B&L Woodwaste Site
Pierce County, Washington

Engineering Design Report (EDR) Addendum 3

Phase 2 Part 1 Remediation Design Report

Groundwater Recovery and Treatment System

Prepared for

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June 2011

FINAL

B&L Woodwaste Site
Pierce County, Washington

Engineering Design Report (EDR) Addendum 3

Phase 2 Part 1 Remediation Design Report

Groundwater Recovery and Treatment System

Appendix 3F
Construction Drawings and Specifications

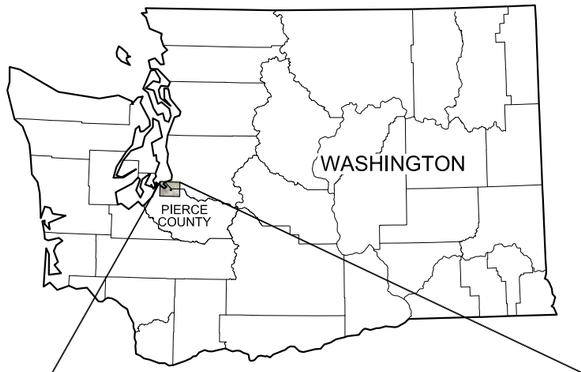
(Specifications provided on CD-ROM)

Note: Part 1 of Appendix 3F drawings - Part 2 of Appendix 3F and remainder of EDR Addendum 3 are separate files

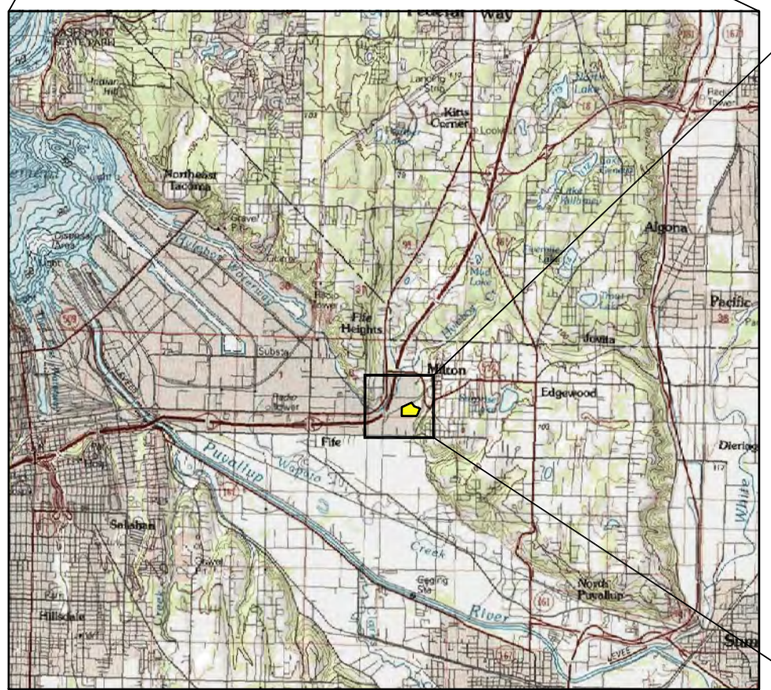
FINAL

PLANS AND SPECIFICATIONS - DRAWINGS
ADDENDUM 3: PHASE 2 REMEDIATION DESIGN
GROUNDWATER RECOVERY AND TREATMENT SYSTEM

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

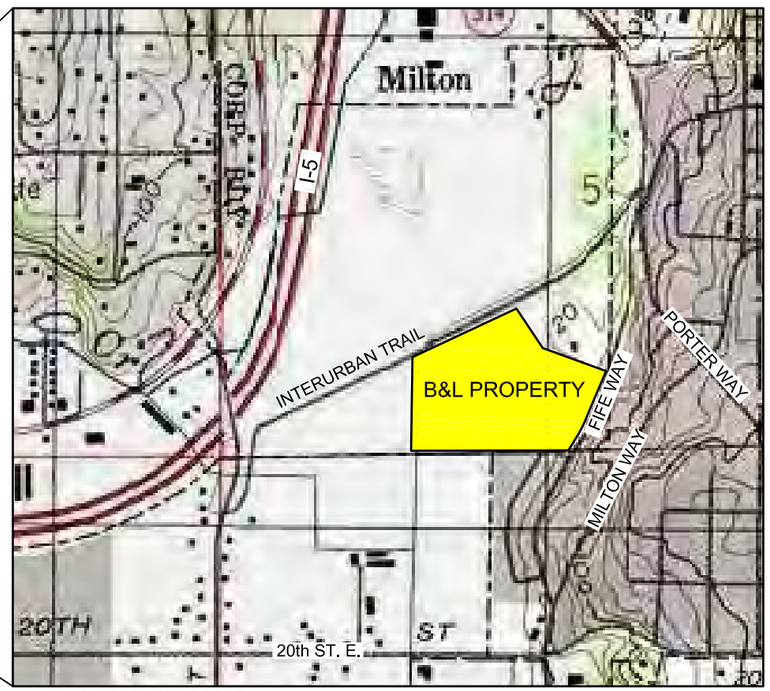


LOCATION MAP



VICINITY MAP

0 1 2
APPROXIMATE SCALE IN MILES



PROJECT SITE MAP

0 500 1000
APPROXIMATE SCALE IN FEET

REFERENCES:	NO.	REVISION	DATE	APRVD
PLANS	1	ISSUED FOR REVIEW	MAR 24	GP
	2	ISSUED FOR SPECIFICATION PACKAGE REVIEW	APR 21	GP
DATUM HORIZONTAL: WASP-NAD83-S FEET VERTICAL: NAVD88 FEET	3	ISSUED FOR TENDER	MAY 26	WJM

DRAWN JR
DESIGNED GP
CHECKED LDV
REVIEWED WJM

AMEC Geomatrix

COVER SHEET
ADDENDUM 3

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

DATE: 05/20/11
PROJECT NO.: SE10160010

DRAWING
G-01

Plot Date: 05/20/11 - 10:36am, Plotted by: Dell Survey2
Drawing Path: T:\Pete\Geomatrix\2011\112500-I B&L Woodwaste Site (SE10160010)\, Drawing Name: SE10160010-cover.dwg

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AS-04	GWTP ARCHITECTURAL/STRUCTURAL
AS-05	GWTP ARCHITECTURAL/STRUCTURAL
AS-06	GWTP ARCHITECTURAL/STRUCTURAL
AS-07	GWTP ARCHITECTURAL/STRUCTURAL
AS-08	GWTP ARCHITECTURAL/STRUCTURAL
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NOTES:

1. GROUND SURFACE CONTOUR LINES WERE OBTAINED FROM LIDAR AND AUGMENTED WITH SOME LAND SURVEYING BY BARGHAUSEN.
2. LIDAR ELEVATIONS ARE GENERALLY ACCURATE TO ±1 FOOT.
3. SITE GROUNDWATER AND LANDFILL WASTE ARE CONTAMINATED WITH ARSENIC. SEE SITE HEALTH AND SAFETY PLAN FOR RELEVANT INFORMATION. ALL WORKERS INVOLVED WITH TRENCHING IN WETLAND AREAS OR LIKELY TO BE EXPOSED TO GROUNDWATER MUST BE CURRENT WITH HAZWOPER-TRAINING AND MEDICAL MONITORING.
4. CONDUCT UNDERGROUND UTILITY LOCATES TO CLEAR EXCAVATION AREAS BEFORE START OF SUBSUFACE CONSTRUCTION.
5. BESIDES CONTRACTOR'S OWN FIELD OFFICE, PROVIDE AN ADDITIONAL FIELD OFFICE TRAILER WITH SPACE AND FURNITURE FOR THE CONSTRUCTION MANAGER, AT LEAST 28 FT LONG, AND CONNECT WITH POWER AND PHONE SERVICES.
6. A POWER POLE WITH METER AND SINGLE PHASE, 240V, SUPPLY IS EXISTING. CONTRACTOR WILL BE RESPONSIBLE FOR ALL OTHER TRANSFORMERS AND LINES NEEDED FOR TEMPORARY AND PERMANENT SERVICE. SEE SHEET C-03 FOR SERVICE LOCATION.
7. CONTRACTOR IS RESPONSIBLE FOR TEMPORARY AND PERMANENT PHONE SERVICE.
8. WATER SUPPLY SHALL BE OBTAINED FROM A CITY OF MILTON FIRE HYDRANT ON FIFE WAY, APPROXIMATELY 0.5 MILE NORTH OF THE SITE.
9. PROVIDE OTHER TEMPORARY FACILITIES FOR THE DURATION OF THE PROJECT.
10. ALL EXCAVATIONS AND TRENCHING WORK SHALL BE PERFORMED IN ACCORDANCE WITH CURRENT WISHA AND OSHA REGULAITONS ON EXCAVATIONS, TRENCHING, AND SHORING.
11. REMOVE ALL EXCESS MATERIAL AND REMAINING DEBRIS FROM THE WORK AREA AND DISPOSE IN ACCORDANCE WITH APPLICABLE REGULATIONS AND STANDARDS.
12. CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING NEAR EXISTING PROPERTY FEATURES, SUCH AS EXISISTING WELLS, LANDFILL BARRIER WALL, AND LANDFILL CAP. ANY DAMAGE WILL BE REPAIRED TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE, AT THE CONTRACTOR'S SOLE EXPENSE.
13. THESE DRAWINGS ARE TO BE USED IN CONJUNCTION WITH THE WRITTEN SPECIFICATIONS, AND ALL RFQ DOCUMENTS TO DEFINE THE FULL RESPONSIBILITIES OF THE CONTRACTOR. CONTRACTOR IS RESPONSIBLE FOR REVIEWING AND UNDERSTANDING ALL DRAWINGS AND DOCUMENTS. WHERE CONFLICTS EXIST, THE OWNER'S REPRESENTATIVE SHALL BE CONTACTED FOR CLARIFICATION AND RESOLUTION.
14. CONTRACTOR IS RESPONSIBLE FOR COLLECTING ANY ADDITIONAL SURVEY INFORMATION REQUIRED TO PERFORM THE WORK.
15. THESE DRAWINGS CONSTITUE A PARTIAL DESIGN. CONTRACTOR TO COMPLETE A FULL DETAILED-DESIGN TO SUBMIT FOR APPROVAL BY THE OWNER'S REPRESENTATIVE BEFORE WORK BEGINS.

REFERENCES:
PLANS

DATUM
HORIZONTAL:
WASP-NAD83-S FEET
VERTICAL: NAVD88 FEET

NO.	REVISION	DATE	APRVD
1	ISSUED FOR SPECIFICATION PACKAGE REVIEW	APR 21	GP
2	ISSUED FOR TENDER	MAY 26	WJM

DRAWN JR
DESIGNED LDV
CHECKED GP
REVIEWED WJM

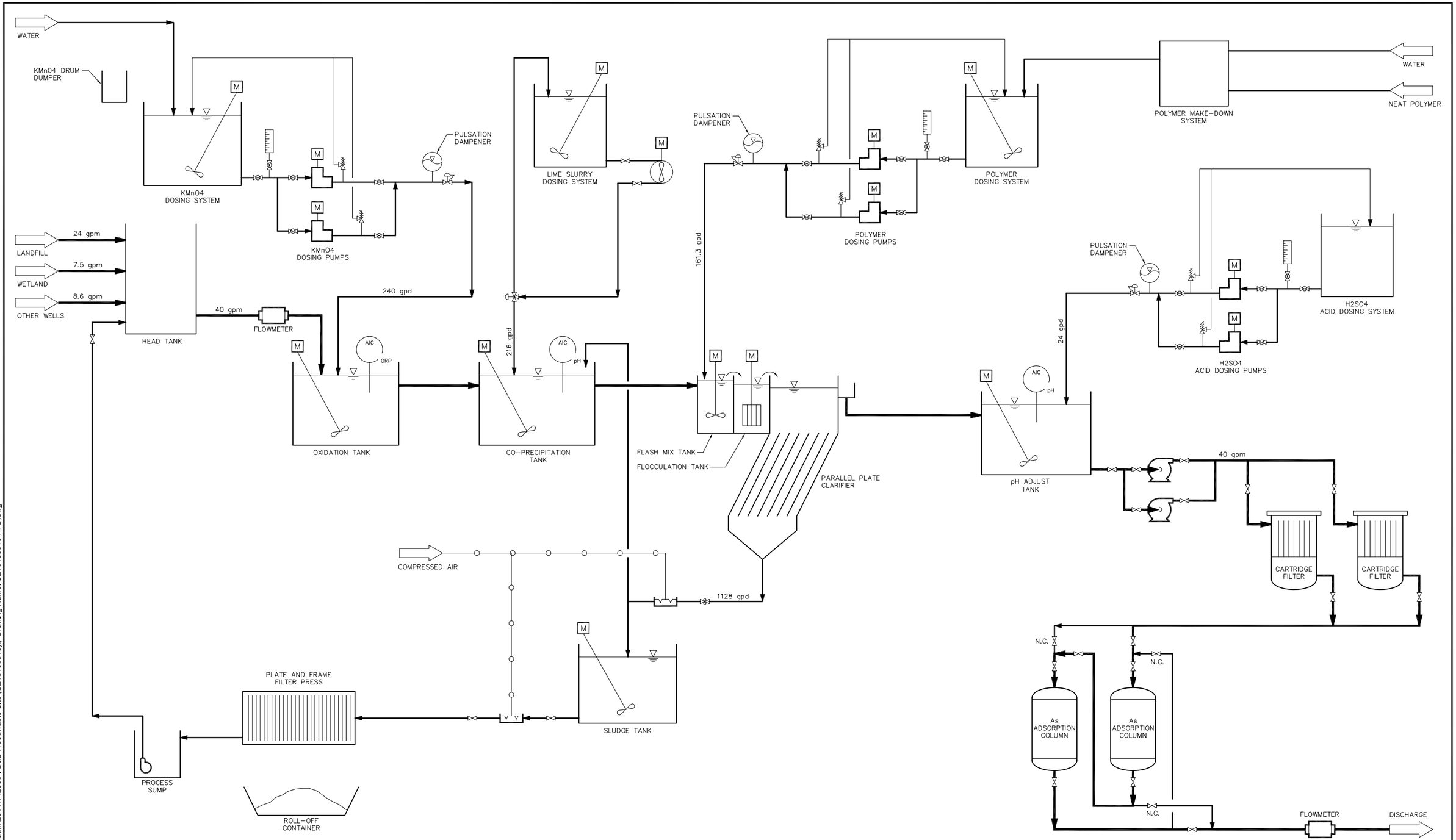
AMEC Geomatrix

DRAWING INDEX AND GENERAL NOTES

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

DATE: 05/25/11
PROJECT NO.: SE10160010

DRAWING
G-02



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REFERENCES:
PLANS

DATUM
HORIZONTAL: WASP-NAD83-S FEET
VERTICAL: NAVD88 FEET

NO.	REVISION	DATE	APRVD
1	ISSUED FOR REVIEW	MAR 04	GP
2	ISSUED FOR SPECIFICATION PACKAGE REVIEW	APR 21	LDV
3	ISSUED FOR TENDER	MAY 26	LDV
4			
5			

DRAWN PRV
DESIGNED CH
CHECKED GP
REVIEWED WJM

AMEC Geomatrix

PROCESS FLOW DIAGRAM

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

DATE: 05/24/11
PROJECT NO.: SE10160010

DRAWING PFD-01

INSTRUMENT IDENTIFICATION

GENERAL INSTRUMENT OR FUNCTION SYMBOLS

	FIELD MOUNTED	PRIMARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR	AUXILIARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR
DISCRETE INSTRUMENTS	X / X–X–X	X / X–X–X	X / X–X–X
SHARED DISPLAY, SHARED CONTROL	X / X–X–X	X / X–X–X	X / X–X–X
COMPUTER FUNCTION	X / X–X–X	X / X–X–X	X / X–X–X
PROGRAMABLE LOGIC CONTROL	X / X–X–X	X / X–X–X	X / X–X–X

NORMALLY INACCESSIBLE OR BEHIND–THE–PANEL DEVICES OR FUNCTIONS ARE DEPICTED BY THE SAME SYMBOLS BUT WITH DASHED HORIZONTAL BARS, i.e.

X / X–X–X X / X–X–X X / X–X–X

ISA INSTRUMENTATION IDENTIFICATION LETTERS

LETTER	FIRST LETTER (S)		SUCCEEDING LETTERS		
	PROCESS OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER FLAME		USERS CHOICE	USERS CHOICE	USERS CHOICE
C	CONDUCTIVITY			CONTROL	
D	DENSITY (S.G)	DIFFERENTIAL			
E	VOLTAGE		PRIMARY ELEMENT		
F	FLOW RATE	RATIO			
G	GAUGE		GLASS	GATE	
H	HAND (MANUAL)				HIGH
I	CURRENT		INDICATE		
J	POWER	SCAN			
K	TIME OR SCHEDULE			CONTROL STATION	
L	LEVEL		LIGHT (PILOT)		LOW
M	MOTION/MOISTURE				MIDDLE
N	TURBIDITY		MIDDLE/INTERMEDIATE		
O	USERS CHOICE		ORIFICE		
P	PRESSURE (OR VACUUM)		POINT (TEST CONNECTION)		
Q	QUANTITY OR EVENT	INTEGRATE	INTEGRATE		
R			RECORD OR PRINT		
S	SPEED OR FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMITTER	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VISCOSITY			VALVE OR DAMPER	
W	WEIGHT OR FORCE		WELL		
X	AS DEFINED				
Y	STATUS			RELAY OR COMPUTE	
Z	POSITION			DRIVE, ACTUATE OR UNCLASSIFIED FINAL CONTROL ELEMENT	

LINE LEGEND

- PROCESS (CLOSED CONDUIT, DASHED LINE INDICATES ALTERNATE FLOW STREAM)
- PROCESS (OPEN CHANNEL)
- ANALOG SIGNAL (4 TO 20 mAdc, ETC.)
- DISCRETE SIGNAL (ON/OFF, ETC.)
- COMPRESSED AIR
- PNEUMATIC SIGNAL
- FILLED SYSTEM SIGNAL
- HYDRAULIC SYSTEM SIGNAL
- SONIC SIGNAL
- PACKAGED BUILDING OR FACILITY BOUNDARY
- CONNECTING LINES
- NON–CONNECTING LINES
- HEAT TRACE

ABBREVIATIONS & LETTER SYMBOLS

AC	ALTERNATING CURRENT
CCS	CENTRAL CONTROL SYSTEM
CSC	CAR SEAL CLOSED
CSO	CAR SEAL OPEN
CP–X	CONTROL PANEL NO. X
CS	CARBON STEEL
DC	DIRECT CURRENT
DISC	DISCONNECT
ES	EMERGENCY STOP
FOS	FAST–OFF–SLOW
FOSA	FAST–OFF–SLOW–AUTO
FOSR	FAST–OFF–SLOW–REMOTE
FR	FORWARD–REVERSE
GALV	GALVANIZED STEEL
HOA	HAND–OFF–AUTO
HOR	HAND–OFF–REMOTE
LEL	LOWER EXPLOSIVE LIMIT
LCP	LOCAL CONTROL PANEL
LOS	LOCKOUT STOP
LR	LOCAL–REMOTE
MA	MANUAL–AUTO
MC	MODULATE–CLOSE
MCC	MOTOR CONTROL CENTRE
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
OC	OPEN–CLOSE (D)
OCR	OPEN–CLOSE–REMOTE
OCA	OPEN–CLOSE–AUTO
OO	ON–OFF
OOA	ON–OFF–AUTO
OOR	ON–OFF–REMOTE
OSC	OPEN–STOP–CLOSE
REM	REMOTE
RPU	REMOTE PROCESSING UNIT
SF	SLOWER–FASTER
SS	START–STOP
SSC	SUPERVISORY SET POINT CONTROL
VIB	VIBRATION

PUMP AND COMPRESSOR SYMBOLS

- CENTRIFUGAL PUMP
- CHEMICAL FEED PUMP
- DIAPHRAGM PUMP
- GEAR PUMP OR BLOWER (POSITIVE DISPLACEMENT)
- PISTON PUMP
- PROGRESSIVE CAVITY PUMP
- SUBMERSIBLE SUMP PUMP
- COMPRESSOR (CENTRIFUGAL) BLOWER OR TURBINE
- COMPRESSOR (PISTON)
- PERISTALTIC PUMP

MISCELLANEOUS SYMBOLS

- SIGHT GLASS
- DIAPHRAGM SEAL
- BLIND FLANGE
- AIR GAP
- VENT TO ATMOSPHERE
- RUPTURE DISK
- M — ELECTRIC MOTOR
- PRESSURE GAUGE
- AIR FILTER
- CALIBRATION COLUMN
- CAM–LOCK
- REDUCER

PRIMARY ELEMENT SYMBOLS

- ORIFICE PLATE
- FLOW TUBE
- VORTEX METER
- ELECTROMAGNETIC FLOWMETER
- PROPELLER OR TURBINE METER
- LEVEL (ULTRASONIC)
- LEVEL (FLOAT)

ACTUATOR SYMBOLS

- P Z — PNEUMATIC W/POSITIONER
- P S — PNEUMATIC W/SOLENOID
- E — ELECTRIC
- E Z — ELECTRIC W/POSITIONER
- EH — ELECTROHYDRAULIC
- H — HYDRAULIC
- P B — PNEUMATIC WITH VOLUME BOOSTER
- S — SOLENOID
- T — MANUAL

VALVE SYMBOLS

- GATE
- K — KNIFE GATE
- BUTTERFLY
- GLOBE
- BALL
- V — VEE–BALL
- SEAT PORT / ECCENTRIC PLUG
- PLUG OR COCK
- NEEDLE
- DIAPHRAGM
- PINCH
- SWING CHECK
- BALL CHECK
- HOSE VALVE OR BIBB
- PRESSURE RELIEF
- AIR AND/OR VACUUM RELEASE
- ACTUATOR — MOTORIZED VALVE
- ACTUATOR — SOLENOID VALVE
- ACTUATOR — TO TEMPERATURE SENSOR — TEMPERATURE SENSING VALVE
- REGULATED SIDE — PRESSURE CONTROL

REFERENCES:
PLANS

DATUM
HORIZONTAL:
WASP–NAD83–S FEET
VERTICAL: NAVD88 FEET

NO.	REVISION	DATE	APRVD
1	ISSUED FOR REVIEW	MAR 02	LDV
2	ISSUED FOR SPECIFICATION PACKAGE REVIEW	APR 21	LDV
3	ISSUED FOR TENDER	MAY 26	LDV

DRAWN JR
DESIGNED LDV
CHECKED GP
REVIEWED WJM

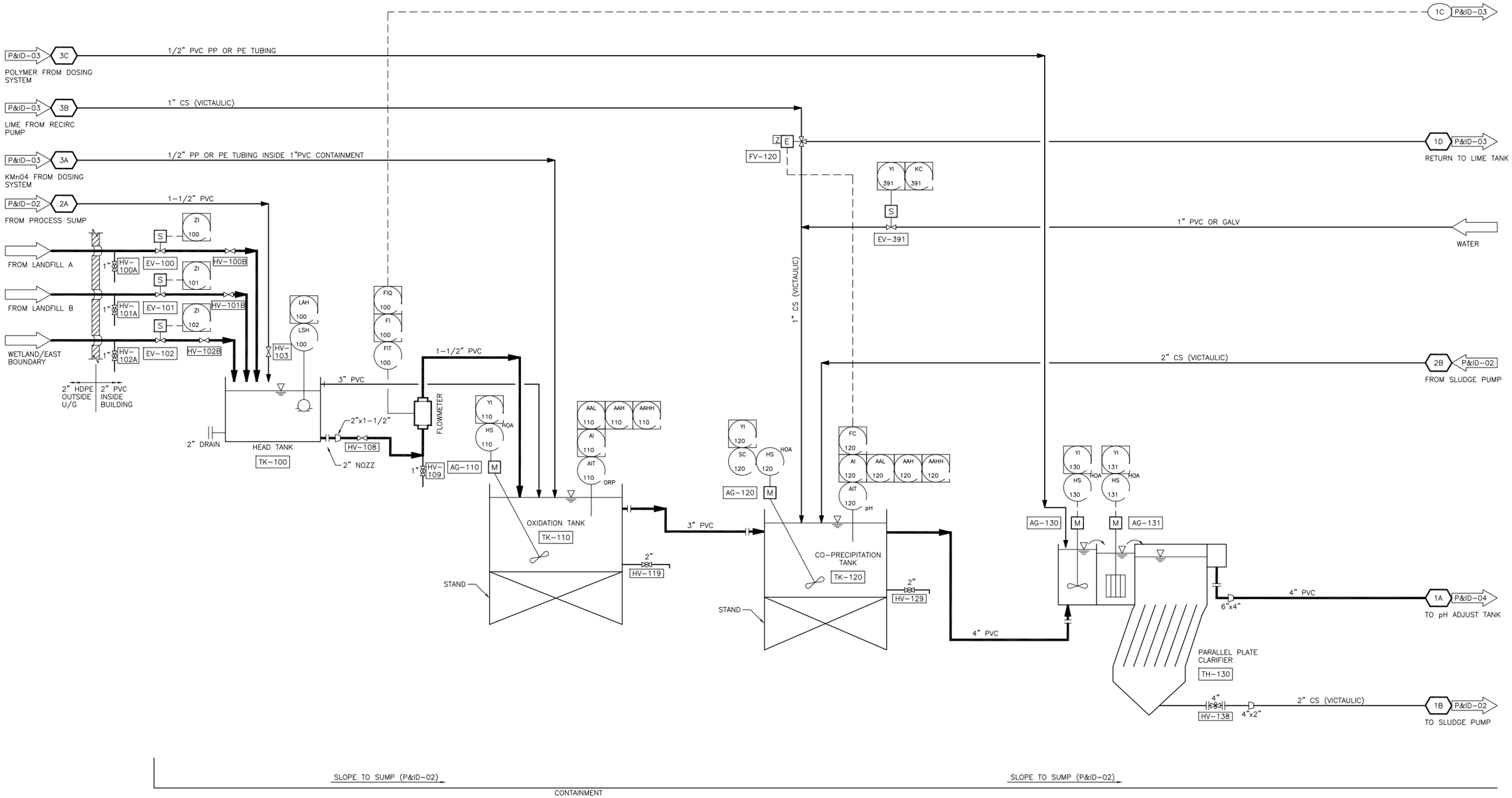
AMEC Geomatrix

PROCESS FLOW AND INSTRUMENTATION LEGEND

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

DATE: 05/24/11
PROJECT NO.: SE10160010

DRAWING P&ID–00



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REFERENCES:
PLANS

DATUM
HORIZONTAL: WASP-NAD83-S FEET
VERTICAL: NAVD88 FEET

NO.	REVISION	DATE	APRVD
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2	ISSUED FOR DESIGN	MAR 18	LDV
3	ISSUED FOR SPECIFICATION PACKAGE REVIEW	APR 21	LDV
4	ISSUED FOR TENDER	MAY 26	LDV

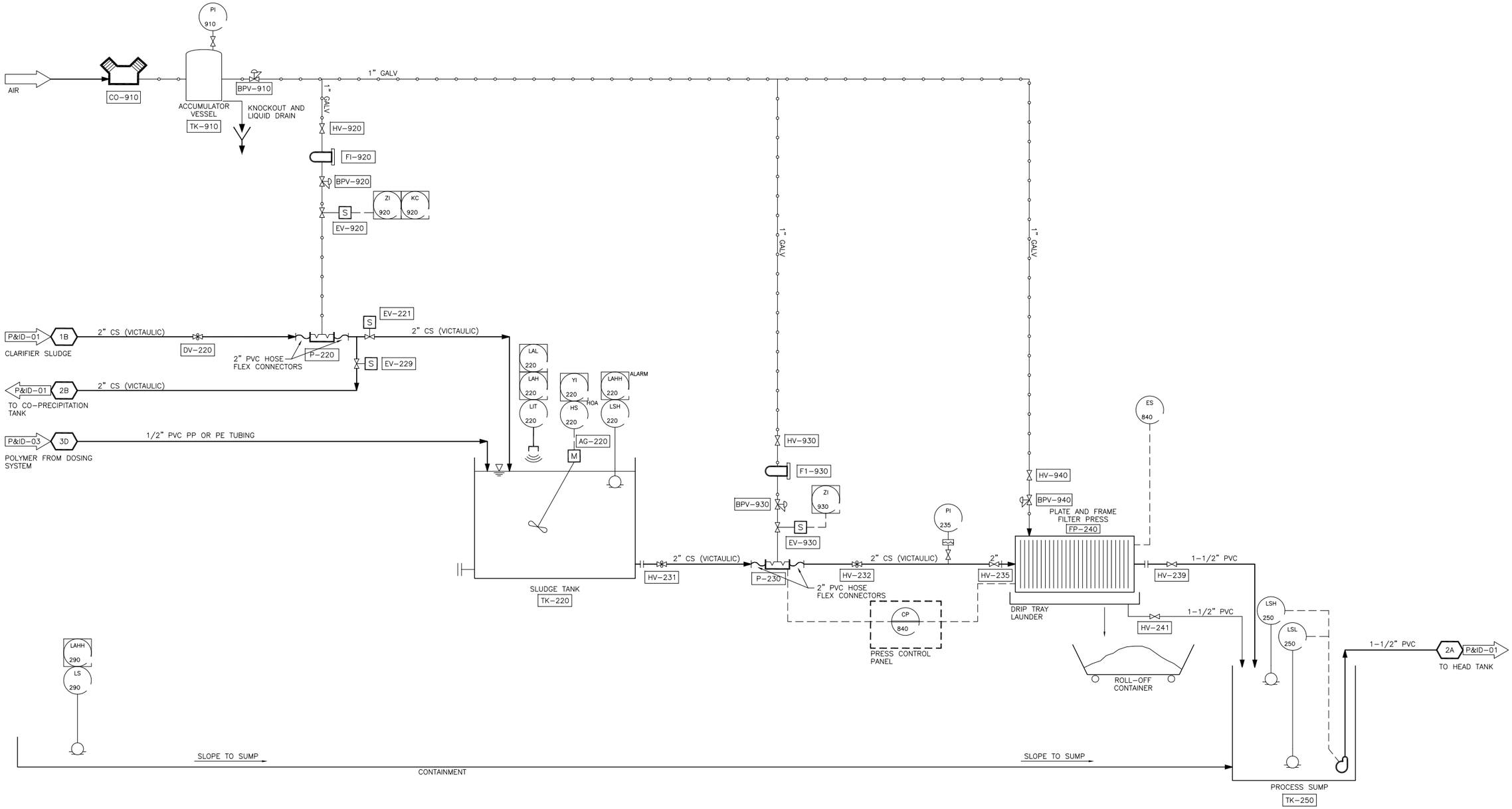
DRAWN JR
DESIGNED LDV
CHECKED GP
REVIEWED WJM

AMEC Geomatrix

PROCESS FLOW AND INSTRUMENTATION OXIDATION / PRECIPITATION

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

DATE: 05/24/11
PROJECT NO.: SE10160010
DRAWING P&ID-01



REFERENCES:	NO.	REVISION	DATE	APRVD
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	2	ISSUED FOR DESIGN		
DATUM HORIZONTAL: WASP-NAD83-S FEET VERTICAL: NAVD88 FEET	3	ISSUED FOR SPECIFICATION PACKAGE REVIEW	APR 21	LDV
	4	ISSUED FOR TENDER	MAY 26	LDV

DRAWN JR
DESIGNED LDV
CHECKED GP
REVIEWED WJM

AMEC Geomatrix

PROCESS FLOW AND INSTRUMENTATION SLUDGE HANDLING

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

DATE: 05/26/11
PROJECT NO.: SE10160010

DRAWING P&ID-02

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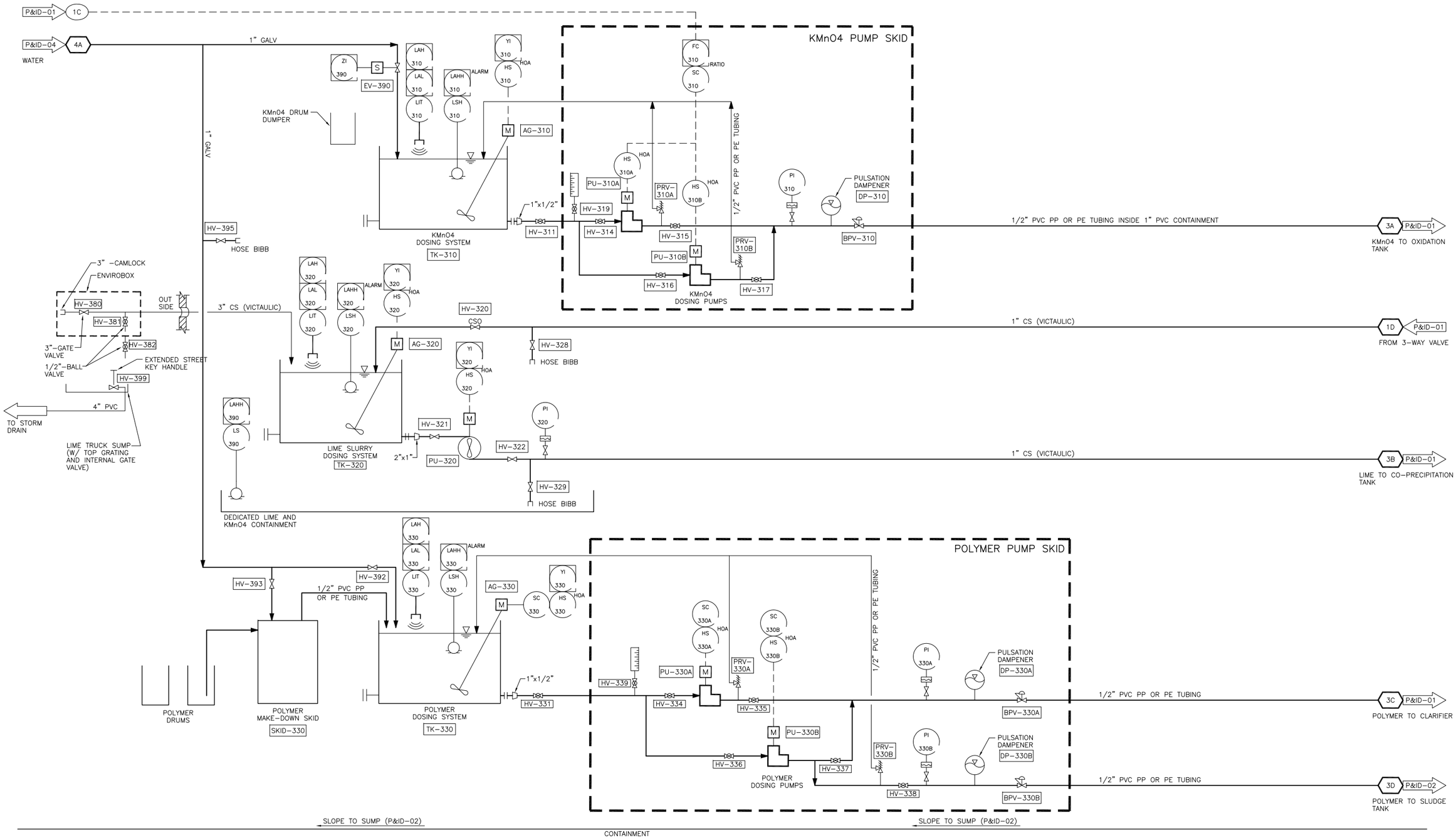

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REFERENCES:
PLANS

DATUM
HORIZONTAL:
WASP-NAD83-S FEET
VERTICAL: NAVD88 FEET

NO.	REVISION	DATE	APRVD
1	ISSUED FOR REVIEW	MAR 02	LDV
2	ISSUED FOR DESIGN	MAR 18	LDV
3	ISSUED FOR SPECIFICATION PACKAGE REVIEW	APR 21	LDV
4	ISSUED FOR TENDER	MAY 26	LDV

DRAWN JR
DESIGNED LDV
CHECKED GP
REVIEWED WJM

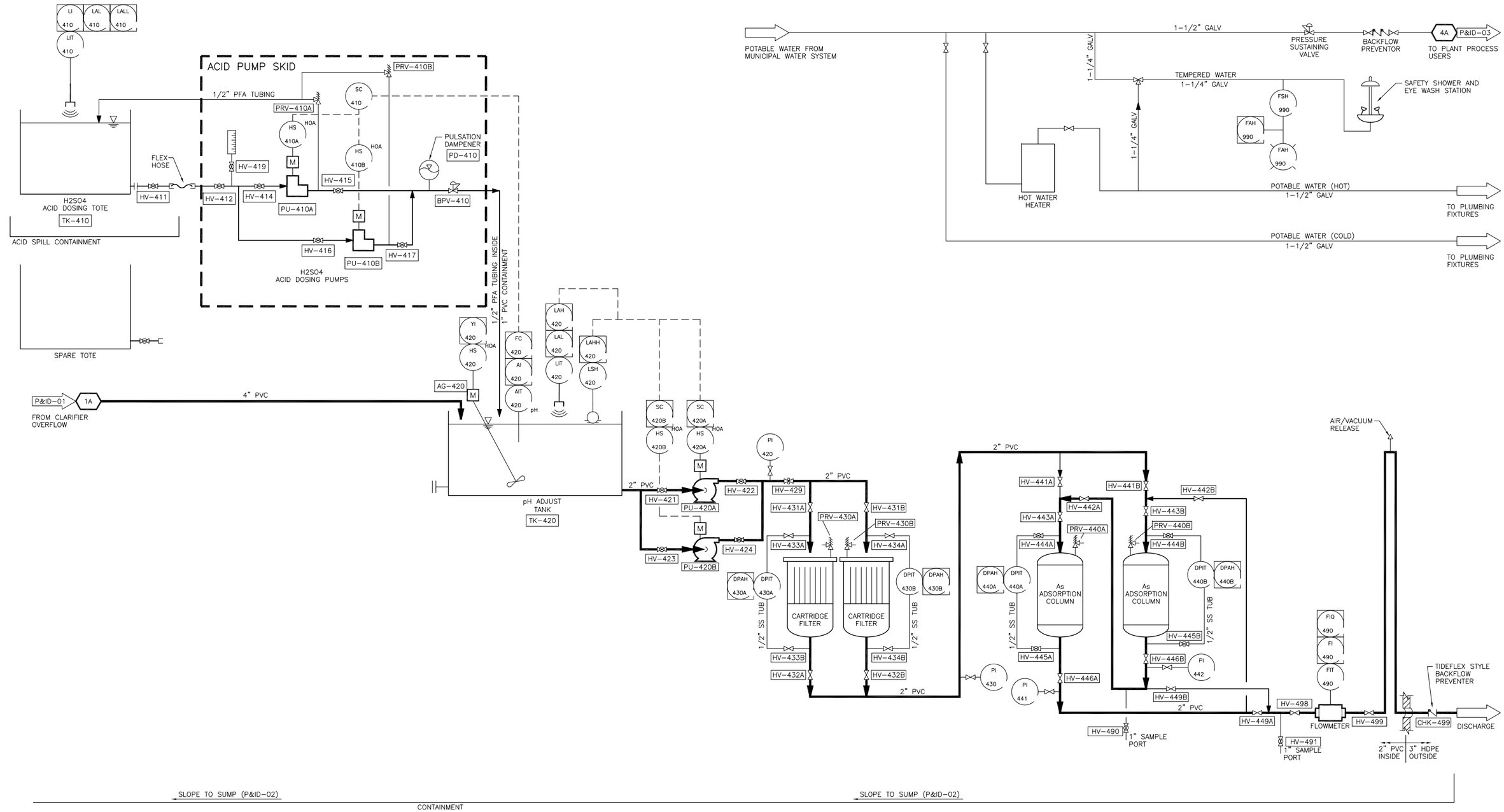
AMEC Geomatrix

PROCESS FLOW AND INSTRUMENTATION ADDITIVES

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

DATE: 05/26/11
PROJECT NO.: SE10160010

DRAWING
P&ID-03



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REFERENCES:
PLANS

DATUM
HORIZONTAL:
WASP-NAD83-S FEET
VERTICAL: NAVD88 FEET

NO.	REVISION	DATE	APRVD
1	ISSUED FOR REVIEW	MAR 02	LDV
2	ISSUED FOR DESIGN	MAR 18	LDV
3	ISSUED FOR SPECIFICATION PACKAGE REVIEW	APR 21	LDV
4	ISSUED FOR TENDER	MAY 26	LDV

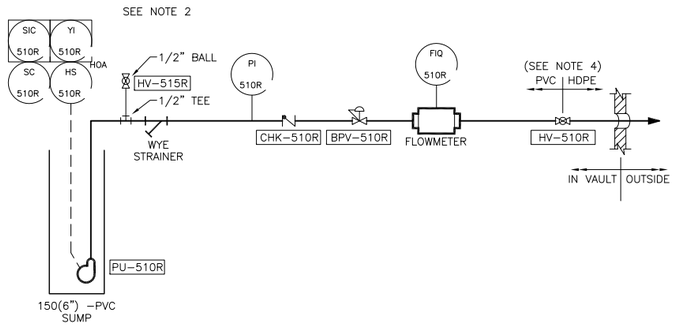
DRAWN JR
DESIGNED LDV
CHECKED GP
REVIEWED WJM

AMEC Geomatrix

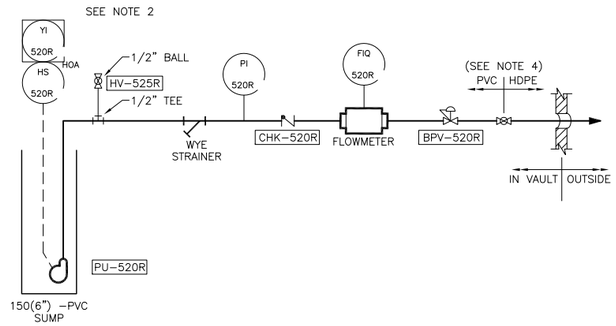
PROCESS FLOW AND INSTRUMENTATION EFFLUENT POLISHING

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

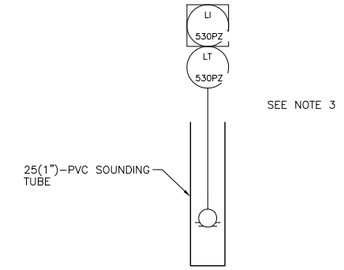
DATE: 05/26/11
PROJECT NO.: SE10160010
DRAWING P&ID-04



LANDFILL WELLS DETAIL (TYP OF 11)



AG. FIELD AND WETLAND WELLS DETAIL (TYP OF 10)



PIEZOMETER DETAIL (TYP OF 16)

STATION	COORDS	TERMINATION
R-01	1186310.409 702291.5027 inside	KIOSK 3
R-02	1186467.023 702042.2185 inside	KIOSK 2
R-03	1186327.49 702003.56 inside	KIOSK 2
R-04	1186152.52 702096.41 inside	KIOSK 3
R-05	1186200.63 701953.59 inside	KIOSK 2
R-06	1186293.15 701769.26 inside	KIOSK 2
R-07	1185852.906 701693.703 inside	KIOSK 1
R-08	1185907.93 701803.16 inside	KIOSK 1
R-09	1185776.662 701873.0772 inside	KIOSK 1
R-10	1185842.089 702081.232 inside	KIOSK 1
R-11	1186121.23 702223.96 inside	KIOSK 3

TABLE OF LANDFILL WELLS

STATION	COORDS	TERMINATION
R-12	1186517.737 702182.2116 outside-east	KIOSK 4
R-13	1186579.559 702070.3399 outside-east	KIOSK 4
R-14	1185679.036 702073.3376 outside-west	KIOSK 5
R-15	1185617.392 702077.515 outside-west	KIOSK 5
R-16	1186011.284 702345.452 outside-north	KIOSK 5
R-17	1186126.763 702394.4934 outside-north	KIOSK 5
R-18	1186032.526 702468.6627 outside-north	KIOSK 5
R-19	1185911.289 702509.2755 outside-north	KIOSK 5
R-20	1185980.764 702595.2624 outside-north	KIOSK 5
R-21	1185984.041 702673.8679 outside-north	KIOSK 5

TABLE OF AG. FIELD AND WETLAND WELLS

STATION	COORDS	TERMINATION
PZ-1a	1186183.28 702353.14 perimeter	KIOSK 3
PZ-1b	1186191.53 702329.08 perimeter	KIOSK 3
PZ-2a	1185886.44 702209.88 perimeter	KIOSK 1
PZ-2b	1185897.84 702186.89 perimeter	KIOSK 1
PZ-3a	1185733.73 701976.73 perimeter	KIOSK 1
PZ-3b	1185753.71 701976.05 perimeter	KIOSK 1
PZ-4a	1185731.96 701728.73 perimeter	KIOSK 1
PZ-4b	1185755.21 701726.18 perimeter	KIOSK 1
PZ-4c	1185754.96 701732.98 perimeter	KIOSK 1
PZ-5a	1186002.81 701621.79 perimeter	KIOSK 1
PZ-5b	1186005.46 701641.88 perimeter	KIOSK 1
PZ-5c	1186000.96 701642.36 perimeter	KIOSK 1
PZ-6a	1186379.5 701620.95 perimeter	DIRECT
PZ-6b	1186377.84 701640.57 perimeter	DIRECT
PZ-7a	1186595.69 701831.05 perimeter	DIRECT
PZ-7b	1186578.05 701835.09 perimeter	DIRECT
PZ-8a	1186513.106 702097.0787 perimeter	KIOSK 4
PZ-8b	1186495.24 702090.37 perimeter	KIOSK 4
PZ-8c	1186496.75 702085.74 perimeter	KIOSK 4

TABLE OF PIEZOMETERS

NOTES:

1. WELL COORDINATES EXPRESSED IN WASHINGTON STATE PLANE COORDINATE SYSTEM. DATUM CITATION IN LOWER LEFT.
2. "R" = STATION NUMBER FOR EACH WELL
3. "PZ" = STATION NUMBER FOR EACH PIEZOMETER
4. INSIDE VAULT USE SCH 80 PVC, OUTSIDE VAULT USE SDR11 HDPE R2, R7, R9 ARE 1.5", ALL OTHERS ARE 1"

REFERENCES:
PLANS

DATUM
HORIZONTAL:
WASP-NAD83-S FEET
VERTICAL: NAVD88 FEET

NO.	REVISION	DATE	APRVD
1	ISSUED FOR REVIEW	MAR 09	LDV
2	ISSUED FOR DESIGN	MAR 18	LDV
3	ISSUED FOR SPECIFICATION PACKAGE REVIEW	APR 6	LDV
4	ISSUED FOR TENDER	MAY 26	LDV

DRAWN JR
DESIGNED LDV
CHECKED GP
REVIEWED WJM

AMEC Geomatrix

PROCESS FLOW AND INSTRUMENTATION
EXTRACTION AND MONITORING WELLS

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

DATE: 05/24/11
PROJECT NO.: SE10160010

DRAWING
P&ID-05

Plot Date: 05/25/11 - 8:17am, Plotted by: Dell Survey2
Drawing Path: T:\Pete\Geomatrix\2011\11250\C-I B&L Woodwaste Site (SE10160010)\, Drawing Name: SE10160010-CIVIL.dwg

REFERENCES:
PLANS

DATUM
HORIZONTAL: WASP-NAD83-S FEET
VERTICAL: NAVD88 FEET

NO.	REVISION	DATE	APRVD
1	ISSUED FOR PERMIT	FEB 25	WJM
2	ISSUED FOR PLANS AND SPECIFICATIONS	APR 8	WJM
3	ISSUED FOR TENDER	MAY 26	WJM

DRAWN JR
DESIGNED ES
CHECKED GP
REVIEWED WJM

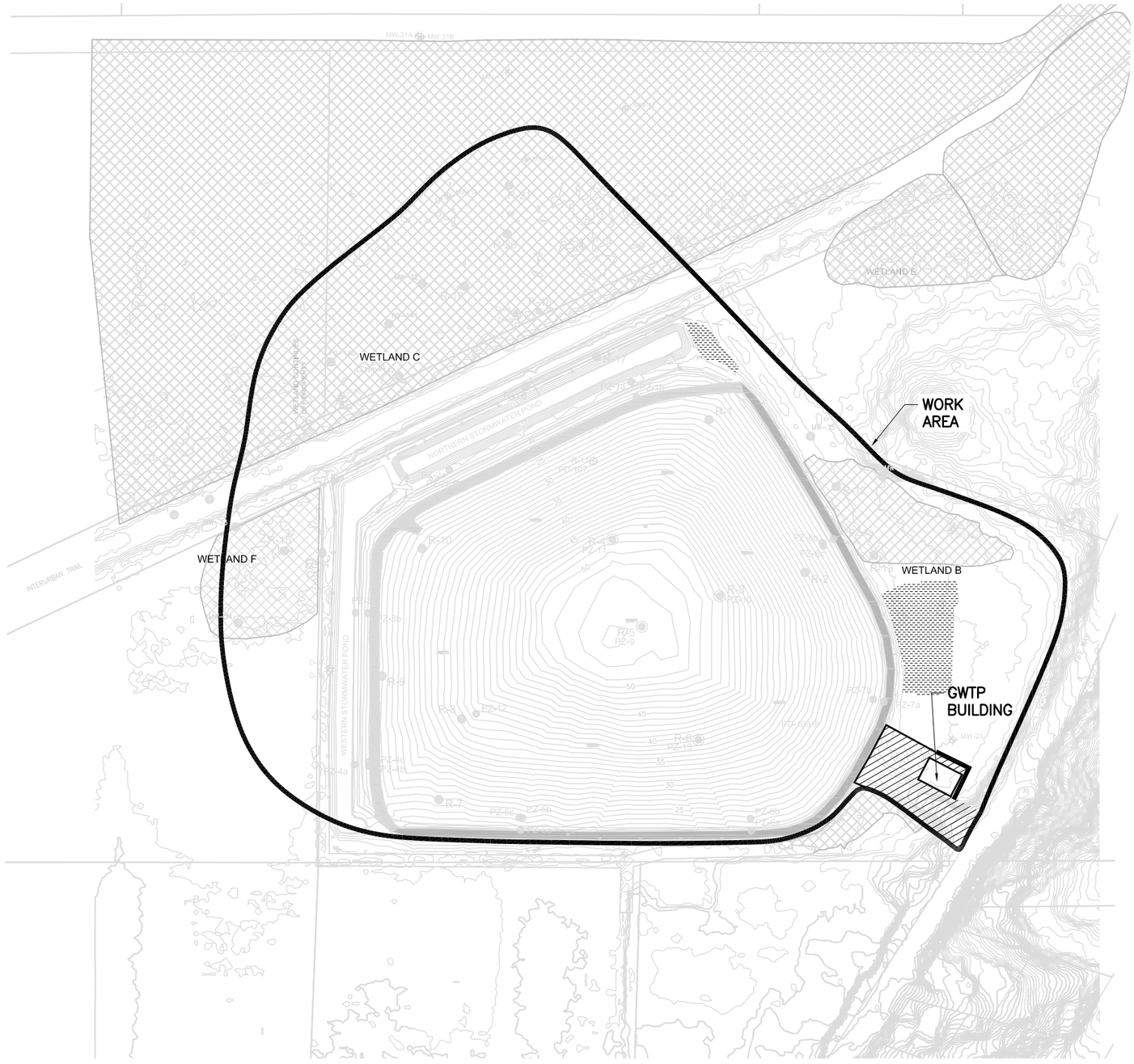
AMEC Geomatrix

B&L WOODWASTE SITE PROPERTY
EXISTING LAYOUT

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

DATE: 05/25/11
PROJECT NO.: SE10160010

DRAWING
C-01



LEGEND:

- TAX PARCEL LINE
- FENCE LINE (EXISTING)
- 12" DIAMETER CULVERT (EXISTING)
- AGRICULTURAL DITCH (EXISTING)
- WETLAND
- FINAL STORMWATER COLLECTION DITCH (EXISTING)
- AREA DESIGNATED FOR PIPE STORAGE
- STORMWATER COLLECTION DITCH (EXISTING)
- STABILIZE AREA WITH CRUSHED ROCK
- WORK AREA
- PERIMETER ROAD (EXISTING)
- R-21 NEW EXTRACTION WELL (BY OTHERS)
- R-11 EXISTING WELL INCLUDED IN EXTRACTION NETWORK (BY OTHERS)
- MONITORING WELL (BY OTHERS)
- PZ-7a PIEZOMETER (BY OTHERS)

SCALE BAR (1" = 200'–0")

0 200' 400' 600'

REFERENCES:
PLANS

DATUM
HORIZONTAL: WASP–NAD83–S FEET
VERTICAL: NAVD88 FEET

NO.	REVISION	DATE	APRVD
1	ISSUED FOR PERMIT	FEB 25	WJM
2	ISSUED FOR PLANS AND SPECIFICATIONS	APR 8	WJM
3	ISSUED FOR TENDER	MAY 26	WJM

DRAWN JR
DESIGNED ES
CHECKED GP
REVIEWED WJM

AMEC Geomatrix

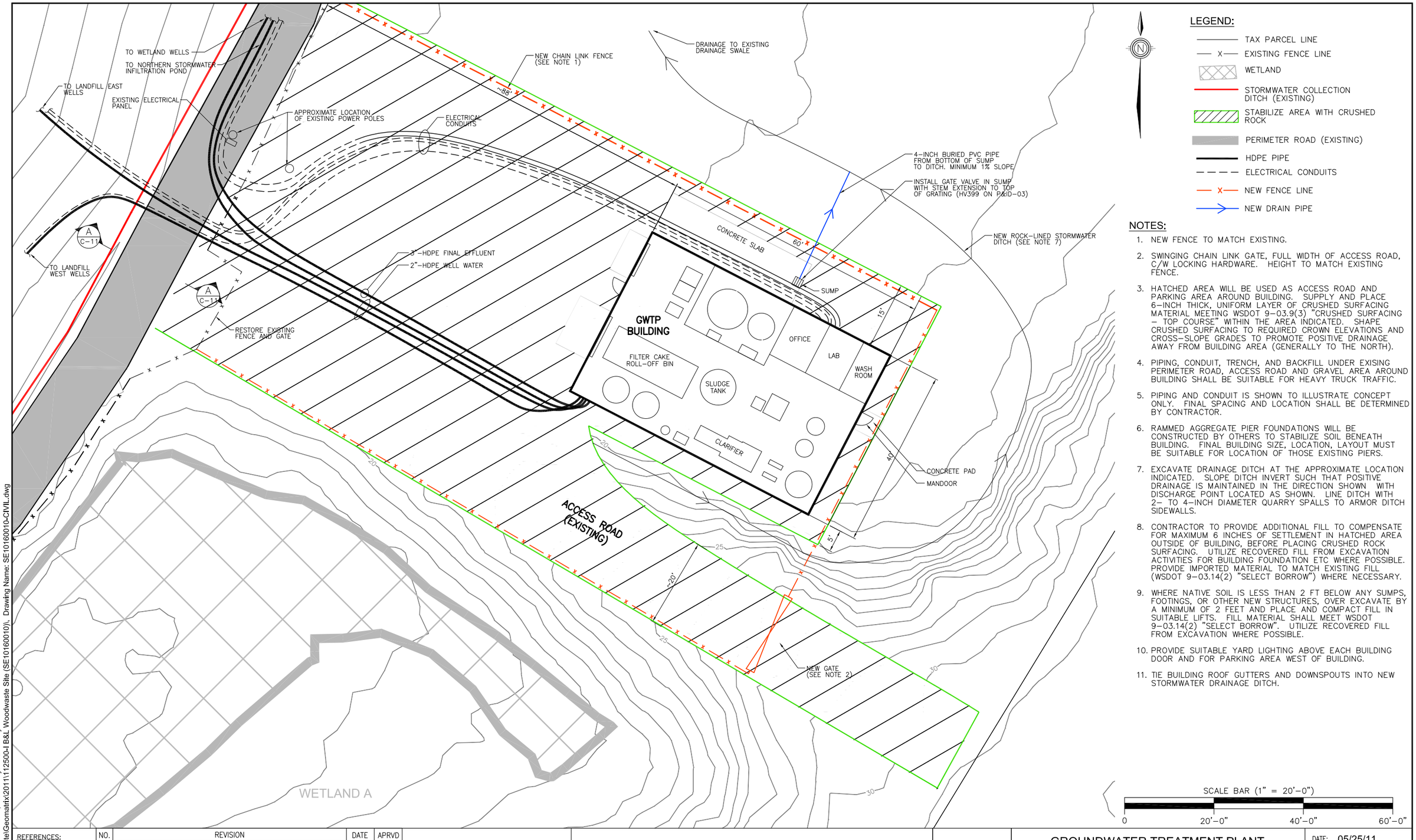
GROUNDWATER RECOVERY AND TREATMENT PLANT WORK AREA

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

DATE: 05/25/11
PROJECT NO.: SE10160010

DRAWING C–02

Plot Date: 05/25/11 - 8:23am, Plotted by: Dell Survey2
Drawing Path: T:\Pete\Geomatrix\2011\12300-I B&L Woodwaste Site (SE10160010)\, Drawing Name: SE10160010-CIVIL.dwg



LEGEND:

- TAX PARCEL LINE
- EXISTING FENCE LINE
- WETLAND
- STORMWATER COLLECTION DITCH (EXISTING)
- STABILIZE AREA WITH CRUSHED ROCK
- PERIMETER ROAD (EXISTING)
- HDPE PIPE
- ELECTRICAL CONDUITS
- NEW FENCE LINE
- NEW DRAIN PIPE

NOTES:

1. NEW FENCE TO MATCH EXISTING.
2. SWINGING CHAIN LINK GATE, FULL WIDTH OF ACCESS ROAD, C/W LOCKING HARDWARE. HEIGHT TO MATCH EXISTING FENCE.
3. HATCHED AREA WILL BE USED AS ACCESS ROAD AND PARKING AREA AROUND BUILDING. SUPPLY AND PLACE 6-INCH THICK, UNIFORM LAYER OF CRUSHED SURFACING MATERIAL MEETING WSDOT 9-03.9(3) "CRUSHED SURFACING - TOP COURSE" WITHIN THE AREA INDICATED. SHAPE CRUSHED SURFACING TO REQUIRED CROWN ELEVATIONS AND CROSS-SLOPE GRADES TO PROMOTE POSITIVE DRAINAGE AWAY FROM BUILDING AREA (GENERALLY TO THE NORTH).
4. PIPING, CONDUIT, TRENCH, AND BACKFILL UNDER EXISING PERIMETER ROAD, ACCESS ROAD AND GRAVEL AREA AROUND BUILDING SHALL BE SUITABLE FOR HEAVY TRUCK TRAFFIC.
5. PIPING AND CONDUIT IS SHOWN TO ILLUSTRATE CONCEPT ONLY. FINAL SPACING AND LOCATION SHALL BE DETERMINED BY CONTRACTOR.
6. RAMMED AGGREGATE PIER FOUNDATIONS WILL BE CONSTRUCTED BY OTHERS TO STABILIZE SOIL BENEATH BUILDING. FINAL BUILDING SIZE, LOCATION, LAYOUT MUST BE SUITABLE FOR LOCATION OF THOSE EXISTING PIERS.
7. EXCAVATE DRAINAGE DITCH AT THE APPROXIMATE LOCATION INDICATED. SLOPE DITCH INVERT SUCH THAT POSITIVE DRAINAGE IS MAINTAINED IN THE DIRECTION SHOWN WITH DISCHARGE POINT LOCATED AS SHOWN. LINE DITCH WITH 2- TO 4-INCH DIAMETER QUARRY SPALLS TO ARMOR DITCH SIDEWALLS.
8. CONTRACTOR TO PROVIDE ADDITIONAL FILL TO COMPENSATE FOR MAXIMUM 6 INCHES OF SETTLEMENT IN HATCHED AREA OUTSIDE OF BUILDING, BEFORE PLACING CRUSHED ROCK SURFACING. UTILIZE RECOVERED FILL FROM EXCAVATION ACTIVITIES FOR BUILDING FOUNDATION ETC WHERE POSSIBLE. PROVIDE IMPORTED MATERIAL TO MATCH EXISTING FILL (WSDOT 9-03.14(2) "SELECT BORROW") WHERE NECESSARY.
9. WHERE NATIVE SOIL IS LESS THAN 2 FT BELOW ANY SUMPS, FOOTINGS, OR OTHER NEW STRUCTURES, OVER EXCAVATE BY A MINIMUM OF 2 FEET AND PLACE AND COMPACT FILL IN SUITABLE LIFTS. FILL MATERIAL SHALL MEET WSDOT 9-03.14(2) "SELECT BORROW". UTILIZE RECOVERED FILL FROM EXCAVATION WHERE POSSIBLE.
10. PROVIDE SUITABLE YARD LIGHTING ABOVE EACH BUILDING DOOR AND FOR PARKING AREA WEST OF BUILDING.
11. TIE BUILDING ROOF GUTTERS AND DOWNSPOUTS INTO NEW STORMWATER DRAINAGE DITCH.

SCALE BAR (1" = 20'-0")

0 20'-0" 40'-0" 60'-0"

REFERENCES:
PLANS

DATUM
HORIZONTAL: WASP-NAD83-S FEET
VERTICAL: NAVD88 FEET

NO.	REVISION	DATE	APRVD
1	ISSUED FOR PERMIT	FEB 25	WJM
2	ISSUED FOR PLANS AND SPECIFICATIONS	APR 8	WJM
3	ISSUED FOR TENDER	MAY 26	WJM

DRAWN JR
DESIGNED ES
CHECKED GP
REVIEWED WJM

AMEC Geomatrix

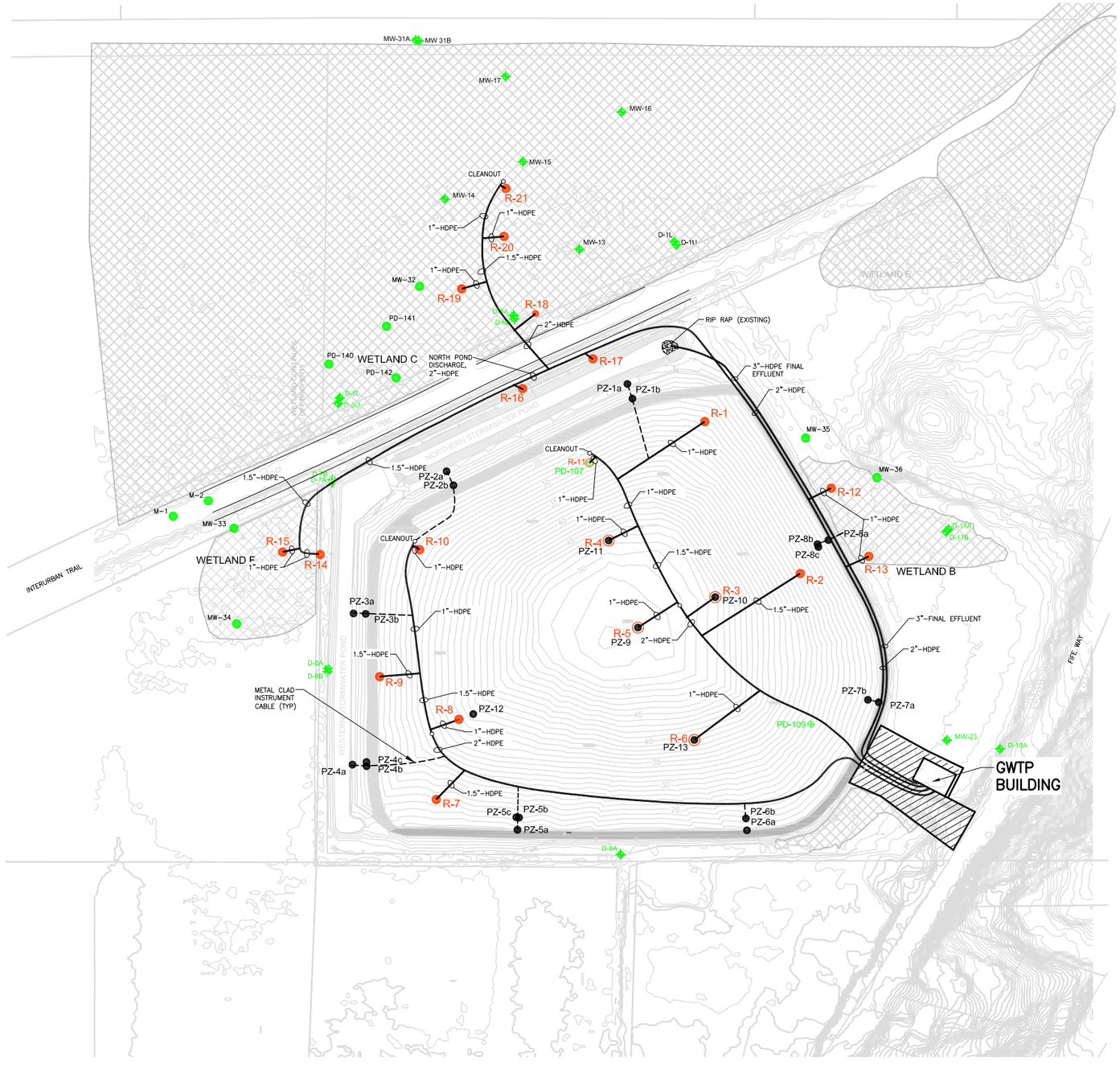
GROUNDWATER TREATMENT PLANT PARTIAL SITE PLAN

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

DATE: 05/25/11
PROJECT NO.: SE10160010

DRAWING C-03

Plot Date: 05/25/11 - 8:49am, Plotted by: Dell Survey2
Drawing Path: T:\Pete\Geomatrix\2011\12500-I B&L Woodwaste Site (SE10160010)\, Drawing Name: SE10160010-CIVIL.dwg



LEGEND:

- TAX PARCEL LINE
- FENCE LINE (EXISTING)
- 12" DIAMETER CULVERT (EXISTING)
- AGRICULTURAL DITCH (EXISTING)
- WETLAND
- FINAL STORMWATER COLLECTION DITCH (EXISTING)
- STABILIZE AREA WITH CRUSHED ROCK
- PERIMETER ROAD (EXISTING)
- R-21 NEW EXTRACTION WELL (BY OTHERS)
- R-11 EXISTING WELL INCLUDED IN EXTRACTION NETWORK (BY OTHERS)
- MONITORING WELL (BY OTHERS)
- PZ-7a PIEZOMETER (BY OTHERS)

NOTES:

1. GREEN WELLS SHOWN FOR INFORMATION ONLY.
2. CONTRACTOR MUST TAKE CARE NOT TO DAMAGE ANY EXISTING WELLS. ANY DAMAGE SHALL BE REPAIRED AT CONTRACTOR'S FULL EXPENSE.
3. WELLS WILL BE DRILLED BY OTHERS.
4. CONTRACTOR SHALL PROVIDE ALL PUMPS, PIPING, VALVES, FITTINGS, CLEANOUTS, POWER, CONTROLS, FOR ALL R LABELED WELLS.
5. CONTRACTOR TO PROVIDE WELL VAULTS FOR ALL WELLS INSIDE LANDFILL AREA. WELL VAULTS FOR WELLS OUTSIDE OF LANDFILL WILL BE BY OTHERS.
6. CONTRACTOR TO PROVIDE CONTROL WIRING FOR ALL PZ LABELED WELLS TO CONNECT TO PLC.
7. APPROPRIATE NUMBER AND SPACING OF CLEANOUT LOCATIONS FOR PIGGING AND CLEANING LINES TO BE DETERMINED BY CONTRACTOR. CLEANOUTS SHALL BE HOUSED IN TAMPER-PROOF VAULTS SUITABLE FOR H-15 AASHTO TRAFFIC RATING. TOP OF VAULTS TO MATCH EXISTING GRADE.

SCALE BAR (1" = 200'-0")

0 200' 400' 600'

REFERENCES:
PLANS

DATUM
HORIZONTAL: WASP-NAD83-S FEET
VERTICAL: NAVD88 FEET

NO.	REVISION	DATE	APRVD
1	ISSUED FOR REVIEW	FEB 25	WJM
2	ISSUED FOR PERMIT	MAR 18	GP
3	ISSUED FOR PLANS AND SPECIFICATIONS	APR 8	WJM
4	ISSUED FOR TENDER	MAY 26	WJM

DRAWN JR
DESIGNED ES
CHECKED GP
REVIEWED WJM

AMEC Geomatrix

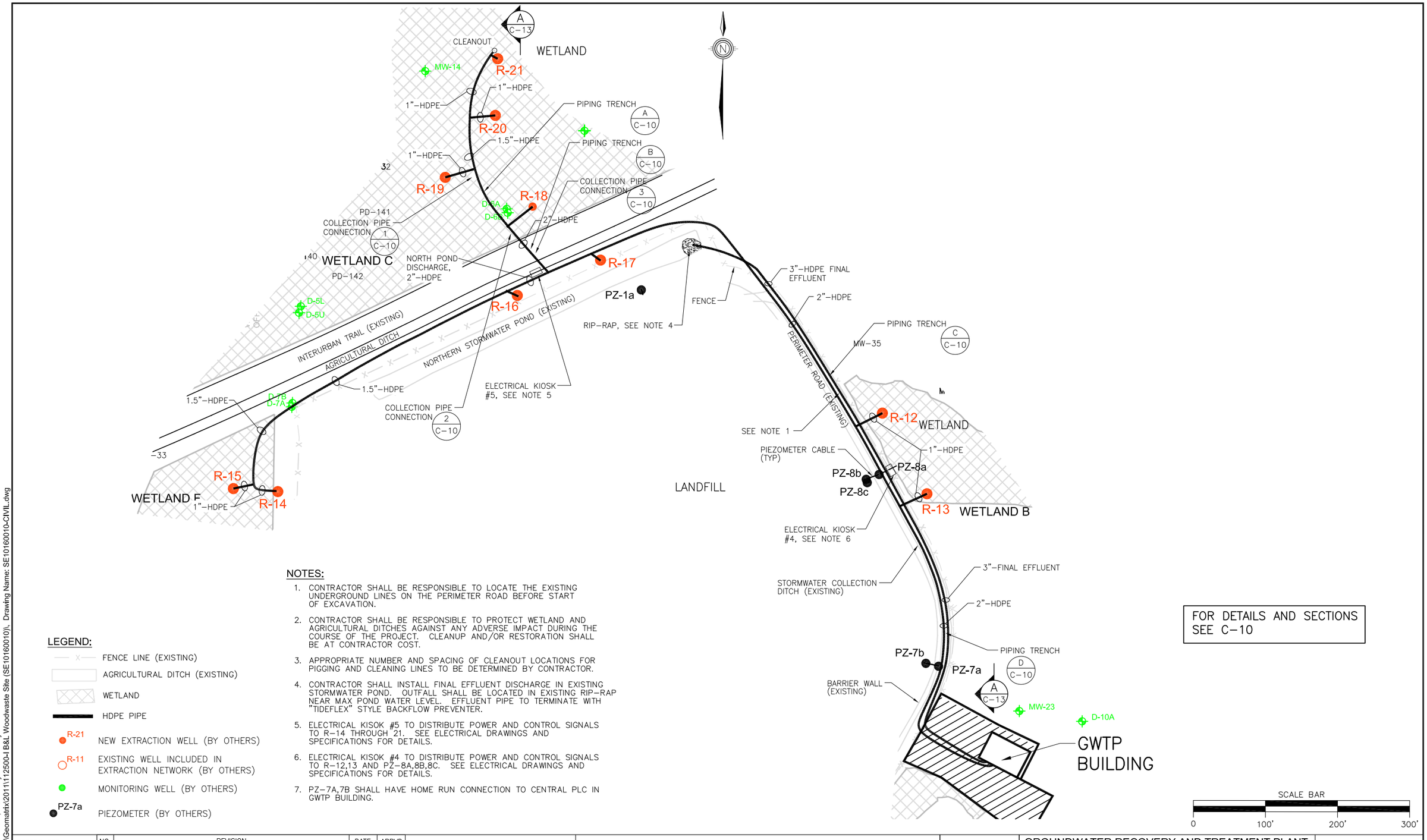
GROUNDWATER RECOVERY AND TREATMENT PLANT PIPING LAYOUT

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

DATE: 05/25/11
PROJECT NO.: SE10160010

DRAWING C-04

Plot Date: 05/25/11 - 1:13pm, Plotted by: Dell Survey2
Drawing Path: T:\Pete\Geomatrix\2011\112500-I B&L Woodwaste Site (SE10160010)\, Drawing Name: SE10160010-CIVIL.dwg



LEGEND:

- FENCE LINE (EXISTING)
- AGRICULTURAL DITCH (EXISTING)
- WETLAND
- HDPE PIPE
- R-21 — NEW EXTRACTION WELL (BY OTHERS)
- R-11 — EXISTING WELL INCLUDED IN EXTRACTION NETWORK (BY OTHERS)
- MONITORING WELL (BY OTHERS)
- PZ-7a — PIEZOMETER (BY OTHERS)

NOTES:

1. CONTRACTOR SHALL BE RESPONSIBLE TO LOCATE THE EXISTING UNDERGROUND LINES ON THE PERIMETER ROAD BEFORE START OF EXCAVATION.
2. CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT WETLAND AND AGRICULTURAL DITCHES AGAINST ANY ADVERSE IMPACT DURING THE COURSE OF THE PROJECT. CLEANUP AND/OR RESTORATION SHALL BE AT CONTRACTOR COST.
3. APPROPRIATE NUMBER AND SPACING OF CLEANOUT LOCATIONS FOR PIGGING AND CLEANING LINES TO BE DETERMINED BY CONTRACTOR.
4. CONTRACTOR SHALL INSTALL FINAL EFFLUENT DISCHARGE IN EXISTING STORMWATER POND. OUTFALL SHALL BE LOCATED IN EXISTING RIP-RAP NEAR MAX POND WATER LEVEL. EFFLUENT PIPE TO TERMINATE WITH "TIDEFLEX" STYLE BACKFLOW PREVENTER.
5. ELECTRICAL KISOK #5 TO DISTRIBUTE POWER AND CONTROL SIGNALS TO R-14 THROUGH 21. SEE ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR DETAILS.
6. ELECTRICAL KISOK #4 TO DISTRIBUTE POWER AND CONTROL SIGNALS TO R-12,13 AND PZ-8A,8B,8C. SEE ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR DETAILS.
7. PZ-7A,7B SHALL HAVE HOME RUN CONNECTION TO CENTRAL PLC IN GWTP BUILDING.

REFERENCES:
PLANS

DATUM
HORIZONTAL: WASP-NAD83-S FEET
VERTICAL: NAVD88 FEET

NO.	REVISION	DATE	APRVD
1	ISSUED FOR REVIEW	FEB 25	WJM
2	ISSUED FOR PERMIT	MAR 18	GP
3	ISSUED FOR PLANS AND SPECIFICATIONS	APR 8	WJM
4	ISSUED FOR TENDER	MAY 26	WJM

DRAWN JR
DESIGNED ES
CHECKED GP
REVIEWED WJM

AMEC Geomatrix

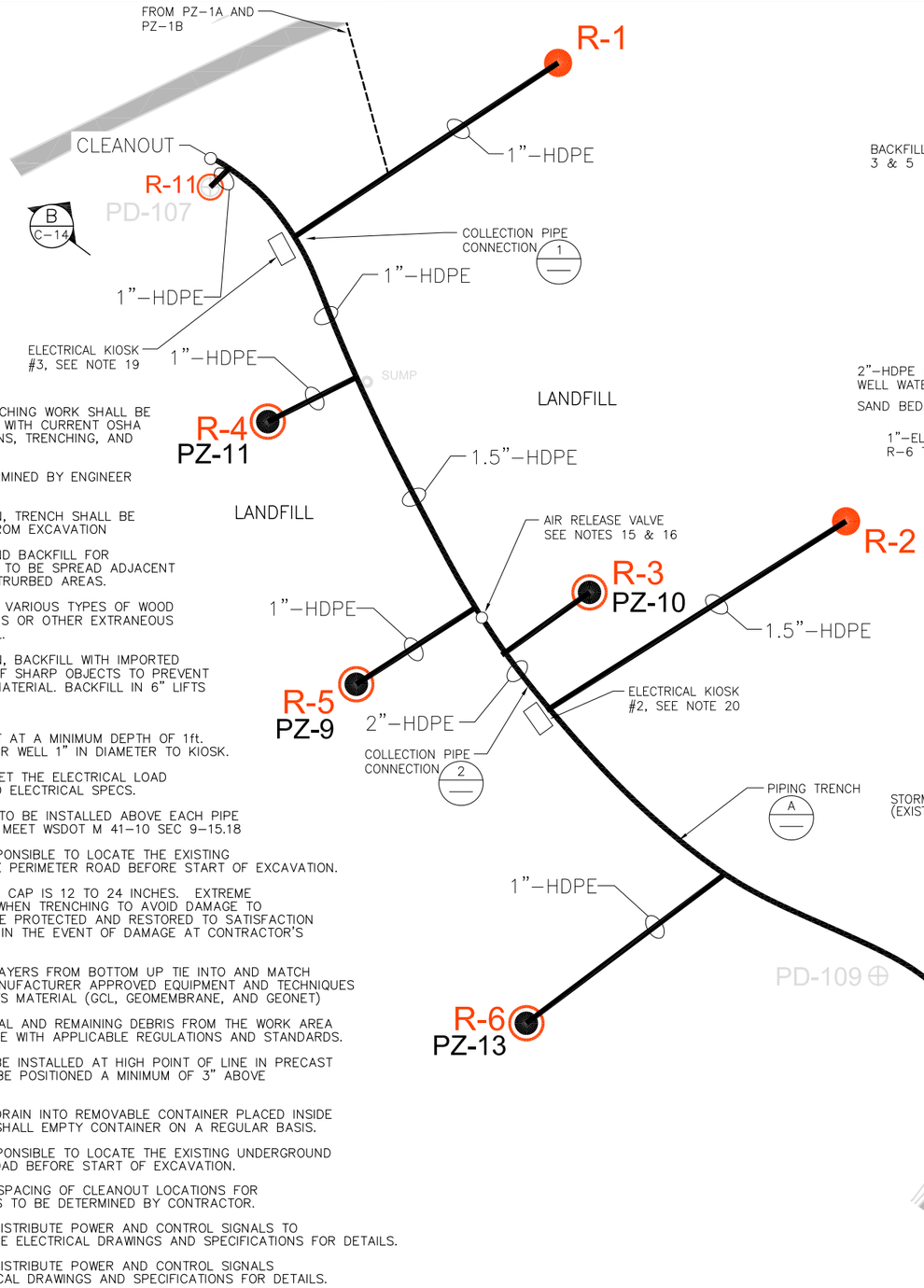
GROUNDWATER RECOVERY AND TREATMENT PLANT
WETLAND WELLS AND FINAL EFFLUENT PIPING LAYOUT

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

DATE: 05/25/11
PROJECT NO.: SE10160010

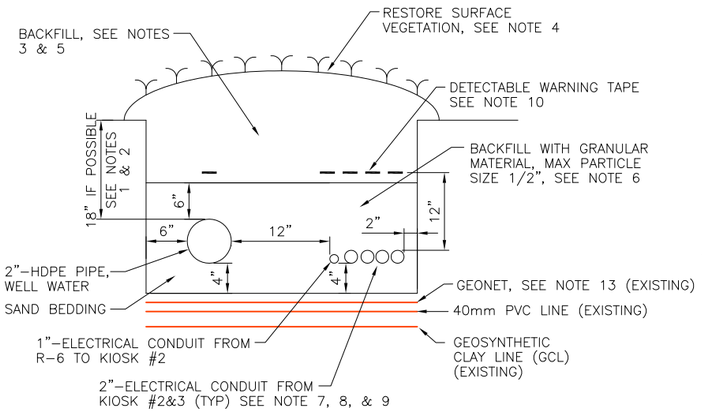
DRAWING C-05

Plot Date: 05/25/11 - 9:01am, Plotted by: Dell Survey2
Drawing Path: T:\Pete\Geomatrix\2011\12300-I B&L Woodwaste Site (SE10160010)\, Drawing Name: SE10160010-CIVIL.dwg



NOTES:

1. ALL EXCAVATIONS AND TRENCHING WORK SHALL BE PERFORMED IN ACCORDANCE WITH CURRENT OSHA REGULATIONS ON EXCAVATIONS, TRENCHING, AND SHORING.
2. TRENCH DEPTH TO BE DETERMINED BY ENGINEER BASED ON CAP DEPTH.
3. WHERE INDICATED IN SECTION, TRENCH SHALL BE BACKFILLED WITH TOPSOIL FROM EXCAVATION
4. IN UNIMPROVED AREAS MOUND BACKFILL FOR SETTLEMENT. EXCESS SOILS TO BE SPREAD ADJACENT TO TRENCH. HYDROSEED DISTRURBED AREAS.
5. MATERIAL SHALL FREE FROM VARIOUS TYPES OF WOOD WASTE, CONSTRUCTION DEBRIS OR OTHER EXTRANEOUS OR OBJECTIONABLE MATERIAL.
6. WHERE INDICATED IN SECTION, BACKFILL WITH IMPORTED GRANULAR MATERIAL FREE OF SHARP OBJECTS TO PREVENT DAMAGE TO GEOSYNTHETIC MATERIAL. BACKFILL IN 6" LIFTS
7. BUTT FUSED HDPE PIPE
8. INSTALL ELECTRICAL CONDUIT AT A MINIMUM DEPTH OF 1ft. ONE ELECTRICAL CONDUIT PER WELL 1" IN DIAMETER TO KIOSK.
9. ELECTRICAL WIRING MUST MEET THE ELECTRICAL LOAD RATING FOR THE PUMPS AND ELECTRICAL SPECS.
10. DETECTABLE MARKING TAPE TO BE INSTALLED ABOVE EACH PIPE AND CONDUIT. TAPE SHALL MEET WSDOT M 41-10 SEC 9-15.18
11. CONTRACTOR SHALL BE RESPONSIBLE TO LOCATE THE EXISTING UNDERGROUND LINES ON THE PERIMETER ROAD BEFORE START OF EXCAVATION.
12. DEPTH OF EXISTING LANDFILL CAP IS 12 TO 24 INCHES. EXTREME CARE SHALL BE EXERCISED WHEN TRENCHING TO AVOID DAMAGE TO CAP. CAP SYSTEM SHALL BE PROTECTED AND RESTORED TO SATISFACTION OF OWNER'S REPRESETATIVE IN THE EVENT OF DAMAGE AT CONTRACTOR'S FULL EXPENSE.
13. RESTORE LANDFILL CAP IN LAYERS FROM BOTTOM UP TIE INTO AND MATCH THE EXISTING CAP. USE MANUFACTURER APPROVED EQUIPMENT AND TECHNIQUES TO INSTALL CAP COMPONENTS MATERIAL (GCL, GEOMEMBRANE, AND GEONET)
14. REMOVE ALL EXCESS MATERIAL AND REMAINING DEBRIS FROM THE WORK AREA AND DISPOSE IN ACCORDANCE WITH APPLICABLE REGULATIONS AND STANDARDS.
15. AIR RELEASE VALVE SHALL BE INSTALLED AT HIGH POINT OF LINE IN PRECAST CHAMBER. CHAMBER SHALL BE POSITIONED A MINIMUM OF 3" ABOVE GEOMEMBRANE.
16. AIR RELEASE VALVE SHALL DRAIN INTO REMOVABLE CONTAINER PLACED INSIDE THE CHAMBER. OPERATOR SHALL EMPTY CONTAINER ON A REGULAR BASIS.
17. CONTRACTOR SHALL BE RESPONSIBLE TO LOCATE THE EXISTING UNDERGROUND LINES ON THE PERIMETER ROAD BEFORE START OF EXCAVATION.
18. APPROPRIATE NUMBER AND SPACING OF CLEANOUT LOCATIONS FOR PIGGING AND CLEANING LINES TO BE DETERMINED BY CONTRACTOR.
19. ELECTRICAL KISOK #3 WILL DISTRIBUTE POWER AND CONTROL SIGNALS TO R-1,4,11 AND PZ-1A,1B. SEE ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR DETAILS.
20. ELECTRICAL KIOSK #2 WILL DISTRIBUTE POWER AND CONTROL SIGNALS TO R-2,3,5,6. SEE ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR DETAILS.



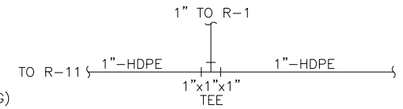
PIPING TRENCH (TYP)

SECTION A

N.T.S.

LEGEND:

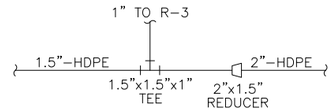
- FENCE LINE (EXISTING)
- PERIMETER ROAD (EXISTING)
- HDPE PIPE
- R-21 NEW EXTRACTION WELL (BY OTHERS)
- R-11 EXISTING WELL INCLUDED IN EXTRACTION NETWORK (BY OTHERS)
- PZ-7a PIEZOMETER (BY OTHERS)
- INSTRUMENT CABLE



COLLECTION PIPE CONNECTION

DETAIL 1

N.T.S.



COLLECTION PIPE CONNECTION

DETAIL 2

N.T.S.

SCALE BAR

0 100' 200' 300'

REFERENCES:	NO.	REVISION	DATE	APRVD
PLANS	1	ISSUED FOR REVIEW	FEB 25	WJM
DATUM HORIZONTAL: WASP-NAD83-S FEET VERTICAL: NAVD88 FEET	2	ISSUED FOR PLANS AND SPECIFICATIONS	APR 8	WJM
	3	ISSUED FOR TENDER	MAY 26	WJM

DRAWN JR
DESIGNED ES
CHECKED GP
REVIEWED WJM

AMEC Geomatrix

GROUNDWATER RECOVERY AND TREATMENT PLANT LANDFILL EAST WELL PIPING

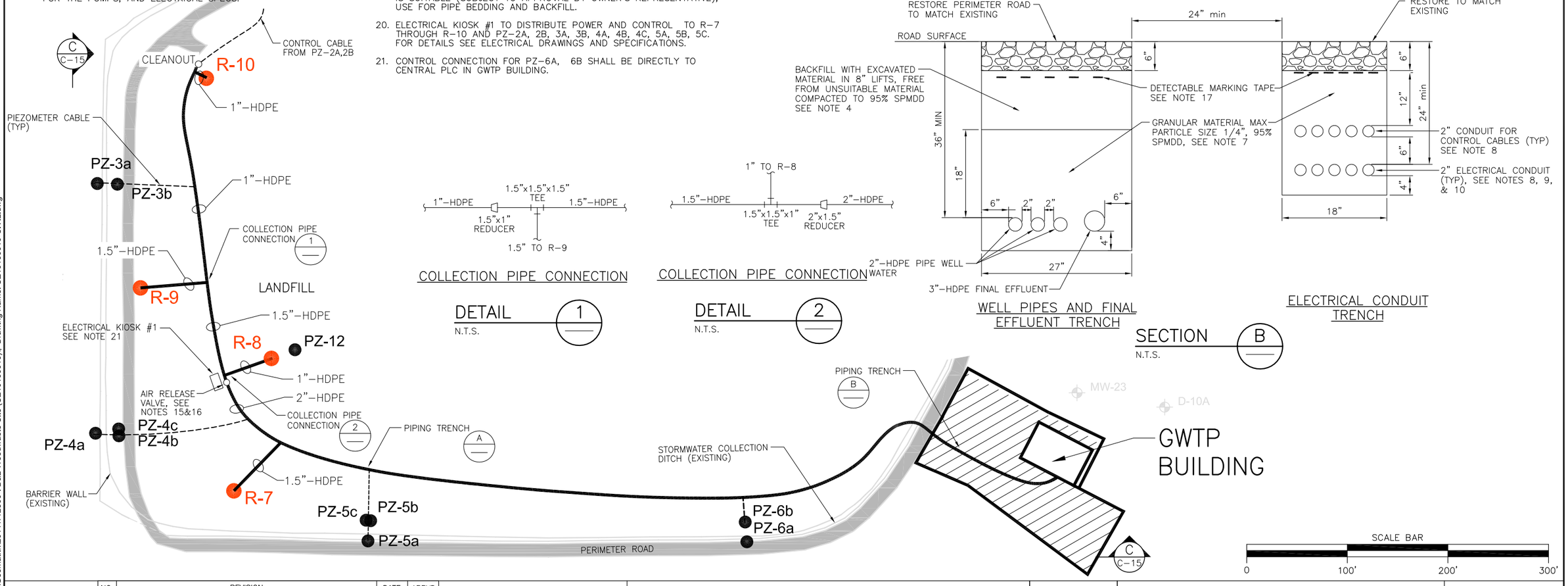
B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

DATE: 05/25/11
PROJECT NO.: SE10160010
DRAWING C-06

Plot Date: 05/25/11 - 1:20pm, Plotted by: Dell Survey2
Drawing Path: T:\Pete\Geomatrix\2011\12500-I B&L Woodwaste Site (SE10160010)\, Drawing Name: SE10160010-CIVIL.dwg

NOTES:

1. CONTRACTOR SHALL BE RESPONSIBLE TO LOCATE THE EXISTING UNDERGROUND LINES ON THE PERIMETER ROAD BEFORE START OF EXCAVATION.
2. ALL EXCAVATIONS AND TRENCHING WORK SHALL BE PERFORMED IN ACCORDANCE WITH CURRENT WISHA AND OSHA REGULATIONS ON EXCAVATIONS, TRENCHING, AND SHORING.
3. WHERE INDICATED IN SECTION, TRENCH SHALL BE BACKFILLED WITH TOPSOIL FROM EXCAVATION
4. MATERIAL SHOULD BE FREE FROM VARIOUS TYPES OF WOOD WASTE, CONSTRUCTION DEBRIS OR OTHER EXTRANEOUS OR OBJECTIONABLE MATERIAL.
5. IN UNIMPROVED AREAS MOUND BACKFILL FOR SETTLEMENT. EXCESS SOILS TO BE SPREAD ADJACENT TO TRENCH. HYDROSEED DISTRURBED AREAS.
6. WHERE INDICATED IN SECTION, BACKFILL WITH IMPORTED GRANULAR MATERIAL FREE OF SHARP OBJECTS TO PREVENT DAMAGE TO GEOSYNTHETIC MATERIAL. BACKFILL IN 6" LIFTS.
7. WHERE INDICATED IN SECTION, BACKFILL WITH IMPORTED GRANULAR MATERIAL IN 6" LIFTS.
8. BUTT FUSED HDPE PIPE
9. INSTALL ELECTRICAL CONDUIT AT A MINIMUM DEPTH OF 2FT (PER ELECTRICAL CODES). ONE ELECTRICAL CONDUIT PER WELL 1" IN DIAMETER.
10. ELECTRICAL WIRING MUST MEET THE ELECTRICAL LOAD RATING FOR THE PUMPS, AND ELECTRICAL SPECS.
11. INSTALL ELECTRICAL AND CONTROL CABLE CONDUITS BY LAYERS PER WELL SECTION (WETLAND WELL: 10 CONDUITS; LANDFIELD EAST WELLS 7 CONDUITS; LANDFIELD WEST WELLS: 4 CONDUITS)
12. DEPTH OF EXISTING LANDFILL CAP IS 12 TO 24 INCHES. EXTREME CARE SHALL BE EXERCISED WHEN TRENCHING TO AVOID DAMAGE TO CAP. CAP SYSTEM SHALL BE PROTECTED AND RESTORED TO SATISFACTION OF OWNER'S REPRESETATIVE IN THE EVENT OF DAMAGE AT CONTRACTOR'S FULL EXPENSE.
13. RESTORE LANDFILL CAP IN LAYERS FROM BOTTOM UP TIE INTO AND MATCH THE EXISTING CAP. USE MANUFACTURER APPROVED EQUIPMENT AND TECHNIQUES TO INSTALL CAP COMPONENTS MATERIAL (GCL, GEOMEMBRANE, AND GEONET)
14. REMOVE ALL EXCESS MATERIAL AND REMAINING DEBRIS FROM THE WORK AREA AND DISPOSE IN ACCORDANCE WITH APPLICABLE REGULATION AND STANDARDS.
15. AIR RELEASE VALVE SHALL BE INSTALLED AT HIGH POINT OF LINE IN PRECAST CHAMBER. CHAMBER SHALL BE POSITIONED A MINIMUM OF 3" ABOVE GEOMEMBRANE.
16. AIR RELEASE VALVE SHALL DRAIN INTO REMOVABLE CONTAINER PLACED INSIDE THE CHAMBER. OPERATOR SHALL EMPTY CONTAINER ON A REGULAR BASIS.
17. DETECTABLE MARKING TAPE TO BE INSTALLED ABOVE EACH PIPE AND CONDUIT. TAPE SHALL MEET WSDOT M 41-10 SEC 9-15.18
18. APPROPRIATE NUMBER AND SPACING OF CLEANOUT LOCATIONS FOR PIGGING AND CLEANING LINES TO BE DETERMINED BY CONTRACTOR.
19. IF EXISTING PIT-RUN FROM TRENCH EXCAVATION IN LANDFILL AREA IS SUITABLE (SUBJECT TO APPROVAL BY OWNER'S REPRESENTATIVE), USE FOR PIPE BEDDING AND BACKFILL.
20. ELECTRICAL KIOSK #1 TO DISTRIBUTE POWER AND CONTROL TO R-7 THROUGH R-10 AND PZ-2A, 2B, 3A, 3B, 4A, 4B, 4C, 5A, 5B, 5C. FOR DETAILS SEE ELECTRICAL DRAWINGS AND SPECIFICATIONS.
21. CONTROL CONNECTION FOR PZ-6A, 6B SHALL BE DIRECTLY TO CENTRAL PLC IN GWTP BUILDING.



COLLECTION PIPE CONNECTION

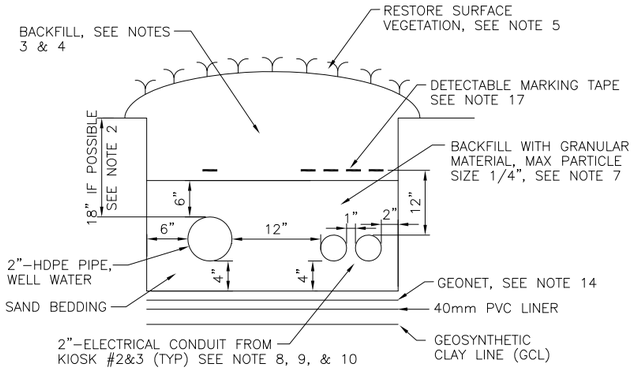
DETAIL 1

N.T.S.

COLLECTION PIPE CONNECTION

DETAIL 2

N.T.S.



PIPING TRENCH

SECTION A

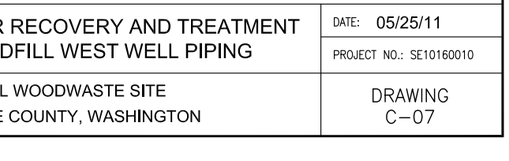
N.T.S.

WELL PIPES AND FINAL EFFLUENT TRENCH

ELECTRICAL CONDUIT TRENCH

SECTION B

N.T.S.



REFERENCES:
PLANS

DATUM
HORIZONTAL: WASP-NAD83-S FEET
VERTICAL: NAVD88 FEET

NO.	REVISION	DATE	APRVD
1	ISSUED FOR REVIEW	FEB 25	WJM
2	ISSUED FOR PLANS AND SPECIFICATIONS	APR 8	WJM
3	ISSUED FOR TENDER	MAY 26	WJM

DRAWN JR
DESIGNED ES
CHECKED GP
REVIEWED WJM

AMEC Geomatrix

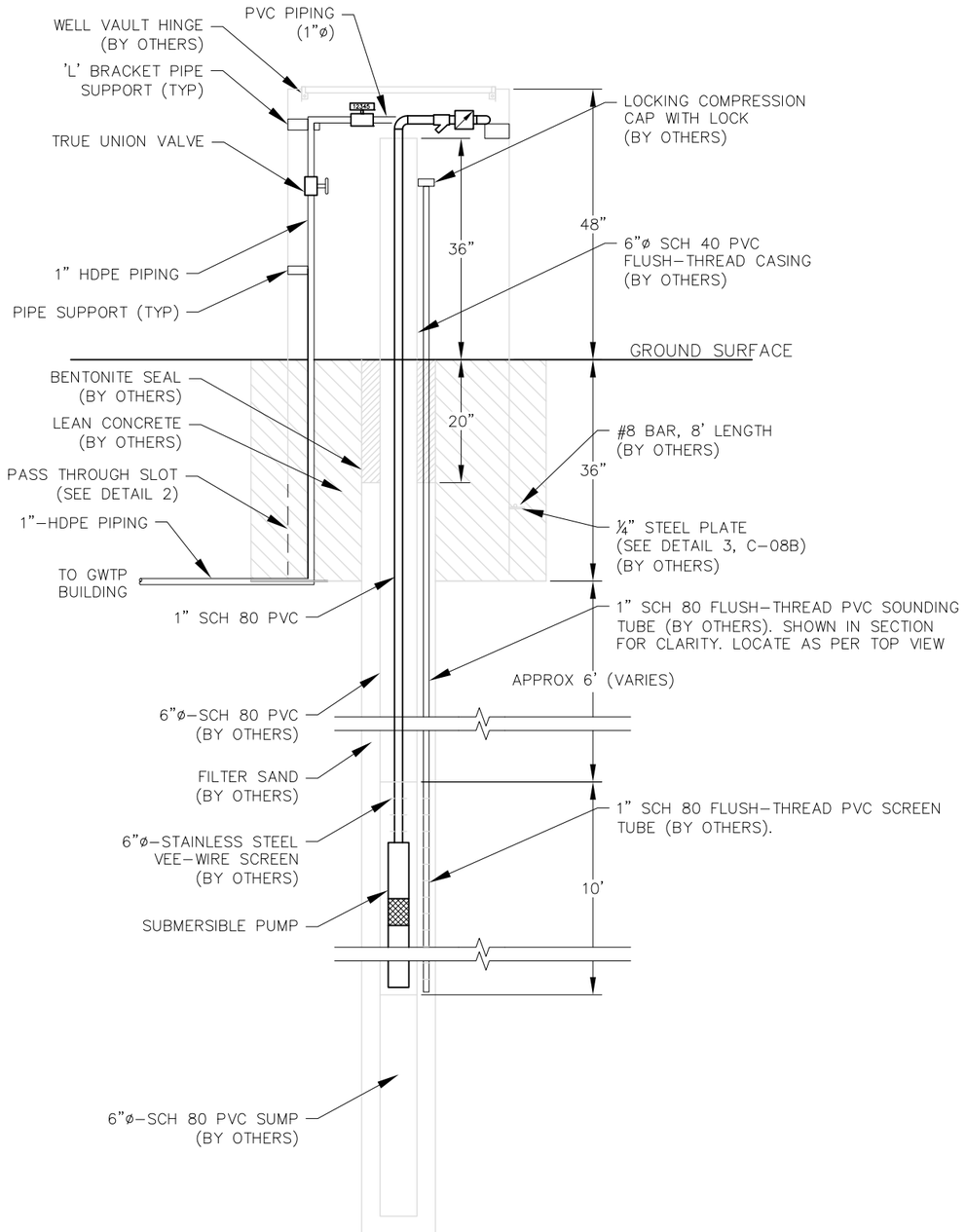
GROUNDWATER RECOVERY AND TREATMENT PLANT LANDFILL WEST WELL PIPING

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

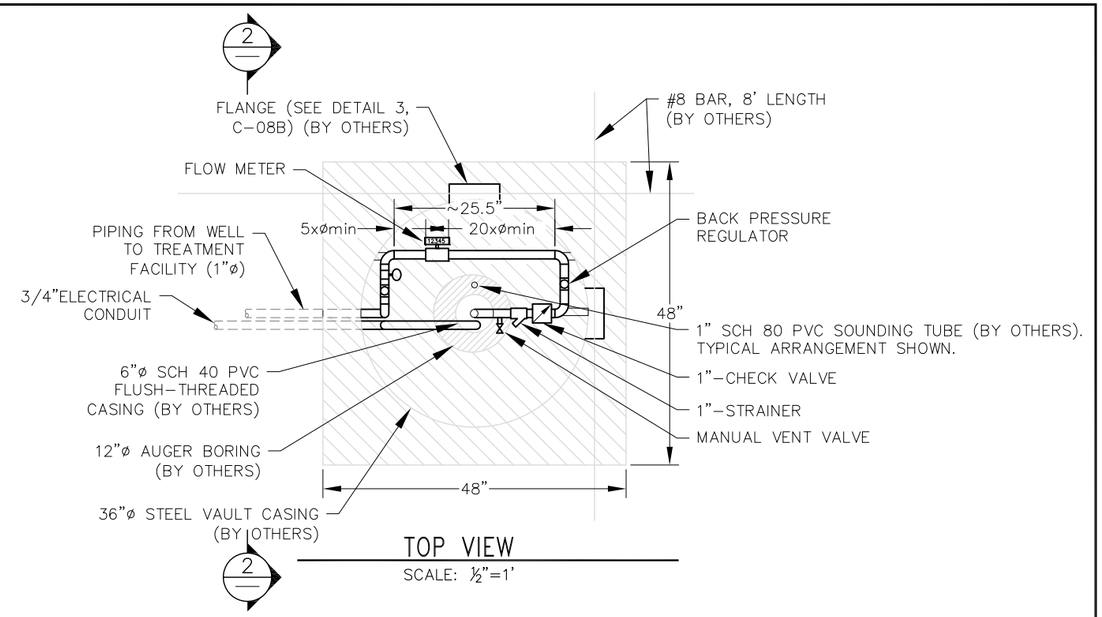
DATE: 05/25/11
PROJECT NO.: SE10160010

DRAWING C-07

Plot Date: 05/25/11 - 1:21pm. Plotted by: Dell Survey2
Drawing Path: T:\Pete\Geomatrix\2011\12500-I B&L Woodwaste Site (SE10160010)\. Drawing Name: SE10160010-CIVIL.dwg



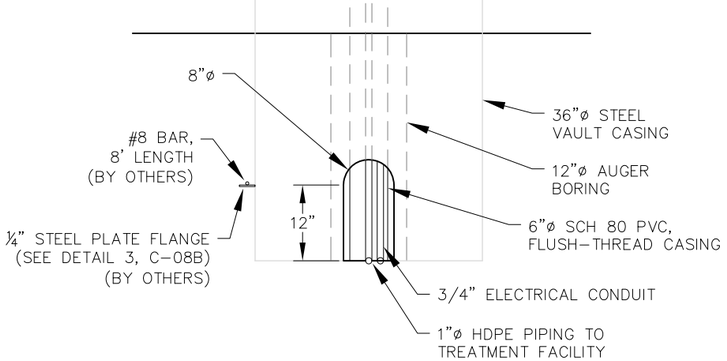
FRONT VIEW
SCALE: ½"=1'



TOP VIEW
SCALE: ½"=1'

NOTES:

1. PIPING AND FITTINGS ARE SCHEDULE 80 PVC, FROM PUMP TO TRUE UNION BALL VALVE, THEN SWITCH TO 1" HDPE SDR 11
2. ALL VALVES, FITTINGS, COUPLING, INSTRUMENTS, ETC., SHALL BE COMPATIBLE WITH PIPE MATERIAL AND INSTALLED PER MANUFACTURE'S RECOMMENDATIONS
3. WELL DRILLING, CASING, SCREEN, SEAL, SOUNDING TUBE, AND VAULT BY OTHERS.
4. INSULATE ABOVE GRADE PIPING WITH SUITABLE FREEZE PROTECTION, MINIMUM 2 INCH CLOSED CELL FOAM INSULATION AND HARD PLASTIC COVER.



PASS THROUGH SLOT DETAIL 2
SCALE: ½"=1'

Plot Date: 05/24/11 - 10:05am Plotted by: Dell Survey2
Drawing Path: T:\Pete\Geomatrix\2011\12500-I B&L Woodwaste Site (SE101600010)\, Drawing Name: SE101600010-C08-09.dwg

REFERENCES:
PLANS

DATUM
HORIZONTAL:
WASP-NAD83-S FEET
VERTICAL: NAVD88 FEET

NO.	REVISION	DATE	APRVD
1	ISSUED FOR PLANS AND SPECIFICATIONS	APR 8	WJM
2	ISSUED FOR TENDER	MAY 26	WJM

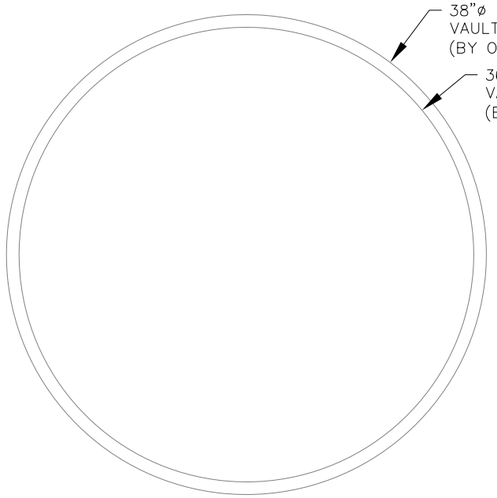
DRAWN JR
DESIGNED ES
CHECKED GP
REVIEWED WJM

AMEC Geomatrix

WETLAND WELL VAULT DETAILS

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

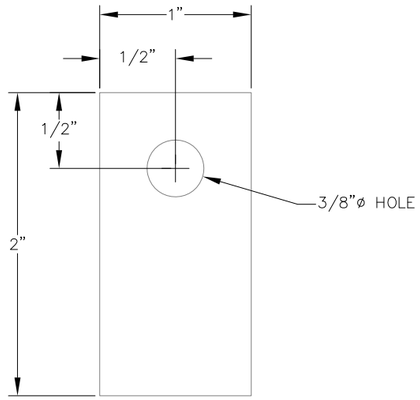
DATE: 05/24/11
PROJECT NO.: 13488
DRAWING C-08A



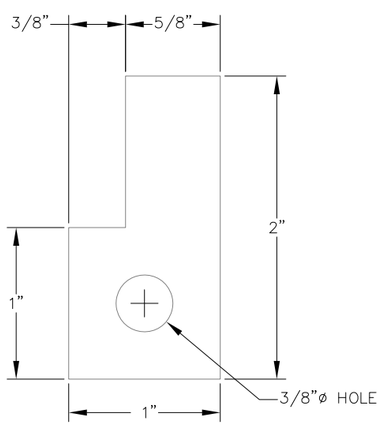
STEEL VAULT LID TOP VIEW
SCALE: 1"=1'

STEEL VAULT LID SIDE VIEW
SCALE: 1"=1'

STEEL VAULT LID SECTION VIEW
SCALE: 1"=1'



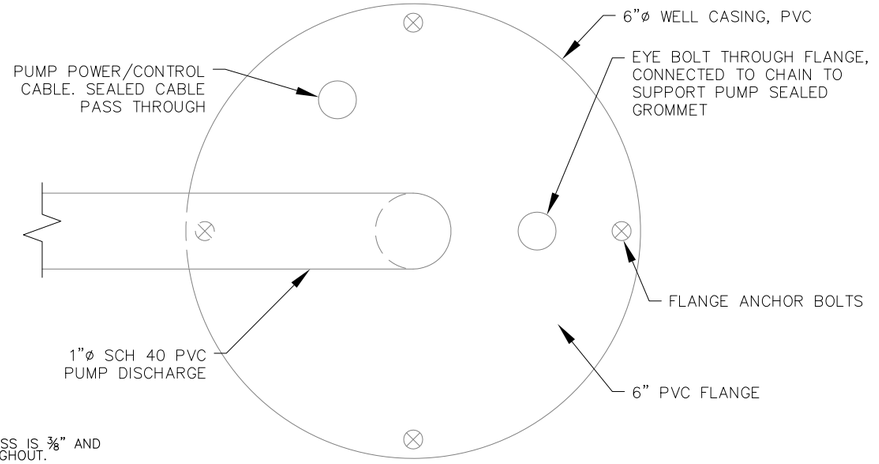
CASING FLANGE DETAIL
SCALE: 1"=1"



LID FLANGE DETAIL
SCALE: 1"=1"

NOTES:

1. FLANGE THICKNESS IS ⅜" AND UNIFORM THROUGHOUT.
2. TWO FLANGES WILL BE WELDED TO THE STEEL VAULT CASING. THEY WILL BE LOCATED OPPOSITE EACH OTHER AND IN LINE WITH WELL VAULT LID FLANGES, TO ALLOW FOR HINGE AND LOCKING TO OCCUR.

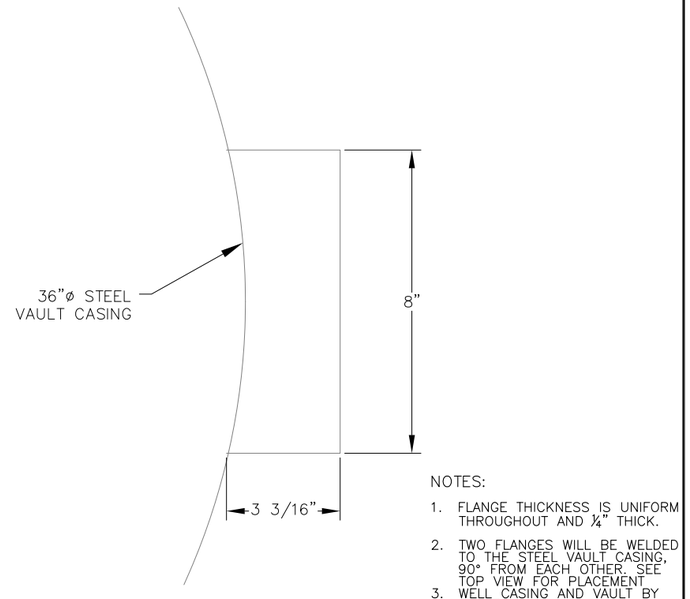


WELL CAP FLANGE DETAIL
SCALE: 1"=2"

2

NOTES:

1. FLANGE THICKNESS IS ⅜" AND UNIFORM THROUGHOUT.
2. TWO FLANGES WILL BE WELDED TO VAULT LID. ONE FLANGE WILL ACT AS A HINGE AND THE OTHER WILL SECURE THE VAULT VIA PADLOCK.
3. THE FLANGES WILL BE WELDED OPPOSITE EACH OTHER ON THE VAULT LID.



NOTES:

1. FLANGE THICKNESS IS UNIFORM THROUGHOUT AND ¼" THICK.
2. TWO FLANGES WILL BE WELDED TO THE STEEL VAULT CASING, 90° FROM EACH OTHER. SEE TOP VIEW FOR PLACEMENT
3. WELL CASING AND VAULT BY OTHERS

REBAR FLANGE DETAIL
SCALE: 1"=4"

3

REFERENCES:
PLANS

DATUM
HORIZONTAL:
WASP–NAD83–S FEET
VERTICAL: NAVD88 FEET

NO.	REVISION	DATE	APRVD
1	ISSUED FOR PLANS AND SPECIFICATIONS	APR 8	WJM
2	ISSUED FOR TENDER	MAY 26	WJM

DRAWN JR
DESIGNED ES
CHECKED GP
REVIEWED WJM

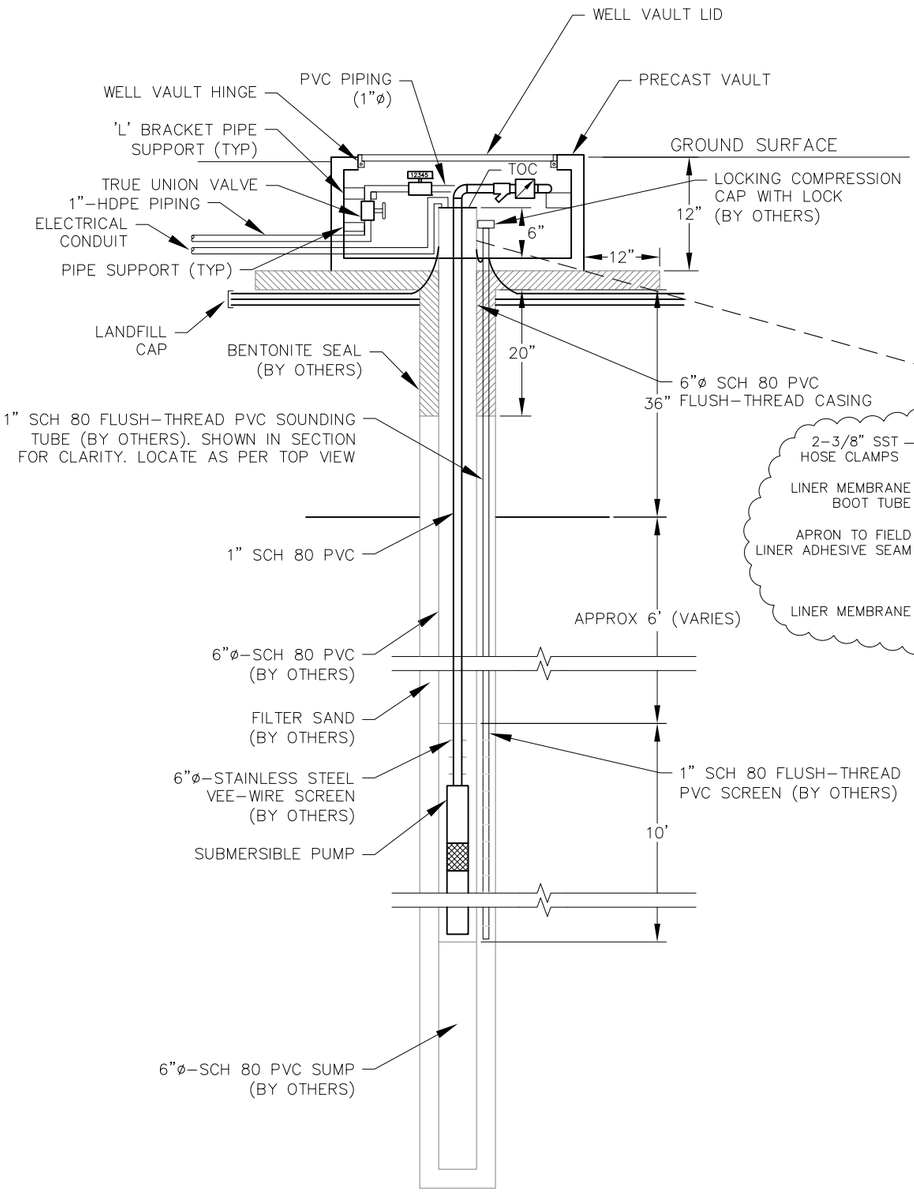
AMEC Geomatrix

WETLAND WELL VAULT DETAILS

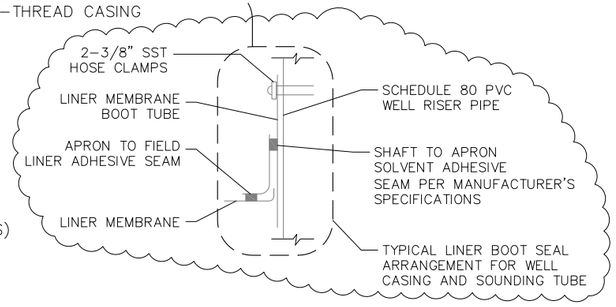
B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

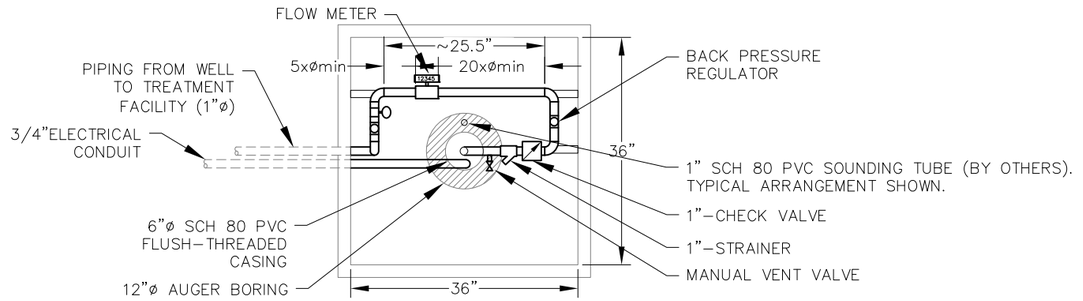
DATE: 05/24/11
PROJECT NO.: 13488

DRAWING
C–08B

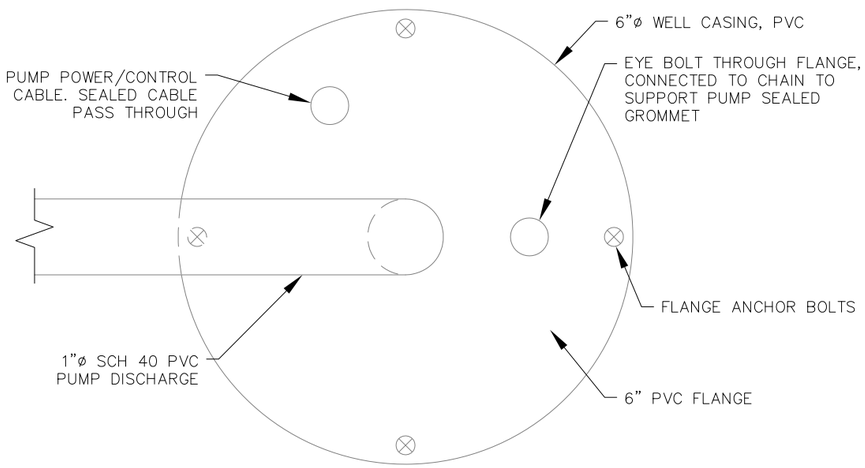


FRONT VIEW
SCALE: ½"=1'





TOP VIEW
SCALE: ½"=1'



WELL CAP FLANGE DETAIL (2)
SCALE: 1"=2"

NOTES:

1. PIPING AND FITTINGS ARE SCHEDULE 80 PVC FROM PUMP TO TRUE UNION BALL VALVE, THEN SWITCH TO HDPE SDR 11
2. ALL VALVES, FITTINGS, COUPLING, INSTRUMENTS, ETC., SHALL BE COMPATIBLE WITH PIPE MATERIAL AND INSTALLED PER MANUFACTURE'S RECOMMENDATIONS
3. INSTALL A PRECAST VAULT ON 4" THICK SAND BEDDING
4. BACKFILL THE REMAINDER OF EXCAVATION WITH THE COVER SOIL TO RESTORE TO ITS ORIGINAL CONDITION.
5. WELL DRILLING, CASING, SCREEN, AND SEAL BY OTHERS.
6. CONTRACTOR TO EXCAVATE TO CAP LINER AND CUT HOLE THROUGH CAP LINER BEFORE WELL IS DRILLED (BY OTHERS).
7. AFTER DRILLING AND CASING IS INSTALLED BY OTHERS, CONTRACTOR SHALL SEAL LINER AROUND WELL CASING AND SOUNDING TUBE AS PER TYPICAL DETAIL SHOWN AND MANUFACTURER'S INSTRUCTIONS. CAP LINER BOOT SHALL BE PURCHASED FROM NORTHWEST LINING.
8. WELL VAULT SHALL BE SUITABLE FOR H–15 AASHTO TRAFFIC RATING.
9. WELL VAULT SHALL HAVE DRAIN HOLE THROUGH BOTTOM THAT WILL DRAIN ANY FREE LIQUID TO SAND BEDDING LAYER.
10. IF TALLER VAULT IS REQUIRED AND TOP OF VAULT DOES NOT FIT AT GRADE, MOUND BACKFILL TO PROVIDE GRADUAL SLOPE FROM TOP OF VAULT TO EXISTING GRADE. SLOPE SHALL BE NO GREATER THAN 4:1. PROVIDE TOPSOIL AND HYDROSEED IMPACTED AREA.

REFERENCES:
PLANS

DATUM
HORIZONTAL:
WASP–NAD83–S FEET
VERTICAL: NAVD88 FEET

NO.	REVISION	DATE	APRVD
1	ISSUED FOR PLANS AND SPECIFICATIONS	APR 8	WJM
2	ISSUED FOR TENDER	MAY 26	WJM

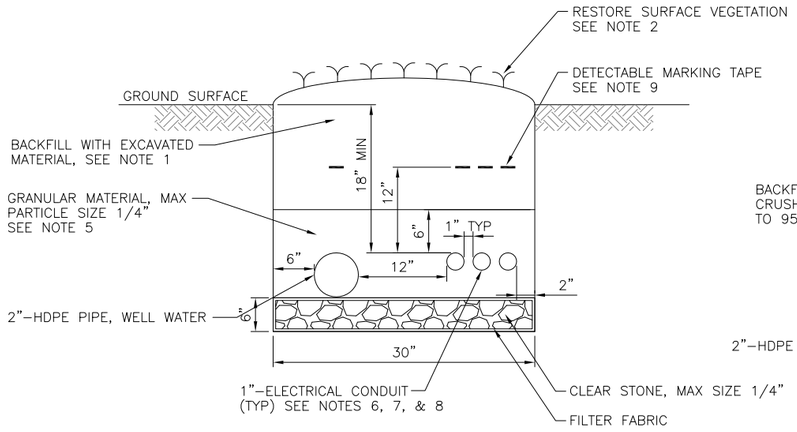
DRAWN JR
DESIGNED ES
CHECKED GP
REVIEWED WJM

AMEC Geomatrix

LANDFILL WELL VAULT DETAILS

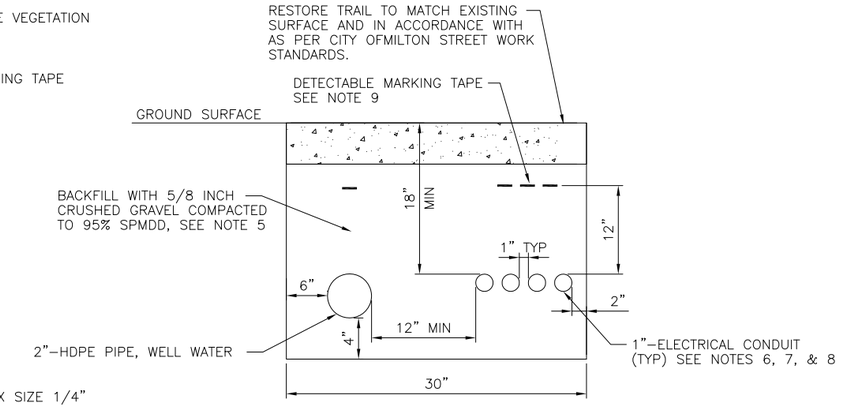
B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

DATE: 05/25/11
PROJECT NO.: 13488
DRAWING C–09



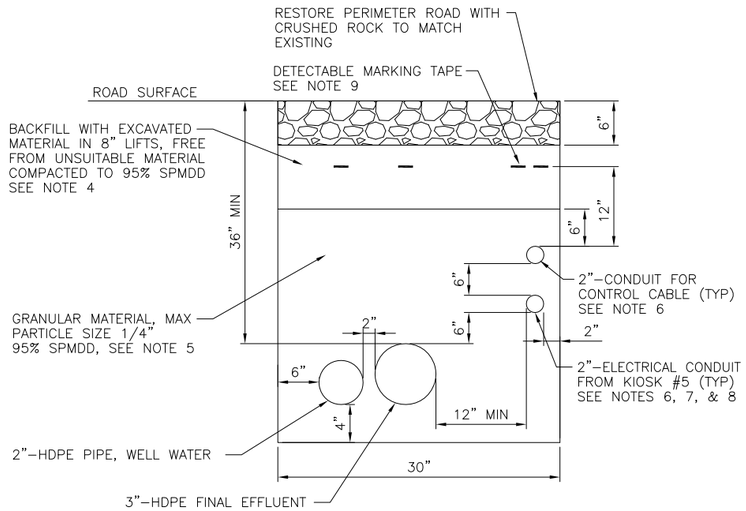
WETLAND AREA PIPING TRENCH

SECTION A — N.T.S. — C–05



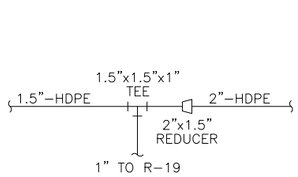
INTERURBAN TRAIL PIPING TRENCH

SECTION B — N.T.S. — C–05



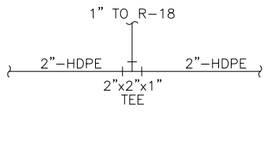
PIPING TRENCH

SECTION C — N.T.S. — C–05



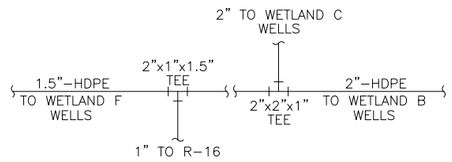
COLLECTION PIPE CONNECTION

DETAIL 1 — N.T.S. — C–05



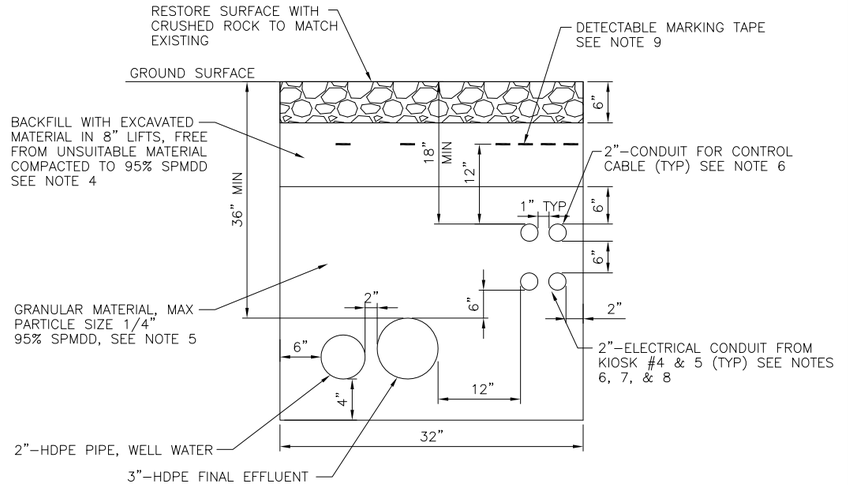
COLLECTION PIPE CONNECTION

DETAIL 2 — N.T.S. — C–05



COLLECTION PIPE CONNECTION

DETAIL 3 — N.T.S. — C–05



PIPING TRENCH

SECTION D — N.T.S. — C–05

NOTES:

1. WHERE INDICATED IN SECTION,TRENCH SHALL BE BACKFILLED WITH WETLAND TOPSOIL FROM EXCAVATION
2. IN UNIMPROVED AREAS MOUND BACKFILL FOR SETTLEMENT
3. TRENCH SIDE SLOPE OR SHORING REQUIREMENTS TO BE DETERMINED BY CONTRACTOR BASED ON FINAL TRENCH DEPTH AND SOIL CONDITIONS. ALL EXCAVATIONS AND TRENCHING WORK SHALL BE PERFORMED IN ACCORDANCE WITH CURRENT OSHA AND WISHA REGULATIONS ON EXCAVATIONS, TRENCHING, AND SHORING.
4. MATERIAL SHALL BE ESSENTIALLY FREE FROM VARIOUS TYPES OF WOOD WASTE, CONSTRUCTION DEBRIS OR OTHER EXTRANEOUS OR OBJECTIONABLE MATERIAL.
5. WHERE INDICATED IN SECTION, BACKFILL WITH IMPORTED GRANULAR MATERIAL IN 6" LIFTS
6. BUTT FUSED HDPE PIPE
7. INSTALL ELECTRICAL CONDUIT AT A MINIMUM DEPTH OF 18 INCHES. ONE ELECTRICAL CONDUIT PER WELL 1" IN DIAMETER.
8. ELECTRICAL WIRING MUST MEET THE ELECTRICAL LOAD RATING FOR THE PUMPS AND ELECTRICAL SPECIFICATIONS.
9. DETECTABLE MARKING TAPE TO BE INSTALLED ABOVE EACH PIPE AND CONDUIT. TAPE SHALL MEET WSDOT M 41–10 SEC 9–15.18
10. DUE TO PRESENCE OF ARSENIC, SUBSURFACE WORK PERFORMED OUTSIDE THE LANDFILL PERIMETER ROAD SHALL BE CONDUCTED IN ACCORDANCE WITH OSHA HAZWOPER REGULATIONS AND A SITE SPECIFIC HEALTH AND SAFETY PLAN.
11. EXCESS SPOILS SHALL BE DISPOSED OF IN AN ENVIRONMENTALLY SOUND MANNER AT AN APPROVED FACILITY.
12. ALL DISTURBED AREAS SHALL BE HYDROSEEDED WITH NATIVE VEGETATION SPECIES.

REFERENCES:
PLANS

DATUM
HORIZONTAL: WASP–NAD83–S FEET
VERTICAL: NAVD88 FEET

NO.	REVISION	DATE	
1	ISSUED FOR REVIEW	FEB 25	WJM
2	ISSUED FOR PERMIT	MAR 18	GP
3	ISSUED FOR PLANS AND SPECIFICATIONS	APR 8	WJM
4	ISSUED FOR TENDER	MAY 26	WJM

DRAWN JR
DESIGNED ES
CHECKED GP
REVIEWED WJM

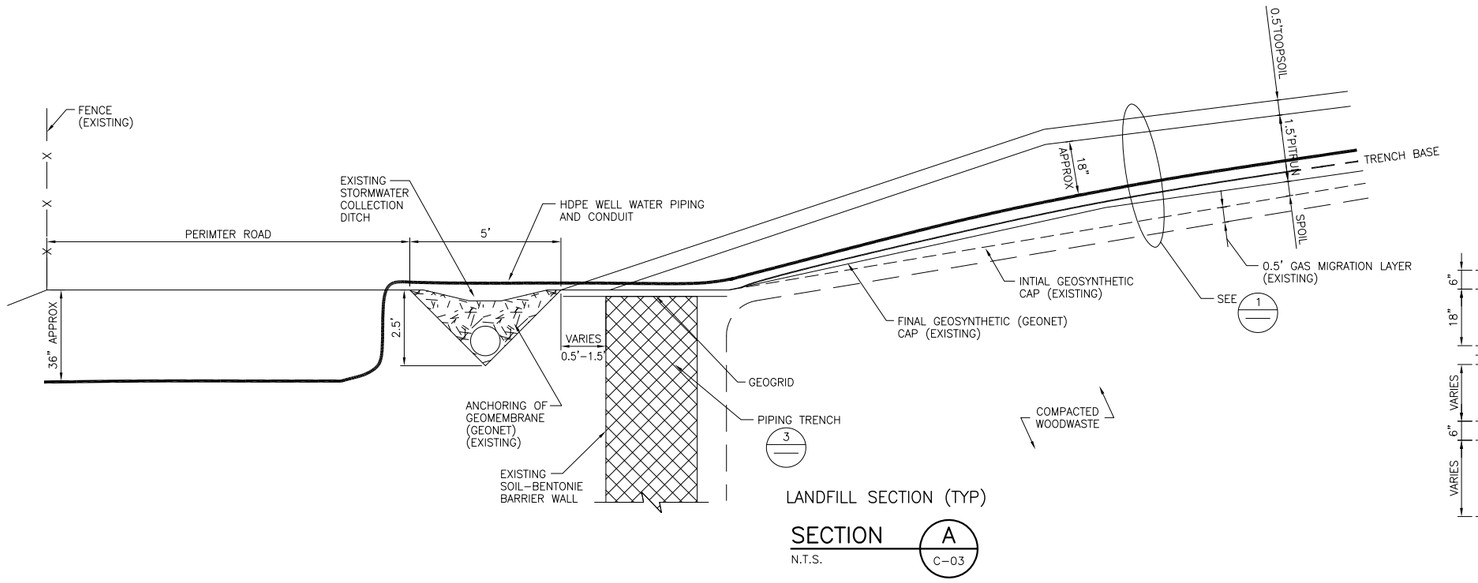
AMEC Geomatrix

GROUNDWATER TREATMENT PLANT
WETLAND AND OUTSIDE LANDFILL PIPING DETAILS

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

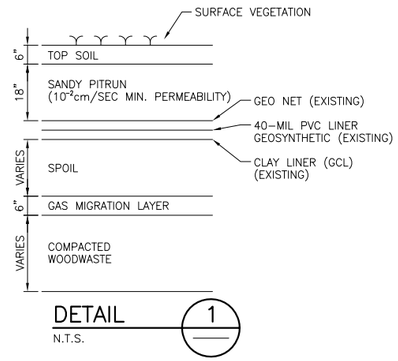
DATE: 05/25/11
PROJECT NO.: SE10160010
DRAWING C–10

Plot Date: 05/25/11 - 11:03am, Plotted by: Dell Survey2
Drawing Path: T:\Pete\Geomatrix\2011\12500-I B&L Woodwaste Site (SE10160010)\, Drawing Name: SE10160010-CIVIL.dwg



LANDFILL SECTION (TYP)

SECTION A
N.T.S.
C–03



DETAIL 1
N.T.S.

NOTES:

1. CONTRACTOR SHALL BE RESPONSIBLE TO LOCATE ANY EXISTING UNDERGROUND LINES BEFORE START OF ANY EXCAVATION.
2. CONTRACTOR SHALL PROTECT OR RESTORED EXISTING ELECTRICAL CONDUITS AND PERFORATED DRAIN PIPE IN PERIMETER ROAD.
3. ALL EXCAVATIONS AND TRENCHING WORK SHALL BE PERFORMED IN ACCORDANCE WITH CURRENT OSHA AND WISHA REGULATIONS ON EXCAVATIONS, TRENCHING, AND SHORING.
4. BANKS MORE THAN 5 FEET HIGH SHALL BE BENCHED. IF BENCHING IS NOT POSSIBLE, APPROVED SHORING SHALL BE USED.
5. EXCAVATED MATERIAL SHALL BE STORED AT LEAST TWO FEET FROM THE EDGE OF THE EXCAVATION.
6. WHERE WORKERS ARE REQUIRED TO BE IN TRENCHES 4FEET DEEP OR MORE, LADDERS OR STEPS SHALL BE PROVIDED AND LOCATED AS TO PROVIDE A MEANS OF EXIT WITH NO MORE THAN 25 FEET OF LATERAL TRAVEL.
7. REMOVE ALL EXCESS MATERIAL AND REMAINING DEBRIS FROM THE WORK AREA AND DISPOSAL IN ACCORDANCE WITH APPLICABLE REGULATION AND STANDARDS.
8. EXISTING STORMWATER COLLECTION TRENCH SYSTEM SHALL BE RESTORED TO ORIGINAL CONDITION.
9. INSTALL ELECTRICAL CONDUIT AT A MINIMUM DEPTH OF 2FEET (PER ELECTRICAL CODES). ONE ELECTRICAL CONDUIT PER WELL 1 INCH IN DIAMETER.
10. ELECTRICAL WIRING MUST MEET THE ELECTRICAL LOAD RATING FOR THE PUMPS AND ELECTRICAL SPECIFICATIONS.
11. DETECTABLE MARKING TAPE TO BE INSTALLED ABOVE EACH PIPE AND CONDUIT. TAPE SHALL MEET WSDOT M 41–10 SEC 9–15.18
12. PROVIDE SUITABLE FREEZE PROTECTION FOR EXPOSED GROUNDWATER PIPING, MINIMUM 2 INCH CLOSED CELL FOAM INSULATION WITH RIGID WEATHERPROOF CASING.
13. PROVIDE UV–RESISTANT CONDUIT FOR EXPOSED ELECTRICAL AND CONTROL WIRING.
14. PROVIDE SUITABLE SUPPORT FOR PIPING ACROSS STORMWATER COLLECTION DITCH.
15. CROSS PERIMETER ROAD AT GAP BETWEEN EXISTING UTILITY TRENCHES AND GROUNDWATER INTERCEPTION TRENCHES, APPROXIMATELY IN LINE WITH ACCESS RAMP TO FIFE WAY.
16. CONTRACTOR SHALL BE RESPONSIBLE TO LOCATE ANY EXISTING UNDERGROUND LINES BEFORE START OF EXCAVATION.
17. CONTRACTOR SHALL TAKE THE UTMOST CARE TO AVOID DAMAGING LANDFILL CAP LINER WHICH IS TIED INTO EXISTING STORMWATER TRENCH. ANY DAMAGE SHALL BE REPAIRED TO THE SATISFACTION OF OWNER'S REPRESENTATIVE AT CONTRACTOR'S FULL EXPENSE.
18. PERIMETER ROAD SHALL BE RESTORED TO EXISTING CONDITION.
19. PIPING, TRENCH AND CONDUIT UNDER PERIMETER ROAD SHALL BE SUITABLE FOR H–20 AASHTO TRAFFIC LOADS.

REFERENCES:
PLANS

DATUM
HORIZONTAL: WASP–NAD83–S FEET
VERTICAL: NAVD88 FEET

NO.	REVISION	DATE	
1	ISSUED FOR REVIEW	FEB 25	WJM
2	ISSUED FOR PERMIT	MAR 18	GP
3	ISSUED FOR PLANS AND SPECIFICATIONS	APR 8	WJM
4	ISSUED FOR TENDER	MAY 26	WJM

DRAWN JR
DESIGNED ES
CHECKED GP
REVIEWED WJM

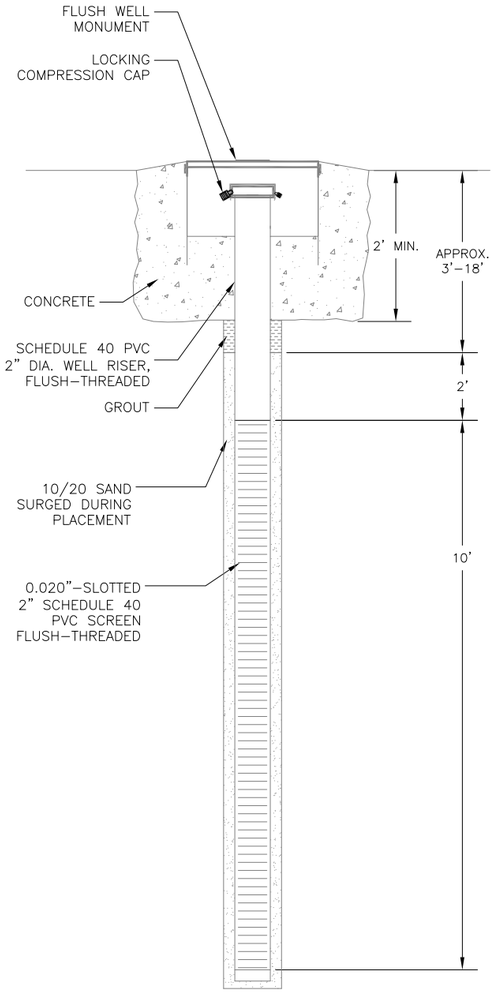
AMEC Geomatrix

BARRIER WALL TRENCHING DETAILS

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

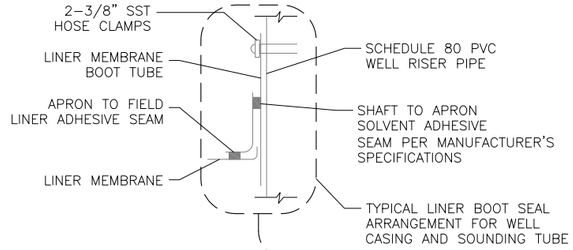
DATE: 05/25/11
PROJECT NO.: SE10160010

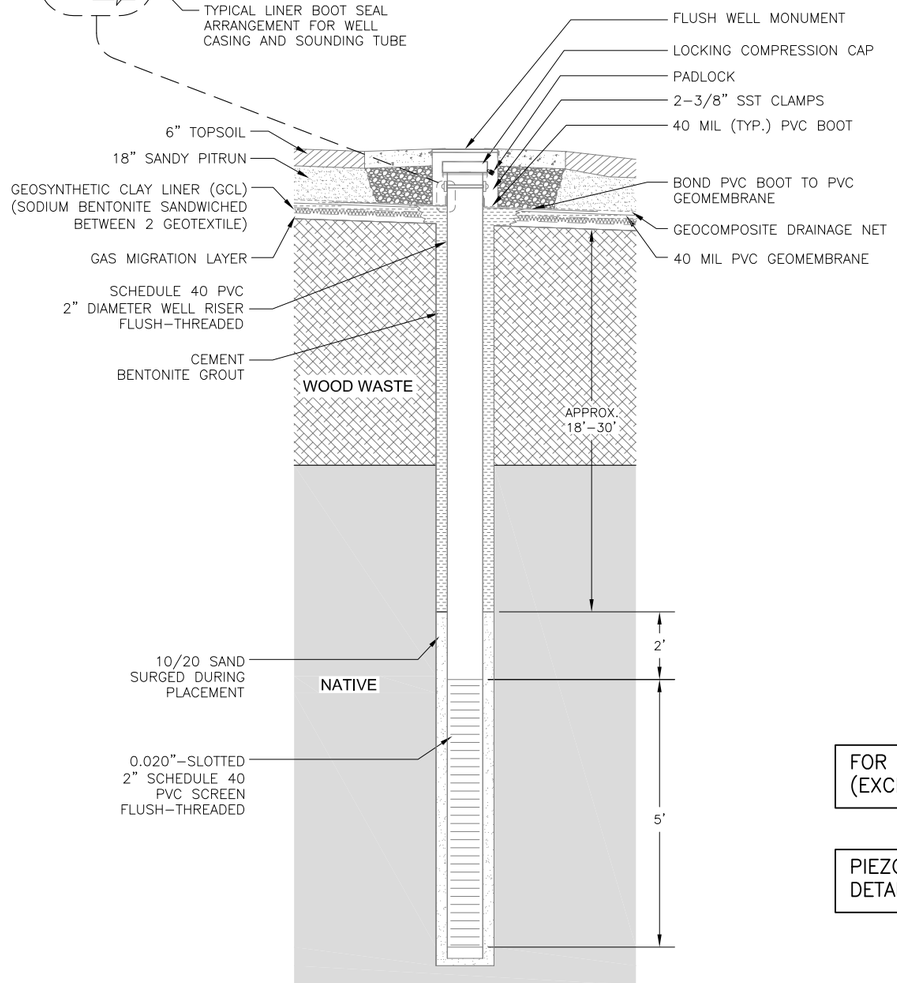
DRAWING
C–11



UPPER INTERVAL PIEZOMETER OUTSIDE BARRIER WALL — 1

NOT TO SCALE





LOWER INTERVAL PIEZOMETER INSIDE BARRIER WALL — 2

NOT TO SCALE

FOR INFORMATION ONLY (EXCEPT AS NOTED)

PIEZOMETER AND WELL DETAILS SEE C–12B

NOTES:

1. CONNECT CONTROL CABLES TO PIEZOMETERS AS REQUIRED IN P&IDs. INSTALL SEALED CABLE PASS THROUGH IN EXISTING WELL MONUMENT LIDS.

REFERENCES:
PLANS

DATUM
HORIZONTAL: WASP–NAD83–S FEET
VERTICAL: NAVD88 FEET

NO.	REVISION	DATE	APRVD
1	ISSUED FOR PLANS AND SPECIFICATIONS	APR 8	ES
2	ISSUED FOR TENDER	MAY 26	WJM

DRAWN JR
DESIGNED ES
CHECKED GP
REVIEWED WJM

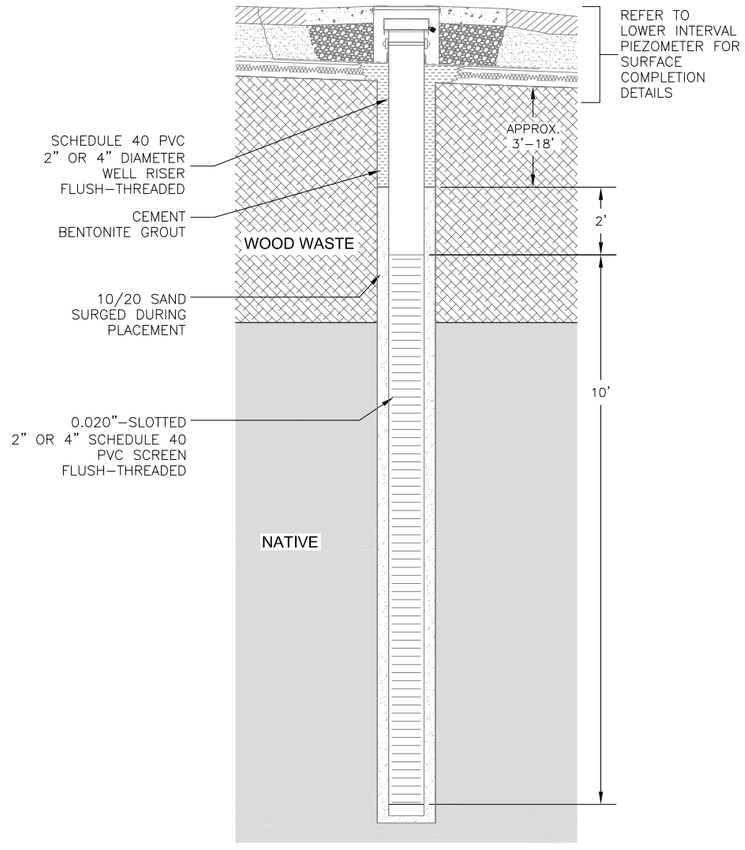
AMEC Geomatrix

EXISTING PIEZOMETER DETAILS
SHEET 1 of 2

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

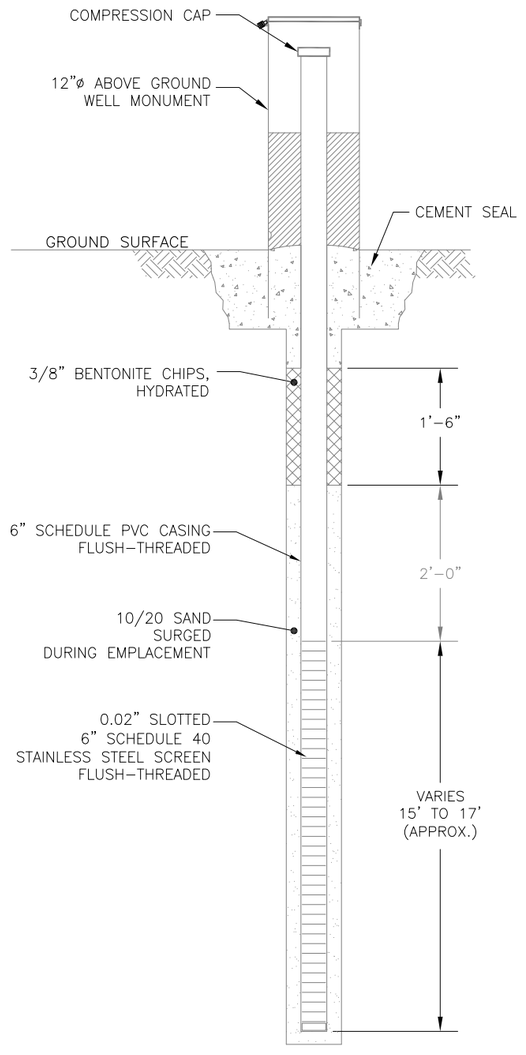
DATE: 05/24/11
PROJECT NO.: SE10160010

DRAWING C–12A



UPPER INTERVAL PIEZOMETER INSIDE BARRIER WALL — 3

NOT TO SCALE



PREZOMETER OUTSIDE BARRIER WALL — 4

NOT TO SCALE

FOR INFORMATION ONLY (EXCEPT AS NOTED)

NAME	DETAIL	COMMENTS
LOWER SAND AQUIFER		
PZ-4c	DETAIL 2	2-INCH DIAMETER, 0.020-INCH MACHINE-SLOTTED PVC SCREEN
PZ-5c		
PZ-8c		
UPPER SAND AQUIFER		
PZ-1a	DETAIL 1	2-INCH DIAMETER, 0.020-INCH MACHINE-SLOTTED PVC SCREEN
PZ-1b	DETAIL 3	
PZ-2a	DETAIL 1	
PZ-2b	DETAIL 3	
PZ-3a	DETAIL 1	
PZ-3b	DETAIL 3	
PZ-4a	DETAIL 1	
PZ-4b	DETAIL 3	
PZ-5a	DETAIL 1	
PZ-5b	DETAIL 3	
PZ-6a	DETAIL 1	
PZ-6b	DETAIL 3	
PZ-7a	DETAIL 1	
PZ-7b	DETAIL 3	
PZ-8a	DETAIL 1	
PZ-8b	DETAIL 3	
EXISTING PIEZOMETER TO BE USED AS EXTRACTION WELL		
PZ-9/R-5	DETAIL 3, NOTE 2	4-INCH DIAMETER, 0.020-INCH CONTINUOUS-WRAP PVC SCREEN
PZ-10/R-3		4-INCH DIAMETER, 0.020-INCH MACHINE-SLOTTED PVC SCREEN
PZ-11/R-4		
PZ-12/R-8		
PZ-13/R-6		
PD-107/R-11	DETAIL 4, NOTE 2	6-INCH DIAMETER, 0.020-INCH CONTINUOUS-WRAP STAINLESS STEEL
PD-109	DETAIL 4, NOTE 1	6-INCH DIAMETER, 0.020-INCH CONTINUOUS-WRAP STAINLESS STEEL

NOTES:

1. CONTRACTOR TO CONVERT EXISTING PIEZOMETER INTO FLUSH CAPPED WELL SIMILAR TO DETAIL 2
2. CONTRACTOR TO CONVERT EXISTING PIEZOMETER INTO EXTRACTION WELL SEE DRAWING C-09
3. ALL NEW EXTRACTION WELL DRILLING WILL BE BY OTHERS.
4. DECOMMISSIONING OF MONITORING WELL MW-30 WILL BE BY OTHERS.
6. CONNECT CONTROL CABLES TO PIEZOMETERS AS REQUIRED IN P&IDs. INSTALL SEALED CABLE PASS THROUGH IN EXISTING WELL MONUMENT LIDS.

REFERENCES:
PLANS

DATUM
HORIZONTAL: WASP-NAD83-S FEET
VERTICAL: NAVD88 FEET

NO.	REVISION	DATE	APRVD
1	ISSUED FOR PLANS AND SPECIFICATIONS	APR 8	
2	ISSUED FOR TENDER	MAY 26	WJM

DRAWN JR
DESIGNED ES
CHECKED GP
REVIEWED WJM

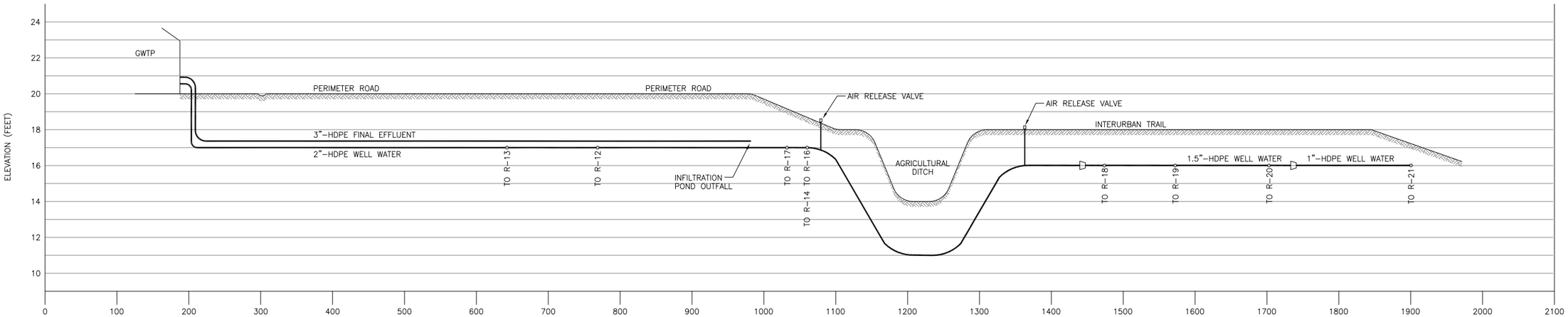
AMEC Geomatrix

EXISTING PIEZOMETER DETAILS
SHEET 2 of 2

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

DATE: 05/24/11
PROJECT NO.: SE10160010
DRAWING C-12B

Plot Date: 05/24/11 - 9:18am, Plotted by: Dell Survey2
Drawing Path: T:\Pete\Geomatrix\2011\112500-I B&L Woodwaste Site (SE10160010)\, Drawing Name: SE10160010-EC01,2 & C12.20.dwg



SECTION A
AS SHOWN C–05

NOTES:
1. PROVIDED TO ILLUSTRATE APPROXIMATE ELEVATION CHANGES ONLY. NOT A TRUE RIGOROUS SECTION.

HORIZONTAL SCALE BAR
0 100' 200' 300'

REFERENCES:
PLANS

DATUM
HORIZONTAL: WASP–NAD83–S FEET
VERTICAL: NAVD88 FEET

NO.	REVISION	DATE	APRVD
1	ISSUED FOR PLANS AND SPECIFICATIONS	APR 8	WJM
2	ISSUED FOR TENDER	MAY 26	WJM

DRAWN JR
DESIGNED ES
CHECKED GP
REVIEWED WJM

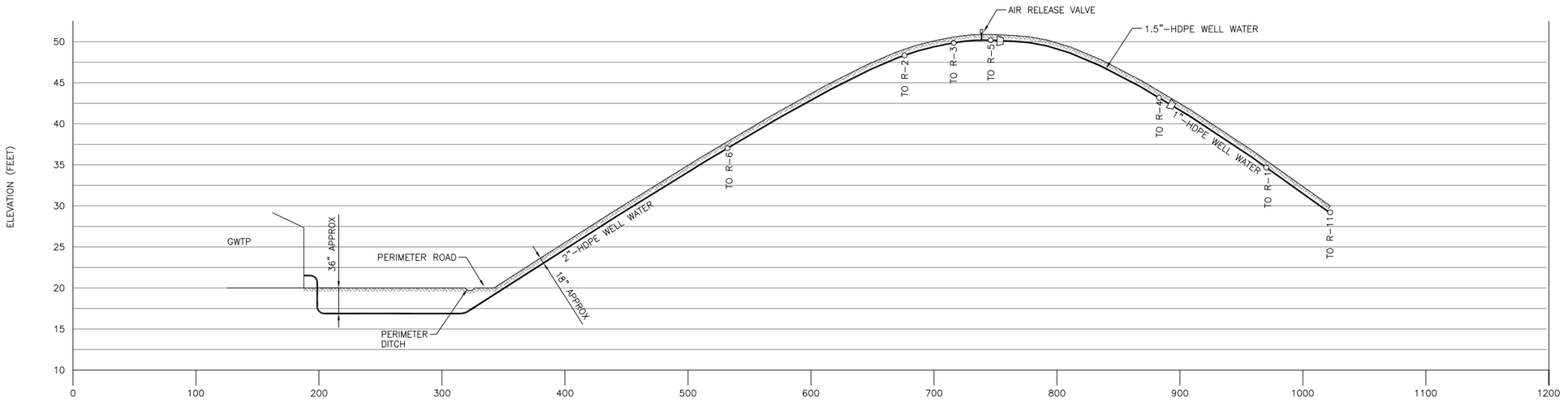
AMEC Geomatrix

GROUNDWATER RECOVERY AND TREATMENT PLANT
WETLAND AND EAST WELL PIPING ELEVATION

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

DATE: 05/24/11
PROJECT NO.: SE10160010
DRAWING C–13

Plot Date: 05/24/11 - 9:41am, Plotted by: Dell Survey2
Drawing Path: T:\Pete\Geomatrix\2011\11\2500-I B&L Woodwaste Site (SE10160010)\, Drawing Name: SE10160010-C13-15.dwg



SECTION B
AS SHOWN C-06

NOTES:
1. PROVIDED TO ILLUSTRATE APPROXIMATE ELEVATION CHANGES ONLY. NOT A TRUE RIGOROUS SECTION.

HORIZONTAL SCALE BAR
0 100' 200' 300'

REFERENCES:
PLANS

DATUM
HORIZONTAL: WASP-NAD83-S FEET
VERTICAL: NAVD88 FEET

NO.	REVISION	DATE	APRVD
1	ISSUED FOR PLANS AND SPECIFICATIONS	APR 8	WJM
2	ISSUED FOR TENDER	MAY 26	WJM

DRAWN JR
DESIGNED ES
CHECKED GP
REVIEWED WJM

AMEC Geomatrix

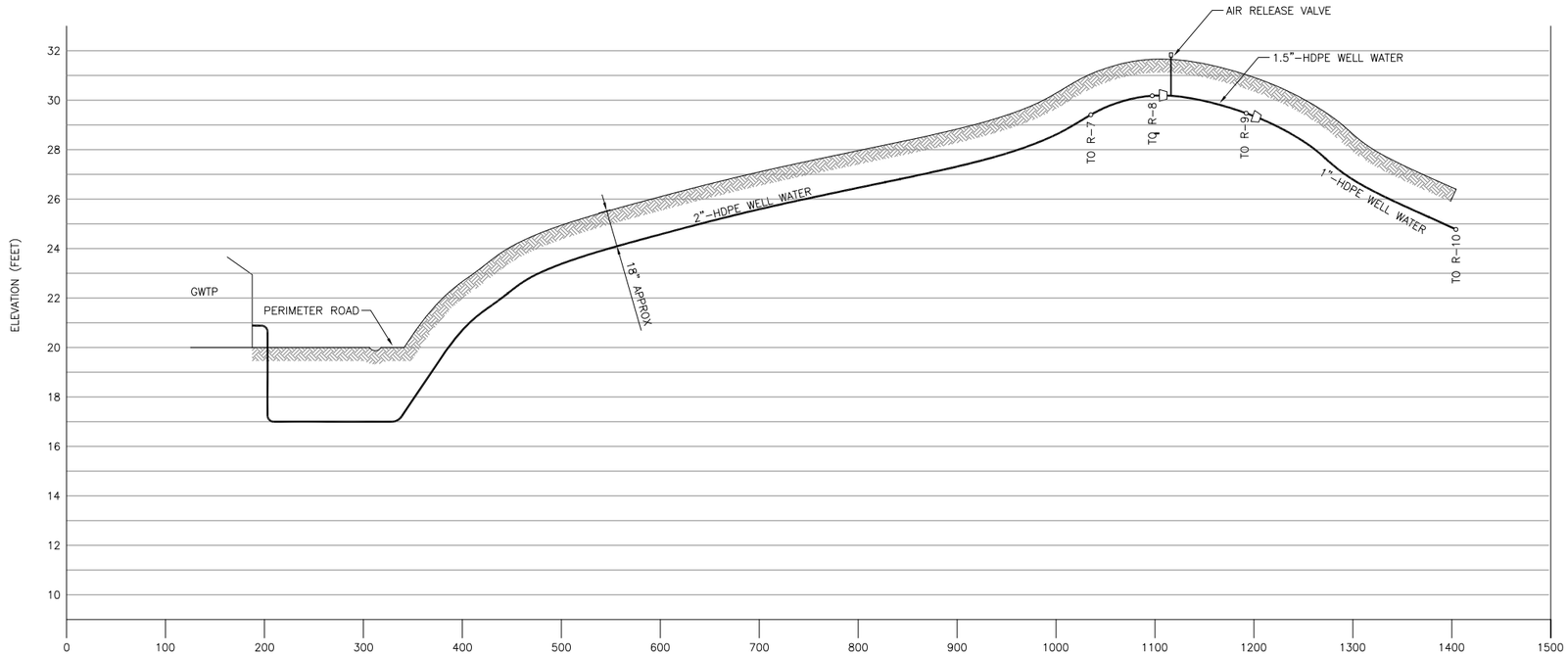
GROUNDWATER RECOVERY AND TREATMENT PLANT
LANDFILL EAST WELL PIPING ELEVATION

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

DATE: 05/24/11
PROJECT NO.: SE10160010

DRAWING
C-14

Plot Date: 05/24/11 - 9:41am, Plotted by: Dell Survey2
Drawing Path: T:\Pete\Geomatrix\2011\12500-I B&L Woodwaste Site (SE10160010)\, Drawing Name: SE10160010-C13-15.dwg



SECTION C
AS SHOWN C–07

NOTES:
1. PROVIDED TO ILLUSTRATE APPROXIMATE ELEVATION CHANGES ONLY. NOT A TRUE RIGOROUS SECTION.

HORIZONTAL SCALE BAR
0 100' 200' 300'

REFERENCES:
PLANS

DATUM
HORIZONTAL: WASP–NAD83–S FEET
VERTICAL: NAVD88 FEET

NO.	REVISION	DATE	APRVD
1	ISSUED FOR PLANS AND SPECIFICATIONS	APR 8	WJM
2	ISSUED FOR TENDER	MAY 26	WJM

DRAWN JR
DESIGNED ES
CHECKED GP
REVIEWED WJM

AMEC Geomatrix

GROUNDWATER RECOVERY AND TREATMENT PLANT
LANDFILL WEST WELL PIPING ELEVATION

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

DATE: 05/24/11
PROJECT NO.: SE10160010

DRAWING
C–15

Plot Date: 05/24/11 - 9:42am, Plotted by: Dell Survey2
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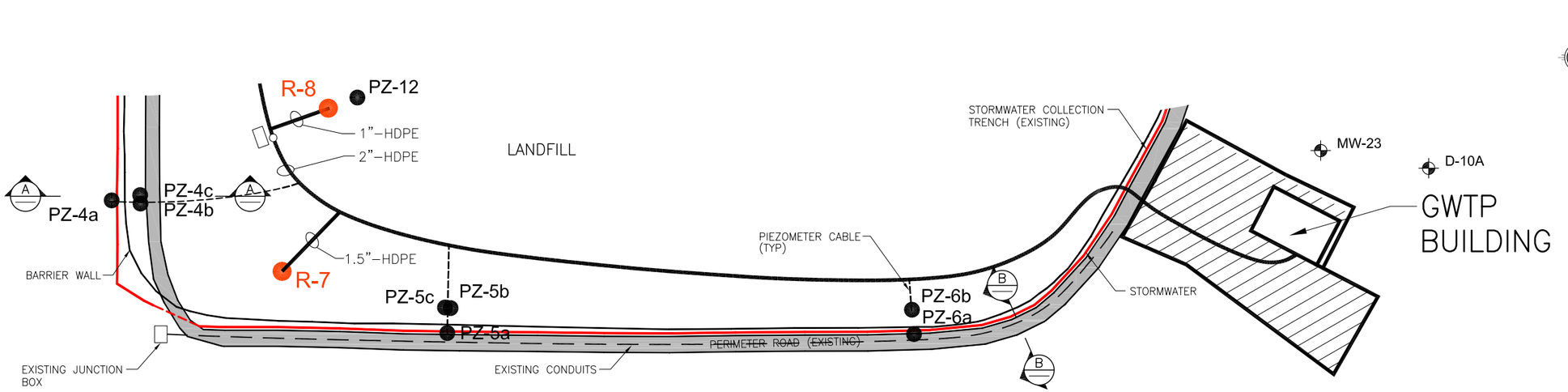
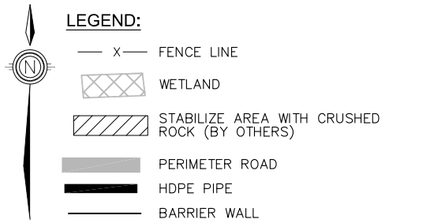
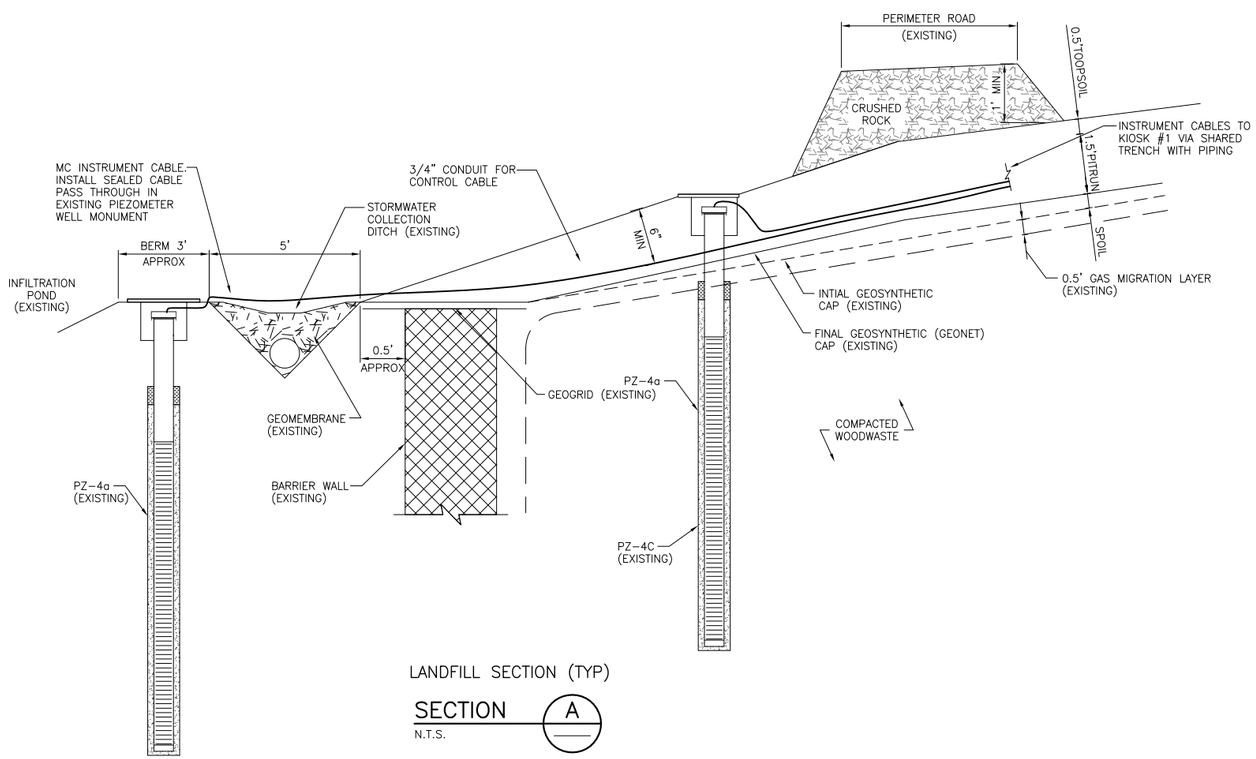
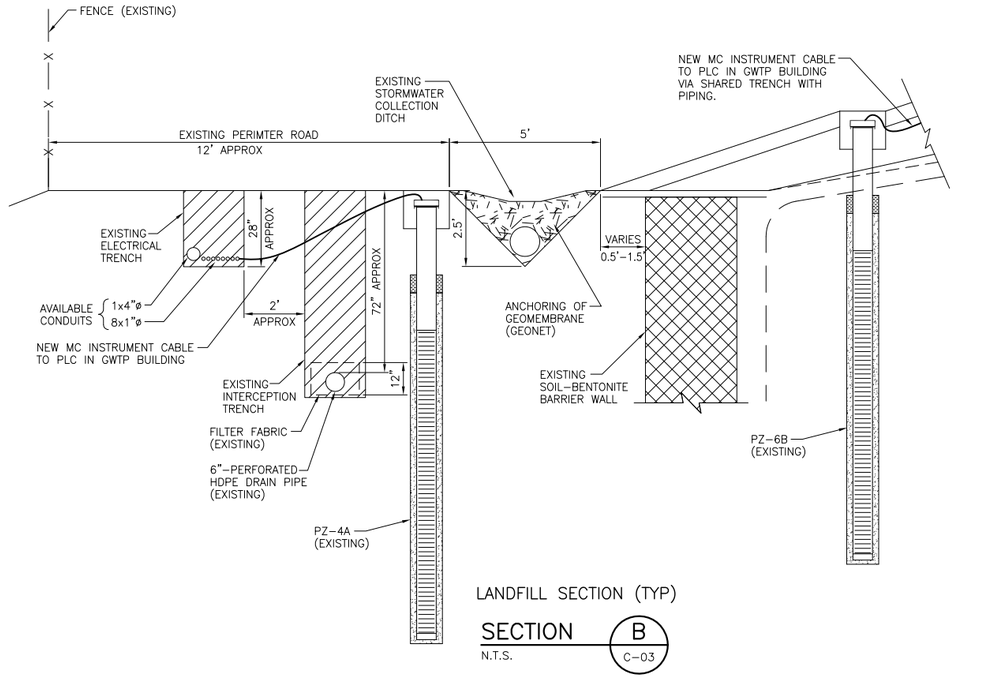






LANDFILL SECTION (TYP)

SECTION A
N.T.S.



LANDFILL SECTION (TYP)

SECTION B
N.T.S.
C–03

NOTES:

1. PIEZOMETERS PZ–1A, PZ–2A, PZ–3A, PZ4A, AND PZ–5A SHALL BE CONNECTED AS PER SECTION A
2. WHERE POSSIBLE CONNECT PIEZOMETER PZ–6A THROUGH THE EXISTING AVAILABLE CONDUIT. AS PER SECTIONS B. ADD NEW CONDUIT WHERE NECESSARY.
3. INSTALL NEW INSTRUMENT CABLES FOR EACH PIEZOMETER AS PER P&IDS, WITH SEALED PASS THROUGH ON WELL CAPS AND VAULTS.
4. INSTRUMENT CABLES SHOWN TO ILLUSTRATE CONCEPT ONLY. FINAL PLACEMENT TO BE DETERMINED BY CONTRACTOR TO SUIT SITE CONDITIONS.

REFERENCES:
PLANS

DATUM
HORIZONTAL: WASP–NAD83–S FEET
VERTICAL: NAVD88 FEET

NO.	REVISION	DATE	APRVD
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DRAWN JR
DESIGNED ES
CHECKED GP
REVIEWED WJM

AMEC Geomatrix

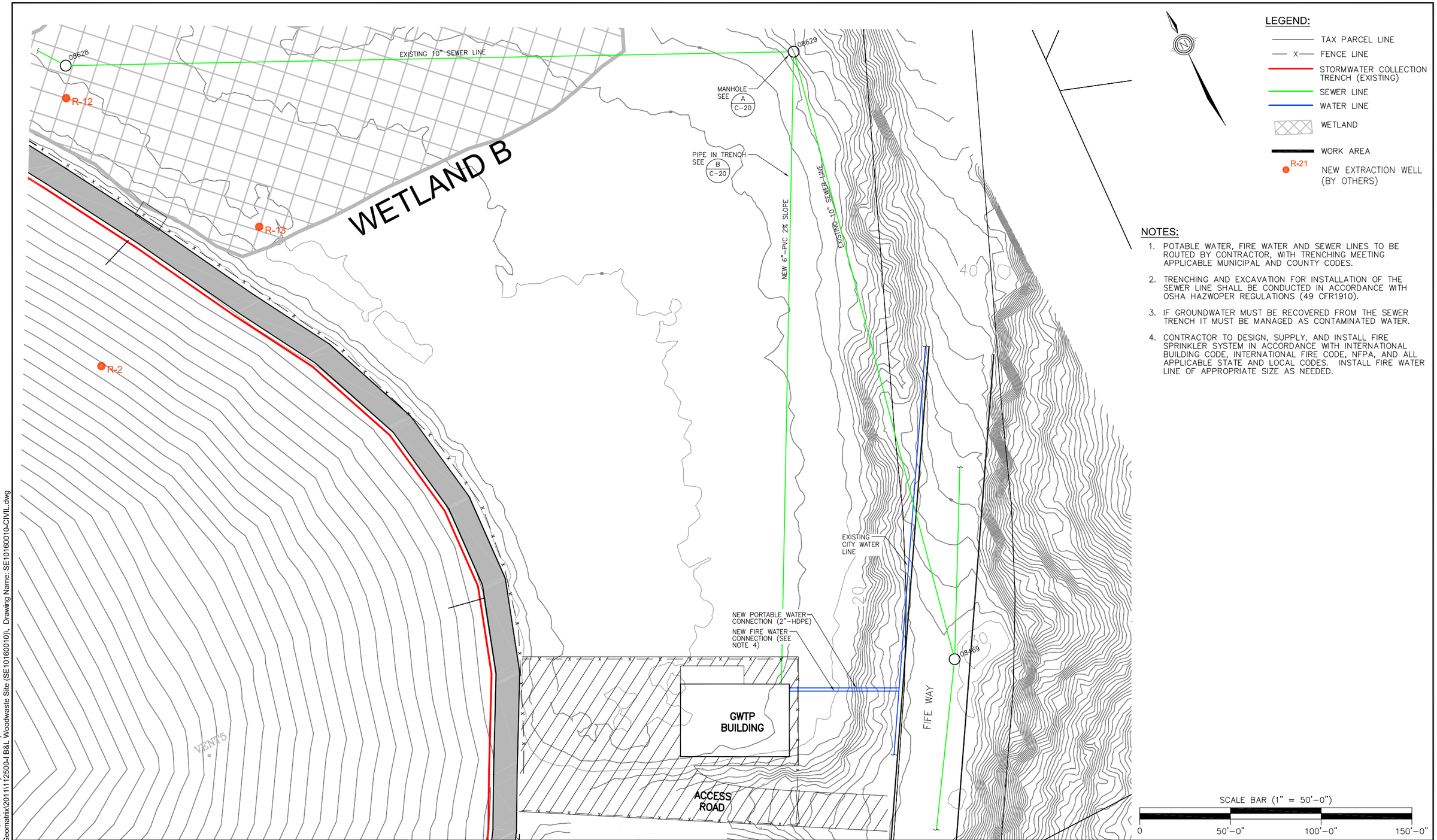
PIEZOMETER CONNECTIONS DETAIL

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

DATE: 05/25/11
PROJECT NO.: SE10160010

DRAWING C–16

Plot Date: 05/25/11 - 11:08am, Plotted by: Dell Survey2
Drawing Path: T:\Pete\Geomatrix\2011\12500-I B&L Woodwaste Site (SE10160010)\, Drawing Name: SE10160010-CIVIL.dwg



NOTES:

1. POTABLE WATER, FIRE WATER AND SEWER LINES TO BE ROUTED BY CONTRACTOR, WITH TRENCHING MEETING APPLICABLE MUNICIPAL AND COUNTY CODES.
2. TRENCHING AND EXCAVATION FOR INSTALLATION OF THE SEWER LINE SHALL BE CONDUCTED IN ACCORDANCE WITH OSHA HAZWOPER REGULATIONS (49 CFR1910).
3. IF GROUNDWATER MUST BE RECOVERED FROM THE SEWER TRENCH IT MUST BE MANAGED AS CONTAMINATED WATER.
4. CONTRACTOR TO DESIGN, SUPPLY, AND INSTALL FIRE SPRINKLER SYSTEM IN ACCORDANCE WITH INTERNATIONAL BUILDING CODE, INTERNATIONAL FIRE CODE, NFPA, AND ALL APPLICABLE STATE AND LOCAL CODES. INSTALL FIRE WATER LINE OF APPROPRIATE SIZE AS NEEDED.

REFERENCES:
PLANS

DATUM
HORIZONTAL: WASP-NAD83-S FEET
VERTICAL: NAVD88 FEET

NO.	REVISION	DATE	APRVD
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DRAWN JR
DESIGNED ES
CHECKED GP
REVIEWED WJM

AMEC Geomatrix

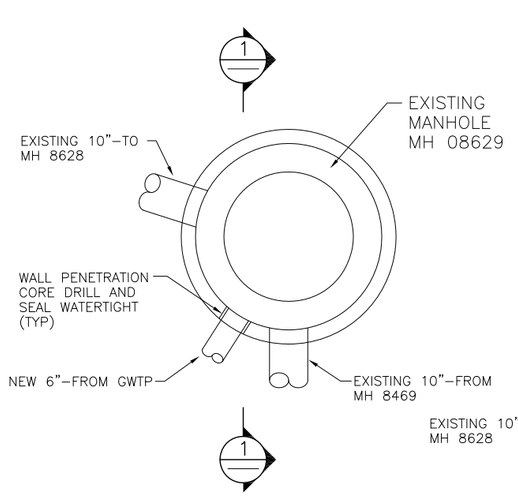
WATER AND SEWER SERVICE CONNECTIONS

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

DATE: 05/24/11
PROJECT NO.: SE10160010

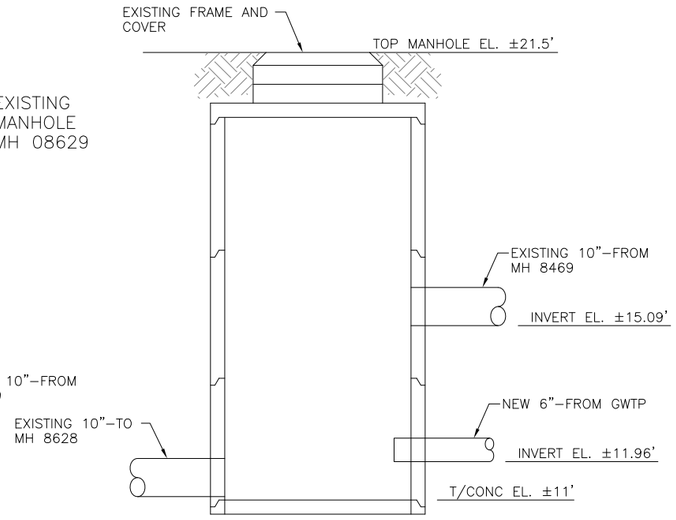
DRAWING C-19

Plot Date: 05/24/11 - 12:38pm, Plotted by: Dell Survey2
Drawing Path: T:\Pete\Geomatrix\2011\12500-I B&L Woodwaste Site (SE10160010)\, Drawing Name: SE10160010-CIVIL.dwg



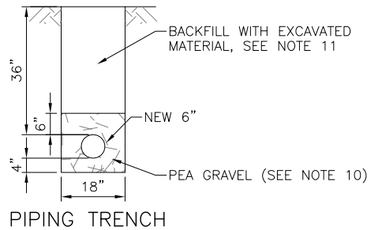
PLAN VIEW

DETAIL A
N.T.S. C–19



EXISTING MANHOLE 8629

SECTION 1
N.T.S.



PIPING TRENCH

SECTION B
N.T.S. C–19

NOTES:

1. CONTRACTOR SHALL BE RESPONSIBLE TO LOCATE ANY EXISTING UNDERGROUND LINES BEFORE START OF EXCAVATION.
2. CONTRACTOR SHALL BE RESPONSIBLE OF PROTECTING WETLAND AND AGRICULTURAL DITCHES AGAINST ANY ADVERSE IMPACT DURING THE COURSE OF THE PROJECT. CLEANUP AND/OR RESTORATION SHALL BE AT CONTRACTOR COST
3. ALL EXCAVATIONS AND TRENCHING WORK SHALL BE PERFORMED IN ACCORDANCE WITH CURRENT WISHA AND OSHA REGULATIONS ON EXCAVATIONS, TRENCHING, AND SHORING
4. TRENCH SIDES SHALL BE STABILIZED WITH SLOPES, BENCHING OR SHORING AS PER OSHA REGS, UNLESS TRENCH IS LESS THAN 5 FEET DEEP, AND IT HAS BEEN DETERMINED BY A COMPETENT PERSON THAT THERE IS NO POTENTIAL FOR CAVE–IN.
5. EXCAVATED MATERIAL SHALL BE STORED AT LEAST TWO FEET FROM THE EDGE OF THE EXCAVATION
6. WHERE WORKERS ARE REQUIRED TO BE IN TRENCHES 4 FEET DEEP OR MORE, LADDERS OR STEPS SHALL BE PROVIDED AND LOCATED AS TO PROVIDE A MEANS OF EXIT WITH NO MORE THAN 25' OF LATERAL TRAVEL
7. REMOVE ALL EXCESS MATERIAL AND REMAINING DEBRIS FROM THE WORK AREA AND DISPOSAL IN ACCORDANCE WITH APPLICABLE REGULATION AND STANDARDS
8. SEWER LINE SHALL BE INSTALLED ON A 2% GRADE OR GREATER
9. THE MINIMUM COVER OVER PIPING SHALL BE 36 INCHES IN A NON–DRIVING SURFACE. IN DRIVING AREAS, MINIMUM COVER OVER THE PIPE SHALL BE 5 FEET FOR PVC AND 3 FEET FOR DUCTILE IRON PIPE
10. PEA GRAVEL (No. 89 ASTM D448, NATURALLY ROUNDED) MUST BE PLACED 4 INCHES BELOW THE INVERT TO 6 INCHES ABOVE THE TOP OF THE PIPE.
11. BACKFILL MATERIAL SHALL BE ESSENTIALLY FREE FROM VARIOUS TYPES OF WOOD WASTE, CONSTRUCTION DEBRIS OR OTHER EXTRANEOUS OR OBJECTIONABLE MATERIAL.
12. ALL SERVICE PIPES LEADING FROM THE BUILDING SHALL BE BURIED NOT LESS THAN 12 INCHES BELOW THE AVERAGE LOCAL FROST DEPTH OF THE PROPOSED FINAL GRADE, BUT IN NO CASE LESS THAN 12 INCHES BELOW THE PROPOSED FINAL GRADE. ENGINEER SHALL DETERMINE THE FINAL DEPTH
13. APPROVED BACKFLOW PREVENTION ASSEMBLIES SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF WASHINGTON ADMINISTRATIVE CODE (WAC 246–290–490) AND UPC SECTION 603. WAC 51.56.0600 REQUIRES COORDINATION BETWEEN PIERCE COUNTY AND THE WATER PURVEYOR FOR CROSS CONTROL REQUIREMENTS
14. ALL PIPES SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER'S INSTRUCTION AND THE UPC
15. BACKFILLING UP TO 12 INCHES OVER THE TOP OF THE PIPE SHALL BE EVENLY AND CAREFULLY PLACED. THE REMAINING DEPTH OF TRENCH IS TO BE FILLED IN ACCORDANCE WITH APPLICABLE CONSTRUCTION STANDARDS IDENTIFIED IN THE GENERAL PROVISIONS OF THE "STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION," 1984 EDITION, AS PREPARED BY THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION AND THE AMERICAN PUBLIC WORKS ASSOCIATION, WASHINGTON STATE CHAPTER. MATERIALS CAPABLE OF DAMAGING THE PIPE OR ITS COATING SHALL BE REMOVED FROM THE BACKFILL MATERIAL

SCALE BAR (3/8" = 1'–0")

0 2'–6" 5'–0" 7'–6"

REFERENCES:
PLANS

DATUM
HORIZONTAL: WASP–NAD83–S FEET
VERTICAL: NAVD88 FEET

NO.	REVISION	DATE	APRVD
1	ISSUED FOR PLANS AND SPECIFICATIONS	APR 8	ES
2	ISSUED FOR TENDER	MAY 26	WJM

DRAWN JR
DESIGNED ES
CHECKED GP
REVIEWED WJM

AMEC Geomatrix

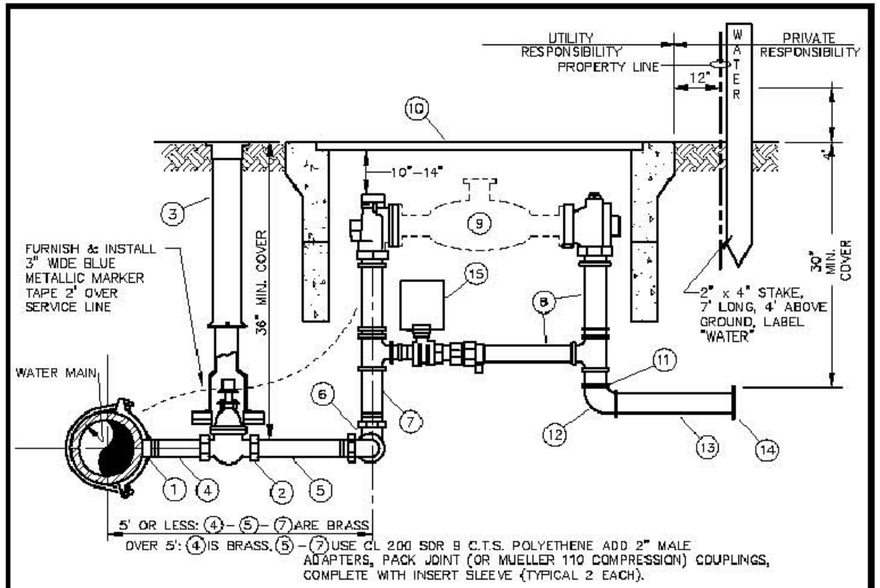
WATER AND SEWER DETAILS

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

DATE: 05/25/11
PROJECT NO.: SE10160010

DRAWING
C–20A

Plot Date: 05/25/11 - 11:09am, Plotted by: Dell Survey2
Drawing Path: T:\Pete\Geomatrix\2011\112500-I B&L Woodwaste Site (SE10160010)\, Drawing Name: SE10160010-EC01,2 & C12,20.dwg

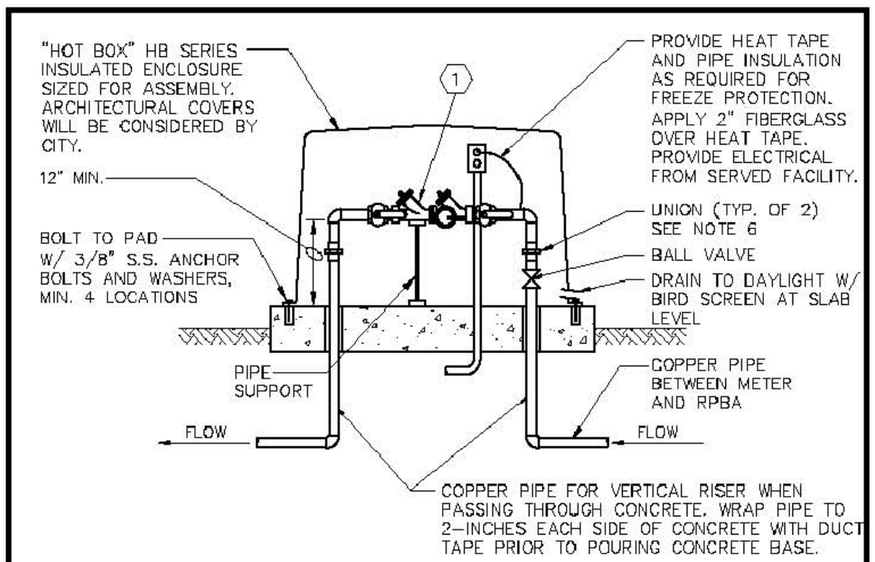


NO.	ITEM
1	ROMAC STYLE 202S STAINLESS STEEL DOUBLE STRAP TYPE SADDLE
2	2" RESILIENT WEDGE GATE VALVE WITH 2" OPERATING NUT
3	STANDARD CAST-IRON VALVE BOX (RICH NO. 940)
4	BRASS NIPPLE (3" MIN., 6" MAX.)
5	NIPPLE (SEE NOTE ABOVE)
6	BRASS SWING JOINT
7	BRASS NIPPLE (SEE NOTE ABOVE)
8	METER SETTER, 2" FORD VBH66-12B OR MUELLER B2423-2.1512 WITH METER SPACER (LENGTH DETERMINED BY DISTRICT PRIOR TO INSTALLATION)
9	METER (FURNISHED BY CITY) 17 1/4" LONG
10	METER BOX, NO.2 FOG TITE OR BROOKS NO. 65, WITH STEEL TRAFFIC COVER (FURNISH 2 BOXES).
11	1-1/2" OR 2" (MATCH METER SIZE) BRASS NIPPLE
12	1-1/2" OR 2" (MATCH METER SIZE) BRASS 90° EL
13	1-1/2" OR 2" x 12" (MATCH METER SIZE) BRASS NIPPLE
14	1-1/2" OR 2" (MATCH METER SIZE) CAP
15	6" PVC PIPE OVER BY-PASS VALVE.

CITY OF MILTON

1-1/2" & 2" WATER SERVICE

REVISION DATE:	SCALE:	DWG. NO.
3/30/07	NONE	WT-14



(1) WASHINGTON STATE APPROVED REDUCED PRESSURE BACKFLOW ASSEMBLY (RPBA) WITH TEST COCK PROTECTION AND BRONZE BODY BALL VALVE AT EACH END.

NOTES:

1. CONCRETE TO BE 2500 PSI MIX WITH AIR ENTRAINMENT.
2. COMPLETE ALL WORK IN ACCORDANCE WITH STATE, DISTRICT AND MANUFACTURER STANDARDS.
3. SYSTEM SHALL NOT BE PUT INTO SERVICE UNTIL RPBA IS APPROVED BY THE CITY AND TESTED/CERTIFIED BY A WASHINGTON STATE LICENSED BACKFLOW ASSEMBLY TESTER.
4. RPBA IS CONSIDERED PART OF THE PRIVATE SYSTEM AND SHALL BE MAINTAINED BY THE PROPERTY OWNER WITH ANNUAL CERTIFICATION REQUIRED.
5. DIELECTRIC UNIONS SHALL BE USED TO SEPARATE DISSIMILAR MATERIALS.
6. NO BRANCH CONNECTIONS ALLOWED BETWEEN METER AND RPBA.

CITY OF MILTON

REDUCED PRESSURE BACKFLOW ASSEMBLY 3/4" TO 2"

REVISION DATE:	SCALE:	DWG. NO.
3/30/07	NONE	WT-25

NOTES:

1. CONNECTION TO WATER MAIN AND WATER METER INSTALLATION BY CITY OF MILTON. CONTRACTOR TO AQUIRE PERMIT, AT CONTRACTOR'S EXPENSE, AND COORDINATE.
2. CONTRCATOR TO SUPPLY AND INSTALL BACKFLOW PREVENTION DEVICE AS PER CITY OF MILTON REQUIREMENTS. CONTRACTOR TO DETERMINE FINAL INSTALLATION. PREFERRED INSTALLATION IS IN BUILDING IF ACCEPTABLE TO CITY OF MILTON.

REFERENCES:
PLANS

DATUM
HORIZONTAL: WASP-NAD83-S FEET
VERTICAL: NAVD88 FEET

NO.	REVISION	DATE	APRVD
1	ISSUED FOR PLANS AND SPECIFICATIONS	APR 8	ES
2	ISSUED FOR TENDER	MAY 26	WJM

DRAWN JR
DESIGNED ES
CHECKED GP
REVIEWED WJM

AMEC Geomatrix

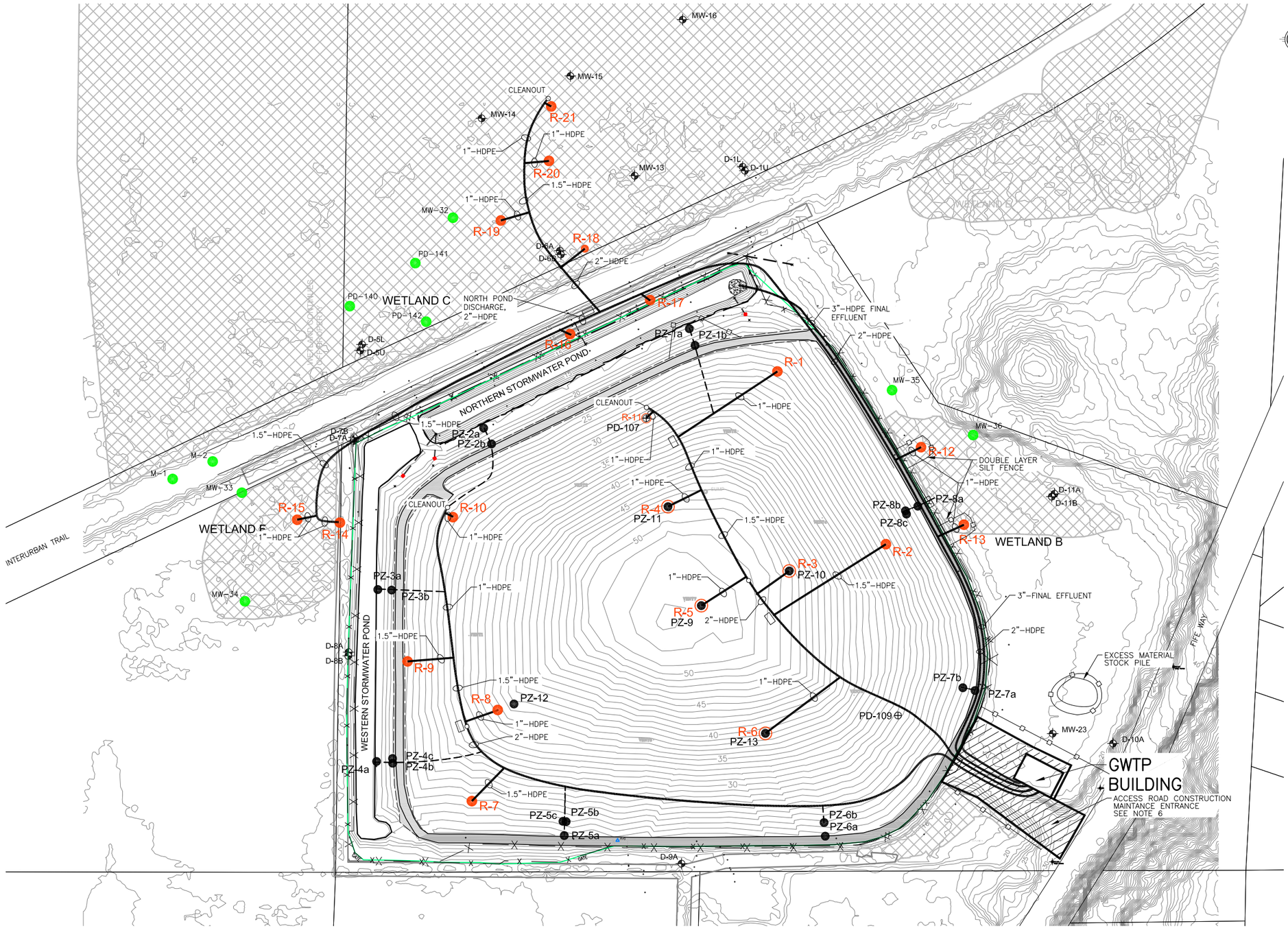
WATER AND SEWER DETAILS

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

DATE: 05/25/11
PROJECT NO.: SE10160010

DRAWING C-20B

Plot Date: 05/25/11 - 11:14am, Plotted by: Dell Survey2
Drawing Path: T:\Pete\Geomatrix\2011\112500-I B&L Woodwaste Site (SE10160010)\, Drawing Name: SE10160010-EC01.2 & C12.20.dwg



LEGEND:

- FENCE LINE
- 12" DIAMETER CULVERT
- AGRICULTURAL DITCH
- WETLAND
- STABILIZE AREA WITH CRUSHED ROCK
- PERIMETER ROAD
- METAL CLAD INSTRUMENT CABLE
- SILT FENCE
- R-21 NEW EXTRACTION WELL (BY OTHERS)
- R-11 EXISTING WELL INCLUDED IN EXTRACTION NETWORK
- NEW MONITORING WELL
- PZ-7a PIEZOMETER (EXISTING)

NOTES:

1. ALL ELEVATIONS ARE IN FEET UNLESS OTHERWISE NOTED.
2. SILT FENCE SHALL BE INSTALLED DOWN-GRADIENT OF CONSTRUCTION AND CLEARING ACTIVITIES.
3. THE SILT FENCE SHALL BE CONSTRUCTED AT THE INITIATION OF THE PROJECT BEFORE ANY SITE GRADING OR EARTHWORKS FOR THE GROUNDWATER TREATMENT PLANT AND WELL PIPING ARE STARTED.
4. ALL WORK WITHIN THE WETLAND AREAS WILL BE CONDUCTED DURING THE DRY SEASON TO AVOID/MINIMIZE IMPACTS TO SURFACE WATERS. ANY STORMWATER IS EXPECTED TO INFILTRATE. STOCKPILE SLOPES WILL BE PROTECTED/COVERED. FILTRATION BMPs WILL BE AVAILABLE AND IMPLEMENTED IF NEEDED.
5. TEMPORARY SWALES MAY BE REQUIRED BASED ON THE CONSTRUCTION ACTIVITIES AND SHALL BE APPROVED BY THE ENGINEER.
6. THE EXCESS EXCAVATED MATERIAL THAT WILL BE STOCK PILED FOR MORE THAN 30 DAYS SHALL BE SURROUNDED BY SILT FENCE. ALL WETLAND AREAS THAT ARE DISTURBED DURING CONSTRUCTION SHALL BE BACK-FILLED AND RESTORED WITHIN 30 DAYS.
7. CONTRACTOR SHALL WASH SOIL FROM TRUCKS (IF REQUIRED) BEFORE LEAVING THE AREA.
8. SWALES AND SILT FENCE SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EVERY RAIN EVENT AND REPAIRED AS REQUIRED TO MAINTAIN THE EFFECTIVENESS OF THE EROSION MANAGEMENT SYSTEM.
9. FILTRATION BEST MANAGEMENT PRACTICES WILL BE IMPLEMENTED DOWN GRADIENT OF EARTH DISTURBING ACTIVITIES AS NEEDED, SUCH AS COMPOST SACKS, STRAW WATTLES, GRAVEL BERMS AND POTENTIALLY SILT FENCE.

SCALE BAR (1" = 150'-0")

0 100' 200' 300'

REFERENCES:
PLANS

DATUM
HORIZONTAL: WASP-NAD83-S FEET
VERTICAL: NAVD88 FEET

NO.	REVISION	DATE	APRVD
1	ISSUED FOR PLANS AND SPECIFICATIONS	APR 8	WJM
2	ISSUED FOR TENDER	MAY 26	WJM

DRAWN JR
DESIGNED ES
CHECKED GP
REVIEWED WJM

AMEC Geomatrix

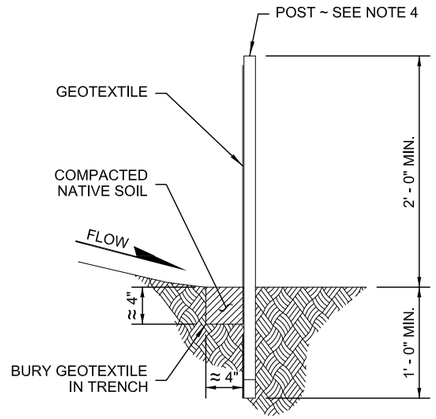
EROSION CONTROL PLAN

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

DATE: 05/25/11
PROJECT NO.: SE10160010

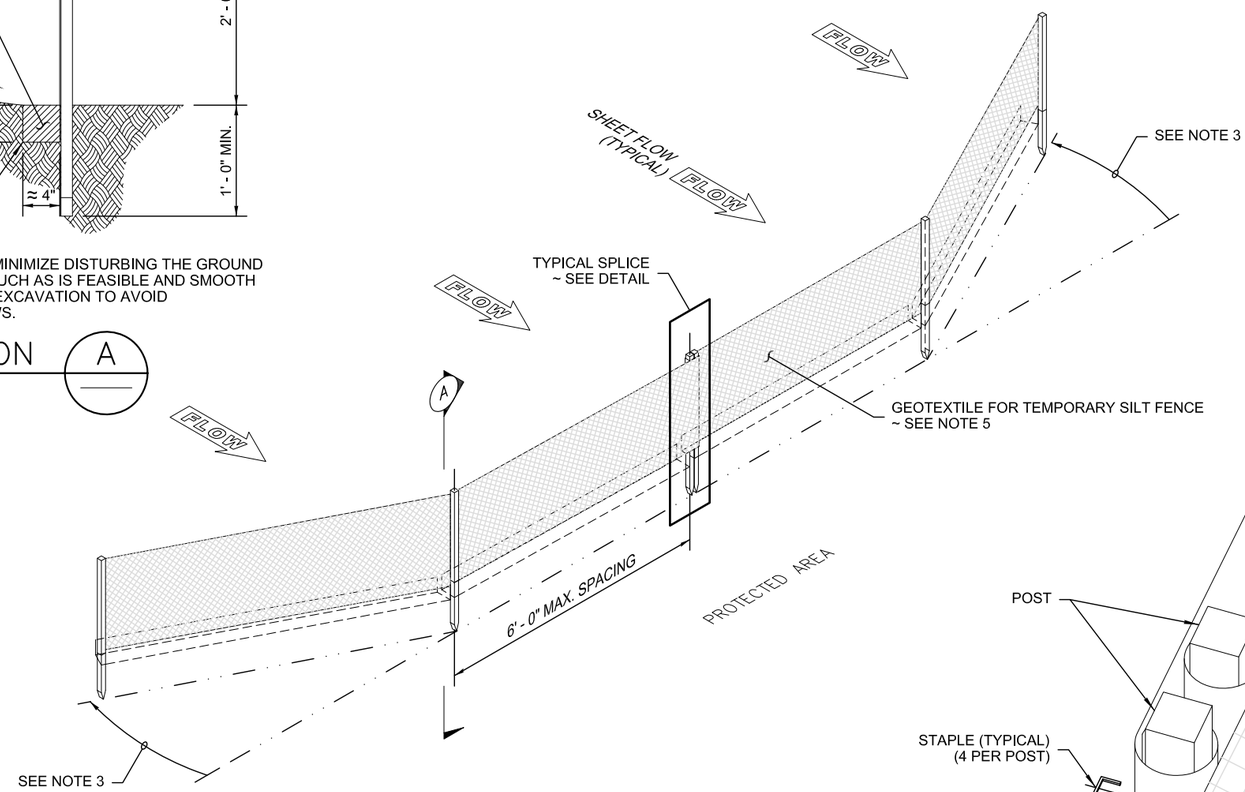
DRAWING EC-01

Plot Date: 05/25/11 - 1:31pm, Plotted by: Dell Survey2
Drawing Path: T:\Pete\Geomatrix\2011\112500-I B&L Woodwaste Site (SE10160010)\, Drawing Name: SE10160010-EC01.2 & C12.20.dwg



DURING EXCAVATION, MINIMIZE DISTURBING THE GROUND AROUND TRENCH AS MUCH AS IS FEASIBLE AND SMOOTH SURFACE FOLLOWING EXCAVATION TO AVOID CONCENTRATING FLOWS.

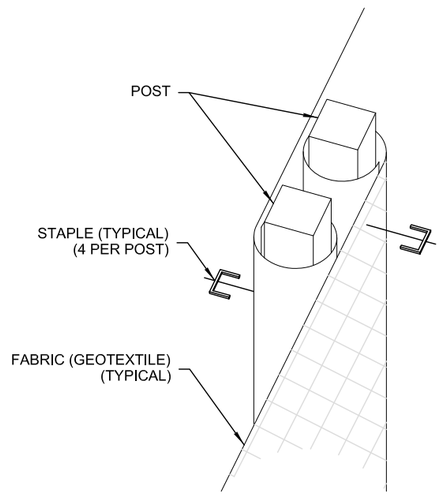
SECTION A
N.T.S.



1. Maximize detention of stormwater by placing fence as far away from toe of slope as possible without encroaching on sensitive areas or outside of the clearing boundaries.
2. Install silt fencing along contours.
3. Install the ends of the silt fence to point slightly up-slope to prevent sediment from flowing around the ends of the fence.
4. Posts shall be hardwood of sound quality. Min 1 1/4 inch by 1-1/4 inch.
5.

Geotextile for temporary silt fence

Geotextile Property	ASTM Test Method	Geotextile Property Requirements	
		Unsupported Between Posts	Supported Between Posts with Wire or Polymeric Mesh
AOS	D 4751	No. 30 max. for slit wovens, No. 50 for all other geotextile types, No. 100 min.	
Water Permittivity	D 4491	0.02 sec min.	
Grab Tensile Strength, in machine and x-machine direction	D 4632	180 lb min. in machine direction, 100 lb min. in x-machine direction	100 lb min.
Grab Tensile Strain, in machine and x-machine direction	D 4632	30% max. at 180 lb or more	
Ultraviolet (UV) Radiation Stability	D 4355	70% strength retained min. after 500 hours in xenon arc device	



SPLICED FENCE SECTIONS SHALL BE CLOSE ENOUGH TOGETHER TO PREVENT SILT LADEN WATER FROM ESCAPING THROUGH THE FENCE AT THE OVERLAP. JOINING SECTIONS SHALL NOT BE PLACED IN LOW SPOTS OR IN SUMP LOCATIONS.

REFERENCES:
PLANS

DATUM
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DRAWN JR
DESIGNED ES
CHECKED GP
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AMEC Geomatrix

EROSION CONTROL PLAN DETAILS

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

DATE: 05/25/11
PROJECT NO.: SE10160010

DRAWING EC–2