Port of Vancouver USA

TERMINAL REHABILITATION AND IMPROVEMENT PROGRAM PROJECT 2

BERTH 8/9 EXTENSION AND EFFICIENCY IMPROVEMENTS

PHASE 1: BERTH 9 IMPROVEMENTS

PHASE 2: BERTH 8 IMPROVEMENTS

SHEET LIST

SEE SHEET G01 FOR SHEET LIST

DESIGN TEAM

CIVIL AND STRUCTURAL ENGINEER

WSP USA Inc.
1207 Washington Street
Suite 115
Vancouver, WA 98660
TEL: 360-823-6100
FAX: 360-823-6101

ELECTRICAL ENGINEER

R&W ENGINEERING, INC.
9615 S.W. Allen Boulevard
Suite 107
Beaverton, Oregon 97005
Phone: (503) 776-3317
Office: (503) 292-6000
E-mail: rweng@rweng.com
Project No.: 606.036.001 Contact: DENNIS HALL

DREDGE ENGINEER

kpff
1601 5th Avenue, Suite 1300
Seattle, Washington 98101
(206) 382-0600 Fax (206) 382-0500

PROJECT DESCRIPTION

THIS PROJECT INCLUDES A WHARF EXTENSION AND WHARF APRONS AT TERMINAL 3, BERTHS 8 AND 9. THE PROJECT WILL BE CONSTRUCTED IN TWO PHASES:

PHASE 1: DOWNSTREAM EXTENSION OF BERTH 9 AND A BERTH 9 APRON STRUCTURE

PHASE 2: BERTH 8 APRON STRUCTURE

POV PROJECT NUMBER: CP-0441

OWNER INFORMATION

PORT OF VANCOUVER
3103 NW LOWER RIVER ROAD
VANCOUVER, WA 98660

COMMISSIONERS

DON ORANGE
ERIC LABRANT
JACK BURKMAN

EXECUTIVE DIRECTOR

JULIANNA MARLER

City of VANCOUVER WASHINGTON

Plans reviewed for compliance with City Standards and Policies

Case Number _____

Recommended for Approval:

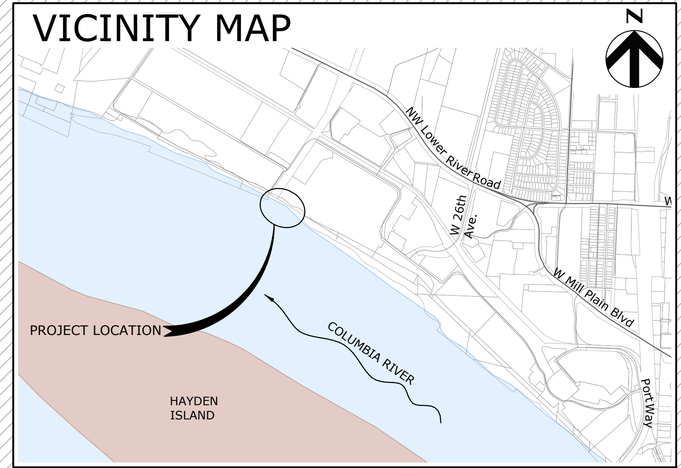
Fire Review	Date
Water Review	Date
Sewer Review	Date
Grading (UBC Compliance)	Date
Stormwater and Erosion Control	Date
Transportation Review	Date
Traffic Review	Date
Planning Review	Date

Improvement Summary

Water Main Footage			0	LF
Sewer Main Footage			0	LF
Septic System Decommisioned			0	EA
Total Impervious Surface			0	SF
Private Impervious Surface			0	AC
Grading	Cut 0	CY Fill	0	CY
Total Trenching within City Right of Way			0	LF
Total Street Improvements (Curb/Pavmnt)			0	LF
	Arterial		Local	
Full St Const.	0	LF	0	LF
Total Pavmnt Add	0	SF	0	SF
Curb/Gutter	0	LF	0	LF
Sidewalk	0	SF	0	SF
Street Lights	0	#	0	#
Traffic Signals	0	#		

rev. 4/14/2010

VICINITY MAP



90% SUBMITTAL

DIRECTOR OF ENGINEERING AND PROJECT DELIVERY DATE

PORT OF VANCOUVER, USA

CALL
2 BUSINESS DAYS
BEFORE YOU DIG
1.800.424.5555
"It's the Law"
NORTHWEST UTILITY NOTIFICATION CENTER

Dec 29, 2023 - 4:24pm

USJH675409 C:\Users\USJH675409\WSP 0365\Portland CADD Projects - PDX CADD Projects\A19.01981\002\CADD\Dwgs\01_G00.dwg

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GENERAL NOTES

CODES AND STANDARDS:

1. ALL METHODS AND MATERIALS SHALL CONFORM TO THE INTERNATIONAL BUILDING CODE (IBC) 2021 EDITION AS AMENDED BY THE STATE OF WASHINGTON AND THE CITY OF VANCOUVER EXCEPT AS NOTED BELOW.
2. THE CITY OF VANCOUVER MUNICIPAL CODE (VMC), CHAPTER 14 SHALL APPLY TO WORK AS IDENTIFIED IN THE PLANS AND SPECIFICATIONS.
3. THE WASHINGTON STATE 2023 STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION (M41–10), AS PREPARED BY THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION (WSDOT), SHALL APPLY TO WORK AS IDENTIFIED IN THE SPECIFICATIONS.
4. REINFORCED CONCRETE WORK SHALL CONFORM TO THE REQUIREMENTS OF "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS" (ACI 301–10), "GUIDE TO PRESENTING REINFORCING STEEL DESIGN DETAILS" (ACI 315R–18) AND "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" (ACI 318–19).
5. STRUCTURAL AND MISCELLANEOUS STEEL FABRICATION AND ERECTION THEREOF SHALL CONFORM TO: "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES" (AISC 303–10) AND "SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS" (AISC 360–10).
6. WELDING OF STRUCTURAL AND MISCELLANEOUS STEEL SHALL CONFORM TO "STRUCTURAL WELDING CODE – STEEL" (AWS D1.1).
7. WELDING OF REINFORCING STEEL SHALL CONFORM TO "STRUCTURAL WELDING CODE – REINFORCING STEEL" (AWS D.1.4)
8. U.S. DEPARTMENT OF DEFENSE UNIFIED FACILITIES CRITERIA, UFC 4–152–01, "DESIGN: PIERS & WHARVES"
9. U.S. DEPARTMENT OF DEFENSE UNIFIED FACILITIES CRITERIA, UFC 4–159–03, "DESIGN: MOORINGS".
10. CALIFORNIA BUILDING CODE (CBC), CHAPTER 31F – MARINE OIL TERMINALS ENGINEERING & MAINTENANCE STANDARDS (MOTEMS).
11. PIANC: GUIDELINES FOR THE DESIGN OF FENDER SYSTEMS.

GENERAL:

1. THESE NOTES CONTAIN GENERAL INFORMATION AND ARE NOT COMPLETE FOR CONSTRUCTION PURPOSES. VERIFY INFORMATION GIVEN HERE WITH THE SPECIFICATIONS AND OTHER DRAWINGS, AND BRING ANY CONFLICTS TO THE ATTENTION OF THE PORT BEFORE BEGINNING AFFECTED WORK. THE PORT WILL RESOLVE ANY CONFLICTS.
2. BERTHS 9 & 10 WILL BE IN OPERATION DURING CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE THEIR WORK WITH THE PORT AND SHALL KEEP PERSONNEL, MATERIALS, AND EQUIPMENT CLEAR OF ALL OPERATION ACTIVITIES.
3. THE IMPLEMENTATION OF A BEST MANAGEMENT PRACTICE (BMP) PLAN DURING CONSTRUCTION IS REQUIRED. THE CONTRACTOR SHALL PREVENT, AVOID, AND MINIMIZE THE POTENTIAL FOR DEMOLITION, CONSTRUCTION, OR OTHER DEBRIS FROM FALLING INTO THE WATER BY UTILIZING TARPS, FLOATING PLATFORMS, OR OTHER MEANS. IN THE EVENT THAT DEBRIS ENTERS THE WATER, THE CONTRACTOR SHALL IMMEDIATELY REMOVE THE DEBRIS AND DISPOSE OF IT IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE, AND LOCATE REGULATIONS. THE CONTRACTOR SHALL MONITOR OVERWATER DEMOLITION AND CONSTRUCTION ACTIVITIES TO FACILITATE IMMEDIATE REMOVAL OF ANY DEBRIS THAT ENTERS THE WATER. CONTAINMENT METHODS SHALL BE MODIFIED IF MONITORING INDICATES THAT THE METHODS USED ARE NOT EFFECTIVE.
4. ALL DIMENSIONS AND DETAILS SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO FABRICATION AND CONSTRUCTION.
5. PROVIDE TEMPORARY SUPPORT TO EXISTING STRUCTURE AS REQUIRED TO MAINTAIN STABILITY, AVOID UNDUE STRESS, AND PREVENT DAMAGE PRIOR TO AND DURING CONSTRUCTION. THE CONTRACTOR SHALL SUBMIT DETAILS FOR TEMPORARY SUPPORT TO THE PORT FOR REVIEW.
6. FIELD VERIFY ALL FEATURES, DIMENSIONS, AND ELEVATIONS PRIOR TO FABRICATION OF ASSEMBLIES OR CONSTRUCTION. THE CONDITIONS SHOWN ON THESE DRAWINGS ARE BASED ON AVAILABLE EXISTING DATA. NOTIFY THE PORT OF ANY DISCREPANCIES BEFORE BEGINNING THE AFFECTED WORK.
7. DIMENSIONS, ELEVATIONS, AND DETAILS OF EXISTING STRUCTURES ARE INCLUDED ON THESE DRAWINGS FOR REFERENCE ONLY AND MAY NOT REFLECT ACTUAL FIELD CONDITIONS. VERIFY DIMENSIONS AND DETAILS, AND NOTIFY THE PORT OF ANY MISALIGNMENT, DISCREPANCIES, DIMENSIONS THAT NEED MODIFICATION, OR OMISSIONS BEFORE THE SHOP DRAWING SUBMITTALS.
8. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR FIELD VERIFICATION OF EXISTING STRUCTURE GEOMETRY AND DETERMINATION OF STRUCTURAL CAPACITY OF THE EXISTING AND/OR MODIFIED EXISTING STRUCTURES FOR THE PURPOSES OF CONSTRUCTION LOADS.
9. ANY DAMAGE CAUSED BY THE CONTRACTOR'S OPERATIONS TO EXISTING FEATURES, STRUCTURES, AND UTILITIES THAT ARE TO REMAIN, SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
10. THE CONTRACTOR SHALL SUPPLY, INSTALL, AND MAINTAIN AT ALL TIMES FLOATING DEBRIS BOOMS AROUND ALL ACTIVE IN–WATER AND OVER WATER WORK AREAS.
11. THE CONTRACTOR SHALL PERFORM WORK IN ACCORDANCE WITH ALL PERMIT REQUIREMENTS.

DEMOLITION:

1. THE CONTRACTOR SHALL CONTAIN THE DEMOLITION WITHIN THE LIMITS DESIGNATED, TO PREVENT DAMAGE TO EXISTING STRUCTURES, UTILITIES, OR FACILITIES, AND KEEP ALL DEBRIS FROM FALLING INTO THE WATER.
2. PRIOR TO GENERAL DEMOLITION, THE CONTRACTOR SHALL SAWCUT WHERE NOTED, OR OTHERWISE PROVIDE A SMOOTH CLEAN BREAK BETWEEN ITEMS THAT ARE TO BE DEMOLISHED AND ITEMS THAT ARE TO REMAIN.
3. ALL DEMOLITION MATERIAL, EXCEPT AS NOTED, SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE COMPLETELY REMOVED AND DISPOSED OF BY THE CONTRACTOR. THE REMOVAL, HANDLING, AND DISPOSAL OF ALL DEMOLITION MATERIALS, INCLUDING CREOSOTE–TREATED TIMBERS, SHALL BE IN STRICT ACCORDANCE WITH ALL STATE AND FEDERAL REQUIREMENTS. PROPER DISPOSAL OF ALL DEMOLITION AND CONSTRUCTION MATERIALS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE ITSELF WITH THE MATERIALS TO BE DISPOSED OF AND ALL GOVERNING AGENCIES AND PERMIT REQUIREMENTS.
4. EXISTING PILING TO BE REMOVED SHALL BE COMPLETELY REMOVED BY EXTRACTION.

SURVEY CONTROL & PROJECT DATUM INFORMATION:

1. PROJECT DATUM:
   A. HORIZONTAL DATUM/BASIS OF BEARING: WASHINGTON SOUTH STATE PLANE COORDINATE SYSTEM (ZONE 3602), NAD83/2007, REFERENCED TO PORT OF VANCOUVER CONTROL NETWORK.
   B. VERTICAL DATUM: NGVD29 (PRE–1947 ADJUSTMENT) = CRD + 1.33'
2. CONTROL POINT:
   BASED ON TIES TO PORT OF VANCOUVER CONTROL POINTS 105R, 110, 114, 115, 118, 120 AND 121 AS SHOWN IN R.O.S. BK. 59, PG. 179.

NOAA TIDAL INFORMATION:

100 YR FLOOD	26.43	FEET	MEAN SEA LEVEL (MSL)	4.62	FEET
ORDINARY HIGH WATER (OHW)	16.77	FEET	MEAN LOW WATER (MLW)	3.49	FEET
MEAN HIGHER HIGH WATER (MHHW)	6.46	FEET	MEAN LOWER LOW WATER (MLLW)	3.27	FEET
MEAN HIGH WATER (MHW)	5.93	FEET	EXTREME LOW WATER (ELW)	1.33	FEET

SHEET LIST

DRAWING	SHEET	SHEET CONTENTS
		GENERAL
G00	1	COVER SHEET, SHEET LIST AND VICINITY MAP
G01	2	GENERAL NOTES AND SHEET LIST
G02	3	LEGEND, SYMBOLOGY AND ABBREVIATIONS
G03	4	EXISTING SITE PLAN
G04	5	SITE PLAN
G05	6	SOIL BORING LOGS
		EROSION CONTROL
EC01	7	EROSION CONTROL OVERALL PLAN
EC02	8	EROSION CONTROL – BERTH 9 EXTENSION
EC03	9	EROSION CONTROL – BERTH 9 APRON
EC04	10	EROSION CONTROL – BERTH 8 APRON
EC05	11	EROSION CONTROL DETAILS
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D01	12	DEMOLITION PLAN OVERALL PLAN
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D03	14	DEMOLITION PLAN – BERTH 9 APRON
D04	15	DEMOLITION PLAN – BERTH 8 APRON
D05	16	DEMOLITION DETAILS
		CIVIL
C01	17	DREDGING AND SHORELINE PROTECTION OVERALL PLAN
C02	18	DREDGING PLAN
C03	19	DREDGING PROFILE
C04	20	SHORELINE PROTECTION PLAN – BERTH 9 EXTENSION
C05	21	SHORELINE PROTECTION PLAN – BERTH 9 APRON
C06	22	SHORELINE PROTECTION PLAN – BERTH 8 APRON
C07	23	SHORELINE PROTECTION SECTIONS – BERTH 9 EXTENSION
C08	24	SHORELINE PROTECTION SECTIONS – BERTH 9 APRON – SHEET 1
C09	25	SHORELINE PROTECTION SECTIONS – BERTH 9 APRON – SHEET 2
C10	26	SHORELINE PROTECTION SECTIONS – BERTH 8 APRON
C11	27	SHORELINE PROTECTION DETAILS – SHEET 1
C12	28	SHORELINE PROTECTION DETAILS – SHEET 2
C13	29	DRAINAGE PLAN – BERTH 9 EXTENSION
C14	30	DRAINAGE PLAN – BERTH 9 APRON
C15	31	DRAINAGE PLAN – BERTH 8 APRON
C16	32	PAVEMENT GRADING PLAN – BERTH 9 EXTENSION
C17	33	PAVEMENT GRADING PLAN – BERTH 9 APRON
C18	34	PAVEMENT GRADING PLAN – BERTH 8 APRON
C19	35	UTILITY PLAN – BERTH 9 EXTENSION
C20	36	UTILITY PLAN – BERTH 9 APRON
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CD02	40	CIVIL DETAILS – SHEET 2
CD03	41	CIVIL DETAILS – SHEET 3
CD04	42	CIVIL DETAILS – SHEET 4
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S02	44	STRUCTURAL NOTES – SHEET 2
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S04	46	MOORING ARRANGEMENT PLAN
S05	47	SURFACE FEATURES PLAN – BERTH 9 EXTENSION
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S07	49	SURFACE FEATURES PLAN – BERTH 8 APRON
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S49	90	NOT USED
S50	91	BERTH 8/9 MOORING DOLPHIN & WALKWAY PLAN
S51	92	BERTH 8/9 MOORING DOLPHIN & WALKWAY DETAILS – SHEET 1
S52	93	BERTH 8/9 MOORING DOLPHIN & WALKWAY DETAILS – SHEET 2
S53	94	BERTH 8/9 MOORING DOLPHIN & WALKWAY DETAILS – SHEET 3
S54	95	BERTH 8/9 MOORING DOLPHIN & WALKWAY DETAILS – SHEET 4
S55	96	WALKWAY SUPPORT DETAILS
S56	97	NOT USED
S57	98	NOT USED
S58	99	NOT USED
S59	100	NOT USED
S60	101	MHC OPERATIONS AT EXISTING BERTHS
		ELECTRICAL
E01	102	LEGEND, SYMBOLOGY, AND ABBREVIATIONS
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E07	108	PARTIAL SITE PLAN BERTH 9 – PHOTOMETRIC
E08	109	PARTIAL SITE PLAN BERTH 8 – PHOTOMETRIC
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E12	113	ELECTRICAL PANEL SCHEDULES
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E23	124	PARTIAL SITE PLAN BERTH 8 – EXISTING PHOTOMETRIC
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ES05	129	ELECTRICAL VEHICLE CHARGING STATION ILLUSTRATIONS
ES06	130	MEDIUM VOLTAGE MANHOLE DETAILS

90% SUBMITTAL Dec 29, 2023 - 4:25pm

BRIAN DEAN BARD
STATE OF WASHINGTON
57460
REGISTERED
PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: NOT TO SCALE

DRAWN BY: JTH

APPROVED BY: BDB

DATE: 22-Dec-23

REVISION NO. DATE.

PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
GENERAL NOTES AND SHEET LIST

DRAWING NUMBER
G01

SHEET NUMBER 2 OF 130

POV PROJECT NO:
CP-0441

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EXISTING SURVEY SYMBOLOGY

- TELEPHONE RISER
- FIBER OPTIC J–BOX
- FIBER OPTIC MANHOLE
- GENERIC UTILITY MANHOLE
- SIGN AS NOTED
- 6" DIA. BOLLARD UNLESS NOTED OTHERWISE
- 4" DIA. BOLLARD
- STORM MANHOLE
- (C.B.) STORM CATCH BASIN
- SANITARY SEWER MANHOLE
- CLEANOUT
- SANITARY SEWER STRUCTURE
- WATER VALVE
- BLOW–OFF VALVE
- FIRE HYDRANT
- FIRE ALARM
- PIV VALVE
- WATER METER
- POWER POLE
- TRANSFORMER
- LIGHT POLE
- ELECTRICAL METER
- ELECTRICAL J–BOX
- ELECTRICAL CABINET
- ELECTRICAL VAULT
- B–### BORE HOLE
- MONITORING WELL
- WATER MANHOLE
- RAILROAD SWITCH LEVER AS NOTED
- FOUND MONUMENT AS NOTED
- CONIFEROUS TREE
- DECIDUOUS TREE
- CONC. CONCRETE
- L.P. LIGHT POLE
- TOG TOP OF GRATE
- 125 KIP BOLLARD
- 18" OCTAGON PIPE PILE, PLUMB/BATTER
- 18" PIPE PILE, PLUMB/BATTER
- 12" FENDER PILE
- 15 SURVEY MAJOR CONTOUR
- 14 SURVEY MINOR CONTOUR
- BUILDING FACE
- CENTER LINE RAILROAD TRACKS
- OH OVERHEAD POWER LINE
- STM UNDERGROUND/UNDER DECK STORM LINE
- SAN UNDERGROUND SANITARY SEWER LINE
- PWR UNDERGROUND/UNDER DECK POWER LINE
- FO UNDERGROUND FIBER OPTIC LINE
- W UNDERGROUND/UNDER DECK WATER LINE
- CHAIN LINK FENCE
- SAWCUT / TRENCH OUTLINE
- GUARD RAIL
- GAS GAS LINE
- OHW ORDINARY HIGH WATER (BIOLOGICAL)
- USACE ORDINARY HIGH WATER (USACE SECTION 10)
- ORDINARY HIGH WATER (POV AQUATIC SURVEY 2010)
- ORDINARY LOW WATER (POV AQUATIC SURVEY 2010)
- INNER HARBOR LINE
- PORT MANAGEMENT AGREEMENT (PMA) BOUNDARY
- FEMA FLOOD PLAIN BOUNDARY
- CONCRETE PAVING
- ASPHALT PAVING
- BUILDING
- GRAVEL SURFACE
- EXISTING RIPRAP SLOPE PROTECTION

SITE PLAN SYMBOLOGY

- 50 5FT INTERVAL CONTOUR
- 49 1FT INTERVAL CONTOUR
- X.X% DRAINAGE SLOPE
- VEGETATION
- TREE TO BE REMOVED
- CO CLEAN OUT
- MANHOLE
- STORM DRAIN CATCH BASIN
- UTILITY VAULT
- PP POWER POLE
- TP TELEPHONE POLE
- FH FIRE HYDRANT
- YH–X YARD HYDRANT
- MONITORING WELL
- 200 KIP MOORING BOLLARD
- 30" STEEL PIPE PILE, PLUMB/BATTER
- 18" STEEL FENDER PILE
- NZ19 STEEL SHEET PILE
- XXX FINISHED SPOT ELEVATION
- 75.5 EXISTING SPOT ELEVATION
- YYXX WORK POINT
- SURVEY CONTROL POINT
- BENCHMARK
- WATERLINE
- DOWN GUY WIRE
- BURIED VALVE
- # STATE PLANE COORDINATE ID

NOTE:

UTILITIES THAT ARE SUSPENDED ABOVE GRADE ARE DESIGNATED BY THE PREFIX "OH".

- LIMITS OF WORK BOUNDARY
- R/W PUBLIC RIGHT–OF–WAY LINE
- LOT LOT LINE
- BDY PORT BOUNDARY
- ESMT RAIL EASEMENT
- CONSTRUCTION EASEMENT
- UTILITY EASEMENT
- W WATER LINE
- SAN SANITARY SEWER
- STM STORM SEWER
- HANDRAIL
- SINGLE LINE PIPELINE
- PIPELINE BENEATH CONCRETE OR STRUCTURE/SHEET PILE
- DRAINAGE FLOW
- NATURAL WATERWAY
- GUARDRAIL
- X X CHAIN LINK FENCE
- ROAD CENTERLINE
- WETLAND BOUNDARY
- SAWCUT PAVEMENT
- ASPHALT PAVING
- DSM IMPROVEMENT ZONE
- SHORELINE PROTECTION
- REMOVING ASPHALT CONC. PAVEMENT
- CLEARING AND GRUBBING
- EXCAVATION
- DEMOLISH EXISTING STRUCTURE
- REMOVING TRACK
- REMOVING CHAIN LINK FENCE
- ABANDON EXISTING UTILITY
- SILT FENCE
- STRAW WATTLES
- HIGH VISIBILITY FENCE
- INLET PROTECTION
- DSM SHAFTS

GENERAL SYMBOLOGY

ARROW INDICATES DIRECTION OF PLAN NORTH

N

PLAN
SCALE:

0 25 50 100

SECTION LETTER

FLAG INDICATES DIRECTION OF SECTION CUT

X
XXX

* DRAWING WHERE SECTION VIEW IS LOCATED

SECTION CUT MARKER

SECTION LETTER

SECTION
SCALE:

X
XXX

* DRAWING WHERE SECTION VIEW IS FIRST CUT

DETAIL NUMBER

X
XXX

* DRAWING WHERE DETAIL IS LOCATED

DETAIL MARKER

DETAIL NUMBER

DETAIL
SCALE:

X
XXX

* DRAWING WHERE DETAIL WAS TAKEN

KEYNOTE OR SPECIFIC NOTE DESIGNATION

KEYNOTE NUMBER

(X)

X ADD ALTERNATE

* FOR COMMON DETAILS AND SECTION OR DETAILS THAT ARE CUT OR CALLED OUT ON MULTIPLE SHEETS, THE SHEET NUMBER IS REPLACED BY A DASH (–). TYPICAL SECTION WILL ALWAYS SHOW A DASH.

ABBREVIATIONS

@	AT
±,+/–	PLUS AND OR MINUS
%	PERCENT
&	AND
AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
AC	ASPHALT CONCRETE
ACI	AMERICAN CONCRETE INSTITUTE
ACZA	AMMONIACAL COPPER ZINC ARSENATE
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
APPD	APPROVED
APPROX	APPROXIMATE
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS
ASPH	ASPHALT
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AUX	AUXILIARY
AWS	AMERICAN WELDING SOCIETY
BLDG	BUILDING
BFP	BACK FLOW PREVENTER
BGID	BELOW GRATE INLET DEVICE
BM	BENCH MARK
BMP	BEST MANAGEMENT PRACTICES
BOT	BOTTOM
BOD	BASIS OF DESIGN
BPA	BONNEVILLE POWER ADMINISTRATION
CB	CATCH BASIN
CBC	CALIFORNIA BUILDING CODE
CDF	CONTROLLED DENSITY FILL
CFS	CUBIC FEET PER SECOND
CG	CENTER OF GRAVITY
CIP	CAST–IN–PLACE
CJ	CONSTRUCTION JOINT
CL.	CLASS
℄	CENTERLINE
CLE	CONTINGENCY LEVEL EARTHQUAKE
CLR	CLEARANCE
CMP	CORRUGATED METAL PIPE
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUE, CONTINUOUS
COV	CITY OF VANCOUVER
CRD	COLUMBIA RIVER DATUM
CSBC	CRUSHED SURFACING BASE COURSE
CSTC	CRUSHED SURFACING TOP COURSE
CY	CUBIC YARD
DBL	DOUBLE
DE	DESIGN EARTHQUAKE
DEMO	DEMOLITION, DEMOLISH
°,DEG	DEGREE
DET	DETAIL
DIA,ø	DIAMETER
DIP	DUCTILE IRON PIPE
DSM	DEEP SOIL MIXING
DWG(S)	DRAWING
DWT	DEAD–WEIGHT TONNAGE
E	EAST, EASTING
EA	EACH
EC	EROSION CONTROL
EG	EXISTING GROUND, GRADE
EL,ELEV	ELEVATION, ELBOW
ELEC	ELECTRIC, ELECTRICAL
ELW	EXTREME LOW WATER
ENGR	ENGINEER
EPDM	ETHYLENE PROPYLENE DIENE MONOMER
EQ	EQUAL
EQUIP.	EQUIPMENT
EST	ESTIMATED
EW	EACH WAY
EXIST	EXISTING
f'c	28–DAY CONCRETE STRENGTH
fy	YIELD STRESS
FEMA	FEDERAL EMERGENCY MANAGEMENT AGENCY
FG	FINISHED GRADE
FIG	FIGURE
FS	FACTOR SAFETY
',FT	FOOT, FEET
g	GRAVITY CONSTANT
GALV	GALVANIZE
GND	GROUND
GPM	GALLONS PER MINUTE
H	HYDRAULIC DROP
HDPE	HIGH DENSITY POLYETHYLENE
H, HORIZ	HORIZONTAL
HMA	HOT MIX ASPHALT CONCRETE
HP.	HIGH POINT
HSB	HIGH STRENGTH BOLT
HSS	TUBE STEEL
IBC	INTERNATIONAL BUILDING CODE
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
",IN	INCH, INCHES
INV.	INVERT
IR	IRON ROD
JT	JOINT
K,KIP(S)	1000 LBS
KSI	KIPS PER SQUARE INCH
L	LENGTH
L–	L–ANGLE
LBS	POUND(S)
LF	LINEAR FOOT (FEET)
LH	LEFT HAND
LIN	LINEAR (LINEAL)
LLH	LONG LEG HORIZONTAL
LOA	LENGTH OVERALL
LONG	LONGITUDINAL
LP.	LOW POINT
LT	LEFT
LW	LIMITS OF WORK
M, m	METER
MAINT	MAINTENANCE
MANUF	MANUFACTURER
MAT	MATERIAL
MAX	MAXIMUM
MH	MANHOLE
MHW	MEAN HIGH WATER
MHHW	MEAN HIGHER HIGH WATER
MI	MILE
MIN	MINIMUM
MISC	MISCELLANEOUS
MLW	MEAN LOW WATER
MLLW	MEAN LOWER LOW WATER
mm	MILLIMETER
MPH	MILES PER HOUR
MSL	MEAN SEA LEVEL
MV	MEDIUM VOLTAGE
N	NORTH, NORTHING
N/A	NOT APPLICABLE
NE	NORTHEAST
NGVD	NATIONAL GEODETIC VERTICAL DATUM
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
NO, #	NUMBER
NOM	NOMINAL
NW	NORTHWEST
OC	ON CENTER
OD	OUTSIDE DIAMETER
OHW	ORDINARY HIGH WATER
OHWM	ORDINARY HIGH WATER MARK
OLE	OPERATING LEVEL EARTHQUAKE
OLWM	ORDINARY LOW WATER MARK
OP	OVERHEAD POWER
OPP	OPPOSITE
PAV	PAVEMENT
P/C	PRECAST
PCI	PRECAST CONCRETE INSTITUTE
PERF	PERFORATE
PGA	PEAK GROUND ACCELERATION
P/H	POTENTIAL HYDROGEN
PI	POINT OF INTERSECTION, PILE
PMA	PORT MANAGEMENT AGREEMENT
POB	POINT OF BEGINNING
POE	POINT OF ENDING
PREFAB	PREFABRICATED
PROJ	PROJECTION
PSI	POUND PER SQUARE INCH
PSF	POUNDS PER SQUARE FOOT
P/S	PRESTRESS
PT	POINT OF TANGENCY
PL	PLATE
PV	PAVING
PVC	POINT OF VERTICAL CURVE
PVCP	POLYVINYL CHLORIDE PIPE
PVT	POINT OF VERTICAL TANGENCY
R	RADIUS
RAD	RADIAL
REINF	REINFORCED, REINFORCING
REQ'D	REQUIRED
REV	REVISION
RH	RIGHT HAND
RIM	
RT	RIGHT
R/W,ROW	RIGHT–OF–WAY
S	SOUTH
SAN	SANITARY
SD	STORM DRAIN
SE	SOUTHEAST
SEC,S	SECOND(S)
SCH	SCHEDULE
SF	SQUARE FOOT
SHT	SHEET
SIM	SIMILIAR
SM	DEEP SOIL MIXING
SQ	SQUARE
SPA	SPACE
SS	SANITARY SEWER, STAINLESS STEEL
STA	STATION
ST	STREET
STL	STEEL
STD	STANDARD
SS	SANITARY SEWER
SSP	SANITARY SEWER PIPE
STS	STORM SEWER
SW	SOUTHWEST
SY	SQUARE YARD
SYM	SYMMETRICAL
T&B	TOP AND BOTTOM
TBM	TEMPORARY BENCHMARK
TC	TURBIDITY CURTAIN
TEL	TELEPHONE
TEMP	TEMPORARY
TERM	TERMINAL
T.O.	TURNOUT
TRANS	TRANSVERSE
TRK	TRACK
TOT	TOTAL
TWIC	TRANSPORTATION WORKER IDENTIFICATION CREDENTIAL
TYP	TYPICAL
UHMW	ULTRA–HIGH MOLECULAR WEIGHT POLYETHYLENE
UNO	UNLESS NOTED OTHERWISE
USACE	UNITED STATES ARMY CORPS OF ENGINEERS
UTIL	UTILITY
VERT, V	VERTICAL
VLT	VAULT
VMC	VANCOUVER MUNICIPAL CODE
VOL	VOLUME
W	WATER, WEST
WABO	WASHINGTON ASSOCIATION OF BUILDING OFFICIALS
WAC	WASHINGTON ADMINISTRATIVE CODE
W/	WITH
W/L	WATER LINE
WL	WALL
W/O	WITHOUT
WP	WORK POINT
WSDOT	WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
YD	YARD
YR	YEAR

90% SUBMITTAL Dec 29, 2023 - 4:25pm

BRIAN DEAN BOARD — STATE OF WASHINGTON — 37460 — REGISTERED PROFESSIONAL ENGINEER

WSP USA Inc.
2121 E 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

A/E PROJECT NUMBER: A19 0198.02

DRAWING SCALE: NOT TO SCALE

DRAWN BY: JTH

APPROVED BY: BDB

DATE: 22-Dec-23

REVISION
NO. DATE.

PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
LEGEND, SYMBOLOGY AND ABBREVIATIONS

DRAWING NUMBER
G02

SHEET NUMBER 3 OF 130

POV PROJECT NO:
CP-0441

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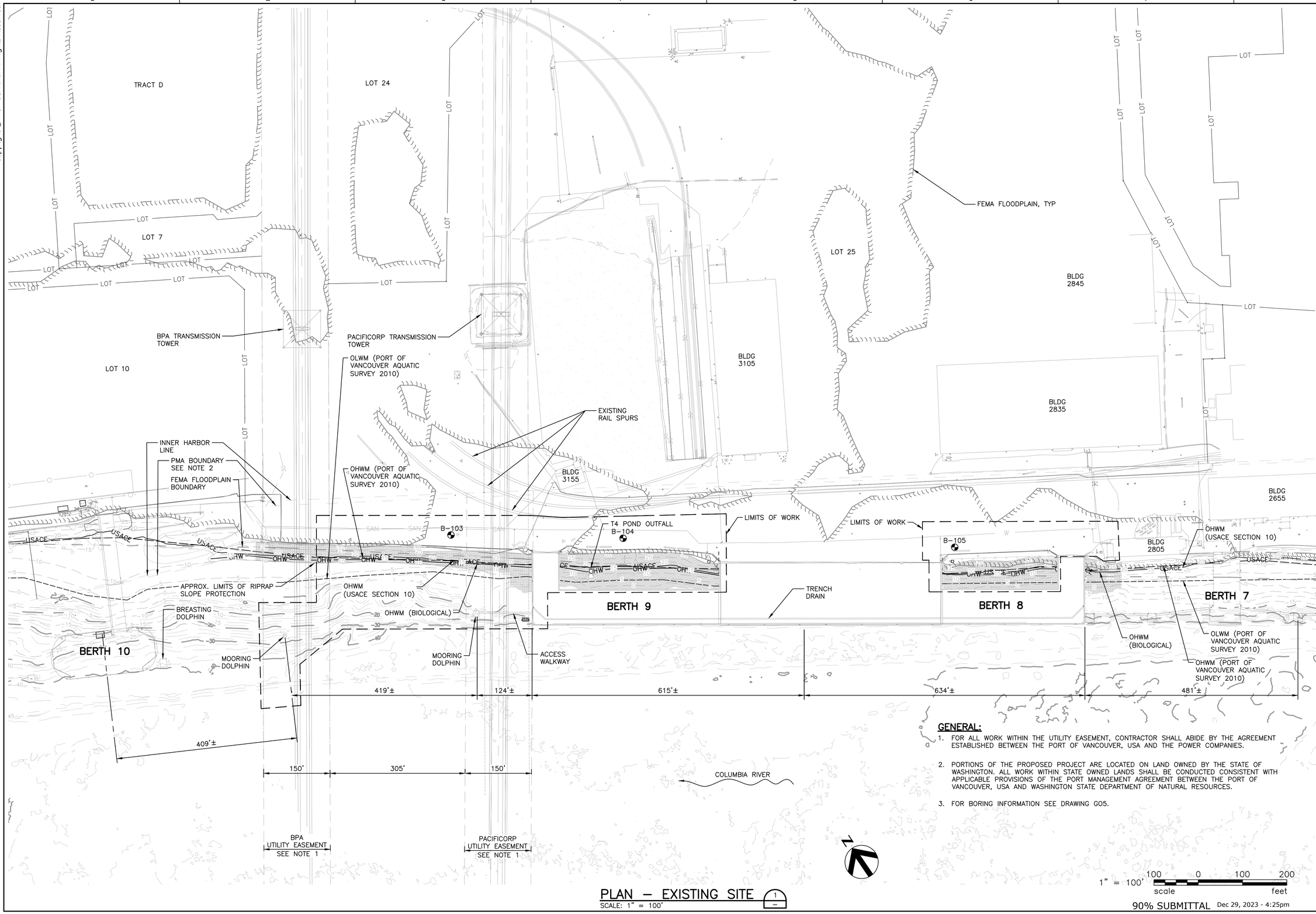

PLAN – EXISTING SITE (1)
SCALE: 1" = 100'

GENERAL:

1. FOR ALL WORK WITHIN THE UTILITY EASEMENT, CONTRACTOR SHALL ABIDE BY THE AGREEMENT ESTABLISHED BETWEEN THE PORT OF VANCOUVER, USA AND THE POWER COMPANIES.
2. PORTIONS OF THE PROPOSED PROJECT ARE LOCATED ON LAND OWNED BY THE STATE OF WASHINGTON. ALL WORK WITHIN STATE OWNED LANDS SHALL BE CONDUCTED CONSISTENT WITH APPLICABLE PROVISIONS OF THE PORT MANAGEMENT AGREEMENT BETWEEN THE PORT OF VANCOUVER, USA AND WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES.
3. FOR BORING INFORMATION SEE DRAWING G05.

90% SUBMITTAL Dec 29, 2023 - 4:25pm

BRIAN DEAN BOARD STATE OF WASHINGTON 57460 REGISTERED PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-6100
FAX: 360-823-6101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: 1" = 100'
DRAWN BY: JTH
APPROVED BY: BDB
DATE: 22-Dec-23

REVISION NO. DATE.

PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
EXISTING SITE PLAN

DRAWING NUMBER
G03
SHEET NUMBER 4 OF 130

POV PROJECT NO:
CP-0441

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LIMITS OF WORK BOUNDARY ALIGNMENT CONTROL TABLE		
POINT	STATION	OFFSET
LW01	STA 'C Line' 19+61.71	374.27 LT
LW02	STA 'C Line' 19+66.71	134.80 LT
LW03	STA 'C Line' 18+36.30	134.80 LT
LW04	STA 'C Line' 18+35.95	61.85 RT
LW05	STA 'C Line' 13+50.63	60.96 RT
LW06	STA 'C Line' 13+26.84	59.30 RT
LW07	STA 'C Line' 13+09.89	58.11 RT
LW08	STA 'C Line' 12+80.65	56.07 RT
LW09	STA 'C Line' 12+60.08	56.50 RT
LW10	STA 'C Line' 12+39.66	56.93 RT
LW11	STA 'C Line' 11+91.29	57.94 RT
LW12	STA 'C Line' 11+50.89	58.79 RT

LIMITS OF WORK BOUNDARY ALIGNMENT CONTROL TABLE		
POINT	STATION	OFFSET
LW13	STA 'C Line' 11+15.13	59.54 RT
LW14	STA 'C Line' 10+90.77	60.05 RT
LW15	STA 'C Line' 10+43.44	61.04 RT
LW16	STA 'C Line' 9+96.31	62.03 RT
LW17	STA 'C Line' 9+51.46	62.97 RT
LW18	STA 'C Line' 9+32.46	63.36 RT
LW19	STA 'C Line' 9+10.33	63.83 RT
LW20	STA 'C Line' 9+10.27	113.26 LT
LW21	STA 'C Line' 13+14.13	113.40 LT
LW22	STA 'C Line' 13+14.13	195.00 LT
LW23	STA 'C Line' 17+77.38	195.00 LT
LW24	STA 'C Line' 18+73.80	274.16 LT

LIMITS OF WORK BOUNDARY ALIGNMENT CONTROL TABLE		
POINT	STATION	OFFSET
LW25	STA 'C Line' 18+71.86	367.23 LT
LW30	STA 'C Line' 4+57.70	113.30 LT
LW31	STA 'C Line' 4+57.56	41.75 LT
LW32	STA 'C Line' 4+67.31	41.75 LT
LW33	STA 'C Line' 4+67.31	45.27 RT
LW34	STA 'C Line' 0+25.97	45.22 RT
LW35	STA 'C Line' 0+22.28	42.77 LT
LW36	STA 'C Line' 0+58.45	44.48 LT
LW37	STA 'C Line' 0+74.22	33.83 LT
LW38	STA 'C Line' 1+55.69	33.84 LT
LW39	STA 'C Line' 1+55.62	113.35 LT

TRACT D
LOT 24
LOT 7
LOT 10
LOT 25
BLDG 3105
BLDG 2845
BLDG 2835
BLDG 3155
BLDG 2655
BLDG 2805
BPA TRANSMISSION TOWER
PACIFICORP TRANSMISSION TOWER
APPROXIMATE LIMITS OF GROUND IMPROVEMENTS
OLWM (PORT OF VANCOUVER AQUATIC SURVEY 2010)
OHWM (USACE SECTION 10)
OHWM (BIOLOGICAL)
OHWM (PORT OF VANCOUVER AQUATIC SURVEY 2010)
INNER HARBOR LINE
PMA BOUNDARY SEE NOTE 2
EXISTING RAIL SPURS
FEMA FLOODPLAIN, TYP
LIMITS OF WORK
BERTH 8 APRON (PHASE 2)
BERTH 9 APRON (PHASE 1)
BERTH 9 WHARF EXTENSION (PHASE 1)
MOORING DOLPHIN
FG SHORELINE PROTECTION
ACCESS WALKWAY
BERTH 9 WHARF EXTENSION DREDGE PRISM, SEE DRAWING C01
DEMO EXIST DOLPHIN
EXIST BREASTING DOLPHIN
BERTH 10
BERTH 9
BERTH 8
BERTH 7
–40' CONTOUR
546'±
180'
250'
615'±
634'±
481'±
150'
305'
150'
BPA UTILITY EASEMENT SEE NOTE 1
PACIFICORP UTILITY EASEMENT SEE NOTE 1
COLUMBIA RIVER
20+00
18+00
16+00
14+00
12+00
10+00
8+00
6+00
4+00
2+00
0+00
USACE
OHW

GENERAL:

1. FOR ALL WORK WITHIN THE UTILITY EASEMENT, CONTRACTOR SHALL ABIDE BY THE AGREEMENT ESTABLISHED BETWEEN THE PORT OF VANCOUVER, USA AND THE POWER COMPANIES.
2. PORTIONS OF THE PROPOSED PROJECT ARE LOCATED ON LAND OWNED BY THE STATE OF WASHINGTON. ALL WORK WITHIN STATE OWNED LANDS SHALL BE CONDUCTED CONSISTENT WITH APPLICABLE PROVISIONS OF THE PORT MANAGEMENT AGREEMENT BETWEEN THE PORT OF VANCOUVER, USA AND WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES.
3. FOR SUGGESTED CONSTRUCTION METHODOLOGY, SEE "Berths 8&9 – Constructability Memo Draft 2023–1227"

PLAN – SITE
SCALE: 1" = 100'

1" = 100' 100 0 100 200
scale feet

90% SUBMITTAL Dec 29, 2023 - 4:26pm

BRIAN DEAN BEARD — STATE OF WASHINGTON — 57460 — REGISTERED PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-6100
FAX: 360-823-6101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: 1" = 100'
DRAWN BY: JTH
APPROVED BY: BDB
DATE: 22-Dec-23

REVISION NO. DATE.

PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
SITE PLAN

DRAWING NUMBER
G04
SHEET NUMBER 5 OF 130

POV PROJECT NO:
CP-0441

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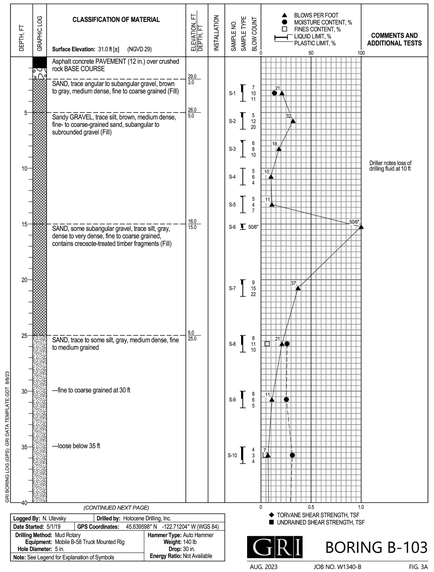
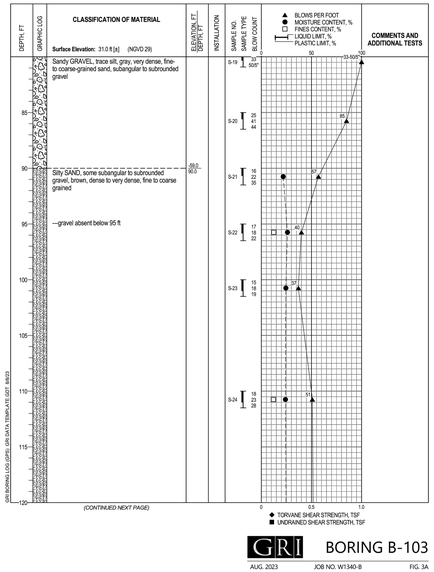


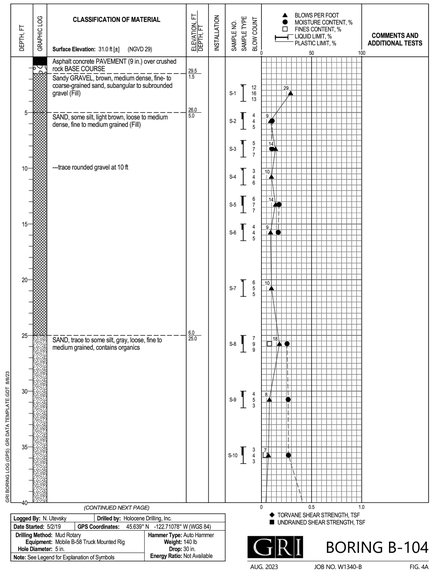
GRI BORING B-103

AUG. 2023 JOB NO. W1340-8 FIG. 3A



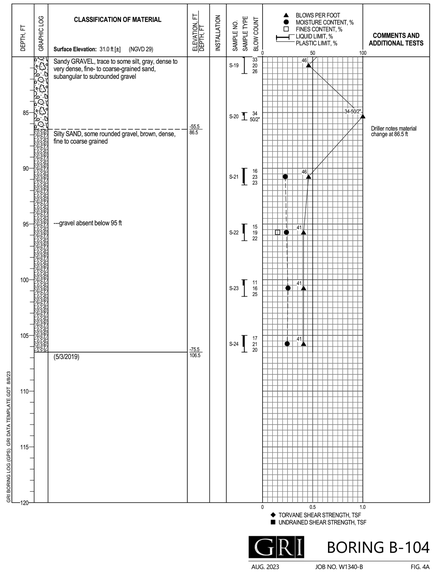
GRI BORING B-103

AUG. 2023 JOB NO. W1340-8 FIG. 3A



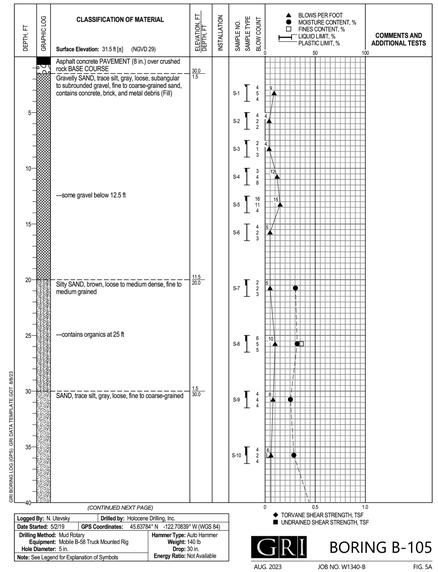
GRI BORING B-104

AUG. 2023 JOB NO. W1340-8 FIG. 4A



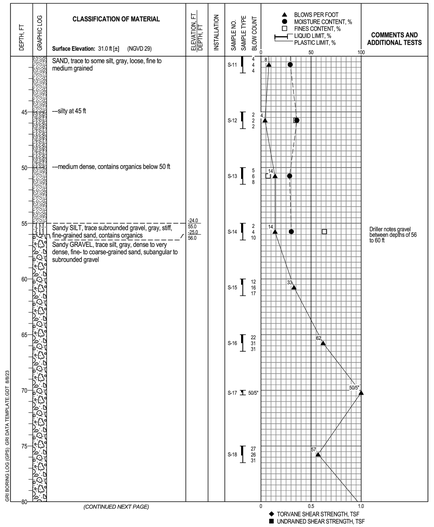
GRI BORING B-104

AUG. 2023 JOB NO. W1340-8 FIG. 4A



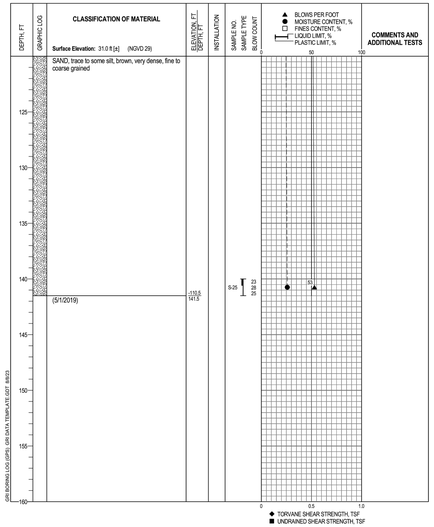
GRI BORING B-105

AUG. 2023 JOB NO. W1340-8 FIG. 5A



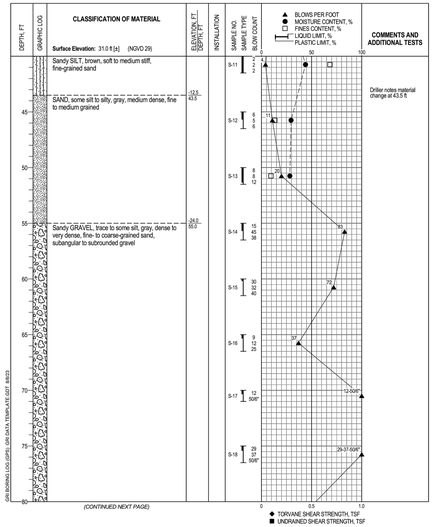
GRI BORING B-103

AUG. 2023 JOB NO. W1340-8 FIG. 3A



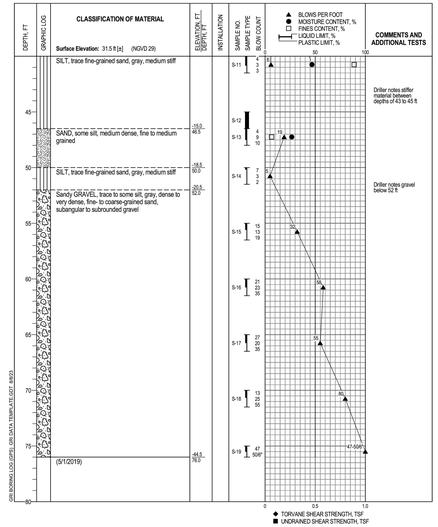
GRI BORING B-103

AUG. 2023 JOB NO. W1340-8 FIG. 3A



GRI BORING B-104

AUG. 2023 JOB NO. W1340-8 FIG. 4A



GRI BORING B-105

AUG. 2023 JOB NO. W1340-8 FIG. 5A

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BRIAN DEAN BEARD
STATE OF WASHINGTON
57460
REGISTERED
PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-6100
FAX: 360-823-6101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: NOT TO SCALE

DRAWN BY: JTH

APPROVED BY: BDB

DATE: 22-Dec-23

REVISION NO. DATE.

PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
SOIL BORING LOGS

DRAWING NUMBER
G05

SHEET NUMBER 6 OF 130

POV PROJECT NO:
CP-0441

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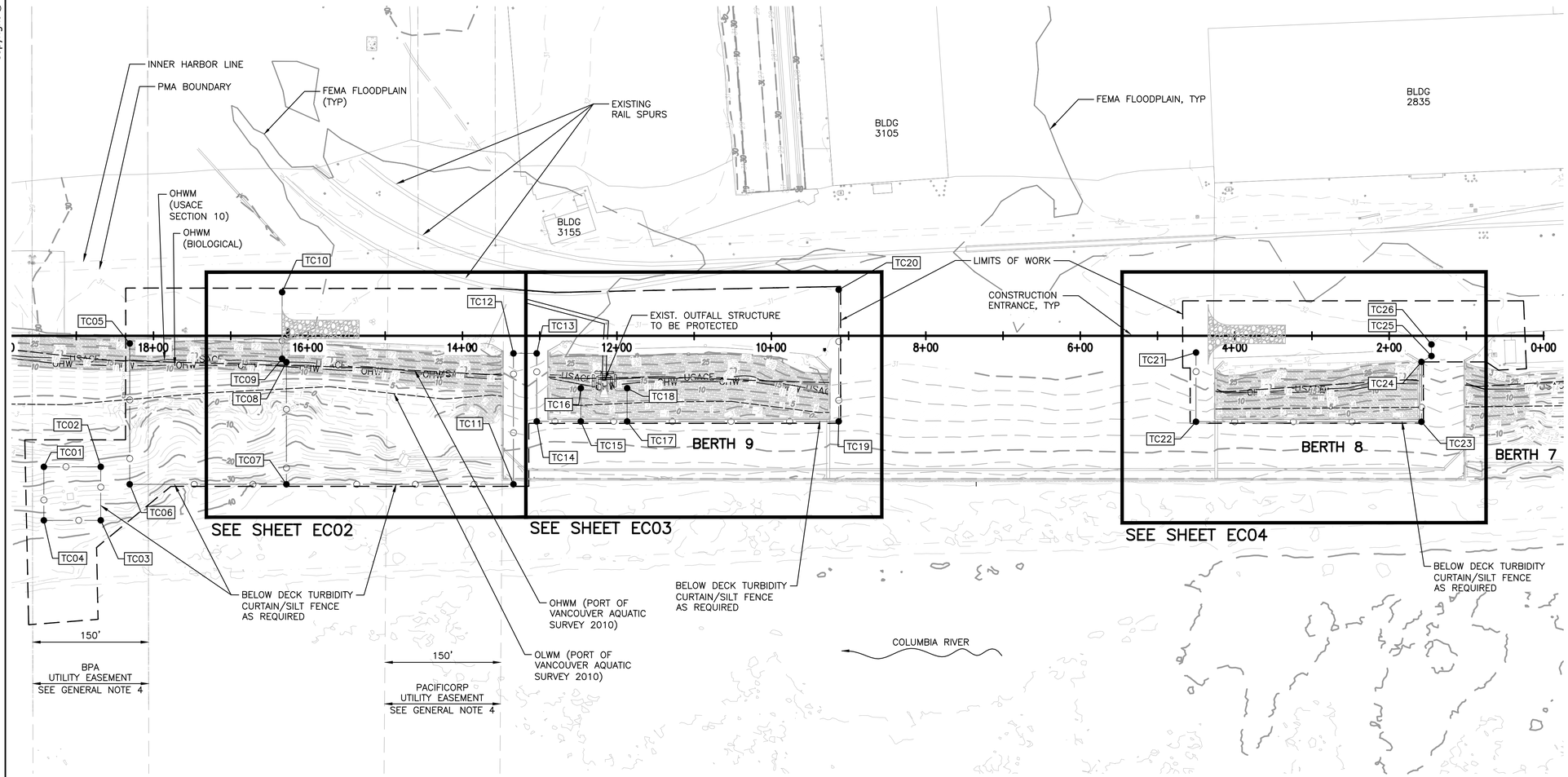
GENERAL:

1. MAINTAIN INLET PROTECTION UNTIL DIRECTED BY ENGINEER.
2. FINAL CONSTRUCTION ENTRANCE TO BE SELECTED BY CONTRACTOR AND APPROVED BY ENGINEER.
3. ELEVATIONS SHOWN ARE IN NVGD29 UNLESS NOTED OTHERWISE.
4. FOR ALL WORK WITHIN THE UTILITY EASEMENT, CONTRACTOR SHALL ABIDE BY THE AGREEMENT ESTABLISHED BETWEEN THE PORT OF VANCOUVER, USA AND THE POWER COMPANIES.



TURBIDITY CURTAIN ALIGNMENT CONTROL TABLE		
POINT	STATION	OFFSET
TC01	STA 'C Line' 19+42.03	169.75 LT
TC02	STA 'C Line' 18+68.35	169.75 LT
TC03	STA 'C Line' 18+68.35	239.01 LT
TC04	STA 'C Line' 19+42.03	239.01 LT
TC05	STA 'C Line' 18+30.87	10.02 LT
TC06	STA 'C Line' 18+30.87	192.33 LT
TC07	STA 'C Line' 16+27.99	192.33 LT
TC08	STA 'C Line' 16+27.99	34.18 LT
TC09	STA 'C Line' 16+33.49	29.68 LT
TC10	STA 'C Line' 16+33.49	56.45 RT
TC11	STA 'C Line' 13+33.95	192.33 LT
TC12	STA 'C Line' 13+33.95	22.84 LT
TC13	STA 'C Line' 13+03.81	22.84 LT
TC14	STA 'C Line' 13+03.81	110.89 LT
TC15	STA 'C Line' 12+46.73	110.89 LT
TC16	STA 'C Line' 12+46.73	67.89 LT
TC17	STA 'C Line' 11+86.70	110.89 LT
TC18	STA 'C Line' 11+86.71	67.89 LT
TC19	STA 'C Line' 9+12.79	110.89 LT
TC20	STA 'C Line' 9+12.79	59.61 RT
TC21	STA 'C Line' 4+50.05	21.76 LT
TC22	STA 'C Line' 4+50.06	111.32 LT
TC23	STA 'C Line' 1+58.13	111.37 LT
TC24	STA 'C Line' 1+58.13	33.85 LT
TC25	STA 'C Line' 1+45.22	26.21 LT
TC26	STA 'C Line' 1+45.22	11.21 LT

PLAN – EROSION CONTROL OVERALL

SCALE: 1" = 80'

1" = 80' 80 0 80 160 scale feet

90% SUBMITTAL Dec 29, 2023 - 4:27pm

BRIAN DEAN BARD
STATE OF WASHINGTON
57460
REGISTERED PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-6100
FAX: 360-823-6101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: 1" = 80'

DRAWN BY: PPR

APPROVED BY: BDB

DATE: 22-Dec-23

REVISION NO.	DATE.

PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
EROSION CONTROL OVERALL PLAN

DRAWING NUMBER
EC01

SHEET NUMBER 7 OF 130

POV PROJECT NO: CP-0441

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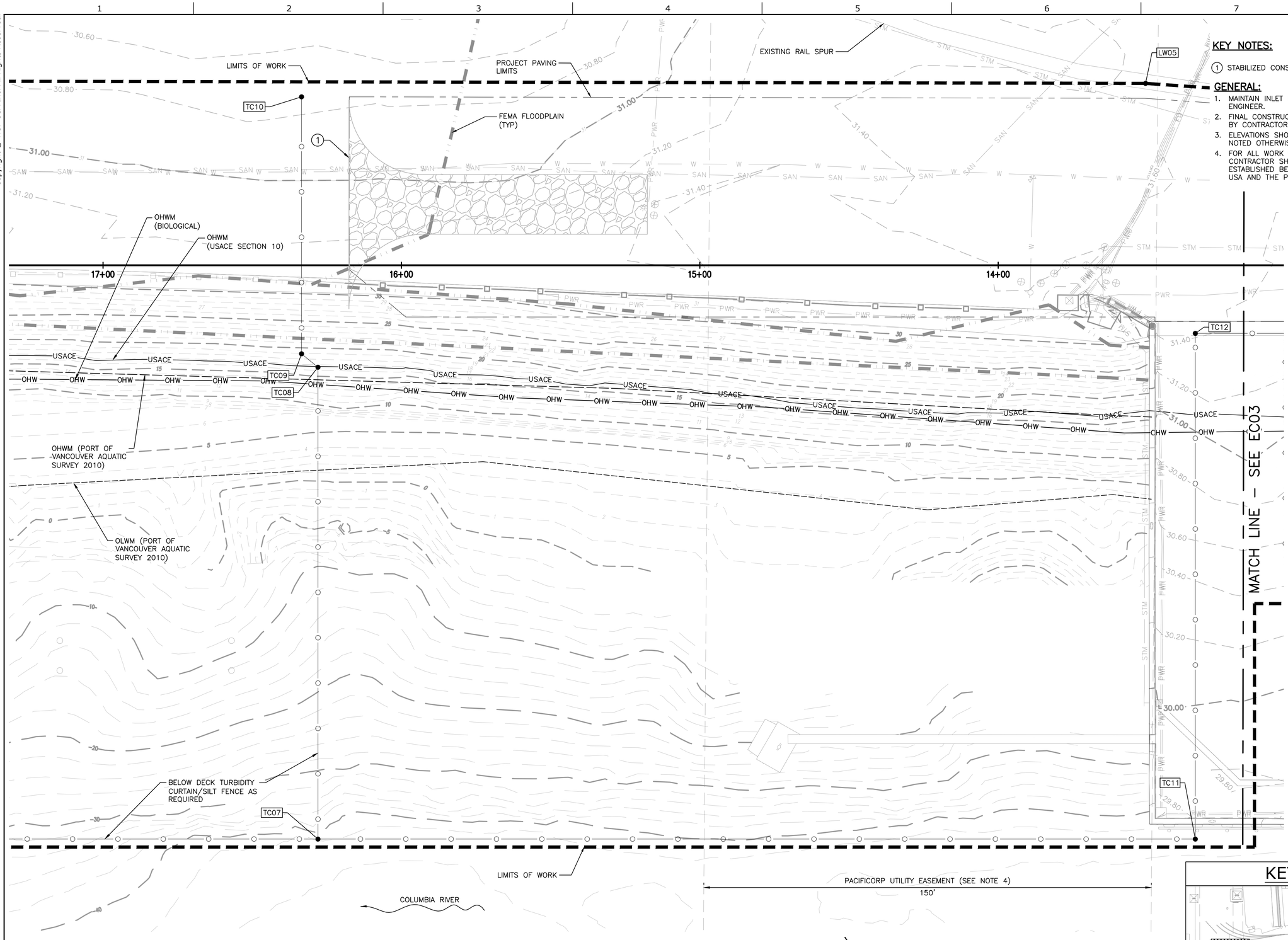


KEY NOTES:

(1) STABILIZED CONSTRUCTION ENTRANCE, SEE 1 EC05

GENERAL:

1. MAINTAIN INLET PROTECTION UNTIL DIRECTED BY ENGINEER.
2. FINAL CONSTRUCTION ENTRANCE TO BE SELECTED BY CONTRACTOR AND APPROVED BY ENGINEER.
3. ELEVATIONS SHOWN ARE IN NVGD29 UNLESS NOTED OTHERWISE.
4. FOR ALL WORK WITHIN THE UTILITY EASEMENT, CONTRACTOR SHALL ABIDE BY THE AGREEMENT ESTABLISHED BETWEEN THE PORT OF VANCOUVER, USA AND THE POWER COMPANIES.

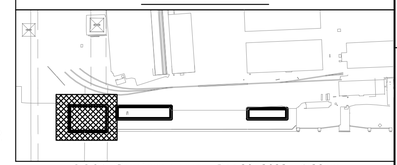
PLAN – EROSION CONTROL BERTH 9 EXTENSION

SCALE: 1/16" = 1'-0"

1 EC01

1/16" = 1'-0" 16 0 16 32 scale feet

KEY PLAN



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BRIAN DEAN BOARD
STATE OF WASHINGTON
157460
REGISTERED
PROFESSIONAL ENGINEER

WSP USA Inc.
2121 SW 3rd Street
Suite 300
Vancouver, WA 98660-3231
PH: 360-823-4100
FAX: 360-823-4101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: 1/16" = 1'-0"

DRAWN BY: PPR

APPROVED BY: BDB

DATE: 22-Dec-23

REVISION NO. DATE.

PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
EROSION CONTROL - BERTH 9 EXTENSION

DRAWING NUMBER
EC02

SHEET NUMBER 8 OF 130

POV PROJECT NO: CP-0441

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KEY NOTES:

(2) WATTLES (146 LF, TOTAL), SEE 2/EC05

GENERAL:

1. MAINTAIN INLET PROTECTION UNTIL DIRECTED BY ENGINEER.
2. FINAL CONSTRUCTION ENTRANCE TO BE SELECTED BY CONTRACTOR AND APPROVED BY ENGINEER.
3. ELEVATIONS SHOWN ARE IN NVGD29 UNLESS NOTED OTHERWISE.

EROSION CONTROL B9 APRON ALIGNMENT CONTROL TABLE		
POINT	STATION	OFFSET
EC01	STA 'C Line' 12+31.59	73.92 LT
EC02	STA 'C Line' 12+30.81	69.52 LT
EC03	STA 'C Line' 12+30.65	47.45 LT
EC04	STA 'C Line' 12+01.94	47.49 LT
EC05	STA 'C Line' 12+02.01	69.48 LT
EC06	STA 'C Line' 12+01.31	74.18 LT

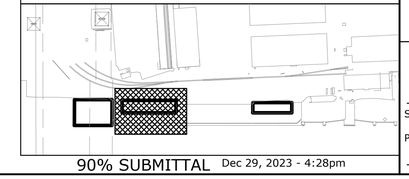
EROSION CONTROL B9 APRON ALIGNMENT CONTROL TABLE		
POINT	STATION	OFFSET
EC07	STA 'C Line' 12+26.67	74.80 LT
EC08	STA 'C Line' 12+25.81	69.98 LT
EC09	STA 'C Line' 12+25.68	52.46 LT
EC10	STA 'C Line' 12+06.96	52.48 LT
EC11	STA 'C Line' 12+07.02	69.85 LT
EC12	STA 'C Line' 12+06.26	74.92 LT

PLAN – EROSION CONTROL BERTH 9 APRON

SCALE: 1/16" = 1'-0"

1/16" = 1'-0" scale 16 0 16 32 feet

KEY PLAN



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BRIAN DEAN BEARD
STATE OF WASHINGTON
37460
REGISTERED
PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
PH: 360-823-4100
FAX: 360-823-4101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: 1/16" = 1'-0"

DRAWN BY: PPR

APPROVED BY: BDB

DATE: 22-Dec-23

REVISION NO. DATE.

PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
EROSION CONTROL - BERTH 9 APRON

DRAWING NUMBER
EC03

SHEET NUMBER 9 OF 130

POV PROJECT NO: CP-0441

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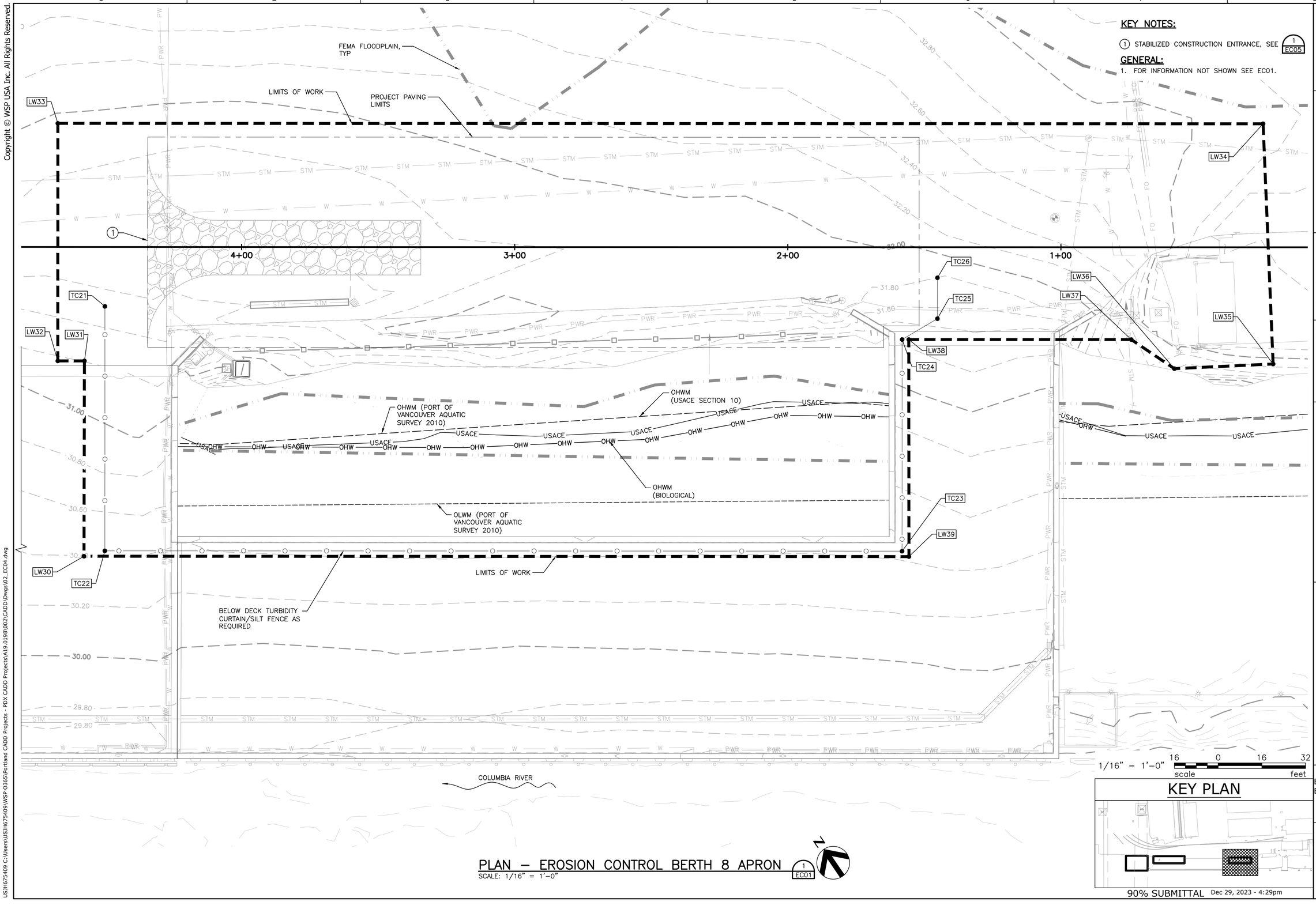

PLAN – EROSION CONTROL BERTH 8 APRON

SCALE: 1/16" = 1'-0"

BRIAN DEAN BEARD
STATE OF WASHINGTON
37460
REGISTERED PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: 1/16" = 1'-0"
DRAWN BY: PPR
APPROVED BY: BDB
DATE: 22-Dec-23

REVISION NO. DATE.

PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
EROSION CONTROL - BERTH 8 APRON

KEY PLAN

DRAWING NUMBER
EC04
SHEET NUMBER 10 OF 130

POV PROJECT NO:
CP-0441

90% SUBMITTAL Dec 29, 2023 - 4:29pm

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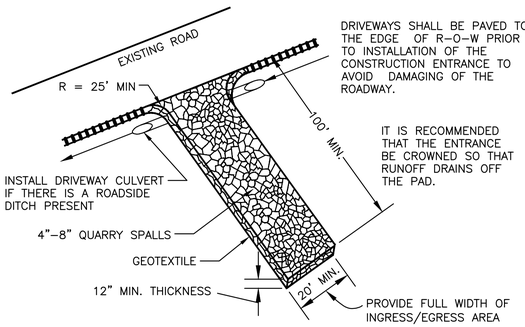
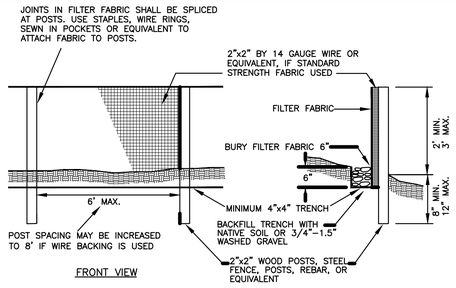


NOTES:

1. IF THE ENTRANCE SITS ON A SLOPE, PLACE A FILTER FABRIC FENCE DOWN GRADIENT.
2. TOP DRESS THE PAD WITH CLEAN 3" MINUS ROCK WHEN THE CONSTRUCTION ENTRANCE BECOMES CLOGGED WITH SEDIMENTS.
3. ANY SEDIMENT CARRIED FROM THE SITE ONTO THE STREET SHALL BE CLEANED UP IMMEDIATELY.
4. IF EQUIPMENT TRAVELS EXTENSIVELY ON UNSTABILIZED ROADS ON THE SITE, A TIRE AND VEHICLE UNDERCARRIAGE WASH NEAR THE ENTRANCE WILL BE NEEDED. PERFORM WASHING ON CRUSHED ROCK. WASH WATER WILL REQUIRE TREATMENT IN A SEDIMENT POND OR TRAP.

N.T.S.

STABILIZED CONSTRUCTION ENTRANCE					STANDARD PLAN NO.
CITY OF VANCOUVER DEPARTMENT OF PUBLIC WORKS SURFACE WATER MANAGEMENT	REV. NO.	DATE	BY	APPROVED	E-1.05
		01/06/02	MDH		
		01/05/05		AMG	



NOTE: FILTER FABRIC FENCES SHALL BE INSTALLED ALONG CONTOUR WHENEVER POSSIBLE

MAINTENANCE STANDARDS:

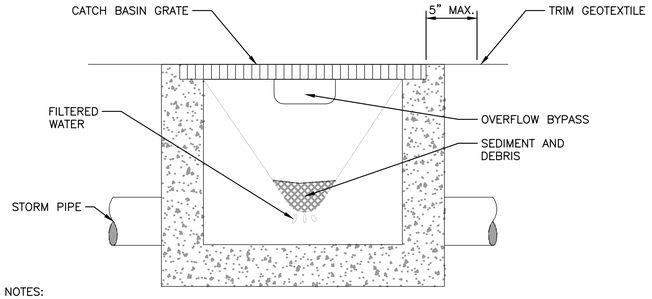
1. SILT FENCES AND FILTER BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
2. IF CONCENTRATED FLOWS ARE EVIDENT UPHILL OF THE FENCE, THEY MUST BE INTERCEPTED AND CONVEYED TO A SEDIMENT POND.
3. IT IS IMPORTANT TO CHECK THE UPHILL SIDE OF THE FENCE FOR SIGNS OF THE FENCE CLOGGING AND ACTING AS A BARRIER TO FLOW AND THEN CAUSING CHANNELIZATION OF FLOWS PARALLEL TO THE FENCE. IF THIS OCCURS, REPLACE THE FENCE OR REMOVE THE TRAPPED SEDIMENT.
4. SEDIMENT DEPOSITS SHALL EITHER BE REMOVED WHEN THE DEPOSIT REACHES APPROXIMATELY ONE–THIRD THE HEIGHT OF THE SILT FENCE, OR A SECOND SILT FENCE SHALL BE INSTALLED.
5. IF THE FILTER FABRIC (GEOTEXTILE) HAS DETERIORATED DUE TO ULTRAVIOLET BREAKDOWN, IT SHALL BE REPLACED.

SILT FENCE					STANDARD PLAN NO.
CITY OF VANCOUVER DEPARTMENT OF PUBLIC WORKS SURFACE WATER MANAGEMENT	REV. NO.	DATE	BY	APPROVED	E-2.33
		01/06/02	MDH		

DETAIL – STABILIZED CONSTRUCTION ENTRANCE

SCALE: NTS

1 EC02



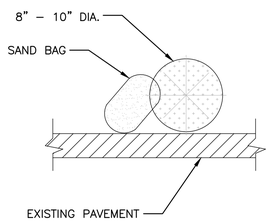
NOTES:

1. SIZE THE BELOW GRATE INLET DEVICE (BGID) FOR THE STORM WATER STRUCTURE IT WILL SERVE.
2. THE REMOVAL SYSTEM MUST ALLOW REMOVAL OF THE BGID WITHOUT SPILLING THE COLLECTED MATERIAL.
3. THE BGID SHALL HAVE A BUILT–IN HIGH–FLOW RELIEF SYSTEM (OVERFLOW BYPASS)
4. THE CONTRACTOR SHALL INSPECT THE BAG AFTER EACH STORM EVENT AND AT REGULAR INTERVALS.
5. THE FILTER BAG SHALL BE CLEANED OR REPLACED WHEN THE BAG BECOMES HALF FULL.

DETAIL – FILTER BAG

SCALE: NTS

2 EC02



DETAIL – WATTLE

SCALE: NTS

3 EC02

GENERAL EROSION PREVENTION & SEDIMENT CONTROL NOTES

1. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IN PLACE AND IN WORKING CONDITION PRIOR TO ANY LAND DISTURBING ACTIVITY INCLUDING CLEARING OR GRADING. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE APPROVED BY THE CITY EROSION SPECIALIST PRIOR TO THE COMMENCEMENT OF WORK. AN ON–SITE INSPECTION SHALL BE REQUESTED WHEN EROSION AND SEDIMENT CONTROL MEASURES ARE IN PLACE AND PRIOR TO COMMENCEMENT OF WORK. ONCE APPROVED, THE SITE MUST BE MAINTAINED THROUGH THE LIFE OF THE PROJECT, AS SHOWN ON THE PLANS. ADDITIONAL MEASURES MAY BE REQUIRED TO MEET THE PROVISIONS OF THE CITY EROSION PREVENTION AND SEDIMENT CONTROL ORDINANCE VMC 14.24.

2. EROSION AND SEDIMENT CONTROL BMPS SHALL BE SITED, DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS IN THE CITY OF VANCOUVER'S LATEST VERSION OF GENERAL REQUIREMENTS AND STANDARD DETAILS MANUAL AND THE WASHINGTON STATE DEPARTMENT OF ECOLOGY STORMWATER MANAGEMENT MANUAL FOR WESTERN WASHINGTON, WHERE THE CITY OF VANCOUVER GENERAL REQUIREMENTS SHALL TAKE PRECEDENCE.

3. THE DEVELOPER AND/OR OWNER IS RESPONSIBLE FOR MAINTAINING EROSION PREVENTION AND SEDIMENT CONTROL BMPS DURING AND AFTER INSTALLATION OF ALL UTILITY WORK ASSOCIATED WITH UTILITY TRENCHES.

4. PRIOR TO ANY SITE EXCAVATION, ALL STORM DRAIN INLETS SHALL BE PROTECTED DOWN SLOPE FROM ANY DISTURBED OR CONSTRUCTION AREAS PER STANDARD DETAIL E–2.20 TO PREVENT SEDIMENT FROM ENTERING THE STORM DRAINAGE SYSTEM PRIOR TO PERMANENT STABILIZATION OF THE DISTURBED AREAS. CLEAN FILTER FABRIC AS NECESSARY TO MAINTAIN DRAINAGE. REMOVE FILTER AND CLEAN CATCH BASINS FOLLOWING COMPLETION OF SITE WORK.

5. NEWLY CONSTRUCTED OR MODIFIED INLETS AND CATCH BASINS SHALL BE PROTECTED FROM SEDIMENT IMMEDIATELY UPON INSTALLATION.

6. THE CONTRACTOR SHALL NOT ALLOW SEDIMENT OR DEBRIS TO ENTER NEW OR EXISTING PIPES, CATCH BASINS OR INFILTRATION SYSTEMS. IF THIS OCCURS, THE CONTRACTOR SHALL REMOVE ALL ACCUMULATED SEDIMENT FROM THE CATCH BASINS, DRYWELLS, AND STORM PIPES IMMEDIATELY. FINAL ACCEPTANCE WILL NOT BE ISSUED BY THE CITY UNTIL THIS OCCURS.

7. PRIOR TO LEAVING A CONSTRUCTION SITE OR PRIOR TO DISCHARGING INTO AN INFILTRATION SYSTEM, SEDIMENT–LADEN WATER SHALL PASS THROUGH A SEDIMENT POND, TRAP, OR OTHER APPROVED BMP SYSTEM.

8. ALL EXPOSED AND UNWORKED SOILS SHALL BE STABILIZED BY THE APPROPRIATE BEST MANAGEMENT PRACTICES (BMPS). FROM OCTOBER 1 TO APRIL 30, NO SOILS SHALL BE EXPOSED AND UNWORKED FOR MORE THAN TWO (2) DAYS. FROM MAY 1 TO SEPTEMBER 30, NO SOILS SHALL BE EXPOSED AND UNWORKED FOR MORE THAN SEVEN (7) DAYS.

9. SOIL STOCKPILES SHALL BE STABILIZED FROM EROSION, PROTECTED WITH SEDIMENT TRAPPING MEASURES, AND WHEN POSSIBLE, BE LOCATED AWAY FROM STORM DRAIN INLETS, WATER WAYS AND DRAINAGE CHANNELS.

10. CONSTRUCTION ROADS AND PARKING AREAS SHALL BE STABILIZED WHEREVER THEY ARE CONSTRUCTED, WHETHER PERMANENT OR TEMPORARY, FOR THE USE OF CONSTRUCTION TRAFFIC.

11. IF THE BMPS APPLIED TO A SITE ARE INSUFFICIENT TO PREVENT SEDIMENT FROM REACHING WATER BODIES, ADJACENT PROPERTIES, STORM FACILITIES OR PUBLIC RIGHT–OF–WAY, THEN THE CITY SHALL REQUIRE ADDITIONAL BMPS.

12. IF THE CITY INSPECTOR OR ENGINEER(S) HAS EVIDENCE OF POOR CONSTRUCTION PRACTICES OR IMPROPER EROSION PREVENTION BMPS, CITATIONS AND/OR A STOP WORK ORDER SHALL BE ISSUED UNTIL PROPER MEASURES HAVE BEEN TAKEN AND APPROVED BY THE CITY OF VANCOUVER.

PROTECTION OF ADJACENT PROPERTIES, ROADS/STREETS AND PAVED SURFACES

13. PROVIDE A 12–INCH DEEP PAD OF CRUSHED ROCK FOR A DISTANCE OF 100 FEET INTO THE SITE FOR ALL ACCESS POINTS UTILIZED BY CONSTRUCTION EQUIPMENT AND TRUCKS. PAD WIDTH SHALL BE A MINIMUM OF 20 FEET. ALL VEHICLES LEAVING THE SITE SHALL EGRESS ACROSS THE PAD. ACCUMULATED SEDIMENT SHALL BE PERIODICALLY REMOVED, OR ADDITIONAL ROCK SHALL BE PLACED UPON THE PAD SURFACE. ROCK SHALL BE CLEAN 4–INCH TO 8–INCH QUARRY SPALLS. ALL MATERIALS SPILLED, DROPPED, WASHED OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS SHALL BE REMOVED IMMEDIATELY.

14. PAVEMENT SWEEPING AND SHOVELING IS REQUIRED. CLEAN BEFORE WASHING, NO WATER INTO WETLANDS OR OTHER WATERBODIES.

15. IF SEDIMENT, MUD OR DEBRIS IS TRANSPORTED ONTO A PAVED SURFACE OR ROADWAY, THE PAVED SURFACE OR ROADWAY SHALL BE THOROUGHLY CLEANED WITH HIGH EFFICIENCY STREET SWEEPERS AT THE END OF EACH WORKDAY, OR MORE OFTEN IF NECESSARY. SIGNIFICANT SOIL DEPOSITS SHALL BE REMOVED FROM ROADS BY SHOVELING AND SWEEPING. STREET WASHING IS NOT ALLOWED UNLESS APPROVED BY THE DIRECTOR AND ONLY AFTER SEDIMENT IS REMOVED IN THE MANNER DESCRIBED ABOVE.

16. A WHEEL WASH MAY BE REQUIRED IF CONSTRUCTION ENTRANCE IS NOT SUFFICIENT IN PREVENTING SEDIMENT FROM BEING TRACKED ONTO PAVEMENT. WHEEL WASH SHALL BE PER STANDARD PLAN E–1.06 AND THE STORMWATER MANUAL.

17. INSTALL SEDIMENT FENCE PER STANDARD PLAN E–2.33 PRIOR TO BUILDING CONSTRUCTION AND/OR EXCAVATION TO PREVENT SILT INTRUSION UPON ADJACENT LOTS. IF CONSTRUCTION OCCURS SIMULTANEOUSLY ON ADJACENT LOTS AND THE LOTS HAVE THE SAME OWNER DURING CONSTRUCTION, THE SILT FENCE ALONG THE COMMON LOT LINE MAY BE ELIMINATED.

18. PROPOSED PERMEABLE PAVEMENT AREAS SHALL BE SHOWN ON THE EROSION CONTROL PLAN. PERMEABLE PAVEMENT AREAS SHALL BE PROTECTED FROM SEDIMENT DURING AND AFTER INSTALLATION.

MAINTENANCE OF EROSION PREVENTION AND SEDIMENT CONTROL BMPS

19. ALL EROSION PREVENTION AND SEDIMENT CONTROL BMPS SHALL BE REGULARLY INSPECTED AND MAINTAINED TO ENSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION.

20. THE CONTRACTOR SHALL MAINTAIN AND HAVE ON–SITE A WRITTEN LOG OF EROSION PREVENTION AND SEDIMENT CONTROL BMP MAINTENANCE.

21. ALL TEMPORARY EROSION PREVENTION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER SITE STABILIZATION IS ACHIEVED OR AFTER TEMPORARY BMPS ARE NO LONGER NEEDED. TRAPPED SEDIMENT SHALL BE REMOVED OR STABILIZED ON SITE. DISTURBED SOIL AREAS RESULTING FROM REMOVAL SHALL BE PERMANENTLY STABILIZED PER THE STORMWATER MANUAL.

DUST CONTROL

22. IN AREAS SUBJECT TO SURFACE AND AIR MOVEMENT OF DUST, REFER TO THE STORMWATER MANUAL FOR DUST CONTROL BMPS.

TEMPORARY SEEDING

23. EXPOSED SURFACES THAT WILL NOT BE BROUGHT TO FINAL GRADE OR GIVEN A PERMANENT COVER TREATMENT WITHIN 30 DAYS OF THE EXPOSURE SHALL HAVE SEED MIX AND MULCH PLACED TO STABILIZE THE SOIL AND REDUCE EROSION SEDIMENTATION. SEEDED AREAS SHALL BE CHECKED REGULARLY TO ASSURE A GOOD STAND OF GRASS IS BEING MAINTAINED. AREAS THAT FAIL TO ESTABLISH VEGETATION COVER ADEQUATE TO PREVENT EROSION WILL BE RESEEDED AS SOON AS SUCH AREAS ARE IDENTIFIED.

24. AN APPROVED TEMPORARY SEEDING MIXTURE SHALL BE APPLIED TO THE PREPARED SEED BED AT A RATE OF 120 LBS/ACRE. NOTE: "HYDROSEEDING" APPLICATIONS WITH APPROVED SEED–MULCH–FERTILIZER MIXTURES MAY ALSO BE USED.

90% SUBMITTAL Dec 29, 2023 - 4:29pm

BRIAN DEAN BARRY
STATE OF WASHINGTON
21857460
REGISTERED
PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3221
TEL: 360-823-4100
FAX: 360-823-4101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: NOT TO SCALE

DRAWN BY: PPR

APPROVED BY: BDB

DATE: 22-Dec-23

REVISION NO. DATE.

PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
EROSION CONTROL - DETAILS

DRAWING NUMBER
EC05

SHEET NUMBER 11 OF 130

POV PROJECT NO: CP-0441

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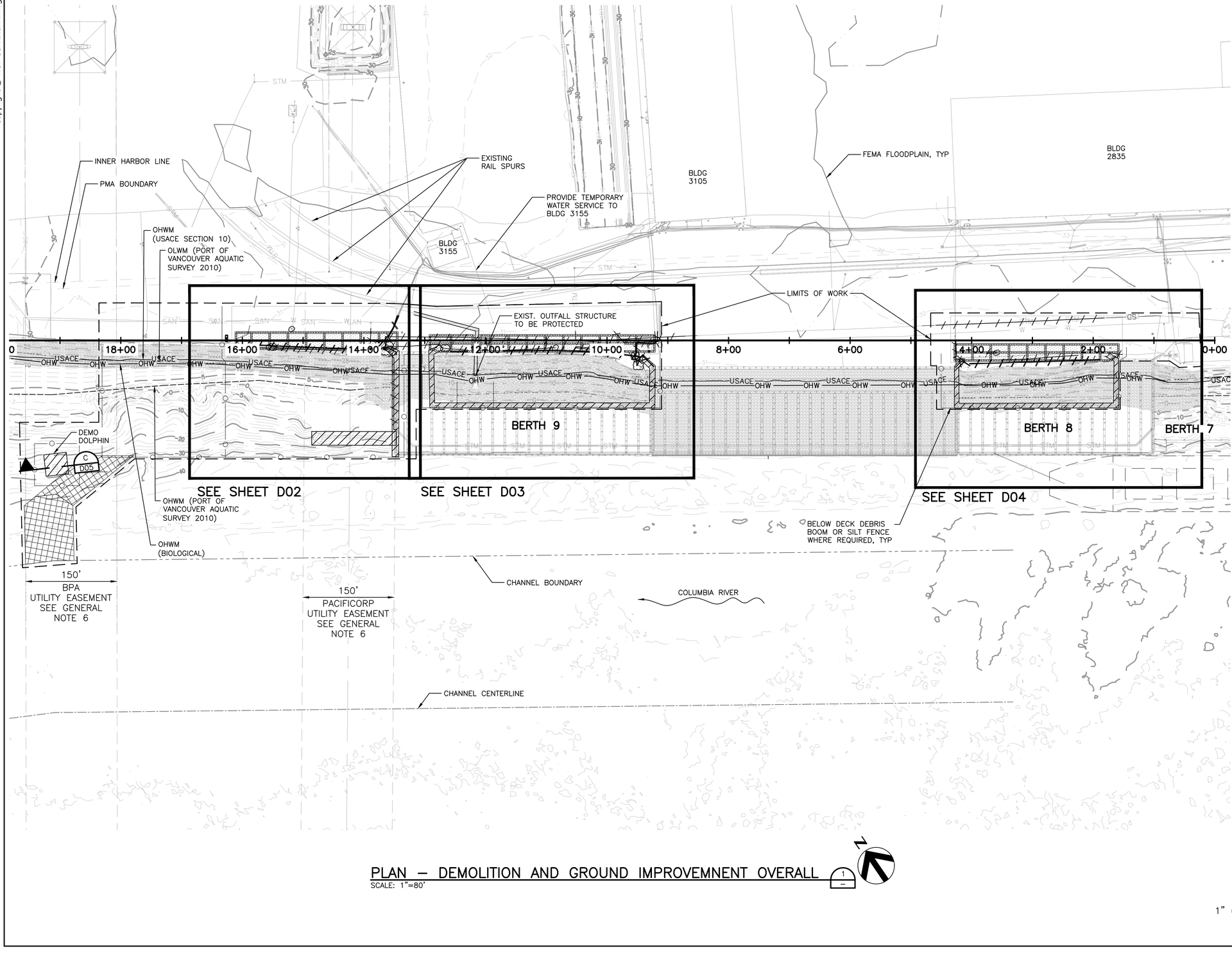

PLAN – DEMOLITION AND GROUND IMPROVEMNENT OVERALL

SCALE: 1"=80'

1" = 80' scale 80 0 80 160 feet

90% SUBMITTAL Dec 29, 2023 - 4:30pm

GENERAL:

1. ELEVATIONS SHOWN ARE IN NVGD29 UNLESS NOTED OTHERWISE.
2. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR FIELD VERIFICATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION
3. ANY DAMAGE CAUSED BY THE CONTRACTOR'S OPERATIONS TO EXISTING FEATURES, STRUCTURES, AND UTILITIES THAT ARE TO REMAIN, SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
4. THE CONTRACTOR SHALL SUPPLY, INSTALL, AND MAINTAIN AT ALL TIMES FLOATING DEBRIS BOOMS AROUND ALL ACTIVE IN–WATER AND OVERWATER WORK AREAS.
5. THE CONTRACTOR SHALL PERFORM WORK IN ACCORDANCE WITH ALL PERMIT REQUIREMENTS.
6. FOR ALL WORK WITHIN THE UTILITY EASEMENT, CONTRACTOR SHALL ABIDE BY THE AGREEMENT ESTABLISHED BETWEEN THE PORT OF VANCOUVER, USA AND THE POWER COMPANIES.

GROUND IMPROVEMENT:

1. GROUND IMPROVEMENT PERFORMED BY DEEP SOIL MIXING.
2. LATERAL SPREADING DEFORMATIONS WITHIN GROUND IMPROVEMENT SHALL BE LIMITED TO 12 INCHES.
3. DEPTH OF GROUND IMPROVEMENT SHALL EXTEND BELOW THE SURFACE AND DOWN TO THE GRAVEL LAYER (APPROX 55 FEET DEEP).
4. WIDTH OF GROUND IMPROVEMENT SHALL BE 30 FEET WIDE AND EXTEND THE FULL LENGTH OF THE DOCK EXTENSION AND INFILL PLUS 8 FEET BEYOND.

BRIAN DEAN BEARD — STATE OF WASHINGTON — 57460 — REGISTERED PROFESSIONAL ENGINEER

WSP USA Inc.
2121 E 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-6100
FAX: 360-823-6101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: 1" = 80'
DRAWN BY: TW
APPROVED BY: BDB
DATE: 22-Dec-23

REVISION NO. DATE.

PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
DEMOLITION AND GROUND IMPROVEMENT OVERALL PLAN

DRAWING NUMBER
D01
SHEET NUMBER 12 OF130

POV PROJECT NO:
CP-0441

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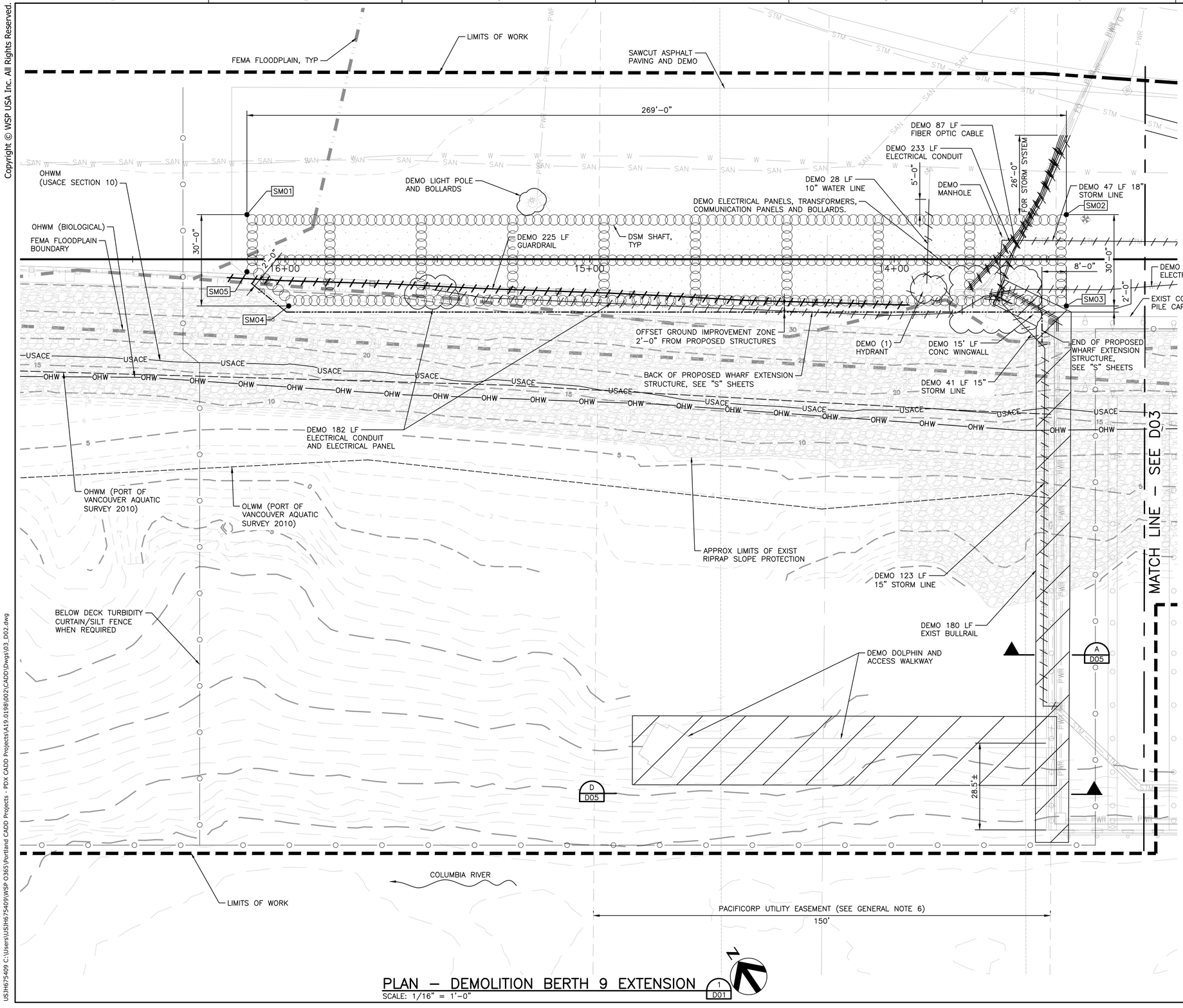


PLAN – DEMOLITION BERTH 9 EXTENSION

1 D01

SCALE: 1/16" = 1'–0"

GENERAL:

1. ELEVATIONS SHOWN ARE IN NVGD29 UNLESS NOTED OTHERWISE.
2. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR FIELD VERIFICATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION
3. ANY DAMAGE CAUSED BY THE CONTRACTOR'S OPERATIONS TO EXISTING FEATURES, STRUCTURES, AND UTILITIES THAT ARE TO REMAIN, SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
4. THE CONTRACTOR SHALL SUPPLY, INSTALL, AND MAINTAIN AT ALL TIMES FLOATING DEBRIS BOOMS AROUND ALL ACTIVE IN–WATER AND OVERWATER WORK AREAS.
5. THE CONTRACTOR SHALL PERFORM WORK IN ACCORDANCE WITH ALL PERMIT REQUIREMENTS.
6. FOR ALL WORK WITHIN THE UTILITY EASEMENT, CONTRACTOR SHALL ABIDE BY THE AGREEMENT ESTABLISHED BETWEEN THE PORT OF VANCOUVER, USA AND THE POWER COMPANIES.

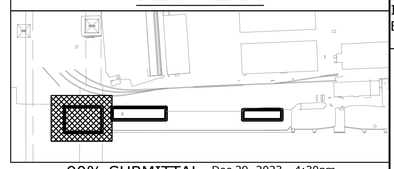
GROUND IMPROVEMENT:

1. GROUND IMPROVEMENT PERFORMED BY DEEP SOIL MIXING.
2. LATERAL SPREADING DEFORMATIONS WITHIN GROUND IMPROVEMENT SHALL BE LIMITED TO 12 INCHES.
3. DEPTH OF GROUND IMPROVEMENT SHALL EXTEND BELOW THE SURFACE AND DOWN TO THE GRAVEL LAYER (APPROX 55 FEET DEEP).
4. WIDTH OF GROUND IMPROVEMENT SHALL BE 30 FEET WIDE AND EXTEND THE FULL LENGTH OF THE DOCK EXTENSION AND INFILL PLUS 8 FEET BEYOND.
5. STORMLINE AND WATER PIPES TO BE DEMOILISHED WILL BE CAPPED TEMPORARILY FOR THE DURATION OF GROUND IMPROVEMENT WORK.

DSM B9 EXTENSION ALIGNMENT CONTROL TABLE		
POINT	STATION	OFFSET
SM01	STA 'C Line' 16+12.49	14.67 RT
SM02	STA 'C Line' 13+43.49	14.67 RT
SM03	STA 'C Line' 13+43.49	15.33 LT
SM04	STA 'C Line' 15+98.77	15.33 LT
SM05	STA 'C Line' 16+12.49	4.12 LT

1/16" = 1'–0" scale 16 0 16 32 feet

KEY PLAN



90% SUBMITTAL Dec 29, 2023 - 4:30pm

BRIAN DEAN BAIRD STATE OF WASHINGTON 37460 REGISTERED PROFESSIONAL ENGINEER

WSP USA Inc.
2035 NE 10th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: 1/16" = 1'-0"

DRAWN BY: TW

APPROVED BY: BDB

DATE: 22-Dec-23

REVISION NO. DATE.

PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
DEMOLITION AND GROUND IMPROVEMENT PLAN - BERTH 9 EXTENSION

DRAWING NUMBER
D02

SHEET NUMBER 13 OF 130

POV PROJECT NO:
CP-0441

USJH675409 C:\Users\USJH675409\WSP O365\Portland CADD Projects - PDX CADD Projects\A19.0198(002)\CADD\Dwgs\03_D02.dwg

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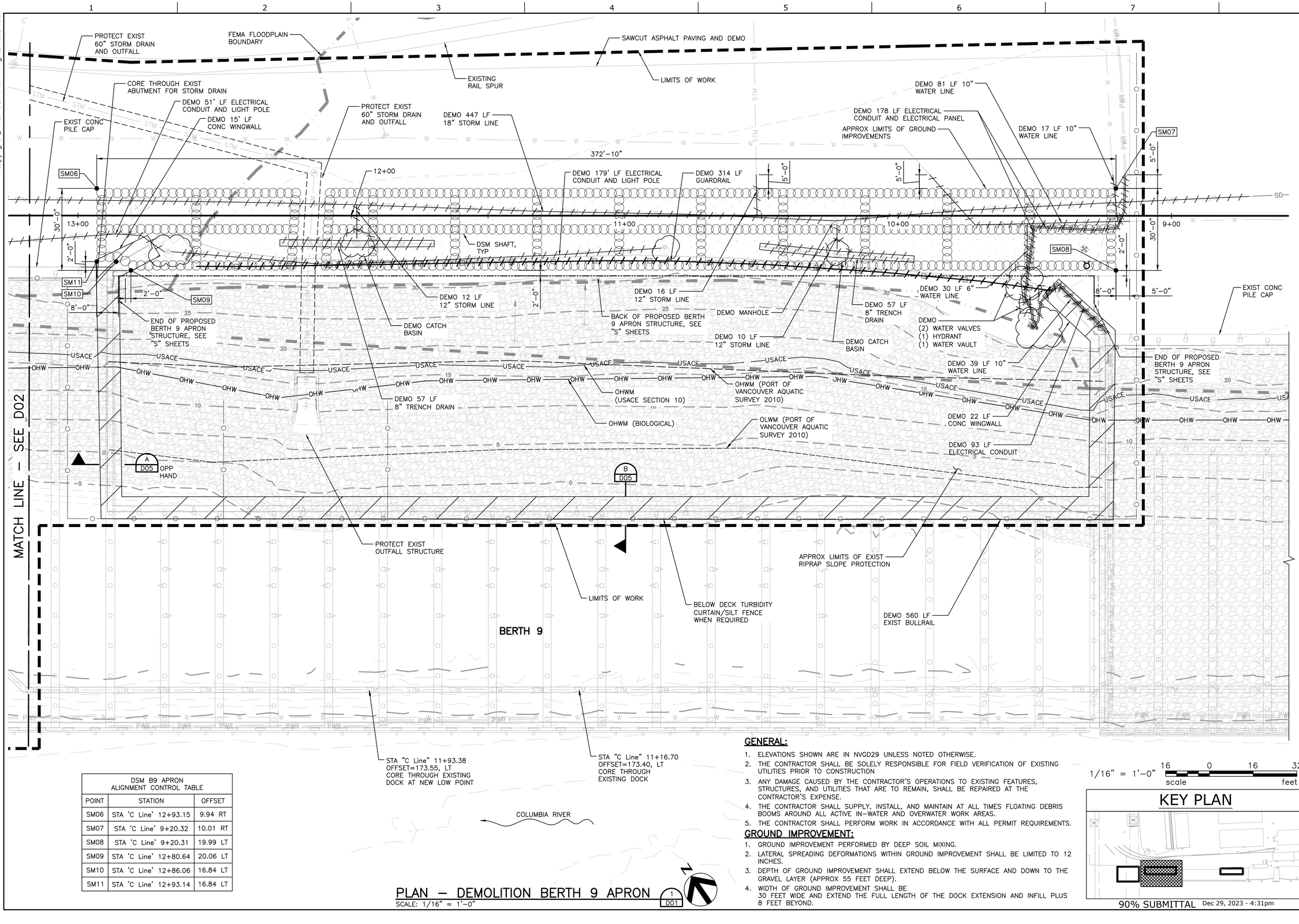

DSM B9 APRON ALIGNMENT CONTROL TABLE		
POINT	STATION	OFFSET
SM06	STA 'C Line' 12+93.15	9.94 RT
SM07	STA 'C Line' 9+20.32	10.01 RT
SM08	STA 'C Line' 9+20.31	19.99 LT
SM09	STA 'C Line' 12+80.64	20.06 LT
SM10	STA 'C Line' 12+86.06	16.84 LT
SM11	STA 'C Line' 12+93.14	16.84 LT

PLAN – DEMOLITION BERTH 9 APRON

SCALE: 1/16" = 1'-0"

1/16" = 1'-0"

16 0 16 32

scale feet

GENERAL:

1. ELEVATIONS SHOWN ARE IN NVGD29 UNLESS NOTED OTHERWISE.
2. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR FIELD VERIFICATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION
3. ANY DAMAGE CAUSED BY THE CONTRACTOR'S OPERATIONS TO EXISTING FEATURES, STRUCTURES, AND UTILITIES THAT ARE TO REMAIN, SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
4. THE CONTRACTOR SHALL SUPPLY, INSTALL, AND MAINTAIN AT ALL TIMES FLOATING DEBRIS BOOMS AROUND ALL ACTIVE IN-WATER AND OVERWATER WORK AREAS.
5. THE CONTRACTOR SHALL PERFORM WORK IN ACCORDANCE WITH ALL PERMIT REQUIREMENTS.

GROUND IMPROVEMENT:

1. GROUND IMPROVEMENT PERFORMED BY DEEP SOIL MIXING.
2. LATERAL SPREADING DEFORMATIONS WITHIN GROUND IMPROVEMENT SHALL BE LIMITED TO 12 INCHES.
3. DEPTH OF GROUND IMPROVEMENT SHALL EXTEND BELOW THE SURFACE AND DOWN TO THE GRAVEL LAYER (APPROX 55 FEET DEEP).
4. WIDTH OF GROUND IMPROVEMENT SHALL BE 30 FEET WIDE AND EXTEND THE FULL LENGTH OF THE DOCK EXTENSION AND INFILL PLUS 8 FEET BEYOND.

KEY PLAN

90% SUBMITTAL Dec 29, 2023 - 4:31pm

BRIAN DEAN BAIRD
STATE OF WASHINGTON
37460
REGISTERED PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: 1/16" = 1'-0"

DRAWN BY: TW

APPROVED BY: BDB

DATE: 22-Dec-23

REVISION NO. DATE.

PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
DEMOLITION AND GROUND IMPROVEMENT PLAN - BERTH 9 APRON

DRAWING NUMBER
D03

SHEET NUMBER 14 OF 130

POV PROJECT NO: CP-0441

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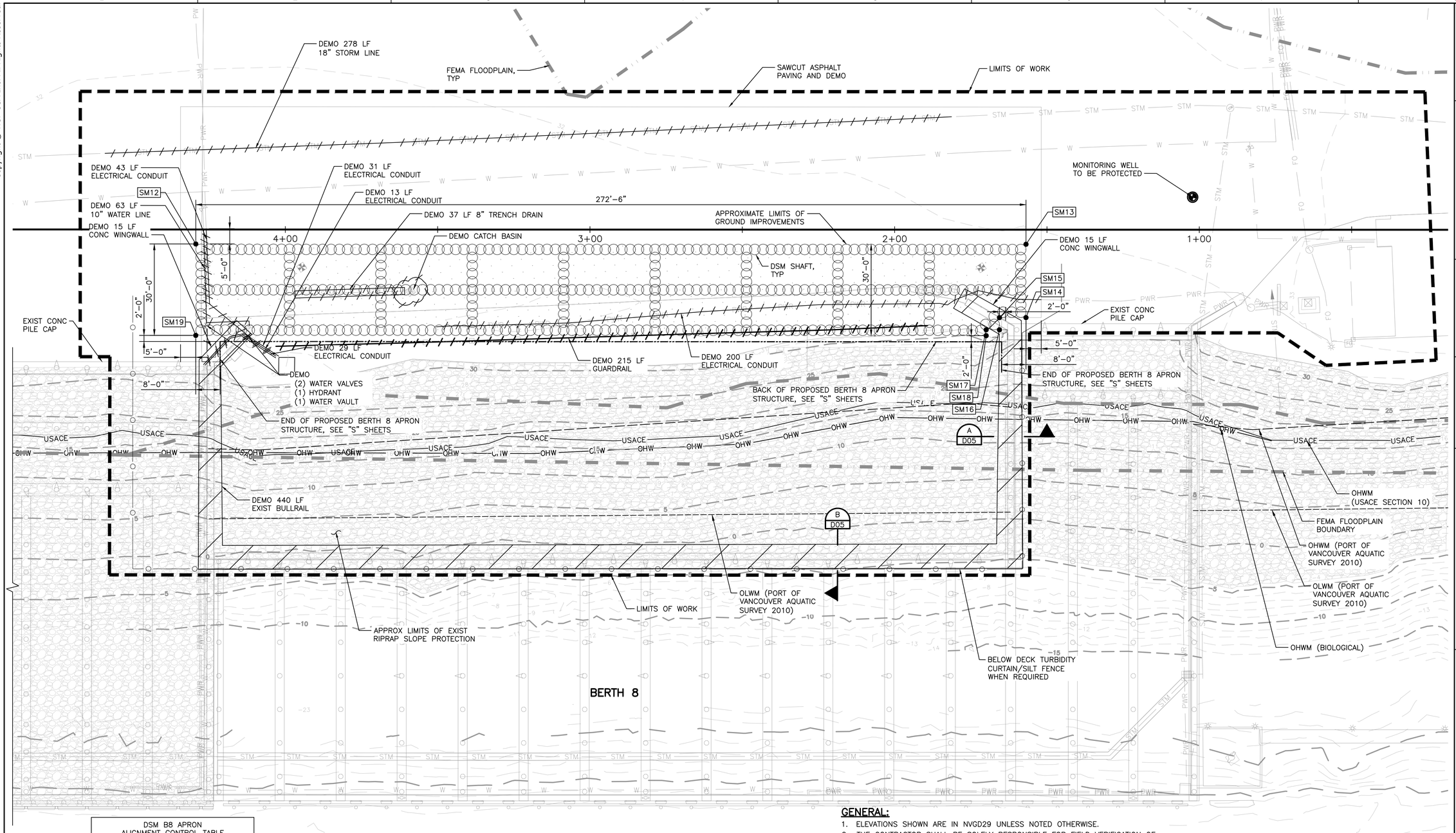


DSM B8 APRON ALIGNMENT CONTROL TABLE		
POINT	STATION	OFFSET
SM12	STA 'C Line' 4+29.38	4.75 LT
SM13	STA 'C Line' 1+56.88	4.78 LT
SM14	STA 'C Line' 1+56.88	28.84 LT
SM15	STA 'C Line' 1+65.60	28.85 LT
SM16	STA 'C Line' 1+65.59	32.85 LT
SM17	STA 'C Line' 1+69.95	32.85 LT
SM18	STA 'C Line' 1+69.95	34.78 LT
SM19	STA 'C Line' 4+29.38	34.75 LT

PLAN – DEMOLITION BERTH 8 APRON

SCALE: 1/16" = 1'–0"

1 EC01

GENERAL:

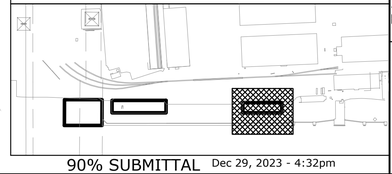
1. ELEVATIONS SHOWN ARE IN NVGD29 UNLESS NOTED OTHERWISE.
2. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR FIELD VERIFICATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION
3. ANY DAMAGE CAUSED BY THE CONTRACTOR'S OPERATIONS TO EXISTING FEATURES, STRUCTURES, AND UTILITIES THAT ARE TO REMAIN, SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
4. THE CONTRACTOR SHALL SUPPLY, INSTALL, AND MAINTAIN AT ALL TIMES FLOATING DEBRIS BOOMS AROUND ALL ACTIVE IN–WATER AND OVERWATER WORK AREAS.
5. THE CONTRACTOR SHALL PERFORM WORK IN ACCORDANCE WITH ALL PERMIT REQUIREMENTS.

GROUND IMPROVEMENT:

1. GROUND IMPROVEMENT PERFORMED BY DEEP SOIL MIXING.
2. LATERAL SPREADING DEFORMATIONS WITHIN GROUND IMPROVEMENT SHALL BE LIMITED TO 12 INCHES.
3. DEPTH OF GROUND IMPROVEMENT SHALL EXTEND BELOW THE SURFACE AND DOWN TO THE GRAVEL LAYER (APPROX 55 FEET DEEP).
4. WIDTH OF GROUND IMPROVEMENT SHALL BE 30 FEET WIDE AND EXTEND THE FULL LENGTH OF THE DOCK EXTENSION AND INFILL PLUS 8 FEET BEYOND.

1/16" = 1'–0" 16 0 16 32 scale feet

KEY PLAN



90% SUBMITTAL Dec 29, 2023 - 4:32pm

BRIAN DEAN BOARD
STATE OF WASHINGTON
37460
REGISTERED
PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: 1/16" = 1'-0"
DRAWN BY: TW
APPROVED BY: BDB
DATE: 22-Dec-23

REVISION NO. DATE.

PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
DEMOLITION AND GROUND IMPROVEMENT PLAN - BERTH 8 APRON

DRAWING NUMBER
D04
SHEET NUMBER 15 OF 130

POV PROJECT NO:
CP-0441

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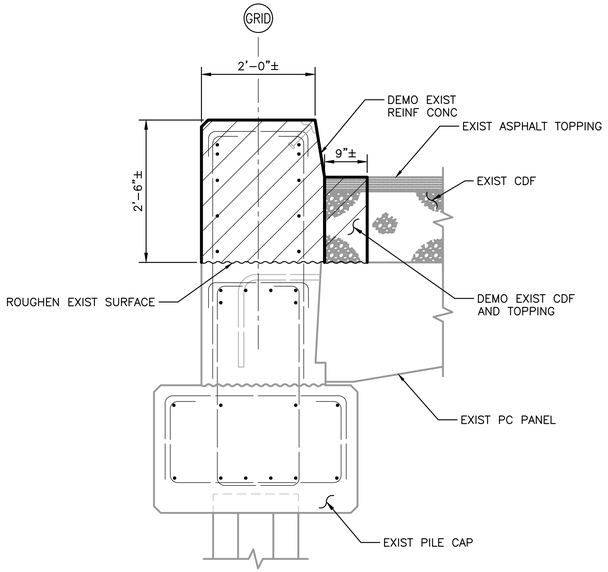
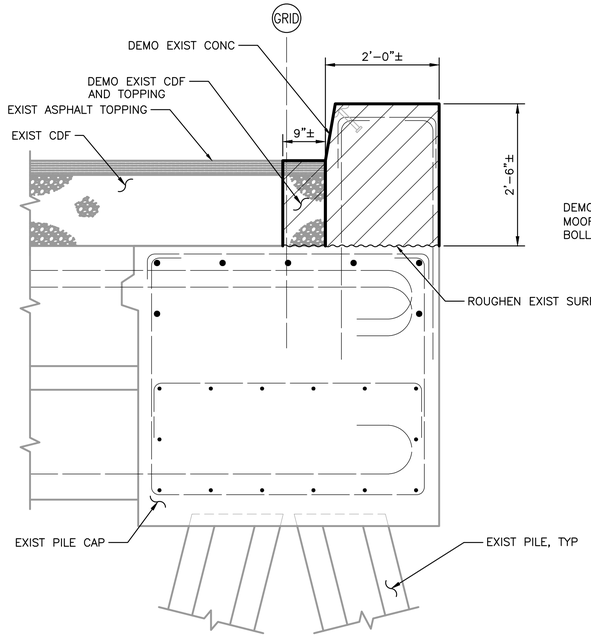
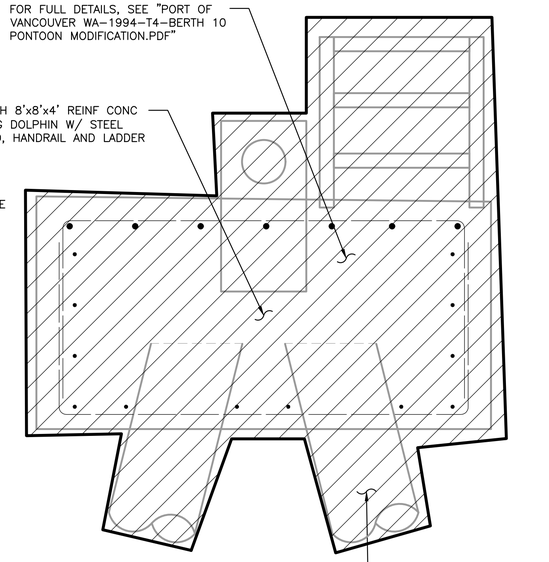


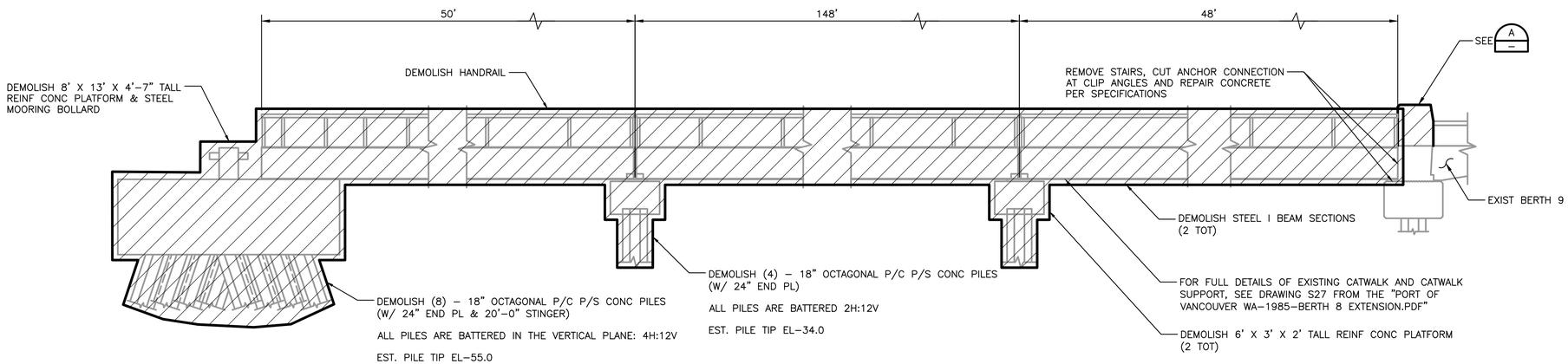
SECTION A
SCALE: 3/4" = 1'-0" D02



SECTION B
SCALE: 3/4" = 1'-0" D03



SECTION C
SCALE: 3/4" = 1'-0" D01



SECTION D
SCALE: 1/4" = 1'-0" D02

NOTES:

1. FOR EXISTING STRUCTURE INFORMATION, SEE DWGS "PORT OF VANCOUVER WA-1977-BERTH 8_2899 GEN CARGO WHARF PLANS 1977 - 1982", "PORT OF VANCOUVER WA-1985-BERTH 8 EXTENSION.PDF" AND "PORT OF VANCOUVER WA-1994-T4-BERTH 10 PONTOON MODIFICATION.PDF"

1/4" = 1'-0" scale 4 0 4 8 feet

3/4" = 1'-0" scale 2 0 2 4 feet

90% SUBMITTAL Dec 29, 2023 - 4:32pm

BRIAN DEAN BEARD — STATE OF WASHINGTON — 57460 — REGISTERED PROFESSIONAL ENGINEER

WSP USA Inc.
2121 SW 3rd Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-6100
FAX: 360-823-6101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: AS SHOWN
DRAWN BY: TW
APPROVED BY: BDB
DATE: 22-Dec-23

REVISION
NO. DATE.

PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
DEMOLITION DETAILS

DRAWING NUMBER
D05
SHEET NUMBER 16 OF 130

POV PROJECT NO:
CP-0441

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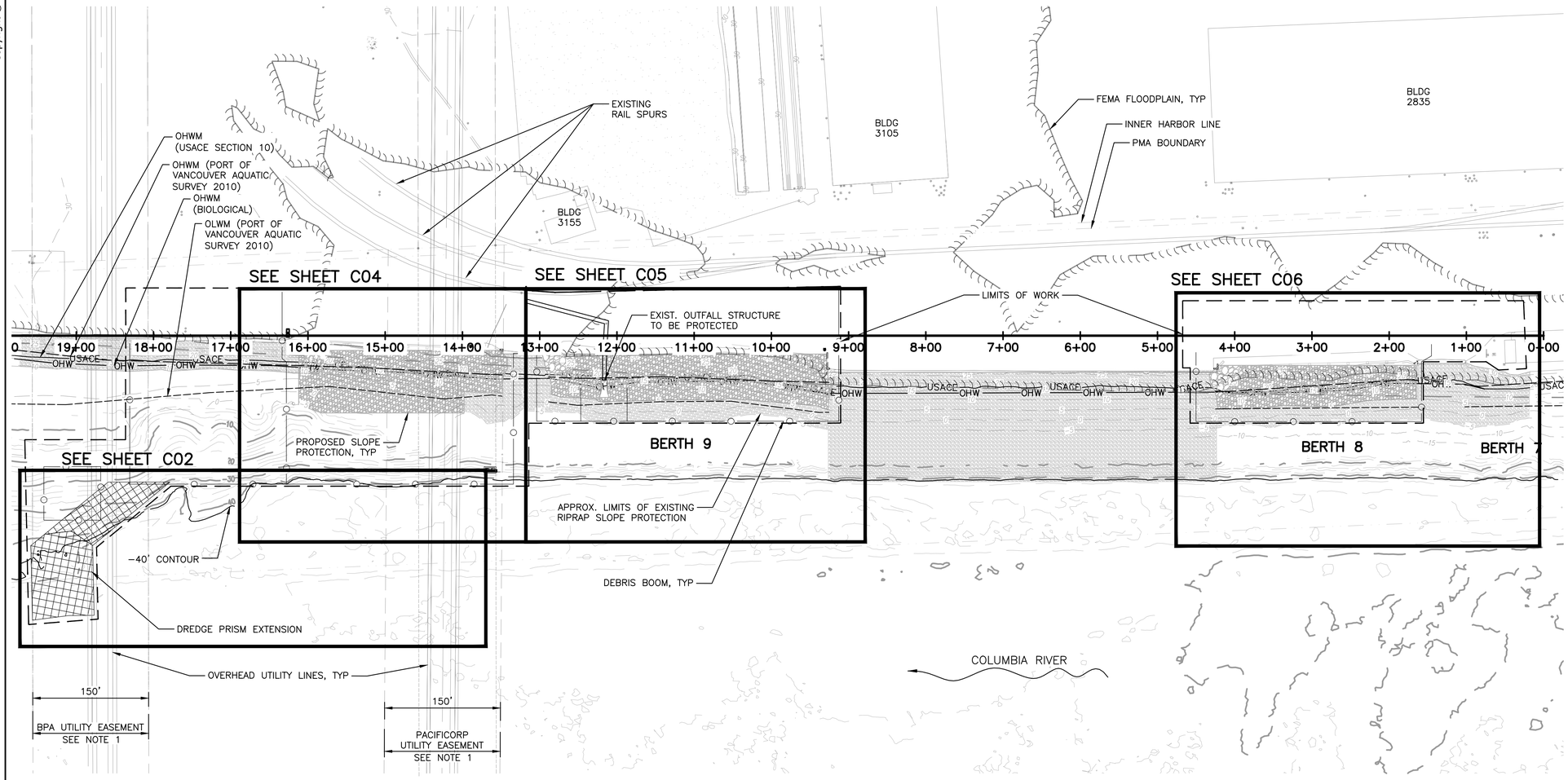
GENERAL:

1. FOR ALL WORK WITHIN THE UTILITY EASEMENT, CONTRACTOR SHALL ABIDE BY THE AGREEMENT ESTABLISHED BETWEEN THE PORT OF VANCOUVER, USA AND THE POWER COMPANIES.



PLAN – DREDING AND SHORELINE PROTECTION OVERALL SITE (1 / –)
SCALE: 1" = 80'

1" = 80' scale 80 0 80 160 feet

90% SUBMITTAL Dec 29, 2023 - 4:32pm

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-6100
FAX: 360-823-6101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: 1" = 80'
DRAWN BY: TW
APPROVED BY: BDB
DATE: 22-Dec-23

REVISION NO. DATE.

PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
DREDGING AND SHORELINE PROTECTION OVERALL PLAN

DRAWING NUMBER
C01
SHEET NUMBER 17 OF 130

POV PROJECT NO:
CP-0441

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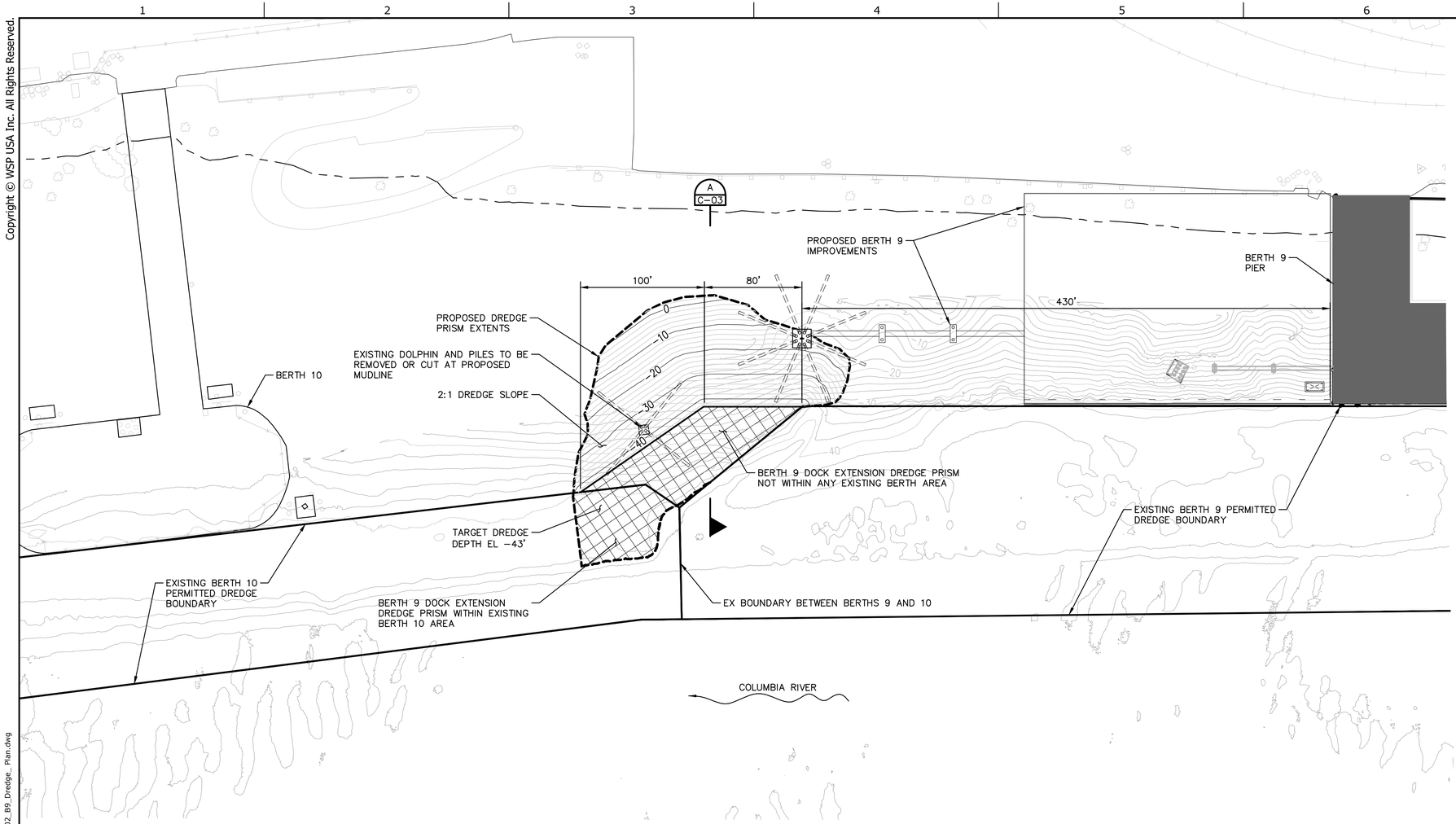


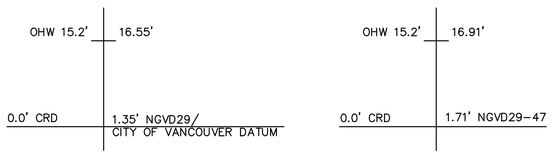
BERTH 9 PLAN VIEW
SCALE: 1" = 50'-0"

GENERAL CONSTRUCTION NOTES

1. CONTRACTOR SHALL PROTECT IN PLACE ALL EXISTING STRUCTURES INCLUDING PILES, CATWALKS, MOORING AND BREASTING DOLPHINS, TRESTLES, DOCKS, CITY OUTFALL STRUCTURE, AND PIERS.
2. CONTRACTOR SHALL USE EXTREME CARE DREDGING ADJACENT TO EXISTING BERTHS. ANY DAMAGE CAUSED BY THE CONTRACTOR SHALL BE REPAIRED AT NO ADDITIONAL COST TO THE PORT, SEE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS.
3. DREDGING SHALL NOT GO BEYOND LIMITS AND DEPTHS SHOWN IN PLAN AND SECTION. DREDGE DEPTH SHALL NOT GO BEYOND THE ALLOWABLE OVERDEPTH OR BEYOND OFFSETS FROM EXISTING BERTHS FENDER SYSTEM AS SHOWN IN SECTION, UNLESS APPROVED IN WRITING BY THE PORT.
4. CONTRACTOR SHALL COORDINATE ALL DREDGING ACTIVITIES AND SCHEDULE WITH THE PORT.
5. ALL DREDGED MATERIAL SHALL BE TRANSPORTED VIA BARGE TO DESIGNATED IN-WATER DISPOSAL AREA. SEE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS.
6. IT IS ASSUMED THAT THE SOILS UPSLOPE OF THE DREDGE LIMIT AND BELOW THE EXISTING STRUCTURES WILL SLOUGH DURING AND AFTER DREDGING OPERATIONS. AS A FINAL ITEM OF WORK THE CONTRACTOR SHALL MAKE ONE PASS ALONG THE FACE OF FENDER SYSTEM TO REMOVE ANY SLOUGHED MATERIAL.
7. DESIGN DREDGE DEPTH FOR THE EXTENDED BERTH 9 DREDGE PRISM IS -43' +2.

SAFETY AND DATUM INFORMATION

1. BATHYMETRIC SURVEY COMPLETED BY ETRAC INC DATED JUNE 9, 2023.
2. SURFACE FEATURE SURVEY FILES COMPLETED BY JONES AND STOKES DATED 2005 AND MACKAY & SPOSITO, INC DATED 2010.
3. DATUM INFORMATION:
   HORIZONTAL DATUM: WASHINGTON STATE PLANE SOUTH, NAD 83 (US FEET)
   VERTICAL DATUM: COLUMBIA RIVER DATUM, CRD (FT)
   VERTICAL DATUM CONVERSION:



LEGEND

- BERTH 9 DOCK EXTENSION DREDGE PRISM
- EXISTING BERTHS 9 AND 10 PERMITTED DREDGE BOUNDARY
- PROPOSED DREDGE PRISM EXTENTS

1" = 50' 50 0 50 100 scale feet

90% SUBMITTAL Dec 21, 2023 - 3:21pm

kpff
1601 5th Avenue, Suite 1200
Seattle, Washington 98101
(206) 382-0600 Fax (206) 382-0500

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: 1:50
DRAWN BY: YJP
APPROVED BY:
DATE: 01-Dec-2023

REVISION
NO. DATE.

PORT OF VANCOUVER USA
Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
BERTH 9 DREDGE PLAN

DRAWING NUMBER
C-02
SHEET NUMBER OF
POV PROJECT NO:

ypatel X:\SEA\2022\2200051 POV On-Call Dredge Consulting 2022\2.18 Drawings\Current- Berth 8-9 Extension\2200051_C02_B9_Dredge_Plan.dwg

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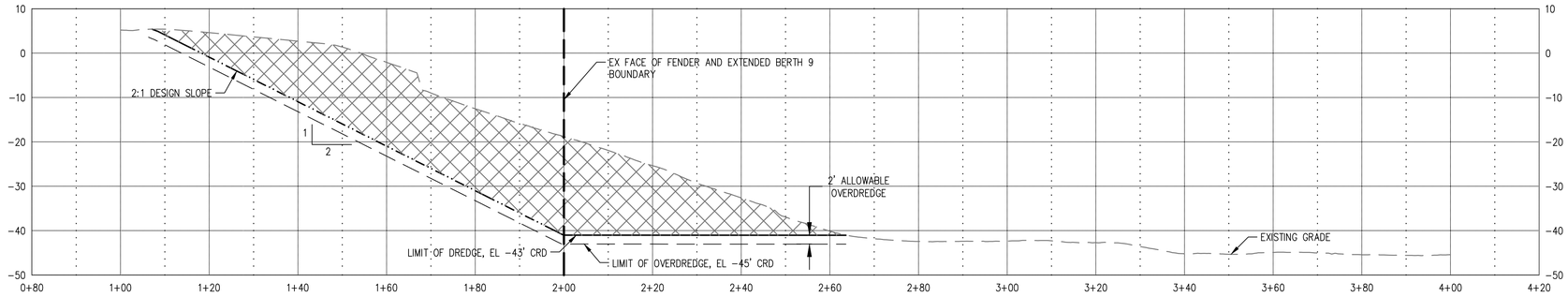

BERTH 9 TYPICAL SECTION (A SHT1)

SCALE: 1" = 16'−0"

GENERAL CONSTRUCTION NOTES

1. ELEVATIONS SHOWN IN SECTIONS ARE BASED ON COLUMBIA RIVER DATUM, CRD.
2. DREDGE DEPTH SHALL NOT GO BEYOND LIMITS AND DEPTHS SHOWN. DREDGE DEPTH SHALL NOT GO BEYOND THE ALLOWABLE OVERDEPTH SHOWN, UNLESS APPROVED IN WRITING BY THE PORT.

LEGEND

REPRESENTATIVE DREDGE AREA

90% SUBMITTAL Dec 21, 2023 - 3:28pm

PRELIMINARY

kpff
1601 5th Avenue, Suite 1300
Seattle, Washington 98101
(206) 382-0600 Fax (206) 382-0500

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: 1:16

DRAWN BY: YJP

APPROVED BY:

DATE: 01-Dec-2023

REVISION
NO. DATE.

PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS

BERTH 9
DREDGE PROFILE

DRAWING NUMBER

C-03

SHEET NUMBER OF

POV PROJECT NO:

bdonahue X:\SEA\2022\2200051 POV On-Call Dredge Consulting 2022\2-18 Drawings\Current- Berth 8-9 Extension\2200051_C03_B9_Dredge_Profile.dwg

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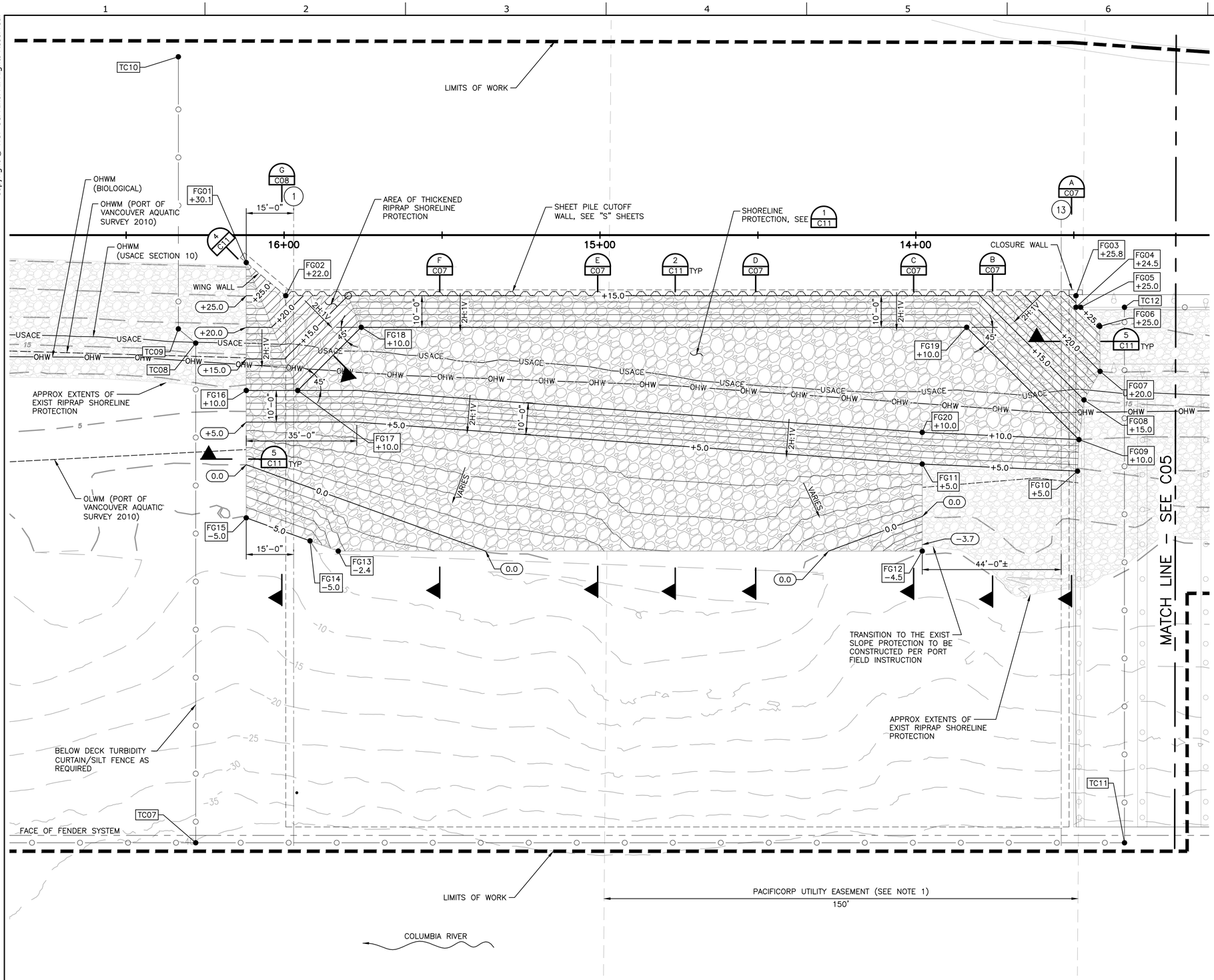


PLAN – SHORELINE PROTECTION – BERTH 9 EXTENSION

SCALE: 1/16" = 1'–0"

LEGEND

- EXISTING RIPRAP SHORELINE PROTECTION
- DESIGN RIPRAP SHORELINE PROTECTION
- THICKENED DESIGN RIPRAP SHORELINE PROTECTION

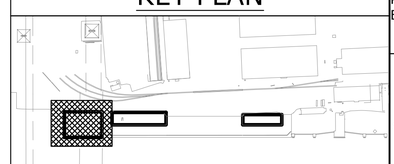
GENERAL:

1. FOR ALL WORK WITHIN THE UTILITY EASEMENT, CONTRACTOR SHALL ABIDE BY THE AGREEMENT ESTABLISHED BETWEEN THE PORT OF VANCOUVER, USA AND THE POWER COMPANIES.

FG BENCH B9 EXTENSION ALIGNMENT CONTROL TABLE		
POINT	STATION	OFFSET
FG01	STA 'C Line' 16+11.99	8.68 LT
FG02	STA 'C Line' 15+99.49	19.17 LT
FG03	STA 'C Line' 13+49.31	19.17 LT
FG04	STA 'C Line' 13+49.32	22.83 LT
FG05	STA 'C Line' 13+47.82	22.83 LT
FG06	STA 'C Line' 13+41.78	28.87 LT
FG07	STA 'C Line' 13+41.67	43.13 LT
FG08	STA 'C Line' 13+46.78	52.16 LT
FG09	STA 'C Line' 13+48.37	64.71 LT
FG10	STA 'C Line' 13+48.83	74.70 LT
FG11	STA 'C Line' 13+97.99	72.46 LT
FG12	STA 'C Line' 13+97.99	100.00 LT
FG13	STA 'C Line' 15+82.86	100.00 LT
FG14	STA 'C Line' 15+91.80	96.77 LT
FG15	STA 'C Line' 16+11.99	89.49 LT
FG16	STA 'C Line' 16+11.99	49.17 LT
FG17	STA 'C Line' 15+95.68	49.17 LT
FG18	STA 'C Line' 15+75.61	29.17 LT
FG19	STA 'C Line' 13+83.91	29.17 LT
FG20	STA 'C Line' 13+97.99	62.43 LT

1/16" = 1'–0" scale 16 0 16 32 feet

KEY PLAN



90% SUBMITTAL Dec 29, 2023 - 4:36pm

WSP USA Inc.
2121 SW 3rd Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-6100
FAX: 360-823-6101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: 1/16" = 1'-0"

DRAWN BY: TW

APPROVED BY: BDB

DATE: 22-Dec-23

REVISION NO. DATE.

PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
SHORELINE PROTECTION PLAN - BERTH 9 EXTENSION

DRAWING NUMBER
C04

SHEET NUMBER 20 OF 130

POV PROJECT NO:
CP-0441

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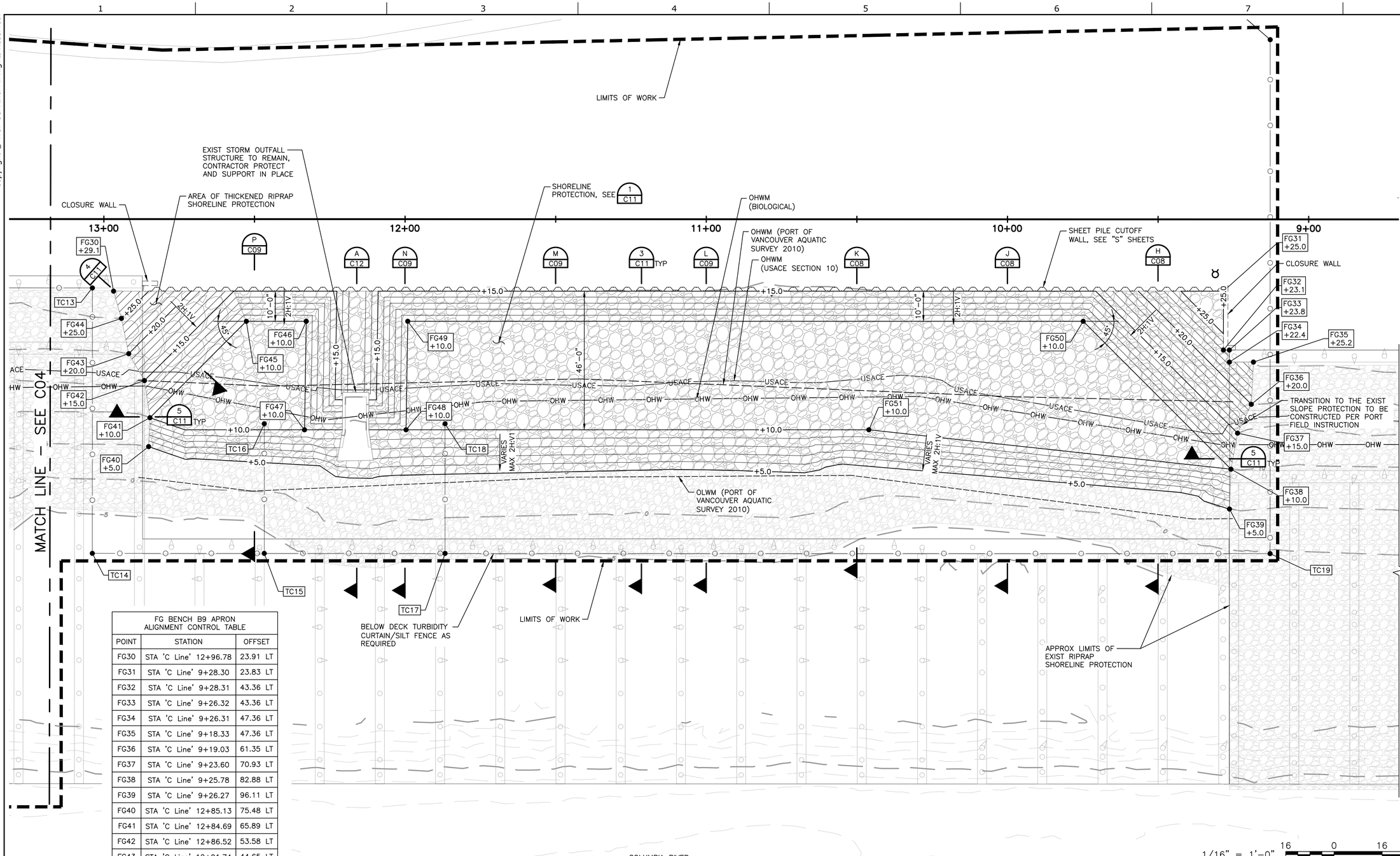


FG BENCH B9 APRON ALIGNMENT CONTROL TABLE		
POINT	STATION	OFFSET
FG30	STA 'C Line' 12+96.78	23.91 LT
FG31	STA 'C Line' 9+28.30	23.83 LT
FG32	STA 'C Line' 9+28.31	43.36 LT
FG33	STA 'C Line' 9+26.32	43.36 LT
FG34	STA 'C Line' 9+26.31	47.36 LT
FG35	STA 'C Line' 9+18.33	47.36 LT
FG36	STA 'C Line' 9+19.03	61.35 LT
FG37	STA 'C Line' 9+23.60	70.93 LT
FG38	STA 'C Line' 9+25.78	82.88 LT
FG39	STA 'C Line' 9+26.27	96.11 LT
FG40	STA 'C Line' 12+85.13	75.48 LT
FG41	STA 'C Line' 12+84.69	65.89 LT
FG42	STA 'C Line' 12+86.52	53.58 LT
FG43	STA 'C Line' 12+91.74	44.65 LT
FG44	STA 'C Line' 12+94.18	32.95 LT
FG45	STA 'C Line' 12+52.71	33.90 LT
FG46	STA 'C Line' 12+32.80	33.90 LT
FG47	STA 'C Line' 12+33.37	69.90 LT
FG48	STA 'C Line' 11+99.67	69.89 LT
FG49	STA 'C Line' 11+99.10	33.89 LT
FG50	STA 'C Line' 9+74.85	33.84 LT
FG51	STA 'C Line' 10+46.00	69.85 LT

PLAN – SHORELINE PROTECTION – BERTH 9 APRON

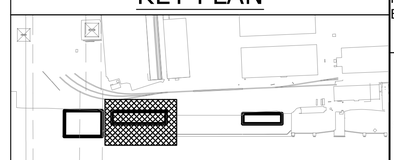
SCALE: 1/16" = 1'-0"

1/16" = 1'-0" scale 16 0 16 32 feet

LEGEND

- EXISTING RIPRAP SHORELINE PROTECTION
- DESIGN RIPRAP SHORELINE PROTECTION
- THICKENED DESIGN RIPRAP SHORELINE PROTECTION

KEY PLAN



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BRIAN DEAN BEARD
STATE OF WASHINGTON
157460
REGISTERED PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-6100
FAX: 360-823-6101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: 1/16" = 1'-0"

DRAWN BY: TW

APPROVED BY: BDB

DATE: 22-Dec-23

REVISION NO. DATE.

PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
SHORELINE PROTECTION PLAN - BERTH 9 APRON

DRAWING NUMBER
C05

SHEET NUMBER 21 OF 130

POV PROJECT NO: CP-0441

USJH675409 C:\Users\USJH675409\WSP O365\Portland CADD Projects - PDX CADD Projects\A19.0198(002)\CADD\Dwgs\04_C05.dwg

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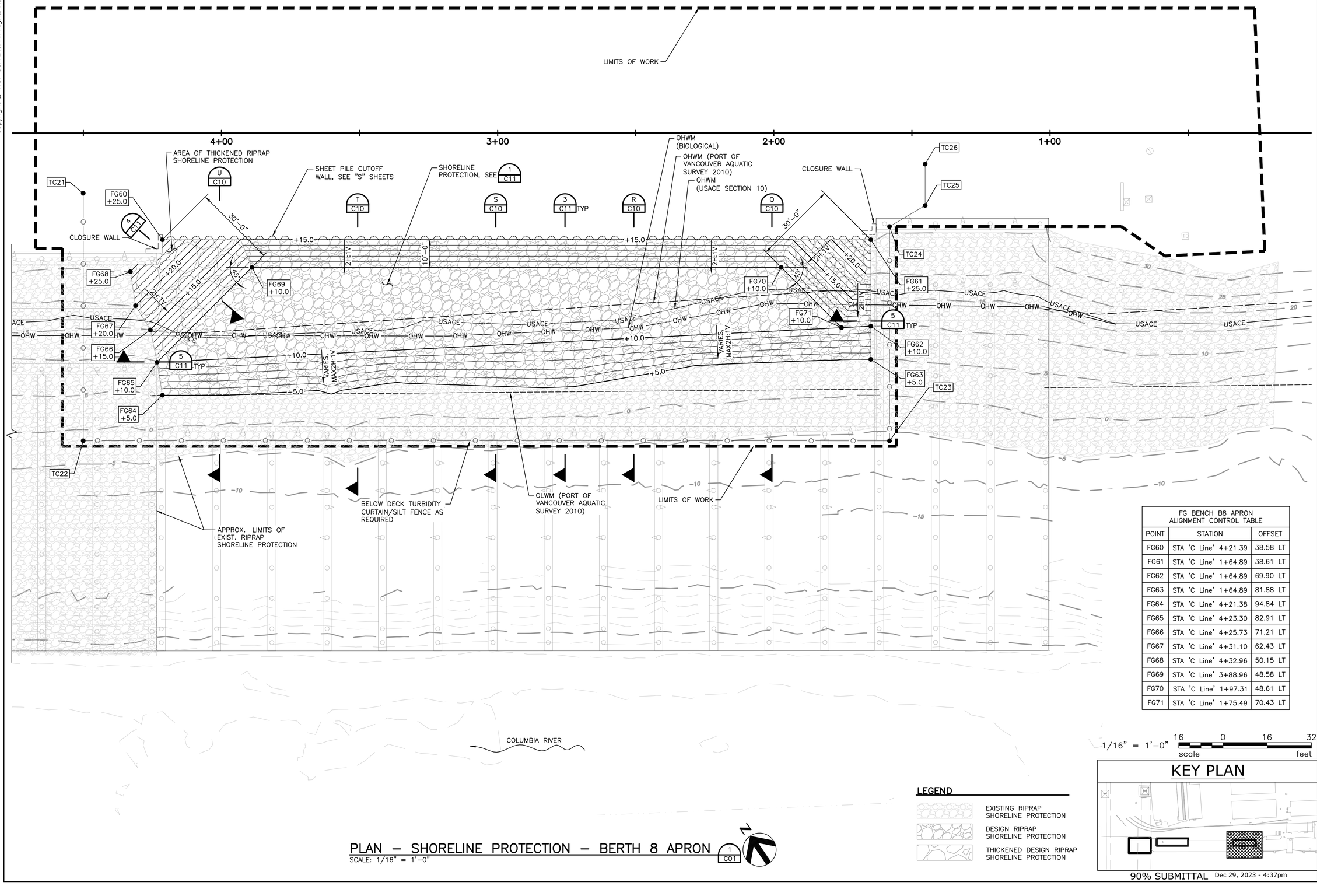

FG BENCH B8 APRON ALIGNMENT CONTROL TABLE		
POINT	STATION	OFFSET
FG60	STA 'C Line' 4+21.39	38.58 LT
FG61	STA 'C Line' 1+64.89	38.61 LT
FG62	STA 'C Line' 1+64.89	69.90 LT
FG63	STA 'C Line' 1+64.89	81.88 LT
FG64	STA 'C Line' 4+21.38	94.84 LT
FG65	STA 'C Line' 4+23.30	82.91 LT
FG66	STA 'C Line' 4+25.73	71.21 LT
FG67	STA 'C Line' 4+31.10	62.43 LT
FG68	STA 'C Line' 4+32.96	50.15 LT
FG69	STA 'C Line' 3+88.96	48.58 LT
FG70	STA 'C Line' 1+97.31	48.61 LT
FG71	STA 'C Line' 1+75.49	70.43 LT

1/16" = 1'-0" 16 0 16 32 scale feet

PLAN – SHORELINE PROTECTION – BERTH 8 APRON

SCALE: 1/16" = 1'-0"

1 C01

LEGEND

- EXISTING RIPRAP SHORELINE PROTECTION
- DESIGN RIPRAP SHORELINE PROTECTION
- THICKENED DESIGN RIPRAP SHORELINE PROTECTION

KEY PLAN

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BRIAN DEAN BEARD
STATE OF WASHINGTON
37460
REGISTERED PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-6100
FAX: 360-823-6101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: 1/16" = 1'-0"
DRAWN BY: TW
APPROVED BY: BDB
DATE: 22-Dec-23

REVISION NO. DATE.

PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
SHORELINE PROTECTION PLAN - BERTH 8 APRON

DRAWING NUMBER
C06
SHEET NUMBER 22 OF 130

POV PROJECT NO:
CP-0441

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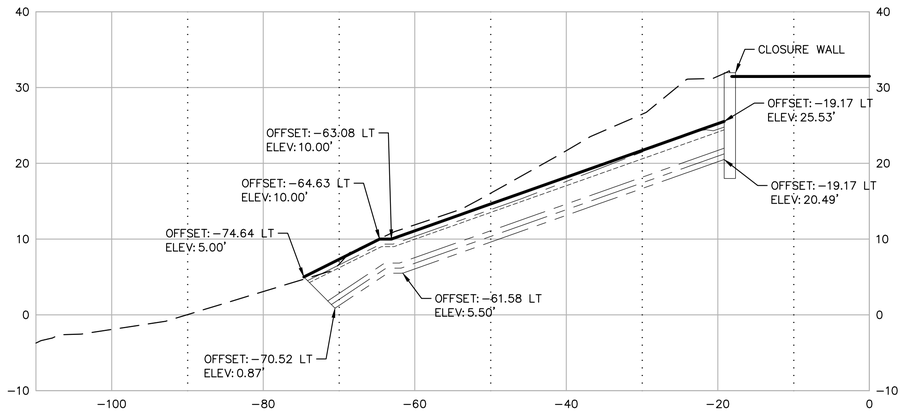
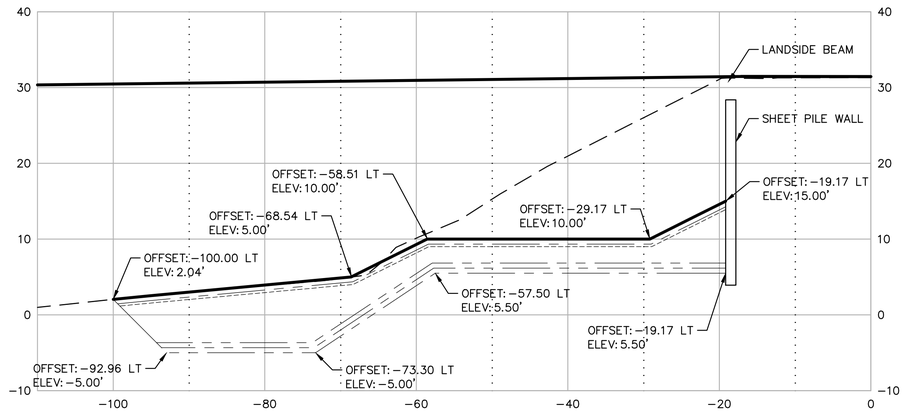


BERTH 9 EXTENSION – STA. 13+50 SECTION (A / C04)
SCALE: 1" = 10'



BERTH 9 EXTENSION – STA. 14+50 SECTION (D / C04)
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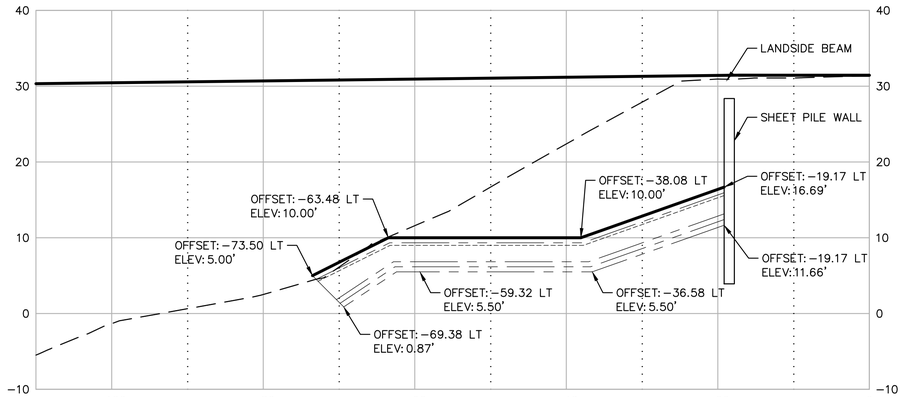

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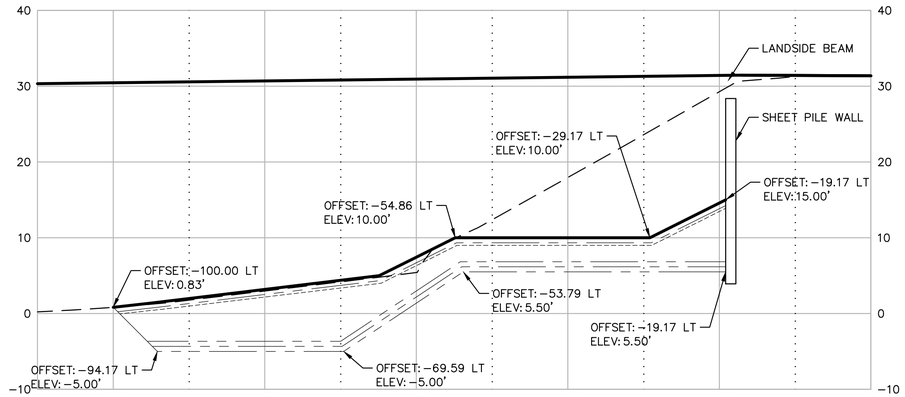

BERTH 9 EXTENSION – STA. 15+00 SECTION (E / C04)
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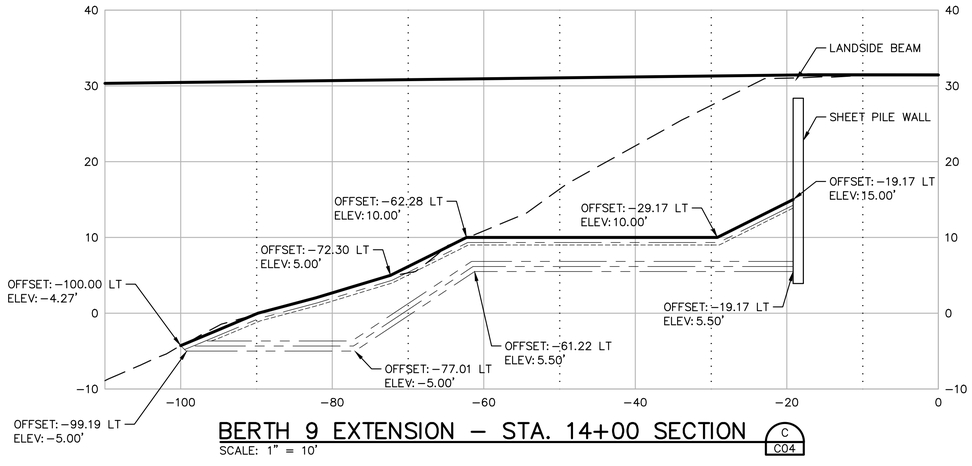
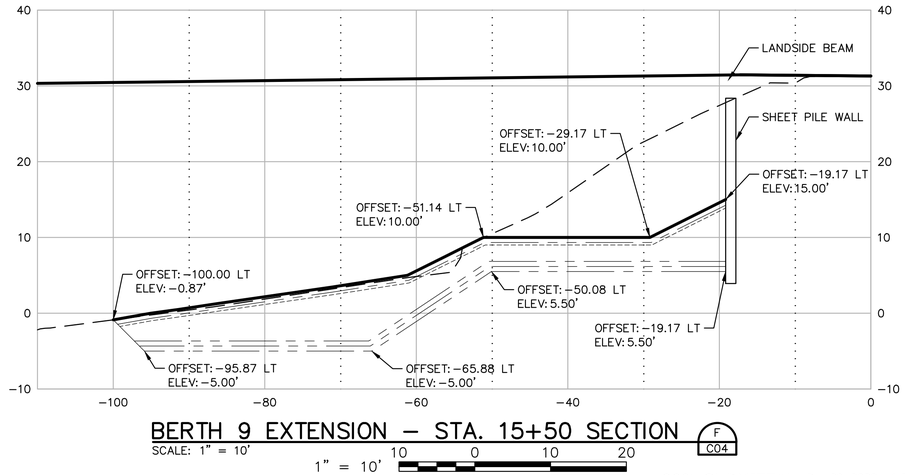


BERTH 9 EXTENSION – STA. 14+00 SECTION (C / C04)
SCALE: 1" = 10'



BERTH 9 EXTENSION – STA. 15+50 SECTION (F / C04)
SCALE: 1" = 10'

1" = 10' scale (10 0 10 20 feet)

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WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

BRIAN DEAN BEARD — STATE OF WASHINGTON — 57460 — REGISTERED PROFESSIONAL ENGINEER

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: 1" = 10'
DRAWN BY: TW
APPROVED BY: BDB
DATE: 22-Dec-23

REVISION NO. DATE.

PORT OF VANCOUVER USA
Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
SHORELINE PROTECTION SECTIONS - BERTH 9 EXTENSION

DRAWING NUMBER
C07
SHEET NUMBER 23 OF 130

POV PROJECT NO:
CP-0441

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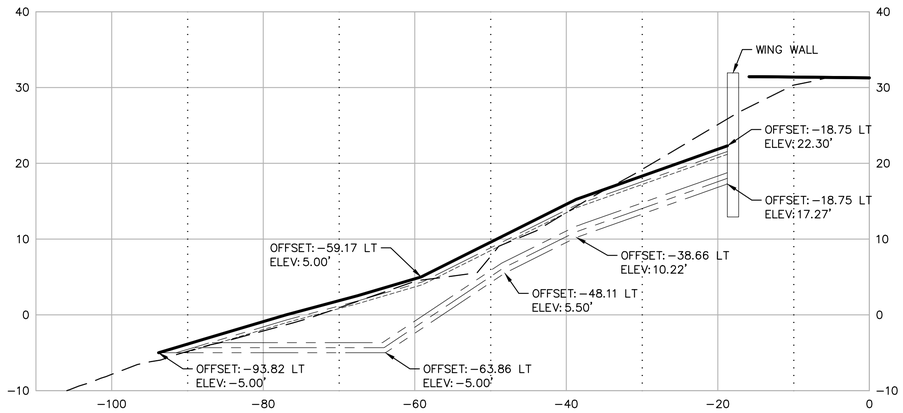

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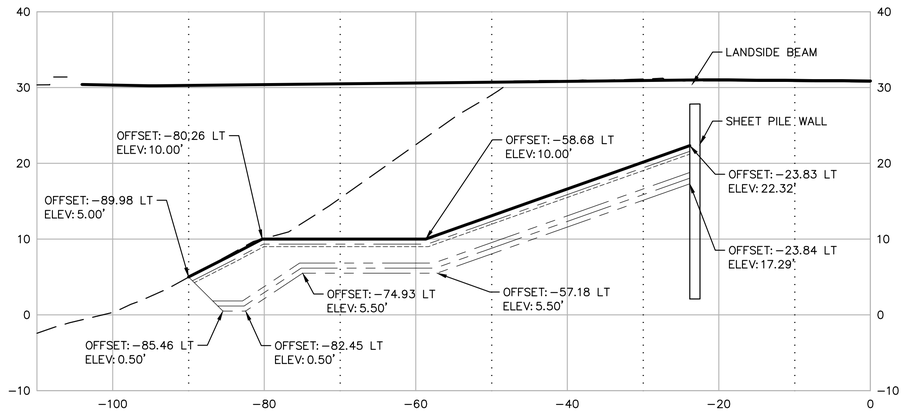

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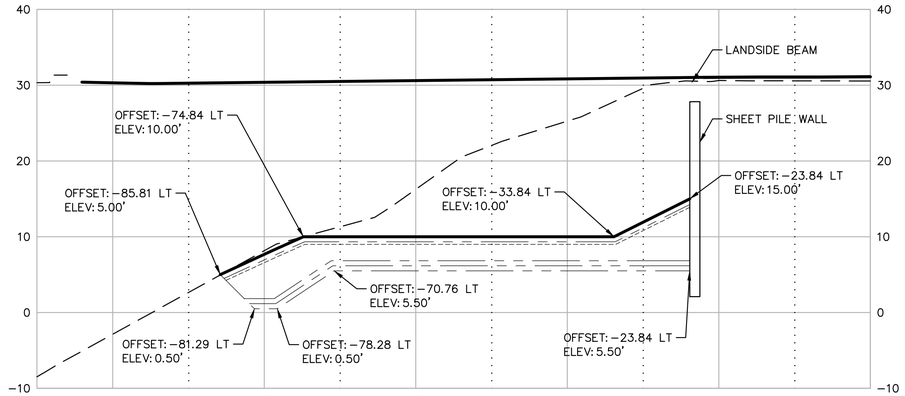

BERTH 9 APRON – STA. 10+00 SECTION (J / C05)
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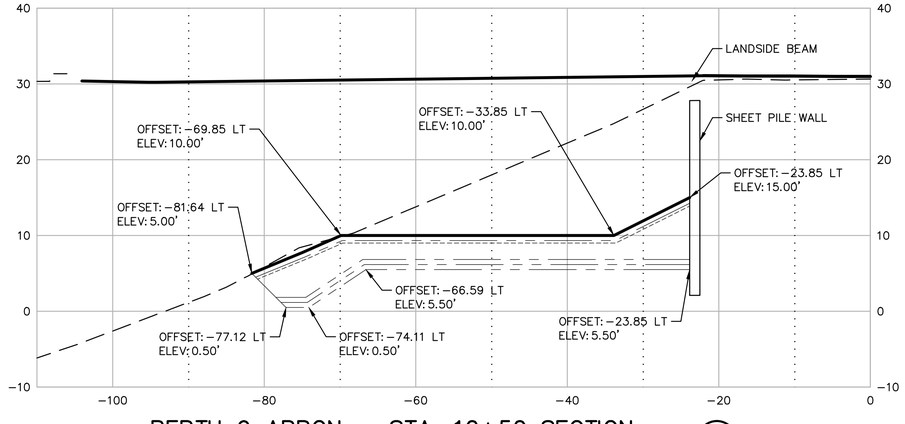

BERTH 9 APRON – STA. 10+50 SECTION (K / C05)
SCALE: 1" = 10'

1" = 10' scale feet

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BRIAN DEAN BEARD
STATE OF WASHINGTON
57460
REGISTERED PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-6100
FAX: 360-823-6101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: 1" = 10'
DRAWN BY: TW
APPROVED BY: BDB
DATE: 22-Dec-23

REVISION NO. DATE.

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Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
SHORELINE PROTECTION SECTIONS - BERTH 9 APRON - SHEET 1

DRAWING NUMBER
C08
SHEET NUMBER 24 OF 130

POV PROJECT NO:
CP-0441

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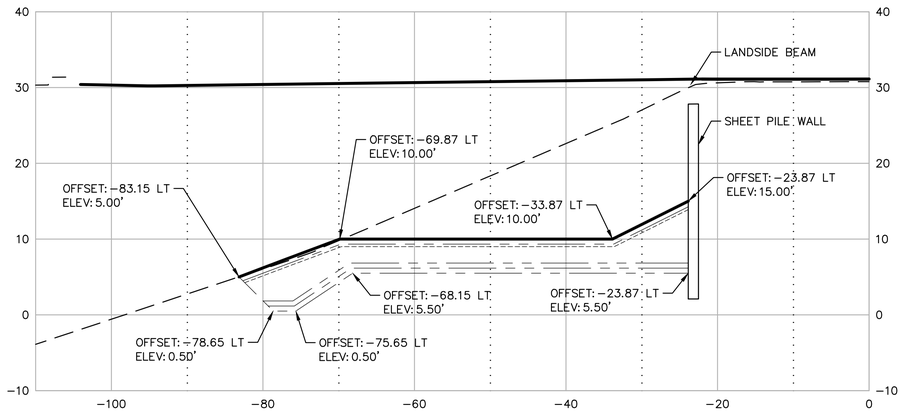

BERTH 9 APRON – STA. 11+00 SECTION (L / C05)
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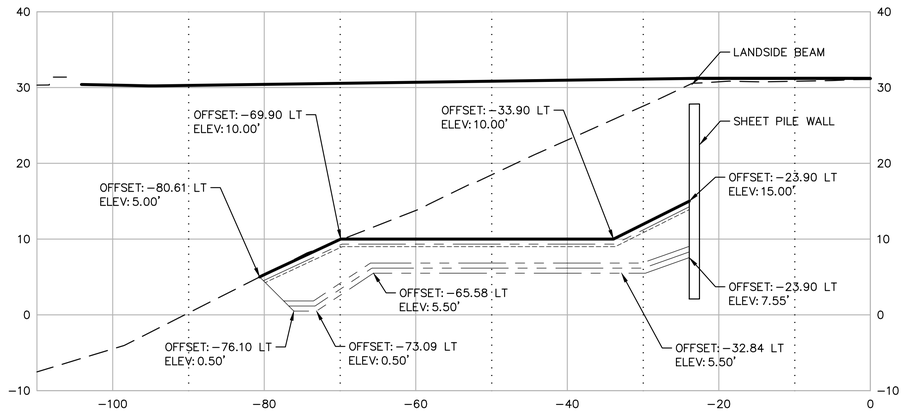

BERTH 9 APRON – STA. 12+50 SECTION (P / C05)
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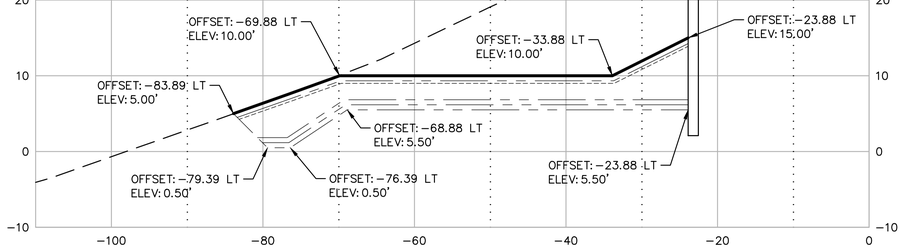

BERTH 9 APRON – STA. 11+50 SECTION (M / C05)
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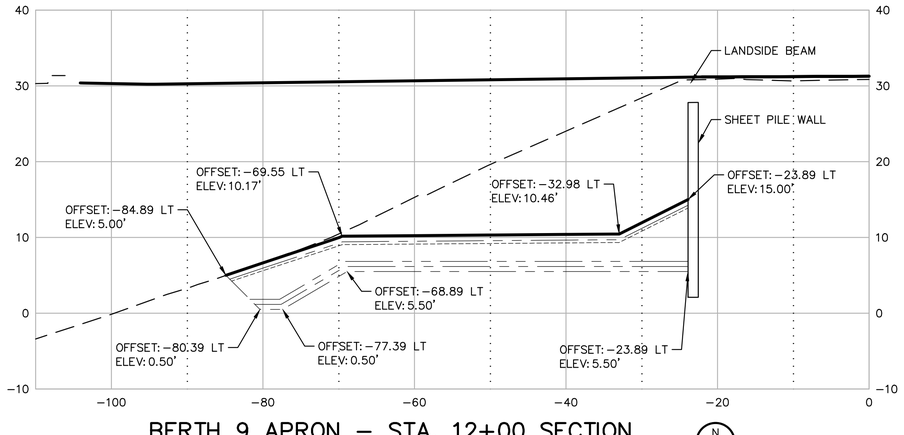

BERTH 9 APRON – STA. 12+00 SECTION (N / C05)
SCALE: 1" = 10'

1" = 10' 10 0 10 20 scale feet

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BRIAN DEAN BEARD
STATE OF WASHINGTON
57460
REGISTERED PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

A/E PROJECT NUMBER: A19.0198.02

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APPROVED BY: BDB
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Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
SHORELINE PROTECTION SECTIONS - BERTH 9 APRON - SHEET 2

DRAWING NUMBER
C09
SHEET NUMBER 25 OF 130

POV PROJECT NO: CP-0441

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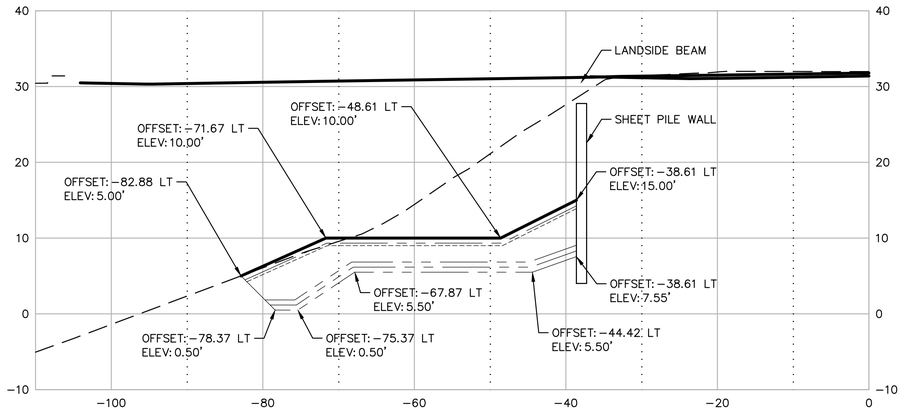

BERTH 8 APRON – STA. 2+00 SECTION (Q / C06)
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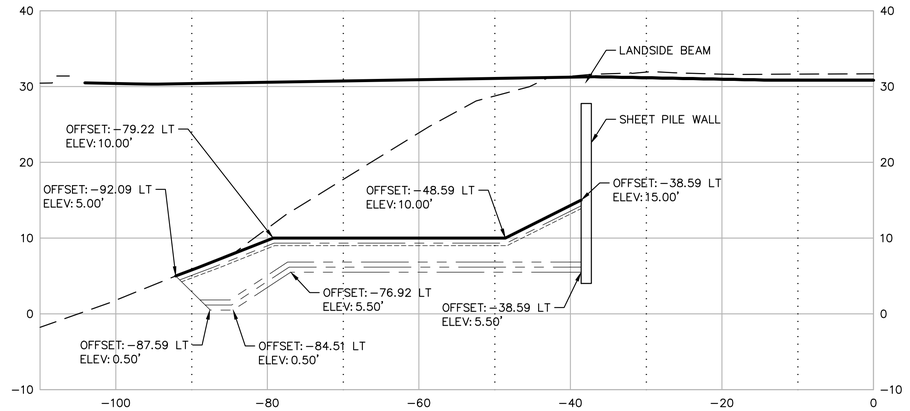

BERTH 8 APRON – STA. 3+50 SECTION (T / C06)
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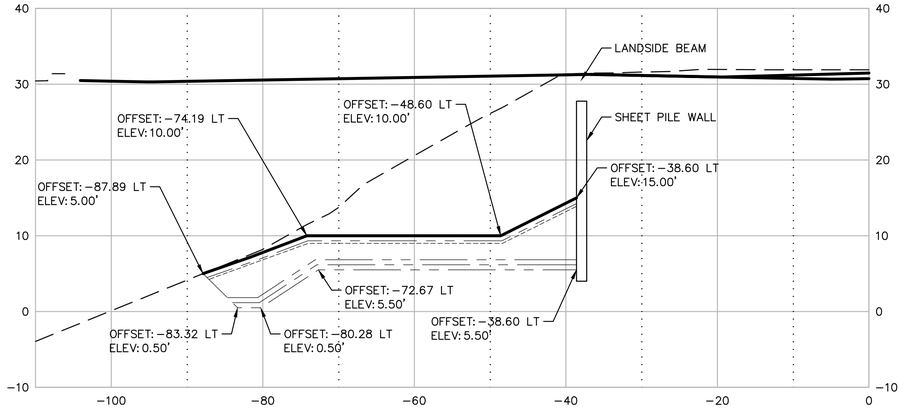

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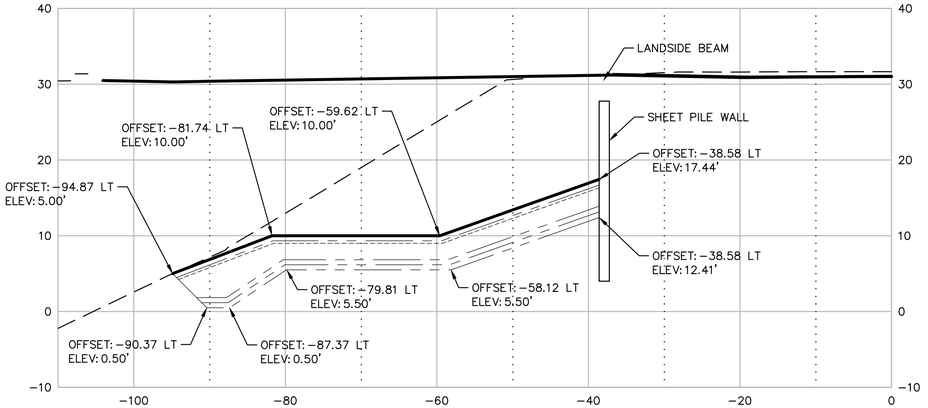
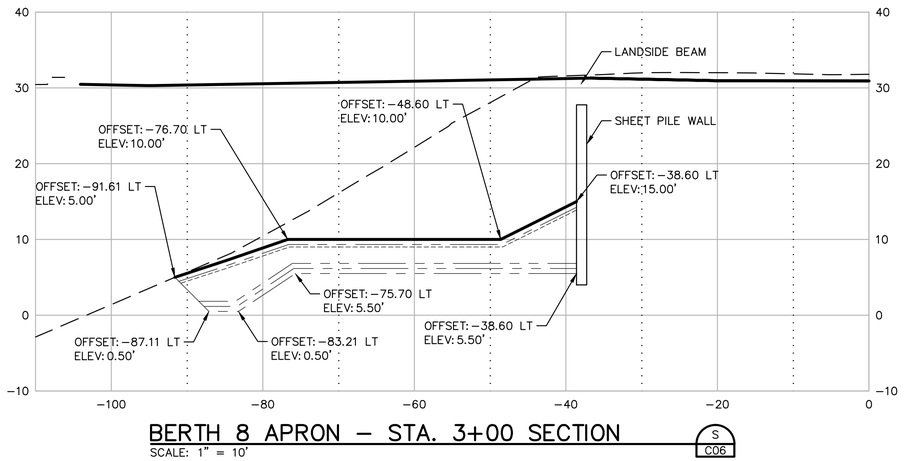


BERTH 8 APRON – STA. 4+00 SECTION (U / C06)
SCALE: 1" = 10'



BERTH 8 APRON – STA. 3+00 SECTION (S / C06)
SCALE: 1" = 10'

1" = 10' scale 10 0 10 20 feet

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BRIAN DEAN BEARD
STATE OF WASHINGTON
57460
REGISTERED
PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-6100
FAX: 360-823-6101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: 1" = 10'
DRAWN BY: TW
APPROVED BY: BDB
DATE: 22-Dec-23

REVISION NO. DATE.

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Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
SHORELINE PROTECTION SECTIONS - BERTH 8 APRON

DRAWING NUMBER
C10
SHEET NUMBER 26 OF 130

POV PROJECT NO:
CP-0441

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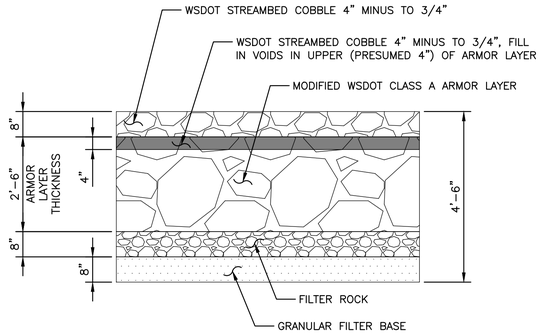
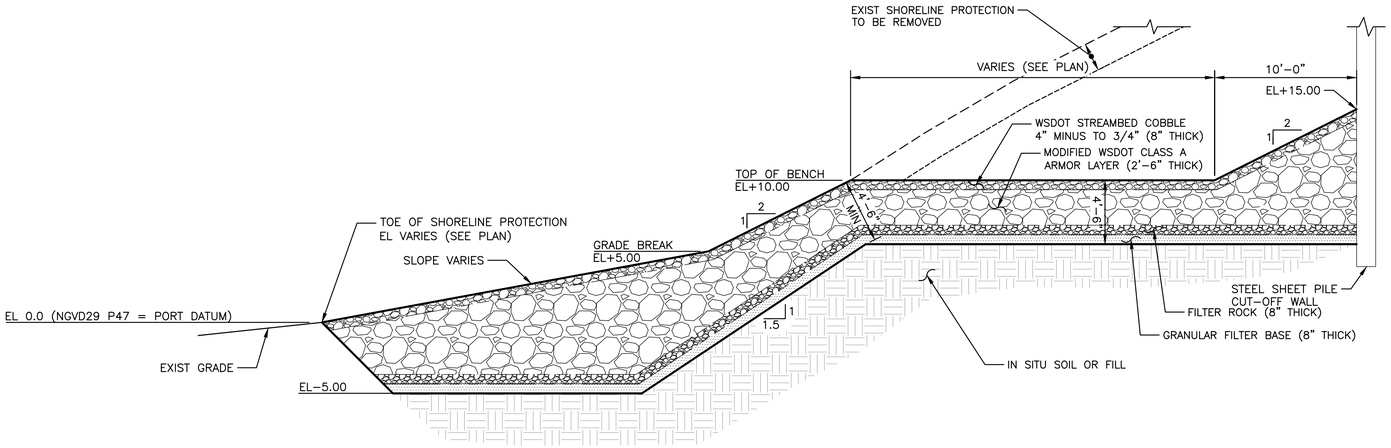
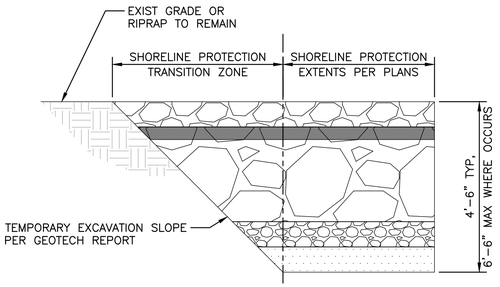


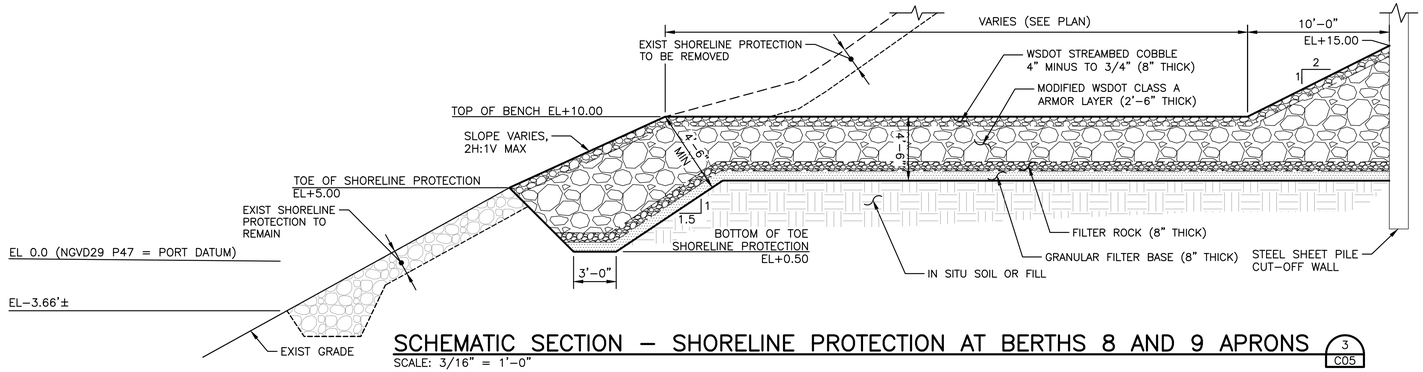
SHORELINE PROTECTION DETAIL (1/C04)
SCALE: 1/2" = 1'-0"



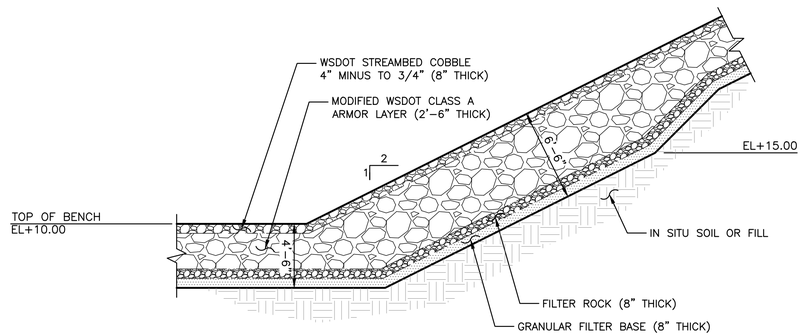
SCHEMATIC SECTION – SHORELINE PROTECTION AT BERTH 9 EXTENSION (2/C04)
SCALE: 3/16" = 1'-0"



SHORELINE PROTECTION TRANSITION DETAIL (5/C04)
SCALE: 1/2" = 1'-0"



SCHEMATIC SECTION – SHORELINE PROTECTION AT BERTHS 8 AND 9 APRONS (3/C05)
SCALE: 3/16" = 1'-0"



SCHEMATIC SECTION – SHORELINE PROTECTION AT DOWNSTREAM TRANSITION (4/C04)
SCALE: 3/16" = 1'-0"

3/16" = 1'-0" (8 0 8 16 scale feet)

1/2" = 1'-0" (2 0 2 4 scale feet)

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BRIAN DEAN BEARD
STATE OF WASHINGTON
37460
REGISTERED PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: AS SHOWN
DRAWN BY: TW
APPROVED BY: BDB
DATE: 22-Dec-23

REVISION NO. DATE.

PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
SHORELINE PROTECTION DETAILS - SHEET 1

DRAWING NUMBER
C11
SHEET NUMBER 27 OF 130
POV PROJECT NO: CP-0441

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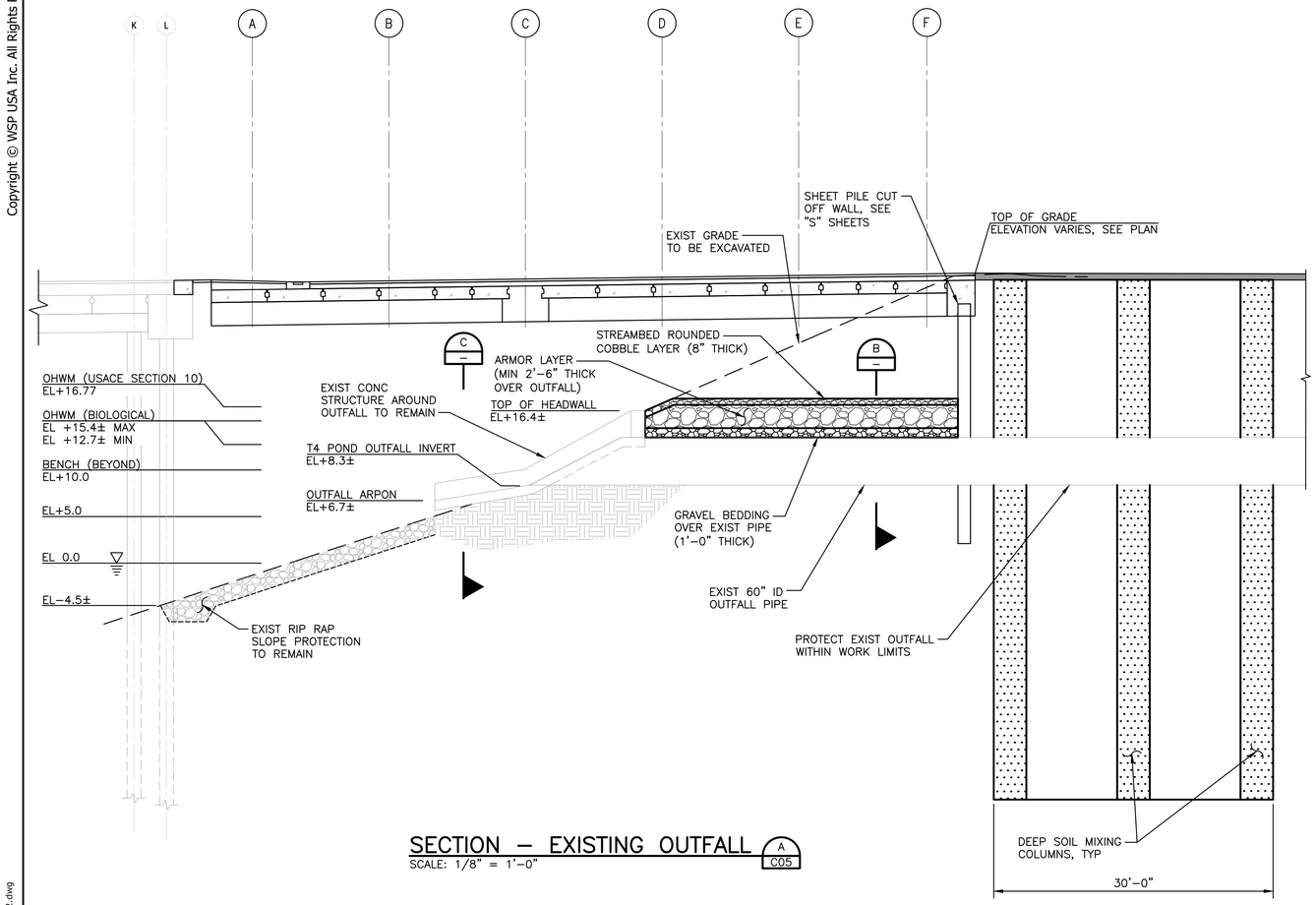
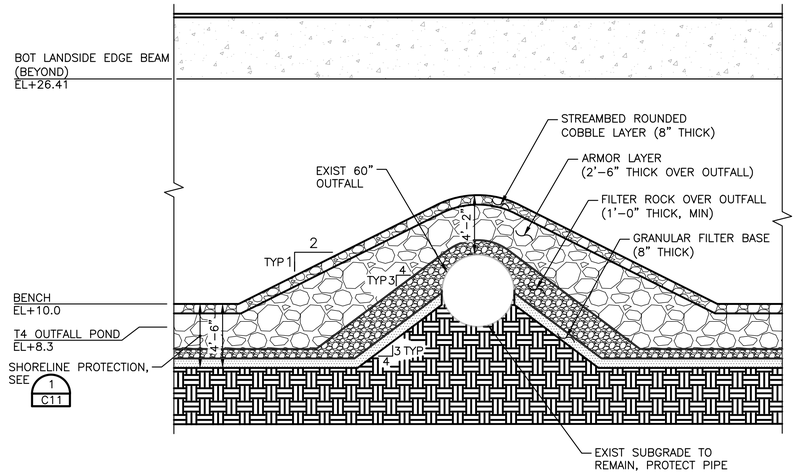
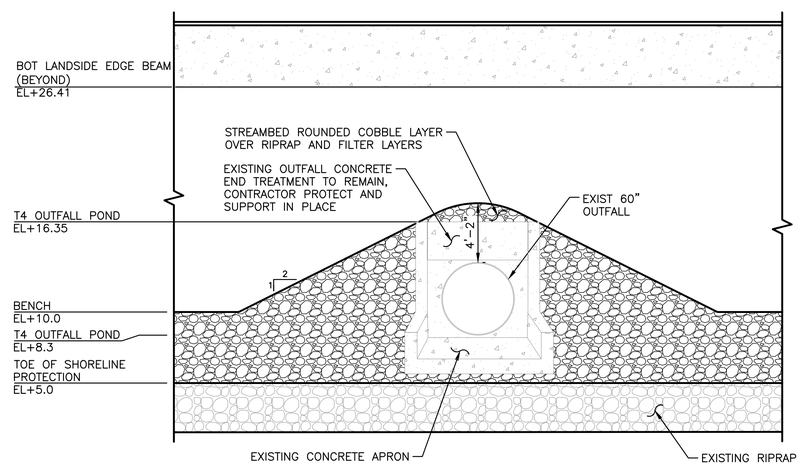


SECTION – EXISTING OUTFALL (A / C05)
SCALE: 1/8" = 1'–0"



SECTION – EXISTING OUTFALL (B / –)
SCALE: 3/16" = 1'–0"



ELEVATION – EXISTING OUTFALL END TREATMENT (C / –)
SCALE: 3/16" = 1'–0"

1/8" = 1'–0" scale 8 0 8 16 feet

3/16" = 1'–0" scale 8 0 8 16 feet

NOTES:

1. FOR EXISTING STRUCTURE INFORMATION, SEE DWGS "Port of Vancouver WA–1977–Berth 8_2899 Gen Cargo Wharf Plans 1977 – 1982" AND "Port of Vancouver WA–1985–Berth 8 Extension.pdf"
2. FOR INFORMATION NOT SHOWN, SEE SHEET S24.

90% SUBMITTAL Dec 29, 2023 - 4:40pm

BRIAN DEAN BEARD — STATE OF WASHINGTON — 47460 — REGISTERED PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: AS SHOWN
DRAWN BY: TW
APPROVED BY: BDB
DATE: 22-Dec-23

REVISION NO. DATE.

PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
SHORELINE PROTECTION DETAILS - SHEET 2

DRAWING NUMBER
C12
SHEET NUMBER 28 OF 130

POV PROJECT NO:
CP-0441

US\H675409 C:\Users\US\H675409\WSP O365\Portland CADD Projects - PDX CADD Projects\A19.0198\00\2\CADD\Dwgs\04_C12.dwg

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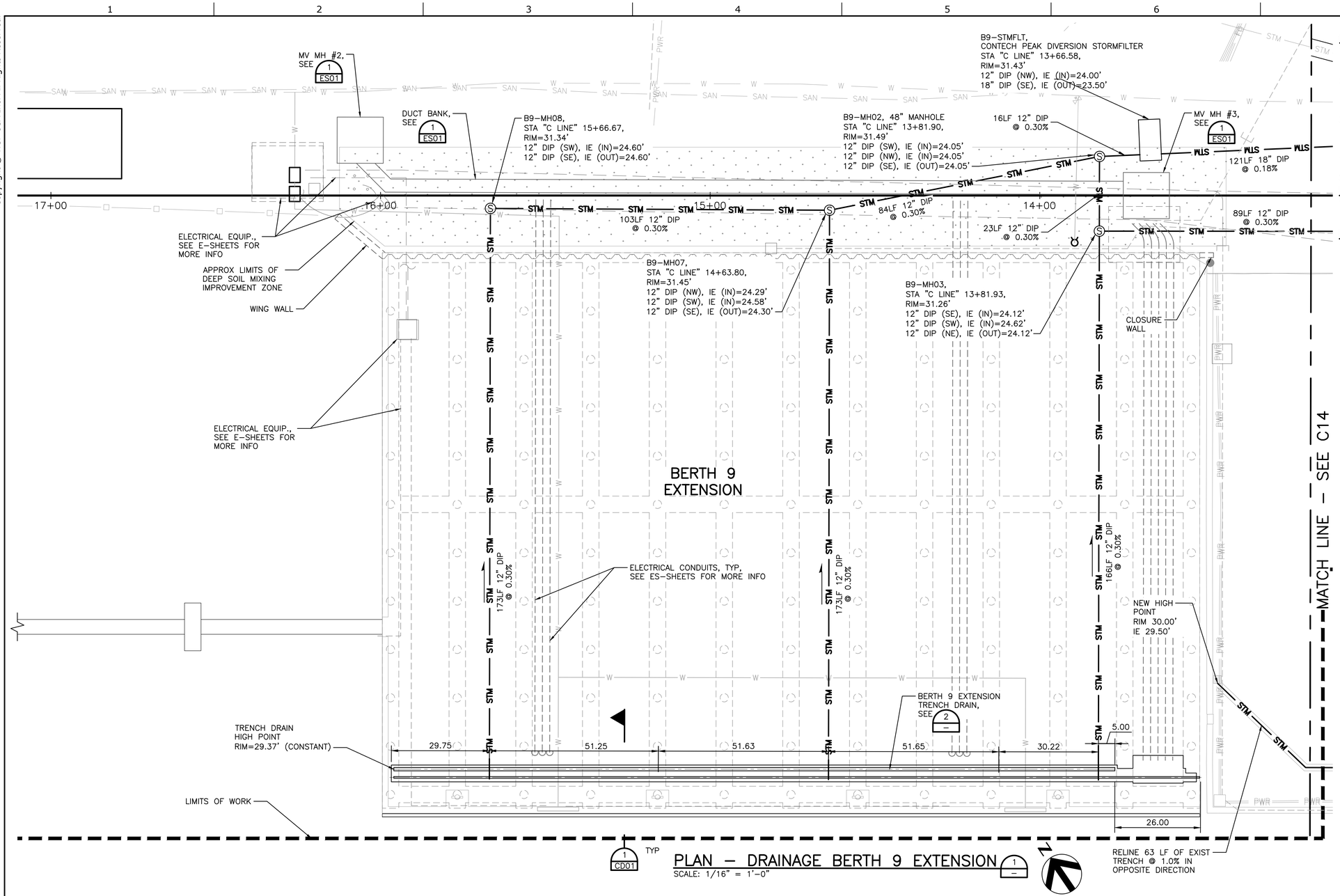
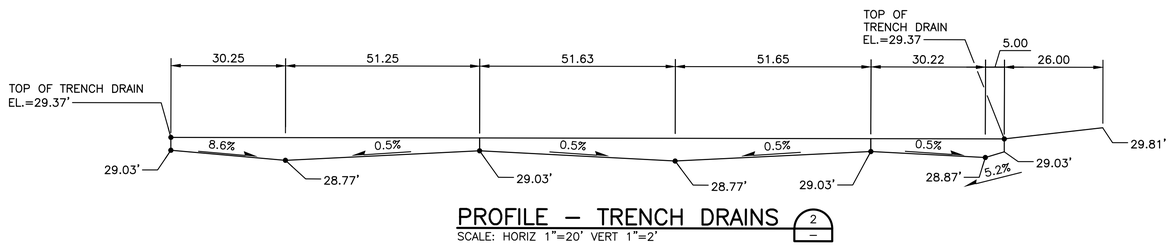


NOTE: CONTRACTOR TO PROVIDE NEENAH FOUNDRY R-4990 SERIES HEAVY DUTY TRENCH DRAIN GRATE AND FRAME FOR INSTALLATION, OR EQUIVALENT.



PROFILE - TRENCH DRAINS 2
SCALE: HORIZ 1"=20' VERT 1"=2'

GENERAL:

1. ELEVATIONS SHOWN ARE IN NVGD29 UNLESS NOTED OTHERWISE. HORIZONTAL DIMENSIONS ARE IN FEET, UNO.
2. ANY DAMAGE CAUSED BY THE CONTRACTOR'S OPERATIONS TO EXISTING FEATURES, STRUCTURES, AND UTILITIES THAT ARE TO REMAIN, SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
3. THE CONTRACTOR SHALL SUPPLY, INSTALL, AND MAINTAIN AT ALL TIMES FLOATING DEBRIS BOOMS AROUND ALL ACTIVE IN-WATER AND OVERWATER WORK AREAS.
4. THE CONTRACTOR SHALL PERFORM WORK IN ACCORDANCE WITH ALL PERMIT REQUIREMENTS.
5. DESIGN STORM: 25 YR.

UTILITIES:

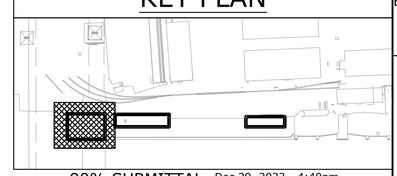
1. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR FIELD VERIFICATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.

DRAINAGE:

1. CONTRACTOR SHALL PROVIDE NEENAH FOUNDRY R-4990 AIRPORT, PORT AND HEAVY INDUSTRIAL SERIES TRENCH DRAIN FRAME AND GRATE OR COMPARABLE EQUIVALENT.

1/16" = 1'-0" scale 16 0 16 32 feet

KEY PLAN



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BRIAN DEAN BEARD STATE OF WASHINGTON 37460 REGISTERED PROFESSIONAL ENGINEER

WSP USA Inc. 2121 SW 3rd Street Suite 300 Vancouver, WA 98660-3231 TEL: 360-823-4100 FAX: 360-823-4101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: AS SHOWN
DRAWN BY: TW
APPROVED BY: BDB
DATE: 22-Dec-23

REVISION NO. DATE.

PORT OF VANCOUVER USA
Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
DRAINAGE PLAN - BERTH 9 EXTENSION

DRAWING NUMBER
C13
SHEET NUMBER 29 OF 130

POV PROJECT NO:
CP-0441

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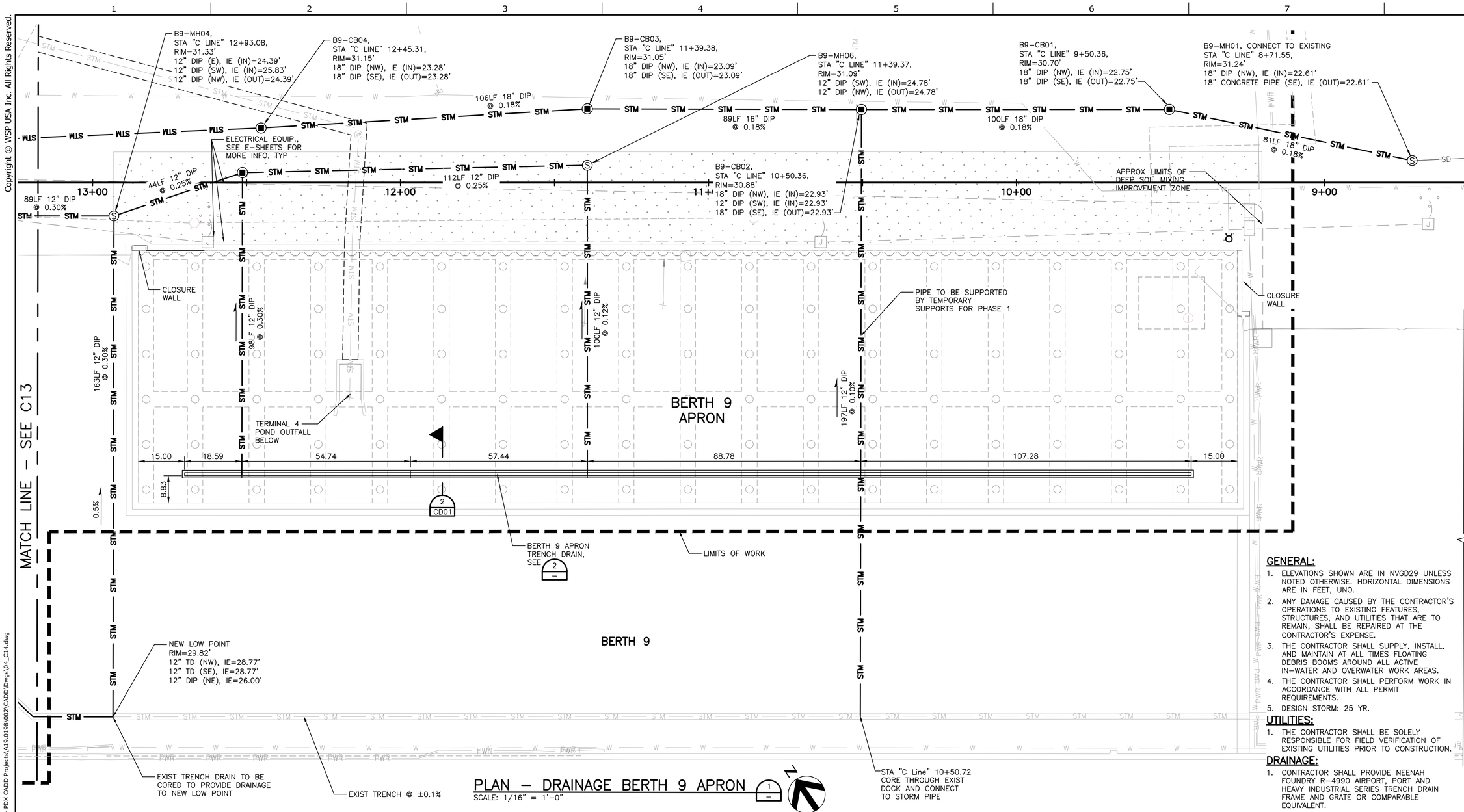
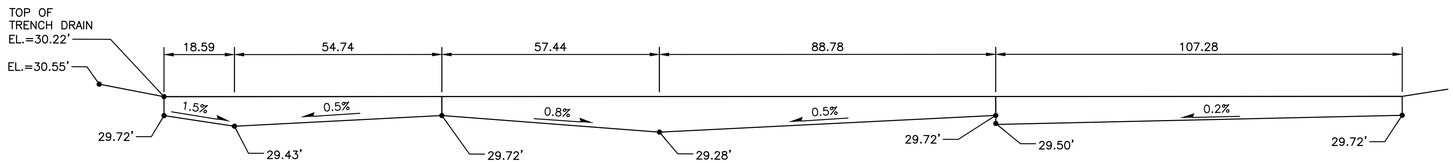


PLAN – DRAINAGE BERTH 9 APRON

SCALE: 1/16" = 1'–0"

NOTE: CONTRACTOR TO PROVIDE NEENAH FOUNDRY R–4990 SERIES HEAVY DUTY TRENCH DRAIN GRATE AND FRAME FOR INSTALLATION, OR EQUIVALENT.



PROFILE – TRENCH DRAINS

SCALE: HORIZ 1"=20' VERT 1"=2'

GENERAL:

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4. THE CONTRACTOR SHALL PERFORM WORK IN ACCORDANCE WITH ALL PERMIT REQUIREMENTS.
5. DESIGN STORM: 25 YR.

UTILITIES:

1. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR FIELD VERIFICATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.

DRAINAGE:

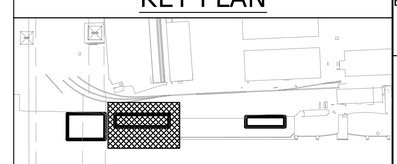
1. CONTRACTOR SHALL PROVIDE NEENAH FOUNDRY R–4990 AIRPORT, PORT AND HEAVY INDUSTRIAL SERIES TRENCH DRAIN FRAME AND GRATE OR COMPARABLE EQUIVALENT.

1/16" = 1'–0"

16 0 16 32

scale feet

KEY PLAN



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BRIAN DEAN BEARD
STATE OF WASHINGTON
57460
REGISTERED PROFESSIONAL ENGINEER

WSP USA Inc.
2121 SW 3rd Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: AS SHOWN

DRAWN BY: TW

APPROVED BY: BDB

DATE: 22-Dec-23

REVISION NO. DATE.

PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
DRAINAGE PLAN - BERTH 9 APRON

DRAWING NUMBER
C14

SHEET NUMBER 30 OF130

POV PROJECT NO:
CP-0441

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B8–MH01,
STA "C LINE" 4+60.71,
RIM=31.77'
18" DIP (SE), IE (IN)=22.83'
18" CONCRETE PIPE (NW), IE (OUT)=22.85'

B8–CB01,
STA "C LINE" 3+71.98,
RIM=30.50'
18" DIP (SE), IE (IN)=22.95'
12" DIP (SW), IE (IN)=24.71'
18" DIP (NW), IE (OUT)=22.95'

B8–CB02,
STA "C LINE" 2+71.92,
RIM=30.50'
18" DIP (E), IE (IN)=23.08'
12" DIP (SW), IE (IN)=24.71'
18" DIP (NW), IE (OUT)=23.08'

B8–MH02,
STA "C LINE" 1+79.82,
RIM=32.34'
18" EXIST DIP (SE), IE (IN)=23.21'
12" DIP (SW), IE (IN)=24.60'
18" DIP (W), IE (OUT)=23.21'

91LF 18" DIP @ 0.13%
100LF 18" DIP @ 0.13%
98LF 18" DIP @ 0.13%
MONITORING WELL TO BE PROTECTED
4+00
3+00
2+00
1+00
ELECTRICAL EQUIP., SEE E–SHEETS FOR MORE INFO, TYP
APPROX LIMITS OF DEEP SOIL MIXING IMPROVEMENT ZONE
CLOSURE WALL
98LF 12" DIP @ 0.30%
98LF 12" DIP @ 0.30%
132LF 12" DIP @ 0.30%
BERTH 8 APRON
BERTH 8 APRON TRENCH DRAIN, SEE 2
14.92
8.71
34.46
50.00
50.00
50.00
42.16
14.95
3 CD01
LIMITS OF WORK
BERTH 8

GENERAL:

1. ELEVATIONS SHOWN ARE IN NVGD29 UNLESS NOTED OTHERWISE. HORIZONTAL DIMENSIONS ARE IN FEET, UNO.
2. ANY DAMAGE CAUSED BY THE CONTRACTOR'S OPERATIONS TO EXISTING FEATURES, STRUCTURES, AND UTILITIES THAT ARE TO REMAIN, SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
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4. THE CONTRACTOR SHALL PERFORM WORK IN ACCORDANCE WITH ALL PERMIT REQUIREMENTS.
5. DESIGN STORM: 25 YR.

UTILITIES:

1. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR FIELD VERIFICATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION

DRAINAGE:

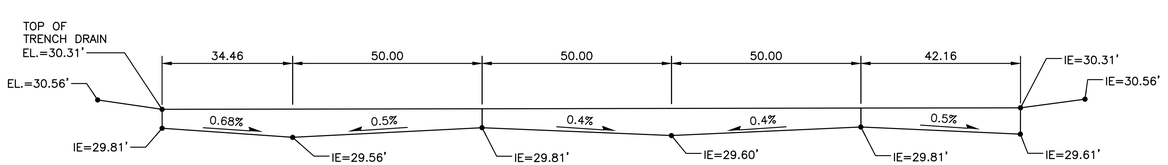
1. CONTRACTOR SHALL PROVIDE NEENAH FOUNDRY R–4990 AIRPORT, PORT AND HEAVY INDUSTRIAL SERIES TRENCH DRAIN FRAME AND GRATE OR COMPARABLE EQUIVALENT.

PLAN – DRAINAGE BERTH 8 APRON

1

SCALE: 1/16" = 1'–0"

NOTE: CONTRACTOR TO PROVIDE NEENAH FOUNDRY R–4990 SERIES HEAVY DUTY TRENCH DRAIN GRATE AND FRAME FOR INSTALLATION, OR EQUIVALENT.



PROFILE – TRENCH DRAINS

2

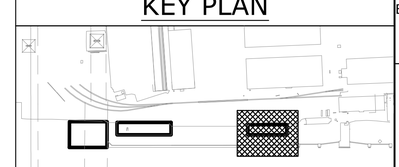
SCALE: HORIZ 1"=20' VERT 1"=2'

1/16" = 1'–0"

16 0 16 32

scale feet

KEY PLAN



90% SUBMITTAL Dec 29, 2023 - 4:41pm

BRIAN DEAN BEARD
STATE OF WASHINGTON
37460
REGISTERED
PROFESSIONAL ENGINEER

WSP USA Inc.
217 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: AS SHOWN
DRAWN BY: TW
APPROVED BY: BDB
DATE: 22-Dec-23

REVISION NO. DATE.

PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
DRAINAGE PLAN - BERTH 8 APRON

DRAWING NUMBER
C15
SHEET NUMBER 31 OF 130

POV PROJECT NO:
CP-0441

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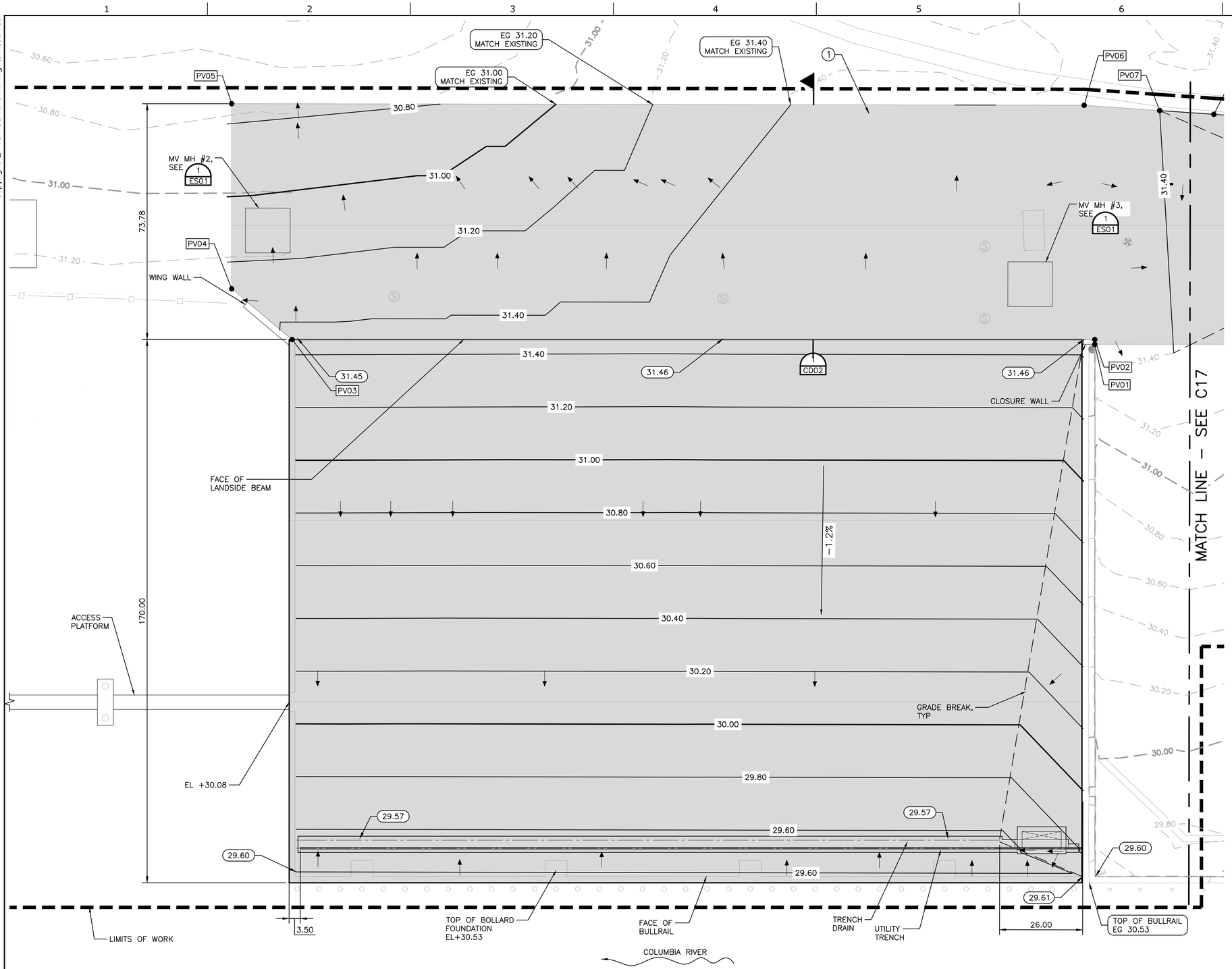


PLAN – GRADING BERTH 9 EXTENSION

SCALE: 1/16" = 1'-0"

GENERAL:

1. ELEVATIONS SHOWN ARE IN NVGD29 UNLESS NOTED OTHERWISE. HORIZ DIMENSIONS ARE IN FEET, UNO.
2. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR FIELD VERIFICATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION
3. ANY DAMAGE CAUSED BY THE CONTRACTOR'S OPERATIONS TO EXISTING FEATURES, STRUCTURES, AND UTILITIES THAT ARE TO REMAIN, SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
4. THE CONTRACTOR SHALL SUPPLY, INSTALL, AND MAINTAIN AT ALL TIMES FLOATING DEBRIS BOOMS AROUND ALL ACTIVE IN-WATER AND OVERWATER WORK AREAS.
5. THE CONTRACTOR SHALL PERFORM WORK IN ACCORDANCE WITH ALL PERMIT REQUIREMENTS.

PAVEMENT NOTES:

1. REFER TO G01 FOR GENERAL PROJECT NOTES.
2. PAVEMENT SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS IN THE WASHINGTON STATE 2023 SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION (M41-10), AS PREPARED BY THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION (WSDOT), AND SPECIAL PROVISIONS.
3. EARTHWORK, INCLUDING EXCAVATION AND SUBGRADE PREPARATION, SHALL BE IN ACCORDANCE WITH WSDOT SPECIFICATIONS SECTION 2-01.
4. CRUSHED SURFACING BASE COURSE (CSBC) AGGREGATES SHALL BE IN ACCORDANCE WITH WSDOT SPECIFICATIONS SECTION 4-04.
5. HOT MIX ASPHALT (HMA) SHALL BE IN ACCORDANCE WITH WSDOT SPECIFICATIONS SECTION 5-04.

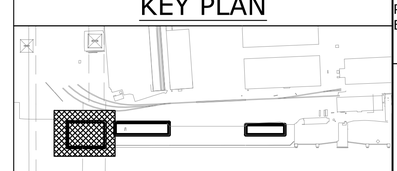
KEY NOTES:

(1) 12" THK HMA CL 1/2" PG 58H-22, 21,901 SF (1643 TONS)

PAVING LIMITS B9 ALIGNMENT CONTROL TABLE		
POINT	STATION	OFFSET
PV01	STA 'C Line' 13+47.48	18.83 LT
PV02	STA 'C Line' 13+47.49	17.33 LT
PV03	STA 'C Line' 15+98.56	17.33 LT
PV04	STA 'C Line' 16+17.49	1.45 LT
PV05	STA 'C Line' 16+17.49	56.45 RT
PV06	STA 'C Line' 13+50.81	55.96 RT
PV07	STA 'C Line' 13+27.19	54.31 RT

1/16" = 1'-0" scale 16 0 16 32 feet

KEY PLAN



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BRIAN DEAN BEARD
STATE OF WASHINGTON
37460
REGISTERED
PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-6100
FAX: 360-823-6101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: 1/16" = 1'-0"
DRAWN BY: TW
APPROVED BY: BDB
DATE: 22-Dec-23

REVISION NO. DATE.

PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
PAVEMENT GRADING PLAN - BERTH 9 EXTENSION

DRAWING NUMBER
C16
SHEET NUMBER 32 OF 130

POV PROJECT NO:
CP-0441

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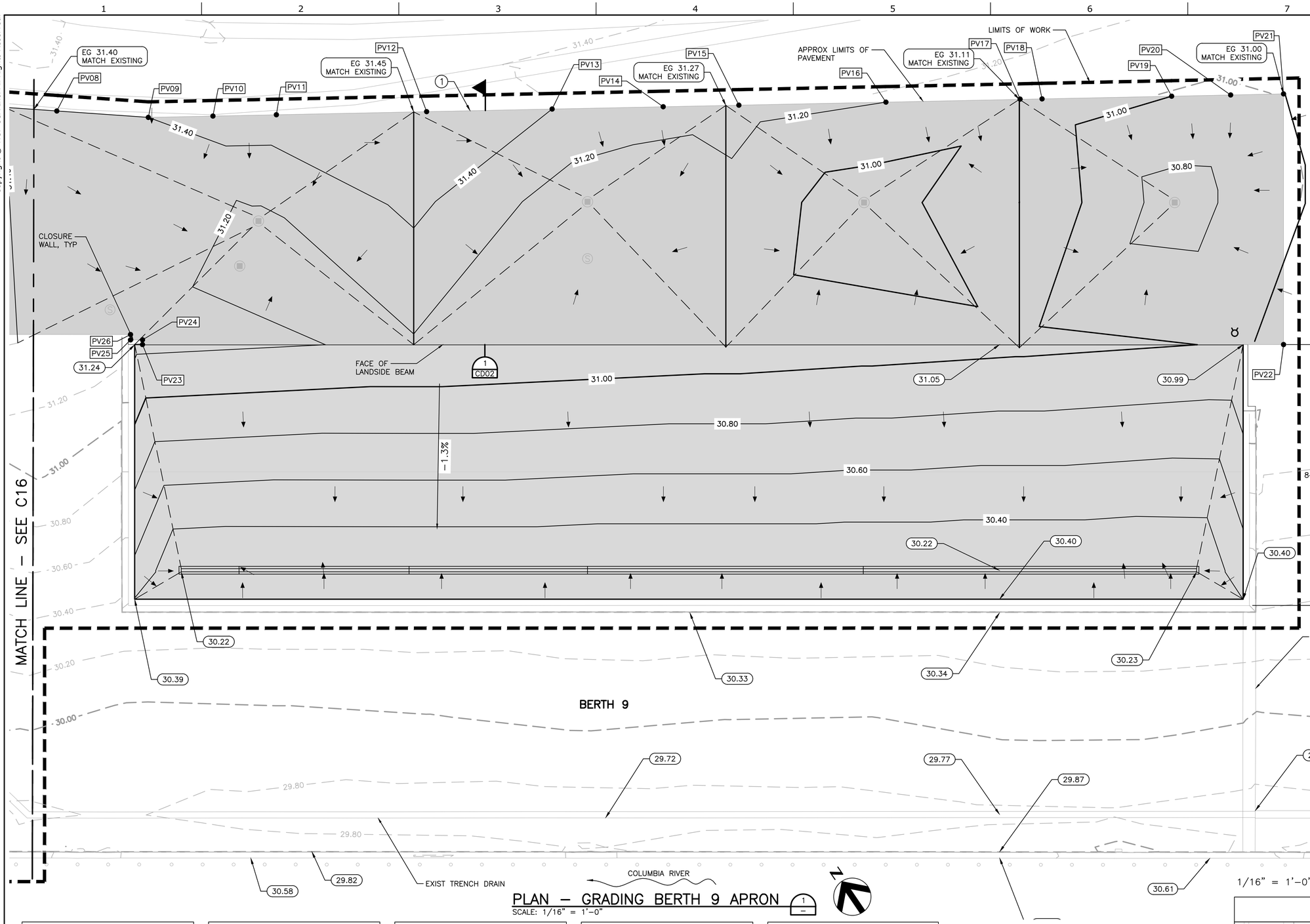

PLAN – GRADING BERTH 9 APRON

SCALE: 1/16" = 1'–0"

1/16" = 1'–0" scale 16 0 16 32 feet

PAVING LIMITS B9 ALIGNMENT CONTROL TABLE		
POINT	STATION	OFFSET
PV08	STA 'C Line' 13+10.24	53.13 RT
PV09	STA 'C Line' 12+80.77	51.07 RT
PV10	STA 'C Line' 12+59.97	51.50 RT
PV11	STA 'C Line' 12+39.56	51.93 RT

PAVING LIMITS B9 ALIGNMENT CONTROL TABLE		
POINT	STATION	OFFSET
PV12	STA 'C Line' 11+91.18	52.94 RT
PV13	STA 'C Line' 11+50.78	53.79 RT
PV14	STA 'C Line' 11+15.03	54.54 RT
PV15	STA 'C Line' 10+90.67	55.05 RT

PAVING LIMITS B9 ALIGNMENT CONTROL TABLE		
POINT	STATION	OFFSET
PV16	STA 'C Line' 10+43.33	56.04 RT
PV17	STA 'C Line' 10+00.14	57.03 RT
PV18	STA 'C Line' 9+93.06	57.09 RT
PV19	STA 'C Line' 9+51.35	57.97 RT

PAVING LIMITS B9 ALIGNMENT CONTROL TABLE		
POINT	STATION	OFFSET
PV20	STA 'C Line' 9+32.35	58.37 RT
PV21	STA 'C Line' 9+15.33	58.72 RT
PV22	STA 'C Line' 9+15.31	21.99 LT
PV23	STA 'C Line' 12+82.64	22.06 LT

PAVING LIMITS B9 ALIGNMENT CONTROL TABLE		
POINT	STATION	OFFSET
PV24	STA 'C Line' 12+82.64	20.56 LT
PV25	STA 'C Line' 12+86.49	20.56 LT
PV26	STA 'C Line' 12+86.49	18.84 LT

GENERAL:

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5. THE CONTRACTOR SHALL PERFORM WORK IN ACCORDANCE WITH ALL PERMIT REQUIREMENTS.

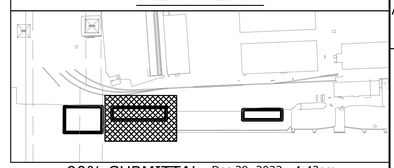
ROADWAY CONSTRUCTION NOTES:

1. ROADWAY CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS IN THE WASHINGTON STATE 2023 SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION (M41–10), AS PREPARED BY THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION (WSDOT), AND SPECIAL PROVISIONS.
2. EARTHWORK, INCLUDING EXCAVATION AND SUBGRADE PREPARATION, SHALL BE IN ACCORDANCE WITH WSDOT SPECIFICATIONS SECTION 2–01.
3. CRUSHED SURFACING BASE COURSE (CSBC) AGGREGATES SHALL BE IN ACCORDANCE WITH WSDOT SPECIFICATIONS SECTION 4–04.
4. HOT MIX ASPHALT (HMA) SHALL BE IN ACCORDANCE WITH WSDOT SPECIFICATIONS SECTION 5–04.

KEY NOTES:

(1) 12" THK HMA CL 1/2" PG 58H–22, 30,753 SF (2,306 TONS)

KEY PLAN



90% SUBMITTAL Dec 29, 2023 - 4:43pm

BRIAN DEAN BAIRD STATE OF WASHINGTON 147460 REGISTERED PROFESSIONAL ENGINEER

WSP USA Inc.
2121 SW 3rd Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: 1/16" = 1'-0"

DRAWN BY: TW

APPROVED BY: BDB

DATE: 22-Dec-23

REVISION NO. DATE.

PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
PAVEMENT GRADING PLAN - BERTH 9 APRON

DRAWING NUMBER
C17
SHEET NUMBER 33 OF 130

POV PROJECT NO:
CP-0441

USJH675409 C:\Users\USJH675409\WSP O365\Portland CADD Projects - PDX CADD Projects\A19.0198\002\CADD\Dwgs\04_C17.dwg

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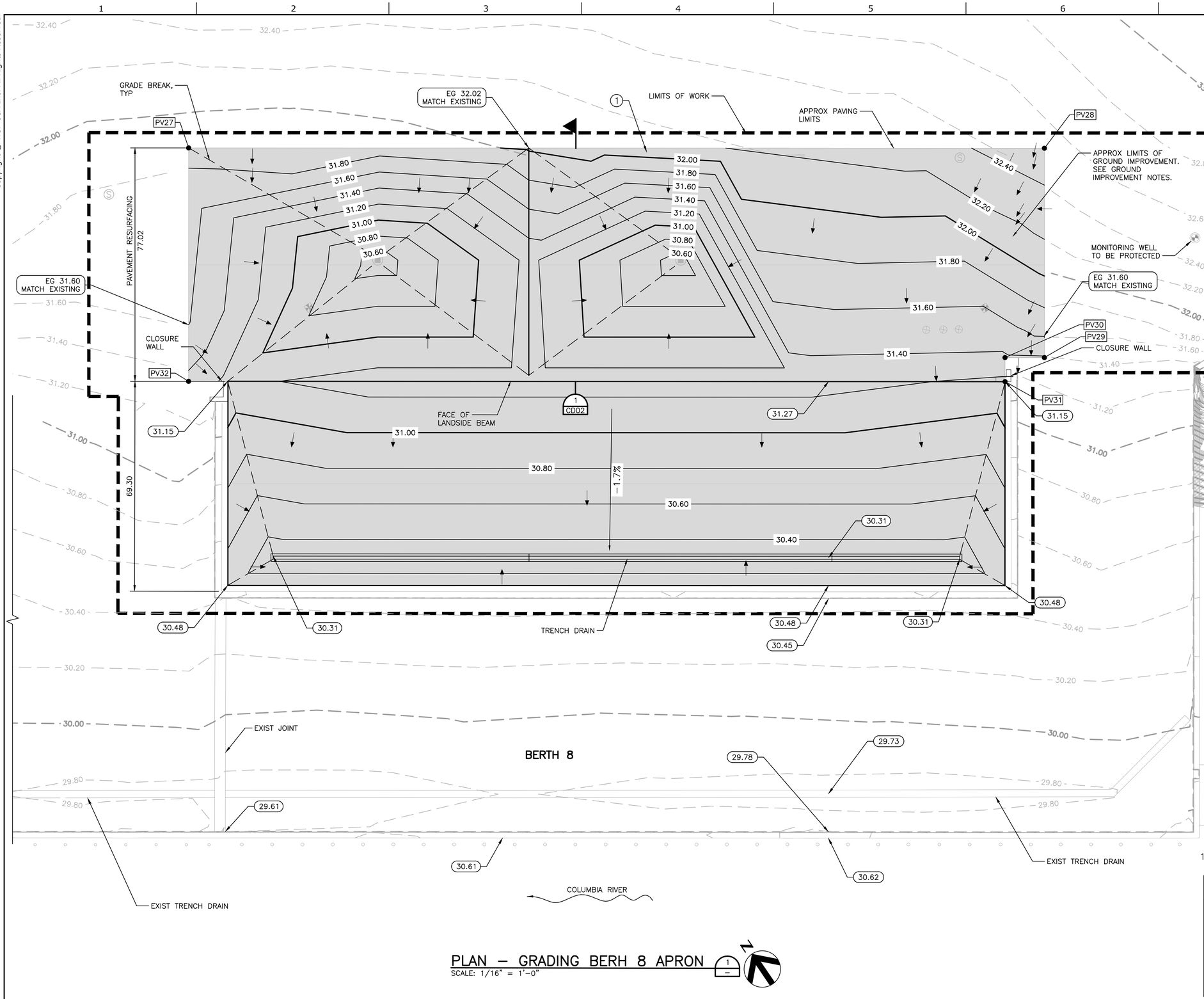

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5. THE CONTRACTOR SHALL PERFORM WORK IN ACCORDANCE WITH ALL PERMIT REQUIREMENTS.

ROADWAY CONSTRUCTION NOTES:

1. REFER TO G01 FOR GENERAL PROJECT NOTES.
2. ROADWAY CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS IN THE WASHINGTON STATE 2023 SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION (M41-10), AS PREPARED BY THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION (WSDOT), AND SPECIAL PROVISIONS.
3. EARTHWORK, INCLUDING EXCAVATION AND SUBGRADE PREPARATION, SHALL BE IN ACCORDANCE WITH WSDOT SPECIFICATIONS SECTION 2-01.
4. CRUSHED SURFACING BASE COURSE (CSBC) AGGREGATES SHALL BE IN ACCORDANCE WITH WSDOT SPECIFICATION SECTION 4-04.
5. HOT MIX ASPHALT (HMA) SHALL BE IN ACCORDANCE WITH WSDOT SPECIFICATIONS SECTION 5-04.

KEY NOTES:

(1) 12" THK HMA CL 1/2" PG 58H-22, 21,652 SF (1,624 TONS)

PAVING LIMITS B8 APRON ALIGNMENT CONTROL TABLE		
POINT	STATION	OFFSET
PV27	STA 'C Line' 4+34.38	40.27 RT
PV28	STA 'C Line' 1+51.90	40.23 RT
PV29	STA 'C Line' 1+51.88	28.84 LT
PV30	STA 'C Line' 1+64.88	28.85 LT
PV31	STA 'C Line' 1+64.89	36.78 LT
PV32	STA 'C Line' 4+34.39	36.75 LT

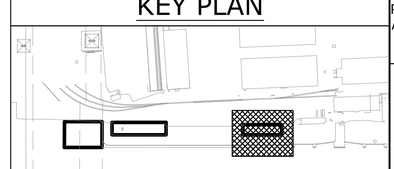
1/16" = 1'-0"

16 0 16 32
scale feet

PLAN - GRADING BERH 8 APRON

SCALE: 1/16" = 1'-0"

KEY PLAN



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BRIAN DEAN BEARD
STATE OF WASHINGTON
57460
REGISTERED PROFESSIONAL ENGINEER

WSP USA Inc.
2121 SW 3rd Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-6100
FAX: 360-823-6101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: 1/16" = 1'-0"
DRAWN BY: TW
APPROVED BY: BDB
DATE: 22-Dec-23

REVISION NO. DATE.

PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
PAVEMENT GRADING PLAN - BERTH 8 APRON

DRAWING NUMBER
C18
SHEET NUMBER 34 OF 130

POV PROJECT NO:
CP-0441

USJH675409 C:\Users\USJH675409\WSP O365\Portland CADD Projects - PDX CADD Projects\A19.0198\002\CADD\Dwgs\04_C18.dwg

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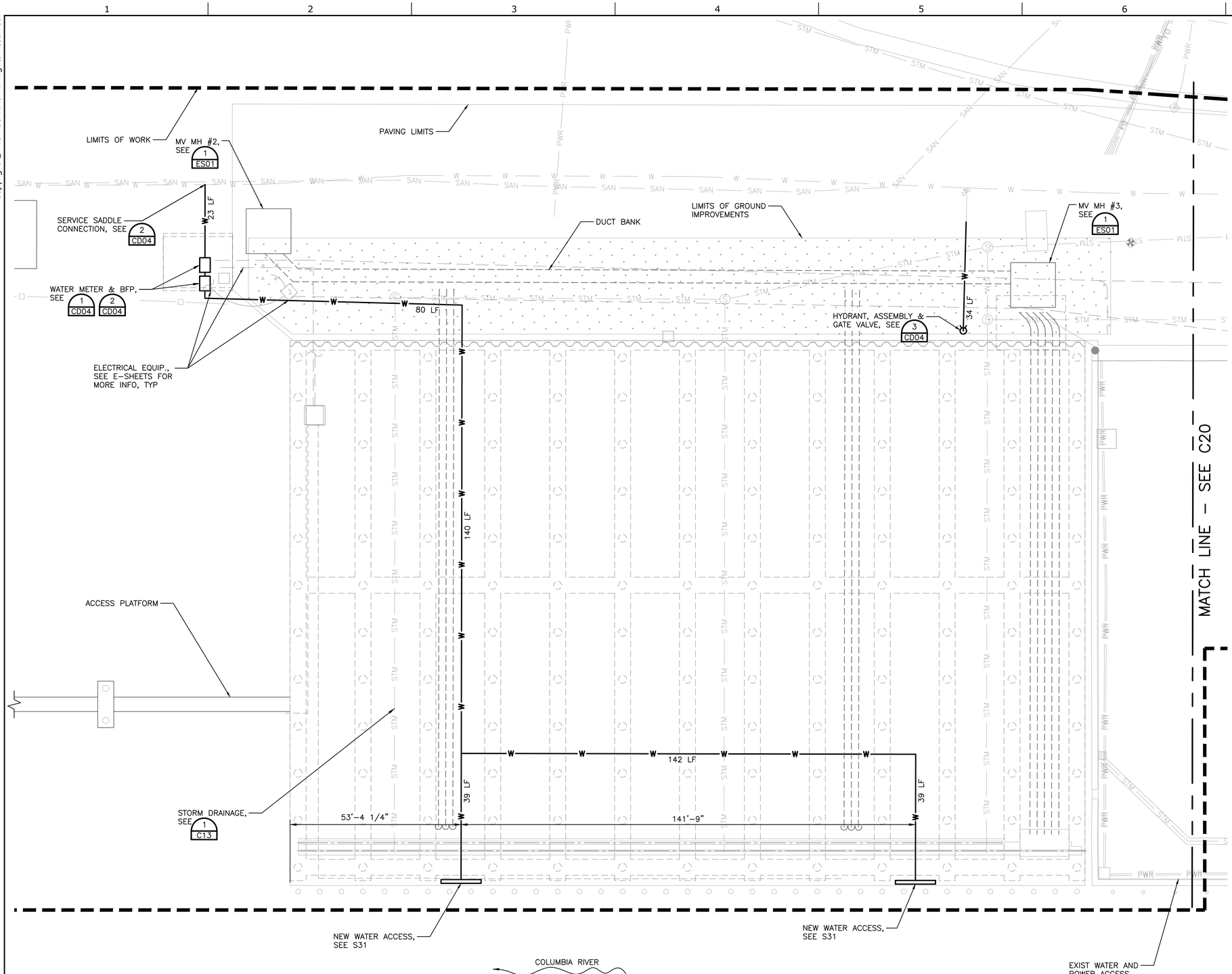


PLAN – UTILITY BERTH 9 EXTENSION

SCALE: 1/16"=1'-0"

GENERAL:

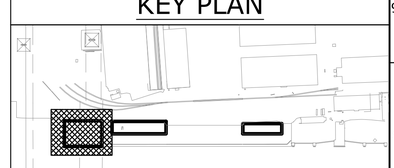
1. ELEVATIONS SHOWN ARE IN NVGD29 UNLESS NOTED OTHERWISE.
2. ANY DAMAGE CAUSED BY THE CONTRACTOR'S OPERATIONS TO EXISTING FEATURES, STRUCTURES, AND UTILITIES THAT ARE TO REMAIN, SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
3. THE CONTRACTOR SHALL SUPPLY, INSTALL, AND MAINTAIN AT ALL TIMES FLOATING DEBRIS BOOMS AROUND ALL ACTIVE IN-WATER AND OVERWATER WORK AREAS.
4. THE CONTRACTOR SHALL PERFORM WORK IN ACCORDANCE WITH ALL PERMIT REQUIREMENTS.

UTILITIES:

1. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR FIELD VERIFICATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION
2. POLYETHYLENE WRAP TO BE PROVIDED FOR ALL NEW WATER LINE, SEE 5 M003
3. TRENCH BEDDING AND BACKFILL FOR NEW WATER LINE, SEE 6 M003

1/16" = 1'-0" 16 0 16 32 scale feet

KEY PLAN



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BRIAN DEAN BAIRD STATE OF WASHINGTON 37460 REGISTERED PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: 1/16" = 1'-0"
DRAWN BY: TW
APPROVED BY: BDB
DATE: 22-Dec-23

REVISION NO. DATE.

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Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
UTILITY PLAN - BERTH 9 EXTENSION

DRAWING NUMBER
C19
SHEET NUMBER 35 OF 130
POV PROJECT NO:
CP-0441

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LIMITS OF WORK

PAVING LIMITS

ELECTRICAL EQUIP., SEE E-SHEETS FOR MORE INFO, TYP

LIMITS OF GROUND IMPROVEMENTS

CONNECT TO EXIST WATER LINE

THRUST RESTRAINT, SEE 4 CD04

17 LF

57 LF

5 LF

10"X10" 45 DEG MJ FITTING, THRUST RESTRAINT

16 LF

HYDRANT, ASSEMBLY & GATE VALVE, SEE 3 CD04

CONNECT TO EXIST WATER LINE

WATER METER & BFP, SEE 1 CD04 2 CD04

26 LF

STORM DRAINAGE, SEE 1 C14

MATCH LINE – SEE C19

BERTH 9

EXIST WATER AND POWER ACCESS

EXIST WATER AND POWER ACCESS

EXIST WATER LINE

COLUMBIA RIVER

PLAN – UTILITY BERTH 9 APRON

SCALE: 1/16"=1'-0"

1/16" = 1'-0"

16 0 16 32

scale feet

GENERAL:

1. ELEVATIONS SHOWN ARE IN NVGD29 UNLESS NOTED OTHERWISE.
2. ANY DAMAGE CAUSED BY THE CONTRACTOR'S OPERATIONS TO EXISTING FEATURES, STRUCTURES, AND UTILITIES THAT ARE TO REMAIN, SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
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2. POLYETHYLENE WRAP TO BE PROVIDED FOR ALL NEW WATER LINE, SEE 5 DH04
3. TRENCH BEDDING AND BACKFILL FOR NEW WATER LINE, SEE 6 DH04

KEY PLAN

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BRIAN DEAN BEARD
STATE OF WASHINGTON
57460
REGISTERED PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: 1/16" = 1'-0"

DRAWN BY: TW

APPROVED BY: BDB

DATE: 22-Dec-23

REVISION NO. DATE.

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Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
UTILITY PLAN - BERTH 9 APRON

DRAWING NUMBER
C20

SHEET NUMBER 36 OF 130

POV PROJECT NO:
CP-0441

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LIMITS OF WORK

PAVING LIMITS

LIMITS OF GROUND IMPROVEMENTS

MONITORING WELL TO BE PROTECTED

ELECTRICAL EQUIP., SEE E-SHEETS FOR MORE INFO, TYP

WATER METER & BFP, SEE 1 CD04, 2 CD04

CONNECT TO EXIST WATER LINE

CLOSURE WALL, TYP

STORM DRAINAGE, SEE 1 C15

BERTH 8

COLUMBIA RIVER

PLAN – UTILITY BERTH 8 APRON 1

SCALE: 1/16"=1'-0"

1/16" = 1'-0" 16 0 16 32 scale feet

GENERAL:

1. ELEVATIONS SHOWN ARE IN NVGD29 UNLESS NOTED OTHERWISE.
2. ANY DAMAGE CAUSED BY THE CONTRACTOR'S OPERATIONS TO EXISTING FEATURES, STRUCTURES, AND UTILITIES THAT ARE TO REMAIN, SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
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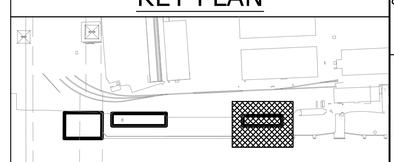
2. POLYETHYLENE WRAP TO BE PROVIDED FOR ALL NEW WATER LINE, SEE 5 D06C1
3. TRENCH BEDDING AND BACKFILL FOR NEW WATER LINE, SEE 6 D06C1

KEY PLAN



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BRIAN DEAN BEARD
STATE OF WASHINGTON
57460
REGISTERED PROFESSIONAL ENGINEER

WSP USA Inc.
217 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

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Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
UTILITY PLAN - BERTH 8 APRON

DRAWING NUMBER
C21

SHEET NUMBER 37 OF 130

POV PROJECT NO:
CP-0441

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PIPE SUMMARY TABLE

NAME	DIAMETER (INCH)	LENGTH (LF)	SLOPE %	MATERIAL	US INVERT	DS INVERT
B8-EX01	18	20	0.25	DIP	22.85	22.80
B8-EX02	18	88.55	0.25	DIP	23.43	23.21
B8-01	18	91.33	0.13	DIP	22.95	22.83
B8-02	18	100.06	0.30	DIP	23.08	22.95
B8-03	18	98.12	0.13	DIP	23.21	23.08
B8-04	12	132.01	0.30	DIP	24.60	25.00
B8-05	12	98.17	0.30	DIP	24.71	25.00
B8-06	12	98.17	0.30	DIP	24.71	25.00
B9-EX01	18	20.00	0.25	DIP	22.61	22.56
B9-01	18	80.55	0.18	DIP	22.76	22.61
B9-02	18	100.00	0.18	DIP	22.93	22.75
B9-03	18	89.02	0.18	DIP	23.09	22.93
B9-04	18	106.12	0.18	DIP	23.281	23.09
B9-05	18	121.15	0.18	DIP	23.28	23.498
B9-06	12	15.56	0.30	DIP	24.00	24.05
B9-07	12	22.64	0.30	DIP	24.05	24.12
B9-08	12	88.85	0.30	DIP	24.12	24.39
B9-09	12	44.04	0.25	DIP	24.39	24.5
B9-10	12	112.01	0.25	DIP	24.50	24.78
B9-11	12	100.37	0.12	DIP	24.90	24.78
B9-12	12	98.00	0.30	DIP	24.95	24.66
B9-13	12	162.68	0.30	DIP	26.32	25.832
B9-14	12	166.48	0.30	DIP	25.12	24.62
B9-15	12	83.50	0.30	DIP	24.301	24.05
B9-16	12	172.66	0.30	DIP	25.10	24.58
B9-17	12	102.88	0.3	DIP	24.60	24.29
B9-18	12	173.02	0.3	DIP	25.12	24.60
B9-19	12	197.07	0.1	DIP	23.13	22.93

BERTH 8 STRUCTURE SUMMARY

STRUCTURE	TYPE	SIZE	STATION	OFFSET	RIM ELEV.	SUMP ELEV.	INV IN		INV OUT	
B8-MH01	MANHOLE	60 IN	4+60.71	24.9 RT	31.77	22.83	22.83	B8-01	22.85	B8-EX01
B8-CB01	CATCH BASIN TYPE 2	60 IN	3+71.98	3.26 RT	30.5	22.95	22.95	B8-02	22.95	B8-01
							24.71	B8-06		
B8-CB02	CATCH BASIN TYPE 2	60 IN	2+71.92	3.25 RT	30.5	23.08	23.08	B8-03	23.08	B8-02
							24.71	B8-05		
B8-MH02	MANHOLE	60 IN	1+79.82	37.08 RT	32.34	23.21	23.21	B8-EX02	23.21	B8-03
							24.60	B8-04		

BERTH 9 STRUCTURE SUMMARY

STRUCTURE	TYPE	SIZE	STATION	OFFSET	RIM ELEV.	SUMP ELEV.	INV IN		INV OUT	
B9-MH01	MANHOLE	60 IN	8+71.55	7.11 RT	31.24	22.61	22.61	B9-01	22.61	B9-EX01
B9-CB01	CATCH BASIN TYPE 2	60 IN	9+50.36	23.73 RT	30.70	22.75	22.75	B9-02	22.75	B9-01
B9-CB02	CATCH BASIN TYPE 2	60 IN	10+50.36	23.71 RT	30.88	22.93	22.93	B9-03	22.93	B9-02
							22.93	B9-19		
B9-CB03	CATCH BASIN TYPE 2	60 IN	11+39.38	23.94 RT	31.05	23.09	23.09	B9-04	23.09	B9-03
B9-CB04	CATCH BASIN TYPE 2	60 IN	12+45.31	17.70 RT	31.15	23.28	23.28	B9-05	23.28	B9-04
B9-STMFLT	PEAK DIVERSION STRUCTURE	6' x 12'	13+66.58	16.84 RT	31.43	23.50	24.00	B9-06	23.50	B9-05
B9-MH02	MANHOLE	48 IN	13+81.90	11.85 RT	31.49	24.05	24.05	B9-07	24.05	B9-06
							24.05	B9-15		
B9-MH03	MANHOLE	48 IN	13+81.93	10.79 LT	31.26	24.12	24.12	B9-08	24.12	B9-07
							24.62	B9-14		
B9-MH04	MANHOLE	48 IN	12+93.08	10.87 LT	31.22	24.39	24.39	B9-09	24.39	B9-08
							25.83	B9-13		
B9-MH05	MANHOLE	48 IN	12+51.35	3.21 RT	31.18	24.50	24.66	B9-12	24.50	B9-09
							24.50	B9-10		
B9-MH06	MANHOLE	48 IN	11+39.37	5.61 RT	31.09	24.78	24.78	B9-11	24.78	B9-10
B9-MH07	MANHOLE	48 IN	14+63.80	4.46 LT	31.45	24.29	24.29	B9-17	24.30	B9-15
							24.58	B9-16		
B9-MH08	MANHOLE	48 IN	15+66.67	3.91 LT	31.34	24.60	24.60	B9-18	24.60	B9-17

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WSP USA Inc.
2121 SW 3rd Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-6100
FAX: 360-823-6101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: NOT TO SCALE

DRAWN BY: TW

APPROVED BY: BDB

DATE: 22-Dec-23

REVISION NO. DATE.

PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
STORM PIPE TABLES

DRAWING NUMBER
C22

SHEET NUMBER 38 OF 130

POV PROJECT NO:
CP-0441

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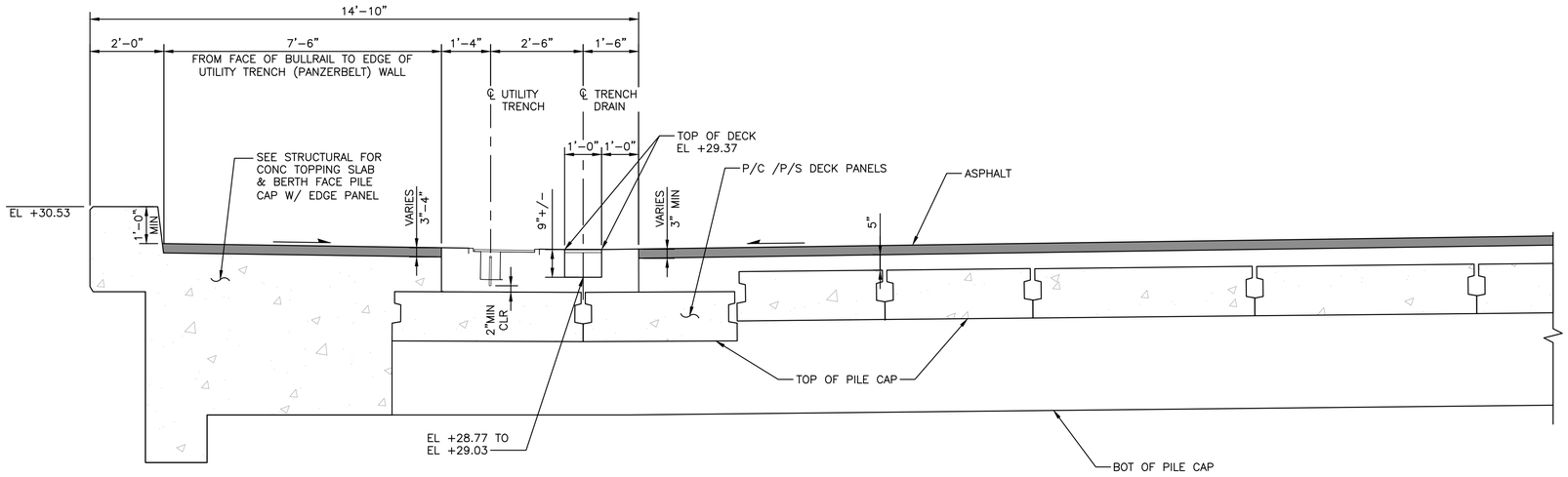
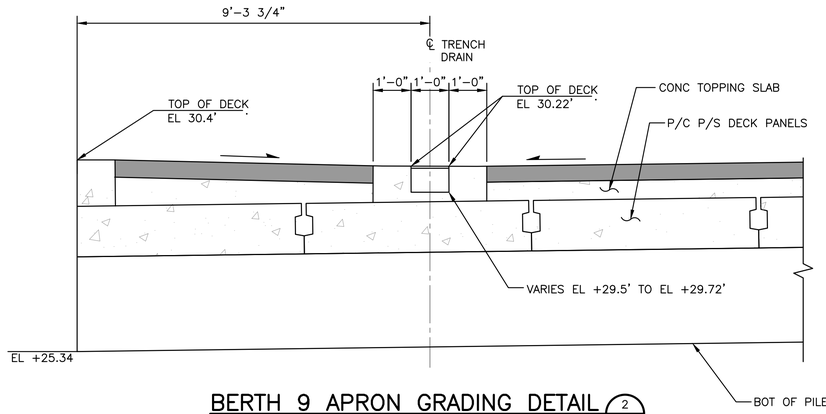


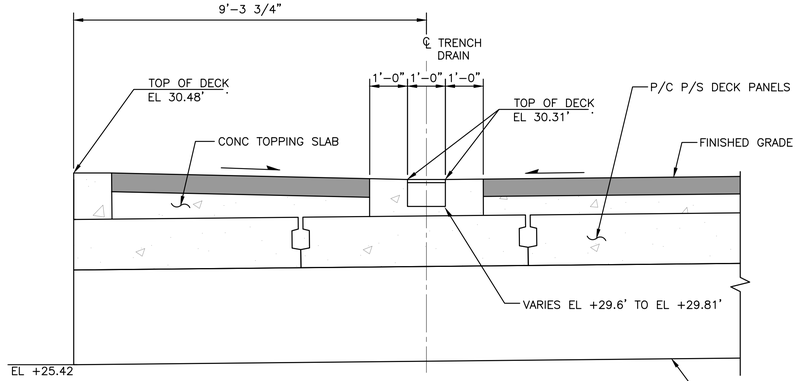
EXTENSION GRADING DETAIL (1/C13)

SCALE: 1/2"=1'–0"



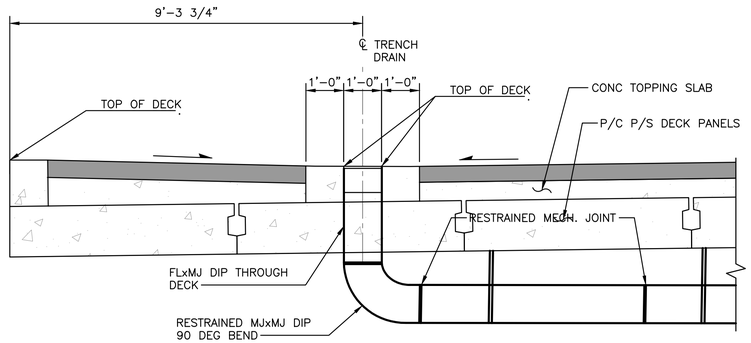
BERTH 9 APRON GRADING DETAIL (2/C14)

SCALE: 1/2"=1'–0"



BERTH 8 APRON GRADING DETAIL (3/C15)

SCALE: 1/2"=1'–0"



TYP. TRENCH DRAIN DOWNSPOUT PENETRATION

SCALE: 1/2"=1'–0"

1/2" = 1'–0" 2 0 2 4 scale feet

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BRIAN DEAN BEARD
STATE OF WASHINGTON
57460
REGISTERED PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

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DRAWN BY: TW
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REVISION
NO. DATE.

PORT OF VANCOUVER USA
Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
CIVIL DETAILS - SHEET 1

DRAWING NUMBER
CD01
SHEET NUMBER 39 OF 130
POV PROJECT NO: CP-0441

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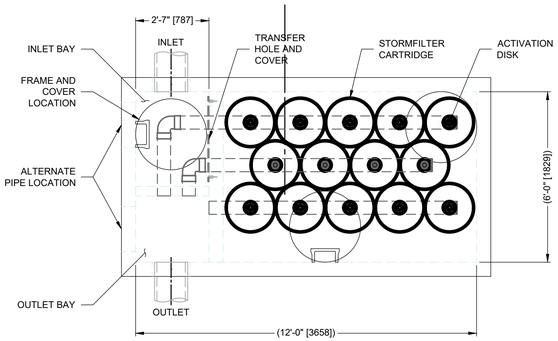
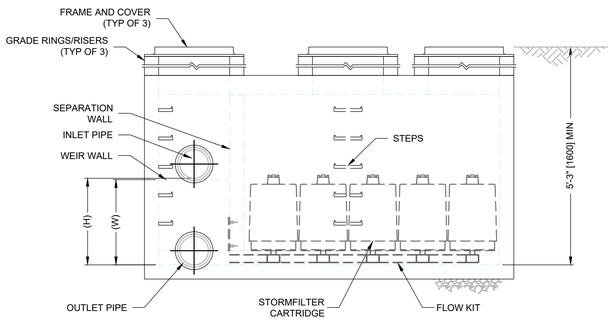


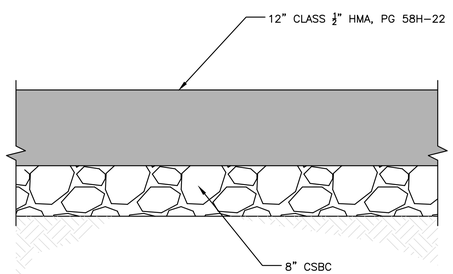
PLAN



ELEVATION

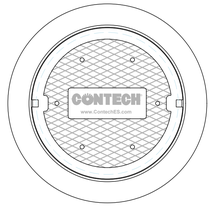
SECTION – 6' X 12' PEAK DIVERSION STORMFILTER

SCALE: 3/8 = 1'–0"



UPLAND PAVEMENT SECTION

SCALE: 1" = 1'



FRAME AND COVER

(30" ROUND)
(NOT TO SCALE)

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID	B9-STMFLT
WATER QUALITY FLOW RATE (cfs [L/s])	0.2087
PEAK FLOW RATE (cfs [L/s])	2.291
RETURN PERIOD OF PEAK FLOW (yrs)	100
CARTRIDGE FLOW RATE	
CARTRIDGE SIZE (27, 18, LOW DROP (LD))	LD
MEDIA TYPE (PERLITE, ZPG, PSORB)	PSORB
NUMBER OF CARTRIDGES REQUIRED	11
INLET BAY RIM ELEVATION	
FILTER BAY RIM ELEVATION	

PIPE DATA:	INVERT	MATERIAL	DIAMETER
INLET PIPE 1	24.00	DIP	12
INLET PIPE 2		-	-
OUTLET PIPE	23.50	DIP	18

NOTES/SPECIAL REQUIREMENTS:

STORMFILTER DESIGN NOTES

- STORMFILTER TREATMENT CAPACITY VARIES BY CARTRIDGE COUNT AND LOCALLY APPROVED SURFACE AREA SPECIFIC FLOW RATE. PEAK CONVEYANCE CAPACITY TO BE DETERMINED BY ENGINEER OF RECORD
- A 6' x 12' [1829 x 3658] PEAK DIVERSION STYLE STORMFILTER IS SHOWN WITH THE MAXIMUM NUMBER OF CARTRIDGES (14) AND IS AVAILABLE IN A LEFT INLET (AS SHOWN) OR A RIGHT INLET CONFIGURATION
- ALL PARTS AND INTERNAL ASSEMBLY PROVIDED BY CONTECH UNLESS NOTED OTHERWISE

CARTRIDGE SIZE (in. [mm])	27 [686]			18 [457]			LOW DROP		
RECOMMENDED HYDRAULIC DROP (H) (ft. [mm])	3.05 [930]			2.3 [701]			1.8 [549]		
HEIGHT OF WEIR (W) (ft. [mm])	3.00 [914]			2.25 [686]			1.75 [533]		
SPECIFIC FLOW RATE (gpm/sf [L/s/m^2])	2 [1.36]	1.67* [1.13]*	1 [0.68]	2 [1.36]	1.67* [1.13]*	1 [0.68]	2 [1.36]	1.67* [1.13]*	1 [0.68]
CARTRIDGE FLOW RATE (gpm [L/s])	22.5 [1.42]	18.79 [1.19]	11.25 [0.71]	15 [0.95]	12.53 [0.79]	7.5 [0.47]	10 [0.63]	8.35 [0.53]	5 [0.32]

* 1.67 gpm/sf [1.13 L/s/m^2] SPECIFIC FLOW RATE IS APPROVED WITH PHOSPHOSORB® (PSORB) MEDIA ONLY

PERFORMANCE SPECIFICATION

FILTER CARTRIDGES SHALL BE MEDIA-FILLED, PASSIVE, SIPHON ACTUATED, RADIAL FLOW, AND SELF CLEANING. **RADIAL MEDIA DEPTH SHALL BE 7" [178].** FILTER MEDIA CONTACT TIME SHALL BE AT LEAST **38 SECONDS**. SPECIFIC FLOW RATE SHALL BE **2 GPM/SF [1.36 L/s/m^2] (MAXIMUM)**. SPECIFIC FLOW RATE IS THE MEASURE OF THE FLOW (GPM) DIVIDED BY THE MEDIA SURFACE CONTACT AREA (SF). MEDIA VOLUMETRIC FLOW RATE SHALL BE **6 GPM/CF [13.39 L/s/m^3] OF MEDIA (MAXIMUM).**

GENERAL NOTES

1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. DIMENSIONS MARKED WITH ( ) ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
3. ALTERNATE DIMENSIONS ARE IN MILLIMETERS [mm] UNLESS NOTED OTHERWISE.
4. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH REPRESENTATIVE. www.ContechES.com
5. STORMFILTER WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
6. STRUCTURE SHALL MEET AASHTO HS25 LOAD RATING, ASSUMING EARTH COVER OF 0' - 10' [3048] AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 AND BE CAST WITH THE CONTECH LOGO.

INSTALLATION NOTES

A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STORMFILTER STRUCTURE.
C. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL SECTIONS AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH OUTLET PIPE INVERT WITH OUTLET BAY FLOOR.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT CARTRIDGES FROM CONSTRUCTION-RELATED EROSION RUNOFF.
F. CONTRACTOR TO REMOVE THE TRANSFER OPENING COVER WHEN THE SYSTEM IS BROUGHT ONLINE.

3/8" = 1'–0" 4 0 4 8 scale feet

1" = 1'–0" 1 0 1 2 scale feet

90% SUBMITTAL Dec 29, 2023 - 4:46pm

BRIAN DEAN BEARD — STATE OF WASHINGTON — 37460 — REGISTERED PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: AS SHOWN
DRAWN BY: TW
APPROVED BY: BDB
DATE: 22-Dec-23

REVISION NO. DATE.

PORT OF VANCOUVER USA
Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

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CIVIL DETAILS - SHEET 2

DRAWING NUMBER
CD02
SHEET NUMBER 40 OF 130

POV PROJECT NO:
CP-0441

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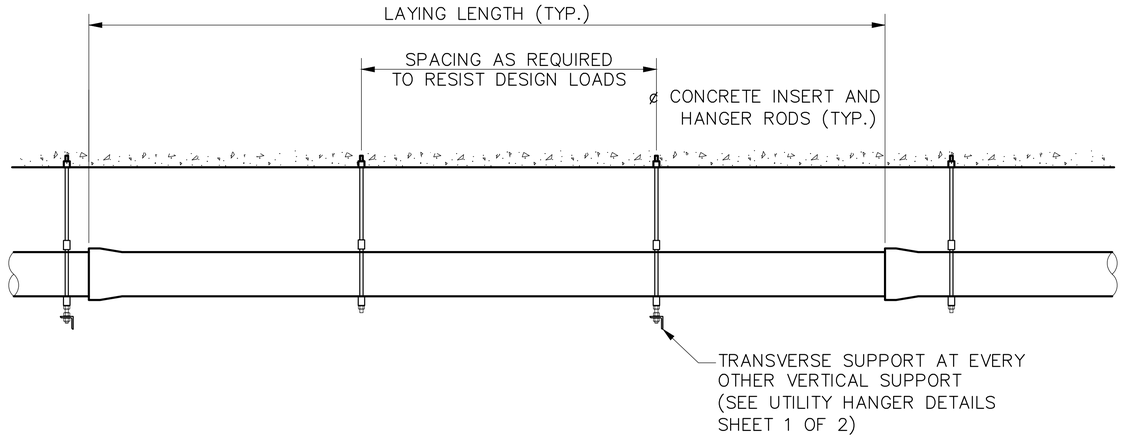
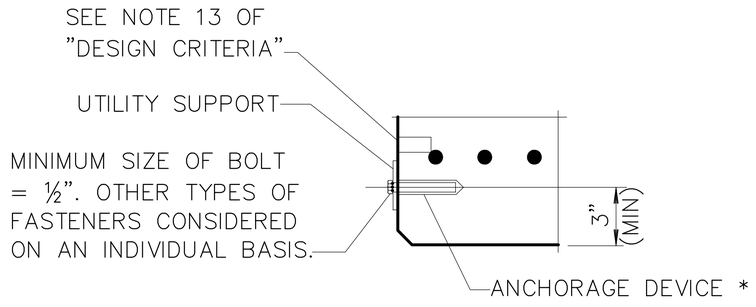


ADJUSTABLE UTILITY HANGER

SCALE: 1" = 1'



GENERAL NOTES:

1. SET POSITION OF EXPANSION FITTING BASED ON MANUFACTURER RECOMMENDATIONS AND TEMPERATURE AT TIME OF INSTALLATION.
2. EXPANSION FITTINGS SHALL BE INSTALLED EVERY 100'–0" MAX, AN SHALL ACCOMMODATE 5.1 INCHES OF MOVEMENT. THE DESIGN TEMPERATURE RANGE IS 125 DEGREES (–15 DEGREES TO 110 DEGREES).

1" = 5' (5 0 5 10 scale feet)

1" = 1' (1 0 1 2 scale feet)

90% SUBMITTAL Dec 29, 2023 - 4:46pm

BRIAN DEAN BARRY
STATE OF WASHINGTON
57460
REGISTERED
PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

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DRAWN BY: TW
APPROVED BY: BDB
DATE: 22-Dec-23

REVISION NO. DATE.

PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
CIVIL DETAILS - SHEET 3

DRAWING NUMBER
CD03
SHEET NUMBER 41 OF 130

POV PROJECT NO:
CP-0441

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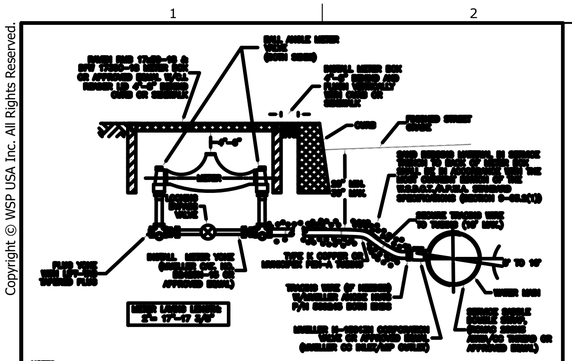
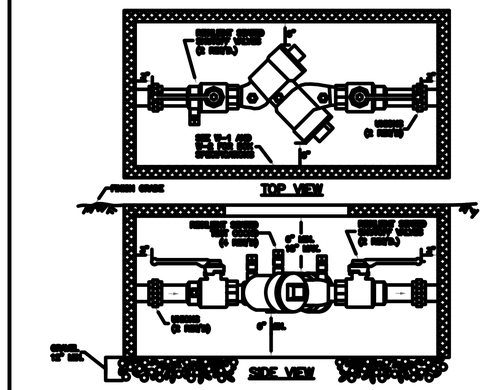


NOTES:
1. ALL MATERIALS AND WORKMANSHIP SHALL BE SUPPLIED, OWNED AND INSTALLED BY THE CITY OF VANCOUVER PER VMC 14.04.070(3)
2. ALL 1 1/2" AND 2" METERS MAY BE EITHER THE DISHED END OR FLANGED TYPE, THREAD METERS ARE NOT ALLOWED.
3. PRIOR TO THE INSTALLATION OF METERS, ALL SERVICE CONNECTIONS MUST BE COMPLETED AND APPROVED. SERVICE TYPE AND SIZE PER APPROVED DRAWINGS AND APPROVAL.
4. CONTACT CITY'S METER SHOP (CUSTOMER SERVICE) (360)487-7700 48 HOURS PRIOR TO METER INSTALLATION.
5. METERS WILL NOT BE SET BY THE CITY PRIOR TO COMPLETION OF THE MAIN AND SERVICE, AND PRIOR TO A SATISFACTORY FLUSHING AND TEST.
6. METER SERVICES SHALL BE PERPENDICULAR TO THE MAIN.
7. USE 1-1/4" SET FOR ALL 2" SERVICE TAPS.
8. METER BOX SHALL NOT BE PLACED IN ROAD SURFACE AREA WHERE FROST CAN AT VANCOUVER WATER STATION. IF METER BOX MUST BE LOCATED IN A TRAVEL AREA, A NON-SKID TRAFFIC RATED LID SHALL BE REQUIRED. (SEE W-04)
9. METERS PLACED IN ROAD SURFACE AREAS SHALL BE CALLED OUT AS SUCH ON THE PLANS.
10. ALL METERS ARE SUBJECT TO REMOVE FOR DISPLAY PROTECTION REQUIREMENTS.
11. ALL 1-1/4" AND 2" METER INSTALLATIONS SHALL BE 2" TYPE AND 2" SERVICE TYPE.
12. TRACER WIRE IS REQUIRED ON ALL NONMETAL PIPE-A THREE AND SHALL BE CONTAINED WITH COPPER CORED WIRE. USE REQUIRED FOR DIRECT BURY APPLICATIONS OR APPROVED EQUAL.
13. COMPRESSION FITTINGS WITH STAINLESS STEEL INSERTS SHALL BE USED ON ALL CONNECTIONS TO PEX-A TUBING.
14. TRACING WIRE SHALL NOT BE SPLICED AND SHALL BE TESTED FOR CONTINUITY PRIOR TO ACCEPTANCE.

N.T.S.

CITY OF VANCOUVER PUBLIC WORKS WATER ENGINEERING	STANDARD 2" WATER SERVICE	W-2

2" WATER SERVICE METER (1)

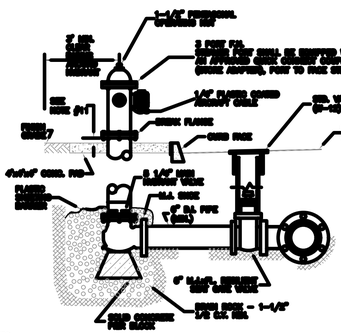


NOTES:
1. A REPRESENTATIVE FROM APPROVED DOUBLE CHECK DETECTOR ASSEMBLY (DCDA) SHALL BE INSTALLED BY THE CONTRACTOR AND SHALL BE PRESENT AT THE TIME OF TESTING AND APPROVAL.
2. ALL BACKFLOW PREVENTERS MUST BE LOCATED AS CLOSE TO THE PROPERTY LINE AND/OR BOUNDARY OF THE USER AS POSSIBLE PRACTICAL, AND BE ACCESSIBLE.
3. A FLANGED JOINT IS REQUIRED—CONTACT THE APPROPRIATE JURISDICTION'S PERMITS OFFICER.
4. ALL BACKFLOW PREVENTERS SHALL BE INSTALLED ABOVE GROUND. THEY SHALL USE APPROVED ENCLOSURE ASSEMBLIES WHERE SUBJECT TO FREEZING OR VANDALISM.
5. TEST COCKS TO FACE UPWARDS FROM ASSEMBLY.
6. THE WATER USER SHALL BE RESPONSIBLE FOR PROPER CARE OF BACKFLOW PREVENTER WHILE IT IS ON THEIR PREMISES, INCLUDING ANY NECESSARY TESTING AND REPAIRS.
7. MEET ANSI/NSF REGULATIONS SHALL BE PROVIDED TO PERMIT PROVIDER.
8. ALL INSTALLATIONS SHALL USE 3 UNIONS.
9. ANYONE WHO ALTERS, TAMPERS WITH OR PUTS OTHER CONTAMINANTS, POLLUTANTS OR LIQUIDS, OTHER THAN WATER, INTO A PUBLIC WATER SYSTEM SHALL BE GUILTY OF A MISDEMEANOR AND SHALL BE SUBJECT TO A FINE AS SET BY THE CITY WATER QUALITY OFFICER.

N.T.S.

CITY OF VANCOUVER PUBLIC WORKS WATER ENGINEERING	STANDARD DOUBLE CHECK VALVE ASSEMBLY 2" & SMALLER	W-21

DOUBLE CHECK VALVE (2)

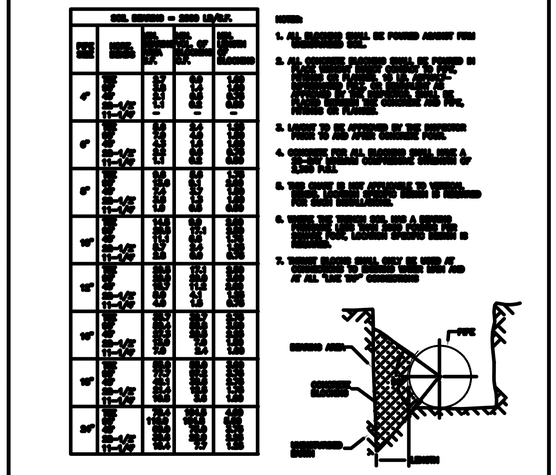


NOTES:
1. THE FIRE HYDRANT SHALL BE INSTALLED WITH CENTERLINE AND 1'-0" BACK FROM THE FACE OF CURB, OR AS DIRECTED BY THE ENGINEER. THE TOP OF HYDRANT SHALL BE 3" ABOVE FINISH GRADE OF SIDEWALK.
2. THE FIRE HYDRANT SHALL BE INSTALLED SO THAT IT IS PLUMB IN ALL DIRECTIONS.
3. THE BASE OF THE BONNET CAP GASKET SHALL BE LUBRICATED WITH PUMPS PU 307 GREASE OR AN APPROVED EQUAL.
4. NO DRAINAGE OR FIRE PROTECTION SERVICES SHALL BE TAPPED OFF OF THE FIRE HYDRANT PIPING.
5. A CONCRETE PAD NO LESS THAN 4'x4'x4", SHALL BE CONSTRUCTED AROUND THE FIRE HYDRANT.
6. THE CONCRETE PAD SHALL BE PLACED FLUSH IN FINISHED AND APPROVED GRADE OF CURB OF THE SIDEWALK IF SIDEWALK OR CURBET GRADE OR BASE OF SIDEWALK IF SIDEWALK IS DEPRESSED. EXPANSION JOINT MATERIAL SHALL BE PLACED BETWEEN THE CONCRETE PAD AND CURB/SIDEWALK.
7. CONCRETE PAD SHALL BE FINISHED TO APWA STANDARD SPECIFICATIONS.
8. ALL PIPING SHALL BE RESTRAINED UNLESS MECHANICAL RESTRAINT EXISTING. CONCRETE THRUST BLOCKS SHALL NOT BE ALLOWED.
9. THE HYDRANT SHALL BE PAINTED PRIMER OR GREASE FREE PAINTED RED. MEDIA CLEANING AGENT SHALL NOT CLEAN EXPOSED YELLOW T-BOLT-1 TO ANY EXTENTION.
10. FIRE HYDRANT LEAD SHALL BE 6" MIN. A 6" GATE MAY BE USED FOR A DEAD-END RUN OF LESS THAN 50' TO A HYDRANT SUBJECT TO ASSIGNED FIRE FLOW.
11. HYDRANT EXTENSIONS SHALL BE 3 INCHES, USE AN AS-NEEDED EXTENSION OF 3-4 INCHES.
12. COUPLINGS SHALL NOT BE INSTALLED AS FIRE HYDRANT PROVISIONS.

N.T.S.

CITY OF VANCOUVER PUBLIC WORKS WATER ENGINEERING	STANDARD FIRE HYDRANT ASSEMBLY	W-10

FIRE HYDRANT ASSEMBLY (3)



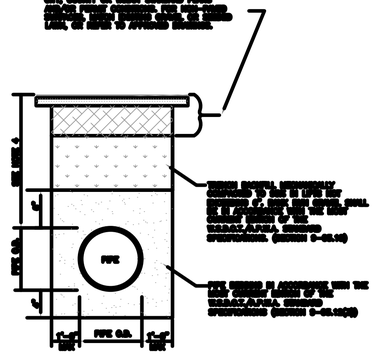
PIPE DIAMETER (IN)	MINIMUM FILM THICKNESS (MIL)
4	10
6	20
8	25
12	30
16	37
24	50

NOTES:
1. ALL POLYWRAPPED PIPE SHALL CONFORM TO THE REQUIREMENTS OF AWWA C105.
2. ALL VALVES, FITTINGS, JOINTS, ENDS SHALL BE WRAPPED WITH 8 MIL POLYWRAP AND SEALED WITH 2" PVC TAPE.
3. THE INNER POLY SLEEVE SHALL EXTEND 1' PAST THE BELL OR FITTING AND BE TAPED TO THE PIPE.
4. THE OUTER SLEEVE SHALL OVERLAP THE INNER SLEEVE BY 2'
5. ENSURE POLYWRAP TO BE PLACED ON THE TOP OF THE PIPE AND SECURED WITH POLY TAPE AT 3' SPACE.
6. APPLY POLY TAPE CONFORMLY AROUND THE PIPE FOR A WIDTH TO PROVIDE THE POLY WRAP FROM THE SURFACE DAMAGE.
7. SEE CHART FOR MINIMUM WRAP NEEDS

N.T.S.

CITY OF VANCOUVER PUBLIC WORKS WATER ENGINEERING	STANDARD POLYETHYLENE PIPE WRAP	W-19

POLYETHYLENE PIPE WRAP (5)



NOTES:
1. CLASS BEDDING MATERIAL MAY BE USED AS PIPE BEDDING AND TRENCH BACKFILL AS APPROVED BY CITY OF VANCOUVER CONSTRUCTION INSPECTOR FOR TRENCH CONDITIONS (SECTION 2-07.3(2)).
2. CONTROL DENSITY FILL (CDF) MAY BE ORDERED BASED ON THE LOCAL JURISDICTION'S STANDARDS.
3. ORGANIC MATERIAL (PT) SHALL NOT BE ALLOWED IN TRENCH.
4. PIPE DEPTH OF BURY MEASURED FROM TOP OF PIPE TO FINISH GRADE
   - 30" FOR ALL PIPE 12" AND SMALLER
   - 48" FOR ALL PIPE LARGER THAN 12" AND LARGER

N.T.S.

CITY OF VANCOUVER PUBLIC WORKS WATER ENGINEERING	WATER PIPE TRENCH BEDDING & BACKFILL	W-13

PIPE TRENCH BEDDING & BACKFILL (6)

90% SUBMITTAL Dec 29, 2023 - 4:46pm

BRIAN DEAN BOARD
STATE OF WASHINGTON
57460
REGISTERED
PROFESSIONAL ENGINEER

WSP USA Inc.
2131 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: AS SHOWN
DRAWN BY: TW
APPROVED BY: BDB
DATE: 22-Dec-23

REVISION NO. DATE.

PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

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DRAWING NUMBER
CD04
SHEET NUMBER 42 OF 130

POV PROJECT NO:
CP-0441

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STRUCTURAL NOTES

REINFORCED CONCRETE:

1. CONCRETE — 28–DAY COMPRESSIVE STRENGTH
   - A. CONCRETE — 5,000 PSI
   - B. PILE PLUGS — 5,000 PSI
   - C. NON–SHRINK GROUT (UNO) — 8,000 PSI (5 KSI IN 5 DAYS)
   - D. PRECAST CONC PANELS — 6,000 PSI

2. REINFORCING STEEL:
   - A. REINFORCING STEEL (UNO) — ASTM A 615, GRADE 60
   - B. REINFORCING STEEL, WELDABLE — ASTM A 706, GRADE 60
   - C. PILE TO DECK CONNECTION HEADED DOWEL MAX — ASTM A 706, GRADE 60, DEFORMED, FY=68 KSI
   - D. HEADED REINFORCEMENT — ASTM A 970, ROUND HEADS ONLY
   - E. SPIRAL, PLAIN WIRE — ASTM A 1064, FY=70 KSI
   - F. SPIRAL, DEFORMED WIRE — ASTM A 1064, FY=75 KSI
   - G. PRESTRESSING STEEL — ASTM A 416, GRADE 270, UNCOATED LOW–RELAXATION SEVEN–WIRE STRAND

3. REINFORCING BAR COUPLERS: MECHANICAL SPLICE PER ACI 318, DEVELOPING 125 PERCENT OF THE BAR YIELD STRENGTH AS A MINIMUM.

4. INSTALL CORNER BARS AT ALL CORNERS. MATCH THE NUMBER, SPACING AND DIAMETER OF ALL HORIZONTAL REINFORCING STEEL AT THE CORNERS.

5. DETAIL ALL REINFORCING STEEL IN ACCORDANCE WITH ACI 315. ALL REINFORCING STEEL BEND DIMENSIONS ARE SHOWN OUT TO OUT. USE SEISMIC HOOK DETAILS FOR ALL TIES AND STIRRUPS UNLESS OTHERWISE SHOWN ON THE DRAWINGS.

6. LAP SPLICES ON LONGITUDINAL REINFORCING BARS LESS THAN 20 FEET IN LENGTH ARE NOT PERMITTED. STAGGER SPLICES ONE SPLICE LENGTH MINIMUM. NO MORE THAN 50 PERCENT OF THE BARS MAY BE SPLICED AT ANY ONE LOCATION INCLUDING CONSTRUCTION JOINTS. SHOW SPLICE LOCATIONS FOR REINFORCING STEEL ON THE SHOP DRAWINGS. SPLICES SHALL CONFORM TO THE FOLLOWING TABLE, UNLESS OTHERWISE NOTED:

SCHEDULE OF LAP SPLICE LENGTHS (f'c=5000 PSI)								
BAR SIZE	4	5	6	7	8	9	10	11
TOP BARS	2'–6"	2'–6"	3'–0"	3'–6"	4'–6"	5'–9"	7'–6"	9'–0"
BOTTOM BARS	2'–0"	2'–0"	2'–3"	2'–6"	3'–6"	4'–3"	5'–6"	6'–6"

NOTES:
1. VALUES ARE BASED ON CLASS "B" SPLICES (MAX OF 50% BAR 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.

7. COVER SHALL BE A MINIMUM OF 3" UNO.

8. ALL EXPOSED CORNERS SHALL BE CHAMFERED 3/4" INCHES.

9. CONCRETE FORMING: FILL ALL VOIDS LEFT BY CONES AND OTHER FORMWORK HARDWARE AFTER FORMS ARE REMOVED. FOR CHAIRS, SUPPORTS, AND SPACERS TO SUPPORT REINFORCING STEEL, USE ALL PLASTIC OR EPOXY–COATED WITH PRE–MOLDED PLASTIC TIPS. PROVIDE CHAIRS, SUPPORTS, AND SPACERS AT INTERVALS LESS THAN 4 FEET ON CENTER UNLESS OTHERWISE ALLOWED BY THE PORT. FORMWORK SHALL BE CONSTRUCTED IN SUCH A MANNER SO AS TO CONTAIN ALL UNCURED CONCRETE AND WATER THAT HAS CONTACTED UNCURED CONCRETE.

10. CONCRETE FINISHING: TERMINOLOGY IS AS DEFINED IN ACI 301.
    - SLAB OR TOP SURFACE = LIGHT BROOM FINISH W/ 1/16" STRIA
    - FORMED SURFACES = SMOOTH FORM FINISH
    - SURFACES RECEIVING GROUT = SCRATCH FINISH

11. CONCRETE CURING: MOIST CURE CONCRETE SURFACES OR USE AN APPROVED CURING MEMBRANE IN ACCORDANCE WITH ACI 301 UNLESS A LONGER TIME IS REQUIRED IN THE SPECIFICATIONS.

12. PROVIDE CONSTRUCTION JOINTS ONLY AS NOTED ON THE DRAWINGS, OR AS SPECIFICALLY PERMITTED BY THE ENGINEER. SPLICING REINFORCEMENT OVER JOINTS IS NOT PERMITTED.

13. ROUGHEN CONSTRUCTION JOINTS TO ¼ IN AMPLITUDE, UNO. CLEAN AND REMOVE LAITANCE, THEN CONTINUOUSLY SOAK WITH WATER FOR 24 HRS PRIOR TO POUR, UNO. REMOVE STANDING WATER JUST PRIOR TO PLACING CONCRETE.

14. PRECAST CONCRETE MEMBERS: PERFORM ADDITIONAL DESIGN AS REQUIRED FOR PROPER HANDLING DURING PRECASTING, STRIPPING FROM FORMS, TRANSPORTATION, STORING AND ERECTION OF MEMBERS. LIFTING INSERTS SHALL BE PROVIDED IN ALL APPLICABLE PRECAST MEMBERS TO FACILITATE LIFTING AND SUPPORTING MEMBERS DURING ERECTION. ADDITIONAL REINFORCING STEEL SHALL BE PROVIDED AS NECESSARY TO PREVENT CRACKING DURING HANDLING, DELIVERY AND ERECTION.

15. NON–SHRINK GROUT: ASTM C1107 CEMENTITIOUS MATERIAL MEETING THE ADDITIONAL REQUIREMENTS OF THE SPECIFICATIONS.

STRUCTURAL STEEL AND METAL FABRICATIONS:

1. STEEL MATERIALS SHALL CONFORM TO THE FOLLOWING UNLESS NOTED OTHERWISE:
   - A. PLATES, BARS, HP SHAPES: — ASTM A 572, GRADE 50
   - B. ANGLES AND CHANNELS: — ASTM A 36.
   - C. WIDE FLANGE SHAPES: — ASTM A 992.
   - D. HSS (RECTANGULAR) SHAPE: — ASTM A 500, GRADE B, FY=46 KSI
   - E. HSS (ROUND) SHAPE: — ASTM A 500, GRACE B, FY=42 KSI
   - F. PIPE: — ASTM A 53, GRADE B
   - G. STANDARD BOLTS: — ASTM A 307 TYPICAL, UNO
   - H. THREADED RODS: — ASTM A 36
   - I. HIGH STRENGTH BOLTS: — ASTM F 3125 GRADE A325, THREADED CONDITION X.
   - J. HEAVY HEX NUTS: — ASTM A 563
   - K. WASHERS: — ASTM F 844, WIDE SERIES, MAXIMUM THICKNESS
   - L. WASHERS–HSB: — ASTM F 436
   - M. ANCHOR BOLTS/RODS: — ASTM F 1554, GRADE 105, HEADED TYPICAL
   - N. HIGH STRENGTH THREADED ROD: — ASTM F 1554, GRADE 55
   - O. STAINLESS STEEL — ASTM A 276 ASTM A 240 316L
   - P. MOORING HARDWARE: — PER MANUFACTURER
   - Q. MOORING HARDWARE ANCHOR BOLTS: — PER MANUFACTURER

2. WELD HEADED STUDS USING AUTOMATICALLY TIMED WELDING EQUIPMENT IN ACCORDANCE WITH AWS D1.1

STRUCTURAL STEEL AND METAL FABRICATIONS, CONT:

3. HOT–DIP GALVANIZE ALL STEEL MATERIALS, FABRICATIONS, AND ASSEMBLIES IN ACCORDANCE WITH ASTM A 123, OTHERWISE ASTM A 153, AND ASTM F 2329, UNO. COAT ALL STEEL IN ACCORDANCE WITH THE SPECIFICATIONS, AFTER FABRICATION.
   - A. RESTORE DAMAGED GALVANIZING WITH FIELD–APPLIED GALVANIZING COMPOUND PER ASTM A 780 ANNEX A1. AS A MINIMUM, MATCH THE THICKNESS OF THE UNDAMAGED GALVANIZING.

4. STEEL FABRICATIONS NOT REQUIRING HOT DIP GALVANIZATION ARE AS FOLLOWS:
   - A. MOORING BOLLARDS
   - B. ACCESS WALKWAY FRAMING AND RAILINGS

5. ALL STEEL CONSTRUCTION SHALL CONFORM TO AISC 303 EXCEPT AS FOLLOWS, UNO:
   - A. REPLACE SECTION 2.1, DEFINITION OF STRUCTURAL STEEL, TO READ IN ITS ENTIRETY AS FOLLOWS: STRUCTURAL STEEL SHALL CONSIST OF ALL ELEMENTS SHOWN AND SIZED IN THE STRUCTURAL DRAWINGS (S–SERIES SHEETS).
   - B. REPLACE SECTION 2.2, OTHER STEEL, IRON, OR METAL ITEMS, TO READ IN ITS ENTIRETY AS FOLLOWS: OTHER STEEL, IRON, OR METAL ITEMS SHALL CONSIST OF ELEMENTS SHOWN IN THE CIVIL (C–SERIES SHEETS), MECHANICAL (M–SERIES SHEETS), PLUMBING (P–SERIES SHEETS), AND ELECTRICAL (E–SERIES) DRAWINGS.
   - C. REPLACE SECTION 3.1 TO READ IN ITS ENTIRETY AS FOLLOWS: THE CONTRACT DOCUMENTS PROVIDE STRUCTURAL STEEL DESIGN DRAWINGS SHOWING THE CHARACTER OF THE WORK TO BE PERFORMED AND GIVING THE SIZE, SECTION, MATERIAL, GRADE AND LOCATION OF ALL MEMBERS. SECTIONS AND DETAILS HAVE BEEN PROVIDED TO INDICATE THE DESIRED APPROACH TO DETAILING IN ORDER TO OBTAIN THE REQUIRED RESULT. THIS DESIRED APPROACH SHALL BE IMPLEMENTED BY THE FABRICATOR TO PREPARE AND COMPLETE DETAILED SHOP DRAWINGS.

6. MOORING HARDWARE SHALL BE PAINTED PER SPECIFICATIONS AND MANUFACTURERS RECOMMENDATIONS.

7. CASTINGS:
   - A. TRENCH DRAIN FRAMES AND GRATES: DUCTILE IRON, LOAD CLASS 'F' BASED ON MODIFIED AASHTO M 306 FOR AIRPORT LOADING; WORKING LOAD = 55,000 LBS MINIMUM
   - B. SUMP AND PULL BOX COVERS: DUCTILE IRON, LOAD CLASS 'F' BASED ON MODIFIED AASHTO M 306 FOR AIRPORT LOADING; WORKING LOAD = 55,000 LBS MINIMUM
   - C. MOORING HARDWARE: CAST STEEL CONFORMING TO ASTM A 27, GR 70–40.

PILING:

1. PIPE PILE MATERIAL: ASTM A 252, GRADE 3, W/ MODIFIED YIELD STRENGTH = 50 KSI

2. PILES SHALL BE DRIVEN TO MINIMUM TIP ELEVATIONS AND CAPACITIES AS INDICATED ON THE DRAWINGS.

3. NOTIFY THE PORT IF ANY PILE IS DRIVEN BEYOND THE TOLERANCES OR DOES NOT ACHIEVE THE PILE TIP ELEVATION, OR DESIGN ULTIMATE COMPRESSION OR TENSILE CAPACITIES, AS NOTED IN THE SPECIFICATIONS OR ON THE DRAWINGS.

4. CONCRETE PILE PLUGS:
   - A. SEE REINFORCED CONCRETE

5. CUT–OFF:
   - A. PILE CUTOFF SHALL BE LEVEL.
   - B. PILE CUT OFFS AND CUTTING DEBRIS SHALL NOT BE ALLOWED TO FALL INTO THE WATER OR INSIDE THE PIPE PILE.

SHEET PILING (CUT–OFF WALL):

1. MATERIAL: ASTM A 572, GRADE 60

2. DRIVE SHEET PILES TO THE TIP ELEVATIONS, OR BELOW THE TIP ELEVATIONS, AS INDICATED ON THE DRAWINGS UNO.

3. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION INCLUDING SHEET PILE DRIVING AND PILE CUT–OFF TOLERANCES, AND ALLOWABLE SHEET PILE MANIPULATION.

DRILLED AND BONDED ANCHORS:

1. POST–INSTALLED ITEMS (EMBEDDED WITH ADHESIVE):
   - A. DOWELS — ASTM A 706, GRADE 60, DEFORMED
   - B. THREADED ROD ANCHORS — ASTM 593, TYPE 316L, UNO
   - C. ADHESIVE — ASTM C 881, UNO

2. POST–INSTALLED MECHANICAL ANCHORS:
   - A. WEDGE ANCHOR — SS TYPE 316

3. DRILL HOLES WITH A PERCUSSION–TYPE DRILL AND REMOVE ALL CUTTINGS FROM THE HOLES. DO NOT CORE DRILL. DO NOT CUT REINFORCING. DRILL HOLES STRAIGHT AND TRUE AT RIGHT ANGLES TO THE FACE, UNO.

4. USE OF DRILLED ADHESIVE CONCRETE ANCHORS, WHERE NOT SPECIFIED IN THE DOCUMENTS, SHALL BE SUBJECT TO APPROVAL BY THE ENGINEER.

5. EPOXY OR ADHESIVE–TYPE ANCHORS SHALL BE INSTALLED PER THE MANUFACTURER'S RECOMMENDATION. SPECIAL INSPECTION IS REQUIRED FOR ALL ADHESIVE ANCHORS.

WELDING:

1. PROVIDE WELDS AND ELECTRODES IN ACCORDANCE WITH AWS, SUITABLE TO THE PARTICULAR MATERIALS AND SITUATIONS. USE A MINIMUM OF 70 KSI LOW–HYDROGEN ELECTRODES, UNO.

2. ALL WELDING SHALL BE PERFORMED BY WELDERS QUALIFIED FOR THE WELD AND POSITION SHOWN IN ACCORDANCE WITH AWS AND HAVING CURRENT CERTIFICATION FROM WABO. SUBMIT EVIDENCE OF CURRENT CERTIFICATION FOR THE WELDS TO BE MADE.

3. ALL WELDS SHALL BE PERFORMED WITH PROCEDURES PREQUALIFIED OR QUALIFIED IN ACCORDANCE WITH AWS D1.1 AND D1.4, AS APPLICABLE.

4. THE WELDS SHOWN ARE FOR THE FINAL CONNECTIONS. FIELD WELD SYMBOLS ARE SHOWN WHERE FIELD WELDS ARE REQUIRED BY THE STRUCTURAL DESIGN. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING IF A WELD SHOULD BE SHOP OR FIELD WELDED IN ORDER TO FACILITATE THE STRUCTURAL STEEL ERECTION.

5. PROVIDE ERECTION AIDS, AS REQUIRED, TO PERFORM FIELD WELDING. WHEN WELDING IS COMPLETE, REMOVE ERECTION AIDS, PLUG HOLES W/ WELD WHERE APPLICABLE, GRIND SMOOTH, AND RESTORE ALL COATINGS TO ORIGINAL THICKNESS AND COATING MATERIAL TYPE. REFER TO AISC 303 FOR OTHER REQUIREMENTS.

LOAD PATH:

1. VERTICAL LOADS:
   LOADS ARE DISTRIBUTED THROUGH CONCRETE TOPPING SLAB TO DECK PANELS, DECK PANELS TO PILE CAPS, PILE CAPS TO PILES, AND PILES TO SOIL IN FRICTION AND END BEARING.
2. HORIZONTAL LOADS:
   LOADS, INCLUDING SEISMIC FORCES, SOIL PRESSURE, SHIP BERTHING, AND MOORING FORCES ARE TRANSMITTED THROUGH THE DECK ACTING AS A DIAPHRAGM TO THE PILES.

CONTRACTOR DESIGNED WALKWAYS:

1. WALKWAYS SHALL BE CONTRACTOR–DESIGNED AND SHALL HAVE THE SAME APPEARANCE AS ONE ANOTHER. DESIGN,FABRICATE AND ERECT THE WALKWAYS IN CONFORMANCE WITH THE REFERENCE DRAWINGS AND SPECIFICATIONS.
2. THE SUPPORTING SUBSTRUCTURE ELEMENTS (WHARF EXTENSION AND PLATFORMS) HAVE BEEN DESIGNED TO MEET THE LOADING CRITERIA AS SPECIFIED ON THE DRAWINGS.
3. COORDINATE AND RESOLVE THE WALKWAY SUPPORTS WITH THE DETAILS AT THE WHARF AND PLATFORMS BEFORE FABRICATION. THE ENDS OF THE WALKWAYS SHALL BE DESIGNED TO ACCOMMODATE THE EMBEDDED OBJECTS AND REINFORCEMENT AS SHOWN.
4. GEOMETRY IS INDICATED ON THE DRAWINGS. EACH WALKWAY SHALL BE CAMBERED SUCH THAT IT HAS AN UPWARD DISPLACEMENT AT THE CENTER OF THE SPAN, UNDER IT'S OWN SELF–WEIGHT. THE MAGNITUDE OF THE CAMBER SHALL BE ESTABLISHED SUCH THAT THE BOTTOM CHORD IS FLAT, OR CAMBERED UP, UNDER FULL LIVE LOAD PLUS SELF–WEIGHT.
5. WALKING SURFACES OF TRANSITION PLATES SHALL BE ALUMINUM WITH A PERMANENT SLIP–RESISTANT METAL FABRICATED SURFACE. TREAD PLATE OR CHECKER PLATE SHALL NOT BE USED.
6. LIVE LOAD: 100 PSF.

DREDGING/SLOPE PROTECTION:

1. FOR DREDGING/SLOPE PROTECTION REQUIREMENTS, SEE C01–C12.

90% SUBMITTAL Dec 29, 2023 - 4:46pm

BRIAN DEAN BARD
STATE OF WASHINGTON
157460
REGISTERED
PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: NOT TO SCALE
DRAWN BY: JTH
APPROVED BY: BDB
DATE: 22-Dec-23

REVISION NO. DATE.

PORT OF VANCOUVER USA
Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
STRUCTURAL NOTES - SHEET 1

DRAWING NUMBER
S01
SHEET NUMBER 43 OF 130

POV PROJECT NO:
CP-0441

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STRUCTURAL NOTES

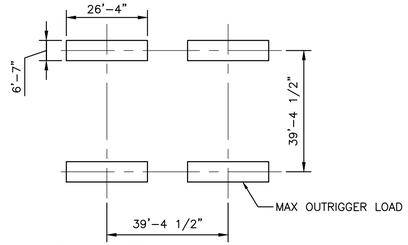
DESIGN LOADS:

1. DEAD LOADS:
   ACTUAL WEIGHT OF MATERIALS OF CONSTRUCTION AND PERMANENT EQUIPMENT

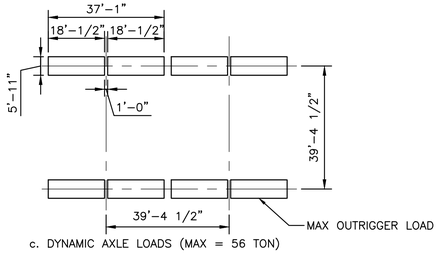
2. UNIFORM LIVE LOADS:
   A. PIER DECK 750 PSF
   B. WALKWAYS 100 PSF

3. VEHICULAR LIVE LOADS:
   A. MOBILE HARBOR CRANE (LHM500S)
   MAX OUTRIGGER LOAD:
   STATIC WITHOUT WIND – 713.3 K
   STATIC WITH WIND – 776.5 K
   DYNAMIC WITHOUT WIND – 817.6 K
   DYNAMIC WITH WIND – 855K

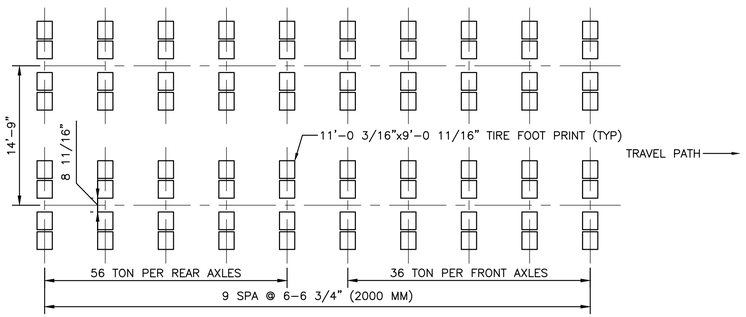
a. SINGLE OUTRIGGER PAD CONFIGURATION



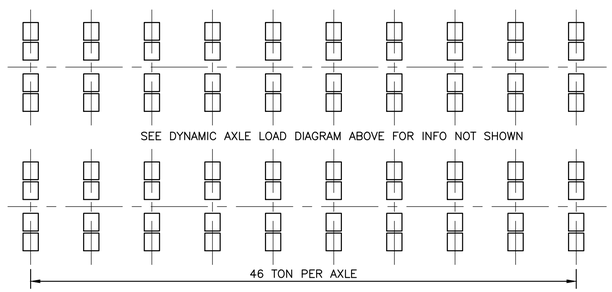
b. DOUBLE OUTRIGGER PAD CONFIGURATION



c. DYNAMIC AXLE LOADS (MAX = 56 TON)

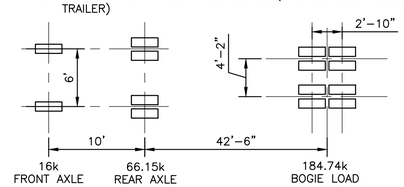


d. STATIC AXLE LOADS (MAX = 46 TON)

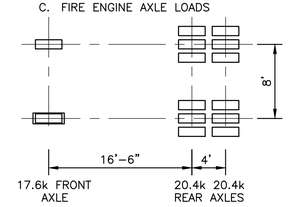


DESIGN LOADS CONT:

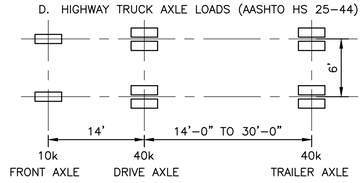
B. TRACTOR AND TRAILER AXLE LOADS (MAGNUM SISU MODEL TT120 SERIES W/ 100 TONNES MAFI TRAILER)



C. FIRE ENGINE AXLE LOADS



D. HIGHWAY TRUCK AXLE LOADS (AASHTO HS 25–44)



4. LATERAL LOADS (NON–SEISMIC):
   A. WIND LOADS ON RIGID STRUCTURES:
   WIND SPEED 115 MPH (3–SEC GUST)
   WIND EXPOSURE C
   OCCUPANCY CATEGORY 1.0

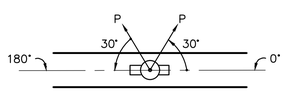
   B. WIND LOADS ON MOORED VESSELS 64 KNOTS (30–SEC GUST)

   C. CURRENT 4.0 FT/SEC

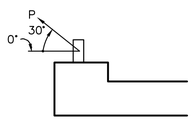
   D. BERTHING LOADS:

	SUPRAMAX	HANDY SIZE	BARGE
LOA	656 Ft	623 Ft	284 Ft
BEAM	106 Ft	98.40 Ft	42.10 Ft
DRAFT	43 FT	37.7 FT	16.50 Ft
DISPLACEMENT	70,000 LONG–TON	37,500 LONG–TON	4,064 LONG–TON
BERTHING VELOCITY (PERPENDICULAR TO WHARF)	0.2 FT/SEC	0.2 FT/SEC	0.2 FT/SEC
ACCIDENTAL BERTHING ENERGY MULTIPLIER	1.5	1.5	1.5
ACCIDENTAL BERTHING ENERGY	135 KIP–FT	72 KIP–FT	7.8 KIP–FT

E. MOORING LOADS (BERTH 9 EXTENSION):
   a. FORCES ON BERTH BOLLARD (WORKING LOAD): P=200 KIPS



PLAN



ELEVATION

DESIGN LOADS CONT:

5. SEISMIC LOADS
   THE SEISMIC DESIGN IS IN ACCORDANCE WITH ASCE 61–14 "SEISMIC DESIGN OF PIERS AND WHARVES" FOR THE FOLLOWING PERFORMANCE LEVELS AND ASSOCIATED SPECTRAL ACCELERATIONS PROVIDED BY GRI GEOTECHNICAL REPORT, DATED AUGUST 14, 2023.

   A. OPERATING LEVEL EARTHQUAKE (OLE) – MINIMAL DAMAGE –
   50% CHANCE OF EXCEEDANCE IN 50 YEARS (72 YEAR RETURN PERIOD).
   $S_{a\ 0.2}$ = 0.12 g
   $S_{a\ 1.0}$ = 0.04 g
   PGA = 0.061 g

   B. CONTINGENCY LEVEL EARTHQUAKE (CLE) – CONTROLLED AND REPAIRABLE DAMAGE –
   10% CHANCE OF EXCEEDANCE IN 50 YEARS (475 YEAR RETURN PERIOD).
   $S_{a\ 0.2}$ = 0.43 g
   $S_{a\ 1.0}$ = 0.22 g
   PGA = 0.20 g

   C. DESIGN EARTHQUAKE (DE) – LIFE SAFETY PROTECTION –
   2% CHANCE OF EXCEEDANCE IN 50 YEARS (2,475 YEAR RETURN PERIOD)
   SDS = 0.69 g
   SD1 = 0.41 g
   PGA = 0.31 g

6. LOAD COMBINATIONS
   ULTIMATE (FOR DESIGN OF STRUCTURAL COMPONENTS)

   U1 = 1.4 D
   U2 = 1.2 D + 1.6 L
   U3 = 1.2 D + (*) W + L
   U4 = 0.9 D +(*) W
   U5 = (1.0 + 0.5 PGA) D +0.1 L + 1.0 H + 1.0 E
   U6 = (1.0 – 0.5 PGA) D +0.1 L + 1.0 E
   U7 = 1.2 D +1.0 L +1.6 M
   U8 = 1.2 D +1.6 L + 1.6 B
   * = 1.0 (3–SEC GUST), 1.6 (30–SEC GUST)

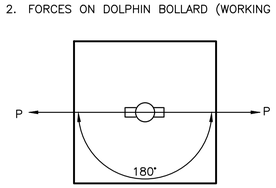
   SERVICE (FOR DESIGN OF PILES AND SERVICEABILITY)

   S1 = 1.0 D + 1.0 L
   NOTE: ONLY 80% OF LIVE LOAD WILL BE CONSIDERED FOR DESIGN OF PILES.

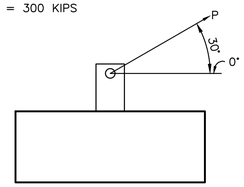
   ABBREVIATIONS:
   D DEAD LOAD
   L LIVE LOAD
   W WIND LOAD ON STRUCTURE
   E EARTHQUAKE LOAD
   M MOORING LOAD
   B BERTHING LOAD

MOORING DOLPHIN DESIGN LOADS:

1. DEAD LOADS: ACTUAL WEIGHT OF MATERIALS
2. FORCES ON DOLPHIN BOLLARD (WORKING LOAD): P = 300 KIPS



PLAN



ELEVATION

3. WIND ON VESSELS (30–SEC SUSTAINED WIND):
   A. VESSEL AT BERTH 9: 50 MPH
   B. VESSEL AT BERTH 10:
   DOWNSTREAM 90 MPH
   DOWNSTREAM/ONSHORE 90 MPH
   ONSHORE 90 MPH
   UPSTREAM/ONSHORE 90 MPH
   UPSTREAM 50 MPH
   UPSTREAM/OFFSHORE 50 MPH
   OFFSHORE 50 MPH
   DOWNSTREAM/OFFSHORE 50 MPH
4. CURRENT VELOCITY: 4.0 FT/SEC PARALLEL TO SHORE

90% SUBMITTAL Dec 29, 2023 - 4:46pm

BRIAN DEAN BOARD
STATE OF WASHINGTON
57460
REGISTERED
PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

A/E PROJECT NUMBER: A19 0198.02

DRAWING SCALE: NOT TO SCALE
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APPROVED BY: BDB
DATE: 22-Dec-23

REVISION
NO. DATE.

PORT OF VANCOUVER USA
Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
STRUCTURAL NOTES - SHEET 2

DRAWING NUMBER
S02
SHEET NUMBER 44 OF 130

POV PROJECT NO:
CP-0441

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TABLE 1705.7
REQUIRED SPECIAL INSPECTIONS AND TESTS OF DRIVEN DEEP FOUNDATION ELEMENTS

	TYPE	CONTINUOUS	PERIODIC	REMARKS
1.	VERIFY ELEMENT MATERIALS, SIZES AND LENGTHS COMPLY WITH THE REQUIREMENTS	X	-	
2.	DETERMINE CAPACITIES OF TEST ELEMENTS AND CONDUCT ADDITIONAL LOAD TESTS, AS REQUIRED.	X	-	
3.	INSPECT DRIVING OPERATIONS AND MAINTAIN COMPLETE AND ACCURATE RECORDS FOR EACH ELEMENT.	X	-	
4.	VERIFY PLACEMENT LOCATIONS AND PLUMBNESS, CONFIRM TYPE AND SIZE OF HAMMER, RECORD NUMBER OF BLOWS PER FOOT OF PENETRATION, DETERMINE REQUIRED PENETRATIONS TO ACHIEVE DESIGN CAPACITY, RECORD TIP AND BUTT ELEVATIONS AND DOCUMENT ANY DAMAGE TO FOUNDATION ELEMENT.	X	-	
5.	FOR STEEL ELEMENTS, PERFORM ADDITIONAL SPECIAL INSPECTIONS IN ACCORDANCE WITH SECTION 1705.2.	-	-	

IBC TABLE 1705.3
REQUIRED SPECIAL INSPECTIONS AND TESTS OF CONCRETE CONSTRUCTION

	TYPE	CONTINUOUS	PERIODIC	REFERENCED STANDARD	IBC REFERENCE	REMARK
1.	INSPECT REINFORCEMENT, INCLUDING PRESTRESSING TENDONS, AND VERIFY PLACEMENT.	-	X	ACI 318: CH. 20, 25.2, 25.3, 26.6.1-26.6.3	1908.4	
2.	REINFORCING BAR WELDING: a. VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706; b. INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM 5/16"; AND c. INSPECT ALL OTHER WELDS.	- X	X X	AWS D1.4 ACI 318: 26.6.4	-	
3.	INSPECT ANCHORS CAST IN CONCRETE.	-	X	ACI 318: 17.8.2	-	
4.	INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE. a. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS. b. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4.a.	X	 X	ACI 318: 17.8.2.4 ACI 318: 17.8.2	-	
5.	VERIFY USE OF REQUIRED DESIGN MIX.	-	X	ACI 318: CH. 19, 26.4.3, 26.4.4	1904.1, 1904.2, 1908.2, 1908.3	
6.	PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMEN FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONCRETE TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	X	-	ASTM C 172, ASTM C 31, ACI 318: 26.5, 26.12	1908.10	
7.	INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	X	-	ACI 318: 26.5	1908.6, 1908.7, 1908.8	
8.	VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	-	X	ACI 318: 26.5.3-26.5.5	1908.9	
12.	INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.	-	X	ACI 318: 26.11.1.2(b)	-	

AISC 360-16 CHAPTER N - BOLTING

QC = QUALITY CONTROL, TO BE PERFORMED BY THE FABRICATOR'S OR ERECTOR'S QUALITY CONTROL INSPECTOR
QA = QUALITY ASSURANCE, TO BE PERFORMED AT THE FABRICATORS PLANT OR IN THE FIELD BY THE QUALITY ASSURANCE INSPECTOR
O = OBSERVE ITEMS RANDOMLY
P = PERFORM TASKS FOR EACH ELEMENT

TABLE N 5.6-1
INSPECTION TASKS PRIOR TO BOLTING

VERIFICATIONS AND INSPECTION	QC	QA	RECSC REF
1. MANUFACTURER'S CERTIFICATIONS AVAILABLE FOR FASTENER MATERIALS	O	P	2.1, 9.1
2. FASTENERS MARKED IN ACCORDANCE WITH ASTM REQUIREMENTS	O	O	FIG C-2.1, 9.1
3. CORRECT FASTENERS SELECTED FOR THE JOINT DETAIL (GRADE, TYPE, BOLT LENGTH, IF THREADS ARE TO BE EXCLUDED FROM THE SHEAR PLANE)	O	O	2.3.2, 2.7.2, 9.1
4. CORRECT BOLTING PROCEDURE SELECTED FOR JOINT DETAIL	O	O	4, 8
5. CONNECTING ELEMENTS, INCLUDING THE APPROPRIATE FAYING SURFACE CONDITION AND HOLE PREPARATION, IF SPECIFIED, MEET APPLICABLE REQUIREMENTS	O	O	3, 9.1, 9.3
6. PRE-INSTALLATION VERIFICATION TESTING BY INSTALLATION PERSONNEL OBSERVED AND DOCUMENTED FOR FASTENER ASSEMBLIES AND METHODS USED	P	O	7, 9.2
7. PROTECTED STORAGE PROVIDED FOR BOLTS, NUTS, WASHERS AND OTHER FASTENER COMPONENTS.	O	O	2.2, 8, 9.1

TABLE N 5.6-2
INSPECTION TASKS DURING BOLTING

VERIFICATIONS AND INSPECTION	QC	QA	RECSC REF
1. FASTENER ASSEMBLIES PLACED IN ALL HOLES AND WASHERS AND NUTS (IF REQUIRED) ARE POSITIONED AS REQUIRED.	O	O	8.1, 9.1
2. JOINT BROUGHT TO SNUG-TIGHT CONDITION PRIOR TO THE PRETENSIONING OPERATION	O	O	8.1, 9.1
3. FASTENER COMPONENT NOT TURNED BY THE WRENCH PREVENTED FROM ROTATING	O	O	8.2, 9.2
4. FASTENERS ARE PRETENSIONED IN ACCORDANCE WITH A METHOD APPROVED BY RCSC AND PROGRESSING SYSTEMATICALLY FROM MOST RIGID POINT TOWARD FREE EDGES.	O	O	8.2, 9.2

TABLE N 5.6-3
INSPECTION TASKS AFTER BOLTING

VERIFICATIONS AND INSPECTION	QC	QA	RECSC REF
1. DOCUMENT ACCEPTANCE OR REJECTION OF BOLTED CONNECTIONS	P	P	NOT ADDRESSED

AISC 360-16 CHAPTER N AND AISC 341-16 CHAPTER J - WELDING

QC = QUALITY CONTROL, TO BE PERFORMED BY THE FABRICATOR'S OR ERECTOR'S QUALITY CONTROL INSPECTOR
QA = QUALITY ASSURANCE, TO BE PERFORMED AT THE FABRICATORS PLANT OR IN THE FIELD BY THE QUALITY ASSURANCE INSPECTOR
O = OBSERVE ITEMS RANDOMLY
P = PERFORM TASKS FOR EACH ELEMENT

TABLE N 5.4-1
INSPECTION TASKS PRIOR TO WELDING

VERIFICATIONS AND INSPECTION	QC	QA	AWS REF.
1. WELDER QUALIFICATION RECORDS AND CONTINUITY RECORDS	P	O	
2. WPS AVAILABLE	P	P	6.3
3. MANUFACTURER CERTIFICATIONS FOR WELDING CONSUMABLES AVAILABLE	P	P	6.2
4. MATERIAL IDENTIFICATION (TYPE/GRADE)	O	O	6.2
5. WELDER IDENTIFICATION SYSTEM, SEE NOTE 1	O	O	6.4
6. FIT-UP OF GROOVE WELDS (INCLUDING JOINT GEOMETRY)			
A. JOINT PREPARATION	P/O SEE NOTE 2	O	6.5.2
B. DIMENSIONS (ALIGNMENT, ROOT OPENING, ROOT FACE, BEVEL)			5.22
C. CLEANLINESS (CONDITION OF STEEL SURFACES)			5.14
D. TACKING (TACK WELD QUALITY AND LOCATION)			5.17
E. BACKING TYPE AND FIT (IF APPLICABLE)			5.9, 5.21.1.1
7. FIT-UP OF CJP GROOVE WELDS OF HSS T-, Y- & K-JOINTS WITHOUT BACKING (INCLUDING JOINT GEOMETRY)			
A. JOINT PREPARATION	P	O	9.11.2
B. DIMENSIONS (ALIGNMENT, ROOT OPENING, ROOT FACE, BEVEL)			
C. CLEANLINESS (CONDITION OF STEEL SURFACES)			
D. TACKING (TACK WELD QUALITY AND LOCATION)			
8. CONFIGURATION AND FINISH OF ACCESS HOLES	O	O	6.5.2, 5.16
9. FIT-UP OF FILLET WELDS			
A. DIMENSIONS (ALIGNMENT, GAPS AT ROOT)	P/O SEE NOTE 2	O	5.21.1
B. CLEANLINESS (CONDITION OF STEEL SURFACES)			5.14
C. TACKING (TACK WELD QUALITY AND LOCATION)			5.17
10. CHECK WELDING EQUIPMENT	O	-	6.2, 5.10

NOTE 1: THE FABRICATOR OR ERECTOR, AS APPLICABLE, SHALL MAINTAIN A SYSTEM BY WHICH A WELDER WHO HAS WELDED A JOINT OR MEMBER CAN BE IDENTIFIED. STAMPS, IF USED, SHALL BE THE LOW-STRESS TYPE.

NOTE 2: FOLLOWING PERFORMANCE OF THIS INSPECTION TASK FOR TEN WELDS TO BE MADE BY A GIVEN WELDER, WITH THE WELDER DEMONSTRATING UNDERSTANDING OF REQUIREMENTS AND POSSESSION OF SKILLS AND TOOLS TO VERIFY THESE ITEMS, THE 'PERFORM' DESIGNATION OF THIS TASK SHALL BE REDUCED TO 'OBSERVE', AND THE WELDER SHALL PERFORM THIS TASK. SHOULD THE INSPECTOR DETERMINE THAT THE WELDER HAS DISCONTINUED PERFORMANCE OF THIS TASK, THE TASK SHALL BE RETURNED TO 'PERFORM' UNTIL SUCH TIME AS THE INSPECTOR HAS RE-ESTABLISHED ADEQUATE ASSURANCE THAT THE WELDER WILL PERFORM THE INSPECTION TASKS LISTED.

TABLE N 5.4-2
INSPECTION TASKS DURING WELDING

VERIFICATIONS AND INSPECTION	QC	QA	AWS REF.
1. CONTROL AND HANDLING OF WELDING CONSUMABLES			6.2
A. PACKAGING	O	O	5.3.1
B. EXPOSURE CONTROL	O	O	5.3.2, 5.3.3
2. NO WELDING OVER CRACKED WELDS	O	O	5.17
3. ENVIRONMENTAL CONDITIONS			
A. WIND SPEED WITHIN LIMITS	O	O	5.11.1
B. PRECIPITATION AND TEMPERATURE			5.11.2.
4. WPS FOLLOWED			
A. SETTINGS ON WELDING EQUIPMENT	O	O	6.3.3, 6.5.2, 5.5, 5.20
B. TRAVEL SPEED			
C. SELECTED WELDING MATERIALS			
D. SHIELDING GAS TYPE/ FLOW RATE			
E. PREHEAT APPLIED			
F. INTERPASS TEMPERATURE MAINTAINED (MIN/MAX.)			5.6, 5.7
G. PROPER POSITION (F, V, H, OH)			
H. INTERMIX OF FILLER MATERIALS AVOIDED UNLESS APPROVED			AISC 341-16
5. WELDING TECHNIQUES			
A. INTERPASS AND FINAL CLEANING	O	O	6.5.2, 6.5.3, 5.23, 5.29.1
B. EACH PASS WITHIN PROFILE LIMITATIONS	O	O	
C. EACH PASS MEETS QUALITY REQUIREMENTS	O	O	
6. PLACEMENT AND INSTALLATION OF STEEL HEADED STUD ANCHORS	P	P	
7. USE OF QUALIFIED WELDERS	O	O	AISC 341-16

TABLE N 5.4-3
INSPECTION TASKS AFTER WELDING

VERIFICATIONS AND INSPECTION	QC	QA	AWS REF.
1. WELDS CLEANED	O	O	5.29.1
2. SIZE, LENGTH AND LOCATION OF WELDS	P	P	6.5.1
3. WELDS MEET VISUAL ACCEPTANCE CRITERIA			
A. CRACK PROHIBITION	P	P	6.5.3
B. WELD/BASE-METAL FUSION			TABLE 6.1 (1)
C. CRATER CROSS SECTION			TABLE 6.1 (2)
D. WELD PROFILES			TABLE 6.1 (3)
E. WELD SIZE			TABLE 6.1 (4), 5.24
F. UNDERCUT			TABLE 6.1 (6)
G. POROSITY			TABLE 6.1 (7)
			TABLE 6.1 (8)
4. ARC STRIKES	P	P	5.28
5. K-AREA, SEE NOTE 3	P	P	NOT ADDRESSED
6. WELD ACCESS HOLES IN ROLLED HEAVY SHAPES AND BUILT-UP HEAVY SHAPES, SEE NOTE 4	P	P	5.16, 6.5.2
7. BACKING REMOVED AND WELD TABS REMOVED (IF REQUIRED)	P	P	5.9, 5.30
8. REPAIR ACTIVITIES	P	P	6.5.3, 5.25
9. DOCUMENT ACCEPTANCE OR REJECTION OF WELDED JOINT OR MEMBER	P	P	6.5.4, 6.5.5
10. NO PROHIBITED WELDS HAVE BEEN ADDED WITHOUT THE APPROVAL OF THE EOR	O	O	
11. PLACEMENT OF REINFORCING OR CONTOUR FILLET WELDS (IF REQUIRED)	P	P	AISC 341-16

NOTE 3: WHEN WELDING OF DOUBLER PLATES, CONTINUITY PLATES OR STIFFENERS HAS BEEN PERFORMED IN THE K-AREA, VISUALLY INSPECT THE WEB K-AREA FOR CRACKS WITHIN 3 INCHES (75MM) OF THE WELD.

NOTE 4: AFTER ROLLED HEAVY SHAPES (AISC 360-16 SECT. A3.1c) AND BUILT-UP HEAVY SHAPES (AISC 360-16 SECT. A3.1d) ARE WELDED, VISUALLY INSPECT THE WELD ACCESS FOR CRACKS.

STRUCTURAL OBSERVATIONS:

1. STRUCTURAL OBSERVATIONS WILL CONFORM TO SECTION 1704 OF THE IBC. AS A MINIMUM, STRUCTURAL OBSERVATIONS ARE REQUIRED AT THE FOLLOWING STAGES OF CONSTRUCTION:
   - DURING PILE INSTALLATION
   - PRIOR TO CASTING MOORING DOLPHIN CAP & ACCESS PLATFORMS
2. STRUCTURAL OBSERVATIONS WILL BE PERFORMED BY THE ENGINEER OF RECORD. THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE ENGINEER OF RECORD IN ADVANCE OF THE STAGES LISTED ABOVE.
3. THE ENGINEER OF RECORD WILL OBSERVE THE INDICATED WORK FOR GENERAL CONFORMANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS. ALL DISCREPANCIES WILL BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR FOR CORRECTION AND NOTED IN THE OBSERVATION REPORTS.
4. THE STRUCTURAL OBSERVATIONS DO NOT INCLUDE OR WAIVE THE RESPONSIBILITY FOR ANY REQUIRED SPECIAL INSPECTIONS.

SPECIAL INSPECTION PROGRAM NOTES:

1. SPECIAL INSPECTIONS SHALL CONFORM TO CHAPTER 17 OF THE INTERNATIONAL BUILDING CODE AND WASHINGTON AMENDMENTS.
2. SPECIAL INSPECTIONS AND ASSOCIATED TESTING SHALL BE PERFORMED BY AN APPROVED ACCREDITED INDEPENDENT AGENCY MEETING THE REQUIREMENTS OF ASTM E329 (MATERIALS), ASTM D3740 (SOILS), ASTM C1077 (CONCRETE), ASTM A880 (STEEL), AND ASTM E543 (NON–DESTRUCTIVE). THE INSPECTION AND TESTING AGENCY SHALL FURNISH TO THE ENGINEER OF RECORD A COPY OF THEIR SCOPE OF ACCREDITATION. SPECIAL INSPECTORS SHALL BE CERTIFIED BY THE BUILDING OFFICIAL. WELDING INSPECTORS SHALL BE QUALIFIED PER SECTION 6.1.4.1.1 OF AWS D1.1. SPECIAL INSPECTION AND ASSOCIATED TESTING SHALL BE PERFORMED BY THE OWNER.
3. MAINTAIN ACCESS TO WORK REQUIRING INSPECTION UNTIL IT HAS BEEN INSPECTED AND INDICATED TO BE IN CONFORMANCE.
4. DEFINITIONS:
   A. CONTINUOUS INSPECTION: THE INSPECTOR IS OBSERVING THE WORK REQUIRING INSPECTION AT ALL TIMES.
   B. PERIODIC INSPECTION: THE INSPECTOR IS ON SITE AS REQUIRED TO CONFIRM THAT THE WORK REQUIRING INSPECTION IS IN CONFORMANCE.
5. THE SPECIAL INSPECTOR SHALL OBSERVE THE INDICATED WORK FOR COMPLIANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS. ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION NOTED IN THE INSPECTION REPORTS, AND IF NOT CORRECTED, BROUGHT TO THE ATTENTION OF THE ENGINEER OF RECORD AND THE BUILDING OFFICIAL.
6. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS FOR EACH INSPECTION TO THE BUILDING OFFICIAL, ENGINEER OF RECORD, CONTRACTOR, AND OWNER. THE SPECIAL INSPECTION AGENCY SHALL SUBMIT A FINAL REPORT INDICATING THE WORK REQUIRING SPECIAL INSPECTION WAS INSPECTED AND IS IN CONFORMANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS AND THAT ALL DISCREPANCIES NOTED IN THE INSPECTION REPORTS HAVE BEEN CORRECTED.
7. REVIEW INSPECTION PROTOCOL WITH THE CONTRACTOR, ENGINEER OF RECORD AND ALL INTERESTED PARTIES, PRIOR TO CONSTRUCTION.

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BRIAN DEAN BARRY — STATE OF WASHINGTON — 57460 — REGISTERED PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: NOT TO SCALE
DRAWN BY: JTH
APPROVED BY: BDB
DATE: 22-Dec-23

REVISION NO. DATE.

PORT OF VANCOUVER USA
Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
SPECIAL INSPECTION

DRAWING NUMBER
S03
SHEET NUMBER 45 OF 130

POV PROJECT NO:
CP-0441

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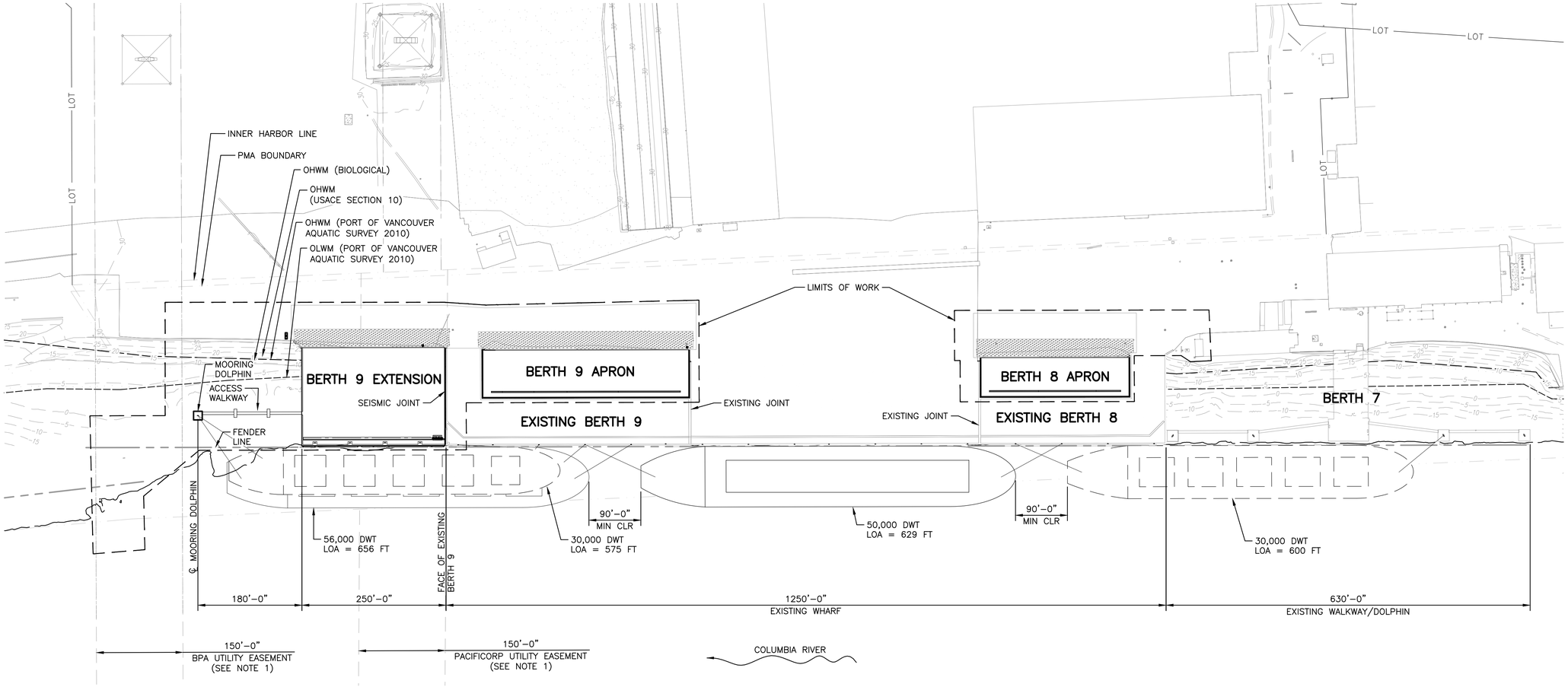

PLAN – MOORING ARRANGEMENT

SCALE: 1" = 100'

GENERAL:

1. FOR ALL WORK WITHIN THE UTILITY EASEMENT, CONTRACTOR SHALL ABIDE BY THE AGREEMENT ESTABLISHED BETWEEN THE PORT OF VANCOUVER, USA AND THE POWER COMPANIES.
2. PORTIONS OF THE PROPOSED PROJECT ARE LOCATED ON LAND OWNED BY THE STATE OF WASHINGTON. ALL WORK WITHIN STATE OWNED LANDS SHALL BE CONDUCTED CONSISTENT WITH APPLICABLE PROVISIONS OF THE PORT MANAGEMENT AGREEMENT BETWEEN THE PORT OF VANCOUVER, USA AND WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES.

1" = 100' 100 0 100 200 scale feet

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BRIAN DEAN BOARD
STATE OF WASHINGTON
87460
REGISTERED
PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: 1" = 100'

DRAWN BY: JTH

APPROVED BY: BDB

DATE: 22-Dec-23

REVISION
NO. DATE.

PORT OF VANCOUVER USA

Berth 8/9 Extension and
Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
MOORING
ARRANGEMENT PLAN

DRAWING NUMBER
S04

SHEET NUMBER 46 OF 130

POV PROJECT NO:
CP-0441

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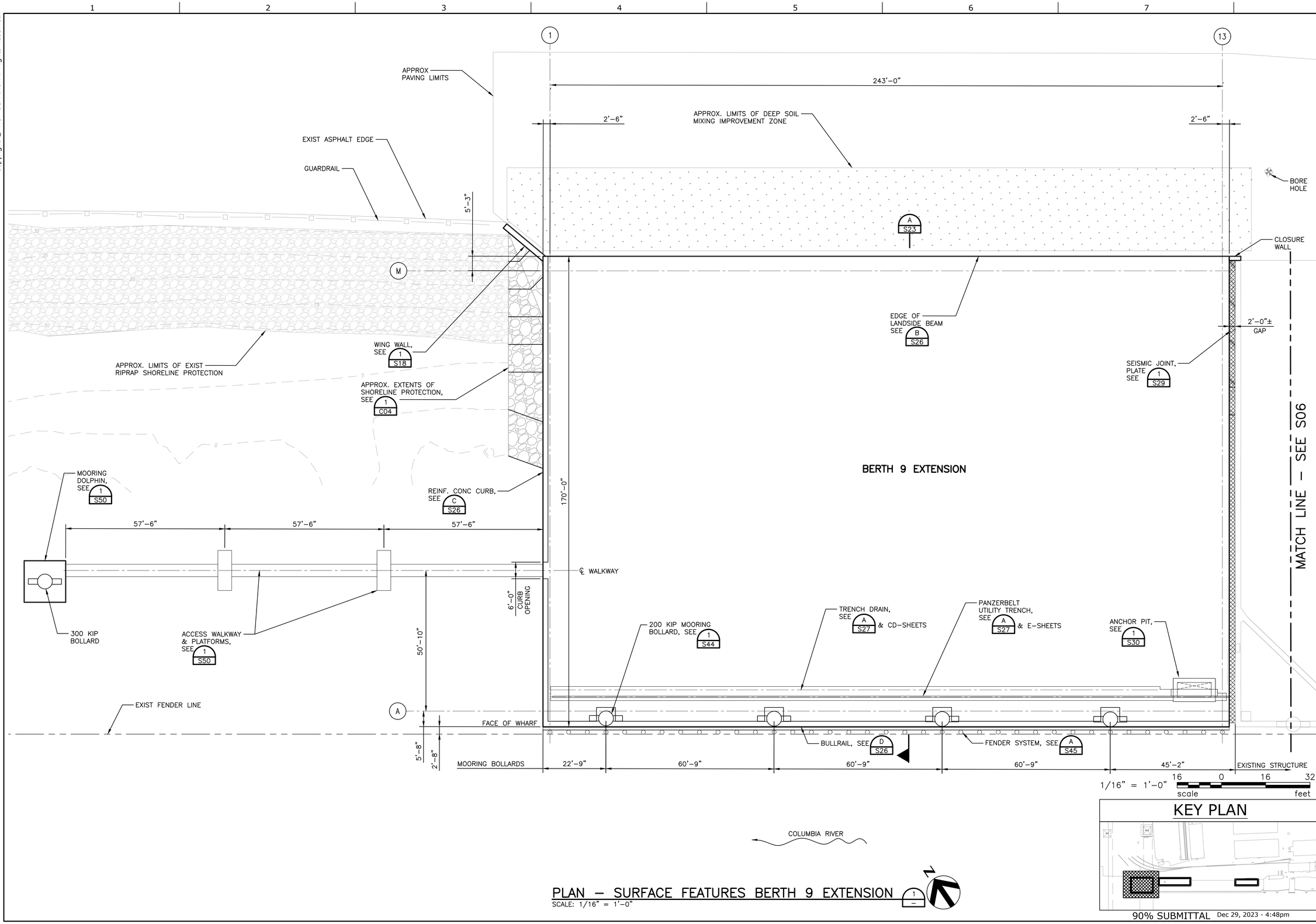

BRIAN DEAN BOARD
STATE OF WASHINGTON
87460
REGISTERED
PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-6100
FAX: 360-823-6101

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DRAWN BY: JTH
APPROVED BY: BDB
DATE: 22-Dec-23

REVISION NO. DATE.

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Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
SURFACE FEATURES PLAN - BERTH 9 EXTENSION

DRAWING NUMBER
S05
SHEET NUMBER 47 OF 130

POV PROJECT NO:
CP-0441

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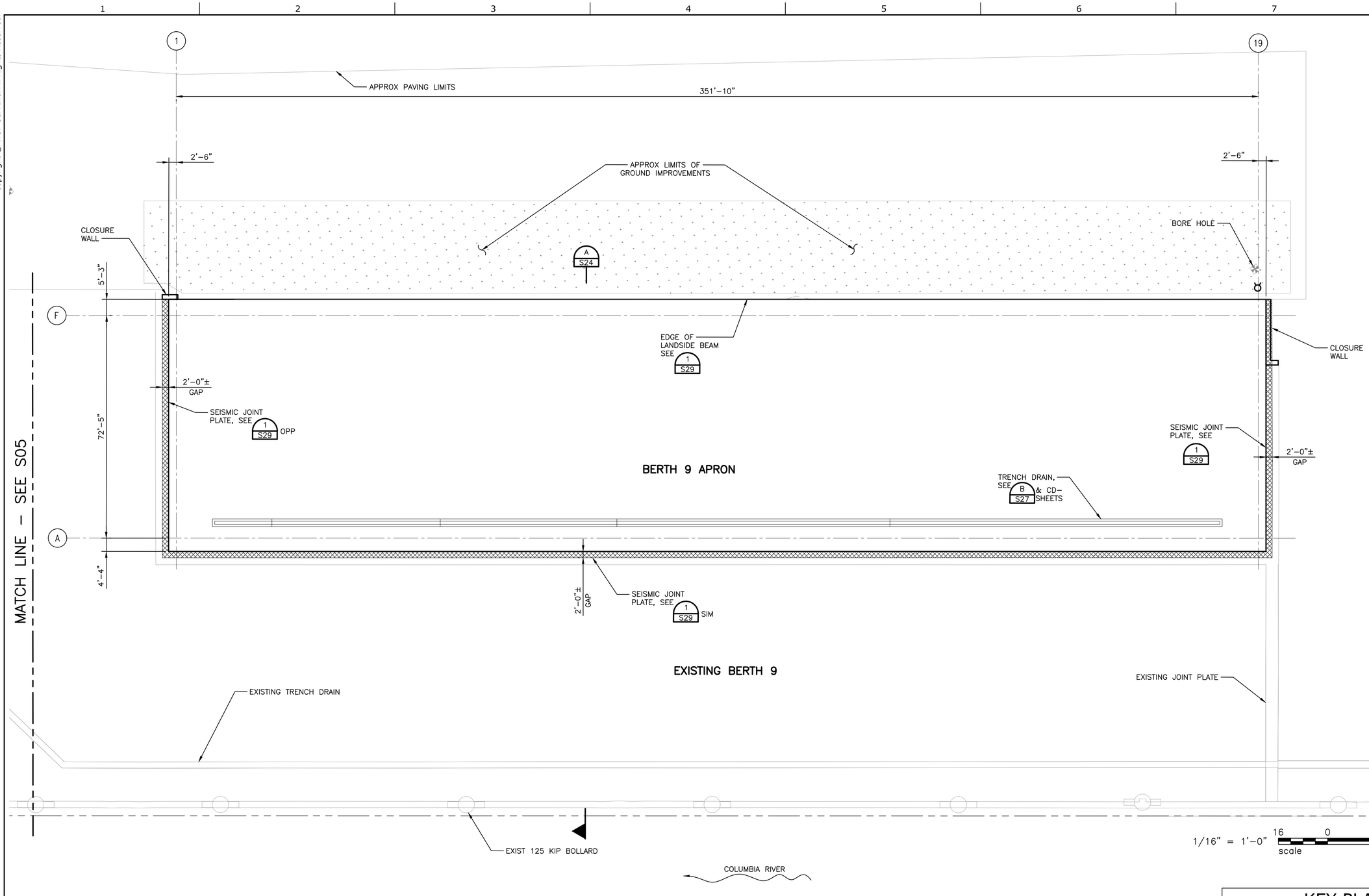
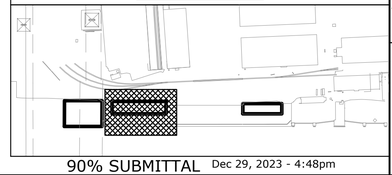


PLAN – SURFACE FEATURES BERTH 9 APRON

SCALE: 1/16" = 1'–0"

KEY PLAN



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BRIAN DEAN BOARD
STATE OF WASHINGTON
37460
REGISTERED
PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

A/E PROJECT NUMBER: A19.0198.02

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Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
SURFACE FEATURES PLAN - BERTH 9 APRON

DRAWING NUMBER
S06
SHEET NUMBER 48 OF 130

POV PROJECT NO:
CP-0441

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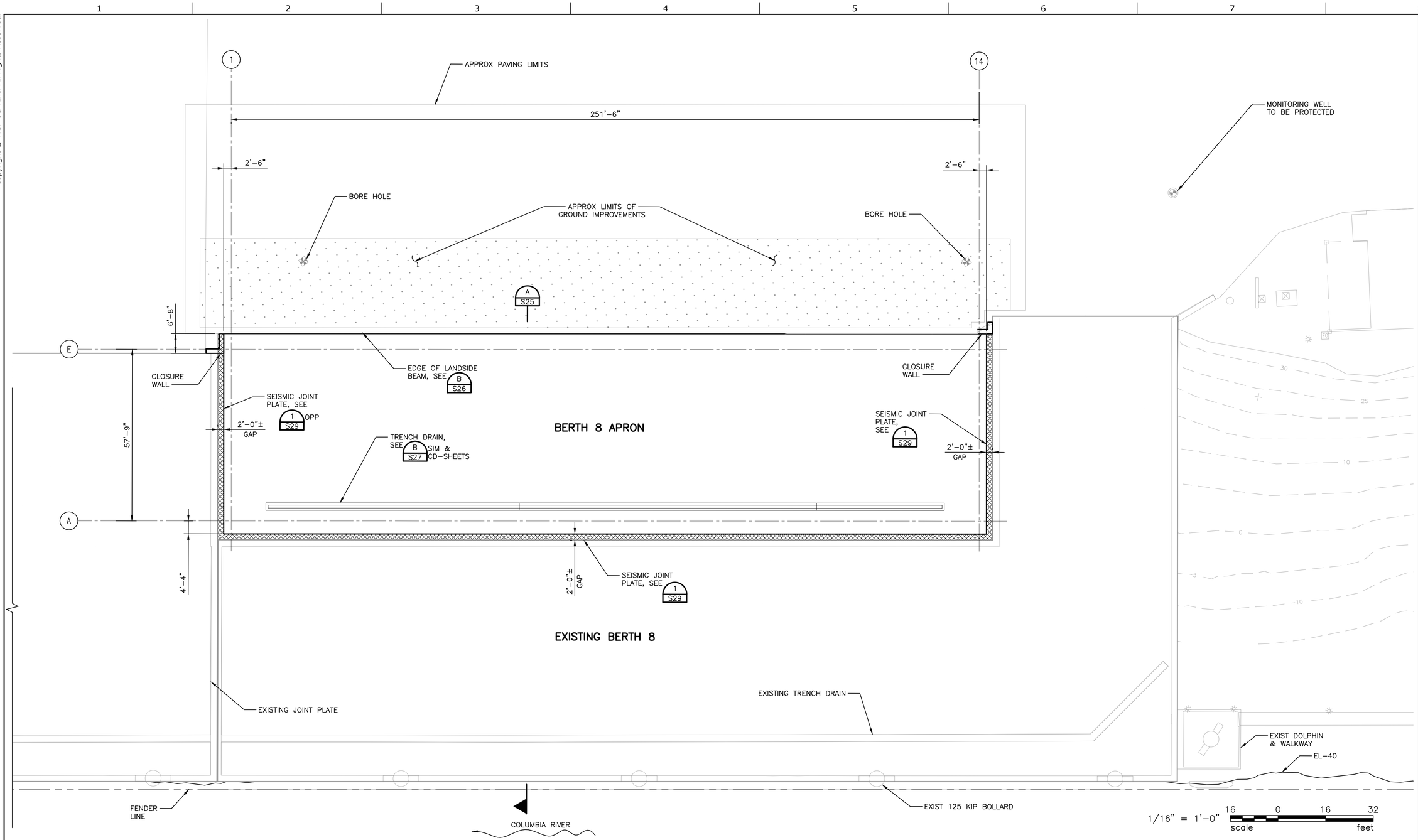
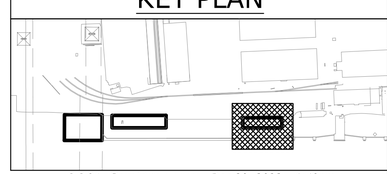


PLAN – SURFACE FEATURES BERTH 8 APRON (1)
SCALE: 1/16" = 1'–0"

KEY PLAN



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BRIAN DEAN BOARD
STATE OF WASHINGTON
87460
REGISTERED
PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

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Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
SURFACE FEATURES PLAN - BERTH 8 APRON

DRAWING NUMBER
S07
SHEET NUMBER 49 OF 130

POV PROJECT NO:
CP-0441

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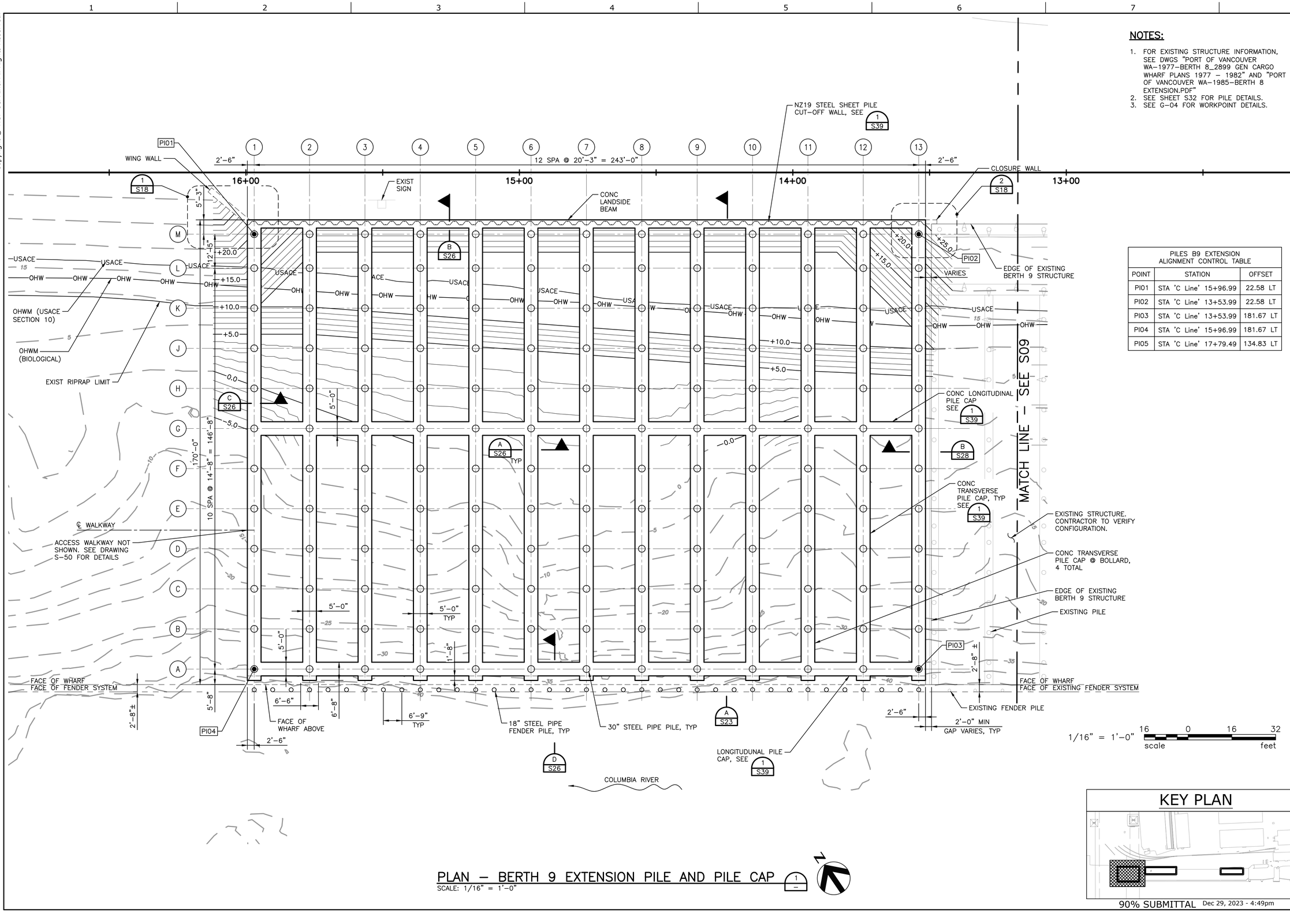
NOTES:

1. FOR EXISTING STRUCTURE INFORMATION, SEE DWGS "PORT OF VANCOUVER WA–1977–BERTH 8_2899 GEN CARGO WHARF PLANS 1977 – 1982" AND "PORT OF VANCOUVER WA–1985–BERTH 8 EXTENSION.PDF"
2. SEE SHEET S32 FOR PILE DETAILS.
3. SEE G–04 FOR WORKPOINT DETAILS.



PILES B9 EXTENSION ALIGNMENT CONTROL TABLE		
POINT	STATION	OFFSET
PI01	STA 'C Line' 15+96.99	22.58 LT
PI02	STA 'C Line' 13+53.99	22.58 LT
PI03	STA 'C Line' 13+53.99	181.67 LT
PI04	STA 'C Line' 15+96.99	181.67 LT
PI05	STA 'C Line' 17+79.49	134.83 LT

1/16" = 1'–0" scale 16 0 16 32 feet

PLAN – BERTH 9 EXTENSION PILE AND PILE CAP

SCALE: 1/16" = 1'–0"

KEY PLAN

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BRIAN DEAN BEARD
STATE OF WASHINGTON
57460
REGISTERED PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-6100
FAX: 360-823-6101

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Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
PILE AND PILE CAP PLAN - BERTH 9 EXTENSION

DRAWING NUMBER
S08
SHEET NUMBER 50 OF130
POV PROJECT NO:
CP-0441

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NOTES:

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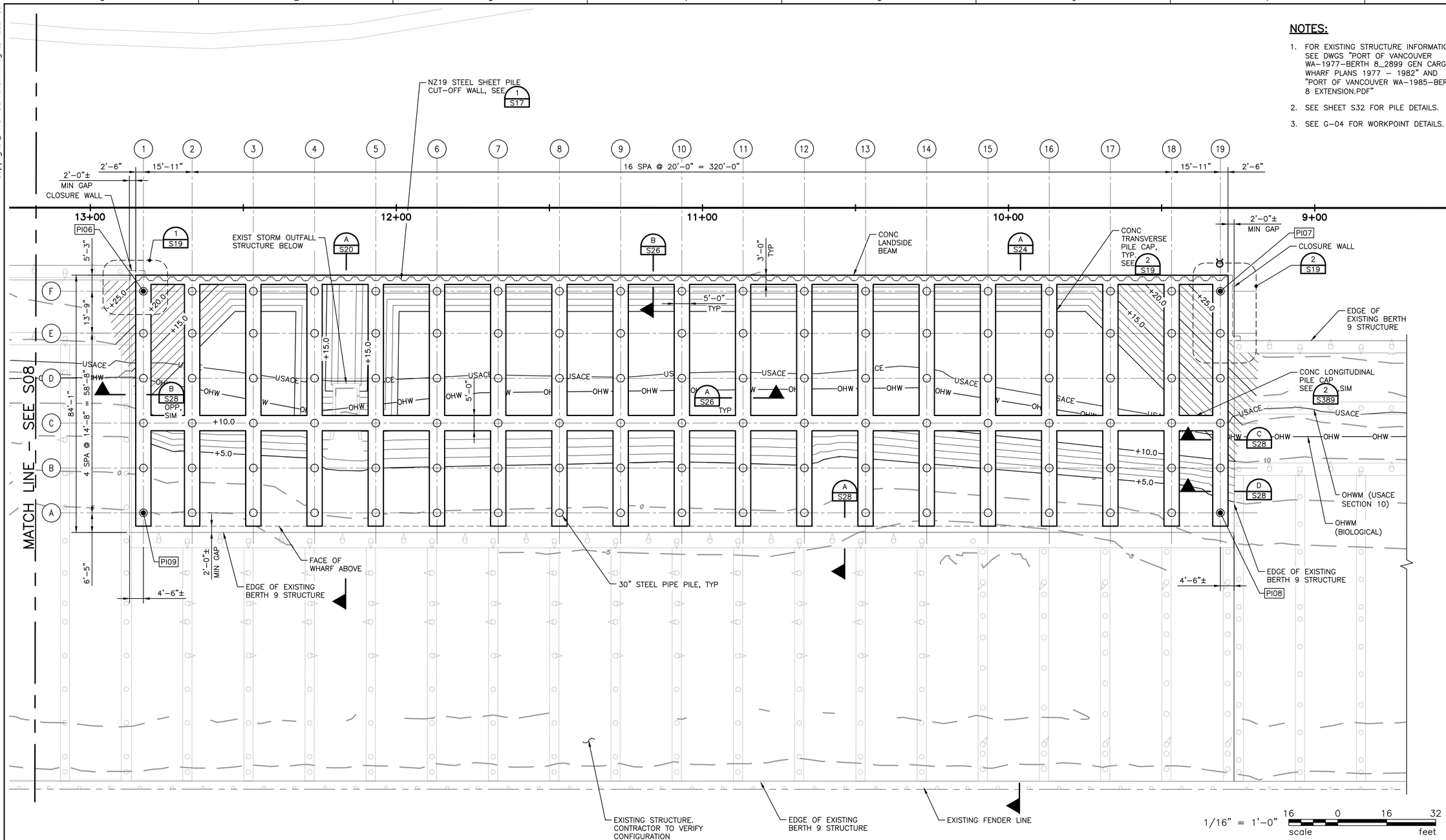


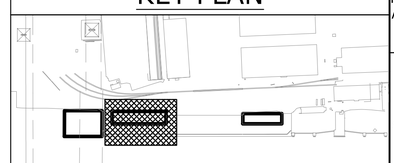
PILES B9 APRON ALIGNMENT CONTROL TABLE		
POINT	STATION	OFFSET
PI06	STA 'C Line' 12+82.64	27.31 LT
PI07	STA 'C Line' 9+30.81	27.23 LT
PI08	STA 'C Line' 9+30.79	99.65 LT
PI09	STA 'C Line' 12+82.62	99.73 LT

COLUMBIA RIVER

PLAN – BERTH 9 APRON PILE AND PILE CAP

SCALE: 1/16" = 1'–0"

KEY PLAN



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BRIAN DEAN BEARD STATE OF WASHINGTON 57460 REGISTERED PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-6000
FAX: 360-823-6101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: 1/16" = 1'-0"

DRAWN BY: JTH

APPROVED BY: BDB

DATE: 22-Dec-23

REVISION NO. DATE.

PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
PILE AND PILE CAP PLAN - BERTH 9 APRON

DRAWING NUMBER
S09

SHEET NUMBER 51 OF 130

POV PROJECT NO:
CP-0441

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NOTES:

1. FOR EXISTING STRUCTURE INFORMATION, SEE DWGS "PORT OF VANCOUVER WA–1977–BERTH 8_2899 GEN CARGO WHARF PLANS 1977 – 1982" AND "PORT OF VANCOUVER WA–1985–BERTH 8 EXTENSION.PDF"
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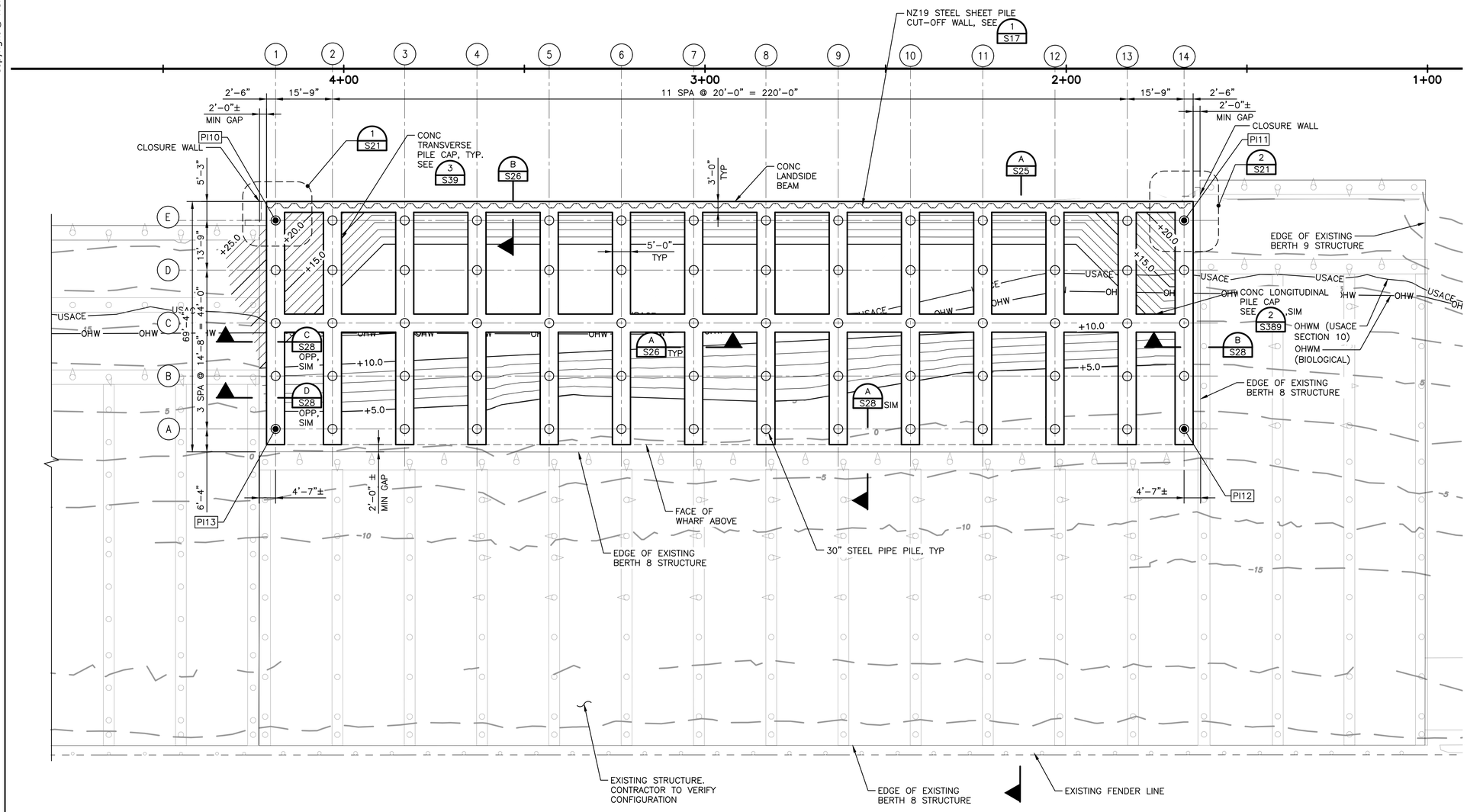


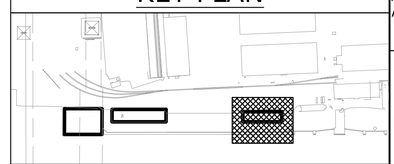
PILES B8 APRON ALIGNMENT CONTROL TABLE		
POINT	STATION	OFFSET
PI10	STA 'C Line' 4+18.89	42.00 LT
PI11	STA 'C Line' 1+67.39	42.03 LT
PI12	STA 'C Line' 1+67.39	99.78 LT
PI13	STA 'C Line' 4+18.89	99.75 LT

1/16" = 1'–0" scale 16 0 16 32 feet

PLAN – BERTH 8 APRON PILE AND PILE CAP

SCALE: 1/16" = 1'–0"

KEY PLAN



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BRIAN DEAN BEARD
STATE OF WASHINGTON
57460
REGISTERED PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-6100
FAX: 360-823-6101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: 1/16" = 1'-0"
DRAWN BY: JTH
APPROVED BY: BDB
DATE: 22-Dec-23

REVISION NO. DATE.

PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
PILE AND PILE CAP PLAN - BERTH 8 APRON

DRAWING NUMBER
S10
SHEET NUMBER 52 OF 130

POV PROJECT NO:
CP-0441

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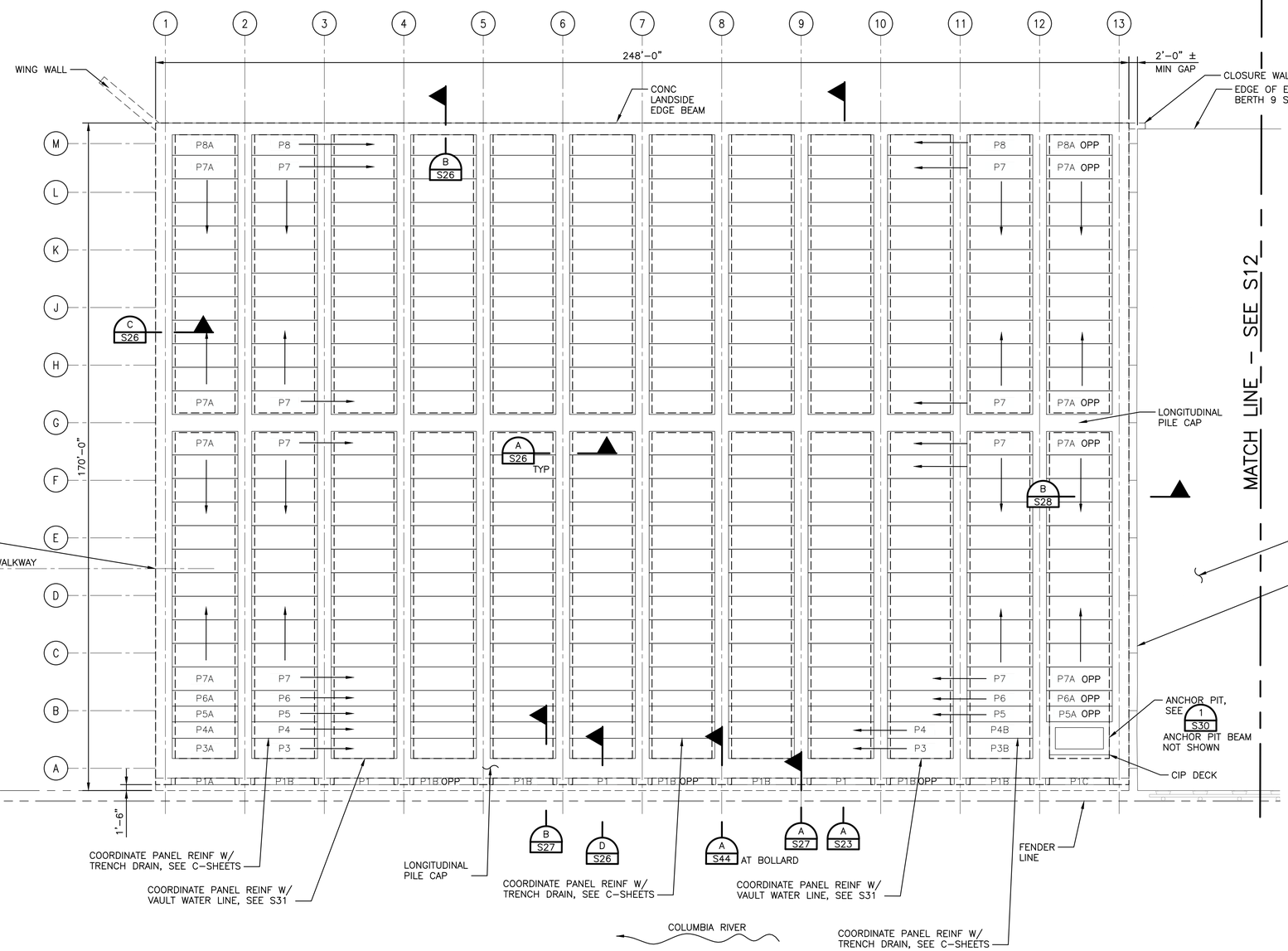

PLAN – BERTH 9 EXTENSION DECK PANEL

SCALE: 1/16" = 1'-0"

NOTES:

1. FOR DECK PANEL INFORMATION, SEE SHEET S34 THROUGH S37.
2. EXTENSION PILES NOT SHOWN.

1/16" = 1'-0" 16 0 16 32 scale feet

KEY PLAN

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210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-6100
FAX: 360-823-6101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: 1/16" = 1'-0"
DRAWN BY: JTH
APPROVED BY: BDB
DATE: 22-Dec-23

REVISION NO. DATE.

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Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
DECK PANEL PLAN - BERTH 9 EXTENSION

DRAWING NUMBER
S11
SHEET NUMBER 53 OF130

POV PROJECT NO:
CP-0441

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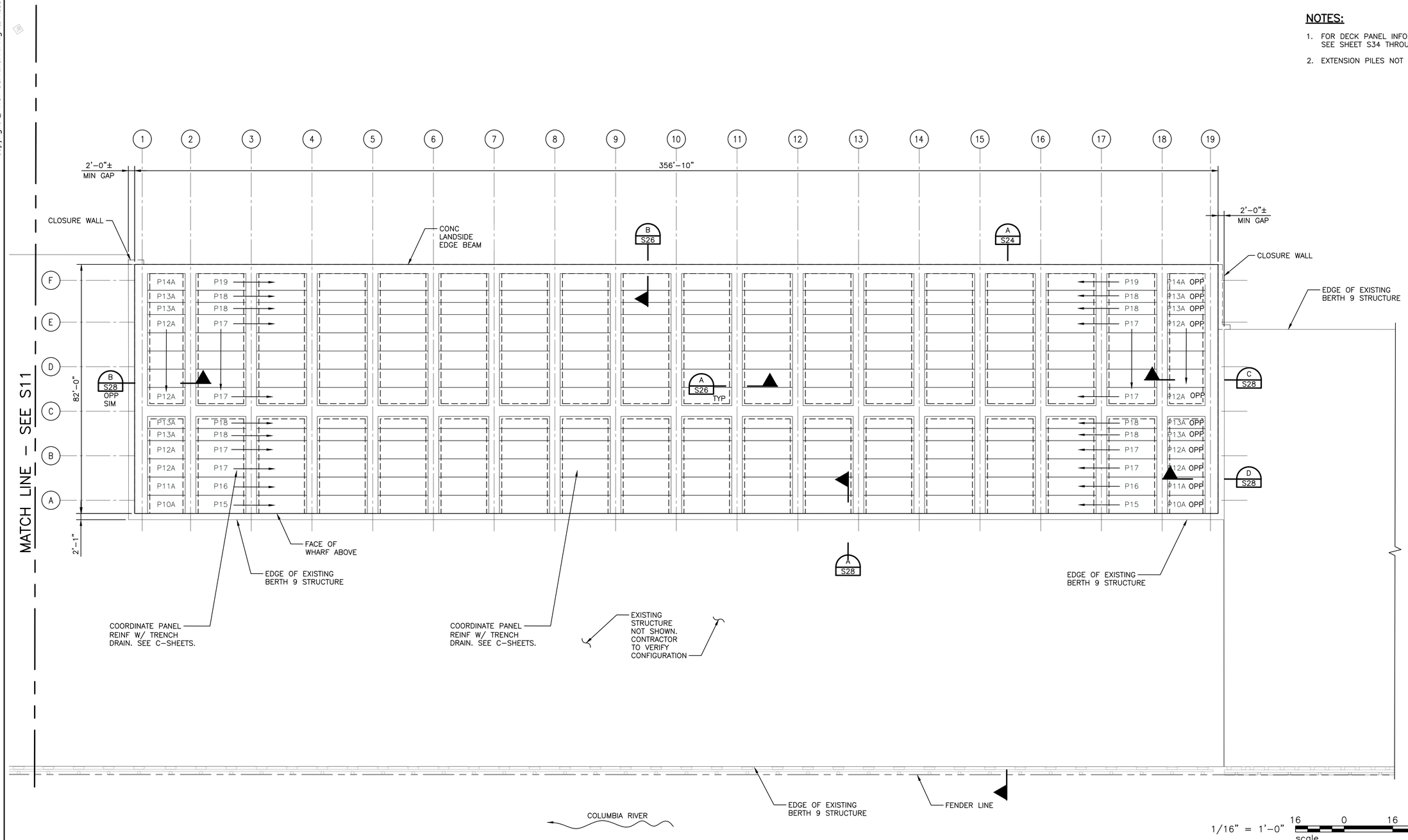
NOTES:

1. FOR DECK PANEL INFORMATION, SEE SHEET S34 THROUGH S37.
2. EXTENSION PILES NOT SHOWN.

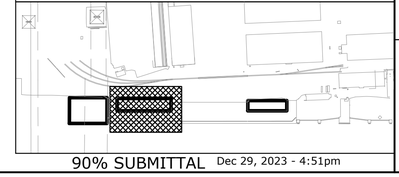


PLAN – BERTH 9 APRON DECK PANEL

SCALE: 1/16" = 1'–0"

1/16" = 1'–0" scale 16 0 16 32 feet

KEY PLAN



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STATE OF WASHINGTON
57460
REGISTERED PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-6100
FAX: 360-823-6101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: 1/16" = 1'-0"
DRAWN BY: JTH
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DATE: 22-Dec-23

REVISION NO. DATE.

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Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
DECK PANEL PLAN - BERTH 9 APRON

DRAWING NUMBER
S12
SHEET NUMBER 54 OF 130

POV PROJECT NO:
CP-0441

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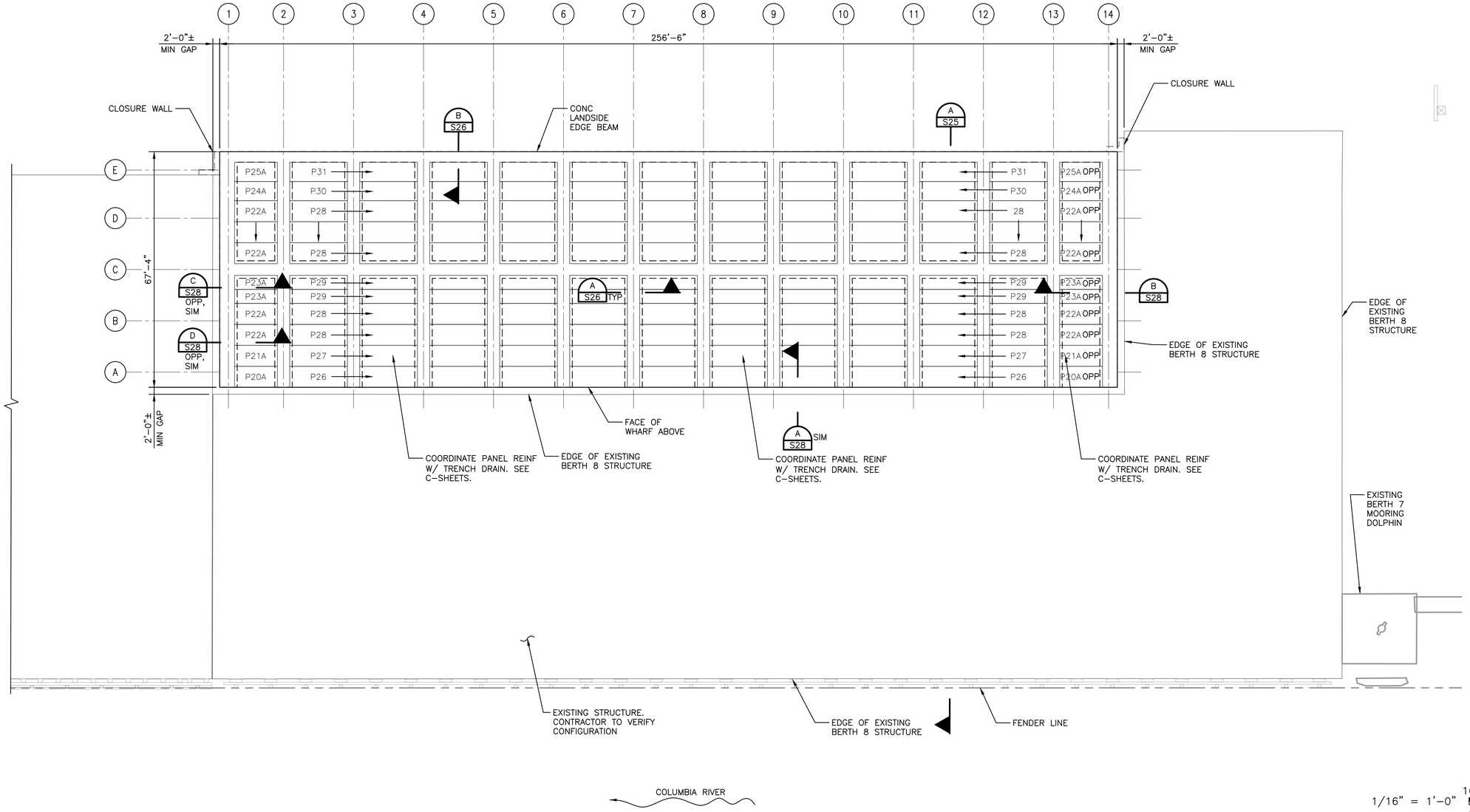
NOTES:

1. FOR DECK PANEL INFORMATION, SEE SHEET S34 THROUGH S37.
2. EXTENSION PILES NOT SHOWN.

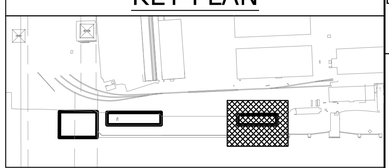


PLAN – BERTH 8 APRON DECK PANEL

SCALE: 1/16" = 1'–0"

1/16" = 1'–0" scale 16 0 16 32 feet

KEY PLAN



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STATE OF WASHINGTON
57460
REGISTERED PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-6100
FAX: 360-823-6101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: 1/16" = 1'-0"
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DATE: 22-Dec-23

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Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
DECK PANEL PLAN - BERTH 8 APRON

DRAWING NUMBER
S13
SHEET NUMBER 55 OF 130

POV PROJECT NO:
CP-0441

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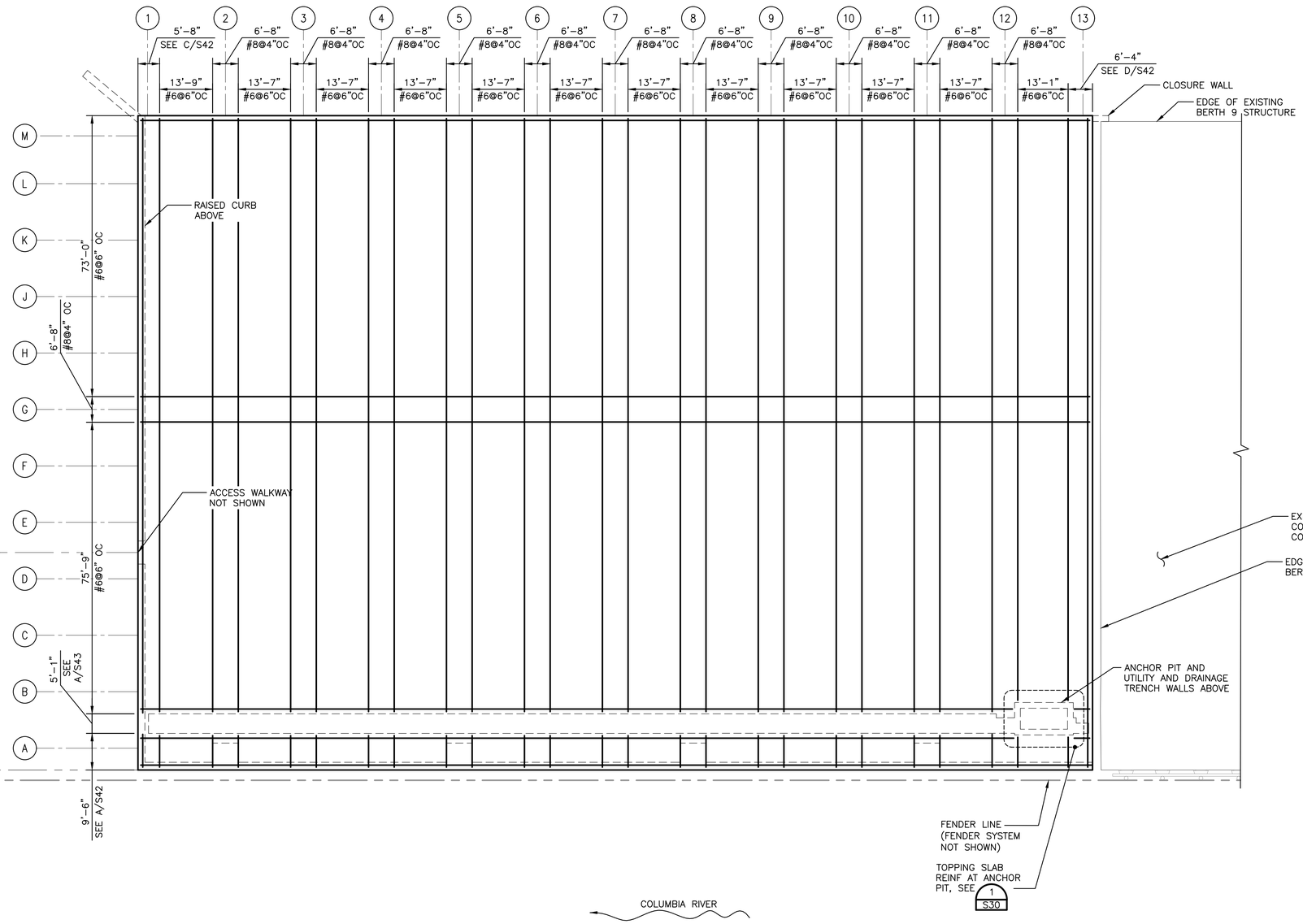
NOTE:

1. BERTH 8 AND BERTH 9 APRON TOPPING REINF IS SIMILAR

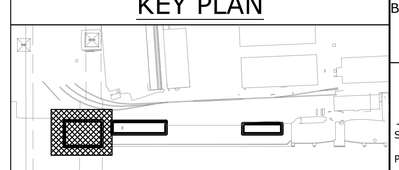


PLAN – BERTH 9 EXTENSION TOPPING SLAB (1/—)

SCALE: 1/16" = 1'-0"

1/16" = 1'-0" scale 16 0 16 32 feet

KEY PLAN



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STATE OF WASHINGTON
157460
REGISTERED
PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: 1/16" = 1'-0"

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APPROVED BY: BDB

DATE: 22-Dec-23

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VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
TOPPING PLAN - BERTH 9 EXTENSION

DRAWING NUMBER
S14

SHEET NUMBER 56 OF 130

POV PROJECT NO: CP-0441

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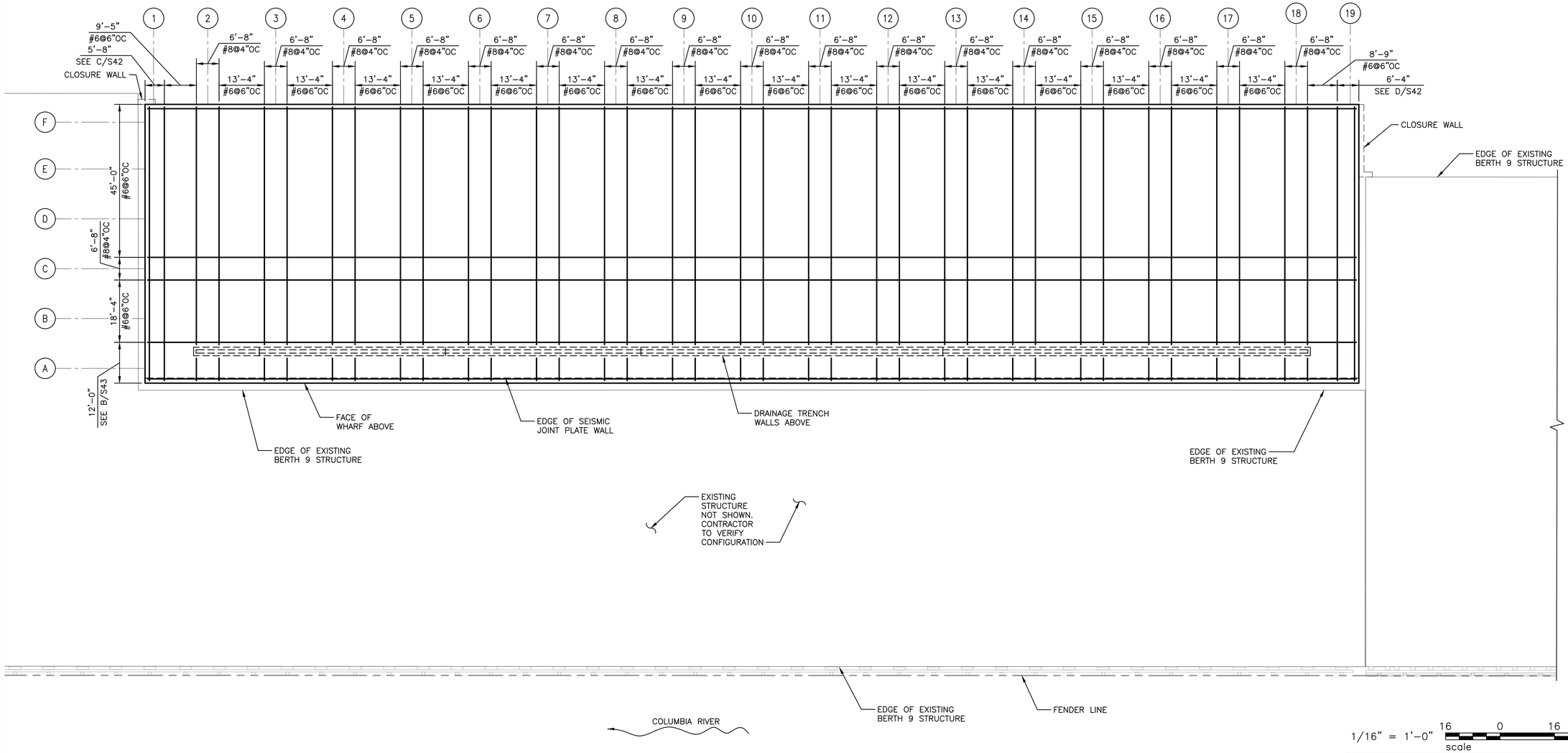
NOTES:

1. FOR DECK PANEL INFORMATION, SEE SHEET S34 THROUGH S37.
2. EXTENSION PILES NOT SHOWN.

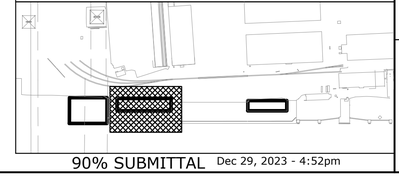


PLAN – BERTH 9 APRON DECK PANEL

SCALE: 1/16" = 1'–0"

1/16" = 1'–0" 16 0 16 32 scale feet

KEY PLAN



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STATE OF WASHINGTON
57460
REGISTERED
PROFESSIONAL ENGINEER

WSP USA Inc.
2121 SW 3rd Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-6100
FAX: 360-823-6101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: 1/16" = 1'-0"

DRAWN BY: JTH

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VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
TOPPING PLAN - BERTH 9 APRON

DRAWING NUMBER
S15

SHEET NUMBER 57 OF 130

POV PROJECT NO: CP-0441

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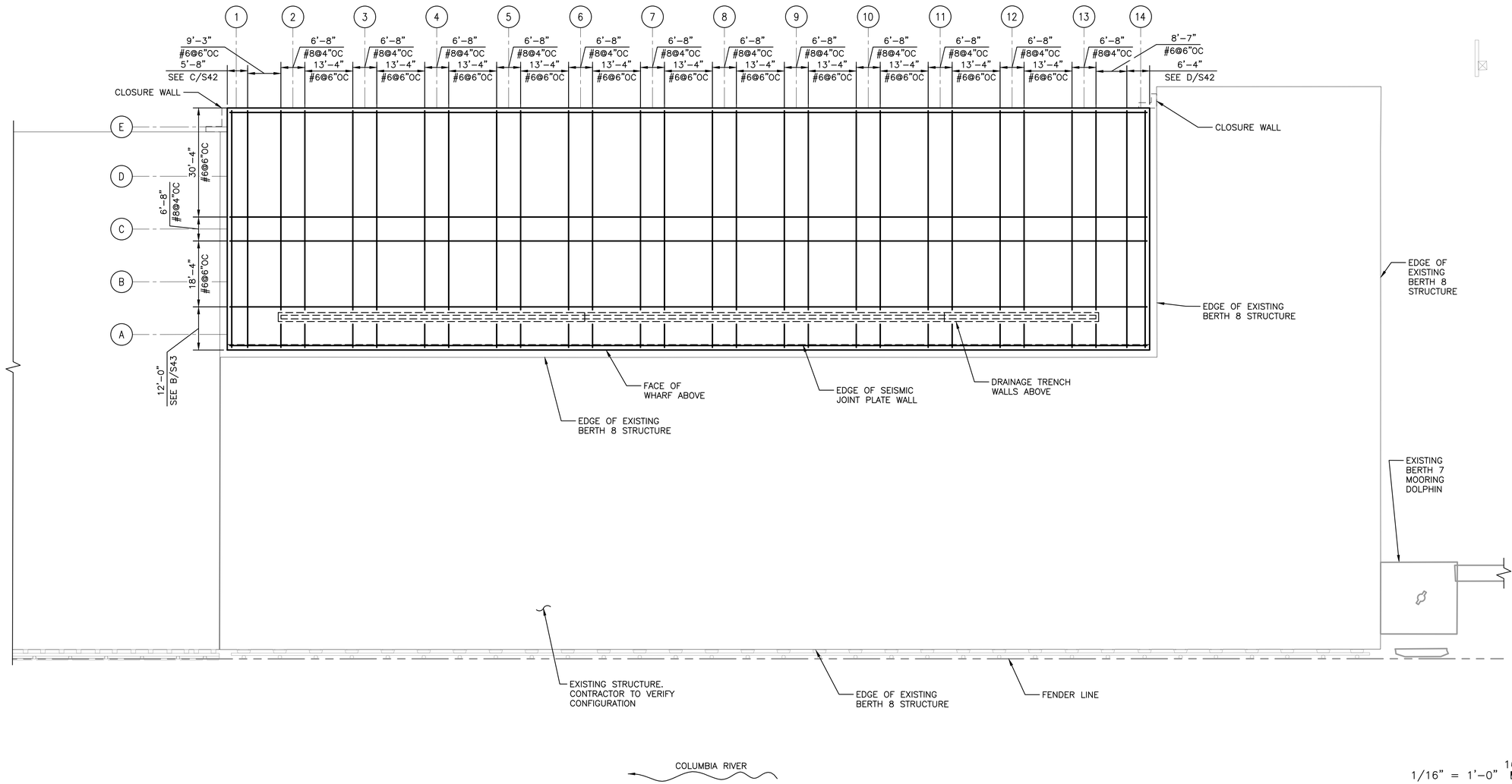
NOTES:

1. FOR DECK PANEL INFORMATION, SEE SHEET S34 THROUGH S37.
2. EXTENSION PILES NOT SHOWN.

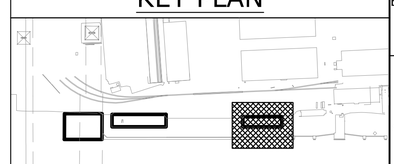


PLAN – BERTH 8 APRON DECK PANEL

SCALE: 1/16" = 1'–0"

1/16" = 1'–0" scale 16 0 16 32 feet

KEY PLAN



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STATE OF WASHINGTON
57460
REGISTERED
PROFESSIONAL ENGINEER

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2121 SW 3rd Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-6100
FAX: 360-823-6101

A/E PROJECT NUMBER: A19.0198.02

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VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
TOPPING PLAN - BERTH 8 APRON

DRAWING NUMBER
S16

SHEET NUMBER 58 OF130

POV PROJECT NO:
CP-0441

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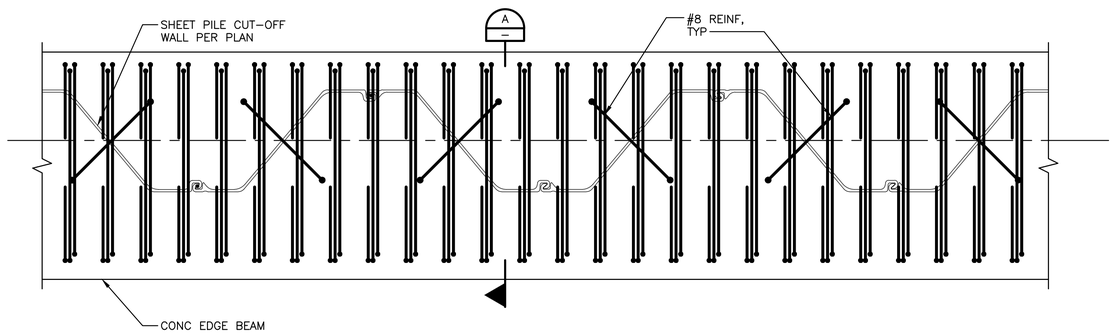
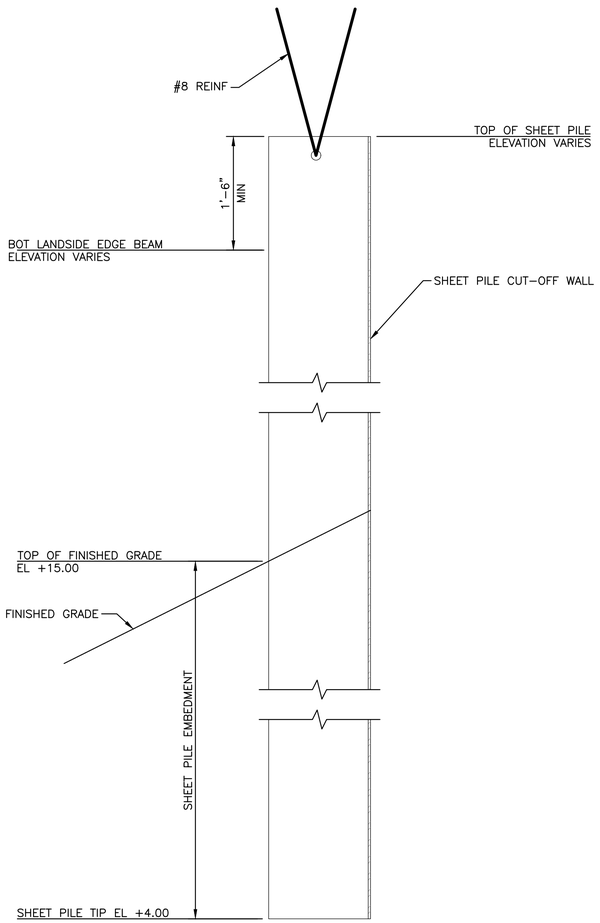
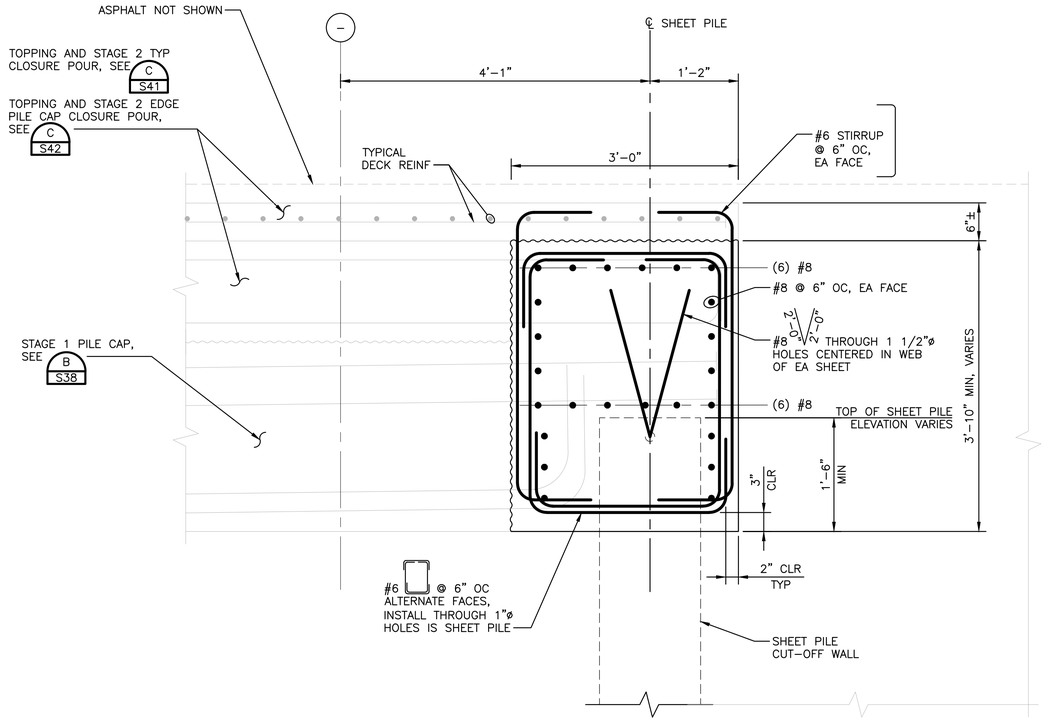


PLAN – SHEET PILE CUT–OFF WALL (1 / S08)
SCALE: 1" = 1'–0"



DETAIL – SHEET PILE CUT–OFF WALL (A / –)
SCALE: 1" = 1'–0"



DETAIL – LANDSIDE EDGE BEAM (B / S26)
SCALE: 1" = 1'–0"

1" = 1'–0"
1 0 1 2
scale feet

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PROFESSIONAL ENGINEER
BRIAN DEAN BEARD
STATE OF WASHINGTON
57460
REGISTERED

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-6100
FAX: 360-823-6101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: 1" = 1'-0"
DRAWN BY: JTH
APPROVED BY: BDB
DATE: 22-Dec-23

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Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
SHEET PILE CUT-OFF WALL TYPICAL DETAILS

DRAWING NUMBER
S17
SHEET NUMBER 59 OF 130

POV PROJECT NO:
CP-0441

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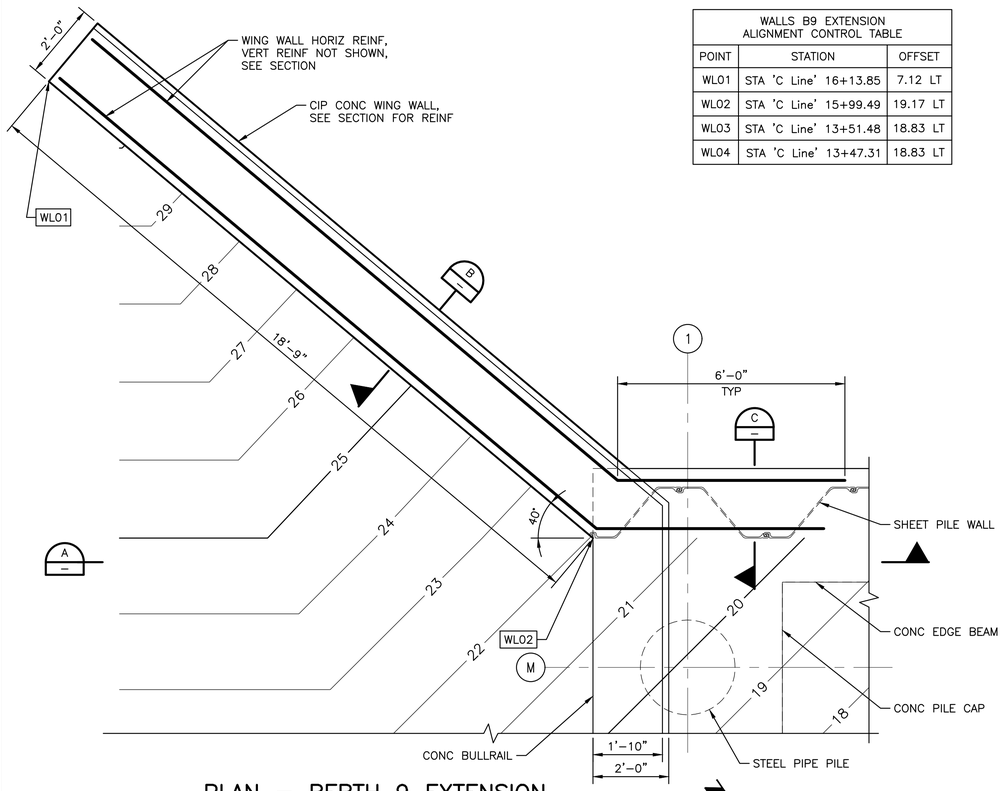
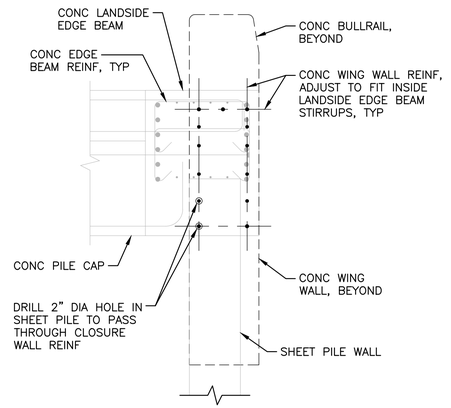
WALLS B9 EXTENSION ALIGNMENT CONTROL TABLE		
POINT	STATION	OFFSET
WL01	STA 'C Line' 16+13.85	7.12 LT
WL02	STA 'C Line' 15+99.49	19.17 LT
WL03	STA 'C Line' 13+51.48	18.83 LT
WL04	STA 'C Line' 13+47.31	18.83 LT



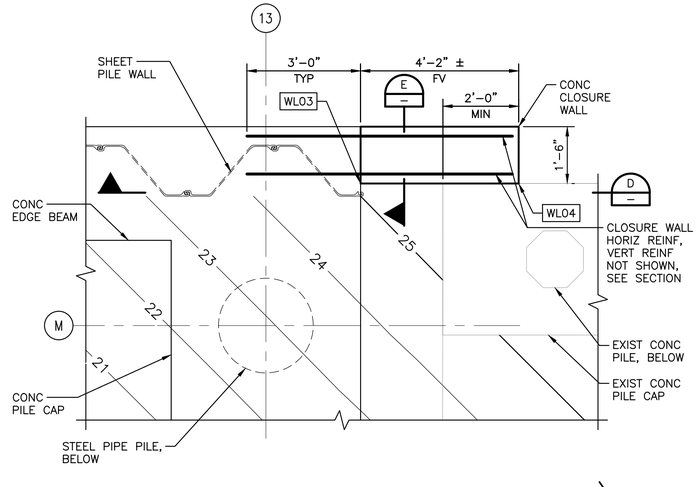
PLAN – BERTH 9 EXTENSION WING WALL AT DOWNSTREAM END

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



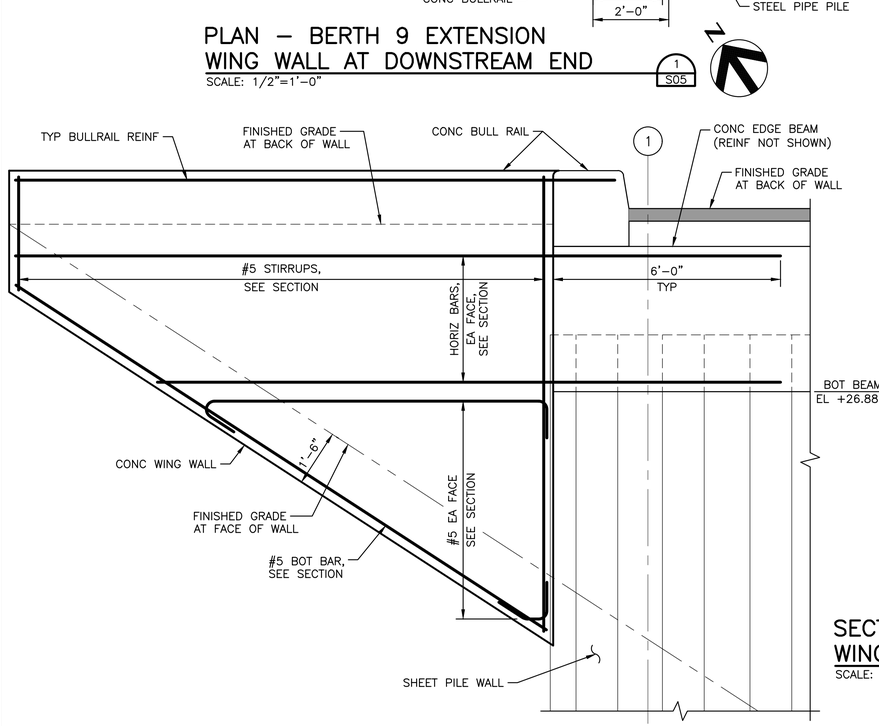
SECTION – BERTH 9 EXTENSION WING WALL AT DOWNSTREAM END

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



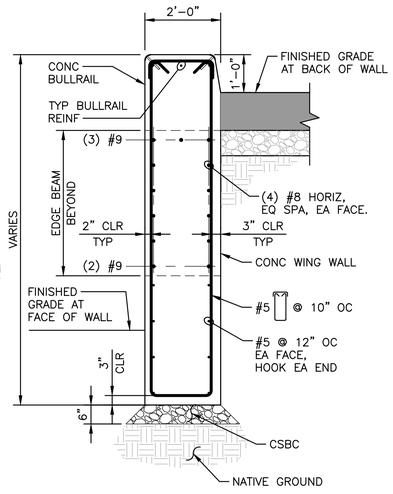
PLAN – BERTH 9 EXTENSION CLOSURE WALL AT UPSTREAM END

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



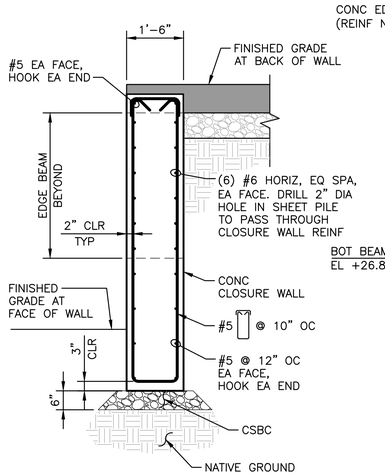
ELEVTION – BERTH 9 EXTENSION WING WALL AT DOWNSTREAM END

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



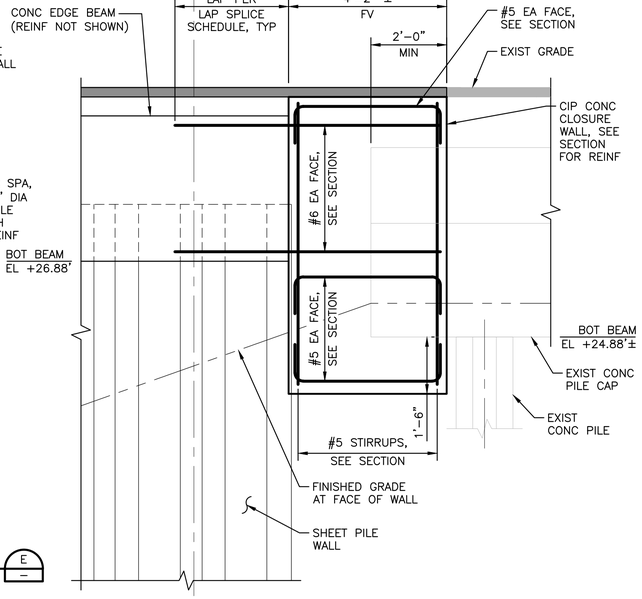
SECTION – BERTH 9 EXTENSION WING WALL AT DOWNSTREAM END

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



SECTION – BERTH 9 EXTENSION CLOSURE WALL AT UPSTREAM END

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



ELEVTION – BERTH 9 EXTENSION CLOSURE WALL AT UPSTREAM END

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

1/2" = 1'-0" scale 2 0 2 4 feet

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BRIAN DEAN BEARD
STATE OF WASHINGTON
37460
REGISTERED PROFESSIONAL ENGINEER

WSP USA Inc.
2121 SW 3rd Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: 1/2" = 1'-0"

DRAWN BY: JTH

APPROVED BY: BDB

DATE: 22-Dec-23

REVISION NO. DATE.

PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
SHEET PILE CUT-OFF WALL DETAILS - BERTH 9 EXTENSION

DRAWING NUMBER
S18
SHEET NUMBER 60 OF130

POV PROJECT NO:
CP-0441

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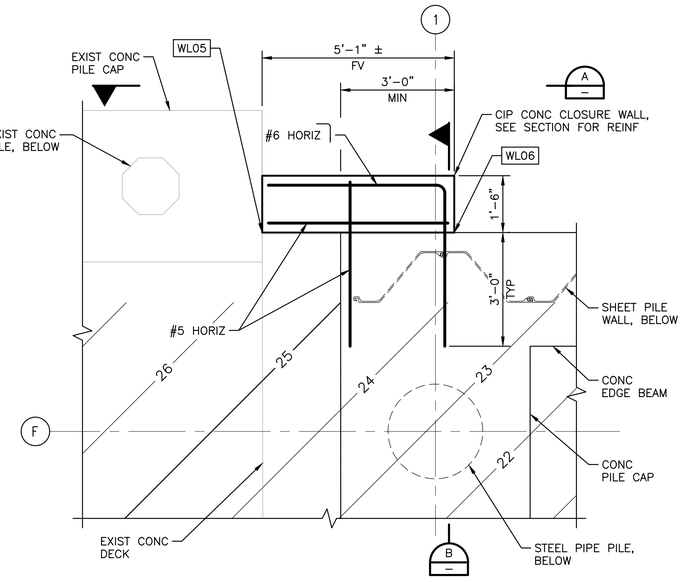
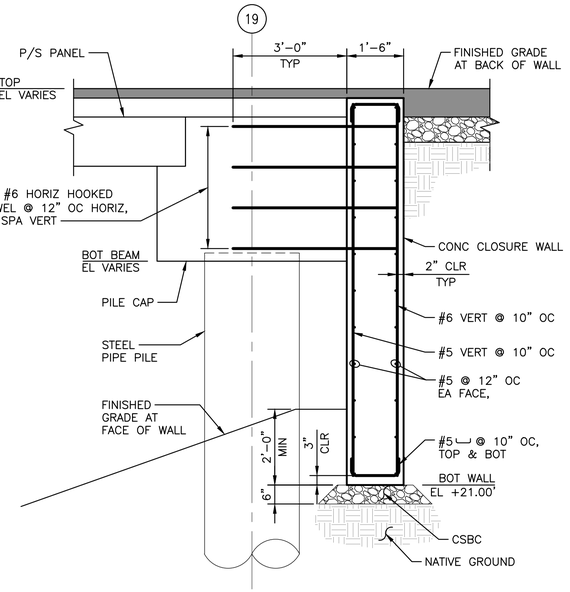
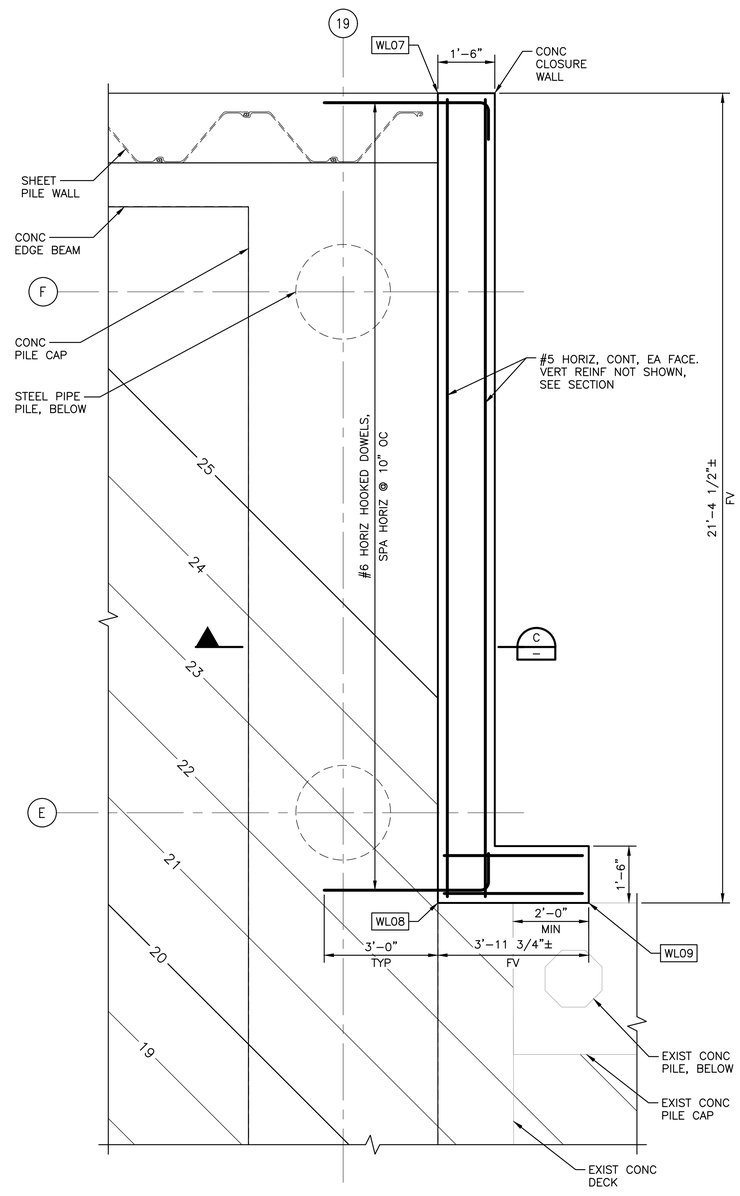


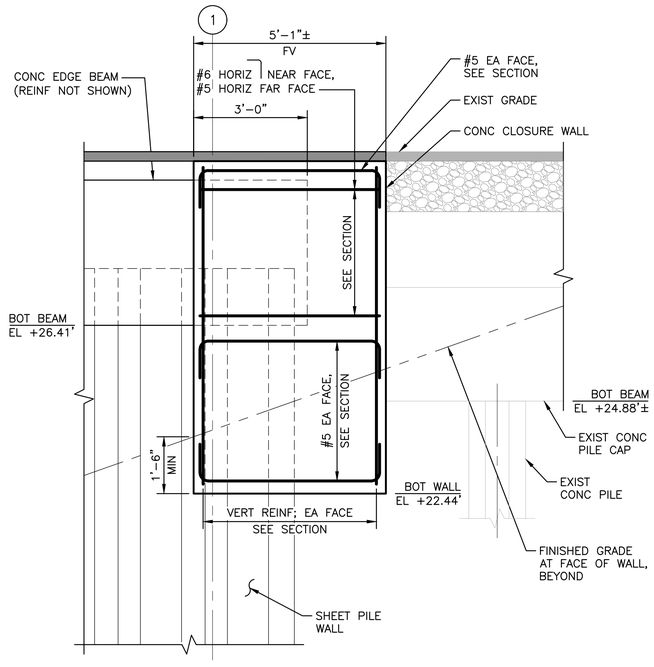
PLAN – BERTH 9 APRON
CLOSURE WALL AT DOWNSTREAM END
SCALE: 1/2"=1'–0"



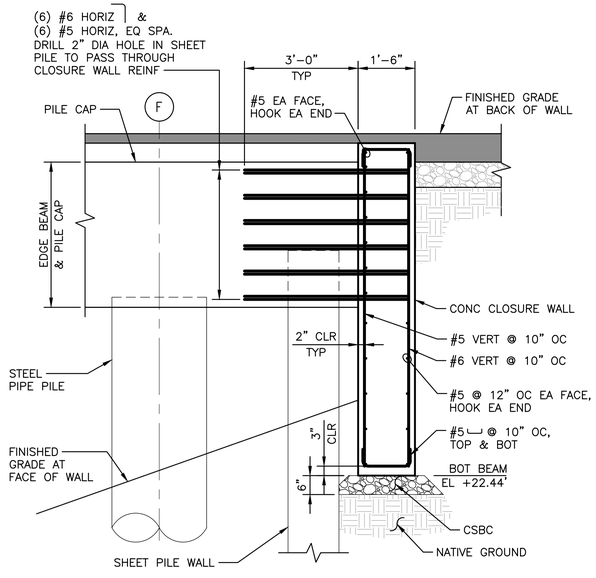
SECTION – BERTH 9 APRON
CLOSURE WALL AT UPSTREAM END
SCALE: 1/2"=1'–0"



PLAN – BERTH 9 APRON
CLOSURE WALL AT UPSTREAM END
SCALE: 1/2"=1'–0"



ELEVATION – BERTH 9 APRON
CLOSURE WALL AT DOWNSTREAM END
SCALE: 1/2"=1'–0"



SECTION – BERTH 9 APRON
CLOSURE WALL AT DOWNSTREAM END
SCALE: 1/2"=1'–0"

WALLS B9 APRON ALIGNMENT CONTROL TABLE		
POINT	STATION	OFFSET
WL05	STA 'C Line' 12+87.21	22.06 LT
WL06	STA 'C Line' 12+82.14	22.06 LT
WL07	STA 'C Line' 9+28.31	21.99 LT
WL08	STA 'C Line' 9+28.31	43.36 LT
WL09	STA 'C Line' 9+24.21	43.36 LT

1/2" = 1'–0"
2 0 2 4
scale feet

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BRIAN DEAN BEARD
STATE OF WASHINGTON
37460
REGISTERED PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-6100
FAX: 360-823-6101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: 1/2" = 1'-0"
DRAWN BY: JTH
APPROVED BY: BDB
DATE: 22-Dec-23

REVISION NO. DATE.

PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
SHEET PILE CUT-OFF WALL DETAILS - BERTH 9 APRON

DRAWING NUMBER
S19
SHEET NUMBER 61 OF 130

POV PROJECT NO:
CP-0441

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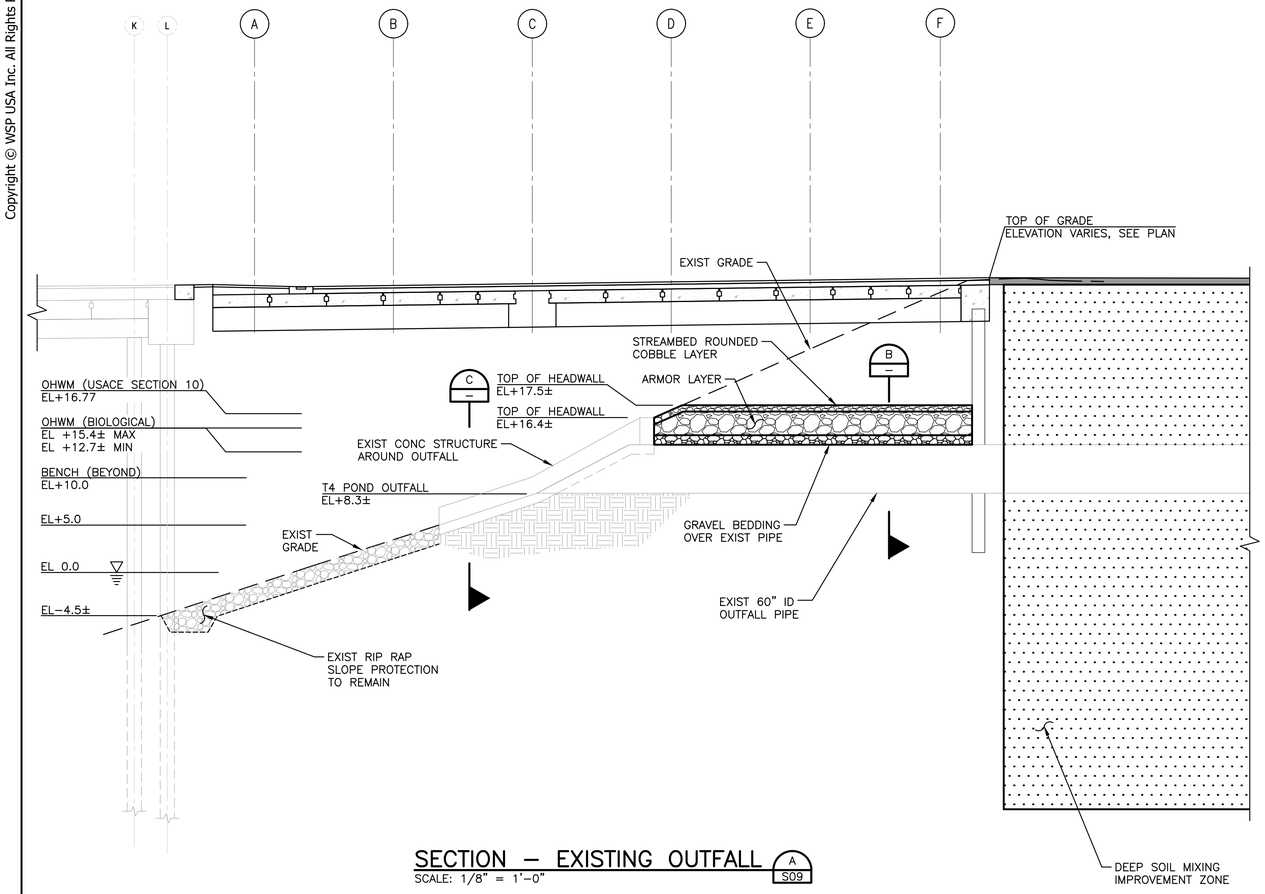
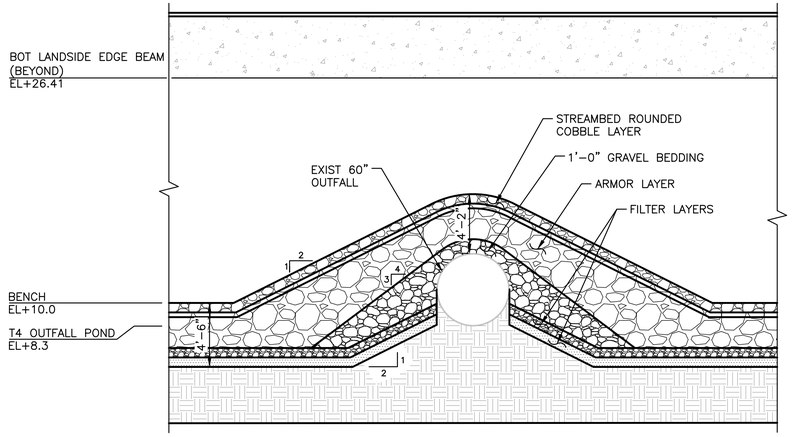
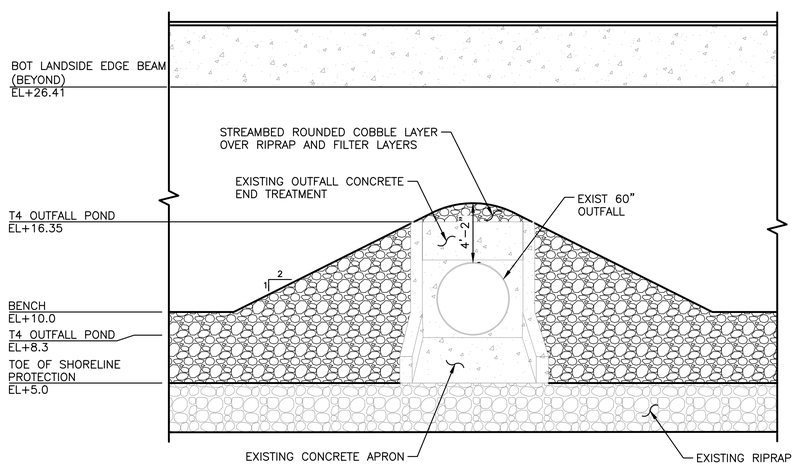


SECTION – EXISTING OUTFALL (A / S09)
SCALE: 1/8" = 1'–0"



SECTION – EXISTING OUTFALL (B / –)
SCALE: 3/16" = 1'–0"



ELEVATION – EXISTING OUTFALL END TREATMENT (C / –)
SCALE: 3/16" = 1'–0"

1/8" = 1'–0" (8 0 8 16 scale feet)

3/16" = 1'–0" (8 0 8 16 scale feet)

NOTES:

1. FOR EXISTING STRUCTURE INFORMATION, SEE DWGS "Port of Vancouver WA–1977–Berth 8_2899 Gen Cargo Wharf Plans 1977 – 1982" AND "Port of Vancouver WA–1985–Berth 8 Extension.pdf"
2. FOR INFORMATION NOT SHOWN, SEE SHEETS S21 AND S22.

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BRIAN DEAN BARD — STATE OF WASHINGTON — 47460 — REGISTERED PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: AS SHOWN
DRAWN BY: JTH
APPROVED BY: BDB
DATE: 22-Dec-23

REVISION NO. DATE.

PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
SHEET PILE CUT-OFF WALL DETAILS - BERTH 9 APRON OUTFALL

DRAWING NUMBER
S20
SHEET NUMBER 62 OF 130

POV PROJECT NO:
CP-0441

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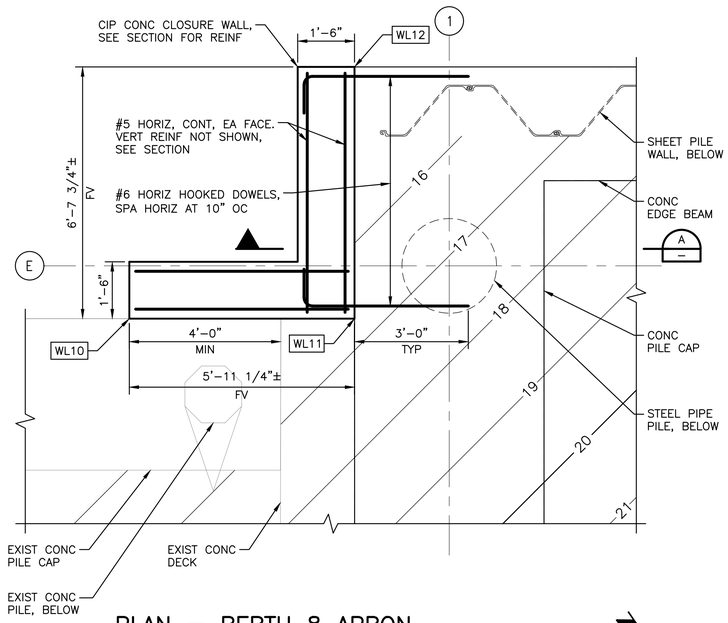
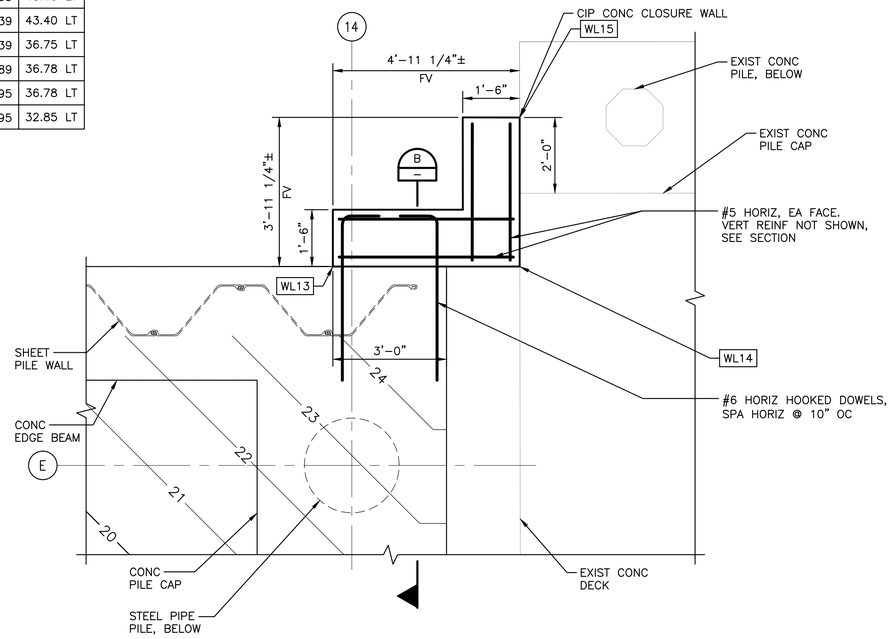
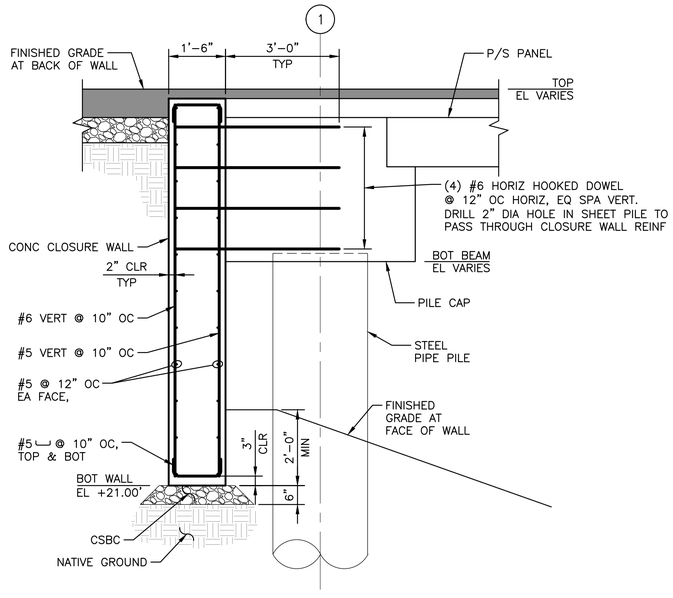


PLAN – BERTH 8 APRON
CLOSURE WALL AT DOWNSTREAM END
SCALE: 1/2"=1'–0"

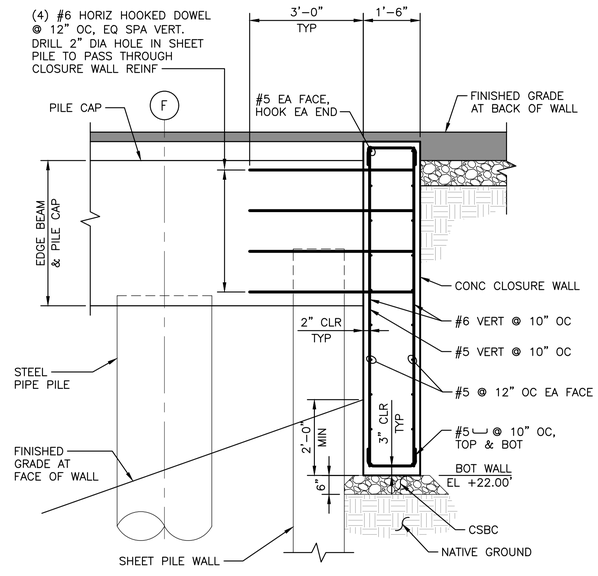
WALLS B8 APRON ALIGNMENT CONTROL TABLE		
POINT	STATION	OFFSET
WL10	STA 'C Line' 4+27.33	43.40 LT
WL11	STA 'C Line' 4+21.39	43.40 LT
WL12	STA 'C Line' 4+21.39	36.75 LT
WL13	STA 'C Line' 1+67.89	36.78 LT
WL14	STA 'C Line' 1+62.95	36.78 LT
WL15	STA 'C Line' 1+62.95	32.85 LT



PLAN – BERTH 8 APRON
CLOSURE WALL AT UPSTREAM END
SCALE: 1/2"=1'–0"



SECTION – BERTH 8 APRON
CLOSURE WALL AT DOWNSTREAM END
SCALE: 1/2"=1'–0"



SECTION – BERTH 8 APRON
CLOSURE WALL AT UPSTREAM END
SCALE: 1/2"=1'–0"

1/2" = 1'–0" 2 0 2 4 scale feet

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PREPARED BY
BRIAN DEAN BEARD
STATE OF WASHINGTON
57460
REGISTERED PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: 1/2" = 1'-0"
DRAWN BY: JTH
APPROVED BY: BDB
DATE: 22-Dec-23

REVISION
NO. DATE.

PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
SHEET PILE CUT-OFF WALL DETAILS - BERTH 8 APRON

DRAWING NUMBER
S21
SHEET NUMBER 63 OF 130

POV PROJECT NO:
CP-0441

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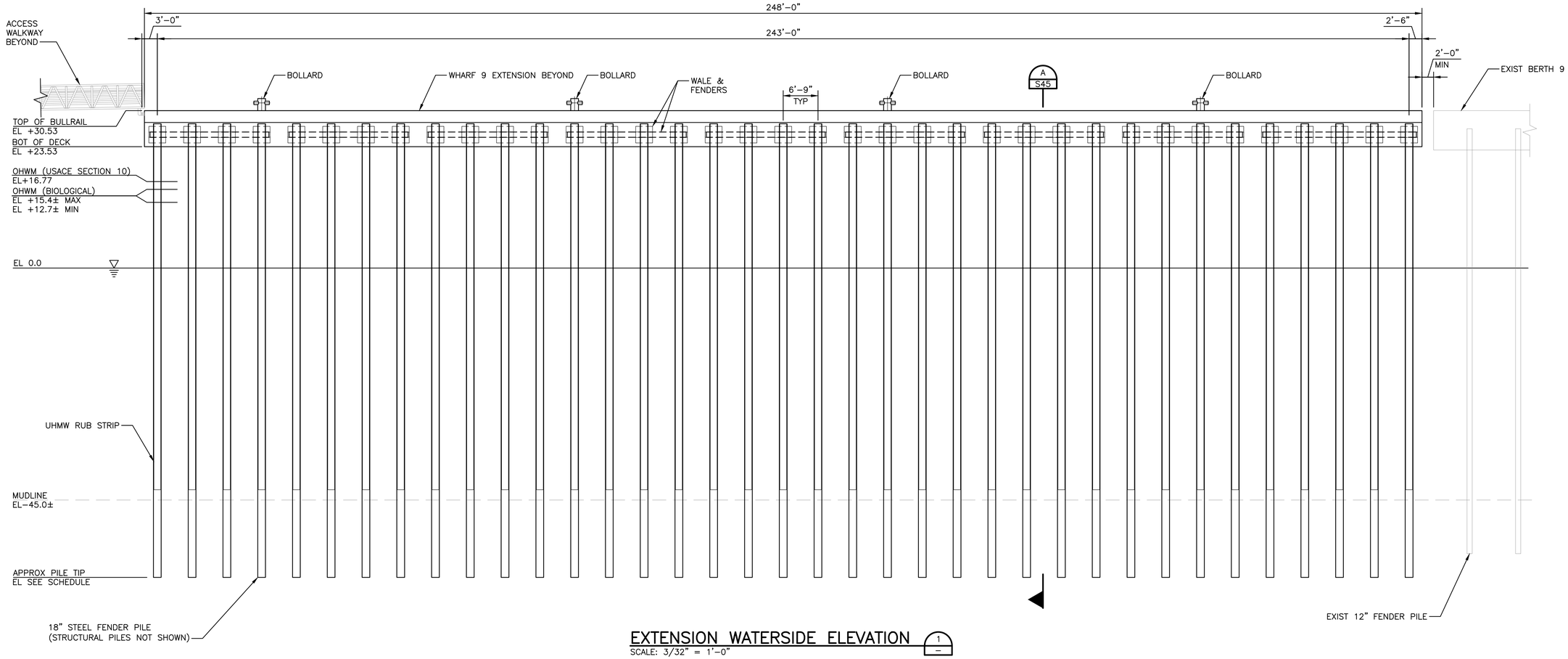

EXTENSION WATERSIDE ELEVATION (1)
SCALE: 3/32" = 1'–0"

3/32" = 1'–0" scale 16 0 16 32 feet

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PROFESSIONAL ENGINEER
BRIAN DEAN BEARD
STATE OF WASHINGTON
57460
REGISTERED

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: 3/32" =1'-0"
DRAWN BY: JTH
APPROVED BY: BDB
DATE: 22-Dec-23

REVISION NO. DATE.

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Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
EXTENSION WATER SIDE ELEVATION

DRAWING NUMBER
S22
SHEET NUMBER 64 OF 130
POV PROJECT NO: CP-0441

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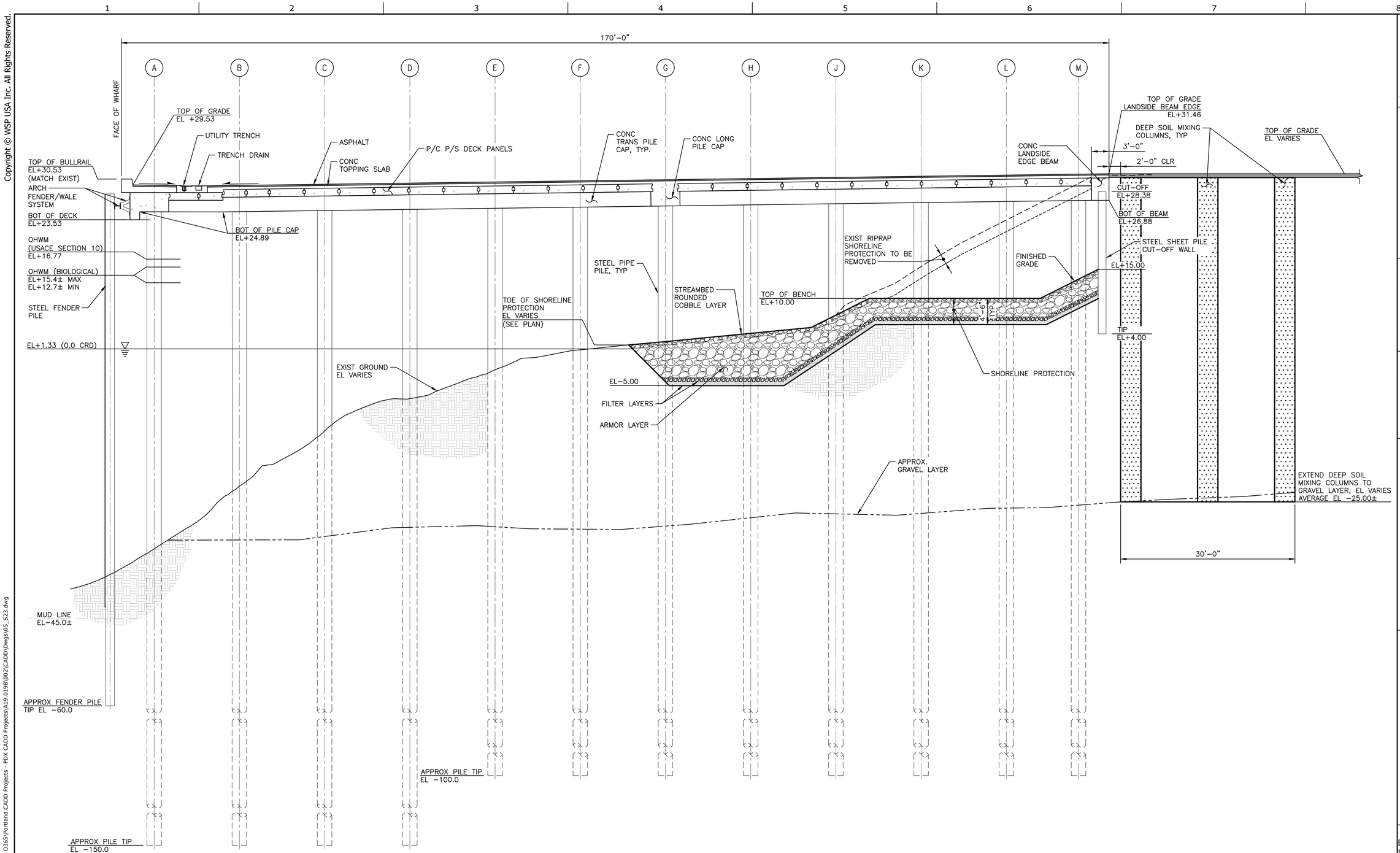

BERTH 9 EXTENSION – TYPICAL SECTION (A / S05)

SCALE: 1/8" = 1'–0"

1/8" = 1'–0" 8 0 8 16 scale feet

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BRIAN DEAN BARRY
STATE OF WASHINGTON
57460
REGISTERED
PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: 1/8" = 1'-0"

DRAWN BY: JTH

APPROVED BY: BDB

DATE: 22-Dec-23

REVISION NO. DATE.

PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
EXTENSION TYPICAL SECTION

DRAWING NUMBER
S23

SHEET NUMBER 65 OF 130

POV PROJECT NO: CP-0441

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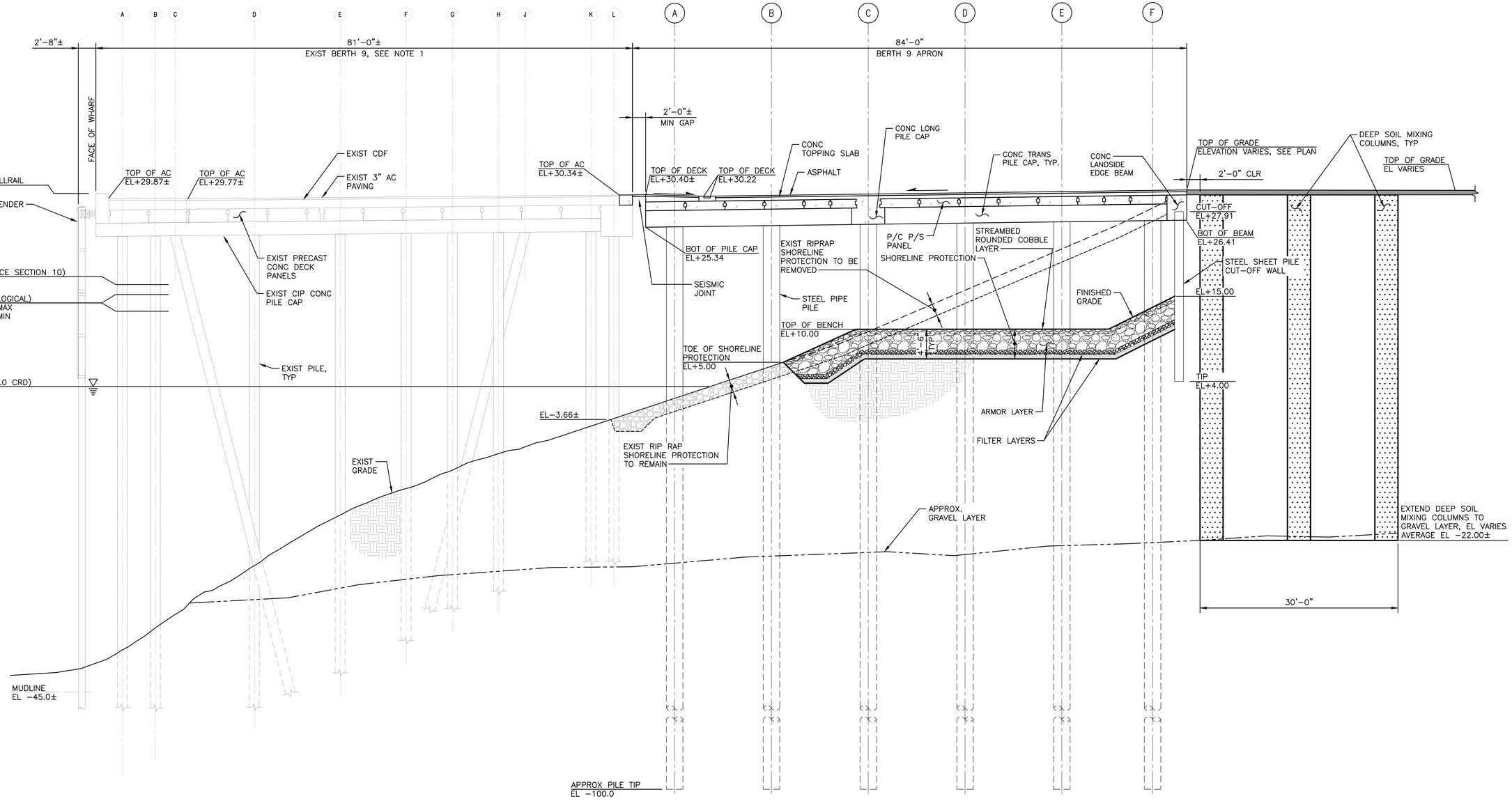

BERTH 9 APRON – TYPICAL SECTION

A / S06

SCALE: 1/8" = 1'–0"

NOTES:

1. FOR EXISTING STRUCTURE INFORMATION, SEE DWGS "Port of Vancouver WA–1977–Berth 8_2899 Gen Cargo Wharf Plans 1977 – 1982" AND "Port of Vancouver WA–1985–Berth 8 Extension.pdf"
2. FOR INFORMATION NOT SHOWN, SEE SHEET S23

1/8" = 1'–0" scale 8 0 8 16 feet

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BRIAN DEAN BEARD
STATE OF WASHINGTON
57460
REGISTERED
PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-6100
FAX: 360-823-6101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: 1/8" = 1'-0"

DRAWN BY: JTH

APPROVED BY: BDB

DATE: 22-Dec-23

REVISION NO. DATE.

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Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
BERTH 9 APRON TYPICAL SECTION

DRAWING NUMBER
S24

SHEET NUMBER 66 OF 130

POV PROJECT NO: CP-0441

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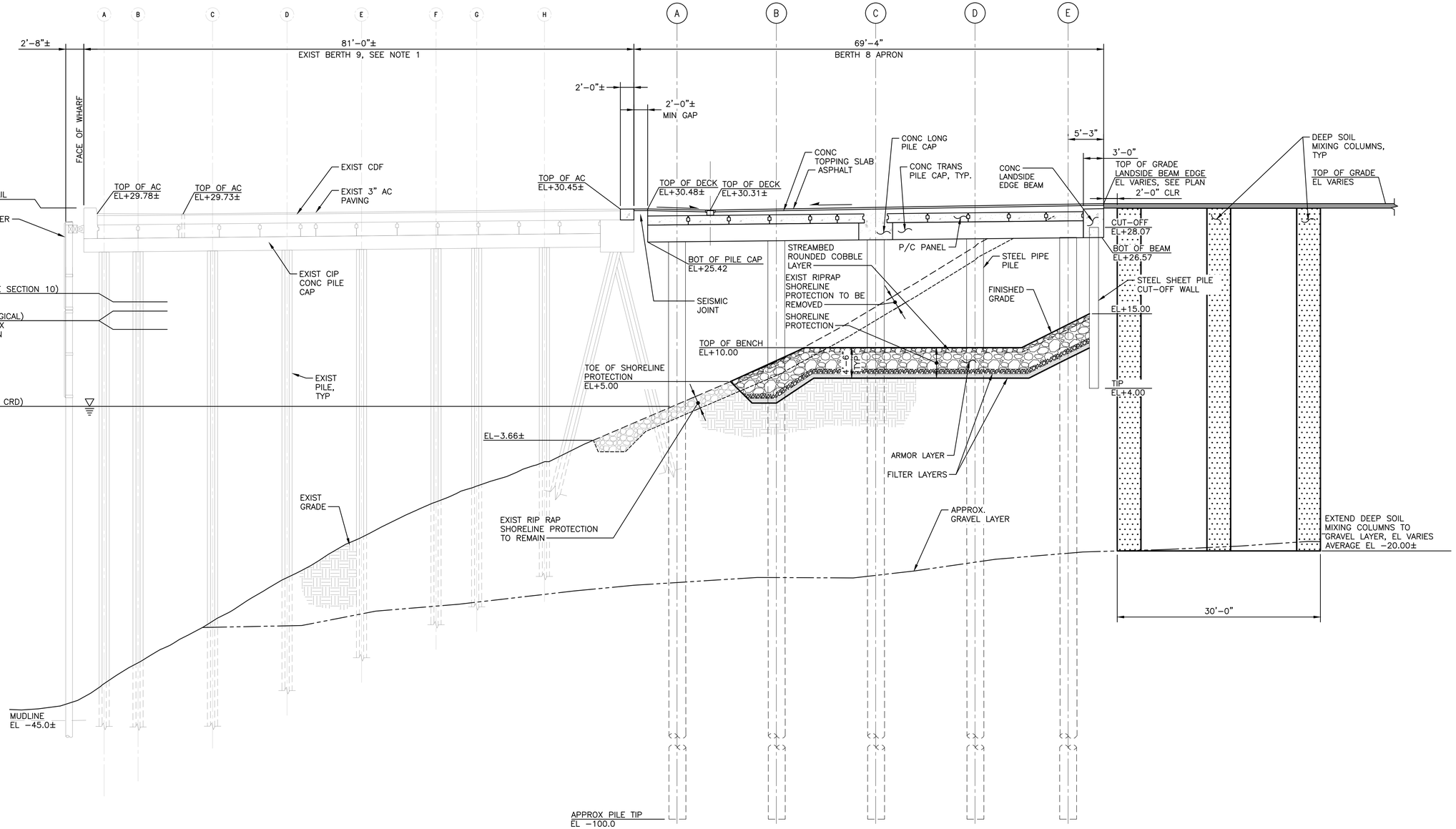

BERTH 8 APRON – TYPICAL SECTION

A / S07

SCALE: 1/8" = 1'–0"

NOTES:

1. FOR EXISTING STRUCTURE INFORMATION, SEE DWGS "Port of Vancouver WA–1977–Berth 8_2899 Gen Cargo Wharf Plans 1977 – 1982" AND "Port of Vancouver WA–1985–Berth 8 Extension.pdf"
2. FOR INFORMATION NOT SHOWN, SEE SHEET S23

1/8" = 1'–0" scale 8 0 8 16 feet

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BRIAN DEAN BEARD
STATE OF WASHINGTON
57460
REGISTERED
PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-6100
FAX: 360-823-6101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: 1/8" = 1'-0"
DRAWN BY: JTH
APPROVED BY: BDB
DATE: 22-Dec-23

REVISION NO. DATE.

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Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
BERTH 8 APRON
TYPICAL SECTION

DRAWING NUMBER
S25
SHEET NUMBER 67 OF 130

POV PROJECT NO:
CP-0441

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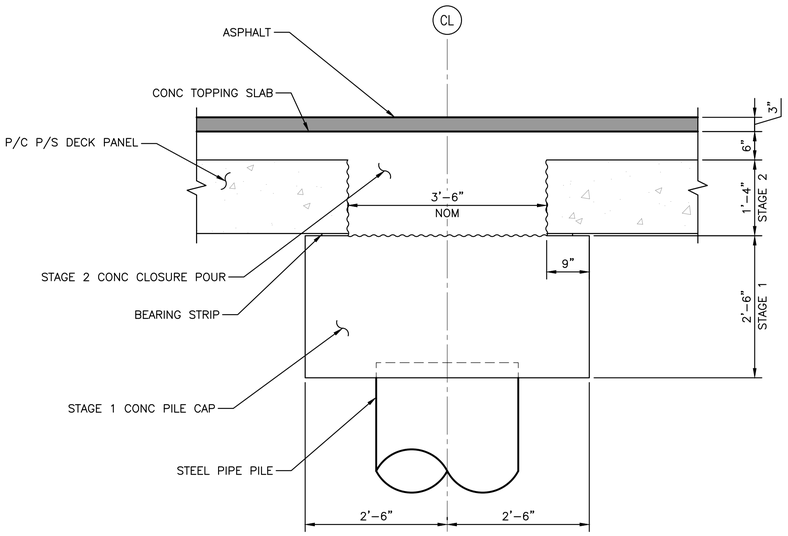
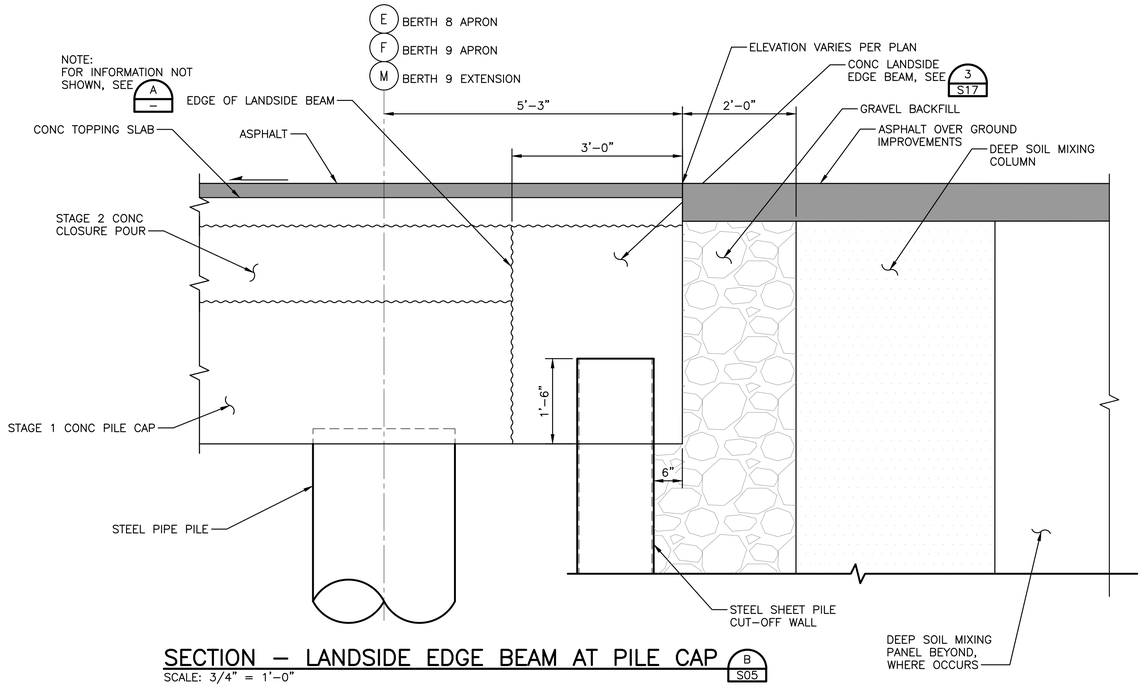


SECTION – TYPICAL TRANSVERSE PILE CAP

SCALE: 3/4" = 1'-0"

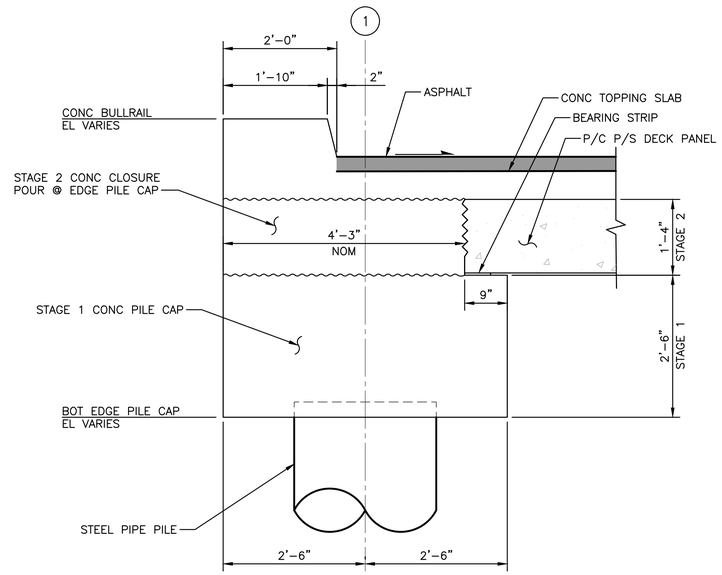
TYPICAL LONGITUDINAL PILE CAP (SIM) — A / S08



SECTION – LANDSIDE EDGE BEAM AT PILE CAP

SCALE: 3/4" = 1'-0"

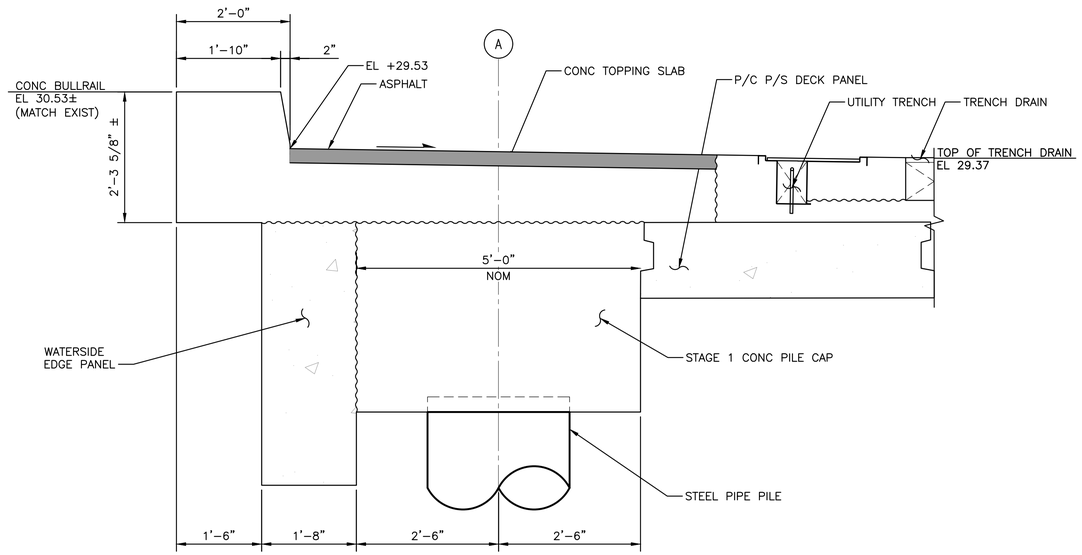
B / S05



SECTION – EDGE PILE CAP

SCALE: 3/4" = 1'-0"

C / S05



SECTION – BERTH FACE PILE CAP

SCALE: 3/4" = 1'-0"

D / S05

3/4" = 1'-0" 2 0 2 4 scale feet

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BRIAN DEAN BEARD
STATE OF WASHINGTON
37460
REGISTERED
PROFESSIONAL ENGINEER

WSP USA Inc.
217 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: 3/4" = 1'-0"

DRAWN BY: JTH

APPROVED BY: BDB

DATE: 22-Dec-23

REVISION
NO. DATE.

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Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
SECTIONS - SHEET 1

DRAWING NUMBER
S26

SHEET NUMBER 68 OF 130

POV PROJECT NO:
CP-0441

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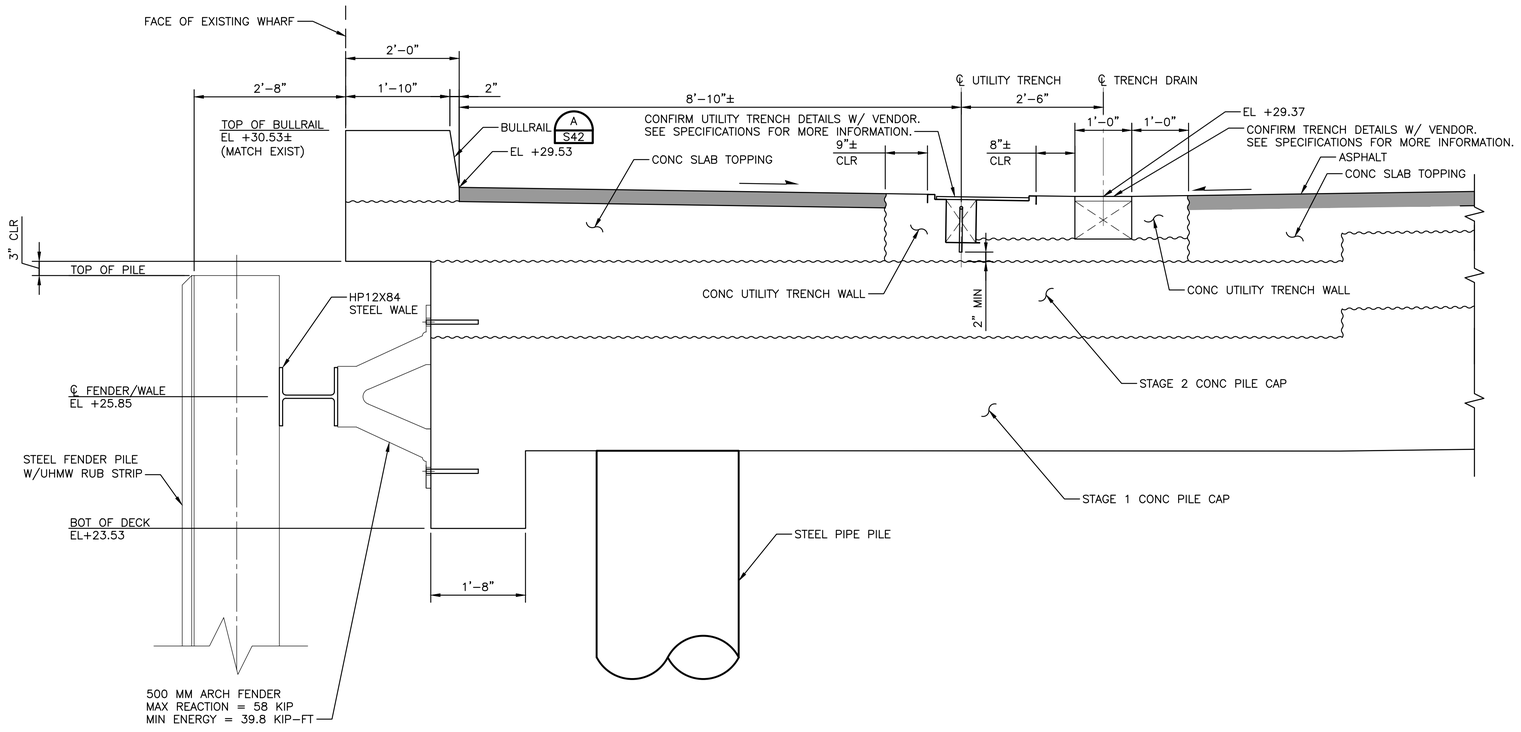
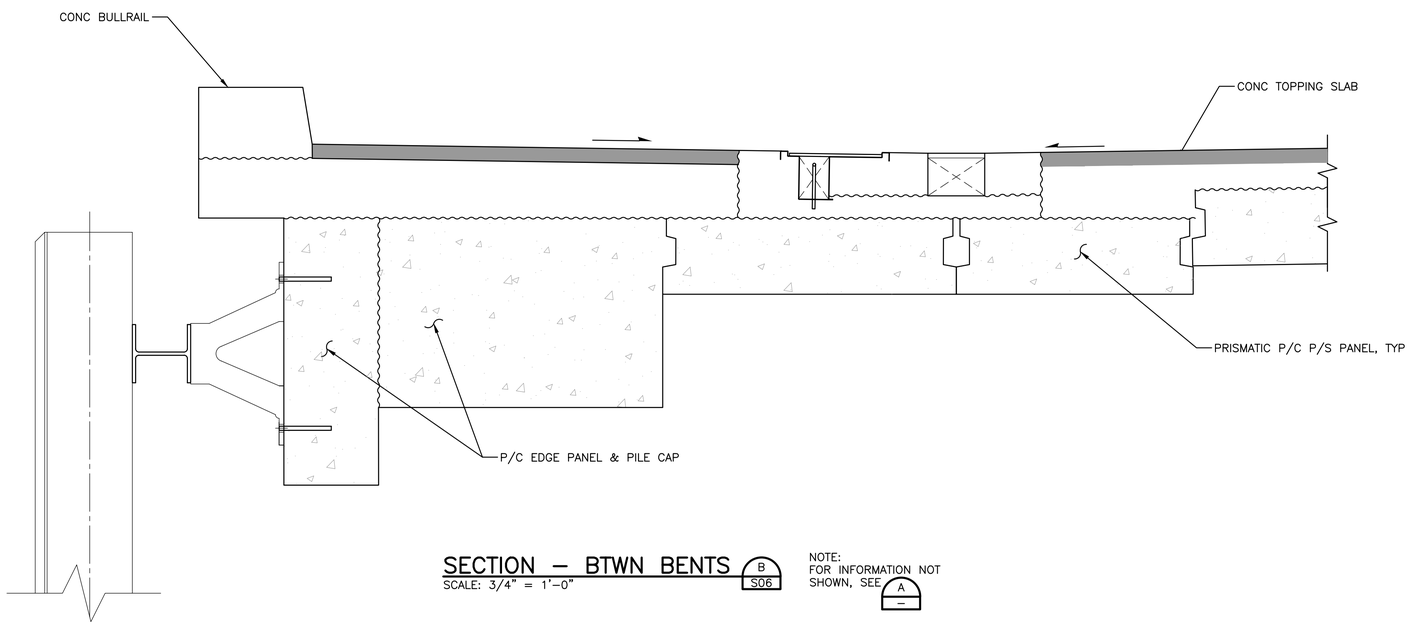


SECTION – AT PILE CAPS (A S05)

SCALE: 3/4" = 1'–0"



SECTION – BTWN BENTS (B S06)

SCALE: 3/4" = 1'–0"

NOTE:
FOR INFORMATION NOT SHOWN, SEE A –

3/4" = 1'–0"

2 0 2 4
scale feet

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BRIAN DEAN BARRY
STATE OF WASHINGTON
157460
REGISTERED
PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: 3/4" = 1'-0"
DRAWN BY: JTH
APPROVED BY: BDB
DATE: 22-Dec-23

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NO. DATE.

PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
SECTIONS - SHEET 2

DRAWING NUMBER
S27
SHEET NUMBER 69 OF 130

POV PROJECT NO:
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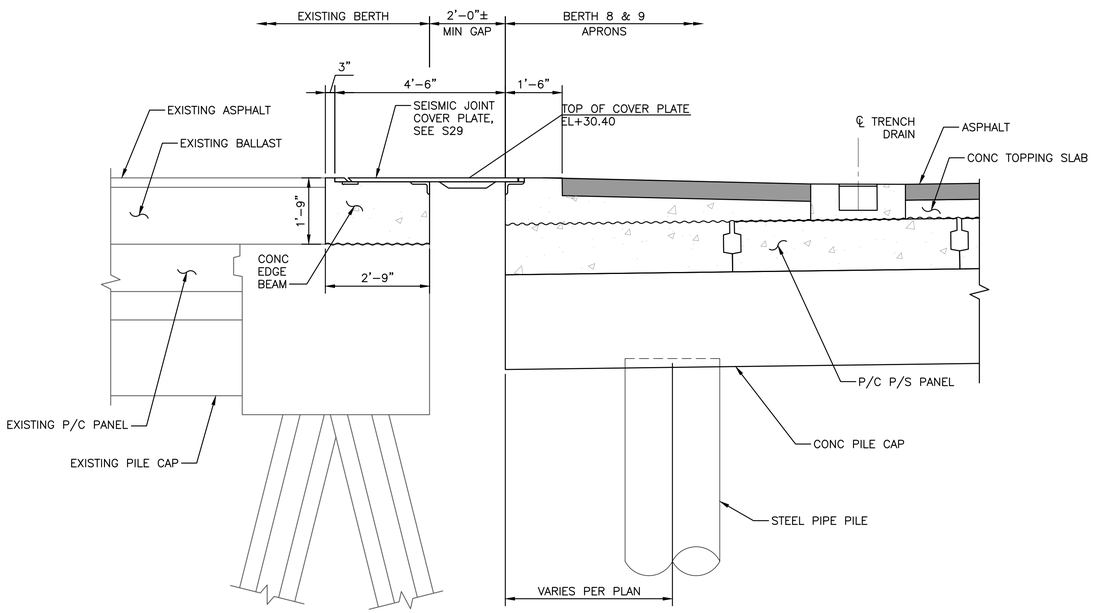
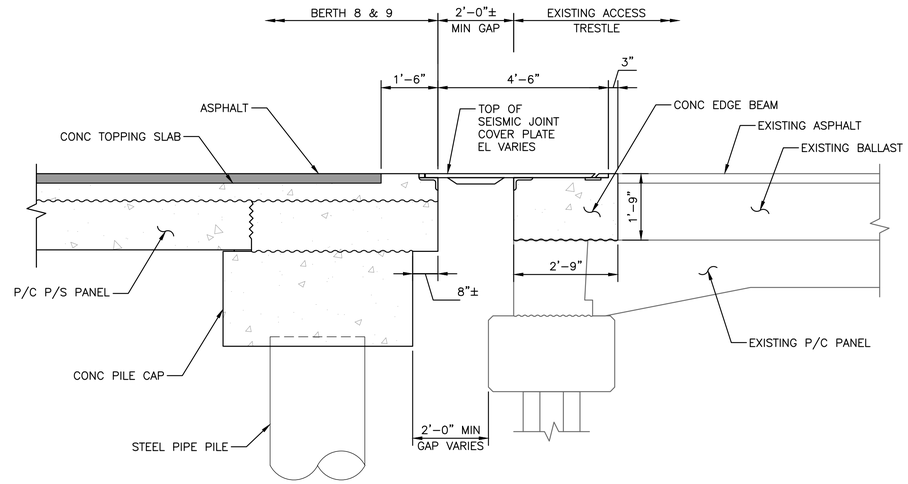
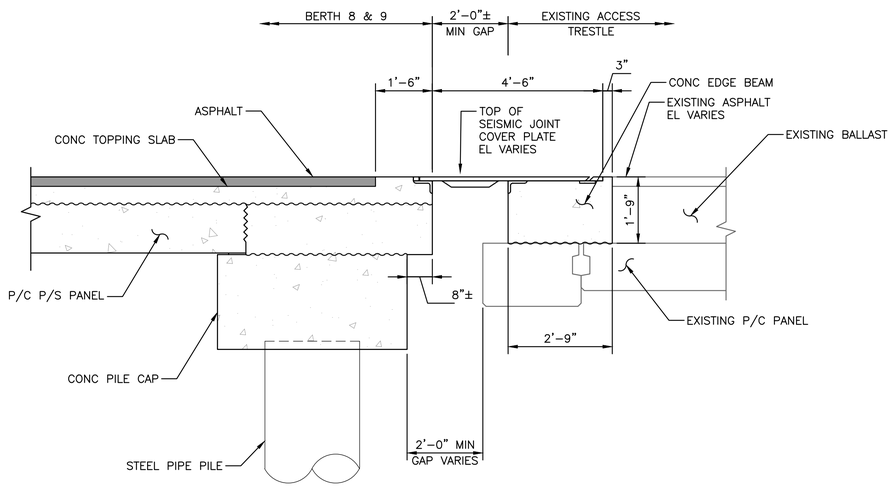


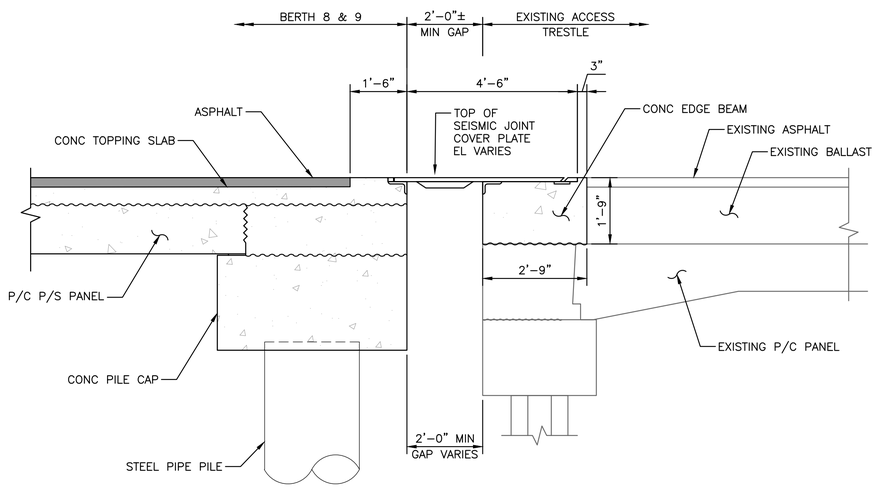
SECTION
SCALE: 1/2" = 1'–0"
A S09



SECTION
SCALE: 1/2" = 1'–0"
B S08



SECTION
SCALE: 1/2" = 1'–0"
C S09



SECTION
SCALE: 1/2" = 1'–0"
D S09

1/2" = 1'–0"
2 0 2 4
scale feet

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BRIAN DEAN BEARD
STATE OF WASHINGTON
57460
REGISTERED
PROFESSIONAL ENGINEER

WSP USA Inc.
217 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: 1/2" = 1'-0"
DRAWN BY: JTH
APPROVED BY: BDB
DATE: 22-Dec-23

REVISION
NO. DATE.

PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
SECTIONS - SHEET 3

DRAWING NUMBER
S28
SHEET NUMBER 70 OF 130

POV PROJECT NO:
CP-0441

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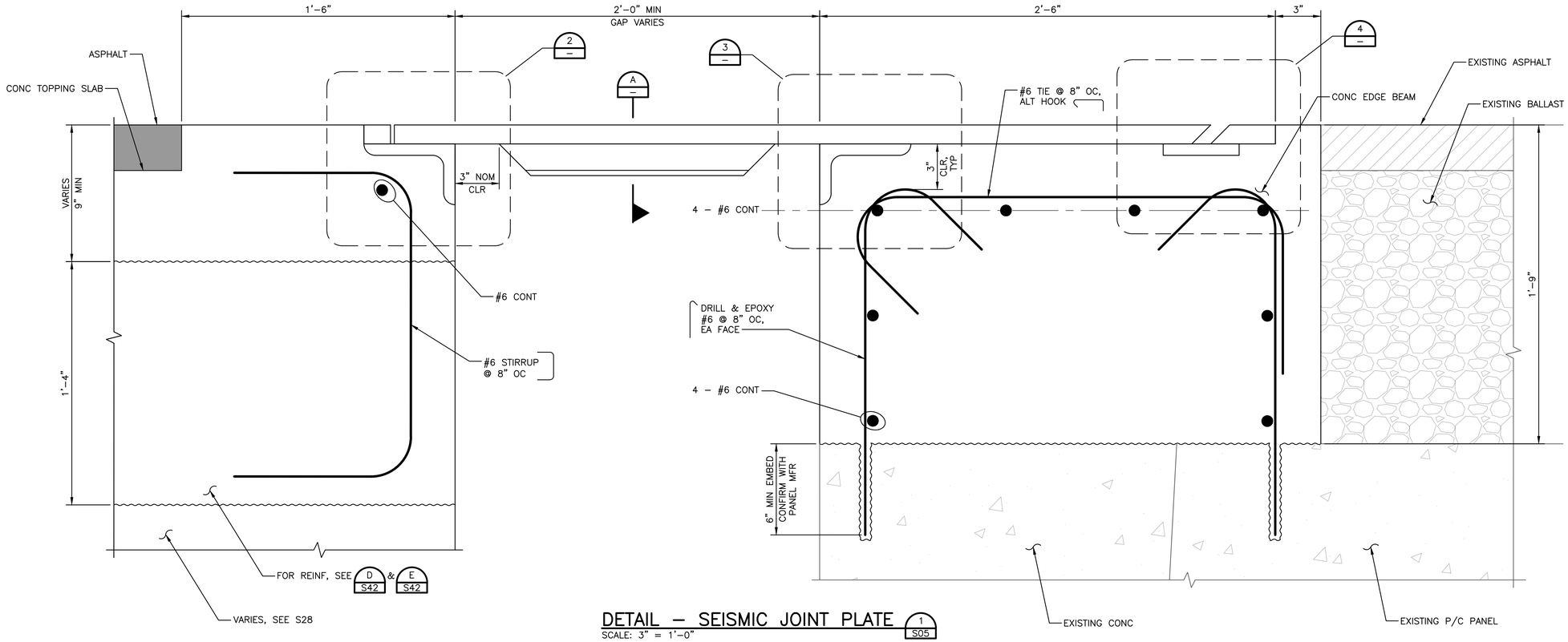
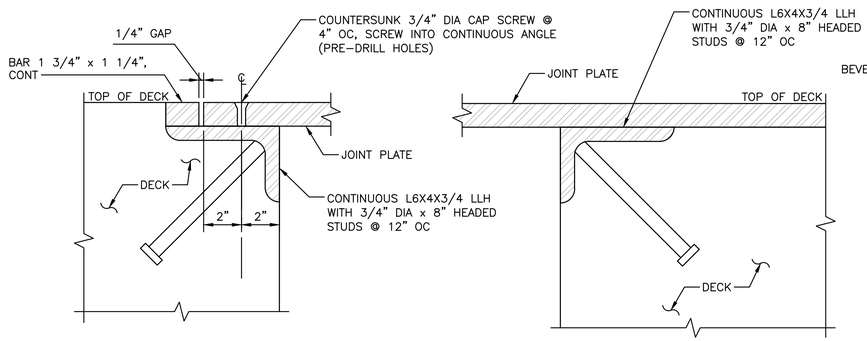
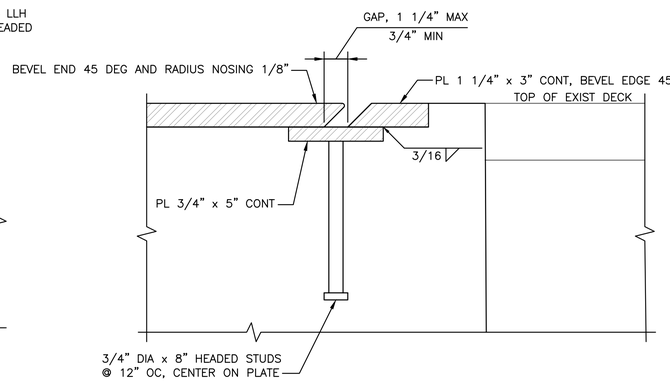


DETAIL – SEISMIC JOINT PLATE (1/S05)
SCALE: 3" = 1'–0"

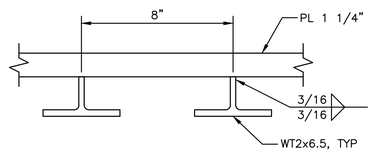


DETAIL – JOINT AT FIXED END (2/–)
SCALE: 3" = 1'–0"

DETAIL – JOINT AT FREE END (3/–)
SCALE: 3" = 1'–0"



DETAIL – JOINT AT FREE END (4/–)
SCALE: 3" = 1'–0"



SECTION – SEISMIC JOINT PLATE (A/–)
SCALE: 3" = 1'–0"

3" = 1'–0" 6 0 6 12 scale inches

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BRIAN DEAN BEARD
STATE OF WASHINGTON
157460
REGISTERED
PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: 3" = 1'-0"
DRAWN BY: JTH
APPROVED BY: BDB
DATE: 22-Dec-23

REVISION NO. DATE.

PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
SEISMIC JOINT DETAILS

DRAWING NUMBER
S29
SHEET NUMBER 71 OF 130

POV PROJECT NO:
CP-0441

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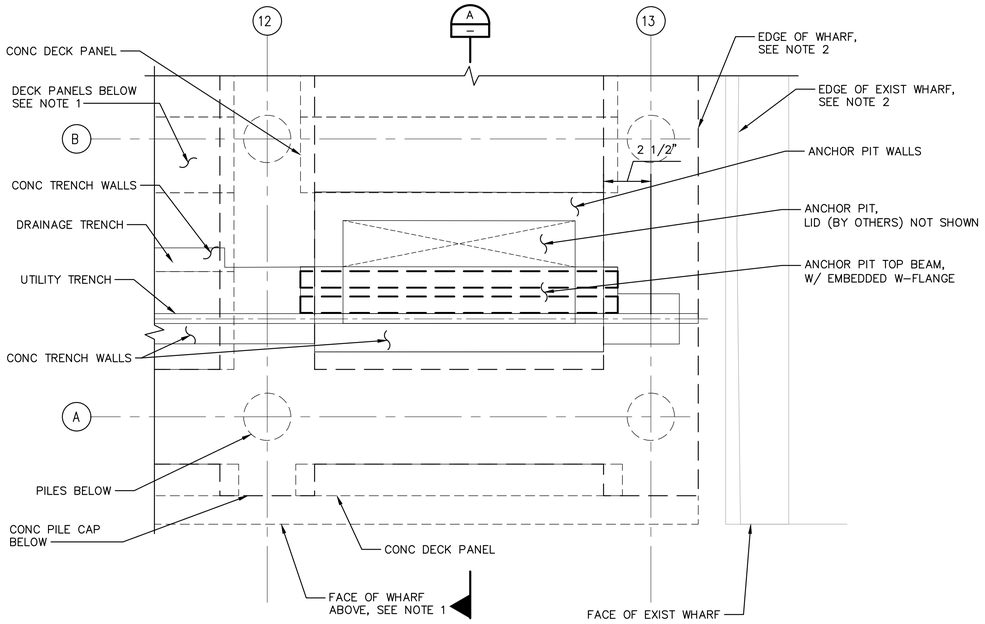
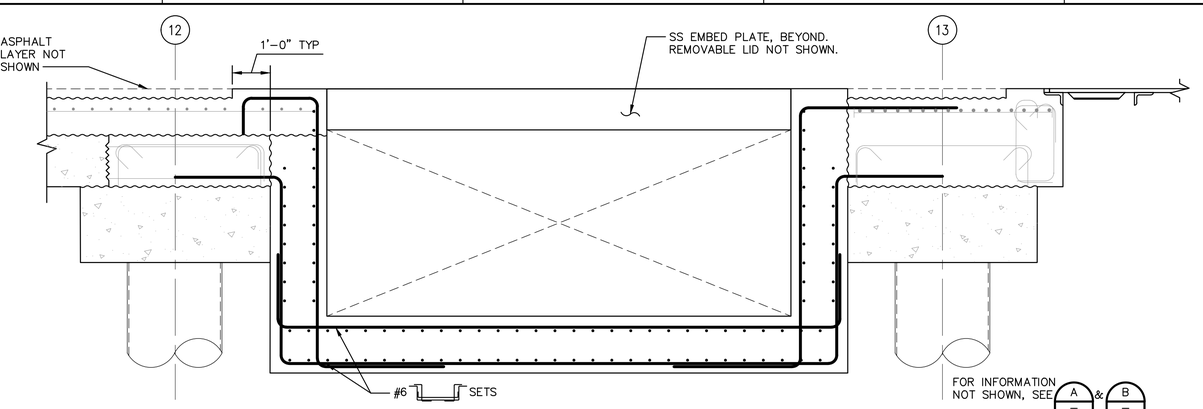


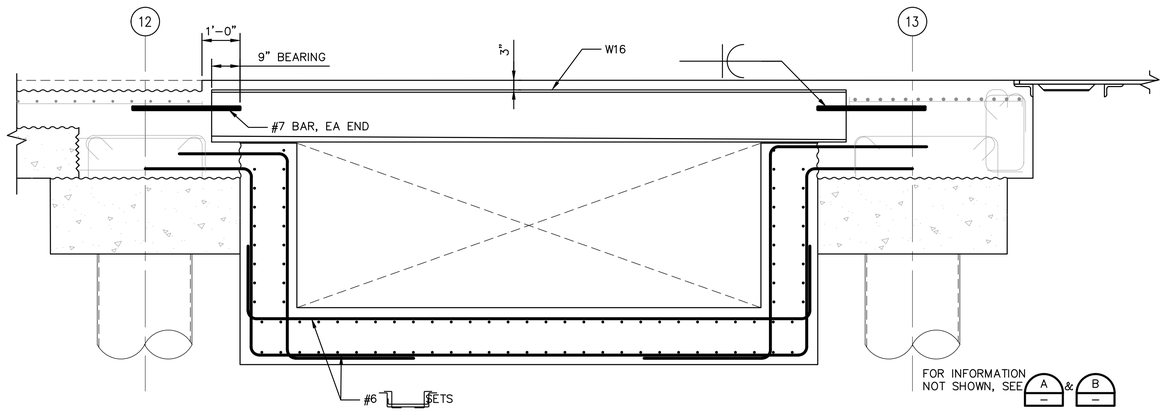
DETAIL – ANCHOR PIT

SCALE: 3" = 1'-0"



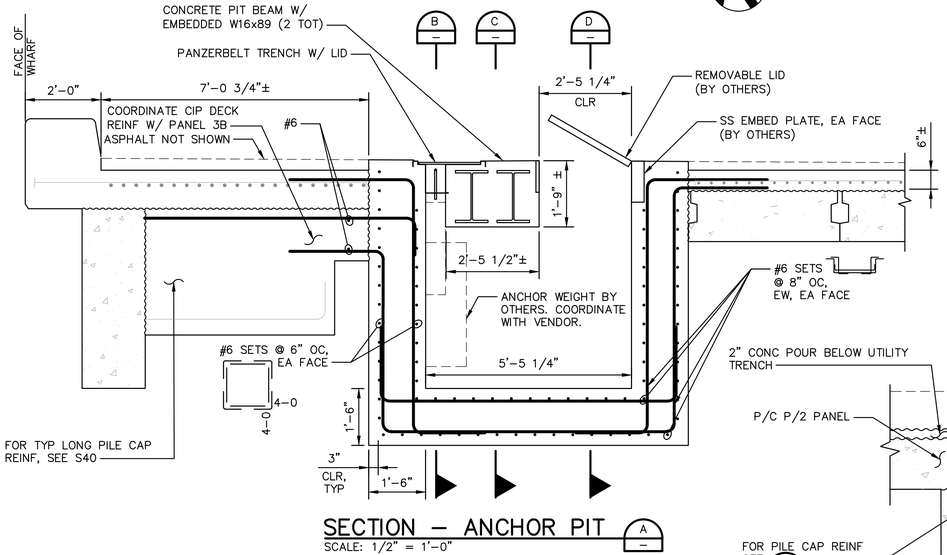
SECTION – ANCHOR PIT REINFORCING

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



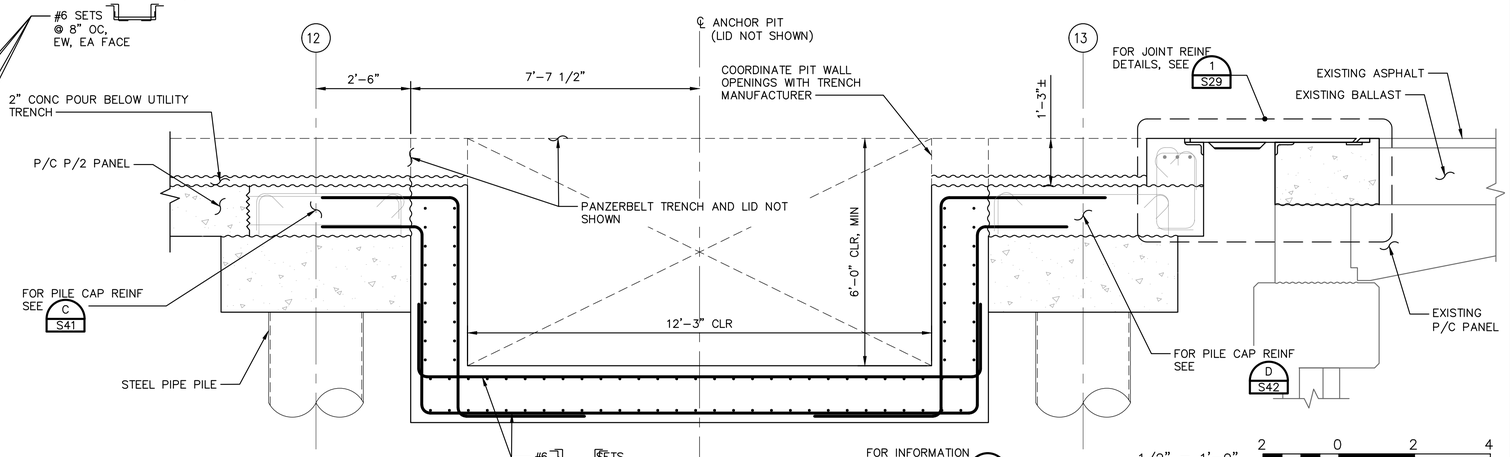
SECTION – ANCHOR PIT REINFORCING

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



SECTION – ANCHOR PIT

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



SECTION – ANCHOR PIT

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

NOTES:

1. TOPPING AND FENDER SYSTEMS NOT SHOWN,
2. SEISMIC COVER NOT SHOWN.

1/2" = 1'-0" scale: 2 0 2 4 feet

3" = 1'-0" scale: 6 0 6 12 inches

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PROFESSIONAL ENGINEER
BRIAN DEAN BEARD
STATE OF WASHINGTON
157460
REGISTERED

WSP USA Inc.
2131 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: AS SHOWN
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DATE: 22-Dec-23

REVISION
NO. DATE.

PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
ANCHOR PIT - PLANS, SECTIONS, & DETAILS

DRAWING NUMBER
S30
SHEET NUMBER 72 OF 130

POV PROJECT NO:
CP-0441

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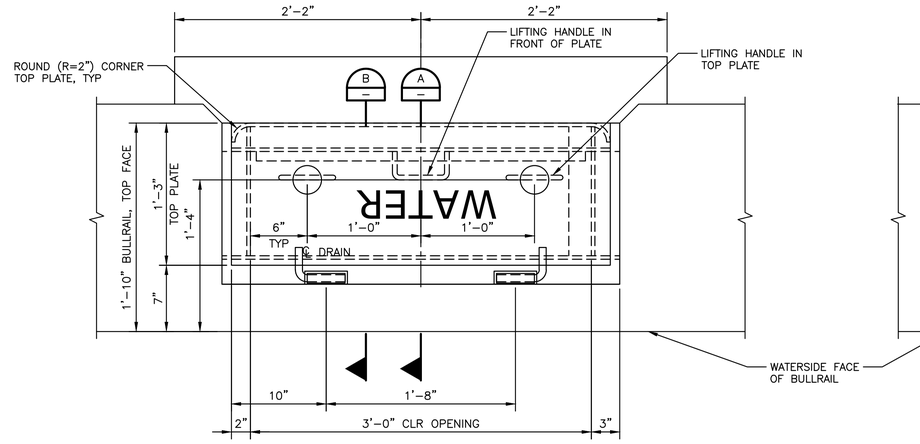
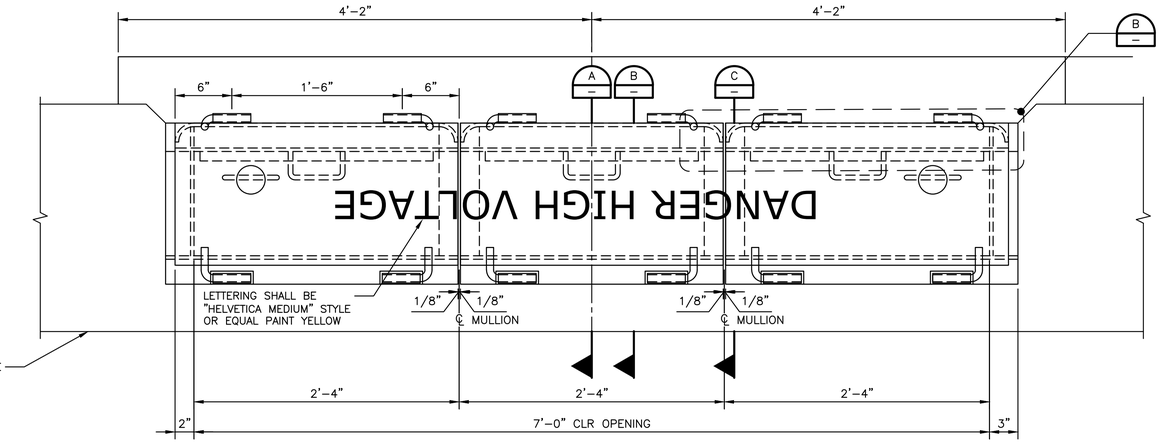
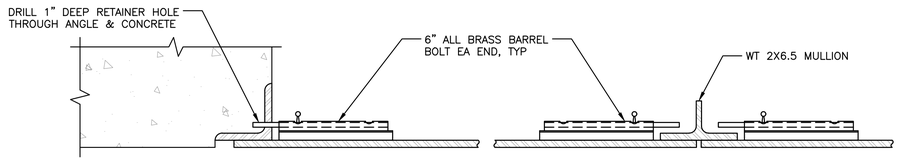


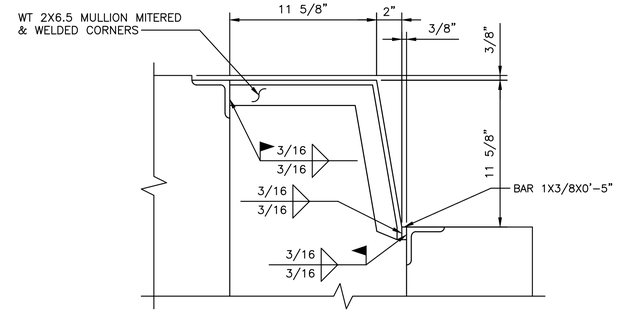
PLAN – SHIP'S WATER SERVICE VAULT 1
SCALE: 1 1/2" = 1'–0"



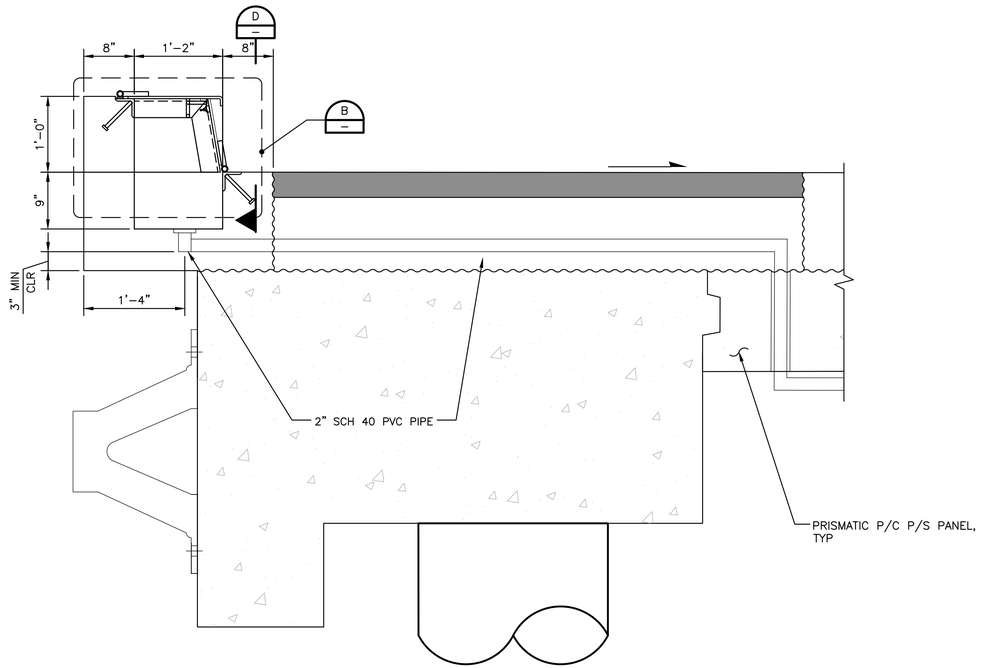
PLAN – PIER POWER VAULT 2
SCALE: 1 1/2" = 1'–0"



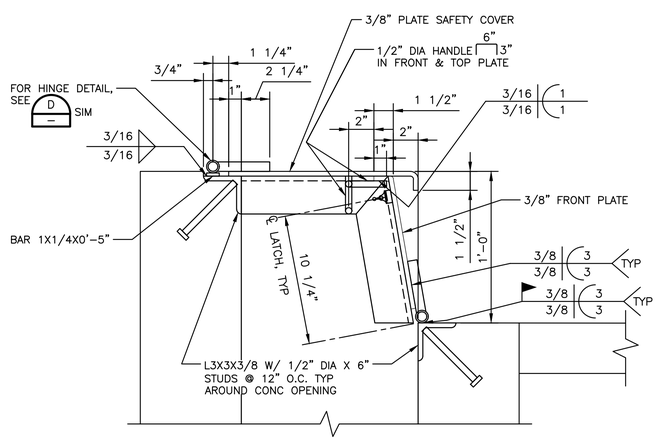
PLAN – LATCH DETAIL 3
SCALE: 3" = 1'–0"



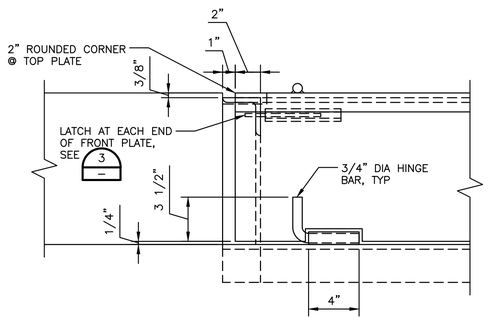
DETAIL – INTERMEDIATE MULLION C
SCALE: 2" = 1'–0"



SECTION – BULLRAIL AT VAULT COVER A
SCALE: 1" = 1'–0"



DETAIL – VAULT COVER B
SCALE: 2" = 1'–0"



ELEVATION – FRONT PLATE D
SCALE: 2" = 1'–0"

1–1/2" = 1'–0" scale 1 0 1 2 feet

3" = 1'–0" scale 6 0 6 12 inches

1" = 1'–0" scale 1 0 1 2 feet

2" = 1'–0" scale 6 0 6 12 inches

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BRIAN DEAN BEARD STATE OF WASHINGTON 37460 REGISTERED PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: 3/4" = 1'-0"

DRAWN BY: JTH

APPROVED BY: BDB

DATE: 22-Dec-23

REVISION NO. DATE.

PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
BERTH 9 EXTENSION
WATER AND POWER
VAULT DETAILS

DRAWING NUMBER
S31

SHEET NUMBER 73 OF130

POV PROJECT NO:
CP-0441

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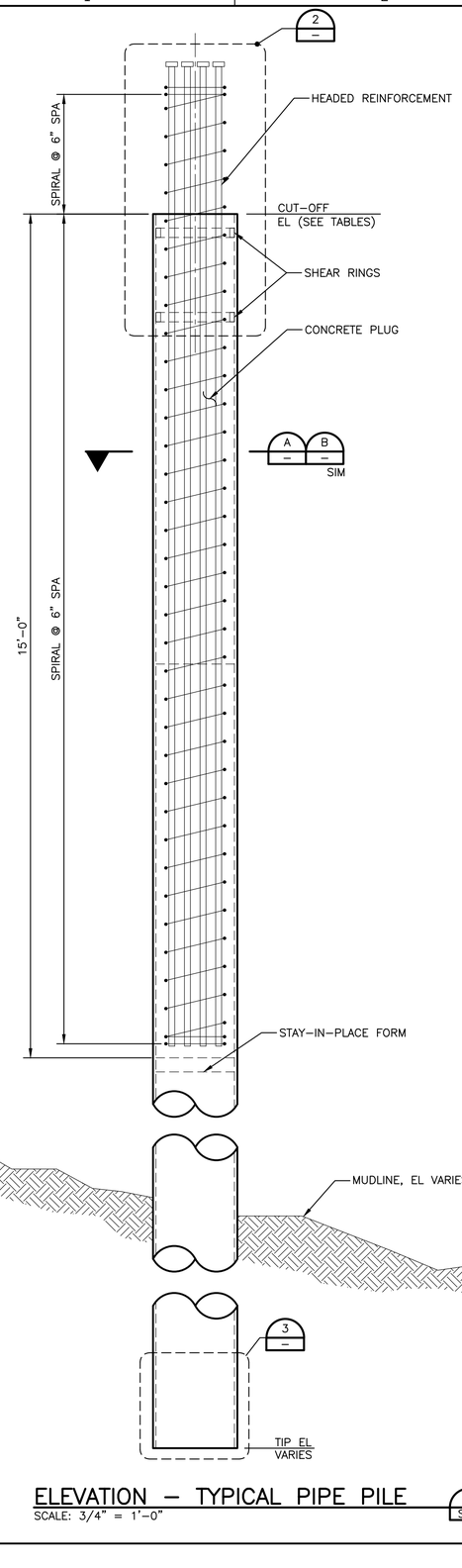
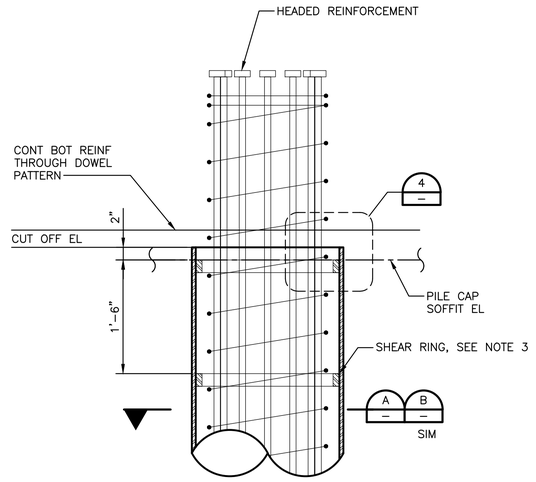
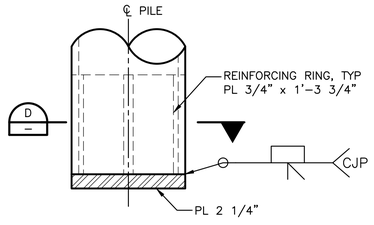


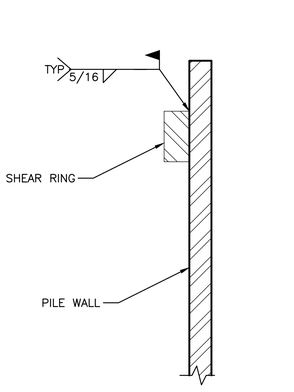
ELEVATION – TYPICAL PIPE PILE (1 / S06)
SCALE: 3/4" = 1'–0"



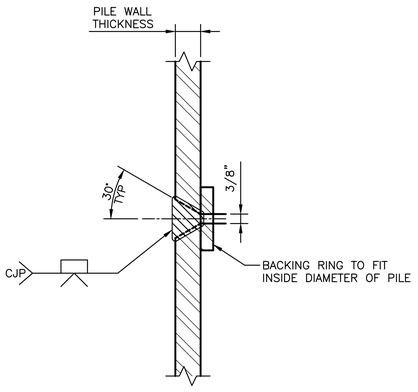
DETAIL – PILE – PILE CAP CONN (2)
SCALE: 1" = 1'–0"



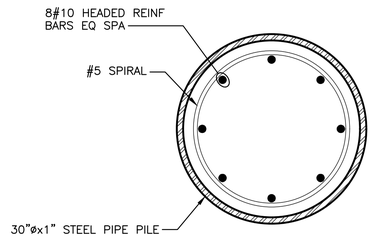
DETAIL – CLOSED–ENDED PILE TIP (3)
SCALE: 1" = 1'–0"



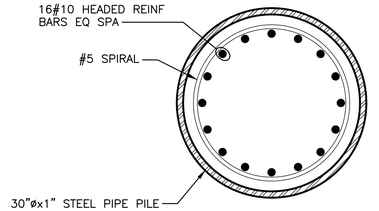
DETAIL – SHEAR RING (4)
SCALE: 4" = 1'–0"



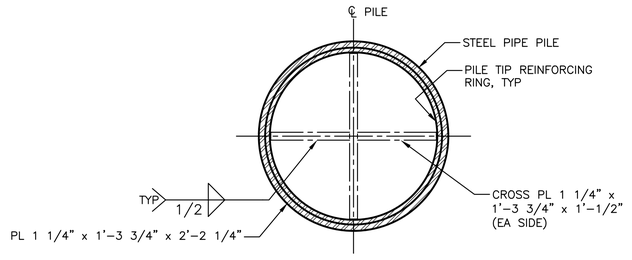
DETAIL – TYPICAL PILE SPLICE (5)
SCALE: 4" = 1'–0"



SECTION – PIPE PILE CONNECTION A (A)
SCALE: 1" = 1'–0"



SECTION – PIPE PILE CONNECTION B (B)
SCALE: 1" = 1'–0"



SECTION – CLOSED–ENDED TIP (D)
SCALE: 1" = 1'–0"

NOTES:
1. COAT PILES IN ACCORDANCE WITH THE SPECIFICATIONS. COATING SHALL EXTEND FROM CUT–OFF ELEVATION TO APPROXIMATELY 20 FEET BELOW THE FIELD–MEASURED MUDLINE FOR EACH PILE UNO, SEE SCHEDULE. SUBMIT PILE ORDER/COATING LIST FOR APPROVAL.
2. TOUCH UP DAMAGED PILE COATING IN ACCORDANCE WITH THE SPECIFICATIONS AND AS DIRECTED.
3. EACH 1"x2" SHEAR RING MAY BE FABRICATED IN A MAXIMUM OF 3 PIECES (NOMINAL 120 DEGREE ARC MINIMUM), WITH A MAXIMUM GAP OF 1/2" BETWEEN PIECES.
4. PUMP WATER OUT OF PILE IMMEDIATELY PRIOR TO POURING CONCRETE IN PILE. VERIFY NO WATER IS ABOVE FORM IMMEDIATELY BEFORE CASTING PLUG.

4" = 1'–0" (scale 3 0 3 6 inches)
3/4" = 1'–0" (scale 2 0 2 4 feet)
1" = 1'–0" (scale 1 0 1 2 feet)

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BRIAN DEAN BEARD
STATE OF WASHINGTON
37460
REGISTERED
PROFESSIONAL ENGINEER

WSP USA Inc.
217 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: AS SHOWN
DRAWN BY: JTH
APPROVED BY: BDB
DATE: 22-Dec-23

REVISION NO. DATE.

PORT OF VANCOUVER USA
Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
PILE DETAILS

DRAWING NUMBER
S32
SHEET NUMBER 74 OF 130

POV PROJECT NO:
CP-0441

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BRIAN DEAN BARD
STATE OF WASHINGTON
57460
REGISTERED
PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

A/E PROJECT NUMBER: A19.0198.02

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JTH

APPROVED BY:
BDB

DATE:
22-Dec-23

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PORT OF VANCOUVER USA

Berth 8/9 Extension and
Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
PILE CONNECTION
DETAILS

DRAWING NUMBER
S33

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POV PROJECT NO:
CP-0441

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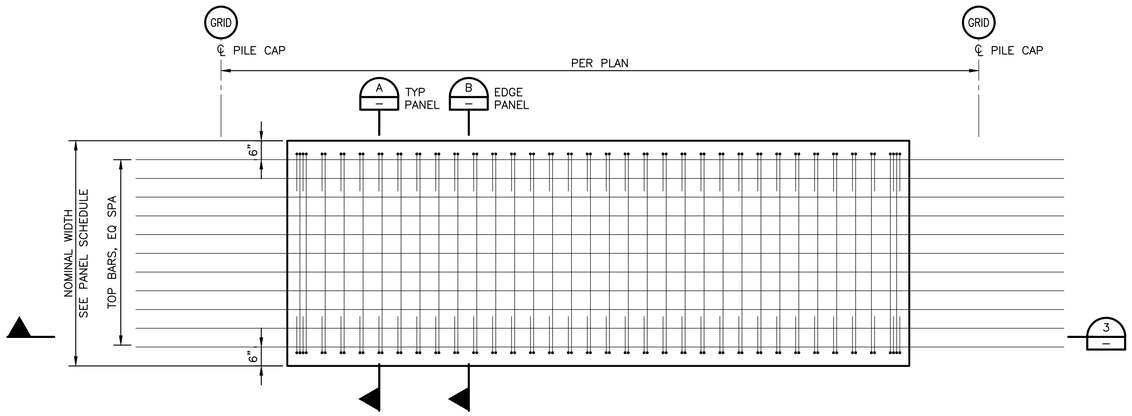
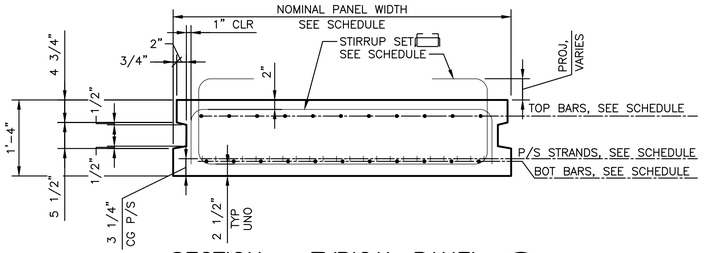
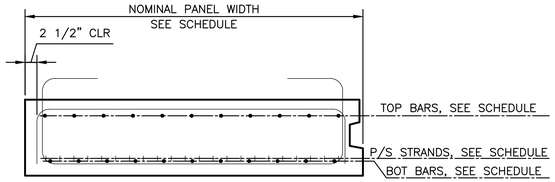


PLAN – TOP REINFORCEMENT 1
SCALE: 1/2" = 1'–0"

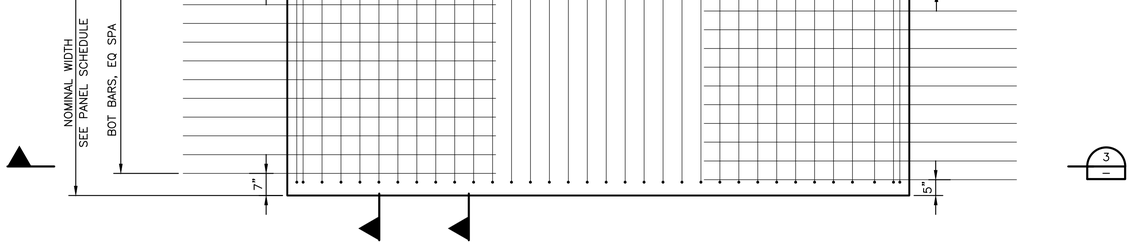


SECTION – TYPICAL PANEL A
SCALE: 3/4" = 1'–0"

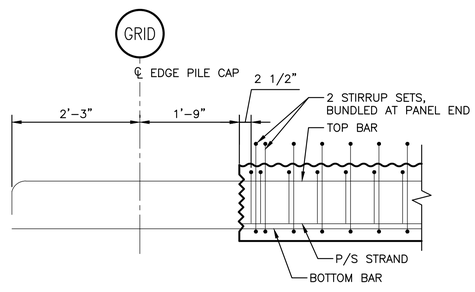


NOTE: FOR INFORMATION NOT SHOWN, SEE A

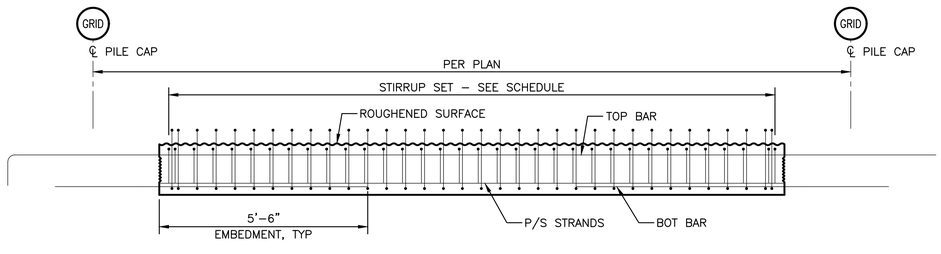
SECTION – EDGE PANEL B
SCALE: 3/4" = 1'–0"



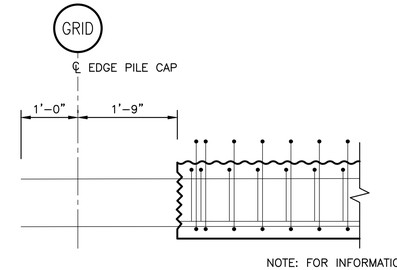
PLAN – BOTTOM REINFORCEMENT 2
SCALE: 1/2" = 1'–0"



DETAIL – PANEL END C
SCALE: 3/4" = 1'–0"



ELEVATION 3
SCALE: 1/2" = 1'–0"



NOTE: FOR INFORMATION NOT SHOWN, SEE C

DETAIL – PANEL END D
SCALE: 3/4" = 1'–0"

NOTES:

1. PROVIDE BULLRAIL AND TRENCH WALL REINF WHERE INDICATED ON PLAN AND ASSOCIATED DETAILS.
2. AT LOCATIONS WHERE WALL REINF IS REQUIRED, EXTEND STIRRUP LEGS.
3. LEFT & RIGHT CORRESPOND TO WATERSIDE & SHORESIDE RESPECTIVELY.
4. FOR INFORMATION ON PANEL BEARING STRIP AND CONCRETE SHEAR KEY SEE S33.

3/4" = 1'–0" 2 0 2 4 scale feet

1/2" = 1'–0" 2 0 2 4 scale feet

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BRIAN DEAN BEARD
STATE OF WASHINGTON
57460
REGISTERED
PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

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Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
DECK PANEL - PLANS, SECTIONS & DETAILS - SHEET 1

DRAWING NUMBER
S34
SHEET NUMBER 75 OF 130

POV PROJECT NO:
CP-0441

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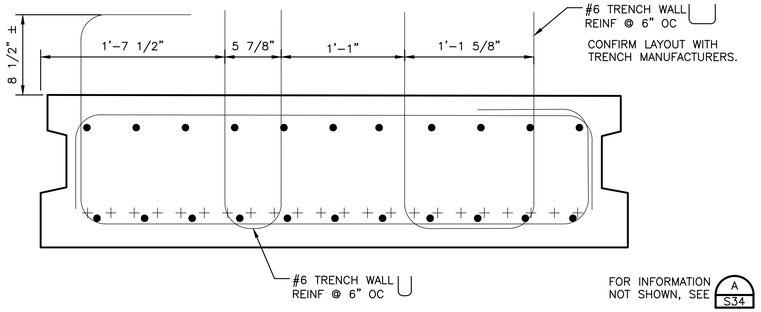
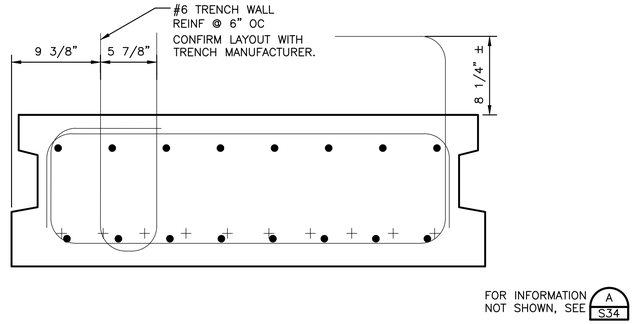
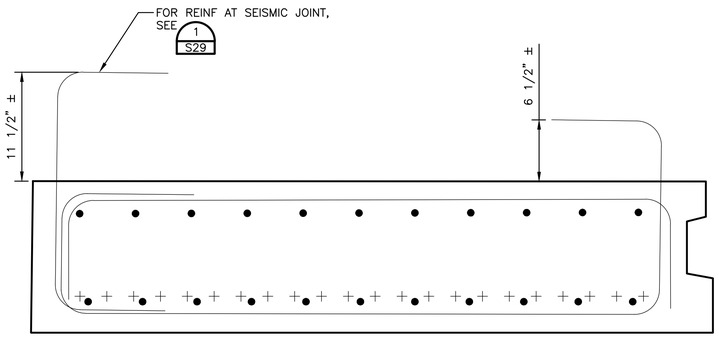


SECTION – PANEL P3# (A –)
SCALE: 1 1/2" = 1'–0"

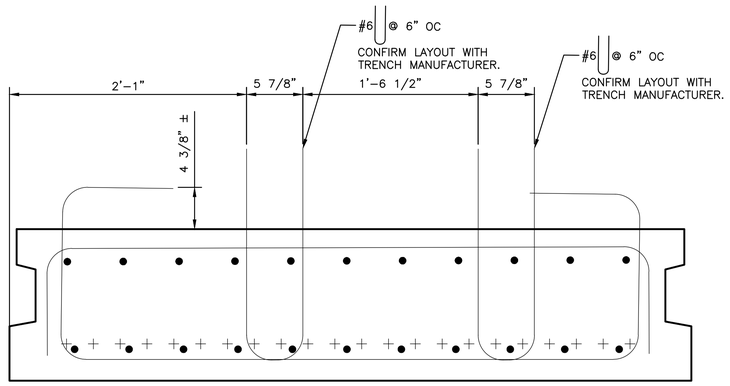


SECTION – PANEL P4# (E –)
SCALE: 1 1/2" = 1'–0"



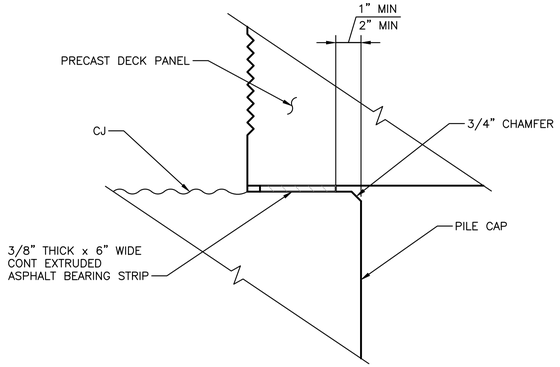
SECTION – PANEL P15# (F –)
SCALE: 1 1/2" = 1'–0"

NOTE: PANEL 26 SIM

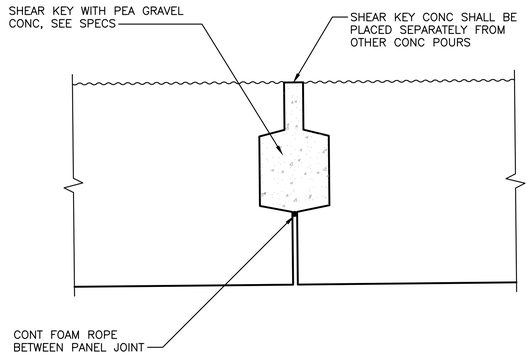


SECTION – PANEL P16# (G –)
SCALE: 1 1/2" = 1'–0"

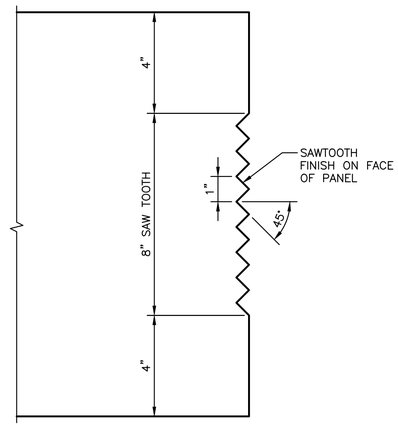
NOTE: PANEL 27 SIM



DETAIL – TYP BEARING STRIP (C –)
SCALE: 2" = 1'–0"



DETAIL – TYP SHEAR KEY (B –)
SCALE: 2" = 1'–0"



DETAIL – PANEL END (D –)
SCALE: N.T.S.

2" = 1'–0" (6 0 6 12 scale inches)

1–1/2" = 1'–0" (1 0 1 2 scale feet)

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WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: AS SHOWN
DRAWN BY: JTH
APPROVED BY: BDB
DATE: 22-Dec-23

REVISION NO. DATE.

PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
DECK PANEL - PLANS, SECTIONS & DETAILS - SHEET 2

DRAWING NUMBER
S35
SHEET NUMBER 76 OF 130

POV PROJECT NO:
CP-0441

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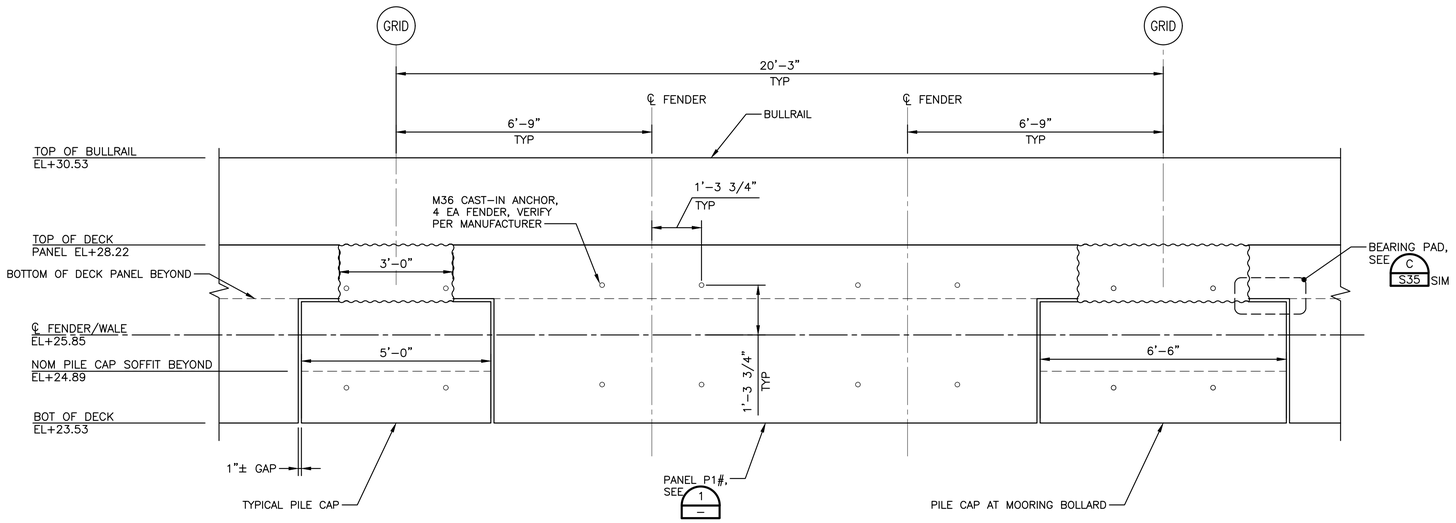
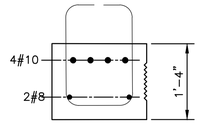


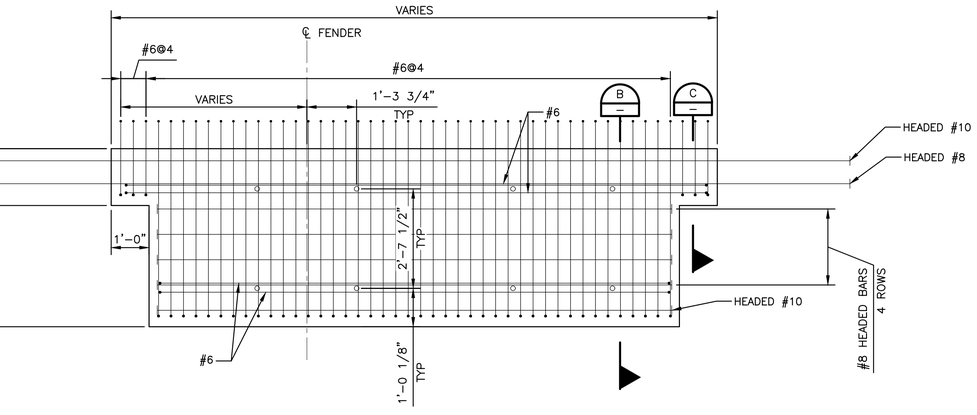
ELEVATION – PRECAST CONCRETE EDGE PANEL A

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



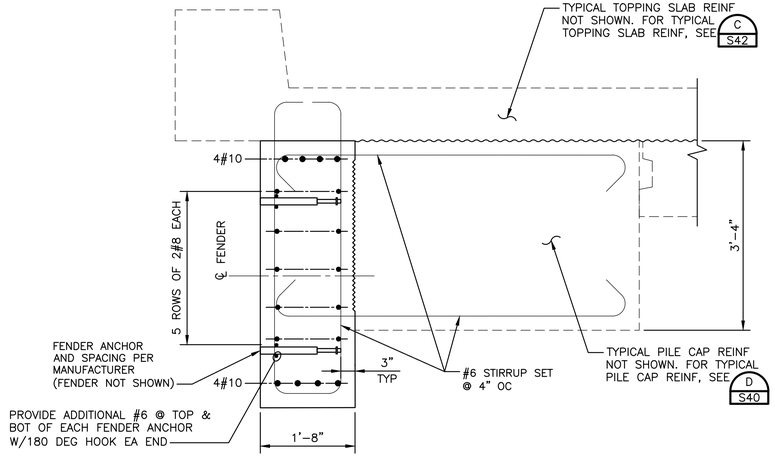
DETAIL – PRECAST CONCRETE EDGE PANEL C

SCALE: 3/4" = 1'-0"



DETAIL – PRECAST CONCRETE EDGE BEAM PANEL 1

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



DETAIL – PRECAST CONCRETE EDGE PANEL B

SCALE: 3/4" = 1'-0"

3/4" = 1'-0" 2 0 2 4 scale feet

1/2" = 1'-0" 2 0 2 4 scale feet

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BRIAN DEAN BEARD
STATE OF WASHINGTON
57460
REGISTERED
PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-6100
FAX: 360-823-6101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: AS SHOWN

DRAWN BY: JTH

APPROVED BY: BDB

DATE: 22-Dec-23

REVISION NO. DATE.

PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
DECK PANEL - PLANS, SECTIONS & DETAILS - SHEET 3

DRAWING NUMBER
S36

SHEET NUMBER 77 OF 130

POV PROJECT NO: CP-0441

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BERTH 9 WHARF EXTENSION PRECAST PRISMATIC DECK PANEL SCHEDULE												
MARK	COUNT	# OF STRANDS	NOM PANEL WIDTH	ACTUAL PANEL WIDTH	PANEL LENGTH	FINAL PRESTRESS (KIPS)	MILD REINFORCEMENT			SHEAR KEY		NOTES
							TOP BARS	BOT BARS	STIRRUP SETS	LEFT	RIGHT	
P1	3	-	1'-8"	-	16'-9"	-	-	-	-	NO	YES	3
P1A	1	-	1'-8"	-	16'-0"	-	-	-	-	NO	YES	3,4
P1B	7	-	1'-8"	-	16'-0"	-	-	-	-	NO	YES	3,4
P1C	1	-	1'-8"	-	16'-9"	-	-	-	-	NO	YES	3
P3	9	22	5'-2"	5'-1 3/4"	16'-9"	809	11 #8	11 #8	#6 @ 6"	YES	YES	1,2,6
P3A	1	22	5'-2"	5'-1 3/4"	16'-9"	809	11 #8	11 #8	#6 @ 6"	YES	YES	1,2,4,6
P3B	1	22	5'-2"	5'-1 3/4"	16'-9"	809	11 #8	11 #8	#6 @ 6"	YES	YES	1,2,4,5,6
P4	9	10	4'-2"	4'-1 3/4"	16'-9"	368	8 #8	8 #8	#6 @ 6"	YES	YES	2
P4A	1	10	4'-2"	4'-1 3/4"	16'-9"	368	8 #8	8 #8	#6 @ 6"	YES	YES	2,4
P4B	1	10	4'-2"	4'-1 3/4"	16'-9"	368	8 #8	8 #8	#6 @ 6"	YES	YES	2,4,5
P5	10	10	4'-0"	3'-11 3/4"	16'-9"	368	8 #8	8 #8	#6 @ 6"	YES	YES	
P5A	1	10	4'-0"	3'-11 3/4"	16'-9"	368	8 #8	8 #8	#6 @ 6"	YES	YES	4
P6	10	10	4'-0"	3'-11 3/4"	16'-9"	368	8 #8	8 #8	#6 @ 6"	YES	YES	
P6A	2	10	4'-0"	3'-11 3/4"	16'-9"	368	8 #8	8 #8	#6 @ 6"	YES	YES	4
P7	210	22	6'-0"	5'-11 3/4"	16'-9"	809	11 #8	11 #8	#6 @ 6"	YES	YES	
P7A	42	22	6'-0"	5'-11 3/4"	16'-9"	809	11 #8	11 #8	#6 @ 6"	YES	YES	4
P8	10	22	5'-3"	5'-2 3/4"	16'-9"	809	11 #8	11 #8	#6 @ 6"	YES	NO	
P8A	2	22	5'-3"	5'-2 3/4"	16'-9"	809	11 #8	11 #8	#6 @ 6"	YES	NO	4

BERTH 9 APRON PRECAST PRISMATIC DECK PANEL SCHEDULE												
MARK	COUNT	# OF STRANDS	NOM PANEL WIDTH	ACTUAL PANEL WIDTH	PANEL LENGTH	FINAL PRESTRESS (KIPS)	MILD REINFORCEMENT			SHEAR KEY		NOTES
							TOP BARS	BOT BARS	STIRRUP SETS	LEFT	RIGHT	
P10A		20	6'-0"	5'-11 3/4"	12'-5"	735	12 #8	12 #8	#6 @ 6"	NO	YES	4
P11A		20	6'-0"	5'-11 3/4"	12'-5"	735	12 #8	12 #8	#6 @ 6"	YES	YES	2,4
P12A		20	6'-0"	5'-11 3/4"	12'-5"	735	12 #8	12 #8	#6 @ 6"	YES	YES	4
P13A		10	4'-0"	3'-11 3/4"	12'-5"	368	6 #8	6#8	#6 @ 6"	YES	YES	4
P14A		20	5'-6"	5'-5 3/4"	12'-5"	735	12 #8	12 #8	#6 @ 6"	YES	NO	4
P15		22	6'-0"	5'-11 3/4"	16'-6"	809	11 #8	11 #8	#6 @ 6"	NO	YES	
P16		22	6'-0"	5'-11 3/4"	16'-6"	809	11 #8	11 #8	#6 @ 6"	YES	YES	2
P17		22	6'-0"	5'-11 3/4"	16'-6"	809	11 #8	11 #8	#6 @ 6"	YES	YES	
P18		10	4'-0"	3'-11 3/4"	16'-6"	368	8 @8	8 @8	#6 @ 6"	YES	YES	
P19		22	5'-6"	5'-5 3/4"	16'-6"	809	11 #8	11 #8	#6 @ 6"	YES	NO	

BERTH 8 APRON PRECAST PRISMATIC DECK PANEL SCHEDULE												
MARK	COUNT	# OF STRANDS	NOM PANEL WIDTH	ACTUAL PANEL WIDTH	PANEL LENGTH	FINAL PRESTRESS (KIPS)	MILD REINFORCEMENT			SHEAR KEY		NOTES
							TOP BARS	BOT BARS	STIRRUP SETS	LEFT	RIGHT	
P20A		20	6'-0"	5'-11 3/4"	12'-3"	735	12 #8	12 #8	#6 @ 6"	NO	YES	4
P21A		20	6'-0"	5'-11 3/4"	12'-3"	735	12 #8	12 #8	#6 @ 6"	YES	YES	2,4
P22A		20	6'-0"	5'-11 3/4"	12'-3"	735	12 #8	12 #8	#6 @ 6"	YES	YES	4
P23A		10	4'-0"	3'-11 3/4"	12'-3"	368	6 #8	6 #8	#6 @ 6"	YES	YES	4
P24A		20	5'-6"	5'-5 3/4"	12'-3"	735	12 #8	12 #8	#6 @ 6"	YES	YES	4
P25A		20	5'-6"	5'-5 3/4"	12'-3"	735	12 #8	12 #8	#6 @ 6"	YES	NO	4
P26		22	6'-0"	5'-11 3/14"	16'-6"	809	11 #8	11 #8	#6 @ 6"	NO	YES	
P27		22	6'-0"	5'-11 3/14"	16'-6"	809	11 #8	11 #8	#6 @ 6"	YES	YES	2
P28		22	6'-0"	5'-11 3/14"	16'-6"	809	11 #8	11 #8	#6 @ 6"	YES	YES	
P29		10	4'-0"	3'-11 3/4"	16'-6"	368	8 #8	8 #8	#6 @ 6"	YES	YES	
P30		22	5'-6"	5'-5 3/4"	16'-6"	809	11 #8	11 #8	#6 @ 6"	YES	YES	
P31		22	5'-6"	5'-5 3/4"	16'-6"	809	11 #8	11 #8	#6 @ 6"	YES	NO	

NOTES:

1. COORDINATE PANEL FABRICATION WITH UTILITY TRENCH SYSTEM DETAILS.
2. COORDINATE PANEL FABRICATION WITH TRENCH DRAIN DETAILS.
3. COORDINATE PANEL FABRICATION WITH ARCH FENDER DETAILS. FOR REINFORCEMENT DETAILS, SEE DWG S36.
4. SEE DECK PANEL PLAN FOR NOTATION ON PANEL ORIENTATION.
5. COORDINATE PANEL FABRICATION WITH ANCHOR PIT DETAILS.
6. COORDINATE PANEL FABRICATION WITH WATER VAULT SYSTEM.

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BRIAN DEAN BEARD
STATE OF WASHINGTON
57460
REGISTERED
PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: NOT TO SCALE
DRAWN BY: JTH
APPROVED BY: BDB
DATE: 22-Dec-23

REVISION
NO. DATE.

PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
DECK PANEL SCHEDULE

DRAWING NUMBER
S37
SHEET NUMBER 78 OF 130

POV PROJECT NO:
CP-0441

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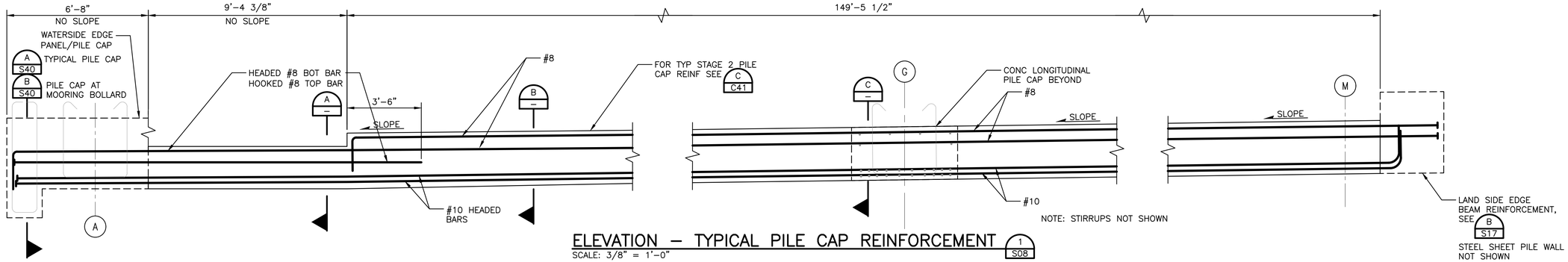
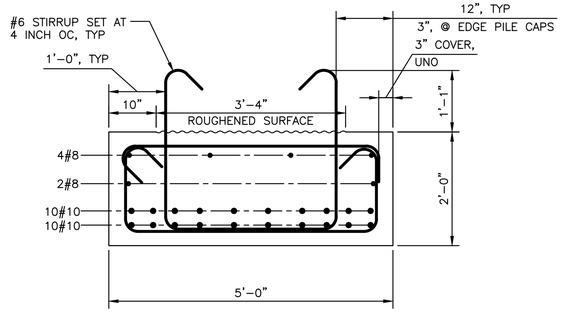
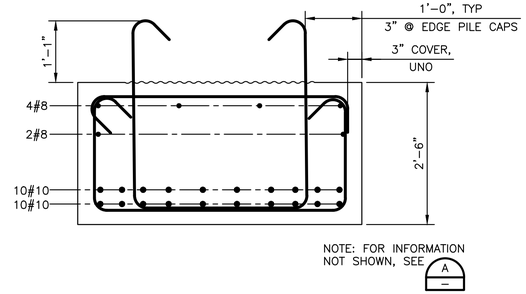


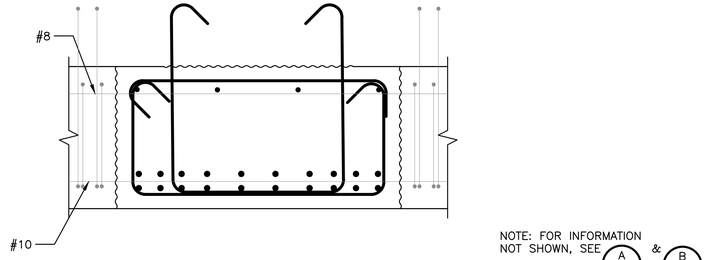
ELEVATION – TYPICAL PILE CAP REINFORCEMENT (1 S08)
SCALE: 3/8" = 1'–0"



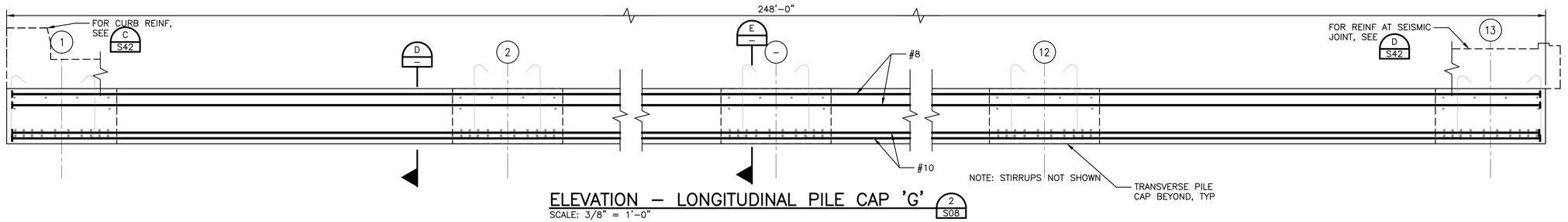
SECTION – PILE CAP (A –)
SCALE: 3/4" = 1'–0"



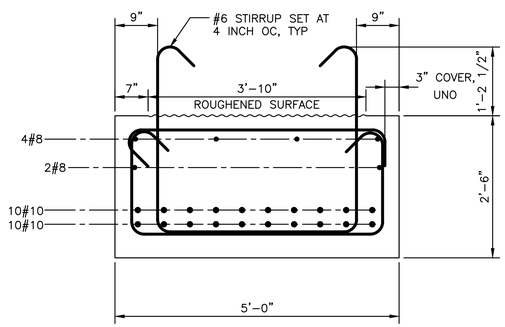
SECTION – TYPICAL PILE CAP (B –)
SCALE: 3/4" = 1'–0"



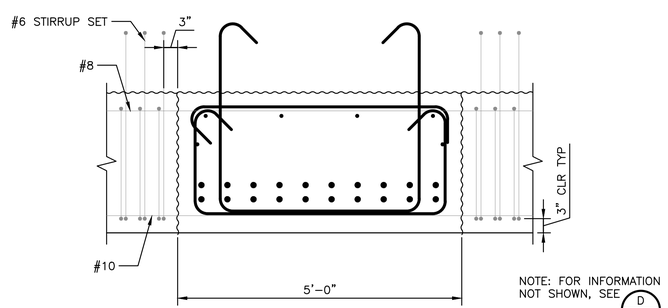
SECTION – PILE CAP AT GRID 'G' (C –)
SCALE: 3/4" = 1'–0"



ELEVATION – LONGITUDINAL PILE CAP 'G' (2 S08)
SCALE: 3/8" = 1'–0"



SECTION – PILE CAP (D –)
SCALE: 3/4" = 1'–0"



SECTION – PILE CAP INTERSECTION (E –)
SCALE: 3/4" = 1'–0"

3/8" = 1'–0" scale 4 0 4 8 feet

3/4" = 1'–0" scale 2 0 2 4 feet

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PRELIMINARY
BRIAN DEAN BEARD
STATE OF WASHINGTON
37460
REGISTERED PROFESSIONAL ENGINEER

WSP USA Inc.
217 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: AS SHOWN
DRAWN BY: JTH
APPROVED BY: BDB
DATE: 22-Dec-23

REVISION
NO. DATE.

PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
CIP PILE CAP DETAILS - SHEET 1

DRAWING NUMBER
S38
SHEET NUMBER 79 OF 130

POV PROJECT NO:
CP-0441

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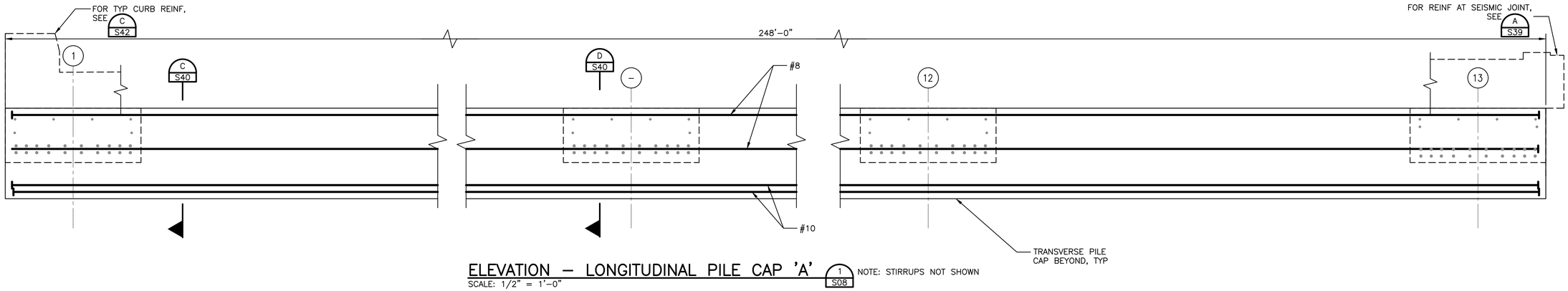
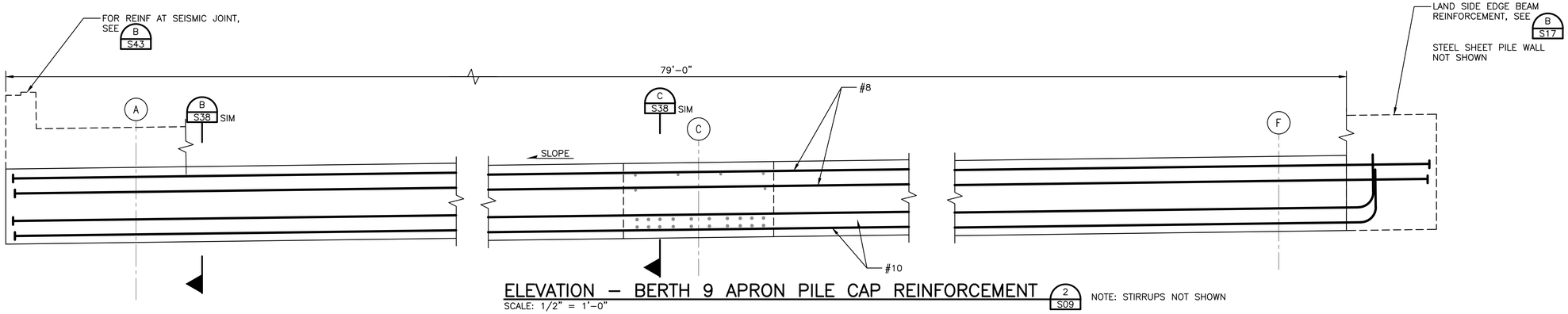


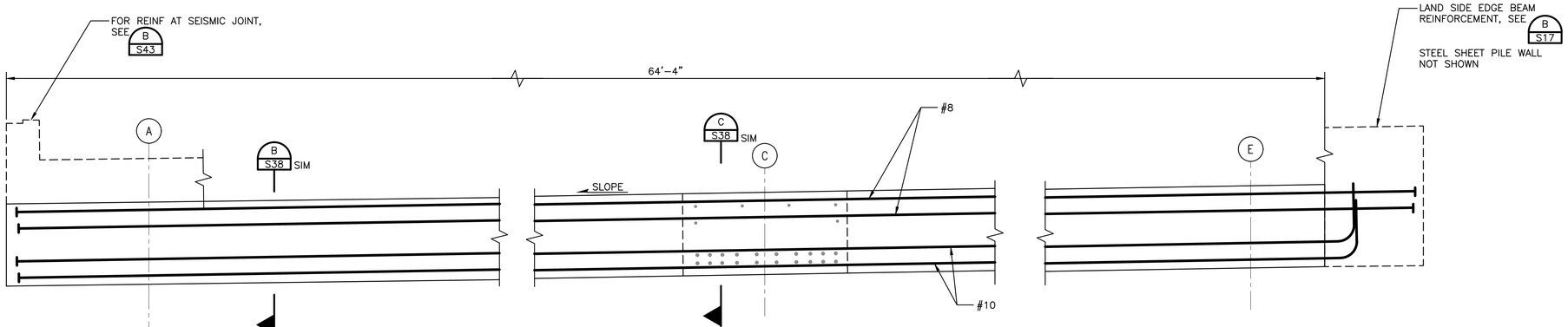
ELEVATION – LONGITUDINAL PILE CAP 'A'
SCALE: 1/2" = 1'-0"

1 S08 NOTE: STIRRUPS NOT SHOWN



ELEVATION – BERTH 9 APRON PILE CAP REINFORCEMENT
SCALE: 1/2" = 1'-0"

2 S09 NOTE: STIRRUPS NOT SHOWN



ELEVATION – BERTH 8 APRON PILE CAP REINFORCEMENT
SCALE: 1/2" = 1'-0"

3 S10 NOTE: STIRRUPS NOT SHOWN

1/2" = 1'-0" 2 0 2 4 scale feet

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BRIAN DEAN BEARD
STATE OF WASHINGTON
157460
REGISTERED
PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4101
FAX: 360-823-4101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: 1/2" = 1'-0"
DRAWN BY: JTH
APPROVED BY: BDB
DATE: 22-Dec-23

REVISION
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PORT OF VANCOUVER USA
Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
CIP PILE CAP DETAILS - SHEET 2

DRAWING NUMBER
S39
SHEET NUMBER 80 OF 130

POV PROJECT NO:
CP-0441

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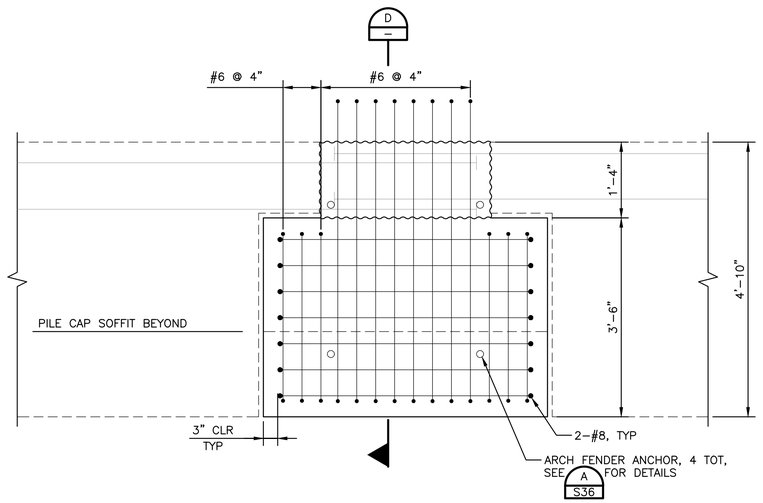
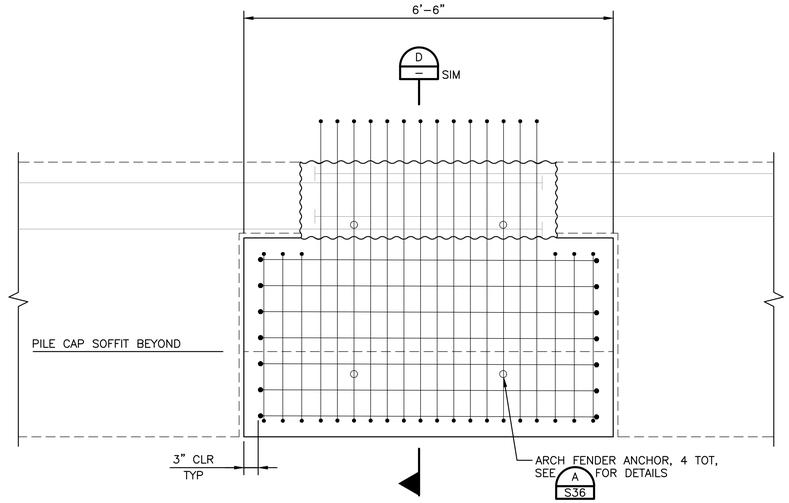
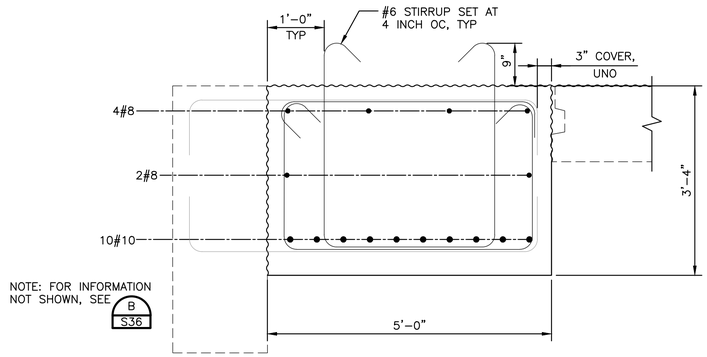


SECTION – TYPICAL PILE CAP (A S38)
SCALE: 3/4" = 1'-0"

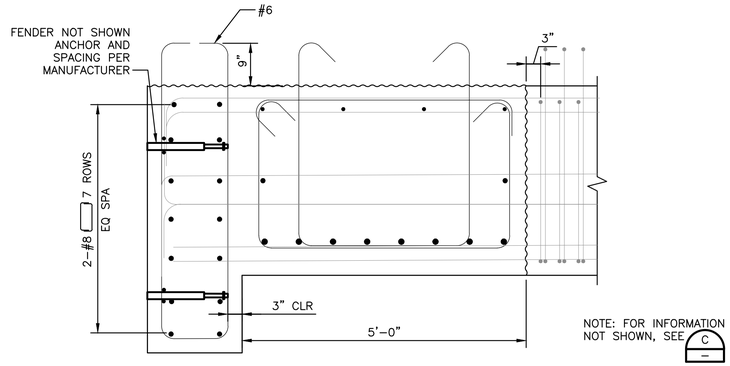


SECTION – TYPICAL PILE CAP AT BOLLARD (B S38)
SCALE: 3/4" = 1'-0"

NOTE: FOR INFORMATION NOT SHOWN, SEE A –



SECTION – PILE CAP (C S39)
SCALE: 3/4" = 1'-0"



SECTION – PILE CAP INTERSECTION (D S39)
SCALE: 3/4" = 1'-0"

3/4" = 1'-0" 2 0 2 4 scale feet

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BRIAN DEAN BARD STATE OF WASHINGTON 47460 REGISTERED PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: 3/4" = 1'-0"
DRAWN BY: JTH
APPROVED BY: BDB
DATE: 22-Dec-23

REVISION
NO. DATE.

PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
CIP PILE CAP DETAILS - SHEET 3

DRAWING NUMBER
S40
SHEET NUMBER 81 OF 130

POV PROJECT NO:
CP-0441

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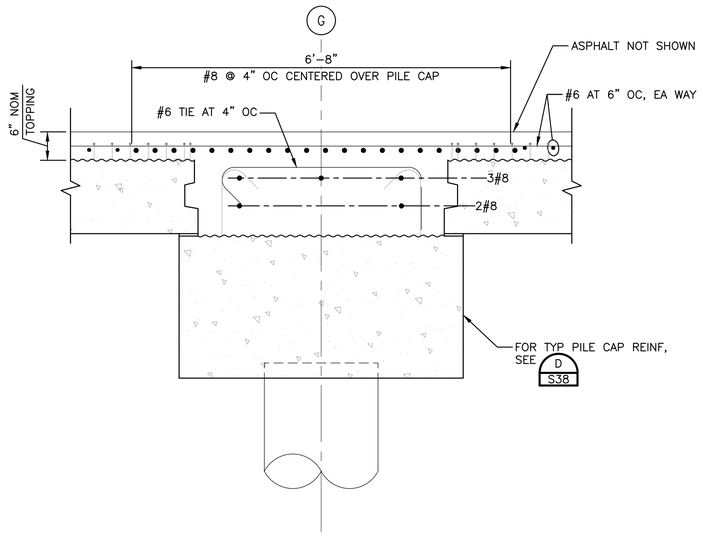
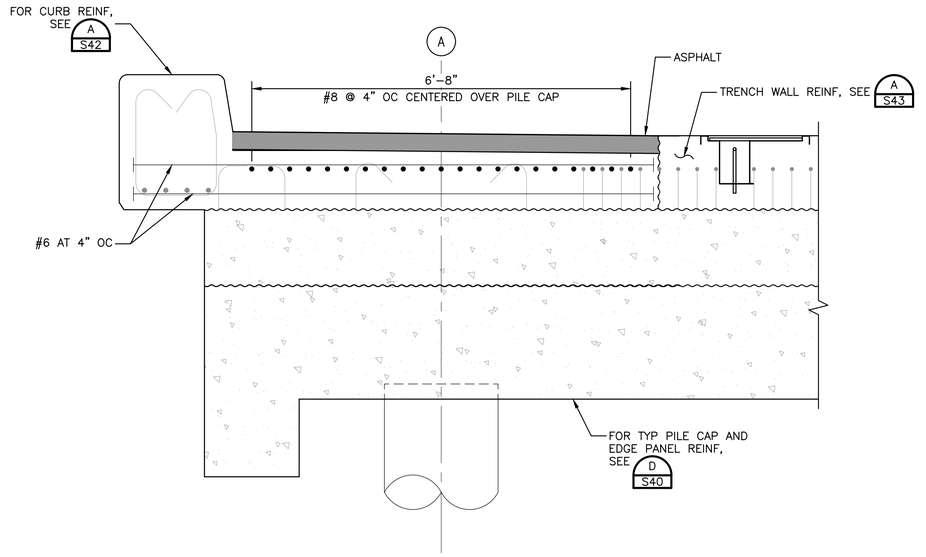
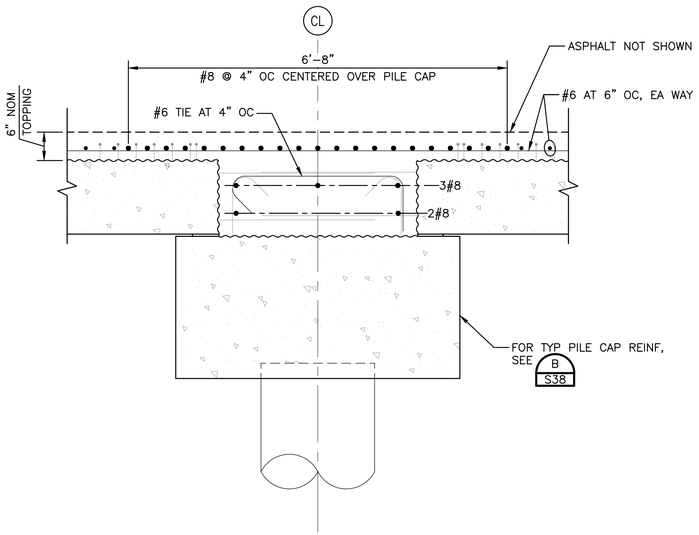


SECTION – DECK REINFORCEMENT AT LONG PILE CAP 'G' (A –)
SCALE: 3/4" = 1'-0"



SECTION – DECK REINFORCEMENT AT LONG PILE CAP 'A' (B S39)
SCALE: 3/4" = 1'-0"



SECTION – DECK REINFORCEMENT (C –)
SCALE: 3/4" = 1'-0"

3/4" = 1'-0" scale 2 0 2 4 feet

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PROFESSIONAL ENGINEER
BRIAN DEAN BEARD
STATE OF WASHINGTON
57460
REGISTERED
WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-6100
FAX: 360-823-6101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: 3/4" = 1'-0"
DRAWN BY: JTH
APPROVED BY: BDB
DATE: 22-Dec-23

REVISION NO. DATE.

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Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
CIP PILE CAP DETAILS - SHEET 4

DRAWING NUMBER
S41
SHEET NUMBER 82 OF 130

POV PROJECT NO:
CP-0441

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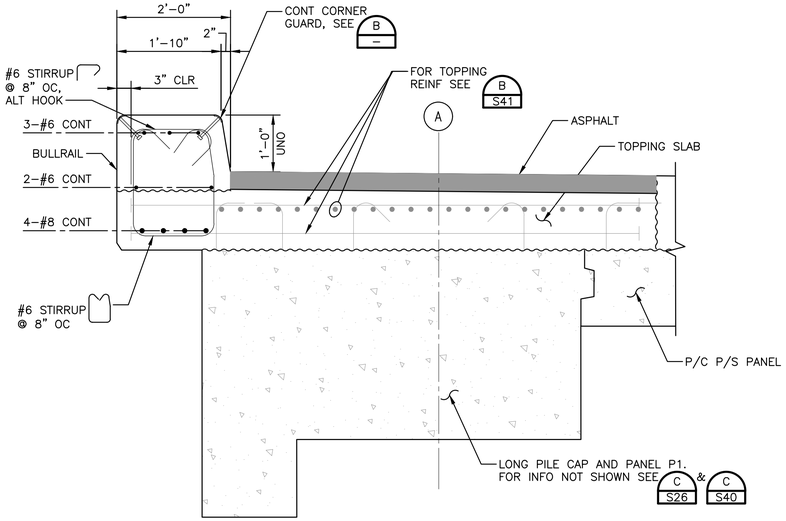
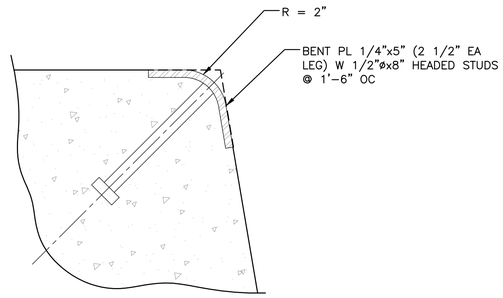
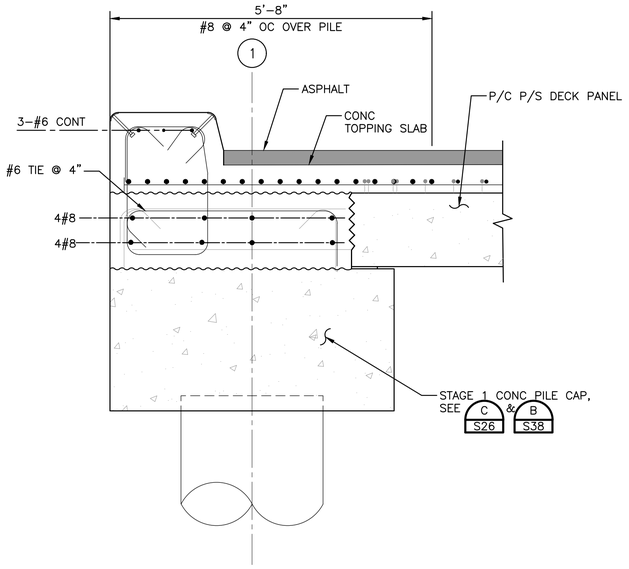


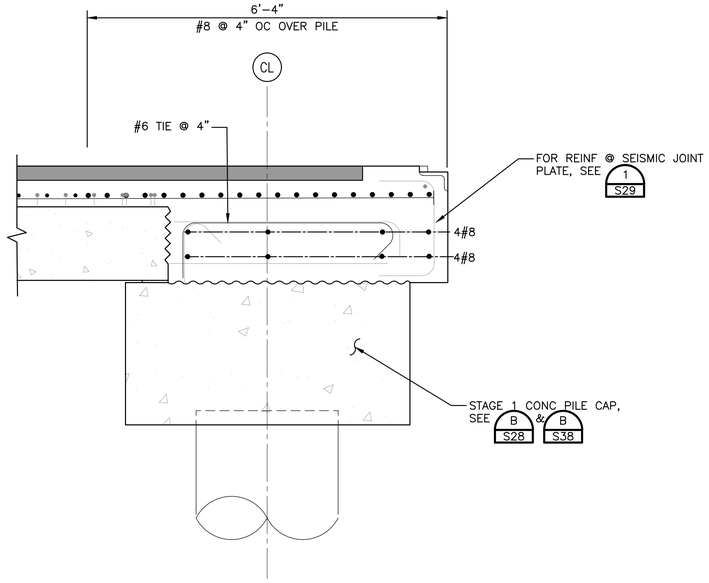
DETAIL – BULLRAIL A S05
SCALE: 3/4" = 1'–0"



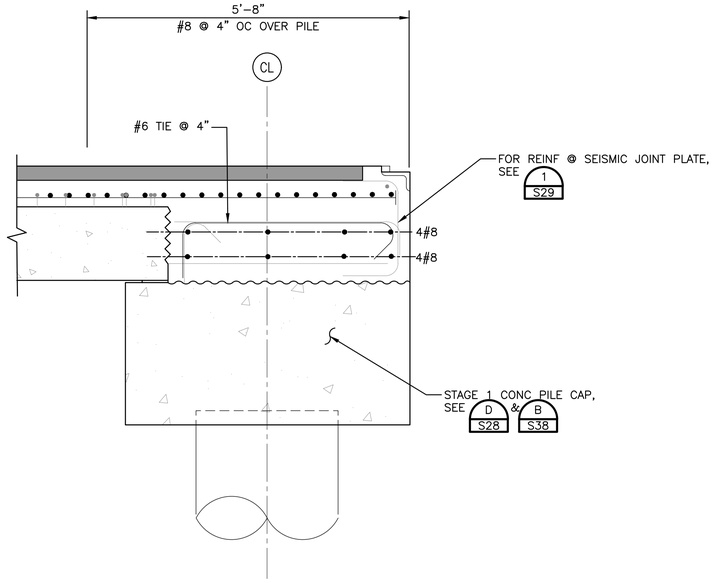
DETAIL – BULLRAIL CORNER GUARD B –
SCALE: NTS



SECTION – EDGE PILE CAP C S05
SCALE: 3/4" = 1'–0"



SECTION – EDGE PILE CAP D S05
SCALE: 3/4" = 1'–0"



SECTION – EDGE PILE CAP E S09
SCALE: 3/4" = 1'–0"

3/4" = 1'–0" scale 2 0 2 4 feet

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BRIAN DEAN BEARD
STATE OF WASHINGTON
157460
REGISTERED PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-6100
FAX: 360-823-6101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: 3/4" = 1'-0"
DRAWN BY: JTH
APPROVED BY: BDB
DATE: 22-Dec-23

REVISION NO. DATE.

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Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
CIP BULLRAIL DETAILS

DRAWING NUMBER
S42
SHEET NUMBER 83 OF130

POV PROJECT NO:
CP-0441

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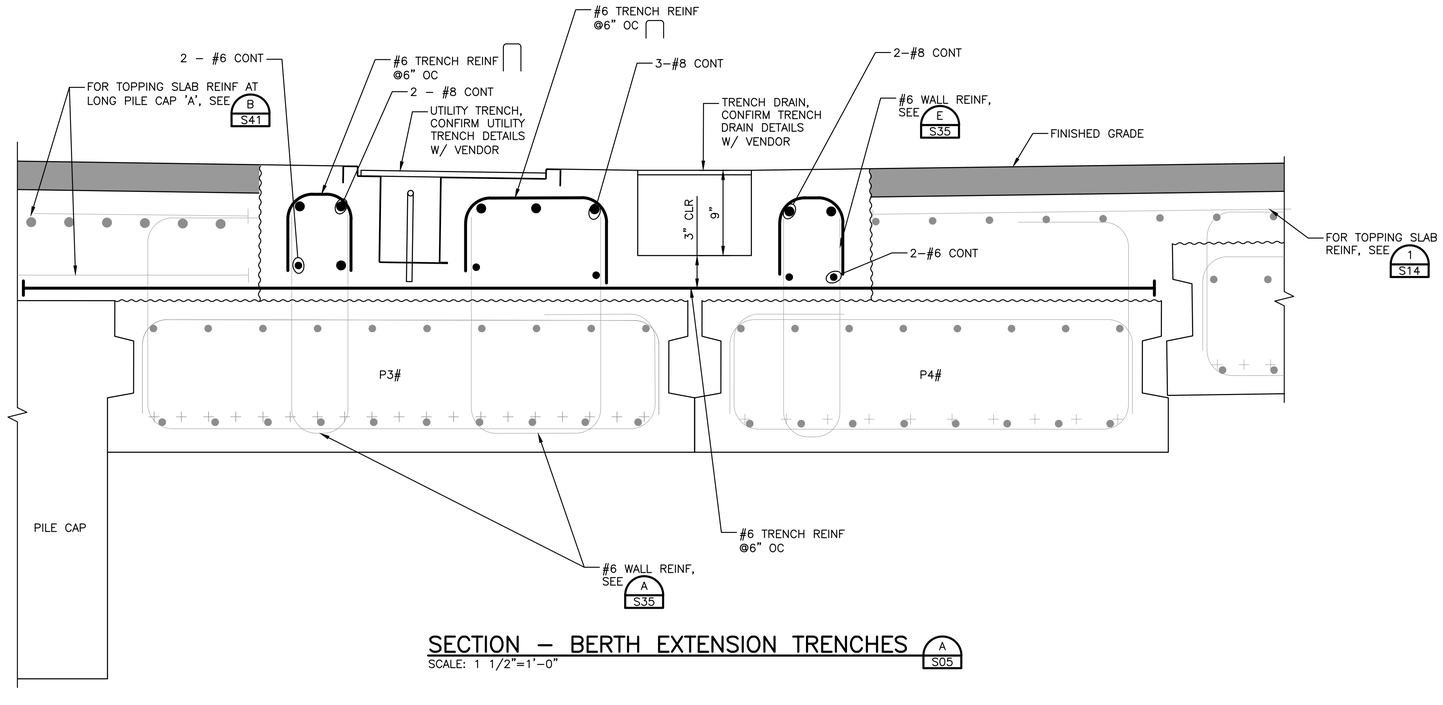
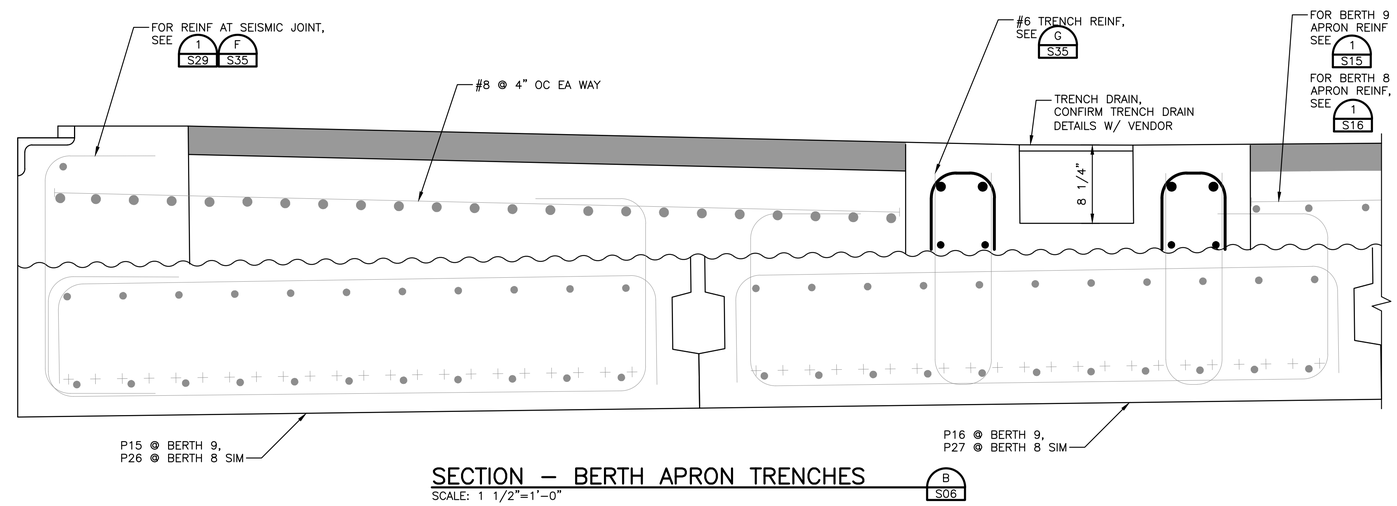


SECTION – BERTH EXTENSION TRENCHES (A S05)

SCALE: 1 1/2"=1'–0"



SECTION – BERTH APRON TRENCHES (B S06)

SCALE: 1 1/2"=1'–0"

1–1/2" = 1'–0"

1 0 1 2
scale feet

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BRIAN DEAN BEARD
STATE OF WASHINGTON
157460
REGISTERED PROFESSIONAL ENGINEER

WSP USA Inc.
217 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: 1 1/2" = 1'-0"
DRAWN BY: JTH
APPROVED BY: BDB
DATE: 22-Dec-23

REVISION
NO. DATE.

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Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
TRENCH WALL - SECTIONS AND DETAILS

DRAWING NUMBER
S43
SHEET NUMBER 84 OF 130

POV PROJECT NO:
CP-0441

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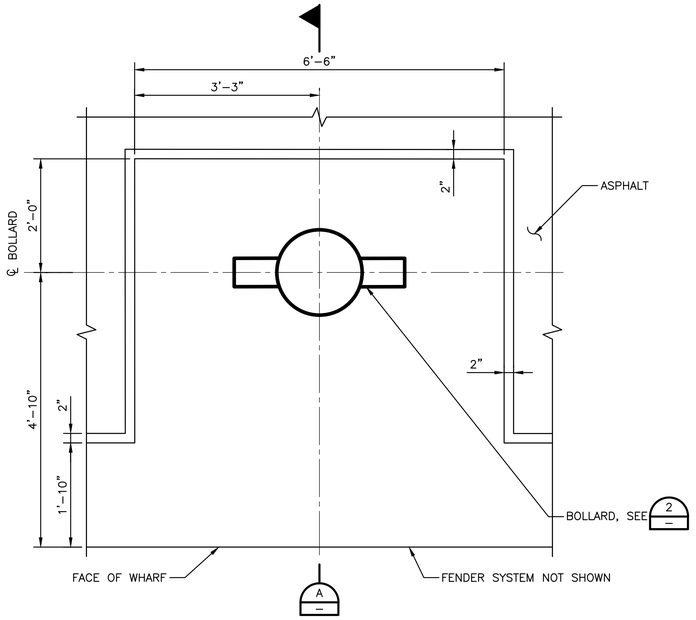
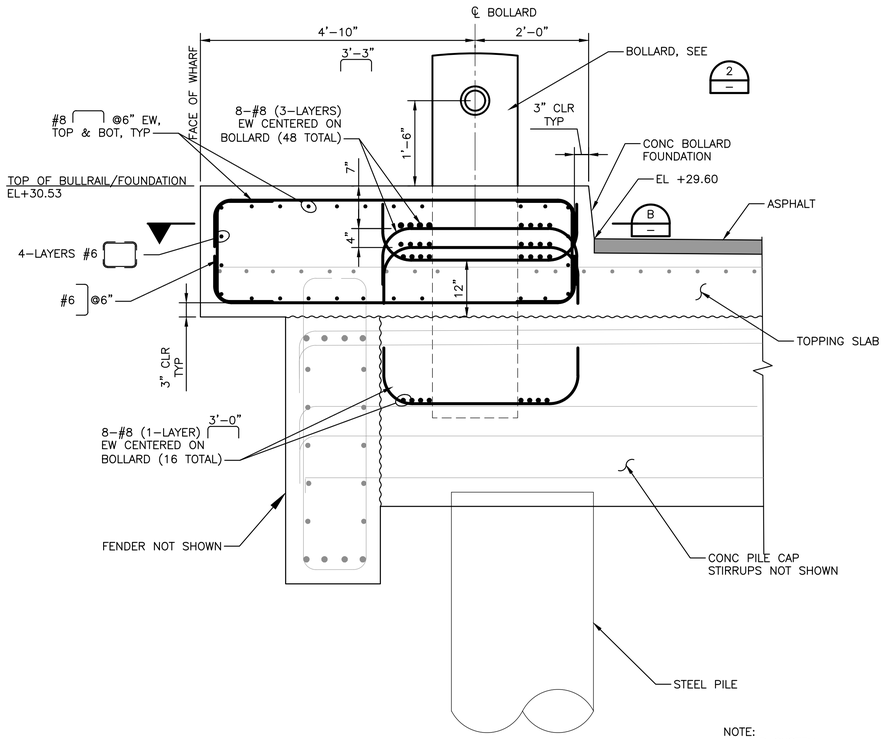
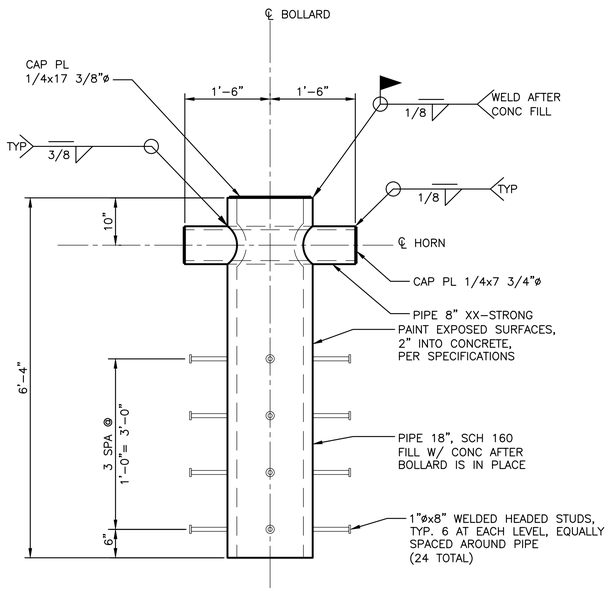


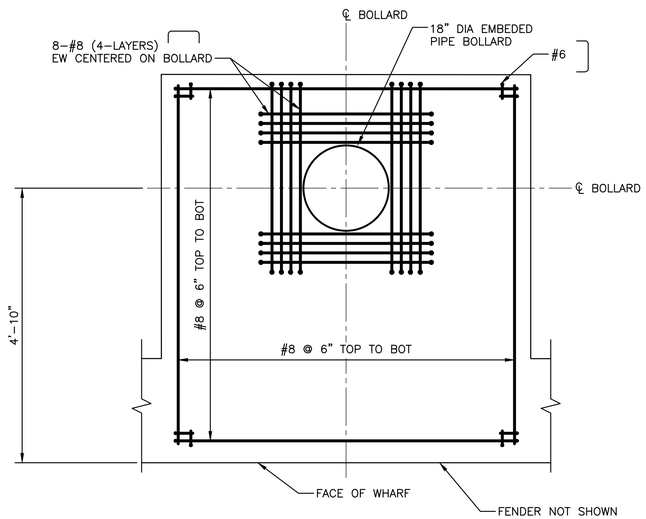
ENLARGED PLAN – TYPICAL BOLLARD (1 S05)
SCALE: 3/4" = 1'-0"



SECTION – TYPICAL BOLLARD (A S11)
SCALE: 3/4" = 1'-0"



DETAIL – WHARF MOORING BOLLARD (2)
SCALE: 1/2"=1'-0"



SECTION – FOUNDATION REINFORCEMENT (B)
SCALE: 3/4" = 1'-0"

3/4" = 1'-0" scale 2 0 2 4 feet

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WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: 3/4" = 1'-0"
DRAWN BY: JTH
APPROVED BY: BDB
DATE: 22-Dec-23

REVISION NO. DATE.

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Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
MOORING HARDWARE DETAILS

DRAWING NUMBER
S44
SHEET NUMBER 85 OF 130

POV PROJECT NO:
CP-0441

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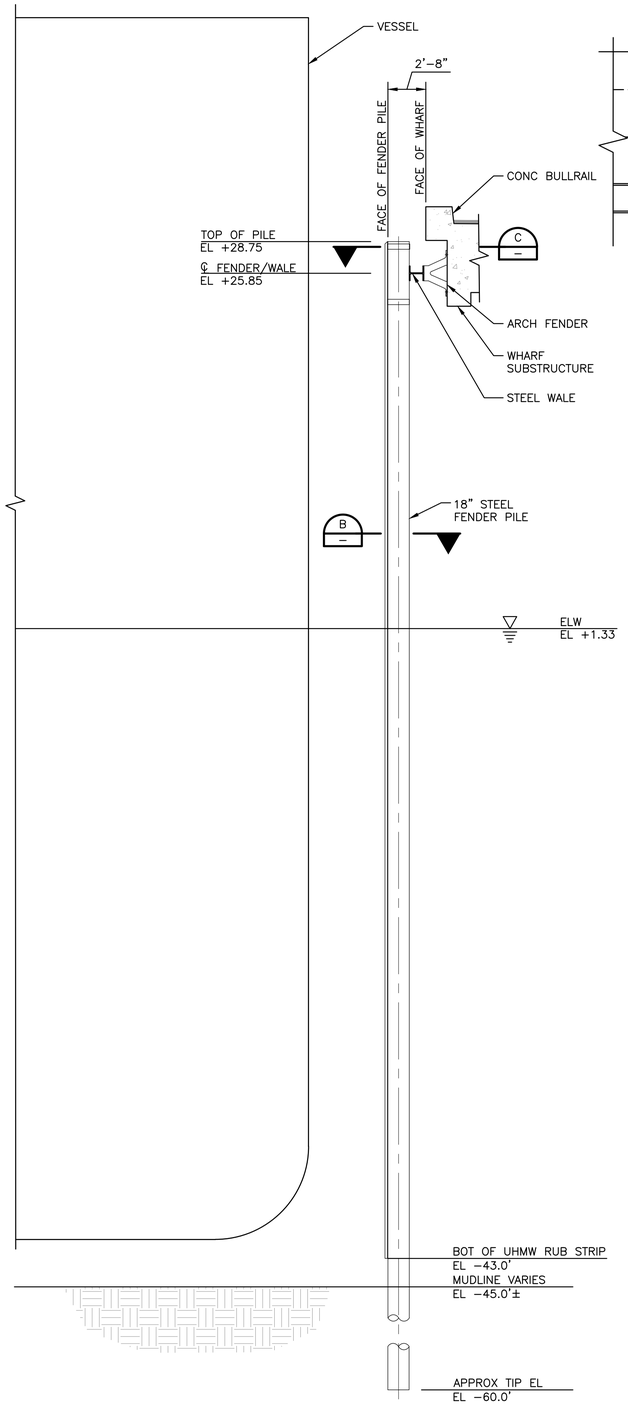
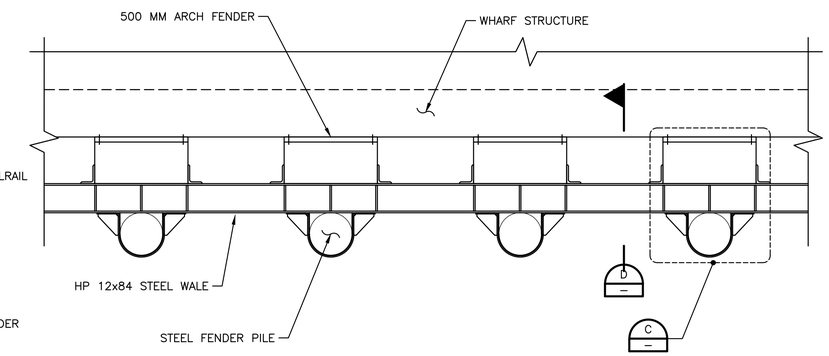
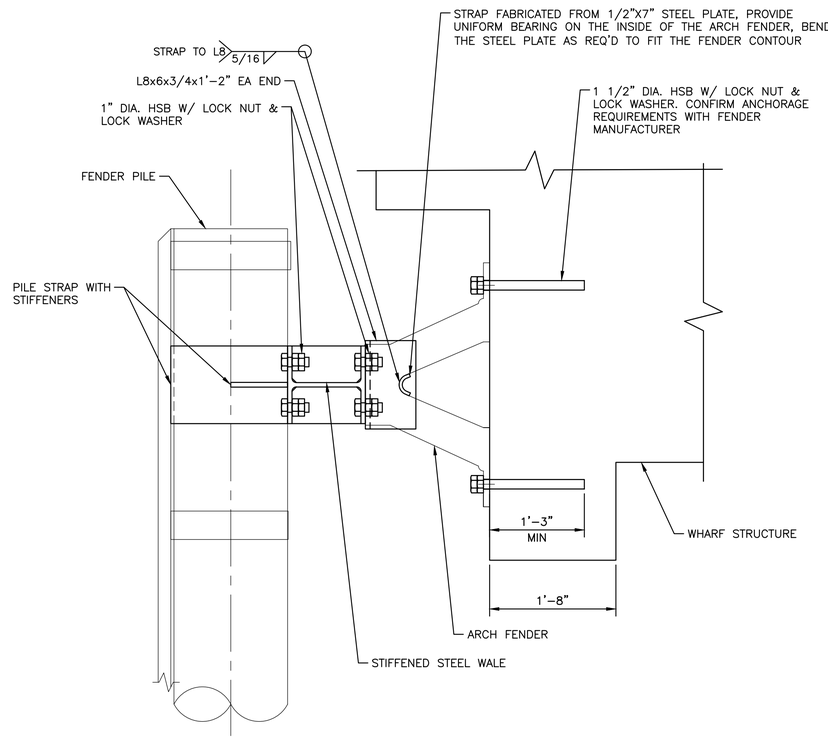


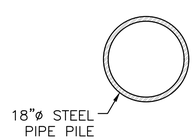
DETAIL – FENDER SYSTEM A S05
SCALE: 3/16" = 1'-0"



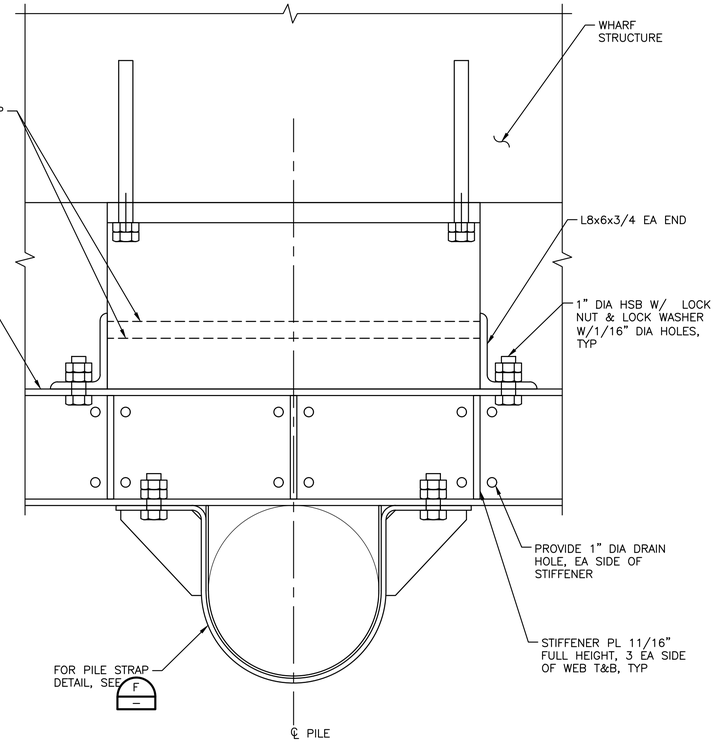
DETAIL – FENDER SYSTEM C
SCALE: 3/8" = 1'-0"



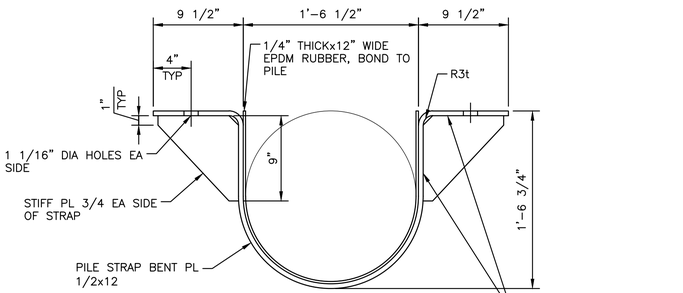
DETAIL – MOORING HARDWARE D
SCALE: 1" = 1'-0"



SECTION – FENDER PILE B
SCALE: 3/4" = 1'-0"



DETAIL – FENDER SYSTEM E
SCALE: 1 1/2" = 1'-0"



DETAIL – PILE STRAP F
SCALE: 1 1/2" = 1'-0"

3/16" = 1'-0" 8 0 8 16 scale feet
3/4" = 1'-0" 2 0 2 4 scale feet
3/8" = 1'-0" 4 0 4 8 scale feet
1" = 1'-0" 1 0 1 2 scale feet
1-1/2" = 1'-0" 1 0 1 2 scale feet

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BRIAN DEAN BEARD
STATE OF WASHINGTON
37460
REGISTERED PROFESSIONAL ENGINEER

WSP USA Inc.
217 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: AS SHOWN
DRAWN BY: JTH
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DATE: 22-Dec-23

REVISION NO. DATE.

PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
FENDER PILE DETAILS - SHEET 1

DRAWING NUMBER
S45
SHEET NUMBER 86 OF 130

POV PROJECT NO:
CP-0441

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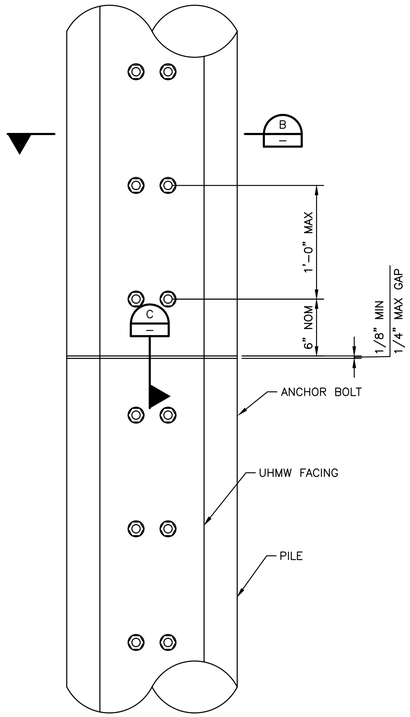
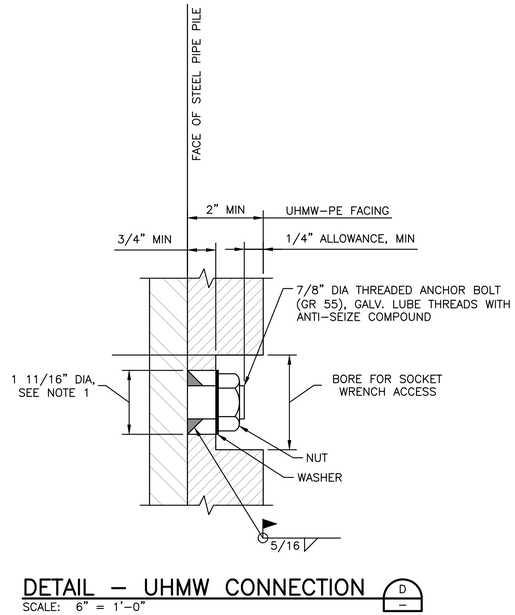
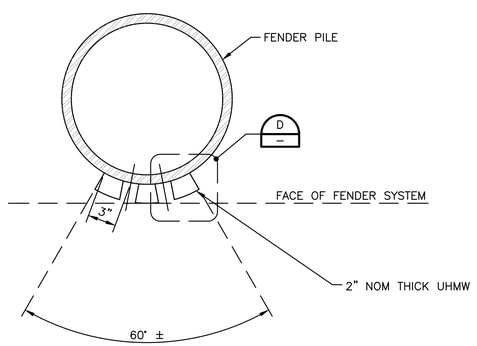


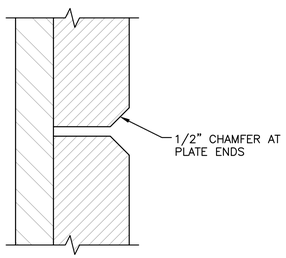
DETAIL – UHMW FACING
SCALE: 1 1/2" = 1'-0"



DETAIL – UHMW CONNECTION
SCALE: 6" = 1'-0"



DETAIL – PILE FACING
SCALE: 1 1/2" = 1'-0"



DETAIL – UHMW FACING
SCALE: 6" = 1'-0"

NOTES:
1. BORE HOLE IN UHMW IS BASED ON AN OVERSIZED HOLE FOR WELDED ANCHOR BOLT AS CALLED OUT ON PLAN. CONFIRM BEFORE FABRICATION OF UHMW PANEL FABRICATION

6" = 1'-0" scale 3 0 3 6 inches
1-1/2" = 1'-0" scale 1 0 1 2 feet

90% SUBMITTAL Dec 29, 2023 - 5:00pm

BRIAN DEAN BEARD
STATE OF WASHINGTON
157460
REGISTERED PROFESSIONAL ENGINEER

WSP USA Inc.
217 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-6100
FAX: 360-823-6101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: AS SHOWN
DRAWN BY: JTH
APPROVED BY: BDB
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PORT OF VANCOUVER USA
Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
FENDER PILE DETAILS - SHEET 2

DRAWING NUMBER
S46
SHEET NUMBER 87 OF 130
POV PROJECT NO: CP-0441

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WHARF 9 EXTENSION PILE SCHEDULE										
LOCATION	SIZE	COUNT	END DETAIL	APPROXIMATE MUDLINE ELEV. (FT)	APPROXIMATE TOP OF GRAVEL ELEV. (FT)	PILE CUT-OFF ELEV. (FT)	STEEL PIPE PILE TIP ELEV. (FT)	DRIVING ALLOWANCE ± (FT)	ESTIMATED LENGTH (FT)	PILE CAP CONNECTION TYPE
A1-A13	30"x1.00"	13	Open	-42.00	-42.00	24.86	-92.00	15.00	131.86	CONNECTION A
B1-B13	30"x1.00"	13	Open	-35.75	-35.75	25.01	-85.75	15.00	125.76	CONNECTION A
C1-C13	30"x1.00"	13	Closed	-29.25	-31.50	25.16	-66.50	15.00	106.66	CONNECTION A
D1-D13	30"x1.00"	13	Closed	-22.75	-30.77	25.31	-65.77	15.00	106.08	CONNECTION A
E1-E13	30"x1.00"	13	Closed	-16.25	-30.00	25.46	-65.00	15.00	105.46	CONNECTION A
F1-F13	30"x1.00"	13	Closed	-10.00	-29.30	25.61	-64.30	15.00	104.91	CONNECTION A
G1-G13	30"x1.00"	13	Closed	-3.25	-28.56	25.76	-63.56	15.00	104.32	CONNECTION A
H1-H13	30"x1.00"	13	Closed	3.25	-27.83	25.91	-62.83	15.00	103.74	CONNECTION A
J1-J13	30"x1.00"	13	Closed	10.00	-27.10	26.06	-62.10	15.00	103.16	CONNECTION A
K1-K13	30"x1.00"	13	Closed	10.00	-26.36	26.21	-61.36	15.00	102.57	CONNECTION A
L2-L12	30"x1.00"	11	Closed	10.00	-25.62	26.36	-60.62	15.00	101.98	CONNECTION A
L1,L13	30"x1.00"	2	Closed	10.00	-25.62	26.36	-60.62	15.00	101.98	CONNECTION B
M1-M13	30"x1.00"	13	Closed	10.00	-25.00	26.49	-60.00	15.00	101.49	CONNECTION B

WHARF 9 APRON PILE SCHEDULE										
LOCATION	SIZE	COUNT	END DETAIL	APPROXIMATE MUDLINE ELEV. (FT)	APPROXIMATE TOP OF GRAVEL ELEV. (FT)	PILE CUT-OFF ELEV. (FT)	STEEL PIPE PILE TIP ELEV. (FT)	DRIVING ALLOWANCE ± (FT)	ESTIMATED LENGTH (FT)	PILE CAP CONNECTION TYPE
A1-A19	30"x1.00"	19	Closed	2.50	-26.00	26.53	-61.00	15.00	102.53	CONNECTION A
B1-B19	30"x1.00"	19	Closed	7.50	-25.30	26.53	-60.30	15.00	101.83	CONNECTION A
C1-C19	30"x1.00"	19	Closed	10.00	-24.60	26.54	-59.60	15.00	101.14	CONNECTION A
D1-D19	30"x1.00"	19	Closed	10.00	-23.90	26.54	-58.90	15.00	100.44	CONNECTION A
E1-E19	30"x1.00"	19	Closed	10.00	-23.21	26.54	-58.21	15.00	99.75	CONNECTION A
F1-F19	30"x1.00"	19	Closed	10.00	-22.00	26.54	-57.00	15.00	98.54	CONNECTION B

WHARF 8 APRON PILE SCHEDULE										
LOCATION	SIZE	COUNT	END DETAIL	APPROXIMATE MUDLINE ELEV. (FT)	APPROXIMATE TOP OF GRAVEL ELEV. (FT)	PILE CUT-OFF ELEV. (FT)	STEEL PIPE PILE TIP ELEV. (FT)	DRIVING ALLOWANCE ± (FT)	ESTIMATED LENGTH (FT)	PILE CAP CONNECTION TYPE
A1-A14	30"x1.00"	14	Closed	2.50	-26.00	26.53	-61.00	15.00	102.53	CONNECTION A
B1-B14	30"x1.00"	14	Closed	7.50	-24.69	26.53	-59.69	15.00	101.22	CONNECTION A
C1-C14	30"x1.00"	14	Closed	10.00	-23.39	26.54	-58.39	15.00	99.93	CONNECTION A
D1-D14	30"x1.00"	14	Closed	10.00	-22.08	26.54	-57.08	15.00	98.62	CONNECTION A
E1-E14	30"x1.00"	14	Closed	10.00	-20.77	26.54	-55.77	15.00	97.31	CONNECTION B

MOORING DOLPHIN PILE SCHEDULE							
PILE TYPE	COUNT	PILE PLUG TYPE	CUT OFF EL (FT)	ESTIMATE TIP EL (FT)	MINIMUM YIELD STRESS (KSI)	REQUIRED CAPACITY (KIPS)	
						COMP	TENSION
24"x5/8"	8	SEE S52	26.35	-127	50	470	432

MOORING DOLPHIN CATWALK PILE SCHEDULE					
SIZE	COUNT	CUT OFF EL (FT)	ESTIMATE TIP EL (FT)	DRIVING ALLOWANCE ± (FT)	ESTIMATED LENGTH (FT)
24"x1.00"	4	28.60	-100.00	15.00	143.6

WHARF 9 EXTENSION FENDER PILE SCHEDULE			
PILE TYPE	COUNT	CUT OFF EL (FT)	ESTIMATE TIP EL (FT)
18"x5/8"	37	EL +28.75	EL -60.0

NOTES:

1. SEE GEOTECHNICAL REPORT FOR INFORMATION ON SOILS AND PILE INSTALLATION RECOMMENDATIONS.
2. REQUIRED CAPACITIES ARE AT ULTIMATE LOADS.

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BRIAN DEAN BOARD
STATE OF WASHINGTON
57460
REGISTERED
PROFESSIONAL ENGINEER

WSP USA Inc.
217 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-6100
FAX: 360-823-6101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: NOT TO SCALE

DRAWN BY: JTH

APPROVED BY: BDB

DATE: 22-Dec-23

REVISION NO. DATE.

PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
PILE SCHEDULES - SHEET 1

DRAWING NUMBER
S47

SHEET NUMBER 88 OF 130

POV PROJECT NO:
CP-0441

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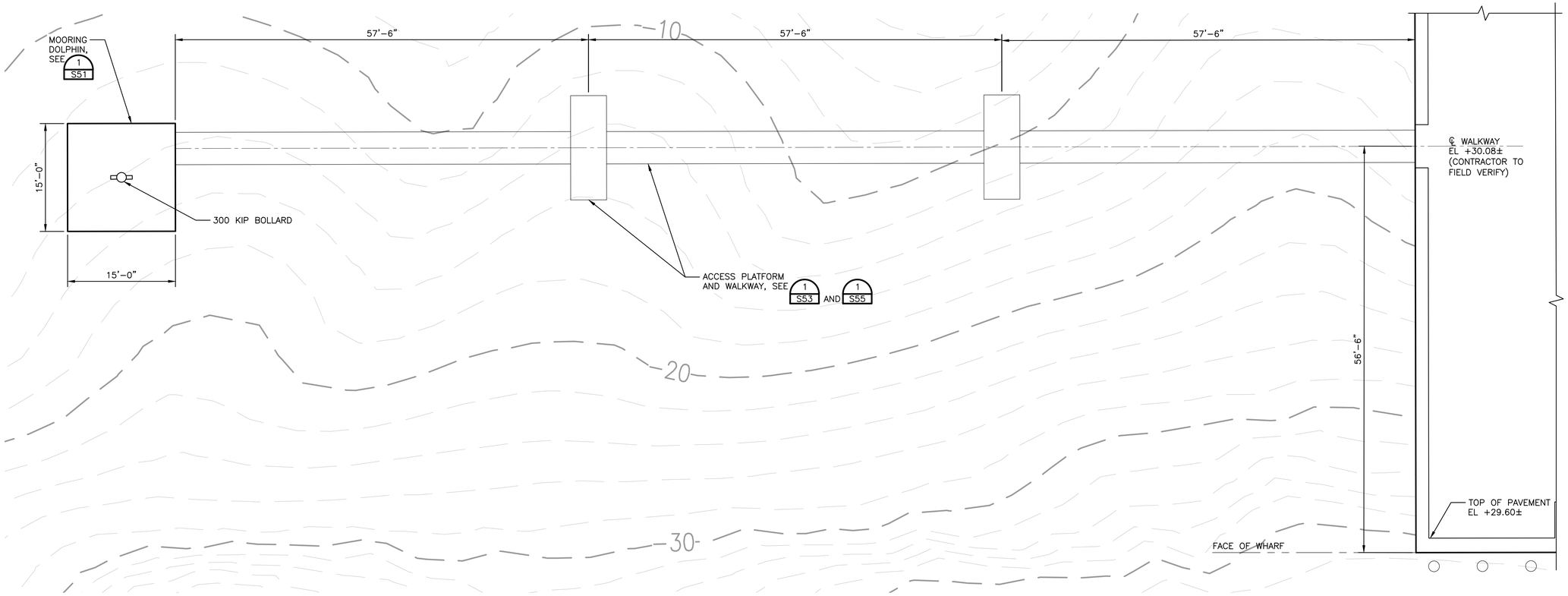
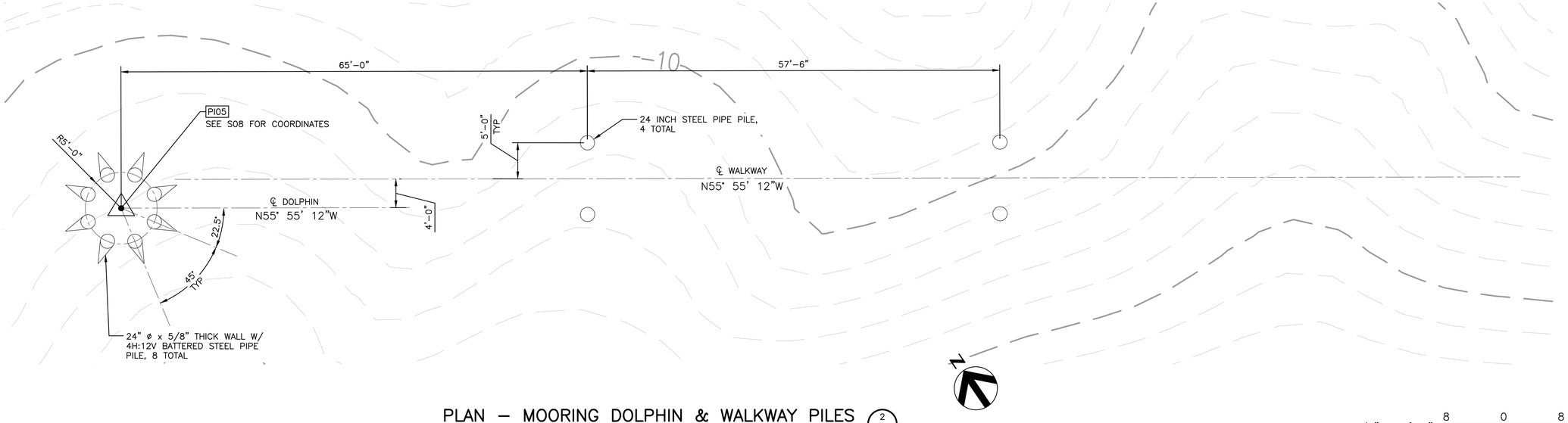


PLAN – MOORING DOLPHIN & WALKWAYS (1 S05)

SCALE: 1/8" = 1'–0"



PLAN – MOORING DOLPHIN & WALKWAY PILES (2 –)

SCALE: 1/8" = 1'–0"

1/8" = 1'–0" scale 8 0 8 16 feet

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BRIAN DEAN BOARD
STATE OF WASHINGTON
87460
REGISTERED
PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

A/E PROJECT NUMBER: A19.0198.02

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DRAWN BY: JTH
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DATE: 22-Dec-23

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PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
BERTH 9/10 MOORING DOLPHIN & WALKWAY PLAN

DRAWING NUMBER
S50
SHEET NUMBER 91 OF 130

POV PROJECT NO:
CP-0441

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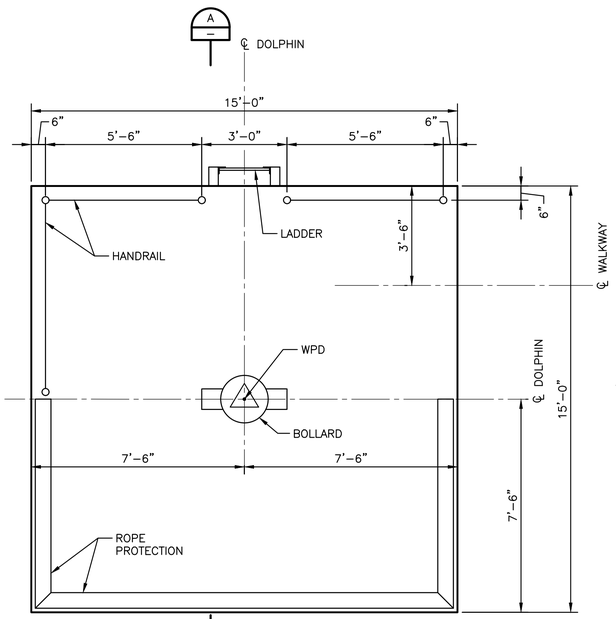
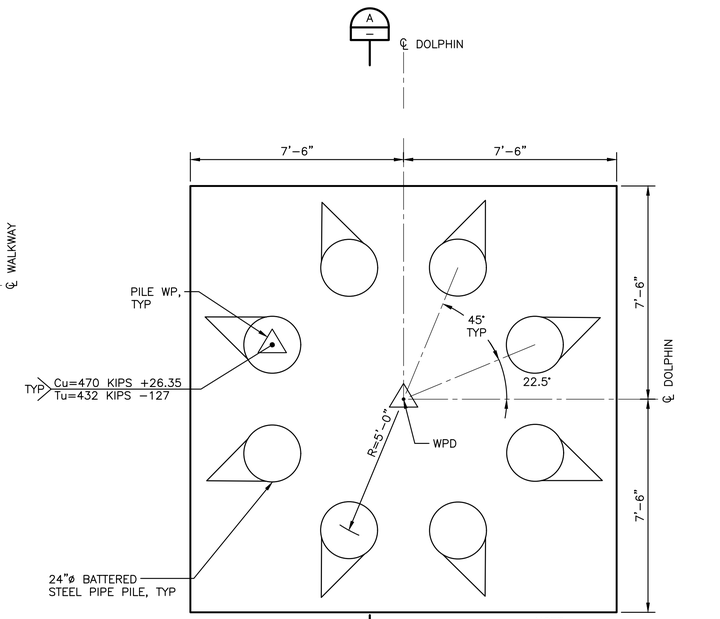
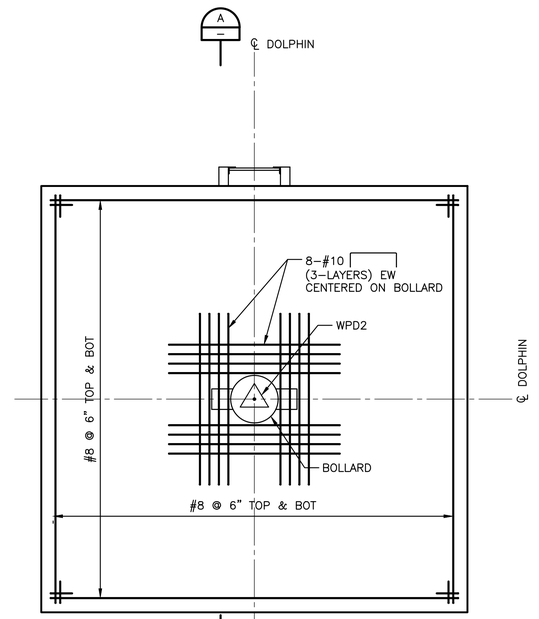


PLAN – MOORING DOLPHIN SURFACE FEATURES (1 / S50)
SCALE: 3/8"=1'–0"

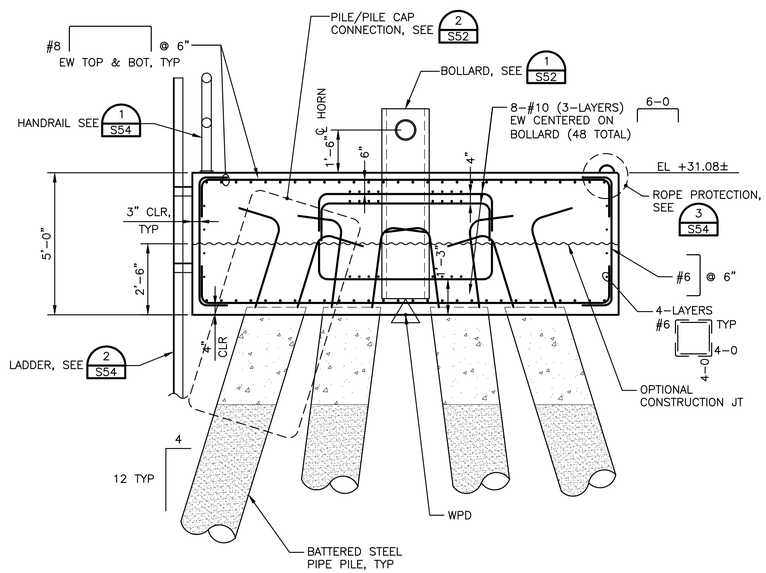


NOTE:
PILE LOCATION SHOWN ARE AT CUT–OFF ELEVATIONS.

PLAN – MOORING DOLPHIN PILE ARRANGEMENT (2 / –)
SCALE: 3/8"=1'–0"

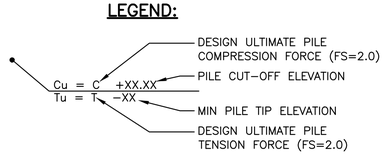


PLAN – MOORING DOLPHIN REINFORCEMENT (3 / –)
SCALE: 3/8"=1'–0"



SECTION – MOORING DOLPHIN (A / –)
SCALE: 3/8"=1'–0"

LEGEND:



3/8" = 1'–0"
4 0 4 8
scale feet

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BRIAN DEAN BEARD
STATE OF WASHINGTON
57460
REGISTERED
PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

A/E PROJECT NUMBER: A19.0198.02

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DATE: 22-Dec-23

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PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
BERTH 9/10 MOORING DOLPHIN & WALKWAY DETAILS - SHEET 1

DRAWING NUMBER
S51
SHEET NUMBER 92 OF 130

POV PROJECT NO:
CP-0441

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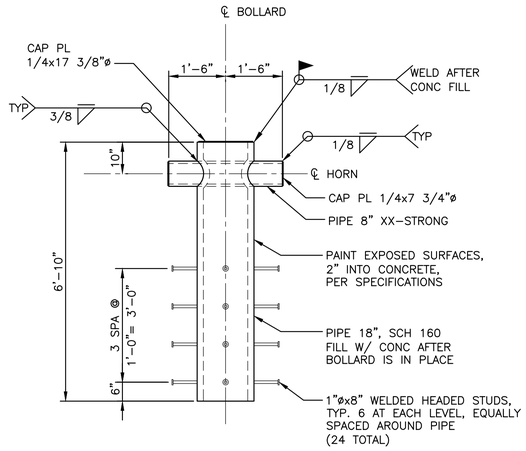
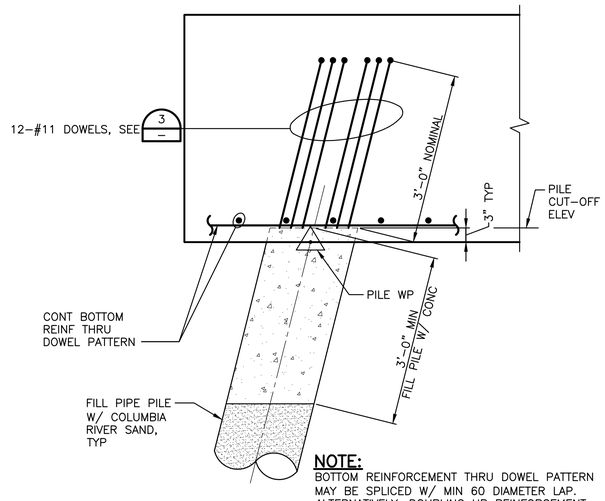
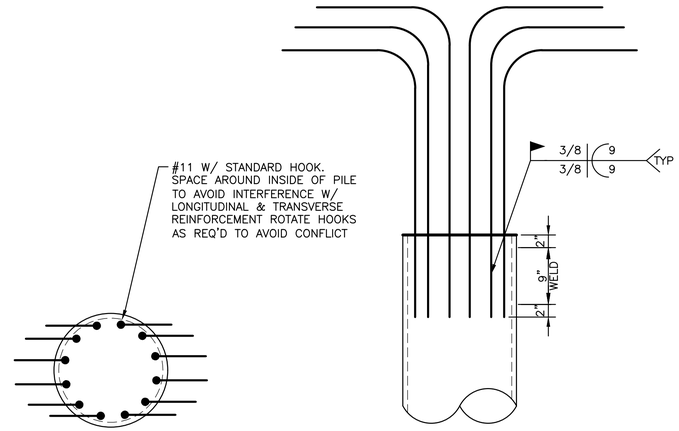


DETAIL – MOORING DOLPHIN BOLLARD 1/S51
SCALE: 1/2"=1'–0"



NOTE:
BOTTOM REINFORCEMENT THRU DOWEL PATTERN MAY BE SPLICED W/ MIN 60 DIAMETER LAP. ALTERNATIVELY, DOUBLING UP REINFORCEMENT AT BOTH SIDES OF THE STEEL PILE CONNECTION IS PERMITTED.

DETAIL – STEEL PILE CONNECTION 2/S51
SCALE: 3/4"=1'–0"



DETAIL – STEEL PILE CONNECTION 3/–
SCALE: 1"=1'–0"

1/2" = 1'–0" 2 0 2 4 scale feet
3/4" = 1'–0" 2 0 2 4 scale feet
1" = 1'–0" 1 0 1 2 scale feet

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BRIAN DEAN BARRY
STATE OF WASHINGTON
57460
REGISTERED
PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

A/E PROJECT NUMBER: A19.0198.02

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Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
BERTH 9/10 MOORING DOLPHIN & WALKWAY DETAILS - SHEET 2

DRAWING NUMBER
S52
SHEET NUMBER 93 OF 130

POV PROJECT NO:
CP-0441

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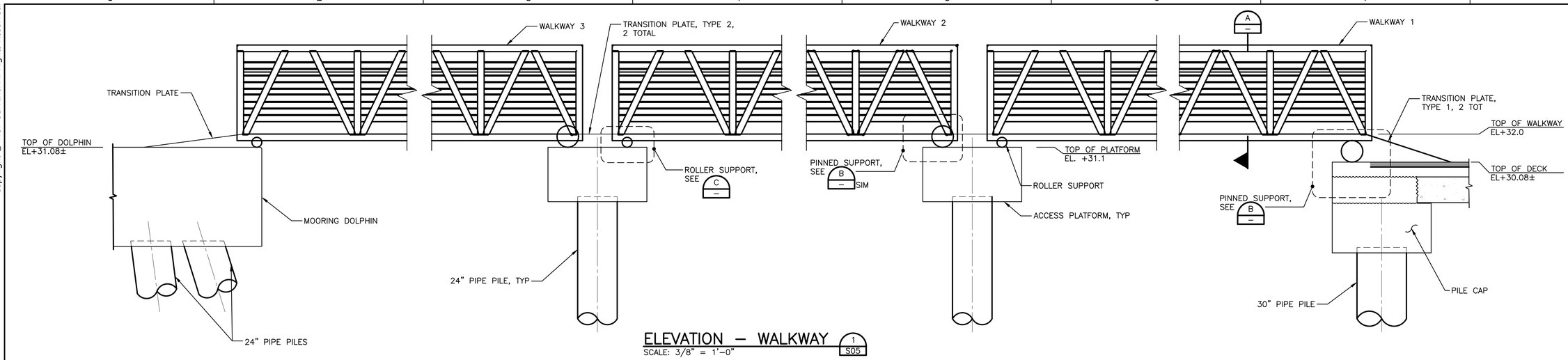
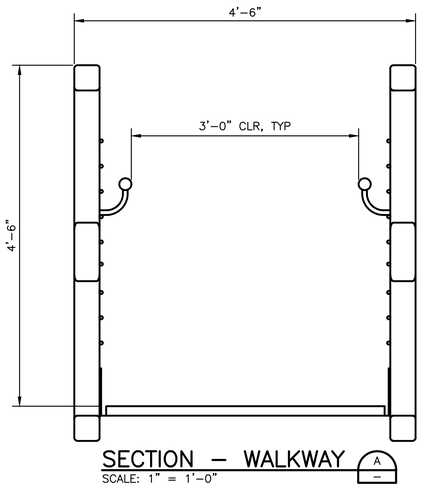
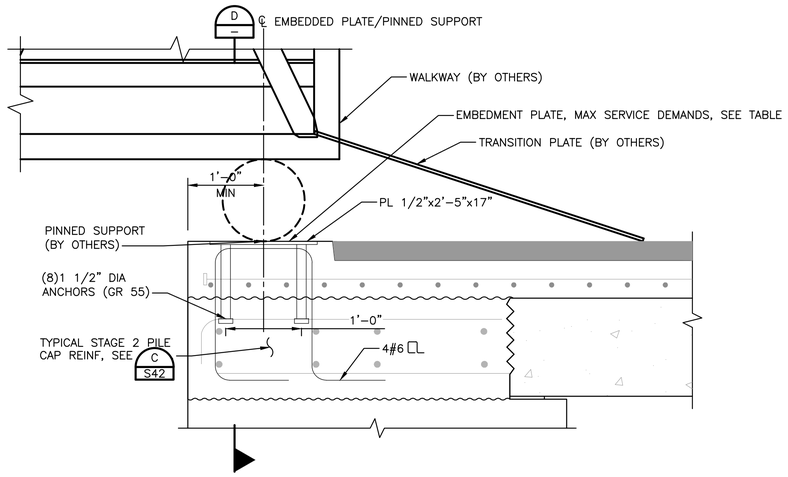


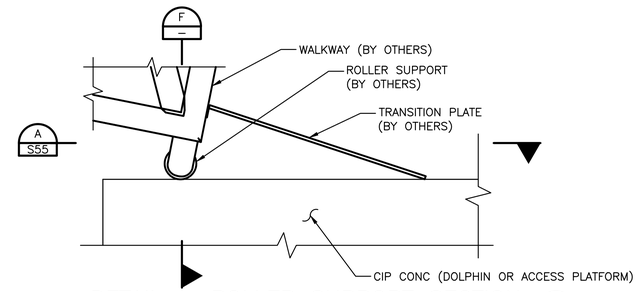
ELEVATION – WALKWAY (1 S05)
SCALE: 3/8" = 1'–0"



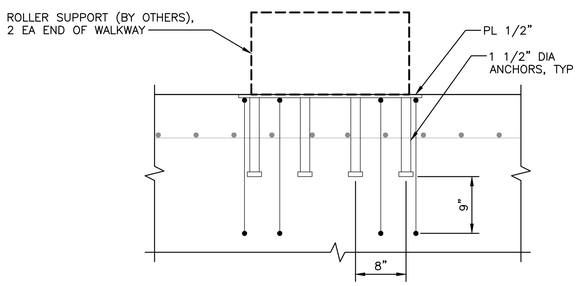
SECTION – WALKWAY (A –)
SCALE: 1" = 1'–0"



DETAIL – PINNED SUPPORT SECTION (B –)
SCALE: 1" = 1'–0"



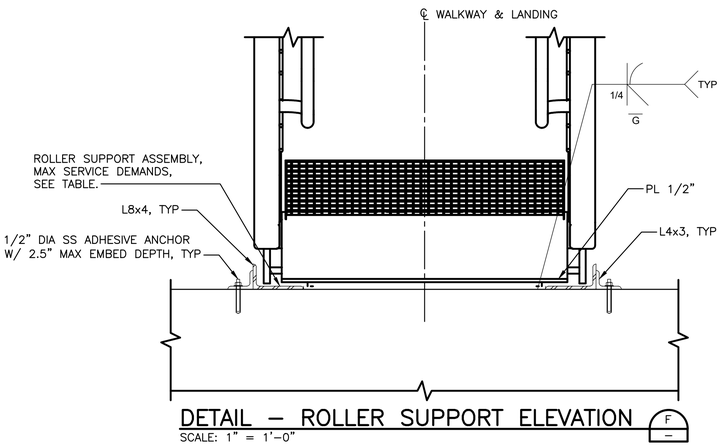
DETAIL – ROLLER SUPPORT SECTION (C –)
SCALE: 1" = 1'–0"



DETAIL – PINNED SUPPORT ELEVATION (D –)
SCALE: 1" = 1'–0"

		Walkway Connection Service Demands	
		EA End	EA Connection (2 AE END)
VERTICAL SEISMIC FORCE	Ev (kip)	4.8	2.4
HORIZONTAL SEISMIC FORCE	Eh (kip)	11.92	5.96
DEAD LOAD VERTICAL REACTION	DL (kip)	2.65	1.325
LIVE LOAD VERTICAL REACTION	LL (kip)	13.1	6.55
LATERAL (TRANS) WIND FORCE	WL_T (kip)	7.625	3.8125
LATERAL (LONG) WIND FORCE	WL_L (kip)	0.5	0.25

TABLE – EMBEDMENT DEMANDS (E –)
NTS



DETAIL – ROLLER SUPPORT ELEVATION (F –)
SCALE: 1" = 1'–0"

NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR STRUCTURAL STABILITY DURING CONSTRUCTION. THE STRUCTURE SHOWN ON THE DRAWING HAS BEEN DESIGNED FOR STABILITY IN THE FINAL CONFIGURATION ONLY.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR STRUCTURAL DESIGN AND DETAILING OF THE WALKWAY MOUNTING HARDWARE SHOWN ON THIS SHEET. SEE SPECIFICATION FOR PERFORMANCE REQUIREMENTS.
3. FRAMING SHALL BE 6061–T6 OR 6063–T6 ALUMINUM ALLOY CONFORMING TO ASTM B 209, B 221, AND B 303.
4. RAILING SHALL BE 6061–T6 ALUMINUM PIPE AND TUBING ASTM B 429. A 4" SPHERE SHALL NOT BE ABLE TO PASS THROUGH THE RAILING. RAILING SHALL EXTEND 1" BEYOND WALKWAY LENGTH.
5. DIRECT CONTACT BETWEEN ALUMINUM AND DISSIMILAR METALS IS NOT PERMITTED.
6. DECKING SHALL HAVE A MINIMUM OF 60% OPEN AREA FOR LIGHT PENETRATION.

3/8" = 1'–0" scale 4 0 4 8 feet

1" = 1'–0" scale 1 0 1 2 feet

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BRIAN DEAN BEARD
STATE OF WASHINGTON
37460
REGISTERED
PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: AS SHOWN
DRAWN BY: JTH
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DATE: 22-Dec-23

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PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
BERTH 9/10 MOORING DOLPHIN & WALKWAY DETAILS - SHEET 3

DRAWING NUMBER
S53
SHEET NUMBER 94 OF 130

POV PROJECT NO:
CP-0441

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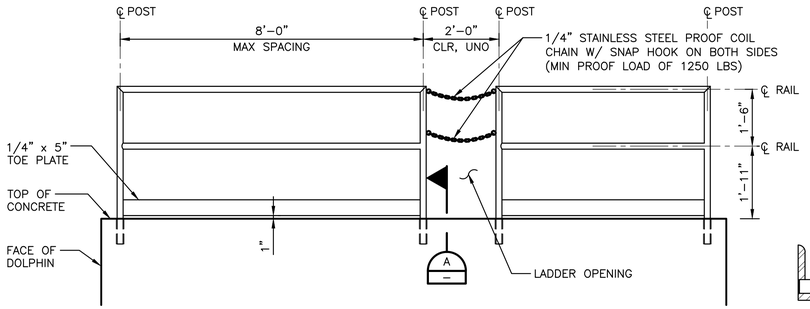
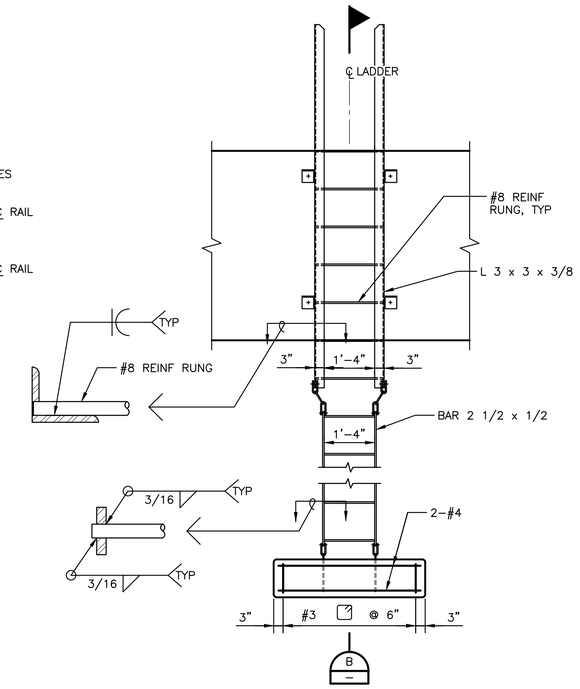
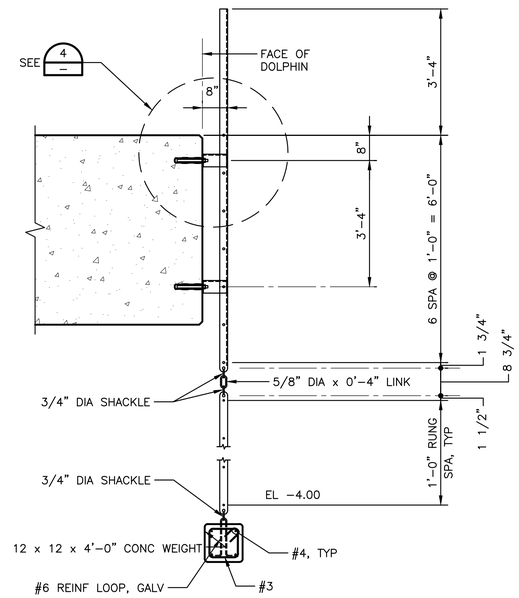


DETAIL – HANDRAIL
SCALE: 1/2"=1'–0"
1 S51



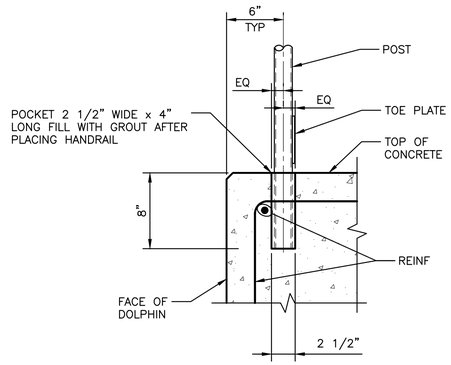
ELEVATION – LADDER
SCALE: 1/2"=1'–0"
2 S51



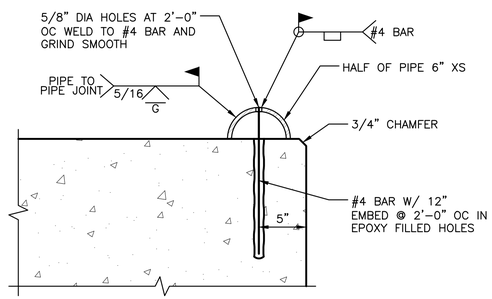
SECTION – LADDER
SCALE: 1/2"=1'–0"
B

NOTES:

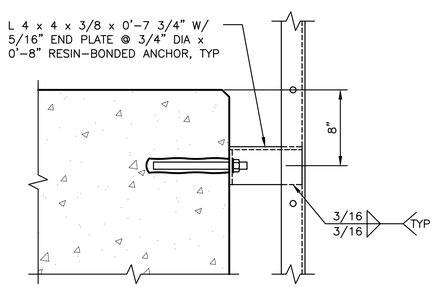
1. MATERIALS:
   A. HANDRAILS AND POSTS: ASTM A53, STEEL PIPE 1 1/2" XS.
   B. PLATES AND BARS: ASTM A36
2. USE ALL–WELDED CONSTRUCTION PER AWS D1.1.
3. GRIND SMOOTH ALL SHARP CORNERS AND ROUGH EDGES AFTER FABRICATION.



SECTION – HANDRAIL CONNECTION
SCALE: 1 1/2"=1'–0"
A



DETAIL – ROPE PROTECTION
SCALE: 1 1/2"=1'–0"
3 S51



DETAIL – LADDER CONNECTION
SCALE: 1 1/2"=1'–0"
4

1/2" = 1'–0" (2 0 2 4 scale feet)

1–1/2" = 1'–0" (1 0 1 2 scale feet)

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PROFESSIONAL ENGINEER
BRIAN DEAN BEARD
STATE OF WASHINGTON
57460
REGISTERED

WSP USA Inc.
217 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

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PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
BERTH 9/10 MOORING DOLPHIN & WALKWAY DETAILS - SHEET 4

DRAWING NUMBER
S54
SHEET NUMBER 95 OF 130
POV PROJECT NO:
CP-0441

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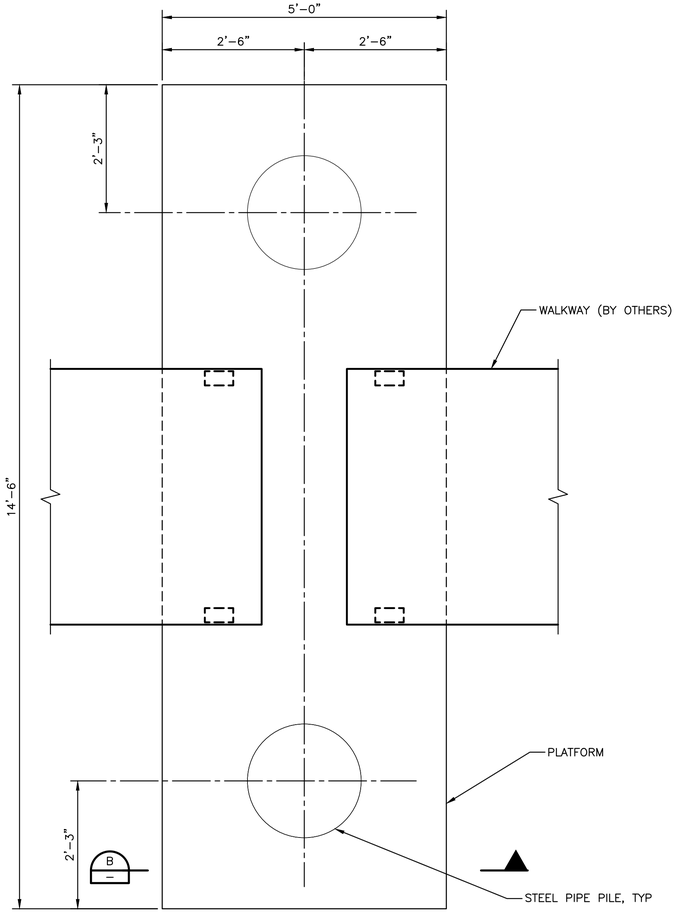
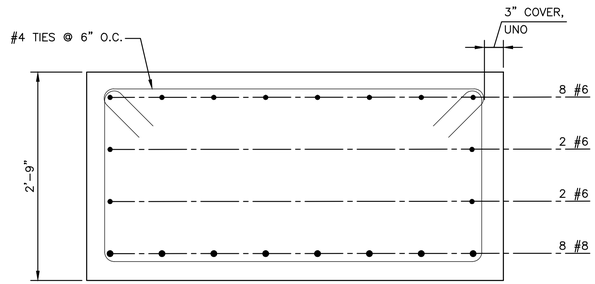


DETAIL – WALKWAY PLATFORM (A)
SCALE: 3/4" = 1'–0"



DETAIL – WALKWAY PLATFORM SECTION (B)
SCALE: 1" = 1'–0"

3/4" = 1'–0" scale 2 0 2 4 feet

1" = 1'–0" scale 1 0 1 2 feet

90% SUBMITTAL Dec 29, 2023 - 5:02pm

BRIAN DEAN BEARD
STATE OF WASHINGTON
57460
REGISTERED
PROFESSIONAL ENGINEER

WSP USA Inc.
217 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-6100
FAX: 360-823-6101

A/E PROJECT NUMBER: A19.0198.02

DRAWING SCALE: AS SHOWN
DRAWN BY: JTH
APPROVED BY: BDB
DATE: 22-Dec-23

REVISION NO. DATE.

PORT OF VANCOUVER USA

Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
WALKWAY SUPPORT DETAILS

DRAWING NUMBER
S55
SHEET NUMBER 96 OF 130
POV PROJECT NO: CP-0441

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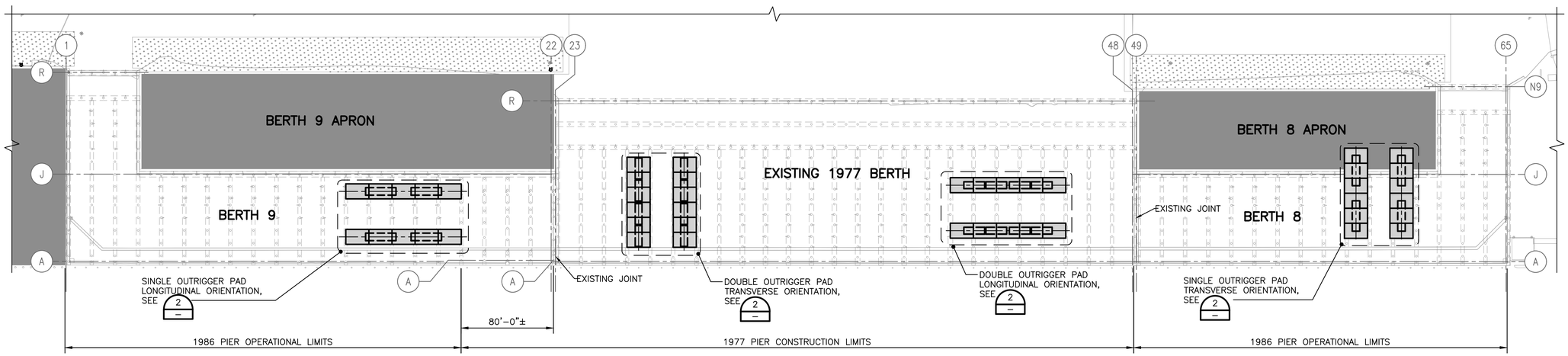
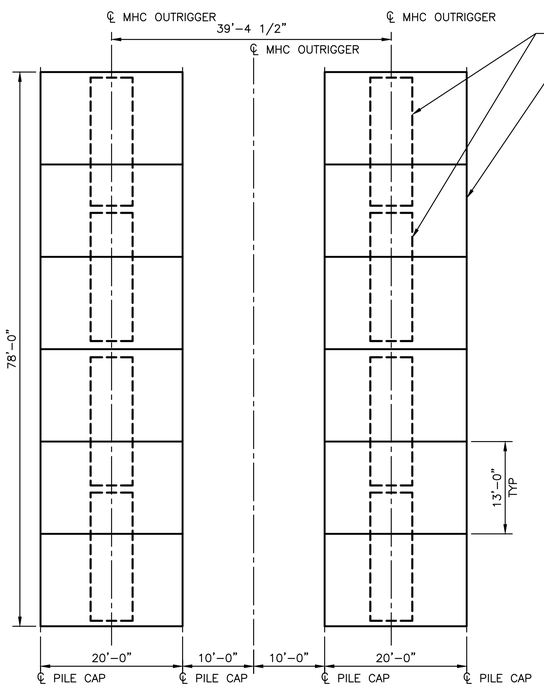


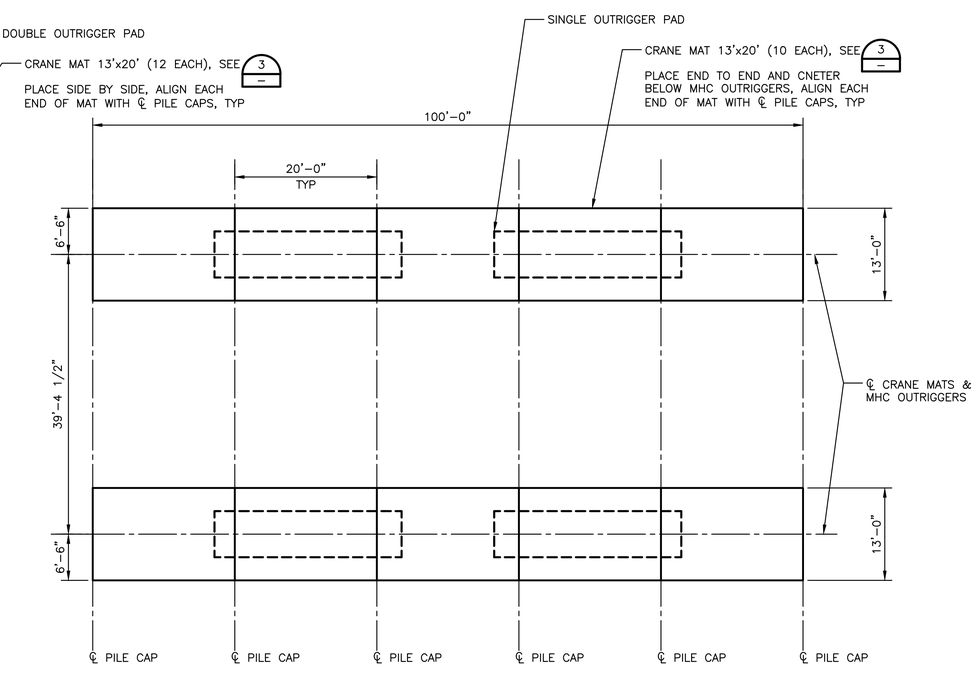
PLAN – CRANE OUTRIGGER LAYOUT AT EXISTING BERTHS 1

SCALE: 1"= 50'



TRANSVERSE ORIENTATION

NOTE: DOUBLE OUTRIGGER PAD SHOWN, SINGLE OUTRIGGER PAD SIMILAR

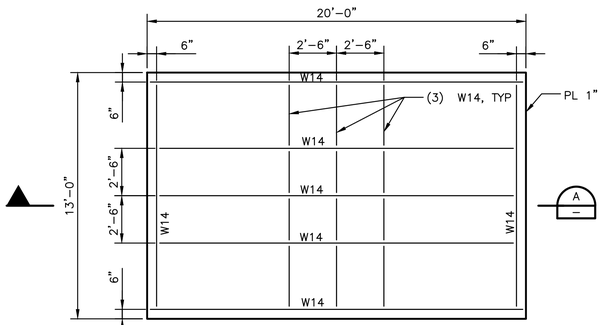


LONGITUDINAL ORIENTATION

NOTE: SINGLE OUTRIGGER PAD SHOWN, DOUBLE OUTRIGGER PAD SIMILAR

PLAN – CRANE MAT CONFIGURATION 2

SCALE: 3/32" = 1'–0"



PLAN – CRANE MAT FRAMING (12 EACH) 3

SCALE: 1/4" = 1'–0"

SECTION – CRANE MAT FRAMING A

SCALE: 1/4" = 1'–0"

1" = 50' scale 50 0 50 100 feet

3/32" = 1'–0" scale 16 0 16 32 feet

1/4" = 1'–0" scale 4 0 4 8 feet

90% SUBMITTAL Dec 29, 2023 - 5:03pm

BRIAN DEAN BEARD STATE OF WASHINGTON 57460 REGISTERED PROFESSIONAL ENGINEER

WSP USA Inc.
210 East 13th Street
Suite 300
Vancouver, WA 98660-3231
TEL: 360-823-4100
FAX: 360-823-4101

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DATE: 22-Dec-23

REVISION NO. DATE.

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Berth 8/9 Extension and Efficiency Improvements

Port of Vancouver USA
3103 N.W. LOWER RIVER ROAD
VANCOUVER, WA 98660-1027
(360) 693-3611 FAX (360) 735-1565

SHEET CONTENTS
MHC OPERATIONS AT EXISTING BERTHS

DRAWING NUMBER
S60
SHEET NUMBER 101 OF 130

POV PROJECT NO:
CP-0441

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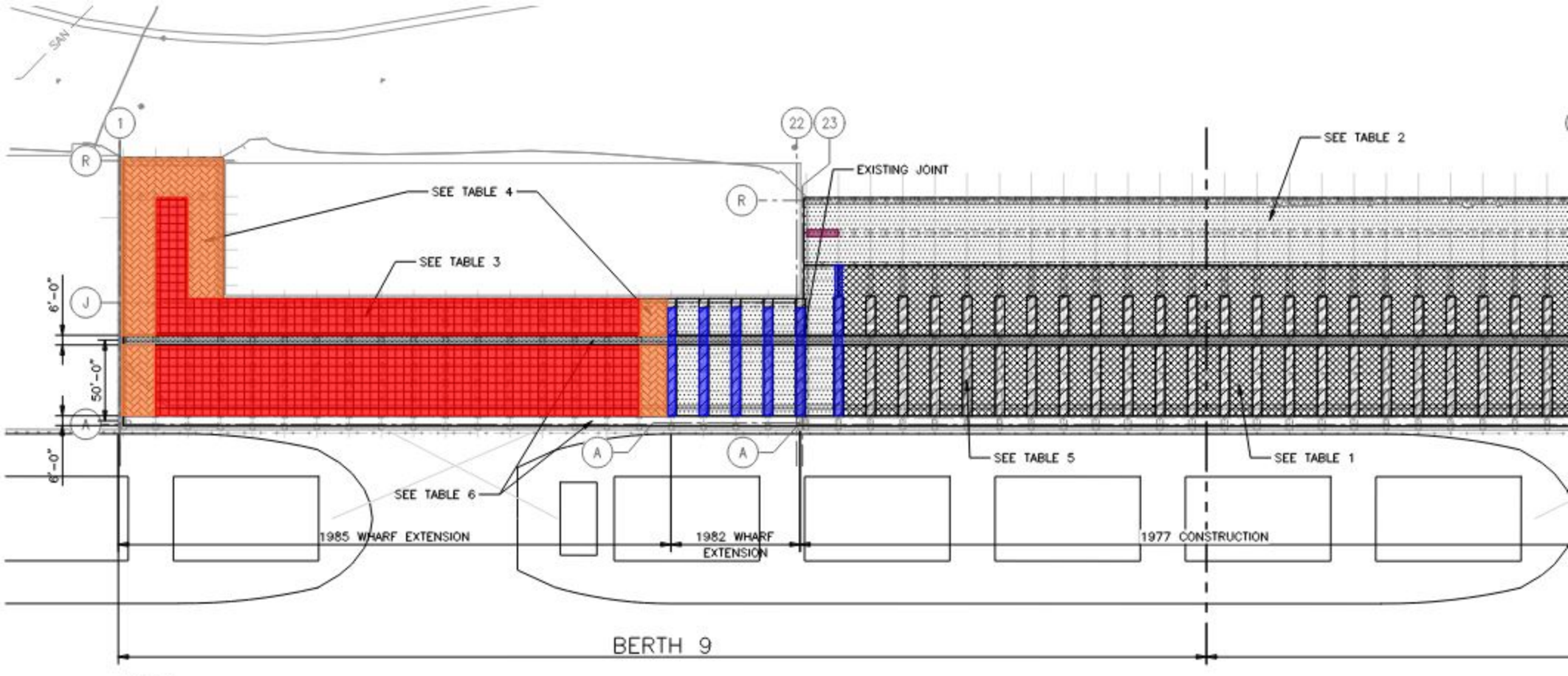

LEGEND

INSTALL TWO (2) LAYERS OF TYFO SCH-41 SYSTEM TO SOFFIT OF EACH CONCRETE DECK PANEL, 24" WIDE STRIPS @ MAX 32" O.C., W/ PRIMARY FIBERS ORIENTED PARALLEL TO DECK SPAN, TYP

INSTALL ONE (1) LAYER OF TYFO SCH-41 SYSTEM TO SOFFIT OF EACH CONCRETE DECK PANEL, 24" WIDE STRIPS @ MAX 32" O.C., W/ PRIMARY FIBERS ORIENTED PARALLEL TO DECK SPAN, TYP

INSTALL ONE (1) LAYER OF TYFO SCH-41 SYSTEM TO PILE CAP, 24" WIDE "U-WRAP" @ MAX 30" O.C., W/ PRIMARY FIBERS ORIENTED TRANSVERSE TO PILE CAP, TYP

INSTALL ONE (2) LAYERS OF TYFO SCH-41 SYSTEM TO PILE CAP, 24" WIDE "U-WRAP" @ MAX 28" O.C., W/ PRIMARY FIBERS ORIENTED TRANSVERSE TO PILE CAP, TYP

COLUMBIA RIVER

PLAN – EXISTING BERTHS 8/9 CONFIGURATION 1

SCALE: 1"= 50'