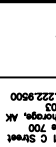


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Altitude Manufacturing Contractors LLC
3201 C Street
Suite 700
Anchorage, AK
99503
907.222.9500

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BUILDING SYSTEMS, INC.
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FORT_RICHARDSON_ALASKA
 FT245_INTERIM_FACILITIES
 FOR_AIRBORNE_COMBAT_BRIGADE
 76_BARACKS/LAUNDRY
 CODE_PLAN_1
 AS_BUILT_DRAWINGS

2 X 4 STUD FRAME

29 GA. METAL

1/2" PLYWOOD SHEATHING

WEATHER TIGHT GASKET

ACCESS DOOR FIELD PAINTED STEEL SPOUT

PAN HEAD SCREW WITH INSULATION WASHER ALL AROUND.

6 MIL. POLY VAPOR BARRIER WRAPPED AROUND RIGID INSULATION ON DOOR.

1" FLOEY RIGID INSULATION

3" POLY RIGID INSULATION WRAPPED WITH 6 MIL. VAPOR BARRIER

6 MIL. POLY VAPOR BARRIER WRAPPED AROUND RIGID INSULATION

3" POLY RIGID INSULATION APPLIED WITH APPROVED ADHESIVE MATERIALS.

HASP TO BE PROVIDED

ACCESS 30 X 30 HASP TO



CONTRACT NO. W911KB-05-C-0009	
CONTRACTOR ALUTIQ INC., LLC	
CITY ANCHORAGE	STATE ALASKA
Approved: _____	
Date: _____	
PRIME CONTRACTOR	
RECOMMENDED: _____	

Item	Action	Description	Date	Appvd

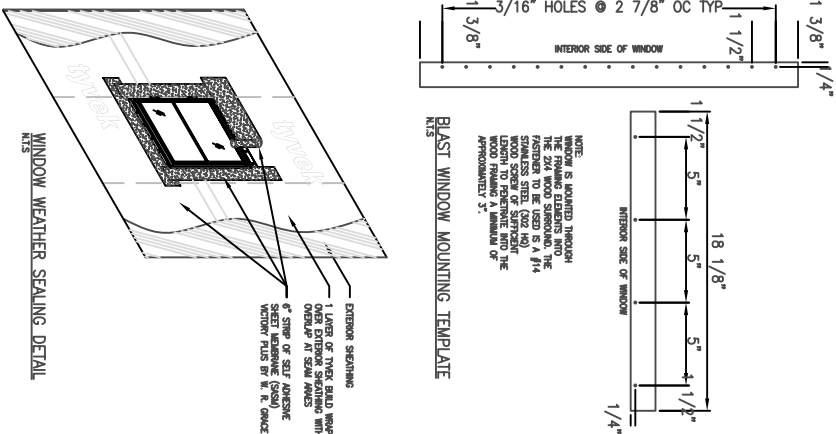
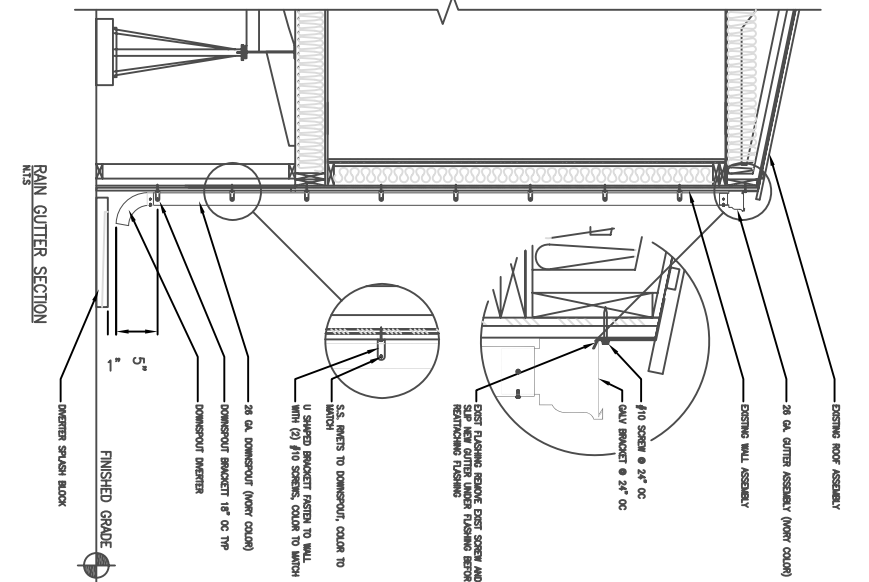
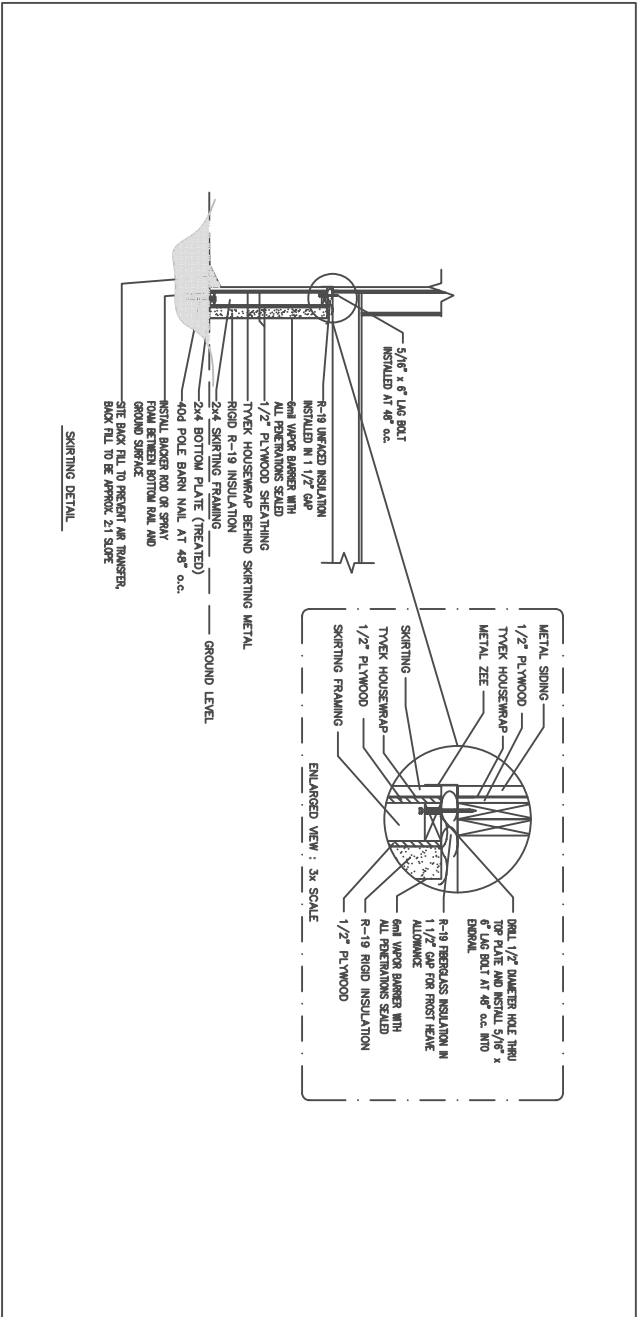
Alutiq
3201 C Street
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Anchorage, AK 99503
907.222.9500

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Drawn: C. Stewart	Checked: C. Stewart	Designed: C. Stewart
Scale: 1:1	Scale: 1:1	Scale: 1:1
Proj: FTR2454.0AA	Proj: FTR2454.0AA	Proj: FTR2454.0AA
Rev: 1	Rev: 1	Rev: 1
Date: 04-19-08	Date: 04-19-08	Date: 04-19-08
Author: C. Stewart	Author: C. Stewart	Author: C. Stewart
Drawn: C. Stewart	Drawn: C. Stewart	Drawn: C. Stewart
Checked: C. Stewart	Checked: C. Stewart	Checked: C. Stewart
Designed: C. Stewart	Designed: C. Stewart	Designed: C. Stewart

W911KB-05-0009

FOR RICHARDSON ALASKA
FTR245 INTERIM FACILITIES
FOR AIRBORNE COMBAT BRIGADE
76 BARACKS/LAUNDRY
CODE PLAN 1
AS BUILT DRAWINGS



WINDOW WEATHER SEALING DETAIL



CONTRACT NO. W911KB-05-C-0009	
CONTRACTOR ALUTIQ INC., LLC	
CITY ANCHORAGE	STATE ALASKA
Approved: _____ Date: _____	
PRIME CONTRACTOR RECEIPT ENGINEER	

Sym.	Action	Description	Date	Appvd

Alutiq

3201 C Street
Suite 700
Anchorage, AK 99503
907.222.9500

Manufacturing Contractors LLC

907.222.9500

Drawn: TMR

Checked: TMR

Submitted: 05/13/08

Project: FTR245-08

Revision: 1/8"=1'-0"

Drawn by: AS-BL-21-11-07

Submitted: 05/13/08

Drawn by: AS-BL-21-11-07

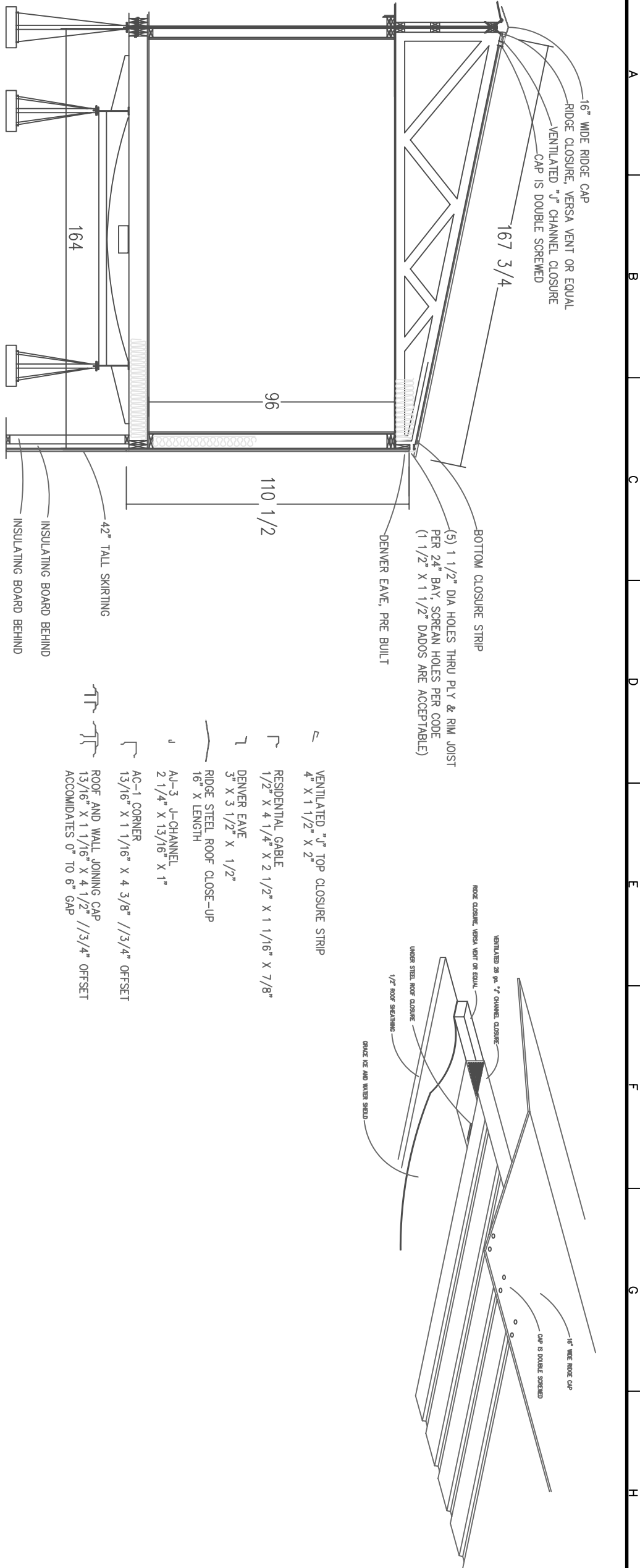
Checked: TMR

Submitted: 05/13/08

W911KB-05-0009

AS-BL-21-11-07

FORT_RICHARDSON_ALASKA
FTR245_INTERIM_FACILITIES
FOR_AIRBORNE_COMBAT_BRIGADE
76_BARACKS/LAUNDRY
CODE_PLAN_1
AS_BUILT_DRAWINGS



SPECIFIED FASTENER	REQUIRED PENETRATION	DESIRED FASTENER																	
		16 GA STAPLE	15 GA STAPLE	14 GA STAPLE	13 GA STAPLE	12 GA STAPLE	.091 d NAIL	.097 d NAIL	.105 d NAIL	.113 d NAIL	.120 d NAIL	.128 d NAIL	.131 d NAIL	.148 d NAIL	.162 d NAIL	#8 SCREW	#10 SCREW	#12 SCREW	
16 GA STAPLE	1.00 IN.	1.00	0.81	0.69	0.57	0.46	1.13	1.00	0.90	0.83	0.75	0.68	0.67	0.55	0.49	0.48	0.36	0.28	
15 GA STAPLE	1.00 IN.	1.23	1.00	0.85	0.70	0.57	1.39	1.23	1.11	1.02	0.93	0.84	0.82	0.68	0.60	0.60	0.44	0.34	
14 GA STAPLE	1.00 IN.	1.44	1.17	1.00	0.82	0.66	1.63	1.44	1.30	1.19	1.09	0.99	0.96	0.80	0.70	0.70	0.52	0.40	
13 GA STAPLE	1.00 IN.	1.77	1.44	1.23	1.00	0.81	2.00	1.77	1.60	1.46	1.33	1.21	1.18	0.98	0.86	0.86	0.64	0.49	
12 GA STAPLE	1.125 IN.	2.17	1.77	1.51	1.23	1.00	2.46	2.17	1.97	1.79	1.64	1.49	1.45	1.20	1.06	1.05	0.78	0.61	
.091 DIA. NAIL	1.00 IN.	0.88	0.72	0.61	0.50	0.41	1.00	0.88	0.80	0.73	0.67	0.61	0.59	0.49	0.43	0.43	0.32	0.25	
.097 DIA. NAIL	1.125 IN.	1.00	0.81	0.69	0.57	0.46	1.13	1.00	0.90	0.83	0.75	0.68	0.67	0.55	0.49	0.48	0.36	0.28	
.105 DIA. NAIL	1.25 IN.	1.25	0.90	0.77	0.63	0.51	1.25	1.11	1.00	0.91	0.83	0.76	0.74	0.61	0.54	0.54	0.40	0.31	
.113 DIA. NAIL	1.25 IN.	1.21	0.98	0.84	0.68	0.56	1.37	1.21	1.10	1.00	0.91	0.83	0.81	0.67	0.59	0.59	0.44	0.34	
.120 DIA. NAIL	1.375 IN.	1.33	1.08	0.92	0.75	0.61	1.50	1.33	1.20	1.10	0.91	0.88	0.88	0.73	0.64	0.64	0.48	0.37	
.128 DIA. NAIL	1.50 IN.	1.46	1.19	1.01	0.83	0.67	1.65	1.46	1.32	1.21	1.10	1.00	0.97	0.81	0.71	0.71	0.53	0.41	
.131 DIA. NAIL	1.50 IN.	1.50	1.22	1.04	0.85	0.69	1.70	1.50	1.36	1.24	1.13	1.03	1.00	0.83	0.73	0.73	0.54	0.42	
.148 DIA. NAIL	1.625 IN.	1.81	1.47	1.25	1.02	0.83	2.04	1.81	1.64	1.49	1.36	1.24	1.21	1.00	0.88	0.88	0.65	0.50	
.162 DIA. NAIL	1.75 IN.	2.06	1.67	1.43	1.16	0.95	2.33	2.06	1.86	1.70	1.55	1.41	1.37	1.14	1.00	1.00	0.74	0.57	
#8 WOOD SCREW	1.148 IN.	2.07	1.68	1.43	1.17	0.95	2.33	2.07	1.87	1.70	1.56	1.41	1.38	1.14	1.00	1.00	0.74	0.58	
#10 WOOD SCREW	1.33 IN.	2.78	2.26	1.93	1.57	1.28	3.14	2.78	2.51	2.29	2.09	1.90	1.85	1.54	1.35	1.34	1.00	0.77	
#12 WOOD SCREW	1.512 IN.	3.58	2.91	2.49	2.03	1.65	4.05	3.58	3.24	2.96	2.70	2.45	2.39	1.98	1.74	1.74	1.29	1.00	

NOTES:

1. SUBSTITUTION METHODS:

A. WHEN QUANTITIES ARE SPECIFIED MULTIPLY THE QUANTITY OF "SPECIFIED FASTENERS" BY THE FACTOR FROM THE TABLE FOR THE "DESIRED FASTENER" TO ARRIVE AT THE EQUIVALENT NUMBER OF FASTENERS.

EXAMPLE: DRAWING SPECIFIES (7) 16 GA STAPLES. TO FIND THE EQUIVALENT NUMBER OF .162 d NAILS MULTIPLY 7 BY THE FACTOR OF .49 WHICH EQUALS 3.43 OR 4 NAILS.

B. WHEN SPACINGS ARE SPECIFIED DIVIDE THE SPECIFIED SPACING FOR THE "SPECIFIED FASTENER" BY THE FACTOR FROM THE TABLE FOR THE "DESIRED FASTENER" TO ARRIVE AT THE EQUIVALENT SPACING.

EXAMPLE: DRAWING SPECIFIES .131 d NAILS AT 8" OC. TO FIND THE EQUIVALENT SPACING FOR 16 GA STAPLES DIVIDE 8" BY THE FACTOR OF 1.50 WHICH EQUALS 5.33" OC.

2. MINIMUM 3/4" SIDE MEMBER LUMBER IS REQUIRED.

NOTES:

1. FASTENERS MAY BE "TOED" PROVIDED THE FASTENER SPACING IS 2/3 OF THAT SPECIFIED AND QUANTITIES ARE MULTIPLIED BY 1.50.

2. CROWN OF STAPLE MAY BE IN ANY ORIENTATION UNLESS OTHER WISE SPECIFIED ON THE DRAWING.

3. NAILS MAY BE GUN OR COMMON PROVIDED THE CORRECT DIAMETER IS USED.

4. SEE DRAWING 010.10 FOR ADDITIONAL NOTES.

5. FASTENERS MUST HAVE THE MINIMUM PENETRATION AS SPECIFIED IN THE TABLE.

6. THIS DRAWING IS APPLICABLE TO Laterally Loaded Fasteners.



CONTRACT NO. W911KB-05-C-0009	
CONTRACTOR ALTRIO WALK CON., LLC	
CITY ANCHORAGE	STATE ALASKA
Recommended: _____	
Approved: _____	
Date: _____	

Sym.	Action	Description	Date	Appvd

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Suite 700
Anchorage, AK
99503
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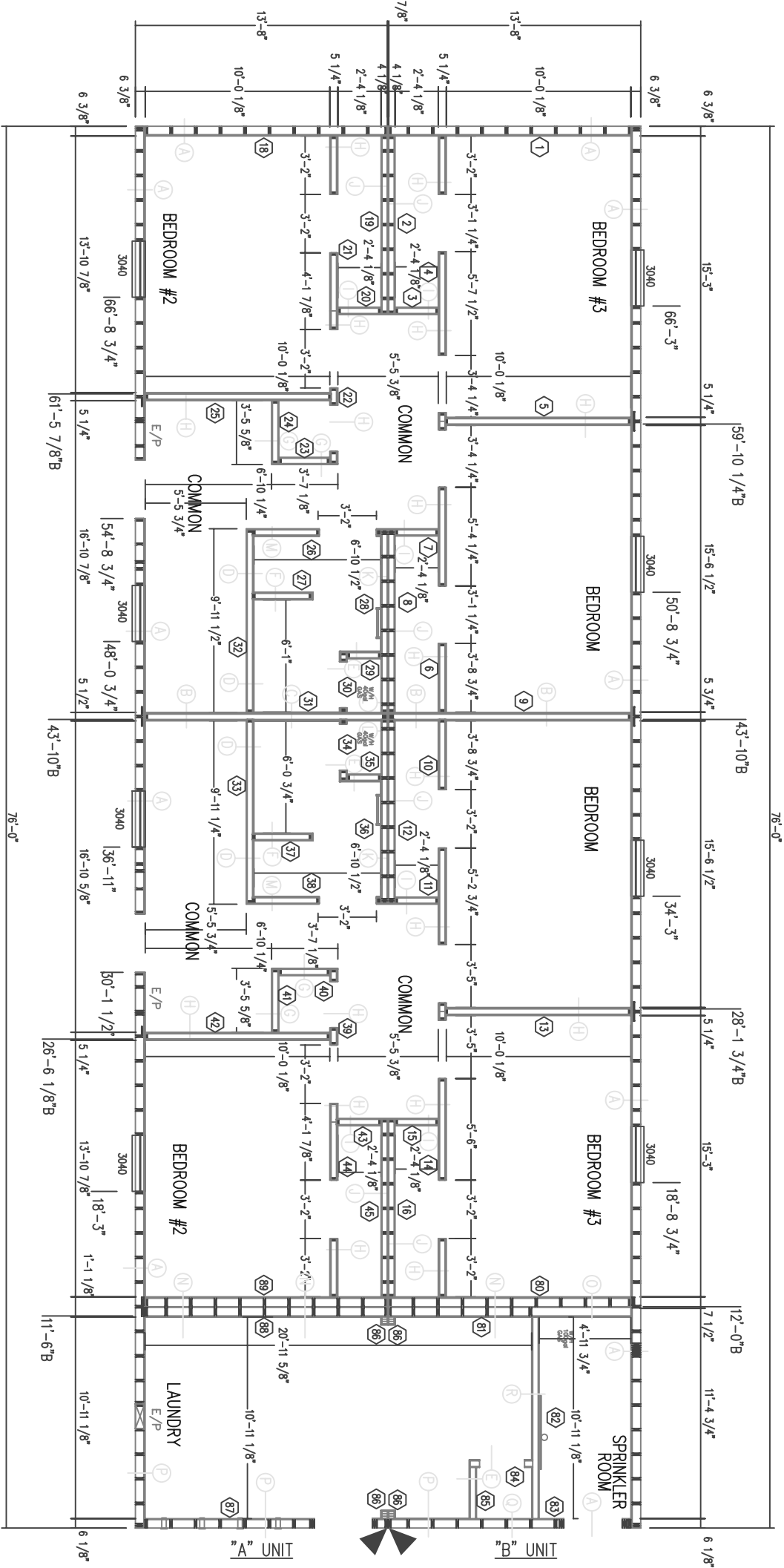
COMARK
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Anchorage, AK
99503
907.222.9500

Designed: _____
Drawn: _____
Checked: _____
Reviewed: _____
Title: _____
Scale: _____
Date: _____

W911KB-05-0009
FOR AIRBORNE COMBAT BRIGADE
76' BARACKS/LAUNDRY
AS-BUILT DRAWINGS

FOR AIRBORNE COMBAT BRIGADE
76' BARACKS/LAUNDRY
AS-BUILT DRAWINGS

- EASTING SCHEDULE:
1. TOP PLATE AND BOTTOM PLATE TO STUDS: (3) EA. .131 x 3" NAILS OR (4) EA. 7/16" x 2 1/2" x 15ga. STAPLES.
 2. OUTSIDE TOP PLATE TO INSIDE TOP PLATE: .131 x 3" NAILS OR 7/16" x 2 1/2" x 16ga. STAPLES AT 12"o.c.
 3. DOUBLE STUDS: .131 x 3" NAILS AT 8"o.c. OR 7/16" x 2 1/2" x 15ga. STAPLES AT 5"o.c.
 4. TRIPLE HEADERS: .131 x 3" NAILS AT 8"o.c. ALONG EACH EDGE OR 7/16" x 2 1/2" x 15ga. STAPLES AT 12"o.c.
 5. HEADER TO STUD: (4) .131 x 3" NAILS OR (6) 7/16" x 2 1/2" x 15ga. STAPLES.
 6. BOTTOM PLATE FOR FLOOR RM.: .131 x 3" NAILS AT 8"o.c. OR 7/16" x 2 1/2" x 15ga. STAPLES AT 5"o.c.
 7. SIDING TO FRAMING: PER MANUFACTURERS INSTRUCTIONS.



- NOTES:
1. ALL EXTERIOR WALLS ARE 2x6 WITH DBL. 2x TOP PLATES AND SING. 2x BOTTOM PLATES.
 2. ALL WARRAGE WALLS ARE 2x4 WITH DBL. 2x TOP PLATES AND SING. 2x BOTTOM PLATES.
 3. ALL INTERIOR WALLS ARE 2x4 WITH DBL. 2x TOP PLATES AND SING. 2x BOTTOM PLATES.



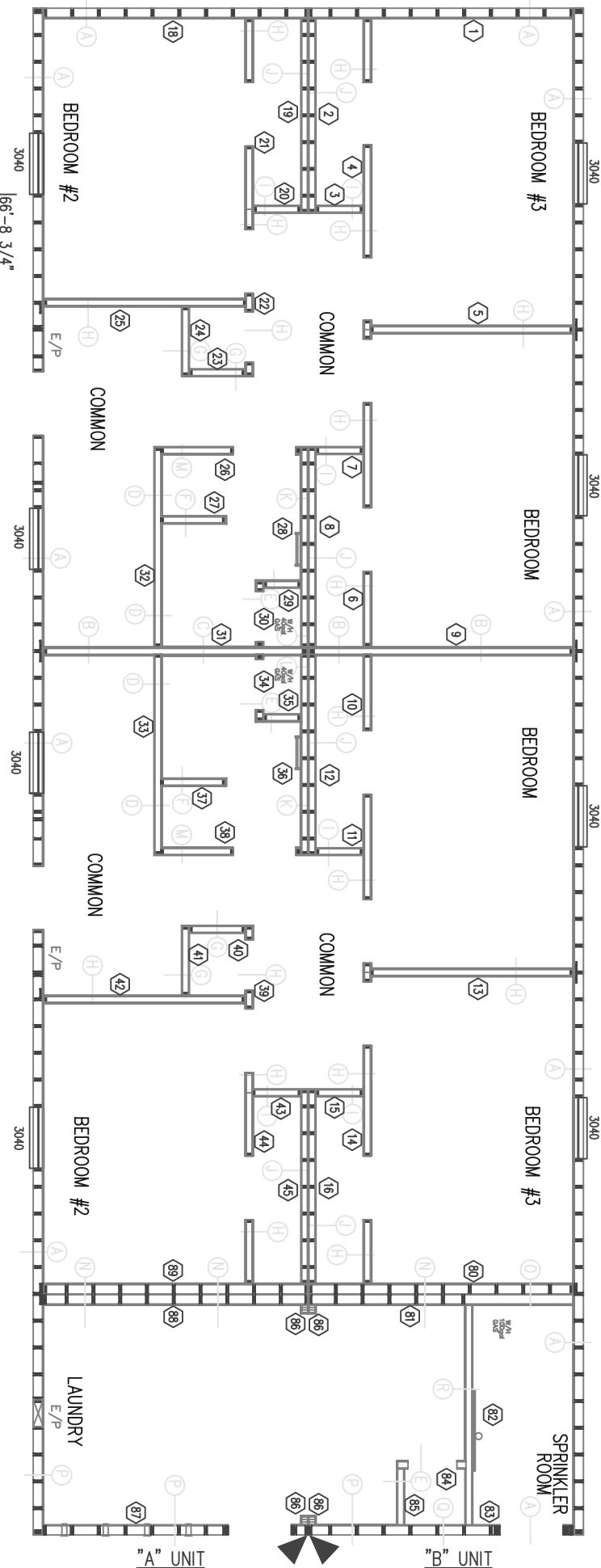
CONTRACT NO.	W111B-05-C-0009
CONTRACTOR	ALUTIA MAR. CON. LLC
CITY	ANCHORAGE
STATE	ALASKA
RECOMMENDED:	APPROVED:
PRIME CONTRACTOR	RESIDENT ENGINEER
Date:	

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 Manufacturing Contractors LLC
 Suite 700
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FORT_RICHARDSON_ALASKA
FTR245_INTERIM_FACILITIES
FOR_AIRBORNE_COMBAT_BRIGADE
76_BARRACKS/LAUNDRY
CODE_PLAN_1
AS_BUILT_DRAWINGS

FLOOR PLAN

(H) SOUND PROOF BEDROOM WALLS
5/8" VINYL COVERED TYPE X GYPSUM
1/4" GYPSUM WALL BOARD
2 X 4 FRAMING 16" O.C.
R-11 FIBERGLASS BATT INSULATION
1/4" GYPSUM WALLBOARD
5/8" VINYL COVERED TYPE X GYPSUM
(I) NON SOUND RATED WALLS
5/8" VINYL COVERED GYPSUM
2 X 4 FRAMING 16" O.C.
R-11 FIBERGLASS BATT INSULATION
5/8" VINYL COVERED GYPSUM
(J) NON RATED MARRIAGE CLOSET WALLS:
5/8" VINYL COVERED GYPSUM
2 X 4 FRAMING 16" O.C.
R-11 FIBERGLASS BATT INSULATION
7/16" PLIWOOD EXTERIOR MATE LINE SHEATHING



(C) LADDERY W/H AT ENDWALL
5/8" TYPE X G/PSUM
6 MILL POLY VAPOR BARRIER
2 X 6 FRAMING 16" O.C.
R-19 FIBERGLASS INSULATION BATTS
15/32" GDX / OSB PLY
TYPEX EXTERIOR HOUSE WRAP
STEEL EXTERIOR SIDING
(D) LADDERY W/H TO SPRINKLER ROOM
1/4" FRP PANELS
5/8" TYPE X G/PSUM
2 X 4 FRAMING 16" O.C.
5/8" VINYL COVERED TYPE X G/PSUM



CONTRACT NO. W911KB-05-C-0009	
CONTRACTOR ALUTIQ ENGR. CO., LLC	
CITY ANCHORAGE	STATE ALASKA
Recommended: _____	
Approved: _____	
Date: _____	

Sym.	Action	Description	Date	Appvd

Alutiq
3201 C Street
Suite 700
Anchorage, AK 99503
907.223.9500

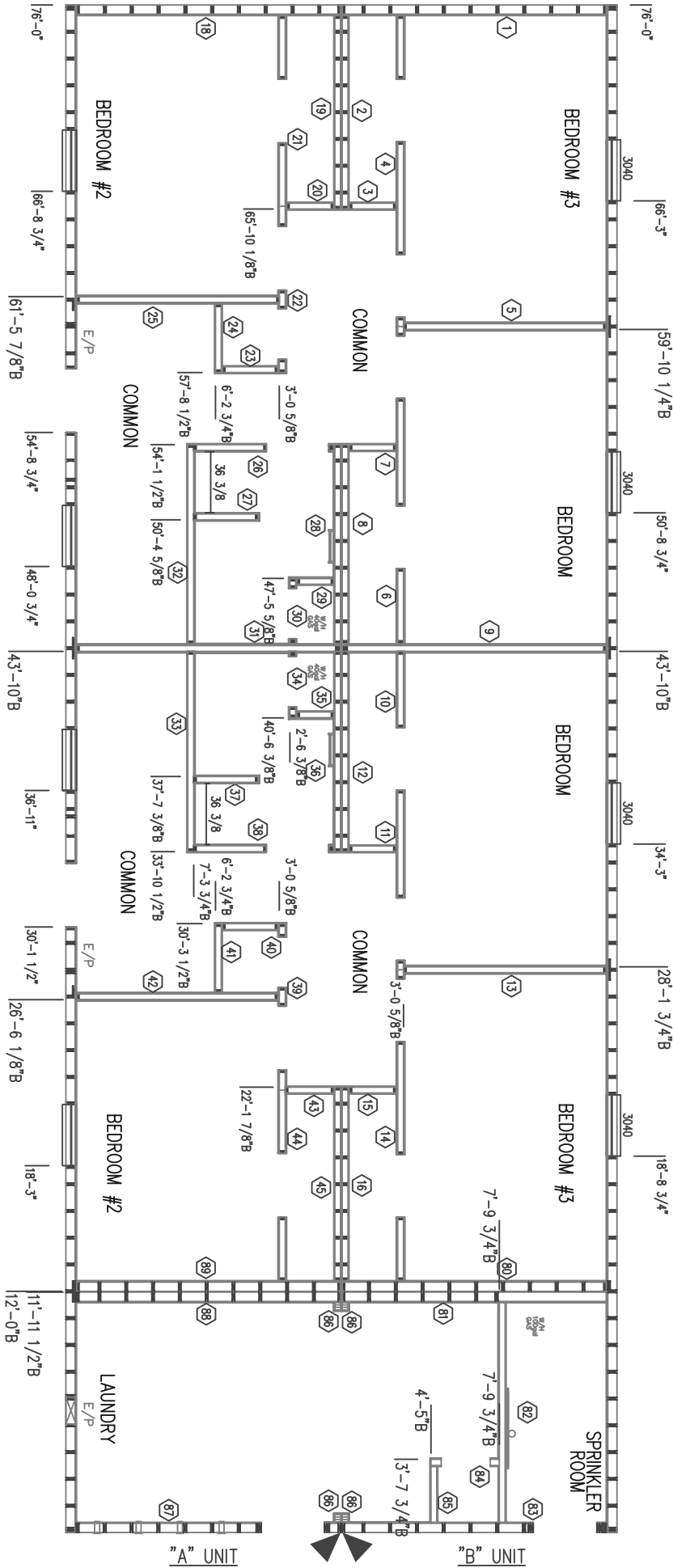
COMARK
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3505 C Street
Anchorage, AK 99503
907.223.9500

Designed: COMARK	Date: 04-13-08
Drawn: LMB	Plot Scale: 1/1
Reviewed: LMB	Plot Scale: 1/8"=1'-0"
Submitted: 04-13-08	Revision: 1
Drawn by: AS-BL-1-221-11-07	File: FTR2455.00
Drawing #: AS-BL-1-221-11-07	

W911KB-05-0009

FORT_RICHARDSON_ALASKA
FTR245_INTERIM_FACILITIES
FOR_AIRBORNE_COMBAT_BRIGADE
76'_BARRACKS/LAUNDRY
CODE_PLAN_1
AS_BUILT_DRAWINGS

- EASTING SCHEDULE:
1. TOP PLATE AND BOTTOM PLATE TO STUDS: (3) EA. .131 x 3" NAILS OR (4) EA. 7/16" x 2 1/2" x 15ga. STAPLES.
 2. OUTSIDE TOP PLATE TO INSIDE TOP PLATE: .131 x 3" NAILS OR 7/16" x 2 1/2" x 15ga. STAPLES AT 12" o.c.
 3. DOUBLE STUDS: .131 x 3" NAILS AT 8" o.c. OR 7/16" x 2 1/2" x 15ga. STAPLES AT 5" o.c.
 4. TRIPLE HEADERS: .131 x 3" NAILS AT 16" o.c. ALONG EACH EDGE OR 7/16" x 2 1/2" x 15ga. STAPLES AT 12" o.c.
 5. HEADER TO STUD: (4) .131 x 3" NAILS OR (6) 7/16" x 2 1/2" x 15ga. STAPLES.
 6. BOTTOM PLATE FOR FLOOR RIM: .131 x 3" NAILS AT 8" o.c. OR 7/16" x 2 1/2" x 15ga. STAPLES AT 5" o.c.
 7. SIDING TO FRAMING: PER MANUFACTURERS INSTRUCTIONS.



- NOTES:
1. ALL EXTERIOR WALLS ARE 2x6 WITH DBL. 2x TOP PLATES AND SINGL. 2x BOTTOM PLATES.
 2. ALL WARRAGE WALLS ARE 2x4 WITH DBL. 2x TOP PLATES AND SINGL. 2x BOTTOM PLATES.
 3. ALL INTERIOR WALLS ARE 2x4 WITH DBL. 2x TOP PLATES AND SINGL. 2x BOTTOM PLATES.

FLOOR PLAN

L

TRACTOR

Action	



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45_INTERIM_FACI
AIRBORNE_COMBAT_BR
76_BARRACKS/LAUNDR
CODE_PLAN_1
AS_BUILT_DRAWINGS



CONTRACT NO. W911KB-05-C-0009	
CONTRACTOR ALTITUDE HALL CON., LLC	
CITY ANCHORAGE	STATE ALASKA
Recommended: _____	
Approved: _____	
Date: _____	

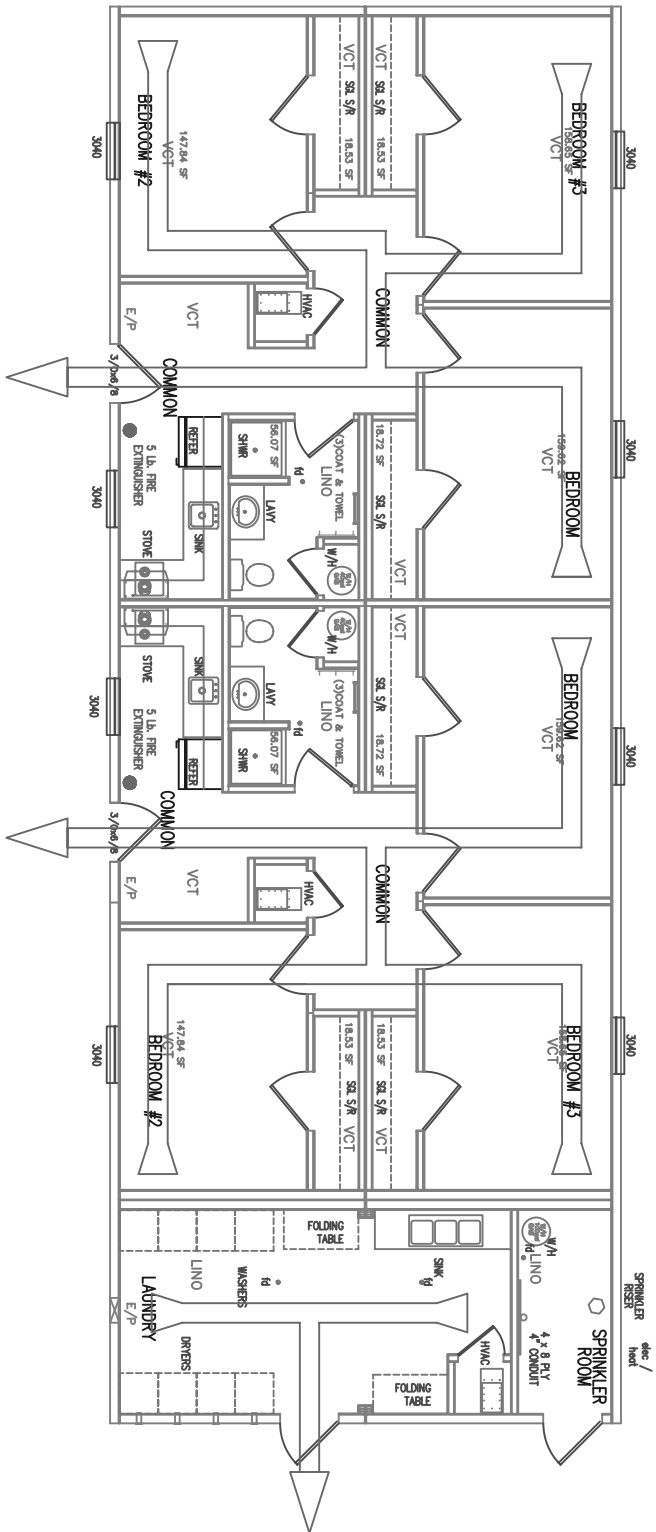
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Drawn: C. GARDNER	Checked: L. HARRIS	Reviewed: J. HARRIS	Submitted: J. HARRIS
Date: 04-13-08	Plot Scale: 1:1	Plot Scale: 1/8"=1'-0"	Revision: 1
Drawing #: AS-BL-1-721-11-07			
Sheet: W911KB-05-0009			

FORT RICHARDSON, ALASKA
FTR245_INTERIM_FACILITIES
FOR AIRBORNE COMBAT BRIGADE
76' BARACKS/LAUNDRY
AS_BUILT_DRAWINGS
CODE_PLAN_1



CODE ANALYSIS

PROJECT LOCATION: ANCHORAGE, ALASKA
ARCHITECT: GUERDON ENTERPRISES

REQUIRED DESIGN PARAMETERS:

SNOW LOAD: 40 PSF
FLOOR LOAD - LT: 100 PSF GENERAL AREA
100 PSF MECHANICAL AREA
FROST DEPTH: 2
WIND SPEED: 115 MPH
SEISMIC DESIGN CATEGORY "D"
WIND EXPOSURE "C"

BASIC REQUIREMENTS
MAJOR USE: RESIDENTIAL DOMATORY
OCCUPANCY LOAD: 6 UNIT RESIDENTIAL @ LAUNDRY

TYPE OF CONSTRUCTION
TYPE VB

FIRE RESISTANCE SEPARATION
A) 1-HOUR FIRE SEPARATION WALL NOT REQUIRED
B) MIN --' SEPARATION FROM PROPANE LINE

BUILDING HEIGHT
SINGLE STORY 13'5"

FIRE PROTECTION
AUTOMATIC FIRE SPRINKLER: YES-NPEA 13R
FIRE DETECTION SYSTEM: YES-NPEA 72

BASIC FLOOR AREA ALLOWED VERSUS PROPOSED FLOOR AREA

BUILDING	USE:	CONSTR.	BASIC ALLOW FLOOR AREA	PROPOSED FLOOR AREA
64' LIVING UNIT	R-2	V-B	1,750 SQ. FT.	1,750 SQ. FT.
LIVING W/LAUNDRY	R-2	V-B	2,078 SQ. FT.	2,078 SQ. FT.

AREAS - CONSTRUCTION TYPES, AREA SEPARATORS,
OCCUPANCY SEPARATIONS, FIRE WALLS - CODE ANALYSIS

TRAVEL DISTANCE, FOR GROUP R-2
ALLOWED WITHOUT SPRINKLER SYSTEM 200 FT.
ALLOWED WITH SPRINKLER SYSTEM 250 FT.
ACTUAL 50 FT.

ALLOWED COMMON PATH OF EGRESS
ACTUAL 75 FT.
50 FT.

BUILDING WITH 1 EXIT, SECTION 1008.2
OCCUPANCY MAX. STORY HEIGHT (OR DWELLING UNITS) PER FLOOR
AND TRAVEL DISTANCE
R-2 1 STORY 10 OCCUPANTS AND 75 FT. TRAVEL DISTANCE



PRIME CONTRACTOR	
Contract No.	W911KB-05-C-0009
Contractor	ALUTIA M&E CON., LLC
City	ANCHORAGE
State	ALASKA
Date:	
APPROVED:	
Resident Engineer	

Sym.	Action	Description	Date	Appvd

Alutia
Manufacturing Contractors LLC
3201 C Street
Suite 700
Anchorage, AK 99503
907.222.9500

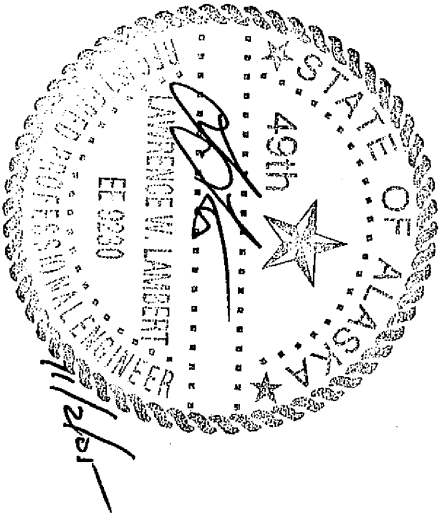
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Date:	05-19-08
Drawn:	COMARK
Checked:	COMARK
Reviewed:	COMARK
Project:	FTR245
Section:	FTR245.00
Sheet:	14 of 50
Project No.:	W911KB-05-0009

PORT RICHARDSON, ALASKA
FTR245 INFRASTRUCTURE
FOR INTERIM FACILITIES
76th BARRICKS
AS-BUILT DRAWINGS
CODE PLAN 1

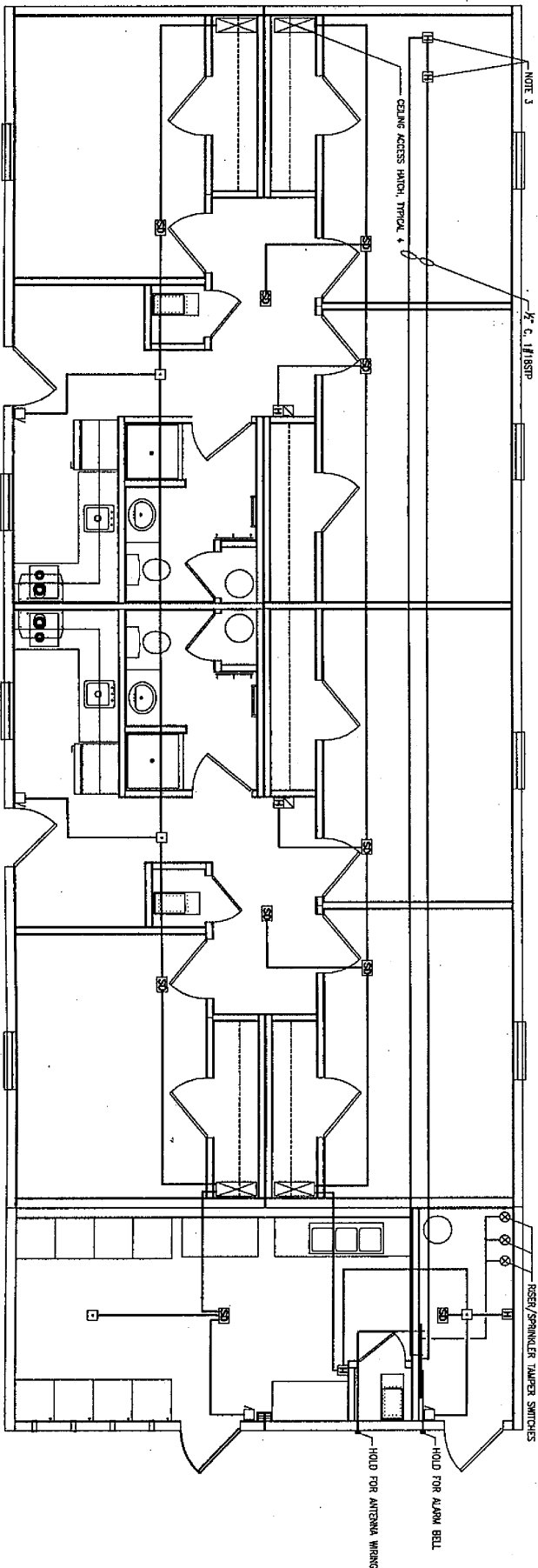
GENERAL NOTES:

- 1) REFER TO PROJECT SPECIFICATIONS FOR FULL ELECTRICAL REQUIREMENTS.
- 2) INTERCONNECT FIRE DETECTION DEVICES THROUGH CEILING SPACE WITH TYPE BXT CONDUIT TO INDICATED CEILING ACCESS HATCHES. INCLUDE FULL TAPES AND CAP OPEN ENDS.
- 3) LOCATED ON OTHER SIDE OF THE CEILING SPACE RUNWAY.
- 4) SOME ELEMENTS ARE AS REPORTED BY FIELD FORCES AND HAVE NOT BEEN VERIFIED.



LEGEND

- 50 SQUARE DETECTOR, NONADDRESSABLE W/SOUNDER BELL, W/NOVACO 725-318-01, TYPICAL. PROVIDE FLUSH-MOUNT BOX AT CEILING. SHIP DEVICE LOOSE IN ORIGINAL PACKAGING. TYPE/FULL OR FIRE DETECTOR, NONADDRESSABLE W/ALERT. W/NOVACO 725-122-00, WITH BASE PLATE 725-088-00. PROVIDE FLUSH-MOUNT BOX AT CEILING. SHIP DEVICE LOOSE IN ORIGINAL PACKAGING.
- 51 CO DETECTOR, W/NOVACO 725-311-00, SHIP DEVICE LOOSE IN ORIGINAL PACKAGING.
- 52 PROVIDE FLUSH-MOUNT BOX 84" AFF. SHIP DEVICE LOOSE IN ORIGINAL PACKAGING.
- 53 FULL SMOKE / FIRE, W/NOVACO 725-024-00, SHIP DEVICE LOOSE IN ORIGINAL PACKAGING.
- 54 SPRINKLER HORN, STROBE, ASSY, W/NOVACO 585-061-00, PROVIDE FLUSH-MOUNT BOX 84" AFF. SHIP DEVICE LOOSE IN ORIGINAL PACKAGING.



1 FIRE DETECTION SYSTEM PLAN

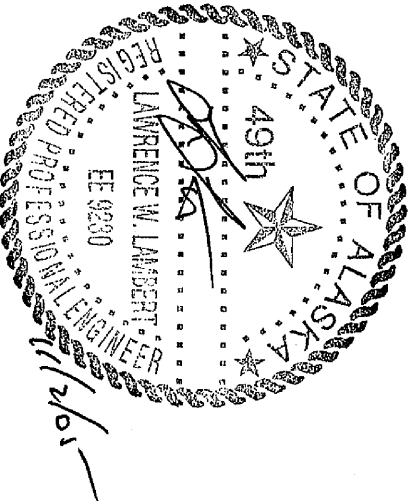
SCALE: 1/4" = 1'-0"



GENERAL NOTES:

- 1) REFER TO PANELBOARD SCHEDULE, DRAWING E-701.
- 2) REFER TO DRAWING E-701 FOR CRAWL SPACE FURNACE INTERCONNECTION.
- 3) REFER TO PROJECT SPECIFICATIONS FOR ALL ELECTRICAL REQUIREMENTS.
- 4) REFER TO DRAWING E-701 FOR RECEPTACLE/ANTENNA BOX REQUIREMENTS. INTERCONNECT ANTENNA BOXES TO RESPECTIVE ABOVE-FLOOR RECEPTACLE.
- 5) INTERCONNECT THROUGH CRAWL SPACE AND TO RECEPTACLES WITH 3/4" EMT.
- 6) ALL INTERCONNECTIONS AND ROUTING MADE WITH MINIMUM 3/4" EMT.
- 7) REFER TO IN-PLACE PANELBOARD CONNECTION.
- 8) SOME ELEMENTS ARE AS REQUIRED BY FIELD FORCES AND HAVE NOT BEEN VERIFIED.

NOTE: UNDERGROUND SPRINKLER PIPE BETWEEN BUILDINGS(SEE CIVIL DRAWINGS) AND WATER PIPES TO 10' BELOW GRADE HAVE SELF LIMITING HEAT TRACE ATTACHED. HEAT TRACE TO THESE PIPES HAS NO THERMOSTAT AND ARE HARDWIRED TO SECOND HEAT TRACE CIRCUIT. SEE 7B.



SYN.	ACTION	DESCRIPTION	DATE	APPROVED

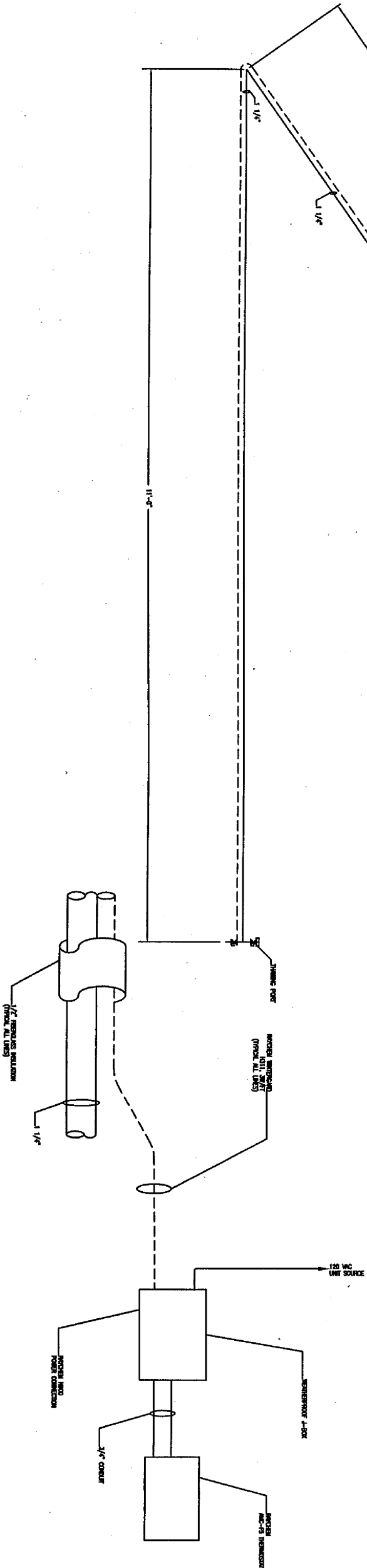
CONTRACT NO.	W911KB-05-C-0009
CONTRACTOR	ALUTIQ MAN. CON., LLC
CITY	ANCHORAGE
STATE	ALASKA
APPROVED:	
DATE:	



2201 C Street Anchorage, AK 99503 907.222.9500	Alutiq Manufacturing Contractors LLC	REGISTERED PROFESSIONAL ENGINEER LAWRENCE W. LAMBERT EE 9230 1/26/01
Drawn: LAM	Reviewed: COMARK	Section: FTR2457.08
Proj. Scale: 1:1	Proj. Scale: NTS	Sheet: 16 of 30
Date: 3-10-08	Submitted: COMARK	Drawing #: W911KB-05-0009

FORT_RICHARDSON_ALASKA FTR245_INTERIM_FACILITIES FOR_AIRBORNE_COMBAT_BRIGADE 76_BARRACKS CODE_PLAN_1 AS_BUILT_DRAWINGS

Reference number: 7E	Sheet 16 of 30
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1 CRAWL SPACE HEAT TRACING

SCALE: NTS

2 HEAT TRACING CONNECTION DETAIL

SCALE: NTS

PLUMBING AND PIPING ABBREVIATIONS

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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PLUMBING ROUGH-IN SCHEDULE

		MINIMUM CONNECTION SIZE					UNLESS INDICATED OTHERWISE, ON PLANS	
		ROUGH-IN SIZE						
TAG	DESCRIPTION	WASTE	VENT	TRAP	CW	HW	REMARKS	MANUFACTURER & MODEL
WC-1	WATER CLOSET	3"	2"	INTERVAL	1/2"	---	FLOOR MOUNTED, GRABBY TANK LEVER TO BE ON WIDE SIDE OF STALL	VENNA VORTERS, DOWN-#3177, TANK-#3412
LC-1	LAVATORY- COUNTER	1-1/2"	1-1/2"	1-1/4"	1/2"	1/2"	OVAL, COUNTERTOP (DROP IN)	C-LAND MANUFACTURING, MODEL L-8825
KS-1	SINK (SINGLE COMPARTMENT)	2"	1-1/2"	1-1/2"	1/2"	1/2"	SELF-RAIL COUNTERTOP	STERLING PRO 2522B-SS
SS-1	SINK (THREE COMPARTMENT)	2"	1-1/2"	1-1/2"	1/2"	1/2"	3 COMPARTMENT, FREE STANDING	ADVANCE TAPCO, 400 SERIES
SH-1	SHOWER	2"	1-1/2"	1-1/2"	1/2"	1/2"	FLOOR MOUNTED	USCO 1363CT/36x36x72
TP-1	TRAP PUMPER	---	---	---	1/2"	---	MOUNT ABOVE FLOOR IN WALL, WHERE POSSIBLE, WITH ACCESS DOOR.	PRO FLOW PFP2500
ED-1	FLOOR DRAIN	2"	1-1/2"	2"	1/2" TP	---	5" ROUND GRATE	QWERTY, 72063/72093
WB-1	WASHER HOOK-UP BOX	2"	1-1/2"	2"	1/2"	1/2"	FLUSH WALL MOUNTED, COORDINATE WITH RATED WALL CONSTRUCTION.	QWERTY, #12-NO. 39751

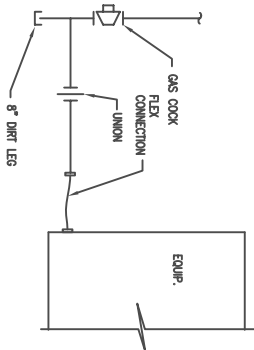
GAS FIRED WATER HEATER SCHEDULE

EQUIP. TAG	TYPE	SERVICE AREA	7" WC. PRESSURE INPUT	RECOVERY 90° RISE GPH	FIRST HOUR DELIVERY GPH	APPROX INCH	MANUFACTURER	MODEL #	REMARKS
WH-1	GAS	SEE PLANS	30,000	38,500	30.3		REED	WARRIOR 219000V	[1] [2] [3] [4] [5] [6]
WH-2	GAS	LAUNDRY	100	200,000	161	60	REED	GP-100-200	[1] [2] [3] [4] [5] [6]
						1,800			

- 1) PROVIDE COMPLETE FOR SEALED, VERTICAL, DIRECT VENT OPERATION.
- 2) PROVIDE ROOF TERMINATION ASSEMBLY FOR INTAKE/VENT.
- 3) PROVIDE FACTORY COMBUSTION AIR DUCT EXTENSION PIPE CONNECTION KIT
- 4) PROVIDE DWP PAN WITH 3/4" DRAIN TO BELOW FLOOR 6". PIPE TO SURFSTALL BY COMARK.
- 5) PROVIDE TAP PIPE FROM AND STUD TO 6" BELOW FLOOR. PIPE TO SURFSTALL BY COMARK.
- 6) PROVIDE WITH WAFS VENT AND COMBUSTION AIR KIT TO ROOF.

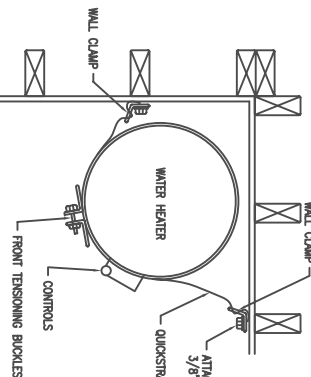
SECTION/DETAIL

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



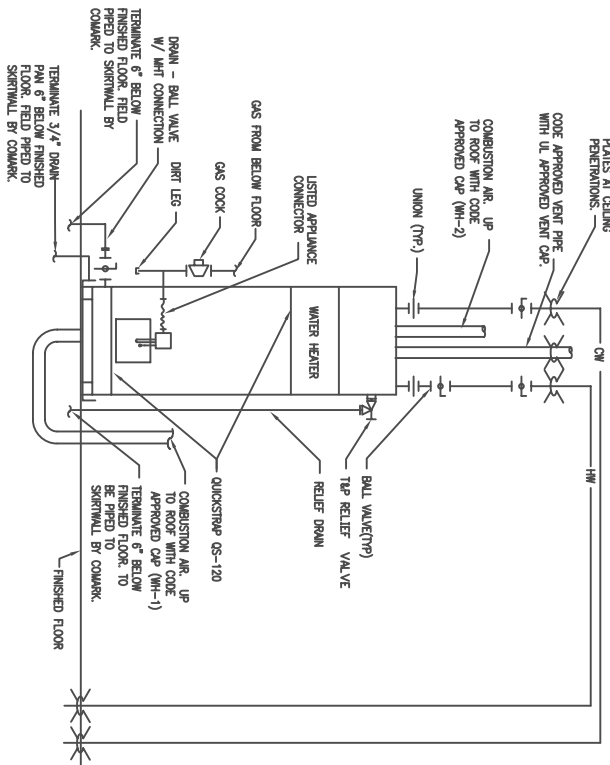
SECTION/DETAIL

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



SECTION/DETAIL

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



PLUMBING AND PIPING LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
CA	COMPRESSED AIR		DIRECTION OF FLOW		DWAPRICAL VALVE
COND	CONDENSATE DRAIN		REDUCER		DOWNSCOUT NOZZLE
DA	CLEAN DRY AIR		PPE DROP		FLOOR DRAIN ROUND OR SQUARE
CO2	CARBON DIOXIDE		PPE DROP		FLOW METER
CMR	CONDENSER WATER RETURN		PPE RISE		FLOW SWITCH
CNS	CONDENSER WATER SUPPLY		PPE RISE		FLOOR SINK
CMR	CHILLED WATER RETURN		PPE RISE		FLOW VALVE
CMS	CHILLED WATER SUPPLY		PPE RISE		GAS METER
CM	DOMESTIC COLD WATER		PPE RISE		GLOBE VALVE
CM	DEMO ITEMS		PPE RISE		INLINE TEMPERATURE GAUGE
CM	GREASE WASTE		PPE RISE		PLUG VALVE
HE	HELIUM		PPE RISE		OUTSIDE STEEL AND WIRE
HGR	HOT GLYCOL RETURN		PPE RISE		RESINO PUMP
HGS	HOT GLYCOL SUPPLY		PPE RISE		TEMPERATURE CONTROL VALVE
HPS	HIGH PRESSURE CONDENSATE		PPE RISE		THERMO WELL
HPS	HIGH PRESSURE STEAM		PPE RISE		
HWC	DOMESTIC HOT WATER		PPE RISE		
HWC	DOMESTIC HOT WATER RECIRCULATION		PPE RISE		
HWR	HEATING WATER RETURN		PPE RISE		
HWS	HEATING WATER SUPPLY		PPE RISE		
IA	INSTRUMENT AIR		PPE RISE		
IW	INDIRECT WASTE		PPE RISE		
LP	LIQUEFIED PETROLEUM GAS		PPE RISE		
LP	LOW PRESSURE CONDENSATE		PPE RISE		
LP	LOW PRESSURE STEAM		PPE RISE		
MA	MEDICAL AIR		PPE RISE		
MPS	MEDICAL PRESSURE CONDENSATE		PPE RISE		
MPS	MEDICAL PRESSURE STEAM		PPE RISE		
MC	MEDICAL VACUUM		PPE RISE		
N2	NITROGEN		PPE RISE		
N2O	NITROUS OXIDE		PPE RISE		
NG	NATURAL GAS		PPE RISE		
NPW	NON POTABLE WATER		PPE RISE		
ODL	OVERFLOW DRAIN LEADER		PPE RISE		
PMR	POTABLE HOT WATER RETURN		PPE RISE		
PMWS	POTABLE HOT WATER SUPPLY		PPE RISE		
PM	POTABLE WATER		PPE RISE		
ROL	ROOF DRAIN LEADER		PPE RISE		
SD	STORM DRAIN		PPE RISE		
SS	SAUNTRY CENTER		PPE RISE		
TPW	TEMPERED POTABLE WATER		PPE RISE		
TWR	TEMPERED WATER RETURN		PPE RISE		
TWS	TEMPERED WATER SUPPLY		PPE RISE		
V	VENT		PPE RISE		

NOTE: ALL SYMBOLS LISTED ABOVE MAY NOT APPEAR ON THESE DOCUMENTS

 US ARMY CORPS OF ENGINEERS ALASKA DISTRICT		CONTRACT NO. W911NB-05-C-0009 CONTRACTOR ALUTIA MNL. CON. LLC CITY ANCHORAGE STATE ALASKA		RECOMMENDED BY _____ APPROVED BY _____ RESIDENT ENGINEER _____ DATE: _____	
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[illegible][illegible]

FTTRICHARDSON_ALASKA
 FTTR245_INTERIM_FACILITIES
 FOR_AIRBORNE_COMBAT_BRIGADE
 76_BARRACKS
 CODE_PLAN_1
 AS-BUILT-DRAWINGS



US ARMY CORPS
OF ENGINEERS
ALASKA DISTRICT

CONTRACT NO.	W11IB-05-C-0009
CONTRACTOR	ALTIVO MFG. CO., LLC
CITY	ANCHORAGE
STATE	ALASKA
DATE:	
APPROVED:	
PROJECT ENGINEER	

Rev.	Action	Description	Date	App'd
1	REVISION	AS-BUILT PER OWNER MARK-UP CHANGES		

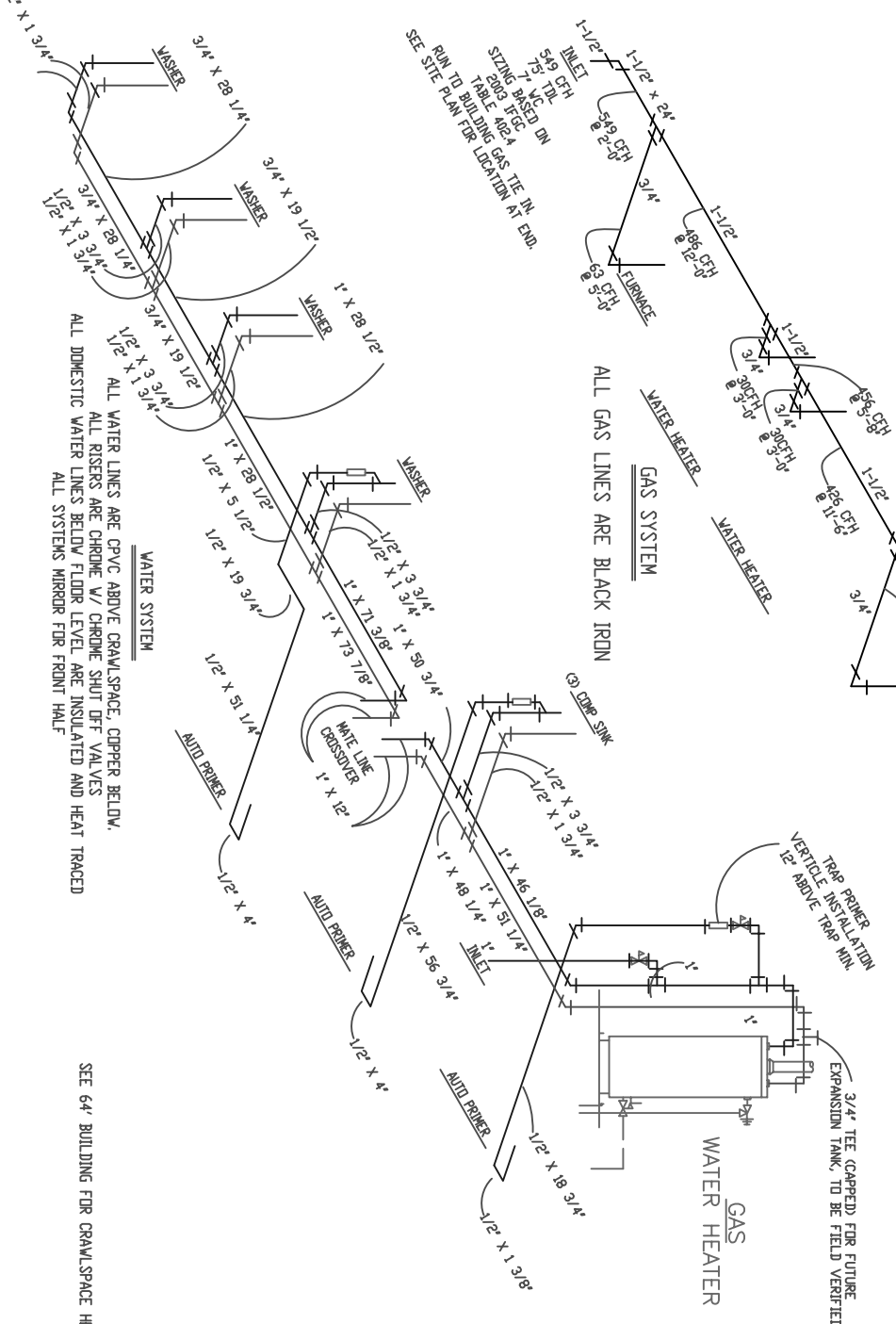
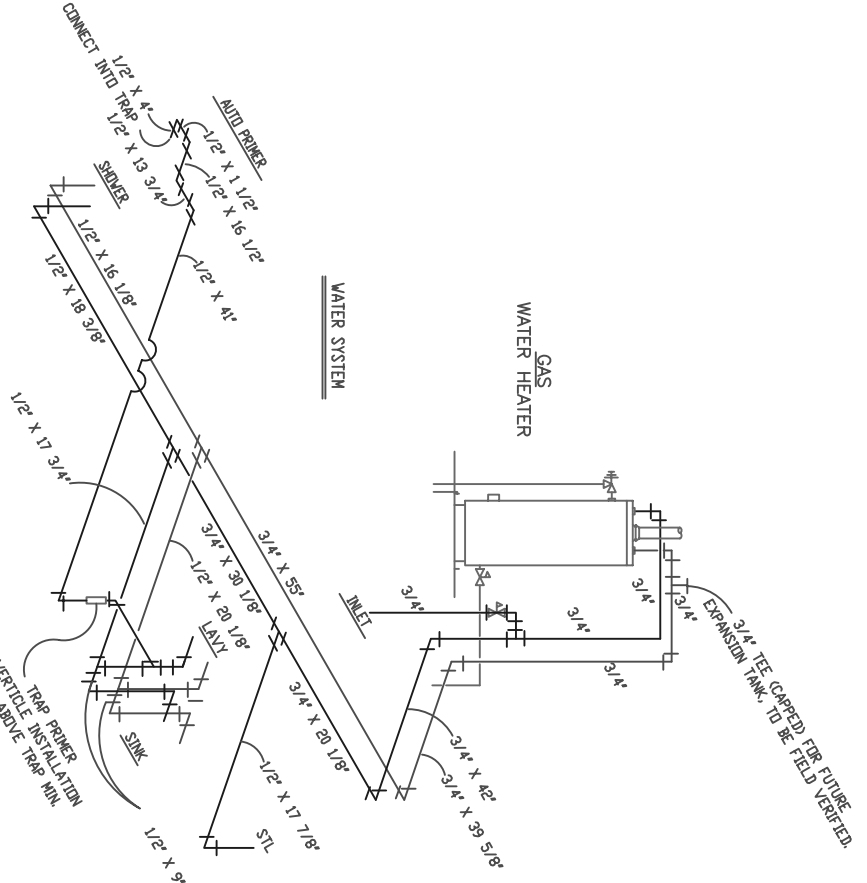
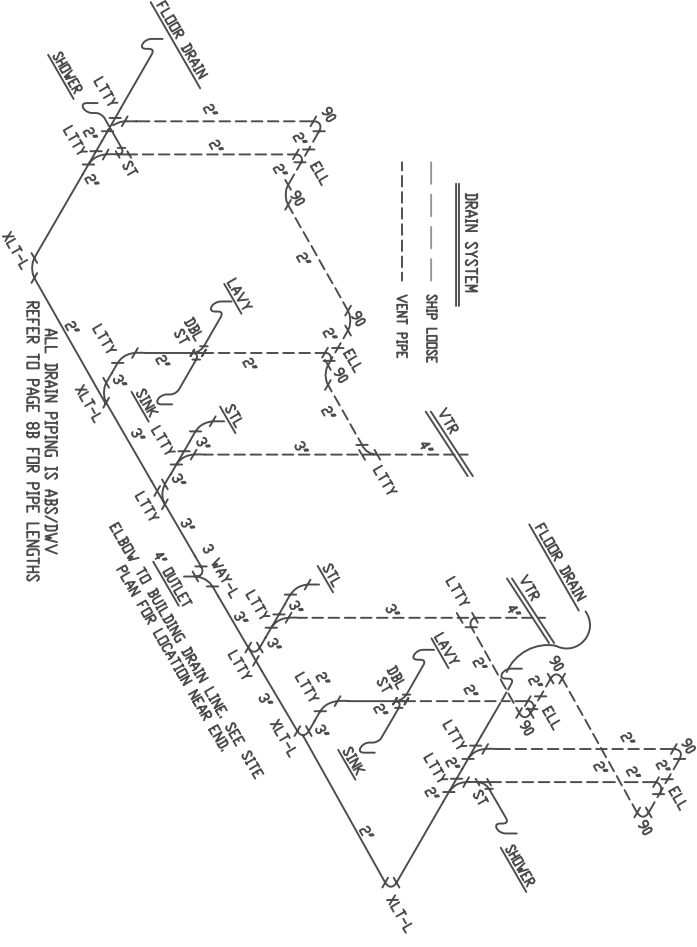
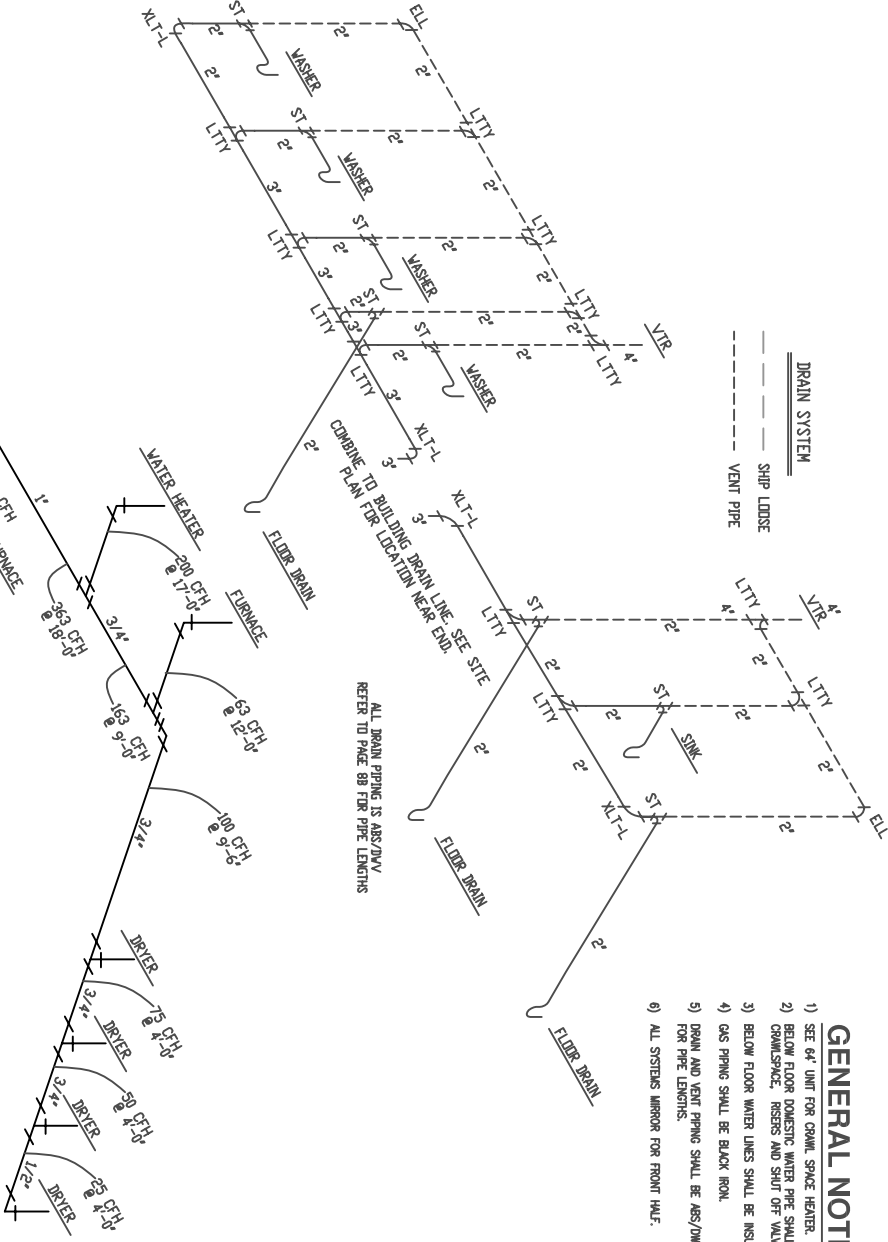
3201 C Street Anchorage, AK 99503 907.222.9500 Selling 750 Altivo	Manufacturing Contractors LLC 907.222.9500	DESIGN-BUILD GENERAL CONTRACTOR, INC. COMARK	DATE: 11-13-08 DRAWING # 11-13-08 PROJECT: FTR245-08	DESIGNED: COMARK CHECKED: COMARK SUBMITTED: COMARK
---	---	---	--	--

FOR FORT RICHARDSON, ALASKA FTR245 INTERIM FACILITIES FOR AIRBORNE COMBAT BRIGADE 76 BARACKS AS-BUILT-DRAWINGS CODE PLAN 1

Reference number: 8-C Sheet 19 of 50

GENERAL NOTES:

- 1) SEE 64' UNIT FOR CRAWL SPACE HEATER.
- 2) BELOW FLOOR DOMESTIC WATER PIPE SHALL BE COPPER, CPVC ABOVE CRAWLSPACE. RISERS AND SHUT OFF VALVES SHALL BE CHROME.
- 3) BELOW FLOOR WATER LINES SHALL BE INSULATED AND HEAT TRACED.
- 4) GAS PING SHALL BE BLACK IRON.
- 5) DRAIN AND VENT PING SHALL BE ABS/DWV. REFER TO PAGE 88 FOR PIPE LENGTHS.
- 6) ALL SYSTEMS MIRROR FOR FRONT HALF.



ALL WATER LINES ABOVE CRAWLSPACE ARE CPVC, COPPER BELOW.
ALL RISERS ARE CHROME V/ CHROME SHUT OFF VALVES
ALL DOMESTIC WATER LINES BELOW FLOOR LEVEL ARE INSULATED AND HEAT TRACED.
ALL SYSTEMS MIRROR FOR FRONT HALF

WATER SYSTEM

GAS WATER HEATER

EXPANSION TANK TO BE FIELD VERIFIED.
3/4" TEE CAPPED FOR FUTURE.

DRAIN SYSTEM

SHP LODGE
VENT PIPE

DRAIN SYSTEM

SHP LODGE
VENT PIPE

GAS SYSTEM

ALL GAS LINES ARE BLACK IRON

WATER SYSTEM

ALL WATER LINES ARE CPVC ABOVE CRAWLSPACE, COPPER BELOW.
ALL RISERS ARE CHROME V/ CHROME SHUT OFF VALVES
ALL DOMESTIC WATER LINES BELOW FLOOR LEVEL ARE INSULATED AND HEAT TRACED
ALL SYSTEMS MIRROR FOR FRONT HALF

SEE 64' BUILDING FOR CRAWLSPACE HEATER



CONTRACT NO. W911KB-05-C-0009	
CONTRACTOR ALTITUDE HALL CON., LLC	
CITY ANCHORAGE	STATE ALASKA
Recommended by: _____	
Approved: _____	
Date: _____	

Sym.	Action	Description	Date	Apprvd.

Altitude

3501 C Street
Suite 700
Anchorage, AK
99503
907.222.9500

COMARK

AVIATION SYSTEMS, INC.
3505 CHALKWATER AVENUE, SUITE 100
ANCHORAGE, ALASKA 99503
907.222.9500

Drawn by: J. H. H.	Checked by: J. H. H.	Date: 04-13-08
Revised: 04-13-08	Drawn: J. H. H.	Plot Scale: 1:1
Submittal: 04-13-08	Reviewed: J. H. H.	Plot Scale: 1:1
Drawn by: J. H. H.	Checked by: J. H. H.	Date: 04-13-08

FORT_RICHARDSON_ALASKA
FTR245_INTERIM_FACILITIES
FOR_AIRBORNE_COMBAT_BRIGADE
76'_BARRACKS/LAUNDRY
CODE_PLAN.1
AS_BUILT_DRAWINGS

76'-0"	57
74'-8"	56
73'-4"	55
72'-0"	54
70'-8"	53
69'-4"	52
68'-0"	51
66'-8"	50
65'-4"	49
64'-0"	48
62'-8"	47
61'-4"	46
60'-0"	45
58'-8"	44
57'-4"	43
56'-0"	42
54'-8"	41
53'-4"	40
52'-0"	39
50'-8"	38
49'-4"	37
48'-0"	36
46'-8"	35
45'-4"	34
44'-0"	33
42'-8"	32
41'-4"	31
40'-0"	30
38'-8"	29
37'-4"	28
36'-0"	27
34'-8"	26
33'-4"	25
32'-0"	24
30'-8"	23
29'-4"	22
28'-0"	21
26'-8"	20
25'-4"	19
24'-0"	18
22'-8"	17
21'-4"	16
20'-0"	15
18'-8"	14
17'-4"	13
16'-0"	12
14'-8"	11
13'-4"	10
12'-0"	9
10'-8"	8
9'-4"	7
8'-0"	6
6'-8"	5
5'-4"	4
4'-0"	3
2'-8"	2
1'-4"	1
0'-0"	0

3/16" X 2" X 2" ANGLE CROSSMEMBERS, TYPICAL

12.5" X 11.8 CHAPERELL I BEAM MAIN RAILS, TYPICAL

48" CL FROM REAR, ADD HANGERS, ROTATE 90 DEGREES

76'-0"

20'-0" CL FROM FRONT, ADD HANGERS, ROTATE 90 DEGREES

12.5" X 11.8# CHAPERELL I BEAM HEADBOARD

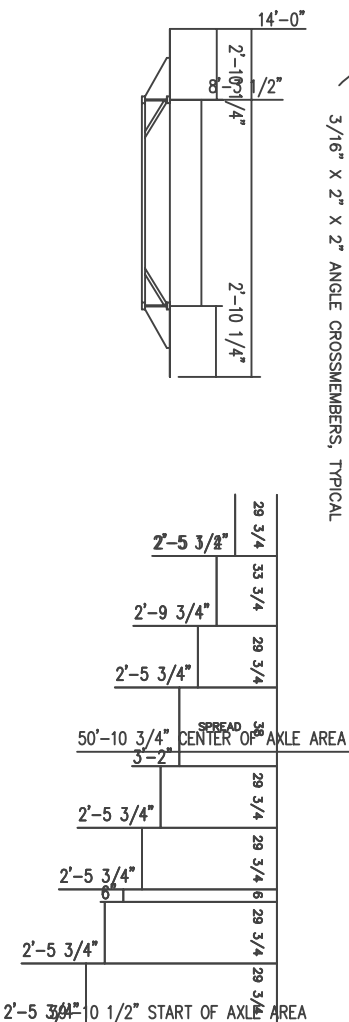
20" STEEL OUTRIGGERS, TYPICAL

HITCH / JACK & COUPLER

3/16" X 2" X 2" ANGLE CROSSMEMBERS, TYPICAL

UN-BOLTABLE HITCH ASSY.

THESE CHASSIS ARE FULL LENGTH, "NOT FOUNDATION READY"
SKIRTING SHALL BE APPLIED ON SITE.





CONTRACT NO. W911KB-05-C-0009	
CONTRACTOR ALTITUDE MAIN CON, LLC	
CITY	ANCHORAGE
STATE	ALASKA
DATE	
RECOMMENDED BY	
APPROVED BY	

Qty	Action	Description	Date	Apprv

Altitude

3201 C Street
Suite 700
Anchorage, AK 99503
907.222.9500

COMARK

Manufacturing Contractors LLC
907.222.9500

Altitude

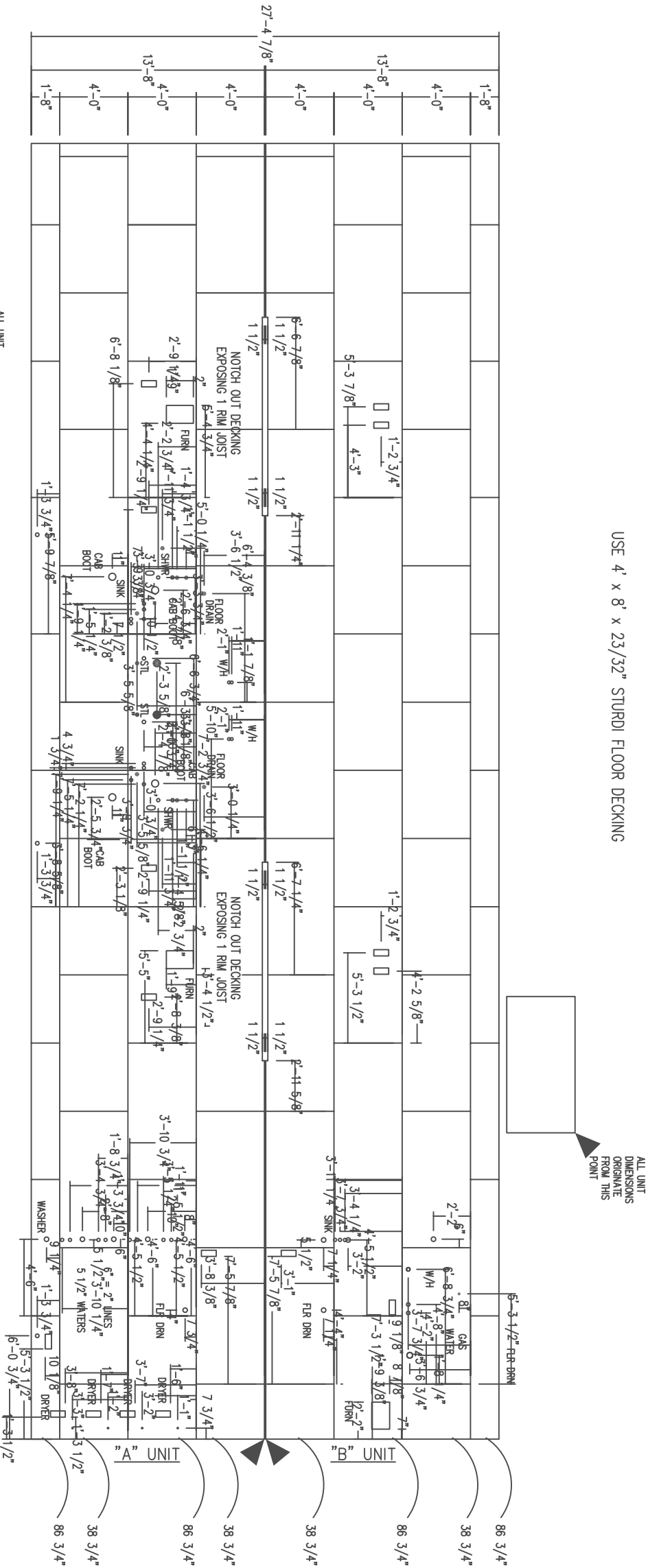
3201 C Street
Suite 700
Anchorage, AK 99503
907.222.9500

COMARK

Manufacturing Contractors LLC
907.222.9500

DATE: 11-13-08	BY: JLS
SCALE: 1:1	PROJECT: FTR245
REVISION: 1	DESCRIPTION: FTR245
DATE: 11-13-08	BY: JLS
SCALE: 1:1	PROJECT: FTR245
REVISION: 1	DESCRIPTION: FTR245

FOR: RICHARDSON, ALASKA
FTR245, INTERIM, FACILITIES
FOR: AIRBORNE, COMBAT, BRIGADE
76, BARACKS/LAUNDRY
CODE: PLAN-1
AS: BUILT, DRAWINGS





CONTRACT NO. W911KB-05-C-0009	
CONTRACTOR ALTIMA MAINT. CON., LLC	
CITY ANCHORAGE	STATE ALASKA
Approved: _____ Date: _____	
RECEIVED ENGINEER	

Sym.	Action	Description	Date	Appvd

3201 C Street
Suite 700
Anchorage, AK 99503
907.222.9500

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Designed: C. STEWART	Drawn: J. HARRIS	Date: 05-15-08
Reviewed: J. HARRIS	Checked: J. HARRIS	Released: J. HARRIS
Submitted: J. HARRIS	Drawn: J. HARRIS	Drawn #: 05-08-1-721-11-07
Drawing # 05-08-1-721-11-07		
Title: FTR24510.0B		
File: 05-08-1-721-11-07	Revision: 1	Section: 10.0B
Plot Scale: 1/8"=1'-0"	Plot: 1/8"=1'-0"	Plot: 1/8"=1'-0"
Date: 05-15-08	Drawn: J. HARRIS	Released: J. HARRIS

FORT_RICHARDSON_ALASKA
FTR245_INTERIM_FACILITIES
FOR_AIRBORNE_COMBAT_BRIGADE
76'_BARRACKS/LAUNDRY
CODE_PLAN_1
AS_BUILT_DRAWINGS

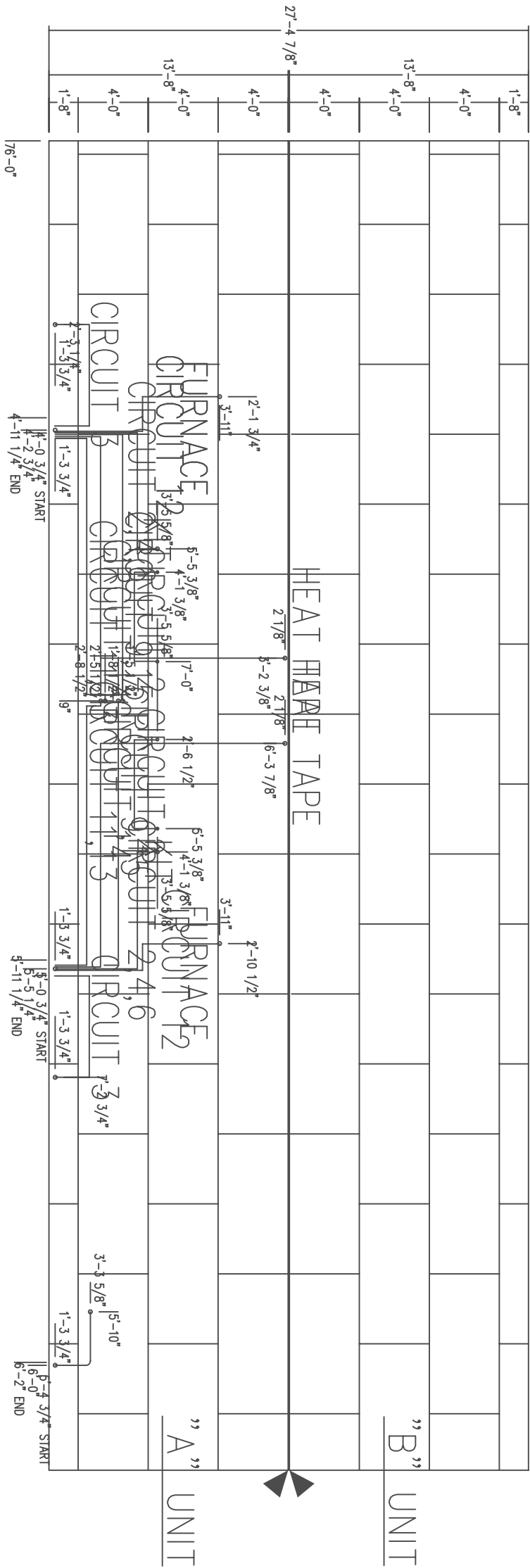
Reference number: 10B

Sheet 22 of 50

SHOWN RIGHT-SIDE UP

ALL UNIT DIMENSIONS
ORIGINATE FROM THIS POINT

ALL UNIT DIMENSIONS
ORIGINATE FROM THIS POINT



FLOOR WIRING



CONTRACT NO.	W111B-05-C-0009
CONTRACTOR	ALUTIA MAR. CON. LLC
CITY	ANCHORAGE
STATE	ALASKA
RECOMMENDED:	Approved: _____
PRIME CONTRACTOR	RESIDENT ENGINEER
	Date: _____

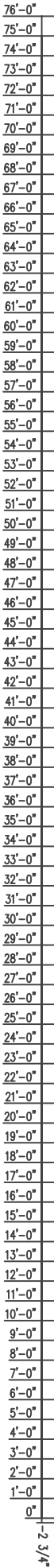
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3200
Suite
And
9950
Alutiq
Manufacturing Contractors LLC

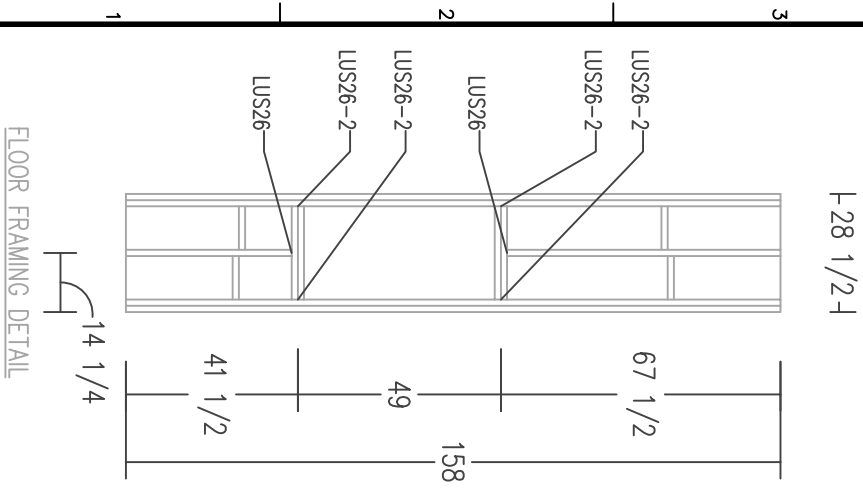
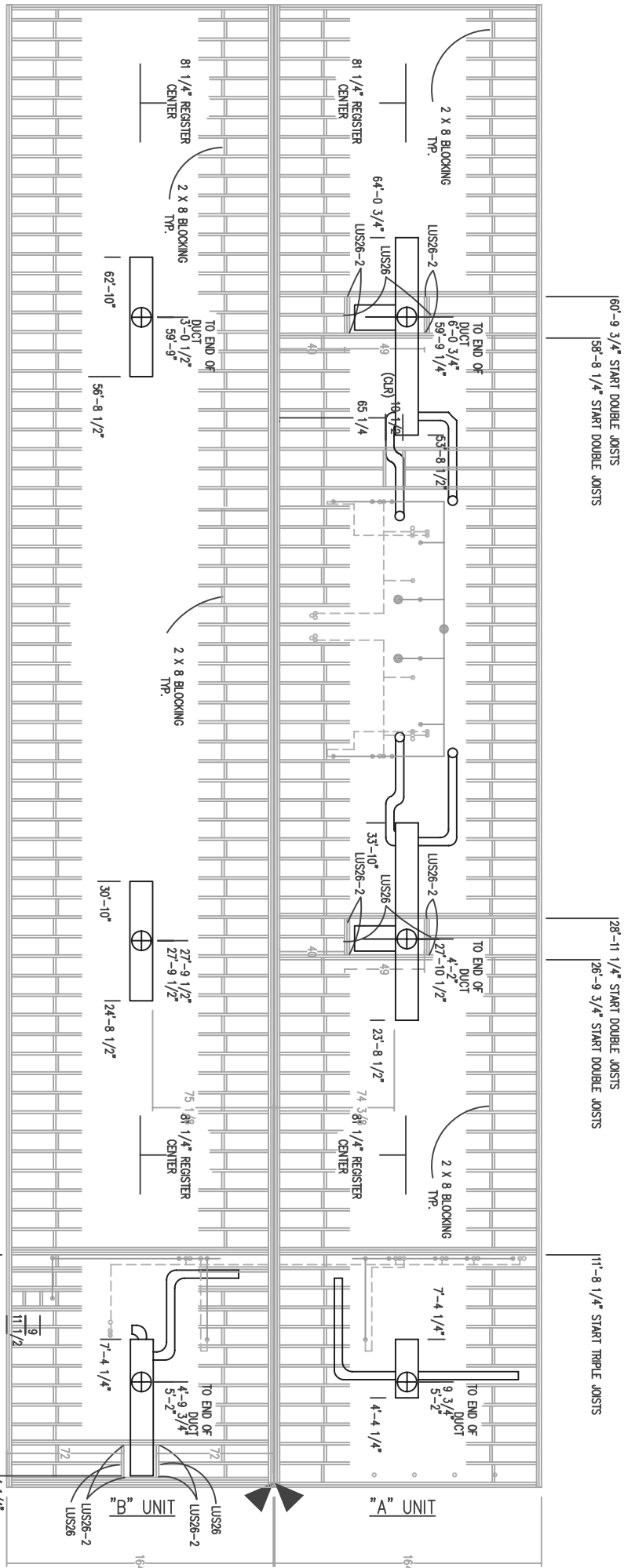
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FORT_RICHARDSON_ALASKA
FTR245_INTERIM_FACILITIES
FOR_AIRBORNE_COMBAT_BRIGADE
76_BARRACKS/LAUNDRY
CODE_PLAN_1
AS_BUILT_DRAWINGS

Reference
number:
11
Sheet 23 of 50



2x8 FLOOR SYSTEM, SPF #2 OR BETTER AT 12" ON CENTER

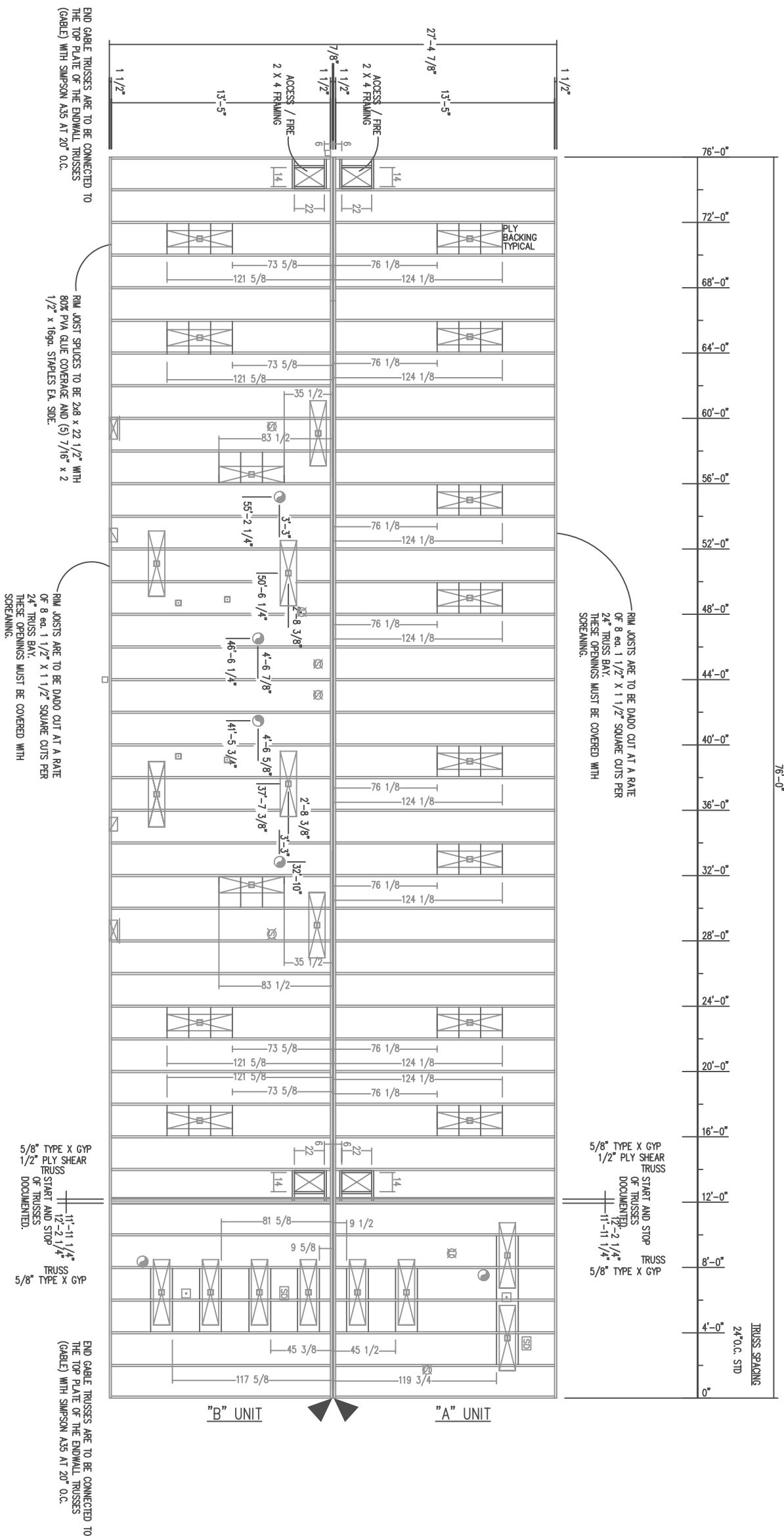


- NOTES:**
1. FLOOR FRAMING IS SHOWN INVERTED (UPSIDE DOWN, AS BUILT IN JIG).
 2. DOUBLE RIM JOISTS SPLICES TO BE OFFSET 48" MIN.

- FASTENING SCHEDULE:
1. RM. JOIST TO FLOOR JOIST: (4) $1\frac{1}{2}$ x 3" NAILS @ 7/16" x 2.1/2" x 15ga. STAPLES
 2. OUTSIDE RM. TO INSIDE RM.: $1\frac{1}{2}$ x 3" NAILS, 2 ROWS, 24" o.c. STAGGERED.
 3. RM. TO SILL PLATE: $1\frac{1}{2}$ x 3" NAILS AT 5" o.c.
 4. FLOOR DECKING TO FRAMING: 10d NAILS AT 6" o.c. EDGES AND 12" o.c. FIELD.
 5. DOUBLE JOISTS: $1\frac{1}{2}$ x 3" NAILS 2 ROWS, 24" o.c. STAGGERED.
 6. I-BEAM TO JOIST: 5/16" x 3" LAG TO CHASSIS BEAMS @ 16" o.c.
 - OUTRIGGER TO JOIST: 5/16" x 3" LAG TO OUTRIGGER AT FREE END.

[illegible]

FORT_RICHARDSON_ALASKA
FTR245_INTERIM_FACILITIES
FOR_AIRBORNE_COMBAT_BRIGADE
76_BARRACKS/LAUNDRY
CODE_PLAN_1
AS_BUILT_DRAWINGS





CONTRACT NO.	W111B-05-C-0009
CONTRACTOR	ALUTIA MAR. CON. LLC
CITY	ANCHORAGE
STATE	ALASKA
RECOMMENDED:	APPROVED:
PRIME CONTRACTOR	RESIDENT ENGINEER
Date:	

[illegible]

3201 C Street
 Suite 700
 Alhambra, AK
 90525
 907.222.9500

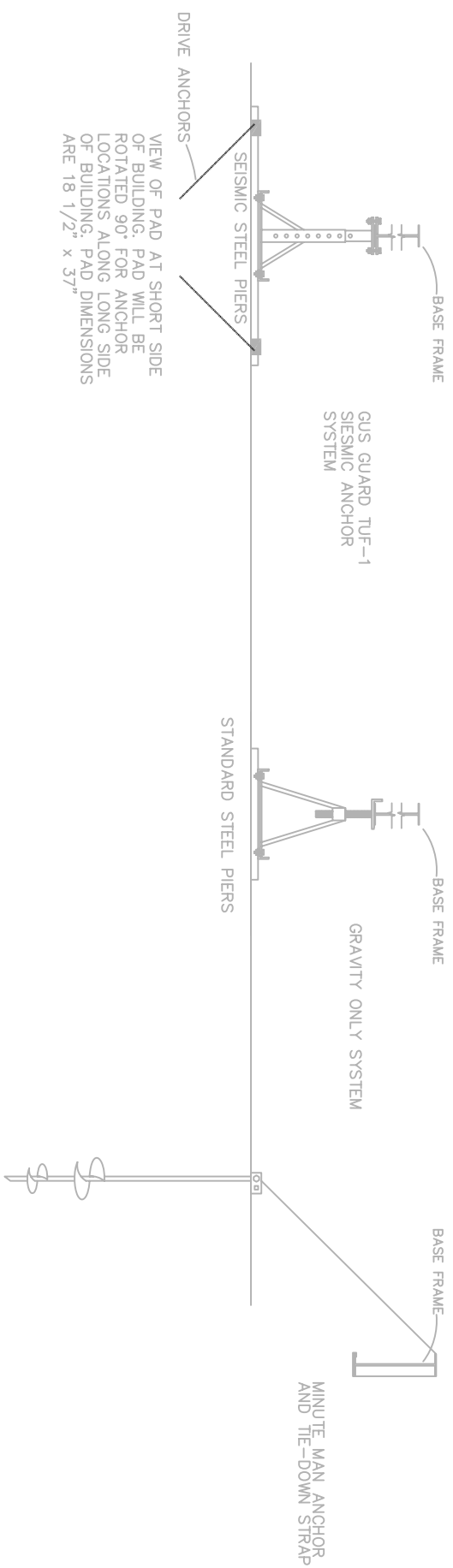
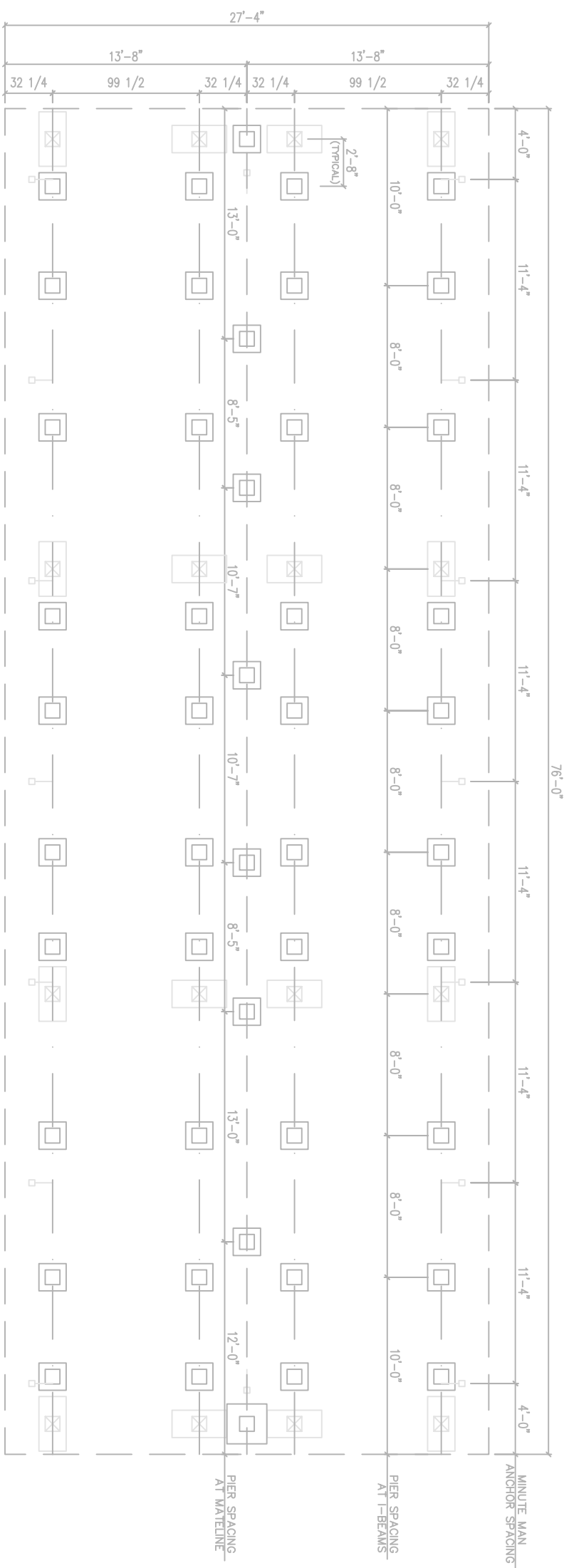
COMARK
 BUILDING SYSTEMS, INC.
 3205 COMARK BUILDING SYSTEMS, INC.
 AL RIGHTS RESERVED

Drawn: CONARK	Drawn: CONARK
Revised: CONARK	Revised: CONARK
Section: CONARK	Section: CONARK
Sheet: CONARK	Sheet: CONARK
Chg#: CONARK	Chg#: CONARK
Branch: CONARK	Branch: CONARK
Drawing #: BL-721-11-07	Drawing #: BL-721-11-07

FORT_RICHARDSON_ALASKA
FTR245_INTERIM_FACILITIES
FOR_AIRBORNE_COMBAT_BRIGADE
76_BARRACKS/LAUNDRY
CODE_PLAN_1
AS_BUILT_DRAWINGS

Reference
number:
12B

Sheet 25 of 50



LATERAL FORCES DUE TO WIND & SEISMIC LOADING SHALL BE RESISTED BY GUS GUARD TUF-1 ASSEMBLES AS MANUFACTURED BY ABESCO-GUS GUARD COMPANY OF SACRAMENTO, CA. (800-352-8831). FULLY COMPLY WITH THE MANUFACTURER'S RECOMMENDATIONS & REQUIREMENTS FOR INSTALLATION AND DESIGN. THE TUF-1 ANCHOR STAND SHALL BE SUPPORTED USING AN ABESCO ABS PAD #503 (WITH STEEL FRAME AND ANCHOR RODS) OR WITH 16" x 32" x 12" POURED IN PLACE CONCRETE FOUNDATIONS (WITH 1/2" DIAMETER ANCHOR BOLTS OR EXPANSION ANCHORS).

ANCHOR STANDS FOR GRAVITY ONLY LOADS SHALL BE CAPABLE OF SAFELY SUPPORTING A MINIMUM OF 5000 LBS.

THE FOUNDATION IS DESIGNED FOR A MINIMUM ALLOWABLE SOIL BEARING PRESSURE OF 2000 PSF. BEARING SUBGRADE CAPACITY SHALL BE VERIFIED BEFORE SETTING FOUNDATION SYSTEM.

- NOTES:
1. STAND SPACING MAY VARY DUE TO AXLE HANGERS OR OTHER STRUCTURAL OBSTRUCTIONS.
 2. BASE PADS TO BE CONSTRUCTED OF ABS.
 3. STANDS MAY BE ADDED UNDER SIDES OF DOORS AS NECESSARY FOR PROPER DOOR ADJUSTMENT.
 4. ASSUMED SOIL BEARING PRESSURE IS 2500 PSF.
 5. ALL PIERES TO BE MECHANICALLY ATTACHED TO FRAME.

LOCATION OF SEISMIC STEEL PIER & 18 1/2"x37" ABS PAD

LOCATION OF STEEL PIER ON 18 1/2" x 18 1/2" ABS PAD

LOCATION OF TIE-DOWN ANCHORS WITH 2000 LBS ALLOWABLE UPLIFT CAPACITY



US ARMY CORPS
OF ENGINEERS
ALASKA DISTRICT

CONTRACT NO.		W11K1B-05-C-0008	
CONTRACTOR		ALTIMO MAN. CON., LLC	
CITY		ANCHORAGE	
STATE		ALASKA	
Recommended:	Approved:	Date:	
PRIME CONTRACTOR		RESIDENT ENGINEER	

[illegible][illegible]

FORTRICHARDSON,ALASKA
FTR245,INTERIM,FACILITIES
FOR,AIRBORNE,COMBAT,BRIGADE
76,"BARRACKS/LAUNDRY
CODE,PLAN,1
AS,BUILT,DRAWINGS

[illegible]

FORT_RICHARDSON_ALASKA
 FTR245.INTERIM_FACILITIES
 FOR_AIRBORNE_COMBAT_BRIGADE
 76_BARRACKS_AWAY
 CODE_PLA
 AS_BUILT_DRAW
 AND_KNOVAL
 SLOTS
 DRET_40
 6d_WMS
 OF_SPACE
 STAGGERED_AT



CONTRACT NO. W911KB-05-C-0008	
CONTRACTOR ALTRIS MFG. CO., LLC	
CITY	STATE ALASKA
PROJECT CONTRACTOR	RESCUE ENGINEER
Recommended:	Approved:
Date:	Date:

Sym.	Action	Description

3201 C Street
Anchorage, AK 99503
907.222.9800

COMARK
Manufacturing Contractors LLC

3201 C Street
Anchorage, AK 99503
907.222.9800

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Manufacturing Contractors LLC

W911KB-05-0009

Sheet 28 of 50

Drawn: COMARK

Checked: COMARK

Designed: COMARK

Date: 9-13-09

Proj. FTR24515-01

Section

Rev. Scale: 1/8"=1'-0"

Proj. Scale: 1/8"=1'-0"

Proj. Scale: 1/8"=1'-0"

Proj. Scale: 1/8"=1'-0"

Drawn: COMARK

Checked: COMARK

Designed: COMARK

Date: 9-13-09

Proj. FTR24515-01

Section

Rev. Scale: 1/8"=1'-0"

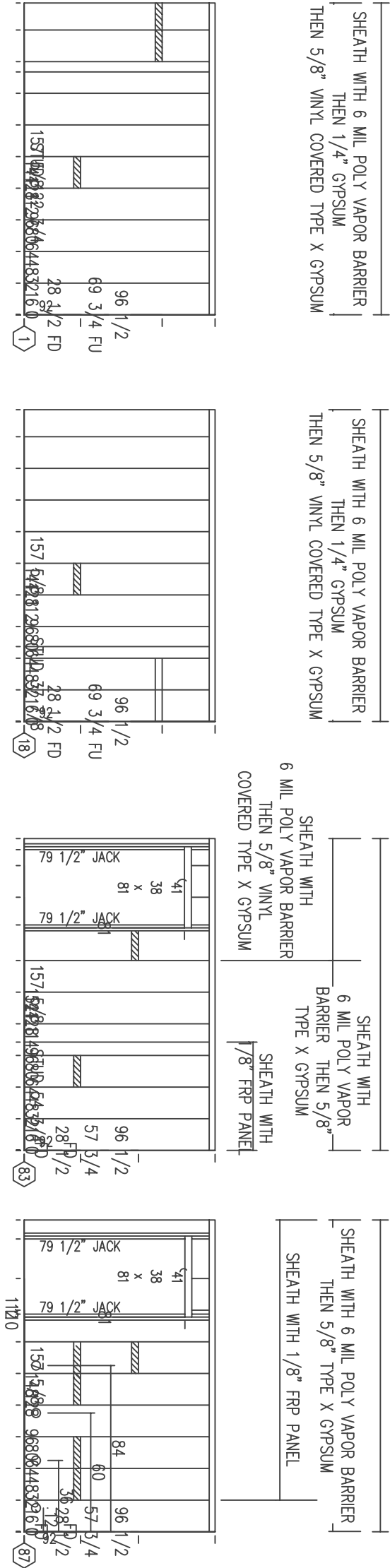
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Proj. Scale: 1/8"=1'-0"

Proj. Scale: 1/8"=1'-0"

FORT_RICHARDSON_ALASKA
FOR_AIRBORNE_COMBAT_BRIGADE
76_BARACKS/LAUNDRY
CODE_PLAN_1
100%-DRAWINGS

Reference number:
15B
Sheet 28 of 50



MARRIAGE WALL OPENING BEAM DETAIL
(4) BEAMS REQUIRED PER DOUBLEWIDE UNIT

146 1/2

(2) 1 3/4" X 9 1/2" LVL BEAMS

5/8" VCX GYPSUM FILLER

WASH CAR BEAM ONLY.
(2) BEAMS REQUIRED PER DOUBLEWIDE UNIT

9 1/2

128 1/8

PARTITIONS: EXTERIOR



CONTRACT NO.	W911KB-05-C-0009	CONTRACTOR	ALTRIA MAN. CON. LLC	CITY	ANCHORAGE	STATE	ALASKA
Recommended:		Approved:		Date:		Resident Engineer	
Prime Contractor							

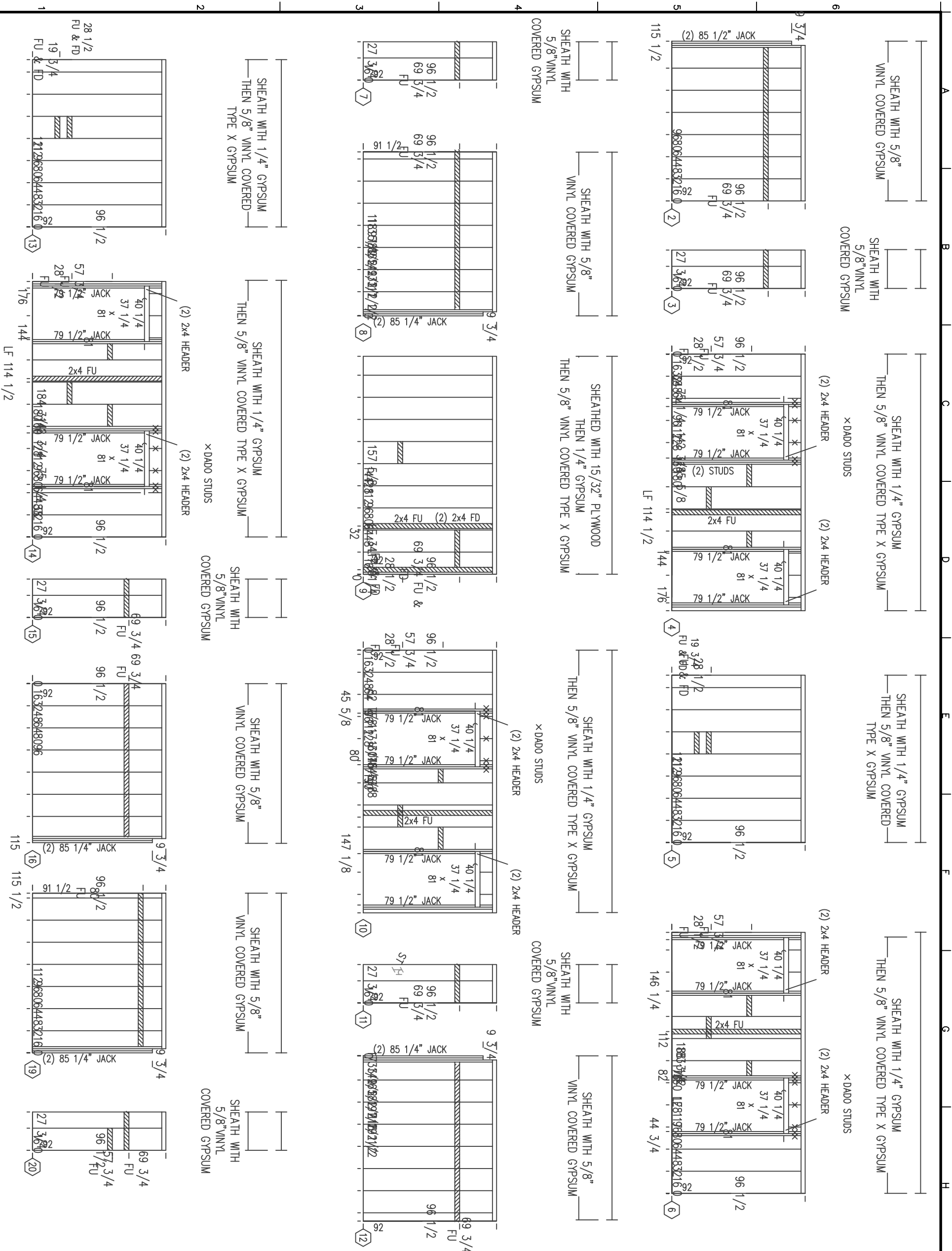
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99503
Manufacturing Contractors LLC
Alutiiq
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Date:	3-13-06
Dwg Scale:	1:1
Plot Scale:	1/8" = 1'-0"
File:	FTR24515.D
Drawing #:	S-BLT-721-11-07

FORT_RICHARDSON_ALASKA
 FTR245_INTERIM_FACILITIES
 FOR_AIRBORNE_COMBAT_BRIGADE
 76_BARRACKS/LAUNDRY
 CODE_PLAN_1

PARTITIONS: INTERIOR





CONTRACT NO. W911KB-05-C-0008	
CONTRACTOR ALTRIS M&M CON. LLC	
CITY	STATE
RESIDENT ENGINEER	DATE:
RECOMMENDED:	APPROVED:
PRIME CONTRACTOR	

Qty.	Action	Description

3201 C Street
Suite 700
Anchorage, AK 99503
907.222.9000

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Manufacturing Contractors LLC
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W911KB-05-0009

Drawn: DATE: 10-13-08

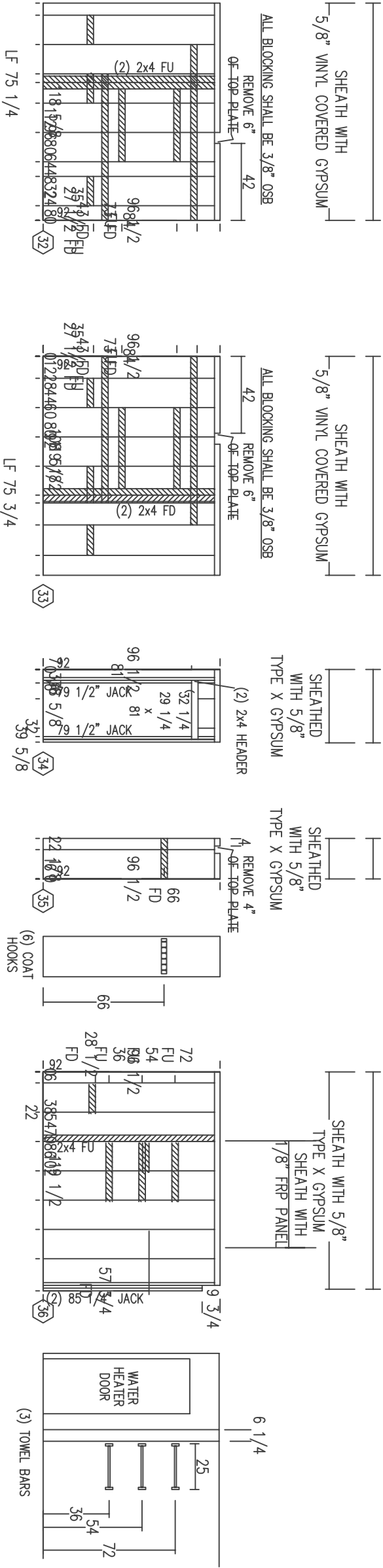
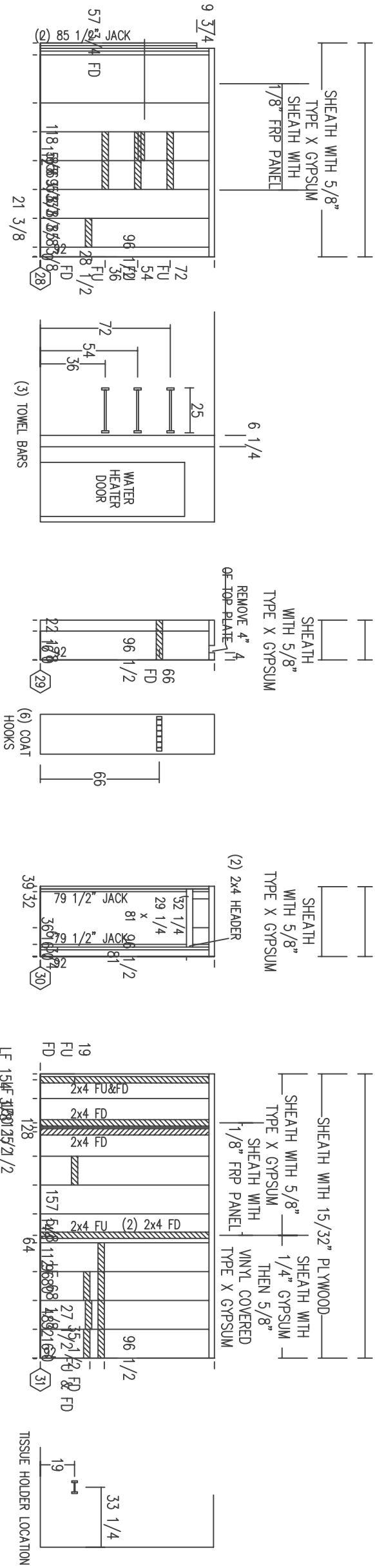
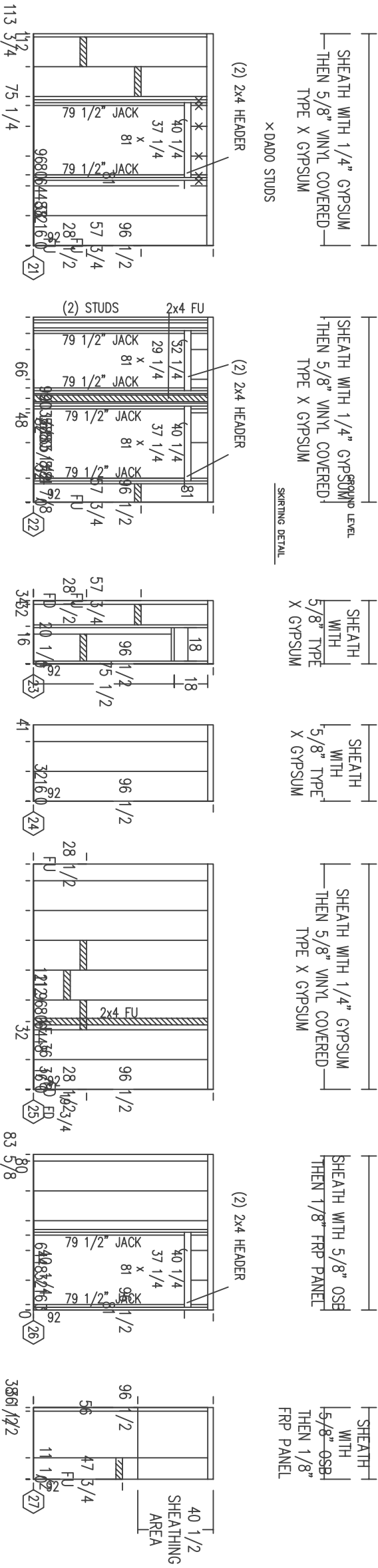
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Sheet: 30 of 50

Design: 10-13-08	Drawn: 10-13-08	Revised: 0503	Sheet: 30 of 50
Project: FT24515-01	Client: COMARK	Contract: 11	Scale: 1/8"=1'-0"
Drawn: 10-13-08	Revised: 0503	Sheet: 30 of 50	Project: FT24515-01
Design: 10-13-08	Drawn: 10-13-08	Revised: 0503	Sheet: 30 of 50

FT245 INTERIM FACILITIES
FOR AIRBORNE COMBAT BRIGADE
76th BARACKS/LAUNDRY
CODE PLAN 1

PARTITIONS: INTERIOR





CONTRACT NO. W911KB-05-C-0008	
CONTRACTOR ALTRIS M&M CON. LLC	
CITY	ANCHORAGE
STATE	ALASKA
RESIDENT ENGINEER	Approved: _____ Date: _____
PRIME CONTRACTOR	Recommended: _____

Qty.	Action	Description

Alutiiq
Manufacturing Contractors LLC
2001 C Street
Suite 700
Anchorage, AK 99503
907.222.9900

COMARK
Sustainable Building Systems, Inc.
2001 C Street
Suite 700
Anchorage, AK 99503
907.222.9900

Designed: CONTRACTOR

Drawn: LHM

Reviewed: CONTRACTOR

Checked: CONTRACTOR

Approved: CONTRACTOR

Date: 10-13-08

Sheet: W911KB-05-0009

Part: FTR24515.05

Rev: 1

Scale: 1/8"=1'-0"

Section: 6" WALL

Revision: 1

Revision: 2

Revision: 3

Revision: 4

Revision: 5

Revision: 6

Revision: 7

Revision: 8

Revision: 9

Revision: 10

Revision: 11

Revision: 12

Revision: 13

Revision: 14

Revision: 15

Revision: 16

Revision: 17

Revision: 18

Revision: 19

Revision: 20

Revision: 21

Revision: 22

Revision: 23

Revision: 24

Revision: 25

Revision: 26

Revision: 27

Revision: 28

Revision: 29

Revision: 30

Revision: 31

Revision: 32

Revision: 33

Revision: 34

Revision: 35

Revision: 36

Revision: 37

Revision: 38

Revision: 39

Revision: 40

Revision: 41

Revision: 42

Revision: 43

Revision: 44

Revision: 45

Revision: 46

Revision: 47

Revision: 48

Revision: 49

Revision: 50

FOR AIRBORNE COMBAT FACILITIES
FOR AIRBORNE COMBAT FACILITIES
76' BARACKS/LAUNDRY
CODE PLAN 1

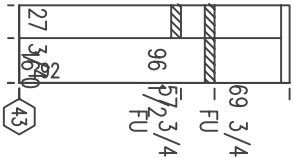
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FOR AIRBORNE COMBAT FACILITIES
76' BARACKS/LAUNDRY
CODE PLAN 1

Reference Number: 15F

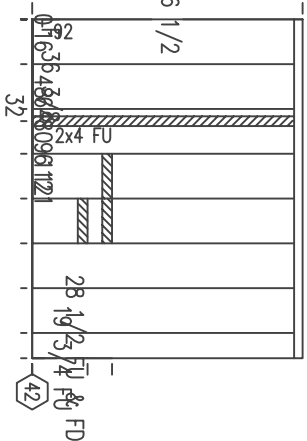
Sheet 31 of 50

PARTITIONS: INTERIOR

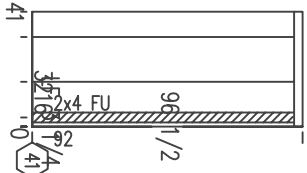
SHEATH WITH 5/8" VINYL COVERED GYPSUM



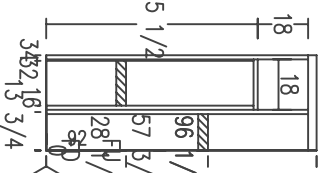
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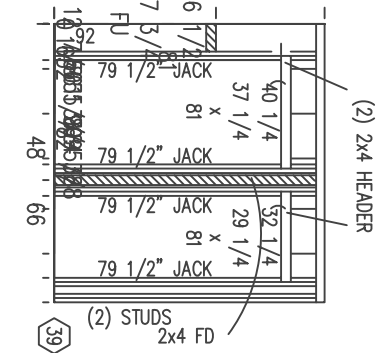
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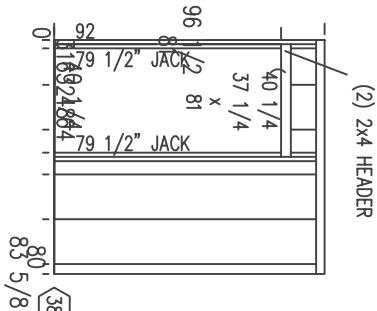
SHEATH WITH 5/8" TYPE X GYPSUM



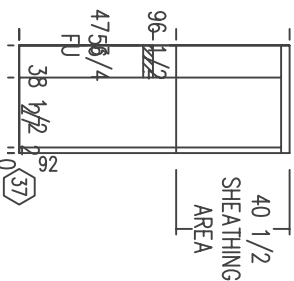
SHEATH WITH 1/4" GYPSUM THEN 5/8" VINYL COVERED TYPE X GYPSUM



SHEATH WITH 5/8" OSB THEN 1/8" FRP PANEL

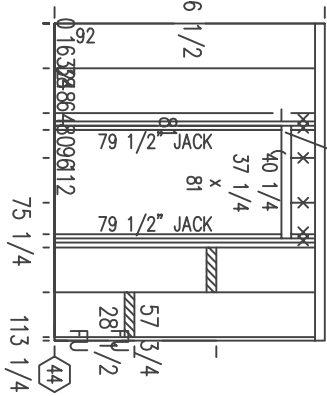


SHEATH WITH 5/8" OSB THEN 1/8" FRP PANEL

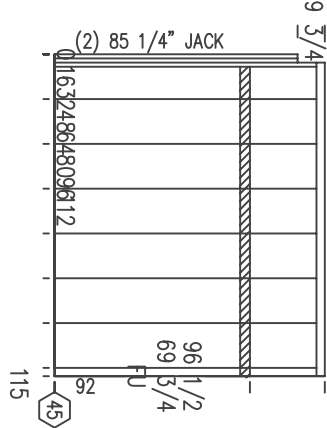


SHEATH WITH 1/4" GYPSUM THEN 5/8" VINYL COVERED TYPE X GYPSUM

× DADO STUDS (2) 2x4 HEADER

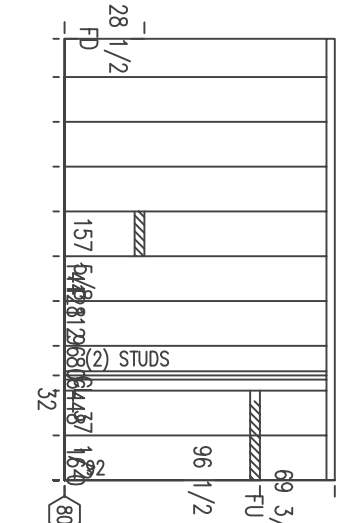


SHEATH WITH 5/8" VINYL COVERED GYPSUM



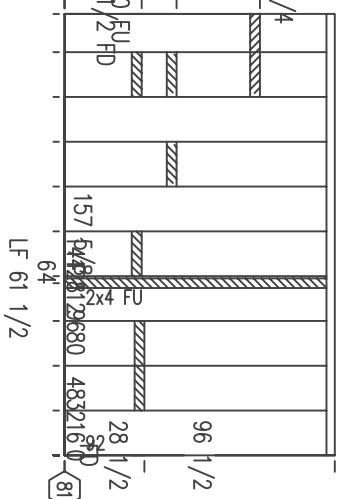
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6" WALL

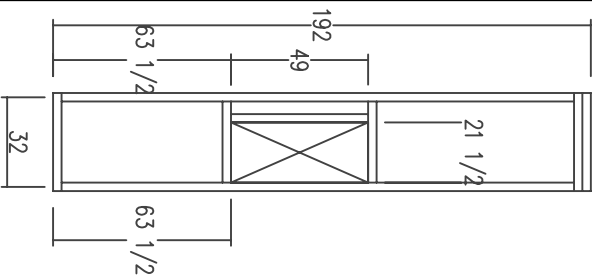


SHEATH WITH 5/8" TYPE X GYPSUM THEN 1/8" FRP PANEL

6" WALL

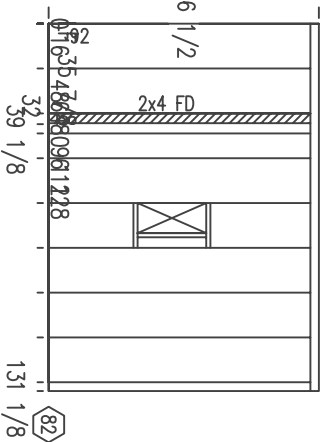


FIRE EXT. CABINET FRAMING DETAIL

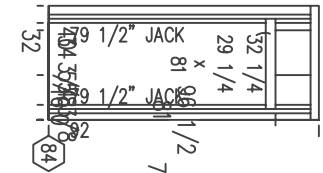


SHEATH WITH 5/8" VINYL COVERED TYPE X GYPSUM

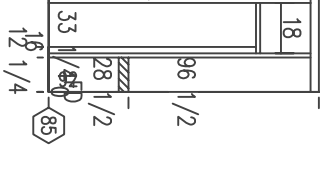
SHEATH WITH 5/8" PLY



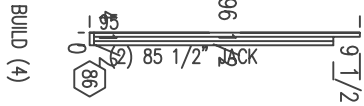
SHEATH WITH 5/8" TYPE X GYPSUM



SHEATH WITH 5/8" TYPE X GYPSUM

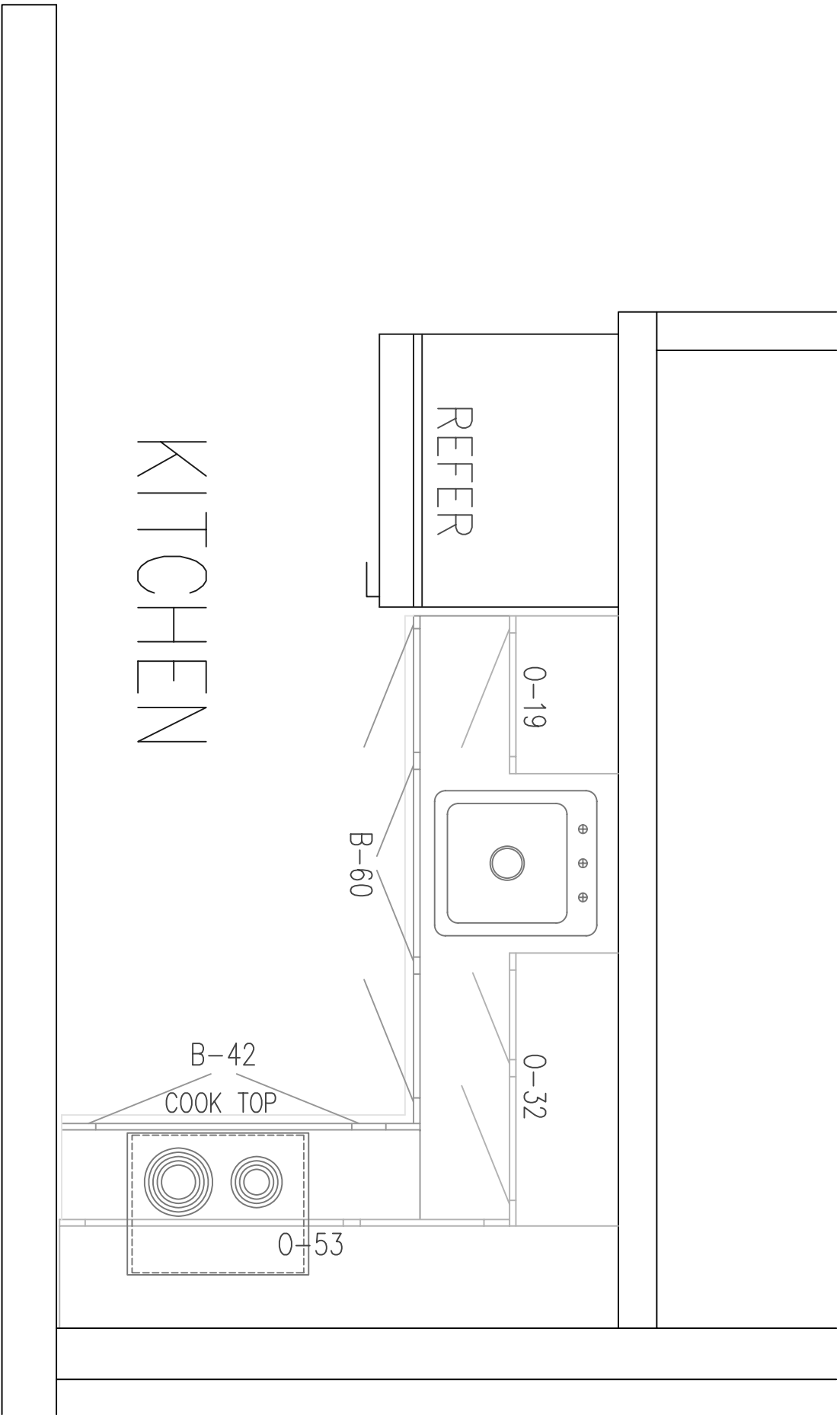


NO TOP PLATE



FIRE EXT. CABINET 24" H X 10 1/2" W X 4" D BLUE BOARD BEHIND, INSULATION

BUILD 1 RIGHT AND 1 LEFT, SEE FLOOR PLAN



Reference
number:
16A
Sheet 32 of 50

FORT_RICHARDSON_ALASKA
FOR_AIRBORNE_COMBAT_BRIGADE
ALL_BARACKS
CODE_PLAN_1
AS_BUILT_DRAWINGS

3201 C Street
Suite 700
Anchorage, AK 99503
907.222.9800

Alutiq
Manufacturing Contractors LLC

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Designed: COMARK
Drawn: LHM
Reviewed: COMARK
Checked: COMARK
Submitted: COMARK
Date: 9-19-09

Part Scale: 1/8"=1'-0"

Part Scale: 1/8"=1'-0"

File: FTR24516.0A

Drawing #: 16-B-1-721-11-03

W911KB-05-0009

0000

Qty.	Action	Description	Date	Appvd

CONTRACT NO. W911KB-05-C-0009	
CONTRACTOR ALUTIQ MAN. CON. LLC	
CITY ANCHORAGE	STATE ALASKA
Recommended: _____	Approved: _____
PRIME CONTRACTOR	RESIDENT ENGINEER
Date: _____	



CONTRACT NO. W911KB-05-C-0008	
CONTRACTOR ALTRIS MFG. CO., LLC	
CITY Anchorage	STATE Alaska
Recommended: _____	Approved: _____
PRIME CONTRACTOR	RESIDENT ENGINEER
Date: _____	

Qty.	Action	Description	Date	Appvd

3201 C Street
Suite 700
Anchorage, AK 99503

907.222.9800

Manufacturing Contractors LLC

Alutiiq

Alutiiq Building Systems, Inc.

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COMARK

Designed: COMARK

Drawn: LHM

Reviewed: COMARK

Checked: COMARK

Submitted: COMARK

Outlet: COMARK

Date: 9-19-09

Pkg Scale: 1:1

Pkg: FTR24516.03

Revision: 145-81-721-11-03

Drawing #: 145-81-721-11-03

W911KB-05-0009

Section: DISTRIBUTION

Branch: DISTRIBUTION

Sheet: 33 of 50

FORT_RICHARDSON_ALASKA

FOR_AIRBORNE_COMBAT_BRIGADE

ALL_BARACKS

AS_BUILT_DRAWINGS

Code: PLAN_1

Code: PLAN_1

Reference Number: 16B

Sheet 33 of 50

SPACESAVER MICRO

CABINET DOOR/DRAWER SIZE SCHEDULE

(A) = 11 1/2 x 19 1/2	(G) = 19 1/2 x 26 1/2	(U) = 11 1/2 x 9 3/8	(UU) = 23 x 9 3/8
(B) = 11 1/2 x 26 1/2	(H) = 15 1/2 x 43 1/2	(V) = 15 1/2 x 9 3/8	(VV) = 31 x 9 3/8
(C) = 15 1/2 x 11 1/2	(M) = 13 5/8 x 28 1/2	(W) = 19 1/2 x 9 3/8	(WW) = 39 x 9 3/8
(D) = 15 1/2 x 19 1/2	(R) = 11 1/2 x 6	(RR) = 23 x 6	(XX) = 23 x 12 3/4
(E) = 15 1/2 x 26 1/2	(S) = 15 1/2 x 6	(SS) = 31 x 6	(YY) = 31 x 12 3/4
(F) = 19 1/2 x 19 1/2	(T) = 19 1/2 x 6	(TT) = 39 x 6	(ZZ) = 39 x 12 3/4

OVERHEAD CABINETS



CONTRACT NO. W911KB-05-C-0009	
CONTRACTOR	ALTRIS MM, CO., LLC
CITY	ANCHORAGE
STATE	ALASKA
APPROVED:	DATE:
PRIME CONTRACTOR	RESIDENT ENGINEER

Qty.	Action	Description	Date	Appvd

3201 C Street
Suite 700
Anchorage, AK 99503
907.222.9800

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Designed: COMBARK
Drawn: LHM
Reviewed: COMBARK
Checked: COMBARK
Submittal: COMBARK
Out: COMBARK

Date: 9-19-09
Pkg Scale: 1/1
File: FTR24516-05
Drawing #: 45-8-1-721-11-03

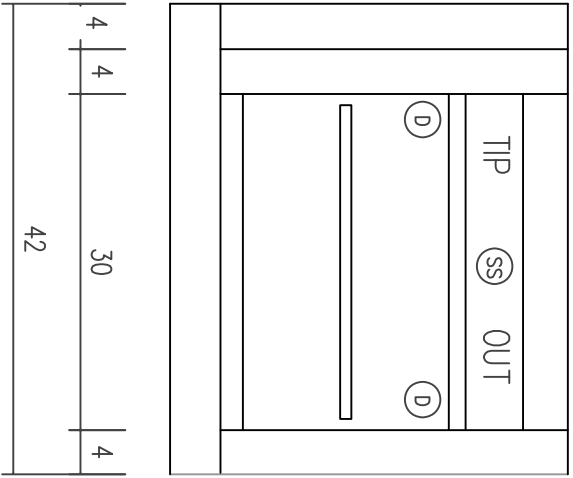
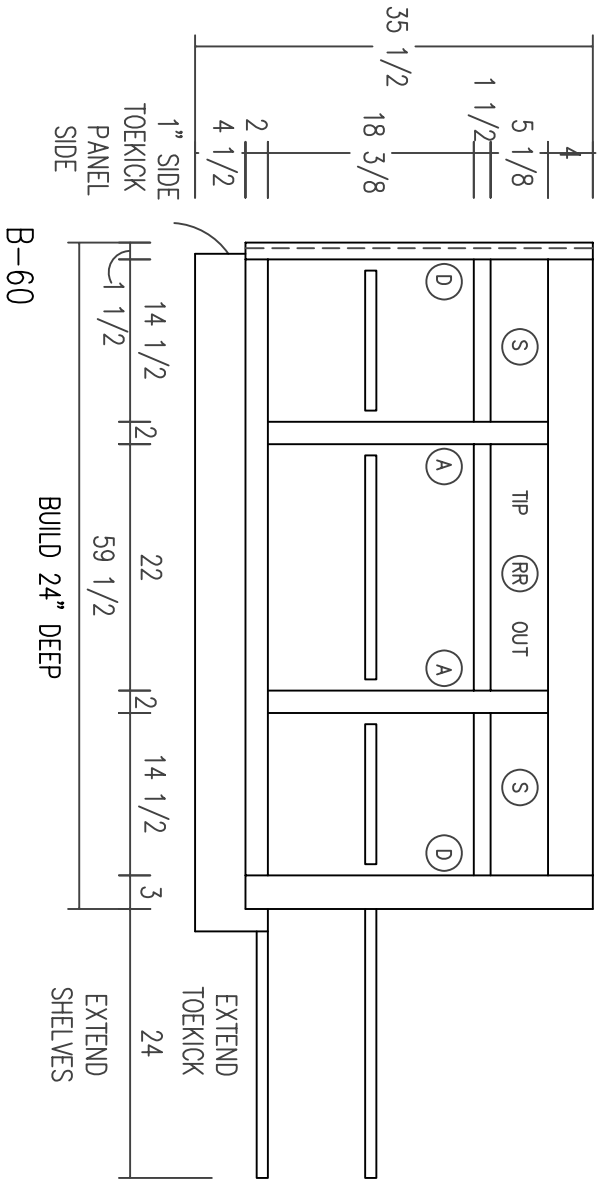
W911KB-05-0009

FOR_RICHARDSON_ALASKA	FOR_AIRBORNE_COMBAT_BRIGADE	ALL_BARACKS	CODE_PLAN_1	AS_BUILT_DRAWINGS
-----------------------	-----------------------------	-------------	-------------	-------------------

Reference number:
16C

Sheet 34 of 50

BASE CABINETS



CABINET DOOR/DRAWER SIZE SCHEDULE

(A) = 11 1/2 x 19 1/2	(G) = 19 1/2 x 26 1/2	(U) = 11 1/2 x 9 3/8	(UU) = 23 x 9 3/8
(B) = 11 1/2 x 26 1/2	(H) = 15 1/2 x 43 1/2	(V) = 15 1/2 x 9 3/8	(VV) = 31 x 9 3/8
(C) = 15 1/2 x 11 1/2		(W) = 19 1/2 x 9 3/8	(WW) = 39 x 9 3/8
(D) = 15 1/2 x 19 1/2	(R) = 11 1/2 x 6	(X) = 11 1/2 x 12 3/4	(XX) = 23 x 12 3/4
(E) = 15 1/2 x 26 1/2	(S) = 15 1/2 x 6	(Y) = 15 1/2 x 12 3/4	(YY) = 31 x 12 3/4
(F) = 19 1/2 x 19 1/2	(T) = 19 1/2 x 6	(Z) = 19 1/2 x 12 3/4	(ZZ) = 39 x 12 3/4
	(RR) = 23 x 6		
	(SS) = 31 x 6		
	(TT) = 39 x 6		

A B C D E F G H



CONTRACT NO. W911KB-05-C-0009	
CONTRACTOR ALTRIO MM, CO., LLC	
CITY	ANCHORAGE
STATE	ALASKA
Approved:	Resident Engineer
Date:	

Qty.	Action	Description	Date	Appvd



3201 C Street
Suite 700
Anchorage, AK 99503
Manufacturing Contractors LLC
907.222.9900



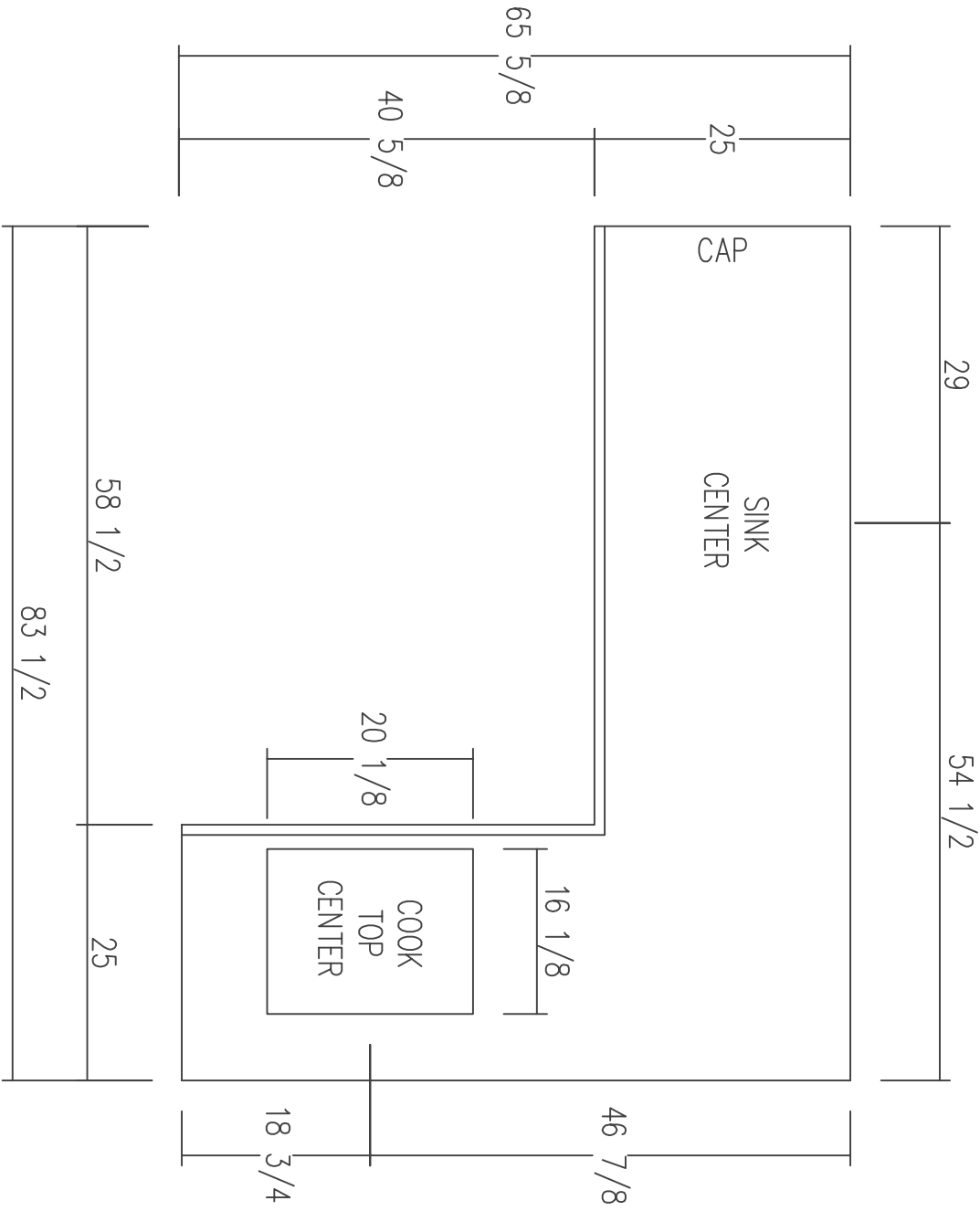
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Designed: COMARK	Date: 9-19-09
Drawn: LHM	Proj. Scale: 1:1
Reviewed: COMARK	File: FTR24516.03
Sheet: 16D	Section: 16D
Submittal: COMARK	Drawing #: 45-B-1-721-11-03
Client: COMARK	Project: W911KB-05-0009

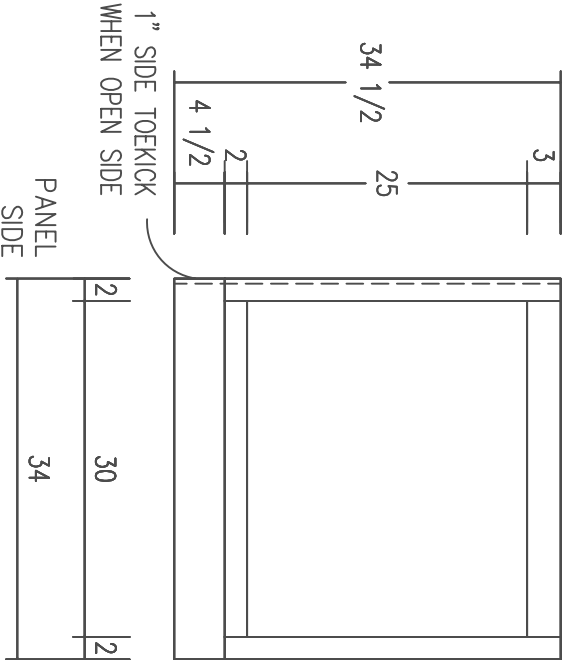
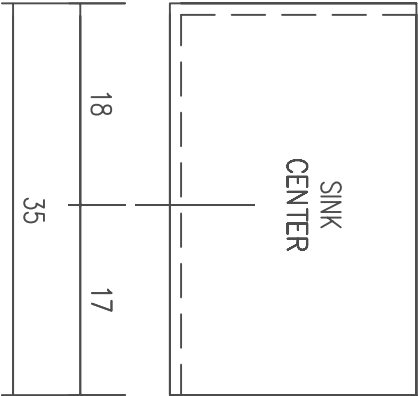
FORT_RICHARDSON_ALASKA
FTR245_INTERIM_FACILITIES
FOR_AIRBORNE_COMBAT_BRIGADE
ALL_BARRACKS
CODE_PLAN_1
AS_BUILT_DRAWINGS

Reference number:
16D
Sheet 35 of 50

KITCHEN COUNTER TOPS



BUILD 1 RIGHT AND 1 LEFT, SEE FLOOR PLAN



CABINET DOOR/DRAWER SIZE SCHEDULE

- (A) = 11 1/2 x 19 1/2 (G) = 19 1/2 x 26 1/2 (U) = 11 1/2 x 9 3/8 (UU) = 23 x 9 3/8
- (B) = 11 1/2 x 26 1/2 (H) = 15 1/2 x 43 1/2 (V) = 15 1/2 x 9 3/8 (VV) = 31 x 9 3/8
- (C) = 15 1/2 x 11 1/2 (R) = 11 1/2 x 6 (RR) = 23 x 6 (W) = 19 1/2 x 9 3/8 (WW) = 39 x 9 3/8
- (D) = 15 1/2 x 19 1/2 (S) = 15 1/2 x 6 (SS) = 31 x 6 (X) = 11 1/2 x 12 3/4 (XX) = 23 x 12 3/4
- (E) = 15 1/2 x 26 1/2 (T) = 19 1/2 x 6 (TT) = 39 x 6 (Y) = 15 1/2 x 12 3/4 (YY) = 31 x 12 3/4
- (F) = 19 1/2 x 19 1/2 (Z) = 19 1/2 x 12 3/4 (ZZ) = 39 x 12 3/4



CONTRACT NO.	W911KB-05-C-0009
CONTRACTOR	ALTRIO MFG. CO., LLC
CITY	ANCHORAGE
STATE	ALASKA
APPROVED:	DATE:
RECOMMENDED:	DATE:
PRIME CONTRACTOR	RESIDENT ENGINEER

Qty.	Action	Description	Date	Appvd

Alutiq

3001 C Street
Anchorage, AK 99503

Manufacturing Contractors LLC
907.222.9800

COMARK

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Designed: COMARK	Date: 9-19-09
Drawn: LHM	Proj. Scale: 1:1
Reviewed: COMARK	File: FTR24516.05
Submitted: COMARK	Revision: 1
Client: COMARK	Drawing #: 45-81-721-11-03
Contract: W911KB-05-0009	

FORT_RICHARDSON_ALASKA
FOR_AIRBORNE_COMBAT_FACILITIES
ALL_BARACKS
AS_BUILT_DRAWINGS
CODE_PLAN_1

Reference number:	16E
Sheet	36 of 50

34" LAV BASE
V-134A

A

B

C

D

E

F

G

H

US ARMY CORPS
OF ENGINEERS

CONTRACT NO. W9118B-05-C-0009	
CONTRACTOR	ALUTIA MFG. CO., LLC
CITY	ANCHORAGE
STATE	ALASKA
DATE	
APPROVED	
RESIDENT ENGINEER	

Qty.	Action	Description	Date	Appvd.
1	REVIEW	AS-BUILT PER OWNER WORK ORDER		

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Designed: COMARK	Drawn: LHM	Reviewed: COMARK	Checked: COMARK	Submitted: COMARK
Date: 12-15-09	Plot Scale: 1/8"=1'-0"	Section: 1124517.0B	Branch: 40185-120-11-10	Drawing #: 40185-120-11-10

FORT RICHARDSON, ALASKA
FTR245 INTERIM FACILITIES
FOR AIRBORNE COMBAT BRIGADE
76 L BARRACKS
AS-BUILT-DRAWINGS
CODE PLAN 1

Reference
number:
17-B
Sheet 38 of 50

GENERAL NOTES:

- INSTALL ALL SHEET METAL IN ACCORDANCE WITH LATEST ASHRAE DUCT CONSTRUCTION MANUAL REQUIREMENTS. MINIMUM DUCT SIZE AND ADDITIONAL DUCT FITTINGS AS REQUIRED TO CLEAR OBSTRUCTIONS AND MAINTAIN CLEARANCES.
- SEE 64' UNIT FOR CRAWL SPACE HEATER.

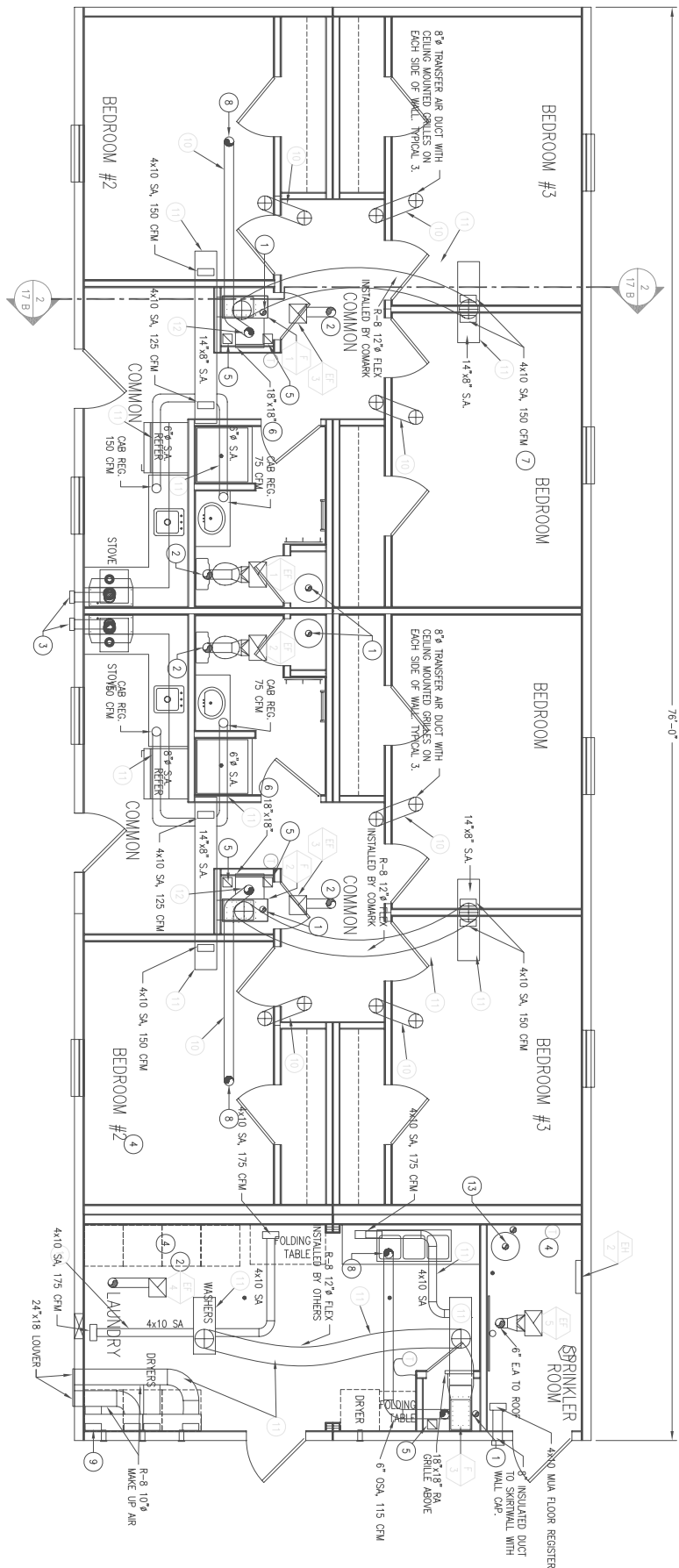
IECC MECHANICAL

NOTES:

- DUCTWORK TO BE SEALED WITH UNITED DUCT SEALER OR EQUAL. DUCT TAPE IS NOT ACCEPTABLE.
- ALL SUPPLY AND RETURN AIR DUCTS AND PLenums SHALL BE INSULATED WITH A MINIMUM OF R-5 INSULATION WHEN LOCATED IN UNCONDITIONED SPACE.
- ALL SUPPLY AND RETURN AIR DUCTS AND PLenums SHALL BE INSULATED WITH A MINIMUM OF R-5 INSULATION WHEN LOCATED OUTSIDE THE BUILDING.
- DUCTS IN TEMPERED SPACES THAT SERVE THAT AREA OR DUCTS WITH A TEMPERATURE DIFFERENCE LESS THAN 15° F DO NOT REQUIRE INSULATION.
- ALL THERMOSTATS TO BE ELECTRONIC DIGITAL.

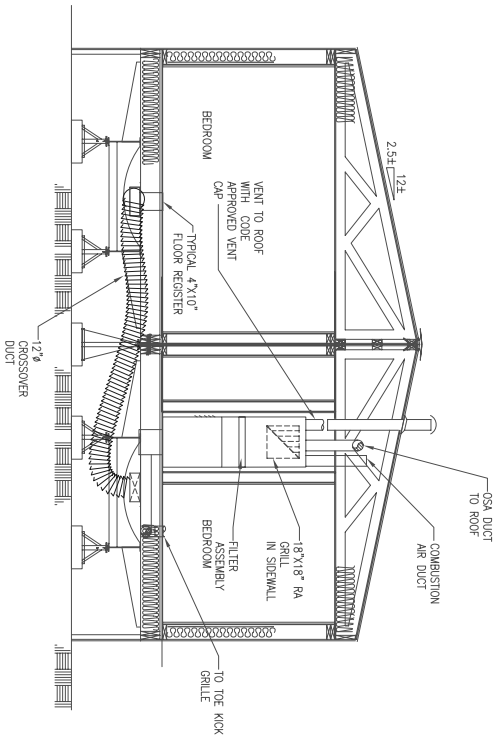
KEY NOTES:

- 4"x8" FLEX VENT TO ROOF WITH CODE APPROVED VENT CONNECTOR.
- 6"x8" G.E. UP TO ROOF. TERMINATE WITH ROOF JACK AND FLASHING AS REQUIRED. EXHAUST DUCT SHALL BE INSULATED WITH MINIMUM R-8.
- CODE APPROVED DOWNFLOW WALL CAP.
- ACQUIL LOCATION AND SELECTION OF LINE VOLUME THERMOSTAT FOR EXHAUST FAN TO BE DETERMINED IN FIELD.
- COMBUSTION AIR DUCTS PER MANUFACTURERS INSTALLATION INSTRUCTIONS AND RECOMMENDATIONS. LOWER DUCT SHALL BE INSULATED AND ROUTED TO SHUTWALL IN FIELD BY COMMON UPPER STANDARD. EXHAUST TERMINATE PER STATE AND LOCAL CODES AND STANDARDS.
- 18"x18" COMMERCIAL GRADE RETURN GRILLE.
- SUPPLY GRILLES SHALL BE COMMERCIAL GRADE, 4"x10" (TYPICAL).
- 6"x8" OUTSIDE AIR DUCT TO ROOF WITH CODE APPROVED ROOF CAP WITH BRIO SCREEN. INSULATE DUCT WITH R-8.
- 4"x10" FLOOR REGISTER WITH PLenum IN CRAWL SPACE FOR MAKE UP AIR. TYPICAL 3. ROUTE TO 10"x10" MUA DUCTS TO SIDE AS SHOWN.
- DUCT IN ATTIC SPACE.
- DUCT IN CRAWL SPACE.
- DUCT IN CONDITIONED SPACE.
- BLUE VENT AND COMBUSTION AIR DUCT TO ROOF (MUA PER MANUFACTURERS LISTING. PROVIDE WITH MFR'S FILE AND COMBUSTION AIR KIT).



1 HVAC FLOOR PLAN

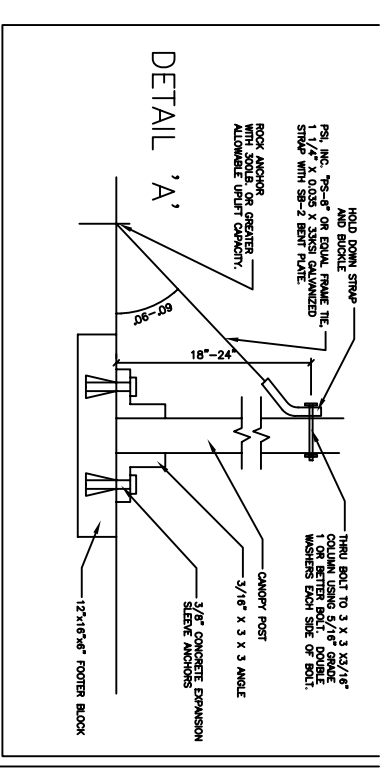
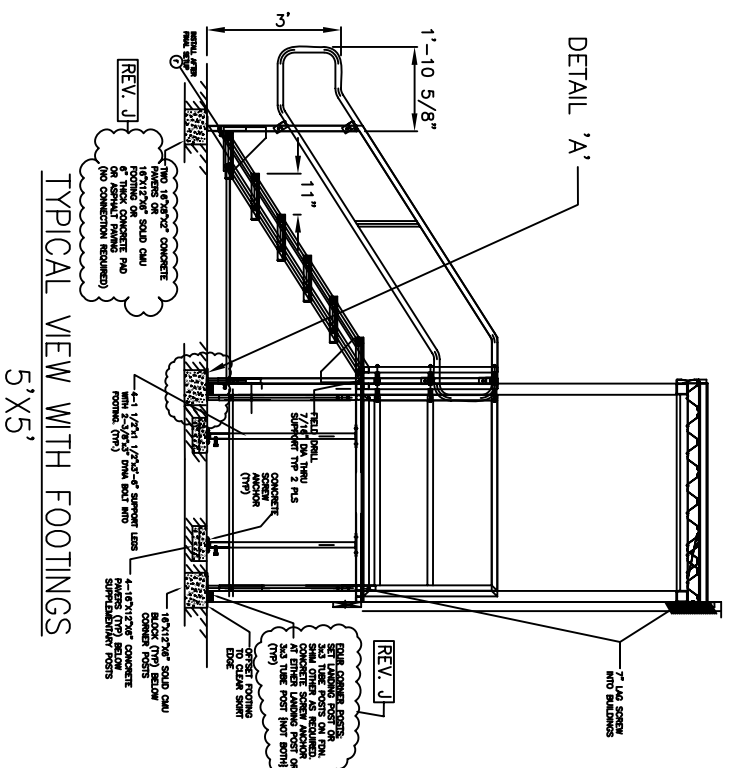
SCALE 1/4" = 1'-0"



2 HVAC SECTION PLAN

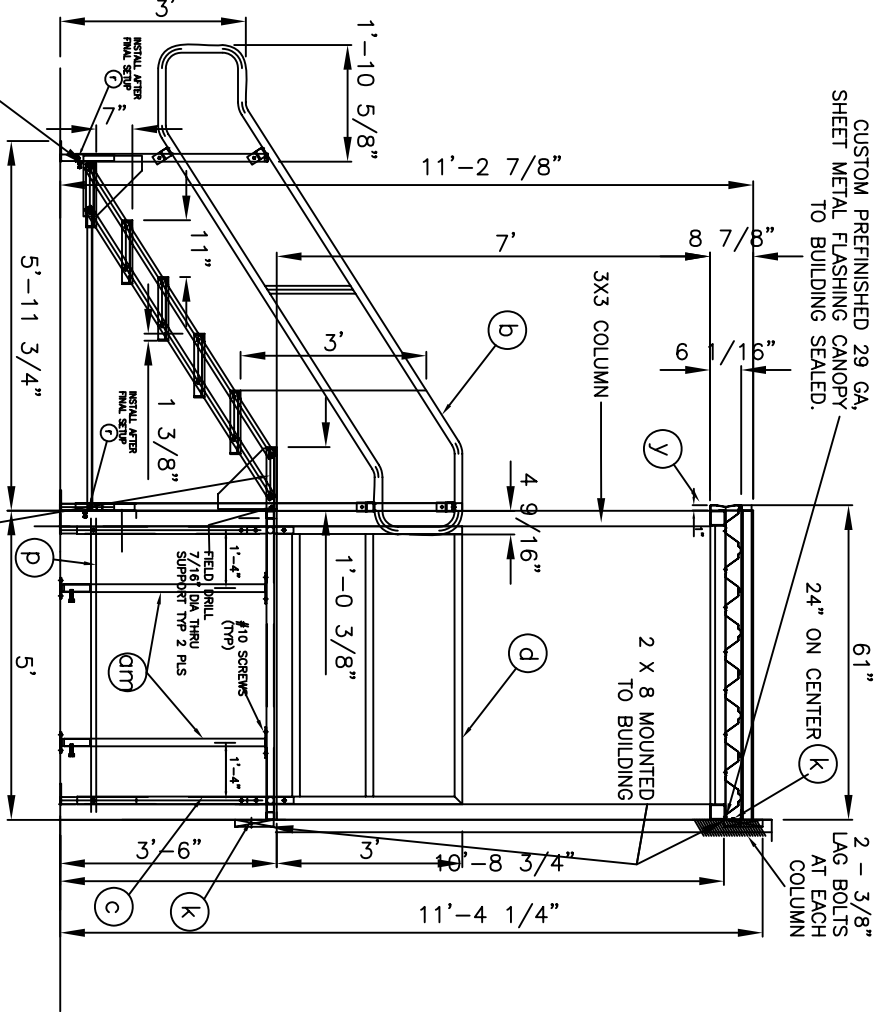
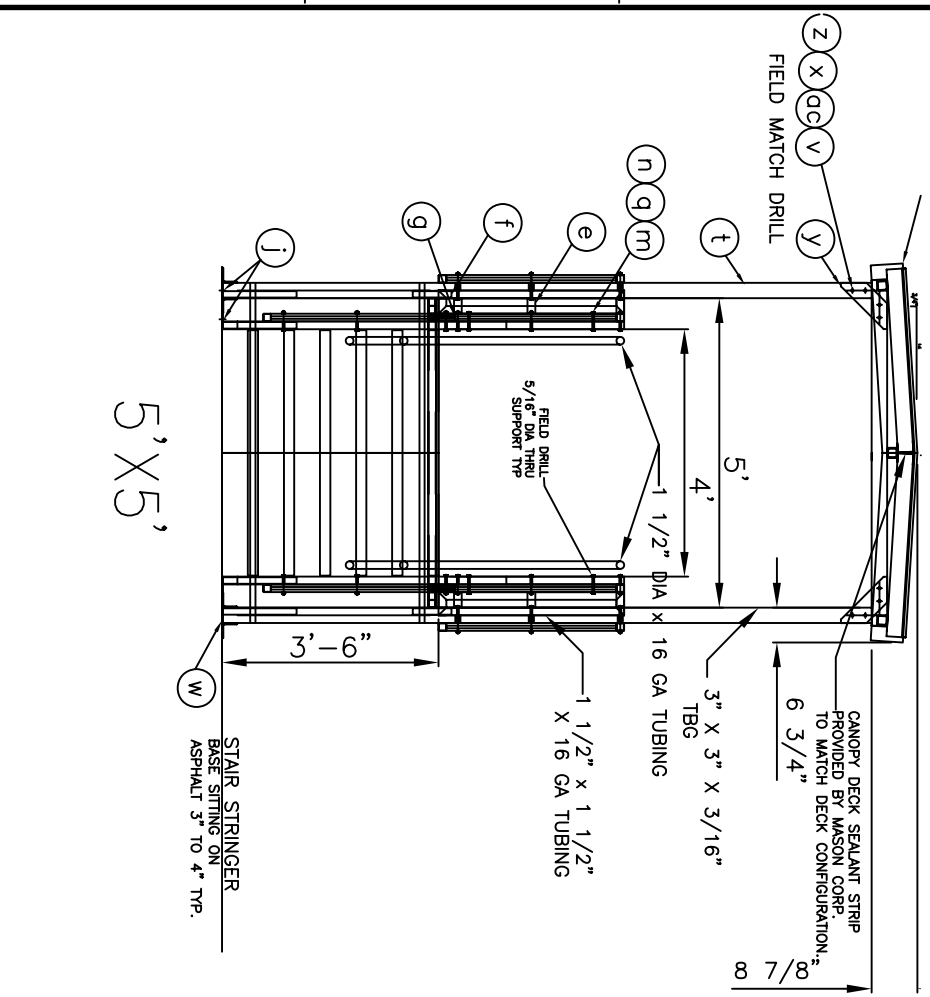
SCALE 1/4" = 1'-0"

SEE 64' BUILDING FOR CRAWLSPACE HEATER



6060 ASSY

A	INITIAL RELEASE	03/28/06	DIA
B	CHANGED FROM 11 GA MED. PAT. TIE PLT	04/14/06	DIA
C	ADDED RAMP TO DWG WITH 13 GA TREAD GRIP DECKING	5/04/06	DIA
D	RELEASE TO PRODUCTION 5 X 5	06/27/06	DIA
E	RELEASE TO PRODUCTION 6 X 6, 6 X 8, 6 X 8 A.D.A., 6 X 10	06/27/06	DIA
F	RELEASE TO PRODUCTION 6 X 6, 6 X 8, 6 X 8 A.D.A., 6 X 10	06/27/06	DIA
G	RELEASE TO PRODUCTION 6 X 6, 6 X 8, 6 X 8 A.D.A., 6 X 10	06/27/06	DIA
H	ADDED ITEMS ON THRU DECK TO BOM	07/19/06	DIA
I	EDITED POST STAIR LANDING, & TIE-DOWN	09/12/06	SP





US ARMY CORPS
OF ENGINEERS
ALASKA DISTRICT

CONTRACT NO.	9811KB-05-C-0009	TRACTOR	ALUTING MAN. CON., LLC	ANCHORAGE	STATE	ALASKA
RECOMMENDED:	APPROVED:	DATE:	RESIDENT ENGINEER			

Sym.	Action	Description	Date	Appvd
1	ISSUE	FOR REVISION	4/19/98	
2	ISSUE	FOR CONSTRUCTION	4/19/98	
3	ISSUE	FOR REVISION	4/19/98	
4	ISSUE	AS BUILT PER OWNER MARK UP	02/04/99	

[illegible]

FORT_RICHARDSON_ALASKA
FTR244_INFRASTRUCTURE
FOR_FACTILITIES
76'_BARRICKS
CODE_PLAN_1
AS_BUILT_DRAWINGS



US ARMY CORPS
OF ENGINEERS
ALASKA DISTRICT

CONTRACT NO. W1119-05-C-0009	
CONTRACTOR ALTRIO MFG. CO., LLC	
CITY ANCHORAGE	STATE ALASKA
Approved: _____ Date: _____	
PRIME CONTRACTOR _____ RESCUE ENGINEER _____	

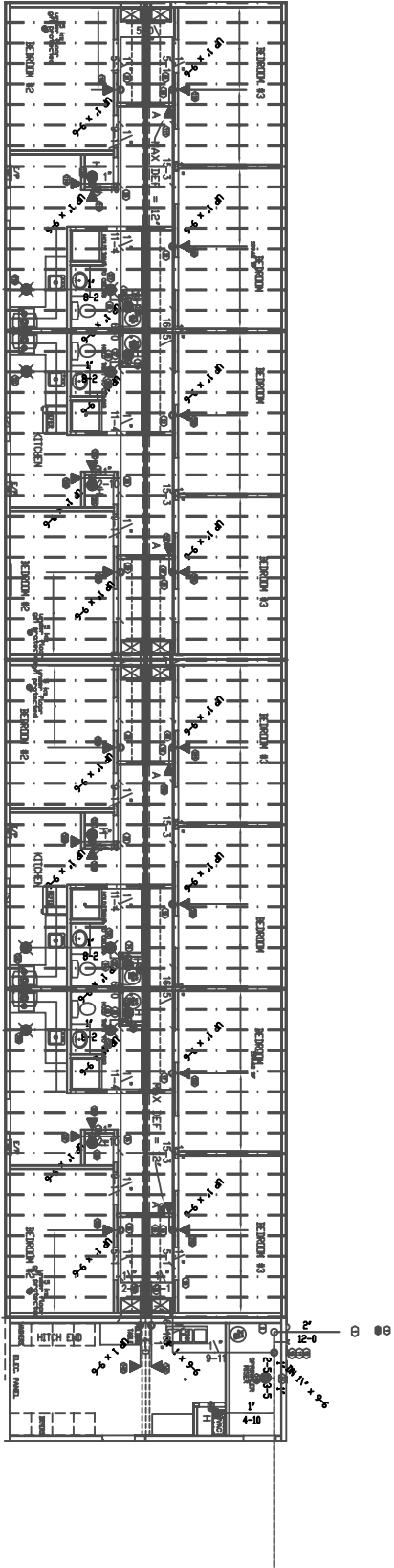
Sym.	Action	Description	Date	Appvd
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2	NOTE	SEE DRAWING	11/11/05	AK
3	NOTE	SEE DRAWING	11/11/05	AK
4	NOTE	SEE DRAWING	11/11/05	AK

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Manufacturing Contractors LLC
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Anchorage, AK 99503
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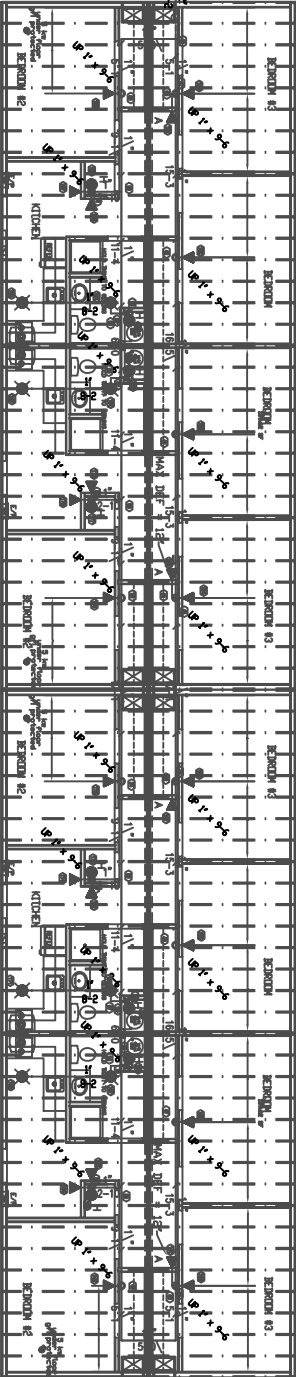
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Sheet: 11-15-05	Branch: 11-15-05	Submittal: 11-15-05

FORT_RICHARDSON_ALASKA
FTR244_INFRASTRUCTURE
FOR_INTERIM_FACILITIES
76" BARRRICKS
AS_BUILT_DRAWINGS



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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SPRINKLER PIPING
LIVING UNITS WITHOUT LAUNDRY

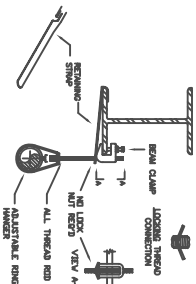


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---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----

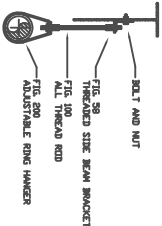
SPRINKLER PIPING
LIVING UNITS WITHOUT LAUNDRY

SPRINKLER PIPING
LIVING UNITS WITHOUT LAUNDRY

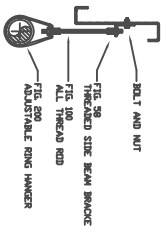
KEY PLAN



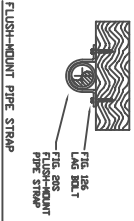
BOTTOM BEAM CLAMP, ROD, AND RING



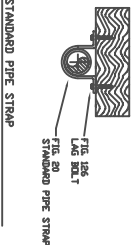
THREADED STEEL BEAM BRACKET, ROD & RING
BEAM OR PURLIN CONSTRUCTION



THREADED STEEL BEAM BRACKET, ROD & RING
PURLIN CONSTRUCTION



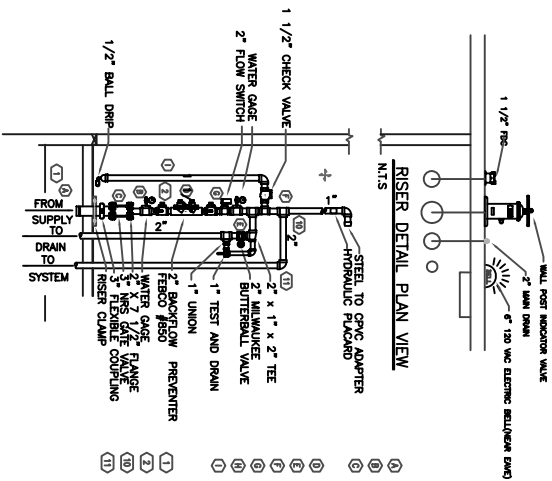
FLUSH-MOUNT PIPE STRAP



STANDARD PIPE STRAP

TYP. PIPE HANGER DETAILS

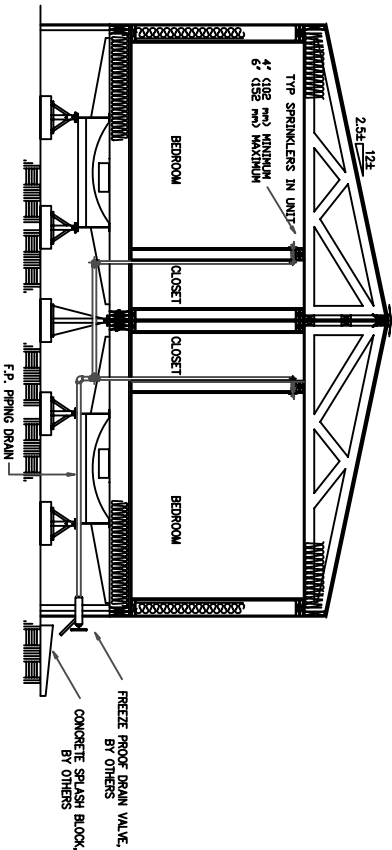
NIS



RISER DETAIL PLAN VIEW

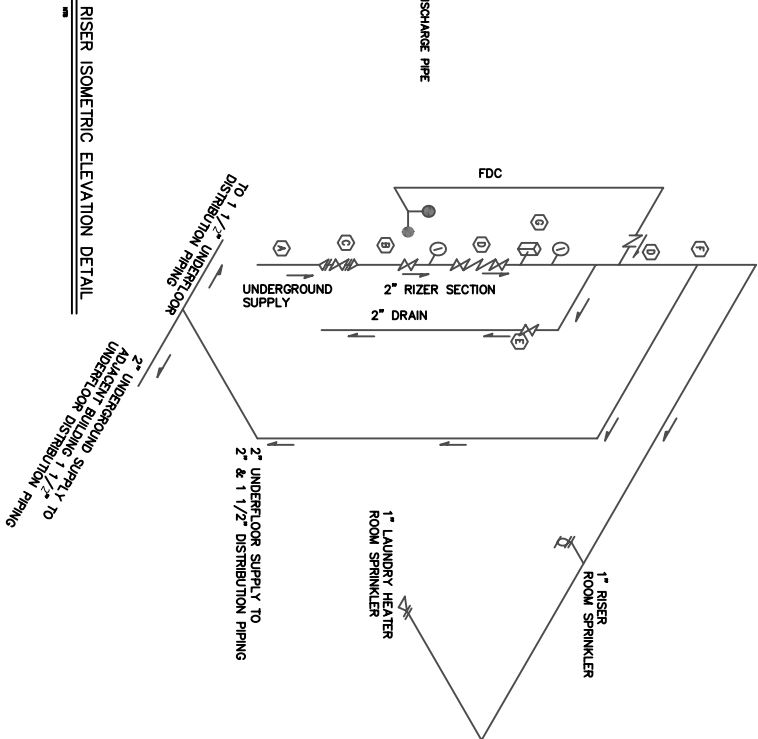
- RISER COMPONENTS
- 1 UNDERGROUND SUPPLY
 - 2 RISER INLET
 - 3 RISER INLET CONTROL VALVE (3" VALVE-TAMPER SWITCH AS REQUIRED)
 - 4 2" BACKFLOW PREVENTER
 - 5 2" FLOW TEST VALVE, CONNECT TO OUTSIDE DISCHARGE PIPE
 - 6 PADLOCK TYPE FLOW SWITCH (NOT USED)
 - 7 FIRE DEPARTMENT CONNECTION (AS REQUIRED)
- NODE POINTS
- 1 CONNECTION TO CENTRAL WATER SUPPLY
 - 2 FIRE RISER SUPPLY INLET
 - 3 FIRE RISER ROOM DISCHARGE
 - 4 RISER OUTLET TO 1/2" UNDER FLOOR FIRE SPRINKLER DISTRIBUTION SYSTEM

RISER ELEVATION DETAIL

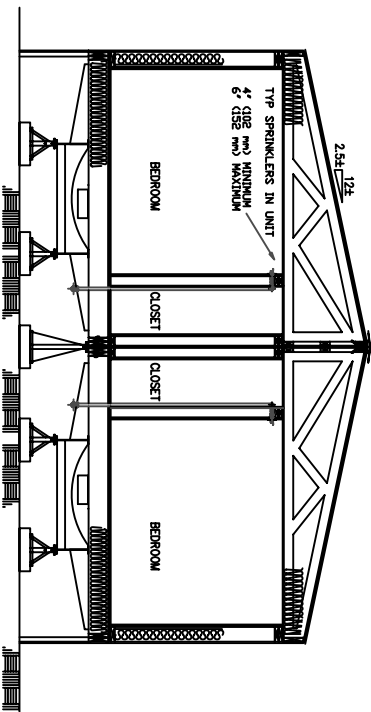


TYPICAL SECTION ELEVATION DETAIL
SHOWING DRAIN PIPING AND SPLASH BLOCK

NIS



RISER ISOMETRIC ELEVATION DETAIL



TYPICAL SECTION ELEVATION DETAIL

NIS

SPRINKLER SCHEDULE & LEGEND

SYMBOL	RESPONSE	MANUFACTURER	WATERMARK	TYPE	SIZE	TEMPERATURE	BRAND
1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4
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6	6	6	6	6	6	6	6
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49	49	49	49	49	49	49	49
50	50	50	50	50	50	50	50

A B C D E F G H



CONTRACT NO. W911MB-05-C-0009	
CONTRACTOR ALTINO MAN. CON. LLC	
CITY	ANCHORAGE
STATE	ALASKA
APPROVED:	DATE:
PRIME CONTRACTOR	RESIDENT ENGINEER

Qty.	Action	Description	Date	Appvd

3201 G Street Suite 700 Anchorage, AK 99503 Manufacturing Contractors LLC 907.222.9000 © 2005, COMARK BUILDING SYSTEMS, INC. All Rights Reserved.			
Designed: COMARK	Date: 3-10-05	Drawn: LHM	Dwg Scale: 1:1
Reviewed: COMARK	Rev Scale: NTS	File: FTR24520.04	Drawing #: 15-BLT-721-11-07
Submitted: COMARK	Check: COMARK	Branch: COMARK	Contract: W911KB-05-0009

FORT_RICHARDSON_ALASKA	
FTR245_INTERIM_FACILITIES	
FOR_AIRBORNE_COMBAT_BRIGADE	
BARACKS	
CODE_PLAN_1	
AS-BUILT_DRAWINGS	

Reference Number:	20A
Sheet	47 of 50

A B C D E F G H



CONTRACT NO. W911MB-05-C-0009	
CONTRACTOR ALTINO MAN. CON. LLC	
CITY	ANCHORAGE
STATE	ALASKA
Approved:	Date:
PRIME CONTRACTOR	RESIDENT ENGINEER

Item	Action	Description	Date	Appvd

3201 G Street Suite 700 Anchorage, AK 99503 Manufacturing Contractors LLC 907.222.9000 © 2005, COMARK BUILDING SYSTEMS, INC. All Rights Reserved.			
Designed: COMARK	Date: 3-10-05	Drawn: LHM	Dwg Scale: 1:1
Reviewed: COMARK	Rev Scale: NTS	File: FTR24520.05	Drawing #: 15-BLT-721-11-07
Submitted: COMARK	Check: COMARK	Branch: COMARK	Contract: W911KB-05-0009

FORT_RICHARDSON_ALASKA	
FTR245_INTERIM_FACILITIES	
FOR_AIRBORNE_COMBAT_BRIGADE	
BARACKS	
CODE_PLAN_1	
AS-BUILT_DRAWINGS	

Reference Number:	20B
Sheet	48 of 50



US ARMY CORPS
OF ENGINEERS
ALASKA DISTRICT

CONTRACT NO. W911KB-05-C-0009		CONTRACTOR ALTRIA MAR. CON., LLC	
CITY ANCHORAGE		STATE ALASKA	
Recommended:		Approved:	
PRIME CONTRACTOR		RESIDENT EMPLOYER	

[illegible][illegible]

FORT_RICHARDSON_ALASKA
 FTR245_INTERIM_FACILITIES
 FOR_AIRBORNE_COMBAT_BRIGADE
 BARRACKS
 CODE_PLAN_1
 AS-BUILT_DRAWINGS

Reference number:
20C

Sheet 49 of 50

A B C D E F G H



CONTRACT NO. W911MB-05-C-0009	
CONTRACTOR ALTINO MAN. CON. LLC	
CITY	ANCHORAGE
STATE	ALASKA
APPROVED:	DATE:
PRIME CONTRACTOR	RESIDENT ENGINEER

Sym.	Action	Description	Date	Appvd

3201 G Street Suite 700 Anchorage, AK 99503 Manufacturing Contractors LLC 907.222.9000 © 2005, COMARK BUILDING SYSTEMS, INC. All Rights Reserved.			
Designed: COMARK	Date: 3-10-05	Drawn: LHM	Dwg Scale: 1:1
Reviewed: COMARK	File: FTR24520.00	Section: SECTION	Sheet: INTS
Submitted: COMARK	Branch: Drawing # 15-BLT-721-11-07	Contract: W911KB-05-0009	CMAT: COMARK

FORT_RICHARDSON_ALASKA	
FTR245_INTERIM_FACILITIES	
FOR_AIRBORNE_COMBAT_BRIGADE	
BARACKS	
CODE_PLAN_1	
AS-BUILT_DRAWINGS	

Reference number:	20D
Sheet	50 of 50

The calculator provides voltage drop calculations in three formats (Point to Point, End of Line and Load Centering).															
Project Name		R. Rectangular 6/2-3005		End of Line Method CIRCUIT'S WITHIN LIMITS				End of Line Method CIRCUIT'S WITHIN LIMITS				Load Centering Method CIRCUIT'S WITHIN LIMITS			
Area/Circuit		3. Wire Tripper Switch		Totals		Totals		Totals		Totals		Totals		Totals	
Normal System Voltage		20.4 (-24%) 85		Current	Distance	Voltage Drop	Current	Distance	Voltage Drop	Current	Distance	Voltage Drop	Current	Distance	Voltage Drop
Minimum Device Voltage		12		0.000	37	0.00	0.00	0.000	37	0.00	0.00	0.000	37	0.00	0.000
Total Circuit Current		0.000		End of Line Voltage	20.40	0.00%	Percent Drop	0.00%	End of Line Voltage	20.40	0.00%	Percent Drop	0.00%	End of Line Voltage	20.40
		Wire Gauge		Per 1000	Percent Drop	0.00%	Percent Drop	0.00%	Percent Drop	0.00%	Percent Drop	0.00%	Percent Drop	0.00%	Percent Drop
Distance from source to 1st device		17		Standard Wire Resistance in Ohms per 1000 feet				Standard Wire Resistance in Ohms per 1000 feet				Standard Wire Resistance in Ohms per 1000 feet			
Wire Gauge to achieve all circuit		18 / 7.77		15-14 AWG = Standard Conductors				15-14 AWG = Standard Conductors				12-10 AWG = Standard Conductors			
Voltage Drop from 100 to 100 ft		Percent Drop		Notes:				Notes:				Notes:			
		The voltage calculated to the last device in any method must be lower than the manufacturer's listed minimum operating voltage (IE: rated operating voltage 20.32 VDC).													
Device Number		Device <td colspan="2">Device<td colspan="2">Device<td colspan="2">Device<td colspan="2">Device<td colspan="2">Device<td colspan="2">Device</td></td></td></td></td></td>		Device <td colspan="2">Device<td colspan="2">Device<td colspan="2">Device<td colspan="2">Device<td colspan="2">Device</td></td></td></td></td>		Device <td colspan="2">Device<td colspan="2">Device<td colspan="2">Device<td colspan="2">Device</td></td></td></td>		Device <td colspan="2">Device<td colspan="2">Device<td colspan="2">Device</td></td></td>		Device <td colspan="2">Device<td colspan="2">Device</td></td>		Device <td colspan="2">Device</td>		Device	
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Device 3		Device 3 <td colspan="2">Device 3<td colspan="2">Device 3<td colspan="2">Device 3<td colspan="2">Device 3<td colspan="2">Device 3<td colspan="2">Device 3</td></td></td></td></td></td>		Device 3 <td colspan="2">Device 3<td colspan="2">Device 3<td colspan="2">Device 3<td colspan="2">Device 3<td colspan="2">Device 3</td></td></td></td></td>		Device 3 <td colspan="2">Device 3<td colspan="2">Device 3<td colspan="2">Device 3<td colspan="2">Device 3</td></td></td></td>		Device 3 <td colspan="2">Device 3<td colspan="2">Device 3<td colspan="2">Device 3</td></td></td>		Device 3 <td colspan="2">Device 3<td colspan="2">Device 3</td></td>		Device 3 <td colspan="2">Device 3</td>		Device 3	
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Device 83		Device 83 <td colspan="2">Device 83<td colspan="2">Device 83<td colspan="2">Device 83<td colspan="2">Device 83<td colspan="2">Device 83<td colspan="2">Device 83</td></td></td></td></td></td>		Device 83 <td colspan="2">Device 83<td colspan="2">Device 83<td colspan="2">Device 83<td colspan="2">Device 83<td colspan="2">Device 83</td></td></td></td></td>		Device 83 <td colspan="2">Device 83<td colspan="2">Device 83<td colspan="2">Device 83<td colspan="2">Device 83</td></td></td></td>		Device 83 <td colspan="2">Device 83<td colspan="2">Device 83<td colspan="2">Device 83</td></td></td>		Device 83 <td colspan="2">Device 83<td colspan="2">Device 83</td></td>		Device 83 <td colspan="2">Device 83</td>		Device 83	
Device 84		Device 84 <td colspan="2">Device 84<td colspan="2">Device 84<td colspan="2">Device 84<td colspan="2">Device 84<td colspan="2">Device 84<td colspan="2">Device 84</td></td></td></td></td></td>		Device 84 <td colspan="2">Device 84<td colspan="2">Device 84<td colspan="2">Device 84<td colspan="2">Device 84<td colspan="2">Device 84</td></td></td></td></td>		Device 84 <td colspan="2">Device 84<td colspan="2">Device 84<td colspan="2">Device 84<td colspan="2">Device 84</td></td></td></td>		Device 84 <td colspan="2">Device 84<td colspan="2">Device 84<td colspan="2">Device 84</td></td></td>		Device 84 <td colspan="2">Device 84<td colspan="2">Device 84</td></td>		Device 84 <td colspan="2">Device 84</td>		Device 84	
Device 85		Device 85 <td colspan="2">Device 85<td colspan="2">Device 85<td colspan="2">Device 85<td colspan="2">Device 85<td colspan="2">Device 85<td colspan="2">Device 85</td></td></td></td></td></td>		Device 85 <td colspan="2">Device 85<td colspan="2">Device 85<td colspan="2">Device 85<td colspan="2">Device 85<td colspan="2">Device 85</td></td></td></td></td>		Device 85 <td colspan="2">Device 85<td colspan="2">Device 85<td colspan="2">Device 85<td colspan="2">Device 85</td></td></td></td>		Device 85 <td colspan="2">Device 85<td colspan="2">Device 85<td colspan="2">Device 85</td></td></td>		Device 85 <td colspan="2">Device 85<td colspan="2">Device 85</td></td>		Device 85 <td colspan="2">Device 85</td>		Device 85	
Device 86		Device 86 <td colspan="2">Device 86<td colspan="2">Device 86<td colspan="2">Device 86<td colspan="2">Device 86<td colspan="2">Device 86<td colspan="2">Device 86</td></td></td></td></td></td>		Device 86 <td colspan="2">Device 86<td colspan="2">Device 86<td colspan="2">Device 86<td colspan="2">Device 86<td colspan="2">Device 86</td></td></td></td></td>		Device 86 <td colspan="2">Device 86<td colspan="2">Device 86<td colspan="2">Device 86<td colspan="2">Device 86</td></td></td></td>		Device 86 <td colspan="2">Device 86<td colspan="2">Device 86<td colspan="2">Device 86</td></td></td>		Device 86 <td colspan="2">Device 86<td colspan="2">Device 86</td></td>		Device 86 <td colspan="2">Device 86</td>		Device 86	
Device 87		Device 87 <td colspan="2">Device 87<td colspan="2">Device 87<td colspan="2">Device 87<td colspan="2">Device 87<td colspan="2">Device 87<td colspan="2">Device 87</td></td></td></td></td></td>		Device 87 <td colspan="2">Device 87<td colspan="2">Device 87<td colspan="2">Device 87<td colspan="2">Device 87<td colspan="2">Device 87</td></td></td></td></td>		Device 87 <td colspan="2">Device 87<td colspan="2">Device 87<td colspan="2">Device 87<td colspan="2">Device 87</td></td></td></td>		Device 87 <td colspan="2">Device 87<td colspan="2">Device 87<td colspan="2">Device 87</td></td></td>		Device 87 <td colspan="2">Device 87<td colspan="2">Device 87</td></td>		Device 87 <td colspan="2">Device 87</td>		Device 87	
Device 88		Device 88 <td colspan="2">Device 88<td colspan="2">Device 88<td colspan="2">Device 88<td colspan="2">Device 88<td colspan="2">Device 88<td colspan="2">Device 88</td></td></td></td></td></td>		Device 88 <td colspan="2">Device 88<td colspan="2">Device 88<td colspan="2">Device 88<td colspan="2">Device 88<td colspan="2">Device 88</td></td></td></td></td>		Device 88 <td colspan="2">Device 88<td colspan="2">Device 88<td colspan="2">Device 88<td colspan="2">Device 88</td></td></td></td>		Device 88 <td colspan="2">Device 88<td colspan="2">Device 88<td colspan="2">Device 88</td></td></td>		Device 88 <td colspan="2">Device 88<td colspan="2">Device 88</td></td>		Device 88 <td colspan="2">Device 88</td>		Device 88	
Device 89		Device 89 <td colspan="2">Device 89<td colspan="2">Device 89<td colspan="2">Device 89<td colspan="2">Device 89<td colspan="2">Device 89<td colspan="2">Device 89</td></td></td></td></td></td>		Device 89 <td colspan="2">Device 89<td colspan="2">Device 89<td colspan="2">Device 89<td colspan="2">Device 89<td colspan="2">Device 89</td></td></td></td></td>		Device 89 <td colspan="2">Device 89<td colspan="2">Device 89<td colspan="2">Device 89<td colspan="2">Device 89</td></td></td></td>		Device 89 <td colspan="2">Device 89<td colspan="2">Device 89<td colspan="2">Device 89</td></td></td>		Device 89 <td colspan="2">Device 89<td colspan="2">Device 89</td></td>		Device 89 <td colspan="2">Device 89</td>		Device 89	
Device 90		Device 90 <td colspan="2">Device 90<td colspan="2">Device 90<td colspan="2">Device 90<td colspan="2">Device 90<td colspan="2">Device 90<td colspan="2">Device 90</td></td></td></td></td></td>		Device 90 <td colspan="2">Device 90<td colspan="2">Device 90<td colspan="2">Device 90<td colspan="2">Device 90<td colspan="2">Device 90</td></td></td></td></td>		Device 90 <td colspan="2">Device 90<td colspan="2">Device 90<td colspan="2">Device 90<td colspan="2">Device 90</td></td></td></td>		Device 90 <td colspan="2">Device 90<td colspan="2">Device 90<td colspan="2">Device 90</td></td></td>		Device 90 <td colspan="2">Device 90<td colspan="2">Device 90</td></td>		Device 90 <td colspan="2">Device 90</td>		Device 90	
Device 91		Device 91 <td colspan="2">Device 91<td colspan="2">Device 91<td colspan="2">Device 91<td colspan="2">Device 91<td colspan="2">Device 91<td colspan="2">Device 91</td></td></td></td></td></td>		Device 91 <td colspan="2">Device 91<td colspan="2">Device 91<td colspan="2">Device 91<td colspan="2">Device 91<td colspan="2">Device 91</td></td></td></td></td>		Device 91 <td colspan="2">Device 91<td colspan="2">Device 91<td colspan="2">Device 91<td colspan="2">Device 91</td></td></td></td>		Device 91 <td colspan="2">Device 91<td colspan="2">Device 91<td colspan="2">Device 91</td></td></td>		Device 91 <td colspan="2">Device 91<td colspan="2">Device 91</td></td>		Device 91 <td colspan="2">Device 91</td>		Device 91	
Device 92		Device 92 <td colspan="2">Device 92<td colspan="2">Device 92<td colspan="2">Device 92<td colspan="2">Device 92<td colspan="2">Device 92<td colspan="2">Device 92</td></td></td></td></td></td>		Device 92 <td colspan="2">Device 92<td colspan="2">Device 92<td colspan="2">Device 92<td colspan="2">Device 92<td colspan="2">Device 92</td></td></td></td></td>		Device 92 <td colspan="2">Device 92<td colspan="2">Device 92<td colspan="2">Device 92<td colspan="2">Device 92</td></td></td></td>		Device 92 <td colspan="2">Device 92<td colspan="2">Device 92<td colspan="2">Device 92</td></td></td>		Device 92 <td colspan="2">Device 92<td colspan="2">Device 92</td></td>		Device 92 <td colspan="2">Device 92</td>		Device 92	
Device 93		Device 93 <td colspan="2">Device 93<td colspan="2">Device 93<td colspan="2">Device 93<td colspan="2">Device 93<td colspan="2">Device 93<td colspan="2">Device 93</td></td></td></td></td></td>		Device 93 <td colspan="2">Device 93<td colspan="2">Device 93<td colspan="2">Device 93<td colspan="2">Device 93<td colspan="2">Device 93</td></td></td></td></td>		Device 93 <td colspan="2">Device 93<td colspan="2">Device 93<td colspan="2">Device 93<td colspan="2">Device 93</td></td></td></td>		Device 93 <td colspan="2">Device 93<td colspan="2">Device 93<td colspan="2">Device 93</td></td></td>		Device 93 <td colspan="2">Device 93<td colspan="2">Device 93</td></td>		Device 93 <td colspan="2">Device 93</td>		Device 93	
Device 94		Device 94 <td colspan="2">Device 94<td colspan="2">Device 94<td colspan="2">Device 94<td colspan="2">Device 94<td colspan="2">Device 94<td colspan="2">Device 94</td></td></td></td></td></td>		Device 94 <td colspan="2">Device 94<td colspan="2">Device 94<td colspan="2">Device 94<td colspan="2">Device 94<td colspan="2">Device 94</td></td></td></td></td>		Device 94 <td colspan="2">Device 94<td colspan="2">Device 94<td colspan="2">Device 94<td colspan="2">Device 94</td></td></td></td>		Device 94 <td colspan="2">Device 94<td colspan="2">Device 94<td colspan="2">Device 94</td></td></td>		Device 94 <td colspan="2">Device 94<td colspan="2">Device 94</td></td>		Device 94 <td colspan="2">Device 94</td>		Device 94	
Device 95		Device 95 <td colspan="2">Device 95<td colspan="2">Device 95<td colspan="2">Device 95<td colspan="2">Device 95<td colspan="2">Device 95<td colspan="2">Device 95</td></td></td></td></td></td>		Device 95 <td colspan="2">Device 95<td colspan="2">Device 95<td colspan="2">Device 95<td colspan="2">Device 95<td colspan="2">Device 95</td></td></td></td></td>		Device 95 <td colspan="2">Device 95<td colspan="2">Device 95<td colspan="2">Device 95<td colspan="2">Device 95</td></td></td></td>		Device 95 <td colspan="2">Device 95<td colspan="2">Device 95<td colspan="2">Device 95</td></td></td>		Device 95 <td colspan="2">Device 95<td colspan="2">Device 95</td></td>		Device 95 <td colspan="2">Device 95</td>		Device 95	
Device 96		Device 96 <td colspan="2">Device 96<td colspan="2">Device 96<td colspan="2">Device 96<td colspan="2">Device 96<td colspan="2">Device 96<td colspan="2">Device 96</td></td></td></td></td></td>		Device 96 <td colspan="2">Device 96<td colspan="2">Device 96<td colspan="2">Device 96<td colspan="2">Device 96<td colspan="2">Device 96</td></td></td></td></td>		Device 96 <td colspan="2">Device 96<td colspan="2">Device 96<td colspan="2">Device 96<td colspan="2">Device 96</td></td></td></td>		Device 96 <td colspan="2">Device 96<td colspan="2">Device 96<td colspan="2">Device 96</td></td></td>		Device 96 <td colspan="2">Device 96<td colspan="2">Device 96</td></td>		Device 96 <td colspan="2">Device 96</td>		Device 96	
Device 97		Device 97 <td colspan="2">Device 97<td colspan="2">Device 97<td colspan="2">Device 97<td colspan="2">Device 97<td colspan="2">Device 97<td colspan="2">Device 97</td></td></td></td></td></td>		Device 97 <td colspan="2">Device 97<td colspan="2">Device 97<td colspan="2">Device 97<td colspan="2">Device 97<td colspan="2">Device 97</td></td></td></td></td>		Device 97 <td colspan="2">Device 97<td colspan="2">Device 97<td colspan="2">Device 97<td colspan="2">Device 97</td></td></td></td>		Device 97 <td colspan="2">Device 97<td colspan="2">Device 97<td colspan="2">Device 97</td></td></td>		Device 97 <td colspan="2">Device 97<td colspan="2">Device 97</td></td>		Device 97 <td colspan="2">Device 97</td>		Device 97	
Device 98		Device 98 <td colspan="2">Device 98<td colspan="2">Device 98<td colspan="2">Device 98<td colspan="2">Device 98<td colspan="2">Device 98<td colspan="2">Device 98</td></td></td></td></td></td>		Device 98 <td colspan="2">Device 98<td colspan="2">Device 98<td colspan="2">Device 98<td colspan="2">Device 98<td colspan="2">Device 98</td></td></td></td></td>		Device 98 <td colspan="2">Device 98<td colspan="2">Device 98<td colspan="2">Device 98<td colspan="2">Device 98</td></td></td></td>		Device 98 <td colspan="2">Device 98<td colspan="2">Device 98<td colspan="2">Device 98</td></td></td>		Device 98 <td colspan="2">Device 98<td colspan="2">Device 98</td></td>		Device 98 <td colspan="2">Device 98</td>		Device 98	
Device 99		Device 99 <td colspan="2">Device 99<td colspan="2">Device 99<td colspan="2">Device 99<td colspan="2">Device 99<td colspan="2">Device 99<td colspan="2">Device 99</td></td></td></td></td></td>		Device 99 <td colspan="2">Device 99<td colspan="2">Device 99<td colspan="2">Device 99<td colspan="2">Device 99<td colspan="2">Device 99</td></td></td></td></td>		Device 99 <td colspan="2">Device 99<td colspan="2">Device 99<td colspan="2">Device 99<td colspan="2">Device 99</td></td></td></td>		Device 99 <td colspan="2">Device 99<td colspan="2">Device 99<td colspan="2">Device 99</td></td></td>		Device 99 <td colspan="2">Device 99<td colspan="2">Device 99</td></td>		Device 99 <td colspan="2">Device 99</td>		Device 99	
Device 100		Device 100 <td colspan="2">Device 100<td colspan="2">Device 100<td colspan="2">Device 100<td colspan="2">Device 100<td colspan="2">Device 100<td colspan="2">Device 100</td></td></td></td></td></td>		Device 100 <td colspan="2">Device 100<td colspan="2">Device 100<td colspan="2">Device 100<td colspan="2">Device 100<td colspan="2">Device 100</td></td></td></td></td>		Device 100 <td colspan="2">Device 100<td colspan="2">Device 100<td colspan="2">Device 100<td colspan="2">Device 100</td></td></td></td>		Device 100 <td colspan="2">Device 100<td colspan="2">Device 100<td colspan="2">Device 100</td></td></td>		Device 100 <td colspan="2">Device 100<td colspan="2">Device 100</td></td>		Device 100 <td colspan="2">Device 100</td>		Device 100	
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Device 102		Device 102 <td colspan="2">Device 102<td colspan="2">Device 102<td colspan="2">Device 102<td colspan="2">Device 102<td colspan="2">Device 102<td colspan="2">Device 102</td></td></td></td></td></td>		Device 102 <td colspan="2">Device 102<td colspan="2">Device 102<td colspan="2">Device 102<td colspan="2">Device 102<td colspan="2">Device 102</td></td></td></td></td>		Device 102 <td colspan="2">Device 102<td colspan="2">Device 102<td colspan="2">Device 102<td colspan="2">Device 102</td></td></td></td>		Device 102 <td colspan="2">Device 102<td colspan="2">Device 102<td colspan="2">Device 102</td></td></td>		Device 102 <td colspan="2">Device 102<td colspan="2">Device 102</td></td>		Device 102 <td colspan="2">Device 102</td>		Device 102	
Device 103		Device 103 <td colspan="2">Device 103<td colspan="2">Device 103<td colspan="2">Device 103<td colspan="2">Device 103<td colspan="2">Device 103<td colspan="2">Device 103</td></td></td></td></td></td>		Device 103 <td colspan="2">Device 103<td colspan="2">Device 103<td colspan="2">Device 103<td colspan="2">Device 103<td colspan="2">Device 103</td></td></td></td></td>		Device 103 <td colspan="2">Device 103<td colspan="2">Device 103<td colspan="2">Device 103<td colspan="2">Device 103</td></td></td></td>		Device 103 <td colspan="2">Device 103<td colspan="2">Device 103<td colspan="2">Device 103</td></td></td>		Device 103 <td colspan="2">Device 103<td colspan="2">Device 103</td></td>		Device 103 <td colspan="2">Device 103</td>		Device 103	
Device 104		Device 104 <td colspan="2">Device 104<td colspan="2">Device 104<td colspan="2">Device 104<td colspan="2">Device 104<td colspan="2">Device 104<td colspan="2">Device 104</td></td></td></td></td></td>		Device 104 <td colspan="2">Device 104<td colspan="2">Device 104<td colspan="2">Device 104<td colspan="2">Device 104<td colspan="2">Device 104</td></td></td></td></td>		Device 104 <td colspan="2">Device 104<td colspan="2">Device 104<td colspan="2">Device 104<td colspan="2">Device 104</td></td></td></td>		Device 104 <td colspan="2">Device 104<td colspan="2">Device 104<td colspan="2">Device 104</td></td></td>		Device 104 <td colspan="2">Device 104<td colspan="2">Device 104</td></td>		Device 104 <td colspan="2">Device 104</td>		Device 104	
Device 105		Device 105 <td colspan="2">Device 105<td colspan="2">Device 105<td colspan="2">Device 105<td colspan="2">Device 105<td colspan="2">Device 105<td colspan="2">Device 105</td></td></td></td></td></td>		Device 105 <td colspan="2">Device 105<td colspan="2">Device 105<td colspan="2">Device 105<td colspan="2">Device 105<td colspan="2">Device 105</td></td></td></td></td>		Device 105 <td colspan="2">Device 105<td colspan="2">Device 105<td colspan="2">Device 105<td colspan="2">Device 105</td></td></td></td>		Device 105 <td colspan="2">Device 105<td colspan="2">Device 105<td colspan="2">Device 105</td></td></td>		Device 105 <td colspan="2">Device 105<td colspan="2">Device 105</td></td>		Device 105 <td colspan="2">Device 105</td>		Device 105	
Device 106		Device 106 <td colspan="2">Device 106<td colspan="2">Device 106<td colspan="2">Device 106<td colspan="2">Device 106<td colspan="2">Device 106<td colspan="2">Device 106</td></td></td></td></td></td>		Device 106 <td colspan="2">Device 106<td colspan="2">Device 106<td colspan="2">Device 106<td colspan="2">Device 106<td colspan="2">Device 106</td></td></td></td></td>		Device 106 <td colspan="2">Device 106<td colspan="2">Device 106<td colspan="2">Device 106<td colspan="2">Device 106</td></td></td></td>		Device 106 <td colspan="2">Device 106<td colspan="2">Device 106<td colspan="2">Device 106</td></td></td>		Device 106 <td colspan="2">Device 106<td colspan="2">Device 106</td></td>		Device 106 <td colspan="2">Device 106</td>		Device 106	
Device 107		Device 107 <td colspan="2">Device 107<td colspan="2">Device 107<td colspan="2">Device 107<td colspan="2">Device 107<td colspan="2">Device 107<td colspan="2">Device 107</td></td></td></td></td></td>		Device 107 <td colspan="2">Device 107<td colspan="2">Device 107<td colspan="2">Device 107<td colspan="2">Device 107<td colspan="2">Device 107</td></td></td></td></td>		Device 107 <td colspan="2">Device 107<td colspan="2">Device 107<td colspan="2">Device 107<td colspan="2">Device 107</td></td></td></td>		Device 107 <td colspan="2">Device 107<td colspan="2">Device 107<td colspan="2">Device 107</td></td></td>		Device 107 <td colspan="2">Device 107<td colspan="2">Device 107</td></td>		Device 107 <td colspan="2">Device 107</td>		Device 107	
Device 108		Device 108 <td colspan="2">Device 108<td colspan="2">Device 108<td colspan="2">Device 108<td colspan="2">Device 108<td colspan="2">Device 108<td colspan="2">Device 108</td></td></td></td></td></td>		Device 108 <td colspan="2">Device 108<td colspan="2">Device 108<td colspan="2">Device 108<td colspan="2">Device 108<td colspan="2">Device 108</td></td></td></td></td>		Device 108 <td colspan="2">Device 108<td colspan="2">Device 108<td colspan="2">Device 108<td colspan="2">Device 108</td></td></td></td>		Device 108 <td colspan="2">Device 108<td colspan="2">Device 108<td colspan="2">Device 108</td></td></td>		Device 108 <td colspan="2">Device 108<td colspan="2">Device 108</td></td>		Device 108 <td colspan="2">Device 108</td>		Device 108	
Device 109		Device 109 <td colspan="2">Device 109<td colspan="2">Device 109<td colspan="2">Device 109<td colspan="2">Device 109<td colspan="2">Device 109<td colspan="2">Device 109</td></td></td></td></td></td>		Device 109 <td colspan="2">Device 109<td colspan="2">Device 109<td colspan="2">Device 109<td colspan="2">Device 109<td colspan="2">Device 109</td></td></td></td></td>		Device 109 <td colspan="2">Device 109<td colspan="2">Device 109<td colspan="2">Device 109<td colspan="2">Device 109</td></td></td></td>		Device 109 <td colspan="2">Device 109<td colspan="2">Device 109<td colspan="2">Device 109</td></td></td>		Device 109 <td colspan="2">Device 109<td colspan="2">Device 109</td></td>		Device 109 <td colspan="2">Device 109</td>		Device 109	
Device 110		Device 110 <td colspan="2">Device 110<td colspan="2">Device 110<td colspan="2">Device 110<td colspan="2">Device 110<td colspan="2">Device 110<td colspan="2">Device 110</td></td></td></td></td></td>		Device 110 <td colspan="2">Device 110<td colspan="2">Device 110<td colspan="2">Device 110<td colspan="2">Device 110<td colspan="2">Device 110</td></td></td></td></td>		Device 110 <td colspan="2">Device 110<td colspan="2">Device 110<td colspan="2">Device 110<td colspan="2">Device 110</td></td></td></td>		Device 110 <td colspan="2">Device 110<td colspan="2">Device 110<td colspan="2">Device 110</td></td></td>		Device 110 <td colspan="2">Device 110<td colspan="2">Device 110</td></td>		Device 110 <td colspan="2">Device 110</td>		Device 110	
Device 111		Device 111 <td colspan="2">Device 111<td colspan="2">Device 111<td colspan="2">Device 111<td colspan="2">Device 111<td colspan="2">Device 111<td colspan="2">Device 111</td></td></td></td></td></td>		Device 111 <td colspan="2">Device 111<td colspan="2">Device 111<td colspan="2">Device 111<td colspan="2">Device 111<td colspan="2">Device 111</td></td></td></td></td>		Device 111 <td colspan="2">Device 111<td colspan="2">Device 111<td colspan="2">Device 111<td colspan="2">Device 111</td></td></td></td>		Device 111 <td colspan="2">Device 111<td colspan="2">Device 111<td colspan="2">Device 111</td></td></td>		Device 111 <td colspan="2">Device 111<td colspan="2">Device 111</td></td>		Device 111 <td colspan="2">Device 111</td>		Device 111	
Device 112		Device 112 <td colspan="2">Device 112<td colspan="2">Device 112<td colspan="2">Device 112<td colspan="2">Device 112<td colspan="2">Device 112<td colspan="2">Device 112</td></td></td></td></td></td>		Device 112 <td colspan="2">Device 112<td colspan="2">Device 112<td colspan="2">Device 112<td colspan="2">Device 112<td colspan="2">Device 112</td></td></td></td></td>		Device 112 <td colspan="2">Device 112<td colspan="2">Device 112<td colspan="2">Device 112<td colspan="2">Device 112</td></td></td></td>		Device 112 <td colspan="2">Device 112<td colspan="2">Device 112<td colspan="2">Device 112</td></td></td>		Device 112 <td colspan="2">Device 112<td colspan="2">Device 112</td></td>		Device 112 <td colspan="2">Device 112</td>		Device 112	
Device 113		Device 113													

This calculator provides voltage drop calculations in three formats (Point to Point, End of Line, and Load Centering).

[illegible][illegible]

This calculator provides voltage drop calculations in three formats (Point to Point, End of Line, and Load Centering).

Port to Port Method										End of Line Method										Load Centering Method									
CIRCUIT IS WITHIN LIMITS										CIRCUIT IS WITHIN LIMITS										CIRCUIT IS WITHIN LIMITS									
Port Name	F1, Richardson, AL									9/9/2005																			
Date Number	2, Living and working									Living (includes laundry)																			
Area Covered	Living (lens with air conditioning)									204 (4'x20' 85)																			
Normal System Voltage	204									204																			
Minimum System Voltage	204									204																			
Total Circuit Current	0.081									0.081																			
Distance from source to 1st device	18' 7.77"									18' 7.77"																			
Wire Gauge by distance of circuit	18' 7.77"									18' 7.77"																			
Enter current in Amps Distance	18' 7.77"									18' 7.77"																			
150 - 180 lbs from	Device Number									Device Number																			
Device 1	Current: 0.00012	Distance: 8	Device: 20.35	Percent: 0.22%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 2	Current: 0.000	Distance: 36	Device: 20.35	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 3	Current: 0.000	Distance: 6	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 4	Current: 0.000	Distance: 8	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 5	Current: 0.000	Distance: 8	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 6	Current: 0.00010	Distance: 8	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 7	Current: 0.000	Distance: 33	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 8	Current: 0.000	Distance: 6	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 9	Current: 0.000	Distance: 6	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 10	Current: 0.00010	Distance: 6	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 11	Current: 0.000	Distance: 8	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 12	Current: 0.00010	Distance: 32	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 13	Current: 0.000	Distance: 8	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 14	Current: 0.00010	Distance: 11	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 15	Current: 0.000	Distance: 11	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 16	Current: 0.000	Distance: 14	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 17	Current: 0.00010	Distance: 12	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 18	Current: 0.000	Distance: 14	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 19	Current: 0.000	Distance: 12	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 20	Current: 0.000	Distance: 14	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 21	Current: 0.000	Distance: 14	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 22	Current: 0.000	Distance: 14	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 23	Current: 0.000	Distance: 14	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 24	Current: 0.000	Distance: 14	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 25	Current: 0.000	Distance: 14	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 26	Current: 0.000	Distance: 14	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 27	Current: 0.000	Distance: 14	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 28	Current: 0.000	Distance: 14	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 29	Current: 0.000	Distance: 14	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 30	Current: 0.000	Distance: 14	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 31	Current: 0.000	Distance: 14	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 32	Current: 0.000	Distance: 14	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 33	Current: 0.000	Distance: 14	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 34	Current: 0.000	Distance: 14	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 35	Current: 0.000	Distance: 14	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 36	Current: 0.000	Distance: 14	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 37	Current: 0.000	Distance: 14	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 38	Current: 0.000	Distance: 14	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 39	Current: 0.000	Distance: 14	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 40	Current: 0.000	Distance: 14	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 41	Current: 0.000	Distance: 14	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 42	Current: 0.000	Distance: 14	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 43	Current: 0.000	Distance: 14	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 44	Current: 0.000	Distance: 14	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 45	Current: 0.000	Distance: 14	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 46	Current: 0.000	Distance: 14	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 47	Current: 0.000	Distance: 14	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 48	Current: 0.000	Distance: 14	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 49	Current: 0.000	Distance: 14	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 50	Current: 0.000	Distance: 14	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 51	Current: 0.000	Distance: 14	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 52	Current: 0.000	Distance: 14	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 53	Current: 0.000	Distance: 14	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 54	Current: 0.000	Distance: 14	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 55	Current: 0.000	Distance: 14	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 56	Current: 0.000	Distance: 14	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 57	Current: 0.000	Distance: 14	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 58	Current: 0.000	Distance: 14	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 59	Current: 0.000	Distance: 14	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 60	Current: 0.000	Distance: 14	Device: 20.34	Percent: 0.25%						Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop	Device Manufacturer	Monroe	Current	Distance	Drop
Device 61	Current: 0.000	Distance: 14	Device: 20.34																										

FIRE ALARM PANEL BATTERY
CALCULATIONS AND INC & NAC CIRCUITS

ITEM	DESCRIPTION	STANDBY CURRENT (AMPS)	QTY	TOTAL STANDBY CURRENT (AMPS)	ALARM CURRENT (AMPS)	QTY	TOTAL ALARM CURRENT (AMPS)
FACP	Fire Alarm Control Panel	0.2500 X	1 =	0.2500	0.5000 X	1 =	0.5000
ANN	Annunciator	0.0000 X	1 =	0.0000	0.0000 X	1 =	0.0000
SMDC	Smoke Detector	0.0001 X	34 =	0.0034	0.0100 X	34 =	0.3400
PS	Power Supply	0.0000 X	1 =	0.0000	0.0000 X	1 =	0.0000
PSL	Push Station	0.0000 X	1 =	0.0000	0.0000 X	1 =	0.0000
BELL	Bell	0.0000 X	1 =	0.0000	0.0500 X	1 =	0.0500
HORN	Horn	0.0000 X	0 =	0.0000	0.0000 X	0 =	0.0000
STROBE	Strobe	0.0000 X	0 =	0.0000	0.0000 X	0 =	0.0000
DCS	Carbon Monoxide Det.	0.0000 X	8 =	0.0000	0.0100 X	8 =	0.0800
TS	Valve Tripper Switch	0.0000 X	1 =	0.0000	0.0000 X	1 =	0.0000
FS	Refr Flow Switch	0.0000 X	1 =	0.0000	0.0000 X	1 =	0.0000
0		0.0000 X	0 =	0.0000	0.0000 X	0 =	0.0000
	TOTAL SYSTEM			0.4144			3.0460
STANDBY CURRENT (AMPS)							
Prepared by:							
REQUIRED STANDBY CURRENT (AMPS)	REQUIRED SYSTEM STANDBY CURRENT (AMPS)	REQUIRED ALARM LINE CURRENT (AMPS)	REQUIRED SYSTEM STANDBY CURRENT (AMPS)	REQUIRED ALARM LINE CURRENT (AMPS)	REQUIRED SYSTEM STANDBY CURRENT (AMPS)	REQUIRED ALARM LINE CURRENT (AMPS)	REQUIRED SYSTEM STANDBY CURRENT (AMPS)
441.5.3	441.5.3	441.5.3	441.5.3	441.5.3	441.5.3	441.5.3	441.5.3
24 X	0.1514 =	9.9691	0.003 X	0.030 X	3.0940 =	0.2568	
Prepared by:							
REQUIRED CAPACITY (AMP-HOURS)	REQUIRED CAPACITY (AMP-HOURS)	TOTAL (AMP-HOURS)	TOTAL (AMP-HOURS)	SAFETY FACTOR	ADJUSTED CAPACITY (AMP-HOURS)		
9.97 +	0.2568 =	10.2259	10.2259 +	20% =	12		

 U.S. ARMY CORPS OF ENGINEERS WASH. METRO DISTRICT	RECOMMENDED _____	APPROVED _____	DATE _____
	PRINCIPAL CONTRACTOR _____	RESIDENT ENGINEER _____	
CONTRACT NO. W511MB-05-C-0009			
CONTRACTOR ALUTING MAN CON. LLC			
CITY ANCHORAGE STATE ALASKA			

[illegible]

Reference
number:
Fire Alarm
FA-0.2

A

B

C

D

E

F

G

H

This calculator provides voltage drop calculations in three formats (Point to Point, End of Line, and Load Centering)												
Project Name	R. Richardson, AL			Point to Point Method CIRCUIT IS WITHIN LIMITS			End of Line Method CIRCUIT IS WITHIN LIMITS			Load Centering Method CIRCUIT IS WITHIN LIMITS		
Date	8/3/2005											
Circuit Number	7. Living unit without attached laundry			Totals			Totals			Totals		
Area Covered	Living Units without Laundry			Current	Distance	Drop	Current	Distance	Drop	Current	Distance	Drop
Normal System Voltage	20.4 (2470.85)			0.002	279	0.01	0.002	279	0.08	0.002	279	0.04
Minimum System Voltage	12			End of Line Voltage	0.03%			End of Line Voltage	0.10%			20.40
Total Circuit Current	0.002			Percent Drop	0.03%			Percent Drop	0.10%			0.02%
Distance from source to 1st device	91			Standard Wire Resistance in Ohms per 1000 feet			Standard Wire Resistance in Ohms per 1000 feet					
Wire Gauge for balance of circuit	18.777			18-14 AWG = Solid Conductors			12-10 AWG = Stranded Conductors					
Enter current in amperes	150			Notes:			Notes:					
150 = 150 ma				Wire resistance is doubled in the calculations for two wires (Positive and Negative)			Wire resistance is doubled in the calculations for two wires (Positive and Negative)					
Device Number	Device	previous	from	Voltage	Drop	Percent	Device	Device	previous	from	Voltage	Drop
1	0.00012	91	20.40	0.03%	0.01%	0.001	the manufacturers listed minimum operating voltage (IEC rated operating voltage 20-32 VDC)					
2	0.00012	8	20.40	0.03%	0.01%	0.001	Device Manufacturer: Monaco					
3	0.00012	14	20.40	0.03%	0.02%	0.002	Horn Strakes					
4	0.00012	34	20.40	0.04%	0.02%	0.005	Model #					
5	0.00012	34	20.40	0.04%	0.02%	0.005	Candela					
6	0.00012	13	20.40	0.04%	0.02%	0.005	Device Number:					
7	0.00012	8	20.40	0.04%	0.02%	0.005						
8	0.00012	45	20.39	0.03%	0.03%	0.003						
9	0.00012	7	20.39	0.03%	0.03%	0.003						
10	0.00012	32	20.39	0.03%	0.03%	0.003						
11	0.00012	7	20.39	0.03%	0.03%	0.003						
12	0.00012	32	20.39	0.03%	0.03%	0.003						
13	0.00012	8	20.39	0.03%	0.03%	0.003						
14	0.00012	12	20.39	0.03%	0.03%	0.003						
15	0.00012	36	20.39	0.03%	0.03%	0.003						
16	0.00012	18.777	20.39	0.03%	0.03%	0.003						
END	20.39	0.03%	0.03%									
END	20.39	0.03%	0.03%									
END	20.39	0.03%	0.03%									
END	20.39	0.03%	0.03%									
END	20.39	0.03%	0.03%									
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END	20.39	0.03%	0.03%									
END	20.39	0.03%	0.03%									
END	20.39	0.03%	0.03%									
END	20.39	0.0										

This calculator provides voltage drop calculations in three formats (Point to Point, End of Line, and Load Centering)

This calculator provides voltage drop calculations in three formats (Point to Point, End of Line, and Load Centering).														
Project Name			R. Richardson, AL			Point to Point Method			End of Line Method			Load Centering Method		
Circuit Number			8. Living unit with attached Laundry			CIRCUIT IS WITHIN LIMITS			CIRCUIT IS WITHIN LIMITS			CIRCUIT IS WITHIN LIMITS		
Area Covered			Living Units with Laundry (includes laundry)			Totals			Totals			Totals		
Normal System Voltage			20.4 (2474.85)			Current			Current			Current		
Minimum System Voltage			12			Distance			Distance			Distance		
Total Circuit Current			0.002			Drop			Drop			Drop		
Distance from source to 1st device			36			Percent Drop			Percent Drop			Percent Drop		
Wire Gauge for balance of circuit			18.777			End of Line Voltage			End of Line Voltage			End of Line Voltage		
Enter current in amperes			18.777			Percent Drop			Percent Drop			Percent Drop		
150 = 150 ma			18.777			Standard Wire Resistance in Ohms per 1000 feet			Standard Wire Resistance in Ohms per 1000 feet			Standard Wire Resistance in Ohms per 1000 feet		
Device			AI			Notes:			Notes:			Notes:		
Number			Device			Wire resistance is doubled in the calculations for two wires (Positive and Negative)			Wire resistance is doubled in the calculations for two wires (Positive and Negative)			Wire resistance is doubled in the calculations for two wires (Positive and Negative)		
Current			source			The voltage calculated is the minimum operating voltage (IE: rated operating voltage 20.32 VDC).			The voltage calculated is the minimum operating voltage (IE: rated operating voltage 20.32 VDC).			The voltage calculated is the minimum operating voltage (IE: rated operating voltage 20.32 VDC).		
Device previous			Drop from			The manufacturers listed next to minimum operating voltage			The manufacturers listed next to minimum operating voltage			The manufacturers listed next to minimum operating voltage		
Device			Percent			Device Manufacturer			Device Manufacturer			Device Manufacturer		
1			0.001			Monaco			Monaco			Monaco		
2			0.01%			Current			Current			Current		
3			0.01%			@Rated			@Rated			@Rated		
4			0.01%			Single Only			Single Only			Single Only		
5			0.01%			Model #			Model #			Model #		
6			0.03%			Candela			Candela			Candela		
7			0.03%			Device Number			Device Number			Device Number		
8			0.04%											
9			0.02%											
10			0.05%											
11			0.0012											
12			0.0012											
13			0.02%											
14			0.03%											
15			0.03%											
16			0.03%											
17			0.03%											
18			0.0012											
END			20.39											
END			0.065											
END			0.03%											
END			0.03%											
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