TECHNICAL MEMORANDUM

LANDAU ASSOCIATES
ENVIRONMENTAL | GEOTECHNICAL | NATURAL RESOURCES

TO: Andy Kallus, Washington State Department of Ecology

FROM: Larry Beard, P.E., Landau Associates

DATE: November 15, 2013

RE: EMERGENCY ACTION AMENDMENT
STORMWATER TRUNK LINE CLEANOUT AND REPAIR
NORTH MARINA AMERON/HULBERT SITE
EVERETT, WASHINGTON

This technical memorandum presents an amendment to trunk line cleanout and repair emergency cleanup action being conducted at the North Marina Ameron/Hulbert site (Site) to clean out and repair the stormwater trunk line located along the north Site boundary. A remedial investigation/feasibility study (RI/FS) is currently underway for the Site under Agreed Order No. 6677 between the Port of Everett (Port), Ameron International and the Hulberts [the potentially liable parties (PLPs)], and the Washington State Department of Ecology (Ecology).

The planned emergency action was presented in a September 19, 2012 technical memorandum (Landau Associates 2012) and was authorized by Ecology in a September 19, 2012 letter. The original plan called for slip-lining the trunk line with Cured-In-Place-Pipe (CIPP) after accumulated stormwater solids were removed from the existing corrugated metal pipe (CMP) trunk line. However, video inspection of the trunk line following cleaning revealed that the CMP had deteriorated to the point that CIPP could not be used to slip-line the trunk line. It was also discovered that one of the sections of trunk line is 18 inches in diameter instead of the 24-inch diameter previously reported, which significantly limited the capacity of a slip-lined repaired trunk line. Based on these considerations, and a concern that installing the trunk line along the current alignment could threaten the stability of the Bayside Marine building, the Port, in conjunction with Norton Industries, is now proposing to construct a new trunk line to the north of a portion of the existing trunk line using conventional trenching construction methods and to remove and replace a portion of the existing trunk line. As part of this proposal, the portion of the existing trunk line located between catch basin CB-111 and the point where the SD-8 lateral connects to the trunk line would be abandoned by injecting it with grout to ensure it does not collapse or function as a preferential pathway for contaminants and a new trunk line would be constructed to the north of this segment. The portion of the existing trunk line located between the SD-8 lateral connection and catch basin SD-5 would be removed and replaced as part of the final cleanup action for the Site (as part of cleanup area G-2). This technical memorandum addresses the portion of the trunk line located west of the

SD-8 lateral connection. Plans and specifications for replacement of the portion of the trunk line located east of the SD-8 lateral connection will be addressed in the Cleanup Action Plan for the Site.

The new trunk line alignment is shown on Drawing C1.1 (Attachment 1). The new trunk line will be constructed of 24-inch-diameter HDPE pipe and will be connected to all stormwater laterals currently served by the existing trunk line. The plans and specifications for the new trunk line construction are included as Attachment 1 to this technical memorandum.

Because the trunk line is being installed as part of a cleanup action under the Model Toxics Control Act (MTCA), local and state permits will not be required. However, the trunk line will be constructed in substantive compliance will all local and state requirements, which are summarized in Attachment 1, and include:

- EPA National Recommended Water Quality Criteria – Section 304 Clean Water Act
- EPA Water Quality Standards (National Toxics Rule) – 40 CFR 131
- Washington Water Pollution Control Act (Chapter 90.48 RCW) and the implementing regulations, Water Quality Standards for Surface Waters of the State of Washington (Chapter 173-201A WAC).
- Washington Solid Waste Handling Standards (Chapter 173-350 WAC)
- Washington Hazardous Waste Management Act and the implementing regulations, Dangerous Waste Regulations (Chapter 173-303 WAC), and the federal Resource Conservation and Recovery Act [RCRA; 40 CFR 261), to the extent that any dangerous wastes are discovered or generated during the cleanup action
- The federal Clean Water Act, with respect to in-water work associated with dredging or sediment capping
- Washington Clean Air Act (Chapter 70.94 WAC)
- Occupational Safety and Health Act (OSHA), 29 CFR Subpart 1910.120
- Washington Industrial Safety and Health Act (WISHA)
- City of Everett public works permit requirements, and POTW requirements regarding discharge to the City sanitary sewer system (if applicable)
- City of Everett Environmentally Sensitive Areas Regulations as contained in EMC 19.37 (as applicable).

Soil excavated during pipeline construction will be managed consistent with the Contamination Contingency Plan developed for the North Marina Redevelopment Site (Landau Associates 2008). Any soil that shows visual or olfactory evidence of potential contamination will be segregated for analytical testing and disposal at an appropriate waste disposal facility (if applicable). All excavated soil will be managed to prevent contact with precipitation or stormwater until either reused or transported offsite for disposal. Groundwater extracted to facilitate excavation and pipe installation will be managed consistent with local, state, and federal requirements.

REPORTING

The results of the emergency action will be reported in a summary technical memorandum that includes a description of the emergency action activities, the volume of solids removed and disposed from the pipeline, the condition of the trunk line including a copy of the post-cleanout video and post-repair video survey, and any changes to the planned emergency action that were implemented based on conditions observed during construction. The summary technical memorandum will be submitted to Ecology and, depending on where the Site is in the cleanup process, will be included as an appendix to the RI/FS report or possibly the cleanup action plan.

REFERENCES

Landau Associates. 2012. Technical Memoandum to Andy Kallus, Washington State Department of Ecology, re: *Emergency Action Cleanup Plan, Stormwater Trunk Line Cleanout and Repair, North Marina Ameron/Hulbert Site, Everett, Washington.* Larry Beard, Landau Associates. September 19.

Landau Associates. 2008. *Contamination Contingency Plan, North Marina Redevelopment Site, Everett, Washington*. Prepared for the Port of Everett. January 30.

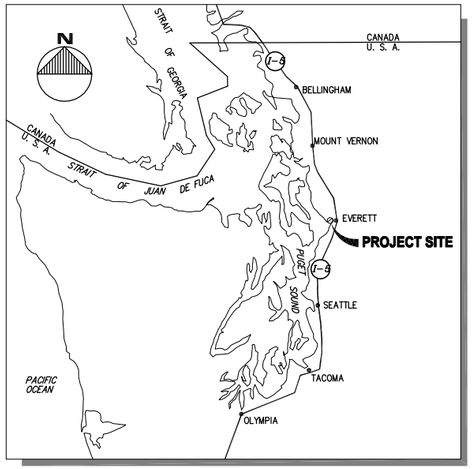
ATTACHMENTS

Attachment 1: Trunk Line Replacement Plans and Specifications

ATTACHMENT 1

Trunk Line Replacement Plans and Specifications

PORT OF EVERETT
AMERON-HULBERT MTCA CLEANUP SITE
EMERGENCY ACTION TRUNKLINE STORM DRAIN REPAIR



LOCATION MAP

NO SCALE

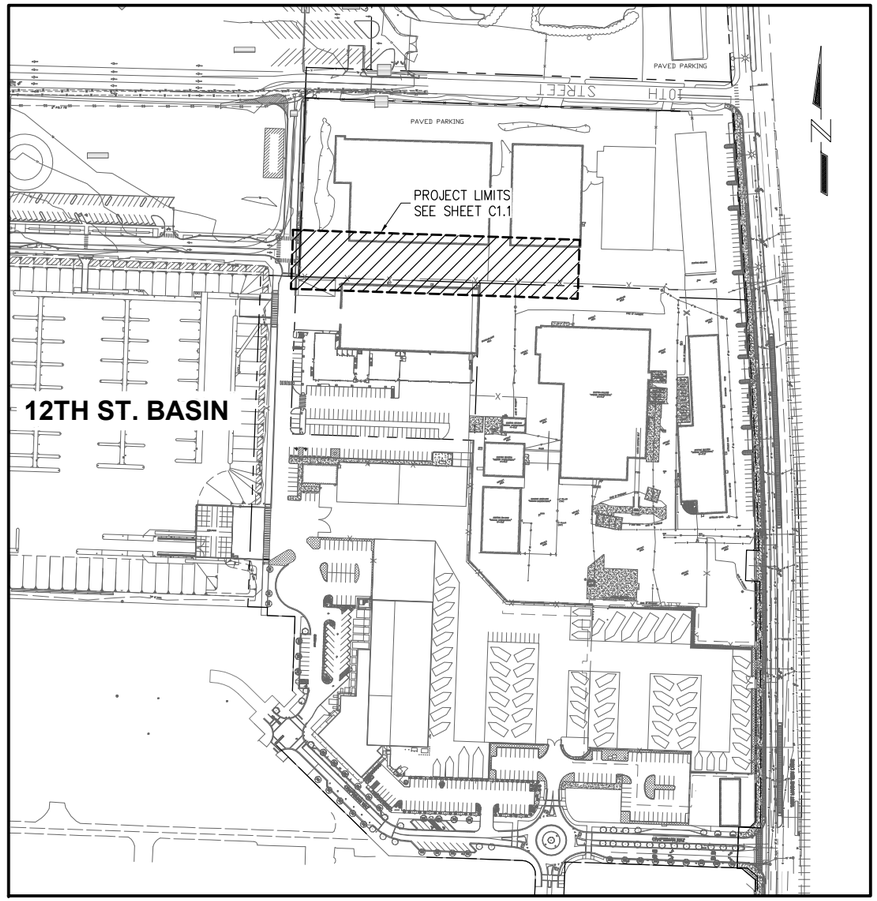
DATUM

ELEVATION DATUM FOR THIS PROJECT IS 0.0' MEAN LOWER LOW WATER (MLLW)

TIDAL DATA

BASED ON NOAA's PUBLICATION SHEET "WASHINGTON 944–7659", DATED 9/29/1988, THE RELATIONSHIP BETWEEN NGVD 1929 AND MLLW DATUMS FOR EVERETT, POSSESSION SOUND, FOR THE TIDAL EPOCH 1960–1978 IS AS FOLLOWS:

HIGHEST RECORDED TIDE: ESTIMATED (EHW)	+14.35'
MEAN HIGHER HIGH WATER (MHHW)	+11.11'
MEAN HIGH WATER (MHW)	+10.25'
NGVD 1929	+5.93'
MEAN LOW WATER (MLW)	+2.80'
MEAN LOWER LOW WATER (MLLW)	0.0'
LOWEST OBSERVED WATER LEVEL (6/02/77)	−3.60'
EXTREME LOW WATER (ELW)	−4.50'



PROJECT LOCATION

NO SCALE

PORT COMMISSIONERS

TOM STIGER
TROY McCLELLAND
GLEN BACHMAN

EXECUTIVE DIRECTOR

JOHN MOHR

CHIEF OF ECONOMIC DEVELOPMENT

TERRIE BATTUELLO

DIRECTOR OF PROPERTY DEVELOPMENT

STEVE HAGER

CHIEF OF ENGINEERING & PLANNING

JOHN KLEKOTKA, P.E., S.E.

ENVIRONMENTAL REMEDIATION ADMINISTRATOR

ERIK GERKING, L.G.

CIVIL/STRUCTURAL ENGINEER

PND ENGINEERS, INC.

NORTON INDUSTRIES PROPERTY OWNER

JIM SCHACK

IF THIS DRAWING IS NOT 22"x34" SCALE ACCORDINGLY.

ISSUED FOR CONSTRUCTION

Port of EVERETT
P.O. BOX 538
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PND ENGINEERS, INC.
1736 Fourth Avenue S. Suite A
Seattle, Washington 98134
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NO.	DATE	BY	REVISION
0	10/22/13	GRW	ISSUED FOR CONSTRUCTION

PROJECT ENGINEER: J. KEISER	SCALE: NOTED
DESIGNED BY: C. WIEST	DATE: OCTOBER 2013
DRAWN BY: G. DEAN	CHECKED BY: S. ROBERT
APPROVED BY:	

PORT OF EVERETT

AMERON – HULBERT SITE
TRUNKLINE STORM DRAIN REPAIR
TITLE SHEET

DWG. NO.	T1.1
CIP NO.	3-0-0-12-03
PROJECT NO.	PD-NM-2013-09
SHEET NO.	1 OF 8

K:\2013\134067.01 – Port of Everett – Ameron Storm Drain Replacement\Issued for Construction\104067.06-T1.0.dwg

SHEET INDEX			
DWG. NO.	REV. NO	SHEET NO.	SHEET NAME
TITLE			
T1.0	0	1	TITLE SHEET
GENERAL			
G1.1	0	2	SHEET INDEX
G1.2	0	3	GENERAL SYMBOLS
G1.3	0	4	GENERAL ABBREVIATIONS
DEMOLITION & EROSION CONTROL			
D1.1	0	5	EXISTING CONDITIONS
D1.2	0	6	DEMOLITION PLAN
CIVIL			
C1.1	0	7	DRAINAGE REPAIR PLAN
C1.2	0	8	DRAINAGE PROFILE

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AMERON – HULBERT SITE
TRUNKLINE STORM DRAIN REPAIR
SHEET INDEX

DWG. NO. **G1.1**

CIP NO. 3-0-0-12-03

PROJECT NO. PD-NM-2013-09

SHEET NO. 2 OF 8

CIVIL SYMBOLS

SURVEY

SYMBOL THEOR./EXIST.	SYMBOL FOUND/PROP.	DESCRIPTION (ABBR)
		ANGLE POINT
		BENCH MARK
		REBAR/IRON PIPE
		MONUMENT (IN CASE)
		MONUMENT (SURFACE)
?_____	?_____	TAX LOT / PARCEL NUMBER
		OWNERSHIP TIE
× ELEV	× ELEV	SPOT ELEVATION
	SEE SHEET X.XX	MATCHLINE
		SECTION DATA:
		SECTION CENTER
		SECTION CORNER
		QUARTER CORNER
		SIXTEENTH CORNER
		CLOSING CORNER
MC	MC	MEANDER CORNER
		NORTH

SH–DATUM

USGS 1982

SCALE IN FEET

20 0 20 40

UTILITY

SYMBOL EXIST.	SYMBOL PROP.	DESCRIPTION (ABBR) PROP.
		CAP/PLUG
		GUARD POST
		REDUCER
		THRUST BLOCK
		WATER METER
		FIRE HYDRANT
		AIR RELIEF
		BLOW–OFF
		GATE VALVE (X=UTILITY)
		P.R.V.
		PAD MOUNTED TRANSFORMER
TY?	TY?	UTILITY VAULT
		TRANSMISSION TOWER
		UTILITY POLE
		UTILITY POLE W/RISER
		UTILITY POLE ANCHOR
		UTILITY POLE SIDEWALK ANCHOR
		STREET LIGHT ASSEMBLY
TEL	TEL	TELEPHONE RISER
		SAN. SEWER CLEAN OUT
		MANHOLE TYPE 1
		MANHOLE TYPE 2
		CATCHBASIN
		CATCHBASIN TYPE 2
		STORM DRAIN INLET
		STORM DRAIN CULVERT
—CW—	—CW—	COLD WATER LINE
—F—	—F—	FIRE LINE
—FM—	—FM—	FORCE MAIN
—SS—	—SS—	SANITARY SEWER LINE
—SD—	—SD—	STORM DRAIN LINE
CO		SANITARY SEWER CLEANOUT
		FIRE DEPARTMENT CONNECTION
DS		DOWNSPOUT

SYMBOL PROP.	DESCRIPTION (ABBR) PROP.
FIRE	
—F4—F4—	FIRE LINE
—F6—F6—	FIRE LINE
	FIRE DEPARTMENT CONNECTION
H	FIRE HOSE CONNECTION
X	FIRE EXTINGUISHER & LIFE RING CABINETS
WATER	
—W—W—	WATER MAIN
W	WATER PEDESTAL
	VALVE
	FIRE HYDRANT
SEWER	
—S—S—	SEWER LINE
	DUMP STATION
	SEWER PUMP
	SEWER HOSE RACK
	SEWER CONNECTION
SEWER	
—SD—SD—	STORM DRAIN
	EXISTING CATCH BASIN
	PROPOSED CATCH BASIN
OTHER	
	UTILITY STATION(CONSISTS OF ONE WATER PEDESTAL & ONE ELECTRICAL PEDESTAL)
E	ELECTRICAL PEDESTAL

SURFACE & LANDSCAPING

SYMBOL EXIST.	SYMBOL PROP.	DESCRIPTION
		EMBANKMENT NA
		RIP RAP NA
		HEDGE LD–HEDGE
		SHRUB LD–SHRUB
		TREE (Conifer) LD–TR–C(L,M OR S)
		TREE (Deciduous) LD–TR–D(L,M OR S)
		YARD OR STREET LIGHT LT–YDLIT
NO		SOIL BORING SF–BORNG
		SEE BORING PLAN

CHANNELIZATION

SYMBOL EXIST.	SYMBOL PROP.	DESCRIPTION
		DISABLED SYMBOL SP–HANDY
STOP	STOP	STOP LEGEND SP–STOP

STRUCTURAL SYMBOLS

GENERAL

- GRID LINE MARKER
- GRID LINE
- SOIL
- GRAVEL
- OPENING IN FLOOR OR WALL
- SEE SHEET X.XX — MATCHLINE
- REFERENCE LINE, EXISTING OR ARCHITECTURAL ELEMENTS
- A — DIMENSION PER ARCHITECT
- M/E — DIMENSION PER MECHANICAL OR ELECTRICAL
- EL 43'–6" T — TOP OF STRUCTURE ELEVATION (TOP OF ELEMENT INDICATED)
- [–14½"] — ELEVATION POINT (TOP OF ELEMENT INDICATED)
- WP — WORKPOINT
- DIRECTION OF SPAN
- LIMIT OF SPAN
- SLOPE
- SURFACE – SLOPE UP
- SURFACE – SLOPE DOWN
- SURFACE – SLOPE TWO WAYS
- SURFACE – STEPPED
- SURFACE – STEPPED & SLOPED
- —X— FENCE
- PROJECT LIMITS

CONCRETE

- T (440'–0") — FOOTING TYPE AND BOTTOM ELEVATION
- STUD — CONCRETE OVER STEEL FLOOR DECK–LONGITUDINAL
- WWF — CONCRETE OVER STEEL FLOOR DECK–TRANSVERSE
- CONCRETE CURB/ PARTIAL HEIGHT WALL
- CONCRETE WALL
- CONCRETE WALL BELOW THIS LEVEL
- EDGE OF CONCRETE
- CONCRETE COLUMN
- CONCRETE COLUMN BELOW THIS LEVEL
- CHANGE OF SLAB THICKNESS
- RAISED SLAB
- PC–1 — PILE CAP IDENTIFICATION

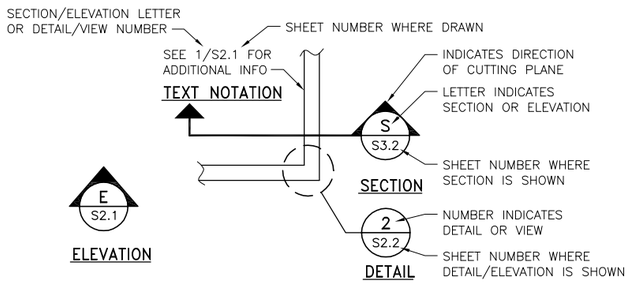
TITLES

PLAN TITLE
SCALE: 1/8" = 1'–0"

A / S1.1 — SECTION/ELEVATION TITLE
SCALE: 3/4" = 1'–0"

1 / S2.1 — DETAIL/VIEW TITLE
SCALE: 3/4" = 1'–0"

SECTION/ELEVATION/DETAIL/VIEW LABELS



SECTION/ELEVATION/DETAIL/VIEW IDENTIFIERS

TEXT

Ø	PHASE, DIAMETER
&	AND
'	FEET, MINUTES
"	INCHES, SECONDS
°	DEGREE
@	AT
℄	CENTERLINE
℞	PLATE
#	NUMBER
%	PERCENT

STEEL

- BEAM/GIRDER
- STEEL IN CROSS SECTION

FASTENERS

PLAN	SECTION	
+		CONCRETE ANCHOR BOLT
+		DRILLED IN CONCRETE ANCHOR
+		BOLT
+		NAIL

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APPROVED BY:	

PORT OF EVERETT

AMERON – HULBERT SITE
TRUNKLINE STORM DRAIN REPAIR
GENERAL SYMBOLS

DWG. NO. **G1.2**
CIP NO. 3–0–0–12–03
PROJECT NO. PD–NM–2013–09
SHEET NO. 3 OF 8

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ABBREVIATIONS

AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS
AB	ANCHOR BOLT
ABAND	ABANDONED
ABUT	ABUTMENT
AC	ASPHALT CONCRETE
ACI	AMERICAN CONCRETE INSTITUTE
ADDL	ADDITIONAL
ADJ	ADJUST, ADJACENT
AFF	ABOVE FINISHED FLOOR
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
AISI	AMERICAN IRON AND STEEL INSTITUTE
ALIGN	ALIGNMENT
ALUM	ALUMINUM
ALT	ALTERNATE
ANCH	ANCHOR
AP	ANGLE POINT
APA	AMERICAN PLYWOOD ASSOCIATION
APPROX	APPROXIMATE
APWA	AMERICAN PUBLIC WORKS ASSOCIATION
AR	ANCHOR ROD
ARCH	ARCHITECT, ARCHITECTURAL
ARV	AIR RELIEF VALVE
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS
ASPH	ASPHALT
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
ASSY	ASSEMBLY
AVE	AVENUE
AVG	AVERAGE
AWS	AMERICAN WELDING SOCIETY
B/	BOTTOM OF
BAL	BALANCE
BF	BRACED FRAME
BGS	BENEATH GROUND SURFACE
BLDG	BUILDING
BLKG	BLOCK, BLOCKING
BLVD	BOULEVARD
BOC	BACK OF CURB
BOW	BACK OF WALK
BOL	BOLLARD
BM	BEAM, BENCH MARK
BNSF	BURLINGTON NORTHERN SANTA FE
BSMT	BASEMENT
BOT	BOTTOM
BRDG	BRIDGE
BRG	BEARING
BRK	BREAK
BTWN	BETWEEN
BU	BUILT-UP
C	CAMBER, CHANNEL
CAL	CALIPER
CANT	CANTILEVER
CAP	CAPACITY
CB	CATCH BASIN
CB1	CATCH BASIN TYPE 1
CB2	CATCH BASIN TYPE 2
CC	CENTER-TO-CENTER
CDF	CONTROL DENSITY FILL
CF	CUBIC FEET, COLD-FORMED
CG	CURB & GUTTER
COG	CENTER OF GRAVITY
CI	CAST IRON
CICL	CAST IRON CONCRETE LINED
CIP	CAST IN PLACE
CJ	CONTROL JOINT, CONSTRUCTION JOINT
CJP, CP	COMPLETE JOINT PENETRATION
CLF	CHAIN LINK FENCE
CLG	CEILING
CLR	CLEAR(ANCE)
CMP	CORRUGATED METAL PIPE
CMU	CONC MASONRY UNIT
CNTY	COUNTY
CO	CLEAN OUT
COE	CITY OF EVERETT
COL	COLUMN
COM	COMMON
CONC	CONCRETE
CONN	CONNECT, CONNECTION
CONST	CONSTRUCT, CONSTRUCTION
CONT	CONTINUED, CONTINOUS
CONTR	CONTRACTOR
COORD	COORDINATE
CP	COMPLETE PENETRATION
CRSI	CONCRETE REINFORCED STEEL INSTITUTE
CSBC	CRUSHED SURFACING BASE COURSE
CSTC	CRUSHED SURFACING TOP COURSE
CTR	CENTER, CENTERED
CU	CUBIC
CULV	CULVERT
CY	CUBIC YARD
CYL	CYLINDER

d	PENNYWEIGHT (NAILS)
DB	DIVIDER BEAM OR DRAIN BASIN
DBA	DEFORMED BAR ANCHOR
DBL	DOUBLE
DDCV	DOUBLE DETECTOR CHECK VAVLE
DEMO	DEMOLISH, DEMOLITION
DEG	DEGREE
DET	DETAIL
DF	DOUGLAS FIR
DFL	DOUGLAS FIR-LARCH
DI	DUCTILE IRON
DIP	DUCTILE IRON PIPE
DIA	DIAMETER
DIAG	DIAGONAL
DIAPH	DIAPHRAGM
DICA	DRILLED-IN CONCRETE ANCHOR
DIM	DIMENSION
DL	DEAD LOAD
DN	DOWN
DO	DITTO
DP	DEEP
DS	DOWN SPOUT
D/W	DRIVEWAY
DWG(S)	DRAWING(S)
DWL	DOWEL
E	EAST
EA	EACH
EE	EACH END
EF	EACH FACE
EHW	EXTREME HIGH WATER
EJ	EXPANSION JOINT
EL, ELEV	ELEVATION, ELEVATOR
ELB	ELBOW
ELEC	ELECTRICAL
EMB	EMBANKMENT
EMBED	EMBEDMENT
ENGR	ENGINEER
EOA	EDGE OF ASPHALT
EOC	EDGE OF CONCRETE
EOD	EDGE OF DIRT
EOG	EDGE OF GRAVEL
EP	EDGE OF PAVEMENT
EQ	EQUAL, EARTHQUAKE
EQUIP	EQUIPMENT
ES	EACH SIDE
ETC	ETCETERA
EW	EACH WAY
EXC	EXCAVATION
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR, EXTENSION, EXTRUDED
EVT	EVERETT
E-W	EAST-WEST
FD	FLOOR DRAIN
FDN	FOUNDATION
FEMA	FEDERAL EMERGENCY MANAGEMENT AGENCY
FF	FAR FACE, FINISH FLOOR
FL	FLANGE
FG	FINISH GRADE
FH	FIRE HYDRANT
FIG	FIGURE
FIN	FINISH, FINISHED
FLG	FLANGE
FLR	FLOOR
FM	FORCE MAIN
FNC	FENCE
FOC	FACE OF CURB
FOW	FACE OF WALL
FS	FAR SIDE
FT	FEET/FOOT
FTG	FOOTING
G	GAS LINE
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GB	GRADE BREAK
GE	GRATE ELEVATION
GEN	GENERAL
GM	GAS METER
GL, GLULAM	GLUED LAMINATED MEMBER
GR	GUARD RAIL
GRD	GRADE
GRND	GROUND
GV	GAS VALVE
GWB	GYPSUM WALL BOARD

H	HEIGHT
HDCP	HANDICAP
HDG	HOT DIPPED GALV
HDPE	HIGH DENSITY POLYETHYLENE
HF	HEM-FIR
HGR	HANGER
HK	HOOK
HMA	HOT MIX ASPHALT
HORIZ	HORIZONTAL
HP	HIGH POINT
HSB	HIGH STRENGTH BOLT
HSE	HOUSE
HSS	HOLLOW STRUCTURAL SECTION
HT	HEIGHT
IBC	INTERNATIONAL BUILDING CODE
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IF	INSIDE FACE
IJ	ISOLATION JOINT
IN	INCH/INCHES
INCL	INCLUDE
INFO	INFORMATION
INST	INSTALL
INSUL	INSULATION
INT	INTERIOR, INTERMEDIATE
INV	INVERT
IP	IRON PIPE
JB	JUNCTION BOX
JST	JOIST
JT	JOINT
K	KIP (1,000 LB)
KSF	KIPS PER SQUARE FOOT
KSI	KIPS PER SQUARE INCH
L	LENGTH, ANGLE
LB	FOOT POUNDS
LBS	POUNDS
LEV	LEVEL
LF	LINEAL FOOT/FEET
LL	LIVE LOAD
LLBB	LONG LEGS BACK TO BACK
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LOC	LOCATION, LOCATE
LONGIT	LONGITUDINAL
LP	LOW POINT
LSH	LONG SLOTTED HOLE
LSL	LAMINATED STRAND LUMBER
LT	LEFT
LUMIN	LUMINAIRE
LVL	LAMINATED VENEER LUMBER
M	METER
MATL	MATERIAL
MAX	MAXIMUM
MB	MAILBOX, MACHINE BOLT
MECH	MECHANICAL
MF	MOMENT FRAME
MFR(S)	MANUFACTURER(S)
MH	MANHOLE
MHW	MEAN HIGH WATER
MHHW	MEAN HIGHER HIGH WATER
MIC	MONUMENT IN CASE
MIN	MINIMUM
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT
MLW	MEAN LOW WATER
MLLW	MEAN LOWER LOW WATER
M/L	MONUMENT LINE
MPH	MILES PER HOUR
MON	MONUMENT
MTL	METAL
MUTCD	MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES
N	NORTH
NE	NORTHEAST
NEG	NEGATIVE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOC
NF	NEAR FACE
NIC	NOT IN CONTRACT
NOM	NOMINAL
No.	NUMBER
NS	NEAR SIDE, NONSHRINK
N-S	NORTH-SOUTH
NTS	NOT TO SCALE
NW	NORTHWEST

OC	ON CENTER
OD	OUTSIDE DIAMETER
OHW	ORDINARY HIGH WATER
OF	OUTSIDE FACE
OPNG	OPENING
OPP	OPPOSITE
OSH	OVERSIZED HOLE
OT	OVERHEAD TELEPHONE
OWJ	OPEN WEB JOIST
P	POLE, POWER
PAR	PARALLEL
PC	PRECAST, PIECE
PCF	POUNDS PER CUBIC FOOT
PEN	PENETRATION
PED	PEDESTRIAN
PERP	PERPENDICULAR
PI	POINT OF INTERSECTION
PJP, PP	PARTIAL JOINT PENETRATION
PLCS	PLACES
PLF	POUNDS PER LINEAR FOOT
PLWD	PLYWOOD
PNL	PANEL
POC	POINT OF CONNECTION
PREFAB	PREFABRICATED
PRV	PRESSURE REDUCING VALVE
PS	PRESTRESS
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSS	PRESSURE SANITARY SEWER
PT	POINT OF TANGENT, POINT, PRESSURE TREATED
PUD	PUBLIC UTILITY DISTRICT #1 OF SNOHOMISH CNTY
PSL	PARALLEL STRAND LUMBER
P-T	POST-TENSIONED
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
P/L	PROPERTY LINE
QTY	QUANTITY
R, RAD	RADIUS
RC	REINF CONC
RD	ROOF DRAIN
REF	REFERENCE
REINF	REINFORCE(D)(MENT)(ING)
REM	REMAINDER
REQD	REQUIRED
RET	RETAINING
RETW	RETAINING WALL
RMC	RIGID METAL CD
RND	ROUND
RO	ROUGH OPENING
RR	RAILROAD
RT	RIGHT
RTN	RETURN
R/W	RIGHT OF WAY
S	SOUTH, SLOPE
SB	SOIL BORING
SC	SLIP CRITICAL
SCHED	SCHEDULE
SD	STORM DRAIN
SDMH	STORM DRAIN MANHOLE
SE	SPOT ELEVATION, SOUTHEAST
SECT	SECTION
SERV	SERVICE
SF	SQUARE FEET
SHLDR	SHOULDER
SHT	SHEET
SIM	SIMILAR
SJI	STEEL JOIST INSTITUTE
S/L	SURVEY LINE
SOG	SLAB ON GRADE
SPC	SPACE(ED)(ING)
SPEC(S)	SPECIFICATION(S)
SQ	SQUARE
SS	SANITARY SEWER, STAINLESS STEEL
SSH	SHORT SLOTTED HOLE
SSMH	SANITARY SEWER MANHOLE
ST	STREET
STA	STATION
STAG	STAGGER, STAGGERED
STD	STANDARD
STIFF	STIFFENER
STIR	STIRRUP
STPS	STEPS
STL	STEEL
STRUC	STRUCTURAL
SUPP	SUPPORT
SW	SOUTHWEST, SHEAR WALL, SOUTHWEST
S/W	SIDEWALK
SYM	SYMMETRICAL, SYMBOL

T/	TOP OF
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
TB	THRUST BLOCK
TAN	TANGENT
T&B	TOP & BOTTOM
TBM	TEMPORARY BENCH MARK
TD	TRENCH DRAIN
TEL	TELEPHONE
TEMP	TEMPORARY, TEMPERATURE
THK	THICK, THICKNESS
THRU	THROUGH
TMH	TELEPHONE MANHOLE
TOA	TOP OF ASPHALT
TOC	TOP OF CURB OR TOP OF CONCRETE
TOE	CONCAVE SLOPE BREAK
TOF	TOP OF FOOTING
TOP	CONVEX SLOPE BREAK
TOPO	TOPOGRAPHY
TOS	TOP OF STEEL
TOT	TOTAL
TOW	TOP OF WALL
TP	TEST PIT
TRAN	TRANSITION
TRANSV	TRANSVERSE
TR	TELEPHONE RISER, THREADED ROD
TUN	TUNNEL
TV	TELEVISION
TWS	THREADED WELDED STUD
TWST	TWISTED
TYP	TYPICAL
UBC	UNIFORM BUILDING CODE
UHMW	ULTRA HIGH MOLECULAR WEIGHT
UG	UNDERGROUND
UNO	UNLESS NOTED OTHERWISE
UP	UTILITY POLE
UPA	UTILITY POLE ANCHOR
UTIL	UTILITY
V	VALVE
VAR	VARIES
VERT	VERTICAL
VLT	VAULT
W	WIDTH, WATER LINE, WEST, WIDE FLANGE
W/	WITH
W/O	WITHOUT
WD	WOOD
WHS	WELDED HEADED STUD
WHSE	WAREHOUSE
WL	BUTT FUSION WELD
WM	WATER METER, WATERMAIN
WP	WORK POINT
WT	WEIGHT
WV	WATER VALVE
WWF	WELDED WIRE FABRIC
YD	YARD DRAIN

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IF THIS DRAWING IS NOT 22"x34" SCALE ACCORDINGLY.

ISSUED FOR CONSTRUCTION

Port of EVERETT
P.O. BOX 538
EVERETT, WA 98206
(425) 259-3164

PND ENGINEERS, INC.
1736 Fourth Avenue S. Suite A
Seattle, Washington 98134
Phone: 206-624-1387
Fax: 206-624-1388
mail@pndengineers.com

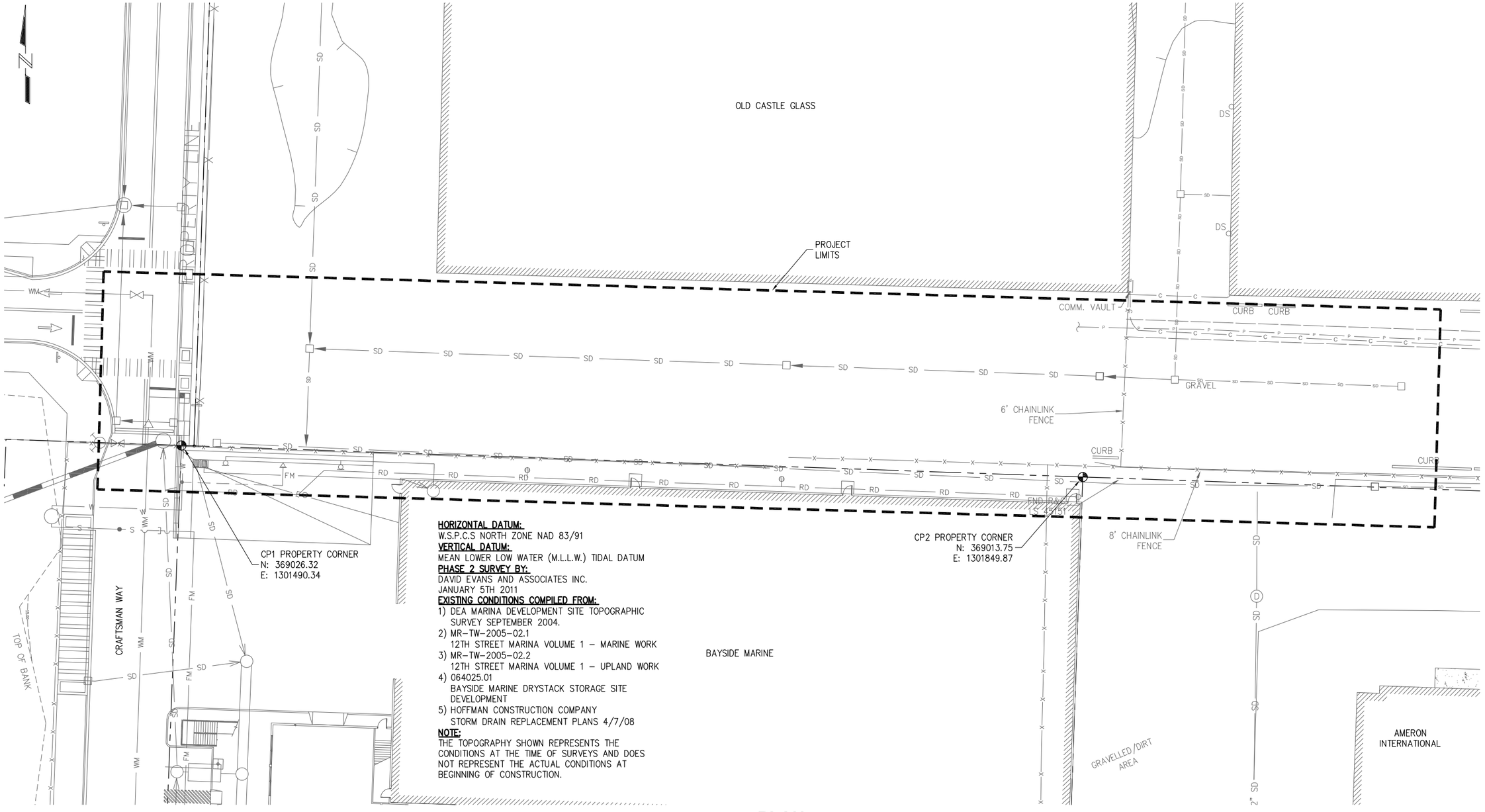
NO.	DATE	BY	REVISION
	10/22/13	GRW	ISSUED FOR CONSTRUCTION

PROJECT ENGINEER: J. KEISER	SCALE: NOTED
DESIGNED BY: C. WIEST	DATE: OCTOBER 2013
DRAWN BY: G. DEAN	CHECKED BY: S. ROBERT
APPROVED BY:	

PORT OF EVERETT

AMERON - HULBERT SITE
TRUNKLINE STORM DRAIN REPAIR
GENERAL ABBREVIATIONS

DWG. NO.	G1.3
CIP NO.	3-0-0-12-03
PROJECT NO.	PD-NM-2013-09
SHEET NO.	4 OF 8



HORIZONTAL DATUM:
W.S.P.C.S NORTH ZONE NAD 83/91
VERTICAL DATUM:
MEAN LOWER LOW WATER (M.L.L.W.) TIDAL DATUM
PHASE 2 SURVEY BY:
DAVID EVANS AND ASSOCIATES INC.
JANUARY 5TH 2011
EXISTING CONDITIONS COMPILED FROM:
1) DEA MARINA DEVELOPMENT SITE TOPOGRAPHIC SURVEY SEPTEMBER 2004.
2) MR-TW-2005-02.1
   12TH STREET MARINA VOLUME 1 – MARINE WORK
3) MR-TW-2005-02.2
   12TH STREET MARINA VOLUME 1 – UPLAND WORK
4) 064025.01
   BAYSIDE MARINE DRYSTACK STORAGE SITE DEVELOPMENT
5) HOFFMAN CONSTRUCTION COMPANY
   STORM DRAIN REPLACEMENT PLANS 4/7/08

NOTE:
THE TOPOGRAPHY SHOWN REPRESENTS THE CONDITIONS AT THE TIME OF SURVEYS AND DOES NOT REPRESENT THE ACTUAL CONDITIONS AT BEGINNING OF CONSTRUCTION.

PLAN

0 5 10 20 40 60 FT.

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DESIGNED BY: C. WIEST	DATE: OCTOBER 2013
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APPROVED BY:	

PORT OF EVERETT

AMERON – HULBERT SITE TRUNKLINE STORM DRAIN REPAIR EXISTING CONDITIONS

DWG. NO.	D1.1
CIP NO.	3-0-0-12-03
PROJECT NO.	PD-NM-2013-09
SHEET NO.	5 OF 8

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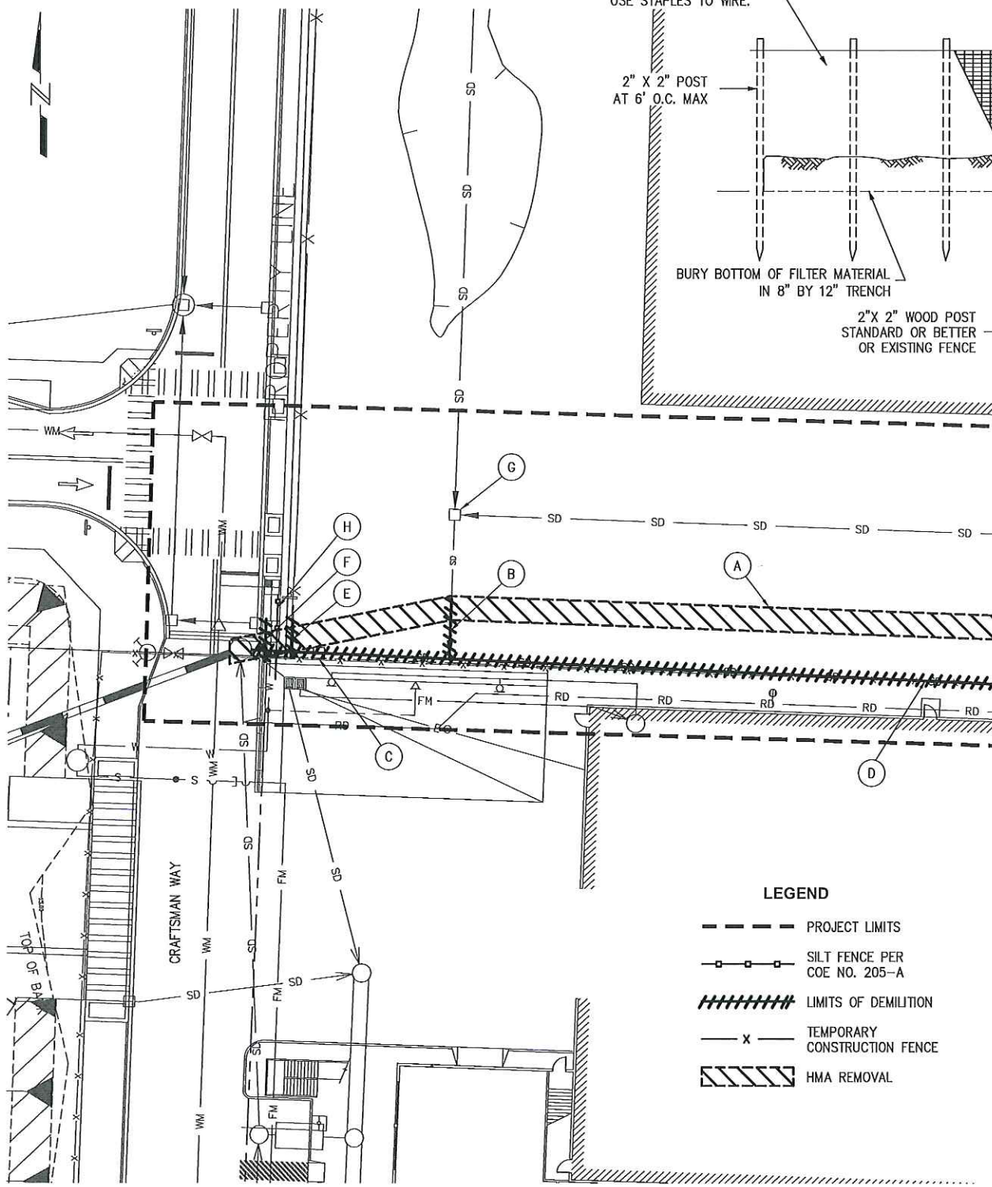
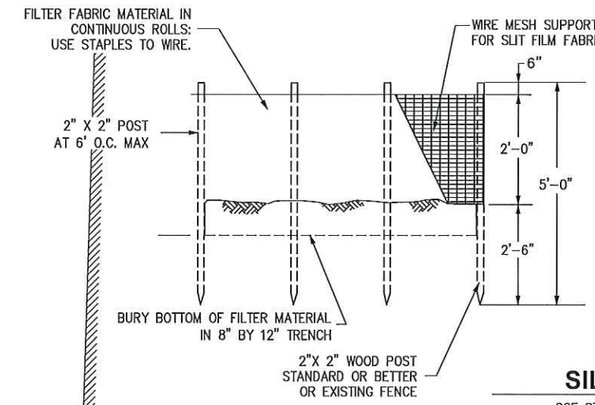
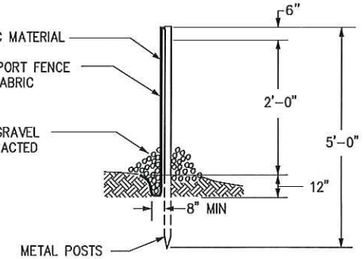




SILT FENCE

COE STANDARD No. 205A



DEMOLITION NOTES

- (A) SAWCUT, DEMO AND DISPOSE OF EXISTING HMA AS REQUIRED FOR INSTALLATION OF NEW PIPE. PATCH DEMOLISHED ASPHALT FOLLOWING INSTALLATION OF NEW STORM DRAIN SYSTEM.
- (B) DEMO SEGMENT OF EXISTING STORM DRAIN AS REQUIRED TO CONNECT LINE TO NEW CB 101. SEQUENCE WITH INSTALLATION OF NEW DRAINAGE SYSTEM.
- (C) DEMO EXISTING CB 112.
- (D) ABANDON EXISTING 18" STORM DRAIN. BACKFILL WITH CEMENT SLURRY, VERIFY ENTIRE LINE FILLED. ADDITIONAL ACCESS TO PIPE MAY BE NECESSARY TO COMPLETE WORK. POTHOLE LINE AS REQUIRED TO PERFORM WORK. COORDINATE WITH ENGINEER IN FIELD.
- (E) DEMO EXISTING FENCE SEGMENT AS REQUIRED TO INSTALL REPAIR LINE. REPLACE IN-KIND.
- (F) DEMO EXISTING CURB AND GUTTER. SAWCUT EXISTING HMA AS REQUIRED TO CONNECT REPAIR LINE. REPLACE CURB IN-KIND.
- (G) INSTALL CATCH BASIN FILTER BAG INSERT.
- (H) INSTALL SILT FENCE.
- (I) INSTALL TEMPORARY CONSTRUCTION FENCE TO SECURE AMERON SITE DURING CONSTRUCTION.

6-Foot high?

LEGEND

- PROJECT LIMITS
- SILT FENCE PER COE NO. 205-A
- LIMITS OF DEMILITION
- TEMPORARY CONSTRUCTION FENCE
- HMA REMOVAL

NOTES:

1) STORMWATER AND GROUND WATER DISPOSAL OPTIONS ARE PROVIDED IN THE SPECIFICATIONS.
2) CRAFTSMAN WAY TO BE KEPT CLEAN FROM CONSTRUCTION DEBRIS AT ALL TIMES.
3) PREVENT WIND TRANSPORT OF DUST FROM DISTURBED SOILS SURFACES ONTO ROADWAYS, DRAINAGE WAYS AND SURFACE WATERS.
4) INSTALL EROSION PREVENTION AND SEDIMENT CONTROL MEASURES PRIOR TO START OF CONSTRUCTION. KEEP SUFFICIENT SUPPLY OF EROSION CONTROL MATERIALS ON SITE AT ALL TIMES DURING CONSTRUCTION.
5) DEMOLITION LIMITS ARE APPROXIMATE. FLAG LIMITS PRIOR TO COMMENCING AND FIELD REVIEW WITH ENGINEER.

PLAN

0 5 10 20 40 60 FT.

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DESIGNED BY: C. WIEST	DATE: OCTOBER 2013
DRAWN BY: G. DEAN	CHECKED BY: S. ROBERT
APPROVED BY:	

PORT OF EVERETT

AMERON – HULBERT SITE
TRUNKLINE STORM DRAIN REPAIR
DEMOLITION PLAN

DWG. NO.	D1.2
CIP NO.	3-0-0-12-03
PROJECT NO.	PD-NM-2013-09
SHEET NO.	6 OF 8

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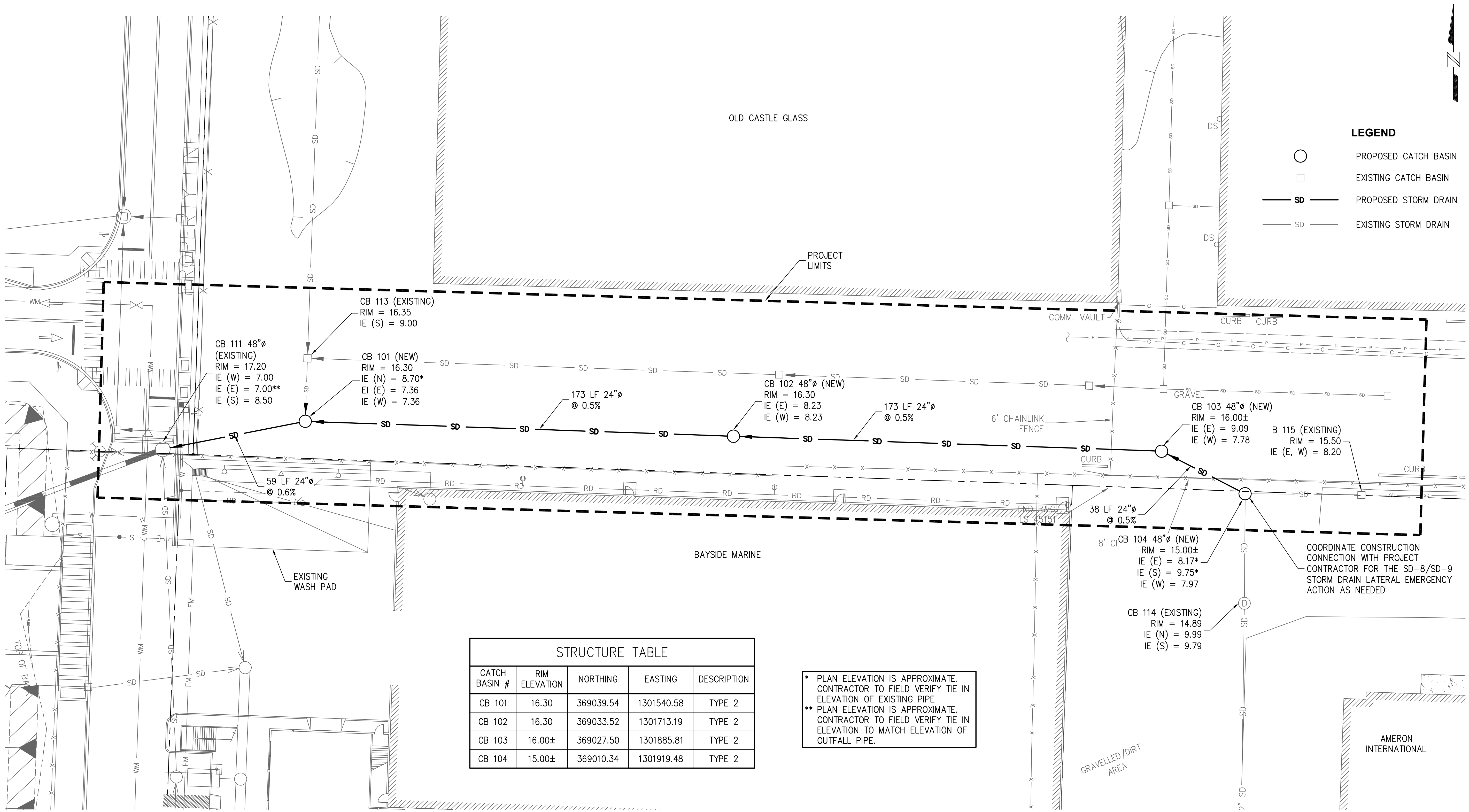

STRUCTURE TABLE

CATCH BASIN #	RIM ELEVATION	NORTHING	EASTING	DESCRIPTION
CB 101	16.30	369039.54	1301540.58	TYPE 2
CB 102	16.30	369033.52	1301713.19	TYPE 2
CB 103	16.00±	369027.50	1301885.81	TYPE 2
CB 104	15.00±	369010.34	1301919.48	TYPE 2

* PLAN ELEVATION IS APPROXIMATE. CONTRACTOR TO FIELD VERIFY TIE IN ELEVATION OF EXISTING PIPE

** PLAN ELEVATION IS APPROXIMATE. CONTRACTOR TO FIELD VERIFY TIE IN ELEVATION TO MATCH ELEVATION OF OUTFALL PIPE.

PLAN

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PORT OF EVERETT

AMERON – HULBERT SITE
TRUNKLINE STORM DRAIN REPAIR
DRAINAGE REPAIR PLAN

DWG. NO. C1.1
CIP NO. 3-0-0-12-03
PROJECT NO. PD-NM-2013-09
SHEET NO. 7 OF 8

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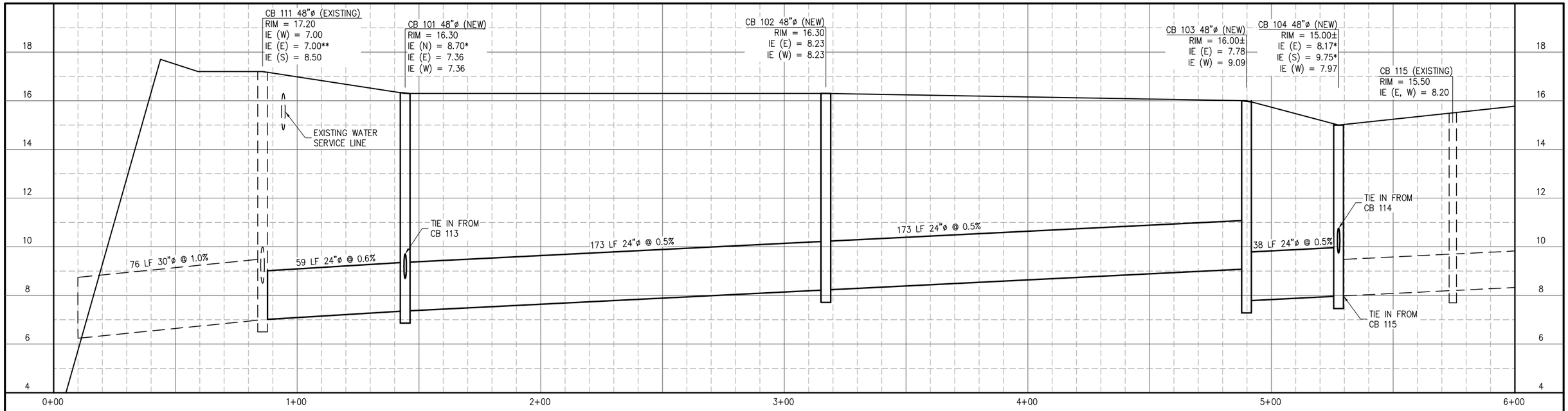
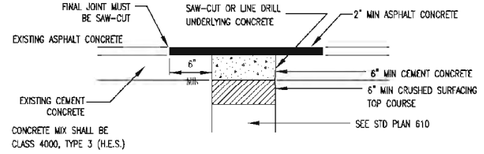
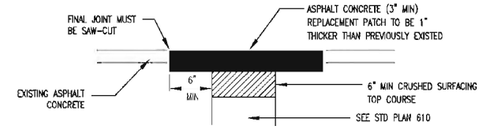


PROFILE

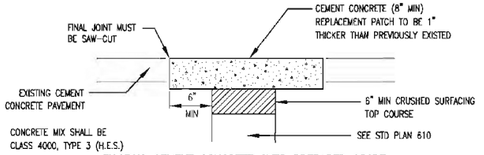
* PLAN ELEVATION IS APPROXIMATE. CONTRACTOR TO FIELD VERIFY TIE IN ELEVATION OF EXISTING PIPE
** PLAN ELEVATION IS APPROXIMATE. CONTRACTOR TO FIELD VERIFY TIE IN ELEVATION TO MATCH ELEVATION OF OUTFALL PIPE.



EXISTING ASPHALT CONCRETE OVER CEMENT CONCRETE



EXISTING ASPHALT CONCRETE OVER PREPARED GRADE



EXISTING CEMENT CONCRETE OVER PREPARED GRADE

NOTES:

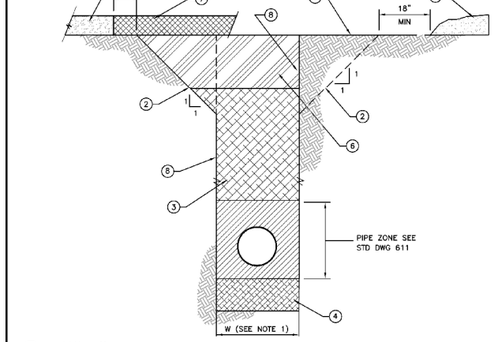
1. ALL TRENCHES IN ROADWAY AREAS SHALL BE BACKFILLED AND PATCHED WITH TEMPORARY ASPHALT AT THE END OF EACH WORK DAY, UNLESS PERMISSION IS GRANTED TO DO OTHERWISE BY THE CITY ENGINEER.
2. ALL TEMPORARY PATCHES ON TRENCHES SHALL BE PERMANENTLY PATCHED WITHIN 2 WEEKS OF COMPLETION OF WORK WITHIN ROADWAY AREA.

CITY OF EVERETT PUBLIC WORKS — ENGINEERING & PUBLIC SERVICES DEPARTMENT

PAVEMENT PATCHING DETAILS

1-14-2004 date

316 number



NOTES

1. W = MAXIMUM WIDTH OF TRENCH. FOR PIPES 15" OR LESS IN DIA W=40". FOR PIPES 18" OR GREATER W=1.5 x I.D. + 18". PIPE MUST BE CENTERED IN TRENCH.
2. ALTERNATE SLOPING TRENCH WALL TO MEET O.S.H.A. REQUIREMENTS (NO SLOPES STEEPER THAN 1:1 EXCEPT FOR ROCK).
3. SUITABLE NATIVE MATERIAL OR IMPORTED GRAVEL BORROW AS DIRECTED. COMPACT TO 90% MAXIMUM DENSITY.
4. FOUNDATION GRAVEL IF REQUIRED BY THE ENGINEER TO REPLACE UNSUITABLE MATERIAL. SHALL BE FOUNDATION MATERIAL CLASS A, B OR AS APPROVED BY THE ENGINEER.
5. FOR ADDITIONAL COMPACTION INFORMATION SEE STANDARD DWG 615.
6. IF DIRECTED BY THE ENGINEER THE TOP THREE TO FIVE FEET OF BACKFILL SHALL BE IMPORTED GRAVEL BORROW OR SUITABLE NATIVE MATERIAL COMPACTED TO 95% MAXIMUM DENSITY.
7. SEE CITY OF EVERETT STANDARD DWG 316 FOR PAVEMENT PATCH DETAILS.
8. VERTICAL TRENCH WALLS WITH SHORING TO CONFORM TO O.S.H.A. REGULATIONS.
9. SUBGRADE OR GROUND SURFACE IN NON-PAVED AREAS.
10. EXCAVATED NATIVE MATERIAL OR STOCKPILED BACKFILL MATERIAL.
11. FOR ALL TRENCHING TRANSVERSE TO THE ROADWAY BACKFILL ABOVE THE PIPE ZONE SHALL BE CONTROLLED DENSITY FILL. SEE SECTION 3-9.6 & 3-20.1 OF THESE STANDARDS.
12. FOR UTILITY CUTS SUCH AS GAS, TELEPHONE, POWER, AND CABLE TV LONGITUDINAL TO THE ROADWAY, BACKFILL SHALL BE CONTROLLED DENSITY FILL. SEE SECTION 3-9.5 OF THESE STANDARDS

CITY OF EVERETT PUBLIC WORKS DEPARTMENT

TYPICAL TRENCH SECTION

8/10/2011 Date:

610 SDE Std Dwg.

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APPROVED BY:	

PORT OF EVERETT

AMERON – HULBERT SITE TRUNKLINE STORM DRAIN REPAIR DRAINAGE PROFILE

DWG. NO. **C1.2**

CIP NO. 3-0-0-12-03

PROJECT NO. PD-NM-2013-09

SHEET NO. 8 OF 8

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