ABBREVIATIONS

ACI	AMERICAN CONCRETE INSTITUTE
ACP	ASPHALT CONCRETE PAVEMENT
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS
ASTM	ASTM INTERNATIONAL
AWG	AMERICAN WIRE GAUGE
AWS	AMERICAN WELDING SOCIETY
BLDG	BUILDING
BOF	BALANCE OF FACILITIES
C	CONDUIT
CAT	CATAGORY
CDF	CONTROLLED DENSITY FILL
CF	CUBIC FEET
CKT	CIRCUIT
CL	CENTER LINE
CLR	CLEAR
CND	CONDUIT
COM	COMMUNICATIONS
COMM	COMMUNICATIONS
CONC	CONCRETE
CS	CARBON STEEL
CSBC	CRUSHED SURFACING BASE COURSE
DEG C	DEGREES CELSIUS
DI	DUCTILE IRON
DIA	DIAMETER
DOE	DEPARTMENT OF ENERGY
DP	DISTRIBUTION PANEL
DS	DISCONNECT SWITCH
DWG	DRAWING
EIN	EQUIPMENT IDENTIFICATION NUMBER
EMBED	EMBED, EMBEDMENT, EMBEDDED
ENCL	ENCLOSURE
EQ	EQUAL, EQUALLY
EXP	EXPOSURE
EXST, EXIST	EXISTING
EW	EACH WAY
FA	FIRE ALARM
FT	FEET
GALV	GALVANIZED
G	GROUND
GA	GAUGE
GFE	GOVERNMENT FURNISHED EQUIPMENT
GND	GROUND, EQUIPMENT GROUNDING CONDUCTOR
GR	GRADE
GS	GENERAL SERVICE
HMA	HOT-MIX ASPHALT
H-O-A	HAND-OFF-AUTO
HSS	HOLLOW STRUCTURAL SECTION
HT	HEAT TRACE
IN	INCH
IXC	ION EXCHANGE COLUMN
I&C	INSTRUMENT AND CONTROLS
KSI	KIPS PER SQUARE INCH
LAR	LENGTH AS REQUIRED
LB, LBS	POUNDS (FORCE)
LP	LIGHTING POLE
M	METER
MAX	MAXIMUM
MIN	MINIMUM
MPH	MILES PER HOUR
NEC	NATIONAL ELECTRICAL CODE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NO.	NUMBER
OC	ON CENTER
OHP	OVERHEAD POWER
PL, PLCS	PLACE, PLACES
POW	POWER
PS	PROCESS SEWER
PSF	POUNDS (FORCE) PER SQUARE FEET
PSI	POUNDS PER SQUARE INCH
REQD	REQUIRED
RW	RAW WATER
SCH	SCHEDULE
SH	SHEET
SIM	SIMILAR
SMF	SINGLE MODE FIBER
SP	SPARE
SPEC	SPECIFICATION
SS	SAFETY SIGNIFICANT
SST	STAINLESS STEEL
SW	SANITARY WATER
T&B	TOP AND BOTTOM
TBD	TO BE DETERMINED
TBX	TERMINAL BOX
TOC	TOP OF CONCRETE
TSCR	TANK SIDE CESIUM REMOVAL
TYP	TYPICAL
WP	WASTE PROCESSING
WRPS	WASHINGTON RIVER PROTECTION SOLUTIONS
WT	WASTE TRANSFER

LEGEND

- NEW
- CENTERLINE
- EXISTING
- HIDDEN OR BELOW GRADE
- ---709.5--- EXISTING SURFACE CONTOUR
- —709.5— MODIFIED SURFACE CONTOUR
- — AB W — ABANDONED WATER
- — COM — EXISTING COMMUNICATIONS LINE
- — OHP — EXISTING OVERHEAD POWER
- — PS — EXISTING PROCESS SEWER LINE
- — RW — EXISTING RAW WATER LINE
- — SW — EXISTING SANITARY WATER LINE
- — POW — EXISTING UNDERGROUND POWER LINE
- —X—X—X— FENCE
- (1) KEYED NOTE
- SLOPE
- SURVEY CONTROL MONUMENT
- CONCRETE
- UNDISTURBED EARTH OR COMPACTED SUBGRADE
- CRUSHED SURFACING/BASE COURSE (DETAILS)
- CRUSHED SUFACING/BASE COURSE (PLAN)
- NEW HMA
- EXISTING BLACKTOP
- STRUCTURAL FILL
- BOLLARD
- FIRE HYDRANT
- GATE VALVE
- EXISTING POWER OR LIGHTING POLE
- NEW LIGHTING POLE WITH FLOODLIGHTS
- (#) LUMINAIRE NUMBER
- JERSEY BARRIER

GENERAL NOTES:

1. CODES AND MANUALS:
   - A. INTERNATIONAL BUILDING CODE, 2015, AS MODIFIED BY TFC-ENG-STD-06, REV D-1.
   - B. ASCE 7-10 MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES
   - C. AWS D1.1 STRUCTURAL WELDING CODE – STEEL, 2015.
   - D. AISC STEEL CONSTRUCTION MANUAL, AISC 325, 14TH EDITION.
   - E. ACI 318-2014, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE.
   - F. ACI 301-2010, SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS.
   - G. NFPA 70-2017, NATIONAL ELECTRICAL CODE.
   - H. NFPA 13-2019, STANDARD FOR INSTALLATION OF SPRINKLER SYSTEMS.
2. STRUCTURAL DESIGN CRITERIA:
   - A. TFC-ENG-STD-06, REV D-1.
   - B. FACILITY DESIGN CRITERIA:
     NDC-2 (PROCESS ENCLOSURE)
     NDC-1 (OTHER STRUCTURES)
   - C. SEISMIC:
     S_{DS} = 0.286, S_{D1} = 0.1758
     SITE CLASS C
     IMPORTANCE FACTOR = 1.5 (PROCESS ENCLOSURE)
     IMPORTANCE FACTOR = 1.0 (OTHER STRUCTURES)
   - D. WIND:
     ASCE 7-10 WITH THREE-SECOND GUST VELOCITY V=115 MPH (PROCESS ENCLOSURE)
     V=110 MPH (OTHER STRUCTURES)
     EXP. CATEGORY: C
   - E. SNOW LOAD:
     GROUND SNOW LOAD, P=15 PSF
   - F. ASHFALL LOAD, 11.8 PSF (PROCESS ENCLOSURE)
     ASHFALL LOAD, 3.20 PSF (OTHER STRUCTURES)
3. MATERIAL PROPERTIES:
   - A. CONCRETE: f'c = 4500 PSI @ 28 DAYS.
   - B. REINFORCING STEEL: ASTM A615 OR ASTM A706, GRADE 60, DEFORMED BARS.
   - C. STRUCTURAL STEEL: ASTM A36 UNLESS OTHERWISE NOTED; ASTM A500 GR C (f_y =46 KSI) FOR RECTANGULAR AND SQUARE STRUCTURAL STEEL TUBING. ASTM A240 STAINLESS STEEL FOR STORAGE PAD EMBED PLATES.
   - D. CDF f'c = 100 TO 300PSI @ 28 DAYS.
4. PRIOR TO STARTING WORK IN AN AREA, VERIFY REFERENCE ELEVATIONS, COORDINATES, AND DIMENSIONS WITH SURVEY EQUIPMENT. CONTACT WRPS FIELD ENGINEER BEFORE PROCEEDING WITH CONSTRUCTION IF REFERENCE ELEVATION SHOWN ON DRAWING DIFFERS FROM FIELD VERIFIED ELEVATION BY MORE THAN 0.10 FEET, OR IF A COORDINATE OR DIMENSION DIFFERS BY MORE THAN 0.2 FEET.
5. THE EXACT LOCATION OF EXISTING UTILITIES AND MONUMENTS SHALL BE FIELD VERIFIED PRIOR TO BEGINNING CONSTRUCTION. TIE-IN LOCATIONS, ELEVATIONS, AND INVERTS ARE SHOWN USING THE BEST INFORMATION AVAILABLE AT THE TIME OF DESIGN AND MAY BE ADJUSTED IN THE FIELD AS NEEDED WITH THE APPROVAL OF THE WRPS FIELD ENGINEER.
6. SOME TSCR WORKS ARE SAFETY SIGNIFICANT (QL-2), AS FOLLOWS: VEHICLE (JERSEY) BARRIERS, BOF PAD SHIELD WALL, SHIELD WALL FOUNDATION, PROCESS ENCLOSURE FOUNDATION, AND ANCHORAGE. MECHANICAL PIPING AND ELECTRICAL WORK IN THIS PACKAGE IN GENERAL SERVICE.
7. REPLACE EXISTING SOIL (2 FT) BENEATH TSCR IXC STORAGE PAD AND HAUL PATH IN ACCORDANCE WITH GEOTECHNICAL REPORT. (RPP-SPEC-61401, REV 0, SECTION 8) REPLACE EXISTING SOIL (1 FT) BENEATH TSCR IXC BOF PAD AND ENCLOSURE FOUNDATION.
8. THESE DRAWINGS ARE TO BE USED IN CONJUNCTION WITH CONSTRUCTION SPECIFICATION RPP-SPEC-62663. CONTACT WRPS FIELD ENGINEER FOR RESOLUTION UPON DISCOVERY OF DISCREPANCIES BETWEEN DRAWINGS AND SPECIFICATION.
9. VERIFY REBAR AND CAST-IN-PLACE ANCHOR LOCATION AS-BUILTS PRIOR TO POUR.
10. HAND DIG NEAR BELOW GRADE INTERFERENCES IN ORDER TO PREVENT DAMAGE TO LINES. OTHER METHODS MAY BE USED WITH PRIOR APPROVAL FROM WRPS FIELD ENGINEER. RELOCATION OF UTILITIES SHALL BE PERFORMED ON A CASE-BY-CASE BASIS UPON IDENTIFICATION. CONTACT WRPS FIELD ENGINEER UPON DISCOVERY OF INTERFERENCES.
11. STRUCTURAL BACKFILL ABOVE THE RAW WATERLINE (BELOW THE BOF PAD) SHOULD NOT BE TAMPED OR COMPACTED WITHIN 12" OF THE TOP OF PIPE, BUT WATER SOAKED AND SETTLED TO ATTAIN PROPER COMPACTION. CDF MAY ALSO BE UTILIZED TO PROVIDE ADEQUATE FILL WITHOUT DAMAGING EXISTING UTILITIES.
12. CONCRETE PADS SHALL BE GPR ANALYZED FOR REBAR LOCATIONS PRIOR TO CUTTING OR DRILLING ACTIVITIES. NO REBAR SHALL BE CUT OR DAMAGED UNLESS PRE-APPROVED BY THE WRPS FIELD ENGINEER. RELOCATE EQUIPMENT OR PENETRATIONS AS REQUIRED TO AVOID REBAR INTERFERENCES
13. RAW WATER LINES AND DOCUMENTATION THEREOF ARE OWNED AND CONTROLLED BY MISSION SUPPORT ALLIANCE.
14. POR655-WP-TSCR-001, POR656-RA-RSCR-001, POR657-VT-TSCR-001, POR253-EMER-003, POR668-WP-TRLR-001, POR668-WP-XFMR-001 ARE GOVERNMENT FURNISHED EQUIPMENT.

JEFFREY ROBERT MARTIN
STATE OF WASHINGTON
49199
REGISTERED
PROFESSIONAL ENGINEER
9/26/19

FOR PERMITTING 9/26/19

DRAWING TRACEABILITY LIST		REFERENCES		REVISIONS		
DWG NUMBER	TITLE	REF NUMBER	TITLE	REV NO	DESCRIPTION	DATE
NEXT USED ON END ITEM		RPP-SPEC-62663	CONSTRUCTION SPECIFICATION	0	RELEASED PER EDT-882290	9/26/19
		H-14-111602	DRAWING LIST & TITLE SHEET			

BLDG NO: 241-AP, 255-AP, POR-655, POR-656, POR-657, POR-668
INDEX NO: 0000

CAUTION: NOT COMPLETE WITHOUT CURRENT CHANGE DOCUMENTS FROM DATABASE

DRAWN	NAME	DATE	COMPANY
	E P CULBERTSON	9/26/19	CH2M
CHECKED			
	D R CHAPMAN	9/26/19	CH2M

U.S. DEPARTMENT OF ENERGY
Office of River Protection

TSCR IXC STORAGE AREA
CIVIL
GENERAL NOTES & LEGEND

SIZE F | DRAWING NUMBER H-14-111603 | SHEET 1 | REV 00

SCALE NONE

15160

DOE_TS_F.DWG (MARCH 2019)