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

B&L Custodial Trust
606 Columbia Street NW, Suite 212
Olympia, Washington 98501

Prepared by

Floyd|Snider
Two Union Square
600 Union Street, Suite 601
Seattle, Washington 98101

AMEC Geomatrix
600 University Street, Suite 1020
Seattle, Washington 98101

June 2011

FINAL

B&L Woodwaste Site
Pierce County, Washington

Engineering Design Report (EDR) Addendum 3

Phase 2 Part 1 Remediation Design Report

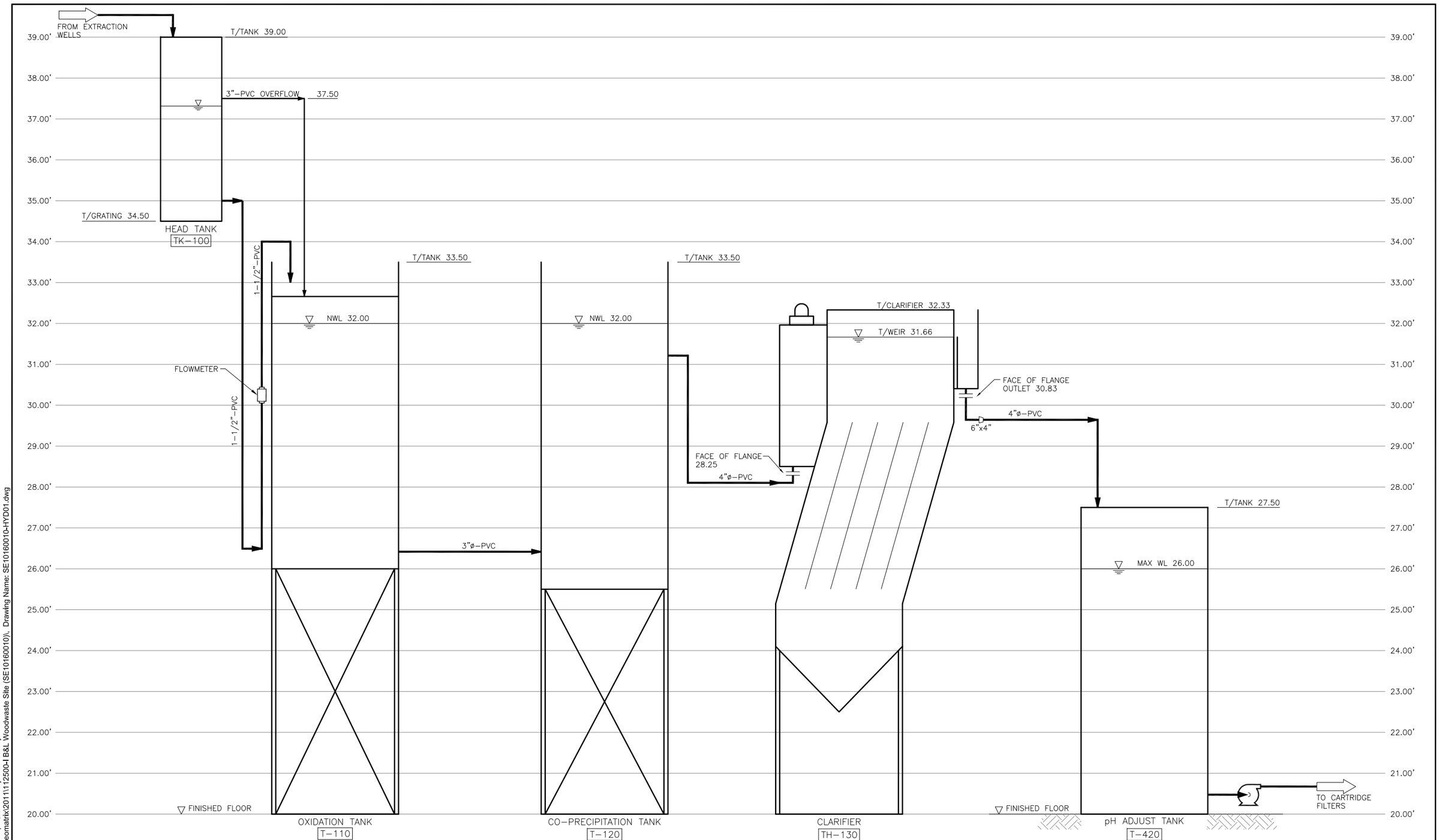
Groundwater Recovery and Treatment System

Appendix 3F
Construction Drawings and Specifications

(Specifications provided on CD-ROM)

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

FINAL



Plot Date: 05/25/11 - 12:10pm. Plotted by: Dell Survey2
Drawing Path: T:\Pete\Geomatrix\2011\112500-I B&L Woodwaste Site (SE10160010)\. Drawing Name: SE10160010-HYD01.dwg

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 TENDER	MAY 26	WJM

DRAWN JR
DESIGNED ES
CHECKED GP
REVIEWED WJM

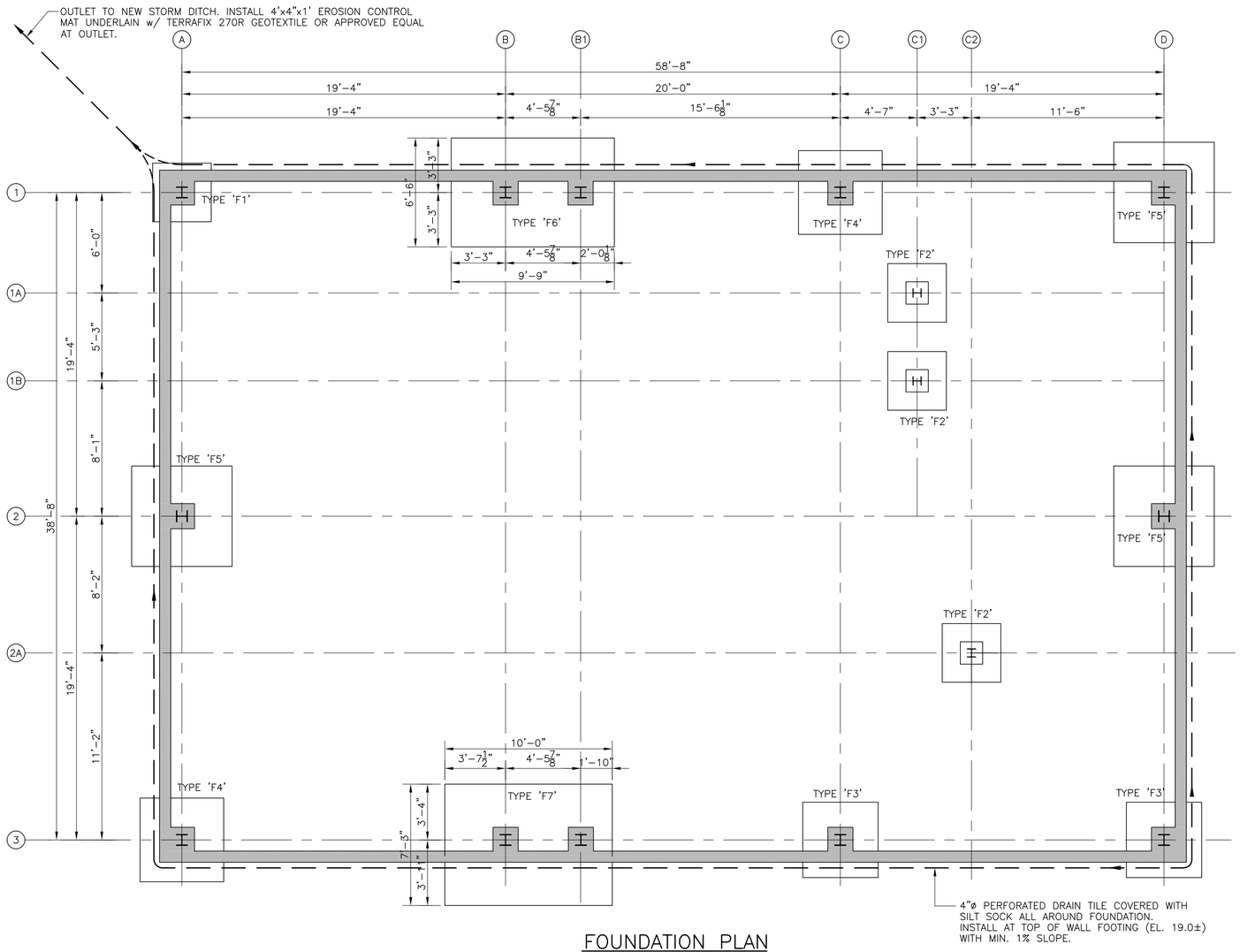
AMEC Geomatrix

GROUNDWATER TREATMENT PLANT HYDRAULIC PROFILE

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

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

DRAWING
HYD–01



4"ø PERFORATED DRAIN TILE COVERED WITH SILT SOCK ALL AROUND FOUNDATION. INSTALL AT TOP OF WALL FOOTING (EL. 19.0±) WITH MIN. 1% SLOPE.

FOUNDATION PLAN

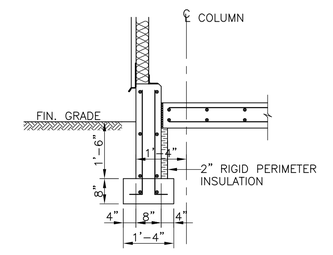
SCALE; 1/4" = 1'-0"

NOTE:-

1) DESIGN BUILD CONTRACTOR TO COORDINATE WALL, ROOF, FLOOR AND FOUNDATION PENETRATIONS WITH MECHANICAL, CIVIL, ELECTRICAL, ITC AND VENDOR REQUIREMENTS.

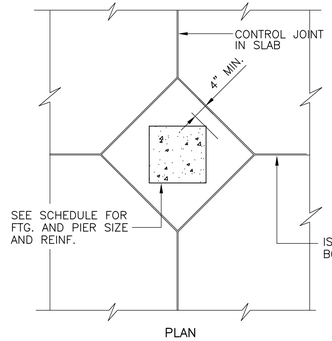
COLUMN FOOTING SCHEDULE

COLUMN FOOTING				PIER			
NO.	SIZE	TOP OF FOOTING ELEV.	REINFORCING	SIZE	DOWELS	TIE	TIE TYPE
TYPE 'F1'	3'-6"x3'-6"x12"	19'-4"	4-#5 EW	18"x18"	8-#6	#4 @ 12"	
TYPE 'F2'	3'-6"x3'-6"x12"	19'-4"	4-#5 EW	16"x16"	8-#5	#4 @ 12"	
TYPE 'F3'	4'-6"x4'-6"x12"	19'-4"	5-#5 EW	18"x18"	8-#6	#4 @ 12"	
TYPE 'F4'	5'-0"x5'-0"x12"	19'-4"	6-#5 EW	18"x18"	8-#6	#4 @ 12"	
TYPE 'F5'	6'-0"x6'-0"x12"	19'-4"	7-#5 EW	18"x18"	8-#6	#4 @ 12"	
TYPE 'F6'	6'-6"x9'-9"	17'-5"	11-#5 (N-S) 7-#5 (W-E)	2-18"x18"	8-#6	#4 @ 12"	
TYPE 'F7'	7'-3"x10'-0"	16'-5"	11-#5 (N-S) 8-#5 (W-E)	2-18"x18"	8-#6	#4 @ 12"	

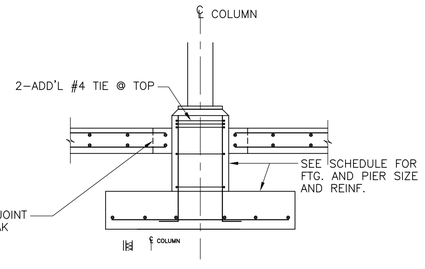


TYP. WALL FOUNDATION

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



PLAN



TYP. COLUMN FOUNDATION

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

FOR INFORMATION ONLY

DESIGN/BUILD CONTRACTOR TO PROVIDE FINAL DESIGN

SCALE BAR

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 & SPECIFICATIONS	04/20/11	-
2	ISSUED FOR TENDER	05/26/11	WJM

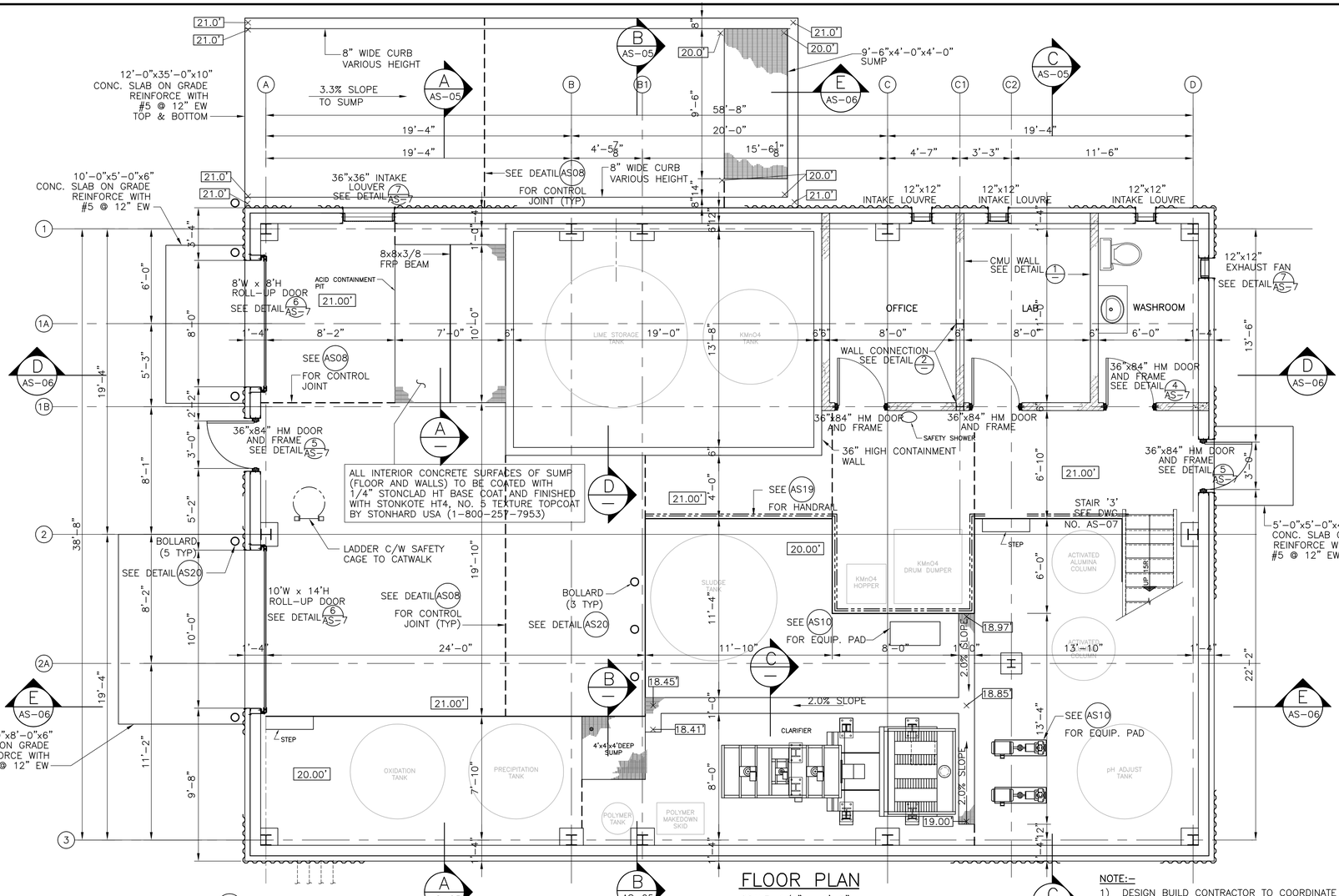
DRAWN YR
DESIGNED YR
CHECKED BE
REVIEWED WJM

AMEC Geomatrix

GROUNDWATER TREATMENT PLANT
ARCHITECTURAL / STRUCTURAL

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

DATE: 05/05/11
PROJECT NO.: SE10160010
DRAWING AS-01



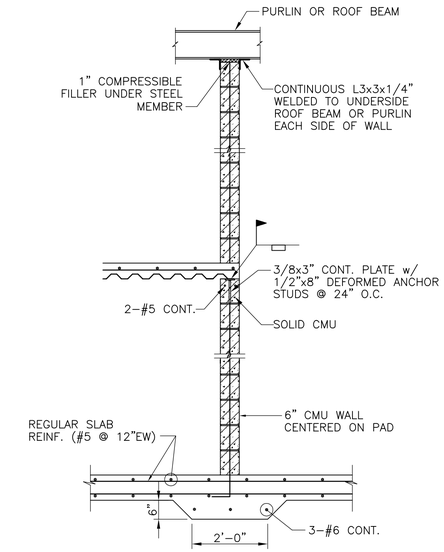
FLOOR PLAN

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

NOTE:- 21.00' DENOTES ELEVATION IN FT.

NOTE:-

1) DESIGN BUILD CONTRACTOR TO COORDINATE WALL, ROOF, FLOOR AND FOUNDATION PENETRATIONS WITH MECHANICAL, CIVIL, ELECTRICAL, ITC AND VENDOR REQUIREMENTS.



CMU WALL DETAIL 1

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

CMU WALL CONNECTION TO COLUMN 2

NTS

SECTION A

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

ALL INTERIOR CONCRETE SURFACES OF SUMP (FLOOR AND WALLS) TO BE COATED WITH 1/4" STONCLAD HT BASE COAT AND FINISHED WITH STONKOTE HT4, NO. 5 TEXTURE TOPCOAT BY STONHARD USA (1-800-257-7953)

SECTION B

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

SECTION C

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

SECTION D

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

SECTION E

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

FOR INFORMATION ONLY

DESIGN/BUILD CONTRACTOR TO PROVIDE FINAL DESIGN

SCALE BAR

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 & SPECIFICATIONS	04/20/11	-
2	ISSUED FOR TENDER	05/26/11	WJM

DRAWN YR
DESIGNED YR
CHECKED BE
REVIEWED WJM

AMEC Geomatrix

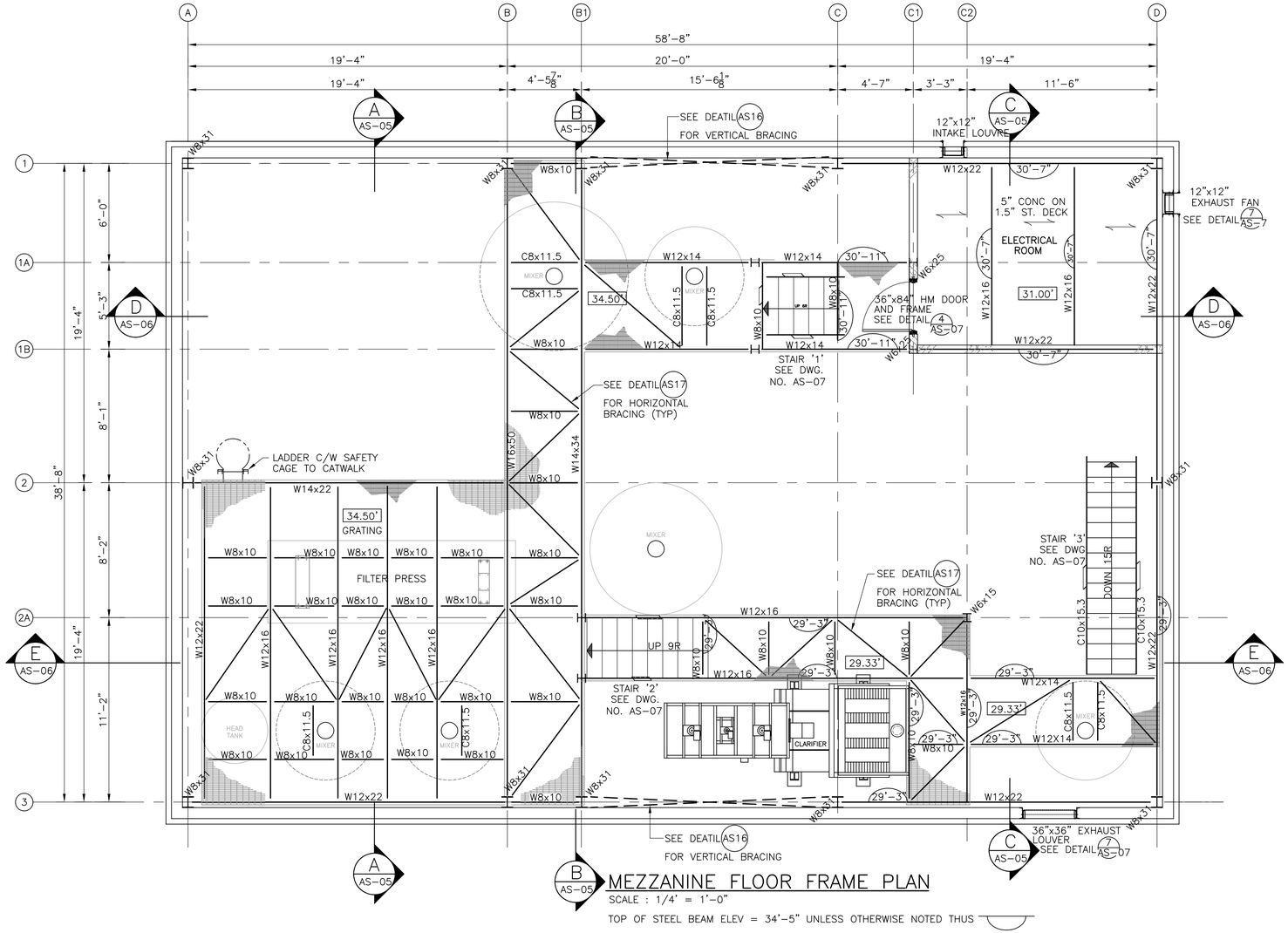
GROUNDWATER TREATMENT PLANT ARCHITECTURAL / STRUCTURAL

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

DATE: 05/05/11

PROJECT NO.: SE10160010

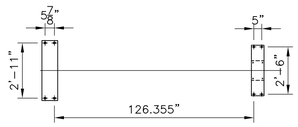
DRAWING AS-02



MEZZANINE FLOOR FRAME PLAN

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

TOP OF STEEL BEAM ELEV = 34'-5" UNLESS OTHERWISE NOTED THUS



FILTER PRESS

DEAD LOAD: 5,444 LB
LIVE LOAD; 7,044 LB

DESIGN LOADS

UNLESS OTHERWISE NOTED

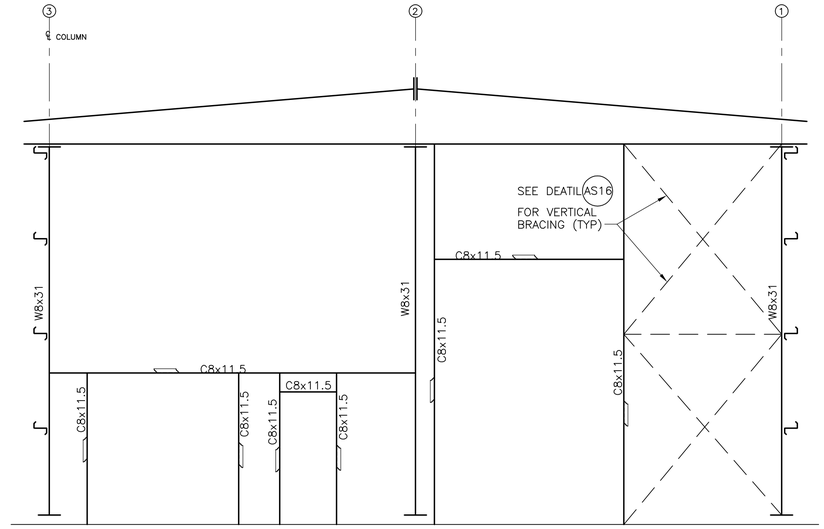
1. IN ELECTRICAL ROOM
   - DEAD LOAD = 80LB/SQ.FT. (20 LB/SQ.FT. PARTITION LOAD INCLUDED)
   - LIVE LOAD = 250 LB/SQ.FT. ON SLAB
2. ON GRATING
   - LIVE LOAD = 100 LB/SQ.FT.
3. SUSPENDED CONCENTRIC LOAD TO BEAMS WITH A SPAN OF 10' OR LONGER = 2 KIP

NOTE:-

1) DESIGN BUILD CONTRACTOR TO COORDINATE WALL, ROOF, FLOOR AND FOUNDATION PENETRATIONS WITH MECHANICAL, CIVIL, ELECTRICAL, ITC AND VENDOR REQUIREMENTS.
2) DESIGN BUILD CONTRACTOR TO ENSURE VERTICAL BRACING UNDER CATWALKS (IF REQUIRED) DOES NOT IMPEDE FOOT TRAFFIC, MATERIAL HANDLING AND EQUIPMENT MOVEMENT ON THE MAIN FLOOR, AND THAT MAINTENANCE ACCESS TO EQUIPMENT UNDER CATWALKS IS NOT HINDERED.

FOR INFORMATION ONLY

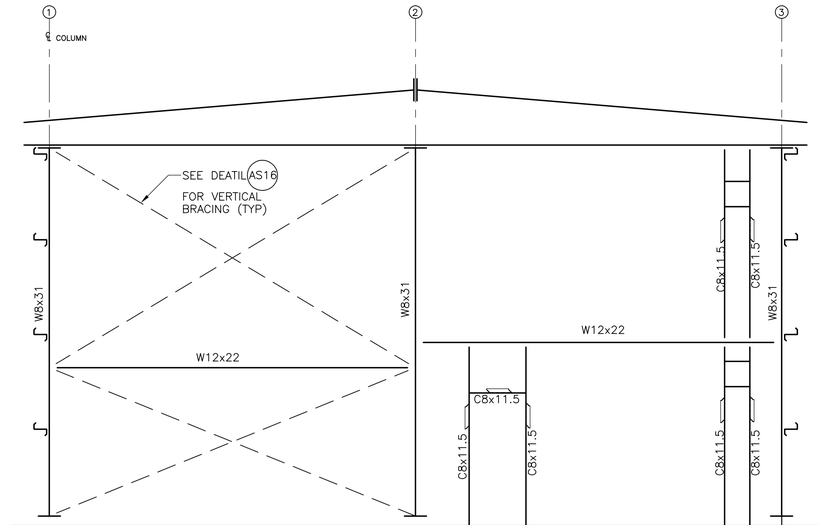
DESIGN/BUILD CONTRACTOR TO PROVIDE FINAL DESIGN



WEST ELEVATION

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

NOTE: GIRT AND GAG RODS ARE NOT SHOWN.



EAST ELEVATION

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

NOTE: GIRT AND GAG RODS ARE NOT SHOWN.

SCALE BAR

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 & SPECIFICATIONS	04/20/11	-
2	ISSUED FOR TENDER	05/26/11	WJM

DRAWN YR
DESIGNED YR
CHECKED BE
REVIEWED WJM

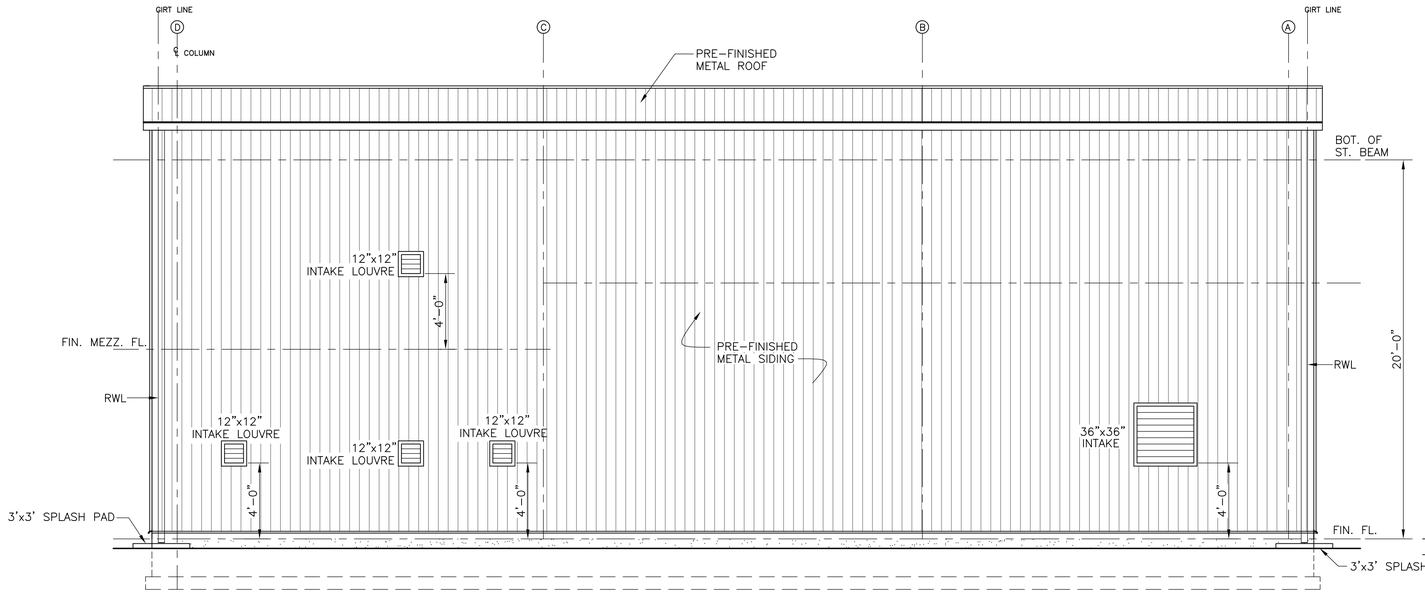
AMEC Geomatrix

GROUNDWATER TREATMENT PLANT
ARCHITECTURAL / STRUCTURAL

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

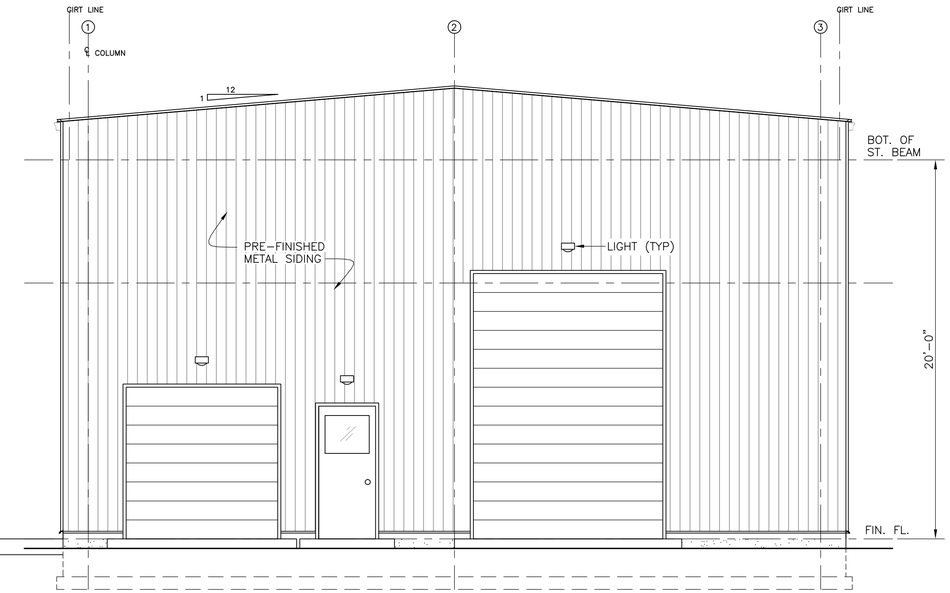
DATE: 05/05/11
PROJECT NO.: SE10160010

DRAWING
AS-03



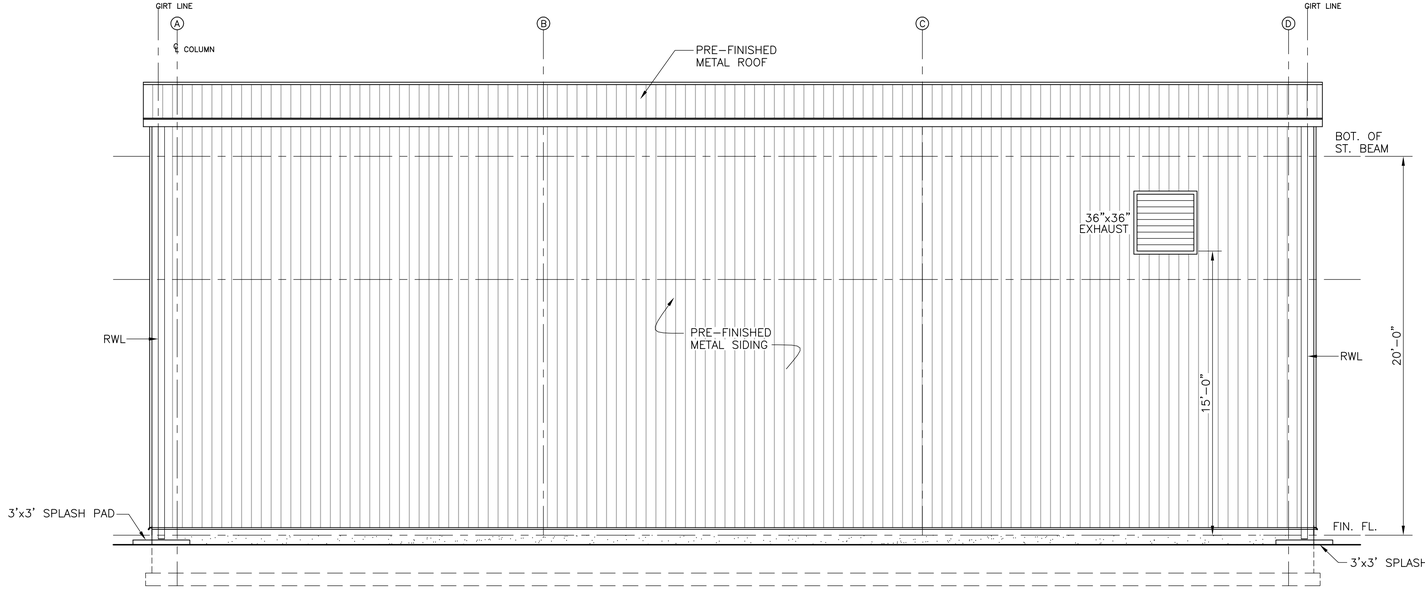
NORTH ELEVATION

SCALE; 1/4" = 1'–0"



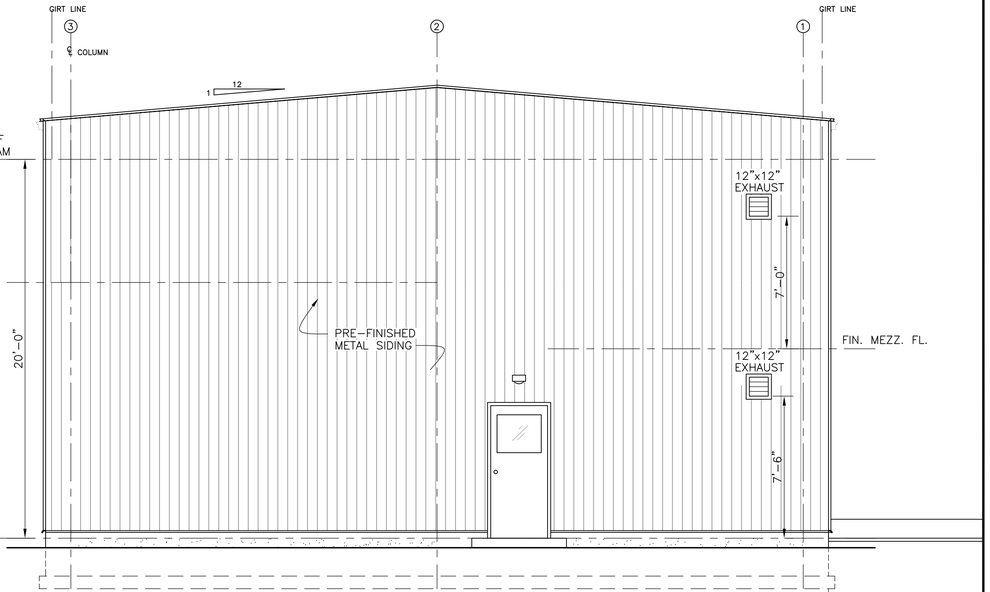
WEST ELEVATION

SCALE; 1/4" = 1'–0"



SOUTH ELEVATION

SCALE; 1/4" = 1'–0"



EAST ELEVATION

SCALE; 1/4" = 1'–0"

NOTE:–

1) DESIGN BUILD CONTRACTOR TO COORDINATE WALL, ROOF, FLOOR AND FOUNDATION PENETRATIONS WITH MECHANICAL, CIVIL, ELECTRICAL, ITC AND VENDOR REQUIREMENTS.

FOR INFORMATION ONLY

DESIGN/BUILD CONTRACTOR TO PROVIDE FINAL DESIGN

SCALE BAR

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 & SPECIFICATIONS	04/20/11	–
2	ISSUED FOR TENDER	05/26/11	WJM

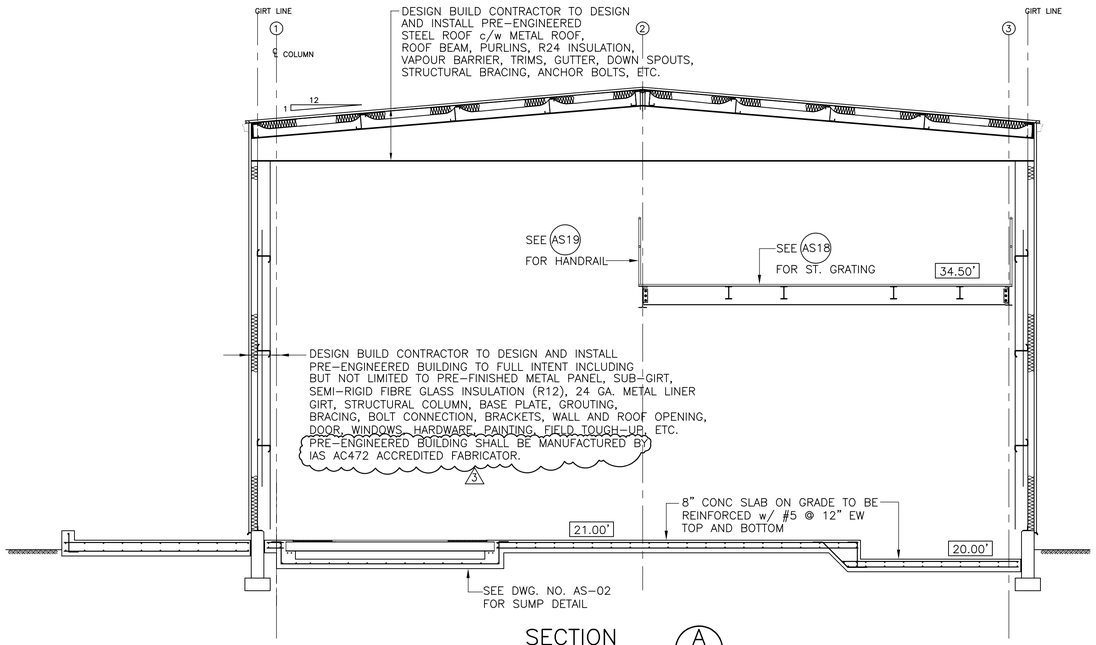
DRAWN YR
DESIGNED YR
CHECKED BE
REVIEWED WJM

AMEC Geomatrix

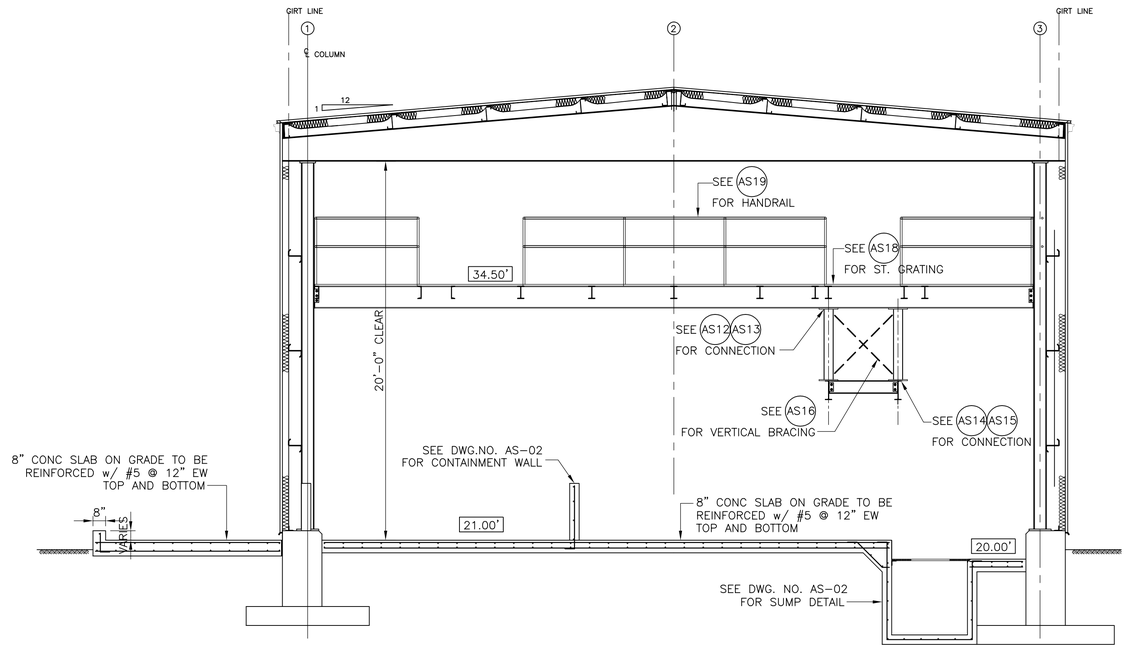
GROUNDWATER TREATMENT PLANT ARCHITECTURAL / STRUCTURAL

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

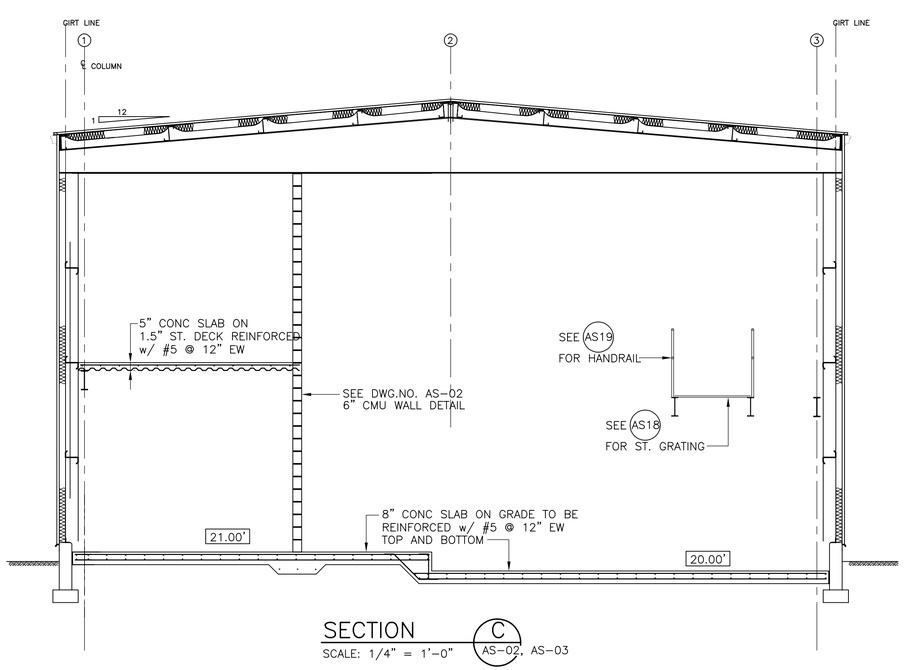
DATE: 05/05/11
PROJECT NO.: SE10160010
DRAWING AS–04



SECTION A
SCALE: 1/4" = 1'-0"
AS-02, AS-03



SECTION B
SCALE: 1/4" = 1'-0"
AS-02, AS-03



SECTION C
SCALE: 1/4" = 1'-0"
AS-02, AS-03

FOR INFORMATION ONLY

DESIGN/BUILD CONTRACTOR TO PROVIDE FINAL DESIGN

SCALE BAR
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 & SPECIFICATIONS	04/20/11	-
2	ISSUED FOR TENDER	05/26/11	WJM
3	ADDED NOTES	05/30/11	WJM

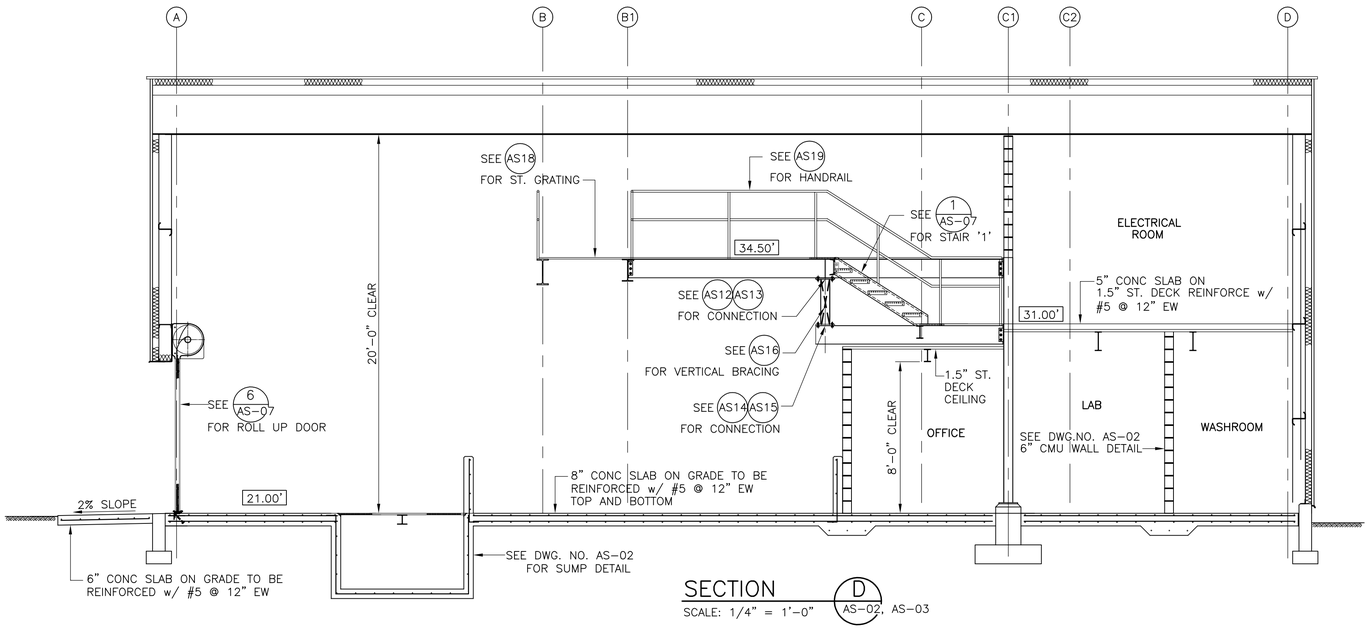
DRAWN YR
DESIGNED YR
CHECKED BE
REVIEWED WJM

AMEC Geomatrix

GROUNDWATER TREATMENT PLANT ARCHITECTURAL / STRUCTURAL

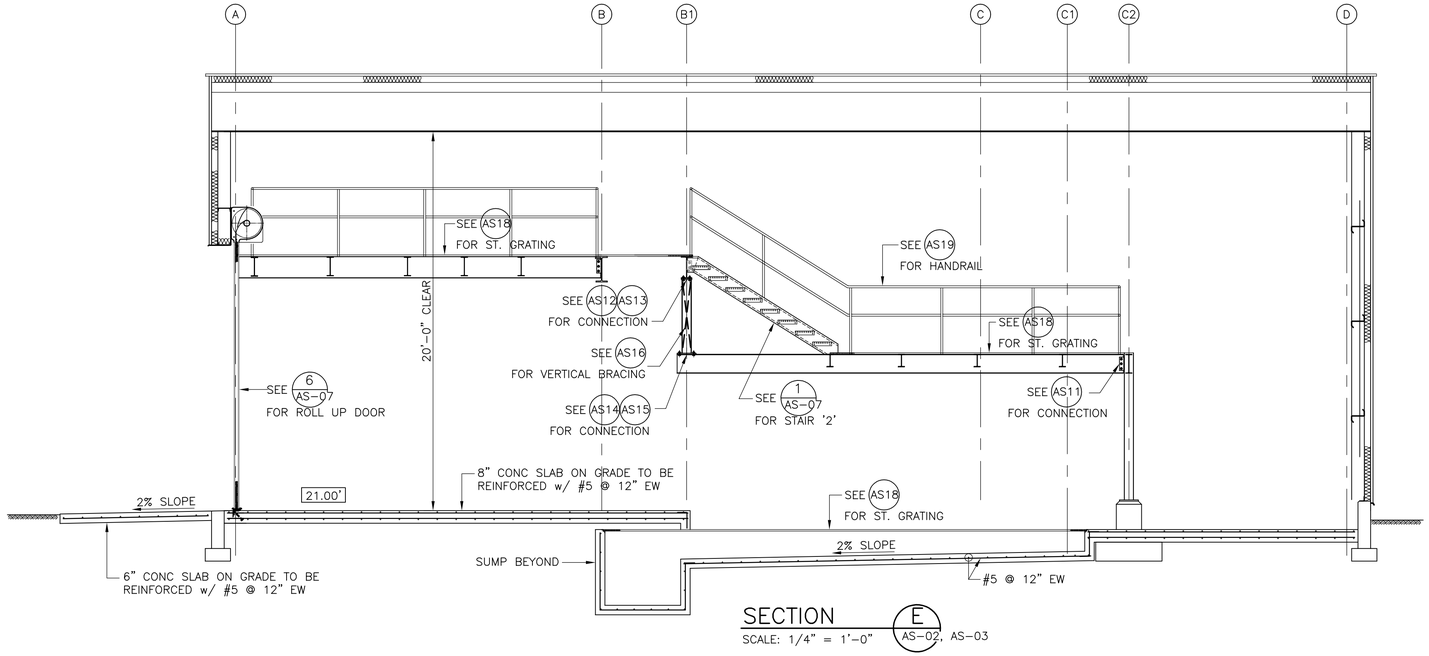
B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

DATE: 05/05/11
PROJECT NO.: SE10160010
DRAWING AS-05



SECTION D (AS-02, AS-03)

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



SECTION E (AS-02, AS-03)

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

FOR INFORMATION ONLY

DESIGN/BUILD CONTRACTOR TO PROVIDE FINAL DESIGN

SCALE BAR

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 & SPECIFICATIONS	04/20/11	–
2	ISSUED FOR TENDER	05/26/11	WJM

DRAWN YR
DESIGNED YR
CHECKED BE
REVIEWED WJM

AMEC Geomatrix

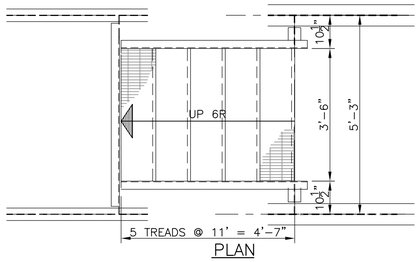
GROUNDWATER TREATMENT PLANT
ARCHITECTURAL / STRUCTURAL

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

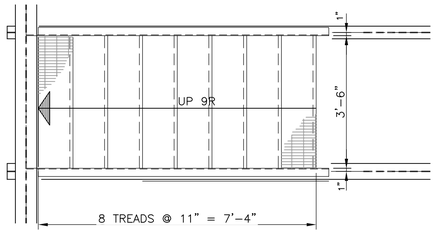
DATE: 05/05/11

PROJECT NO.: SE10160010

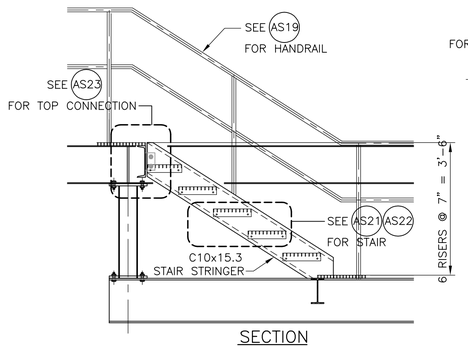
DRAWING
AS-06



PLAN

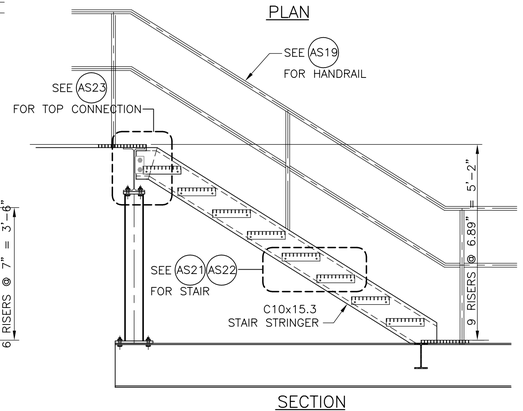


PLAN



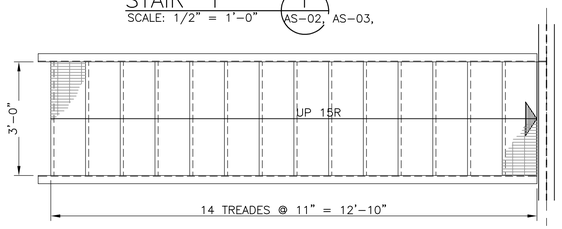
SECTION

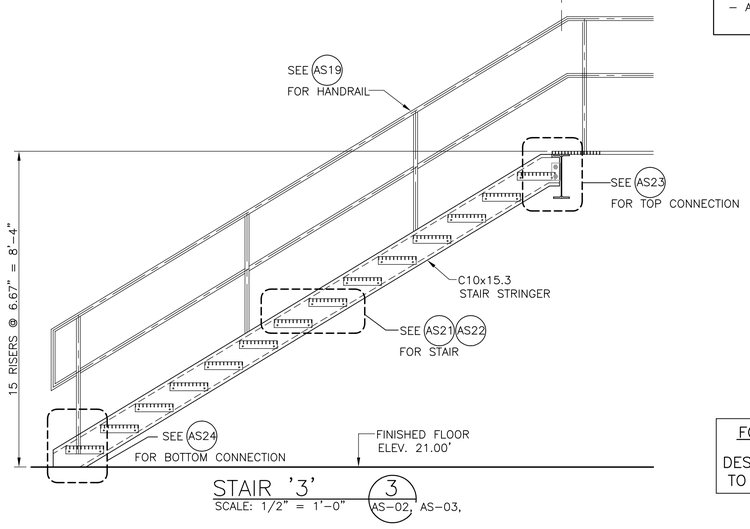
STAIR '1'
SCALE: 1/2" = 1'-0"
1 AS-02, AS-03,



SECTION

STAIR '2'
SCALE: 1/2" = 1'-0"
2 AS-02, AS-03,



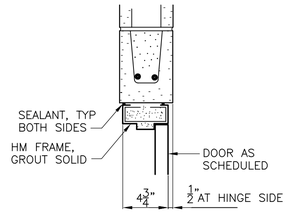


STAIR '3'
SCALE: 1/2" = 1'-0"
3 AS-02, AS-03,

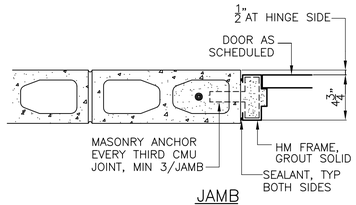
NOTE:–
- ALL STAIR TO BE GALVANIZED
- ALL TREADS TO BE NON-SLIP TREADS

FOR INFORMATION ONLY

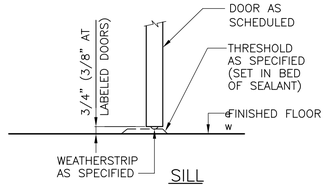
DESIGN/BUILD CONTRACTOR TO PROVIDE FINAL DESIGN



HEAD

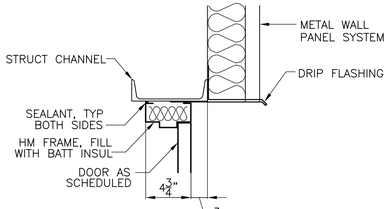


JAMB

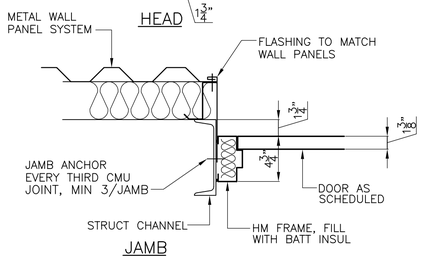


SILL

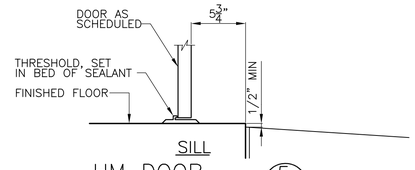
HM DOOR
SCALE 1 1/2" = 1'-0"
4 AS-02, AS-03



HEAD

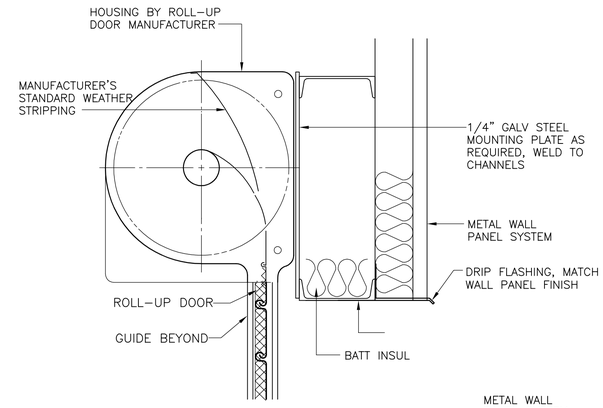


JAMB

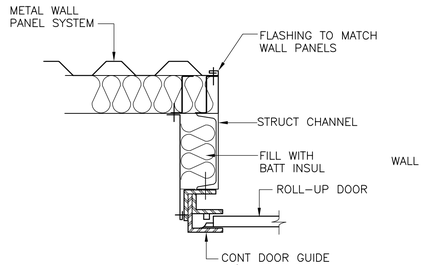


SILL

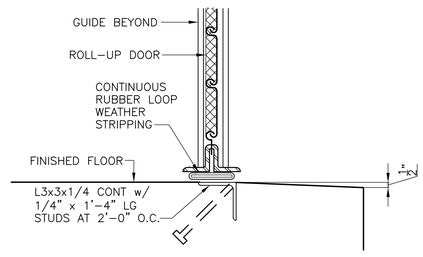
HM DOOR
SCALE 1 1/2" = 1'-0"
5 AS-02, AS-03



HEAD

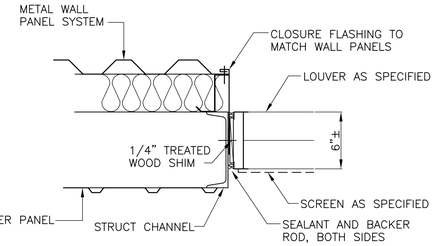


JAMB

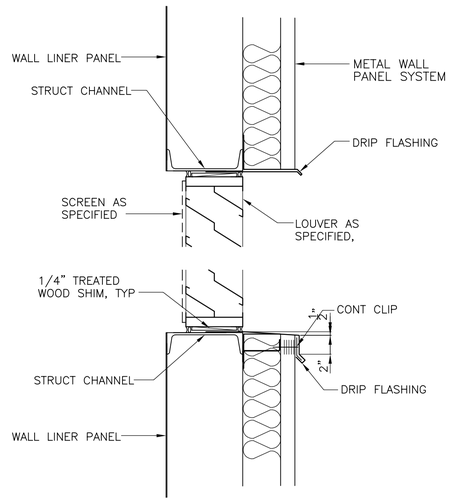


SILL

ROLL UP DOOR
SCALE 1 1/2" = 1'-0"
6 AS-02, AS-03



JAMB



LOUVER
SCALE 1 1/2" = 1'-0"
7 AS-02, AS-03

SCALE BAR
0 2'-6" 5'-0" 7'-6"

REFERENCES:	NO.	REVISION	DATE	APRVD
PLANS	1	ISSUED FOR PLANS & SPECIFICATIONS	04/20/11	–
	2	ISSUED FOR TENDER	05/26/11	WJM
DATUM HORIZONTAL: WASP–NAD83–S FEET VERTICAL: NAVD88 FEET				

DRAWN YR
DESIGNED YR
CHECKED BE
REVIEWED WJM

AMEC Geomatrix

GROUNDWATER TREATMENT PLANT ARCHITECTURAL / STRUCTURAL

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

DATE: 05/05/11
PROJECT NO.: SE10160010
DRAWING AS–07

GENERAL STRUCTURAL NOTES

GENERAL

1. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO LATEST EDITION OF THE INTERNATIONAL BUILDING CODE (IBC).

LOADS

SNOW LOAD	18 PSF
WIND LOAD	85 MPH, EXPOSURE "C"
SEISMIC	SITE CLASS D
	PEAK GROUND ACCELERATION: 0.292g
	SITE COEFFICIENT Fa; 1.035
	SITE COEFFICIENT Fv; 1.619
FLOOR LIVE LOADS	AS NOTED ON DWGS.
EQUIPMENT LOADS	AS NOTED ON DWGS.

FOUNDATIONS

1. REFER TO GEOTECHINICAL INVESTIGATION REPORT (MARCH 25, 2011) PREPARED BY AMEC EARTH & ENVIRONMENTAL INC. AMEC EARTH & ENVIRONMENTAL INC. DOES NOT GUARANTEE THE ACCURACY OF THIS REPORT.
2. FOUNDATIONS OVER STRUCTURAL FILL HAVE BEEN DESIGNED FOR AN ALLOWABLE BEARING PRESSURE OF 1000 PSF.

CONCRETE

1. ALL CAST-IN-PLACE CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4000 PSI, EXCEPT THAT CONCRETE SPECIFICALLY DETAILED AS CONCRETE FILL SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 2500 PSI. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. REINFORCING STEEL FOR CONCRETE SHALL CONFORM TO ASTM A615, GRADE 60 DEFORMED BARS. FURNISH AND ERECT IN ACCORDANCE WITH ACI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES, ACI 315.
3. THE MINIMUM REINFORCING FOR ALL CONCRETE WALLS AND SLABS SHALL BE AS FOLLOWS:

WALL THICKNESS	REINF EACH WAY	LOCATION
6"	#4@12"	CENTERED
8"	#5@12"	CENTERED
10"	#4@12"	EACH FACE
12"	#5@12"	EACH FACE

PROVIDE LARGER SIZES AND MORE REINFORCING IN ALL SECTIONS OF CONCRETE WHERE REQUIRED BY THE DETAILS ON THE DRAWINGS OR BY THE SPECIFICATIONS.

4. CLEARANCE FOR REINFORCEMENT BARS, UNLESS SHOWN OTHERWISE, SHALL BE:
   - WHEN PLACED ON GROUND: ——— 3"
   - ALL OTHER CONCRETE SURFACES:
     - #5 BAR OR SMALLER ——— 1 1/2"
     - #6 BAR OR LARGER ——— 2"
5. REFER TO WALL CORNER AND WALL INTERSECTION REINFORCING DETAIL. IN GENERAL, THE WALL CORNER REINFORCING SIZES AND SPACINGS SHALL BE CALLED OUT ON THE PLANS AND REFERENCED TO THESE DETAILS AND THE TYPICAL HORIZONTAL WALL REINFORCING SHALL LAP WITH THE HORIZONTAL REINFORCING.
6. ALL BENDS, UNLESS OTHERWISE SHOWN, SHALL BE A 90 DEGREE STANDARD HOOK AS DEFINED IN LATEST EDITION OF AC1 318.
7. ALL WALL CORNER AND WALL INTERSECTION REINFORCEMENT BARS SHALL BE CONTINUOUS AROUND CORNERS AND THROUGH COLUMNS OR PILASTERS. REINFORCEMENT SHALL BE EXTENDED INTO CONNECTING WALLS AND LAPPED ON THE OPPOSITE FACE OF THE CONNECTING WALLS, AS INDICATED ELSEWHERE ON THIS SHEET.
8. VERTICAL WALL BARS SHALL BE LAPPED WITH DOWELS FROM BASE SLABS AND EXTENDED INTO THE TOP FACE OF ROOF SLABS AND LAPPED WITH TOP SLAB REINFORCEMENT. PROVIDE A MINIMUM OF TWO FULL HEIGHT VERTICAL BARS WITH MATCHING DOWELS AT WALL ENDS, CORNERS AND INTERSECTIONS WITH SIZE TO MATCH TYPICAL VERTICAL REINFORCING STEEL SHOWN OR REQUIRED BY NOTES ABOVE.
9. UNLESS INDICATED OTHERWISE, ALL REINFORCEMENT BENDS AND LAPS, UNLESS OTHERWISE NOTED, SHALL SATISFY THE FOLLOWING MINIMUM REQUIREMENT:

DETAIL OF REINFORCEMENT – LAP LENGTHS					
BAR SIZE		#6 OR SMALLER	#7	#8	#9
CONC DESIGN STRENGTH		4000 PSI			
GR 40	TOP BAR	32 DIA, MIN 1'-6"	2'-6"	3'-3"	4'-0"
	OTHER BAR	22 DIA, MIN 1'-0"	1'-9"	2'-4"	3'-0"
GR 60	TOP BAR	45 DIA, MIN 2'-0"	3'-8"	4'-9"	6'-0"
	OTHER BAR	32 DIA, MIN 1'-6"	2'-8"	3'-6"	4'-4"

3 10. ALL CONCRETE WORKS AND STRUCTURAL GROUT SHALL BE INSPECTED BY THE WASHINGTON ASSOCIATION BUILDING OFFICIALS (WABO) CERTIFIED SPECIAL INSPECTORS EMPLOYED BY WABO CERTIFIED INSPECTION AGENCIES.

MASONRY

1. MORTAR SHALL CONFORM TO ASTM C270, TYPE S. MASONRY CEMENT SHALL NOT BE USED.
2. GROUT SHALL CONFORM TO ASTM C476 AND SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 2000 PSI CONTAINING NO MASONRY CEMENT.
3. CONCRETE BLOCK UNITS SHALL CONFORM TO ASTM C90 GRADE N-1 AND SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 1900 PSI.
4. THE MASONRY ASSEMBLY SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF f'_m =1500 PSI, NO SPECIAL INSPECTION (USE HALF ALLOWABLE DESIGN STRESSES).
5. REINFORCING STEEL FOR MASONRY SHALL CONFORM TO ASTM A615, GRADE 60 FOR DEFORMED BARS.
6. MASONRY WALLS SHALL BE GROUTED AND BE REINFORCED AS SCHEDULED UNLESS OTHERWISE SHOWN:

WALL THICKNESS	VERTICAL REINF	HORIZ REINF
6"	#5 @ 36" OC	2 – #4 @ 4'-0" OC
8"	#6 @ 48" OC	2 – #4 @ 4'-0" OC

7. HORIZONTAL REINFORCING SHALL BE PLACED AT THE BOTTOM OF WALLS, ROOF LEVEL, TOP AND BOTTOM OF ALL OPENINGS. AT THE TOP OF WALLS, AT THE MAXIMUM SPACING INDICATED IN SCHEDULE, AND ELSEWHERE AS INDICATED ON THE DRAWINGS. REINFORCING SHALL BE CONTINUOUS EXCEPT AT THE TOP AND BOTTOM OF OPENINGS WHERE IT SHALL EXTEND A MINIMUM OF 2'-0" BEYOND THE FACE OF THE OPENING OR TERMINATE IN A STANDARD HOOK AS SHOWN IN THE STANDARD DETAIL.

   REINFORCING BARS SHALL BE CONTINUOUS AROUND WALL CORNERS AND THROUGH WALL INTERSECTIONS AND HOOKED @ WALL ENDS PER STANDARD DETAIL. ALL HORIZONTAL BARS SHALL BE PLACED IN A BOND BEAM UNIT.
8. VERTICAL REINFORCING SHALL BE PLACED AT CORNERS, EACH SIDE OF OPENINGS, END WALLS (INCLUDING EACH SIDE OF CONTROL JOINTS), AT MAXIMUM SPACING INDICATED IN THE SCHEDULE, AND ELSEWHERE AS INDICATED ON THE DRAWINGS. BARS SHALL BE CONTINUOUS FROM FOUNDATION TO TOP OF WALL AND LAP SPLICED A MINIMUM OF 2'-6" TO FOUNDATION DOWELS.
9. GROUT ALL REINFORCED CELLS AND THOSE ADDITIONAL CELLS INDICATED IN THE PLANS AND DETAILS.
10. LAP REINFORCING 44 BAR DIAMETERS UNLESS OTHERWISE SHOWN.
11. GROUT ALL CELLS WITH ANCHOR BOLTS.
12. CMU WALL CONTROL JOINTS SHALL BE CONTINUOUS FROM TOP OF FOUNDATION TO TOP OF WALL OR PARAPET.

STRUCTURAL STEEL

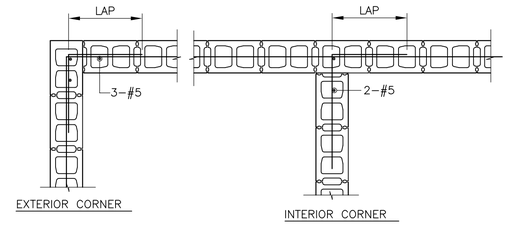
1. ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM A36 UNLESS SHOWN OTHERWISE ON THE PLANS. STRUCTURAL TUBING SHALL CONFORM TO ASTM A-500, GRADE B.
2. ALL STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED IN CONFORMANCE WITH THE AISC MANUAL OF STEEL CONTRUCTION, LATEST EDITION.
3. ALL BOLTS SHALL BE HIGH STRENGTH BOLTS CONFORMING TO ASTM A325-F(SC) UNLESS SHOWN OTHERWISE. USE DIRECT TENSION INDICATORS AT ALL HIGH STRENGTH BOLTS. BOLTS INDICATED AS MACHINE BOLTS OR ANCHOR BOLTS SHALL CONFORM TO ASTM A307 FOR CARBON STEEL, A193 FOR STAINLESS STEEL AND A153 FOR GALVANIZED STEEL.
4. ALL WELDS SHALL CONFORM TO THE CURRENT EDITION OF AWS D1.1. PERIODIC INSPECTION IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE. ALL WELDING SHALL BE PERFORMED WITH E70XX ELECTRODES EXCEPT THAT E60XX ELECTRODES SHALL BE USED FOR METAL DECKING. ALL WELDS SHALL BE PERFORMED BY CERTIFIED WELDERS.

3 5. ALL WELDS AND WELD INSPECTIONS SHALL BE DONE BY THE WASHINGTON ASSOCIATION BUILDING OFFICIALS (WABO) CERTIFIED WELDERS AND INSPECTORS EMPLOYED BY WABO CERTIFIED INSPECTION AGENCIES.

6. ALL STRUCTURAL STEEL TO BE EMBEDDED IN CONCRETE OR TO RECEIVE FIREPROOFING MATERIAL SHALL BE CLEAN AND FREE OF PAINT, OIL OR DIRT. ALL OTHER STRUCTURAL STEEL SHALL RECEIVE ONE COAT OF RUST INHIBITING PRIMER. SEE SPECIFICATIONS FOR ADDITIONAL PAINTING REQUIREMENTS.
7. SEE THE SPECIFICATIONS FOR ADDITIONAL STRUCTURAL STEEL REQUIREMENTS.

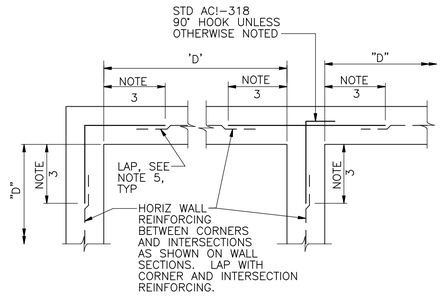
METAL DECKING

1. ROOF DECKING SHALL BE 1 1/2" DEEP x 22 GA (I=0.183 IN /FT, S=0.209 IN /FT) GALV STEEL DECK, FLOOR DECKING SHALL BE 1 1/2" DEEP x 18 GA (I=0.338 IN /FT, S=0.395 IN /FT) AS SPECIFIED. PROVIDE (5) 3/4" DIA PUDDLE WELDS PER 36" PANEL AT ALL SUPPORTS PERPENDICULAR TO DECK RIBS. PROVIDE 3/4" DIA. PUDDLE WELDS AT 12" ON CENTER AT ALL SUPPORTS PARALLEL TO DECK RIBS. SIDE SEAMS SHALL BE BUTTON PUNCHED AT 18" ON CENTER AND AS RECOMMENDED BY THE MANUFACTURER, UNLESS OTHERWISE NOTED.



NOTE:- LAP = 30 BAR DIAMETERS OR 2'-0" MIN. UNLESS OTHERWISE NOTED.

CMU WALL CORNERS (AS01)
NTS



TYPICAL SINGLE MAT CORNER AND INTERSECTION REINFORCING (AS02)
NTS

CORNER AND INTERSECTION REINFORCING DETAILS

1. TYPICAL HORIZONTAL WALL CORNER AND INTERSECTION REINFORCING LAYOUT IS SHOWN TO AVOID CONGESTION AND PERMIT PROPER PLACEMENT, FOR SIZE AND SPACING SEE PLANS. ALL HORIZONTAL REINFORCING AT CORNERS AND INTERSECTIONS SHALL BE FABRICATED AND INSTALLED WITH SPLICES LOCATED WHERE SHOWN REGARDLESS OF BAR SIZE AND SPACING.
2. WHERE THE CORNER OR INTERSECTION REINFORCING SIZE AND SPACING IS NOT SHOWN, NOTED OR TABULATED ON THE PLANS, THE SIZE AND SPACING SHALL BE THE SAME AS THE WALL HORIZONTAL REINFORCING SHOWN ON THE WALL SECTIONS OR AS NOTED FOR THE REINFORCING BETWEEN THE CORNERS OR INTERSECTIONS.
3. EXCEPT WHERE OTHERWISE SHOWN ON THE DRAWINGS, THE LENGTH INDICATED AS "NOTE 3" SHALL BE THE LESSER OF D/4, 10 FEET, OR 1.0 TIMES THE HEIGHT OF THE WALL, EXCEPT THAT IN NO CASE SHALL IT BE LESS THAN 2.0 FEET.
4. D = LENGTH OF WALL PARALLEL TO THE BAR LENGTH IN QUESTION.
5. EXCEPT WHERE OTHERWISE SHOWN ON THE DRAWINGS, THE LENGTH INDICATED AS "NOTE 5" SHALL BE EQUAL TO ONE "LAP LENGTH" AS REQUIRED BY THE GENERAL STRUCTURAL NOTES. USE THE LAP LENGTH AS REQUIRED FOR THE SMALLER OF THE TWO REINFORCING BARS BEING SPLICED.
6. UNLESS OTHERWISE NOTED, "B" AND "C" BARS ARE THE SAME SIZE AND SPACING AND, "F" AND "G" BARS ARE THE SAME SIZE AND SPACING.

REFERENCES:
PLANS

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

NO.	REVISION	DATE	APRVD
1	ISSUED FOR PLANS & SPECIFICATIONS	04/20/11	-
2	ISSUED FOR TENDER	05/26/11	WJM
3	ADDED NOTES	05/30/11	WJM

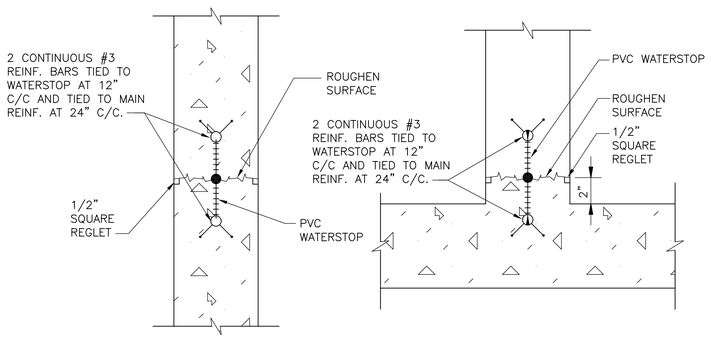
DRAWN YR
DESIGNED YR
CHECKED BE
REVIEWED WJM

AMEC Geomatrix

GROUNDWATER TREATMENT PLANT
ARCHITECTURAL / STRUCTURAL

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

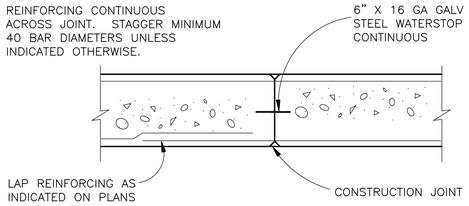
DATE: 05/05/11
PROJECT NO.: SE10160010
DRAWING AS-08



TYPICAL CONSTRUCTION JOINTS
NTS

AS03

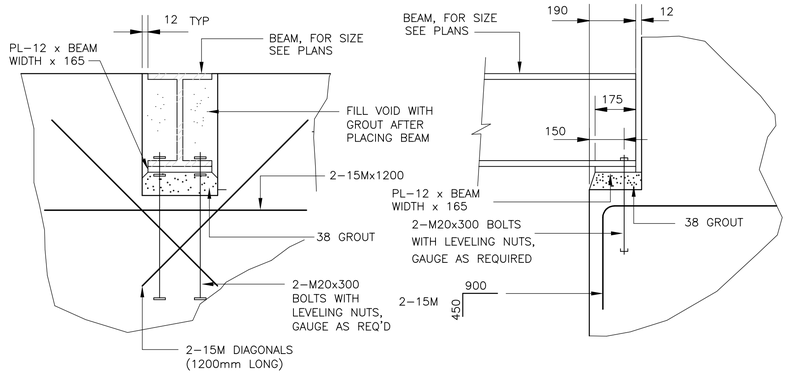
NOTE:
REINFORCING CONTINUOUS ACROSS JOINT. STAGGER MINIMUM 40 BAR DIAMETERS UNLESS INDICATED OTHERWISE.



PLAN

SLAB CONSTRUCTION JOINT
NTS

AS06

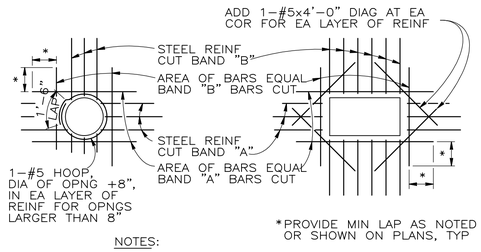


PERPENDICULAR TO WALL

PARALLEL TO WALL

BEAM SEAT DETAIL
NTS

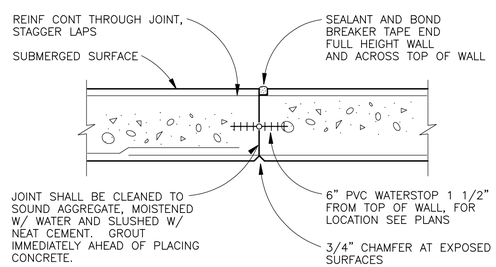
AS09



NOTES:
1. TYPICAL FOR ALL OPENINGS IN CONCRETE WALLS AND SLABS UNLESS INDICATED OTHERWISE ON PLANS.
2. DO NOT WELD REINFORCEMENT TO PIPE SLEEVES AND INSERTS.

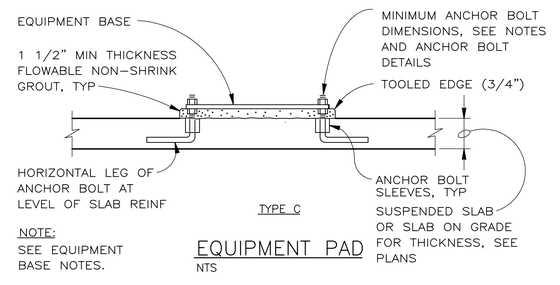
OPENING REINFORCING
NTS

AS04



VERTICAL CONSTRUCTION JOINT
NTS

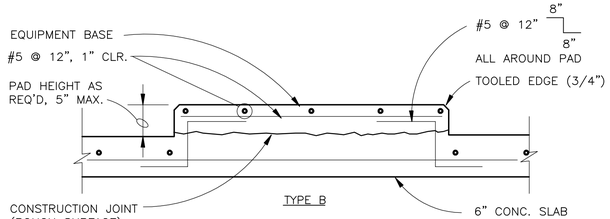
AS07



TYPE C

NOTE:
SEE EQUIPMENT BASE NOTES.

EQUIPMENT PAD
NTS



TYPE B

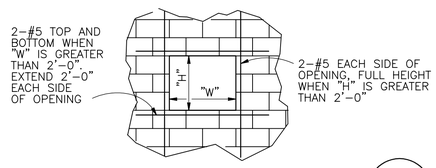
EQUIPMENT PAD
NTS

EQUIPMENT BASE NOTES

1. PAD SIZE SHALL BE A MINIMUM INDICATED OR AS SHOWN ON THE PLANS OR AS INDICATED BY THE MANUFACTURER AND APPROVED BY THE ENGINEER.
2. THE SIZE, NUMBER, TYPE, LOCATION, AND THREAD PROJECTION OF THE ANCHOR BOLTS SHALL BE DETERMINED BY THE EQUIPMENT MANUFACTURER, AND SHALL BE AS APPROVED BY THE ENGINEER. ANCHOR BOLTS SHALL BE HELD IN POSITION WITH A TEMPLATE WHILE CONCRETE FOR PAD IS BEING PLACED.
3. ANCHOR BOLT SLEEVES SHALL BE USED TO PROVIDE THE ANCHOR BOLT A MINIMUM MOVEMENT OF 1/2" IN ALL DIRECTIONS. THE MINIMUM SLEEVE LENGTH SHALL BE 8 TIMES THE BOLT DIAMETER. SLEEVES SHALL BE FILLED WITH NON SHRINK GROUT.
4. ANCHOR BOLT SLEEVES SHALL HAVE A MINIMUM INTERNAL DIAMETER 1" GREATER THAN BOLT DIAMETER AND A MAXIMUM INTERNAL DIAMETER 3" GREATER THAN ANCHOR BOLT DIAMETER. SLEEVES SHALL BE FILLED WITH NON SHRINK GROUT.
5. EQUIPMENT BASES SHALL BE INSTALLED LEVEL UNLESS SPECIFIED OTHERWISE.
6. WHEN REQUIRED ANCHOR BOLT LENGTH EXCEEDS PAD THICKNESS MINUS 1". USE DETAILS OF SLAB BLOCKOUT FOR ANCHOR BOLTS AS SHOWN. PRIOR TO CASTING SLAB CONCRETE.
7. WEDGES OR SHIMS SHALL BE USED TO SUPPORT THE BASE WHILE THE NON-SHRINK GROUT IS PLACED. TEMPORARY LEVELING NUTS SHALL BE BACKED OFF IF LEFT IN. THE WEDGES OR SHIMS SHALL NOT BE EXPOSED TO VIEW.

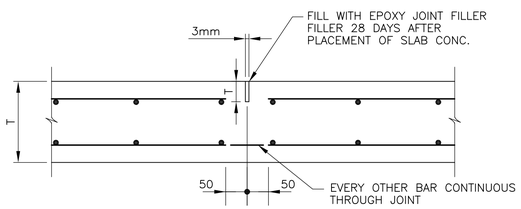
EQUIPMENT PAD DETAILS
NTS

AS10



CMU OPENING REINFORCING
NTS

AS05



NOTE:- CONTRACTOR SHALL USE STRING LINE OR OTHER POSITIVE MEANS TO PLACE REINFORCING AND LOCATE SAWCUT.

SAWN SLAB ON GRADE CONTROL JOINT
NTS

AS08

REFERENCES:
PLANS

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

NO.	REVISION	DATE	APRVD
1	ISSUED FOR PLANS & SPECIFICATIONS	04/20/11	-
2	ISSUED FOR TENDER	05/26/11	WJM

DRAWN YR
DESIGNED YR
CHECKED BE
REVIEWED WJM

AMEC Geomatrix

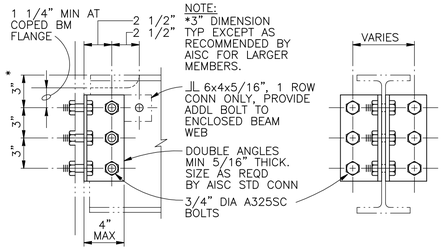
GROUNDWATER TREATMENT PLANT
ARCHITECTURAL / STRUCTURAL

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

DATE: 05/05/11
PROJECT NO.: SE10160010
DRAWING AS-09

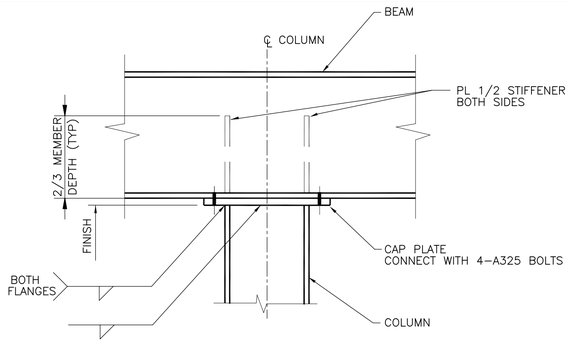
NOMINAL BEAM DEPTH, INCHES	ROWS OF BOLTS	LENGTH (3) OF ANGLE
36	7	1'–8 1/2"
30–33	6	1'–5 1/2"
24–27	5	1'–2 1/2"
16–21	4	11 1/2"
12–15	3	8 1/2"
8–10	2	5 1/2"
6	1	3"

NOTES:
1. NUMBER OF ROWS IS EQUAL TO NUMBER OF BOLTS TO ENCLOSED WEB.
2. ALL FRAMING CONNECTIONS SHALL CONFORM TO SCHEDULE UNLESS DETAILED OTHERWISE ON FRAMING PLANS.

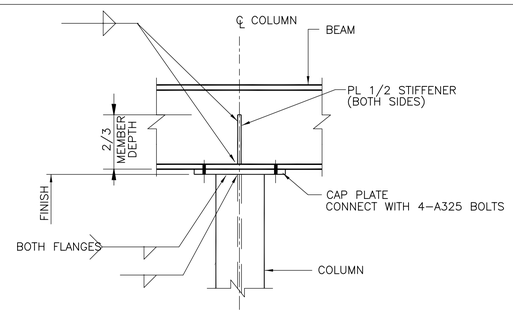


TYPICAL FRAMING CONNECTION AS11

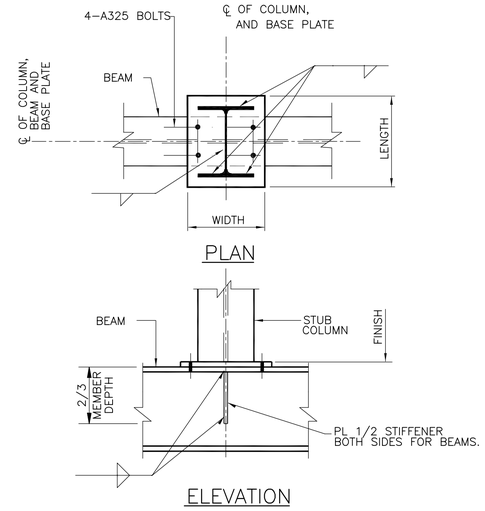
NTS



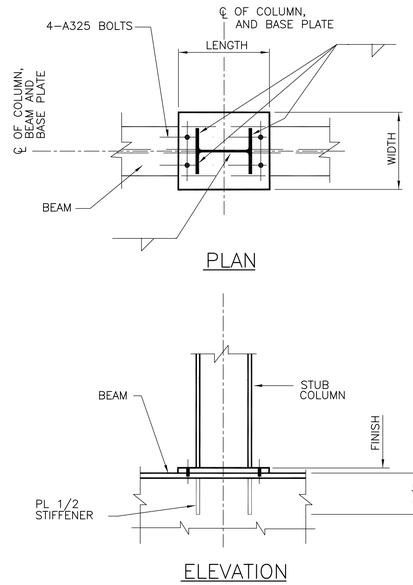
BEAM CONNECTION TO COLUMN CAP PLATE TYPE 'A' AS12



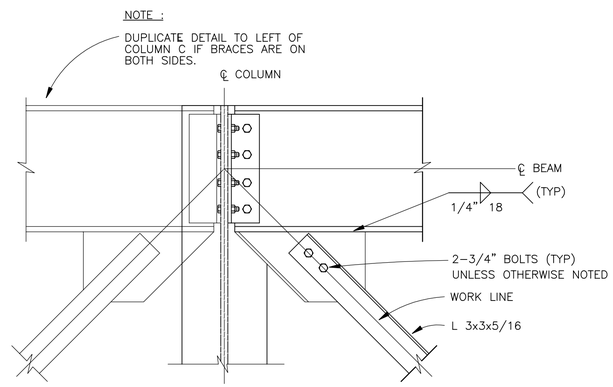
BEAM CONNECTION TO COLUMN CAP PLATE TYPE 'B' AS13

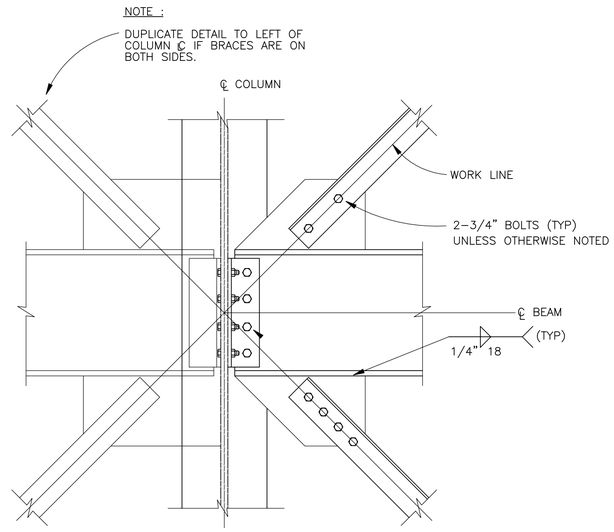


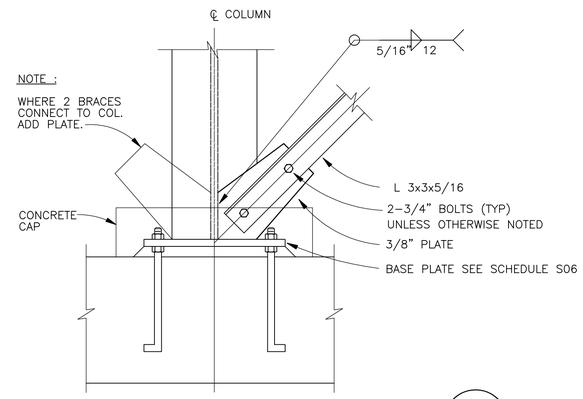
STUB COLUMN BASE PLATE DETAIL TYPE 'A' AS14



STUB COLUMN BASE PLATE DETAIL TYPE 'B' AS15







VERTICAL BRACING DETAILS AS16

NTS

REFERENCES:
PLANS

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

NO.	REVISION	DATE	APRVD
1	ISSUED FOR PLANS & SPECIFICATIONS	04/20/11	–
2	ISSUED FOR TENDER	05/26/11	WJM

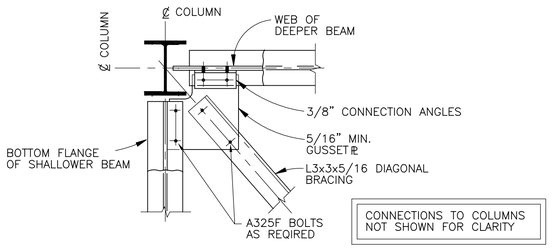
DRAWN YR
DESIGNED YR
CHECKED BE
REVIEWED WJM

AMEC Geomatrix

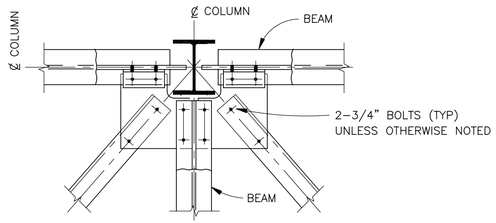
GROUNDWATER TREATMENT PLANT ARCHITECTURAL / STRUCTURAL

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

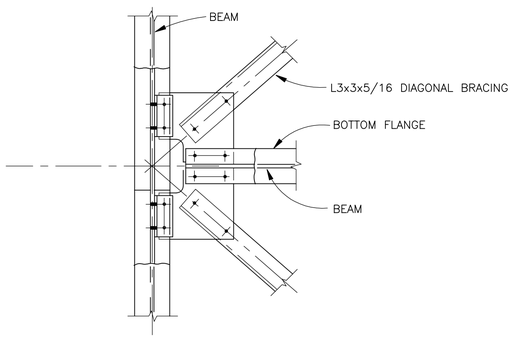
DATE: 05/05/11
PROJECT NO.: SE10160010
DRAWING AS–10



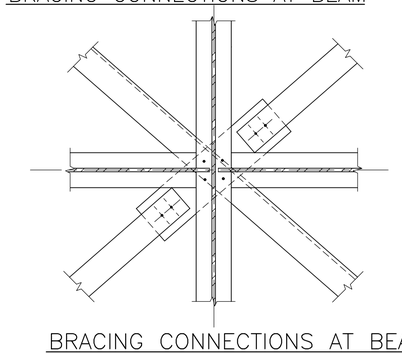
BRACING CONNECTIONS AT CORNERS



BRACING CONNECTIONS AT COLUMNS



BRACING CONNECTIONS AT BEAM

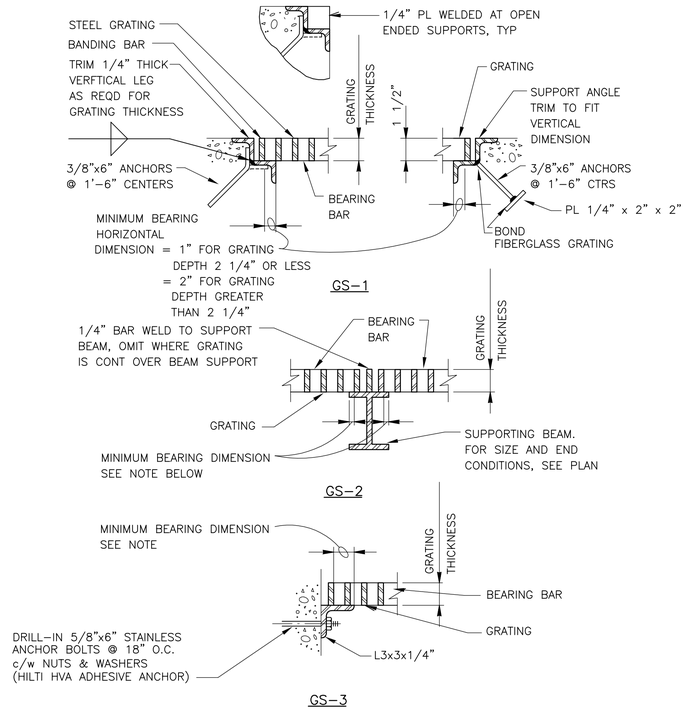


BRACING CONNECTIONS AT BEAM

HORIZONTAL BRACING DETAIL (AS17)

NTS

NOTE:
USE 4–3/4" DIA. A325 BOLTS FOR CONNECTION



GRATING SUPPORT

ALL STEEL GRATING TO BE GALVANIZED

FOOT TRAFFIC GRATING THICKNESS TABLE		
MAXIMUM SPAN	STEEL (IN.)	FIBERGLASS (IN.)
3'–6"	1"	1 1/2"
4'–0"	1"	1 1/2"
4'–6"	1"	MAXIMUM ALLOWABLE SPAN IS 4'–0" LIMIT DEFLECTION TO 1/4" MAXIMUM.
5'–0"	1 1/4"	
5'–6"	1 1/4"	
6'–0"	1 1/2"	

HEAVY VEHICULAR TRAFFIC (HS 20–44)	
MAXIMUM SPAN	STEEL (IN.)
1'–8"	2 1/2"x 1/4"

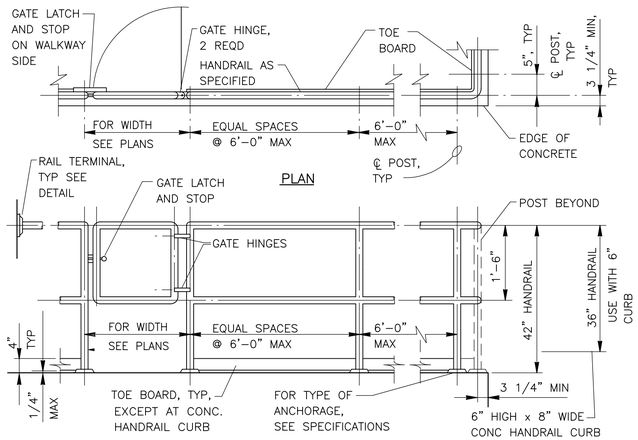
NOTE:
STEEL GRATING BEARING BARS FOR HEAVY VEHICULAR TRAFFIC SHALL BE SPACED AT 1 7/8" OC.

STEEL GRATING NOTES

1. EXTEND GRATING CONTINUOUSLY OVER GATE GUIDES AND GATES.
2. NOTCH GRATING SUPPORTS AT GATES AS REQUIRED.
3. GRATING SPAN ⟷ SEE PLAN.
4. WIDTH OF GRATING SECTIONS SHALL NOT EXCEED 3'–0".
5. SHOP DRAWINGS BASED ON FIELD DIMENSIONS SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO FABRICATION.
6. MATERIAL FOR SUPPORTS OF STEEL GRATING TO BE SAME AS GRATING.
7. UNLESS NOTED OTHERWISE ON PLANS, GRATING THICKNESS SHALL BE AS TABULATED IN "GRATING THICKNESS TABLE" FOR APPLICABLE TRAFFIC.
8. BEARING BAR THICKNESS FOR GRATING TO BE 3/16" MINIMUM.
9. BAND ALL EDGES WITH 3/16" x DEPTH OF BEARING BAR.
10. PROVIDE MISCELLANEOUS GRATING FASTENERS AS REQUIRED.
11. THE HORIZONTAL CLEARANCE BETWEEN THE GRATING AND GRATING SUPPORTS SHALL NOT BE LESS THAN 1/4" NOR GREATER THAN 1/2" AND AS SPECIFIED.
12. ALL GRATING SECTIONS, WHEN IN PLACE, SHALL ALWAYS BE FIRMLY ANCHORED TO THEIR SUPPORTS AS SPECIFIED.

STEEL GRATING (AS18)

NTS



NOTES:
1. FASTEN RAIL TO WALL FLANGE PER MANUFACTURERS RECOMMENDATIONS.
2. WALL FLANGE TO BE MOUNTED TO WALL WITH 2 – 3/8" DIA SST WEDGE ANCHORS.

RAIL TERMINAL

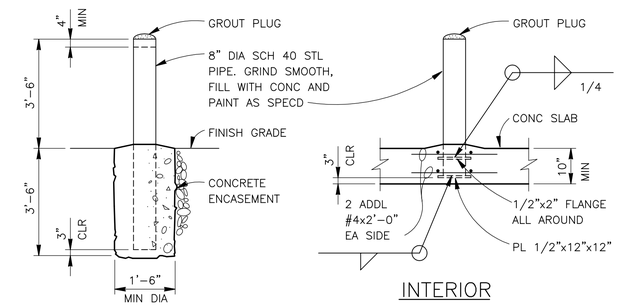
NOTE:
AT CONTRACTOR'S OPTION FABRICATE HINGES OR PROVIDE OTHER HINGES AS SPECIFIED. ANODIZE, GALV OR FINISH AFTER ALL WELDING AS SPECIFIED.

PLAN ELEVATION

TWO–RAIL HANDRAIL (AS19)

NTS

NOTE:– ALL HANDRAIL TO BE GALVANIZED.



GUARD POST (AS20)

NTS

REFERENCES:	NO.	REVISION	DATE	APRVD
PLANS	1	ISSUED FOR PLANS & SPECIFICATIONS	04/20/11	–
DATUM HORIZONTAL: WASP–NAD83–S FEET VERTICAL: NAVD88 FEET	2	ISSUED FOR TENDER	05/26/11	WJM

DRAWN YR
DESIGNED YR
CHECKED BE
REVIEWED WJM

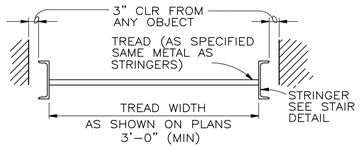
AMEC Geomatrix

GROUNDWATER TREATMENT PLANT ARCHITECTURAL / STRUCTURAL

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

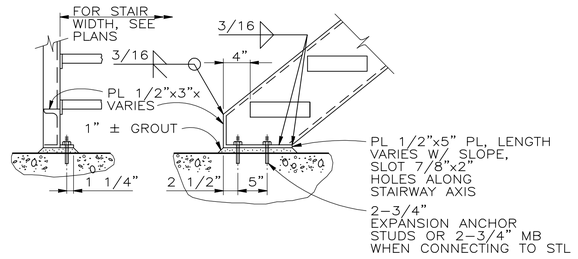
DATE: 05/05/11
PROJECT NO.: SE10160010
DRAWING AS–11

TREAD WIDTH	BEARING BARS	
	ALUMINUM TREAD	STEEL TREAD
2'-3" OR LESS	1"x 3/16"	3/4"x 3/16"
2'-9" OR LESS	1 1/4"x 3/16"	1"x 3/16""
3'-3" OR LESS	1 1/2"x 3/16"	1 1/4"x 3/16"
4'-7" OR LESS	1 3/4"x 3/16"	1 1/2"x 3/16"



STAIR TREADS AS21

NTS



NOTES:

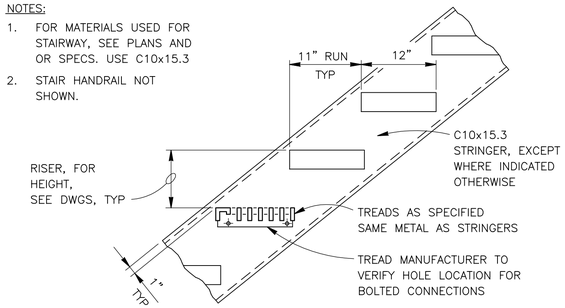
1. USE BASE PL OF SAME METAL AS STRINGER.
2. PROVIDE PROTECTION FOR DISSIMILAR METALS AND CONCRETE AS SPECIFIED.
3. STAIR HANDRAIL NOT SHOWN.

STAIR BOTTOM CONNECTION AS24

NTS

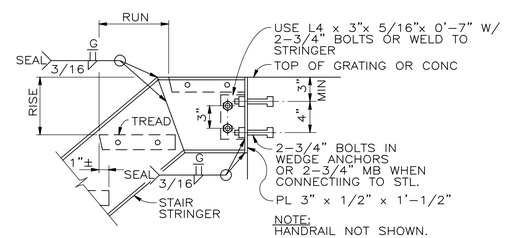
NOTES:

1. FOR MATERIALS USED FOR STAIRWAY, SEE PLANS AND OR SPECS. USE C10x15.3
2. STAIR HANDRAIL NOT SHOWN.



STAIR DETAIL AS22

NTS



STAIR TOP CONNECTION AS23

NTS

REFERENCES:
PLANS

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

NO.	REVISION	DATE	APRVD
1	ISSUED FOR PLANS & SPECIFICATIONS	04/20/11	-
2	ISSUED FOR TENDER	05/26/11	WJM

DRAWN YR
DESIGNED YR
CHECKED BE
REVIEWED WJM

AMEC Geomatrix

GROUNDWATER TREATMENT PLANT
ARCHITECTURAL / STRUCTURAL

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

DATE: 05/05/11
PROJECT NO.: SE10160010
DRAWING AS-12

NOTES:

1. RENDERING PROVIDED TO SHOW AESTHETIC CONCEPTS ONLY. AESTHETIC DETAILS DESIRED: TWO-TONE COLOR SCHEME, CUPOLA, ROOF OVERHANG, AWNING OVER MAN-DOOR. THIS RENDERING DOES NOT REFLECT PROPER LOCATION OR NUMBER OF DOORS, EXHAUST FANS ETC. WHERE THIS RENDERING CONFLICTS WITH OTHER DRAWINGS, OTHER DRAWINGS SHALL TAKE PRECEDENCE.
2. CONTRACTOR TO SUBMIT DRAWINGS, RENDERING, AND COLOR SAMPLES OF BUILDING FOR APPROVAL BY OWNER BEFORE ANY BUILDING MATERIALS ARE ORDERED AND ANY CONSTRUCTION BEGINS.

REFERENCES:
PLANS

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

NO.	REVISION	DATE	APRVD
1	ISSUED FOR PLANS & SPECIFICATIONS	04/20/11	-
2	ISSUED FOR TENDER	MAY 26	WJM

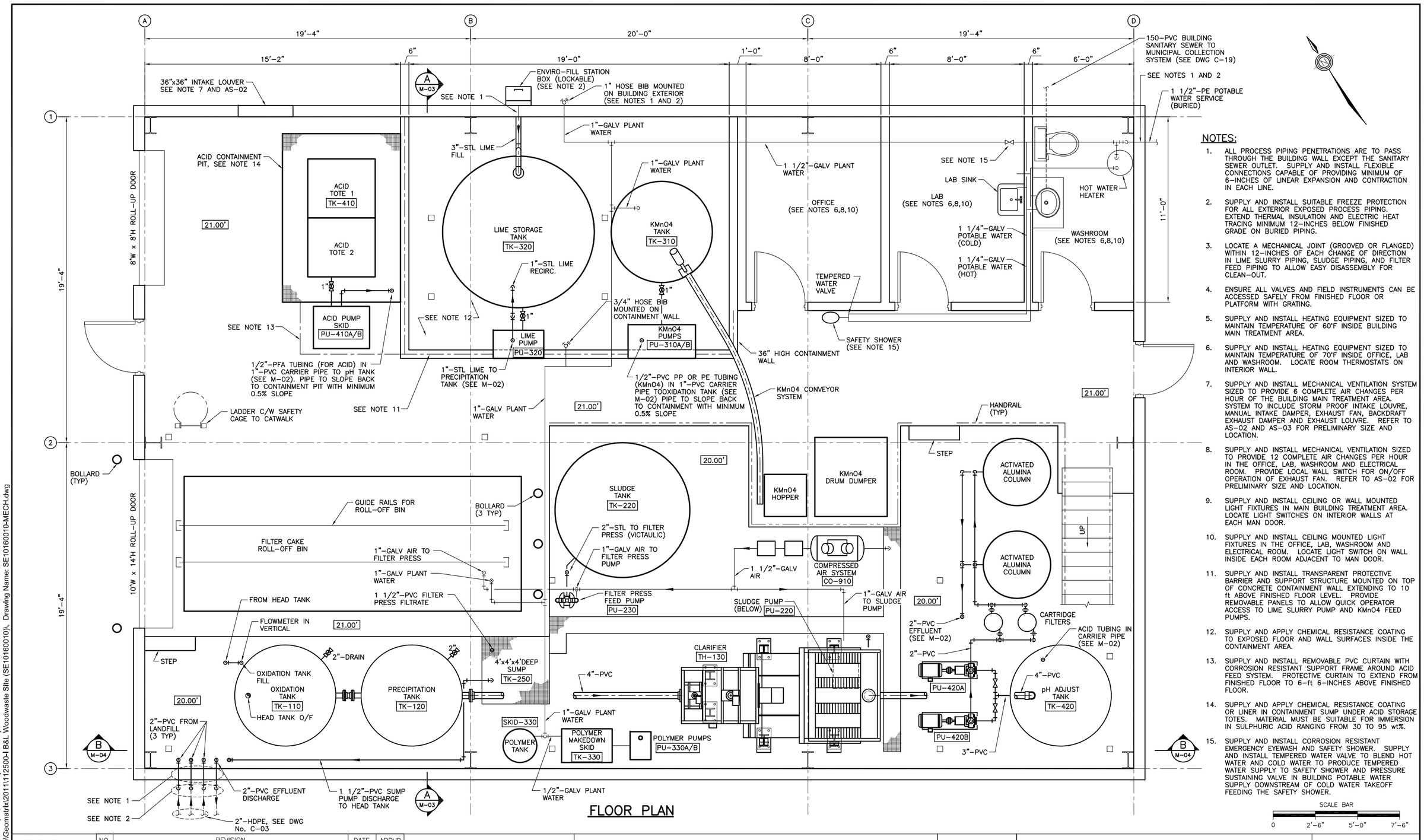
DRAWN -
DESIGNED -
CHECKED -
REVIEWED -

AMEC Geomatrix

GROUNDWATER TREATMENT PLANT BUILDING CONCEPTUAL RENDERING

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

DATE: 05/05/11
PROJECT NO.: SE10160010
DRAWING AS-13



FLOOR PLAN

NOTES:

1. ALL PROCESS PIPING PENETRATIONS ARE TO PASS THROUGH THE BUILDING WALL EXCEPT THE SANITARY SEWER OUTLET. SUPPLY AND INSTALL FLEXIBLE CONNECTIONS CAPABLE OF PROVIDING MINIMUM OF 6-INCHES OF LINEAR EXPANSION AND CONTRACTION IN EACH LINE.
2. SUPPLY AND INSTALL SUITABLE FREEZE PROTECTION FOR ALL EXTERIOR EXPOSED PROCESS PIPING. EXTEND THERMAL INSULATION AND ELECTRIC HEAT TRACING MINIMUM 12-INCHES BELOW FINISHED GRADE ON BURIED PIPING.
3. LOCATE A MECHANICAL JOINT (GROOVED OR FLANGED) WITHIN 12-INCHES OF EACH CHANGE OF DIRECTION IN LIME SLURRY PIPING, SLUDGE PIPING, AND FILTER FEED PIPING TO ALLOW EASY DISASSEMBLY FOR CLEAN-OUT.
4. ENSURE ALL VALVES AND FIELD INSTRUMENTS CAN BE ACCESSED SAFELY FROM FINISHED FLOOR OR PLATFORM WITH GRATING.
5. SUPPLY AND INSTALL HEATING EQUIPMENT SIZED TO MAINTAIN TEMPERATURE OF 60°F INSIDE BUILDING MAIN TREATMENT AREA.
6. SUPPLY AND INSTALL HEATING EQUIPMENT SIZED TO MAINTAIN TEMPERATURE OF 70°F INSIDE OFFICE, LAB AND WASHROOM. LOCATE ROOM THERMOSTATS ON INTERIOR WALL.
7. SUPPLY AND INSTALL MECHANICAL VENTILATION SYSTEM SIZED TO PROVIDE 6 COMPLETE AIR CHANGES PER HOUR OF THE BUILDING MAIN TREATMENT AREA. SYSTEM TO INCLUDE STORM PROOF INTAKE LOUVRE, MANUAL INTAKE DAMPER, EXHAUST FAN, BACKDRAFT EXHAUST DAMPER AND EXHAUST LOUVRE. REFER TO AS-02 AND AS-03 FOR PRELIMINARY SIZE AND LOCATION.
8. SUPPLY AND INSTALL MECHANICAL VENTILATION SIZED TO PROVIDE 12 COMPLETE AIR CHANGES PER HOUR IN THE OFFICE, LAB, WASHROOM AND ELECTRICAL ROOM. PROVIDE LOCAL WALL SWITCH FOR ON/OFF OPERATION OF EXHAUST FAN. REFER TO AS-02 FOR PRELIMINARY SIZE AND LOCATION.
9. SUPPLY AND INSTALL CEILING OR WALL MOUNTED LIGHT FIXTURES IN MAIN BUILDING TREATMENT AREA. LOCATE LIGHT SWITCHES ON INTERIOR WALLS AT EACH MAN DOOR.
10. SUPPLY AND INSTALL CEILING MOUNTED LIGHT FIXTURES IN THE OFFICE, LAB, WASHROOM AND ELECTRICAL ROOM. LOCATE LIGHT SWITCH ON WALL INSIDE EACH ROOM ADJACENT TO MAN DOOR.
11. SUPPLY AND INSTALL TRANSPARENT PROTECTIVE BARRIER AND SUPPORT STRUCTURE MOUNTED ON TOP OF CONCRETE CONTAINMENT WALL EXTENDING TO 10 ft ABOVE FINISHED FLOOR LEVEL. PROVIDE REMOVABLE PANELS TO ALLOW QUICK OPERATOR ACCESS TO LIME SLURRY PUMP AND KMnO4 FEED PUMPS.
12. SUPPLY AND APPLY CHEMICAL RESISTANCE COATING TO EXPOSED FLOOR AND WALL SURFACES INSIDE THE CONTAINMENT AREA.
13. SUPPLY AND INSTALL REMOVABLE PVC CURTAIN WITH CORROSION RESISTANT SUPPORT FRAME AROUND ACID FEED SYSTEM. PROTECTIVE CURTAIN TO EXTEND FROM FINISHED FLOOR TO 6-ft 6-INCHES ABOVE FINISHED FLOOR.
14. SUPPLY AND APPLY CHEMICAL RESISTANCE COATING OR LINER IN CONTAINMENT SUMP UNDER ACID STORAGE TOTES. MATERIAL MUST BE SUITABLE FOR IMMERSION IN SULPHURIC ACID RANGING FROM 30 TO 95 wt%.
15. SUPPLY AND INSTALL CORROSION RESISTANT EMERGENCY EYEWASH AND SAFETY SHOWER. SUPPLY AND INSTALL TEMPERED WATER VALVE TO BLEND HOT WATER AND COLD WATER TO PRODUCE TEMPERED WATER SUPPLY TO SAFETY SHOWER AND PRESSURE SUSTAINING VALVE IN BUILDING POTABLE WATER SUPPLY DOWNSTREAM OF COLD WATER TAKEOFF FEEDING THE SAFETY SHOWER.

SCALE BAR
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 & SPECIFICATIONS	04/20/11	-
2	ISSUED FOR TENDER	05/20/11	WJM

DRAWN PRV
DESIGNED BE
CHECKED GP
REVIEWED WJM

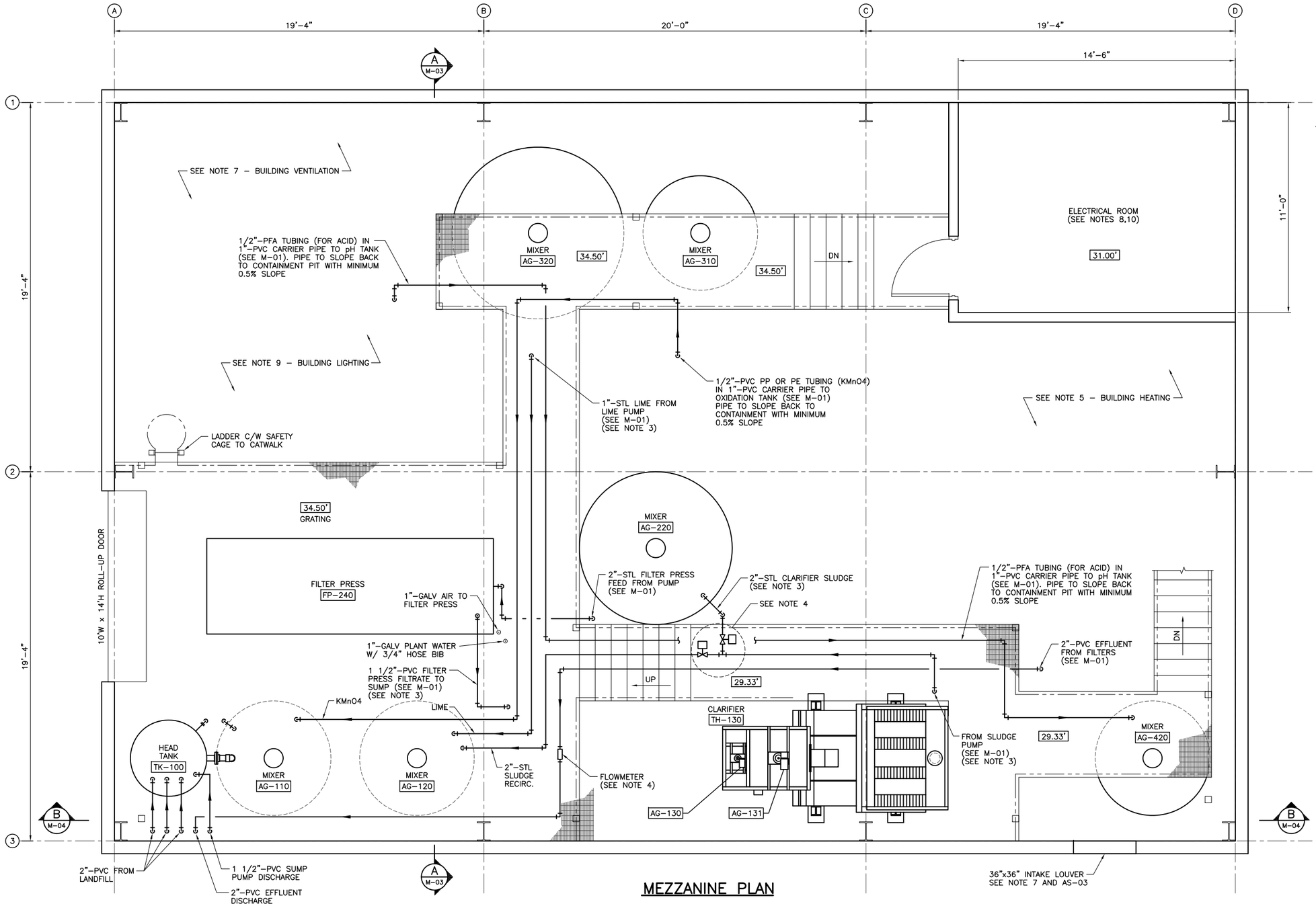
AMEC Geomatrix

GROUNDWATER TREATMENT PLANT MECHANICAL LAYOUT - FLOOR PLAN

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

DATE: 05/25/11
PROJECT NO.: SE10160010
DRAWING M-01

Plot Date: 05/25/11 - 12:14pm, Plotted by: Dell Survey2
Drawing Path: T:\Pete\Geomatrix\2011\112500-I B&L Woodwaste Site (SE10160010)\, Drawing Name: SE10160010-MECH.dwg



MEZZANINE PLAN

NOTES:

1. ALL PROCESS PIPING PENETRATIONS ARE TO PASS THROUGH THE BUILDING WALL EXCEPT THE SANITARY SEWER OUTLET. SUPPLY AND INSTALL FLEXIBLE CONNECTIONS CAPABLE OF PROVIDING MINIMUM OF 6–INCHES OF LINEAR EXPANSION AND CONTRACTION IN EACH LINE.
2. SUPPLY AND INSTALL SUITABLE FREEZE PROTECTION FOR ALL EXTERIOR EXPOSED PROCESS PIPING. EXTEND THERMAL INSULATION AND ELECTRIC HEAT TRACING MINIMUM 12–INCHES BELOW FINISHED GRADE ON BURIED PIPING.
3. LOCATE A MECHANICAL JOINT (GROOVED OR FLANGED) WITHIN 12–INCHES OF EACH CHANGE OF DIRECTION IN LIME SLURRY PIPING, SLUDGE PIPING, AND FILTER FEED PIPING TO ALLOW EASY DISASSEMBLY FOR CLEAN–OUT.
4. ENSURE ALL VALVES AND FIELD INSTRUMENTS CAN BE ACCESSED SAFELY FROM FINISHED FLOOR OR PLATFORM WITH GRATING.
5. SUPPLY AND INSTALL HEATING EQUIPMENT SIZED TO MAINTAIN TEMPERATURE OF 60°F INSIDE BUILDING MAIN TREATMENT AREA.
6. SUPPLY AND INSTALL HEATING EQUIPMENT SIZED TO MAINTAIN TEMPERATURE OF 70°F INSIDE OFFICE, LAB AND WASHROOM. LOCATE ROOM THERMOSTATS ON INTERIOR WALL.
7. SUPPLY AND INSTALL MECHANICAL VENTILATION SYSTEM SIZED TO PROVIDE 6 COMPLETE AIR CHANGES PER HOUR OF THE BUILDING MAIN TREATMENT AREA. SYSTEM TO INCLUDE STORM PROOF INTAKE LOUVRE, MANUAL INTAKE DAMPER, EXHAUST FAN, BACKDRAFT EXHAUST DAMPER AND EXHAUST LOUVRE. REFER TO AS–02 AND AS–03 FOR PRELIMINARY SIZE AND LOCATION.
8. SUPPLY AND INSTALL MECHANICAL VENTILATION SIZED TO PROVIDE 12 COMPLETE AIR CHANGES PER HOUR IN THE OFFICE, LAB, WASHROOM AND ELECTRICAL ROOM. PROVIDE LOCAL WALL SWITCH FOR ON/OFF OPERATION OF EXHAUST FAN. REFER TO AS–02 FOR PRELIMINARY SIZE AND LOCATION.
9. SUPPLY AND INSTALL CEILING OR WALL MOUNTED LIGHT FIXTURES IN MAIN BUILDING TREATMENT AREA. LOCATE LIGHT SWITCHES ON INTERIOR WALLS AT EACH MAN DOOR.
10. SUPPLY AND INSTALL CEILING MOUNTED LIGHT FIXTURES IN THE OFFICE, LAB, WASHROOM AND ELECTRICAL ROOM. LOCATE LIGHT SWITCH ON WALL INSIDE EACH ROOM ADJACENT TO MAN DOOR.
11. SUPPLY AND INSTALL TRANSPARENT PROTECTIVE BARRIER AND SUPPORT STRUCTURE MOUNTED ON TOP OF CONCRETE CONTAINMENT WALL EXTENDING TO 10 ft ABOVE FINISHED FLOOR LEVEL. PROVIDE REMOVABLE PANELS TO ALLOW QUICK OPERATOR ACCESS TO LIME SLURRY PUMP AND KMnO4 FEED PUMPS.
12. SUPPLY AND APPLY CHEMICAL RESISTANCE COATING TO EXPOSED FLOOR AND WALL SURFACES INSIDE THE CONTAINMENT AREA.
13. SUPPLY AND INSTALL REMOVABLE PVC CURTAIN WITH CORROSION RESISTANT SUPPORT FRAME AROUND ACID FEED SYSTEM. PROTECTIVE CURTAIN TO EXTEND FROM FINISHED FLOOR TO 6–ft 6–INCHES ABOVE FINISHED FLOOR.
14. SUPPLY AND APPLY CHEMICAL RESISTANCE COATING OR LINER IN CONTAINMENT SUMP UNDER ACID STORAGE TOTES. MATERIAL MUST BE SUITABLE FOR IMMERSION IN SULPHURIC ACID RANGING FROM 30 TO 95 wt%.
15. SUPPLY AND INSTALL CORROSION RESISTANT EMERGENCY EYEWASH AND SAFETY SHOWER. SUPPLY AND INSTALL TEMPERED WATER VALVE TO BLEND HOT WATER AND COLD WATER TO PRODUCE TEMPERED WATER SUPPLY TO SAFETY SHOWER AND PRESSURE SUSTAINING VALVE IN BUILDING POTABLE WATER SUPPLY DOWNSTREAM OF COLD WATER TAKEOFF FEEDING THE SAFETY SHOWER.

SCALE BAR
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 & SPECIFICATIONS	04/20/11	–
2	ISSUED FOR TENDER	05/20/11	WJM

DRAWN PRV
DESIGNED BE
CHECKED GP
REVIEWED WJM

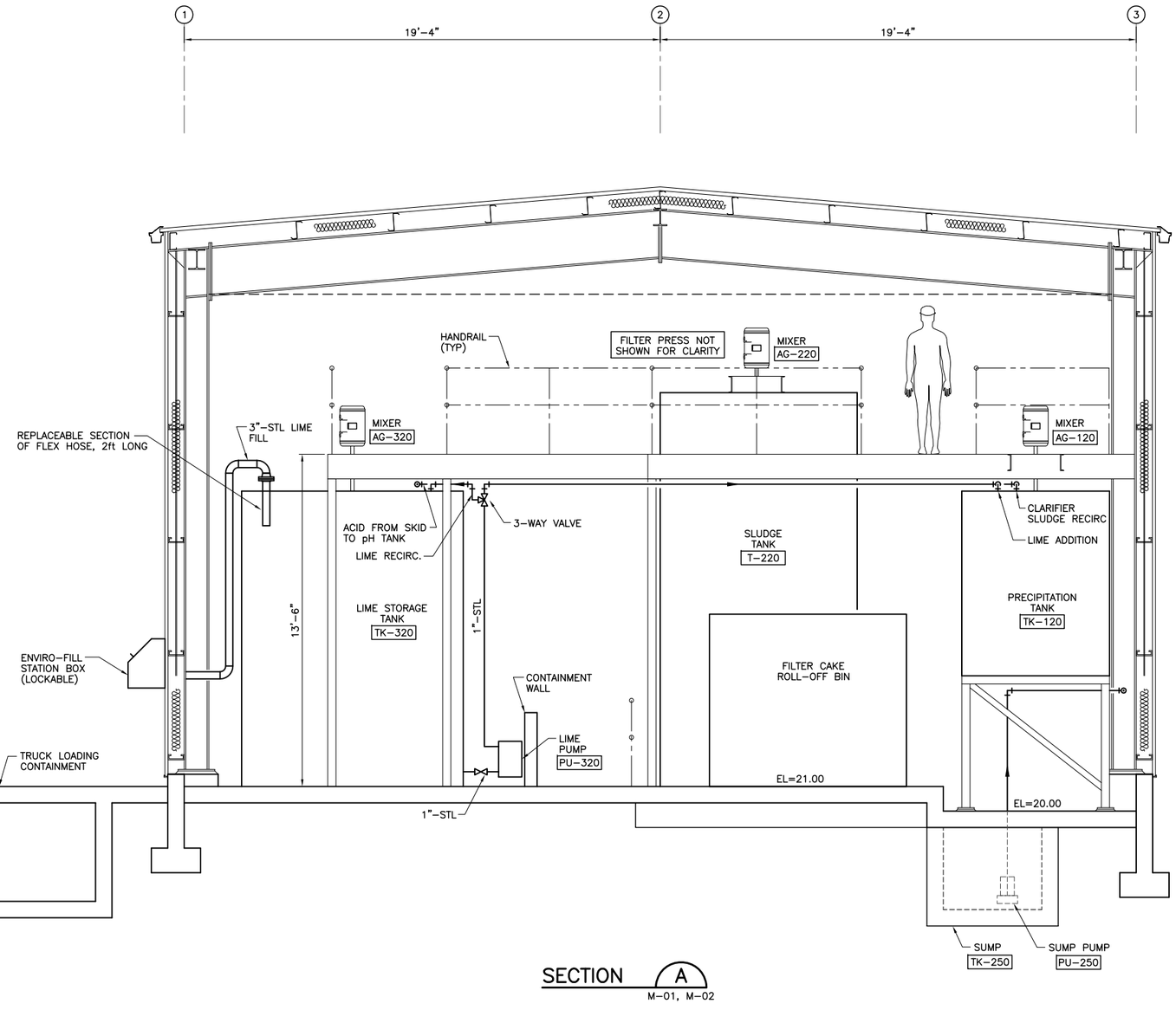
AMEC Geomatrix

GROUNDWATER TREATMENT PLANT
MECHANICAL LAYOUT - MEZZANINE PLAN

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

DATE: 05/24/11
PROJECT NO.: SE10160010
DRAWING M–02

Plot Date: 05/24/11 - 5:00pm. Plotted by: Dell Survey2
Drawing Path: T:\Pete\Geomatrix\2011\112500-I B&L Woodwaste Site (SE10160010)\. Drawing Name: SE10160010-MECH.dwg



SECTION A
M-01, M-02

SCALE BAR
0 2'-6" 5'-0" 7'-6"

REFERENCES:	NO.	REVISION	DATE	APRVD
PLANS	1	ISSUED FOR PLANS & SPECIFICATIONS	04/20/11	-
DATUM HORIZONTAL: WASP-NAD83-S FEET VERTICAL: NAVD88 FEET	2	ISSUED FOR TENDER	05/20/11	WJM

DRAWN PRV
DESIGNED BE
CHECKED GP
REVIEWED WJM

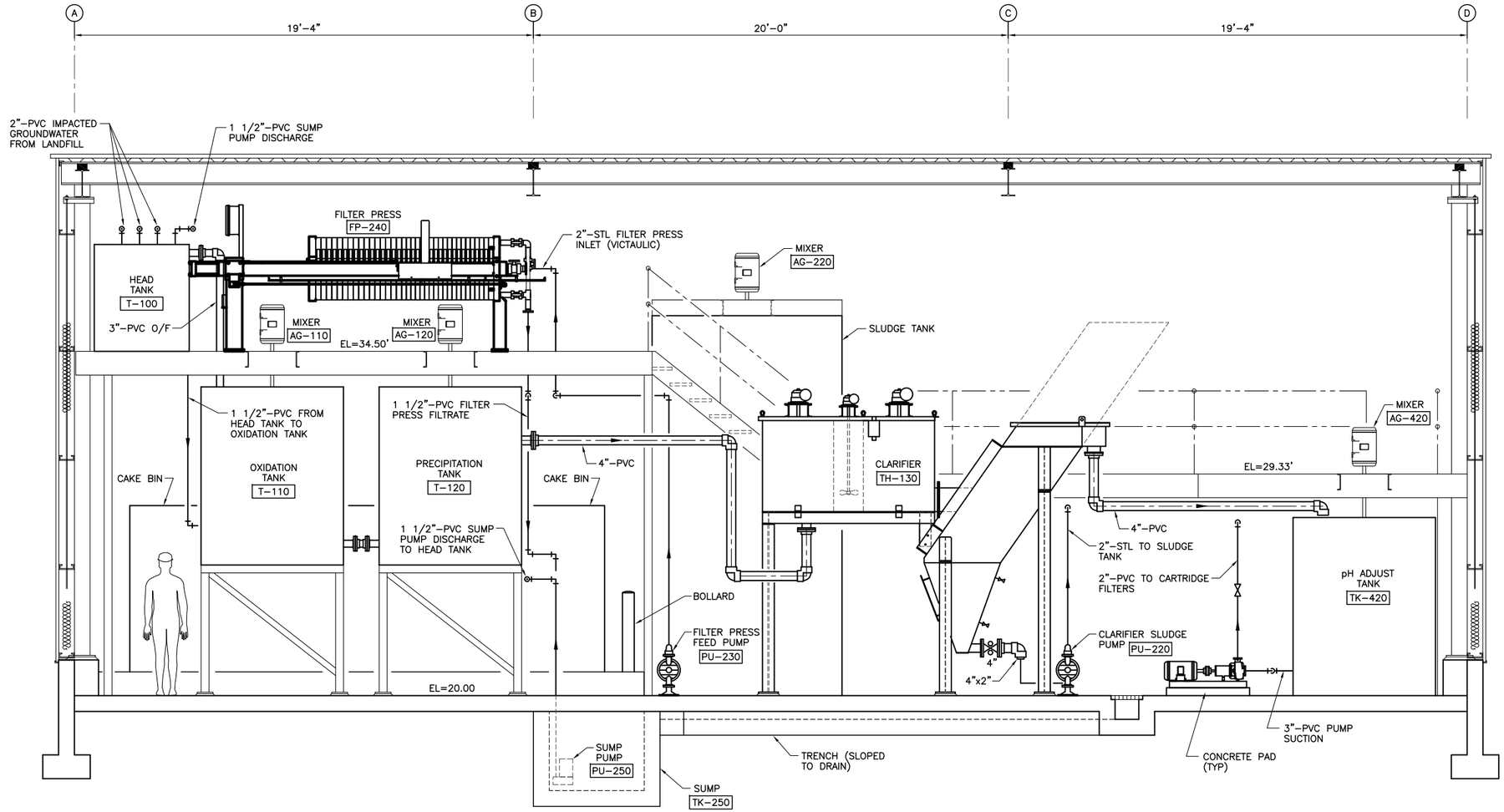
AMEC Geomatrix

GROUNDWATER TREATMENT PLANT
MECHANICAL LAYOUT - SECTION-A

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

DATE: 05/25/11
PROJECT NO.: SE10160010
DRAWING M-03

Plot Date: 05/25/11 - 12:22pm, Plotted by: Dell Survey2
Drawing Path: T:\Pete\Geomatrix\2011\112500-I B&L Woodwaste Site (SE10160010)\, Drawing Name: SE10160010-MECH.dwg



SECTION B
M-01, M-02

SCALE BAR
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 & SPECIFICATIONS	04/20/11	-
2	ISSUED FOR TENDER	05/20/11	WJM

DRAWN PRV
DESIGNED BE
CHECKED GP
REVIEWED WJM

AMEC Geomatrix

GROUNDWATER TREATMENT PLANT
MECHANICAL LAYOUT - SECTION-B

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

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

DRAWING
M-04

Plot Date: 05/25/11 - 12:23pm, Plotted by: Dell Survey2
Drawing Path: T:\Pete\Geomatrix\2011\112500-I B&L Woodwaste Site (SE10160010)\, Drawing Name: SE10160010-MECH.dwg

Service	Pipe Material	Type	Pressure Rating	Joint Type/Joining Method	Minimum Support Spacing	Anchor Rod Size	Maximum Operating Temperature	Maximum Operating Pressure	Test Pressure	Test Fluid	Test Duration	Remarks
Impacted Groundwater - buried	HDPE	DR11	160 psi	butt fusion welded	continuous	n/a	100F	100 psi	150 psi	water	2 hrs	provide suitable freeze protection on any section with less than 12-inches of cover (minimum 1-inch closed cell foam insulation, self regulated heat tracing cable and watertight jacket)
Impacted Groundwater - exposed	HDPE	DR11	160 psi	butt fusion welded and flanged	5 feet	3/8-inch	100F	100 psi	150 psi	water	2 hrs	provide suitable freeze protection (minimum 1-inch closed cell foam insulation, self regulated heat tracing cable and watertight jacket); use flanged end connections as required to mate with valves and process equipment
Impacted Groundwater/Process - pressurized	PVC	Sch 40	280 psi @ 73F	socket solvent welded and flanged	5 feet	3/8-inch	100F	100 psi	150 psi	water	2 hrs	use flanged end connections as required to mate with valves and process equipment
Process - gravity	PVC	Sch 40	280 psi @ 73F	socket solvent welded or flanged	5 feet	3/8-inch	100F	5 psi	n/a	water	2 hrs	use flanged end connections as required to mate with valves and process equipment
Potassium Permanganate Solution (3.5% KMnO4)	braided PVC, PP or polyethylene tubing	0.062-inch wall thickness	100 psig	compression fitting	continuous	n/a	100F	50 psi	75 psi	water	2 hrs	use single continuous section of tubing run inside Sch 40 PVC containment pipe
Lime Slurry	Steel	Sch 40	150 psi @ -40/+250F	grooved coupling or flanged	6 feet	3/8-inch	100F	100 psi	150 psi	water	2 hrs	use long radius bends; provide coupling or flange within 1 foot of any change in direction; use flanged end connections as required to mate to valves or process equipment
Polymer Solution	braided PVC, PP or polyethylene tubing	0.062-inch wall thickness	100 psig	compression fitting	continuous	n/a	100F	50 psi	75 psi	water	2 hrs	use single continuous section of tubing
Clarifier Sludge/Filter Press Feed	Steel	Sch 40	150 psi @ -40/+250F	grooved coupling or flanged	6 feet	3/8-inch	100F	100 psi	150 psi	water	2 hrs	use long radius bends; provide coupling or flange within 1 foot of any change in direction; use flanged end connections as required to mate to valves or process equipment
Compressed Air	Galvanized Steel	Sch 40	150 psi @ -40/+250F	threaded	6 feet	3/8-inch	150F	125 psi	187.5 psi	air	2 hrs	provide pre-formed fiberglass insulation on first 10 feet of piping from compressor discharge for personnel protection
Acid	PFA Teflon tubing	0.062-inch wall thickness	100 psig	compression fitting	continuous	n/a	100F	50 psi	75 psi	air	2 hrs	use single continuous section of tubing run inside Sch 40 PVC containment pipe
Potable Water - bldg supply	HDPE	DR11	160 psi	butt fusion welded	n/a	n/a	100F	100 psi				test as required by local regulatory authority; use flanged end connections as required to mate to valves
Potable Water - Cold	Galvanized Steel	Sch 40	150 psi @ -40/+250F	threaded	6 feet	3/8-inch	100F	100 psi	150 psi	water	2 hrs	provide closed cell insulation to reduce condensation
Potable Water - Hot	Galvanized Steel	Sch 40	150 psi @ -40/+250F	threaded	6 feet	3/8-inch	150F	100 psi	150 psi	water	2 hrs	provide pre-formed fiberglass insulation for heat conservation and personal protection
Potable Water - Tempered	Galvanized Steel	Sch 40	150 psi @ -40/+250F	threaded	6 feet	3/8-inch	150F	100 psi	150 psi	water	2 hrs	
Plant Water - cold	PVC or	Sch 40	280 psi @ 73F	socket solvent welded	5 feet	3/8-inch	100F	100 psi	150 psi	water	2 hrs	
Fire Protection Water	Galvanized Steel	Sch 40	150 psi @ -40/+250F	threaded	6 feet	3/8-inch	100F	100 psi	150 psi	water	2 hrs	provide closed cell insulation to reduce condensation
Sanitary Sewer	PVC	-		-	-	-	-	-				test as required by local regulatory authority

REFERENCES:
PLANS

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

NO.	REVISION	DATE	APRVD
1	ISSUED FOR PLANS & SPECIFICATIONS	04/20/11	-
2	ISSUED FOR TENDER	MAY 26	WJM

DRAWN PRV
DESIGNED BE
CHECKED GP
REVIEWED WJM

AMEC Geomatrix

PIPING SCHEDULE

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

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

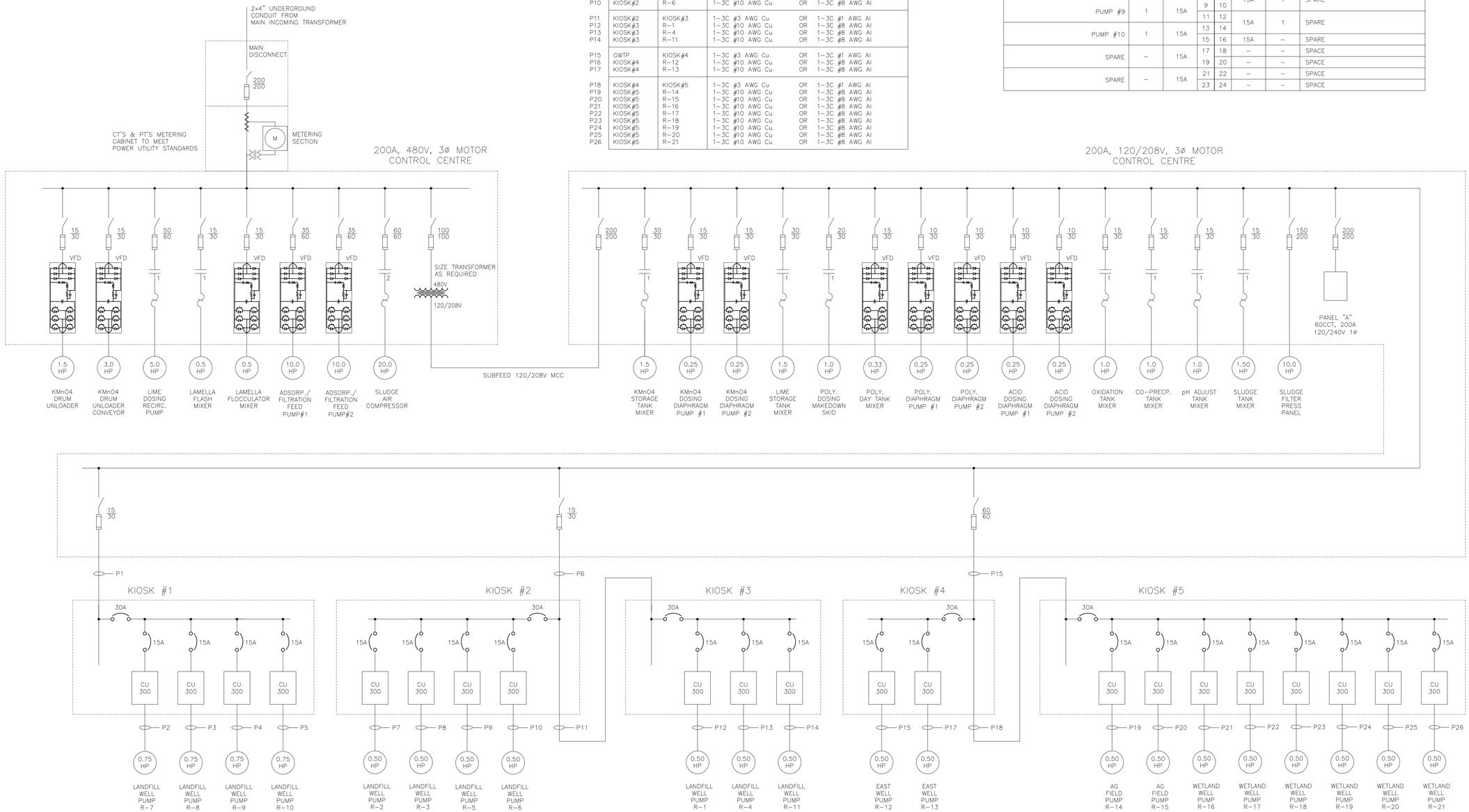
CONDUCTOR TABLE

	FROM	TO	MINIMUM SERVICE CONDUCTOR SIZES
P1	GWTP	KIOSK#1	1–3C #3 AWG Cu OR 1–3C #1 AWG Al
P2	KIOSK#1	R–7	1–3C #10 AWG Cu OR 1–3C #8 AWG Al
P3	KIOSK#1	R–8	1–3C #10 AWG Cu OR 1–3C #8 AWG Al
P4	KIOSK#1	R–9	1–3C #10 AWG Cu OR 1–3C #8 AWG Al
P5	KIOSK#1	R–10	1–3C #10 AWG Cu OR 1–3C #8 AWG Al
P6	GWTP	KIOSK#2	1–3C #3 AWG Cu OR 1–3C #1 AWG Al
P7	KIOSK#2	R–2	1–3C #10 AWG Cu OR 1–3C #8 AWG Al
P8	KIOSK#2	R–3	1–3C #10 AWG Cu OR 1–3C #8 AWG Al
P9	KIOSK#2	R–5	1–3C #10 AWG Cu OR 1–3C #8 AWG Al
P10	KIOSK#2	R–6	1–3C #10 AWG Cu OR 1–3C #8 AWG Al
P11	KIOSK#2	KIOSK#3	1–3C #3 AWG Cu OR 1–3C #1 AWG Al
P12	KIOSK#3	R–1	1–3C #10 AWG Cu OR 1–3C #8 AWG Al
P13	KIOSK#3	R–4	1–3C #10 AWG Cu OR 1–3C #8 AWG Al
P14	KIOSK#3	R–11	1–3C #10 AWG Cu OR 1–3C #8 AWG Al
P15	GWTP	KIOSK#4	1–3C #3 AWG Cu OR 1–3C #1 AWG Al
P16	KIOSK#4	R–12	1–3C #10 AWG Cu OR 1–3C #8 AWG Al
P17	KIOSK#4	R–13	1–3C #10 AWG Cu OR 1–3C #8 AWG Al
P18	KIOSK#4	KIOSK#5	1–3C #3 AWG Cu OR 1–3C #1 AWG Al
P19	KIOSK#5	R–14	1–3C #10 AWG Cu OR 1–3C #8 AWG Al
P20	KIOSK#5	R–15	1–3C #10 AWG Cu OR 1–3C #8 AWG Al
P21	KIOSK#5	R–16	1–3C #10 AWG Cu OR 1–3C #8 AWG Al
P22	KIOSK#5	R–17	1–3C #10 AWG Cu OR 1–3C #8 AWG Al
P23	KIOSK#5	R–18	1–3C #10 AWG Cu OR 1–3C #8 AWG Al
P24	KIOSK#5	R–19	1–3C #10 AWG Cu OR 1–3C #8 AWG Al
P25	KIOSK#5	R–20	1–3C #10 AWG Cu OR 1–3C #8 AWG Al
P26	KIOSK#5	R–21	1–3C #10 AWG Cu OR 1–3C #8 AWG Al

TYPICAL DISTRIBUTION PANEL

120/240V PANEL WITH 100A MAIN BREAKER AND FEED THROUGH LUGS

DESCRIPTION	# OUTLETS	BKR SIZE	ITEM	ITEM	BKR SIZE	# OUTLETS	DESCRIPTION
PUMP #7	1	15A	1	2	15A	1	PLC CONTROL PANEL
			3	4	15A	1	LIGHT
PUMP #8	1	15A	5	6	15A	1	SPARE
			7	8	15A	1	SPARE
PUMP #9	1	15A	9	10			
			11	12	15A	1	SPARE
PUMP #10	1	15A	13	14			
			15	16	15A	–	SPARE
SPARE	–	15A	17	18	–	–	SPACE
			19	20	–	–	SPACE
SPARE	–	15A	21	22	–	–	SPACE
			23	24	–	–	SPACE



REFERENCES:
PLANS

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

NO.		DATE	APRVD
1	ISSUED FOR PERMIT	FEB 25	WJM
2	ISSUED FOR TENDER	MAY 25	TDU

DRAWN JB
DESIGNED JB, TU
CHECKED –
REVIEWED –

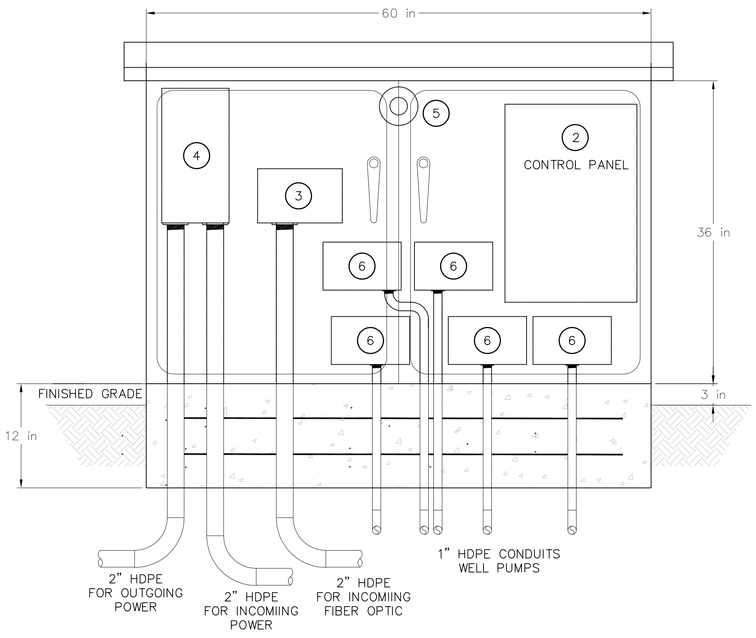
AMEC Geomatrix

ELECTRICAL SINGLE LINE DIAGRAM

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

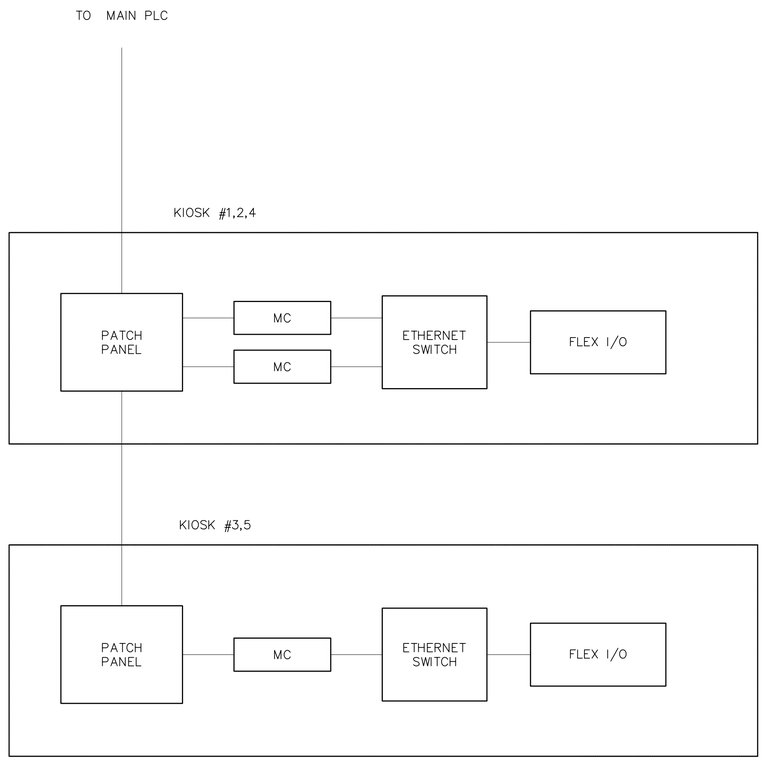
DATE: 05/25/11
PROJECT NO.: 104–018–E1

DRAWING E–01

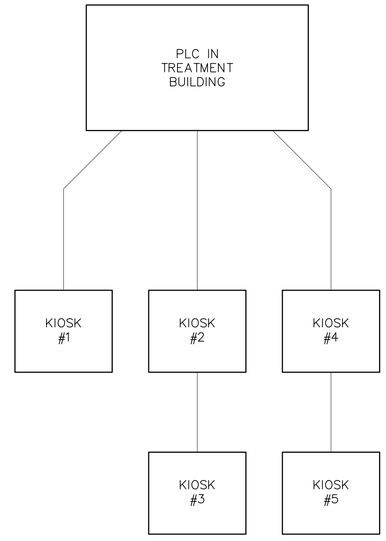


TYPICAL KIOSK

SCALE 1:20



TELEMETRY DIAGRAM



KIOSK MATERIAL LIST				
ITEM	QTY	MANUFACTURER	PART #	DESCRIPTION
1	1	OPEN	36"x72"x12" NEMA 4X SS	PANEL ENCLOSURE c/w BACK PLANE
2	1	OPEN	OPEN	PLC CONTROL PANEL
3	1	OPEN	OPEN	FIBER OPTIC PATCH PANEL
4	1	OPEN	OPEN	120/240V BREAKER PANEL
5	1	OPEN	OPEN	120V LIGHT
6	1	GRUNDFOS	CU-300	PUMP MOTOR CONTROLLER

REFERENCES:
PLANS

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

NO.	REVISION	DATE	APRVD
1	ISSUED FOR PLANS AND SPECIFICATIONS	APR 13	–
2	ISSUED FOR TENDER	MAY 25	TDU

DRAWN JB
DESIGNED JB,TU
CHECKED –
REVIEWED –

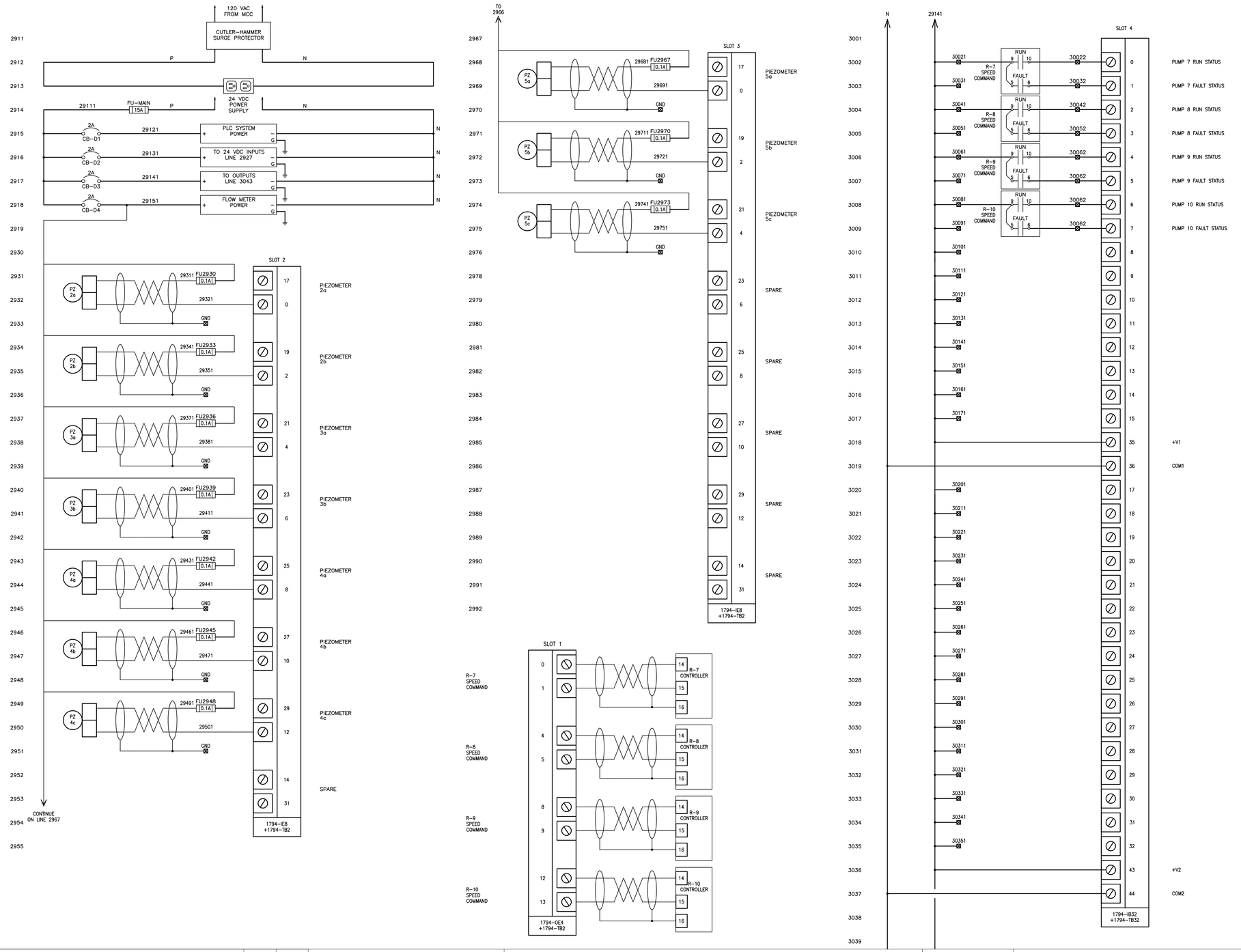
AMEC Geomatrix

KIOSK DETAILS, CONDUCTOR TABLE & TELEMETRY SCHEMATICS

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

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

DRAWING
E-02



REFERENCES:	NO.	REVISION	DATE	APRVD
PLANS	1	ISSUED FOR PLANS AND SPECIFICATIONS	APR 13	–
	2	ISSUED FOR TENDER	MAY 25	TDU
DATUM HORIZONTAL: WASP–NAD83–S FEET VERTICAL: NAVD88 FEET				

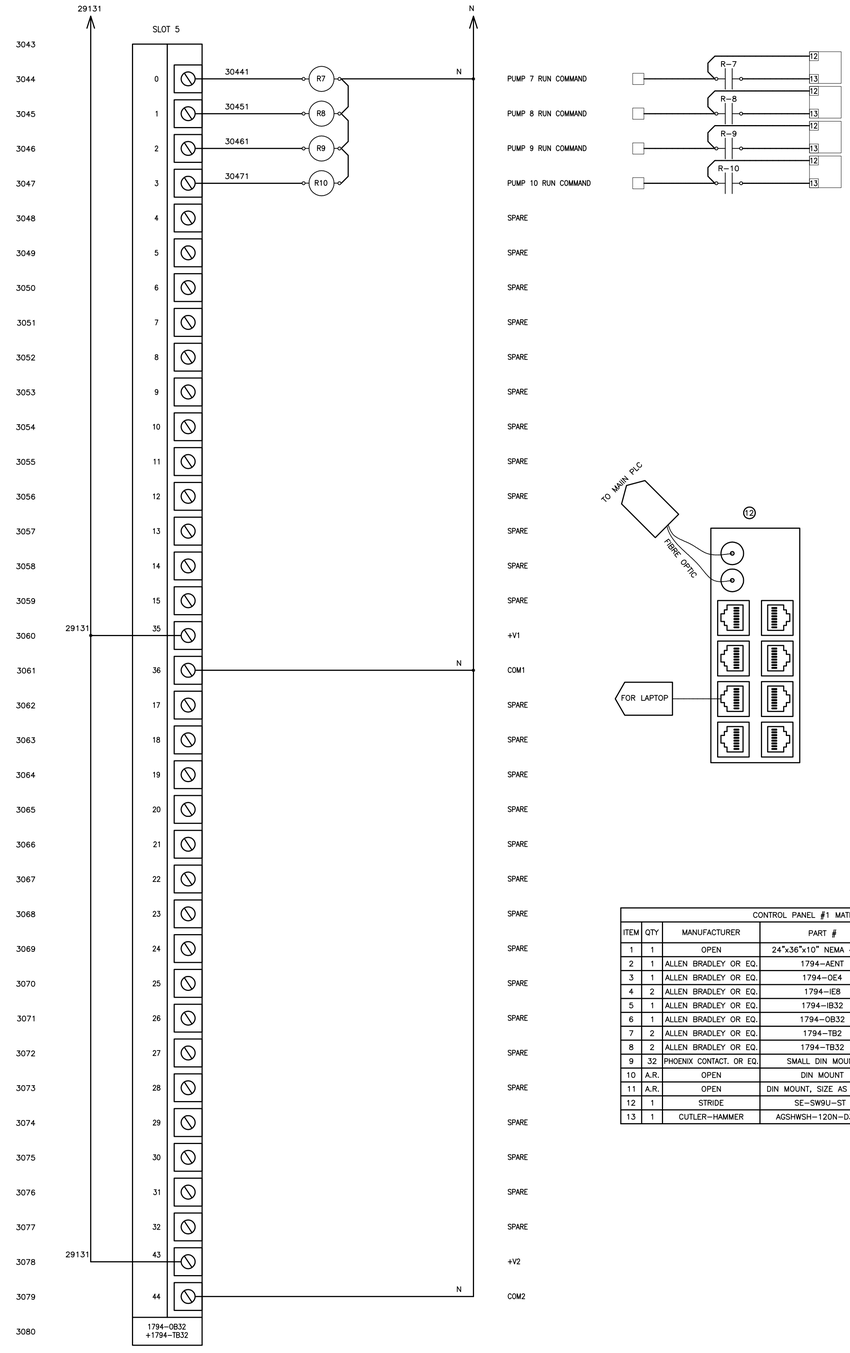
DRAWN JB
DESIGNED JB,TU
CHECKED –
REVIEWED –

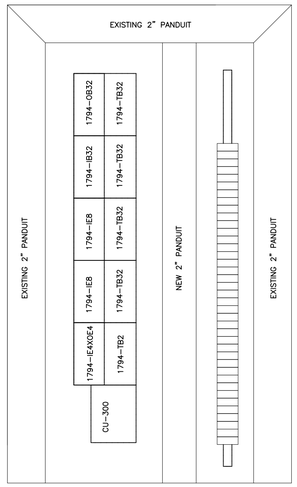
AMEC Geomatrix

KIOSK #1 PLC ELECTRICAL SCHEMATICS

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

DATE: 05/25/11
PROJECT NO.: SE10160010
DRAWING E–03





CONTROL PANEL #1 MATERIAL LIST				
ITEM	QTY	MANUFACTURER	PART #	DESCRIPTION
1	1	OPEN	24"x36"x10" NEMA 4X SS	PANEL ENCLOSURE c/w BACK PLANE
2	1	ALLEN BRADLEY OR EQ.	1794-AENT	FLEX I/O CONTROLLER
3	1	ALLEN BRADLEY OR EQ.	1794-OE4	FLEX I/O 4PT ANALOG OUTPUT CARD
4	2	ALLEN BRADLEY OR EQ.	1794-IE8	FLEX I/O 8PT ANALOG INPUT CARD
5	1	ALLEN BRADLEY OR EQ.	1794-IB32	FLEX I/O 32PT INPUT CARD
6	1	ALLEN BRADLEY OR EQ.	1794-OB32	FLEX I/O 32PT OUTPUT CARD
7	2	ALLEN BRADLEY OR EQ.	1794-TB2	FLEX I/O TERMINAL BLOCK
8	2	ALLEN BRADLEY OR EQ.	1794-TB32	FLEX I/O TERMINAL BLOCK
9	32	PHOENIX CONTACT. OR EQ.	SMALL DIN MOUNT	24VDC RELAYS
10	A.R.	OPEN	DIN MOUNT	FUSES, FUSE BLOCKS
11	A.R.	OPEN	DIN MOUNT, SIZE AS SHOWN	24VDC CIRCUIT BREAKERS
12	1	STRIDE	SE-SW9U-ST	ETHERNET SWITCH (8 RJ45 PORT)
13	1	CUTLER-HAMMER	AGSHWSH-120N-D3-XS	120V SURGE PROTECTOR

REFERENCES:
PLANS

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

NO.	REVISION	DATE	APRVD
1	ISSUED FOR PLANS AND SPECIFICATIONS	APR 13	–
2	ISSUED FOR TENDER	MAY 25	TDU

DRAWN JB
DESIGNED JB,TU
CHECKED –
REVIEWED –

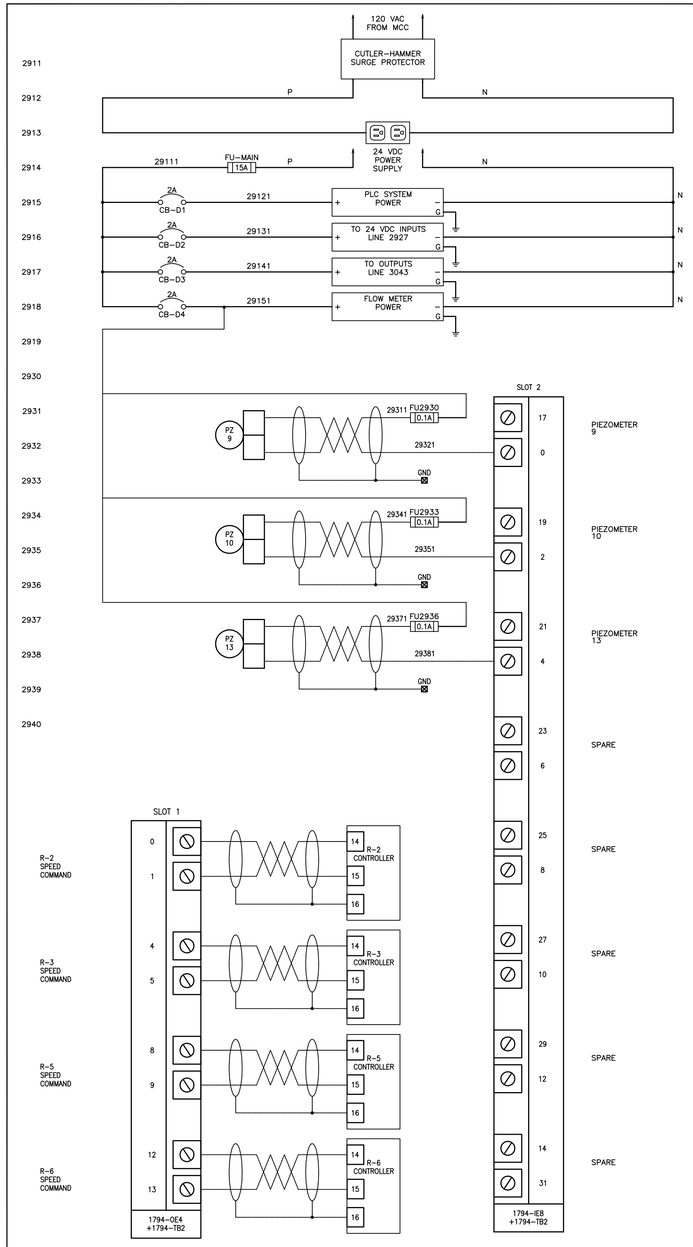
AMEC Geomatrix

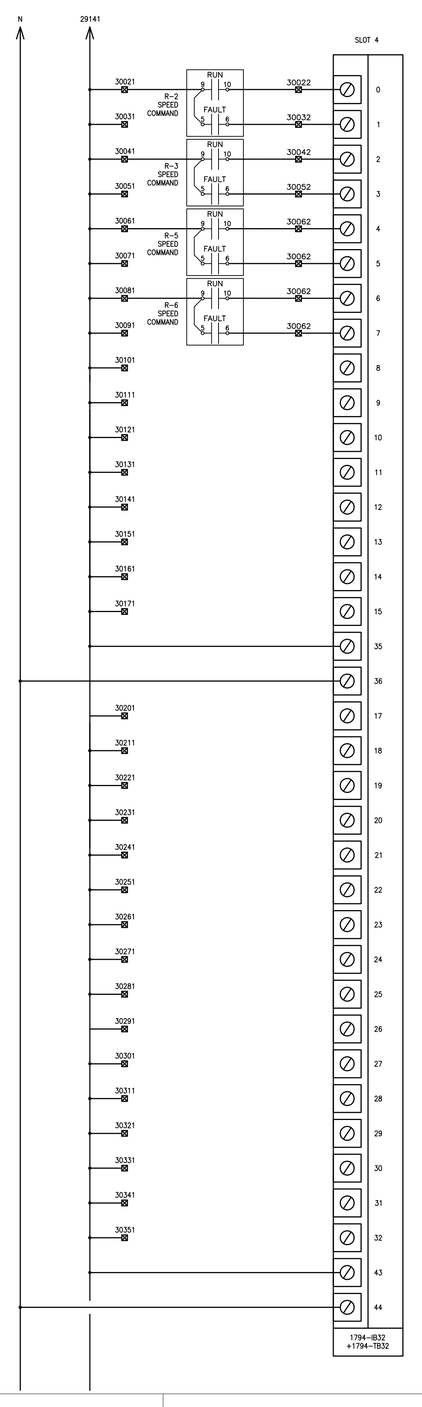
KIOSK #1 PLC page 2
ELECTRICAL SCHEMATICS

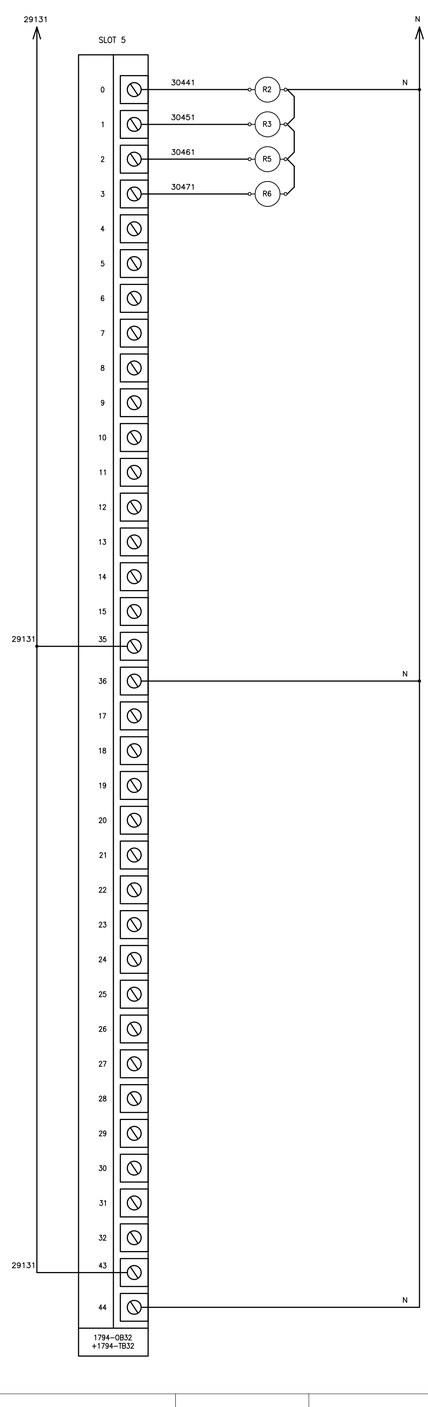
B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

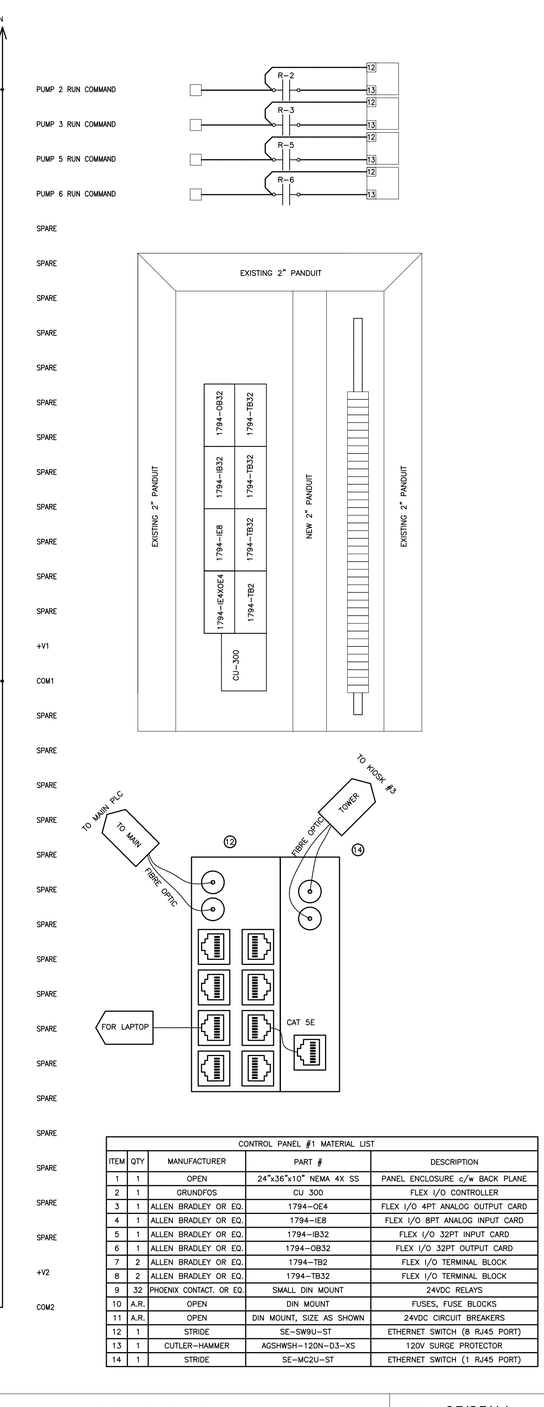
DATE: 05/25/11
PROJECT NO.: SE10160010

DRAWING
E-04









CONTROL PANEL #1 MATERIAL LIST				
ITEM	QTY	MANUFACTURER	PART #	DESCRIPTION
1	1	OPEN	24"x36"x10" NEMA 4X SS	PANEL ENCLOSURE c/w BACK PLANE
2	1	GRUNDFOS	CU 300	FLEX I/O CONTROLLER
3	1	ALLEN BRADLEY OR EQ.	1794-OE4	FLEX I/O 4PT ANALOG OUTPUT CARD
4	1	ALLEN BRADLEY OR EQ.	1794-IE8	FLEX I/O 8PT ANALOG INPUT CARD
5	1	ALLEN BRADLEY OR EQ.	1794-IB32	FLEX I/O 32PT INPUT CARD
6	1	ALLEN BRADLEY OR EQ.	1794-OB32	FLEX I/O 32PT OUTPUT CARD
7	2	ALLEN BRADLEY OR EQ.	1794-TB2	FLEX I/O TERMINAL BLOCK
8	2	ALLEN BRADLEY OR EQ.	1794-TB32	FLEX I/O TERMINAL BLOCK
9	32	PHOENIX CONTACT. OR EQ.	SMALL DIN MOUNT	24VDC RELAYS
10	A.R.	OPEN	DIN MOUNT	FUSES, FUSE BLOCKS
11	A.R.	OPEN	DIN MOUNT, SIZE AS SHOWN	24VDC CIRCUIT BREAKERS
12	1	STRIDE	SE-SW9U-ST	ETHERNET SWITCH (8 RJ45 PORT)
13	1	CUTLER-HAMMER	AGSHWSH-120N-D3-XS	120V SURGE PROTECTOR
14	1	STRIDE	SE-MC2U-ST	ETHERNET SWITCH (1 RJ45 PORT)

REFERENCES:
PLANS

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

NO.	REVISION	DATE	APRVD
1	ISSUED FOR PLANS AND SPECIFICATIONS	APR 13	–
2	ISSUED FOR TENDER	MAY 25	TDU

DRAWN JB
DESIGNED JB,TU
CHECKED –
REVIEWED –

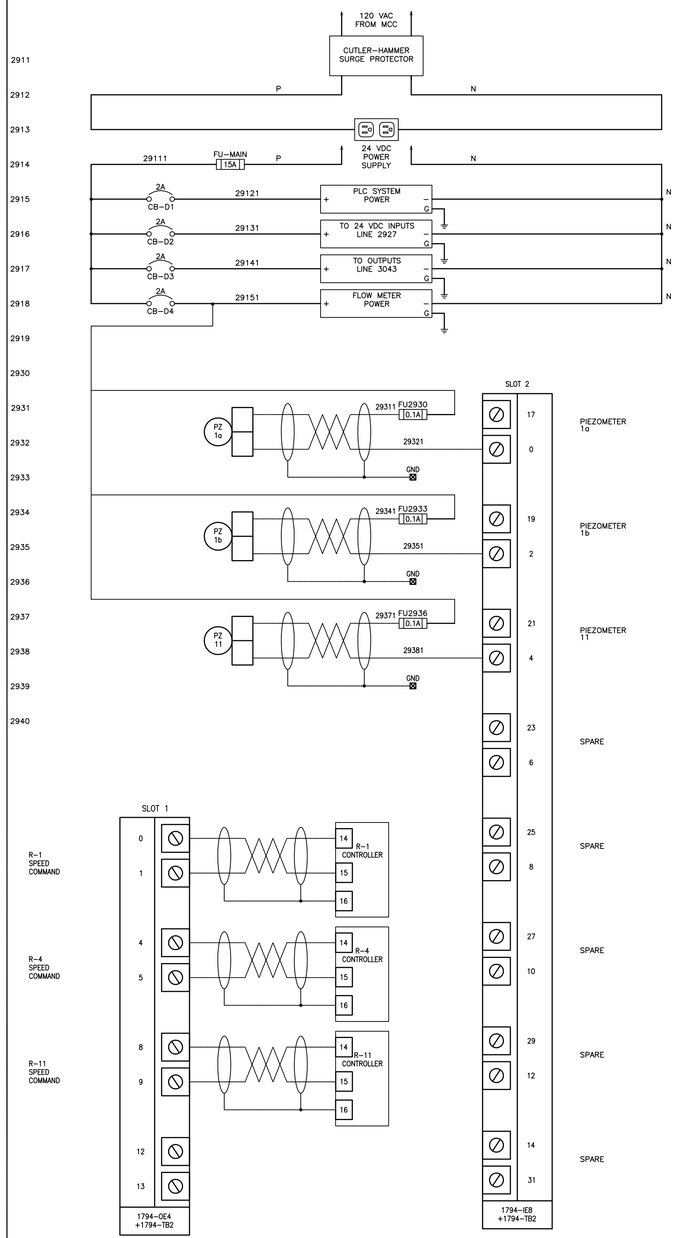
AMEC Geomatrix

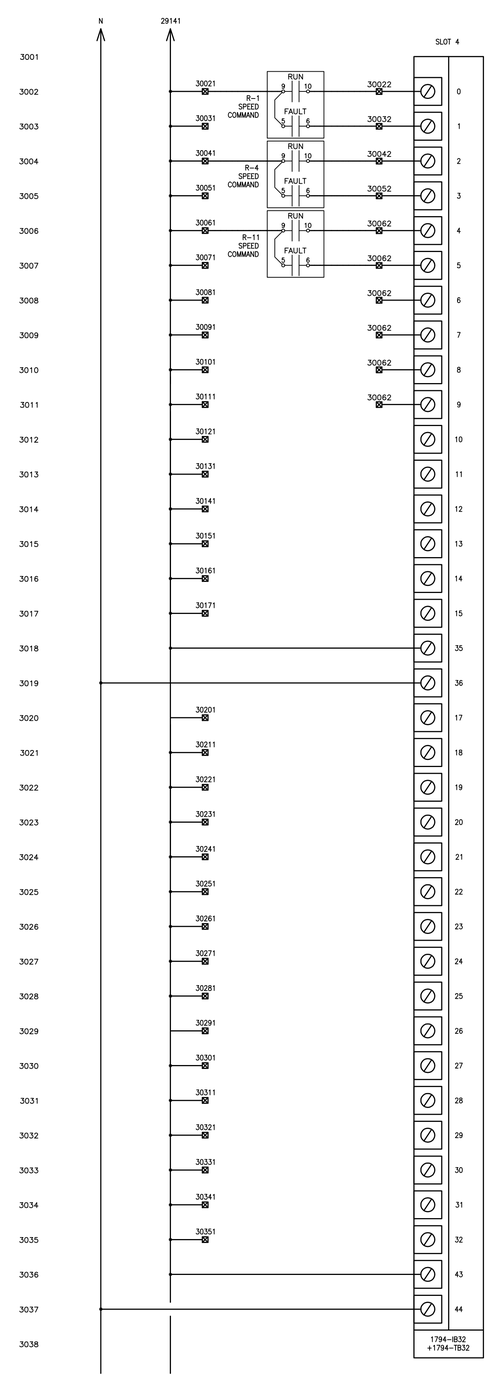
KIOSK #2 PLC ELECTRICAL SCHEMATICS

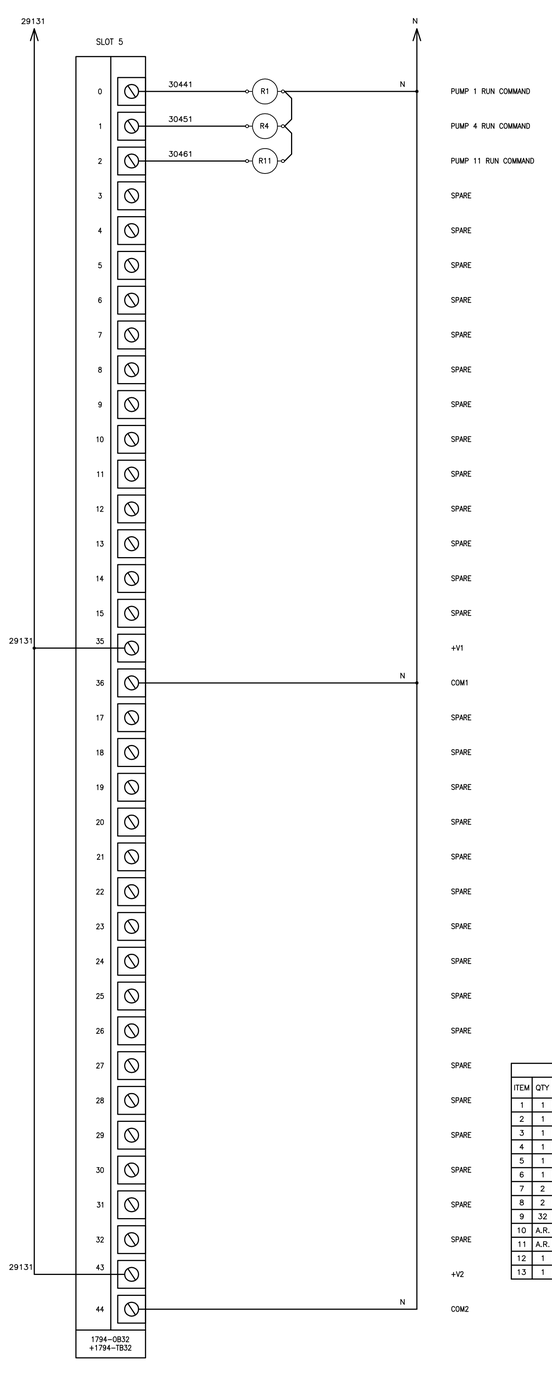
B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

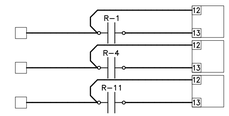
DATE: 05/25/11
PROJECT NO.: SE10160010

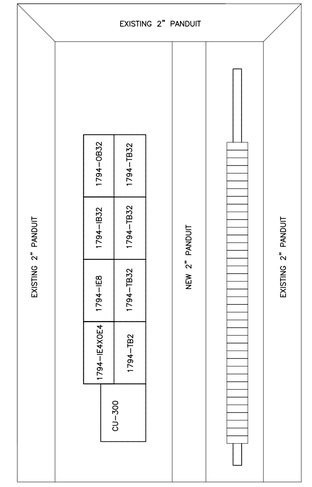
DRAWING E-05

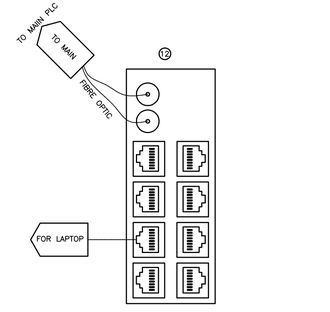












CONTROL PANEL #1 MATERIAL LIST				
ITEM	QTY	MANUFACTURER	PART #	DESCRIPTION
1	1	OPEN	24"x36"x10" NEMA 4X SS	PANEL ENCLOSURE c/w BACK PLANE
2	1	GRUNDFOS	CU 300	FLEX I/O CONTROLLER
3	1	ALLEN BRADLEY OR EQ.	1794-OE4	FLEX I/O 4PT ANALOG OUTPUT CARD
4	1	ALLEN BRADLEY OR EQ.	1794-IE8	FLEX I/O 8PT ANALOG INPUT CARD
5	1	ALLEN BRADLEY OR EQ.	1794-IB32	FLEX I/O 32PT INPUT CARD
6	1	ALLEN BRADLEY OR EQ.	1794-OB32	FLEX I/O 32PT OUTPUT CARD
7	2	ALLEN BRADLEY OR EQ.	1794-TB2	FLEX I/O TERMINAL BLOCK
8	2	ALLEN BRADLEY OR EQ.	1794-TB32	FLEX I/O TERMINAL BLOCK
9	32	PHOENIX CONTACT. OR EQ.	SMALL DIN MOUNT	24VDC RELAYS
10	A.R.	OPEN	DIN MOUNT	FUSES, FUSE BLOCKS
11	A.R.	OPEN	DIN MOUNT, SIZE AS SHOWN	24VDC CIRCUIT BREAKERS
12	1	STRIDE	SE-SW9U-ST	ETHERNET SWITCH (8 RJ45 PORT)
13	1	CUTLER-HAMMER	AGSHWSH-120N-D3-XS	120V SURGE PROTECTOR

REFERENCES:
PLANS

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

NO.	REVISION	DATE	APRVD
1	ISSUED FOR PLANS AND SPECIFICATIONS	APR 13	–
2	ISSUED FOR TENDER	MAY 25	TDU

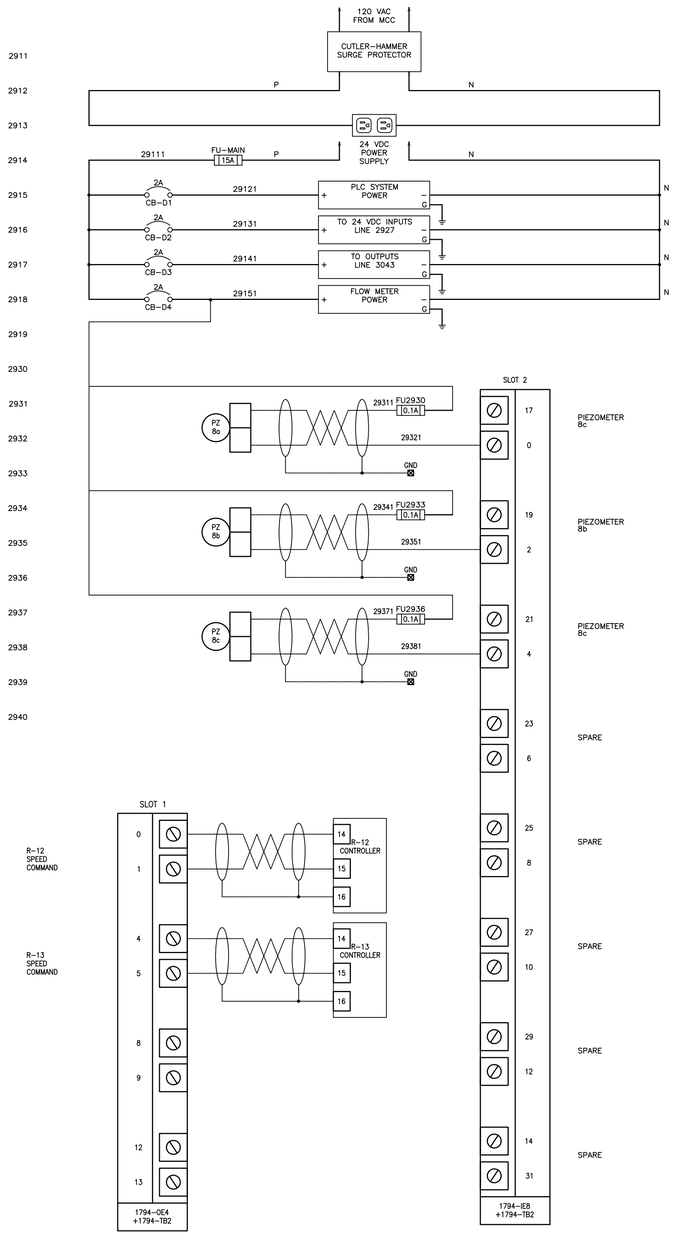
DRAWN JB
DESIGNED JB,TU
CHECKED –
REVIEWED –

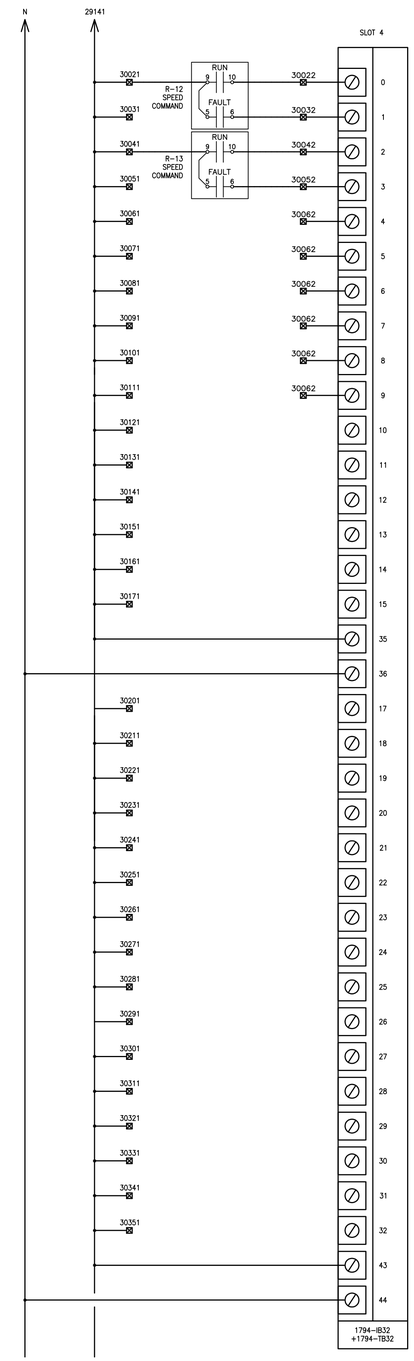
AMEC Geomatrix

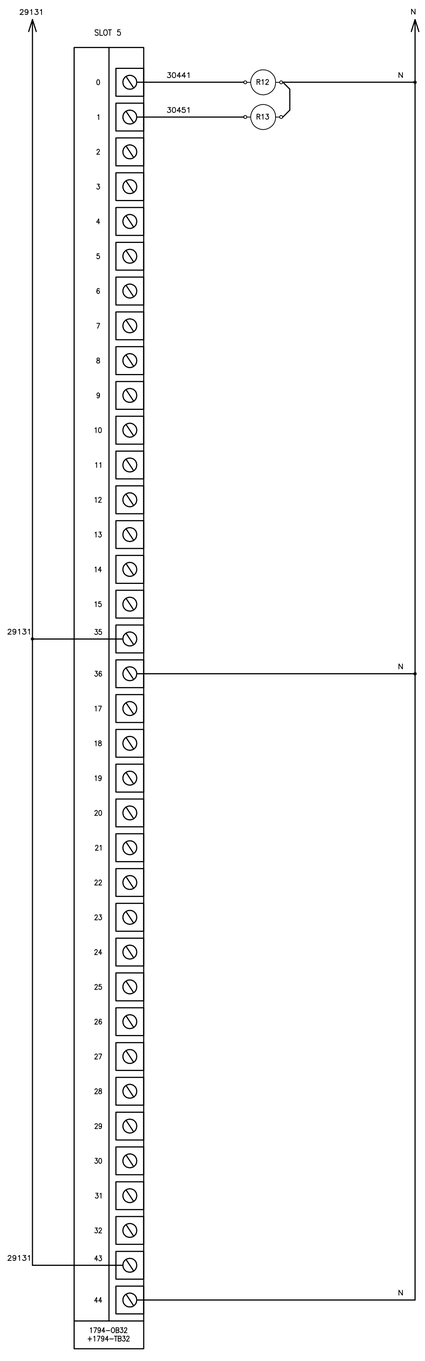
KIOSK #3 PLC ELECTRICAL SCHEMATICS

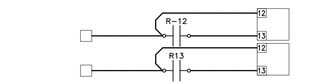
B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

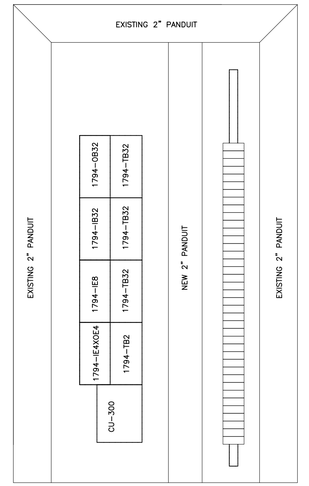
DATE: 05/25/11
PROJECT NO.: SE10160010
DRAWING E-06

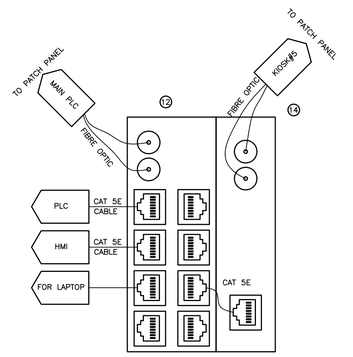












CONTROL PANEL #1 MATERIAL LIST				
ITEM	QTY	MANUFACTURER	PART #	DESCRIPTION
1	1	OPEN	24"x36"x10" NEMA 4X SS	PANEL ENCLOSURE c/w BACK PLANE
2	1	GRUNDFOS	CU 300	FLEX I/O CONTROLLER
3	1	ALLEN BRADLEY OR EQ.	1794-OE4	FLEX I/O 4PT ANALOG OUTPUT CARD
4	1	ALLEN BRADLEY OR EQ.	1794-IE8	FLEX I/O 8PT ANALOG INPUT CARD
5	1	ALLEN BRADLEY OR EQ.	1794-IB32	FLEX I/O 32PT INPUT CARD
6	1	ALLEN BRADLEY OR EQ.	1794-OB32	FLEX I/O 32PT OUTPUT CARD
7	2	ALLEN BRADLEY OR EQ.	1794-TB2	FLEX I/O TERMINAL BLOCK
8	2	ALLEN BRADLEY OR EQ.	1794-TB32	FLEX I/O TERMINAL BLOCK
9	32	PHOENIX CONTACT. OR EQ.	SMALL DIN MOUNT	24VDC RELAYS
10	A.R.	OPEN	DIN MOUNT	FUSES, FUSE BLOCKS
11	A.R.	OPEN	DIN MOUNT, SIZE AS SHOWN	24VDC CIRCUIT BREAKERS
12	1	STRIDE	SE-SW9U-ST	ETHERNET SWITCH (8 RJ45 PORT)
13	1	CUTLER-HAMMER	AGSHWSH-120N-D3-XS	120V SURGE PROTECTOR
14	1	STRIDE	SE-MC2U-ST	ETHERNET SWITCH (1 RJ45 PORT)

REFERENCES:
PLANS

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

NO.	REVISION	DATE	APRVD
1	ISSUED FOR PLANS AND SPECIFICATIONS	APR 13	–
2	ISSUED FOR TENDER	MAY 25	TDU

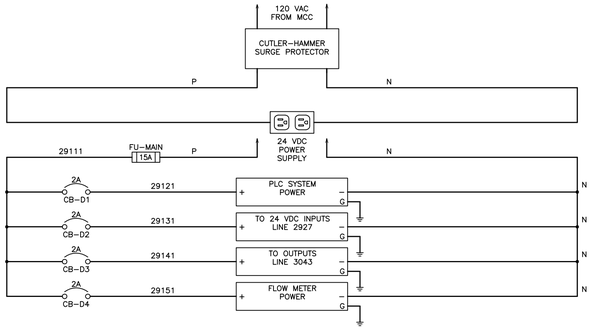
DRAWN JB
DESIGNED JB,TU
CHECKED –
REVIEWED –

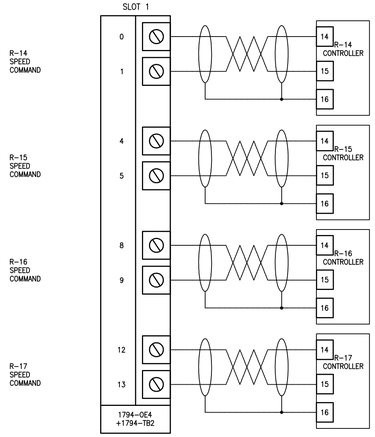
AMEC Geomatrix

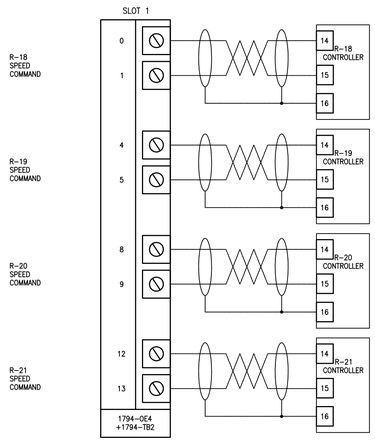
KIOSK #4 PLC ELECTRICAL SCHEMATICS

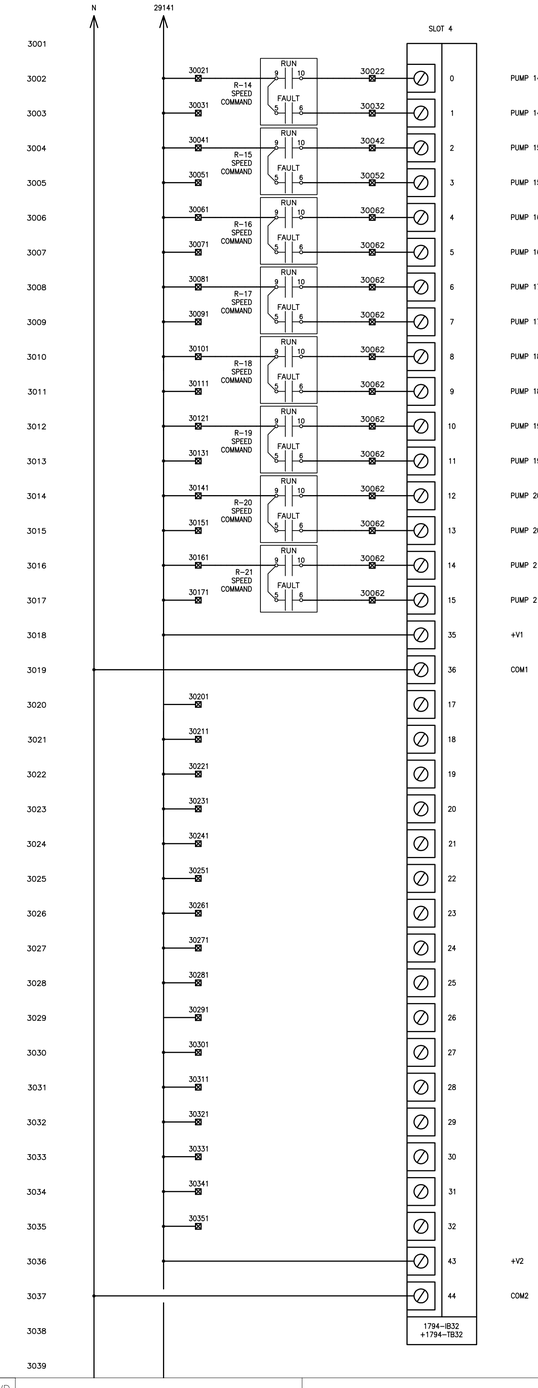
B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

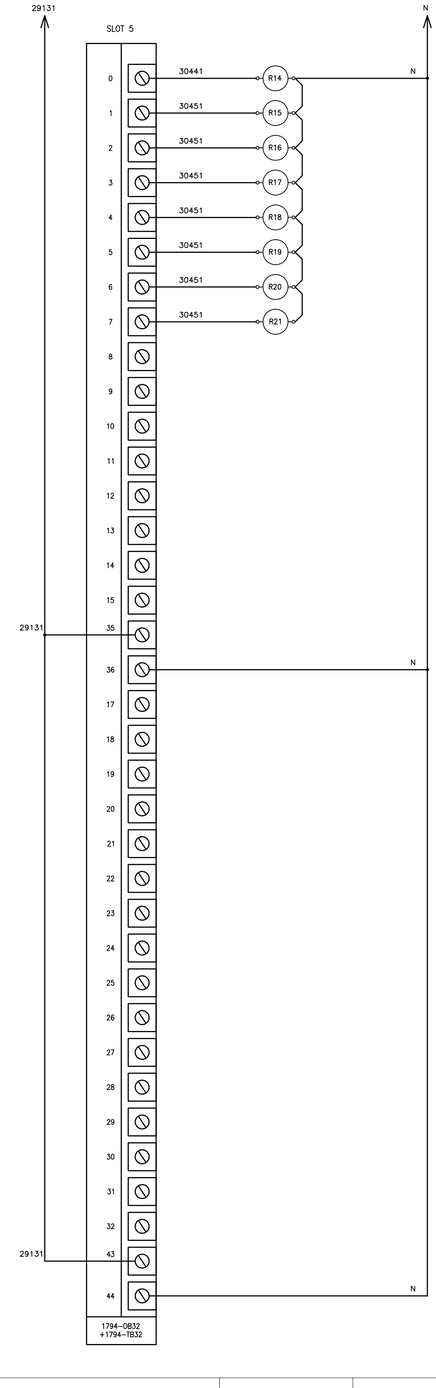
DATE: 05/25/11
PROJECT NO.: SE10160010
DRAWING E-07

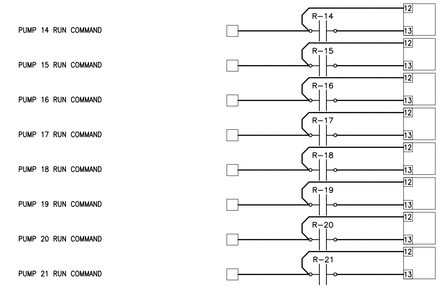




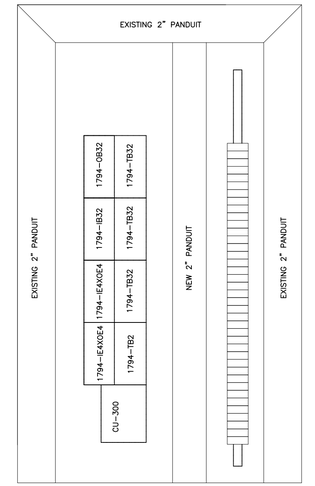


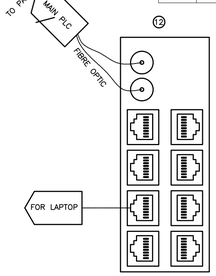






CONTROL PANEL #1 MATERIAL LIST				
ITEM	QTY.	MANUFACTURER	PART #	DESCRIPTION
1	1	OPEN	24"x36"x10" NEMA 4X SS	PANEL ENCLOSURE c/w BACK PLANE
2	1	GRUNDFOS	CU 300	FLEX I/O CONTROLLER
3	2	ALLEN BRADLEY OR EQ.	1794-OE4	FLEX I/O 4PT ANALOG OUTPUT CARD
4	0	ALLEN BRADLEY OR EQ.	1794-IE8	FLEX I/O 8PT ANALOG INPUT CARD
5	1	ALLEN BRADLEY OR EQ.	1794-IB32	FLEX I/O 32PT INPUT CARD
6	1	ALLEN BRADLEY OR EQ.	1794-OB32	FLEX I/O 32PT OUTPUT CARD
7	2	ALLEN BRADLEY OR EQ.	1794-TB2	FLEX I/O TERMINAL BLOCK
8	2	ALLEN BRADLEY OR EQ.	1794-TB32	FLEX I/O TERMINAL BLOCK
9	32	PHOENIX CONTACT. OR EQ.	SMALL DIN MOUNT	24VDC RELAYS
10	A.R.	OPEN	DIN MOUNT	FUSES, FUSE BLOCKS
11	A.R.	OPEN	DIN MOUNT, SIZE AS SHOWN	24VDC CIRCUIT BREAKERS
12	1	STRIDE	SE-SW9U-ST	ETHERNET SWITCH (8 RJ45 PORT)
13	1	CUTLER-HAMMER	AGSHWSH-120N-D3-XS	120V SURGE PROTECTOR





REFERENCES:
PLANS

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

NO.	REVISION	DATE	APRVD
1	ISSUED FOR PLANS AND SPECIFICATIONS	APR 13	–
2	ISSUED FOR TENDER	MAY 25	TDU

DRAWN JB
DESIGNED JB,TU
CHECKED –
REVIEWED –

AMEC Geomatrix

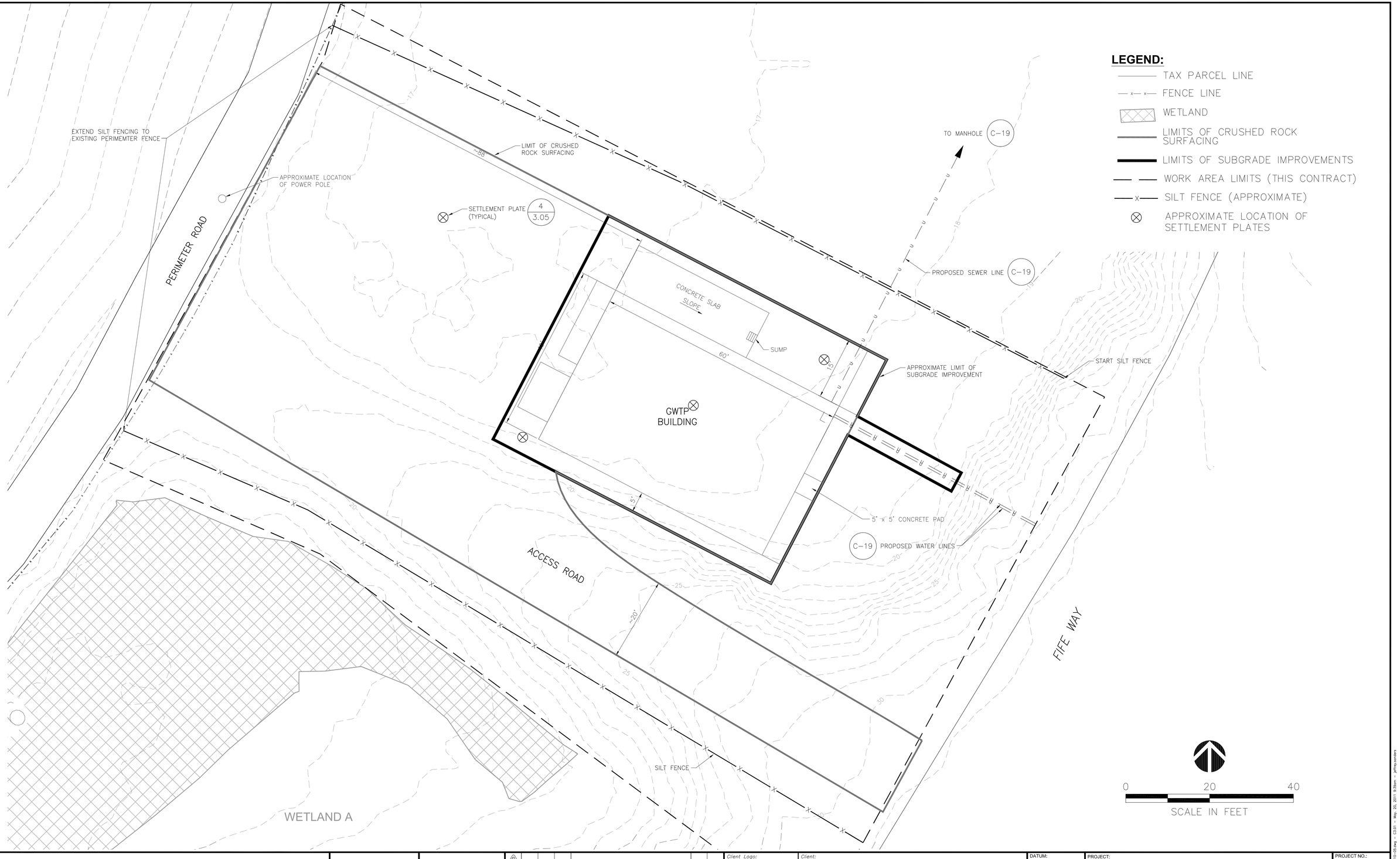
KIOSK #5 PLC ELECTRICAL SCHEMATICS

B&L WOODWASTE SITE
PIERCE COUNTY, WASHINGTON

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

DRAWING
E-08

Geotechnical and Building Pad Drawings



REV	D	M	Y	ISSUE/REVISION DESCRIPTION	ENG.	APPR.
G						
F						
E						
D						
C						
B						
A	15	04	2011	ISSUED FOR CLIENT REVIEW	X.X.	WBL

Client Logo:

Client: B&L CUSTODIAL TRUST

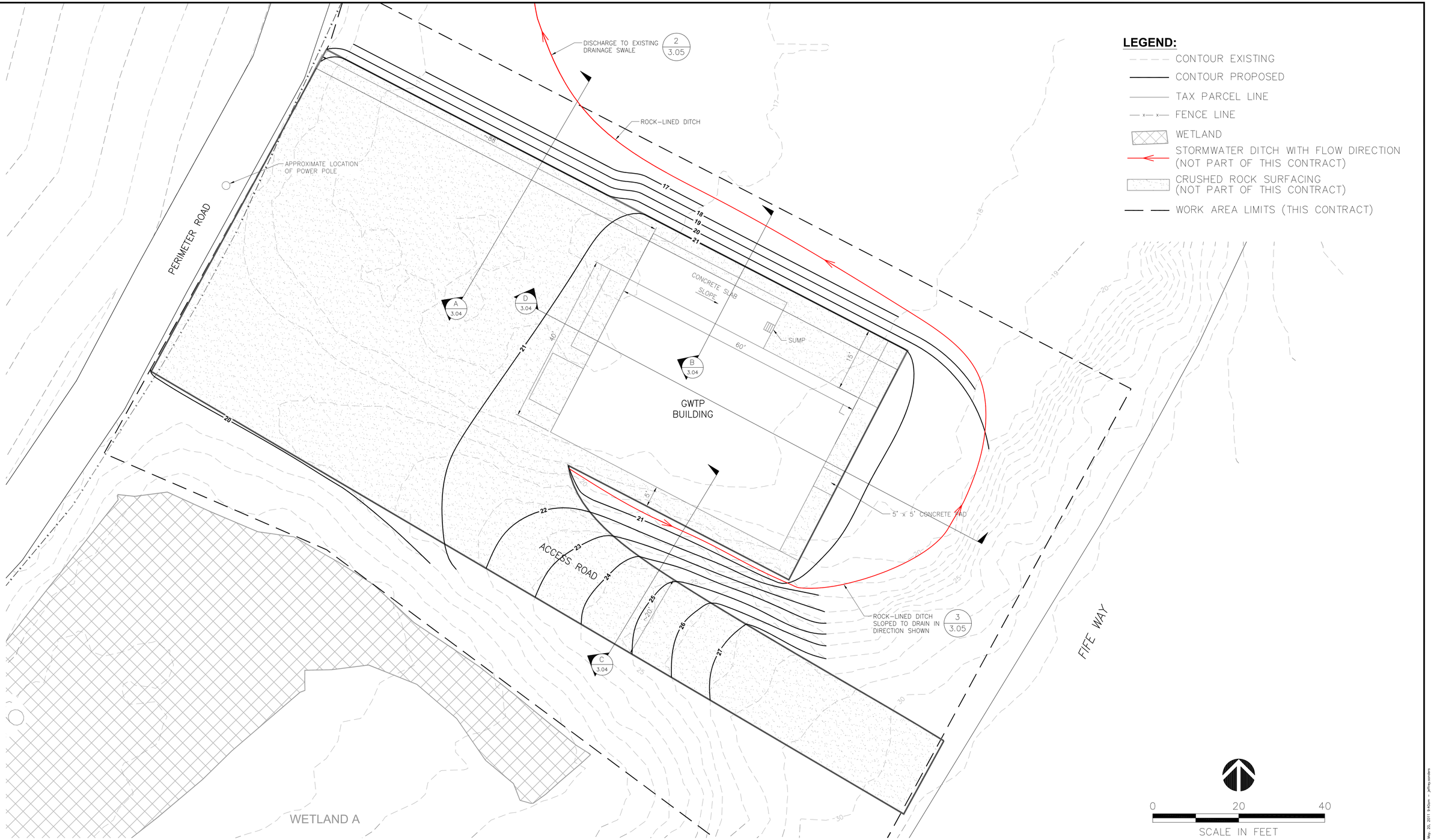
AMEC Earth & Environmental
11810 North Creek Parkway North
Bothell, WA, U.S.A. 98011-8201
www.amec.com/earthandenvironmental

DATUM:
PROJECTION:
DRAWN BY: JRS
REVIEWED BY: WBL
ORIGINAL SCALE: AS SHOWN

PROJECT: B&L WOODWASTE EQUIPMENT BUILDING

TITLE: SUBGRADE IMPROVEMENTS

PROJECT NO.: SE 10160010
REVISION NO.
DATE: MAY 2011
DRAWING NO.: C-3.01
SHEET NO.: Sheet 1 of 5



REV	D	M	Y	ISSUE/REVISION DESCRIPTION	ENG.	APPR.
A	15	04	2011	ISSUED FOR CLIENT REVIEW	X.X.	WBL

Client Logo:

Client: B&L CUSTODIAL TRUST

AMEC Earth & Environmental
11810 North Creek Parkway North
Bothell, WA, U.S.A. 98011-8201
www.amec.com/earthandenvironmental

DATUM:
PROJECTION:
DRAWN BY: JRS
REVIEWED BY: WBL
ORIGINAL SCALE: AS SHOWN

PROJECT: B&L WOODWASTE EQUIPMENT BUILDING

TITLE: GRADING AND DRAINAGE

PROJECT NO.: SE 10160010
REVISION NO.
DATE: MAY 2011
DRAWING NO.: C-3.02
SHEET NO.: Sheet 2 of 5

G:_AMEC\Geomatics\SE 10160010\se 10160010-05.dwg - C3.02 - May. 20, 2011 9:40am - jeffreysanders

GENERAL NOTES

1. IT IS THE INTENT OF THIS SPECIFICATION THAT THE CONTRACTOR PROVIDE THE WORK DEFINED HEREIN, COMPLETE IN EVERY RESPECT, AND IN ACCORDANCE WITH THE GOOD PRACTICES OF THE TRADES INVOLVED IN THE EXCAVATION, TRANSPORT, PLACEMENT, GRADING, BACKFILLING AND COMPACTION OF EARTHEN MATERIALS AND THE REQUIREMENTS OF THE SPECIFICATION, REGARDLESS OF WHETHER OR NOT FULL DETAILS OF SUCH COMPLETENESS, WORKMANSHIP, OR PRACTICES ARE CONTAINED HEREIN.
2. ALL WORK SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES, ORDINANCES AND REGULATIONS. NOTHING IN THE SPECIFICATIONS OR DRAWINGS IS TO BE CONSTRUED TO ALLOW WORK NOT CONFORMING TO SUCH CODES. CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH THE REGULATIONS AND CODE REQUIREMENTS.

EROSION CONTROL NOTES

1. PROVIDE, INSTALL AND MAINTAIN EROSION CONTROL MEASURES AS INDICATED IN THE PROJECT PLANS AND AS REQUIRED BY PIERCE COUNTY AND THE WASHINGTON STATE DEPARTMENT OF ECOLOGY, PRIOR TO BEGINNING ANY WORK WHICH DISTURBS THE EXISTING SITE SOILS OR VEGETATION. PROVIDE, INSTALL AND MAINTAIN ADDITIONAL TEMPORARY EROSION CONTROL MEASURES AT NO ADDITIONAL COST TO THE OWNER AS NECESSARY DUE TO WEATHER OR ENVIRONMENTAL CONDITIONS AND TO COMPLY WITH PIERCE COUNTY, AND THE WASHINGTON STATE DEPARTMENT OF ECOLOGY.
2. ALL STORMWATER WITHIN THE WORK AREAS SHALL BE CONTAINED ONSITE AND INFILTRATED. EROSION AND SEDIMENT CONTROL MEASURES ARE CONCEPTUAL AND MAY BE ALTERED AS NECESSARY DURING DIFFERENT STAGES OF CONSTRUCTION TO PREVENT SEDIMENT OR STORMWATER MIGRATING OFFSITE.
3. THE EXISTING WETLANDS SOUTH OF THE ACCESS ROAD AND NORTH OF THE PROJECT SITE SHALL BE PROTECTED FROM ADVERSE IMPACT BY SITE ACTIVITIES. PROVIDE SUMPS, PUMPS AND HOSES TO COLLECT AND REMOVE ANY TURBID STORMWATER BEFORE IT ENTERS THESE AREAS.
4. ANY SEDIMENT THAT IS TRACKED ON TO FIFE WAY SHALL BE REMOVED IMMEDIATELY BY SWEEPING. THE PAVEMENT SHALL NOT BE CLEANED BY WASHING DOWN THE STREET, EXCEPT WHEN SWEEPING IS INEFFECTIVE AND THERE IS NO THREAT TO PUBLIC SAFETY
5. IF SEDIMENT FROM THE WORK SITE IS TRACKED ONTO FIFE WAY, THEN ALTERNATIVE MEASURES TO KEEP STREETS FREE OF SEDIMENT SHALL BE USED. THIS MAY INCLUDE CONSTRUCTION OF A STABILIZED CONSTRUCTION ENTRANCE, REGULARLY SCHEDULED STREET SWEEPING OR CONSTRUCTION OF A WHEEL WASH LOCATED ONSITE.
6. DUST CONTROL SHALL BE IMPLEMENTED WHEN EXPOSED SOILS ARE DRY TO THE POINT THAT WIND TRANSPORT IS POSSIBLE AND ROADWAYS, DRAINAGE WAYS OR SURFACE WATERS ARE LKELY TO BE IMPACTED. WATER IS THE MOST COMMON DUST CONTROL METHOD, WHEN USING WATER FOR DUST CONTROL THE EXPOSED SOILS SHALL BE SPRAYED UNTIL WET, BUT RUNOFF SHALL NOT BE GENERATED BY SPRAYING.

SITE EARTHWORK NOTES AND SPECIFICATIONS

1. WSDOT SPECIFICATION CODES CITED HEREIN REFER TO WSDOT PUBLICATION M41-10, 2010 STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION, PREPARED BY WASHINGTON STATE DEPARTMENT OF TRANSPORTATION.
2. CLEARING SHALL CONSIST OF REMOVAL OF ALL TREES, BRUSH, GRASS AND OTHER VEGETATION. CUT OFF FLUSH WITH OR BELOW THE ORIGINAL GROUND SURFACE, TREES, STUMPS, ROOTS, BRUSH AND OTHER VEGETATION IN AREAS TO BE CLEARED. CLEARING SHALL INCLUDE THE DISPOSAL OF ANY RUBBISH OR MAN-MADE MATERIALS ENCOUNTERED. REMOVE AND DISPOSE OF ROOTS LARGER THAN 3 INCHES IN DIAMETER AND THE MATTED ROOTS FROM THE INDICATED GRUBBING AREAS. EXCAVATE THIS MATERIAL TOGETHER WITH ORGANIC AND METALLIC DEBRIS, BRUSH AND REFUSE AND REMOVE TO A DEPTH OF NOT LESS THAN 6 INCHES BELOW THE ORIGINAL SOIL SURFACE. ALL MATERIALS GENERATED FROM CLEARING AND GRUBBING ACTIVITIES ARE TO BE HAULED OFFSITE AND DISPOSED AT AN APPROVED LOCATION. FILL DEPRESSIONS CREATED BY GRUBBING WITH SUITABLE MATERIAL AND IN ACCORDANCE WITH PROJECT SPECIFICATIONS.
3. EXCAVATE SURFACES WITHIN WORK AREAS TO INDICATED CROSS-SECTIONS, ELEVATIONS AND GRADES SHOWN ON PROJECT PLANS. NOTIFY PROJECT GEOTECHNICAL ENGINEER WHEN EXCAVATION HAS REACHED REQUIRED SUBGRADE. PRIOR TO PLACEMENT OF FILL ALL AREAS TO RECEIVE STRUCTURAL FILL SHALL BE PROOF-ROLLED TO EVALUATE SUBGRADE CONDITIONS.
4. PROOF-ROLL EXPOSED SUBGRADE SOILS UNDER THE OBSERVATION OF THE PROJECT GEOTECHNICAL ENGINEER, WHEN WEATHER CONDITIONS PERMIT. CONTRACTOR SHALL PROOF-ROLL USING A FULLY LOADED DUAL-AXLE DUMP TRUCK TO IDENTIFY SOFT SUBGRADE AREAS. SOFT OR YIELDING SUBGRADE SOILS SHALL BE EXCAVATED TO REMOVE THE SOFT SOILS TO EXPOSE SUITABLE SUBGRADE SOILS, AS DETERMINED BY THE PROJECT GEOTECHNICAL ENGINEER. AREAS WHERE SOFT SOILS HAVE BEEN REMOVED SHALL BE BACKFILLED WITH STRUCTURAL FILL PLACED AND COMPACTED IN ACCORDANCE WITH PROJECT SPECIFICATIONS.
5. SETTLEMENT PLATES TO BE INSTALLED AT LOCATIONS SHOWN ON DRAWINGS PRIOR TO FILL PLACEMENT. ALL SETTLEMENT PLATES TO BE SURVEYED IMMEDIATELY AFTER INSTALLATION.
6. ALL IMPORTED MATERIALS SHALL BE PROVIDED BY EITHER LLOYD ENTERPRISES MILTON PIT OR CTI SUMNER PIT NO. 3 WHICH ARE PRE-APPROVED SOURCES FOR THE MATERIAL SPECIFIED. SUBMIT EITHER RECENT GRADATION TESTS OF SOIL MATERIALS TESTED AT THE SOURCE OR PROVIDE 60-POUND SAMPLES WITHIN AIRTIGHT CONTAINERS OF EACH PROPOSED SOIL MATERIAL TO THE DESIGN ENGINEER A MINIMUM OF 1 WEEK BEFORE ANTICIPATED USE. ADDITIONAL CHEMICAL ANALYSES MAY BE REQUIRED
7. DRAINAGE LAYER: SUPPLY AND PLACE 6-INCH THICK, UNIFORM LAYER OF BALLAST MATERIAL MEETING WSDOT 9-03.9(2) “PERMEABLE BALLAST” OVER THE SUBGRADE TREATMENT AREA, EXTENDING THE BALLAST MATERIAL TO THE NORTH EDGE OF THE FILL PAD SO THAT ANY ACCUMULATED SEEPAGE CAN DRAIN FREELY TO THE EDGE OF THE PAD. ALSO EXTEND BALLAST PLACEMENT 1-FOOT BEYOND THE OUTSIDE EDGE OF ANY RAMMED AGGREGATE PIER LOCATIONS.
8. FILL PAD: SUPPLY AND PLACE FILL PAD MATERIAL CONSISTING OF GRANULAR MATERIAL MEETING WSDOT 9-03.14(2) “SELECT BORROW”. GRADE AND COMPACT TO MEET PROJECT PLANS AND SPECIFICATIONS.
9. SETTLEMENT OF THE FILL PAD OUTSIDE OF THE SUBGRADE TREATMENT AREA IS ANTICIPATED. THE CONTRACTOR SHOULD ASSUME THAT UP TO 6-INCHES OF SETTLEMENT MAY OCCUR AFTER PLACEMENT OVER THE COURSE OF BUILDING CONSTRUCTION. FINE GRADING AND ADDITIONAL FILL PAD MATERIAL SHALL BE PLACED NO SOONER THAN SIX WEEKS AFTER COMPLETION OF ROUGH GRADING TO ALLOW FOR MAJORITY OF SETTLEMENT TO OCCUR.
10. GRAVEL SURFACING (NOT PART OF THIS CONTRACT): SUPPLY AND PLACE 6-INCH THICK, UNIFORM LAYER OF CRUSHED SURFACING MATERIAL MEETING WSDOT 9-03.9(3) “CRUSHED SURFACING - TOP COURSE” WITHIN THE AREAS INDICATED ON THE PROJECT PLANS. SHAPE CRUSHED SURFACING TO REQUIRED CROWN ELEVATIONS AND CROSS-SLOPE GRADES TO PROMOTE POSITIVE DRAINAGE AWAY FROM BUILDING AREA.
11. PLACE FILL MATERIALS IN UNIFORM, LEVEL CONTINUOUS LAYERS NOT EXCEEDING 6-INCHES IN LOOSE LIFT THICKNESS AND COMPACT TO A FIRM AND UNYIELDING CONDTION TO ATTAIN A MINIMUM OF 90 PERCENT OF MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D1557. MAINTAIN OPTIMUM MOISTURE CONTENT OF FILL MATERIALS TO ATTAIN REQUIRED COMPACTION VALUES. EARTHWORK PERFORMED DURING WET WEATHER IS AT THE CONTRACTORS OWN RISK. MATERIALS WHICH BECOME UNUSABLE DUE TO HIGH MOISTURE CONTENT SHALL BE EITHER REMOVED AND REPLACED WITH SUITABLE STRUCTURAL FILL OR SCARIFIED AND AERATED TO DRY THE MATERIAL TO ITS OPTIMUM MOISTURE CONTENT AT NO COST TO THE OWNER.
12. GRANULAR SPOILS GENERATED FROM PRE-DRILLING OF RAMMED AGGREGATE PIERS ARE TO BE PLACED IN A THIN LIFT NEAR THE BASE OF THE FILL AREA OUTSIDE OF THE BUILDING PAD FOOTPRINT. SHOULD THE MATERIAL CONSIST OF HIGH PLASTICITY CLAYEY SOILS OR HAVE PREVALENT ORGANIC DEBRIS, THE SPOILS SHALL BE EXPORTED OFF-SITE.
13. EXCAVATE DRAINAGE DITCH (NOT PART OF THIS CONTRACT) AT THE APPROXIMATE LOCATION INDICATED ON THE PROJECT PLANS. SLOPE DITCH INVERT SUCH THAT POSITIVE DRAINAGE IS MAINTAINED WITH THE DISCHARGE POINT LOCATED AS SHOWN. LINE DITCH WITH "PERMEABLE BALLAST", WSDOT 9-03.4(2) TO ARMOR THE DRAINAGE DITCH SIDEWALLS.

RAMMED AGGREGATE PIER FOUNDATION NOTES AND SPECIFICATIONS

1. WORK SHALL CONSIST OF DESIGNING, FURNISHING AND INSTALLING RAMMED AGGREGATE PIER FOUNDATIONS TO THE LINES AND GRADES DESIGNATED ON THE SUBGRADE IMPROVEMENT PLAN AND AS SPECIFIED HEREIN. PROVIDE ALL EQUIPMENT, MATERIAL, LABOR, AND SUPERVISION TO DESIGN AND INSTALL RAMMED AGGREGATE PIER ELEMENTS. DESIGN SHALL RELY ON SUBSURFACE INFORMATION PRESENTED IN THE PROJECT GEOTECHNICAL REPORT.
2. THE AGGREGATE PIERS SHALL BE CONSTRUCTED BY DRIVING A HOLLOW MANDREL TO THE DESIGN DEPTH AND VERTICALLY RAMMING LIFTS OF AGGREGATE USING THE SPECIALLY DESIGNED TAMPER HEAD AND HIGH-ENERGY IMPACT DENSIFICATION EQUIPMENT TO CREATE THE COMPACTED AGGREGATE PIER. THE RAMMED AGGREGATE PIER ELEMENTS SHALL BE IN A COLUMNAR-TYPE CONFIGURATION AND SHALL BE USED TO IMPROVE THE EXISTING SUBGRADE SOILS BENEATH THE FOOTPRINT OF THE PROPOSED BUILDING AND CONCRETE TRUCK PAD AND ASSOCIATED UTILITIES INCLUDING: DOMESTIC WATER, FIRE AND SANITARY SEWER LINES TO THE LIMITS OF THE FILL PAD AS SHOWN.
3. THE RAMMED AGGREGATE PIER INSTALLER (THE INSTALLER) CURRENTLY APPROVED FOR THIS WORK IS GEOPIER-NORTHWEST, INC., BELLEVUE, WA. WITHOUT EXCEPTION, NO ALTERNATE INSTALLER WILL BE ACCEPTED UNLESS APPROVED BY THE OWNER'S ENGINEER AT LEAST TWO (2) WEEKS PRIOR TO BID OPENING.
4. DESIGN CALCULATIONS - THE INSTALLER SHALL SUBMIT DETAILED DESIGN CALCULATIONS AND CONSTRUCTION DRAWINGS PREPARED BY THE RAMMED AGGREGATE PIER DESIGNER (THE DESIGNER) FOR REVIEW AND APPROVAL BY THE OWNER OR OWNER'S ENGINEER. ALL PLANS SHALL BE SEALED BY A WASHINGTON STATE PROFESSIONAL ENGINEER.
5. THE DESIGN OF THE RAMMED AGGREGATE PIER SYSTEM SHALL BE BASED ON THE SERVICE LOAD BEARING PRESSURE AND THE ALLOWABLE TOTAL AND DIFFERENTIAL SETTLEMENT CRITERIA OF ALL FOOTINGS INDICATED BY THE DESIGN TEAM FOR SUPPORT BY THE RAMMED AGGREGATE PIER SYSTEM. THE RAMMED AGGREGATE PIER SYSTEM SHALL BE DESIGNED IN ACCORDANCE WITH GENERALLY-ACCEPTED ENGINEERING PRACTICE. THE DESIGN LIFE OF THE STRUCTURE SHALL BE 50 YEARS AND SHALL MEET THE FOLLOWING CRITERIA:

   MAXIMUM ALLOWABLE BEARING PRESSURE FOR REINFORCED SOILS FOOTINGS SUPPORTED BY RAMMED AGGREGATE PIER: 2,000 PSF

   ESTIMATED TOTAL LONG-TERM SETTLEMENT: ≤1-INCH

   ESTIMATED LONG-TERM DIFFERENTIAL SETTLEMENT: ≤½-INCH
6. THE INSTALLER SHALL SUBMIT DETAILED DESIGN CALCULATIONS, CONSTRUCTION DRAWINGS, AND SHOP DRAWINGS, (THE DESIGN SUBMITTAL), FOR APPROVAL AT LEAST 2 WEEK(S) PRIOR TO THE BEGINNING OF CONSTRUCTION. A DETAILED EXPLANATION OF THE DESIGN PARAMETERS FOR SETTLEMENT CALCULATIONS SHALL BE INCLUDED IN THE DESIGN SUBMITTAL. ALL COMPUTER-GENERATED CALCULATIONS AND DRAWINGS SHALL BE PREPARED AND SEALED BY A PROFESSIONAL ENGINEER, LICENSED IN WASHINGTON STATE.
7. THE LOCATION OF RAMMED AGGREGATE PIER-SUPPORTED FOUNDATIONS FOR THIS PROJECT, INCLUDING LAYOUT OF INDIVIDUAL RAMMED AGGREGATE PIER ELEMENTS, SHALL BE MARKED IN THE FIELD USING SURVEY STAKES OR SIMILAR MEANS AT LOCATIONS SHOWN ON THE DRAWINGS. THE AS-BUILT CENTER OF EACH PIER SHALL BE WITHIN 6 INCHES OF THE LOCATIONS INDICATED ON THE PLANS. PIERS INSTALLED OUTSIDE OF THE ABOVE TOLERANCES AND DEEMED NOT ACCEPTABLE SHALL BE REBUILT AT NO ADDITIONAL EXPENSE TO THE OWNER.
8. DISPLACEMENT RAMMED AGGREGATE PIER SYSTEMS SHALL BE CONSTRUCTED BY ADVANCING A SPECIALLY DESIGNED MANDREL WITH A MINIMUM 15 TON STATIC FORCE AUGMENTED BY DYNAMIC VERTICAL RAMMING ENERGY TO THE FULL DESIGN DEPTH. THE HOLLOW-SHAFT MANDREL, FILLED WITH AGGREGATE, IS INCREMENTALLY RAISED, PERMITTING THE AGGREGATE TO BE RELEASED INTO THE CAVITY, AND THEN LOWERED BY VERTICALLY ADVANCING AND/OR RAMMING TO DENSIFY THE AGGREGATE AND FORCE IT LATERALLY INTO THE ADJACENT SOIL. THE CYCLE OF RAISING AND LOWERING THE MANDREL IS REPEATED TO THE TOP OF PIER ELEVATION. THE CYCLE DISTANCE SHALL BE DETERMINED BY THE RAMMED AGGREGATE PIER DESIGNER. SPECIAL HIGH-ENERGY IMPACT DENSIFICATION APPARATUS SHALL BE EMPLOYED TO VERTICALLY DENSIFY THE RAMMED AGGREGATE PIER ELEMENTS DURING INSTALLATION OF EACH CONSTRUCTED LIFT OF AGGREGATE. DENSIFICATION SHALL BE PERFORMED USING A MANDREL/TAMPER. THE MANDREL/TAMPER FOOT IS REQUIRED TO ADEQUATELY INCREASE THE LATERAL EARTH PRESSURE IN THE MATRIX SOIL DURING INSTALLATION. COMPACTION EQUIPMENT THAT INDUCES HORIZONTAL VIBRATORY ENERGY (SUCH AS VIBROFLOT EQUIPMENT) IS NOT PERMITTED. DOWNWARD CROWD PRESSURE SHALL BE APPLIED TO THE MANDREL DURING INSTALLATION.
9. PRE-AUGERING THROUGH THE EXISTING GRANULAR FILL USING MECHANICAL DRILLING OR EXCAVATION EQUIPMENT IS PERMITTED PROVIDED THE MAXIMUM DEPTH OF DRILLING IS LESS THAN 10 FEET. SPOILS FROM PRE-AUGERING TO BE COLLECTED AND STOCKPILED FOR REUSE AS FILL OUTSIDE OF THE BUILDING PAD.
10. DAILY RAMMED AGGREGATE PIER PROGRESS REPORTS - THE INSTALLER SHALL FURNISH A COMPLETE AND ACCURATE RECORD OF RAMMED AGGREGATE PIER INSTALLATION TO THE GENERAL CONTRACTOR. THE RECORD SHALL INDICATE THE PIER LOCATION, LENGTH, VOLUME OF AGGREGATE USED OR NUMBER OF LIFTS, DENSIFICATION FORCES DURING INSTALLATION, AND FINAL ELEVATIONS OR DEPTHS OF THE BASE AND TOP OF PIERS. THE RECORD SHALL ALSO INDICATE THE TYPE AND SIZE OF THE INSTALLATION EQUIPMENT USED, AND THE TYPE OF AGGREGATE USED. THE INSTALLER SHALL IMMEDIATELY REPORT ANY UNUSUAL CONDITIONS ENCOUNTERED DURING INSTALLATION TO THE GENERAL CONTRACTOR, THE DESIGNER AND TO THE TESTING AGENCY.
11. THE RAMMED AGGREGATE PIER INSTALLER SHALL PROVIDE FULL-TIME QUALITY CONTROL MONITORING OF RAMMED AGGREGATE PIER CONSTRUCTION ACTIVITIES. THE OWNER'S ENGINEER WILL PROVIDE QUALITY ASSURANCE SERVICES.
12. SITE GRADES FOR RAMMED AGGREGATE PIER INSTALLATION SHALL BE WITHIN 1 FOOT OF THE TOP OF FOOTING ELEVATION OR FINISHED GRADE ELEVATION TO MINIMIZE RAMMED AGGREGATE PIER INSTALLATION DEPTHS. GROUND ELEVATIONS AND BOTTOM OF FOOTING ELEVATIONS SHALL BE PROVIDED TO THE RAMMED AGGREGATE PIER INSTALLER IN SUFFICIENT DETAIL TO ESTIMATE INSTALLATION DEPTH ELEVATIONS TO WITHIN 3 INCHES.
13. THE EARTHWORK CONTRACTOR WILL PROVIDE SITE ACCESS TO THE INSTALLER, AFTER EARTHWORK IN THE AREA HAS BEEN COMPLETED. A WORKING SURFACE SHALL BE ESTABLISHED AND MAINTAINED BY THE EARTHWORK CONTRACTOR TO PROVIDE WET WEATHER PROTECTION OF THE SUBGRADE AND TO PROVIDE ACCESS FOR EFFICIENT OPERATION OF THE RAMMED AGGREGATE PIER INSTALLATION. PRIOR TO, DURING AND FOLLOWING RAMMED AGGREGATE PIER INSTALLATION, THE EARTHWORK CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE TO PROTECT THE SITE FROM WET WEATHER AND SURFACE PONDING OF WATER. IF SPOILS ARE GENERATED BY RAMMED AGGREGATE PIER INSTALLATION, SPOIL REMOVAL FROM THE RAMMED AGGREGATE PIER WORK AREA IN A TIMELY MANNER TO PREVENT INTERRUPTION OF RAMMED AGGREGATE PIER INSTALLATION IS REQUIRED. SPOILS TO BE STOCKPILED FOR REUSE AS STRUCTURAL FILL OUTSIDE OF THE BUILDING FOOTPRINT
14. THE EARTHWORK CONTRACTOR SHALL COORDINATE ALL EXCAVATIONS MADE SUBSEQUENT TO RAMMED AGGREGATE PIER INSTALLATIONS SO THAT EXCAVATIONS DO NOT ENCROACH ON THE PIERS AS SHOWN IN THE RAMMED AGGREGATE PIER CONSTRUCTION DRAWINGS. PROTECTION OF COMPLETED RAMMED AGGREGATE PIER ELEMENTS IS THE RESPONSIBILITY OF THE EARTHWORK CONTRACTOR. IN THE EVENT THAT UTILITY EXCAVATIONS ARE REQUIRED IN CLOSE PROXIMITY TO THE INSTALLED RAMMED AGGREGATE PIER ELEMENTS, THE EARTHWORK CONTRACTOR SHALL CONTACT THE RAMMED AGGREGATE PIER DESIGNER IMMEDIATELY TO DEVELOP CONSTRUCTION SOLUTIONS TO MINIMIZE IMPACTS ON THE INSTALLED AGGREGATE PIER ELEMENTS.
15. PRIOR TO PLACEMENT OF THE DRAINAGE LAYER OVER THE SUBGRADE IMPROVEMENT AREA, THE TOPS OF ALL RAMMED AGGREGATE PIER ELEMENTS AND SUBGRADE AREAS BETWEEN THE AGGREGATE PIERS SHALL BE CLEARED OF LOOSE SOILS OR DEBRIS. COMPACTION OF THE TOP OF RAMMED AGGREGATE PIER ELEMENTS SHALL BE PERFORMED USING A MOTORIZED IMPACT COMPACTOR (“WACKER”, “JUMPING JACK,” OR SIMILAR). LOOSE OR SOFT SURFICIAL SOIL OVER THE TREATMENT AREA SURFACE SHALL BE RECOMPACTED OR REMOVED.

REV	D	M	Y	ISSUE/REVISION DESCRIPTION	ENG.	APPR.
G						
F						
E						
D						
C						
B						
A	15	04	2011	ISSUED FOR CLIENT REVIEW	X.X.	WBL

Client Logo:

Client: B&L CUSTODIAL TRUST

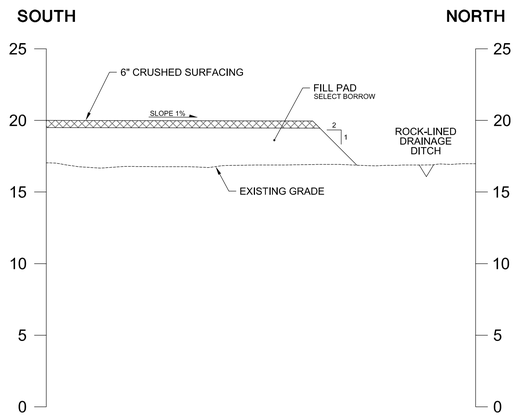
AMEC Earth & Environmental
11810 North Creek Parkway North
Bothell, WA, U.S.A. 98011-8201
www.amec.com/earthandenvironmental

DATUM:
PROJECTION:
DRAWN BY: JRS
REVIEWED BY: WBL
ORIGINAL SCALE: AS SHOWN

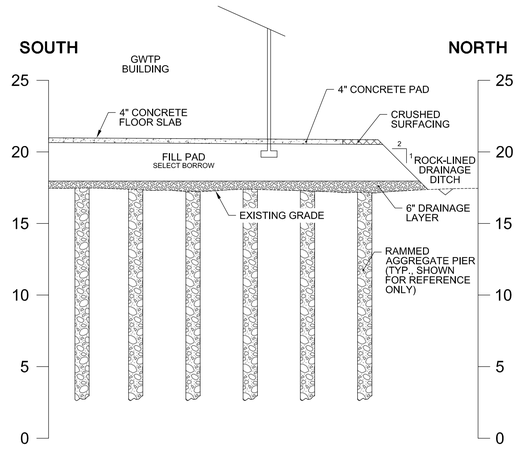
PROJECT: B&L WOODWASTE EQUIPMENT BUILDING
TITLE: DETAILS AND NOTES

PROJECT NO.: SE 10160010
REVISION NO.
DATE: MAY 2011
DRAWING NO.: C-3.03
SHEET NO.: Sheet 3 of 5

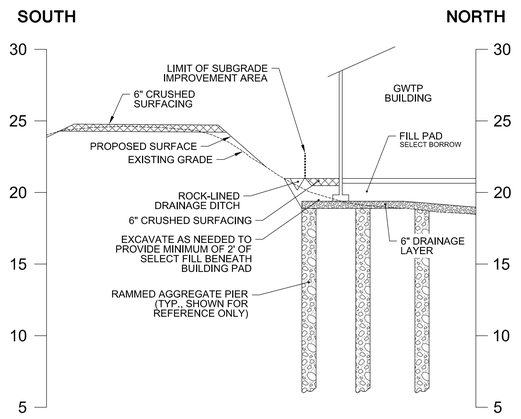
D:_AMEC\Documents\CSE 10160010\Use 10160010-05.dwg - C3.03 - May 20, 2011 9:41am - jeffrey.sanders



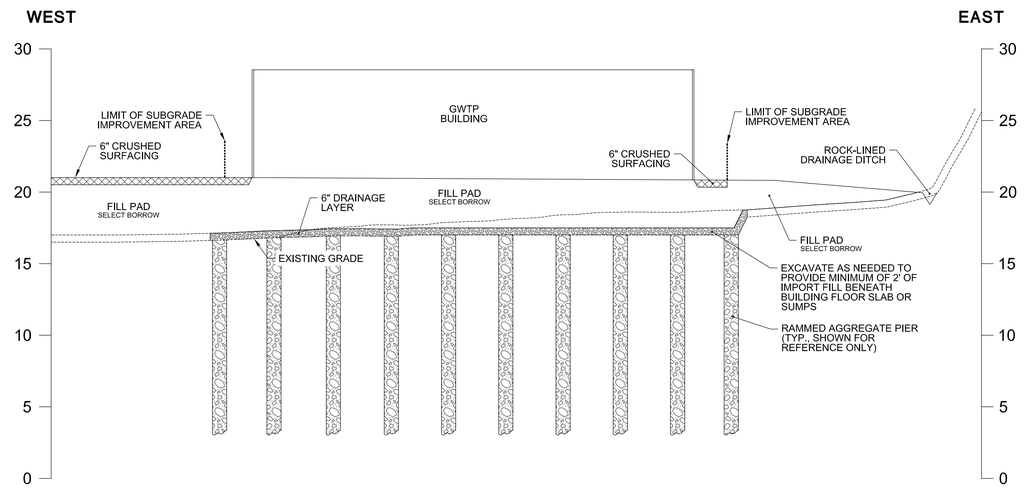
A C-3.02 **PROFILE A**
NOT TO SCALE



B C-3.02 **PROFILE B**
NOT TO SCALE



C C-3.02 **PROFILE C**
NOT TO SCALE



D C-3.02 **PROFILE D**
NOT TO SCALE

REV	D	M	Y	ISSUE/REVISION DESCRIPTION	ENG.	APPR.
A	15	04	2011	ISSUED FOR CLIENT REVIEW	X.X.	WBL
B						
C						
D						
E						
F						
G						

Client Logo:

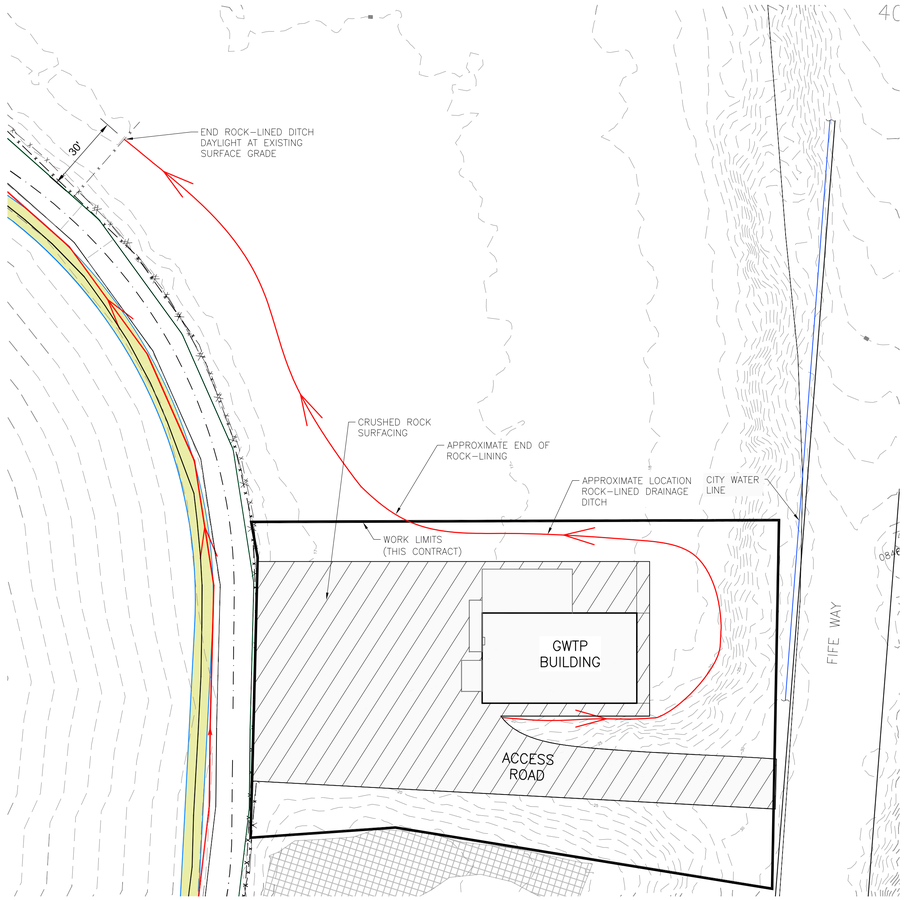
Client: B&L CUSTODIAL TRUST

AMEC Earth & Environmental
11810 North Creek Parkway North
Bothell, WA, U.S.A. 98011-8201

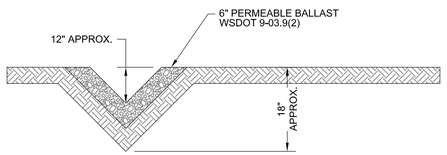
DATUM:
PROJECTION:
DRAWN BY: JRS
REVIEWED BY: WBL
ORIGINAL SCALE: AS SHOWN

PROJECT: B&L WOODWASTE EQUIPMENT BUILDING
TITLE: DETAILS AND NOTES

PROJECT NO.: SE 10160010
REVISION NO.
DATE: MAY 2011
DRAWING NO.: C-3.04
SHEET NO.: Sheet 4 of 5



1 3.02 **DRAINAGE DETAIL**
NOT TO SCALE

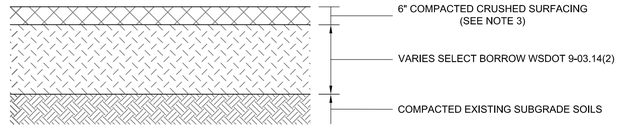


2 3.02 **ROCK-LINED DITCH DETAIL**
NOT TO SCALE

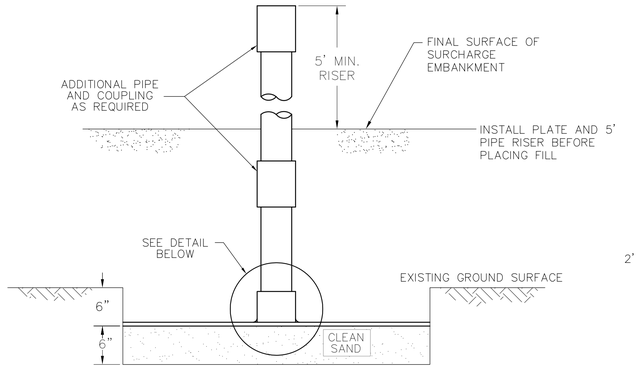
NOTES

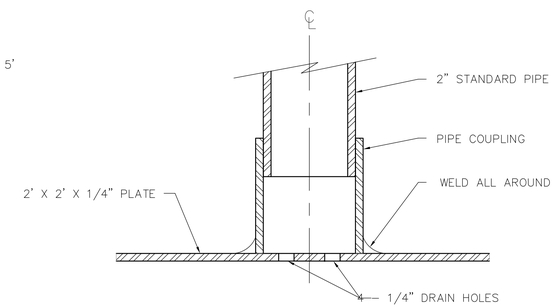
1. DEPTHS ARE COMPACTED THICKNESS.
2. ALL UTILITY TRENCHING AND EXCAVATION TO BE COMPLETED AND BACKFILLED PRIOR TO PLACING CRUSHED SURFACING.
3. CRUSHED SURFACING TO MEET THE FOLLOWING REQUIREMENTS:

SIEVE	PERCENT PASSING
3/4	**100**
No. 4	50-78
No. 8	37-67
No. 40	13-35
No. 200	4-15



3 3.02 **CRUSHED ROCK SURFACING DETAIL**
NOT TO SCALE





4 3.01 **SETTLEMENT PLATE DETAIL**
NOT TO SCALE

REV	D	M	Y	ISSUE/REVISION DESCRIPTION	ENG.	APPR.
G						
F						
E						
D						
C						
B						
A	15	04	2011	ISSUED FOR CLIENT REVIEW	X.X.	WBL

Client Logo:

Client: B&L CUSTODIAL TRUST

AMEC Earth & Environmental
11810 North Creek Parkway North
Bothell, WA, U.S.A. 98011-6201
www.amec.com/earthandenvironmental

DATUM:
PROJECTION:
DRAWN BY: JRS
REVIEWED BY: WBL
ORIGINAL SCALE: AS SHOWN

PROJECT: B&L WOODWASTE EQUIPMENT BUILDING
TITLE: DETAILS AND NOTES

PROJECT NO.: SE 10160010
REVISION NO.
DATE: MAY 2011
DRAWING NO.: C-3.05
SHEET NO.: Sheet 5 of 5