PROFESSIONAL RESPONSIBLE FOR THEIR DESIGN, EXCEPT THAT THE INSPECTION REQUIREMENTS SHALL NOT BE LESS THAN SPECIFIED IN THIS SCHEDULE.
2. SPECIAL INSPECTION IS NOT REQUIRED FOR WORK PERFORMED BY AN APPROVED FABRICATOR PER IBC 1704.2.5.1 SEE SPECIFICATIONS FOR APPROVAL REQUIREMENTS.
3. CONTINUOUS SPECIAL INSPECTION MEANS THAT THE SPECIAL INSPECTOR IS ON THE SITE AT ALL TIMES OBSERVING THE WORK REQUIRING SPECIAL INSPECTION. PERIODIC SPECIAL INSPECTION MEANS THAT THE SPECIAL INSPECTOR IS ON SITE AT TIME INTERVALS NECESSARY TO CONFIRM THAT ALL WORK REQUIRING SPECIAL INSPECTION IS IN COMPLIANCE (IBC 1702.1).
4. INSPECTION FOR PREFABRICATED CONSTRUCTION SHALL BE THE SAME AS IF THE MATERIAL USED IN THE CONSTRUCTION TOOK PLACE ON SITE. CONTINUOUS INSPECTION WILL NOT BE REQUIRED DURING PREFABRICATION IF THE APPROVED AGENCY CERTIFIES THE CONSTRUCTION AND FURNISHES EVIDENCE OF COMPLIANCE. SEE SPECIFICATIONS FOR APPROVED AGENCIES AND SUBMITTAL REQUIREMENTS.
5. CONTINUOUS INSPECTION IS REQUIRED FOR INSTALLATION OF COUPLERS. PERIODIC INSPECTION MAY BE USED FOR VERIFICATION OF COUPLER MATERIALS.
6. ALL WELDS SHALL BE VISUALLY INSPECTED.
7. ALL COMPLETE PENETRATION WELDS SHALL BE TESTED ULTRASONICALLY OR BY USING ANOTHER APPROVED METHOD.
8. WELDED DOWELS AT THE TOP OF PILES SHALL BE PERIODICALLY INSPECTED PRIOR TO INSTALLATION OF ABUTMENT REINFORCEMENT.

f'c = 4000PSI SPLICE TABLE

BAR SIZE	TOP BARS	OTHER STRAIGHT BARS	HOOKE BARS
#3	24"	19"	7"
#4	32"	25"	10"
#5	40"	31"	12"
#6	48"	37"	15"
#7	70"	54"	17"
#8	80"	62"	19"
#9	91"	70"	22"
#10	102"	79"	24"
#11	113"	87"	27"

NOTES

1. LENGTHS ARE BASED CLASS "B", CASE 1 SPLICES (MAX OF 50% OF BARS SPLICED AT ONE LOCATION).
2. TOP BARS ARE DEFINED AS ANY HORIZONTAL BAR PLACED SUCH THAT MORE THAN 12" OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE BAR IN ANY SINGLE POUR.
3. STAGGER ALL LAP SPLICES IN ADJACENT BARS BY ONE LAP LENGTH +1'-0" MINIMUM.
4. NO MORE THAN 50% OF THE REINFORCING BARS IN ANY LAYER SHALL BE SPLICED AT ONE LOCATION.
5. FOR EPOXY COATED BARS, LAP SPLICE AND DEVELOPMENT LENGTHS SHALL BE 1.5 TIMES THE VALUE IDENTIFIED IN THE SCHEDULE OF MINIMUM LAP SPLICE AND DEVELOPMENT LENGTHS SHOWN IN THE $f_c = 4000$ PSI SPLICE TABLE.
6. DEVELOPMENT & SPLICE LENGTHS ARE APPLICABLE FOR TENSION OR COMPRESSION.
7. FOR NON-CONTACT LAP SPLICES THE TRANSVERSE CENTER-TO-CENTER SPACING OF SPLICED BARS SHALL NOT EXCEED THE LESSER OF ONE-FIFTH THE REQUIRED LAP SPLICE LENGTH AND 6IN.

BRIDGE DESIGN LOADS

BRIDGE DESIGN LOADS

1. PERMANENT LOADS:
 - DC CONCRETE WEIGHT = 155 PCF
 - STRUCTURAL STEEL WEIGHT = 490 PCF
 - DW FUTURE HMA OVERLAY WEIGHT = 35 PSF (ASSUMED 4" OVERLAY)
 - EV UNIT WEIGHT OF SOIL = 115-125 PCF (SEE PROJECT GEOTECH REPORT)
 - EH ACTIVE PRESSURE (TRIANGULAR DISTRIBUTION) = 244 PSF
 - H = STRUCTURE HEIGHT, FT = 55/30 PCF ABOVE/BELOW WATER TABLE
 - D = SLOPED SOIL HEIGHT ABOVE BOTTOM OF STRUCTURE = 900 PSF (MAX)
 - PASSIVE PRESSURE (TRIANGULAR DISTRIBUTION) = 900 PSF
2. TRANSIENT LOADS:
 - LL HL-93 DESIGN TRUCK AXLE LOAD INCLUDING DESIGN LANE LOAD OF 0.064 KSF
 - IM VEHICULAR DYNAMIC LOAD ALLOWANCE APPLIED TO DESIGN TRUCK = 33%
 - LS LIVE LOAD SURCHARGE APPLIED TO ABUTMENT = 64 PSF
 - TU UNIFORM TEMPERATURE RANGE FROM 0° TO 100° FAHRENHEIT
3. SEISMIC DESIGN LOADS AND PARAMETERS: (2014 AASHTO)
 - OPERATIONAL IMPORTANCE η_1 = 1.0
 - SITE CLASS = E
 - SPECTRAL ACCELERATION AT 0.2s ($S_{0.2}$) = 0.89g
 - SPECTRAL ACCELERATION AT 1.0s ($S_{1.0}$) = 0.301g
 - S_{DS} = 0.918g
 - S_{D1} = 0.841g
 - PGA = 0.56g
 - A_s = 0.363g
 - SEISMIC EARTH PRESSURE (TRIANGULAR DISTRIBUTION) = 58.7H PSF (MAX)
 - H = STRUCTURE HEIGHT, FT
 - TOTAL STRUCTURE DEAD WEIGHT = 859k
4. LOAD COMBINATIONS: AASHTO LRFD BDS T3.4.1-1
 - SERVICE I : 1.0 DC + 1.0 DW + 1.0 (LL + IM)
 - SERVICE II : 1.0 DC + 0.8 DW + 1.0 (LL + IM)
 - STRENGTH I : 0.9 / 1.25 DC + 0.65 / 1.5 DW + 1.75 (LL + IM)
 - FATIGUE I : 0.5 DC + 0.5 DW + 1.50 (LL + IM)
 - EXTREME EVENT I : 0.9 / 1.25 DC + 0.65 / 1.5 DW + 0.5 (LL + IM) + 1.0 EQ
 - EXTREME EVENT II : 0.9 / 1.25 DC + 0.65 / 1.5 DW + 0.5 (LL + IM) + 1.0 CT



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MOTT
MACDONALD

MARK: REVISION: BY: DATE: APPR:



J. Dawson
CHECKED BY

5/28/21
DATE

A. Mitchell
PROJ. ENGR

5/28/21
DATE

Oliveria May 28, 2021
PRINTED BY:

TACOMA, WA 98421
PORT ADDRESS: 1 SITCOM PLAZA

APPROVED:
[Signature]
DIRECTOR ENG. DATE: 5-28-21

BRIDGE GENERAL NOTES

SECTION: 1
RANGE: 3E
TOWNSHIP: 20N
DATE-HRZ: WAB8-SF
PARCEL: 14

6656

**LOWER WAPATO CREEK
HABITAT PROJECT**

DATE: 07/14/21

SCALE: AS NOTED

34 OF 82

S1.1

07/14/21

DATE: 07/14/21

CONTRACTOR: 07/14/21

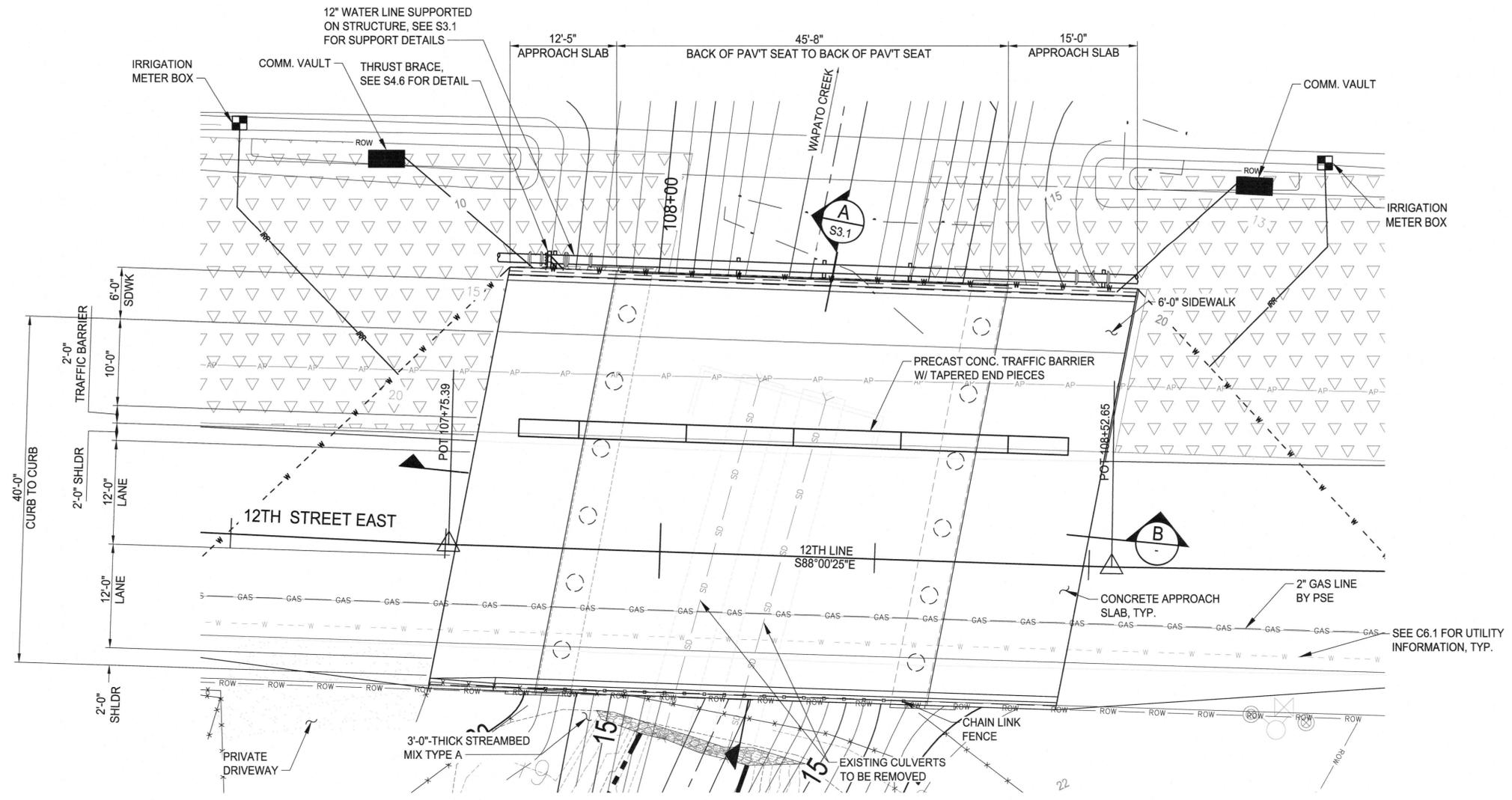
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10/14/21

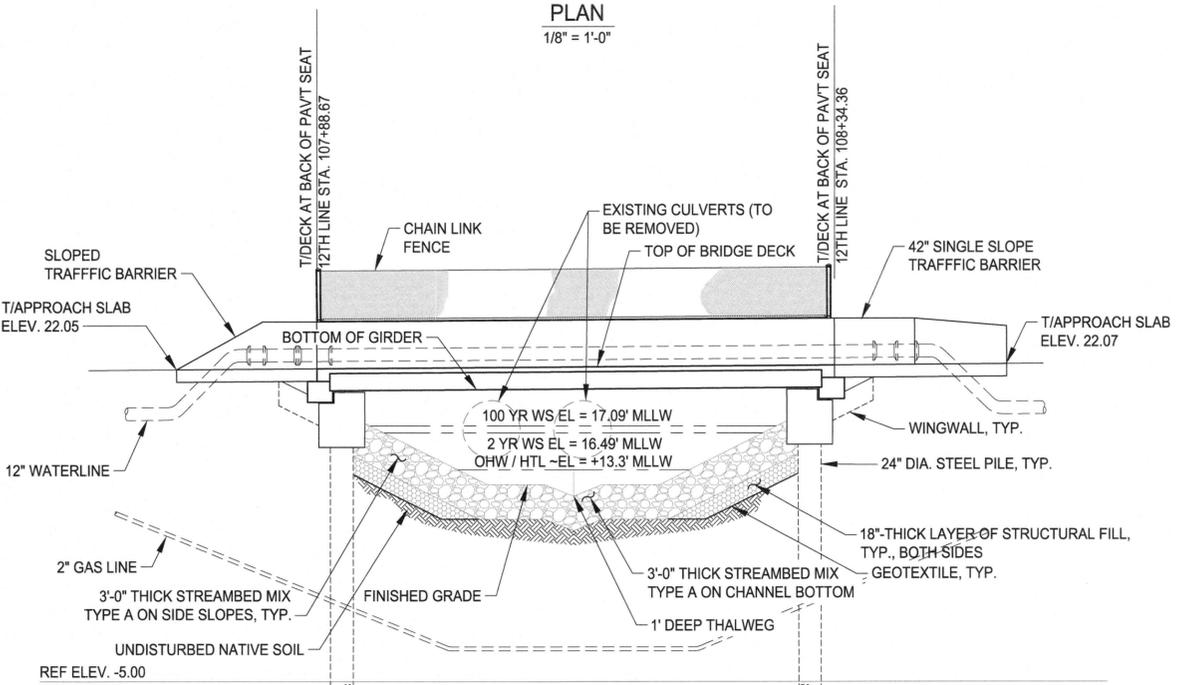
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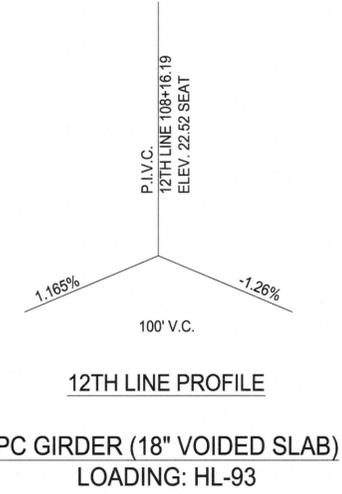
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PLAN
1/8" = 1'-0"



SECTION B
1/8" = 1'-0"



12TH LINE PROFILE

PC GIRDER (18" VOIDED SLAB)
LOADING: HL-93



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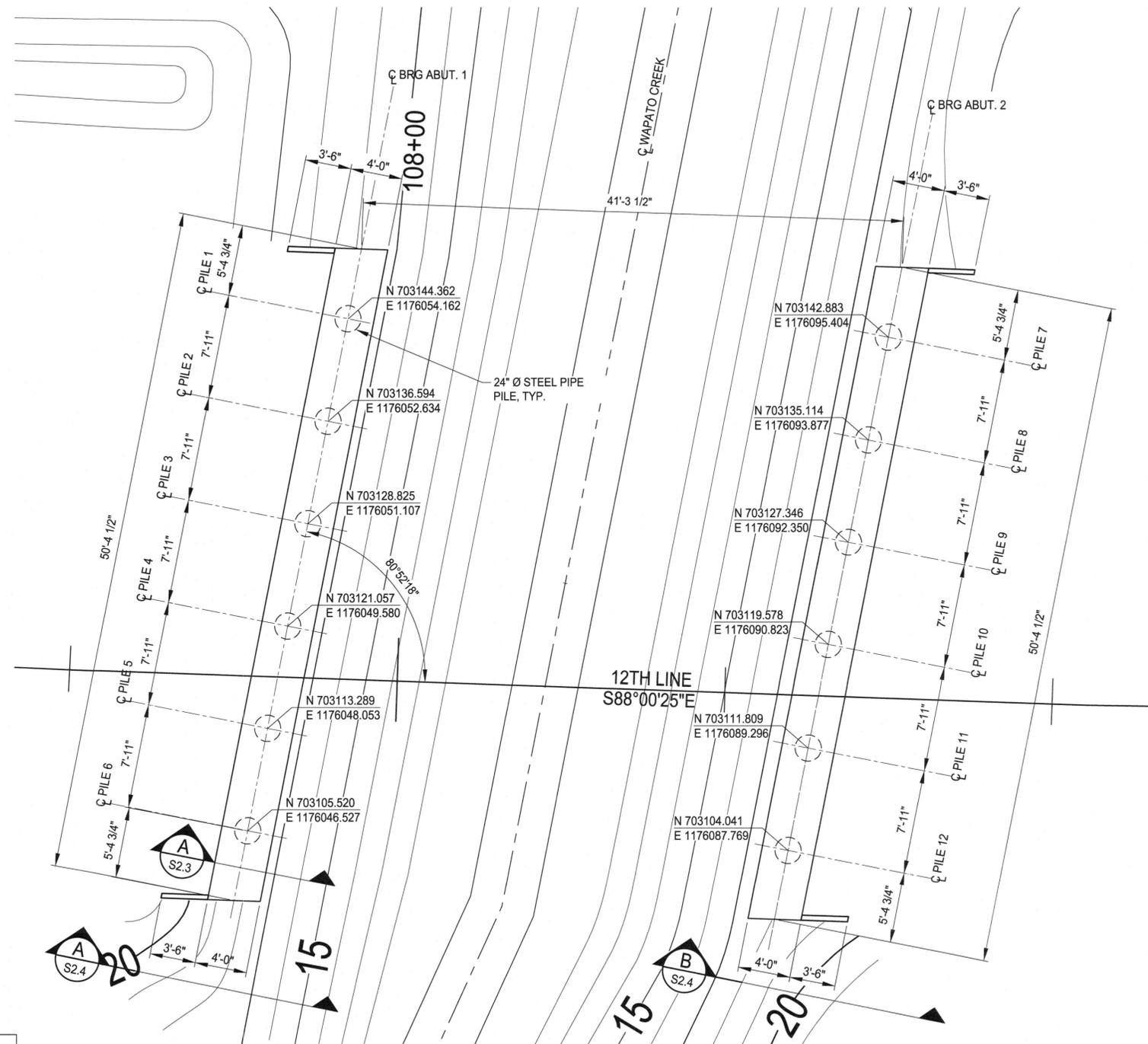
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**LOWER WAPATO CREEK
HABITAT PROJECT**
BRIDGE LAYOUT

TOWNSHIP: 20N RANGE: 3E SECTION: 1
DATE-HRZ: WA83-SF VERT: MLLW (PORT OF TACOMA TIDAL)
PARCEL: 14 DRAWING SCALE: AS NOTED

6656
S1.2
35 OF 82

CONT/CONS: 071447
M. ID: 101449.01
PHASE: BID SET



FOUNDATION PLAN
3/16" = 1'-0"

PILE SCHEDULE

PILE #	LENGTH (FT)	TIP ELEV. (FT)	TOP OF PILE ELEV. (FT)	REQUIRED GEOTECHNICAL CAPACITY (KIPS)
1	90.00	-74.76	15.24	334
2	90.00	-74.76	15.24	334
3	90.00	-74.76	15.24	334
4	90.00	-74.76	15.24	334
5	90.00	-74.76	15.24	334
6	90.00	-74.76	15.24	334
7	90.00	-74.73	15.27	334
8	90.00	-74.73	15.27	334
9	90.00	-74.73	15.27	334
10	90.00	-74.73	15.27	334
11	90.00	-74.73	15.27	334
12	90.00	-74.73	15.27	334

NOTES

- ALL ELEVATIONS RELATIVE TO MLLW (PORT OF TACOMA TIDAL DATUM).
- REQUIRED GEOTECHNICAL CAPACITY IS THE MINIMUM REQUIRED ULTIMATE PILE CAPACITY. RESISTANCE FACTORS OF 0.45 FOR SAND AND 0.35 FOR CLAY ARE USED TO DETERMINE NOMINAL GEOTECHNICAL STRENGTH OF PILES.

6656
S2.1
36 OF 82

CONTRACTORS: 071447
M. ID.: 101449.01
PHASE: BID SET

LOWER WAPATO CREEK HABITAT PROJECT
FOUNDATION PLAN

TOWNSHIP: 20N RANGE: 3E SECTION: 1
DATE-HRZ: WA83-SF VERT: MLLW (PORT OF TACOMA TIDAL)
PARCEL: 14 DRAWING SCALE: AS NOTED

APPROVED: *[Signature]* J. Dawson
DIRECTOR ENGR. DATE: 5/28/21
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CHECKED BY: A. Mitchell
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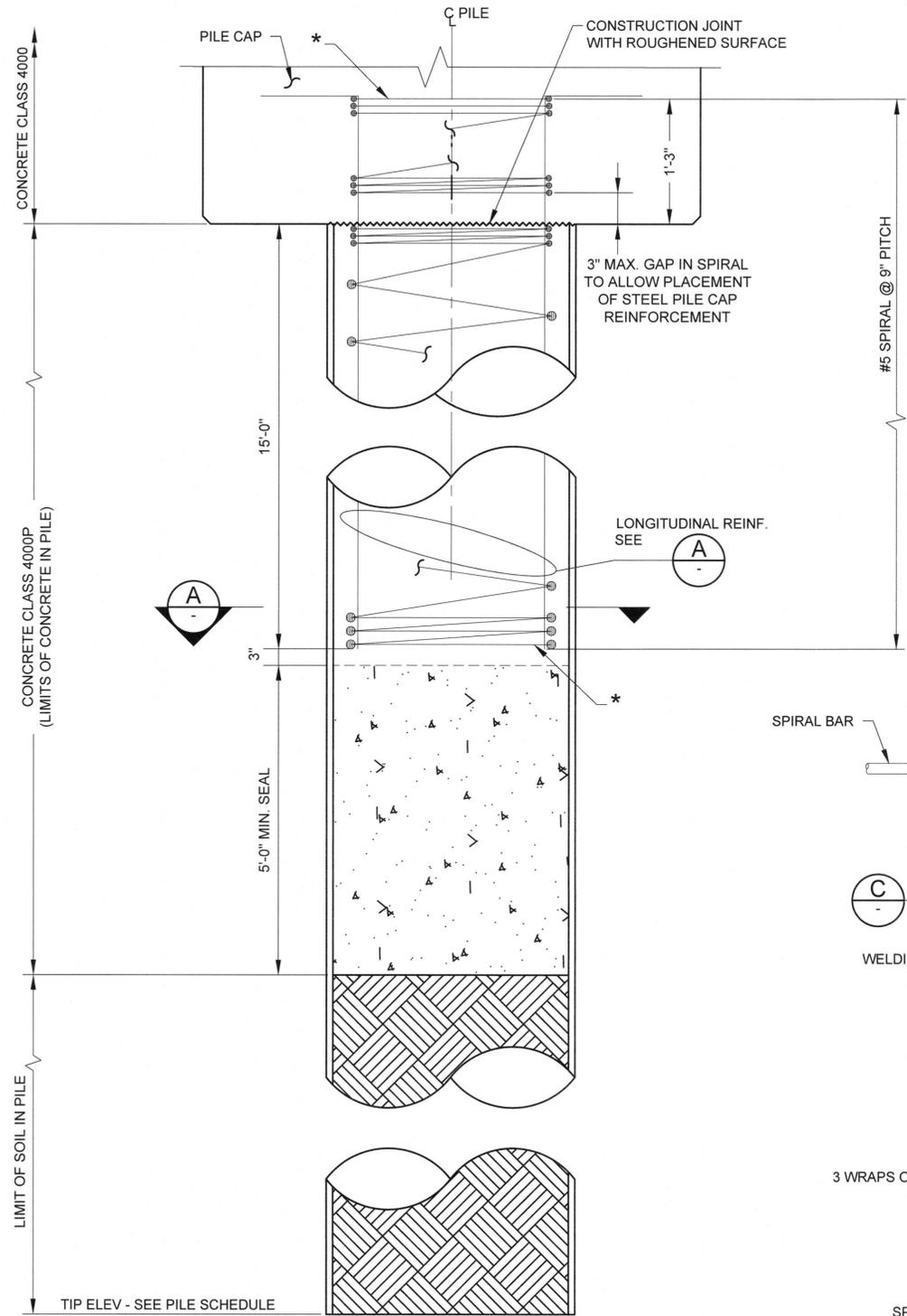
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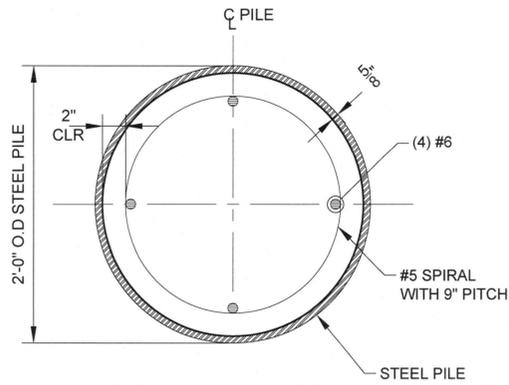
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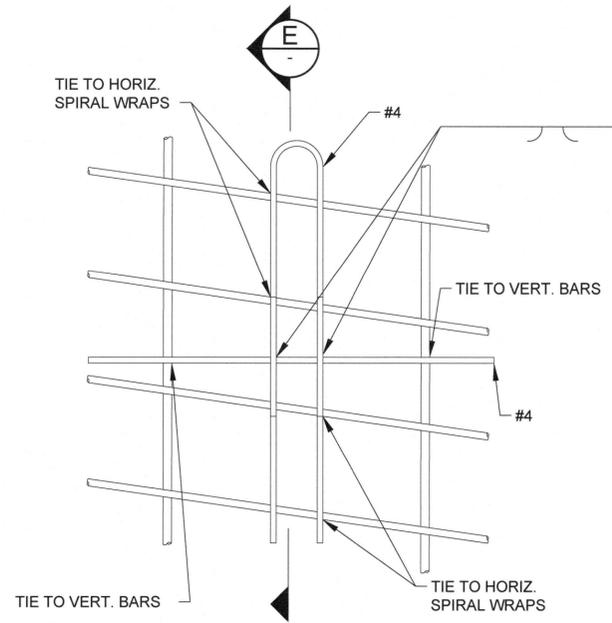
ELEVATION

NOTES:

- 1. SEE "CENTRALIZER DETAIL" THIS SHEET
- * SEE SPIRAL TERMINATION DETAIL.



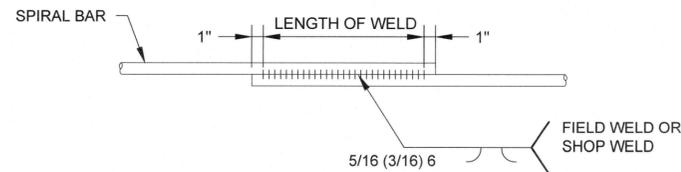
(A) DETAIL
1/2" = 1'-0"



(B) CENTRALIZER DETAIL
NTS

EPOXY COAT CENTRALIZER OR PAINT WITH INORGANIC ZINC AFTER FABRICATION

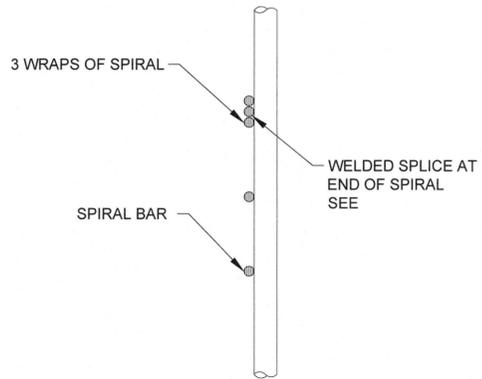
NOTES:
EACH LEG SHOULD BE TIED TO TWO SPIRALS.
SEE SPECIAL PROVISIONS FOR SPACING REQUIREMENTS.
 δ - CONCRETE COVER - 1/2"



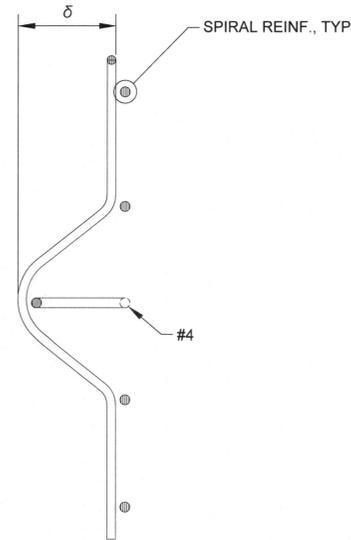
(C) WELDED LAP SPLICE DETAIL
NTS

WELDING SHALL MEET THE REQUIREMENTS OF STD. SPEC. 6-02.3(24)E.

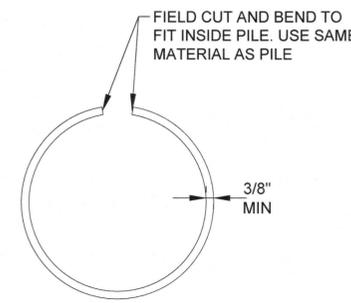
PILE SPIRAL OPTIONS



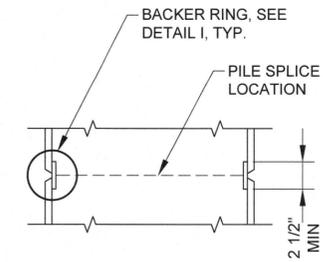
(D) SPIRAL TERMINATION DETAIL
NTS



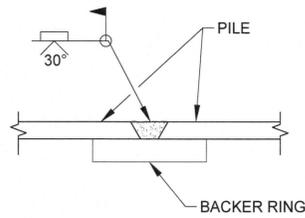
(E) VIEW
NTS



(F) BACKER RING DETAIL
NTS



(H) BACKER RING DETAIL
NTS



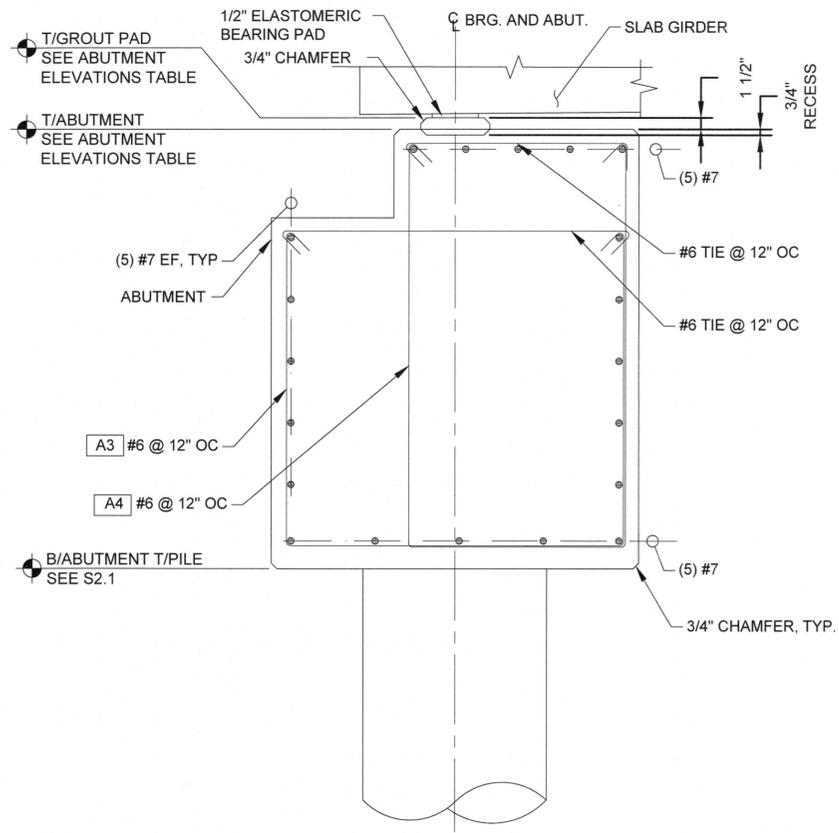
(I) DETAIL
NTS



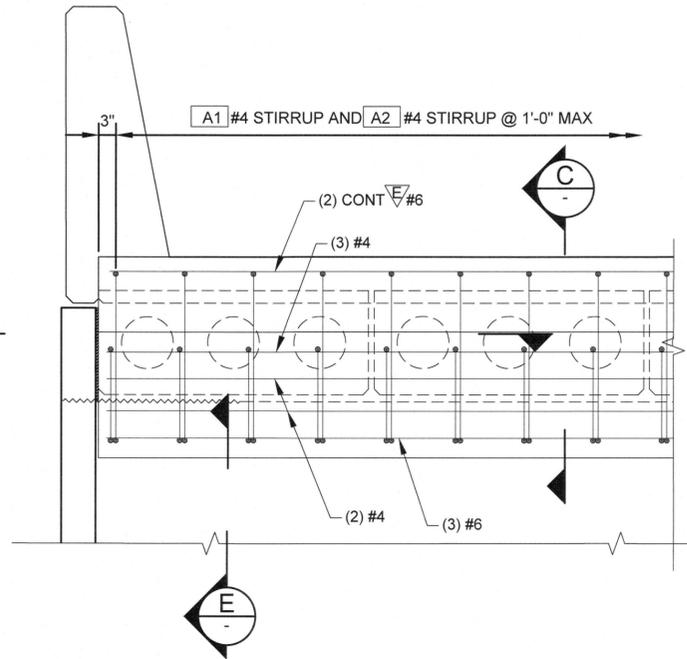
APPROVED:	J. Dawson	5/28/21	DATE
CHECKED BY:	A. Mitchell	5/28/21	DATE
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LOWER WAPATO CREEK
HABITAT PROJECT
TYPICAL PILE DETAILS

CONTRACT:	071447	TOWNSHIP:	20N	RANGE:	3E	SECTION:	1
M. I. D.:	101449.01	DAT-HRZ:	WA83-SF	VERT:	MLLW (PORT OF TACOMA TIDAL)		
PHASE:	BID SET	PARCEL:	14	DRAWING SCALE:	AS NOTED		

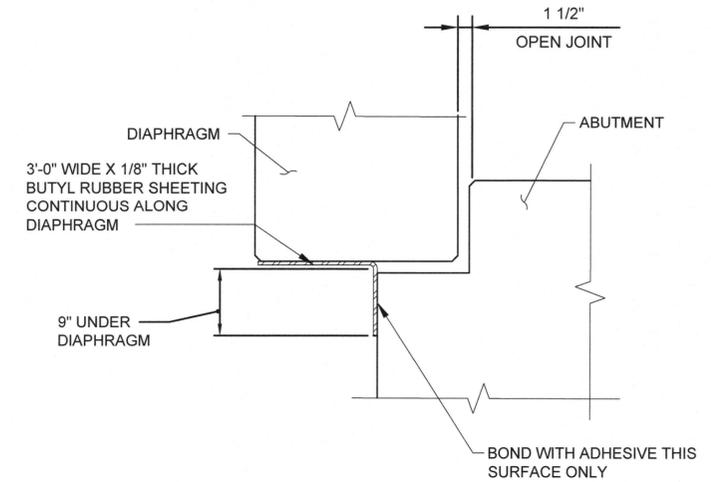


A SECTION
S2.1 1" = 1'-0"

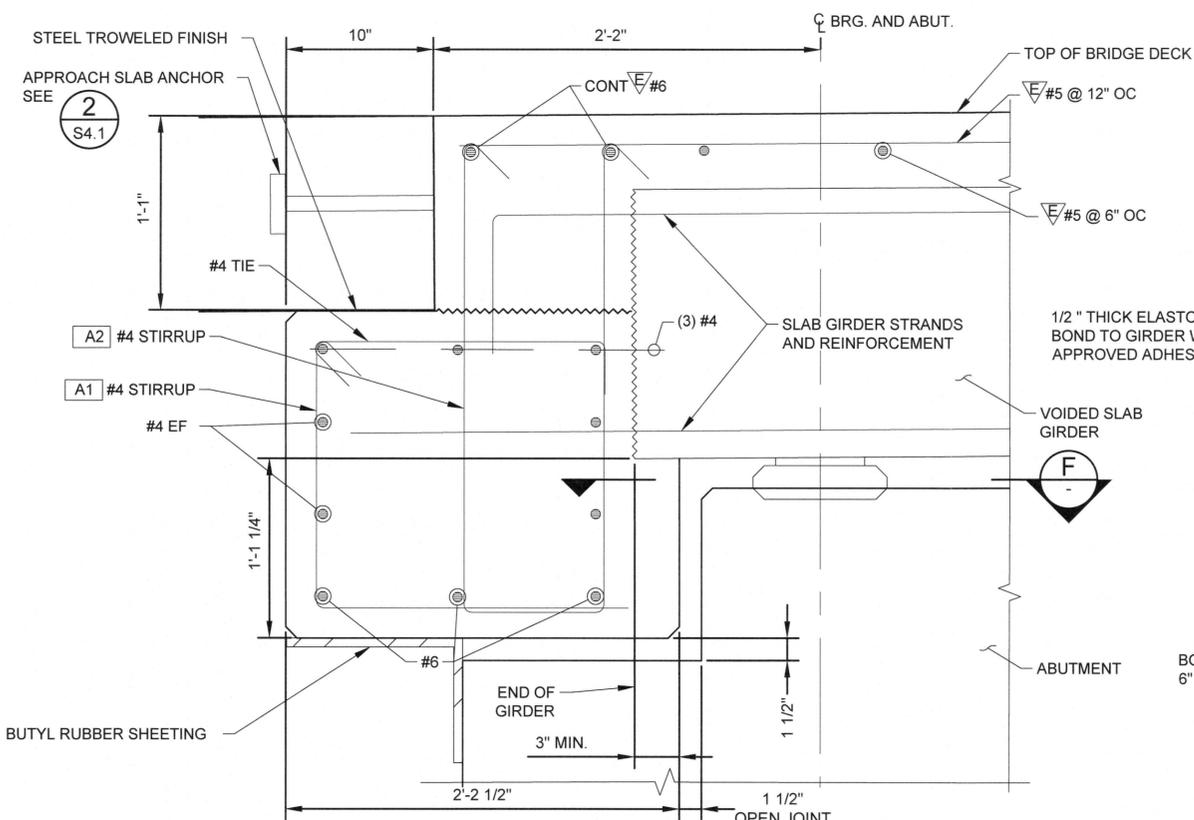


B SECTION
S2.4 3/4" = 1'-0"

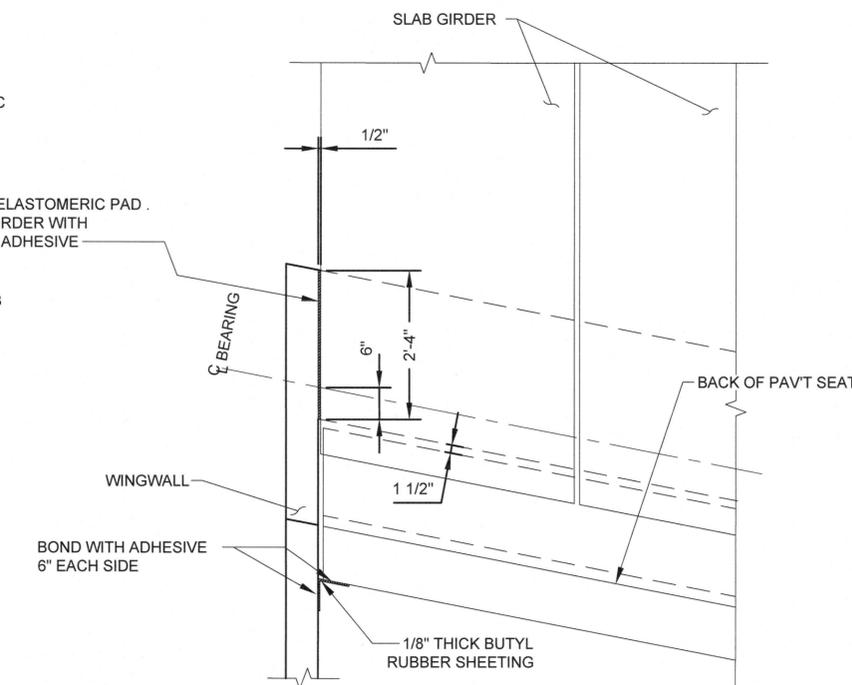
ABUTMENT ELEVATIONS		
LOCATION	ABUTMENT 1	ABUTMENT 2
TOP OF ABUTMENT	19.99	20.02
TOP OF GROUT PAD	20.06	20.09



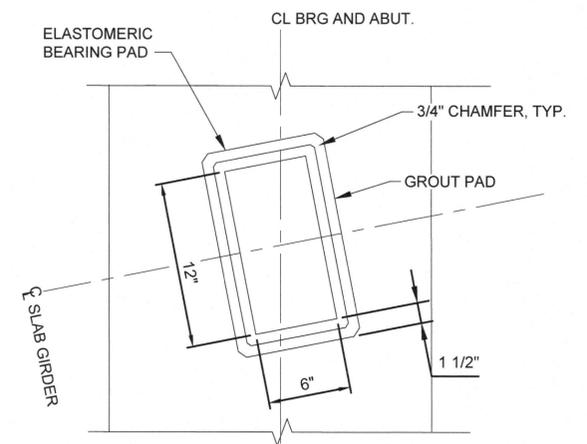
E SECTION
1" = 1'-0"



C SECTION
3/4" = 1'-0"



D SECTION
3/4" = 1'-0"



F SECTION
1" = 1'-0"

NOTE:
FULL BEARING OF SLAB UNIT IS REQUIRED
AT EACH ELASTOMERIC BEARING.

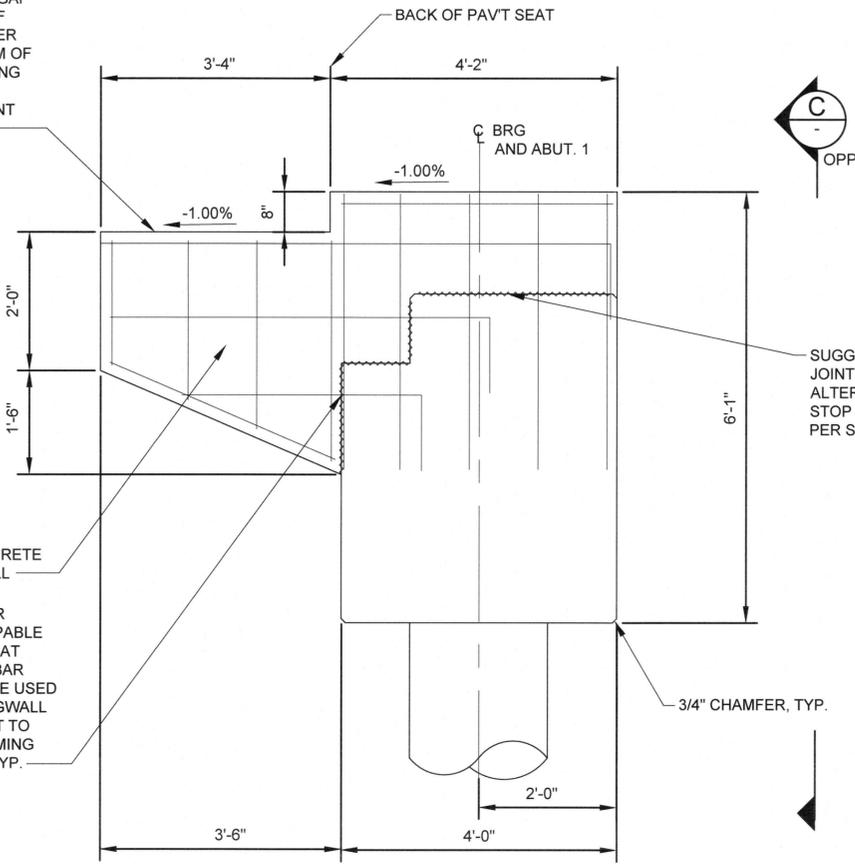


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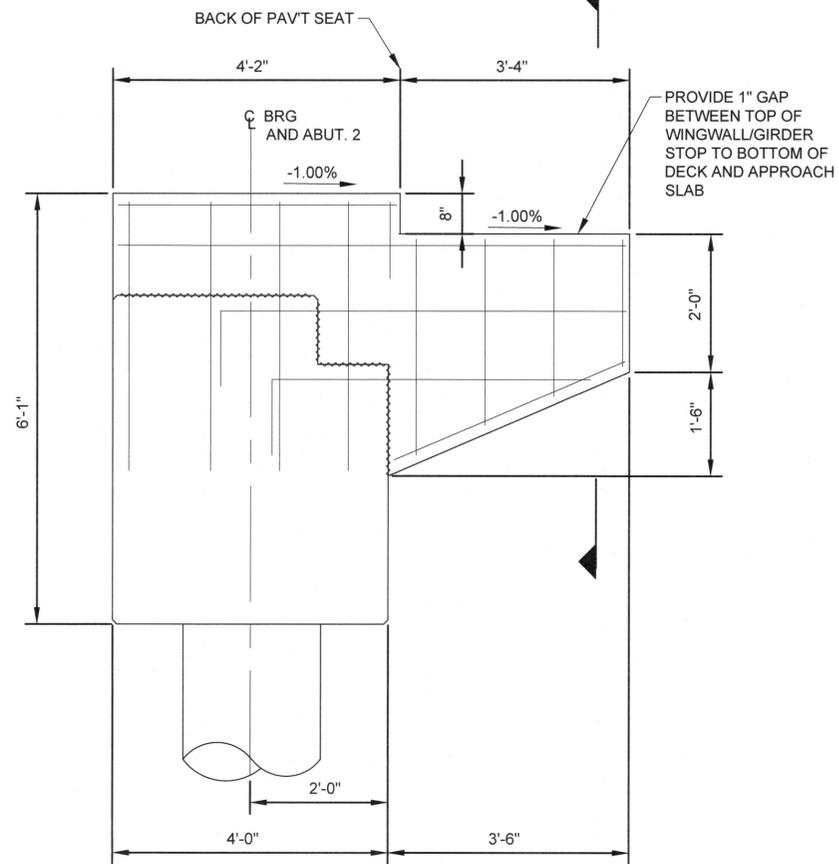
**LOWER WAPATO CREEK
HABITAT PROJECT**
ABUTMENT DETAILS

6656
38 OF 82
S2.3
TOWNSHIP: 20N RANGE: 3E SECTION: 1
M. ID.: 071447 DAT-HRZ: WA83-SF VERT: MLW (PORT OF TACOMA TIDAL)
PARCEL: 14 DRAWING SCALE: AS NOTED

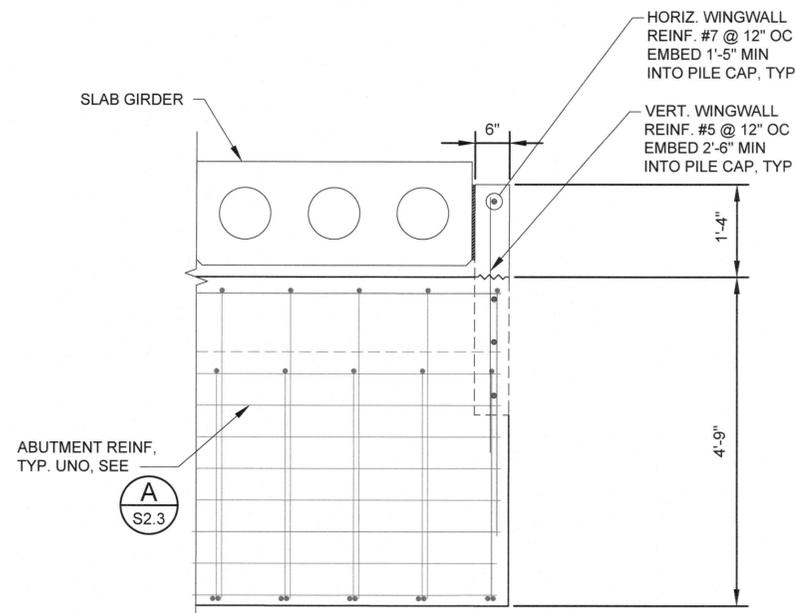
PROVIDE 1" MIN. GAP BETWEEN TOP OF WINGWALL/GIRDER STOP TO BOTTOM OF GIRDER OVERHANG FILL GAP WITH PREFORMED JOINT FILLER



A SW WINGWALL ELEVATION (NE OPP HAND)
S2.1 3/4" = 1'-0"



B SE WINGWALL ELEVATION (NW OPP HAND)
S2.1 3/4" = 1'-0"



C EAST SECTION (WEST OPP HAND)
3/4" = 1'-0"

FORMSAVERS OR EQUIVALENT CAPABLE OF DEVELOPING AT LEAST 125% OF BAR CAPACITY MAY BE USED FOR HORIZ. WINGWALL REINFORCEMENT TO FACILITATE FORMING OF ABUTMENT, TYP.

CIP CONCRETE WINGWALL

3/4" CHAMFER, TYP.

OPP

C

C

B
S2.3



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CHECKED BY:	A. Mitchell	5/28/21	DATE
DIRECTOR ENG. DATE:	5/28/21	PROJ. ENGR DATE:	5/28/21
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LOWER WAPATO CREEK HABITAT PROJECT WINGWALL DETAILS			
TOWNSHIP:	20N	RANGE:	3E
DAT-HRZ:	WA83-SF	VERT.:	MILLW (PORT OF TACOMA TIDAL)
PARCEL:	14	DRAWING SCALE:	AS NOTED

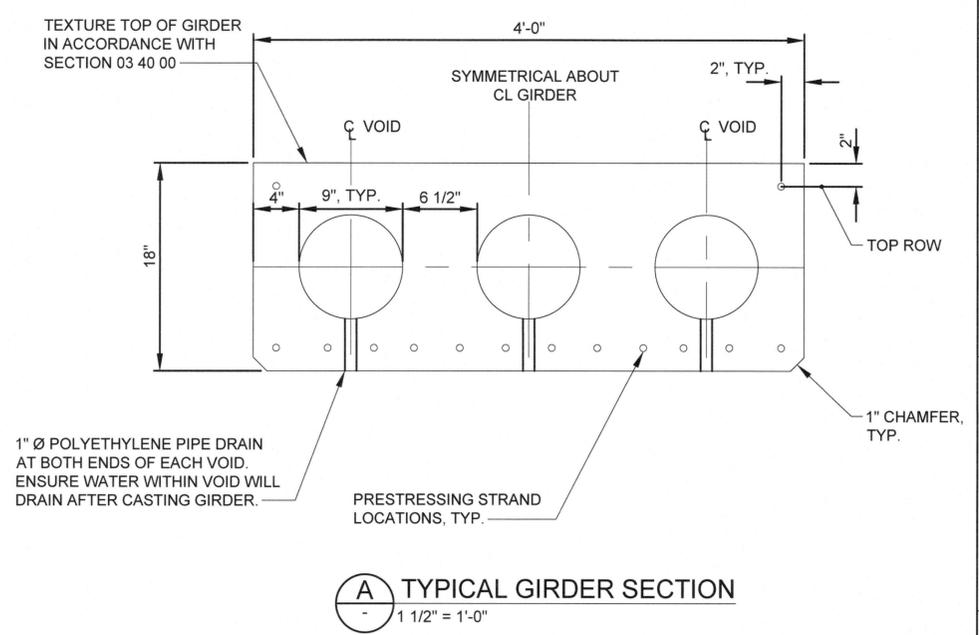
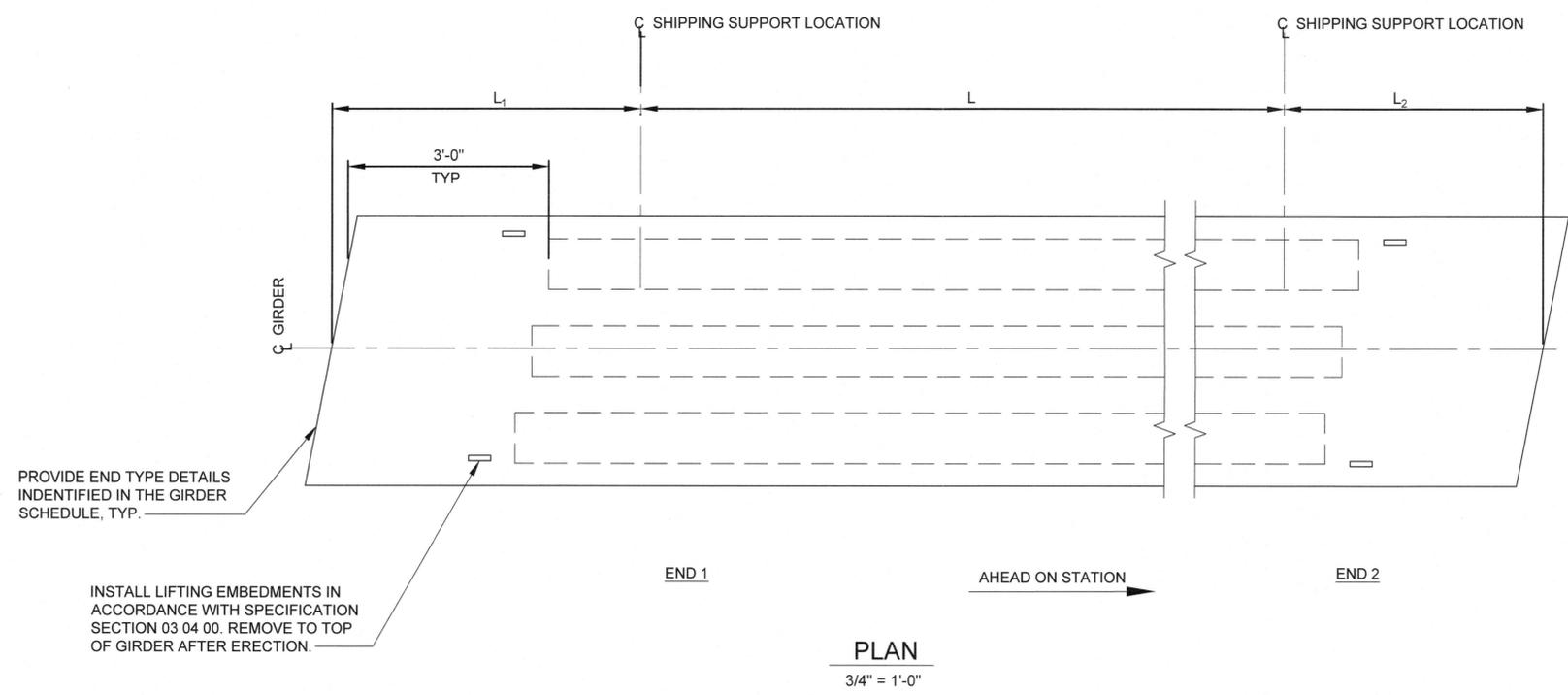
6656	071447
S2.4	101449.01
39 OF 82	PHASE: BID SET

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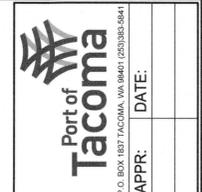
BINDING EDGE



SPAN	GIRDER	GIRDER HEIGHT H	GIRDER WIDTH W	PLAN LENGTH (ALONG GIRDER GRADE) (SEE GIRDER NOTE 1)	VOIDS		GIRDER END DETAILS		MIN. CONC. COMP. STRENGTH		PRESTRESSING STRANDS (SEE GIRDER NOTES 2-4)						"A" DIMENSION AT CL BEARINGS	DECK SCREED CAMBER C	MIDSPAN VERTICAL DEFLECTION D		TRANSVERSE REINFORCEMENT						LONGITUDINAL REINFORCEMENT		SHIPPING AND HANDLING DETAILS											
					NUMBER	DIAMETER	END 1 TYPE	END 2 TYPE	@ 28-DAYS FC (psi)	@ RELEASE FCI (psi)	PERMANENT STRANDS	ROW 1		ROW 2		TOP ROW			LOWER BOUND @ 40 DAYS	UPPER BOUND @ 120 DAYS	ZONE 1			ZONE 2			ZONE 3			G1	G2	L	L1	L2	K _s MINIMUM SHIPPING SUPPORT ROTATIONAL SPRING CONSTANT	W _{cc} MINIMUM SHIPPING SUPPORT CNTR-TO-CNTR WHEEL SPACING				
												EXTENDED NUMBER AND LENGTH	DEBONDED NUMBER AND LENGTH	PERMANENT STRANDS	EXTENDED NUMBER AND LENGTH						DEBONDED NUMBER AND LENGTH	PERMANENT STRANDS	EXTENDED NUMBER AND LENGTH	DEBONDED NUMBER AND LENGTH	PERMANENT STRANDS	TEMPORARY STRANDS	BAR SIZE	SPACING	LENGTH								BAR SIZE	SPACING	LENGTH	BAR SIZE
					1'-4"	1'-4"	1'-4"	1'-4"	1'-4"	1'-4"	1'-4"	1'-4"	1'-4"	1'-4"	1'-4"	1'-4"			1'-4"	1'-4"	1'-4"	1'-4"	1'-4"	1'-4"	1'-4"	1'-4"	1'-4"	1'-4"	1'-4"	1'-4"	1'-4"	1'-4"	1'-4"	1'-4"	1'-4"	1'-4"	1'-4"	1'-4"	1'-4"	1'-4"
1	1	18	48	43'-4 1/2"	3	9.0"	A	A	7.0	6.0	12	4 @ 1'-4"	0	0	0	0	2	0	5 1/2"	1/4"	3/8"	7/8"	4	3"	1'	4	5"	5'	4	9"	6'	4	4	4	4	39'-4 1/2"	2'	2'	40000 KP-IN/RAD	6'-0"
1	2	18	48	43'-4 1/2"	3	9.0"	A	A	7.0	6.0	12	4 @ 1'-4"	0	0	0	0	2	0	6 1/2"	1/4"	3/8"	7/8"	4	3"	1'	4	5"	5'	4	9"	6'	4	4	4	4	39'-4 1/2"	2'	2'	40000 KP-IN/RAD	6'-0"
1	3	18	48	43'-4 1/2"	3	9.0"	A	A	7.0	6.0	12	4 @ 1'-4"	0	0	0	0	2	0	7 1/2"	1/4"	3/8"	7/8"	4	3"	1'	4	5"	5'	4	9"	6'	4	4	4	4	39'-4 1/2"	2'	2'	40000 KP-IN/RAD	6'-0"
1	4	18	48	43'-4 1/2"	3	9.0"	A	A	7.0	6.0	12	4 @ 1'-4"	0	0	0	0	2	0	8 1/2"	1/4"	3/8"	7/8"	4	3"	1'	4	5"	5'	4	9"	6'	4	4	4	4	39'-4 1/2"	2'	2'	40000 KP-IN/RAD	6'-0"
1	5	18	48	43'-4 1/2"	3	9.0"	A	A	7.0	6.0	12	4 @ 1'-4"	0	0	0	0	2	0	9 1/2"	1/4"	3/8"	7/8"	4	3"	1'	4	5"	5'	4	9"	6'	4	4	4	4	39'-4 1/2"	2'	2'	40000 KP-IN/RAD	6'-0"
1	6	18	48	43'-4 1/2"	3	9.0"	A	A	7.0	6.0	12	4 @ 1'-4"	0	0	0	0	2	0	9"	1/4"	3/8"	7/8"	4	3"	1'	4	5"	5'	4	9"	6'	4	4	4	4	39'-4 1/2"	2'	2'	40000 KP-IN/RAD	6'-0"
1	7	18	48	43'-4 1/2"	3	9.0"	A	A	7.0	6.0	12	4 @ 1'-4"	0	0	0	0	2	0	8"	1/4"	3/8"	7/8"	4	3"	1'	4	5"	5'	4	9"	6'	4	4	4	4	39'-4 1/2"	2'	2'	40000 KP-IN/RAD	6'-0"
1	8	18	48	43'-4 1/2"	3	9.0"	A	A	7.0	6.0	12	4 @ 1'-4"	0	0	0	0	2	0	7"	1/4"	3/8"	7/8"	4	3"	1'	4	5"	5'	4	9"	6'	4	4	4	4	39'-4 1/2"	2'	2'	40000 KP-IN/RAD	6'-0"
1	9	18	48	43'-4 1/2"	3	9.0"	A	A	7.0	6.0	12	4 @ 1'-4"	0	0	0	0	2	0	6"	1/4"	3/8"	7/8"	4	3"	1'	4	5"	5'	4	9"	6'	4	4	4	4	39'-4 1/2"	2'	2'	40000 KP-IN/RAD	6'-0"
1	10	18	48	43'-4 1/2"	3	9.0"	A	A	7.0	6.0	12	4 @ 1'-4"	0	0	0	0	2	0	5"	1/4"	3/8"	7/8"	4	3"	1'	4	5"	5'	4	9"	6'	4	4	4	4	39'-4 1/2"	2'	2'	40000 KP-IN/RAD	6'-0"
1	11	18	48	43'-4 1/2"	3	9.0"	A	A	7.0	6.0	12	4 @ 1'-4"	0	0	0	0	2	0	5"	1/4"	3/8"	7/8"	4	3"	1'	4	5"	5'	4	9"	6'	4	4	4	4	39'-4 1/2"	2'	2'	40000 KP-IN/RAD	6'-0"
1	12	18	48	43'-4 1/2"	3	9.0"	A	A	7.0	6.0	12	4 @ 1'-4"	0	0	0	0	2	0	5"	1/4"	3/8"	7/8"	4	3"	1'	4	5"	5'	4	9"	6'	4	4	4	4	39'-4 1/2"	2'	2'	40000 KP-IN/RAD	6'-0"

TRAFFIC BARRIER REINFORCING REQ'D, SEE S4.4 AND S4.5

TRAFFIC BARRIER REINFORCING REQ'D, SEE S4.4 AND S4.5



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LOWER WAPATO CREEK HABITAT PROJECT
GIRDER DETAILS
1 OF 2

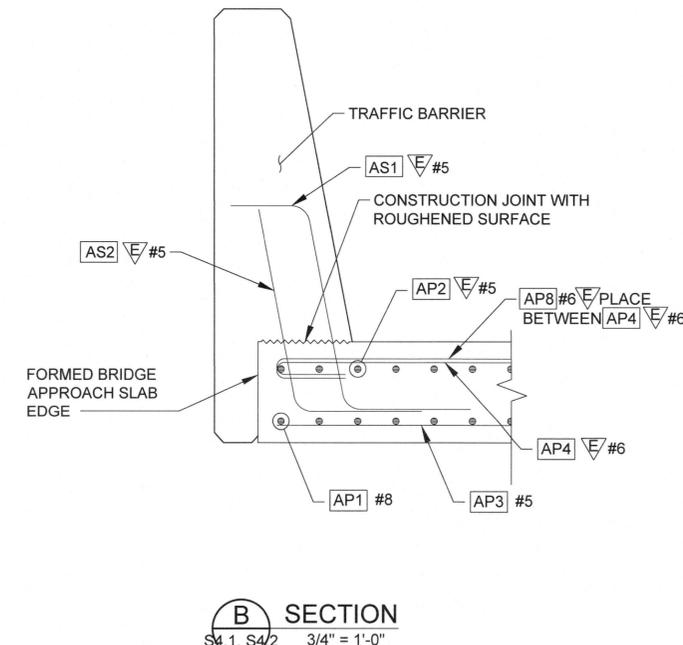
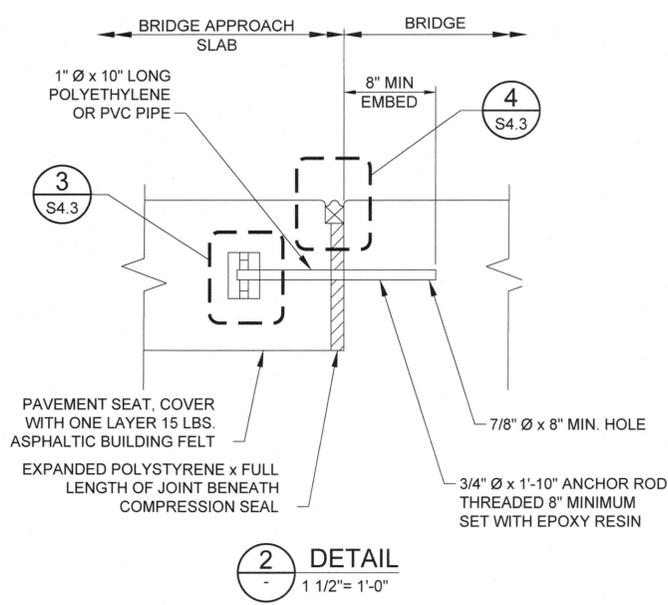
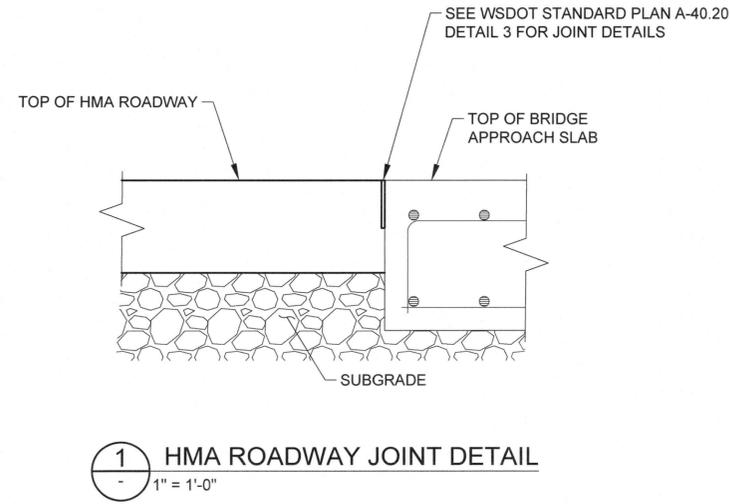
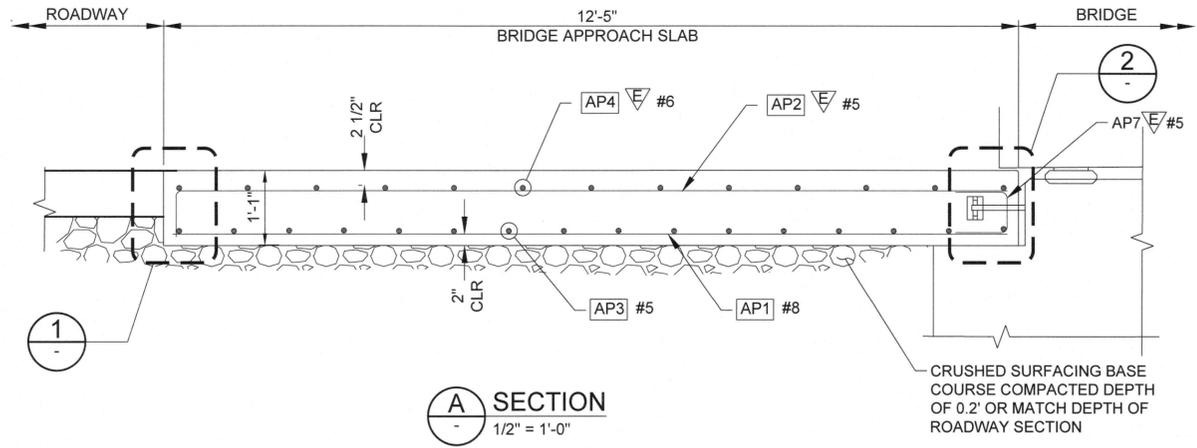
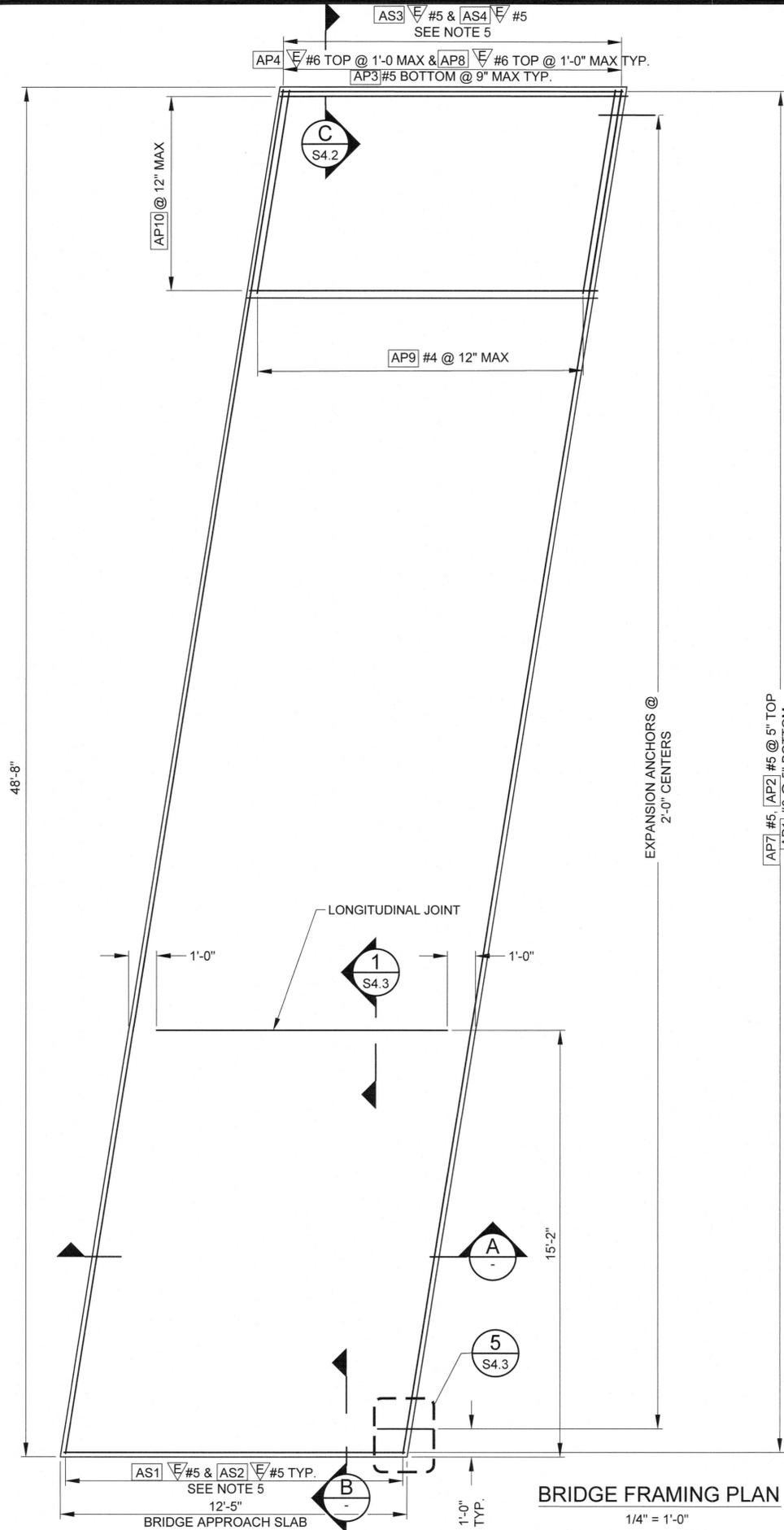
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DAT-HRZ: WA83-SF VERT: MILLW (PORT OF TACOMA TIDAL)
PARCEL: 14 DRAWING SCALE: AS NOTED

6656
S3.3
42 OF 82

CONT/CONS: 071447
M.I.D: 101449.01
PHASE: BID SET

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- NOTES**
- ALL EDGES OF BRIDGE APPROACH SLAB SHALL HAVE 1/2" RADIUS EXCEPT AT LONGITUDINAL JOINTS.
 - LONGITUDINAL JOINTS SHALL BE PLACED ON LANE LINES AND SHALL BE CONSTRUCTED AND SEALED IN ACCORDANCE WITH SPECIFICATION SECTION 03 30 00. JOINTS MAY BE EITHER A SAWCUT CRACK CONTROL JOINT OR A CONSTRUCTION JOINT. SAWCUT JOINTS SHALL TERMINATE 1'-0" BEFORE REACHING EDGE OF SLAB AND MUST BE SAW CUT AS SOON AS POSSIBLE AFTER PLACEMENT OF CONCRETE. SEE "LONGITUDINAL JOINT DETAIL" ON BRIDGE APPROACH SLAB DETAILS 3 OF 3.
 - THE MINIMUM LAP SPLICE OF #5 IS 3'-4", #5 IS 5'-0", #6 IS 4'-0" AND #8 IS 6'-8". ALL LAP SPLICES SHALL BE STAGGERED SO THAT NO MORE THAN 50% OF REBAR IS SPLICED AT THE SAME LOCATION. LAP SPLICES SHALL BE LOCATED WITHIN THE MIDDLE HALF OF THE BRIDGE APPROACH SLAB. OPTIONAL SPLICES ARE ALLOWED FOR AP4 #6.
 - FOR TRAFFIC BARRIER, INCLUDING ANY BRIDGE APPROACH SLAB BLOCKOUT INFORMATION, SEE TRAFFIC BARRIER SHEETS.
 - FOR SPACING OF AS1 THRU AS4 BARS, SEE TRAFFIC BARRIER SHEET.

6656 S4.1
44 OF 82

LOWER WAPATO CREEK HABITAT PROJECT
APPROACH SLAB DETAILS
1 OF 3

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TOWNSHIP: 20N RANGE: 3E SECTION: 1
DATE/HRZ: WA83-SF VERT: MLW (PORT OF TACOMA TIDAL)
M. ID: 101449.01
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PARCEL: 14

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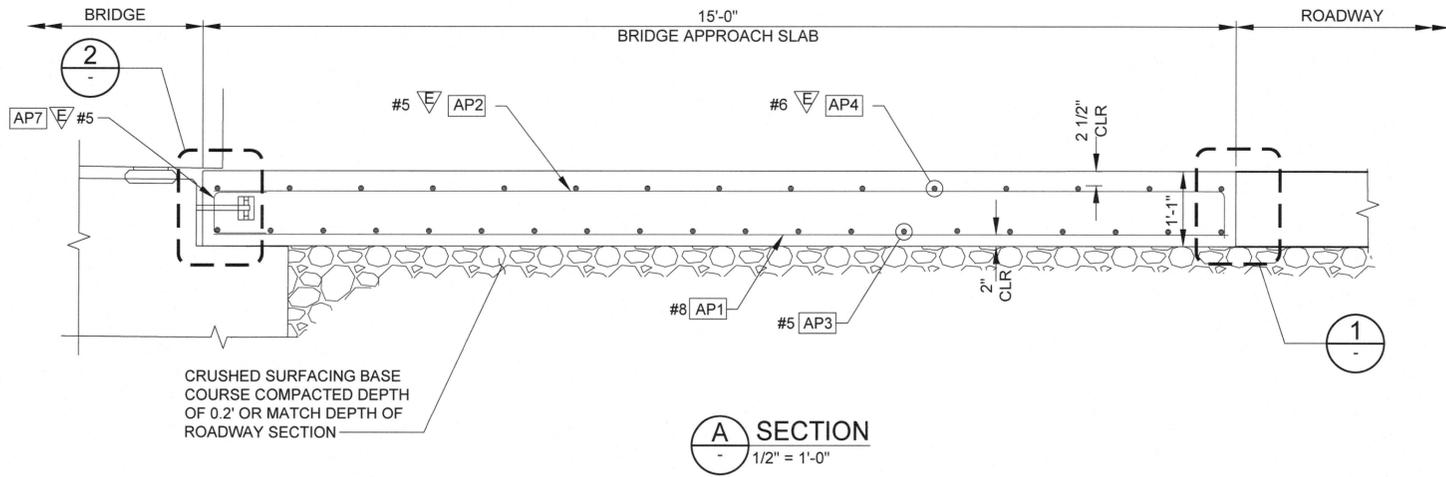
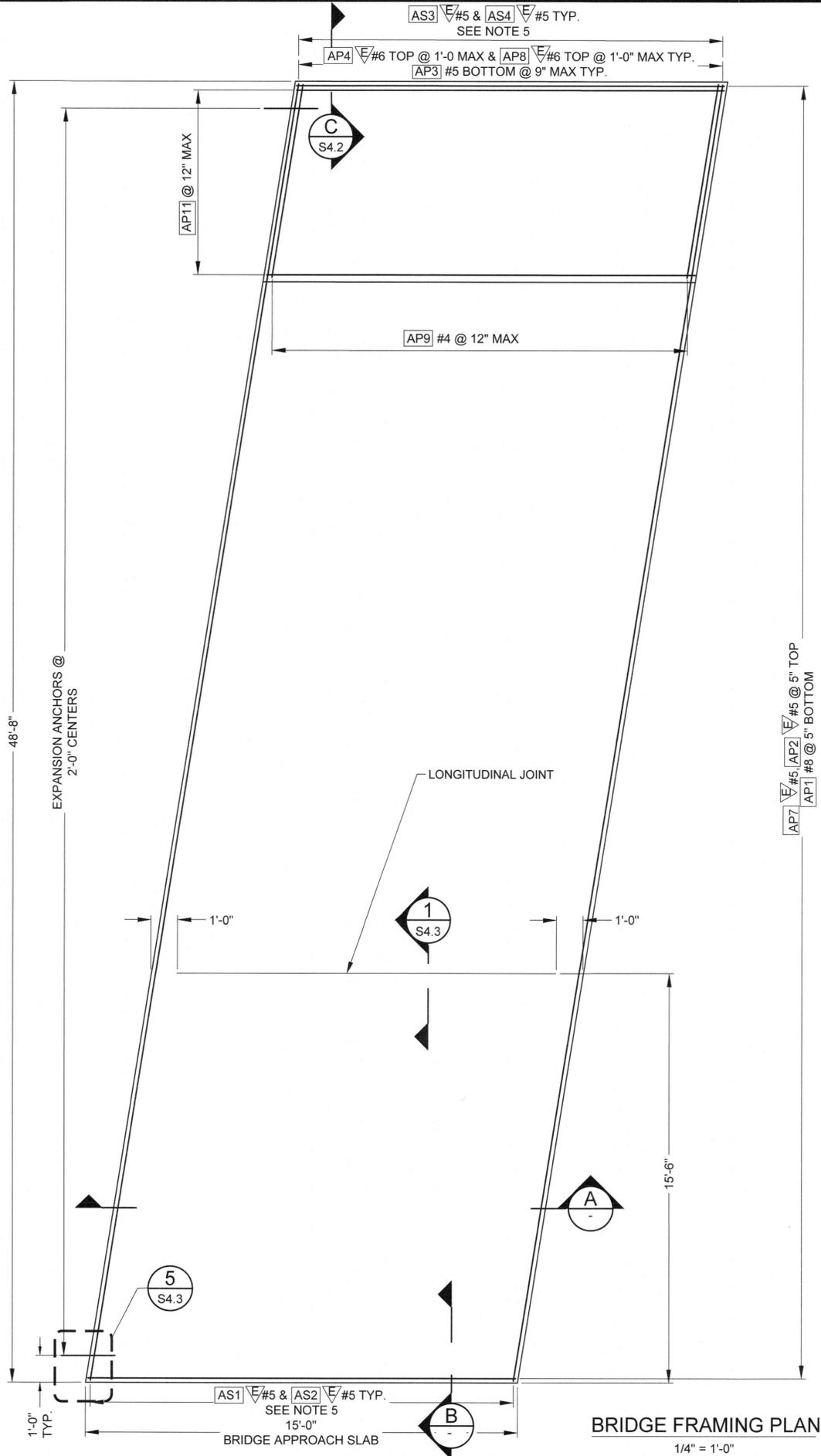
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TACOMA, WA 98421

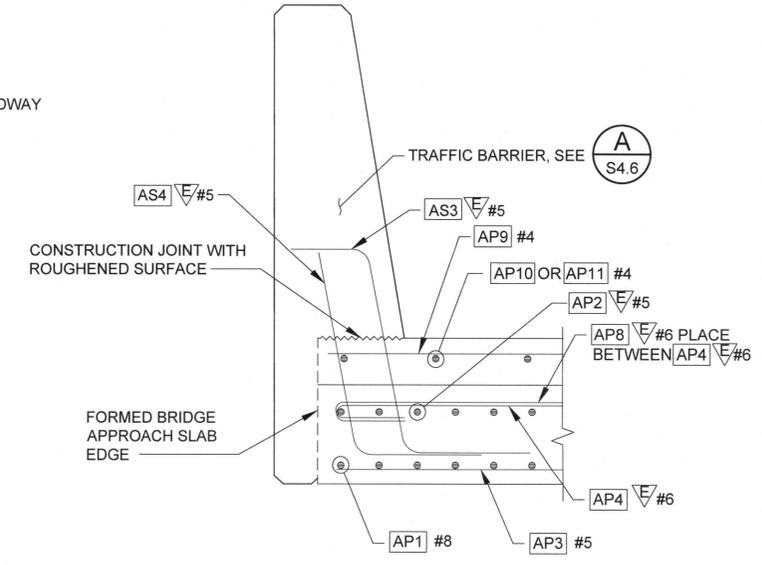
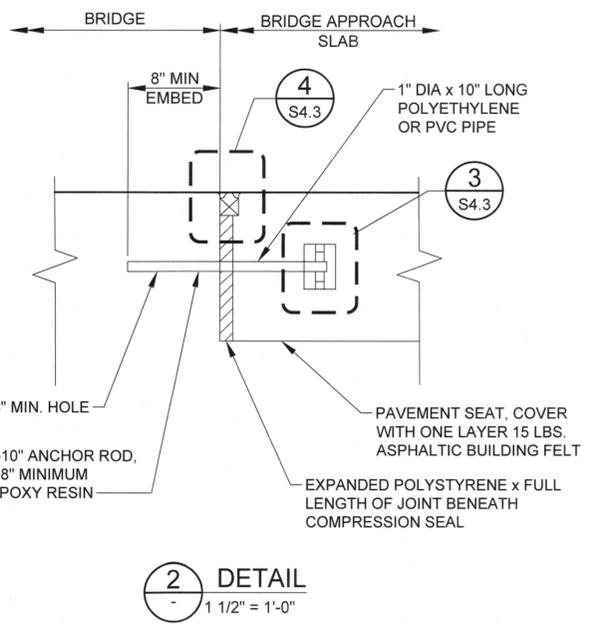
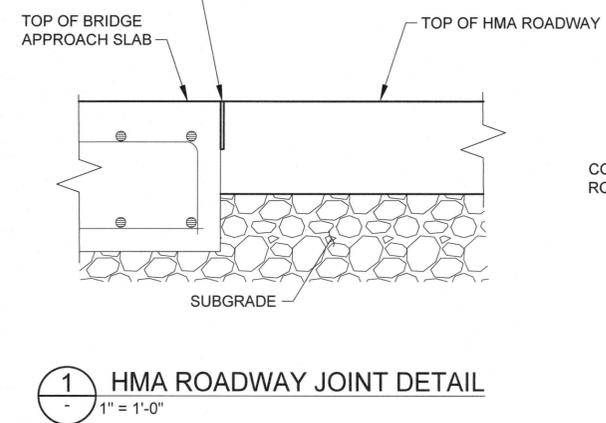
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BINDING EDGE

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SEE WSDOT STANDARD PLAN A-40.20
DETAIL 3 FOR JOINT DETAILS



NOTES

- ALL EDGES OF BRIDGE APPROACH SLAB SHALL HAVE 1/2" RADIUS EXCEPT AT LONGITUDINAL JOINTS.
- LONGITUDINAL JOINTS SHALL BE PLACED ON LANE LINES AND SHALL BE CONSTRUCTED AND SEALED IN ACCORDANCE WITH SPECIFICATION SECTION 03 30 00. JOINTS MAY BE EITHER A SAWCUT CRACK CONTROL JOINT OR A CONSTRUCTION JOINT. SAWCUT JOINTS SHALL TERMINATE 1'-0" BEFORE REACHING EDGE OF SLAB AND MUST BE SAW CUT AS SOON AS POSSIBLE AFTER PLACEMENT OF CONCRETE. SEE "LONGITUDINAL JOINT DETAIL" ON BRIDGE APPROACH SLAB DETAILS 3 OF 3.
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- FOR SPACING OF AS1 THRU AS4 BARS, SEE TRAFFIC BARRIER SHEET.



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LOWER WAPATO CREEK
HABITAT PROJECT
APPROACH SLAB DETAILS
SHEET 2 OF 3

TOWNSHIP: 20N SECTION: 1

RANGE: 3E VERT: MILLW (PORT OF TACOMA TIDAL)

DATE: 10/14/49.01 DAT-HRZ: WA83-SF

PARCEL: 14 DRAWING SCALE: AS NOTED

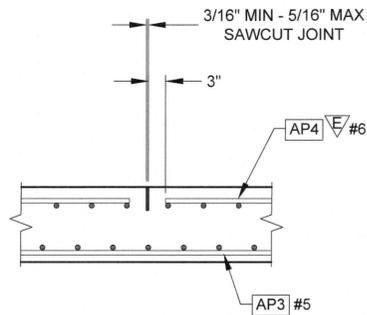
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S4.2
45 OF 82

CONTCONS: 071447

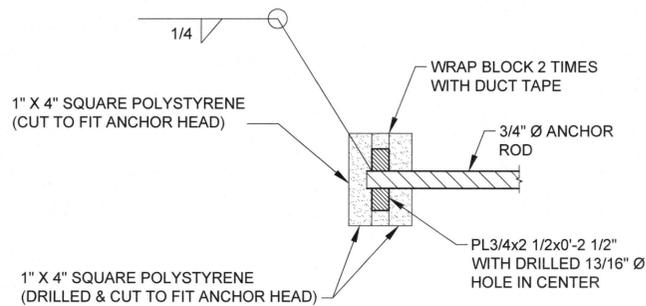
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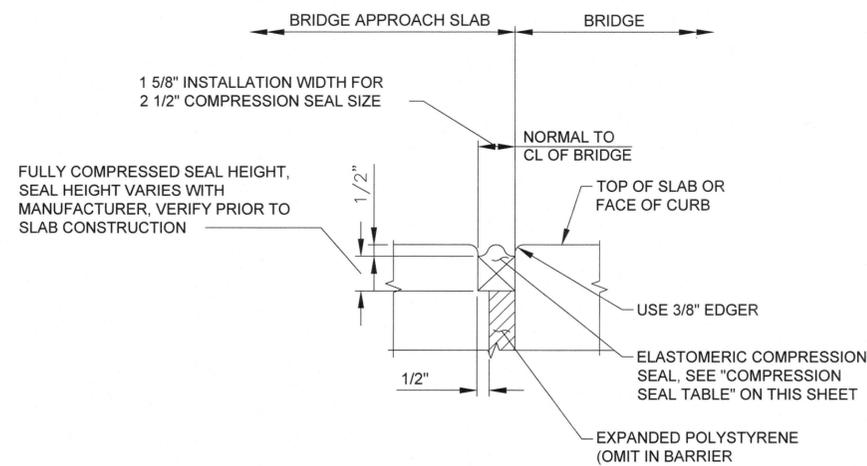
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1 LONGITUDINAL JOINT DETAIL
S4.1, S4.2 3/4"=1'-0"

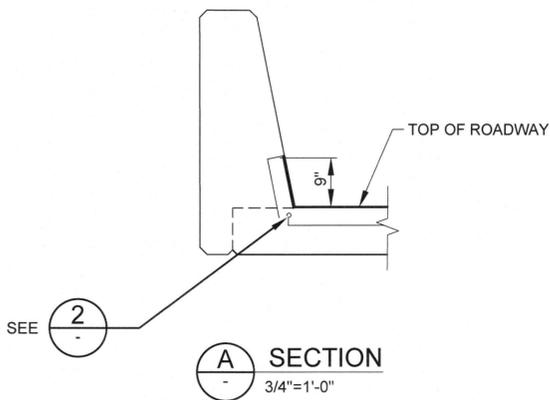


3 DETAIL
S4.1, S4.2 3"=1'-0"

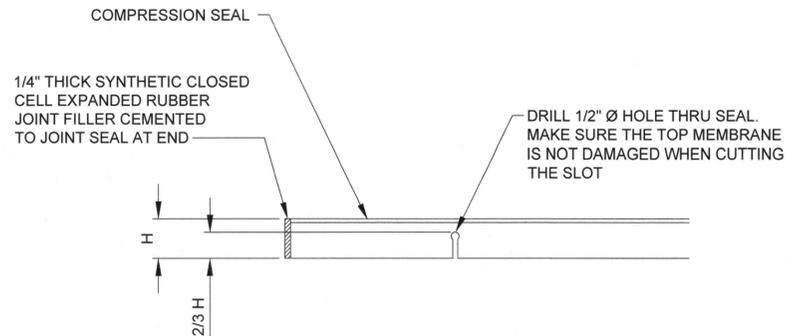


4 DETAIL
S4.1, S4.2 3"=1'-0"

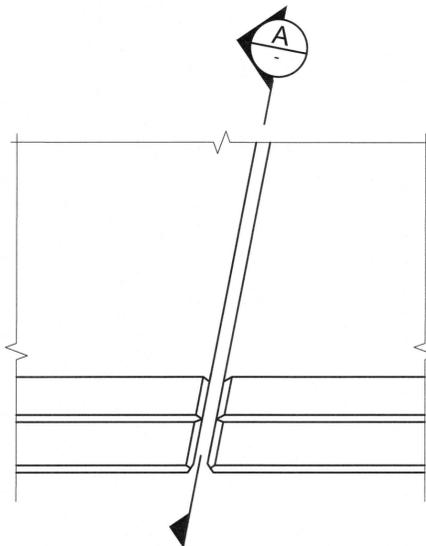
COMPRESSION SEAL TABLE			
D.S. BROWN		WATSON BOWMAN ACME	
SEAL	WIDTH	SEAL	WIDTH
CV-2502	2 1/2"	WA-250	2 1/2"



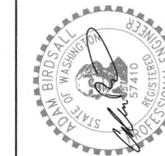
2 SEAL CUTTING DETAIL
S4.1, S4.2 3/4"=1'-0"



5 PLAN EXPANSION JOINT
S4.1, S4.2 3/4"=1'-0"



5 PLAN EXPANSION JOINT
S4.1, S4.2 3/4"=1'-0"



APPROVED: J. Dawson 5/28/21
 CHECKED BY: A. Mitchell 5/28/21
 DIRECTOR ENGR. DATE: 5-28-21
 PRINTED BY: OliveSia May 28, 2021
 PORT ADDRESS: 1 SITCOM PLAZA
 TACOMA, WA 98421

LOWER WAPATO CREEK
 HABITAT PROJECT
 APPROACH SLAB DETAILS
 3 OF 3

TOWNSHIP: 20N RANGE: 3E SECTION: 1
 DAT-HRZ: WA83-SF VERT: MLLW (PORT OF TACOMA TIDAL)
 PARCEL: 14 DRAWING SCALE: AS NOTED

6656
S4.3
 46 of 82

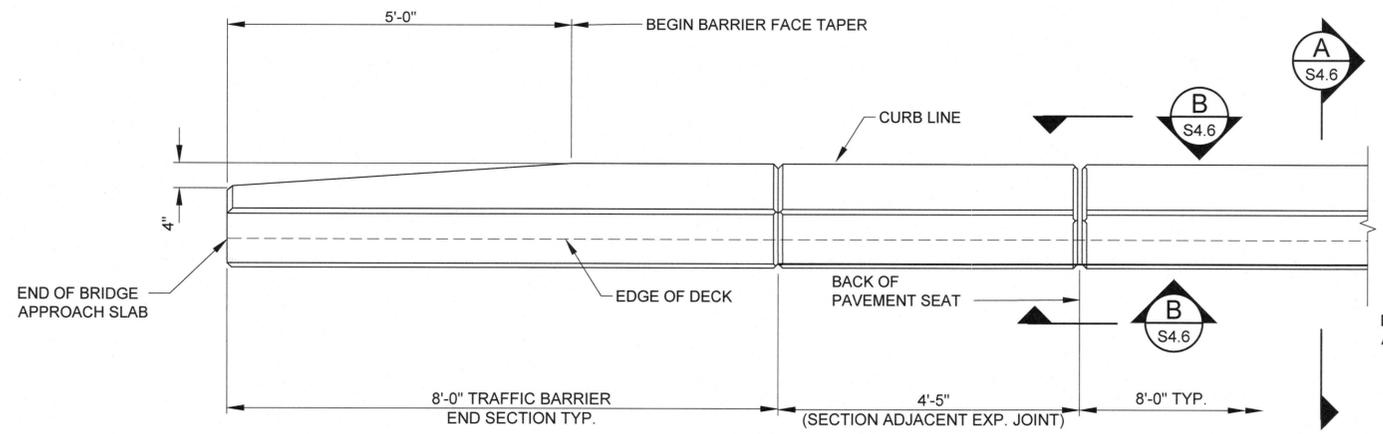
CONTR/CONS: 071447
 M. ID: 101449.01
 PHASE: BID SET

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M MOTT MACDONALD

MARK: REVISION: BY: APPR: DATE:

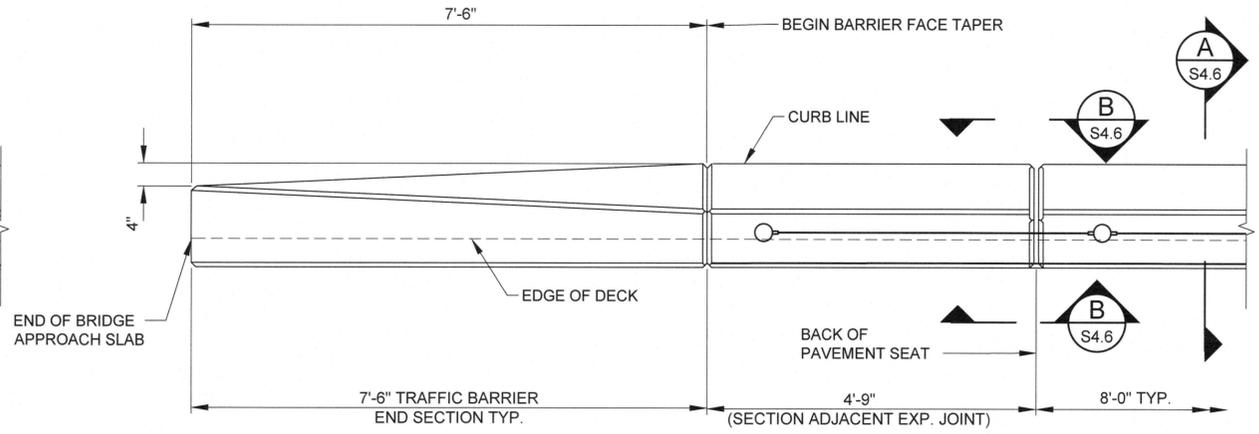
BINDING EDGE



PLAN NW END OF TRAFFIC BARRIER

1/4" = 1'-0"

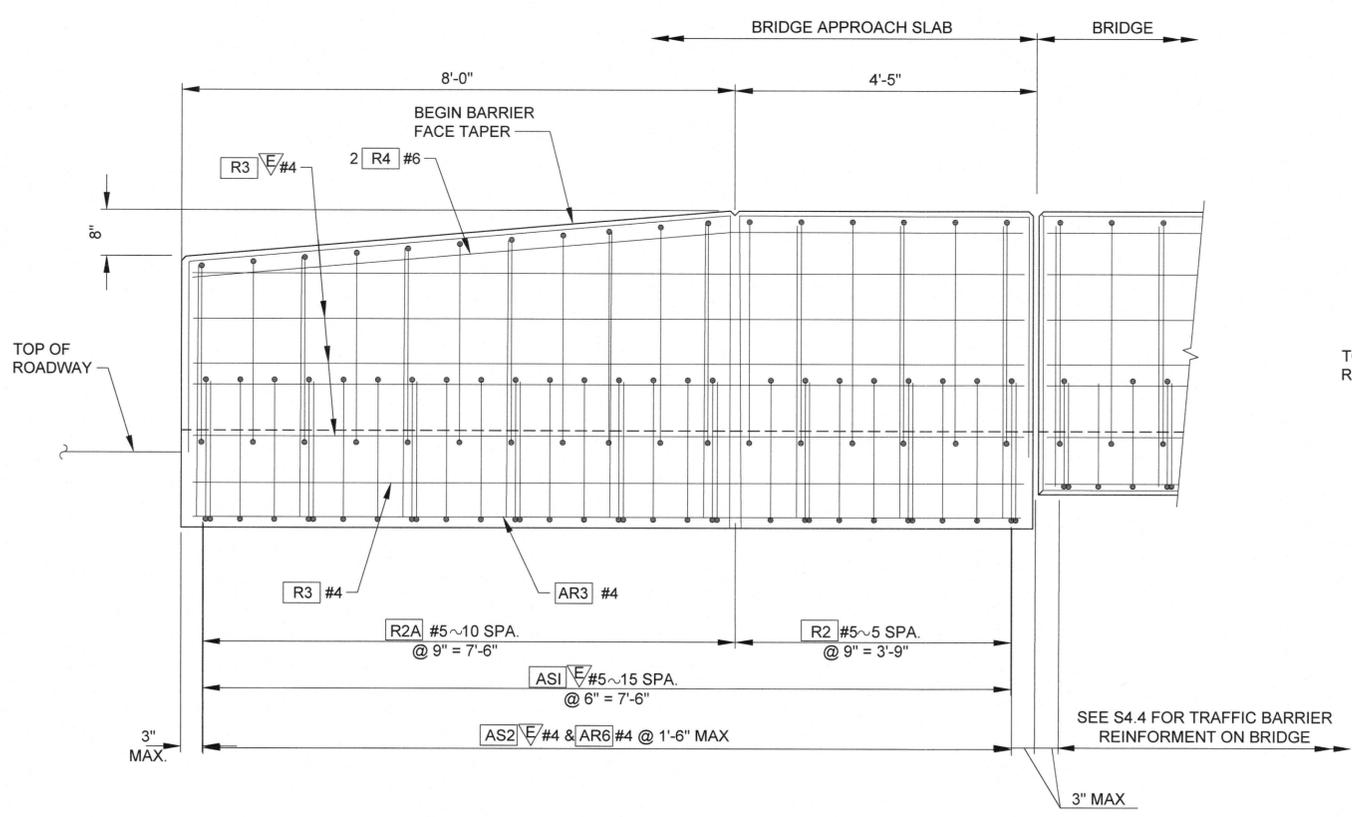
BARRIER CONTINUOUS BETWEEN BRIDGE DECK EXPANSION JOINTS. CONSTRUCTION JOINTS WITH SHEAR KEYS ARE PERMISSIBLE AT DUMMY JOINT LOCATIONS. FORM JOINTS BETWEEN DUMMY JOINTS SHALL NOT BE PERMITTED.



PLAN SW END OF TRAFFIC BARRIER

1/4" = 1'-0"

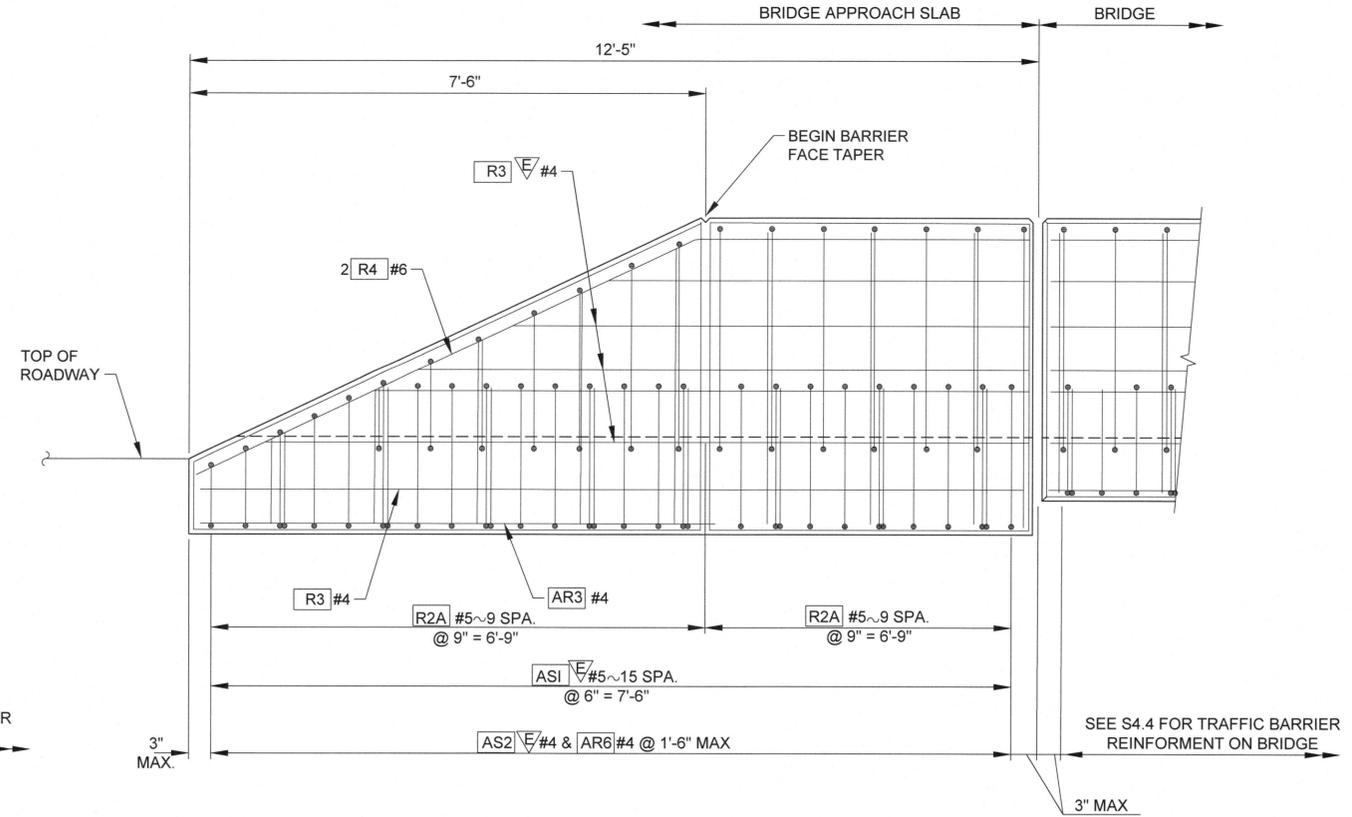
BARRIER CONTINUOUS BETWEEN BRIDGE DECK EXPANSION JOINTS. CONSTRUCTION JOINTS WITH SHEAR KEYS ARE PERMISSIBLE AT DUMMY JOINT LOCATIONS. FORM JOINTS BETWEEN DUMMY JOINTS SHALL NOT BE PERMITTED.



OUTSIDE ELEVATION NE END OF TRAFFIC BARRIER

1/4" = 1'-0"

(SHOWN WITH BRIDGE APPROACH SLAB)



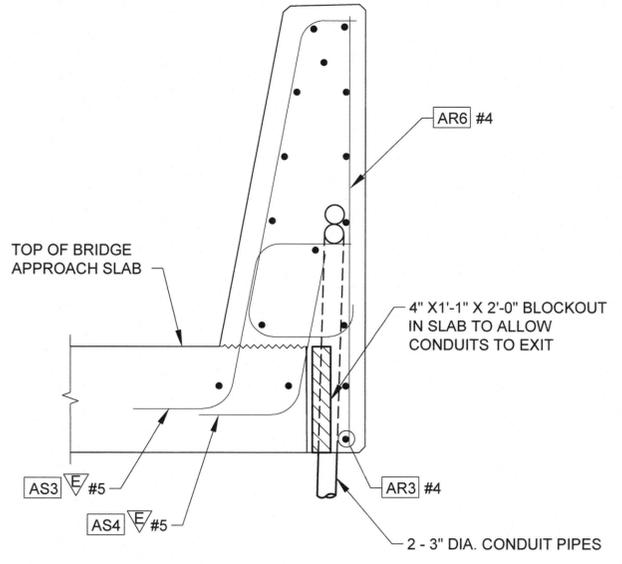
OUTSIDE ELEVATION SW END OF TRAFFIC BARRIER

1/4" = 1'-0"

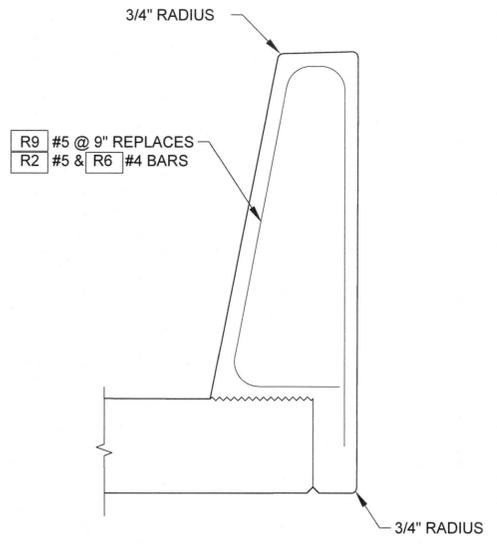
(SHOWN WITH BRIDGE APPROACH SLAB)

		1601 5th Avenue Suite 800 Seattle, Washington 98101 T +1 (425) 779 6243		MARK: MOTT MACDONALD REVISION: BY: DATE:
		J. Dawson CHECKED BY: A. Mitchell DIRECTOR ENGR. DATE: 5/28/21 PROJECT ENGR. DATE: 5/28/21		5/28/21 DATE: 5/28/21
LOWER WAPATO CREEK HABITAT PROJECT TRAFFIC BARRIER DETAILS 2 OF 3		PRINTED BY: OliveSta May 28, 2021 PORT ADDRESS: 1 SITCOM PLAZA TACOMA, WA 98421		SECTION: 1 RANGE: 3E TOWNSHIP: 20N DAT-HRZ: WA83-SF PARCEL: 14
6656 S4.5 48 of 82		SEE S4.4 FOR TRAFFIC BARRIER REINFORCEMENT ON BRIDGE		THIS DRAWING IS THE PROPERTY OF THE PORT OF TACOMA AND SHALL NOT BE USED ON OTHER WORK, DISCLOSED, COPIED, IN WHOLE OR IN PART, WITHOUT WRITTEN PERMISSION

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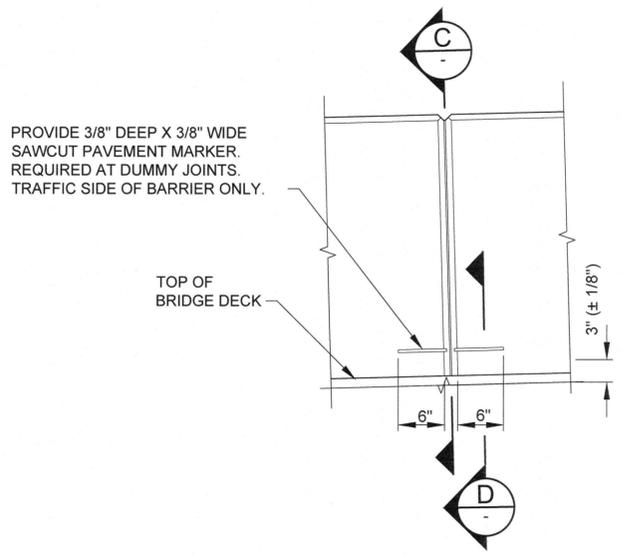


SECTION BRIDGE
(A) APPROACH SLAB
 S4.4, S4.5 1" = 1'-0"

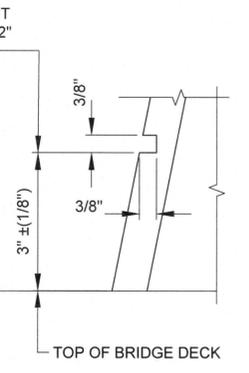


SLIPFORM ALTERNATE
 1" = 1'-0"

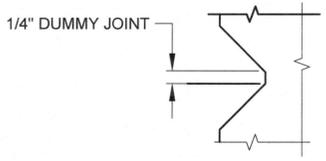
SEE "TYPICAL SECTION - TRAFFIC BARRIER" FOR ADDITIONAL DETAILS.
 THE CONTRACTOR IS ADVISED THAT THE SLIPFORM CONSTRUCTION METHOD IS A PATENTED PROPRIETARY PROCESS FOR BARRIERS.



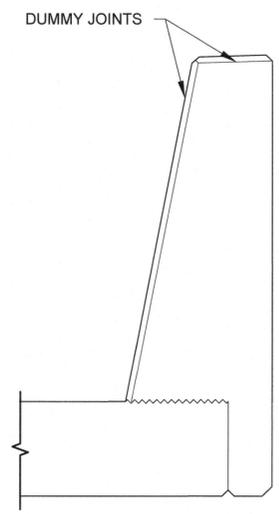
(B) VIEW
 S4.5 1" = 1'-0"



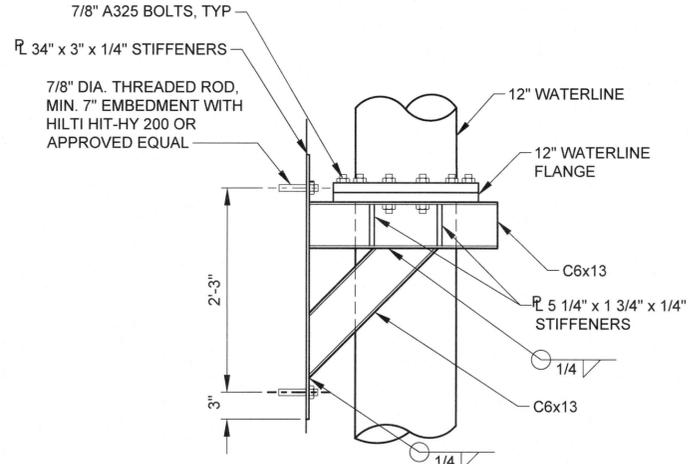
(D) SECTION
 1" = 1'-0"



DUMMY JOINT DETAIL
 1" = 1'-0"



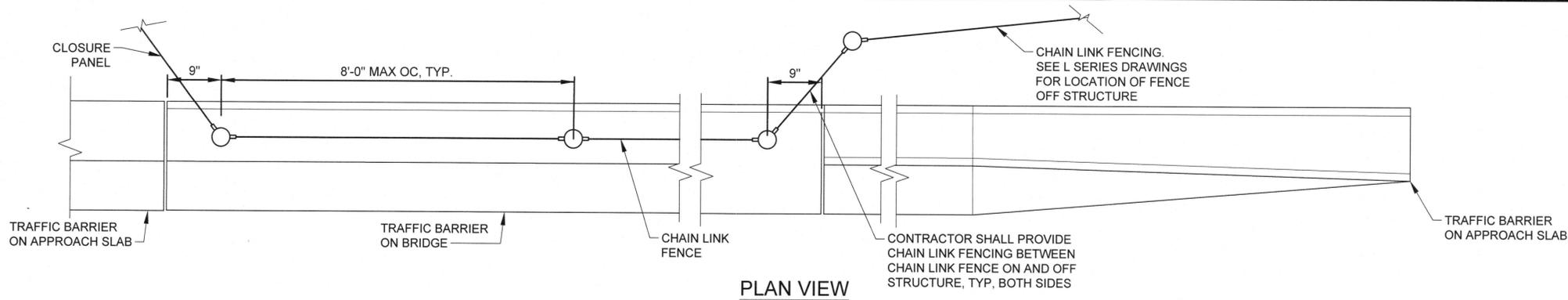
(C) SECTION
 1" = 1'-0"



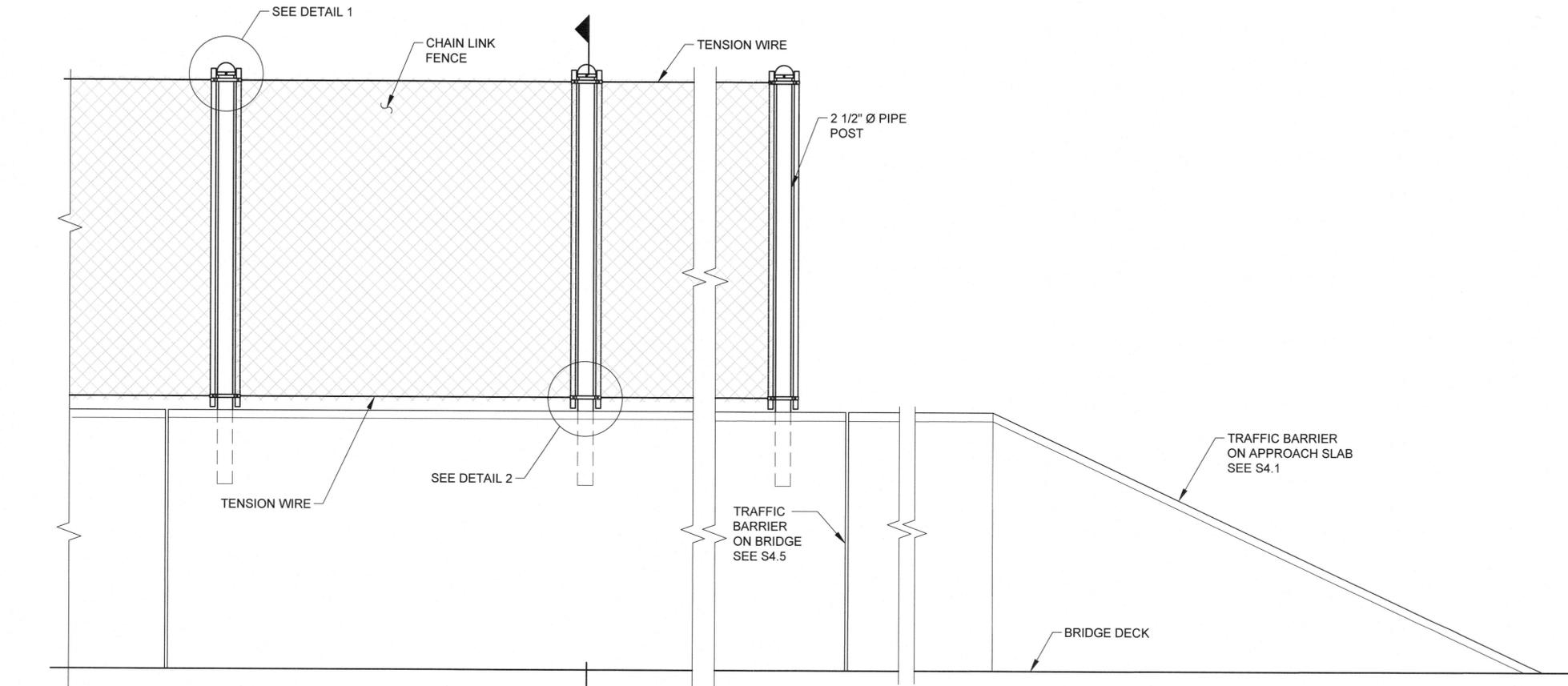
(E) THRUST BRACE
 1" = 1'-0"

	1601 6th Avenue Suite 800 Seattle, Washington 98101 T +1 (425) 778 6243	BY: _____ APPR: _____ DATE: _____
	M M MOTT MACDONALD	REVISION: _____ MARK: _____
APPROVED: J. Dawson CHECKED BY: A. Mitchell DIRECTOR ENGR. DATE: 5/28/21 PROJECT ENGR. DATE: 5/28/21	DATE: 5/28/21 DATE: 5/28/21	PRINTED BY: OliveSta May 28, 2021 PORT ADDRESS: 1 SITCOM PLAZA TACOMA, WA 98421
LOWER WAPATO CREEK HABITAT PROJECT TRAFFIC BARRIER DETAILS 3 OF 3	TOWNSHIP: 20N RANGE: 3E SECTION: 1 DAT-HRZ: WA83-SF VERT: MLLW (PORT OF TACOMA TIDAL) DRAWING SCALE: AS NOTED PARCEL: 14	6656 S4.6 49 OF 82

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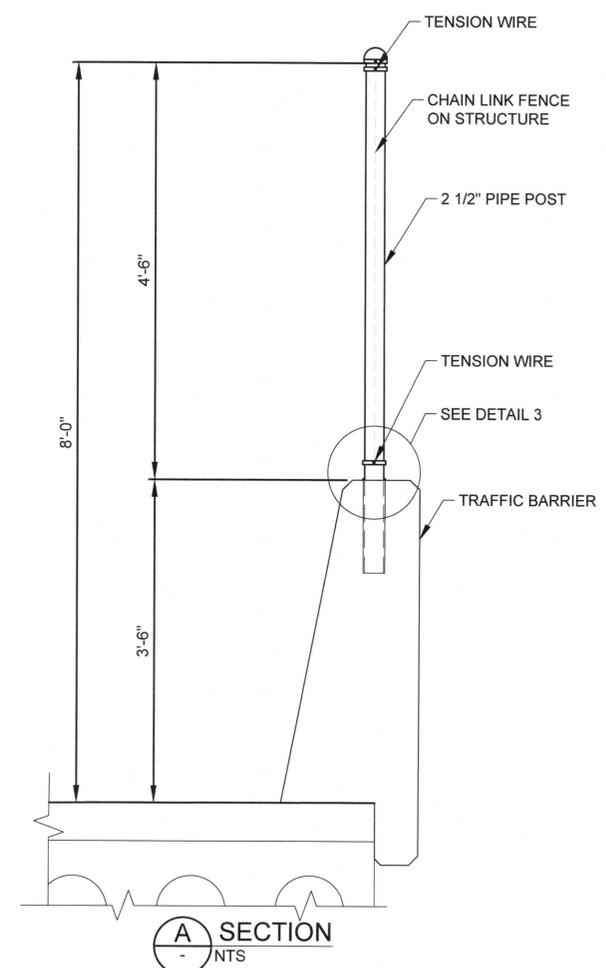


PLAN VIEW

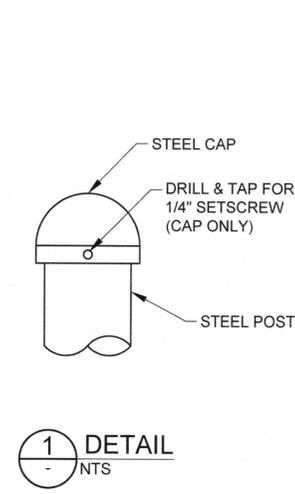


ELEVATION
1/8" = 1'-0"

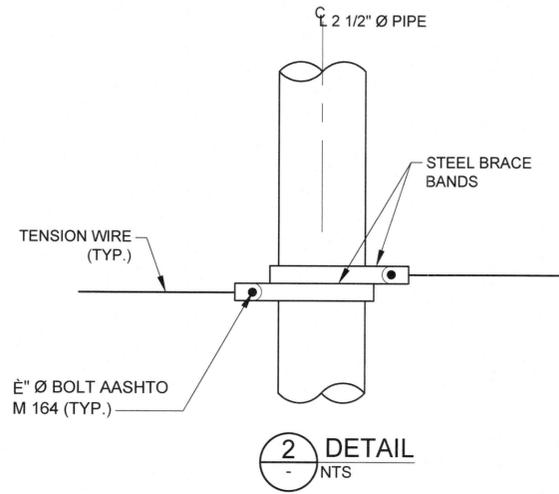
- NOTES**
1. FENCE POSTS ARE PLUMB.
 2. CONTRACTOR IS RESPONSIBLE FOR LOCATION AND PLUMBNESS.
 3. ALL ELEMENTS OF FENCE SHALL BE HOT DIPPED GALVANIZED AND PVC COATED AFTER FABRICATION.
 4. STEEL PIPES FOR POSTS AND LONGITUDINAL MEMBERS SHALL CONFORM TO ASTM SPECIFICATION A 53 GRADE B GALV. PER ASTM A 392.
 5. ALL HARDWARE SHALL CONFORM TO AASHTO SPECIFICATION M 183 GALV. PER ASTM A 392 UNLESS NOTED OTHERWISE.
 6. FABRIC SHALL BE HEAVY DUTY ALUMINUM OF #9 GAGE WIRE WOVEN IN A 2" CHAIN LINK DIAMOND MESH.
 7. FABRIC TIES SHALL BE INSTALLED TO ALL FRAMES IN ACCORDANCE WITH GOOD TRADE PRACTICES AT 1'-0" CENTERS MAXIMUM SPACING.



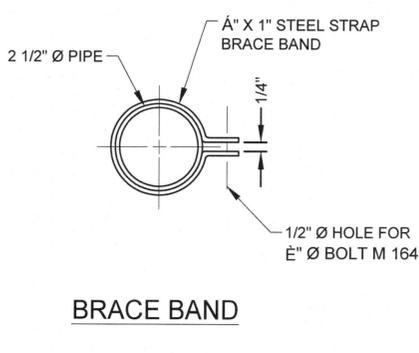
SECTION A
NTS



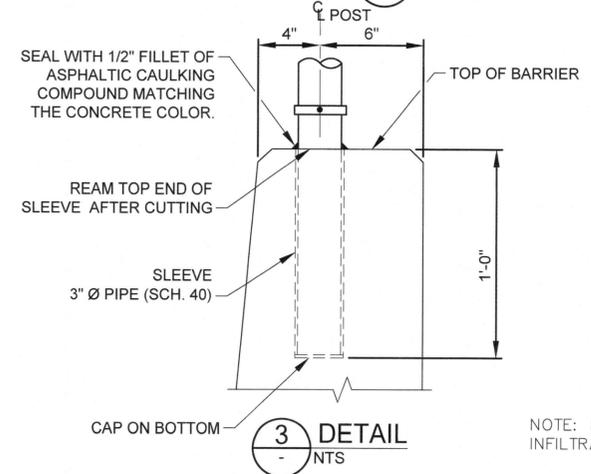
1
DETAIL
NTS



2
DETAIL
NTS



BRACE BAND



3
DETAIL
NTS

NOTE: PLUG SLEEVE TO PREVENT INFILTRATION

6656
S4.7
50 OF 82

CONTRACTOR: 071447
M. ID.: 101449.01
PHASE: BID SET

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MOTT MACDONALD

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APPROVED: J. Dawson 5/28/21
CHECKED BY: A. Mitchell 5/28/21
DIRECTOR ENG. DATE: 5/28/21
PRINTED BY: OliveSta May 28, 2021
PORT ADDRESS: 1 SITCOM PLAZA
TACOMA, WA 98421

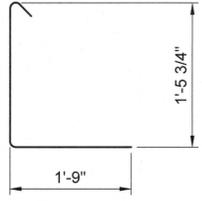
5/28/21 DATE
5/28/21 DATE
PROJ. ENGR. DATE: May 28, 2021
TACOMA, WA 98421

LOWER WAPATO CREEK HABITAT PROJECT
FENCE DETAILS

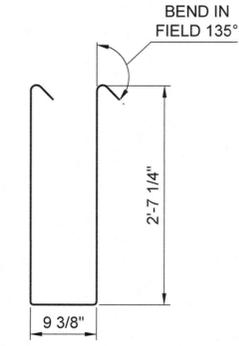
RANGE: 3E SECTION: 1
TOWNSHIP: 20N
DAT-HRZ: WA83-SF
PARCEL: 14

VERT: MLLW (PORT OF TACOMA TIDAL)
DRAWING SCALE: AS NOTED

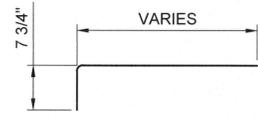
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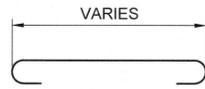
A1 #4 STIRRUP



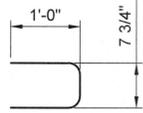
A2 #4 STIRRUP



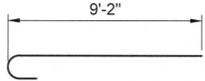
AP2 #5



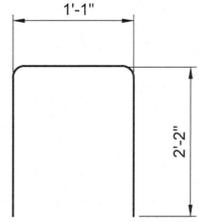
AP4 #6



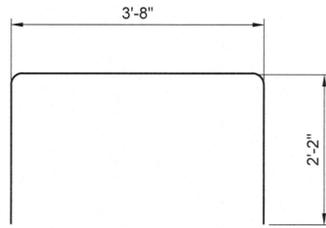
AP7 #6



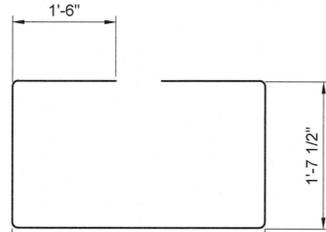
AP8 #6



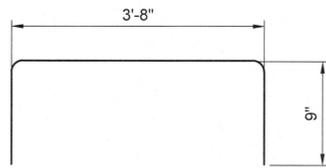
G3 #4



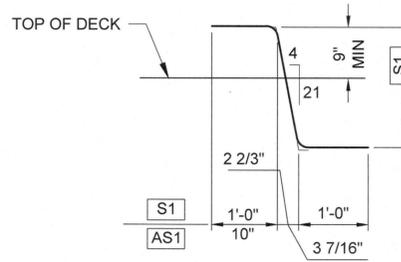
G4 #4



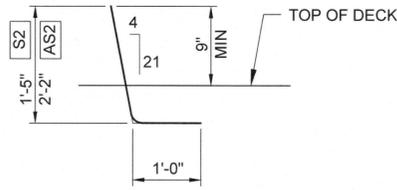
G5 #4



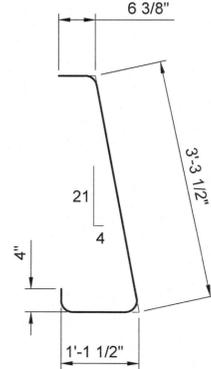
G6 #4



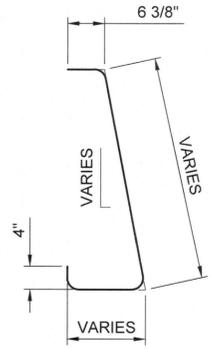
S1 #5 AND AS1



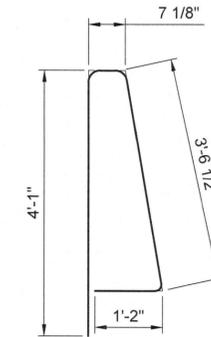
S2 #4 AND AS2 #4



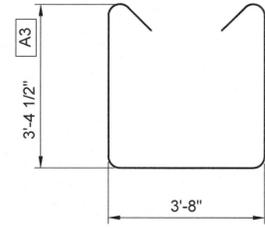
R2 #5



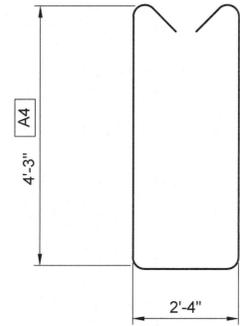
R2A #4



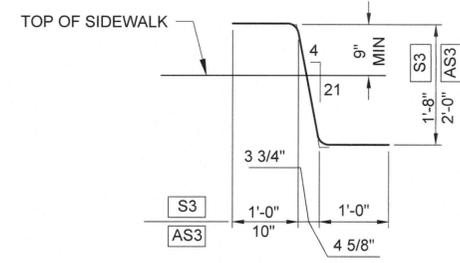
R9 #5



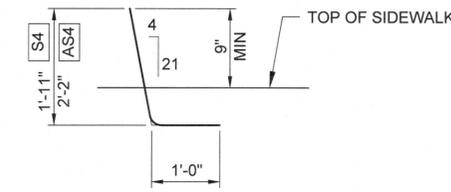
A3 #6



A4 #6



S3 #5 AND AS3



S4 #4 AND AS4 #4



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P.O. BOX 1837 TACOMA, WA 98401 (253)395-9441



J. Dawson
5/28/21
A. Mitchell
5/28/21
PROJ. ENGR
DATE
OliveSta May 28, 2021
1 SITCOM PLAZA
TACOMA, WA 98421

LOWER WAPATO CREEK
HABITAT PROJECT
BAR BENDING DIAGRAM

TOWNSHIP: 20N	RANGE: 3E	SECTION: 1
DAT-HRZ: WA83-SF	VERT: MILLW (PORT OF TACOMA TIDAL)	
PARCEL: 14	DRAWING SCALE: AS NOTED	

6656
S5.1
51 OF 82
CONT/CONS: 071447
M. ID: 101449.01
PHASE: BID SET

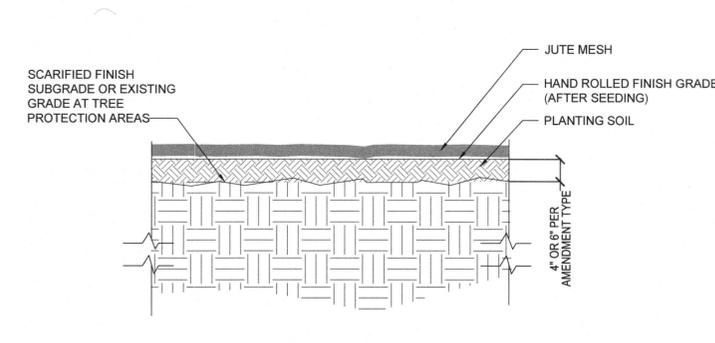
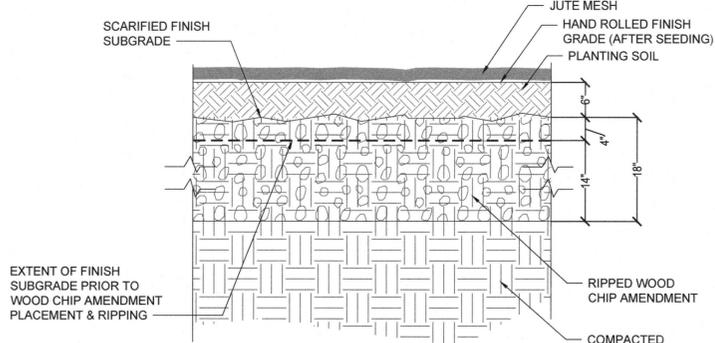
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BINDING EDGE



1 SOIL AMEND. "A" (INCL. WOOD CHIP AMEND.)
SCALE: 3/4" = 1'-0"

2 SOIL AMEND. "B" (4" DEPTH) OR "C" (6" DEPTH)
SCALE: 3/4" = 1'-0"



- SOIL PLACEMENT STEPS:**
- ROUGH GRADE AND COMPACT TO 85% DENSITY.
 - PLACE 4" OF WOOD CHIP AMENDMENT ONTO SUBGRADE
 - USING TWO PASSES IN PERPENDICULAR DIRECTIONS, SCARIFY SOIL TO A COMBINED DEPTH OF 18" TOTAL TO INTEGRATE WOOD CHIPS INTO SUBGRADE.
 - COMPACT TO 85% DENSITY TO ESTABLISH FINISH SUBGRADE.
 - SCARIFY FINISH SUBGRADE TO A DEPTH OF 3"
 - PLACE 6" PLANTING SOIL AND FINE GRADE. COMPACT TO 85%.
 - INSTALL SEED, LIGHTLY RAKE IN AND THEN ROLL WITH HAND ROLLER.
 - INSTALL JUTE MESH.

- SOIL PLACEMENT STEPS:**
- ROUGH GRADE AND COMPACT TO 85% DRY DENSITY.
- OR -
 - WITHIN TREE RETENTION AREAS, ACHIEVE CLEARING REQUIREMENTS (SEE SPECS) PRIOR TO PLACING 4" PLANTING SOIL.
 - SCARIFY FINISH SUBGRADE OR EXISTING GRADE TO A DEPTH OF 2".
 - PLACE 4" PLANTING SOIL IN AMENDMENT "B" AREAS OR 6" OF PLANTING SOIL IN AMENDMENT "C" AREAS.
 - FINE GRADE. COMPACT TO 85%. INSTALL SEED, LIGHT RAKE IN AND THEN ROLL WITH HAND ROLLER.
 - INSTALL JUTE MESH.

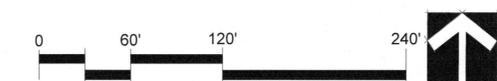
LEGEND

- * SNAG
- ✂ LARGE WOODY MATERIAL
- [Diagonal Hatching] SOIL AMENDMENT A - 9.84 ACRES (SEE CONTRACT DOCUMENTS)
- [Dotted Pattern] SOIL AMENDMENT B - 2.19 ACRES (SEE CONTRACT DOCUMENTS)
- [Cross-hatch Pattern] SOIL AMENDMENT C - 4.62 ACRES (SEE CONTRACT DOCUMENTS)

NOTES

- In Soil Amendment A area, contractor shall cut subgrade to a depth of 10" below finish grade.
- In Soil Amendment B area, contractor shall cut subgrade to 4" below finish grade
- In Soil Amendment C area, contractor shall cut subgrade to 6" below finish grade.

Port of Tacoma P.O. BOX 1837 TACOMA, WA 98421 (253)385-9641		DATE: _____ APPR: _____ BY: _____ REVISION: _____ MARK: _____	
SiteWorkshop LANDSCAPE ARCHITECTURE			
LOWER WAPATO CREEK HABITAT PROJECT SOILS PLAN		APPROVED: <i>J. Dawson</i> CHECKED BY: A. Mitchell DIRECTOR ENG. DATE: 5/28/21 PROJ. ENGR DATE: 5/28/21 PRINTED BY: MOR69830 PORT ADDRESS: 1 SITCOM PLAZA TACOMA, WA 98421	
TOWNSHIP: 20N DAT-HRZ: WA83-SF PARCEL: 14	RANGE: 3E VERT: MLLW (PORT OF TACOMA TIDAL) DRAWING SCALE: AS NOTED	SECTION: 1 DATE: 5/27/2021	DATE: 5/28/21
6656 L1.0 52 OF 82		CONT/CONS: 071447 M. ID: 101449.01 PHASE: BID SET	

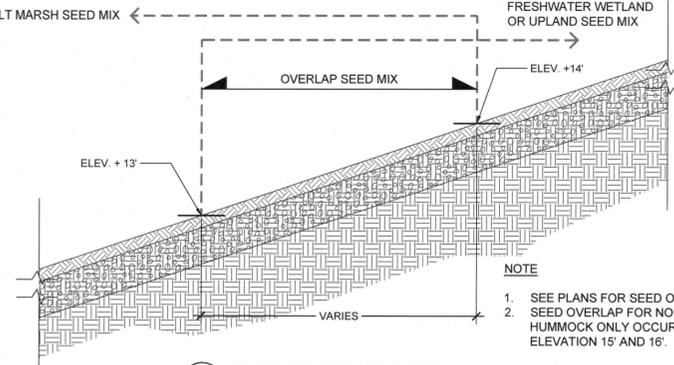


PORT OF TACOMA FILE: C:\pwworking\hmm\ports_harboors\mor69830\dms48062L1.0 - Soils Plan

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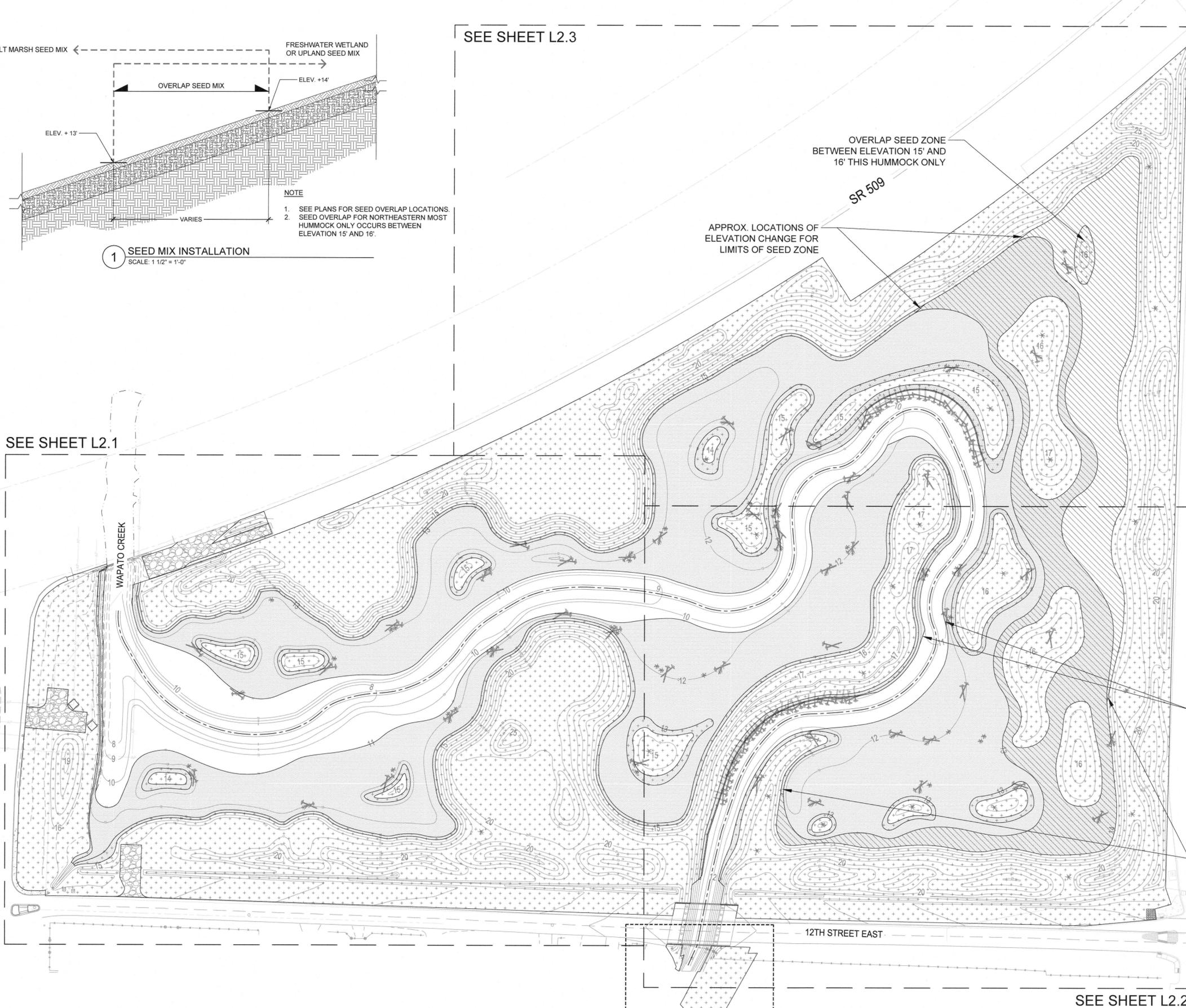
BINDING EDGE

PORT OF TACOMA FILE: C:\pwworking\hmm\ports_harbors\mor69830\dms48062\2.0 - Landscaping Plan



SEE SHEET L2.1

SEE SHEET L2.3



APPROX. LOCATIONS OF ELEVATION CHANGE FOR LIMITS OF SEED ZONE

OVERLAP SEED ZONE BETWEEN ELEVATION 15' AND 16' THIS HUMMOCK ONLY

SEED SCHEDULE

NOTE:
ALL DISTURBED SOIL AREAS ABOVE ELEVATION 11 TO BE SEEDED
NO SEEDING TO OCCUR BELOW ELEVATION 11
ALL DISTURBED AREAS AROUND GRAVEL ACCESS PADS TO BE SEEDED

SEED MIX	LBS PER AC	TOTAL LBS
UPLAND SEED MIX 10.26 AC TOTAL		
ACHILLEA MILLEFOLIUM / WHITE YARROW	0.50	5.13
ELYMUS GLAUCUS / BLUE WILDRIE	10.00	102.60
ERIGERON SPECIOSUS / SHOWY FLEABANE	0.04	0.41
LUPINUS POLYPHYLLUS / BIGLEAF LUPINE	4.00	41.04
LUPINUS BICOLOR / TWO COLOR LUPINE	4.00	41.04
HORDEUM BRACHYANTHERUM / MEADOW BARLEY	8.00	82.08
TRITICUM AESTIVUM / STERILE WHEAT GRASS (REGREEN™ OR EQUAL)	7.00	71.82
POA SECUNDA / SANDBERG'S BLUEGRASS	3.00	30.78
ARTEMISIA SUKSDORFII / COAST MUGWORT	0.25	2.57
ANAPHALIS MARGARITACEA / WEST. PEARLY EVERLAST.	0.05	0.51
ERIOPHYLLUM LANATUM / OREGON SUNSHINE	0.12	1.23
LUPINUS LITTORALIS / SEASHORE LUPINE	1.00	10.26
FRAGARIA CHILOENSIS / BEACH STRAWBERRY	0.05	0.51
AMBROSIA CHAMISSONIS / SILVER BURR RAGWEED	0.03	0.31
GRINDELIA INTEGRIFOLIA / PUGET SOUND GUMWEED	0.70	7.18
ARGENTINA EGEDII / PACIFIC SILVERWEED	0.09	0.92
PRUNELLA VULGARIS VAR. LANCEOLATA / SELF HEAL	0.30	3.07
SIDALCEA HENDERSONII / HEND. CHECKERMALLOW	0.25	2.57
ASTER SUBSPICATUS / DOUGLAS'S ASTER	0.03	0.31
DESCHAMPSIA CAESPITOSA / TUFTED HAIRGRASS	2.00	20.52
PLECTRITIS CONGESTA / SHORTSPUR SEABLUSH	0.16	1.64
FRESHWATER WETLAND SEED MIX 1.75 AC TOTAL		
BROMUS CARINATUS / CALIFORNIA BROME GRASS	3.00	5.25
ELYMUS GLAUCUS / BLUE WILDRIE	3.00	5.25
POA SECUNDA / SANDBERG'S BLUEGRASS	2.00	3.50
GLYCERIA OCCIDENTALIS / WESTERN MANNA GRASS	4.00	7.00
DECHAMPSIA CAESPITOSA / TUFTED HAIR GRASS	3.00	5.25
ELEOCHARIS PALUSTRIS / COMMON SPIKE RUSH	4.00	7.00
CAREX OBNUPTA / SLOUGH SEDGE	5.00	8.75
SALT MARSH SEED MIX 6.41 AC TOTAL		
CAREX LYNGBYEI / LYNDBY'S SEDGE	3.00	19.23
CAREX OBNUPTA / SLOUGH SEDGE	3.60	23.08
CAREX STIPATA / AWLFRUITED SEDGE	1.20	7.69
ELEOCHARIS PALUSTRIS / COMMON SPIKE RUSH	1.20	7.69
JUNCUS ACUMINATUS / TAPERED RUSH	0.06	0.38
JUNCUS ARTICUS / MOUNTAIN RUSH	1.20	7.69
JUNCUS ENSIFOLIUS / DAGGERLEAF RUSH	0.06	0.38
SCHOENOPLECTUS ACUTUS / HARDSTEM BULRUSH	3.20	20.51
SCHOENOPLECTUS AMERICANUS / CHAIRMAKERS BULRUSH	2.40	15.38
BOLBOSCHOENUS MARITIMUS / COSMOPOLITAN BULRUSH	3.00	19.23
GRINDELIA INTEGRIFOLIA / PUGET SOUND GUMWEED	0.35	2.24
ARGENTINA EGEDII / PACIFIC SILVERWEED	0.09	0.58
SIDALCEA HENDERSONII / HEND. CHECKERMALLOW	0.50	3.21
LYTHRUS JAPONICUS VAR. MARTIMUS / BEACH PEA	0.05	0.32
LATHYRUS LITTORALIS / SILKY BEACH PEA	0.05	0.32
PLECTRITIS CONGESTA / SHORTSPUR SEABLUSH	0.16	1.03
UPLAND AND SALT MARSH SEED MIX (OVERLAP)		
FRESHWATER WETLAND AND SALT MARSH SEED MIX (OVERLAP)		
UPLAND AND FRESHWATER WETLAND SEED MIX (OVERLAP)		

LOWEST LIMIT OF SEEDING FOLLOWS TOP OF BANK (ABOVE ELEVATION 11') UPSTREAM OF THIS LOCATION ONLY

APPROX. LOCATIONS OF ELEVATION CHANGE FOR LIMITS OF SEED ZONE

PROLOGIS DEVELOPMENT

ENLARGED PLAN, SEE SHEET L2.4

SEE SHEET L2.2



6656 L2.0
53 OF 82
CONTRACT/CONS: 071447
M. ID: 101449.01
PHASE: BID SET

LOWER WAPATO CREEK HABITAT PROJECT
OVERALL LANDSCAPE PLAN

APPROVED: J. Dawson 5/28/21
CHECKED BY: A. Mitchell 5/28/21
DIRECTOR ENGR. DATE: MOR69830 May 27, 2021
PRINTED BY: 1 SITCOM PLAZA
PORT ADDRESS: TACOMA, WA 98421

TOWNSHIP: 20N RANGE: 3E SECTION: 1
DATE-HRZ: WA83-SF VERT: MLLW (PORT OF TACOMA TIDAL)
PARCEL: 14 DRAWING SCALE: AS NOTED

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P.O. BOX 1837 TACOMA, WA 98401 (253) 835-5044

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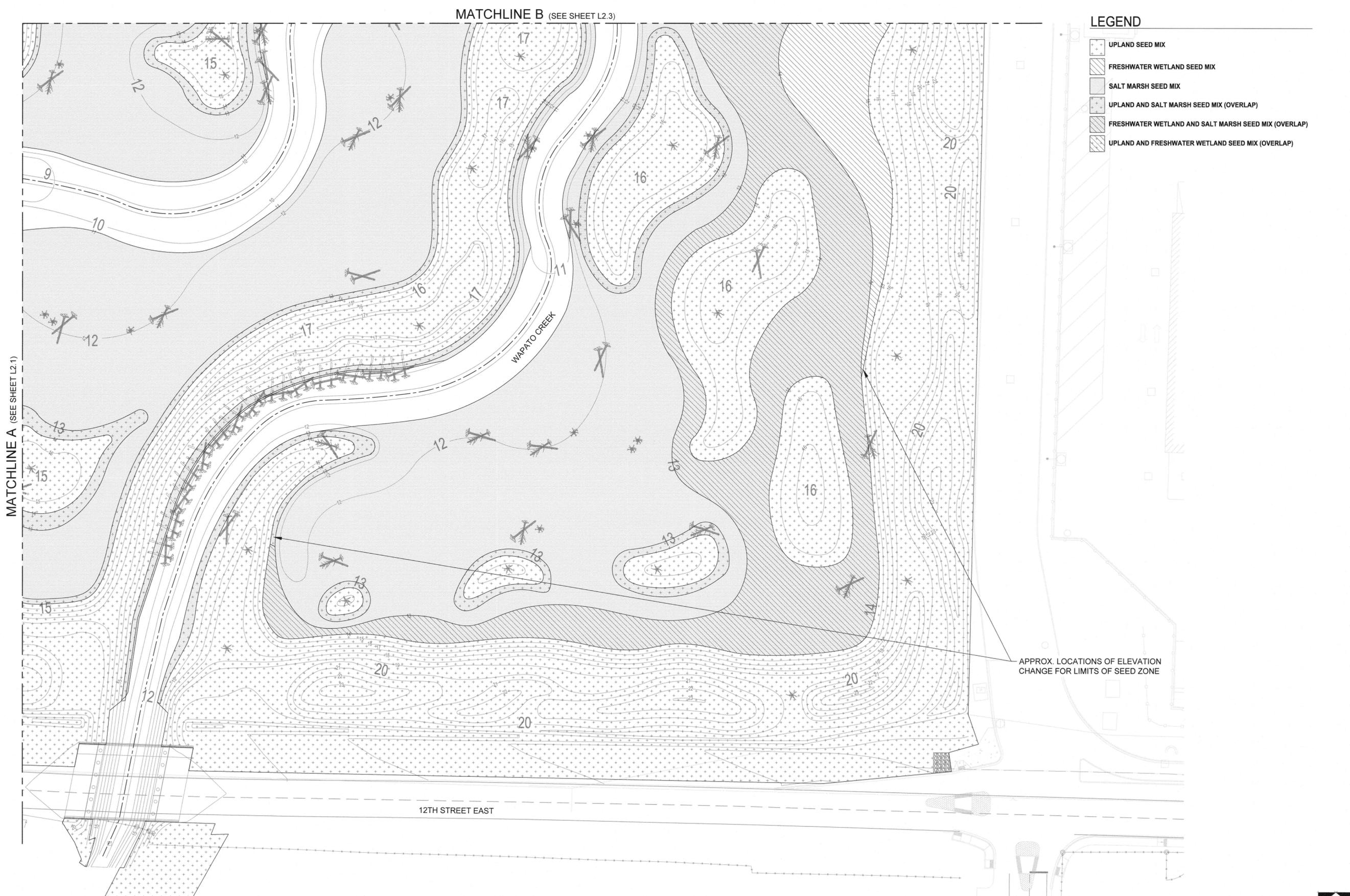
LEGEND

- UPLAND SEED MIX
- FRESHWATER WETLAND SEED MIX
- SALT MARSH SEED MIX
- UPLAND AND SALT MARSH SEED MIX (OVERLAP)
- FRESHWATER WETLAND AND SALT MARSH SEED MIX (OVERLAP)
- UPLAND AND FRESHWATER WETLAND SEED MIX (OVERLAP)



6656 L2.1 54 OF 82 CONT/CONS: 071447 M. ID: 101449.01 PHASE: BID SET	LOWER WAPATO CREEK HABITAT PROJECT LANDSCAPE PLAN 1		APPROVED: <i>[Signature]</i> J. Dawson CHECKED BY: A. Mitchell DIRECTOR ENG. DATE: MOR69830 May 27, 2021 PRINTED BY: T SITCOM PLAZA PORT ADDRESS: TACOMA, WA 98421	5/28/21 DATE: 5/28/21 DATE: May 27, 2021
	TOWNSHIP: 20N RANGE: 3E SECTION: 1 VERT: MLLW (PORT OF TACOMA TIDAL) DAT-HRZ: WA83-SF PARCEL: 14 DRAWING SCALE: AS NOTED	SiteWorkshop LANDSCAPE ARCHITECTURE P.O. BOX 1877 TACOMA, WA 98401 (253)855-9644 APPR: BY: DATE:		REVISION: MARK:

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- LEGEND**
- UPLAND SEED MIX
 - FRESHWATER WETLAND SEED MIX
 - SALT MARSH SEED MIX
 - UPLAND AND SALT MARSH SEED MIX (OVERLAP)
 - FRESHWATER WETLAND AND SALT MARSH SEED MIX (OVERLAP)
 - UPLAND AND FRESHWATER WETLAND SEED MIX (OVERLAP)

MATCHLINE A (SEE SHEET L2.1)

MATCHLINE B (SEE SHEET L2.3)

12TH STREET EAST

APPROX. LOCATIONS OF ELEVATION CHANGE FOR LIMITS OF SEED ZONE

6656
L2.2
55 OF 82

CONT/CONS: 071447
M ID: 101449.01
PHASE: BID SET

**LOWER WAPATO CREEK
HABITAT PROJECT**
LANDSCAPE PLAN 2

TOWNSHIP: 20N SECTION: 1
DATE-HRZ: WA83-SF VERT: MLW (PORT OF TACOMA TIDAL)
PARCEL: 14 DRAWING SCALE: AS NOTED

APPROVED: J. Dawson 5/28/21
CHECKED BY: A. Mitchell 5/28/21
DIRECTOR ENG. DATE: MOR69830 May 27, 2021
PRINTED BY: 1 SITCOM PLAZA
PORT ADDRESS: TACOMA, WA 98421



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LANDSCAPE ARCHITECTURE

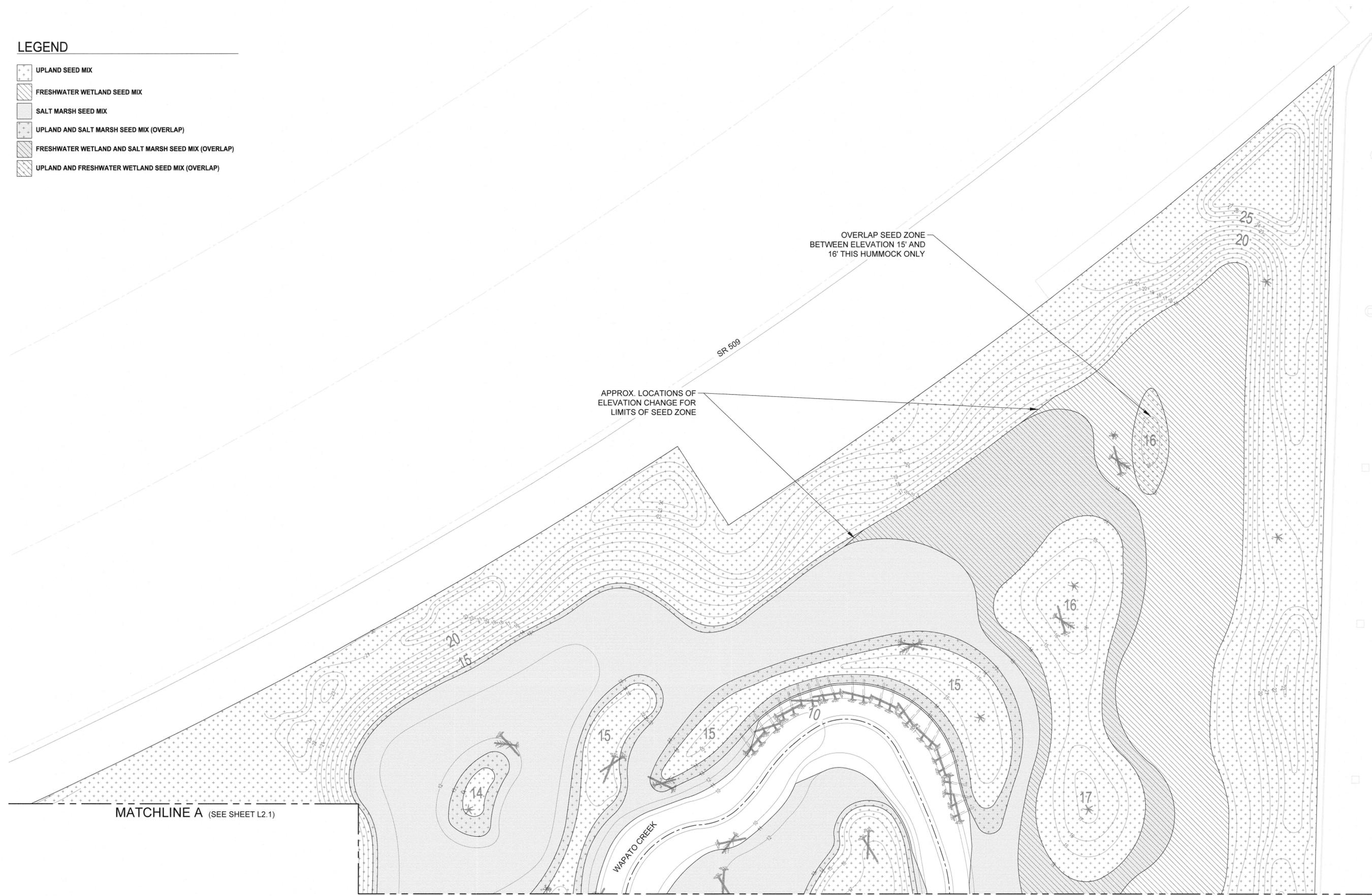
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LEGEND

-  UPLAND SEED MIX
-  FRESHWATER WETLAND SEED MIX
-  SALT MARSH SEED MIX
-  UPLAND AND SALT MARSH SEED MIX (OVERLAP)
-  FRESHWATER WETLAND AND SALT MARSH SEED MIX (OVERLAP)
-  UPLAND AND FRESHWATER WETLAND SEED MIX (OVERLAP)



<p>6656 L2.3 56 OF 82</p>	<p>LOWER WAPATO CREEK HABITAT PROJECT LANDSCAPE PLAN 3</p>		<p>APPROVED: <i>J. Dawson</i> 5/28/21</p>	<p>CHECKED BY: A. Mitchell 5/28/21</p>
	<p>TOWNSHIP: 20N DATE-HRZ: WA83-SF PARCEL: 14</p>	<p>RANGE: 3E VERT: MLW (PORT OF TACOMA TIDAL) DRAWING SCALE: AS NOTED</p>	<p>DATE: 5/28/21</p>	<p>DATE: 5/28/21</p>
<p>CONTRACTORS: 071447 M. ID: 101449.01 PHASE: BID SET</p>	<p>SECTION: 1 TACOMA, WA 98421</p>	<p>PRINTED BY: MOR69830 May 27, 2021 PORT ADDRESS: 1 SITCOM PLAZA</p>		



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LANDSCAPE ARCHITECTURE

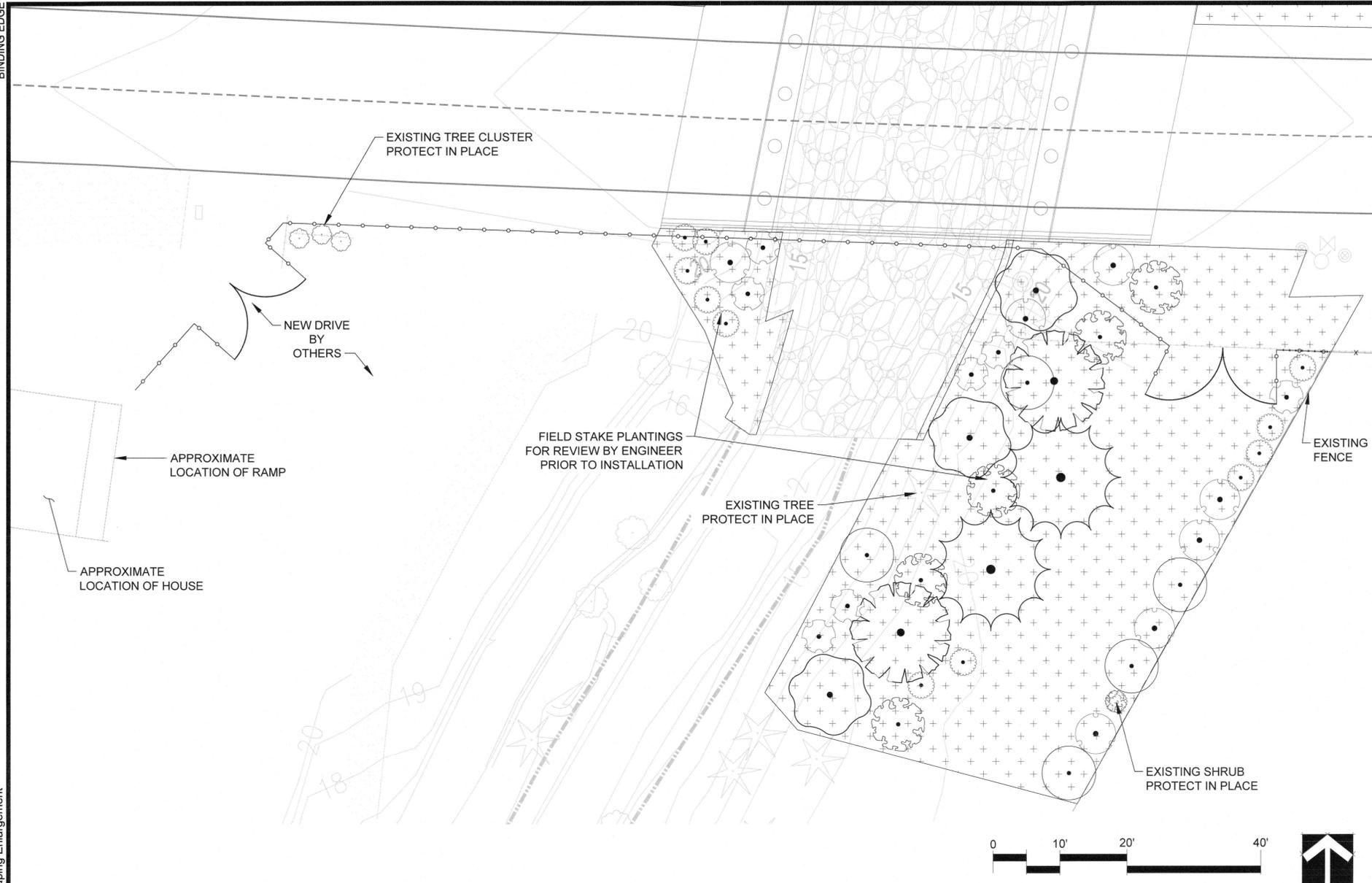
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APPR: _____ DATE: _____

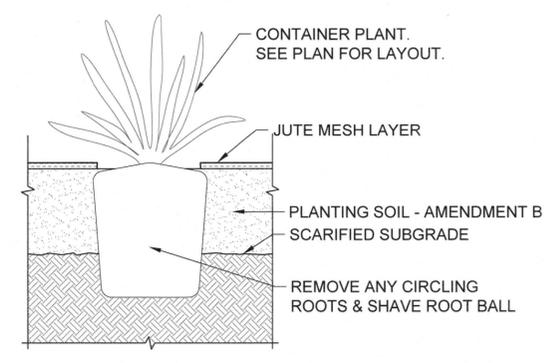
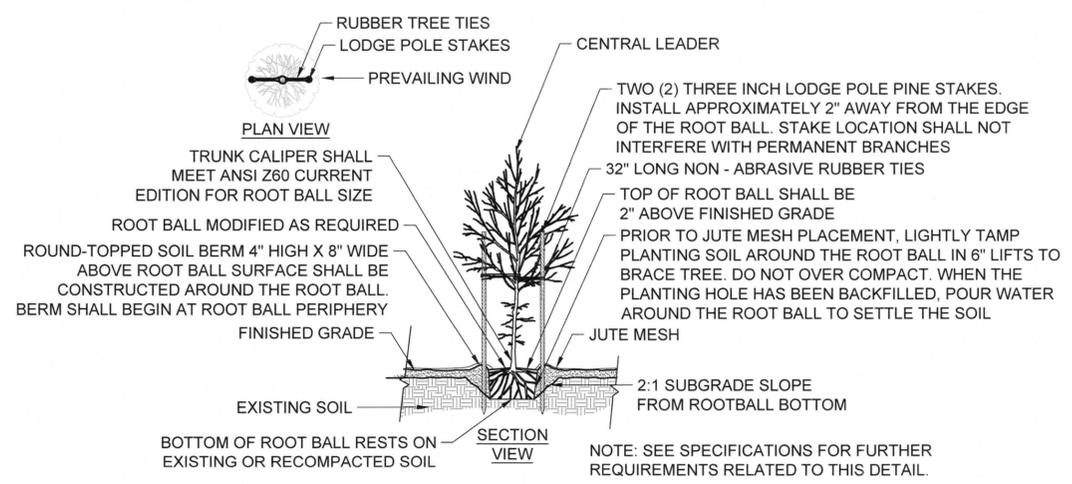
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PORT OF TACOMA FILE: C:\pwworking\hmm\ports_harbor\mor69830\dms48062\LL3.0 Landscaping Enlargement



PLANT SCHEDULE

TREES	CODE	QTY	BOTANICAL / COMMON NAME	CONT
	AR	2	ALNUS RUBRA RED ALDER	1.5" CAL.
	MP	3	MALUS FUSCA OREGON CRAB APPLE	1" CAL.
	PD	2	PSEUDOTSUGA MENZIESII DOUGLAS FIR	6-7' HT.
SHRUBS	CODE	QTY	BOTANICAL / COMMON NAME	CONT
	CR	5	CORNUS SERICEA RED TWIG DOGWOOD	1 GAL
	PC	7	PHYSOCARPUS CAPITATUS PACIFIC NINEBARK	1 GAL
	RN	11	ROSA NUTKANA NOOTKA ROSE	1 GAL
	RS	5	RUBUS SPECTABILIS SALMONBERRY	1 GAL
	SA	7	SYMPHORICARPOS ALBUS COMMON WHITE SNOWBERRY	1 GAL
			EXISTING VEGETATION	
			UPLAND PLANTING SEED MIX SEE SHEET L2.0	



1 TREE PLANTING
SCALE: 1/2"=1'-0"

2 CONTAINER STOCK PLANTING
SCALE: 1-1/2"=1'-0"

6656
L2.4
OF
57

CONT/CONS: 071447
M ID: 101449.01
PHASE: BID SET

**LOWER WAPATO CREEK
HABITAT PROJECT**
LANDSCAPE PLAN 4

RANGE: 3E SECTION: 1
TOWNSHIP: 20N VERT: MLW (PORT OF TACOMA TIDAL)
DAT-HRZ: WA83-SF
PARCEL: 14

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APPROVED: *J. Dawson*
DIRECTOR ENGR. DATE: 5/28/21
PRINTED BY: MOR69830 May 27, 2021
PORT ADDRESS: 1 SITCOM PLAZA
TACOMA, WA 98421

5/28/21 DATE
CHECKED BY: A. Mitchell
PROJ. ENGR. DATE: 5/28/21
MOR69830 May 27, 2021

J. Dawson
5/28/21 DATE
A. Mitchell
5/28/21 DATE

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MARK: REVISION: BY: DATE: APPR: DATE:

Port of Tacoma
P.O. BOX 1857 TACOMA, WA 98401 (206)345-9841

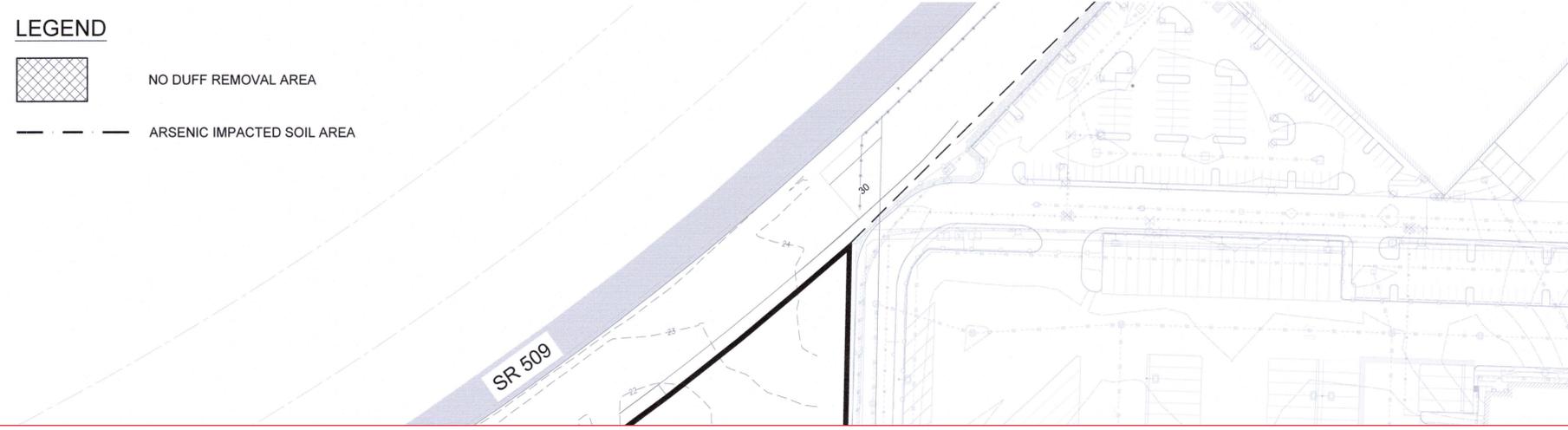


NOTES

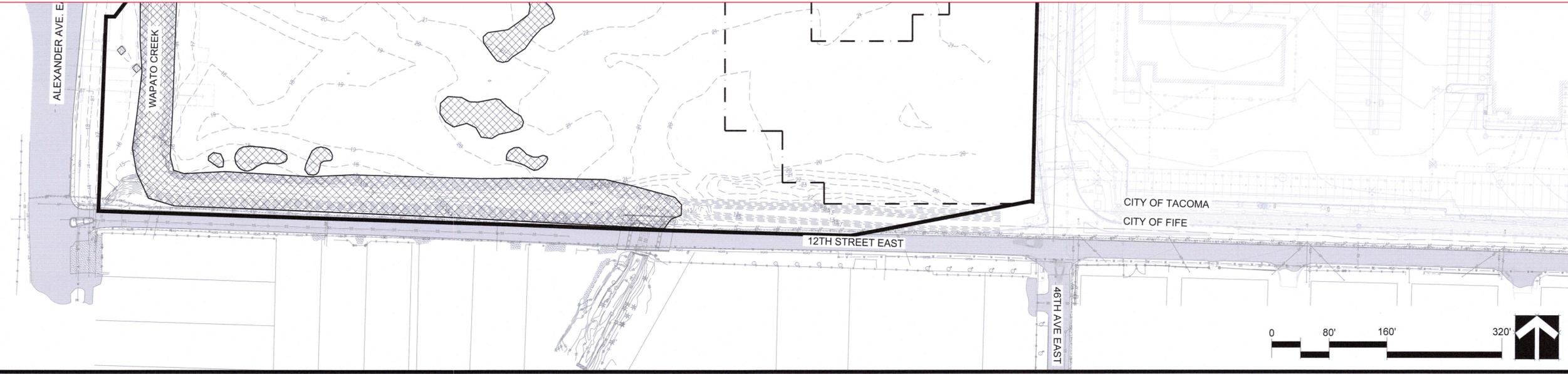
1. ALL DUFF MATERIAL LOCATED OUTSIDE OF THE ARSENIC IMPACTED SOIL AREA SHALL BE TAKEN TO PORT PARCEL 88 FOR STOCKPILING BY OTHERS (SEE INSET).
2. SEE SHEET D2.0 FOR ARSENIC IMPACTED AREA DISPOSAL INFORMATION.

LEGEND

-  NO DUFF REMOVAL AREA
-  ARSENIC IMPACTED SOIL AREA



REPLACED BY BID ADDENDUM 1.



6656		LOWER WAPATO CREEK HABITAT PROJECT		ARSENIC CLEANUP AREAS	
D1.0	58 OF 82	TOWNSHIP: 20N	RANGE: 3E	SECTION: 15E	
CONT/CONS: 071447	M. ID.: 101449.01	DATE-HRZ: WAB3-SF	DATE-HRZ: WAB3-SF	VERT: MLLW (PORT OF TACOMA TIDAL)	
PHASE: BID SET	PARCEL: 14	DRAWING SCALE: AS NOTED		PORT ADDRESS: T SITCOM PLAZA TACOMA, WA 98421	



M M
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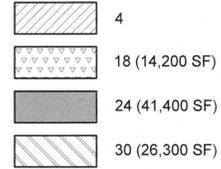


NOTES

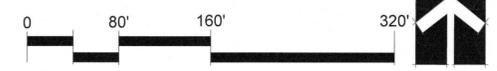
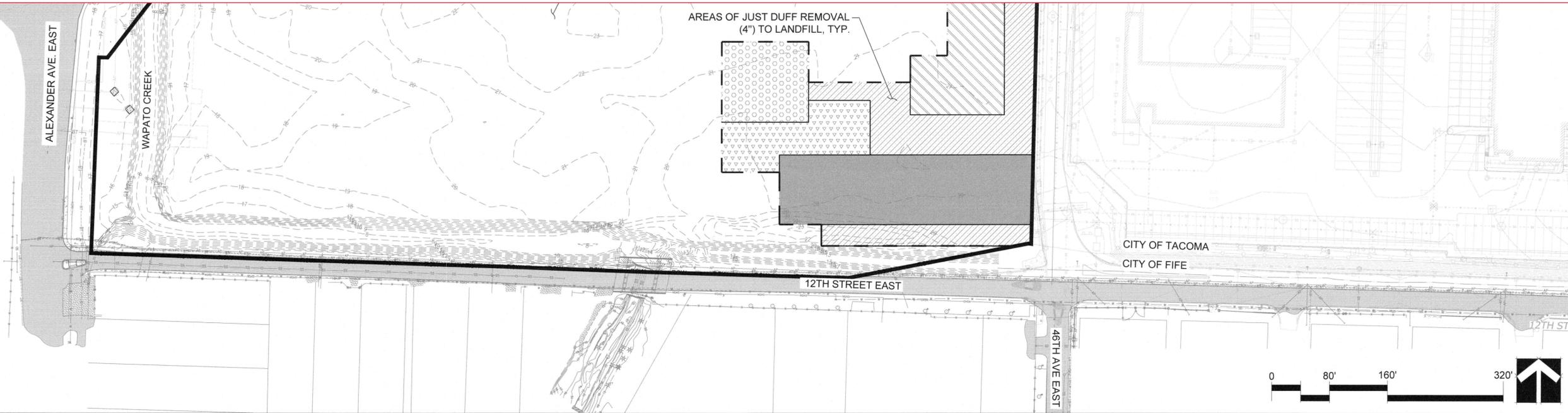
- 1. ALL ARSENIC CLEANUP SOILS SHALL BE REMOVED IN AREAS SHOWN AND DISPOSED OF AT LRI.
- 2. CONFIRMATION SAMPLING WILL NEED TO BE ACCOMPLISHED BY THE PORT ONCE AREAS ARE EXCAVATED OUT. CONTRACTOR SHOULD ANTICIPATE A 5 DAY WAIT ON SAMPLE RESULTS BEFORE SUBSEQUENT WORK MAY COMMENCE IN THESE AREAS. IF ELEVATED LEVELS OF ARSENIC ARE FOUND BY CONFIRMATION SAMPLING THE PORT WILL PROVIDE ADDITIONAL DIRECTION TO THE CONTRACTOR.
- 3. APPROXIMATE EXCAVATION EXTENT IS RELATIVE TO THE TOP OF EXISTING GRADE.

APPROXIMATE EXCAVATION EXTENT

EXCAVATION DEPTH IN INCHES



REPLACED BY BID ADDENDUM 1.



		1601 6th Avenue Suite 800 Seattle, Washington 98101 T +1 (425) 778 6243		BY:	DATE:
M MOTT MACDONALD	MARK:	REVISION:	APPR:		
		TACOMA, WA 98421			
6659 D2.0 59 OF 82		LOWER WAPATO CREEK HABITAT PROJECT ARSENIC CLEANUP AND DISPOSAL PLAN		TOWNSHIP: 20N RANGE: 3E SECTION: 1	
CONT/CONS: 071447 M. ID: 101449.01 PHASE: BID SET		DAT-HRZ: WA83-SF PARCEL: 14		VERT: MILLW (PORT OF TACOMA TIDAL) DRAWING SCALE: AS NOTED	
		PORT ADDRESS: T SITCOM PLAZA TACOMA, WA 98421			

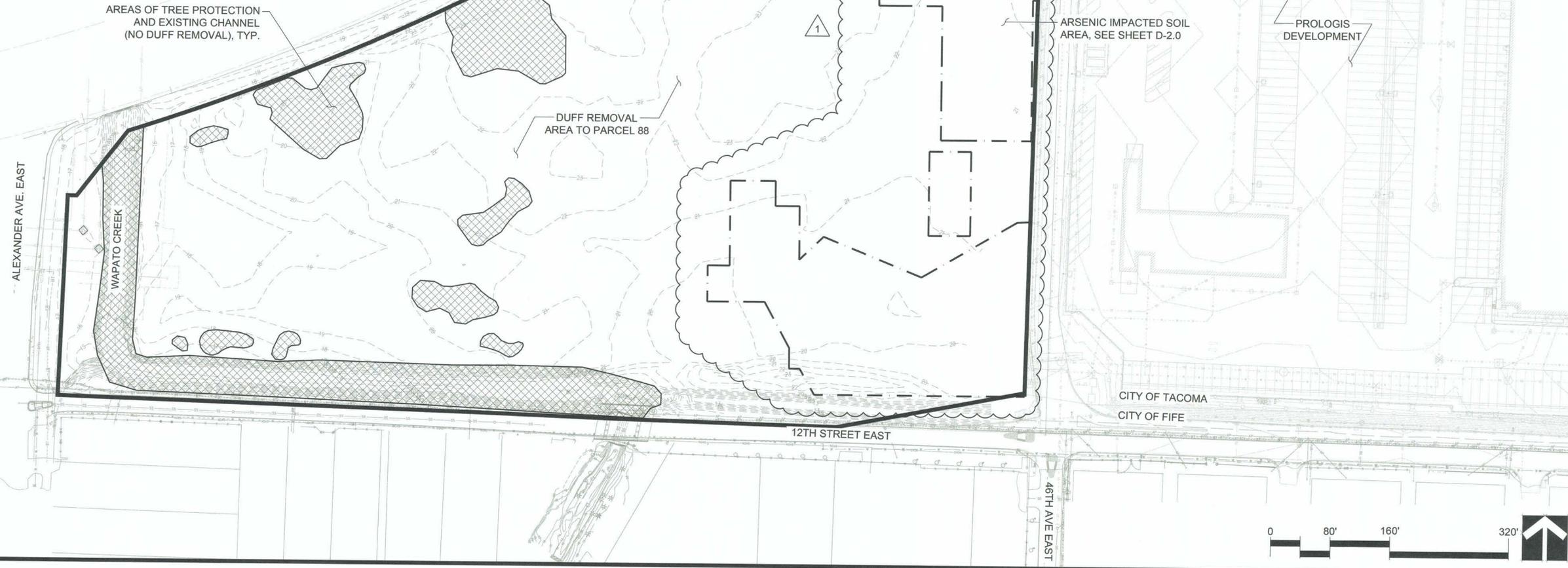


NOTES

1. ALL DUFF MATERIAL LOCATED OUTSIDE OF THE ARSENIC IMPACTED SOIL AREA SHALL BE TAKEN TO PORT PARCEL 88 FOR STOCKPILING BY OTHERS (SEE INSET).
2. SEE SHEET D2.0 FOR ARSENIC IMPACTED AREA DISPOSAL INFORMATION.
3. DUFF REMOVAL IS CONSIDERED TO BE THE TOP 4" OF SOIL.

LEGEND

-  NO DUFF REMOVAL AREA
-  ARSENIC IMPACTED SOIL AREA



6656
D1.0
 58 OF 82
 CONT/CONS: 071447
 M. ID.: 101449.01
 PHASE: BID SET

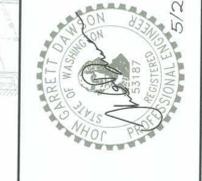
**LOWER WAPATO CREEK
 HABITAT PROJECT**
 ARSENIC CLEANUP AREAS

TOWNSHIP: 20N
 RANGE: 3E
 DAT-HRZ: WA83-SF
 PARCEL: 14

SECTION: 1
 VERT: MLLW (PORT OF TACOMA TIDAL)
 DRAWING SCALE: AS NOTED

APPROVED:  J. Dawson
 CHECKED BY: A. Mitchell
 DIRECTOR ENG. DATE: MOR69830 Jun 17, 2021
 PRINTED BY: 1 SITCOM PLAZA
 PORT ADDRESS: TACOMA, WA 98421

5/28/21
 DATE: 5/28/21
 PROJ. ENGR DATE: 5/28/21



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MARK: 1
 REVISION: ADDENDUM 1
 BY: TM
 APPR: JD
 DATE: 6/18/21



NOTES

1. ALL ARSENIC CLEANUP SOILS SHALL BE REMOVED IN AREAS SHOWN AND DISPOSED OF AT LRI.
2. CONFIRMATION SAMPLING WILL NEED TO BE ACCOMPLISHED BY THE PORT ONCE AREAS ARE EXCAVATED OUT. CONTRACTOR SHOULD ANTICIPATE A 5 DAY WAIT ON SAMPLE RESULTS BEFORE SUBSEQUENT WORK MAY COMMENCE IN THESE AREAS. IF ELEVATED LEVELS OF ARSENIC ARE FOUND BY CONFIRMATION SAMPLING THE PORT WILL PROVIDE ADDITIONAL DIRECTION TO THE CONTRACTOR.
3. APPROXIMATE EXCAVATION EXTENT IS RELATIVE TO THE TOP OF EXISTING GRADE.
4. EXCAVATION ASSOCIATED WITH THE SLAG AND ARSENIC REMOVAL SHOULD BE COMPLETED WITH A FLAT BUCKET WITHOUT TEETH.
5. ARSENIC CONCENTRATION LEVELS WITHIN THE EXCAVATION LIMITS RANGE FROM 20.1 mg/kg TO 84 mg/kg.
6. SYNTHETIC PRECIPITATION LEACHING PROCEDURE (SPLP) TESTING SHOWED NON-DETECT IN ALL SAMPLES TESTED. ARSENIC IS NOT LEACHABLE.

APPROXIMATE EXCAVATION EXTENT

EXCAVATION DEPTH IN INCHES

- 4
- 18 (20,700 SF)
- 24 (27,200 SF)
- 36 (34,200 SF)
- 48 (3,700 SF)



1

1

<p>Port of Tacoma P.O. BOX 1837 TACOMA, WA 98401 (253)355-9641</p>	<p>1601 5th Avenue Suite 800 Seattle, Washington 98101 T +1 (425) 778 6243</p>	<p>BY: TM</p>	<p>DATE: 6/18/21</p>
<p>M M MOTT MACDONALD</p>	<p>REVISION: 1 ADDENDUM 1</p>	<p>APPR: JD</p>	<p>DATE: 6/18/21</p>
	<p>5/28/21</p>		
<p>APPROVED: <i>[Signature]</i></p>	<p>J. Dawson CHECKED BY: A. Mitchell</p>	<p>DATE: 5/28/21</p>	<p>DATE: 5/28/21</p>
<p>PROJECT: MOR69830 Jun 17, 2021</p>		<p>PROJ. ENGR DATE</p>	<p>DATE</p>
<p>PRINTED BY: MOR69830 Jun 17, 2021</p>		<p>PROJ. ENGR DATE</p>	
<p>PORT ADDRESS: 1 SITCOM PLAZA TACOMA, WA 98421</p>		<p>DATE</p>	
<p>LOWER WAPATO CREEK HABITAT PROJECT ARSENIC CLEANUP AND DISPOSAL PLAN</p>			
<p>TOWNSHIP: 20N</p>	<p>RANGE: 3E</p>	<p>SECTION: 1</p>	<p>DATE: 07/14/21</p>
<p>DATE: 10/14/21</p>	<p>DATE: 10/14/21</p>	<p>DATE: 10/14/21</p>	<p>DATE: 10/14/21</p>
<p>PARCEL: 14</p>			
<p>DRAWING SCALE: AS NOTED</p>			
<p>6656</p>	<p>D2.0</p>	<p>59 OF 82</p>	<p>CONT/CONS: 07/14/21</p>
<p>PHASE: BID SET</p>	<p>THIS DRAWING IS THE PROPERTY OF THE PORT OF TACOMA AND SHALL NOT BE USED ON OTHER WORK, DISCLOSED, COPIED, IN WHOLE OR IN PART, WITHOUT WRITTEN PERMISSION</p>		



BILL OF MATERIAL-ASSEMBLIES															
ROW	DESCRIPTION	Reference Detail and/or Part Number	TOTAL QUANTITY	A		B		C		D		E		MISCELLANEOUS	
				STRUCTURE 1 - 115kV SMALL ANGLE DEADEND		STRUCTURE 2 - 115kV LARGE ANGLE DEADEND		STRUCTURE 3 - 115kV IN-LINE DEADEND		EXISTING 40414		EXISTING 31685		MISC.	
				Per Str	1 Str	Per Str	1 Str	Per Str	1 Str	Per Str	1 Str	Per Str	1 Str	Per Str	1 Str
1	115kV Vertical Self Support Dead-end (Structure 1)	DH857	1	1											
2	115kV Vertical Self Support Dead-end (Structure 2)	DH858	1		1	1									
3	115kV Vertical Self Support Dead-end (Structure 3)	DH859	1				1	1							
4	Steel Pole Pier Foundation Detail	DH861	3	1	1	1	1	1							
5	Push Guy Detail	DH862	1								1	1			
6	A-XM-3010 Tangent Wood Pole	DH869	1						1	1					
7	1272 AAC "Narcissus"		2740										2740	2740	
8	795 AAC "Arbutus"		1800										1800	1800	
9	75-H2 Wood Pole	By TPU	1						1	1					
10	62' Engineered Steel Pole	By Port of Tacoma	1	1	1										
11	70' Engineered Steel Pole	By Port of Tacoma	1			1	1								
12	112' Engineered Steel Pole	By Port of Tacoma	1					1	1						

Item #	Code	Size CM	Reel	Length (ft)	Weight (lbs.)
1	Narcissus	1,272,000	RMT 84.45*	8,170	9,760
2	Arbutus	795,000	RMT 84.45*	9,920	4,400
3	Arbutus	795,000	RM 66.32*	4,960	3,700

Tacoma Power Steel Reel Dimensions & Wire Lengths for 1272 AAC and 795 AAC Wire. A variance of up to 15% is allowed by contract.

Item ID	Structure / Pole				Span	Span	Span	Span	Total	MOU	Description	Source	Material ID / Catalog #	Manufacturer
	1	2	3	31685										
1	DH857	DH858	DH859	DH862	2	3	31685	23930	18	ea	Insulator Suspension, 115kV, 450kV BIL, 30Kip, Wye Clevis-Ball	TPWR	22235	
2									18	ea	Clamp, Deadend Strain w/ Socket - 1272 AAC	TPWR	34609	
4									9	ea	Insulator Line Post, 115kV, 450kV BIL	TPWR	35394	
5									9	ea	Clamp, Line Post 1272 AAC	TPWR	34613	
6									12	ea	Bolt, Machine, 3/4" x 6"	TPWR	B76-3	Hughes Brothers
7									18	ea	Washer, Round, 3/4"	TPWR	35066	
8									12	ea	Washer, Curved, 3/4"	TPWR	35069	
9									22	ea	Nut, Lock 3/4" Type N	TPWR	35072	
10									18	ea	Connector, Wedge, 1272-1272	TPWR	35389	
11		1	1						2	ea	Crossarm, Special Steel, DBL 16ft See DH858 & DH859	Stl Pole Man		
12									3	ea	Bolt, Stud, 3/4" w/ 2" Pintle Bolt	TPWR	35016	
13									3	ea	Insulator, Post, 50kV, Trunion Clamp	TPWR	35396	
44							3		3	ea	Line Guard, 1272 AAC	TPWR	34744	
45		3	6						9	ea	Insulator Suspension, 25kV, Clevis-Eye	TPWR	35418	
46		3	6						9	ea	Clamp, Deadend Strain w/ Clevis - 795 AAC	TPWR	19251	
47				1					1	ea	Brakcet, Push Brace	TPWR	34568	
48				1					1	ea	Pole, Wood, 75ft Class 1	TPWR	20453	
49				8					8	yds	Crushed Stone, #57	Contractor		
							1		1	ea	Pole, Wood, 75ft Class H2	TPWR	20455	
				1			1		2	ea	Cap, Pole 19 In	TPWR	52980	
			3	7					10	ea	Bolt, Machine, 3/4" x 24" w/ Nut	TPWR	B724-6	Hughes Brothers
				1					1	ea	Plate, Grounding, 288 Sq In	TPWR	41132	
							12		12	ea	Staples	TPWR	44448	
							20		20	ft	Wire, #4 Cu Clad Stl	TPWR	52230	
									6	ea	Connector, Wedge, 795-795	TPWR	22188	
			3						3	ea	Clamp, Trunion, 795 AAC	TPWR	34612	
	50	30	60		850	1150	600	0	2740	ft	Wire, 1272 AAC	TPWR	22354	
			50		0	1150	600	0	1800	ft	Wire, 795 AAC	TPWR	22350	

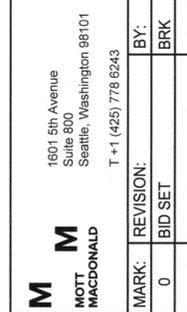
Span	Span	Span	Span	Total	MOU	Description	Source	Material ID / Catalog #	Manufacturer
1	2	3	31685	23930					
275	330	190	155	950	ft	2" MOD - Figure 8 w/ 3/8 Messenger	TPWR	21644	
2	2	2	2	8	ea	Grip, Preform	TPWR	19945	
2	2	2	2	8	ea	Shackle	TPWR		
2	2	2	2	8	ea	Cookie	TPWR		

2" MOD - Figure 8 Aerial Self Supporting Duct
 Manufacturer: Dura-Line
 Catalog #: F8A-200-10
 Duct Size: 2" SDR 9
 Strand
 Size: 10M - 3/8" EHS Galvanized
 Minimum Strength: 15,400 lbs
 Minimum Bending Radius: 16 in
 Weight per 100 ft: 85 lbs
 Overall Combined Width: 2.775 in
 Reel: RM 96.48 - Arbor Hole 3.25"
 Max Weight of Fiber Installed: 1.08 lbs/ft
 Total Weight: 1.93 lbs/ft



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DATE: 05/26/21
APPR: SRA
BY: BRK



REVISION: 0
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S. AKERS
CHECKED BY: B. KAMINSKI
DIRECTOR ENGR. DATE: 5-28-21

DATE: 05/26/21
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PROJ. ENGR. DATE: May 27, 2021
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TACOMA, WA 98421

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LOWER WAPATO CREEK
HABITAT PROJECT

6656
DH851
60 OF 82

SECTION: 1
RANGE: 3E
TOWNSHIP: 20N
DATE: 10/14/99.01
PARCEL: 14
BILL OF MATERIAL (SHEET 1)
SECTION: 1
RANGE: 3E
TOWNSHIP: 20N
DATE: 10/14/99.01
PARCEL: 14
DRAWING SCALE: AS NOTED

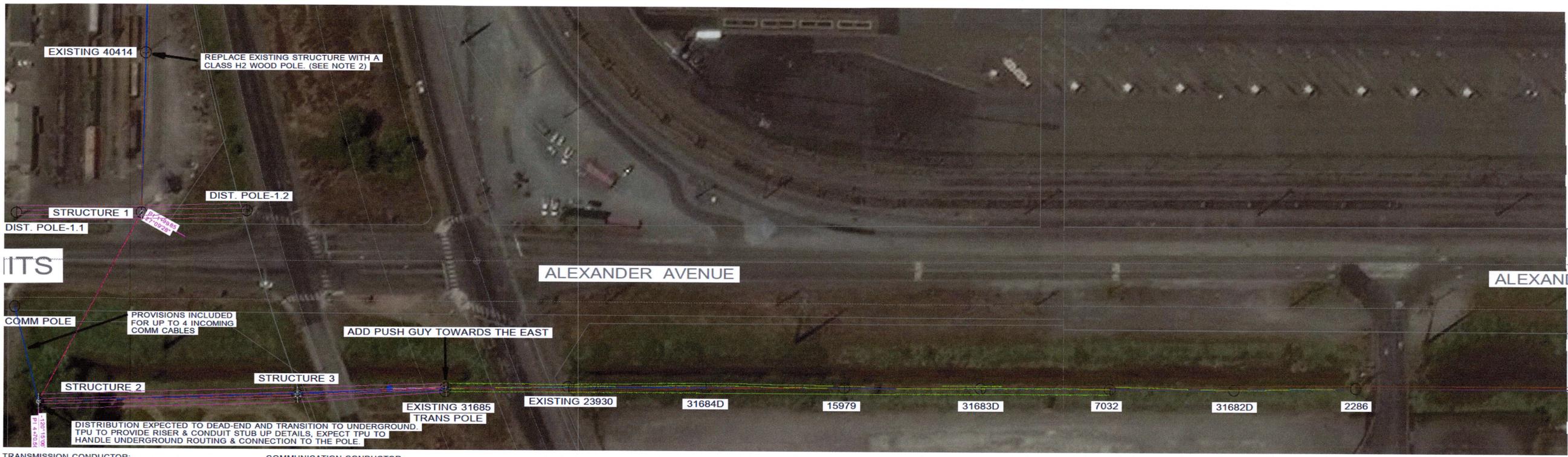
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List of Materials - Power						
Item ID	Total	MOU	Description	Source	Material ID / Catalog #	Manufacturer
1	18	ea	Insulator Suspension, 115kV, 450kV BIL, 30Kip, Wye Clevis-Ball	TPWR	22235	
2	18	ea	Clamp, Deadend Strain w/ Socket - 1272 AAC	TPWR	34609	
4	9	ea	Insulator Line Post, 115kV, 450kV BIL	TPWR	35394	
5	9	ea	Clamp, Line Post 1272 AAC	TPWR	34613	
6	12	ea	Bolt, Machine, 3/4" x 6"	TPWR	B76-3	Hughes Brothers
7	18	ea	Washer, Round, 3/4"	TPWR	35066	
8	12	ea	Washer, Curved, 3/4"	TPWR	35069	
9	22	ea	Nut, Lock 3/4" Type N	TPWR	35072	
10	18	ea	Connector, Wedge, 1272-1272	TPWR	35389	
11	2	ea	Crossarm, Special Steel, DBL 16ft See DH858 & DH859	Stl Pole Man		
12	3	ea	Bolt, Stud, 3/4" w/ 2" Pintle Bolt	TPWR	35016	
13	3	ea	Insulator, Post, 50kV, Trunion Clamp	TPWR	35396	
44	3	ea	Line Guard, 1272 AAC	TPWR	34744	
45	9	ea	Insulator Suspension, 25kV, Clevis-Eye	TPWR	35418	
46	9	ea	Clamp, Deadend Strain w/ Clevis - 795 AAC	TPWR	19251	
47	1	ea	Brakcet, Push Brace	TPWR	34568	
48	1	ea	Pole, Wood, 75ft Class 1	TPWR	20453	
49	8	yds	Crushed Stone, #57	Contractor		
	1	ea	Pole, Wood, 75ft Class H2	TPWR	20455	
	2	ea	Cap, Pole 19 In	TPWR	52980	
	10	ea	Bolt, Machine, 3/4" x 24" w/ Nut	TPWR	B724-6	Hughes Brothers
	1	ea	Plate, Grounding, 288 Sq In	TPWR	41132	
	12	ea	Staples	TPWR	44448	
	20	ft	Wire, #4 Cu Clad Stl	TPWR	52230	
	6	ea	Connector, Wedge, 795-795	TPWR	22188	
	3	ea	Clamp, Trunion, 795 AAC	TPWR	34612	
	2740	ft	Wire, 1272 AAC	TPWR	22354	
	1800	ft	Wire, 795 AAC	TPWR	22350	

List of Materials - HFC / FD						
Total	MOU	Description	Source	Material ID / Catalog #	Manufacturer	
950	ft	2" MOD - Figure 8 w/ 3/8 Messenger	TPWR	21644		
8	ea	Grip, Preform	TPWR	19945		
8	ea	Shackle	TPWR			
8	ea	Cookie	TPWR			

6656 DH852 61 OF 82 CONT/CONS: 07/1447 M. ID: 101449.01 PHASE: BID SET	LOWER WAPATO CREEK HABITAT PROJECT BILL OF MATERIAL (SHEET 2) RANGE: 3E SECTION: 1 TOWNSHIP: 20N DAT-HRZ: WA83-SF VERT: MLLW (PORT OF TACOMA TIDAL) PARCEL: 14 DRAWING SCALE: AS NOTED		APPROVED: <i>[Signature]</i> DIRECTOR ENG. DATE: 5-28-21 PRINTED BY: KAM82092 May 27, 2021 PORT ADDRESS: 1 SITCOM PLAZA TACOMA, WA 98421	S. AKERS CHECKED BY: B. KAMINSKI PROJECT ENGR: PROJ. ENGR DATE: 05/26/21 DATE: 05/26/21		MOTT MACDONALD 1601 5th Avenue Suite 800 Seattle, Washington 98101 T +1 (425) 778 6243	P.O. BOX 1877 TACOMA, WA 98401 (253)986-9841 DATE: 05/26/21 APPR: SRA BY: BRK REVISION: 0 MARK: 0 BID SET
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BINDING EDGE



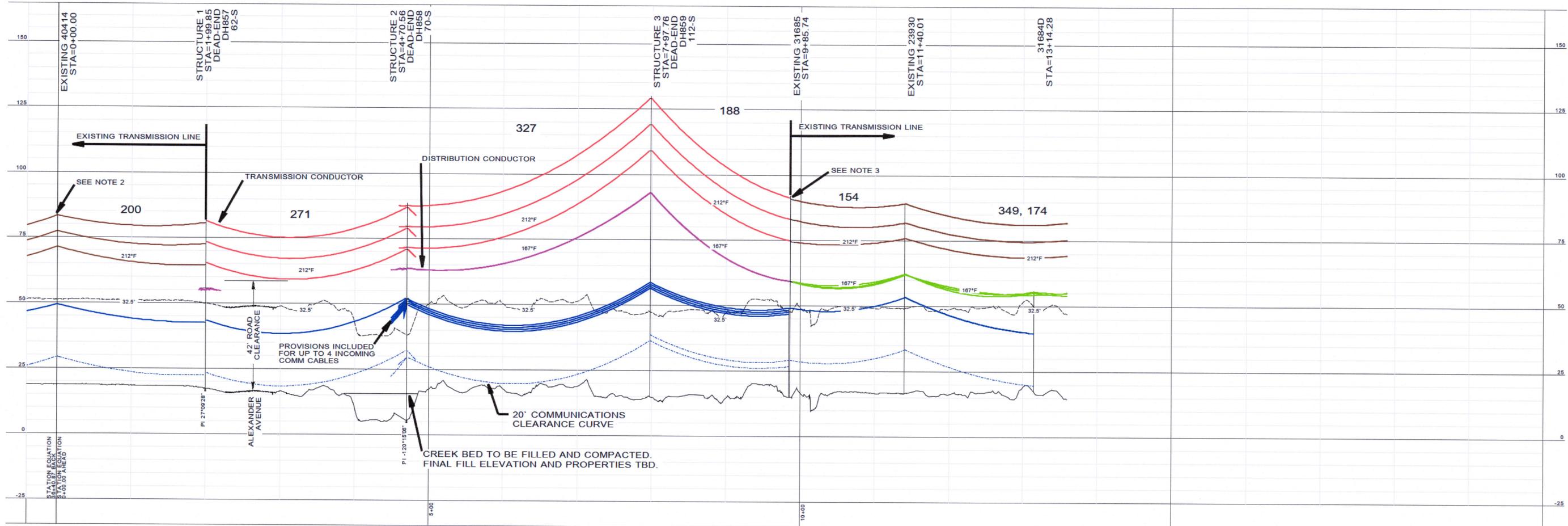
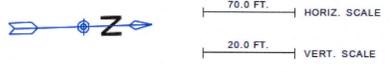
TRANSMISSION CONDUCTOR:
 1272 KCMIL 61/0 STRAND "NARCISSUS" AAC
 DESIGN TENSION OF 5,500LBS INITIAL @ NESC MEDIUM
 DISPLAYED AT 212°F

COMMUNICATION CONDUCTOR:
 2" MOD - AERIAL SELF SUPPORTING DUCT (1.93 LBS/FT)
 DESIGN TENSION OF 3,500LBS INITIAL @ NESC MEDIUM
 DISPLAYED AT 32°F, 1/4" RADIAL ICE

DISTRIBUTION CONDUCTOR:
 795 KCMIL 37/0 STRAND "ARBUTUS" AAC
 DESIGN TENSION OF 3,475LBS INITIAL @ NESC MEDIUM
 DISPLAYED AT 167°F

EXISTING CONDUCTOR TENSIONS:
 TOP PHASE - 2,491.1LBS FINAL UNLOADED @ 70°F
 MIDDLE PHASE - 2,598.6LBS FINAL UNLOADED @ 70°F
 BOTTOM PHASE - 2,612.2LBS FINAL UNLOADED @ 70°F

NOTES:
 1) PHASING IS UNKNOWN, MAINTAIN EXISTING PHASING.
 2) REPLACE STRUCTURE 40414 WITH A CLASS H2 WOOD POLE.
 3) PUSH GUY TO BE ADDED ON EAST SIDE OF STRUCTURE BELOW BOTTOM TRANSMISSION PHASE. ALSO MIDDLE DISTRIBUTION PHASE DEAD-END TO BE MOVED TO THE MIDDLE POSITION ON THE EAST SIDE OF THE POLE.
 4) VIBRATION DAMPERS ARE NOT REQUIRED PER AFL VIBREC ANALYSIS.



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 DIRECTOR ENGR. DATE: KAM82092 May 27, 2021
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**LOWER WAPATO CREEK
 HABITAT PROJECT**

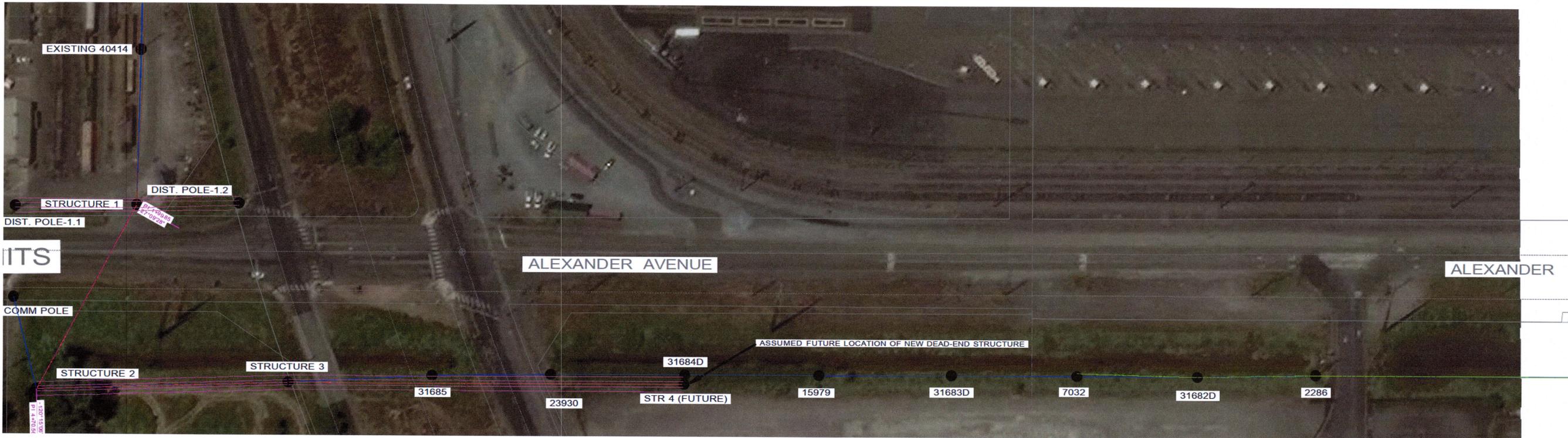
TEMPORARY PLAN & PROFILE
 RANGE: 3E SECTION: 1
 TOWNSHIP: 20N
 DAT-HRZ: WA83-SF
 VERT: MILLW (PORT OF TACOMA TIDAL)
 PARCEL: 14
 DRAWING SCALE: AS NOTED

6656
DH853
 62 OF 82
 CONT/CONS: 071447
 M. ID: 101449.01
 PHASE: BID SET

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PORT OF TACOMA FILE: C:\Users\KAM82092\Documents\Port of Tacoma\Wapato Creek\Transmission\DWG\DWG SET\DH853

BINDING EDGE

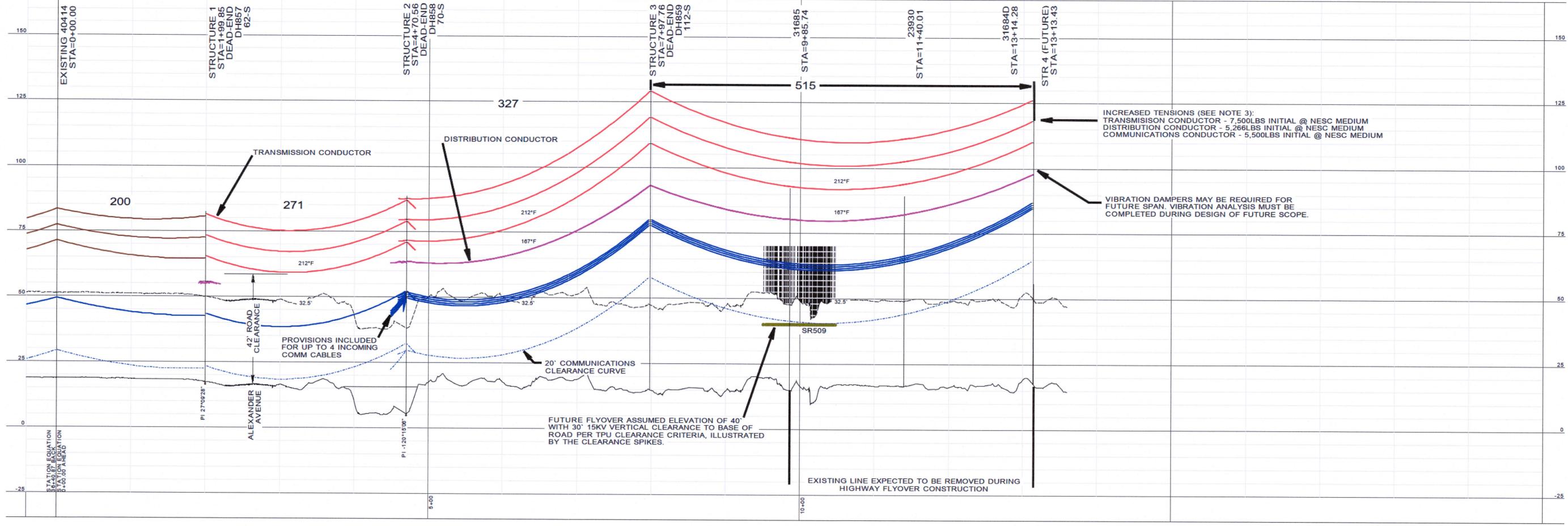
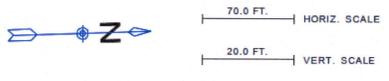


TRANSMISSION CONDUCTOR:
 1272 KCMIL 61/0 STRAND "NARCISSUS" AAC
 DESIGN TENSION OF 5,500LBS INITIAL @ NESC MEDIUM
 DISPLAYED AT 212°F

COMMUNICATION CONDUCTOR:
 2" MOD - AERIAL SELF SUPPORTING DUCT (1.93 LBS/FT)
 DESIGN TENSION OF 3,500LBS INITIAL @ NESC MEDIUM
 DISPLAYED AT 32°F, 1/4" RADIAL ICE

DISTRIBUTION CONDUCTOR:
 795 KCMIL 37/0 STRAND "ARBUTUS" AAC
 DESIGN TENSION OF 3,475LBS INITIAL @ NESC MEDIUM
 DISPLAYED AT 167°F

- NOTES:**
- 1) PHASING IS UNKNOWN, MAINTAIN EXISTING PHASING.
 - 2) THIS PROFILE SHEET IS MEANT TO SHOW THE ASSUMED FUTURE SCENARIO AFTER EXISTING STRUCTURE 31685 IS REMOVED AND A FLYOVER ON HIGHWAY 509 IS CONSTRUCTED.
 - 3) TENSIONS INCREASED ABOVE TPU CRITERIA FOR SPECIAL LONGER SPAN. ASSUME THESE TENSIONS ARE ACCEPTABLE FOR THIS WORST CASE SCENARIO AND EXPECT THEM TO BE RE-EVALUATED DURING DESIGN OF FUTURE SCOPE.
 - 4) VIBRATION DAMPERS ARE NOT REQUIRED PER AFL VIBREC ANALYSIS.



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 BY: SRA
 DATE: 05/26/21



APPROVED: S. AKERS
 CHECKED BY: B. KAMINSKI
 PROJECT ENGR: KAMR2092
 DATE: May 27, 2021

PRINTED BY: 1 SITCOM PLAZA
 PORT ADDRESS: TACOMA, WA 98421

**LOWER WAPATO CREEK
 HABITAT PROJECT**

FUTURE PLAN & PROFILE
 RANGE: 3E
 SECTION: 1
 TOWNSHIP: 20N
 DAT-HRZ: WA63-SF
 PARCEL: 14

**6656
 DH854**

63 OF 82
 CONT/CONS: 071447
 M.ID: 101449.01
 PHASE: BID SET

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STRUCTURE No.	STATION (ft)	AHEAD SPAN (ft)	LINE ANGLE (BY AHEAD STA.) (deg.)	X EASTING (ft)	Y NORTHING (ft)	Z GRND ELEV. (ft)	STRUCTURE SPECIFICS										COMMENTS
							TRANSMISSION-LINE PHASE	Fiber	Remove				WOOD POLE FOUNDATION	WOOD POLE GROUNDING ASSEMBLY	EXISTING GUY	EXISTING ANCHOR	
							TYPE	TYPE	POLE LENGTH AND CLASS	TYPE	FRAMING NAME	TOP FRAMING DRAWING NUMBER	QUANTITY	QUANTITY	QUANTITY	QUANTITY	
40414	00+00.00	-	-	1174992.570	703337.050	18.670	-	-	75-2	T	115kV Tangent Staggered	A-XM-3010 or Similar	-	1	-	-	Replace 40414 with a class H2 pole. TPU to provide pole and framing materials. Material for suspending the fiber line to be transferred to new pole. Top pole 1ft above Comm. Lumens/CTL to transfer and remove.
Future Structure 1	01+99.85	271	0.0	1175425.646	703188.904	-	1272 AAC "NARCISSUS"	-	-	-	-	-	-	-	-	-	Future dead-end location, conductor in back direction to remain with all conductor in ahead direction to be removed.
31116	04+16.30	200	-90.8	1175408.360	703316.500	10.640	1272 AAC "NARCISSUS"	-	85-1	DE	115kV Dead-end, Double Dead-end, & Corner	A-XM-3120	-	1	7	5	Fiber to remain intact for future structure
31113	06+16.25	188	0.1	1175415.510	703516.320	12.080	1272 AAC "NARCISSUS"	-	85-1	TG	115kV Tangent Staggered	A-XM-3010 or Similar	-	1	-	-	Fiber to remain intact for future structure
31685	08+04.10	-	-0.8	1175422.600	703704.040	15.120	-	-	90-1	-	115kV Double Dead End	-	-	-	-	-	Structure to remain but conductors on south side to be removed. Temporary guys/support to be added to the south as required to support the terminal loads.

6656
DH855
64 OF 82

**LOWER WAPATO CREEK
HABITAT PROJECT**

REMOVAL STAKING TABLE
RANGE: 3E SECTION: 1
TOWNSHIP: 20N DAT-HRZ: WAB3-SF
PARCEL: 14

APPROVED: *[Signature]*
DIRECTOR ENG. DATE: 5-28-21
PRINTED BY: MCC40799 May 27, 2021
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CHECKED BY DATE
B. KAMINSKI 05/26/21



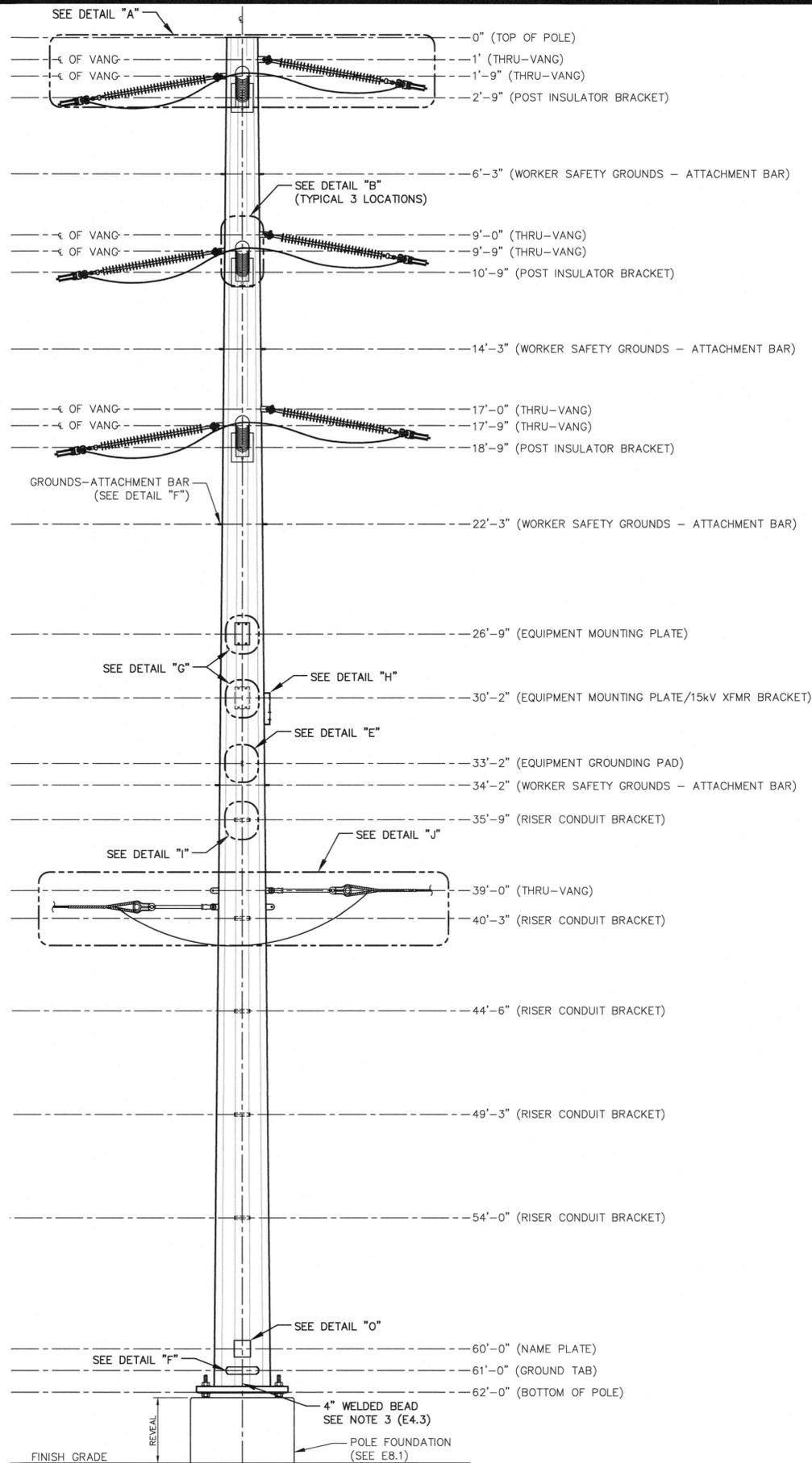
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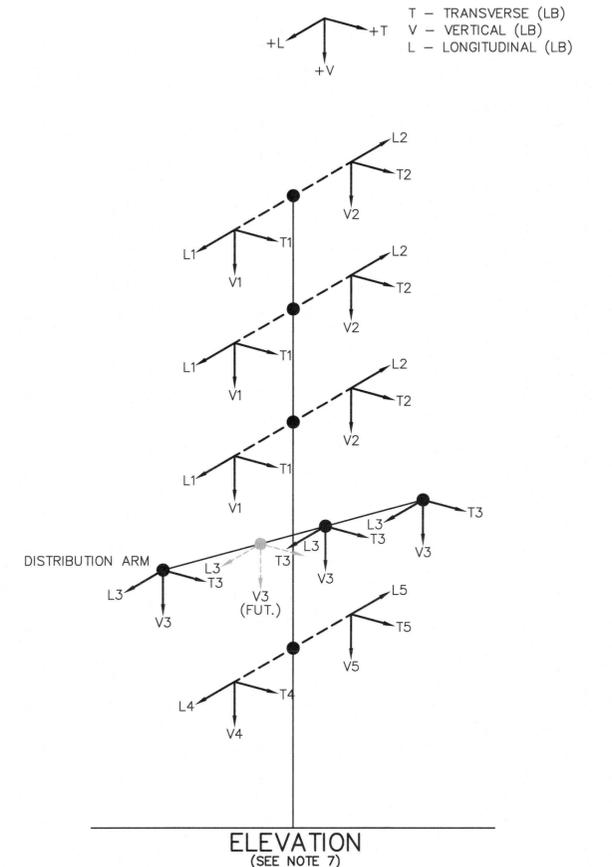
BINDING EDGE



POLE ELEVATION
NOT TO SCALE

FACTORED LOADING COMPONENTS	LOAD TABLE										
	LOAD CASES										
	L1 NESC 250B MEDIUM	L2 NESC 250C EXTREME WIND	L3 NESC 250D CONCURRENT ICE AND WIND	L4 NESC 250B LIGHT	L5 EXTREME ICE	L6 DEFLECTION WORKING	L7 NESC 250B MEDIUM TERMINAL DEADEND	L8 NESC 250C EXTREME WIND TERMINAL DEADEND	L9 NESC 250D EXTREME ICE CONCURRENT WIND TERMINAL DEADEND	L10 EXTREME ICE TERMINAL DEADEND	L11 CONSTRUCTION - DEADEND STRUCTURES
V1 (BK)	200	100	150	120	200	100	200	100	150	200	8500
T1 (BK)	2250	1350	1350	1900	1450	750	2250	1350	1350	1450	1200
L1 (BK)	8300	4350	4900	6400	5650	2750	8300	4350	4900	5650	4500
V2 (AH)	250	100	150	150	250	150	0	0	0	0	8510
T2 (AH)	2250	1250	1310	1950	1350	700	0	0	0	0	1200
L2 (AH)	-8300	-4100	-5200	-6600	-5500	-2700	0	0	0	0	-4800
V3 (DIST TAN)	250	100	150	150	250	100	0	0	0	0	0
T3 (DIST TAN)	-60	-100	-50	-100	50	-10	0	0	0	0	0
L3 (DIST TAN)	-200	-200	-100	-300	100	-50	0	0	0	0	0
V4 (FO BK)	150	50	100	50	200	30	150	50	100	200	0
T4 (FO BK)	1600	1300	900	1700	1000	650	1600	1300	900	1000	0
L4 (FO BK)	5550	3900	3500	5050	4050	2350	5550	3900	3500	4050	0
V5 (FO AH)	350	100	250	150	400	150	0	0	0	0	0
T5 (FO AH)	1700	1450	950	1850	1050	650	0	0	0	0	0
L5 (FO AH)	-5500	-4000	-3400	-4950	-4150	-2200	0	0	0	0	0
WIND LOAD ON STRUCTURE (PSF)	10	20.4	2.5	22.5	-	3	10	20.4	2.5	-	3
WIND DIRECTION	BISECTOR	BISECTOR	BISECTOR	BISECTOR	-	BISECTOR	BISECTOR	BISECTOR	BISECTOR	-	BISECTOR
LOAD FACTORS											
VERTICAL	1.5	1.1	1.1	1.5	1.1	1	1.5	1.1	1.1	1.1	2.5
WIND ON WIRES	2.5	1.1	1.1	2.5	1.1	1	2.5	1.1	1.1	1.1	1.5
WIRE TENSION	1.65	1.1	1.1	1.65	1.1	1	1.65	1.1	1.1	1.1	1.5
WIND ON STRUCTURE	2.5	1.1	1.1	2.5	1.1	1	2.5	1.1	1.1	1.1	1.5
WIRE CONDITIONS											
TEMPERATURE (°F)	15	60	15	30	30	60	15	60	15	30	40
RADIAL ICE THICKNESS (IN)	0.25	-	0.25	-	0.5	-	0.25	-	0.25	0.5	-
WIND PRESSURE (PSF)	4	-	-	9	-	0.3	4	-	-	-	2
WIND VELOCITY (MPH)	-	85	30	-	-	-	-	85	30	-	-
WIRE TENSION	INITIAL	INITIAL	INITIAL	INITIAL	INITIAL	INITIAL	INITIAL	INITIAL	INITIAL	INITIAL	INITIAL
DEFLECTION LIMITS											
*MAX TOP DEFLECTION (% OF LENGTH)	6	6	6	6	NSL	1.5	8	8	8	NSL	NSL
*	DEFLECTION LIMITS TO BE APPLIED TO THE WEATHER CASES WITH A UNITY (1.0) LOAD FACTOR										
NSL	NO SPECIFIED LIMIT										

- GENERAL NOTES:**
- DESIGN AND FABRICATE STRUCTURES IN ACCORDANCE WITH STEEL POLE SPECIFICATION.
 - LOADS SHOWN IN LOAD TABLE.
 - ARE IN POUNDS AND ARE APPLIED AT THE POINT OF WIRE ATTACHMENT.
 - INCLUDE INSULATOR ASSEMBLIES AND LINE HARDWARE WEIGHTS.
 - INCLUDE LOAD FACTORS AS GIVEN IN LOAD TABLE.
 - FABRICATE POLE SHAFTS FROM 12-SIDED SHAPES ONLY.
 - APPLY THE VERTICAL LOAD FACTOR TO THE DEAD WEIGHT OF STRUCTURES.
 - POINT OF FIXITY: TOP OF PIER FOUNDATION.
 - DESIGN STRUCTURES FOR EITHER CIRCUIT 1 OR CIRCUIT 2 MISSING. DESIGN NOTES FOR CLIENT USE.
 - CONDUCTOR SYSTEM: 1-1272, 61-STRAND, AAC NARCISUSS PER PHASE.
 - TENSION LIMITS: 40% NESC, 22% 15 F BARE INITIAL, 18% 15 F BARE FINAL.
 - BASED ON RULING SPAN 700 FT., 115kV CIRCUITS AHEAD (CEDAR AND HILLTOP): SPAN 450 FT., VERTICAL PROJECTION -5 FT., 115kV CEDAR CIRCUIT BACK: SPAN 250 FT., VERTICAL PROJECTIONS -20, -30 AND -40 FT., 115kV HILLTOP CIRCUIT BACK SPAN 350 FT., VERTICAL PROJECTION -5 DFT., OHSW BACK (CEDAR): SPAN 250 FT., VERTICAL PROJECTION -45 FT.
 - DESIGNED AS FULL TERMINAL DEADEND STRUCTURE.



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APPR: SRA

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REVISION: 0
BID SET

APPROVED: *[Signature]* S. AKERS
CHECKED BY: B. KAMINSKI
DIRECTOR/ENGINEER
DATE: 05/26/21
PROJECT: MCG40799
PRINTED BY: MCG40799 May 27, 2021

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PROJECT: MCG40799
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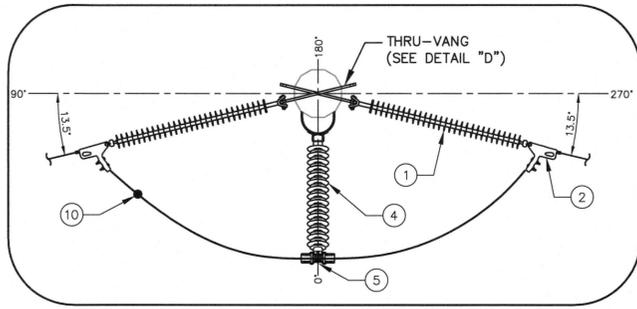
**LOWER WAPATO CREEK
HABITAT PROJECT**
115KV VERTICAL SELF-SUPPORTING DEAD-END
(STRUCTURE 1) STEEL POLE FRAMING - SHEET 1
RANGE: 3E SECTION: 1

DATE: 05/26/21
PROJECT: MCG40799
PRINTED BY: MCG40799 May 27, 2021
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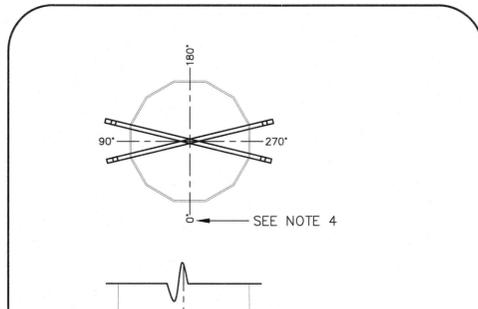
6656
DH857-1
66 OF 82
CONT/CONS: 071447
M. ID: 101449.01
PHASE: BID SET

DATE: 05/26/21
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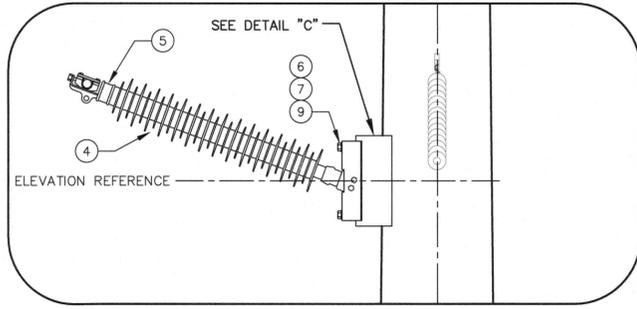
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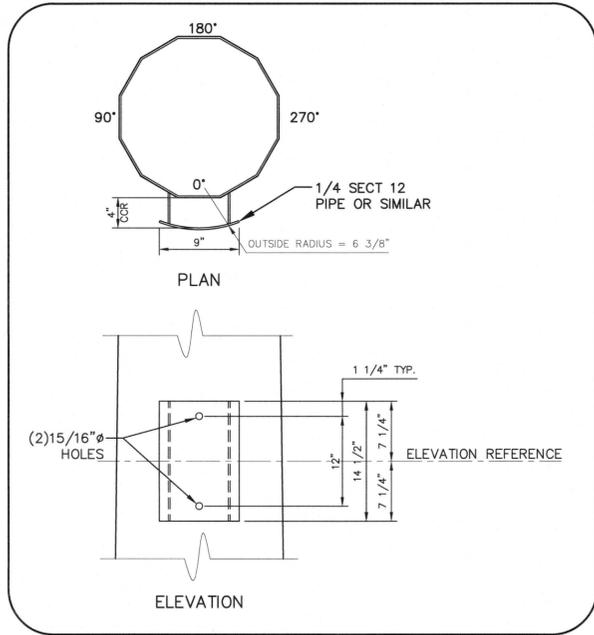
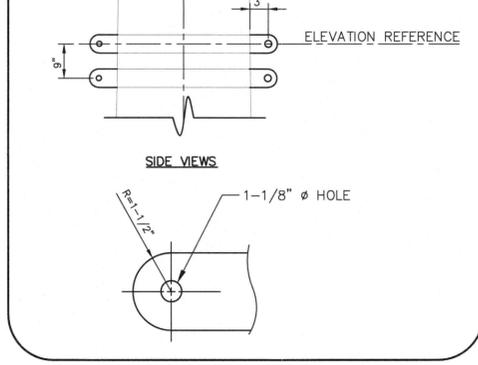
DETAIL "A"
DEAD END SUSPENSION ASSEMBLY - PLAN VIEW



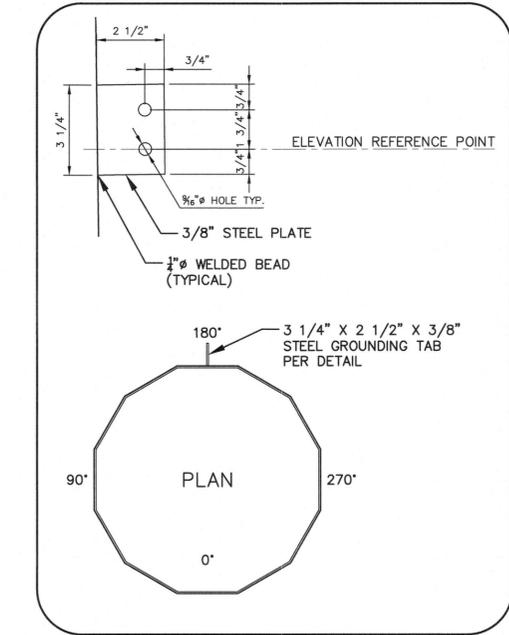
DETAIL "D"
DOUBLE THRU-VANG DETAIL



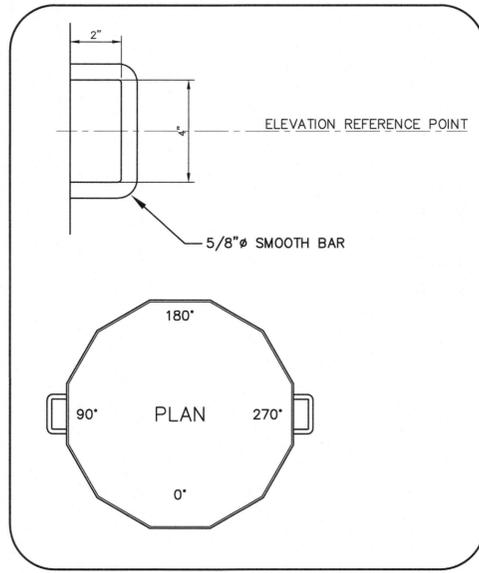
DETAIL "B"
POST INSULATOR ASSEMBLY



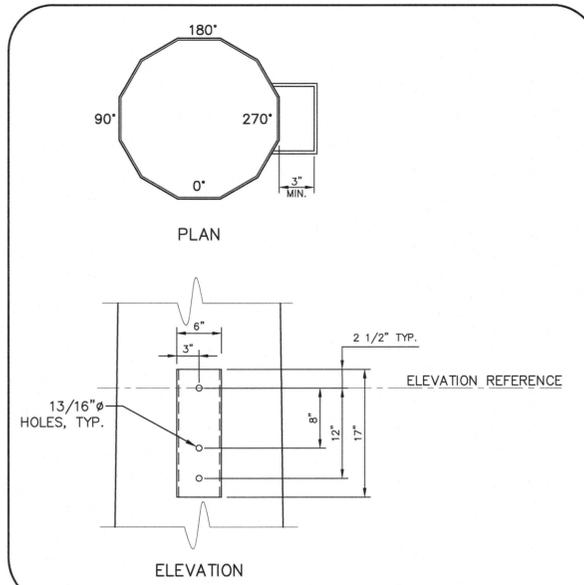
DETAIL "C"
HORIZONTAL POST INSULATOR BRACKET



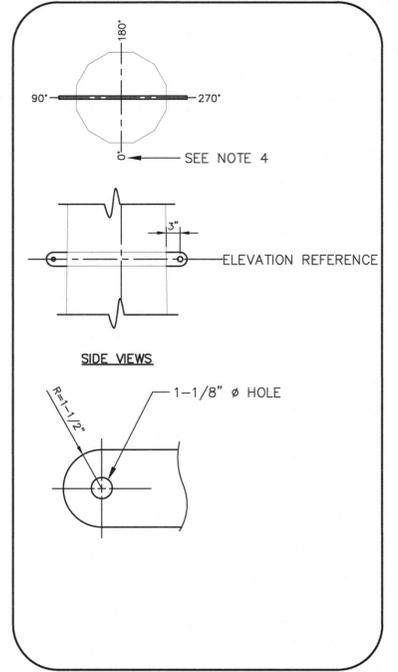
DETAIL "E"
GROUND TAB PLATE LOCATION



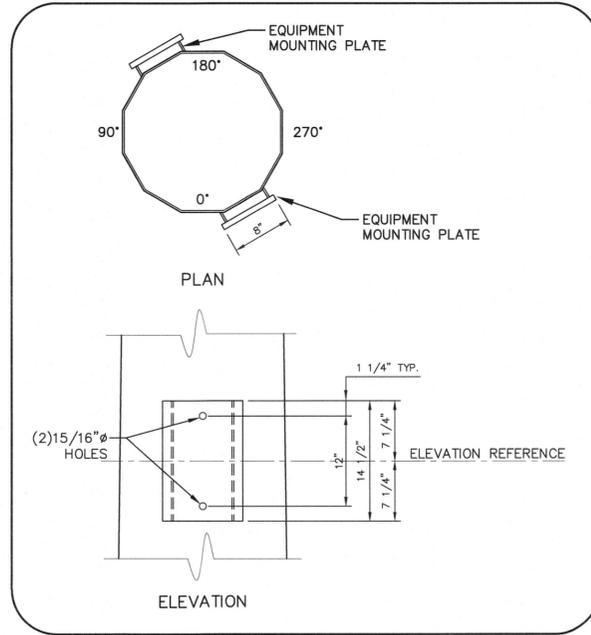
DETAIL "F"
WORKER SAFETY GROUNDS ATTACHMENT BAR



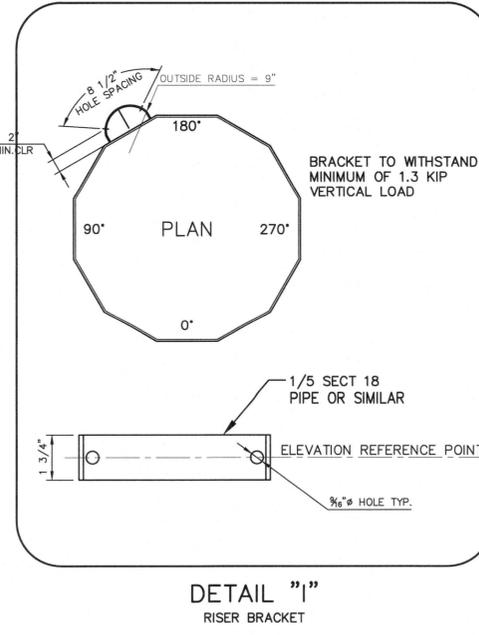
DETAIL "H"
15KV TRANSFORMER BRACKET



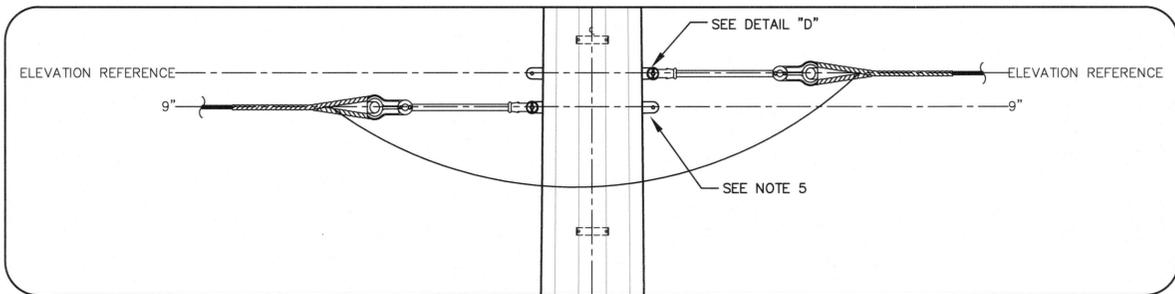
DETAIL "K"
THRU-VANG DETAIL



DETAIL "G"
EQUIPMENT MOUNTING PLATES



DETAIL "I"
RISER BRACKET



DETAIL "J"
FIBER DEAD-END ASSEMBLY



1601 5th Avenue
Suite 800
Seattle, Washington 98101
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M M
MOTT
MACDONALD

MARK: 0
REVISION: 0
BY: BRK
SRA
DATE: 05/26/21



APPROVED: S. AKERS
CHECKED BY: B. KAMINSKI
DATE: 05/26/21

DIRECTOR ENG DATE: 05-26-21
PROJECT: 115KV VERTICAL SELF-SUPPORTING DEAD-END (STRUCTURE 1) STEEL POLE FRAMING - SHEET 2
RANGE: 3E
SECTION: 1

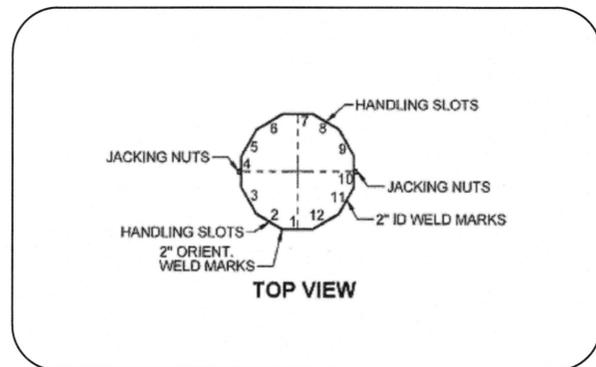
PRINTED BY: MCC40799 MAY 27, 2021
PORT ADDRESS: 1 SITCOM PLAZA
TACOMA, WA 98421

LOWER WAPATO CREEK
HABITAT PROJECT
115KV VERTICAL SELF-SUPPORTING DEAD-END (STRUCTURE 1) STEEL POLE FRAMING - SHEET 2

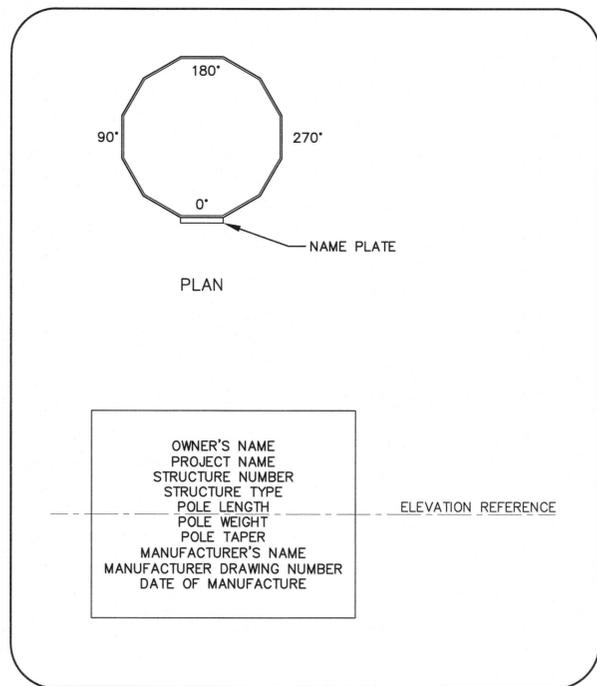
TOWNSHIP: 20N
DATE-HRZ: WA83-SF
PARCEL: 14

VERT: MLLW (PORT OF TACOMA TIDAL)
DRAWING SCALE: AS NOTED

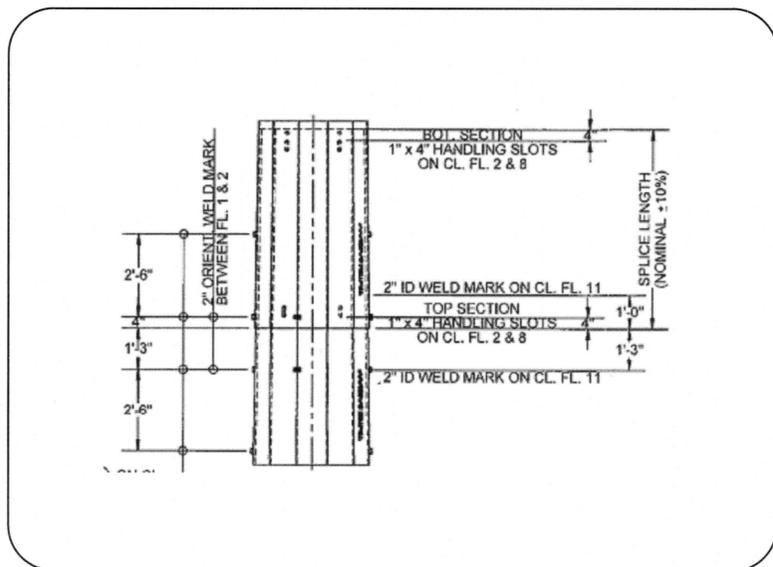
6656
DH857-2
67 OF 82
M. ID: 101449.01
PHASE: BID SET



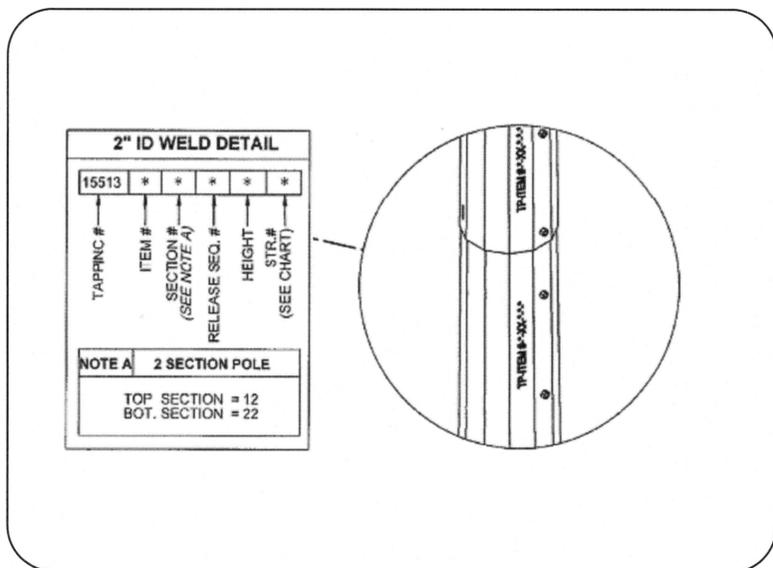
DETAIL "L"
12 SIDED FACE



DETAIL "O"
NAME PLATE



DETAIL "M"
TYPICAL SLIP JOINT SPLICE DETAIL



DETAIL "N"
2" ID WELD DETAIL

List of Materials - Power						
Item ID	Qty	MOU	Description	Source	Material ID / Catalog #	Manufacturer
1	6	ea	Insulator Suspension, 115kV, 450kV BIL, 30kip, Wye Clevis-Ball	TPWR	22235	
2	6	ea	Clamp, Deadend Strain w/ Socket - 1272 AAC	TPWR	34609	
4	3	ea	Insulator Line Post, 115kV, 450kV BIL	TPWR	35394	
5	3	ea	Clamp, Line Post 1272 AAC	TPWR	34613	
6	6	ea	Bolt, Machine, 3/4" x 6"	TPWR		
7	6	ea	Washer, Round, 3/4"	TPWR	35066	
9	6	ea	Nut, Lock 3/4" Type N	TPWR		
10	6	ea	Connector, Wedge, 1272-1272	TPWR	35389	
	50	lbs	Wire, 1272 AAC	TPWR	22354	

NOTES:

- REFER TO STAKING TABLE (E3.2) FOR DRAWING DETAIL NUMBERS.
- NAME PLATE TO BE PLACED ALONG INNER BISECTOR.
- 4" WELDED VERTICAL BEAD TO BE ADDED AT 4' ABOVE GROUND ALONG INNER BISECTOR.
- 0° ORIENTATION ALIGNS WITH INNER BISECTOR.
- POLES WILL BE GALVANIZED THEN PAINTED WITH A HIGH-PERFORMANCE COATING OR PAINT. FINAL COAT COLOR SHALL BE FLAT GRAY. PROTECTIVE COATING SHALL PROVIDE PROTECTION AGAINST SALT SPRAY DUE TO THE PROXIMITY TO THE SALT WATER AT THE PORT.

TPU STANDARDS

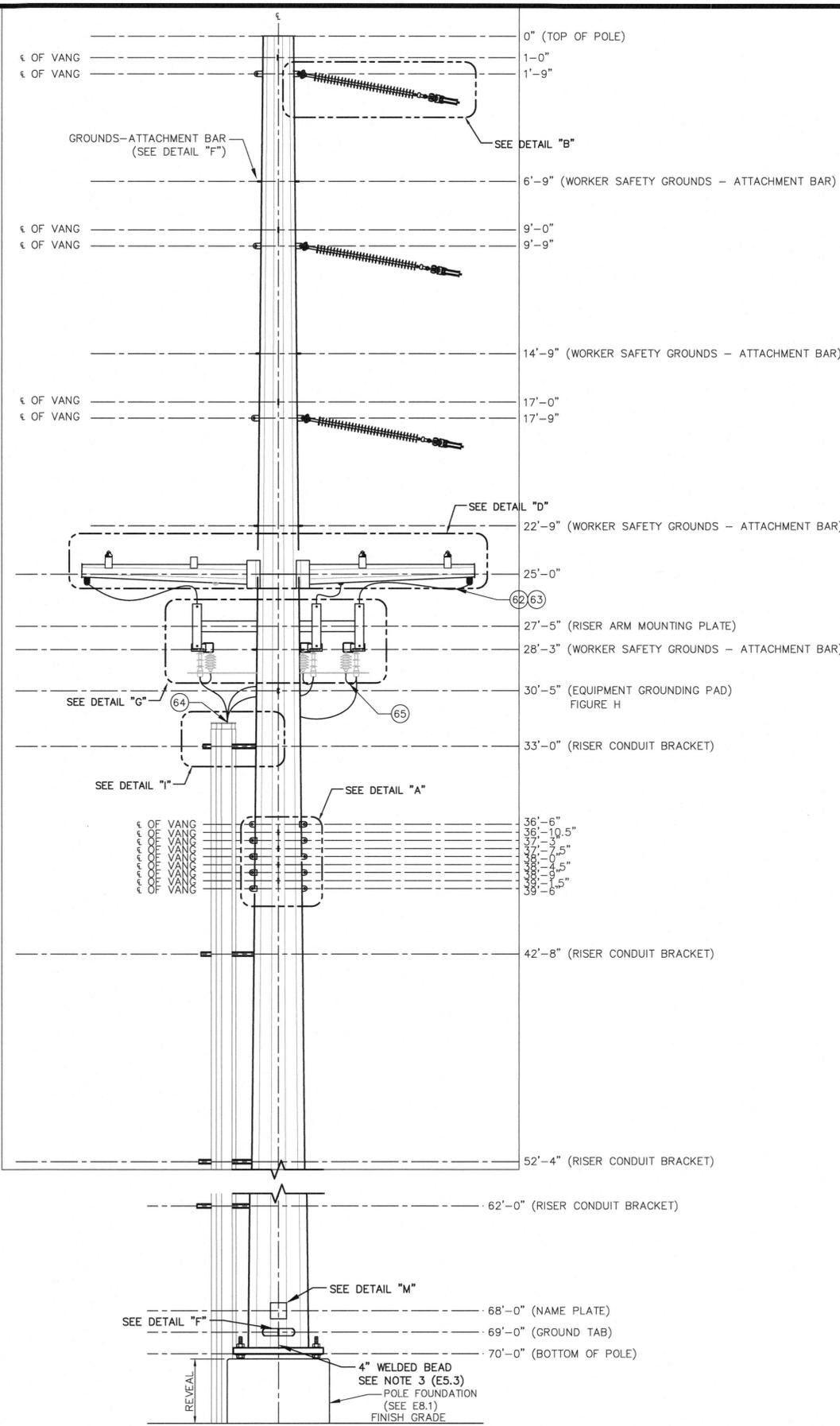
A-XM-3120 115KV DEADEND, DOUBLE DEADEND, & CORNER

<p>6656 DH857-3 68 OF 82</p>	<p>LOWER WAPATO CREEK HABITAT PROJECT 115KV VERTICAL SELF-SUPPORTING DEAD-END (STRUCTURE 1) STEEL POLE FRAMING - SHEET 3</p>		<p>APPROVED: <i>[Signature]</i> DIRECTOR ENG. DATE: 5-28-21</p>		<p>S. AKERS CHECKED BY: B. KAMINSKI DATE: 05/26/21</p>	
	<p>TOWNSHIP: 20N RANGE: 3E SECTION: 1</p>	<p>VERT: MLLW (PORT OF TACOMA TIDAL) DRAWING SCALE: AS NOTED</p>	<p>PRINTED BY: MCC-40799 DATE: May 27, 2021</p>	<p>PORT ADDRESS: 1 SITCOM PLAZA TACOMA, WA 98421</p>	<p>MARK: 0 REVISION: 0 BY: BRK DATE: 05/26/21</p>	<p>MOTT MACDONALD 1601 5th Avenue Suite 800 Seattle, Washington 98101 T +1 (425) 778 6243</p>

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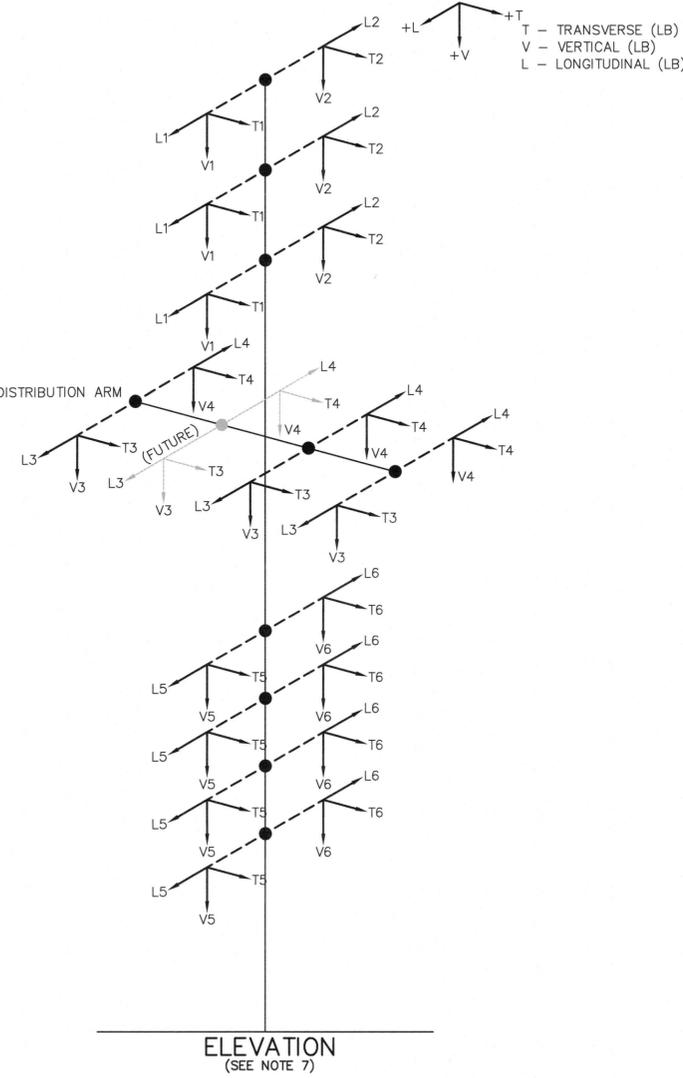
BINDING EDGE

PORT OF TACOMA FILE: C:\pwworking\hmm\external\mcc40799\d0510215\DH858-1



POLE ELEVATION
SCALE: 1:40

FACTORED LOADING COMPONENTS	LOAD TABLE										
	LOAD CASES										
	LC1 NESC 250B MEDIUM	LC2 NESC 250C EXTREME WIND	LC3 NESC 250D CONCURRENT ICE AND WIND	LC4 NESC 250B LIGHT	LC5 EXTREME ICE	LC6 DEFLECTION WORKING	LC9 NESC 250B MEDIUM TERMINAL DEADEND	LC10 NESC 250C EXTREME WIND TERMINAL DEADEND	LC11 NESC 250D EXTREME ICE CONCURRENT WIND TERMINAL DEADEND	LC12 EXTREME ICE TERMINAL DEADEND	LC13 CONSTRUCTION - DEADEND STRUCTURES
V1 (BK)	500	300	400	400	500	250	0	0	0	0	8900
T1 (BK)	-7550	-3900	-4700	-6100	-4900	-2450	0	0	0	0	-4300
L1 (BK)	4100	2000	2650	3150	2850	1350	0	0	0	0	2400
V2 (AH)	-500	-350	-385	-450	-300	-180	-500	-350	-385	-300	7800
T2 (AH)	-7820	-4100	-4800	-6400	-5200	-2650	-7820	-4100	-4800	-5200	-4450
L2 (AH)	-4205	-2050	-2700	-3200	-3000	-1450	-4205	-2050	-2700	-3000	-2500
V3 (DIST AH)	-110	-150	-100	-150	-50	-50	-100	-150	-100	-50	0
T3 (DIST AH)	-5020	-2800	-2950	-4000	-3400	-1550	-5100	-2800	-2950	-3400	0
L3 (DIST AH)	-2650	-1350	-1650	-2000	-1950	-850	-2650	-1350	-1650	-1950	0
V4 (TO STR 1)	650	400	500	500	650	300	0	0	0	0	0
T4 (TO STR 1)	-5200	-3850	-3100	-4800	-3700	-2050	0	0	0	0	0
L4 (TO STR 1)	2600	1700	1700	2100	2150	1100	0	0	0	0	0
V5 (TO SW)	760	550	600	700	700	400	0	0	0	0	0
T5 (TO SW)	-1600	-950	-1100	-1350	-1200	-800	0	0	0	0	0
L5 (TO SW)	5500	3650	3550	5150	3750	2550	0	0	0	0	0
V6 (TO E)	700	500	550	650	600	400	0	0	0	0	0
T6 (TO E)	3500	2250	2250	3350	2250	1700	0	0	0	0	0
L6 (TO E)	-5150	-3150	-3400	-4800	-3450	-2550	0	0	0	0	0
V7 (TO STR 3)	500	205	400	300	550	250	500	205	400	550	0
T7 (TO STR 3)	-5200	-3900	-3150	-4850	-3700	-2100	-5200	-3900	-3150	-3700	0
L7 (TO STR 3)	-2500	-1600	-1650	-1950	-2100	-1100	-2500	-1600	-1650	-2100	0
WIND LOAD ON STRUCTURE (PSF)	10	20.4	2.5	22.5	-	3	10	20.4	2.5	-	3
WIND DIRECTION	BISECTOR	BISECTOR	BISECTOR	BISECTOR	-	BISECTOR	BISECTOR	BISECTOR	BISECTOR	-	BISECTOR
LOAD FACTORS											
VERTICAL	1.5	1.1	1.1	1.5	1.1	1	1.5	1.1	1.1	1.1	2.5
WIND ON WIRES	2.5	1.1	1.1	2.5	1.1	1	2.5	1.1	1.1	1.1	1.5
WIRE TENSION	1.65	1.1	1.1	1.65	1.1	1	1.65	1.1	1.1	1.1	1.5
WIND ON STRUCTURE	2.5	1.1	1.1	2.5	1.1	1	2.5	1.1	1.1	1.1	1.5
WIRE CONDITIONS											
TEMPERATURE (°F)	15	60	15	30	30	60	15	60	15	30	40
RADIAL ICE THICKNESS (IN)	0.25	-	0.25	-	0.5	-	0.25	-	0.25	0.5	-
WIND PRESSURE (PSF)	4	-	-	9	-	0.3	4	-	-	-	2
WIND VELOCITY (MPH)	-	85	30	-	-	-	-	85	30	-	-
WIRE TENSION	INITIAL	INITIAL	INITIAL	INITIAL	INITIAL	INITIAL	INITIAL	INITIAL	INITIAL	INITIAL	INITIAL
DEFLECTION LIMITS											
*MAX TOP DEFLECTION (% OF LENGTH)	6	6	6	6	NSL	1.5	8	8	8	NSL	NSL
* DEFLECTION LIMITS TO BE APPLIED TO THE WEATHER CASES WITH A UNITY (1.0) LOAD FACTOR											
NSL	NO SPECIFIED LIMIT										



- GENERAL NOTES:**
- DESIGN AND FABRICATE STRUCTURES IN ACCORDANCE WITH STEEL POLE SPECIFICATION.
 - LOADS SHOWN IN LOAD TABLE.
 - ARE IN POUNDS AND ARE APPLIED AT THE POINT OF WIRE ATTACHMENT.
 - INCLUDE INSULATOR ASSEMBLIES AND LINE HARDWARE WEIGHTS.
 - INCLUDE LOAD FACTORS AS GIVEN IN LOAD TABLE.
 - FABRICATE POLE SHAFTS FROM 12-SIDED SHAPES ONLY.
 - APPLY THE VERTICAL LOAD FACTOR TO THE DEAD WEIGHT OF STRUCTURES.
 - POINT OF FIXITY: TOP OF PIER FOUNDATION.
 - DESIGN STRUCTURES FOR EITHER CIRCUIT 1 OR CIRCUIT 2 MISSING. DESIGN NOTES FOR CLIENT USE.
 - CONDUCTOR SYSTEM: 1-1272, 61-STRAND, AAC NARCISSEUS PER PHASE.
 - TENSION LIMITS: 40% NESC, 22% 15 F BARE INITIAL, 18% 15 F BARE FINAL.
 - BASED ON RULING SPAN 700 FT., 115KV CIRCUITS AHEAD (CEDAR AND HILLTOP): SPAN 450 FT., VERTICAL PROJECTION -5 FT., 115KV CEDAR CIRCUIT BACK: SPAN 250 FT., VERTICAL PROJECTIONS -20, -30 AND -40 FT., 115KV HILLTOP CIRCUIT BACK SPAN 350 FT., VERTICAL PROJECTION -5 DFT., OHSW BACK (CEDAR): SPAN 250 FT., VERTICAL PROJECTION -45 FT.
 - DESIGNED AS FULL TERMINAL DEADEND STRUCTURE.
 - DESIGN NOTES FOR CLIENT USE.

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MOTT MACDONALD

REVISION: 0
BY: BRK
DATE: 05/26/21

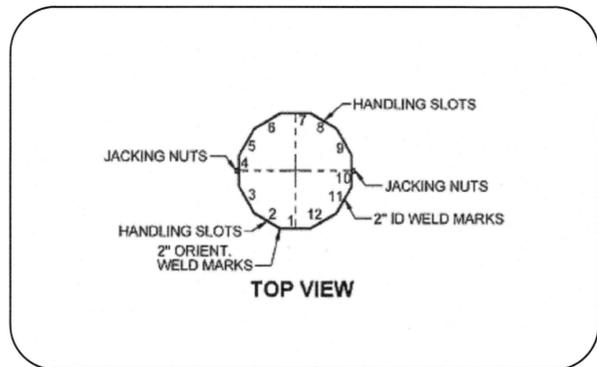
APPROVED: S. AKERS 05/26/21
CHECKED BY: B. KAMINSKI 05/26/21
DIRECTOR ENGR DATE: MCCA0799 May 27, 2021
PRINTED BY: 1 SITCOM PLAZA
TACOMA, WA 98421

LOWER WAPATO CREEK HABITAT PROJECT
115KV VERTICAL SELF-SUPPORTING DEAD-END (STRUCTURE 2) STEEL POLE FRAMING - SHEET 1

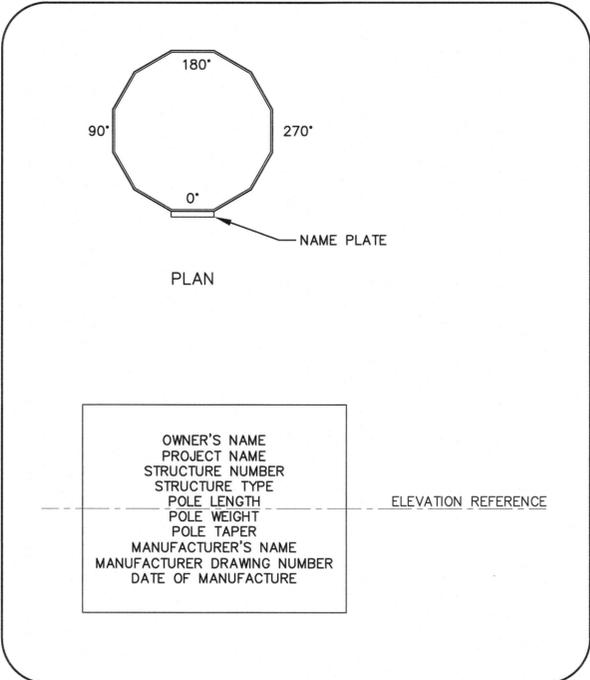
6656 **DH858-1**
69 OF 82

CONTR: 071447
M. ID: 101449.01
PHASE: BID SET

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DETAIL "J"
12 SIDED FACE

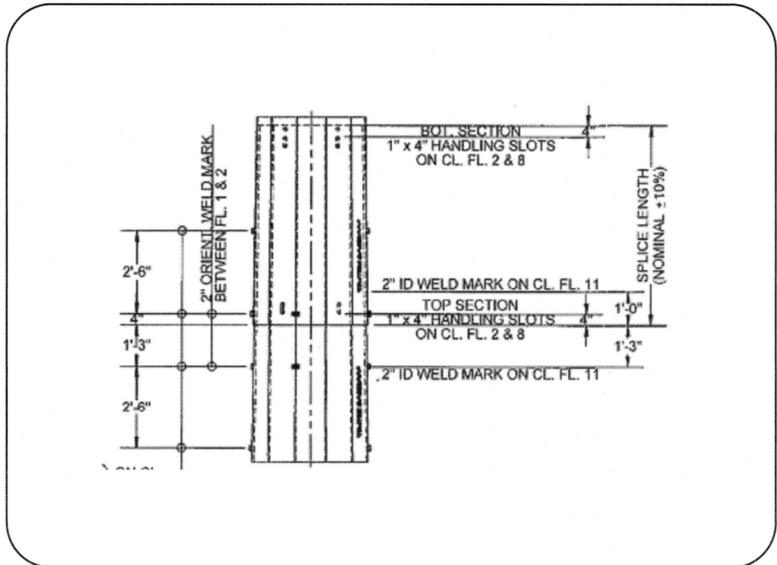


OWNER'S NAME
PROJECT NAME
STRUCTURE NUMBER
STRUCTURE TYPE
POLE LENGTH
POLE WEIGHT
POLE TAPER
MANUFACTURER'S NAME
MANUFACTURER DRAWING NUMBER
DATE OF MANUFACTURE

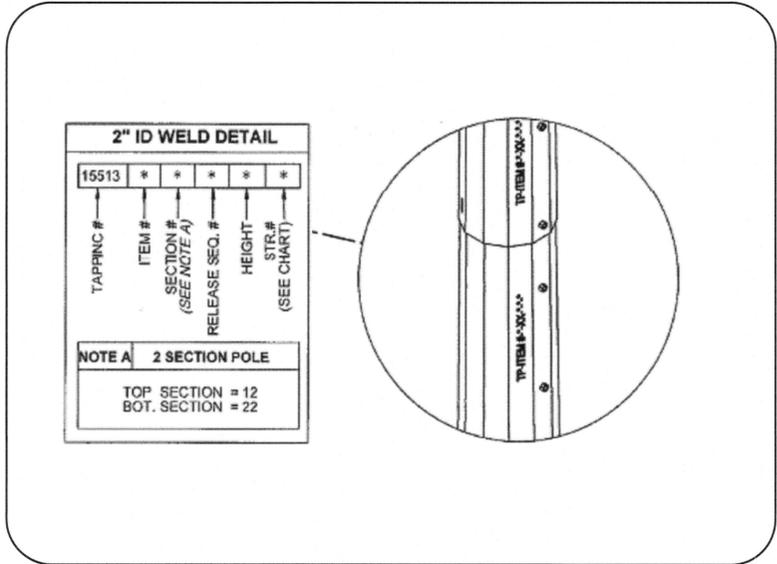
ELEVATION REFERENCE

DETAIL "M"
NAME PLATE

List of Materials - Power						
Item ID	Qty		Description	Source	Material ID / Catalog #	Manufacturer
1	6	ea	Insulator Suspension, 115kV, 450kV BIL, 30Kip, Wye Clevis-Ball	TPWR	22235	
2	6	ea	Clamp, Deadend Strain w/ Socket - 1272 AAC	TPWR	34609	
10	6	ea	Connector, Wedge, 1272-1272	TPWR	35389	
11	1	ea	Crossarm, Special Steel, DBL 16ft	Stl Pole Man		
45	3	ea	Insulator Suspension, 25kV, Clevis-Eye	TPWR	35418	
46	3	ea	Clamp, Deadend Strain w/ Clevis - 795 AAC	TPWR	19251	
30	30	lbs	Wire, 1272 AAC	TPWR	22354	



DETAIL "K"
TYPICAL SLIP JOINT SPLICE DETAIL



DETAIL "L"
2" ID WELD DETAIL

NOTES:

- 1) REFER TO STAKING TABLE (E3.2) FOR DRAWING DETAIL NUMBERS.
- 2) NAMEPLATE TO ALWAYS BE PLACED ON THE INNER BISECTOR OF A STRUCTURE.
- 3) 4" WELDED VERTICAL BEAD TO BE ADDED AT 4' ABOVE GROUND ALONG INNER BISECTOR.
- 4) 0° ORIENTATION ALIGNS WITH INNER BISECTOR.
- 5) PROVISIONS FOR 4 TOTAL COMMUNICATION CABLES TO BE INCLUDED. YANG ORIENTATIONS TO BE CONFIRMED WITH CABLE COMPANIES.
- 6) POLES WILL BE GALVANIZED THEN PAINTED WITH A HIGH-PERFORMANCE COATING OR PAINT. FINAL COAT COLOR SHALL BE FLAT GRAY. PROTECTIVE COATING SHALL PROVIDE PROTECTION AGAINST SALT SPRAY DUE TO THE PROXIMITY TO THE SALT WATER AT THE PORT.

TPU STANDARDS

- A-XM-3120 115KV DEADEND, DOUBLE DEADEND, & CORNER
- A-OH-3322 3-PHASE DOUBLE DEADEND
- A-OH-1500 DISTRIBUTION INSULATORS, PRIMARY TANGENT ASSEMBLIES
- A-OH-1505 DISTRIBUTION INSULATORS, PRIMARY DEADEND ASSEMBLIES

6656

DH858-3

71 OF 82

CONT/CONS: 071447

M. ID: 101449.01

PHASE: BID SET

LOWER WAPATO CREEK

HABITAT PROJECT

115KV VERTICAL SELF-SUPPORTING DEAD-END
(STRUCTURE 2) STEEL POLE FRAMING - SHEET 3

TOWNSHIP: 20N RANGE: 3E SECTION:

DAT-HRZ: WA83-SF VERT: MLLW (PORT OF TACOMA TIDAL)

PARCEL: 14 DRAWING SCALE: AS NOTED

APPROVED:

DIRECTOR ENGDATE: 05-26-21
PRINTED BY: MCC40799 May 27, 2021
PORT ADDRESS: 1 SITCOM PLAZA
TACOMA, WA 98421

S. AKERS 05/26/21

CHECKED BY DATE

B. KAMINSKI 05/26/21

PROJ. ENGR DATE

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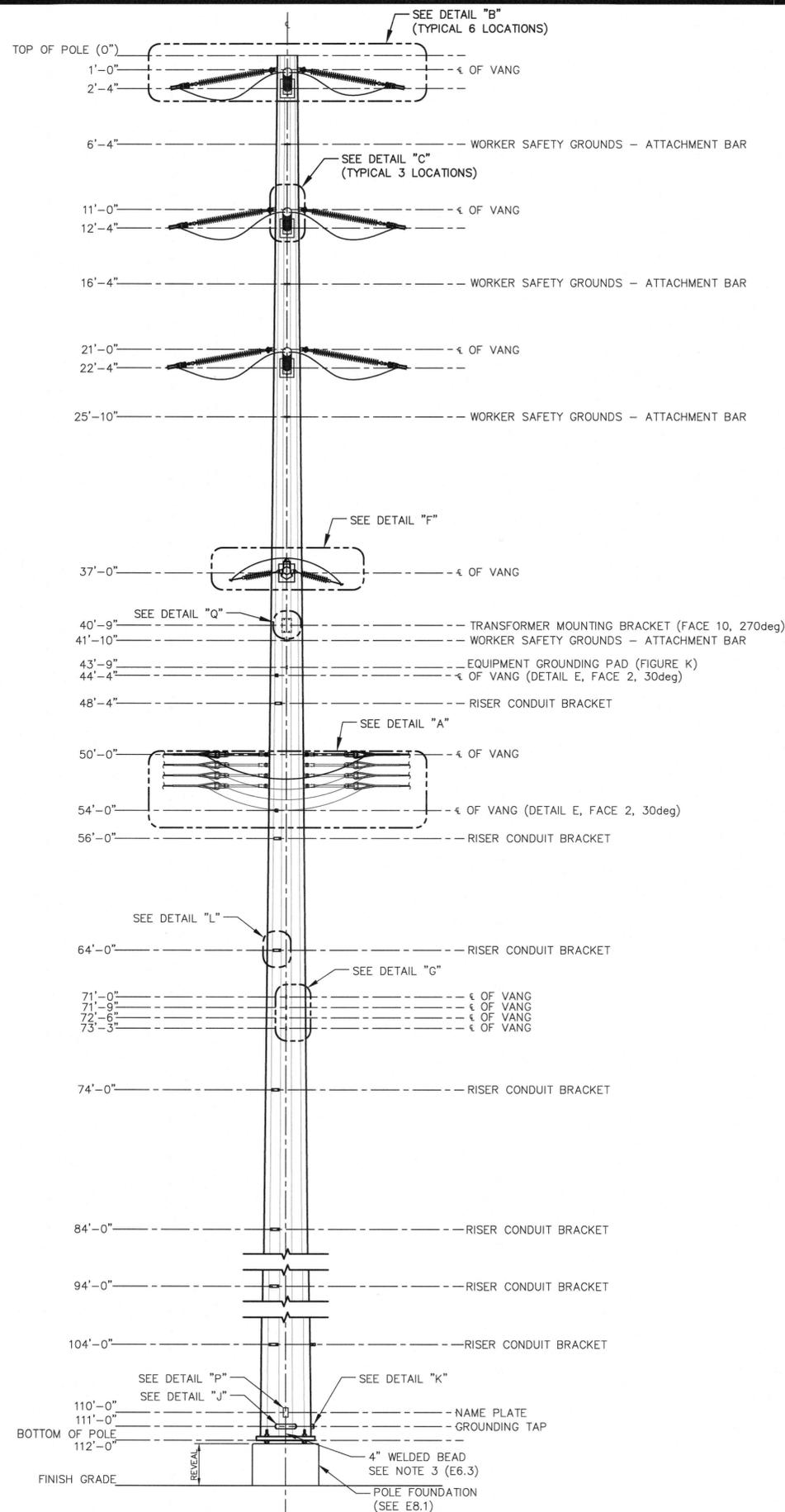
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BY: BRK APPR: SRA

DATE: 05/26/21

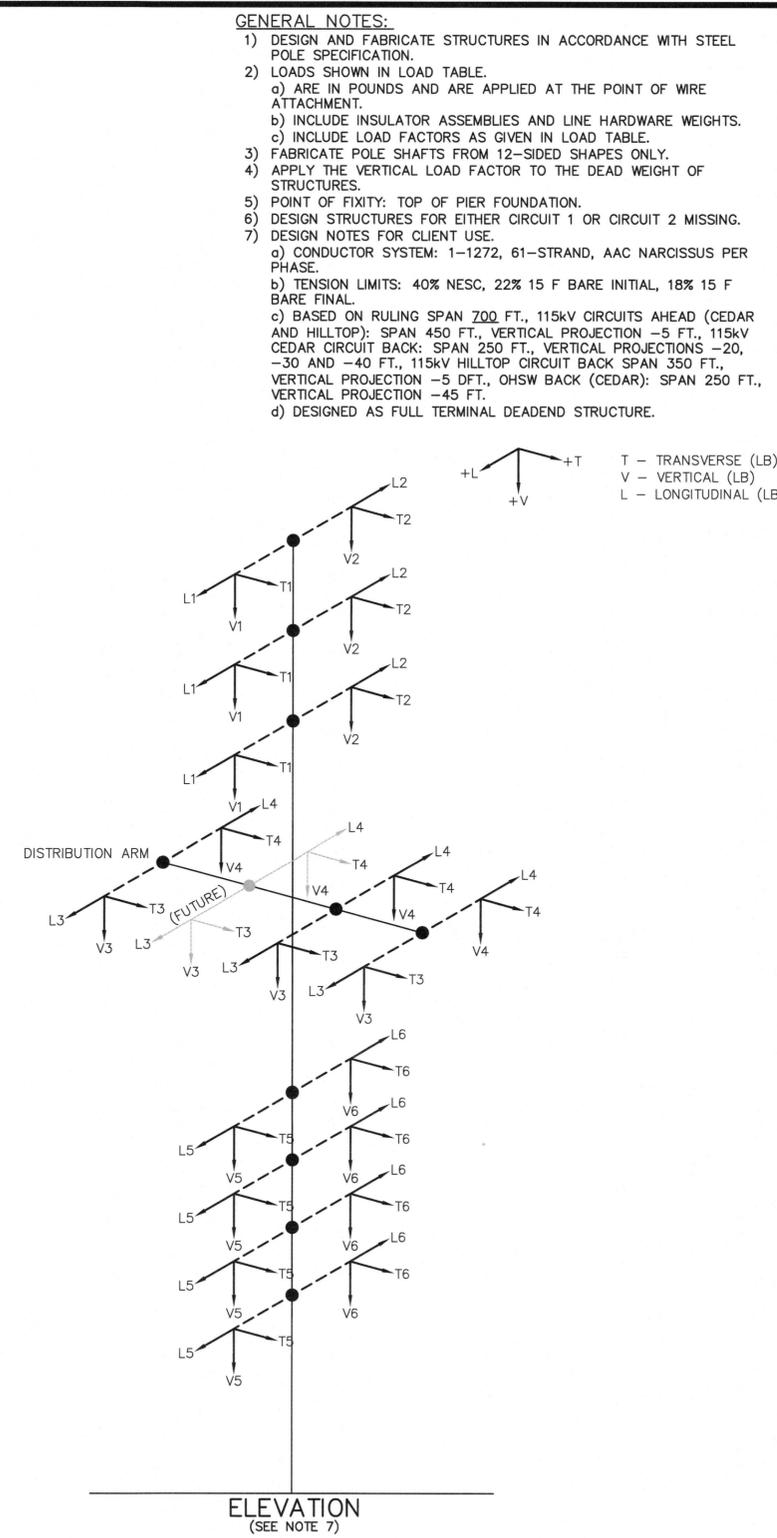
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BINDING EDGE



POLE ELEVATION
SCALE: 1/8" = 1'-0"

FACTORED LOADING COMPONENTS	LOAD TABLE										
	LOAD CASES										
	LC1 NESC 250B MEDIUM WIND	LC2 NESC 250C EXTREME WIND	LC3 NESC 250D CONCURRENT ICE AND WIND	LC4 NESC 250B LIGHT WIND	LC5 EXTREME ICE	LC8 DEFLECTION WORKING	LC9 NESC 250B MEDIUM WIND TERMINAL DEADEND	LC10 NESC 250C EXTREME WIND TERMINAL DEADEND	LC11 NESC 250D CONCURRENT WIND EXTREME ICE TERMINAL DEADEND	LC12 EXTREME ICE TERMINAL DEADEND	LC13 CONSTRUCTION - DEADEND STRUCTURES
V1 (BK)	1350	805	1010	1110	1200	600	0	0	0	0	9850
T1 (BK)	350	350	150	500	100	100	0	0	0	0	100
L1 (BK)	8900	4550	5500	7100	6000	3000	0	0	0	0	5100
V2 (AH)	1000	600	750	800	1000	500	1000	600	750	1000	9460
T2 (AH)	950	750	450	1100	400	300	950	750	450	400	450
L2 (AH)	-12300	-6600	-7650	-10200	-8450	-4600	-12300	-6600	-7650	-8450	-7600
V3 (DIST BK)	700	450	550	550	700	300	0	0	0	0	0
T3 (DIST BK)	300	200	100	300	50	75	0	0	0	0	0
L3 (DIST BK)	5700	3050	3350	4450	3900	1750	0	0	0	0	0
V4 (DIST AH)	600	310	450	450	600	260	600	310	450	600	0
T4 (DIST AH)	705	550	350	850	300	100	705	550	350	300	0
L4 (DIST AH)	-8700	-4750	-5250	-7100	-6000	-3010	-8700	-4750	-5250	-6000	0
V5 (FO BK)	1050	660	750	800	1000	500	0	0	0	0	0
T5 (FO BK)	350	500	150	700	50	150	0	0	0	0	0
L5 (FO BK)	5700	4150	3450	5050	4300	2250	0	0	0	0	0
V6 (FO AH)	1050	550	750	700	1050	450	1050	550	750	1050	0
T6 (FO AH)	1010	1050	400	1500	300	320	1010	1050	400	300	0
L6 (FO AH)	-9000	-6300	-5550	-8150	-6700	-3800	-9000	-6300	-5550	-6700	0
V7 (FO TAN)	1000	600	800	750	1100	450	0	0	0	0	0
T7 (FO TAN)	100	500	200	700	400	350	0	0	0	0	0
L7 (FO TAN)	5	15	20	20	20	20	0	0	0	0	0
WIND LOAD ON STRUCTURE (PSF)	10	20.4	2.5	22.5	-	3	10	20.4	2.5	-	3
WIND DIRECTION	BISECTOR	BISECTOR	BISECTOR	BISECTOR	-	BISECTOR	BISECTOR	BISECTOR	-	BISECTOR	BISECTOR
LOAD FACTORS											
VERTICAL	1.5	1.1	1.1	1.5	1.1	1	1.5	1.1	1.1	1.1	2.5
WIND ON WIRES	2.5	1.1	1.1	2.5	1.1	1	2.5	1.1	1.1	1.1	1.5
WIRE TENSION	1.65	1.1	1.1	1.65	1.1	1	1.65	1.1	1.1	1.1	1.5
WIND ON STRUCTURE	2.5	1.1	1.1	2.5	1.1	1	2.5	1.1	1.1	1.1	1.5
WIRE CONDITIONS											
TEMPERATURE (°F)	15	60	15	30	30	60	15	60	15	30	40
RADIAL ICE THICKNESS (IN)	0.25	-	0.25	-	0.5	-	0.25	-	0.25	0.5	-
WIND PRESSURE (PSF)	4	-	-	9	-	0.3	4	-	-	-	2
WIND VELOCITY (MPH)	-	85	30	-	-	-	-	85	30	-	-
WIRE TENSION	INITIAL	INITIAL	INITIAL	INITIAL	INITIAL	INITIAL	INITIAL	INITIAL	INITIAL	INITIAL	INITIAL
DEFLECTION LIMITS											
*MAX TOP DEFLECTION (% OF LENGTH)	6	6	6	6	NSL	1.5	8	8	8	NSL	NSL
*	DEFLECTION LIMITS TO BE APPLIED TO THE WEATHER CASES WITH A UNITY (1.0) LOAD FACTOR										
NSL	NO SPECIFIED LIMIT										



ELEVATION
(SEE NOTE 7)

- GENERAL NOTES:**
- DESIGN AND FABRICATE STRUCTURES IN ACCORDANCE WITH STEEL POLE SPECIFICATION.
 - LOADS SHOWN IN LOAD TABLE.
 - ARE IN POUNDS AND ARE APPLIED AT THE POINT OF WIRE ATTACHMENT.
 - INCLUDE INSULATOR ASSEMBLIES AND LINE HARDWARE WEIGHTS.
 - INCLUDE LOAD FACTORS AS GIVEN IN LOAD TABLE.
 - FABRICATE POLE SHAFTS FROM 12-SIDED SHAPES ONLY.
 - APPLY THE VERTICAL LOAD FACTOR TO THE DEAD WEIGHT OF STRUCTURES.
 - POINT OF FIXITY: TOP OF PIER FOUNDATION.
 - DESIGN STRUCTURES FOR EITHER CIRCUIT 1 OR CIRCUIT 2 MISSING. DESIGN NOTES FOR CLIENT USE.
 - CONDUCTOR SYSTEM: 1-1272, 61-STRAND, AAC NARCISSUS PER PHASE.
 - TENSION LIMITS: 40% NESC, 22% 15 F BARE INITIAL, 18% 15 F BARE FINAL.
 - BASED ON RULING SPAN 200 FT., 115kV CIRCUITS AHEAD (CEDAR AND HILLTOP); SPAN 450 FT., VERTICAL PROJECTION -5 FT., 115kV CEDAR CIRCUIT BACK; SPAN 250 FT., VERTICAL PROJECTIONS -20, -30 AND -40 FT., 115kV HILLTOP CIRCUIT BACK SPAN 350 FT., VERTICAL PROJECTION -5 DFT., OHSW BACK (CEDAR); SPAN 250 FT., VERTICAL PROJECTION -45 FT.
 - DESIGNED AS FULL TERMINAL DEADEND STRUCTURE.

PORT OF TACOMA FILE: C:\pwworking\hmm\external\mcc40799\0510215\DH859-1

Port of Tacoma
P.O. BOX 1837 TACOMA, WA 98401 (206)383-1841

DATE: 05/26/21
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BY: BRK

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REVISION: T +1
MARK: 0
BID SET

S. AKERS
CHECKED BY: B. KAMINSKI
DATE: 05/26/21

PROJECT: LOWER WAPATO CREEK HABITAT PROJECT
115KV VERTICAL SELF-SUPPORTING DEAD-END (STRUCTURE 3) STEEL POLE FRAMING - SHEET 1
TOWNSHIP: 20N RANGE: 3E SECTION: 1
DATE: 05/27/2021
PRINTED BY: MCC40799
MAY 27, 2021
PORT ADDRESS: 1 SITCOM PLAZA TACOMA, WA 98421

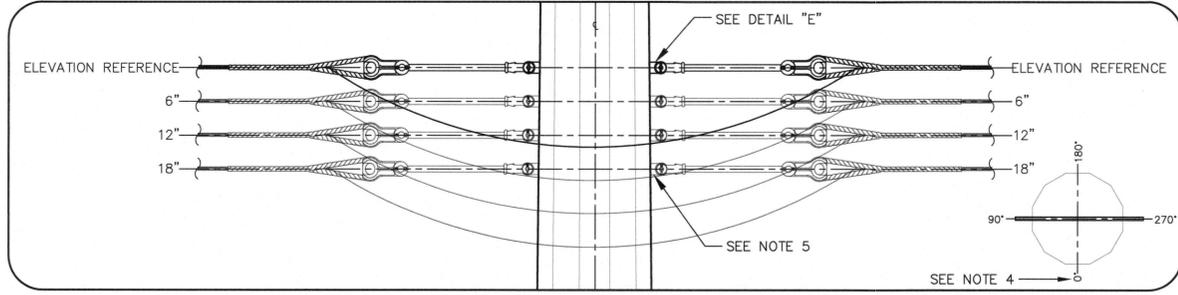
APPROVED: [Signature]

DATE: 05/26/21

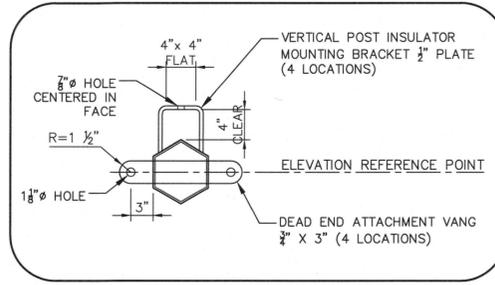
6656
DH859-1
72 OF 82

CONTRACT: 071447
M. ID: 101449.01
PHASE: BID SET

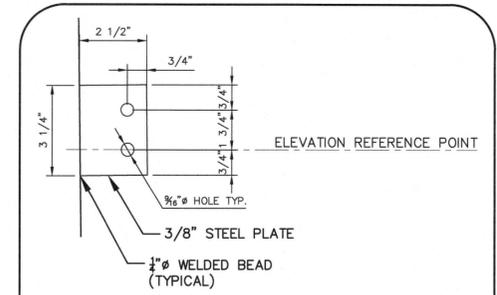
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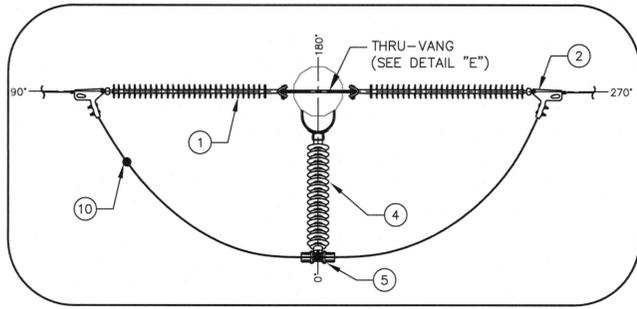
DETAIL "A"
FIBER DEAD-END ASSEMBLY



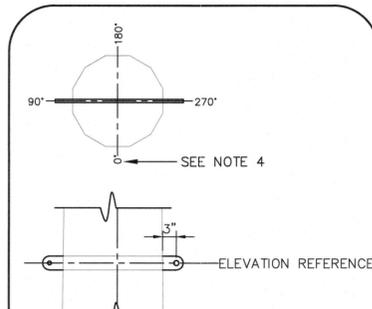
VIEW "H-H"



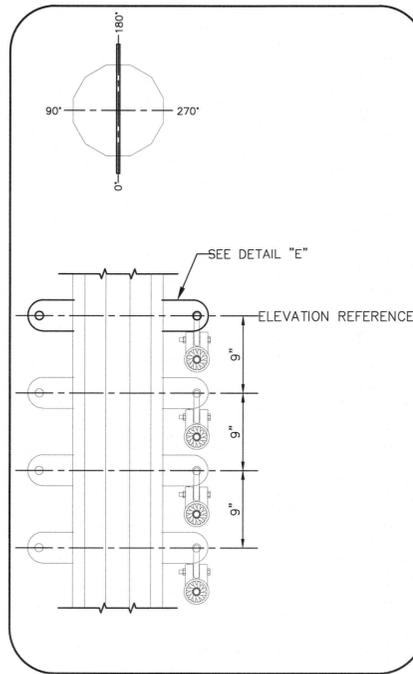
DETAIL "K"
GROUND TAB PLATE LOCATION



DETAIL "B"
DEAD END SUSPENSION ASSEMBLY - PLAN VIEW



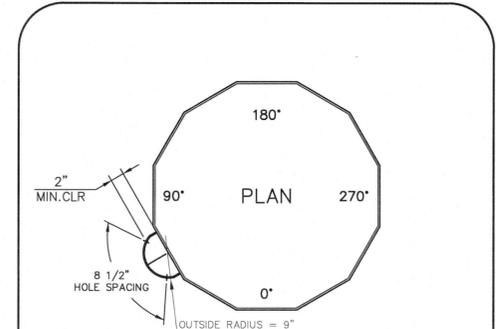
DETAIL "E"
THRU-VANG DETAIL



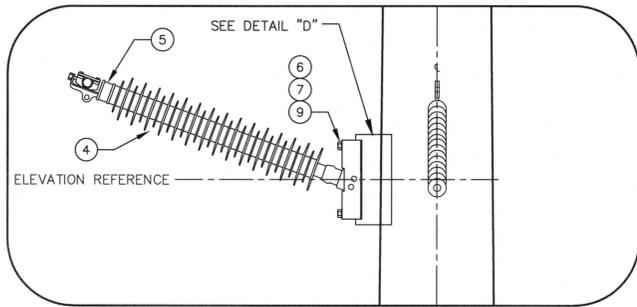
DETAIL "G"
FIBER SUSPENSION ASSEMBLY

DETAIL REMOVED 02/12/21
NO LONGER NEEDED

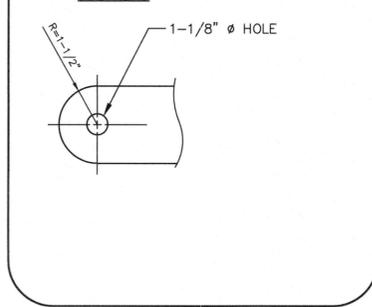
DETAIL "I"



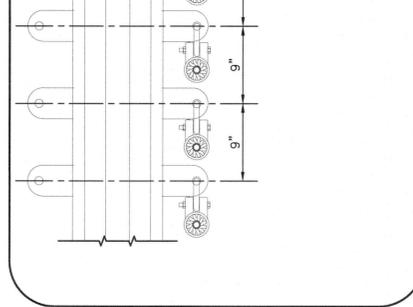
DETAIL "L"
RISER BRACKET



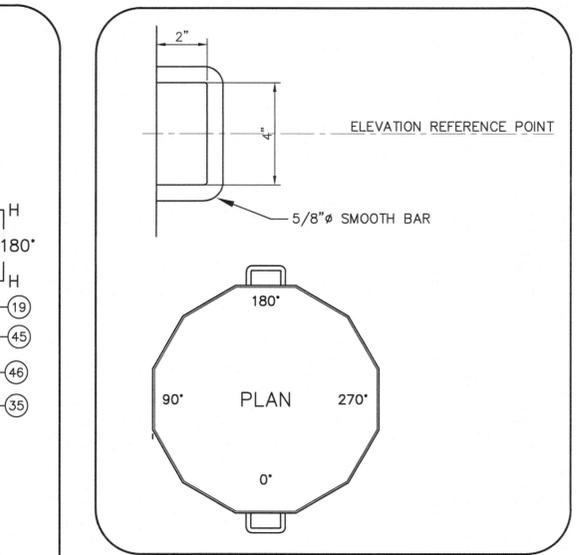
DETAIL "C"
POST INSULATOR ASSEMBLY



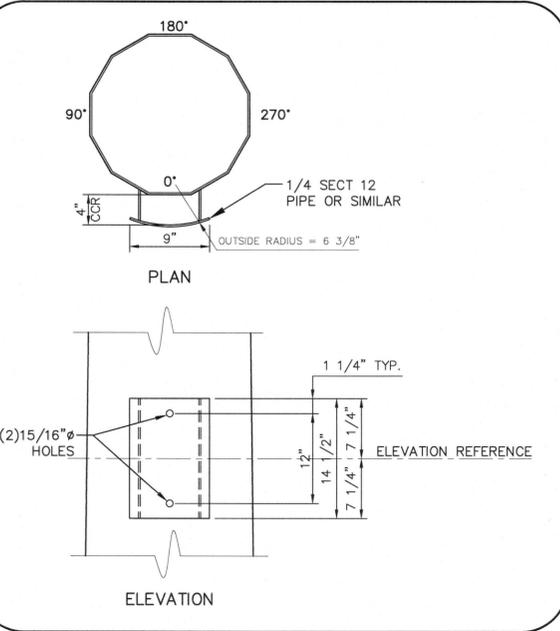
DETAIL "E"
THRU-VANG DETAIL



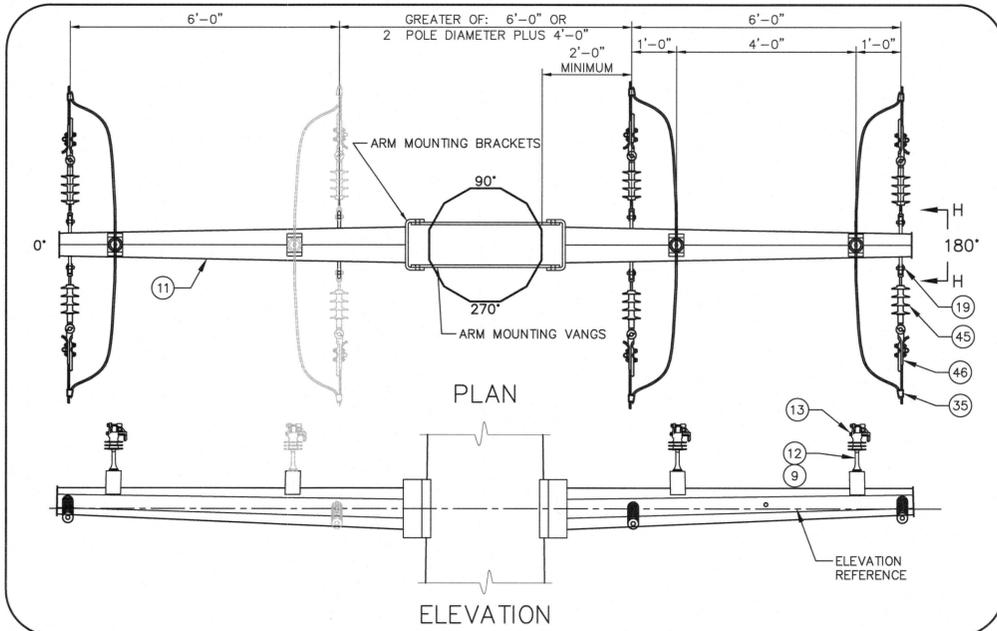
DETAIL "G"
FIBER SUSPENSION ASSEMBLY



DETAIL "J"
WORKER SAFETY ATTACHMENT BAR
NOT TO SCALE

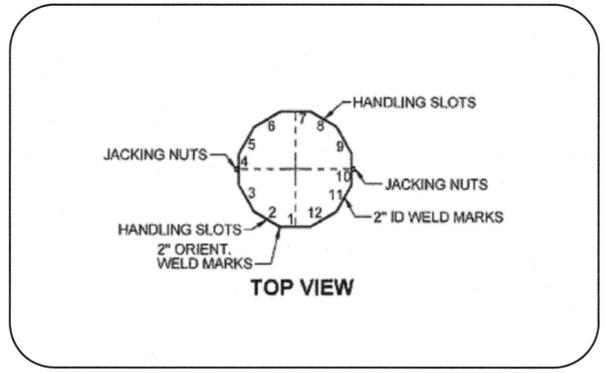


DETAIL "D"
HORIZONTAL POST INSULATOR BRACKET

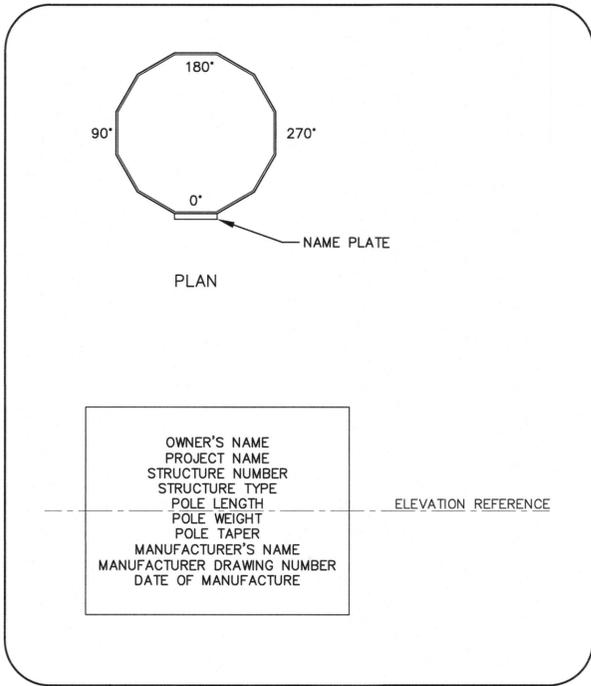


DETAIL "F"
DISTRIBUTION DAVIT ARM ASSEMBLY

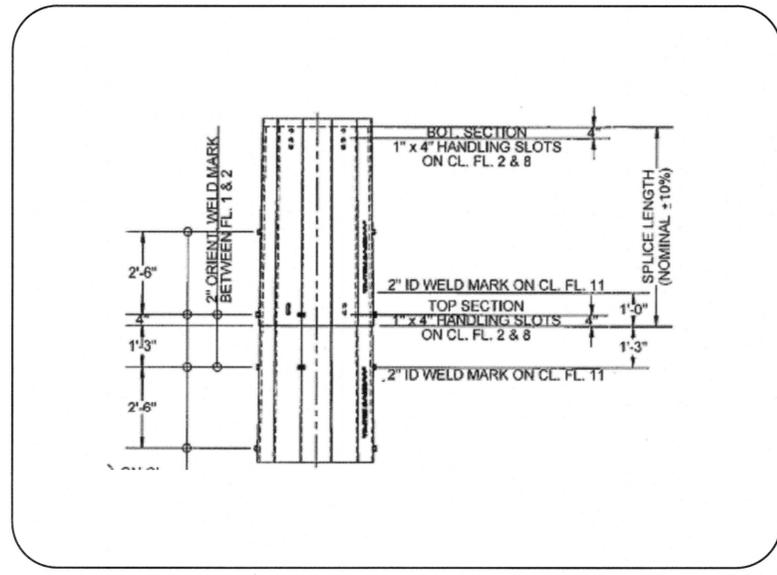
6656 DH8559-2 73 OF 82	LOWER WAPATO CREEK HABITAT PROJECT 115KV VERTICAL SELF-SUPPORTING DEAD-END (STRUCTURE 3) STEEL POLE FRAMING - SHEET 2		S. AKERS CHECKED BY B. KAMINSKI DIRECTOR ENGR. DATE MCC-40799 May 27, 2021	05/26/21 DATE 05/26/21
	TOWNSHIP: 20N RANGE: 3E SECTION: 1	DAT-HRZ: WA83-SF VERT: MILLW (PORT OF TACOMA TIDAL) PARCEL: 14	PROJECT NO: 15087 PROJECT ADDRESS: 1 SITCOM PLAZA TACOMA, WA 98421	BY: SRA BRK APPR: SRA DATE: 05/26/21



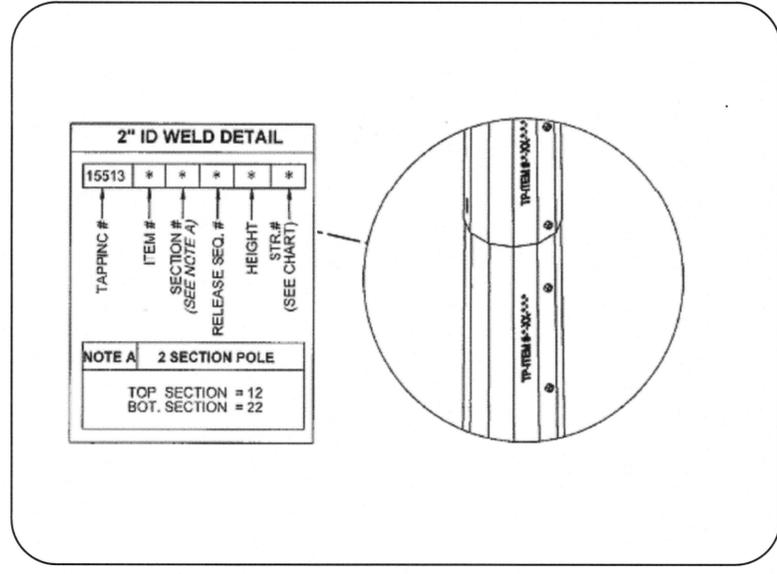
DETAIL "M"
12 SIDED FACE



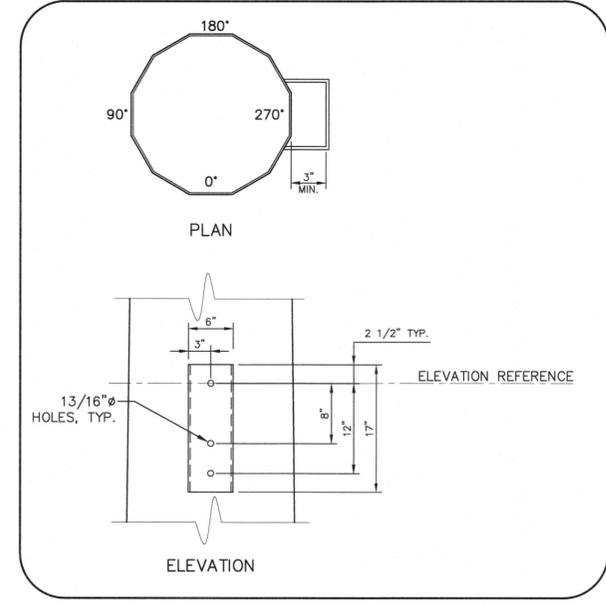
DETAIL "P"
NAME PLATE



DETAIL "N"
TYPICAL SLIP JOINT SPLICE DETAIL



DETAIL "O"
2" ID WELD DETAIL



DETAIL "Q"
15KV TRANSFORMER BRACKET

List of Materials - Power						
Item ID	Qty		Description	Source	Material ID / Catalog #	Manufacturer
1	6	ea	Insulator Suspension, 115kV, 450kV BIL, 30Kip, Wye Clevis-Ball	TPWR	22235	
2	6	ea	Clamp, Deadend Strain w/ Socket - 1272 AAC	TPWR	34609	
4	3	ea	Insulator Line Post, 115kV, 450kV BIL	TPWR	35394	
5	3	ea	Clamp, Line Post 1272 AAC	TPWR	34613	
6	6	ea	Bolt, Machine, 3/4" x 6"	TPWR		
7	6	ea	Washer, Round, 3/4"	TPWR	35066	
9	6	ea	Nut, Lock 3/4" Type N	TPWR		
10	6	ea	Connector, Wedge, 1272-1272	TPWR	35389	
11	1		Crossarm, Special Steel, DBL 16ft		Stl Pole Man	
12	3	ea	Bolt, Stud, 3/4" w/ 2" Pintle Bolt	TPWR	35016	
13	3	ea	Insulator, Post, 50kV	TPWR	35396	
45	6	ea	Insulator Suspension, 25kV, Clevis-Eye	TPWR	35418	
46	6	ea	Clamp, Deadend Strain w/ Clevis - 795 AAC	TPWR	19251	
	6	ea	Connector, Wedge, 795-795	TPWR	22188	
	3	ea	Clamp, Trunion, 795 AAC	TPWR	34612	
	60	lbs	Wire, 1272 AAC	TPWR	22354	
	50	lbs	Wire, 795 AAC	TPWR	22350	

NOTES:

- REFER TO STAKING TABLE (E3.2) FOR DRAWING DETAIL NUMBERS.
- NAMEPLATE TO ALWAYS BE PLACED ON THE INNER BISECTOR OF A STRUCTURE.
- 4" WELDED VERTICAL BEAD TO BE ADDED AT 4' ABOVE GROUND ALONG INNER BISECTOR.
- 0° ORIENTATION ALIGNS WITH INNER BISECTOR.
- PROVISIONS FOR 4 TOTAL COMMUNICATION CABLES TO BE INCLUDED. VANG ORIENTATIONS TO BE CONFIRMED WITH CABLE COMPANIES.
- POLES WILL BE GALVANIZED THEN PAINTED WITH A HIGH-PERFORMANCE COATING OR PAINT. FINAL COAT COLOR SHALL BE FLAT GRAY. PROTECTIVE COATING SHALL PROVIDE PROTECTION AGAINST SALT SPRAY DUE TO THE PROXIMITY TO THE SALT WATER AT THE PORT.

TPU STANDARDS

- A-XM-3120 115KV DEADEND, DOUBLE DEADEND, & CORNER
- A-OH-3322 3-PHASE DOUBLE DEADEND
- A-OH-1500 DISTRIBUTION INSULATORS, PRIMARY TANGENT ASSEMBLIES
- A-OH-1505 DISTRIBUTION INSULATORS, PRIMARY DEADEND ASSEMBLIES

Port of Tacoma
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REVISION: BRK

MARK: 0 BID SET

BY: SRA

DATE: 05/26/21

APPROVED: S. AKERS

CHECKED BY: B. KAMINSKI

DIRECTOR ENG. DATE: 5-25-21

PRINTED BY: MCC40799

PORT ADDRESS: 1 SITCOM PLAZA TACOMA, WA 98421

DATE: 05/26/21

DATE: 05/26/21

DATE: MAY 27, 2021

DATE: 05/26/21

DATE: MAY 27, 2021

DATE: MAY 27, 2021

LOWER WAPATO CREEK HABITAT PROJECT

115KV VERTICAL SELF-SUPPORTING DEAD-END (STRUCTURE 3) STEEL POLE FRAMING - SHEET 3

SECTION: 1

RANGE: 3E

VERT: MLLW (PORT OF TACOMA TIDAL)

DRAWING SCALE: AS NOTED

DATE: 05/26/21

DATE: 05/26/21

DATE: MAY 27, 2021

6656 **DH859-3**

74 OF 82

CONT/CONS: 071447

M. ID: 101449.01

PHASE: BID SET

SECTION: 1

RANGE: 3E

VERT: MLLW (PORT OF TACOMA TIDAL)

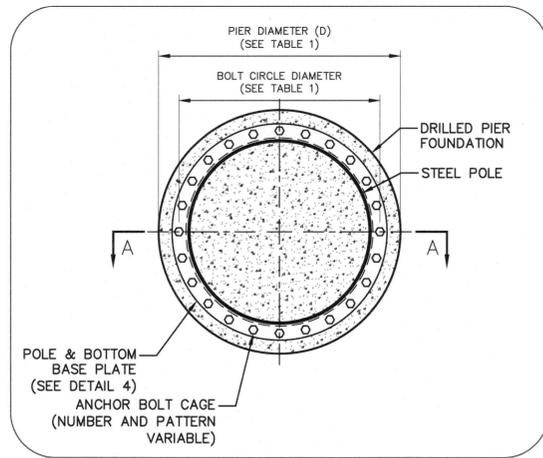
DRAWING SCALE: AS NOTED

DATE: 05/26/21

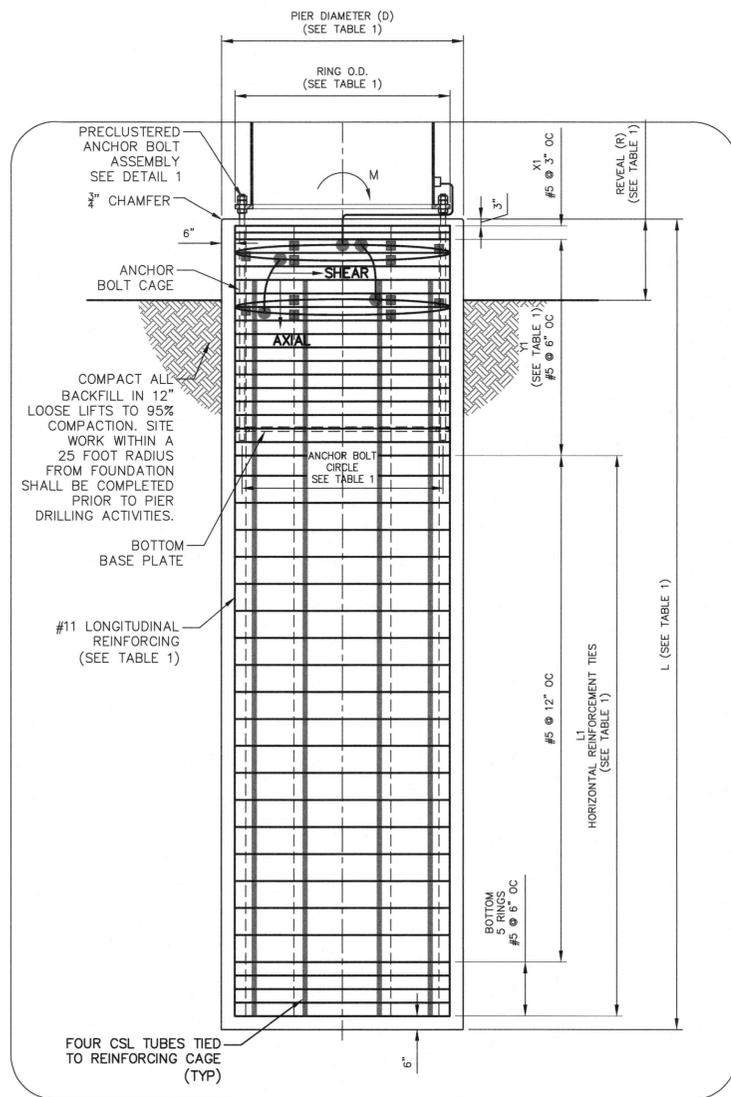
DATE: 05/26/21

DATE: MAY 27, 2021

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DRILLED PIER FOUNDATION PLAN DETAIL
SCALE: 1:40



ELEVATION A-A
SCALE: 1:40

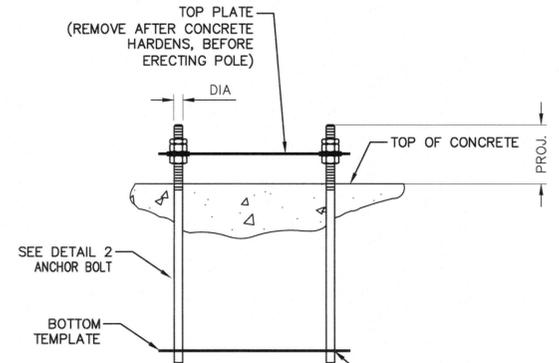
TABLE 1

STR #	TYPE	POLE LENGTH (FT)	REP. BORING	PIER DIMENSIONS				ANCHOR BOLTS					LONGITUDINAL BARS		TIE RINGS						GROUND LINE REACTIONS (NOTE 6)					
				D DIA. (FT)	L LENGTH (FT)	R REVEAL (FT)	VOLUME (CY)	LENGTH (FT)	SIZE	QTY	BOLT CIRCLE DIA. (IN)	PROJECTIO N (IN)	LENGTH (FT)	QTY	LENGTH (FT)	X1 RING OUTSIDE DIA (FT)	QTY	LENGTH (FT)	Y1 RING OUTSIDE DIA (FT)	QTY	LENGTH (FT)	L1 RING OUTSIDE DIA (FT)	QTY	AXIAL (K)	SHEAR (K)	MOMENT (K-FT)
1	DEAD-END	62	GEL-3	6	26	3	27.3	10	2.25	8	45.5	16	25.25	14	0.5	5	2	8	5	16	17	5	20	11.14	32.27	1515
2	DEAD-END	70	-	7	35	3	49.9	10	2.25	16	58.0	16	34.25	18	0.5	6	2	8	6	16	26	6	29	21.96	77.53	4072
3	DEAD-END	112	-	9	53	3	124.9	10	2.25	28	74.5	16	52.25	30	0.5	8	2	8	8	16	44	8	47	51.39	108.14	8612

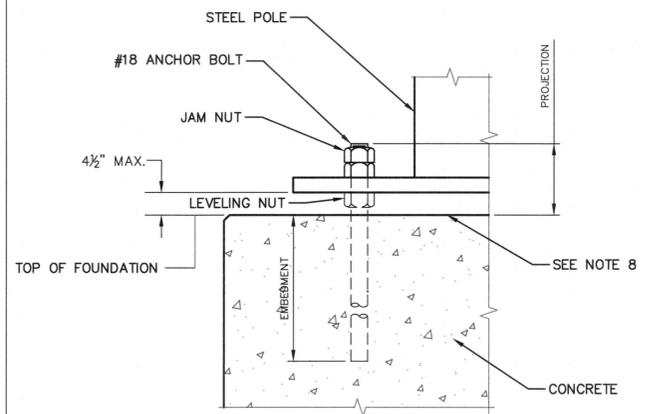
* QUANTITY INCLUDES THE BOTTOM 5 RINGS SPACED AT 6" FOR ALL FOUNDATIONS.

TABLE 2
BURNDY REBAR CLAMPS

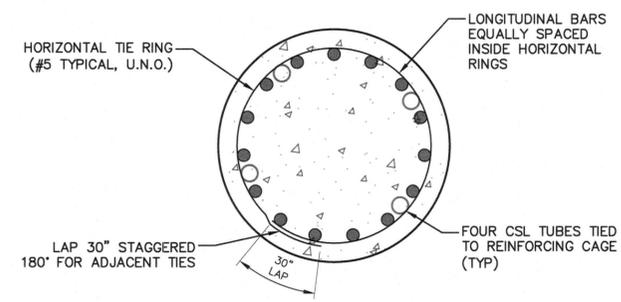
REBAR SIZE	BURNDY CLAMP
5-6	GAR 6429
7-8	GAR 1429
9-10	GAR 1529
11	GAR 1629



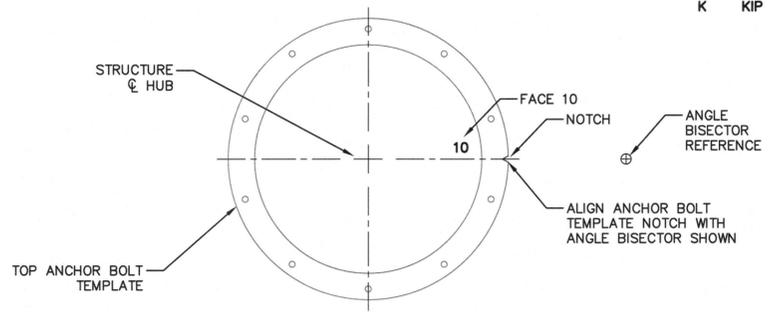
DETAIL 1 ANCHOR BOLT CAGE
NOT TO SCALE



DETAIL 2 ANCHOR BOLT DETAIL
NOT TO SCALE



DETAIL 3 TIE DETAIL
NOT TO SCALE



DETAIL 4 ANCHOR BOLT CAGE INSTALLATION
NOT TO SCALE

(4) CROSSHOLE SONIC LOGGING (CSL) TUBES SHALL BE INSTALLED IN EACH PIER FOUNDATION FOR VERIFICATION OF THE INSTALLED INTEGRITY OF THE FOUNDATION.

NOTES:

- CONCRETE IN ACCORDANCE WITH ASTM C94, OPTION C.
- FOUNDATION CONCRETE:
 - MEETS WSDOT 4000P
 - COMPRESSIVE STRENGTH (28 DAYS): 4,500 PSI
 - SLUMP: 6-8 INCHES
 - MAXIMUM SIZE AGGREGATE: 1 1/2 INCH
 - MINIMUM CEMENT CONTENT: 5.5 BAGS
- REINFORCING: ASTM A615, GRADE 60
- FOUNDATION DIAMETER IS BASED ON ANCHOR BOLT ASSEMBLY RING OD AS SHOWN ON NELLO FABRICATION DRAWINGS.
- FOUNDATION DESIGN BASED ON GEOTECHNICAL INVESTIGATION BY GEOENGINEERS, GEOTECHNICAL ENGINEERING SERVICES REPORT, FEB 2, 2021.
- INSTALL GROUNDING PER ELEVATION A-A, THIS SHEET FOR EACH FOUNDATION. SEE DWG DH860 FOR MORE INFORMATION.
- SLOPE FOUNDATION TOP FROM CENTER TO EDGE, ALL AROUND AND EVENLY NO MORE THAN 2 DEGREES.
- SEE CONSTRUCTION SPECIFICATIONS FOR BORING LOGS.

ABBREVIATIONS:

- OC ON CENTER
- MAX MAXIMUM
- MIN MINIMUM
- SP SPACING
- K KIP



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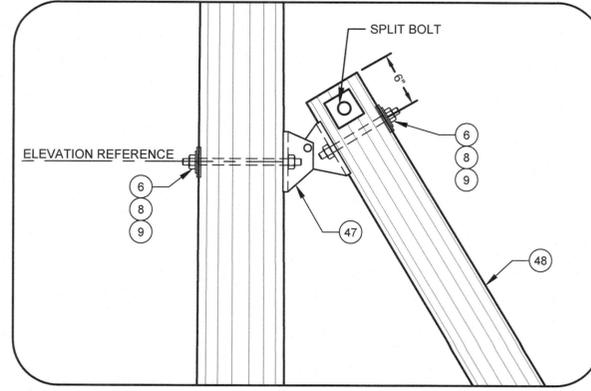
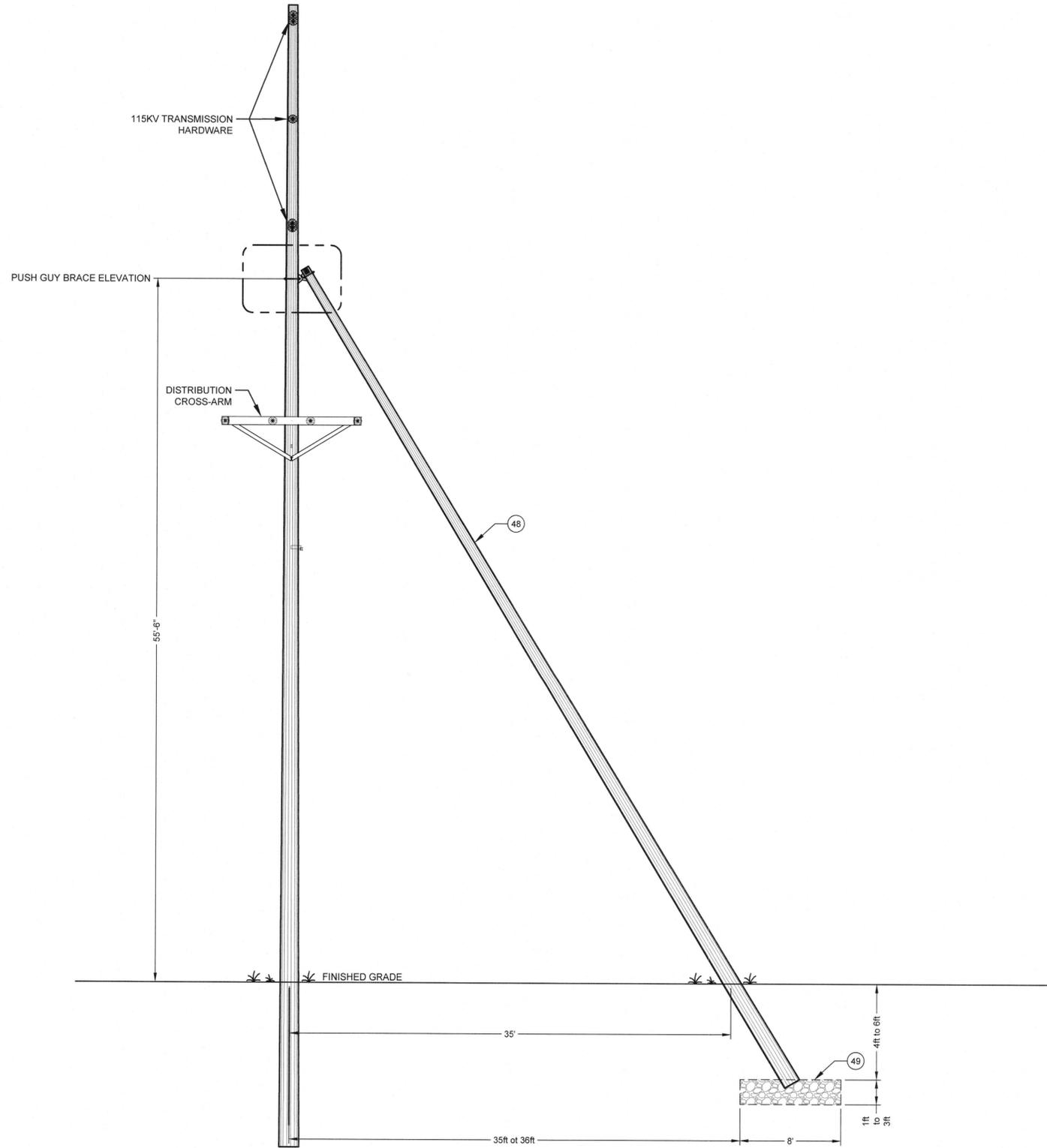
S. AKERS 05/26/21
CHECKED BY DATE
B. KAMINSKI 05/26/21
DIRECTOR ENGR DATE
MCC40799 May 27, 2021
PRINTED BY: 1 SITCOM PLAZA
TACOMA, WA 98421

LOWER WAPATO CREEK HABITAT PROJECT
115KV TRANSMISSION LINE RELOCATION
DRILLED PIER FOUNDATION DETAILS

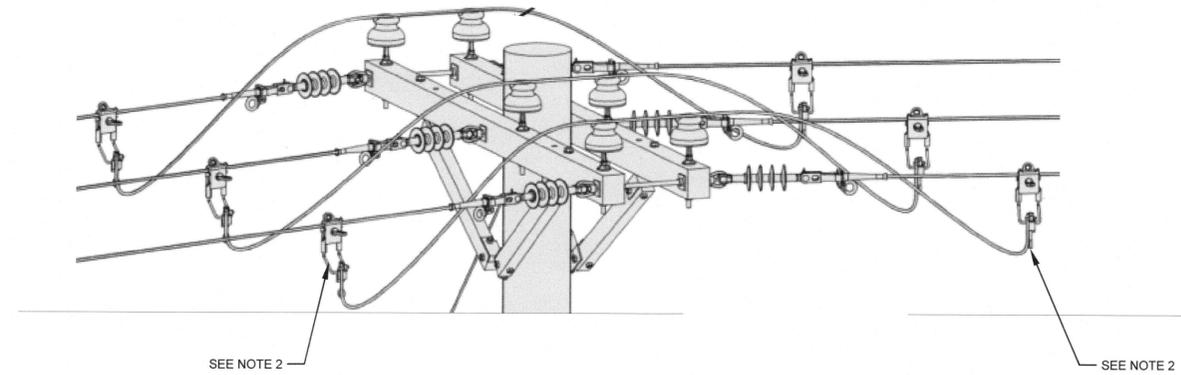
6656 DH861
75 OF 82

CONTRACTS: 071447
M. ID: 101449.01
PHASE: BID SET

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DETAIL "A"
PUSH GUY BRACE DETAIL
NOT TO SCALE



3 PH DOUBLE DEAD END

List of Materials - Power						
Item ID	Qty	ea	Description	Source	Material ID / Catalog #	Manufacturer
8	4	ea	Washer, Curved, 3/4"	TPWR	35069	
9	3	ea	Nut, Lock 3/4" Type N	TPWR		
47	1	ea	Bracket, Push Brace	TPWR	34568	
48	1	ea	Pole, Wood, 75ft Class 1	TPWR	20453	
49	8	yds	Crushed Stone, S57	Contractor		
	1	ea	Cap, Pole 19 In	TPWR	52980	
	3	ea	Bolt, Machine, 3/4" x 24" w/ Nut	TPWR		

- NOTES:
- 1) INSTALL PUSH GUY CONNECTOR AS CLOSE AS POSSIBLE TO THE POINT OF STRAIN, TYPICALLY FOR THE PRIMARY CONDUCTOR.
 - 2) REPLACE STIRRUPS AND HOT LINE CLAMPS WITH FIRE-WEDGE CONNECTORS

TPU STANDARDS
A-OH-1408 PUSH GUY



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MOTT
MACDONALD



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APPROVED:
DIRECTOR ENG. DATE
PRINTED BY: MCC40799 May 27, 2021
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TACOMA, WA 98421

**LOWER WAPATO CREEK
HABITAT PROJECT**

PUSH GUY DETAIL
RANGE: 3E
VERT: MILLW (PORT OF TACOMA TIDAL)
DRAWING SCALE: AS NOTED

TOWNSHIP: 20N
DA-T-HRZ: WA83-SF
PARCEL: 14

6656
DH862
76 OF 82
CONT/CONS: 071447
M ID: 101449.01
PHASE: BID SET

DATE: 05/26/21
APPR: SRA
BY: BRK
REVISION: 0
MARK: BID SET

115KV - 1272 AAC 61/0 "NARCISSUS" - SAG(FT)																
STRUCTURE 1 TO STRUCTURE 2 - RULING SPAN: 268 FEET																
Span No.	Back Str.	Ahead Str.	Length (ft)	10°F	20°F	30°F	40°F	50°F	60°F	70°F	80°F	90°F	100°F	110°F	120°F	Temp.
1	STRUCTURE 1	STRUCTURE 2	267	2.45	2.72	3.02	3.32	3.64	3.95	4.26	4.57	4.87	5.16	5.44	5.71	Sag (ft)
STRUCTURE 2 TO STRUCTURE 3 - RULING SPAN: 121 FEET																
Span No.	Back Str.	Ahead Str.	Length (ft)	10°F	20°F	30°F	40°F	50°F	60°F	70°F	80°F	90°F	100°F	110°F	120°F	Temp.
2	STRUCTURE 2	STRUCTURE 3	324	3.69	4.03	4.38	4.75	5.11	5.47	5.82	6.17	6.51	6.84	7.16	7.48	Tension (lbs)
STRUCTURE 3 TO EXISTING 31685 - RULING SPAN: 147 FEET																
Span No.	Back Str.	Ahead Str.	Length (ft)	10°F	20°F	30°F	40°F	50°F	60°F	70°F	80°F	90°F	100°F	110°F	120°F	Temp.
3	STRUCTURE 3	EXISTING 31685	186	0.93	1.05	1.19	1.36	1.56	1.79	2.04	2.30	2.56	2.81	3.06	3.30	Sag (ft)

115KV - 1272 AAC 61/0 "NARCISSUS" - 3RD WAVE RETURN TIME (SEC)																
STRUCTURE 1 TO STRUCTURE 2 - RULING SPAN: 268 FEET																
Span No.	Back Str.	Ahead Str.	Length (ft)	10°F	20°F	30°F	40°F	50°F	60°F	70°F	80°F	90°F	100°F	110°F	120°F	Temp.
1	STRUCTURE 1	STRUCTURE 2	267	4.68	4.94	5.19	5.45	5.7	5.94	6.18	6.39	6.6	6.79	6.97	7.15	Time (s)
STRUCTURE 2 TO STRUCTURE 3 - RULING SPAN: 121 FEET																
Span No.	Back Str.	Ahead Str.	Length (ft)	10°F	20°F	30°F	40°F	50°F	60°F	70°F	80°F	90°F	100°F	110°F	120°F	Temp.
2	STRUCTURE 2	STRUCTURE 3	324	5.74	6	6.26	6.52	6.76	6.99	7.22	7.43	7.63	7.82	8	8.18	Tension (lbs)
STRUCTURE 3 TO EXISTING 31685 - RULING SPAN: 147 FEET																
Span No.	Back Str.	Ahead Str.	Length (ft)	10°F	20°F	30°F	40°F	50°F	60°F	70°F	80°F	90°F	100°F	110°F	120°F	Temp.
3	STRUCTURE 3	EXISTING 31685	186	2.89	3.06	3.26	3.48	3.73	4	4.27	4.53	4.78	5.02	5.23	5.43	Time (s)

6656
DH864

77 OF 82
LOWER WAPATO CREEK
HABITAT PROJECT

STRINGING CHARTS FOR TRANSMISSION CONDUCTOR
TOWNSHIP: 20N RANGE: 3E SECTION: 1
DATE: 07/14/47 DAT-HRZ: WA83-SF VERT: MILLW (PORT OF TACOMA TIDAL) DRAWING SCALE: AS NOTED
M.I.D.: 101449.01 PARCEL: 14
PHASE: BID SET

APPROVED:

[Signature]
DIRECTOR FOR ENG. DATE: 05/26/21
PRINTED BY: MCC40799 May 27, 2021
PORT ADDRESS: 1 SITCOM PLAZA
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S. AKERS 05/26/21

CHECKED BY: DATE

B. KAMINSKI 05/26/21

PROJ. ENGR DATE



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MARK: 0 REVISION: 0
BY: BRK
APPR: SRA
DATE: 05/26/21

2" MOD - Figure 8 Aerial Self Supporting Duct w/o Fiber (0.85 LBS/FT)

Table with 17 columns (Span No., Back Str., Ahead Str., Length (ft), 10°F to 120°F, Temp., Tension (lbs), Sag (ft)) and 4 rows of data for two ruling spans (268 FT and 259 FT).

Table with 17 columns (Span No., Back Str., Ahead Str., Length (ft), 10°F to 120°F, Temp., Tension (lbs), Time (s)) and 4 rows of data for two ruling spans (268 FT and 259 FT).

2" MOD - Figure 8 Aerial Self Supporting Duct w/ Fiber (1.93 LBS/FT)

Table with 17 columns (Span No., Back Str., Ahead Str., Length (ft), 10°F to 120°F, Temp., Tension (lbs), Sag (ft)) and 4 rows of data for two ruling spans (268 FT and 259 FT).

Table with 17 columns (Span No., Back Str., Ahead Str., Length (ft), 10°F to 120°F, Temp., Tension (lbs), Time (s)) and 4 rows of data for two ruling spans (268 FT and 259 FT).



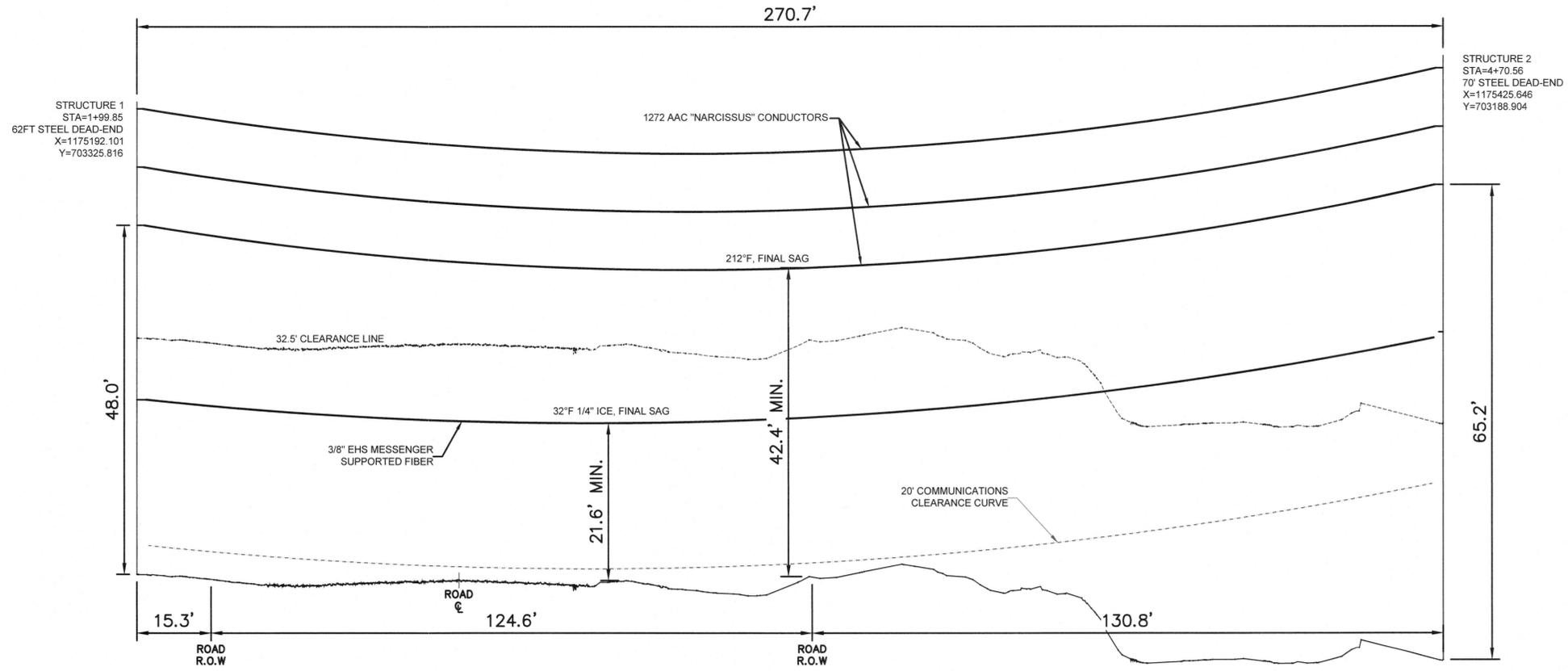
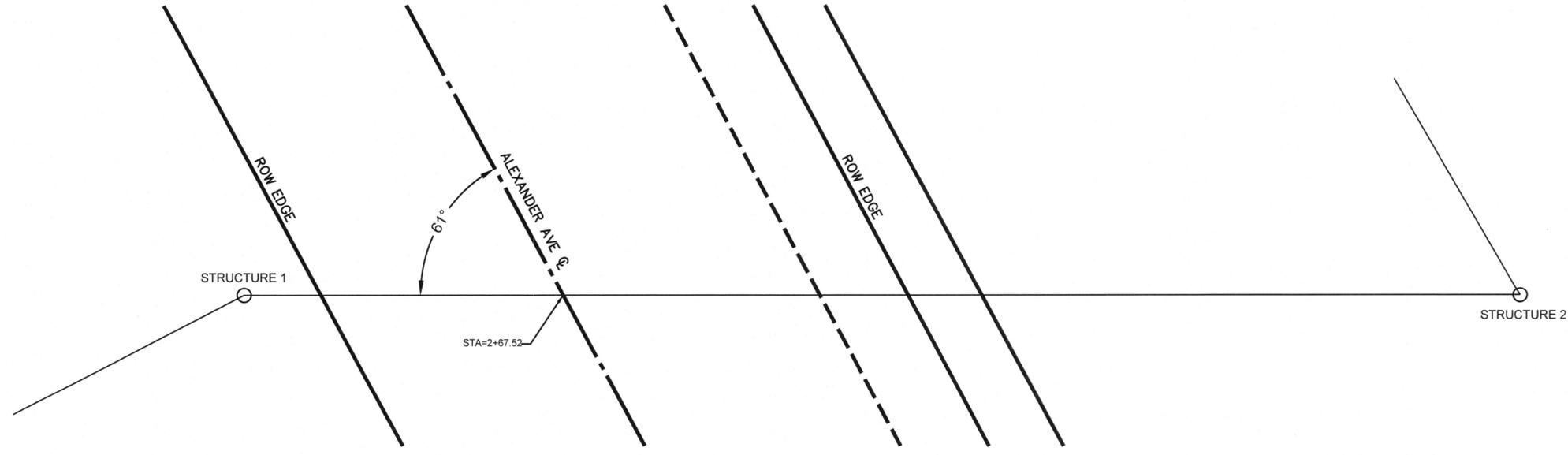
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S. AKERS 05/26/21 CHECKED BY B. KAWINSKI 05/26/21 DIRECTOR ENGR. DATE 5-28-21 PROJECT ENGR DATE MCCA0799 MAY 27, 2021 PRINTED BY: PORT ADDRESS: 1 SITCOM PLAZA TACOMA, WA 98421

LOWER WAPATO CREEK HABITAT PROJECT STRINGING CHARTS FOR COMMUNICATION FIBER RANGE: 3E SECTION: 1 TOWNSHIP: 20N DAT-HRZ: WA83-SF VERT: MILLW (PORT OF TACOMA TIDAL) DRAWING SCALE: AS NOTED PARCEL: 14

6656 DH866 79 OF 82 CONT/CONS: 071447 M. ID: 101449.01 PHASE: BID SET



15.0 FT. HORIZ. SCALE
10.0 FT. VERT. SCALE



6656
DH867

LOWER WAPATO CREEK
HABITAT PROJECT

APPROVED: *[Signature]*
S. AKERS
CHECKED BY: B. KAMINSKI
DATE: 05/26/21

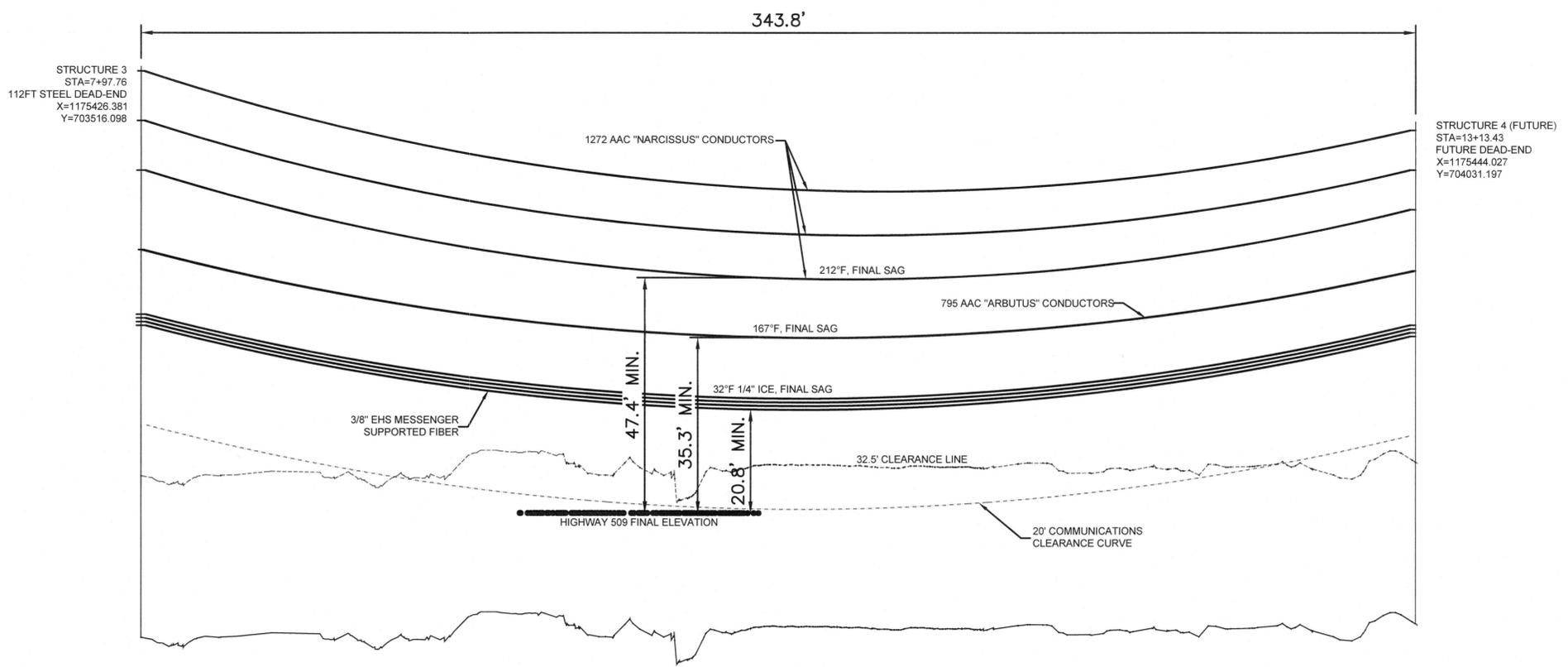
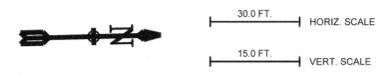
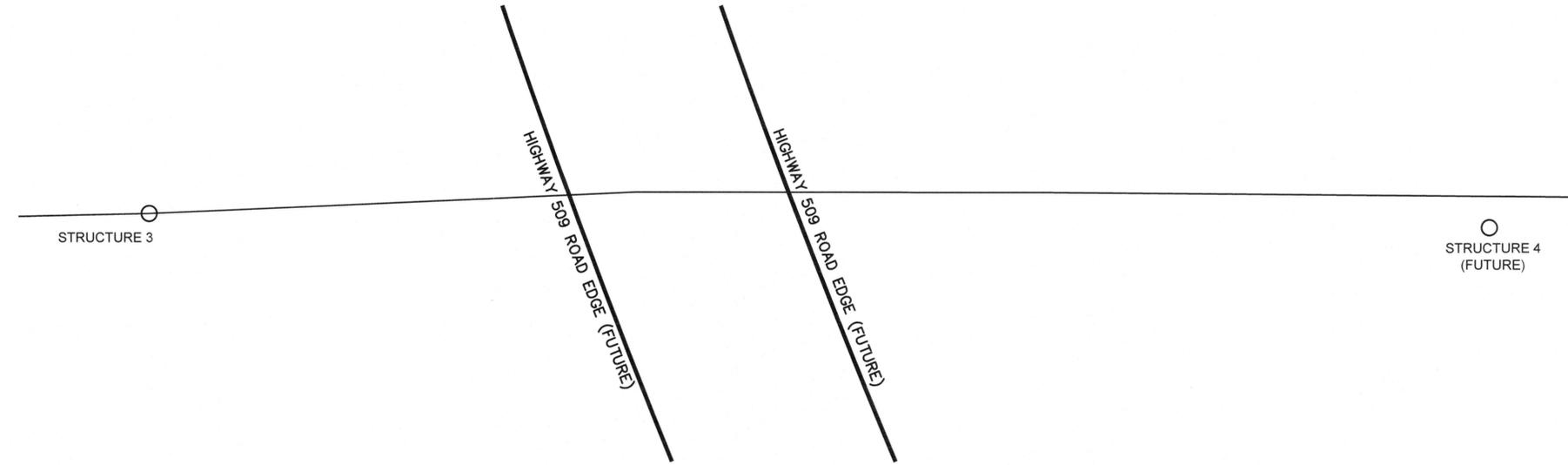


M M
MOTT
MACDONALD
MARK: 0
REVISION: 0
BY: BRK
DATE: 05/26/21

Port of
Tacoma
1601 5th Avenue
Suite 800
Seattle, Washington 98101
T +1 (425) 778 8243
APPR: SRA
DATE: 05/26/21

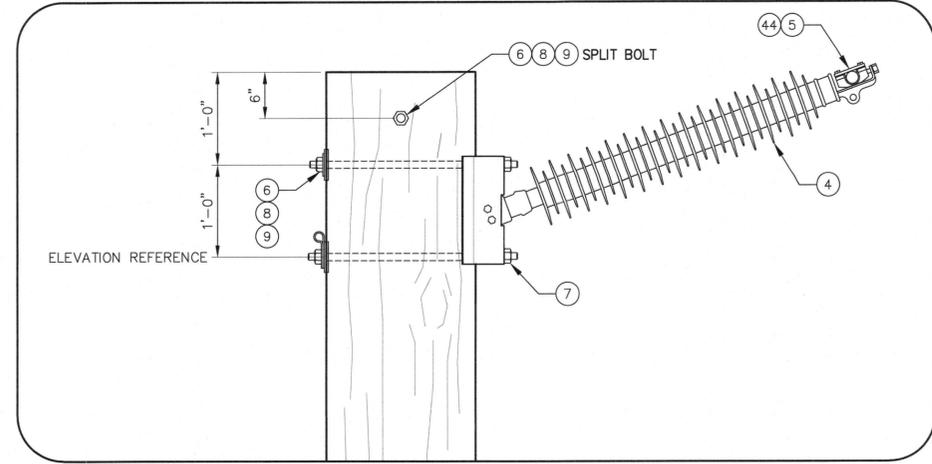
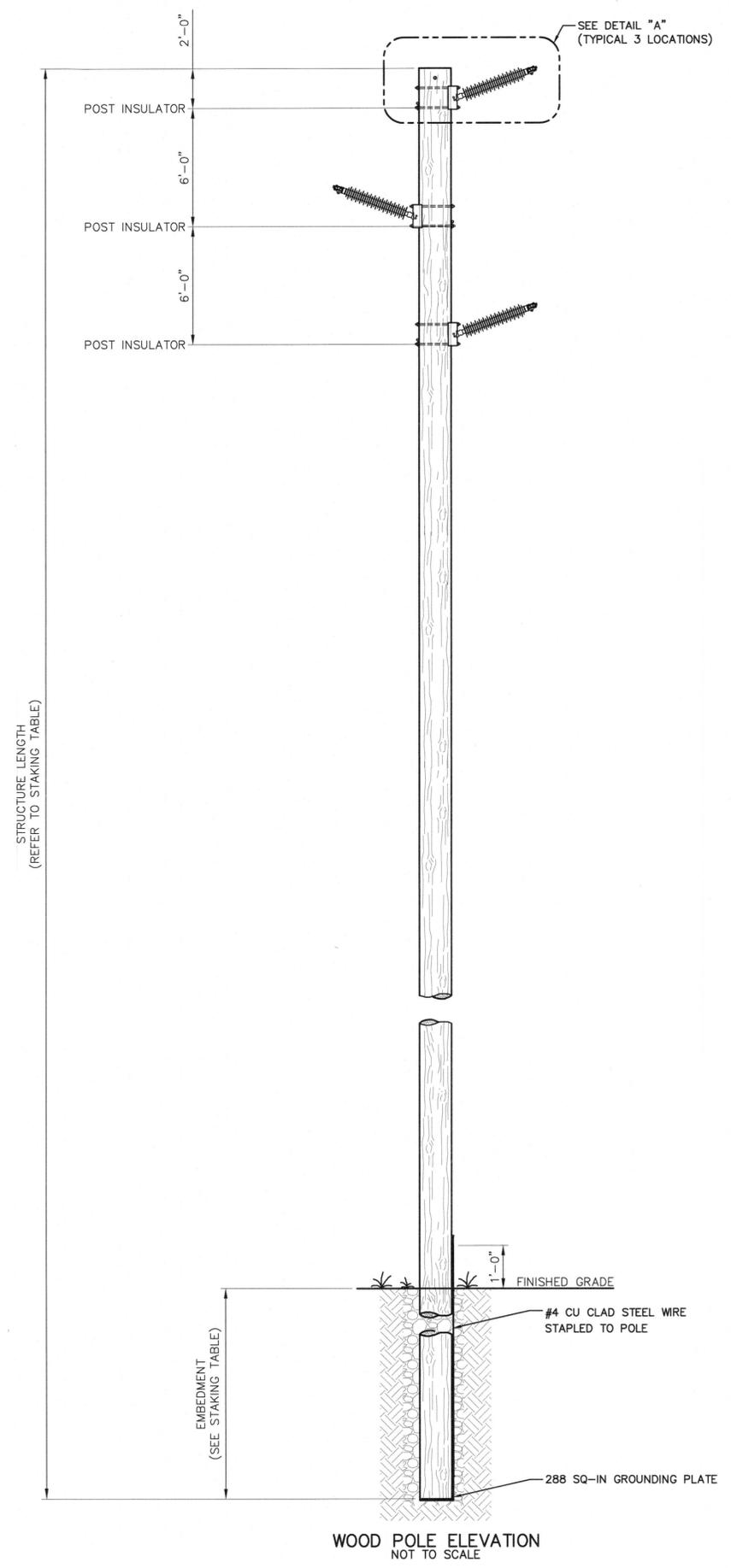
80 OF 82
CONT/CONS: 071447
M. ID: 101449.01
PHASE: BID SET
ALEXANDER AVE. CROSSING DETAIL
RANGE: 3E SECTION: 1
TOWNSHIP: 20N
DATE-HRZ: WA89-SF
VERT: MLLW (PORT OF TACOMA TIDAL)
DRAWING SCALE: AS NOTED
PARCEL: 14
PORT ADDRESS: 1 SITCOM PLAZA
TACOMA, WA 98421

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<p>6656 DH868 81 OF 82</p>		<p>LOWER WAPATO CREEK HABITAT PROJECT</p>		<p>APPROVED: <i>[Signature]</i> DIRECTOR ENG. DATE: 5/28/21</p>		<p>S. AKERS 05/26/21 CHECKED BY DATE: B. KAMINSKI 05/26/21</p>		<p>1601 5th Avenue Suite 800 Seattle, Washington 98101 T +1 (425) 778 6243</p>		<p>Port of Tacoma P.O. BOX 887 TACOMA, WA 98101 (253)835-5841</p>	
<p>CONTR/CONS: 071447 M. ID: 101449.01 PHASE: BID SET</p>		<p>HIGHWAY 509 CROSSING DETAIL RANGE: 3E SECTION: 1 DATE-HRZ: WA83-SF VERT: MLLW (PORT OF TACOMA TIDAL) PARCEL: 14 DRAWING SCALE: AS NOTED</p>		<p>PRINTED BY: MCC40799 May 27, 2021 PORT ADDRESS: 1 SITCOM PLAZA TACOMA, WA 98421</p>		<p>MARK: 0 REVISION: 0 BY: BRK SRA</p>		<p>DATE: 05/26/21</p>		<p>APPR: SRA BY: BRK</p>	

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DETAIL "A"
POST INSULATOR ASSEMBLY
NOT TO SCALE

List of Materials - Power					
Item ID	Qty	Description	Source	Material ID / Catalog #	Manufacturer
4	3	ea Insulator Line Post, 115kV, 450kV BIL	TPWR	35394	
5	3	ea Clamp, Line Post 1272 AAC	TPWR	34613	
7	6	ea Washer, Round, 3/4"	TPWR	35066	
8	8	ea Washer, Curved, 3/4"	TPWR	35069	
9	7	ea Nut, Lock 3/4" Type N	TPWR		
44	3	ea Line Guard, 1272 AAC	TPWR	34744	
7	ea	Bolt, Machine, 3/4" x 24" w/ Nut	TPWR		
1	ea	Pole, Wood, 75ft Class H2	TPWR	20455	
1	ea	Cap, Pole 19 In	TPWR	52980	
1	ea	Plate, Grounding, 288 Sq In	TPWR	41132	
12	ea	Staples	TPWR	44448	
20	ft	Wire, #4 Cu Clad Stl	TPWR	52230	

- NOTES:
- 1) REFER TO STAKING TABLE FOR DRAWING DETAIL NUMBERS.
 - 2) PLACE ON BELLY OF POLE ALIGN THE BELLY WITH THE CONDUCTOR
 - 3) HARDWARE LENGTHS TO BE DETERMINED BY PURCHASER OR INSTALLATION CONTRACTOR BASED ON WOOD POLES RECEIVED IN THE FIELD.
 - 4) INST GROUNDING PLATE PER TPU STANDARD A-OH-1100 FIGURE A

TPU STANDARDS
A-XM-3010 115KV TANGENT STAGGERED

6656 DH869 82 OF 82	LOWER WAPATO CREEK HABITAT PROJECT		APPROVED: <i>[Signature]</i> DIRECTOR ENGDATE: 5-28-24	S. AKERS CHECKED BY: B. KAMINSKI DATE: 05/26/21
	CONT/CONS: 071447 M. ID: 101449.01 PHASE: BID SET	TOWNSHIP: 20N DAT-HRZ: WA83-SF PARCEL: 14	A-XM-3010 STAGGERED WOOD TANGENT POLE RANGE: 3E VERT: MILLW (PORT OF TACOMA TIDAL) SECTION: 1 DRAWING SCALE: AS NOTED	PRINTED BY: KAM82092 PROJ. ENGR: May 27, 2021 PORT ADDRESS: 1 SITCOM PLAZA TACOMA, WA 98421
6656 Port of Tacoma <small>P.O. BOX 1837 TACOMA, WA 98401 (203)85-5841</small>		REVISION: 0 BY: BRK DATE: 05/26/21		APPR: SRA DATE: 05/26/21



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