

| | Room | Lead in Partitions (mm) | Lead in Doors & Control Windows (mm) | Lead on Floor Slabs (mm) | Lead on Ceiling Slabs (mm) | Height of Lead in Partitions |
|----|--|---|--|--|--|------------------------------|
| 1 | Radiographic Fluoroscopic Room (Ceiling Mounted X-Ray) Special Procedures Diagnostic and Tele-Fluoroscopy (Ceiling Mounted X-Ray) | 1.5mm (3mm for on Partition on Dark Room Side) | 1.5 mm (3 mm for Door to Dark Room) | None on 100 mm (min.) Normal Weight Concrete | None | 2100 mm (7") |
| 2 | Deep Therapy Room: Conventional Cobalt Betatrons Linear Accelerators | Shielding as Determined by a Licensed Physicist | | | | |
| 3 | Cystoscopic Room | 1.5mm (3mm for on Partition on Dark Room Side) | 1.5 mm (3 mm for Door to Dark Room) | None on 100 mm (min.) Normal Weight Concrete | None | 2100 mm (7") |
| 4 | Animal X-Ray, Animal Research, Radiography and Fluoroscopy | 1.5mm (3mm for on Partition on Dark Room Side) | 1.5mm (3mm for on Partition on Dark Room Side) | 1.5 mm (3 mm for Door to Dark Room) | None on 100 mm (min.) Normal Weight Concrete | None |
| 5 | Dental X-Ray Area Oral Surgery Room General Treatment Operatories | 1 mm | 1 mm | None | None | 2100 mm (7") |
| 6 | Dental X-Ray Room (Portable 50/65 KVP) | None | None | None | None | None |
| 7 | Fluoroscopic Rooms, Vertical or Tilt Type, Gastroenterology (No Radiography) | 1.5 mm (No Control Booth Required) | 1.5 mm | None on 100 mm (min.) Normal Weight Concrete | None | 2100 mm (7") |
| 8 | Operating Room Including Animal Operating (Portable X-Ray), Cardiac and Neurosurgical Operating Room (Portable X-Ray) | None (Except 3 mm on Dark Room Side) | None (Except 3 mm on Dark Room Side) | None | None | None |
| 9 | Cardiac Catheterization in cardiopulmonary Clinic (Fixed Equipment) Operating Room (Fixed Equipment) | 1.5mm (3mm for on Partition on Dark Room Side) | 1.5 mm (3 mm for Door to Dark Room) | None on 100 mm (min.) Normal Weight Concrete | None | 2100 mm (7") |
| 10 | Ultrasound & Thermography | None | None | None | None | None |

GENERAL NOTES:

1. ALL RADIOLOGY FACILITY PROJECTS WILL BE REVIEWED BY THE VA HEALTH PHYSICS PROGRAM OFFICE FOR APPROPRIATE APPLICATION OF PROTECTIVE STANDARDS.
- 2.* LEAD SHIELDING REQUIREMENTS IN PARTITIONS ADJACENT TO, FACING, OR PROXIMITY TO PHOTOGRAPHIC LABS SHOULD BE REVIEWED BY A REGISTERED PHYSICIST.

DETAIL TITLE / LEAD LINING IN X-RAY ROOMS

SCALE : NONE

DATE ISSUED :DECEMBER 2008

CADD DETAIL NO. : SD134900-01.DWG

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| MILLI-METERS | DECIMALS OF AN INCH | FRACTIONS OF AN INCH | LBS. PER SQ. FT | LEAD GLASS EQUIVALENT |
|--------------|---------------------|----------------------|-----------------|-----------------------|
| 0.396 | 0.0156 | 1/64" | 1 | 1 PLY APPROX. 1/4" |
| 0.792 | 0.0312 | 1/32" | 2 | 1 PLY APPROX. 1/4" |
| 1.000 | 0.0391 | 5/128" | 2 1/2 | 1 PLY APPROX. 1/4" |
| 1.191 | 0.0469 | 3/64" | 3 | 1 PLY APPROX. 1/4" |
| 1.587 | 0.0625 | 1/16" | 4 | 1 PLY APPROX. 1/4" |
| 1.984 | 0.0781 | 5/64" | 5 | 1 PLY APPROX. 1/4" |
| 2.380 | 0.0937 | 3/32" | 6 | 1 PLY APPROX. 1/4" |
| 3.175 | 0.1250 | 1/8" | 8 | 2 PLY APPROX. 1/2" |
| 3.967 | 0.1562 | 5/32" | 10 | 2 PLY APPROX. 1/2" |
| 4.763 | 0.1875 | 3/16 | 12 | 3 PLY APPROX. 3/4" |
| 5.555 | 0.2187 | 7/32" | 14 | 3 PLY APPROX. 3/4" |
| 6.350 | 0.2500 | 1/4" | 16 | 4 PLY APPROX. 1" |
| 7.142 | 0.2812 | 9/32" | 18 | 4 PLY APPROX. 1" |
| 8.465 | 0.3333 | 1/3" | 20 | 5 PLY APPROX. 1 1/4" |
| 9.525 | 0.3750 | * 3/8" | 22 1/2 | 6 PLY APPROX. 1 1/2" |
| 10.160 | 0.4000 | 2/5" | 24 | 6 PLY APPROX. 1 1/2" |
| 10.317 | 0.4062 | 13/32" | 25 | 6 PLY APPROX. 1 1/2" |
| 11.112 | 0.4375 | * 7/16" | 28 | 7 PLY APPROX. 1 3/4" |
| 12.700 | 0.5000 | 1/2" | 30 | 7 PLY APPROX. 1 3/4" |
| 14.267 | 0.5625 | * 9/16" | 34 | 8 PLY APPROX. 2" |
| 15.876 | 0.6250 | 5/8" | 38 | 9 PLY APPROX. 2 1/4" |
| 16.934 | 0.6667 | 2/3" | 40 | 9 PLY APPROX. 2 1/4" |
| 19.050 | 0.7500 | 3/4" | 44 | 10 PLY APPROX. 2 1/2" |
| 20.637 | 0.8125 | * 13/16" | 48 | 11 PLY APPROX. 2 3/4" |
| 22.225 | 0.8750 | 7/8" | 52 | 12 PLY APPROX. 3" |
| 25.400 | 1.000 | 1" | 60 | 14 PLY APPROX. 3 1/4" |

GENERAL NOTES:

1. SHEET LEAD IN THIS TABLE GIVEN IN COMMERCIAL THICKNESSES EXCEPT AS NOTED.
- 2.* THESE SPECIAL THICKNESSES MAY BE ROLLED IF IN SUFFICIENT QUANTITIES



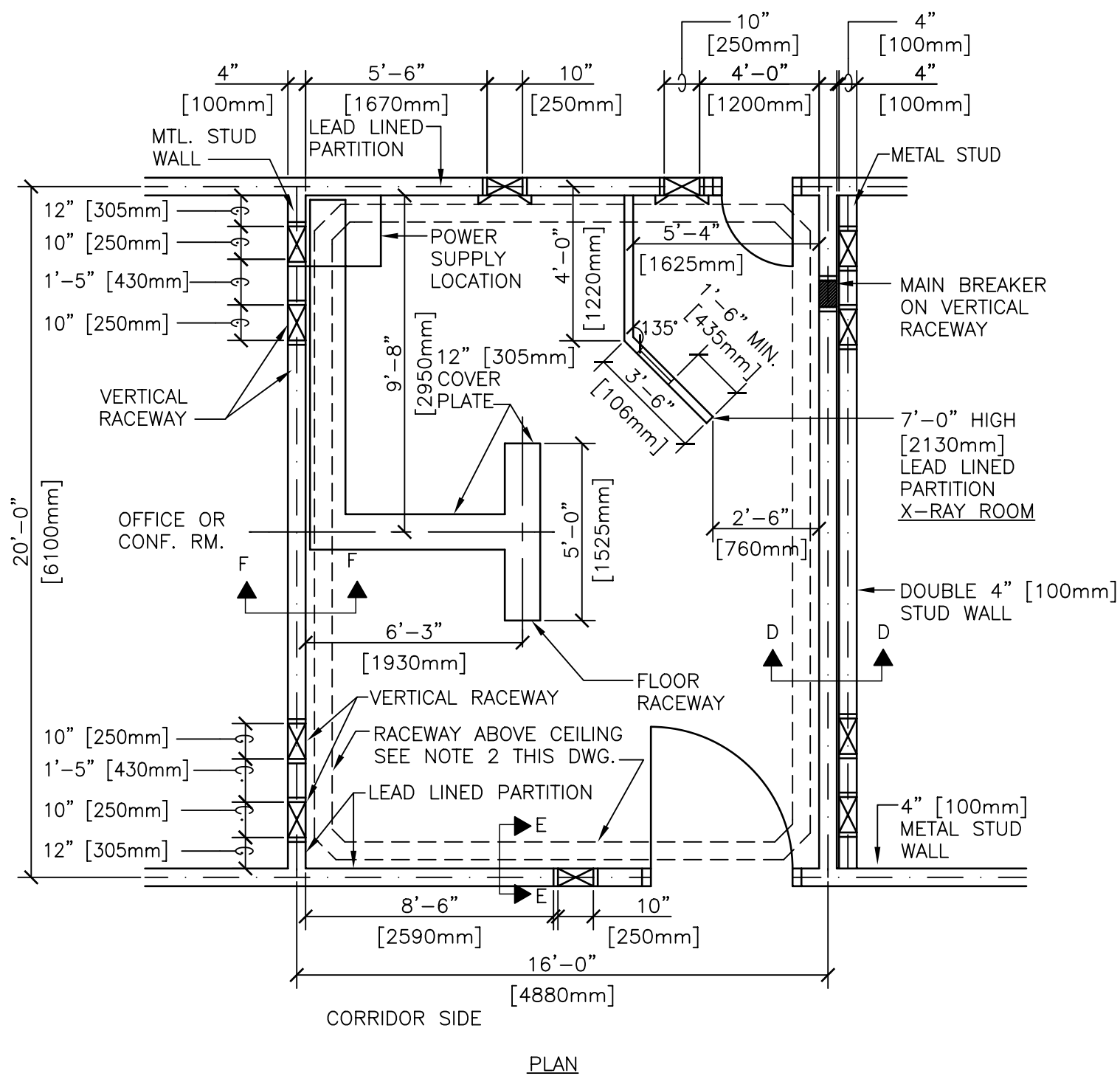
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DETAIL TITLE / LEAD SHEET THICKNESS & WEIGHT

SCALE : NONE

DATE ISSUED :DECEMBER 2008

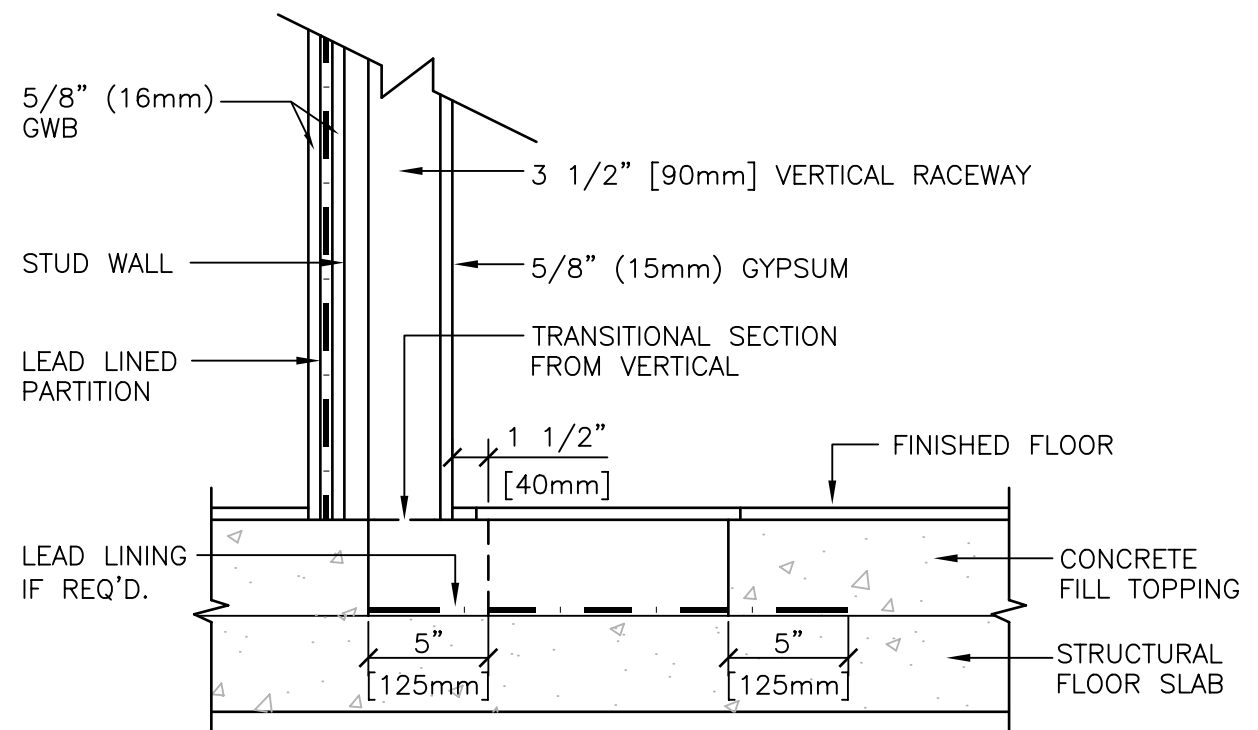
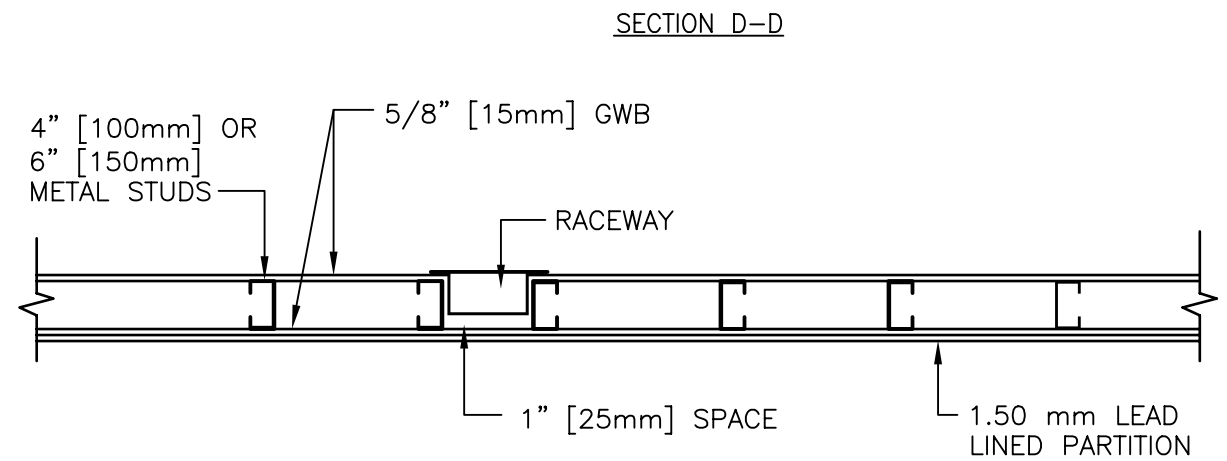
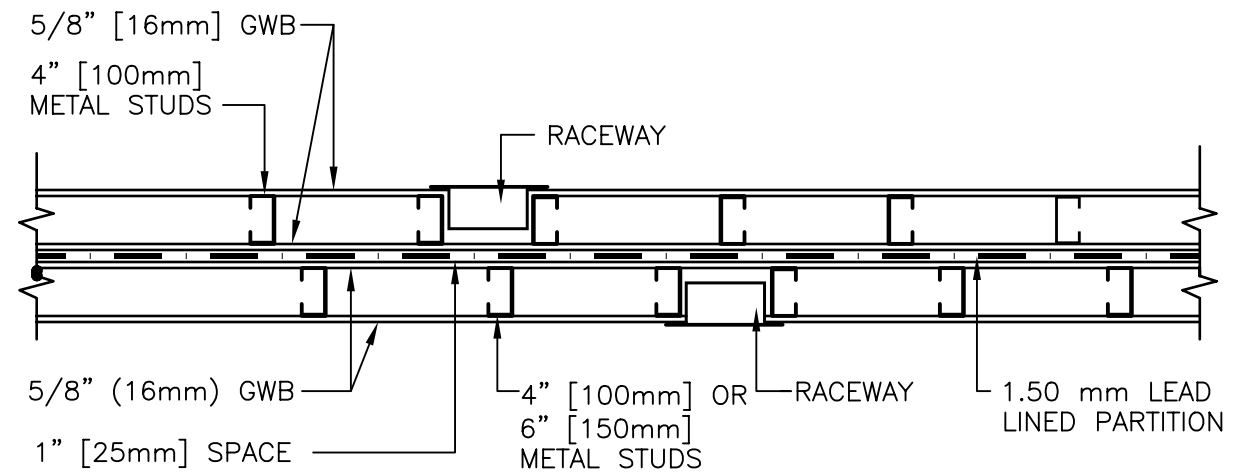
CADD DETAIL NO. : SD134900-02.DWG



PLAN

GENERAL NOTES:

1. VERTICAL & HORIZONTAL RACEWAYS REQUIRE A 6" [152mm] DEPTH WHERE THERE IS A 3.5" [115mm] TOPPING & DEPRESS THE SLAB 2.5" [65mm]. WHERE THE SLAB DOES NOT HAVE A TOPPING, DEPRESS THE SLAB 6" [152mm].
2. RACEWAY CORNERS ARE BEVELED AT 45 DEGREES TO FACILITATE CONDUIT INSTALLATION.
3. 6" [152mm] LEAD LINED PARTITION AT THE ENTIRE PERIMETER.



DETAIL TITLE / DOD / VA UNIVERSAL X-RAY
(R-F) ROOM
PLAN AND SECTIONS

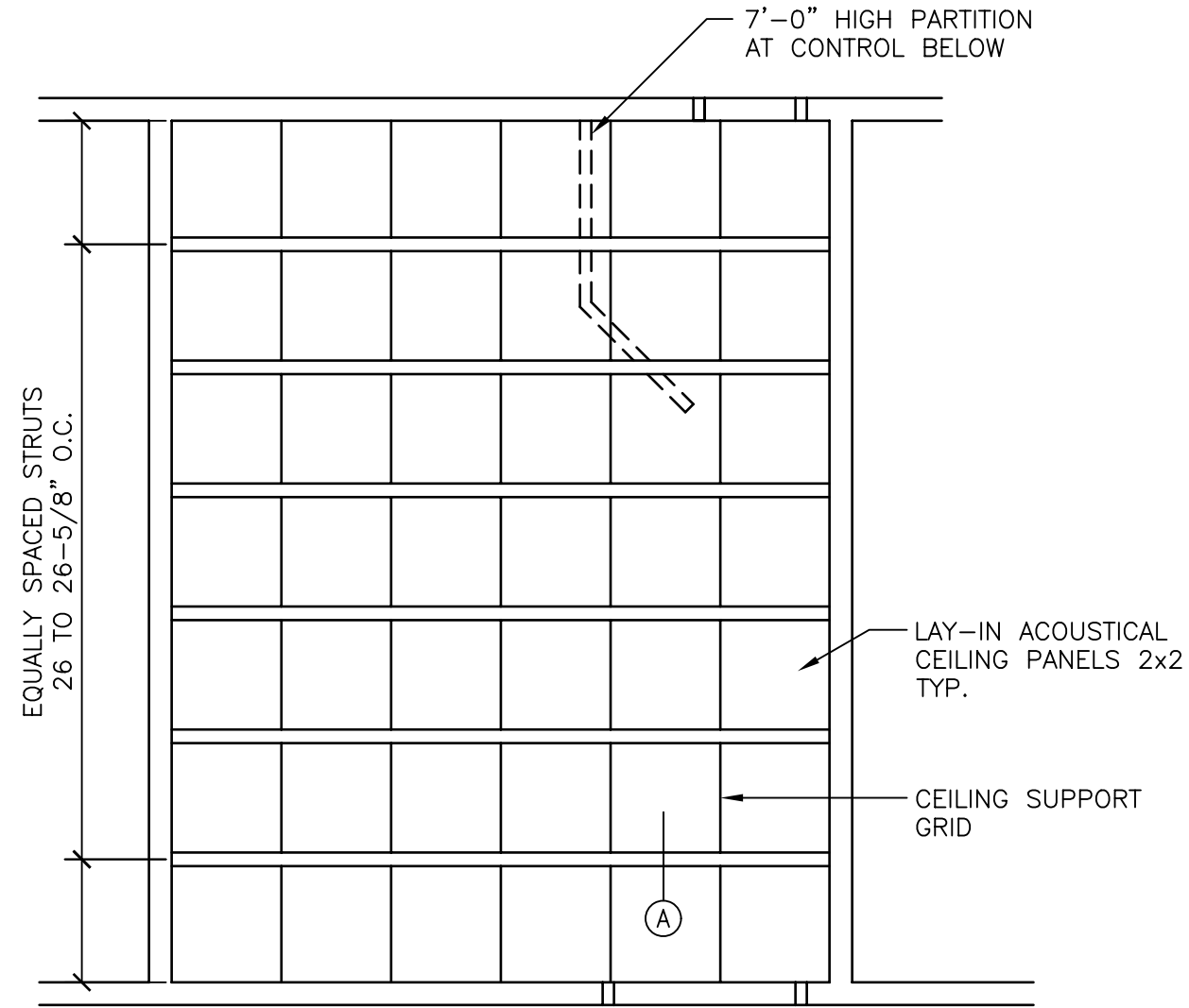
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DATE ISSUED :DECEMBER 2008

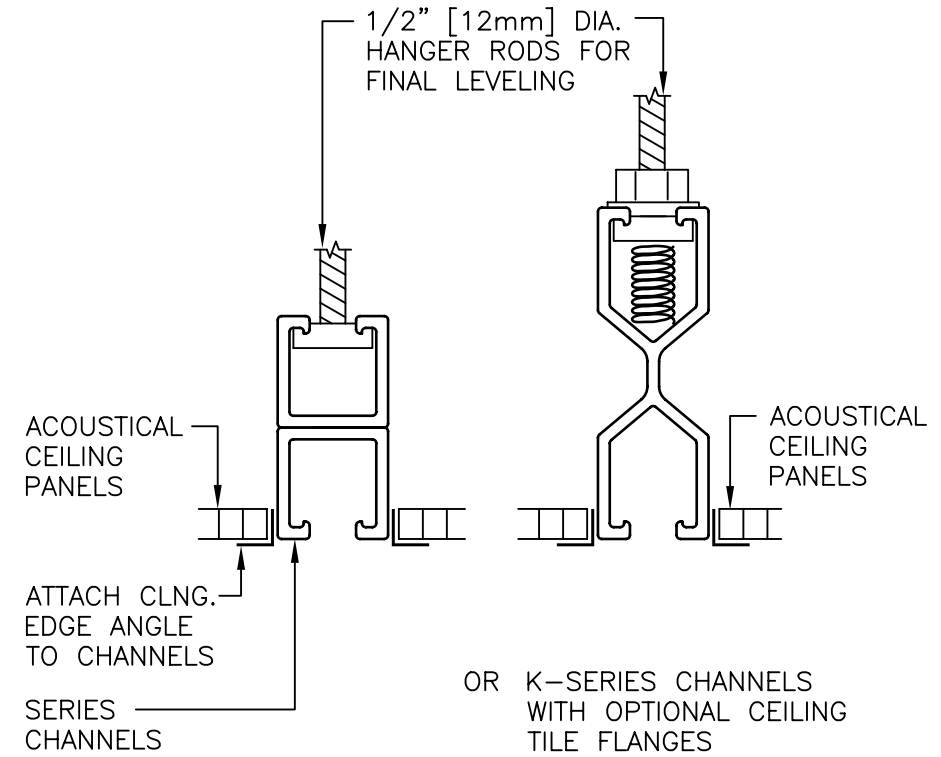
CADD DETAIL NO. : SD134900-03.DWG

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REFLECTED CEILING PLAN
UNIVERSAL X-RAY ROOM



(A) SUPPORT STRUT DETAILS LAY-IN CEILING

GENERAL NOTES:

PROVIDE SUSPENDED GRID OF STRUT CHANNELS TO SUPPORT X-RAY MACHINE RAILS. A/E SHALL DESIGN SUPPORT SYSTEM TO SUIT BUILDING STRUCTURE. SUPPORT RAILS FROM STRUCTURAL BEAMS OR JOISTS (PROVIDE INTERMEDIATE FRAMING AS NECESSARY). DO NOT SUPPORT FROM METAL DECK, CONCRETE SLABS, OR WALK-ON (INTERSTITIAL) DECKS. BRACE SUPPORT SYSTEM FOR LATERAL LOADS FROM MOVING EQUIPMENT AND SEISMIC. PROVIDE LIGHTING AND HVAC PER VA DESIGN MANUALS.

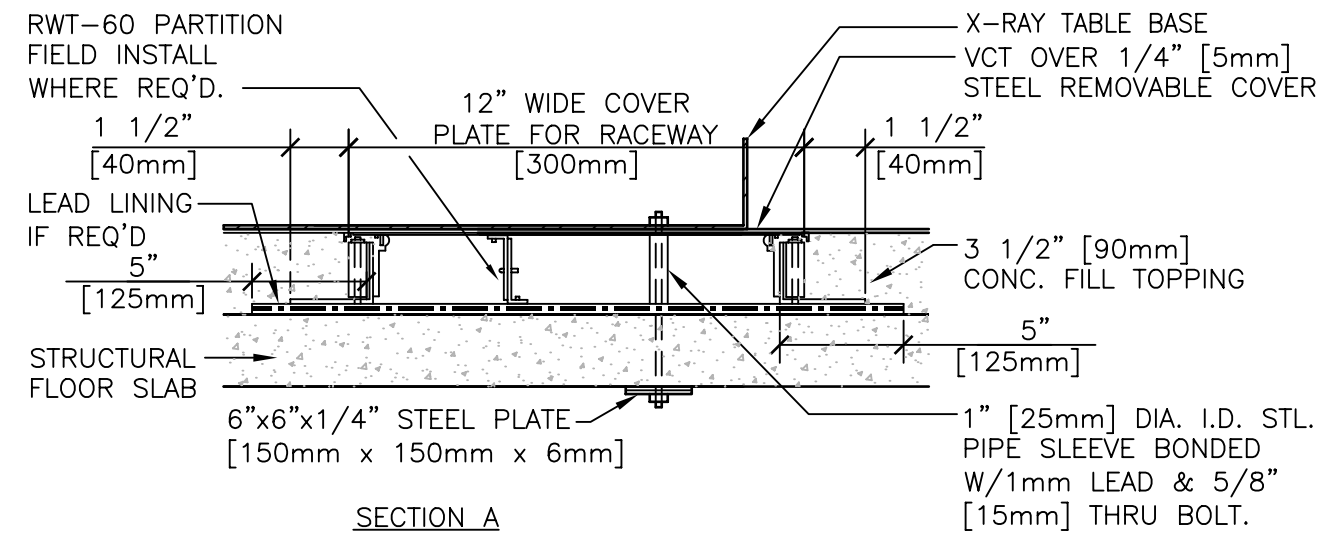
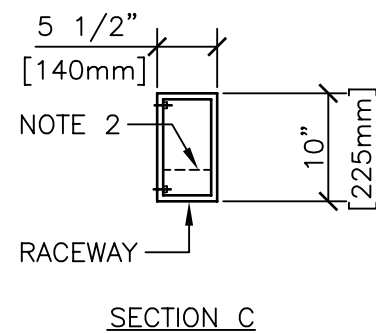
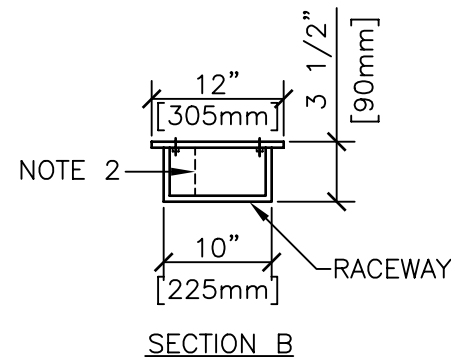
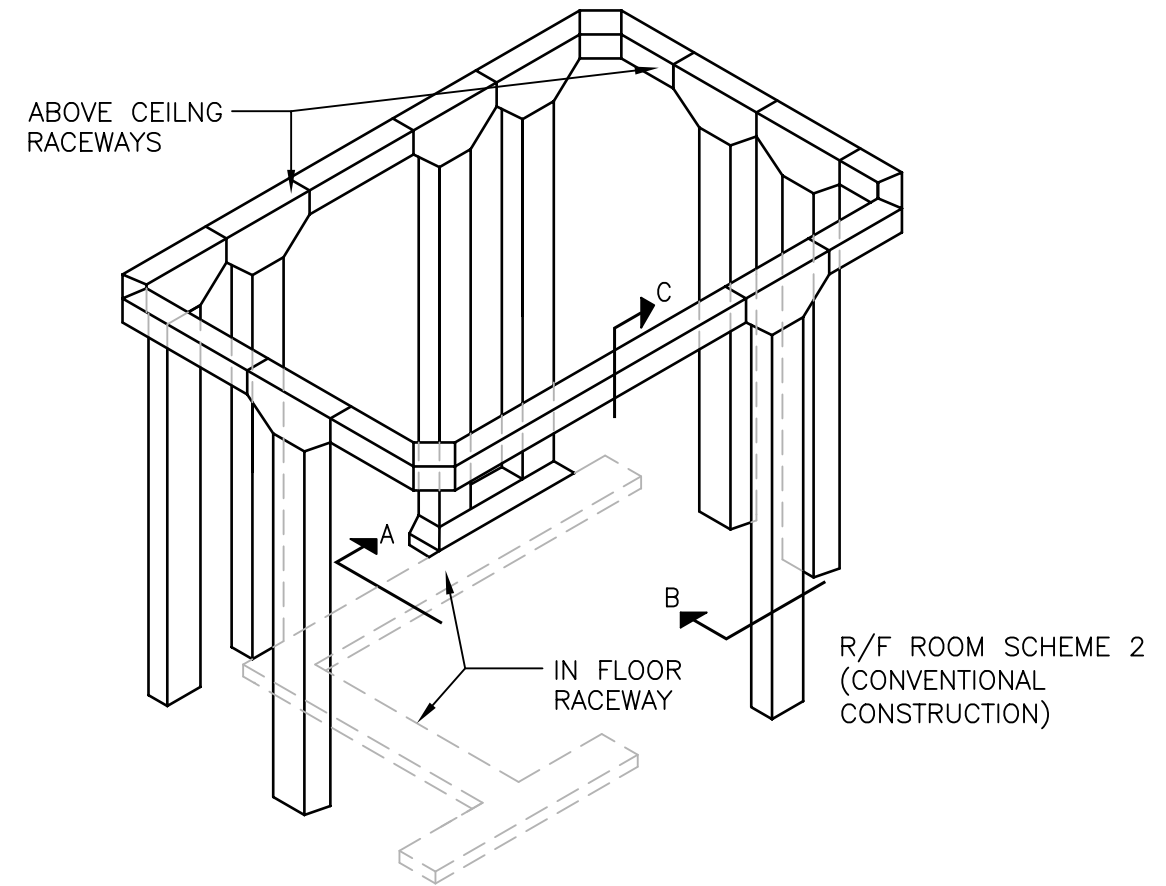
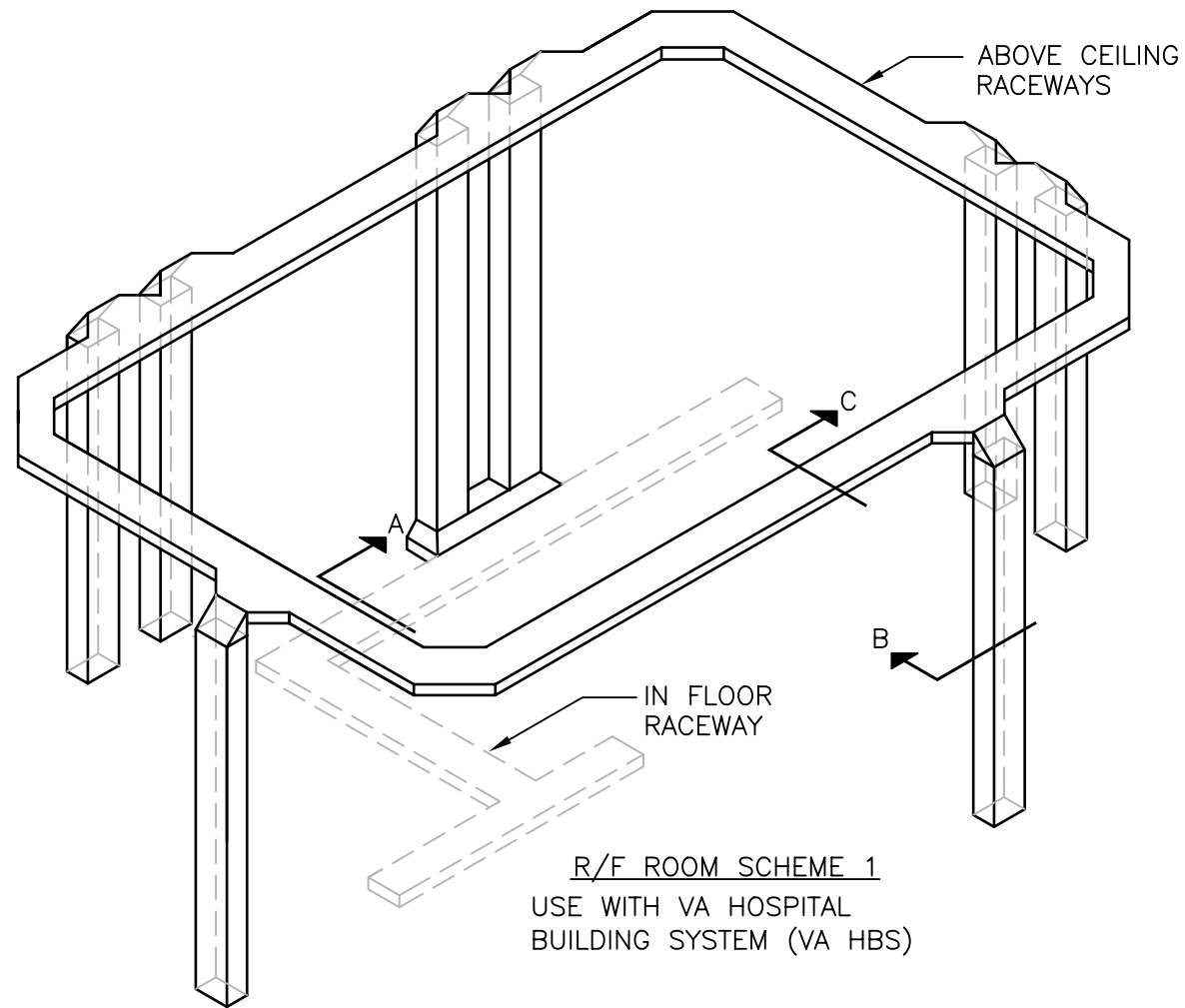
DETAIL TITLE / SUPPORT SYSTEM FOR CEILING
MOUNTED X-RAY EQUIPMENT

SCALE : NONE

DATE ISSUED : DECEMBER 2008

CADD DETAIL NO. : SD134900-04.DWG





GENERAL NOTES:

1. REFER TO STANDARD DETAILS 13 49 00-1 & 13 49 00-2 FOR LEAD LINING REQUIREMENTS.
2. INSTALL DIVIDERS IN RACEWAYS IF REQUIRED.
3. LOCATE RACEWAY ON THE UNDERSIDE OF THE VA HBS WALK-ON DECK.

DETAIL TITLE / DOD / VA UNIVERSAL X-RAY (R-F0) ROOM RACEWAY LAYOUT SCHEME 1 & 2

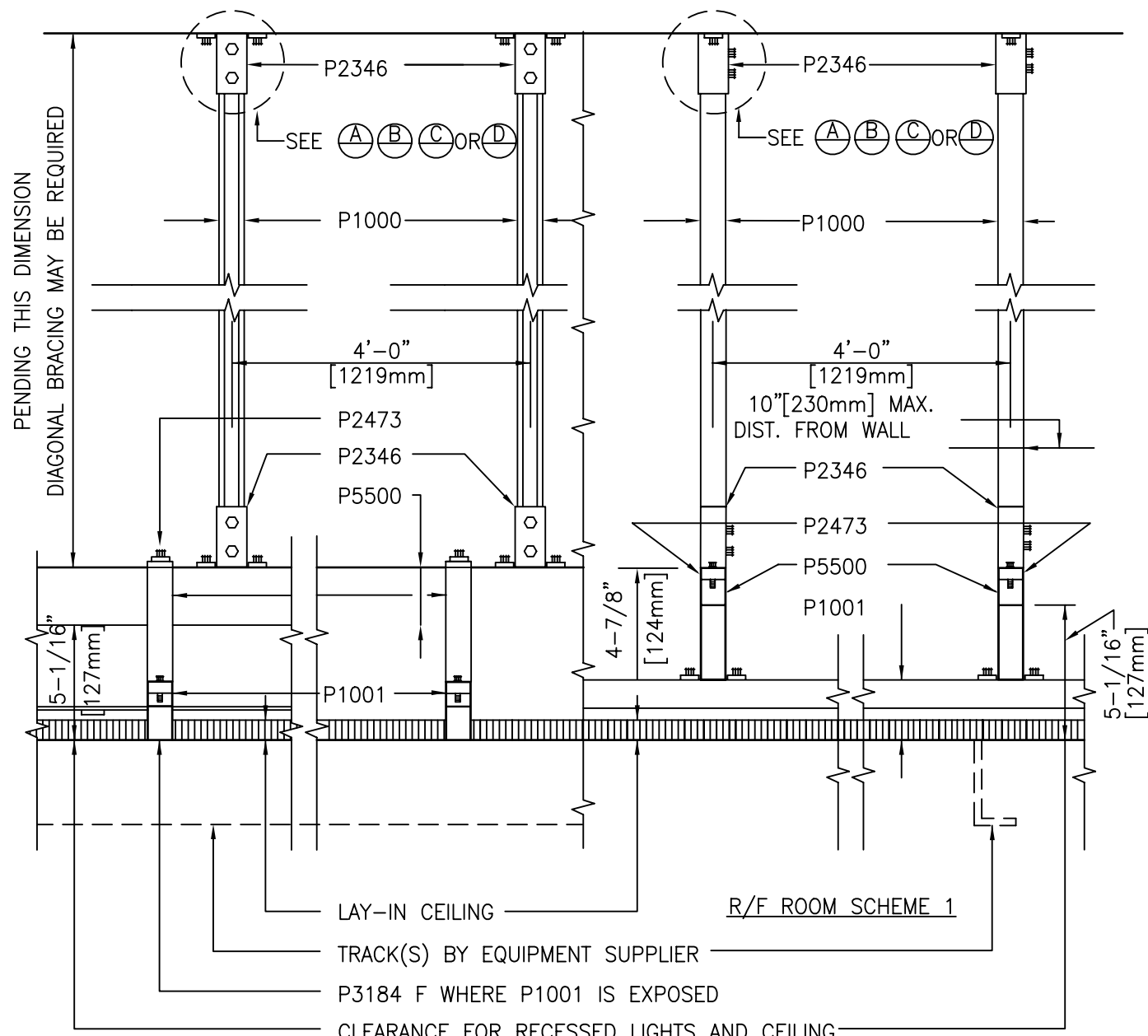
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DATE ISSUED : DECEMBER 2008

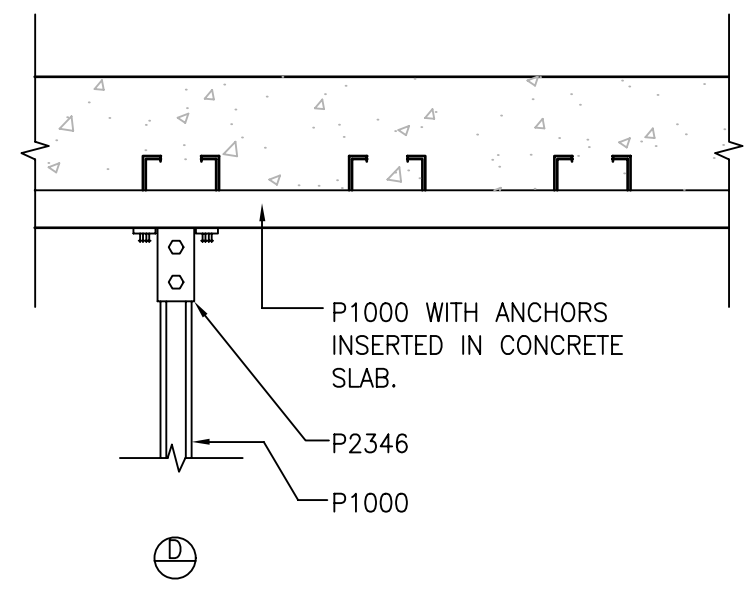
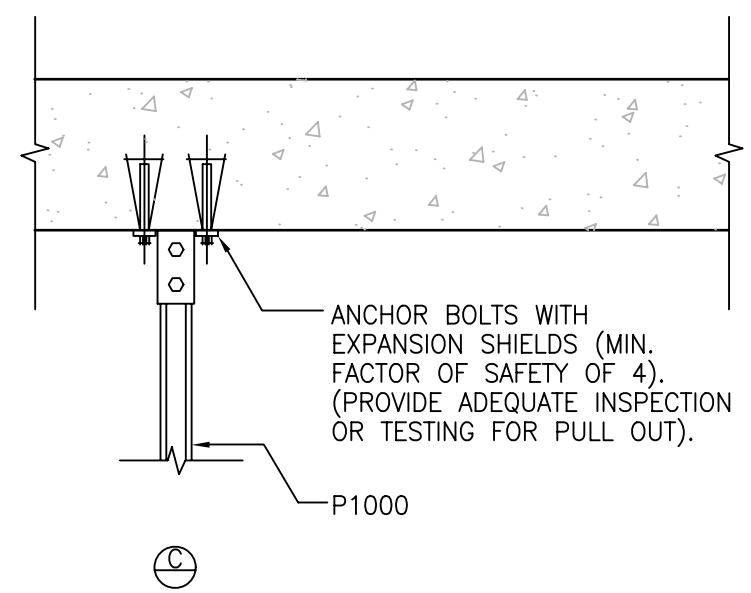
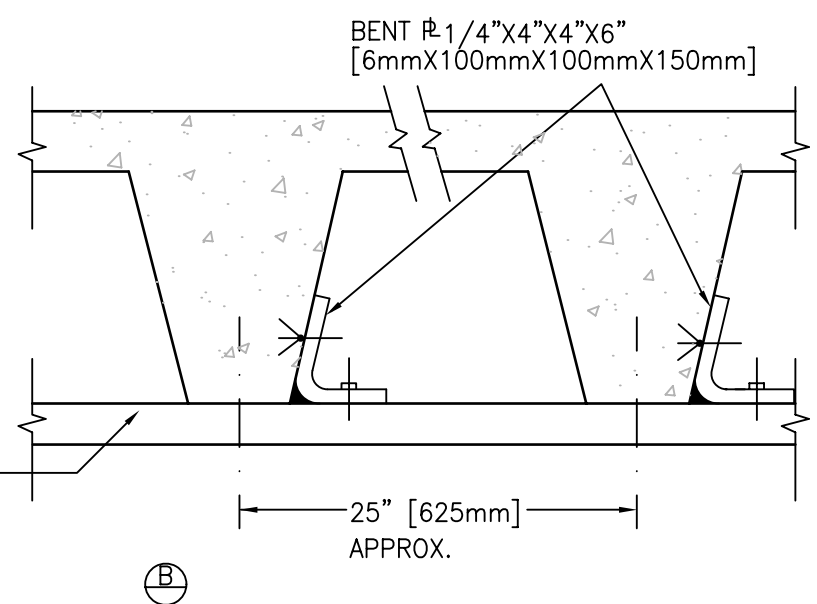
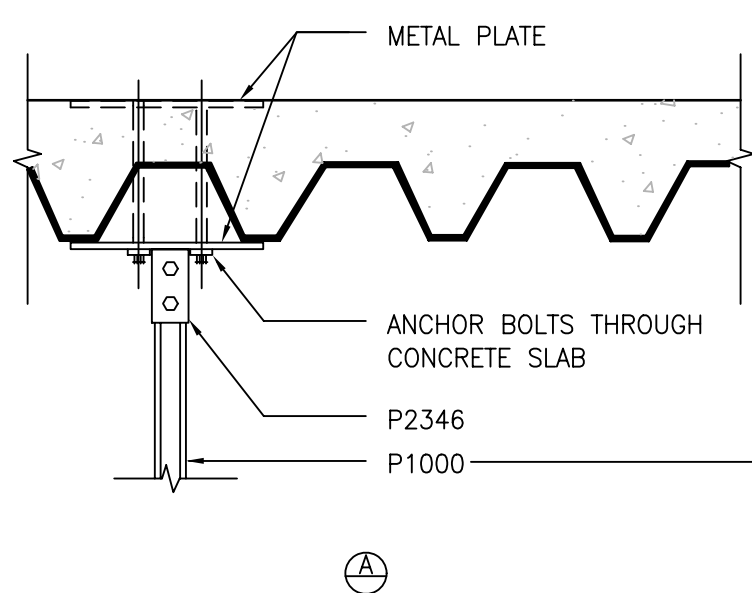
CADD DETAIL NO. : SD134900-05.DWG

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SECTION THROUGH SUPPORT SYSTEM



NOTES:
 ALL SUPPORTS AND HANGERS SHALL BE ARRANGED AS SHOWN ON ARCHITECTURAL DRAWINGS AND SHALL TERMINATE APPROX. 6" [150mm] FROM FACE OF WALLS OR PARTITIONS, EXCEPT FOR MEMBERS FLUSH WITH CEILING.
 THE NUMBER SHOWN ON DRAWING WITH A "P" PREFIX ARE UNISTRUT CATALOG NUMBERS USED AS A CONVENIENCE FOR IDENTIFYING DESIRED SHAPES AND THICKNESS OF MEMBERS.

NOTE FOR ARCHITECT:
 DETAILS A, B, C & D SHOW ANCHORAGE SUPPORT INTO VARIOUS TYPES OF SLAB CONDITIONS. ACTUAL SUPPORT MUST BE DESIGNED TO SUIT THE PARTICULAR SITUATION.

DETAIL TITLE / DOD / VA UNIVERSAL X-RAY (R-F) ROOM SUPPORT SYSTEM FOR CEILING MOUNTED X-RAY EQUIPMENT