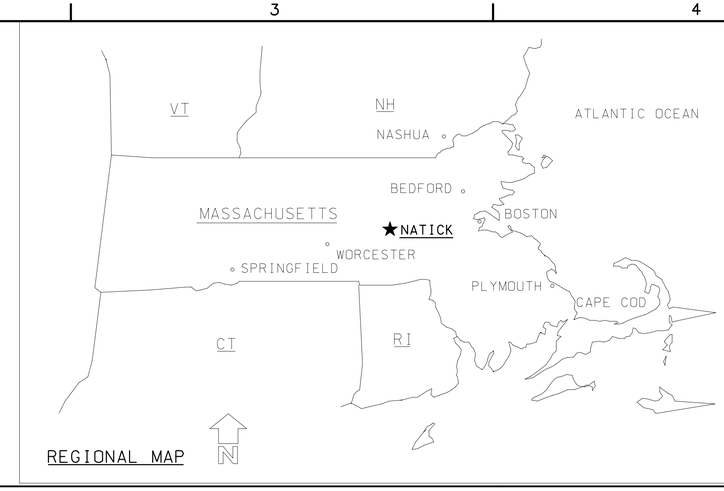
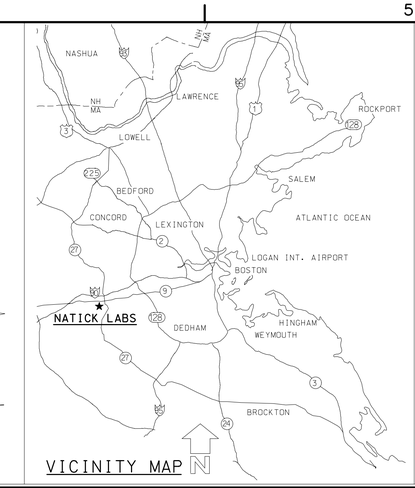
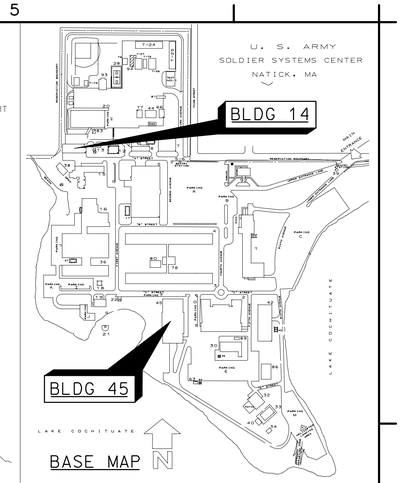
US Army Corps
of Engineers
New England District



REGIONAL MAP



VICINITY MAP



BASE MAP

BUILDING 45 OFFICE RENOVATION
U.S. ARMY SOLDIER SYSTEMS CENTER

NATICK, MASSACHUSETTS

INDEX TO DRAWINGS

SHEET NO.		DESIGN FILE	TITLE
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2	A-1	B45a101.s01	EXISTING FLOOR & DEMOLITION PLAN
3	A-2	B45a102.s02	NEW PLAN, BLDG. 45
4	A-3	B45a103.s03	PLANS AND SCHEDULES
5	A-4	B45a104.s04	REFLECTED CEILING PLAN
6	A-5	B45a105.s05	NEW EQUIPMENT PLAN, BLDG. 45
7	A-6	B45a106.s06	NEW EQUIPMENT PLAN
8	A-7	B45a107.s07	BUILDING 14 - GARAGE CARPENTER SHOP
9	A-8	B45a501.s08	PARTITION TYPES & DETAILS
10	A-9	B45a502.s09	DOOR DETAILS
11	M-1	B45m101.s10	MECHANICAL DEMOLITION PLAN
12	M-2	B45m102.s11	NEW MECHANICAL EQUIPMENT PLAN
13	M-3	B45m601.s12	MECHANICAL EQUIPMENT SCHEDULES
14	M-4	B45m602.s13	HVAC CONTROL SYSTEM, SCHEMATIC, AND MECHANICAL DETAILS
15	M-5	B45m103.s14	SPRINKLER SYSTEM MODIFICATIONS
16	E-1	B45e1wX.s15	ELECTRICAL DEMO. PLAN, BLDG 45, WEST; LEGEND; & DROP CORD
17	E-2	B45e1wN.s16	ELECTRICAL NEW PLAN, BLDG 45, WEST; & LIGHTING FIXTURE DET.
18	E-3	B45e1eX.s17	ELECTRICAL DEMOLITION PLANS, BUILDING 45, EAST
19	E-4	B45e1eN.s18	ELECTRICAL NEW PLANS, BUILDING 45, EAST (OFFICE)
20	E-5	B45e1b_.s19	ELECTRICAL SWITCHBOARD REPLACEMENT, BUILDING 45, BASEMENT
21	E-6	B45e1g_.s20	ELECTRICAL PLANS & DETAILS, BLDG 14 - GARAGE CARPENTER SHOP

VALUE ENGINEERING PAYS DIVIDENDS

SAFETY PAYS

SOLICITATION # W912WJ-04-B-0005

SEE SPECIFICATIONS FOR DRAWING SIGNATURES

APPROVED FUNCTIONAL ADEQUACY
JOHN C. PERRY /s/ 06/10/04
TECHNICAL LEAD ENGINEER DATE:
RECOMMENDED BY:
H. FARRELL MCMILLAN /s/ 06/10/04
DEPUTY CHIEF, E/P DIV DATE:
REVIEWED BY:
DAVID R. DESCOTEAUX /s/ 06/10/04
CHIEF, DESIGN BRANCH DATE:
APPROVED BY:
DAVID L. DULONG /s/ 06/10/04
CHIEF, ENGRG/PLANNING DIV DATE:
REVIEWED BY:
N/A
CHF, HTRW/GEOTECH ENGRG BR DATE:

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CONCORD, MASSACHUSETTS

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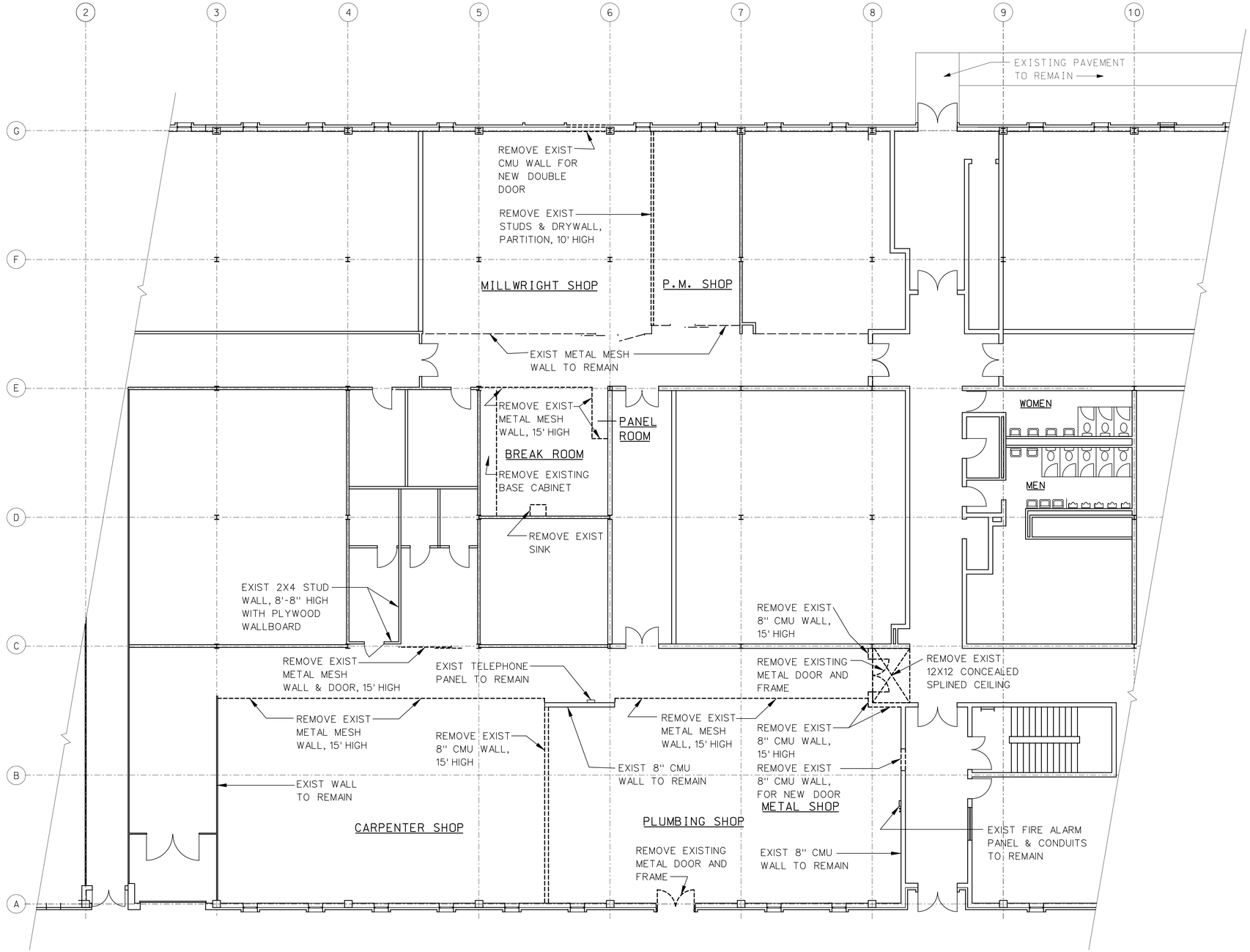
U.S. ARMY SOLDIER SYSTEMS CENTER
NATICK, MASSACHUSETTS
BUILDING 45 OFFICE RENOVATION

COVER SHEET

Reference number:
G-1
Sheet 1 of 21



EXISTING FLOOR & DEMOLITION PLAN

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

GRAPHIC SCALE:
1/8" = 1'-0" 4' 0 4' 8' 12' 16' 20'

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New England District

Symbol	Description	Date	Appr.	Symbol	Description	Date	Appr.

Date: June 2003
Rev.
Solicitation no. W912WJ-04-B-0005
Drawing code: F-228-45-01
File name:
Plot width:
Plot scale:

Designed by: CYH
Drawn by: CYH
Reviewed by: DAVID DESCOTEAUX /s/
Submitted by: DAVID DESCOTEAUX /s/
Chief, General Engrg Sect

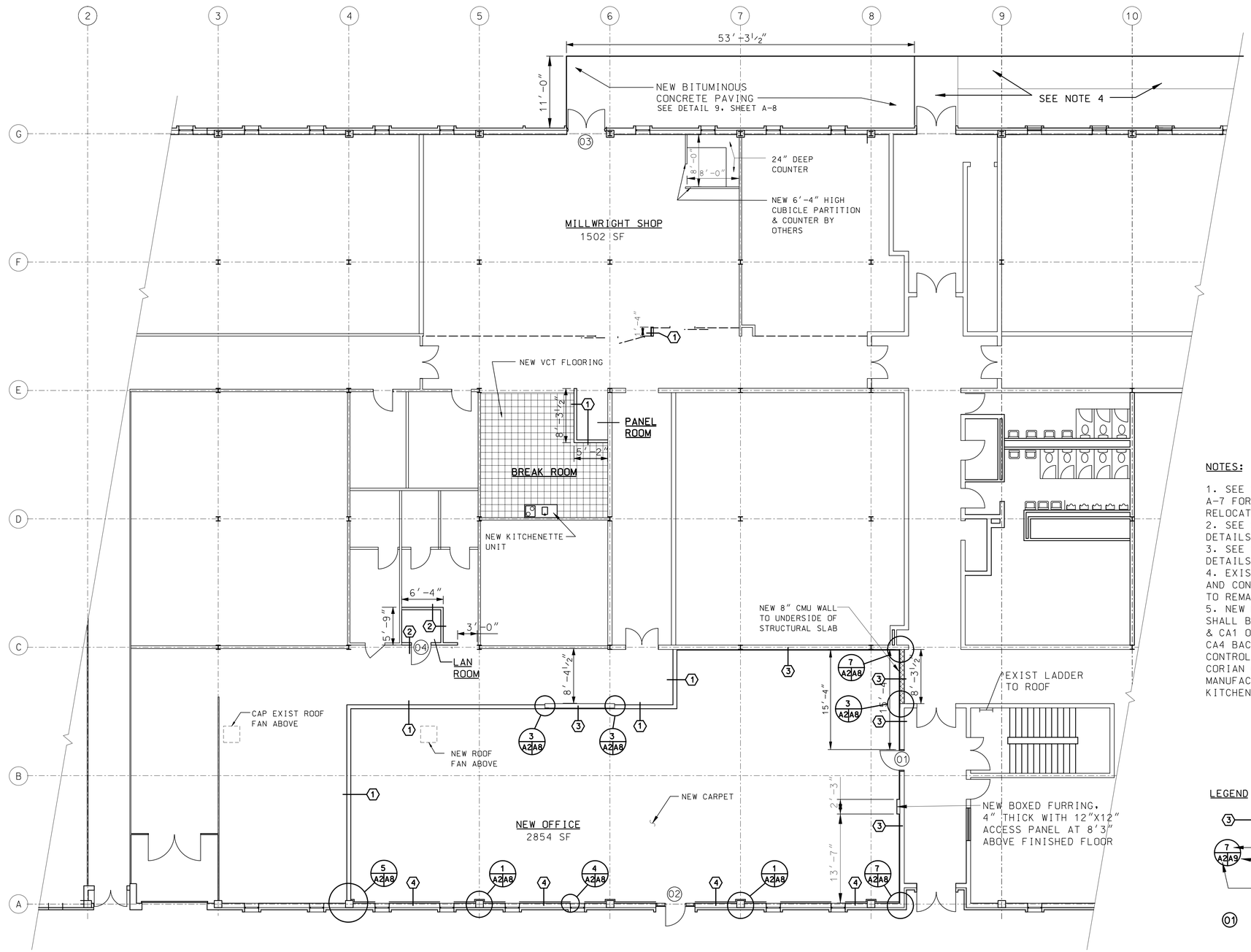
U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

U.S. ARMY SOLDIER SYSTEMS CENTER
NATICK, MASSACHUSETTS
BUILDING 45 OFFICE RENOVATION

EXISTING FLOOR & DEMOLITION PLAN

Reference number:
A-1

Sheet 2 of 21



PARTIAL NEW OFFICE FLOOR PLAN

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

NOTES:

1. SEE SHEET A-5 THROUGH A-7 FOR EQUIPMENT RELOCATIONS AND LAYOUT
2. SEE SHEET A-8 FOR WALL DETAILS
3. SEE SHEET A-9 FOR DOOR DETAILS
4. EXISTING ASPHALT PAVING AND CONCRETE/BRICK PAVING TO REMAIN
5. NEW KITCHENNETTE UNIT SHALL BE RE-60 WITH 2 BURNERS, & CA1 OVERHEAD CABINET, CA4 BACK SPLASH, CA7 SINGLE CONTROL FAUCET, CA18 CORIAN COUNTER TOP AS MANUFACTURED BY CERVITOR KITCHENS OR APPROVED EQUAL.

LEGEND

- (3) — PARTITION TYPE, SEE SHEET A-8
- (7 / A2A9) — DETAIL KEY; DETAIL DRAW ON SHEET; DETAIL TAKEN FROM SHEET
- (01) — NEW DOOR NUMBER, SEE DETAILS ON SHEET A-9

GRAPHIC SCALE:

1/8" = 1'-0" 4' 0 4' 8' 12' 16' 20'

US Army Corps of Engineers
New England District

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Date: June 2003 | Rev.
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Designed by: CYH
Drawn by: CYH
Reviewed by: DAVID DESCOTEAUX /s/
Submitted by: DAVID DESCOTEAUX /s/
Chief, General Engrg Sect

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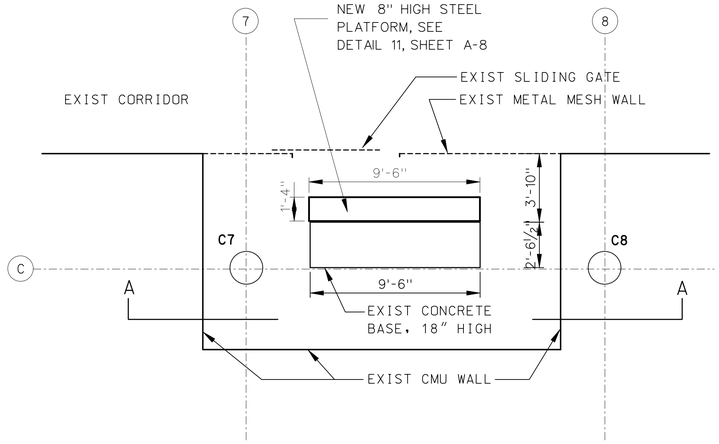
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

U.S. ARMY SOLDIER SYSTEMS CENTER
NATICK, MASSACHUSETTS
BUILDING 45 OFFICE RENOVATION

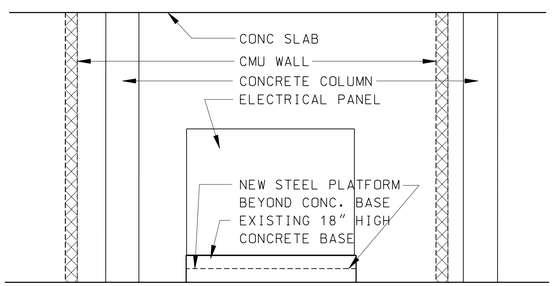
NEW FLOOR PLAN

Reference number:
A-2
Sheet 3 of 21



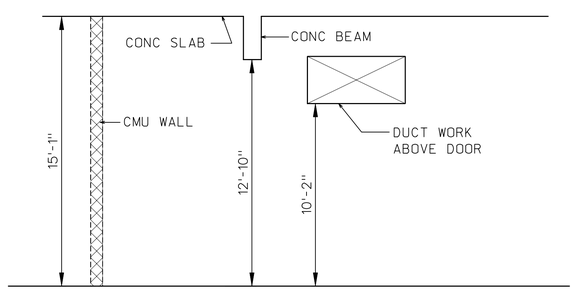
BASEMENT PLAN AT MAIN PANEL

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



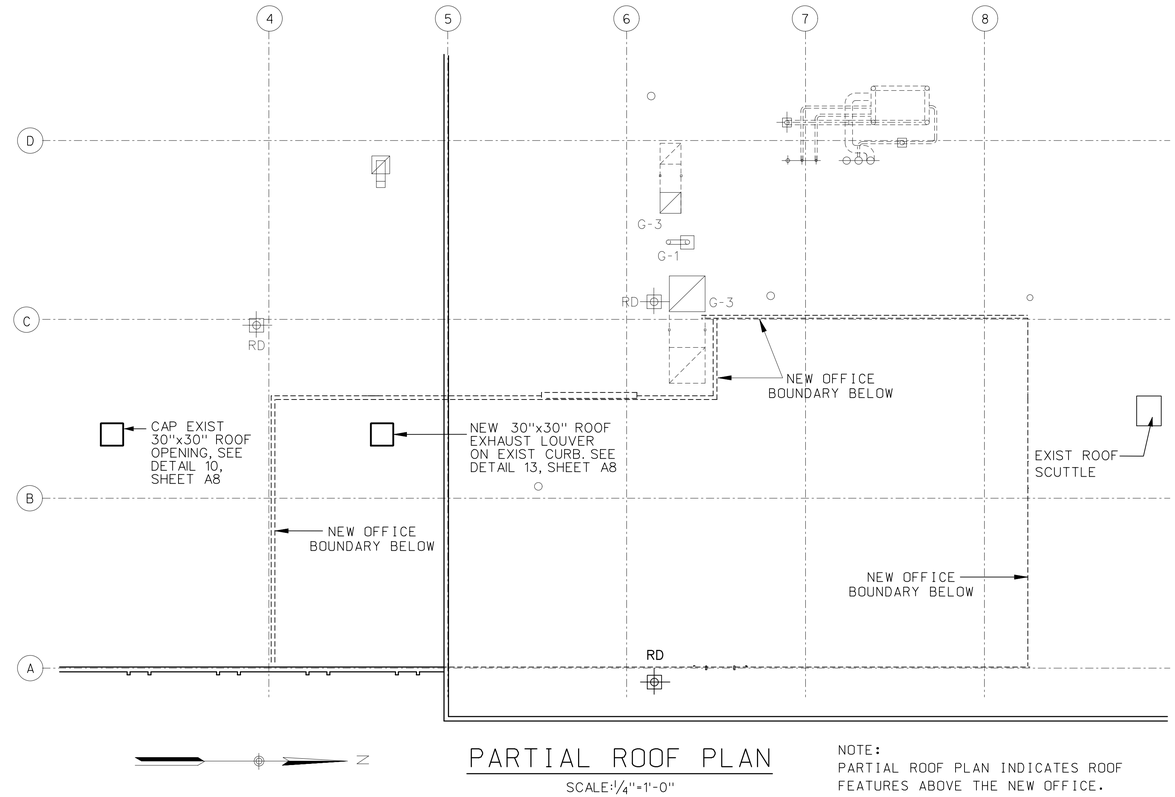
SECTION A-A AT MAIN PANEL SPACE IN BASEMENT

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



VERTICAL SPACING AT FIRST FLOOR

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



PARTIAL ROOF PLAN

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

NOTE:
PARTIAL ROOF PLAN INDICATES ROOF FEATURES ABOVE THE NEW OFFICE.

FINISH SCHEDULE

ROOM NAME	FLOOR	BASE	WALLS	CEILING	CEILING HT	REMARKS
OFFICE	CARPET	RT	PAINTED	SUSP CLG	9'6"	
BREAK ROOM	VCT	RT	PAINTED	SUSP CLG	8'0"	
DATA ROOM	EXIST CONC	—	PAINTED	SUSP CLG	8'0"	
CARPENTER	EXIST CONC	—	PAINTED	PAINTED	EXIST SLAB	
MILLWRIGHT	EXIST CONC	—	PAINTED	PAINTED	EXIST SLAB	
PANEL	EXIST CONC	RT	PAINTED	EXIST SLAB	EXIST SLAB	

NEW DOOR SCHEDULE

DOOR NO.	ROOM NAME	DOOR					FRAME				THRES HOLD	FIRE LABEL	HDWE NO	REMARKS
		NO	SIZE	THICK	MAT'L	TYPE	MAT'L	TYPE	HEAD	JAMB				
01	OFFICE	1	3'-0"X6'-6"	1 3/4"	HM	1	PM	A	HEAD 1	JAMB 1	-	B	1	
02	OFFICE	1	3'-0"X7'-0"	1 3/4"	HM	2	PM	B	HEAD 2	JAMB 2	ALUM	-	2	
03	MILLWRIGHT	2	2'-10"X6'-6"	1 3/4"	HM	3	PM	C	HEAD 3	JAMB 3	ALUM	-	3	
04	DATA ROOM	1	3'-0"X6'-8"	1 3/4"	HM	4	PM	D	HEAD 4	JAMB 4	-	-	4	18"X18" LOUVER
05	STORAGE IN GARAGE	2	3'-0"X7'-0"	1 3/4"	HM	3	PM	C	HEAD 3	JAMB 3	-	-	5	

ABBREVIATIONS:

ALUM	ALUMINUM	PM	PRESSED METAL
CONC	CONCRETE	RT	RUBBER BASE
EXIST	EXISTING	SUSP CLG	SUSPENDED CEILING
HM	HOLLOW METAL	VCT	VINYL COMPOSITION TILE
MAT'L	MATERIAL	VWC	VINYL WALL COVERING

GRAPHIC SCALE:
1/4" = 1'-0" 4' 0 4' 8'

US Army Corps of Engineers
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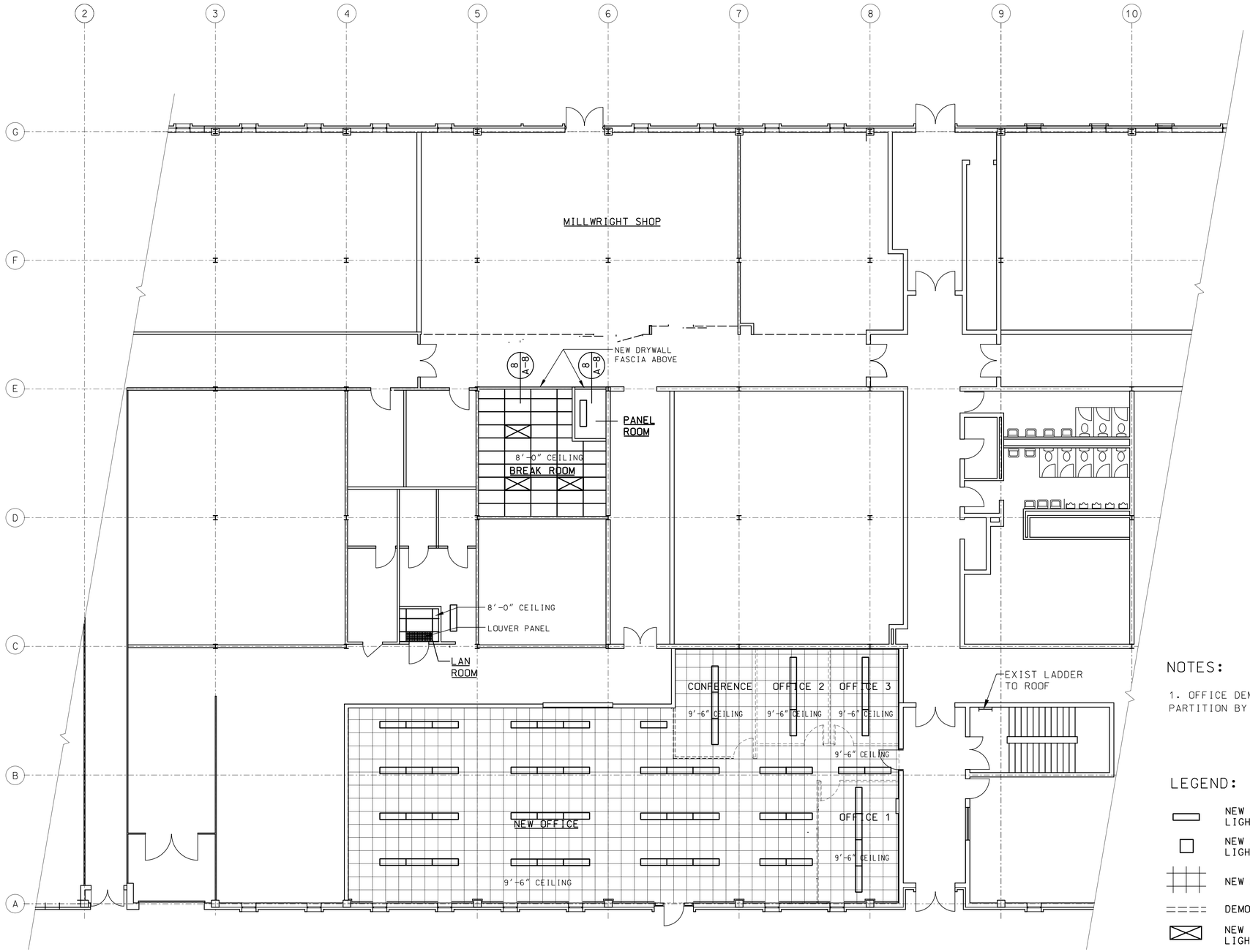
Designed by: CYH
Drawn by: CYH
Reviewed by: DAVID DESOTEAUX /s/ Supervised by: DAVID DESOTEAUX /s/ Chief, General Engrg Sect

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

U.S. ARMY SOLDIER SYSTEMS CENTER
NATICK, MASSACHUSETTS
BUILDING 45 OFFICE RENOVATION

PLANS AND SCHEDULES

Reference number:
A-3
Sheet 4 of 21



NEW REFLECTED CEILING PLAN

1/8" = 1'-0"

NOTES:

1. OFFICE DEMOUNTABLE PARTITION BY OTHERS

LEGEND:

- NEW SUSPENDED FLUORESCENT LIGHT FIXTURE
- NEW 2' X 2' FLUORESCENT LIGHT FIXTURE
- NEW 2' X 2' CEILING GRID
- DEMOUNTABLE PARTITION
- NEW 2'×4' FLOURESCENT LIGHT FIXTURE

GRAPHIC SCALE:
1/8" = 1'-0" 4' 0 4' 8' 12' 16' 20'

US Army Corps of Engineers
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Submitted by: DAVID DESOTEAUX /s/
Chief, General Engrg Sect

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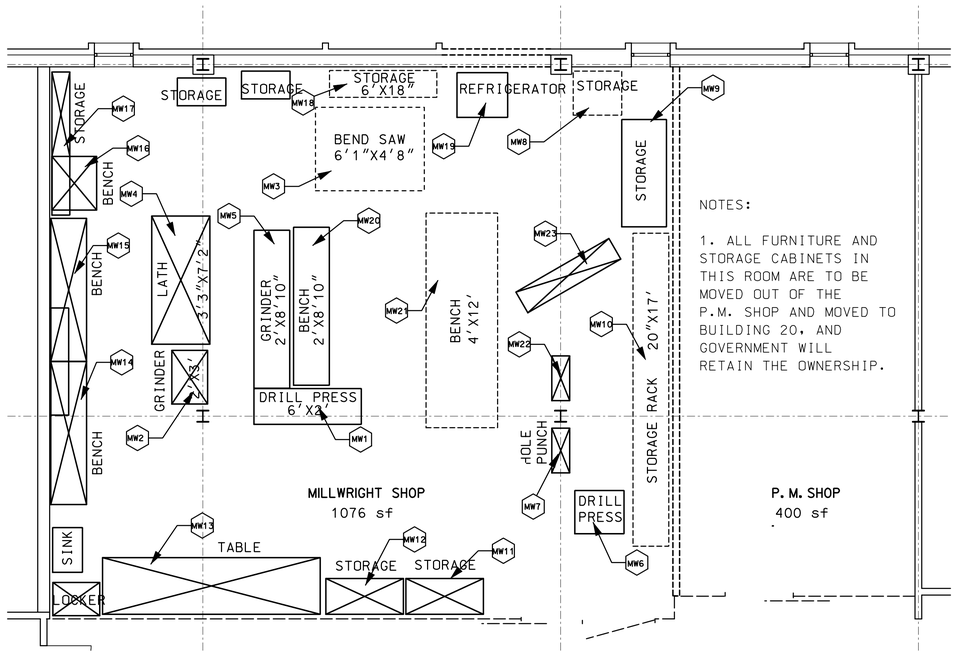
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

U.S. ARMY SOLDIER SYSTEMS CENTER
NATICK, MASSACHUSETTS
BUILDING 45 OFFICE RENOVATION

REFLECTED CEILING PLAN

Reference number:
A-4

Sheet 5 of 21



NOTES:

1. ALL FURNITURE AND STORAGE CABINETS IN THIS ROOM ARE TO BE MOVED OUT OF THE P.M. SHOP AND MOVED TO BUILDING 20, AND GOVERNMENT WILL RETAIN THE OWNERSHIP.

EXISTING MILLWRIGHT & P.M. SHOPS PLAN

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

N

EXISTING EQUIPMENT INDEX

NO.	NAME	ESTIMATED WEIGHT	ELECTRICITY	REMARKS
MW1	DRILL PRESS	300 LBS	110V	
MW2	GRINDER	NO WORK	110V	
MW3	BAND SAW	2000 LBS TURN IN	110V	
MW4	LAITH	1200 LBS NO WORK	110V	
MW5	GRINDER	400 LBS	110V	
MW6	DRILL PRESS	300 LBS	110V	
MW7	HOLE PUNCH	NO WORK	110V	
MW8	STORAGE	200 LBS TURN IN		
MW9	STORAGE	300 LBS		
MW10	STORAGE RACK	200 LBS TURN IN		
MW11	STORAGE	NO WORK		
MW12	STORAGE	NO WORK		
MW13	TABLE	NO WORK		
MW14	BENCH	NO WORK		
MW15	BENCH	NO WORK		
MW16	BENCH	NO WORK		
MW17	STORAGE	NO WORK		
MW18	STORAGE	400 LBS TURN IN		
MW19	REF.	200 LBS	110V	
MW20	BENCH	400 LBS		
MW21	STORAGE	600 LBS TURN IN		
MW22		NO WORK		
MW23		NO WORK		
C1	GLASS CUTTER	100 lbs	110V	
C2	SINK	100 lbs TURN IN	—	
C3	DUST VACUUM	1000 lbs	110V	
C4	TABLE	400 lbs	—	
C5	MISC.	100 lbs TURN IN	—	
C6	TABLE	300 lbs	—	
C7	STORAGE	100 lbs	—	
C8	DESK	100 lbs TURN IN	—	
C9	STORAGE	100 lbs TURN IN	—	
C10	TABLE SAW	400 lbs	110V	
C11	TABLE	100 lbs TURN IN	—	
C12	BELT SANDER	200 lbs	110V	
C13	DUST COLLECTER	300 lbs	110V	
C14	TABLE ROUTER	200 lbs	110V	
C15	TABLE SAW	200 lbs TURN IN	—	
C16	WORK BENCH	200 lbs TURN IN	—	
C17	TABLE	200 lbs	—	
C18	RADIAL ARM SAW	300 lbs	110V	
C19	TABLE	300 lbs TURN IN	—	
C20	PLAINER	500 lbs	110V	
C21	JOINER	500 lbs	110V	

EXISTING EQUIPMENT INDEX

NO.	NAME	ESTIMATED WEIGHT	ELECTRICITY	REMARKS
C22	DRILL PRESS	200 lbs	110V	
C23	SAW	200 LBS TURN IN	110V	
M1	CABINET	200 LBS TURN IN		
M2	BENCH	400 LBS		
M3	SEAM LOCK	100 LBS		
M4	SPOT WELD	100 LBS		
M5	MISC.	200 LBS TURN IN		
M6	BENCH	400 LBS		
M7	BENCH	400 LBS TURN IN		
M8	SLIP BENDER	200 LBS TURN IN		
M9	METAL SHEAR	2000 LBS		
M10	HAND ROLLER	100 LBS TURN IN		
M11	ELECT. SHEAR	1000 LBS TURN IN		
M12	ROLLING MACH.	200 LBS TURN IN		
M13	TURN PUNCH	100 LBS TURN IN		
M14	BENCH	100 LBS		
M15	METAL RACK	1000 LBS		
M16	LARGE BREAK	500 LBS TURN IN		
M17	BOX BREAK	300 LBS		
M18	CORNER BREAK	300 LBS TURN IN		
M19		100 LBS TURN IN		
P1	DUCT	50 LBS TURN IN		
P2	PIPE RACK	1000 LBS		
P3	CAP	50 LBS		
P4	CAP	50 LBS		
P5	BAND SAW	200 LBS		
P6	PIPE CUTTER	400 LBS		
P7	STORAGE	ON WHEEL		
P8	STORAGE	ON WHEEL		
P9	STORAGE	200 LBS TURN IN		
P10	CAB	200 LBS TURN IN		
P11	DRILL PRESS	200 LBS		
P12	TOOL BOXES	400 LBS TURN IN		
P13	SLOP SINK	100 LBS TURN IN		
P14	REF.	200 LBS TURN IN		
P15	WORK BENCH	300 LBS TURN IN		
P16	WORK BENCH	200 LBS TURN IN		
P17	WORK BENCH	200 LBS TURN IN		
P18	CAB	200 LBS- 1 TURN IN		
P19	TABLE	100 LBS TURN IN		
P20	FILE	200 LBS- 1 TURN IN		
P21	DESK	200 LBS TURN IN		

INDEX

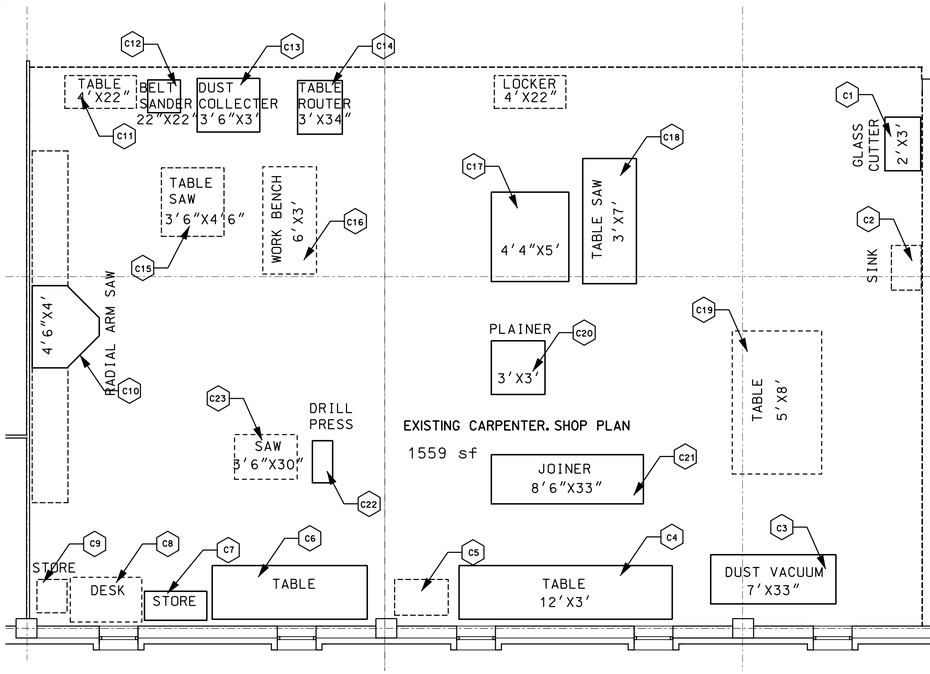
EQUIPMENT TO STAY AS IS

EQUIPMENT TO BE RELOCATED

EQUIPMENT TO BE TURNED IN SEE NOTE 1 & 2

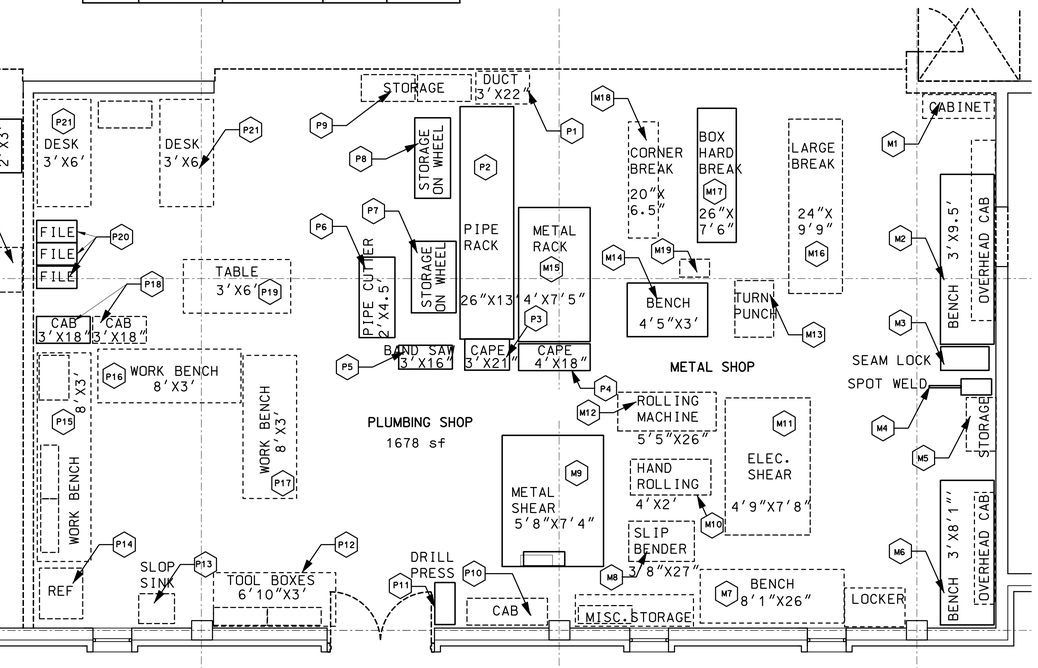
NOTES

1. CONTRACTOR SHALL MOVE ALL EQUIPMENT OUT OF THE CARPENTER SHOP, METAL SHOP AND PLUMBING SHOP WHETHER IT IS SHOWN ON DRAWING OR NOT.
2. ALL EQUIPMENT SHOWN USING SOLID LINES IS TO BE MOVED TO A NEW LOCATION. ALL EQUIPMENT SHOWN IN DASHED LINES IS TO BE MOVED OUT OF THE BUILDING TO BUILDING 20, AND THE GOVERNMENT WILL RETAIN OWNERSHIP
3. ALL WEIGHTS OF EQUIPMENT ARE ESTIMATED, CONTRACTOR TO VERIFY IN FIELD.
4. ALL EQUIPMENT SHOWN ON DRAWINGS IS APPROXIMATE IN SIZE.
5. SOME EQUIPMENT SHOWN HAVE CABINETS ON TOP OF THE UNITS. CONTRACTOR TO VERIFY THE CABINETS IN FIELD.
6. ALL EQUIPMENT TO BE TURNED IN SHALL HAVE ALL OIL, HYDRAULIC FLUID ETC. DRAINED BEFORE TURN IN.
7. ALL OIL AND HYDRAULIC FLUID ETC. SHALL BE DISPOSED OFF PROPERLY.



EXISTING CARPENTER. SHOP PLAN

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



EXISTING PLUMBING & METAL.SHOPS PLAN

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

GRAPHIC SCALE: 1/4" = 1'-0" 4' 0 4' 8'

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New England District

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U.S. ARMY ENGINEER DISTRICT
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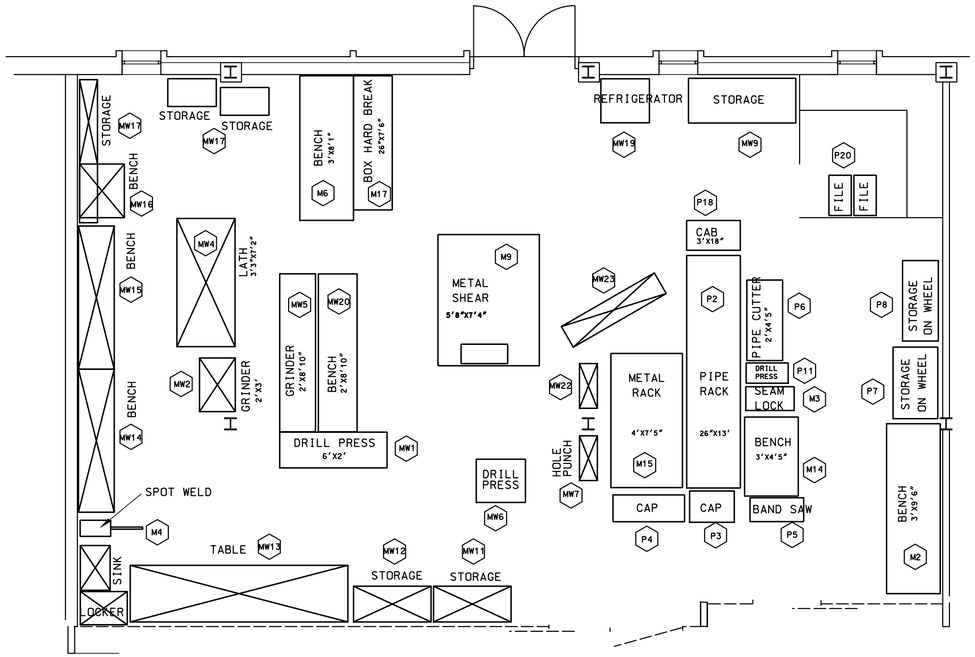
CONCORD, MASSACHUSETTS

U.S. ARMY SOLDIER SYSTEMS CENTER
NATICK, MASSACHUSETTS
BUILDING 45 OFFICE RENOVATION

EXISTING EQUIPMENT PLAN ENLARGED

Reference number:
A-5



MILLWRIGHT SHOP FINAL LAYOUT

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

N

NEW EQUIPMENT INDEX				
NO.	NAME	ESTIMATED WEIGHT	ELECTRICAL	REMARKS
MW1	DRILL PRESS	300 LBS		
MW2	GRINDER	NO WORK		
MW4	LAITH	NO WORK		
MW5	GRINDER	400 LBS		
MW6	DRILL PRESS	200 LBS	110V	
MW7	HOLE PUNCH	NO WORK		
MW9	STORAGE	300 LBS		
MW11	STORAGE	NO WORK		
MW12	STORAGE	NO WORK		
MW13	TABLE	NO WORK		
MW14	BENCH	NO WORK		
MW15	BENCH	NO WORK		
MW16	BENCH	NO WORK		
MW17	STORAGE	300 LBS		
MW19	REF.	200 LBS	110V	
MW20	BENCH	400 LBS		
MW22		NO WORK		
MW23		NO WORK		

NEW EQUIPMENT INDEX				
NO.	NAME	ESTIMATED WEIGHT	ELECTRICAL	REMARKS
M2	BENCH	400 LBS		
M3	SEAM LOCK	100 LBS	110V	
M4	SPOT WELD	100 LBS	220V, 20kVA	
M6	BENCH	400 LBS	—	
M9	METAL SHEAR	2000 LBS	3ph, 2HP	
M14	BENCH	100 LBS	—	
M15	METAL RACK	1000 LBS	—	
M17	BOX BREAK	300 LBS	—	
P2	PIPE RACK	1000 LBS	—	
P3	CAP	50 LBS	—	
P4	CAP	50 LBS	—	
P5	BAND SAW	200 LBS	110V	
P6	PIPE CUTTER	400 LBS	110V	
P7	STORAGE	ON WHEEL	—	
P8	STORAGE	ON WHEEL	—	
P11	DRILL PRESS	200 LBS	110V	
P12	TOOL BOXES	400 LBS	—	
P18	CORNER BREAK	200 LBS	—	
P20	FILE	200 LBS	—	

INDEX

- EQUIPMENT TO STAY AS IS
- EQUIPMENT TO BE RELOCATED
- EQUIPMENT TO BE TAKEN TO BUILDING 20

GRAPHIC SCALE:

1/4" = 1'-0" 4' 0 4' 8'

US Army Corps of Engineers
New England District

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Designed by: CYH/DMF
Drawn by: CYH/DMF
Reviewed by: DAVID DESCOTEAUX /s/ Supervisor Engr.
Reviewed by: DAVID DESCOTEAUX /s/ Chief, General Engrg. Sect.
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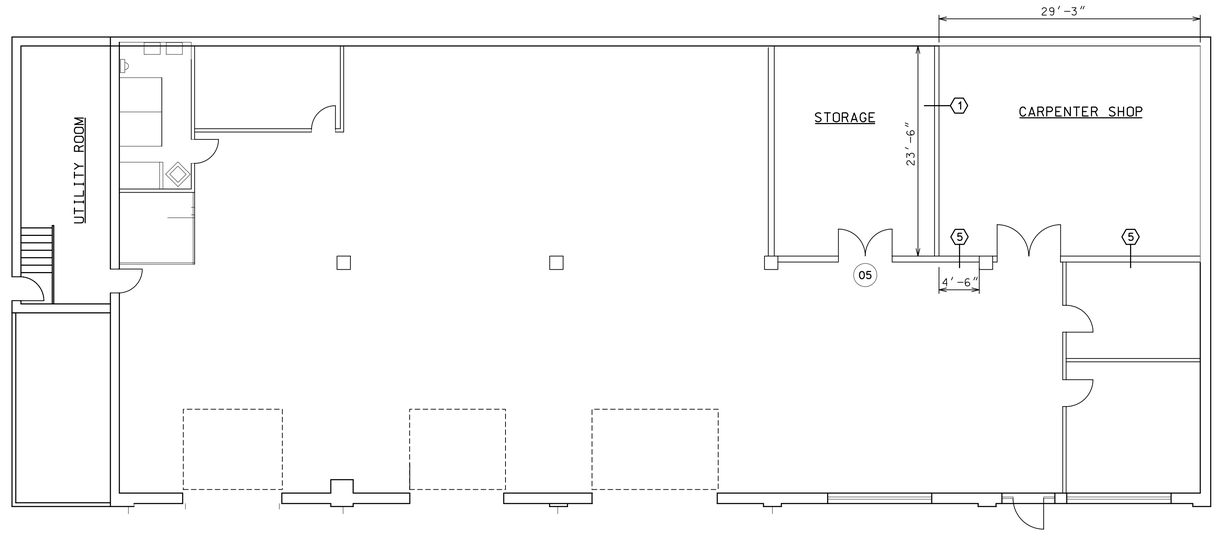
U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

U.S. ARMY SOLDIER SYSTEMS CENTER
NATICK, MASSACHUSETTS
BUILDING 45 OFFICE RENOVATION

NEW EQUIPMENT PLAN

Reference number:
A-6

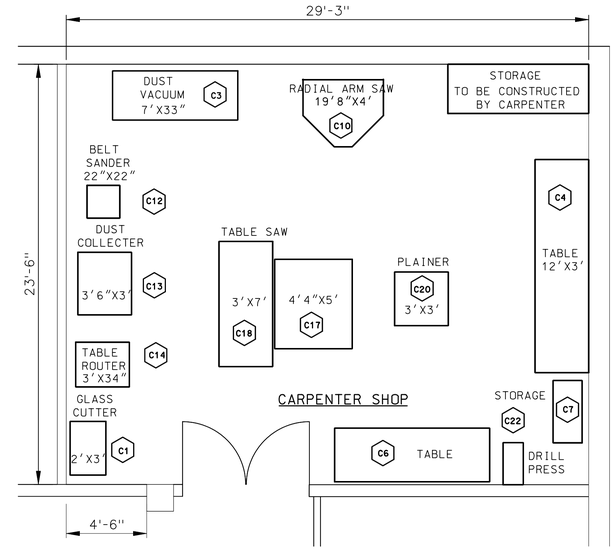
Sheet 7 of 21



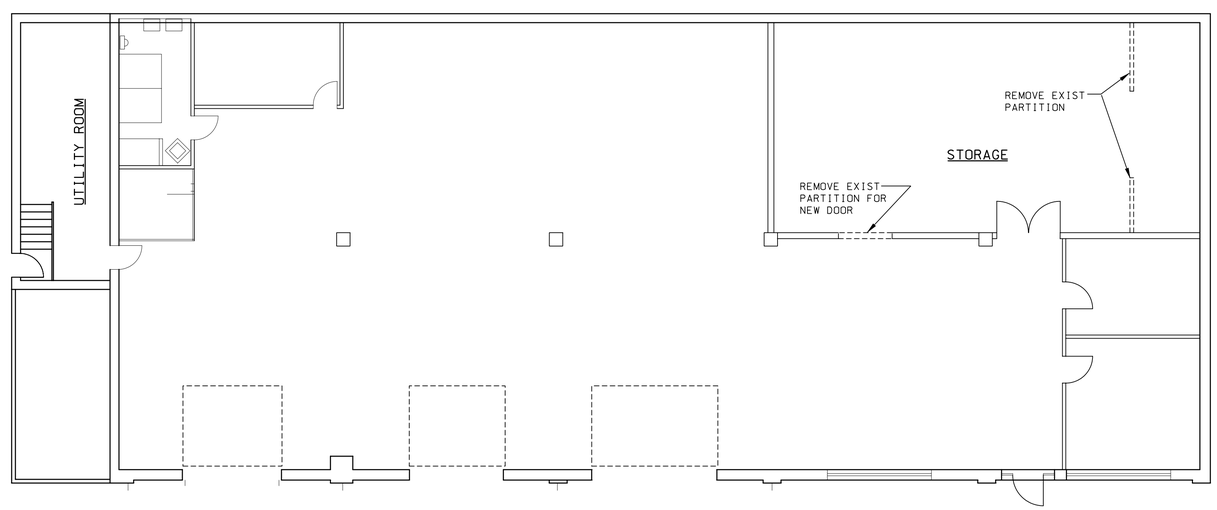
NEW LOWER LEVEL GARAGE PLAN
BUILDING 14
SCALE : 1/8"=1'-0"

NOTES:

1. REMOVE ALL SHELVES, EQUIPMENT AND PARTS FROM THE NEW CARPENTER SHOP AREA.TO THE NEW REDUCED STORAGE AREA.
2. THE ARRANGEMENT OF THE SHELVES WILL BE AS DIRECTED BY THE CONTRACTING OFFICER.



NEW CARPENTER SHOP
SCALE : 1/4"=1'-0"



EXISTING LOWER LEVEL GARAGE PLAN
BUILDING 14
SCALE : 1/8"=1'-0"

N

NEW EQUIPMENT INDEX

NO.	NAME	ESTIMATED WEIGHT	ELECTRICAL	REMARKS
C1	GLASS CUTTER	100 LBS	—	
C3	DUST VACUUM	2000 LBS	3ph, 10HP	HW
C4	TABLE	400 LBS	—	
C6	TABLE	300 LBS	—	
C10	TABLE SAW	400 LBS	3ph, 3HP	HW
C12	BELT SANDER	200 LBS	110V	NEMA 5-15
C13	DUST COLLECTER	300 LBS	3ph, 1.5HP	HW
C14	TABLE ROUTER	200 LBS	3ph, 2HP	NEMA L14-20
C17	TABLE	200 LBS	—	
C18	RADIAL ARM SAW	300 LBS	1ph, 208V	NEMA L6-20
C20	PLANER	500 LBS	3ph	HW
C22	DRILL PRESS	200 LBS	110V	NEMA 5-15

ADDITIONAL ELECTRICAL NOTES & REMARKS

1. Abbreviations used: ph = phase; HP = horse power; V = volts; NEMA refers to the National Electrical Manufacturers Association plug/receptacle configuration; HW = hardwired.

2. Verify the NEMA configuration.

GRAPHIC SCALE:

1/8" = 1'-0" 4' 0 4' 8' 12' 16' 20'

1/4" = 1'-0" 4' 0 4' 8'

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr.	Symbol	Description	Date	Appr.

Designed by: CYH/DWF
Date: June 2003
Rev.
Drawn by: CYH/DWF
Solicitation no. W912EN-04-B-0005
Reviewed by: DAVID DESCOTEAUX /s/
Drawing code: F-216-45-01
Submitted by: DAVID DESCOTEAUX /s/
Chief, General Engrg Sect
File name:
Plot date:
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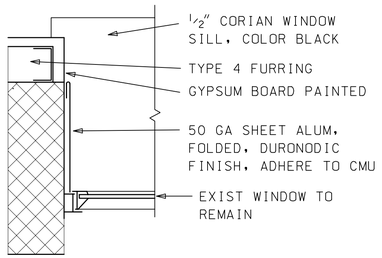
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

U.S. ARMY SOLDIER SYSTEMS CENTER
NATICK, MASSACHUSETTS
BUILDING 45 OFFICE RENOVATION

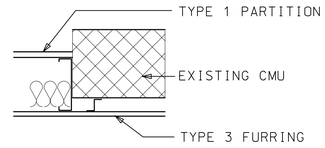
BUILDING 14 - GARAGE
CARPENTER SHOP

Reference number:
A-7

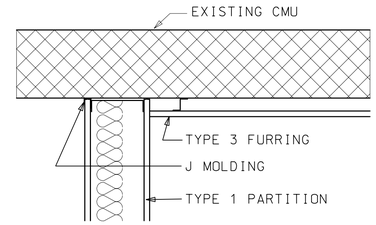
Sheet 8 of 21



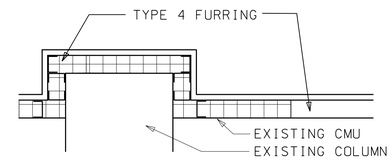
4 A2 A8 DETAIL @ WINDOW
SCALE : 3 "=1'-0"



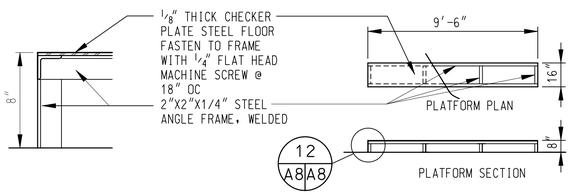
3 A2 A8 WALL DETAIL
SCALE : 1 1/2"=1'-0"



2 A2 A8 CORNER FURRING
SCALE : 1 1/2"=1'-0"

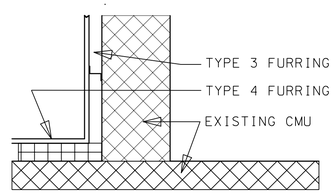


1 A2 A8 WALL FURRING
SCALE : 1 1/2"=1'-0"

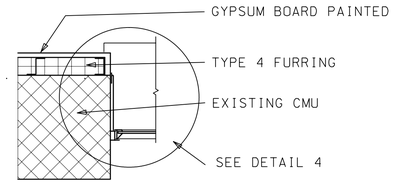


12 A8 A8 DETAIL
NOT TO SCALE

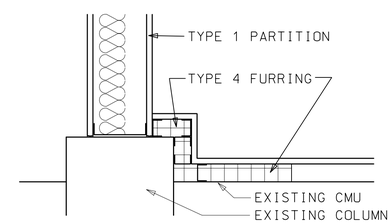
11 A3 A8 PLATFORM DETAIL
SCALE :1/4"=1'-0"



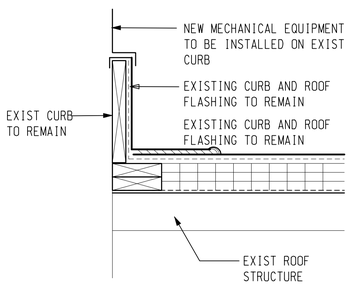
7 A2 A8 CORNER FURRING
SCALE : 1 1/2"=1'-0"



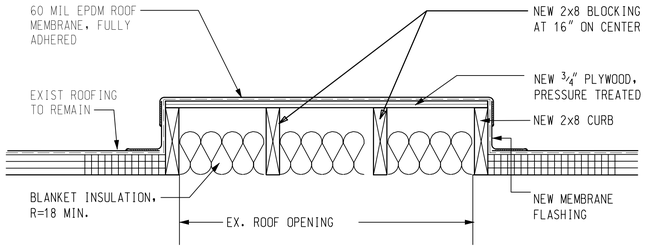
6 A2 A8 FURRING @ WINDOW
SCALE : 1 1/2"=1'-0"



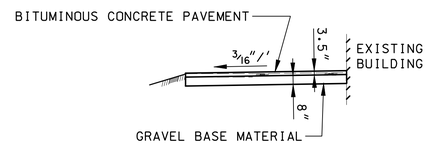
5 A2 A8 CORNER DETAIL
SCALE : 1 1/2"=1'-0"



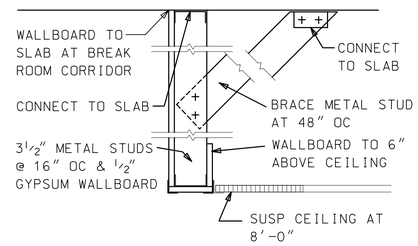
13 A3 A8 EQUIPMENT CURB
SCALE : 1 1/2"=1'-0"



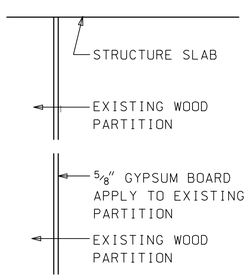
10 A3 A8 CAP ROOF OPENING
SCALE : 1 1/2"=1'-0"



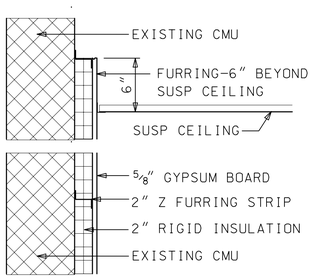
9 A2 A8 SECTION – NEW WALKWAY
SCALE: 1" = 5'



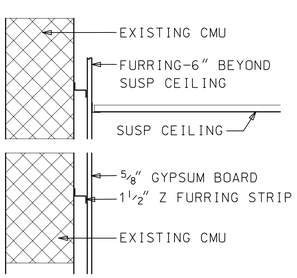
8 A4 A8 FASCIA DETAIL
SCALE : 1 1/2"=1'-0"



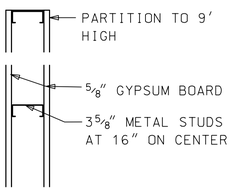
5 FURRING



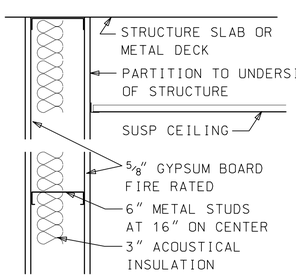
4 FURRING



3 FURRING



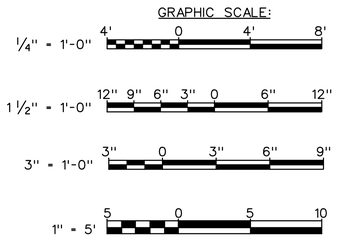
2 PARTITION



1 PARTITION

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

GRAPHIC SCALE:



US Army Corps of Engineers
New England District

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Drawing code: F-228-45-01
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Designed by: CYH
Drawn by: CYH
Reviewed by: DAVID DESCOTEAUX
Submitted by: DAVID DESCOTEAUX /s/
Chief, General Engrg Sect

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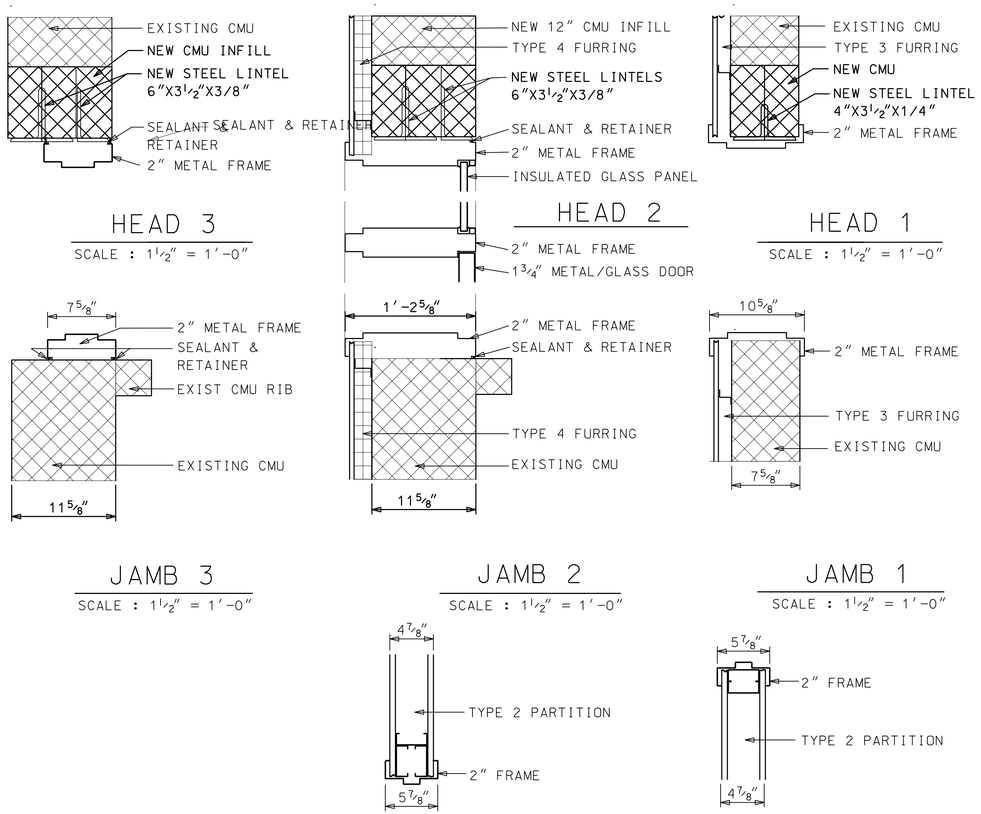
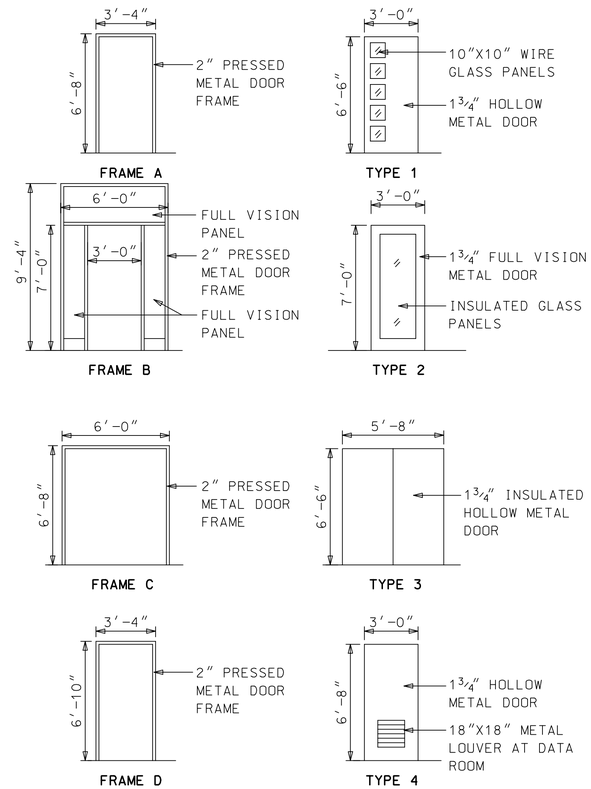
CONCORD, MASSACHUSETTS

U.S. ARMY SOLDIER SYSTEMS CENTER
NATICK, MASSACHUSETTS
BUILDING 45 OFFICE RENOVATION

PARTITION TYPES & DETAILS

Reference number:
A–8
Sheet 9 of 21





NOTES:

1. ALL LOCKSET TO BE SARGENT MORTISE 7700 LINE, WITH LEVER HANDLE.
2. LOCKSET SHOULD HAVE 7 PINS REMOVABLE CORE.
3. CLOSER TO BE SARGENT 1100 LINE, TOP JAMB MODEL.
4. EXIT DEVICE TO BE SARGENT 80 SERIES.
5. THRESHOLD TO BE PEMKO 271A
6. WEATHERSTRIPPING TO BE PEMKO 315CR & PK55D
7. 1 AUTOMATIC DOOR BOTTOM, PEMKO 411A

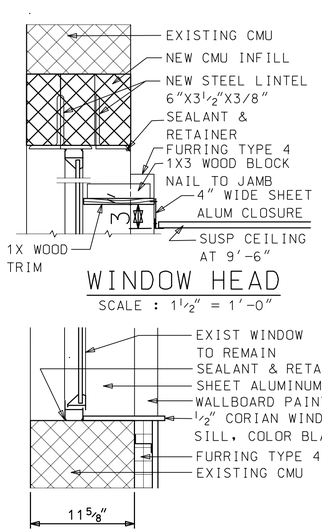
DOOR 1 HARDWARE
1½ PAIR 4½" HINGE
1 LOCKSET, FUNCTION 05
1 CLOSER, 1231
1 FLOOR STOP

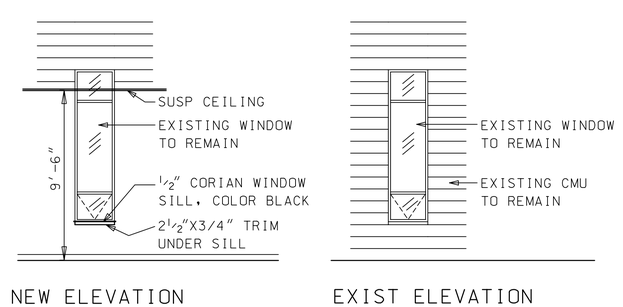
DOOR 2 HARDWARE
1½ PAIR 4½" SS HINGE
1 EXIT DEVICE, 8300 SERIES
1 LOCKSET, FUNCTION 45
1 CLOSER, 1231
1 SET WEATHERSTRIPPING
1 AUTO DOOR BOTTOM
1 THREASHOLD

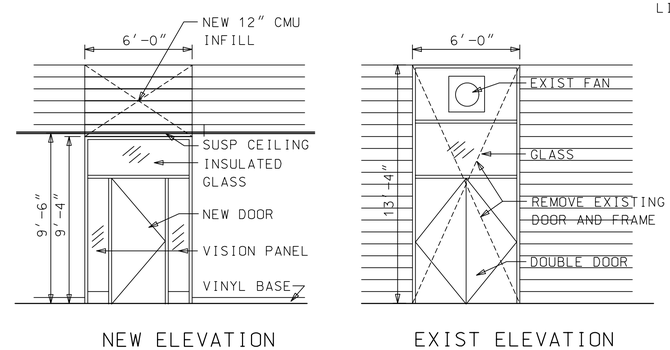
DOOR 3 HARDWARE
3 PAIR 4½" SS HINGE
1 LOCKSET, FUNCTION 45
1 ASTRAGALS, ZERO 155-M
4 EXTENSION FLASH BOLTS, IVES 457
1 SET WEATHERSTRIPPING
1 AUTO DOOR BOTTOM
1 THREASHOLD

DOOR 4 HARDWARE
1½ PAIR 4½" HINGE
1 LOCKSET, FUNCTION 06

DOOR 5 HARDWARE
3 PAIR 4½" SS HINGE
1 LOCKSET, FUNCTION 45
4 EXTENSION FLASH BOLTS, IVES 457







NOTES ON MASONRY OPENING AND LINTEL:

1. SHORE UP THE EXISTING CMU WALL AT NEW OPENINGS
2. REMOVE 8" CMU AT BOTH SIDES OF THE MASONRY OPENINGS TO PROVIDE 8" SUPPORT FOR THE NEW STEEL LINTELS
3. THE LENGTH OF THE NEW STEEL LINTELS SHALL BE 16" LONGER THAN THE CMU OPENING.
4. INSTALL CMU INFILL ON TOP OF THE STEEL LINTEL

GRAPHIC SCALE:
¼" = 1'-0" 4' 0 4' 8'
1½" = 1'-0" 12" 9" 6" 3" 0 6" 12"

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NATICK, MASSACHUSETTS
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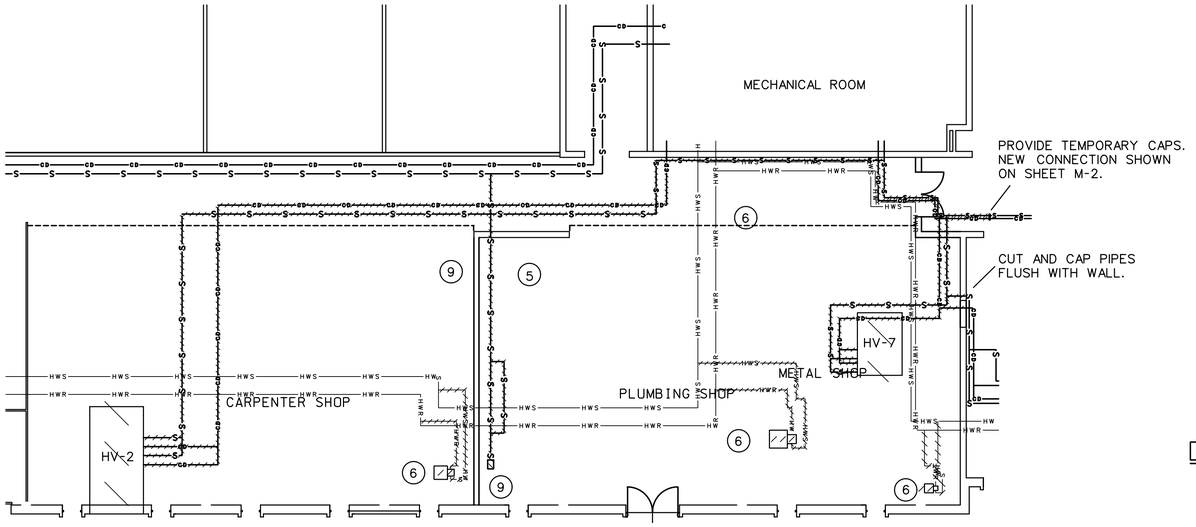
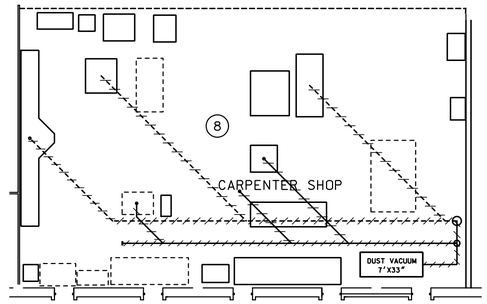
DOOR DETAILS

Reference number:
A-9
Sheet 10 of 21



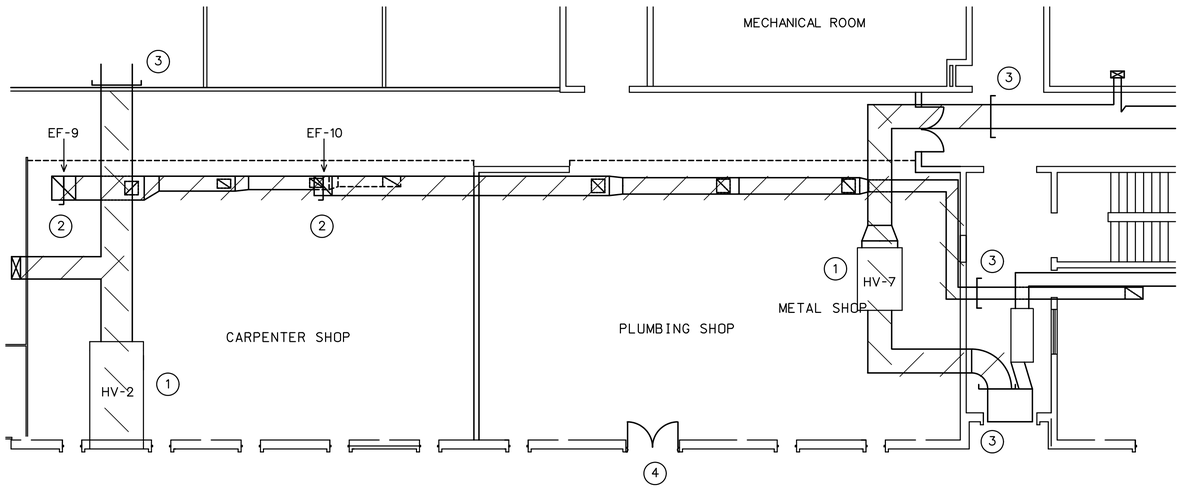
STEAM AND HOT WATER PIPING DEMOLITION PLAN

SCALE -1/8" = 1' - 0"



DUST COLLECTOR DUCT DEMOLITION PLAN

SCALE -1/8" = 1' - 0"



HVAC EQUIPMENT AND DUCT DEMOLITION PLAN

SCALE -1/8" = 1' - 0"

DEMOLITION NOTES

1. REMOVE TWO HEATING AND VENTILATING UNITS LOCATED OVER NEW OFFICE AREA. UNITS ARE IDENTIFIED AS HV-2 AND HV-7. BLANK OFF OPENING FOR HV-2 WITH WATERPROOF PLYWOOD. PAINT INSIDE SURFACE OF PLYWOOD BLACK. LEAVE EXISTING LOUVER IN PLACE. FLEXIBLE DUCT CONNECTORS CONTAIN ASBESTOS. SEE SPECIFICATIONS FOR REMOVAL REQUIREMENTS.

2. REMOVE ROOF MOUNTED EXHAUST FANS OVER NEW OFFICE AREA. FANS ARE IDENTIFIED AS EF-9 AND EF-10. CAP REMAINING ROOF CURB FOR EF-9 AND SEAL AS SHOWN.

3. REMOVE DUCTWORK ASSOCIATED WITH HV UNITS AND EXHAUST FANS AS SHOWN. REMOVE ALL DUCTWORK ABOVE NEW OFFICE AREA AND IN ADJACENT CORRIDOR. CUT DUCTWORK AS SHOWN AND CAP REMAINING DUCTS WHICH ARE TO BE ABANDONED IN PLACE. REPAIR RESULTING WALL OPENINGS TO MAINTAIN FIRE RATING. BLANK OFF AND SEAL PORTION OF AIR INTAKE WHICH SERVED HV-7. FABRICATE BLANK OFF PLATE OF 18 GAUGE GALVANIZED STEEL.

4. REMOVE EXHAUST FAN OVER DOOR AND BRICK UP OPENING.

5. REMOVE STEAM PIPING AND INSULATION AS SHOWN. INSULATION HAS BEEN DETERMINED NOT TO CONTAIN ASBESTOS. CUT BRANCH PIPING BACK TO TEE WITH MAIN AND CAP. WHERE 2" RETURN PIPING IS SHOWN TO PENETRATE MECHANICAL ROOM WALL, CUT AND CAP AT MECHANICAL ROOM WALL. PIPE INSULATION FITTINGS INSIDE MECHANICAL ROOM CONTAIN ASBESTOS.

6. REMOVE THREE HOT WATER UNIT HEATERS AND TWO STEAM UNIT HEATERS. REMOVE HOT WATER PIPING AND INSULATION AS SHOWN. INSULATION HAS BEEN DETERMINED NOT TO CONTAIN ASBESTOS.

7. REMOVE ALL COMPRESSED AIR PIPING ABOVE NEW OFFICE AREA. CUT BRANCH LINES BACK TO HEADER AND CAP AT TEE.

8. REMOVE ALL DUCTWORK ASSOCIATED WITH DUST COLLECTION MACHINE IN CARPENTER'S SHOP INCLUDING DUCTWORK LOCATED UNDER THE FLOOR. UNDERFLOOR DUCTWORK IS HUNG FROM THE BASEMENT CEILING WHICH IS 14'HIGH. A LIFT WILL BE REQUIRED. PATCH RESULTING FLOOR OPENINGS WITH 4" THICK CONCRETE (4 OPENINGS, APPROXIMATELY 8" DIAMETER).

9. REMOVE SINKS IN CARPENTRY SHOP AND PLUMBING SHOPS. CUT BACK EXISTING WATER SUPPLY AND WASTE PIPES TO WALL AND CAP.

10. REMOVE ELECTRICAL WIRING AND CONTROLS FOR ALL UNIT HEATERS, HEATING VENTILATING UNITS AND EXHAUST FANS LISTED ABOVE. REMOVE POWER WIRING AND CONDUIT BACK TO PANEL. SEE ELECTRICAL DEMOLITION SHEET FOR ADDITIONAL REQUIREMENTS.

11. REMOVE SPRINKLERS AND PIPING ABOVE NEW OFFICE AREAS (SEE SHEET M-5).

12. ALL EQUIPMENT TO BE TURNED IN SHALL BE FULLY CLEANED AND DRAINED OF ALL OIL, HYDRAULIC FLUID, ETC. BEFROE BEING TURNED IN.

NOTE: SEE SHEET M-3 FOR LEGEND

GRAPHIC SCALE:
1/8" = 1'-0" 4' 0 4' 8' 12' 16' 20'

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Submitted by: DAVID DESCOTEAUX /s/
Chief, General Engrg Sect

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MECHANICAL DEMOLITION PLAN

Reference number:
M-1

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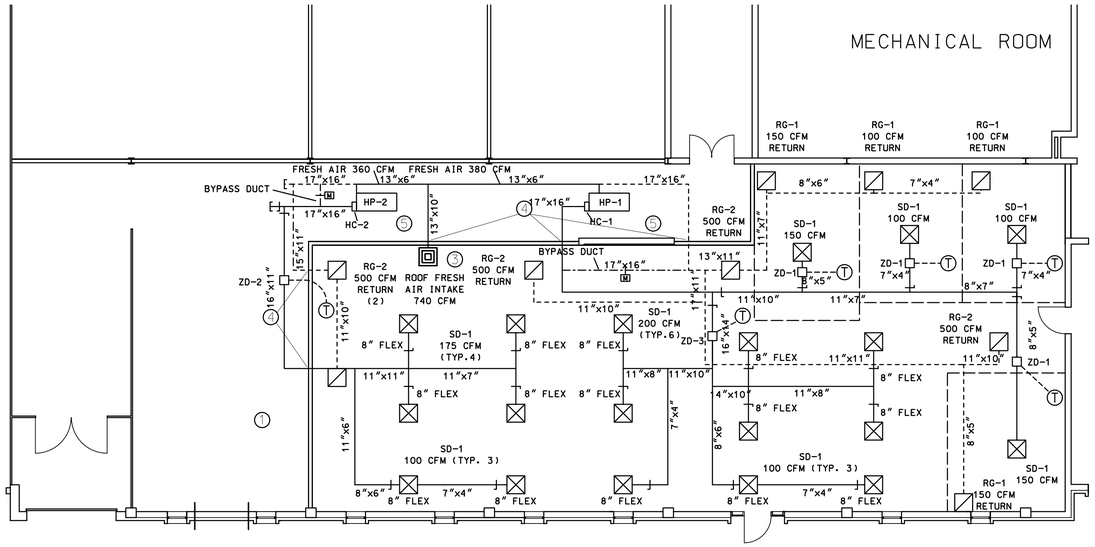
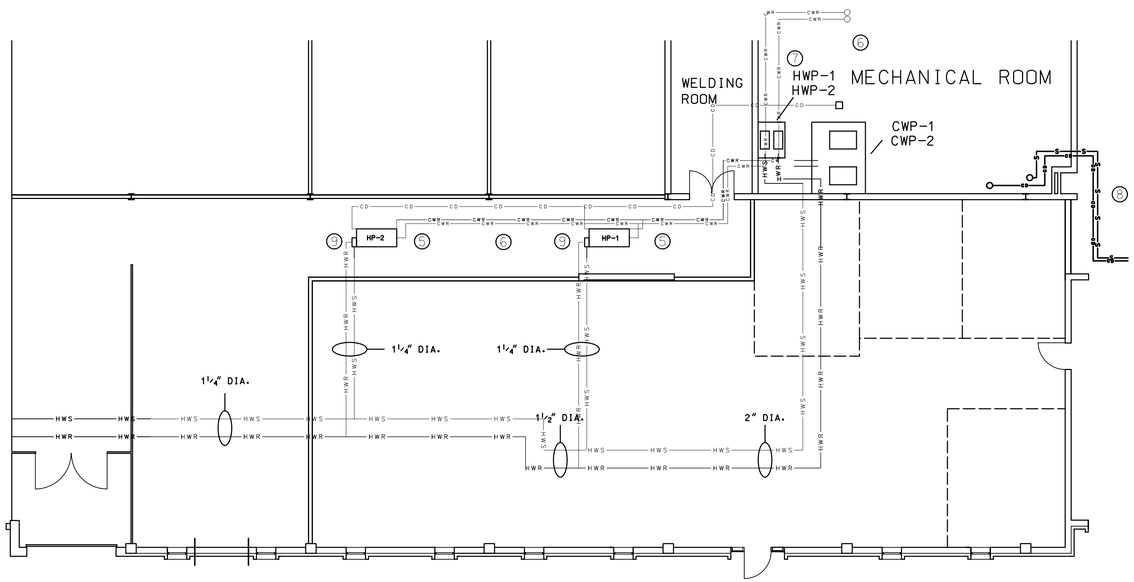


NEW OFFICE HVAC DUCT PLAN

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



NEW OFFICE HVAC PIPING PLAN

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

CONSTRUCTION NOTES

1. PROVIDE NEW SUPPLY AND RETURN DUCTWORK AS SHOWN. DUCTWORK SHALL BE PRESSURE CLASS 2. INSULATE SUPPLY AIR DUCTS AND OUTSIDE AIR INTAKE DUCTS AS SPECIFIED. PROVIDE ACOUSTICAL DUCT LINER AS SPECIFIED IN ALL SUPPLY DUCTS BETWEEN HP UNITS AND ZONE DAMPERS, RETURN DUCTS BETWEEN HP UNITS AND NEAREST RETURN GRILLE, AND BYPASS DUCTS. CAP DUCT BRANCHES PROVIDED FOR FUTURE EXPANSION. CONNECT ZONE DAMPER BOXES TO NEW THERMOSTATS AS SHOWN.

2. PROVIDE NEW SUPPLY DIFFUSERS AND RETURN GRILLES AS SHOWN. INSTALL NEW MANUAL BALANCING DAMPERS WHERE INDICATED. USE FLEXIBLE CONNECTORS FOR DIFFUSER RUNOUTS.

3. PROVIDE NEW PENTHOUSE LOUVER ON EXISTING ROOF CURB FORMERLY USED BY EF-10. SEE ARCHITECHURAL SHEETS FOR ROOF CURB DETAIL.

4. PROVIDE NEW FIRE DAMPERS WHERE INDICATED. SEE SPECIFICATIONS FOR FIRE DAMPER REQUIREMENTS.

5. PROVIDE TWO NEW HEAT PUMPS AS SHOWN. PIPE HEAT PUMP CONDENSATE DRAIN LINES BACK TO NEAREST FLOOR DRAIN IN MECHANICAL ROOM.

6. PROVIDE NEW CONDENSING WATER PIPING AS INDICATED. CONNECT TO EXISTING 2 " DIAMETER STEEL CONDENSING WATER CONNECTIONS IN MECHANICAL ROOM.

7. REPLACE TWO EXISTING HOT WATER PUMPS WITH NEW INCREASED CAPACITY PUMPS. SEE EQUIPMENT SCHEDULE FOR PUMP PERFORMANCE REQUIREMENTS.

8. CONNECT EXISTING LOW PRESSURE STEAM SUPPLY AND CONDENSATE RETURN AS SHOWN. PROVIDE PIPE SLEEVES AND FIRESTOPPING FOR NEW MECHANICAL ROOM WALL PENETRATIONS. INSULATE NEW PIPE AS SPECIFIED.

9. PROVIDE TWO NEW HOT WATER HEATING COILS AS INDICATED. CONNECT TO NEW HOT WATER HEATING SUPPLY AND RETURN LINES.

10. INSULATE HOT WATER, CONDENSING WATER, AND CONDENSATE DRAIN PIPING AS SPECIFIED.

11. CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL LOCATION OF ALL MECHANICAL EQUIPMENT.

NOTE: SEE SHEET M-3 FOR LEGEND AND NEW CARPENTER SHOP DUST COLLECTOR DUCT LAYOUT

GRAPHIC SCALE:
1/8" = 1'-0" 4' 0 4' 8' 12' 16' 20'

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr.	Symbol	Description	Date	Appr.

Designed by: ARG
Drawn by: ARG
Date: June 2003
Solicitation no. W912JV-04-B-0005
Drawing code: F-216-45-01
Rev.
Reviewed by: JOHN WALTER /s/
Submitted by: DAVID DESCOTEAUX /s/ Chief, General Engrg Sect
File name:
Plot date:
Plot scale:

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

U.S. ARMY SOLDIER SYSTEMS CENTER
NATICK, MASSACHUSETTS
BUILDING 45 OFFICE RENOVATION

NEW MECHANICAL EQUIPMENT PLAN

Reference number:
M-2
Sheet 12 of 21

HOT WATER PUMPS							
TAG	ELECTRICAL					SIZE	REMARKS
	RPM	V	PH	HZ	HP		
HWP-1	1750	208/230	3	60	2	1 1/2 BC	BELL AND GOSSETT 313 TB MODEL 1531 OR APPROVED EQUAL
HWP-2	1750	208/230	3	60	2	1 1/2 BC	

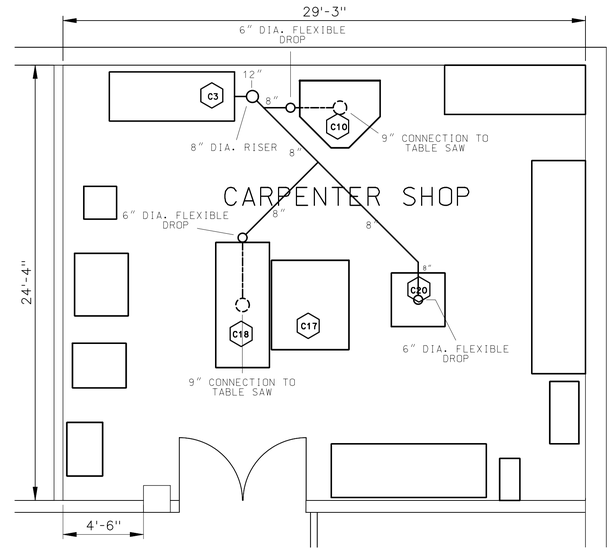
HEAT PUMPS											
TAG	ESP (IN WG)	CONDENSER WATER FLOW (GPM)	AIRFLOW (CFM)	COOLING (TONS)	EER	HEATING (BTUH)	COP	ELECTRICAL			REMARKS
								V	PH	HZ	
HP-1	0.6	15	2000	5	12	76800	4.2	208/230	3	60	CARRIER MODEL 50RHC060ECC50130 OR EQUAL
HP-2	0.6	15	2000	5	12	76800	4.2	208/230	3	60	

DIFFUSERS, GRILLES, LOUVERS						
TAG	SERVICE	SIZE (IN)	NECK SIZE (IN)	MAX. RADIATED NOISE (NC)	MAX dP (IN. WG)	NOTES
SD-1	SUPPLY	24"X24"	8"	12	0.015	STAMPED SQUARE, 4 WAY THROW, OBD
RG-1	RETURN	24"X24"	8"	20	0.03	PERFORATED
RG-2	RETURN	24"X24"	12"	20	0.07	PERFORATED
PL-1	OA INTAKE	24"X24"	-	-	0.05	PENTHOUSE LOUVER, 3.2 SQFT. FREE AREA, 12" HIGH, INSECT SCREEN

HOT WATER COILS											
TAG	AIRFLOW (CFM)	MAX FACE VELOCITY (FPM)	AIR (F)		AIR PD (IN WG)	MIN CAPACITY (MBH)	WATER (F)		HOT WATER FLOW (GPM)	WATER PD (FT WG)	MIN ROWS
			EAT	LAT			EWT	LWT			
HC-1	2000	500	68	110	.13	90	200	180	9	0.5	1
HC-2	2000	500	68	110	.13	90	200	180	9	0.5	1

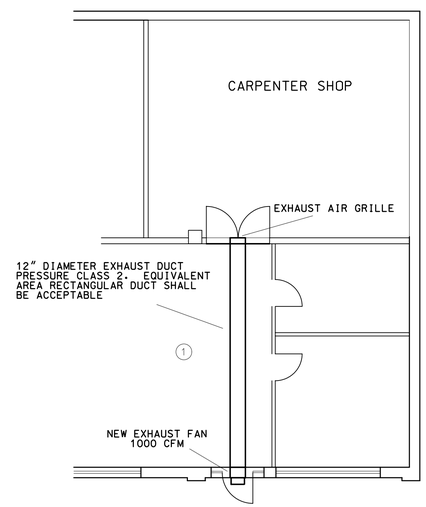
ZONE DAMPERS						
TAG	AIRFLOW (CFM)		MAX dP	INLET SIZE (IN)	MAX. RADIATED NOISE (NC)	REMARKS
	MAX	MIN				
ZD-1	150	20	0.02	4	24	TWO POSITION OPERATION
ZD-2	1000	200	0.04	12	22	
ZD-3	1500	300	0.09	12	22	

DUST VACUUM EQUIPMENT SCHEDULE					
TAG	DESCRIPTION	MODEL NO.	CFM	FITTING	REMARKS
C-10	RADIAL ARM SAW	DEWALT 3 HP 30 AMP 230 VAC	800	9"	PROVIDE NEW 9" TO 6" REDUCER TO CONNECT TO FLEXIBLE DROP
C-18	TABLE SAW	ROCKWELL DELTA TYPE BFR	800	9"	PROVIDE NEW 9" TO 6" REDUCER TO CONNECT TO FLEXIBLE DROP
C-20	PLAINER	ROCKWELL INVICTA 22500	1100	-	-



NEW CARPENTER SHOP

NOT TO SCALE



NEW EXHAUST FAN SCHEMATIC

NOT TO SCALE

1. PROVIDE WALL MOUNTED CENTRIFUGAL EXHAUST FAN AS SHOWN. FAN SHALL BE 1000 CFM CAPACITY, 1725 RPM DIRECT DRIVE, WITH 1/4 HP MOTOR. FAN SHALL BE UL LISTED FOR ELECTRICAL COMPONENTS. FAN SHALL BE PROVIDED WITH BIRD SCREEN, BACK DRAFT DAMPER, WALL MOUNTING PLATE, AND LOCAL DISCONNECT SWITCH. FAN SHALL BE CONTROLLED BY A MANUAL ON/OFF SWITCH LOCATED ON THE WALL INSIDE THE CARPENTER'S SHOP. FAN SHALL BE GREENHECK CW-101-A OR APPROVED EQUAL.

LEGEND

SYMBOL	DESCRIPTION
M	MOTORIZED DAMPER
	SUPPLY DIFFUSER
	RETURN GRILLE
T	THERMOSTAT
	MANUAL BALANCING DAMPER
	SUPPLY DUCT
	RETURN DUCT
	BYPASS DUCT
	CONNECT TO EXISTING WORK
HWS	HOT WATER SUPPLY PIPE
HWR	HOT WATER RETURN PIPE
CWS	CONDENSING WATER SUPPLY PIPE
CWR	CONDENSING WATER RETURN PIPE
CD	CONDENSATE DRAIN PIPE
S	STEAM SUPPLY PIPE

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr.	Symbol	Description	Date	Appr.

Rev.

Date: June 2003
Solicitation no. W912WJ-04-B-0005
Drawing code: F-228-45-01
File name:
Plot width:
Plot scale:

Designed by: ARG
Drawn by: ARG
Reviewed by:
JOHN WALTZER /s/ Supervisory Engr.
DAVID DESCOTEAUX /s/ Chief, General Engrg Sect

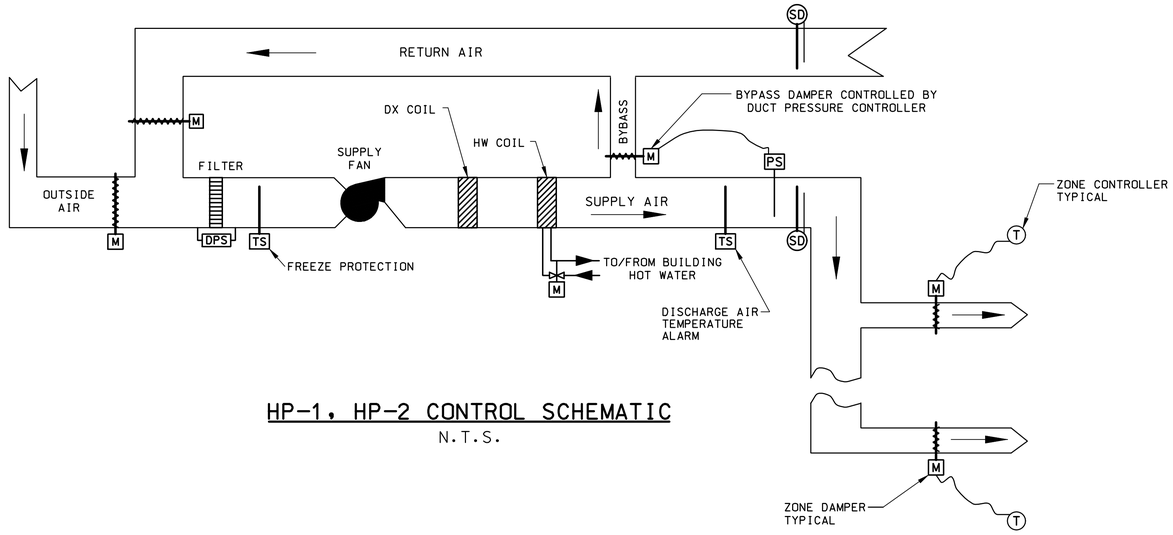
U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

U.S. ARMY SOLDIER SYSTEMS CENTER
NATICK, MASSACHUSETTS
BUILDING 45 OFFICE RENOVATION

MECHANICAL EQUIPMENT SCHEDULES

Reference number:
M-3

Sheet 13 of 21



HP-1, HP-2 CONTROL SCHEMATIC

N.T.S.

1. HVAC CONTROLS SHALL BE CARRIER COMFORT NETWORK VVT SYSTEM OR APPROVED EQUAL. A COMPLETE HVAC CONTROL SYSTEM SHALL BE PROVIDED FOR EACH HEAT PUMP SYSTEM TO INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING COMPONENTS: MONITOR THERMOSTAT, ZONE CONTROLLERS, ZONE DAMPERS, BYPASS CONTROLLER, DUCT PRESSURE SENSOR, BYPASS DAMPER, DUCT TEMPERATURE SENSORS, DUCT SMOKE DETECTORS, AND RELAY PACKS. IN ADDITION, ONE CARRIER TELINK REMOTE NETWORK INTERFACE SHALL BE PROVIDED. THE GOVERNMENT WILL PROVIDE A DEDICATED PHONE LINE TO CONNECT THE TELINK REMOTE NETWORK INTERFACE TO THE BASE MANAGEMENT SYSTEM. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONNECTING AND VERIFYING PROPER SYSTEM OPERATION.

2. HP-1, HP-2 SEQUENCE OF CONTROL:

UNIT OPERATION - THE WATER SOURCE HEAT PUMP UNIT SHALL OPERATE AS A COOLING ONLY UNIT.
SPACE HEATING SHALL BE PROVIDED BY A HOT WATER COIL MOUNTED IN THE DISCHARGE AIR DUCTWORK.
SWITCH OVER BETWEEN COOLING MODE AND HEATING MODE SHALL BE MANUAL.

DURING OCCUPIED PERIODS, UNIT SUPPLY FAN SHALL RUN CONTINUOUSLY. RETURN AND OUTSIDE AIR DAMPERS SHALL BE POSITIONED TO ALLOW DESIGN VENTILATION AIR FLOW. BYPASS DAMPER BETWEEN SUPPLY AND RETURN DUCTS SHALL MODULATE TO MAINTAIN SUPPLY AIR SETPOINT PRESSURE AS MEASURED BY SENSOR IN SUPPLY DUCT. DURING UNOCCUPIED PERIODS, OUTSIDE AIR DAMPER SHALL BE CLOSED AND RETURN AIR DAMPER SHALL BE OPEN. SUPPLY FAN SHALL CYCLE ON AND OFF TO MAINTAIN ZONE SETPOINT TEMPERATURES.

THE VVT SYSTEM SHALL CONTROL THE HEAT PUMP UNITS AND HOT WATER COILS TO PROVIDE CONDITIONED SUPPLY AIR BASED ON ZONE DEMAND.

UNIT SHUTDOWN - THE SUPPLY FAN SHALL STOP, THE OUTSIDE AIR DAMPER SHALL CLOSE, THE COOLING SYSTEM SHALL LOCKOUT THE COMPRESSOR, AND THE HEATING CONTROL VALVE SHALL BE POSITIONED TO BYPASS THE HOT WATER COIL.

ZONE CONTROLS - ZONE CONTROLLERS SHALL OPERATE ZONE DAMPERS TO MAINTAIN ZONE SETPOINT TEMPERATURES.

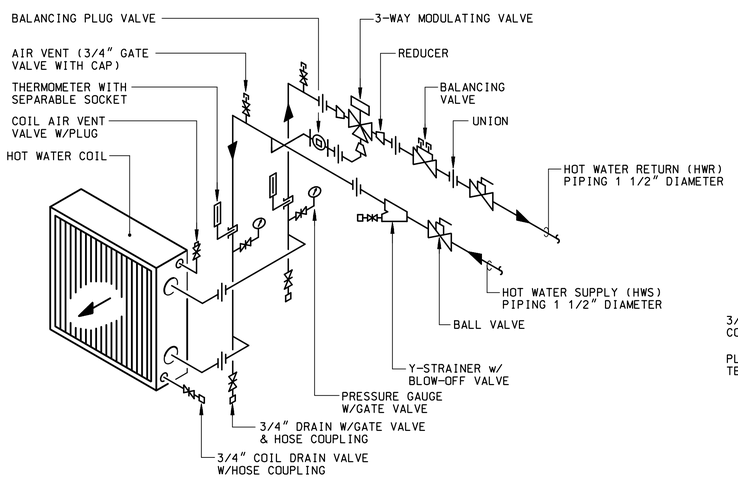
SAFETY CONTROLS

SMOKE ALARM - WHEN SMOKE DETECTORS SENSE SMOKE IN SUPPLY OR RETURN DUCTWORK, UNIT SHUT DOWN SHALL BE INITIATED AND THE CONTROL SYSTEM SHALL ALARM. DUCT SMOKE DETECTORS SHALL ALSO BE TIED INTO EXISTING BUILDING FIRE ALARM PANEL.

FREEZE PROTECTION - IF MIXED AIR TEMPERATURE FALLS BELOW 40 DEGREES, UNIT SHUTDOWN SHALL BE INITIATED, AND THE CONTROL SYSTEM SHALL ALARM.

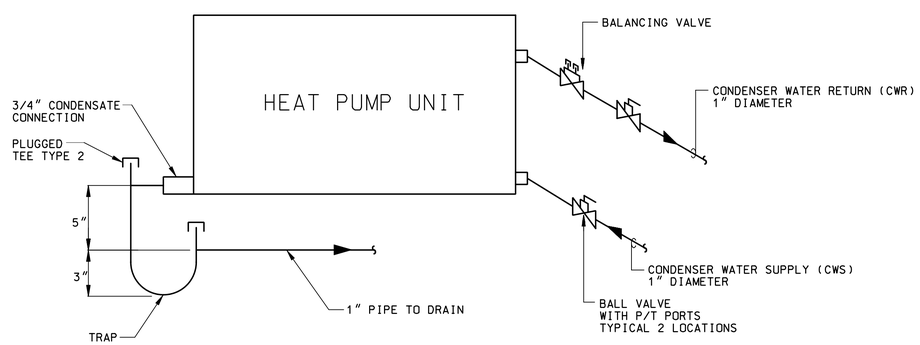
IN ADDITION TO SMOKE AND FREEZE ALARMS, THE FOLLOWING SITUATIONS SHALL ALSO GENERATE A CONTROL SYSTEM ALARM AND UNIT SHUTDOWN.

COMPRESSOR FAULT
SUPPLY FAN FAULT
REFRIGERANT PRESSURE HIGH OR LOW LIMIT
SUPPLY VOLTAGE HIGH OR LOW LIMIT
CONDENSATE PAN OVERFLOW
DISCHARGE AIR PRESSURE HIGH LIMIT
DISCHARGE AIR TEMPERATURE HIGH OR LOW LIMIT
ROOM TEMPERATURE SENSOR HIGH OR LOW LIMIT (ALARM ONLY)
DIRTY FILTER (ALARM ONLY)



HOT WATER COIL PIPING

N.T.S.



HEAT PUMP UNIT PIPING CONNECTIONS

N.T.S.

LEGEND

SYMBOL	DESCRIPTION
M	MOTORIZED DAMPER
M	MOTORIZED VALVE
TS	DUCT TEMPERATURE SENSOR
PS	DUCT PRESSURE SENSOR
SD	DUCT SMOKE DETECTOR
T	ZONE TEMPERATURE CONTROLLER
DPS	DIFFERENTIAL PRESSURE SWITCH

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr.	Symbol	Description	Date	Appr.

Designed by: DAG
Drawn by: DSH
Reviewed by: JOHN WUTZER /s/
Submitted by: DAVID DESCOTEAUX /s/
Chief, General Engrg. Sect.
Date: June 2003
Rev: 0
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Drawing code: F-228-45-01
File name: B45M002.S13
Plot date: 1/4 "= 1'-0"
Plot scale: 1/4 "= 1'-0"

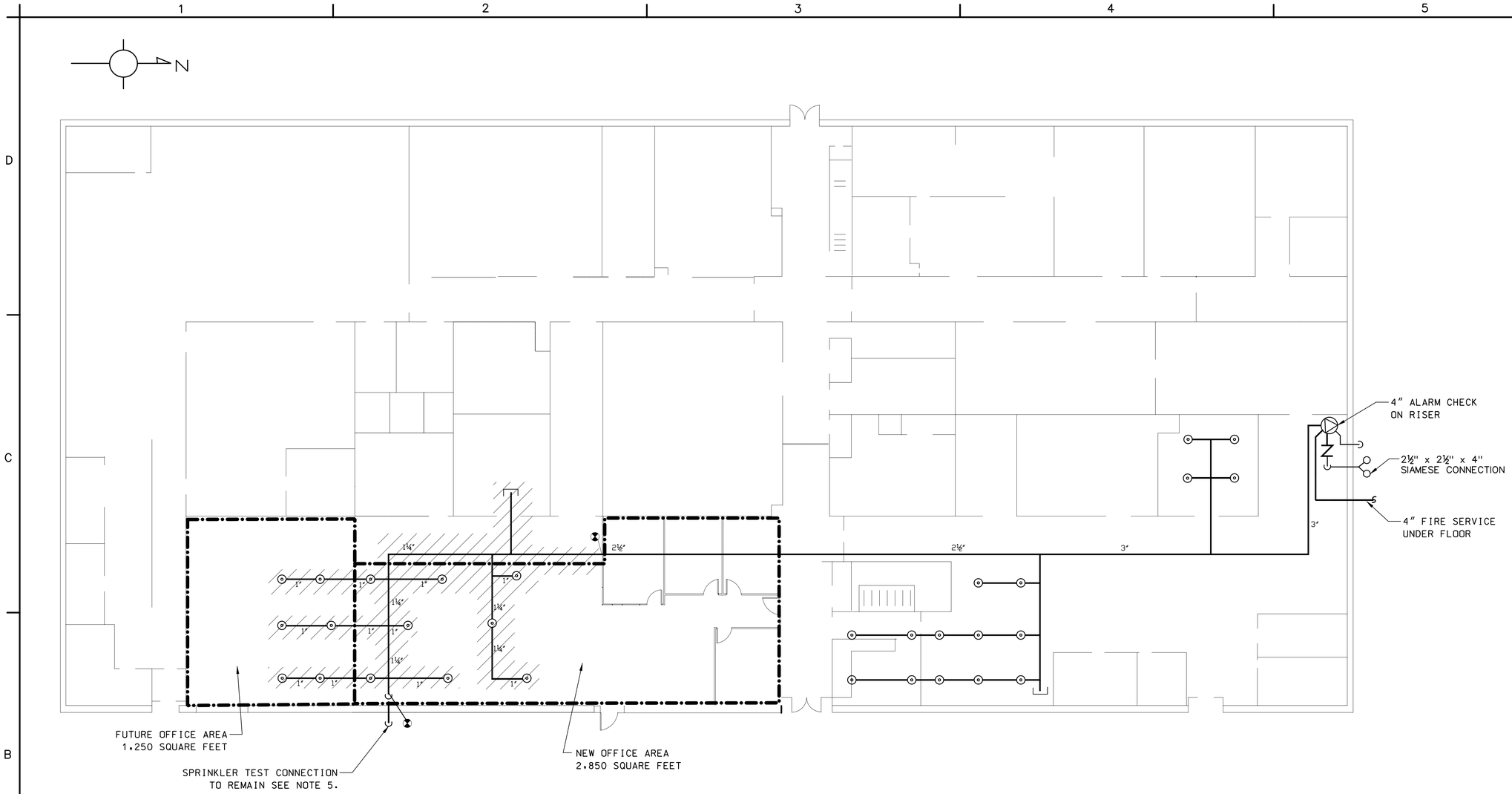
U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

U.S. ARMY SOLDIER SYSTEMS CENTER
NATICK, MASSACHUSETTS
BUILDING 45 OFFICE RENOVATION

HVAC CONTROL SYSTEM, SCHEMATIC AND, MECHANICAL DETAILS

Reference number:
M-4

Sheet 14 of 21



BUILDING 45 EXISTING SPRINKLER PLAN

3/32" = 1'-0"

SPRINKLER SYSTEM NOTES:

1. REMOVE EXISTING SPRINKLERS AND PIPING AS INDICATED.
   EXTEND AND MODIFY EXISTING WET PIPE SPRINKLER SYSTEM TO PROVIDE COVERAGE FOR NEW OFFICE AREA SHOWN. SPRINKLER SYSTEM MODIFICATIONS SHALL BE DESIGNED BY A LICENSED FIRE PROTECTION ENGINEER IN ACCORDANCE WITH NFPA 13.

2. FLOW TEST DATA FOR NEAREST HYDRANT ON NORTH SIDE OF BUILDING (HYDRANT NUMBER 3) IS:
   STATIC PRESSURE - 63 PSI
   RESIDUAL PRESSURE - 58 PSI
   FLOW AT 58 PSI RESIDUAL PRESSURE - 1272 GPM.
   THIS FLOW INFORMATION IS FOR DESIGN PURPOSES ONLY.
   THE CONTRACTOR SHALL OBTAIN AN INDEPENDANT HYDRANT FLOW TEST TO VERIFY ACTUAL FLOWS.

3. NEW OFFICE AREA AND FUTURE OFFICE AREA ARE CLASSIFIED AS LIGHT HAZARD. DESIGN NEW PORTION OF SYSTEM TO INCLUDE FUTURE OFFICE AREA. INSTALLATION OF SPRINKLERS IN FUTURE OFFICE AREA IS NOT REQUIRED UNDER THIS CONTRACT. EXTEND SPRINKLER SUPPLY PIPE INTO FUTURE OFFICE AREA AND CAP.

4. NEW PORTIONS OF SYSTEM SHALL BE PROVIDED WITH PENDENT SPRINKLERS EXTENDING THROUGH THE SUSPENDED CEILING.

5. REPLACE EXISTING GLOBE VALVE ON SPRINKLER TEST CONNECTION IN NEW OFFICE AREA WITH FULL PORT BALL VALVE.

KEY

- EXISTING SPRINKLERS
- EXISTING PIPING & SPRINKLERS TO BE REMOVED
- CONNECT NEW WORK TO EXISTING

GRAPHIC SCALE:

3/32" = 1'-0" 12' 6' 0 12'

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr.	Symbol	Description	Date	Appr.

Date: June 2003
Rev: 0
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File name: B45M03-S14
Plot date:
Plot scale: 3/32" = 1'-0"

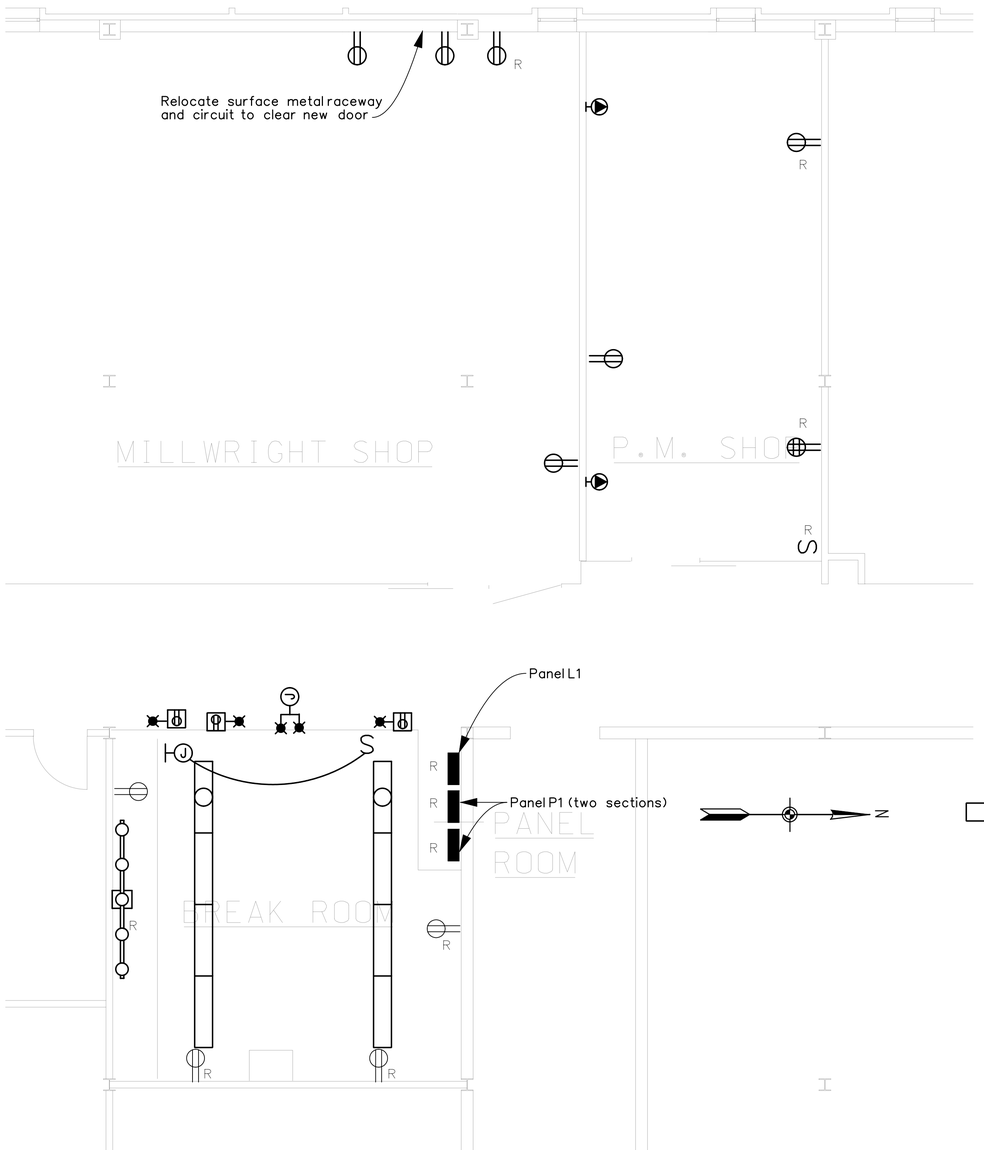
Designed by: DAG
Drawn by: DSH
Reviewed by: JOHN NUTTER /s/
Submitted by: DAVID DESCOTEAUX /s/
Chief, General Engrg Sect

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

U.S. ARMY SOLDIER SYSTEMS CENTER
NATICK, MASSACHUSETTS
BUILDING 45 OFFICE RENOVATION

SPRINKLER SYSTEM MODIFICATIONS

Reference number:
M-5
Sheet 15 of 21



ELECTRICAL DEMOLITION PLAN, BLDG 45, WEST

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

LEGEND

- Multiple outlet strip (Plugmold), NEMA 5-15. Mount above benches and counters.
- Duplex receptacle, NEMA 5, floor mounted, wall mounted. Floor mount stubbed on conduit 6" high. Wall: 12" high.
- Quadruplex receptacle, NEMA 5, wall mounted. Existing only.
- Single receptacle, NEMA 5: floor mounted, wall mounted. Existing only.
- 20A L6 — Single receptacle, special: floor mounted, wall or pendant mounted with NEMA Type & current rating. Height similar.
- S — Switch, toggle
- Conduit through floor to equipment
- P — Pendant drop cord plug or connection. See detail below.
- Disconnect switch
- Motor starter
- J — Junction box: ceiling mounted, wall mounted
- T — Thermostat
- Pushbutton station (existing only to be removed)
- M UH — Connection to Motor or controller. UH indicates Unit Heater, otherwise see sheet M-3 for tags.
- Panelboard, surface mounted
- Panelboard, flush mounted
- COM — Telephone cabinet (existing only to remain)
- Specific note/callout
- Lighting fixture, pendant mounted. New fixtures shall be 8'-0" above finished floor.
- Lighting fixture, recessed, 2'x4'
- Lighting fixture, recessed, 2'x2'
- Lighting fixture with emergency battery unit
- Exit lighting fixture
- FCP — Fire Alarm Control Panel (existing only to remain)
- Fire alarm Gong (existing only to remain)
- Fire alarm Horn/Strobe
- R — "R" next to fixture, device, or equipment means it is existing to remain.
- Wiring, exposed
- Wiring continues
- Telephone outlet

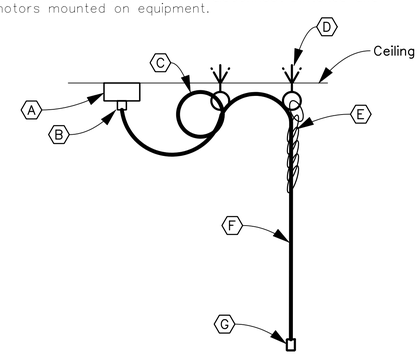
NOTES

Applies to all sheets.

1. Electrical equipment, fixtures, and devices shown on existing plans shall be removed unless noted otherwise. Remove wiring (conductors and raceway) from devices to respective panelboard or junction box (if circuit is fed from an undemolished area). All equipment, fixtures, and devices shown on new plans or indicated by specific notes are new unless noted otherwise.
2. Floor mounted devices are supported on conduits stubbed up through floor. If conduits are embedded in slab, cut conduit flush with floor and patch floor.
3. Heights indicated are measured above finished floor (AFF). Dimension in inches shown next to device is the height if not the default height shown in the legend.
4. Wiring is shown when exposed to show association with other devices. Wiring is not shown when concealed by structure or obscured by equipment.
5. Remove or relocate electrical devices and wiring, even though not shown, that interfere with the construction of the new office and renovated shop spaces.
6. Lower case letter next to light fixture or switch designates controlling switch or fixture controlled.
7. Number next to device or fixture designates the circuit number.
8. Provide Nameplate for designations in quotation marks, " ".

NEW PENDANT DROP CORD PLUG NOTES

- A — 4" sq x 2" outlet box (min.) with wiring to panelboard
- B — Outlet box cover w/cord grip connection
- C — Coil 6' of slack cable and secure w/tie wrap to 3/8" eye bolt and 3/8" machine bolt anchor
- D — 3/8" eye bolt and machine bolt anchor
- E — Wire mesh cord grip
- F — Flexible cable, heavy duty, size and number of conductors to match the receptacle or circuit ampacity.
- G — Connector receptacle body, complete w/ cap and cable clamp mounted 6'-6" above finished floor, NEMA Type L5-20R unless noted otherwise.
- H — Similar for cord connection to disconnect switches and motors mounted on equipment.



NEW PENDANT DROP CORD PLUG

NOT TO SCALE

GRAPHIC SCALE: 1/4" = 1'-0" 4' 0 4' 8'

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr.	Symbol	Description	Date	Appr.

Designed by: TLA
Drawn by: TLA
Reviewed by: FRANK TINER /s/
Submitted by: DAVID DESCOTEAUX /s/ Chief, General Engrg Sect

Date: June 2003
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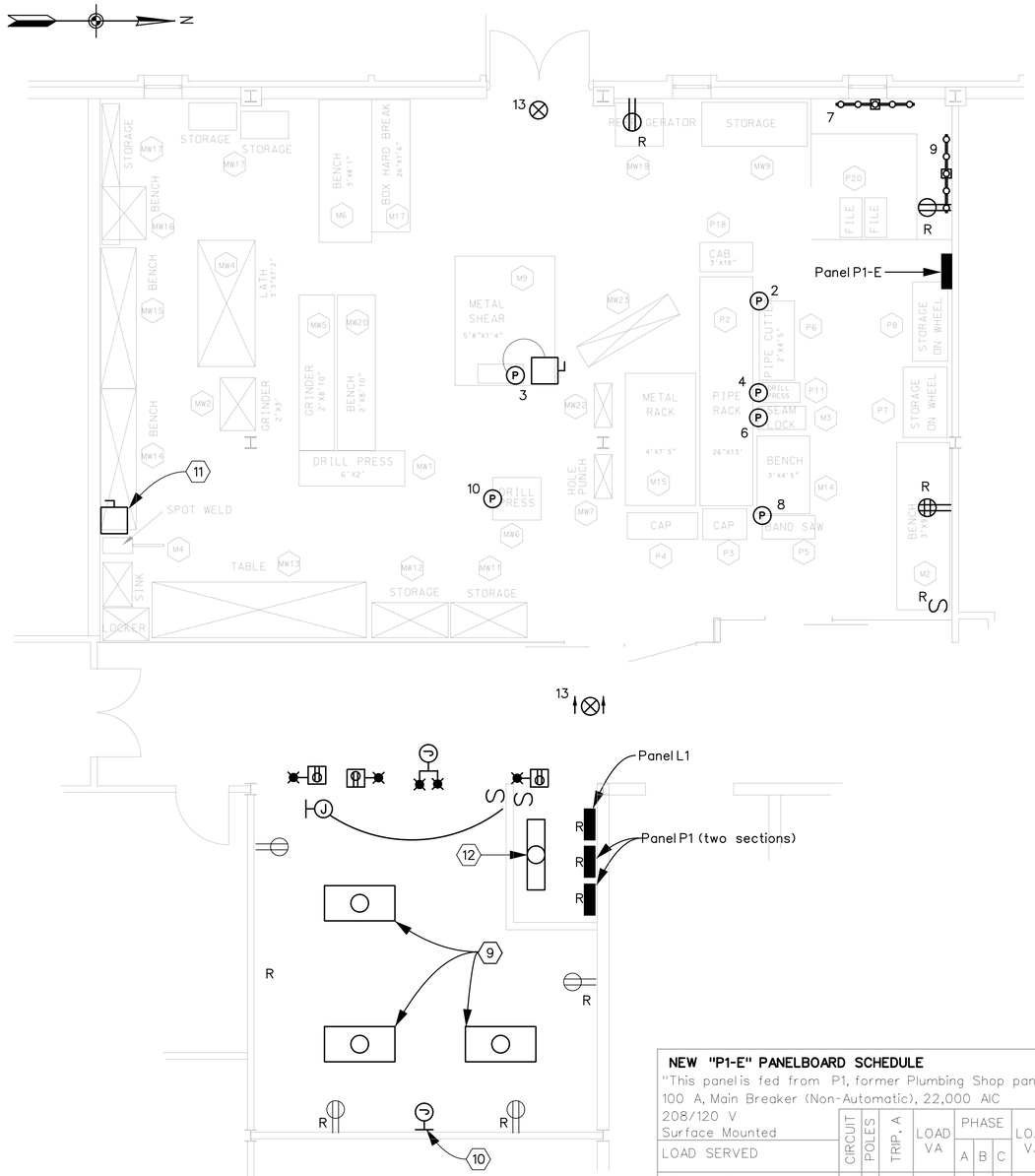
U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

U.S. ARMY SOLDIER SYSTEMS CENTER
NATICK, MASSACHUSETTS
BUILDING 45 OFFICE RENOVATION

ELECTRICAL DEMOLITION PLAN, BUILDING 45, WEST; LEGEND: & PENDANT DROP CORD DETAIL

Reference number:
E-1

Sheet 16 of 21



NEW ELECTRICAL PLAN, BLDG 45, WEST

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

TYPE: PF3

FEATURES
LAMP TYPE: F32T8/75 CRI
PROFILE: 3 LAMP
MOUNTING: AIRCRAFT CABLE

SHIELDING: SPECULAR, PERFORATED DOWN, OPEN UP
BALLAST: ELECTRONIC, 95% P.F., <20% T.H.D.
NOM. DIMENSIONS: (2½" H X 9" W X 4' L)

GENERAL DESCRIPTION
HOUSING: ONE PIECE DIE-FORMED COLD ROLLED STEEL UP TO 12' FOR CONTINUOUS ROWS, MINIMUM
REFLECTORS: DIE-FORMED HIGH REFLECTANCE ALUMINUM
ELECTRICAL: 120 VOLT BALLAST
FINISH: PAINTED BAKED ENAMEL, WHITE STANDARD
SHALL BE SIMILAR OR EQUAL TO CORELITE IRIDIUM MODEL • IP-SP-3T8-2C-120-AC18-T1
FIXTURE SHALL HAVE ADJUSTABLE SUSPENSION LENGTH but shall be mounted 18" below the ceiling, i.e., 8' AFF

PENDANT MOUNTED STEEL DIRECT/INDIRECT FLUORESCENT

CORPS OF ENGINEERS DEPARTMENT OF THE ARMY

TYPE: XF1

FEATURES
LAMP TYPE: F32T8/RS
PROFILE: 1 LAMP
MOUNTING: CONCEALED IN FIXTURE
OTHER: CHARGING INDICATOR LIGHT; TEST SWITCH
BATTERY: 90 MINUTE OPERATION
NOM. DIMENSIONS 38 mm X 64 mm X 241 mm (1½" W x 2½" H x 9½")

GENERAL DESCRIPTION
HOUSING: 22 GAUGE RED PAINTED STEEL ENCLOSURE
ELECTRICAL: 120 VOLT
BATTERY: HIGH TEMPERATURE NICKEL CADMIUM

EMERGENCY BATTERY PACK UNIT

CORPS OF ENGINEERS DEPARTMENT OF THE ARMY

TYPE: RF9

FEATURES
LAMP TYPE: F32T8/75 CRI
PROFILE: 3 LAMP
SHIELDING: ACRYLIC PRISMATIC LENS
BALLAST: ELECTRONIC
NOM. DIMENSIONS 610 mm X 1219 mm X 152 mm (24" W X 4' L X 6" D)

GENERAL DESCRIPTION
HOUSING: COLD ROLLED STEEL, FLANGE TO COORDINATE WITH CEILING; EXTRUDED ALUMINUM LENS FRAME, HINGED REMOVAL AND SPRING-LOADED CATCHES
MOUNTING: RECESSED INTO STANDARD NON METRIC GRID
REFLECTORS: HIGH REFLECTANCE GLOSS WHITE
ELECTRICAL: 120 VOLT BALLAST
EFFICIENCY: 80%

RECESSED LENSED 2' X 4' FLUORESCENT TROFFER

CORPS OF ENGINEERS DEPARTMENT OF THE ARMY

TYPE: SF4

FEATURES
LAMP TYPE: F32T8/75 CRI
PROFILE: 2 LAMP
SHIELDING: 4.8 mm (0.187") THICK OPAL ACRYLIC INJECTION MOLDED LENS
BALLAST: ELECTRONIC
OPTION, MOUNTING: PENDANT
NOM. DIMENSIONS 356 mm X 1295 mm X 102 mm (14" W X 51" L X 4" D)

GENERAL DESCRIPTION
HOUSING: FORMED COLD ROLLED STEEL
REFLECTORS: GLOSS WHITE REFLECTOR AND INTERNAL HOUSING
ELECTRICAL: 120 VOLT BALLAST
FINISH: WHITE ENAMEL OR POLYESTER POWDER COAT

SURFACE MOUNTED 1' X 4' DROP OPAL LENS

CORPS OF ENGINEERS DEPARTMENT OF THE ARMY

TYPE: XL1

FEATURES
LAMP TYPE: LED
MOUNTING: UNIVERSAL
SHIELDING: FLAT SHEET ACRYLIC
LETTERS: RED
FINISH: WHITE
ELECTRICAL: 120 VOLT
OTHER: MINIMUM BRIGHTNESS 20 CD/SQ METER ON FACE OF SIGN.
NOM. DIMENSIONS 289 mm X 200 mm X 44 mm (11⅜" W X 7⅞" H X 1¾" D)

GENERAL DESCRIPTION
HOUSING: 20 GA. COLD ROLLED STEEL, HARDWARE FINISH TO MATCH HOUSING FINISH. 152 mm (6") H LETTERS WITH 19 mm (3/4") STROKE. DIRECTIONAL ARROWS AS REQUIRED

LED STENCIL FACE EXIT SIGN

LIGHTING FIXTURES

NOT TO SCALE

NEW "P1-E" PANELBOARD SCHEDULE

"This panel is fed from P1, former Plumbing Shop panel circuit 10, 3P 100A breaker"
100 A, Main Breaker (Non-Automatic), 22,000 AIC
208/120 V
Surface Mounted

R = Receptacle(s)
• = bus connection
V = Volts, A = Amperes
× =same as circuit above

LOAD SERVED	CIRCUIT	POLES	TRIP, A	LOAD VA	PHASE A	PHASE B	PHASE C	LOAD VA	TRIP, A	POLES	CIRCUIT	LOAD SERVED
M9 Metal Shear	1	3	20	800	•			1200	20	1	2	P6 Pipe Cutter
×	×	×	×	800		•		1200	20	1	4	P11 Drill Press
×	×	×	×	800			•	1200	20	1	6	M3 Seam Lock
R, Plugmold	7	1	20	500	•			1200	20	1	8	P5 Band Saw
R, Plugmold	9	1	20	500		•		1200	20	1	10	MW6 Drill Press
R, below panelboard	11	1	20	800			•	500	20	1	12	Spare
EXIT lights	13	1	20	100	•			500	20	1	14	Spare
Spare	15	1	20	500		•		500	20	1	16	Spare
Spare	17	1	20	500			•	300	-	-	18	Provision for breaker
Spare	19	1	20	500	•			300	-	-	20	Provision for breaker
Spare	21	1	20	500		•		300	-	-	22	Provision for breaker
Spare	23	1	20	500			•	300	-	-	24	Provision for breaker
Spare	25	1	20	500	•			300	-	-	26	Provision for breaker
Provision for breaker	27	-	-	300		•		300	-	-	28	Provision for breaker
Provision for breaker	29	-	-	300			•	300	-	-	30	Provision for breaker
Total Phase A load VA = 4400								Total "connected" load = 15800 VA				
Total Phase B load VA = 5200								Connected current load ~ 44 A/phase				
Total Phase C load VA = 6200												

ADDITIONAL NOTES

9. Type RF9 fixture, reconnect to existing lighting circuit for room.
10. Connection circuit for kitchenette unit. Mount 12" AFF or as required by manufacturer.
11. Reconnect spot welder & disconnect switch to "P1 Plumbing Shop" panel circuit 1 with 1-1/4", 2-•2, •8G.
12. Type SF4 fixture, connect to Break Room lighting circuit. Mount 8' AFF.
13. Provide NEMA L5-20R receptacles for drop cords and matching plugs for 120V equipment. Metal Shear, M9, will be hardwired.

GRAPHIC SCALE:
1/4" = 1'-0" 4' 0 4' 8'

US Army Corps of Engineers
New England District

Symbol	Description	Symbol	Date	Appr.	Description	Date	Appr.

Date: June 2003
Rev.
Solicitation no. W912WJ-04-B-0005
Drawing code: F-228-45-01
File name:
Plot width:
Plot scale:

Designed by: TLA
Drawn by: TLA
Reviewed by: FRANK TURNER /s/
Submitted by: DAVID DESCOTEAUX /s/
Chief, General Engrg Sect

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

U.S. ARMY SOLDIER SYSTEMS CENTER
NATICK, MASSACHUSETTS
BUILDING 45 OFFICE RENOVATION

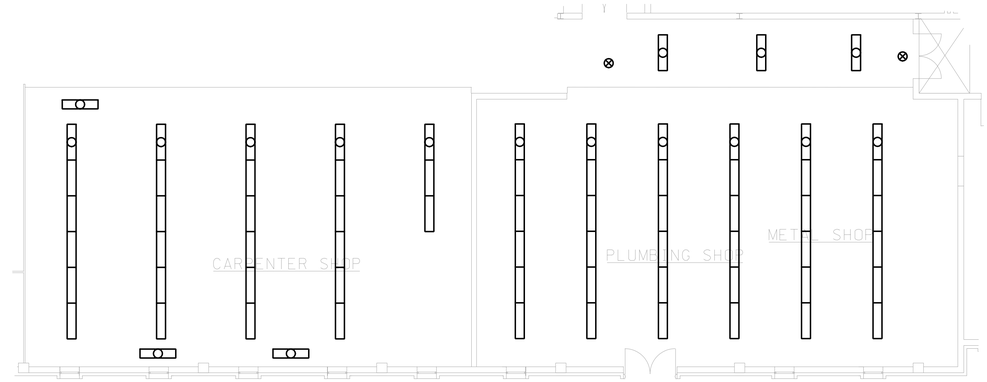
ELECTRICAL NEW PLAN, BUILDING 45, WEST; AND LIGHTING FIXTURE DETAILS

Reference number:
E-2
Sheet 17 of 21

NOTES:

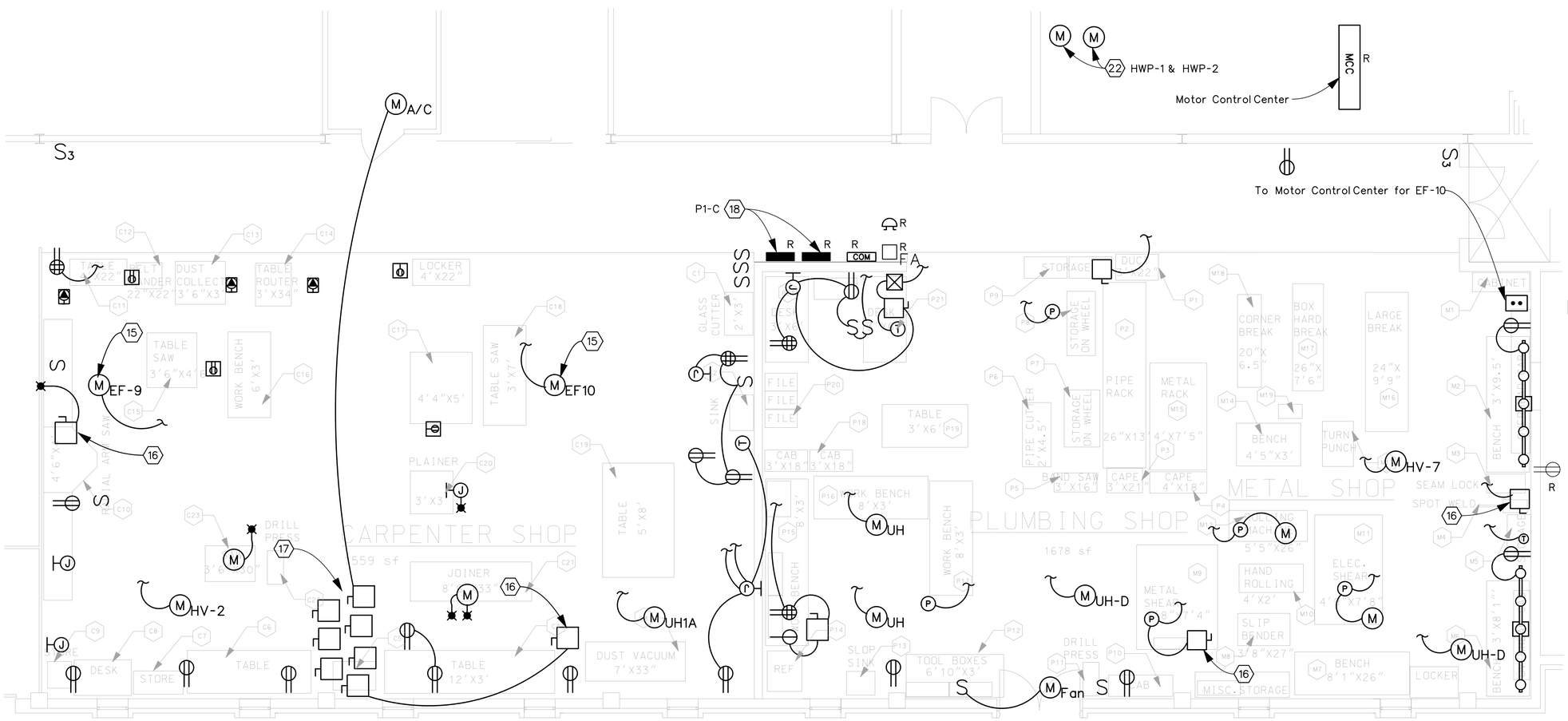
15. Disconnect and remove all wiring associated with roof mounted exhaust fans.
16. Demolish wiring to switch and relocate switch with associated equipment.
17. A 100A disconnect switch fed from circuit 10 panel P1-C feeds the other switches through a common wireway. These switches feed C3, C15, C18, C20, C21, & the A/C unit across the corridor from the Carpenter Shop.
18. This is two section panelboard P1-C labeled as PLUMBING SHOP and CARPENTER SHOP.

Notes 19 and 20 are reserved.



LIGHTING DEMOLITION PLAN

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



POWER DEMOLITION PLAN

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

GRAPHIC SCALE:
1/8" = 1'-0" 4' 0 4' 8' 12' 16' 20'

GRAPHIC SCALE:
1/4" = 1'-0" 4' 0 4' 8'

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New England District

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Date: June 2003
Solicitation no. W912WJ-04-B-0005
Drawing code: F-228-45-01
File name:
Plot width:
Plot scale: 1/4" = 1'-0"

Designed by: TLA
Drawn by: TLA
Reviewed by: RICHARD TURNER /s/
Submitted by: DAVID DESCOTEAUX /s/
Chief, General Engrg. Sect.

U.S. ARMY ENGINEER DISTRICT
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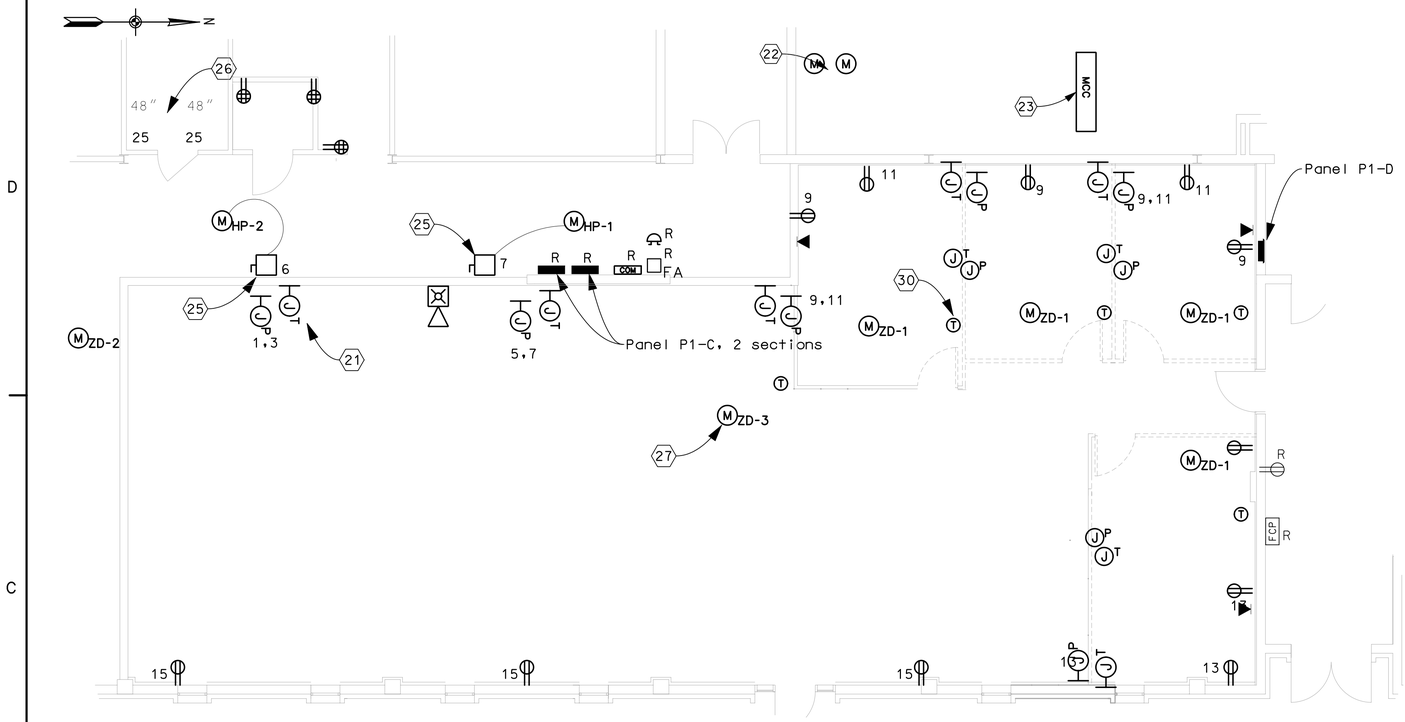
U.S. ARMY SOLDIER SYSTEMS CENTER
NATICK, MASSACHUSETTS
BUILDING 45 OFFICE RENOVATION

ELECTRICAL DEMOLITION PLANS, BUILDING 45, EAST

Reference number:
E-3

Sheet 18 of 21



NEW POWER & MISCELLANEOUS PLAN

SCALE: 3/16" = 1'-0"

NEW "P1-D" PANELBOARD SCHEDULE

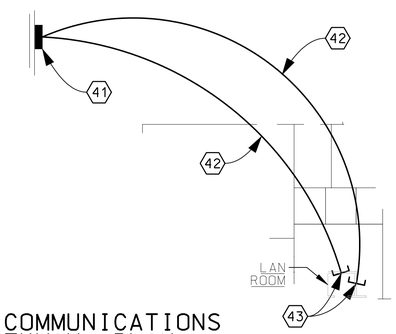
22,000 AIC, (Amperes Interrupting Capacity)
225 A, Main Breaker (Non-Automatic)
208/120 V
Flush Mounted

R = Receptacle(s)
L = Lighting
+ = bus connection
V = Volts, A = Amperes
* =same as circuit above

LOAD SERVED	CIRCUIT	POLES	TRIP, A	LOAD VA	PHASE A	PHASE B	PHASE C	LOAD VA	TRIP, A	POLES	CIRCUIT	LOAD SERVED
R, South Cubicles	1	1	20	1350	+			1200	20	1	2	L, South
R, South Cubicles	3	1	20	1350		+		1200	20	1	4	L, Middle
R, Middle Cubicles	5	1	20	1350			+	900	20	1	6	L, North
R, Middle Cubicles	7	1	20	1350	+			1400	20	1	8	L, NW, Conf, Off-2,&Off-3
R, NW Cubes,Conf,&Offs	9	1	20	1800		+		1500	20	1	10	L, Northeast & Office-1
R, NW Cubes,Conf,&Offs	11	1	20	1800			+	500	20	1	12	Spare
R, NE Cubicles & Office	13	1	20	1350	+			500	20	1	14	Spare
R, Aisle	15	1	20	500		+		500	20	1	16	Spare
Spare	17	1	20	500			+	500	20	1	18	Spare
Spare	19	1	20	500	+			300	-	-	20	Provision for breaker
Spare	21	1	20	500		+		300	-	-	22	Provision for breaker
Spare	23	1	20	500			+	300	-	-	24	Provision for breaker
Spare	25	1	20	500	+			300	-	-	26	Provision for breaker
Spare	27	1	20	500		+		300	-	-	28	Provision for breaker
Provision for breaker	29	-	-	300			+	300	-	-	30	Provision for breaker

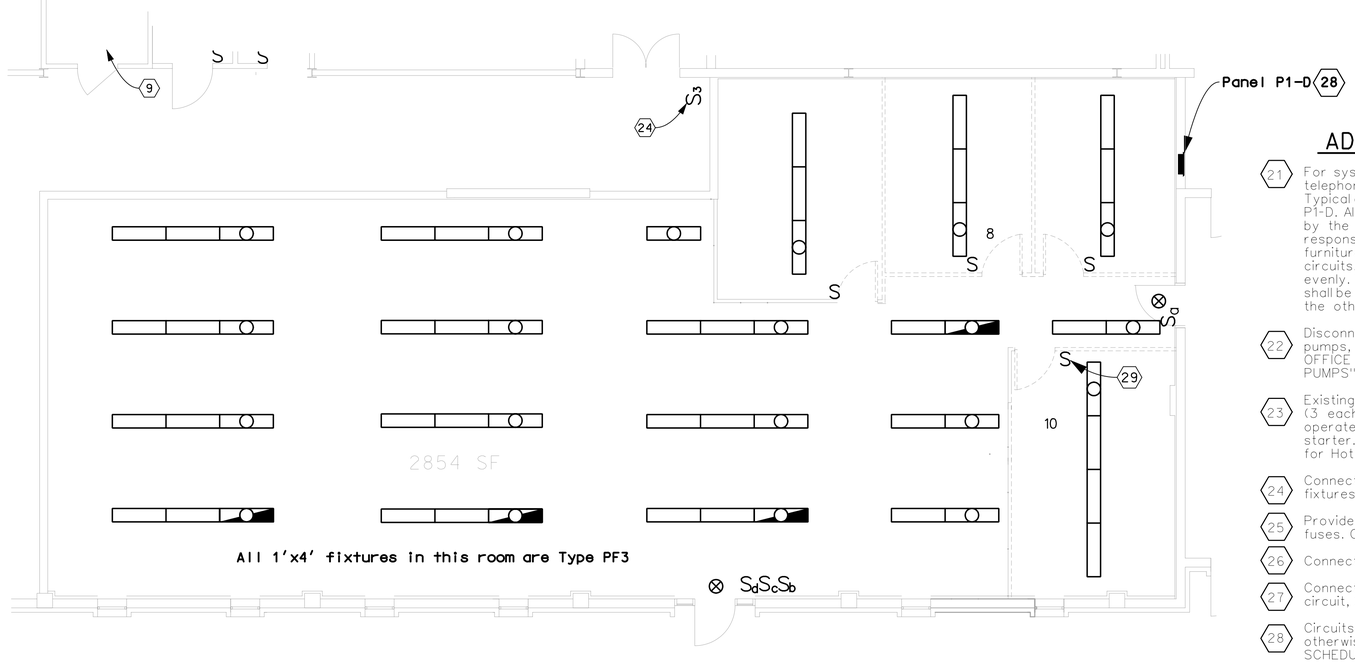
Provide 42 pole panelboard with provisions for future breakers in the rest of the slots.

Total Phase A load VA = 7350	Total "connected" load = 24150 VA
Total Phase B load VA = 7650	Connected current load ~ 67 A/phase
Total Phase C load VA = 9150	



NEW COMMUNICATIONS PATHWAY PLAN

SCALE: 1/16" = 1'-0"



NEW LIGHTING PLAN

SCALE: 3/16" = 1'-0"

ADDITIONAL NOTES

21. For systems furniture power, LAN, and telephone infeed. Mount above the ceiling. Typical of 7. Circuit numbers are to panel P1-D. All furniture infeeds will be furnished by the furniture manufacturer. Contractor is responsible for the connection of the furniture power infeeds to their respective circuits. The circuits shall be divided evenly. The symbol designated with a "T" shall be two junction boxes, one for LAN and the other for telephone.

22. Disconnect existing pumps and reconnect new pumps, HWP-1 & HWP-2). See sheet M-2, "NEW OFFICE PIPING PLAN" and sheet M-3, "HOT WATER PUMPS" equipment schedule.

23. Existing Motor Control Center. Replace fuses (3 each) in motor starter. Only one motor operates at a time so there is only one starter. Correctly size fuses for new motors for Hot Water Pumps (HWP).

24. Connect circuit for existing corridor light fixtures to new switch.

25. Provide 3-pole disconnect switch with 35A fuses. Connect to panel P1-C with 3/4", 3-#8.

26. Connect to panel P1-C.

27. Connect the ZD-x to panel P1-C, 13a (1st circuit, 2nd section). Typical of 6.

28. Circuits are to panel P1-D unless noted otherwise. See sheet E-5 SWITCHBOARD SCHEDULE, circuit #21 for feeder information.

29. Provide junction box above ceiling and connect switch whip to lighting circuit. Typical of 3.

30. Provide thermostat and junction box above ceiling for HVAC control for offices. Typical of 2. Coordinate installation with office furniture contractor.

Notes 31 through 40 are reserved.

41. Existing communications service cabinet located in the basement at column F1.

42. Empty 2" (with pull wire). 90° bends are not allowed. Raceway shall have a gradual sweep. Mount on the underside of the ceiling of the basement.

43. Penetrate directly below the LAN room. Stub end 24" AFF. Mount the LAN raceway inside the LAN room on the west wall. Mount the telephone raceway outside the LAN room on the north wall. Provide a 3/4"x4'x4' painted plywood backboard mounted above the telephone raceway.

Notes 44 through 50 are reserved.

GRAPHIC SCALES:

1/16" = 1'-0" 0' 8' 16' 32' 48'

3/16" = 1'-0" 8' 0 8'

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr.	Symbol	Description	Date	Appr.

Designed by: TLA
Drawn by: TLA
Reviewed by:
FRANK TUNER /s/
Supervisor
DAVID DESGOTEAUX /s/
Chief, General Engrg Sect

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Plot scale: 1/4" = 1'-0"

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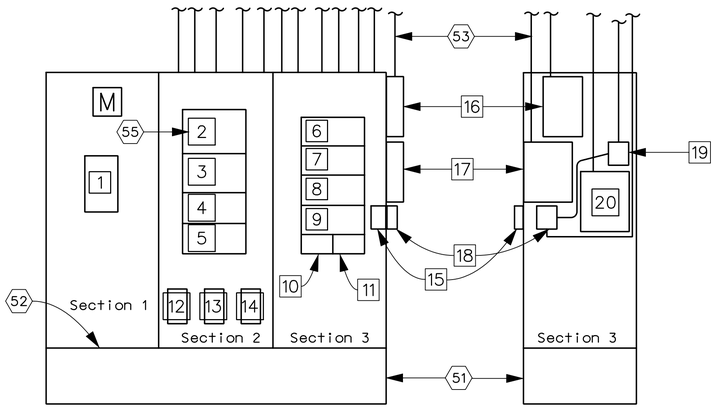
CONCORD, MASSACHUSETTS

U.S. ARMY SOLDIER SYSTEMS CENTER
NATICK, MASSACHUSETTS
BUILDING 45 OFFICE RENOVATION

ELECTRICAL NEW PLANS, BUILDING 45, EAST (OFFICE)

Reference number:
E-4

Sheet 19 of 21



FRONT SIDE

EXISTING SWITCHBOARD ELEVATION
NOT TO SCALE

NOTES:

(51) Existing concrete pedestal, 18 inches high. See Architectural sheet A-3 for information about the platform to be built in front of the switchboard to facilitate access to switchboard.

(52) Reconnect main feeder to new switchboard. Feeder enters from the bottom through the concrete base.

(53) Relocate and reconnect feeders to new switchboard. Almost all feeders exit overhead. Not all feeders are shown. Splice additional length of conductor to existing conductors to reach new breaker locations. Connect new feeders as indicated.

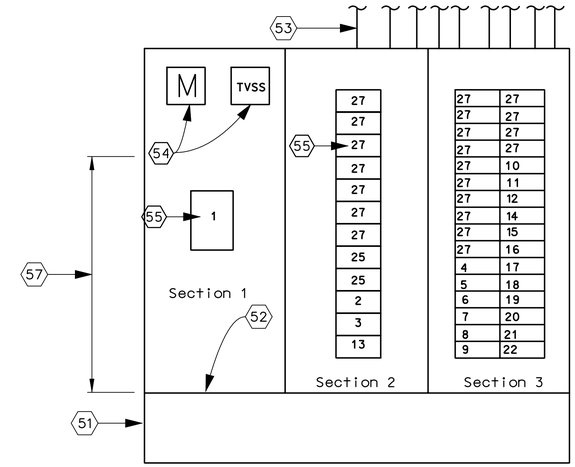
(54) Meter and Transient Voltage Surge Suppressor (TVSS), see specifications.

(55) Typical breaker number. Refer to "EXISTING & NEW SWITCHBOARD SCHEDULE".

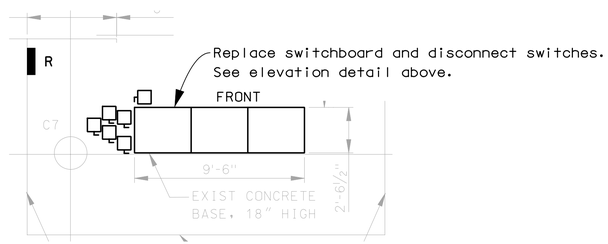
(56) 300 kVA pad mounted transformer in vault near column 4A in basement.

(57) Maximum height of breaker handles shall be 6'-7" above new platform (5'-9" above concrete pedestal).

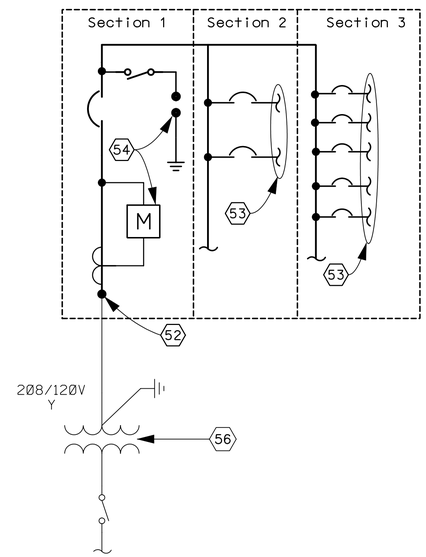
Notes 58 through 60 are reserved.



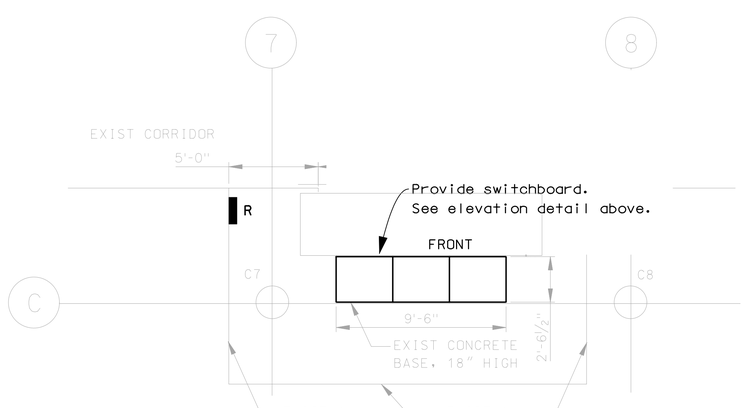
NEW SWITCHBOARD ELEVATION
NOT TO SCALE



EXISTING SWITCHBOARD PLAN
SCALE: 1/4" = 1'-0"



NEW ONE LINE DIAGRAM
NOT TO SCALE



NEW SWITCHBOARD PLAN
SCALE: 1/4" = 1'-0"

GRAPHIC SCALE:
¼" = 1'-0" 4' 0 4' 8'

SWITCHBOARD SCHEDULE

No.	Frame A{6}	Trip A	Conduit Size	Wire No.& Size	Label/Function {10}	Remarks
1	1200	1000	3x4"	3x4-500k	Main	{1}
2	400	400	4"	4-500k	Motor Contrl Cntr, Mech Rm	
3	400	300	3"	4-300k	P1 Millwright & Plumbing	
4	225	125	2"	4-#2	L1A Reproducton Pnl	
5	225	125	2"	4-#2	P1B 2 sect	
6	225	125	2"	4-#2	L1 Plumbing & Elec Shop Pnl	
7	225	150	2"	4-#1/0	P1A Pwr Pnl Reproduction	
8	225	175	2-1/2"	4-#2/0	P1C A & B Carpenter Shop	
9	225	200	2"	4-#3/0,#4	L1B Bsmnt Lighting Pnls	{2}
10	100	100	1-1/2"	4-#3	L2B, Base Floor	
11	100	100	1-1/4"	3-#2	Welder	
12	225	150	*	4-#1/0	Psyh Lab Bsmt Panel	{3} & {4}
13	400	400	*	4-500k	Distrb Pnl, Adj. col	
14	225	200	*	4-#3/0	Press Rm Reproduction	{4}
15	100	30	3/4"	2-#10	Fire Alarm Panel	{5} & {7}
16	100	*	1-1/2"	*	*	
17	225	*	2"	*	*	
18	100	*	1"	*	EXIT Lights	{5}
19	100	*	3/4"	*	*	{5}
20	225	*	2"	*	*	
21	225	225	2-1/2"	4-#4/0	P1-D, Offce Pnl in Lobby 101	
22	100	30	-	2-#10	Switchboard Heaters	{8}
23	Reserved					
24	Reserved					
25	Provide 400A connectors.				Provision for Future Breaker	
26	Provide 225A connectors.				Provision for Future Breaker	
27	Provide no connectors.				No Breaker Allowed	

Notes & Remarks Codes
A Amperes
k kcmil Wire Size
* Contractor shall determine size and function. Label shall be as approved.
{1} Conduits are up from pad.
{2} Feeder conduit is into pad.
{3} @ col 9.
{4} The existing is a circuit breaker.
{5} Existing switch is rated 30A.
{6} The existing switch sizes do not necessarily correspond to these breaker sizes.
{7} Connect the fire alarm breaker ahead of the Main breaker.
{8} Existing is inside switchboard.
{9} 22,000 AIC shall be the minimum switchboard and circuit breaker rating.
{10} Provide Nameplates as designated here.

US Army Corps of Engineers
New England District

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Drawn by: TLA
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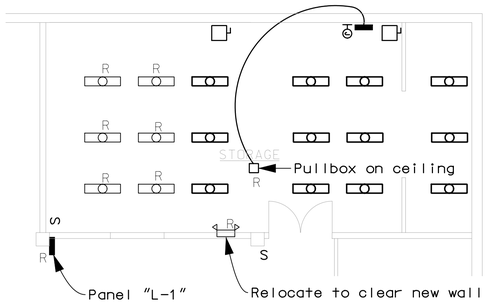
Submitted by: DAVID DESCOTEAUX /s/ Chief, General Engrg Sect

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

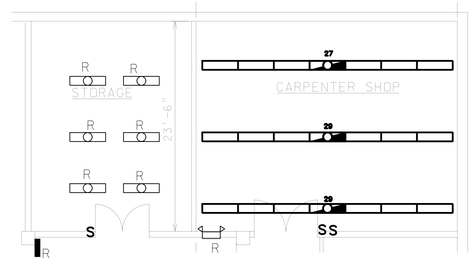
U.S. ARMY SOLDIER SYSTEMS CENTER
NATICK, MASSACHUSETTS
BUILDING 45 OFFICE RENOVATION

ELECTRICAL, SWITCHBOARD REPLACEMENT
BUILDING 45, BASEMENT

Reference number:
E-5
Sheet 20 of 21



POWER & LIGHTING DEMOLITION PLAN
SCALE: 1/8" = 1'-0"



NEW LIGHTING PLAN
SCALE: 1/8" = 1'-0"

NOTES

Notes 49 through 60 have been reserved.

61 Existing 400A main fused disconnect switch.

62 Existing fused panelboard.

63 Provide circuit breaker disconnect, 225 ampere

64 Provide 2½", 3-#4/0, #1/0, #2

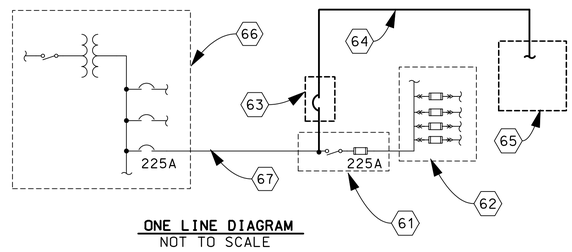
65 Provide panelboard "L4"

66 Existing unit substation "L" switchboard located across the street in barracks Bldg 15.

67 Existing 3", 4-#4/0

68 Reinstall equipment disconnect switch.

69 Sawcut and patch floor for circuits in the middle of the floor.



ONE LINE DIAGRAM
NOT TO SCALE

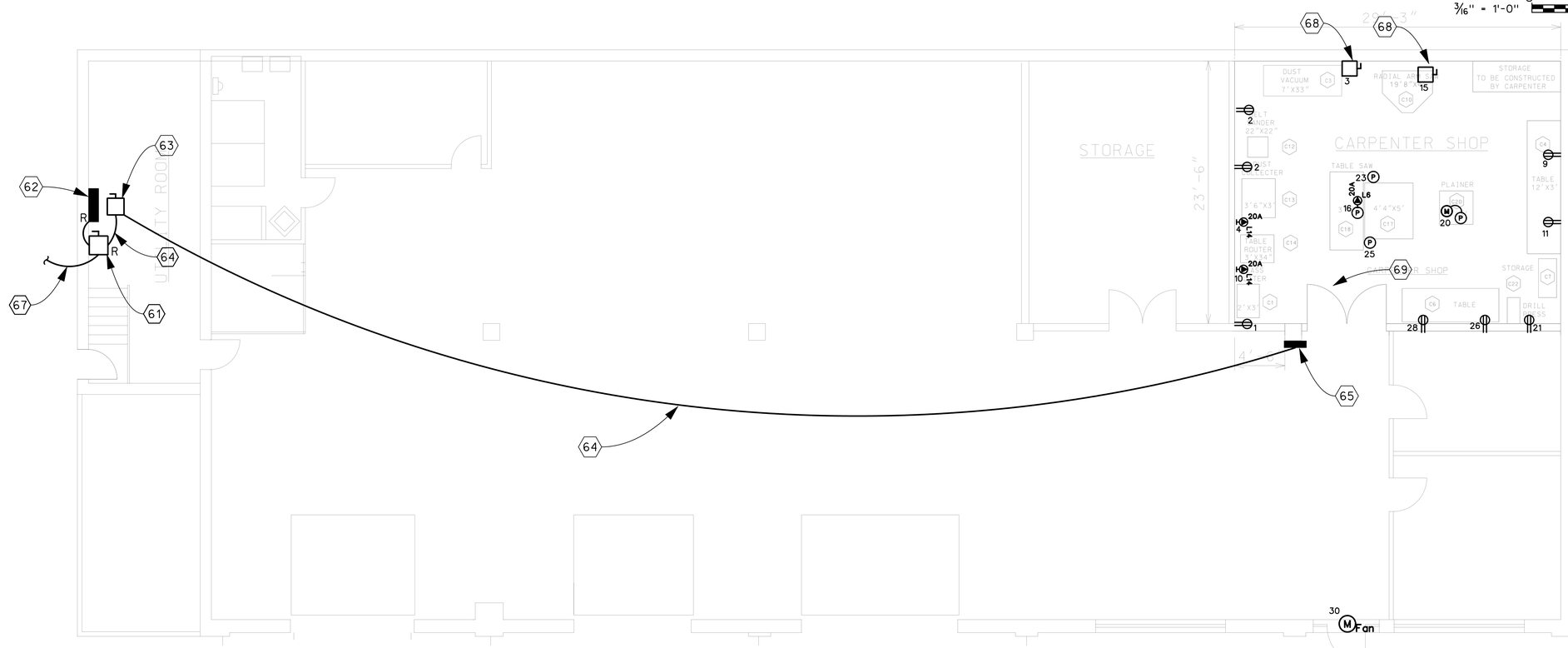
NEW "L4" PANELBOARD SCHEDULE
22,000 AIC, (Amperes Interrupting Capacity)
225 A, Main Breaker (Non-Automatic)
208/120 V
Surface Mounted

R = Receptacle(s)
+ = bus connection
V = Volts, A = Amperes
× =same as circuit above

LOAD SERVED	CIRCUIT	POLES	TRIP, A	LOAD VA	PHASE A	PHASE B	PHASE C	LOAD VA	TRIP, A	POLES	CIRCUIT	LOAD SERVED
R, C1 Class Cutter	1	1	20	800	+			1200	20	1	2	R, C12 Belt Sander
C3 Dust Vacuum	3	3	40	3700		+		700	20	3	4	C13 Dust Collector
×	×	×	×	3700			+	700	×	×	×	×
×	×	×	×	3700	+			700	×	×	×	×
R, C4 Table, left	9	1	20	500		+		700	20	3	10	L14, C14 Table Router
R, C4 Table, right	11	1	20	500			+	700	×	×	×	×
Spare	13	1	20	500	+			700	×	×	×	×
C10 Table Saw	15	3	30	1250		+		1400	30	2	16	L6, C18 Table Saw
×	×	×	×	1250			+	1400	×	×	×	×
×	×	×	×	1250	+			2000	30	3	20	C20 Planer
R, C22 Drill Press	21	1	20	1200		+		2000	×	×	×	×
R, C17 Table	23	1	20	800			+	2000	×	×	×	×
R, C17 Table	25	1	20	800	+			800	20	1	26	R, C6 Table
Lighting	27	1	20	700		+		800	20	1	28	R, C6 Table
Lighting	29	1	20	1400			+	700	20	1	30	Fan
Spare	31	1	20	500	+			200	-	-	32	Provision for breaker
Spare	33	1	20	500		+		200	-	-	34	Provision for breaker
Spare	35	1	20	500			+	200	-	-	36	Provision for breaker
Spare	37	1	20	500	+			200	-	-	38	Provision for breaker
Spare	39	1	20	500		+		500	-	-	40	Provision for breaker
Spare	41	1	20	500			+	500	-	-	42	Provision for breaker
Total Phase A load VA = 14550								Total "connected" load = 42350 VA				
Total Phase B load VA = 13750								Connected current load ~ 118 A/phase				
Total Phase C load VA = 14050												

L6 & L14 indicate NEMA (locking) receptacle configuration.
C*, indicates equipment index *. See sheet A-7 for additional notes and information.
Provide 1" & #8 for circuit 3. Provide 1" & #10 for circuits 15, 16, & 20.
Provide 1" for circuits 23 & 25.

GRAPHIC SCALES:
1/8" = 1'-0"
3/16" = 1'-0"



NEW POWER PLAN
SCALE: 3/16" = 1'-0"

US Army Corps of Engineers
New England District

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Submitted by: DAVID DESGOTEAUX /s/ Chief, General Engrg Sect

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U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

U.S. ARMY SOLDIER SYSTEMS CENTER
NATICK, MASSACHUSETTS
BUILDING 45 OFFICE RENOVATION

ELECTRICAL PLANS AND DETAILS.
BUILDING 14 - GARAGE CARPENTER SHOP

Reference number:
E-6

Sheet 21 of 21