VAMC Lebanon
Renovation of Laboratory B1
1700 South Lincoln Avenue
Lebanon PA 17042
VA Project Number 595-09-107

Owner / Developer
Ricardo Ramos, Project Manager
1700 South Lincoln Avenue
Lebanon, PA 17042
(717) 272-6621 x3935

Architects / Engineers
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227 Fort Pitt Boulevard
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Civil Engineer
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Asbestos Consultant
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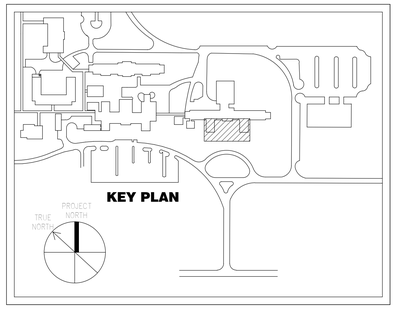
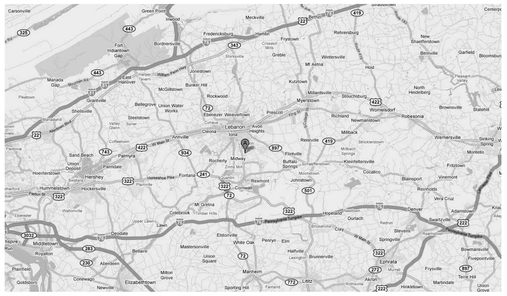


Vicinity Map



Location Map

CONSTRUCTION DOCUMENT SUBMISSION

FULLY SPRINKLERED

Number	Description	Date
	Revision Schedule	

CONSULTANTS:

ARCHITECT/ENGINEERS:

ARCHITECTURE
ENGINEERING
INTERIOR DESIGN
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ASTORINO
227 Fort Pitt Boulevard Pittsburgh Pennsylvania 15222
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Drawing Title: **Cover Sheet**

Approved: Project Director

Project Title: **VAMC Lebanon - Renovation of Laboratory B1**

Location: **Lebanon, PA**

Date: **02/23/2012** | Checked: **AB** | Drawn: **BY**

Project Number: **595-09-107**

Building Number

Drawing Number: **G0-000**

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Office of Facilities Management

Department of Veterans Affairs

VA FORM 08-6231, OCT 1978

Symbols and Keys

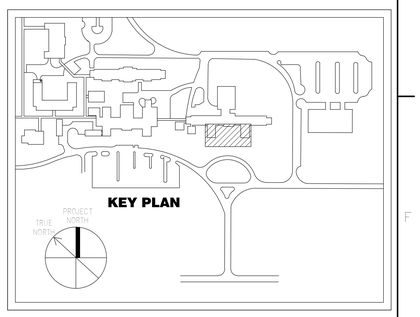
Room name 101	ROOM TAG		BUILDING SECTION AND WALL SECTION TAG
Room name 150 SF	AREA TAG	1 A2-040A SIM	INTERIOR SECTION TAG
101	DOOR TAG		SPOT ELEVATION
	GENERIC ANNOTATION TAG		SPOT ELEVATION
?	KEYNOTE	2.2	TOILET ACCESSORIES TAG
1t	WINDOW TAG	1 View Name 1/8" = 1'-0"	VIEW TITLE
1 A2-050A SIM	CALLOUT HEAD	1	WALL TAG
	NORTH ARROW	GWB-2 1'-0"	CEILING TAG
	NORTH ARROW	A3-010A	AREA, SERIES, OR SHEET SEQUENCE NUMBER FLOOR OR GENERAL SHEET SERIES DISCIPLINE
1	REVISION TAG		

Abbreviations

AFF	ABOVE FINISHED FLOOR
ACT	ACOUSTICAL TILE
ADJ	ADJACENT
ALT	ALTERNATE
ALUM	ALUMINUM
ADA	AMERICANS WITH DISABILITIES ACT
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
AD	AREA DRAIN
AED	AUTOMATED-EXTERNAL DEFIBRILLATOR
BRG	BEARING
BLKG	BLOCKING
BD	BOARD
BOT	BOTTOM
BLDG	BUILDING
BUR	BUILT-UP ROOF (ING)
CAB	CABINET
CPT	CARPET
CI	CAST IRON
CB	CATCH BASIN
CLG	CEILING
CEM	CEMENT
CL	CENTER LINE
CT	CERAMIC TILE
CO	CLEAN OUT
COL	COLUMN
CONC	CONCRETE
CMU	CONCRETE MASONRY UNIT
CONT	CONTINUOUS
CONTR	CONTRACTOR
CJ	CONTROL JOINT
CG	CORNER GUARD
CC	CONTRACTOR FURNISHED & INSTALLED
DEG	DEGREE (S)
DET	DETAIL
DIAG	DIAGONAL
DIA	DIAMETER
DIM	DIMENSION
DR	DOOR
DN	DOWN
DS	DOWN SPOUT
DWG	DRAWING
D	DATA OUTLET
EA	EACH
EC	ELECTRICAL CONTRACTOR
ELEC	ELECTRIC (AL)
EWC	ELECTRIC WATER COOLER
ELEV	ELEVATION
EQ	EQUAL
EPDM	ETHYLENE PROPYLENE DIENE MONOMER
EJ	EXPANSION JOINT
EXT	EXTERIOR
EIFS	EXTERIOR INSULATION AND FINISH SYSTEM
EQUIP.	EQUIPMENT
E	ELECTRICAL OUTLET
FIN	FINISH (ED)
FA	FIRE ALARM
FEC	FIRE EXTINGUISHER CABINET
FHC	FIRE HOSE CABINET
FL	FLOOR
FD	FLOOR DRAIN
FT	FOOT
FTG	FOOTING
GA	GAGE
GALV	GALVANIZED
GL	GLASS
GC	GENERAL CONTRACTOR
GWB	GYPSUM WALL BOARD
HTG	HEATING
HVAC	HEATING, VENTILATING & AIR CONDITIONING
HT	HEIGHT
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HW	HOT WATER
ID	INSIDE DIAMETER
INSUL	INSULATE (D) (ION)
INT	INTERIOR
INV	INVERT
JAN	JANITOR
JT	JOINT
LAM	LAMINATED
LH	LEFT HAND
LT	LIGHT
MFR	MANUFACTURER
MAS	MASONRY
MO	MASONRY OPENING
MATL	MATERIAL
MAX	MAXIMUM
MECH	MECHANICAL
MDF	MEDIUM DENSITY FIBERBOARD
MET	METAL
MTD	MOUNTED
MIN	MINIMUM
MISC	MISCELLANEOUS
NON-COM	NON COMBUSTIBLE
NOM	NOMINAL
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
NO	NUMBER
OC	ON CENTER
OD	OUTSIDE DIAMETER
OPNG	OPENING
OPP	OPPOSITE
PTD	PAINTED
PTN	PARTITION
PLAM	PLASTIC LAMINATE
PL	PLATE
PWD	PLYWOOD
PT	POINT
PVC	POLYVINYL CHLORIDE
PSI	POUNDS PER SQ.INCH
PRE-FAB	PREFABRICATED
QTY	QUANTITY
QT	QUARRY TILE
RAD	RADIUS
RWL	RAIN WATER LEADER
RE:	REFER TO
REINF	REINFORCE (D) (ING)
REQ'D	REQUIRED
REV	REVISION
RH	RIGHT HAND
RD	ROOF DRAIN
RO	ROUGH OPENING
SECT	SECTION
SIM	SIMILAR
SPEC	SPECIFICATIONS
SQ	SQUARE
SST	STAINLESS STEEL
STD	STANDARD
STL	STEEL
SD	STORM DRAIN
STRUCT	STRUCTURAL
SUSP	SUSPENDED
TB	TACKBOARD
TOS	TOP OF STEEL
TOW	TOP OF WALL
TYP	TYPICAL
UL	UNDERWRITERS LABORATORIES INC.
UNO	UNLESS NOTED OTHERWISE
UCL	UNDER CABINET LIGHT FIXTURE
VIF	VERIFY IN FIELD
VERT	VERTICAL
VCT	VINYL COMPOSITION TILE
VWC	VINYL WALL COVERING
VV	VA FURNISHED & INSTALLED
WC	WATER CLOSET
WT	WEIGHT
WWF	WELDED WIRE FABRIC
W/	WITH
W/O	WITHOUT
WD	WOOD
XRVB	X-RAY VIEW BOX

General Notes

1. DO NOT SCALE DRAWINGS.
2. ALL DIMENSIONS ARE TO FINISHED FACE OF PARTITION (GWB), UNLESS NOTED OTHERWISE.
3. CONTRACTOR SHALL FIELD VERIFY ALL CONDITIONS AND DIMENSIONS. CONTRACTOR SHALL NOTIFY THE ARCHITECT OF ALL DISCREPANCIES PRIOR TO COMMENCING WITH THE WORK.
4. LARGE SCALE DETAILS SHALL GOVERN OVER SMALLER SCALE PLANS.
5. NEW PARTITIONS ABUTTING EXISTING CONSTRUCTION SHALL BE ALIGNED TO PROVIDE A CONTINUOUS FLUSH FACE, UNLESS NOTED OTHERWISE.
6. CONTRACTOR SHALL CLOSE (WITH MATERIALS MATCHING & ALIGNING WITH EXISTING ADJACENT CONSTRUCTION) ALL DUCT, GRILLE, PIPING & CONDUIT WALL, PARTITION, FLOOR AND ROOF OPENINGS THAT ARE SCHEDULED TO BE REMOVED OR ALTERED. BOND (TOOTH) NEW & EXISTING MASONRY, UNLESS NOTED OTHERWISE.
7. CONTRACTOR SHALL PROVIDE ALL NEW OPENINGS REQUIRED IN NEW & EXISTING PARTITIONS, EXTERIOR WALLS, FLOORS AND ROOF FOR NEW & EXISTING MECHANICAL, ELECTRICAL AND PLUMBING WORK. FURNISH & INSTALL ALL REQUIRED LINTELS AND SLEEVES FOR ALL NEW & EXISTING PIPING CONDUITS, DUCTWORK, ETC. COORDINATE THIS WORK WITH MECHANICAL & ELECTRICAL CONTRACTORS. REFER TO MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE PROTECTION DRAWINGS.
8. TYPICAL LOCATION OF INTERIOR DOORS FROM ADJACENT WALL TO BE 6" TO THE INSIDE FACE OF FRAME UNLESS NOTED OTHERWISE.
9. TOILETS MARKED AS ACCESSIBLE TOILET ON THE FLOOR PLANS ARE DESIGNED TO MEET USAFVA ACCESSIBILITY STANDARDS.
10. THE VA HAS AWARDED SEVERAL PROJECTS TO BE CONSTRUCTED ADJACENT TO AND CONCURRENT WITH THIS PROJECT. CONTRACTOR TO COORDINATE CONSTRUCTION THAT INTERFERES WITH ADJACENT CONSTRUCTION WITH CONTRACTING OFFICE TECHNICAL REPRESENTATIVE (COTR).



CONSTRUCTION DOCUMENT SUBMISSION

FULLY SPRINKLERED

Number	Description	Date
Revision Schedule		

CONSULTANTS:

ARCHITECT/ENGINEERS:

ARCHITECTURE ENGINEERING INTERIOR DESIGN DESIGN/BUILD ASTORINO

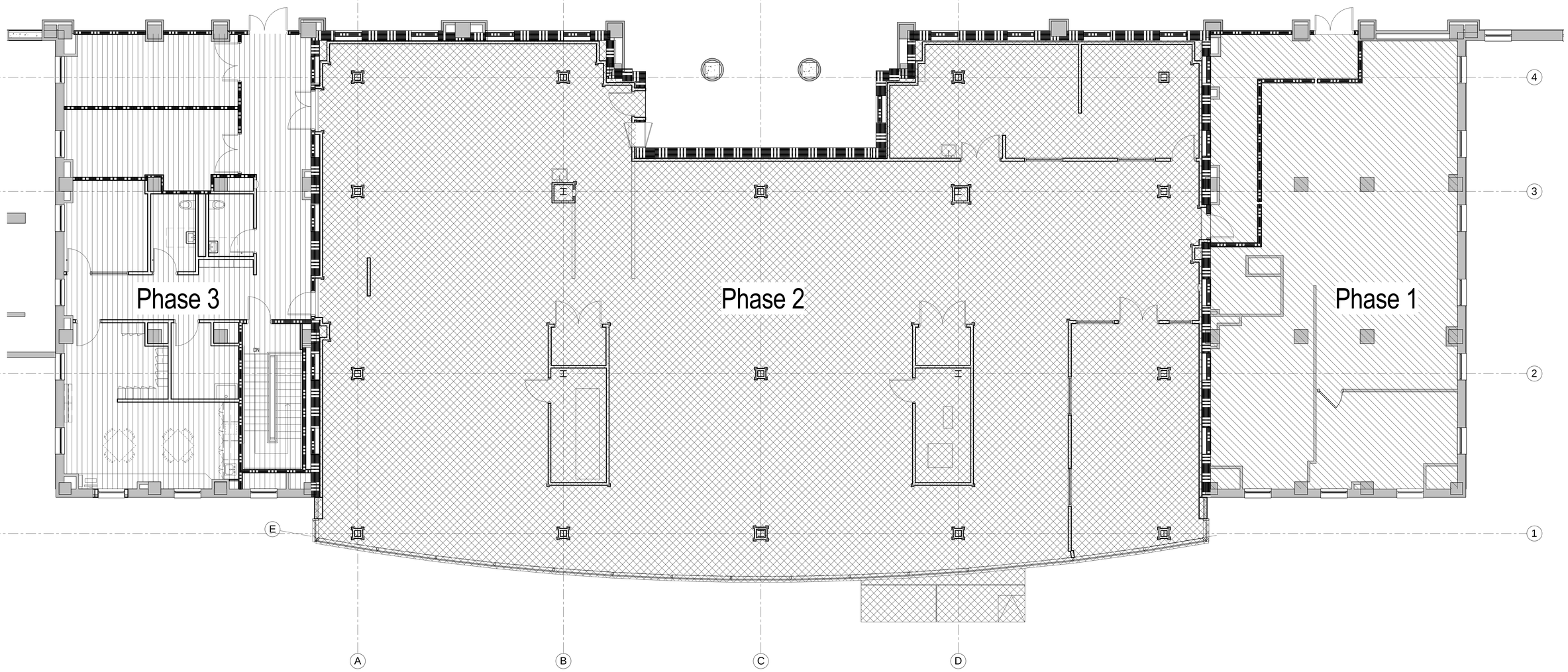
227 Fort Pitt Boulevard Pittsburgh Pennsylvania 15222
TEL 412 765 3700 FAX 412 765 3711 www.astorino.com

Drawing Title: **Abbreviations, Symbols and Notes**	Project Title: **VAMC Lebanon - Renovation of Laboratory B1**		Project Number: **595-09-107**
Approved: Project Director	Location: **Lebanon, PA**		Building Number
	Date: **02/23/2012**	Checked: **AB**	Drawing Number: **G0-001**
		Drawn: **BY**	Dwg. of

Office of Facilities Management

Department of Veterans Affairs

VA FORM 08-6231, OCT 1978



1 Ground Floor Plan
3/16" = 1'-0"

Phasing Plan Notes

Phase 1 - by VA
-East Side Renovations

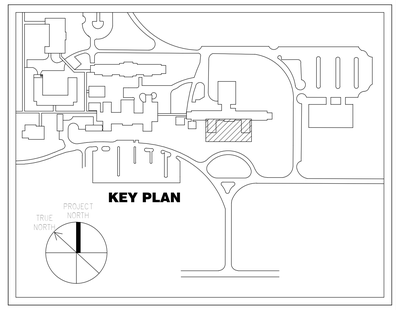
Notes:
-Exit from Lab Addition will be created.
-Conduits are being provided from the Addition side for installing power on east side so temporary service may be needed.
-Tie-ins to Phase 2 work needs to be ongoing.
-Coordination of Corridor Project construction with this project needs to be ongoing.

Phase 2
-New Mechanical Basement - including areaway.
-New Lab Addition

Notes:
-Contractor to design, provide, and maintain temporary exit from south curtain wall; Contractor to design exit, VA to approve.
-All work to be done from outside of the hospital; Coordinate with COTR
-Microbiology and Molecular Lab to be used for temporary Break Room/ Locker Room.
-Conference Room is to be used as a temporary Histology Lab. VA to coordinate lab utilities.
-Coordination of Corridor Project construction with this project needs to be ongoing.
-There is some engineering work that ties into the Radiology Project.
-Opening of exterior wall into new Lab Addition could happen at end of Addition construction.

Phase 3
-West Side Renovations

Note:
-Coordination of Corridor Project construction with this project needs to be ongoing.



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FULLY SPRINKLERED

Number	Description	Date
	Revision Schedule	

CONSULTANTS:

ARCHITECT/ENGINEERS:

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ASTORINO
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Drawing Title: **Phasing Plan**

Approved: Project Director

Project Title: **VAMC Lebanon - Renovation of Laboratory B1**

Location: **Lebanon, PA**

Date: **02/23/2012** | Checked: **AB** | Drawn: **BY**

Project Number: **595-09-107**

Building Number:

Drawing Number: **G0-002**

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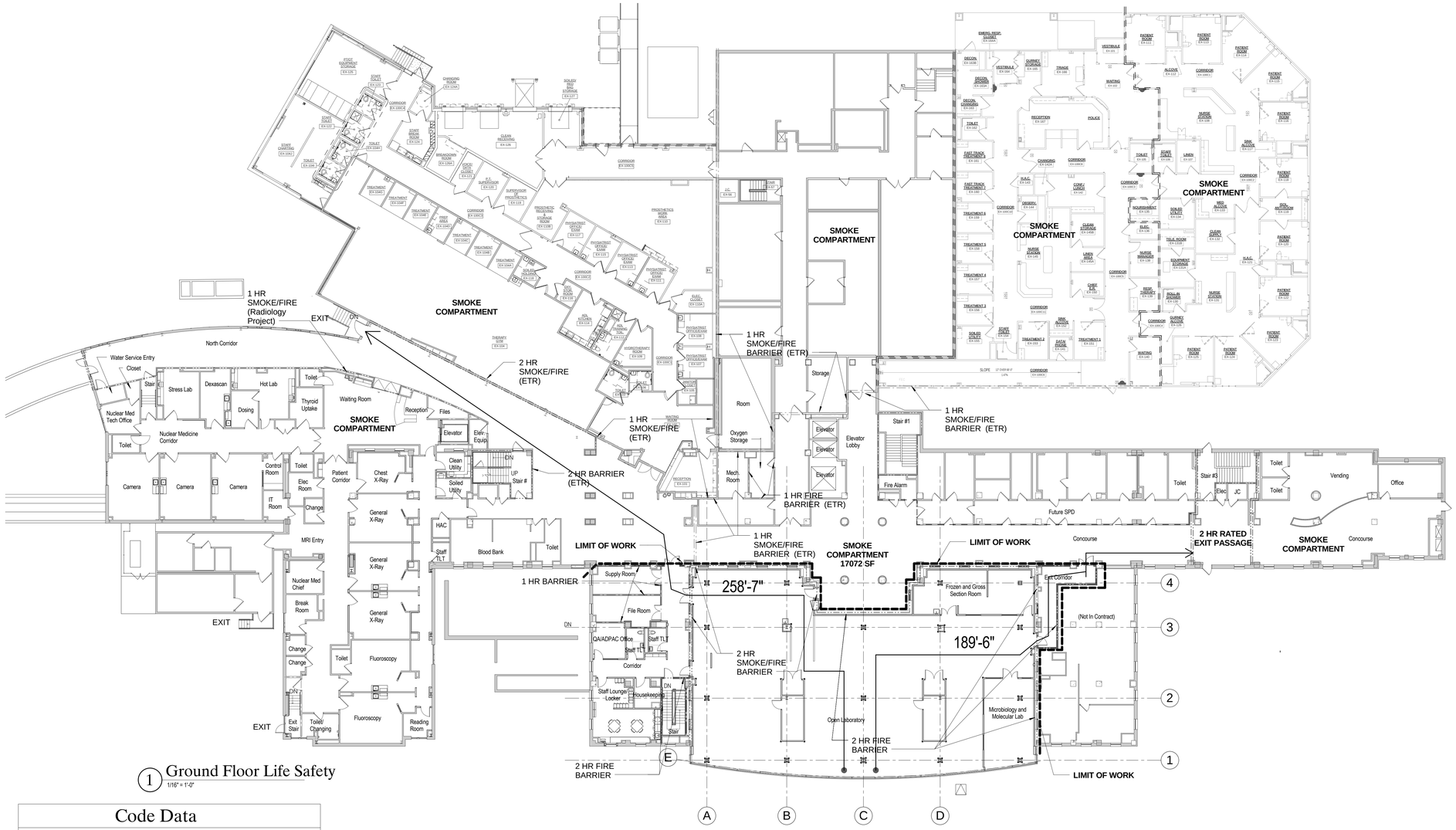


1 Ground Floor Life Safety
1/16" = 1'-0"

Occupancy Table

Floor	Occupancy Description	Total Area (in SF)	Area per Occupant	Total Occupancy
Basement	Special Purpose Industrial	4,174	Use Maximum Probable Population	3
Ground Floor	Business	11,359	1/100	114
Roof	-	-	100	15

Egress Table

Floor	Basement	Ground
Total Occupancts and Direction of Travel	14 up	114 at grade = 14 from below = 128 <2000
Stair Width Required/Drawn (total cumulative occupant load <2000)	44"/48"	at grade
Egress Options at each level	2	2
Re-Entry Allowed	no	yes
# Egress Points Required	2	2
Egress Capacity Stairs (min. width 44")	14/2*.3 =2.1 "	horizontal exit
# Egress Capcity Level (min 36")		128/2*.2= 12.8"

Rated Partition Legend

- SMOKE PARTITION
- 1 HOUR RATED FIRE PARTITION
- 1 HOUR RATED SMOKE/PARTITION
- 2 HOUR RATED FIRE PARTITION
- 2 HOUR RATED SMOKE/FIRE PARTITION

Code Data

THE PROJECT WAS DESIGNED IN ACCORDANCE WITH THE FOLLOWING GUIDELINES AND THE LATEST EDITION OF THE FOLLOWING CODES:

- NFPA 101 2009 (LSC)
- NFPA 99 Standards of Healthcare Facilities Chapter 11 Laboratories
- NFPA 45 Fire Protection for Laboratories Using Chemicals
- Uniform Federal Accessibility Standards (UFAS)
- Department of Veterans Affairs - Design Manuals and Standards
- National Fire Protection Association (NFPA) except NFPA 5000
- National Standard Plumbing Code (NSPC)
- National Electric Code (NEC)
- International Mechanical Code 2009
- Occupational, Safety and Health Administration (OSHA)
- International Plumbing Code 2009
- International Building Code 2009 (as applicable)

	NFPA 101 2009 (LSC)
USE GROUP(S)	HEALTHCARE, MAINTENANCE (SPECIAL PURPOSE INDUSTRICAL OCCUPANCY)
CONSTRUCTION TYPE	II (2,2,2)
SPRINKLERS	PROVIDED
STORIES	1
STRUCTURAL FRAME INCLUDING COLUMNS, BEAMS, GIRDERS, TRUSSES	2 HOURS
BEARING WALLS- EXTERIOR INTERIOR	2 HOURS
NON-BEARING WALLS & PARTITIONS EXTERIOR INTERIOR	NON-COMBUSTIBLE
FLOOR CONSTRUCTION INCLUDING SUPPORTING BEAMS, TRUSSES AND FRAMING.	2 HOURS
ROOF CONSTRUCTION INCLUDING SUPPORTING BEAMS, TRUSSES AND FRAMING	2 HOURS

FIRE RESISTANCE RATING REQUIREMENTS FOR EXTERIOR WALLS BASED ON SEPARATION DISTANCE

FIRE SEPARATION DISTANCE	TYPE OF CONSTRUCTION	GROUP A, B, E, F-2, I, R, S-2, U
< 5	ALL	1
> 5 < 10	IA OTHERS	1 1
> 10 < 30	IA, IB 11B, VB OTHERS	1 0 1
> 30	ALL	0

MINIMUM FIRE RESISTANCE RATING OF ENCLOSURES	HOURS
MAIN ELECTRICAL SWITCHGEAR ROOM	1
EMERGENCY GENERATOR	2
TELEPHONE, ELECTRICAL CLOSETS AND MECHANICAL EQUIPMENT ROOMS	NON-COMBUSTIBLE
STORAGE ROOMS GREATER THAN 100 SQ.FT.	1
BOILER AND FURNACE ROOMS	NON-COMBUSTIBLE

TRAVEL DISTANCE	300'
COMMON PATH OF EGRESS TRAVEL	100'
DEAD END CORRIDOR	50' WHERE SPRINKLED

CORRIDOR WIDTHS (LSC)	
OFFICES OR OTHER AREAS NOT SUBJECT TO HOUSING, TREATMENT OR USE OF INPATIENTS	44 INCHES

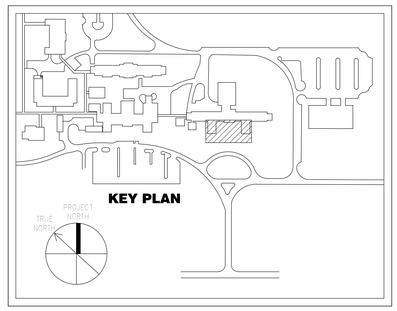
EXIT CAPACITY (LSC)	
STAIRS	0.3 INCHES PER PERSON
LEVEL COMPONENTS & RAMPS	0.2 INCHES PER PERSON

MINIMUM CLEAR WIDTH OF DOORS (LSC)	
ALL AREAS	32 INCHES CLEAR WIDTH

OCCUPANCY FIRE SEPARATION ASSEMBLIES	
EXTERIOR NON-BEARING WALLS	NON-COMBUSTIBLE
INTERIOR NON-BEARING WALLS	NON-COMBUSTIBLE
EXIT ACCESS CORRIDORS	NON-COMBUSTIBLE
ENCLOSURES OF EXIT CORRIDORS, STAIRWAYS AND ASSOCIATED EXIT CORRIDORS CONNECTING 3 OR FEWER STORIES	2
SHAFTS AND ELEVATOR HOISTWAYS CONNECTING 3 OR FEWER STORIES	2

OCCUPANCY LOAD FACTORS (LSC)	
BUSINESS AREAS	100 SQUARE FEET
STORAGE, MECHANICAL ROOMS	300 SQUARE FEET
ASSEMBLY, TABLES AND CHAIRS	15 SQUARE FEET NET
ASSEMBLY, CHAIRS ONLY	7 SQUARE FEET NET

Note: Lab does not fall under



CONSTRUCTION DOCUMENT SUBMISSION

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Number	Description	Date
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CONSULTANTS:

ARCHITECT/ENGINEERS:

ARCHITECTURE ENGINEERING INTERIOR DESIGN DESIGN/BUILD

ASTORINO

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Drawing Title: **Ground Floor Life Safety Plan**

Approved: Project Director

Project Title: **VAMC Lebanon - Renovation of Laboratory B1**

Location: **Lebanon, PA**

Date: **02/23/2012** | Checked: **AB** | Drawn: **BY**

Project Number: **595-09-107**

Building Number:

Drawing Number: **G0-003**

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Department of Veterans Affairs

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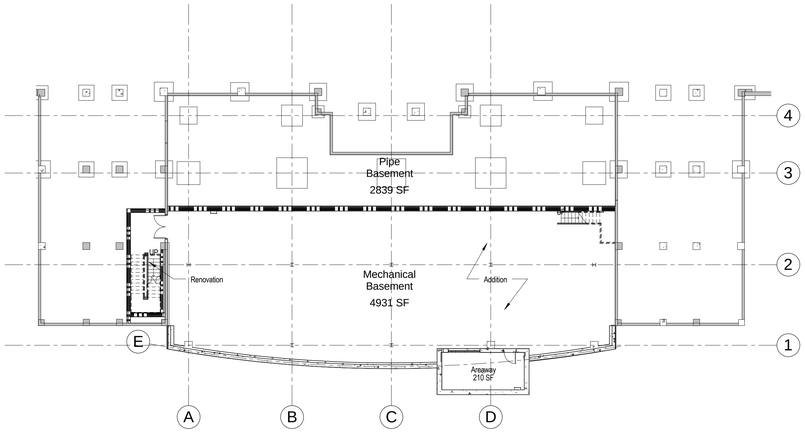
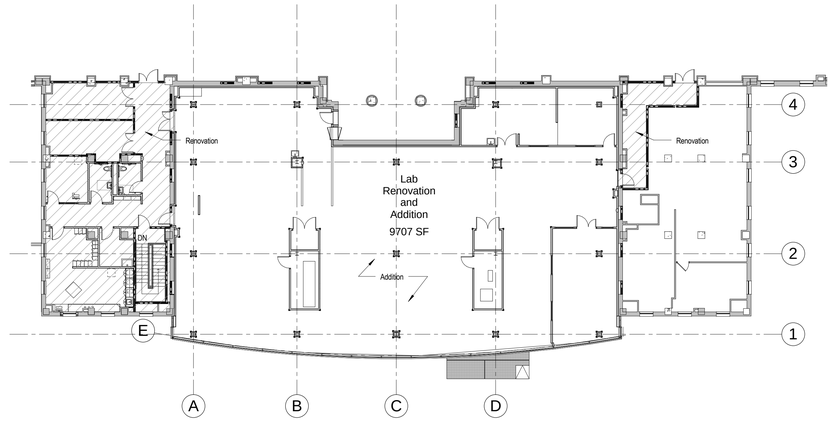


1 Mechanical Basement Gross Area
1/16" = 1'-0"



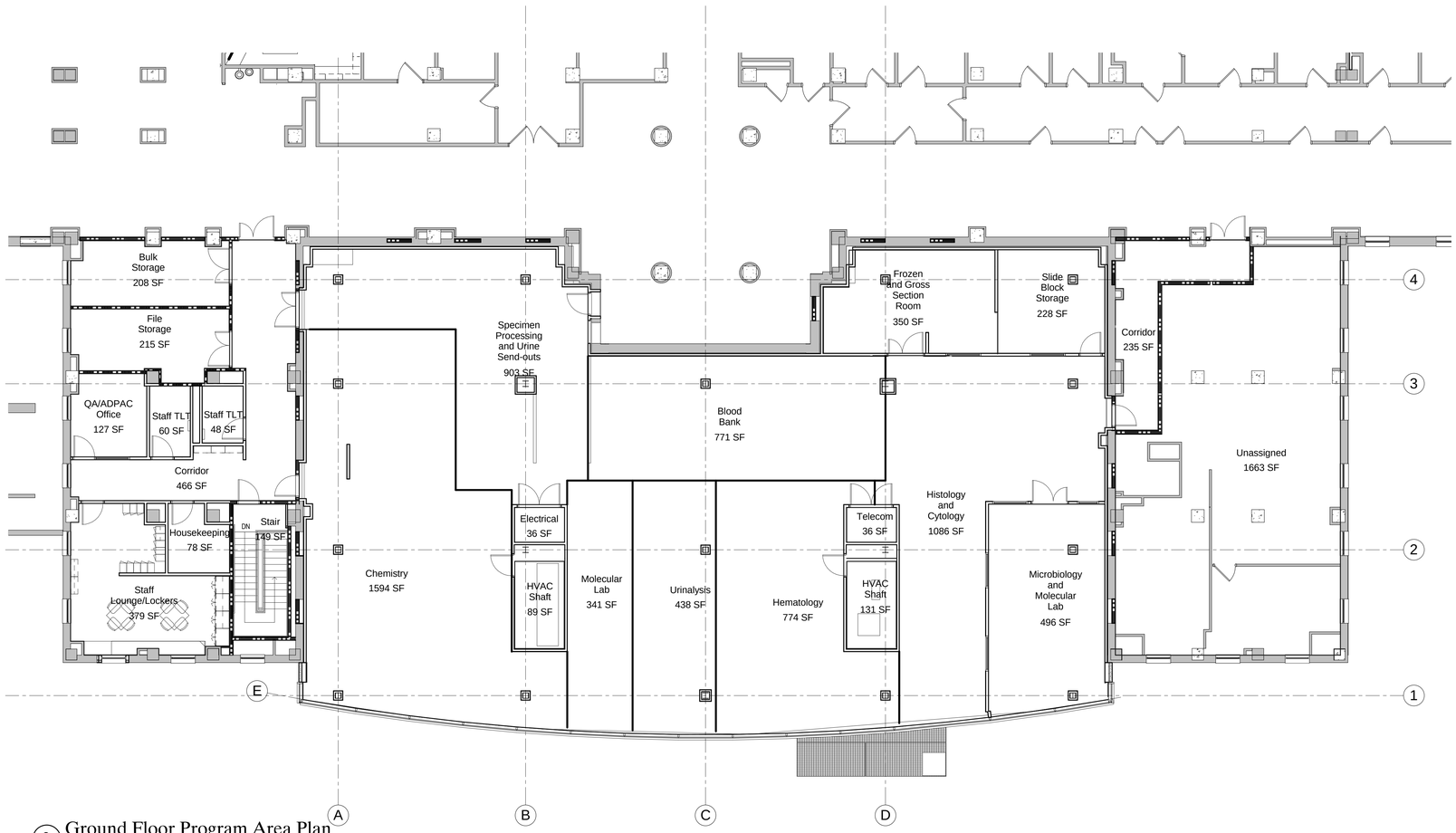
2 Ground Floor Gross Area
1/16" = 1'-0"

Room Area Schedule		
Room No.	Room Name	Area
B10	Mechanical Room	4397 SF
B11	Areaway	210 SF
B17	Stair	215 SF
G11	Microbiology and Molecular Lab	499 SF
G13	Frozen and Gross Section Room	347 SF
G14	Telecom	36 SF
G14B	HVAC	110 SF
G15	Electrical	36 SF
G15B	HVAC	110 SF
G16	Open Laboratory	5839 SF
G17	Stair	150 SF
G18	Housekeeping	78 SF
G19	Staff Lounge/ Locker	377 SF
G20	QA/ADPAC Office	128 SF
G21	Staff TLT	60 SF
G22	Staff TLT	48 SF
G23	Supply Room	206 SF
G24	Corridor	448 SF
G25	Exit Corridor	232 SF
G27	File Room	210 SF
G30	Slide/Block Storage	226 SF

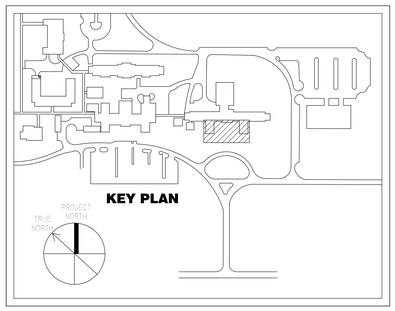
TOTAL PROGRAM AREA 9053 SF

Note:
Does not include Pipe Basement, Areaway, Electrical and Telecom Rooms, HVAC Shafts listed above or exterior wall.

TOTAL (BGSF) 14,494 SF
Includes interior spaces, MEP spaces and new exterior wall.



3 Ground Floor Program Area Plan
1/8" = 1'-0"



CONSTRUCTION DOCUMENT SUBMISSION

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CONSULTANTS:

ARCHITECT/ENGINEERS:

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ENGINEERING
INTERIOR DESIGN
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ASTORINO
227 Fort Pitt Boulevard Pittsburgh Pennsylvania 15222
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Drawing Title: **Building Gross & Program Area Plans**

Approved: Project Director

Project Title: **VAMC Lebanon - Renovation of Laboratory B1**

Location: **Lebanon, PA**

Date: **02/23/2012** | Checked: **AB** | Drawn: **BY**

Project Number: **595-09-107**

Building Number

Drawing Number: **G0-004**

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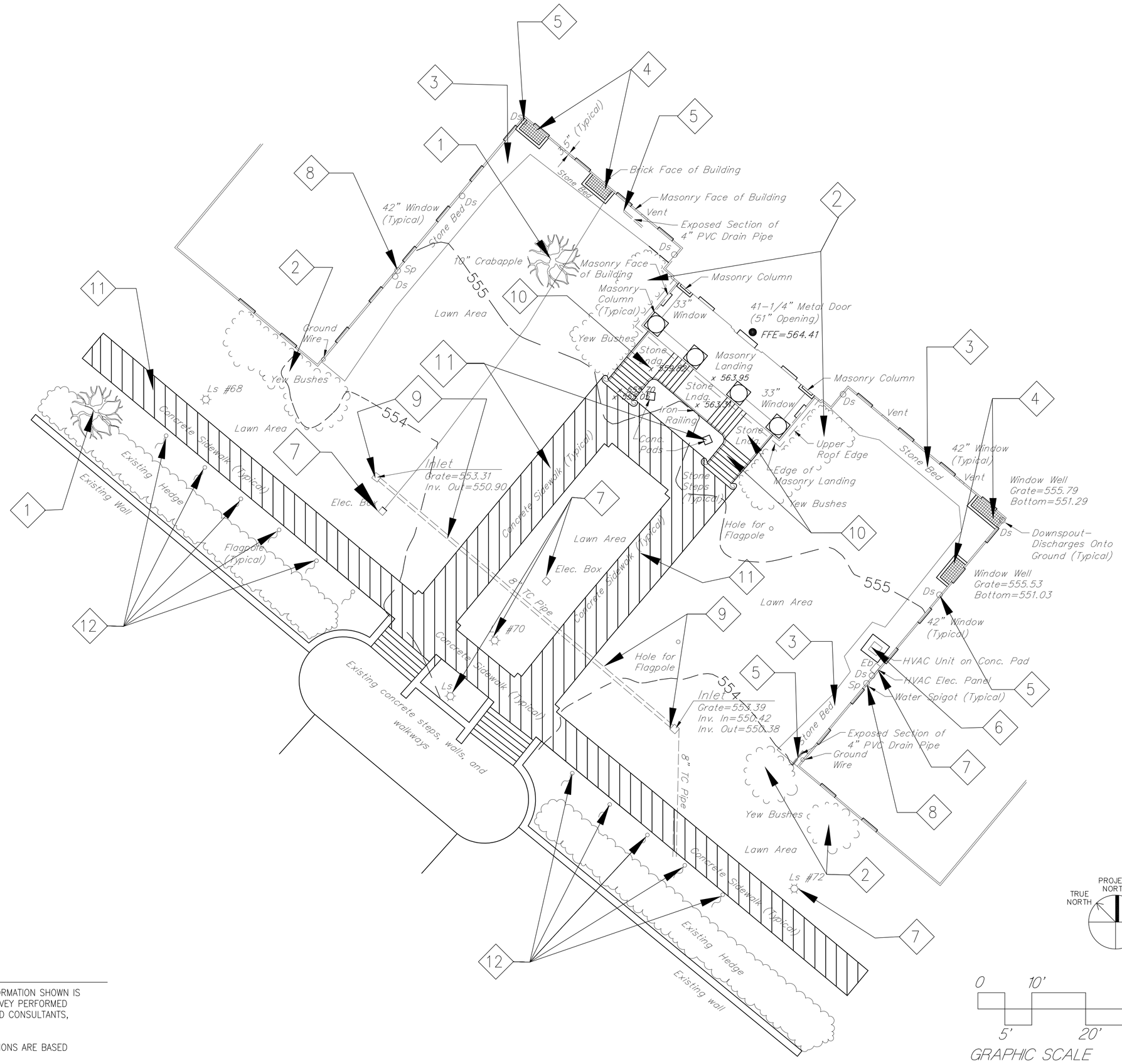


Site Demolition Key Notes

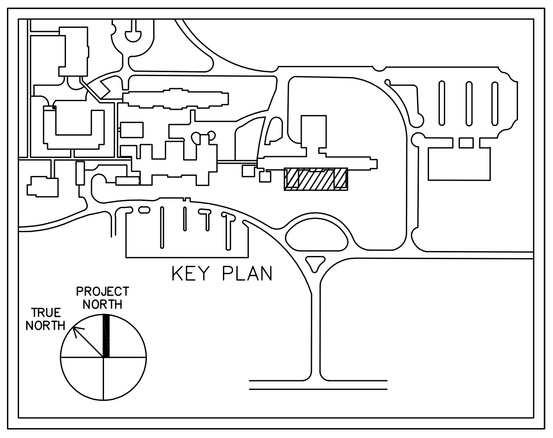
1. TRANSPLANT EXISTING CRABABBLE TREE USING MECHANICAL TREE SPADE. SEE SITE PLAN FOR PLANTING LOCATION.
2. REMOVE EXISTING SHRUBS INCLUDING COMPLETE ROOT SYSTEM.
3. REMOVE EXISTING STONE CHIP MULCHING AROUND BUIDLING.
4. REMOVE WINDOW WELLS. SEE ARCHITECTURAL DEMOLITION DRAWINGS.
5. REMOVE DOWNSPOUTS AND ALL CONNECTED ABOVE AND BELOW GRADE PIPING. SEE PLUMBING DRAWINGS.
6. REMOVE HVAC UNIT AND CONCRETE PAD. SEE HVAC DRAWINGS.
7. REMOVE AND DE-ENERGIZE ELECTRICAL ELEMENTS INCLUDING LIGHT POLES/CONCRETE BASES UNDERGROUND COUNDUIT AND JUNCTION BOXES SEE ELECTRICAL DRAWINGS FOR DISPOSTION.
8. EXISTING HOSE BIBS, SEE PLUMBING DRAWINGS FOR DISPOSITION.
9. REMOVE EXISTING YARD INLETS AND 8" TERRA COTTA PIPE TO A POINT 5 FT OUTSIDE OF NEW ADDITION AND CAP EXISTING PIPE.
10. REMOVE EXISTING STONE STEPS AND LANDINGS, INCLUDING ALL WALL AND ASSOCIATED FOOTINGS. REFER TO ARCHITECTURAL DEMOLITION DRAWINGS FOR DISPOSITION OF RAILINGS.
11. REMOVE EXISTING CONCRETE SIDEWALKS AND PADS. HAUL DEBRIS FROM SITE.
12. REMOVE AND SALVAGE EXISTING FLAGPOLES AND GROUND SLEEVES AND DELIVER TO VA.

TRUE NORTH
PROJECT NORTH

0 10' 30'
5' 20'
GRAPHIC SCALE
1"=10'-0"

SURVEY NOTES

1. THE TOPOGRAPHIC INFORMATION SHOWN IS BASED ON A FIELD SURVEY PERFORMED BY K&W ENGINEERS AND CONSULTANTS, DATED OCTOBER, 2010.
2. CONTOURS AND ELEVATIONS ARE BASED ON NAVD 88.
3. ORIENTATION IS BASED ON PENNSYLVANIA STATE PLANE COORDINATES - SOUTH ZONE, NAD 83.
4. UTILITY INFORMATION WAS DERIVED FROM SURFACE EVIDENCE AND UTILITY PLANS PROVIDED BY THE LEBANON VA MEDICAL CENTER ENGINEERING OFFICE. NO PA ONE-CALL UTILITY MARKINGS WERE EVIDENT AT THE TIME OF THE FIELD SURVEY. PA ONE-CALL SERIAL NO. 20102840302 WAS ASSIGNED ON OCTOBER 11, 2010.



CONSTRUCTION DOCUMENT SUBMISSION

FOR CONSTRUCTION
FULLY SPRINKLERED

Revisions:	Date

CONSULTANTS:

ARCHITECT/ENGINEERS:

ARCHITECTURE
ENGINEERING
INTERIOR DESIGN
DESIGN/BUILD
ASTORINO
227 Fort Pitt Boulevard Pittsburgh Pennsylvania 15222
TEL 412 765 1700 FAX 412 765 1711 www.astorino.com

Drawing Title: **Site Existing Conditions and Demolition Plan**

Approved: Project Director

Project Title: **VAMC Lebanon-Renovation of Laboratory B1**

Location: **VAMC Lebanon, PA.**

Date: **02-23-2012** | Checked: **MED** | Drawn: **MED**

Project Number: **595-09-107**

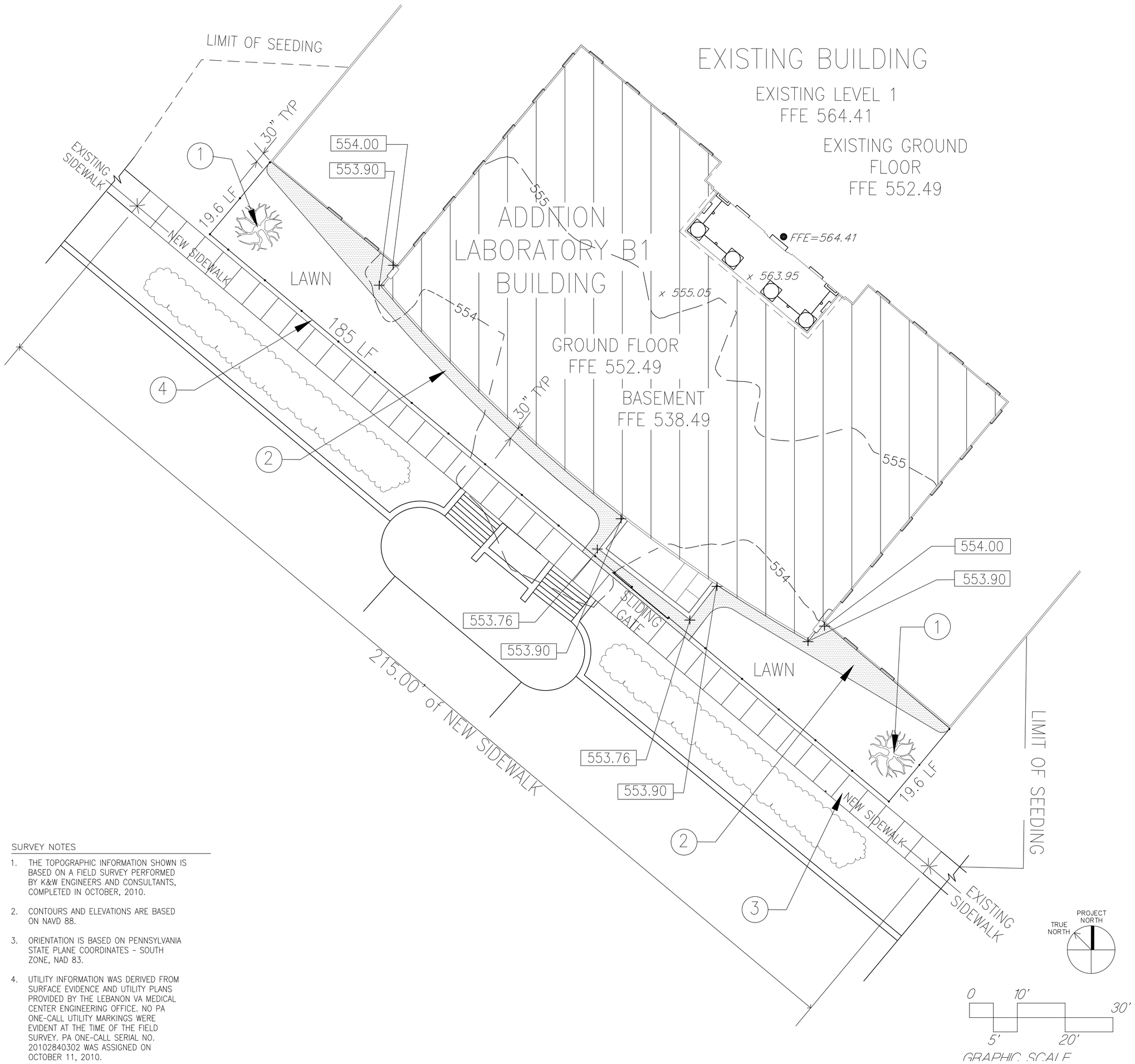
Building Number:

Drawing Number: **CS2-000**
Dwg. -- of --

Office of Facilities Management

Department of Veterans Affairs

VA FORM 08-6231, OCT 1978

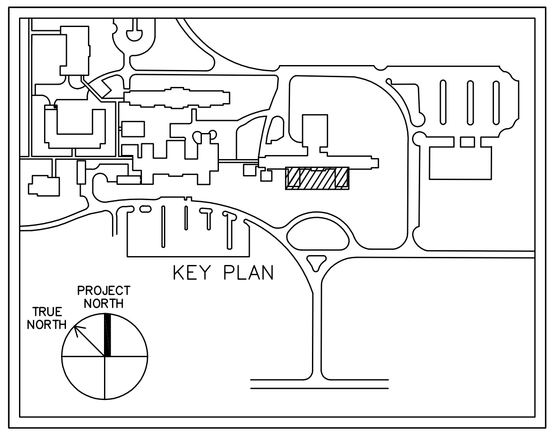


Key Notes

1. TRANSPLANTED EXISTING CRABAPPLE TREE. VERIFY LOCATION WITH RESIDENT ENGINEER.
2. 4" THICK WASHED ORNAMENTAL RIVER STONE (SIZE 2½' TO 4") BORDER WITH ALUMINUM EDGING.
3. 6'-0" WIDE X 4" THICK 3000 PSI AIR ENTRAINED CONCRETE SIDEWALK REINFORCED WITH 6X6 W1.4 WWM. OVER 4" THICK AASHTO #57 CRUSHED AGGREGATE BASE. MATCH FINISH OF EXISTING, ADJACENT WALK. CONTROL JOINTS 5'-0" O.C. EXPANSION JOINTS 35'-0" O.C.
4. 8'-0" HIGH POWDER-COAT-PAINTED GALVANIZED, ORNAMENTAL STEEL, 3-RAIL, PICKET TYPE SECURITY FENCE SYSTEM WITH 8'-0" WIDE SLIDING CANTILEVER GATE.
5. CONTRACTOR SHALL RESTORE TO EXISTING CONDITION ALL LAWN AND PLANTED AREAS, AND ALL EXISTING WALKWAYS, RAILINGS, WALLS, ETC. NOT SHOWN TO BE DEMOLISHED, REMOVED OR ALTERED AND ANY OTHER EXISTING CONDITIONS AFFECTED BY CONSTRUCTION ACTIVITIES OR DISTURBED IN ANY WAY.

SURVEY NOTES

1. THE TOPOGRAPHIC INFORMATION SHOWN IS BASED ON A FIELD SURVEY PERFORMED BY K&W ENGINEERS AND CONSULTANTS, COMPLETED IN OCTOBER, 2010.
2. CONTOURS AND ELEVATIONS ARE BASED ON NAVD 88.
3. ORIENTATION IS BASED ON PENNSYLVANIA STATE PLANE COORDINATES - SOUTH ZONE, NAD 83.
4. UTILITY INFORMATION WAS DERIVED FROM SURFACE EVIDENCE AND UTILITY PLANS PROVIDED BY THE LEBANON VA MEDICAL CENTER ENGINEERING OFFICE. NO PA ONE-CALL UTILITY MARKINGS WERE EVIDENT AT THE TIME OF THE FIELD SURVEY. PA ONE-CALL SERIAL NO. 20102840302 WAS ASSIGNED ON OCTOBER 11, 2010.



CONSTRUCTION DOCUMENT SUBMISSION

FOR CONSTRUCTION
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Revisions:	Date

CONSULTANTS:

ARCHITECT/ENGINEERS:

ARCHITECTURE
ENGINEERING
INTERIOR DESIGN
DESIGN/BUILD

ASTORINO

227 Fort Pitt Boulevard Pittsburgh Pennsylvania 15222
TEL 412 765 1700 FAX 412 765 1711 www.astorino.com

Drawing Title: **Site Grading and Landscape Plan**	Project Title: **VAMC Lebanon-Renovation of Laboratory B1**		Project Number: **595-09-107**
			Building Number:
Approved: Project Director	Location: **VAMC Lebanon, PA.**		Drawing Number: **CS4-000**
	Date: **02-23-2012**	Checked: **MED**	Drawn: **MED**
			Dwg. .. of ..

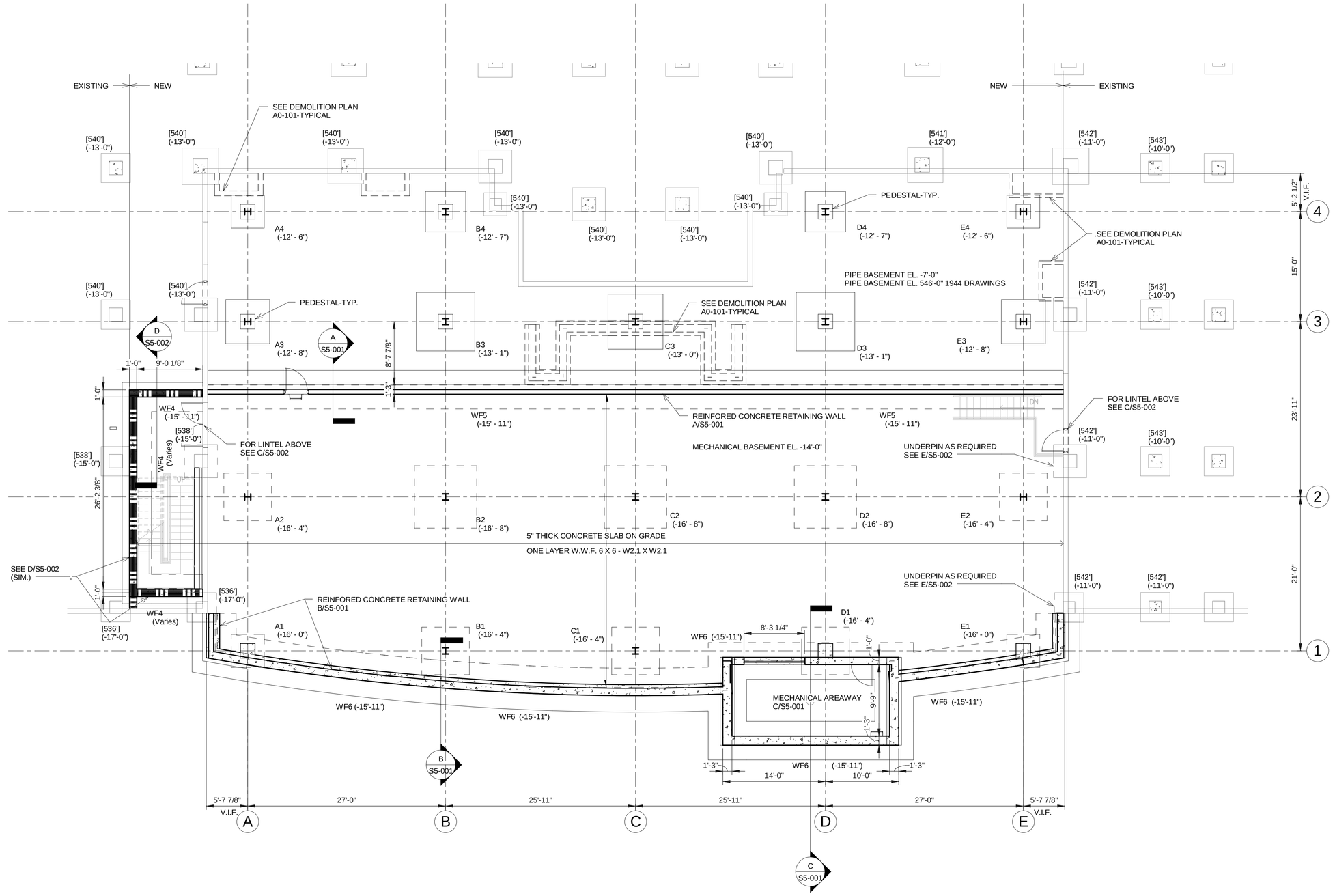
Office of Facilities Management

Department of Veterans Affairs

VA FORM 08-6231, OCT 1978

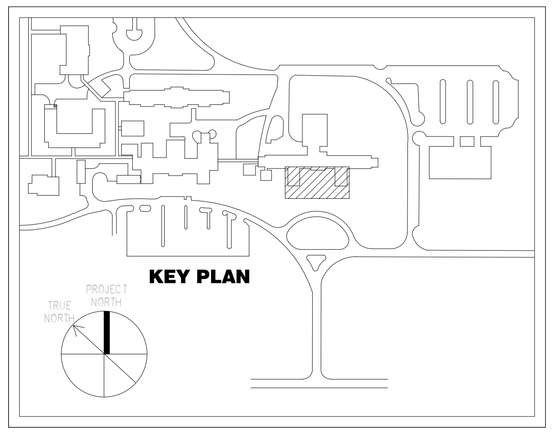
FOOTING SCHEDULE				
Mark	Length	Width	Thickness	Reinforcing
A1	4' - 6"	4' - 6"	1' - 0"	(4) #5 E.W. @ 16" O.C.
A2	6' - 6"	6' - 6"	1' - 4"	(7) #5 E.W.
A3	6' - 0"	6' - 0"	1' - 2"	(7) #5 E.W.
A4	4' - 6"	4' - 6"	1' - 0"	(4) #5 E.W. @ 16" O.C.
B1	6' - 6"	6' - 6"	1' - 4"	(7) #5 E.W.
B2	8' - 6"	8' - 6"	1' - 8"	(7) #7 E.W.
B3	8' - 0"	8' - 0"	1' - 7"	(6) #7 E.W.
B4	5' - 6"	5' - 6"	1' - 1"	(6) #5 E.W.
C1	6' - 6"	6' - 6"	1' - 4"	(7) #5 E.W.
C2	8' - 6"	8' - 6"	1' - 8"	(7) #7 E.W.
C3	7' - 6"	7' - 6"	1' - 6"	(7) #6 E.W.
D1	6' - 6"	6' - 6"	1' - 4"	(7) #5 E.W.
D2	8' - 6"	8' - 6"	1' - 8"	(7) #7 E.W.
D3	8' - 0"	8' - 0"	1' - 7"	(6) #7 E.W.
D4	5' - 6"	5' - 6"	1' - 1"	(6) #5 E.W.
E1	4' - 6"	4' - 6"	1' - 0"	(4) #5 E.W. @ 16" O.C.
E2	6' - 6"	6' - 6"	1' - 4"	(6) #5 E.W.
E3	6' - 0"	6' - 0"	1' - 2"	(7) #5 E.W.
E4	4' - 6"	4' - 6"	1' - 0"	(6) #5 E.W.

Wall Footing Schedule				
Mark	Width	Thickness	Cont. Reinforcing	Prime Reinforcing
WF4	4' - 0"	1' - 3"	(5) #5 CONT.	#5 X 3'-6" AT 12"
WF5		1' - 3"	(5) #5 CONT.	#5 X 4'-9" AT 12"
WF6	6' - 0"	1' - 3"	(6) #5 CONT.	#5 X 5'-6" AT 12"



1 Mechanical Basement-Foundation Plan

1/8"=1'-0"
FINISHED FLOOR EL. -14'-0" U.N.O.
(00'-0") = BOTTOM OF FOOTING ELEVATION
[000'-0"] = EXISTING BOTTOM OF FOOTING 1944 DRAWINGS



CONSTRUCTION DOCUMENT SUBMISSION

FULLY SPRINKLERED

Number	Description	Date
Revision Schedule		

CONSULTANTS:

ARCHITECT/ENGINEERS:

ARCHITECTURE ENGINEERING INTERIOR DESIGN DESIGN/BUILD

ASTORINO

227 Fort Pitt Boulevard Pittsburgh Pennsylvania 15222
TEL 412 765 1700 FAX 412 765 1711 www.astorino.com

Drawing Title: **Mechanical Basement-Foundation Plan**

Approved: Project Director

Project Title: **VAMC-Lebanon-Renovation of Laboratory B1**

Location

Date: **02/23/2012**

Checked: **MGB**

Drawn: **JPL**

Project Number: **595-09-107**

Building Number

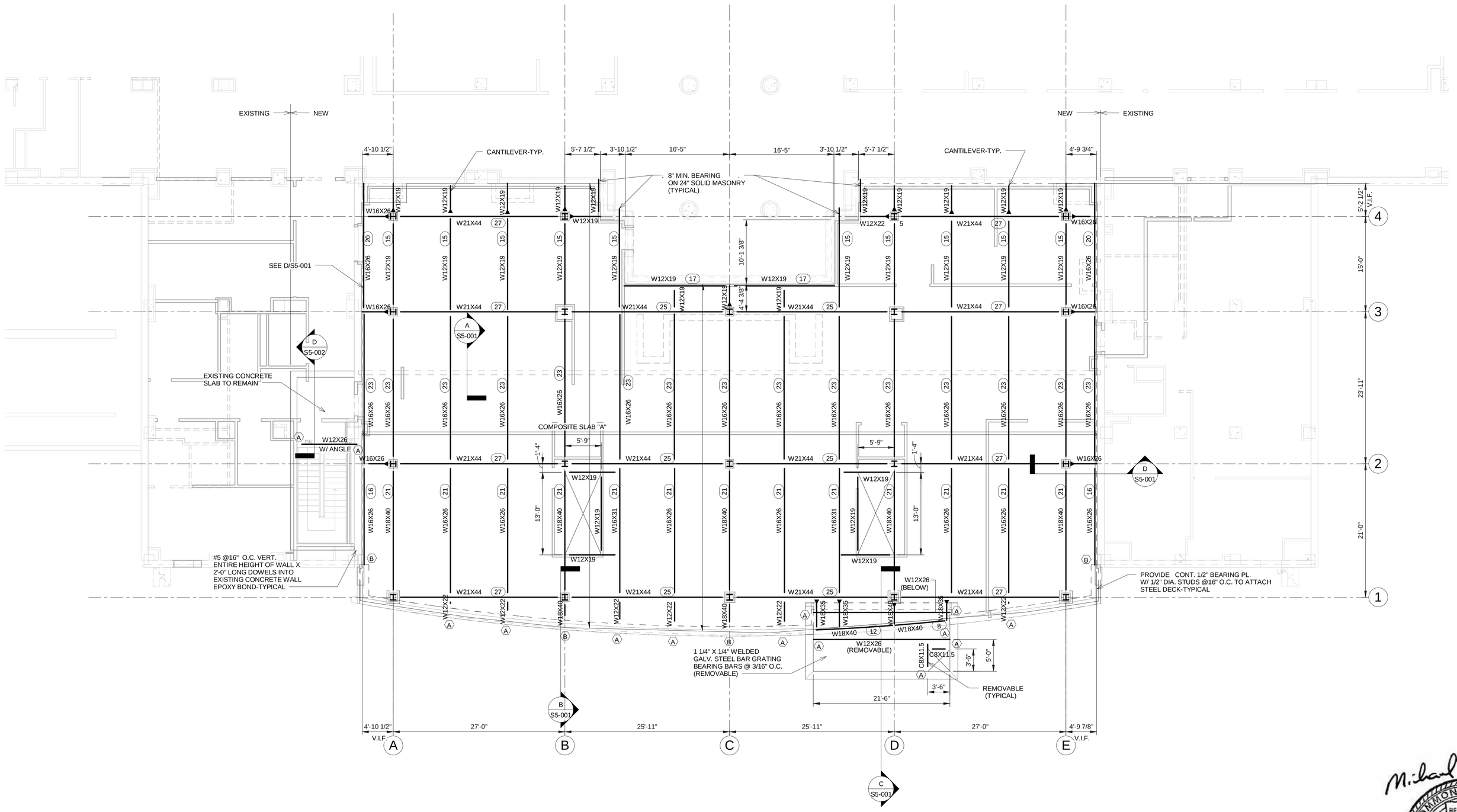
Drawing Number: **S1-100**

Dwg. of

Office of Facilities Management

Department of Veterans Affairs

VA FORM 08-6231, OCT 1978

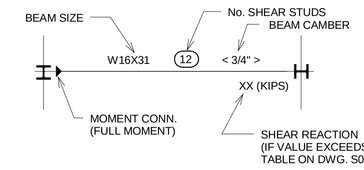


1 Ground Floor Framing Plan

1/8" = 1'-0"

FINISHED FLOOR EL. 0'-0"
TOP OF STEEL -5 1/2" U.N.O.

LEGEND



COMPOSITE SLAB "A"

5 1/2" THICK WITH 2" X 18 GA. COMPOSITE STEEL DECK AND 3 1/2" NWT. CONCRETE FILL. ONE LAYER OF W.W.F. 6 X 6 - W2.1 X W2.1 MINMUM 3 SPANS UNSHORED.

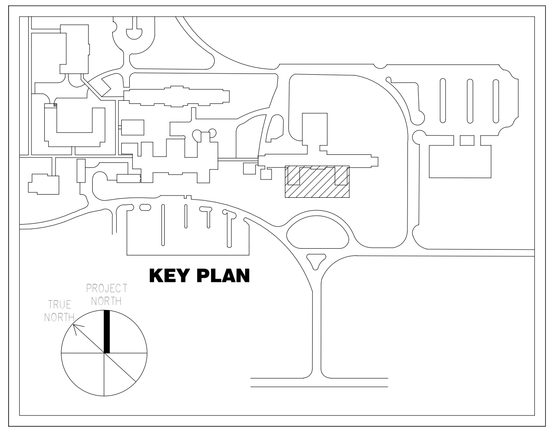
SHORE ALL COMPOSITE SLABS AS REQ'D. BY DECK MFR.

(00) = NUMBER OF SHEAR STUDS REQUIRED. (SEE PLAN) SHEAR STUDS TO BE NELSON 3/4"Ø X 4 1/2" LONG. STUDS BASED ON A (q) ALLOWABLE = 11.5 KIPS.

DECK MFR. MUST ADJUST NUMBER OF STUDS TO CONFORM TO THEIR DECK PROFILE.

Framing Legend

1/8" = 1'-0"



CONSTRUCTION DOCUMENT SUBMISSION

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Number	Description	Date
Revision Schedule		

CONSULTANTS:

ARCHITECT/ENGINEERS:

ARCHITECTURE ENGINEERING INTERIOR DESIGN DESIGN/BUILD ASTORINO

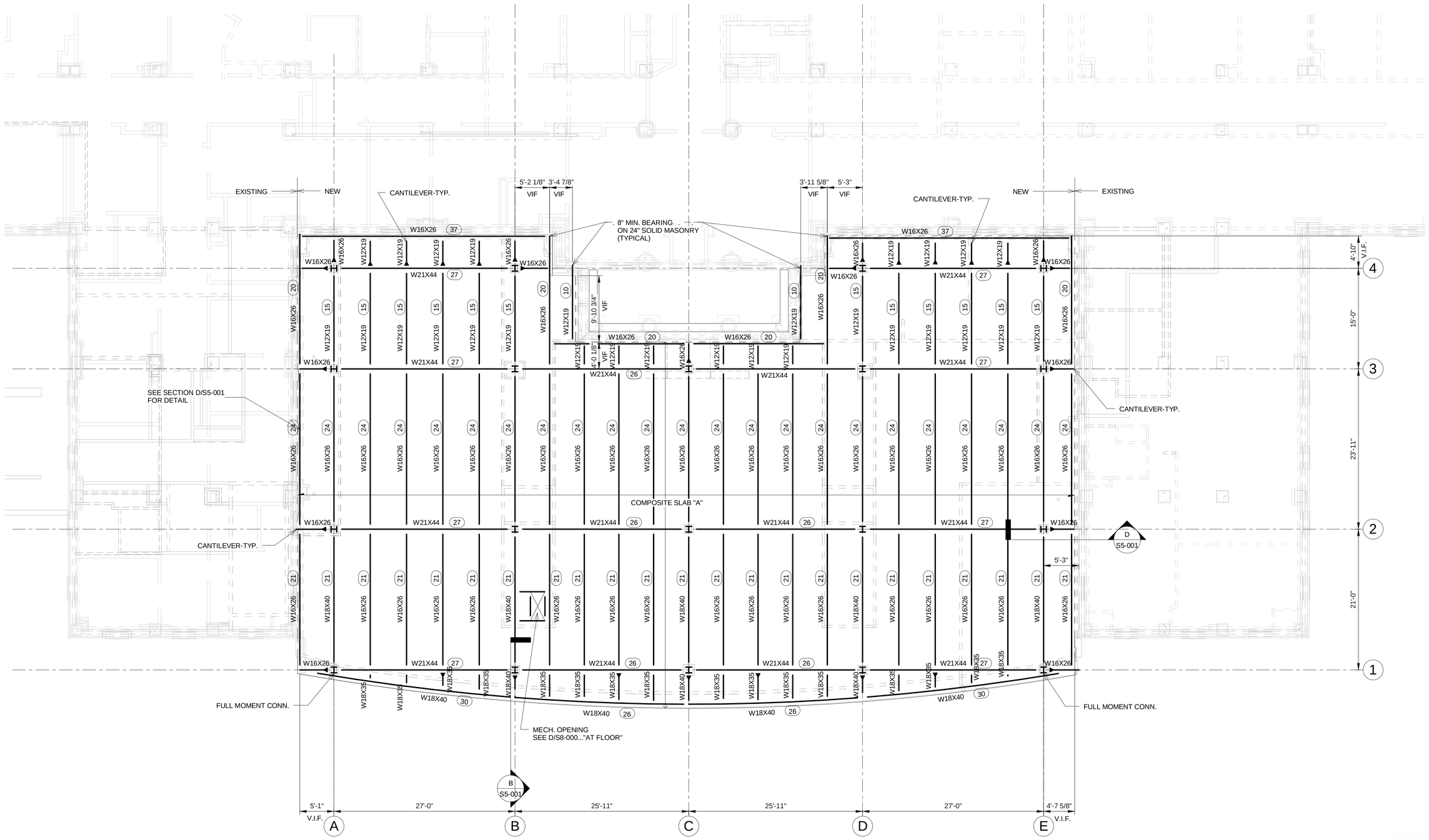
227 Fort Pitt Boulevard Pittsburgh Pennsylvania 15222
TEL 412 765 1700 FAX 412 765 1711 www.astorino.com

Drawing Title: **Ground Floor Framing Plan**	Project Title: **VAMC-Lebanon-Renovation of Laboratory B1**			Project Number: **595-09-107**
Approved: Project Director	Location			Building Number
	Date: **02/23/2012**	Checked: **MGB**	Drawn: **JPL**	Drawing Number: **S1-101** Dwg. of

Office of Facilities Management

Department of Veterans Affairs

VA FORM 08-6231, OCT 1978

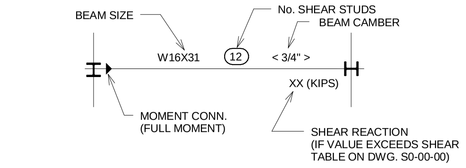


1 Roof Framing Plan

1/8" = 1'-0"

TOP OF CONCRETE ROOF SLAB EL. 13'-4 1/2"
TOP OF STEEL -5 1/2"

LEGEND



COMPOSITE SLAB "A"

5 1/2" THICK WITH 2" X 18 GA. COMPOSITE STEEL DECK AND 3 1/2" NWT. CONCRETE FILL. ONE LAYER OF W.W.F. 6 X 6 - W2.1 X W2.1 MINMUM 3 SPANS UNSHORED.

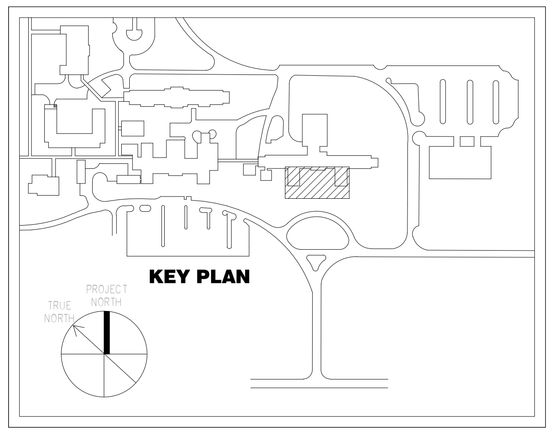
SHORE ALL COMPOSITE SLABS AS REQ'D. BY DECK MFR.

(00) = NUMBER OF SHEAR STUDS REQUIRED. (SEE PLAN)
SHEAR STUDS TO BE NELSON 3/4"Ø X 4 1/2" LONG.
STUDS BASED ON A (q) ALLOWABLE = 11.5 KIPS.

DECK MFR. MUST ADJUST NUMBER OF STUDS TO CONFORM TO THEIR DECK PROFILE.

Framing Legend

1/8" = 1'-0"



COMMONWEALTH OF PENNSYLVANIA
REGISTERED Professional
MICHAEL G. BRENNAN
ENGINEER 039762-E

CONSTRUCTION DOCUMENT SUBMISSION

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Number	Description	Date
	Revision Schedule	

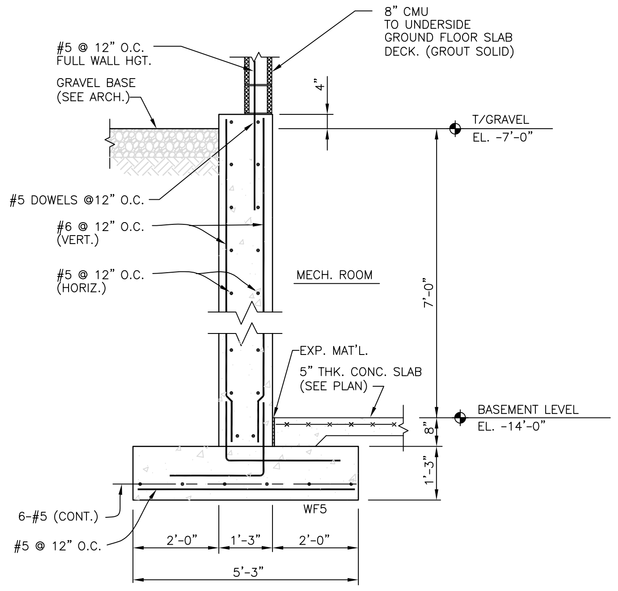
CONSULTANTS:

ARCHITECT/ENGINEERS:

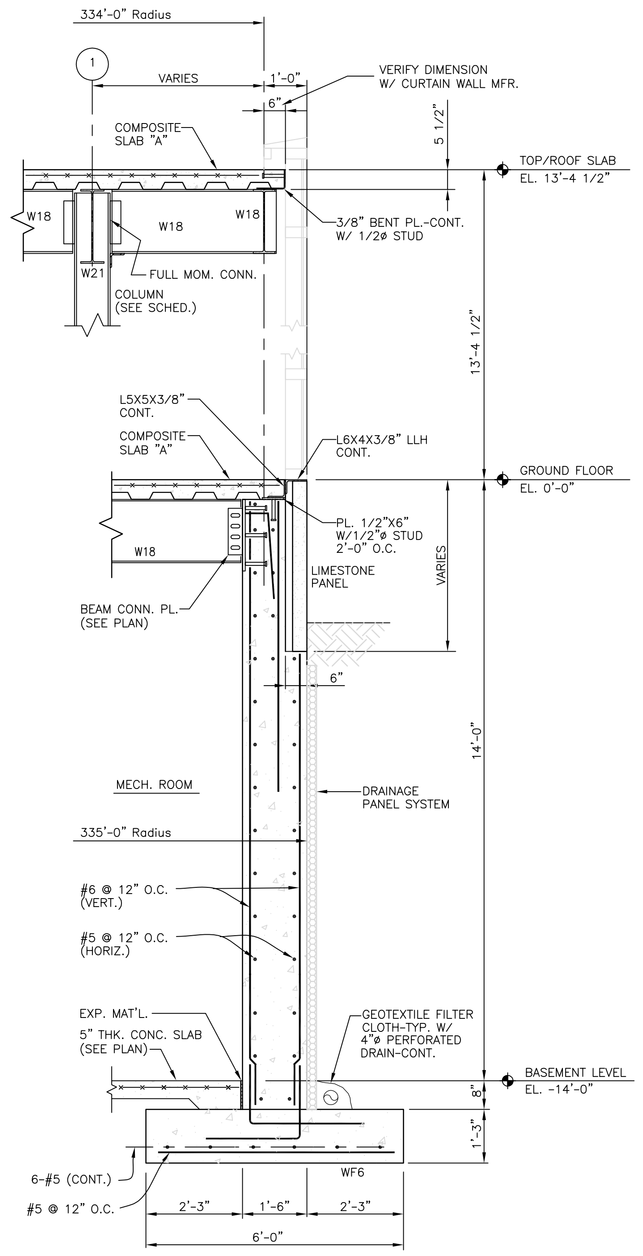
ARCHITECTURE ENGINEERING INTERIOR DESIGN DESIGN/BUILD
ASTORINO
227 Fort Pitt Boulevard Pittsburgh Pennsylvania 15222
TEL 412 765 1700 FAX 412 765 1711 www.astorino.com

Drawing Title: **Roof Framing Plan**	Project Title: **VAMC-Lebanon-Renovation of Laboratory B1**	Project Number: **595-09-107**	**Office of Facilities Management**
Approved: Project Director	Location	Building Number	
	Date: **02/23/2012** / Checked: **MGB** / Drawn: **JPL**	Drawing Number: **S1-102** Dwg. of	Department of Veterans Affairs

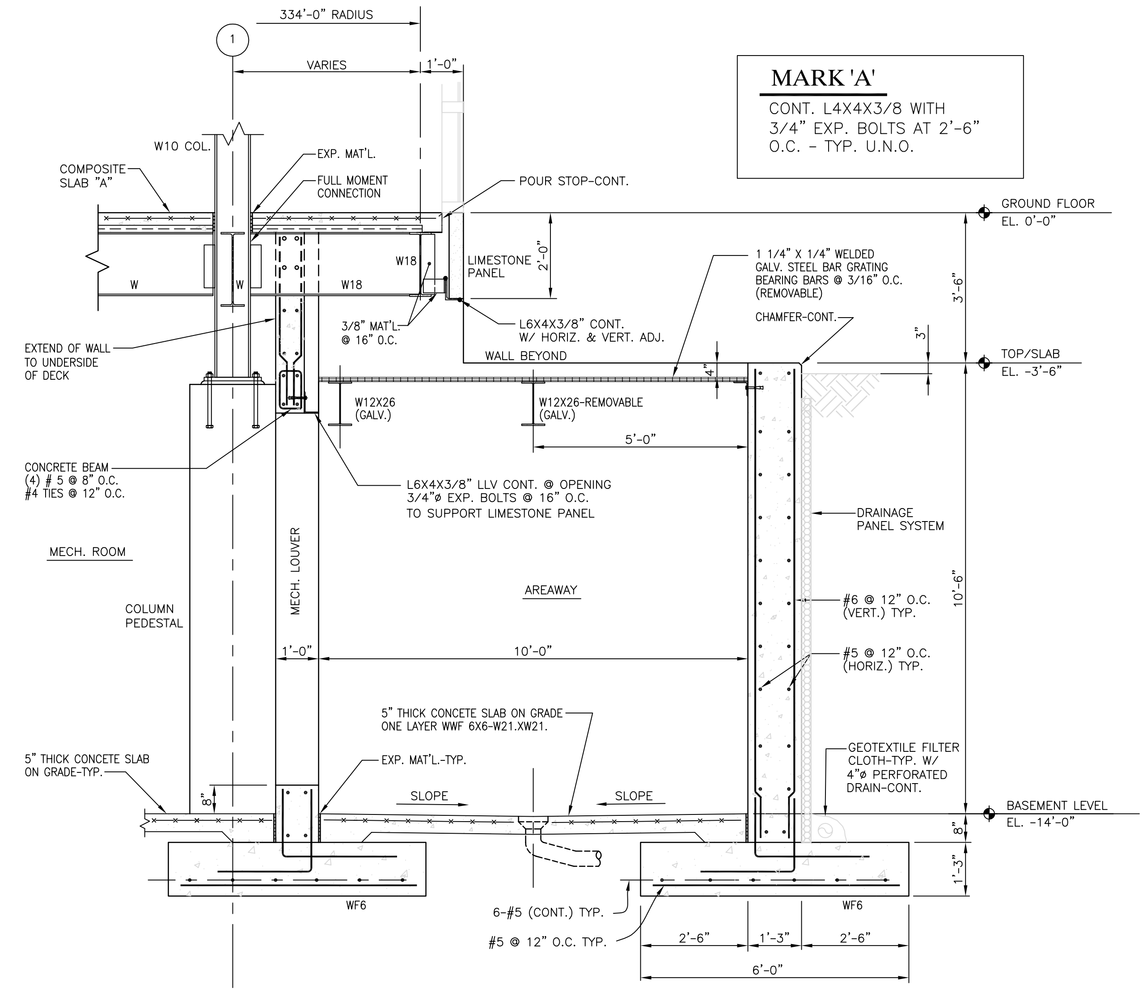
VA FORM 08-6231, OCT 1978



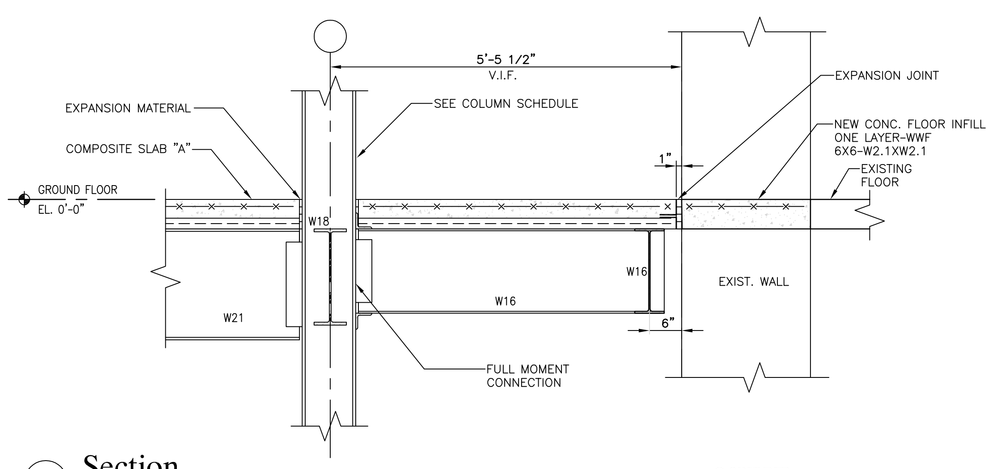
A Section
SCALE: 1/2"=1'-0"
RETAINING WALL



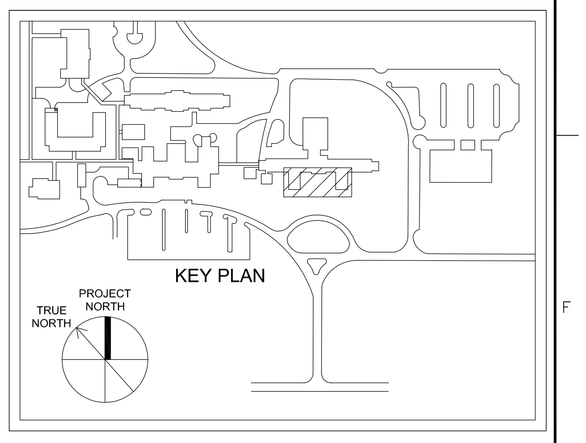
B Section
SCALE: 1/2"=1'-0"
RETAINING WALL



C Section
SCALE: 1/2"=1'-0"
RETAINING WALL
@ MECH. AREAWAY



D Section
SCALE: 3/4"=1'-0"
@ CANTILEVER



CONSTRUCTION DOCUMENT SUBMISSION

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Revisions:	Date

CONSULTANTS:

ARCHITECT/ENGINEERS:

ARCHITECTURE
ENGINEERING
INTERIOR DESIGN
DESIGN/BUILD
ASTORINO
227 Fort Pitt Boulevard Pittsburgh Pennsylvania 15222
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Drawing Title	**Details & Sections** - -
Approved: Project Director	
Project Title	**VAMC-Lebanon-Renovation of Laboratory B1**
Location	**Lebanon, Pennsylvania**
Date	**02/23/2012**
Checked	**MGB**
Drawn	**JPL**
Project Number	**595-09-107**
Building Number	-
Drawing Number	**S5-001**
Dwg. of	

Office of Facilities Management

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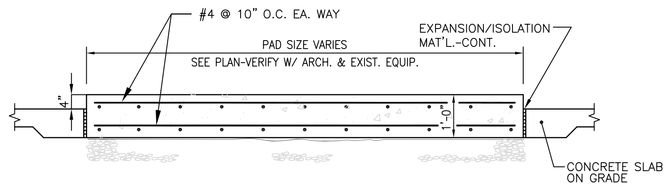
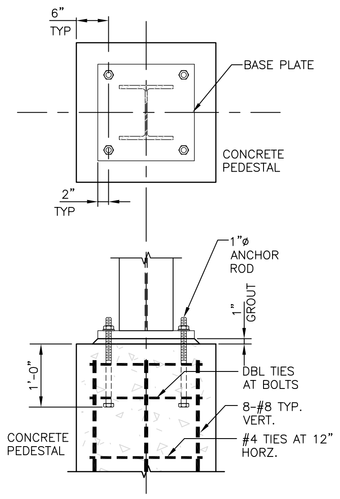
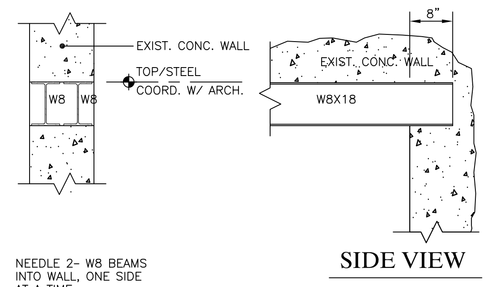


A DETAIL
SCALE: 1/2"=1'-0"
ISOLATION SLAB INTERIOR

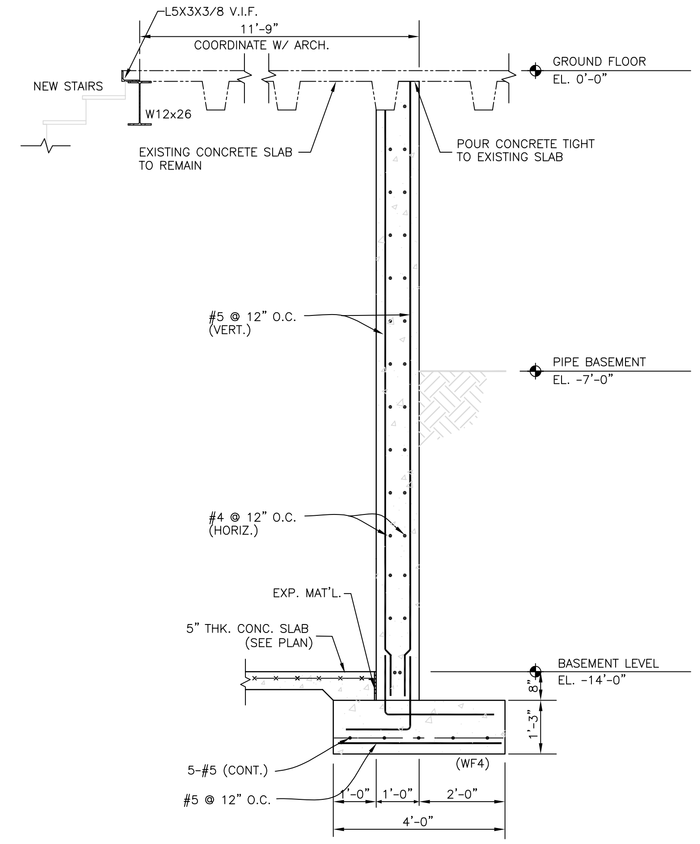


B Detail
SCALE: 3/4"=1'-0"
TYPICAL PEDESTAL

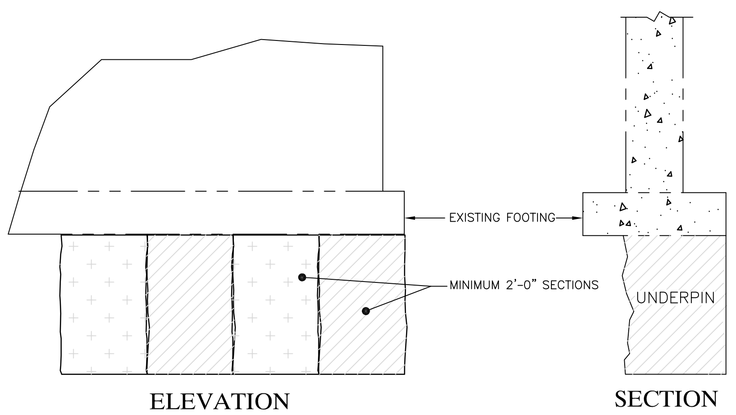


C DETAIL
SCALE: 3/4"=1'-0"
WALL OPENING THROUGH EXISTING CONCRETE WALL

COORDINATE OPENING LOCATION AND WIDTH WITH PLANS. CONTRACTOR TO PROVIDE SHORING FOR ALL AREAS BEARING ON WALLS BEFORE WORK IS BEGUN. STRUCTURAL INTEGRITY OF BUILDING IS TO BE MAINTAINED AT ALL TIMES.

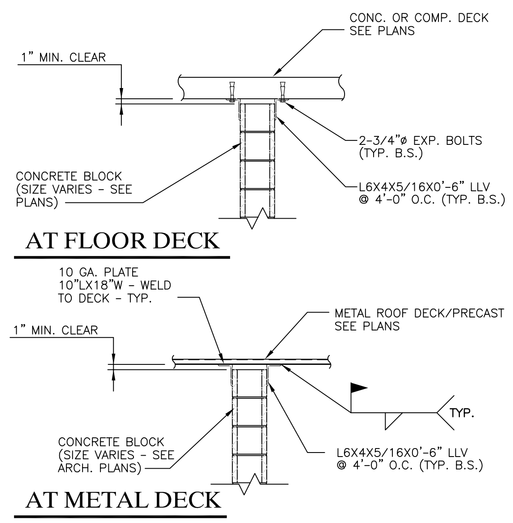


D Section
SCALE: 1/2"=1'-0"
BASEMENT STAIR RETAINING WALL

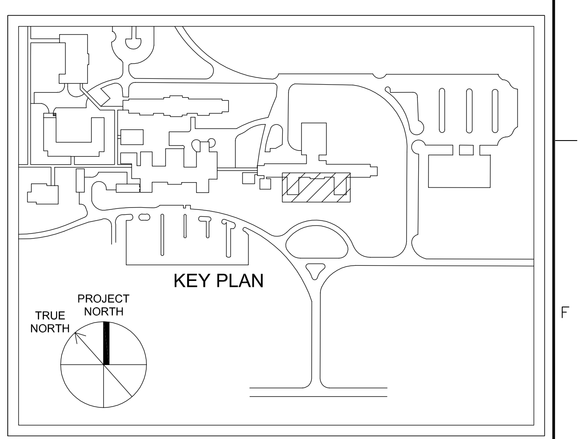


E Detail
SCALE: 1/2"=1'-0"
TYPICAL UNDERPINNING

UNDERPINNING CALCULATIONS AND DRAWINGS TO BE PREPARED AND SEALED BY A QUALIFIED PROFESSIONAL ENGINEER AND SUBMITTED TO THE ARCHITECT FOR REVIEW BEFORE WORK IS BEGUN.



F Detail
SCALE: 1/2"=1'-0"
TYPICAL NON-BEARING MASONRY WALL SUPPORT



CONSTRUCTION DOCUMENT SUBMISSION

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Revisions:	Date

CONSULTANTS:

ARCHITECT/ENGINEERS:

ARCHITECTURE ENGINEERING INTERIOR DESIGN DESIGN/BUILD
ASTORINO
227 Fort Pitt Boulevard Pittsburgh Pennsylvania 15222
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Drawing Title	**Details & Sections** - -
Approved: Project Director	
Project Title	**VAMC-Lebanon-Renovation of Laboratory B1**
Location	**Lebanon, Pennsylvania**
Date	**02/23/2012**
Checked	**MGB**
Drawn	**JPL**
Project Number	**595-09-107**
Building Number	-
Drawing Number	**S5-002**
Dwg. of	

Office of Facilities Management

VA FORM 08-6231, OCT 1978

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GENERAL NOTES

1. CONCRETE

a. ALL CONCRETE SHALL BE IN ACCORDANCE WITH A.C.I. 318 "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE.

b. MINIMUM CEMENT CONTENT 5 1/2 SACKS PER CU. YD. STRENGTHS DEVELOPED AT 28 DAYS SHALL BE AS FOLLOWS:

INTERIOR SLAB ON GRADE.....3000 psi
CAISSONS & GRADE BEAMS.....3000 psi
COMPOSITE SLABS.....3000 psi
EXTERIOR SLABS ON GRADE.....4000 psi w/6% AIR
FOOTINGS. WALLS, ETC.....3000 psi

c. ALL REINFORCING SHALL BE ASTM A-615 SERIES 60. WELDED WIRE FABRIC SHALL BE A.S.T.M. A-185. MESH LOCATED 1 1/2" ABOVE DECK OR TOP 1/3 OF SLAB THICKNESS ON GRADE.

d. SPLICES IN REINFORCING SHALL BE MADE ACCORDING TO A.C.I. 318, CHAPTER 12.

e. MINIMUM COVER FOR REINFORCING SHALL BE AS FOLLOWS:
ALL CONCRETE EXPOSED TO EARTH.....3"
ALL CONCRETE EXPOSED TO WEATHER:
#5 OR SMALLER.....1 1/2"
ALL OTHER.....2"
SLABS NOT EXPOSED TO WEATHER.....3/4"

f. ALL CONCRETE SHALL BE REGULAR WEIGHT (UNLESS NOTED)

g. PROVIDE HORIZ. CORNER BARS AT INTERSECTION OF ALL WALLS (CONC. & IVANY) SPACING SAME AS HORIZONTAL REINFORCING.

h. CONTRACTOR TO SUBMIT LOCATION OF ALL SLEEVES & OPENINGS THROUGH SLABS, WALLS AND FOOTINGS PRIOR TO SUBMISSION OF REINFORCING DRAWINGS.

i. WEDGE ANCHORS IN CONCRETE ARE TO BE OF SUITABLE SPACING AND EMBEDMENT LENGTH TO PROVIDE A WORKING LOAD OF 4350 POUNDS SHEAR AND 3120 POUNDS PULL OUT FORCE FOR A 3/4" DIA ANCHOR.

2. MASONRY

a. ALL MASONRY SHALL BE IN ACCORDANCE WITH THE BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES (ACI 530/ASCE 5) AND SPECIFICATIONS FOR MASONRY STRUCTURES (ACI 530.1/ASCE 6) LATEST REVISION.

b. MATERIALS: MASONRY PRISM STRENGTH f'm = 1500 psi DETERMINED BY: METHOD No. 1 PRISM TEST.

HOLLOW LOAD BEARING MASONRY.....ASTM C90-70T, TYPE N1.
SOLID LOAD BEARING MASONRY.....ASTM C145-71 , TYPE N1.
MORTAR.....ASTM C270 TYPE S.
GROUT.....ASTM C476
REINFORCING RODS.....ASTM A-615, GRADE 60.
WIRE JOINT REINFORCING.....ASTM A951 LADDER-MESH.
BRICK.....ASTM. C216 AND 62 TYPE FBX
GRADE SW 8000 psi ULTIMATE.

c. ALL MASONRY UNITS TO BE LAYED WITH FULL HEAD AND BED JOINTS INCLUDING FLANGES AND CROSS WEBS.

d. GROUT STRENGTH, AGGREGATE, AND SLUMP SHALL BE PROPORTIONED FOR LIFT HEIGHT AND WALL STRENGTH REQUIREMENTS. USE GROUT STRENGTH METHOD WITH COMPRESSIVE STRENGTH GREATER THEN f'm OR MINIMUM STRENGTH = 2000 psi.

e. LADDER- MESH WIRE JOINT REINFORCING IS REQUIRED, SPACED AS SPECIFIED.
f. MAXIMUM CONSTRUCTION LOAD PER FLOOR 50 LBS./SQ. FT. WITHOUT SHORING.
g. SLEEVE ANCHORS IN MASONRY ARE TO BE OF SUITABLE SPACING AND EMBEDMENT LENGTH TO PROVIDE A WORKING LOAD OF 2550 POUNDS SHEAR AND A 1050 POUNDS PULL OUT FORCE FOR A 3/4"∅ ANCHOR.
h. WALLS SHALL BE TEMPORARILY SHORED AND SECURELY BRACED UNTIL FLOOR OR ROOF SYSTEM HAS BEEN ANCHORED THERETO.

i. A MINIMUM OF 24" OF MASONRY BELOW BEAM OR JOIST BEARING PLATES MUST BE FILLED WITH GROUT.

j. ALL CMU WALLS BELOW GRADE TO BE GROUTED SOLID.

3. STRUCTURAL STEEL

a. ALL STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDING (ASD), LATEST REVISION.

b. "W" SHAPES.....ASTM. A992 (Fy=50 KSI)
"S", "M", AND "HP" SHAPES.....ASTM. A36. (Fy=36 KSI)
ALL TUBES.....ASTM A500, CLASS B (Fy=46 KSI)
ALL PIPES.....ASTM. A53, TYPE E GRADE B (Fy=35 KSI)
CHANNELS, ANGLES, AND PLATE...ASTM A36 (Fy=36 KSI)

c. SHOP CONNECTIONS MAY BE BOLTED OR WELDED.

d. FIELD CONNECTIONS MAY BE BOLTED OR WELDED.
(SEE MIN. SHEAR CAPACITY TABLE)
1) BOLTED USING 3/4"DIA H.S. BOLTS - A.S.T.M. A325-N, FULLY TENSIONED.
2) WELDING IN ACCORDANCE WITH AMERICAN WELDING SOCIETY

e. ALL WELDING SHALL BE MADE WITH E-70 OR SAW-2 ELECTRODES.

f. DEVELOP THE FOLLOWING MOMENT CAPACITIES ACCORDING TO THE TYPE OF CONNECTION USED:
FLANGE PLATES.....100%
CAP AND SEAT ANGLES.....100%
END PLATES.....100%
PENETRATING WELDS.....100%
PROVIDE COLUMN STIFFENERS AS REQUIRED

g. ALL BEAMS FRAMING TO COLUMNS SHALL BE CONNECTED WITH A MINIMUM 3/8" THICK DOUBLE ANGLE MAXIMUM DEPTH CONNECTION.

h. FABRICATION/ERECTION INSPECTION AND TESTING LISTED IN THE QUALITY CONTROL SPECIFICATIONS. VERIFIFICATION INSPECTION OF BOLTS AND WELDS SHALL BE DONE BY AN INDEPENDENT TESTING AGENCY. VERIFICATION FIELD INSPECTION SHALL INCLUDE THE FOLLOWING WITH THE RESULTS SUBMITTED TO THE ARCHITECT.

1) BOLTS: 10% OF ALL FIELD BOLTS MINIMUM 2 PER CONNECTION.
2) WELDING: VISUAL INSPECTION OF ALL WELDS.
NON DESTRUCTIVE ULTRASONIC TESTING FOR FULL PENETRATION WELDS.
MAGNETIC PARTICLE TESTING OF 10% OF FILLET WELD LENGTHS.

i. SUBMIT PROFESSIONALLY ENGINEERED AND SEALED SHEAR AND MOMENT CONNECTION DETAILS AND CALCULATIONS FOR APPROVAL PRIOR TO FABRICATION.

j. CUTTING OF HOLES THROUGH STRUCTURAL STEEL IN THE FIELD WILL NOT BE PERMITTED UNTIL REVIEWED BY THE STRUCTURAL ENGINEER.

k. PROVIDE HORIZONTAL AND VERTICAL ADJUSTMENT ON ALL SPANDREL ANGLES.

l. ALL STEEL SHALL BE SHOP PRIMED EXCEPT STEEL TO RECEIVE FIREPROOFING, GALVANIZED, OR ENCASED IN CONCRETE.

5. FOUNDATIONS

a. ALL SOIL CONDITIONS BASED ON REPORT BY GAI F091285.00 DATED August 30, 2011. ALLOWABLE SOIL BEARING CAPACITY = 3000 psf NET

b. FILL PLACED USING COHESIVE SOILS SHALL BE COMPACTED TO AT LEAST 95% OF MAXIMUM DRY DENSITY AS DETERMINED BY THE MODIFIED PROCTOR (ASTM D-1557) OR A MINIMUM OF 70% OF THE RELATIVE DENSITY AS DETERMINED BY ASTM D-4253 & D-4254 FOR COHESIONLESS SOILS.

c. INSTALLATION TOLERANCE FOR PILES SHALL CONFORM TO PROJECT SPECIFICATIONS.

d. BACKFILL FOR UNBALANCED CONDITIONS TO BE WELL DRAINING MATERIAL WITH A MAXIMUM DENSITY OF 110 PCF.

6. DESIGN LOADS

OCCUPANCY CATEGORY	I.B.C. 2006 & ASCE 7 SECTION 1
OFFICE< 300 PEOPLE	II
LIVE LOAD	I.B.C. 2006
FLOOR LIVE LOAD	100 psf
STAIRS & LOBBY	100 psf
MECHANICAL ROOM	100 psf + EQMT.
ROOF LIVE LOAD	30 psf + DRIFT
WIND LOAD	ASCE 7/2005 SECTION 6
EXPOSURE	B
BASIC VELOCITY	90 mph
IMPORTANCE FACTOR	1.0
DRIFT LOAD	ASCE 7/2005 SECTION 7
GROUND SNOW (Pg)	25 psf
IMPORTANCE FACTOR	1.0
EARTHQUAKE LOAD	ASCE 7/2005 SECTION 11-12
IMPORTANCE FACTOR	1.0
SPECTRAL RESPONSE COEFFICIENTS	SDS=.283 SD1=.126
SITE CLASS	E
DESIGN CATEGORY	A
RESISTING SYSTEM	STRUCTURAL STEEL NOT DETAILED FOR SEISMIC
DESIGN BASE SHEAR	kips
ANALYSIS PROCEDURE	LATERAL FORCE

7. ABBREVIATIONS

ACI	AMERICAN CONCRETE INSTITUTE
AESS	ARCHITECTURALLY EXPOSED STRUCTURAL STEEL
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ARCH	ARCHITECT OR ARCHITECTURAL
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
CANTL	CANTILEVER
CB	CONCRETE BEAM
CIP	CAST IN PLACE (CONCRETE)
CJ	CONTROL JOINT
COL.	COLUMN
CONC.	CONCRETE
CRSI	CONCRETE REINFORCING STEEL INSTITUTE
COMP.	COMPOSITE
CONT.	CONTINUOUS
CONST.	CONSTRUCTION
DWG.	DRAWING
EF	EACH FACE
E.O.D.	EDGE OF DECK
E.O.S.	EDGE OF SLAB
EL	ELEVATION
ELEV	ELEVATOR
ES	EACH SIDE
EW	EACH WAY
EXP. JT.	EXPANSION JOINT
EXT.	EXTERIOR
GB	GRADE BEAM
HORIZ.	HORIZONTAL
HGR.	HANGER
IBC	INTERNATIONAL BUILDING CODE
INTER.	INTERIOR
LTW	LIGHT WEIGHT
MAT'L.	MATERIAL
MFR	MANUFACTURER
MAX.	MAXIMUM
MIN.	MINIMUM
NWT	NORMAL WEIGHT
O.C.	ON CENTER
PC.	PIECE
PSI	POUNDS PER SQUARE INCH
PED	PEDESTAL
REINF.	REINFORCING
SIM.	SIMILAR
T&B	TOP AND BOTTOM
T/D	TOP OF DECK
T/FTG	TOP OF FOOTING
T/PC	TOP OF PILECAP
T/SLAB	TOP OF SLAB
T/STL	TOP OF STEEL
TYP.	TYPICAL
U.N.O	UNLESS NOTED OTHERWISE
V/F	VERIFY IN FIELD
VERT.	VERTICAL
WT.	WEIGHT
W/	WITH

4. MISCELLANEOUS

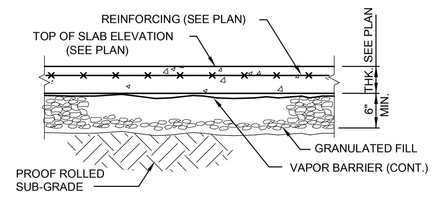
a. ROOF AND FLOOR DECKS - ACCORDING TO STEEL DECK INSTITUTE DESIGN MANUAL FOR FLOOR AND ROOF DECK, LATEST REVISION.

b. STEEL JOIST - ACCORDING TO STEEL JOIST INSTITUTE, LATEST REVISION.

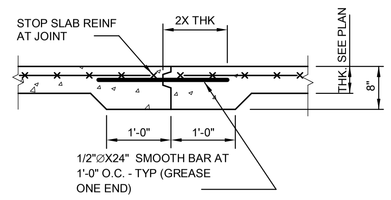
c. ROOF JOISTS MUST RESIST A 20 psf UPLIFT FORCE (1/3 INCREASE ALLOWED)

d. SHORE ALL COMPOSITE DECKS AS REQUIRED BY MANUFACTURER.

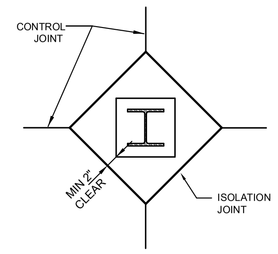
e. CONCRETE ON METAL DECK SHALL BE PLACED TO THE MINIMUM THICKNESS SHOWN. CONTRACTOR SHALL BECOME FAMILIAR WITH THE DEFLECTION CHARACTERISTICS OF STRUCTURAL FRAME AND DECKING AND INCLUDE ADDITIONAL CONCRETE DUE TO DEFLECTIONS IN CALCULATING QUANTITIES OF CONCRETE FOR SLAB.



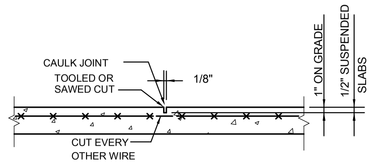
TYPICAL SLAB



CONSTRUCTION JOINT

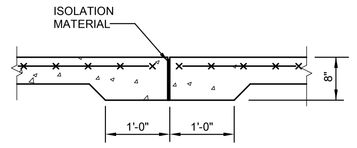


PLAN AT COLUMNS



CONTROL JOINT SPACING SHALL NOT EXCEED 36 X T (E.W.).

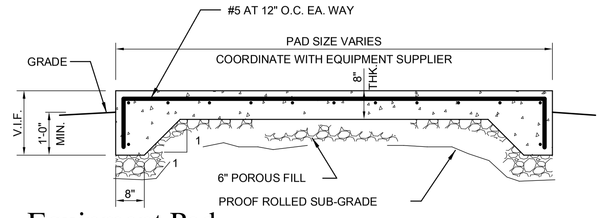
CONTROL JOINT



ISOLATION JOINT

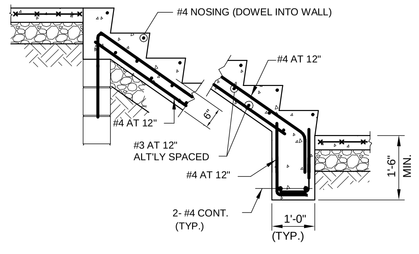
A SLAB ON GRADE

SCALE: 3/4" = 1'-0"



B Equipment Pad

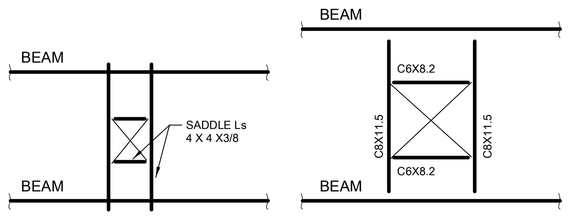
SCALE: 1/2" = 1'-0"



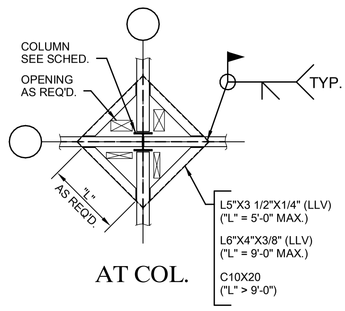
COORDINATE RISE, RUN, AND PITCH WITH ARCH. DRAWINGS

C CONCRETE STAIR ON GRADE

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



AT ROOF AT FLOOR



AT COL.

FOR OPENINGS LARGER THAN 12" SQUARE NOT SHOWN ON DWGS.
COORDINATE OPENINGS WITH MECHANICAL DRAWINGS

D MECHANICAL OPENINGS

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

MINIMUM SHEAR CAPACITIES ROLLED SECTIONS

BEAM TO BEAM CONN.	MIN # ROWS	kips	BEAM TO COLUMN CONN.	MIN # ROWS	kips
W8,W10,C8,C10	2	15	W8 - W10	2	15
W12 - W14	3	30	W12 - W14	3	30
W16	4	40	W16	4	50
W18	5	50	W18	5	70
W21	6	60	W21	6	100
W24 -W27	7	70	W24 - W27	7	120
W30 - W33	8	80	W30 - W33	8	140
W36	9	90	W36	9	170

NOTES

a. SHEAR CONNECTION FOR GRAVITY LOADING ONLY UNLESS NOTED ON DRAWING (SEE LEGEND). MOMENT CAPACITIES VARY AS SHOWN.

b. CONNECTION TO CONTAIN MINIMUM NUMBER OF BOLT ROWS SHOWN UNLESS SPECIFIC DETAILING REQUIREMENTS JUSTIFY MODIFICATION.

c. CONNECTION CAPACITIES SHOWN USE ASD DESIGN LOADING AND ARE FOR USE IN SPECIFIC DETAIL CASES NOT SHOWN ON DRAWING.

d. BEAM TO BEAM CONNECTIONS CAPACITIES BASED ON 5/16" SINGLE SHEAR PLATES WITH 3/4"∅ A325-N BOLTS IN SSLT HOLES PER AISC TABLE 10-9a

e. BEAM TO COLUMN CONNECTIONS SHALL BE 3/8" THICK DOUBLE ANGLE WITH MIN. ROWS SHOWN, UNLESS SPECIFIC DETAILING REQUIREMENTS JUSTIFY MODIFICATION. CAPACITIES BASED ON AISC TABLE 10-2 CASE II.

LOOSE ANGLE LINTEL SCHEDULE
NON BEARING MASONRY WALLS

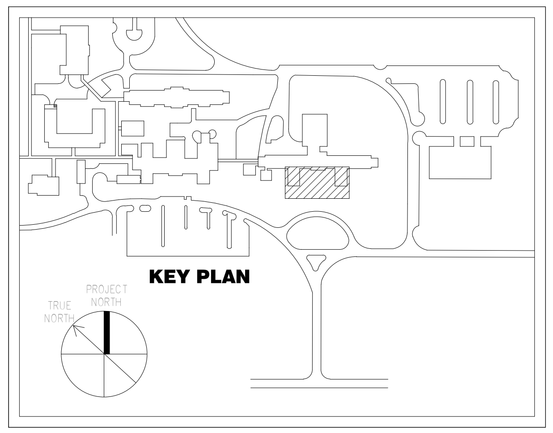
ONE ANGLE REQUIRED FOR EVERY 4" OF WALL THICKNESS. END BEARING 4 1/2" MIN. OR 1" PER FOOT OF OPENING. LONG LEG OF ANGLE VERTICAL. ANGLES WELDED BACK TO BACK. ALL EXTERIOR LINTELS TO BE HOT DIPPED GALVANIZED.

ANGLE SIZE	OPENING
1-L4 X3 1/2 X5/16	TO 5'-0"
1-L5 X3 1/2 X5/16	5'-0" TO 7'-0"
1-L6 X3 1/2 X5/16	7'-0" TO 10'-0"
FOR 10" CMU - HORZ. LEGS = 4" MIN. (2X)	

LAP SPLICE TABLE

BAR SIZE	SPLICE LENGTH TOP BARS	SPLICE LENGTH BOTTOM BARS
#3	21"	16"
#4	28"	22"
#5	36"	27"
#6	43"	33"
#7	62"	48"
#8	71"	55"
#9	80"	62"
#10	90"	70"
#11	100"	77"

COMMONWEALTH OF PENNSYLVANIA
REGISTERED Professional
MICHAEL G. BRENNAN
ENGINEER 039762-E



CONSTRUCTION DOCUMENT SUBMISSION

FULLY SPRINKLERED

Number	Description	Date
Revision Schedule		

CONSULTANTS:

ARCHITECT/ENGINEERS:

ARCHITECTURE ENGINEERING INTERIOR DESIGN DESIGN/BUILD
ASTORINO
227 Fort Pitt Boulevard Pittsburgh Pennsylvania 15222
TEL 412 765 1700 FAX 412 765 1711 www.astorino.com

Drawing Title: **General Notes and Schedules**	Project Title: **VAMC-Lebanon-Renovation of Laboratory B1**	Project Number: **595-09-107**	**Office of Facilities Management**
Approved: Project Director	Location	Building Number	
	Date: **02/23/2012** / Checked: **MGB** / Drawn: **JPL**	Drawing Number: **S8-000** Dwg. of	Department of Veterans Affairs

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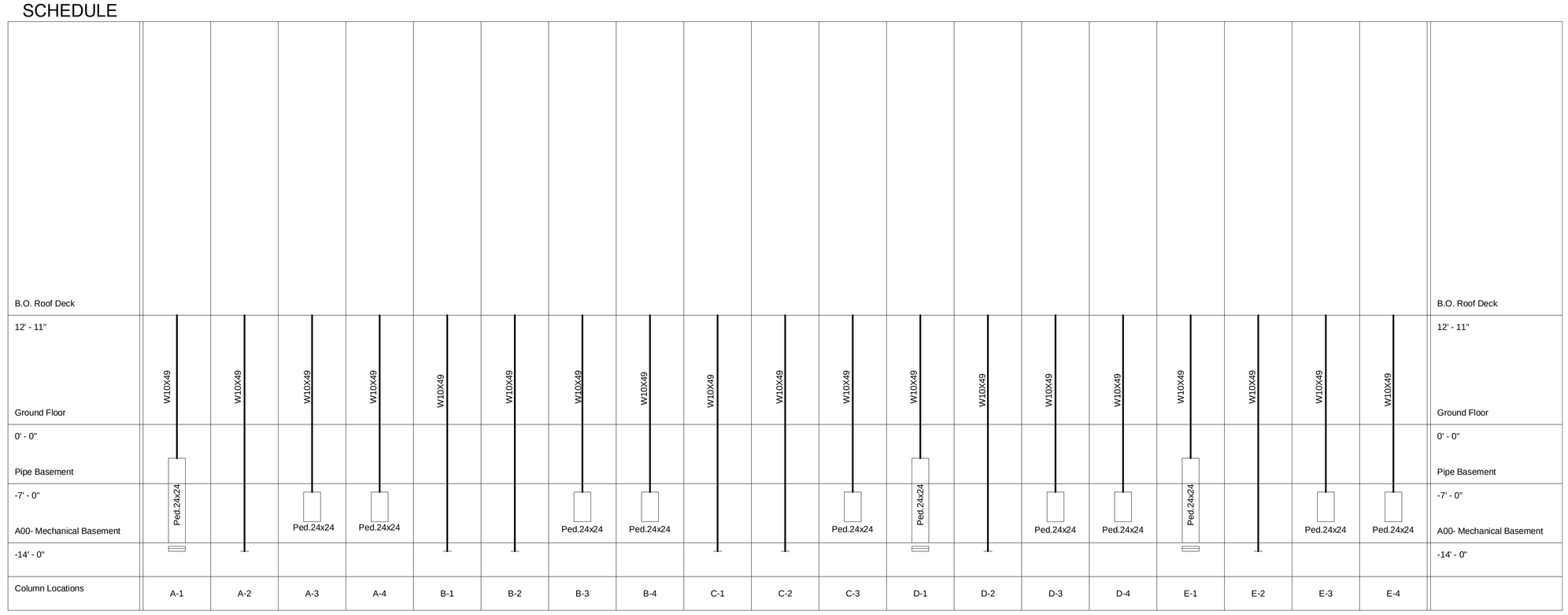
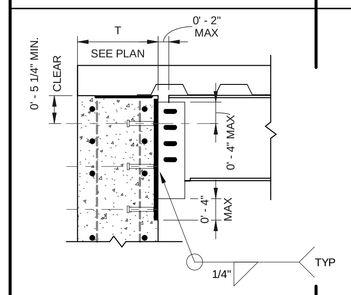
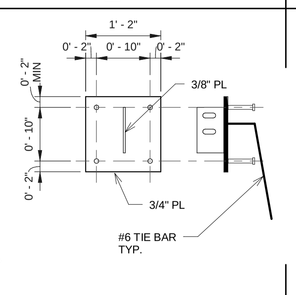
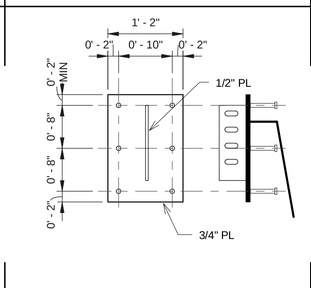
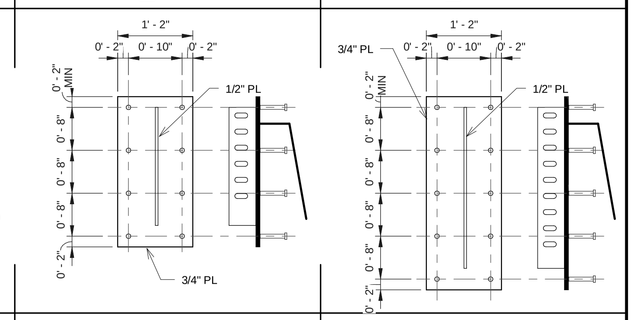
COLUMN SCHEDULE

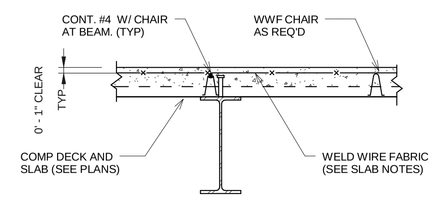


Column Base Plates				
Type	Base Level	Bottom Of Base Plate	Base Plate Size	Column Location Mark
W10X49	Ground Floor	-3' - 11"	1" x 16" x 16"	A-1
W10X49	Ground Floor	-14' - 11"	1" x 16" x 16"	A-2
W10X49	Ground Floor	-7' - 11"	1" x 16" x 16"	A-3
W10X49	Ground Floor	-7' - 11"	1" x 16" x 16"	A-4
W10X49	Ground Floor	-14' - 11"	1" x 16" x 16"	B-1
W10X49	Ground Floor	-14' - 11"	1" x 16" x 16"	B-2
W10X49	Ground Floor	-7' - 11"	1" x 16" x 16"	B-3
W10X49	Ground Floor	-7' - 11"	1" x 16" x 16"	B-4
W10X49	Ground Floor	-14' - 11"	1" x 16" x 16"	C-1
W10X49	Ground Floor	-14' - 11"	1" x 16" x 16"	C-2
W10X49	Ground Floor	-7' - 11"	1" x 16" x 16"	C-3
W10X49	Ground Floor	-3' - 11"	1" x 16" x 16"	D-1
W10X49	Ground Floor	-14' - 11"	1" x 16" x 16"	D-2
W10X49	Ground Floor	-7' - 11"	1" x 16" x 16"	D-3
W10X49	Ground Floor	-7' - 11"	1" x 16" x 16"	D-4
W10X49	Ground Floor	-3' - 11"	1" x 16" x 16"	E-1
W10X49	Ground Floor	-14' - 11"	1" x 16" x 16"	E-2
W10X49	Ground Floor	-7' - 11"	1" x 16" x 16"	E-3
W10X49	Ground Floor	-7' - 11"	1" x 16" x 16"	E-4

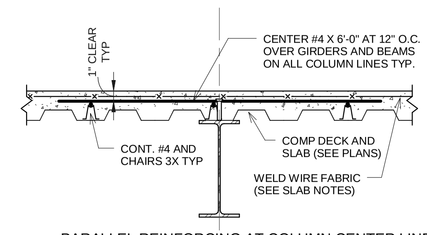
BEAM CONNECTION PLATE TO CONCRETE

CONNECTION MARK	A	B	C	D
				
FRAMING MEMBER SIZE SEE PLAN	W8,C8, W10, W12, OR W14	W16, W18	W21, W24 OR W27	W30, W33 OR W36
MIN NUMBER OF SLOTTED HOLES FOR 7/8"ϕ A325N BOLTS	2 - W8 W10 3 - W12, W14	4 - W16 5 - W18	6 - W21,W24 7 - W27	9
NUMBER 7/8"ϕ X 6" SHEAR STUDS	4	6	8	10

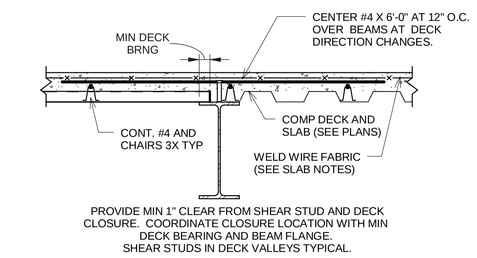
Beam Connection Plate to Concrete
1 3/4" = 1'-0"



PERPENDICULAR REINFORCING AT BEAMS

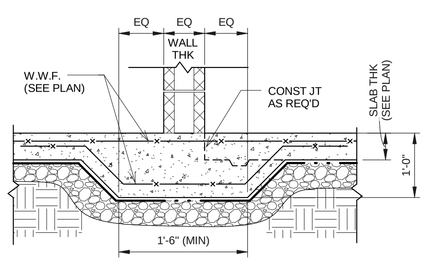


PARALLEL REINFORCING AT COLUMN CENTER LINES

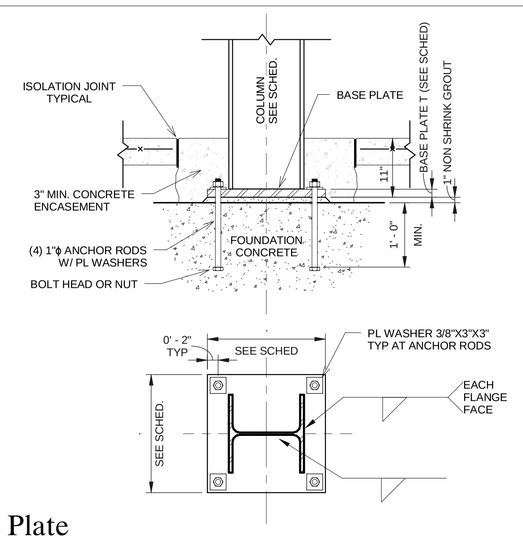


REINFORCING AT CHANGES OF DECK DIRECTION

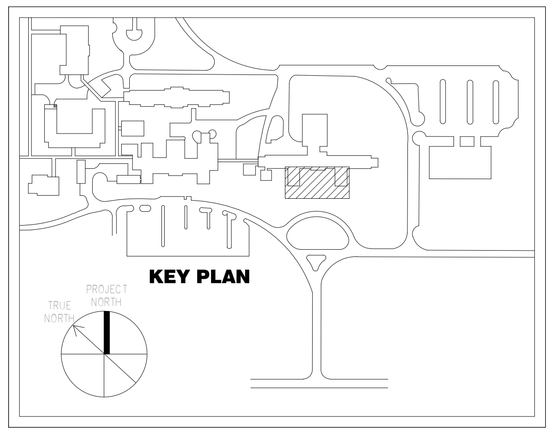
Reinforcing at Composite Deck
3 3/4" = 1'-0"



Thicken Slab at Non Bearing Cmu Partition
4 3/4" = 1'-0"



Column Base Plate Detail and Plan
2 3/4" = 1'-0"



CONSTRUCTION DOCUMENT SUBMISSION

FULLY SPRINKLERED

Number	Description	Date
Revision Schedule		

CONSULTANTS:

ARCHITECT/ENGINEERS:

ARCHITECTURE ENGINEERING INTERIOR DESIGN DESIGN/BUILD

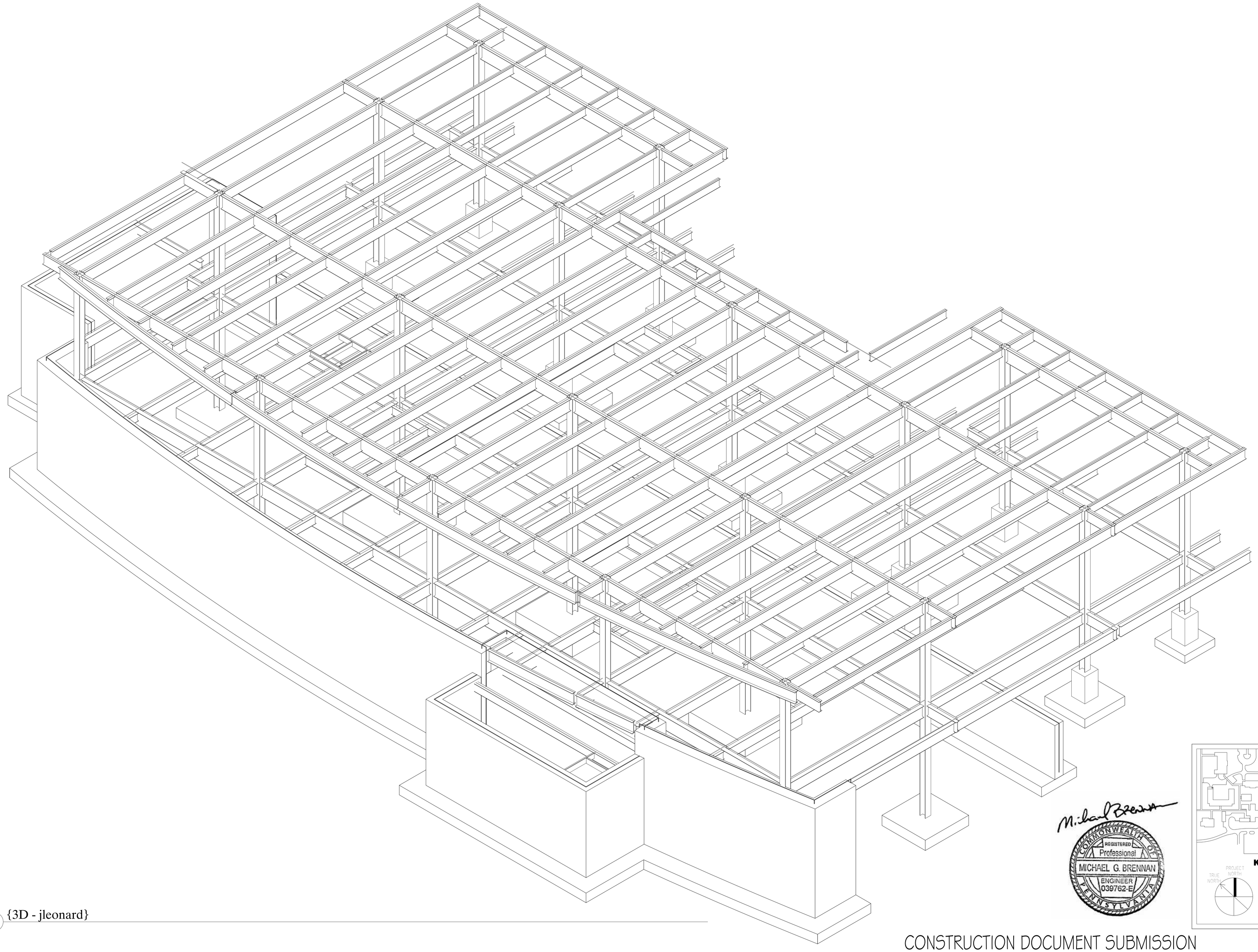
ASTORINO

227 Fort Pitt Boulevard Pittsburgh Pennsylvania 15222
TEL 412 765 1700 FAX 412 765 1711 www.astorino.com

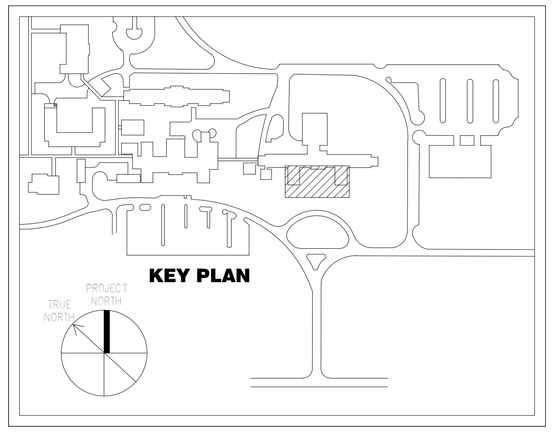
Drawing Title: **Column Schedule**	Project Title: **VAMC-Lebanon-Renovation of Laboratory B1**	Project Number: **595-09-107**	**Office of Facilities Management**
Approved: Project Director	Location	Building Number	
	Date: **02/23/2012**	Checked: **MGB** / Drawn: **JPL**	Drawing Number: **S8-001** Dwg. of

Department of Veterans Affairs

VA FORM 08-6231, OCT 1978



1 {3D - jleonard}



COMMONWEALTH OF PENNSYLVANIA
REGISTERED Professional
MICHAEL G. BRENNAN
ENGINEER
039762-E

CONSTRUCTION DOCUMENT SUBMISSION

FULLY SPRINKLERED

Number	Description	Date
Revision Schedule		

CONSULTANTS:

ARCHITECT/ENGINEERS:

ARCHITECTURE
ENGINEERING
INTERIOR DESIGN
DESIGN/BUILD

ASTORINO

227 Fort Pitt Boulevard Pittsburgh Pennsylvania 15222
TEL 412 765 1700 FAX 412 765 1711 www.astorino.com

Drawing Title
3D VIEW

Approved: Project Director

Project Title
VAMC-Lebanon-Renovation of Laboratory B1

Location

Date **02/23/2012** | Checked **MGB** | Drawn **JPL**

Project Number **595-09-107**

Building Number

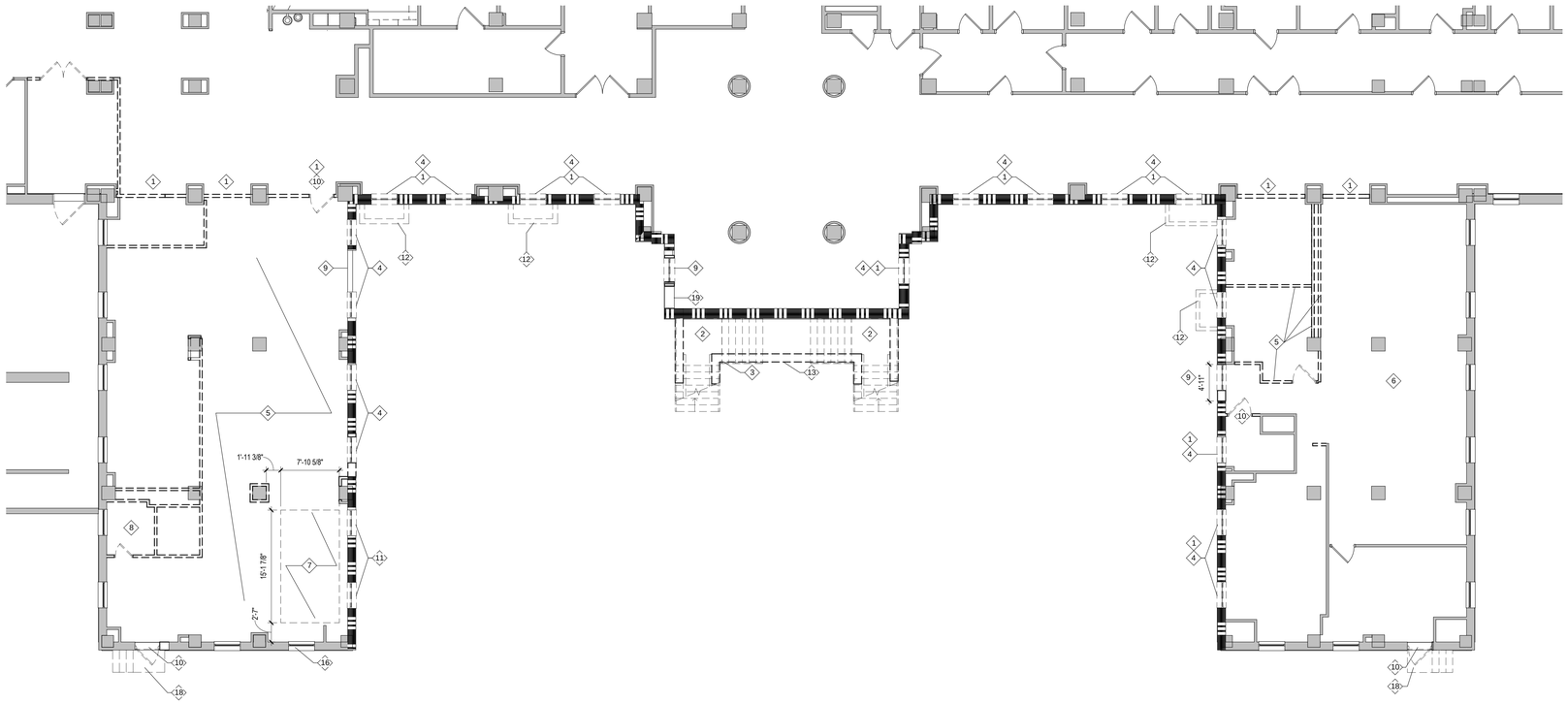
Drawing Number **S8-002**

Dwg. of

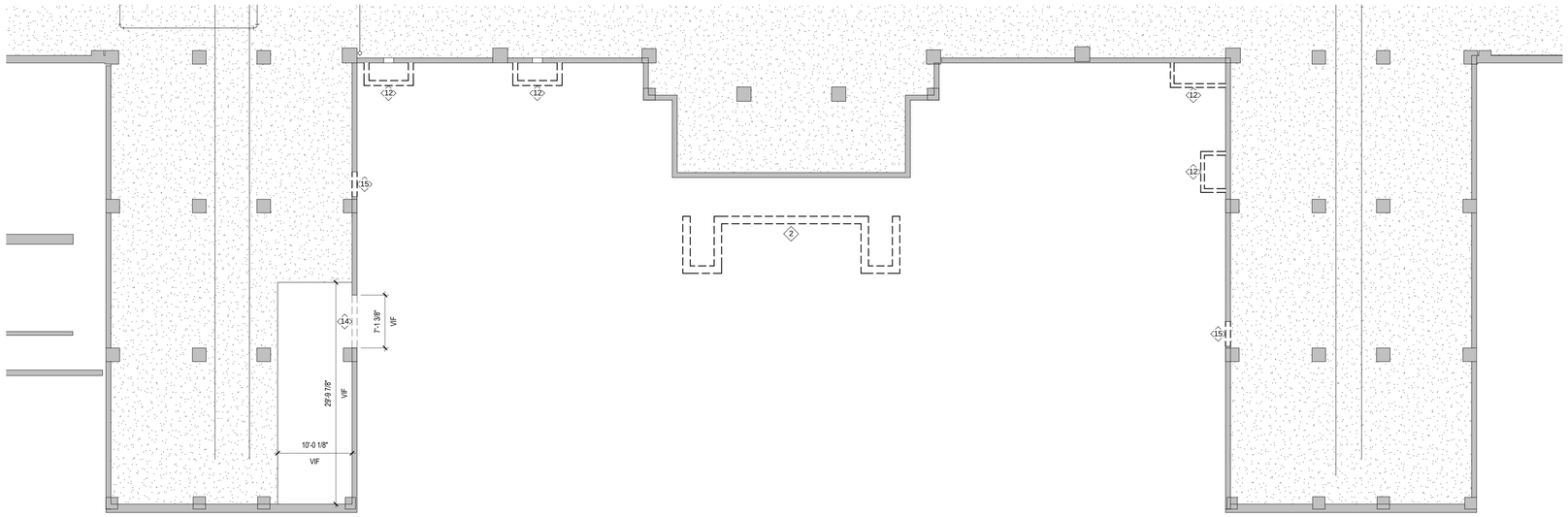
Office of Facilities Management

Department of Veterans Affairs

VA FORM 08-6231, OCT 1978



1 Demolition Plan - Ground Floor
1/8" = 1'-0"



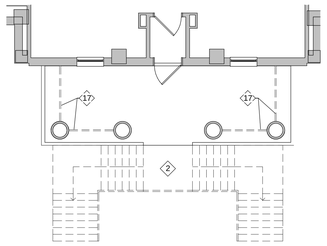
2 Demolition Plan - Pipe Basement
1/8" = 1'-0"

DEMOLITION DRAWING NOTES

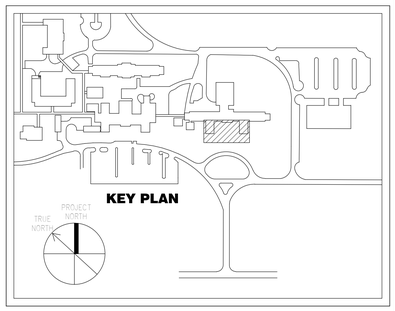
1. REFER TO SHEET G0-001 FOR ALL GENERAL NOTES, LEGENDS AND SYMBOLS.
2. SEE MEP DEMOLITION PLANS FOR MEP DEMOLITION.
3. REMOVE ALL INTERIOR COLUMN DRYWALL ENCLOSURES.
4. REMOVE ANY EXISTING FLOOR FINISHES AND PREPARE SUBFLOOR TO RECEIVE NEW FINISHES.
5. PROJECT 595-10-197 IS BEING CONSTRUCTED ADJACENT TO THIS PROJECT. COORDINATION BETWEEN PROJECTS WILL BE REQUIRED; COORDINATE WITH THE COTR.

DEMOLITION DRAWING KEY NOTES

1. COORDINATE DEMOLITION WITH VA PROJECT MANAGER (COTR)
2. REMOVE STAIRS, RAILINGS, STAIR STRUCTURE
3. REMOVE DEDICATION PLAQUES AND RETURN TO VA
4. REMOVE WINDOW, RETURN TO VA
5. REMOVE WALLS, DOORS, FLOORING, CEILINGS, ETC.
6. PHARMACY SHELVING, EQUIPMENT TO BE REMOVED BY VA
7. REMOVE PORTION OF FLOOR SLAB AS INDICATED FOR NEW STAIR
8. REMOVE PLUMBING FIXTURES, FLOORING, ACCESSORIES, WALLS, DOORS, ETC.
9. REMOVE WINDOW AND WALL FOR NEW DOOR; VIF EXTENT OF DEMOLITION AND COORDINATE WITH REQUIRED OPENING FOR NEW DOOR.
10. REMOVE DOOR, FRAME, ETC.; VIF AND COORDINATE EXTENT OF DEMOLITION WITH PLACEMENT OF SALVAGED WINDOW
11. REMOVE EXISTING WINDOW AND RETURN TO VA
12. REMOVE EXTERIOR AREAWAY AND GRATE
13. SALVAGE RAILING AT THIS LOCATION ONLY TO BE USED ELSEWHERE
14. REMOVE PORTION OF WALL AS INDICATED FOR NEW DOOR; VIF EXISTING WALLS AND STRUCTURE PRIOR TO DEMO; COORDINATE SIZE OF CUT WITH NEW DOOR SIZE AND REQUIRED OPENING LOCATED AT NEW MECHANICAL BASEMENT ELEVATION.
15. REMOVE PORTION OF WALL AS INDICATED FOR NEW DOOR; VIF EXISTING WALLS AND STRUCTURE PRIOR TO DEMO; COORDINATE SIZE OF CUT WITH NEW DOOR SIZE AND REQUIRED OPENING LOCATED AT EXISTING PIPE LEVEL BASEMENT.
16. REMOVE WINDOW; REPLACE GLAZING WITH SPANDREL GLASS AND REPLACE WINDOW.
17. REMOVE RAILING
18. REMOVE STAIR, RAILINGS, STAIR STRUCTURE; VIF
19. REMOVE PORTION OF WALL REQUIRED FOR FIRE RATED PASS-THRU; REFER TO DETAIL AND SPECIFICATIONS FOR INFORMATION.



3 Demolition Plan - Portico
1/8" = 1'-0"



CONSTRUCTION DOCUMENT SUBMISSION

FULLY SPRINKLERED

Number	Description	Date
	Revision Schedule	

CONSULTANTS:

ARCHITECT/ENGINEERS:

ARCHITECTURE ENGINEERING INTERIOR DESIGN DESIGN/BUILD
ASTORINO
227 Fort Pitt Boulevard Pittsburgh Pennsylvania 15222
TEL 412 765 1700 FAX 412 765 1711 www.astorino.com

Drawing Title: **Demolition Floor Plans**

Approved: Project Director

Project Title: **VAMC Lebanon - Renovation of Laboratory B1**

Location: **Lebanon, PA**

Date: **02/23/2012** | Checked: **AB** | Drawn: **BY**

Project Number: **595-09-107**

Building Number:

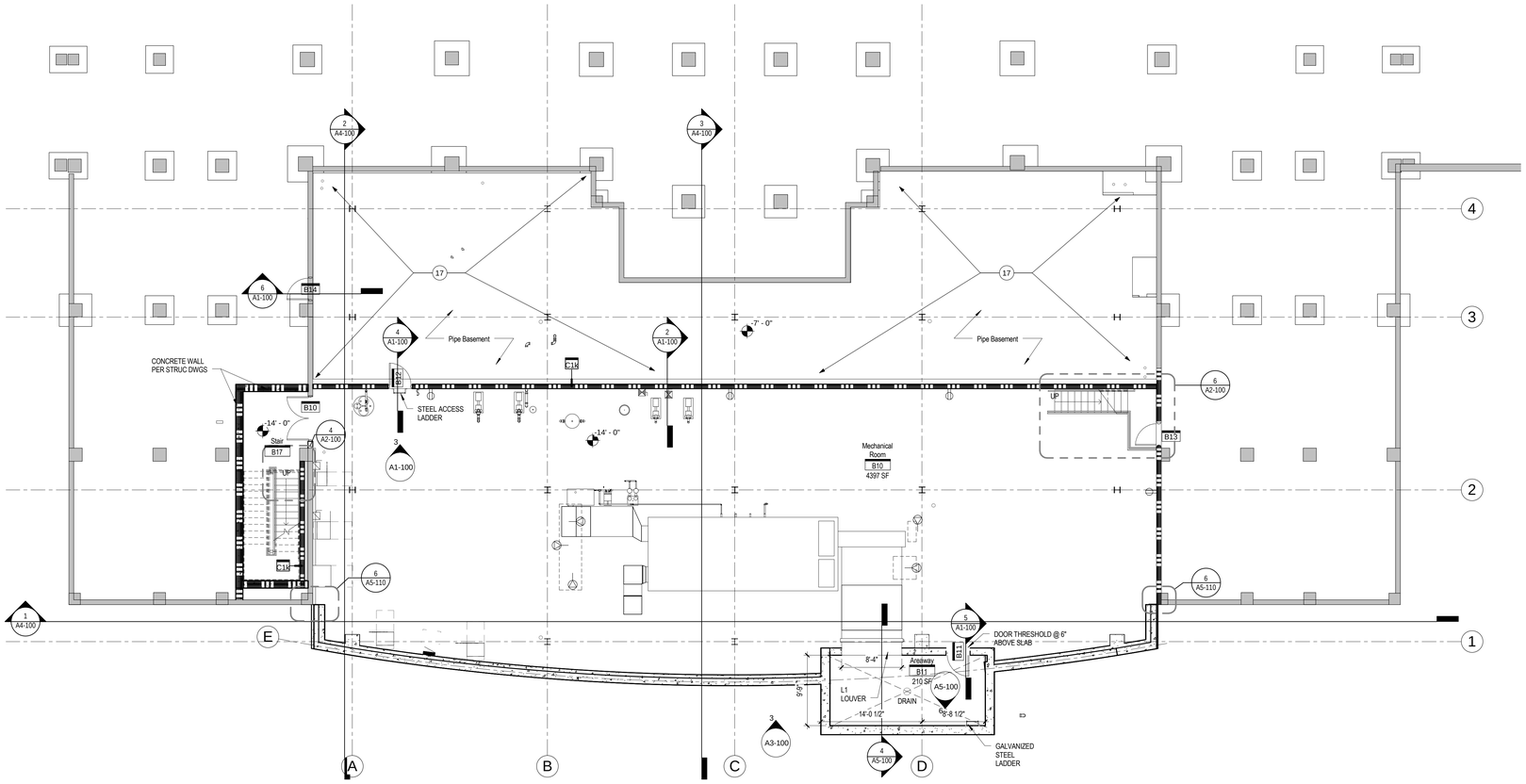
Drawing Number: **A0-101**

Dwg. of

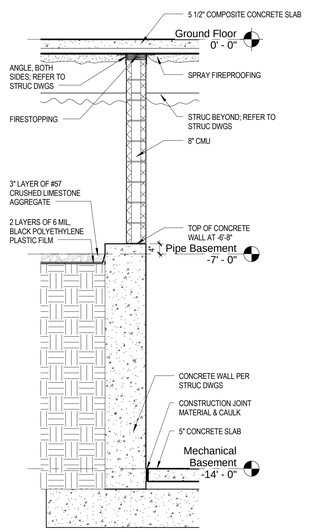
Office of Facilities Management

Department of Veterans Affairs

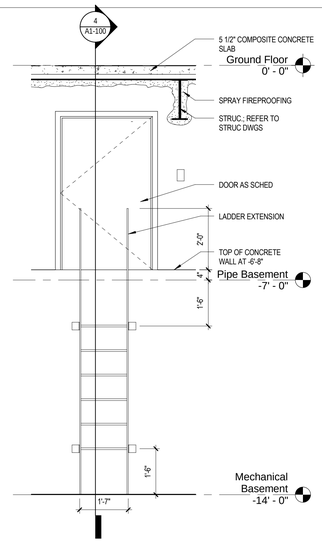
VA FORM 08-6231, OCT 1978



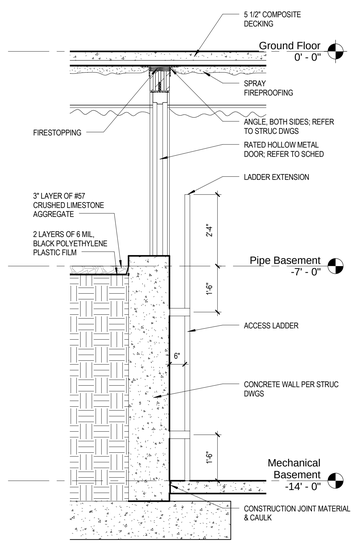
1 Mechanical Basement
1/8" = 1'-0"



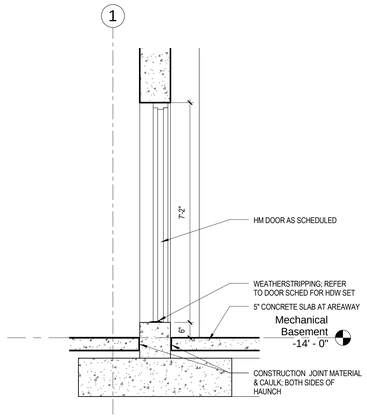
2 Detail - Pipe Basement Wall
1/2" = 1'-0"



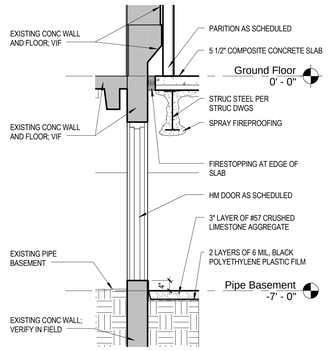
3 Detail - Access Ladder Elevation
1/2" = 1'-0"



4 Detail - Access Ladder & Door
1/2" = 1'-0"



5 Detail - Door @ Areaway Wall
1/2" = 1'-0"



6 Detail - Door @ Pipe Basement Wall
1/2" = 1'-0"

Plan Drawing Notes

1. REFER TO SHEET G0-001 FOR ALL GENERAL NOTES, LEGENDS AND SYMBOLS .
2. FOR INTERIOR ELEVATION REFER TO A2-100 SERIES, UNLESS NOTED OTHERWISE. REFER TO INTERIOR ELEVATIONS FOR CASEWORK DIMENSIONS.
3. FOR INTERIOR WINDOWS ELEVATIONS AND DETAILS REFER TO A8-101.
4. ALL DIMENSIONS ARE TO FINISHED FACE OF WALL CONSTRUCTION, UNLESS OTHERWISE NOTED.
5. NEW PARTITIONS ABUTTING EXISTING CONSTRUCTION SHALL BE ALIGNED TO PROVIDE A CONTINUOUS FLUSH FACE, UNLESS OTHERWISE NOTED.
6. VERIFY THE INSTALLATION REQUIREMENTS (LOCATION & UTILITES) OF ALL EQUIPMENT FURNISHED BY THE OWNER.
7. NOT ALL PLAN KEY NOTES APPEAR ON ALL DRAWINGS.
8. PROVIDE SPRAY FIREPROOFING @ COLUMN, BEAMS AND METAL FLOOR AND ROOF DECKS.
9. FURNITURE SHOWN IS VA FURNISHED AND INSTALLED

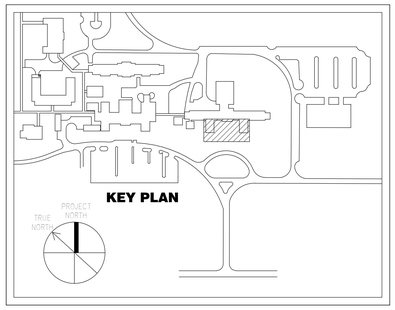
Fire Separation Legend

1 HOUR FIRE WALL

2 HOUR FIRE WALL

Plan Drawing Key Notes

1. WINDOW INFILL; SEE DETAIL 2/A5-100 COORDINATE WITH COTR AND INTERIOR EXPANSION PROJECT #595-10-197
2. FIRE EXTINGUISHER CABINET; FIRE EXTINGUISHER PROVIDED BY VA.
3. 3' X 5' TACKBOARD
4. 4' X 6' TACKBOARD
5. 4' X 4' TACKBOARD
6. INSTALL SALVAGED WINDOW
7. WORK IN PROJECT 595-10-197
8. PROVIDE SPRAY FIREPROOFING AT COLUMN, BEAMS AND METAL ROOF DECK
9. CLOCK (VC)
10. REPLACE GLAZING WITH SPANDREL GLASS
11. SURFACE MOUNTED CORNER GUARD
12. SOLAR SHADE CONTROL PANEL
13. DOUBLE HEIGHT LOCKERS, TOTAL 26, PROVIDE SCRIBE STRIPS; VA FURNISHED AND INSTALLED
14. MOP RACK
15. PROVIDE HASP & PADLOCK ON REMOVABLE GRATING.
16. COORDINATE SLAB OPENINGS WITH HVAC DWGS FOR SIZE REQUIREMENTS AND LOCATIONS; COORDINATE SLAB OPENINGS WITH STRUC DWGS TO CLEAR STEEL.
17. 3" LAYER OF AASHTO #57 CRUSHED LIMESTONE AGGREGATE OVER 2 LAYERS OF 6 MIL, BLACK POLYETHYLENE PLASTIC FILM.
    -PLASTICE FILM TO COMPLY WITH ASTM D-4397-84 SPECIFICATIONS FOR POLYETHYLENE SHEETING, NBS PS17-69, AND NATIONAL BUREAU OF STANDARDS HANDBOOKS 130 &133.
    -PLACE FILM ON SMOOTH, HORIZONTAL, SUB-GRADE FREE OF TOPSOIL, ROCKS OVER 1/2", DEBRIS, AND VEGETATION OF ANY KIND.
    -OVERLAP SUCCESSIVE LAYERS PF PLASTIC FILM BY 12".



CONSTRUCTION DOCUMENT SUBMISSION

FULLY SPRINKLERED

Number	Description	Date
Revision Schedule		

CONSULTANTS:

ARCHITECT/ENGINEERS:

ARCHITECTURE ENGINEERING INTERIOR DESIGN DESIGN/BUILD
ASTORINO
227 Fort Pitt Boulevard Pittsburgh Pennsylvania 15222
TEL 412 765 1700 FAX 412 765 1711 www.astorino.com

Drawing Title: **Pipe Basement and Mechanical Basement**

Approved: Project Director

Project Title: **VAMC Lebanon - Renovation of Laboratory B1**

Location: **Lebanon, PA**

Date: **02/23/2012** | Checked: **AB** | Drawn: **BY**

Project Number: **595-09-107**

Building Number

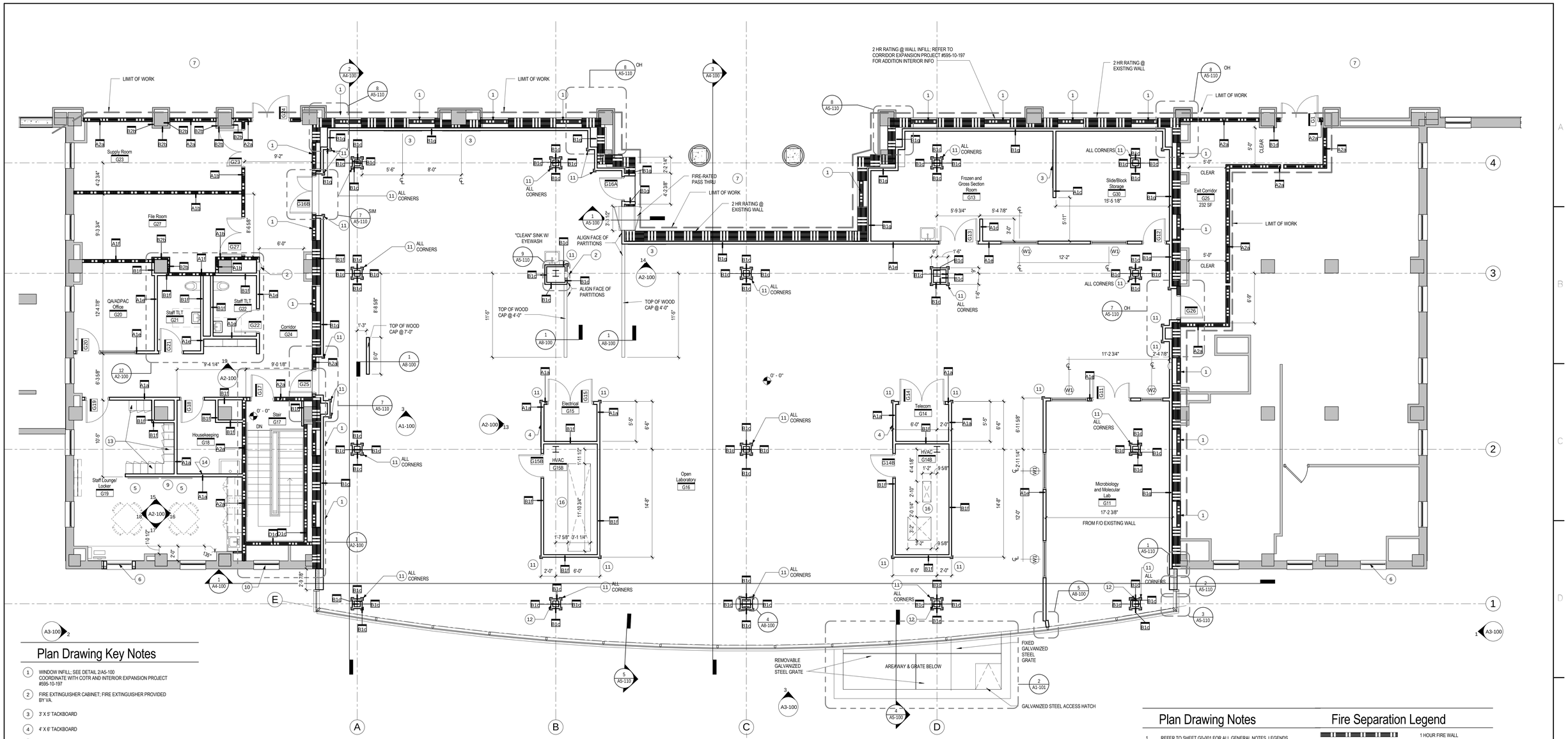
Drawing Number: **A1-100**

Dwg. of

Office of Facilities Management

Department of Veterans Affairs

VA FORM 08-6231, OCT 1978



Plan Drawing Key Notes

1. WINDOW INFILL; SEE DETAIL 2/A5-100 COORDINATE WITH COTR AND INTERIOR EXPANSION PROJECT #595-10-197
2. FIRE EXTINGUISHER CABINET; FIRE EXTINGUISHER PROVIDED BY VA.
3. 3' X 5' TACKBOARD
4. 4' X 6' TACKBOARD
5. 4' X 4' TACKBOARD
6. INSTALL SALVAGED WINDOW
7. WORK IN PROJECT 595-10-197
8. PROVIDE SPRAY FIREPROOFING AT COLUMN, BEAMS AND METAL ROOF DECK
9. CLOCK (VC)
10. REPLACE GLAZING WITH SPANDREL GLASS
11. SURFACE MOUNTED CORNER GUARD
12. SOLAR SHADE CONTROL PANEL
13. DOUBLE HEIGHT LOCKERS, TOTAL 26, PROVIDE SCRIBE STRIPS; VA FURNISHED AND INSTALLED
14. MOP RACK
15. PROVIDE HASP & PADLOCK ON REMOVABLE GRATING.
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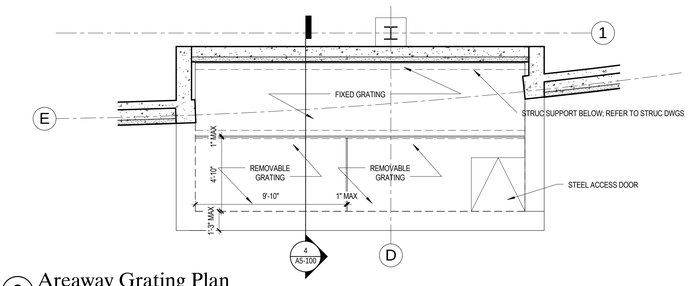
    -PLASTICE FILM TO COMPLY WITH ASTM D-4397-84 SPECIFICATIONS FOR POLYETHYLENE SHEETING, NBS PS17-69, AND NATIONAL BUREAU OF STANDARDS HANDBOOKS 130 &133.
    -PLACE FILM ON SMOOTH, HORIZONTAL, SUB-GRADE FREE OF TOPSOIL, ROCKS OVER 1/2", DEBRIS, AND VEGETATION OF ANY KIND.
    -OVERLAP SUCCESSIVE LAYERS PF PLASTIC FILM BY 12".

1 Ground Floor Plan
3/16" = 1'-0"



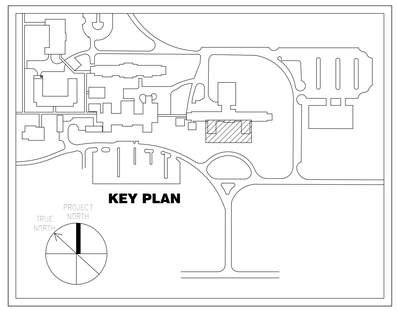
2 Areaway Grating Plan
1/4" = 1'-0"

Plan Drawing Notes

1. REFER TO SHEET G0-001 FOR ALL GENERAL NOTES, LEGENDS AND SYMBOLS.
2. FOR INTERIOR ELEVATION REFER TO A2-100 SERIES, UNLESS NOTED OTHERWISE. REFER TO INTERIOR ELEVATIONS FOR CASEWORK DIMENSIONS.
3. FOR INTERIOR WINDOWS ELEVATIONS AND DETAILS REFER TO A8-101.
4. ALL DIMENSIONS ARE TO FINISHED FACE OF WALL CONSTRUCTION, UNLESS OTHERWISE NOTED.
5. NEW PARTITIONS ABUTTING EXISTING CONSTRUCTION SHALL BE ALIGNED TO PROVIDE A CONTINUOUS FLUSH FACE, UNLESS OTHERWISE NOTED.
6. VERIFY THE INSTALLATION REQUIREMENTS (LOCATION & UTILITES) OF ALL EQUIPMENT FURNISHED BY THE OWNER.
7. NOT ALL PLAN KEY NOTES APPEAR ON ALL DRAWINGS.
8. PROVIDE SPRAY FIREPROOFING @ COLUMN, BEAMS AND METAL FLOOR AND ROOF DECKS.
9. FURNITURE SHOWN IS VA FURNISHED AND INSTALLED

Fire Separation Legend

1 HOUR FIRE WALL
2 HOUR FIRE WALL



CONSTRUCTION DOCUMENT SUBMISSION

FULLY SPRINKLERED

Number	Description	Date
Revision Schedule		

CONSULTANTS:

ARCHITECT/ENGINEERS:

ARCHITECTURE ENGINEERING INTERIOR DESIGN DESIGN/BUILD
ASTORINO
227 Fort Pitt Boulevard Pittsburgh Pennsylvania 15222
TEL 412 765 1700 FAX 412 765 1711 www.astorino.com

Drawing Title: **Ground Floor Plan**

Approved: Project Director

Project Title: **VAMC Lebanon - Renovation of Laboratory B1**

Location: **Lebanon, PA**

Date: **02/23/2012** | Checked: **AB** | Drawn: **BY**

Project Number: **595-09-107**

Building Number:

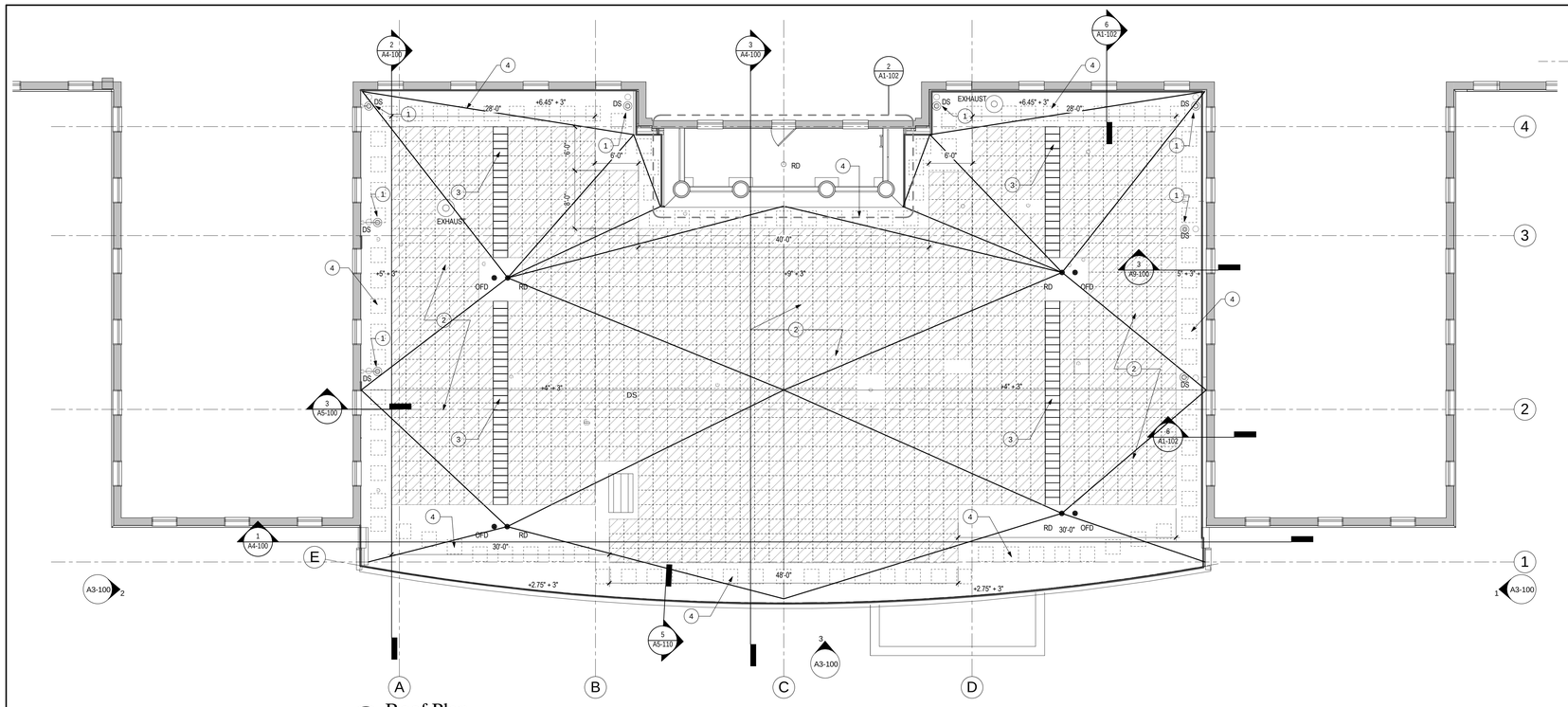
Drawing Number: **A1-101**

Dwg. of

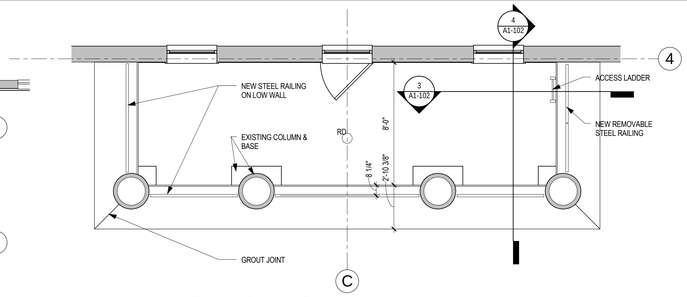
Office of Facilities Management

Department of Veterans Affairs

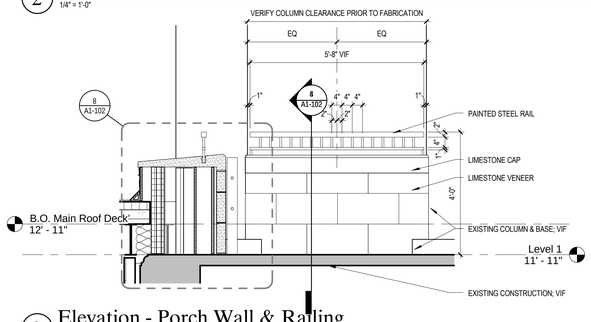
VA FORM 08-6231, OCT 1978



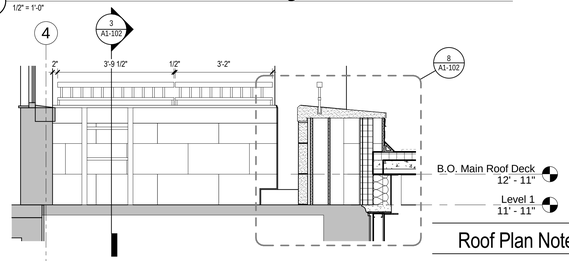
1 Roof Plan
1/8" = 1'-0"



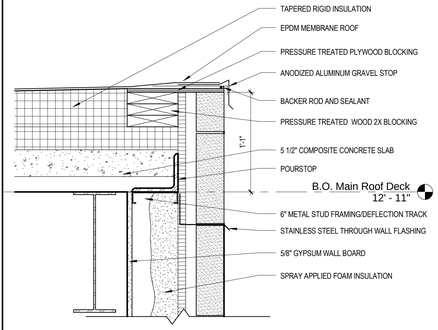
2 Enlarged Plan - Porch Plan
1/4" = 1'-0"



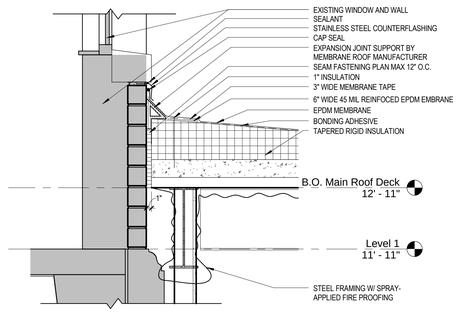
3 Elevation - Porch Wall & Railing
1/2" = 1'-0"



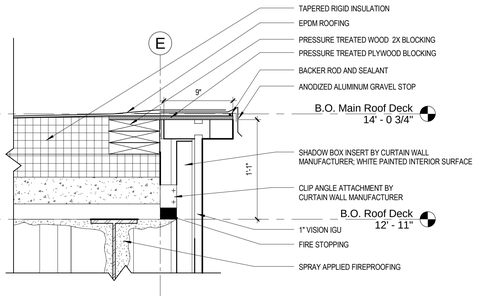
4 Elevation - Porch Access Ladder
1/2" = 1'-0"



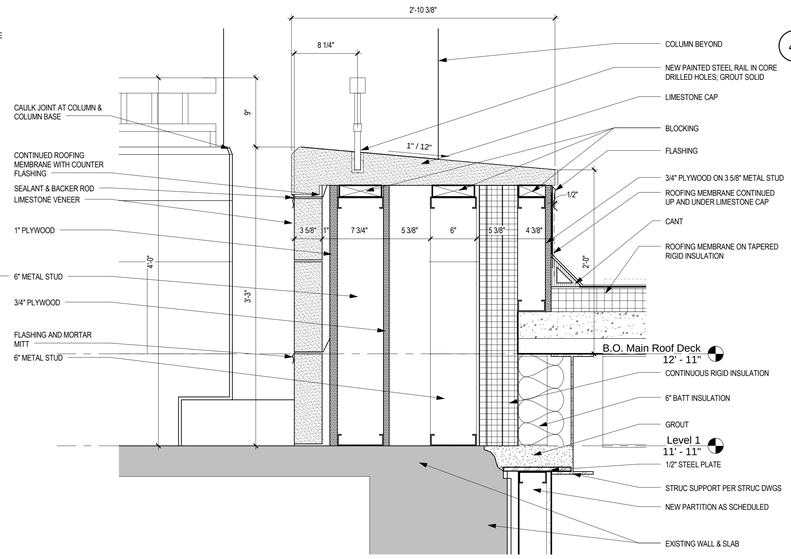
5 Roof Detail - Roof Edge
1 1/2" = 1'-0"



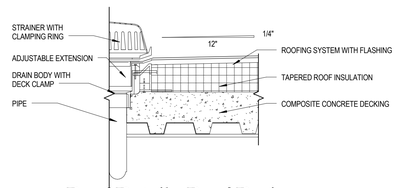
6 Roof Detail - New Roof @ Existing Wall
1" = 1'-0"



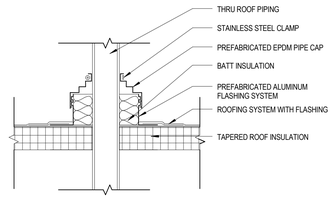
7 Roof Detail - Roof @ Curtainwall Mullion
1 1/2" = 1'-0"



8 Detail - Porch Wall
1 1/2" = 1'-0"



9 Roof Detail - Roof Drain
1 1/2" = 1'-0"



10 Roof Detail - Thru Roof Penetration
1 1/2" = 1'-0"

Roof Plan Notes

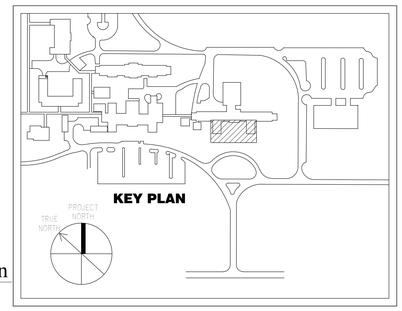
1. FOR ROOF TOP EQUIPMENT AND PENETRATIONS REFER TO MEP DWGS.

Roof Plan Key Notes

1. VIEW PIPE FLANGE AND RUBBER CAP WITH CLAMPS: SEE DETAIL 2/A1-102.
2. 24"X24" ROOF TRAY PLANTING SYSTEM. WHERE ROOF PENETRATIONS OCCUR DO NOT INSTALL PLANTING TRAY. REFER TO PLUMBING DWGS AND VIF LOCATIONS.
3. 12"x24" INTEGRATED ROOF PAVER.
4. 24"x24" ROOFTOP WALKWAY PADS (SEE SPECIFICATION FOR INFORMATION). COORINATE LOCATIONS WITH ROOF PENETRATIONS WHERE APPLICABLE.

Roof Plan Legend

RD	ROOF DRAIN
OFD	OVERFLOW DRAIN
DS	DOWN SPOUT



CONSTRUCTION DOCUMENT SUBMISSION

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Number	Description	Date
Revision Schedule		

CONSULTANTS:

ARCHITECT/ENGINEERS:

ARCHITECTURE ENGINEERING INTERIOR DESIGN DESIGN/BUILD
ASTORINO
227 Fort Pitt Boulevard Pittsburgh Pennsylvania 15222
TEL 412 765 1700 FAX 412 765 1711 www.astorino.com

Drawing Title: **Roof Plan**

Approved: Project Director

Project Title: **VAMC Lebanon - Renovation of Laboratory B1**

Location: **Lebanon, PA**

Date: **02/23/2012** | Checked: **AB** | Drawn: **BY**

Project Number: **595-09-107**

Building Number:

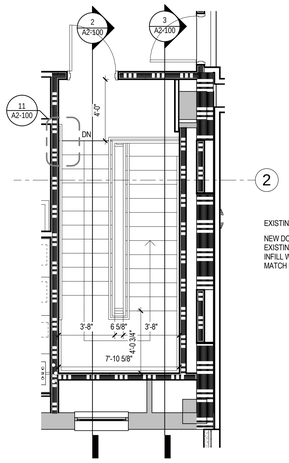
Drawing Number: **A1-102**

Dwg. of

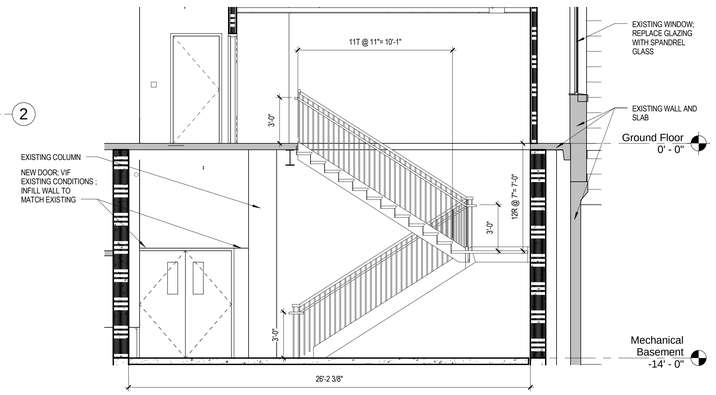
Office of Facilities Management

Department of Veterans Affairs

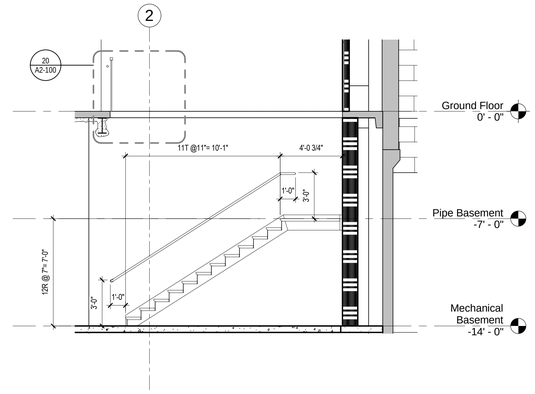
VA FORM 08-6231, OCT 1978



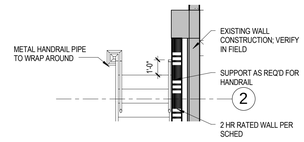
1 Enlarged Plan - Ground Level Stair
1/4" = 1'-0"



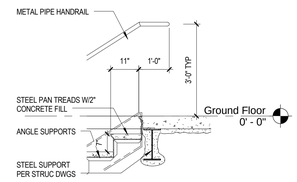
2 Stair Section - 1
1/4" = 1'-0"



3 Stair Section - 2
1/4" = 1'-0"



4 Enlarged Plan - Basement Level Stair
1/4" = 1'-0"



5 Stair Detail - Ground Floor Landing
1/2" = 1'-0"

Interior Elevation Notes

1. CONTRACTOR TO PROVIDE WALL BLOCKING OR SUPPORT FOR ALL WALL MOUNTED ITEMS PER WALL TYPE AS REQUIRED.

Toilet Accessory Schedule

MARK	DESCRIPTION	REMARKS
1	SOAP DISPENSER (DISPOSABLE)	VV
2	PAPER TOWEL DISPENSER (SURFACE MOUNTED)	VV
3A	GRAB BARS 36" LONG	CC
3B	GRAB BARS 42" LONG	CC
3C	GRAB BARS 18" LONG (VERTICAL)	CC
4	COAT HOOK	CC
5	TOILET PAPER DISPENSER (SURFACE MOUNTED)	CC
6	MIRROR W/ SS FRAME AND SHELF	CC

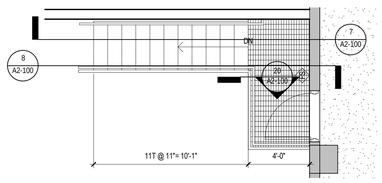
NOTE:
VV: VA FURNISHED & VA INSTALLED
VC: VA FURNISHED & CONTRACTOR INSTALLED
CC: CONTRACTOR FURNISHED & CONTRACTOR INSTALLED

CONTRACTOR TO PROVIDE BLOCKING FOR ALL WALL MOUNTED ITEMS.

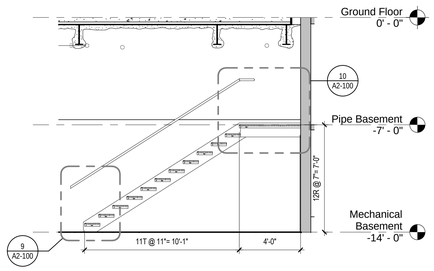
Equipment Key Notes

MARK	DESCRIPTION	REMARKS
1	CLOCK	VC
2	GLOVE DISPENSER	VC
3	HAND SANITIZER DISPENSER	VC

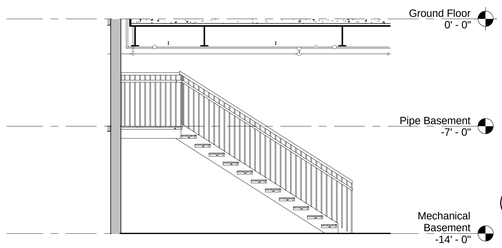
NOTE:
CONTRACTOR TO PROVIDE BLOCKING FOR ALL WALL MOUNTED ITEMS.



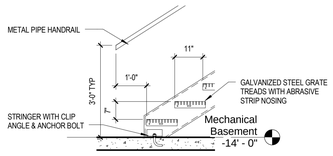
6 Enlarged Plan - Steel Grate Stair Floor Plan
1/4" = 1'-0"



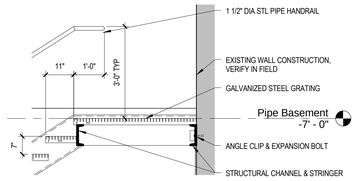
7 Stair Section - Steel Grate Stair - 1
1/4" = 1'-0"



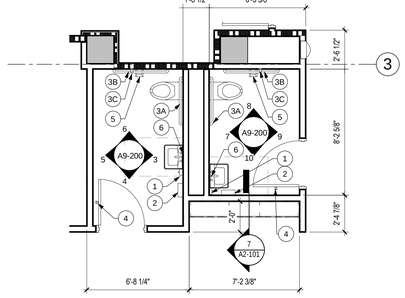
8 Stair Section - Steel Grate Stair - 2
1/4" = 1'-0"



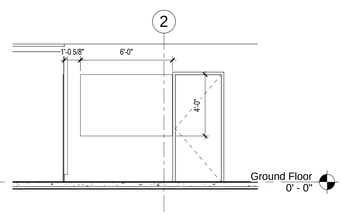
9 Stair Detail - Steel Grate Stair Bottom Landing
1/2" = 1'-0"



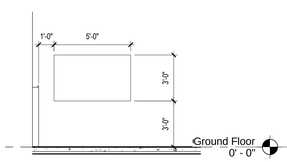
10 Stair Detail - Steel Grate Stair Top Landing
1/2" = 1'-0"



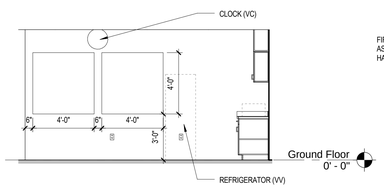
12 Staff Toilet Rooms
1/4" = 1'-0"



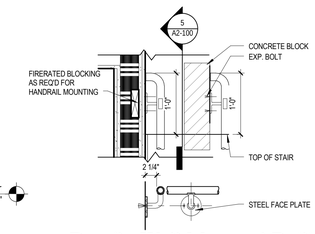
13 Elevation - Tack Board
1/4" = 1'-0"



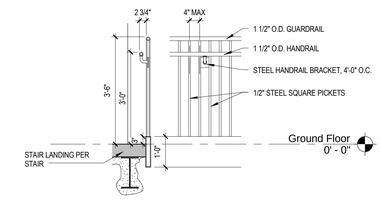
14 Elevation - Tack Board
1/4" = 1'-0"



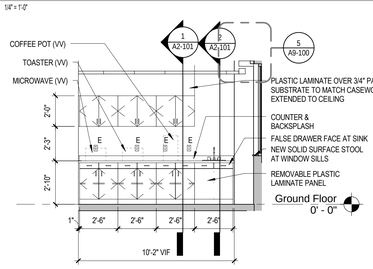
15 Elevation - Tack Board
1/4" = 1'-0"



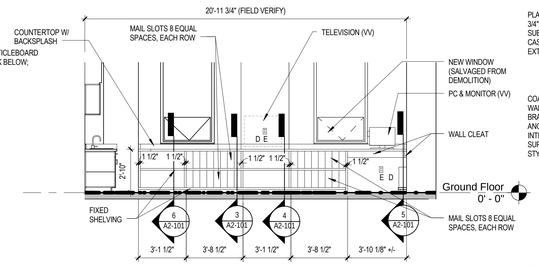
11 Detail - Wall Mounted Railing
1" = 1'-0"



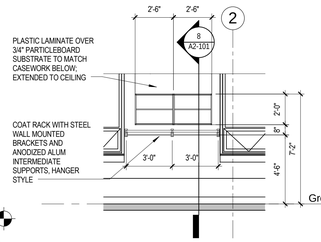
20 Detail - Railing
1/2" = 1'-0"



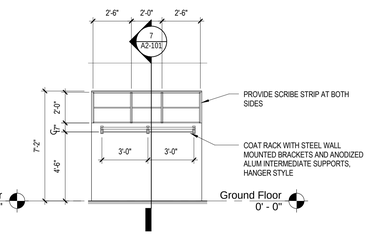
16 Elevation - Staff Lounge Elevation 1
1/4" = 1'-0"



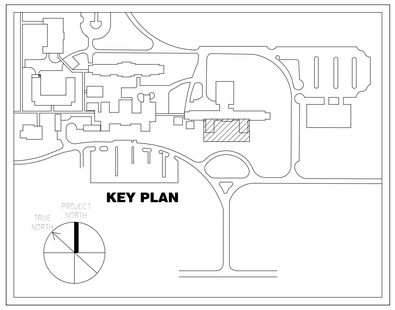
17 Elevation - Staff Lounge Elevation 2
1/4" = 1'-0"



18 Elevation - Coat Rod and Shelves
1/4" = 1'-0"



19 Elevation - Lab Coat Storage
1/4" = 1'-0"



CONSTRUCTION DOCUMENT SUBMISSION

FULLY SPRINKLERED

Number	Description	Date
	Revision Schedule	

CONSULTANTS:

ARCHITECT/ENGINEERS:

ARCHITECTURE
ENGINEERING
INTERIOR DESIGN
DESIGN/BUILD
ASTORINO
227 Fort Pitt Boulevard Pittsburgh Pennsylvania 15222
TEL 412 765 1700 FAX 412 765 1711 www.astorino.com

Drawing Title: **Enlarged Plans & Elevations**

Approved: Project Director

Project Title: **VAMC Lebanon - Renovation of Laboratory B1**

Location: **Lebanon, PA**

Date: **02/23/2012** | Checked: **AB** | Drawn: **BY**

Project Number: **595-09-107**

Building Number:

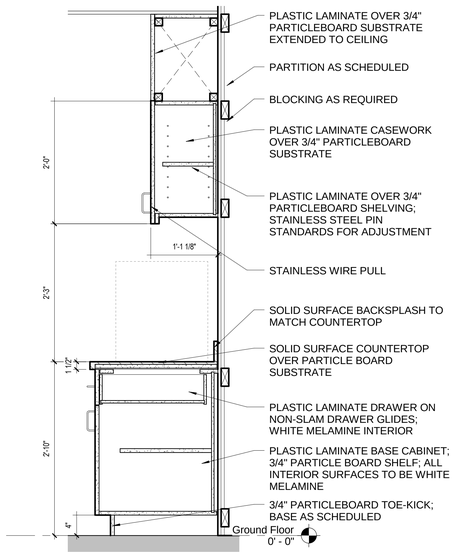
Drawing Number: **A2-100**

Dwg. of

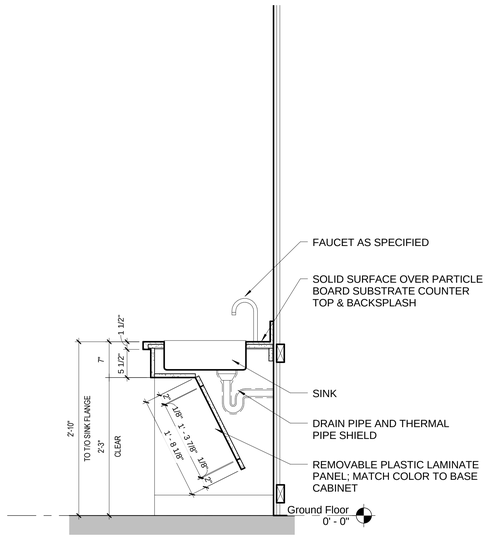
Office of Facilities Management

Department of Veterans Affairs

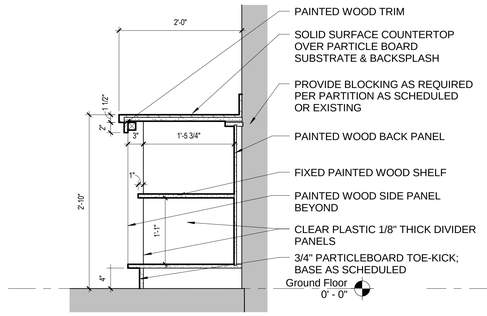
VA FORM 08-6231, OCT 1978



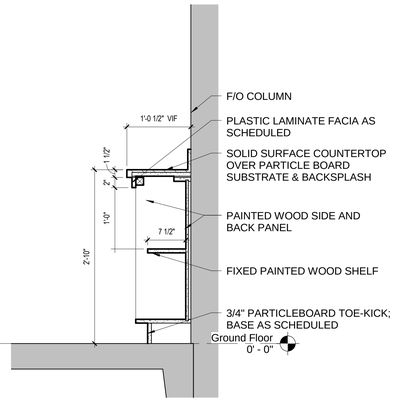
1 Casework Cabinets
1" = 1'-0"



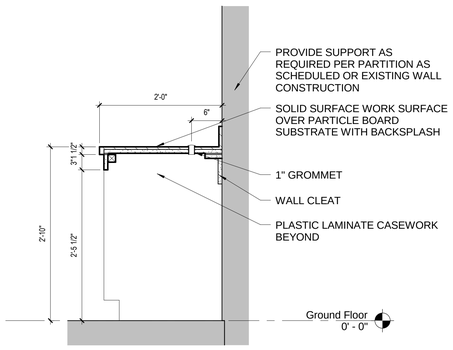
2 Casework - With Sink
1" = 1'-0"



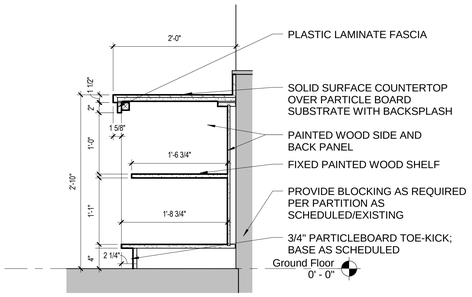
3 Casework Shelves
1" = 1'-0"



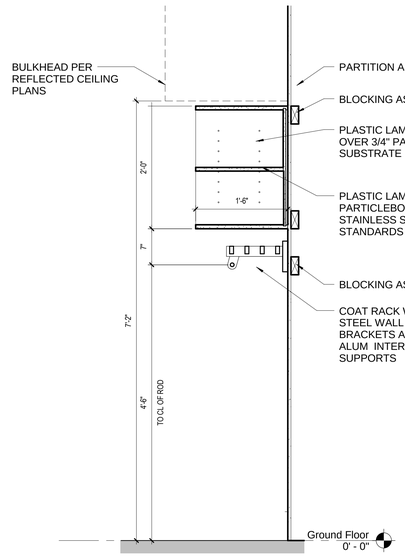
4 Casework Shelves
1" = 1'-0"



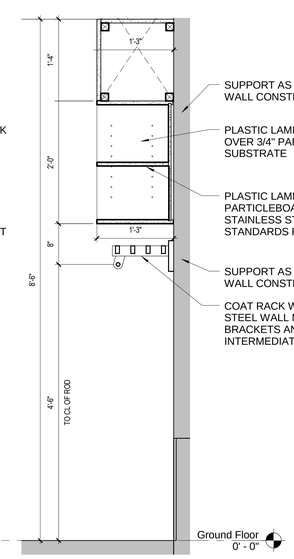
5 Casework - Work Surface
1" = 1'-0"



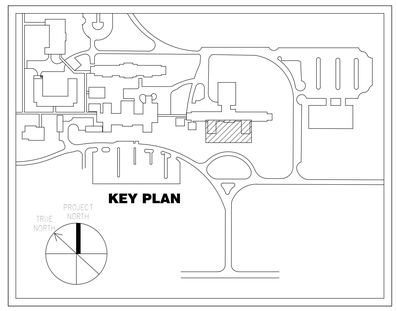
6 Casework Work Surface w/ Shelves
1" = 1'-0"



7 Section - Coat Rack 1
1" = 1'-0"



8 Section - Coat Rack 2
1" = 1'-0"



CONSTRUCTION DOCUMENT SUBMISSION

FULLY SPRINKLERED

Number	Description	Date
	Revision Schedule	

CONSULTANTS:

ARCHITECT/ENGINEERS:

ARCHITECTURE ENGINEERING INTERIOR DESIGN DESIGN/BUILD
ASTORINO
227 Fort Pitt Boulevard Pittsburgh Pennsylvania 15222
TEL 412 765 1700 FAX 412 765 1711 www.astorino.com

Drawing Title: **Interior Details**

Approved: Project Director

Project Title: **VAMC Lebanon - Renovation of Laboratory B1**

Location: **Lebanon, PA**

Date: **02/23/2012** | Checked: **AB** | Drawn: **BY**

Project Number: **595-09-107**

Building Number:

Drawing Number: **A2-101**

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Department of Veterans Affairs

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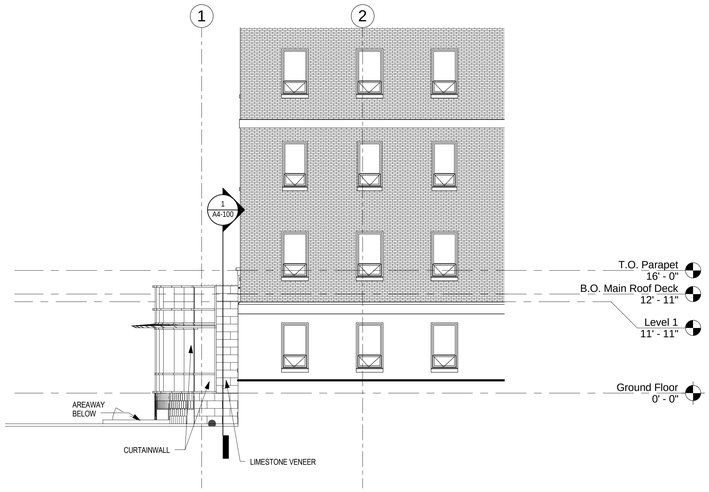
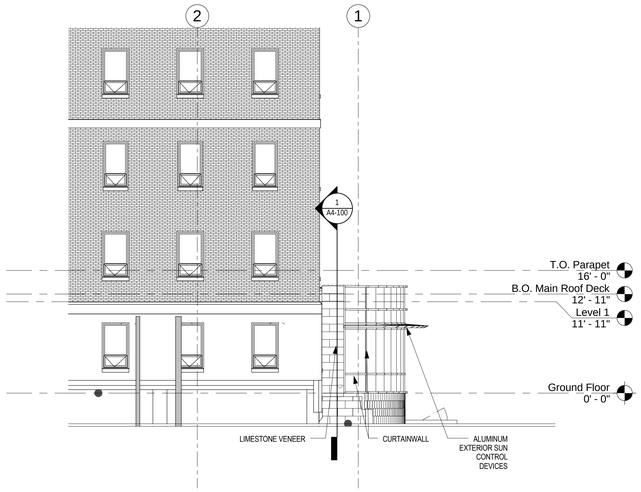


1 East Elevation
1/8" = 1'-0"



2 West Elevation
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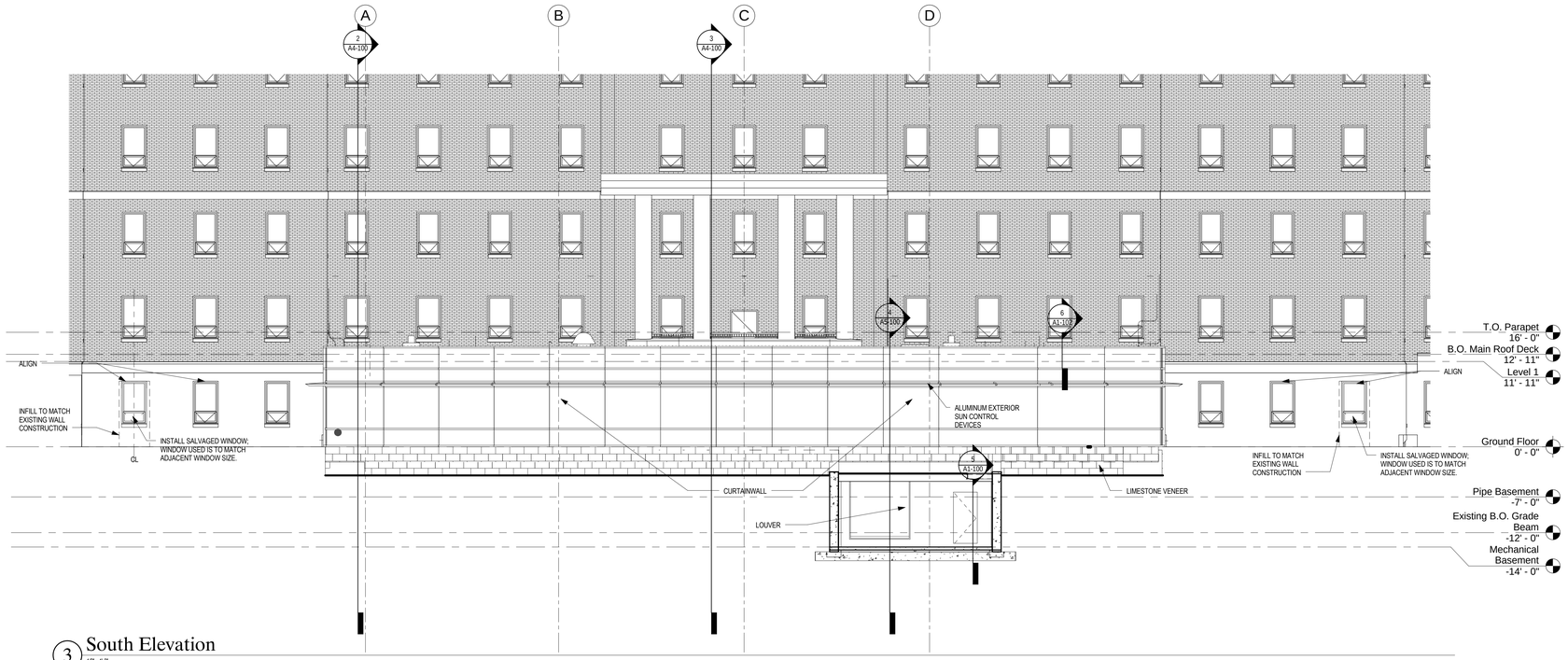
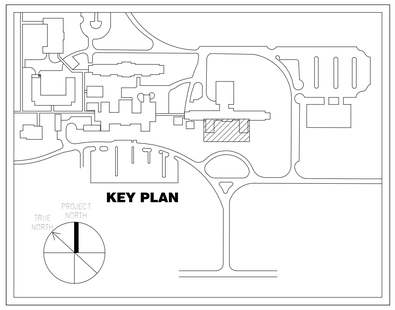


3 South Elevation
1/8" = 1'-0"



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Number	Description	Date
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CONSULTANTS:

ARCHITECT/ENGINEERS:

ARCHITECTURE
ENGINEERING
INTERIOR DESIGN
DESIGN/BUILD
ASTORINO
227 Fort Pitt Boulevard Pittsburgh Pennsylvania 15222
TEL 412 765 1700 FAX 412 765 1711 www.astorino.com

Drawing Title: **Building Elevations**

Approved: Project Director

Project Title: **VAMC Lebanon - Renovation of Laboratory B1**

Location: **Lebanon, PA**

Date: **02/23/2012** | Checked: **AB** | Drawn: **BY**

Project Number: **595-09-107**

Building Number:

Drawing Number: **A3-100**

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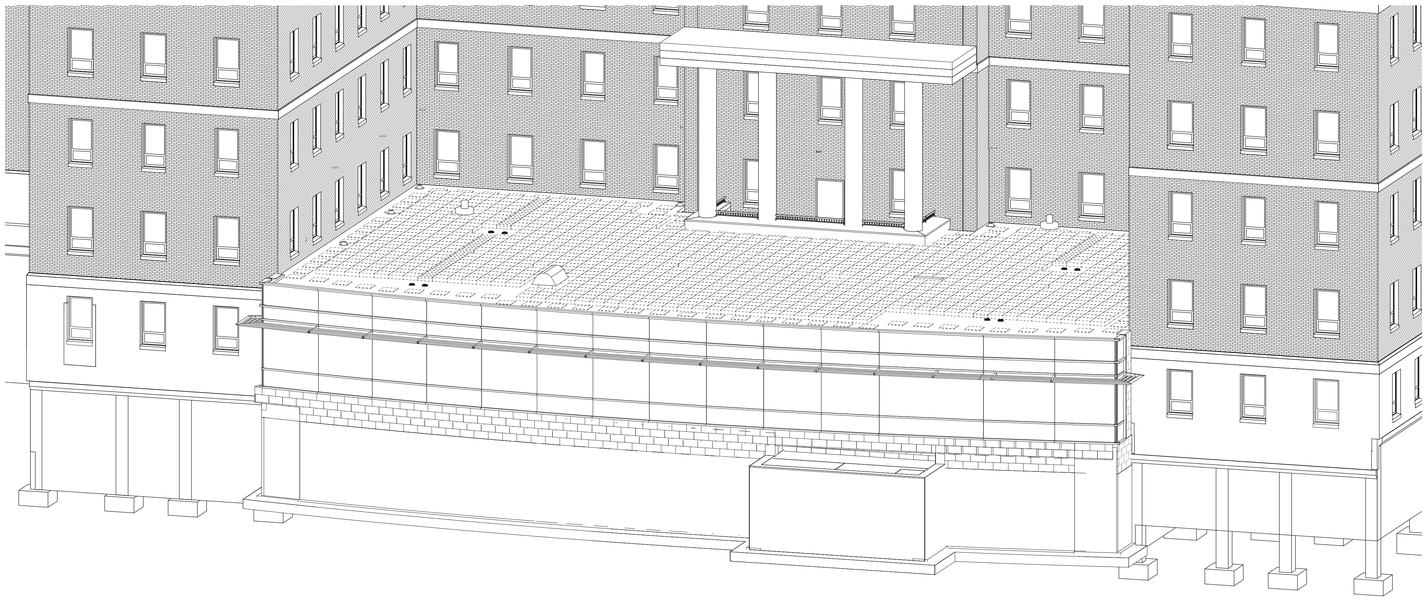
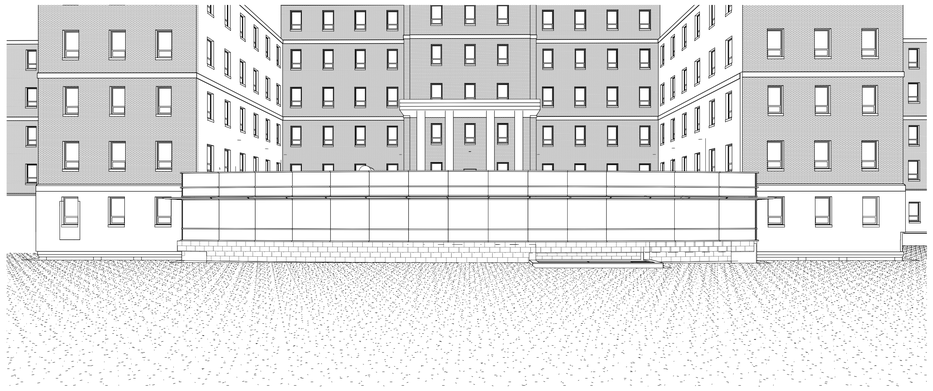
Department of Veterans Affairs

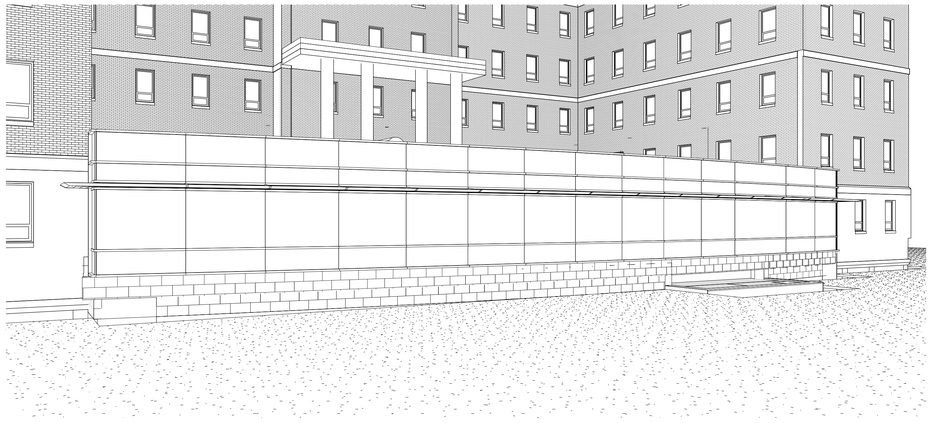
VA FORM 08-6231, OCT 1978



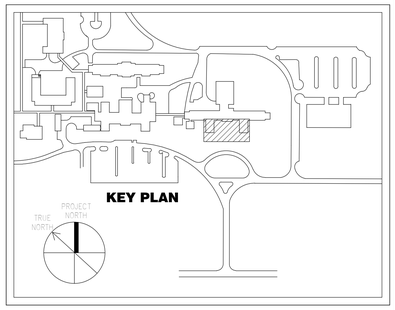
1 Axonometric



3 Perspective 2



2 Perspective 1



CONSTRUCTION DOCUMENT SUBMISSION

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Number	Description	Date
	Revision Schedule	

CONSULTANTS:

ARCHITECT/ENGINEERS:

ARCHITECTURE
ENGINEERING
INTERIOR DESIGN
DESIGN/BUILD

ASTORINO

227 Fort Pitt Boulevard Pittsburgh Pennsylvania 15222
TEL 412 765 1700 FAX 412 765 1711 www.astorino.com

Drawing Title: **Perspectives**

Approved: Project Director

Project Title: **VAMC Lebanon - Renovation of Laboratory B1**

Location: **Lebanon, PA**

Date: **02/23/2012** | Checked: **AB** | Drawn: **BY**

Project Number: **595-09-107**

Building Number:

Drawing Number: **A3-101**

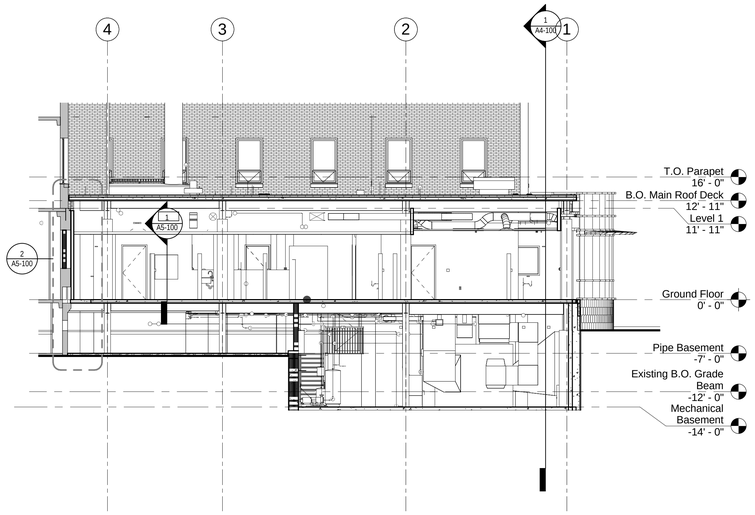
Dwg. of

Office of Facilities Management

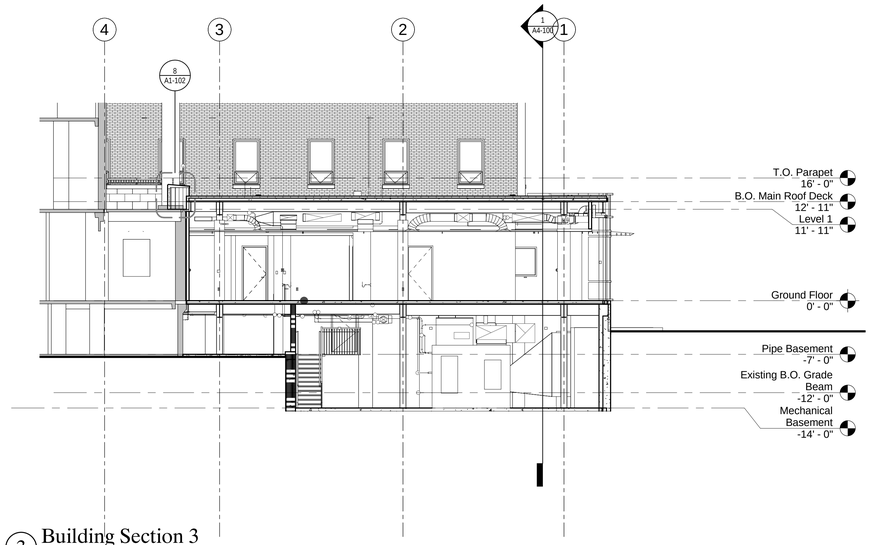
Department of Veterans Affairs

VA FORM 08-6231, OCT 1978

1 Building Section 1
1/8" = 1'-0"



2 Building Section 2
1/8" = 1'-0"



3 Building Section 3
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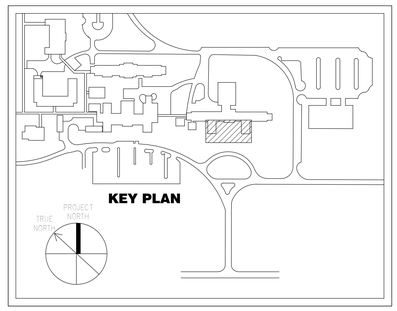

CONSTRUCTION DOCUMENT SUBMISSION

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Number	Description	Date
	Revision Schedule	

CONSULTANTS:

ARCHITECT/ENGINEERS:

ARCHITECTURE ENGINEERING INTERIOR DESIGN DESIGN/BUILD

ASTORINO

227 Fort Pitt Boulevard Pittsburgh Pennsylvania 15222
TEL 412 765 1700 FAX 412 765 1711 www.astorino.com

Drawing Title: **Building Sections**

Approved: Project Director

Project Title: **VAMC Lebanon - Renovation of Laboratory B1**

Location: **Lebanon, PA**

Date: **02/23/2012** | Checked: **AB** | Drawn: **BY**

Project Number: **595-09-107**

Building Number

Drawing Number: **A4-100**

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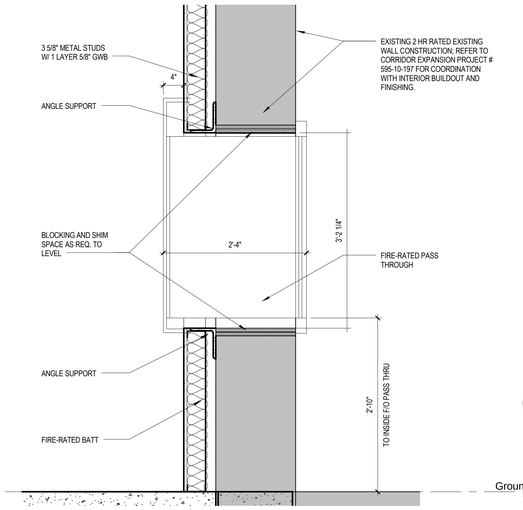
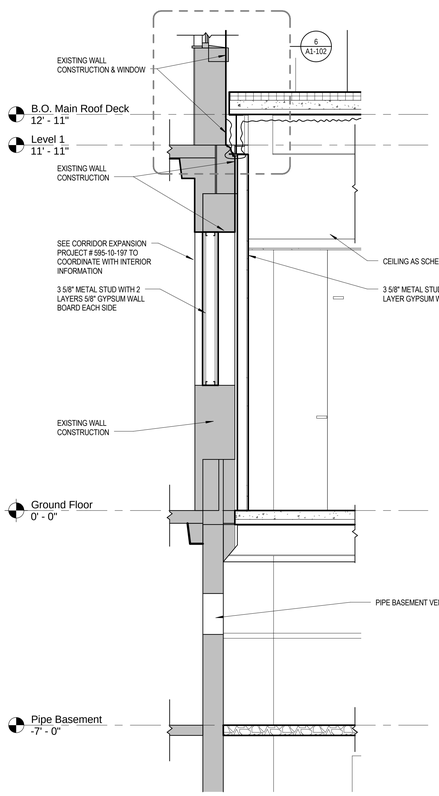
Office of Facilities Management

Department of Veterans Affairs

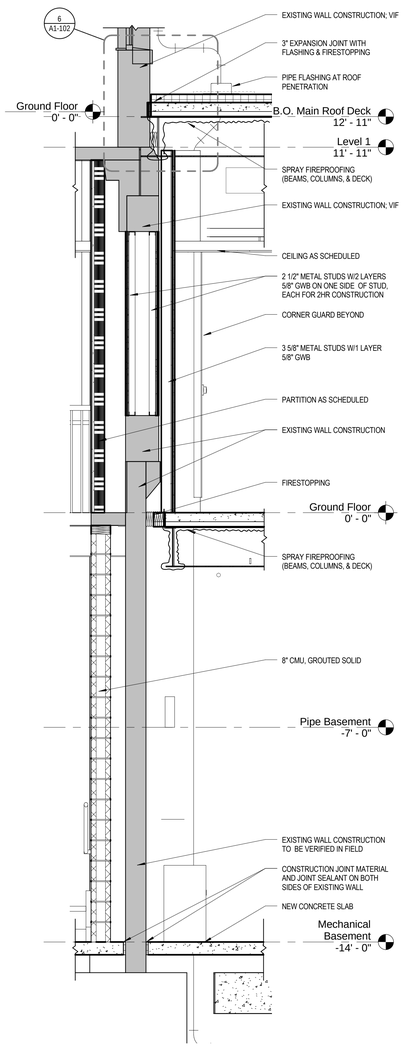
VA FORM 08-6231, OCT 1978



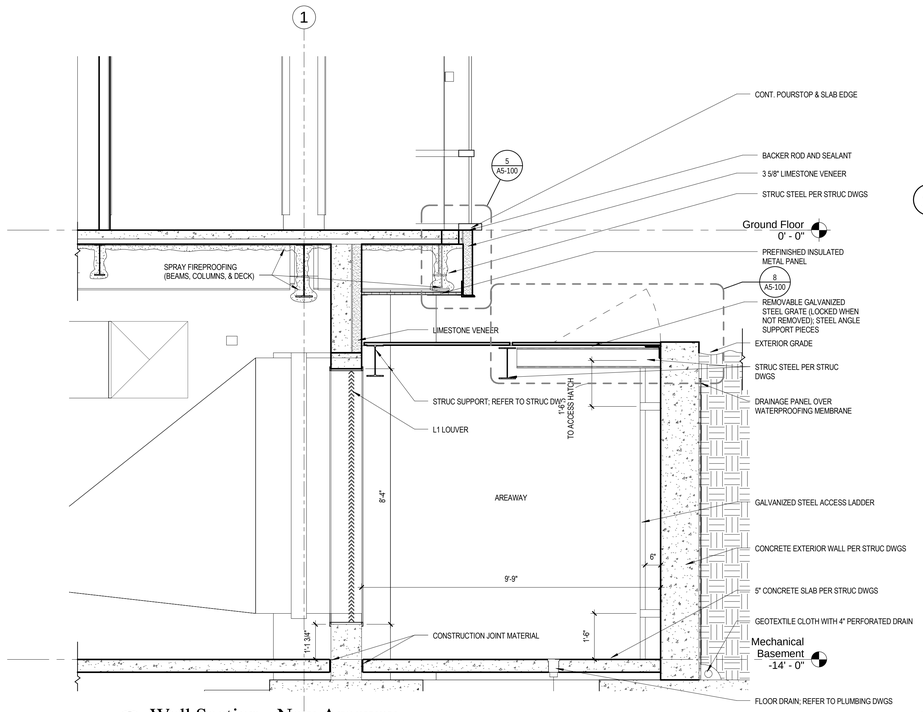
1 Detail - Pass-Thru
1" = 1'-0"



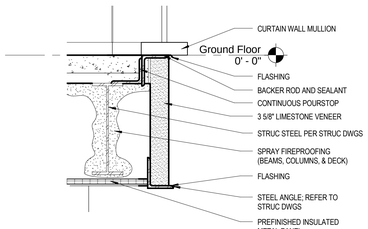
2 Wall Section - Existing Areaway
1/2" = 1'-0"



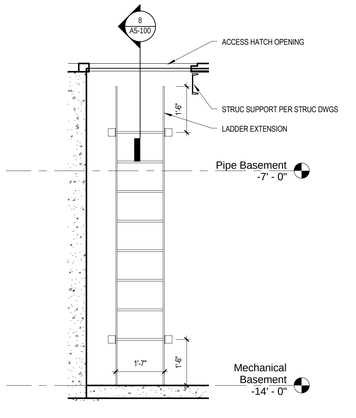
3 Wall Section - New Wall @ Existing Wall
1/2" = 1'-0"



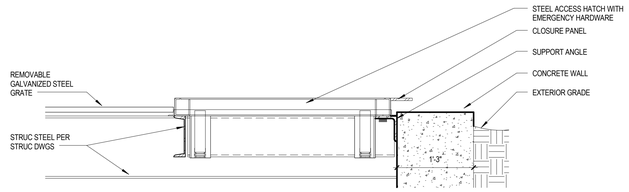
4 Wall Section - New Areaway
1/2" = 1'-0"



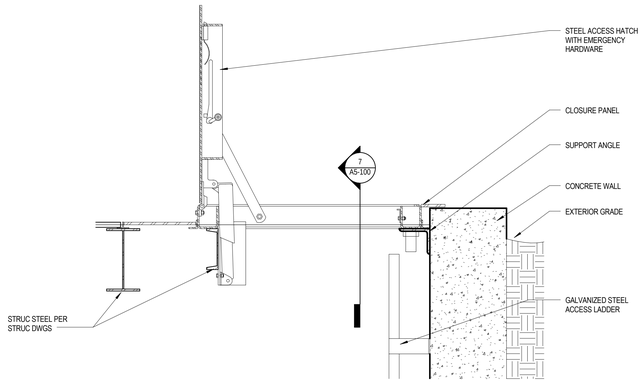
5 Detail - Ground Floor Overhang
1" = 1'-0"



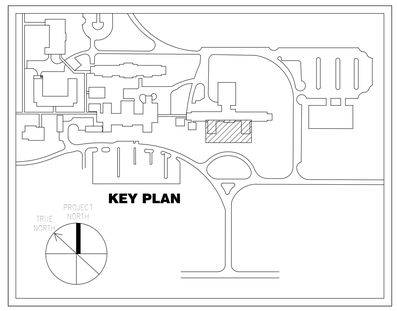
6 Detail - Access Ladder @ Areaway
1/2" = 1'-0"



7 Access Hatch
1" = 1'-0"



8 Access Hatch & Grate
1" = 1'-0"



CONSTRUCTION DOCUMENT SUBMISSION

FULLY SPRINKLERED

Number	Description	Date
	Revision Schedule	

CONSULTANTS:

ARCHITECT/ENGINEERS:

ARCHITECTURE ENGINEERING INTERIOR DESIGN DESIGN/BUILD
ASTORINO
227 Fort Pitt Boulevard Pittsburgh Pennsylvania 15222
TEL 412 765 1700 FAX 412 765 1711 www.astorino.com

Drawing Title: **Wall Sections**

Approved: Project Director

Project Title: **VAMC Lebanon - Renovation of Laboratory B1**

Location: **Lebanon, PA**

Date: **02/23/2012** | Checked: **AB** | Drawn: **BY**

Project Number: **595-09-107**

Building Number

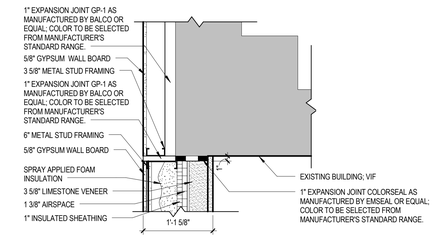
Drawing Number: **A5-100**

Dwg. of

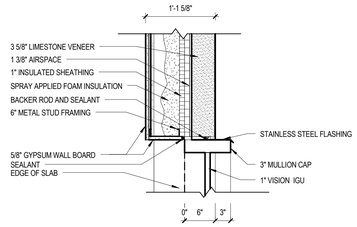
Office of Facilities Management

Department of Veterans Affairs

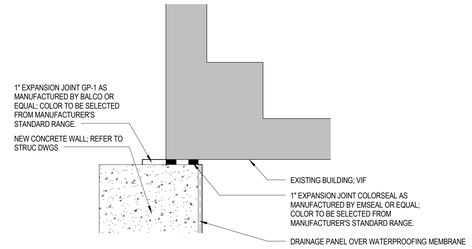
VA FORM 08-6231, OCT 1978



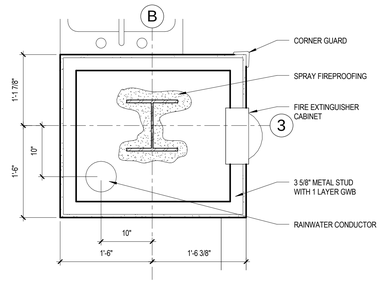
1 Detail - Existing Building Expansion Joint
1" = 1'-0"



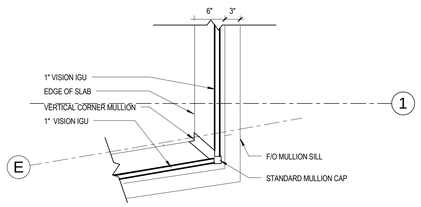
Detail - Curtain Wall @ Limestone Wall
2 1" = 1'-0"



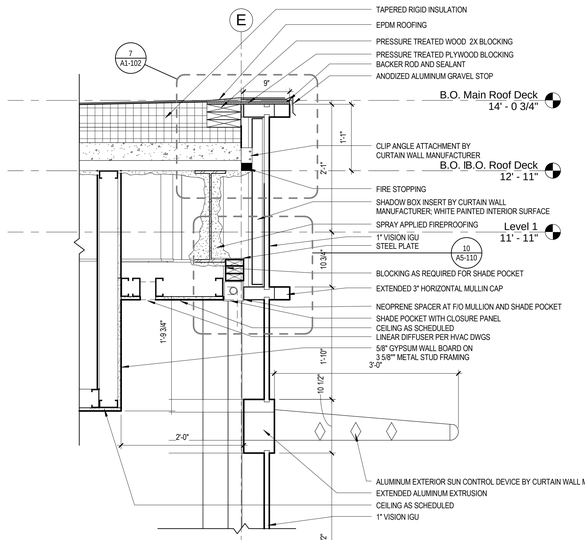
6 Detail at Basement Corner
1" = 1'-0"



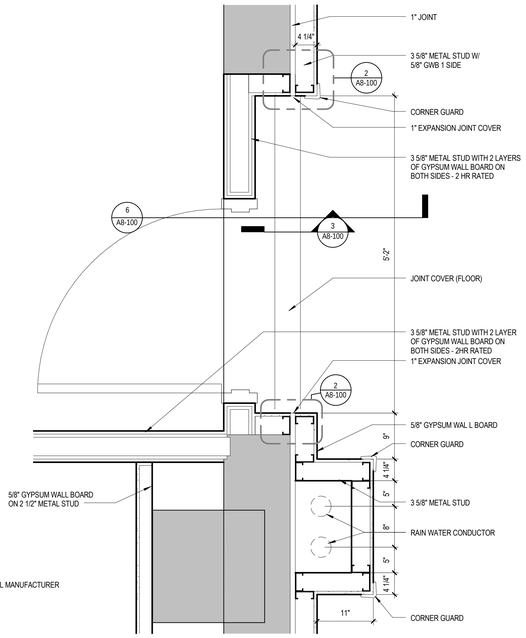
9 Detail at Column Wrap
1" = 1'-0"



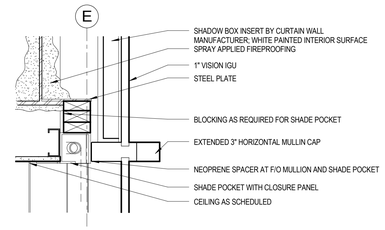
3 Detail - Curtian Wall Corner Cap
1" = 1'-0"



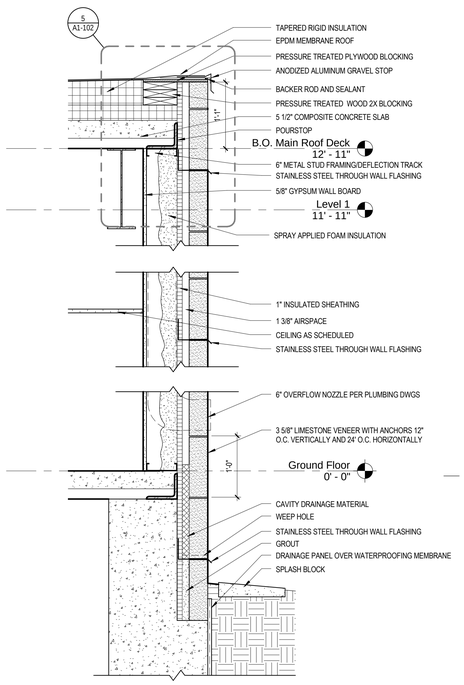
Detail - Typical Curtainwall
5 1" = 1'-0"



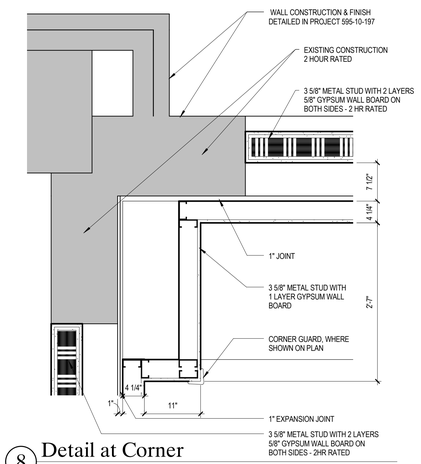
7 Detail at Door
1" = 1'-0"



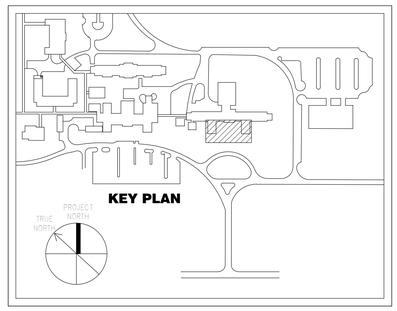
10 Detail - Shade Pocket
1 1/2" = 1'-0"



Detail - Limestone Veneer
4 1" = 1'-0"



8 Detail at Corner
1" = 1'-0"



CONSTRUCTION DOCUMENT SUBMISSION

FULLY SPRINKLERED

Number	Description	Date
Revision Schedule		

CONSULTANTS:

ARCHITECT/ENGINEERS:

ARCHITECTURE ENGINEERING INTERIOR DESIGN DESIGN/BUILD ASTORINO

227 Fort Pitt Boulevard Pittsburgh Pennsylvania 15222
TEL 412 765 1700 FAX 412 765 1711 www.astorino.com

Drawing Title: **Details**

Approved: Project Director

Project Title: **VAMC Lebanon - Renovation of Laboratory B1**

Location: **Lebanon, PA**

Date: **02/23/2012** | Checked: **AB** | Drawn: **BY**

Project Number: **595-09-107**

Building Number:

Drawing Number: **A5-110**

Dwg. of

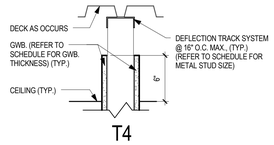
Office of Facilities Management

Department of Veterans Affairs

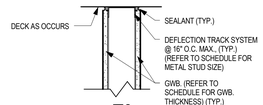
VA FORM 08-6231, OCT 1978

Partition Schedule

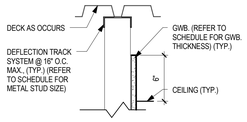
Type Mark	Width	Framing Size	GWB Thicknes s	Layers Of GWB Each Side	GWB To Deck	Studs To Deck	Sound Insulation	Insulation To Deck	Masonry To Deck	Fire Rating Hours	STC Rating	UL Number	Base Detail	Top Detail	Comments
A1a	4 7/8"	3 5/8"	5/8"	1 Layer	Yes	Yes	No	No	No	0			B2	T3	REFER TO NOTE 4
A1b	4 7/8"	3 5/8"	5/8"	1 Layer	Yes	Yes	No	No	No	1	40	UL419	B2	T3	
A1c	4 7/8"	3 5/8"	5/8"	1 Layer	No	Yes	No	No	No	0			B2	T4	
A1e	4 7/8"	3 5/8"	5/8"	1 Layer	Yes	Yes	Yes	Yes	No	0			B1	T1	REFER TO NOTE 3
A1f	4 7/8"	3 5/8"	5/8"	1 Layer	Yes	Yes	Yes	Yes	No	1	47	UL419	B1	T1	
A2a	6 1/8"	3 5/8"	5/8"	2 Layers	Yes	Yes	No	No	No	2	50	UL419	B4	T7	
A2b	6 1/8"	3 5/8"	5/8"	2 Layers	Yes	Yes	Yes	Yes	No	0			B3	T6	
B1a	2 1/8"	1 1/2"	5/8"	1 Layer	No	Yes	No	No	No	0			B8	T13	
B1c	3 1/8"	2 1/2"	5/8"	1 Layer	No	Yes	No	No	No	0			B8	T13	
B1d	3 1/8"	2 1/2"	5/8"	1 Layer	Yes	Yes	Yes	Yes	No	0			B7	T10	
B1f	4 1/4"	3 5/8"	5/8"	1 Layer	Yes	Yes	No	No	No	0			B8	T12	REFER TO NOTE 3. REFER TO NOTE 4
B1g	4 1/4"	3 5/8"	5/8"	1 Layer	Yes	Yes	Yes	Yes	No	0			B7	T10	
B2b	3 3/4"	2 1/2"	5/8"	2 Layers	Yes	Yes	Yes	Yes	No	1	48	UL419	B9	T14	
C1k	7 5/8"	7 5/8"			No	No	No	No	Yes	2	48	UL901	B12	T18	
D1c	5 1/4"	4"	5/8"	2 Layers	Yes	Yes	No	No	No	2	38	UL417	B15	T23	



T4



T3



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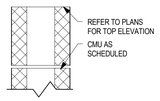

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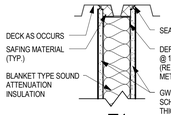
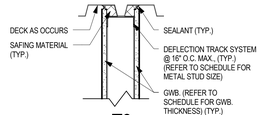


T1



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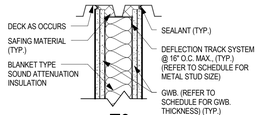
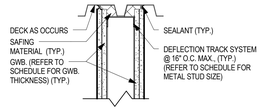
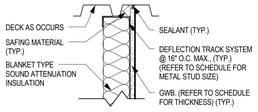


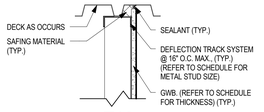
T6



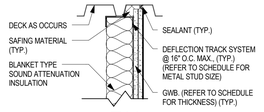
T7



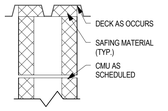
T10



T12



T14



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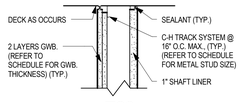

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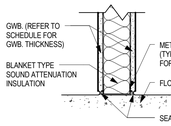
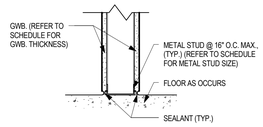


B1



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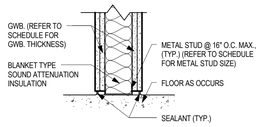

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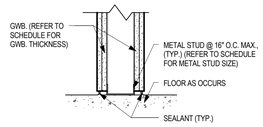
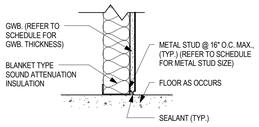


B4



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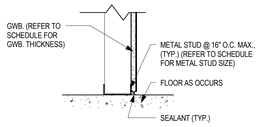

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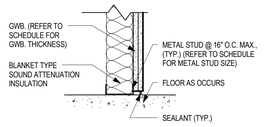

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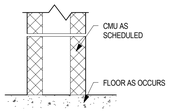

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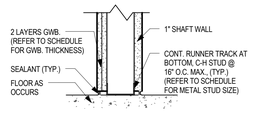
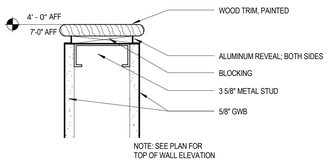
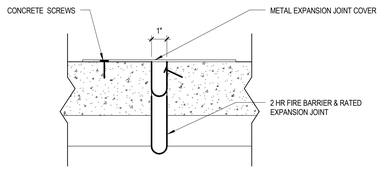


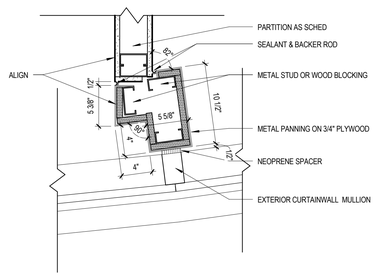
B15



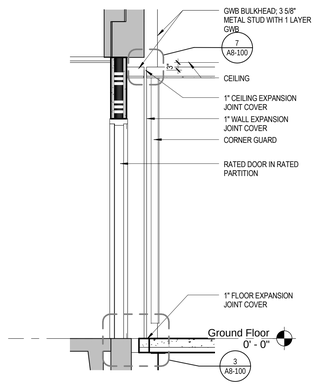
1 Detail at Partial Height Wall
3" = 1'-0"



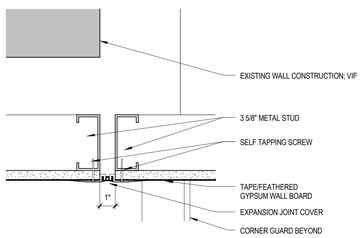
3 Detail - Floor Expansion Joint
3" = 1'-0"



5 Detail - Mullion at Curtain wall
1 1/2" = 1'-0"



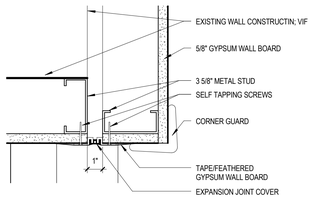
6 Detail - Door
1/2" = 1'-0"



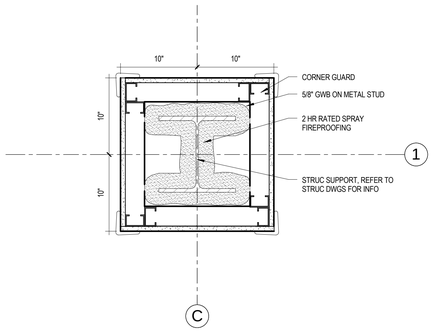
7 Detail - Bulkhead Expansion Joint Cover
3" = 1'-0"

GENERAL PARTITION NOTES

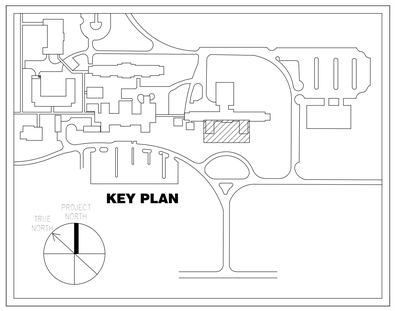
1. UL RATED WALLS REQUIRE FIRE SEALANT PER UL DESIGN NUMBER AND SPECIFICATION REQUIREMENT.
2. TOP DETAILS ARE REFERENCED FOR PARALLEL AND PERPENDICULAR CONDITIONS, AS FIELD CONDITIONS DICTATE.
3. WHERE TILE IS INDICATED ON WALLS, PROVIDE TILE BACKER AND WATERPROOFING MEMBRANE AS SPECIFIED IN LIEU OF 1 LAYER OF GWB ONLY ON SIDE TO BE TILED.
4. WALLS LOCATED IN HOUSEKEEPING, USE MOISTURE AND MOLD RESISTANT GWB AS SPECIFIED.



2 Detail - Wall Expansion Joint Cover
3" = 1'-0"



4 Detail - Typical Column Enclosure
1 1/2" = 1'-0"



CONSTRUCTION DOCUMENT SUBMISSION

FULLY SPRINKLERED

Number	Description	Date
	Revision Schedule	

CONSULTANTS:

ARCHITECT/ENGINEERS:

ARCHITECTURE ENGINEERING INTERIOR DESIGN DESIGN/BUILD ASTORINO

227 Fort Pitt Boulevard Pittsburgh Pennsylvania 15222
TEL 412 765 1700 FAX 412 765 1711 www.astorino.com

Drawing Title: **Partition Schedule and Details**

Approved: Project Director

Project Title: **VAMC Lebanon - Renovation of Laboratory B1**

Location: **Lebanon, PA**

Date: **02/23/2012** | Checked: **AB** | Drawn: **BY**

Project Number: **595-09-107**

Building Number:

Drawing Number: **A8-100**

Dwg. of

Office of Facilities Management

Department of Veterans Affairs

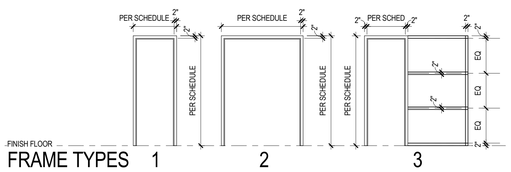
VA FORM 08-6231, OCT 1978

DOOR NOTES

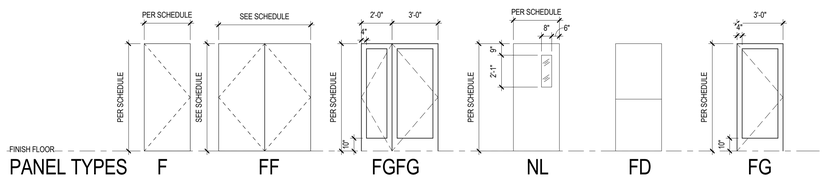
1. TYPICAL LOCATION OF INTERIOR DOORS FROM ADJACENT WALL TO BE 6" TO THE INSIDE FACE OF FRAME UNLESS NOTED OTHERWISE.

Door Schedule

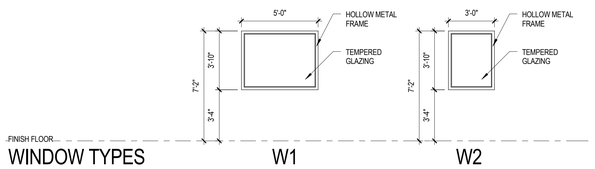
No.	Door Panel: Construction Type	Height	Thickness	Type	Material	Finish	Door Frame: FType	FMaterial	FFinish	Hardware Set	Head Detail	Jamb Detail	Fire Label	Remarks
B10	PR 3'-0"	7' - 0"	0' - 1 3/4"	NL	HM	PAINT	2	HM	PAINT	16	M	L	90	
B11	3'-0"	7' - 0"	0' - 1 3/4"	F	HM	PAINT	1	HM	PAINT	19	M	L	0	
B13	3'-0"	5' - 0"	0' - 1 3/4"	F	HM	PAINT	1	HM	PAINT	17	M	L	90	
B14	3'-0"	5' - 0"	0' - 1 3/4"	F	HM	PAINT	1	HM	PAINT	18	M	L	0	
B12	3'-0"	5' - 0"	0' - 1 3/4"	F	HM	PAINT	1	HM	PAINT	17	D	C	90	
G1	UPR 3'-0"/1'-6"	7' - 0"	0' - 1 3/4"	FF	WOOD	TRANS	2	HM	PAINT	1	B	A	90	
G11	UPR 3'-0"/1'-6"	7' - 0"	0' - 1 3/4"	FGFG	AL W/ GLAZ		2	ALUM		2	B	A	0	
G12	3'-0"	7' - 0"	0' - 1 3/4"	FG	AL W/ GLAZ		1	ALUM		3	B	A	0	
G13	UPR 3'-0"/1'-6"	7' - 0"	0' - 1 3/4"	FGFG	AL W/ GLAZ		2	ALUM		4	B	A	0	
G14	PR 3'-0"	7' - 0"	0' - 1 3/4"	FF	WOOD	TRANS	2	HM	PAINT	5	B	A	0	
G14B	3'-0"	7' - 0"	0' - 1 3/4"	F	WOOD	TRANS	1	HM	PAINT	8	B	A	0	
G15	PR 3'-0"	7' - 0"	0' - 1 3/4"	FF	WOOD	TRANS	2	HM	PAINT	5	B	A	0	
G15B	3'-0"	7' - 0"	0' - 1 3/4"	F	WOOD	TRANS	1	HM	PAINT	8	B	A	0	
G16A	3'-0"	7' - 0"	0' - 1 3/4"	FD	WOOD	TRANS	1	HM	PAINT	15	P	N	90	Dutch Door Style Door
G16B	UPR 3'-0"/1'-6"	7' - 0"	0' - 1 3/4"	FF	WOOD	TRANS	2	HM	PAINT	6	B	A	90	
G17	3'-0"	7' - 0"	0' - 1 3/4"	NL	WOOD	TRANS	1	HM	PAINT	14	B	A	90	
G18	3'-0"	7' - 0"	0' - 1 3/4"	F	WOOD	TRANS	1	HM	PAINT	8	B	A	0	
G19	3'-0"	7' - 0"	0' - 1 3/4"	F	WOOD	TRANS	1	HM	PAINT	11	B	A	0	
G20	3'-0"	7' - 0"	0' - 1 3/4"	F	WOOD	TRANS	3	HM	PAINT	10	B	A	0	
G21	3'-0"	7' - 0"	0' - 1 3/4"	F	WOOD	TRANS	1	HM	PAINT	9	B	A	0	
G22	3'-0"	7' - 0"	0' - 1 3/4"	F	WOOD	TRANS	1	HM	PAINT	9	B	A	0	
G23	UPR 3'-0"/1'-6"	7' - 0"	0' - 1 3/4"	FF	WOOD	TRANS	2	HM	PAINT	7	B	A	45	
G24	UPR 3'-0"/1'-6"	7' - 0"	0' - 1 3/4"	FF	WOOD	TRANS	2	HM	PAINT	1	B	A	90	
G25	3'-0"	7' - 0"	0' - 1 3/4"	NL	WOOD	TRANS	1	HM	PAINT	12	B	A	90	
G26	3'-0"	7' - 0"	0' - 1 3/4"	NL	WOOD	TRANS	1	HM	PAINT	12	B	A	90	
G27	UPR 3'-0"/1'-6"	7' - 0"	0' - 1 3/4"	FF	WOOD	TRANS	2	HM	PAINT	7	B	A	45	



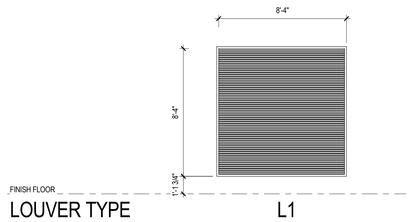
FRAME TYPES 1 2 3



PANEL TYPES F FLUSH | FF FLUSH | FGFG ALUM W/ GLAZ | NL VISION GLASS (RATED) | FD FLUSH DUTCH DOOR | FG FULL GLAZ



WINDOW TYPES W1 W2



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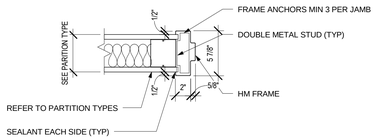

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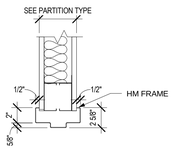

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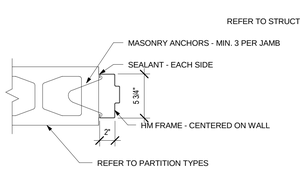

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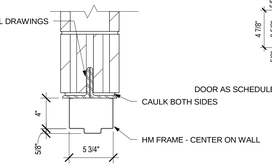

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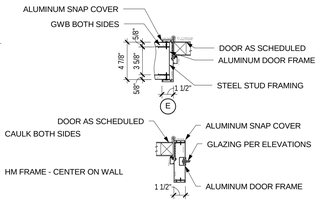

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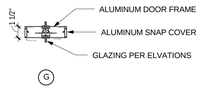

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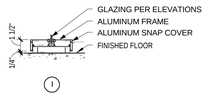

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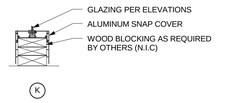

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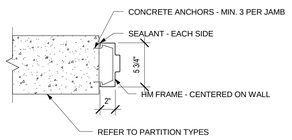

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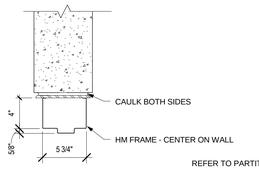

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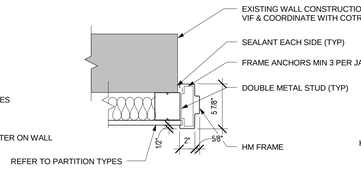

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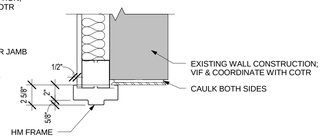

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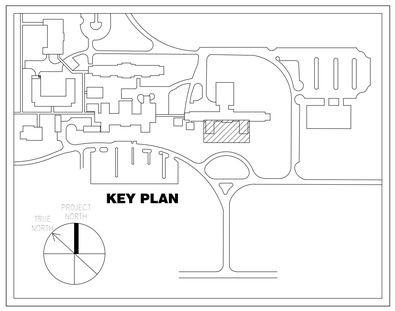


CONSTRUCTION DOCUMENT SUBMISSION

FULLY SPRINKLERED

Number	Description	Date
Revision Schedule		

CONSULTANTS:

ARCHITECT/ENGINEERS:

ARCHITECTURE ENGINEERING INTERIOR DESIGN DESIGN/BUILD

ASTORINO

227 Fort Pitt Boulevard Pittsburgh Pennsylvania 15222
TEL 412 765 1700 FAX 412 765 1711 www.astorino.com

Drawing Title: **Door and Window Schedule and Details**

Approved: Project Director

Project Title: **VAMC Lebanon - Renovation of Laboratory B1**

Location: **Lebanon, PA**

Date: **02/23/2012** | Checked: **AB** | Drawn: **BY**

Project Number: **595-09-107**

Building Number

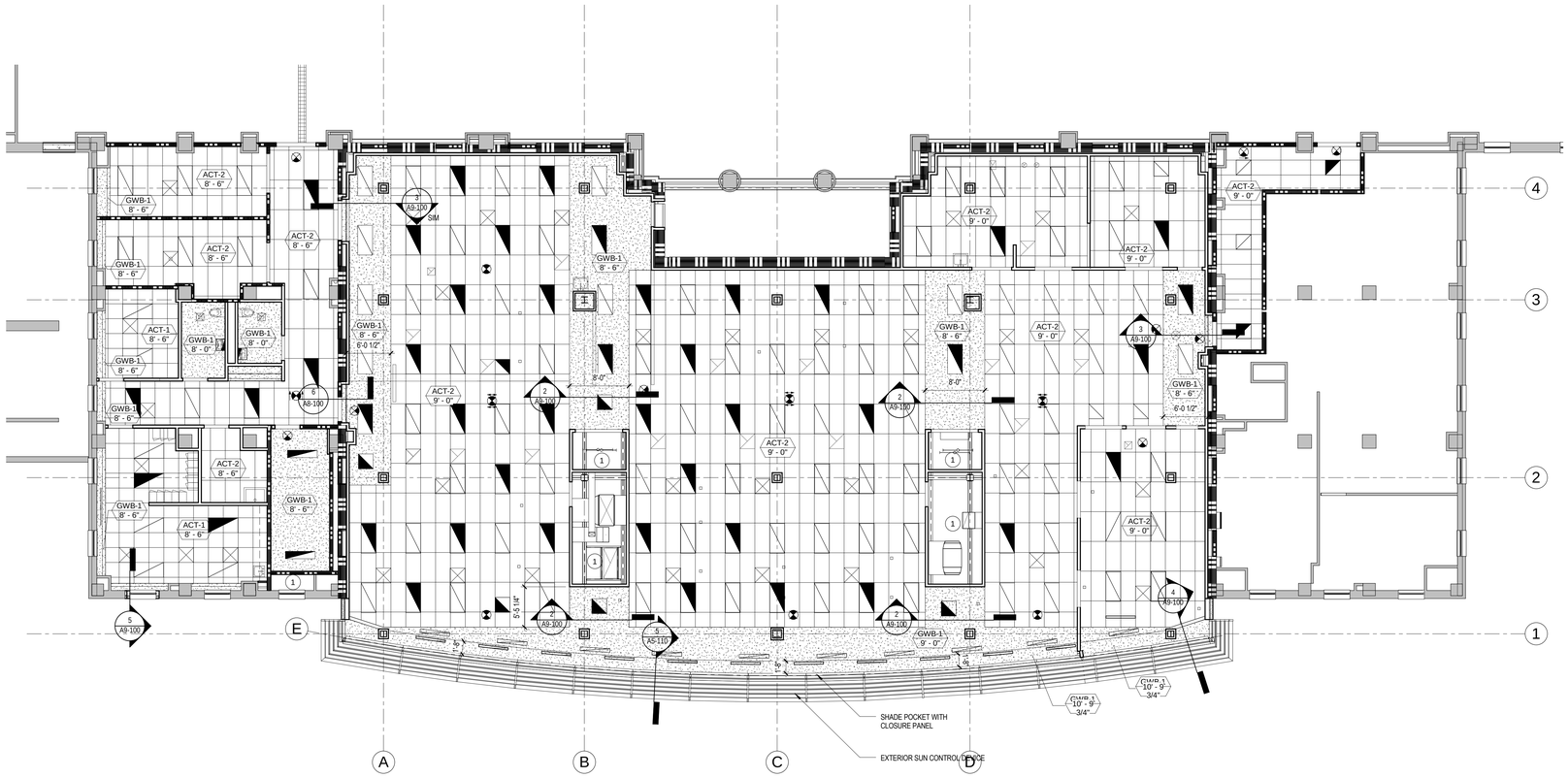
Drawing Number: **A8-101**

Dwg. of

Office of Facilities Management

Department of Veterans Affairs

VA FORM 08-6231, OCT 1978



1 A2 - Ground Floor RCP

1/8" = 1'-0"

RCP Notes

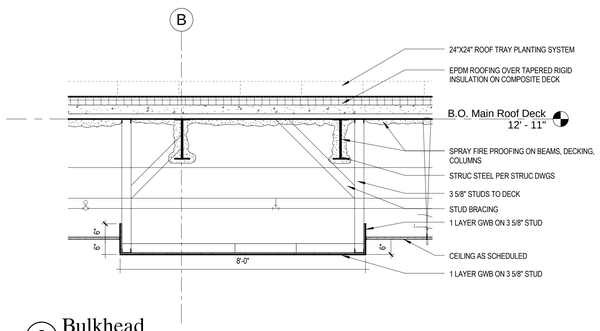
1. REFER TO SHEET G0-001 FOR ALL GENERAL NOTES, LEGENDS AND SYMBOLS .
2. REFER TO ELECTRICAL SHEETS FOR LIGHT FIXTURE TYPES.
3. REFER TO SPECIAL SYSTEMS DRAWINGS FOR COMMUNICATION & FIRE ALARM DEVICES.
4. CEILING HEIGHTS SHOWN ARE TO BOTTOM OF GRID SYSTEM OR GWB ABOVE FINISH FLOOR.
5. CEILING GRIDS ARE TO BE CENTERED AS SHOWN IN ROOM OR DEFINED BOUNDARY UNLESS DIMENSIONED OTHERWISE.
6. DOOR EXIT SIGNS SHALL BE LOCATED 1'-0" CLEAR FROM DOOR TO WHICH EGRESS IS INDICATED.

RCP Key Notes

1. NO CEILING SYSTEM IN THIS AREA, REFER TO MEP DRAWINGS FOR LAYOUT OF ALL LIGHTING, SPRINKLERS, HVAC, ETC. IN THIS AREA

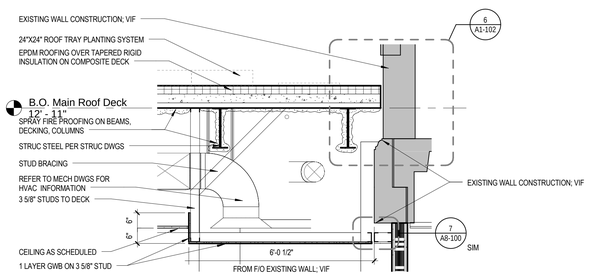
RCP Legend

- 2 x 4 Fluorescent Light
- 2 x 4 Fluorescent Light - Emergency
- 2 x 2 HVAC Diffuser
- 2 x 2 HVAC Supply
- Emergency Exit Sign
- Sprinkler Head



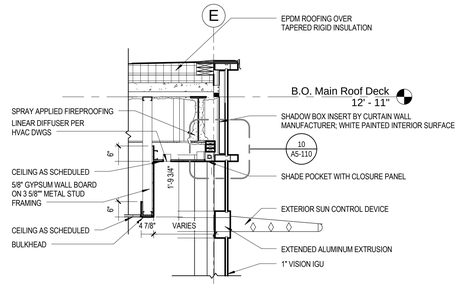
2 Bulkhead

1/2" = 1'-0"



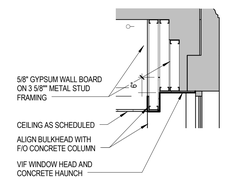
3 Bulkhead @ Exterior Wall

1/2" = 1'-0"



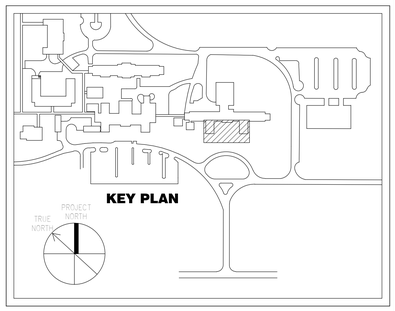
4 Detail - End Bulkhead

1/2" = 1'-0"



5 Detail - Ceiling Pocket @ Window

1/2" = 1'-0"



CONSTRUCTION DOCUMENT SUBMISSION

FULLY SPRINKLERED

Number	Description	Date
Revision Schedule		

CONSULTANTS:

ARCHITECT/ENGINEERS:

ARCHITECTURE ENGINEERING INTERIOR DESIGN DESIGN/BUILD

ASTORINO

227 Fort Pitt Boulevard Pittsburgh Pennsylvania 15222
TEL 412 765 1700 FAX 412 765 1711 www.astorino.com

Drawing Title: **Reflected Ceiling Plan**

Approved: Project Director

Project Title: **VAMC Lebanon - Renovation of Laboratory B1**

Location: **Lebanon, PA**

Date: **02/23/2012** | Checked: **AB** | Drawn: **BY**

Project Number: **595-09-107**

Building Number

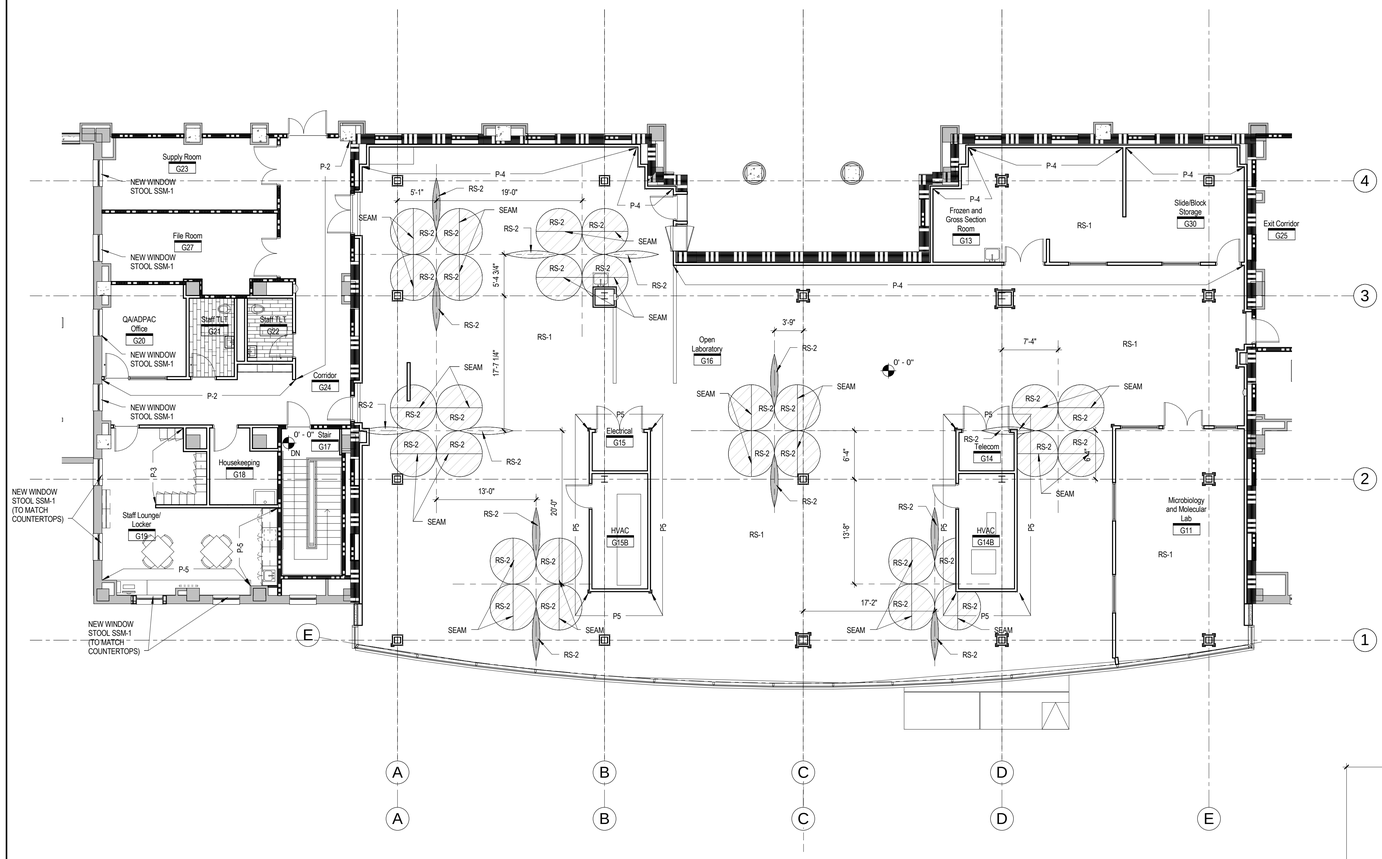
Drawing Number: **A9-100**

Dwg. of

Office of Facilities Management

Department of Veterans Affairs

VA FORM 08-6231, OCT 1978



1 Ground Floor Finish Plan
1/8" = 1'-0"

Room Finish Schedule									
Room No.	Room Name	Floor	Base	Walls North	Walls East	Walls South	Walls West	Ceiling	Remarks
Mechanical Basement									
B10	Mechanical Room	EPY	N/A	SC	SC	SC	SC	N/A	
B11	Areaway	SC	N/A	SC	SC	SC	SC	N/A	
B17	Stair	RS-5/RST	RB-1	P-2	P-2	P-2	P-2	GWB/P-1	
Ground Floor									
G11	Microbiology and Molecular Lab	RS-1	RS-1	P-1	P-1	P-1	P-1	ACT-2	
G13	Frozen and Gross Section Room	RS-1	RS-1	P-4	P-1	P-1	P-1	ACT-2	P4 on Open Lab side of partition
G14	Telecom	RS-1	RB-1	P-1	P-1	P-1	P-1	N/A	P5 on Open Lab side of partition
G14B	HVAC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	P5 on Open Lab side of partition
G15	Electrical	RS-1	RB-1	P-1	P-1	P-1	P-1	N/A	P5 on Open Lab side of partition
G15B	HVAC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	P5 on Open Lab side of partition
G16	Open Laboratory	RS-1, 2	RS-1	P-4	P-1	P-1	P-1	ACT-2/GWB	
G17	Stair	RS-5/RST	RB-1	P-2	P-2	P-2	P-2	GWB/P-1	
G18	Housekeeping	RS-4	RS-4	P-1	P-1	P-1	P-1	ACT-2	
G19	Staff Lounge/ Locker	RS-1	RB-1	P-3	P-3/P-5	P-3/P-5	P-3	ACT-1	SEE FINISH PLAN FOR PAINT; PL-2 ON WALL CABINETS, PL-1 ON BASE CABINETS, SSM-1 ON COUNTERS & WINDOW SILLS
G20	QA/ADPAC Office	CPT-1	RB-1	P-2	P-2	P-3	P-2	ACT-1	
G21	Staff TLT	PT-1	CT-1	CT-1, CT-2, GT-1/P-4	CT-1, CT-2, GT-1/P-4	CT-1, CT-2, GT-1/P-4	CT-1, CT-2, GT-1/P-4	GWB/P-1	
G22	Staff TLT	PT-1	CT-1	CT-1, CT-2, GT-1/P-4	CT-1, CT-2, GT-1/P-4	CT-1, CT-2, GT-1/P-4	CT-1, CT-2, GT-1/P-4	GWB/P-1	
G23	Supply Room	RS-4	RB-1	P-1	P-1	P-1	P-1	ACT-2	
G24	Corridor	RS-4	RB-1	P-2	P-4	P-4	P-2	ACT-2	
G25	Exit Corridor	RS-1	RB-1	P-1	P-1	P-1	P-1	ACT-1	
G27	File Room	RS-4	RB-1	P-1	P-1	P-1	P-1	ACT-1	
G30	Slide/Block Storage	RS-1	RS-1	P-4	P-1	P-1	P-1	ACT-2	

NOTES:
1. SEE SPECIFICATION SECTION 09 06 00 SCEDULE FOR FINISHES FOR MANUFACTURERS AND COLORS.
2. ALL CONCRETE FLOORS TO BE SEALED/PREPARED WITH MOISTURE VAPOR CONTROL MATERIAL. SEE SPECIFICATION SECTION 09 67 23.60.

Room Finish Legend

ACT-1	ACOUSTIC CEILING TILE
ACT-2	ACOUSTIC CEILING TILE
CPT-1	CARPET TILE
EPY	RESINOUS FLOORING
PT-1	PORCELAIN FLOOR TILE
CT-1	CERAMIC TILE
CT-2	CERAMIC TILE - BULLNOSE
GT-1	GLASS TILE
P-1	PAINT
P-2	PAINT
P-3	PAINT
P-4	PAINT
P-5	PAINT
RB-1	RUBBER BASE
RS-1	RUBBER SHEET
RS-2	RUBBER SHEET
RS-3	NOT USED
RS-4	RUBBER SHEET
RS-5	RUBBER TILE FLOORING
RST	RESILIENT STAIR TREAD
PL-1	PLASTIC LAMINATE
PL-2	PLASTIC LAMINATE
SSM-1	SOLID SURFACE MATERIAL
SC	SEALED CONCRETE/MASONRY

Toilet Accessory Schedule

MARK	DESCRIPTION	REMARKS
1	SOAP DISPENSER (DISPOSABLE)	VV
2	PAPER TOWEL DISPENSER (SURFACE MOUNTED)	VV
3A	GRAB BARS 36" LONG	CC
3B	GRAB BARS 42" LONG	CC
3C	GRAB BARS 18" LONG (VERTICAL)	CC
4	COAT HOOK	CC
5	TOILET PAPER DISPENSER (SURFACE MOUNTED)	CC
6	MIRROR W/ SS FRAME AND SHELF	CC

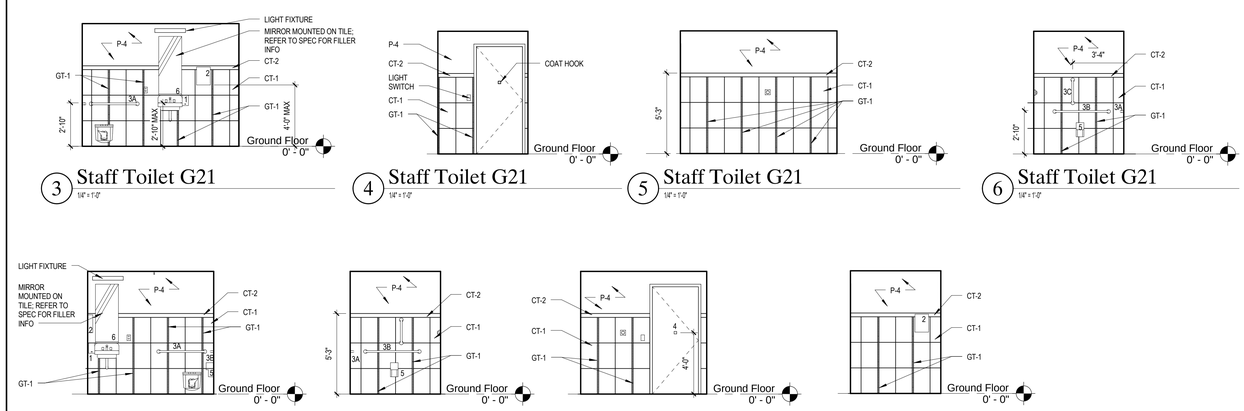
NOTE:
VV: VA FURNISHED & VA INSTALLED
VC: VA FURNISHED & CONTRACTOR INSTALLED
CC: CONTRACTOR FURNISHED & CONTRACTOR INSTALLED

CONTRACTOR TO PROVIDE BLOCKING FOR ALL WALL MOUNTED ITEMS.

Equipment Key Notes

MARK	DESCRIPTION	REMARKS
1	CLOCK	VC
2	GLOVE DISPENSER	VC
3	HAND SANITIZER DISPENSER	VC

NOTE:
CONTRACTOR TO PROVIDE BLOCKING FOR ALL WALL MOUNTED ITEMS.



3 Staff Toilet G21
1/4" = 1'-0"

4 Staff Toilet G21
1/4" = 1'-0"

5 Staff Toilet G21
1/4" = 1'-0"

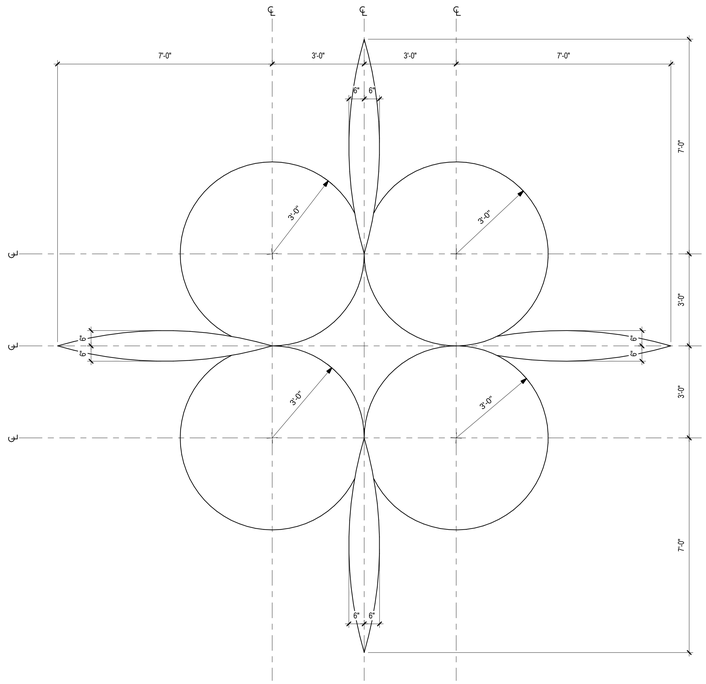
6 Staff Toilet G21
1/4" = 1'-0"

7 Staff Toilet G22
1/4" = 1'-0"

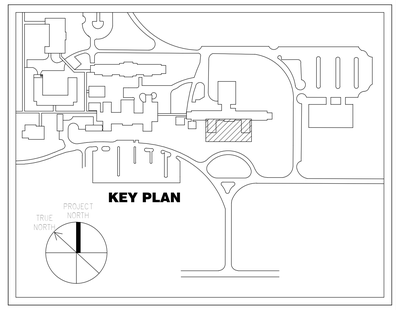
8 Staff Toilet G22
1/4" = 1'-0"

9 Staff Toilet G22
1/4" = 1'-0"

10 Staff Toilet G22
1/4" = 1'-0"



2 Composite Finish Detail
1/2" = 1'-0"



CONSTRUCTION DOCUMENT SUBMISSION

FULLY SPRINKLERED

Number	Description	Date
	Revision Schedule	

CONSULTANTS:

ARCHITECT/ENGINEERS:

ARCHITECTURE ENGINEERING INTERIOR DESIGN DESIGN/BUILD
ASTORINO
237 Fort Pitt Boulevard Pittsburgh Pennsylvania 15222
TEL 412 765 1700 FAX 412 765 1711 www.astorino.com

Drawing Title: **Finish Plan, Room Finish Schedule and Elevations**

Approved: Project Director

Project Title: **VAMC Lebanon - Renovation of Laboratory B1**

Location: **Lebanon, PA**

Date: **02/23/2012** | Checked: **AB** | Drawn: **BY**

Project Number: **595-09-107**

Building Number

Drawing Number: **A9-200**

Dwg. of

Office of Facilities Management

Department of Veterans Affairs

VA FORM 08-6231, OCT 1978

ABBREVIATIONS

AC	AIR CONDITIONING UNIT
ACC	AIR COOLED CONDENSER
ACCU	AIR COOLED CONDENSING UNIT
ACRCU	AIR COOLED RECIPROCATING CHILLER UNIT
ACU	ABSORPTION CHILLER UNIT
AD	ACCESS DOOR
AF	AFTER FILTER
AFCE	AIR FLOW CONTROL VALVE
AFM	AIR FLOW MEASURING DEVICE
AFW	AIR FOIL WHEEL
AHU	AIR HANDLING UNIT
AP	ACCESS PANEL
BIW	BACKWARD INCLINED WHEEL
BG	BOTTOM GRILLE (WALL TYPE)
BR	BOTTOM REGISTER (WALL TYPE)
C	CONVERTOR
CC	COOLING COIL
CCF	CENTRIFUGAL CEILING FAN
CCU	CENTRIFUGAL OR HELICAL ROTARY SCREW CHILLER UNIT
CD	CEILING DIFFUSER
CF	CENTRIFUGAL FAN
CG	CEILING GRILLE
CO	CLEAN OUT
COMP.	COMPRESSOR
CONV.	CONVECTOR
CP	CONDENSATE PUMP
CR	CEILING REGISTER
CU	CONDENSING UNIT
CUH	CABINET UNIT HEATER
CW	COLD WATER
D	AUTOMATIC DAMPER
Db	DRY BULB TEMPERATURE
dB	DECIBELS
DD	DISCHARGE DAMPERS
Dp	DEWPOINT TEMPERATURE
DX	DIRECT EXPANSION
E/A	EXHAUST AIR
EC	EVAPORATIVE CONDENSER
ECC	ENGINEERING CONTROL CENTER
EDH	ELECTRIC COIL DUCT HEATER
EER	ENERGY EFFICIENCY RATIO
EF	EXHAUST FAN
EGW	ETHYLENE GLYCOL-WATER SOLUTION (% GLYCOL BY VOLUME)
EMD	END OF MAIN DRIP (STEAM)
ERC	ENERGY RECOVERY COIL
ERP	ELECTRIC RADIANT CEILING PANEL
ET	EXPANSION TANK
EUH	ELECTRIC UNIT HEATER
EWC	EVAPORATIVE WATER COOLER
EX.	EXISTING
FC	FLEXIBLE CONNECTION
FCU	FAN COIL UNIT
FCW	FORWARD CURVED FAN
FLR.	FLOOR
F.DPR.	FIRE DAMPER
FS	FACTORY FABRICATED FAN SECTION
FTR	FIN TUBE RADIATION
GH	GRAVITY HOOD
HC	HEATING COIL
HD	HOOD
HE	AIR TO AIR HEAT EXCHANGER
HF	HEPA FILTER
HP	HORSEPOWER
HPR	HIGH PRESSURE STEAM CONDENSATE RETURN
HPS	HIGH PRESSURE STEAM
HRP	HYDRONIC RADIANT CEILING PANEL
HV	HEATING AND VENTILATING UNIT
ICF	IN-LINE CENTRIFUGAL FAN
IEF	INDUSTRIAL EXHAUST FAN
IFB	INTEGRAL FACE AND BYPASS
IU	INDUCTION UNIT
IV	INLET VANES
LCD	LINEAR CEILING DIFFUSER
LPR	LOW PRESSURE STEAM CONDENSATE RETURN
LPS	LOW PRESSURE STEAM
LTCP	LOCAL TEMPERATURE CONTROL PANEL
LBS/HR	POUNDS PER HOUR
MB	MIXING BOX
MER	MECHANICAL ROOM
MPR	MEDIUM PRESSURE STEAM CONDENSATE RETURN
MPS	MEDIUM PRESSURE STEAM
MAX.	MAXIMUM
MIN.	MINIMUM
NOM.	NOMINAL
O/A	OUTDOOR AIR
P	PUMP
PC	PUMPED CONDENSATE
PD	PRESSURE DROP
PEF	PROPELLER TYPE EXHAUST FAN
PF	PRE-FILTER
PFW	PUMPED FEED WATER
PGW	PROPYLENE GLYCOL-WATER SOLUTION
PH	PREHEAT
POD	POWER OPERATED, OPPOSED BLADE DAMPER
PPD	POWER OPERATED, PARALLEL BLADE DAMPER
PRV	PRESSURE REDUCING VALVE
R/A	RETURN AIR
RCU	RECIPROCATING CHILLER UNIT
RF	RETURN FAN
RH	REHEAT COIL
Rh	RELATIVE HUMIDITY
RV	POWER TYPE ROOF VENTILATOR
S/A	SUPPLY AIR
SA	SOUND ATTENUATING UNIT
SCD	SMOKE CONTROL DAMPER
SCR	SILICON CONTROLLED RECTIFIER
SD.	SMOKE DAMPER
Sp. Gr.	SPECIFIC GRAVITY
SH	STEAM HUMIDIFIER
SP	STATIC PRESSURE
SPS	STATIC PRESSURE SENSOR
TG	TOP GRILLE (WALL TYPE)
TR	TOP REGISTER (WALL TYPE)
TWU	THRU WALL UNIT
UC	UNIT COOLER
UH	UNIT HEATER
URV	UPBLAST POWER TYPE ROOF VENTILATOR
UV	UNIT VENTILATOR
V	VALVE
VAF	VANE AXIAL FAN
VCC	VOLUMETRIC CONTROL CENTER
VD	VOLUME DAMPER (MANUAL OPPOSED BLADE)
VE	VOLUME EXTRACTOR
VFD	VARIABLE FREQUENCY DRIVE
V1	VIBRATION ISOLATOR
VIV	VARIABLE INLET VANES
VP	VACUUM PUMP
VR	VACUUM STEAM CONDENSATE RETURN
VSMC	VARIABLE SPEED MOTOR CONTROLLER
Wb	WET BULB TEMPERATURE
WEF	WALL TYPE EXHAUST FAN
WF	WATER FILTER
WFMD	WATER FLOW MEASURING DEVICE
VP	VACUUM PUMP
VR	VACUUM STEAM CONDENSATE RETURN
VSMC	VARIABLE SPEED MOTOR CONTROLLER
Wb	WET BULB TEMPERATURE
WEF	WALL TYPE EXHAUST FAN
WF	WATER FILTER
WFMD	WATER FLOW MEASURING DEVICE

DRAWING SYMBOLS

2 — DETAIL NUMBER
H4 — DRAWING NUMBER WHERE DRAWN

A — SECTION LETTER
H7 — DRAWING NUMBER WHERE SHOWN

GENERAL NOTES

1. ALL PIPING AND DUCTS IN FINISHED ROOMS OR SPACES SHALL BE CONCEALED IN FURRED CHASES WITH ACCESS OR ABOVE SUSPENDED CEILINGS.
2. THE FIRST FIGURE OF DUCT SIZE INDICATES DIMENSION OF FACE SHOWN OR INDICATED.
3. ACCESS PANELS IN SUSPENDED CEILINGS ARE REQUIRED FOR ALL VALVES, TRAPS, DAMPERS, CLEANOUTS, CONTROLS, ETC. ACCESS PANELS SHALL BE FURNISHED AND INSTALLED UNDER THE ARCHITECTURAL SPECIFICATIONS.
4. TOTAL STATIC PRESSURE NOTED IN THE SCHEDULES INCLUDES DUCT SYSTEM, TERMINAL UNITS, FILTERS, COILS, ETC.
5. FOR TYPICAL STEAM, WATER AND REFRIGERANT PIPING CONNECTIONS TO EQUIPMENT SEE STANDARD EQUIPMENT DETAILS.
6. DIFFUSER, REGISTER AND GRILLE SIZES SHOWN ON FLOOR PLANS ARE NECK SIZES.
7. WATER PIPE CONNECTIONS TO AIR HEATING AND COOLING COILS SHALL BE MADE TO PROVIDE COUNTER FLOW BETWEEN WATER AND AIR.
8. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF CEILING DIFFUSERS, REGISTERS, AND GRILLES.

HEATING

HPS — HIGH PRESSURE STEAM (60 PSIG AND ABOVE)
HPR — HIGH PRESSURE STEAM CONDENSATE RETURN
LPS — LOW PRESSURE STEAM (15 PSIG AND BELOW)
LPR — LOW PRESSURE STEAM CONDENSATE RETURN
PC — CONDENSATE PUMP DISCHARGE
HWS — HOT WATER HEATING SUPPLY
HWR — HOT WATER HEATING RETURN
VENT LINE

AIR CONDITIONING

REFRIGERANT LIQUID
RS — REFRIGERANT SUCTION
CHWS — CHILLED WATER SUPPLY
CHWR — CHILLED WATER RETURN
MAKE-UP WATER
DRAIN LINE

VALVE SYMBOLS

SHUT-OFF VALVE
GLOBE VALVE
BALL VALVE WITH 3/4 " HOSE ADAPTER
CHECK VALVE
ANGLE GLOBE VALVE
BUTTERFLY VALVE
BALL VALVE
BALANCING VALVE
CIRCUIT SETTER
STRAIGHT-THRU MODULATING CONTROL VALVE
STRAIGHT-THRU TWO POSITION CONTROL VALVE
THREE-WAY MODULATING CONTROL VALVE
AUTOMATIC FLOW CONTROL VALVE
SAFETY OR PRESSURE RELIEF VALVE
PRESSURE REDUCING VALVE
MANUAL AIR VENT
TEST PLUG (PRESSURE/TEMPERATURE)

GENERAL SYMBOLS

DIRECTION OF PIPE PITCH (DOWN)
DIRECTION OF FLOW
PIPE ANCHOR
ALIGNMENT GUIDES
REDUCER OR INCREASER
ECCENTRIC REDUCER
TOP CONNECTION, 45°OR 90°
BOTTOM CONNECTION, 45°OR 90°
SIDE CONNECTION
CAPPED OUTLET
RISE OR DROP IN PIPE
UNION
ORIFICE UNION
POINT OF CONNECTION BETWEEN NEW AND EXISTING WORK
LIMIT OF DEMOLITION
BLAST THERMOSTATIC TRAP
INVERTED BUCKET TRAP SET INCLUDING PIPING ACCESSORIES
FLOAT & THERMOSTATIC TRAP SET INCLUDING PIPING ACCESSORIES
THERMOSTATIC TRAP
STRAINER
THERMOMETER
PRESSURE GAGE
WATER FLOW MEASURING DEVICE
EXISTING PIPE TO BE REMOVED
BACKFLOW PREVENTER
VACUUM BREAKER

PIPING SYMBOLS

15.OMBH — CONVECTOR OR RADIATOR (RECESSED) NUMBER INDICATES 1 MBH=THOUSAND BTUH.
15.OMBH — CONVECTOR OR RADIATOR (WALL HUNG) NUMBER INDICATES 1 MBH=THOUSAND BTUH.
A FCU — FLOOR MOUNTED VERTICAL RECESSED FAN COIL UNIT. LETTER INDICATES UNIT SIZE.
A FCU — FLOOR MOUNTED VERTICAL CABINET FAN COIL UNIT. LETTER INDICATES UNIT SIZE.
A TWU — THRU WALL AIR CONDITIONING UNIT. LETTER INDICATES UNIT SIZE.
A WU — WINDOW TYPE AIR CONDITIONING UNIT. LETTER INDICATES UNIT SIZE.
A HP — FLOOR MOUNTED CABINET WATER TO AIR REVERSE CYCLE HEAT PUMP. LETTER INDICATES UNIT SIZE.
AIR CURTAIN
UNIT HEATER (HORIZONTAL)
UNIT HEATER (VERTICAL)
2'x2' RADIANT CEILING PANEL
2'x4' RADIANT CEILING PANEL
BUILDING NO. WHERE EQUIPMENT IS LOCATED.
EQUIPMENT ABBREVIATION (SUPPLY FAN)
26-SF 3 — SUPPLY FAN NO.3 IN BUILDING NO.26
TYPICAL UNIT NO.
ITEM (TERMINAL UNIT SHOWN)
TU-G01 — ITEM NUMBER (TERMINAL UNIT NO.1)
FLOOR LOCATION (GROUND FLOOR)
VARIABLE VOLUME \ CONSTANT VOLUME TERMINAL UNIT WITH HEATING COIL. REFER TO SINGLE DUCT AIR TERMINAL UNIT SCHEDULE.

DUCTWORK SYMBOLS

DUCT WITH SOUND LINING
MANUAL VOLUME DAMPER
VD — FIRE DAMPER
BDD — BACK DRAFT DAMPER
S — SMOKE DAMPER
I — ISOLATION DAMPER
M.O.D. — MOTOR OPERATED DAMPER
S. DPR — N — SMOKE DAMPER
MANUAL SPLITTER DAMPER
A — AIR MEASURING STATION
FLEXIBLE ROUND DUCT

TERMINAL UNIT SYMBOLS

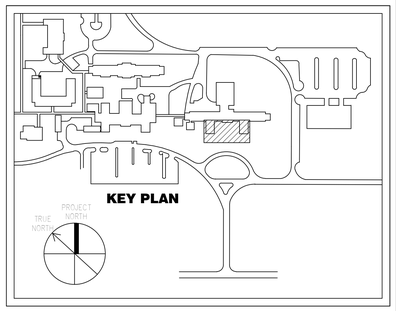
T H P — ROOM CONTROL: THERMOSTAT, HUMIDISTAT, PRESSURE SENSOR
T — REMOTE BULB THERMOSTAT
T — DUCT OR PIPE THERMOSTAT WITH AVERAGING ELEMENT. PROVIDE 12" [300mm] MIN. LENGTH IN DUCT WHEN SPACE PERMITS.
T — DUCT THERMOSTAT WITH AVERAGING ELEMENT
T H — ROOM SENSOR: TEMPERATURE, HUMIDITY
T — DUCT TEMPERATURE SENSOR
T WM — WALL MOUNTED TEMPERATURE SENSOR
T W — WIRELESS TEMPERATURE TRANSMITTER
H — DUCT HUMIDITY SENSOR
DP — DUCT DEW POINT SENSOR
SP — DUCT STATIC PRESSURE SENSOR
BSP — BUILDING STATIC PRESSURE SENSOR
T — DUCT TEMPERATURE SENSOR WITH AVERAGING ELEMENT
F S — SMOKE DETECTOR (SEE ELECTRICAL SPECIFICATIONS)
TEMPERATURE SENSING ELEMENT FOR TRANSMITTING TEMPERATURE TO INDICATOR ON LTCP. (PROVIDE 12 INCHES [205mm] MINIMUM LENGTH IN DUCT WHEN SPACE PERMITS.)
A — SENSOR WITH AVERAGING ELEMENT TO TRANSMIT TEMPERATURE TO LTCP
M — CONTROL AIR MAIN
EP — ELECTRO-PNEUMATIC (EP) SWITCH
C — HOLDING COIL IN MOTOR STARTER
R2 — RELAY COIL
R2-A — CONTACT, NORMALLY OPEN (N.O.)
R2-B — CONTACT, NORMALLY CLOSED (N.C.)
SWITCH
R — PILOT LIGHT (RED)
H1 N — CONTROL CIRCUIT CONNECTION

CONTROLS SYMBOLS

(#) X X X — (# OF DIFFUSERS) TYPE AMOUNT OF CFM EACH NECK SIZE
SUPPLY AIR REGISTER
RETURN / EXHAUST REGISTER
RETURN GRILLE - CEILING
EXHAUST GRILLE - CEILING
RETURN GRILLE - WALL
4 WAY SUPPLY DIFFUSER - CEILING
3 WAY SUPPLY DIFFUSER - CEILING
2 WAY SUPPLY DIFFUSER - CEILING
1 WAY SUPPLY DIFFUSER - CEILING
SUPPLY DUCT UP, OR TOWARD VIEWER
SUPPLY DUCT DOWN, OR AWAY FROM VIEWER
RETURN DUCT UP, OR TOWARD VIEWER
RETURN DUCT DOWN, OR AWAY FROM VIEWER
EXHAUST DUCT UP, OR TOWARD VIEWER
EXHAUST DUCT DOWN, OR AWAY FROM VIEWER

DUCTWORK SYMBOLS (cont)

2 1 — POINT OF CHANGE IN DUCT CONSTRUCTION BY STATIC PRESSURE CLASS. THE NUMBER ASSIGNS PRESSURE CLASS (IN. OF WATER) WHICH WILL ACCOMMODATE MAXIMUM OPERATING PRESSURE IN THE DUCT SUBSECTION. THE SYMBOL CONTINUES THE ASSIGNMENT UNTIL THE DUCT TERMINATES OR ANOTHER SYMBOL APPEARS. A "N" SUPERSCRIPT INDICATES NEGATIVE PRESSURE.
2 1 TU-G01
STAINLESS STEEL DUCT
45° SUPPLY — STANDARD BRANCH SUPPLY OR RETURN, NO SPLITTER (45°TAP)
45° RETURN
DUCT MOUNTED COIL (HOT WATER OR STEAM COIL)
DUCT MOUNTED COIL (ELECTRIC)
UP DN — SUPPLY DUCT
UP DN — RETURN DUCT
UP DN — EXHAUST DUCT
CEILING DIFFUSERS
SUPPLY TOP REGISTER OR GRILLE (WALL TYPE)
RETURN CEILING REGISTER OR GRILLE
EXHAUST CEILING REGISTER OR GRILLE
EXHAUST OR RETURN BOTTOM REGISTER OR GRILLE (WALL TYPE)
EXHAUST OR RETURN REGISTER OR TOP GRILLE (WALL TYPE)
VANED ELBOW & AIR SPLIT TYPE DUCT TAKE-OFF
CONNECT NEW DUCT TO EXISTING DUCT
R — INCLINED RISE, IN DIRECTION OF AIR FLOW
D — INCLINED DROP, IN DIRECTION OF AIR FLOW
LIMIT OF DEMOLITION
FC — FLEXIBLE CONNECTION
VANED ELBOW (PROVIDE ALL SQUARE OR RECTANGULAR ELBOWS WITH VANES EVEN IF SYMBOL IS MISSING)
STANDARD RADIUS ELBOW
10x8 — NEW DUCT (WIDTH x DEPTH)
EXISTING DUCT TO REMAIN
EXISTING DUCT TO BE REMOVED
LOUVER (LOUVER SPECIFIED IN ARCHITECTURAL SECTION.)
FLEXIBLE DUCTWORK



CONSTRUCTION DOCUMENT SUBMISSION

FULLY SPRINKLERED

Number	Description	Date
Revision Schedule		

CONSULTANTS:

COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL ENGINEER — ARTHUR A. BELL, JR. — 040876-R

ARCHITECT/ENGINEERS:

ARCHITECTURE ENGINEERING INTERIOR DESIGN DESIGN/BUILD

ASTORINO

227 Fort Pitt Boulevard Pittsburgh Pennsylvania 15222
TEL 412 765 1700 FAX 412 765 1711 WWW astorino.com

Drawing Title: **HVAC Symbols, Abbreviations, and Notes**

Approved: Project Director

Project Title: **VAMC Lebanon - Renovation of Laboratory B1**

Location

Date: 02/23/2012 | Checked: CWW | Drawn: RAN

Project Number: **595-09-107**

Building Number

Drawing Number: **MH1-001**

Dwg. of

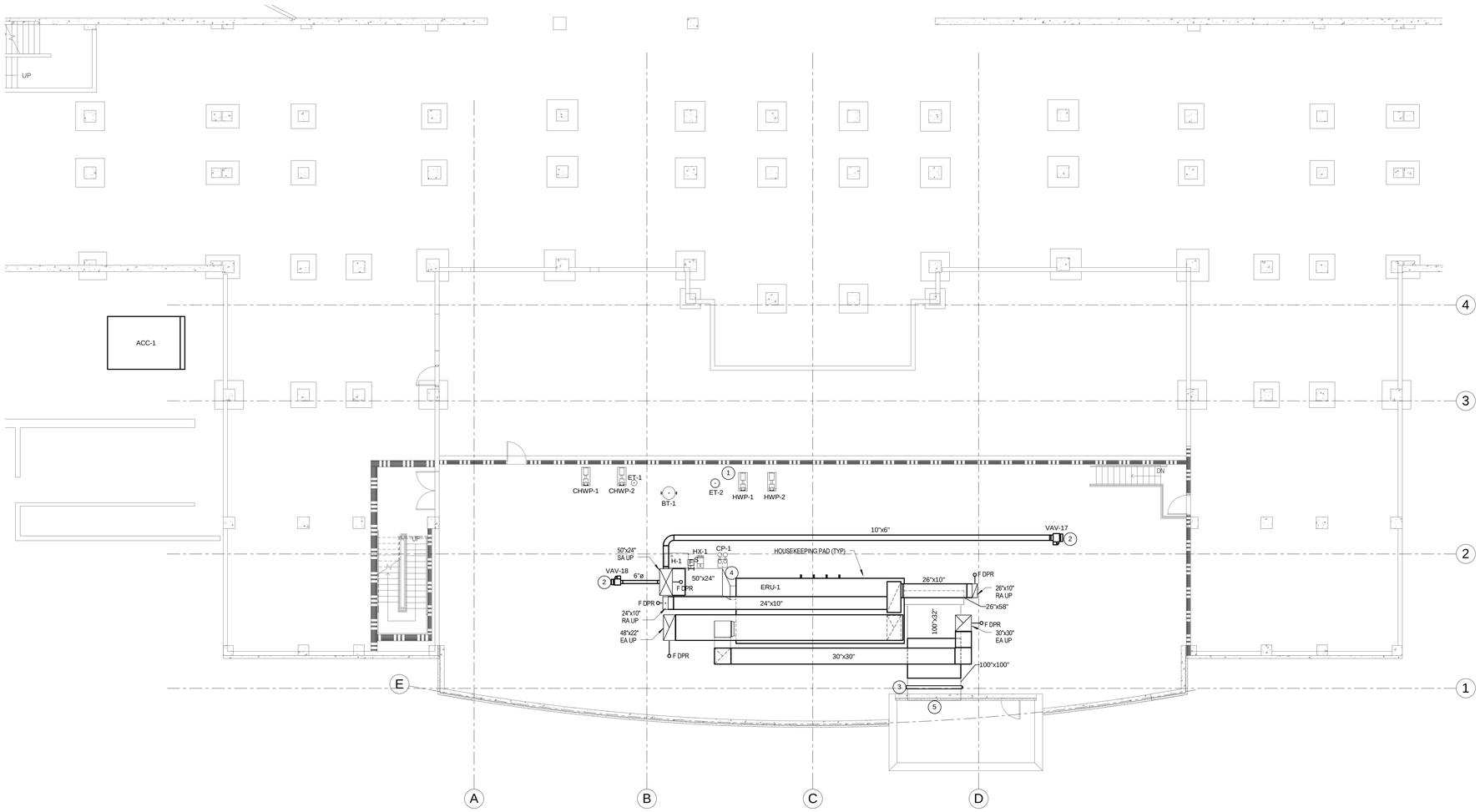
Office of Facilities Management

Department of Veterans Affairs

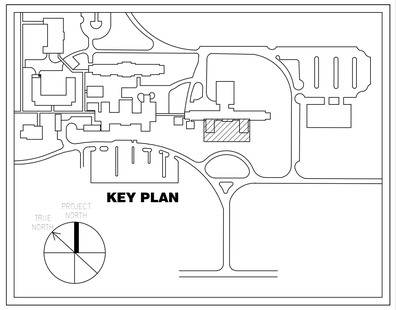
VA FORM 08-6231, OCT 1978

KEYNOTES

1. MOUNT BAS CONTROL PANEL ON WALL. COORDINATE EXACT LOCATION WITH ALL UTILITIES.
2. PROVIDE BIRDSCREEN ON VAV OUTLET.
3. INSTALL 2" FILTER RACK AND 2'-0"x2'-0" ACCESS DOOR BEHIND OUTSIDE AIR INTAKE LOUVER. FILTERS SHALL BE MERV 7 AT A MINIMUM.
4. SUPPLY DUCTWORK CONNECTION SHALL BE INSTALLED PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.
5. OA INTAKE LOUVER SHALL BE GREENHECK ESD-603 OR APPROVED EQUAL.



1 HVAC Ductwork Basement Plan
1/8" = 1'-0"



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	Revision Schedule	

CONSULTANTS:

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER ARTHUR A. BELL, JR. 040876-E

ARCHITECT/ENGINEERS:

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ASTORINO

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Drawing Title: **HVAC Ductwork Basement Plan**	Project Title: **VAMC Lebanon - Renovation of Laboratory B1**		Project Number: **595-09-107**
Approved: Project Director	Location		Building Number
	Date: **02/23/2012**	Checked: **CWW** / Drawn: **RAN**	Drawing Number: **MH1-101** Dwg. of

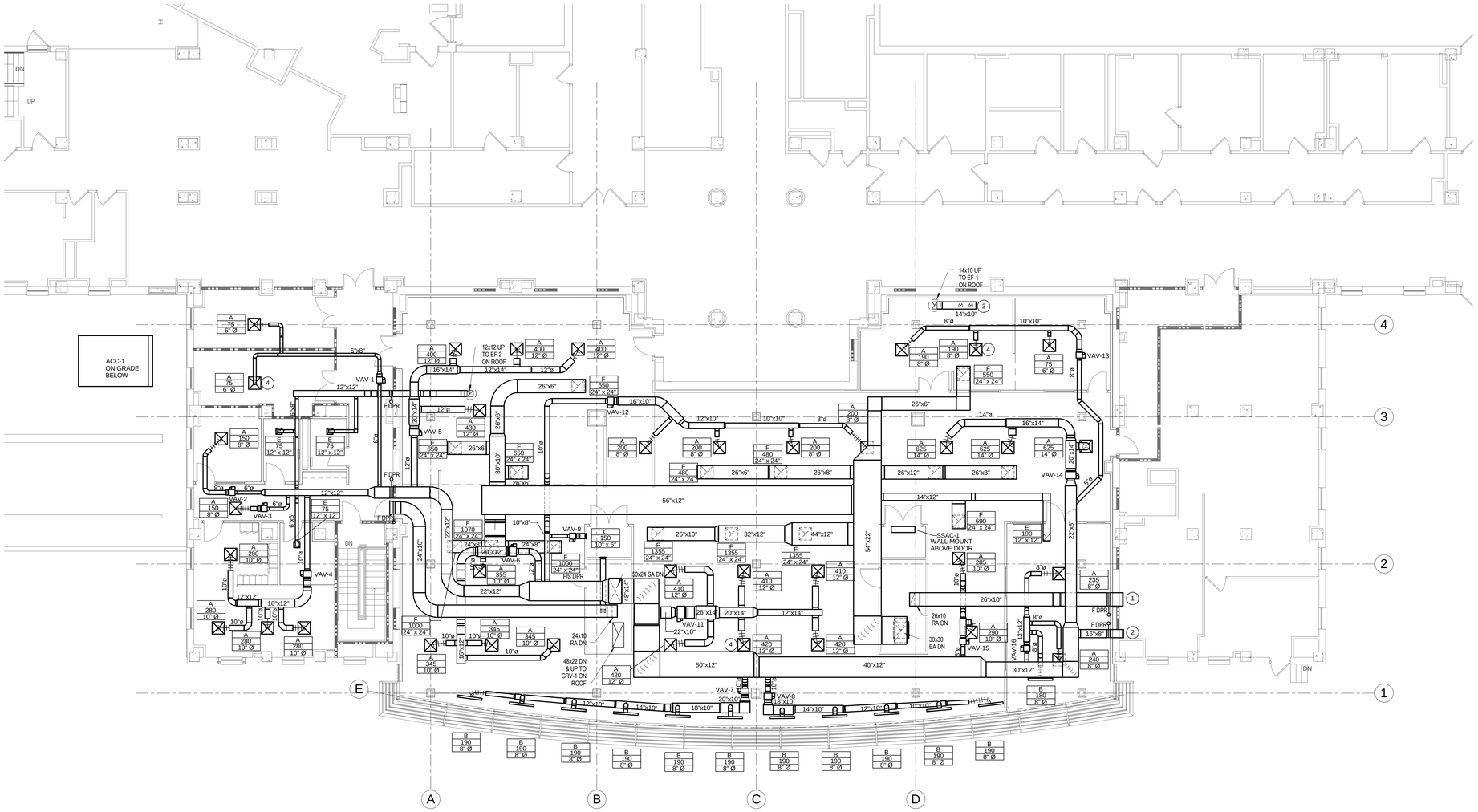
Office of Facilities Management

Department of Veterans Affairs

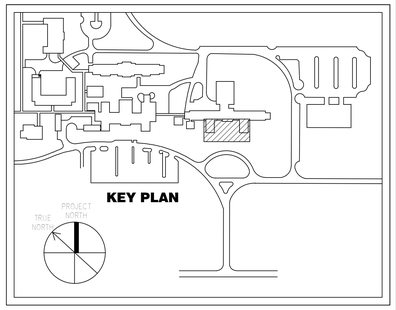
VA FORM 08-6231, OCT 1978

KEYNOTES

1. 26x10 RETURN DUCT FOR FUTURE CONNECTION, 1365 CFM.
2. 16x8 SUPPLY DUCT FOR FUTURE CONNECTION, 1365 CFM.
3. (2) 8" DIAMETER DUCT CONNECTIONS TO GROSSING STATION. TAP INTO 14x10 DUCT, UP TO EF-1.
4. ONLY LOCATE VAV BOX THERMOSTATS AFTER FINAL FURNITURE LOCATIONS HAVE BEEN APPROVED BY COTR. TYPICAL ALL VAV BOXES.



1 HVAC Ductwork Ground Floor Plan
1/8" = 1'-0"



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Number	Description	Date
	Revision Schedule	

CONSULTANTS:

COMMONWEALTH OF PENNSYLVANIA
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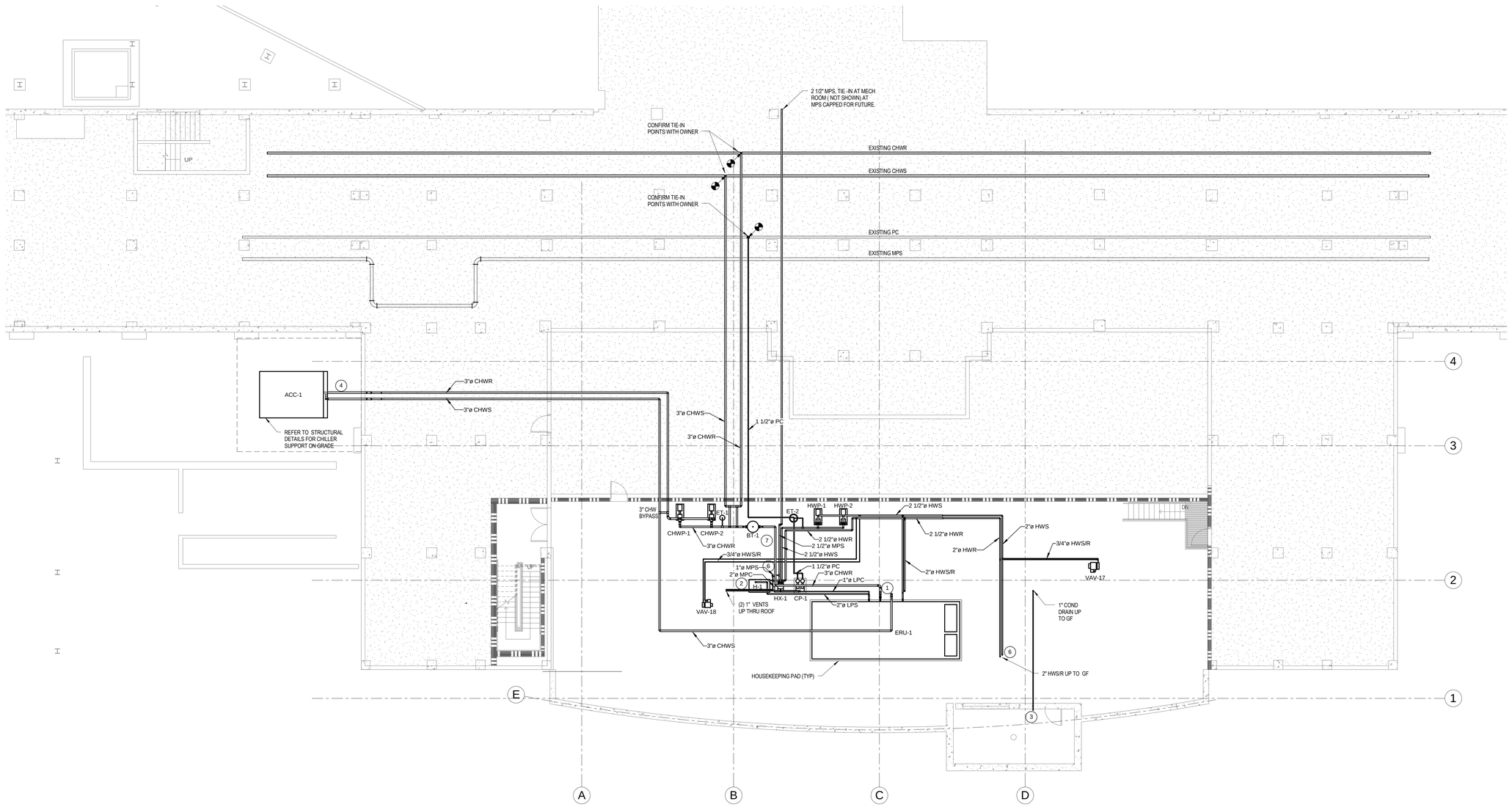
Drawing Title: **HVAC Ductwork Ground Floor Plan**	Project Title: **VAMC Lebanon - Renovation of Laboratory B1**	Project Number: **595-09-107**	**Office of Facilities Management**
Approved: Project Director	Location	Building Number	
	Date: **02/23/2012** / Checked: **CWW** / Drawn: **RAN**	Drawing Number: **MH1-102** Dwg. of	Department of Veterans Affairs

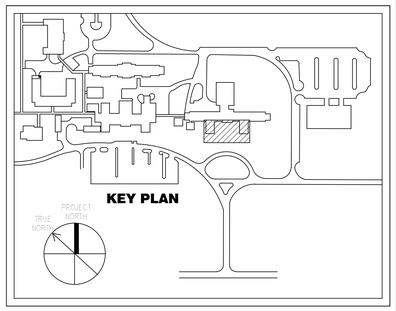
VA FORM 08-6231, OCT 1978



1 HVAC Piping Basement Plan
1/8" = 1'-0"

KEYNOTES

1. PROVIDE (2) 1" CONDENSATE DRAINS TO NEAREST FLOOR DRAIN.
2. CONNECT TO NEARBY DOMESTIC WATER LINE FOR SYSTEM FILL.
3. DROP CONDENSATE DRAIN ALONG AREAWAY WALL AND TERMINATE.
4. INSTALL ELECTRIC HEAT TRACE ON CHWS/R PIPING, SIZED PER MANUFACTURER'S RECOMMENDATION.
5. PROVIDE 3/4" DRAIN WITH BALL VALVE AND HOSE BIBB ADAPTER AT BASE OF HWS AND HWR RISERS.
6. INSTALL PRV BEFORE STEAM TO STEAM HUMIDIFIER PER DETAIL #3 ON MH7-103.
7. GO OVER FINAL EQUIPMENT LAYOUT WITH COTR. PRIOR TO INSTALLATION.



CONSTRUCTION DOCUMENT SUBMISSION

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Number	Description	Date
	Revision Schedule	

CONSULTANTS:

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER ARTHUR A. BELL, JR. 040876-R

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Drawing Title: **HVAC Piping Basement Plan**

Approved: Project Director

Project Title: **VAMC Lebanon - Renovation of Laboratory B1**

Location

Date: **02/23/2012** | Checked: **CWW** | Drawn: **RAN**

Project Number: **595-09-107**

Building Number

Drawing Number: **MH1-201**

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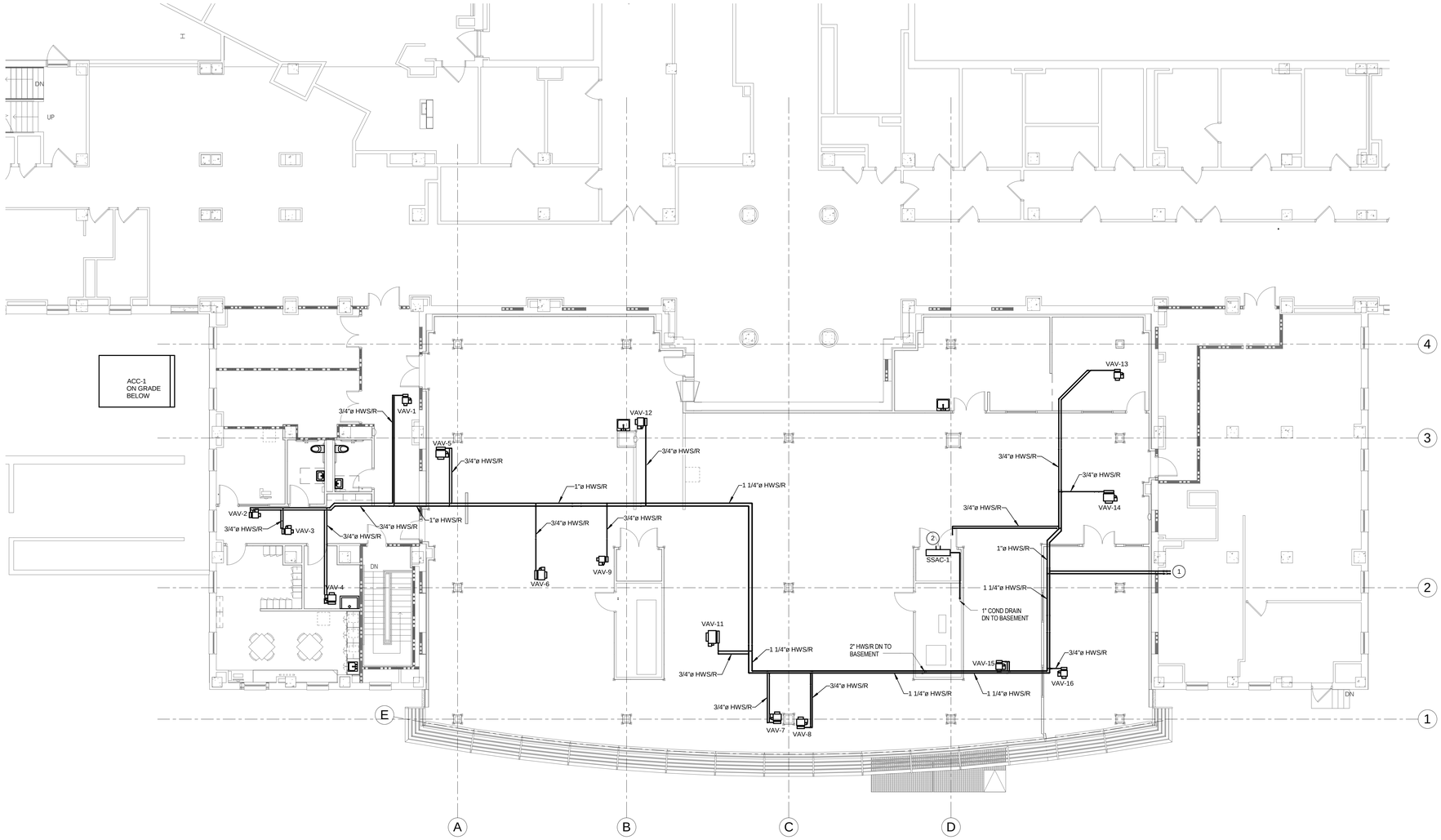
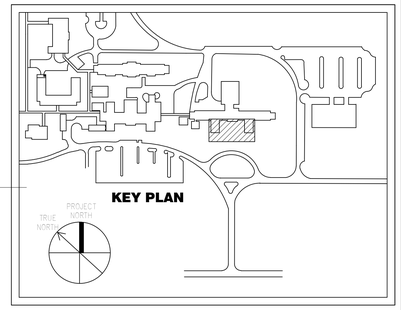
VA FORM 08-6231, OCT 1978

KEYNOTES

1. VALVE AND CAP 1" HWS/R LINE FOR FUTURE CONNECTION, 3.5 GPM.
2. REFRIGERANT LINES UP TO SSAC-1 CONDENSER ON ROOF ABOVE. SIZE PER MANUFACTURER'S RECOMMENDATIONS.



1 HVAC Piping Ground Floor Plan
1/8" = 1'-0"



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Revision Schedule		

CONSULTANTS:

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER ARTHUR A. BELL, JR. 040876-R

ARCHITECT/ENGINEERS:

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Drawing Title: **HVAC Piping Ground Floor Plan**

Approved: Project Director

Project Title: **VAMC Lebanon - Renovation of Laboratory B1**

Location

Date: **02/23/2012** | Checked: **CWW** | Drawn: **RAN**

Project Number: **595-09-107**

Building Number

Drawing Number: **MH1-202**

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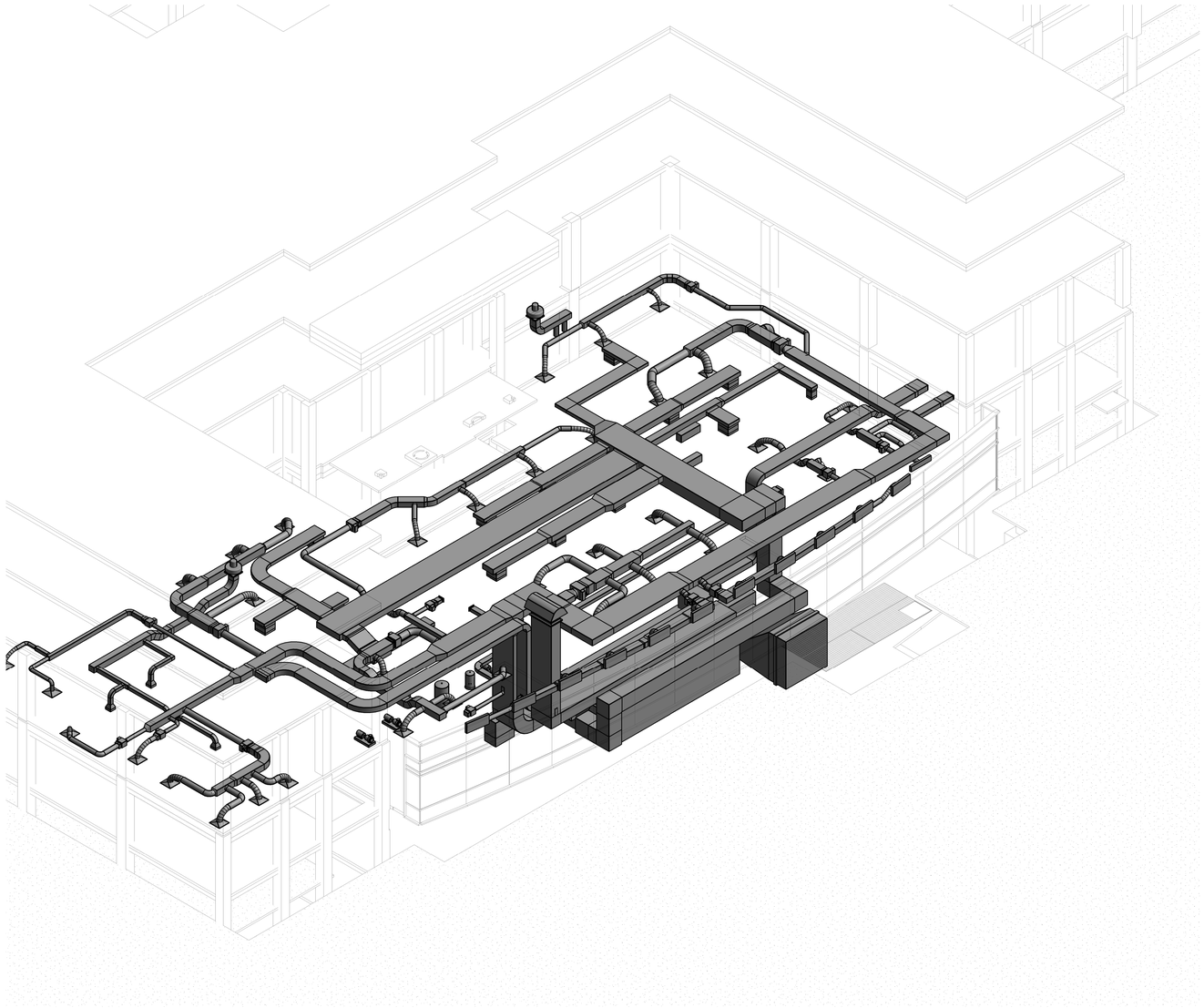

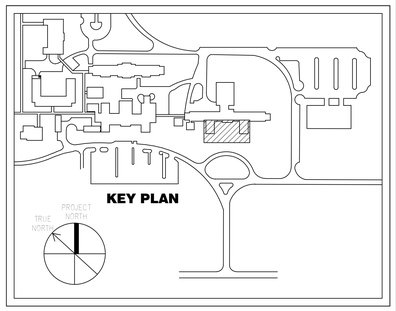

1 HVAC Isometric Ductwork Plan

CONSTRUCTION DOCUMENT SUBMISSION

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Number	Description	Date
Revision Schedule		

CONSULTANTS:

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
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ARCHITECT/ENGINEERS:

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INTERIOR DESIGN
DESIGN/BUILD

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Drawing Title: **HVAC Isometric Ductwork Plan**

Approved: Project Director

Project Title: **VAMC Lebanon - Renovation of Laboratory B1**

Location

Date: **02/23/2012** | Checked: **CWW** | Drawn: **RAN**

Project Number: **595-09-107**

Building Number

Drawing Number: **MH5-101**

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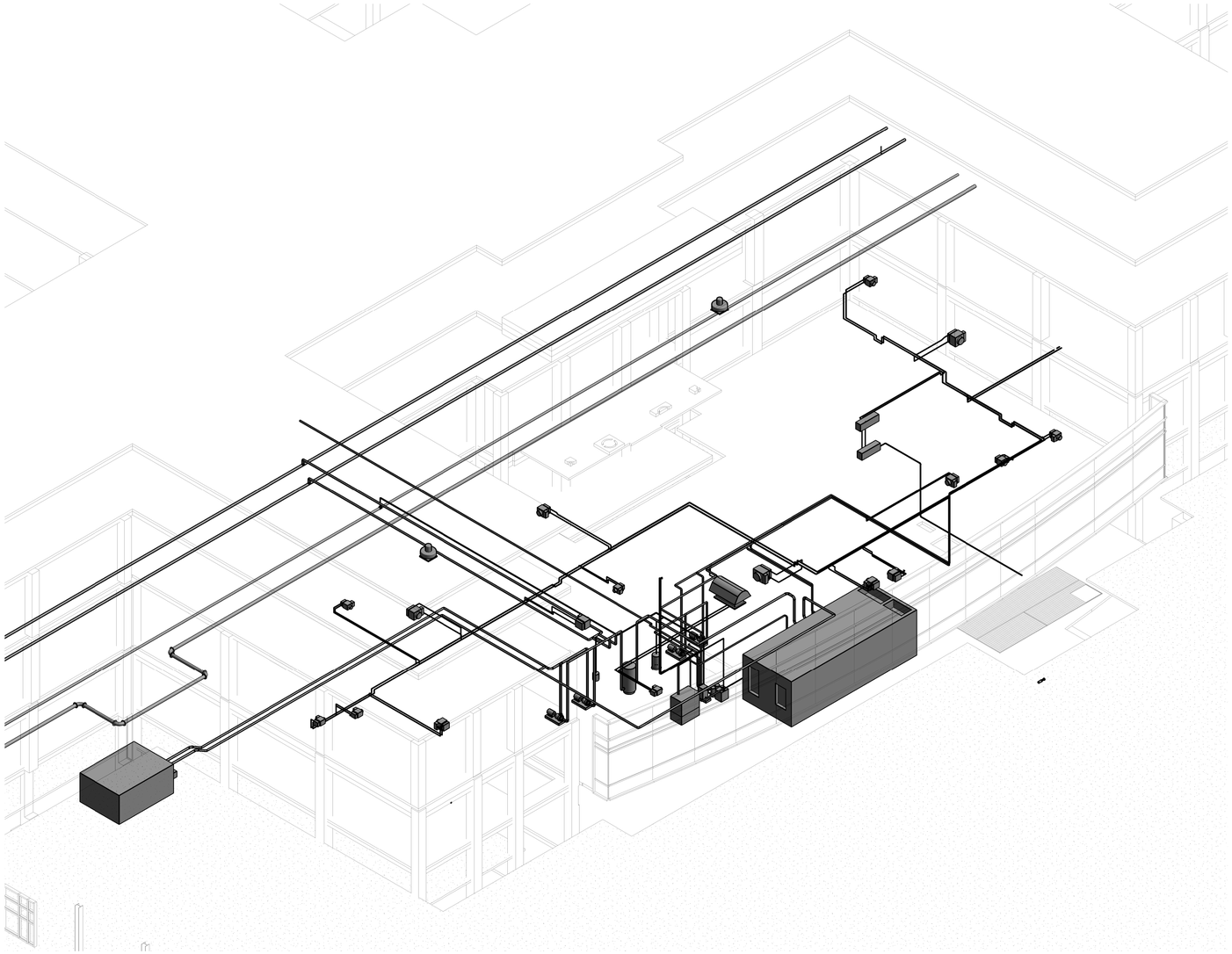
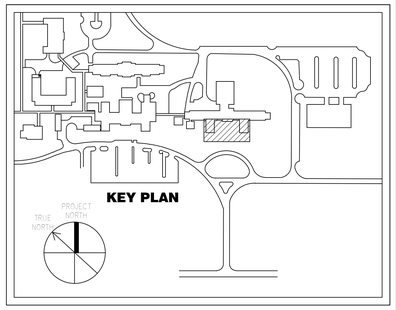


1 HVAC Isometric Piping Plan



CONSTRUCTION DOCUMENT SUBMISSION

FULLY SPRINKLERED

Number	Description	Date
Revision Schedule		

CONSULTANTS:

COMMONWEALTH OF PENNSYLVANIA
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ARTHUR A. BELL, JR.
ENGINEER
040876-R

ARCHITECT/ENGINEERS:

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INTERIOR DESIGN
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Drawing Title
HVAC Isometric Piping Plan

Approved: Project Director

Project Title
VAMC Lebanon - Renovation of Laboratory B1

Location

Date **02/23/2012** | Checked **CWW** | Drawn **RAN**

Project Number **595-09-107**

Building Number

Drawing Number **MH5-201**

Dwg. of

Office of Facilities Management

Department of Veterans Affairs

VA FORM 08-6231, OCT 1978

ENERGY RECOVERY UNIT SCHEDULE

		SUPPLY FAN					EXHAUST FAN					SUPPLY FILTERS				EXHAUST FILTERS				COOLING DATA											HEATING DATA							TOTAL ENERGY WHEEL				ELECTRICAL DATA							
MARK	SERVICE	AIRFLOW (CFM)	FAN TYPE	FAN RPM	ESP	MOTOR HP	AIRFLOW (CFM)	FAN TYPE	FAN RPM	ESP	Motor HP	TYPE	THICKNESS	EFFICIENCY	MAX AIR PD	TYPE	THICKNESS	EFFICIENCY	MAX AIR PD	TOT CAPACITY	SENS CAPACITY	CFM	EAT (DB)	EAT (WB)	LAT (DB)	LAT (WB)	ROWS	EWT	LWT	CHW FLOW RATE	MAX WATER PD (FT)	TOT CAPACITY	CFM	OA EAT (DB)	OA LAT (DB)	ROWS	HW FLOW RATE	MAX WATER PD (ft)	EFFICIENCY	MAX SA PD	MAX EA PD	HP	MCA	MOCP	VOLTAGE	PH	FREQ	APPROX. WEIGHT	MFR.	MODEL	COMMENTS
ERU-1	B1 LAB	18140	PLENUM	2227	4.00 in-wg	40 hp	13380	PLENUM	1715	2.50 in-wg	20 hp	PLEATED	4"	MERV 13	0.75 in-wg	PLEATED	4"	MERV 8	0.75 in-wg	620500 Btu/h	461200 Btu/h	16400	81 °F	66 °F	55 °F	54 °F	6	44 °F	54 °F	124 GPM	9.5	487000 Btu/h	16400	30 °F	57 °F	1	25 GPM	2.90	0.86	0.59 in-wg	0.94 in-wg	0.5	124 A	150 A	480 V	3	60 Hz	5000 lb	SEMCO	EPHC-18	1 2 3 4 5 6 7 8

1. HOUSEKEEPING PAD
2. DISCHARGE AIR TEMPERATURE TO BE 55 DEGREES YEAR ROUND
3. ECONOMIZER AT 100% O.A.
4. AIRFLOW MONITOR STATION AT O.A. INTAKE
5. MODULATING DAMPERS AT R.A. AND O.A. CONNECTIONS
6. VARIABLE FREQUENCY DRIVE
7. AVAILABLE ON EMERGENCY POWER
8. UV LIGHTS SHALL BE INSTALLED DIRECTLY UPSTREAM OF THE COOLING COIL

AIR COOLED CHILLER SCHEDULE

				EVAPORATOR DATA					CONDENSER DATA					COMPRESSOR				ELECTRICAL								
										EAT		FANS						POWER								
MARK	TYPE	NOMINAL CAPACITY (TONS)	NPLV	FLUID TYPE	FLOW	EWT	LWT	MAX WATER PD	CAPACITY	DB	WB	QTY	HP (EA)	QTY	KW (TOTAL)	REFRIG TYPE	MIN OA TEMP	MCA	MOCP	VOLTAGE	PH	FREQ	MAX SOUND POWER (dBa)	APPROX WEIGHT (lbs.)	MFR	MODEL	COMMENTS
ACC-1	AIR COOLED	60	14.7	WATER	124 GPM	54 °F	44 °F	9.00 ft H2O	676800 Btu/h	95 °F	79 °F	4	1 hp	2	60.4	410A	25 °F	130 A	150 A	480 V	3	60 Hz	70	3300	YORK	YCAL0056EE46	1

1. SUPPORT PAD. REFER TO STRUCTURAL PLANS

SPLIT SYSTEM AC UNIT SCHEDULE

		CONDENSER (OUTDOOR UNIT)							EVAPORATOR (INDOOR UNIT)													
				POWER								EAT		ELECTRICAL								
Mark	Service	MCA	MOCP	VOLTAGE	PH	FREQ	APPROX. WEIGHT (LBS)	EER	AIRFLOW (CFM)	TOT CAPACITY	SENS CAPACITY	(DB)	(WB)	MCA	VOLTAGE	PH	FREQ	APPROX. WEIGHT (LBS)	MFR	MODEL	COMMENTS
SSAC-1	TELECOM	14 A	15 A	208 V	1	60 Hz	150	19.2	500	17200 Btu/h	17200 Btu/h	80 °F	67 °F	1 A	208 V	1	60 Hz	25	MITSUBISHI	MUY-GE18NA (OUTDOOR); MSY-GE18NA (INDOOR)	1 2 3 4 5

1. SET THERMOSTAT HIGHER THAN VAV BOX THERMOSTAT
2. ROOF RAILS FOR OUTDOOR UNIT
3. UNIT SHALL BE CAPABLE OF LOW AMBIENT OPERATION
4. AVAILABLE ON EMERGENCY POWER
5. WALL MOUNTED EVAPORATOR, MOUNTED ABOVE DOOR

EXHAUST FAN SCHEDULE

								ELECTRICAL							
									POWER						
MARK	SERVICE	FAN TYPE	FAN DRIVE	AIRFLOW (CFM)	FAN RPM	ESP	MOTOR POWER	VOLTAGE	PH	FREQ	SOUND LEVEL (SONES)	APPROX WEIGHT (LB)	MFR	MODEL	COMMENTS
EF-1	GROSSING STATION	CENTRIFUGAL ROOF MTD	BELT	650	1876	2 in-wg	0.5 hp	120 V	1	60 Hz	18	100	GREENHECK	GB-141HP-5	1 2 3 4 5 6
EF-2	TOILET ROOMS	CENTRIFUGAL ROOF MTD	BELT	225	1657	0.75 in-wg	0.25 hp	120 V	1	60 Hz	10	100	GREENHECK	GB-071-4	1 2 3 4 5 6

1. ROOF CURB
2. BACKDRAFT DAMPER
3. INTERLOCK WITH BAS
4. COMBINATION STARTER / DISCONNECT
5. INTERLOCK WITH BAS
6. AVAILABLE ON EMERGENCY POWER

STEAM TO STEAM HUMIDIFIER SCHEDULE

		PRESSURE STEAM		STEAM TO HUMIDIFIER		STEAM DISTRIBUTION					POWER						
MARK	SERVICE	INLET PRESSURE	CAPACITY (LB/HR)	DISCHARGE PRESSURE	NET CAPACITY (LB/HR)	AIRFLOW (CFM)	MAX ABSORPTION DIST	HEIGHT	WIDTH	HEADER DISTANCE	ELECTRICAL LOAD	VOLTAGE	PH	FREQ	MFR	MODEL	COMMENTS
H-1	ERU-1	15 psi	250	12 psi	125	16400	0' - 8"	66"	58"	0' - 6"	0.65 kW	120 V	1	60 Hz	NORTEC	SETC-250 / SAM-E	1 2 3

1. PROVIDE HUMIDIFIER WITHIN ENERGY RECOVERY UNIT INCLUDING ALL ASSOCIATED ACCESSORIES DETAILED ON DETAIL 3 ON MH7-103.
2. PROVIDE STEAM TO STEAM HUMIDIFIER INCLUDING STANDS TO ALLOW GRAVITY DRAINING TO CONDENSATE RECEIVER
3. PRESSURE REDUCING VALVE (PRV) SHALL BE SIZED TO PROVIDE MAX 15PSI STEAM TO UNIT.

GRAVITY RELIEF VENTILATOR SCHEDULE

			THROAT SIZE		HOOD SIZE				
MARK	AIRFLOW (CFM)	MAX AIR PD	LENGTH	WIDTH	LENGTH	WIDTH	HEIGHT	MFR	MODEL	COMMENTS
GRV-1	13080	0.60 in-wg	46"	22"	64"	40"	19"	GREENHECK	FGR	1 2 3

1. ROOF CURB
2. BIRDSCREEN
3. BACKDRAFT DAMPER

BUFFER TANK SCHEDULE

MARK	SERVICE	TYPE	TANK VOLUME	MAX OPERATING PRESSURE	APPROX WEIGHT	MFR	MODEL	COMMENTS
BT-1	CHW	FLOOR MTD.	120 gal	125 psi	450 lb	WESSELS	CBT-120	1 2

1. FLOOR MOUNTED
2. AIR SEPARATOR WITH DCW INLET

STEAM POWERED CONDENSATE PUMP AND RECEIVER SCHEDULE

	RECEIVER		PUMP DATA						
MARK	STORAGE	SUCTION SIZE	MOTIVE STEAM (psi)	CAPACITY (lb/hr)	HEAD	DISCHARGE SIZE	MFR	MODEL	COMMENTS
CP-1	8.0 gal	2"	50	1400	40.00 ft H2O	1"	SPIRAX SARCO	PPEC-1B	1

1. HOUSEKEEPING PAD

PLATE & FRAME HEAT EXCHANGER SCHEDULE

			STEAM SIDE		HOT WATER SIDE						
MARK	SERVICE	CAPACITY	INLET PRESSURE	FLOW RATE (LB/HR)	EWT	LWT	FLOW RATE	MAX WATER PD	MFR	MODEL	COMMENTS
HX-1	HOT WATER	792500 Btu/h	50 psi	870.42	150 °F	180 °F	54 GPM	16.4 ft H2O	B & G	GPX-P7	1

1. MOUNT ON FLOOR STAND HIGH ENOUGH TO ALLOW CONDENSATE TO FLOW BY GRAVITY TO PUMP CP-1.

PUMP SCHEDULE

											ELECTRICAL						
MARK	SERVICE	TYPE	FLUID TYPE	FLOW	HEAD (FT)	MINIMUM EFFICIENCY	SUCTION SIZE	DISCHARGE SIZE	MOTOR POWER	MOTOR RPM	VOLTAGE	PH	FREQ	MFR	MODEL	COMMENTS
HWP-1	HOT WATER	BASE MOUNTED	WATER	54 GPM	30	55%	2"	1 1/2"	1.5 hp	1750	460 V	3	60 Hz	B & G	1510 1-1/2 BC	1 2 3 4
HWP-2	HOT WATER	BASE MOUNTED	WATER	54 GPM	30	55%	2"	1 1/2"	1.5 hp	1750	460 V	3	60 Hz	B & G	1510 1-1/2 BC	1 2 3 4
CHWP-1	CHILLED WATER	BASE MOUNTED	WATER	124 GPM	60	66%	2 1/2"	2"	5.0 hp	1750	480 V	3	60 Hz	B & G	1510 2BC	1 2 3 4
CHWP-2	CHILLED WATER	BASE MOUNTED	WATER	124 GPM	60	66%	2 1/2"	2"	5.0 hp	1750	460 V	3	60 Hz	B & G	1510 2BC	1 2 3 4

1. VARIABLE FREQUENCY DRIVE
2. 1 PUMP STAND-BY. ROTATE PUMPS WEEKLY
3. HOUSEKEEPING PAD
4. (1) PUMP OF EACH PAIR SHALL BE AVAILABLE ON EMERGENCY POWER

VARIABLE AIR VOLUME BOX SCHEDULE

											POWER				
MARK	INTAKE SIZE	STATIC PRESSURE	MAX AIRFLOW (CFM)	HEATING AIRFLOW (CFM)	HEATING CAPACITY	EAT	LAT	FLOW	MAX WATER PD	EWT	LWT	VOLTAGE	PH	FREQ	COMMENTS
VAV-1	6"	0.01 in-wg	150	130	4610.0 Btu/h	55 °F	91 °F	0.5 GPM	2.00 ft H2O	180 °F	160 °F	120 V	1	60 Hz	1 2 3
VAV-2	6"	0.01 in-wg	150	130	3910.0 Btu/h	55 °F	91 °F	0.5 GPM	2.00 ft H2O	180 °F	160 °F	120 V	1	60 Hz	1 2 3 4
VAV-3	6"	0.01 in-wg	150	130	4210.0 Btu/h	55 °F	91 °F	0.5 GPM	2.00 ft H2O	180 °F	160 °F	120 V	1	60 Hz	1 2 3
VAV-4	10"	0.01 in-wg	1120	350	14750.0 Btu/h	55 °F	95 °F	1.5 GPM	2.00 ft H2O	180 °F	160 °F	120 V	1	60 Hz	1 2 3
VAV-5	12"	0.01 in-wg	1630	630	24810.0 Btu/h	55 °F	91 °F	2.5 GPM	2.00 ft H2O	180 °F	160 °F	120 V	1	60 Hz	1 2 3
VAV-6	12"	0.01 in-wg	1390	350	14950.0 Btu/h	55 °F	94 °F	1.5 GPM	2.00 ft H2O	180 °F	160 °F	120 V	1	60 Hz	1 2 3
VAV-7	10"	0.01 in-wg	1165	500	19100.0 Btu/h	55 °F	92 °F	2.0 GPM	2.00 ft H2O	180 °F	160 °F	120 V	1	60 Hz	1 2 3
VAV-8	10"	0.01 in-wg	885	390	14830.0 Btu/h	55 °F	91 °F	1.5 GPM	2.00 ft H2O	180 °F	160 °F	120 V	1	60 Hz	1 2 3
VAV-9	6"	0.01 in-wg	150	130	3910.0 Btu/h	55 °F	91 °F	0.5 GPM	2.00 ft H2O	180 °F	160 °F	120 V	1	60 Hz	1 2 3
VAV-11	16"	0.01 in-wg	2500	720	29940.0 Btu/h	55 °F	94 °F	3.0 GPM	2.00 ft H2O	180 °F	160 °F	120 V	1	60 Hz	1 2 3
VAV-12	10"	0.01 in-wg	800	370	13890.0 Btu/h	55 °F	93 °F	1.5 GPM	2.00 ft H2O	180 °F	160 °F	120 V	1	60 Hz	1 2 3
VAV-13	8"	0.01 in-wg	455	260	9220.0 Btu/h	55 °F	91 °F	1.0 GPM	2.00 ft H2O	180 °F	160 °F	120 V	1	60 Hz	1 2 3
VAV-14	14"	0.01 in-wg	1875	590	24930.0 Btu/h	55 °F	94 °F	2.5 GPM	2.00 ft H2O	180 °F	160 °F	120 V	1	60 Hz	1 2 3 4
VAV-15	8"	0.01 in-wg	575	250	9550.0 Btu/h	55 °F	92 °F	1.0 GPM	2.00 ft H2O	180 °F	160 °F	120 V	1	60 Hz	1 2 3
VAV-16	8"	0.01 in-wg	655	250	9950.0 Btu/h	55 °F	92 °F	1.0 GPM	2.00 ft H2O	180 °F	160 °F	120 V	1	60 Hz	1 2 3
VAV-17	10"	0.01 in-wg	785	380	14060.0 Btu/h	55 °F	91 °F	1.5 GPM	2.00 ft H2O	180 °F	160 °F	120 V	1	60 Hz	1 2 3
VAV-18	6"	0.01 in-wg	420	260	9020.0 Btu/h	55 °F	91 °F	1.0 GPM	2.00 ft H2O	180 °F	160 °F	120 V	1	60 Hz	1 2 3
															1 2 3

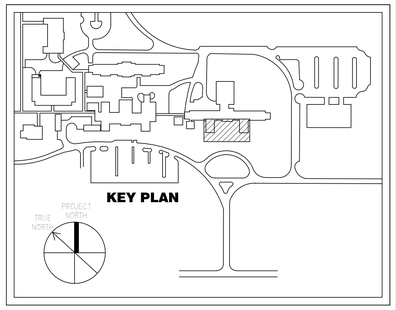
1. 24V TRANSFORMER
2. OVERSIZE CONTROL VALVE TO PROVIDE HIGHER LAT UP TO 110 DEGREE
3. AVAILABLE ON EMERGENCY POWER
4. UNIT SHALL BE CONTROLLED VIA 3-WAY CONTROL VALVE

GRILLES, REGISTERS, DIFFUSERS SCHEDULE

TYPE MARK	SYSTEM	FACE SIZE	MATERIAL	TYPE COMMENTS	MFR	MODEL	COMMENTS
A	SUPPLY	24x24	ALUMINUM	NECK SIZE VARIES	TITUS	TDV-AA	
B	SUPPLY	4'x4'	ALUMINUM	2 SLOT, 4" LENGTH, 1" SLOT WIDTH, 4" WIDE	TITUS	TBDH-30	
C	SUPPLY AND RETURN	VARIES	ALUMINUM	SIDEWALL GRILLES	TITUS	300 FL	
E	EXHAUST	12x12	ALUMINUM	1/2" BLADE SPACING, 35 DEG DEFLECTION	TITUS	355 FL	
F	EXHAUST	24x24	ALUMINUM	1/2" BLADE SPACING, 35 DEG DEFLECTION	TITUS	355 FL	

EXPANSION TANK SCHEDULE

MARK	SERVICE	TYPE	TANK VOLUME (GAL)	ACCEPTANCE (GAL)	RELIEF VALVE (psi)	MAX OPERATING PRESSURE (psi)	MFR	MODEL	COMMENTS
ET-1	CHW	DIAPHRAGM	4.40	2.5	75	100	B & G	HFT-30	
ET-2	HW	DIAPHRAGM	14.00	11.3	75	100	B & G	HFT-30V	



CONSTRUCTION DOCUMENT SUBMISSION

FULLY SPRINKLERED

Number	Description	Date
Revision Schedule		

CONSULTANTS:

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER ARTHUR A. BELL, JR. 040676-R

ARCHITECT/ENGINEERS:

ARCHITECTURE ENGINEERING INTERIOR DESIGN DESIGN/BUILD

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Drawing Title: **HVAC Equipment Schedules**

Approved: Project Director

Project Title: **VAMC Lebanon - Renovation of Laboratory B1**

Location

Date: 02/23/2012 | Checked: CWW | Drawn: RAN

Project Number: **595-09-107**

Building Number

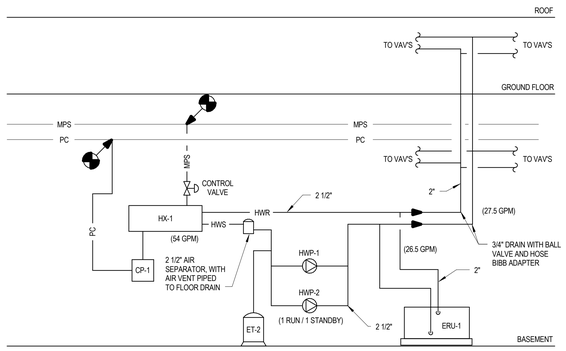
Drawing Number: **MH6-101**

Dwg. of

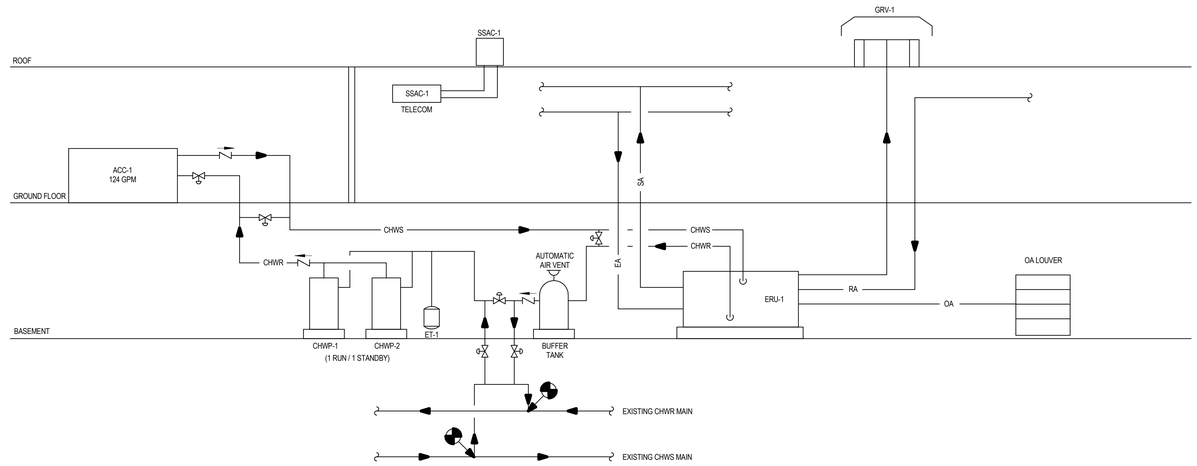
Office of Facilities Management

Department of Veterans Affairs

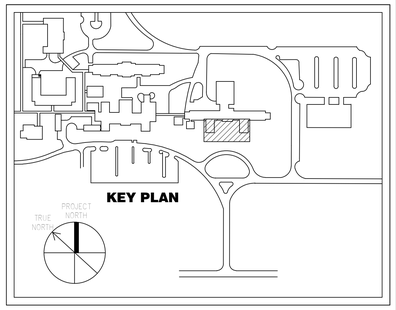
VA FORM 08-6231, OCT 1978



1 Hot Water Flow Diagram
NTS



2 Chilled Water / Airside Riser Diagram
NTS



CONSTRUCTION DOCUMENT SUBMISSION

FULLY SPRINKLERED

Number	Description	Date
	Revision Schedule	

CONSULTANTS:

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ARTHUR A. BELL JR. ENGINEER 040876-R

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ARCHITECTURE ENGINEERING INTERIOR DESIGN DESIGN/BUILD

ASTORINO

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Drawing Title
HVAC Riser Diagrams & Details

Approved: Project Director

Project Title
VAMC Lebanon - Renovation of Laboratory B1

Location

Date **02/23/2012** | Checked **CWW** | Drawn **RAN**

Project Number **595-09-107**

Building Number

Drawing Number **MH7-100**

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Department of Veterans Affairs

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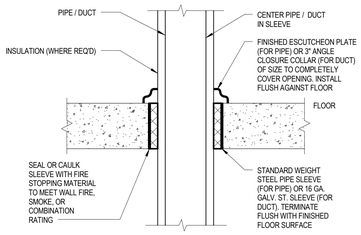
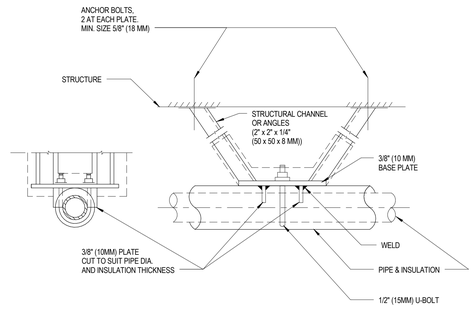


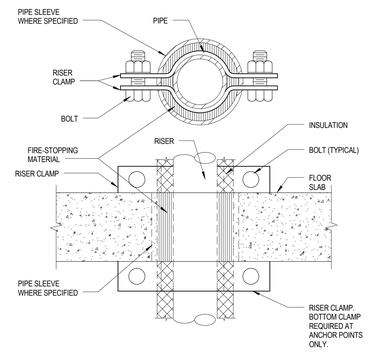
1 Pipe/Duct Penetration of Fire/Smoke Barriers Detail

NTS



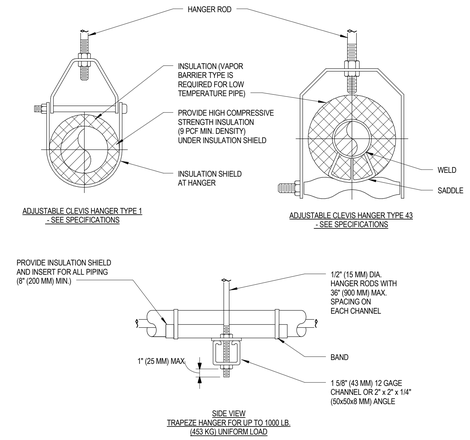
2 Horizontal Pipe Anchor Detail

NTS



3 Support/Anchor for Pipe Risers Detail

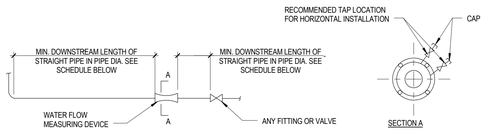
NTS



MAXIMUM PIPE/TUBING SUPPORT SPACING												
NOM. SIZE	IN. (MM)	THRU 3/4 THRU (20)	1 (25)	1 1/4 (32)	1 1/2 (40)	2 (50)	2 1/2 (65)	3 (75)	4 (100)	5 (125)	6 (150)	8 (200)
PIPE	FT. (M)	7 (2.1)	7 (2.1)	7 (2.1)	9 (2.7)	10 (3.0)	11 (3.4)	12 (3.7)	14 (4.1)	16 (4.9)	17 (5.2)	19 (6.8)
TUBING	FT. (M)	5 FT 5 FT	6 (1.8)	7 (2.1)	8 (2.4)	8 (2.4)	9 (2.7)	10 (3.0)	12 (3.7)	13 (4.0)	14 (4.1)	16 (4.9)
NOTE: FOR TRAPEZE HANGER TAKE SPACING OF SMALLEST SIZE ON TRAPEZE.												

4 Typical Pipe Hangers Detail

NTS



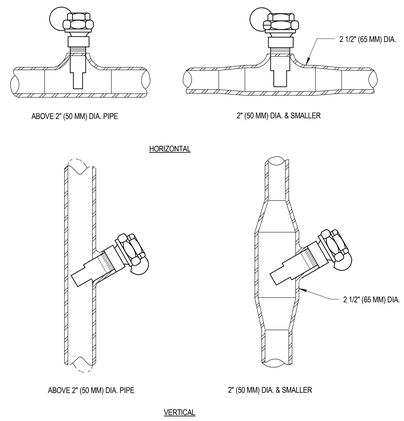
WATER FLOW MEASURING DEVICE INSTALLATION SCHEDULE			
TYPE	MIN. UPSTREAM LENGTH OF STRAIGHT PIPE IN PIPE DIA.		MIN. DOWNSTREAM LENGTH OF STRAIGHT PIPE IN PIPE DIAMETERS
	FOR SIDE TEE	FOR VALVE OR OTHER FITTING	
ORIFICE FLANGE OR FLOATING BALL WITH IMPACT TUBE.	20	10	5
VENTURI, AUTOMATIC BALANCING CONTROL VALVE, OR INSERTION VELOCITY AVERAGING AND MEASURING TUBE	10	5	2

NOTES:

1. DIMENSIONS SHOWN IN SCHEDULE ARE MINIMUM REQUIRED. IF MANUFACTURER OF FURNISHED WATER FLOW MEASURING DEVICE RECOMMENDS A GREATER DIMENSION, USE THOSE DIMENSIONS.
2. INSTALL THE WATER FLOW MEASURING DEVICE SO THE FLOW ARROW ON THE DEVICE IS IN THE SAME DIRECTION AS THE FLOW.
3. THE WATER FLOW MEASURING DEVICE MAY BE INSTALLED IN EITHER HORIZONTAL OR VERTICAL PIPE. UNITS REQUIRING REMOTE METERS SHALL HAVE THE METER CONNECTIONS LOCATED ON OR NEAR THE SIDE WHEN INSTALLED IN HORIZONTAL PIPE. SEE SECTION A. THE METER CONNECTIONS CAN BE INSTALLED IN ANY POSITION WHEN INSTALLED IN VERTICAL PIPE.

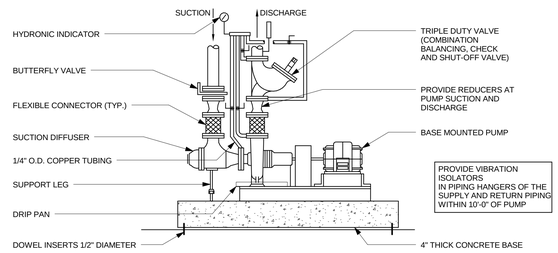
5 Water Flow Measuring Device Installation and Installation Schedule

NTS



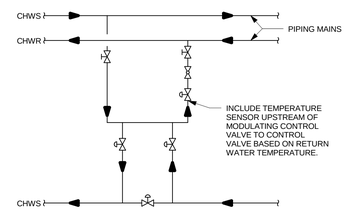
6 Installation of Thermometer Wells Detail

NTS



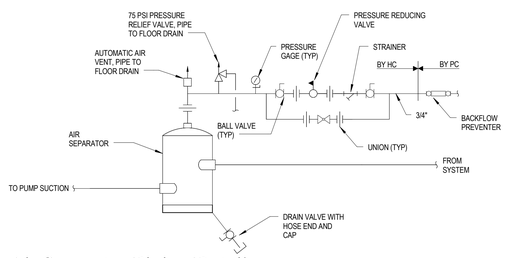
7 End Suction Pump Detail

NTS



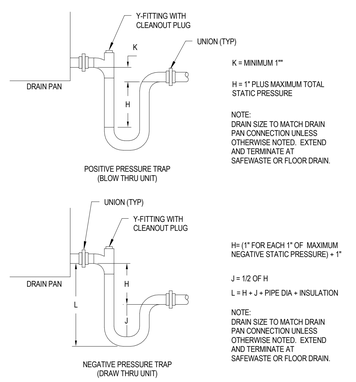
8 Primary-Secondary Bridge Piping Detail

NTS



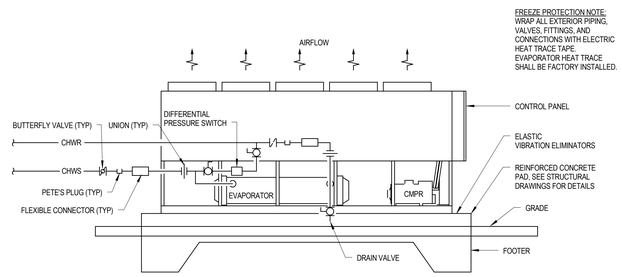
9 Air Separator Piping Detail

NTS



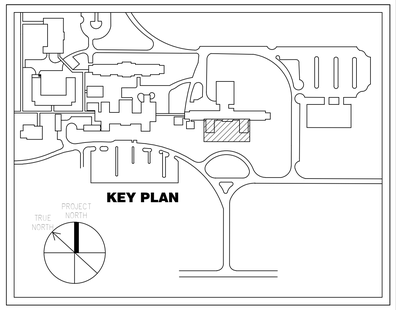
10 Condensate Drain Trap Detail

NTS



11 Air Cooled Chiller Piping

1/2" = 1'-0"



CONSTRUCTION DOCUMENT SUBMISSION

FULLY SPRINKLERED

Number	Description	Date
Revision Schedule		

CONSULTANTS:

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ARTHUR A. BELL JR. ENGINEER 040876-R

ARCHITECT/ENGINEERS:

ARCHITECTURE ENGINEERING INTERIOR DESIGN DESIGN/BUILD

ASTORINO

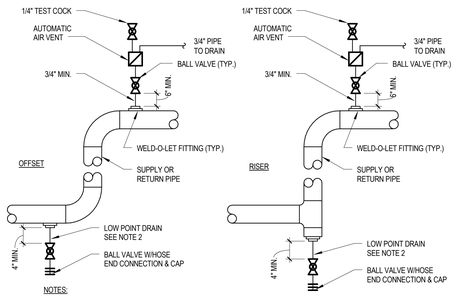
227 Fort Pitt Boulevard Pittsburgh Pennsylvania 15222
TEL 412 765 1700 FAX 412 765 1711 www.astorino.com

Drawing Title: **HVAC Details**	Project Title: **VAMC Lebanon - Renovation of Laboratory B1**		Project Number: **595-09-107**
			Building Number
Approved: Project Director	Location		Drawing Number: **MH7-101**
	Date: **02/23/2012**	Checked: **CWW**	Drawn: **RAN**
			Dwg. of

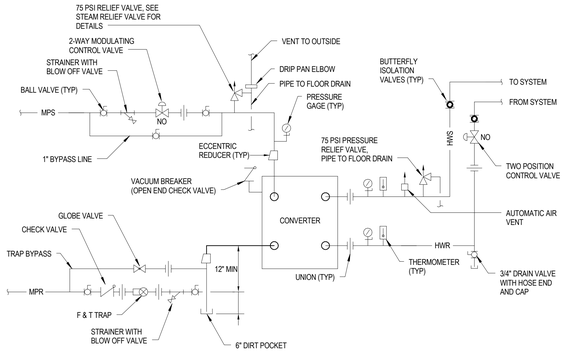
Office of Facilities Management

Department of Veterans Affairs

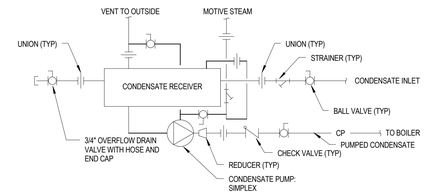
VA FORM 08-6231, OCT 1978



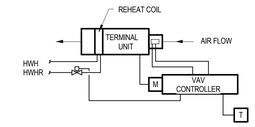
1 Drain & Vent Detail
NTS



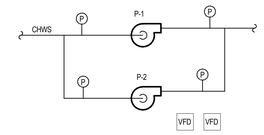
2 Steam to Water Heat Exchanger Piping Detail
NTS



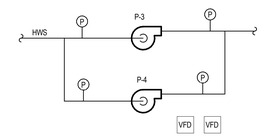
3 Condensate Pump and Receiver Detail
NTS



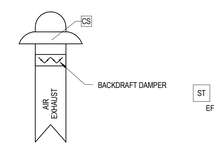
4 VAV Air Terminal Unit With Reheat Control Diagram (Type "C")
NTS



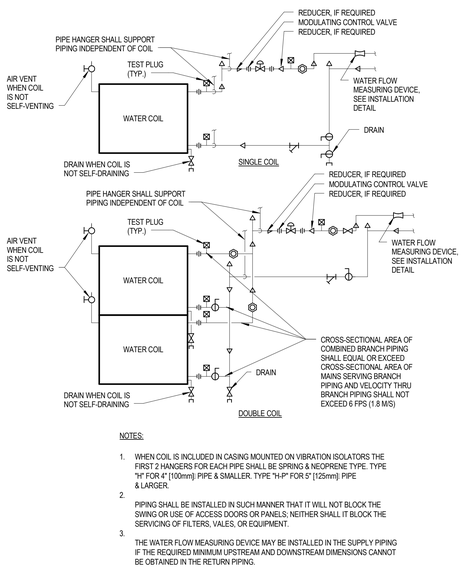
5 Chilled Water Pumps P-1, P-2
NTS



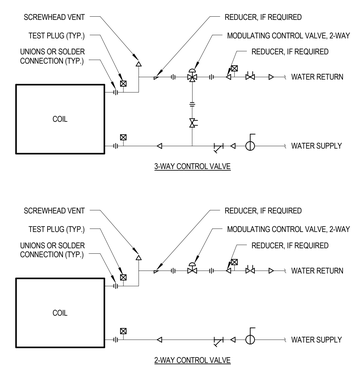
6 Hot Water Pumps P-3, P-4
NTS



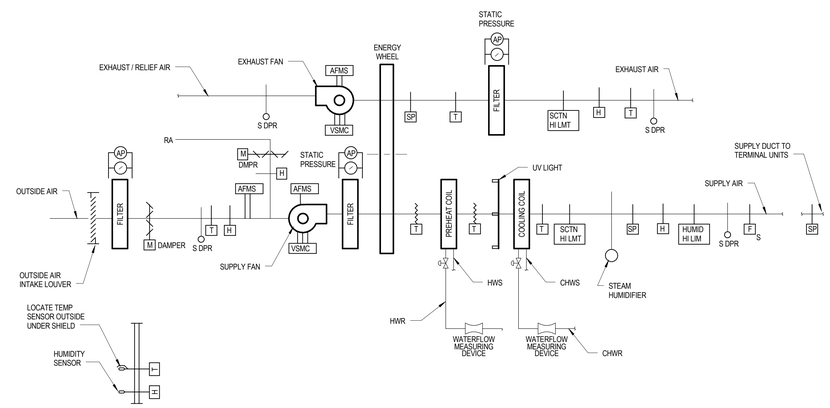
7 Exhaust Fans - EF 1 & EF-2
NTS



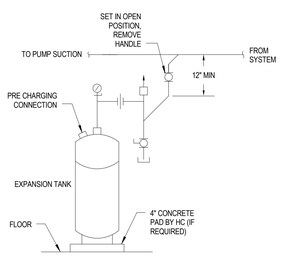
8 Connections to Water Coils Detail
NTS



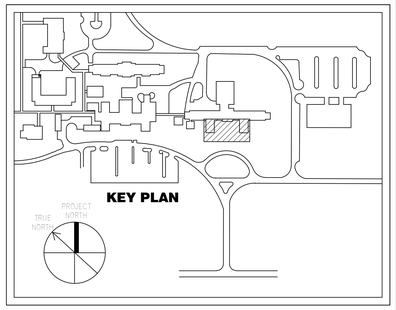
9 Typical Coil Piping Connections to VAV Box Reheat Coils Detail
NTS



10 Variable Air Volume Energy Recovery Unit with Economizer Control Diagram
NTS



11 Expansion Tank Piping Detail
NTS



CONSTRUCTION DOCUMENT SUBMISSION

FULLY SPRINKLERED

Number	Description	Date
	Revision Schedule	

CONSULTANTS:

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER ARTHUR A. BELL JR. 040876-R

ARCHITECT/ENGINEERS:

ARCHITECTURE ENGINEERING INTERIOR DESIGN DESIGN/BUILD

ASTORINO

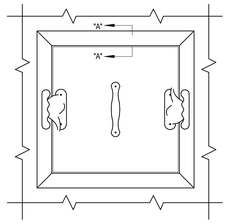
227 Fort Pitt Boulevard Pittsburgh Pennsylvania 15222
TEL 412 765 1700 FAX 412 765 1731 www.astorino.com

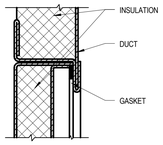
Drawing Title: **HVAC Details**	Project Title: **VAMC Lebanon - Renovation of Laboratory B1**		Project Number: **595-09-107**
			Building Number
Approved: Project Director	Location		Drawing Number: **MH7-102**
	Date: **02/23/2012**	Checked: **CWW**	Drawn: **RAN**
			Dwg. of

Office of Facilities Management

Department of Veterans Affairs

VA FORM 08-6231, OCT 1978

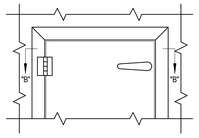


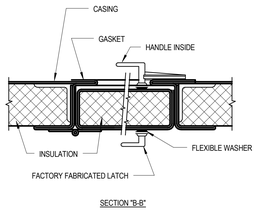


SECTION "A-A"

NOTE:

ACCESS PANELS SHALL BE USED ON EQUIPMENT AND DUCTWORK INSTALLED ABOVE FINISHED CEILINGS.





SECTION "B-B"

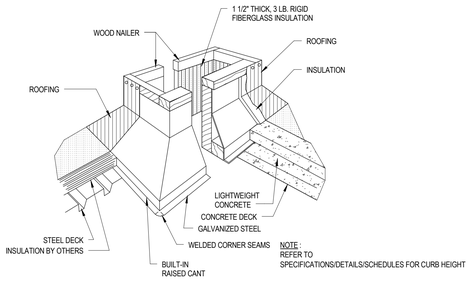
NOTE:

ACCESS DOORS SHALL BE USED ON AIR HANDLING UNITS AND DUCTWORK INSTALLED IN EQUIPMENT ROOMS.

NOTES:

1. LATCHES SHALL BE OF THE WEDGE TYPE TO CLOSE DOORS TIGHTLY.
2. HINGES ON THE ACCESS DOORS SHALL HAVE NON-CORROSIVE PINS.
3. REFER TO SPECIFICATIONS FOR ACCESS DOOR SIZE REQUIREMENTS.

1 Access Provisions Detail
NTS

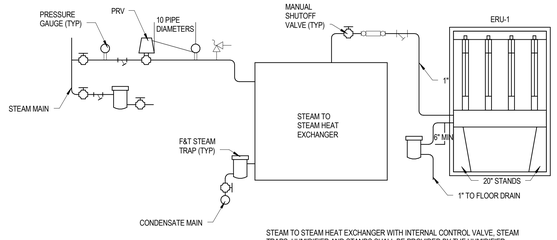


NOTE :
REFER TO SPECIFICATIONS/DETAILS/SCHEDULES FOR CURB HEIGHT

NOTE:

FOR METAL DECK OR CONCRETE DECK AS APPLICABLE

2 Roof Curb Detail
NTS

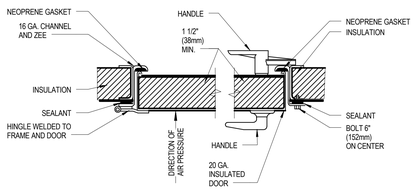


STEAM TO STEAM HEAT EXCHANGER WITH INTERNAL CONTROL VALVE, STEAM TRAPS, HUMIDIFIER AND STANDS SHALL BE PROVIDED BY THE HUMIDIFIER MANUFACTURER.

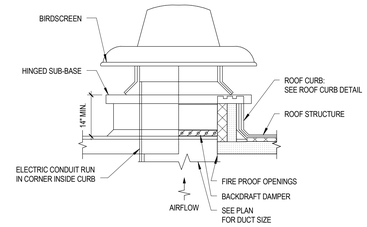
NOTES:

1. PROVIDE NUMBER OF MANIFOLDS AS REQUIRED BY THE DRAWINGS, SCHEDULES, OR SPECIFICATIONS.
2. SEAL ERU SECTION WATERTIGHT AND CONSTRUCT OF STAINLESS STEEL 12 INCHES UPSTREAM AND 7'-0" DOWNSTREAM OF HUMIDIFIER MANIFOLD.
3. SLOPE PIPE 1/2" IN 10 FEET, AND PROVIDE DRAIN WITH TRAP EVERY 20 FEET. USE TYPE "L" HARD COPPER PIPE AND INSULATE PER SPECIFICATIONS UNLESS OTHERWISE INDICATED.
4. ORIENT STEAM DISCHARGE PORTS PER MANUFACTURER'S RECOMMENDATION. CENTER HUMIDIFIER MANIFOLD.
5. PIPING ARRANGEMENT SIMILAR FOR MODELS WITH TWO STEAM OUTLETS. TWO MAKE-UP WATER CONNECTIONS AND TWO DRAIN CONNECTIONS. PROVIDE TWO BALL VALVES ON THE MAKE-UP WATER, AND COMBINE THE TWO DRAINS INTO ONE.
6. ENSURE DISCHARGE WATER TEMPERATURE DOES NOT EXCEED 140°F (OR LOWER IF REQUIRED BY AUTHORITY HAVING JURISDICTION).

3 Steam Humidifier & PRV Detail
NTS



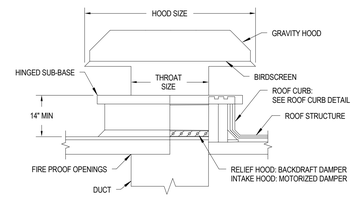
4 Access Panel for High Pressure Duct Systems Detail
NTS



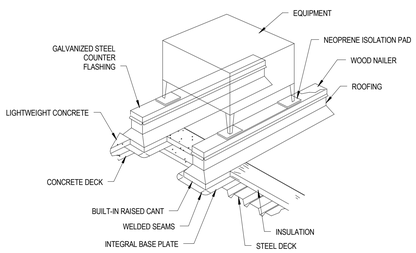
NOTE:

DOME TYPE (OTHER TYPES SIMILAR)

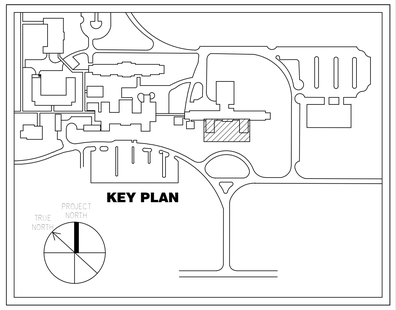
5 Roof Mounted Exhaust Fan Detail
NTS



6 Gravity Intake / Relief Hood Detail
NTS



7 Equipment Rails Detail
NTS



CONSTRUCTION DOCUMENT SUBMISSION

FULLY SPRINKLERED

Number	Description	Date
	Revision Schedule	

CONSULTANTS:

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ARTHUR A. BELL, JR. ENGINEER 040876-R

ARCHITECT/ENGINEERS:

ARCHITECTURE ENGINEERING INTERIOR DESIGN DESIGN/BUILD

ASTORINO

227 Fort Pitt Boulevard Pittsburgh Pennsylvania 15222
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Drawing Title: **HVAC Details**

Approved: Project Director

Project Title: **VAMC Lebanon - Renovation of Laboratory B1**

Location

Date: **02/23/2012** | Checked: **CWW** | Drawn: **RAN**

Project Number: **595-09-107**

Building Number

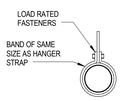
Drawing Number: **MH7-103**

Dwg. of

Office of Facilities Management

Department of Veterans Affairs

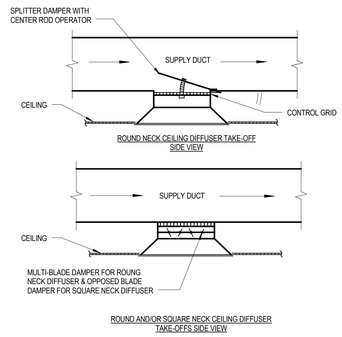
VA FORM 08-6231, OCT 1978



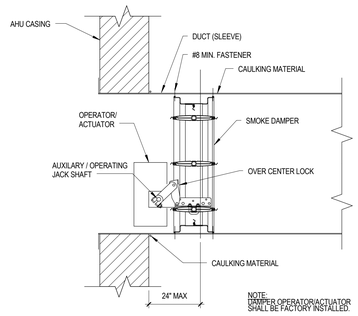
HANGER STRAPS OR RODS			
MAX. DUCT ‡ IN. [mm]	QUANTITY/SIZE IN. [mm]	MAX. LOAD LBS. [kg]	MAX. SPACING IN. [mm]
26 [650]	ONE 1 [25] x 22 GA STRAP	260 [119]	144 [3658]

NOTE:
TABULATED DATA FROM SMACNA ALLOWS FOR DUCT REINFORCING AND INSULATION, BUT NO EXTERNAL LOAD.

1 Round Duct Hangers Detail
NTS

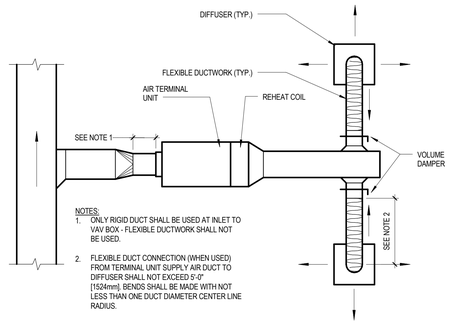


2 Ceiling Diffuser Ductwork Take-Offs Detail
NTS



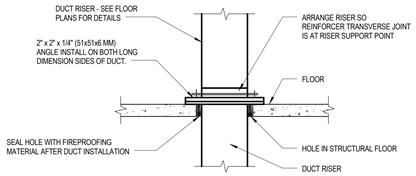
NOTE:
DAMPER OPERATOR/ACTUATOR SHALL BE FACTORY INSTALLED.

3 Smoke Damper Installation Detail
NTS



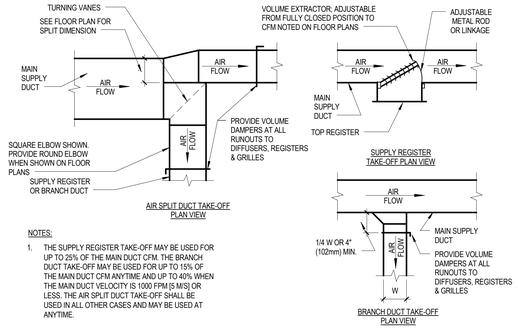
NOTES:
1. ONLY RIGID DUCT SHALL BE USED AT INLET TO VAV BOX - FLEXIBLE DUCTWORK SHALL NOT BE USED.
2. FLEXIBLE DUCT CONNECTION (WHEN USED) FROM TERMINAL UNIT SUPPLY AIR DUCT TO DIFFUSER SHALL NOT EXCEED 5'-0" [1524mm]. BENDS SHALL BE MADE WITH NOT LESS THAN ONE DUCT DIAMETER CENTER LINE RADIUS.

4 Flexible Duct Connection for Air Terminal Units Detail
NTS



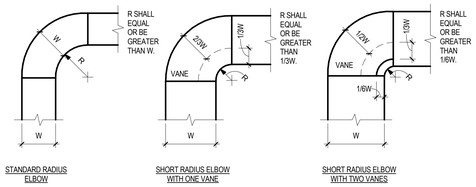
NOTE:
ALL DUCT WORK RISERS WHICH ARE RUN EXPOSED, SUCH AS THRU ATTIC FLOORS AND FAN ROOM FLOORS SHALL BE PROVIDED WITH A 3" [76mm] HIGH CONCRETE CURB AROUND OPENING FOR DUCT.

5 Duct Riser Supports Detail
NTS



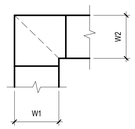
NOTES:
1. THE SUPPLY REGISTER TAKE-OFF MAY BE USED FOR UP TO 25% OF THE MAIN DUCT CFM. THE BRANCH DUCT TAKE-OFF MAY BE USED FOR UP TO 15% OF THE MAIN DUCT CFM ANYTIME AND UP TO 40% WHEN THE MAIN DUCT VELOCITY IS 1000 FPM [5 M/S] OR LESS. THE AIR SPLIT DUCT TAKE-OFF SHALL BE USED IN ALL OTHER CASES AND MAY BE USED AT ANYTIME.

6 Supply Ductwork Take-Offs Detail
NTS



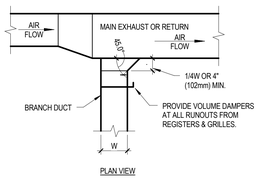
NOTES:
1. THE INTERIOR SURFACE OF ALL RADIUS ELBOWS SHALL BE MADE ROUND.
2. ALL STANDARD RADIUS ELBOWS SHOWN ON FLOOR PLANS MAY BE MADE SHORT RADIUS ELBOWS. ALL SHORT RADIUS ELBOWS SHALL HAVE VANES. VANES SHALL BE CONSTRUCTED, SUPPORTED AND FASTENED AS RECOMMENDED BY SMACNA.

7 Ductwork Radius Elbows Detail
NTS

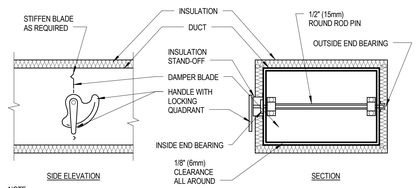


NOTES:
1. ALL VANED ELBOWS SHALL BE CONSTRUCTED AND INSTALLED AS DETAILED BY SMACNA.
2. WHEN W1 DOES NOT EQUAL W2, VANE SHALL BE SINGLE VANE TYPE REGARDLESS OF W DIMENSION.
3. ALL SINGLE VANES SHALL HAVE A 2" [50mm] RADIUS, 1 1/2" [40mm] MAXIMUM SPACE BETWEEN VANES AND A 3/4" [20mm] TRAILING EDGE.
4. WHEN W EQUALS W2 AND W1 IS GREATER THAN 20" [500mm] VANES SHALL BE DOUBLE VANE TYPE.

8 Ductwork Square Vaned Elbows Detail
NTS

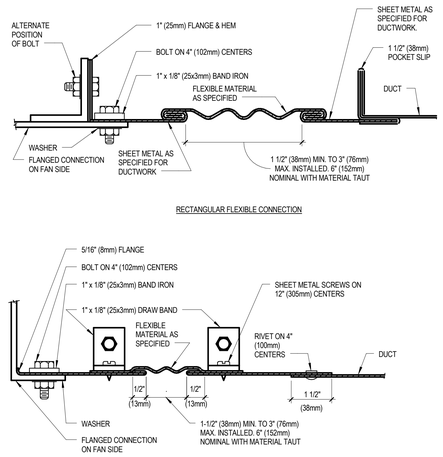


9 Exhaust or Return Branch Ductwork Detail
NTS

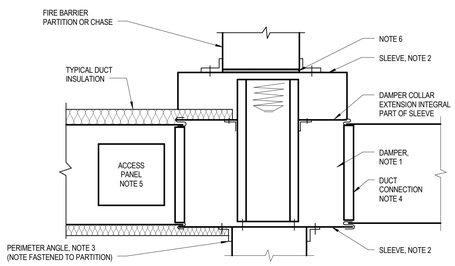


NOTE:
1. DELETE INSULATION STAND-OFF ON DUCTWORK WITHOUT EXTERIOR INSULATION.
2. DETAIL SHOWS SINGLE BLADE DAMPER. DAMPER INSTALLATION SHALL BE SIMILAR FOR MULTI-BLADE DAMPERS & ROUND DAMPERS.
3. MARK END OF DAMPER SHAFT IN RELATION TO DAMPER POSITION.

10 Volume Damper Detail
NTS

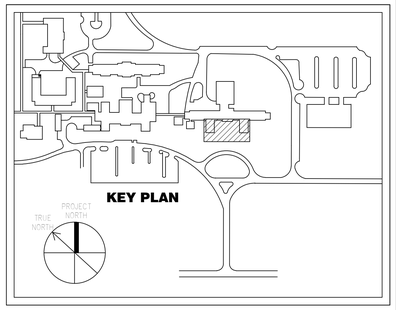


11 Rectangular and Round Flexible Connection Detail
NTS



NOTES:
1. A VERTICAL DAMPER IS SHOWN. HORIZONTAL DAMPER INSTALLATION, 1S SIMILAR. FOLLOW DAMPER MANUFACTURER'S INSTRUCTIONS, INCLUDING FASTENER OPTIONS AND GAGES FOR SLEEVE AND PERIMETER ANGLES. FIRE DAMPERS MUST BE INSTALLED IN THE PARTITION OR FLOOR AND NOT OUTSIDE THE PENETRATION.
2. GALVANIZED SLEEVE: GAGE NOT LESS THAN CONNECTING DUCT. FASTEN SLEEVE TO DAMPER FRAME AND TO PERIMETER ANGLES.
3. PERIMETER ANGELS: GALVANIZED STEEL, NOT LESS THAN 1 1/2"x1 1/2" [38x38mm], 14 GAGE, TO PROVIDE 1" [25mm] MINIMUM OVERLAP OF OPENING ON ALL 4 SIDES.
4. BREAKAWAY DUCT CONNECTION: CONTRACTOR'S OPTION OF TYPES SHOWN IN SMACNA LPDS, FIG. 2-13, SEAL JOINTS.
5. ACCESS PANELS: SIZE AND LOCATION TO PERMIT SERVICING THE FUSIBLE LINK OR LINKS. PANEL SHALL BE SIZZED WITH ONE DIMENSION EQUAL TO DUCT WIDTH, WITH A MINIMUM DIMENSION OF 12".
6. PROVIDE 1/4" TO 1/2" [6 TO 13mm] CLEARANCE ON HEIGHT AND WIDTH. FILL OPEN SPACE WITH ROCK WOOL FIRESTOP FIBER.
7. ALL DUCT WORK RISERS WHICH ARE RUN EXPOSED, SUCH AS THRU ATTIC FLOORS AND MECHANICAL ROOM FLOORS, SHALL BE PROVIDED WITH 3" [76mm] HIGH CONCRETE CURB AROUND OPENING FOR DUCT.

12 Fire Damper Installation Detail
NTS



CONSTRUCTION DOCUMENT SUBMISSION

FULLY SPRINKLERED

Number	Description	Date
Revision Schedule		

CONSULTANTS:

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER ARTHUR A. BELL JR. 040876-R

ARCHITECT/ENGINEERS:

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Drawing Title: **HVAC Details**	Project Title: **VAMC Lebanon - Renovation of Laboratory B1**		Project Number: **595-09-107**
Approved: Project Director	Location		Building Number
	Date: **02/23/2012**	Checked: **CWW**	Drawing Number: **MH7-104**
		Drawn: **RAN**	Dwg. of

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Department of Veterans Affairs

VA FORM 08-6231, OCT 1978

1 Chilled Water System
The Building is served chilled water from the two pumps CHWP-1 & CHWP-2 (Standby). Pumps CHWP-1 & CHWP-2 are controlled with variable frequency drive. Chilled water differencial pressure sensors shall be located 2/3 distance of longest pipe run.

Upon loss of power, the chilled water pumps shall operate on emergency power, providing the building with chilled water from the central system. In this event, the chilled water bypass and bridge supply and return piping control valves shall open, and the ACC-1 and bridge common piping control valves shall close.

Chilled Water Temperature & BTU monitoring:

The controller shall measure the building loop chilled water supply and return temperatures. In combination with the loop flow meter, a BTU value shall be calculated and historically trended for peak and minimum usage on a daily, weekly and monthly basis.
Alarms shall be provided as follows:
* High Chilled Water Supply Temperature: If the chilled water supply temperature is 5°F (adj.) greater than the designed value.
* Low Chilled Water Supply Temperature: If the chilled water supply temperature is 5°F (adj.) less than the designed value.

2 Hot Water System

The Building is served hot water from a water to steam heat exchanger HX-1. Hot water is circulated by two pumps HWP-1 & HWP-2 (Standby). Pumps HWP-1 & HWP-2 are controlled with variable frequency drive. Hot water differencial pressure sensors shall be located 2/3 distance of longest pipe run.

Hot Water Temperature & BTU monitoring:
The controller shall measure the building loop hot water supply and return temperatures. In combination with the loop flow meter, a BTU value shall be calculated and historically trended for peak and minimum usage on a daily, weekly and monthly basis.
Alarms shall be provided as follows:
* High Hot Water Supply Temp: If greater than 200°F (adj.).
* Low Hot Water Supply Temp: If less than 100°F (adj.) when heating is enabled.

3 Variable Air Volume Energy Recovery Unit ERU-1
Run Conditions - Requested:
The unit shall run whenever:
* Any zone is occupied.
* OR a definable number of unoccupied zones need heating or cooling.
The unit will have a motorized two position damper that shall open when the ERU is operating.

Freeze Protection:

The unit shall shut down via a hard wired safety circuit and generate an alarm upon receiving a low limit alarm from switch.

High/Low Static Shutdown:

The unit shall shut down via a hard wired safety circuit and generate an alarm upon receiving a high or low static shutdown signal from either the supply fan discharge cutout switch or the return fan inlet cutout switch.

Duct Smoke Detection and Smoke Dampers:

Refer to the VA Fire Protection Design Manual, Table 7.3, I/O Matrix. Control shall be in accordance with I/O Matrix.

ERU Optimal Start:

The unit shall start prior to scheduled occupancy based on the time necessary for the zones to reach their occupied setpoints. The start time shall automatically adjust based on changes in outside air temperature and zone temperatures.

Supply Fan:

The supply fan shall run anytime the unit is commanded to run, unless shutdown on safeties. To prevent short cycling, the supply fan shall have a user definable (adj.) minimum runtime.
Alarms shall be provided as follows:
* Supply Fan Failure: Commanded on, but the status is off.
* Supply Fan in Hand: Commanded off, but the status is on.
* Supply Fan Runtime Exceeded: Status runtime exceeds a user definable limit (adj.).

Supply Air Duct Static Pressure Control:

The controller shall measure 2/3 duct static pressure and modulate the supply fan variable frequency drive to maintain a duct static pressure setpoint. The static pressure setpoint shall be reset based on zone cooling requirements.

* The initial duct static pressure setpoint shall be 2.5in H2O (adj.).
* As cooling demand increases, the setpoint shall incrementally reset up to a maximum of 2.8in H2O (adj.).
* As cooling demand decreases, the setpoint shall incrementally reset down to a minimum of 2.3in H2O (adj.) .
  Alarms shall be provided as follows:
* High Supply Air Static Pressure: If the supply air static pressure is 25% (adj.) greater than setpoint.
* Low Supply Air Static Pressure: If the supply air static pressure is 25% (adj.) less than setpoint.

A local supply fan discharge duct static pressure sensor will limit the discharge static pressure from the supply fan from exceeding 3" wc (adj.)

Exhaust Fan (Internal to the ERU):
The exhaust fan shall run whenever the supply fan runs.
Alarms shall be provided as follows:
* Exhaust Fan Failure: Commanded on, but the status is off.
* Exhaust Fan in Hand: Commanded off, but the status is on.
* Exhaust Fan Runtime Exceeded: Status runtime exceeds a user definable limit (adj.).

Exhaust Airflow:

The exhaust fan variable frequency drive shall modulate in unison to maintain an exhaust air volume that is equal to the supply air volume less the outside air volume plus or minus 5% (adj.) to maintain a positive building static pressure (the volume offset to be confirmed during building commissioning).

EAv = (SAv - (OAv+ (5% x OAv)))
EAv = Exhaust Air Volume
SAv = Supply Air Volume
OAv = Outside Air Volume

Alarms shall be provided as follows:
* High Exhaust Airflow: If the exhaust airflow is an adjustable percentage greater than setpoint.
* Low Exhaust Airflow: If the exhaust airflow is an adjustable percentage less than setpoint.

Supply Air Temperature Setpoint - Optimized:
The controller shall monitor the supply air temperature and shall maintain a supply air temperature setpoint reset based on zone cooling and heating requirements

The supply air temperature setpoint shall be reset for cooling based on zone cooling requirements as follows:
* The initial supply air temperature setpoint shall be 55°F (adj.).
* As cooling demand increases, the setpoint shall incrementally reset down to a minimum of 53°F (adj.).
* As cooling demand decreases, the setpoint shall incrementally reset up to a maximum of 72°F (adj.).

Heating Coil Valve:

The controller shall measure the supply air temperature and modulate the heating coil valve to maintain the supply air temperature setpoint.
The heating shall be enabled whenever:
* Outside air temperature is less than 60°F (adj.).
* AND the economizer is disabled.
* AND the supply fan status is on.
The heating coil valve shall open for freeze protection whenever:
* Mixed air temperature drops from 40°F to 35°F (adj.).
* OR the low limit is on.

Cooling Coil Valve:

The controller shall measure the supply air temperature and modulate the cooling coil valve to maintain its cooling setpoint.
The cooling shall be enabled whenever:
* Outside air temperature is greater than 60°F (adj.).
* AND the economizer is disabled or fully open.
* AND the supply fan status is on.
* AND the heating is not active.
The cooling coil valve shall open to 50% (adj.) whenever the low limit is on.
The cooling coil discharge air temperature sensor shall be monitored for high and low temperature conditions
Alarms shall be provided as follows:
* High Supply Air Temp: If the supply air temperature is 5°F (adj.) greater than setpoint.
* High Cooling Coil Discharge Air Temp: If the discharge air temperature is 5°F (adj.) greater than the supply air temperature setpoint.
* Low Cooling Coil Discharge Air Temp: If the discharge air temperature is 45°F (adj.) or less.

Low Supply Air Temperature Alarm:

The controller shall alarm if the supply air temperatures is less than 45°F (adj.).

Humidifier Control:

When the controller is not calling for humidity, sensed by the return air and zone humidity sensors, the humidifier shall remain off. When the controller is calling for humidity, the humidifier shall be energized. The controller shall measure the return air humidity and monitor two (2) space humidity sensors connected to terminal unit controllers. These sensors shall be used to maintain the building humidity setpoint of 50% RH (adj.) by resetting the supply air humidity setpoint through a cascaded loop between 25% RH (adj.) and 75% RH (adj.) The humidifier shall be deenergized when the supply fan is off. A duct high humidity limit sensor will deenergize humidifier through a hard wired safety circuit if the duct humidity exceeds 85% RH.

The humidifier shall be enabled whenever:
* Return air or exhaust air humidity is below setpoint.
* AND the cooling is off.
* AND the supply fan status is on.
The supply air humidity sensor shall be monitored for high humidity conditions when cooling is off as follows:
* High Supply Air Humidity: If the supply air humidity is greater than 80% RH (adj.).
If a High Supply Air Humidity alarm is generated, the controller shall close the steam control valve through a software interlock.

Exhaust Duct Static Pressure Control:

The controller shall measure the exhaust duct static pressure and modulate the exhaust air damper to maintain the exhaust duct static pressure setpoint of 0.25in H2O (adj.). The exhaust air damper control shall be enabled when the supply fan status is proven. The exhaust air damper will close when the unit is off.

Alarms shall be provided as follows:
* High Exhaust Static Pressure: If the static pressure is 25% (adj.) greater than setpoint.
* Low Exhaust Static Pressure: If the building static pressure is 25% (adj.) less than setpoint.

Building Static Pressure:

The controller shall measure the building static pressure and monitor that the building is operating at a positive static pressure.
Alarms shall be provided as follows:
* High Building Static Pressure: If the building static pressure is 0.4" wc (adj.) or greater.
* Low Building Static Pressure: If the building static pressure is 0.0" wc (adj.) or less.

Economizer:
The controller shall measure the mixed air temperature and modulate the economizer dampers in sequence to maintain a setpoint 2°F (adj.) less than the supply air temperature setpoint. The outside air dampers shall maintain a minimum adjustable position as scheduled on the mechanical drawings whenever occupied.

The economizer shall be enabled whenever:
* Outside air temperature is less than 65°F (adj.).
* AND the outside air enthalpy is less than 22 Btu/lb (adj.)
* AND the outside air temperature is less than the exhaust air temperature.
* AND the outside air enthalpy is less than the exhaust air enthalpy.
* AND the supply fan status is on.

The economizer shall close whenever:
* Mixed air temperature drops from 40°F to 35°F (adj.)
* OR the low limit is on.
* OR on loss of supply fan status.

The outside and exhaust air dampers shall close and the return air damper shall open when the unit is off.

Filter Differential Pressure Monitor:

The controller shall monitor the differential pressure across the filter.
Alarms shall be provided as follows:
* Filter Change Required: Filter differential pressure exceeds a user definable limit (adj.).

Mixed Air Temperature:

The controller shall monitor the mixed air temperature and use as required for economizer control or heating control .
Alarms shall be provided as follows:
* High Mixed Air Temp: If the mixed air temperature is greater than 90°F (adj.).
* Low Mixed Air Temp: If the mixed air temperature is less than 45°F (adj.).

Return and Exhaust Air Humidity:

The controller shall monitor the return and exhaust air humidity and use as required for economizer control or to reset the discharge air humidity setpoint control .
Alarms shall be provided as follows:
* High Return Air Humidity: If the return or exhaust air humidity is greater than 70% (adj.).
* Low Return Air Humidity: If the return or exhaust air humidity is less than 35% (adj.).

Exhaust Air Temperature:

The controller shall monitor the exhaust air temperature and use as required for setpoint control or economizer control .
Alarms shall be provided as follows:
* High Exhaust Air Temp: If the exhaust air temperature is greater than 90°F (adj.).
* Low Exhaust Air Temp: If the exhaust air temperature is less than 45°F (adj.).

Supply Air Temperature:
The controller shall monitor the supply air temperature.
Alarms shall be provided as follows:
* High Supply Air Temp: If the supply air temperature is greater than 420°F (adj.).
* Low Supply Air Temp: If the supply air temperature is less than 45°F (adj.).

Toilet and Grossing Station Exhaust Fans:

The associated building exhaust fan shall run whenever the supply fan runs.
Alarms shall be provided as follows:
* Exhaust Fan Failure: Commanded on, but the status is off.
* Exhaust Fan in Hand: Commanded off, but the status is on.
* Exhaust Fan Runtime Exceeded: Status runtime exceeds a user definable limit (adj.).

Water Flow Monitoring:

Both the heating coil and the cooling coil will have water flow sensors for monitoring purposes.

4 VAV - Terminal Unit - With Reheat (Control Types C and D)

Run Conditions - Scheduled:

The unit shall run according to a user definable time schedule:
* The unit shall maintain
  A 74°F (adj.) cooling setpoint.
  A 70°F (adj.) heating setpoint.

Alarms shall be provided as follows:
* High Zone Temp: If the zone temperature is greater than the cooling setpoint by a user definable amount (adj.).
* Low Zone Temp: If the zone temperature is less than the heating setpoint by a user definable amount (adj.).

Zone Temperature Sensing:

The zone temperature will be sensed by a room sensor located in a locked boxed within the space served. Local adjustment or overrides will not be provided. All adjustments and overrides will be performed though the campus wide building automation system.

Variable Volume Terminal Unit - Flow Control:

The unit shall maintain zone setpoints by controlling the airflow through the following:

* When zone temperature is greater than its cooling setpoint, the zone damper shall modulate between the minimum occupied airflow (adj.) and the maximum cooling airflow (adj.) until the zone is satisfied.
* When the zone temperature is between the cooling setpoint and the heating setpoint, the zone damper shall maintain the minimum required zone ventilation (adj.).
* When zone temperature is less than its heating setpoint, the controller shall enable heating to maintain the zone temperature at its heating setpoint and the zone damper shall maintain the minimum required zone ventilation (adj.).

Reheating Coil Valve:

The controller shall measure the zone temperature and modulate the reheating coil valve open on dropping temperature to maintain its heating setpoint.

Discharge Air Temperature:

The controller shall monitor the discharge air temperature.
Alarms shall be provided as follows:
* High Discharge Air Temp: If the discharge air temperature is greater than 120°F (adj.).
* Low Discharge Air Temp: If the discharge air temperature is less than 40°F (adj.).

Space Humidity Monitoring:

Selected controllers shall have space humidity sensors connected to them for resetting of the serving ERU humidifier. Refer to the ERU sequences for the quantity of space humidity sensors required.

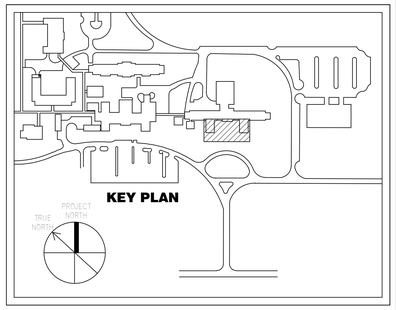
CO2 Control:

Provide either a temperature/CO2 combo sensor or a separate CO2 sensor at each zone to control the CO2 limit to 800 ppm.

5. Service Switch:

Service switch shall be provided at control panel for AHU maintenance. Switch shall shutdown fan, close chilled water valves, and close heating water valves.

6 Split Systems
A temperature sensor shall be included to enable remote temperature monitoring capabilities of the spaces served by the evaporators of the split systems



CONSTRUCTION DOCUMENT SUBMISSION

FULLY SPRINKLERED

Number	Description	Date
Revision Schedule		

CONSULTANTS:

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ARTHUR A. BELL, JR. ENGINEER 040876-E

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Drawing Title: **HVAC Sequence of Operations**

Approved: Project Director

Project Title: **VAMC Lebanon - Renovation of Laboratory B1**

Location

Date: 02/23/2012 | Checked: CWW | Drawn: RAN

Project Number: **595-09-107**

Building Number

Drawing Number: **MH7-105**

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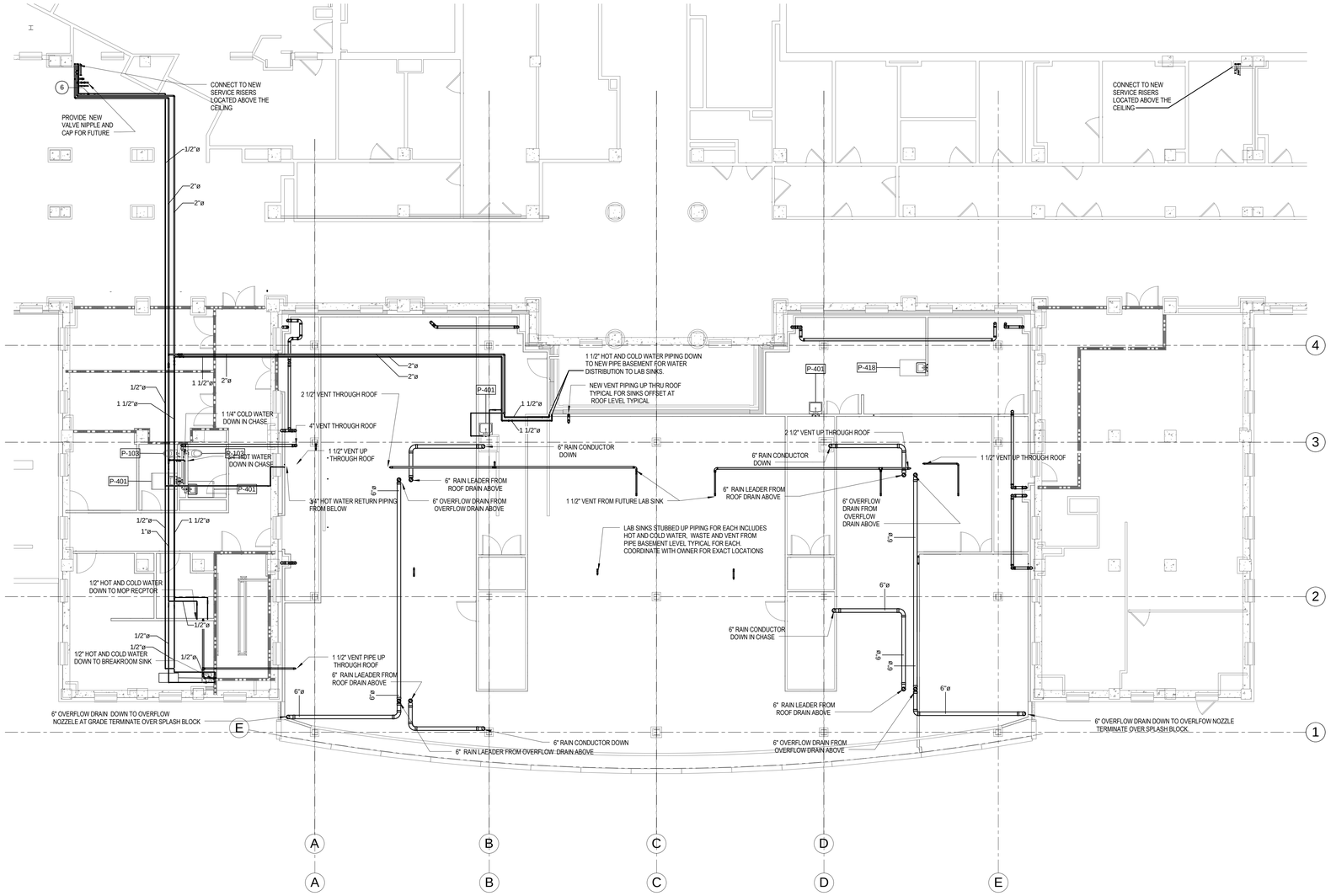
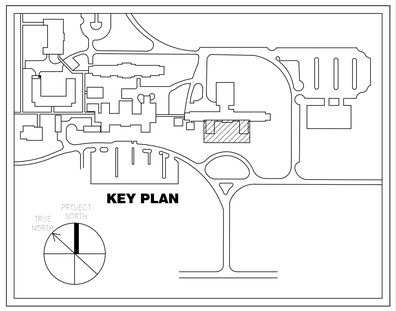
Department of Veterans Affairs

VA FORM 08-6231, OCT 1978



Plumbing Plan Keynotes	
Mark	Notes
1	CONNECT TO HUIDIFIER EQUIPIMENT. CONNECTION REQURIES WATTS 909 BACKFLOW PREVENTOR AND ISOLATION VALVES
2	1/2" COLD WATER UP TO VALVED CONNECTION FOR FUTURE DI WATER FILTRATION SYSTEM
3	RAIN CONDUCTOR FROM ABOVE TO UNDER GROUND. SLEEVES THROUGHS TRUCTURAL MAY BE REQUIRED PRIOR TO POURING FOUNDATIONS
4	1 1/2" STANDPIPE DRAIN FOR LAB EQUIPMENT. COORDINATE WITH OWNER FOR EXACTLOCATION
5	1/2" WATER SUPPLY CONNECTION FOR MECHANICAL EXPANSION TANK. PROVIDE WITH WATTS 909 BACKFLOW PREVENTER ROUTE DRAIN TO FLOOR DRAIN
6	1/2" BALANCING VALVE. BALANCE TO 3 GALLONS PER MINUTE

1 Plumbing Ground Level Floor Plan
1/8" = 1'-0"



CONSTRUCTION DOCUMENT SUBMISSION

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Number	Description	Date
Revision Schedule		

CONSULTANTS:

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER ARTHUR A. BELL, JR. 040876-E

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Drawing Title: **Plumbing Ground Floor Plan**

Approved: Project Director

Project Title: **VAMC Lebanon - Renovation of Laboratory B1**

Location

Date: **02/23/2012** | Checked: **BLG** | Drawn: **Author**

Project Number: **595-09-107**

Building Number

Drawing Number: **PL1-102**

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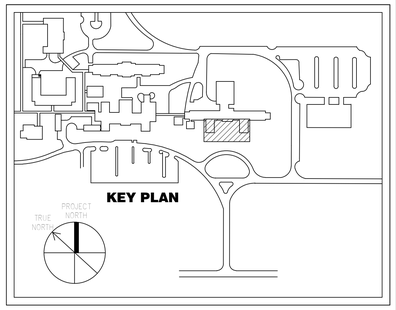
1 Plumbing Roof Floor Plan
1/8" = 1'-0"



CONSTRUCTION DOCUMENT SUBMISSION

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	Revision Schedule	

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Drawing Title: **Plumbing Roof Plan**

Approved: Project Director

Project Title: **VAMC Lebanon - Renovation of Laboratory B1**

Location

Date: **02/23/2012** | Checked: **BLG** | Drawn: **Author**

Project Number: **595-09-107**

Building Number

Drawing Number: **PL1-103**

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Department of Veterans Affairs

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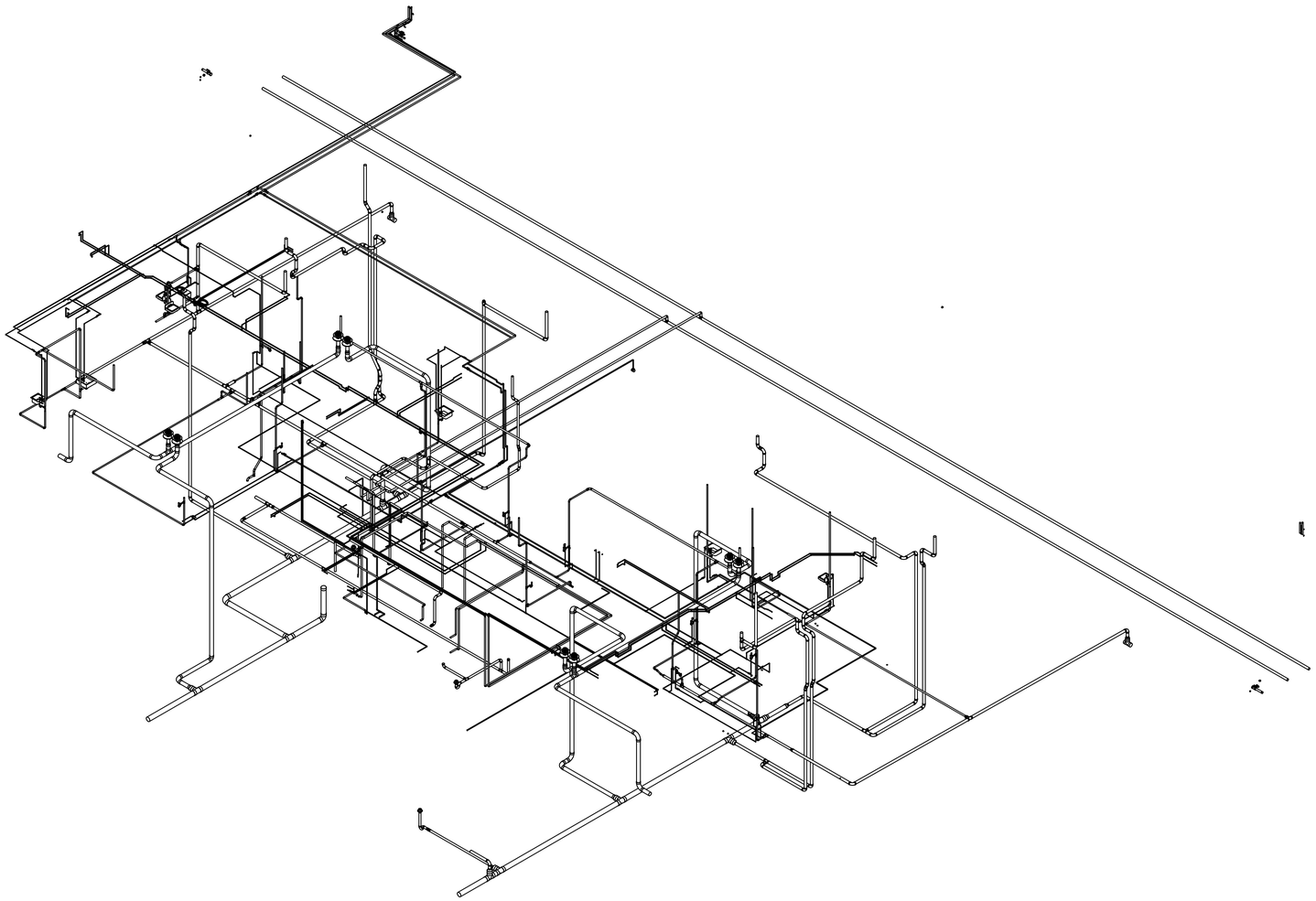
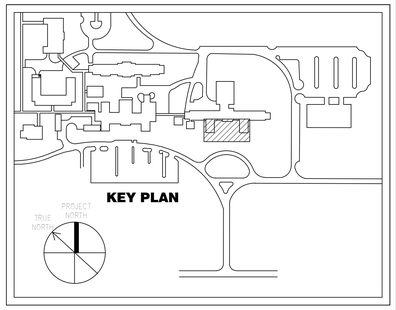


1 3D Plumbing



CONSTRUCTION DOCUMENT SUBMISSION

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Number	Description	Date
	Revision Schedule	

CONSULTANTS:

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Drawing Title
Plumbing Riser Diagram

Approved: Project Director

Project Title
VAMC Lebanon - Renovation of Laboratory B1

Location

Date	Checked	Drawn
02/23/2012	BLG	BLG

Project Number
595-09-107

Building Number

Drawing Number
PL5-101

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Office of Facilities Management

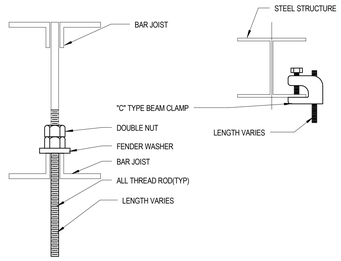
Department of Veterans Affairs

VA FORM 08-6231, OCT 1978

Plumbing Fixture Schedule								
Type Mark	Description	Waste	Vent	Cold Water	Hot Water	Manufacturer	Model	Remarks
PMR-1	MOP RECEPTOR	2"	2"	1/2"	1/2"	EL MUSTEE	63M	FURNISH WITH SERVICE FAUCET NO. 63.600A- MOP HANGER NO. 65.600- DURAGUARD WALL GUARDS NO. 67.2424
P-528	KITCHEN SINK	1 1/2"	1 1/2"	1/2"	1/2"	ELKAY	DLR222210	ELKAY DLR SERIES 18 GUAGE 304 STAINLESS STEEL-18-8 NICKLE BEARING RADIUS CORNERS FULLY UNDERCOATED SATIN FINISH-FURNISH WITH BRASSS TAIL PEICE AND CHROME GRID STRAINER -CHICAGO FAUCET NO. 786-GN8FCABCP
P-418	ALL PURPOSE SINK	2"	2"	1/2"	1/2"	AMERICAN STANDARD	9061.250	ALL PURPOSE WORK SINK LESS PLASTER TRAP- WHITE VITREOUSE CHINA HIGH BACK SPLASH BACK-PROVIDE WITH WALL HANGER SUPPORT SINGLE HOLE FOR FAUCET - GRID DRAIN NO. 7735.038 DRAIN-PROVIDE SLOAN OPTIMA EBF-550 BATTERY POWERED GOOSE NECK FAUCETFURNISH WITH ETF-801 SPRAY HEAD AND ETF-460-A STRAINER
P-401	LAVATORY	1 1/2"	1 1/2"	1/2"	1/2"	AMERICAN STANDARD	0321.075	DECLYN WALL HUNG LAVATORY BEAR OVERFLOW-CONCEALED ARMS SUPPORT-WHITE VITREOUSE CHINA CHROME TAILPEICE AND STRAINER,SUPPLY WITH CHROME TAILPEICE- STOPS AND SUPPLIES-PROVIDE WITH SLOAN OPTIMA EBF 1878DM BATTERY POWERED FAUCET 4"TRIM PLATEAND BELOW DECK ASSE APPROVED MIXING VALVE
P-103	WATER CLOSET	4"	2"	1"		AMERICAN STANDARD	3351.160	AFWALL-HANDICAPP HEIGHT-ELONGATED BOWL-SIPHON JET- TOP SPUD-FURNISH WITH SLOAN OPTIMA PLUS MODEL NO. 8111-FURNISH WITH AMERICAN STANDARD SEAT NO. 5901.100 HEAVY DUTYOPEN FRONT

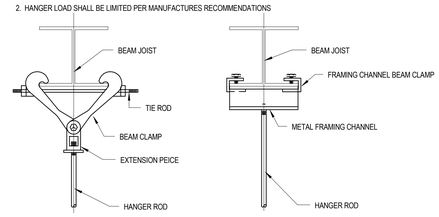
SUMP PUMP SCHEDULE											
Mark	TDH	GPM	Capacity_Volume	Discharge	Motor HP	Motor RPM	Voltage	Phase	Manufacturer	Model	Comments
SP-1	25' - 0"	30 GPM	100.0 gal	2"	0 hp	1750		1	LIBERTY	280	PROVIDE WITH DUPLEX NEMA 4X ALERNATING CONTROL PANEL MOD. NO. AE24L3 AND HEAVY DUTY CHECK VALVE NO. BCV200 - 30 X 48 FIBERGLASS BASIN FIBERGLASS ANTI FLOATATION FLANGE NO. XT30BX48 - 4"INLET HUB NO. K001237 - AND 30" DUPLEX STEEL COVER WITH PUMP ACCESS PLATES AND 2 - 2" DISCHARGE FLANGES AND 2" VENT FLANGE AND FLOAT PLATE.

NOTES:
1. FOR HANGER PLACMENT REQUIREMENTS, AND HANGER ROD SPACING, REFER TO THE SPECIFICATIONS
2. HANGER LOAD SHALL BE LIMITED PER MANUFACTURES RECOMMENDATIONS

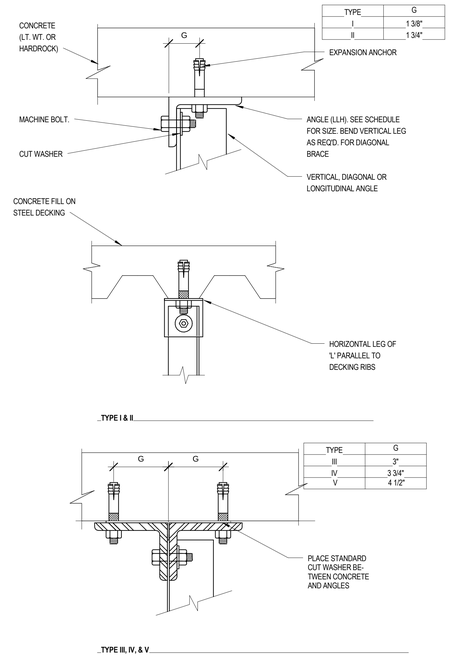


1 Steel Hanger Attachment Detail
12" = 1'-0"

NOTES:
1. FOR HANGER PLACMENT REQUIREMENTS, HANGER ROD SPACING, REFER TO SPECIFICATIONS
2. HANGER LOAD SHALL BE LIMITED PER MANUFACTURES RECOMMENDATIONS



2 Steel Hanger Attachments Detail 2
12" = 1'-0"

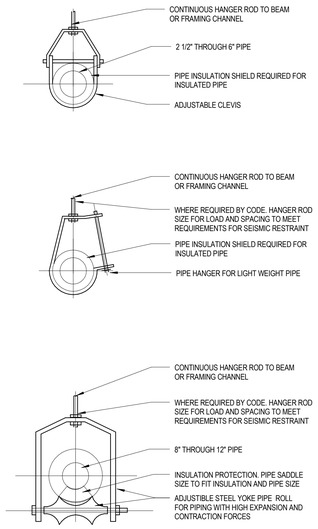


TYPE	G
I	1 3/8"
II	1 3/4"

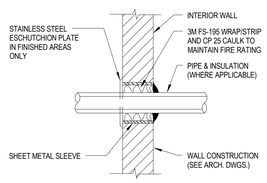
TYPE	G
III	3"
IV	3 3/4"
V	4 1/2"

3 Concrete Hanger Attachments
12" = 1'-0"

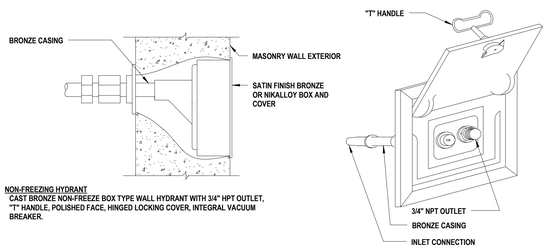
NOTES
1. ATTACH SUPPORTS FOR ALL PIPING SUSPENDED FROM THE STEEL STRUCTURE TO THE TOP CORD OF JOISTS OR BEAMS WHERE POSSIBLE.
2. PROVIDE COPPER OR PLASTIC COATED HANGERS FOR NON-INSULATED COPPER PIPE.



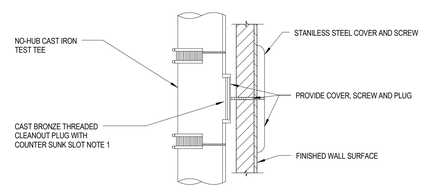
4 Hanger Detail
12" = 1'-0"



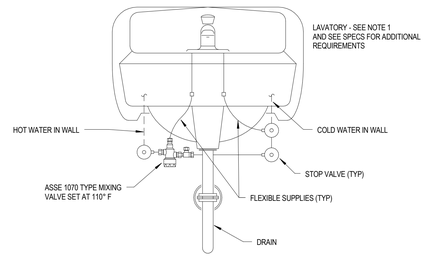
5 Pipe Sleeve Thru Interior Wall
12" = 1'-0"



6 Non-Freeze Wall Hydrant
12" = 1'-0"

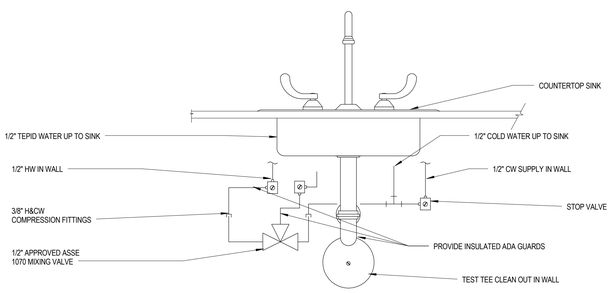


7 Test Tee Connection 1
12" = 1'-0"

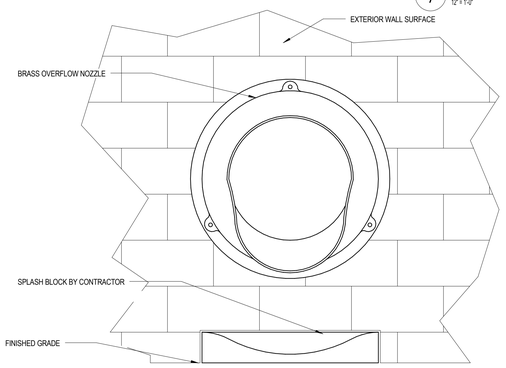


NOTES:
1. WALL MOUNTED LAVATORY SHOWN. DETAIL ALSO APPLICABLE TO COUNTERTOP LAVATORIES REQUIRING TEMPERED WATER BY CODE.

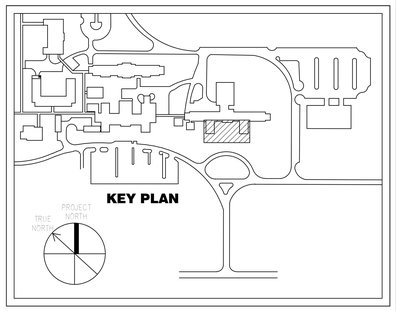
8 Public Mixing Valve Detail
12" = 1'-0"



9 Countertop Mounted Sink Detail
1/4" = 1'-0"



10 Overflow Nozzle Detail
3" = 1'-0"



CONSTRUCTION DOCUMENT SUBMISSION

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Number	Description	Date
Revision Schedule		

CONSULTANTS:

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ARTHUR A. BELL, JR. ENGINEER 040876-R

ARCHITECT/ENGINEERS:

ARCHITECTURE ENGINEERING INTERIOR DESIGN DESIGN/BUILD

ASTORINO

227 Fort Pitt Boulevard Pittsburgh Pennsylvania 15222
TEL 412 765 1700 FAX 412 765 1711 www.astorino.com

Drawing Title: **Plumbing Details**

Approved: Project Director

Project Title: **VAMC Lebanon - Renovation of Laboratory B1**

Location

Date: 02/23/2012 | Checked: BLG | Drawn: Author

Project Number: **595-09-107**

Building Number

Drawing Number: **PL7-101**

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Department of Veterans Affairs

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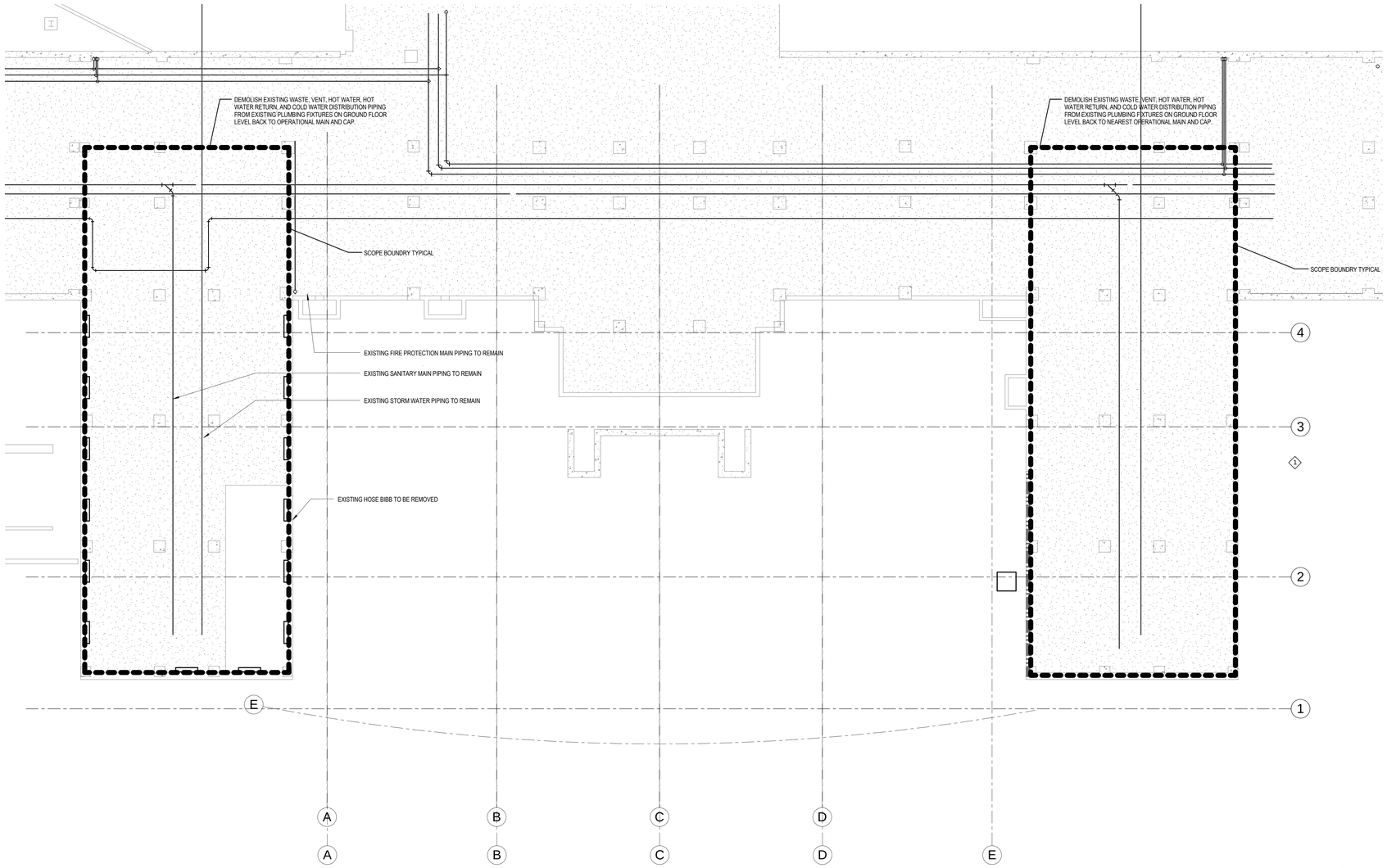
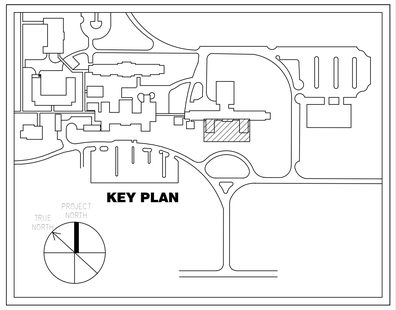


1 Plumbing Pipe Basement Floor Demolition Plan
1/8" = 1'-0"



CONSTRUCTION DOCUMENT SUBMISSION

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Number	Description	Date
	Revision Schedule	

CONSULTANTS:

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
ARTHUR A. BELL, JR.
ENGINEER
040876-E

ARCHITECT/ENGINEERS:

ARCHITECTURE
ENGINEERING
INTERIOR DESIGN
DESIGN/BUILD

ASTORINO

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TEL 412 765 1700 FAX 412 765 1711 www.astorino.com

Drawing Title
Plumbing Pipe Basement Demolition Plan

Approved: Project Director

Project Title
VAMC Lebanon - Renovation of Laboratory B1

Location

Date **02/23/2012** | Checked **BLG** | Drawn **Author**

Project Number **595-09-107**

Building Number

Drawing Number **PD0-101**

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Department of Veterans Affairs

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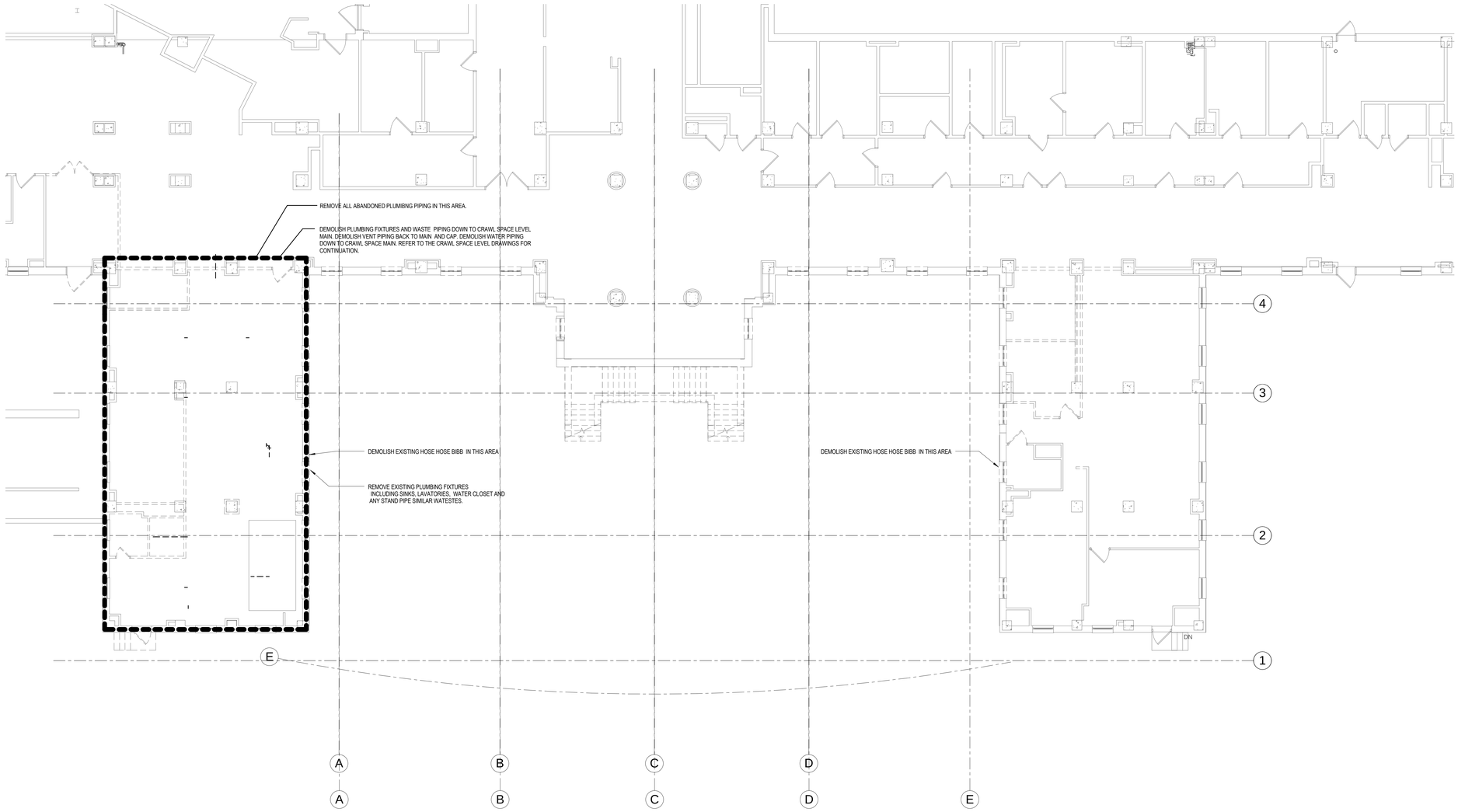
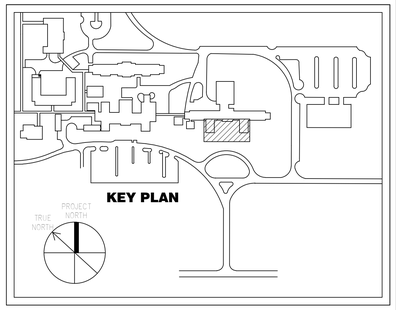


1 Plumbing Ground Level Floor Demolition Plan
1/8" = 1'-0"



CONSTRUCTION DOCUMENT SUBMISSION

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Number	Description	Date
	Revision Schedule	

CONSULTANTS:

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ARTHUR A. BELL JR. ENGINEER 040876-R

ARCHITECT/ENGINEERS:

ARCHITECTURE ENGINEERING INTERIOR DESIGN DESIGN/BUILD

ASTORINO

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Drawing Title: **Plumbing Ground Floor Demolition Plan**

Approved: Project Director

Project Title: **VAMC Lebanon - Renovation of Laboratory B1**

Location

Date: **02/23/2012** | Checked: **BLG** | Drawn: **Author**

Project Number: **595-09-107**

Building Number

Drawing Number: **PD0-102**

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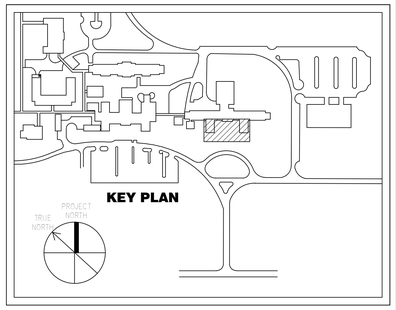
1 Plumbing Roof Deck Floor Demolition Plan
1/8" = 1'-0"



CONSTRUCTION DOCUMENT SUBMISSION

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	Revision Schedule	

CONSULTANTS:

ARCHITECT/ENGINEERS:

ARCHITECTURE
ENGINEERING
INTERIOR DESIGN
DESIGN/BUILD

ASTORINO

227 Fort Pitt Boulevard Pittsburgh Pennsylvania 15222
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Drawing Title
Plumbing Roof Demolition Plan

Approved: Project Director

Project Title
VAMC Lebanon - Renovation of Laboratory B1

Location

Date **02/23/2012** | Checked **BLG** | Drawn **Author**

Project Number **595-09-107**

Building Number

Drawing Number **PD0-103**

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Plumbing General Notes

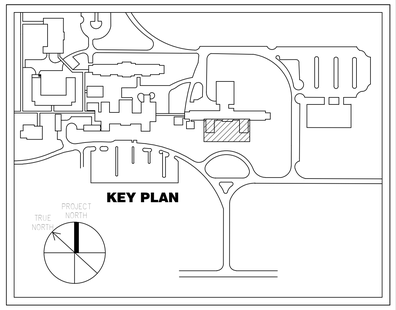
1. EXTEND ALL CLEAN OUTS ON SEWER LINES BELOW SLAB ON GRADE.
2. SET ALL FUNNEL DRAINS AND FLOOR DRAINS OVER DEEP SEAL P-TRAPS. TO FINISHED FLOOR LEVEL.
3. ACCESS PANELS IN CEILINGS AND WALLS FOR ACCESS TO VALVES, COCKS, CLEANOUTS AND SIMILAR EQUIPMENT FOR THE OPERATION OF THE PLUMBING SYSTEM SHALL BE FURNISHED AND INSTALLED BY THE .3 CONTRACTOR. REFER TO SPECIFICATION SECTION 08305.
4. SECURITY ACCESS PANELS FOR GAINING ACCESS TO THE REAR OF THE SECURITY PLUMBING FIXTURES SHALL BE FURNISHED AND INSTALLED BY THE .3 CONTRACTOR. MINIMUM SIZE SHALL BE 30" X 30". REFER TO SPECIFICATION SECTION 08305.
5. COORDINATE LOCATIONS OF FLOOR DRAINS IN MECHANICAL ROOM WITH ACTUAL EQUIPMENT BEING INSTALLED.
6. ALL HORIZONTAL SANITARY DRAINAGE PIPING ABOVE GROUND SHALL BE PITCHED AT 1/4"/FT UP TO 3", 1/8"/FT FOR 4" TO 8".
7. ALL HORIZONTAL STORM DRAINAGE PIPING SHALL BE PITCHED AT 1/4"/FT, UNLESS NOTED OTHERWISE.
8. THE .3 CONTRACTOR SHALL LOCATE UNDERGROUND PIPING WITHIN LIMITS OF THE STRUCTURE IN COORDINATION WITH THE OTHER CONTRACTORS, TO ASSURE NO FOOTING WILL BE UNDERMINED BY TRENCHING. ALL PIPE TRENCHES SHALL BE LOCATED SO THAT THE DISTANCE FROM THE EDGE OF THE FOOTING TO THE EDGE OF THE TRENCH IS ONE AND A HALF TIMES THE DISTANCE FROM THE BOTTOM OF THE FOOTING TO THE BOTTOM OF THE TRENCH. IN THE EVENT THIS CONDITION IS NOT MET, IT SHALL BE THE RESPONSIBILITY OF THE .3 CONTRACTOR INSTALLING THE PIPING TO FILL THE TRENCH WITH CONCRETE AFTER PIPING IS INSTALLED TO AN ELEVATION AT WHICH THE DISTANCE FROM THE EDGE OF THE FOOTING TO THE EDGE OF THE TRENCH IS ONE AND A HALF TIMES THE DISTANCE FROM THE TOP EDGE OF THE CONCRETE TO THE BOTTOM OF THE FOOTING.
9. THE PLUMBING DRAWINGS DO NOT INDICATE ALL STRUCTURAL FOOTINGS AND EXACT SIZES. SOME DEVIATIONS TO THE PIPING LAYOUT MAY BE REQUIRED. REFER TO THE STRUCTURAL FOUNDATION PLANS FOR FOOTING LOCATIONS. COORDINATE ACTUAL LOCATIONS OF THE PLUMBING LINES DURING CONSTRUCTION.
10. ALL HORIZONTAL WATER AND VENT PIPING SHALL BE INSTALLED ABOVE THE CEILING UNLESS OBVIOUSLY INDICATED TO BE INSTALLED IN THE PIPE CHASE OR STATED OTHERWISE.
11. ROOF DRAINS ARE TO BE FURNISHED BY THE .3 CONTRACTOR AND INSTALLED BY THE .1 CONTRACTOR.
12. ALL VENTS THROUGH THE ROOF SHALL BE A MINIMUM OF 10'-0" FROM ALL AIR INTAKES AND EXTENDED TO 2'-0" ABOVE THE ROOF. IF A VENT THROUGH THE ROOF IS CLOSER THAN 10'-0" FROM AN AIR INTAKE THE VENT SHALL BE EXTENDED TO 2'-0" ABOVE THE INTAKE.
13. THE .3 CONTRACTOR SHALL VERIFY ALL ELEVATIONS BEFORE STARTING WORK.
14. THE .3 CONTRACTOR SHALL COMPLY WITH ALL WATER AND SEWER REQUIREMENTS SET FORTH BY THE AUTHORITY HAVING JURISDICTION.
15. FOR ROOF PENETRATIONS REFER TO ARCHITECTURAL ROOF PLAN(S).
16. FOR FIRE-RATING OF WALLS REFER TO ARCHITECTURAL DRAWINGS.

Plumbing Symbols And Abbreviations

—W—	WATER MAIN (W)
	WATER PIPING BLW SLAB ENCASED IN PIPE
—TP—	TRAP PRIMER LINE
—T—	TEMPERED WATER LINE
—SAN—	SANITARY SEWER LINE (S)
—F—	FIRE MAIN (F)
—RL—	STORM SEWER LINE (RAIN LEADER)
	BRANCH VENT LINE (V)
	COLD WATER LINE (C)
	HOT WATER LINE (H)
	HOT WATER RECIRCULATION LINE (R)
	BALANCING VALVE
	GAS COCK
	SHUTOFF VALVE
	CHECK VALVE
	UNION
	STRAINER
CO/WCO	CLEANOUT AT CEILING OR WALL
CO/FCO	CLEANOUT AT FLOOR
FD	FLOOR DRAIN
HB	HOSE BIBB
WH	WALL HYDRANT
	PIPING TURNED UP
	PIPING TURNED DOWN
	DRAIN WITH P-TRAP
	ROOF DRAIN (RD)
	SHOCK ARRESTOR (SA)
	POINT OF CONNECTION TO EXISTING PIPING
A.P	ACCESS PANEL FOR ACCESS TO REAR SECURITY PLUMBING FIXTURES ONLY.
S 1	SOIL / WASTE STACK DESIGNATION
W 1	WATER RISER DESIGNATION
XX 1	EQUIPMENT ITEM:

NOTE: NOT ALL SYMBOLS AND NOTES ARE APPLICABLE TO THIS PROJECT.

WS	WASTE STACK
SS	SOIL STACK
VS	VENT STACK
RL	RAIN LEADER
DR	DRAIN
W/	WITH
FNL	FUNNE DRAIN
FR	FROM
BTC	BRANCH TO CONNECTION
AFF	ABOVE FINISHED FLOOR
INV	INVERT
EL	ELEVATION
ABV	ABOVE
BLW	BELOW
CLG	CEILING
FLR	FLOOR
CTR	COUNTER
DN	DOWN
RZ	RISE
DP	DROP
FF	FINISHED FLOOR
N.C.	NORMALLY CLOSED
NIC	NOT IN CONTRACT
A.P.	ACCESS PANEL
CW FU (XXX)	COLD WATER FIXTURE UNITS (GPM)
HW FU (XXX)	HOT WATER FIXTURE UNITS (GPM)
SAN FU	SANITARY SEWER FIXTURE UNITS
SF	SQUARE FEET
GPM	GALLONS PER MINUTE
DBP	DOMESTIC BACKFLOW PREVENTER
FBP	FIRE PROTECTION BACKFLOW PREVENTER
CP	CIRCULATOR PUMP
ET	EXPANSION TANK
TCV	TEMPERATURE CONTROL VALVE
TC	TIME CLOCK (CIRC PUMP CONTROL)
EWH	ELECTRIC WATER HEATER
IWH	INSTANTANEOUS WATER HEATER
PRV	PRESSURE REDUCING VALVE
TYP	TYPICAL



CONSTRUCTION DOCUMENT SUBMISSION

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Number	Description	Date
Revision Schedule		

CONSULTANTS:

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER ARTHUR A. BELL, JR. 040876-E

ARCHITECT/ENGINEERS:

ARCHITECTURE ENGINEERING INTERIOR DESIGN DESIGN/BUILD

ASTORINO

227 Fort Pitt Boulevard Pittsburgh Pennsylvania 15222
TEL 412 765 1700 FAX 412 765 1711 www.astorino.com

Drawing Title: **Plumbing Legend and General Notes**

Approved: Project Director

Project Title: **VAMC Lebanon - Renovation of Laboratory B1**

Location

Date: **02/23/2012** | Checked: **BLG** | Drawn: **Author**

Project Number: **595-09-107**

Building Number

Drawing Number: **PL1-001**

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Office of Facilities Management

Department of Veterans Affairs

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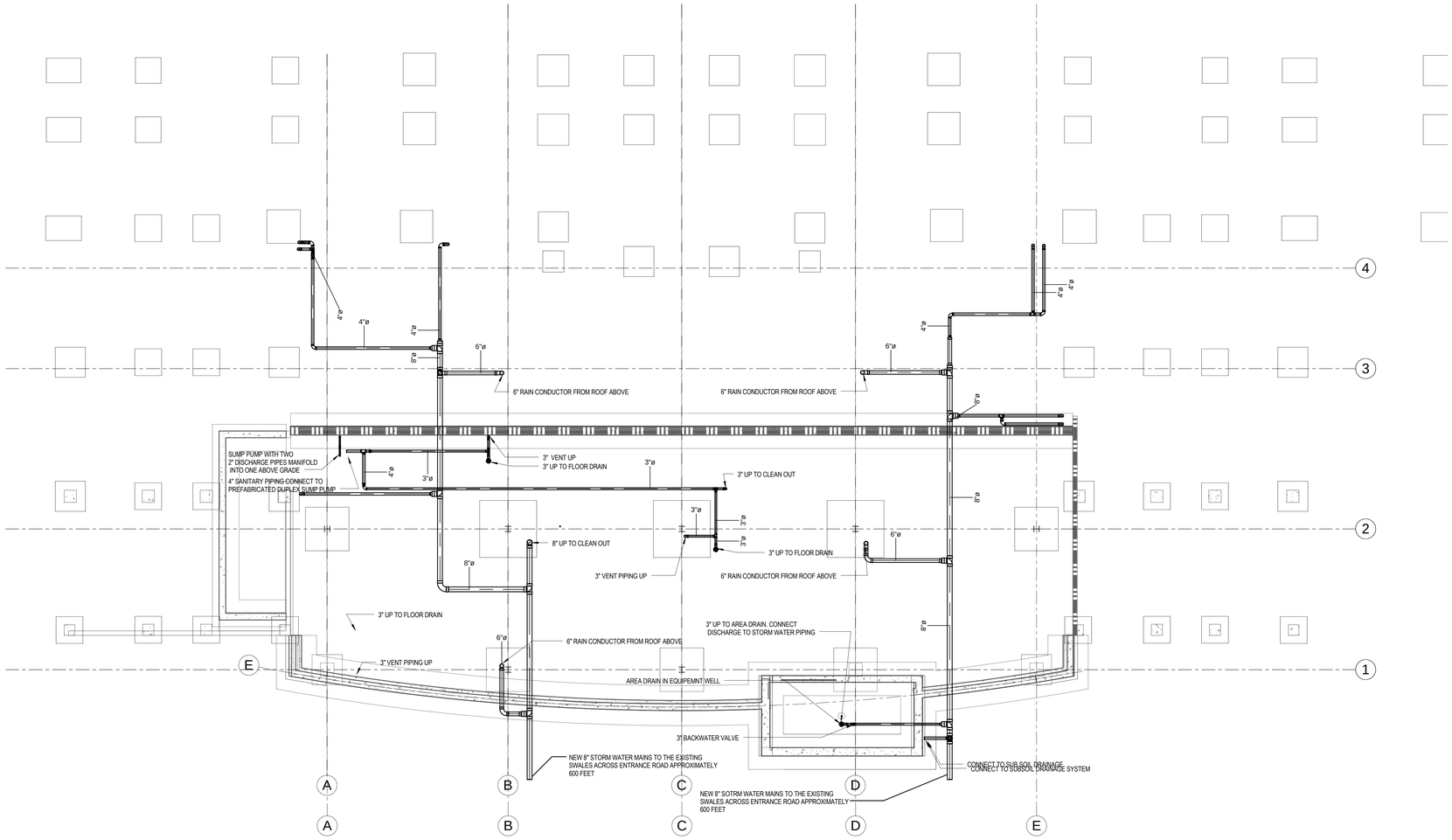
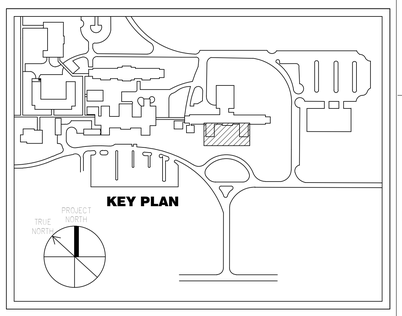


1 Plumbing Underground Plan
1/8" = 1'-0"



CONSTRUCTION DOCUMENT SUBMISSION

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Number	Description	Date
Revision Schedule		

CONSULTANTS:

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
ARTHUR A. BELL, JR.
040876-E

ARCHITECT/ENGINEERS:

ARCHITECTURE
ENGINEERING
INTERIOR DESIGN
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ASTORINO

227 Fort Pitt Boulevard Pittsburgh Pennsylvania 15222
TEL 412 765 1700 FAX 412 765 1711 www.astorino.com

Drawing Title: **Plumbing Underground Plan**	Project Title: **VAMC Lebanon - Renovation of Laboratory B1**		Project Number: **595-09-107**
Approved: Project Director	Location		Building Number
	Date: **02/23/2012**	Checked: **BLG**	Drawing Number: **PL1-100**
		Drawn: **Author**	Dwg. of

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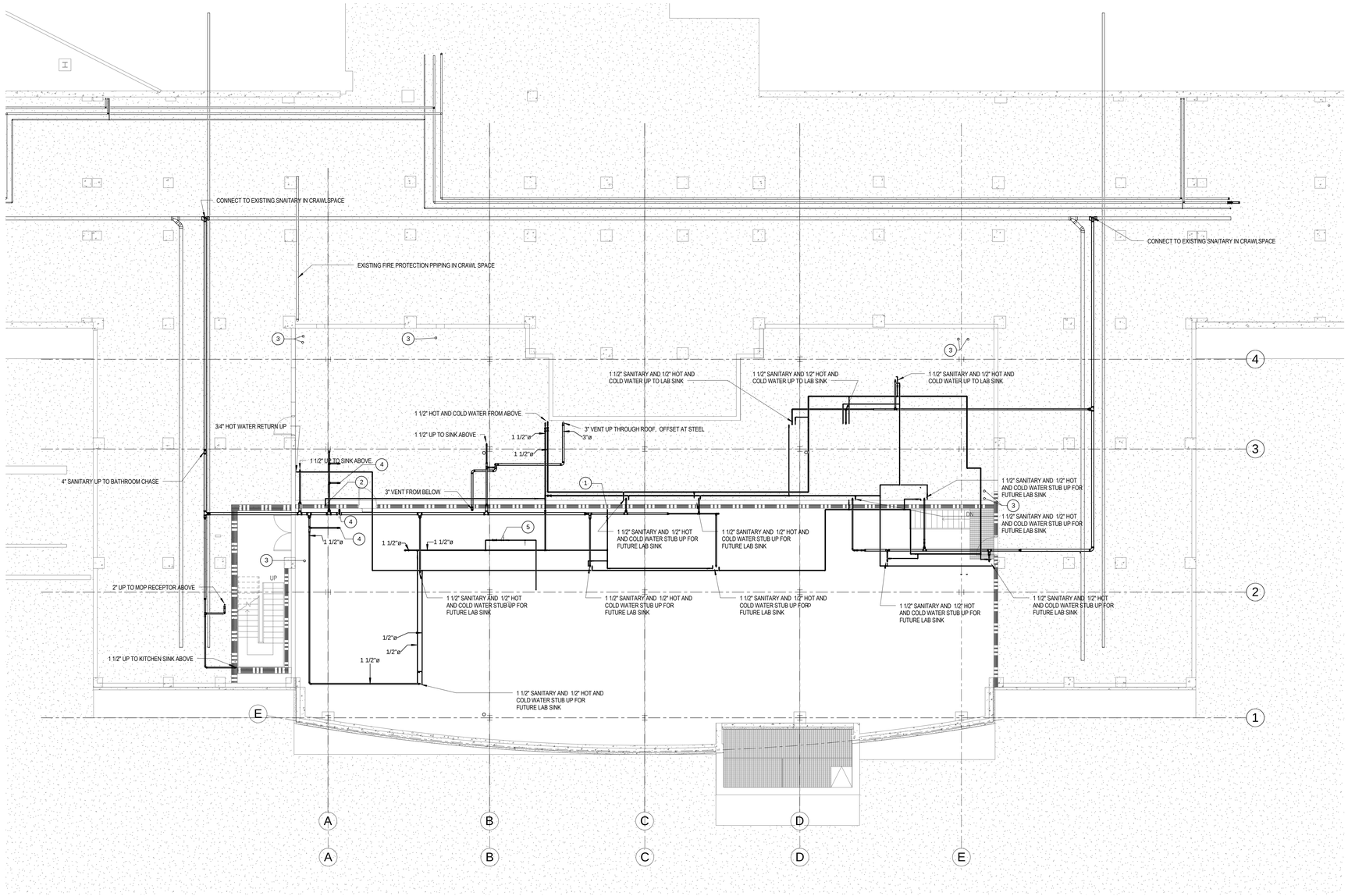
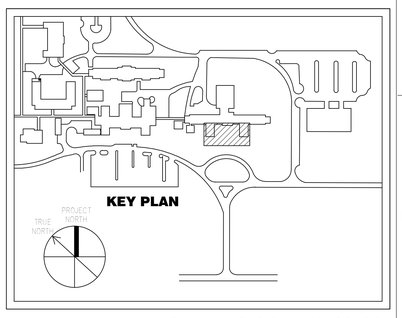
Department of Veterans Affairs

VA FORM 08-6231, OCT 1978

Plumbing Plan Keynotes	
Mark	Notes
1	CONNECT TO HUIDIFIER EQUPIPMENT. CONNECTION REQURIES WATTS 909 BACKFLOW PREVENTOR AND ISOLATION VALVES
2	1/2" COLD WATER UP TO VALVED CONNECTION FOR FUTURE DI WATER FILTRATION SYSTEM
3	RAIN CONDUCTOR FROM ABOVE TO UNDER GROUND. SLEEVES THROUGHS TRUCTURAL MAY BE REQUIRED PRIOR TO POURING FOUNDATIONS
4	1 1/2" STANDPIPE DRAIN FOR LAB EQUIPMENT. COORDINATE WITH OWNER FOR EXACTLOCATION
5	1/2" WATER SUPPLY CONNECTION FOR MECHANICAL EXPANSION TANK. PROVIDE WITH WATTS 909 BACKFLOW PREVENTER ROUTE DRAIN TO FLOOR DRAIN
6	1/2" BALANCING VALVE. BALANCE TO 3 GALLONS PER MINUTE



1 Plumbing Pipe Basement Floor Plan
1/8" = 1'-0"



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Number	Description	Date
Revision Schedule		

CONSULTANTS:

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER ARTHUR A. BELL, JR. 040876-E

ARCHITECT/ENGINEERS:

ARCHITECTURE ENGINEERING INTERIOR DESIGN DESIGN/BUILD

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Drawing Title	Project Title	Project Number
Plumbing Pipe Basement Plan	**VAMC Lebanon - Renovation of Laboratory B1**	**595-09-107**
Approved: Project Director	Location	Building Number
	Date: **02/23/2012** / Checked: **BLG** / Drawn: **Author**	Drawing Number: **PL1-101** Dwg. of

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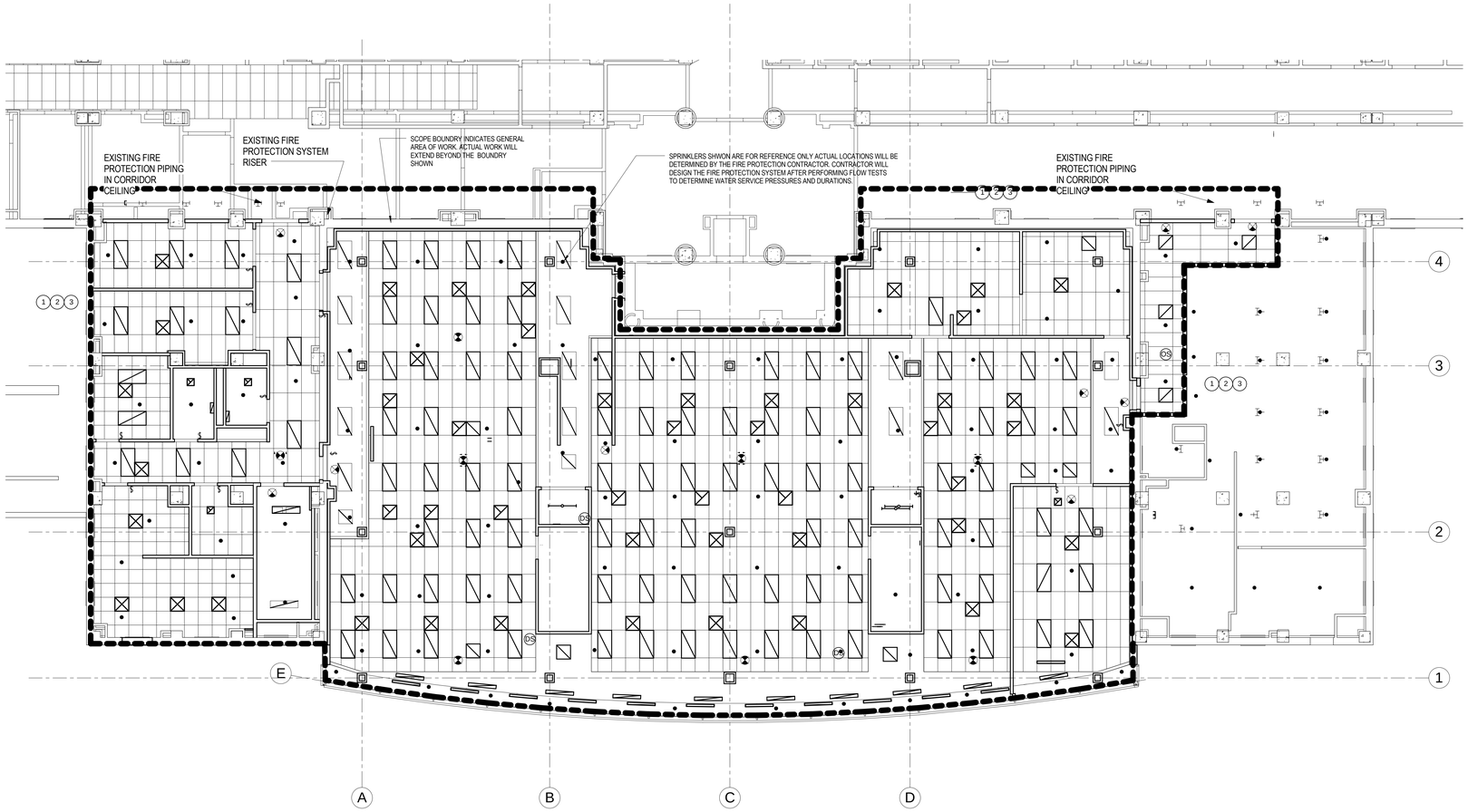
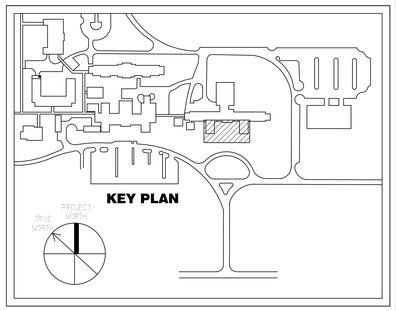
Department of Veterans Affairs

VA FORM 08-6231, OCT 1978

Fire Protection Plan Keynotes	
Mark	Notes
1	REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIRED INFORMATION
2	REFER TO THE LEGEND DRAWING FOR DESIGN INFORMATION
3	THESE DRAWINGS ARE A GUIDE FOR THE CONTRACTOR ONLY. THIS IS A DELEGATED DESIGN FOR THE CONTRACTOR TO DESIGN SUBMIT AND EXECUTE CONSTRUCTION. THE CONTRACTOR WILL PERFORM HIS OWN FLOW TEST FOR THE REQUIRED HYDRAULIC CALCULATIONS
7	



1 Fire Protection Ground Floor Plan
1/8" = 1'-0"



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Revision Schedule		

CONSULTANTS:

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER ARTHUR A. BELL, JR. 040876-E

ARCHITECT/ENGINEERS:

ARCHITECTURE ENGINEERING INTERIOR DESIGN DESIGN/BUILD

ASTORINO

227 Fort Pitt Boulevard Pittsburgh Pennsylvania 15222
TEL 412 765 1700 FAX 412 765 1711 www.astorino.com

Drawing Title: **Fire Protection Ground Floor**

Approved: Project Director

Project Title: **VAMC Lebanon - Renovation of Laboratory B1**

Location

Date: **02/23/2012** | Checked: **Checker** | Drawn: **Author**

Project Number: **595-09-107**

Building Number

Drawing Number: **FP1-102**

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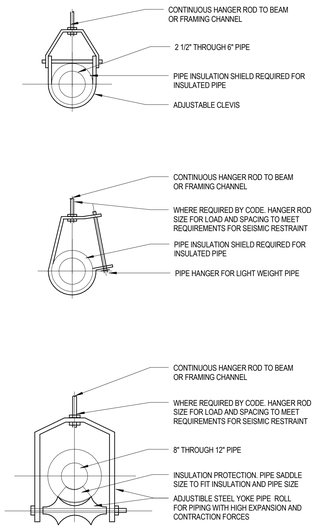
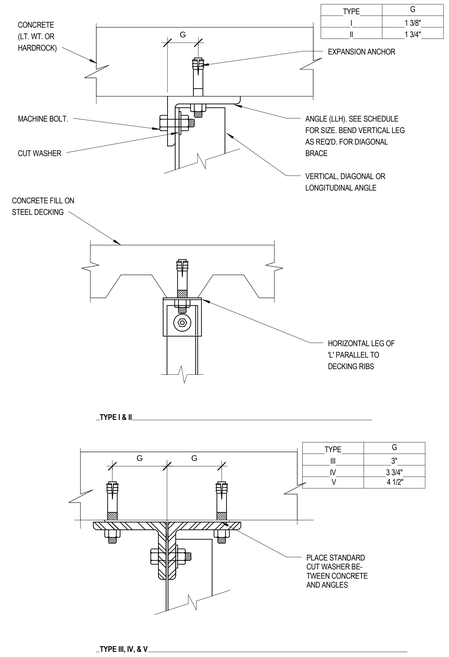
NOTES
1. ATTACH SUPPORTS FOR ALL PIPING SUSPENDED FROM THE STEEL STRUCTURE TO THE TOP CORD OF JOISTS OR BEAMS WHERE POSSIBLE.
2. PROVIDE COPPER OR PLASTIC COATED HANGERS FOR NON-INSULATED COPPER PIPE.



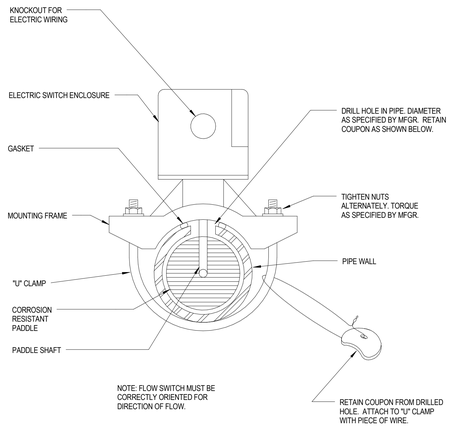
1 Fire Protection Hanger Detail
12" = 1'-0"



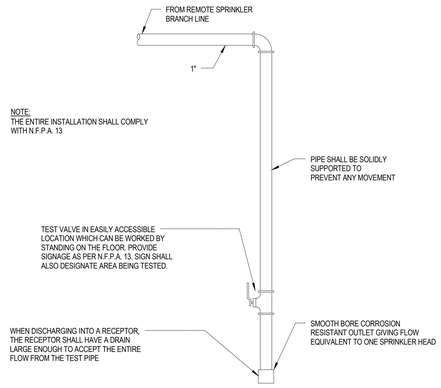
TYPE	G
I	1 3/8"
II	1 3/4"

TYPE	G
III	3"
IV	3 3/4"
V	4 1/2"

2 Fire Protection Concrete Hanger Attachments
12" = 1'-0"

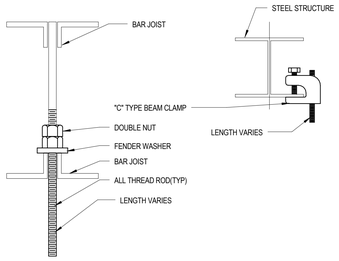


3 Typical Sprinkler Flow Switch
12" = 1'-0"

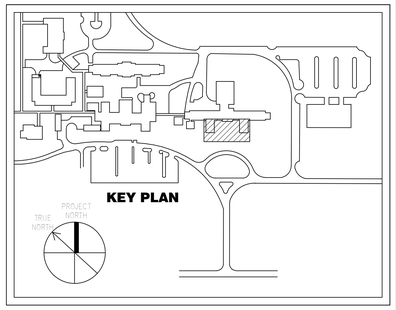


4 Inspector's Test & Drain
12" = 1'-0"

NOTES:
1. FOR HANGER PLACMENT REQUIREMENTS, AND HANGER ROD SPACING, REFER TO THE SPECIFICATIONS
2. HANGER LOAD SHALL BE LIMITED PER MANUFACTURES RECOMMENDATIONS



5 Fire Protection Steel Hanger Attachment Detail
12" = 1'-0"



CONSTRUCTION DOCUMENT SUBMISSION

FULLY SPRINKLERED

Number	Description	Date
Revision Schedule		

CONSULTANTS:

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER ARTHUR A. BELL, JR. 040876-E

ARCHITECT/ENGINEERS:

ARCHITECTURE ENGINEERING INTERIOR DESIGN DESIGN/BUILD

ASTORINO

227 Fort Pitt Boulevard Pittsburgh Pennsylvania 15222
TEL 412 765 3700 FAX 412 765 1711 www.astorino.com

Drawing Title: **Fire Protection Details**

Approved: Project Director

Project Title: **VAMC Lebanon - Renovation of Laboratory B1**

Location

Date: **02/23/2012** | Checked: **Checker** | Drawn: **Author**

Project Number: **595-09-107**

Building Number

Drawing Number: **FP7-101**

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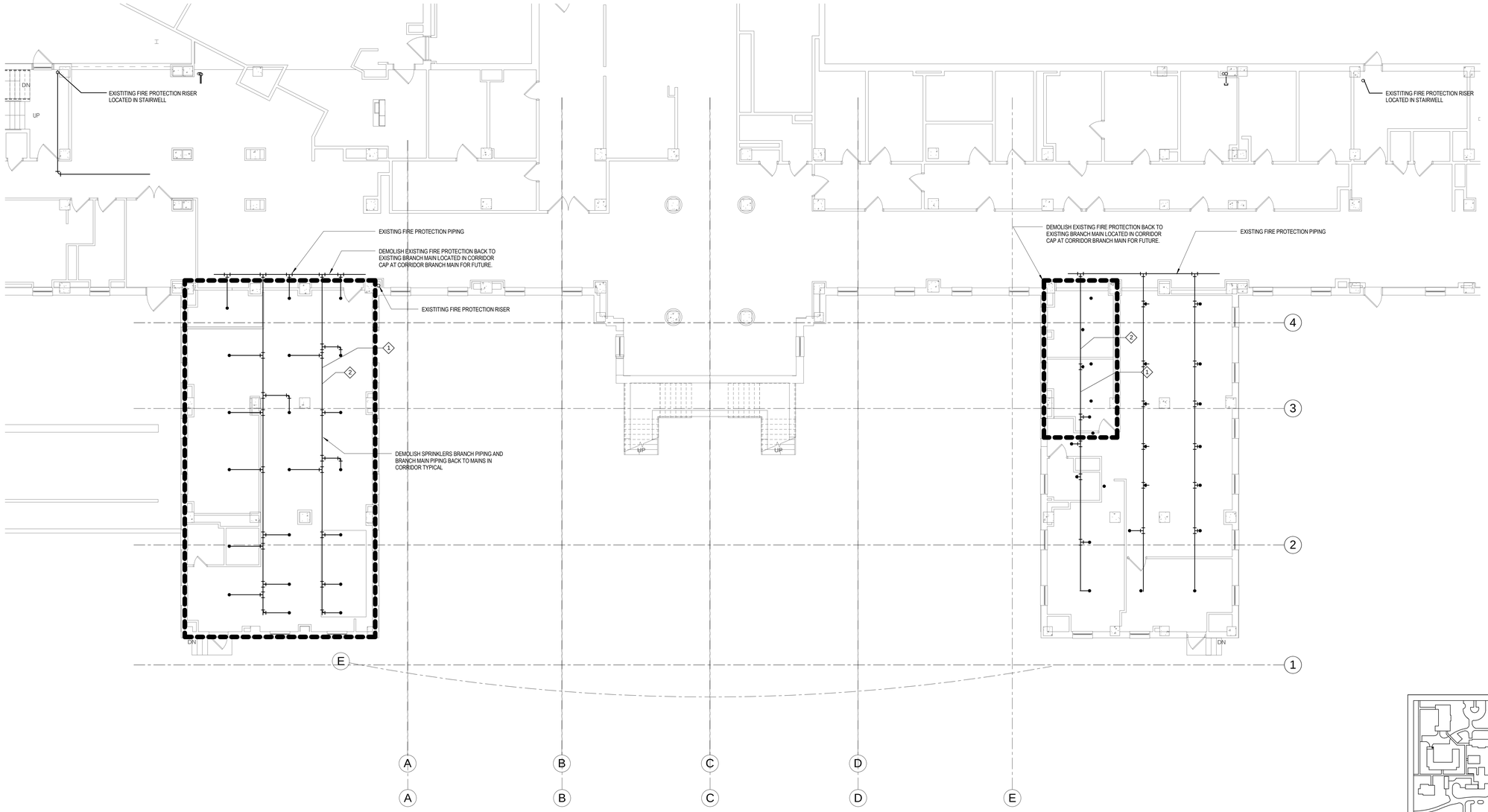
Office of Facilities Management

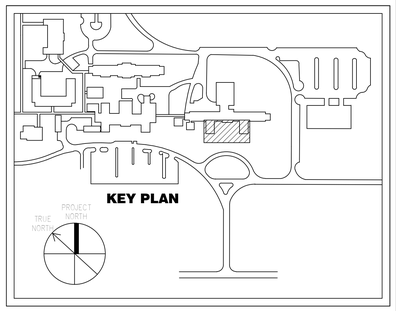
Department of Veterans Affairs

VA FORM 08-6231, OCT 1978

Fire Protection Demolition Keynotes	
Mark	Notes
1	DEMOLISH SPRINKLER PIPING BACK TO BRANCH MAIN OR MAIN PIPING TO FACILITATE THE NEW CONSTRUCTION
2	REFER TO THE SPECIFICATIONS AND GENERAL NOTES AND LEGEND SHEET FOR ADDITIONAL INFORMATION ABOUT THE PROJECT.



1 Fire Protection Demolition-Ground Level
1/8" = 1'-0"



CONSTRUCTION DOCUMENT SUBMISSION

FULLY SPRINKLERED

Number	Description	Date
	Revision Schedule	

CONSULTANTS:

ARCHITECT/ENGINEERS:

ARCHITECTURE ENGINEERING INTERIOR DESIGN DESIGN/BUILD

ASTORINO

227 Fort Pitt Boulevard Pittsburgh Pennsylvania 15222
TEL 412 765 1700 FAX 412 765 1711 www.astorino.com

Drawing Title: **Fire Protection Ground Floor Demolition Plan**

Approved: Project Director

Project Title: **VAMC Lebanon - Renovation of Laboratory B1**

Location

Date: **02/23/2012** | Checked: **Checker** | Drawn: **Author**

Project Number: **595-09-107**

Building Number

Drawing Number: **FPD-102**

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Office of Facilities Management

Department of Veterans Affairs

VA FORM 08-6231, OCT 1978

Fire Protection General Notes:

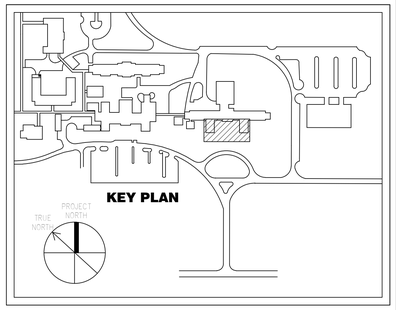
1. THE CONTRACTOR SHALL PROVIDE AN AUTOMATIC SPRINKLER SYSTEM TO PROTECT ALL AREAS OF THE PROJECT.
2. THE COMPLETE INSTALLATION AND TESTING OF THE AUTOMATIC SPRINKLER SYSTEM SHALL BE IN STRICT ACCORDANCE WITH NFPA 13, 2009 EDITION AND THE AUTHORITY HAVING JURISDICTION.
3. THE FIRE PROTECTION DRAWINGS ARE INTENDED FOR BIDDING PURPOSE ONLY AND ARE NOT INTENDED TO COVER EACH AND EVERY ITEM REQUIRED FOR AN APPROVED SYSTEM. SHOULD ADDITIONAL SPRINKLER HEADS OR EQUIPMENT NEED BE INSTALLED TO MEET THE REQUIREMENTS SET FORTH BY NFPA, THE CONTRACTOR SHALL DO SO AT HIS EXPENSE.
4. THE CONTRACTOR SHALL FIELD , VERIFY ALL CEILING TYPES CEILING HEIGHTS, ROOM DIMENSIONS, AND SPRINKLER HEAD LOCATIONS BEFORE PERFORMING ANY WORK. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN AND ROOM FINISH SCHEDULE.
5. ALL WORK SHALL BE STRICTLY COORDINATED BETWEEN INDIVIDUAL CONTRACTORS BEFORE ANY WORK IS PERFORMED.
6. THE CONTRACTOR SHALL SHOW ALL LIGHT FIXTURES, HVAC GRILLES, EXPOSED DUCTWORK, AND BULKHEADS ON THE SPRINKLER SHOP DRAWINGS.
7. SPRINKLER HEADS NEAR HEATERS AND LOCATED WITHIN HEATER ZONES AS DEFINED BY NFPA 13 SHALL BE HIGH TEMPERATURE RATED.
8. INSTALL ALL SPRINKLER PIPING ABOVE CEILINGS UNLESS NOTED OTHERWISE. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES AND LOCATIONS.
9. SPRINKLER PIPING RUNNING THROUGH ROOMS INDICATED TO BE ELECTRICAL ROOMS OR ROOMS HAVING ELECTRICAL PANELS IN THEM, SHALL BE ROUTED AS NOT TO RUN OVER THESE PANELS OR EQUIPMENT ITEMS.
10. ALL VALVE SUPERVISORY SWITCHES AND WATER FLOW SWITCHES SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR AND WIRED BY THE ELECTRICAL CONTRACTOR.
11. ALL DRAIN LINES INCLUDING THE DRAIN FOR THE AUTOMATIC SPRINKLER SYSTEM INSPECTOR'S TEST CONNECTION AND THE AUTOMATIC SPRINKLER SYSTEM MAIN DRAIN SHALL BE GALVANIZED STEEL.
12. ALL PIPE PENETRATIONS THROUGH FLOORS OR WALLS SHALL BE U.L. ASSEMBLIES AND SLEEVED AND SEALED TO MAKE WATERTIGHT AND MAINTAIN FIRE RATING.
13. REFER TO ARCHITECTURAL DRAWINGS FOR FIRE RATINGS OF ALL WALL TYPES.
14. THE FIRE PROTECTION HYDRAULIC CALCULATIONS FOR THE AUTOMATIC SPRINKLER SYSTEMS SHALL INCORPORATE A MINIMUM 10 PSI SAFETY FACTOR.
15. A PRESSURE TEST OF THE AUTOMATIC SPRINKLER SYSTEM SHALL BE WITNESSED BY THE FIRE DEPARTMENT AND OWNER'S INSURANCE AGENCY. TWO (2) WEEKS WRITTEN ADVANCED NOTICE OF TEST SHALL BE GIVEN.
16. ALL LEAKAGE EVIDENCED BY TESTING SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE BY TIGHTENING OR REPLACING FITTINGS OR EQUIPMENT.
17. SEE FIRE PROTECTION SECIFICATIONS FOR ADDITIONAL INFORMATION.
18. DESIGN AND INSTALLATION SHALL BE BY THE CONTRACTOR AND SHALL BE IN ACCORDANCE WITH NFPA 13, 2009 EDITION.
19. ALL UNDERGROUND MAINS SUPPLYING FIRE PROTECTION WATER SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 13 , 2009 EDITION.
20. MAXIMUM SPRINKLER SPACING FOR LIGHT HAZARD AREAS SHALL NOT EXCEED 225 SQUARE FEET PER SPRINKLER. MAXIMUM SPACING FOR ALL ORDINARY HAZARD AREAS SHALL NOT EXCEED 130 SQUARE FEET PER SPRINKLER.
21. THE TEMPERATURE RATING (EXCEPT WHERE HIGHER TEMPERATURE REQUIRED BY NFPA 13) SHALL BE 165 DEGREES F.
22. ALL SPRINKLER SYSTEMS SHALL BE HYDRAULICALLY DESIGNED TO PROVIDE THE MINIMUM DENSITIES AS INDICATED AT BUILDING.
23. FIRE PROTECTION DRAWINGS SHALL BE REVIEWED BY AUTHORITIES HAVING JURISDICTION

Fire Protection Legend

F	FIRE LINE
SPR	SPRINKLER PIPING
FDC	FIRE DEPARTMENT CONNECTION LINE
STD	SPRINKLER TEST DRAIN
	UPRIGHT/PENDENT SPRINKLER HEAD - NEW
	CONCEALED PENDENT SPRINKLER HEAD - NEW
	SIDEWALL SPRINKLER HEAD
	BALL VALVE
	CHECK VALVE
	OS & Y VALVE WITH TAMPER SWITCH TAMPER SWITCH WIRING BY OTHERS
	CAPPED CONNECTION
	CHECK VALVE (INSTALL IN HORIZONTAL)
	STRAINER
	WATER FLOW SWITCH - WIRING BY OTHERS
	RECESSED 2 1/2" FIRE DEPARTMENT VALVE IN CABINET (PROVIDED WITH RATINGS TO MATCH WALL RATINGS)
	2 1/2" FIRE DEPARTMENT VALVE (FDV)
	SPRINKLER ALARM RISER
	CONNECT TO EXISTING SERVICE AS INDICATED
F.C.	FIRE PROTECTION CONTRACTOR
P.C.	PLUMBING CONTRACTOR
E.C.	ELECTRICAL CONTRACTOR
ABV CLG	ABOVE THIS CEILING
BLW FLR	BELOW THIS FLOOR
E.T.R.	EXISTING TO REMAIN
RZ	RISE
DP	DROP
NIC	NOT IN CONTRACT
TYP	TYPICAL

Sprinkler System Densities

ALL LIGHT HAZARD AREAS - 0.10 GPM/SQ.FT. OVER 1500 SQ. FT.
ALL STORAGE AND MECHANICAL AREAS-ORDINARY HAZARD - GROUP 2, 0.20 GPM/SQ. FT. OVER 1500 SQ.FT.



CONSTRUCTION DOCUMENT SUBMISSION

FULLY SPRINKLERED

Number	Description	Date
Revision Schedule		

CONSULTANTS:

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER ARTHUR A. BELL, JR. 040876-R

ARCHITECT/ENGINEERS:

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TEL 412 765 3700 FAX 412 765 1711 www.astorino.com

Drawing Title: **Fire Protection Symbols and General Notes**

Approved: Project Director

Project Title: **VAMC Lebanon - Renovation of Laboratory B1**

Location

Date: **02/23/2012** | Checked: **Checker** | Drawn: **Author**

Project Number: **595-09-107**

Building Number

Drawing Number: **FP1-001**

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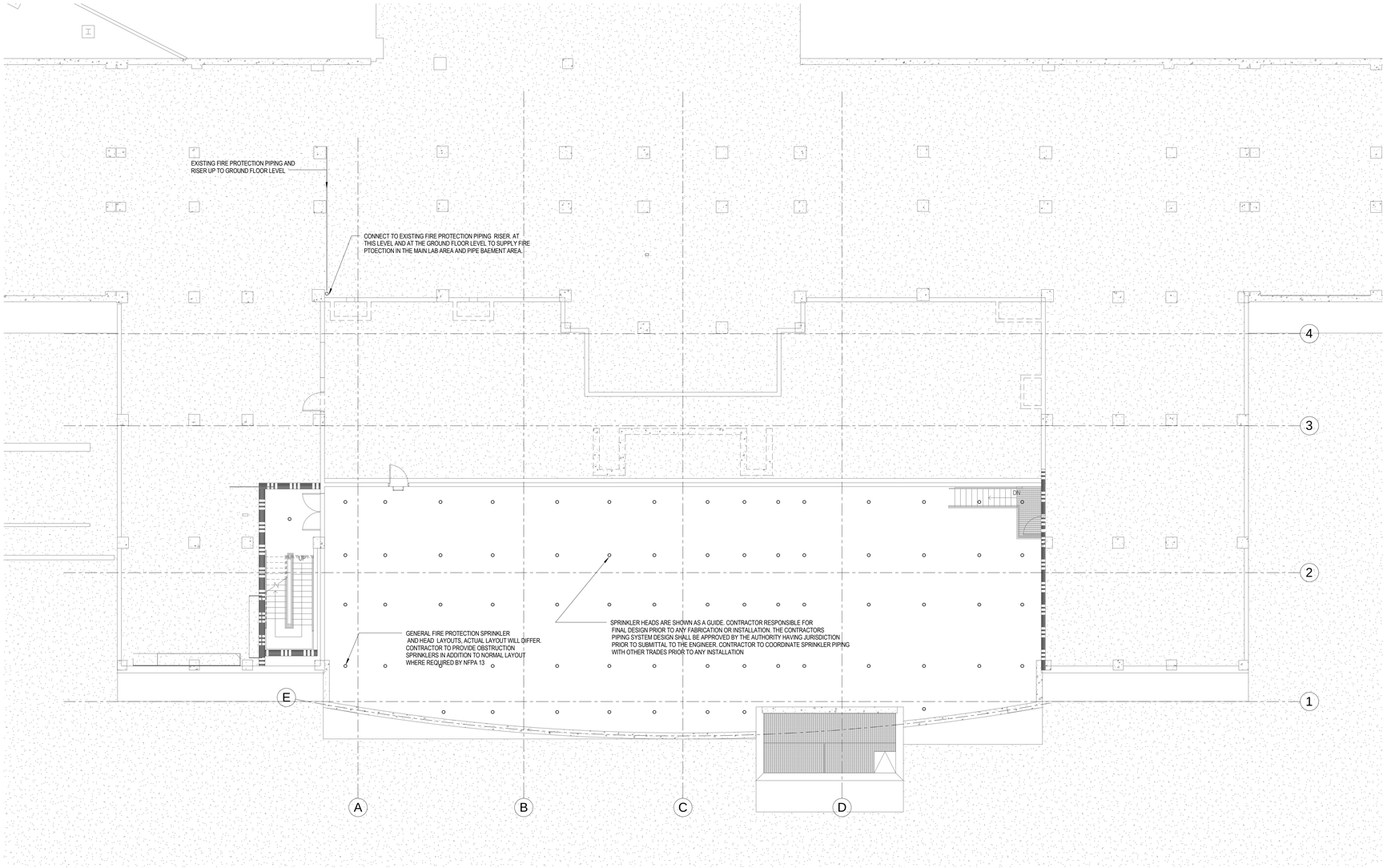
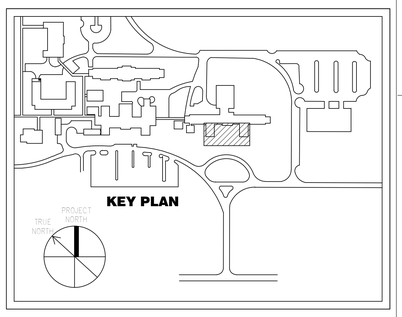
Department of Veterans Affairs

VA FORM 08-6231, OCT 1978



1 Fire Protection Pipe Basement Floor Plan
1/8" = 1'-0"



CONSTRUCTION DOCUMENT SUBMISSION

FULLY SPRINKLERED

Number	Description	Date
	Revision Schedule	

CONSULTANTS:

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER ARTHUR A. BELL, JR. 040876-E

ARCHITECT/ENGINEERS:

ARCHITECTURE
ENGINEERING
INTERIOR DESIGN
DESIGN/BUILD

ASTORINO

227 Fort Pitt Boulevard Pittsburgh Pennsylvania 15222
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Drawing Title: **Fire Protection Pipe Basement**

Approved: Project Director

Project Title: **VAMC Lebanon - Renovation of Laboratory B1**

Location

Date: **02/23/2012** | Checked: **Checker** | Drawn: **Author**

Project Number: **595-09-107**

Building Number

Drawing Number: **FP1-101**

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ELECTRICAL SYMBOLS - POWER PLAN

- MOTOR, SINGLE-PHASE
- MOTOR, THREE-PHASE
- TRANSFORMER, FLOOR, T
- WYE CONNECTION
- DUCT, CELL FLOOR HEADER
- DUCT, TROLLEY
- DUCT, UNDERFLOOR JUNCTION BOX
- EARTH GROUND
- JUNCTION BOX
- LADDER CABLE TRAY
- BRANCH CIRCUIT HOMERUN. ARROWS INDICATE NUMBER OF CIRCUITS, MINUMUM #12 AWG CONDUCTOR. EACH CIRCUIT SHALL HAVE DEDICATED NEUTRAL.
- PB — PULL BOX
- WIREWAY
- RC — RIGID CONDUIT LINE = RC
- DB — DIRECT BURIAL CABLE = DB
- P — POWER DUCT = P
- S — SUBSTATION
- HVS — HI VOLTAGE SWITCH ON CONCRETE PAD
- LVS — LOW VOLTAGE SWITCH ON CONCRETE PAD
- P T — DUAL POWER AND TELECOMMUNICATIONS MANHOLE
- BUSWAY
- FLOOR OUTLET, DATA COMMUNICATION
- OUTLET, DATA COMMUNICATION
- PUSH BUTTON
- DP# — DISTRIBUTION PANEL
- LP — LIGHTING PANEL
- PANELBOARD CABINET, FLUSH MOUNTED
- PANELBOARD CABINET, SURFACE MOUNTED
- RECEPTACLE, CLOCK HANGER
- RECEPTACLE, DUPLEX
- RECEPTACLE, DUPLEX ON EMERGENCY POWER
- RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER
- RECEPTACLE, QUADRAPLEX
- RECEPTACLE, SINGLE
- S — RECEPTACLE, SINGLE WITH SWITCH
- RECEPTACLE, SPECIAL PURPOSE
  A = 120V, 20A, 1 PHASE, 2-POLE, 3W, NEMA 5-20R.
  B = 208V, 20A, 1 PHASE, 2-POLE, 3W, NEMA 6-20R.
  C = 120V, 30A, 1 PHASE, 2-POLE, 3W, NEMA 5-30R.
  D = 208V, 30A, 1 PHASE, 2-POLE, 3W, NEMA 6-30R.
  E = 208V, 50A, 1 PHASE, 3-POLE, 4W, NEMA 14-50R.
  F = 208V, 30A, 3 PHASE, 3-POLE 4W, NEMA 15-30R.
  G = 208V, 50A, 3 PHASE, 3 POLE, 4W, NEMA 15-30R.
  H = 208V, 60A, 3 PHASE, 3 POLE, 4W, NEMA 15-60R.
- S — RECEPTACLE, SWITCHED DUPLEX
- DROP CORD, SINGLE CONVENIENCE OUTLET, 3-WIRE, GROUNDING TYPE, 20A, W#12 CONDUCTORS IN FLEXIBLE CORD (CENTER LINE OF OUTLET: 6'-6" [1981mm] AFF. MINIMUM).
- ELECTRICAL STRIP MOLD (OUTLETS ON 2'-0" [610mm] CENTERS OR AS DESIGNATED ON DRAWINGS), MTD 3'-6" [1067mm] AFF OR AS INDICATED.
- 3-GANG COMPARTMENT BOX IN FLOOR FOR TELEPHONE, DATA & RECEPTACLE.
- ELECTRICAL STRIP MOLD (OUTLETS ON 2'-0" [610mm] CENTERS OR AS DESIGNATED ON DRAWINGS), MTD 3'-6" [1067mm] AFF OR AS INDICATED.
- 3-GANG COMPARTMENT BOX IN FLOOR FOR TELEPHONE, DATA & RECEPTACLE.
- R 50 — RELAY; LETTER INDICATES RELAY TYPE
  50 = INSTANTANEOUS OVERCURRENT OR RATE-OF-RISE
  51 = AC-TIME OVERCURRENT
  67 = AC-DIRECTIONAL OVERCURRENT
  86 = LOCK OUT

ELECTRICAL SYMBOLS - POWER PLAN

- DISCONNECT SWITCH, FUSED
- DISCONNECT SWITCH, UNFUSED
- STARTER, COMBINATION WITH DISCONNECT SWITCH
- STARTER OR MOTOR CONTROLLER
- VFD — VARIABLE FREQUENCY DRIVE
- TC — TIME CLOCK
- POTHEAD
- STRESS CONE
- R — RECTIFIER, CATHODIC PROTECTION SANITARY
- VENTILATOR OR FAN COIL UNIT OUTLET
- CONDUIT TERMINATED 6" [152mm] AFF IN STANDARD BOX FOR EXTENSION TO EQUIPMENT AS DIRECTED.
- CONDUIT TERMINATED W/COUPLING (FLUSH W/FINISHED FLOOR) FOR EXTENSION TO EQUIPMENT AS DIRECTED.
- S2 — SWITCH

F = FUSED SWITCH	K = KEY OPERATED
L = LOCK	LM= LOW VOLTAGE MASTER
M = MANUAL MOTOR STARTING	MC= MOMENTARY CONTACT
MP= MOTOR SNAP WITH PILOT LIGHT (THERMAL TYPE)	P = WITH PILOT LIGHT
PB= PUSH BUTTON STATION	RC= REMOTE CONTROL
WP= WEATHER PROOF	X = EXPLOSION PROOF

ELECTRICAL SYMBOLS - DIAGRAM

- DELTA CONNECTION
- MOTOR, SINGLE-PHASE
- MOTOR, THREE-PHASE
- TRANSFORMER
- WYE CONNECTION
- EARTH GROUND
- J — JUNCTION BOX
- PB — PULL BOX
- FUSE WITH RATING
- MOLDED CASE CIRCUIT BREAKER
- LOW-VOLTAGE DRAWOUT AIR CIRCUIT BREAKER
- DISCONNECT SWITCH, FUSED
- DISCONNECT SWITCH, UNFUSED
- STARTER, COMBINATION WITH DISCONNECT SWITCH
- STARTER OR MOTOR CONTROLLER
- TC — TIME CLOCK
- G — GENERATOR, POWER
- M — METER
- A — AMMETER
- V — VOLTMETER
- W — WATTMETER
- WH — WATT-HOUR METER

ELECTRONIC SAFETY AND SECURITY SYMBOLS

- F P — CARD ACCESS READER (ROUGH-IN BOX ONLY)
  MOUNT — F-FLUSH
  TECHNOLOGY/TYPE — P-PROXIMITY
  PROVIDE 4" SQUARE X 2 1/8" BOX, SINGLE GANG DEVICE RING, 3/4" EMT CONDUIT TO BASKET TRAY AND PULLSTRING.
- I — PHOTOELECTRIC SMOKE DETECTOR
- DETECTOR, SMOKE, FOR DUCT
- FS — FIRE ALARM STATION, MANUAL PULL
- CM — ALARM, CONTROL MODULE
- MM — ALARM, MONITORING MODULE
- WP — FIRE ALARM STATION, MANUAL PULL
- FATC — ALARM, FIRE, TERMINAL CABINET.
- ALARM, SPEAKER/LIGHT, ONE ASSEMBLY
- TS — ALARM, TAMPER SWITCH
- HD — DETECTOR, HEAT
- F — FIRE ALARM LIGHT

ELECTRICAL SYMBOLS - LIGHTING PLAN

- SWITCH, CEILING MOUNTED PULL
- S2 — SWITCH

BLANK = SINGLE POLE	2 = DOUBLE POLE
3 = THREE-WAY	4 = FOUR-WAY
D = DIMMER	K = KEY OPERATED
LV= LOW VOLTAGE	L = LOCK
LM= LOW VOLTAGE MASTER	P = WITH PILOT LIGHT
PB= PUSH BUTTON STATION	RC= REMOTE CONTROL
T = TIMER OPERATED	WP= WEATHER PROOF
X = EXPLOSION PROOF	Mo= OCCUPANCY SENSOR

- SWITCH, LAMP HOLDER POLE
- LIGHT FIXTURE CEILING MOUNTED
- A — LIGHT FIXTURE, RECESSED FLUORESCENT, 2'x4' LETTER INDICATES TYPE.
- B — LIGHT FIXTURE, RECESSED FLUORESCENT, 1'x4' LETTER INDICATES TYPE.
- C — LIGHT FIXTURE, RECESSED FLUORESCENT, 1'x8' [305x2439mm]; LETTER INDICATES TYPE.
- A — LIGHT FIXTURE, SURFACE MOUNTED FLUORESCENT, 2'x4' LETTER INDICATES TYPE.
- B — LIGHT FIXTURE, SURFACE MOUNTED FLUORESCENT, 1'x4' LETTER INDICATES TYPE.
- C — LIGHT FIXTURE, SURFACE MOUNTED FLUORESCENT, 1'x8' LETTER INDICATES TYPE.
- D — LIGHT FIXTURE, FLUORESCENT EMERGENCY; LETTER INDICATES TYPE.
- E — LIGHT FIXTURE, RECESSED FLUORESCENT, 2'x2' LETTER INDICATES TYPE.
- E — LIGHT FIXTURE, SURFACE MOUNTED FLUORESCENT, 2'x2' LETTER INDICATES TYPE.
- LIGHT TRACK WITH HEADS AS SHOWN
- (S) — LIGHT FIXTURE, STRIP/INDUSTRIAL FLUORESCENT; LETTER INDICATES TYPE.
- LIGHT FIXTURE, WALL MOUNTED
- LIGHTING, ONE HEAD EMERGENCY BATTERY POWER
- LIGHTING, TWO HEAD EMERGENCY BATTERY POWER
- LIGHTING, THREE HEAD EMERGENCY BATTERY POWER
- STREET LIGHT WITH BRACKET
- LIGHT POLE, ONE MAST ARM, ONE LUMINAIRE
- LIGHT POLE, TWO MAST ARMS, TWO LUMINAIRES
- LIGHT POLE, POST TOP MOUNT LUMINAIRE
- LIGHT POLE, ONE LUMINAIRE
- LIGHT POLE, TWO LUMINAIRES
- LIGHTING, EXTERIOR BUILDING
- EXTERIOR FLOOD LIGHT
- EXIT SIGN, WALL MOUNTED WITH DIRECTIONAL ARROWS AND FACES AS SHOWN
- EXIT SIGN, CEILING MOUNTED WITH DIRECTIONAL ARROWS AND FACES AS SHOWN
- LIGHT FIXTURE, BOLLARD
- LIGHT FIXTURE, DIRECTIONAL

COMMUNICATION SYMBOLS

- OUTLET, COMBINATION TELEPHONE/DATA COMMUNICATION
- C — COAXIAL CABLE TELEVISION LINE = CATV
- CCTV — CLOSED CIRCUIT TELEVISION LINE = CCTV. MINIMUM 1" [25mm] CONDUIT
- FO — FIBEROPTIC CABLE = FO (INSTALLED IN INNERDUCT)
- T — COPPER TELEPHONE CABLE = T
- BT X" x X" — BASKET STYLE CABLE TRAY (SIZE AS INDICATED)
- C — TELECOMMUNICATIONS MANHOLE
- TV — FLOOR RECEPTACLE, TELEPHONE
- 4 — OUTLET, COMBINATION (2) TELEPHONE/(2) DATA COMMUNICATION
- CATV — OUTLET, CABLE TELEVISION RG-6 COAXIAL CABLE
- W — OUTLET; LETTER INDICATES AS FOLLOWS:
  A = AUDIO V = VIDEO I = INTERCOM
- S X — SPEAKER, CEILING MOUNTED, "X" INDICATES THE TYPE, PROVIDE SCHEDULE ON LEGEND
- S X — SPEAKER, WALL MOUNTED, "X" INDICATES THE TYPE, PROVIDE SCHEDULE ON LEGEND. MTD. 7'-6" [2286mm] AFF UNLESS OTHERWISE NOTED.
- W — WALL PHONE OUTLET, (1) TELEPHONE
- 4 — OUTLET, COMBINATION (2) TELEPHONE/(2) DATA COMMUNICATION (MOUNTED IN CEILING SERVICE PANEL.)
- FIRE RATED SLEEVES
- PB — PUSH BUTTON
- C — DOOR BELL BUZZER

NOTE:
FOR WHEELCHAIR PATIENT USE MOUNT TELEPHONE OUTLET 36" [914mm] AFF TO BOTTOM OF OUTLET BOX.

DESK PHONES - MOUNT OUTLET 1'-6" [457mm] AFF

PAY PHONES - MOUNT OUTLET 4'-0" [1219mm] AFF

HEIGHT OF TELECART OUTLETS SHALL BE AS INDICATED ON BEDWALLS OR PBPU DETAILS.

SEE VA BARRIER FREE DESIGN GUIDE PG-18-13.

ALL FIRE ALARM CABLES INSTALLED IN "RED" CONDUIT.

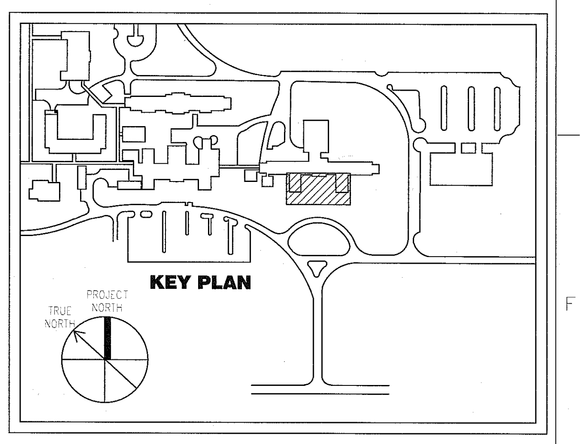
GENERAL NOTES

A. ALL FINAL LOCATIONS AND ARRANGEMENTS OF LIGHTING FIXTURES SHALL BE OBTAINED FROM THE ARCHITECTURAL REFLECTED CEILING PLAN.

B. (1) EACH BRANCH CIRCUIT HOMERUN SHALL HAVE NO MORE THAN THREE CIRCUITS. EACH BRANCH CIRCUIT HOMERUN SHALL HAVE A SEPARATE GREEN INSULATED EQUIPMENT GROUNDING CONDUCTOR. AND A SEPERATE NEUTRAL CONDUCTOR.

C. MULTI-GANG BACKBOXES FOR DIFFERENT VOLTAGES AND TYPES OF EMERGENCY AND NORMAL BRANICH WIRING DEVICES SHALL HAVE DIVIDERS BETWEEN DEVICES.

INPUT DEVICE ↓ / OUTPUT →	1. SOUND GENERAL BUILDING ALARM (FOR OTHER AND HIGH RISE FACILITIES CODES, SEE SECTION 7.2.1	2. NOTIFY NECESSARY STAFF FOR RESPONSE FOR HEALTH CARE AND HIGH RISE BUILDINGS ONLY (ALARM SIGNAL MAY BE DIFFERENT FOR DIFFERENT FLOORS).	3. NOTIFY FIRE DEPARTMENT.	4. INITIATE SUPERVISORY SIGNAL TO A 24-HOURS MANNED POINT FOR IMMEDIATE RESPONSE.	5. CLOSE DAMPERS.	6. SHUT DOWN AIR HANDLER.	7. OPEN LOCKED EGRESS DOORS.
DUCT SMOKE DETECTOR				X	X	X	
AREA SMOKE DETECTOR	X	X	X				X
MANUAL PULL STATION	X	X	X				X
SPRINKLER WATERFLOW/PRESSURE SWITCH	X	X	X				X



CONSTRUCTION DOCUMENT SUBMISSION

FULLY SPRINKLERED

Number	Description	Date
Revision Schedule		

CONSULTANTS:

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DONALD J. DUE JR. ENGINEER 025371 2-21-12

ARCHITECT/ENGINEERS:

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TEL 412 765 1700 FAX 412 765 1711 www.astorino.com

Drawing Title: **Electrical Symbols**	Project Title: **VAMC Lebanon - Renovation of Laboratory B1**		Project Number: **595-09-107**
			Building Number:
Approved: Project Director	Location		Drawing Number: **E00-001**
	Date: 02/23/2012	Checked: DJ	Drawn: RR
			Dwg. of

Office of Facilities Management

Department of Veterans Affairs

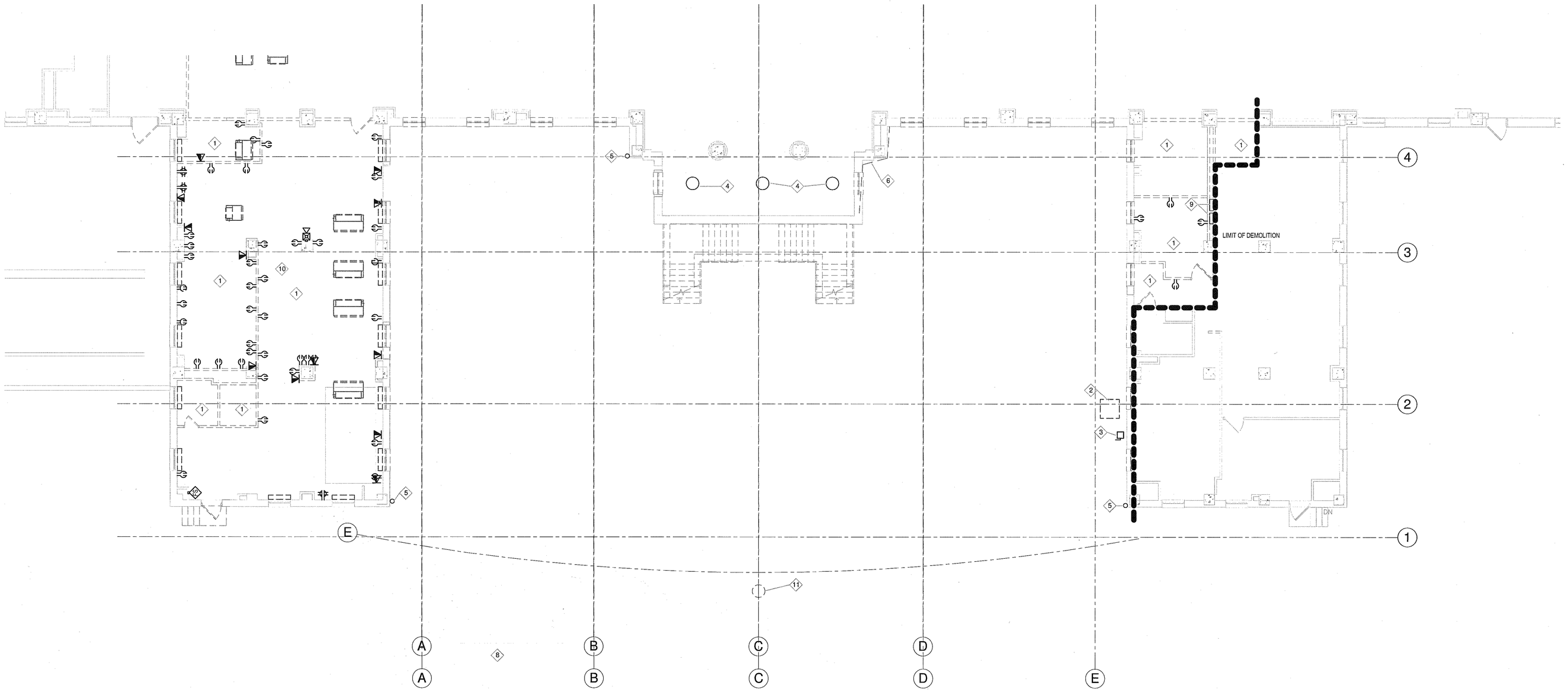
VA FORM 08-6231, OCT 1978

GENERAL NOTES

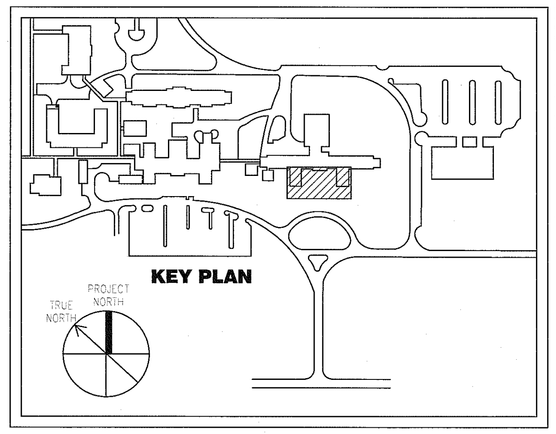
IN THE EVENT THAT THE REMOVAL OF EXISTING ELECTRICAL ITEMS DISRUPTS THE CONTINUITY OF THE BRANCH CIRCUIT. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO REARRANGE THE BRANCH CIRCUIT WIRING TO MAINTAIN CONTINUITY THROUGH OUT THE CIRCUIT

KEY NOTES

1. REMOVE ALL LIGHTING FIXTURES, RECEPTACLES, SPEAKERS, DATA OUTLETS, FIRE ALARM DEVICES, CONDUIT, CONDUCTORS AND ASSOCIATED ACCESSORIES WITHIN THIS AREA.
2. EXISTING CONDENSING UNIT TO BE RELOCATED BY MECHANICAL CONTRACTOR.
3. REMOVE EXISTING DISCONNECT SWITCH AND EXTEND CONDUIT AND CONDUCTORS UP TO RELOCATED CONDENSING UNIT ON ROOF. PROVIDE NEW, 30A-2P NON FUSED, WEATHERPROOF SWITCH, CONDUIT AND CONDUCTOR SIZE TO MATCH EXISTING.
4. EXISTING LIGHTING FIXTURE SHALL BE REMOVED AND TURNED OVER TO VA.
5. EXISTING LIGHTNING PROTECTION DOWN CONDUCTOR TO REMAIN INSIDE NEW WALL CONSTRUCTION AND SHALL BE INTERCEPTED AND EXTENDED TO NEW GROUND LOOP EXTENSION.
6. EXISTING ANTENNA WIRING AND CONTROL UNIT SHALL BE INTERCEPTED AND EXTENDED TO NEW ROOF AREA.
7. EXISTING LIGHTING STANDARD TO REMAIN.
8. EXISTING LIGHTING HAND HOLE BOX TO REMAIN.
9. EXISTING PANELBOARD SHALL BE REMOVED. REMOVED CONDUCTOR AND CONDUIT BACK TO ORIGINAL SOURCE.
10. REMOVE ALL TELECOMMUNICATION AND LOW VOLTAGE CABLING BACK TO SOURCE. COORDIANTE WITH COTR.
11. REFEED EXISTING FLAGPOLE LIGHTING FROM EXISTING PANELBOARD AS DIRECTED BY VA.



1 Electrical Demolition Plan - Ground Level
1/8" = 1'-0"



CONSTRUCTION DOCUMENT SUBMISSION

FULLY SPRINKLERED

Number	Description	Date
Revision Schedule		

CONSULTANTS:

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER DONALD LOUIS JOHNSON PE041026
2-21-12

ARCHITECT/ENGINEERS:

ARCHITECTURE ENGINEERING INTERIOR DESIGN DESIGN/BUILD ASTORINO

227 Fort Pitt Boulevard Pittsburgh Pennsylvania 15222
TEL 412 765 1700 FAX 412 765 1711 www.astorino.com

Drawing Title: **Electrical Demolition Plan Ground Floor**

Approved: Project Director

Project Title: **VAMC Lebanon - Renovation of Laboratory B1**

Location

Date	Checked	Drawn
02/23/2012	DJ	MWM

Project Number: **595-09-107**

Building Number

Drawing Number: **ED1-102**

Dwg. of

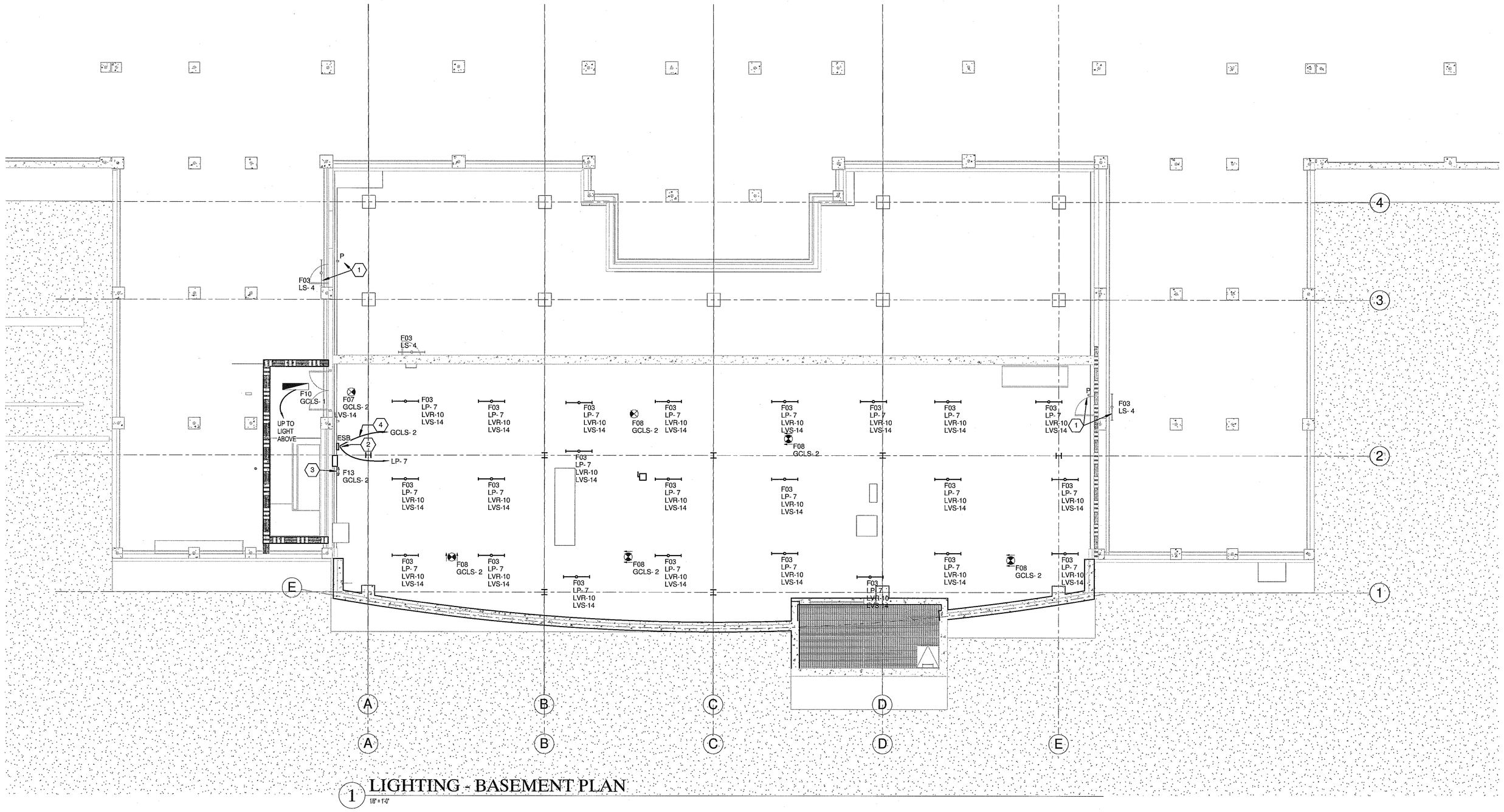
Office of Facilities Management

Department of Veterans Affairs

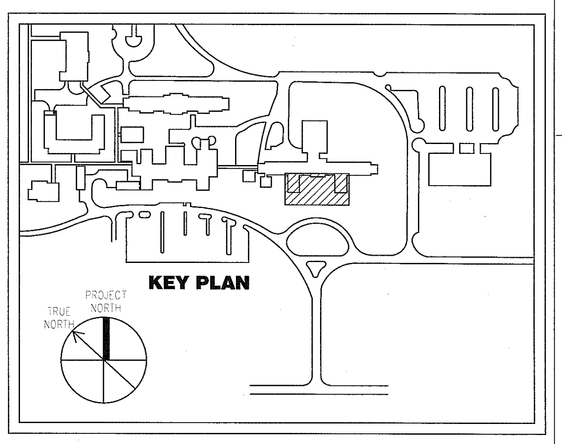
VA FORM 08-6231, OCT 1978

KEY NOTES

1. SWITCH AND PILOT LIGHT FOR CONTROL OF FIXTURE ABOVE DOOR INTO CRAWL SPACE.
2. EMERGENCY SWITCHING DEVICE, BODINE CATALOG NO. GTD20A. SEE WIRING DETAIL. MOUNT UNIT ON WALL WITH NAMEPLATE.
3. EMERGENCY BATTERY UNIT SHALL BE WIRED HOT.
4. BRANCH CIRCUIT HOMERUN TO SPARE 20A-1P BKR IN PANEL INDICATED.



1 LIGHTING - BASEMENT PLAN
1/8" = 1'-0"



CONSTRUCTION DOCUMENT SUBMISSION

FULLY SPRINKLERED

Number	Description	Date
	Revision Schedule	

CONSULTANTS:

ARCHITECT/ENGINEERS:

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COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER DONALD L. DUBRAVAC 044031-E
2-24-12

Drawing Title	**Basement Floor Lighting Plan**
Approved: Project Director	
Project Title	**VAMC Lebanon - Renovation of Laboratory B1**
Location	
Date	02/23/2012
Checked	DJ
Drawn	MWM
Project Number	**595-09-107**
Building Number	
Drawing Number	**EL1-101**
Dwg. of	

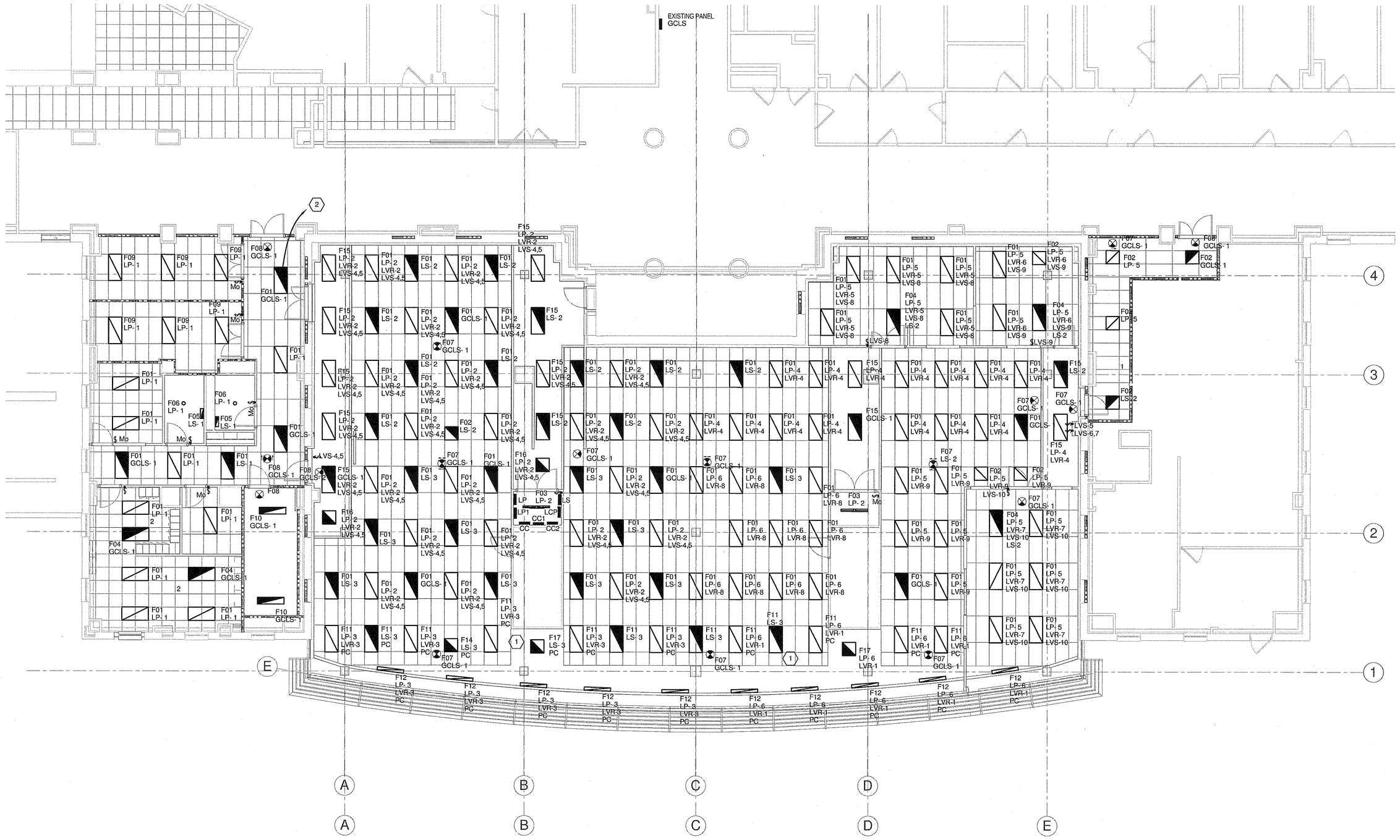
Office of Facilities Management

Department of Veterans Affairs

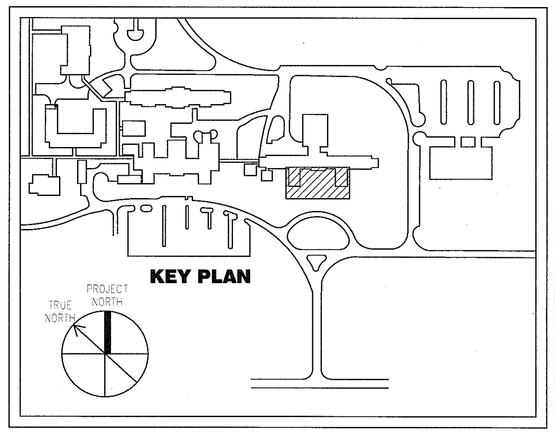
VA FORM 08-6231, OCT 1978

KEY NOTES

1. DAYLIGHT SENSOR FOR DIMMING THE FIRST TWO ROWS OF LIGHTING FIXTURES.
2. TO SPARE 20A-1P BREAKER IN EXISTING PANEL "GCLS".



1 Ground Level
1/8" = 1'-0"



CONSTRUCTION DOCUMENT SUBMISSION

FULLY SPRINKLERED

Number	Description	Date
Revision Schedule		

CONSULTANTS:

ARCHITECT/ENGINEERS:

ARCHITECTURE ENGINEERING INTERIOR DESIGN DESIGN/BUILD ASTORINO

237 Fort Pitt Boulevard Pittsburgh Pennsylvania 15222
TEL 412 765 1700 FAX 412 765 1711 www.astorino.com

Drawing Title: **Ground Floor Lighting Plan**

Approved: Project Director

Project Title: **VAMC Lebanon - Renovation of Laboratory B1**

Location

Date: 02/23/2012 | Checked: DJ | Drawn: RR

Project Number: **595-09-107**

Building Number

Drawing Number: **EL1-102**

Dwg. of

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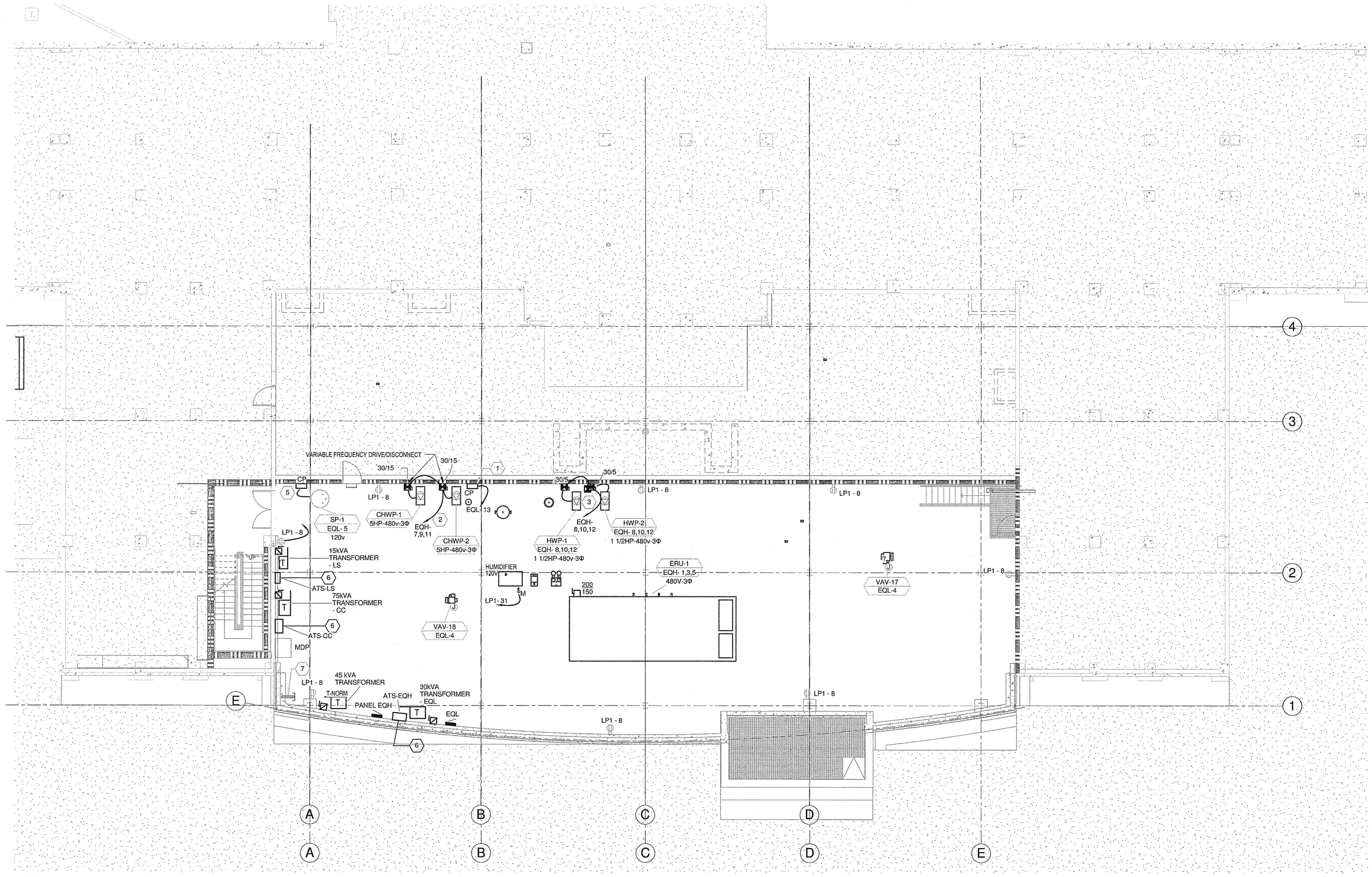
Department of Veterans Affairs

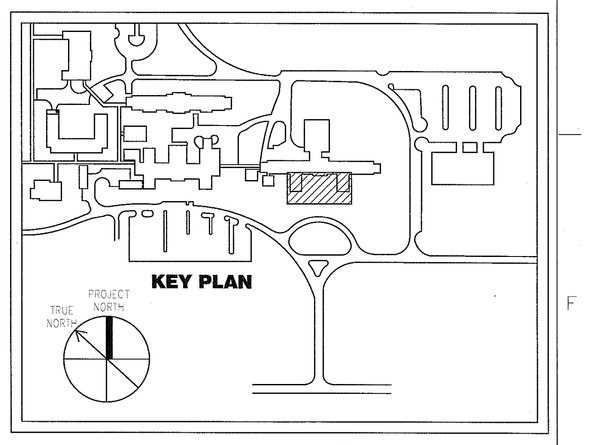
VA FORM 08-6231, OCT 1978



1 NE1P-Pipe Basement
1/8" = 1'-0"

KEY NOTES

1. BAS SYSTEM CONTROL PANEL.
2. 3#6 & 1#10 GRD IN 3/4"C TO 50A-3P BREAKER IN PANEL INDICATED.
3. 3#12 & 1#12 GRD IN 3/4"C TO 20A-3P BREAKER IN PANEL INDICATED.
4. 3#3 & 1#8 GRD IN 1 1/4"C TO 80A-3P BREAKER IN PANEL INDICATED.
5. CONTROL PANEL FOR DUPLEX SUMP PUMP.
6. PROVIDE SPACE FOR FUTURE EMERGENCY CONDUCTOR INSTALLATION.
7. 4 - 4" PVC CONDUIT STUBS FOR FUTURE EMERGENCY POWER CONDUCTORS.



CONSTRUCTION DOCUMENT SUBMISSION

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Number	Description	Date
	Revision Schedule	

CONSULTANTS:

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
DONALD LOUIS PIKIEL
ENGINEER
PE040160
PENNSYLVANIA
2-24-12

ARCHITECT/ENGINEERS:

ARCHITECTURE
ENGINEERING
INTERIOR DESIGN
DESIGN/BUILD
ASTORINO
227 Fort Pitt Boulevard Pittsburgh Pennsylvania 15222
TEL 412 765 1700 FAX 412 765 1711 www.astorino.com

Drawing Title: **Basement Floor Power Plan**

Approved: Project Director

Project Title: **VAMC Lebanon - Renovation of Laboratory B1**

Location

Date	Checked	Drawn
02/23/2012	DJ	RR

Project Number: **595-09-107**

Building Number

Drawing Number: **EP1-101**

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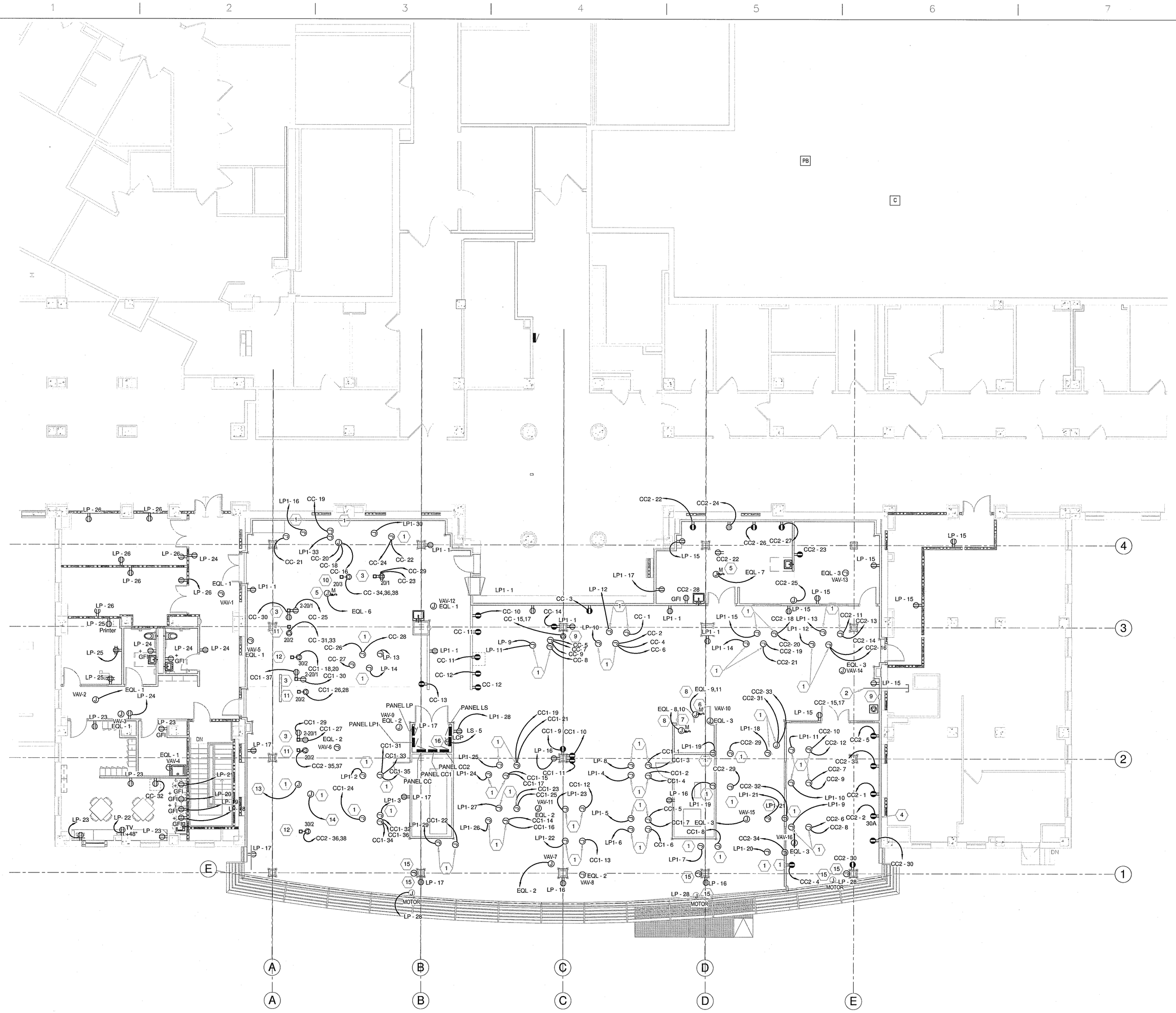
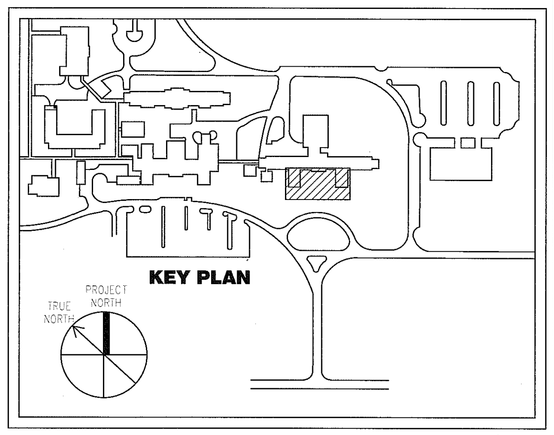


KEY NOTES

1. JUNCTION BOX MOUNTED ABOVE CEILING FOR CONNECTION TO LAB BENCH CEILING PANEL. FINAL CONNECTION TO LAB BENCH BY OTHERS.
2. PROVIDE 5 - 3/4" EMPTY CONDUITS WITH PULL STRING ABOVE CEILING TO ELECTRIC ROOM. STUB INTO SHELL SPACE FOR FUTURE FIT OUT.
3. TWO CIRCUIT POWER POLE WITH (2) DUPLEX RECEPTACLES.
4. PROVIDE 2 #10, 1 #10 GRD-3/4" C AND 30A-2P NEMA 5-30R RECEPTACLE.
5. MOUNT AT EXHAUST FAN ON ROOF.
6. MOUNT AT CONDENSING UNIT ON ROOF.
7. MOUNT AT SSAC-1 UNIT ABOVE DOOR.
8. PROVIDE 2#12, 1#12 GRD-3/4" C TO 20A-2P BREAKER IN PANEL INDICATED.
9. 250 VOLT, 20A, NEMA 6-20R RECEPTACLE. VERIFY EXACT CONFIGURATION WITH EQUIPMENT PLUG.
10. POWER POLE WITH 250 VOLT-3 POLE-3 WIRE 20 AMP NEMA L15-20R RECEPTACLE.
11. POWER POLE WITH 250 VOLT-2 POLE-3 WIRE 20 AMP NEMA L6-20R RECEPTACLE.
12. POWER POLE WITH 250 VOLT-2 POLE-3 WIRE 30 AMP NEMA L6-30R RECEPTACLE.
13. PROVIDE 3#12, 1#12 GRD-3/4"C TO 20A-2P BREAKER FOR FUTURE RECEPTACLE AT CEILING PANEL
14. PROVIDE 3#10, 1#10 GRD-3/4"C TO 30A-2P BREAKER FOR FUTURE RECEPTACLE AT CEILING PANEL
15. PROVIDE SINGLE GANG SWITCH BOX FOR CONTROLS AND CONDUIT TO MOTORIZED SHADE MOTOR LOCATION. PROVIDE CONNECTION TO LIGHTING CONTROL PANEL. VERIFY WIRING ARRANGEMENT.
16. LIGHTING CONTROL PANEL LOCATION.



1 NE2P-Ground Level
1/8" = 1'-0"

CONSTRUCTION DOCUMENT SUBMISSION

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Number	Description	Date
	Revision Schedule	

CONSULTANTS:

ARCHITECT/ENGINEERS:

ARCHITECTURE ENGINEERING INTERIOR DESIGN DESIGN/BUILD ASTORINO

227 Fort Pitt Boulevard Pittsburgh Pennsylvania 15222
TEL 412 765 1700 FAX 412 765 1711 www.astorino.com

Drawing Title: **Ground Floor Power Plan**

Approved: Project Director

Project Title: **VAMC Lebanon - Renovation of Laboratory B1**

Location

Date: 02/23/2012 | Checked: DJ | Drawn: RR

Project Number: **595-09-107**

Building Number

Drawing Number: **EP1-102**

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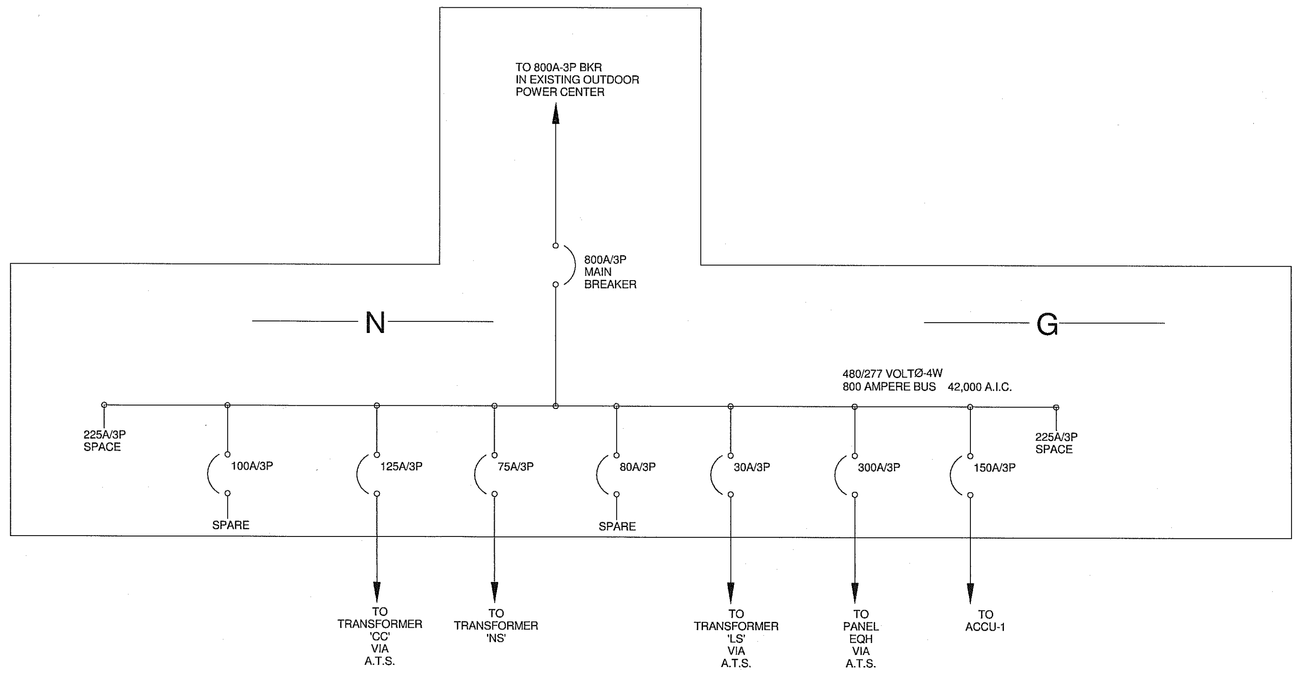
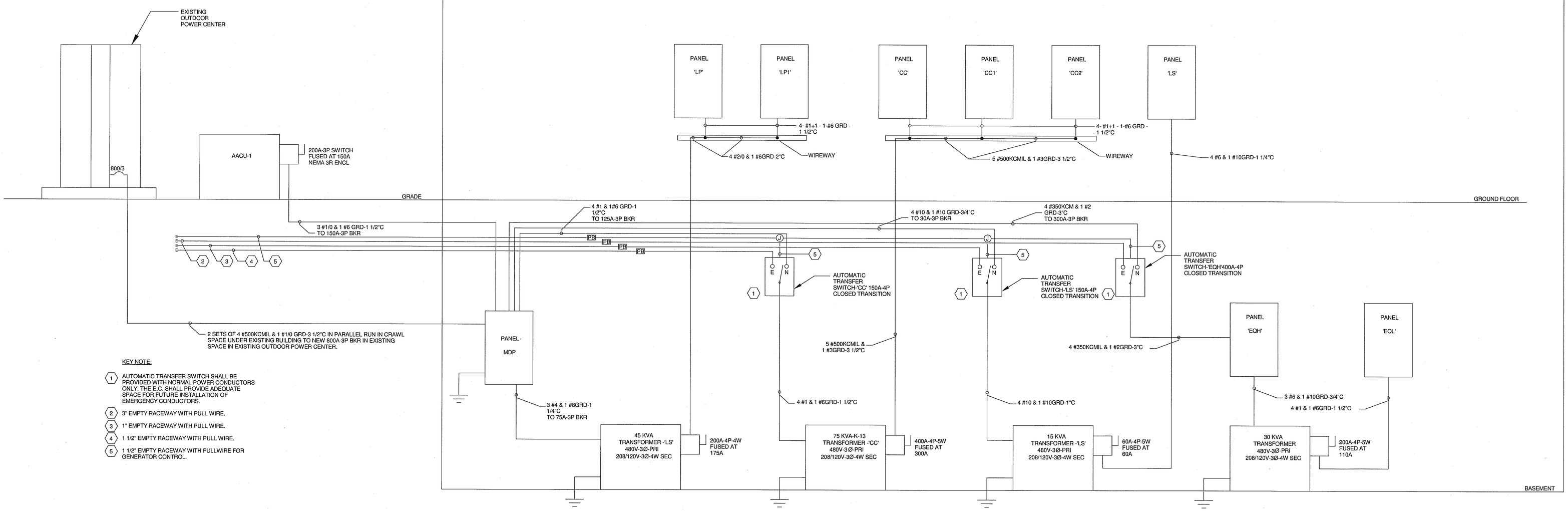


2 PANEL - 'MDP'
1/2" = 1'-0"



KEY NOTE:

1. AUTOMATIC TRANSFER SWITCH SHALL BE PROVIDED WITH NORMAL POWER CONDUCTORS ONLY. THE E.C. SHALL PROVIDE ADEQUATE SPACE FOR FUTURE INSTALLATION OF EMERGENCY CONDUCTORS.
2. 3" EMPTY RACEWAY WITH PULL WIRE.
3. 1" EMPTY RACEWAY WITH PULL WIRE.
4. 1 1/2" EMPTY RACEWAY WITH PULL WIRE.
5. 1 1/2" EMPTY RACEWAY WITH PULLWIRE FOR GENERATOR CONTROL.

1 POWER RISER DIAGRAM
NTS

CONSTRUCTION DOCUMENT SUBMISSION

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Number	Description	Date
	Revision Schedule	

CONSULTANTS:

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER DONALD LOUIS JOHN PE040160 2-24-12

ARCHITECT/ENGINEERS:

ARCHITECTURE ENGINEERING INTERIOR DESIGN DESIGN/BUILD ASTORINO

227 Fort Pitt Boulevard Pittsburgh Pennsylvania 15222
TEL 412 765 1700 FAX 412 765 1711 www.astorino.com

Drawing Title: **Electrical Riser Diagram**

Approved: Project Director

Project Title: **VAMC Lebanon - Renovation of Laboratory B1**

Location

Date	Checked	Drawn
02/23/2012	DJ	MWM

Project Number: **595-09-107**

Building Number

Drawing Number: **EP5-201**

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Department of Veterans Affairs

VA FORM 08-6231, OCT 1978

Branch Panel: CC

Location: Electrical 35 | **Supply From:** | **Mounting:** Surface | **Enclosure:** Type 1

Volts: 120/208 Wye | **Phases:** 3 | **Wires:** 4

A.I.C. Rating: 10,000 | **Mains Type:** BREAKER | **Mains Rating:** 125 A | **MCB Rating:** 125 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	Power Open Laboratory-1 96-1	20 A	1	0.2	1 kVA					1	20 A	Other Open Laboratory-1 96-1	2
3	Other Open Laboratory-1 96-1	20 A	1			0.2	1 kVA			1	20 A	Other Open Laboratory-1 96-1	4
5	Control Open Laboratory-1 96-1	20 A	1					1 kVA	1 kVA	1	20 A	Other Open Laboratory-1 96-1	6
7	Control Open Laboratory-1 96-1	20 A	1	1 kVA	0.2					1	20 A	Power Open Laboratory-1 96-1	8
9	Control Open Laboratory-1 96-1	20 A	1			1 kVA	0.2			1	20 A	Other Open Laboratory-1 96-1	10
11	Other Open Laboratory-1 96-1	20 A	1					0.4	0.4	1	20 A	Other Open Laboratory-1 96-1	12
13	Other Open Laboratory-1 96-1	20 A	1	0.2	0.2					1	20 A	Other Open Laboratory-1 96-1	14
15	Other Open Laboratory-1 96-1	20 A	2			0.1	1 kVA			1	20 A	Control Open Laboratory-1 96-1	16
17	--	--	--					0.1	1 kVA	1	20 A	Control Open Laboratory-1 96-1	18
19	Power Open Laboratory-1 96-1	20 A	1	0.2	1 kVA					1	20 A	Control Open Laboratory-1 96-1	20
21	Power Open Laboratory-1 96-1	20 A	1			0.2	1 kVA			1	20 A	Control Open Laboratory-1 96-1	22
23	Other Open Laboratory-1 96-1	20 A	1					0 kVA	1 kVA	1	20 A	Control Open Laboratory-1 96-1	24
25	Other Open Laboratory-1 96-1	20 A	1	1 kVA	1 kVA					1	20 A	Control Open Laboratory-1 96-1	26
27	Control Open Laboratory-1 96-1	20 A	1			1 kVA	1 kVA			1	20 A	Control Open Laboratory-1 96-1	28
29	Other Open Laboratory-1 96-1	20 A	1					0 kVA	1 kVA	1	20 A	Other Open Laboratory-1 96-1	30
31	SPECIAL PURPOSE RECEPT	20 A	2	0.1	0.2					1	20 A	Other Staff Lounge/ Locker 30	32
33	--	--	--			0.1	0.1			3	20 A	SPECIAL PURPOSE RECEPT	34
35	Spare	0 A	1					0 kVA	0.1	--	--	--	36
37	Spare	0 A	1	0 kVA	0.1					--	--	--	38
39	Spare	0 A	1			0 kVA	0 kVA			1	0 A	Spare	40
41	Spare	0 A	1					0 kVA	0 kVA	1	0 A	Spare	42
			Total Load:	6.14 kVA		6.75 kVA		5.87 kVA					
			Total Amps:	51 A		56 A		49 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	4158 VA	100.00%	4158 VA		
Power	600 VA	100.00%	600 VA	Total Conn. Load:	18758 VA
Control	14000 VA	100.00%	14000 VA	Total Est. Demand:	18758 VA
				Total Conn. Current:	52 A
				Total Est. Demand Current:	52 A

Notes:
PROVIDE 200% NEUTRAL BUS
PROVIDE FEED THROUGH LUGS
PROVIDE PANEL MOUNTED SURGE SUPPRESSION

Branch Panel: CC2

Location: Electrical 35 | **Supply From:** | **Mounting:** Surface | **Enclosure:** Type 1

Volts: 120/208 Wye | **Phases:** 3 | **Wires:** 4

A.I.C. Rating: 10,000 | **Mains Type:** BREAKER | **Mains Rating:** 125 A | **MCB Rating:** 125 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	Other	20 A	1	1.2	2.7					1	20 A	Other	2
3	Other	20 A	1			1.2	1.2			1	20 A	Other	4
5	Other	20 A	1					1.2	1 kVA	1	20 A	Control	6
7	Control	20 A	1	1 kVA	1 kVA					1	20 A	Control	8
9	Control	20 A	1			1 kVA	1 kVA			1	20 A	Control	10
11	Control Open Laboratory-1 96-1	20 A	1					1 kVA	1 kVA	1	20 A	Control	12
13	Control Open Laboratory-1 96-1	20 A	1	1 kVA	1 kVA					1	20 A	Control Open Laboratory-1 96-1	14
15	Other Open Laboratory-1 96-1	20 A	2			0.1	1 kVA			1	20 A	Control Open Laboratory-1 96-1	16
17	--	--	--					0.1	1 kVA	1	20 A	Control Open Laboratory-1 96-1	18
19	Control Open Laboratory-1 96-1	20 A	1	1 kVA	1 kVA					1	20 A	Control Open Laboratory-1 96-1	20
21	Control Open Laboratory-1 96-1	20 A	1			1 kVA	0.4			1	20 A	Other Frozen and Gross Section Room 42	22
23	Other Slide/Block Storage 70	20 A	1					0.2	0.2	1	20 A	Other Frozen and Gross Section Room 42	24
25	Power Frozen and Gross Section Room 42	20 A	1	0.4	0.2					1	20 A	Other Frozen and Gross Section Room 42	26
27	Other Frozen and Gross Section Room 42	20 A	1			0.2	0.2			1	20 A	Other Frozen and Gross Section Room 42	28
29	Power Open Laboratory-1 96-1	20 A	1					0.3	0.4	1	20 A	Other	30
31	Control Open Laboratory-1 96-1	20 A	1	1 kVA	0.2					1	20 A	Power Open Laboratory-1 96-1	32
33	Control Open Laboratory-1 96-1	20 A	1			1 kVA	0.2			1	20 A	Power Open Laboratory-1 96-1	34
35	Other Open Laboratory-1 96-1	20 A	2					0.1	0.1	2	30 A	Other Open Laboratory-1 96-1	36
37	--	--	--	0.1	0.1					--	--	--	38
39	Spare	20 A	1			0 kVA	0 kVA			1	20 A	Spare	40
41	Spare	20 A	1					0 kVA	0 kVA	1	20 A	Spare	42
			Total Load:	11.77 kVA		8.36 kVA		6.49 kVA					
			Total Amps:	98 A		70 A		54 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	9662 VA	100.00%	9662 VA		
Power	960 VA	100.00%	960 VA	Total Conn. Load:	26622 VA
Control	16000 VA	100.00%	16000 VA	Total Est. Demand:	26622 VA
				Total Conn. Current:	74 A
				Total Est. Demand Current:	74 A

Notes:
PROVIDE 200% NEUTRAL BUS

Branch Panel: LS

Location: Electrical 35 | **Supply From:** DS-LS | **Mounting:** Surface | **Enclosure:** Type 1

Volts: 120/208 Wye | **Phases:** 3 | **Wires:** 4

A.I.C. Rating: 10,000 | **Mains Type:** BREAKER | **Mains Rating:** 100 A | **MCB Rating:** 60 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	Lighting Corridor 40	20 A	1	132 VA	1093					1	20 A	Lighting Open Laboratory-1 96-1	2
3	Lighting Open Laboratory-1 96-1	20 A	1			1028	192 VA			1	20 A	Lighting	4
5	Power Electrical 35	20 A	1					150 VA	0 VA	1	20 A	Spare	6
7	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	8
9	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	10
11	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	12
13	Space	--	--	0 VA	0 VA					--	--	Space	14
15	Space	--	--			0 VA	0 VA			--	--	Space	16
17	Space	--	--					0 VA	0 VA	--	--	Space	18
19	Space	--	--	0 VA	0 VA					--	--	Space	20
			Total Load:	1.22 kVA		1.22 kVA		0.15 kVA					
			Total Amps:	10 A		10 A		1 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Lighting	2445 VA	100.00%	2445 VA		
Power	150 VA	100.00%	150 VA	Total Conn. Load:	2595 VA
				Total Est. Demand:	2595 VA
				Total Conn. Current:	7 A
				Total Est. Demand Current:	7 A

Notes:
PROVIDE PANEL MOUNTED SURGE SUPPRESSION

Branch Panel: CC1

Location: Electrical 35 | **Supply From:** | **Mounting:** Surface | **Enclosure:** Type 1

Volts: 120/208 Wye | **Phases:** 3 | **Wires:** 4

A.I.C. Rating: 10,000 | **Mains Type:** BREAKER | **Mains Rating:** 125 A | **MCB Rating:** 125 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	Control Open Laboratory-1 96-1	20 A	1	1 kVA	1 kVA					1	20 A	Control Open Laboratory-1 96-1	2
3	Control Open Laboratory-1 96-1	20 A	1			1 kVA	1 kVA			1	20 A	Control Open Laboratory-1 96-1	4
5	Control Open Laboratory-1 96-1	20 A	1					1 kVA	0.2	1	20 A	Power Open Laboratory-1 96-1	6
7	Control Open Laboratory-1 96-1	20 A	1	1 kVA	0.2					1	20 A	Power Open Laboratory-1 96-1	8
9	Other Open Laboratory-1 96-1	20 A	1			0.2	0.2			1	20 A	Other Open Laboratory-1 96-1	10
11	Other Open Laboratory-1 96-1	20 A	1					0.2	0.2	1	20 A	Power Open Laboratory-1 96-1	12
13	Power Open Laboratory-1 96-1	20 A	1	0.2	1 kVA					1	20 A	Control Open Laboratory-1 96-1	14
15	Control Open Laboratory-1 96-1	20 A	1			1 kVA	1 kVA			1	20 A	Control Open Laboratory-1 96-1	16
17	Control Open Laboratory-1 96-1	20 A	1					1 kVA	0.1	2	30 A	Other Open Laboratory-1 96-1	18
19	Control Open Laboratory-1 96-1	20 A	1	1 kVA	0.1					--	--	--	20
21	Control Open Laboratory-1 96-1	20 A	1			1 kVA	0.2			1	20 A	Power Open Laboratory-1 96-1	22
23	Control Open Laboratory-1 96-1	20 A	1					1 kVA	1 kVA	1	20 A	Control Open Laboratory-1 96-1	24
25	Control Open Laboratory-1 96-1	20 A	1	1 kVA	0.1					2	20 A	Other Open Laboratory-1 96-1	26
27	Other Open Laboratory-1 96-1	20 A	1			1 kVA	0.1			--	--	--	28
29	Other Open Laboratory-1 96-1	20 A	1					1 kVA	1 kVA	1	20 A	Other Open Laboratory-1 96-1	30
31	Control Open Laboratory-1 96-1	20 A	1	1 kVA	1 kVA					1	20 A	Control Open Laboratory-1 96-1	32
33	Control Open Laboratory-1 96-1	20 A	1			1 kVA	1 kVA			1	20 A	Control Open Laboratory-1 96-1	34
35	Control Open Laboratory-1 96-1	20 A	1					1 kVA	1 kVA	1	20 A	Control Open Laboratory-1 96-1	36
37	Other Open Laboratory-1 96-1	20 A	1	1 kVA	0 kVA					1	20 A	Spare	38
39	Spare	20 A	1			0 kVA	0 kVA			1	20 A	Spare	40
41	Spare	20 A	1					0 kVA	0 kVA	1	20 A	Spare	42
			Total Load:	9.48 kVA		8.6 kVA		8.57 kVA					
			Total Amps:	79 A		72 A		71 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	4897 VA	100.00%	4897 VA		
Power	750 VA	100.00%	750 VA	Total Conn. Load:	26647 VA
Control	21000 VA	100.00%	21000 VA	Total Est. Demand:	26647 VA
				Total Conn. Current:	74 A
				Total Est. Demand Current:	74 A

Notes:
PROVIDE 200% NEUTRAL BUS
PROVIDE FEED THROUGH LUGS

Branch Panel: LP1

Location: Electrical 35 | **Supply From:** DS-LS | **Mounting:** Surface | **Enclosure:** Type 1

Volts: 120/208 Wye | **Phases:** 3 | **Wires:** 4

A.I.C. Rating: 10,000 | **Mains Type:** BREAKER | **Mains Rating:** 100 A | **MCB Rating:** 100 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	Other Open Laboratory-1 96-1	20 A	1	1.3	1 kVA					1	20 A	Control Open Laboratory-1 96-1	2
3	Control Open Laboratory-1 96-1	20 A	1			1 kVA	0.2			1	20 A	Power Open Laboratory-1 96-1	4
5	Power Open Laboratory-1 96-1	20 A	1					0.2	0.2	1	20 A	Power Open Laboratory-1 96-1	6
7	Power Open Laboratory-1 96-1	20 A	1	0.2	1.4					1	20 A	Other Mechanical Room-2 94-2	8
9	Power	20 A	1			0.2	0.2			1	20 A	Power	10
11	Power	20 A	1					0.2	0.2	1	20 A	Power Open Laboratory-1 96-1	12
13	Power Open Laboratory-1 96-1	20 A	1	0.2	0.2					1	20 A	Power Open Laboratory-1 96-1	14
15	Power Open Laboratory-1 96-1	20 A	1			0.2	0.2			1	20 A	Power Open Laboratory-1 96-1	16
17	Power Frozen and Gross Section Room 42	20 A	1					0.2	0.2	1	20 A	Power Open Laboratory-1 96-1	18
19	Power Open Laboratory-1 96-1	20 A	1	0.3	0.2					1	20 A	Power Open Laboratory-1 96-1	20
21	Power Open Laboratory-1 96-1	20 A	1			0.2	0.2			1	20 A	Power Open Laboratory-1 96-1	22
23	Power Open Laboratory-1 96-1	20 A	1					0.2	0.2	1	20 A	Power Open Laboratory-1 96-1	24
25	Power Open Laboratory-1 96-1	20 A	1	0.2	0.2					1	20 A	Power Open Laboratory-1 96-1	26
27	Power Open Laboratory-1 96-1	20 A	1			0.2	0.2			1	20 A	Other Open Laboratory-1 96-1	28
29	Power Open Laboratory-1 96-1	20 A	1					0.2	0.2	1	20 A	Power Open Laboratory-1 96-1	30
31	HUMIDIFIER	20 A	1	0.7	0 kVA					1	20 A	Spare	32
33	Power Open Laboratory-1 96-1	20 A	1			0.2	0 kVA			1	20 A	Spare	34
35	Spare	0 A	1					0 kVA	0 kVA	1	20 A	Spare	36
37	Space	--	--	0 kVA	0 kVA					1	20 A	Spare	38
39	Space	--	--			0 kVA	0 kVA			1	20 A	Spare	40
41	Space	--	--					0 kVA	0 kVA	1	20 A	Spare	42
			Total Load:	5.55 kVA		2.53 kVA		1.53 kVA					
			Total Amps:	46 A		21 A		13 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	3710 VA	100.00%	3710 VA		
Power	3900 VA	100.00%	3900 VA	Total Conn. Load:	9610 VA
Control	2000 VA	100.00%	2000 VA	Total Est. Demand:	9610 VA
				Total Conn. Current:	27 A
				Total Est. Demand Current:	27 A

Notes:

Branch Panel: LP

Location: Electrical 35 | **Supply From:** DS-LS | **Mounting:** Surface | **Enclosure:** Type 1

Volts: 120/208 Wye | **Phases:** 3 | **Wires:** 4

A.I.C. Rating: 10,000 | **Mains Type:** BREAKER | **Mains Rating:** 100 A | **MCB Rating:** 100 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	Lighting Supply Room and Long Term File	20 A	1	1 kVA	1.9					1	20 A	Lighting Open Laboratory-1 96-1	2
3	Lighting Open Laboratory-1 96-1	20 A	1			0.5	1 kVA			1	20 A	Lighting Open Laboratory-1 96-1	4
5	Lighting Frozen and Gross Section Room 42	20 A	1					1.5	1.1	1	20 A	Lighting Open Laboratory-1 96-1	6
7	Lighting Mechanical Room-2 94-2	20 A	1	1.5	0.2					1	20 A	Power Open Laboratory-1 96-1	8
9	Control Open Laboratory-1 96-1	20 A	1			1 kVA	0.2			1	20 A	Power Open Laboratory-1 96-1	10
11	Control Open Laboratory-1 96-1	20 A	1					1 kVA	0.2	1	20 A	Power Open Laboratory-1 96-1	12
13	Control	20 A	1	1 kVA	1 kVA					1	20 A	Control Open Laboratory-1 96-1	14
15	Other Open Laboratory-1 96-1	20 A	1			1.4	0.7			1	20 A	Other	16
17	Other Open Laboratory-1 96-1	20 A	1					0.9	0.2	1	20 A	Other Staff Lounge/ Locker 30	18
19	Other Staff Lounge/ Locker 30	20 A	1	0.2	0.2					1	20 A	Other Staff Lounge/ Locker 30	20
21	Other Staff Lounge/ Locker 30	20 A	1			0.4	0.2			1	20 A	Other Staff Lounge/ Locker 30	22
23	Other Staff Lounge/ Locker 30	20 A	1					0.9	2.5	1	20 A	Other Corridor 40	24
25	OPEN LAB	20 A	1	0.9	1.3					1	20 A	Other Supply Room and Long Term File Storage-1	26
27	Spare	20 A	1			0 kVA	1.1			1	20 A	Power	28
29	Spare	20 A	1					0 kVA	0 kVA	1	20 A	Spare	30
31	Spare	20 A	1	0 kVA	0 kVA					1	20 A	Spare	32
33	Spare	20 A	1			0 kVA	0 kVA			1	20 A	Spare	34
35	Spare	20 A	1					0 kVA	0 kVA	1	20 A	Spare	36
37	Space	--	--	0 kVA	0 kVA					--	--	Space	38
39	Space	--	--			0 kVA	0 kVA			--	--	Space	40
41	Space	--	--					0 kVA	0 kVA	--	--	Space	42
			Total Load:	9.08 kVA		6.35 kVA		8.19 kVA					
			Total Amps:	76 A		53 A		68 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Lighting	8348 VA	100.00%	8348 VA		
Other	9738 VA	100.00%	9738 VA	Total Conn. Load:	23616 VA
Power	1530 VA	100.00%	1530 VA	Total Est. Demand:	23616 VA
Control	4000 VA	100.00%	4000 VA	Total Conn. Current:	66 A
				Total Est. Demand Current:	66 A

Notes:
PROVIDE PANEL MOUNTED SURGE SUPPRESSION
PROVED FEED THROUGH LUGS

Number	Description	Date
	Revision Schedule	

CONSULTANTS:

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CONSTRUCTION DOCUMENT SUBMISSION — FULLY SPRINKLERED

Drawing Title: **Electrical Schedules**

Project Title: **VAMC Lebanon - Renovation of Laboratory B1**

Project Number: **595-09-107**

Building Number:

Approved: Project Director

Location:

Drawing Number: **EP6-102**

Date: 02/23/2012 | Checked: DJ | Drawn: RR | Dwg. of

Office of Facilities Management

Department of Veterans Affairs

VA FORM 08-6231, OCT 1978

Lighting Fixture Schedule

Type	Description	Manufacturer and Model: Equal 1	Equal 2	Equal 3	Catalog Number	Lamping: Number	Lamp	Watts	Ballast	Voltage	Mounting	Notes
F01	2x4 FLUORESCENT HIGH EFFICIENT LAY IN FIXTURE WITH PERFORATED CENTER DIFFUSER	DAY-BRITE	LITHONIA	METALUX	2STG232PMW120 EB101	2	F32T8-41K	64 VA	ELECTRONIC	120 V	Recessed	
F02	2x2 FLUORESCENT HIGH EFFICIENT LAY IN FIXTURE WITH PERFORATED CENTER DIFFUSER	DAY-BRITE	LITHONIA	METALUX	2STG217PMW120 EB101	2	F17T8-41K	34 VA	ELECTRONIC	120 V	Recessed	
F03	FLUORESCENT STRIP FIXTURE WITH WIRE GUARD	DAY-BRITE	METALUX	LITHONIA	T232120EB101	2	F32T8-41K	64 VA	ELECTRONIC	120 V	Surface OR Pendant	
F04	2x4 FLUORESCENT HIGH EFFICIENT LAY IN FIXTURE WITH PERFORATED CENTER DIFFUSER AND BODINE 'GTO' GENERATOR TRANSFER DEVICE	DAY-BRITE	LITHONIA	METALUX	2STG232PMW120 EB101GTD	2	F32T8-41K	64 VA	ELECTRONIC	120 V	Recessed	
F05	FLUORESCENT WALL BRACKET WITH ACRYLIC DIFFUSER	LITHONIA	DAY-BRITE	METALUX	WP217MVOLTGEB 10IS	2	F17T8-41K	34 VA	ELECTRONIC	120 V	Recessed	
F06	FLUORESCENT RECESSED DOWNLIGHT WITH SPECULAR ALZAK REFLECTOR,6" APERTURE AND EMERGENCY BATTERY	OMEGA	HALO	GOTHAM	OM61H26CSEM12 0	1	26CFL-41K	26 VA	ELECTRONIC	120 V	Surface	
F07	LED SINGLE FACE EXIT SIGN WITH WHITE THERMOPLASTIC HOUSING	LITHONIA	SURE-LITE	McPHILBEN		0	LED			120 V		
F08	LED DOUBLE FACEPLATE EXIT SIGN WITH WHITE THERMOPLASTIC HOUSING	LITHONIA	SURE-LITE	McPHILBEN		0	LED	1 VA	ELECTRONIC		Ceiling	
F09	2x4 FLUORESCENT LAY-IN FIXTURE WITH .125 ACRYLIC LENS AND FLUSH STEEL DOOR	LITHONIA	METALUX	DAY-BRITE	2GT8232A12125M VOLTGEB10IS	2	F32T8-41K	64 VA	ELECTRONIC	120 V	Recessed	
F10	FLUORESCENT WRAPAROUND	LITHONIA	METALUX	DAY-BRITE	CB232MVOLTGEB 10IS	2	F32T8-41K	64 VA	ELECTRONIC	120 V	Recessed	
F11	2x4 FLUORESCENT HIGH EFFICIENT LAY-IN FIXTURE WITH PERFORATED CENTER DIFFUSER AND DIGITAL DIMMING BALLAST	DAY-BRITE	LITHONIA	METALUX	2STG232PMW120 DIGITALDIM	2	F32T8-41K	64 VA	DIGITAL ADDRESSABLE DIMMING (ECOSYSTEM)	120 V	Recessed	
F12	3.5"x4' FLUORESCENT LINEAR FIXTURE WITH PARABOLIC LOUVER, FLANGE KIT AND DIGITAL DIMMING	PEERLESS	NEO-RAY	COLUMBIA	LSR5FLNG128T5L DL4 120 DIGITAL DIMMING	2	F32T8-41K	28 VA	ELECTRONIC	120 V	Recessed	
F13	4" FLUORESCENT WALL BRACKET WITH ACRYLIC LENS	LITHONIA	METALUX	DAY-BRITE	WP232MVOLTGEB 10IS	2	F32T8-41K	34 VA	ELECTRONIC	120 V	Wall Surface	
F14	2x2 FLUORESCENT HIGH EFFICIENT FLANGED FIXTURE WITH PERFORATED CENTER DIFFUSER AND DIGITAL DIMMING	DAY-BRITE	LITHONIA	METALUX	2STG217PMW120 DIGITALDIM	2	F17T8-41K	34 VA	DIGITAL ADDRESSABLE DIMMING (ECOSYSTEM)	120 V	Recessed	
F15	2x4 FLUORESCENT HIGH EFFICIENT FLANGED FIXTURE WITH PERFORATED CENTER DIFFUSER	DAY-BRITE	LITHONIA	METALUX	2STFWT232PMW1 20EB101	2	F17T8-41K	64 VA	ELECTRONIC	120 V	Recessed	
F16	2x2 FLUORESCENT HIGH EFFICIENT FLANGED FIXTURE WITH PERFORATED CENTER DIFFUSER	DAY-BRITE	LITHONIA	METALUX	2STF217PMW120E B101	2	F17T8-41K	34 VA	ELECTRONIC	120 V	Recessed	
F17	2x2 FLUORESCENT HIGH EFFICIENT FLANGED FIXTURE WITH PERFORATED CENTER DIFFUSER AND DIGITAL DIMMING	DAY-BRITE	LITHONIA	METALUX	2STF217PMW120 DIGITAL DIM	2	F17T8-41K	34 VA	DIGITAL ADDRESSABLE DIMMING (ECOSYSTEM)	120 V	Recessed	

Low Voltage Relay Panel

Relay Number	Area	Panel	Circuit Number	Control
LVR-1	CHEMISTRY, HISTORY, UNINALYSIS	LP	6	PHOTOCELL
LVR-2	HEMATOLOGY, BLOOD BANK	LP	2	LVS-4, LVS-5
LVR-3	HEMATOLOGY & CHEMISTRY	LP	3	PHOTOCELL
LVR-4	HISTORY, CYTOLOGY	LP	4	LVS-6,LVS-7
LVR-5	GROSS ROOM	LP	5	LVS-8
LVR-6		LP	5	
LVR-7	MICROBIOLOGY	LP	5	LVS-10
LVR-8	CHEMISTRY	LP	6	LVS-11
LVR-9	HISTOLOGY	LP	5	LVS-2, LVS-3
LVR-10	BASEMENT LIGHTING	LP	7	LVS-1

Branch Panel: EQL

Location: Mechanical Room B10
Supply From:
Mounting: Surface
Enclosure: Type 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 10,000
Mains Type: BREAKER
Mains Rating: 125 A
MCB Rating: 110 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	VAV UNITS OFFICE AREA	20 A	1	2.2	1.8					1	20 A	VAV UNITS LAB AREA	2
3	VAV UNITS LAB AREA	20 A	1			1.8	0.7			1	20 A	VAV UNITS BASEMENT	4
5	SUMP PUMP	20 A	1					0 kVA	0.4	1	20 A	EXHAUST FAN	6
7	EXHAUST FAN	20 A	1	0.4	0.2					2	20 A	SSAC UNIT INDOOR	8
9	SSAC UNIT OUTDOOR	20 A	2			0.2	0.2			--	--	--	10
11	--	--	--					0.2	0.2	1	20 A	HEAT TRACE	12
13	BAS CONTROL PANEL	20 A	1	0 kVA	0 kVA					1	20 A	Spare	14
15	Spare	20 A	1			0 kVA	0 kVA			1	20 A	Spare	16
17	Spare	20 A	1					0 kVA	0 kVA	1	20 A	Spare	18
19	Spare	20 A	1	0 kVA	0 kVA					1	20 A	Spare	20
21	Spare	20 A	1			0 kVA	0 kVA			1	20 A	Spare	22
23	Spare	20 A	1					0 kVA	0 kVA	1	20 A	Spare	24
25	Spare	20 A	1	0 kVA	0 kVA					1	20 A	Spare	26
27	Space	--	--			0 kVA	0 kVA			--	--	Space	28
29	Space	--	--					0 kVA	0 kVA	--	--	Space	30
31	Space	--	--	0 kVA	0 kVA					--	--	Space	32
33	Space	--	--			0 kVA	0 kVA			--	--	Space	34
35	Space	--	--					0 kVA	0 kVA	--	--	Space	36
37	Space	--	--	0 kVA	0 kVA					--	--	Space	38
39	Space	--	--			0 kVA	0 kVA			--	--	Space	40
41	Space	--	--					0 kVA	0 kVA	--	--	Space	42
		Total Load:		4.5 kVA		2.88 kVA		0.74 kVA					
		Total Amps:		38 A		24 A		6 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	720 VA	100.00%	720 VA		
Power	7200 VA	100.00%	7200 VA	**Total Conn. Load:**	8120 VA
				Total Est. Demand:	8120 VA
				Total Conn. Current:	23 A
				Total Est. Demand Current:	23 A

Notes:
PROVIDE PANEL MOUNTED SURGE SUPRESSION

Branch Panel: EQH

Location: Mechanical Room-2 94-2
Supply From:
Mounting: Surface
Enclosure: Type 1

Volts: 480/277 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 42 KAIC
Mains Type: BREAKER
Mains Rating: 400 A
MCB Rating: 300 A

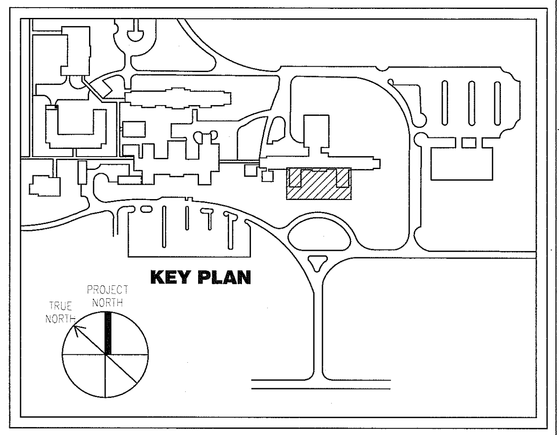
Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	ERU-1	150 A	3	22 kVA	0 kVA					3	20 A	Spare	2
3	--	--	--			22 kVA	0 kVA			--	--	--	4
5	--	--	--					22 kVA	0 kVA	--	--	--	6
7	CHWP 1&2	50 A	3	0.1	1.2					3	20 A	HWP 1&2	8
9	--	--	--			0.1	1.2			--	--	--	10
11	--	--	--					0.1	1.2	--	--	--	12
13	30kVA TRANSFORMER "EQL"	50 A	3	10 kVA	0 kVA					--	--	Space	14
15	--	--	--			10 kVA	0 kVA			--	--	Space	16
17	--	--	--					10 kVA	0 kVA	--	--	Space	18
19	Space	--	--	0 kVA	0 kVA					--	--	Space	20
21	Space	--	--			0 kVA	0 kVA			--	--	Space	22
23	Space	--	--					0 kVA	0 kVA	--	--	Space	24
25	Space	--	--	0 kVA	0 kVA					--	--	Space	26
27	Space	--	--			0 kVA	0 kVA			--	--	Space	28
29	Space	--	--					0 kVA	0 kVA	--	--	Space	30
31	Space	--	--	0 kVA	0 kVA					--	--	Space	32
33	Space	--	--			0 kVA	0 kVA			--	--	Space	34
35	Space	--	--					0 kVA	0 kVA	--	--	Space	36
37	Space	--	--	0 kVA	0 kVA					--	--	Space	38
39	Space	--	--			0 kVA	0 kVA			--	--	Space	40
41	Space	--	--					0 kVA	0 kVA	--	--	Space	42
		Total Load:		33.34 kVA		33.34 kVA		33.34 kVA					
		Total Amps:		120 A		120 A		120 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	96000 VA	100.00%	96000 VA		
Appliance - Dwelling Unit	3134 VA	100.00%	3134 VA	**Total Conn. Load:**	99134 VA
				Total Est. Demand:	99134 VA
				Total Conn. Current:	119 A
				Total Est. Demand Current:	119 A

Notes:
PROVIDE PANEL MOUNTED SURGE SUPPRESSION



CONSTRUCTION DOCUMENT SUBMISSION

FULLY SPRINKLERED

Number	Description	Date
Revision Schedule		

CONSULTANTS:

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER DONALD LOUIS DANIEL PE048180 2-24-12

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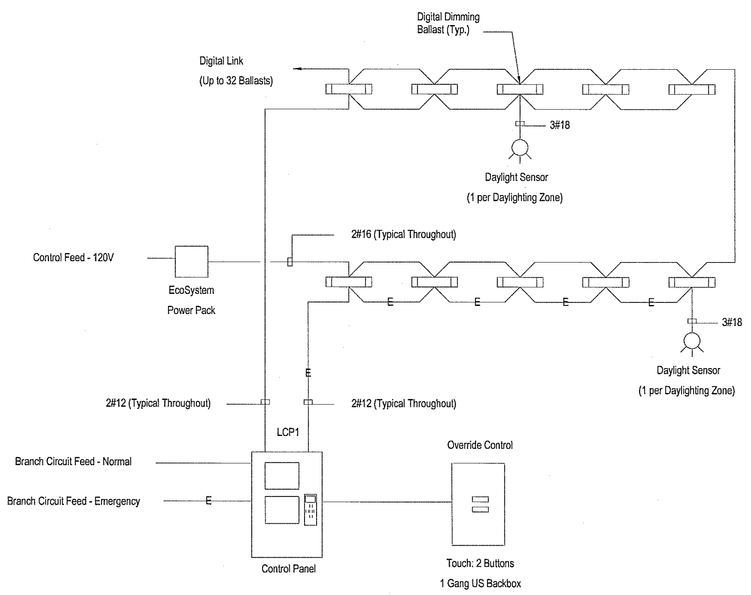
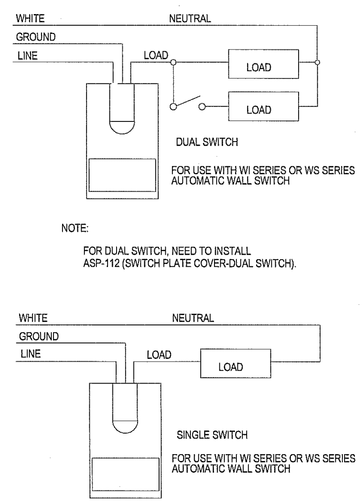
Drawing Title: **Electrical Schedules**	Project Title: **VAMC Lebanon - Renovation of Laboratory B1**	Project Number: **595-09-107**	**Office of Facilities Management**
Approved: Project Director	Location	Building Number	
	Date: **02/23/2012** / Checked: **DJ** / Drawn: **RR**	Drawing Number: **EP6-101** Dwg. of	Department of Veterans Affairs

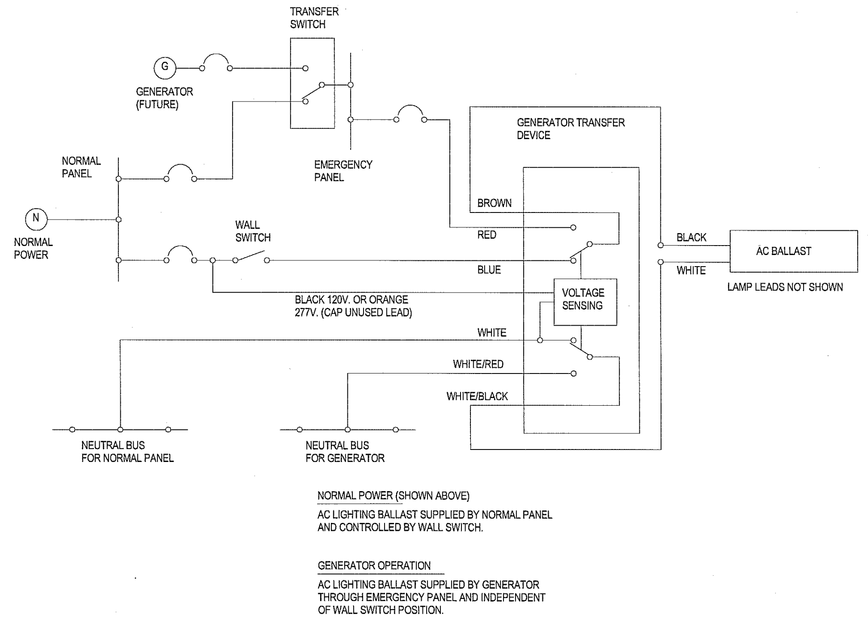
VA FORM 08-6231, OCT 1978



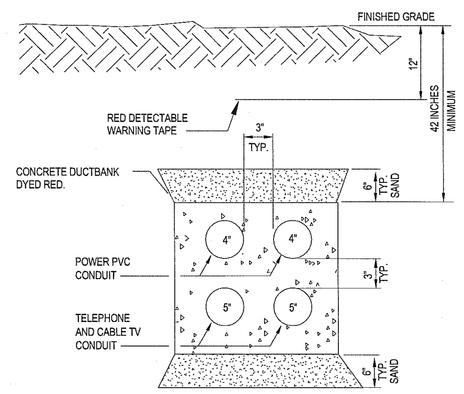
1 Lighting Control Wiring Diagram
NTS



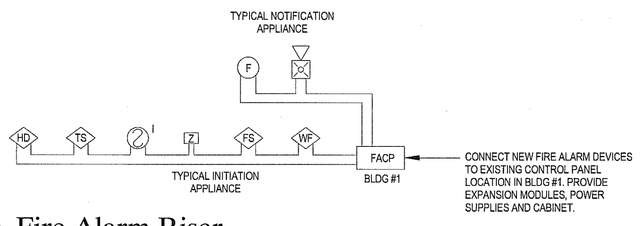
2 Wall Switch Sensor Detail
NTS



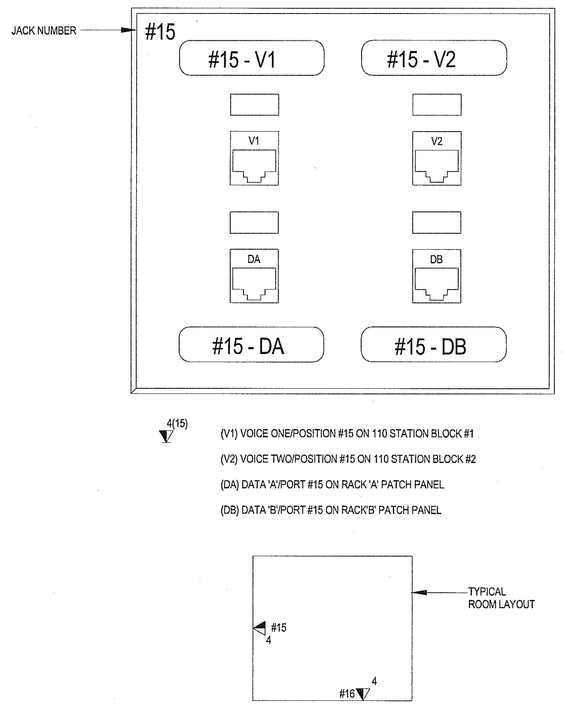
3 Emergency Bypass Lighting Switch Detail
NTS



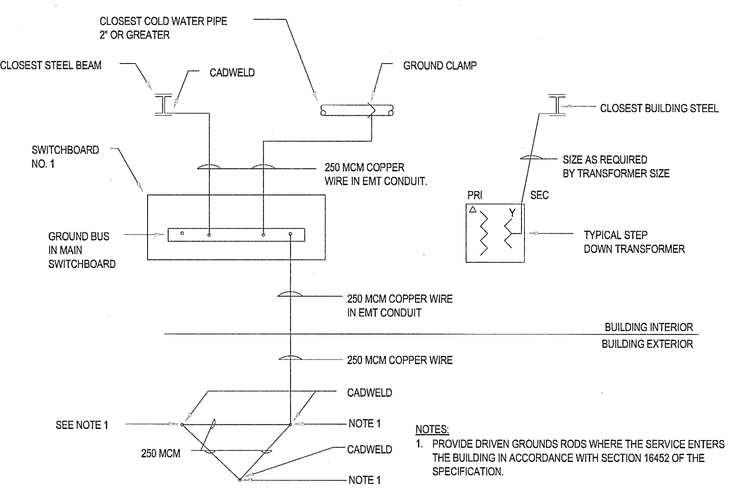
4 Typical Duct Bank Detail
NTS



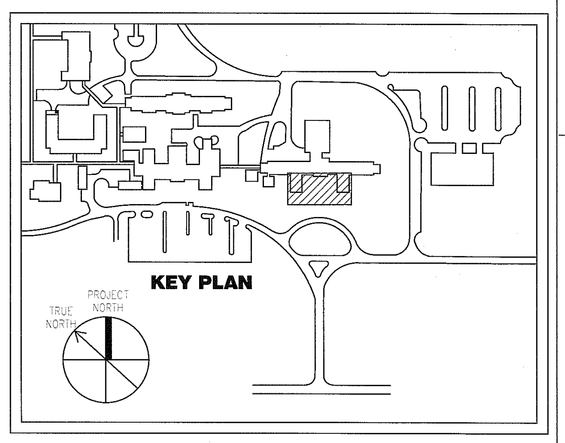
5 Fire Alarm Riser
NTS



6 Faceplate Details
NTS



7 Grounding Detail
NTS



CONSTRUCTION DOCUMENT SUBMISSION

FULLY SPRINKLERED

Number	Description	Date
	Revision Schedule	

CONSULTANTS:

ARCHITECT/ENGINEERS:

ARCHITECTURE ENGINEERING INTERIOR DESIGN DESIGN/BUILD ASTORINO

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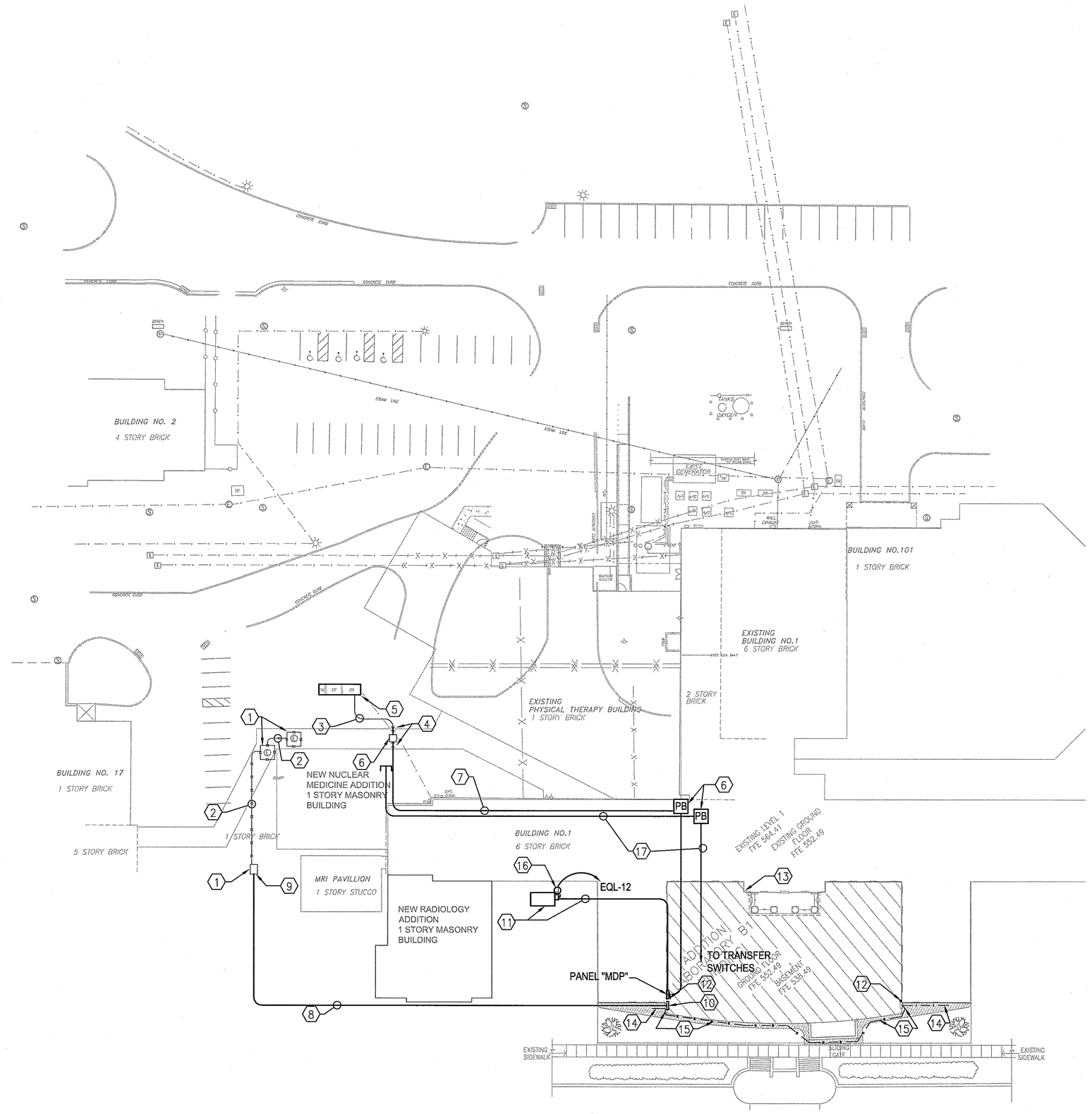
Drawing Title	**Electrical Details**
Approved: Project Director	
Project Title	**VAMC Lebanon - Renovation of Laboratory B1**
Location	
Date	02/23/2012
Checked	DJ
Drawn	RR
Project Number	**595-09-107**
Building Number	
Drawing Number	**EP7-101**
Dwg. of	

Office of Facilities Management

Department of Veterans Affairs

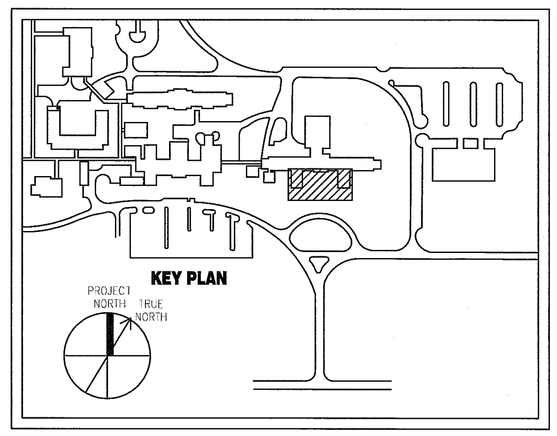
VA FORM 08-6231, OCT 1978



1 Electrical Site Plan
SCALE: 1"=30'-0"

KEY NOTES:

1. EXISTING ELECTRICAL MANHOLES TO REMAIN AND BE UTILIZED FOR NEW FEEDER ROUTING.
2. EXISTING EMERGENCY SYSTEM DUCT BANK TO REMAIN WITH 4 SPARE CONDUITS. THE E.C. SHALL USE SPARE DUCT BANK CONDUIT FOR NEW FEEDERS.
3. NEW UNDERGROUND DUCT BANK TO BE RUN UNDERGROUND TO EXISTING BUILDING CRAWL SPACE FOR NEW DISTRIBUTION.
4. 3 EXISTING 4" CONDUITS STUBBED THROUGH CRAWL SPACE WALL TO BE EXTENDED FOR NEW DISTRIBUTION FEEDERS. VERIFY EXACT LOCATION AND ROUTING.
5. EXISTING OUTDOOR SUBSTATION TO REMAIN.
6. PULL BOX IN CRAWL SPACE AS REQUIRED.
7. FEEDERS IN CRAWL SPACE OF EXISTING BUILDING.
8. NEW EMERGENCY POWER DUCT BANK - CONDUIT ONLY 4-4" PVC CONDUITS ENCASED IN CONCRETE
9. EXISTING EMERGENCY POWER MANHOLE USE EXISTING CONDUIT WINDOW FOR NEW EMERGENCY CONDUIT DUCT BANK TO BE EXTENDED TO B1 LAB BASEMENT.
10. 4-4" PVC CONDUIT STUBBED THROUGH BASEMENT WALL AND CAPPED FOR FUTURE EMERGENCY POWER.
11. ACC-1 UNIT LOCATION WITH FEEDER UNDERGROUND AND THROUGH CRAWL SPACE TO MDP IN B1 LAB BASEMENT.
12. EXISTING LIGHTNING PROTECTION DOWN CONDUCTOR ON OUTSIDE OF BUILDING. INTERCEPT AND EXTEND FOR NEW ROOF LIGHTNING PROTECTION SYSTEM AND PROVIDE AND CONCEAL DOWN CONDUCTOR IN NEW CONSTRUCTION TO NEW GROUND ROD.
13. EXISTING LIGHTNING PROTECTION DOWN CONDUCTOR TO BE CONCEALED IN NEW CONSTRUCTION AND CADWELD TO NEW STEEL COLUMN.
14. EXISTING BUILDING LOOP TO REMAIN
15. INTERCEPT EXISTING BUILDING GROUND LOOP. CADWELD AND EXTEND NEW CONDUCTOR (4/0 COPPER) AS INDICATED FOR CONTINUOUS GROUND LOOP.
16. POWER CONNECTION FOR ACC-1 HEAT TRACE -HEAT TRACE BY OTHERS- VERIFY EXACT LOCATION
17. EMPTY RACEWAYS IN CRAWL SPACE FOR FUTURE EMERGENCY FEEDERS. SEE DRAWING EP5-201 FOR MORE INFORMATION.



CONSTRUCTION DOCUMENT SUBMISSION

FULLY SPRINKLERED

Number	Description	Date
	Revision Schedule	

CONSULTANTS:

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
DONALD LOUIS TOTH
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2.24.12

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Drawing Title: **Electrical Site Plan**	Project Title: **VAMC Lebanon - Renovation of Laboratory B1**	Project Number: **595-09-107**	**Office of Facilities Management**
Approved: Project Director	Location: .	Building Number: .	
	Date: 02/23/2012 / Checked: DJ / Drawn: RR	Drawing Number: **ESO-101** Dwg. of --	Department of Veterans Affairs

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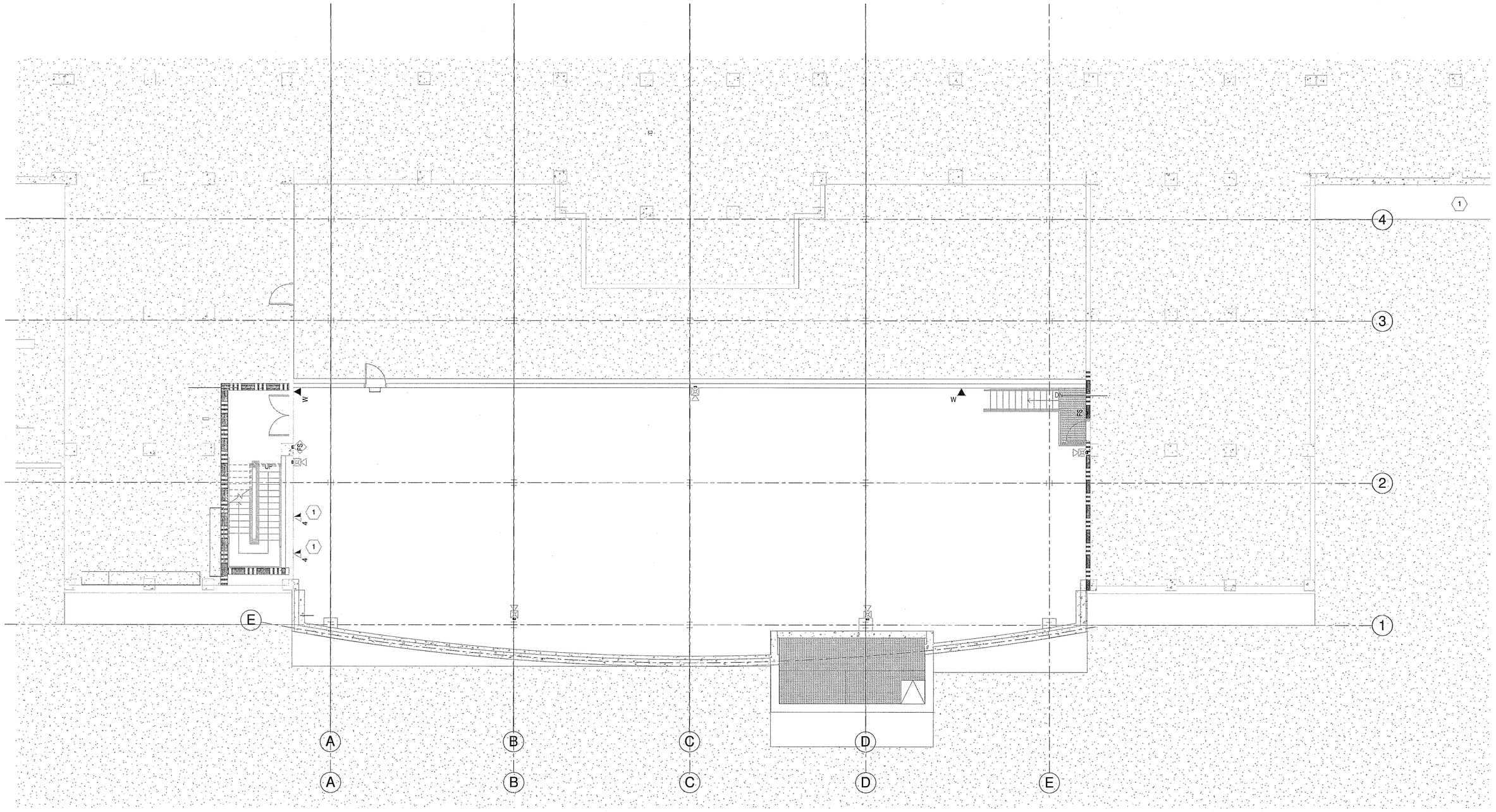
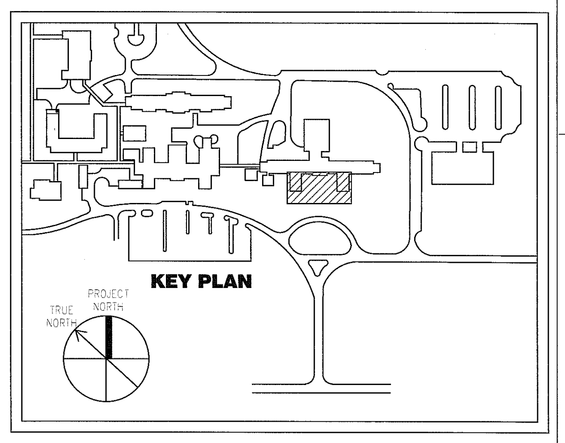


1 NE1S-Pipe Basement
1/8" = 1'-0"

KEY NOTES

1 PROVIDE UTP CABELING DROPS FOR CONNECTOR TO ATS. (TRANSFER SWITCHES). COORDINATE FINAL QUANTITY AND LOCATION WITH COTR.



CONSTRUCTION DOCUMENT SUBMISSION

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Number	Description	Date
	Revision Schedule	

CONSULTANTS:

ARCHITECT/ENGINEERS:

ARCHITECTURE ENGINEERING INTERIOR DESIGN DESIGN/BUILD ASTORINO

227 Fort Pitt Boulevard Pittsburgh Pennsylvania 15222
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Drawing Title: **Basement Systems Plan**

Approved: Project Director

Project Title: **VAMC Lebanon - Renovation of Laboratory B1**

Location

Date	Checked	Drawn
02/23/2012	DJ	RR

Project Number: **595-09-107**

Building Number

Drawing Number: **ET1-101**

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Department of Veterans Affairs

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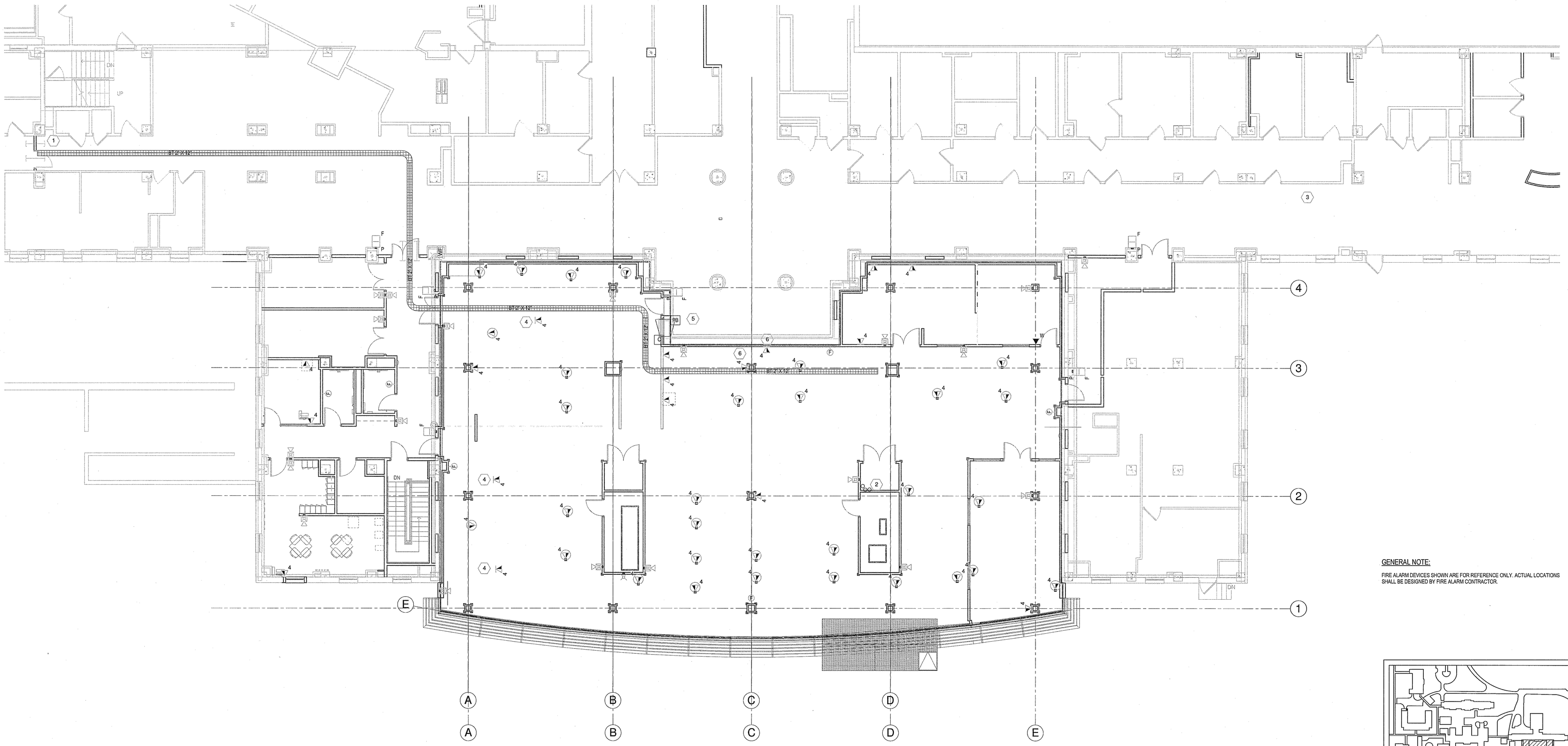
KEY NOTES

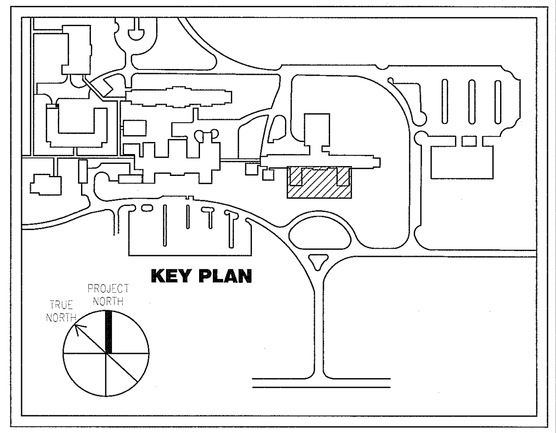
1. EXTEND NEW BASKET TRAY TO RADIOLOGY SPACE. TERMINATE ALL NEW CABLES IN RADIOLOGY TELECOM ROOM. PROVIDE NEW 4 POST RACK (ICCMSR4P84) AND ALL TERMINATION HARDWARE.
2. INSTALL (1) 4" EMT CONDUITS FROM CEILING SPACE TO BASEMENT.
3. EXISTINIG EDWARDS FIRE ALARM CONTROL PANELS (CONFIRM EXACT LOCATION WITH COTR). CONTRACTOR WILL EXPAND AND/OR ADD NECESSARY EQUIPMENT TO SERVE NEW LAB AREA. THIS WILL INCLUDE PRIMARY AND AUXILIARY POWER SUPPLIES, AUDIO AMPLIFIERS, CABINETS AND ADDRESSABLE LOOP MODULES.
4. MOUNT TELECOMMUNICATION OUTLETS IN HUBBEL POWER POLE MODEL # HBLPPO15AI OR APPROVED EQUAL. COORDINATE FINAL LOCATION WITH EQUIPMENT VENDOR AND OWNER.
5. PROVIDE DOOR BELL STYLE BUTTON AND BUZZER TO ALERT STAFF OF SOMEONE AT SERVICE WINDOW.
6. PROVIDE NETWORK CONNECTION TO REFRIGERATOR AND FREEZER. COORDINATE FINAL CONNECTION REQUIREMENT AND LOCATION WITH COTR.



1 NE2S-Ground Level
1/8" = 1'-0"

GENERAL NOTE:

FIRE ALARM DEVICES SHOWN ARE FOR REFERENCE ONLY. ACTUAL LOCATIONS SHALL BE DESIGNED BY FIRE ALARM CONTRACTOR.



CONSTRUCTION DOCUMENT SUBMISSION

FULLY SPRINKLERED

Number	Description	Date
Revision Schedule		

CONSULTANTS:

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER DONALD J. JUSTICE JR. 075461 2-24-12

ARCHITECT/ENGINEERS:

ARCHITECTURE ENGINEERING INTERIOR DESIGN DESIGN/BUILD ASTORINO

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Drawing Title: **Ground Floor Systems Plan**

Approved: Project Director

Project Title: **VAMC Lebanon - Renovation of Laboratory B1**

Location

Date: 02/23/2012 | Checked: DJ | Drawn: RR

Project Number: **595-09-107**

Building Number

Drawing Number: **ET1-102**

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Office of Facilities Management

Department of Veterans Affairs

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