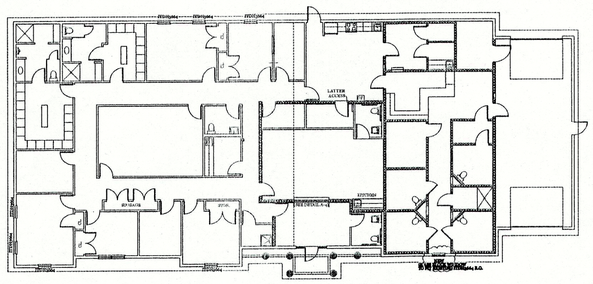
MENDON POLICE STATION

8 MORRISON DRIVE
MENDON, MA 01756



CODE REVIEW

1. BUILDING CODE	IBC 2009 WITH MASS AMENDMENTS 8TH EDITION	
2. USE GROUPS-304 -BUSINESS	B-BUSINESS-CIVIL ADMINISTRATION 6280 S.F.	
3. TYPE OF CONST. (602)	VB, WOOD UNPROTECTED	
4. SPRINKLERS (T903)	NOT REQUIRED (AREA . 7500SF)	
5. DRAFT STOPPING (717.3.2)	YES (IN ATTIC EVERY 3000 SF)	
6. ELEVATOR (1007.2.1)	NOT REQUIRED	
7. AREA OF REFUGE (1007.3)	NOT REQUIRED	
	ALLOWED	PROVIDED
8. OCCUPANT LOAD	100 GROSS = 62	30
9. AREA (T 503)	9000	6770
10. HEIGHT (T 503)	2 ST./40'	1 ST./20'
11.NO. OF EXITS (1021.2)	MIN. 2	3
12.EXIT WIDTH (1005)	.2X60=12"	36"
13. FIRE SEPERATION (601, 1023, 1022)	EXTERIOR WALL	0 HRS.
	ROOF	0 HRS.
	EXIT PASSAGEWAY	1 HR.
14. EXIT TRAVEL DISTANCE (T 1016.1)	200	70'

GROUND SNOW LOAD = 55 PSF

WIND LOAD = 100 MPR

DRAWING LIST

T-1 TITLE PAGE / SCHEDULES
S1 FOUNDATION PLAN
S2 SLAB PLAN
A-1 FLOOR PLAN
A-2 REFLECTED CEILING PLAN
A-3 DETAILS
A-4 DETAILS
E-1 LEGEND
E-2 NOTES
E-3 LIGHTING
E-4 HVAC
E-5 POWER
E-6 FIRE ALARM FLOOR PLAN
E-7 - E9 DETAILS
E-8 - E9 DETAILS
E-9 - E9 DETAILS
E-10 SHEDULES
E-11 FIRE ALARM RISER
E-12 DISTRIBUTION RISER
H-1 HVAC PLANS
H-2 HVAC DIAGRAM
H-3 HVAC SCHEDULES
H-4 HCAC SPECIFICATIONS
P-1 PLUMBING PLAN
P-2 PLUMBING DETAIL AND SHEDULES

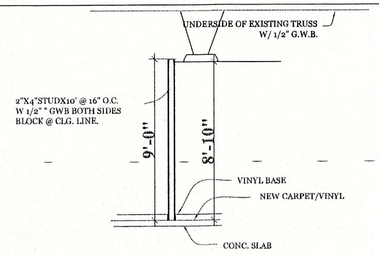
REQUIRED DOCUMENTS

ALARM SYSTEM NARRATIVE

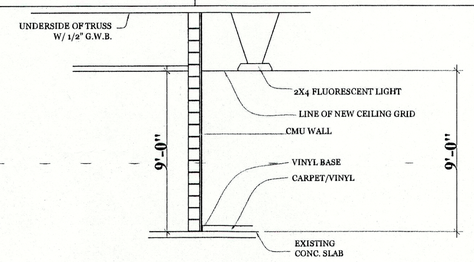
DOOR SCHEDULE

DOOR	SIZE	MATERIAL	SWING	HARD WARE	FRAME	THROAT	REMARKS	QUA
1	3X7X1 3/4"	MTL.	RIGHT	3	PRESSED MTL.	6 5/8"	EXSTING	1
2	3X7X1 3/4"	MTL.	LEFT	3		6 5/8"	EXSTING / NEW	2
3	12'-0"X9'-0"X2"		O.H.D.	1		4 5/8"	EXSTING	2
4	3X7X1 3/4"	SOLID WOOD BIRCH VENEER	LEFT	2			1 MASONRY ANCHOR	2
5	3X7X1 3/4"	SOLID WOOD BIRCH VENEER	RIGHT	2				3
6	(2)2'-6"X7X1 3/4"	SOLID WOOD BIRCH VENEER	L/R	5				6
7	3X7X1 3/4"	BY OTHERS	LEFT		BY OTHERS SEE SHEET A3			4
8	3X7X1 3/4"	BY OTHERS	RIGHT		BY OTHERS SEE SHEET A3			2
9	3X7X1 3/4"	MTL.	RIGHT	1	PRESSED MTL.	6 1/8"	MASONRY ANCHOR	2
10	3X7X1 3/4"	MTL.	LEFT	1			MASONRY ANCHOR	3/1*
11	3X7X1 3/4"	MTL.	RIGHT	2			MASONRY ANCHOR	3/1*
12	3X7X1 3/4"	SOLID WOOD BIRCH VENEER	LEFT	4		4 5/8"		3
13	3X7X1 3/4"	SOLID WOOD BIRCH VENEER	LEFT	1				6
14	3X7X1 3/4"	SOLID WOOD BIRCH VENEER	RIGHT	1				8

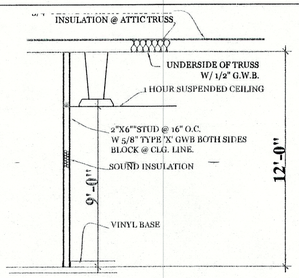
HARDWARE
1-PASSAGE SET W/ CLOSER 1 1/2 PAIR HINGES /SILENCERS/STOP
2-LOCK SET 1 1/2 PAIR HINGES /SILENCERS
3-LOCK CYLINDER PANIC BAR / CLOSER 1 1/2 PAIR HINGES / WEATHER-STRIPP-ED
-ALL HARDWARE TO BE LEVER HANDLES WITH BRUSH CHROME FINISH



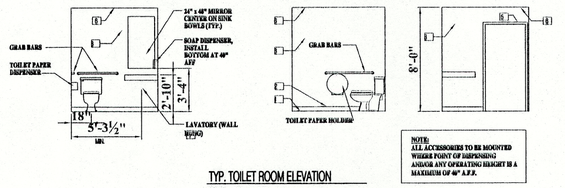
1 INT. WALL SECTION
1/4"=1'-0"



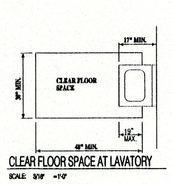
2 CMU WALL SECTION
1/4"=1'-0"
U.L. LISTING U-914 2 HOUR RATED



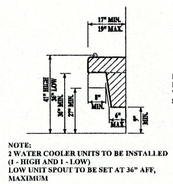
3 INT. WALL SECTION
1/4"=1'-0"



TYP. TOILET ROOM ELEVATION
SCALE: 3/16 =1'-0"

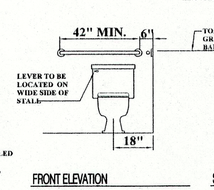


CLEAR FLOOR SPACE AT LAVATORY
SCALE: 3/16 =1'-0"

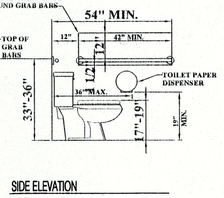


NOTE:
2 WATER COOLER UNITS TO BE INSTALLED (1 - HIGH AND 1 - LOW)
LOW UNIT SPOUT TO BE SET AT 36" AFF, MAXIMUM

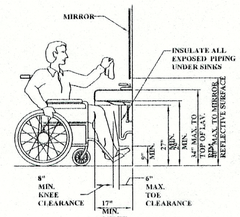
WATER COOLER CLEARANCES
SCALE: 3/16 =1'-0"



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



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



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

AAC BATHROOM DETAILS

NOTES:

Mass DPH
Community Sanitation Program
Paul Halfmann
Assistant Director
APPROVED 10-7-12

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Exclusive Home Designers
Design / Build
Phone No. (508) 466-3202
17 Glenwood St. Holden Ma.

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CONSULTING ARCHITECT
J THOMAS REARDON
7 SUNSET DRIVE
NORTHBOROUGH MA
01532

MENDON POLICE STATION

TITLE SHEET

DATE: 12/21/12
SCALE: AS NOTED
DRAWN BY: JDO
CHECKED BY: RCS

Sheet 1 OF 25

T-1

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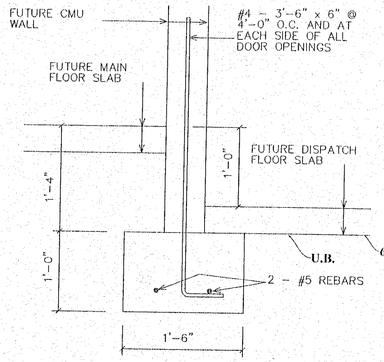
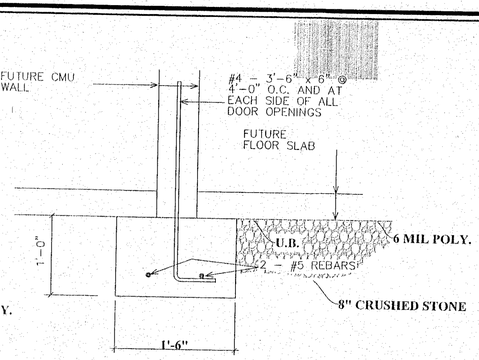


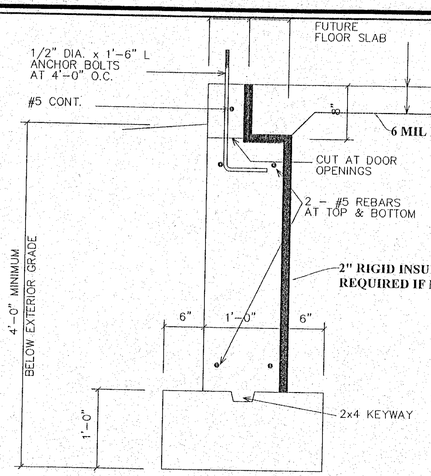
SECTION AT NEW TYPICAL EDGE OF DROPPED DISPATCH SLAB

1 nts



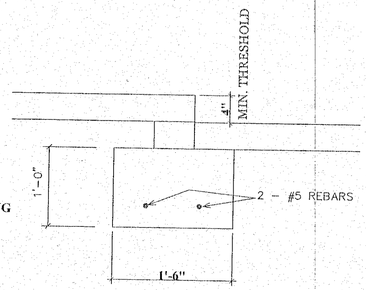
SECTION AT NEW TYPICAL INTERIOR MASONRY WALL FOOTING

2 nts



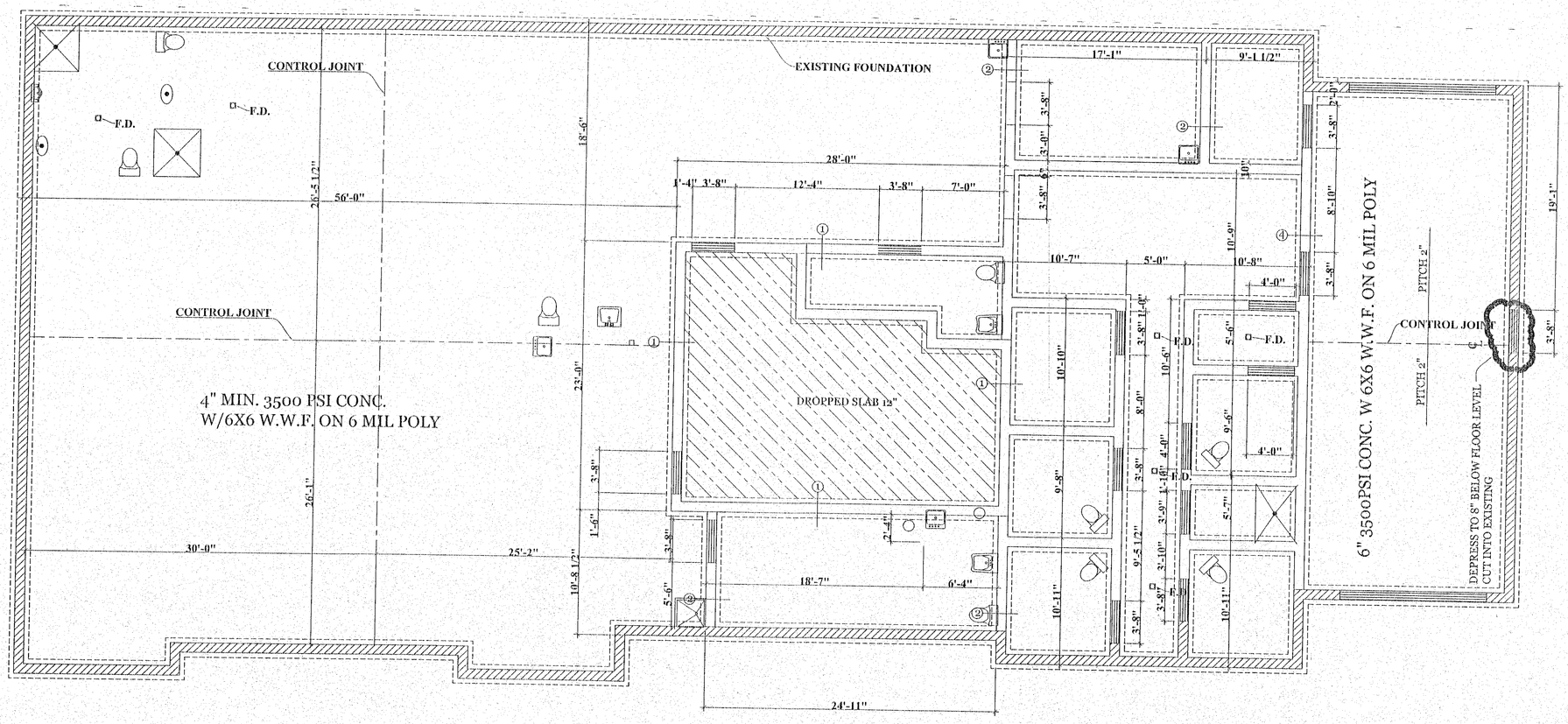
SECTION AT EXISTING TYPICAL EXTERIOR FOUNDATION WALL

3 nts



SECTION AT NEW INTERIOR MASONRY WALL FOOTING

4 nts



FOUNDATION PLAN

3/16" = 1'-0"

▨ = EXISTING

NOTES:

GENERAL NOTES:

1. These plans are drawn as required for construction by an experienced licensed general contractor.
2. The General contractor shall fully comply with the current edition of the Massachusetts State Building Code and all additional local requirements.
3. Written dimensions shall have precedence over scaled dimensions. The general contractor shall verify and is responsible for all dimensions (including rough openings) and conditions on the job and must notify this office of any variations from these drawings. Any defects in the construction documents shall be brought to the attention of this office before proceeding with work. Reasonable time not allowed this office to correct defects shall place the burden of cost and liability from such defects upon the contractor.

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MENDON POLICE STATION

FOUNDATION PLAN

DATE: 12/21/12
SCALE: AS NOTED
DRAWN BY: JDO
CHECKED BY: RCS
Sheet 2 OF 24

S-1

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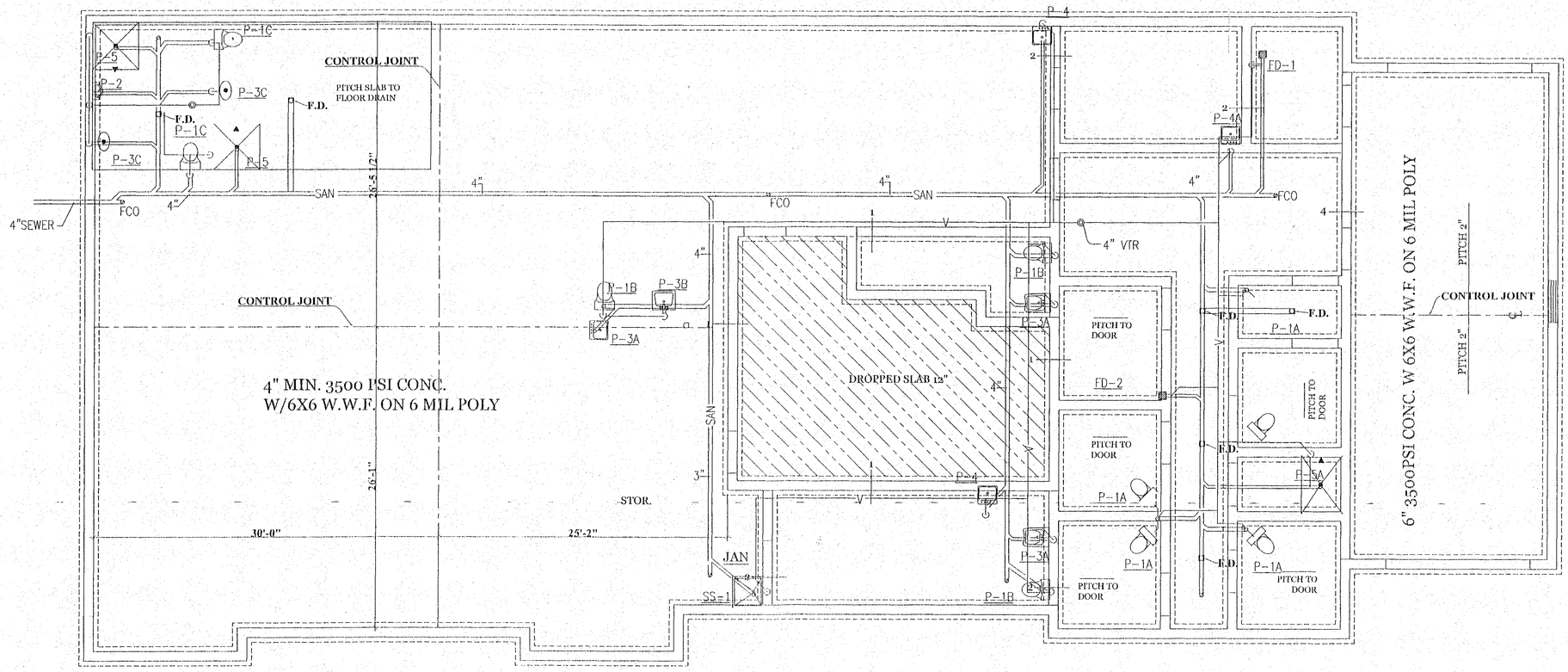
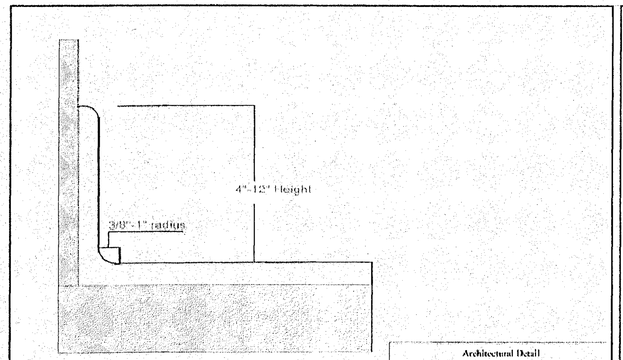
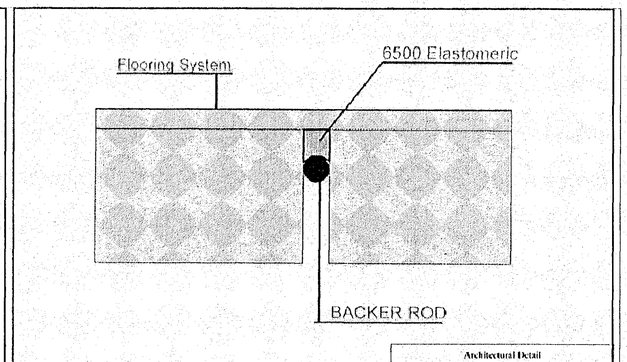


SEWER AND VENT PIPING

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





FLORO SHOP SILICA SAND EPOXY BROADCAST SYSTEM W/
FLORO WARE 7100 TOP COAT @ BOOKING & CELL BLOCK AREA &
MEN/WOMEN LOCKER ROOMS.
(FLOROCK OR EQUIL)

NOTES:

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3. Written dimensions shall have precedence over scaled dimensions. The general contractor shall verify and is responsible for all dimensions (including rough openings) and conditions on the job and must notify this office of any variations from these drawings. Any defects in the construction documents shall be brought to the attention of this office before proceeding with work. Reasonable time not allowed this office to correct defects shall place the burden of cost and liability from such defects upon the contractor.

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REGISTERED ARCHITECT THOMAS REARDON No. 7457 COMMONWEALTH OF MASSACHUSETTS

MENDON POLICE STATION

SLAB PLAN

DATE: 12/21/12
SCALE: AS NOTED
DRAWN BY: JDO
CHECKED BY: RCS
Sheet 3 OF 24

S-2

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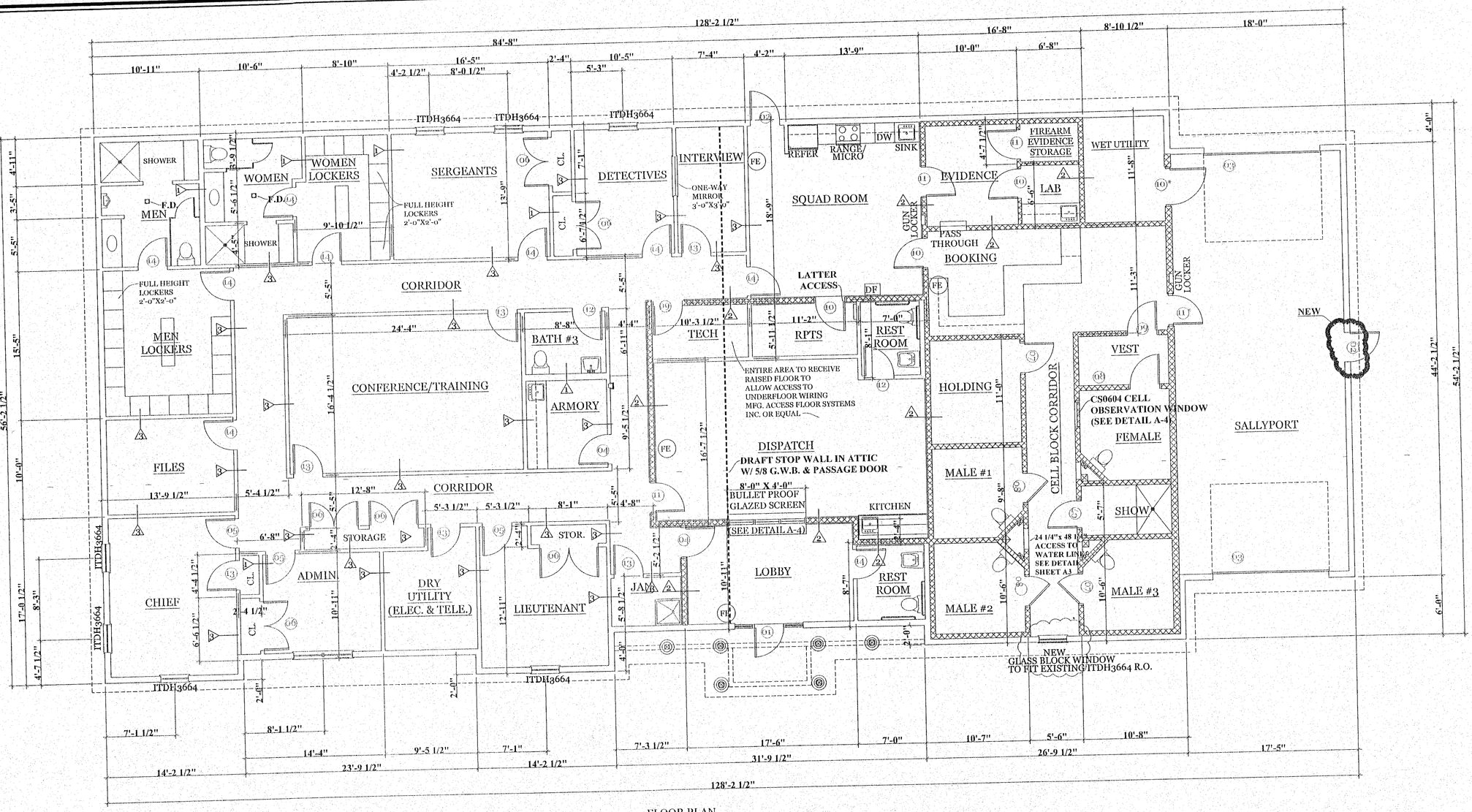


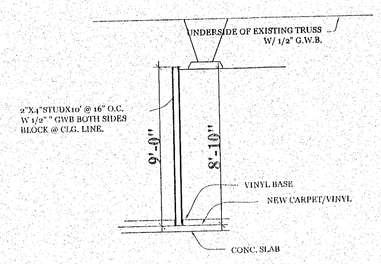
FLOOR PLAN

1/16"=1'-0"

DOOR SCHEDULE

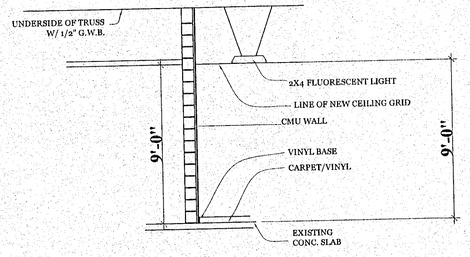
DOOR	SIZE	MATERIAL	SWING	HARD WARE	FRAME	THROAT	REMARES	QUA.
1	3X7X1 3/4"	MTL.	RIGHT	3	PRESSED MTL.	6 5/8"	EXSITING	1
2	3X7X1 3/4"	MTL.	LEFT	3		6 5/8"	EXSITING / NEW	2
3	12'-0"X9'-0"Xα"		O.H.D.	1		4 5/8"	EXSITING	2
4	3X7X1 3/4"	SOLID WOOD BIRCH VENEER	LEFT	2			1 MASONRY ANCHOR	2
5	3X7X1 3/4"	SOLID WOOD BIRCH VENEER	RIGHT	2				3
6	(2)2'-6"X7X1 3/4"	SOLID WOOD BIRCH VENEER	L/R	5				6
7	3X7X1 3/4"	BY OTHERS	LEFT		BY OTHERS SEE SHEET A3			4
8	3X7X1 3/4"	BY OTHERS	RIGHT		BY OTHERS SEE SHEET A3			2
9	3X7X1 3/4"	MTL.	RIGHT	1	PRESSED MTL.	6 1/8"	MASONRY ANCHOR	2
10	3X7X1 3/4"	MTL.	LEFT	1			MASONRY ANCHOR	3/1*
11	3X7X1 3/4"	MTL.	RIGHT	2			MASONRY ANCHOR	3/1*
12	3X7X1 3/4"	SOLID WOOD BIRCH VENEER	LEFT	4		4 5/8"		3
13	3X7X1 3/4"	SOLID WOOD BIRCH VENEER	LEFT	1				6
14	3X7X1 3/4"	SOLID WOOD BIRCH VENEER	RIGHT	1				8

HARDWARE
1-PASSAGE SET W/ CLOSER 1 1/2 PAIR HINGES /SILENCERS/STOP
2-LOCK SET 1 1/2 PAIR HINGES /SILENCERS
3-LOCK CYLINDER PANIC BAR / CLOSER 1 1/2 PAIR HINGES / WEATHER-STRIPP-ED
-ALL HARDWARE TO BE LEVER HANDLES WITH BRUSH CHROME FINISH



1 INT. WALL SECTION

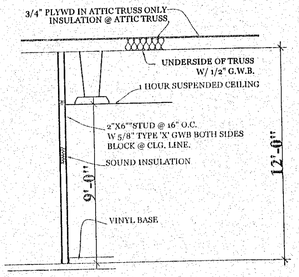
1/4"=1'-0"



2 CMU WALL SECTION

1/4"=1'-0"

U.L. LISTING U-914 2 HOUR RATED



3 INT. WALL SECTION

1/4"=1'-0"

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THOMAS REARDON No. 7457 REGISTERED ARCHITECT COMMONWEALTH OF MASSACHUSETTS

MENDON POLICE STATION

FIRST FLOOR PLAN

MP-12-01

DATE: 12/21/12

SCALE: AS NOTED

DRAWN BY: JDO

CHECKED BY: RCS

Sheet 4 OF 24

A-1

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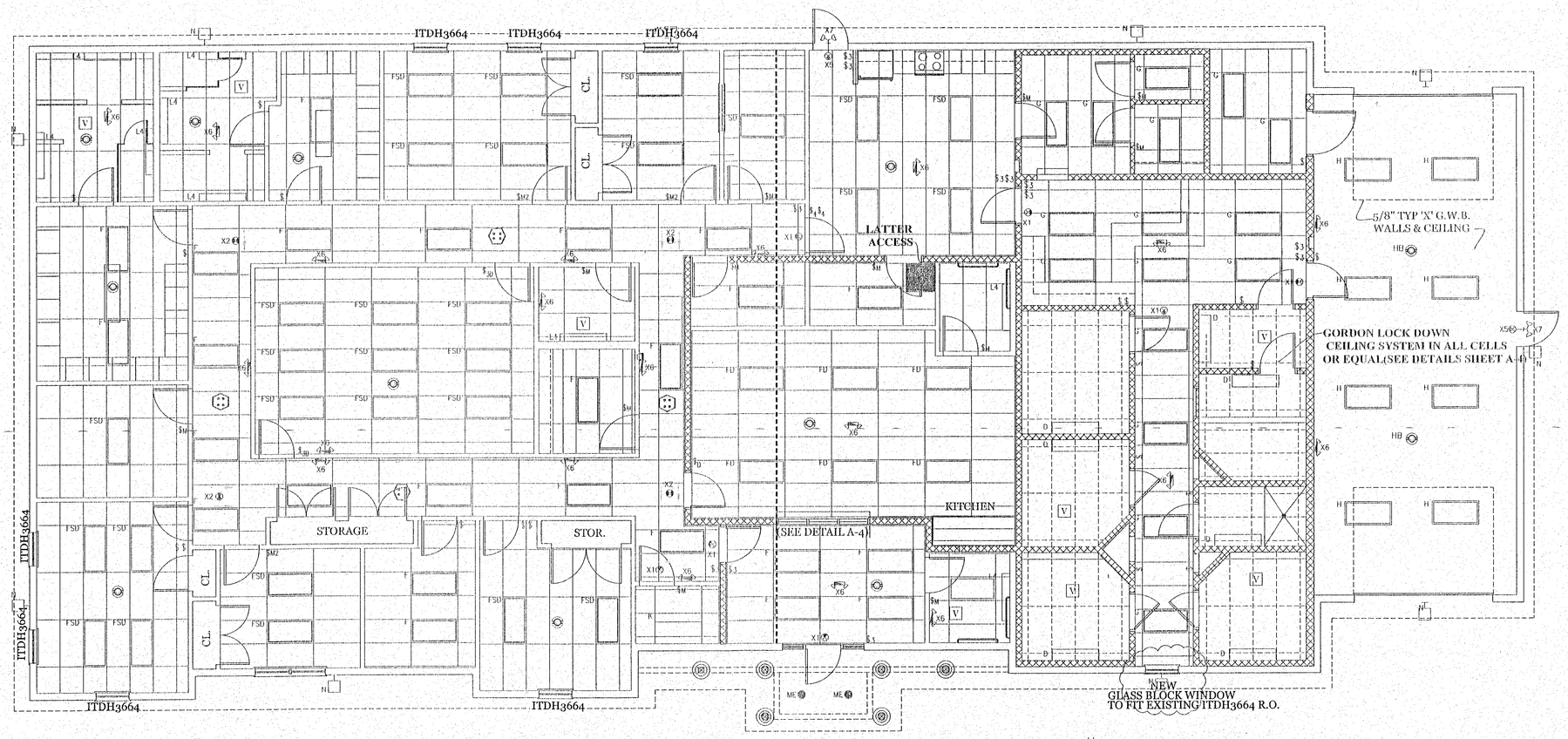
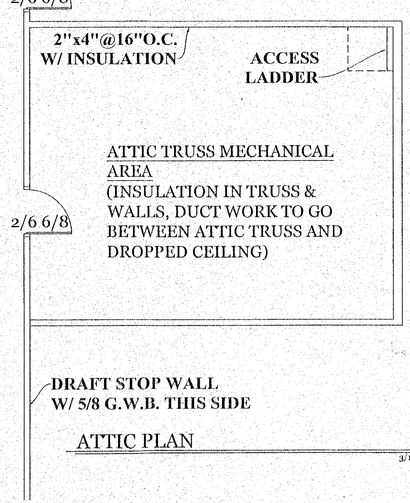


REFLECTED CEILING PLAN

3/16"=1'-0"



ATTIC PLAN

3/16"=1'-0"

NOTES:

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MENDON POLICE STATION

REFLECTED CEILING PLAN

MP-12-01

DATE: 12/21/12

SCALE: AS NOTED

DRAWN BY: JDO

CHECKED BY: RCS

Sheet 5 OF 24

A-2

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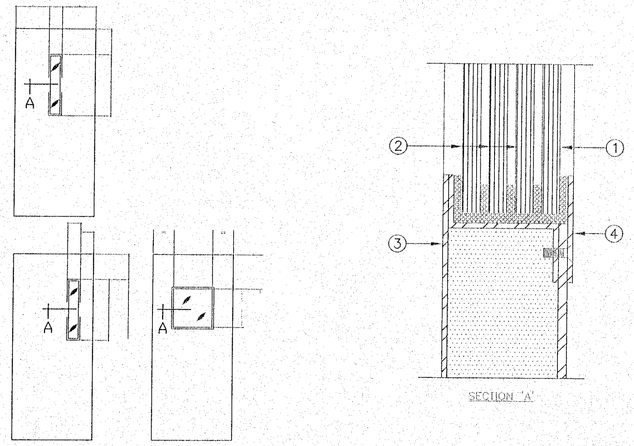
AMBICO LIMITED



ELEVATIONS

SECTION "A"

ALL DIMENSIONS SHOWN REFER TO DOOR CUTOUT SIZES

LEGEND:

1. CLEAR ACOUSTIC OR GEORGIAN WIRE GLASS. (PLEASE SPECIFY) WIRED GLASS WILL BE USED AUTOMATICALLY IF THE OPENING IS FIRE RATED.
2. 3 LAYERS OF CLEAR ACOUSTIC GLASS.
3. FIXED STOP ON THE SECURE SIDE (LOCK CYLINDER SIDE) OF THE DOOR.
4. REMOVABLE STOP.

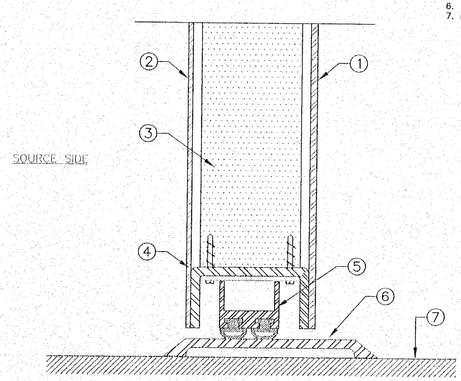
NOTE:

1. ALL GLASS TO BE FACTORY INSTALLED BY AMBICO. MAXIMUM GLASS SIZE NOT TO EXCEED 300 SQUARE INCHES. STOCK GLASS SIZES ARE 5"X20" OR 17"X17".

TYPICAL VISION PANEL FOR STC STEEL DOORS FROM STC 33 TO STC 48

JOB NO:
SHEET: 1 OF: 1

AMBICO LIMITED

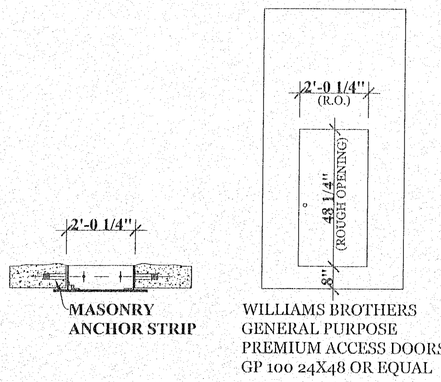


LEGEND:

1. STEEL BACK SKIN.
2. STEEL FRONT SKIN.
3. ALL VOIDS FILLED WITH SOUND DEADENER.
4. BOTTOM CHANNEL.
5. ACOUSTIC MORTISED DROP DOOR BOTTOM.
6. 1/4" HIGH FLAT ACOUSTIC .
7. FINISHED FLOOR.

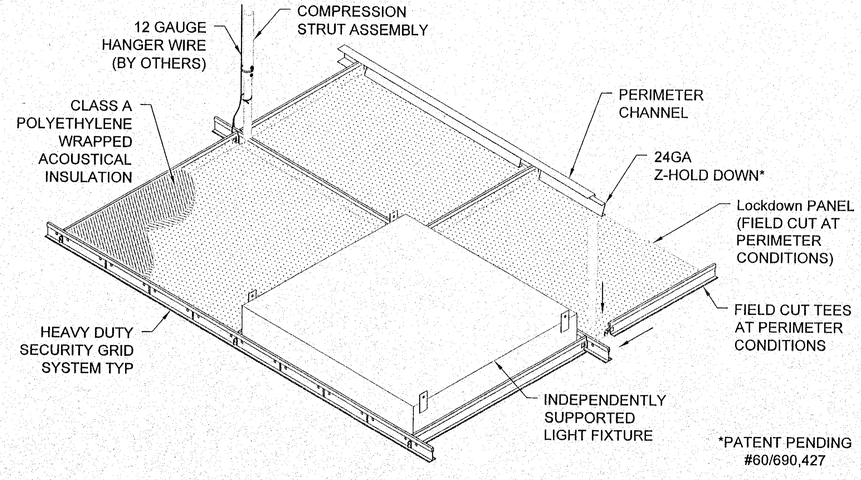
ACOUSTIC STEEL DOOR & DOOR BOTTOM FROM STC 33 TO STC 38

JOB NO:
SHEET: 1 OF: 1



WILLIAMS BROTHERS
GENERAL PURPOSE
PREMIUM ACCESS DOORS
GP 100 24X48 OR EQUAL

24 1/4"x 48 1/4" ACCESS TO WATER LINE DETAILS



*PATENT PENDING
#60/690,427

GORDON LOCKDOWN CEILING DETAIL
3/16"=1-0"

NOTES:

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Phone No. (508) 466-3202
17 Glenwood St.
Holden Ma.

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REGISTERED ARCHITECT THOMAS RICHARDSON No. 7457 COMMONWEALTH OF MASSACHUSETTS

MENDON POLICE STATION

DETAIL SHEET

MP-12-01

DATE: 12/21/12
SCALE: AS NOTED
DRAWN BY: JDO
CHECKED BY: RCS

Sheet 6 OF 24

A-3

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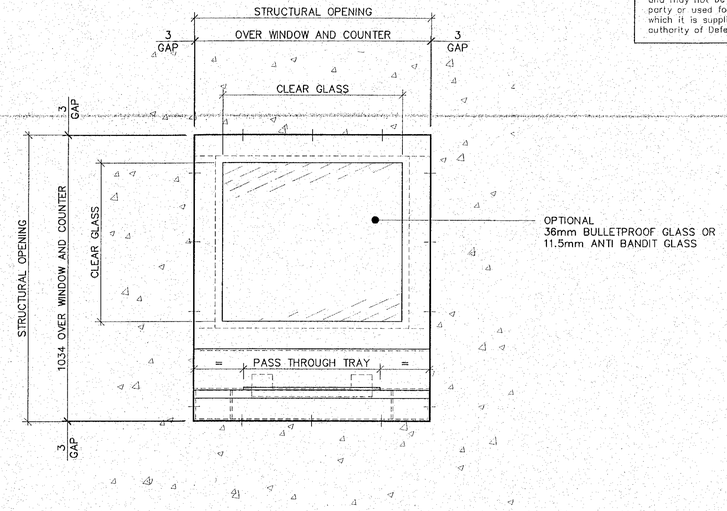
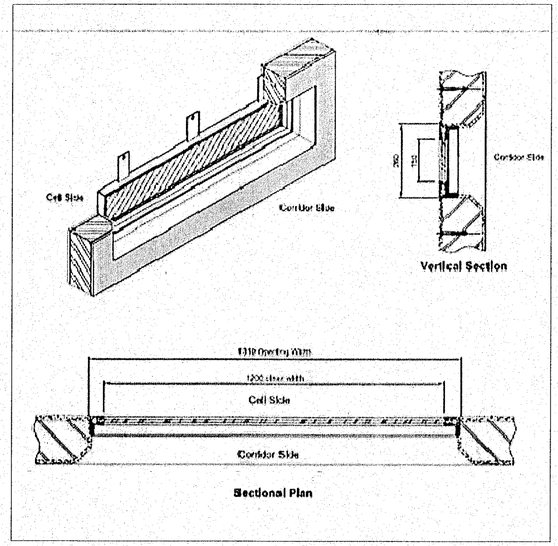
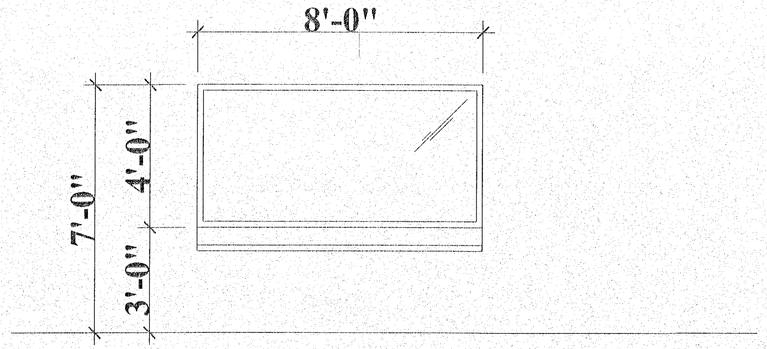


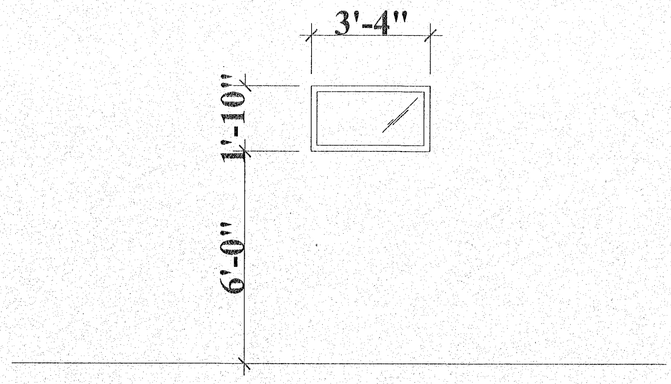
ELEVATION ON WINDOW AND COUNTER
VIEWED ON ATTACK FACE

GLAZED WINDOW WITH COUNTER ARRANGEMENT	DefenceDoors	A3
		Scale 1:10





GLAZED WINDOW WITH COUNTER ARRANGEMENT
MFG: DEFENSE DOOR OR EQUAL



CS0604 18"X36" CELL OBSERVATION WINDOW
MFG: CELL SECURITY LIMITED OR EQUAL

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THOMAS REARDON No. 7427 REGISTERED ARCHITECT COMMONWEALTH OF MASSACHUSETTS

MENDON POLICE STATION

DETAIL SHEET

MP-12-01

DATE: 12/21/12
SCALE: AS NOTED
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Sheet 7 OF 24

A-4

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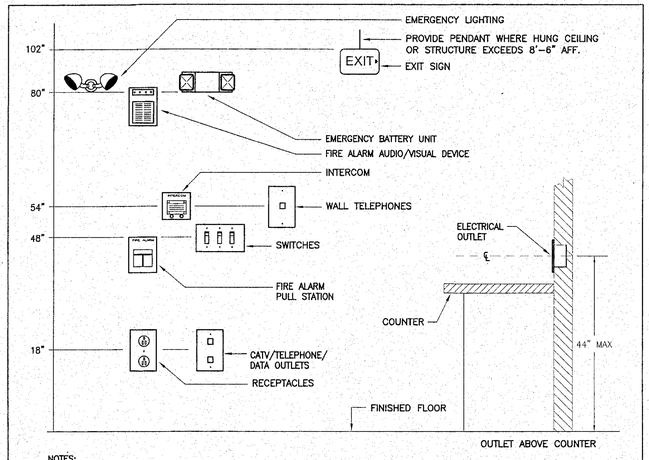

NOTES:
1. ALL MOUNTING HEIGHTS SHALL BE MEASURED FROM FINISHED FLOOR TO CENTERLINE OF DEVICE EXCEPT EXIT SIGN.
2. DEVICES SHALL BE INSTALLED ON A COMMON VERTICAL CENTERLINE WHEREVER POSSIBLE.
3. ALL DEVICES SHALL BE INSTALLED AT MOUNTING HEIGHTS AS INDICATED ON THIS DETAIL UNLESS OTHERWISE NOTED.

ELECTRICAL DEVICE MOUNTING HEIGHTS DETAIL | NTS

BRANCH CIRCUITS SCHEDULE

120V OR 277V – 1ø, 2W CIRCUITS

CIRCUIT BREAKER	CONDUCTOR
20A–1P	2–12 AWG & 1–12 AWG EGC IN 3/4"C
30A–1P	2–10 AWG & 1–10 AWG EGC IN 3/4"C
40A–1P	2–8 AWG & 1–10 AWG EGC IN 3/4"C
50A–1P	2–6 AWG & 1–10 AWG EGC IN 3/4"C
60A–1P	2–4 AWG & 1–10 AWG EGC IN 1"C
208V OR 480V – 1ø, 2W CIRCUITS	
20A–2P	2–12 AWG & 1–12 AWG EGC IN 3/4"C
30A–2P	2–10 AWG & 1–10 AWG EGC IN 3/4"C
40A–2P	2–8 AWG & 1–10 AWG EGC IN 3/4"C
50A–2P	2–6 AWG & 1–10 AWG EGC IN 3/4"C
60A–2P	2–4 AWG & 1–10 AWG EGC IN 1"C
208V OR 480V – 3ø, 3W CIRCUITS	
20A–3P	3–12 AWG & 1–12 AWG EGC IN 3/4"C
30A–3P	3–10 AWG & 1–10 AWG EGC IN 3/4"C
40A–3P	3–8 AWG & 1–10 AWG EGC IN 3/4"C
50A–3P	3–6 AWG & 1–10 AWG EGC IN 1"C
60A–3P	3–4 AWG & 1–10 AWG EGC IN 1"C

NOTES:
1. TYPE MC CABLE SHALL INCLUDE FULL SIZE INSULATED GROUND CONDUCTOR. SIZES AS INDICATED IN SCHEDULE.
2. UPGRADE WIRE SIZE ACCORDING TO VOLTAGE DROP CHART.
3. UPGRADE FEEDER SIZES NOT INCLUDED IN VOLTAGE DROP CHART TO REQUIRMENTS IN ACCORDANCE WITH THE NEC.

VOLTAGE DROP CHART

LOAD UP TO	CONDUCTOR SIZE #12	CONDUCTOR SIZE #10	CONDUCTOR SIZE #8
120V CKTS. / MAX. LENGTH			
800 VA	155 FT	245 FT	390 FT
1000 VA	125 FT	195 FT	310 FT
1200 VA	105 FT	165 FT	260 FT
1400 VA	90 FT	140 FT	220 FT
1600 VA	80 FT	125 FT	195 FT
1800 VA	70 FT	110 FT	175 FT
277V CKTS. / MAX. LENGTH			
2000 VA	330 FT	525 FT	830 FT
2500 VA	265 FT	420 FT	665 FT
3000 VA	220 FT	350 FT	555 FT
3500 VA	190 FT	300 FT	475 FT
4000 VA	165 FT	260 FT	415 FT

ELECTRICAL LEGEND

WIRING DEVICES

- – DUPLEX RECEPTACLE
- – DOUBLE DUPLEX RECEPTACLE
- – GFCI DUPLEX RECEPTACLE
- – CEILING MOUNTED DUPLEX RECEPTACLE COORDINATE EXACT LOCATION IN THE FIELD
- R – NEMA 14–50R RECEPTACLE COORDINATE NEMA CONFIGURATION WITH EQUIPMENT MANUFACTURER'S SPECIFICATIONS PRIOR TO INSTALLATION FURNISH AND INSTALL 6 AWG WIRE
- L5 – SPECIAL PURPOSE RECEPTACLE "L5" DENOTES L5–20R (20A–1P) RECEPTACLE FURNISH AND INSTALL #10 AWG WIRES
- L6 – SPECIAL PURPOSE RECEPTACLE "L6" DENOTES L6–30R (30A–2P) RECEPTACLE FURNISH AND INSTALL #10 AWG WIRES
- $_M – WALL MTD. ULTRASONIC/INFRARED OCCUPANCY SENSOR
- $_L – WALL MTD. (2) SINGLE–POLE SWITCHES LEVITON 5627 OR APPROVED EQUAL
- $_3L – WALL MTD. (2) 3–WAY SWITCHES LEVITON 5640 OR APPROVED EQUAL
- $ – SINGLE POLE SWITCH
- $_3 – THREE–WAY SWITCH
- $_4 – FOUR–WAY SWITCH
- $_D – SINGLE POLE DIMMER SWITCH
- $_3D – THREE–WAY DIMMER SWITCH
- – CEILING MTD. ULTRASONIC/INFRARED OCCUPANCY SENSOR, WITH POWER PACK(S). 2200 SQ FT.

WIRING DEVICES ABBREVIATIONS:

"C" DENOTES MTD. 6" ABOVE COUNTER TOP

"WP/WIC" DENOTES WEATHER PROOF WITH WHILE–IN–USE COVER

EQUIPMENT

- – ELECTRICAL PANEL, SURFACE MTD.
- 30AS / 20AF – FUSED DISCONNECT SWITCH "30AS" DENOTES 30A SWITCH "20AF" DENOTES 20A FUSE
- – UNFUSED DISCONNECT SWITCH
- J – JUNCTION BOX
- J – JUNCTION BOX, FLOOR MOUNTED
- $_T – SAFETY DISCONNECT SNAP SWITCH
- – FLEXIBLE CONNECTION
- EPO – EMERGENCY POWER SHUTOFF BUTTON

WIRING

- – HOME RUN TO PANEL
- 10 AWG – DENOTES – INSTALL 10 AWG WIRE TO ALL FIXTURES IN THE CIRCUIT UNLESS OTHERWISE NOTED.

WIRE SIZES SHOWN ON WIRING RUNS ARE FOR THE ASSISTANCE TO THE ELECTRICIAN IN RUNNING THE WIRING. HOWEVER, IT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO VERIFY ALL WIRE SIZES AND INSTALL THE REQUIRED NUMBER OF CONDUCTORS NEEDED FOR THE INSTALLATION.

FIRE ALARM

- – SMOKE DETECTOR, CEILING MOUNTED
- CO – CARBON MONOXIDE DETECTOR
- 135°F – HEAT DETECTOR, FIXED 135 DENOTES TEMPERATURE
- P – PULL STATION
- 110cd S – VISUAL APPLIANCE 110cd DENOTES CANDELA RATING CEILING MOUNTED
- 110cd H – COMBINATION AUDIOVISUAL APPLIANCE 110cd DENOTES CANDELA RATING CEILING MOUNTED
- 110cd – VISUAL APPLIANCE 110cd DENOTES CANDELA RATING WALL MOUNTED
- 110cd H – COMBINATION AUDIOVISUAL APPLIANCE 110cd DENOTES CANDELA RATING WALL MOUNTED
- – MASTER BOX
- K – KNOX BOX
- – EXTERIOR BEACON 150,000 CANDLE POWER BEACON COORDINATE EXACT LOCATION WITH AHJ
- EOLR – END–OF–LINE RESISTOR

FIRE ALARM DEVICES ABBREVIATIONS:

"KL" DENOTES WITH KEY LOCK

"VP" DENOTES WITH VANDAL PROOF GUARD

"WG" DENOTES WITH WIRE GUARD

"WP" DENOTES WEATHERPROOF

TELECOMMUNICATIONS

- – VOICE/DATA OUTLET (3) CATEGORY 6 CABLES ONE VOICE DROP AND TWO DATA DROPS UNLESS NOTED OTHERWISE HOMERUN TO TELECOMMUNICATIONS CLOSET
- – DATA OUTLET (2) CATEGORY 6 CABLES UNLESS NOTED OTHERWISE HOMERUN TO TELECOMMUNICATIONS ROOM
- W – WALL PHONE VOICE OUTLET (1) CATEGORY 6 CABLE HOMERUN TO TELECOMMUNICATIONS ROOM
- AP – WIFI ACCESS POINT (2) CATEGORY 6 CABLE CEILING MOUNTED HOMERUN TO TELECOMMUNICATIONS ROOM
- AV – AV OUTLET. WALL MOUNTED. 2–GANG BOX WITH 1–1/4" CONDUIT, STUB–UP ABOVE THE CEILING. PROVIDE WITH PULL STRING AND BUSHING.

NOTES FOR COMMUNICATIONS DEVICES:

1. FOR ALL TEL/DATA OUTLETS PROVIDE 4" BOX AND 3/4" CONDUIT STUB WITH BUSHING AND PULL STRING ABOVE THE CEILING. INCREASE CONDUIT SIZE FOR FOUR OR MORE CAT. 6 CABLES.
2. MOUNT VOICE, DATA AND VIDEO OUTLETS A MINIMUM OF 12" FROM A POWER OUTLET. COORDINATE LOCATIONS WITH ELECTRICAL DRAWINGS.
3. REFER TO VOICE DATA ABBREVIATIONS FOR CABLE DROP QUANTITIES.

TEL/DATA ABBREVIATIONS:

"1V/1D" – DENOTES ONE VOICE AND ONE DATA DROP
"1V/2D" – DENOTES ONE VOICE AND TWO DATA DROPS
"1V/3D" – DENOTES ONE VOICE AND THREE DATA DROPS
"2V/2D" – DENOTES TWO VOICE AND TWO DATA DROPS
"2V/3D" – DENOTES TWO VOICE AND THREE DATA DROPS
"2V/4D" – DENOTES TWO VOICE AND FOUR DATA DROPS
"1D" – DENOTES ONE DATA DROP
"2D" – DENOTES TWO DATA DROPS
"3D" – DENOTES THREE DATA DROPS
"4D" – DENOTES FOUR DATA DROPS
"5D" – DENOTES FIVE DATA DROPS
"6D" – DENOTES SIX DATA DROPS
"1V" – DENOTES ONE VOICE DROP
"2V" – DENOTES TWO VOICE DROPS
"C" – DENOTES MTD. 6" ABOVE COUNTER TOP
"AV" – DENOTES AUDIOVISUAL
"H" – DENOTES MOUNTED HIGH, COORDINATE MOUNTING HEIGHT WITH THE ARCHITECT.
"TV" – DENOTES FOR TELEVISION, COORDINATE MOUNTING HEIGHT IN THE FIELD
"U" – DENOTES MTD. UNDER COUNTER
"WP,WIC" – DENOTES WEATHER PROOF WITH "WHILE IN USE" COVER

LIGHTING

- A / A / P–4 – LIGHT FIXTURE "A" DENOTES FIXTURE TYPE "A" DENOTES SWITCH CODE "P–4" DENOTES PANEL AND CIRCUIT NUMBER
- – LIGHT FIXTURE WITH EMERGENCY BALLAST "NL" DENOTES NIGHTLIGHT

EGRESS LIGHTING

- – EXIT SIGN, SINGLE SIDED
- – EXIT SIGN, DUAL SIDED
- – EXIT SIGN W/ INTEGRAL HEADS AND REMOTE EMERGENCY HEADS
- – REMOTE EMERGENCY HEADS – DUAL
- – EMERGENCY BATTERY UNIT

CONNECT EXIT SIGNS TO THE LINE SIDE OF THE NEAREST NORMAL LIGHTING CIRCUIT IN THE AREA.

CONNECT EMERGENCY BATTERY UNITS TO THE LINE SIDE OF THE NEAREST NORMAL LIGHTING CIRCUIT IN THE AREA.

ABBREVIATIONS

- AFF – ABOVE FINISHED FLOOR
- AHJ – AUTHORITY HAVING JURISDICTION
- ATS – AUTOMATIC TRANSFER SWITCH
- AIC – AMPERES INTERRUPTING CAPACITY
- CLG – CEILING MTD.
- EC – ELECTRICAL CONTRACTOR
- F – FRACTIONAL HORSEPOWER
- FACP – FIRE ALARM CONTROL PANEL
- FBO – FURNISHED BY OTHERS
- GC – GENERAL CONTRACTOR
- GFCI – GROUND FAULT CIRCUIT INTERRUPTER
- GFP – GROUND FAULT PROTECTION
- HH – HANDHOLE
- LCP – LIGHTING CONTROL PANEL
- MCB – MAIN CIRCUIT BREAKER
- MGB – MAIN GROUNDING BUSBAR
- MLO – MAIN LUGS ONLY
- MD – MOTORIZED DAMPER
- NTS – NOT TO SCALE
- HB – HIGH BAY
- PTZ – PAN/TILT/ZOOM
- TBD – TO BE DETERMINED
- TC – TIME CLOCK
- VFD – VARIABLE FREQUENCY DRIVE
- VSD – VARIABLE SPEED DRIVE
- W – WALL MOUNTED
- WG – WIRE GUARD
- WIC – WHILE IN USE COVER
- WP – WEATHERPROOF
- XFMR – TRANSFORMER

ACCESS CONTROL

NOT IN CONTRACT. BY OWNER.

VIDEO SURVEILLANCE

- – CAMERA AND WIRING BY OWNER.

NOTES FOR VIDEO SURVEILLANCE DEVICES:

1. ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL 1" EMT FROM EACH CAMERA TO THE ELECTRICAL ROOM.

ART Engineering
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508-797-0333 Phone
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COMMONWEALTH OF MASSACHUSETTS
AZIM S. RAWJI
No. 41765
REGISTERED PROFESSIONAL ENGINEER

MENDON POLICE STATION

ELECTRICAL LEGEND & NOTES

DATE: 12/21/12
SCALE: NTS
DRAWN BY: NAJ
CHECKED BY: AR
Sheet 8 OF 25

E1

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GENERAL NOTES

1. ALL RACEWAY SHALL BE CONCEALED UNLESS OTHERWISE NOTED.
2. THE SIZES OF ELECTRICAL RACEWAY SHALL BE AS INDICATED ON THE CONTRACT DRAWINGS AND SHALL MEET THE REQUIREMENTS OF THE LOCAL ELECTRIC CODE, ¾" MINIMUM, OR AS SHOWN ELSEWHERE.
3. CONDUIT FOR WIRING CONCEALED IN FLOOR SLABS, OR BELOW GRADE SHALL BE 1" MINIMUM.
4. ALL WORK INCLUDING DEVICES, OUTLETS, FIXTURES, WIRING, CONDUIT, RACEWAY, EQUIPMENT, ETC SHOWN ON THE ELECTRICAL PLANS IS NEW WORK AND SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR OR THEIR SUB-CONTRACTORS, UNLESS NOTED OTHERWISE.
5. ALL NEW OUTLETS, DEVICES, FIXTURES, WIRING, CONDUIT, RACEWAY, EQUIPMENT, ETC SHOWN ON THE ELECTRICAL PLANS SHALL BE PROVIDED WITH ALL PARTS AND ACCESSORIES FOR A COMPLETE INSTALLATION.
6. ALL WIRE AND CABLE FOR POWER, LIGHTING, CONTROL INDICATION, ALARM, SIGNAL AND COMMUNICATION SYSTEM, UNLESS OTHERWISE NOTED, SHALL HAVE TYPE THHN INSULATION AND SHALL BE RATED FOR 600V MINIMUM.
7. MINIMUM WIRE SHALL BE #12. ALL WIRING SHALL BE NEW, UNLESS NOTED OTHERWISE. WIRING IN EXCESS OF 70 FEET FOR 120/208V AND 165 FEET FOR 277/480V MUST BE SIZED FOR VOLTAGE DROP. UPGRADE FEEDER SIZES IN ACCORDANCE WITH THE NEC. LIMIT VOLTAGE DROP TO LESS THAN 3%. FEEDERS SHALL FOLLOW SIMILAR GUIDELINES AND BE LIMITED TO 2% DROP.
8. ALL WIRING INSTALLATION SHALL BE COLOR CODED AS PER THE ELECTRICAL CODE. ALL CONDUCTORS SHALL BE STRANDED TYPE.
9. CIRCUIT RUNS ARE SHOWN DIAGRAMMATICALLY ONLY AND SHALL BE INSTALLED IN A MANNER TO PREVENT CONFLICTS WITH EQUIPMENT AND STRUCTURAL CONDITIONS. CONDUITS AND CABLES SHALL BE INSTALLED PARALLEL TO BEAMS AND WALLS.
10. CONDUITS SHALL BE TERMINATED SO AS TO PERMIT NEAT CONNECTIONS TO MOTORS AND OTHER EQUIPMENT.
11. CONDUIT AND WIRING (NOT SHOWN) FOR THE HVAC CONTROL EQUIPMENT AND MISCELLANEOUS DEVICES, OUTLET, SWITCHES, JUNCTION, PULL AND TERMINAL BOXES SHALL BE PROVIDED WITH NEMA ENCLOSURE SUITABLE TO THE ENVIRONMENT.
12. WIRING (NOT SHOWN) FOR THE FIRE ALARM AND LOW VOLTAGE SYSTEMS, SHALL BE FURNISHED AND INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS, SEE ELECTRICAL SPECIFICATIONS FOR ADDITIONAL SCOPE OF WORK. EXPOSED WIRING SHALL BE INSTALLED IN CONDUIT.
13. ALL CONDUIT RUNS CROSSING EXPANSION JOINTS SHALL HAVE EXPANSION OR EXPANSION AND DEFLECTION TYPE FITTINGS.
14. ALL CONDUITS FOR DATA/VOICE CABLING SHALL BE PROVIDED WITH BOX AND CONDUIT STUBBED UP ABOVE THE CEILING (UNLESS OTHERWISE NOTED) AND WITH PULL STRING AND NYLON BUSHINGS AT CONDUIT STUBS, TO PREVENT DAMAGE TO CABLES WHEN PULLED. SIZE CONDUIT AS REQUIRED.
15. ALL WIRING DEVICES, PANEL BOARDS, DISTRIBUTION BOARDS, MOTORS, ETC., SHALL BE GROUNDED AS PER ELECTRIC CODE.
16. ARCHITECTURAL DRAWINGS, INDICATE REQUIRED LOCATION OF WIRING DEVICES, COORDINATE ALL COVER PLATE COLORS WITH ARCHITECT.
17. ALL WORK SHALL BE INSTALLED IN FULL ACCORDANCE WITH LOCAL, STATE & FEDERAL CODES, STATE AND LOCAL AUTHORITIES. FILE ALL PLANS, OBTAIN ALL PERMITS, PAY ALL FEES, SCHEDULE ALL INSPECTIONS, MAKE ALL TESTS AND OBTAIN ALL APPROVALS REQUIRED. THE ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST ADOPTED EDITION OF NATIONAL ELECTRIC CODE AND LOCAL AUTHORITIES HAVING JURISDICTION. ALL COMPONENTS SHALL BE UL LISTED.
18. WHERE CONFLICTS ARE FOUND BETWEEN DRAWINGS, SPECIFICATIONS, LAWS & ORDINANCES, THE MOST STRINGENT SHALL APPLY.
19. SUBMIT FOR APPROVAL, COMPLETE SHOP DRAWINGS, LIST OF MATERIALS AND DETAILED DATA OF EQUIPMENT GIVING THE MANUFACTURERS NAME, CATALOG NUMBER, SIZE, CAPACITY AND DIMENSIONS. SUBMIT SHOP DRAWINGS FOR APPROVAL ONLY AFTER VERIFYING ALL DIMENSIONS, CONFIRM THAT THE EQUIPMENT, DEVICES, FIXTURES, ETC. CAN BE INSTALLED WITHOUT MODIFICATIONS. NO EQUIPMENT SHALL BE INSTALLED OR FABRICATED WITHOUT OBTAINING APPROVAL. ANY MODIFICATIONS REQUIRED, SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
20. SUBMIT FOR APPROVAL PRODUCTS THAT ARE APPROVED EQUAL ONLY. IT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO VERIFY THAT THE SUBSTITUTED SYSTEMS ARE APPROVED EQUAL. IN THE EVENT THAT UNAPPROVED SYSTEMS ARE SUBMITTED FOR APPROVAL, THE ELECTRICAL CONTRACTOR SHALL RETURN THESE SYSTEMS TO THE VENDOR AND PROVIDE APPROVED SYSTEMS AT NO ADDITIONAL COST TO THE OWNER.
21. ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL MOTOR STARTERS FOR ALL MOTORS, UNLESS CLEARLY INDICATED OTHERWISE ON THE CONTRACT DOCUMENTS. THREE PHASE MOTORS SHALL BE PROVIDED WITH A COMBINATION MAGNETIC MOTOR STARTER WITH AMBIENT COMPENSATED OVERLOAD HEATERS IN EACH UNGROUNDED LEG. SHORT CIRCUIT AND GROUND FAULT PROTECTION SHALL BE BY FUSED DISCONNECT SWITCH AS SHOWN OR SPECIFIED.
22. MANUALLY CONTROLLED SINGLE PHASE MOTORS SHALL HAVE FULLY RATED MANUAL MOTOR STARTER SWITCHES WITH O.L. HEATERS IN EACH UNGROUNDED LEG.
23. THE WIRING DIAGRAMS, QUANTITY AND SIZE OF WIRES AND CONDUIT REPRESENT A SUGGESTED ARRANGEMENT BASED UPON SELECTED STANDARD COMPONENTS OF ELECTRICAL EQUIPMENT. MODIFICATIONS ACCEPTABLE TO THE ENGINEER MAY BE MADE BY THE CONTRACTOR TO ACCOMMODATE EQUIPMENT ACTUALLY PURCHASED.
24. SWITCHES SHALL BE MOUNTED 4'-0" MAX ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED. RECEPTACLES SHALL BE MOUNTED 1'-6" ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED.
25. ALL PANELBOARDS SHALL BE MOUNTED SO THAT THE DISTANCE FROM THE TOP CIRCUIT BREAKER OPERATING HANDLE TO THE FLOOR SHALL NOT EXCEED 6'-6". PROVIDE A MINIMUM OF 3'-0". CLEARANCE FOR ALL 208V ELECTRICAL PANELS AND 3'-6" CLEARANCE FOR ALL 480V ELECTRICAL PANELS.
26. ALL 15A AND 20A, 125V AND 250V NON-LOCKING RECEPTACLES IN DAMP AND WET LOCATIONS SHALL BE LISTED AS WEATHER RESISTANT TYPE PER NEC.

GENERAL NOTES

27. ALL 15A AND 20A, 125V AND 250V NON-LOCKING RECEPTACLES IN DAMP AND WET LOCATIONS SHALL BE LISTED AS WEATHER RESISTANT TYPE PER NEC.
28. ELECTRICAL CONTRACTOR TO VERIFY ACTUAL CEILING CONSTRUCTION TYPE AND FURNISH ALL LIGHTING FIXTURES WITH THE CORRECT MOUNTING DEVICE. WHETHER OR NOT SUCH VARIATIONS ARE INDICATED BY THE FIXTURE CATALOG NUMBER. THE CONTRACTOR SHALL VERIFY DEPTH OF ALL RECESSED LIGHTING FIXTURES PRIOR TO ORDERING FIXTURES. ANY DISCREPANCIES THAT WOULD CAUSE RECESSED FIXTURES NOT TO FIT INTO CEILING SHALL BE REPORTED TO THE ARCHITECT PRIOR TO ORDERING FIXTURES.
29. REFER TO ARCHITECTS INTERIOR ROOM ELEVATIONS FOR EXACT LOCATIONS LIGHT FIXTURES, RECEPTACLES AND LIGHT SWITCHES AND OTHER WALL MOUNTED ELECTRICAL EQUIPMENT PRIOR TO ROUGH-IN. CONSULT ARCHITECT PRIOR TO ROUGH-IN SHOULD THE ELECTRICAL DRAWINGS DIFFER WITH THE ARCHITECT'S INTERIOR ELEVATIONS.
30. VERIFY EXACT LOCATION OF CASEWORK AND FURNITURE WITH ARCHITECT AND GENERAL CONTRACTOR PRIOR TO ROUGH-IN.
31. COORDINATE EXACT LOCATION AND MOUNTING HEIGHTS OF DEVICES IN AREA'S BEING PROVIDED WITH FIN TUBE RADIATION WITH ARCHITECT PRIOR TO ROUGH-IN.
32. REFER TO HVAC, PLUMBING, FIRE PROTECTION, AND SECURITY CONSULTANT DRAWINGS AND ASSOCIATED PROJECT SPECIFICATIONS FOR ADDITIONAL SCOPE OF RELATED ELECTRICAL WORK.
33. FOR EXACT LOCATION OF HVAC, PLUMBING, AND FIRE PROTECTION EQUIPMENT, REQUIRING ELECTRICAL CONNECTION, REFER TO HVAC, PLUMBING, FIRE PROTECTION, AND SECURITY CONSULTANTS DRAWINGS.
34. CONFIRM EXACT POWER REQUIREMENTS AND CONNECTION LOCATIONS FOR ALL EQUIPMENT PRIOR TO INSTALLATION WITH PLUMBING, FIRE PROTECTION, HVAC, AND GENERAL CONTRACTOR.
35. THE ELECTRICAL CONTRACTOR SHALL COORDINATE THE EXACT LOCATION OF OUTLETS FOR THE PROJECTORS AND SCREENS WITH THE OWNER AND ARCHITECT PRIOR TO INSTALLATION.
36. SWITCHGEAR & PANEL DESIGNATIONS ARE INTENDED TO BE INTERPRETED AS INDICATED BELOW:
BLANK: NOT INTENDED FOR USE, PLATE ONLY.
SPACE: CONTAINS NECESSARY BUS AND HARDWARE FOR FUTURE ADDITION OF BREAKERS OR STARTERS WITHIN SIZE RANGE SHOWN.
SPARE: CONTAINS A COMPLETE BREAKER OR STARTER INSTALLED, SIZE AS INDICATED AVAILABLE FOR FUTURE USE.
37. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF EXISTING ELECTRICAL SERVICES AND CONNECTION REQUIREMENTS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY CONFLICTS OR DISCREPANCIES FOUND PRIOR TO BID.

BRANCH CIRCUIT WIRING

1. WIRING SHOWN ON DRAWINGS IS FOR SPECIFIC ROUTES OR SPECIAL CONDITIONS.
2. NEW WIRING AND CONDUIT SHALL BE REQUIRED BETWEEN ALL OUTLETS INDICATED WITH CIRCUIT NUMBERS AND PANEL DESIGNATIONS.
3. ALL SWITCH CONTROLS SHALL BE PROVIDED WITH NEW WIRING AND CONDUIT AS REQUIRED.
4. ALTHOUGH ALL BRANCH CIRCUIT WIRE AND CONDUIT IS NOT SHOWN, IT IS THE INTENT OF THESE DRAWINGS THAT A COMPLETE BRANCH CIRCUIT WIRING SYSTEM BE INSTALLED.
5. ALL 120V SINGLE PHASE CIRCUITS SHALL HAVE DEDICATED NEUTRALS. NO SHARED NEUTRALS WILL BE ALLOWED.

MEP COORDINATION

1. ALL ELECTRICALLY POWERED HVAC, PLUMBING AND FIRE PROTECTION EQUIPMENT TO BE PROVIDED WITH LOCAL DISCONNECT SWITCHES. THE SWITCHES SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR UNLESS NOTED OTHERWISE.
2. VARIABLE FREQUENCY DRIVES (VFDS/VSDS) SHALL BE SUPPLIED BY THE MECHANICAL CONTRACTOR AND INSTALLED BY THE ELECTRICAL CONTRACTOR. COORDINATE EXACT LOCATION OF VARIABLE FREQUENCY DRIVES WITH MECHANICAL PLANS. THE ELECTRICAL CONTRACTOR SHALL PROVIDE AUX CONTACTS / MICRO-SWITCHES IN THE DISCONNECT WIRED TO THE VFD. ALL CONTROL WIRING SHALL BE BY THE MECHANICAL CONTRACTOR.
3. LINE VOLTAGE THERMOSTATS SHALL BE SUPPLIED BY THE MECHANICAL CONTRACTOR, INSTALLED AND WIRED BY THE ELECTRICAL CONTRACTOR.
4. DUCT MOUNTED SMOKE DETECTORS ARE TO BE SUPPLIED BY THE ELECTRICAL CONTRACTOR (FIRE ALARM EQUIPMENT SUPPLIER), INSTALLED IN THE DUCTWORK BY THE HVAC CONTRACTOR. WIRED BY THE ELECTRICAL CONTRACTOR.
5. THE ELECTRICAL CONTRACTOR SHALL COORDINATE THE EXACT LOCATIONS OF THE PLUMBING, HVAC AND SPRINKLER SYSTEM DEVICES IN THE FIELD PRIOR TO ROUGH-IN.
6. ALL EXTERIOR MOUNTED DISCONNECT SWITCHES, SAFETY SNAP SWITCHES, AND ASSOCIATED DEVICES SHALL BE WEATHERPROOF AND RATED NEMA 3R.
7. PROVIDE WEATHERPROOF RECEPTACLES WITH WHILE-IN-USE COVERS FOR ALL EXTERIOR OUTLETS.
8. ALL EQUIPMENT, DEVICES AND INSTALLATION MATERIALS LOCATED IN THE SHOWER ROOM, COLD ROOM, ICE RINK, GARAGES, BUILDING EXTERIOR AND SIMILAR AREAS SHALL BE OF WEATHER PROOF TYPE.
9. FURNISH AND INSTALL FIRE RATED ¾" PLYWOOD ON ALL THE WALLS IN THE COMMUNICATIONS ROOMS, DATA ROOMS, TELECOM ROOMS, AND SERVER ROOMS/CLOSETS AND IN ALL ROOMS AND CLOSETS WHERE COMMUNICATIONS AND SECURITY EQUIPMENT IS TO BE INSTALLED. THE PLYWOOD SHALL BE PAINTED WITH TWO COATS OF PAINT INCLUDING THE BACK SIDE, AND SHALL BE INSTALLED FROM 2'-0" AFF TO 8'-0" AFF.

FIRE ALARM NOTES

1. ALL WORK SHALL BE INSTALLED IN FULL ACCORDANCE WITH LOCAL, STATE & FEDERAL CODES, STATE AND LOCAL AUTHORITIES IRRESPECTIVE OF THE FIRE ALARM DEVICES SHOWN ON THE DRAWINGS. FILE ALL PLANS, OBTAIN ALL PERMITS, PAY ALL FEES, SCHEDULE ALL INSPECTIONS, MAKE ALL TESTS AND OBTAIN ALL APPROVALS REQUIRED. THE FIRE ALARM WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE ADOPTED EDITIONS OF NFPA-72, NATIONAL ELECTRIC CODE AND LOCAL AUTHORITIES HAVING JURISDICTION. ALL COMPONENTS SHALL BE UL LISTED.
2. THE FIRE ALARM RISER IS FOR REFERENCES ONLY. THE ELECTRICAL CONTRACTOR SHALL USE THE FIRE ALARM RISER PROVIDED BY THE MANUFACTURER.
3. THE ELECTRICAL CONTRACTOR SHALL DETERMINE DEVICE COUNTS FROM THE FIRE ALARM DRAWINGS.
4. ALL VISUAL DEVICES SHALL BE SYNCHRONIZED AS PER NFPA 72.
5. SMOKE DETECTORS SHALL NOT BE LOCATED WITHIN 3'-0" OF A SUPPLY DIFFUSER.
6. ALL EQUIPMENT AND DEVICES LOCATED IN THE SHOWER ROOM, COLD ROOM, ICE RINK, GARAGES, BUILDING EXTERIOR AND SIMILAR AREAS SHALL BE OF WEATHER PROOF TYPE.
7. CIRCUIT BREAKER FOR FIRE ALARM CONTROL UNIT SHALL HAVE RED MARKING WITH A CIRCUIT BREAKER LOCK LISTED FOR USE WITH THE CIRCUIT BREAKER.
8. THE LOCATION OF THE CIRCUIT DISCONNECTING MEANS SHALL BE PERMANENTLY IDENTIFIED AT THE FIRE ALARM CONTROL UNIT.
9. PROVIDE CONDUIT, WIRING AND FIRE ALARM SYSTEM CONNECTION TO HVAC DUCT MOUNTED SMOKE DETECTORS. DUCT SMOKE DETECTORS SHALL BE PROVIDED WITH A REMOTE TEST SWITCH IN A LOCATION ACCEPTABLE TO THE FIRE DEPARTMENT. COORDINATE EXACT LOCATION OF REMOTE TEST SWITCH WITH THE FIRE DEPARTMENT PRIOR TO INSTALLATION.
10. PROVIDE DUCT SMOKE ALARM INDICATOR IN THE CEILING OR WALL BELOW THE DETECTOR.

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COMMONWEALTH OF MASSACHUSETTS
AZIM S. RAWJI
No. 41705
REGISTERED PROFESSIONAL ENGINEER
ELECTRICAL

MENDON POLICE STATION

ELECTRICAL NOTES

DATE: 12/21/12
SCALE: NTS
DRAWN BY: NAJ
CHECKED BY: AR
Sheet 9 OF 25

E2

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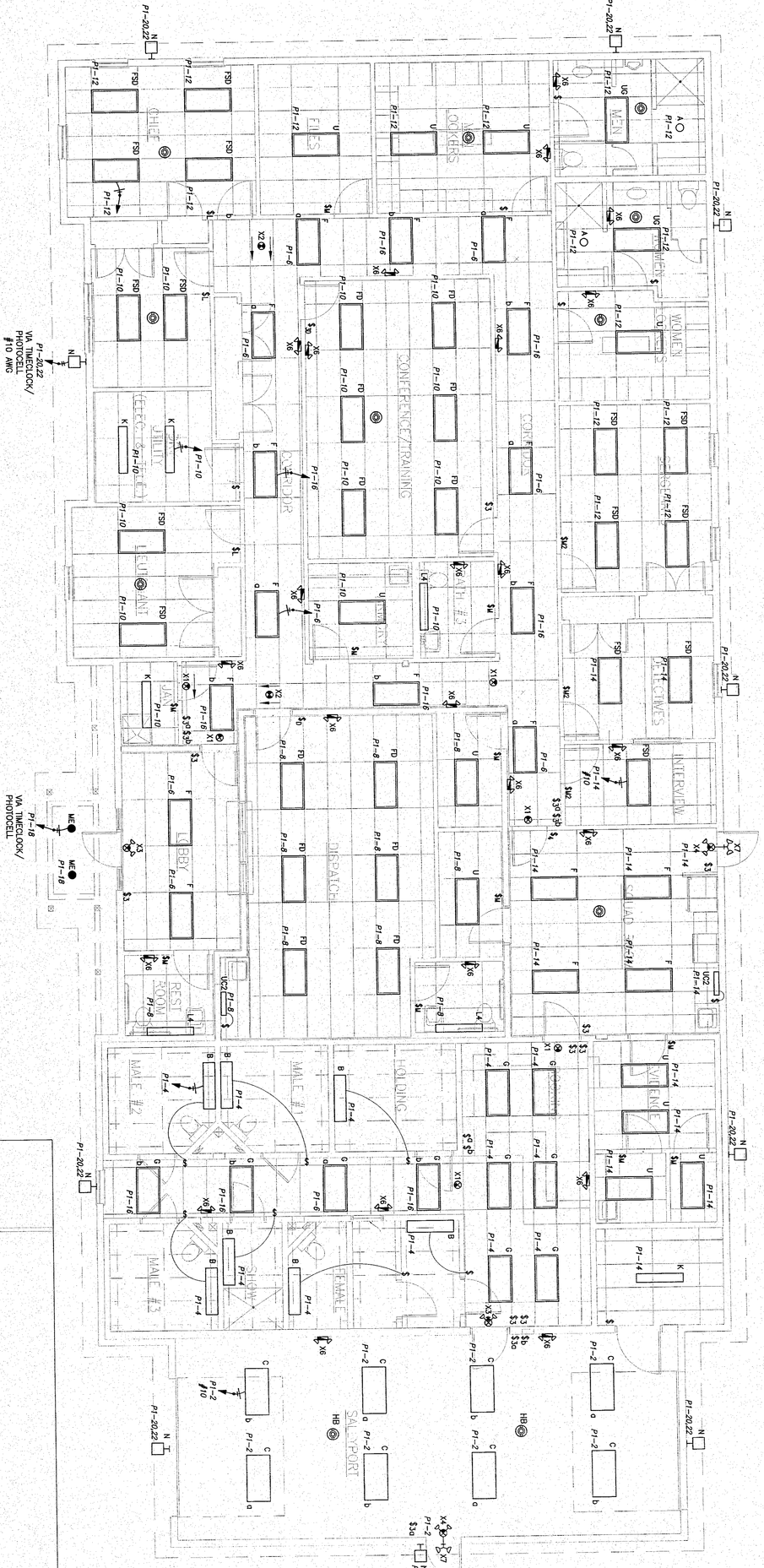
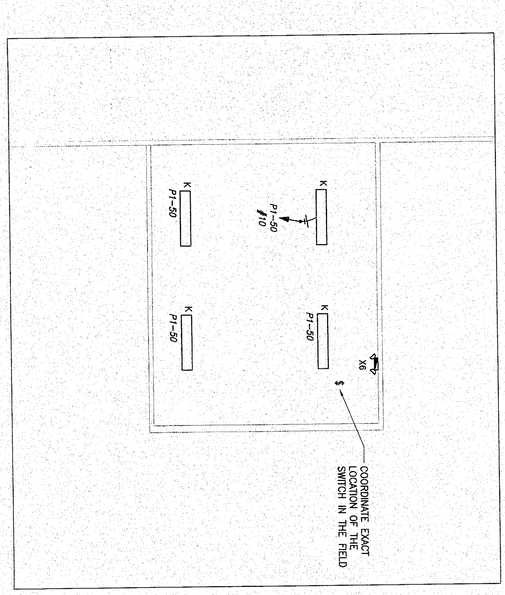


1 / E-3 LIGHTING - FLOOR PLAN

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



2 / E-3 LIGHTING - ATTIC PLAN

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

E3

Sheet	10 OF 25
CHECKED BY:	AR
DRAWN BY:	NAJ
SCALE:	3/16"=1'-0"
DATE:	12/21/12

MENDON POLICE STATION

LIGHTING FLOOR PLAN

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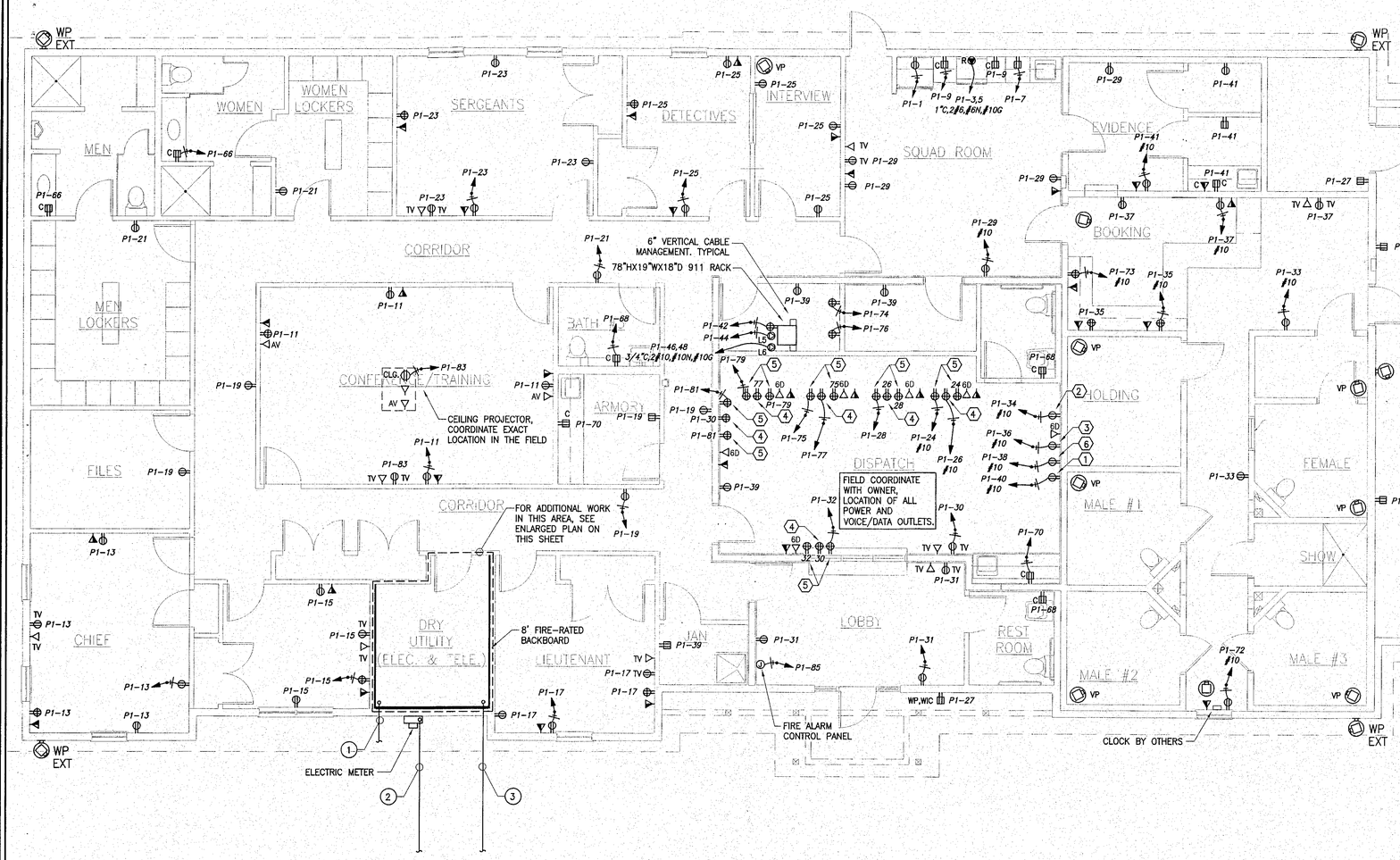


1 POWER - FLOOR PLAN
E-5

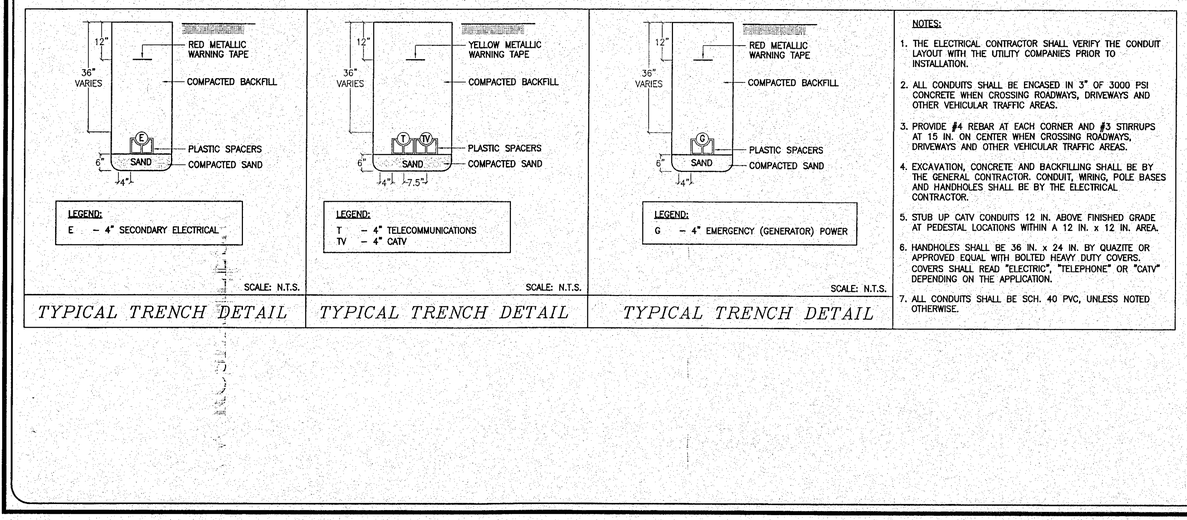
SCALE: 3/16"=1'-0"

EQUIPMENT SCHEDULE (BY OWNER)

ITEM #	DESCRIPTION	LOCATION
1	LW BILLS COMPANY DMP-703 120 VAC	DISPATCH
2	MOTOROLA ASTRO DIS 13.8 DC 20% NEGATIVE	DISPATCH
3	CCAPTURE DVR DIS 8-32 VOLTS	DISPATCH
4	(7) OPTIPLEX DIS 100-240V 255W MAX OUTPUT(PER UNIT)	DISPATCH
5	(25) MONITORS 100-240 VAC/50 TO 60HZ/1.5 A(PER UNIT)	DISPATCH
6	RADIO CONSOLES	DISPATCH

KEYED NOTES

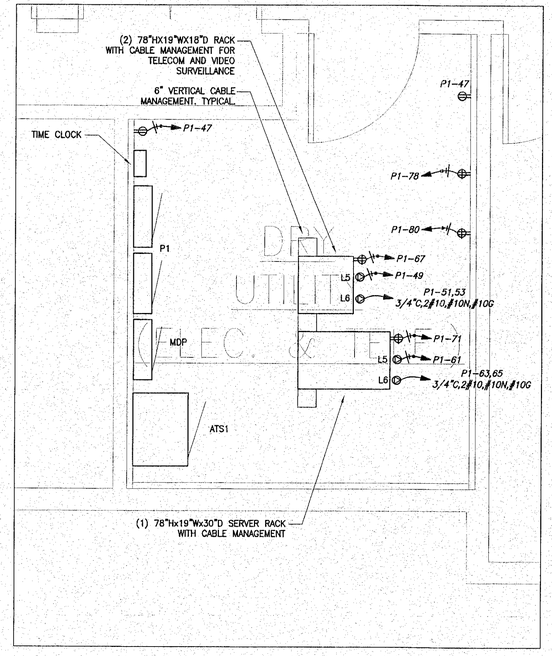
1. ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL 4" CONDUIT AND FEEDERS FOR EMERGENCY (GENERATOR) POWER. ELECTRICAL CONTRACTOR SHALL COORDINATE ROUTING OF CONDUIT AND FEEDERS WITH THE OWNER/ARCHITECT PRIOR TO BID. ELECTRICAL CONTRACTOR SHALL CARRY THE COST ASSOCIATED WITH THIS WORK IN THE BID.
2. ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL 4" CONDUIT AND FEEDERS FOR ELECTRICAL SERVICE. ELECTRICAL CONTRACTOR SHALL COORDINATE ROUTING OF CONDUITS AND FEEDERS WITH THE OWNER/UTILITY COMPANY/ARCHITECT PRIOR TO BID. ELECTRICAL CONTRACTOR SHALL CARRY THE COST ASSOCIATED WITH THIS WORK IN THE BID.
3. ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL (2) 4" CONDUITS AND FOR TELECOMM/CATV SERVICE. ELECTRICAL CONTRACTOR SHALL COORDINATE ROUTING OF CONDUITS WITH THE OWNER/UTILITY COMPANY/ARCHITECT PRIOR TO BID. ELECTRICAL CONTRACTOR SHALL CARRY THE COST ASSOCIATED WITH THIS WORK IN THE BID.



TYPICAL TRENCH DETAIL | *TYPICAL TRENCH DETAIL* | *TYPICAL TRENCH DETAIL*

NOTES:

1. THE ELECTRICAL CONTRACTOR SHALL VERIFY THE CONDUIT LAYOUT WITH THE UTILITY COMPANIES PRIOR TO INSTALLATION.
2. ALL CONDUITS SHALL BE ENCASED IN 3" OF 3000 PSI CONCRETE WHEN CROSSING ROADWAYS, DRIVEWAYS AND OTHER VEHICULAR TRAFFIC AREAS.
3. PROVIDE #4 REBAR AT EACH CORNER AND #3 STIRRUPS AT 15 IN. ON CENTER WHEN CROSSING ROADWAYS, DRIVEWAYS AND OTHER VEHICULAR TRAFFIC AREAS.
4. EXCAVATION, CONCRETE AND BACKFILLING SHALL BE BY THE GENERAL CONTRACTOR. CONDUIT, WIRING, POLE BASES AND HANDHOLES SHALL BE BY THE ELECTRICAL CONTRACTOR.
5. STUB UP CATV CONDUITS 12 IN. ABOVE FINISHED GRADE AT PEDESTAL LOCATIONS WITHIN A 12 IN. x 12 IN. AREA.
6. HANDHOLES SHALL BE 36 IN. x 24 IN. BY QUAZITE OR APPROVED EQUAL WITH BOLTED HEAVY DUTY COVERS. COVERS SHALL READ "ELECTRIC", "TELEPHONE" OR "CATV" DEPENDING ON THE APPLICATION.
7. ALL CONDUITS SHALL BE SCH. 40 PVC, UNLESS NOTED OTHERWISE.



2 POWER - DRY UTILITY
E-5

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

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AZIM S. RAWJI No. 41765 REGISTERED PROFESSIONAL ENGINEER COMMONWEALTH OF MASSACHUSETTS

MENDON POLICE STATION

POWER FLOOR PLAN

DATE: 12/21/12
SCALE: AS NOTED
DRAWN BY: NAJ
CHECKED BY: AR
Sheet 11 OF 25

E4

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1 HVAC POWER - FLOOR PLAN
E-4

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

2 HVAC POWER - ATTIC PLAN
E-4

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

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COMMONWEALTH OF MASSACHUSETTS
AZIM S. RAWJI
No. 41765
REGISTERED PROFESSIONAL ENGINEER
ELECTRICAL

MENDON POLICE STATION

HVAC POWER FLOOR PLAN

DATE:	12/21/12
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Sheet	12 OF 25

E5

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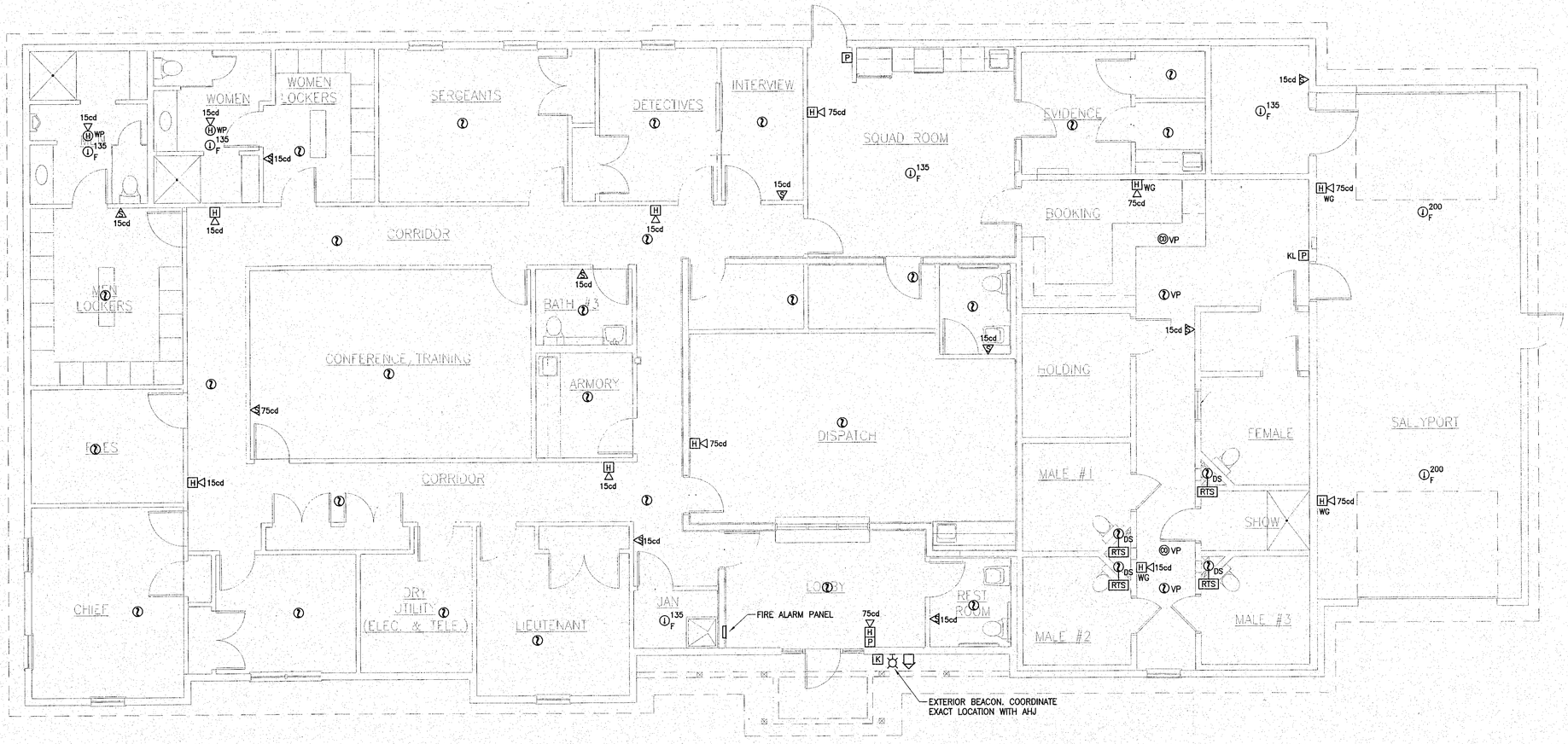
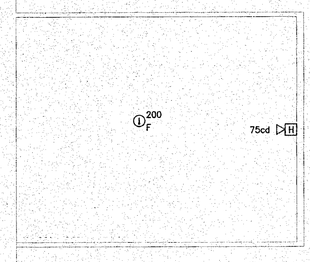


1 / E-6 FIRE ALARM - FLOOR PLAN

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



2 / E-6 FIRE ALARM - ATTIC PLAN

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

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No. 41705
REGISTERED ARCHITECT

MENDON POLICE STATION

FIRE ALARM FLOOR PLAN

DATE: 12/21/12
SCALE: 3/16"=1'-0"
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Sheet 13 OF 25

E6

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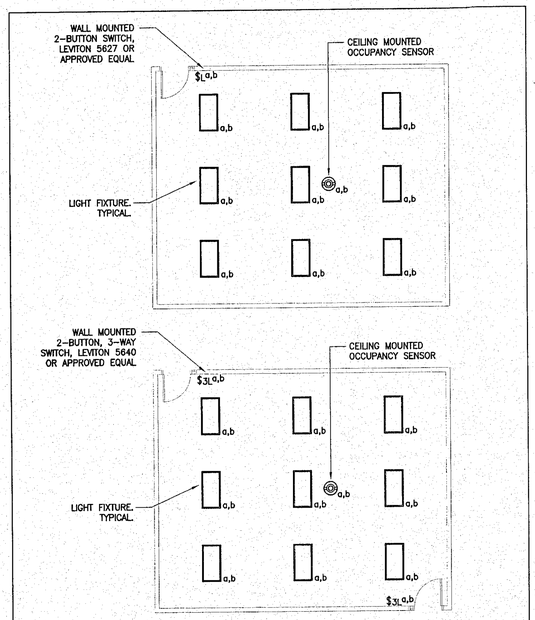
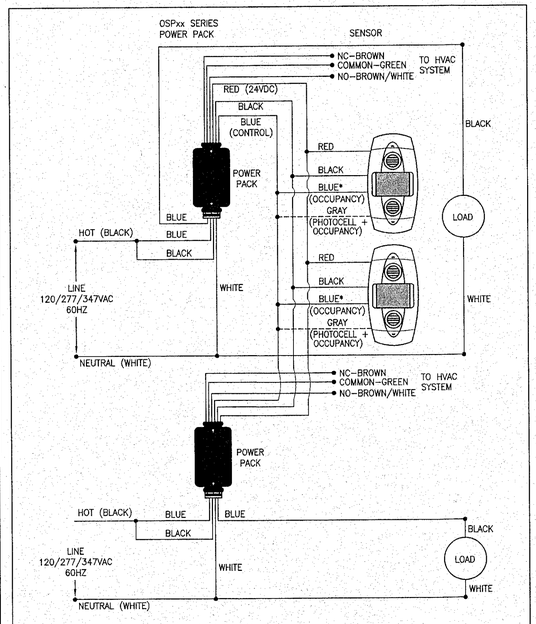
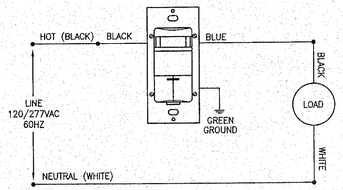


TYPICAL SWITCHING DETAIL FOR LIGHT FIXTURES WITH DUAL BALLASTS / STEP DIMMING BALLASTS | NTS

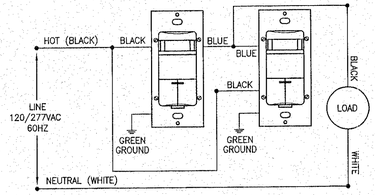


OCCUPANCY SENSOR WIRING DIAGRAM WITH MULTIPLE POWER PACKS | NTS



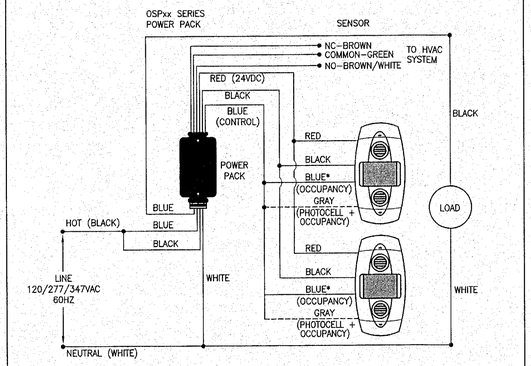
NOTE: GROUND MUST BE CONNECTED

OCCUPANCY SENSOR WIRING DIAGRAM SINGLE LOCATION CONTROL | NTS

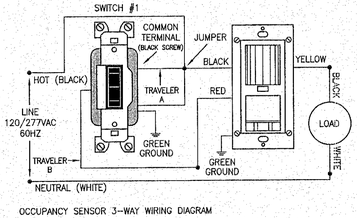


NOTE: GROUND MUST BE CONNECTED

OCCUPANCY SENSOR WIRING DIAGRAM TWO–LOCATION CONTROL | NTS

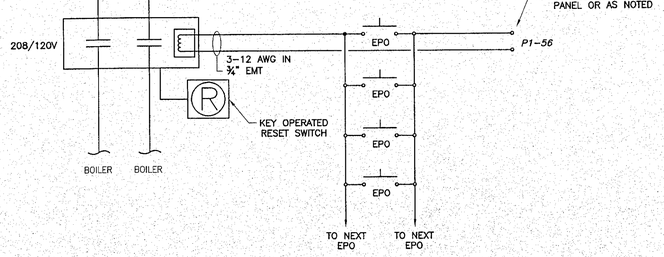


OCCUPANCY SENSOR WIRING DIAGRAM WITH SINGLE POWER PACK | NTS



OCCUPANCY SENSOR 3–WAY WIRING DIAGRAM

OCCUPANCY SENSOR 3–WAY WIRING DIAGRAM | NTS



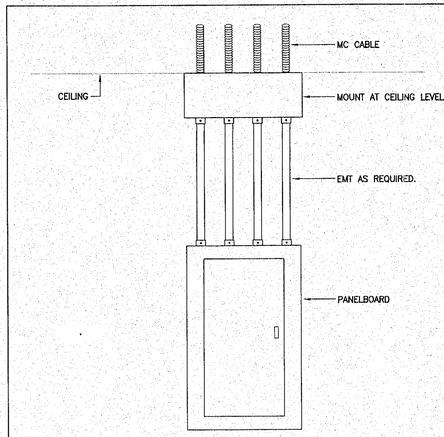
EPO CONTROL NOTES

1. PROVIDE NEW MECHANICALLY HELD CONTACTOR (REFER TO CIRCUIT BREAKER SCHEDULE FOR SIZE), EMERGENCY POWER OFF (EPO) BUTTONS AND KEYED RESET SWITCH.
2. EMERGENCY POWER OFF EQUIPMENT SHALL BE BY SQUARE D, EATON, GE OR APPROVED EQUAL.
3. POWER THE CONTACTOR SO THAT IT WILL REQUIRE COIL POWER TO HOLD IT IN. WHEN AN EPO BUTTON IS PRESSED, THE POWER TO THE COIL IS CUT–OFF THE CONTACTOR WILL CUT OFF POWER TO THE PANEL. THE CONTACTOR SHALL BE RESET BY THE KEY OPERATED RESET SWITCH.
4. IN THE EVENT OF A POWER FAILURE, THE CONTACTOR WILL CUT–OFF POWER TO THE PANEL. THE CONTACTOR SHALL BE RESET BY THE KEY OPERATED RESET SWITCH.
5. EPO BASIS OF DESIGN SQUARE D #9001–KR5RH13/KY1. KEY OPERATED RESET SWITCH BASIS OF DESIGN SQUARE D #9001–KN203/KA1/KY1/KS34K1.
6. PROVIDE QUANTITY OF EPOs AS SHOWN ON PLANS.

EPO CONTROL CIRCUITS

LOCATION	CIRCUIT BREAKER
WET UTILITY	P1–62
WET UTILITY	P1–64

TYPICAL EMERGENCY POWER OFF (EPO) CONTROL DIAGRAM | NTS



TYPICAL PANELBOARD DETAIL | NTS

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No. 41705
REGISTERED PROFESSIONAL ELECTRICAL ENGINEER

MENDON POLICE STATION

ELECTRICAL DETAILS

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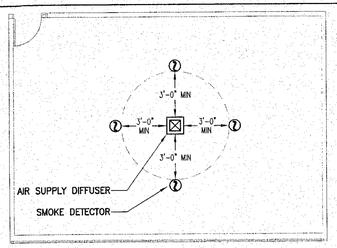
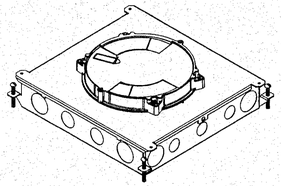


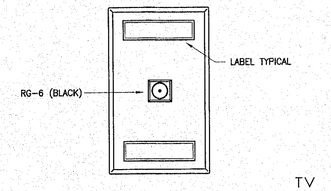
SMOKE DETECTOR MINIMUM CLEARANCE DETAIL | *NTS*



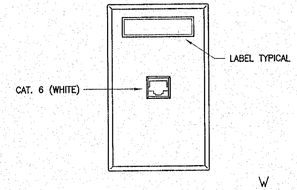
NOTE:
FURNISH AND INSTALL
(1) ¾"C FOR POWER &
(2) 1¼"C FOR COMMUNICATION & AV
UNLESS NOTED OTHERWISE

FLOOR BOX DETAIL POWER, COMMUNICATIONS & AV | *NTS*

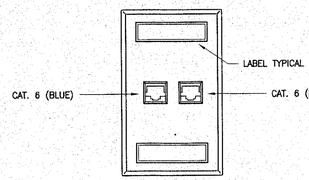
TELECOMMUNICATIONS OUTLETS



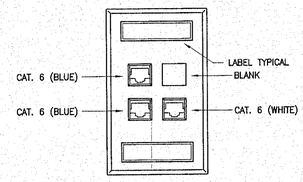
1 TELEVISION
NOT TO SCALE



2 VOICE - WALL
NOT TO SCALE

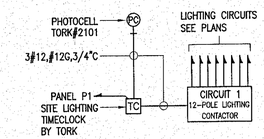


3 DATA
NOT TO SCALE



4 VOICE/DATA
NOT TO SCALE

NOTE:
1. COORDINATE FACEPLATE COLOR WITH THE ARCHITECT.
2. LABEL ALL DATA AND VOICE OUTLETS. LABEL SHALL BE CLEAR MYLAR, P-TOUCH TYPE.



SITE LIGHTING CONTROL DETAIL | *NTS*

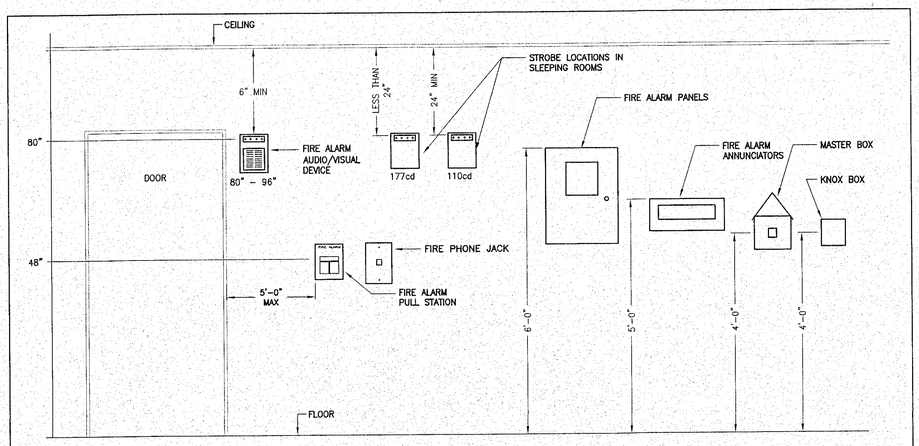
⚠ WARNING

Arc Flash Hazard.
Appropriate PPE Required.
Failure To Comply Can Result in Death or Injury
Refer to NFPA 70 E.

NOTE:

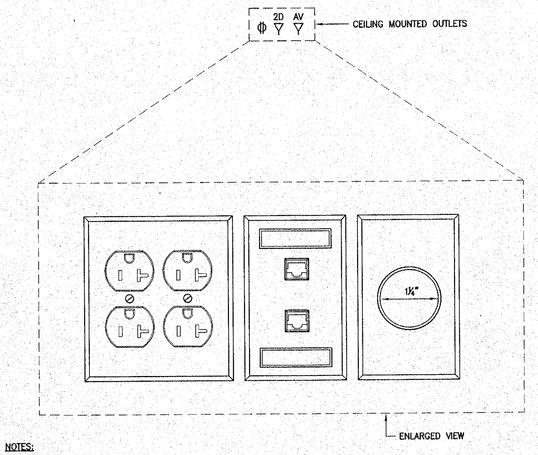
PROVIDE WARNING SIGN ON ALL ELECTRICAL EQUIPMENT, SUCH AS SWITCHBOARDS, PANELBOARDS, INDUSTRIAL CONTROL PANELS, METER SOCKET ENCLOSURES, AND MOTOR CONTROL CENTERS IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE.

TYPICAL ARC FLASH WARNING SIGN | *NTS*



NOTES:
1. ALL MOUNTING HEIGHTS SHALL BE MEASURED FROM FINISHED FLOOR TO CENTERLINE OF DEVICE EXCEPT EXIT SIGN.
2. DEVICES SHALL BE INSTALLED ON A COMMON VERTICAL CENTERLINE WHEREVER POSSIBLE.
3. ALL DEVICES SHALL BE INSTALLED AT MOUNTING HEIGHTS AS INDICATED ON THIS DETAIL UNLESS OTHERWISE NOTED.

FIRE ALARM DEVICE MOUNTING HEIGHTS DETAIL | *NTS*



NOTES:
1. DEVICES ARE TO BE CENTERED ON CEILING TILE
2. COORDINATE EXACT LOCATION WITH THE OWNER AND THE ARCHITECT PRIOR TO INSTALLATION. PROVIDE SHOP DRAWING WITH DIMENSIONS FOR EACH LOCATION.

TYPICAL DETAIL OF CEILING MOUNTED OUTLETS FOR A PROJECTOR | *NTS*

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COMMONWEALTH OF MASSACHUSETTS
AZIM S. RAWJI
No. 41265
REGISTERED PROFESSIONAL ENGINEER

MENDON POLICE STATION

ELECTRICAL DETAILS

DATE: 12/21/12
SCALE: N.T.S.
DRAWN BY: NAJ
CHECKED BY: AR

Sheet 15 OF 25

E8

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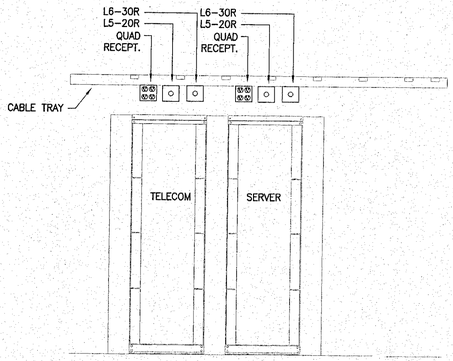
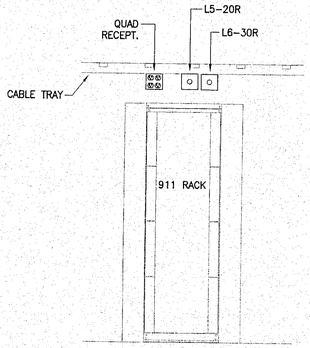
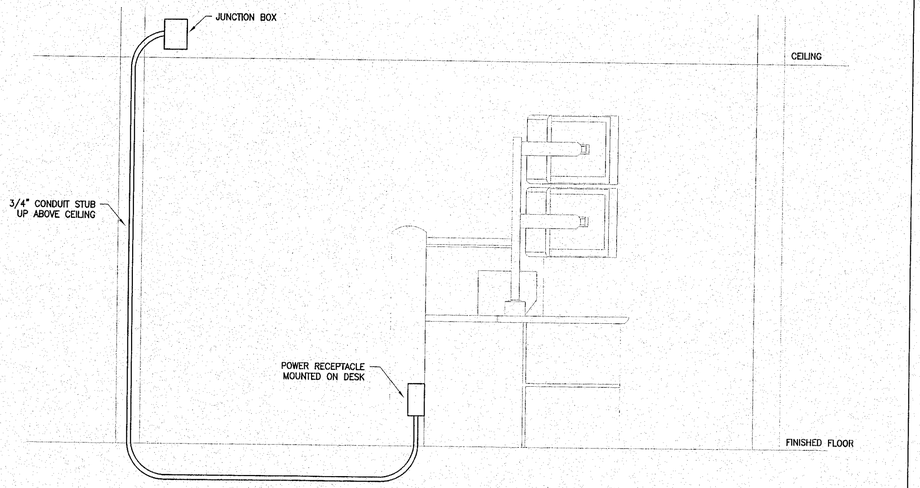


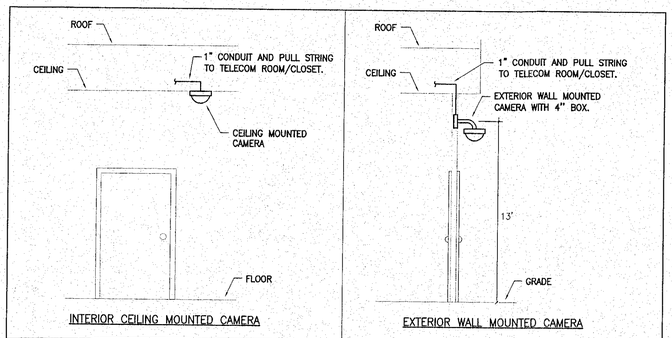
RACK DETAIL | NTS



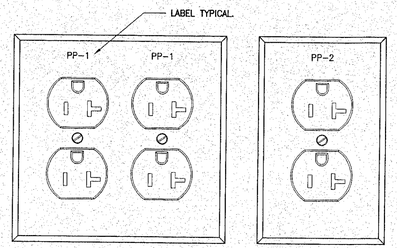
911 RACK DETAIL | NTS



DISPATCH ROOM SECURITY DESK POWER DETAIL | NTS



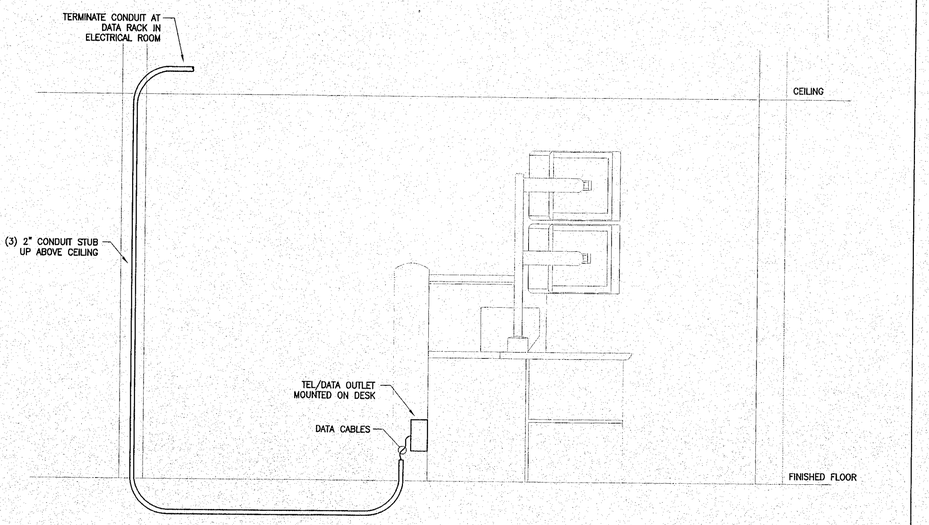
CAMERA MOUNTING DETAIL | NTS



NOTES:

1. COORDINATE FACEPLATE COLOR WITH THE ARCHITECT.
2. LABEL ALL RECEPTACLES WITH PANEL DESIGNATION AND CIRCUIT NUMBER. LABEL SHALL BE CLEAR MYLAR, P-TOUCH TYPE.

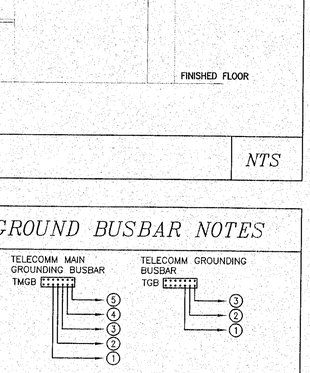
TYPICAL RECEPTACLE LABEL REQUIREMENTS | NTS



DISPATCH ROOM SECURITY DESK TEL/DATA DETAIL | NTS

TELECOMMUNICATIONS GROUND BUSBAR NOTES

1. 6 AWG INSULATED GREEN COPPER GROUNDING CONDUCTOR TO THE BUILDING STEEL.
2. 6 AWG INSULATED GREEN COPPER GROUNDING CONDUCTOR TO THE TELECOMMUNICATION RACK AND EQUIPMENT.
3. 6 AWG INSULATED GREEN COPPER GROUNDING CONDUCTOR TO THE NEAREST ELECTRICAL PANEL.
4. 3/0 AWG INSULATED GREEN COPPER GROUNDING CONDUCTOR TO THE MAIN ELECTRICAL GROUNDING BUSBAR.
4. 6 AWG INSULATED GREEN COPPER GROUNDING CONDUCTOR TO TWO 3/4"X10' COPPER GROUNDING RODS



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MENDON POLICE STATION

ELECTRICAL DETAILS

DATE: 12/21/12
SCALE: N.T.S.
DRAWN BY: NAJ
CHECKED BY: AR

Sheet 16 OF 25

E9

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EQUIPMENT SCHEDULE

EQUIPMENT TAG	DESCRIPTION	HP	KVA	FLA	MCA	MOCP	VOLTS/PHASE	TRIP/POLE	CONNECTION	DISC./FUSE	NEMA	FEEDER	CIRCUIT
AC-1	INDOOR DX-UNIT EVAPORATOR		2.87	13.8A	17	25	208V 2P 2W	25/2		30AS/25AF		3/4"C,2#12,#12G	MDP-18,20
AC-2	INDOOR DX-UNIT EVAPORATOR		1.16	5.6A	7	20	208V 2P 2W	20/2		30AS/15AF		3/4"C,2#12,#12G	MDP-22,24
AC-3	INDOOR DX-UNIT EVAPORATOR		1.16	5.6A	7	20	208V 2P 2W	20/2		30AS/15AF		3/4"C,2#12,#12G	MDP-26,28
ACU-1	OUTDOOR CONDENSING UNIT		4.49	21.6A	15.125	25	208V 2P 2W	25/2		30AS/25AF	NEMA 3R	3/4"C,2#12,#12G	MDP-2,4
ACU-2	INDOOR DX-UNIT-EVAPORATOR		2.5	12A	15	20	208V 2P 2W	20/2		30AS/20AF	NEMA 3R	3/4"C,2#12,#12G	MDP-6,8
ACU-3	OUTDOOR CONDENSING UNIT		1.46	7A	8.75	20	208V 2P 2W	20/2		30AS/15AF	NEMA 3R	3/4"C,2#12,#12G	MDP-10,12
AHU-1	AIR HANDLING UNIT		0.62	3A	3.75	20	208V 2P 2W	20/2		30AS/15AF		3/4"C,2#12,#12G	P1-82,84
AHU-2	AIR HANDLING UNIT		0.62	3A	3.75	20	208V 2P 2W	20/2		30AS/15AF		3/4"C,2#12,#12G	P1-86,88
AHU-3	AIR HANDLING UNIT		0.29	1.4A	1.75	20	208V 2P 2W	20/2		30AS/15AF		3/4"C,2#12,#12G	P1-90,92
AHU-4	AIR HANDLING UNIT		0.29	1.4A	1.75	20	208V 2P 2W	20/2		30AS/15AF		3/4"C,2#12,#12G	P1-94,96
AHU-5	AIR HANDLING UNIT		0.29	1.4A	1.75	20	208V 2P 2W	20/2		30AS/15AF		3/4"C,2#12,#12G	P1-98,100
B-1	OIL FIRED BOILER		0.48	4A	5	20	120V 1P 2W	20/1	ST			3/4"C,1#12,#12N,#12G	P1-62
B-2	OIL FIRED BOILER		0.48	4A	5	20	120V 1P 2W	20/1	ST			3/4"C,1#12,#12N,#12G	P1-64
CU-1	CONDENSING UNIT		3.83	18.4A	23	40	208V 2P 2W	40/2		60AS/40AF	NEMA 3R	3/4"C,2#10,#10G	MDP-1,3
CU-2	CONDENSING UNIT		3.83	18.4A	23	40	208V 2P 2W	40/2		60AS/40AF	NEMA 3R	3/4"C,2#10,#10G	MDP-5,7
CU-3	CONDENSING UNIT		2.95	14.2A	18	30	208V 2P 2W	30/2		30AS/30AF	NEMA 3R	3/4"C,2#12,#12G	MDP-9,11
CU-4	CONDENSING UNIT		2.95	14.2A	18	30	208V 2P 2W	30/2		30AS/30AF	NEMA 3R	3/4"C,2#12,#12G	MDP-13,15
CU-5	CONDENSING UNIT		2.95	14.2A	18	30	208V 2P 2W	30/2		30AS/30AF	NEMA 3R	3/4"C,2#12,#12G	MDP-17,19
CUH-1	CABINET UNIT HEATER	1/8 HP	0.47	3.9A	5	20	120V 1P 2W	20/1	ST			3/4"C,1#12,#12N,#12G	P1-52
EF-1	EXHAUST FAN		0.05	0.4A	0.468	20	120V 1P 2W	20/1	ST			3/4"C,1#12,#12N,#12G	P1-8
EF-2	EXHAUST FAN		0.05	0.4A	0.468	20	120V 1P 2W	20/1	ST			3/4"C,1#12,#12N,#12G	P1-8
EF-3	EXHAUST FAN		0.05	0.4A	0.468	20	120V 1P 2W	20/1	ST			3/4"C,1#12,#12N,#12G	P1-10
EF-4	EXHAUST FAN		0.05	0.4A	0.468	20	120V 1P 2W	20/1	ST			3/4"C,1#12,#12N,#12G	P1-10
EF-5	EXHAUST FAN		0.05	0.4A	0.468	20	120V 1P 2W	20/1	ST			3/4"C,1#12,#12N,#12G	P1-60
EF-6	EXHAUST FAN		0.08	0.7A	0.8338	20	120V 1P 2W	20/1	ST			3/4"C,1#12,#12N,#12G	P1-12
EF-7	EXHAUST FAN		0.08	0.7A	0.8338	20	120V 1P 2W	20/1	ST			3/4"C,1#12,#12N,#12G	P1-12
EF-8	EXHAUST FAN	1/4 HP	0.7	5.8A	7.25	20	120V 1P 2W	20/1	ST			3/4"C,1#12,#12N,#12G	P1-58
ERV-1	ENERGY RECOVERY VENTILATOR	1/3 HP	0.86	4.2A	4.37	20	208V 2P 2W	20/2		30AS/20AF		3/4"C,2#12,#12G	MDP-14,16
P-1	PUMP	1/3 HP	0.86	4.2A	5.12	20	208V 2P 2W	20/2		30AS/6AS		3/4"C,2#12,#12G	MDP-34,36
P-2	PUMP	1/3 HP	0.86	4.2A	5.12	20	208V 2P 2W	20/2		30AS/6AS		3/4"C,2#12,#12G	MDP-38,40
P-3	PUMP	1/3 HP	0.86	4.2A	5.12	20	208V 2P 2W	20/2		30AS/6AS		3/4"C,2#12,#12G	MDP-21,23
P-4	PUMP	1/3 HP	0.86	4.2A	5.12	20	208V 2P 2W	20/2		30AS/6AS		3/4"C,2#12,#12G	MDP-25,27
UH-1	UNIT HEATER	1/10 HP	0.42	3.5A	4.375	20	120V 1P 2W	20/1	ST			3/4"C,1#12,#12N,#12G	P1-54

New Panel: P1 — MOUNTING SURFACE: FED FROM MDP — VOLTS 208Y/120V 3P 4W — BUS AMPS 200

CKT #	CKT BKR	CIRCUIT DESCRIPTION		CKT #	CKT BKR	CIRCUIT DESCRIPTION
1	20/1	REFRIGERATOR	a	2	20/1	LIGHTING
3	50/2	RANGE	b	4	20/1	LIGHTING
5	|		c	6	20/1	LIGHTING
7	20/1	RECEPTACLE	a	8	20/1	LIGHTING, EF-1, EF-2
9	20/1	RECEPTACLE	b	10	20/1	LIGHTING, EF-4, EF-3
11	20/1	RECEPTACLE	c	12	20/1	LIGHTING, EF-6, EF-7
13	20/1	RECEPTACLE	a	14	20/1	LIGHTING
15	20/1	RECEPTACLE	b	16	20/1	LIGHTING
17	20/1	RECEPTACLE	c	18	20/1	LIGHTING
19	20/1	RECEPTACLE	a	20	20/2	LIGHTING
21	20/1	RECEPTACLE	b	22	|	
23	20/1	RECEPTACLE	c	24	20/1	RECEPTACLE
25	20/1	RECEPTACLE	a	26	20/1	RECEPTACLE
27	20/1	RECEPTACLE	b	28	20/1	RECEPTACLE
29	20/1	RECEPTACLE	c	30	20/1	RECEPTACLE
31	20/1	RECEPTACLE	a	32	20/1	RECEPTACLE
33	20/1	RECEPTACLE	b	34	20/1	RECEPTACLE
35	20/1	RECEPTACLE	c	36	20/1	RECEPTACLE
37	20/1	RECEPTACLE	a	38	20/1	RECEPTACLE
39	20/1	RECEPTACLE	b	40	20/1	RECEPTACLE
41	20/1	RECEPTACLE	c	42	20/1	RECEPTACLE
43	20/1	RECEPTACLE	a	44	20/1	RECEPTACLE
45	20/1	RECEPTACLE	b	46	30/2	RECEPTACLE
47	20/1	RECEPTACLE	c	48	|	
49	20/1	RECEPTACLE	a	50	20/1	LIGHTING
51	30/2	RECEPTACLE	b	52	20/1	CUH-1
53	|		c	54	20/1	UH-1
55	30/2	SPARE	a	56	20/1	EPO
57	|		b	58	20/1	EF-8
59	20/1	SPARE	c	60	20/1	EF-5
61	20/1	RECEPTACLE	a	62	20/1	B-1
63	30/2	RECEPTACLE	b	64	20/1	B-2
65	|		c	66	20/1	RECEPTACLE
67	20/1	RECEPTACLE	a	68	20/1	RECEPTACLE
69	20/1	SPARE	b	70	20/1	RECEPTACLE
71	20/1	RECEPTACLE	c	72	20/1	RECEPTACLE
73	20/1	RECEPTACLE	a	74	20/1	RECEPTACLE
75	20/1	RECEPTACLE	b	76	20/1	RECEPTACLE
77	20/1	RECEPTACLE	c	78	20/1	RECEPTACLE
79	20/1	RECEPTACLE	a	80	20/1	RECEPTACLE
81	20/1	RECEPTACLE	b	82	20/2	AHU-1
83	20/1	RECEPTACLE	c	84	|	
85	20/1	FIRE ALARM CONTROL PANEL	a	86	20/2	AHU-2
87	20/1	SPARE	b	88	|	
89	20/1	SPARE	c	90	20/2	AHU-3
91	20/1	SPARE	a	92	|	
93	20/1	SPARE	b	94	20/2	AHU-4
95	20/1	SPARE	c	96	|	
97	20/1	SPARE	a	98	20/2	AHU-5
99	20/1	SPARE	b	100	|	
101	20/1	SPARE	c	102	20/1	SPARE
103	20/1	SPARE	a	104	20/1	SPARE
105	20/1	SPARE	b	106	20/1	SPARE
107	20/1	SPARE	c	108	20/1	SPARE

LIGHTING FIXTURE SCHEDULE

CALLOUT	SYMBOL	LAMP	DESCRIPTION	MOUNTING	MODEL	VOLTS
A	○	(1) 26W CFL	Recessed Downlight	CEILING	PORTFOLIO CD6S142-E-6CLS1421-MW-1-LAMP 26W	120V 1P 2W
B	▭	(3) 32W HPT8	1x4 Wraparound Fixture	WALL	FAIL SAFE FDX-T8-1/232-81/86-HB81	120V 1P 2W
C	▭	(3) 32W HPT8	High Bay	CEILING	METALUX I8-3-32-FL-UNV-3000-HBT8-With Chain Set Coordinate mounting height with the Architect.	120V 1P 2W
F	▭	(2) 32W HPT8	2'x4' Semi Direct Fixture	CEILING	CORELITE R3-WL-2T8-1-C-UNV-24	120V 1P 2W
FD	▭	(2) 32W HPT8	2'x4' Semi Direct Fixture	CEILING	CORELITE R3-WL-2T8-1-D-UNV-24 With Dimming Ballast	120V 1P 2W
FSD	▭	(2) 32W HPT8	2'x4' Semi Direct Fixture	CEILING	CORELITE R3-WL-2T8-1-SD-UNV-24 With Step Dimming Ballast	120V 1P 2W
G	▭	(2) 32W HPT8	2x4 Prismatic Fixture	CEILING	FAIL SAFE CFDFA-232A19/156-UNV-EB81-G3-U	120V 1P 2W
K	▭	(2) 32W HPT8	4' Wraparound	CEILING	COOPER CR-2-32-A-UNV-EBH1	120V 1P 2W
L4	▭	(2) 32W HPT8	4' Wall Mounted Fixture	WALL/CEILING	METALUX BC-2-32-T8-UNV-EBT51	120V 1P 2W
ME	●	(1) 26W CFL	Recessed Light Fixture	CEILING	KIRLIN FRR-07037-13-AT-CE With Emergency Ballast	120V 1P 2W
N	⊢□	(3) 32W CFL	Wall Pack	WALL	McGRAW-EDISON IMT-96-CF-208-4S-P-TR-COLOR AS SELECTED BY ARCHITECT	208V 2P 2W
U	▭	(2) 32W HPT8	2x4 Prismatic Fixture	CEILING	METALUX 2GC8-232T8A125-UNV-EB81-U	120V 1P 2W
UC2	▭	(1) 17W HPT8	5 1/4' ' Undercabinet Light Fixture	CEILING	LEGION 312-117-ACW-EBO-120V	120V 1P 2W
UG	▭	(2) 32W HPT8	2x4 Prismatic Fixture	CEILING	METALUX 2GC8-232T8A125-UNV-EB81-U-PROVIDE WITH GASKET	120V 1P 2W
X1	◶	(0) LED	Exit sign – Single sided	WALL/CEILING	SURE-LITES LPX-7-WH-SD With Emergency Battery	120V 1P 2W
X2	◓	(0) LED	Exit sign – Dual sided	WALL/CEILING	SURE-LITES LPX-7-WH-SD With Emergency Battery	120V 1P 2W
X3	◈	(0) LED	Exit sign w/ integral emergency lighting unit	WALL/CEILING	SURE-LITES LPXH7-G-R-WH-UNV-DH-SD With Emergency Battery and integral heads	120V 1P 2W
X4	◈	(0) LED	Exit sign w/ integral emergency lighting unit and remote head capability	WALL/CEILING	SURE-LITES LPXH7-G-R-WH-UNV-DH-SD With Emergency Battery, integral heads and remote head capability.	120V 1P 2W
X6	◈	(0) HAL	Emergency battery unit	WALL/CEILING	SURE-LITES APZSQ	120V 1P 2W
X7	◈	(0)	Double remote emergency heads	WALL/CEILING	SURE-LITES 6-T-54-D-W-WH	120V 1P 2W

NOTES:

1. THE ELECTRICAL CONTRACTOR SHALL DETERMINE ACTUAL LIGHT FIXTURE COUNTS FROM THE DRAWINGS.
2. ALL LIGHT FIXTURES SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE, AND SHALL BE INDEPENDANT OF DUCTS, PIPES, CEILINGS AND THEIR SUPPORTING MEMBERS.
3. ALL FIXTURES WITH T8 FLUORESCENT LAMPS TO BE HIGH EFFICIENCY T8 SYSTEM.
4. LIGHTING FIXTURES SHALL BE BY COOPER, LIGHTOLIER, LITHONIA OR APPROVED EQUAL.

New Panel: MDP — MOUNTING SURFACE: FED FROM UTILITY — VOLTS 208Y/120V 3P 4W — BUS AMPS 400

CKT #	CKT BKR	CIRCUIT DESCRIPTION		CKT #	CKT BKR	CIRCUIT DESCRIPTION
1	40/2	CU-1	a	2	25/2	ACU-1
3	|		b	4	|	
5	40/2	CU-2	c	6	20/2	ACU-2
7	|		a	8	|	
9	30/2	CU-3	b	10	20/2	ACU-3
11	|		c	12	|	
13	30/2	CU-4	a	14	20/2	ERV-1
15	|		b	16	|	
17	30/2	CU-5	c	18	25/2	AC-1
19	|		a	20	|	
21	20/2	P-3	b	22	20/2	AC-2
23	|		c	24	|	
25	20/2	P-4	a	26	20/2	AC-3
27	|		b	28	|	
29	20/2	SPARE	c	30	20/2	P-1
31	|		a	32	|	
33	20/2	SPARE	b	34	20/2	P-2
35	|		c	36	|	
37	200/3	PANEL P1	a	38	30/3	SPARE
39	|		b	40	|	
41	|		c	42	|	

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AZIM S. RAWJI No. 41765 REGISTERED PROFESSIONAL ENGINEER COMMONWEALTH OF MASSACHUSETTS

MENDON POLICE STATION

ELECTRICAL SCHEDULES

DATE: 12/21/12
SCALE: 3/16"=1'-0"
DRAWN BY: NAJ
CHECKED BY: AR
Sheet 17 OF 25

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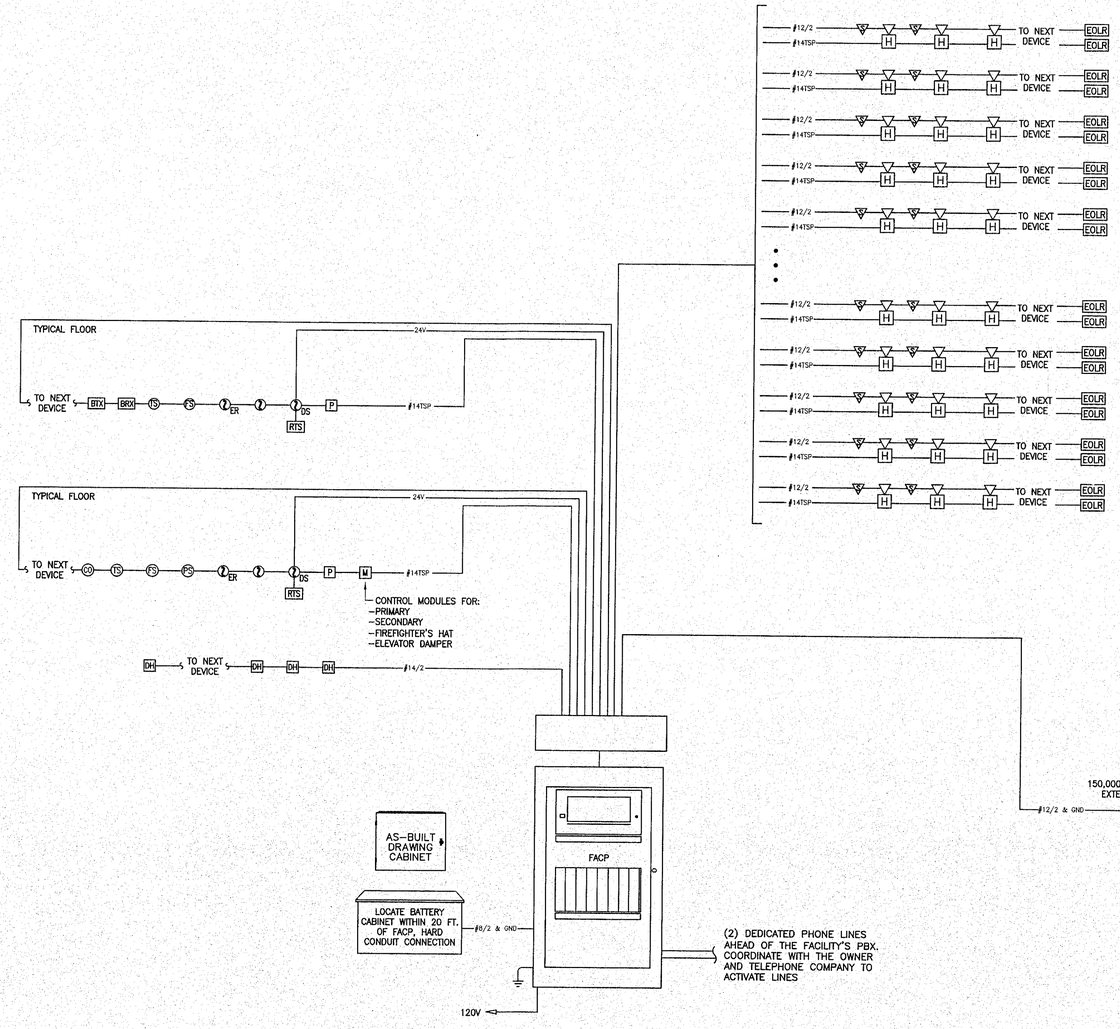

TYPICAL FIRE ALARM RISER DIAGRAM

NOT TO SCALE

GENERAL NOTES:

1. EQUIPMENT/DEVICES SHALL BE AS MANUFACTURED BY SIMPLEX–GRINNELL, GAMEWELL, NOTIFIER OR APPROVED EQUAL.
2. RISER DIAGRAMS ARE FOR REFERENCES ONLY. THE ELECTRICAL CONTRACTOR SHALL USE THE RISER DIAGRAM AND CABLING SCHEME PROVIDED BY THE MANUFACTURER. THE SYSTEM VENDOR SHALL PREPARE RISER DIAGRAM FOR A FULLY FUNCTIONAL SYSTEM.
3. ALL FIRE ALARM SYSTEM WIRING SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE, APPLICABLE STATE AND LOCAL FIRE AND SAFETY CODES, AS WELL AS BEING COORDINATED WITH THE LOCAL AUTHORITY HAVING JURISDICTION.
4. PROVIDE ISOLATOR BASES IN SMOKE DETECTORS FOR EVERY 25 ADDRESSABLE DEVICES.
5. BATTERIES TO BE SIZED FOR 60 HOURS STANDBY, 15 MINUTE ALARM AND 20% SPARE CAPACITY.

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COMMONWEALTH OF MASSACHUSETTS
AZIM S. RAWJI
No. 41765
REGISTERED PROFESSIONAL ENGINEER
ELECTRICAL

MENDON POLICE STATION

FIRE ALARM RISER

DATE:	12/21/12
SCALE:	NTS
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Sheet 18 OF 25

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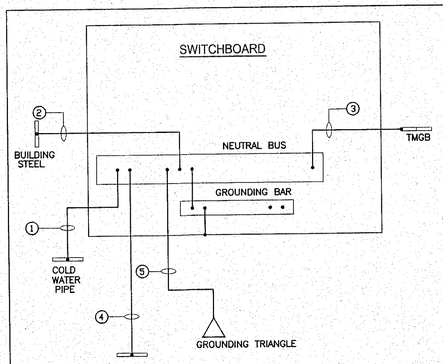


NOTES:

1. 1/0 AWG COPPER GROUNDING ELECTRODE CONDUCTOR TO METAL UNDERGROUND WATER PIPE. BOND TO THE WATER PIPE WITHIN 5 FT. FROM THE POINT OF ENTRANCE TO THE BUILDING.
2. 1/0 AWG COPPER GROUNDING ELECTRODE CONDUCTOR TO EFFECTIVELY GROUNDED METAL FRAME OF THE BUILDING.
3. 1/0 AWG GROUNDING ELECTRODE CONDUCTOR TO THE MAIN TELECOMMUNICATION GROUNDING BUSBAR AT THE TELECOMMUNICATIONS ENTRANCE FACILITY.
4. 4 AWG COPPER GROUNDING ELECTRODE CONDUCTOR TO EFFECTIVELY GROUNDED MINIMUM 20 FT. X 1/2 IN. REBAR IN THE BUILDING FOUNDATION OR 20 FT. 4 AWG BARE GROUND CONDUCTOR IN BUILDING FOOTING INSTALLED PER THE NEC.
5. 6 AWG COPPER GROUNDING ELECTRODE CONDUCTOR TO THREE ¾ IN. x 10 FT. COPPER-CLAD STEEL GROUND RODS PLACED A MINIMUM OF 10 FT. APART.
6. 6 AWG GROUNDING ELECTRODE CONDUCTOR FROM THE NEAREST ELECTRICAL PANEL TO EACH TELECOMMUNICATIONS GROUNDING BUSBAR. FURNISH AND INSTALL GROUNDING BUSBAR IN ALL TELECOMMUNICATION/DATA ROOMS (ALL ROOMS WITH VOICE/DATA/COMMUNICATION RACKS).

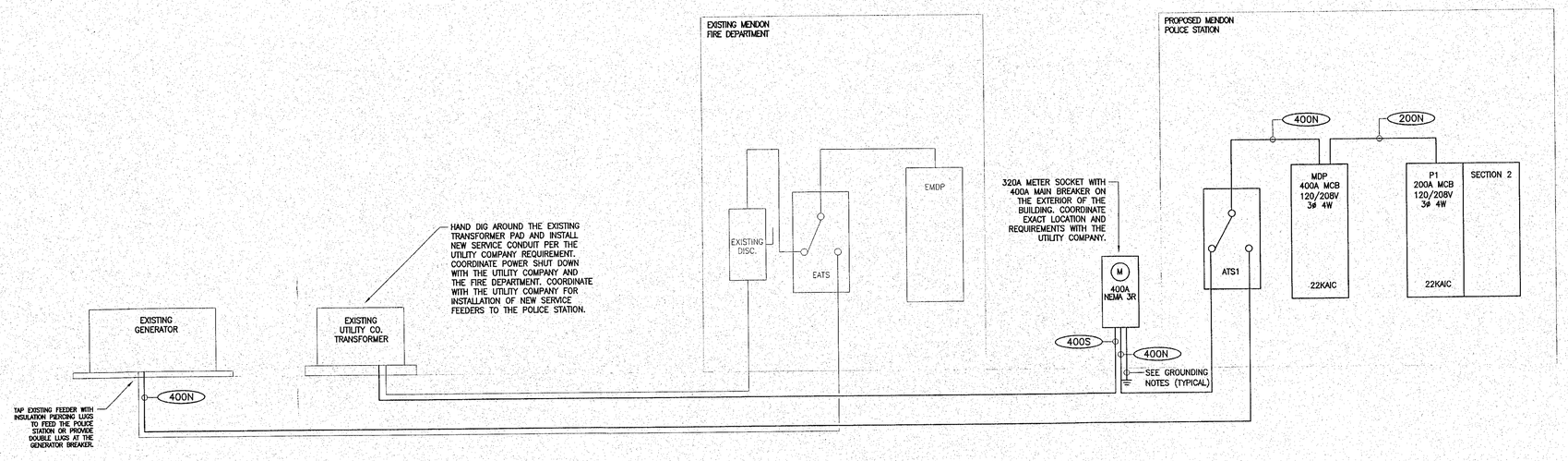
GROUNDING NOTES AND DETAIL | NTS

FEEDER SCHEDULE – COPPER

FEEDER SYMBOL	COPPER CONDUCTORS	CONDUIT	NOMINAL AMPERE RATING
200N	4–3/0 AWG & 1–6 AWG GND	2–1/2"	200
400N	4–600 KCMIL & 1–3 AWG GND	4"	400
400S	4–600 KCMIL	4"	400

DISTRIBUTION NOTES

1. SWITCHGEAR AND PANELBOARDS SHALL BE MANUFACTURED BY SQUARE D, SIEMENS, GENERAL ELECTRIC OR CUTLER–HAMMER.
2. THIS CONTRACTOR SHALL VERIFY THE AVAILABLE SHORT CIRCUIT CURRENT FOR THE MAIN SERVICE WITH THE UTILITY COMPANY. THE ELECTRICAL DISTRIBUTION SYSTEM SHALL BE RATED FOR THE AVAILABLE SHORT CIRCUIT CURRENT OR AS NOTED ON THE DRAWINGS.
3. THE ENTIRE SYSTEM SHALL BE RATED AND COORDINATED FOR THE AVAILABLE SHORT CIRCUIT CURRENT.
4. PROVIDE HACR CIRCUIT BREAKERS FOR ALL HVAC EQUIPMENT.
5. SEE FEEDER SCHEDULE FOR PANEL FEEDER SIZES. UNLESS NOTED OTHERWISE.



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MENDON POLICE STATION

ELECTRICAL DISTRIBUTION RISER

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Sheet 19 OF 25

E12

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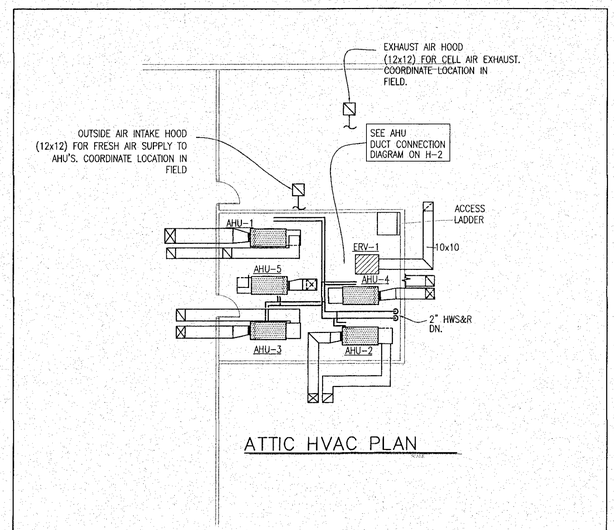
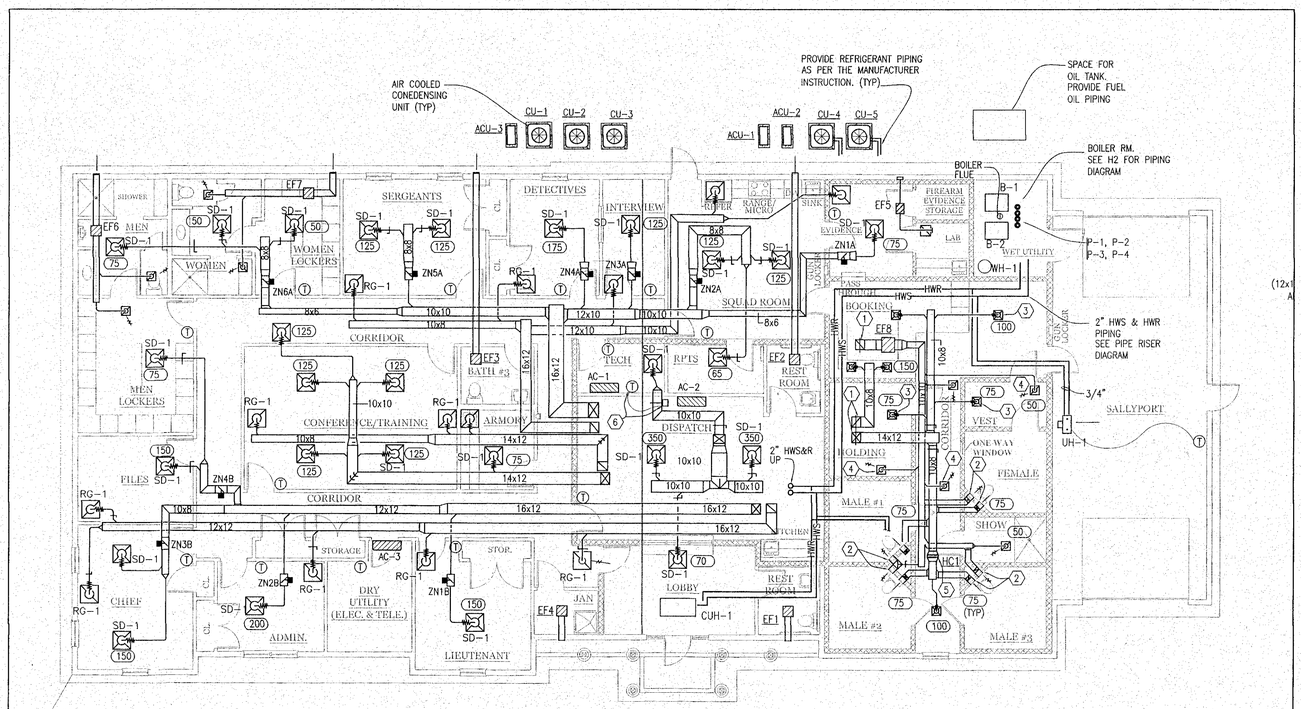


ATTIC HVAC PLAN



HVAC PLAN

SCALE: 1/8"=1'

PLAN NOTES

1. PROVIDE SECURITY BAR AT THE DUCT PENETRATION.
2. PROVIDE 6x6 SECURITY LATTICE FACE GRILLE. PRICE MODEL MSL OR EQUAL. (TYPICAL IN SUPPLY AND EXHAUST OUTLETS AT ALL HOLDING CELLS.) PROVIDE VOLUME DAMPER IN BRANCH DUCTWORK AT CELL CHASE.
3. PROVIDE 6x6 SECURITY LATTICE FACE DIFFUSER. PRICE MODEL "MSD" OR EQUAL. PROVIDE DAMPER FOR FLOW CONTROL.
4. PROVIDE 6x6 EXHAUST GRILLE WITH SECURITY LATTICE FACE PLATE. PRICE MODEL "MSLP" OR EQUAL. PROVIDE DAMPER FOR FLOW CONTROL.
5. PROVIDE HOT WATER REHEAT COIL. (HC1). 1 ROW, 6 MBHA AT .5 GPM. PROVIDE SECURE ACCESS PANEL BELOW COIL.
6. PROVIDE LINE THERMOSTAT AND MOTORIZED DAMPER FOR BACKUP COOLING. THERMOSTAT SHALL OPEN MOTORIZED DAMPER IN EVENT THE SPACE TEMPERATURE IN SERVER ROOM EXCEED SETPOINT (80°F).

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ANUP S. KHATRA
No. 42431
REGISTERED PROFESSIONAL ENGINEER

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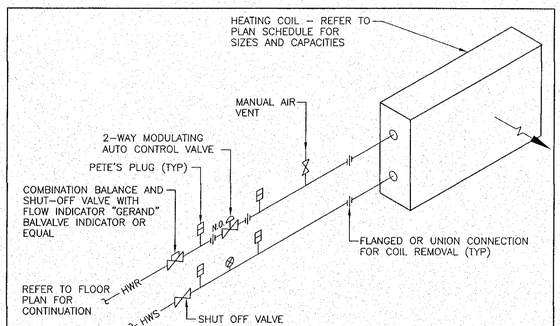
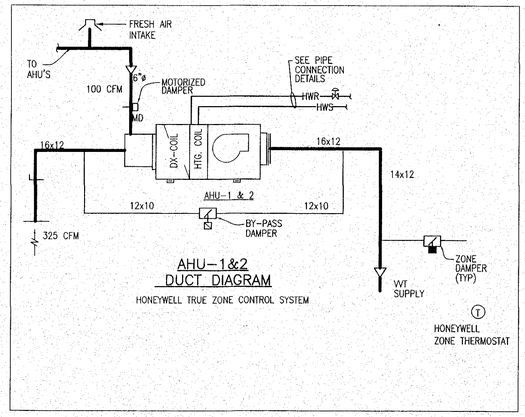
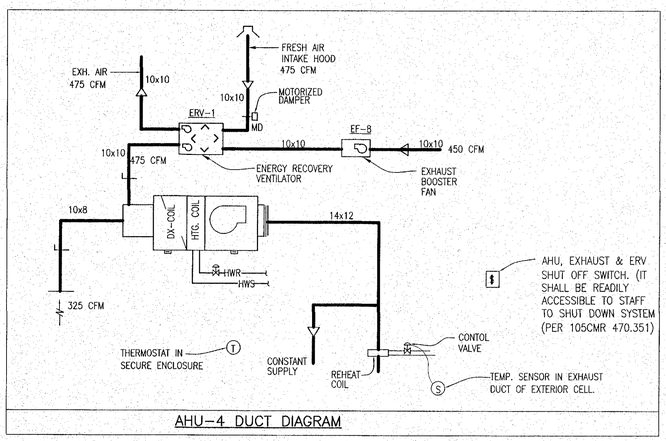


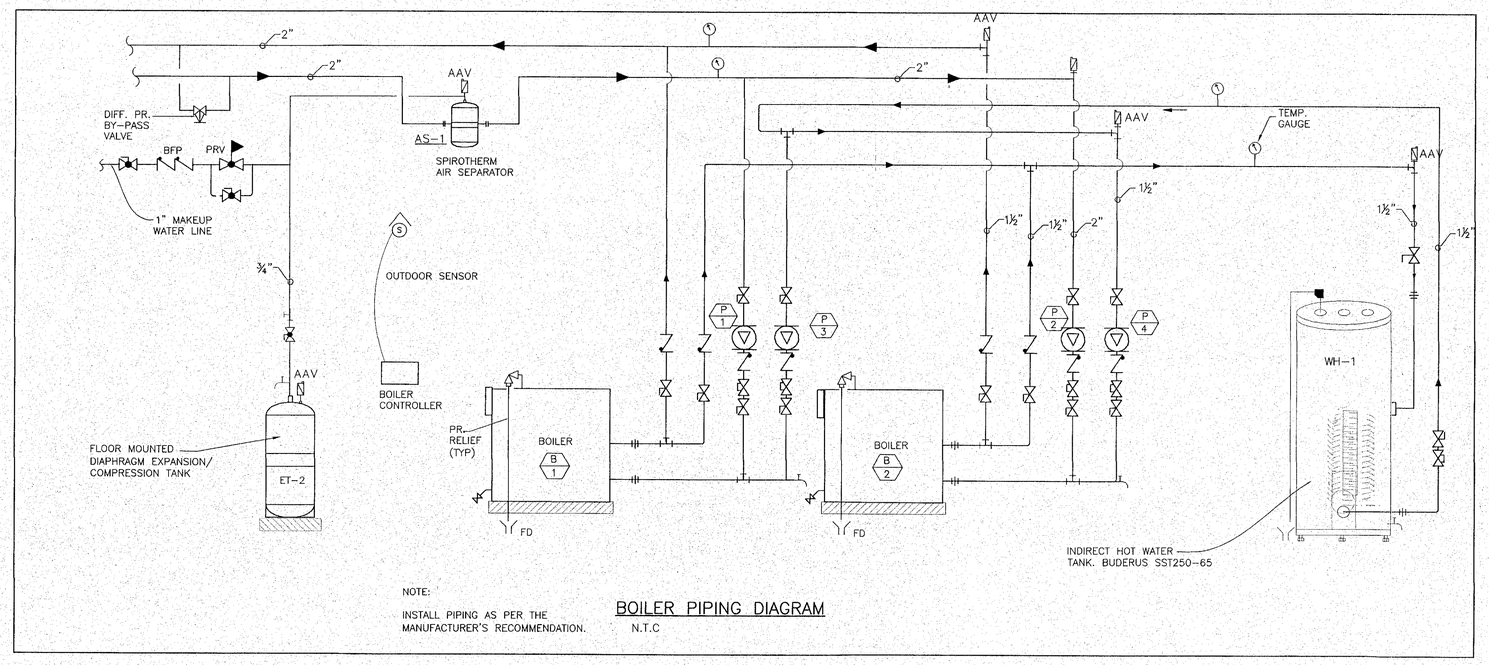
X **HEATING COIL PIPING DIAGRAM-A**
NOT TO SCALE



AHU–1&2
DUCT DIAGRAM
HONEYWELL TRUE ZONE CONTROL SYSTEM



AHU–4 DUCT DIAGRAM



NOTE:
INSTALL PIPING AS PER THE MANUFACTURER'S RECOMMENDATION.

BOILER PIPING DIAGRAM
N.T.C

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ANUP S. KHATRA
No. 42431
REGISTERED PROFESSIONAL ENGINEER

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H-2

OIL FIRED BOILER SCHEDULE

MARK	TYPE	INPUT	OUTPUT	AFUE %	MODEL (LOCHINVAR)	ELECT	WEIGHT	NOTES
B-1	CAST IRON	171	149	–	BUDERUS G215/4	120V-1PH	–	1, 2
B-2	CAST IRON	171	149	–	BUDERUS G215/4	120V-1PH	–	1, 2

NOTES: 1) PROVIDE STAINLESS STEEL VENT KITS.
2) PROVIDE STAINLESS STEEL INDIRECT HOT WATER TANK- SST250

INDOOR DX-UNIT-EVAPORATOR

EVAPORATOR TAG	LOCATION	SERVICE UNIT		COOLING BTU	HEAT BTU/HR	CFM	ELECTRICAL			MANUFACTURER MODEL	REMARKS
							VOLTAGE	MCA	OCP		
AC-1	TECH.	ACU-1	WALL MTD.	18,000	–	750	208V-1PH	18.8	25	LIBERT-DME020EH	(1)
AC-2	DISPATCH	ACU-2	WALL MTD.	18,000	–	470	208V-1PH	–	15	DAIKIN FTXN18KVJU	(1)
AC-3	ELECT.	ACU-3	WALL MTD.	12,000	–	350	208V-1PH	–	15	DAIKIN FTXN12KVJU	(1)

(1) PROVIDE CONDENSATE PUMP IF REQUIRED.

OUTDOOR CONDENSING UNIT SCHEDULE

UNIT NO.	SERVICE	REFRIG. TYPE	NOMINAL COOLING CAPACITY (TONS)	COOLING CAPACITY (MBH)	HEATING CAPACITY (MBH)	SEER	ELECTRIC SERVICE					MANUFACTURER AND MODEL NUMBER		REMARKS
							FLA AMPS	OPD AMPS	V	PH.	HZ			
ACU-1	AC-1	R-410A	1.5	18	–	–	12.1	25	208	1	60	LIBERT-PFH020AH		1, 2, 3
ACU-2 (STANDBY)	AC-2	R-410A	1.5	18	–	18	15	20	208	1	60	DAIKIN RKN18KEVJU		1, 2, 3
ACU-3	AC-3	R-410A	1	12	–	18	7	15	208	1	60	DAIKIN RKN12KEVJU		1, 2, 3

1. PROVIDE UNIT W/ LOW TEMP. AMBIENT KIT
2. APPROVED MANUFACTURER'S CARRIER, DAIKIN, MITSUBISHI, PANASONIC OR EQUAL.

GRILLE AND DIFFUSER SCHEDULE

MARK	SD-1	RG-1
TYPE	LAY-IN	SURF. MTD
DAMPER NUMBER	AG-75	
FRAME/BORDER TYPE	-	
MODULE SIZE	24X24	24x24
PATTERN	-	
FINISH	OFF WHITE	OFF WHITE
MANUFACTURER	TITUS	TITUS
MODEL NUMBER	OMNI	PAS
REMARKS	-	

EXHAUST FAN SCHEDULE

TAG	SERVICE	CFM	FAN TYPE	E.S.P. (IN.WG)	DRIVE	ELECTRICAL			MANUFACTUER & MODEL NUMBER	REMARKS
						WATTS	V	PH		
EF-1 TO EF-5	SEE PLAN	60	CEILING	0.35	DIRECT	45	120	1	GREENHECK SP-B70	1, 2
EF-6 & EF-7	SEE PLAN	300	INLINE	0.35	DIRECT	80	120	1	GREENHECK CSP-A290	1, 2
EF-8	SEE PLAN	450	INLINE	0.35	BELT	¾ HP	120	1	GREENHECK CSP-A290	1

1. PROVIDE BACK DRAFT DAMPER, 2. EXHAUST AIR OUTLET

PUMP SCHEDULE

MARK	SERVING	GPM	PD FtHd	HP	RPM	TYPE	MANU	MODEL	V-PH-HZ	NOTES
P-1	B-1 / HEATING WATER LOOP	35	20	1/3	1760	IN-LINE	TACO	2445	208-1-60	1
P-2	B-2 / HEATING WATER LOOP	35	20	1/3	1760	IN-LINE	TACO	2445	208-1-60	1
P-3	B-1 / DOMESTIC WATER LOOP	20	25	1/3	1760	IN-LINE	TACO	2445	208-1-60	1
P-4	B-2 / DOMESTIC WATER LOOP	20	25	1/3	1760	IN-LINE	TACO	2445	208-1-60	1

NOTES:
1) PROVIDE PUMPS WITH STARTER & DISCONNECT SWITCH

AIR HANDLING UNIT

MARK	TYPE	COIL HEATING (MBH)	GPM	DX COOLING TON	CFM @ 0.5	EXT. S.P	FRESH AIR CFM	MOTOR HP	FLA AMPS	MAX FUSE	VOLTAGE	# OF ZONE	MANUFACTURER REMARKS MODEL	
AHU-1	MULTI POSITION	55	6	3	1050	0.85	100	1/2	3.0	15	120/60/1	6	FIRST CO. 36SHX	(1)(2)(3)
AHU-2	MULTI POSITION	55	6	3	1020	0.85	100	1/2	3.0	15	120/60/1	4	FIRST CO. 36SHX	(1)(2)(3)
AHU-3	MULTI POSITION	35	4	2	800	0.75	100	1/3	1.4	15	120/60/1		FIRST CO. 24SHX	(1)(2)
AHU-4	MULTI POSITION	35	4	2	700	0.75	450	1/3	1.4	15	120/60/1		FIRST CO. 24SHX	(1)(2)
AHU-5	MULTI POSITION	35	4	2	700	0.75	60	1/3	1.4	15	120/60/1		FIRST CO. 24SHX	(1)(2)

(1) CONDENSATE PAN AND OVERFLOW SAFETY SWITCH
(2) 2-ROW HOT WATER COIL
(3) PROVIDE ZONE CONTROLS EQUAL TO HONEYWELL TrueZONE SYSTEM. HONEYWELL CONTROL KIT SHALL INCLUDE HZ322 CONTROL PANEL, WIRELESS FOCUSPRO THERMOSTATS, ADAPTER AND BY-PASS DAMPER MODEL-SPRD10 ETC.

COORDINATE ELECTRICAL REQUIREMENTS

ZONE DAMPERS

MARK	SERVICE	SIZE	CFM	AREA	MANUFACT-URER
ZN1A	AHU-1	6"ø	75	EVIDENCE	ARD6
ZN2A	AHU-1	10x8	250	SQUAD RM	ZD10x8
ZN3A	AHU-1	10x8	125	INTERVIEW	ARD8
ZN4A	AHU-1	12x10	175	DETECTIVES	ARD8
ZN5A	AHU-1	10x8	250	SERGEANTS	ZD10x8
ZN6A	AHU-1	10x8	175	MEN & WOMEN TOILET	ARD8
BY-PASS DAMPER	AHU-1				SPRD10

ZONE DAMPERS

MARK	SERVICE	SIZE	CFM	AREA	MANUFACTURER
ZN1B	AHU-2	12x8	150	EVIDENCE	ARD8
ZN2B	AHU-2	12x10	200	INTERVIEW	ZD10x8
ZN3B	AHU-2	10x8	300	DETECTIVES	ZD10x8
ZN4B	AHU-2	12x10	225	SERGEANTS	ZD10x8
BY-PASS DAMPER	AHU-2				SPRD10

CONDENSING UNIT

MARK	SERVICE	REFRIGERANT	COMP. TYPE	COOLING	SEER	MINIMUM CKTS AMPS	MOP	VOLT	MANUFACTURER / MODEL	REMARK
CU-1	AHU-1	R-410A	SCROLL	3 TON	16	23	40	208-1PH	YORK CZF036	
CU-2	AHU-2	R-410A	SCROLL	3 TON	16	23	40	208-1PH	YORK CZF036	
CU-3	AHU-3	R-410A	SCROLL	2 TON	16	18	30	208-1PH	YORK CZF024	
CU-4	AHU-4	R-410A	SCROLL	2 TON	16	18	30	208-1PH	YORK CZF024	
CU-5	AHU-5	R-410A	SCROLL	2 TON	16	18	30	208-1PH	YORK CZF024	(1)

1. PROVIDE UNIT W/ LOW TEMP. AMBIENT KIT

ENERGY RECOVERY VENTILATOR

UNIT NO.	TYPE	ROOM AIR WINTER (°F)	ROOM AIR SUMMER (°F)	OUTDOOR WINTER (°F)	OUTDOOR SUMMER (°F)	EXHUST CFM	EXHUST ESP	O.A CFM	O.A ESP	EFFECTIVENESS TEMP.	EFFECTIVENESS TOTAL W	EFFECTIVENESS TOTAL S	FAN SUPPLY DISCHARGE TEMP. WINTER(°F) DB	WINTER WB	SUMMER(°F) DB	SUMMER WB	TOTAL ENERGY SAVING WINTER (MBH)	TOTAL ENERGY SAVING SUMMER (MBH)	MOTOR HP	FLA	ELECTRICAL DATA VOLTS/ø/ HZ	MANUFACTURER MODEL NUMBER RENEWAIRE, SEMCO, GREENHECK OR EQUAL	REMARKS
ERV-1	STATIC PLATE	70	75	0	95	450	0.75	450	1.0	73%	66%	56%	51	40	80	68	24	7	0.6	3.5	208V/1/60	RENEWAIRE EV450IN	(1)(2)(3)

(1) FUSED DISCONNECT SWITCH (2) TRANSFORMER RELAY PACKAGE (3) SUPPORTING BRACKET W/ VIBRATION ISOLATOR

UNIT HEATER SCHEDULE (HOT WATER)

TAG	LOCATION	TYPE	OUTPUT MBH	AIR CFM	MOTOR RPM	MOTOR HP	ELECTRIC SERVICE HZ	ELECTRIC SERVICE V	ELECTRIC SERVICE PH	WATER GPM	WATER EWT (°F)	WATER LWT (°F)	MANUFACTURER AND MODEL NUMBER STERLING, AIRTHERM, BEACON MORRIS OR EQUAL	REMARKS
UH-1	SALLY PORT	HORIZONTAL	15	420	1070	16 WATTS	60	115	1	1.5	180	160	AIRTHERM HA-118	1, 2
CUH-1	VESTIBULE	CEILING RECESSED	16	230	1050	16 WATTS	60	115	1	1.5	180	160	AIRTHERM RC-02	1, 2

1. PROVIDE WITH POWER DISCONNECT.
2. PROVIDE INLINE THERMOSTAT.

ARCHITECTURAL ENGINEERING, INC.
44 Central Street, Unit # 4
Berlin, MA. 01503
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COMMONWEALTH OF MASSACHUSETTS
ANUP S. KHATRI
No. 42431
REGISTERED PROFESSIONAL ENGINEER

DATE: 12/21/12
SCALE:
DRAWN BY: JP
CHECKED BY: AK
Sheet 22 OF 25

H-3

HVAC SPECIFICATIONS

HVAC GENERAL

REFER TO ALL OTHER DRAWINGS AND SPECIFICATIONS, AND BE RESPONSIBLE FOR ALL APPLICABLE PROVISIONS THEREIN. FURNISH AND INSTALL ALL NECESSARY LABOR AND MATERIALS FOR A COMPLETE SYSTEM. ANY APPLIANCES OR MATERIALS OBVIOUSLY A PART OF THE SYSTEM AND NECESSARY FOR ITS PROPER OPERATION, ALTHOUGH NOT SPECIFICALLY MENTIONED HEREIN, SHALL BE FURNISHED AND INSTALLED AS IF CALLED FOR IN DETAIL. WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH ALL STATE AND LOCAL CODES AND THE BUILDING REGULATIONS. ATTAIN AND PAY FOR ALL REQUIRED PERMITS AND FEES. EQUIPMENT AND MATERIALS SHALL BE NEW, UNLESS OTHERWISE SPECIFIED.

COMPLY WITH RULES, REGULATIONS OF STATE, COUNTY, AND CITY AUTHORITIES HAVING JURISDICTION OVER THE PREMISES, INCLUDING SAFETY REQUIREMENTS OF OSHA.

DRAWINGS ARE GENERALLY DIAGRAMMATIC AND DO NOT NECESSARILY SHOW EVERY FITTING, OFFSET, DROP AND RISE OF RUNS, AND DETAIL. INSTALL DUCTS, EQUIPMENT AND CONTROLS IN A NEAT, WORKMANLIKE MANNER AND IN ACCORDANCE WITH GOOD PRACTICE FOR A COMPLETE, WORKABLE INSTALLATION. AVOID CONFLICT WITH OTHER WORK, MAKE ADEQUATE PROVISIONS FOR PREVENTING NOISE AND VIBRATION. DRAWINGS INDICATE LOCATIONS OF FIXTURES, APPARATUS, DUCTWORK AND PIPING; AND WHILE THESE ARE TO BE FOLLOWED AS CLOSELY AS POSSIBLE, IF IT IS NECESSARY TO CHANGE THE LOCATION OF SAME TO ACCOMMODATE BUILDING CONDITIONS. MAKE CHANGES WITHOUT ADDITIONAL COST TO THE OWNER AND AS APPROVED BY THE ARCHITECT. PROVIDE ADEQUATE ACCESS TO THE EQUIPMENT AND APPARATUS REQUIRING OPERATION, SERVICE OR MAINTENANCE WITHIN THE LIFE OF THE SYSTEM. DO NOT RUN PIPING OR DUCTWORK, OR LOCATE EQUIPMENT, (WITH RESPECT TO SWITCHBOARDS, PANEL BOARDS, POWER PANELS, MOTOR CONTROL CENTERS OR DRY TYPE TRANSFORMERS) WITHIN 42 INCHES IN FRONT OF EQUIPMENT, OVER EQUIPMENT, OR WITHIN 36 INCHES HORIZONTALLY OF SAME. ALL SECURITY GRILLS SHALL TEMPER PROOF SCREWS.

COORDINATION

COORDINATE ALL WORK UNDER THIS DIVISION WITH WORK UNDER OTHER DIVISIONS.

PROTECTION OF WORK DURING CONSTRUCTION

PROVIDE PROTECTIVE COVERS, SKID, PLUGS OR CAPS TO PROTECT EQUIPMENT AND MATERIALS FROM DAMAGE AND DETERIORATION DURING CONSTRUCTION. PROTECT EXPOSED COILS WITH PLYWOOD OR OTHER SUITABLE RIGID COVERS TO AVOID DAMAGE TO FINS.

CONTRACTOR SHALL TAKE PRECAUTIONS AGAINST DAMAGING OR DISRUPTING BUILDING SYSTEMS, WIRING OR CONTROL TUBING FOR ADJACENT TENANTS. ANY DAMAGE SHALL BE REPAIRED AT THE CONTRACTORS COST.

PROTECT ALL EQUIPMENT AND MATERIALS FROM DAMAGE. ANY DAMAGE SHALL BE REPAIRED USING THE SAME MATERIALS AT THE CONTRACTORS COST.

RECORD DRAWINGS

CONTRACTOR WILL PROVIDE A COMPLETE SET OF REPRODUCIBLE AS-BUILT DRAWINGS CLEARLY INDICATING LOCATION OF DUCTWORK AND EQUIPMENT, INCLUDING DIMENSIONS ARRANGEMENT, RATING AND CAPACITIES OF ALL NEW AND EXISTING SYSTEMS.

SUBMITTALS

SUBMIT ALL SHOP DRAWINGS FOR REVIEW AND APPROVAL PRIOR TO PURCHASE, FABRICATION AND INSTALLATION.

SUBMIT AIR AND WATER BALANCE REPORTS.

FURNISH TO THE OWNER ONE COPY OF OPERATING INSTRUCTIONS, MANUFACTURERS PARTS DATA, AND SERVICE INSTRUCTIONS.

TESTING

ALL LEAKS SHALL BE REPAIRED BY TIGHTENING, AND FITTINGS. CAULKING OF JOINTS WILL NOT BE PERMITTED.

ADJUST DAMPERS, REGISTERS AND DIFFUSERS FOR PROPER AIR DISTRIBUTION. CHECK SYSTEM UNDER ACTUAL OPERATING CONDITIONS AND MAKE ADJUSTMENTS FOR A UNIFORM TEMPERATURE THROUGH THE CONDITIONED.

CLEANING AND ADJUSTING

THE EXTERIOR SURFACES OF ALL MECHANICAL EQUIPMENT, PIPING, DUCTS, ETC., SHALL BE CLEANED OF ALL GREASE, OIL, PAINT AND OTHER CONSTRUCTION DEBRIS. DUCTS, PLENUMS AND CASINGS SHALL BE CLEANED OF ALL DEBRIS AND BLOWN FREE OF ALL PARTICLES OF RUBBISH AND DUST BEFORE INSTALLING OUTLET FACES. BEARINGS THAT REQUIRE LUBRICATION SHALL BE LUBRICATED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. ALL CONTROL EQUIPMENT SHALL BE ADJUSTED TO THE SETTINGS INDICATED OR REQUIRED FOR PERFORMANCE AS SPECIFIED. FLUSH WATER PIPING SYSTEMS UNTIL WATER RUNS CLEAN. REMOVE ALL STICKERS, RUST, STAINS, LABELS, AND TEMPORARY COVERS BEFORE FINAL ACCEPTANCE. REMOVE FOREIGN MATTER FROM EQUIPMENT, PIPING AND DUCTWORK SYSTEMS AND APPURTENANCES. CLEAN AND POLISH IDENTIFICATION PLATES.

BALANCING

PROVIDE SERVICES OF A CERTIFIED AABC OR NEBB TEST AGENCY TO TEST AND BALANCE HVAC SYSTEM. CONDUCT ALL TEST IN ACCORDANCE WITH AABC OR NEBB, NATIONAL STANDARDS FOR FIELD MEASUREMENTS AND INSTRUMENTATION.

THE HVAC CONTRACTOR SHALL MAKE ALL CHANGES IN SHEAVES, BELTS AND DAMPERS AS REQUIRED. ADD DAMPERS AS REQUIRED TO CORRECTLY BALANCE SYSTEM AT NO ADDITIONAL

TEST AND BALANCE HVAC AIR SYSTEMS TO WITHIN +10, -5% OF DESIGN FLOWS.

COMMISSIONING PROCEDURES

THE INSTALLING CONTRACTOR WILL PERFORM THE FINAL TESTING AND BALANCING OF ALL SYSTEMS AFTER THE HVAC SYSTEM HAS BEEN OPERATED.

THE INSTALLING HVAC CONTRACTOR SHALL, PRIOR TO THE OPERATION OF THE SYSTEMS:

- SET UP ALL AIR SYSTEM TO OPERATE AT THE CFM, RPM AND AMPERAGE TO MEET THE CAPACITIES SCHEDULED ON THE PLANS.
- REPLACE THE AIR FILTERS USED DURING THE SET-UP PROCEDURE WITH NEW FILTERS.
- CLEAN AND FILL ALL WATER SYSTEMS AND TREAT ALL WATER SYSTEMS WITH OSHA AND APPROVED CORROSION AND BIOLOGICAL INHIBITORS.

PROJECT CLOSEOUT

THE COMMISSIONING OF ALL SYSTEMS AND EQUIPMENT WILL BE DOCUMENTED BY THE INSTALLING MEP CONTRACTOR IN WRITING USING THE FORMS ENCLOSED WITH PERFORMANCE SPECIFICATION.

THE INSTALLING CONTRACTOR SHALL PROVIDE WRITTEN EVIDENCE THAT ALL REQUIRED INSPECTIONS BY THE LOCAL CODE OFFICIALS HAVE BEEN COMPLETED USING THE CLOSE OUT FORM PROVIDED HEREIN.

TAGS AND CHARTS: TAG ALL VALVES, DAMPERS AND OTHER CONTROL DEVICES WITH 2-INC DIAMETER, STAMPED BRASS TAGS THAT ARE FIRMLY AFFIXED TO EACH DEVICE.

THE HVAC CONTRACTOR SHALL PROVIDE A REPRESENTATIVE OF THE OWNER WITH 8 HOURS OF ON-SITE INSTRUCTION IN THE OPERATION AND MAINTENANCE OF THE HVAC SYSTEMS.

PROVIDE A WRITTEN ONE-YEAR LABOR AND MATERIALS WARRANTY FOR THE ENTIRE INSTALLATION.

GUARANTEE

MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED AGAINST DEFECTS FOR ONE YEAR.

EQUIPMENT, MATERIALS AND BID BASIS.

SPECIFIED MANUFACTURERS NAMES AND MODEL NUMBERS ARE FOR THE PURPOSE OF DESCRIBING TYPE, CAPACITY, FUNCTION AND QUALITY OF EQUIPMENT AND MATERIALS TO BE USED.

EQUIPMENT SUPPORT

SUPPORT ALL CEILING MOUNTED EQUIPMENT, DUCTWORK AND PIPING FROM BUILDING STRUCTURE AND/OR FRAMING IN AN APPROVED MANNER.

VIBRATION ISOLATORS

SUSPENDED EQUIPMENT SHALL BE PROVIDED WITH VIBRATION ISOLATION HANGERS WHICH SHALL BE FURNISHED WITH THE UNIT, AND ISOLATOR SHALL BE MATCHED TO EQUIPMENT WEIGHT AND SUPPORT LOCATIONS. ISOLATION HANGERS SHALL BE COMBINATION STEEL SPRING AND NEOPRENE-IN-SHEAR WITH STEEL HOUSING. ISOLATORS SHALL HAVE A MINIMUM OPERATING DEFLECTION OF 1-1/2". SPRINGS SHALL HAVE A MINIMUM ADDITIONAL TRAVEL FOR 50% BETWEEN THE DESIGN HEIGHT AND THE SOLID HEIGHT.

HVAC INSULATION

QUALITY ASSURANCE: TYPE D1 ASTM C553 TYPE 1, CLASS B3: INSULATE SUPPLY DUCT, FRESH AIR DUCT WITH A MINIMUM 1 1/2" FIBERGLASS DUCT WRAP, NOMINAL 1 P.C.F. DENSITY BLANKET, K FACTOR OF 0.31 MAXIMUM AT 75 DEGREE F MEAN, WITH FACTORY APPLIED FSK (FOIL-SCRIM-KRAFT) VAPOR BARRIER JACKET, FOR TEMPERATURES TO 250 DEGREE F. SPECIFIED COMPONENTS OF THIS INSULATION SYSTEM, INCLUDING FACINGS, MASTICS, AND ADHESIVES, SHALL HAVE A FIRE HAZARD RATING NOT TO EXCEED 25 FOR FLAME SPREAD AND 50 FOR SMOKE DEVELOPED, AS PER TESTS CONDUCTED IN ACCORDANCE WITH ASTM E84 (NFPA 255) METHODS.

APPROVED PRODUCTS:

STANDARD FIBERGLASS DUCT WRAP, TYPE 100 OWENS CORNING TYPE 100.

INSTALLATION OF DUCTWORK INSULATION:

MAINTAIN INTEGRITY OF VAPOR-BARRIER ON DUCTWORK INSULATION, AND PROTECT IT TO PREVENT PUNCTURE AND OTHER DAMAGE. TAPE ALL PUNCTURES. SECURE ALL DUCTWORK WITH GALVANIZED WIRE 12 INCHES O.C. SECURE DUCTWORK WITH OUTWARD CLINCHING STAPLES. SEAL ALL LONGITUDINAL AND CIRCUMFERENTIAL JOINTS WITH FSK TAPE.

EXTEND DUCTWORK INSULATION WITHOUT INTERRUPTION THROUGH WALLS, FLOORS AND SIMILAR DUCTWORK PENETRATIONS, EXCEPT WHERE OTHERWISE INDICATED.

PIPE INSULATION

HOT WATER PIPING: 1" GLASS FIBER: HEAVY DENSITY, ONE PIECE CONSTRUCTION. ACCEPTABLE MANUFACTURERS: OWENS-CORNING MODEL SSL II, ALL SERVICE JACKET; KNAUF, SCHULLER.

CELLULAR FOAM ½" THICK- REFRIGERANT PIPING

ACCEPTABLE MANUFACTURERS: ARMSTRONG, MODEL AP ARMAFLEX; INSULTUBE, RUBATEX. INSULATION: ASTM C534; FLEXIBLE, CELLULAR ELASTOMERIC, MOLDED OR SHEET.

PIPING

HOT WATER PIPING SHALL BE
COPPER TUBE ASTM B88, TYPE L HARD DRAWN (2"<), TYPE L HARD DRAWN. PIPING SHALL BE COMPLETE WITH PIPE FITTINGS, VALVES, COUPLING, STRAINERS, HANGER RODS, HANGERS, SUPPORTS, GUIDES, SLEEVES AND ACCESSORIES IN CONFORMANCE WITH THE LATEST CODES AND ASME,

CONNECTIONS BETWEEN FERROUS AND COPPER PIPING SHALL BE WITH DIELECTRIC FITTING.

PROVIDE FITTINGS FOR CHANGE IN PIPE SIZE AND FOR FINAL CONNECTION AT EQUIPMENT, AS REQUIRED.

PROVIDE UNION CONNECTIONS AT EACH PIECE OF EQUIPMENT AND ON EACH SIDE OF ALL VALVES.

PROVIDE VALVED AND CAPPED CONNECTIONS AT ALL POINTS IN PIPING SYSTEMS REQUIRED FOR DRAINING

REFRIGERANT PIPING

COPPER TUBING UP TO 7/8 INCH OD: ASTM B88, TYPE K, ANNEALED.
1. FITTINGS: ASME B16.26 CAST COPPER.
2. JOINTS: FLARED.

SHEET METAL WORK

EXCEPT AS OTHERWISE NOTED, ALL DUCTWORK AND OTHER SHEET METAL WORK SHALL BE INSTALLED IN ACCORDANCE WITH LATEST EDITION OF THE SHEET METAL AND AIR CONDITIONING CONTRACTOR NATIONAL ASSOCIATION, INC. (SMACNA), "HVAC DUCT CONSTRUCTION STANDARDS" MANUAL. DUCTWORK SHALL BE GALVANIZED SHEET STEEL, UNLESS OTHERWISE NOTED. FIBERGLASS DUCTWORK IS NOT ACCEPTABLE.

LOW PRESSURE FLEXIBLE DUCT SHALL BE SIMILAR TO FLEXMASTER TYPE 5, OR APPROVED EQUAL, WITH 1 1/2 INCH THICK INSULATION AND SHALL CONFORM TO U.L. 181 AND NFPA BULLETIN 90A. MAXIMUM LENGTH SHALL NOT EXCEED FOUR (4) FEET.

VOLUME DAMPER: SAME MATERIAL AS DUCT, PER SMACNA, EXCEPT PROVIDE BEARING AT ONE END OF DAMPER ROD AND QUADRANT, WITH LEVER AND LOCKSCREW AT OTHER END. FOR INSULATED DUCTS, QUADRANTS MOUNTED ON COLLAR TO CLEAR INSULATION, INSTALL WITH LEVERS ACCESSIBLE.

ACCESS TILE IDENTIFICATIONS: PROVIDE BUTTONS, TABS AND MARKERS TO IDENTIFY LOCATION OF ALL CONCEALED VALVES, DAMPERS AND EQUIPMENT. SUBMIT TO ARCHITECT FOR APPROVAL.

DUCT SIZES SHOWN ARE CLEAR INSIDE DIMENSIONS. WHERE INTERNAL INSULATION IS CALLED FOR, DIMENSIONS SHALL BE INCREASED BY THICKNESS OF INSULATION.

PORTIONS OF DUCTWORK VISIBLE THROUGH SUPPLY AND RETURN AIR OPENINGS SHALL BE PAINTED FLAT BLACK.

TRANSITION RECTANGULAR DUCTWORK ON THE BOTTOM AND THE SIDES. MAINTAIN DUCTWORK LEVEL AND AS HIGH AS POSSIBLE UNLESS NOTED OTHERWISE.

FLEXIBLE DUCT RUNOUTS TO ALL DIFFUSERS SHALL BE INSTALLED FREE OF KINKS AND SAGS. ALL BRANCH DUCTWORK SHALL BE SIZED TO MATCH THE INLET OF THE DIFFUSERS SERVED

ALL DUCT TRANSITIONS FROM SQUARE TO ROUND SHALL BE SMOOTH SQUARE TO ROUND TRANSITIONS. SPIN-IN FITTINGS AT THE END OF CAPPED DUCTS ARE NOT ACCEPTABLE.

ALL OPEN ENDED DUCTS SHALL BE REINFORCED WITH 1-1/2"x1-1/2"x1/8" GALVANIZED STEEL ANGLES BOLTED OR RIVETED 6" ON CENTER ALL AROUND THE EXTERIOR PERIMETER OF THE DUCT.

AUTOMATIC CONTROLS

MECHANICAL CONTRACTOR SHALL RETAIN THE SERVICES OF A QUALIFIED AUTOMATIC CONTROLS CONTRACTOR.

MOUNT THERMOSTATS WHERE INDICATED ON PLANS 48" A.F.F., UNLESS NOTED OTHERWISE.

CONTRACTOR SHALL PROVIDE AND INSTALL ALL INTERCONNECTING CONTROL WIRING AS REQUIRED FOR A COMPLETE AND OPERABLE INSTALLATION. THIS CONTRACTOR IS TO ASSUME COMPLETE RESPONSIBILITY FOR INSTALLATION OF CONTROL WIRING WITH APPROPRIATE CONNECTIONS.

INSTALL PROGRAMMABLE THERMOSTAT FOR AHU'S TO RUN TIME SCHEDULE.

INSTALL HONEYWELL ZONE CONTROL SYSTEM AS PER THE MANUFACTURERS INSTRUCTION.

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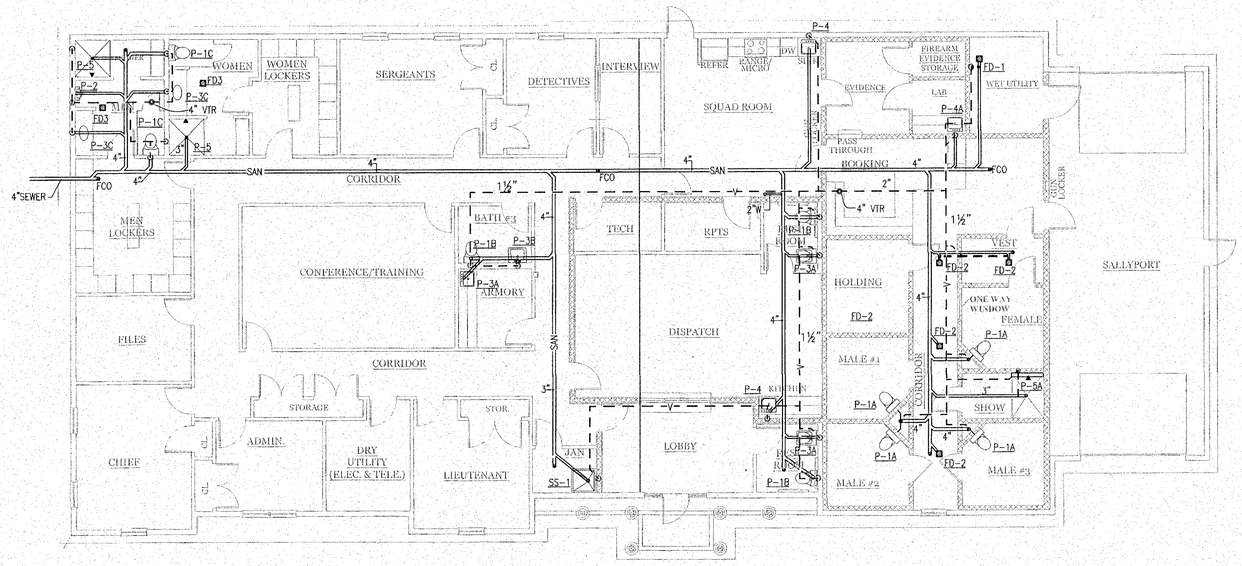
COMMONWEALTH OF MASSACHUSETTS
ANUP S KHATRA
No. 42431
REGISTERED PROFESSIONAL ENGINEER

DATE:	12/21/12
SCALE:	
DRAWN BY:	JP
CHECKED BY:	AK

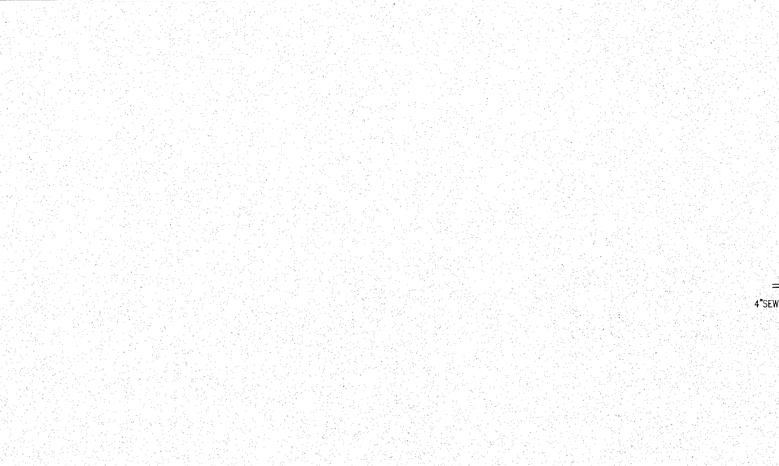
Sheet 23 OF 25

H-4



SEWER AND VENT PIPING

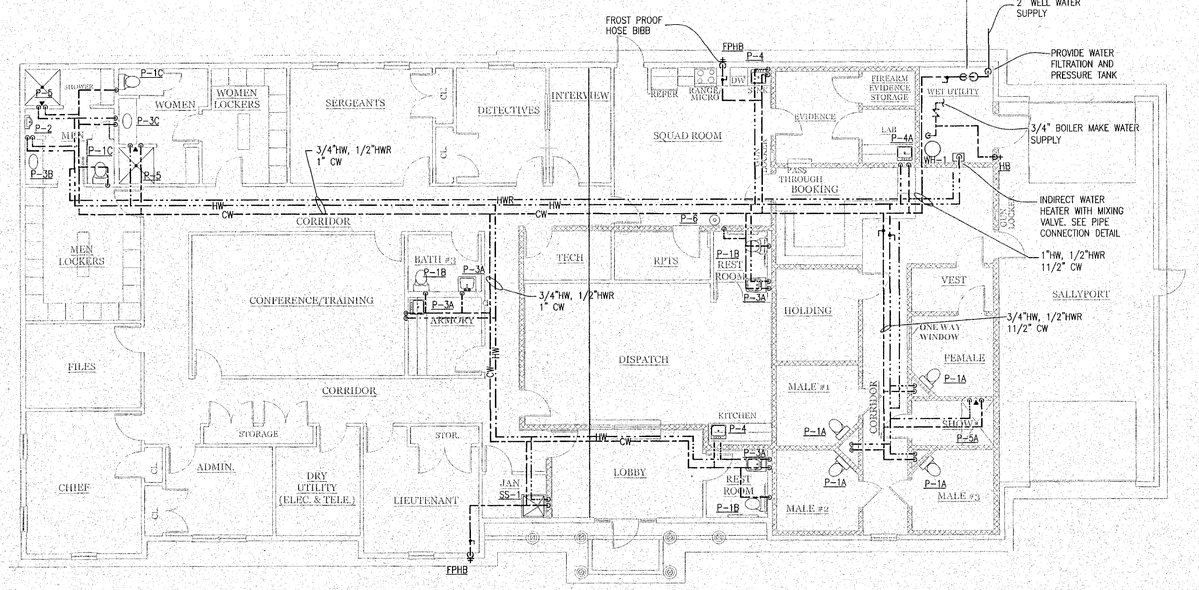
SCALE: 1/8"=1'-0"



PIPE CONNECTION DETAIL TO DOMESTIC WATER HEATER

NOT TO SCALE

NOTE:
COORDINATE WELL WATER FLOW, PRESSURE AND OTHER REQUIREMENTS WITH OWNER. PROVIDE WATER FILTRATION, PRESSURE TANK ETC AS REQUIRED TO PROVIDE SUFFICIENT PRESSURE & FLOW TO THE PLUMBING FIXTURES.



COLD AND HOT WATER PIPING

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

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P-1

GENERAL SPECIFICATION (PLUMBING)

GENERAL

REFER TO ALL OTHER DRAWINGS AND SPECIFICATIONS, AND BE RESPONSIBLE FOR ALL APPLICABLE PROVISIONS THEREIN. FURNISH AND INSTALL ALL NECESSARY LABOR AND MATERIALS FOR A COMPLETE SYSTEM. ANY APPLIANCES OR MATERIALS OBVIOUSLY A PART OF THE SYSTEM AND NECESSARY FOR ITS PROPER OPERATION, ALTHOUGH NOT SPECIFICALLY MENTIONED HEREIN, SHALL BE FURNISHED AND INSTALLED AS IF CALLED FOR IN DETAIL. WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH ALL STATE AND LOCAL CODES, NFPA AND THE BUILDING REGULATIONS. ATTAIN AND PAY FOR ALL REQUIRED PERMITS AND FEES. EQUIPMENT AND MATERIALS SHALL BE NEW.

DRAWINGS ARE GENERALLY DIAGRAMMATIC AND DO NOT NECESSARILY SHOW EVERY FITTING, OFFSET, DROP AND RISE OF RUNS, AND DETAIL. INSTALL PIPING, EQUIPMENT AND CONTROLS IN A NEAT, WORKMANLIKE MANNER AND IN ACCORDANCE WITH GOOD PRACTICE FOR A COMPLETE, WORKABLE INSTALLATION. AVOID CONFLICT WITH OTHER WORK, MAKE ADEQUATE PROVISIONS FOR PREVENTING NOISE AND VIBRATION. DRAWINGS INDICATE LOCATIONS OF FIXTURES, APPARATUS, AND PIPING; AND WHILE THESE ARE TO BE FOLLOWED AS CLOSELY AS POSSIBLE, IF IT IS NECESSARY TO CHANGE THE LOCATION OF SAME TO ACCOMMODATE BUILDING CONDITIONS, MAKE CHANGES WITHOUT ADDITIONAL COST TO THE OWNER AND AS APPROVED BY THE ARCHITECT. PROVIDE ADEQUATE ACCESS TO THE EQUIPMENT AND APPARATUS REQUIRING OPERATION, SERVICE OR MAINTENANCE WITHIN THE LIFE OF THE SYSTEM. DO NOT RUN PIPING, OR LOCATE EQUIPMENT, (WITH RESPECT TO SWITCHBOARDS, PANEL BOARDS, POWER PANELS, MOTOR CONTROL CENTERS OR DRY TYPE TRANSFORMERS) WITHIN 42 INCHES IN FRONT OF EQUIPMENT, OVER EQUIPMENT, OR WITHIN 36 INCHES HORIZONTALLY OF SAME SPACE.

COORDINATION

COORDINATE ALL WORK UNDER THIS DIVISION WITH WORK UNDER OTHER DIVISIONS. PROVIDE ADJUSTMENTS AS NECESSARY. EQUIPMENT, APPARATUS, PIPING, ETC., INSTALLED WITHOUT REGARD FOR THE SPACE REQUIREMENTS OF OTHER TRADES WILL BE REWORKED AT THE EXPENSE OF THE INSTALLING CONTRACTOR IF IT CREATES AN UNNECESSARY HINDRANCE TO THE INSTALLATION OF ANOTHER TRADES WORK. ALL ITEMS MOUNTED AT OR BELOW THE CEILING, AND ANY ITEM PENETRATING THE CEILING, SHALL BE COORDINATED WITH THE ARCHITECTURAL REFLECTED CEILING PLANS.

PROTECTION OF WORK DURING CONSTRUCTION

PROVIDE PROTECTIVE COVERS, PLUGS OR CAPS TO PROTECT EQUIPMENT AND MATERIALS FROM DAMAGE AND DETERIORATION DURING CONSTRUCTION.

CONTRACTOR SHALL TAKE PRECAUTIONS AGAINST DAMAGING OR DISRUPTING BUILDING SYSTEMS, WIRING OR CONTROL TUBING FOR ADJACENT TENANTS. ANY DAMAGE SHALL BE REPAIRED AT THE CONTRACTORS COST.

PROTECT ALL EQUIPMENT AND MATERIALS FROM DAMAGE. ANY DAMAGE ITEM SHALL BE REPLACED USING THE SAME MATERIALS AT THE CONTRACTORS COST.

RECORD DRAWINGS

CONTRACTOR WILL PROVIDE A COMPLETE SET OF AS-BUILT DRAWINGS CLEARLY INDICATING LOCATION OF PIPING AND EQUIPMENT, INCLUDING DIMENSIONS, ARRANGEMENT, RATING AND CAPACITIES OF ALL NEW SYSTEMS.

SUBMITTALS

SUBMIT FOR REVIEW FIVE COPIES OF SHOP DRAWINGS ON ALL EQUIPMENT.

SUBMIT ALL SHOP DRAWINGS FOR REVIEW AND APPROVAL PRIOR TO PURCHASE, FABRICATION AND INSTALLATION.

TESTING

WATER PIPING SHALL BE HYDROSTATICALLY TESTED TO 1.5 TIMES THE OPERATING PRESSURE BUT NOT LESS THAN 150 PSI.

ALL LEAKS SHALL BE REPAIRED BY TIGHTENING, REWELDING OR REPLACING PIPE AND FITTINGS. CAULKING OF JOINTS WILL NOT BE PERMITTED.

CLEANING AND ADJUSTING

THE EXTERIOR SURFACES OF ALL EQUIPMENT, PIPING, ETC., SHALL BE CLEANED OF ALL GREASE, OIL, PAINT AND OTHER CONSTRUCTION DEBRIS.
FLUSH WATER PIPING SYSTEMS UNTIL WATER RUNS CLEAN. REMOVE ALL STICKERS, RUST, STAINS, LABELS, AND TEMPORARY COVERS BEFORE FINAL ACCEPTANCE. REMOVE FOREIGN MATTER FROM EQUIPMENT, PIPING AND APPURTENANCES.

GUARANTEE

MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED AGAINST DEFECTS FOR ONE YEAR.

EQUIPMENT, MATERIALS AND BID BASIS.

SPECIFIED MANUFACTURERS NAMES AND MODEL NUMBERS ARE FOR THE PURPOSE OF DESCRIBING TYPE, CAPACITY, FUNCTION AND QUALITY OF EQUIPMENT AND MATERIALS TO BE USED. UNLESS "OR EQUAL" IS SPECIFICALLY STATED, BIDS SHALL BE BASED ON EQUIPMENT NAMED. CAPACITIES INDICATED TAKE PRECEDENCE OVER MODEL NUMBERS.

EQUIPMENT SUPPORT

SUPPORT ALL CEILING MOUNTED EQUIPMENT AND PIPING FROM BUILDING STRUCTURE AND/OR FRAMING IN AN APPROVED MANNER. WHERE OVERHEAD CONSTRUCTION DOES NOT PERMIT FASTENING OF SUPPORTS AND EQUIPMENT, PROVIDE ADDITIONAL STEEL FRAMING.

PIPE INSULATION:

TYPE P1 ASTM C547, CLASS 1 (-20 DEGREE F TO 500 DEGREE F):

FIBERGLASS, MINIMUM 4 POUNDS PER CUBIC FOOT (P.C.F.) DENSITY, K FACTOR 0.23 MAXIMUM AT 75 DEGREE F MEAN, WITH FACTORY-APPLIED ALL-SERVICE JACKET (ASJ) COMPOSED OF REINFORCED KRAFT AND ALUMINUM FOIL LAMINATE. JACKET SHALL HAVE SELF-SEALING LAP TO FACILITATE CLOSING LONGITUDINAL AND END JOINTS.

APPROVED PRODUCTS:

CERTAINTEED 500 DEGREE SNAP ON ASJ/SSL
SCHULLER PIPE INSULATION
OWENS/CORNING FIBERGLASS SSLII
KNAUF PIPE INSULATION ASJ/SSL

INSTALLATION OF PIPE INSULATION:

INSTALL INSULATION ON PIPE SYSTEMS SUBSEQUENT TO TESTING AND ACCEPTANCE OF TEST.

MAINTAIN INTEGRITY OF VAPOR-BARRIER JACKETS ON PIPE INSULATION, AND PROTECT TO PREVENT PUNCTURE OR OTHER DAMAGE. SEAL OPEN ENDS OF INSULATION WITH MASTIC. SECTIONALLY SEAL ALL BUTT ENDS OF ALL COLD WATER PIPING INSULATION AT FITTINGS WITH WHITE VAPOR BARRIER COATING.

COVER VALVES, FLANGES, FITTINGS, AND SIMILAR ITEMS IN EACH PIPING SYSTEM WITH EQUIVALENT THICKNESS AND COMPOSITION OF INSULATION AS APPLIED TO ADJOINING PIPE RUN. INSTALL FACTORY MOLDED, PRECUT OR JOB FABRICATED UNITS (AT INSTALLERS OPTION). FINISH COLD PIPE FITTINGS WITH WHITE VAPOR BARRIER COATING AND HOT PIPING WITH WHITE VINYL ACRYLIC MASTIC, BOTH REINFORCED WITH GLASS CLOTH.

EXTEND PIPING INSULATION WITHOUT INTERRUPTION THROUGH WALLS, FLOORS, HANGERS AND SIMILAR PIPING PENETRATIONS, EXCEPT WHERE OTHERWISE INDICATED.

INSTALL PROTECTIVE METAL SHIELDS AND FOAMGLASS INSERTS WHERE PIPE HANGERS BEAR ON OUTSIDE OF INSULATION.

INSULATION REQUIREMENTS:

DOMESTIC COLD WATER PIPING:	DOMESTIC HOT WATER PIPING:
HORIZONTAL STORM	
HOT WATER RECIRCULATION	TYPE P1 FIBERGLASS 1 INCH THICKNESS
TYPE P1 FIBERGLASS 1/2 INCH THICKNESS	

PIPING

GENERAL: PIPING SHALL BE COMPLETE WITH PIPE FITTINGS, VALVES, COUPLING, STRAINERS, HANGER RODS, ANSI, ASTM AND MSS STANDARDS.

FOR PIPE SIZES NOT INDICATED ON PLANS, SEE MANUFACTURERS EQUIPMENT CONNECTION DETAILS.

PROVIDE FITTINGS FOR CHANGE IN PIPE SIZE AND FOR FINAL CONNECTION AT EQUIPMENT, AS REQUIRED.

PROVIDE UNION CONNECTIONS AT EACH PIECE OF EQUIPMENT AND ON EACH SIDE OF ALL VALVES AND IN-LINE EQUIPMENT.

PROVIDE VALVED AND CAPPED CONNECTIONS AT ALL POINTS IN PIPING SYSTEMS REQUIRED FOR DRAINING SYSTEMS.

HANGERS, SUPPORTS, GUIDES, SLEEVES AND ACCESSORIES IN CONFORMANCE WITH THE LATEST CODES AND ASME,

AVOID ENTRY OF FOREIGN MATTER INTO PIPING DURING CONSTRUCTION. AFTER COMPLETION OF PIPING, FLUSH WATER SYSTEM WITH WATER UNTIL CLEAR. REMOVE AND CLEAN STRAINERS, AND BLOW OFF ALL PIPING LOW POINTS AT THE END OF THE FLUSH PERIOD.

PROVIDE MINUMUM PITCH TO INSURE ADEQUATE VENTING AND DRAINAGE.

RUN ALL DRAINAGE AND VENT PIPING AS DIRECT AS POSSIBLE. SLOPE BRANCH WASTE PIPING AT 1/8" PER FOOT UNLESS OTHERWISE NOTED.

PROVIDE A CLEANOUT AT ALL CHANGES IN DIRECTION FOR SANITARY PIPING.

PROVIDE CLAMPS, OFFSETS, EXPANSION JOINTS, ANCHORS AND GUIDES AS NECESSARY TO PREVENT STRESS ON PIPING.

PIPING SUPPORTS:

HORIZONTAL PIPING AND PIPING HANGERS SHALL BE ADJUSTABLE CLEVIS TYPE "CARPENTER & PATTERSON" FIGURE NO. 100 OR 100SH OR APPROVED EQUAL. HANGER RODS SHALL BE OF THE FOLLOWING DIAMETER.

PIPE SIZE: 1-1/2 INCH & BELOW. ROD DIAMETER: 3/8 INCH. MAX SPACING: 6 FEET.

PROVIDE ADDITIONAL SUPPORTS AT CHANGE OF DIRECTION, RUNOUTS AND CONCENTRATED LOADS DUE TO VALVES, ETC.

PIPING MATERIAL:

PIPE AND FITTINGS SHALL SHALL CONFORM TO THE LATEST ASA, ASTM AND/OR FS STANDARDS.

SANITARY PIPING ABOVE GRADE

CART IRON, CISP 301, HUBLESS SERVICE WEIGHT, JOINTS TO BE CISPI 310, NEOPRENE GASKETS AND STAINLESS STEEL CLAMP AND SHIELD ASSEMBLIES.

SANITARY SEWER PIPING BURRIED

~~PVC PIPE ASTM D2665 OR ASTM D3034, PVC FITTINGS AND SOLVENT WELD OR CEMENT JOINTS PER ASTM D2855 OR~~ CAST IRON ASTM A74 PIPE W/ CAST IRON FITTING AND HUB AND SPIGOT FITTING.

DOMESTIC WATER PIPING

ABOVE GROUND WATER PIPING: TYPE L COPPER TUBING, CONFORMING TO FEDERAL SPECIFICATION WW-T-799 HARD TEMPER. WROUGHT COPPER AND BRONZE SOLDER JOINTS. SOLDER JOINTS SHALL BE LEAD FREE SOLDER.

BELOW GROUND WATER PIPING 3 IN. AND SMALLER: TYPE K COPPER TUBING, SOFT TEMPER WITH BITUMINOUS COATING. NO JOINTS WHERE POSSIBLE, WROUGHT COPPER AND BRONZE WITH LEAD FREE SOLDER.

FITTINGS:

PROVIDE DIELECTRIC GASKETS FOR JOINTS OF DISSIMILAR METALS: ISOLATING GASKETS, SLEEVES AND WASHERS BETWEEN FLANGES, BOLTS AND NUTS.

PROVIDE WATER HAMMER ARRESTOR AS REQUIRED TO CONTROL PIPE VIBRATION AND NOISE CONTROL. IT SHALL BE SIZED PER PDI WH-201.

PROVIDE 1/2 INCH DRAIN VALVE AND CAPPED CONNECTIONS AT LOW POINTS. PROVIDE 3/4 INCH CAPPED CONNECTION FOR DRAINING CONNECTION AT THE LOWEST POINT IN THE SYSTEM.

FOR MANUAL AIR VENTS, PROVIDE LINE SIZE AIR CHAMBER WITH 1/2 INCH VALVE. PROVIDE VALVES AT ALL HIGH POINTS AND WHERE FLOW CHANGES FROM HORIZONTAL TO DOWNWARD.

WATER PIPING: 95-5 TIN-ANTIMONY SOLDER JOINT CONNECTIONS - NO LEAD

VALVES:

PROVIDE SHUTOFF VALVES ON ALL BRANCH PIPING AND ON ALL SUPPLIES TO INDIVIDUAL FIXTURES AND EQUIPMENT. PROVIDE BALL VALVES ON ALL WATER MAIN BRANCHES IN CORRIDORS AND AS INDICATED ON DRAWINGS.

VALVES FOR WATER PIPING SHALL BE SUITABLE FOR THE SERVICE PRESSURE AND TEMPERATURE.

GATE VALVE: STOCKHAM, MILWAUKEE OR GRINNELL

BALL VALVES ARE ACCEPTABLE FOR USE AS SHUT-OFF VALVE.

TRAP PRIMER

ACCEPTABLE MANUFACTURERS: PRECISION PLUMBING PRODUCTS, MODEL OREGON MODEL #1; SIOUX CHIEF, ZURN. PROVIDE TRAP SEAL PRIMER FOR ALL NEW FLOOR DRAINS. CONTRACTOR SHALL LOCATE PRIMER, CONNECT TO NEAREST COLD WATER SOURCE AND PROVIDE COMPLETE WITH COPPER DISTRIBUTION UNIT WITH CLEAR PLASTIC INSPECTION COVER.

PLUMBING FIXTURE SCHEDULE

FIXTURE NUMBER	SYMBOL		WASTE	VENT	COLD	HOT	REMARKS
P-1A		LAV/ TOILET COMBO WATER CLOSET	4"	2"	1"	½"	PROVIDE ACORN MODEL 1418-CT, STAINLESS STEEL LAV-TOILET COMBO FIXTURE. 1.6 GPF MECH. FLUSH VALVE, BUBBLER, AIR CONTROL H&C NON-METERING VALVE. COORDINATE INSTALLATION WITH MANUFACTURER.
P-1B P-1C		TANK TYPE WATER CLOSET	4"	2"	½"	-	P-1B : FLOOR MOUNTED, TANK TYPE, ADA COMPLIANT, ELONGATED BOWL WATER CLOSET. P-1C : FLOOR MOUNTED, TANK TYPE, ELONGATED BOWL WATER CLOSET. AMERICAN STANDARD CHAMPION 4
P-2		URINAL	2"	1½"	¾"		ELJER CORRECTO 161-1032, WALL HUNG SIPHON JET URINAL, LOW CONSUMPTION, FLUSH VALVE: SLOAN ROYAL 186-1 OR EQUAL
P-3A		WALL HUNG LAVATORY	1½"	1½"	½"	½"	P-3A: ADA COMPLIANT, WALL HUNG LAVATORY WITH 4 INCH HIGH BACK, DRILLINGS ON 4 INCH CENTERS, RECTANGULAR BASIN WITH SPLASH LIP, FRONT OVERFLOW AND CONCEALED ARMS SUPPORT.
P-3B		COUNTERTOP LAVATORY					P3B: AMERICAN STANDARD AQUALYN# 0476.028 OR EQUAL , ASME A112.19.2, VITREOUS CHINA SELF RIMMING COUNTER TOP LAVATORY, 20"X17" WITH DRILLINGS ON 4" CENTERS, FRONT OVERFLOW, 1 1/4" OUTLET AND A SEAL OF CAULKING
P-4		SINK	1½"	1½"	½"	½"	ELKAY MANUFACTURING CO. MODEL LRAD 1517, 15" X 17 1/2" X 6 1/2" DEEP LEDGE, 18GAUGE, TYPE 302 18-8 STAINLESS STEEL
P-5A		SECURITY WALL SHOWER	3"	1½"	½"	½"	ACORN PANEL WARE 1741FA FRONT ACCESS WALL SHOWER TIME-TROL HOT & COLD VALVE, CONICAL SHOWER HEAD, SOAP DISH.
P-5B		WALL SHOWER	3"	1½"	½"		(BARRIER FREE) EQUAL TO SYMMONS 1-903-S-FSB HYDAPIPE THRU CEILING SUPPLY PIPING SHOWER SYSTEM, STAINLESS STEEL (MIN. 18 GA.) VERTICAL COVERWITH CEILING FLANGE, PRESSURE BALANCING MIXING VALVE. ATTACHED SOAP DISH. 1.5 GPM SHOWER HEAD, FLEXIBLE METAL HOSE WALL CONNECTION AND FLANGE, 30" SLIDE BAR FOR HAND SHOWER MOUNTING. PROVIDE SHOWER FLOOR DRAIN
P-6		DRINKING WATER COOLER	2"	1½"	½"		HALSEY TAYLOR BARRIER FREE COOLER MODEL "HVRGRN8" WITH WATER FILTER
SS-1		SERVICE SINK	3"	1½"	½"	½"	FLOOR SERVICE SINK : MOP RECEPTOR EQUAL TO FIAT PRECAST TERRAZZO MOP BASIN MODEL TSB-3010, 24" X 24" X 12" WITH 6" DROP FRONT, STAINLESS STEEL THRESHOLD, FLANGE ON WALL SIDES. CHICAGO 897 WALL MOUNTED SERVICE SINK FAUCET W/ VACUUM BREAKER SPOUT. RUBBER HOSE, WALL HOOK, 24" LONG MOP HANGER WITH 3 SPRING CLIPS.
FD1 FD2	FD	FLOOR DRAIN	3"	1½"	3/8"		PROVIDE TRAP PRIMER

NOTE:
ALL PLUMBING FIXTURES MUST BE MASSACHUSETTS PLUMBING BOARD APPROVED PRODUCT.

COORDINATE PLUMBING FIXTURE SELECTION WITH THE OWNER

AKA Engineering Inc.
44 Central Street, Unit # 4
Berlin, MA. 01503
Telephone - (508) 869-0403
Fax - (508) 869-2391
www.akaengineering.com

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Exclusive Home Designers
Design / Build
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17 Glenwood St.
Holden Ma.

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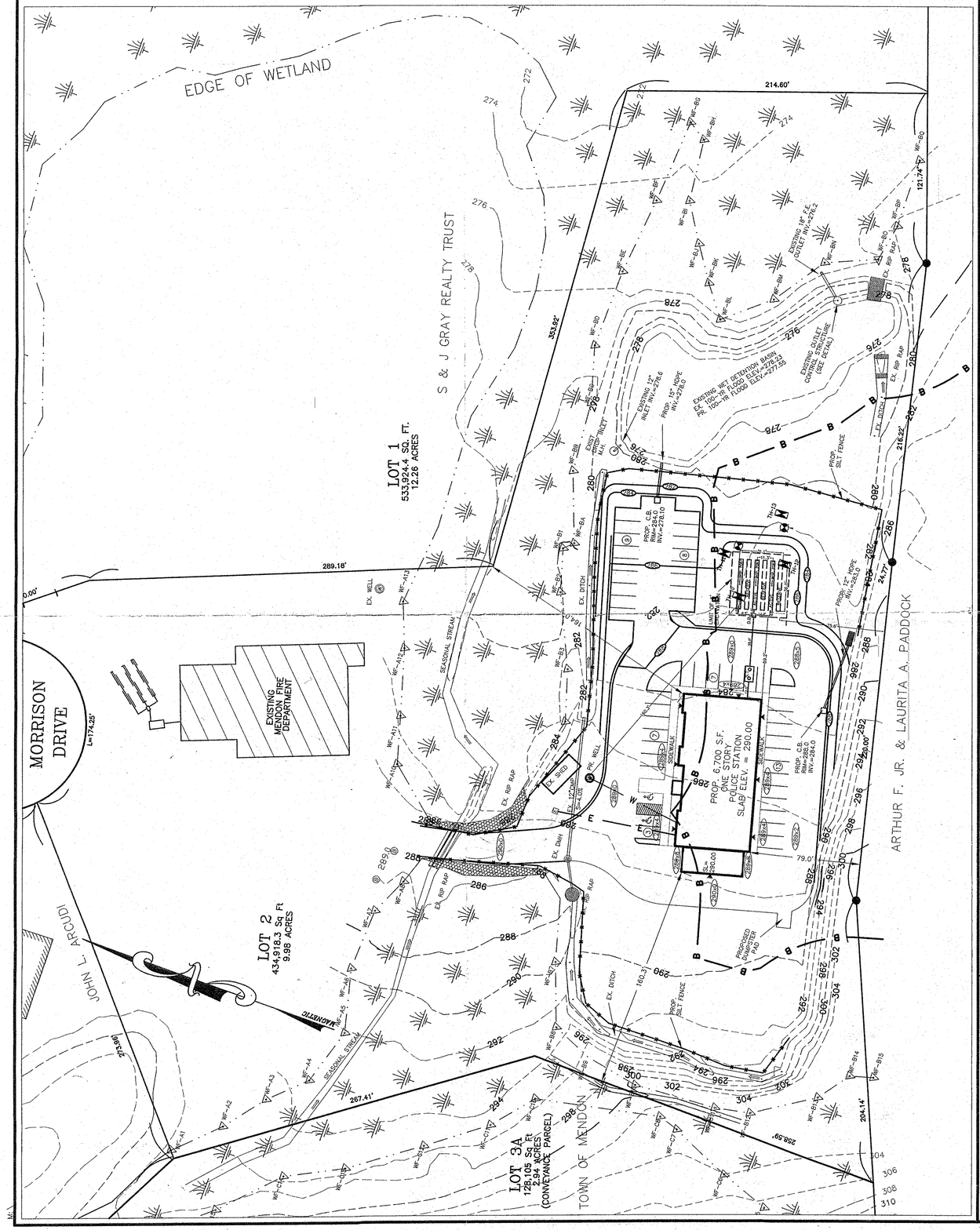
ANUP S. KHATRI No. 42431 REGISTERED PROFESSIONAL ENGINEER

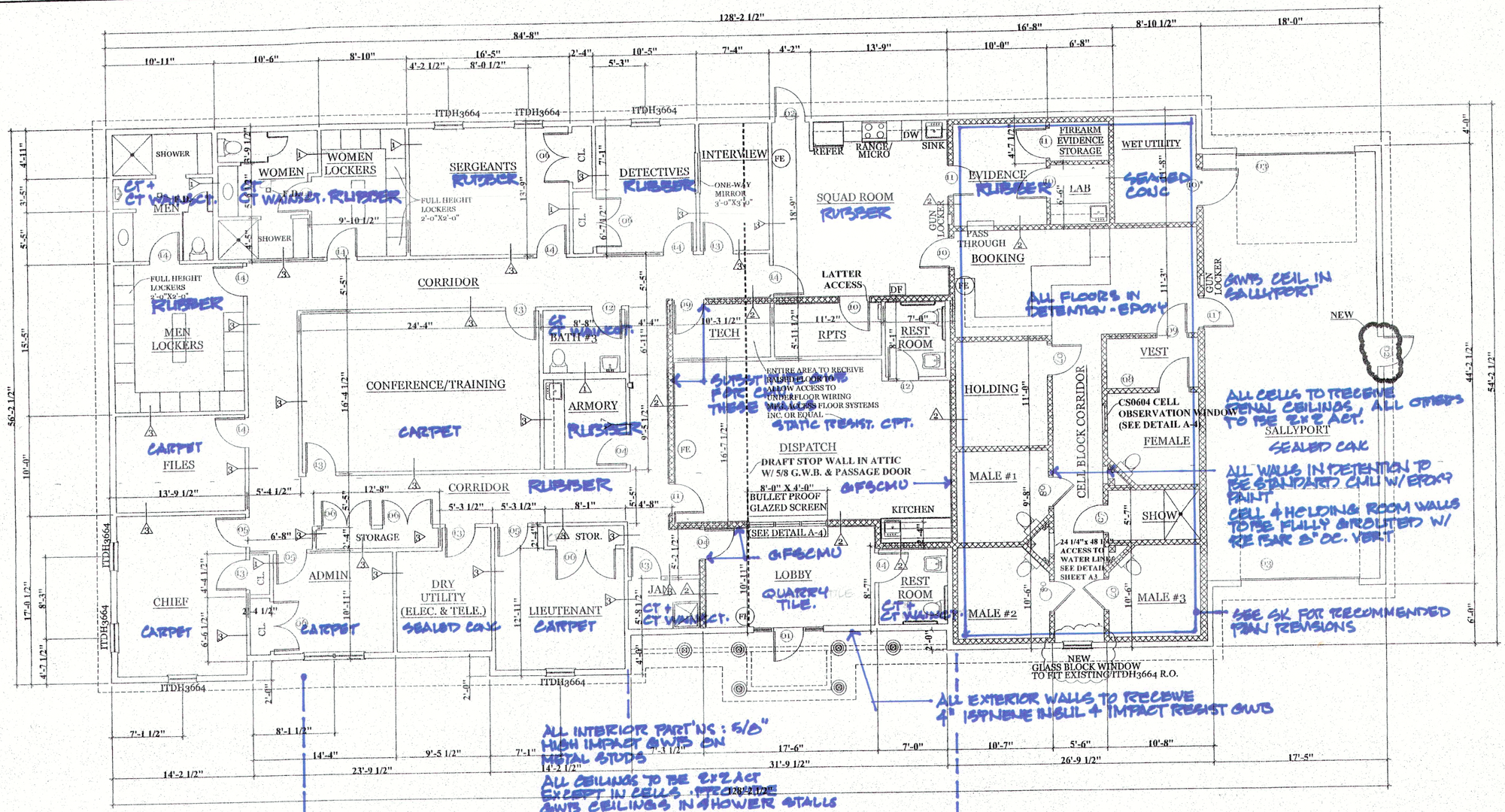
DATE:	12/21/12
SCALE:	
DRAWN BY:	JP
CHECKED BY:	AK
Sheet	25 OF 25

P-2

SEPTIC SYSTEM EXCAVATION TO BE INSPECTED BY DESIGN ENGINEER PRIOR TO CONSTRUCTION OF FOUNDATION


EDGE OF WETLAND
S & J GRAY REALTY TRUST
LOT 1
533,924.4 SQ. FT.
12.26 ACRES
214.60'
121.24'
353.92'
216.42'
289.18'
0.00'
MORRISON DRIVE
L=174.25'
EXISTING MENDON FIRE DEPARTMENT
LOT 2
434,918.3 Sq Ft
9.98 ACRES
JOHN L. ARCUDI
267.41'
LOT 3A
126,105 Sq Ft
2.94 ACRES
(CONVEYANCE PARCEL)
TOWN OF MENDON
ARTHUR F. JR. & LAURITA A. PADDOCK
258.59'
204.14'
79.0'
160.3'
PROP. 6,700 S.F. ONE STORY POLICE STATION SLAB ELEV. = 290.00
PROP. SILT FENCE
EXISTING WET DETENTION BASIN
FF. 100-YR FLOOD ELEV.=278.3
FF. 100-YR FLOOD ELEV.=277.55
EXISTING OUTLET CONTROL STRUCTURE (SEE DETAIL)
EXISTING 12" INLET INV.=278.6
PROP. 15" HDPE INV.=278.0
EXIST. CATCH BASIN
PROP. C.B. RIM=286.0 INV.=276.10
PROP. 12" HDPE INV.=284.0
PROP. C.B. RIM=288.0 INV=284.0
PROP. D.B. RIM=288.0 INV=284.0
EXISTING 36" RCP
EXISTING 18" RCP
EX. DITCH
EX. RIP RAP
EX. WELL
PROP. WELL
EX. WOOD
SEASONAL STREAM
SIDEWALK
PROPOSED DRIVEWAY
PROP. CURB
EX. CURB
EX. GUARD RAIL
EX. FENCE
EX. BUSH
EX. TREE LINE
EX. UTILITY POLE
EX. GAS GATE
EX. GAS LINE
EX. WATER GATE
EX. WATER LINE
EX. ELECTRIC LINE
EX. TELEPHONE LINE
EX. ELECTRIC MANHOLE
EX. TELEPHONE MANHOLE
EX. SIGN
EX. LIGHT
EX. HYDRANT
EX. GAS VALVE
EX. GAS METER
EX. WATER VALVE
EX. WATER METER
EX. SEWER MANHOLE
EX. SEWER LINE
EX. DRAIN MANHOLE
EX. DRAIN LINE
EX. CATCH BASIN
EX. GUY WIRE
EX. SPOT ELEVATION
EX. CONTOUR
PROP. CONTOUR
PROP. SPOT ELEVATION
PROP. TREE LINE
PROP. SILT FENCE
PROP. HAY BALE
PROP. LIMIT OF CLEARING
PROP. LIMIT OF EXCAVATION
PROP. LIMIT OF DISTURBANCE
PROP. LIMIT OF WORK
PROP. SEWER MANHOLE
PROP. SEWER LINE
PROP. DRAIN MANHOLE
PROP. DRAIN LINE
PROP. CATCH BASIN
PROP. GUY WIRE
PROP. SPOT ELEVATION
PROP. CONTOUR

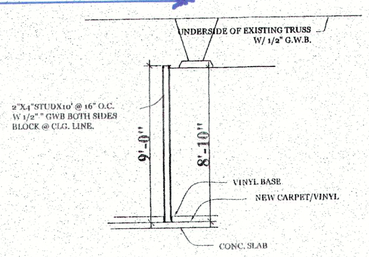
NOTES:



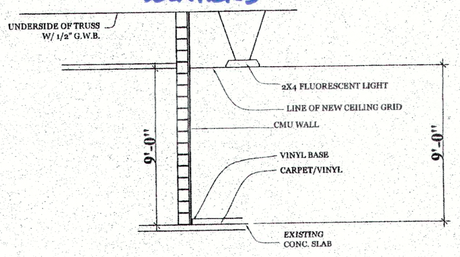
DOOR SCHEDULE

DOOR	SIZE	MATERIAL	SWING	HARD WARE	FRAME	THRO	REMARKS	
1	3X7X1 3/4"	MTL.	RIGHT	3	PRESSED MTL.	6 5/8"	EXISTING	2
2	3X7X1 3/4"	MTL.	LEFT	3		6 5/8"	EXISTING / NEW	2
3	12'-0"X9'-0"X2"		O.H.D.	1		4 5/8"	EXISTING	2
4	3X7X1 3/4"	SOLID WOOD BIRCH VENEER	LEFT	2			1 MASONRY ANCHOR	2
5	3X7X1 3/4"	SOLID WOOD BIRCH VENEER	RIGHT	2				3
6	(2)3'-6"X7X1 3/4"	SOLID WOOD BIRCH VENEER	L/R	5				6
7	3X7X1 3/4"	BY OTHERS	LEFT		BY OTHERS SEE SHEET A3			4
8	3X7X1 3/4"	BY OTHERS	RIGHT		BY OTHERS SEE SHEET A3			2
9	3X7X1 3/4"	MTL.	RIGHT	1	PRESSED MTL.	6 1/8"	MASONRY ANCHOR	2
10	3X7X1 3/4"	MTL.	LEFT	1			MASONRY ANCHOR	3/1"
11	3X7X1 3/4"	MTL.	RIGHT	2			MASONRY ANCHOR	3/1"
12	3X7X1 3/4"	SOLID WOOD BIRCH VENEER	LEFT	4		4 5/8"		3
13	3X7X1 3/4"	SOLID WOOD BIRCH VENEER	LEFT	1				6
14	3X7X1 3/4"	SOLID WOOD BIRCH VENEER	RIGHT	1				8

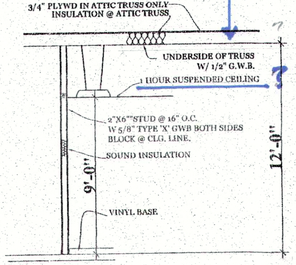
HARDWARE
1-PASSAGE SET W/ CLOSER 1 1/2 PAIR HINGES /SILENCERS/STOP
2-LOCK SET 1 1/2 PAIR HINGES /SILENCERS
3-LOCK CYLINDER PANIC BAR / CLOSER 1 1/2 PAIR HINGES / WEATHER-STRIPP-ED
-ALL HARDWARE TO BE LEVER HANDLES WITH BRUSH CHROME FINISH



1 INT. WALL SECTION
1/4"=1'-0"



2 CMU WALL SECTION
1/4"=1'-0"
U.L. LISTING U-914 2 HOUR RATED



3 INT. WALL SECTION
1/4"=1'-0"

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Design / Build
Phone No. (508) 466-3202
17 Glenwood St.
Holden Ma.

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MENDON POLICE STATION

FIRST FLOOR PLAN

MP-12-01

DATE: 12/21/12

SCALE: AS NOTED

DRAWN BY: JDO

CHECKED BY: RCS

Sheet 4 OF 24

A-1

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MORRISON DRIVE

L=174.25'

JOHN L. ARCUDI

273.96'

LOT 2
434,918.3 Sq Ft
9.98 ACRES

EXISTING MENDON FIRE DEPARTMENT

MAGNOLIA

SEASONAL STREAM

257.41'

289.18'

EX. WELL

LOT 1
533,924.4 SQ. FT.
12.26 ACRES

SHARE FIRE STATION EMERGENCY GENERATOR

S. & J. GRAY REALTY TRUST

PROVIDE FINAL GRADING, PAVING, CURBS + PAVEMENT MARKINGS

PROVIDE SITE IMPROVEMENTS - SIGNAGE, FLAGPOLE, FENCING, BOLLARDS

PROVIDE LANDSCAPING (LOAM/SEED)

PROVIDE SITE LIGHTING

PROVIDE CONC. WALKS, APPROACHES, AND PADS

EDGE OF WETLAND

SEPTIC SYSTEM EXCAVATION TO BE INSPECTED BY DESIGN ENGINEER PRIOR TO CONSTRUCTION OF FOUNDATION

LOT 3A
128,105 Sq Ft
2.94 ACRES
(CONVEYANCE PARCEL)

EX. RIP RAP

EX. DMH

EX. SHED

EX. 12"CMP S=4.0%

PR. WELL

WELL IS INSTALLED

EX. DITCH

TOWN OF MENDON

PROVIDE TIGHT TANK AND INTERCEPTOR

PERIMETER DRAIN FOR DOWNSPOUTS

PROP. SILT FENCE

SIDEWALK

PROP. 6,700 S.F. ONE STORY POLICE STATION SLAB ELEV. = 290.00

SL=290.00

POSSIBLE CARPORT ALTERNATE

PROPOSED DUMPSTER PAD

DUMPSTER PAD + ENCLOSURE

PROP. C.B. RIM=288.0 INV.=284.0

PROP. C.B. RIM=284.0 INV.=278.10

LIMIT OF EXCAVATION

TH-10

TH-11

TH-12

TH-13

SEPTIC SYSTEM APPROVED / INSTALLED

PROP. 12" HDPE INV.=283.0

PROP. SILT FENCE

EXISTING 12" INLET INV.=278.6

PROP. 15" HDPE INV.=278.0

EXISTING WET DETENTION BASIN EX. 100-YR FLOOD ELEV.=277.53 PR. 100-YR FLOOD ELEV.=277.53

EXISTING OUTLET CONTROL STRUCTURE (SEE DETAIL)

EXISTING 18" F.E. OUTLET INV.=276.2

EX. DITCH

EX. RIP RAP

ARTHUR F. JR. & LAURITA A. PADDOCK

204.14'

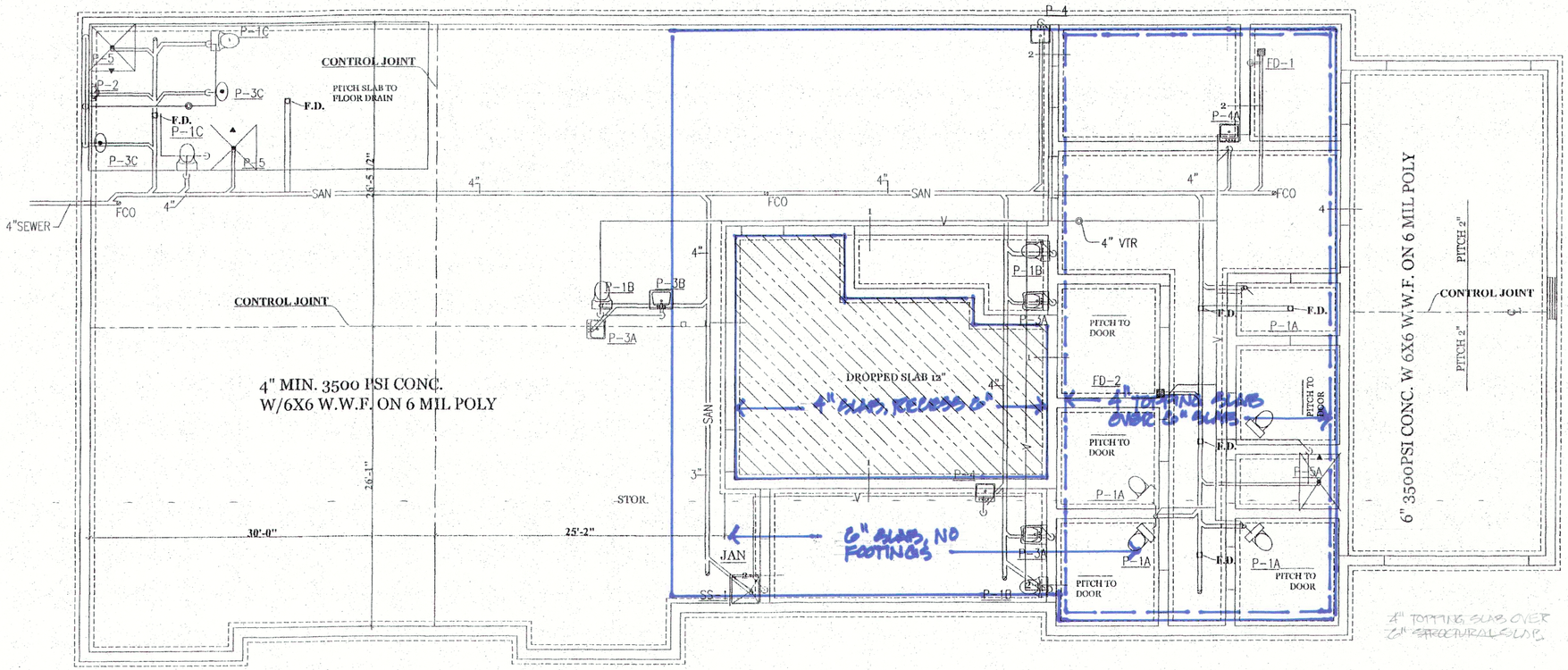
220.00'

24.77'

216.22'

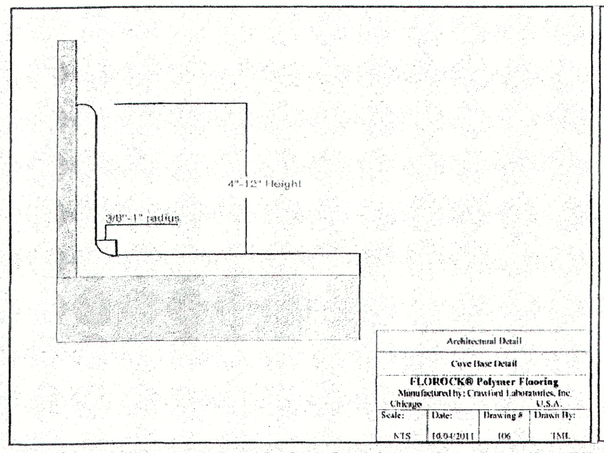
121.74'

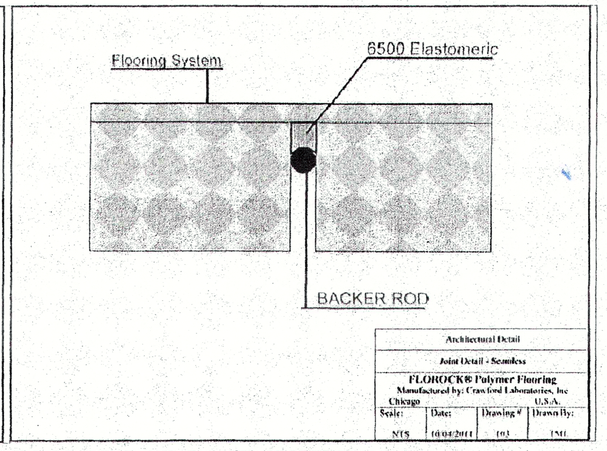
214.60'



SEWER AND VENT PIPING

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





FLORO SHOP SILICA SAND EPOXY BROADCAST SYSTEM W/
FLORO WARE 7100 TOP COAT @ BOOKING & CELL BLOCK AREA &
MEN/WOMEN LOCKER ROOMS.
(FLOROCK OR EQUIL)

NOTES:

GENERAL NOTES:

1. These plans are drawn as required for construction by an experienced licensed general contractor.
2. The General contractor shall fully comply with the current edition of the Massachusetts State Building Code and all additional local requirements.
3. Written dimensions shall have precedence over scaled dimensions. The general contractor shall verify and is responsible for all dimensions (including rough openings) and conditions on the job and must notify this office of any variations from these drawings. Any defects in the construction documents shall be brought to the attention of this office before proceeding with work. Reasonable time not allowed this office to correct defects shall place the burden of cost and liability from such defects upon the contractor.

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Design / Build
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17 Glenwood St. Holden Ma.

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THOMAS REARDON No. 7437 REGISTERED ARCHITECT COMMONWEALTH OF MASSACHUSETTS

MENDON POLICE STATION

SLAB PLAN

DATE: 12/21/12
SCALE: AS NOTED
DRAWN BY: JDO
CHECKED BY: RCS

Sheet 3 OF 24

S-2

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