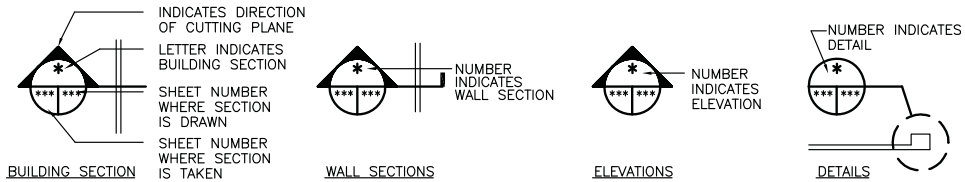


100% SUBMISSION

DETAIL SYMBOLS

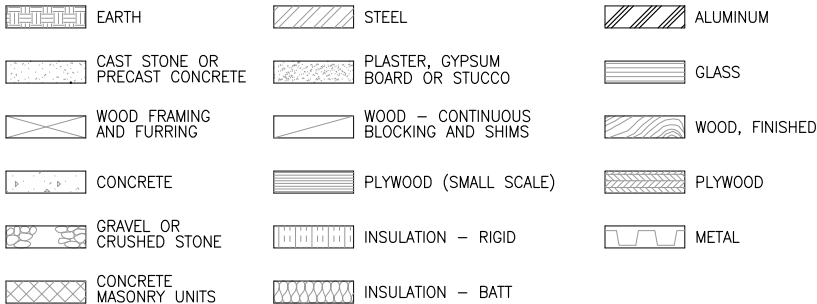


GENERAL NOTES

- ALL PLAN DIMENSIONS ARE TO FACE OF GWB OR EXISTING SHELL, VERIFY IN FIELD.
- GENERAL CONTRACTOR SHALL COORDINATE AND PROVIDE SEMI RECESSED EXTINGUISHER CABINETS AND EXTINGUISHER AS REQUIRED BY NFPA 10. FINAL LOCATION AND SIZE TO BE DETERMINED BY FIRE MARSHALL.
- ALL PENETRATIONS (NEW AND EXISTING) OF FIRE ASSEMBLIES (WALL AND/OR CEILINGS AND AT THE INTERSECTION OF WALLS AND METAL ROOF DECK) SHALL BE FIRE STOPPED TO COMPLY WITH APPLICABLE CODES IN ACCORDANCE WITH U.L. STANDARDS. MECHANICAL DUCTS THAT PENETRATE FIRE-RATED PARTITIONS MUST HAVE FIRE DAMPERS.
- CONTRACTOR TO VERIFY ALL ± AND REFERENCE DIMENSIONS PRIOR TO COMMENCEMENT OF CONSTRUCTION, AND NOTIFY ARCHITECT OF ANY DISCREPANCIES.
- DO NOT SCALE DRAWINGS. USE WRITTEN DIMENSIONS ONLY.
- ALL DIMENSIONS, NOTES, FINISHES AND FIXTURES SHOWN ON TYPICAL FLOOR PLANS, SECTIONS, OR DETAILS SHALL APPLY TO ALL SIMILAR, SYMMETRICAL OR OPPOSITE HAND PLANS, SECTIONS OR DETAILS.
- ALL MATERIALS & WORK SHALL CONFORM TO LOCAL BUILDING CODES & ORDINANCES AND OTHER AGENCIES HAVING JURISDICTION.
- CONTRACTOR TO PROVIDE AND INSTALL EXIT SIGNS AND EMERGENCY LIGHTING AS REQUIRED BY APPLICABLE CODES. COORDINATE WITH ELECTRICAL DRAWINGS.
- GENERAL CONTRACTOR TO VERIFY ALL EXISTING UTILITIES
A. GAS SERVICE
B. DOMESTIC WATER SERVICE
C. SANITARY SEWER SERVICE
D. SPRINKLER WATER PIPING
E. ELECTRIC POWER SOURCE
F. PHONE AND DATA LINES
- COORDINATE WITH ALL EXISTING AND PROPOSED FLOOR, WALL AND ROOF PENETRATIONS

MATERIALS

(ARCHITECTURAL AND STRUCTURAL DRAWINGS)



ABBREVIATIONS

AFF	above finish floor	FEC	fire extinguisher cabinet	OPG	opening
AT	acoustical tile	FFL	finished floor line	OD	outside diameter
AC	air conditioning	FLG	flashing	OA	overall
ALT	alternate	FLR	floor (ing)	OH	overhead
ALUM	aluminum	FD	floor drain	PFG	polished float glass
AB	anchor bolt	FTG	footing	PNL	panel
APPROX	approximate	FND	foundation	PER	perimeter
ARCH	architect (ural)	GA	gauge	PLAS	plaster
ASPH	asphalt	GC	general contractor	PL	plate
AUTO	automatic	GD	grade, grading	PLK	concrete plank-painted
BSMT	basement	GHM	galvanized hollow metal	PWD	plywood
BPL	bearing plate	GMU	glazed masonry unit	PT	point
BFF	below finish floor	GYP	gypsum	PVC	polyvinyl chloride
BM	bench mark	GWB	gypsum wall board	PSF	pounds per square foot
BIT	bituminous	HDW	hardware	PSI	pounds per square inch
BLK	block	HGT	height	PL	property line
BD	board	HTG	heating	QT	quarry tile
BS	both sides	HVAC	heating ventilating	R	radius
BOT	bottom		air conditioning	REF	reference
BLDG	building	HC	hollow core	RA	return air
BUR	built up roof	HM	hollow metal	REV	revision, revised
C	cove	HOR	horizontal	ROW	right of way
CI	cast iron	HB	hose bib	R	riser
CB	catch basin	HWH	hot water heater	RM	room
CLG	ceiling	INCL	include (d) (ing)	RO	rough opening
CEM	cement	ID	inside diameter	SCH	schedule
CT	ceramic tile	INSUL	insulation	SEC	section
COL	column	IG	insulated glass	SIM	similar
CONC	concrete	INT	interior	S	south, switch (es)
CMU	concrete masonry unit	INV	invert	SF	seamless floor
CONST	construction	JT	joint	SPEC	specification (s)
CONT	continuous, continue	KO	knock out	SQ	square
CJT	control joint	LBL	label	SS	stainless steel
CU	cubic	LAV	lavatory	ST	straight
DL	dead load	LH	left hand	STL	steel
DEM	demolish, demolition	L	length, latex	STO	storage
DTL	detail	LT	light	STR	structural
DIA	diameter	LL	live load	SYS	system
DIM	dimension	MH	manhole	TFG	tempered float glass
DR	door	MFR	manufacture (er)	TH	threshold
DS	downspout	MAS	masonry	TIG	tempered insulated glass
D	drain	MBL	marble	THK	thick (ness)
DWG	drawing	MDO	medium density overlay	T&G	tongue & groove
DF	drinking fountain	MO	masonry opening	T	tread
E	east, enamel paint	MTL	metal	TYP	typical
ELEC	electric (al)	MAX	maximum	VERT	vertical
EWC	electric water cooler	MECH	mechanical	VCT	vinyl composition tile
ELEV	elevation	MED	medium	VB	vinyl base
EMER	emergency	MIN	minimum	VCD	vinyl covered drywall
EST	estimate	MISC	miscellaneous	WC	water closet
EW	each way	NOM	nominal	WP	waterproof (ing)
EXH	exhaust	N	north	WWF	welded wire fabric
EXIST	existing	NIC	not in contract	W	west, width, wide
EXP	expansion, exposed	NTS	not to scale	W/	with
EXT	exterior	NUM	number	WD	wood
FIN	finish (ed)	OC	on center	WB	wood base
FE	fire extinguisher				

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849 Edmont Ave Suite 102
Baltimore, MD 21206
Phone 410.832.2418
Fax 410.832.2419



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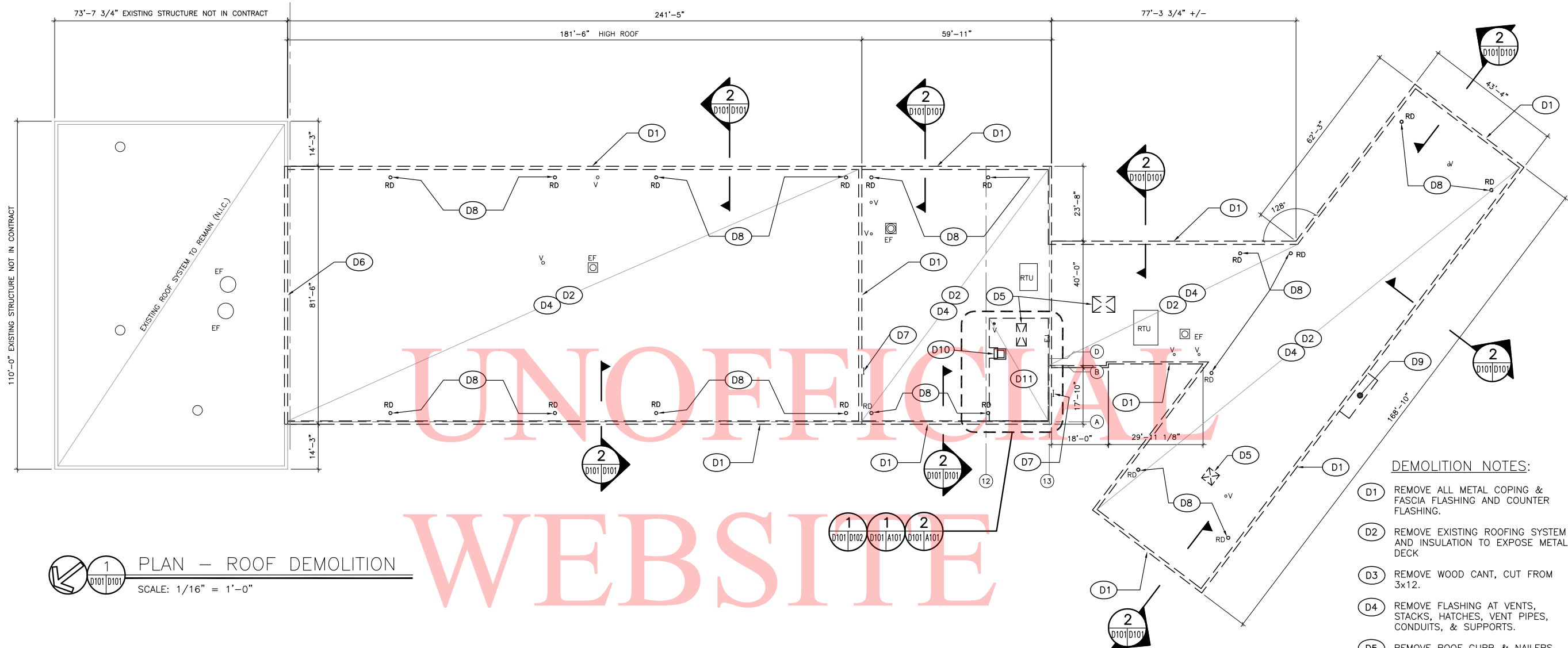
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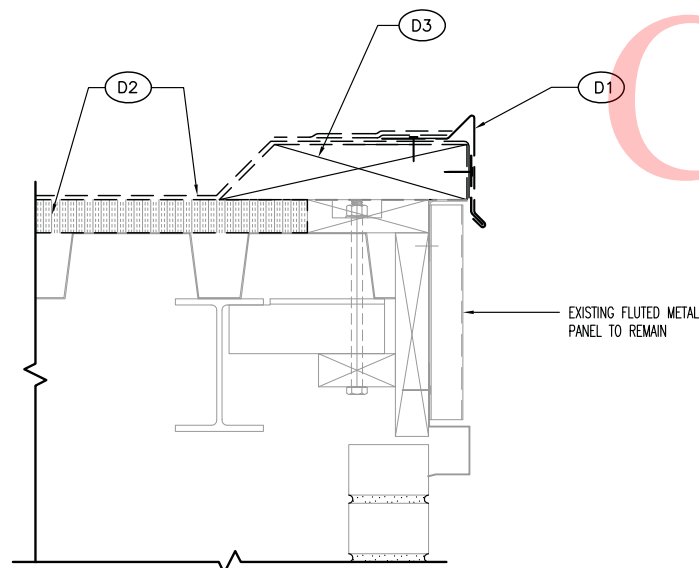
ADDENDUMS / REVISIONS

SOUTH DISTRICT ADMINISTRATION
BUILDING ROOF AND BOILER
IMPROVEMENTS

CONTRACT	BRIDGE NO.	NOTES, ABBREVIATIONS AND SYMBOLS G102	SHEET NO.
T201080107	DESIGNED BY: C. Hansen		2
COUNTY	CHECKED BY: S. Burdette		TOTAL SHTS. 24
SUSSEX			



1 PLAN — ROOF DEMOLITION
SCALE: 1/16" = 1'-0"



2 SECTION — ROOF EDGE DEMOLITION
SCALE: 3" = 1'-0"

DEMOLITION NOTES:

- D1 REMOVE ALL METAL COPING & FASCIA FLASHING AND COUNTER FLASHING.
- D2 REMOVE EXISTING ROOFING SYSTEM AND INSULATION TO EXPOSE METAL DECK
- D3 REMOVE WOOD CANT, CUT FROM 3x12.
- D4 REMOVE FLASHING AT VENTS, STACKS, HATCHES, VENT PIPES, CONDUITS, & SUPPORTS.
- D5 REMOVE ROOF CURB & NAILERS FOR NEW WORK TO BE PREFORMED.
- D6 REMOVE EPDM COPING / EXPANSION JOINT COVER. REMOVE WOOD BLOCKING TO THE EXTENT NECESSARY TO REBUILD EXPANSION JOINT.
- D7 REMOVE ROOF ACCESS LADDER.
- D8 REMOVE ROOF DRAIN. CAP REMAINING DRAIN LINE BELOW ROOF DECK AND AT GRADE IN A MANNER TO PERMIT NEW WORK TO PROCEED. COVER OPENING IN ROOF DECK WITH NEW METAL DECK TO MATCH EXISTING.
- D9 REMOVE ALL METAL COUNTER FLASHING AND FASCIA FLASHING. REMOVE EXISTING ROOFING SYSTEM, WOOD DECK AND BLOCKING.
- D10 REMOVE EXISTING BRICK CHIMNEY. REMOVE PORTION OF THE CHIMNEY WHICH EXTENDS ABOVE THE BOTTOM OF THE ROOF DECK. APPROXIMATE CHIMNEY DEMO AREA: 3'-4"W x 3'-8" D x 11'-0" H.
- D11 COMPLETELY REMOVE PLASTER ON METAL LATH CEILING IN BOILER ROOM TO FACILITATE INSTALLATION OF NEW BOILER, STACKS, PIPING, AND STRUCTURAL STEEL.

GENERAL NOTES:

CONTRACTOR SHALL VERIFY EXISTING ROOF INCLUDING MECHANICAL & ELECTRICAL EQUIPMENT.

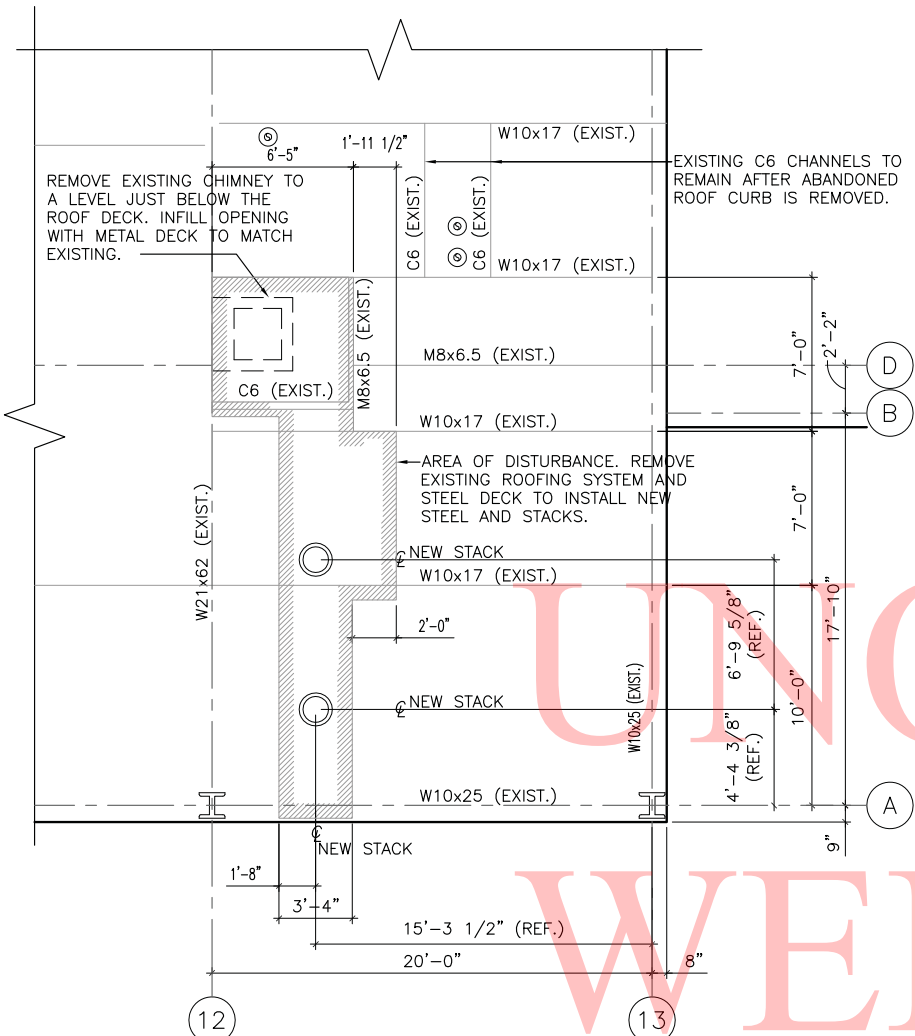
ROOF PLAN ABBREVIATIONS

EF EXHAUST FAN
EV EXHAUST VENT
ES EXHAUST STACK
RTU ROOF TOP UNIT
RD ROOF DRAIN
EJ EXPANSION JOINT
V VENT

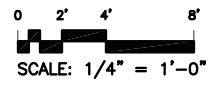
0 2' 4' 8'
SCALE: 3" = 1'-0"

0 8' 16' 32'
SCALE: 1/16" = 1'-0"

100% SUBMISSION SET — 04/08/11



1 PLAN - DEMOLITION
D101 D102 SCALE : 1/4" = 1'-0"



100% SUBMISSION SET - 04/08/11

 DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS		SOUTH DISTRICT ADMINISTRATION BUILDING ROOF AND BOILER IMPROVEMENTS	CONTRACT	BRIDGE NO.	ENLARGED DEMOLITION ROOF PLAN D102	SHEET NO.
				T201080107	DESIGNED BY: C. Hansen		4
				COUNTY	CHECKED BY: S. Burdette		TOTAL SHTS.
				SUSSEX			24

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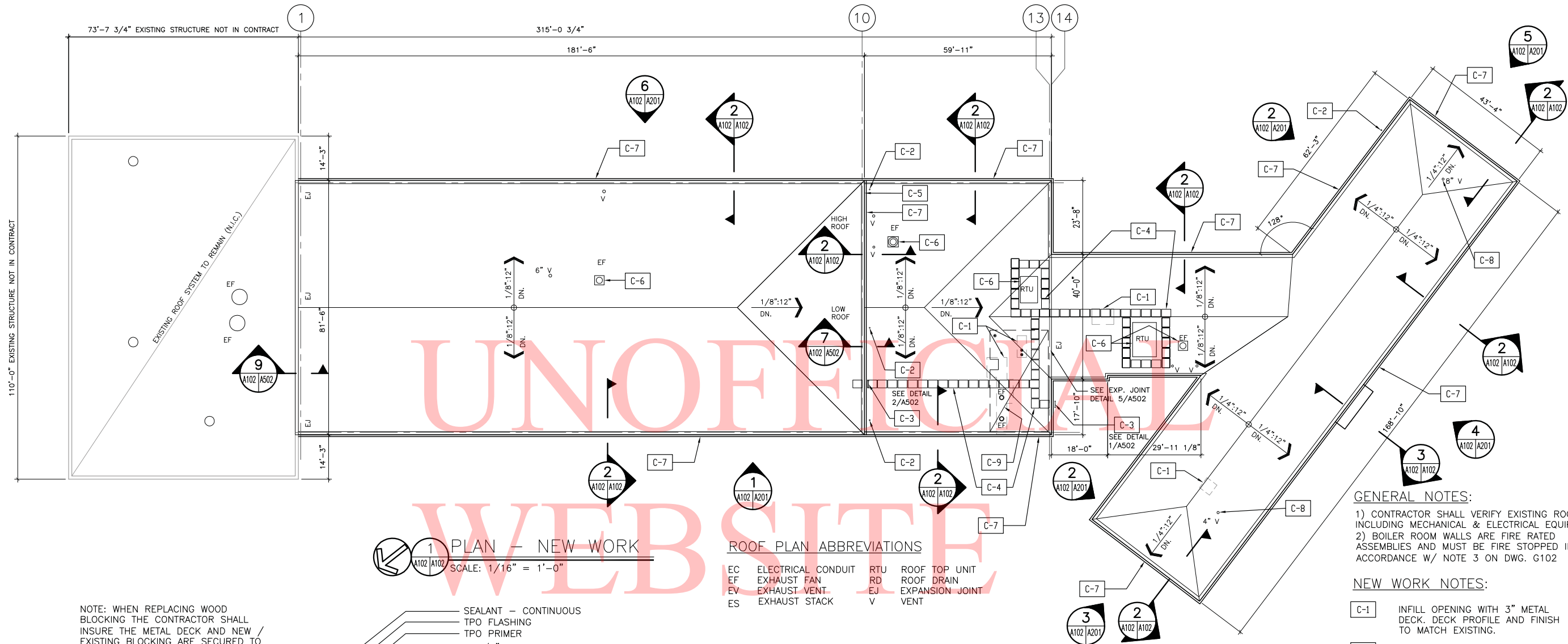
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Consulting Engineers
849 Edmont Ave Suite 102
Baltimore, MD 21206
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Baltimore, MD 21204
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WBCM
ARCHITECTURE ENGINEERING CONSTRUCTION



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

ROOF PLAN ABBREVIATIONS

EC ELECTRICAL CONDUIT RTU ROOF TOP UNIT
EF EXHAUST FAN RD ROOF DRAIN
EV EXHAUST VENT EJ EXPANSION JOINT
ES EXHAUST STACK V VENT

GENERAL NOTES:

- 1) CONTRACTOR SHALL VERIFY EXISTING ROOF INCLUDING MECHANICAL & ELECTRICAL EQUIPMENT.
- 2) BOILER ROOM WALLS ARE FIRE RATED ASSEMBLIES AND MUST BE FIRE STOPPED IN ACCORDANCE W/ NOTE 3 ON DWG. G102

NEW WORK NOTES:

- C-1 INFILL OPENING WITH 3" METAL DECK. DECK PROFILE AND FINISH TO MATCH EXISTING.
- C-2 REMOVE AND REINSTALL. PROVIDE NEW WALL BRACKETS FOR POST MOUNTED EQUIPMENT TO CLEAR NEW GUTTER SYSTEM.
- C-3 INSTALL NEW O.S.H.A. COMPLIANT WALL MOUNTED ROOF ACCESS LADDER. SEE DETAIL 1/A502 OR 2/A502.
- C-4 WALKWAY PAD 30" WIDE x 36" LONG WITH 3" MIN. BETWEEN PADS.
- C-5 PROVIDE NEW COUNTER FLASHING AT LOW ROOF WALL TERMINATION.
- C-6 PROVIDE A MINIMUM 8" UPTURN ON NEW ROOFING MEMBRANE. RAISE ROOF TOP EQUIPMENT TO ACHIEVE MINIMUM UPTURN. RECONNECT EQUIPMENT TO EXISTING DUCT WORK.
- C-7 INSTALL NEW ROOF EDGE GUTTER SYSTEM.
- C-8 EXTEND ROOF VENTS ABOVE NEW MEMBRANE SURFACE A MINIMUM OF 12". TYPICAL ALL LOCATIONS
- C-9 PAINT BOILER ROOM WALLS AND METAL DECK CEILING DEPICTED ON DRAWING M2.1 IN ACCORDANCE WITH SPECIFICATION SECTION 099123. OWNER WILL SELECT COLOR.

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Phone: (410) 346-6702 Fax: (410) 346-6746
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SHEET NO.
6
TOTAL SHTS.
24

NOTE: WHEN REPLACING WOOD BLOCKING THE CONTRACTOR SHALL INSURE THE METAL DECK AND NEW / EXISTING BLOCKING ARE SECURED TO THE BUILDING STRUCTURE

EXISTING 2x6 WOOD BLOCKING TO REMAIN.

1/2" THK. COVER BOARD

NEW 1/8" OR 1/4":12" TAPERED INSULATION. SEE PLAN FOR LOCATION

NEW 1" BASE INSULATION

SEALANT - CONTINUOUS

TPO FLASHING

TPO PRIMER

1-1/4" S.S. ROOF NAILS AT 4" O.C. MAX.

EXISTING 12 GA. ALUMINUM CLOSURE.

SEALANT - CONTINUOUS

TPO MEMBRANE.

SELF TAPPING SHEET METAL SCREW

NEW GUTTER SUPPORT BRACKET AT 3'-0" O.C.

NEW HANGING GUTTER W/ CONTINUOUS DRIP EDGE

EXISTING 2x10 WOOD BLOCKING TO REMAIN.

5 1/4"

7"

EXISTING 16 GA. METAL PANEL TO REMAIN. CONTRACTOR TO ENSURE PANEL IS SECURELY ATTACHED TO BUILDING STRUCTURE.

EXISTING 12 GA. ALUMINUM CLOSURE.

NEW 4" OR 5" RECTANGULAR DOWNSPOUT. 50'-0" O.C. MAX. SEE ELEVATIONS FOR LOCATIONS

2 SECTION - ROOF EDGE NEW WORK
SCALE: 3" = 1'-0"

CONTINUOUS SEALANT

TERMINATION BAR WITH FASTENER 12" O.C. MAX.

CONTINUOUS BEAD OF WATERBLOCK

COUNTER FLASHING 3'-10"

11"

10" SCUPPER

24 GA GALV WATERDAM

NEW 2"x4" BLOCKING

TPO ROOFING MEMBRANE

3" WIDE STAINLESS STEEL SPRING 3'-0" O.C.

NEW FASCIA FLASHING

ANCHOR FASCIA FLASHING WITH S.S. ROOF NAILS AT 6" O.C. MAX.

EXISTING FASCIA BOARD TO REMAIN

S.S. ROOF NAILS AT 12" O.C. MAX.

CONTINUOUS CLEAT

NEW SOFFIT CLOSURE

EXISTING STUCCO SOFFIT TO REMAIN

1/2" THK. COVER BOARD

NEW 1" THK. INSULATION

NEW 3/4" THK. PLYWOOD OR DENSDECK

EXISTING C4 CHANNELS

3 SECTION - ROOF EDGE CANOPY
SCALE: 1 1/2" = 1'-0"

0 2' 4' 8' 0 4' 8' 1'-4' 0 8' 16' 32'
SCALE: 3" = 1'-0" SCALE: 1 1/2" = 1'-0" SCALE: 1/16" = 1'-0"

100% SUBMISSION SET - 04/08/11

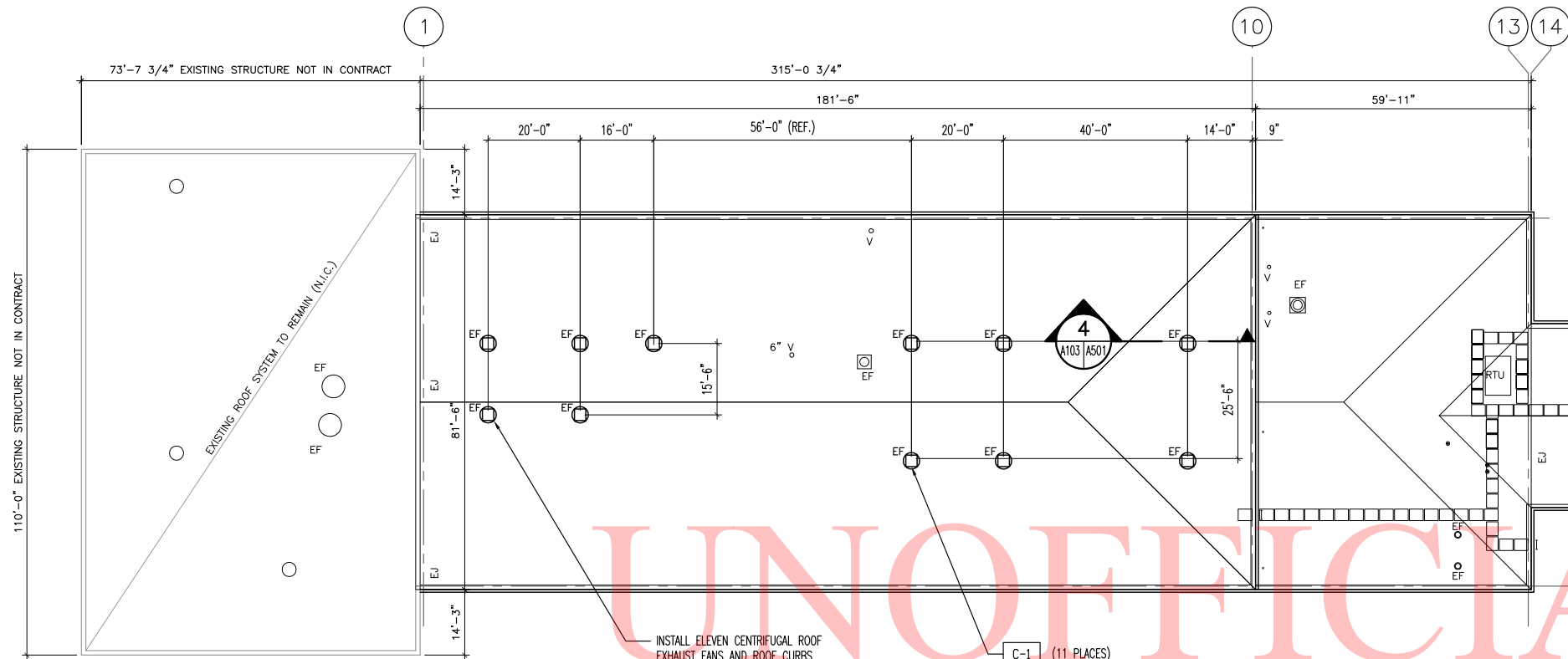
DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

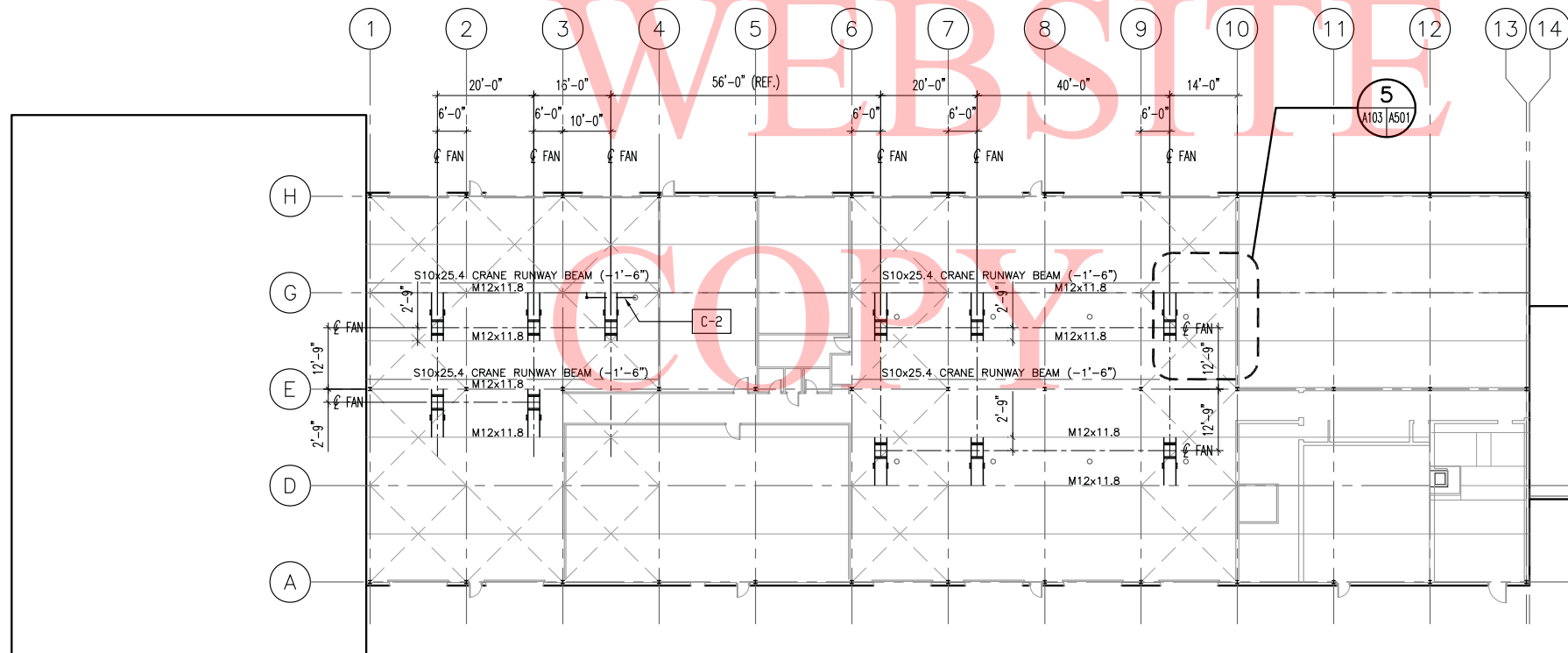
SOUTH DISTRICT ADMINISTRATION
BUILDING ROOF AND BOILER
IMPROVEMENTS

CONTRACT
T201080107
COUNTY
SUSSEX
BRIDGE NO.
DESIGNED BY: C. Hansen
CHECKED BY: S. Burdette

PLAN - NEW WORK
A102



1 ROOF PLAN — CENTRIFUGAL EXHAUST FANS
SCALE: 1/16" = 1'-0"



2 REFLECTED CEILING PLAN — CENTRIFUGAL EXHAUST FANS
SCALE: 1/16" = 1'-0"

GENERAL NOTES:
CONTRACTOR SHALL VERIFY
EXISTING ROOF INCLUDING
MECHANICAL & ELECTRICAL
EQUIPMENT.

NEW WORK NOTES:

- C-1 CUT 30"x30" OPENING IN STEEL
DECK PANEL. AVOID CUTTING
COMPLETELY THROUGH THE WIDTH
OF ONE ROOF DECK PANEL
- C-2 RELOCATE EXISTING CONDUIT TO
PERMIT INSTALLATION OF NEW
FRAMING MEMBERS FOR ROOF
OPENING.

0 8' 16' 32'
SCALE: 1/16" = 1'-0"

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ADDENDUMS / REVISIONS

SOUTH DISTRICT ADMINISTRATION
BUILDING ROOF AND BOILER
IMPROVEMENTS

CONTRACT	BRIDGE NO.	X
T201080107	DESIGNED BY:	C. Hansen
COUNTY	CHECKED BY:	S. Burdette
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ROOF & REFLECTED CEILING PLANS — EXH. FANS	SHEET NO.
A103	7
	TOTAL SHTS.
	24

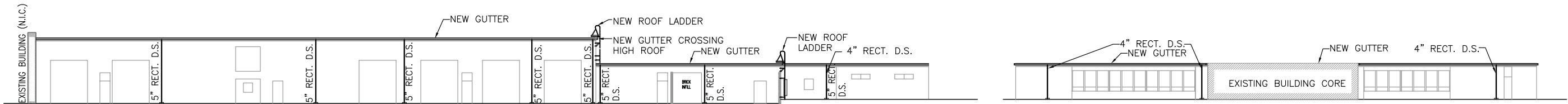
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1 ELEV. — NORTHEAST
SCALE: 1/16" = 1'-0"

2 ELEV. — EAST
SCALE: 1/16" = 1'-0"

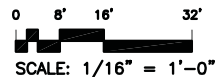
3 ELEV. — NORTH
SCALE: 1/16" = 1'-0"

4 ELEV. — WEST
SCALE: 1/16" = 1'-0"

5 ELEV. — SOUTH
SCALE: 1/16" = 1'-0"

6 ELEV. — SOUTHWEST
SCALE: 1/16" = 1'-0"

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BUILDING ROOF AND BOILER
IMPROVEMENTS

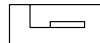
CONTRACT	BRIDGE NO.	X
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ELEVATIONS
A201

SHEET NO.	8
TOTAL SHTS.	24

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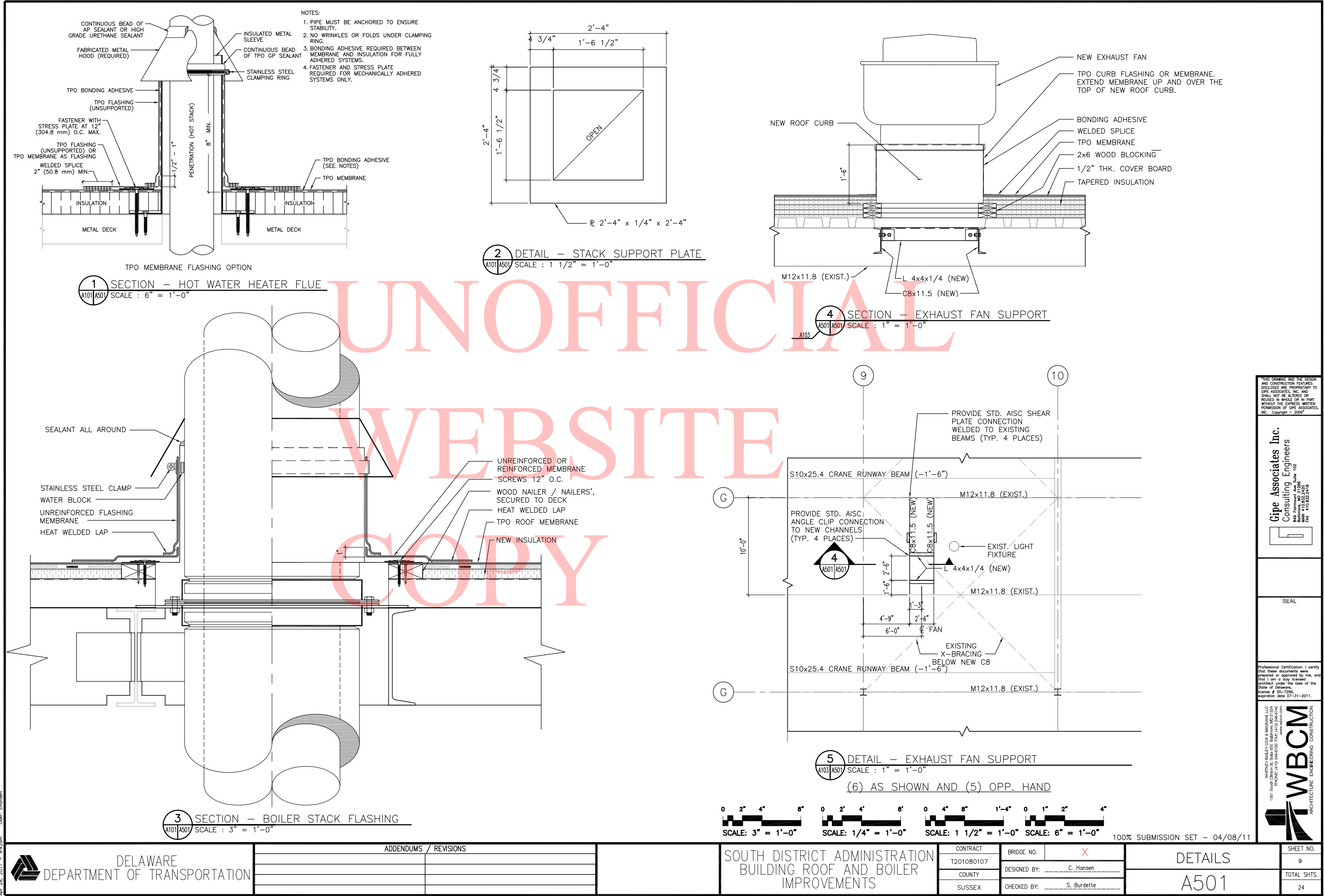
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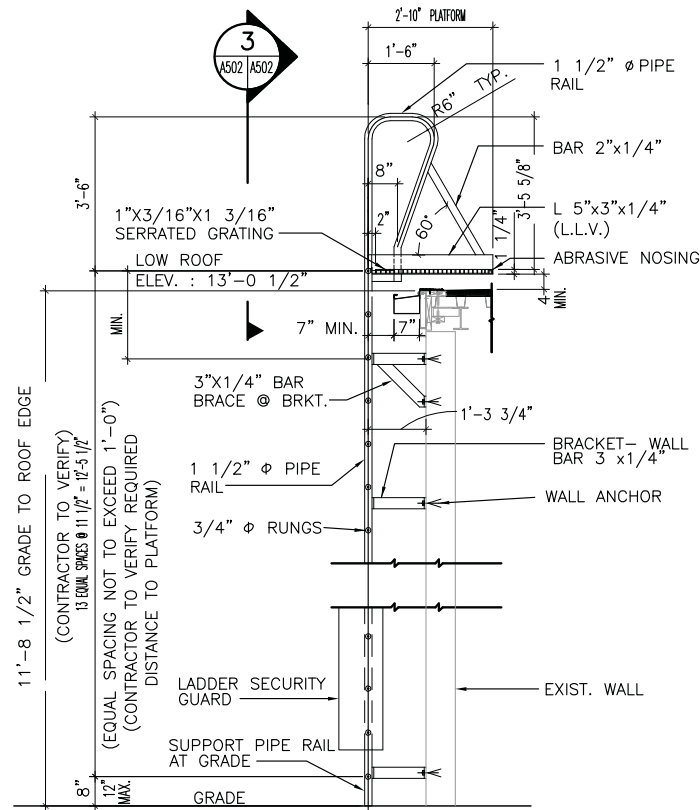


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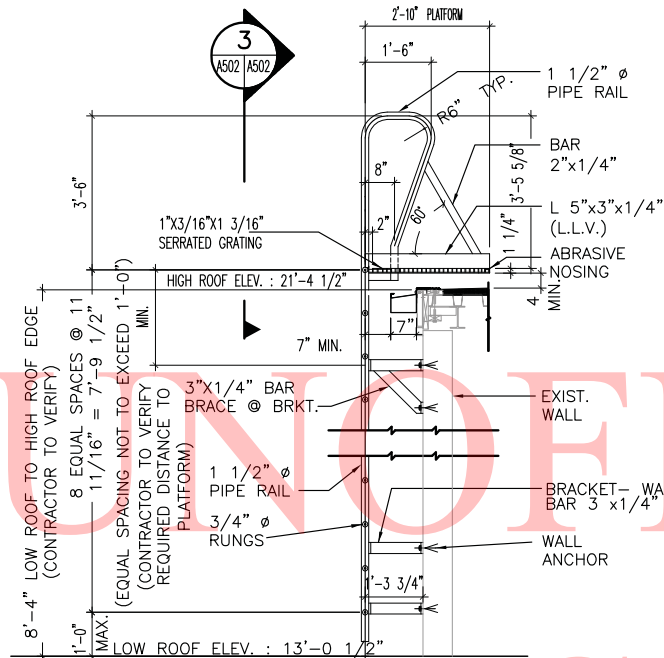
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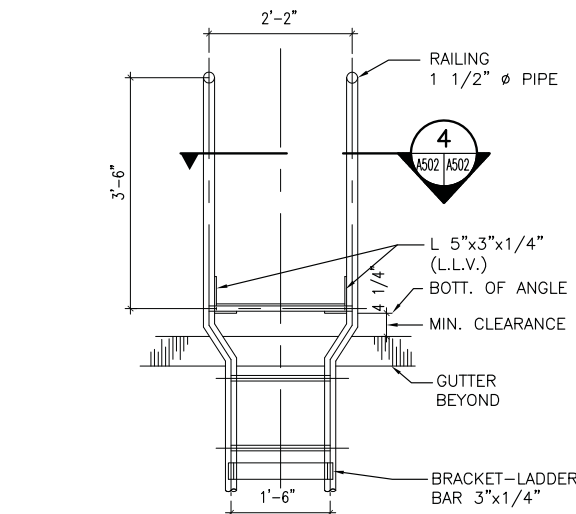




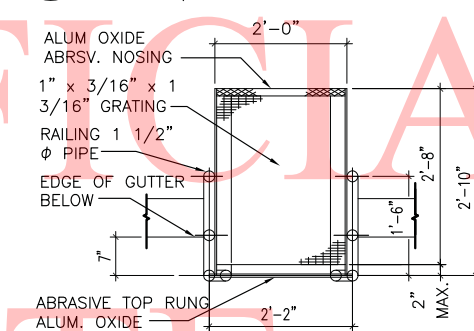
1 LADDER AT GRADE
SCALE: 1/2" = 1'-0"



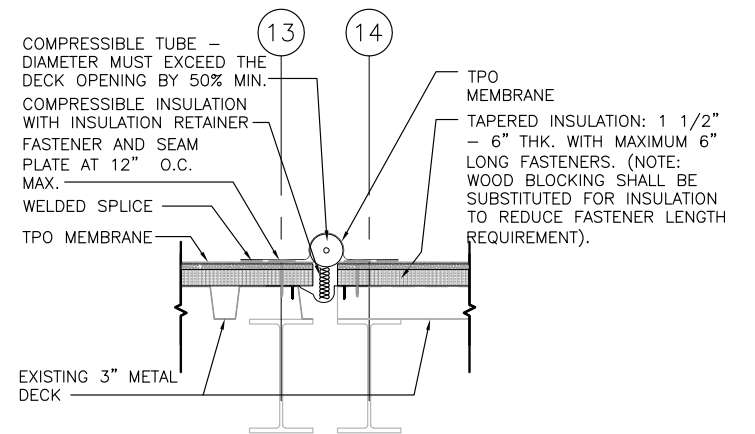
2 LADDER AT LOW ROOF
SCALE: 1/2" = 1'-0"



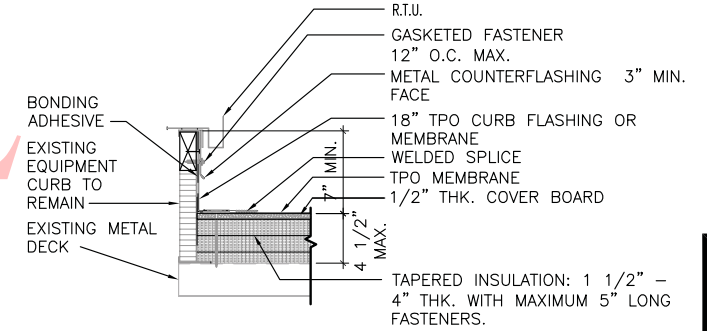
3 VIEW - LADDER LANDING
SCALE: 3/4" = 1'-0"



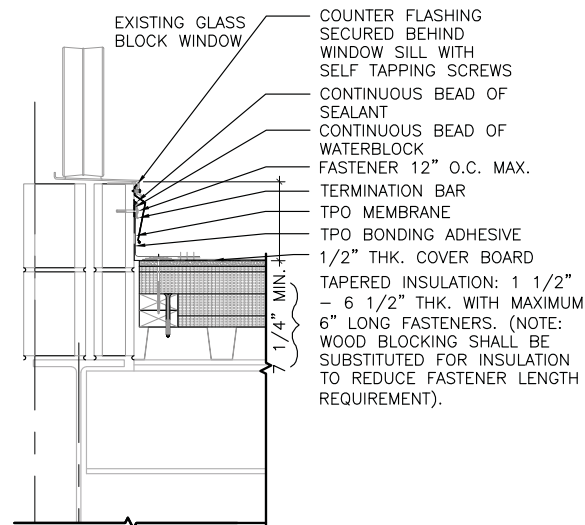
4 SECTION - LADDER LANDING
SCALE: 3/4" = 1'-0"



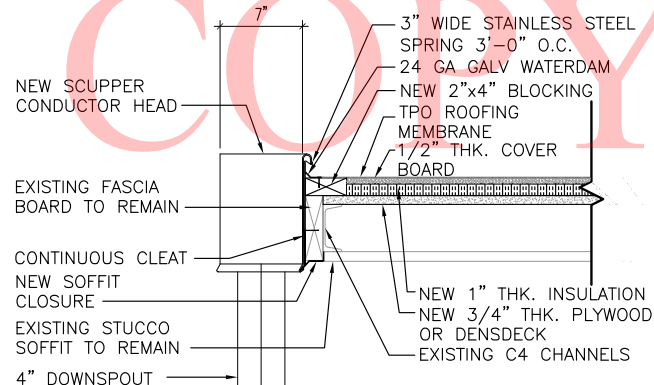
5 SECTION - EXPANSION JOINT
SCALE: 1 1/2" = 1'-0"



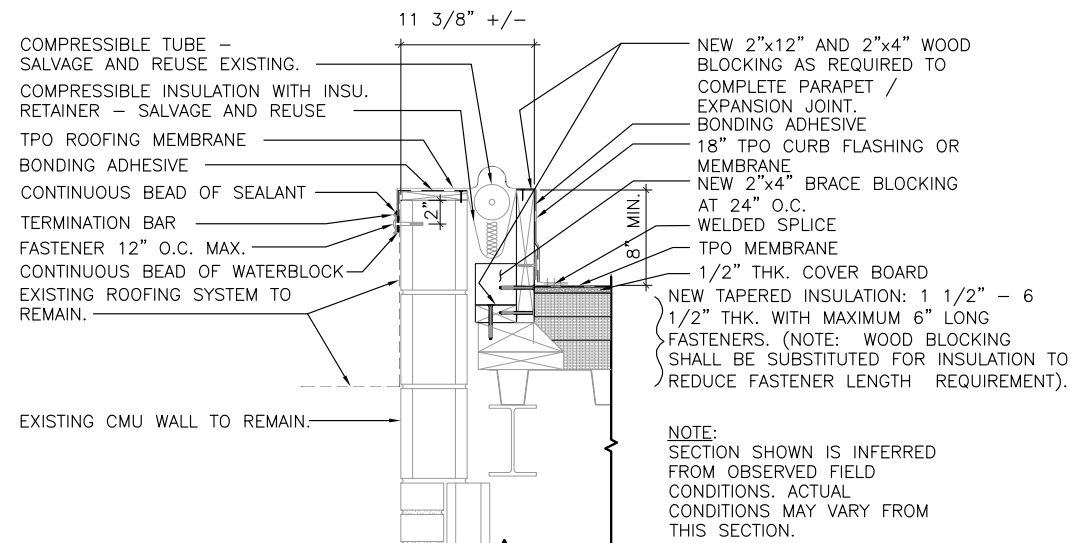
6 SECTION - ROOF CURB
SCALE: 1 1/2" = 1'-0"



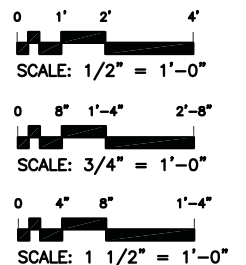
7 SECTION - LOW ROOF
SCALE: 1 1/2" = 1'-0"



8 SECTION - CONDUCTOR HEAD
SCALE: 1 1/2" = 1'-0"



9 SECTION - EX. JT. / PARAPET
SCALE: 1 1/2" = 1'-0"



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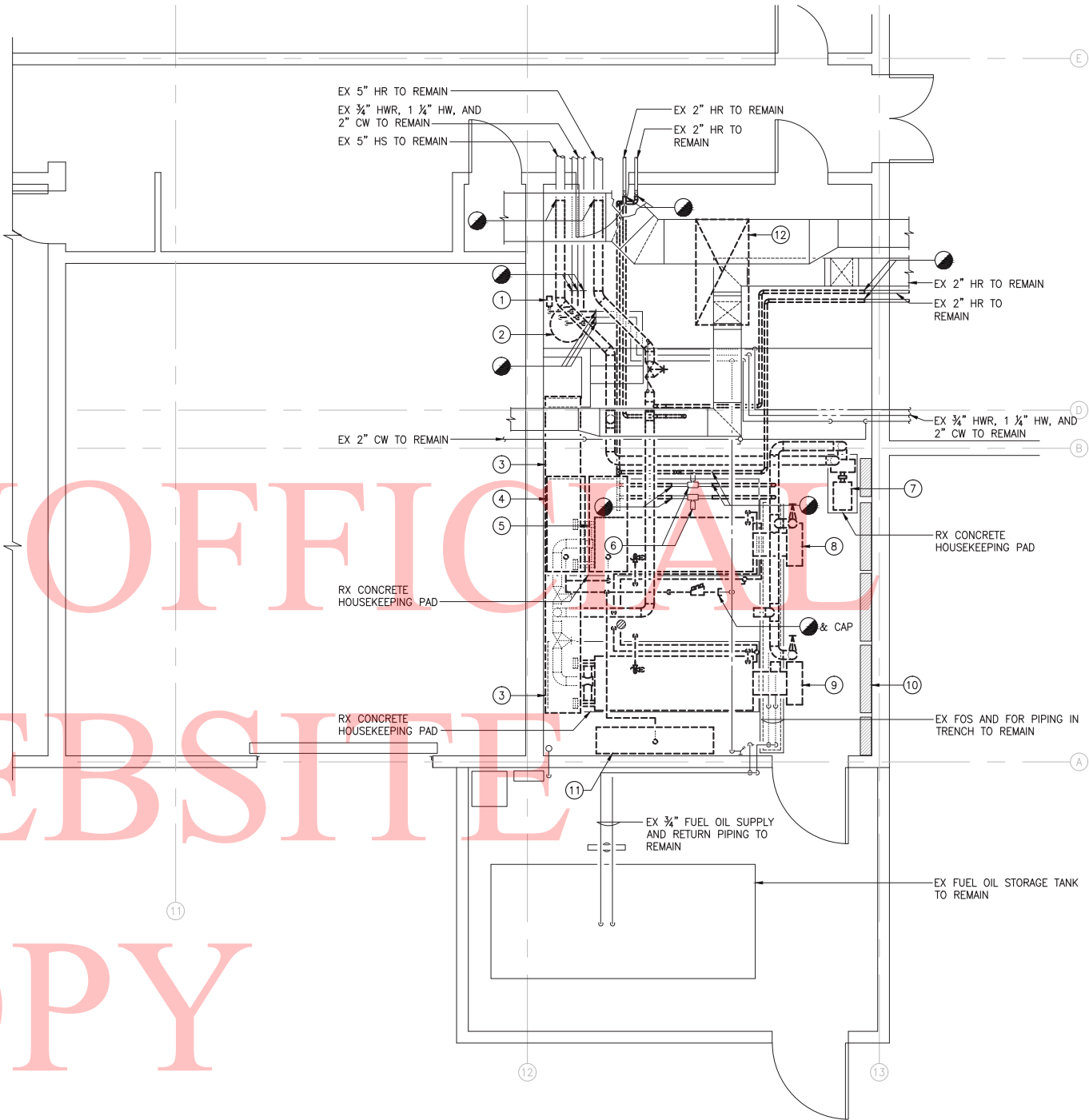
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849 Edmonstoun Ave. Suite 102
Baltimore, MD 21206
PHONE: (410) 832-2418
FAX: (410) 832-2418

Professional Certification: I certify that these documents were prepared or approved by me, and that I am a duly licensed architect under the laws of the State of Delaware, license # S07-7296, expiration date 07-31-2011.

WBCM
ARCHITECTURE ENGINEERING CONSTRUCTION

DRAWING NOTES :

- 1 REMOVE EXISTING DOMESTIC HOT WATER RECIRCULATION PUMP, PIPING, VALVING, SUPPORTS, POWER & CONTROL WIRING AND ALL ASSOCIATED APPURTENANCES
- 2 DISCONNECT EXISTING 50 GALLON DOMESTIC WATER HEATER AND DELIVER TO OWNER IN LOCATION AS DIRECTED.
- 3 REMOVE EXISTING BOILER BREECHING FROM EACH BOILER TO STACK INCLUDING ALL TRANSITIONS, COLLARS, SUPPORTS, INSULATION AND ALL ASSOCIATED APPURTENANCES
- 4 REMOVE EXISTING EXPANSION TANK NUMBER 1, PIPING, VALVING, SUPPORTS, AND ALL ASSOCIATED APPURTENANCES
- 5 REMOVE EXISTING EXPANSION TANK NUMBER 2, PIPING, VALVING, SUPPORTS, AND ALL ASSOCIATED APPURTENANCES
- 6 EXISTING ZONE CIRCULATION PUMP, VALVING, SUPPORTS, AND ALL ASSOCIATED APPURTENANCES TO BE RE-USED. CONTRACTOR TO CAREFULLY REMOVE AND STORE UNTIL RE-INSTALLATION DURING NEW WORK (TYP OF 2)
- 7 REMOVE EXISTING PRIMARY HEATING WATER PUMP, PIPING, VALVING, SUPPORTS, HOUSEKEEPING PAD, POWER & CONTROL WIRING AND ALL ASSOCIATED APPURTENANCES
- 8 REMOVE EXISTING HOT WATER BOILER NUMBER 1, PIPING, VALVING, SUPPORTS, HOUSEKEEPING PAD, POWER & CONTROL WIRING AND ALL ASSOCIATED APPURTENANCES
- 9 REMOVE EXISTING HOT WATER BOILER NUMBER 2, PIPING, VALVING, SUPPORTS, HOUSEKEEPING PAD, POWER & CONTROL WIRING AND ALL ASSOCIATED APPURTENANCES
- 10 EXISTING ELECTRICAL GEAR TO REMAIN, UNLESS NOTED OTHERWISE ON ELECTRICAL DRAWINGS.
- 11 REMOVE EXISTING EXPANSION TANK NUMBER 3, PIPING, VALVING, SUPPORTS, AND ALL ASSOCIATED APPURTENANCES
- 12 REMOVE EXISTING ABANDONED 72x36 OUTSIDE AIR DUCT UP TO ROOF. EXISTING ROOF CAP TO REMAIN

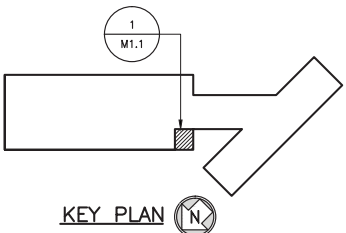


1
M1.1

PART PLAN – BOILER ROOM
MECHANICAL DEMOLITION

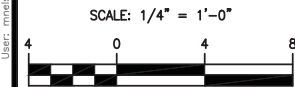
SCALE: 1/4" = 1'-0"

N



KEY PLAN

Apr 06, 2011 - 2:41pm User: mmlscon



ADDENDUMS / REVISIONS

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04/08/2011

SOUTH DISTRICT ADMINISTRATION
BUILDING ROOF AND BOILER
IMPROVEMENTS

CONTRACT
T201080107

COUNTY
SUSSEX

BRIDGE NO. X

DESIGNED BY: M. NELSON

CHECKED BY: M. NELSON

PART PLAN – BOILER ROOM
MECHANICAL DEMOLITION

M1.1

SHEET NO.
11

TOTAL SHTS.
24

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Consulting Engineers
849 Edmont Ave Suite 102
Baltimore, MD 21206
PHONE 410.332.2416
FAX 410.332.2418



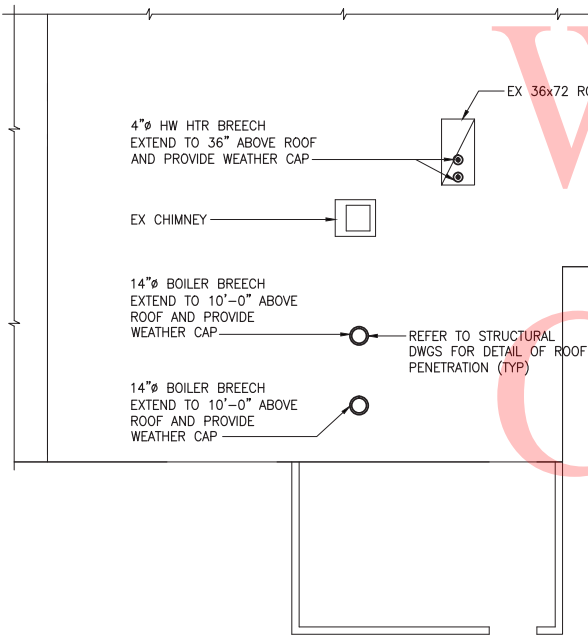
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WHITNEY BAILEY/COR & MAGNANI, LLC
1501 South China St. Suite 500 Baltimore, MD 21224
PHONE (410) 246-6000 FAX (410) 246-6000
WWW.WBCEM.COM

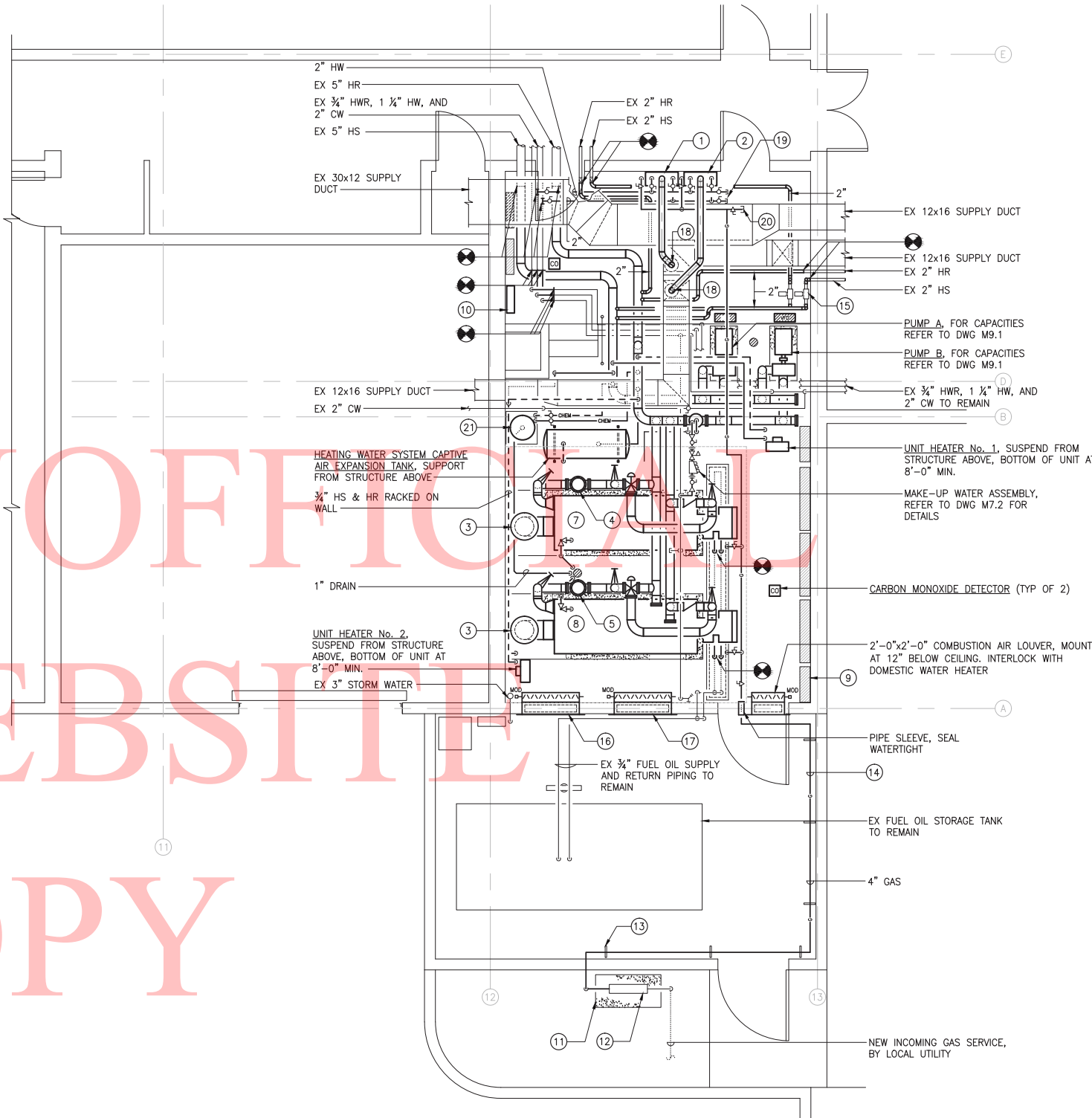
WBCM
ARCHITECTURE ENGINEERING CONSTRUCTION

DRAWING NOTES :

- 1 DOMESTIC WATER HEATER No. 1, MOUNT ON WALL, REFER TO DWG M9.1 FOR CAPACITIES
- 2 DOMESTIC WATER HEATER No. 2, MOUNT ON WALL, REFER TO DWG M9.1 FOR CAPACITIES
- 3 14"Ø BOILER BREECH DOWN TO BOILER AND UP THRU ROOF, MAKE ALL NECESSARY CONNECTIONS
- 4 PUMP D, BOILER CIRCULATION PUMP, REFER TO DWG M9.1 FOR CAPACITIES
- 5 PUMP E, BOILER CIRCULATION PUMP, REFER TO DWG M9.1 FOR CAPACITIES
- 6 RELOCATED EXISTING ZONE CIRCULATION PUMP, VALVING, SUPPORTS, AND ALL ASSOCIATED APPURTENANCES. RECONNECT EXISTING CONTROLS TO THIS LOCATION
- 7 HW BOILER NUMBER 1, REFER TO DWG M9.1 FOR CAPACITIES
- 8 HW BOILER NUMBER 2, REFER TO DWG M9.1 FOR CAPACITIES
- 9 EXISTING ELECTRICAL GEAR, REFER TO ELECTRICAL DWGS
- 10 CARBON MONOXIDE DETECTION SYSTEM CONTROL PANEL, MOUNT ON WALL
- 11 4'-0"x2'-0"x6" HIGH ABOVE GRADE CONCRETE PAD FOR UTILITY COMPANY EQUIPMENT, COORDINATE WITH UTILITY COMPANY FOR SIZE AND LOCATION
- 12 GAS SERVICE PRESSURE REDUCING VALVE AND METER STATION BY LOCAL UTILITY
- 13 GALVANIZED STEEL PIPE RACK MOUNTED FROM WALL, TYPICAL
- 14 PAINT ALL EXTERIOR GAS PIPING WITH HIGH PERFORMANCE WEATHER-PROOF PAINT. COLOR SHALL BE YELLOW, UNLESS OTHERWISE DIRECTED BY OWNER.
- 15 RELOCATE EXISTING IN-LINE CIRCULATOR PUMPS TO THIS LOCATION. RACK PUMPS AND VALVING ON WALL FOR EASE OF MAINTENANCE.
- 16 (2) 3'-6"x3'-6" COMBUSTION AIR LOUVERS, MOUNT ONE AT 12" ABOVE FINISHED FLOOR AND THE OTHER AT 12" BELOW FINISHED CEILING. INTERLOCK WITH BOILER NUMBER 1
- 17 (2) 3'-6"x3'-6" COMBUSTION AIR LOUVERS, MOUNT ONE AT 12" ABOVE FINISHED FLOOR AND THE OTHER AT 12" BELOW FINISHED CEILING. INTERLOCK WITH BOILER NUMBER 2
- 18 4" DIAMETER WATER HEATER BREECH UP THRU ROOF, FOR CONT REFER TO PART PLAN ON THIS SHEET
- 19 1" HW AND 1" CW CAPPED FOR FUTURE CONNECTION, PROVIDE WITH BALL VALVE
- 20 ¾" GAS CAPPED FOR FUTURE CONNECTION, PROVIDE WITH GAS COCK
- 21 CHEMICAL SHOT FEEDER, PROVIDE WITH 4" HIGH CONCRETE HOUSEKEEPING PAD

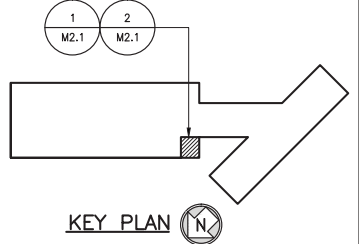


2
M2.1
ROOF PLAN – BOILER ROOM
MECHANICAL NEW WORK
SCALE: 1/8" = 1'-0"

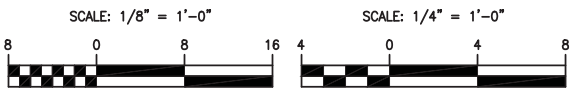


1
M2.1
PART PLAN – BOILER ROOM
MECHANICAL NEW WORK
SCALE: 1/4" = 1'-0"

- NOTES :
1. CONTRACTOR SHALL COMPLETELY DRAIN THE ENTIRE HOT WATER HEATING SYSTEM, INCLUSIVE OF ALL UNITS WITHIN THIS FACILITY, FLUSH THE SYSTEM, AND REFILL WITH TREATED WATER PRIOR TO SYSTEM START-UP. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
 2. CONTRACTOR SHALL CONTACT, COORDINATE AND ARRANGE WITH LOCAL NATURAL GAS UTILITY TO PROVIDE NEW GAS SERVICE TO THIS FACILITY. ALL ENGINEERING AND INSTALLATION COSTS SHALL BE PAID BY THE CONTRACTOR. COSTING FOR THIS ITEM SHALL BE IN THE CONSTRUCTION BID.



KEY PLAN



ADDENDUMS / REVISIONS

100% SUBMISSION SET
04/08/2011

SOUTH DISTRICT ADMINISTRATION
BUILDING ROOF AND BOILER
IMPROVEMENTS

CONTRACT	BRIDGE NO.	X
T201080107	DESIGNED BY:	M. NELSON
COUNTY	CHECKED BY:	M. NELSON
SUSSEX		

PART PLAN – BOILER ROOM
MECHANICAL NEW WORK

M2.1

SHEET NO.	12
TOTAL SHTS.	24

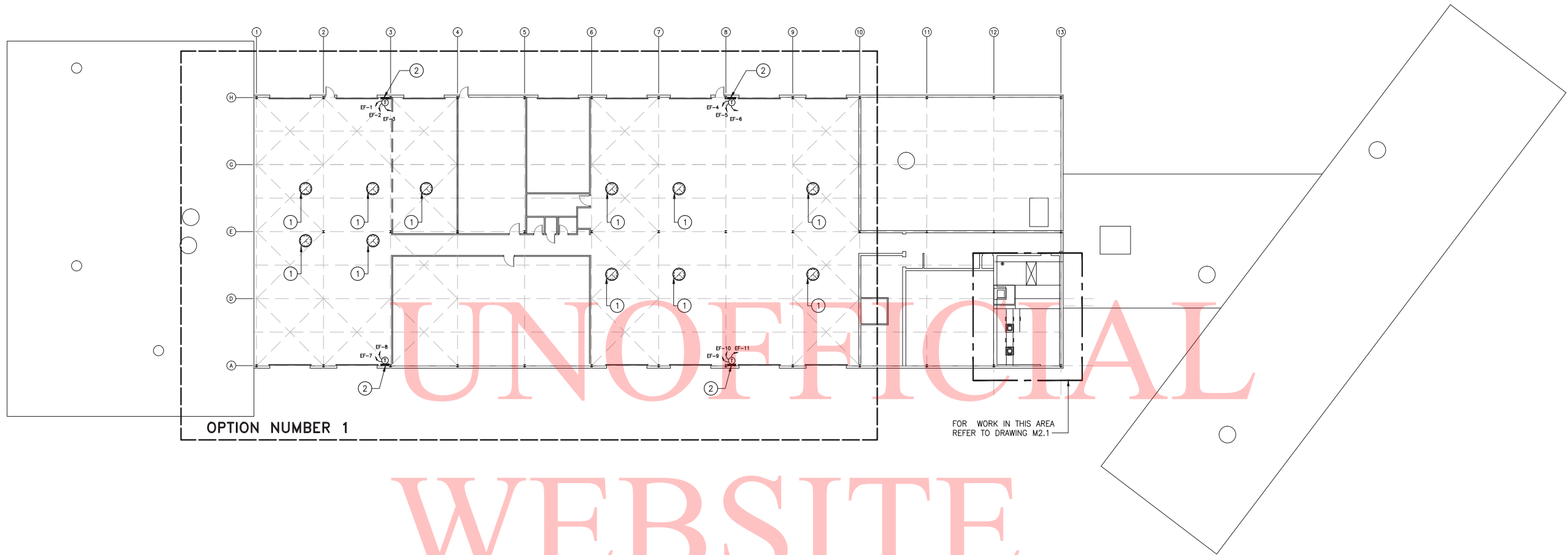
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Gipe Associates Inc.
Consulting Engineers
849 Edmont Ave Suite 102
Baltimore, MD 21206
PHONE 410.332.2418
FAX 410.332.2415



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1
M2.2

FLOOR PLAN — MECHANICAL NEW WORK

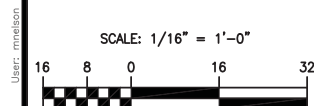
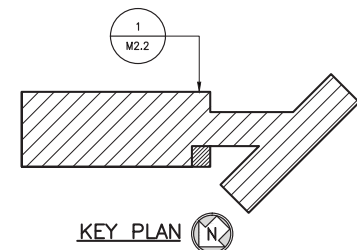
SCALE: 1/16" = 1'-0"

N

- NOTES :
1. FOR FAN CAPACITIES REFER TO DRAWING M9.1
 2. FOR DETAIL OF ROOF FANS, REFER TO DRAWING M7.3

DRAWING NOTES :

1. 24x24 EXHAUST AIR DUCT UP THRU ROOF, TRANSITION TO UNIT OPENING. PROVIDE GRAVITY BACKDRAFT DAMPER AT ROOF PENETRATION
2. THERMOSTAT-VENTILATION, INTERLOCK WITH INDICATED FANS. MOUNT THERMOSTAT ON INSULATION BOARD AT 5'-0" AFF.



Apr 06, 2011 — 2:40pm User: mnelson



ADDENDUMS / REVISIONS	

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FLOOR PLAN — MECHANICAL NEW WORK	SHEET NO.
M2.2	13
	TOTAL SHTS.
	24

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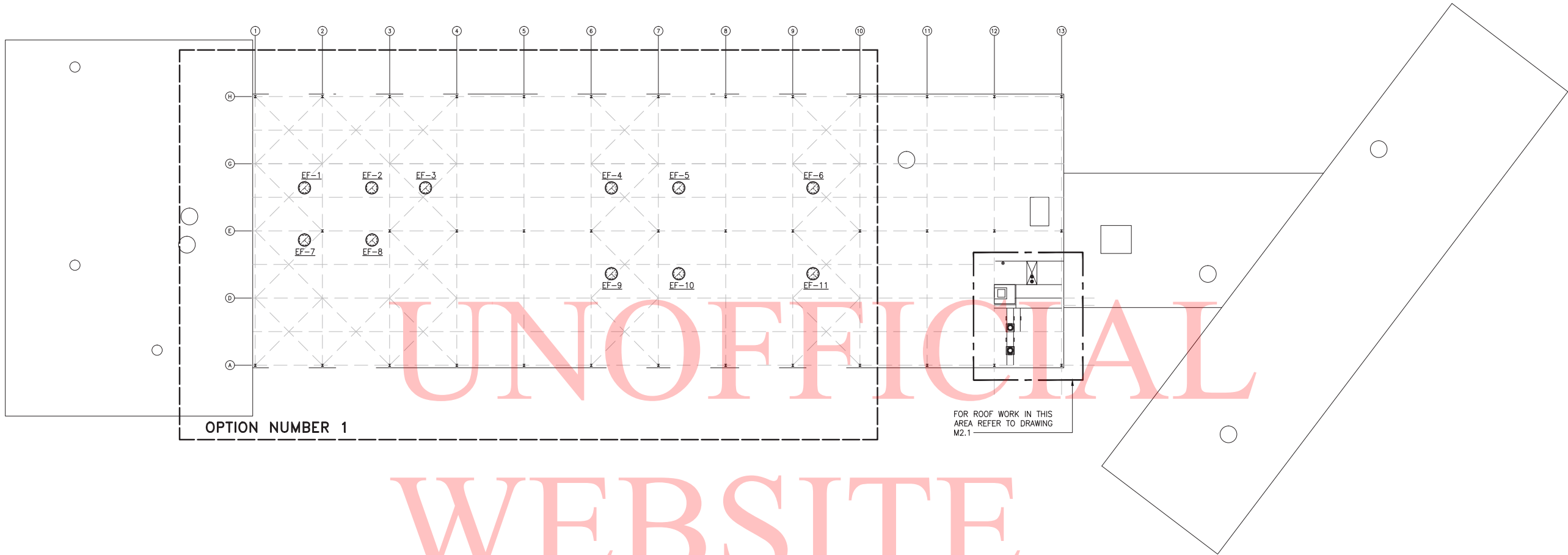
Gipe Associates Inc.
Consulting Engineers
849 Edmont Ave Suite 102
Baltimore, MD 21206
PHONE 410.332.2418
FAX 410.332.2418

SEAL
MICHEL JOHN RYAN
REGISTERED
No. 10935
DELAWARE
PROFESSIONAL ENGINEER

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1501 South Chester St. Suite 500 Baltimore, MD 21204
PHONE (410) 246-6000 FAX (410) 246-6000
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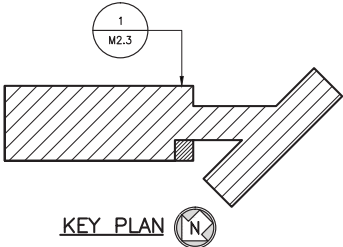
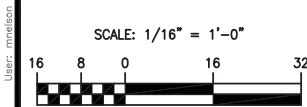
1
M2.3

ROOF PLAN – MECHANICAL NEW WORK

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

N

- NOTES :
1. FOR FAN CAPACITIES REFER TO DRAWING M9.1
 2. FOR DETAIL OF ROOF FANS, REFER TO DRAWING M7.3





DELAWARE

DEPARTMENT OF TRANSPORTATION

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SOUTH DISTRICT ADMINISTRATION

BUILDING ROOF AND BOILER

IMPROVEMENTS

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ROOF PLAN –

MECHANICAL NEW WORK

M2.3

SHEET NO.
14
TOTAL SHTS.
24

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Baltimore, MD 21206
PHONE 410.332.2418
FAX 410.332.2418



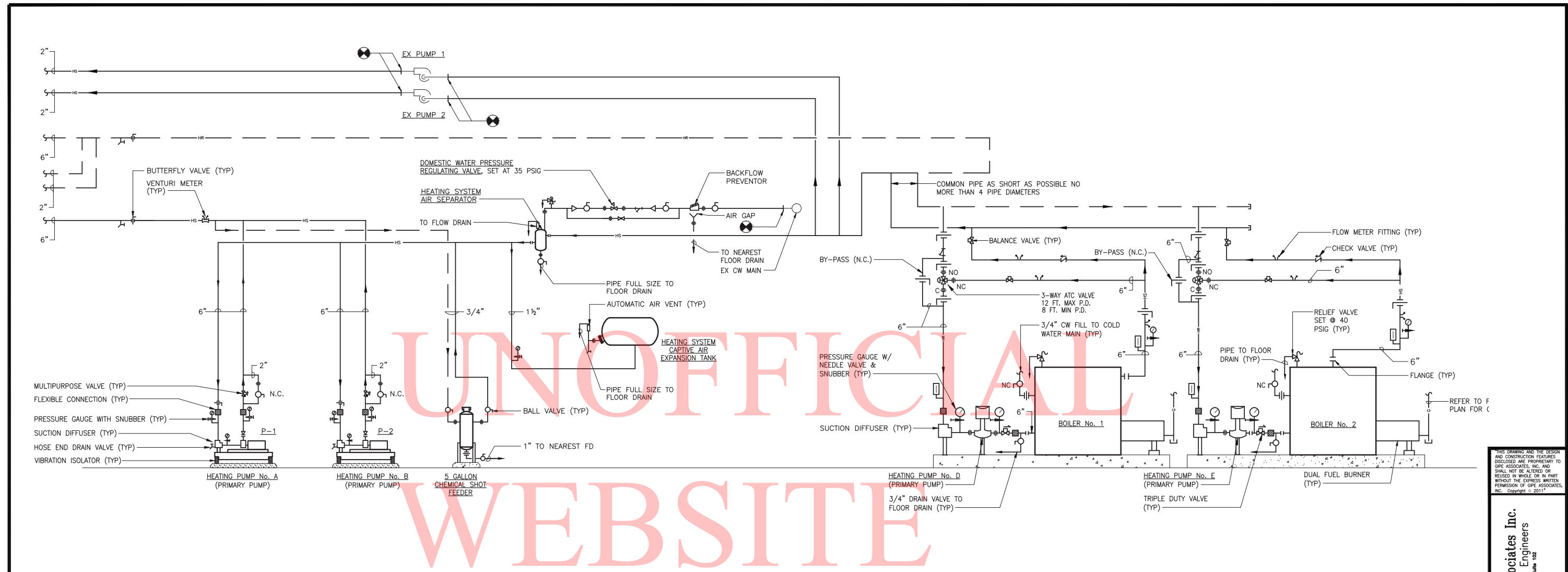
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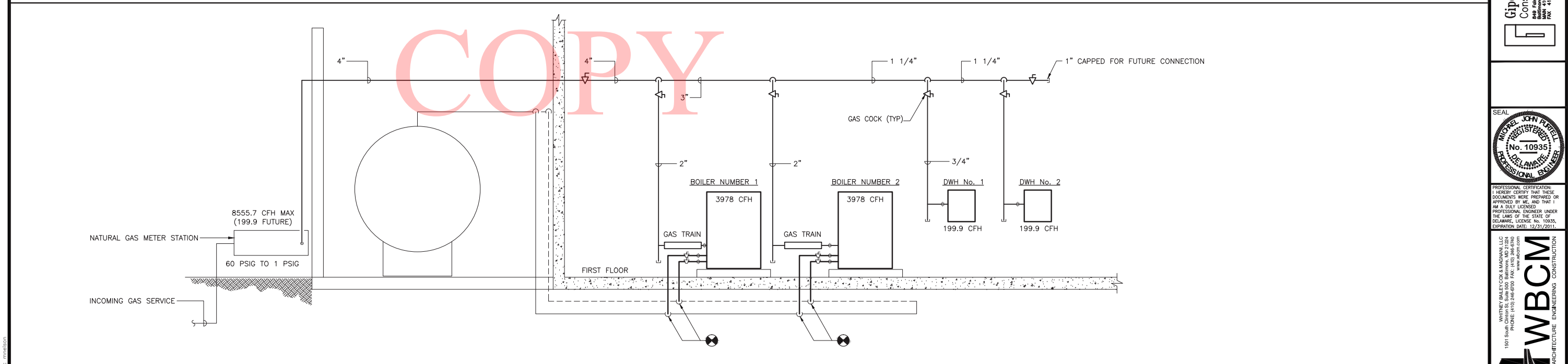
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1501 South Chester St. Suite 500 Baltimore, MD 21224
PHONE (410) 246-6000 FAX (410) 246-6000
www.whitneybaileyckm.com

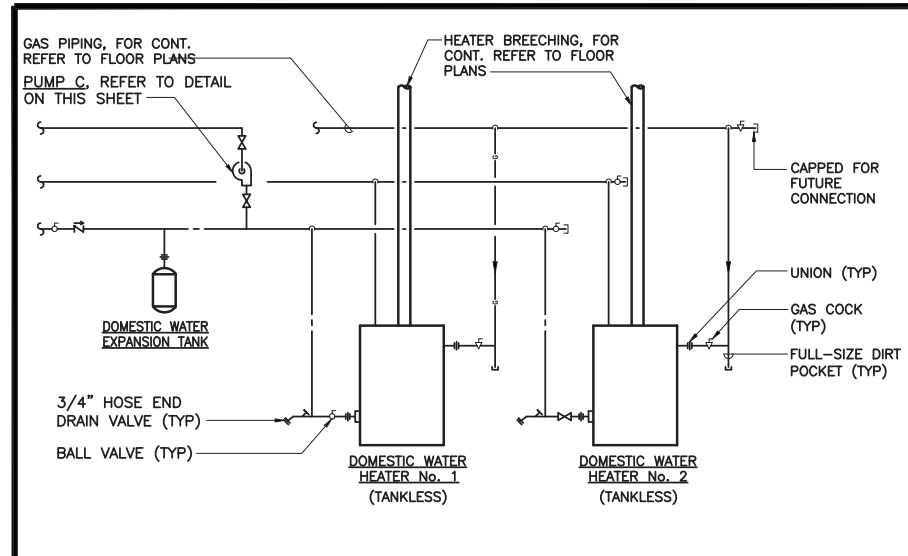




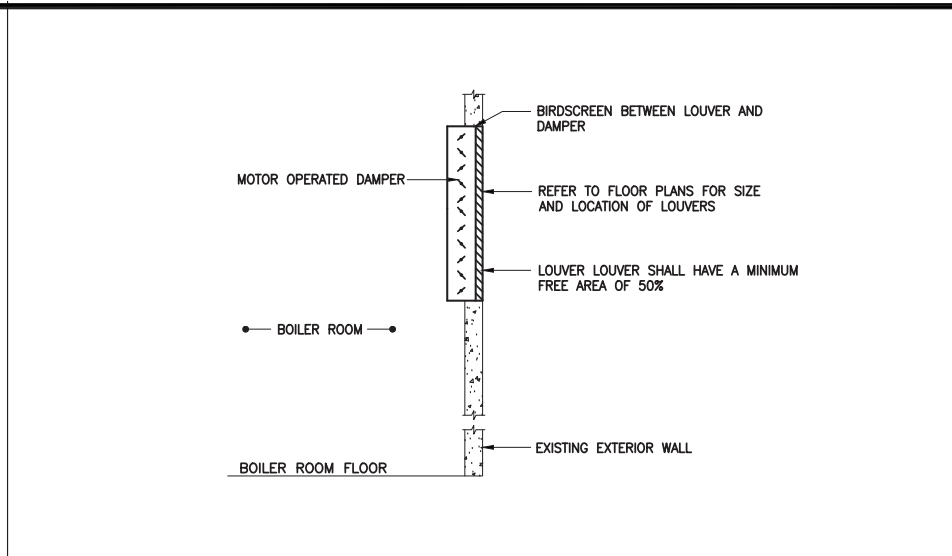
1 HEATING SYSTEM PIPING DETAIL SCALE: NONE



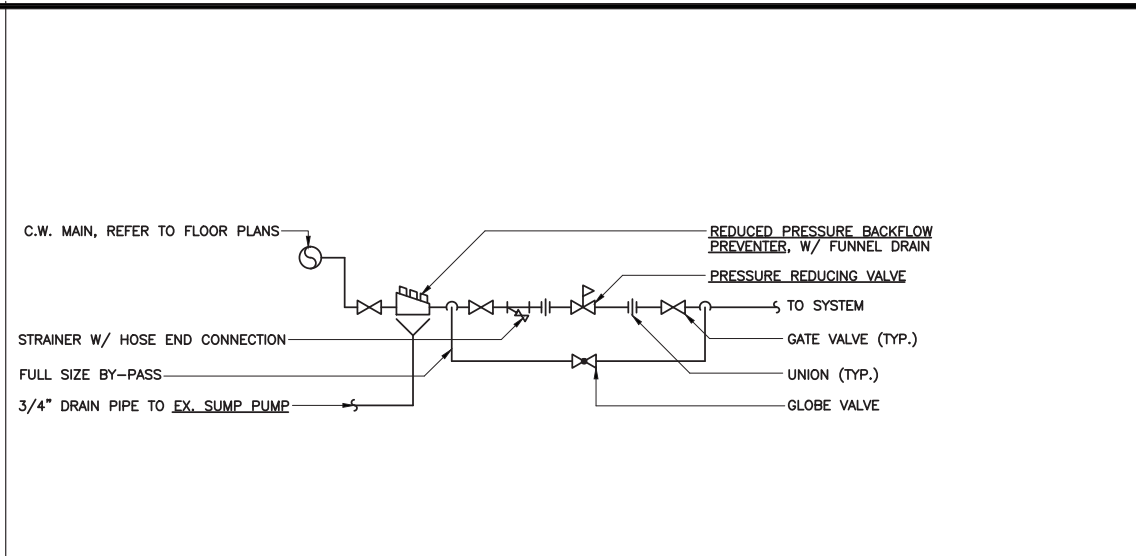
2 NATURAL GAS DISTRIBUTION SYSTEM PIPING DETAIL SCALE: NONE



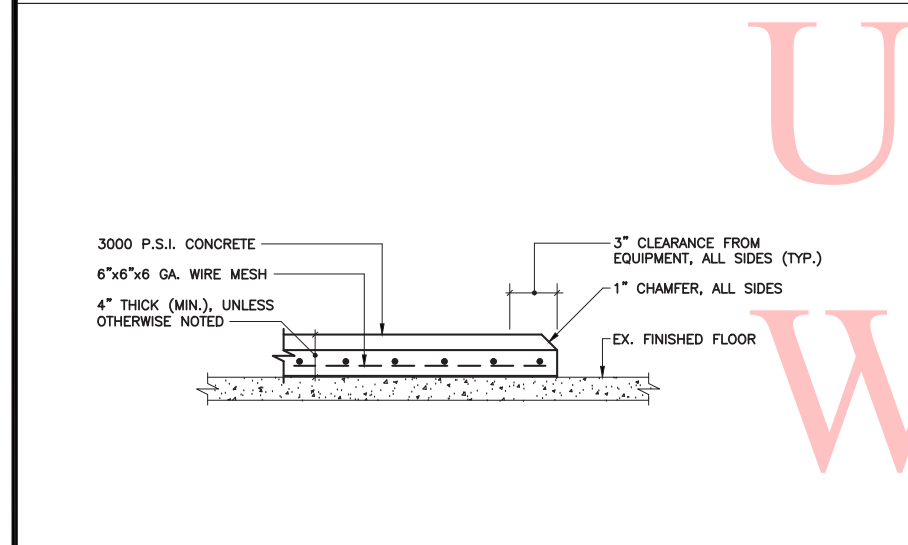
3 DETAIL – TYPICAL TANKLESS WATER HEATER SCALE: NONE



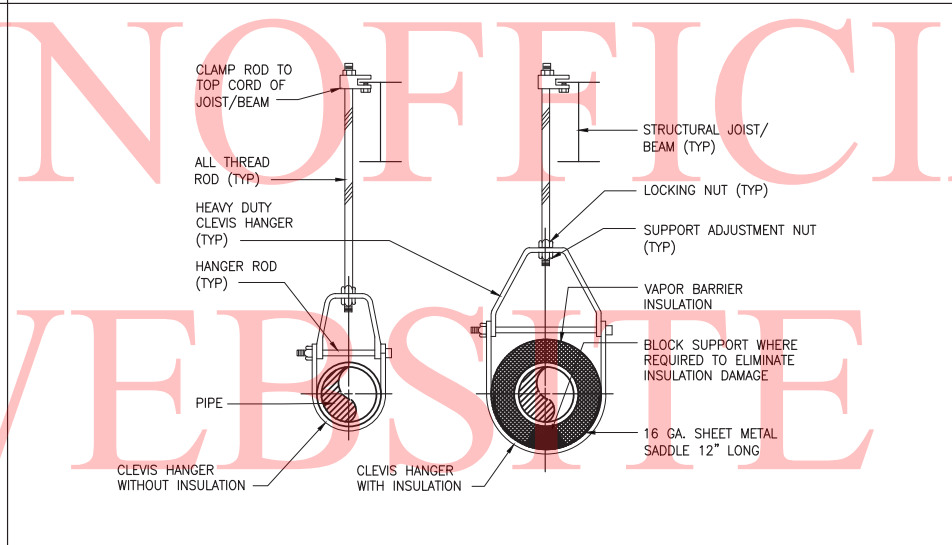
4 DETAIL – TYPICAL COMBUSTION AIR LOUVER SCALE: NONE



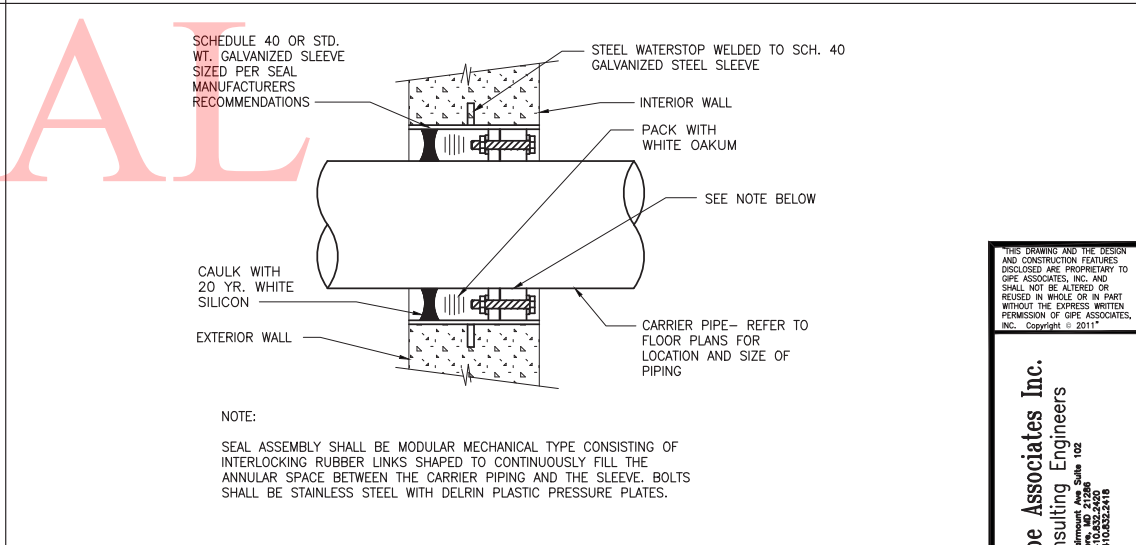
5 DETAIL – TYPICAL HEATING SYSTEM MAKE-UP WATER ASSEMBLY SCALE: NONE



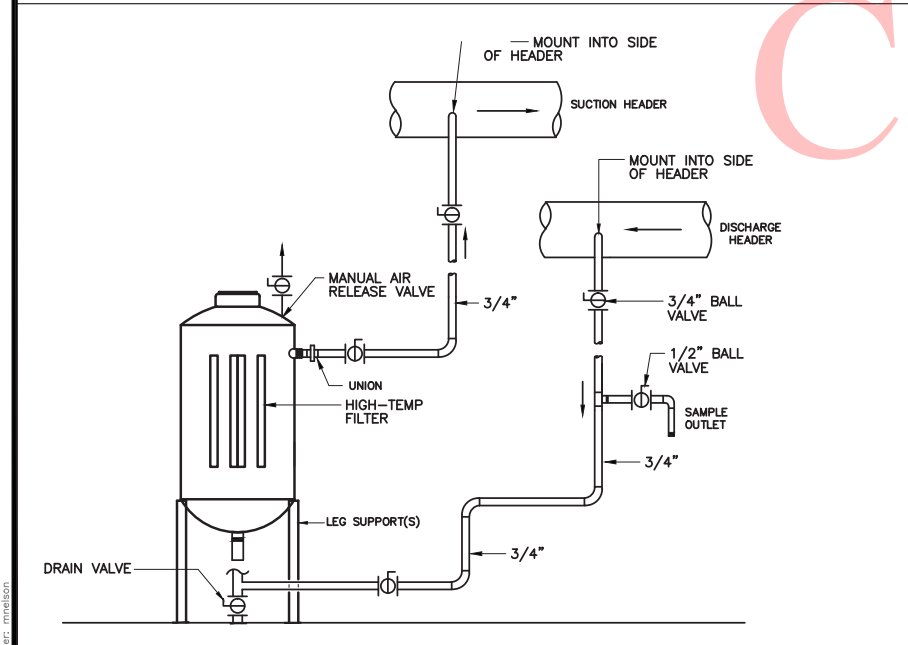
6 DETAIL – TYPICAL CONCRETE HOUSEKEEPING PAD SCALE: NONE



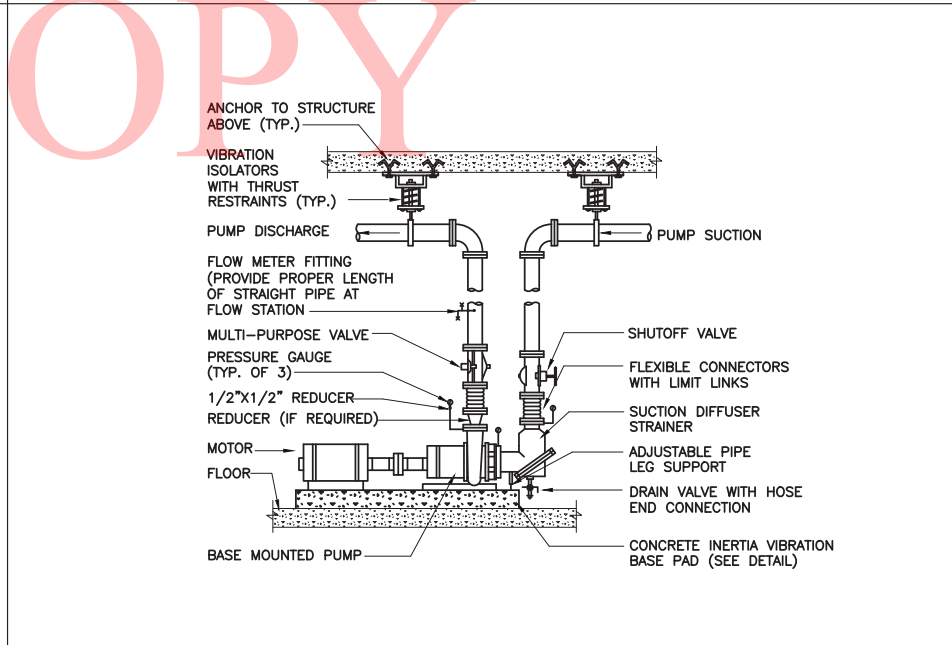
7 DETAIL – TYPICAL PIPE SUPPORTS SCALE: NONE



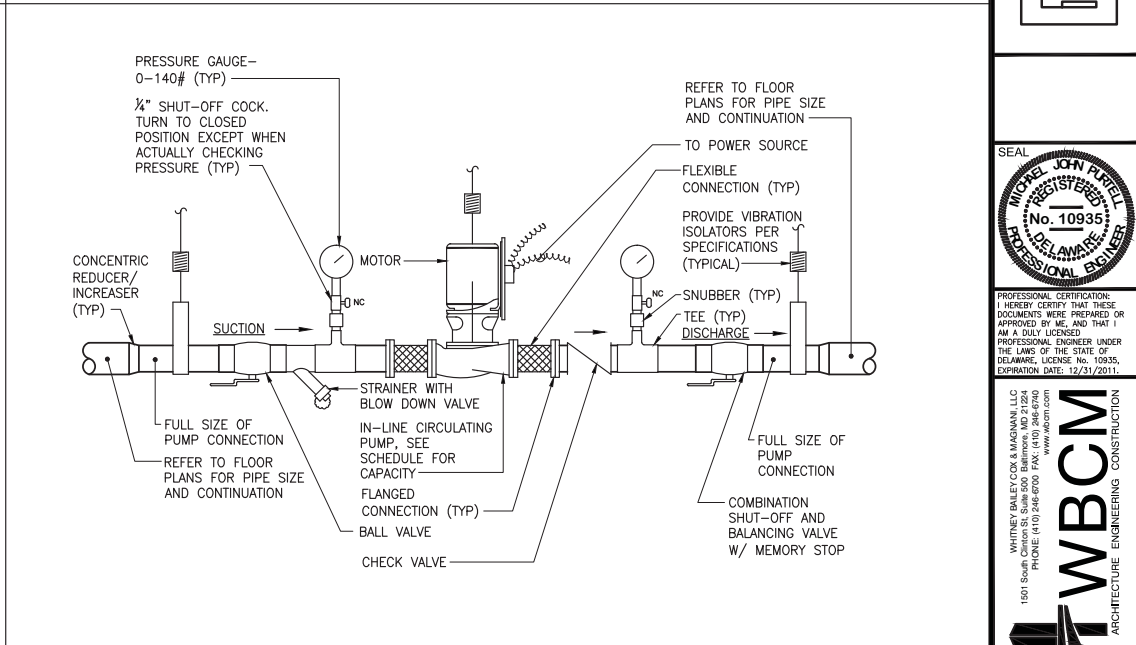
8 DETAIL – TYPICAL PIPE SLEEVE THRU EXTERIOR WALL SCALE: NONE



9 DETAIL – TYPICAL HW CHEMICAL FEED SYSTEM SCALE: NONE



10 DETAIL – TYPICAL BASE MOUNTED END SUCTION PUMP SCALE: NONE



11 DETAIL – TYPICAL IN-LINE CIRCULATOR PUMP SCALE: NONE

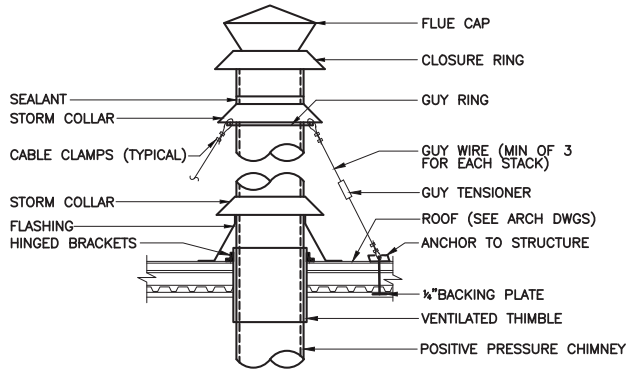
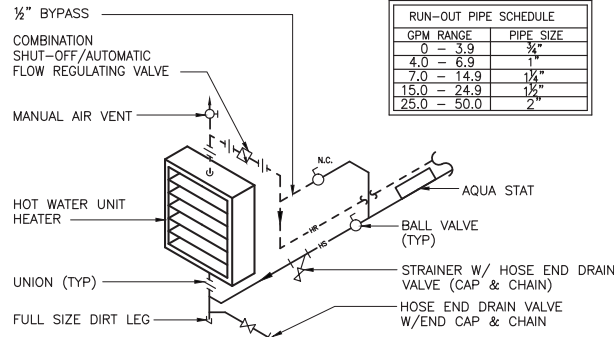
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Consulting Engineers
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Baltimore, MD 21206
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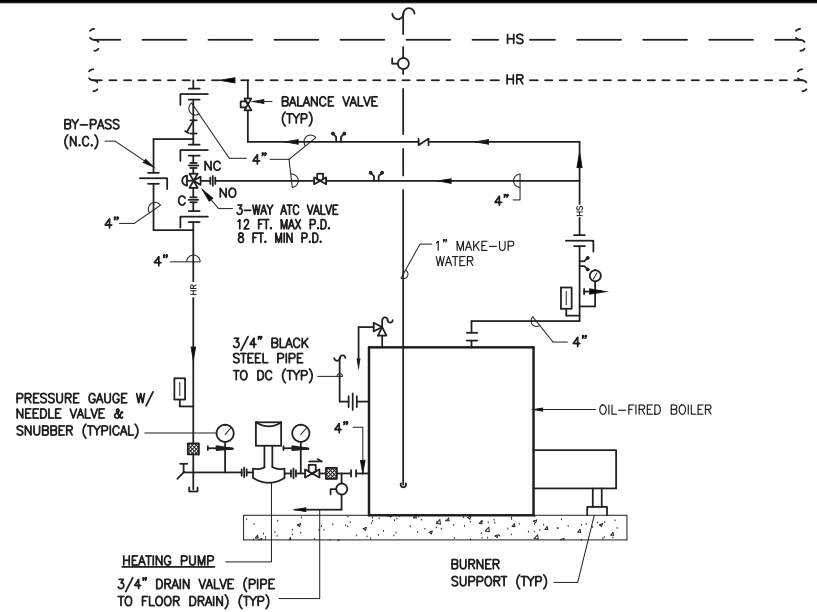
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REGISTERED
No. 10935
PROFESSIONAL ENGINEER
DELAWARE

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WBCM
ARCHITECTURE ENGINEERING CONSTRUCTION
WHITNEY BAILEY/CORP & MAGNANI, LLC
1501 South Chester St. Suite 500 Baltimore, MD 21204
PHONE (410) 246-6000 FAX (410) 246-6000



NOTE:
FLUE SHALL EXTEND 5'-0" MINIMUM ABOVE ROOF AND HIGHEST POINT WITHIN 10'-0".



12 DETAIL - TYPICAL HW UNIT HEATER

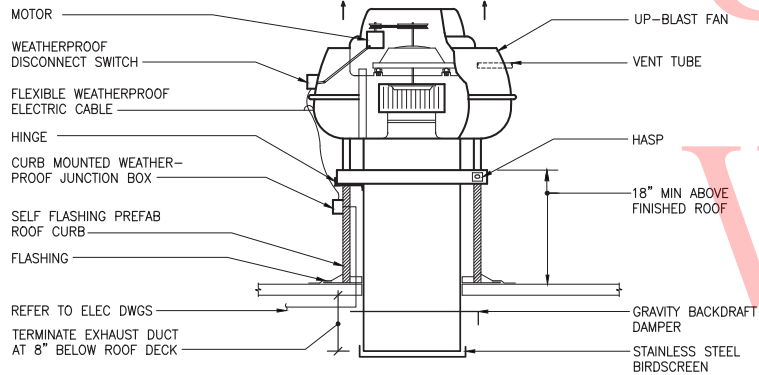
SCALE: NONE

13 DETAIL - TYPICAL FLUE THRU ROOF

SCALE: NONE

14 DETAIL - TYPICAL HEATING WATER BOILER HOOK-UP

SCALE: NONE



- NOTES:
1. COORDINATE FLASHING REQUIREMENTS WITH ARCHITECT.
 2. COORDINATE ROOF OPENING SIZE AND LOCATION WITH STRUCTURE ENGINEER.
 3. PROVIDE CURB FOR SLOPED ROOF IF REQUIRED
 4. PROVIDE BIRDSCREEN IN FAN OUTLET

OPTION NUMBER 1

15 TYPICAL UPBLAST FAN DETAIL

SCALE: NONE

16

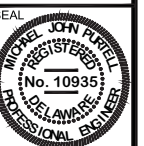
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17

SCALE: NONE

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MECHANICAL GENERAL NOTES

1. THE LOCATION OF EXISTING UNDERGROUND UTILITIES IS SHOWN IN AN APPROXIMATE WAY ONLY. DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. REPAIR ALL DAMAGES OCCASIONED BY FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
2. RUN ALL SOIL, WASTE, AND DRAIN PIPING WITH MINIMUM GRADE UNLESS OTHERWISE NOTED. HORIZONTAL VENT PIPING SHALL BE GRADED TO DRIP BACK TO THE SOIL OR WASTE PIPE BY GRAVITY.
3. ELEVATIONS NOTED ARE TO CENTER LINES OF PIPES FOR ALL PRESSURE LINES AND TO INVERT FOR ALL GRAVITY FLOW LINES.
4. ADJUST SEWER INVERTS TO KEEP TOPS OF PIPE IN-LINE WHERE PIPE SIZE CHANGES.
5. MAINTAIN MINIMUM OF 3'-0" COVER OVER UNDERGROUND WATER MAINS AND MINIMUM OF 2'-6" COVER OVER UNDERGROUND SEWERS AND DRAINS.
6. PROVIDE SHUT-OFF VALVES IN DOMESTIC WATER SYSTEMS IN BRANCH LINES SERVING TWO OR MORE FIXTURES.
7. UNLESS OTHERWISE NOTED, ALL PIPING AND DUCTWORK IS OVERHEAD, TIGHT TO UNDERSIDE OF SLAB, WITH SPACE FOR INSULATION, IF REQUIRED.
8. INSTALL PIPING AND DUCTWORK SO THAT ALL VALVES AND DAMPERS ARE ACCESSIBLE.
9. COORDINATE ALL MECHANICAL WORK WITH ELECTRICAL WORK, ETC., SHOWN ON OTHER DRAWINGS.
10. EXCEPT AS OTHERWISE SHOWN, LOCATE ALL ROOM THERMOSTATS 5'-0" (CENTERLINE) ABOVE FINISHED FLOOR ON THE VERTICAL CENTERLINE OF THE ROOM LIGHT SWITCH. NOTIFY THE ENGINEER OF ANY ROOMS WHERE THE ABOVE LOCATION CANNOT BE MAINTAINED OR WHERE THERE IS A QUESTION ON LOCATION.
11. MAINTAIN MINIMUM 6'-8" CLEARANCE TO UNDERSIDE OF PIPES, DUCTS, CONDUIT, SUSPENDED EQUIPMENT, ETC., THROUGHOUT ACCESS ROUTES IN MECHANICAL AND ELECTRICAL ROOMS.
12. CERTAIN ITEMS SUCH AS CLEANOUTS, ACCESS DOORS, RISE AND DROPS IN DUCTWORK, ETC., ARE INDICATED ON THE DRAWINGS FOR CLARITY OR A SPECIFIC LOCATION REQUIREMENT AND SHALL NOT BE INTERPRETED AS THE EXTENT OF THE REQUIREMENTS FOR THOSE ITEMS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THESE ITEMS AS REQUIRED ELSEWHERE IN THE CONTRACT DOCUMENTS.
13. EQUIPMENT CONNECTION SIZES MAY DIFFER FROM INDICATED DUCT OR PIPE SIZES. PROVIDE APPROPRIATE TRANSITIONS WHERE REQUIRED.
14. THESE DRAWINGS ARE DIAGRAMMATIC AND ALL OFFSETS, FITTINGS, TRANSITIONS AND ACCESSORIES ARE NOT NECESSARILY SHOWN. COORDINATE THE INSTALLATION OF ALL PIPING, DUCTWORK, EQUIPMENT AND OTHER WORK WITH ALL OTHER TRADES.
15. IT IS THE INTENT THAT ALL WORK SHALL BE COMPLETE IN EVERY RESPECT AND THAT MATERIAL OR WORK SPECIFICALLY NOT INDICATED ON DRAWINGS, BUT NECESSARY TO COMPLETE THE WORK, SHALL BE FURNISHED.
16. EXACT LOCATION OF DIFFUSERS, REGISTERS AND GRILLES PROVIDE DIN CEILING SHALL BE COORDINATED WITH REFLECTED CEILING PLANS.
17. REFER TO AIR DEVICE SCHEDULES FOR SIZE OF DUCT FROM BRANCH DUCT TO NECK OF AIR DEVICE.
18. UNLESS INDICATED OTHERWISE, ALL BRANCH DUCT RUNOUTS TO AIR DEVICES SHALL BE PROVIDED WITH VOLUME DAMPERS.
19. MATERIAL, EQUIPMENT, INSTALLATION AND PROCEDURES SHALL BE IN STRICT ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF THE LATEST CURRENT EDITION OF THE REFERENCED DOCUMENTATION.
- A. REGULATIONS OF LOCAL AUTHORITIES HAVING JURISDICTION.
B. NFPA-NATIONAL FIRE PROTECTION ASSOCIATION.
C. SMACNA - SHEET METAL AND AIR CONDITIONING NATIONAL ASSOCIATION.
D. ASME - AMERICAN SOCIETY OF MECHANICAL ENGINEERS.
E. ASTM - AMERICAN SOCIETY OF TESTING AND MATERIALS.
F. ASHRAE - AMERICAN SOCIETY OF HEATING, REFRIGERATION AND AIR CONDITIONING ENGINEERS, INC.
G. BOCA, NATIONAL PLUMBING CODE, LATEST ADOPTED EDITION.
20. ALL FIRE PROTECTION VALVES SHALL BE SUPERVISED.
21. PROVIDE DIRT POCKET AT EACH DROP IN GAS PIPING.
22. ALL AUTOMATIC TEMPERATURE CONTROL SETPOINTS SHALL BE ADJUSTABLE.
23. ALL EXPOSED DUCTWORK AND PIPING SHALL BE FINISHED AND PAINTED TO MATCH SURROUNDING AREA.

MECHANICAL ABBREVIATIONS

AAV	AUTOMATIC AIR VENT	IN	INCHES
ABV	ABOVE	INV	INVERT ELEVATION
AC	ALTERNATING CURRENT	KW	KILOWATT
ACU	AIR-CONDITIONING UNIT(S)	KWH	KILOWATT HOUR
AD	ACCESS DOOR	LAT	LEAVING AIR TEMPERATURE
AFF	ABOVE FINISHED FLOOR	LBS	POUNDS
AG	AIR GAP	LF	LINEAR FEET
AHU	AIR HANDLING UNIT	LPS	LOW PRESSURE STEAM
AMP	AMPERE	LTHW	LOW TEMPERATURE HOT WATER
AMS	AIR MONITORING STATION	LWT	LEAVING WATER TEMPERATURE
ANC	ANCHOR	MAV	MANUAL AIR VENT
APD	AIR PRESSURE DROP	MAX	MAXIMUM
APPROX	APPROXIMATE	MBH	BTU PER HOUR (THOUSAND)
AQ	AQUASTAT	MH	MAN HOLE
ATC	AUTOMATIC TEMPERATURE CONTROL	MIN	MINIMUM
AVG	AVERAGE	MOD	MOTOR-OPERATED DAMPER
AWG	AMERICAN WIRE GAUGE	MPS	MEDIUM PRESSURE STEAM
BDF	BLOW DOWN VALVE	MTHW	MEDIUM TEMPERATURE HOT WATER
BF	BLIND FLANGE	N/C	NOT IN CONTRACT
BHP	BOILER HORSE POWER	NA	NOT APPLICABLE
BOP	BOTTOM OF PIPE	NC	NORMALLY CLOSED
BOTT	BOTTOM	NC	NOISE CRITERIA
BTU	BRITISH THERMAL UNIT	No	NUMBER
BTU/H	BRITISH THERMAL UNIT PER HOUR	NO	NORMALLY OPEN
BWV	BACK WATER VALVE	NTS	NOT TO SCALE
CAP	CAPACITY	O/A	OUTSIDE AIR
CFM	CUBIC FEET PER MINUTE	OAF	OUTSIDE AIR FAN
CHAR	CHARACTERISTICS	OAT	OUTSIDE AIR TEMPERATURE
CI	CAST IRON	OC	ON CENTER
CL	CENTER LINE	OD	OUTSIDE DIAMETER
CLG	CEILING	%	PERCENT
CO	CLEAN OUT	PD	PUMP DISCHARGE
CO2	CARBON MONOXIDE	PD	PRESSURE DROP
PHASE	CONCRETE	PH	PHASE
CONC	CONNECTION	PPM	PARTS PER MILLION
CU FT	CUBIC FEET	PRESS	PRESSURE
CW	COLD WATER	PRV	PRESSURE REDUCING VALVE
D	DRAIN LINE	PSF	POUNDS PER SQUARE FOOT
DB	DRY BULB	PSI	POUNDS PER SQUARE INCH
DB	DECIBEL	PSIA	POUNDS PER SQUARE INCH ABSOLUTE
DC	DIRECT CURRENT	QTY	QUANTITY
DEG	DEGREE	R	THERMAL RESISTANCE
DIA	DIAMETER	R/A	RETURN AIR
Δ	DIFFERENCE OR DELTA	R-*	REFRIGERANT DESIGNATION
DIFF	DIFFUSER	RAF	RETURN AIR FAN
DISCH	DISCHARGE	REQ'D	REQUIRED
DN	DOWN	REG	REGISTER
DWG	DRAWING	RH	RELATIVE HUMIDITY
E/A	EXHAUST AIR	RPM	REVOLUTIONS PER MINUTE
EAF	EXHAUST AIR FAN	RX	REMOVE EXISTING
EAT	ENTERING AIR TEMPERATURE	S/A	SUPPLY AIR
EDR	EQUIVALENT DIRECT RADIATION	SA	SOUND ATTENUATOR
EF	EXHAUST FAN	SAF	SUPPLY AIR FAN
EFF	EFFICIENCY	SAN	SANITARY
EL	ELEVATION	SCFM	CFM, STANDARD CONDITIONS
ELEC	ELECTRIC	SD	STORM DRAIN
ENT	ENTERING WATER TEMPERATURE	SD	DUCT SMOKE DETECTOR
ENT	ENTERING	SD	SMOKE DAMPER
ESP	EXTERNAL STATIC PRESSURE	SENS	SENSIBLE
EX	EXISTING	SP	STATIC PRESSURE
EXH	EXHAUST	SP	SPRINKLER PIPING
F	FAHRENHEIT	SPEC	SPECIFICATIONS
F	FIRE LINE	SPLY	SUPPLY
FD	FOUNDATION DRAIN	SQ	SQUARE
FD	FIRE DAMPER	SS	STAINLESS STEEL
FD	FLOOR DRAIN	STD	STANDARD
FDV	FIRE DEPARTMENT VALVE	SUCT	SUCTION
FOB	FLAT ON BOTTOM	SWT	SUPPLY WATER TEMPERATURE
FOT	FLAT ON TOP	TEMP	TEMPERATURE
FPM	FEET PER MINUTE	TONW	TONS OF REFRIGERATION
FPS	FEET PER SECOND	TS	TAMPER SWITCH
FS	FLOW SWITCH	U	US
FT H2O	FEET WATER GAUGE	U	VENT
FT	FEET	V	VOLTS
G	NATURAL GAS	VAC	VACUUM
GA	GAUGE	VAV	VARIABLE AIR VOLUME
GALV	GALVANIZED	VB	VACUUM BREAKER
GPD	GALLONS PER DAY	VD	MANUAL VOLUME DAMPER
GPH	GALLONS PER HOUR	VELOCITY	VELOCITY
GPM	GALLONS PER MINUTE	VENT	VENTILATION
H-O-A	HAND-OFF-AUTOMATIC	VERT	VERTICAL
H-B	HOSE BIBB	VOL	VOLUME
HD	HEAD (FEET OF)	VSD	VARIABLE SPEED DRIVE
HG	MERCURY (INCHES OF)	VTR	VENT THROUGH ROOF
HOR	HORIZONTAL	W	WATT
HP	HORSEPOWER	W/	WITH
HPS	HIGH PRESSURE STEAM	WB	WET BULB
HTHW	HIGH TEMPERATURE HOT WATER	WG	WATER GAUGE
HVAC	HEATING, VENTILATION AND AIR CONDITIONING	WC	WALL
HYD	HYDRAULIC	WH	WALL HYDRANT
HZ	HERTZ	WPD	WATER PRESSURE DROP
ID	INSIDE DIAMETER		
IN	INCHES		
IN H2O	INCHES WATER GAUGE		
IN	INDIRECT WASTE		

MECHANICAL EQUIPMENT LIST

1. **BOILER NUMBER 1 :**
- A. HIGH EFFICIENCY PRESSURIZED WET BASE WATER BOILER/BURNER UNIT WITH DIRECT SPARK IGNITION.
- B. NOMINAL 98.00 BOILER HORSEPOWER
- C. 3304 MBH I=B=R NET OUTPUT (HOT WATER)
- D. BURNER INPUT CAPACITY: PRIMARY 3978 MBH NATURAL GAS SECONDARY 27.5 GPH NUMBER 2 FUEL OIL
- E. 50 PSIG ASME WATER WORKING PRESSURE
- F. 360 GPM @ 20 DEG F DELTA T
- G. 2.0 HP BURNER MOTOR, 3500 RPM, 480V/3ø/60Hz
- H. 13" WC MINIMUM INLET NATURAL GAS PRESSURE
- I. 1 PSI MAXIMUM INLET NATURAL GAS PRESSURE
- J. ELECTRICAL: 208V/3PH/60Hz
2. **BOILER NUMBER 2 :**
- A. HIGH EFFICIENCY PRESSURIZED WET BASE WATER BOILER/BURNER UNIT WITH DIRECT SPARK IGNITION.
- B. NOMINAL 98.00 BOILER HORSEPOWER
- C. 3304 MBH I=B=R NET OUTPUT (HOT WATER)
- D. BURNER INPUT CAPACITY: PRIMARY 3978 MBH NATURAL GAS SECONDARY 27.5 GPH NUMBER 2 FUEL OIL
- E. 50 PSIG ASME WATER WORKING PRESSURE
- F. 360 GPM @ 20 DEG F DELTA T
- G. 2.0 HP BURNER MOTOR, 3500 RPM, 480V/3ø/60Hz
- H. 13" WC MINIMUM INLET NATURAL GAS PRESSURE
- I. 1 PSI MAXIMUM INLET NATURAL GAS PRESSURE
- J. ELECTRICAL: 208V/3PH/60Hz
3. **HEATING WATER SYSTEM AIR SEPARATOR :**
- A. 6" PIPE SIZE
- B. 360 GPM, 2.75 FT H2O MAXIMUM PRESSURE DROP AT 6.0 FT/SEC MAXIMUM FLOW RATE
- C. 350 DEG F MAXIMUM WORKING TEMPERATURE, 150 PSI MAXIMUM WORKING PRESSURE
- D. STEEL BODY AND FLANGES, CONSTRUCTED PER ASME CODE SECTION VIII., DIVISION 1.

4. **HEATING WATER CAPTIVE AIR EXPANSION TANK :**
- A. 80 GALLON TANK VOLUME, 43 GALLON ACCEPTANCE, APPROXIMATELY 24" DIAMETER x 60" LONG
- B. 60 PSIG FILL PRESSURE, 70 PSIG OPERATING PRESSURE, 125 PSIG ASME RATED
- C. HORIZONTAL INSTALLATION, WATERLOGGED WEIGHT = 700lbs ±
5. **DOMESTIC WATER EXPANSION TANK :**
- A. 5.0 GALLON TANK VOLUME, 1.2 GALLON ACCEPTANCE, APPROXIMATELY 12" DIAMETER x 15" HIGH
- B. 50 PSIG FILL PRESSURE, 90 PSIG MAXIMUM OPERATING PRESSURE, 45 DEG F MINIMUM OPERATING TEMPERATURE, 160 DEG F. MAXIMUM OPERATING TEMPERATURE
- C. CONSTRUCTED PER ASME CODE SECTION VIII, HORIZONTAL INSTALLATION
6. **DOMESTIC WATER HEATER No. 1 AND 2 :**
- A. 199,900 MAX BTUH INPUT, INDOOR DIRECT VENT TANKLESS WATER HEATER, 9.5 GPM MAXIMUM FLOW AT 35 DEG F TEMPERATURE RISE. FACTORY SET FOR 120 DEG F DELIVERY TEMPERATURE
- B. CONTROL; 120 VOLT, SINGLE PHASE
- C. NATURAL GAS BURNER, GAS INLET FLOW PRESSURE 8" WC MINIMUM. STANDING PILOT IGNITION

PUMP SCHEDULE

PUMP No.	SERVICE	LOCATION	GPM	TOTAL FEET HEAD	MOTOR HP	RPM	ELECTRICAL CHARACTERISTICS	PUMP TYPE	PUMP DISCHARGE SIZE, INCHES	NOTES
							V/ø/Hz			
A	HEATING WATER DISTRIBUTION	BOILER ROOM	360.0	35.0	5.0	1750	208/3/60	END SUCTION	5.0	
B	HEATING WATER DISTRIBUTION	BOILER ROOM	360.0	35.0	5.0	1750	208/3/60	END SUCTION	5.0	
C	DOMESTIC WATER RECIRC	BOILER ROOM	10.0	25.0	1/12	1750	120/1/60	IN-LINE	0.75	
D	BOILER No. 1 CIRCULATION	BOILER ROOM	360.0	25.0	5.0	1160	208/3/60	IN-LINE, SPLIT	4.0	
E	BOILER No. 1 CIRCULATION	BOILER ROOM	360.0	25.0	5.0	1160	208/3/60	IN-LINE, SPLIT	4.0	

UNIT HEATER SCHEDULE

UH-No.	TYPE	LOCATION	SUPPLY FAN			HOT WATER SYSTEM CONDITION							CONFIGURATION/TYPE	NOTES
			CFM HIGH	HP	RPM	ELECT. CHAR. V/ø/Hz	E.A.T. DB (°F)	L.A.T. DB (°F)	EWI (°F)	LWT (°F)	MAX. W.P.D. (FT.)	GPM		
1	UNITARY	BOILER ROOM	500	1/20	1050	120/1/60	60	106.0	180	160	2.2	2.0	18.3	WALL HUNG-VERTICAL TYPE
2	UNITARY	BOILER ROOM	500	1/20	1050	120/1/60	60	106.0	180	160	2.2	2.0	18.3	WALL HUNG-VERTICAL TYPE

FAN SCHEDULE

No.	SERVICE	LOCATION	DRIVE TYPE	STD. AIR CFM		SP (IN H ₂ O)	FAN MOTOR	FAN RPM	ELECTRICAL CHARACTERISTICS	FAN TYPE	NOTES
				HIGH	LOW				V/ø/Hz		
1	EXHAUST	ROOF	BELT	4500	2750	0.375	1.0 HP	681	208/3/60	UPBLAST ROOF, TWO SPEED	
2	EXHAUST	ROOF	BELT	4500	2750	0.375	1.0 HP	681	208/3/60	UPBLAST ROOF, TWO SPEED	
3	EXHAUST	ROOF	BELT	4500	2750	0.375	1.0 HP	681	208/3/60	UPBLAST ROOF, TWO SPEED	
4	EXHAUST	ROOF	BELT	4500	2750	0.375	1.0 HP	681	208/3/60	UPBLAST ROOF, TWO SPEED	
5	EXHAUST	ROOF	BELT	4500	2750	0.375	1.0 HP	681	208/3/60	UPBLAST ROOF, TWO SPEED	
6	EXHAUST	ROOF	BELT	4500	2750	0.375	1.0 HP	681	208/3/60	UPBLAST ROOF, TWO SPEED	
7	EXHAUST	ROOF	BELT	4500	2750	0.375	1.0 HP	681	208/3/60	UPBLAST ROOF, TWO SPEED	
8	EXHAUST	ROOF	BELT	4500	2750	0.375	1.0 HP	681	208/3/60	UPBLAST ROOF, TWO SPEED	
9	EXHAUST	ROOF	BELT	4500	2750	0.375	1.0 HP	681	208/3/60	UPBLAST ROOF, TWO SPEED	
10	EXHAUST	ROOF	BELT	4500	2750	0.375	1.0 HP	681	208/3/60	UPBLAST ROOF, TWO SPEED	
11	EXHAUST	ROOF	BELT	4500	2750	0.375	1.0 HP	681	208/3/60	UPBLAST ROOF, TWO SPEED	

OPTION NUMBER 1



DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

100% SUBMISSION SET
04/08/2011

SOUTH DISTRICT ADMINISTRATION
BUILDING ROOF AND BOILER
IMPROVEMENTS

CONTRACT

T201080107

COUNTY

SUSSEX

BRIDGE NO.

X

DESIGNED BY: M. NELSON

CHECKED BY: M. NELSON

MECHANICAL SCHEDULES,
NOTES AND LEGEND

M9.1

SHEET NO.

19

TOTAL SHTS.

24

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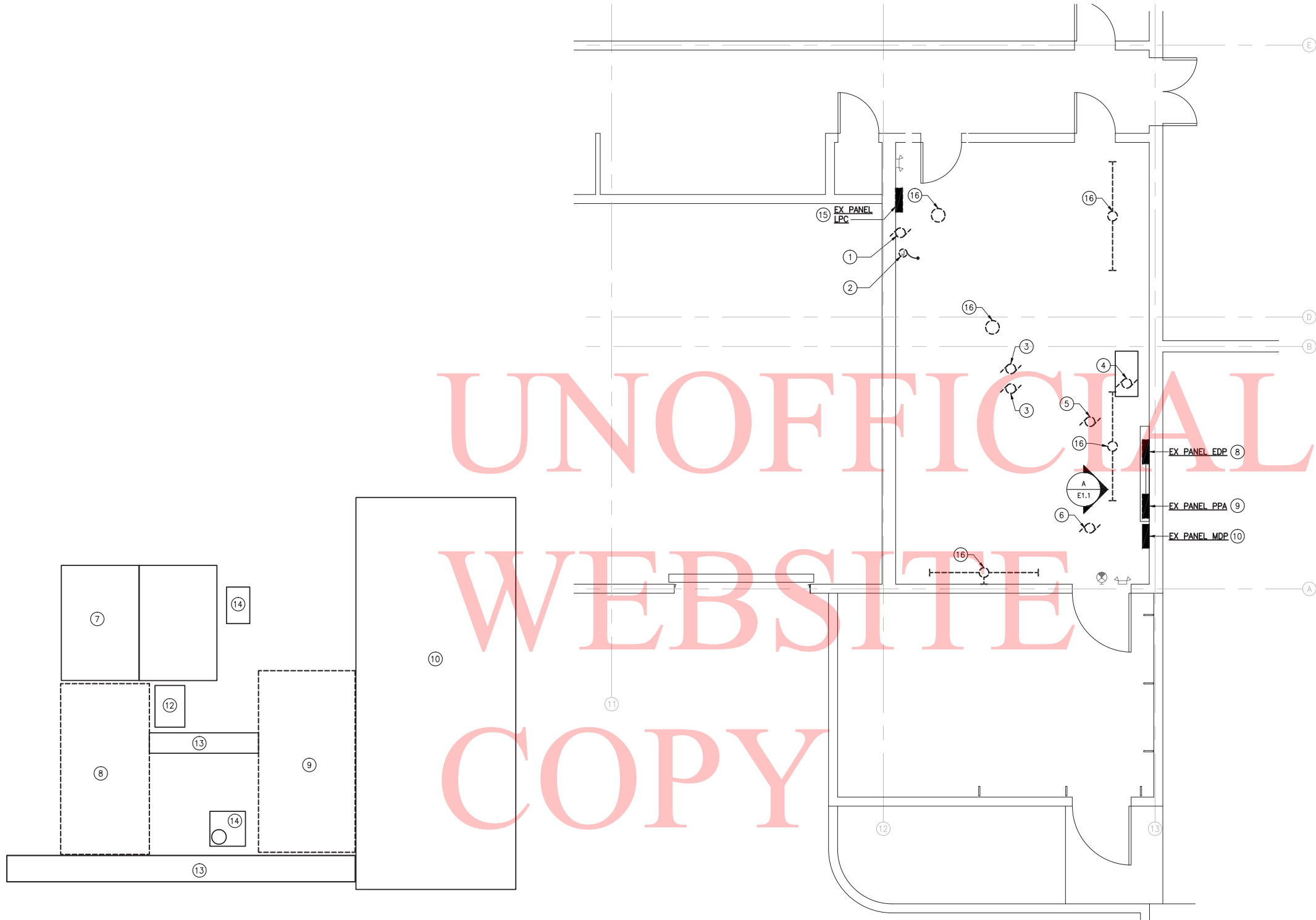
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Consulting Engineers
849 Edmont Ave Suite 102
Baltimore, MD 21206
410.332.2418



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DEMOLITION NOTES:

1. DEMOLITION DRAWING IS DIAGRAMMATIC IN NATURE; NO ATTEMPT HAS BEEN MADE TO SHOW ALL EXISTING ELECTRICAL WORK. IN AREAS INDICATED TO BE RENOVATED, ALL EXISTING ELECTRICAL WORK SHALL REMAIN UNLESS OTHERWISE NOTED. WHEN AN ITEM IS INDICATED TO BE REMOVED, REMOVE ALL ASSOCIATED ELECTRICAL WORK BACK TO POINT OF SOURCE UON.
2. WORK INDICATED TO REMAIN SHALL BE SUITABLY PROTECTED AGAINST DAMAGE.
3. DISPOSE OF ALL FLUORESCENT, INCANDESCENT AND HID LAMPS IN ACCORDANCE WITH EPA, DOT, STATE AND LOCAL REGULATIONS.
4. REMOVE EXISTING LIGHTING FIXTURES, MAINTAIN EXISTING BRANCH CIRCUIT(S) AS REQUIRED FOR NEW FIXTURES UON.
5. DISCONNECT AND REMOVE ALL MOTOR AND ELECTRIC HEAT CONNECTIONS ASSOCIATED WITH MECHANICAL EQUIPMENT INDICATED TO BE REMOVED UNDER DIVISION 15, UON.

DRAWING NOTES:

1. EXISTING DOMESTIC HOT WATER RECIRCULATION PUMP TO BE REMOVED, ALONG WITH ALL SAFETY SWITCHES, CONTROL BRANCH CIRCUITS, AND CONDUIT AND WIRING BACK TO THE POINT OF ORIGIN.
2. EXISTING 50 GALLON DOMESTIC ELECTRIC WATER HEATER TO BE DISCONNECTED. REMOVE ALL BRANCH CIRCUITING, CONDUIT, AND WIRING BACK TO THE POINT OF ORIGIN.
3. EXISTING ZONE CIRCULATION PUMP TO BE RELOCATED. EXTEND EXISTING ELECTRICAL BRANCH CIRCUIT TO NEW LOCATION AS INDICATED ON THE ELECTRICAL NEW WORK PLAN.
4. EXISTING PRIMARY HEATING WATER PUMP TO BE REMOVED ALONG WITH MOTOR STARTER, SAFETY SWITCH AND ALL ASSOCIATED CONDUIT AND WIRING BACK TO THE POINT OF ORIGIN.
5. EXISTING HOT WATER BOILER NO. 1 TO BE REMOVED ALONG WITH ALL SAFETY SWITCHES, CONTROL BRANCH CIRCUITS, AND CONDUIT AND WIRING BACK TO THE POINT OF ORIGIN.
6. EXISTING HOT WATER BOILER NO. 2 TO BE REMOVED ALONG WITH ALL SAFETY SWITCHES, CONTROL BRANCH CIRCUITS, AND CONDUIT AND WIRING BACK TO THE POINT OF ORIGIN.
7. EXISTING C/T CABINET TO REMAIN.
8. PANEL EDP SHALL BE REPLACED. MAINTAIN ALL BRANCH CIRCUITS. REFER TO NEW WORK PLAN FOR ADDITIONAL INFORMATION.
9. PANEL PPA SHALL BE REPLACED. MAINTAIN ALL FEEDER AND BRANCH CIRCUITS. REFER TO NEW WORK PLAN FOR ADDITIONAL INFORMATION.
10. MAIN DISTRIBUTION PANELBOARD MDP SHALL BE EXISTING TO REMAIN.
11. EXISTING PULL BOX TO REMAIN.
12. EXISTING MOTOR STARTER TO REMAIN.
13. EXISTING WIRETROUGH TO REMAIN.
14. EXISTING ASTRONOMICAL TIME CLOCK TO REMAIN.
15. PANEL LPC SHALL BE REPLACED. MAINTAIN ALL FEEDER AND BRANCH CIRCUITS. REFER TO NEW WORK PLAN FOR ADDITIONAL INFORMATION.
16. DISCONNECT AND REMOVE EXISTING LIGHTING FIXTURE. MAINTAIN LIGHTING CIRCUIT SERVING THE ROOM FOR FUTURE USE. REFER TO NEW WORK PLAN ON SHEET E2.1 FOR NEW LIGHTING FIXTURE LAYOUT.

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Consulting Engineers
849 Edmont Ave Suite 102
Baltimore, MD 21206
PHONE 410.332.2418
FAX 410.332.2415

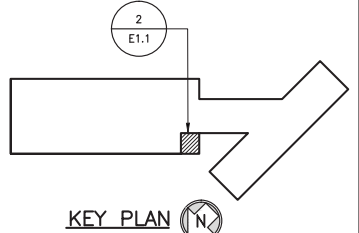


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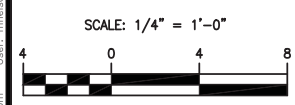
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PHONE (410) 246-6000 FAX (410) 246-6000
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WBCM
ARCHITECTURE ENGINEERING CONSTRUCTION

1
E1.1
ELEVATION "A"
EXISTING ELECTRICAL SERVICE
NOT TO SCALE

2
E1.1
PART PLAN - BOILER ROOM
ELECTRICAL DEMOLITION
SCALE: 1/4" = 1'-0"



KEY PLAN



ADDENDUMS / REVISIONS	

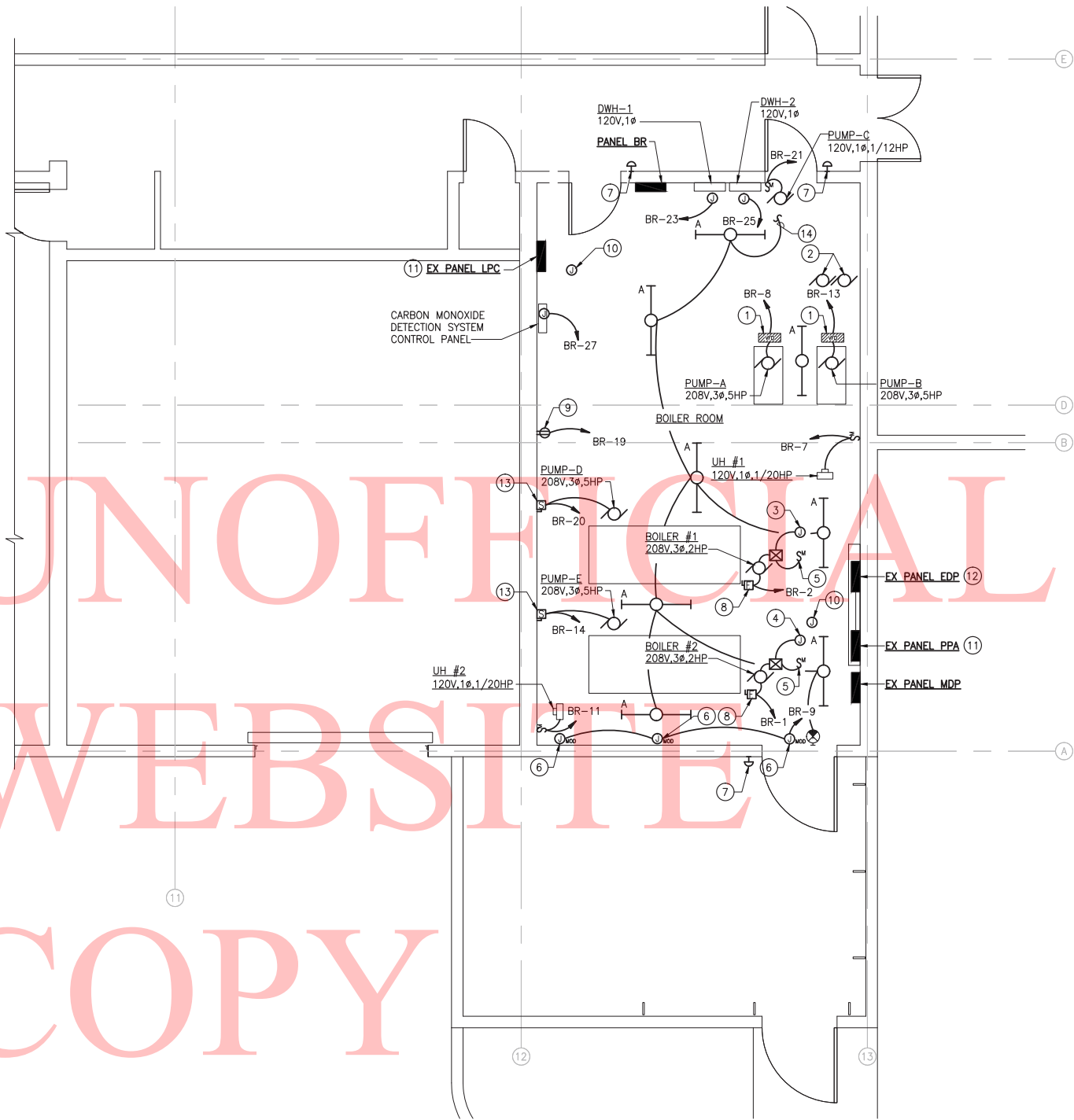
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04/08/2011

SOUTH DISTRICT ADMINISTRATION
BUILDING ROOF AND BOILER
IMPROVEMENTS

CONTRACT	BRIDGE NO.	X
T201080107	DESIGNED BY:	K. CURBERI
COUNTY	CHECKED BY:	K. CURBERI
SUSSEX		

PART PLAN - BOILER ROOM ELECTRICAL DEMOLITION	SHEET NO.
E1.1	20
	TOTAL SHTS.
	24

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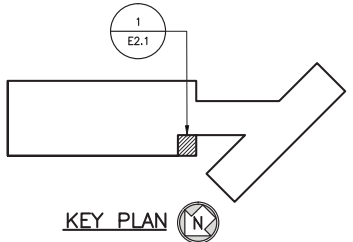
1
E2.1
PART PLAN - BOILER ROOM
ELECTRICAL NEW WORK
SCALE: 1/4" = 1'-0"

GENERAL NOTES:

1. COORDINATE MOUNTING OF LIGHT FIXTURES WITH NEW MECHANICAL DUCTWORK, PIPING, ETC AS REQUIRED.

DRAWING NOTES:

1. VARIABLE FREQUENCY DRIVE FURNISHED BY MECHANICAL CONTRACTOR INSTALLED BY ELECTRICAL CONTRACTOR.
2. RELOCATED EXISTING IN LINE CIRCULATING PUMPS. RELOCATE EXISTING MOTOR STARTER AND DISCONNECT SWITCH FOR BOTH PUMPS AND EXTEND BOTH BRANCH CIRCUITS TO NEW LOCATION.
3. EXTEND THE EXISTING MAINTAINED 120V CONTROL CIRCUIT SERVING EXISTING BOILER #2 TO NEW BOILER #2 CONTROL PANEL.
4. EXTEND THE EXISTING MAINTAINED 120V CONTROL CIRCUIT SERVING EXISTING BOILER #1 TO NEW BOILER #1 CONTROL PANEL.
5. PROVIDE MANUAL MOTOR STARTER FOR 120V CONTROL CIRCUIT. MANUAL MOTOR STARTER SHALL BE EQUIPPED WITH PROVISIONS FOR LOCKING IN OPEN OR CLOSED POSITION.
6. PROVIDE ALL FINAL CONNECTIONS TO MOTORIZED OPERATED DAMPER.
7. PROVIDE GAS BURNER EMERGENCY SHUT OFF SWITCH IN LOCATION AS NOTED. MOUNT EMERGENCY SHUT OFF SWITCH 60" AFF PROVIDE RED SWITCH COVERS AND IDENTIFY AS EMERGENCY SHUT OFF. COORDINATE EXACT LOCATION OF BOILER SHUT OFF SWITCH WITH STATE BOILER INSPECTOR. WIRE IN SERIES AND MAKE CONNECTION TO BOILER CIRCUIT BREAKER SHUNT TRIP COILS.
8. 3 POLE 60 AMP FUSED SAFETY SWITCH FUSED AT 35 AMP WITH PROVISIONS FOR LOCKING IN THE OPEN OR CLOSED POSITION.
9. MOUNT TO SERVE CHEMICAL SHOT FEEDER.
10. PROVIDE 3/4" EMPTY CONDUIT WITH PULL STRINGS FROM JUNCTION BOX TO CARBON MONOXIDE DETECTION SYSTEM CONTROL PANEL.
11. REPLACE PANEL AS SCHEDULED AND RECONNECT ALL MAINTAINED FEEDER AND BRANCH CIRCUITS DISCONNECTED DURING DEMOLITION.
12. REPLACE PANEL AS SCHEDULED AND RECONNECT ALL MAINTAINED BRANCH CIRCUITS DISCONNECTED DURING DEMOLITION. PANEL SHALL BE REFD FROM PANEL BR, REFER TO POWER RISER DIAGRAM ON SHEET E7.1 FOR ADDITIONAL INFORMATION.
13. 3P-60A F/SS (FUSED AT MANUFACTURER'S RECOMMENDATIONS) AND NEMA SIZE 1 COMBINATION MOTOR STARTER WITH HOA, IN NEMA 1 ENCLOSURE.
14. CONNECT TO MAINTAINED LIGHTING CIRCUIT SERVING THE ROOM.



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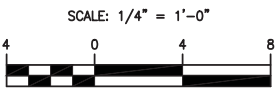
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1501 South China St. Suite 500 Baltimore, MD 21224
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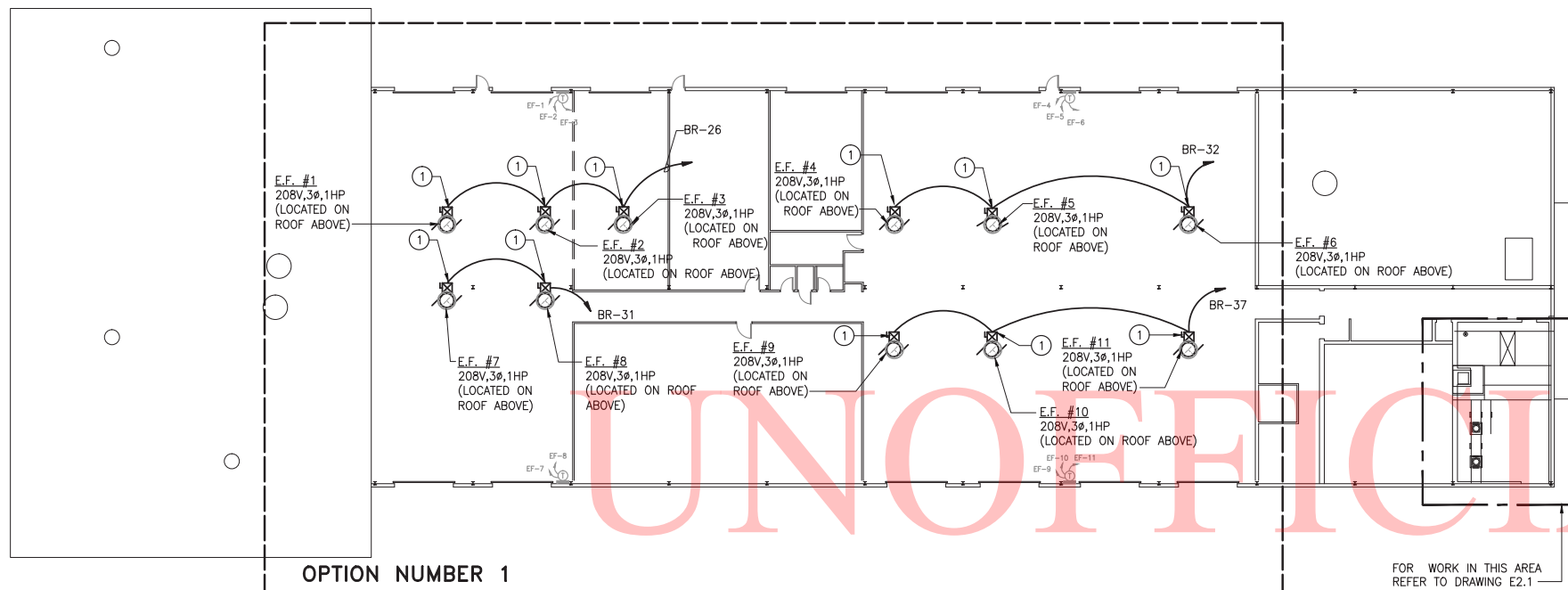
SOUTH DISTRICT ADMINISTRATION
BUILDING ROOF AND BOILER
IMPROVEMENTS

CONTRACT	BRIDGE NO.	X
T201080107	DESIGNED BY:	K. CURRERI
COUNTY	CHECKED BY:	K. CURRERI
SUSSEX		

PART PLAN - BOILER ROOM
ELECTRICAL NEW WORK

E2.1

SHEET NO.	21
TOTAL SHTS.	24



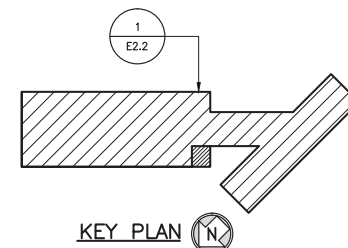
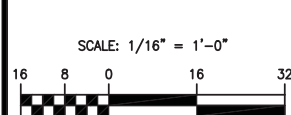
OPTION NUMBER 1

FOR WORK IN THIS AREA
REFER TO DRAWING E2.1

1
E2.2 FLOOR PLAN — ELECTRICAL NEW WORK
SCALE: 1/16" = 1'-0"

DRAWING NOTES:

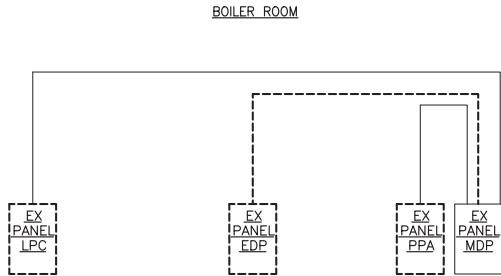
- 1 3P-30A F/SS, FUSED @ 15A, AND NEMA SIZE 0 COMBINATION MOTOR STARTER WITH H.O.A SWITCH IN NEMA 3R ENCLOSURE. MOUNT AT UNIT AND MAKE ALL CONNECTIONS.



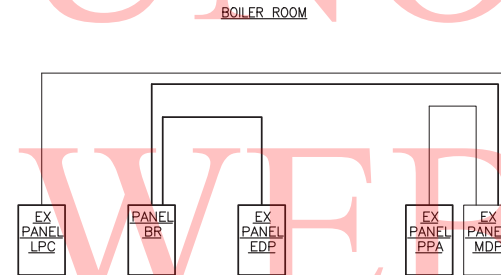
KEY PLAN

DRAWING NOTES:

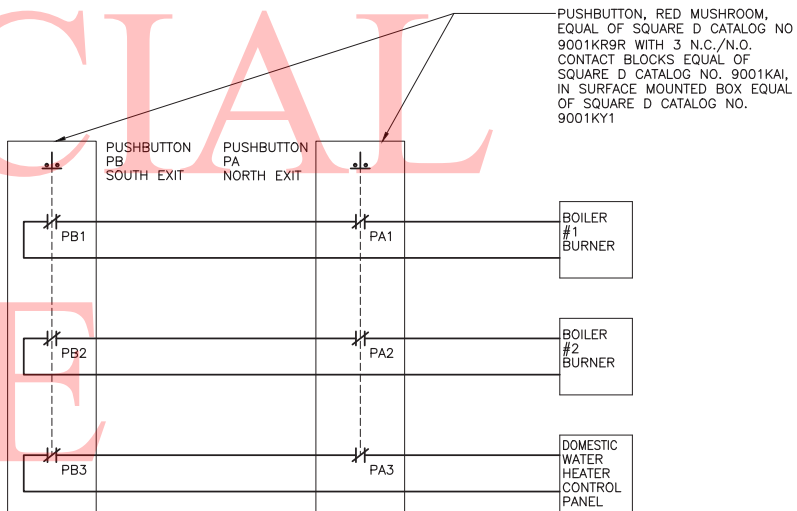
- 1 REPLACE THE 3P-100A CIRCUIT BREAKER SERVING PANEL EDP WITH A 3P-200A CIRCUIT BREAKER TO SERVE PANEL BR. BREAKER SHALL MATCH EXISTING MANUFACTURER, STYLE, TYPE AND SHORT CIRCUIT RATING. PROVIDE ALL REQUIRED BREAKER MOUNTING ACCESSORIES.



1 POWER RISER DIAGRAM – EXISTING CONDITIONS/DEMOLITION
NOT TO SCALE



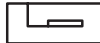
2 POWER RISER DIAGRAM – NEW WORK
NOT TO SCALE



3 WIRING DIAGRAM – BOILER/DOMESTIC WATER HEATER
EMERGENCY SHUTDOWN
NOT TO SCALE

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Gipe Associates Inc.
Consulting Engineers
849 Edmont Ave Suite 102
Baltimore, MD 21206
PHONE 410.332.2418
FAX 410.332.2418



PROFESSIONAL CERTIFICATION:
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF DELAWARE. LICENSE NO. 10935, EXPIRATION DATE: 12/31/2011.

WHITNEY BAILEY/CORP & MAGNANI, LLC
1501 South Coast Street Suite 500 Baltimore, MD 21224
PHONE (410) 246-6000 FAX (410) 246-6000
WWW.WBCMARCHITECTURE.COM

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DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

100% SUBMISSION SET
04/08/2011

SOUTH DISTRICT ADMINISTRATION
BUILDING ROOF AND BOILER
IMPROVEMENTS

CONTRACT
T201080107
COUNTY
SUSSEX

BRIDGE NO. X
DESIGNED BY: K. CURBERI
CHECKED BY: K. CURBERI

POWER RISER DIAGRAM –
WIRING DIAGRAMS

E7.1

SHEET NO.
23
TOTAL SHTS.
24

ELECTRICAL LEGEND

SYMBOL	DESCRIPTION
	FLUORESCENT STRIP LIGHTING FIXTURE; TYPE AS NOTED
	EMERGENCY FIXTURE – WALL MOUNTED 8' AFF OR 6" BELOW CEILING (WHICHEVER IS LOWER)
	EXIT SIGN; CEILING MOUNTED, WALL MOUNTED; SHADING INDICATES ILLUMINATED FACE, DIRECTIONAL ARROWS AS INDICATED
	VARIABLE SPEED DRIVE (FURNISHED UNDER DIVISION 15)
	DUPLEX RECEPTACLE; 2P, 3W, 20A, 125V, NEMA 5–20R; MOUNT AT 1'–6" AFF UON; SUBSCRIPTS: GFI – GROUND FAULT INTERRUPTER, WP – WEATHERPROOF, TR – TAMPER RESISTANT, C – MOUNT AT 4'6", W – INTERACTIVE WHITEBOARD MOUNTED ABOVE BOARD.
	SINGLE POLE MANUAL MOTOR STARTING SWITCH WITH HOA SWITCH; MOUNT AT 4'–0" AFF IN NEMA 1 ENCLOSURE UON
	MOTORIZED DAMPER CONNECTION.
	CONTROL DEVICE FURNISHED BY EQUIPMENT SUPPLIER
	JUNCTION BOX
	MOTOR – TYPE AND HORSEPOWER AS INDICATED.
	SAFETY DISCONNECT SWITCH; FUSED, NONFUSED IN NEMA 1 ENCLOSURE UON; MOUNT AT 4'–0" AFFUON; RATING AND FUSING AS NOTED.
	COMBINATION TYPE MOTOR STARTER; FVNR WITH CONTROL XFMR, RED AND GREEN INDICATING LIGHTS, HOA SELECTOR SWITCH AND CIRCUIT BREAKER DISCONNECT SWITCH IN NEMA 1 ENCLOSURE UON; MOUNT AT 5'–6" TO TOP AFF UON.
	EMERGENCY POWER OFF SWITCH – MOUNT 48" ABOVE FINISHED FLOOR TO CENTERLINE OF DEVICE.
	BRANCH CIRCUIT CONDUIT AND WIRING CONCEALED IN CEILING OR WALL SPACE, OR SURFACE MOUNTED WHERE NO CEILING OR WALL SPACE EXISTS; REFER TO PANEL SCHEDULES FOR MINIMUM WIRE AND CONDUIT SIZES.
	HOMERUN TO PANELBOARD; NUMBER OF ARROWHEADS INDICATE NUMBER OF CIRCUITS; REFER TO PANEL SCHEDULES FOR MINIMUM WIRE AND CONDUIT SIZES.
	EXISTING MOTOR TO BE REMOVED OR RELOCATED AS INDICATED.
	PANELBOARD – 120/208V – 3Ø – 4 WIRE – MOUNTING HEIGHT 6'–6" TO TOP.
	REFERENCE TO DRAWING NOTE.

ELECTRICAL DRAWING LIST

DRAWING NO.	DESCRIPTION
E1.1	PART PLAN – BOILER ROOM ELECTRICAL DEMOLITION
E2.1	PART PLAN – BOILER ROOM ELECTRICAL NEW WORK
E7.1	POWER RISER DIAGRAM – WIRING DIAGRAMS
E9.1	ELECTRICAL LEGEND AND SCHEDULES
E9.2	ELECTRICAL SPECIFICATIONS

ELECTRICAL ABBREVIATIONS

ABBREVIATION.	FOR
AIC	AMPERE INTERRUPTING CAPACITY
AWG	AMERICAN WIRE GAUGE
C	CONDUIT
C/T	CURRENT TRANSFORMER
GND	GROUND
HP	HORSEPOWER
KVA	KILOVOLT AMPERES
MOD	MOTORIZED OPERATED DAMPER
MPN	MICHAEL NELSON
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NO	NUMBER
P	POLE
Ø	PHASE
V	VOLTS

DRAWING NOTES:

- ① REFER TO POWER RISER DIAGRAM ON SHEET E7.1 FOR ADDITIONAL INFORMATION.

PANEL BR										*SHUNT TRIP BREAKER										MOUNTING: SURFACE																			
VOLTAGE: 208/120V, 3PH, 4W										**ADD ALTERNATE #1										LOCATION: BOILER ROOM																			
225 AMPERE BUS										225 A MAIN CIRCUIT BREAKER										100% RATED NEUTRAL BUS										22,000 A.I.C.									
CONN KVA	CKT	DESCRIPTION	BREAKER P	AMPS	NO	SIZE	GND	C		CKT	DESCRIPTION	BREAKER P	AMPS	NO	SIZE	GND	C		CONN KVA																				
0.9	1	BOILER #2	3	15*	3	12	12	3/4		2	BOILER #1	3	15*	3	12	12	3/4		0.9																				
0.9	3	-	-	-	-	-	-	-		4	-	-	-	-	-	-	-		0.9																				
0.9	5	-	-	-	-	-	-	-		6	-	-	-	-	-	-	-		0.9																				
0.2	7	UNIT HEATER No. 1	1	20	2	12	12	3/4		8	PUMP B	3	35	3	10	10	3/4		2.1																				
0.2	9	M.O.D.	1	20	2	12	12	3/4		10	-	-	-	-	-	-	-		2.1																				
0.2	11	UNIT HEATER No. 2	1	20	2	12	12	3/4		12	-	-	-	-	-	-	-		2.1																				
2.1	13	PUMP A	3	35	3	10	10	3/4		14	PUMP E	3	35	3	10	10	3/4		2.1																				
2.1	15	-	-	-	-	-	-	-		16	-	-	-	-	-	-	-		2.1																				
2.1	17	-	-	-	-	-	-	-		18	-	-	-	-	-	-	-		2.1																				
0.6	19	CHEMICAL SHOT FEEDER	1	20	2	12	12	3/4		20	PUMP D	3	35	3	10	10	3/4		2.1																				
0.3	21	PUMP C	1	20*	2	12	12	3/4		22	-	-	-	-	-	-	-		2.1																				
0.2	23	DWH-1	1	20	2	12	12	3/4		24	-	-	-	-	-	-	-		2.1																				
0.2	25	DWH-2	1	20	2	12	12	3/4		26	E.F.-1,2 & 3	3	20**	3	10	10	3/4		1.4																				
0.2	27	CARBON MONOXIDE CP	1	20	2	12	12	3/4		28	(ADD ALTERNATE #1)	-	-	-	-	-	-		1.4																				
	29	SPARE	1	20						30	-	-	-	-	-	-	-		1.4																				
1.4	31	E.F.-7,8	3	20**	3	10	10	3/4		32	E.F.-4,5 & 6	3	20**	3	10	10	3/4		1.4																				
1.4	33	(ADD ALTERNATE #1)	-	-	-	-	-	-		34	(ADD ALTERNATE #1)	-	-	-	-	-	-		1.4																				
1.4	35	-	-	-	-	-	-	-		36	-	-	-	-	-	-	-		1.4																				
1.4	37	E.F.-9,10 & 11	3	20**	3	10	10	3/4		38	EX PANEL EDP	3	100	4	1	8	1-1/2		0.0																				
1.4	39	(ADD ALTERNATE #1)	-	-	-	-	-	-		40	-	-	-	-	-	-	-		0.0																				
1.4	41	-	-	-	-	-	-	-		42	-	-	-	-	-	-	-		0.0																				
TOTAL CONNECTED LOAD			49.5 KVA			KVA PER PHASE:			A 12.6			B 12.1			C 12.0																								

EX PANEL PPA										MOUNTING: SURFACE																													
VOLTAGE: 208/120V, 3PH, 4W										LOCATION: BOILER ROOM																													
225 AMPERE BUS										225 A MAIN LUGS ONLY										100% RATED NEUTRAL BUS										22,000 A.I.C.									
CONN KVA		CKT	DESCRIPTION	BREAKER		CIRCUIT WIRING					CKT	DESCRIPTION	BREAKER		CIRCUIT WIRING					CONN KVA																			
				P	AMPS	NO	SIZE	GND	C					P	AMPS	NO	SIZE	GND	C																				
		1	AIR DRYER	1	20						2	BURNER CONTROLS	1	20																									
		3	OMNTEC TANK MONITOR	1	20						4	HOT WATER CONTROLS	1	20																									
		5	EX CIRCUIT	1	20						6	CIR PUMP	1	20																									
		7	LIGHTING CONTACTOR	2	20						8	RANGE	2	50																									
		9	—	—	—	—	—	—	—		10	—	—	—	—	—	—	—																					
		11	NEW PARKING LOT LTS.	2	20						12	INDUCED DRAFT FAN	2	20																									
		13	—	—	—	—	—	—	—		14	—	—	—	—	—	—	—																					
		15	VAV 13	2	20						16	SPARE	2	30																									
		17	—	—	—	—	—	—	—		18	—	—	—	—	—	—	—																					
		19	PARKING LOT SITE LTS	3	20						20	SPARE	3	20																									
		21	—	—	—	—	—	—	—		22	—	—	—	—	—	—	—																					
		23	—	—	—	—	—	—	—		24	—	—	—	—	—	—	—																					
		25	SANYO UNIT	3	20						26	CHILLED WATER PUMPS	3	30																									
		27	—	—	—	—	—	—	—		28	—	—	—	—	—	—	—																					
		29	—	—	—	—	—	—	—		30	—	—	—	—	—	—	—																					
		31	VAV 16	3	30						32	NEW ATC.	3	20																									
		33	—	—	—	—	—	—	—		34	—	—	—	—	—	—	—																					
		35	—	—	—	—	—	—	—		36	—	—	—	—	—	—	—																					
		37	VAV 17	3	20						38	EX CIRCUIT	3	40																									
		39	—	—	—	—	—	—	—		40	—	—	—	—	—	—	—																					
		41	—	—	—	—	—	—	—		42	—	—	—	—	—	—	—																					
TOTAL CONNECTED LOAD				0.0 KVA				KVA PER PHASE:				A 0.0 B 0.0 C 0.0																											