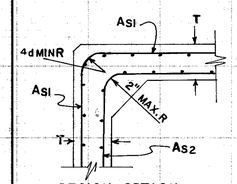
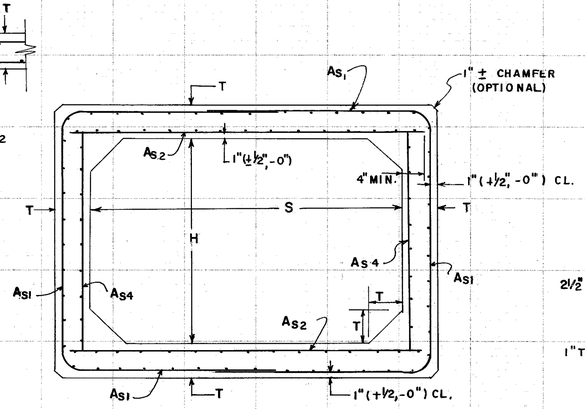
| STATE | PROJECT NUMBER | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| GA. | | | |

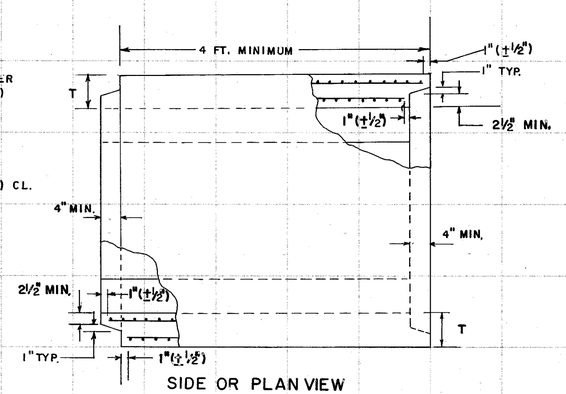
| CULVERT SIZE | | DESIGN I-A 2 FT. MINIMUM COVER | | | | DESIGN I-B 3 FT. MINIMUM COVER | | | | | CULVERT SIZE | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CLEAR SPAN (FT) S | CLEAR HEIGHT (FT) H | T (INCHES) | MINIMUM AREAS OF CIRCUMFERENTIAL REINFORCING STEEL (SQ. IN. PER LIN. FT.) $A_{S1}$ | $A_{S2}$ | $A_{S4}$ | MAXIMUM FILL HEIGHTS (FEET) | MINIMUM AREA OF CIRCUMFERENTIAL REINFORCING STEEL (SQ. IN. PER LIN. FT.) $A_{S1}$ | $A_{S2}$ | $A_{S4}$ | MAXIMUM FILL HEIGHTS (FEET) | T (INCHES) | CLEAR HEIGHT (FT.) H | CLEAR SPAN (FT.) S |
| 4' | 3 | 6 | 0.21 | 0.27 | 0.12 | 16 | 0.13 | 0.18 | 0.12 | 10 | 6 | 3 | 4' |
| | 4 | 6 | 0.18 | 0.30 | 0.12 | 16 | 0.12 | 0.19 | 0.12 | 10 | 6 | 4 | |
| | 5 | 6 | 0.24 | 0.33 | 0.14 | 16 | 0.15 | 0.23 | 0.14 | 10 | 6 | 5 | |
| | 6 | 7 | 0.27 | 0.37 | 0.17 | 16 | 0.20 | 0.27 | 0.17 | 10 | 7 | 6 | |
| 5' | 3 | 6 | 0.26 | 0.29 | 0.14 | 16 | 0.17 | 0.21 | 0.14 | 10 | 6 | 3 | 5' |
| | 4 | 6 | 0.24 | 0.33 | 0.14 | 16 | 0.16 | 0.23 | 0.14 | 10 | 6 | 4 | |
| | 5 | 6 | 0.20 | 0.35 | 0.14 | 16 | 0.14 | 0.25 | 0.14 | 10 | 6 | 5 | |
| | 6 | 7 | 0.25 | 0.39 | 0.17 | 16 | 0.18 | 0.29 | 0.17 | 10 | 7 | 6 | |
| 6' | 3 | 7 | 0.32 | 0.33 | 0.17 | 16 | 0.23 | 0.23 | 0.17 | 10 | 7 | 3 | 6' |
| | 4 | 7 | 0.27 | 0.37 | 0.17 | 16 | 0.20 | 0.27 | 0.17 | 10 | 7 | 4 | |
| | 5 | 7 | 0.25 | 0.39 | 0.17 | 16 | 0.18 | 0.29 | 0.17 | 10 | 7 | 5 | |
| | 6 | 7 | 0.23 | 0.41 | 0.17 | 16 | 0.17 | 0.30 | 0.17 | 10 | 7 | 6 | |
| 7' | 4 | 8 | 0.35 | 0.41 | 0.19 | 16 | 0.25 | 0.27 | 0.19 | 10 | 8 | 4 | 7' |
| | 5 | 8 | 0.31 | 0.44 | 0.19 | 16 | 0.23 | 0.29 | 0.19 | 10 | 8 | 5 | |
| | 6 | 8 | 0.28 | 0.42 | 0.19 | 14 | 0.21 | 0.34 | 0.19 | 10 | 8 | 6 | |
| | 7 | 8 | 0.26 | 0.44 | 0.19 | 14 | 0.19 | 0.36 | 0.19 | 10 | 8 | 7 | |
| 8' | 4 | 8 | 0.43 | 0.40 | 0.19 | 10 | 0.33 | 0.30 | 0.19 | 8 | 8 | 4 | 8' |
| | 5 | 8 | 0.38 | 0.43 | 0.19 | 10 | 0.30 | 0.33 | 0.19 | 8 | 8 | 5 | |
| | 6 | 8 | 0.35 | 0.47 | 0.19 | 10 | 0.27 | 0.35 | 0.19 | 8 | 8 | 6 | |
| | 7 | 8 | 0.33 | 0.50 | 0.19 | 10 | 0.25 | 0.38 | 0.19 | 8 | 8 | 7 | |
| | 8 | 8 | 0.31 | 0.53 | 0.19 | 10 | 0.24 | 0.43 | 0.19 | 8 | 8 | 8 | |
| 9' | 4 | 9 | 0.47 | 0.45 | 0.22 | 10 | 0.38 | 0.38 | 0.22 | 8 | 9 | 4 | 9' |
| | 5 | 9 | 0.43 | 0.45 | 0.22 | 10 | 0.35 | 0.39 | 0.22 | 8 | 9 | 5 | |
| | 6 | 9 | 0.40 | 0.48 | 0.22 | 10 | 0.32 | 0.42 | 0.22 | 8 | 9 | 6 | |
| | 7 | 9 | 0.37 | 0.52 | 0.22 | 10 | 0.30 | 0.45 | 0.22 | 8 | 9 | 7 | |
| | 8 | 9 | 0.35 | 0.54 | 0.22 | 10 | 0.28 | 0.47 | 0.22 | 8 | 9 | 8 | |
| | 9 | 9 | 0.33 | 0.57 | 0.22 | 10 | 0.27 | 0.49 | 0.22 | 8 | 9 | 9 | |
| | 10 | 10 | 0.35 | 0.61 | 0.24 | 10 | 0.30 | 0.55 | 0.24 | 8 | 10 | 10 | |
| 10' | 4 | 10 | 0.50 | 0.46 | 0.24 | 10 | 0.44 | 0.42 | 0.24 | 8 | 10 | 4 | 10' |
| | 5 | 10 | 0.47 | 0.46 | 0.24 | 10 | 0.41 | 0.42 | 0.24 | 8 | 10 | 5 | |
| | 6 | 10 | 0.44 | 0.50 | 0.24 | 10 | 0.38 | 0.45 | 0.24 | 8 | 10 | 6 | |
| | 7 | 10 | 0.41 | 0.53 | 0.24 | 10 | 0.35 | 0.48 | 0.24 | 8 | 10 | 7 | |
| | 8 | 10 | 0.38 | 0.56 | 0.24 | 10 | 0.33 | 0.51 | 0.24 | 8 | 10 | 8 | |
| | 9 | 10 | 0.36 | 0.60 | 0.24 | 10 | 0.32 | 0.53 | 0.24 | 8 | 10 | 9 | |
| | 10 | 10 | 0.35 | 0.61 | 0.24 | 10 | 0.30 | 0.55 | 0.24 | 8 | 10 | 10 | |



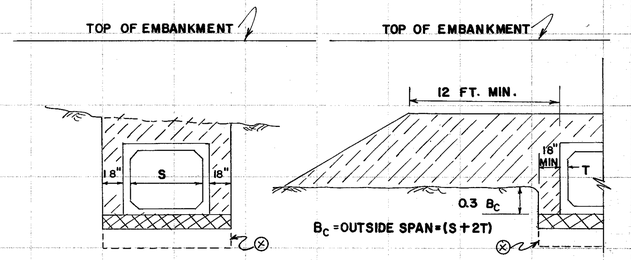

DESIGN OPTION




SECTION




SIDE OR PLAN VIEW



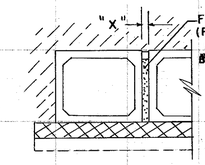

TRENCH INSTALLATION — EMBANKMENT INSTALLATION

MINIMUM TRENCH DEPTH = 0.3 Bc + BEDDING DEPTH

— 6" MIN. DEPTH OF FOUNDATION BACKFILL MATERIAL TYPE II FOR WET AREAS OR 3" MIN. DEPTH FOUNDATION BACKFILL MATERIAL TYPE I OTHERWISE. TYPE I AND II MATERIAL BOTH MAY BE USED IF SPECIFIED. CLASS I SOIL SHALL BE REQUIRED FOR TYPE I BACKFILL MATERIAL.

— NORMAL BACKFILL COMPACTED IN 6" LAYERS BROUGHT UP EVENLY ON BOTH SIDES OF CULVERT FROM TOP OF BEDDING TO MINIMUM REQUIRED COVER.

(x) FOR AN INCOMPRESSABLE FOUNDATION, INCREASE TRENCH UNDER BOX TO 12" MINIMUM, WHERE AN UNSTABLE MATERAL IS ENCOUNTERED, ADDITIONAL EXCAVATION AND BACKFILLING TO DEPTHS AND WIDTHS SPECIFIED BY THE ENGINEER IS REQUIRED.




MULTIPLE LINE

| TYPICAL FILLERS | |
|---|---|
| MATERIALS ALTERNATES | SPACE "X" |
| GROUT | 2" ± |
| CL. B CONC. | 4" ± |

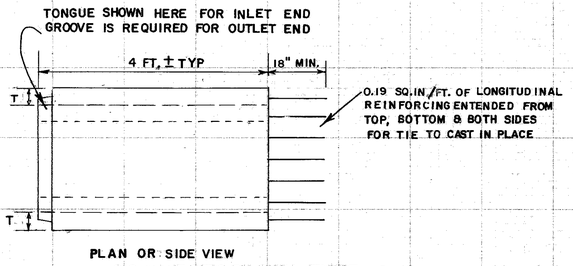
NOTE: PAYMENT FOR CULVERT INCLUDE FILLER.

THE DIMENSION "X" SHALL BE COMPATABLE WITH CULVERT END TREATMENT AND APRON WIDTHS, SPACERS SHALL BE USED BETWEEN BOXES IF BACKFILLED BEFORE FILLER SETS UP.

NOTE: A CULVERT COMBINATION HAVING A TOTAL CLEAR SPAN & HEIGHT EQUAL TO OR EXCEEDING THAT SPECIFIED MAY BE SUBSTITUTED. EXAMPLE: A TRIPLE 6'x6' MAY BE SUBSTITUTED FOR A DOUBLE 9'x6' OR VICE VERSA.

GENERAL NOTES:

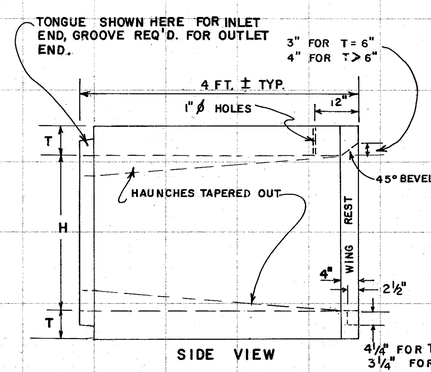
1. SPECIFICATIONS: GA. STANDARD, CURRENT EDITION, AND SUPPLEMENTS THERETO, CONCRETE SHALL CONFORM TO SECTION 843, 5000 PSI, MINIMUM.
2. REINFORCING REQUIREMENTS NOT SHOWN SHALL BE ACCORDING TO A.A.S.H.T.O. M-259. MINIMUM CLEARANCE FOR CIRCUMFERENTIAL REINFORCEMENT SHALL BE 1" WITH LESS THAN 1" OF CLEARANCE BEING CAUSE FOR REJECTION.
3. ALL JOINTS BETWEEN PRECAST SECTIONS SHALL BE TONGUE & GROOVE WITH JOINT MATERIAL. JOINTS BETWEEN CAST-IN-PLACE AND PRECAST SECTIONS SHALL HAVE LONGITUDINAL STEEL EXTENDING FROM TOP, BOTTOM AND BOTH SIDE SLABS OF THE PRECAST BOX TIED TO THE CAST-IN-PLACE REINFORCEMENT.
4. CULVERTS LARGER THAN THE SPECIFIED SIZE MAY BE SUBSTITUTED WITH PAYMENT BEING BASED UPON THE SPECIFIED SIZE RATHER THAN THE SUBSTITUTION, SUCH A SUBSTITUTION MUST BE APPROVED BY THE ENGINEER, MINIMUM COVER MUST BE RETAINED AND NO ADVERSE EFFECTS PRODUCED.
5. ALTERNATES: CAST-IN-PLACE BOX CULVERTS OR OTHER APPROVED PRECAST DESIGNS.
6. LOADING: HS-20 AND ANY FILL HEIGHTS BETWEEN THE MINIMUM AND MAXIMUM SHOWN.
7. ONLY ONE DESIGN OF PRECAST BOX CULVERT IS TO BE USED FOR ANY INSTALLATION.



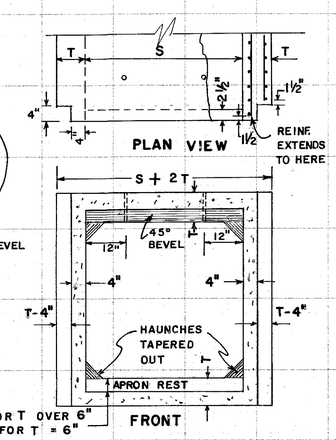

PLAN OR SIDE VIEW

CONNECTOR BOX TYPE C

(USE FOR CONNECTION TO CAST-IN-PLACE)




SIDE VIEW




PLAN VIEW

FRONT

CONNECTOR BOX TYPE P

(USE FOR CONNECTION TO PRECAST ENDS)

| BY | REVISION | DATE |
|---|---|---|
| R.M.U. | MADE 4" JT. DEPTH MIN. | 6-27-85 |

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

# STANDARD

## PRECAST BOX CULVERT BARRELS
4' x 3' THRU 10' x 10'
SINGLE & MULTIPLE LINES

NO SCALE — MARCH, 1985

DES. R.M.U.
DRW. R.M.U.
TRA. G.M.E.
CHK. R.K.C.

(SUBMITTED) Floyd G. Hayden
STATE ROAD & AIRPORT DESIGN ENGR

(APPROVED) Hal Ross
STATE HIGHWAY ENGINEER

NUMBER 2530P

FORM EF00003