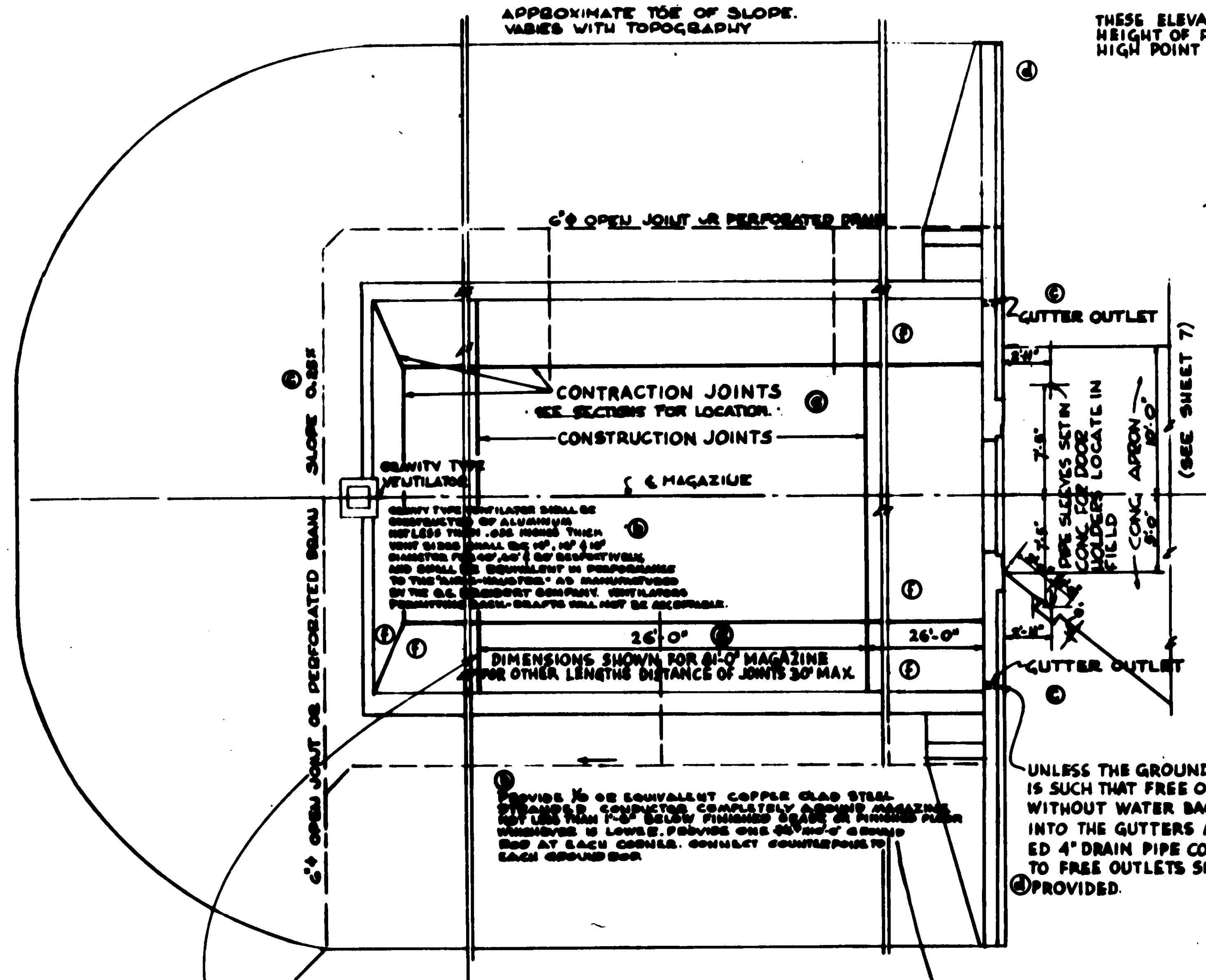
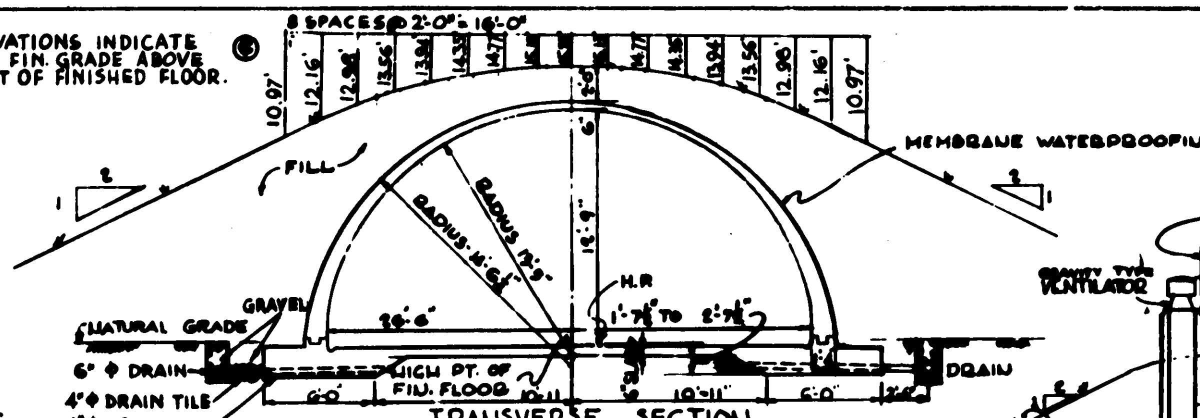
CORPS OF ENGINEERS U. S. ARMY

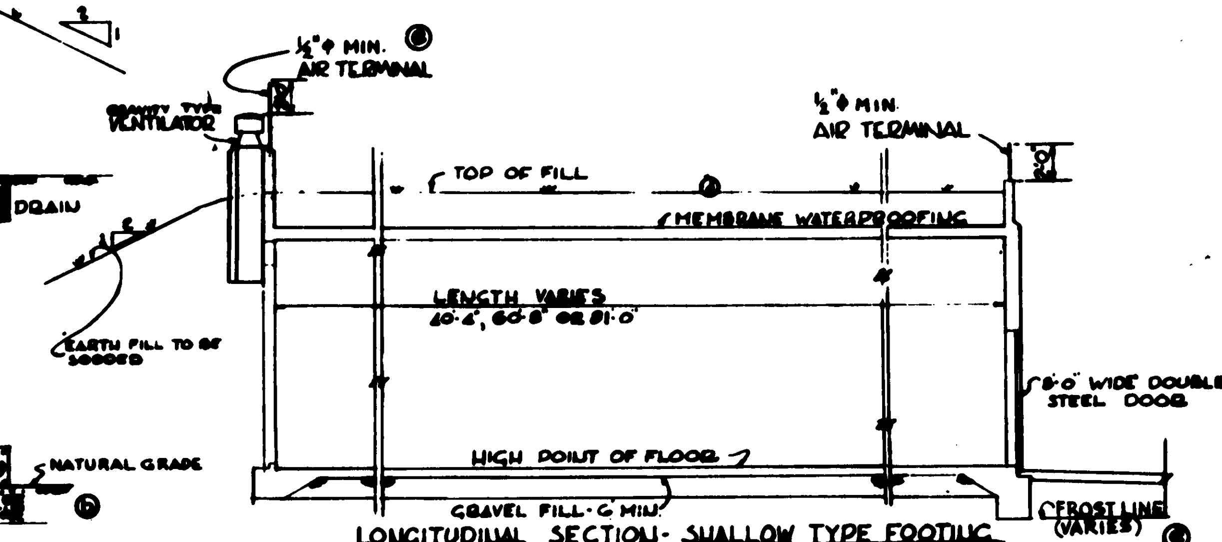


TYPICAL PLAN
SCALE 3/16"=1'-0"

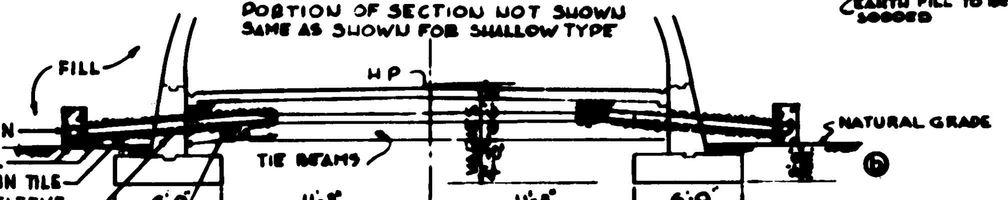
JOINTS SHOWN ARE FOR STRUCTURES WITH SHALLOW OR INTERMEDIATE TYPE FOOTINGS



TRANSVERSE SECTION
SHALLOW TYPE FOOTING
SCALE 3/16"=1'-0"

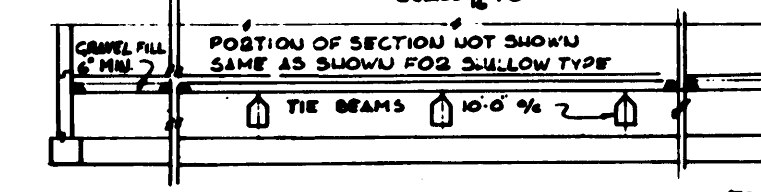


LONGITUDINAL SECTION - SHALLOW TYPE FOOTING
SCALE 3/16"=1'-0"

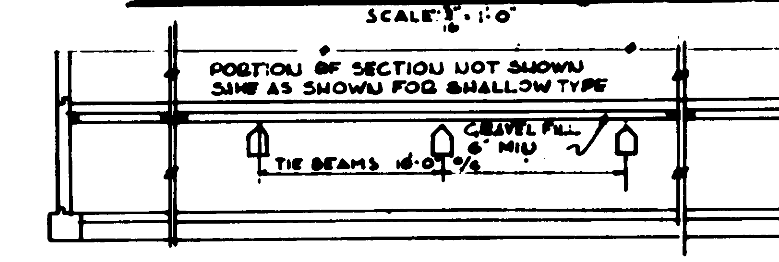


PART TRANSVERSE SECTION
MEDIUM TYPE FOOTING
SCALE 3/16"=1'-0"

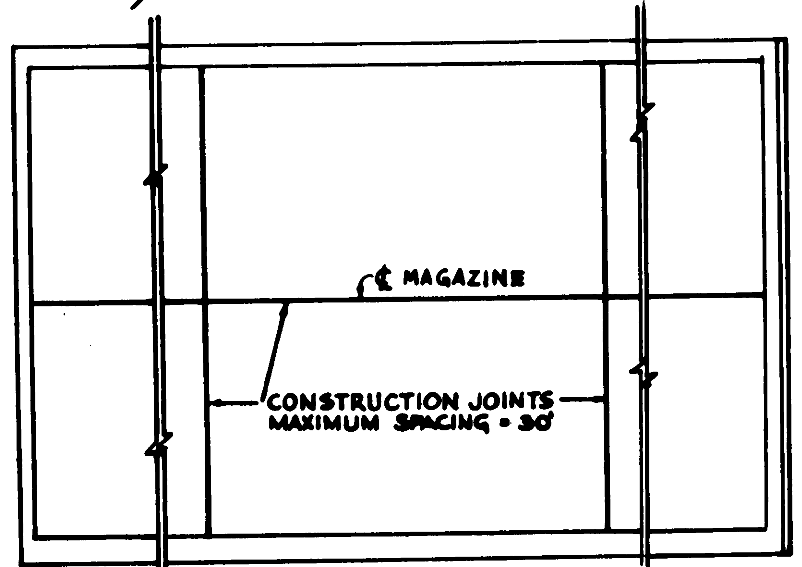
4" PERFORATED DRAIN PIPE SHOULD EXTEND NOT LESS THAN 5'-0" INTO THE STRUCTURE IMMEDIATELY BELOW THE GRAVEL BASE FOR FLOOR SLAB & SHALL OCCUR APPROXIMATELY 20'-0" APART. 4"Φ DRAIN PIPE SHALL BE LAID IN A GRAVEL FILLED TRENCH & SHALL CONNECT TO 6"Φ DRAIN.
A CAST IRON PIPE SECTION SHALL BE USED TO CARRY THE DRAIN THRU FOOTINGS & A PIPE SLEEVE OF A DIAMETER 2" LARGER THAN O.D. OF DRAIN TILE SHALL BE USED TO CARRY IT THRU WALLS.
REINFORCING MAY BE RAISED OR LOWERED SLIGHTLY IN ORDER TO MISS DRAINS.



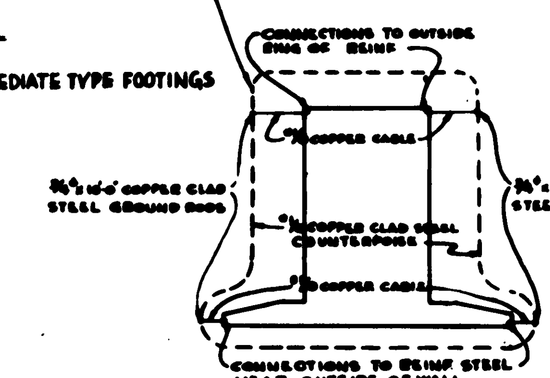
PART LONGITUDINAL SECTION - MEDIUM TYPE FOOTING
SCALE 3/16"=1'-0"



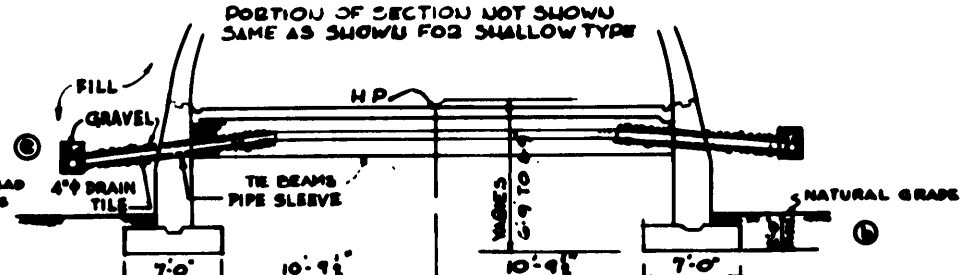
PART LONGITUDINAL SECTION - DEEP TYPE FOOTING
SCALE 3/16"=1'-0"



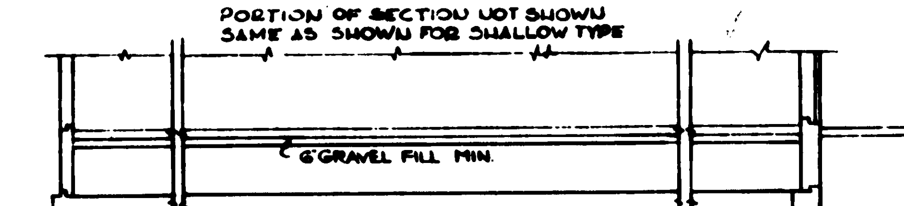
TYPICAL PLAN SHOWING
JOINTS FOR STRUCTURES WITH MEDIUM
OR DEEP TYPE FOOTINGS
SCALE 3/16"=1'-0"



GROUNDING SYSTEM FOR
LIGHTNING PROTECTION

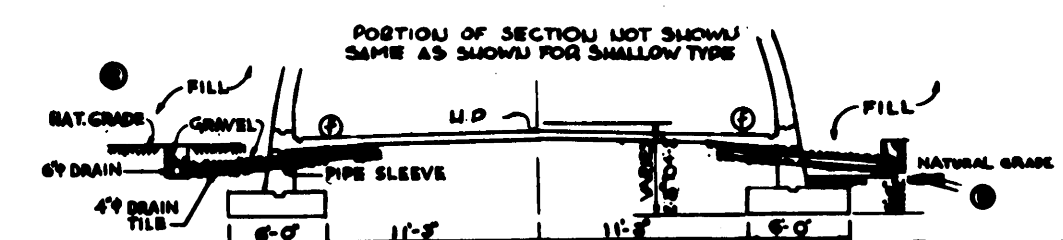


PART TRANSVERSE SECTION
DEEP TYPE FOOTING
SCALE 3/16"=1'-0"

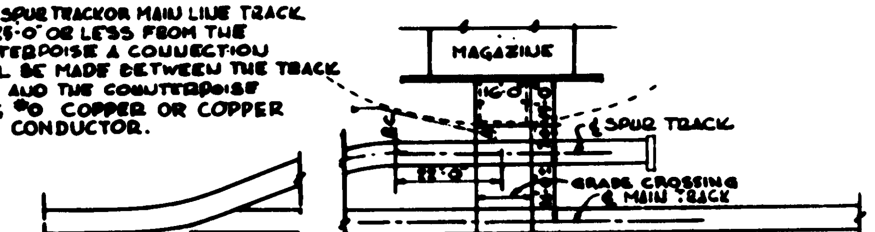


PART LONGITUDINAL SECTION - INTERMEDIATE TYPE FOOTING
SCALE 3/16"=1'-0"

WHEN SPUR TRACK OR MAIN LINE TRACK ARE 25'-0" OR LESS FROM THE COUNTERPOISE A CONNECTION SHALL BE MADE BETWEEN THE TRACK RAILS AND THE COUNTERPOISE USING #0 COPPER OR COPPER CLAD CONDUCTOR.



PART TRANSVERSE SECTION
INTERMEDIATE TYPE FOOTING
SCALE 3/16"=1'-0"



RAILROAD SPUR TO MAGAZINE
WITHOUT BARRICADE
SCALE 1"=30'

TYPICAL PLANS & SECTIONS FOR 40' MAGAZINE
60' & 80' MAGAZINES SIMILAR

NOTE:
NO BLASTING WILL BE PERFORMED IN CONNECTION WITH CONSTRUCTION WITHOUT APPROVAL OF THE CONTRACTING OFFICER.

18. WHEN THE FLOOR IS ABOVE NATURAL GRADE THE FILL WILL BE COMPACTED TO OBTAIN A MINIMUM SOIL VALUE OF 3000#/□'.
19. PAINT INTERIOR 2 COATS OF WHITE CEMENT-WATER PAINT

GENERAL NOTES

1. DESIGN LIVE LOAD FOR FLOOR SLAB IS 3000 LBS. PER SQUARE FOOT
2. ALL CONCRETE SHALL DEVELOP A MINIMUM ULTIMATE COMPRESSIVE STRENGTH AT THE END OF 28 DAYS OF 2500 LBS. PER SQUARE INCH.
3. FINISHES ARE AS FOLLOWS:
   a. FLOOR AND PLATFORM TROWELED SMOOTH.
   b. TOPS OF WALL AND ENTRANCE TROWEL SMOOTH.
   c. ALL OTHER SURFACES SHALL BE DENSE AND SMOOTH AS CAN BE OBTAINED BY CAREFUL FORMWORK, PROPER PLACING AND SPADING OF CONCRETE. ALL FINS OR OTHER PROJECTIONS SHALL BE CAREFULLY REMOVED AND ALL HONEYCOMB SHALL BE CAREFULLY AND COMPLETELY POINTED.
   d. ALL EXPOSED CORNERS AND EDGES SHALL BE CHAMFERED.
4. REINFORCING BARS MAY BE INTERMEDIATE BILLET, HARD BILLET OR HARD RAIL STEEL. WIRE MESH IS TO BE ELECTRICALLY WELDED FABRIC OF COLD DRAWN MILD STEEL.
5. EARTH COVER WILL BE 2'-0" THICK AT CROWN AND SHOULD SLOPE AT 1 VERTICAL TO 2 HORIZONTAL.
6. COVERING MATERIAL SHOULD BE EARTH SELECTED WITH REGARD TO STABILITY WITH RESPECT TO SETTLEMENT AND EROSION, AND SHOULD NOT CONTAIN MORE THAN 10% OF GRAVEL RETAINED ON A #4 SCREEN AND SHOULD BE FREE OF STONES RETAINED ON #1 SCREEN

6 (CONT.) THE GRAVEL IS PERMISSABLE ONLY AS RANDOM FOUND AND SHOULD NOT BE IN FORM OF A BLANKET OR LAYER. SURFACE SHOULD BE STABILIZED BY ESTABLISHMENT OF A VEGETATIVE COVER OR BY MECHANICAL STABILIZATION TREATMENTS APPROPRIATE TO THE LOCAL SOIL TYPE AND CLIMATE.
7. EARTH COVER FOR ARCH SHALL BE PLACED IN SUCH A MANNER THAT DIFFERENCE IN HEIGHT OF EARTH FILL SHALL BE NOT MORE THAN 2'-0" AT ANY TIME. FILL ON OPPOSITE SIDES OF ARCH IS TO BE PLACED SIMULTANEOUSLY.
8. EARTH COVER SHALL BE PLACED IN SUCH A MANNER THAT INJURY TO MEMBRANE WATERPROOFING WILL NOT OCCUR.
9. BACKFILLING OPERATIONS SHALL NOT BE COMMENCED UNTIL APPROVAL HAS BEEN SECURED FROM THE CONTRACTING OFFICER.
10. FRONTWALL FOOTING SHALL BE PROVIDED WITH A FROST CURTAIN AT THE DISCRETION OF THE CONTRACTING OFFICER.
11. PROVIDE 6"Φ PERFORATED OR OPEN JOINTED DRAINS AT FOOTINGS OF REAR AND SIDE WALLS. SLOPE 0.25% TO OUTLET.
12. WHERE INDICATED ON THE DRAWINGS PROVIDE 5 PLY MEMBRANE WATERPROOFING PROTECTED BY ½" OF PARGING.
13. MIN. COVER FOR REINF. IS TO BE 2" UNLESS SHOWN OTHERWISE.

CONTINUED:
14. SHALLOW TYPE FOOTINGS ARE TO BE USED WHEN THE SOIL HAS A MINIMUM BEARING CAPACITY OF 3000#/□' AT FLOOR LEVEL.
15. INTERMEDIATE, MEDIUM & DEEP TYPE FOOTINGS: THE WIDTHS OF THESE FOOTINGS SHOWN ARE BASED ON A MINIMUM BEARING CAPACITY OF 5500#/□'. WHEN THE SOIL BEARING CAPACITY IS OTHER THAN 5500#/□' THE SIZES OF FOOTINGS ARE TO BE MODIFIED ACCORDINGLY.
16. 5-PLY WATERPROOFING MEMBRANE SHALL HAVE TOP & BOTTOM PLY OF FABRIC OR FIBERGLASS.
17. OPTIONAL METHODS OF PROTECTION FOR MEMBRANE WATERPROOFING INCLUDE ¾" THICK ASPHALT-SATURATED FIBERBOARD, TREATED FOR PROTECTION AGAINST FUNGI, TERMITES, MILDEW AND VERMIN, OR ½" THICK ASPHALT-SATURATED FIBERGLASS MAT.
18. & 19. SEE ABOVE

ABBREVIATIONS

1. C.J. - CONSTRUCTION JOINT	4. N.S. - NEAR SIDE
2. I.F. - INSIDE FACE	5. F.S. - FAR SIDE
3. O.F. - OUTSIDE FACE	6. E.F. - EACH FACE

(D)	CONSTRUCTION JOINT RELOCATED	[illegible]	[illegible]	[illegible]

SCHEDULE OF DRAWINGS

DWG. NO.	SHEET	TITLE
33-15-06	1 OF 7	TYPICAL PLAN & SECTIONS
33-15-06	2 OF 7	HALF FLOOR PLAN, SECTIONS & DETAILS
33-15-06	3 OF 7	HALF ELEVATIONS & DETAILS
33-15-06	4 OF 7	MISC. SECTIONS & DETAILS
33-15-06	5 OF 7	DOOR DETAILS, REAR WALL ELEV. & DETAILS
33-15-06	6 OF 7	VENTILATOR & VENTILATOR [illegible] DETAILS
33-15-06	7 OF 7	APPROACH ROAD & BARRICADE DETAILS

REVISIONS

SYMBOL	DESCRIPTION	DATE	APPROVAL
[illegible]	TYPICAL PLAN: JOINTS [illegible] AND PLAN ADDED.	[illegible]	BCD
[illegible]	[illegible]	-	
[illegible]	[illegible]	-	
[illegible]	HEADWALL EXTENDED, EARTH RAMP MODIFIED.	25 OCT [illegible]	[illegible]
[illegible]	[illegible] ROAD PLAN REVISED AND TRANSFERRED TO SHEET 7		
[illegible]	GENERAL NOTE 6 MODIFIED		
[illegible]	INTERMEDIATE AIR TERMINALS DELETED		
[illegible]	AIR TERMINALS ADDED, DRAIN DITCH, GUTTER, DRAIN TILE SIZES CHANGED	12 OCT [illegible]	[illegible]
[illegible]	NATURAL GRADE, LIGHTNING PROTECTION, & VENTILATOR MODIFIED	[illegible]	[illegible]
[illegible]	PREVIOUS DRAWING NUMBERS SUPERSEDED	[illegible]	[illegible]

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OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: TKS
TRACED BY: TKS
CHECKED BY: HW

MAGAZINE
MOUNDED CONCRETE IGLOO
TYPICAL PLAN & SECTIONS

DATE: 1 AUG. 1951
SCALE: AS NOTED
DRAWING NUMBER: 33-15-06
SHEET 1 OF 7

THIS DWG. SUPERSEDES DWG. NOS. 652-686 THRU 652-692 & DWG. NO. 33-15-01