

ADDENDUM NO. 1 TO THE CONTRACT DOCUMENTS FOR THE CONSTRUCTION OF
SWIFT SUBSTATION ADDITION, PUBLIC UTILITY DISTRICT NO. 1
LONGVIEW, WASHINGTON

To Planholders and/or Prospective Bidders: Below are answers to questions raised during or since mandatory pre-bid conference held at PUD office on July 9, 2009.

- A follow-up pre-bid meeting may be requested due to timing of advertisement for bids and scheduling of July 9 meeting (note: Christenson Electric has made this request).
- Swift schedule may delay due to permits being obtained by the DISTRICT.
- DISTRICT provided materials can be picked up at the Operations Center located in Longview, WA,
- CONTRACTOR to provide 4' x 4' x 9" concrete step outside of Control House provided and installed by DISTRICT.
- DISTRICT will disconnect jumpers from existing 230kV disconnect switch and Swift Line No. 1 prior to start of construction.
- Items 780 and 781 (AMI Equipment) will be furnished and installed by DISTRICT
- There is no place to dispose of spoils at Swift site.
- Tree and brush removal and disposal is required.
- DISTRICT will provide construction power for Swift site. CONTRACTOR to provide meter base and 200 Amp panel at location of service.
- See below for clarifications on questions asked on Bill of Material (marked up copy attached).

The following changes, additions, and/or deletions are hereby made a part of the Contract Documents for the construction of the Swift Substation Addition, dated July 2009 as fully and completely as if the same were fully set forth therein:

PART 1: BIDDING REQUIREMENTS

Section 00340 PROPOSAL: Unit No. 21 Install 12.5 kV switches, 1-P, complete, change No. of Units from 6 to 18.

PART 5: DRAWINGS

Replace the Swift Material List with replacement "Addendum No. 1" list attached.

TriAxis Engineering, INC.



Paul A. Hazel, P.E., Project Manager

Appended hereto and part of Addendum No. 1 is:
Attachment No. 1; Swift Material List (07.15.2009 marked up copy)

END OF ADDENDUM

BILLS OF MATERIALS INDEX

<u>Item Numbers</u>	<u>Contents</u>
1-99	Electrical Equipment
100-199	Structures
200-299	Insulators
300-399	Fittings
400-499	Fitting Hardware
500-599	Grounding
600-699	Line Connection Fittings
700-799	Miscellaneous

Note: Quantities shown on material list are for contractor's convenience. Verify all quantities and catalog numbers prior to ordering materials.

PRELIMINARY

07.15.2009
Addendum No. 1

PRELIMINARY		SWIFT #2 DISTRIBUTION ADDITION BILL OF MATERIAL		COWLITZ COUNTY PUD	
Date: MAY 2009					
DES: TriAxis	DR: TriAxis				
CH: Lammers	APP: P. Hazel				
APP:		Sheet 1 of 12	Scale: NONE		
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ELECTRICAL EQUIPMENT

Item

No. Qty.

Description

POWER TRANSFORMERS

1* 1 Three phase, two winding, power transformer, with LTC 15/20/25 MVA, 230-13.09/7.56 kV, 1.5-12 stud HV and 1.5-12 stud LV bushings, provided with 144 kV station class arrestors on HV and 8.4 kV intermediate class arresters on LV, Cowlitz PUD Transformer; Co. No. ???, Delta Star, Inc. (Furnished, placed on foundation and dressed out by Cowlitz PUD)

CIRCUIT SWITCHERS

6* 1 230 kV circuit switcher, 1200A, 20 kA, with steel support columns, 12'-0" phase spacing, complete with control cabinet and motor operator, 125V DC, Southern States CSV 242

POWER CIRCUIT BREAKERS

11* 2 15.5kV, 1200A, circuit breaker with 1200:5 MR CTs on source side bushings, Square D FVR1121120A, 1-1/4"-12 bushing stud

VOLTAGE TRANSFORMERS

20* 3 15kV class (7200/12470 GY), voltage transformer, Ratio 60:1, 120 volt output, Westinghouse type VOG11

DISTRIBUTION TRANSFORMERS

25* 1 25kVA, 7200/12470Y-120/240V, single phase, distribution transformer

26* 1 25kVA, 7200/12470Y-120/240V, single phase, distribution transformer, "pad mount" (provided and installed by Cowlitz PUD)

* Furnished by Cowlitz PUD *installed by contractor (unless noted otherwise)*

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ELECTRICAL EQUIPMENT (continued)

<u>Item No.</u>	<u>Qty.</u>	<u>Description</u>
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FUSES

30*	3	14.4kV, 1E Amp, power fuse, with mounting, S&C Type SMD-20
31*	2	14.4kV, 6E Amp, power fuse, with mounting, S&C Type SMD-20, 1 spare
32*	5	Current Limiting Fuse AB Chance K-25 (1 for station service, 3 for AMI & 1 spare)
33*	3	14.4kV, 10T Amp, power fuse, with mounting, S&C Type SMD-20

SWITCHES

40*	18	15kV, 900A, hook-stick operated, disconnect switch, S&C 4782R3-
42*	1	Switch, group operated, 15kV, 2000 Amp, copper, vertical break, TR-205, NEMA No. 70 Grey station post insulators. Provided with a motor operator control mechanism and load interrupting mechanism. Switch is to be mounted upright on a rack structure with 2'-6" phase spacing. (furnished and installed by Owner)

MISCELLANEOUS

52*	6	Lightning Arrester, 10kV, Station Class with mounting hardware, Joslyn (furnished and installed by Cowlitz PUD)
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STRUCTURES

<u>Item No.</u>	<u>Qty.</u>	<u>Description</u>
100	lot	12.47 kV rack, aluminum, Sh S-2 through S-5.
102	1	230 kV low bus support, single phase, 6" tube steel (19'-2" Bus Height), Sh S-1
103	2	15 kV low bus support, three phase, 6" tube steel (19'-9" Bus Height), Sh S-1
104	2	230 kV low bus support, three phase, 6" tube steel (19'-2" Bus Height), Sh S-6

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INSULATORS

<u>Item No.</u>	<u>Qty.</u>	<u>Description</u>
200*	7	230 kV station post insulator, 5" B.C., gray, 950 lb, 900kV BIL, TR-368 Lapp 315304-70
201*	21	15 kV station post insulator, 3" B.C., gray, 2000 lb, 100kV BIL, TR-205 Lapp 315205-70

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FITTINGS

<u>Item No.</u>	<u>Qty.</u>	<u>Description</u>
ALUMINUM WELDMENT CONNECTORS		
304	3	Connector, tee, 3" IPS AL to 3" IPS AL, weld, Anderson WTT-3030
305	6	Coupler, 45 degree, 3" IPS AL, to 3" IPS AL, weld, Anderson WLI 45-3030
306	3	Coupler, 90 degree, 3" IPS AL, to 3" IPS AL, weld, Anderson WLI 90-3030
307	9	Bus support, 3" IPS AL, 3" B.C., Hook-on type, Anderson WTH-30-3
308	24	Terminal connector, 1" IPS AL to 2-hole pad, Anderson WSTF-10-B2
309	6	Connector, tee, 3" IPS AL to 1" IPS AL, tap, Anderson WTT-3010
311	12	Connector, tee, 1" IPS AL run to 1" IPS AL, tap, Anderson WTT-1010
312	21	Bus support, 1" IPS AL, 3" B.C., Hook-on type, Anderson WTH-10-3
315	As Req'd	Coupler 1" to 1" IPS AL, Anderson WC-1010
316	As Req'd	Coupler 3" to 3" IPS AL, Anderson WC-3030
319	6	Connector, 3" IPS to 2" IPS tap 15 deg from vertical, Anderson WTT-15-3020
320	3	Connector, 3" IPS run to two-2" IPS tap 15 deg from vertical, Anderson WTT2-15-3020
321	3	Connector, tee 3" IPS AL to 4-hole pad, Anderson WTTFR-30-60-C
322	6	Terminal connector, 90 degree, 2-hole pad to 3" IPS, weld, Anderson WSTF-30-B2-Y90
323	6	Connector, tee, 954 ACSR run to 4-hole pad, Anderson 2113
324	3	Expansion terminal, 3" IPS AL to 4-hole pad, (provide aluminum bar for support if required) Travis 18-123-EX (Fitting to be provided with stainless steel bolts, thick Belleville washers and silicon bronze nuts).
326	9	Terminal connector, 3"IPS AL to 4-hole pad, center formed Anderson WSTF-30-C-CF

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FITTINGS (continued)

<u>Item No.</u>	<u>Qty.</u>	<u>Description</u>
DRIVE FITTINGS		
328	6	Corona end plug, 1"IPS AL, drive fit, Anderson ACBI-10
329	6	Corona end plug, 3"IPS AL, drive fit, Anderson ACBI-30
BOLTED FITTINGS		
330	12	Bronze terminal connector for #1/0-500 MCM copper to 2-hole pad, Anderson SWH-050-B2 (Fitting to be provided with stainless steel bolts, thick Belleville washers and silicon bronze nuts for clamping hardware).
331	6	Bronze terminal connector for #1/0-500 MCM copper, 4-hole pad, Anderson SWH-050-C. (Fitting to be provided with stainless steel bolts, thick Belleville washers and silicon bronze nuts for clamping hardware).
332	6	Bronze terminal connector, #2 copper cable to 2-hole pad, bolted, Anderson SWL-022-B
335	7	Support bus, 3"IPS AL, 5"B.C., Hook-on type, Anderson WTH-30-5
STUD FITTINGS		
336	12	Connector stud, bronze, 1-1/4"-12 to #6 solid -500 MCM copper, Anderson DS-12050-12 (Fitting to be provided with stainless steel bolts, thick Belleville washers and silicon bronze nuts for clamping hardware).
340	6	Stud connector, bronze, 1-1/2"-12 to 4-hole pad, Anderson HDSF-14-1-3-3/8-12 (Fittings to be provided with stainless steel bolts, thick Belleville washers and silicon bronze nuts).
COMPRESSION FITTINGS		
341	9	Terminal, AL, Compression, 927.2 kcmil AAAC or 954 ACSR to 4-Hole pad, Anderson ACF-1000-C.
344	1	Terminal, AL, Compression, 927.2 kcmil AAAC or 954 ACSR to 4-Hole pad, 90 degrees, Anderson ACF-1000-C-90.

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FITTING HARDWARE

<u>Item No.</u>	<u>Qty.</u>	<u>Description</u>
402	As Req.	Stainless steel bolt, 1/2" x 2-1/2", thick Belleville washer and silicone bronze nut
403	As Req.	Stainless steel bolt 1/2" x 2", thick Belleville washer and silicone bronze nut
404	As Req.	Miscellaneous fasteners

ERECTION HARDWARE

405	As Req.	Stainless steel bolt, 5/8" x 2-1/2", flat washer, thick Belleville washer and silicone bronze nut
406	As Req.	Stainless steel bolt 5/8" x 2", flat washer, thick Belleville washer and silicone bronze nut
407	As Req.	Miscellaneous fasteners

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GROUNDING

<u>Item No.</u>	<u>Qty.</u>	<u>Description</u>
500	70	Terminal, Copper, #4/0 Cu conductor to 2-hole pad, Cadweld B-102-EE-OL
501	40	Connector, Bronze, #6 Cu conductor, bolted (Servit), Burndy KS 22
502	3	Connector, #8 solid - #4 stranded Cu to 1-1/2" IPS, bolted, for gate frame, Burndy GAR 174-C
503	5	Connector, #4 solid - #2/0 stranded Cu to 2" IPS, bolted, for line post, Burndy GAR 1826
504	3	Connector, #4 solid - #2/0 stranded Cu to 3-1/2" IPS, bolted, for gate post, Burndy GAR 2126
505	1,800'	Conductor, #4/0 copper stranded, bare
506	1	Mold, #4/0 cu to #4/0 Cu cross connection, for item 510, Cadweld XBM-2Q2Q
507	10	One-Shot, #4/0 cu to 3/4" diameter ground rod, for item 508, Cadweld GR1-182Q
508	10	Ground rod, Copper, 3/4" diameter x 10'-0", Blackburn 7510
509	10	Weld metal, Size 150 for item 507 and 521, Cadweld 150
510	88	Weld metal, Size 250 for item 506, Cadweld 250
512	12	Bronze ground clamp, #4 solid - 300 MCM Cu, bolted, Anderson GC-140-02
513	200'	Conductor, #2/0 copper stranded, bare
514	3	Braided shunt, gate to gate post, Anderson FB-600-24
516	9	Connector, crimpit, #2/0 Cu Run, #8 - #2 stranded Cu tap, Burndy YC-26C2
517	5	Operator platform, 3'-0" x 6'-0" x 1". Type 19W4 Bar Grating, 1" x 1/8" band end with 1" x 3/16" Flat bar with (4) 2 x 2 x 3/16" x 2-3/4" long legs. Hot dip galvanize after fabrication.
518	3	Connector, crimpit, #2/0 Cu Run, #8 - #1/0 solid - #2/0 stranded Cu tap, Burndy YC-26C26
519	7	Cast Ground Plate, Cadweld B-164-2Q

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GROUNDING (continued)

<u>Item No.</u>	<u>Qty.</u>	<u>Description</u>
521	2	Mold, 4/0 Cu to 4/0 Cu tee connection and 4/0 Cu to Ground Plate, Cadweld TAC-2Q2Q
522	3	Connector, #4 solid - #2/0 stranded to 2-1/2" IPS, bolted, for corner post, Burndy GAR 1926
523	160'	Conductor #6 copper, solid, bare
524	14	Connector, #8 solid - #4 stranded Cu to 1-1/4" IPS, bolted, for top rail of fence, Burndy GAR 164C
525	6	Connector, Bronze, #4/0 Cu to Bar, bolted, for switch operator platform, Burndy GB29
527	3	Connector, Bronze, Bolted 4-Hole Anderson #STF4-06C
528	1	Mold, #4/0 Cu to #2/0 tee, Cadweld TAC-2Q2G
529	80	Weld metal, Size 90 for Items 528 and 537, Cadweld 90
537	2	Mold, 4/0 Cu to 2-Hole pad lug, for item 500, Cadweld LAC-2QEE
540	1	Mold, 2/0 Cu to 2-hole pad lug, Cadweld LAC-2LEE
541	5	Weld metal, size 65 for item 540, Cadweld 65

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MISCELLANEOUS

<u>Item No.</u>	<u>Qty.</u>	<u>Description</u>
701	20'	Riser, 2" PVC pipe
702	20'	Riser, 6" Schedule 80 PVC pipe
703	2	Cable support, ventilating, 6-inch conduit for 3-1000 MCM AL or Cu, 15-kV Cable, PLM-CV-80 <i>Eliminate this item</i>
705	2	U-bolt, for U.G. Feeders, 6" pipe, McMaster-Carr 2936T63 or equal
706	2	U-bolt, for station service, 2" pipe, McMaster-Carr 2936T46 or equal
707	2	Weather head, 2"
708	15'	Bus, 2" IPS AL tube, Schedule 40, 6063-T6 (Furnished by Cowlitz PUD)
709	490'	Bus, 3" IPS AL tube, Schedule 40, 6063-T6 (Furnished by Cowlitz PUD)
711	240'	Bus, 1" IPS AL tube, Schedule 40, 6063-T6 (Furnished by Cowlitz PUD)
712	12	Plate, bi-metal copper to aluminum 3" 4-hole pad, Anderson TP-C
714	12	Same as Item 712, except 2" 2-hole pad, Anderson TP-B2
715	80'	Cable, #2 copper
716	440'	Cable, #4/0 ACSR for aluminum bus vibration damping, Bare
717	15'	Cable, #4/0 copper, Bare
718	60'	Cable, 500 MCM copper, Bare
721	160'	Cable, 954 kcmil ACSR "Rail"
722*	6	Cable terminator, for 1000 MCM AL, Raychem HVT-1593-SG, complete with mounting bracket and 2-hole terminal (Verify terminal and cable compatibility.) <i>(Installed by Cowlitz)</i>
723* as req'd		Cable, 1000 MCM AL, 220mil XLP, UG (furnished and installed by Cowlitz PUD)
724*	6	Cable positioner, single phase mounting, AL, Alumaform model CS-820

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MISCELLANEOUS (continued)

<u>Item</u> No.	Qty.	Description
733	As Req	Plate, bimetal copper to aluminum, 2-hole pad, Anderson TP-B2 (install between all grounds and aluminum structure, cut in half as required)
734	1	Light, 250W metal halide, 120 volt, top lens, with mounting bracket and remote photocell control (mounted on distribution rack structure), Holophane SU2A-250MH12TL
740	As Req.	Non-Shrink grout. See Foundation Notes, Sh C-4
745	2	Vault, 4'x4'x4', Old Castle Precast (Utility Vault) Type 444-LA (Base No. 444-B without Top with diamond plate cover, 1/4" x 50" x 50", aluminum, See detail on Sh C-6
746	1	Vault, 6'x4'x4', Old Castle Precast (Utility Vault) Type 644-LA (Base No. 644-L and Top No. 64-3660) with factory formed blackout in base per Sh. C-15
747	1	Trench cover, 1/4" x 30" x 50" diamond plate, aluminum
750	1	Oil Containment System. See Plan, Section and Notes on Sh C-7
751	1	Double gate latch, commercial, strong-arm, galvanized, Hoover DAC-4000 (no substitutes)
770	1 lot	Grate assembly, Aluminum, 3'-0" W x 6'-0" L x 16" H, with 12" W X 8" H step on three sides. Provided with all required supports, braces, legs and fasteners
771	1 lot	Stair assembly, Aluminum, 3'-0" W x 2'-6" H, with two handrails, Provided with all required supports, braces, legs and fasteners

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