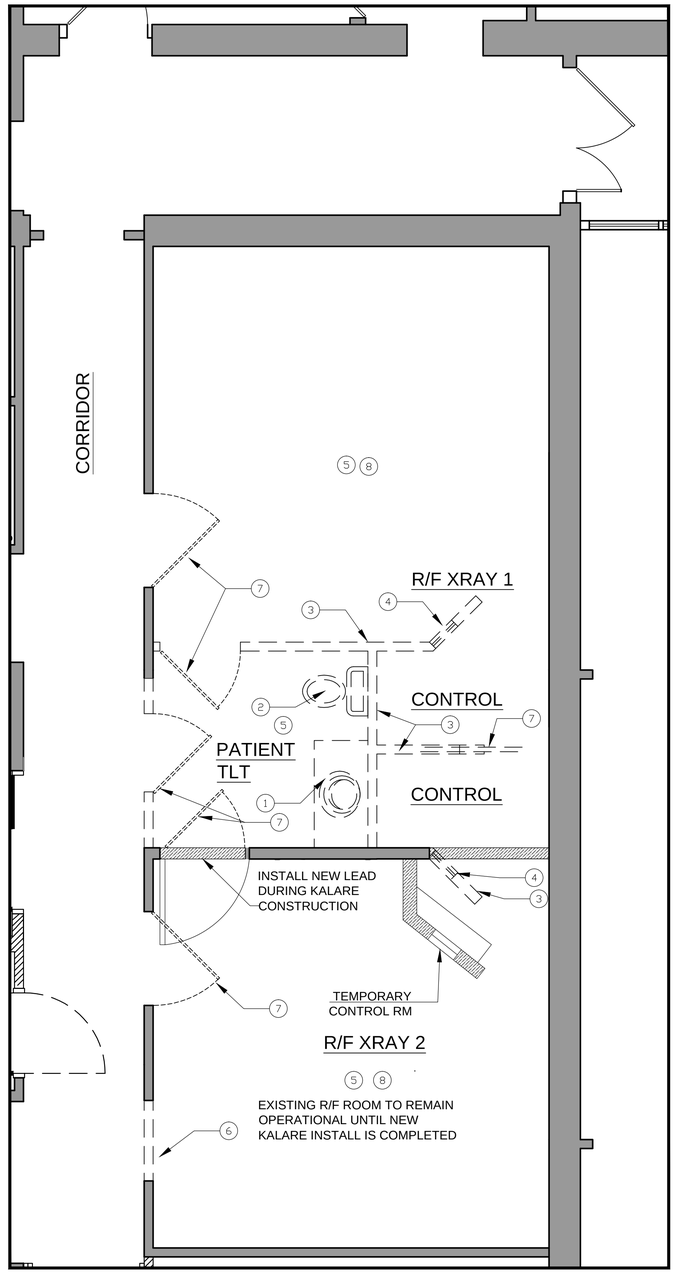
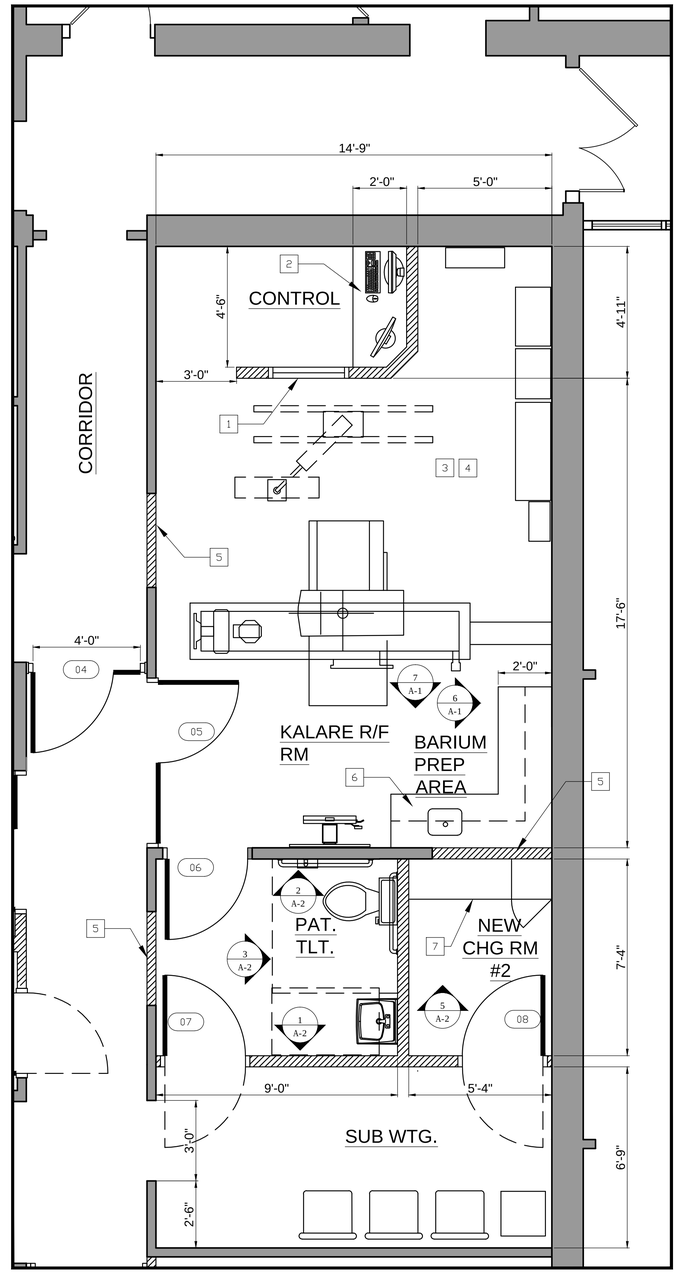


1 DEMOLITION PLAN
Scale: 3/8" = 1'-0"



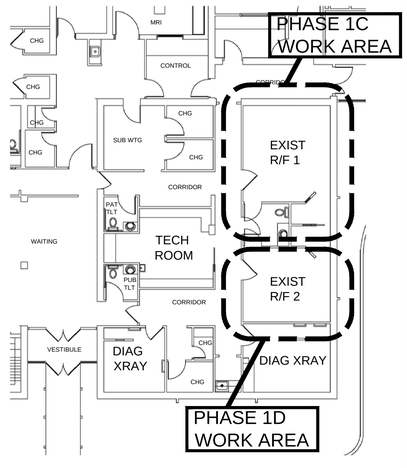
2 NEW FLOOR PLAN
Scale: 3/8" = 1'-0"

DEMOLITION NOTES:

1. REMOVE EXISTING COUNTER & SINK, CAP PIPING.
2. REMOVE EXISTING TOILET, CAP ALL PIPING.
3. REMOVE EXISTING PARTITION.
4. REMOVE EXISTING CONTROL WINDOW.
5. REMOVE EXISTING FLOORING.
6. PROVIDE NEW OPENING.
7. REMOVE EXISTING DOOR & FRAME
8. EXISTING XRAY EQUIPMENT TO BE REMOVED BY OTHERS.

CONSTRUCTION NOTES:

1. NEW SHIELDED CONTROL WINDOW.
2. NEW MILLWORK, CONTROL COUNTER.
3. NEW FLOORING & BASE.
4. NEW PAINT ALL WALLS.
5. INFILL OPENING WITH FINISHES TO MATCH EXISTING.
6. NEW MILLWORK, COUNTER W/ SINK.
7. NEW MILLWORK, BENCH WITH (2) O/U LOCKERS.



M PROJECT MAP
NOT TO SCALE

Revision/Date	By

TRADE EASTERN, INC.
ARCHITECTS • ENGINEERS • BUILDERS
53 GRAVEL STREET WILKES-BARRE, PA. 18705
PHONE 570-287-3178 FAX NO. 570-287-5025

DOUGLAS F. TROWBRIDGE REGISTERED ARCHITECT COMMONWEALTH OF PENNSYLVANIA

DOUGLAS F. TROWBRIDGE PROFESSIONAL ENGINEER No. 19242-E COMMONWEALTH OF PENNSYLVANIA

PINNACLE HEALTH UNION DEPOSIT
X-RAY SUITE IMPROVEMENTS
4518 UNION DEPOSIT RD., HARRISBURG, PA 17110
KALARE R/F RM - NEW SUB WTG -
NEW CHANGING RM #2
DEMOLITION PLAN - NEW FLOOR PLAN

Drawn	K.P.W.
Checked	D.F.T.
Start Date	10/01/2013
Scale	AS NOTED
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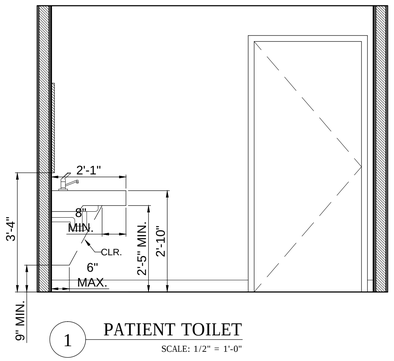
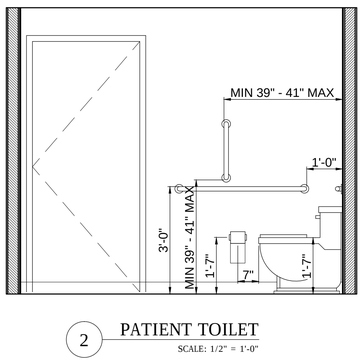
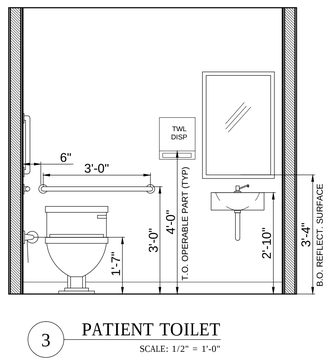
PHASE 1D



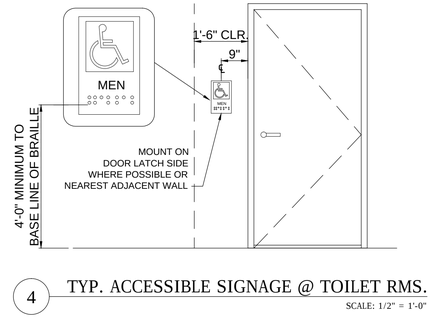
1 PATIENT TOILET
SCALE: 1/2" = 1'-0"



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



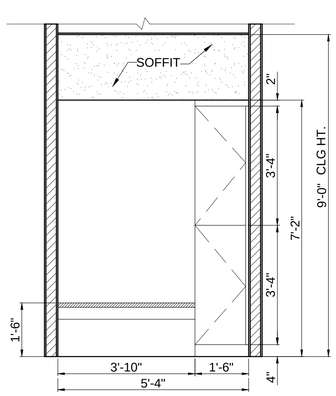
3 PATIENT TOILET
SCALE: 1/2" = 1'-0"



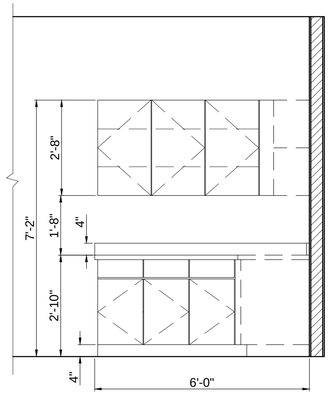
4 TYP. ACCESSIBLE SIGNAGE @ TOILET RMS.
SCALE: 1/2" = 1'-0"

NOTES:

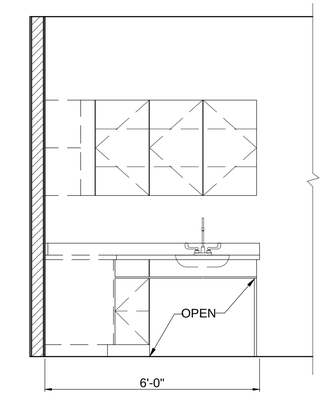
1. ALL ADA GRAB BAR MOUNTING HTS. AND CLEARANCES SHALL BE MEASURED TO THE OUTSIDE OF THE BAR NOT TO THE CENTERLINE.
2. MIRROR HT. ABOVE FIN FLR TO BOTTOM OF REFLECTIVE SURFACE.



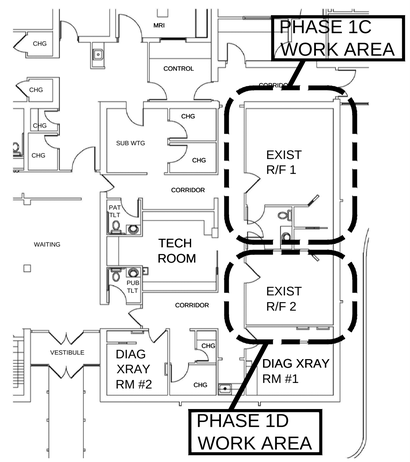
5 CHANGING RM #2 ELEVATION
SCALE: 1/2" = 1'-0"



6 KALARE R/F MILLWORK ELEVATION
SCALE: 1/2" = 1'-0"



7 KALARE R/F MILLWORK ELEVATION
SCALE: 1/2" = 1'-0"



M PROJECT MAP
NOT TO SCALE

Revision/Date	By

TRADE EASTERN, INC.
ARCHITECTS • ENGINEERS • BUILDERS
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PINNACLE HEALTH UNION DEPOSIT
X-RAY SUITE IMPROVEMENTS
4518 UNION DEPOSIT RD., HARRISBURG, PA 17110
PATIENT TOILET ELEVATIONS
MILLWORK ELEVATIONS

Drawn	K.P.W.
Checked	D.F.T.
Start Date	10/01/2013
Scale	AS NOTED
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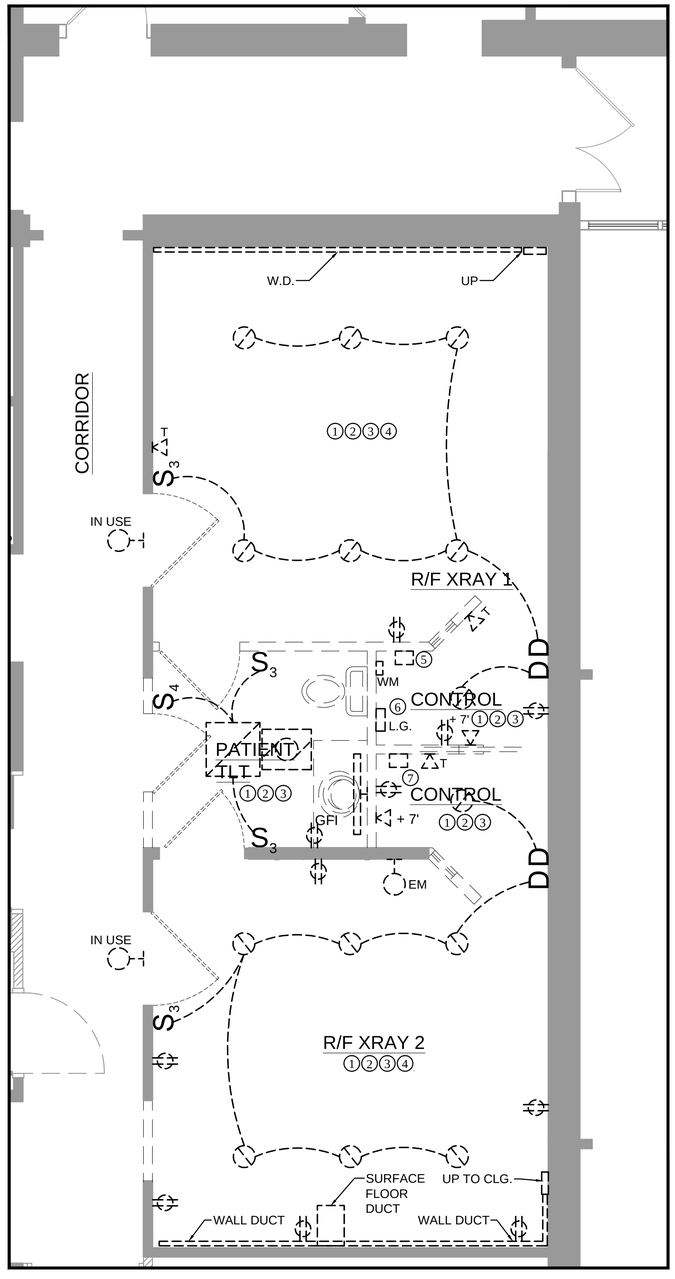
ELECTRICAL LEGEND

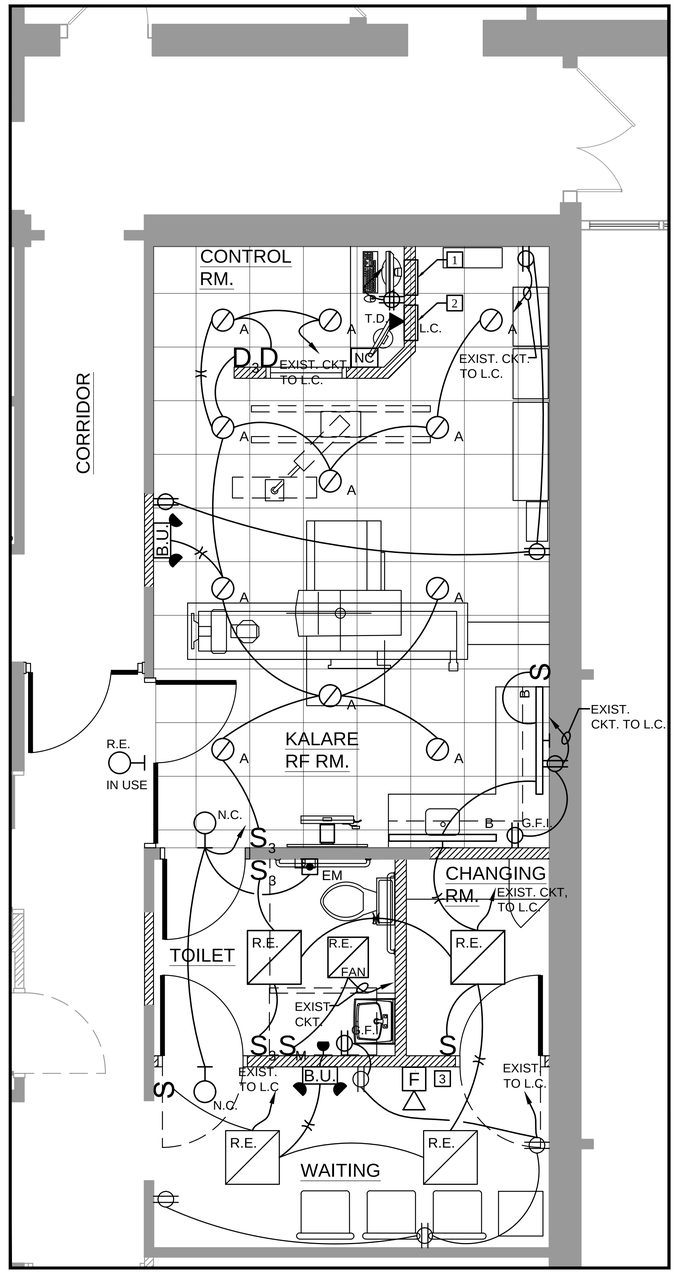
SYMBOL	DESCRIPTION
⊘	RECESSED ROUND LIGHT FIXTURE, TYPE AS NOTED.
F / L	FAN / LIGHT COMBINATION.
	2x2 OR 2x4, RECESSED FLUORESCENT LIGHTING FIXTURE. TYPE AS NOTED.
	DUPLEX CONVENIENCE RECEPTACLE 24" A.F.F., U.N.O.
	DOUBLE DUPLEX CONVENIENCE RECEPTACLE 24" A.F.F., U.N.O.
S_X	SWITCH SINGLE POLE
S_X	SWITCH 3-WAY
D	DIMMER SWITCH
T.D.	TELEPHONE, DATA OR TELEPHONE / DATA AS NOTED. EXTEND ¾"C TO CLG. CAVITY. PROV. TEL/DATA OUTLETS AND HOMERUN CAT5 CABLE TO SERVER RM, TERMINATE CABLES BOTH ENDS
EPO	EMERGENCY OFF BUTTON
	DISCONNECT SWITCH, TYPE AS NOTED.
	MOTOR, TYPE AS NOTED.
S_X	MANUAL MOTOR STARTER SWITCH
F	FIRE ALARM PULL STATION
F	FIRE ALARM AUDIO / VISUAL
F	FIRE ALARM VISUAL ONLY
S	SMOKE DETECTOR
S	SPEAKER
	HOMERUN TO PANEL AS NOTED
	BRANCH WIRING
	EXIT LIGHTING FIXTURE ARROWS AS INDICATED
B.U.	EMERGENCY BATTERY UNIT WITH 2 UNIT MOUNTED HEADS
	REMOTE MOUNTED EMERGENCY HEADS
R.E.	REUSE EXISTING OR RELOCATED EXISTING.
G.F.I.	GROUND FAULT INTERRUPTER

LIGHTING FIXTURE SCHEDULE

SYMBOL	DESCRIPTION
A	6" RECESSED ROUND FLOURESCENT FIXTURE WITH (2) 26 WATT PL LAMPS, LOW IRIDESCENT CLEAR SPECULAR REFLECTOR AND DIMMING BALLAST.
B	UNDERCABINET FLUORESCENT LIGHTING FIXTURE WITH ACRYLIC, PRISMATIC LENS, 4 FOOT SINGLE LAMP.



1 R/F ROOM DEMOLITION PLAN
Scale: 3/8" = 1'-0"



2 KALARE R/F RM NEW POWER AND LIGHTING PLAN
Scale: 3/8" = 1'-0"

DEMOLITION NOTES:

1. REMOVE ALL EXISTING LIGHTING FIXTURES, SWITCHES, DIMMERS SHOWN DOTTED BRANCH WIRING TO REMAIN AND REUSED WHERE APPLICABLE.
2. REMOVE ALL RECEPTACLES AND DATA OUTLETS SHOWN DOTTED. REUSE WIRING WHERE APPICABLE. MAINTAIN CONTINUITY TO DEVICES ON CIRCUITS TO REMAIN.
3. REMOVE AND RELOCATE SPEAKERS, FIRE ALARM A/V UNITS AND SMOKE DETECTORS WHERE INDICATED ON PLAN.
4. REMOVE EXISTING WALL DUCT AND WIRE WAYS SHOWN DOTTED.
5. REMOVE EXISTING 100A-3P, 480V BREAKER. EXTEND FEEDER TO NEW BREAKER LOCATION. PROVIDE GROUND WIRE SIZE EQUAL TO EXISTING PHASE WIRES TO MDP-2 CKT. #14 IN BASEMENT.
6. REMOVE EXISTING 100A, 1Ø, 12 CKT. 120 / 208 V, 1Ø FLUSH MOUNTED LOAD CENTER. EXTEND FEEDER AND BRANCH CIRCUITS TO NEW LOAD CENTER LOCATION. SEE CONSTRUCTION NOTE [2]
7. REMOVE EXISTING 100A, 3P, 480V CIRCUIT BREAKER AND FEEDER TO PANEL ON MDP2 - CKT #6 IN FIRST FLOOR ELECTRICAL ROOM.

CONSTRUCTION NOTES:

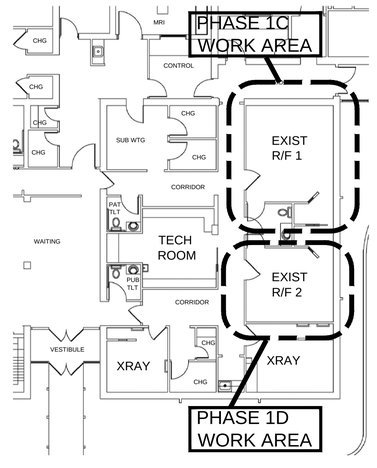
[1] PROVIDE A 80A-3P, RECESSED 480V SHUNT TRIP BREAKER, SEE DEMO NOTE 5.

[2] PROVIDE A 100A, 1Ø, 12 CKT. 120 / 208 V, 1Ø, FLUSH MOUNTED LOAD CENTER WITH 60A-2P MAIN BREAKER AND BRANCH BREAKER TO MATCH EXISTING LOAD CENTER BEING REMOVED.

[3] PROVIDE FIRE ALARM A/V UNIT CONNECT TO EXISTING FIRE ALARM SYSTEM.

GENERAL NOTES:

1. PROVIDE NEW LIGHTING FIXTURES, TYPE AS NOTED, WHERE INDICATED ON PLAN.
2. RELOCATE EXISTING FIXTURES WHERE NOTED B 'R.E.' CLEAN AND RELAMP FIXTURES.
3. RELOCATE EXISTING FIRE ALARM DEVICES AND EMERGENCY LIGHTING WEHRE INDICATED ON PLAN BY 'R.E.' AND PROVIDE NEW DEVICES AS REQUIRED. RECONNECT INTO EXISTING FIRE ALARM AND EMERGENCY LIGHTING SYSTEMS WHERE INDICATED PROVIDE NEW EXIT LIGHTS TO MATCH EXISTING.
4. REUSE EXISTING BRANCH WIRING AND CIRCUITS WHERE APPLICABLE. NEW WIRING SHALL BE MINIMUM 2# 12 + 1# 12G, HG, MC CABLE UNLESS OTHERWISE NOTED.
5. ALL ELECTRICAL WORK SHALL CONFORM TO THE APPLICABLE NATIONAL ELECTRIC CODE, STATE AND LOCAL CODES.
6. SEE TOSHIBA KALARE DRAWINGS FOR THE REQUIRED JUNCTION BOXES, CABLE TRAYS, WIREWAYS, CONDUIT RUNS AND REQUIRED POWER AND CONTROL INTERCONNECT WIRING AND GROUNDING.
7. PROVIDE NEW DEVICES AND PLATES FOR ALL EXISTING DEVICES SHOWN TO REMIAN OR BE RELOCATED.



M PROJECT MAP
NOT TO SCALE

Revision/Date	By

TRADE EASTERN, INC.
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COMMONWEALTH OF PENNSYLVANIA REGISTERED ARCHITECT PROFESSIONAL DOUGLAS K. TRUKHOKEN TRUKHOKEN

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER DOUGLAS K. TRUKHOKEN No. 18247-E

PINNACLE HEALTH UNION DEPOSIT
X-RAY SUITE IMPROVEMENTS
4518 UNION DEPOSIT RD., HARRISBURG, PA 17110
R/F ROOM DEMOLITION PLAN
KALARE R/F ROOM POWER & LIGHTING PLAN

Drawn	K.P.W. / J.B.P.
Checked	D.F.T.
Start Date	10/01/2013
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PHASE 1C
PHASE 1D

KALARE

DRAWING CONTENTS

TOSHIBA
Leading Innovation »»

REV	DATE	REVISED SHEET(S)	INT

TRISTAN ASSOCIATES

(F/R ROOM – KALARE)

4518 UNION DEPOSIT RD.
HARRISBURG, PA 17111

DATE: 10–18–13

SCALE: NOT TO SCALE

PLANNER: M.M.P.

SID NO: 30005332

PROJECT NO.
130013976XRP

C1

FOR REFERENCE ONLY. NOT TO BE USED FOR CONSTRUCTION PURPOSES.

MINIMUM SITE REQUIREMENTS CHECKLIST

PROJECT:		SITE INSPECTION DATE:
EQUIPMENT DELIVERY DATE:		INSPECTED BY:
IN ORDER TO ENSURE A TIMELY AND SUCCESSFUL INSTALLATION, IT IS NECESSARY TO COMPLETE THIS FORM PRIOR TO INSTALLATION. PLEASE ASSIST US BY HAVING THE CONTRACTOR OR YOUR REPRESENTATIVE COMPLETE THE FOLLOWING:		
	1.	ALL WALLS, FLOORS, AND CEILINGS FINISHED. WALLS PAINTED, FLOORS TILED, AND CEILING GRID WORK AND FIXTURES INSTALLED.
	2.	MONOLITHIC OR LAY–IN CEILING? PLEASE CIRCLE ONE. ALL MATERIALS IN SCAN ROOM MUST BE NON–FERROUS.
	3.	DOORS AND WINDOWS (INCLUDING ALL LEADED DOORS AND GLASS) INSTALLED AND LOCKABLE. DOORS TO BE REMOVED PRIOR TO DELIVERY BY CUSTOMER OR CONTRACTOR AND REINSTALLED AFTER EQUIPMENT MOVE–IN. RESERVE SECURE ROOM FOR STORAGE DURING INSTALLATION.
	4.	AREA SET ASIDE FOR EQUIPMENT RIGGING AND MOVE–IN. ENVIRONMENTAL ISSUES ADDRESSED AND RESOLVED PRIOR TO EQUIPMENT DELIVERY (I.E. SURGICAL SUITE).
	5.	ALL CONDUIT, TROUGHING (WITH COVERS), AND BOXES INSTALLED (CLEAN AND DUST FREE). GROMMETED OPENINGS, CHASE NIPPLES, RACEWAY DIVIDERS, ETC. COMPLETE.
	6.	CIRCUIT BREAKER INSTALLED AND INCOMING POWER (PER POWER QUALITY REQUIREMENTS) OPERATIONAL AND CONNECTED TO ROOM BREAKER(S).
	7.	LOCATION OF ALL ELECTRICAL BREAKERS IN POWER CHAIN NOTED.
	8.	ALL CONTRACTOR–INSTALLED STRUCTURAL SUPPORT DEVICES INSTALLED AND LEVELED ACCORDING TO TAMS SPECIFICATIONS ON SITE PLANS.
	9.	ROOM LIGHTING INSTALLED AND OPERATIONAL.
	10.	LIGHTING/SPRINKLER HEADS PRESENT NO CONFLICT WITH UNITS TO BE MOUNTED ON THE CEILING.
	11.	110V ROOM OUTLETS OPERATIONAL.
	12.	ALL CONTRACTOR–SUPPLIED CABLES PULLED AND TERMINATED, INCLUDING GROUND WIRE IN TROUGHING AS SPECIFIED IN THE TOSHIBA SITE PLANS.
	13.	INTERFACE FOR DIMMING OF ROOM LIGHTS IF APPLICABLE. WARNING LIGHTS AND DOOR SWITCHES INSTALLED AND INTERFACE AVAILABLE AND CONNECTED (RELAYS ETC.).
	14.	DUST–FREE ENVIRONMENT IN ALL RELATED ROOMS.
	15.	HEATING AND AIR–CONDITIONING INSTALLED, OPERATIONAL AND STABILIZED PER TOSHIBA SITE PLANS. FILTERS TO BE CHANGED 24 HOURS BEFORE DELIVERY.
	16.	ALL MILLWORK COMPLETE AND INSTALLED.
	17.	PLUMBING COMPLETED (INCLUDING GASES, IF APPLICABLE) ACCORDING TO TAMS SPECIFICATIONS ON SITE PLANS.
	18.	OPTIONAL COMPUTER FLOORING INSTALLED (IF APPLICABLE).
	19.	THIRD PARTY VENDED ITEMS SUCH AS PROCESSORS, INJECTORS, GAS PEDESTALS, PHYSIOLOGICAL MONITORING EQUIPMENT, ETC., INSTALLED AND OPERATIONAL.
	20.	TELEPHONE LINES (VOICE AND OPTIONAL MODEM) INSTALLED AND OPERATIONAL. A DEDICATED PHONE LINE IS REQUIRED FOR SITES THAT ARE RECEIVING INNERVISION.
	21.	ALL UNFINISHED AREAS ARE SEALED OFF TO PREVENT DUST CONTAMINATION.
	22.	RECEPTACLE FOR TRASH AVAILABLE (LARGE ENOUGH FOR SHIPPING CRATES IF REQUIRED).
	23.	SUB BASE PLATE(S) INSTALLED (IF REQUIRED).
	24.	"PDU" INSTALLED AND CONNECTED TO "CB".
	25.	EPOXY LEVELING PAD INSTALLED BY (TOSHIBA OR CONTRACTOR)? PLEASE CIRCLE ONE. IF BY CONTRACTOR, TOSHIBA REPRESENTATIVE MUST INSPECT PAD.
	26.	SEISMIC REQUIREMENTS, AND REQUIRED SEISMIC ANCHORING DEVICES INSTALLED (IF APPLICABLE).
	27.	NETWORK CONNECTIONS INSTALLED AND OPERATIONAL.
	28.	ALL APPLICABLE PERMITS OBTAINED.
	29.	

NOTICE:
CUSTOMER MUST COMPLETE ALL ITEMS ON THIS CHECKLIST BEFORE SCHEDULED DELIVERY DATE FOR THE EQUIPMENT. IF CUSTOMER FAILS TO DO SO, DELIVERY MAY BE DELAYED. FURTHERMORE, THE EQUIPMENT WARRANTY MAY BE VOIDED.

COMMENTS:	
SIGNED TOSHIBA:	
CONTRACTOR:	
CUSTOMER:	

10–07–11

CEILING HEIGHT

RECOMMENDED CEILING HEIGHT: 9'–2" (SEE DETAIL 1 ON SHEET A3)
EXISTING CEILING HEIGHT: 9'–6"

NOTE:
OVERHEAD X–RAY TUBE SUPPORT RAILS MUST NOT BE DIRECTLY OVER KALARE TABLE. IF OVERHEAD X–RAY TUBE SUPPORT RAILS ARE DIRECTLY ABOVE KALARE TABLE, THE CEILING HEIGHTS SHOWN MUST BE INCREASED BY THE DEPTH OF THE RAIL (APPROXIMATELY 4").

10–07–11

GENERAL NOTES

CUSTOMER/CONTRACTOR IS RESPONSIBLE FOR THE FOLLOWING UNLESS OTHERWISE NOTED.

GENERAL

A. TOSHIBA RESERVES THE RIGHT TO CHANGE THESE DESIGNS AND SPECIFICATIONS WITHOUT NOTICE.

B. CUSTOMER/CONTRACTOR SHALL SUPPLY AND INSTALL MATERIALS AND OTHER FEATURES SPECIFIED IN THE TOSHIBA SITE PLANS. CUSTOMER/CONTRACTOR SHALL SUPPLY AND INSTALL ALL COUNTERTOPS, SINKS, CASE WORK AND CABINETS SPECIFIED IN THE TOSHIBA SITE PLANS.

C. ANY CABINETRY THAT MAY BE REQUIRED TO HOUSE VIDEO RECORDERS, MONITORS KEYBOARDS, OR OTHER ANCILLARY EQUIPMENT SHALL BE SUPPLIED AND INSTALLED BY CUSTOMER/CONTRACTOR.

D. THE CUSTOMER/CONTRACTOR SHALL PROVIDE ADEQUATE VENTILATION WITHIN CABINETRY AND INSTALL AXIAL FANS ON THE TOP, SIDE, OR BACK OF CABINETS, IF REQUIRED.

E. THESE TOSHIBA SITE PLANS DO NOT INDICATE EQUIPMENT REQUIREMENTS FOR ITEMS NOT SOLD BY TOSHIBA SUCH AS, PHYSIOLOGICAL MONITORS, LASER CAMERAS, INJECTORS, ETC. SPECIFICATIONS FOR THOSE ITEMS MUST BE OBTAINED FROM THE VENDOR AND INCLUDED IN THE DESIGN TOTALS.

F. IF REQUIRED, THE CUSTOMER/CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AN INTERCOM SPEAKER SYSTEM BETWEEN THE EQUIPMENT ROOM, CONTROL ROOM, AND PROCEDURE ROOM.

G. THE CUSTOMER/CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL COSTS REQUIRED FOR THE ENGINEERING AND/OR REMOVAL OF ANY HAZARDOUS MATERIALS SUCH AS ASBESTOS.

H. CUSTOMER/CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AN OPERATING PHONE IN THE CONTROL ROOM AT THE TIME TOSHIBA EQUIPMENT INSTALLATION BEGINS.

I. CUSTOMER/CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE LIGHTING FOR SERVICING OF EQUIPMENT IN ALL AREAS OF THE INSTALLATION.

J. PRIOR TO EQUIPMENT DELIVERY AND INSTALLATION, THE SITE MUST BE 100% COMPLETE, CLEAN AND FREE OF DUST. CUSTOMER/CONTRACTOR AND TOSHIBA INSTALLATION PROJECT MANAGER MUST COMPLETE A SITE WALK THROUGH 1 WEEK PRIOR TO DELIVERY AND DETERMINE ACCEPTABILITY FOR DELIVERY.

K. CUSTOMER/CONTRACTOR/ARCHITECT SHALL BE RESPONSIBLE FOR PROVIDING THE ENTIRE NETWORKING AND COMMUNICATION SYSTEMS.

L. CUSTOMER/CONTRACTOR SHALL DESIGN, FABRICATE, AND INSTALL MEDICAL GAS PEDESTAL, IF REQUIRED. CONSULT WITH TOSHIBA INSTALLATION MANAGER FOR SUITABLE LOCATIONS.

CODES AND PERMITS

M. THE CUSTOMER/CONTRACTOR IS RESPONSIBLE TO ENSURE THAT ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES AND ORDINANCES ARE COMPLIED WITH.

SITE CONDITIONS

N. DIMENSIONS TO WALLS AND OR OTHER ROOM FEATURES, EXCEPT FOR NOTED COLUMN AND BEAM CENTER LINES SHALL BE FROM FINISHED SURFACES.

O. IT IS RECOMMENDED THAT XR EQUIPMENT REMAIN OUTSIDE 1 GAUSS FIELD OF MR EQUIPMENT.

PLUMBING

P. PLUMBING IS REQUIRED FOR CERTAIN COMPONENTS OF TOSHIBA EQUIPMENT.

Q. IT IS RECOMMENDED THAT A SINK BE PROVIDED FOR USE BY PERSONNEL.

TRANSPORT REQUIREMENTS

R. EQUIPMENT INGRESS ROUTE MUST BE CHECKED PRIOR TO EQUIPMENT DELIVERY TO ENSURE THE LARGEST AND HEAVIEST ITEMS OF EQUIPMENT CAN BE ACCOMMODATED, DIMENSIONS OF DOORWAYS SHOULD BE NO LESS THAN 4'–0" IN WIDTH.

S. CONTACT THE TOSHIBA INSTALLATION PROJECT MANAGER FOR DETAILS OF THE LARGEST AND HEAVIEST ITEMS OF EQUIPMENT FOR THIS INSTALLATION.

10–07–11

HVAC REQUIREMENTS

CUSTOMER TO PROVIDE THE NECESSARY HVAC REQUIREMENTS FOR THE TOSHIBA EQUIPMENT TO OPERATE PROPERLY.

AMBIENT TEMPERATURE SHOULD BE IN ACCORDANCE WITH THE FOLLOWING FOR CORRECT EQUIPMENT OPERATION AND PATIENT/OPERATOR COMFORT.

A. AIR–CONDITIONING FACILITIES MUST BE PROVIDED TO ENSURE THAT THE AMBIENT TEMPERATURE AND RELATIVE HUMIDITY ARE MAINTAINED WITHIN THE OPERATING ENVIRONMENTAL CONDITIONS.

B. AIR SUPPLY DUCTS SHOULD NOT BE PLACED DIRECTLY OVER EXAMINATION TABLES FOR PATIENT COMFORT.

C. EQUIPMENT IN ENCLOSED SPACES SUCH AS EQUIPMENT ROOMS, TRANSFORMER CLOSETS, AND COMPUTER ROOMS MUST BE PROVIDED WITH ADEQUATE VENTILATION. THE AIR FLOW THROUGH TOSHIBA EQUIPMENT CABINETS IS FROM BOTTOM TO TOP. WHERE POSSIBLE, A/C SUPPLY OUTLETS SHOULD BE LOCATED AT FLOOR LEVEL WITH RETURN GRILLES IN THE CEILING. A/C SUPPLY OUTLET TO BE PROVIDED BY CUSTOMER FLOOR LEVEL AT CONTROL ROOM DESK.

D. TO MAINTAIN THE ENVIRONMENTAL CONDITIONS SPECIFIED BELOW, INSTALL AN AIR–CONDITIONER, DEHUMIDIFIER, ETC. WITH APPROPRIATE PERFORMANCE RATINGS FOR THE EXAMINATION ROOM SIZE.

AMBIENT TEMPERATURE	10°C TO 35°C
RELATIVE HUMIDITY	30% TO 85% (NO CONDENSATION
ATMOSPHERIC PRESSURE	700 hPa TO 1,060 hPa
ILLUMINANCE	1000 LX OR LESS
ATMOSPHERE	DO NOT INSTALL THE SYSTEM IN A LOCATION WHERE THE OPERATING ENVIRONMENTAL CONDITIONS SPECIFIED ABOVE ARE NOT SATISFIED. ALSO, DO NOT INSTALL THE SYSTEM IN A LOCATION WHERE IT MAY BE EXPOSED TO THE FOLLOWING: FLAMMABLE GASES, CORROSIVE GASES, STEAM, DRIPPING WATER, EXCESSIVE DUST, SALTY AIR, DIRECT SUNLIGHT, EXCESSIVE SHOCK OR VIBRATION, EXCESSIVE LINE VOLTAGE FLUCTUATION

SYSTEM NAME	HEAT GENERATION (BTU/HR)	POWER CONSUMPTION (kW)
DUA–450F	1,239.00	0.027 (DURING STANDBY)
KXO–80XD	7,678.00	
	4,164.00 (FOR CONTINUOUS FLUOROSCOPY ONLY)	
	2,731.00 APPROX. (DURING STANDBY)	

10–07–11

STRUCTURAL NOTES

CUSTOMER/CONTRACTOR IS RESPONSIBLE FOR THE FOLLOWING UNLESS OTHERWISE NOTED.

A. THESE SITE PLANS ARE INTENDED TO DEPICT ONLY A CONCEPT OF THE STRUCTURE REQUIRED FOR THE TOSHIBA EQUIPMENT. THE DESIGN OF ALL STRUCTURAL ELEMENTS MUST BE SPECIFIED BY A LICENSED STRUCTURAL ENGINEER IN ACCORDANCE WITH TOSHIBA SPECIFICATIONS AND ALL APPLICABLE CODES.

B. THE CUSTOMER/CONTRACTOR SHALL FIELD VERIFY ALL EXISTING AND PROPOSED DIMENSIONS AND SITE CONDITIONS PRIOR TO COMMENCING CONSTRUCTION.

C. THE TOSHIBA INSTALLATION PROJECT MANAGER SHALL BE NOTIFIED IN WRITING OF ANY FIELD CONDITIONS ENCOUNTERED THAT ARE CONTRADICTORY TO THOSE SHOWN IN THE TOSHIBA SITE PLANS.

D. THE DEMOLITION, FABRICATION AND ERECTION OF SUPPORT STRUCTURES FOR TOSHIBA EQUIPMENT SHALL BE PERFORMED BY THE CUSTOMER/CONTRACTOR IN ACCORDANCE WITH THE DESIGN AND SPECIFICATIONS SET FORTH BY THE STRUCTURAL ENGINEER OF RECORD.

E. DUE TO THE DYNAMIC NATURE OF THE LOAD, BOTH HORIZONTAL AND VERTICAL ACCELERATIONS SHOULD BE INCLUDED IN THE DESIGN CALCULATIONS FOR THE SUPPORT STRUCTURE AS WELL AS ANCHORING AND THRU–BOLTING FOR THE TOSHIBA EQUIPMENT (FOR EXAMPLE, CEILING INJECTORS OR MONITORS).

F. IN THE INTEREST OF SAFETY, TOSHIBA RESERVES THE RIGHT TO DELAY INSTALLATION COMMENCEMENT UNTIL RECEIPT OF STRUCTURAL DESIGN DRAWINGS STAMPED BY THE STRUCTURAL ENGINEER OF RECORD.

FLOOR MOUNTING NOTES

G. UNDER NO CIRCUMSTANCE SHOULD THE TOSHIBA EQUIPMENT BE INSTALLED ON A WOOD FLOOR.

H. THE FLOOR MUST USE CONCRETE WITH A LOAD STRENGTH OF AT LEAST 2,560 PSI (1,760 M/cm²) OVER THE ENTIRE FLOOR SURFACE.

I. THE DEPTH OF CONCRETE MUST BE AT LEAST 5 1/8" (130 mm).

J. THE LEVELNESS SLOPE IN THE LONGITUDINAL DIRECTION SHOULD BE LESS THAN 1/16" OVER 5'–9" RUN (1 mm OVER 1,100 mm).

K. THE LEVELNESS SLOPE IN THE LATERAL DIRECTION SHOULD BE LESS THAN 1/16" OVER 3'–9" RUN (1 mm OVER 713 mm).

L. EVENNESS OF FLOOR UNDER BASE SHOULD BE LESS THAN 1/32" (1 mm).

M. IF EPOXY LEVELING OF THE FLOOR IS REQUIRED FOR THE FLOOR MOUNTED EQUIPMENT, IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO SUPPLY AND PERFORM THIS TASK WITH ASSISTANCE OF TOSHIBA. THE EPOXY BASE MUST HAVE A CURE RATING OF 15,000 PSI MINIMUM.

CEILING STRUCTURAL SYSTEM

N. CEILING UNISTRUT SUPPORT STRUCTURES TO BE DESIGNED BY OTHERS BASED ON SPECIFICATIONS SHOWN ON TOSHIBA SITE PLANS.

O. UNISTRUT OR EQUIVALENT CHANNEL SUPPORT SYSTEM TO BE SUPPLIED AND INSTALLED BY CUSTOMER/CONTRACTOR.

P. IN ORDER TO AVOID COLLISION WITH MOVEABLE TOSHIBA CEILING MOUNTED EQUIPMENT, ALL CEILING FIXTURES SUCH AS LAMPS, SMOKE DETECTORS, SPRINKLERS, ETC. MUST BE FLUSH MOUNTED.

Q. CONTRACTOR TO SUPPLY M10 UNISTRUT NUTS.

ACCESS NOTES

R. CUSTOMER/CONTRACTOR TO PROVIDE TWO 18" X 18" CEILING ACCESS PANELS FOR SERVICING OF CEILING MOUNTED EQUIPMENT WHEN INSTALLED ON HARD FINISHED CEILINGS. A MINIMUM CLEARANCE OF 12" ABOVE FINISHED CEILING IS REQUIRED IN THE AREA OF THE ACCESS PANELS.

UNISTRUT NOTE

S. UNISTRUT ARE TO BE P1001 OR EQUIVALENT, MOUNTED FLUSH WITH FINISHED CEILING. ALL UNISTRUT ARE TO BE MOUNTED PARALLEL AND LEVEL WITH A MAXIMUM DEVIATION OF 1/16". UNISTRUT IS TO BE CAPABLE OF SUPPORTING LOAD REQUIREMENTS OF TOSHIBA EQUIPMENT. UNISTRUT LOAD REQUIREMENTS AND DESIGN ARE THE RESPONSIBILITY OF THE STRUCTURAL ENGINEER OF RECORD.

10–07–11

SPECIAL NOTES

SPECIAL SEISMIC CERTIFICATION

A. WHERE SPECIAL SEISMIC CERTIFICATION IS REQUIRED BY CODE THE STRUCTURAL ENGINEER OF RECORD SHALL BE RESPONSIBLE FOR NOTIFYING TOSHIBA'S INSTALLATION PROJECT MANAGER IN WRITING OF THE SEISMIC PERFORMANCE CATEGORY (SPC) RATING OF THE BUILDING IN WHICH TOSHIBA EQUIPMENT IS TO BE INSTALLED. FOR INSTALLATIONS IN A BUILDING RATED SPC3 OR HIGHER TOSHIBA WILL APPLY SPECIAL SEISMIC CERTIFICATION LABELING PER CBC SECTION 1703.5.

B. THE FOLLOWING COMPONENTS HAVE SPECIAL SEISMIC CERTIFICATION:

B.A. OSP–0133–10
- TABLE CONTROL UNIT
- PULSED FLUOROSCOPY UNIT
- DTS 100S OTC OVERHEAD TUBE CRANE
- GENERATOR CONTROL PANEL
- WALL STAND POWER SUPPLY
- TW–420–T BUCKY STAND (AS APPLICABLE)
- TW–420 BUCKY STAND (AS APPLICABLE)
- GENERATOR CABINET
- IDI 1000F–1 SINGLE SUSPENSION
- KALARE X–RAY DIAGNOSTIC TABLE
- MONITOR
- KEYBOARD
- MOUSE

B.B OSP–0281–10
- SYSTEM CABINET
- MAIN PROCESSING UNIT
- TW–420–T–D TILTING BUCKY STAND (AS APPLICABLE)
- TW–420–D NON–TILTING BUCKY STAND (AS APPLICABLE)

B.C. OSP–0133–10
- POWER DISTRIBUTION UNIT (AS APPLICABLE)

C. WEIGHTS SHOWN ON THE OSP DOCUMENTS ARE GENERALLY A MAXIMUM AND THE WEIGHTS SHOWN ON THESE SITE PLANS REFLECT THE EQUIPMENT AS ORDERED.

08–19–13

ELECTRICAL REQUIREMENTS FOR KALARE SYSTEM WITH PDU

SUPPLY CONFIGURATION: 3 PHASE DELTA CONNECTED, 86 kVA SERVICE

SUPPLY VOLTAGE: 480V – 80 AMP

10–07–11

ELECTRICAL NOTES

CUSTOMER/CONTRACTOR IS RESPONSIBLE FOR THE FOLLOWING UNLESS OTHERWISE NOTED.

A. THESE SITE PLANS ARE INTENDED TO DEPICT ONLY A CONCEPT OF THE ELECTRICAL REQUIREMENTS FOR THE TOSHIBA EQUIPMENT. THE DESIGN OF ALL ELECTRICAL ELEMENTS MUST BE SPECIFIED BY A LICENSED ELECTRICAL ENGINEER IN ACCORDANCE WITH TOSHIBA SPECIFICATION AND ALL APPLICABLE CODES.

B. IN ACCORDANCE WITH NEC ARTICLE 517–72(B), THE EQUIPMENT CIRCUIT BREAKER(S) MUST BE LOCATED SO THAT THEY SHALL BE OPERABLE FROM A LOCATION READILY ACCESSIBLE FROM THE CONTROL AREA. IF THIS IS IMPOSSIBLE OR IMPRACTICAL, THE USE OF A SHUNT TRIP TYPE BREAKER WILL BE NECESSARY TO SATISFY THIS REQUIREMENT. THE EMERGENCY OFF BUTTON FOR THE SHUNT TRIP SHOULD BE LOCATED IN THE CONTROL AREA.

C. THE CUSTOMER/CONTRACTOR SHALL SUPPLY AND INSTALL ALL CIRCUIT BREAKERS, CONDUITS, JUNCTION BOXES, DUCTS, A/C POWER RECEPTACLES, THERMOSTATS, EMERGENCY OFF BUTTONS, AND 12 VOLT POWER, ETC. SPECIFIED HEREIN.

D. THE TOSHIBA SITE PLANS DO NOT SPECIFY ELECTRICAL REQUIREMENTS FOR EQUIPMENT NOT SOLD BY TOSHIBA. THESE REQUIREMENTS MUST BE OBTAINED BY THE VENDOR.

E. TOSHIBA WILL SUPPLY INTERCONNECTING CABLES FOR THE TOSHIBA EQUIPMENT. TOSHIBA WILL INSTALL IF LOCAL TRADE LABOR PERMITS.

F. EXCEPT FOR THEIR USE IN POWER LINE CONNECTIONS TO EQUIPMENT CABINETS, FLEXIBLE CONDUIT SHALL NOT BE USED IN THIS INSTALLATION. ONLY FACTORY CONDUIT ELBOWS SHALL BE USED.

G. DUCT WORK SHALL BE PROVIDED WITH SWEEP ELBOWS.

H. ALL JUNCTION BOXES AND DUCTS THAT PENETRATE THE FLOOR SHALL BE WATERPROOF TYPE AND PROVIDED WITH GASKETED WATERPROOF COVERS. ALL FLOOR JUNCTION BOXES AND DUCT COVERS SHALL BE CAPABLE OF SUPPORTING A 200 LB. CONCENTRATED LOAD.

I. ALL ACCESS HOLES ARE TO BE MADE IN THE DUCT WORK PER TOSHIBA SITE PLANS. ACCESS HOLES MUST BE GROMMETED WITH NON–CHAFING MATERIAL SUCH AS RUBBER/PLASTIC OR SLEEVED WITH A SHORT NIPPLE WITH NON–ABRASIVE BUSHINGS.

J. ALL CHASE OPENINGS SHALL HAVE PLASTIC/NYLON BUSHINGS.

K. ALL WALL DUCT WORK SHALL HAVE A MINIMUM OF THREE COMPARTMENTS. TRANSITIONS SUCH AS HORIZONTAL TO VERTICAL WALL DUCT OR JUNCTION BOXES MUST BE REVIEWED ON AN INDIVIDUAL BASIS WITH THE INSTALLATION PROJECT MANAGER. LOCAL CODES. MAY REQUIRE THE USE OF CROSS–OVER TUNNELS OR OTHER SUCH DEVICES TO MAINTAIN CABLE SEPARATION.

L. ALL DUCT WORK MAKING A 90 DEGREE ANGLE MUST BE CHAMFERED FOR CABLE ACCESS.

M. ALL DUCT AND CONDUITS SHALL BE ELECTRICALLY BONDED AS A GROUNDING PATH IN ACCORDANCE WITH NEC ARTICLE 517–13(B).

N. CUSTOMER/CONTRACTOR SHALL SUPPLY AND INSTALL GREENLEE NYLON MEASURING PULL STRING OR EQUIVALENT IN ALL CONDUITS AND CLOSED DUCT WORK.

O. ALL CONDUIT RUNS MUST TAKE THE SHORTEST MOST DIRECT ROUTE POSSIBLE.

P. CONDUIT RUNS MAY HAVE A MAXIMUM OF (3) 90° BENDS.

Q. 110VAC GROUNDED OUTLETS SHALL BE PROVIDED ON WALLS NEAR THE TOSHIBA EQUIPMENT FOR USE DURING EQUIPMENT SERVICE.

R. CUSTOMER/CONTRACTOR MUST SUPPLY AND INSTALL ALL INCOMING POWER CABLES FROM CIRCUIT BREAKER(S) TO TOSHIBA EQUIPMENT CONNECTION POINT. CABLE TYPE MUST BE MTW. MULTI–STRAND COPPER – NO ALUMINUM IS PERMITTED. CABLE SIZE MUST BE IN ACCORDANCE WITH TOSHIBA POWER QUALITY REQUIREMENTS.

S. CUSTOMER/CONTRACTOR IS TO SUPPLY AND INSTALL ALL NECESSARY HARDWARE TO ENCLOSE INCOMING POWER CABLES IN FLEXIBLE WATER TIGHT CONDUIT FROM CIRCUIT BREAKER(S) TO TOSHIBA EQUIPMENT CABINET(S).

T. ANY CHANGES IN THE LOCATION OR TYPE OF CONDUIT, DUCT WORK, JUNCTION BOXES, ETC. MUST BE SUBMITTED IN WRITING TO THE TOSHIBA INSTALLATION PROJECT MANAGER FOR APPROVAL.

U. A SEPARATE CIRCUIT, FED FROM THE FACILITY RADIOLOGY PANEL OR A MAIN SERVICE PANEL IS REQUIRED. USE OF A SUB PANEL WITH LOADS SUCH AS ELEVATORS, HVAC, MOTORS, ETC. IS NOT PERMITTED.

06–01–12

TOSHIBA
Leading Innovation »»

REV	DATE	DESCRIPTION	INT

TRISTAN ASSOCIATES

(F/R ROOM – KALARE)

4518 UNION DEPOSIT RD.
HARRISBURG, PA 17111

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DATE: 10–18–13

SCALE: NOT TO SCALE

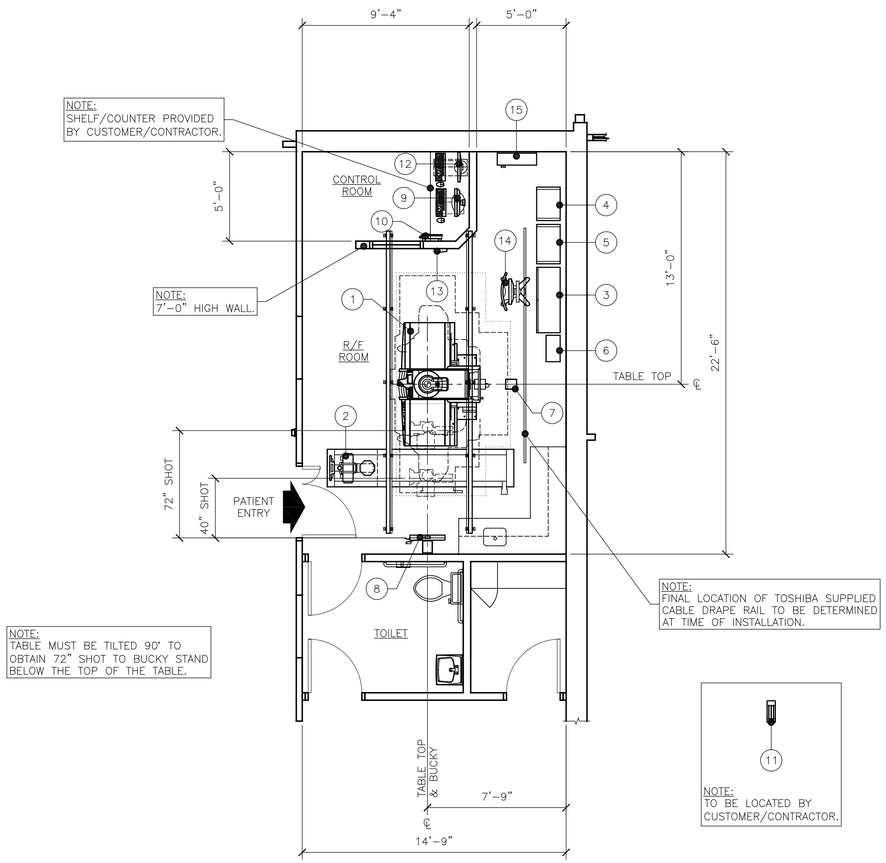
PLANNER: M.M.P.

SID NO: 30005332

PROJECT NO.
130013976XRP

GN

FOR REFERENCE ONLY. NOT TO BE USED FOR CONSTRUCTION PURPOSES.



PRELIMINARY EQUIPMENT LAYOUT

0 1' 2' 4' 8' 16'

EQUIPMENT LEGEND

ITEM	ELEC. SYM.	ITEM DESCRIPTION SUPPLIED AND INSTALLED BY TOSHIBA	BTU/HR	WEIGHT	REF.
1	TBL	DUA-450F X-RAY DIAGNOSTIC TABLE (WEIGHT INCLUDES 350 LB. PATIENT)	1,239	4,170	1/A2
2	OTC	DST-100S CEILING SUSPENDED TUBE SUPPORT W/DSR/242B RAILS AND CARRIAGE	–	896	2/A2
3	XRC	KXO-80XD GENERATOR CONTROL CABINET	2,116	900	3/A2
4	SYS	SYSTEM CABINET ("RCU" WITHIN "SYS" CABINET)	–	420	4/A2
5	GCU	XKGC-80XM FLUORO CONTROL CABINET	–	238	5/A2
6	TCU	TABLE CONTROL UNIT	–	130	6/A2
7	TCS	TABLE CABLE STAND	–	–	1/A2
8	VBS	TW-420-R VERTICAL BUCKY STAND (RIGHT LOAD)	–	415	8/A2
9	MPU	MAIN PROCESSING UNIT (MONITOR, PC, & KEYBOARD)	–	43	3/A3
10	GCP	KXO-80XD GENERATOR CONTROL PANEL (WALL MOUNTED)	–	17	7/A2
ITEM	ELEC. SYM.	OPTIONAL ITEM DESCRIPTION SUPPLIED AND INSTALLED BY TOSHIBA	BTU/HR	WEIGHT	REF.
11	PBC	DRX WIRELESS PANEL BATTERY CHARGER	–	5	4/A3
12	DRX	DRX WORKSTATION (WITH MONITOR, KEYBOARD, MOUSE)	–	90	5/A3
13	WAP	DIGITAL PANEL WIRELESS ACCESS POINT	–	4	–/–
14	CART	XAMC-100L MONITOR CART (SINGLE MONITOR)	–	109	6/A3
ITEM	ELEC. SYM.	ITEM DESCRIPTION – SUPPLIED BY TOSHIBA & INSTALLED BY CUSTOMER / CONTRACTOR	BTU/HR	WEIGHT	REF.
15	PDU	POWER DISTRIBUTION UNIT	193	203	2/A3

SITE PLAN APPROVAL

PLEASE REVIEW, SIGN AND RETURN THIS SET TO HEADQUARTERS BEFORE FINAL PLANS. IF THERE ARE ANY CHANGES, PLEASE INDICATE ACCORDINGLY ON THIS SET.

CUSTOMER: DATE:

SALES: DATE:

I.P.M.: DATE:

TOSHIBA
Leading Innovation »»

REV	DATE	DESCRIPTION	INT

TRISTAN ASSOCIATES

(F/R ROOM – KALARE)

4518 UNION DEPOSIT RD.
HARRISBURG, PA 17111

DATE: 10-18-13

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

PLANNER: M.M.P.

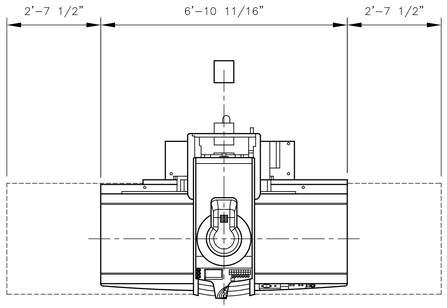
SID NO: 30005332

PROJECT NO.
130013976XRP

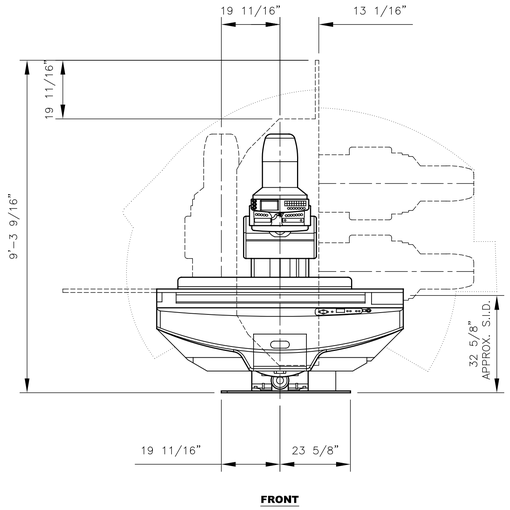
A1

FOR REFERENCE ONLY. NOT TO BE USED FOR CONSTRUCTION PURPOSES.

TBL
HEAT OUTPUT (BTU'S)
1,239
WEIGHT (LBS)
4,170



PLAN



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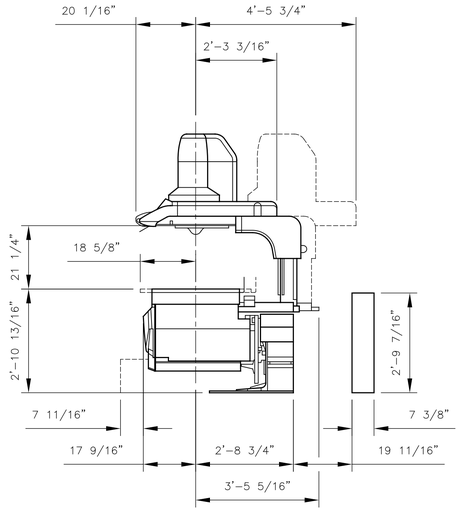
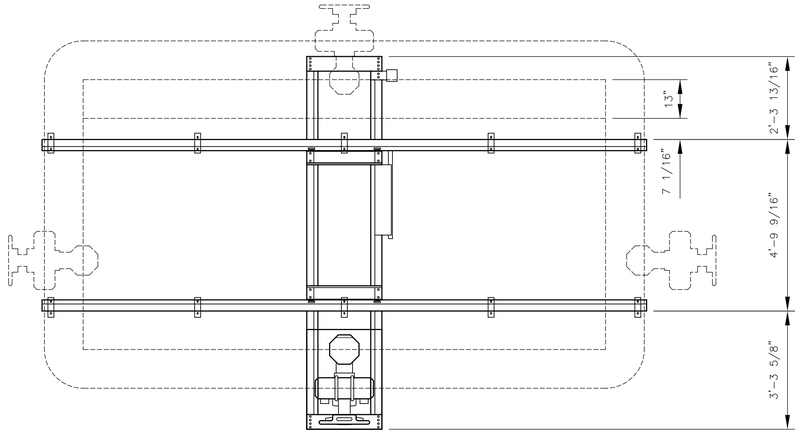


SIDE

1 KALARE DUA-450F X-RAY DIAGNOSTIC TABLE

SCALE: 1/2" = 1'–0" 08–19–13

OTC
HEAT OUTPUT (BTU'S)
–
WEIGHT (LBS)
896



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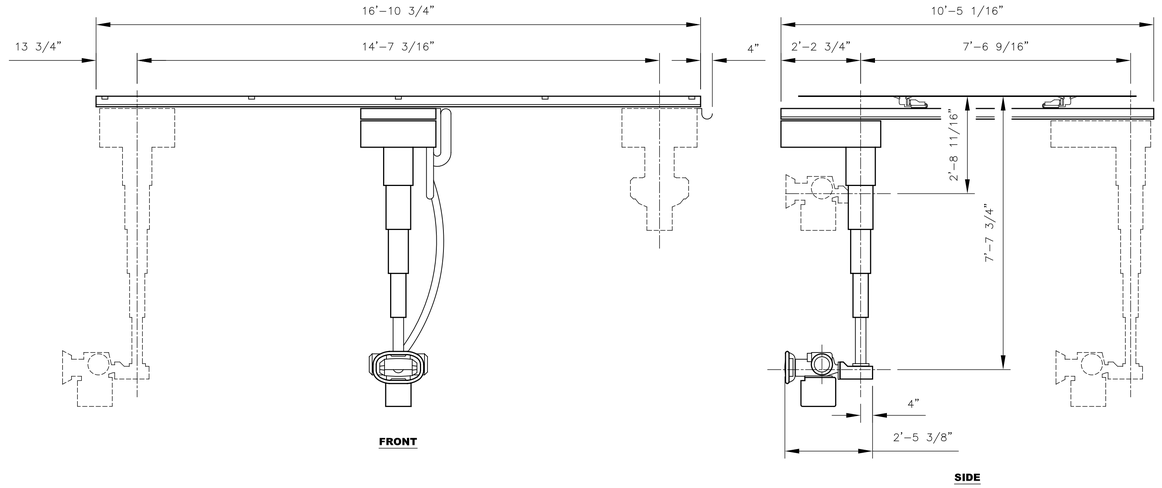
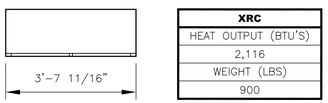


FRONT SIDE

2 CEILING SUSPENDED X-RAY TUBE SUPPORT DST-100S WITH DSR-242B LONGITUDINAL RAILS

SCALE: 1/2" = 1'–0" 08–19–13

XRC
HEAT OUTPUT (BTU'S)
2,116
WEIGHT (LBS)
900



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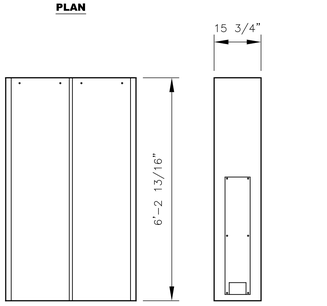
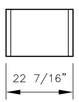


FRONT SIDE

3 KXO-80XD GENERATOR CABINET

SCALE: 1/2" = 1'–0" 08–19–13

SYS
HEAT OUTPUT (BTU'S)
–
WEIGHT (LBS)
420



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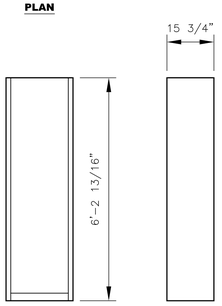
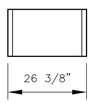


FRONT SIDE

4 KXO-80XD SYSTEM CABINET

SCALE: 1/2" = 1'–0" 08–19–13

GCU
HEAT OUTPUT (BTU'S)
–
WEIGHT (LBS)
238



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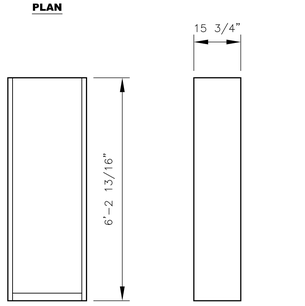
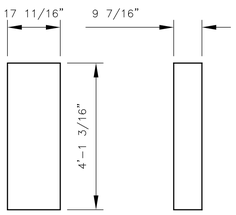


FRONT SIDE

5 XKGC-80XM FLUORO CONTROL

SCALE: 1/2" = 1'–0" 08–19–13

TCU
HEAT OUTPUT (BTU'S)
–
WEIGHT (LBS)
130

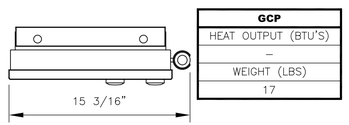


FRONT SIDE

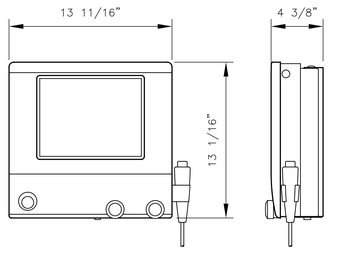
6 TABLE CONTROL UNIT

SCALE: 1/2" = 1'–0" 08–19–13

GCP
HEAT OUTPUT (BTU'S)
–
WEIGHT (LBS)
17



PLAN



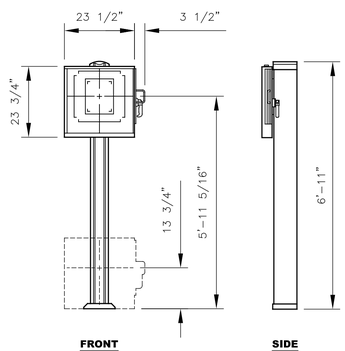
FRONT SIDE

7 KXO-80XD CONTROL PANEL

SCALE: 2" = 1'–0" 08–19–13

VBS
HEAT OUTPUT (BTU'S)
–
WEIGHT (LBS)
415

PLAN



FRONT SIDE

8 VERTICAL BUCKY STAND

SCALE: 1/2" = 1'–0" 08–19–13

TOSHIBA
Leading Innovation

REV	DATE	DESCRIPTION	INT

TRISTAN ASSOCIATES

(F/R ROOM – KALARE)

4518 UNION DEPOSIT RD.
HARRISBURG, PA 17111

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DATE: 10–18–13

SCALE: AS NOTED

PLANNER: M.M.P.

SID NO: 30005332

PROJECT NO.
130013976XRP

A2

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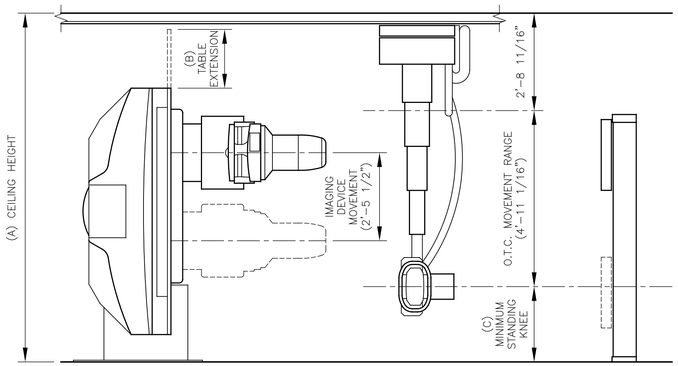


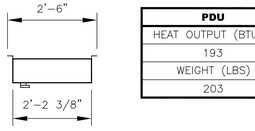
NOTE:
ALL MEASUREMENTS SHOWN REQUIRE THE KALARE TABLE TO BE CENTERED WITHIN LONGITUDINAL RAILS. IF THE TABLE IS UNDERNEATH A RAIL, THEN THE DEPTH OF THE RAIL (3 9/16") MUST BE SUBTRACTED FROM THE CEILING HEIGHT.

NOTE:
WHEN TABLE EXTENSION IS LIMITED DUE TO LESS THAN RECOMMENDED CEILING HEIGHTS, COVERAGE OF IMAGING DEVICE ON TABLE IS REDUCED BY THE SAME AMOUNT. STANDARD COVERAGE IS 2'-5 1/2" (750 mm RANGE OF IMAGING DEVICE) + 1'-7 11/16" (500 mm HEAD END TABLE EXTENSION) = 4'-1 3/16".

NOTE:
IF CEILING HEIGHT IS LESS THAN RECOMMENDED, TABLE MOVEMENT LIMITATIONS MAY BE NECESSARY.

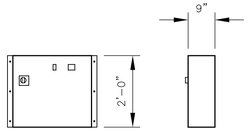
CEILING KIT	(A) CEILING HEIGHT		TABLE TOP S.I.D. MAXIMUM AT 0 DEGREES	(B) TABLE EXTENSION AT 90 DEGREES	(C) STANDING KNEE MINIMUM	NOTES
	ABOVE	AT OR BELOW				
XGST-105A	9'-7 1/2"	10'-0"	48" (40 1/8" W/KIT)	19 11/16"	23 3/4" (15 7/8" W/KIT)	
NONE	9'-5 3/8"	9'-7 1/2"	45 7/8" (38" W/KIT)	19 11/16"	21 5/8" (13 3/4" W/KIT)	40" S.I.D. TO TABLE TOP IS NOT ATTAINABLE WITH HIGH CEILING KIT.
NONE	9'-2"	9'-5 3/8"	42 1/2"	15 3/4"	18 1/4"	
NONE	9'-1 7/16"	9'-2"	41 15/16"	15 3/4"	17 11/16"	9'-2" IS RECOMMENDED CEILING HEIGHT.
XGST-104A	8'-9 1/2"	9'-1 7/16"	38" (42 15/16" W/KIT)	11 13/16"	13 3/4" (18 11/16" W/KIT)	40" S.I.D. TO TABLE TOP IS NOT ATTAINABLE WITHOUT LOW CEILING KIT.
XGST-104A	8'-7 9/16"	8'-9 1/2"	36" (40 15/16" W/KIT)	9 13/16"	11 13/16" (16 3/4" W/KIT)	40" S.I.D. TO TABLE TOP IS NOT ATTAINABLE WITHOUT LOW CEILING KIT. COLLIMATOR CAN COLLIDE WITH THE FLOOR.

1 CEILING HEIGHT AND SYSTEM LIMITATIONS
SCALE: 1/2" = 1'-0" 10-07-11



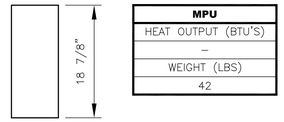
PLAN

PDU
HEAT OUTPUT (BTU'S)
193
WEIGHT (LBS)
203



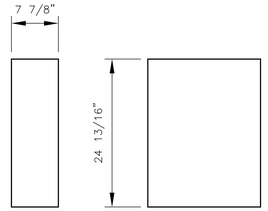
FRONT SIDE

2 POWER DISTRIBUTION UNIT
SCALE: 1/2" = 1'-0" 03-11-13



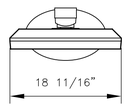
PLAN

MPU
HEAT OUTPUT (BTU'S)
–
WEIGHT (LBS)
42



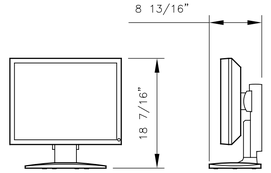
FRONT SIDE

3 MAIN PROCESSING UNIT
SCALE: 1" = 1'-0" 03-11-13



PLAN

LCD MONITOR
HEAT OUTPUT (BTU'S)
–
WEIGHT (LBS)
24



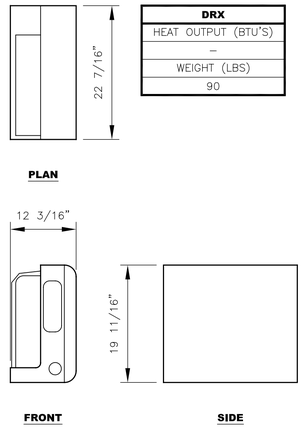
FRONT SIDE

4 DRX BATTERY CHARGER
SCALE: 1" = 1'-0" 03-11-13

PLAN

PBC
HEAT OUTPUT (BTU'S)
–
WEIGHT (LBS)
5

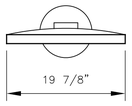
FRONT SIDE



PLAN

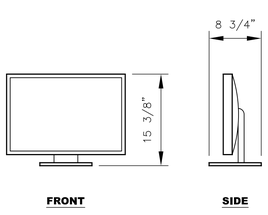
FRONT SIDE

5 DRX WORKSTATION AND MONITOR
SCALE: 1" = 1'-0" 03-11-13



PLAN

LCD MONITOR
HEAT OUTPUT (BTU'S)
–
WEIGHT (LBS)
–

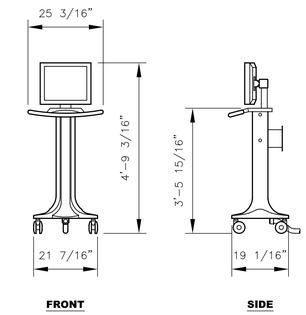


FRONT SIDE

6 XAMC-100L SINGLE MONITOR CART
SCALE: 1/2" = 1'-0" 03-11-13

PLAN

CART
HEAT OUTPUT (BTU'S)
–
WEIGHT (LBS)
109



FRONT SIDE

TOSHIBA
Leading Innovation

REV	DATE	DESCRIPTION	INT

TRISTAN ASSOCIATES

(F/R ROOM – KALARE)

4518 UNION DEPOSIT RD.
HARRISBURG, PA 17111

THESE TOSHIBA PLANS ARE FOR INFORMATIONAL PURPOSES ONLY AND SHALL NOT BE USED FOR ANY PURPOSE OTHER THAN THAT AGREED UPON BETWEEN TOSHIBA AND THE CUSTOMER. THESE SITE PLANS ARE NOT TO BE USED FOR CONSTRUCTION PURPOSES.

DATE: 10-18-13

SCALE: AS NOTED

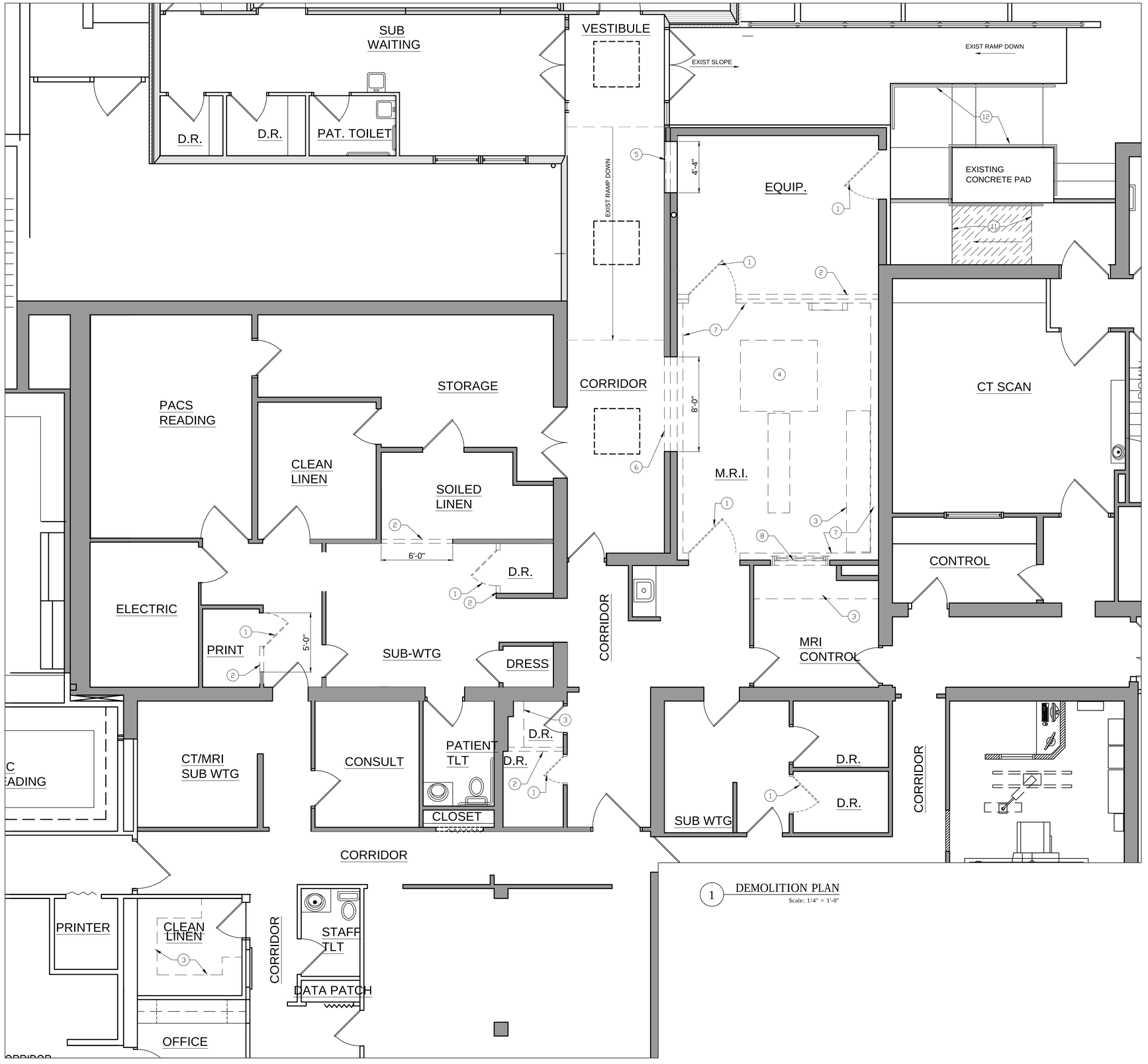
PLANNER: M.M.P.

SID NO: 30005332

PROJECT NO.
130013976XRP

A3

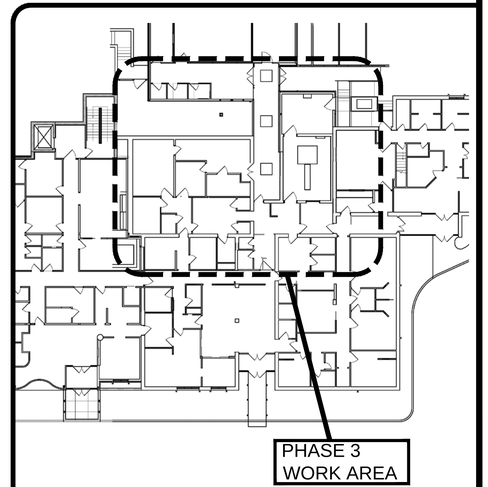
FOR REFERENCE ONLY. NOT TO BE USED FOR CONSTRUCTION PURPOSES.



1 DEMOLITION PLAN
Scale: 1/4" = 1'-0"

DEMOLITION NOTES

1. REMOVE EXISTING DOOR & FRAME.
2. REMOVE EXISTING PARTITION.
3. REMOVE EXISTING MILLWORK.
4. EXISTING MRI TO BE REMOVED BY OTHERS.
5. PROVIDE OPENING FOR NEW 4'-0" X 7'-0" DOOR.
6. PROVIDE 8'-0" X 8'-0" OPENING FOR NEW MRI EGRESS.
7. REMOVE EXISTING SHIELDED BOX PARTITIONS.
8. REMOVE EXISTING CONTROL WINDOW.
9. REMOVE EXISTING RAISED FLOOR TILE & GRID SYSTEM.
10. REMOVE EXISTING ACT CEILING & GRID.
11. REMOVE EXISTING CONCRETE RAMP.
12. MODIFY EXISTING / ADD NEW HANDRAILS AS REQUIRED TO SERVICE & PROTECT NEW HVAC EQUIPMENT TO BE INSTALLED ON EXISTING CONCRETE PAD..



M PROJECT MAP
NOT TO SCALE

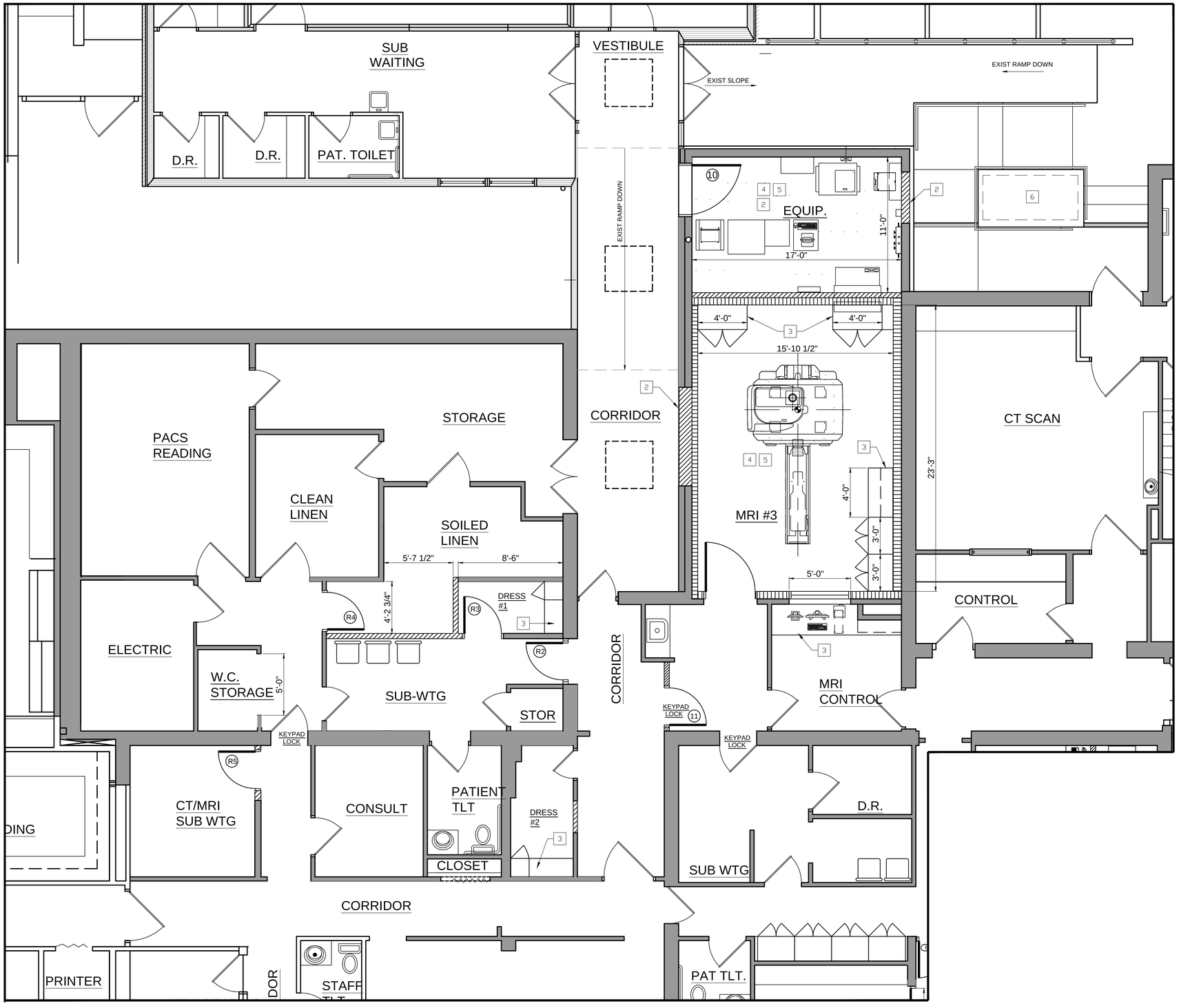
Revision/Date	By

TRADE EASTERN, INC.
ARCHITECTS • ENGINEERS • BUILDERS
53 GRAVEL STREET WILKES-BARRE, PA. 18705
PHONE 570-287-3178 FAX NO. 570-287-5025

PINNACLE HEALTH
UNION DEPOSIT MRI #3
4518 UNION DEPOSIT RD., HARRISBURG, PA 17110
DEMOLITION PLAN

Drawn	K.P.W.
Checked	D.F.T.
Start Date	10/07/2013
Scale	¼" = 1'-0"
Job No.	13-5456
Sheet	

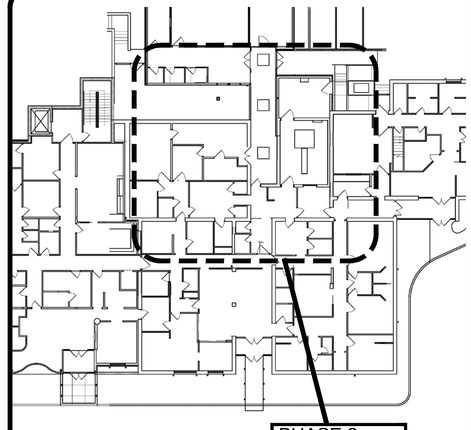
D-1
PHASE 2



1 NEW FLOOR PLAN
Scale: 1/4" = 1'-0"

CONSTRUCTION NOTES

1. INFILL OPENING WITH FINISHES TO MATCH EXISTING.
2. NEW RAISED FLOOR IN MRI EQUIPMENT ROOM .
3. NEW MILLWORK.
4. NEW FLOOR COVERING & BASE.
5. NEW ACT CEILING & GRID
6. NEW HVAC UNIT, SEE MECHANICAL PLANS



Revision/Date	By

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PHONE 570•287•3178 FAX NO. 570•287•5025

REGISTERED ARCHITECT
DOUGLAS F. TRUKOWER
COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
DOUGLAS F. TRUKOWER
No. 18247-E

PINNACLE HEALTH
UNION DEPOSIT MRI #3
4518 UNION DEPOSIT RD., HARRISBURG, PA 17110
NEW FLOOR PLAN

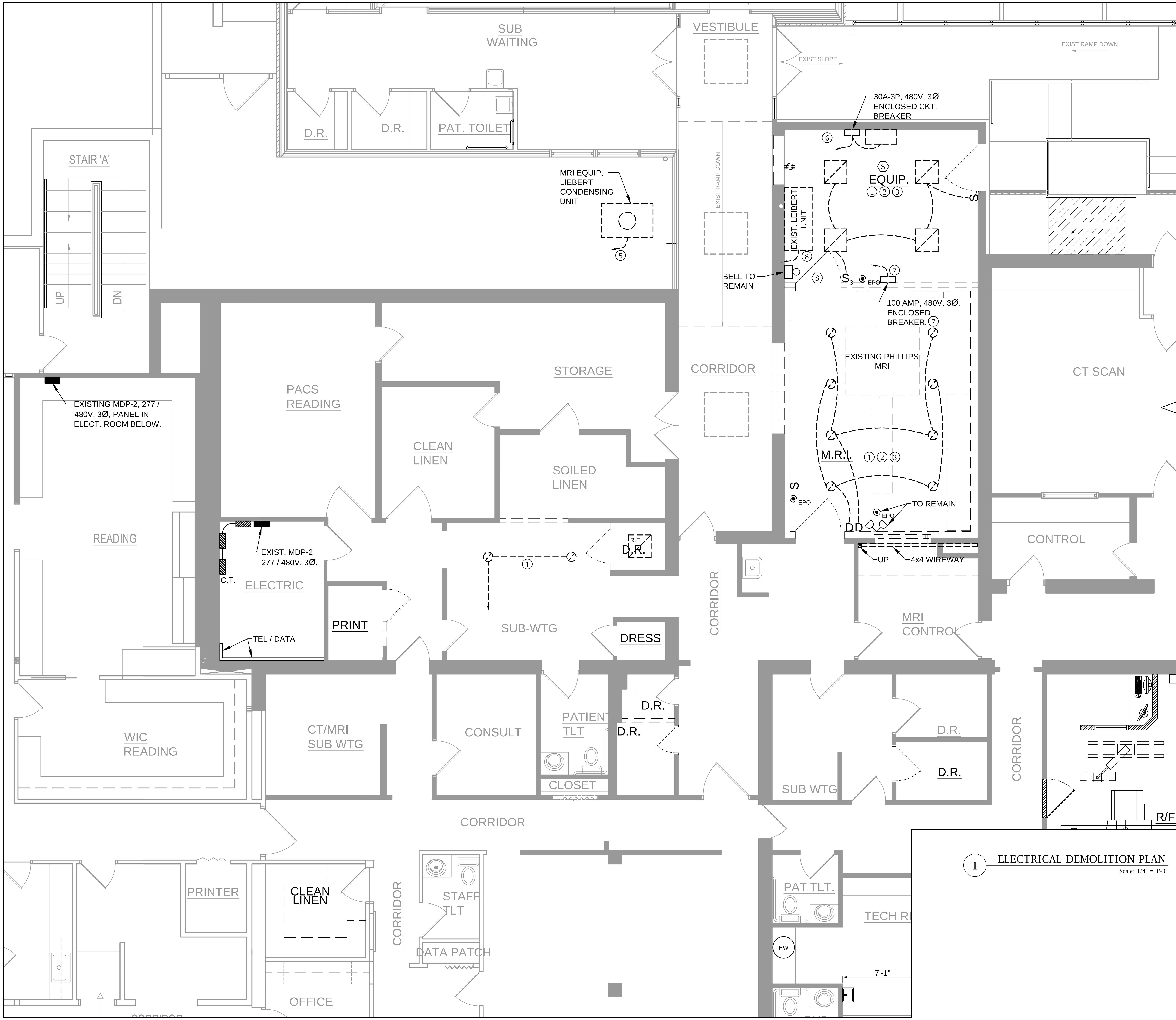
Drawn	K.P.W.
Checked	D.F.T.
Start Date	10/07/2013
Scale	¼" = 1'-0"
Job No.	13-5456
Sheet	A-1

PHASE 2

ELECTRICAL LEGEND	
SYMBOL	DESCRIPTION
	RECESSED ROUND LIGHT FIXTURE, TYPE AS NOTED.
	SURFACE OR CHAIN HUNG FLUORESCENT LIGHTING FIXTURE, TYPE AS NOTED.
F L	FAN / LIGHT COMBINATION.
	2x2 OR 2x4 FLUORESCENT LIGHTING FIXTURE, TYPE AS NOTED.
	DUPLEX CONVENIENCE RECEPTACLE 24" A.F.F., U.N.O.
	DOUBLE DUPLEX CONVENIENCE RECEPTACLE 24" A.F.F., U.N.O.
S	SWITCH SINGLE POLE
S_3	SWITCH 3-WAY
D	DIMMER SWITCH
T.D.	TELEPHONE, DATA OR TELEPHONE / DATA AS NOTED. EXTEND 3/4" C TO CEILING CAVITY. PROVIDE TEL / DATA OUTLETS AND HOMERUN CAT5 CABLE TO SERVER ROOM, TERMINATE CABLES BOTH ENDS.
EPO	EMERGENCY OFF BUTTON
	DISCONNECT SWITCH, TYPE AS NOTED.
	MOTOR, TYPE AS NOTED.
S_M	MANUAL MOTOR STARTER SWITCH
F	FIRE ALARM PULL STATION
F	FIRE ALARM AUDIO / VISUAL
F	FIRE ALARM VISUAL ONLY
S	SMOKE DETECTOR
S	SPEAKER
	HOMERUN TO PANEL AS NOTED
	BRANCH WIRING
	EXIST LIGHTING FIXTURE ARROWS AS INDICATED.
B.U.	EMERGENCY BATTERY UNIT WITH 2 UNIT MOUNTED HEADS. CONNECT TO UNSWITCHED LOCAL LIGHTING CIRCUIT.
	REMOTE MOUNTED EMERGENCY HEADS.
EM	EMERGENCY
R.E.	REUSE EXISTING OR RELOCATED EXISTING.

DEMOLITION NOTES:

1. REMOVE ALL EXISTING LIGHTING FIXTURES AND WIRING SHOWN DOTTED. BRANCH CIRCUIT WIRING TO REMAIN AND REUSED WHERE APPLICABLE.
2. REMOVE EXISTING SWITCHES, DIMMERS, SWITCH LEGS AND EPO SWITCHES WHERE SHOWN DOTTED.
3. REMOVE RECEPTACLES, DATA AND TELEPHONE OUTLETS SHOWN DOTTED. RELOCATE WHERE NOTED. REUSE BRANCH WIRING WHERE APPLICABLE. MAINTAIN CONTINUITY TO DEVICES ON CIRCUITS TO REMAIN.
4. RELOCATE EMERGENCY LIGHTING AND FIRE ALARM DEVICES WHERE NOTED.
5. REMOVE EXISTING FEED TO CONDENSING UNIT FOR THE LIEBERT UNIT.
6. REMOVE EXISTING BREAKER AND FEED FOR NESLAB CHILLER FOR EXISTING MRI.
7. REMOVE EXISTING BREAKER AND FEED FOR EXISTING MRI.



1 ELECTRICAL DEMOLITION PLAN
Scale: 1/4" = 1'-0"

Revision/Date	By

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ARCHITECTS • ENGINEERS • BUILDERS
53 GRAVEL STREET WILKES-BARRE, PA. 18705
PHONE 570-287-3178 FAX NO. 570-287-5025

PINNACLE HEALTH
UNION DEPOSIT MRI #3
4518 UNION DEPOSIT RD., HARRISBURG, PA 17110
ELECTRICAL DEMOLITION PLAN

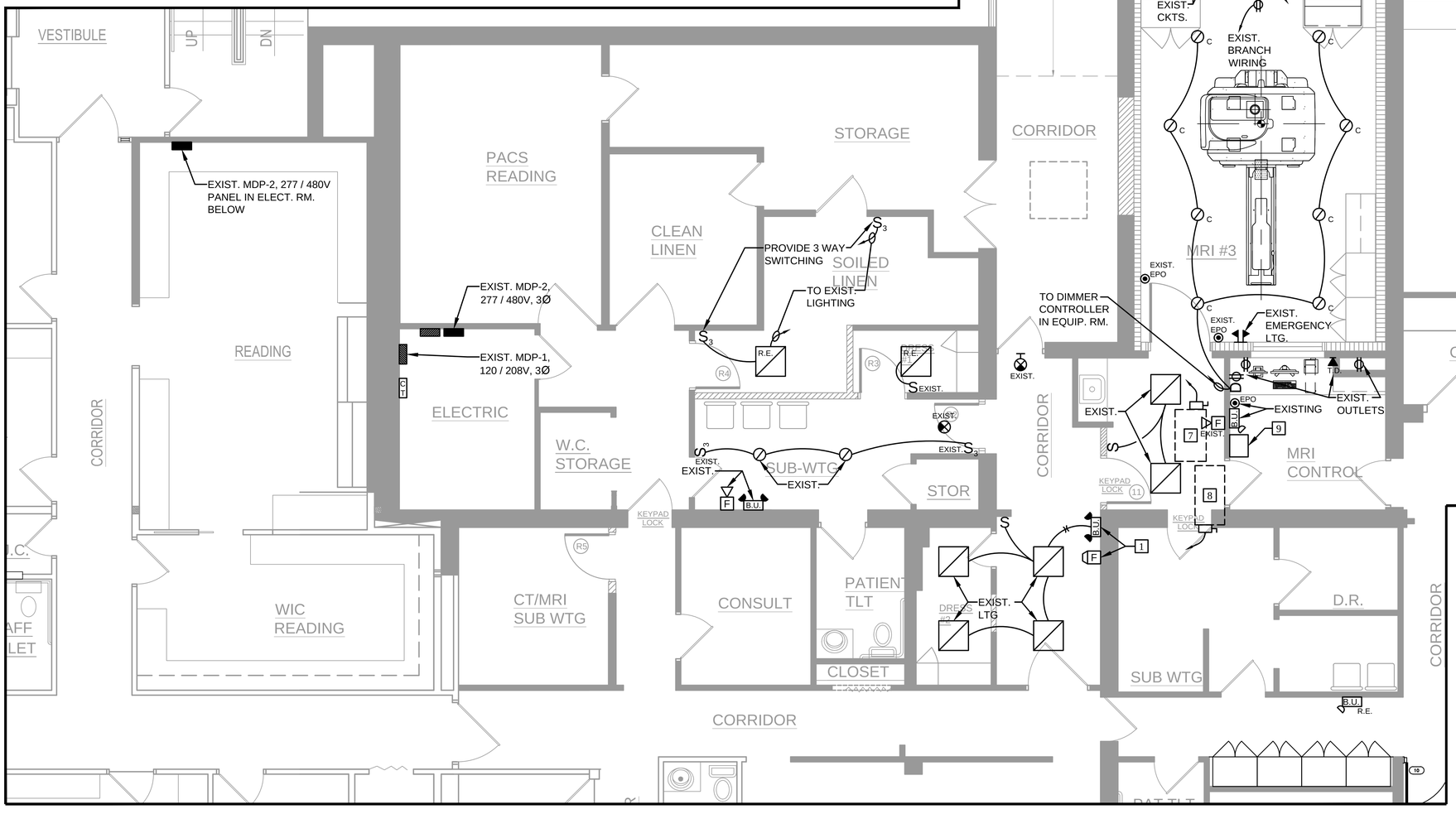
Drawn	K.P.W. / J.B.P
Checked	D.F.T.
Start Date	10/07/2013
Scale	1/4" = 1'-0"
Job No.	13-5456
Sheet	ED-1 PHASE 2

GENERAL NOTES:

1. PROVIDE NEW LIGHTING FIXTURES, TYPE AS NOTED, WHERE INDICATED ON PLAN.
2. RELOCATE EXISTING FIXTURES WHERE NOTED BY 'R.E.', CLEAN AND RELAMP FIXTURES.
3. RELOCATE EXISTING FIRE ALARM DEVICES AND EMERGENCY LIGHTING WHERE INDICATED ON PLAN BY 'R.E.' AND PROVIDE NEW DEVICES AS REQUIRED. RECONNECT INTO EXISTING FIRE ALARM AND EMERGENCY LIGHTING SYSTEMS WHERE INDICATED PROVIDE NEW EXIT LIGHTS TO MATCH EXISTING.
4. REUSE EXISTING BRANCH WIRING AND CIRCUITS WHERE APPLICABLE. NEW WIRING SHALL BE MINIMUM 2# 12 + 1# 12G, HG MC CABLE UNLESS OTHERWISE NOTED.
5. ALL ELECTRICAL WORK SHALL CONFORM TO THE APPLICABLE NATIONAL ELECTRIC CODE, STATE AND LOCAL CODES.
6. SEE TOSHIBA TITAN DRAWINGS FOR THE REQUIRED JUNCTION BOXES, CABLE TRAYS, WIREWAYS, CONDUIT RUNS AND REQUIRED POWER AND CONTROL INTERCONNECT WIRING AND GROUNDING.
7. PROVIDE NEW DEVICES AND PLATES FOR ALL EXISTING DEVICES SHOWN TO REMAIN OR BE RELOCATED.
8. WHERE EXISTING BREAKERS ARE REPLACED WITH BREAKERS OF DIFFERENT AMPERAGE, PROVIDE NEW BREAKERS WITH SAME A.I.C. RATINGS.

CONSTRUCTION NOTES:

1. WHERE INDICATED PROVIDE AN EMERGENCY BATTERY UNIT W / 2 UNIT MOUNTED HEADS. SIMILAR TO EXISTING UNITS. CONNECT TO UNSWITCHED LOCAL LIGHTING CIRCUIT. PROVIDE A FIRE ALARM AV UNIT TO MATCH EXISTING SYSTEM.
2. PROVIDE A 150A-3P SURFACE MOUNTED SHUNT TRIP BREAKER FOR MRI VRDU FEED. EXTEND 3# 2/0 + 1# 2/0 G IN 2" CONDUIT TO EXISTING PANEL MDP-2 IN BASEMENT AND TO TOSHIBA VRDU. PROVIDE A 150A-3P BREAKER IN CIRCUIT #11. MATCH A.I.C. RATING.
3. DRAKE CHILLER FURNISHED BY TOSHIBA PROVIDE A 60A-3P W.P. DISCONNECT SWITCH WITH 45A FUSES AND 3# 6 + 1# 10G - 1"C TO EXISTING PANEL MDP-2 IN BASEMENT. REPLACE 30A-3P BREAKER, CIRCUIT #7 WITH A 45A-3P, BREAKER.
4. EXTEND (2) 3/4" CONDUITS FROM DRAKE CHILLER TO DRAKE HEAT EXCHANGER IN EQUIPMENT ROOM. INSTALL POWER AND SIGNAL CABLES PER DRAKE INSTALL DRAWINGS.
5. LIEBERT CEILING MOUNTED AIR HANDLING UNIT 480V, 3Ø, 28.3 FLA 40 A, MOCP. PROVIDE A 60A DISCONNECT SWITCH WITH 40A FUSES, EXTEND 3# 8 + 1# 10G - 1"C TO EXISTING BASEMENT PANEL MDP-2 EXISTING 50A-3P BREAKER CIRCUIT #9.
6. LIEBERT REMOTE CONDENSING UNIT ON ROOF 480V, 3Ø, 11.7 FLA, 20A, MOCP PROVIDE A WEATHERPROOF. 30A DISCONNECT SWITCH AND EXTEND 3# 10 + 1# 10G - 3/4"C TO EXISTING BASEMENT PANEL MDP-2. PROVIDE A 20A-3P BREAKER AT CIRCUIT #12.
7. AHU-1 INDOOR UNIT MOUNTED ABOVE CEILING, 208V,1Ø, 16 FLA, 20A MOCP. PROVIDE A 30A-2P UNFUSED DISCONNECT SWITCH EXTEND 2# 10 + 1# 10G - 3/4"C TO MDP-1 IN FIRST FLOOR ELECTRICAL ROOM. PROVIDE A 20A-2P BREAKER TO MATCH A.I.C. RATING OF EXISTING BREAKERS.
8. AHU-1 OUTDOOR UNIT MOUNTED ON ROOF ABOVE, 208V, 1Ø, 9.1, MCA 15A, MOCP PROVIDE A WEATHERPROOF 30A-2P UNFUSED DISCONNECT SWITCH, EXTEND 2# 10 + 1# 10G - 3/4"C TO MDP-1 IN FIRST FLOOR ELECTRICAL ROOM. PROVIDE 15A-2P BREAKER TO MATCH A.I.C. RATING OF EXISTING BREAKERS.
9. HUMIDIFIER 15.9A 120V, PROVIDE 20A-1P DISCONNECT SWITCH, EXTEND 2# 12 + 1# 12G - 3/4"C TO NEW PANEL 'FL' IN TECH. ROOM PROVIDE 20A-1P BREAKER.
10. EXHAUST FAN 1/4 HP 120V, 1Ø, PROVIDE DISCONNECT AND RELAY AS REQUIRED PER TOSHIBA DRAWINGS. EXTEND 2# 12 + 1# 12G - 3/4"C TO 15A-1P BREAKER IN LOCAL 120 / 208V PANEL.



1 NEW POWER & LIGHTING PLAN
Scale: 1/4" = 1'-0"

LIGHTING FIXTURE SCHEDULE

SYMBOL	DESCRIPTION
C	6 1/2" RECESSED ROUND 150 WATT INCANDESCENT DOWNLIGHT WITH CLEAR ALZAK REFLECTOR. SUITABLE FOR USE IN MRI SCAN ROOM. SIMILAR TO PEACH TREE LIGHTING CAT. NO. PMRI - 7 - 150 - C.
D	8' - TANDEM 4 LAMP INDUSTRIAL VAPORTIGHT FLUORESCENT FIXTURE WITH 4, 32W T-8 LAMPS, A CLEAR POLYCARBONATE LENS AND T-8 ELECTRONIC BALLAST, CHAIN OR STEM MOUNT.

Revision/Date	By

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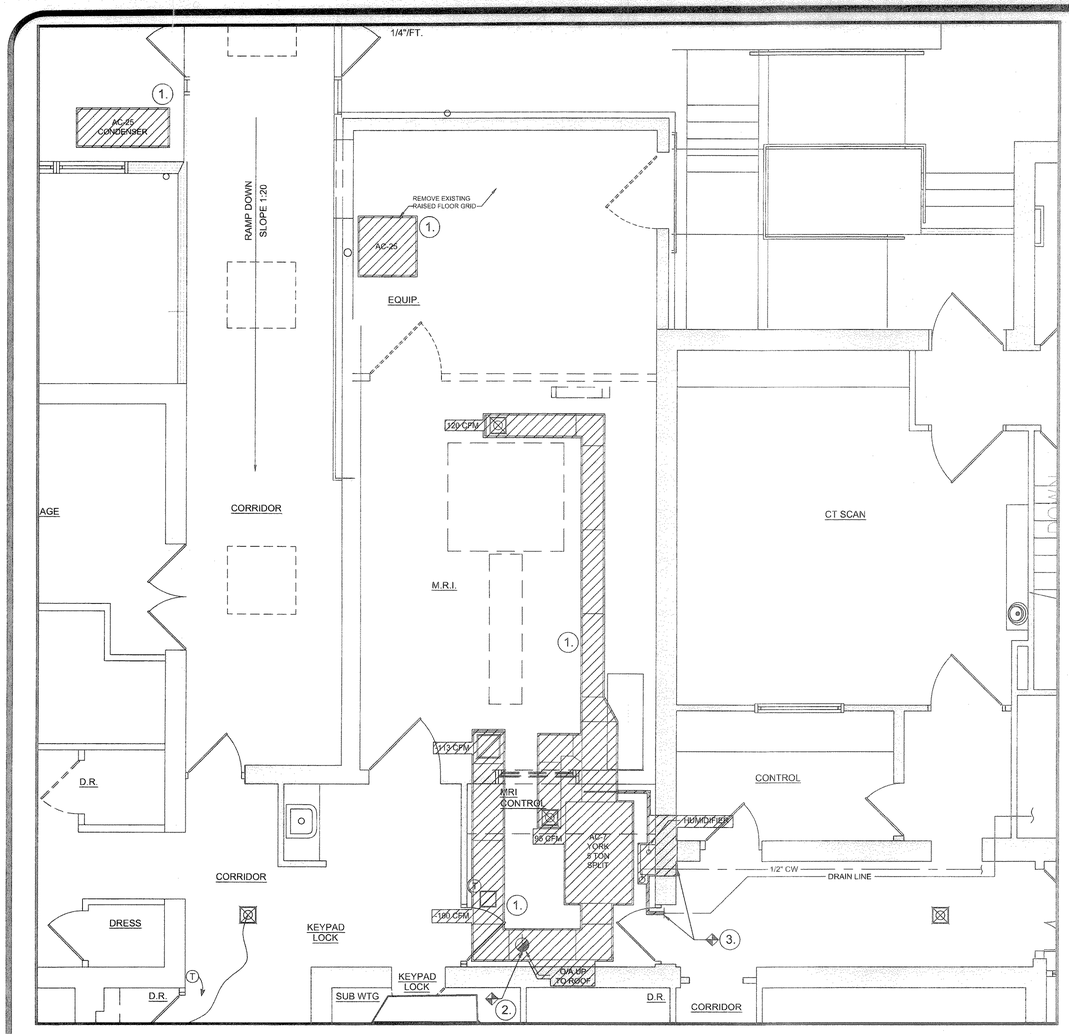
DOUGLAS J. TRUMBOWER, REGISTERED ARCHITECT, COMMONWEALTH OF PENNSYLVANIA
DOUGLAS J. TRUMBOWER, REGISTERED PROFESSIONAL ENGINEER, COMMONWEALTH OF PENNSYLVANIA

PINNACLE HEALTH
UNION DEPOSIT MRI #3
4518 UNION DEPOSIT RD., HARRISBURG, PA 17110
NEW POWER & LIGHTING PLAN

Drawn	K.P.W. / J.B.P
Checked	D.F.T.
Start Date	10/07/2013
Scale	1/4" = 1'-0"
Job No.	13-5456
Sheet	E-1

PHASE 2



1 MRI #3 DEMOLITION PLAN

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

DEMOLITION NOTES:

1. REMOVE EXISTING SPLIT SYSTEM, DUCTWORK, AND PIPING.
2. EXISTING 8"Ø OUTSIDE AIR DUCTWORK UP THROUGH ROOF TO REMAIN. PREPARE FOR RECONNECTION.
3. EXISTING HUMIDIFIER TO BE REMOVED. PREPARE SUPPLY WATER AND DRAIN PIPING FOR RECONNECTION.

SYMBOLS LEGEND

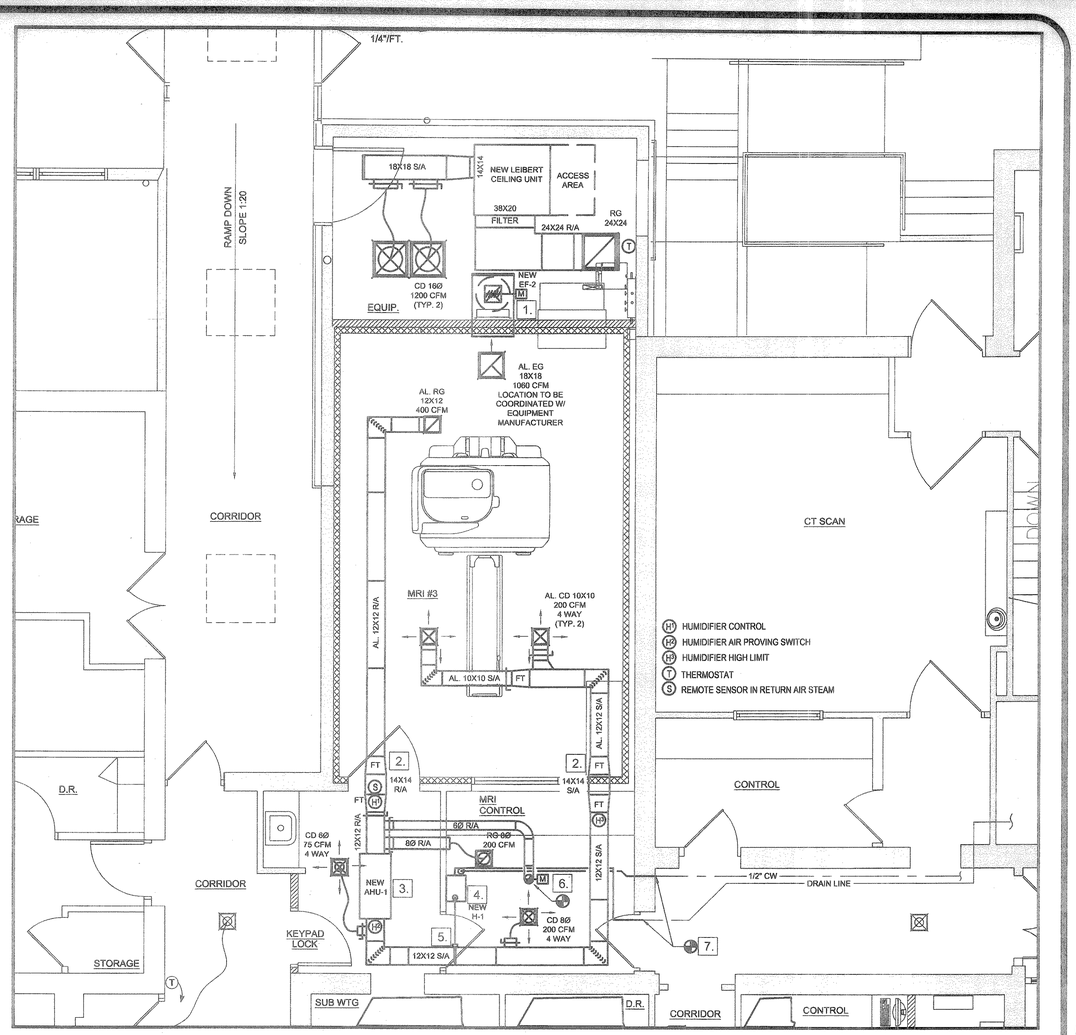
- CEILING SUPPLY GRILLE
- CEILING RETURN/EXHAUST GRILLE
- PIPE UP
- PIPE DOWN
- PIPE BREAK
- CONNECT TO EXISTING
- POINT OF DEMOLITION
- FLOW ARROW
- OXYGEN OUTLET
- VACUUM OUTLET
- MEDICAL AIR OUTLET
- DUCT UP
- DUCT DOWN
- MOTORIZED DAMPER
- VOLUME DAMPER
- FD-FIRE/SMOKE DAMPER VERTICAL - 1 HR-RATING
- EXISTING DUCT
- EXHAUST DUCT
- SUPPLY OR OUTSIDE AIR DUCT
- RETURN DUCT
- DUCT INSULATION
- DOMESTIC COLD WATER PIPING
- DOMESTIC HOT WATER PIPING
- EXISTING DOMESTIC COLD WATER
- SANITARY DRAIN PIPING
- EXISTING SANITARY DRAIN PIPING
- VENT PIPING
- OXYGEN PIPING
- VACUUM PIPING
- MEDICAL AIR PIPING
- REMOVE PIPING
- REMOVE DUCTWORK
- THERMOSTAT
- SIDEWALL SUPPLY GRILLE & SIDEWALL RETURN REGISTER
- ROOF MOUNTED EXHAUST FAN

GRILLE, REGISTER & DIFFUSER KEY

CD - 12X12 - 100 - 4 (SYMBOL - SIZE - CFM - THROW DIRECTIONS)

SYMBOLS
- CD - CEILING DIFFUSER
- RG - RETURN GRILLE
- WL - WALL LOUVER
- WG - SUPPLY WALL GRILLE
- WR - RETURN WALL REGISTER

NOTE: ALL CEILING DIFFUSERS ARE 4-WAY UNLESS OTHERWISE NOTED.



2 MRI #3 NEW WORK PLAN

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

CONSTRUCTION NOTES:

1. 28X10 SHIELDING DUCTWORK THROUGH WALL , 22X8 PLENUM, 11X11 MOTOR OPERATED DAMPER, UP TO ROOF EXHAUST FAN.
2. 14X14 SHIELDING DUCTWORK THROUGH WALL.
3. AHU-1 HUNG FROM BAR JOIST, CONDENSING UNIT, CU-1, ON ROOF ABOVE.
4. HUMIDIFIER, H-1 HUNG HIGH ON WALL, COLD WATER AND DRAIN CONNECT TO EXISTING DRAIN.
5. HUMIDIFIER MANIFOLD LOCATION.
6. CONNECT 6"Ø MOTOR OPERATED DAMPER TO EXISTING DUCTWORK, INTERCONNECT TO AHU-1.
7. CONNECT EXISTING 1/2" COLD WATER AND 1" DRAIN PIPING TO NEW H-1, HUMIDIFIER.

Revision/Date	By

TRADE EASTERN, INC.
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James CRAFT & Son Inc.
MECHANICAL CONTRACTORS
2780 YORK HAVEN RD. YORK HAVEN, PA 17370
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PINNACLE HEALTH UNION DEPOSIT
MRI #3 IMPROVEMENTS
4518 UNION DEPOSIT RD., HARRISBURG, PA 17110
PARTIAL MECHANICAL/PLUMBING PLAN
DEMOLITION/NEW WORK

Drawn	C.A.S.
Checked	D.F.T.
Start Date	11/06/2013
Scale	AS NOTED
Job No.	13-5456
Sheet	M-1

PHASE 2

BASIC MECHANICAL REQUIREMENTS

GENERAL:

1. ALL SYSTEMS ARE SHOWN SCHEMATICALLY. THE EXISTING CONDITIONS MAY DIFFER DUE TO FIELD CONDITIONS. DEVIATIONS SHALL BE REPORTED TO THE PROJECT MANAGER PRIOR TO PROCEEDING WITH WORK. ALL DIMENSIONS ARE TO BE TAKEN IN THE FIELD.
2. INSTALL ALL EQUIPMENT AND MATERIAL IN STRICT ACCORDANCE WITH RESPECTIVE MANUFACTURER'S WRITTEN INSTRUCTIONS.
3. COORDINATE HVAC AND PLUMBING WORK WITH THE WORK OF ALL OTHER TRADES.
4. INSTALL ALL WORK IN ACCORDANCE WITH ALL APPLICABLE CODES AND REGULATIONS.
5. ALL THE EXISTING SYSTEM PARTS AND EQUIPMENT ARE TO BE TRANSFERRED TO THE OWNER BY THE CONTRACTOR EXCEPT ITEMS DESIGNATED TO BE REMOVED FROM THE PREMISES.
6. PATCH OPENINGS CREATED BY JCS IN BUILDING CONSTRUCTION WHERE PIPING, ETC. IS REMOVED. PATCHING SHALL BE THE SAME MATERIAL AS SURROUNDING CONSTRUCTION. FINISH TO MATCH EXISTING TO THE EXTENT POSSIBLE.
7. WHERE PIPES OR CONDUIT PENETRATE FIRE RATED OR SMOKE RATED BARRIERS (WALLS, FLOORS, AND CEILINGS), SEAL PENETRATIONS IN ACCORDANCE WITH NFPA 90A WITH UL LISTED FIRE STOPPING SYSTEMS.
8. ALL EXTERIOR WALL OPENINGS SHALL BE SLEEVED, PROPERLY CAULKED AND SEALED WITH A HIGH QUALITY SEALANT TO PREVENT INFILTRATION OF MOISTURE AND OUTSIDE AIR.
9. FULLY COORDINATE WITH OWNER AND ALL OTHER TRADES, ALL WORK INVOLVING SHUT-DOWN AND INTERRUPTION OF EXISTING SYSTEMS AND SERVICE.
10. ALL DUCTWORK AND PIPING ABOVE CEILING AND IN AREAS WITHOUT CEILINGS SHALL BE INSTALLED AS HIGH AS POSSIBLE.
11. IT IS THE INTENT THAT ALL EXISTING PIPING, DUCTWORK, FIXTURES AND OTHER EQUIPMENT AND MATERIALS THAT INTERFERE WITH THE ALTERED EXISTING BUILDING ARRANGEMENTS AND NEW SYSTEMS BE REMOVED, RELOCATED, REROUTED OR ABANDONED. THE DRAWINGS GENERALLY INDICATE MAJOR ITEMS OF EXISTING MATERIALS AND EQUIPMENT THAT ARE TO BE REMOVED, RELOCATED, REROUTED OR ABANDONED BY EACH TRADE. IT IS NOT POSSIBLE TO INDICATE ALL RELATED ACCESSORIES, SPECIALTIES AND OTHER MINOR ITEMS. HOWEVER THEIR REMOVAL, RELOCATIONS, REROUTING OR ABANDONED SHALL ALSO BE INCLUDED IN THIS CONTRACT.
12. EXISTING CONCEALED AND EXPOSED EQUIPMENT AND MATERIALS THAT WILL BECOME ABANDONED DUE TO NEW WORK SHALL BE REMOVED BACK TO ACTIVE RISER AND MAIN AND PROPERLY PLUGGED OR CAPPED BEHIND FINISHED SURFACES.
13. REMOVED EQUIPMENT AND MATERIALS NOT DESIRED BY OWNER SHALL BECOME PROPERTY OF CONTRACTOR AND SHALL BE PROMPTLY REMOVED FROM SITE. EQUIPMENT AND MATERIALS DESIRED BY OWNER SHALL BE DELIVERED BY CONTRACTOR TO AN ON-SITE STORAGE LOCATION DESIGNATED BY OWNER.

DUCTWORK AND INSULATION:

1. ALL DUCTWORK SHALL BE DESIGNED, CONSTRUCTED AND INSTALLED PER SMACNA STANDARDS. SEAL ALL LONGITUDINAL SEAMS AND TRANSVERSE JOINTS WITH SEALANT UNDER UL 181 FOR "AIR-TIGHT" APPLICATION.
2. DUCT SIZES SHOWN ON DRAWINGS ARE INSIDE DIMENSIONS.
3. THE INSIDE OF ALL DUCTWORK VISIBLE THROUGH A GRILLE OR DIFFUSER SHALL BE PAINTED FLAT BLACK.
4. SUPPORTS FOR DUCTS SHALL BE INSTALLED AT INTERVALS OF NOT MORE THAN 10 FEET.
5. FLEXIBLE DUCTWORK SHALL BE FLEXMASTER TYPE 8M AND SHALL HAVE EXTERNAL INSULATION WITH VAPOR BARRIER JACKETING. FLEXIBLE DUCTWORK SHALL BE CONNECTED TO BRANCHES AND MAINS USING CONICAL FITTINGS AND SHALL NOT EXCEED 8'-0" IN LENGTH INCLUDING ONE ELBOW. FLEXIBLE DUCTWORK SHALL NOT BE USE AS EXHAUST DUCTWORK.
6. LOW PRESSURE-DOWNSTREAM OF VAV BOX, SUPPLY DUCTWORK-
   1" W.G. W/1-1/2"-1.5 POUND DUCT WRAP.
   MEDIUM PRESSURE-UPSTREAM OF VAV BOX, SUPPLY DUCTWORK-
   2.5" W.G. W/1-1/2"-1.5 POUND DUCT WRAP.
   RECTANGULAR RETURN DUCTWORK 1" W.G. W/1/2" 2.0 POUND LINER.
7. ROUND SUPPLY DUCTWORK UPSTREAM OF VAV -
   SPIRAL PIPE AND FITTINGS W/1-1/2" DUCT WRAP.
   ROUND SUPPLY DUCTWORK DOWNSTREAM OF VAV -
   SNAP-LOCK PIPE AND FITTINGS W/1-1/2" DUCT WRAP.
8. ALL DUCTWORK WITHIN THE MRI SCAN ROOM TO BE ALUMINUM OR STAINLESS STEEL.

GRILLES, REGISTERS AND DIFFUSERS:

1. ALL SIZES OF CEILING DIFFUSERS, EXHAUST GRILLES AND RETURN GRILLES SHOWN ON DRAWINGS ARE MODULAR SIZES.
2. ALL SIDEWALL MOUNTED SUPPLY GRILLES SHALL BE DOUBLE DEFLECTION UNLESS OTHERWISE NOTED.
3. PROVIDE SQUARE TO ROUND ADAPTORS AS NECESSARY.
4. ALL CEILING DIFFUSERS SHALL BE 24"X24" LAY-IN MODULES UNLESS OTHERWISE NOTED.

PLUMBING, PIPING AND MATERIALS:

1. ALL DOMESTIC WATER SUPPLY PIPING TO BE COPPER TYPE L WITH BRASS OR COPPER FITTINGS AND GRADE 95T SOLDER JOINTS OR PRESS-FIT.
2. ABOVE AND BELOW GRADE SANITARY, WASTE, VENT PIPING TO BE: CAST IRON PIPE: CISPI 301, HUBLESS, SERVICE WEIGHT WITH NEOPRENE GASKETS AND STAINLESS STEEL CLAMPS.

PIPING INSULATION:

1. PRIOR TO INSULATING, WATER SUPPLY PIPING ONLY SHALL BE HYDROSTATICALLY TESTED AT 100 PSIG WITH NO LOSS OF PRESSURE FOR THREE HOURS.
2. INSULATION SHALL CARRY THROUGH ALL WALL AND FLOOR PENETRATIONS AND PIPE HANGERS.
3. PROVIDE GALVANIZED METAL SHIELDS FORMED TO FIT THE INSULATION BETWEEN HANGERS AND FINISHED INSULATIONS.
4. INSULATION MUST BE FIRE RATED FOR FLAME SPREAD OF 25 OR LESS AND SMOKE DEVELOPED OF 50 OR LESS. "K" VALUE OF 0.27 BTU PER INCH/H FT2 F°. INSULATE DOMESTIC COLD WATER PIPING WITH 1/2" THICK CELLULAR.
5. OVERSIZED HANGERS SHALL BE INSTALLED TO PROVIDE CONTINUOUS INSULATION.

SPLIT SYSTEM AIR CONDITIONING UNIT SCHEDULE

INDOOR SECTION										OUTDOOR SECTION					
SYMBOL	CFM	O/A CFM (MIN/MAX)	NOMINAL CAPACITY	VOLTS/PHASE	MIN CIRCUIT (AMPS)	MOCP SIZE(AMPS)	MFGR MODEL	ELECTRIC HEATING COIL KW	ELECTRIC HEATING COIL STEPS	SYMBOL	NOMINAL CAPACITY	VOLTS/PHASE	MIN CIRCUIT (AMPS)	MOCP SIZE(AMPS)	MFGR MODEL
AHU-1	600	0/120	1.5 TON	208/230/1Ø	16/18	20/20	GOODMAN-ARUF18B14	3.0	1	CU-1	1.5 TON	208/230/1Ø	9.1	15.0	GOODMAN-GSX130181

NEW AQUILION CT LEIBERT AIR CONDITIONING SCHEDULE

INDOOR SECTION								OUTDOOR SECTION					
SYMBOL	CFM	O/A CFM TO ROOM	NOMINAL CAPACITY	VOLTS/PHASE	FLA (AMPS)	MOCP SIZE(AMPS)	MFGR MODEL	SYMBOL	NOMINAL CAPACITY	VOLTS/PHASE	FLA (AMPS)	MOCP SIZE(AMPS)	MFGR MODEL
CR-1	2400	15	5 TON	208/3Ø	59.9	80	LIEBERT-MMD60E7CHEHG	CRCU-1	5 TON	208/3Ø	24.1	45	LIEBERT-PFH067A-YL7

EXHAUST FAN SCHEDULE

SYMBOL	CFM	S.P.	FAN TYPE	DRIVE	HP OR WATTS	ROOF OPENING	VOLTS/ PHASE	MFGR MODEL	OPERATING WEIGHT	REMARKS
EF-1	1060	0.5	CENTRIFUGAL ROOF	DIRECT	0.25 HP	16.5 x 16.5	115/1Ø	S&P RED10MH1AS	50	GRAVITY DMPR ROOF CURB REFER TO NOTE A
NOTE: THIS EXHAUST FAN IS CONTROLLED BY ELECTRICIAN AND TOSHIBA.										

ELECTRIC HUMIDIFIER SCHEDULE

SYMBOL	MIN LBS/HR	MAX LBS/HR	CONN. SIZE	VOLT/ PHASE	RATED CURRENT	MOCP SIZE AMPS
H-1	2.00	10.00	1/2"	110/1Ø	15.90 A	20.0
NOTES: 1/2" SINGLE MANIFOLD, MODULATION CONTROL, NORTEC MODEL RH2, 1/2" WATER SUPPLY FROM NEAREST LOCATION.						

SYMBOL / SIZE / CFM / THROW DIRECTIONS

CD - 12 X 12 - 100 - 4

GRILLE, REGISTER & DIFFUSER KEY

SYMBOLS
CD - CEILING DIFFUSER
RG - RETURN GRILLE
WL - WALL LOUVER
WG - SUPPLY WALL GRILLE
WR - RETURN WALL REGISTER

NOTE: ALL CEILING DIFFUSERS ARE 4-WAY UNLESS OTHERWISE NOTED.

SYMBOLS LEGEND

- CEILING SUPPLY GRILLE
- CEILING RETURN/EXHAUST GRILLE
- PIPE UP
- PIPE DOWN
- PIPE BREAK
- CONNECT TO EXISTING
- POINT OF DEMOLITION
- FLOW ARROW
- O OXYGEN OUTLET
- V VACUUM OUTLET
- M MEDICAL AIR OUTLET
- DUCT UP
- DUCT DOWN
- M MOTORIZED DAMPER
- VOLUME DAMPER
- FD-FIRE/SMOKE DAMPER VERTICAL - 1 HR-RATING

- EXISTING DUCT
- EXHAUST DUCT
- SUPPLY OR OUTSIDE AIR DUCT
- RETURN DUCT
- DUCT INSULATION
- DOMESTIC COLD WATER PIPING
- DOMESTIC HOT WATER PIPING
- ECW EXISTING DOMESTIC COLD WATER
- S SANITARY DRAIN PIPING
- ES EXISTING SANITARY DRAIN PIPING
- V VENT PIPING
- O2 OXYGEN PIPING
- VAC VACUUM PIPING
- MA MEDICAL AIR PIPING
- REMOVE PIPING
- REMOVE DUCTWORK
- T THERMOSTAT
- SIDEWALL SUPPLY GRILLE & SIDEWALL RETURN REGISTER
- ROOF MOUNTED EXHAUST FAN

Revision/Date	By

TRADE EASTERN, INC.
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PINNACLE HEALTH UNION DEPOSIT
MRI #3 IMPROVEMENTS
4518 UNION DEPOSIT RD., HARRISBURG, PA 17110

PARTIAL MECHANICAL/PLUMBING PLAN
SCHEDULE PAGE

Drawn	C.A.S.
Checked	D.F.T.
Start Date	11/06/2013
Scale	AS NOTED
Job No.	13-5456
Sheet	M-2

PHASE 2

Vantage Titan

DRAWING CONTENTS

TOSHIBA
Leading Innovation »»

REV	DATE	REVISED SHEET(S)	INT
0	09-12-13	ORIGINAL PRELIMINARY DRAWING COMPLETED.	V. H.
1	10-25-13	A1 SHEET.	V. H.
2	11-06-13	A1 & A2.	V. H.

TRISTAN UNION DEPOSIT
MRI #3
(MR SCAN ROOM – TITAN)
2808 OLD POST RD.
HARRISBURG, PA 17110

DATE: 11–06–13
SCALE: NOT TO SCALE
PLANNER: V. H.
SID: 30008347
PROJECT NO.
130013978MRP2

C1

ALL INFORMATION ON THIS SHEET IS TO BE CONSIDERED PRELIMINARY AND TENTATIVE AND IS SUBJECT TO CHANGE OR REVISION WITHOUT PRIOR NOTICE. THIS INFORMATION IS FOR PLANNING PURPOSES ONLY.

MINIMUM SITE REQUIREMENTS CHECKLIST

PROJECT:		SITE INSPECTION DATE:
EQUIPMENT DELIVERY DATE:		INSPECTED BY:
IN ORDER TO ENSURE A TIMELY AND SUCCESSFUL INSTALLATION, IT IS NECESSARY TO COMPLETE THIS FORM PRIOR TO INSTALLATION. PLEASE ASSIST US BY HAVING THE CONTRACTOR OR YOUR REPRESENTATIVE COMPLETE THE FOLLOWING:		
	1.	ALL WALLS, FLOORS, AND CEILINGS FINISHED. WALLS PAINTED, FLOORS TILED, AND CEILING GRID WORK AND FIXTURES INSTALLED.
	2.	MONOLITHIC OR LAY–IN CEILING? PLEASE CIRCLE ONE. ALL MATERIALS IN SCAN ROOM MUST BE NON–FERROUS.
	3.	DOORS AND WINDOWS INSTALLED AND LOCKABLE. DOORS TO BE REMOVED PRIOR TO DELIVERY BY CUSTOMER OR CONTRACTOR AND REINSTALLED AFTER EQUIPMENT MOVE–IN. RESERVE SECURE ROOM FOR STORAGE DURING INSTALLATION.
	4.	AREA SET ASIDE FOR EQUIPMENT RIGGING AND MOVE–IN (INCLUDING MAGNET OPENING IN SCAN ROOM). ENVIRONMENTAL ISSUES ADDRESSED AND RESOLVED PRIOR TO EQUIPMENT DELIVERY. RECEPTACLE FOR TRASH AVAILABLE (LARGE ENOUGH FOR SHIPPING CRATES IF REQUIRED). EQUIPMENT (INGRESS) ROUTES ARE CLEAR AND OBSTACLE FREE.
	5.	ALL CONDUIT, TROUGHING (WITH COVERS), AND BOXES INSTALLED (CLEAN AND DUST FREE). GROMMETED OPENINGS, CHASE NIPPLES, RACEWAY DIVIDERS, ETC. COMPLETE.
	6.	CIRCUIT BREAKER INSTALLED AND INCOMING POWER (PER POWER QUALITY REQUIREMENTS) OPERATIONAL AND CONNECTED TO ROOM BREAKER(S).
	7.	LOCATION OF ALL ELECTRICAL BREAKERS IN POWER CHAIN NOTED.
	8.	ALL CONTRACTOR–INSTALLED STRUCTURAL SUPPORT DEVICES INSTALLED AND LEVELED ACCORDING TO TAMS SPECIFICATIONS ON SITE PLANS.
	9.	ALL CONTRACTOR–SUPPLIED CABLES PULLED AND TERMINATED, INCLUDING GROUND WIRE IN TROUGHING AS SPECIFIED IN THE TOSHIBA SITE PLANS.
	10.	DUST–FREE ENVIRONMENT IN ALL RELATED ROOMS.
	11.	HEATING AND AIR–CONDITIONING INSTALLED, OPERATIONAL AND STABILIZED PER TOSHIBA SITE PLANS. FILTERS TO BE CHANGED 24 HOURS BEFORE DELIVERY.
	12.	ALL MILLWORK COMPLETE AND INSTALLED. ENSURE THAT NON–FERROUS MATERIAL IS USED FOR ANY MILLWORK IN SCAN ROOM.
	13.	COMPUTER FLOORING INSTALLED, IF APPLICABLE.
	14.	ALL UNFINISHED AREAS SEALED OFF TO PREVENT DUST CONTAMINATION.
	15.	RECEPTACLE FOR TRASH AVAILABLE (LARGE ENOUGH FOR SHIPPING CRATES IF REQUIRED).
	16.	"PCDU/VRDU/UPS" INSTALLED AND CONNECTED TO "CB".
	17.	LINE FILTER PANEL INSTALLED IN SCAN ROOM.
	18.	RF ROOM COMPLETE AND TESTED. PROVIDED COPY OF SIGNED TEST RESULTS TO SITE PLANNING.
	19.	ALL REQUIRED WAVE GUIDES INSTALLED (INCLUDED MED–GASES, IF APPLICABLE).
	20.	PLUMBING FOR CHILLER AND CRYO COOLER INSTALLED, FLUSHED, AND TESTED.
	21.	SEISMIC REQUIREMENTS, AND REQUIRED SEISMIC ANCHORING DEVICES INSTALLED (IF APPLICABLE).
	22.	NETWORK CONNECTIONS INSTALLED AND OPERATIONAL.
	23.	QUENCH PIPE INSTALLED PER TOSHIBA SPECIFICATIONS (SEE SHEETS M1–M4). USE ONLY STAINLESS STEEL OR ALUMINUM MATERIAL FOR QUENCH PIPE AS SHOWN ON PLAN.
	24.	ALL APPLICABLE PERMITS OBTAINED.
	25.	MAGNETIC/RF SHIELDING DESIGNED, MODELED, AND BUILT.
	26.	ALL MATERIALS IN SCAN ROOM MUST BE NON–FERROUS.
	27.	CLEAN WORK AREA SET ASIDE OUTSIDE PROCEDURE ROOM DOOR AND CONTROL AREA.
	28.	EMERGENCY VENT INSTALLED AND OPERATIONAL.
	29.	CUSTOMER SUPPLIED WATER CHILLER SYSTEM INSTALLED AND OPERATIONAL.
NOTICE: **CUSTOMER MUST COMPLETE ALL ITEMS ON THIS CHECKLIST BEFORE SCHEDULED DELIVER DATE FOR THE EQUIPMENT. IF CUSTOMER FAILS TO DO SO, DELIVERY MAY BE DELAYED. FURTHERMORE, THE EQUIPMENT WARRANTY MAY BE VOIDED.**		
COMMENTS:		
SIGNED TOSHIBA:		
CONTRACTOR:		
CUSTOMER:		

01–30–12

NOISE SPECIFICATION

NOISE IS GENERATED BY THE COOLING FANS IN EACH UNIT. THE NOISE LEVEL DIFFERS AMONG UNITS. THE REFERENCE NOISE LEVELS FOR UNITS THAT ARE PARTICULARLY LOUD ARE SHOWN BELOW.

REFRIGERATOR COMPRESSOR	:	75 dB (A)
TRANSFORMER CABINET	:	65 dB (A)
ECO CABINET	:	64 dB (A)
FAN BOX	:	67 dB (A)
FILTER PANEL	:	59 dB (A)

09–05–12

CEILING HEIGHT

RECOMMENDED CEILING HEIGHT: 8'–10 5/16"
MINIMUM CEILING HEIGHT: 7'–10 1/2"

IF A CEILING HEIGHT OF 8'–10 5/16" IS NOT AVAILABLE, THE SYSTEM CAN STILL BE INSTALLED AS LONG AS THE MINIMUM CEILING HEIGHT IS 7'–10 1/2" AND A SERVICE OPENING IS PROVIDED IN THE CEILING UP TO 8'–10 5/16".

09–05–12

VIBRATION SPECIFICATION

0.02 M/S² (PEAK TO PEAK) = 2.0 GAL OR LESS
VIBRATION TESTING (IF REQUIRED) IS RESPONSIBILITY OF CUSTOMER / CONTRACTOR.

01–10–11

GENERAL NOTES

CUSTOMER/CONTRACTOR IS RESPONSIBLE FOR THE FOLLOWING UNLESS OTHERWISE NOTED.

GENERAL

A. TOSHIBA RESERVES THE RIGHT TO CHANGE THESE DESIGNS AND SPECIFICATIONS WITHOUT NOTICE.

B. CUSTOMER/CONTRACTOR SHALL SUPPLY AND INSTALL MATERIALS AND OTHER FEATURES SPECIFIED IN THE TOSHIBA SITE PLANS. CUSTOMER/CONTRACTOR SHALL SUPPLY AND INSTALL ALL COUNTERTOPS, SINKS, CASE WORK AND CABINETS SPECIFIED IN THE TOSHIBA SITE PLANS.

C. ANY CABINETRY THAT MAY BE REQUIRED TO HOUSE VIDEO RECORDERS, MONITORS KEYBOARDS, OR OTHER ANCILLARY EQUIPMENT SHALL BE SUPPLIED AND INSTALLED BY CUSTOMER/CONTRACTOR.

D. THESE TOSHIBA SITE PLANS DO NOT INDICATE EQUIPMENT REQUIREMENTS FOR ITEMS NOT SOLD BY TOSHIBA SUCH AS, PHYSIOLOGICAL MONITORS, LASER CAMERAS, INJECTORS, ETC. SPECIFICATIONS FOR THOSE ITEMS MUST BE OBTAINED FROM THE VENDOR AND INCLUDED IN THE DESIGN TOTALS.

E. IF REQUIRED, THE CUSTOMER/CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AN INTERCOM SPEAKER SYSTEM BETWEEN THE EQUIPMENT ROOM, CONTROL ROOM, AND PROCEDURE ROOM.

F. THE CUSTOMER/CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL COSTS REQUIRED FOR THE ENGINEERING AND/OR REMOVAL OF ANY HAZARDOUS MATERIALS SUCH AS ASBESTOS.

G. CUSTOMER/CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AN OPERATING PHONE IN THE CONTROL ROOM AT THE TIME TOSHIBA EQUIPMENT INSTALLATION BEGINS.

H. CUSTOMER/CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE LIGHTING FOR SERVICING OF EQUIPMENT IN ALL AREAS OF THE INSTALLATION.

I. PRIOR TO EQUIPMENT DELIVERY AND INSTALLATION, THE SITE MUST BE 100% COMPLETE, CLEAN AND FREE OF DUST. CUSTOMER/CONTRACTOR AND TOSHIBA INSTALLATION PROJECT MANAGER MUST COMPLETE A SITE WALK THROUGH 1 WEEK PRIOR TO DELIVERY AND DETERMINE ACCEPTABILITY FOR DELIVERY.

J. CUSTOMER/CONTRACTOR/ARCHITECT SHALL BE RESPONSIBLE FOR PROVIDING THE ENTIRE NETWORKING AND COMMUNICATION SYSTEMS.

K. ALL MATERIAL IN SCAN ROOM MUST BE NON–FERROUS.

RF / MAGNETIC SHIELDING

L. CUSTOMER/CONTRACTOR RESPONSIBLE FOR OBTAINING A SHIELDING VENDOR, TO MODEL, DESIGN, AND BUILD REQUIRED MAGNETIC AND RF SHIELDING.

M. MAGNET FEET MUST BE INSULATED (ISOLATED) FROM RF ENCLOSURE.

N. GAUSS LINES IN THESE DRAWINGS ARE REPRESENTED WITHOUT MAGNETIC SHIELDING.

O. RF SHIELDING WEIGHT WILL VARY FROM SITE TO SITE. CUSTOMER'S STRUCTURAL ENGINEER MUST CONSULT WITH RF ENCLOSURE VENDOR FOR RF SHIELDING WEIGHTS.

P. THE EXISTING AND PROPOSED STRUCTURAL/ENVIRONMENTAL STEEL INFORMATION WITH RELATIONSHIP TO MAGNET MUST BE PROVIDED TO SITE PLANNING FOR REVIEW (FOR ALL WALLS, CEILING AND FLOOR). ALL STRUCTURAL/ENVIRONMENTAL STEEL SHOULD BE IDENTIFIED INCLUDING, BUT NOT LIMITED TO, REBAR, BEAMS, PIPES, DRAINS, AND ANY STEEL USED FOR MAGNETIC SHIELDING.

Q. THE MAGNET ENVIRONMENT IS SENSITIVE TO FERROUS MATERIAL, WHICH CAN AFFECT IMAGE QUALITY. THE MOST SENSITIVE AREA IS WITHIN AN 8' X 8' AREA BENEATH THE MAGNET TO A DEPTH OF 1'–4". CONTACT YOUR TOSHIBA INSTALLATION PROJECT MANAGER TO HAVE A STEEL SURVEY COMPLETED TO EVALUATE SITE SPECIFIC CONDITIONS.

R. MAGNETOMETER SURVEY MUST BE PERFORMED BY TOSHIBA BEFORE SUBMITTING FINAL DRAWINGS (120V POWER IS REQUIRED FOR TOSHIBA TO BEGIN SURVEY. A MINIMUM OF 50'F IS REQUIRED FOR SURVEY AREA).

S. THE SHIELDING WORK IS REQUIRED TO SUPPRESS EXTERNAL LEAKAGE OF THE ELECTROMAGNETIC RADIATION GENERATED BY THE SYSTEM.

T. THE SHIELD MUST ATTENUATE ELECTROMAGNETIC RADIATION IN THE FREQUENCY BAND OF 63.86 MHz ± 0.5 MHz BY AT LEAST 90 dB.

90 dB OR MORE FROM 64.36 MHz TO 70 MHz
90 dB OR MORE FROM 70 MHz TO 300 MHz
50 dB OR MORE FROM 300 MHz TO 350 MHz
40 dB OR MORE FROM 350 MHz TO 1 GHz

CODES AND PERMITS

U. THE CUSTOMER/CONTRACTOR IS RESPONSIBLE TO ENSURE THAT ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES AND ORDINANCES ARE COMPLIED WITH.

SITE CONDITIONS

V. DIMENSIONS TO WALLS AND OR OTHER ROOM FEATURES, EXCEPT FOR NOTED COLUMN AND BEAM CENTER LINES SHALL BE FROM FINISHED SURFACES.

PLUMBING

W. PLUMBING IS REQUIRED FOR CERTAIN COMPONENTS OF TOSHIBA EQUIPMENT.

TRANSPORT REQUIREMENTS

X. EQUIPMENT INGRESS ROUTE MUST BE CHECKED PRIOR TO EQUIPMENT DELIVERY TO ENSURE THE LARGEST AND HEAVIEST ITEMS OF EQUIPMENT CAN BE ACCOMMODATED, DIMENSIONS OF CORRIDORS SHOULD BE NO LESS THAN 7'–0" IN WIDTH.

Y. RECOMMENDED ENTRANCE TO SCAN ROOM SHOULD BE NO LESS THAN 7'–0"W X 8'–6"H FOR EQUIPMENT DELIVERY. SPECIAL ARRANGEMENTS MAY BE NECESSARY FOR MAGNET DELIVERY, INCLUDING A LARGER OPENING IN THE RF SHIELDING.

Z. CONTACT THE TOSHIBA INSTALLATION PROJECT MANAGER FOR DETAILS OF THE LARGEST AND HEAVIEST ITEMS OF EQUIPMENT FOR THIS INSTALLATION.

09–05–12

CUSTOMER TO PROVIDE THE NECESSARY HVAC REQUIREMENTS FOR THE TOSHIBA EQUIPMENT TO OPERATE PROPERLY.

AMBIENT TEMPERATURE SHOULD BE IN ACCORDANCE WITH THE FOLLOWING FOR CORRECT EQUIPMENT OPERATION AND PATIENT/OPERATOR COMFORT.

ROOM NAME	HEAT OUTPUT (BTU/H) IN USE		HEAT OUTPUT (BTU/H) STANDBY (NIGHT TIME)		TEMP. (°F)	HUMIDITY (%RH)
MRI SCAN ROOM	TOTAL	4,095	TOTAL	1,707	60.8–75.2°	40–60% (NO CONDENSATION)
MAGNET		4,095		1,707		
CONTROL ROOM	TOTAL	2,391	TOTAL	2,391	60.8–86.0°	40–75% (NO CONDENSATION)
HOST CABINET		1,707		1,707		
MONITOR		342		342		
CONTROL BOX & CONTROL PAD		342		342		
EQUIPMENT ROOM *	TOTAL	31,053	TOTAL	23,205	68.0–75.2°	40–70% (NO CONDENSATION)
TRANSFORMER CAB.		3,071		3,071		
REFRIGERATOR		10,578		10,578		
GRADIENT POWER SUPPLY & ECO CAB.		16,379		8,872		
FILTER PANEL		683		342		
MAGNET FAN BOX		342		342		
POWER SYSTEMS	TOTAL		TOTAL			
PCDU		3,669		N/A		
VRDU (480V)		14,000		N/A		
VRDU (208V)		14,000		N/A		
TRANSFORMER (FOR VRDU 208V)		4,700		N/A		
UPS (480V)		32,800		N/A		
PDU OR PCDU		4,100		N/A		
UPS (208V)		35,500		N/A		
PDU OR PCDU		4,100		N/A		

* NOTE:
FINAL HEAT OUTPUT OF EQUIPMENT ROOM MUST INCLUDE SITE SPECIFIC POWER SYSTEM AND ANY OPTIONAL ITEMS. SEE SHEET A1 FOR ADDITIONAL HEAT OUTPUT OF OPTIONAL ITEMS.

NOTE:
A. A MINIMUM OF 10 AIR CHANGES PER HOUR IS SUGGESTED, CONSULT LOCAL CODE.
B. AIR SUPPLY DUCTS SHOULD NOT BE PLACED DIRECTLY OVER EXAMINATION TABLES FOR PATIENT COMFORT.
C. EQUIPMENT IN ENCLOSED SPACES SUCH AS EQUIPMENT ROOMS, TRANSFORMER CLOSETS AND COMPUTER ROOMS MUST BE PROVIDED WITH ADEQUATE VENTILATION. THE AIRFLOW THROUGH TOSHIBA EQUIPMENT CABINETS IS FROM BOTTOM TO TOP. WHERE POSSIBLE, AIR CONDITIONING SUPPLY OUTLETS SHOULD BE LOCATED AT FLOOR LEVEL WITH RETURN GRILLES IN THE CEILING.
D. DEDICATED AIR CONDITIONER REQUIRED FOR SCAN AND EQUIPMENT ROOM.
E. AIR CONDITIONING EQUIPMENT MUST HAVE THE ABILITY TO AUTOMATICALLY RESTART IN THE CASE OF A BLACKOUT.
F. THE EQUIPMENT ROOM MUST NOT HAVE SUPPLYING AIR FROM OUTSIDE DUE TO THE POSSIBLE RISE OF HUMIDITY.
G. IT IS NOT RECOMMENDED TO INSTALL THE AIR CONDITIONING UNIT OR FAN INSIDE THE CEILING OF THE MRI SCAN ROOM.
H. THE AIR CONDITIONING SENSOR FOR THE MRI SCAN ROOM SHOULD BE LOCATED IN A RETURN DUCT.

03–12–13

STRUCTURAL NOTES

CUSTOMER/CONTRACTOR IS RESPONSIBLE FOR THE FOLLOWING UNLESS OTHERWISE NOTED.

A. THESE SITE PLANS ARE INTENDED TO DEPICT ONLY A CONCEPT OF THE STRUCTURE REQUIRED FOR THE TOSHIBA EQUIPMENT. THE DESIGN OF ALL STRUCTURAL ELEMENTS MUST BE SPECIFIED BY A LICENSED STRUCTURAL ENGINEER IN ACCORDANCE WITH TOSHIBA SPECIFICATIONS AND ALL APPLICABLE CODES.

B. THE CUSTOMER/CONTRACTOR SHALL FIELD VERIFY ALL EXISTING AND PROPOSED DIMENSIONS AND SITE CONDITIONS PRIOR TO COMMENCING CONSTRUCTION.

C. THE TOSHIBA INSTALLATION PROJECT MANAGER SHALL BE NOTIFIED IN WRITING OF ANY FIELD CONDITIONS ENCOUNTERED THAT ARE CONTRADICTORY TO THOSE SHOWN IN THE TOSHIBA SITE PLANS.

D. THE DEMOLITION, FABRICATION AND ERECTION OF SUPPORT STRUCTURES FOR TOSHIBA EQUIPMENT SHALL BE PERFORMED BY THE CUSTOMER/CONTRACTOR IN ACCORDANCE WITH THE DESIGN AND SPECIFICATIONS SET FORTH BY THE STRUCTURAL ENGINEER OF RECORD.

E. VANTAGE TITAN MAGNET FEET MUST BE INSULATED/ISOLATED FROM SHIELDED ROOM.

F. INSULATION/ISOLATION FOR MAGNET FEET TO BE PROVIDED BY CUSTOMER/CONTRACTOR.

G. ALL STRUCTURAL MATERIAL IN SCAN ROOM MUST BE NON–FERROUS.

H. IT IS RF VENDOR'S RESPONSIBILITY TO ANCHOR THE MAGNET.

I. THE ENTIRE SCAN ROOM FLOOR TO BE LEVEL WITHIN 1/16".

FLOOR LOADING

J. THE FLOOR MUST SUPPORT 11,904.96 LBS. FOR THE MAGNET, INCLUDING THE COVERS AND THE GRADIENT COIL. THE COMPLETE FLOOR MUST WITHSTAND A MAXIMUM CONCENTRATED MAGNET LOAD OF 3,903.27 LBS. PER SQUARE FOOT (2,976.24 LBS PER MAGNET FOOT). THE FLOOR MUST BE ABLE TO WITHSTAND BOTH THE MAGNET AND THE WEIGHT OF THE MAGNETIC SHIELDING.

05–03–13

SPECIAL NOTES

SPECIAL SEISMIC CERTIFICATION

A. WHERE SPECIAL SEISMIC CERTIFICATION IS REQUIRED BY CODE THE STRUCTURAL ENGINEER OF RECORD SHALL BE RESPONSIBLE FOR NOTIFYING TOSHIBA'S INSTALLATION PROJECT MANAGER IN WRITING OF THE SEISMIC PERFORMANCE CATEGORY (SPC) RATING OF THE BUILDING IN WHICH TOSHIBA EQUIPMENT IS TO BE INSTALLED. FOR INSTALLATIONS IN A BUILDING RATED SPC3 OR HIGHER TOSHIBA WILL APPLY SPECIAL SEISMIC CERTIFICATION LABELING PER CBC SECTION 1703.5.

B. THE FOLLOWING COMPONENTS HAVE SPECIAL SEISMIC CERTIFICATION:

B.A. OSP–0162–10
PCDU/VRDU – GROUP 1 ENCLOSURES (AS APPLICABLE)
B.B. OSP–0013–10
UPS – 9390 160 KVA (AS APPLICABLE)
B.C. OSP–0088–10
BAT – BC55 (AS APPLICABLE)

C. WEIGHTS SHOWN ON THE OSP DOCUMENTS ARE GENERALLY A MAXIMUM AND THE WEIGHTS SHOWN ON THESE SITE PLANS REFLECT THE EQUIPMENT AS ORDERED.

08–19–13

ELECTRICAL REQUIREMENTS FOR MRI SYSTEM WITH VRDU

SUPPLY CONFIGURATION: 3 PHASE DELTA
102 kVA SERVICE

SUPPLY VOLTAGE: 480V – 150 AMP

03–14–12

ELECTRICAL NOTES

CUSTOMER/CONTRACTOR IS RESPONSIBLE FOR THE FOLLOWING UNLESS OTHERWISE NOTED.

A. THESE SITE PLANS ARE INTENDED TO DEPICT ONLY A CONCEPT OF THE ELECTRICAL REQUIREMENTS FOR THE TOSHIBA EQUIPMENT. THE DESIGN OF ALL ELECTRICAL ELEMENTS MUST BE SPECIFIED BY A LICENSED ELECTRICAL ENGINEER IN ACCORDANCE WITH TOSHIBA SPECIFICATION AND ALL APPLICABLE CODES.

B. IN ACCORDANCE WITH NEC ARTICLE 517–72(B), THE EQUIPMENT CIRCUIT BREAKER(S) MUST BE LOCATED SO THAT THEY SHALL BE OPERABLE FROM A LOCATION READILY ACCESSIBLE FROM THE CONTROL AREA. IF THIS IS IMPOSSIBLE OR IMPRACTICAL, THE USE OF A SHUNT TRIP TYPE BREAKER WILL BE NECESSARY TO SATISFY THIS REQUIREMENT. THE EMERGENCY OFF BUTTON FOR THE SHUNT TRIP SHOULD BE LOCATED IN THE CONTROL AREA.

C. THE CUSTOMER/CONTRACTOR SHALL SUPPLY AND INSTALL ALL CIRCUIT BREAKERS, CONDUITS, JUNCTION BOXES, DUCTS, A/C POWER RECEPTACLES, THERMOSTATS, EMERGENCY OFF BUTTONS, AND 12 VOLT POWER, ETC. SPECIFIED HEREIN.

D. THE TOSHIBA SITE PLANS DO NOT SPECIFY ELECTRICAL REQUIREMENTS FOR EQUIPMENT NOT SOLD BY TOSHIBA. THESE REQUIREMENTS MUST BE OBTAINED BY THE VENDOR.

E. TOSHIBA WILL SUPPLY INTERCONNECTING CABLES FOR THE TOSHIBA EQUIPMENT. TOSHIBA WILL INSTALL IF LOCAL TRADE LABOR PERMITS.

F. TOSHIBA WILL PROVIDE CONNECTING AND FILTER PANELS TO RF PROVIDER FOR INSTALLATION. EXCEPT FOR THEIR USE IN POWER LINE CONNECTIONS TO EQUIPMENT CABINETS, FLEXIBLE CONDUIT SHALL NOT BE USED IN THIS INSTALLATION. ONLY FACTORY CONDUIT ELBOWS SHALL BE USED.

G. DUCT WORK SHALL BE PROVIDED WITH SWEEP ELBOWS.

H. ALL JUNCTION BOXES AND DUCTS THAT PENETRATE THE FLOOR SHALL BE WATERPROOF TYPE AND PROVIDED WITH GASKETED WATERPROOF COVERS. ALL FLOOR JUNCTION BOXES AND DUCT COVERS SHALL BE CAPABLE OF SUPPORTING A 200 LB. CONCENTRATED LOAD. ALL MATERIAL IN SCAN ROOM MUST BE NON–FERROUS.

I. ALL ACCESS HOLES ARE TO BE MADE IN THE EQUIPMENT ROOM RAISED FLOOR PER TOSHIBA SITE PLANS. ACCESS HOLES MUST BE GROMMETED WITH NON–CHAFING MATERIAL SUCH AS RUBBER/PLASTIC OR SLEEVED WITH A SHORT NIPPLE WITH NON–ABRASIVE BUSHINGS.

J. ALL CHASE OPENINGS SHALL HAVE PLASTIC/NYLON BUSHINGS.

K. ALL DUCT WORK SHALL HAVE A MINIMUM OF THREE COMPARTMENTS. TRANSITIONS SUCH AS HORIZONTAL TO VERTICAL WALL DUCT OR JUNCTION BOXES MUST BE REVIEWED ON AN INDIVIDUAL BASIS WITH THE INSTALLATION PROJECT MANAGER. LOCAL CODES. MAY REQUIRE THE USE OF CROSS–OVER TUNNELS OR OTHER SUCH DEVICES TO MAINTAIN CABLE SEPARATION.

L. ALL DUCT AND CONDUITS SHALL BE ELECTRICALLY BONDED AS A GROUNDING PATH IN ACCORDANCE WITH NEC ARTICLE 517–13(B).

M. CUSTOMER/CONTRACTOR SHALL SUPPLY AND INSTALL GREENLEE NYLON MEASURING PULL STRING OR EQUIVALENT IN ALL CONDUITS AND CLOSED DUCT WORK.

N. CONDUIT RUNS SHOWN ARE SCHEMATIC ONLY. ALL CONDUIT RUNS MUST TAKE THE SHORTEST MOST DIRECT ROUTE POSSIBLE.

O. CONDUIT RUNS MAY HAVE A MAXIMUM OF (3) 90° BENDS.

P. 110VAC GROUNDED OUTLETS SHALL BE PROVIDED ON WALLS NEAR THE TOSHIBA EQUIPMENT FOR USE DURING EQUIPMENT SERVICE.

Q. CUSTOMER/CONTRACTOR MUST SUPPLY AND INSTALL ALL INCOMING POWER CABLES FROM CIRCUIT BREAKER(S) TO TOSHIBA EQUIPMENT CONNECTION POINT. CABLE TYPE MUST BE MT. MULTI–STRAND COPPER – NO ALUMINUM IS PERMITTED. CABLE SIZE MUST BE IN ACCORDANCE WITH TOSHIBA POWER QUALITY REQUIREMENTS.

R. CUSTOMER/CONTRACTOR IS TO SUPPLY AND INSTALL ALL NECESSARY HARDWARE TO ENCLOSE INCOMING POWER CABLES IN FLEXIBLE WATER TIGHT CONDUIT FROM CIRCUIT BREAKER(S) TO TOSHIBA EQUIPMENT CABINET(S).

S. ANY CHANGES IN THE LOCATION OR TYPE OF CONDUIT, DUCT WORK, JUNCTION BOXES, ETC. MUST BE SUBMITTED IN WRITING TO THE TOSHIBA INSTALLATION PROJECT MANAGER FOR APPROVAL.

T. A SEPARATE CIRCUIT, FED FROM THE FACILITY RADIOLOGY PANEL OR A MAIN SERVICE PANEL IS REQUIRED. USE OF A SUB PANEL WITH LOADS SUCH AS ELEVATORS, HVAC, MOTORS, ETC. IS NOT PERMITTED.

09–05–12

RF ROOM GROUNDING

CUSTOMER/CONTRACTOR IS RESPONSIBLE FOR THE FOLLOWING UNLESS OTHERWISE NOTED.

A. WHEN INSTALLED BY THE RF/STEEL ROOM MANUFACTURER, THE RF ROOM MUST BE TOTALLY ISOLATED FROM GROUND. TO MAINTAIN THIS ISOLATION, NO CONDUCTIVE CONNECTIONS (i.e. ELECTRICAL CONDUITS, PLUMBING, HVAC DUCTS, OR ANY CONDUCTIVE BUILDING MATERIAL) CAN BE MADE TO THE OUTSIDE OF THE RF ROOM. TO KEEP THIS INTEGRITY, ALL ABOVE MENTIONED CONNECTIONS SHOULD BE MADE VIA DIELECTRIC CONNECTORS. A DIELECTRIC CONNECTOR IS A NON–FERROUS SLEEVE, NIPPLE, GASKET, ETC. THIS CONNECTOR MUST BE INSTALLED IN ALL HVAC DUCT, ELECTRICAL CONDUIT, AND ANY PIPE CONNECTION TO THE RF ROOM. THE LOCATION OF THE DIELECTRIC IS TO BE OUTSIDE OF THE RF ROOM, AS CLOSE TO THE WALL OR CEILING OF THE RF ROOM AS PRACTICAL.

B. WHILE THE RF ROOM IS UNDER CONSTRUCTION, A BATTERY OPERATED BELL SHOULD BE TEMPORARILY MOUNTED TO THE ROOM. THE RF ROOM IS TO BE USED AS A GROUND FOR THE BELL. IF ANY CONDUCTIVE MATERIAL CONTACTS THE RF ROOM, THE BELL WILL SOUND ALERTING THE FOREMAN AND/OR CONTRACTOR WHO GROUNDED THE ROOM.

C. DURING THE REMAINING CONSTRUCTION, A TEMPORARY #1 SAFETY GROUND SHOULD BE ATTACHED TO THE RF ROOM UNTIL THE "PCDU/VRDU/UPS" IS INSTALLED. AT THAT TIME, A PERMANENT #1 OR LARGER GROUND WIRE SHOULD BE INSTALLED BETWEEN THE MAGNET ROOM AND THE SECONDARY GROUND BUS OF THE POWER SOURCE. REFER TO DETAIL 4 SHEET E3 (FINAL DRAWINGS ONLY).

D. RF ROOM MUST BE ACCESSIBLE FROM ABOVE FOR ENGINEERS TO FIND AND CORRECT RF GROUNDS IN ROOM.

01–10–11

PLUMBING NOTE

A. IT IS THE CUSTOMER'S RESPONSIBILITY TO SUPPLY AND INSTALL THE CHILLED WATER SYSTEM PER TOSHIBA SPECIFICATIONS.

01–10–11

TOSHIBA
Leading Innovation »»»

REV	DATE	DESCRIPTION	INT
1	09–12–13	ORIGINAL PRELIMINARY DRAWING COMPLETED.	V. H.
2	10–25–13	NO CHANGES MADE TO THIS SHEET.	V. H.
3	11–06–13	NO CHANGES MADE TO THIS SHEET.	V. H.

TRISTAN UNION DEPOSIT
MRI #3
(MR SCAN ROOM – TITAN)
2808 OLD POST RD.
HARRISBURG, PA 17110

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DATE: 11–06–13
SCALE: NOT TO SCALE
PLANNER: V. H.
SID: 30008347
PROJECT NO.
130013978MRP2

GN

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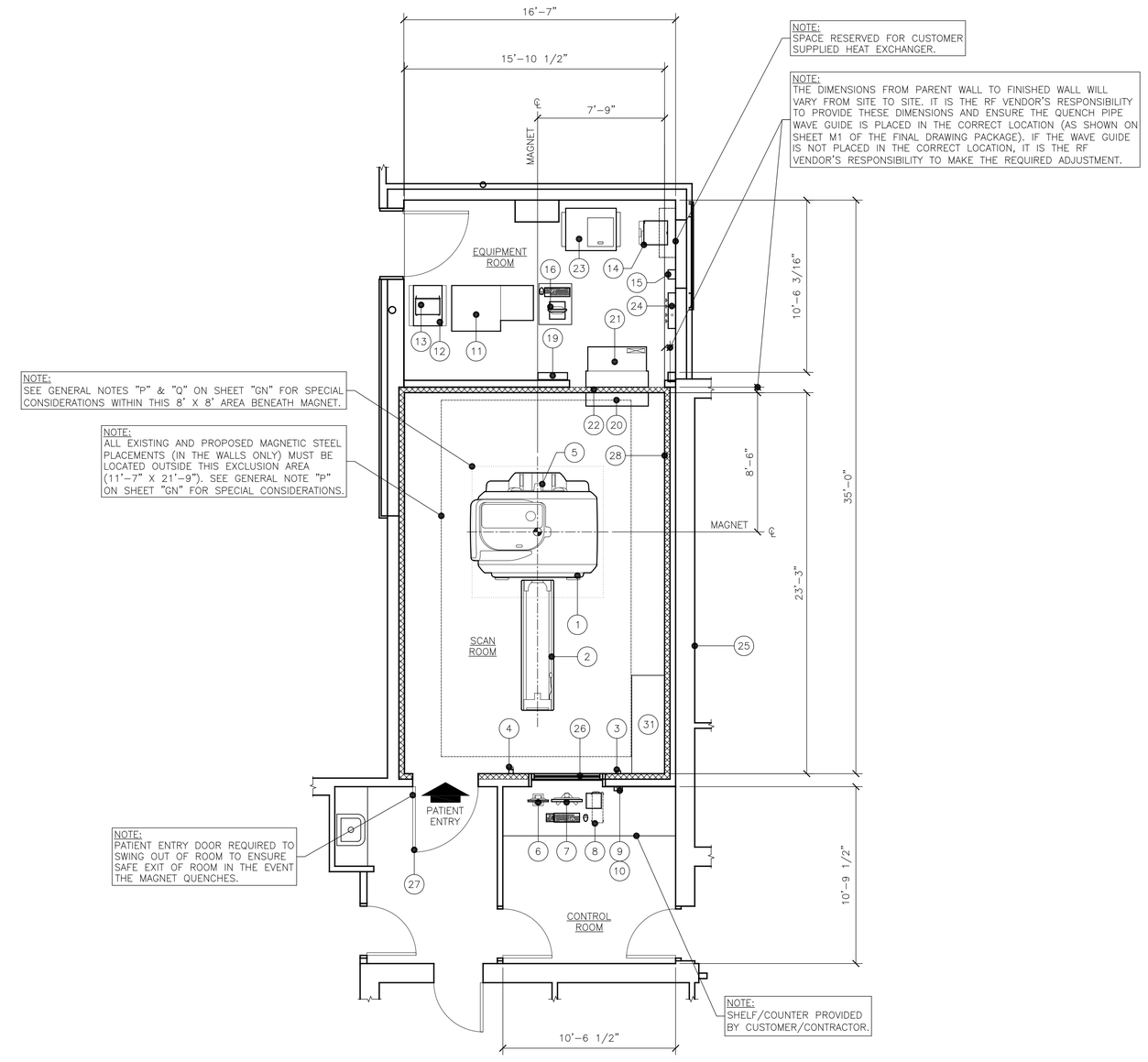

PRELIMINARY EQUIPMENT LAYOUT

0 1' 2' 4' 8' 16'

NOTE:
EXISTING/PROPOSED STRUCTURAL STEEL SHIELDING LOCATIONS WERE NOT SPECIFIED AT THE TIME THESE SITE PLANS WERE GENERATED. THE EXISTING AND PROPOSED STRUCTURAL/ENVIRONMENTAL STEEL INFORMATION WITH RELATIONSHIP TO MAGNET MUST BE PROVIDED TO SITE PLANNING FOR REVIEW (FOR ALL WALLS, CEILING AND FLOOR). ALL STRUCTURAL/ENVIRONMENTAL STEEL SHOULD BE IDENTIFIED INCLUDING, BUT NOT LIMITED TO, REBAR, BEAMS, PIPES, DRAINS, AND ANY STEEL USED FOR MAGNETIC SHIELDING. THE MAGNET ENVIRONMENT IS SENSITIVE TO FERROUS MATERIAL, WHICH CAN AFFECT IMAGE QUALITY. THE MOST SENSITIVE AREA IS WITHIN AN 8' X 8' AREA BENEATH THE MAGNET TO A DEPTH OF 1'-4". THESE SITE PLANS MUST BE CONSIDERED TENTATIVE UNTIL THIS INFORMATION IS PROVIDED. THE FINAL SITING OF THE MAGNET AND EQUIPMENT MAY BE AFFECTED BY ANY EXISTING/PROPOSED STRUCTURAL STEEL OR STEEL SHIELDING. THE CUSTOMER IS RESPONSIBLE FOR ANY ASSOCIATED CONSTRUCTION THAT MAY RESULT.

ALL MATERIAL IN SCAN ROOM MUST BE NON-FERROUS

SITE PLAN APPROVAL

PLEASE REVIEW, SIGN AND RETURN THIS SET TO HEADQUARTERS BEFORE FINAL PLANS. IF THERE ARE ANY CHANGES, PLEASE INDICATE ACCORDINGLY ON THIS SET.

CUSTOMER:	DATE:
SALES:	DATE:
I.P.M.:	DATE:

EQUIPMENT LEGEND

ITEM	ELEC. SYM.	ITEM DESCRIPTION SUPPLIED AND INSTALLED BY TOSHIBA	BTU/HR	WEIGHT	REF.
1	MAG	1.5 TESLA MAGNET	4,095	11,905	1/A4
2	PCH	PATIENT COUCH	–	706	1/A4
3	OXMS	OXYGEN SENSOR	–	1	4/A5
4	SUVS	SUPERVISORY UNIT SWITCH	–	1	7/A5
5	CAM	PATIENT OBSERVATION SYSTEM CAMERA (ON MAGNET)	–	–	–/–
6	POSM	PATIENT OBSERVATION SYSTEM MONITOR	120	10	2/A5
7	CON	WIDESCREEN LCD, CONTROL PAD, SPEAKER, AND CONTROL BOX	684	34	1/A5
8	HOST	HOST CABINET	1,707	47	1/A5
9	OXMM	OXYGEN MONITOR	–	1	4/A5
10	FSB	EMERGENCY VENTILATION FAN SWITCH BOX	100	3	–/–
11	GECO	GRADIENT POWER SUPPLY AND ECO CABINET	16,379	2,161	2/A4
12	TFR	TRANSFORMER CABINET	3,071	574	3/A4
13	SUVU	SUPERVISORY UNIT (MOUNTED ON TRANSFORMER CABINET)	0	27	6/A5
14	RFG	REFRIGERATOR CABINET	10,578	221	3/A5
15	FLS	FLOW SWITCH	–	12	–/–
16	INV	INNERVISION PC (ON CART SUPPLIED BY CUSTOMER / CONTRACTOR)	500	22	5/A5
17	SPK1	CONTROL ROOM SPEAKER (NOT SHOWN)	–	–	–/–
18	SPK2	SCAN ROOM SPEAKER (NOT SHOWN)	–	–	–/–
19	MFB	MAGNET FAN BOX	342	38	9/A5
20	FPC1	FILTER PANEL COVER (SCAN ROOM SIDE)	–	40	4/A4
21	FPC2	FILTER PANEL COVER (EQUIPMENT ROOM SIDE)	–	93	5/A4

ITEM	ELEC. SYM.	OPTIONAL ITEM DESCRIPTION SUPPLIED AND INSTALLED BY TOSHIBA	BTU/HR	WEIGHT	REF.

ITEM	ELEC. SYM.	ITEM DESCRIPTION – SUPPLIED BY TOSHIBA & INSTALLED BY CUSTOMER / CONTRACTOR	BTU/HR	WEIGHT	REF.
22	LFP	LINE FILTER PANEL	683	265	–/–
23	VRDU	VOLTAGE REGULATION DISTRIBUTION UNIT	14,000	1,778	8/A5
24	MFOLD	MANIFOLD (FIELD VERIFY LOCATION)	–	80	6/A4

ITEM	ELEC. SYM.	ITEM DESCRIPTION SUPPLIED AND INSTALLED BY CUSTOMER / CONTRACTOR	BTU/HR	WEIGHT	REF.
25	WALL	PARENT WALL	–	–	–/–
26	RFW	RF WINDOW–SITE SPECIFIC PER ROOM CONDITIONS	–	–	–/–
27	RFD	RF SHIELDED DOOR–SITE SPECIFIC PER ROOM CONDITIONS	–	–	–/–
28	RFS	RF SHIELDED ENCLOSURE–SITE SPECIFIC PER ROOM CONDITIONS (THICKNESS VARIES PER MANUFACTURER)	–	–	–/–
29	HVAC	AIR CONDITIONING UNIT (NOT SHOWN)	–	–	–/–
30	CB	CIRCUIT BREAKER (NOT SHOWN)	–	–	–/–
31	NFCC	NON–FERROUS COIL CABINET	–	–	–/–

TOSHIBA
Leading Innovation

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TRISTAN UNION DEPOSIT MRI #3
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DATE: 11–06–13
SCALE: 1/4" = 1'–0"
PLANNER: V. H.
SID: 30008347
PROJECT NO.
130013978MRP2

A1

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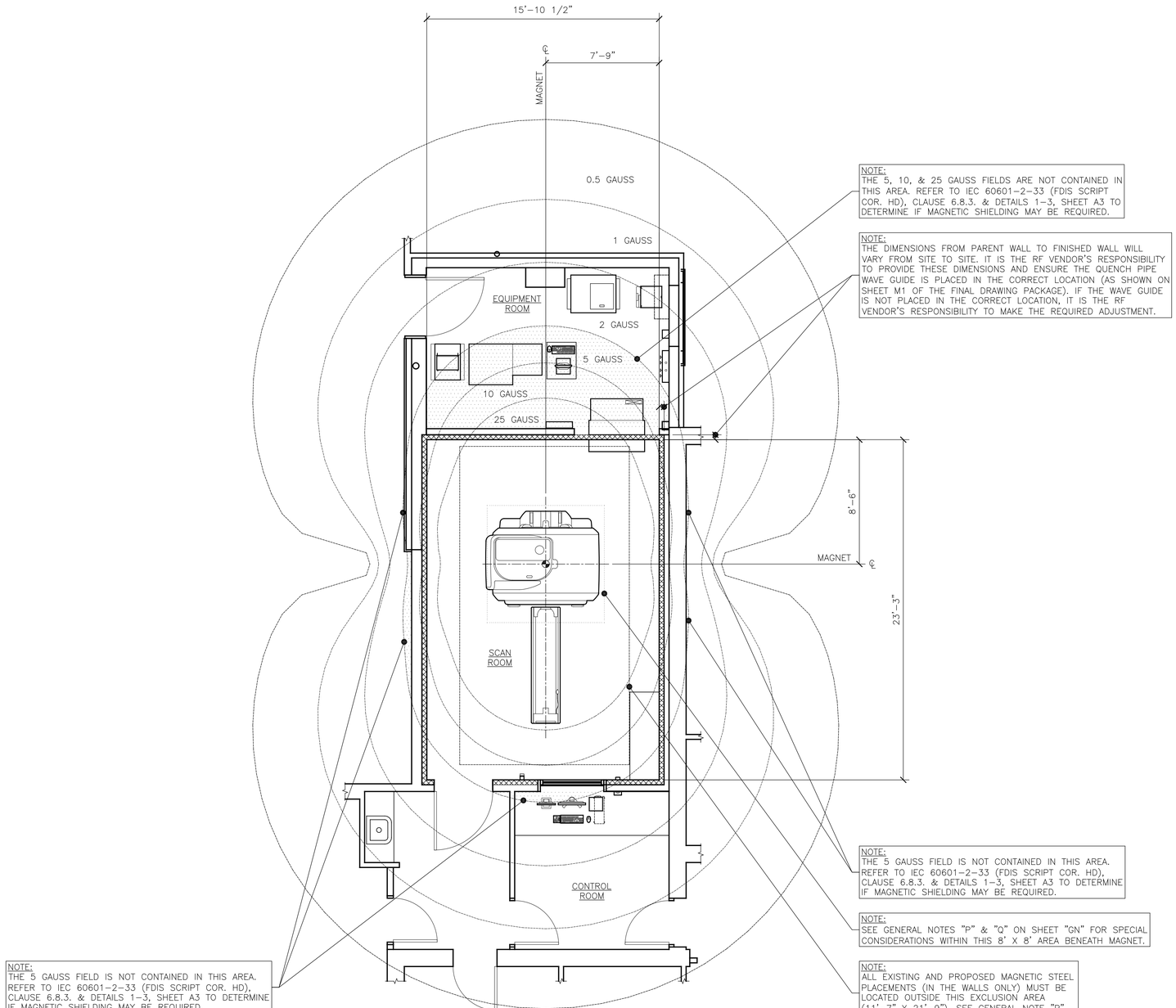

MAGNETIC FIELD LAYOUT

0 1' 2' 4' 8' 16'

RF / MAGNETIC SHIELDING

A. CUSTOMER/CONTRACTOR RESPONSIBLE FOR OBTAINING A SHIELDING VENDOR, TO MODEL, DESIGN, AND BUILD REQUIRED MAGNETIC AND RF SHIELDING.

B. MAGNET LEGS MUST BE INSULATED (ISOLATED) FROM RF ENCLOSURE.

C. GAUSS LINES IN THESE DRAWINGS ARE REPRESENTED WITHOUT MAGNETIC SHIELDING.

D. RF SHIELDING WEIGHT WILL VARY FROM SITE TO SITE. CUSTOMER'S STRUCTURAL ENGINEER MUST CONSULT WITH RF ENCLOSURE VENDOR FOR RF SHIELDING WEIGHTS.

E. THE EXISTING/FUTURE STEEL INFORMATION WITH RELATIONSHIP TO MAGNET MUST BE PROVIDED TO SITE PLANNING FOR REVIEW (ALL SIDES OF THE ROOM, INCLUDING CEILING AND FLOOR).

F. ANY STEEL BENEATH THE MAGNET MUST BE LOCATED A MINIMUM OF 4'–7" FROM MAGNET ISOCENTER. SOME STEEL REBAR COULD BE ACCEPTABLE, CONSULT WITH TOSHIBA INSTALLATION PROJECT MANAGER FOR APPROVAL OF ANY STEEL IN THIS CRITICAL AREA.

G. MAGNETOMETER SURVEY MUST BE PERFORMED BY TOSHIBA BEFORE SUBMITTING FINAL DRAWINGS (120V POWER IS REQUIRED FOR TOSHIBA TO BEGIN SURVEY. A MINIMUM OF 50'F IS REQUIRED FOR SURVEY AREA).

H. THE SHIELDING WORK IS REQUIRED TO SUPPRESS EXTERNAL LEAKAGE OF THE ELECTROMAGNETIC RADIATION GENERATED BY THE SYSTEM.

I. THE SHIELD MUST ATTENUATE ELECTROMAGNETIC RADIATION IN THE FREQUENCY BAND OF 63.86 MHz ± 0.5 MHz BY AT LEAST 90 dB.

90 dB OR MORE FROM 64.36 MHz TO 70 MHz
80 dB OR MORE FROM 70 MHz TO 300 MHz
50 dB OR MORE FROM 300 MHz TO 350 MHz
40 dB OR MORE FROM 350 MHz TO 1 GHz

NOTE:
IF A CEILING HEIGHT OF 8'–10 5/16" IS NOT AVAILABLE, THE SYSTEM CAN STILL BE INSTALLED AS LONG AS THE MINIMUM CEILING HEIGHT IS 7'–10 1/2" AND A SERVICE OPENING IS PROVIDED IN THE CEILING UP TO 8'–10 5/16".

MAGNET LEGS MUST BE INSULATED (ISOLATED) FROM RF ENCLOSURE.

TOSHIBA
Leading Innovation

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TRISTAN UNION DEPOSIT MRI #3
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DATE: 11–06–13
SCALE: 1/4" = 1'–0"
PLANNER: V. H.
SID: 30008347
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A2

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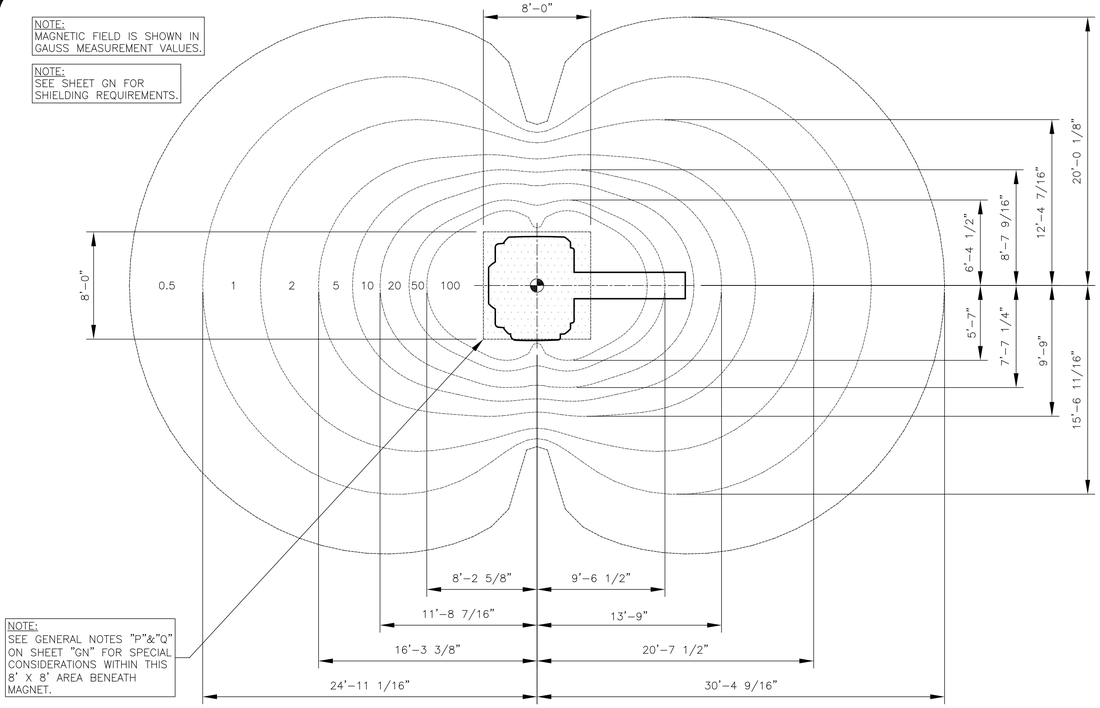
NOTE:
MAGNETIC FIELD IS SHOWN IN GAUSS MEASUREMENT VALUES.

NOTE:
SEE SHEET GN FOR SHIELDING REQUIREMENTS.



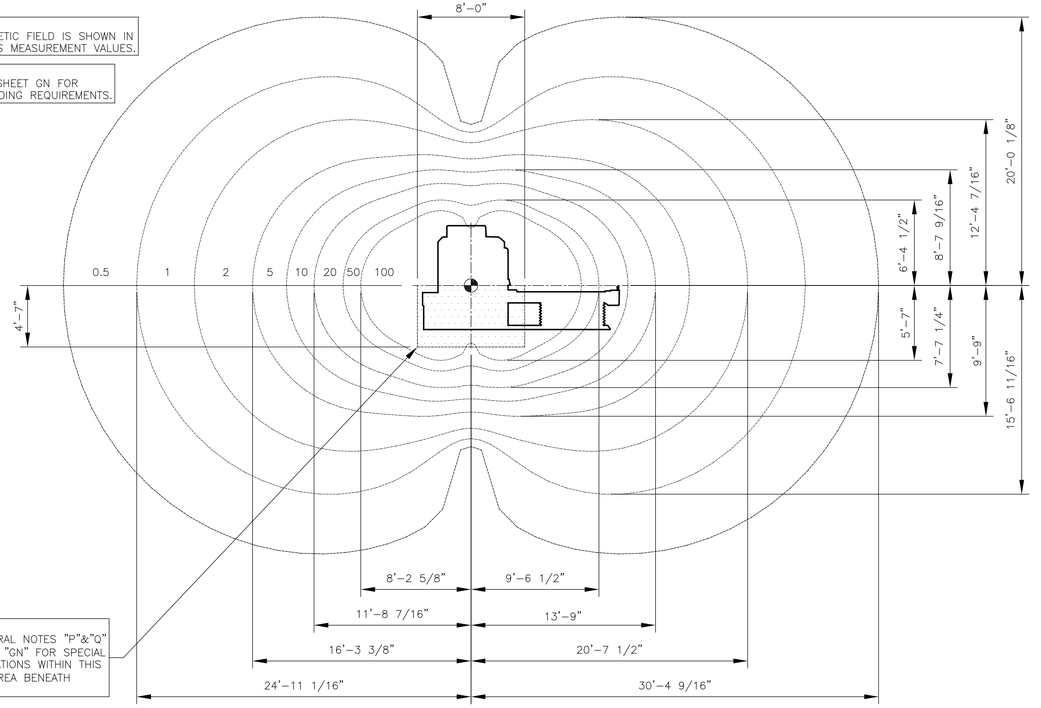
NOTE:
SEE GENERAL NOTES "P"&"Q" ON SHEET "GN" FOR SPECIAL CONSIDERATIONS WITHIN THIS 8' X 8' AREA BENEATH MAGNET.

1 FRINGE FIELD MEASUREMENTS (PLAN VIEW)

SCALE: 3/16" = 1'-0" 09-05-12

NOTE:
MAGNETIC FIELD IS SHOWN IN GAUSS MEASUREMENT VALUES.

NOTE:
SEE SHEET GN FOR SHIELDING REQUIREMENTS.



NOTE:
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2 FRINGE FIELD MEASUREMENTS (ELEVATION VIEW)

SCALE: 3/16" = 1'-0" 09-05-12

UNIT	EXAMPLE	GAUSS (NOTE A)	DISTANCE (FT.) (NOTE B)
ACCELERATING TUBE	LINEAR ACCELERATORS	0.5	30'-4 9/16"
I.I.	X-RAY SYSTEMS	0.5	30'-4 9/16"
NON-SHIELDED PHOTO-MULTIPLIER TUBE	CT, GAMMA CAMERA, PET SYSTEMS	0.5	30'-4 9/16"
REED RELAY	PACEMAKERS**	5	16'-3 3/8"
X-RAY TUBE	CT, X-RAY SYSTEMS	10	13'-9"
CRT	MONOCHROME MONITORS (SHIELDED)	5	16'-3 3/8"
	MONOCHROME MONITORS (UNSHIELDED)	2	20'-7 1/2"
	COLOR MONITORS (SHIELDED)	1	24'-11 1/16"
	COLOR MONITORS (UNSHIELDED)	0.5	30'-4 9/16"
	MULTIFORMAT CAMERAS	10	13'-9"
	ULTRASONIC DIAGNOSTIC SYSTEMS	2	20'-7 1/2"
	ELECTROCARDIOGRAPHS	2	20'-7 1/2"
	ELECTROENCEPHALOGRAPHS	2	20'-7 1/2"
OXYGEN MONITOR	INCLUDED IN THE MRI SYSTEM	20	11'-8 7/16"
SUPERVISORY UNIT	INCLUDED IN THE MRI SYSTEM	20	11'-8 7/16"
FILTER PANEL	INCLUDED IN THE MRI SYSTEM	100	8'-7"
GRADIENT POWER SUPPLY	INCLUDED IN THE MRI SYSTEM	5	16'-3 3/8"
TRANSFORMER CABINET (WITH VACUUM PUMP UNIT)	INCLUDED IN THE MRI SYSTEM	5	16'-3 3/8"
ECO CABINET	INCLUDED IN THE MRI SYSTEM	5	16'-3 3/8"
HOST CABINET	INCLUDED IN THE MRI SYSTEM	5	16'-3 3/8"
MAGNETIC RECORDING MEDIA	MAGNETIC TAPES, FLOPPY DISKS	10	13'-9"
MAGNETIC RECORDING MEDIA	BANK, CREDIT CARDS	20	11'-8 7/16"
OTHERS	WATCHES	30	10'-9 15/16"

NOTE:
THE DEVICES LISTED ABOVE ARE AFFECTED BY MAGNETIC FIELDS AND MAY NOT OPERATE PROPERLY NEAR THE GANTRY.

A. MAXIMUM MAGNETIC FIELD INTENSITY AT WHICH THE UNIT OPERATES NORMALLY. THESE VALUES INCLUDE THE EARTH'S MAGNETIC FIELD (APPROXIMATELY 0.4 GAUSS). IF THE DIRECTION IN WHICH THE GANTRY IS INSTALLED IS CLOSE TO THAT OF THE EARTH'S MAGNETIC FIELD, THE MAXIMUM MAGNETIC INTENSITY (INCLUDING THE EARTH'S MAGNETIC FIELD) OF EACH UNIT MAY EXCEED THE LIMIT. IN THIS SITUATION, THE INSTALLED DIRECTION MUST BE CHANGED. OTHERWISE, DO NOT ALLOW ANY EQUIPMENT TO BE SET UP BEYOND ALLOWABLE LIMIT OR PERSONS TO ENTER THIS AREA.
B. MINIMUM DISTANCE FROM THE CENTER OF THE MAGNET FOR NORMAL OPERATION.
C. SPECIAL CAUTION IS REQUIRED FOR ELECTRON MICROSCOPES BECAUSE THEY CAN BE AFFECTED BY MAGNETIC FIELD VARIATIONS AS SMALL A FEW MILLIGAUSS.

3 EFFECTS OF THE MAGNETIC FIELD

SCALE: NOT TO SCALE 09-05-12

NOTE:
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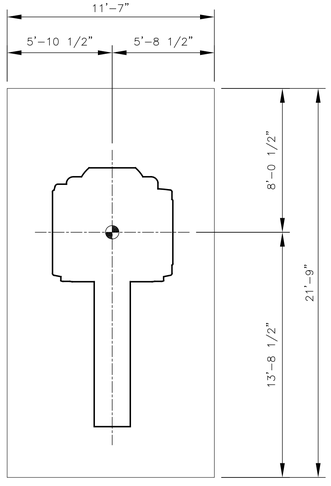
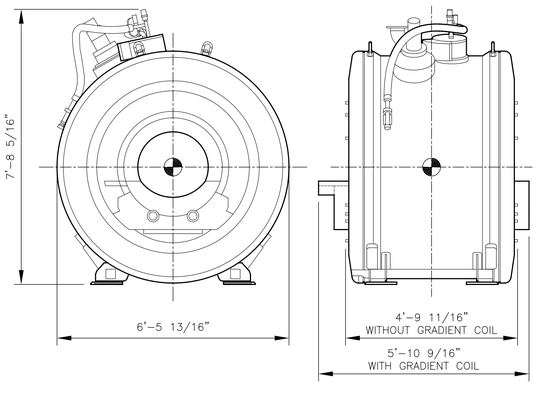


NOTE:
ALL EXISTING AND PROPOSED MAGNETIC STEEL PLACEMENTS (IN THE WALLS ONLY) MUST BE LOCATED OUTSIDE THIS EXCLUSION AREA (11'-7" X 21'-9").

4 STEEL EXCLUSION ZONE OF MAGNET

SCALE: 1/4" = 1'-0" 09-05-12

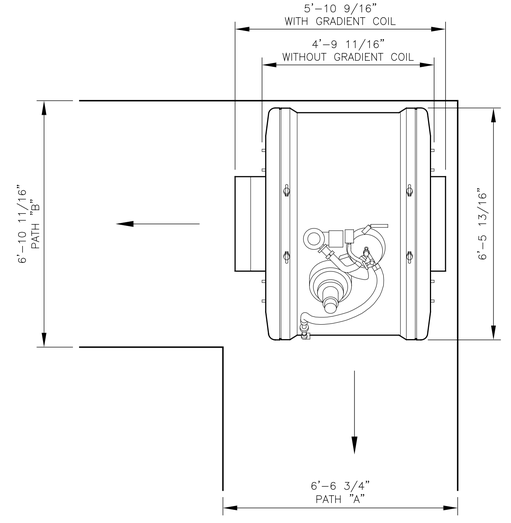


NOTE:
FOR DELIVERY: CONSULT RIGGING CONTRACTOR FOR HEIGHT REQUIREMENTS FOR MATERIALS USED TO TRANSPORT MAGNET TO FINAL LOCATION.

- CASTER HEIGHTS WILL VARY.
- CARRYING IN WEIGHT WITHOUT GRADIENT COIL, COVER IS 8,800 LBS (FILLED).

5 MAGNET ASSEMBLY FOR CARRYING IN

SCALE: 1/2" = 1'-0" 09-05-12



NOTE:
IF ORIENTATION IS NOT CHANGED AT THE CORNER, 6'-6 3/4" WIDTH IS SUFFICIENT FOR PATH "A" AND 6'-10 11/16" FOR PATH "B".

6 MINIMUM CORRIDOR WIDTH FOR MAGNET INGRESS

SCALE: 1/2" = 1'=0" 01-10-11

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TRISTAN UNION DEPOSIT
MRI #3
(MR SCAN ROOM - TITAN)
2808 OLD POST RD.
HARRISBURG, PA 17110

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DATE: 11-06-13
SCALE: AS NOTED
PLANNER: V. H.
SID: 30008347
PROJECT NO.
130013978MRP2

A3

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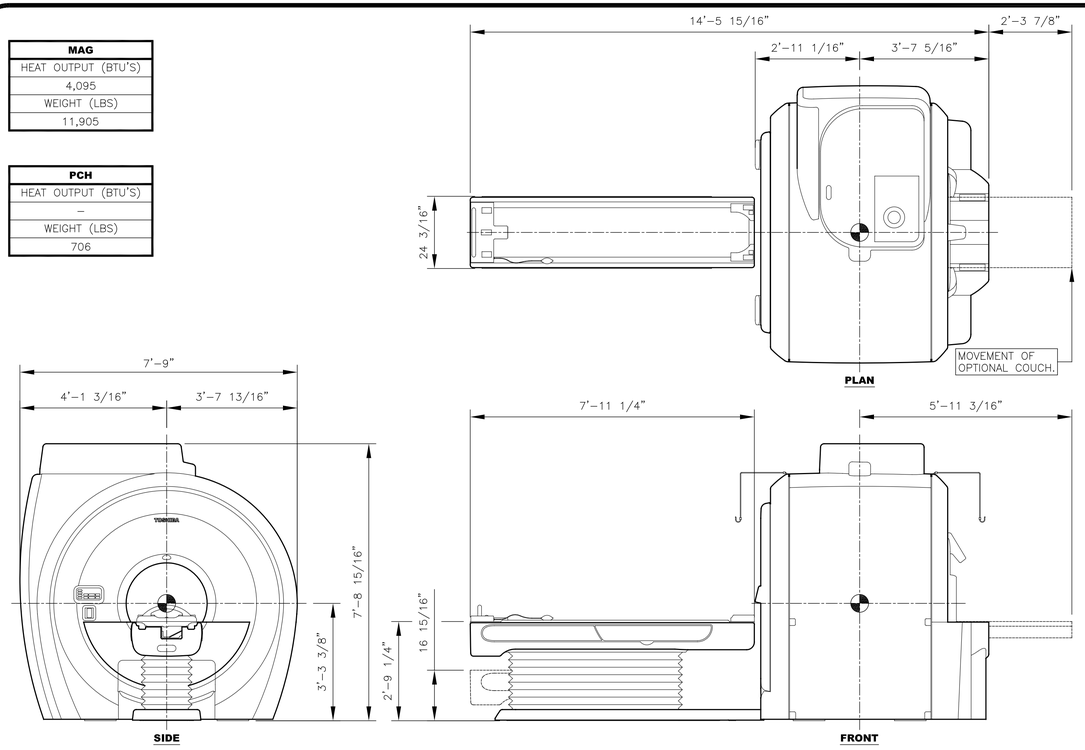
MAG
HEAT OUTPUT (BTU'S)
4,095
WEIGHT (LBS)
11,905

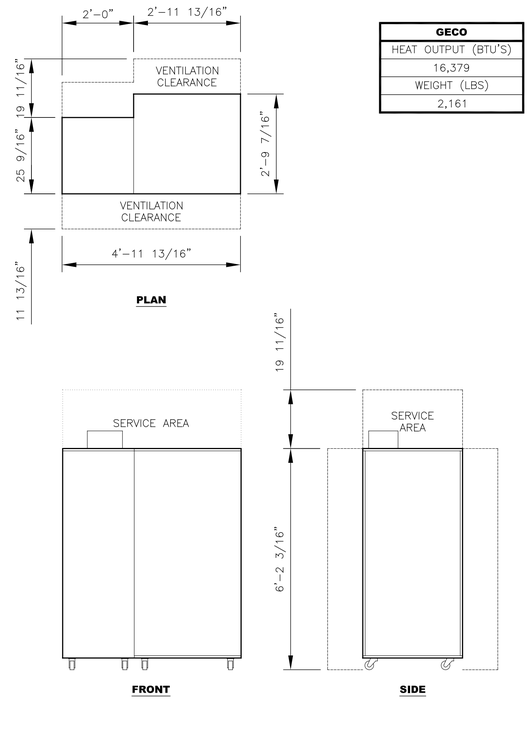
PCH
HEAT OUTPUT (BTU'S)
–
WEIGHT (LBS)
706



1 TITAN 1.5 TESLA MAGNET AND COUCH

SCALE: 1/2" = 1'–0" 03–12–13

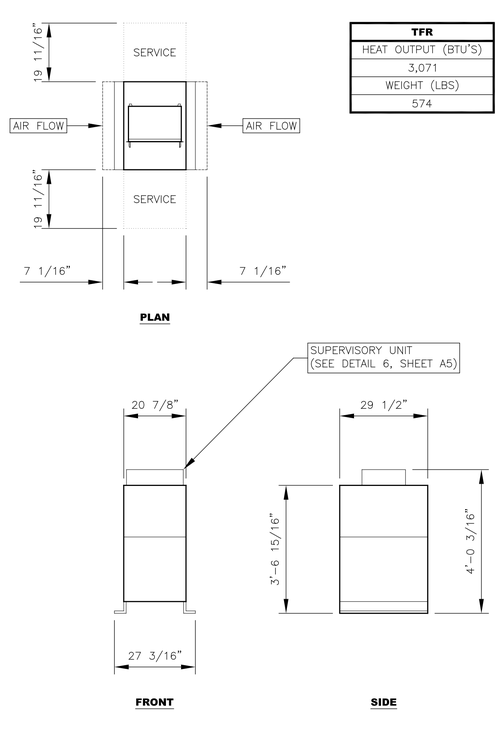
GECO
HEAT OUTPUT (BTU'S)
16,379
WEIGHT (LBS)
2,161



2 GRADIENT POWER SUPPLY AND ECO CABINET

SCALE: 1/2" = 1'–0" 03–12–13

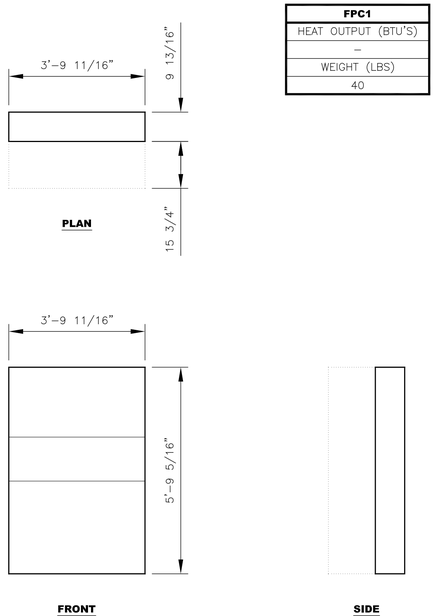
TFR
HEAT OUTPUT (BTU'S)
3,071
WEIGHT (LBS)
574



3 TRANSFORMER CABINET

SCALE: 1/2" = 1'–0" 03–12–13

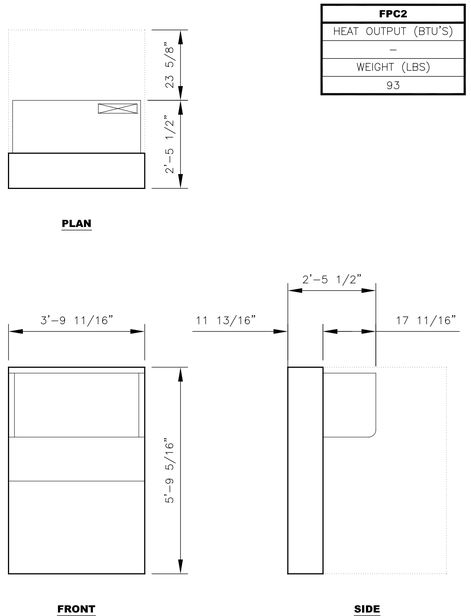
FPC1
HEAT OUTPUT (BTU'S)
–
WEIGHT (LBS)
40



4 FILTER PANEL COVER (SCAN ROOM SIDE)

SCALE: 1/2" = 1'–0" 03–12–13

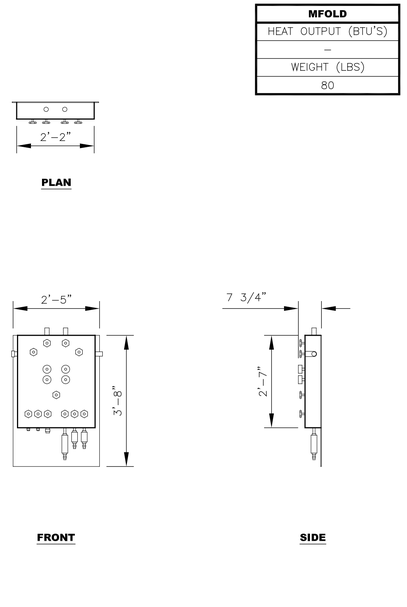
FPC2
HEAT OUTPUT (BTU'S)
–
WEIGHT (LBS)
93



5 FILTER PANEL COVER (EQUIPMENT ROOM SIDE)

SCALE: 1/2" = 1'–0" 03–12–13

MFOLD
HEAT OUTPUT (BTU'S)
–
WEIGHT (LBS)
80



6 MANIFOLD

SCALE: 1/2" = 1'–0" 03–12–13

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(MR SCAN ROOM – TITAN)
2808 OLD POST RD.
HARRISBURG, PA 17110

DATE: 11–06–13

SCALE: AS NOTED

PLANNER: V. H.

SID: 30008347

PROJECT NO.
130013978MRP2

A4

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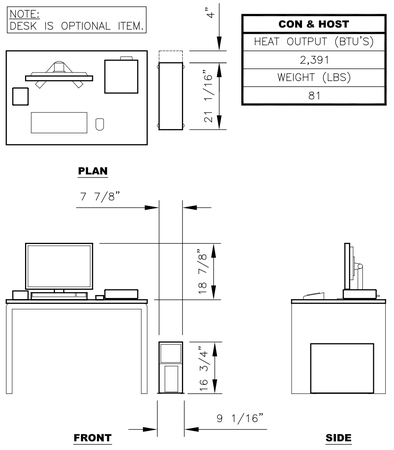
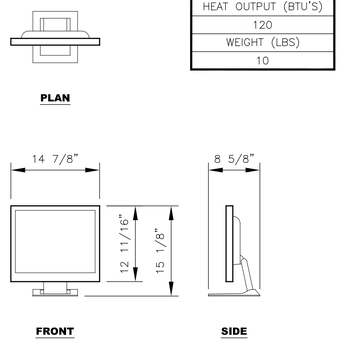
NOTE: DESK IS OPTIONAL ITEM.



CON & HOST
HEAT OUTPUT (BTU'S)
2,391
WEIGHT (LBS)
81

1 CONTROL CONSOLE AND HOST CABINET

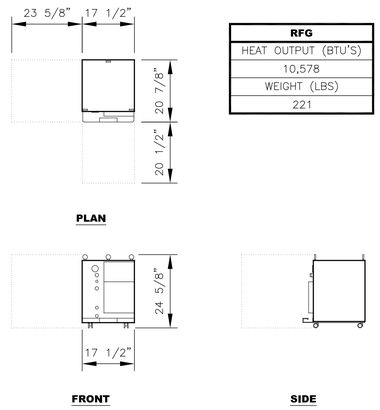
SCALE: 1/2" = 1'-0" 03-12-13



POSM
HEAT OUTPUT (BTU'S)
120
WEIGHT (LBS)
10

2 PATIENT OBSERVATION SYSTEM MONITOR

SCALE: 1" = 1'-0" 03-12-13



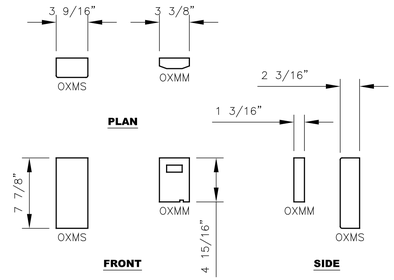
RFG
HEAT OUTPUT (BTU'S)
10,578
WEIGHT (LBS)
221

3 REFRIGERATOR CABINET

SCALE: 1/2" = 1'-0" 03-12-13

OXMS
HEAT OUTPUT (BTU'S)
–
WEIGHT (LBS)
1

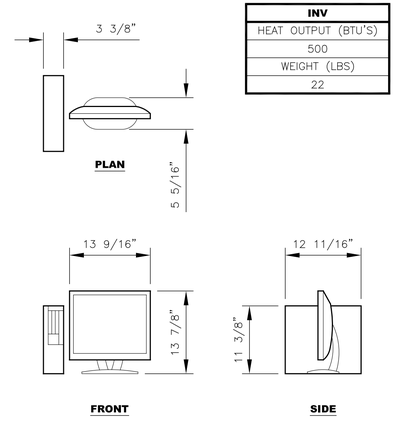
OXMM
HEAT OUTPUT (BTU'S)
–
WEIGHT (LBS)
1



4 OXYGEN SENSOR AND OXYGEN MONITOR

SCALE: 1 1/2" = 1'-0" 03-12-13

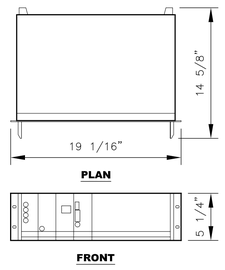
INV
HEAT OUTPUT (BTU'S)
500
WEIGHT (LBS)
22



5 INNERVISION WORKSTATION

SCALE: 1" = 1'-0" 03-12-13

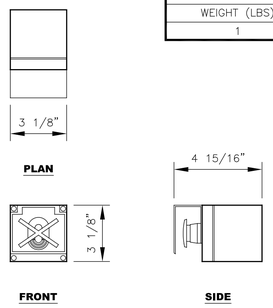
SUVU
HEAT OUTPUT (BTU'S)
–
WEIGHT (LBS)
27



6 SUPERVISORY UNIT

SCALE: 1 1/2" = 1'-0" 03-12-13

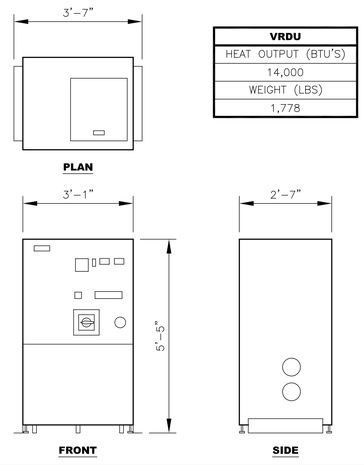
SUVS
HEAT OUTPUT (BTU'S)
–
WEIGHT (LBS)
1



7 SUPERVISORY UNIT SWITCH

SCALE: 3" = 1'-0" 03-12-13

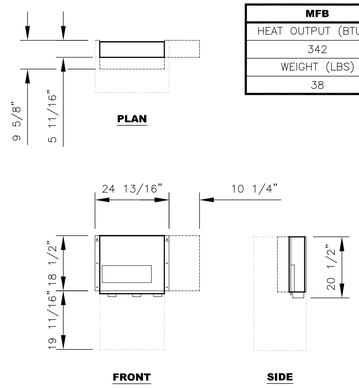
VRDU
HEAT OUTPUT (BTU'S)
14,000
WEIGHT (LBS)
1,778



8 VOLTAGE REGULATION DISTRIBUTION UNIT

SCALE: 1/2" = 1'-0" 03-12-13

MFB
HEAT OUTPUT (BTU'S)
342
WEIGHT (LBS)
38



9 MAGNET FAN BOX

SCALE: 1/2" = 1'-0" 03-12-13

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