WASHINGTON STATE PARKS & RECREATION COMMISSION

MARK O. BROWN, CHAIR

SOPHIA DANENBERG — LAURIE CONNELLY

MICHAEL LATIMER — KEN BOUNDS

ALI RAAD — HOLLY WILLIAMS

DIANA DUPUIS, DIRECTOR

APPROVED FOR CONSTRUCTION

REGION MANAGER *date*

CAPITAL PROGRAM MANAGER *date*

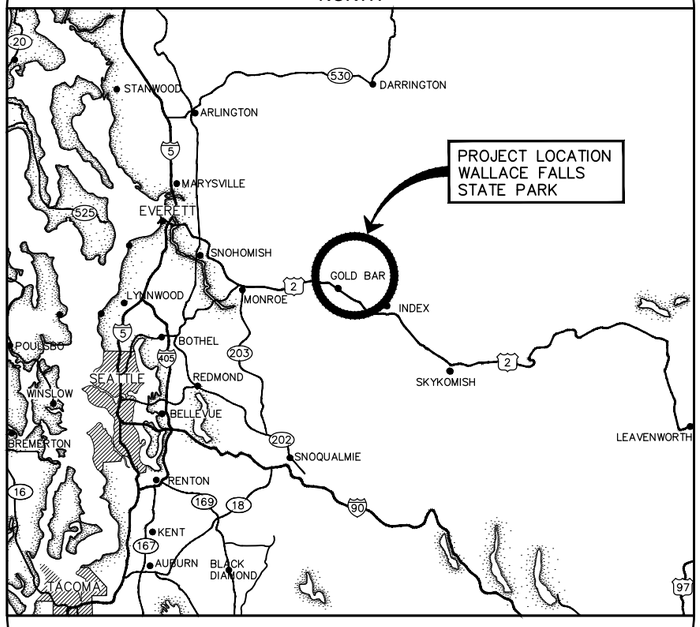
Area Manager: SHAWN TOBIN

WALLACE FALLS STATE PARK

PARKING EXPANSION AND WATER SYSTEM REPLACEMENT

VICINITY MAP

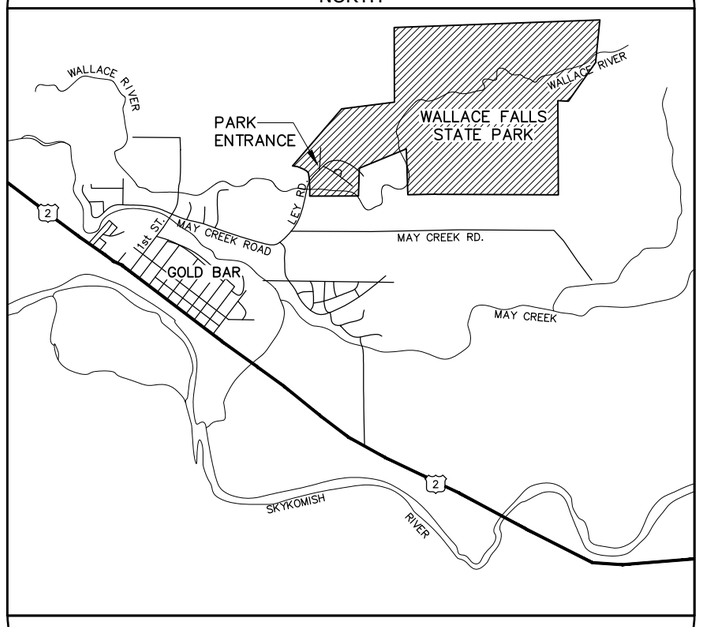
NORTH



LATITUDE: 47°52'2.90"N & LONGITUDE: 121°40'44.95"W

PROJECT LOCATION

NORTH



14503 WALLACE LAKE RD SULTAN WA 98294
SEC-32, 33 T-28-N R-09-E
SNOHOMISH COUNTY TAX PARCEL NUMBER 28093200400100

INDEX

CAD#: W090-D4003-C11-D4002-C11-2023 PARKING EXPANSION AND WATER SYSTEM REPLACEMENT

PROJECT TEAM

OWNER: STATE OF WASHINGTON
PARKS AND RECREATION COMMISSION
1111 ISRAEL ROAD SOUTHWEST
POST OFFICE BOX 42650
OLYMPIA, WASHINGTON 98504-2650

OWNER'S REPRESENTATVE: www.parks.wa.gov

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SHEET X OF X

CAD NO. W090-D4003-C11-D4002-C11-2023-X-G101

NO.	REVISIONS	INT.	APP.	DATE

ACTION	BY	DATE
DESIGNED	HKP	03/31/23
DRAWN	DKH	03/31/23
CHECKED (FIELD)		
CHECKED (HDQTS.)		

REGISTERED STAMP

WASHINGTON STATE PARKS AND RECREATION COMMISSION

WALLACE FALLS STATE PARK

PARKING EXPANSION AND WATER SYSTEM REPLACEMENT

PROJECT TEAM

G101

SCALE
NONE

PARKS FILE#

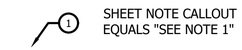
LEGEND

	EXISTING	PROPOSED
EDGE OF ASPHALT		
TRAIL		
GRAVEL		
CONCRETE		
FENCING		
UNDERGROUND WATER LINE	W W W	4"W
ALTERNATIVE UNDERGROUND WATER LINE		4"W
UNDERGROUND SANITARY SEWER LINE	SS SS SS	
UNDERGROUND SEPTIC LINE		
UNDERGROUND POWER LINE	UP UP UP	
UNDERGROUND COMMUNICATIONS TV LINE	T T T	
OVERHEAD POWER LINE	OHPP	
BUILDING/STRUCTURE LINE		
BUILDING EVE LINE		
EDGE OF STREAM		
SWALE		
PROPERTY LINE		
CONTOUR MINOR		
CONTOUR MAJOR	310	
TOE OF SLOPE	TOE TOE	
TOP OF SLOPE	TOP TOP	
EDGE OF TREES/SHRUBS		
BPA SETBACK		
CRITICAL AREA BUFFER		
WELL HEAD SANITARY CONTROL AREA		
WELL		W
FIRE HYDRANT		
WATER VALVE	WV	
WATER METER	WM	
HOSE BIB		
CATCH BASIN		
ROOF DRAIN	RD	
SANITARY CLEANOUT	CO	

	EXISTING	PROPOSED
JUNCTION BOX	J	
POWER TRANSFORMER	PBX	
POWER JUNCTION BOX		
TELEPHONE JUNCTION BOX		
FLAG POLE	FLAG	
BOLLARDS		
MAIL BOX	MAILBOX	
PAY BOX	PAY BOX	
STORM CULVERT		
ENVIRONMENTAL PROBE		
DHA SURVEY CONTROL (HUB AND TACK)		
DHA SURVEY CONTROL (REBAR AND CAP)		
WETLAND FLAG		
SIGN		
BBQ	BBQ	
FIRE PIT	FIRERING	
SUBSURFACE TEST PIT	TP-3	
HANDICAPPED PARKING		
CONIFEROUS TREE		
DECIDUOUS TREE		

811 Know what's below. Call before you dig.

SHEET SYMBOLS



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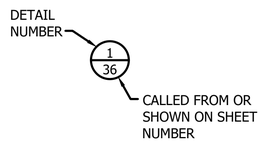

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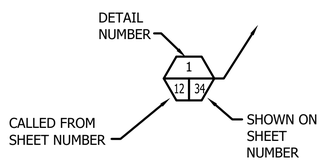

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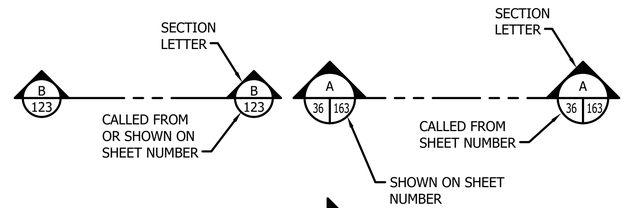
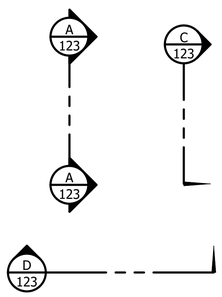
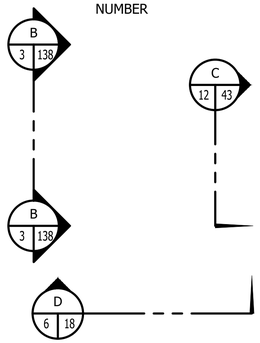




2 PART SECTION CALLOUTS



3 PART SECTION CALLOUTS

CALLOUTS

SHEET X OF X

CAD NO. W090-D4003-C11-D4002-C11-2023-X-G102

NO.	REVISIONS	INT.	APP.	DATE

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DESIGNED	HKP	03/31/23
DRAWN	DKH	03/31/23
CHECKED (FIELD)		
CHECKED (HDQTS.)		

PRELIMINARY ONLY
DO NOT USE FOR CONSTRUCTION
March 2023
Consor
www.consoreng.com

REGISTERED STAMP

WASHINGTON STATE PARKS AND RECREATION COMMISSION

WALLACE FALLS STATE PARK

PARKING EXPANSION AND WATER SYSTEM REPLACEMENT

GENERAL LEGEND

G102

SCALE
NONE

PARKS FILE#

@	AT
A	ALDER TREE
AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY & TRANSPORTATION OFFICIALS
AB	ANCHOR BOLT
ABAN(D)	ABANDON(ED)
ABS	ACRYLONITRILE BUTADIENE STYRENE
ABV	ABOVE / ALCOHOL BY VOLUME
AC	ASPHALTIC CONCRETE
ACP	ASPHALTIC CONCRETE PAVING
ADJ	ADJUSTABLE
ADJC	ADJACENT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHR	ANCHOR
AL	ALUMINUM
ALT	ALTERNATE
AMP	AMPERE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
(AP)	APPROXIMATE
APPROX	APPROXIMATE
APPVD	APPROVED
APWA	AMERICAN PUBLIC WORKS ASSOCIATION
ARCH	ARCHITECTURAL
ARV	AIR RELEASE VALVE
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS
ASR	AQUIFER STORAGE & RECOVERY
ASSN	ASSOCIATION
ASSY	ASSEMBLY
ASTM	AMERICAN SOCIETY FOR TESTING & MATERIALS
ATM	ATMOSPHERE
AUTO	AUTOMATIC
AUX	AUXILIARY
AVE	AVENUE
AVG	AVERAGE
AWWA	AMERICAN WATER WORKS ASSOCIATION
B&S	BELL & SPIGOT
BC	BOLT CIRCLE
BD	BOARD
BETW	BETWEEN
BF	BOTH FACE
BFD	BACKFLOW PREVENTION DEVICE
BFILL	BACKFILL
BFV	BUTTERFLY VALVE
BHP	BRAKE HORSEPOWER
BKGD	BACKGROUND
BLDG	BUILDING
BLK	BLOCK
BLVD	BOULEVARD
BM	BENCHMARK / BEAM
BMP	BEST MANAGEMENT PRACTICES
BO	BLOW-OFF
BOC	BACK OF CURB
BOW	BOTTOM OF WALL
BPA	BONNEVILLE POWER ADMINISTRATION
BS	BOTH SIDES
BSMT	BASEMENT
BTF	BOTTOM FACE
BTU	BRITISH THERMAL UNIT
BV	BALL VALVE
BW	BOTH WAYS
C	CELSIUS / CONIFER TREE
C TO C	CENTER TO CENTER
CA	CRITICAL AREA
CARV	COMBINATION AIR RELEASE VALVE
CATV	CABLE TELEVISION
CB	CATCH BASIN
CCP	CONCRETE CYLINDER PIPE
CCW	COUNTER CLOCKWISE
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
CHAN	CHANNEL
CHEM	CHEMICAL
CHFR	CHAMFER
CHKV	CHECK VALVE
CI	CAST IRON
CIP	CAST IRON PIPE
CIPC	CAST IN PLACE CONCRETE
CISP	CAST IRON SOIL PIPE
CJ	CONSTRUCTION JOINT
CL OR C/L	CENTER LINE
CL2	CHLORINE
CLG	CEILING
CLJ	CONTROL JOINT
CLR	CLEAR
CLSM	CONTROLLED LOW STRENGTH MATERIAL
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CND	CONDUIT
CO	CLEANOUT
COL	COLUMN
COMB	COMBINATION
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS / CONTINUATION
CONTR	CONTRACT(OR)
COORD	COORDINATE
COP	COPPER
CORP	CORPORATION
CORR	CORRUGATED
CP	CONTROL POINT
CPLG	COUPLING
CPVC	CHLORINATED POLYVINYL CHLORIDE
CR	CRUSHED ROCK
CS	COMBINED SEWER
CSP	CONCRETE SEWER PIPE
CT	COURT
CTR	CENTER
CU	CUBIC
CULV	CULVERT
CV	CONTROL VALVE
CW	CLOCKWISE / COLD WATER / COTTON WOOD TREE
CY	CUBIC YARDS
CYL	CYLINDER LOCK
D	DRAIN
DC	DIRECT CURRENT
DF	DRAINFIELD
DEA	DAVID EVAN'S AND ASSOCIATES
DEC	DECIDUOUS TREE
DEFL	DEFLECTION
DEQ	DEPARTMENT OF ENVIRONMENTAL QUALITY
DET	DETAIL
DI	DUCTILE IRON
DIA	DIAMETER
DIM	DIMENSION
DIR	DIRECTION
DIST	DISTANCE
DN	DOWN
DNR	DEPARTMENT OF NATURAL RESOURCES
DR	DRIVE
DS	DOWNSPOUT
DWG	DRAWING
DWL	DOWEL
DWV	DRAIN WASTE AND VENT
DWY	DRIVEWAY
(E)	EXISTING
E / ELEC	ELECTRICAL
EA	EACH
ECC	ECCENTRIC
EF	EACH FACE
EL	ELEVATION
ELB	ELBOW
ENCL	ENCLOSURE
EOP	EDGE OF PAVEMENT
EQ	EQUAL
EQL SP	EQUALLY SPACED
EQUIP	EQUIPMENT
ESMT	EASEMENT
EW	EACH WAY
EXC	EXCAVATE
EXIST	EXISTING
EXP	EXPANSION
EXP BT	EXPANSION BOLT
EXP JT	EXPANSION JOINT
EXT	EXTERIOR
F	FAHRENHEIT / FIR TREE
F TO F	FACE TO FACE
FAB	FABRICATE
FB	FLAT BAR
FCA	FLANGED COUPLING ADAPTER
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FDN	FOUNDATION
FEXT	FIRE EXTINGUISHER
FF	FINISHED FLOOR / FAR FACE
FGL	FIBERGLASS
FH	FIRE HYDRANT
FIN	FINISH(ED)
FIPT	FEMALE IRON PIPE THREAD
FITG	FITTING
FL	FLOOR LINE
FLEX	FLEXIBLE
FLG	FLANGE
FLL	FLOW LINE
FLR	FLOOR
FM	FLOW METER
FO	FIBER OPTIC
FOC	FACE OF CONCRETE
FOF	FACE OF FINISH
FOM	FACE OF MASONRY
FOS	FACE OF STUDS
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FRP	FIBERGLASS REINFORCED PLASTIC
FT	FEET / FOOT
FTG	FOOTING
FUT	FUTURE
FXTR	FIXTURE
G	GAS
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GC	GROOVED COUPLING
GFA	GROOVED FLANGE ADAPTER
GI	GALVANIZED IRON
GIP	GALVANIZED IRON PIPE
GJ	GRIP JOINT
GL	GLASS
GLV	GLOBE VALVE
GND	GROUND
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GPS	GALLONS PER SECOND
GR	GRADE
GR LN	GRADE LINE
GRTG	GRATING
GV	GATE VALVE
GRVL	GRAVEL
GYP	GYPSUM
H	HEMLOCK TREE
HB	HOSE BIBB
HC	HOLLOW CORE
HDPE	HIGH DENSITY POLYETHYLENE
HDR	HEADER
HDWE	HARDWARE
HGR	HANGER
HGT	HEIGHT
HH	HANDHOLD
HM	HOLLOW METAL
HMAC	HOT MIX ASPHALT CONCRETE
HNDRL	HANDRAIL
HOA	HAND-OFF-AUTO
HOR	HAND-OFF-REMOTE
HORIZ	HORIZONTAL
HP	HIGH PRESSURE / HORSEPOWER
HPG	HIGH PRESSURE GAS
HPT	HIGH POINT
HR	HOUR
HSB	HIGH STRENGTH BOLT
HT	HUB / TACK
HV	HOSE VALVE
HVAC	HEATING, VENTILATION, AIR CONDITIONING
HWL	HIGH WATER LINE
HWY	HIGHWAY
HYD	HYDRANT
HYDR	HYDRAULIC
I&C	INSTRUMENTATION & CONTROL
IAW	IN ACCORDANCE WITH
ICV	IRRIGATION CONTROL VALVE
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IF	INSIDE FACE
IMPVT	IMPROVEMENT
IN	INCH
INCC	INCLUDE(D)(ING)
INFL	INFLUENT
INJ	INJECTION
INSTL	INSTALLATION / INSTALL
INSUL	INSULATION
INTER	INTERCEPTOR
INTR	INTERIOR
INV	INVERT
IP	IRON PIPE
IPT	IRON PIPE THREAD
IR	IRON ROD
IRRIG	IRRIGATION
JT	JOINT
JUNC	JUNCTION
KPL	KICK PLATE
KVA	KILOVOLT AMPERE
KW	KILOWATT
KWY	KEYWAY
L	LENGTH
LA	LANDSCAPED AREA
LAB	LABORATORY
LAV	LAVATORY
LB	POUND
LF	LINEAR FOOT
LIN	LINEAL
LN	LANE
LOC	LOCATION
LONG	LONGITUDINAL
LP	LOW PRESSURE
LPT	LOW POINT
LRG	LARGE
LS	LONG SLEEVE / LUMP SUM
LT	LEFT
LVL	LEVEL
LWL	LOW WATER LINE
M	MAPLE TREE
MAN	MANUAL
MAT	MATERIAL
MAX	MAXIMUM
MCC	MOTOR CONTROL CENTER
MCP	MASTER CONTROL PANEL
MECH	MECHANICAL
MET	METAL
MFR	MANUFACTURER
MGD	MILLION GALLONS PER DAY
MH	MANHOLE
MIN	MINIMUM
MIPT	MALE IRON PIPE THREAD
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT
MON	MONUMENT / MONOLITHIC
MOT	MOTOR
MP	MILEPOST
MSL	MEAN SEAL LEVEL
MTD	MOUNTED
NA	NOT APPLICABLE
NAVD	NORTH AMERICAN VERTICAL DATUM
NC	NORMALLY CLOSED
NF	NEAR FACE
NIC	NOT IN CONTRACT
NO / NO.	NORMALLY OPEN / NUMBER
NOM	NOMINAL
NORM	NORMAL
NRS	NON-RISING STEM
NTS	NOT TO SCALE
O TO O	OUT TO OUT
OAR	OREGON ADMINISTRATIVE RULES
OC	ON CENTER
OD	OUTSIDE DIAMETER
OF	OVERFLOW / OUTSIDE FACE
OHPP	OVERHEAD POWER
OHWM	ORDINARY HIGH WATER MARK
OPNG	OPENING
OPP	OPPOSITE
ORIG	ORIGINAL
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
OVHD	OVERHEAD
PA	PLANTED AREA
P&ID	PROCESS & INSTRUMENTATION DIAGRAM
PC	POINT OF CURVE
PCC	POINT OF COMPOUND CURVE
PCVC	POINT OF CURVATURE ON VERTICAL CURVE
(P)	PROPOSED/NEW
PE	PLAIN END
PERF	PERFORATED
PERM	PERMANENT
PERP	PERPENDICULAR
PG	PRESSURE GAUGE
PH	PIPE HANGER
PI	POINT OF INTERSECTION
PIVC	POINT OF INTERSECTION ON VERTICAL CURVE
PL OR P/L	PROPERTY LINE / PLATE / PLASTIC
PLBG	PLUMBING
PNL	PANEL
POC	POINT OF CURVATURE
POLY	POLYETHYLENE
PP	POWER POLE / PURPLE PIPE
PRC	POINT OF REVERSE CURVATURE
PRCST	PRECAST
PRD	PER RECORD DRAWING
PREP	PREPARATION
PRESS	PRESSURE
PRKG	PARKING
PROP	PROPERTY
PRV	PRESSURE REDUCING VALVE
PS	PUMP STATION
PSIG	POUNDS PER SQUARE INCH GAUGE
PSL	PIPE SLEEVE
PSPT	PIPE SUPPORT
PT	PRESSURE TANK
PTVC	POINT OF TANGENCY ON VERTICAL CURVE
PTW	PUMP TO WASTE
PV	PLUG VALVE
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
PW	POTABLE WATER
PWR	POWER
QTY	QUANTITY
RAD	RADIUS
RC	REINFORCED CONCRETE
RCC	REBAR / CONTROL CAP
RCP	REINFORCED CONCRETE PIPE
RD	ROAD / ROOF DRAIN
RDCR	REDUCER
REF	REFERENCE
REINF	REINFORCE(D)(ING)(MENT)
REQ'D	REQUIRED
RESTR	RESTRAINED
RFCA	RESTRAINED FLANGE COUPLING ADAPTER
RM	ROOM
RND	ROUND
RO	ROUGH OPENING
R/W	RIGHT-OF-WAY
RPBPD	REDUCED PRESSURE BACKFLOW PREVENTION DEVICE
RPM	REVOLUTIONS PER MINUTE
RR	RAILROAD
RST	REINFORCED STEEL
RT	RIGHT
SALV	SALVAGE
SAN	SANITARY
SC	SOLID CORE
SCHED	SCHEDULE
SD	STORM DRAIN
SDL	SADDLE
SDR	STANDARD DIMENSION RATIO
SECT	SECTION
SHLDR	SHOULDER
SHT	SHEET
SIM	SIMILAR
SLP	SLOPE
SLV	SLEEVE
SOLN	SOLUTION
SP	SOIL PIPE / SEWER PIPE
SPCL	SPECIAL
SPEC(S)	SPECIFICATION(S)
SPG	SPACING
SPL	SPOOL
SPRT	SUPPORT
SQ	SQUARE
SQ FT	SQUARE FOOT
SQ IN	SQUARE INCH
SQ YD	SQUARE YARD
SS	SANITARY SEWER
SST	STAINLESS STEEL
ST	STREET
STA	STATION
STD	STANDARD
STL	STEEL
STOR	STORAGE
STR	STRAIGHT
STRUCT	STRUCTURE / STRUCTURAL
SUBMG	SUBMERGED
SUCT	SUCTION
SV	SOLENOID VALVE
S/W	SIDEWALK
SWD	SIDEWATER DEPTH
SWGR	SWITCH GEAR
SYMM	SYMMETRICAL
SYS	SYSTEM
T OR TEL	TELEPHONE
T&B	TOP & BOTTOM
TAN	TANGENCY
TB	THRUST BLOCK
TBM	TEMPORARY BENCHMARK
TC	TOP OF CONCRETE / TOP OF CURB
TCE	TEMPORARY CONSTRUCTION EASEMENT
TDH	TOTAL DYNAMIC HEAD
TEMP	TEMPERATURE / TEMPORARY
T&G	TONGUE & GROOVE
THK	THICK / THICKNESS
THRD	THREAD (ED)
THRU	THROUGH
TP	TEST PIT / TOP OF PAVEMENT / TURNING POINT
TRANS	TRANSITION
TSP	TRI-SODIUM PHOSPHATE
TST	TOP OF STEEL
TW	TOP OF WALL
TYP	TYPICAL
UG	UNDERGROUND
UH	UNIT HEATER
UN	UNION
UON	UNLESS OTHERWISE NOTED
UP	UNDERGROUND POWER
USGS	UNITED STATES GEOLOGIC SURVEY
V	VENT / VOLT
VAC	VACUUM
VB	VACUUM BREAKER
VBOX	VALVE BOX
VC	VERTICAL CURVE
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VOL	VOLUME
VCP	VITRIFIED CLAY PIPE
VTR	VENT THROUGH ROOF
W	WATER
W/	WITH
W/IN	WITHIN
W/O	WITHOUT
W/W	WALL TO WALL
WA	WASHINGTON
WD	WOOD
WF	WIDE FLANGE
WH	WATER HEATER
WI	WROUGHT IRON
WM	WATER METER
WP	WORKING POINT / WATERPROOFING
WS	WATER SERVICE
WSDOT	WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
WT	WEIGHT
WTP	WATER TREATMENT PLANT
WTRT	WATERTIGHT
WWF	WELDED WIRE FABRIC
WWTF	WASTEWATER TREATMENT FACILITY
WWTP	WASTEWATER TREATMENT PLANT
X SECT	CROSS SECTION
XFMR	TRANSFORMER
YD	YARD DRAIN / YARD
YH	YARD HYDRANT
YR	YEAR
ZN	ZINC

SHEET X OF X

CAD NO. W090-D4003-C11-D4002-C11-2023-X-G103

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REGISTERED STAMP

WASHINGTON STATE PARKS AND RECREATION COMMISSION

WALLACE FALLS STATE PARK

PARKING EXPANSION AND WATER SYSTEM REPLACEMENT

ABBREVIATIONS

G103

SCALE
NONE

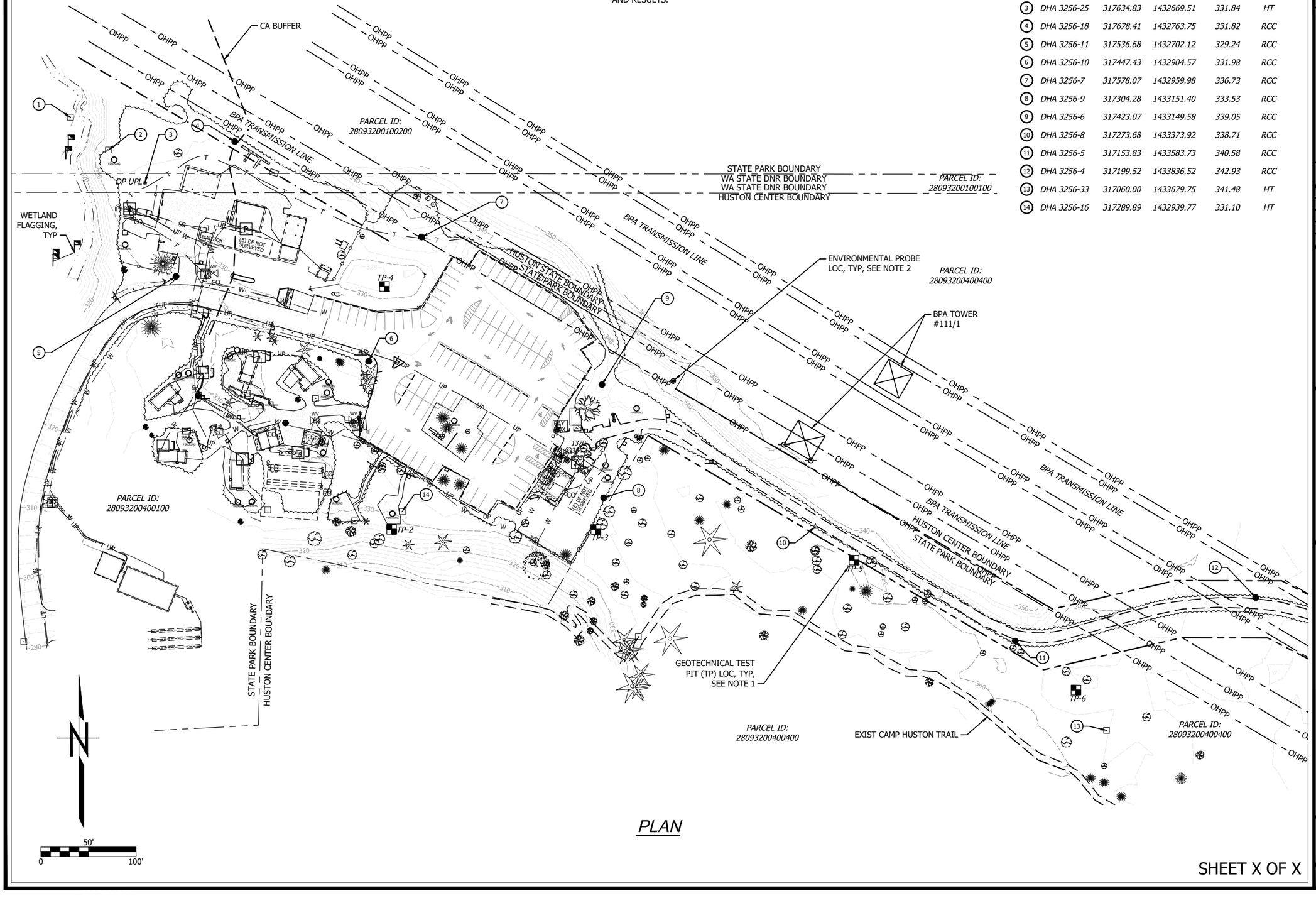
PARKS FILE#

SHEET NOTES:

1. REFERENCE THE GEOTECHNICAL REPORT FOR ADDITIONAL INFORMATION ON TEST PIT LOCATIONS AND RESULTS.
2. REFERENCE THE CRITICAL AREA'S REPORT FOR ADDITIONAL INFORMATION ON PROBE LOCATIONS AND RESULTS.

SITE CONTROL POINTS

	ID	NORTHING	EASTING	EL (NAVD88)	TYPE
1	DHA 3256-31	317703.84	1432591.14	322.81	HT
2	DHA 3256-30	317669.39	1432631.12	332.32	HT
3	DHA 3256-25	317634.83	1432669.51	331.84	HT
4	DHA 3256-18	317678.41	1432763.75	331.82	RCC
5	DHA 3256-11	317536.68	1432702.12	329.24	RCC
6	DHA 3256-10	317447.43	1432904.57	331.98	RCC
7	DHA 3256-7	317578.07	1432959.98	336.73	RCC
8	DHA 3256-9	317304.28	1433151.40	333.53	RCC
9	DHA 3256-6	317423.07	1433149.58	339.05	RCC
10	DHA 3256-8	317273.68	1433373.92	338.71	RCC
11	DHA 3256-5	317153.83	1433583.73	340.58	RCC
12	DHA 3256-4	317199.52	1433836.52	342.93	RCC
13	DHA 3256-33	317060.00	1433679.75	341.48	HT
14	DHA 3256-16	317289.89	1432939.77	331.10	HT



PLAN

SHEET X OF X

CAD NO. W090-D4003-C11-D4002-C11-2023-X-C100

NO.	REVISIONS	INT.	APP.	DATE

ACTION	BY	DATE
DESIGNED	HKP	03/31/23
DRAWN	DKH	03/31/23
CHECKED (FIELD)		
CHECKED (HDQTS.)		

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WASHINGTON STATE PARKS AND RECREATION COMMISSION

WALLACE FALLS STATE PARK

PARKING EXPANSION AND WATER SYSTEM REPLACEMENT

EXISTING SITE CONDITIONS AND CONTROL POINTS - OVERALL

C100

SCALE
AS SHOWN

PARKS FILE#

CAD NO. W090-D4003-C11-D4002-C11-2023-X-C101

NO.	REVISIONS	INT.	APP.	DATE

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WASHINGTON STATE PARKS AND RECREATION COMMISSION

WALLACE FALLS STATE PARK

PARKING EXPANSION AND WATER SYSTEM REPLACEMENT

EXISTING SITE CONDITIONS - WEST

C101

SCALE
AS SHOWN

PARKS FILE#

PARCEL ID: 28093200100200
PARCEL ID: 28093200100100
PARCEL ID: 28093200400400
PARCEL ID: 28093200400100
STATE PARK BOUNDARY
WA STATE DNR BOUNDARY
HUSTON CENTER BOUNDARY
BPA TRANSMISSION LINE
OHPP
ASPHALT ROAD
GRAVEL ROAD
ASPHALT
GRASS
BRUSH
WOODS
GRAVEL
COVERED PARKING/ STORAGE AREA
WOOD SHED
DP UPL
SEPTIC TANK
SHED/DECK
OFFICE BLDG#6
COVERED FIREWOOD/ STORAGE
SHED
TRELLIS
6' WOOD FENCE
GATE
BLDG#8
BLDG#10
SHRUB
SWALE
PA
GARBAGE
STORAGE AREA
CABIN 1
CABIN 2 BLDG#13
CABIN 3 BLDG#14
CABIN 4 BLDG#15
CABIN 5
RAMP
DECK
SEPTIC FIELD (PRD)
SEPTIC DRAINFIELD (PRD)
COVERED SIGN
TRASH ENCLOSURE
PARK STORE BLDG#11
RESTROOMS
SITE 1
SITE 2
TP-1
TP-2
TP-3
TP-4
GARAGE BLDG "A"
RANGER RESIDENCE BLDG#1
MATCHLINE SHEET 7

PLAN

30' 0 60'

SHEET X OF X

CAD NO. W090-D4003-C11-D4002-C11-2023-X-C102

NO.	REVISIONS	INT.	APP.	DATE

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WASHINGTON STATE PARKS AND RECREATION COMMISSION

WALLACE FALLS STATE PARK

PARKING EXPANSION AND WATER SYSTEM REPLACEMENT

EXISTING SITE CONDITIONS - EAST

C102

SCALE
AS SHOWN

PARKS FILE# -

MATCHLINE SHEET 6

STATE PARK BOUNDARY
HUSTON CENTER BOUNDARY

BPA TOWER #111/1

OHPP

TOE

TOP

GRAVEL ROAD

DIRT PATH

BRUSH

WOODS

EXIST CAMP HUSTON TRAIL

TP-5

TP-6

PARCEL ID: 28093200400400

BPA TRANSMISSION LINE

20"A
18"A
24"A
12"HEM
28"HEM
16"A
12"A
18"HEM
20"M
14"A
14"HEM
1-18"A 3-12"A
18"M
22"A
3-18"M
20"HEM
24"CON

340
350

30'
0
60'

PLAN

SHEET X OF X

KEY NOTES

1. SILT FENCE
   PER DET X, SHT X
   FENCE SHOWN IN APPROXIMATE LOCATION, LOCATE FENCE AS NECESSARY TO AVOID PROPOSED CONSTRUCTION
2. CONSTRUCTION EXIT (ENTRANCE)
   PER DET X, SHT X
3. GRAVEL FILTER BERM
   PER DET X, SHT X
4. CONCRETE WASHOUT FACILITY
   CONSTRUCT OR PROVIDE PRE-MANUFACTURED STORAGE BASIN TO WASHOUT CONCRETE TRUCKS. REMOVE WASTE CONCRETE AS NECESSARY TO AVOID OVERTOPPING.
5. INLET PROTECTION
   PER DET X, SHT X
   FURNISH AND INSTALL PROTECTION ON BOTH EXISTING AND PROPOSED STORM DRAIN INLETS

EROSION CONTROL NOTES

1. CONTRACTOR SHALL IDENTIFY DRAINAGE PATHWAYS PRIOR TO BEGINNING CONSTRUCTION AND ENSURE THERE ARE BMPS IN PLACE TO STOP EROSION FROM LEAVING THE SITE.
2. WHERE CONSTRUCTION IS OCCURRING IN AREAS OF ASPHALT PAVEMENT, HAUL TRUCKS SHALL REMAIN ON PAVED SURFACES TO PREVENT COLLECTION OF SEDIMENT ON TIRES AND TRACKOUT FROM THE SITE. IF TRACKOUT IS OCCURRING CONTRACTOR TO PROVIDE A TRACKOUT CONTROL MAT SOLUTION SUCH AS FODS CONSTRUCTION ENTRANCE MUD MAT SYSTEM OR EQUAL.
3. PRESERVE NATURAL VEGETATION ALONG PERIMETER OF THE SITE PER SNOHOMISH COUNTY STORMWATER DESIGN MANUAL (SCSWDM) BMP C101. CONTRACTOR SHALL PROTECT EXISTING VEGETATION ALONG EXISTING SLOPES, PROPERTY LINES, NEAR WATERCOURSES, AND WOODED AREAS. IDENTIFY CONSTRUCTION LIMITS BEFORE BEGINNING WORK AND MARK ACCORDINGLY TO PREVENT VEGETATION REMOVAL OR EARTH DISTURBANCE BEYOND THE PROJECT AREA.
4. PROVIDE BOTH TEMPORARY (DISTURBED AREAS THAT WILL BE UNWORKED FOR MORE THAN 30 DAYS) AND PERMANENT SEEDING (SCSWDM C120) AND MULCH COVER (SCSWDM C121) ON ALL DISTURBED AREAS TO BE VEGETATED. IRRIGATE AS NECESSARY BETWEEN JULY 1 AND AUG 30.

DEMO LEGEND

AREA TO BE DEMOLISHED

LINEAR FEATURE TO BE DEMOLISHED

TREE TO BE DEMOLISHED
NOT ALL TREES MAY BE SHOWN, IF ADDITIONAL TREES ARE REQUIRED TO BE REMOVED TO PERFORM WORK, CONTRACTOR IS TO COORDINATE WITH WSP

PROPOSED WELL SITE AND TREATMENT BLDG

BPA TRANSMISSION LINE

PARCEL ID: 28093200100200

PARCEL ID: 28093200100100

PARCEL ID: 28093200400400

STATE PARK BOUNDARY
WA STATE DNR BOUNDARY
WA STATE DNR BOUNDARY
HUSTON CENTER BOUNDARY

REMOVE ALL (E) PAINT STRIPES AND ARROWS, TYP

HUSTON STATE BOUNDARY
STATE PARK BOUNDARY

PROPOSED IMPROVEMENT FOOTPRINT

(E) DF NOT SURVEYED

100'

REMOVE ALL WHEEL STOPS, TYP
CAREFULLY STORE ONSITE, STOPS TO BE REUSE AS INDICATED ON SITE PLANS OR AS DIRECTED BY WSP

STATE PARK BOUNDARY
HUSTON CENTER BOUNDARY

50'
0
100'

PLAN

SHEET X OF X

CAD NO. W090-D4003-C11-D4002-C11-2023-X-C103

NO.	REVISIONS	INT.	APP.	DATE

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WASHINGTON STATE PARKS AND RECREATION COMMISSION

WALLACE FALLS STATE PARK

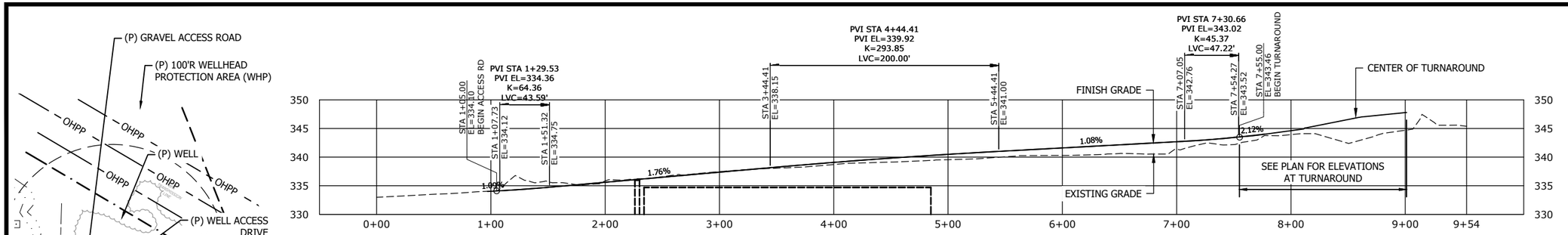
PARKING EXPANSION AND WATER SYSTEM REPLACEMENT

DEMO & TESC PLAN

C103

SCALE
AS SHOWN

PARKS FILE#



LOOP ROAD PROFILE

SCALE: 1" = 50' H, 1" = 10' V

(P) GRAVEL ACCESS ROAD
(P) 100'R WELLHEAD PROTECTION AREA (WHP)
(P) WELL
(P) WELL ACCESS DRIVE
(P) INFILTRATION BASIN STORMTECH SC-740 OR EQUAL 200 CHAMBERS
(P) ASPHALT PAVEMENT, TYP
(P) LANDSCAPE ISLAND, TYP
(P) PARKING LOT STRIPING, TYP
(E) ASPHALT PAVEMENT, TYP RETAIN AND PROTECT
(P) ROCKERY OR BLOCK RETAINING WALL, TYP
50' BPA TOWER OFFSET, TYP
(E) BPA TOWER #111/2
150' CRITICAL AREA SETBACK
BEGIN LOOP ACCESS ROAD ALIGNMENT
N317473.00
E1433032.90
0+00
S56°48'13"E 103.48'
R=295.91'
Δ=9°41'34"
L=100.12'
2+00
3+00
4+00
5+00
6+00
S59°10'22"E 632.59'
R=150.00'
Δ=27°37'37"
L=632.59'
S86°57'59"E 632.59'
MATCHLINE SHEET 6
MATCHLINE SHEET 7
MATCHLINE SHEET 9
MATCHLINE SHEET 10
MATCHLINE SEE SHEET C-6
(P) INFILTRATION BASIN #2 STORMTECH SC-740 OR EQUAL 100 CHAMBERS
(P) LOOP ROAD ℄
SEE PROFILE THIS SHT
SEE TYPICAL SECTION SHT C202
(P) ALT WELL SITE
(P) GATE PER DET X, SHT X
(P) ASPHALT PAVEMENT
(P) GRAVEL PEDESTRIAN PATH
(E) CAMP HOUSTON TRAIL
(P) SOLAR POWERED KIOSK AND E3 BULLETIN BOARD
(P) COMFORT STATION CXT DOUBLE CASCADIAN
END LOOP ACCESS ROAD ALIGNMENT
STA 9+11.18
N317116.17
E1433851.20
6' MAX SPACING, TYP
(P) BOULDERS
50'
0
100'

PLAN

SHEET X OF X

CAD NO. W090-D4003-C11-D4002-C11-2023-X-C200

NO.	REVISIONS	INT.	APP.	DATE

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WASHINGTON STATE PARKS AND RECREATION COMMISSION

WALLACE FALLS STATE PARK

PARKING EXPANSION AND WATER SYSTEM REPLACEMENT

SITE PLAN & PROFILE OVERALL

C200

SCALE
AS SHOWN

PARKS FILE#

CAD NO. W090-D4003-C11-D4002-C11-2023-X-C201

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WASHINGTON STATE PARKS AND RECREATION COMMISSION

WALLACE FALLS STATE PARK

PARKING EXPANSION AND WATER SYSTEM REPLACEMENT

SITE & GRADING PLAN WEST

C201

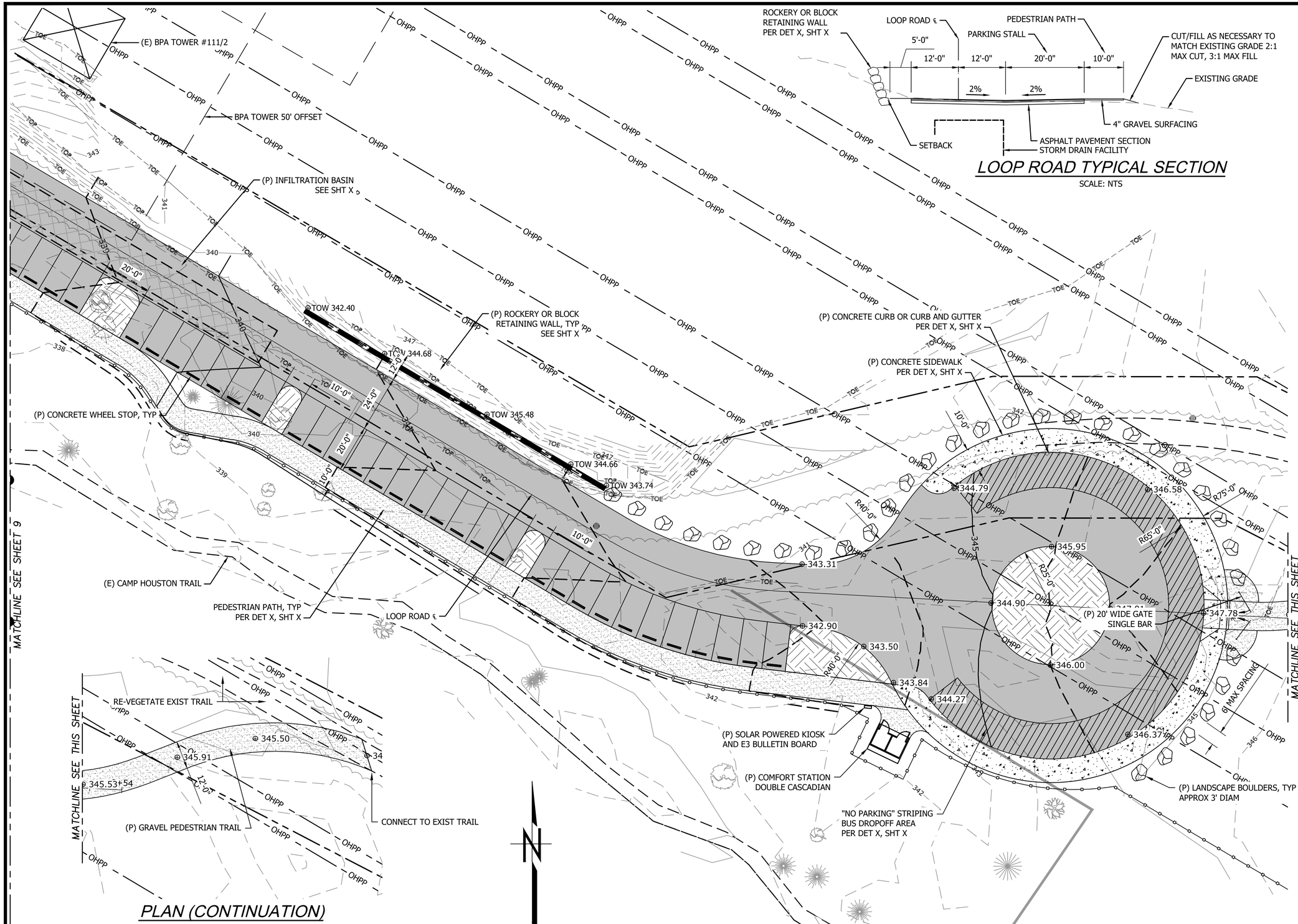
SCALE
AS SHOWN

PARKS FILE#

TOW 343.14
334.99
TOW 343.23
TOW 338.23
TOW 340.64
335.24
335.22
TOW 333.40
TOW 339.02
333.05
333.77
335.54
335.07
TOW 338.14
333.27
336.34
336.02
330.86
331.65
TOW 338.99
336.82
336.54
331.14
TOW 345.55
336.80
336.74
331.90
332.07
TOW 345.70
337.06
TOW 341.05
335.64
335.74
TOW 336.08
334.92
335.11
334.17
334.69
336.17
335.89
(P) ROCKERY OR BLOCK RETAINING WALL, TYP SEE SHT X
(P) 48" STORM DRAIN MANHOLE SEE SHT X
GEOTECHNICAL TEST PIT (TP) LOCATION, TYP, SEE NOTE 1
(P) INFILTRATION BASIN SEE SHT X
(P) PARALLEL PARKING, TYP
SAWCUT (E) ASPHALT TO FORM (P) LANDSCAPE ISLAND, TYP ALL ISLANDS PER DET X, SHT X
(E) STORM DRAIN OVERFLOW
(P) ROCKERY OR BLOCK RETAINING WALL, TYP SEE SHT X
NO PARKING STRIPING PER DET X, SHT X
HYDRODYNAMIC SEPERATOR SEE SHT X
8"ABS STAKE OUTFALL NOT FOUND TO NORTH IE 330.44
BPA TOWER 50' OFFSET
(P) INFILTRATION BASIN SEE SHT X
MATCHLINE SHEET 6
MATCHLINE SHEET 7
MATCHLINE SEE SHEET 10
(P) HYDRODYNAMIC SEPERATOR SEE SHT X
(P) GRAVEL PEDESTRIAN PATH PER DET X, SHT X
(P) CONCRETE WHEEL STOP, TYP
(P) ASPHALT PATCH PER DET X, SHT X
ACCESSIBLE PARKING, TYP PER DET X, SHT X
(P) ASPHALT PATCH PER DET X, SHT X
(P) ADA VAN ACCESSIBLE PARKING PER DET X, SHT X
SEPTIC TANK
PAY BOX
FLAGPOLE
FIRE HYDRANT
1370 @ 334.15 635
R22'-6"
R26'-9"
R4'-6"
R25'-5"
R5'-0"
OHPP
TOP
TOE
0 20' 40'

PLAN

SHEET X OF X



PLAN (CONTINUATION)

PLAN

LOOP ROAD TYPICAL SECTION

SCALE: NTS

CAD NO. W090-D4003-C11-D4002-C11-2023-X-C202

NO.	REVISIONS	INT.	APP.	DATE

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WASHINGTON STATE PARKS AND RECREATION COMMISSION

WALLACE FALLS STATE PARK

PARKING EXPANSION AND WATER SYSTEM REPLACEMENT

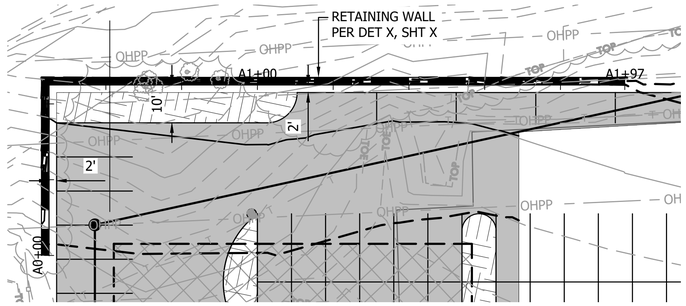
SITE & GRADING PLAN EAST

C202

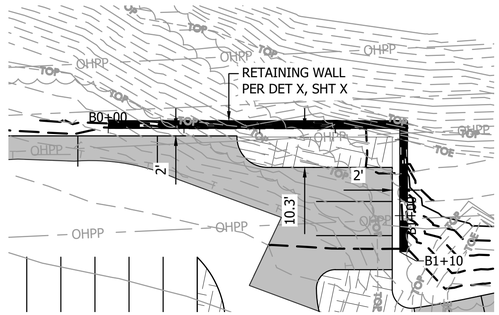
SCALE
AS SHOWN

PARKS FILE#

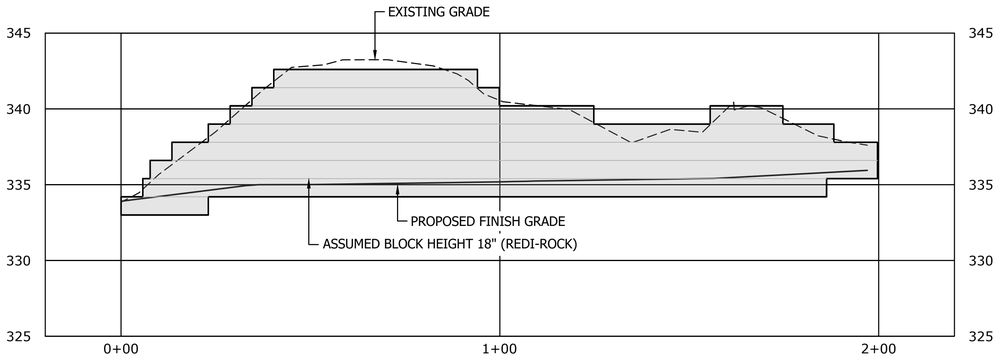
SHEET X OF X



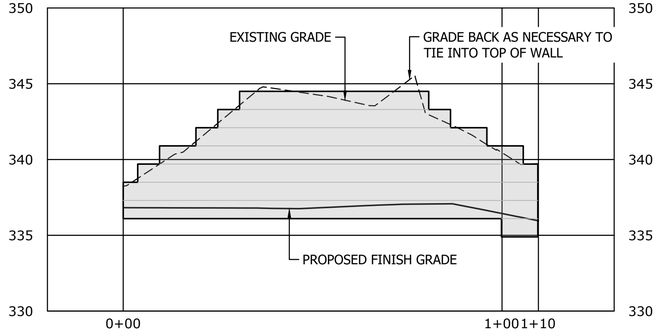
WALL A PLAN



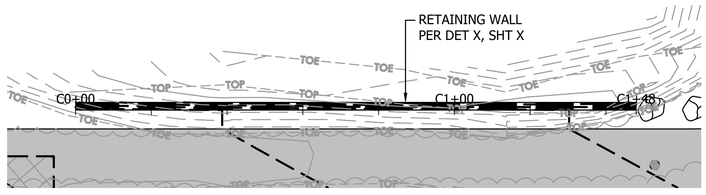
WALL B PLAN



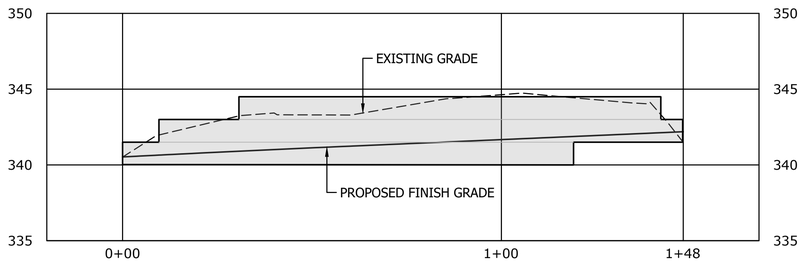
WALL A PROFILE



WALL B PROFILE



WALL C PLAN



WALL C PROFILE

GRAVITY BLOCK RETAINING WALL

1. TOP OF WALL ELEVATIONS ARE BASED ON EXISTING GRADE AT THE TIME OF THE SURVEY. DUE TO THE THICK VEGETATION WHEN THE DATA WAS COLLECTED THE ACTUAL GRADE MAY VARY, WHICH MAY RESULT IN AN ADDITIONAL ROW. CONTRACTOR SHALL FIELD VERIFY GRADE TO CONFIRM FINAL WALL HEIGHT.
2. ACTUAL STEPS IN WALL, BOTH TOP WALL AND FOUNDATION BLOCKS MAY VARY BASED ON BOTH THE EXISTING AND PROPOSED GRADES. ADJUST AS REQUIRED TO PROVIDE THE NECESSARY BLOCK EMBEDMENT AT THE BOTTOM OF WALL AND TO MATCH THE EXISTING GRADE AT THE TOP OF WALL.
3. ALL WALLS REQUIRE A BUILDING PERMIT. CONTRACTOR SHALL PROVIDE STAMPED DESIGNS BY A LICENSED ENGINEER IN THE STATE OF WASHINGTON FOR EACH WALL BASED ON THE SELECTED BLOCK AND SHALL SUBMIT TO THE COUNTY FOR THOSE PERMITS.
4. TOP OF ALL WALLS SHALL HAVE A FLAT SURFACED BLOCK (NO KEYS).
5. ALL WALLS SHALL HAVE A PERFORATED PIPE AT THE BASE OF THE WALL THAT SHALL DRAIN TO DAYLIGHT. PROVIDE ADEQUATE DRAINS AS RECOMMENDED BY THE BLOCK MANUFACTURER.

PLAN/PROFILE HORIZONTAL SCALE 0 20' 40'

PROFILE VERTICAL SCALE 0 5' 10'

SHEET X OF X

CAD NO. W090-D4003-C11-D4002-C11-2023-X-C203

NO.	REVISIONS	INT.	APP.	DATE

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REGISTERED STAMP

WASHINGTON STATE PARKS AND RECREATION COMMISSION

WALLACE FALLS STATE PARK

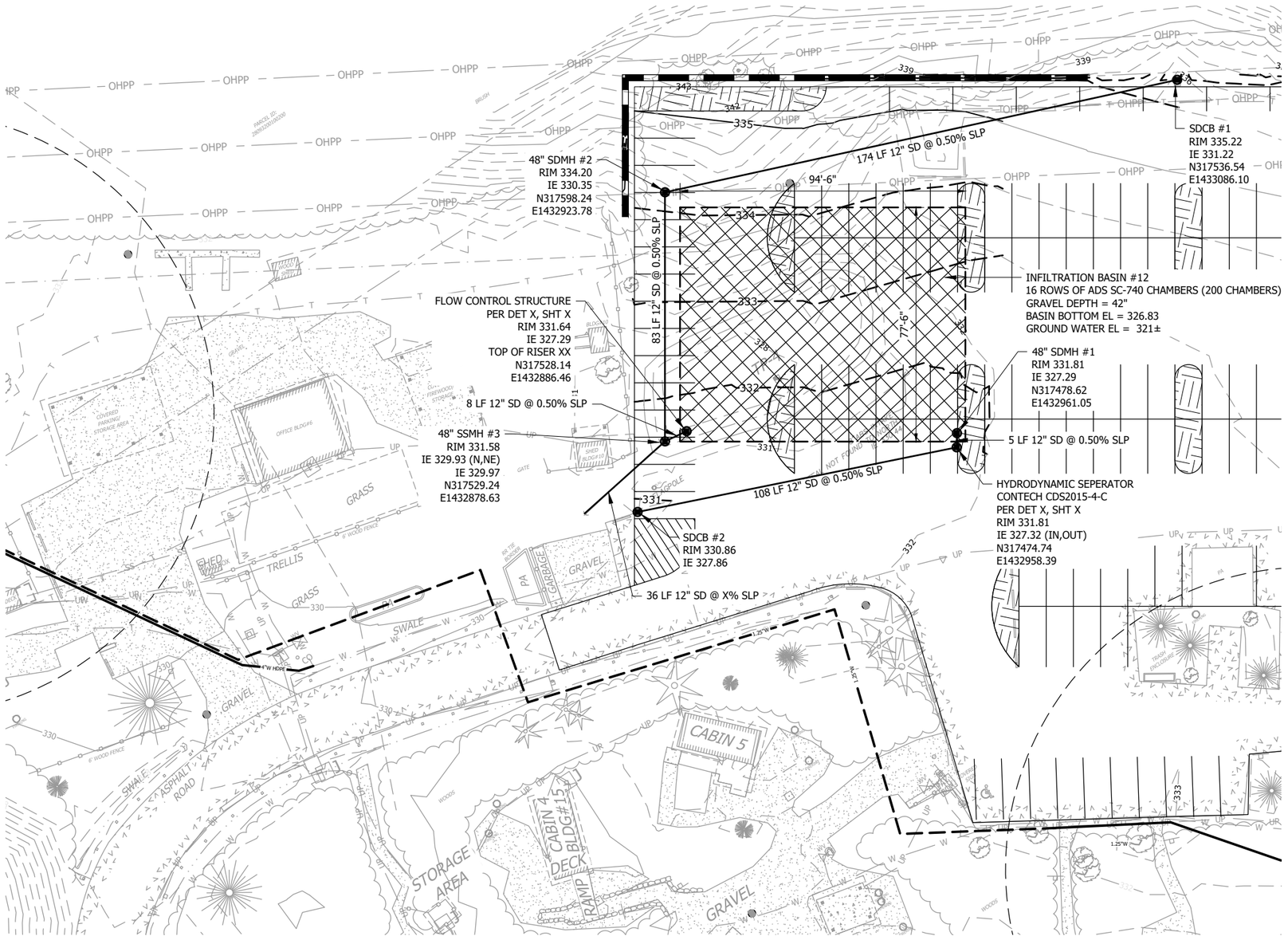
PARKING EXPANSION AND WATER SYSTEM REPLACEMENT

RETAINING WALL PLAN & PROFILES

C203

SCALE
AS SHOWN

PARKS FILE#



WEST DRAINAGE BASIN

20' 0 40'

SHEET X OF X

CAD NO. W090-D4003-C11-D4002-C11-2023-X-C301

NO.	REVISIONS	INT.	APP.	DATE

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WASHINGTON STATE PARKS AND RECREATION COMMISSION

WALLACE FALLS STATE PARK

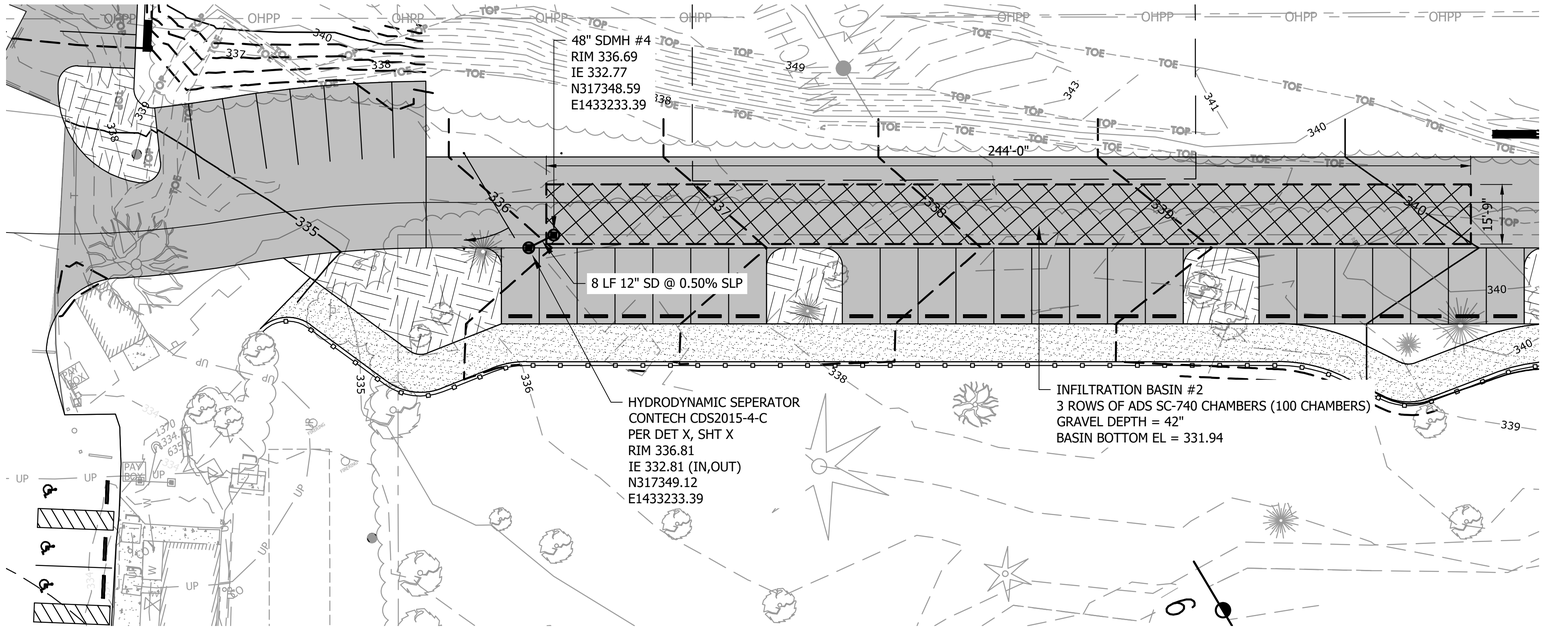
PARKING EXPANSION AND WATER SYSTEM REPLACEMENT

DRAINAGE BASIN WEST

C301

SCALE
AS SHOWN

PARKS FILE#



EAST DRAINAGE BASIN

MATCHLINE SEE THIS SHEET

SHEET X OF X

CAD NO. W090-D4003-C11-D4002-C11-2023-X-C302

NO.	REVISIONS	INT.	APP.	DATE

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WASHINGTON STATE PARKS AND RECREATION COMMISSION

WALLACE FALLS STATE PARK

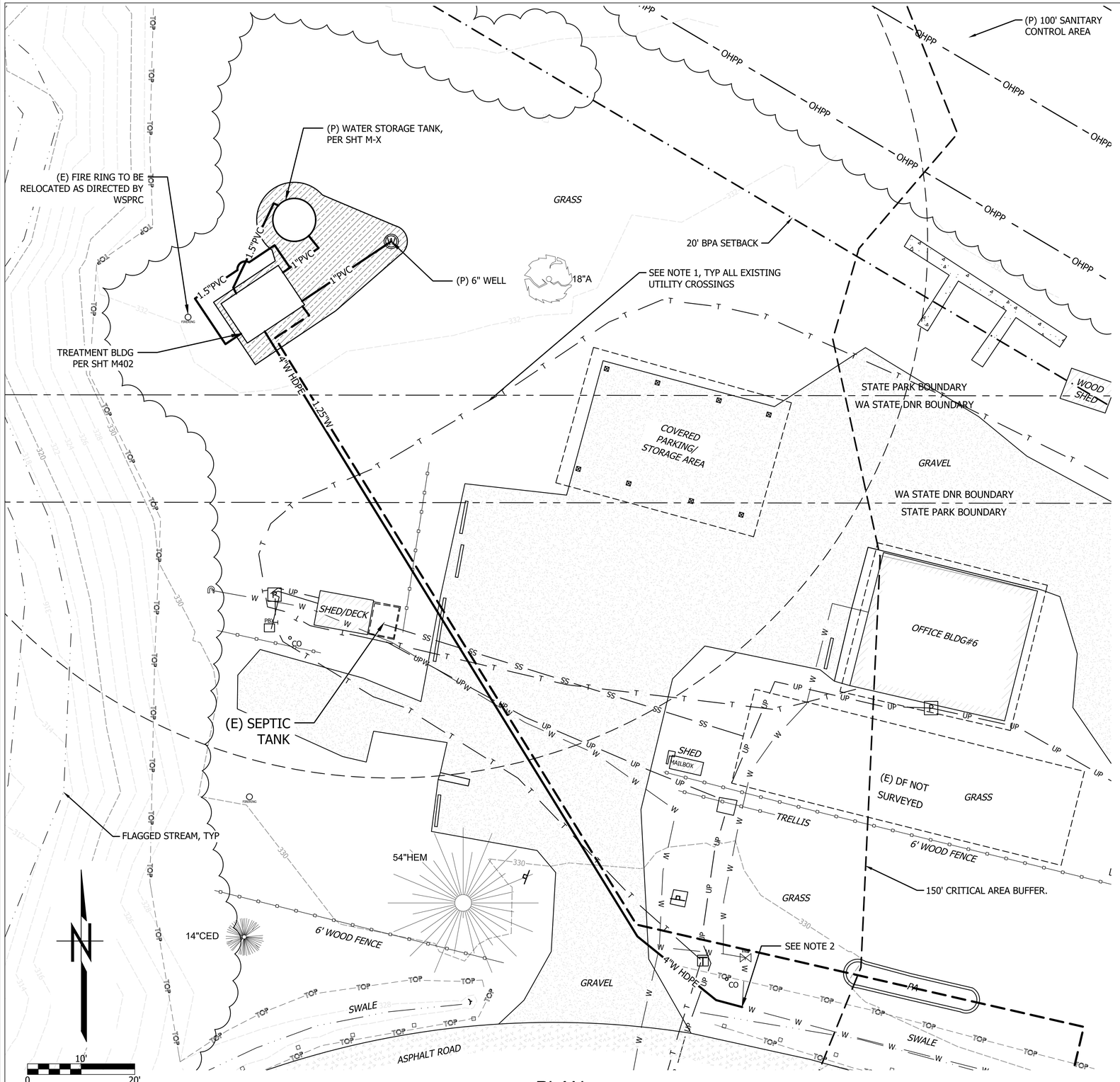
PARKING EXPANSION AND WATER SYSTEM REPLACEMENT

DRAINAGE BASIN EAST

C302

SCALE
AS SHOWN

PARKS FILE#



PLAN

SHEET NOTES:

1. RETAIN AND PROTECT EXISTING UTILITIES.
2. TIE-IN TO EXISTING WATERLINE WILL REQUIRE WATER SYSTEM SHUTDOWN SEQUENCINGS TO BE COORDINATED WITH PARKS. PROVIDE TWO-WEEK NOTICE TO PARKS. CONNECTION DETAIL TO BE DEVELOPED DURING 90% DESIGN SUBMITTAL.

CAD NO. W090-D4003-C11-D4002-C11-2023-X-C401

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WASHINGTON STATE PARKS AND RECREATION COMMISSION

WALLACE FALLS STATE PARK

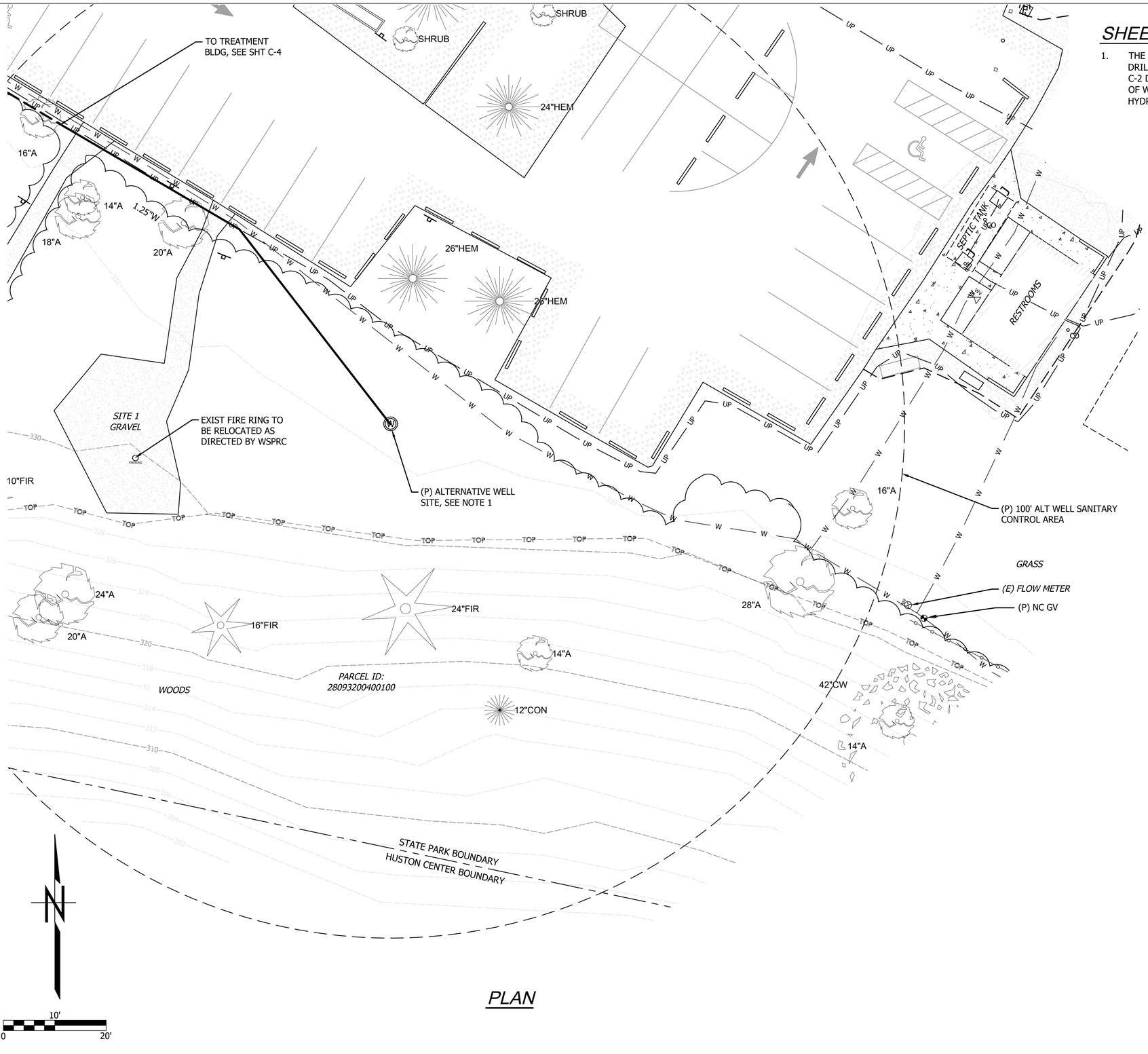
PARKING EXPANSION AND WATER SYSTEM REPLACEMENT

SITE PLAN - TREATMENT BUILDING & WELL
C401

SCALE
AS SHOWN

PARKS FILE#

SHEET X OF X



PLAN

SHEET NOTES:

1. THE ALTERNATIVE WELL SITE WILL ONLY BE DRILLED IF THE PROPOSED WELL SITE SHOWN ON C-2 DOES NOT PRODUCE A SUFFICIENT QUANTITY OF WATER AS DIRECTED BY WSPRC AND/OR HYDROGEOLOGIST.

SHEET X OF X

CAD NO. W090-D4003-C11-D4002-C11-2023-X-C402

NO.	REVISIONS	INT.	APP.	DATE

ACTION	BY	DATE
DESIGNED	HKP	03/31/23
DRAWN	DKH	03/31/23
CHECKED (FIELD)		
CHECKED (HDQTS.)		

PRELIMINARY ONLY
DO NOT USE FOR CONSTRUCTION
February 2023
Nelson Consor
www.consoreng.com

REGISTERED STAMP

WASHINGTON STATE PARKS AND RECREATION COMMISSION

WALLACE FALLS STATE PARK

PARKING EXPANSION AND WATER SYSTEM REPLACEMENT

SITE PLAN - WELL ALTERNATIVE

C402

SCALE
AS SHOWN

PARKS FILE#

Advanced Drainage Systems, Inc.

SiteAssist®
FOR STORMTECH INSTALLATION INSTRUCTIONS VISIT OUR APP

SC-740 STORMTECH CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH SC-740.
2. CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
3. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
4. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
5. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
6. CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
7. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 550 LBS/FT/%, THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418, AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
8. ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
   - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
   - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
   - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
9. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF THE SC-740 SYSTEM

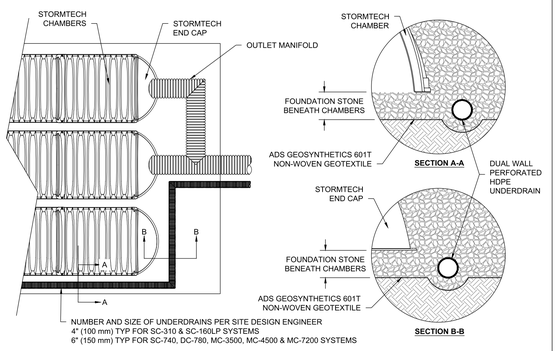
1. STORMTECH SC-740 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. STORMTECH SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
3. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
   - STONESHOOTER LOCATED OFF THE CHAMBER BED.
   - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
   - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
5. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
6. MAINTAIN MINIMUM - 6" (150 mm) SPACING BETWEEN THE CHAMBER ROWS.
7. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE 3/4-2" (20-50 mm).
8. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
9. ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

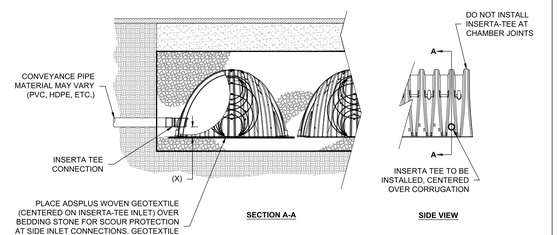
1. STORMTECH SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
2. THE USE OF CONSTRUCTION EQUIPMENT OVER SC-740 CHAMBERS IS LIMITED:
   - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
   - NO RUBBER TIRED LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
   - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
3. FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO THE CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.



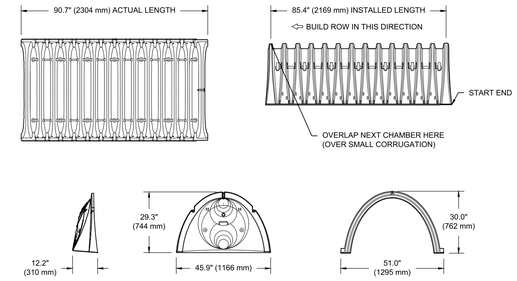
5 UNDERDRAIN DETAIL



CHAMBER	MAX DIAMETER OF INSERTA TEE	HEIGHT FROM BASE OF CHAMBER (X)
SC-310	6" (150 mm)	4" (100 mm)
SC-740	10" (250 mm)	4" (100 mm)
DC-780	10" (250 mm)	4" (100 mm)
MC-3500	12" (300 mm)	6" (150 mm)
MC-4500	12" (300 mm)	8" (200 mm)
MC-7200	12" (300 mm)	8" (200 mm)
INSERTA TEE FITTINGS AVAILABLE FOR SDR 26, SDR 35, SCH 40 IPS GASKETED & SOLVENT WELD, N-12, HP STORM, C-900 OR DUCTILE IRON		

NOTES:
- PART NUMBERS WILL VARY BASED ON INLET PIPE MATERIALS. CONTACT STORMTECH FOR MORE INFORMATION.
- CONTACT ADS ENGINEERING SERVICES IF INSERTA TEE INLET MUST BE RAISED AS NOT ALL INVERTS ARE POSSIBLE.

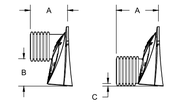
6 INSERTA-TEE SIDE INLET DETAIL



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	51.0" X 30.0" X 85.4"	(1295 mm X 762 mm X 2169 mm)
CHAMBER STORAGE	45.9 CUBIC FEET	(1.30 m³)
MINIMUM INSTALLED STORAGE*	74.9 CUBIC FEET	(2.12 m³)
WEIGHT	75.0 lbs.	(33.6 kg)

*ASSUMES 6" (152 mm) STONE ABOVE, BELOW, AND BETWEEN CHAMBERS



PRE-FAB STUB AT BOTTOM OF END CAP WITH FLAMP END WITH "BR".
PRE-FAB STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
PRE-FAB STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
PRE-CORED END CAPS END WITH "PC"

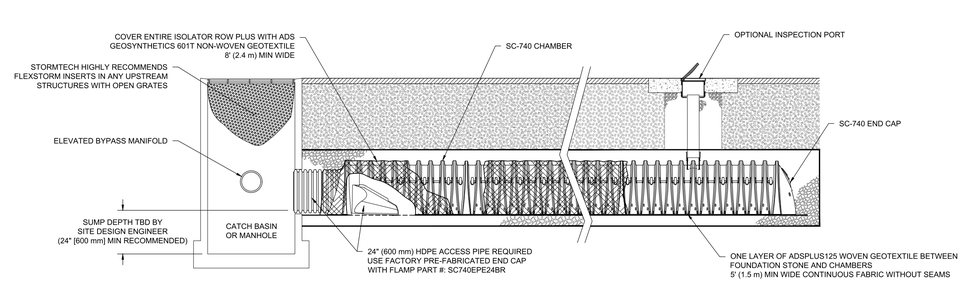
PART #	STUB	A	B	C
SC740EPE06T / SC740EPE06TPC	6" (150 mm)	10.9" (277 mm)	18.5" (470 mm)	---
SC740EPE06B / SC740EPE06BPC			---	0.5" (13 mm)
SC740EPE08T /SC740EPE08TPC	8" (200 mm)	12.2" (310 mm)	16.5" (419 mm)	---
SC740EPE08B / SC740EPE08BPC			---	0.6" (15 mm)
SC740EPE10T / SC740EPE10TPC	10" (250 mm)	13.4" (340 mm)	14.5" (368 mm)	---
SC740EPE10B / SC740EPE10BPC			---	0.7" (18 mm)
SC740EPE12T / SC740EPE12TPC	12" (300 mm)	14.7" (373 mm)	12.5" (318 mm)	---
SC740EPE12B / SC740EPE12BPC			---	1.2" (30 mm)
SC740EPE15T / SC740EPE15TPC	15" (375 mm)	18.4" (467 mm)	9.0" (229 mm)	---
SC740EPE15B / SC740EPE15BPC			---	1.3" (33 mm)
SC740EPE18T / SC740EPE18TPC	18" (450 mm)	19.7" (500 mm)	5.0" (127 mm)	---
SC740EPE18B / SC740EPE18BPC			---	1.6" (41 mm)
SC740EPE24B*	24" (600 mm)	18.5" (470 mm)	---	0.1" (3 mm)
SC740EPE24BR*	24" (600 mm)	18.5" (470 mm)	---	0.1" (3 mm)

ALL STUBS, EXCEPT FOR THE SC740EPE24B/SC740EPE24BR ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT 1-888-892-2694.

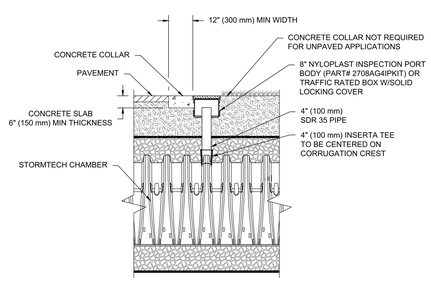
* FOR THE SC740EPE24B/SC740EPE24BR THE 24" (600 mm) STUB LIES BELOW THE BOTTOM OF THE END CAP APPROXIMATELY 1.75" (44 mm). BACKFILL MATERIAL SHOULD BE REMOVED FROM BELOW THE N-12 STUB SO THAT THE FITTING SITS LEVEL.

NOTE: ALL DIMENSIONS ARE NOMINAL

2 SC-740 TECHNICAL SPECIFICATIONS



3 SC-740 ISOLATOR ROW PLUS DETAIL



NOTE:
INSPECTION PORTS MAY BE CONNECTED THROUGH ANY CHAMBER CORRUGATION CREST.

4 4" PVC INSPECTION PORT DETAIL (SC SERIES CHAMBER)

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 3. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR PLUS ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

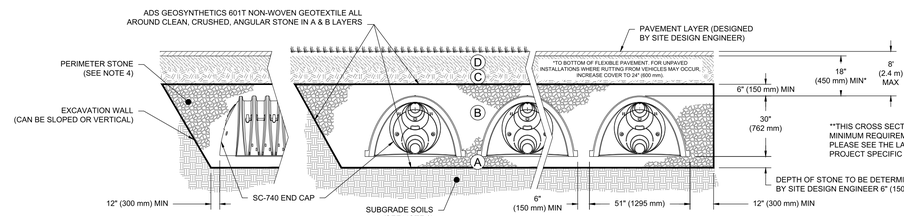
NOTES

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

ACCEPTABLE FILL MATERIALS: STORMTECH SC-740 CHAMBER SYSTEMS

	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 18" (450 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE[2,3]

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



NOTES:

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2. SC-740 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 550 LBS/FT/%. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

1 SC-740 CROSS SECTION DETAIL

DRAWN: | DATE:
REVIEWED: | PROJECT NO:
REV: | NOT TO SCALE

SC-740 STANDARD DETAILS

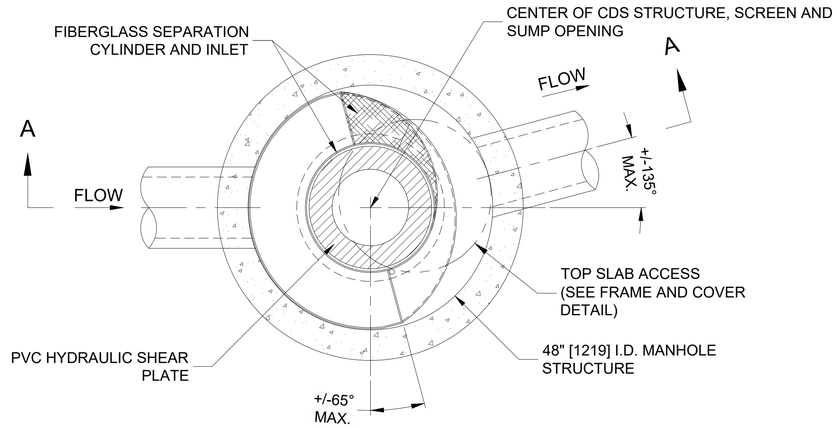
StormTech® Chamber System
888-892-2694 | WWW.STORMTECH.COM

4640 TRUEMAN BLVD
HILLIARD, OH 43026

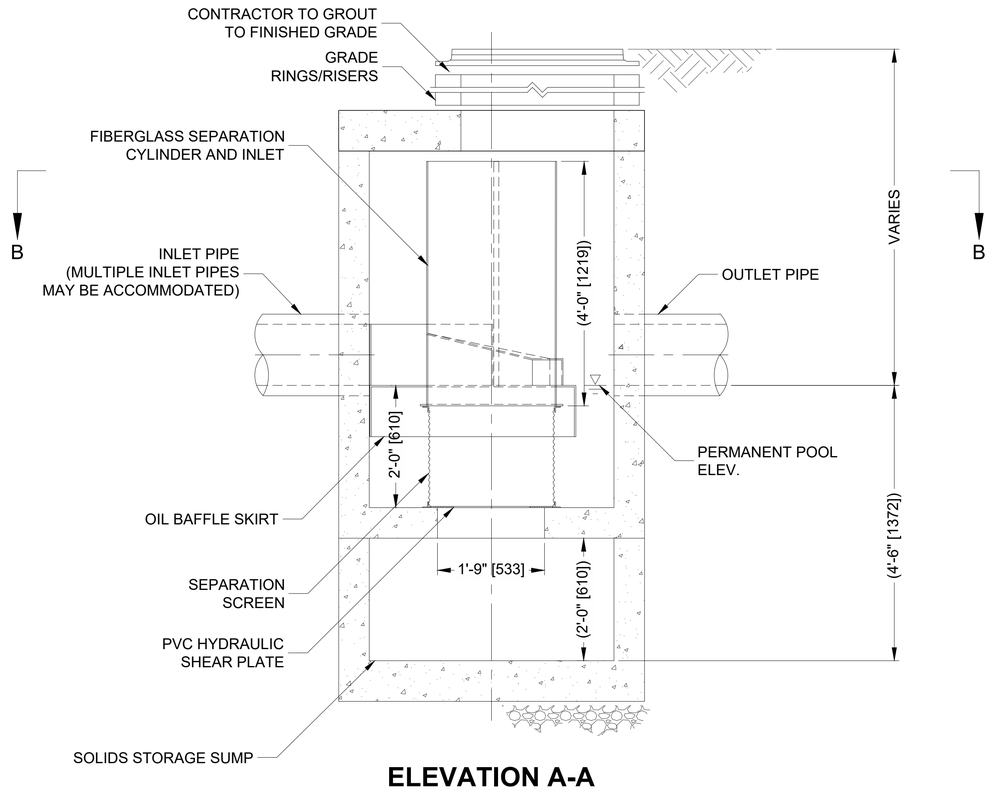
Advanced Drainage Systems, Inc.

SHEET

SHEET C500



PLAN VIEW B-B
NOT TO SCALE.



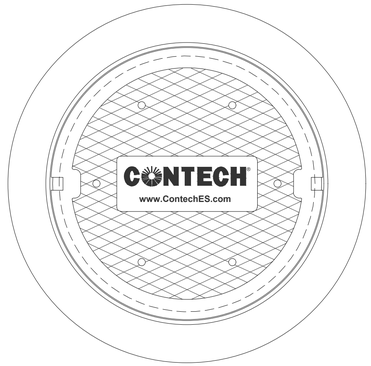
ELEVATION A-A
NOT TO SCALE.

CDS2015-4-C DESIGN NOTES

CDS2015-4-C RATED TREATMENT CAPACITY IS 0.7 CFS [19.8 L/s], OR PER LOCAL REGULATIONS. IF THE SITE CONDITIONS EXCEED MAXIMUM HYDRAULIC CAPACITY, AN UPSTREAM BYPASS STRUCTURE IS REQUIRED.

CDS2015-4-C STANDARD CONFIGURATION IS SHOWN.

FOR NJDEP PROJECTS, PLEASE CONTACT YOUR LOCAL CONTECH REPRESENTATIVE FOR APPROVED CONFIGURATIONS.



FRAME AND COVER
(DIAMETER VARIES)
NOT TO SCALE

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID			
WATER QUALITY FLOW RATE (CFS OR L/s)			*
PEAK FLOW RATE (CFS OR L/s)			*
RETURN PERIOD OF PEAK FLOW (YRS)			*
SCREEN APERTURE (2400 OR 4700)			*
PIPE DATA:	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	*	*	*
INLET PIPE 2	*	*	*
OUTLET PIPE	*	*	*
RIM ELEVATION			*

ANTI-FLOTATION BALLAST	WIDTH	HEIGHT
	*	*

NOTES/SPECIAL REQUIREMENTS:

* PER ENGINEER OF RECORD

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.ContechES.com
3. CDS 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.
4. STRUCTURE SHALL MEET AASHTO HS20 LOAD RATING, ASSUMING EARTH COVER OF 0' - 2', 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..
5. IF REQUIRED, PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.
6. CDS STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-478 AND AASHTO LOAD FACTOR DESIGN METHOD.

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 CDS MANHOLE STRUCTURE.
C. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT INLET AND OUTLET PIPE(S). MATCH PIPE INVERTS WITH ELEVATIONS SHOWN. ALL PIPE CENTERLINES TO MATCH PIPE OPENING CENTERLINES.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

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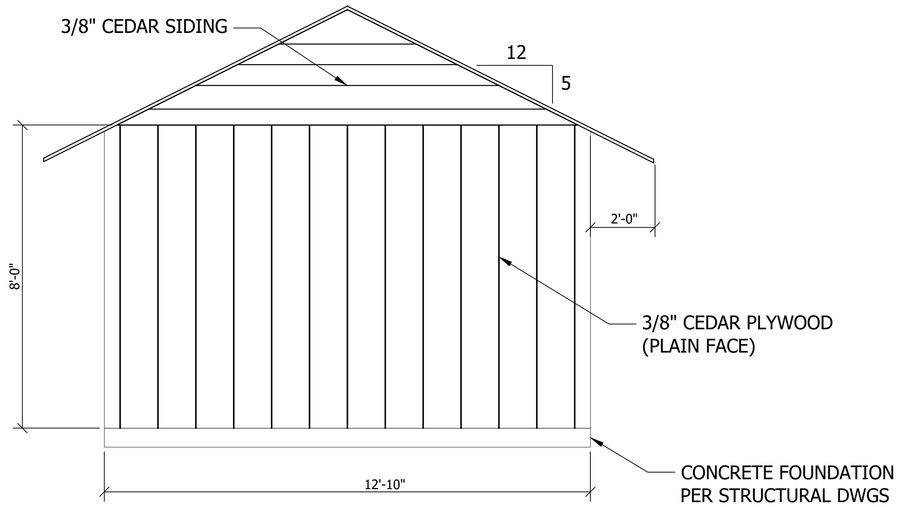
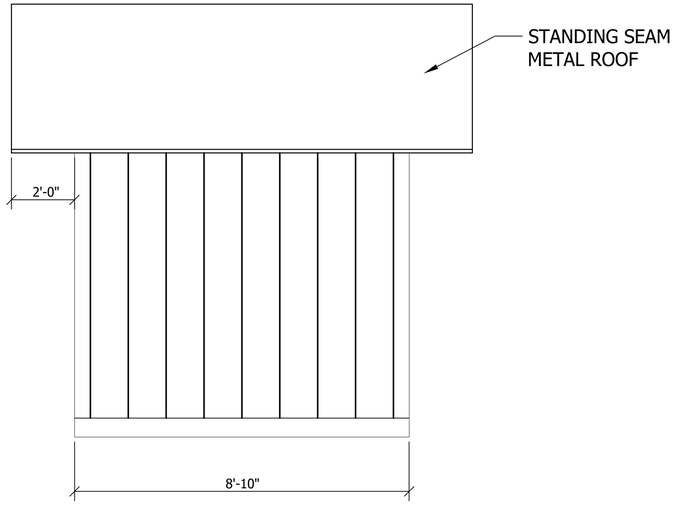
www.contechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

CDS2015-4-C
ONLINE CDS
STANDARD DETAIL

SHEET C501



NORTHWEST ELEVATION



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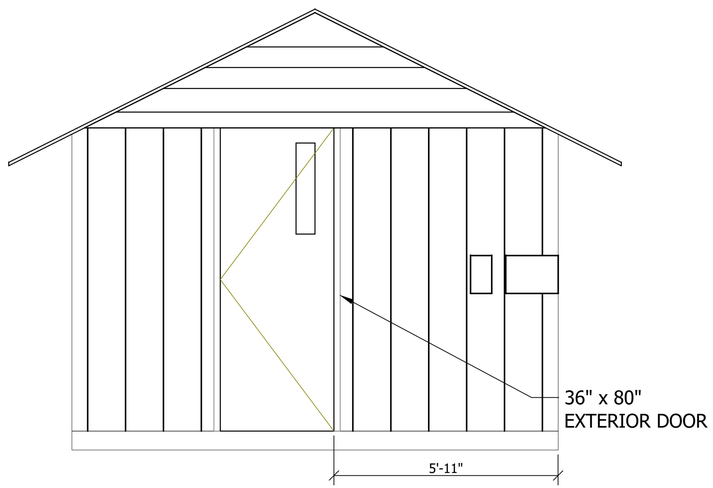

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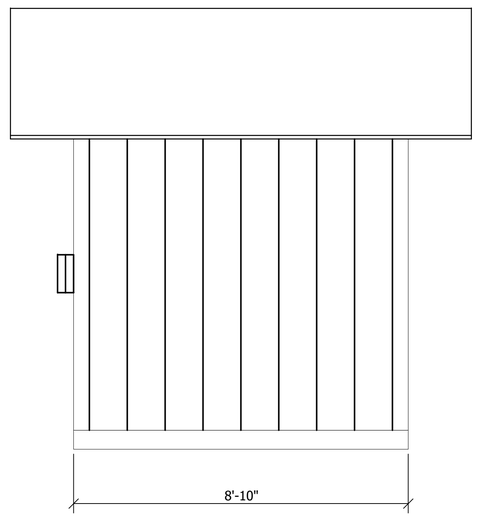

SOUTHEAST ELEVATION

6"
0 1'

SHEET 15 OF X

CAD NO. W090-D4003-C11-D4002-C11-2023-##-###

NO.	REVISIONS	INT.	APP.	DATE

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WASHINGTON STATE PARKS AND RECREATION COMMISSION

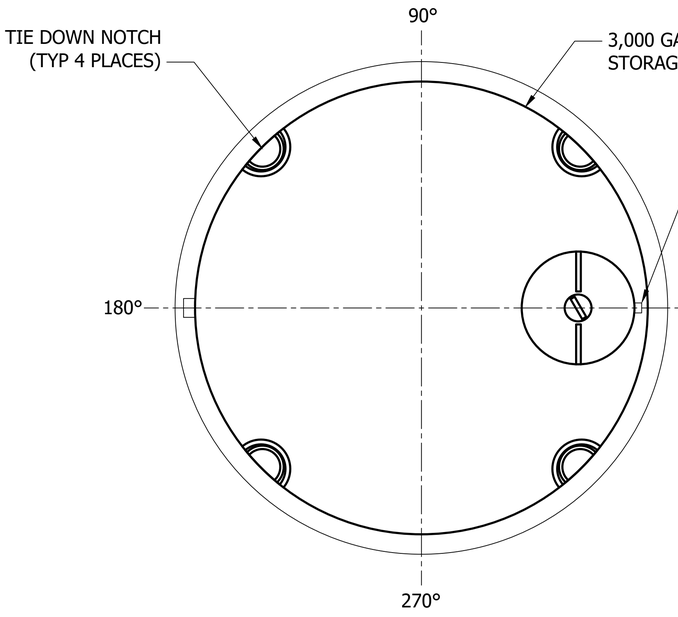
WALLACE FALLS STATE PARK

PARKING EXPANSION AND WATER SYSTEM REPLACEMENT

TREATMENT BUILDING EXTERIOR ELEVATIONS
A400

SCALE
AS SHOWN

PARKS FILE#



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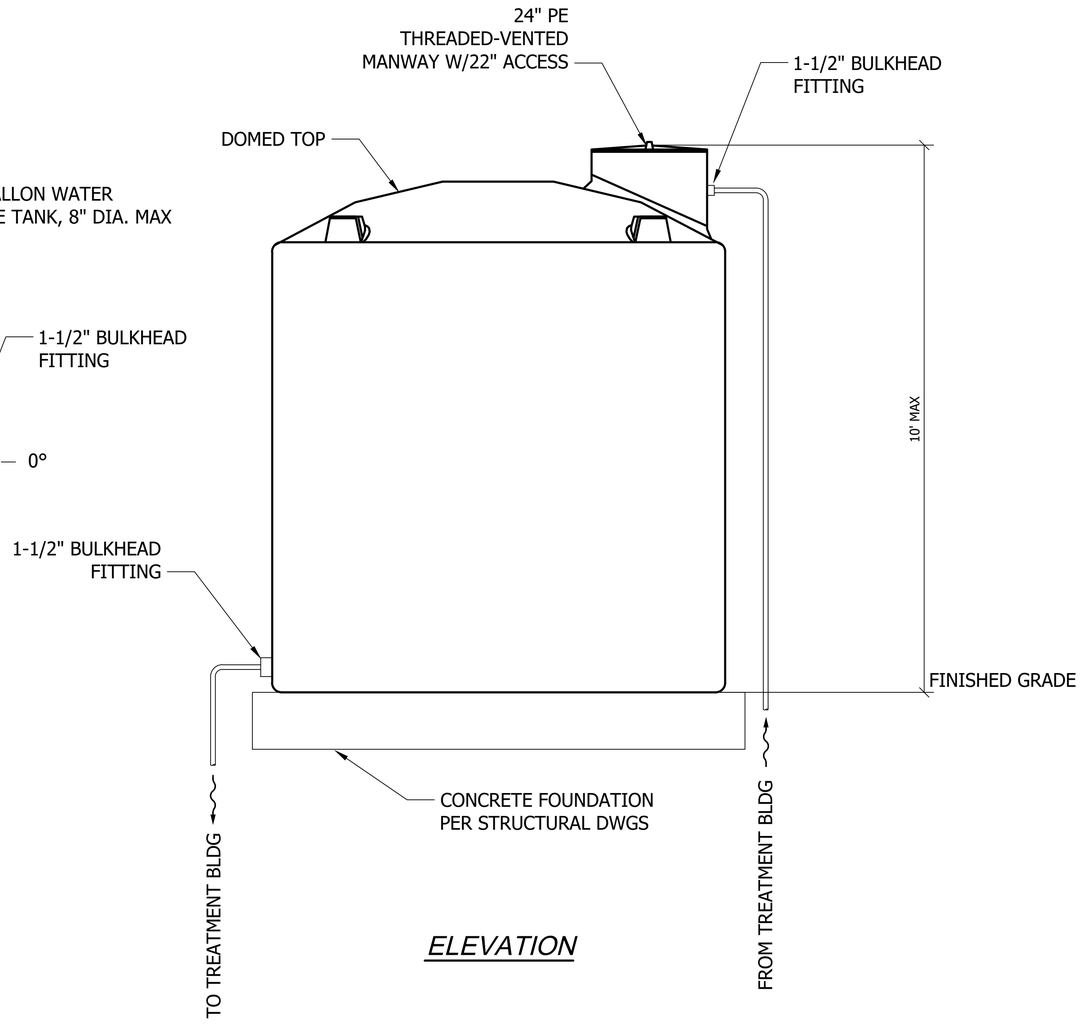

ELEVATION

1'
0 2'

SHEET 16 OF X

CAD NO. W090-D4003-C11-D4002-C11-2023-##-###

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WALLACE FALLS STATE PARK

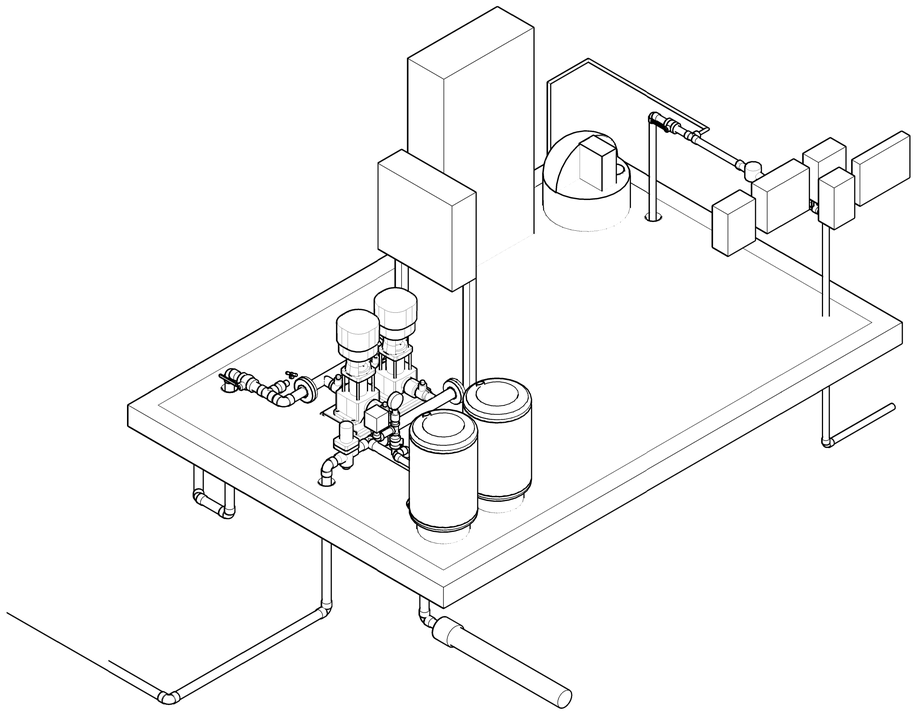
PARKING EXPANSION AND WATER SYSTEM REPLACEMENT

STORAGE TANK PLAN, SECTION, AND DETAILS

M400

SCALE
AS SHOWN

PARKS FILE#



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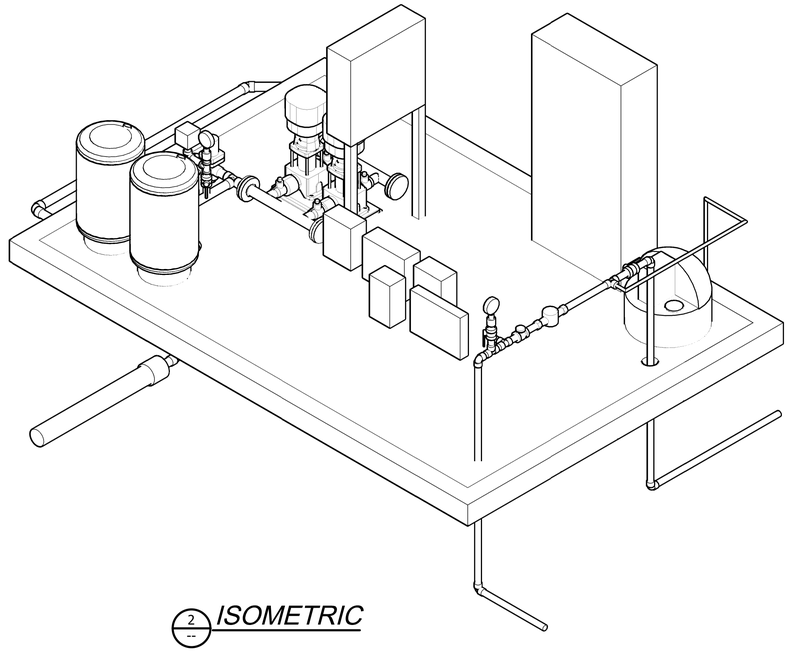

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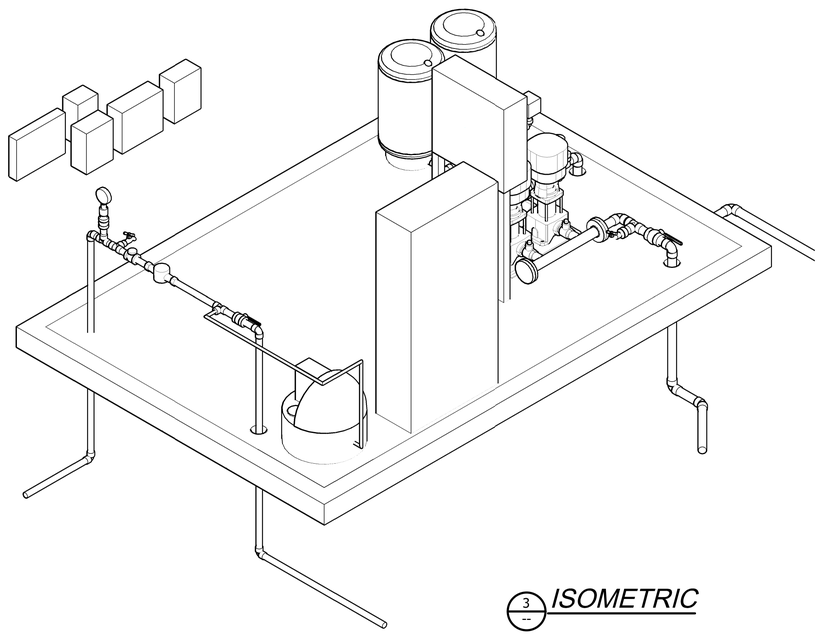

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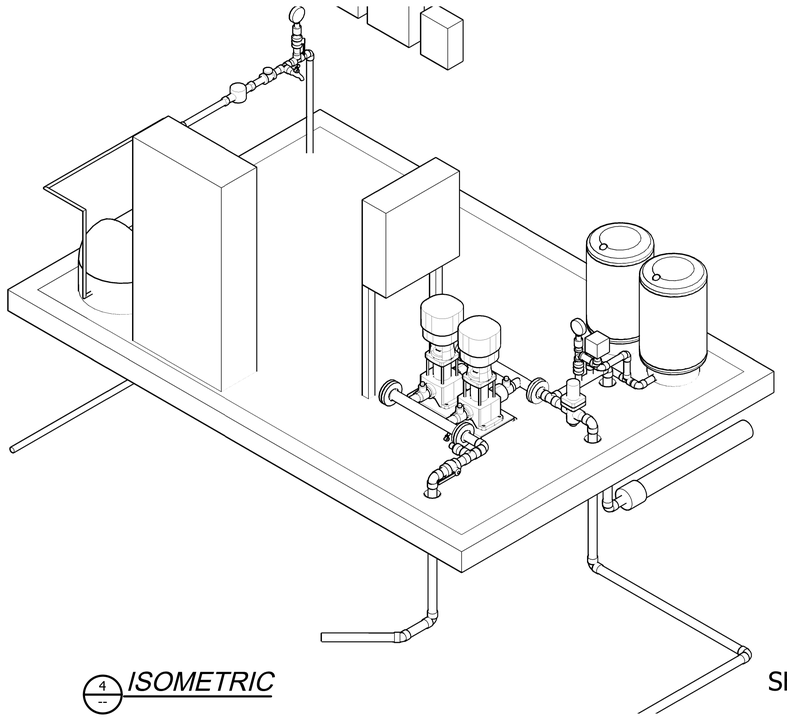

4 -- ISOMETRIC

SHEET 17 OF XX

CAD NO. W090-D4003-C11-D4002-C11-2023-##-###

NO.	REVISIONS	INT.	APP.	DATE

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WALLACE FALLS STATE PARK

PARKING EXPANSION AND WATER SYSTEM REPLACEMENT

TREATMENT BUILDING MECHANICAL PERSPECTIVE

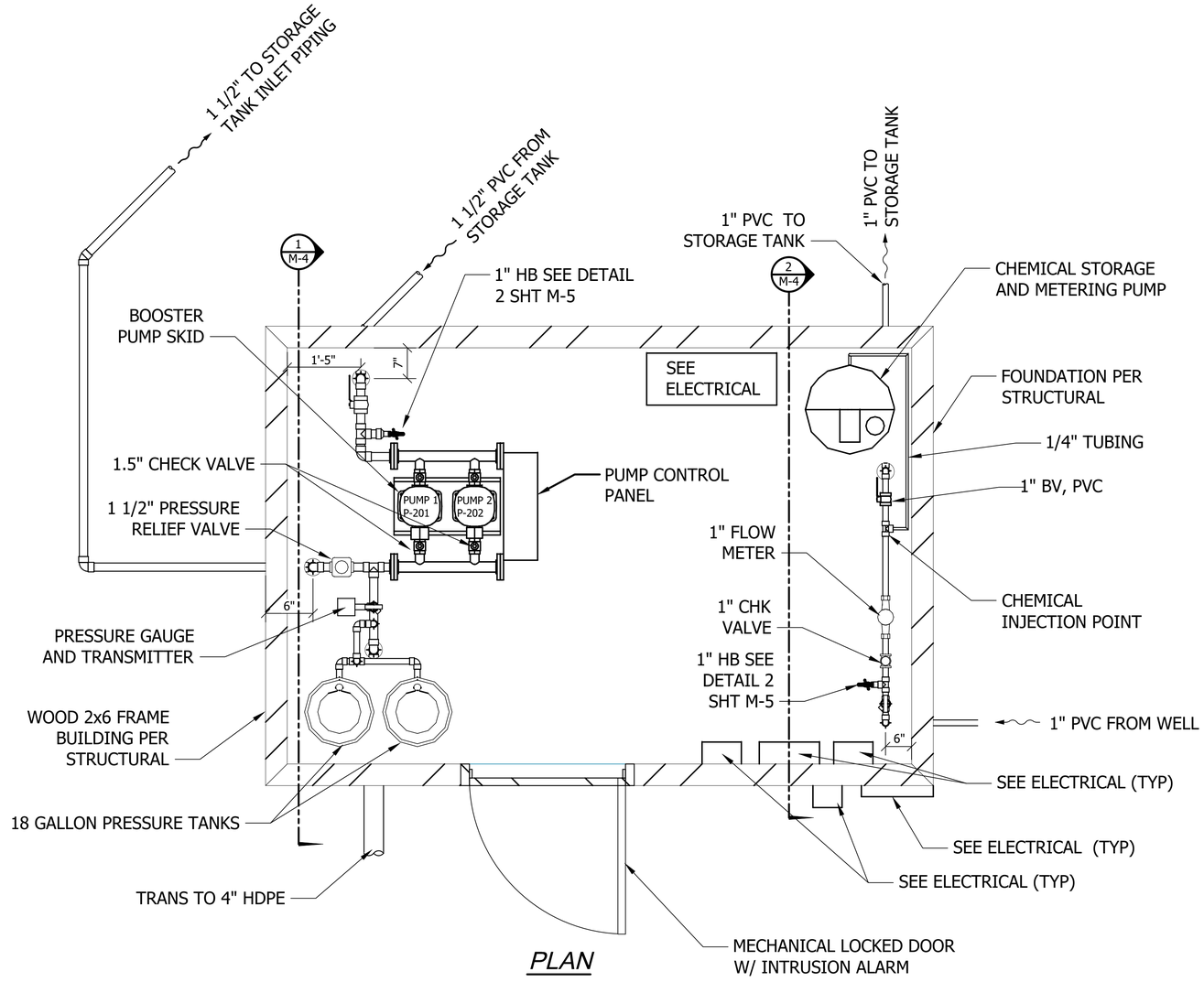
M401

SCALE
AS SHOWN

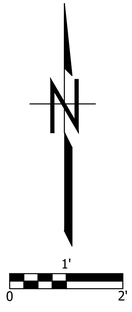
PARKS FILE#

SHEET NOTES:

1. ALL PIPING SHALL BE SCH 80 PVC UNLESS OTHERWISE NOTED.
2. DRAWING SCHEMATIC, LAYOUT MAY VARY IF INTENT IS MET. MISCELLANEOUS ELBOWS AND FITTINGS MAY BE ADDED TO AID INSTALLATION.
3. ALL WATERLINE ELBOWS, TEE, BUSHING, AND COUPLINGS SHALL BE SOLVENT WELD OR THREADED SCHEDULE 80 PVC. ALL TRANSITIONS IN WATERLINE SIZE FOR WATERLINE 2" AND SMALLER SHALL BE ACCOMPLISHED BY BUSHING OR BELL ADAPTERS.



PLAN



SHEET ## OF XX

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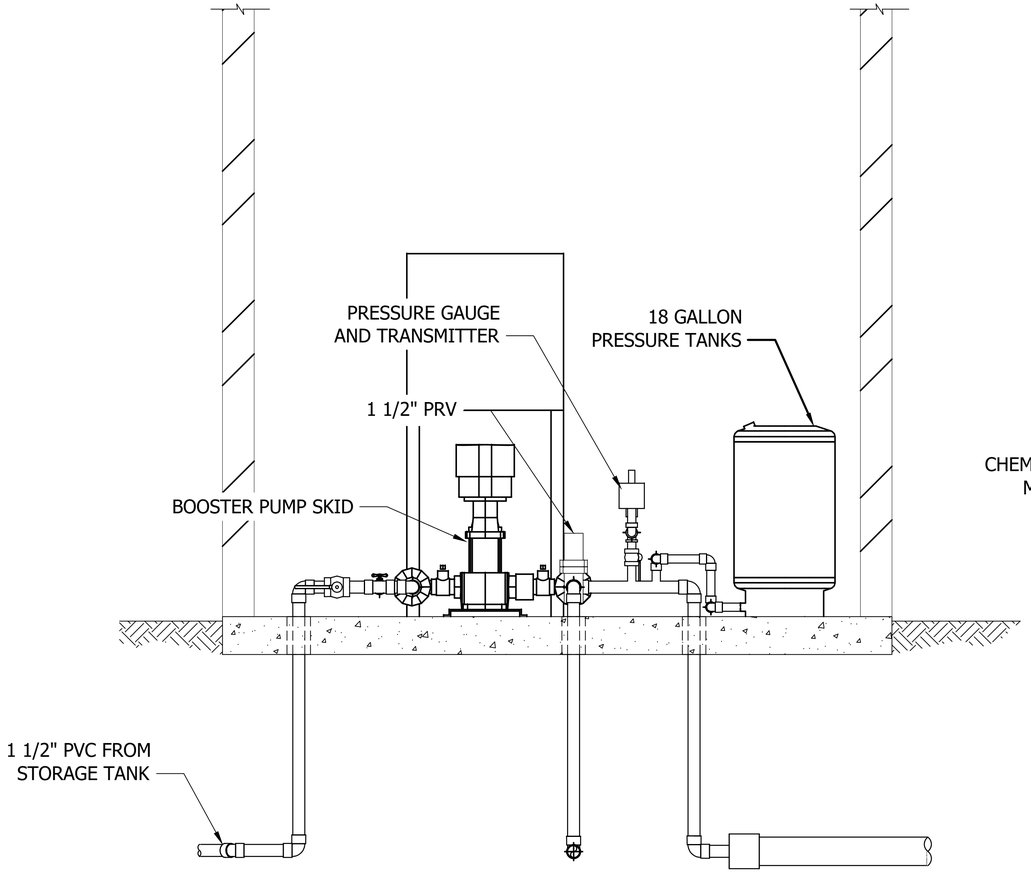
WALLACE FALLS STATE PARK

PARKING EXPANSION AND WATER SYSTEM REPLACEMENT

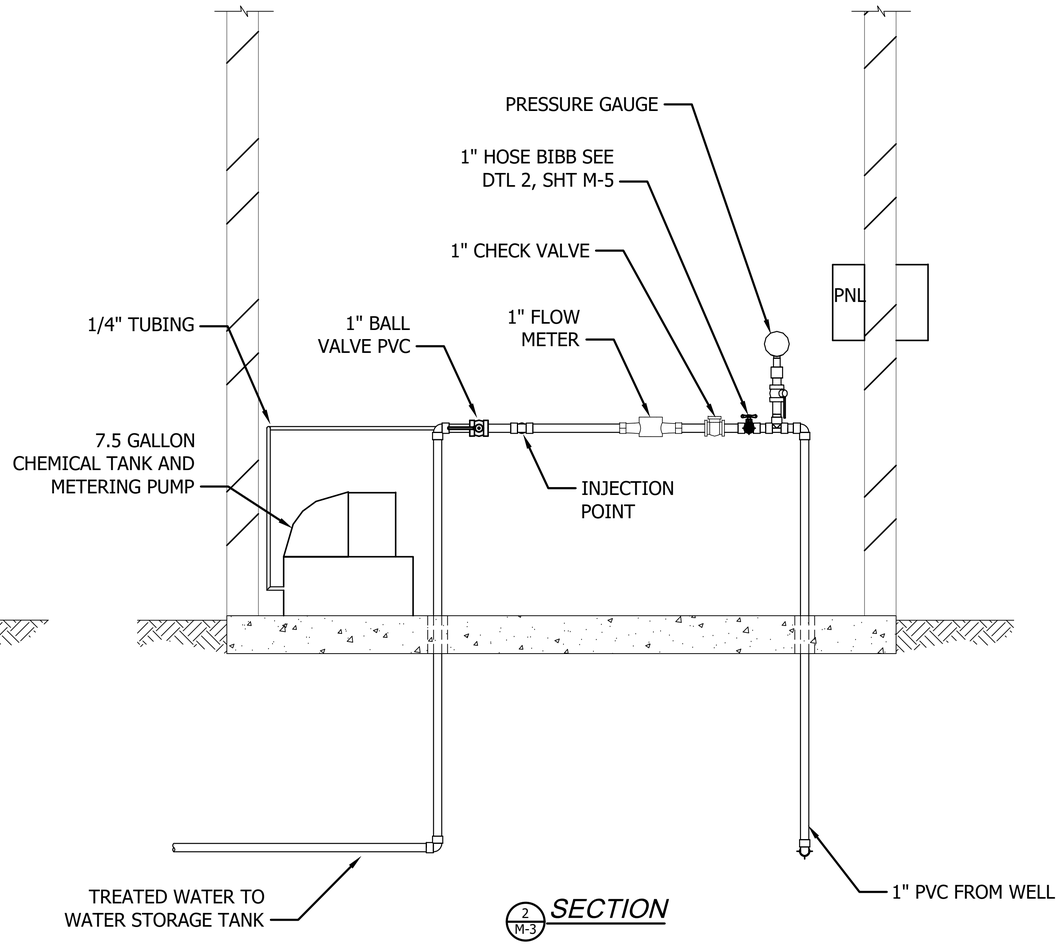
TREATMENT BUILIDNG MECHANICAL FLOOR PLAN M402

SCALE
AS SHOWN

PARKS FILE#



1 M-3 SECTION



2 M-3 SECTION

1'
0 2'

SHEET ## OF XX

CAD NO. W090-D4003-C11-D4002-C11-2023-##-###

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WASHINGTON STATE PARKS AND RECREATION COMMISSION

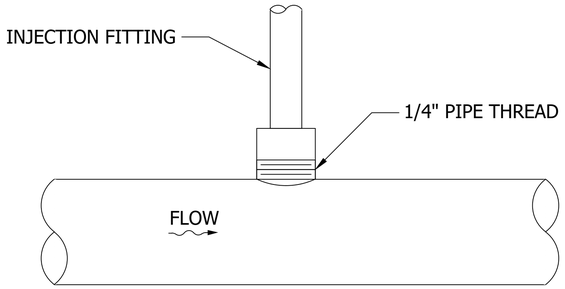
WALLACE FALLS STATE PARK

PARKING EXPANSION AND WATER SYSTEM REPLACEMENT

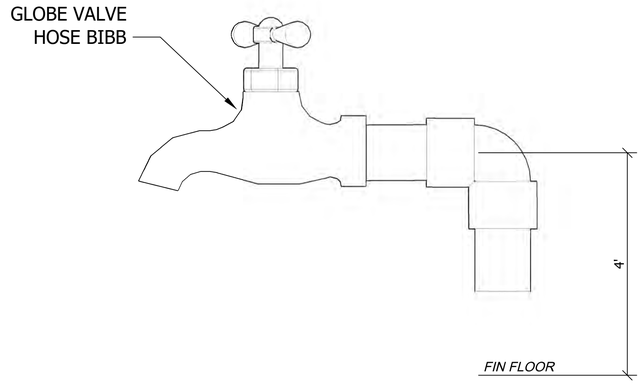
TREATMENT BUILDING MECHANICAL SECTIONS M403

SCALE
AS SHOWN

PARKS FILE#



1 -- CHEMICAL INJECTOR DETAIL



2 M-3 SAMPLE TAP DETAIL

SHEET ## OF XX

CAD NO. W090-D4003-C11-D4002-C11-2023-##-###

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WALLACE FALLS STATE PARK

PARKING EXPANSION AND WATER SYSTEM REPLACEMENT

TREATMENT BUILDING MECHANICAL DETAILS

M404

SCALE
AS SHOWN

PARKS FILE#

STRUCTURAL NOTES

(THESE NOTES ARE TYPICAL UNLESS NOTED OR DETAILED OTHERWISE ON DRAWINGS)

NAILS, BOLTS, AND METAL CONNECTORS FOR WOOD

ALL NAILS SHALL CONFORM TO THE STANDARDS SET FORTH BY THE NATIONAL DESIGN STANDARDS (NDS) FOR WOOD CONSTRUCTION, LATEST EDITION. NAILING NOT SPECIFIED SHALL BE PER IBC TABLE 2304.10.1 NAILING SCHEDULE. ALL NAILS CALLED OUT ON PLANS SHALL BE COMMON NAILS UNLESS NOTED OTHERWISE AND SHALL MEET OR EXCEED THE FOLLOWING MINIMUM GUIDELINES:

NAIL	SHANK Ø	MIN LENGTH
8d COMMON	0.131"Ø	2 1/2" SHANK
10d COMMON	0.148"Ø	3" SHANK
12d COMMON	0.148"Ø	3 1/4" SHANK
16d COMMON	0.162"Ø	3 1/2" SHANK

10d BOX NAILS MAY BE SUBSTITUTED FOR 8d COMMON NAILS WITH NO CHANGE IN NAIL SPACING. FRAMING MEMBERS MAY BE NAILED WITH 16d SINKERS (0.148"Ø x 3 1/4"), BUT ONLY 16d COMMON NAILS SHALL BE USED WHERE 16d NAILS ARE INDICATED IN THIS DRAWING SET. ENGINEER MAY APPROVE OTHER NAILS IF NAIL LABELS ARE SUBMITTED TO ENGINEER PRIOR TO START OF CONSTRUCTION.

ALL BOLTS IN WOOD MEMBERS SHALL CONFORM TO ASTM A307. PROVIDE WASHERS UNDER THE HEADS AND NUTS OF ALL BOLTS AND LAG SCREWS BEARING ON WOOD. LEAD HOLES FOR LAG BOLTS SHALL BE BORED FOR THE SHANK AND THREADED PORTIONS PER NDS 12.1.4.2.

CONNECTORS CALLED OUT BY LETTERS AND NUMBERS SHALL BE "STRONG-TIE" BY SIMPSON COMPANY, CATALOG TO BE THE LATEST EDITION, OR ENGINEER APPROVED EQUAL. CONNECTORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND WITH THE NUMBER AND SIZE OF FASTENERS AS SPECIFIED BY THE MANUFACTURER. WHERE CONNECTOR STRAPS CONNECT TWO MEMBERS, PLACE ONE-HALF OF THE NAILS, SCREWS, OR BOLTS IN EACH MEMBER.

INSTALL SOLID BLOCKING AT ALL BEARING POINTS. ALL SHIMS SHALL BE SEASONED, DRIED, AND THE SAME GRADE (MINIMUM) AS MEMBERS CONNECTED.

GALVANIZATION

UNLESS NOTED OTHERWISE, STEEL CONNECTORS IN CONTACT WITH TREATED WOOD SHALL BE GALVANIZED ACCORDING TO THE FOLLOWING TABLE:

GALVANIZATION	UNTREATED WOOD	CCA-C	SBX	ACQ-C ACQ-D	CBA-A CA-B	OTHER BORATE	ACZA	OTHER PT WOOD
G90	X	X	X					
G185	X	X	X	X	X	X		
HDG	X	X	X	X	X	X		
STT300	X	X	X	X	X	X	X	X

G90 = 0.90 OZ. OF ZINC PER SQUARE FOOT OF AREA
G185 = 1.85 OZ. OF ZINC PER SQUARE FOOT OF AREA
HDG = HOT DIP GALVANIZED
SST300 = TYPE 316L STAINLESS STEEL

RATED SHEATHING

RATED SHEATHING SHALL BE GRADE C-D INT-APA WITH EXTERIOR GLUE OR OSB SHEATHING WITH EXTERIOR GLUE IN CONFORMANCE WITH IBC STANDARD 2303.1.5.

PRE-MANUFACTURED WOOD TRUSSES

WOOD TRUSSES SHALL BE SIZED AND DETAILED TO FIT DIMENSIONS AND LOADS INDICATED ON THE PLANS. ALL DESIGN SHALL BE IN ACCORDANCE WITH THE ALLOWABLE VALUES AND SECTION PROPERTIES ASSIGNED BY THE BUILDING CODE. SUBMIT SHOP DRAWINGS FOR ENGINEER REVIEW PRIOR TO FABRICATION. CALCULATIONS AND SHOP DRAWINGS SHALL BE SIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE SAME STATE AS THE PROJECT. TRUSS DESIGN AND SHOP DRAWINGS SHALL BE IN CONFORMANCE WITH IBC 2303.4

PROVIDE TEMPORARY BRACING UNTIL SHEATHING AND PERMANENT BRACING IS INSTALLED. MANUFACTURER SHALL PROVIDE ALL SPECIALTY ITEMS REQUIRED FOR A COMPLETE INSTALLATION OF JOISTS. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.

FOR TOP CHORD DESIGN LIVE LOADS, REFER TO THE DESIGN LOAD SECTION. IN ADDITION TO ROOF LOADING LISTED IN THE DESIGN LOAD SECTION, ROOF TRUSSES SHALL BE DESIGNED FOR A BOTTOM CHORD LIVE LOAD OF 10 PSF. TOP AND BOTTOM CHORD LIVE LOAD DO NOT NEED TO BE DESIGNED FOR SIMULTANEOUSLY.

IN ADDITION TO THEIR SELF WEIGHT, ROOF TRUSSES SHALL BE DESIGNED FOR A TOP CHORD DEAD LOAD OF 5 PSF AND A BOTTOM CHORD DEAD LOAD OF 10 PSF ACTING SIMULTANEOUSLY. SEE MECHANICAL DRAWINGS FOR LOADS AND OPENINGS NOT SHOWN ON THE STRUCTURAL DRAWINGS. DEFLECTIONS SHALL NOT EXCEED L/360 FOR LIVE LOADS, OR L/240 FOR TOTAL LOADS.

TYPICAL FRAMING NOTES

1. BEARING WALL FRAMING

2x STUDS @ 16" OC FOR ALL SHEAR AND/OR BEARING WALLS UNO.

2. WALL BASE PLATE ON CONCRETE

WALL PLATES BEARING ON CONCRETE SHALL BE PRESSURE-TREATED. FOR ALL EXTERIOR WALLS, BOLT PLATES OR SILLS TO CONCRETE STEM WALLS OR THICKENED SLAB FOOTINGS WITH 5/8 INCH DIAMETER ANCHOR BOLTS WITH 7 INCH MINIMUM EMBEDMENT. PLACE AT 5'-0" OC MAXIMUM AND USE MINIMUM OF TWO ANCHOR BOLTS PER SILL AND PLACE ONE WITHIN 12 INCHES OF END OF PLATES, TYPICAL UNLESS NOTED OR DETAILED OTHERWISE. AT ALL SILL PLATE ANCHOR BOLTS, CONTRACTOR SHALL INSTALL 1/4" x 3" x 3" FLAT PLATE WASHERS.

3. ROOF AND FLOOR FRAMING

PROVIDE 1 1/2" FULL DEPTH BLOCKING FOR TRUSSES AND RAFTERS AT ALL SUPPORTS.

4. DIAPHRAGM NAILING

ALL SHEAR WALLS, FLOOR AND ROOF DIAPHRAGM NAILINGS SHALL BE AS CALLED OUT ON THE PLANS. EXTERIOR WALLS SHALL BE SHEATHED AND NAILED TO SUPPORTING FRAMING WITH 8d NAILS AT 6" OC AT ALL PANEL EDGES AND 12" OC AT ALL INTERMEDIATE SUPPORTS.

THE USE OF NAIL GUNS WILL BE APPROVED IF NAILING INTO THE DIAPHRAGMS CAN BE INSTALLED FLUSH WITH FACE OF SHEATHING. NAIL PENETRATIONS GREATER THAN 1/16" ARE NOT ACCEPTABLE.

5. ALLOWABLE STUD AND PLATE PENETRATIONS

CUTTING AND/OR NOTCHING OF WOOD STUDS OR PLATES SHALL NOT EXCEED 25% OF THE STUD/PLATE WIDTH IN EXTERIOR AND BEARING WALLS AND SHALL NOT EXCEED 40% OF THE STUD/PLATE WIDTH IN ANY NON-BEARING PARTITIONS. BORED HOLE DIAMETER IS LIMITED TO 40% OF STUD/PLATE WIDTH IN ANY STUD AND MAY BE 60% IN NONBEARING PARTITIONS OR IF STUD IS DOUBLED. MAINTAIN 5/8" MINIMUM EDGE DISTANCE FROM HOLE EDGE.

6. GYPSUM WALLBOARD NAILING

ALL GYPSUM WALLBOARD SHALL BE NAILED TO ALL STUDS AND TOP AND BOTTOM PLATES WITH 6d COOLER NAILS OR NO. 13 GAUGE x 1 5/8" @ 7" OC (5d COOLER NAILS FOR 1/2 INCH GYPSUM SHEATHING). TYPICAL UNLESS NOTED OTHERWISE. INSTALLATION OF GWB SHALL BE SUCH THAT JOINTS ARE STAGGERED ON EACH SIDE OF A SINGLE WALL.

GENERAL

STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH CIVIL, ELECTRICAL, AND MECHANICAL DRAWINGS FOR BIDDING AND CONSTRUCTION. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS FOR COMPATIBILITY BEFORE PROCEEDING. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING.

CONTRACTOR TO SEE CIVIL, ELECTRICAL AND MECHANICAL DRAWINGS FOR SIZE AND LOCATION OF PIPE, VENT, DUCT AND OTHER OPENINGS AND DETAILS NOT SHOWN ON THESE DRAWINGS.

CONTRACTOR SHALL BE RESPONSIBLE FOR ERECTION STABILITY AND TEMPORARY SHORING AS NECESSARY UNTIL PERMANENT SUPPORT AND STIFFENING ARE INSTALLED.

CONTRACTOR-INITIATED CHANGES SHALL BE SUBMITTED IN WRITING TO THE STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO FABRICATION OR CONSTRUCTION. CHANGES SHOWN ON SHOP DRAWINGS ONLY WILL NOT SATISFY THIS REQUIREMENT.

DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION. WHERE CONDITIONS ARE NOT SPECIFICALLY INDICATED BUT ARE OF A SIMILAR CHARACTER TO DETAILS SHOWN, SIMILAR DETAILS OF CONSTRUCTION SHALL BE USED, SUBJECT TO REVIEW AND APPROVAL BY THE STRUCTURAL ENGINEER.

LEGEND

DEFINITION	SYMBOL	DEFINITION	SYMBOL
DIRECTION OF FRAMING		NATIVE SOIL	
EXTENT OF FRAMING		GRANULAR FILL	
COLUMNS		STRUCTURAL STEEL	
COLUMN BEARING ON BEAM	(A)	RATED SHEATHING	
BEAM CONTINUOUS OVER SUPPORT	(B)	SHEAR WALL (SEE SCHEDULE)	SWX
CONCRETE WALL		COLUMN MARK (SEE SCHEDULE)	C#
BEARING STUD WALL		FOOTING MARK (SEE SCHEDULE)	FX
NON-BEARING STUD WALL		HOLDOWN MARK (SEE SCHEDULE)	HX
BEARING STUD SHEAR WALL		HANGER MARK (SEE SCHEDULE)	X
NON-BEARING STUD SHEAR WALL		FLAG NOTE (SEE PLAN NOTES)	X
CMU WALL		STEEL MOMENT FRAME CONN.	

ABBREVIATIONS

(A)	ABOVE	HORIZ	HORIZONTAL
AB	ANCHOR BOLT	KP	KING POST
ALT	ALTERNATE	KSI	KIPS PER SQUARE INCH
ARCH	ARCHITECT	MECH	MECHANICAL
(B)	BELOW	MF	MOMENT FRAME
BLKG	BLOCKING	NS	NEAR SIDE
BM	BEAM	OC	ON CENTER
BOT	BOTTOM	OPP	OPPOSITE
BTWN	BETWEEN	PL	PLATE
CJP	COMPLETE JOINT PENETRATION	PLCS	PLACES
CLR	CLEAR	PSI	POUNDS PER SQUARE INCH
CMU	CONCRETE MASONRY UNIT	PSF	POUNDS PER SQUARE FOOT
COL	COLUMN	P/T	POST TENSIONED
CONC	CONCRETE	PT	PRESSURE TREATED
CONN	CONNECTION	REINF	REINFORCING
CONT	CONTINUOUS	REQ'D	REQUIRED
DBL	DOUBLE	SCHED	SCHEDULE
DET	DETAIL	SIM	SIMILAR
DIM	DIMENSION	SOG	SLAB ON GRADE
EA	EACH	STD	STANDARD
ELEV	ELEVATION	SW	SHEAR WALL
EXIST	EXISTING	TOC	TOP OF CONCRETE
EXP	EXPANSION	TOS	TOP OF STEEL
FLR	FLOOR	TOW	TOP OF WALL
FDN	FOUNDATION	TYP	TYPICAL
FTG	FOOTING	UNO	UNLESS NOTED OTHERWISE
FS	FAR SIDE	VFY	VERIFY
FH	FULL HEIGHT	VIF	VERIFY IN FIELD
GLB	GLUE-LAMINATED BEAM	VERT	VERTICAL

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WALLACE FALLS STATE PARK

PARKING EXPANSION AND WATER SYSTEM REPLACEMENT

STRUCTURAL NOTES

S401

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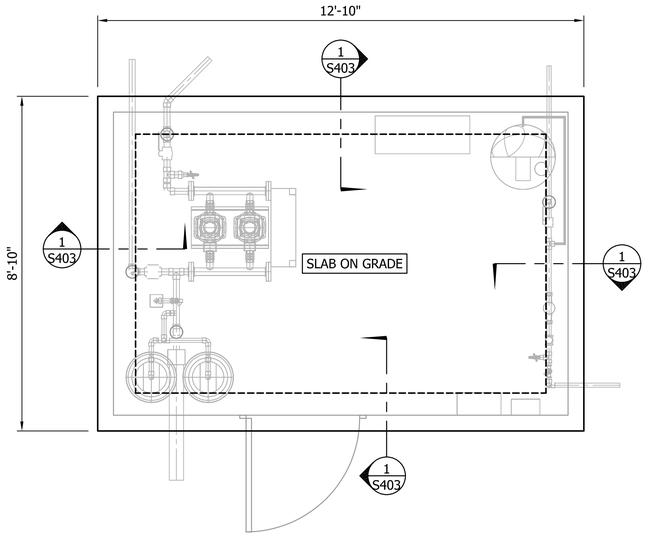

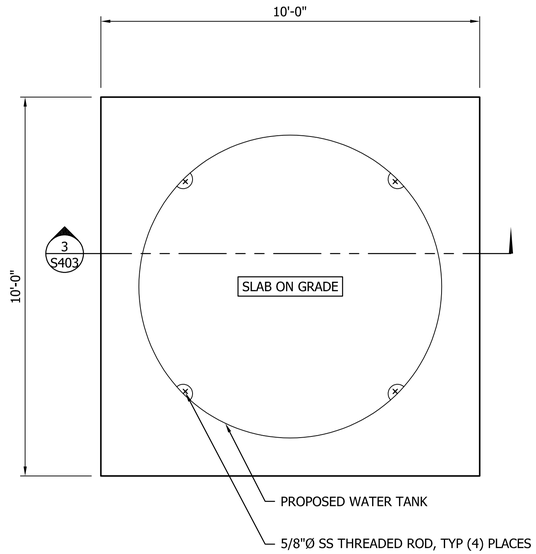

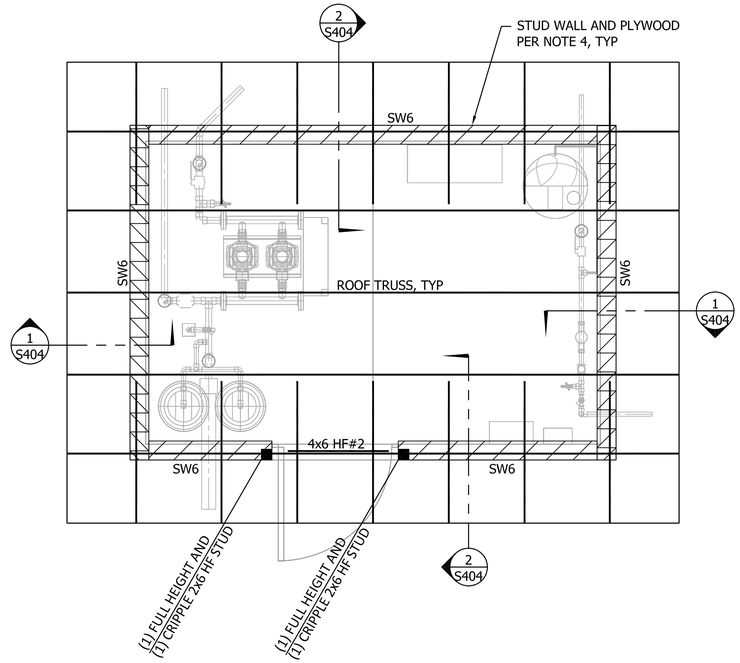

1 - BUILDING FOUNDATION PLAN

2'
0 4'

FOUNDATION PLAN NOTES:

1. EXTERIOR FOOTINGS SHALL BEAR A MIN OF 1'-6" BELOW ADJACENT GRADE.
2. FOOTINGS AND SLAB ON GRADE SHALL BEAR ON FIRM NATIVE SOIL OR COMPACTED STRUCTURAL FILL.
3. WHERE SLAB ON GRADE IS INDICATED, SLAB SHALL BE 5" THICK W/ #4 REINF @ 12" OC EA WAY, CENTERED. SLAB SHALL BE POURED OVER A 10 MIL VAPOR BARRIER OVER 6" OF 5/8" CRUSHED ROCK.
4. REFER TO SHEET S403 FOR FOUNDATION DETAILS.
5. PLACE ALL REINFORCEMENT PER THE STRUCTURAL NOTES AND FOUNDATION DETAILS. REFER TO SHEET S400 FOR ADDITIONAL CONCRETE DETAILING REQUIREMENTS.
6. CONTRACTOR SHALL VERIFY ALL DIMENSIONS, WALL LOCATIONS, AND CONCRETE ROUGH OPENINGS WITH THE DESIGN TEAM DRAWINGS AND NOTIFY ALL PARTIES OF ANY DISCREPANCIES.
7. REFER TO DETAIL 2/S403 FOR PENETRATIONS THROUGH FOUNDATION SLAB.

2 - TANK FOUNDATION PLAN

2'
0 4'

3 - BUILDING ROOF FRAMING PLAN

4'
0 8'

TYPICAL ROOF FRAMING PLAN NOTES:

1. WALLS SHOWN ON ROOF FRAMING PLAN ARE WALLS BELOW ROOF FRAMING.
2. ROOF SHEATHING SHALL BE 1/2" PI 40/20 WITH 8d COMMON NAILS SPACED AT 6" OC AT ALL DIAPHRAGM BOUNDARIES, PANEL EDGES, SHEAR WALLS, AND BLOCKING INDICATED ON PLANS. NAILING AT INTERMEDIATE FRAMING SHALL BE 8d COMMON NAILS @ 12" OC. REFER TO DETAIL 4/S403 FOR ROOF PLYWOOD LAYOUT.
3. REFER TO SHEET S404 FOR TYPICAL ROOF FRAMING DETAILS.
4. ALL STUD WALLS SHALL BE 2x6 HF STUD GRADE AND SPACED AT 16" OC. ALL WALLS (INDICATED AS SW6 ON PLAN) SHALL BE SHEATHED W/ 1/2" APA RATED PLYWOOD. PROVIDE 8d NAILS AT 6" OC AT ALL PANEL EDGES AND 12" OC AT INTERMEDIATE FRAMING. ALL EDGES OF PLYWOOD SHALL BE BLOCKED.
5. REFER TO DETAIL 5/S403 FOR TYPICAL BUILT-UP STUD/POST DETAIL.
6. REFER TO DETAIL 6/S403 FOR TYPICAL HEADER OVER DOORWAY.

SHEET X OF X

CAD NO. W090-D4003-C11-D4002-C11-2023-X-S402

NO.	REVISIONS	INT.	APP.	DATE

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DRAWN	JEG	03/29/23
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PRELIMINARY
NOT FOR CONSTRUCTION
JOSEPH G. GALUSHA
STATE OF WASHINGTON
STRUCTURAL ENGINEER
PROFESSIONAL ENGINEER
03/29/23

REGISTERED STAMP

WASHINGTON STATE PARKS AND RECREATION COMMISSION

WALLACE FALLS STATE PARK

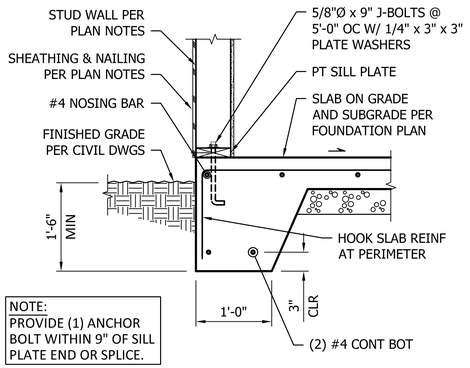
PARKING EXPANSION AND WATER SYSTEM REPLACEMENT

STRUCTURAL PLANS

S402

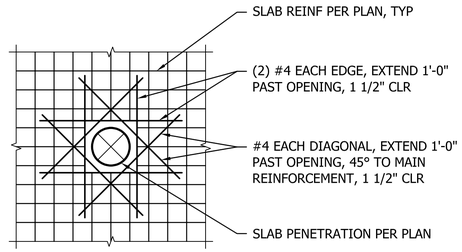
SCALE
AS SHOWN

PARKS FILE#



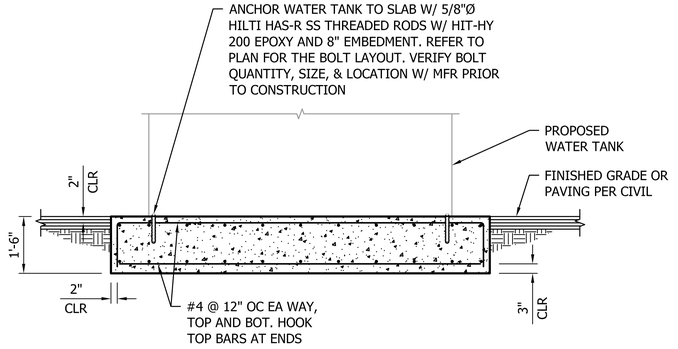
1 S402 THICKENED EDGE FOOTING

1' 0 2'



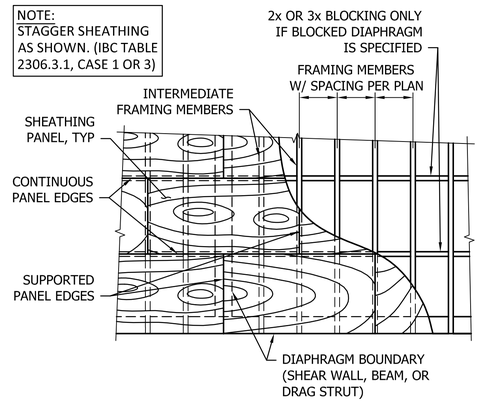
2 S402 CONCRETE SLAB PENETRATION REINFORCING

1' 0 2'



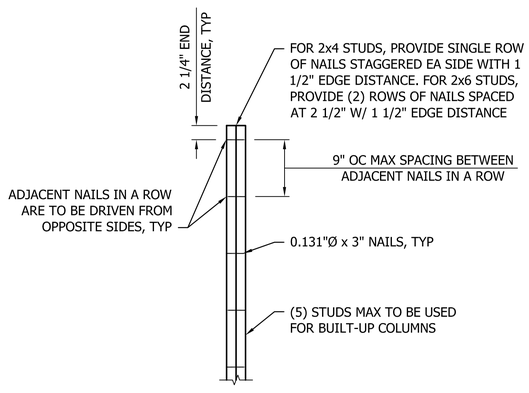
3 S402 WATER TANK SUPPORT SLAB

2' 0 4'



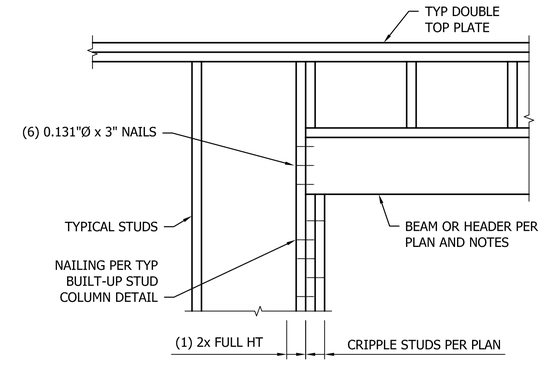
4 S402 TYPICAL ROOF SHEATHING DETAIL

1' 0 2'



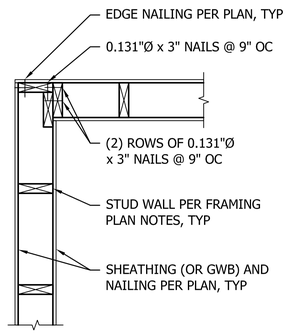
5 S402 TYPICAL BUILT-UP STUD COLUMN DETAIL

1' 0 2'



6 S402 TYPICAL HEADER DETAIL

1' 0 2'



7 S402 TYPICAL WALL CORNER DETAIL

1' 0 2'

SHEET X OF X

CAD NO. W090-D4003-C11-D4002-C11-2023-X-S403

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JOSEPH G. GALUSZKA STATE OF WASHINGTON STRUCTURAL ENGINEER PROFESSIONAL ENGINEER 05/29/23

REGISTERED STAMP

WASHINGTON STATE PARKS AND RECREATION COMMISSION

WALLACE FALLS STATE PARK

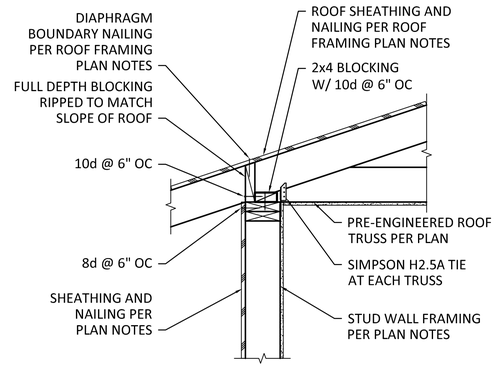
PARKING EXPANSION AND WATER SYSTEM REPLACEMENT

FOUNDATION AND FRAMING DETAILS

S403

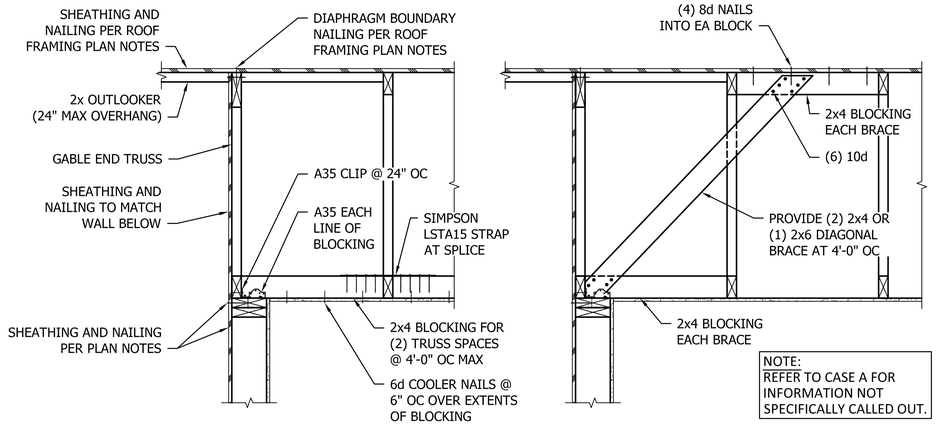
SCALE AS SHOWN

PARKS FILE#



1 S402 **TYPICAL TRUSS SUPPORT DETAIL**

1' 0 2'



OPTION A. BLOCKING AND STRAPS

OPTION B. BRACING

2 S402 **TYPICAL GABLE END SECTION**

1' 0 2'

SHEET X OF X

CAD NO. W090-D4003-C11-D4002-C11-2023-X-S404

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REGISTERED STAMP

WASHINGTON STATE PARKS AND RECREATION COMMISSION

WALLACE FALLS STATE PARK

PARKING EXPANSION AND WATER SYSTEM REPLACEMENT

ROOF FRAMING DETAILS

S404

SCALE
AS SHOWN

PARKS FILE#

GENERAL NOTES:

1. ALL MATERIALS AND INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE LATEST NATIONAL ELECTRICAL CODE. ALL MATERIALS SHALL BE NEW AND LISTED BY THE UNDERWRITERS' LABORATORY INC. (UL). ALL ELECTRICAL WORK SHALL BE INSTALLED IN A SAFE AND FUNCTIONAL MANNER.
2. REFER TO THE ELECTRICAL CIRCUIT SCHEDULE FOR CIRCUIT IDENTIFICATIONS, ROUTING, CONDUCTOR SIZES, ETC.
3. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH OTHER DISCIPLINES AS REQUIRED TO MITIGATE INTERFERENCES.
4. CONDUIT MATERIAL SHOWN ON ELECTRICAL PLANS ARE SPECIFIC FOR THE LOCATION WHERE THE CONDUIT STARTS. CONTRACTOR IS RESPONSIBLE FOR TRANSITIONING TO APPROVED CONDUIT MATERIAL BASED ON LOCATION AND IN ACCORDANCE TO ELECTRICAL SPECIFICATIONS.

ABBREVIATIONS

a	CIRCUIT BREAKER AUX. CONTACT, CLOSED WHEN BREAKER IS CLOSED AMMETER,
A	AMPERES
AC	ALTERNATING CURRENT
A/D	ANALOG TO DIGITAL
AF	AMPERE FRAME
AIC	AMPERES INTERRUPTING CAPACITY
ALT	ALTERNATOR
A/M	AUTO/MANUAL CONTROLLER
ANN	ANNUNCIATOR
AS	AMMETER SWITCH
ASD	ADJUSTABLE SPEED DRIVE
AT	AMPERE TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AWG	AMERICAN WIRE GAGE
b	CIRCUIT BREAKER AUX. CONTACT, CLOSED WHEN BREAKER IS OPEN
BCG	BARE COPPER GROUND
C	CONDUIT, CONTACTOR
CAP	CAPACITOR
CB	CIRCUIT BREAKER
CC	CONTROL CABLE, CLOSING COIL
CHH	COMMUNICATION HANDHOLE
CL	CHLORINE
CKT	CIRCUIT
CMH	COMMUNICATION MANHOLE
CO	CONDUIT ONLY
COMM	COMMUNICATION
CON	CONTACTOR
COND	CONDUCTOR
CONT	CONTINUED, CONTINUATION
CPT	CONTROL POWER TRANSFORMER
CP	CONTROL PANEL
CR	CONTROL RELAY
CS	CONTROL SWITCH
CT	CURRENT TRANSFORMER
CWP	COLD WATER PIPE
DC	DIRECT CURRENT
DIAG	DIAGRAM
DISC	DISCONNECT
DISTR	DISTRIBUTION
DP	DISTRIBUTION PANEL
DPDT	DOUBLE POLE, DOUBLE THROW
DPST	DOUBLE POLE, SINGLE THROW
EXST	EXISTING
EF	EXHAUST FAN
EHH	ELECTRICAL HANDHOLE
ELEM	ELEMENTARY
EMERG	EMERGENCY
EFFL	EFFLUENT
EQ	EQUAL
EQUIP	EQUIPMENT
ETM	ELAPSED TIME METER
FACP	FIRE ALARM CONTROL PANEL
FIN FL	FINISHED FLOOR
FLEX	FLEXIBLE
FLUOR	FLUORESCENT
FO	FIBER OPTIC
FREQ	FREQUENCY
FU	FUSE
FUT	FUTURE
FVNR	FULL VOLTAGE, NON REVERSING
FVR	FULL VOLTAGE, REVERSING
FWD	FORWARD
GA	GAUGE
GEN	GENERATOR
GFI	GROUND FAULT INTERRUPTER
GRS	GALVANIZED RIGID STEEL
H_2O_2	HYDROGEN PEROXIDE
HMI	HUMAN MACHINE INTERFACE
HOA	HAND-OFF-AUTOMATIC
HOR	HAND-OFF-REMOTE
HORZ	HORIZONTAL
HPS	HIGH PRESSURE SODIUM
HTR	HEATER
HV	HIGH VOLTAGE
HZ	HERTZ (CYCLES PER SECOND)
IND LT	INDICATING LIGHT
INCAND	INCANDESCENT
I/O	INPUT/OUTPUT
JB	JUNCTION BOX
KA	KILOAMPERES
KCMIL	THOUSANDS OF CIRCULAR MILS
KV	KILOVOLTS
KVA	KILOVOLT AMPERES
KVAR	KILOVOLT AMPERES REACTIVE
KVARH	KILOVOLT AMPERES REACTIVE HOURS
KW	KILOWATTS
KWH	KILOWATT HOURS
LCP	LIGHTING CONTROL PANEL
LP	LIGHTING PANEL
LPS	LOW PRESSURE SODIUM
LTG	LIGHTING
LT(S)	LIGHT(S)
(M)	MODIFIED
Ma	MILLIAMPERES
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MOV	MOTOR OPERATED VALVE
MS	MOTOR STARTER
MTD	MOUNTED
MTG	MOUNTING
MTS	MANUAL TRANSFER SWITCH
(N)	NEW
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOC.
NEUT	NEUTRAL
NO	NORMALLY OPEN
NTS	NUMBER NOT TO SCALE
OVHD	OVERHEAD
OL	THERMAL OVERLOAD RELAY
OT	OVER TEMPERATURE
PB	PULLBOX, PUSHBUTTON
PD	POSITIVE DISPLACEMENT
PE	PHOTOELECTRIC
PEC	PHOTOELECTRIC CELL
PF	POWER FACTOR
pH	MEASURE OF ACIDITY OR ALKALINITY
PH	PHASE
PLC	PROGRAMMABLE LOGIC CONTROLLER
PM	POWER MONITOR
PNL	PANEL
PNLBD	PANELBOARD
PRI	PRIMARY
PS	PRESSURE SWITCH
PSI	POUNDS PER SQUARE INCH
PWR	POWER
(RL)	RELOCATE
(RLD)	RELOCATED
RCPT	RECEPTACLE
RCT	REPEAT CYCLE TIMER
RPM	REVOLUTIONS PER MINUTE
RT	RESET TIMER
SCR	SILICON CONTROLLED RECTIFIER
SD	SMOKE DETECTOR
SDBC	SOFT-DRAWN BARE COPPER
SEC	SECONDS, SECONDARY
SECT	SECTION
SF	SUPPLY FAN
SHH	SIGNAL HANDHOLE
SIG	SIGNAL
SN	SOLID NEUTRAL
SPEC	SPECIFICATIONS
SPD	SURGE PROTECTIVE DEVICE
SPDT	SINGLE POLE, DOUBLE THROW
SS	STAINLESS STEEL, SOLID STATE
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
SYNC	SYNCHRONIZING
TB	TERMINAL BOX, TERMINAL BOARD
TC	TELEPHONE CABINET
TEMP	TEMPERATURE
TP	TWISTED PAIR UNSHIELDED
TSP	TWISTED SHIELDED PAIR
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
UH	UNIT HEATER
UV	ULTRA VIOLET
V	VOLTS
VA	VOLT-AMPERES
VFD	VARIABLE FREQUENCY DRIVE
VAR	VOLT AMPERES REACTIVE
VERT	VERTICAL
VH	VAR-HOUR
VS	VOLTMETER SWITCH
W	WIRE, WATTS
WHM	WATTHOUR METER
WHDM	WATTHOUR DEMAND METER
WP	WEATHERPROOF
WTRT	WATERTIGHT
WTP	WATER TREATMENT PLANT

ELECTRICAL PLAN SYMBOLS

- METERBASE W/UTILITY METER
- DISCONNECT RECEPTACLE AND PLUG
- MOTOR CONNECTION, HORSEPOWER INDICATED
- JUNCTION BOX
- DISCONNECT SWITCH, AMPERAGE RATING SHOWN (20A / 30A)
- FUSED DISCONNECT SWITCH, SWITCH AND FUSE RATING SHOWN 60/40 = 60A SWITCH WITH 40A FUSE (F, 60/40)
- WIFI ACCESS POINT
- TRANSFORMER (T)
- THERMOSTAT (T)
- VAULT (V)
- SURGE PROTECTIVE DEVICE (SPD)
- PHASE MONITOR RELAY (PMR)
- SINGLE POINT GROUND
- EOL - END OF LINE RESISTOR
- CONDUIT UP
- CONDUIT DOWN
- CONDUIT UP FROM UNDERGROUND RACEWAY
- CONDUIT STUB
- FLEXIBLE CONDUIT OR MFR CONDUIT
- SURFACE RACEWAY
- UNDERGROUND RACEWAY
- HOME RUN, ELECTRICAL PANEL DESTINATION SHOWN (XXX)
- POWER POLE WITH GUY WIRE
- CONDUIT SEAL
- CURRENT TRANSFORMER
- LINE OR LOAD REACTOR, IMPEDENCE SHOWN

MISCELLANEOUS SYMBOLS

- METERBASE W/UTILITY METER (M)
- DISCONNECT RECEPTACLE AND PLUG
- SPECIAL EQUIPMENT CONNECTION AS SHOWN
- MOTOR CONNECTION, HORSEPOWER INDICATED

CONTROL DIAGRAM SYMBOLS

- PANEL WIRING
- FIELD WIRING
- TWISTED SHIELDED PAIR
- SHIELD WIRING
- TWISTED SHIELDED TRIAD
- SHIELD WIRING
- CONNECTING LINES
- NON-CONNECTING LINES
- FUSE, SIZE SHOWN (5A)
- THERMAL MAGNETIC CIRCUIT BREAKER
- MAGNETIC ONLY CIRCUIT BREAKER (MOTOR CIRCUITS ONLY) CONTINUOUS CURRENT RATING AND TRIP SETTINGS SHOWN (30AC 150AT)
- FUSED TERMINAL BLOCK FUSE SIZE SHOWN (XXA, XXX)
- CONTROL PANEL TERMINAL BLOCK
- COMPONENT TERMINAL BLOCK
- HORN
- BATTERY
- RECEPTACLE
- HEATER
- IP CAMERA (PTZ OR OTHER)
- TIME DELAY RELAY (TDR)
- PHASE MONITOR RELAY (PMR)
- ALTERNATOR RELAY (ALT)
- 120V CONTROL RELAY, DPDT MINIMUM (CR5)
- 24VDC CONTROL RELAY, DPDT MINIMUM (CR5)
- RELAY CONTACT - NO, NC
- PUSHBUTTON OR SWITCH CONTACT BLOCK - NO, NC
- THREE POSITION SELECTOR SWITCH (OFF / HAND / AUTO)
- TWO POSITION SELECTOR SWITCH
- PUSH-TO-TEST LED PILOT LIGHT
- INDICATOR LIGHT W - WHITE A - AMBER R - RED G - GREEN
- FLOAT SWITCH - NO, NC
- TEMPERATURE SWITCH - NO, NC
- LIMIT SWITCH - NO, NC
- TIME DELAY CONTACTS, NORMALLY OPEN TIMED CLOSED NORMALLY CLOSED TIMED OPEN
- FLOW SWITCH - NO, NC
- PRESSURE SWITCH - NO, NC
- MOTOR STARTER, SIZE SHOWN (2)
- VARIABLE FREQUENCY DRIVE
- LINE OR LOAD REACTOR, IMPEDENCE SHOWN
- SURGE PROTECTIVE DEVICE (SPD)
- CURRENT TRANSFORMER
- GROUND ROD
- GROUND ROD TEST WELL
- AUTOMATIC TRANSFER SWITCH
- DOUBLE THROW SWITCH
- GROUND CONNECTION PER NEC ARTICLE 250
- 120V CONTROL RELAY, DPDT MINIMUM (CR)
- 24VDC CONTROL RELAY, DPDT MINIMUM (CR)
- RELAY CONTACT - NO, NC
- PUSHBUTTON OR SWITCH CONTACT BLOCK - NO, NC
- THREE POSITION SWITCH (OFF / HAND / AUTO)
- TWO POSITION SWITCH, KEYED (ON / OFF)
- PUSH-TO-TEST LED PILOT LIGHT (R)
- FLOAT SWITCH - NO, NC
- TEMPERATURE SWITCH - NO, NC
- LIMIT SWITCH - NO, NC
- TIME DELAY CONTACTS, NORMALLY OPEN TIMED CLOSED NORMALLY CLOSED TIMED OPEN
- ELAPSED TIME METER (ETM)
- COUNTER (CNT)

NOTE: NOT ALL SYMBOLS OR ABBREVIATIONS USED.

GROUNDING PLAN SYMBOLS

- GROUND ROD
- GROUND TEST WELL
- GROUND CONNECTION TO EQUIPMENT DETAIL CALLOUT SHOWN ON PLAN DWG.
- GROUND CONNECTION, DETAIL CALLOUT SHOWN ON PLAN DWG.
- GROUND CONNECTION TO REBAR. DETAIL CALLOUT SHOWN ON PLAN DWG.
- BELOW GRADE #4/0 AWG BARE COPPER FOR MAIN PLANT GROUND
- BELOW GRADE #2/0 AWG INSULATED COPPER FOR GROUND TAP.
- ABOVE GRADE #2/0 AWG INSULATED GROUND TAP

LIGHTING PLAN SYMBOLS

- SURFACE MOUNTED LED LUMINAIRE *
- RECESSED MOUNTED LED LUMINAIRE *
- WALL MOUNTED LED LUMINAIRE
- BATTERY BACKED WALL MOUNTED LED LUMINAIRE
- WALL SWITCH STANDARD TOGGLE, DESIGNATOR 3 = 3-WAY D = DIMMER T = TIMER
- DUPLEX, QUADPLEX RECEPTACLE, W/DESIGNATOR GFI = GROUND FAULT INTERRUPTING WP = WEATHERPROOF +48 = HEIGHT AFF.
- EXIT SIGN - WALL MOUNTED
- EXIT SIGN - 2 SIDED CEILING MOUNTED
- PHOTOCELL (PC)
- MOTION SENSOR (M)
- FLOOD LIGHT

GENERAL SYMBOLS

KEY NOTES:

1. USE THIS FOR KEY NOTES.
2. DOUBLE SPACE FOR SUBSEQUENT NOTES.

GENERAL NOTES:

1. USE THIS FOR GENERAL NOTES.
2. CONTINUE FOR SUBSEQUENT NOTES.
3. SHOULD AUTOMATICALLY NUMBER DOWNWARD.

ONE-LINE DIAGRAM

SCALE: NONE

1 / -

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AK #1018436
PROJECT#: 22.37.01

SHEET X OF XX

CAD NO. W090-D4003-C11-D4002-C11-2023-X-E400

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WASHINGTON STATE PARKS AND RECREATION COMMISSION

WALLACE FALLS STATE PARK

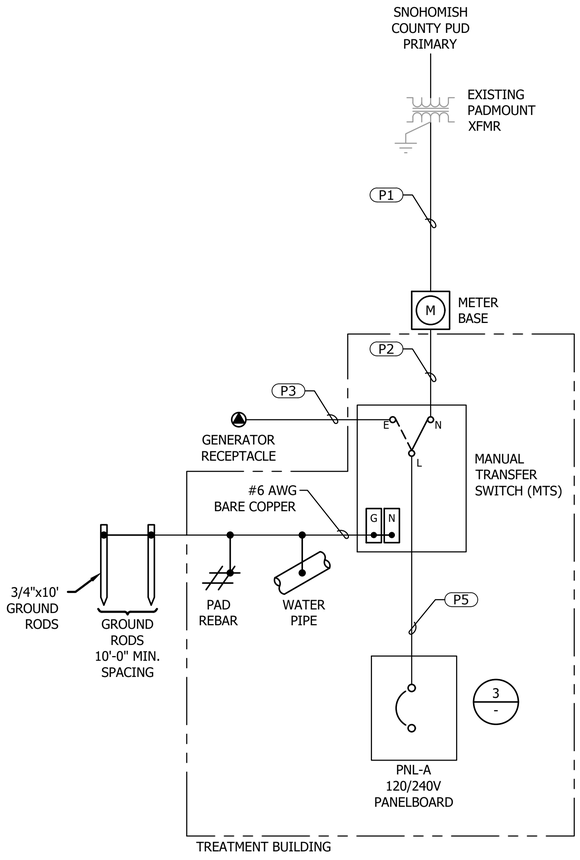
PARKING EXPANSION AND WATER SYSTEM REPLACEMENT

ELECTRICAL NOTE, SYMBOLS AND LEGEND

E400

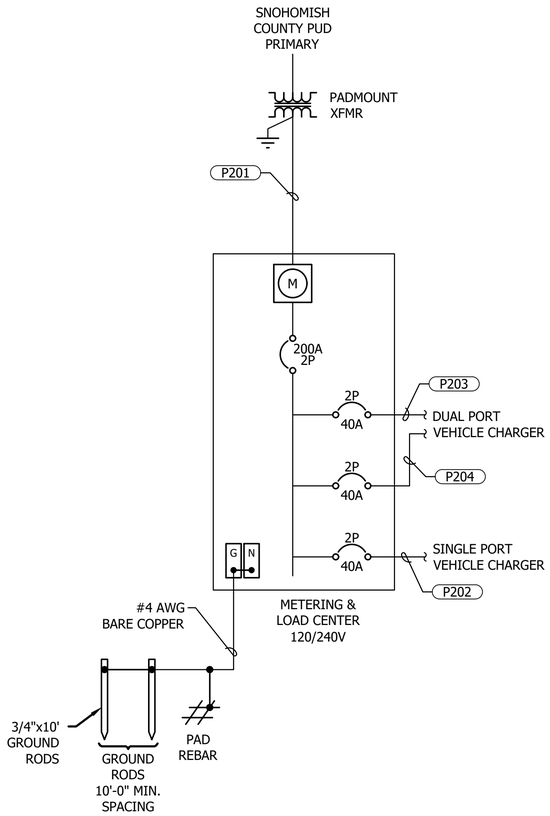
SCALE
AS SHOWN

PARKS FILE#



WELL/TREATMENT ONE-LINE DIAGRAM (1)

SCALE: NONE



VEHICLE CHARGING ONE-LINE DIAGRAM (2)

SCALE: NONE

CONDUCTOR SIZES ARE BASED ON COPPER CONDUCTORS.
MULTIPLE CIRCUITS RUN IN COMMON CONDUITS ARE SHOWN ON PLANS AND SUPERSEDE THE BASIC CONDUIT SIZE SHOWN.

RACEWAY SIZES ARE IN INCHES WITH QUANTITIES IN EXCESS OF (1) SHOWN IN ADJACENT PARENTHESIS.
P = POWER CONDUCTORS; G = GROUND CONDUCTORS; N = FOR NEUTRAL CONDUCTORS; C = CONTROL CONDUCTORS;
SP = SPARE CONDUCTORS; TSP = TWISTED SHIELDED PAIR.

CIRCUIT NUMBER	FROM	TO	CONDUCTORS	RACEWAY	NOTES
P1	PUD TRANSFORMER (EXISTING)	METER BASE	(2) 3 AWG, P (1) 3 AWG, N (1) 6 AWG, G	2"	COORDINATE WITH PUD
P2	METER BASE	MANUAL TRANSFER SWITCH (MTS)	(2) 3 AWG, P (1) 3 AWG, N (1) 6 AWG, G	1.25"	
P3	MANUAL TRANSFER SWITCH (MTS)	GENERATOR RECEPTACLE	(2) 3 AWG, P (1) 3 AWG, N (1) 6 AWG, G	1"	
P4	MANUAL TRANSFER SWITCH (MTS)	PNL-A	(2) 3 AWG, P (1) 3 AWG, N (1) 6 AWG, G	1"	
P5	PNL-A	INTERIOR BUILDING LIGHTING	(1) 12 AWG, P (1) 12 AWG, N (1) 12 AWG, G	3/4"	
P6	PNL-A	EXTERIOR BUILDING LIGHTING	(1) 12 AWG, P (1) 12 AWG, N (1) 12 AWG, G	3/4"	
P7	PNL-A	CONTROL PANEL	(1) 12 AWG, P (1) 12 AWG, N (1) 12 AWG, G	3/4"	
P8	PNL-A	BOOSTER PUMP SKID	(1) 12 AWG, P (1) 12 AWG, N (1) 12 AWG, G	3/4"	
P9	PNL-A	BUILDING CONVENIENCE RECEPTACLE	(1) 12 AWG, P (1) 12 AWG, N (1) 12 AWG, G	3/4"	
P10	PNL-A	CHEMICAL PUMP RECEPTACLE	(1) 12 AWG, P (1) 12 AWG, N (1) 12 AWG, G	3/4"	
P11	PNL-A	FLOW TRANSMITTER	(1) 12 AWG, P (1) 12 AWG, N (1) 12 AWG, G	3/4"	
P12	PNL-A	BUILDING EXHAUST FAN	(1) 12 AWG, P (1) 12 AWG, N (1) 12 AWG, G	3/4"	
P13	PNL-A	BUILDING UNIT HEATER	(1) 12 AWG, P (1) 12 AWG, N (1) 12 AWG, G	3/4"	
P14	PNL-A	WELL PUMP CONTROL BOX	(1) 12 AWG, P (1) 12 AWG, N (1) 12 AWG, G	3/4"	
P14A	WELL PUMP CONTROL BOX	WELL PUMP	(1) 12 AWG, P (1) 12 AWG, N (1) 12 AWG, G	1"	INCREASE WIRE SIZE FOR ALTERNATE WELL LOCATION.
C1	CONTROL PANEL	WELL LEVEL TRANSDUCER JUNCTION BOX	(1) 18 AWG, TSP		
C2	CONTROL PANEL	WELL INTRUSION SWITCH	(2) 14 AWG, C (1) 14 AWG, G		
C3	CONTROL PANEL	WELL FLOW TRANSMITTER	(1) 18 AWG, TSP (2) 14 AWG, C (1) 14 AWG, G	3/4"	
C4	CONTROL PANEL	SYSTEM PRESSURE TRANSMITTER	(1) 18 AWG, TSP	3/4"	
C5	CONTROL PANEL	TANK LSLL LEVEL FLOAT	(2) 14 AWG, C (1) 14 AWG, G	3/4"	
C6	CONTROL PANEL	TANK LSL LEVEL FLOAT	(2) 14 AWG, C (1) 14 AWG, G	3/4"	
C7	CONTROL PANEL	TANK LSH LEVEL FLOAT	(2) 14 AWG, C (1) 14 AWG, G	3/4"	
C8	CONTROL PANEL	TANK LSHH LEVEL FLOAT	(2) 14 AWG, C (1) 14 AWG, G	3/4"	
C9	CONTROL PANEL	BUILDING INTRUSION SWITCH	(2) 14 AWG, C (1) 14 AWG, G	3/4"	
C10	CONTROL PANEL	BOOSTER SKID PANEL	(6) 14 AWG, C (1) 18 AWG, TSP (4) 14 AWG, SP	1"	
C11	CONTROL PANEL	WELL PUMP CONTROL BOX	(4) 14 AWG, C (1) 14 AWG, G	3/4"	RUN COMMAND; RUN CONFIRM
C12	CONTROL PANEL	AUTODIALER (IN OFFICE BLDG)	(9) 14 AWG, C (5) 14 AWG, SP (1) 14 AWG, G	2"	
C13	CONTROL PANEL	CHEMICAL METERING PUMP	(2) 14 AWG, C (1) 18 AWG, TSP (1) 14 AWG, G	1"	
N1	OFFICE BUILDING	STORE	PULL STRING	2"	FOR FIBER

P201	PUD TRANSFORMER	METER/MAIN (200A SERVICE)	(2) 3/0 AWG, P (1) 3/0 AWG, N (1) 4 AWG, G	2"	COORDINATE WITH PUD
P202	METER/MAIN	SINGLE PORT VEHICLE CHARGING STATION	(2) 8 AWG, P (1) 10 AWG, G	1"	
P203	METER/MAIN	DUAL PORT VEHICLE CHARGING STATION	(2) 8 AWG, P (1) 10 AWG, G	1"	
P204	METER/MAIN	DUAL PORT VEHICLE CHARGING STATION	(2) 8 AWG, P (1) 10 AWG, G	1"	

CIRCUIT SCHEDULE (4)

SCALE: NONE

PANEL: PNL-A	VOLTAGE: 240/120, 1PH, 3WIRE	MOUNTING: SURFACE
LOCATION: TREATMENT/BOOSTER BLDG	BUS: 100A COPPER	AIC: 10,000
FEEDER: MAIN BREAKER	MAIN: 100A	

CKT NO	CIRCUIT DESCRIPTION	BREAKER POLES	BREAKER AMPS	VA	PHASE	LOAD VA	BREAKER POLES	BREAKER AMPS	CIRCUIT DESCRIPTION	CKT NO
1	INTERIOR LIGHTING	1	20	200	A	200	1	20	EXTERIOR LIGHTING	2
3	CONTROL PANEL	1	20	500	B	1000	2	20	BOOSTER PUMP SKID	4
5	CONVENIENCE RECEPTACLE	1	20	180	A		-	-		6
7	CHEMICAL PUMP RECEPTACLE	1	15	205	B	100	1	15	FLOW TRANSMITTER	8
9	WELL PUMP	1	20	1200	A		1	15	SPARE	10
11	SPARE	1	15		B		1	15	SPARE	12

LOAD PER PHASE

PHASE A	1.8	KVA
PHASE B	1.8	KVA
TOTAL LOAD	3.6	KVA
TOTAL AMPS	15	AMPS

PNL-A PANEL SCHEDULE (3)

SCALE: NONE

CAD NO. W090-D4003-C11-D4002-C11-2023-X-E401

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DESIGNED	MEW	3/27/23
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PROFESSIONAL ENGINEER

REGISTERED STAMP

WASHINGTON STATE PARKS AND RECREATION COMMISSION

WALLACE FALLS STATE PARK

PARKING EXPANSION AND WATER SYSTEM REPLACEMENT

ELECTRICAL ONE-LINE DIAGRAM & SCHEDULES

E401

SCALE
AS SHOWN

PARKS FILE#

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AK #1018436
PROJECT#: 22.37.01

SHEET X OF XX

SEE E403 FOR AREA PLAN

OFFICE (EXISTING)

FIBER HANDHOLE

STATE PARK BOUNDARY

HUSTON CENTER BOUNDARY

2" CONDUIT FOR FUTURE FIBER

N1 1

STORE (EXISTING)

EXISTING PUD JBOX & TRANSFORMER

HUSTON CENTER BOUNDARY

STATE PARK BOUNDARY

DUAL PORT CHARGING STATION 2

1" C — P203 P204

SINGLE PORT CHARGING STATION 2

P202

METER/MAIN 3

P201

MATCHLINE SHEET 7

STATE PARK BOUNDARY

HUSTON CENTER BOUNDARY

30' 0 60'

KEY NOTES

1. USE SWEEPING 90° THROUGHOUT CONDUIT RUN.
2. TYPE 2 ELECTRIC VEHICLE CHARGING STATIONS, BOLLARD MOUNT ON CONCRETE FOUNDATION.
3. INSTALL 120/240V 200A METERED SERVICE PEDESTAL WITH 200A DISTRIBUTION PANEL.

ELECTRICAL SITE PLAN

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PROJECT#: 22.37.01

SHEET X OF XX

CAD NO. W090-D4003-C11-D4002-C11-2023-X-E402

NO.	REVISIONS	INT.	APP.	DATE

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WASHINGTON STATE PARKS AND RECREATION COMMISSION

WALLACE FALLS STATE PARK

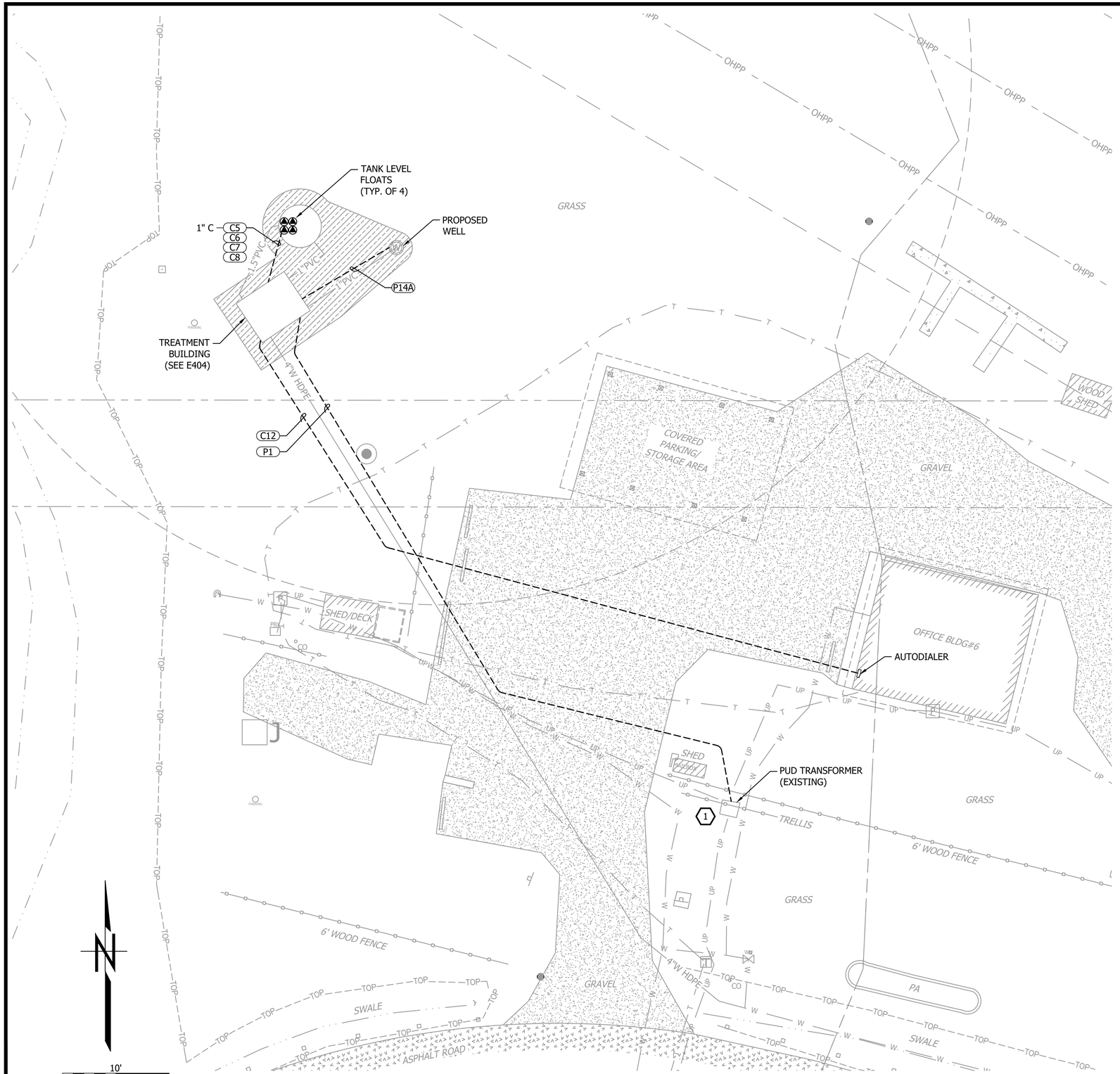
PARKING EXPANSION AND WATER SYSTEM REPLACEMENT

ELECTRICAL SITE PLAN

E402

SCALE
AS SHOWN

PARKS FILE#



PLAN

KEY NOTES

1. CONTRACTOR SHALL RUN CONDUIT AND WIRE UP TO EXISTING PUD TRANSFORMER. COORDINATE CONNECTION WITH PUD.

CAD NO. W090-D4003-C11-D4002-C11-2023-X-E403

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WALLACE FALLS STATE PARK

PARKING EXPANSION AND WATER SYSTEM REPLACEMENT

ELECTRICAL AREA PLAN

E403

SCALE
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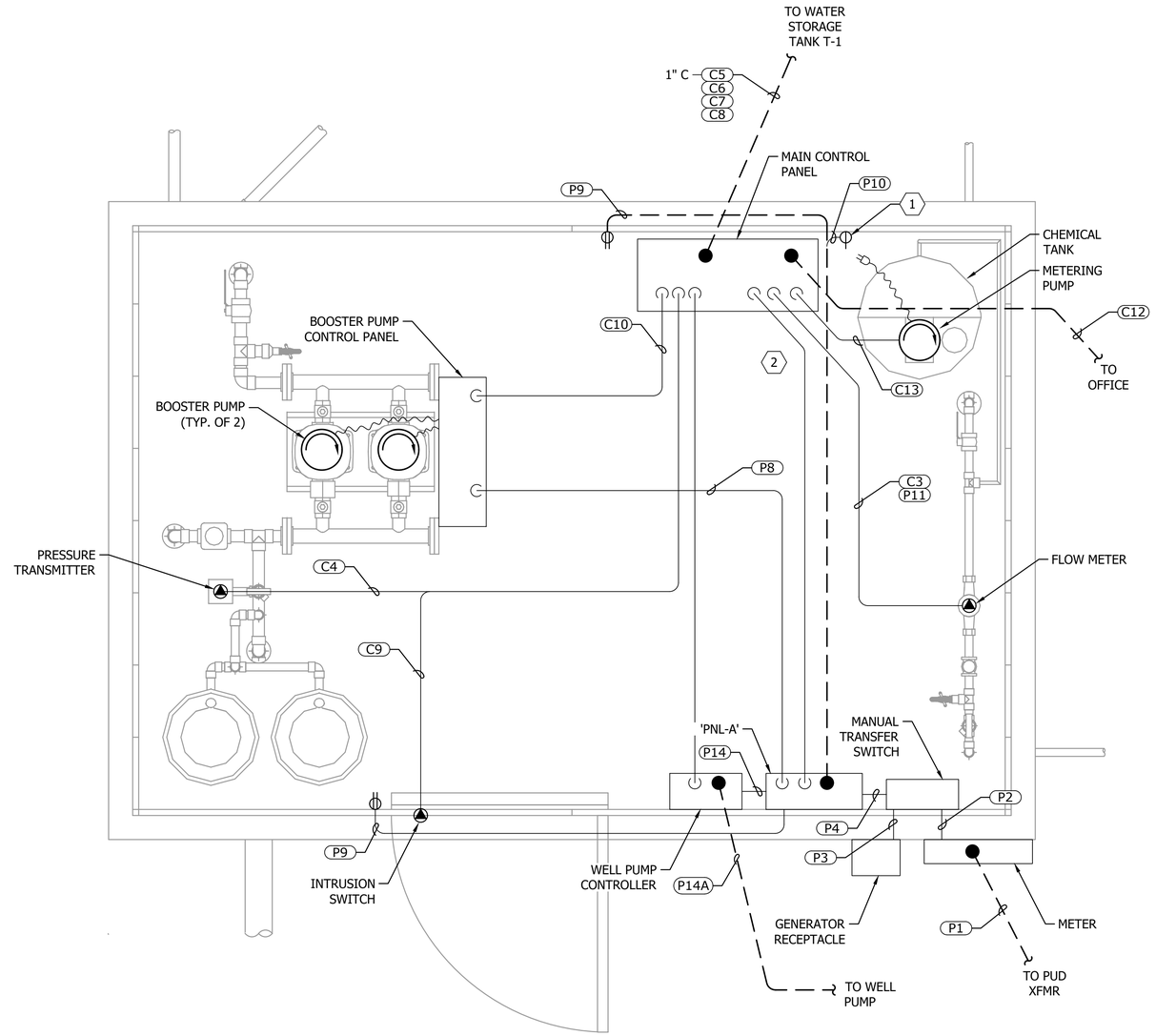
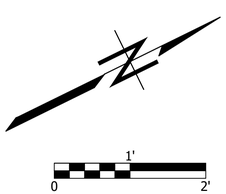
SHEET X OF XX

KEY NOTES

1. DEDICATED SIMPLEX RECEPTACLES FOR CHEMICAL EQUIPMENT.
2. ALL CONDUITS WITHIN 5 FT OF METERING PUMP AND CHEMICAL TANK SHALL BE PGRS.





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WALLACE FALLS STATE PARK

PARKING EXPANSION AND WATER SYSTEM REPLACEMENT

TREATMENT BUILDING ELECTRICAL PLAN

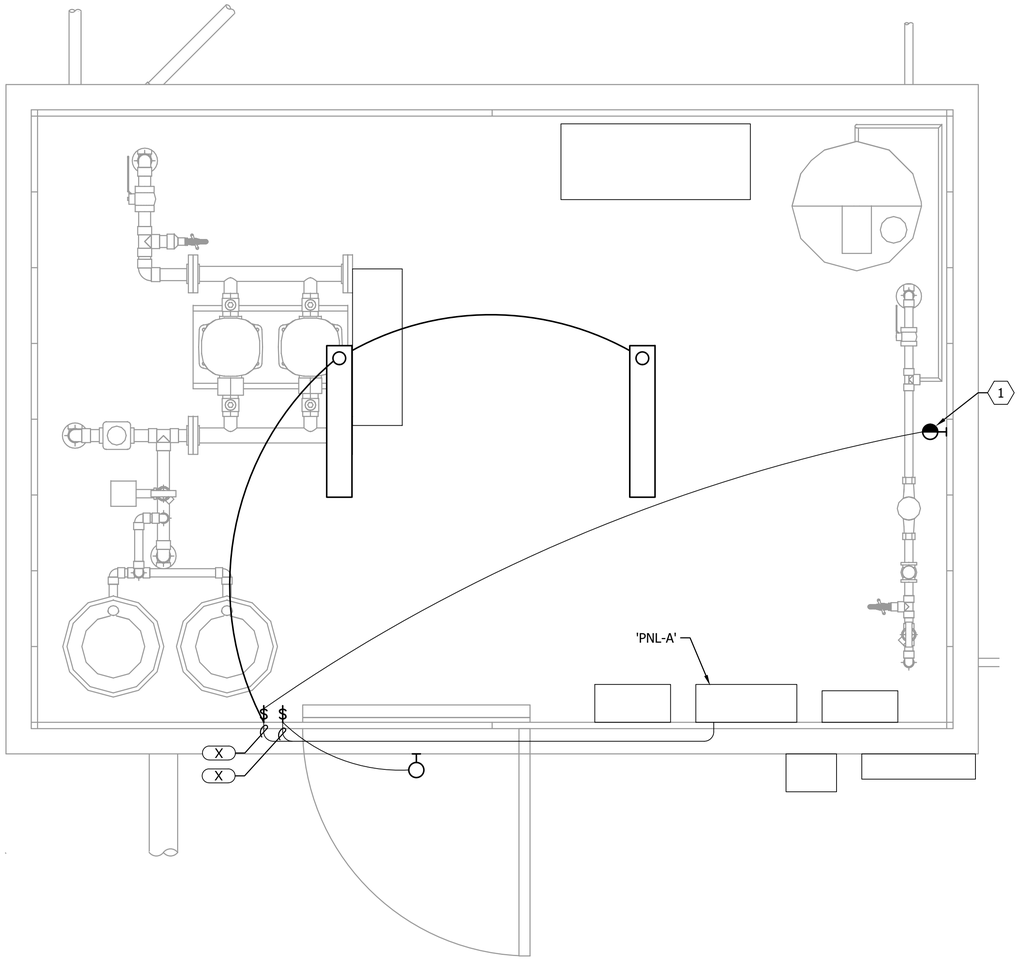
E404

SCALE
AS SHOWN

PARKS FILE#

KEY NOTES

1. ROUTE UN-SWITCHED POWER CIRCUIT TO BATTERY BACKED LUMINAIRE.



LUMINAIRE SCHEDULE				
DEVICE/LOCATION/USE	DESCRIPTION	VOLTS	WATTS	SUGGESTED MANUFACTURER & CATALOG NUMBER
BUILDING INTERIOR LIGHT	4064 LUMEN LED LUMINAIRE FEM SERIES 48"	120V	23.8	LITHONIA FEM L48 4000LM IMAFL MD MVOLT GZ10 40K 80CRI OR EQUAL
WALL MOUNT LUMINAIRE LED TYPE INTERIOR/EXTERIOR	640 LUMEN LED LUMINAIRE FOR EMERGENCY LIGHTING	120V	3.15	LITHONIA ELM4L LED OR EQUAL
WALL MOUNT LUMINAIRE LED TYPE INTERIOR/EXTERIOR	WDGE2 LED WITH P1 - PERFORMANCE PACKAGE, 4000K, 80CRI, VISUAL COMFORT WIDE OPTIC	120V	9.8	WDGE2 LED P1 40K 80CRI VW OR EQUAL

1' 0 2'

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CAD NO. W090-D4003-C11-D4002-C11-2023-X-E405

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WALLACE FALLS STATE PARK

PARKING EXPANSION AND WATER SYSTEM REPLACEMENT

TREATMENT BUILDING LIGHTING PLAN

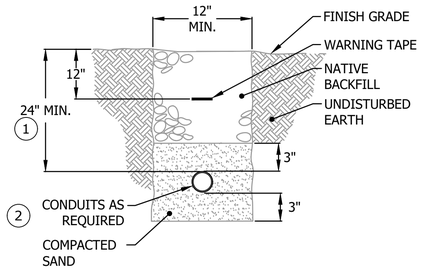
E405

SCALE
AS SHOWN

PARKS FILE#

DETAIL NOTES

1. VERIFY TRENCH DEPTH AND COVERING FOR INCOMING SERVICE CONDUIT WITH LOCAL UTLITY.
2. COORDINATE WITH CIVIL DISCIPLINE FOR INTERSECTING PIPES.

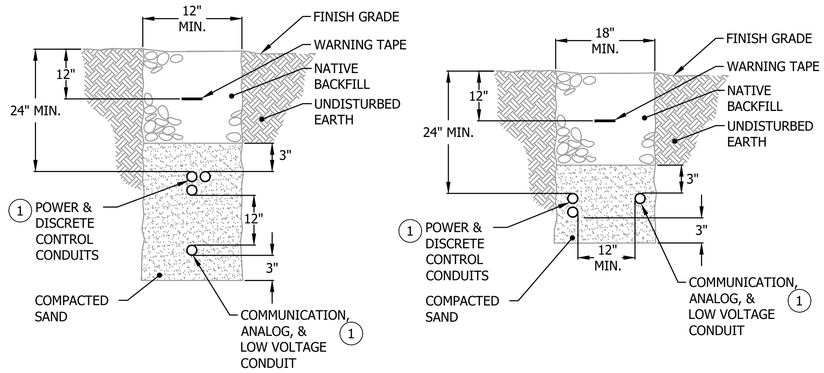


TYP. CONDUIT TRENCH — 1 / -

SCALE: NONE

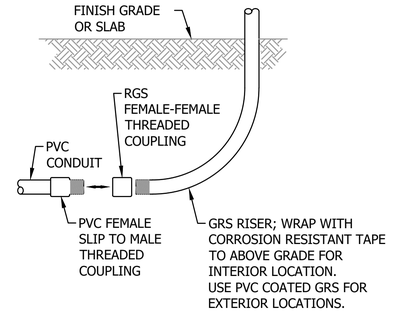
DETAIL NOTES

1. COORDINATE WITH CIVIL DISCIPLINE FOR INTERSECTING PIPES.



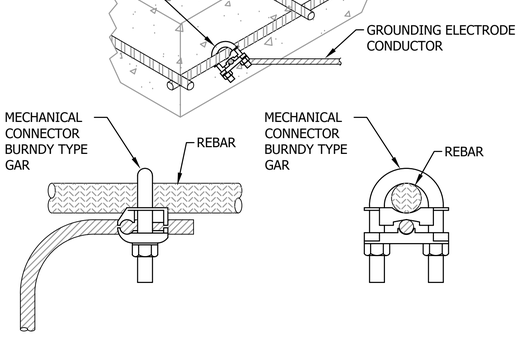
MIXED CONDUIT TRENCES — 2 / -

SCALE: NONE



CONDUIT TRANSITION — 3 / -

SCALE: NONE



REBAR GROUNDING — 4 / -

SCALE: NONE

CAD NO. W090-D4003-C11-D4002-C11-2023-X-E408

NO.	REVISIONS	INT.	APP.	DATE

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WASHINGTON STATE PARKS AND RECREATION COMMISSION

WALLACE FALLS STATE PARK

PARKING EXPANSION AND WATER SYSTEM REPLACEMENT

ELECTRICAL DETAILS

E408

SCALE
AS SHOWN

PARKS FILE#

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SHEET X OF XX

GENERAL INSTRUMENT SYMBOLS

LOCATION/ACCESSIBILITY	DISCRETE INSTRUMENTS	SHARED DISPLAY AND CONTROL (DCS)	PLC	DISCRETE HARDWARE INTERLOCK
FIELD MOUNTED 1. FIELD OR LOCALLY MOUNTED. 2. ACCESSIBLE TO AN OPERATOR AT DEVICE.	○	▢	◇	◇
PRIMARY LOCATION NORMALLY ACCESSIBLE TO AN OPERATOR 1. CENTRAL OR MAIN CONTROL ROOM. 2. FRONT OF MAIN PANEL OR CONSOLE MOUNTED. 3. VISIBLE ON VIDEO DISPLAY. 4. ACCESSIBLE TO AN OPERATOR AT DEVICE OR CONSOLE.	⊖	▢	◇	
PRIMARY LOCATION NORMALLY INACCESSIBLE TO AN OPERATOR 1. CENTRAL OR MAIN CONTROL ROOM. 2. REAR OF PANEL OR CABINET MOUNTED. 3. NOT VISIBLE ON VIDEO DISPLAY. 4. NOT NORMALLY ACCESSIBLE TO AN OPERATOR AT DEVICE OR CONSOLE.	⊖	▢	◇	
AUXILIARY LOCATION NORMALLY ACCESSIBLE TO AN OPERATOR 1. SECONDARY OR LOCAL CONTROL ROOM. 2. FIELD OR LOCAL CONTROL PANEL. 3. FRONT OF SECONDARY OR LOCAL PANEL MOUNTED. 4. VISIBLE ON VIDEO DISPLAY. 5. ACCESSIBLE TO AN OPERATOR AT DEVICE OR CONSOLE.	⊖	▢	◇	
AUXILIARY LOCATION NORMALLY INACCESSIBLE TO AN OPERATOR 1. SECONDARY OR LOCAL CONTROL ROOM. 2. FIELD OR LOCAL CONTROL PANEL. 3. REAR OF SECONDARY OR LOCAL PANEL OR CABINET MOUNTED. 4. NOT VISIBLE ON VIDEO DISPLAY. 5. NOT NORMALLY ACCESSIBLE TO AN OPERATOR AT DEVICE OR CONSOLE.	⊖	▢	◇	

PIPING LINE SYMBOLS

PRIMARY (AG & UG)

SECONDARY / UTILITY (AG & UG)

FUTURE OR EXISTING ON NEW P&IDs

JACKETED OR DOUBLE CONTAINMENT

INSTRUMENT IDENTIFICATION LETTERS

	FIRST LETTER		SUCCEEDING LETTERS		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, FLAME, COMBUSTION		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C	USER'S CHOICE (TYPICALLY CONDUCTIVITY - ELECTRICAL)			CONTROL, COMMAND	CLOSED
D	USER'S CHOICE (TYPICALLY DENSITY OR SPECIFIC GRAVITY)	DIFFERENTIAL			DIVERT
E	VOLTAGE		SENSOR (PRIMARY ELEMENT)		
F	FLOW RATE	RATIO (FRACTION)			
G	USER'S CHOICE OR GAUGING (DIMENSIONAL)		GLASS, VIEWING DEVICE		
H	HAND				HIGH
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME, TIME SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW
M	USER'S CHOICE (TYPICALLY MOISTURE OR HUMIDITY)	MOMENTARY			MIDDLE, INTERMEDIATE
N	USER'S CHOICE		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		ORIFICE, RESTRICTION		OPEN
P	PRESSURE, VACUUM		POINT (TEST) CONNECTION		
Q	QUANTITY OR HEAT DUTY	INTEGRATE, TOTALIZE			
R	RADIATION		RECORD		
S	SPEED, FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	THROUGH
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION, MECHANICAL ANALYSIS			VALVE, DAMPER, LOUVER	
W	WEIGHT, FORCE, TORQUE		WELL		
X	UNCLASSIFIED	X AXIS	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE OR PRESENCE	Y AXIS		RELAY, COMPUTE, CONVERT	
Z	POSITION, DIMENSION	Z AXIS		DRIVER, ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT	

ABBREVIATIONS

AG	ABOVE GROUND
ATM	ATMOSPHERE
BYP	BYPASS
CC	CHEMICAL CLEANOUT
CL	CENTERLINE
CO	CLEANOUT
CONN	CONNECTION
CVLS	CHECK VALVE LIMIT SWITCH
CTR	CENTER
DCS	DISTRIBUTED CONTROL SYSTEM
DES	DESIGN
DIA	DIAMETER
DP	DESIGN PRESSURE
D/P	DIFFERENTIAL PRESSURE
DRN	DRAIN
DT	DESIGN TEMPERATURE
DWG	DRAWING
(E)	EXISTING
EL	ELEVATION
ESD	EMERGENCY SHUTDOWN
FOF	FACE OF FLANGE
(F)	FURNISHED
FC	FAIL CLOSED
FI	FAIL INDETERMINATE
FL	FAIL LOCKED (LAST POSITION)
FLG	FLANGE
FO	FAIL OPEN
FP	FULL PORT
FV	FULL VACUUM
GO	GEAR OPERATED
GR	GRADE
HC	HOSE CONNECTION
HDR	HEADER
HH	HAND HOLE
HOA	HAND/OFF/AUTOMATIC
HP	HIGH PRESSURE
HPT	HIGH POINT
IAS	INSTRUMENT AIR SUPPLY
LC	LOCKED CLOSED
LCP	LOCAL CONTROL PANEL
LO	LOCKED OPEN
LP	LOW PRESSURE
LPT	LOW POINT
MTL	MATERIAL
MAX	MAXIMUM
MCC	MOTOR CONTROL CENTER
MCP	MAIN CONTROL PANEL
MIN	MINIMUM
MOV	MOTOR OPERATED VALVE
MW	MANWAY
NC	NORMALLY CLOSED
NNF	NORMALLY NO FLOW
NO	NORMALLY OPEN
NOZ	NOZZLE
O/C	OPEN/CLOSE
O/O	ON/OFF
OIT	OPERATOR INTERFACE TERMINAL
OP	OUTPUT
OVHD	OVERHEAD
PLC	PROGRAMMABLE LOGIC CONTROLLER
PRESS	PRESSURE
PV	PROCESS VARIABLE
(R)	RELOCATED
REQD	REQUIRED
RIO	REMOTE I/O PANEL
RTD	RESISTANCE TEMPERATURE DETECTOR
SC	SAMPLE CONNECTION
SCADA	SUPERVISORY CONTROL AND DATA ACQUISITION
SCH	SCHEDULE
SD	SHUTDOWN
SG	SPECIFIC GRAVITY
SIS	SAFETY INSTRUMENTED SYSTEM
SO	STEAM OUT
SP	SET POINT
SS	STAINLESS STEEL S/S or START/STOP
STD	STANDARD
T/C	THERMOCOUPLE
TDH	TOTAL DIFFERENTIAL HEAD
TEMP	TEMPERATURE
THRD	THREADED
TSO	TIGHT SHUT-OFF
TYP	TYPICAL
UG	UNDERGROUND
VNT	VENT
VAC	VACUUM
VB	VORTEX BREAKER
VFD	VARIABLE FREQUENCY DRIVE
W/	WITH
W/O	WITHOUT

INSTRUMENT LINE SYMBOLS

INSTRUMENT SUPPLY OR CONNECTION TO PROCESS

PNEUMATIC SIGNAL

ELECTRIC SIGNAL (ANALOG)

ELECTRIC SIGNAL (DISCRETE)

HYDRAULIC SIGNAL

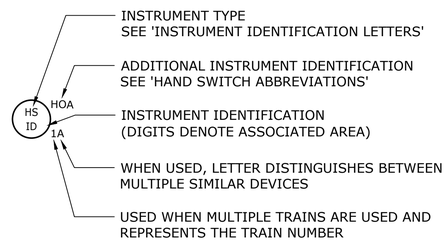
CAPILLARY TUBE

ELECTROMAGNETIC, SONIC, OPTICAL, OR NUCLEAR SIGNAL

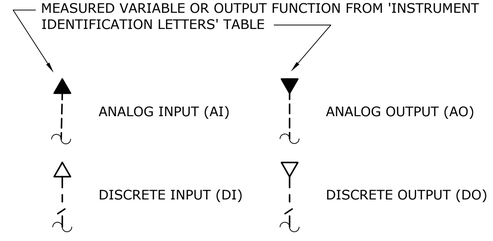
SOFTWARE OR DATA LINK

MECHANICAL LINK

TYPICAL INSTRUMENT TAG NUMBERS & DESIGNATION



INPUT / OUTPUT SIGNALS



HAND SWITCH ABBREVIATIONS

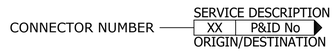
AO = AUTO/OFF
AM = AUTO/MANUAL
CM = COMPUTER/MANUAL
CL = COMPUTER LOCAL
ES = EMERGENCY STOP
FR = FORWARD/REVERSE
FOR = FORWARD/OFF/REVERSE
FS = FAST/SLOW
FOS = FAST/OFF/SLOW
HA = HAND/AUTO
HIM = HUMAN INTERFACE MODULE
HOA = HAND/OFF/AUTOMATIC
LLS = LEAD/LAG/STANDBY
LOC = LOCAL/OFF/COMPUTER
LOR = LOCAL/OFF/REMOTE
LOS = LOCKOUT/STOP
LA = LOCAL/AUTO
LR = LOCAL/REMOTE
OC = OPEN/CLOSE
OCA = OPEN/CLOSE/AUTO
OO = ON/OFF
OOA = ON/OFF/AUTO
OSC = OPEN/STOP/CLOSE
RES = RESET
RF = RUN/FAULT
RSL = RAISE/STOP/LOWER
SS = START/STOP
SOR = START/OFF/RESET
V/B = VFD/BYPASS

FLOW STREAM IDENTIFIERS

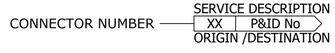
ABE = AERATION BASIN EFFLUENT
BD = BASIN DRAIN
CS = COMBINED SLUDGE
CAS = CAUSTIC SODA
DR = DRAIN
DS = DIGESTER SOLIDS
FBW = FILTER BACKWASH
FE = FINAL EFFLUENT
GR = GRIT
ICE = INTERMEDIATE CLARIFIER EFFLUENT
LPA = LOW PRESSURE AIR
ML = MIXED LIQUOR
NPW = NON POTABLE WATER
PE = PRIMARY EFFLUENT
PI = PRIMARY INFLUENT
PLE = PLANT EFFLUENT
PS = PRIMARY SLUDGE
RAS = RETURN ACTIVATED SLUDGE
RS = RAW SEWAGE
SSL = SECONDARY SLUDGE
SCM = SCUM
SSCM = SECONDARY SCUM
SCRN = SCREENINGS
SE = SECONDARY EFFLUENT
TE = TERTIARY EFFLUENT
TWAS = THICKENED WASTE ACTIVATED SLUDGE
UW = UTILITY WATER
WAS = WASTE ACTIVATED SLUDGE

OFF-PAGE CONNECTORS AND TIE-IN SYMBOL

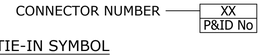
A. OFF-PLOT CONNECTOR



B. PRIMARY/SECONDARY LINES AND INSTRUMENT SIGNAL CONNECTOR

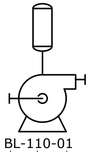


C. UTILITY CONNECTOR



D. TIE-IN SYMBOL

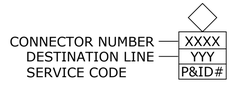
TYPICAL EQUIPMENT TAG NUMBERS & DESIGNATION



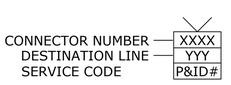
AER = AERATOR
BIN = BIN
BL = BLOWER
CEL = CELL
CLA = CLARIFIER
CLS = CLASSIFIER
CND = CONDENSATE TRAP
CON = CONVEYOR
CMP = COMPRESSOR
DIF = DIFFUSER
DIG = DIGESTER
DIS = DISINFECTION UNIT
FED = FEEDER
FLT = FILTER
HEX = HEAT EXCHANGER
MIX = MIXER
PMP = PUMP
PRS = PRESS
SCN = SCREEN
SDG = SLIDE GATE
SL = SLUICE GATE
SMP = SUMP
THK = THICKENER
TNK = TANK
WEL = WET WELL

DRAIN CONNECTORS

CLOSED DRAIN



OPEN DRAIN



CLOSED DRAIN (NO P&ID)

OPEN DRAIN (NO P&ID)

Industrial Systems INC
12119 NE 99th Street
Suite #2090
Vancouver, Washington 98682
Phone: (360) 718-7267
Fax: (360) 952-8958
e-mail: is@industrialsystems-inc.com
OR CCB #196597 WA #INDUSSI880K9
AK #1018436
PROJECT#: 22.37.01

SHEET X OF XX

CAD NO. W090-D4003-C11-D4002-C11-2023-X-I400

	DATE
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	NO.

ACTION	BY	DATE
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REGISTERED STAMP

WASHINGTON STATE PARKS AND RECREATION COMMISSION

WALLACE FALLS STATE PARK

PARKING EXPANSION AND WATER SYSTEM REPLACEMENT

P&ID LEGEND-1

I400

SCALE
AS SHOWN

PARKS FILE#

PRIMARY ELEMENT SYMBOLS

- XX — GENERAL SYMBOL IN-LINE ELEMENT XX = FS, FG, FE, FT
- FIT / XXXX — IN-LINE FLOW ELEMENT WITH INTEGRAL INDICATING TRANSMITTER XXXX = MASS, CORIOLIS, THERMAL, INT. ORIFICE ...
- FIT / FE / XXXX — IN-LINE FLOW ELEMENT WITH SEPARATE INDICATING TRANSMITTER XXXX = MASS, CORIOLIS, THERMAL...
- ORIFICE
- M — MAGNETIC
- TURBINE OR PROPELLER
- ULTRASONIC
- VORTEX
- PITOT TUBE
- AVERAGING PITOT TUBE
- FLOW NOZZLE
- VENTURI
- WEDGE METER
- LE — RADAR (NON-CONTACT)
- LE — ULTRASONIC LEVEL SENSOR
- LE — RADAR (GUIDED)
- LS* — FLOAT SWITCH; FLOAT SWITCH * = L/LL/H/HH
- FS* — FLOW SWITCH * = H/L
- FG — FLOW GLASS
- FLOW CONDITIONING DEVICES (e.g., STRAIGHTENING VANES)
- FO — RESTRICTION ORIFICE
- AE X — ANALYZER ELEMENT; X INDICATES TYPE: pH = HYDROGEN POTENTIAL; DO = DISSOLVED OXYGEN; H2S = HYDROGEN SULFIDE; LEL = LOWER EXPLOSIVE LIMIT; O2 = OXYGEN; ORP = OXYGEN REDUCTION POTENTIAL; TUR = TURBIDITY
- ROTAMETER
- FI — ROTAMETER WITH INTEGRAL VALVE (SHOWN WITH OPTIONAL INTEGRAL VALVE)
- FLUME
- WEIR
- POSITIVE DISPLACEMENT
- ORIFICE IN QUICK CHANGE FITTING
- TARGET

VALVE SYMBOLS (N.C. WHEN SHADED)

- GATE VALVE
- CHECK VALVE
- STOP CHECK VALVE
- GLOBE VALVE
- BUTTERFLY VALVE
- NEEDLE VALVE
- BALL VALVE
- BALANCING VALVE
- AIR RELEASE VALVE
- PLUG VALVE
- DIAPHRAGM VALVE
- 3-WAY VALVE
- 4-WAY VALVE
- PINCH VALVE
- ANGLE VALVE
- KNIFE VALVE
- SLUICE OR SLIDE GATE

PIPING FITTINGS

- FLANGE
- WELDED CONNECTION
- CONCENTRIC REDUCER
- ECCENTRIC REDUCER
- SPACER
- BLANK
- OPEN FIGURE 8 BLIND
- CLOSED FIGURE 8 BLIND
- PLUG
- BLIND FLANGE
- HOSE CONNECTION
- CAP

PIPING SPECIALTY ITEMS

- Y-TYPE STRAINER
- CONE STRAINER
- T-TYPE STRAINER
- DUPLEX STRAINER
- BASKET STRAINER
- TEMPORARY STRAINER
- FILTER
- D — DETONATION ARRESTOR
- F — FLAME ARRESTOR
- T — STEAM TRAP
- EXHAUST HEAD
- S — IN-LINE SILENCER
- S — VENT SILENCER
- MECHANICAL COUPLING
- EJECTOR
- RS — REMOVABLE SPOOL
- DS — DESUPERHEATER
- FLEXIBLE HOSE
- EXPANSION JOINT
- DAMPER
- BREATHER
- VENT COVER
- IN-LINE MIXER
- DIVERTER VALVE
- ROTARY VALVE
- EXCESS FLOW VALVE
- PULSATION DAMPENER
- INJECTION SPOOL

- HORIZONTAL CENTRIFUGAL PUMP
- VERTICAL INLINE PUMP
- SUBMERSIBLE PUMP
- PROPELLER PUMP
- PROGRESSIVE CAVITY PUMP
- POSITIVE DISPLACEMENT PUMP
- LIQUID RING VACUUM PUMP
- VERTICAL CAN PUMP

SELF-ACTUATED DEVICES

- RUPTURE DISC - PRESSURE RELIEF SAFETY HEAD FOR PRESSURE RELIEF (EXPLOSION PANEL)
- RUPTURE DISC - VACUUM RELIEF SAFETY HEAD FOR VACUUM RELIEF (EXPLOSION PANEL)
- PRESSURE RELIEF - SAFETY VALVE
- VACUUM RELIEF VALVE
- PRESSURE AND VACUUM RELIEF VALVE CONSERVATION VENT
- P — PILOT OPERATED RELIEF VALVE WITH REMOTE SENSOR (USE APPROPRIATE RELIEF VALVE SYMBOL)
- PRESSURE REDUCING REGULATOR (SELF-CONTAINED)
- BACK PRESSURE REGULATOR (SELF-CONTAINED)
- BACK PRESSURE REGULATOR W/ EXTERNAL TAP
- PRESSURE REDUCING REGULATOR W/ EXTERNAL TAP
- DIFFERENTIAL PRESSURE REDUCING REGULATOR
- TEMPERATURE REGULATOR FILLED SYSTEM TYPE

PROCESS EQUIPMENT

- DOME ROOF TANK
- CLOSED TOP TANK
- HYDROPNEUMATIC TANK
- OPEN TOP TANK / WET WELL/ CHANNEL

CONTROL VALVE ACTUATOR SYMBOLS

- MANUAL OPERATOR
- DIAPHRAGM
- PRESSURE BALANCED DIAPHRAGM
- HANDWHEEL WITH ACTUATOR
- CYLINDER - PISTON
- M — MOTOR OPERATED - CONSTANT SPEED
- E/P — ELECTRO-PNEUMATIC
- S — SINGLE SOLENOID
- S R — SINGLE SOLENOID - MANUAL RESET
- S R — SINGLE SOLENOID - REMOTE RESET

MISCELLANEOUS INSTRUMENT SYMBOLS

- CHEMICAL SEAL- DIAPHRAGM
- LEVEL SENSOR — ANNULAR SEAL
- X — PILOT LIGHT OR GAUGE GLASS ILLUMINATOR; X INDICATES COLOR: R = RED, B = BLUE, G = GREEN, A = AMBER, W = WHITE
- DUAL FUNCTION OR INSTRUMENTS SHARING COMMON HOUSING
- I — UNDEFINED INTERLOCK LOGIC

Industrial Systems INC
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SHEET X OF XX

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WALLACE FALLS STATE PARK

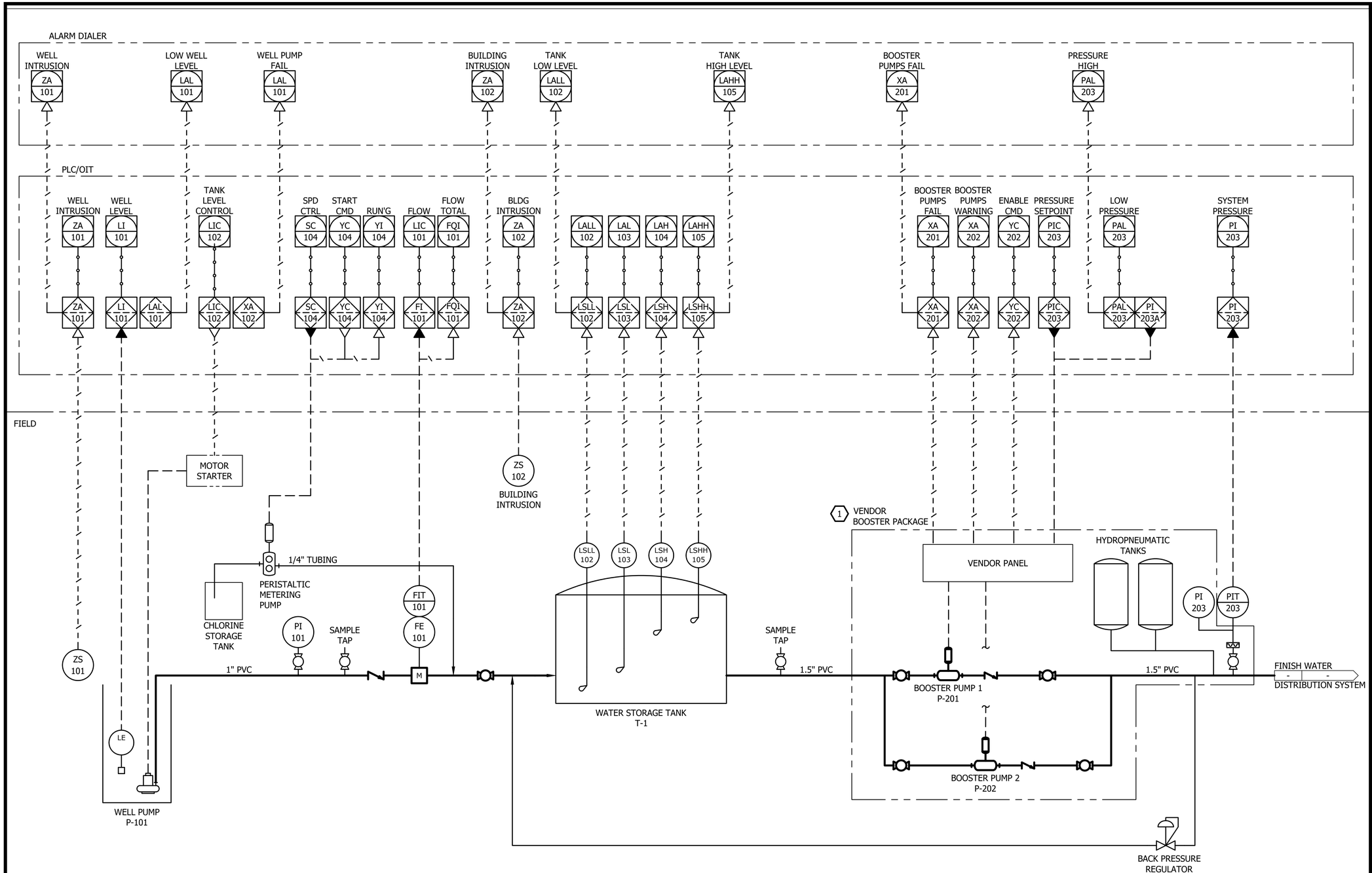
PARKING EXPANSION AND WATER SYSTEM REPLACEMENT

P&ID LEGEND-2

I401

SCALE: AS SHOWN

PARKS FILE#



KEY NOTES

1 NOT ALL PIPING IS INCLUDED WITH VENDOR BOOSTER PACKAGE.

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