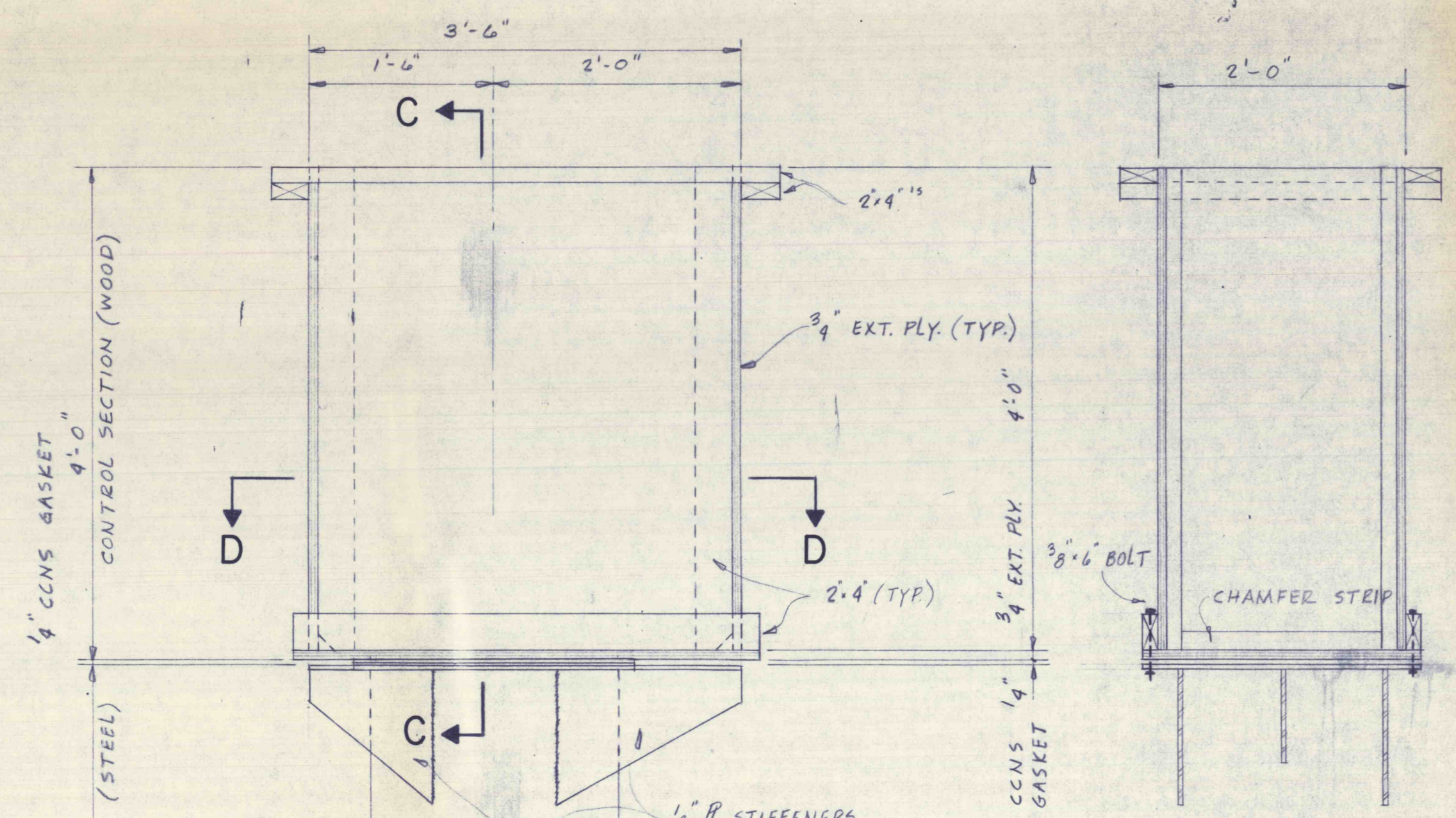
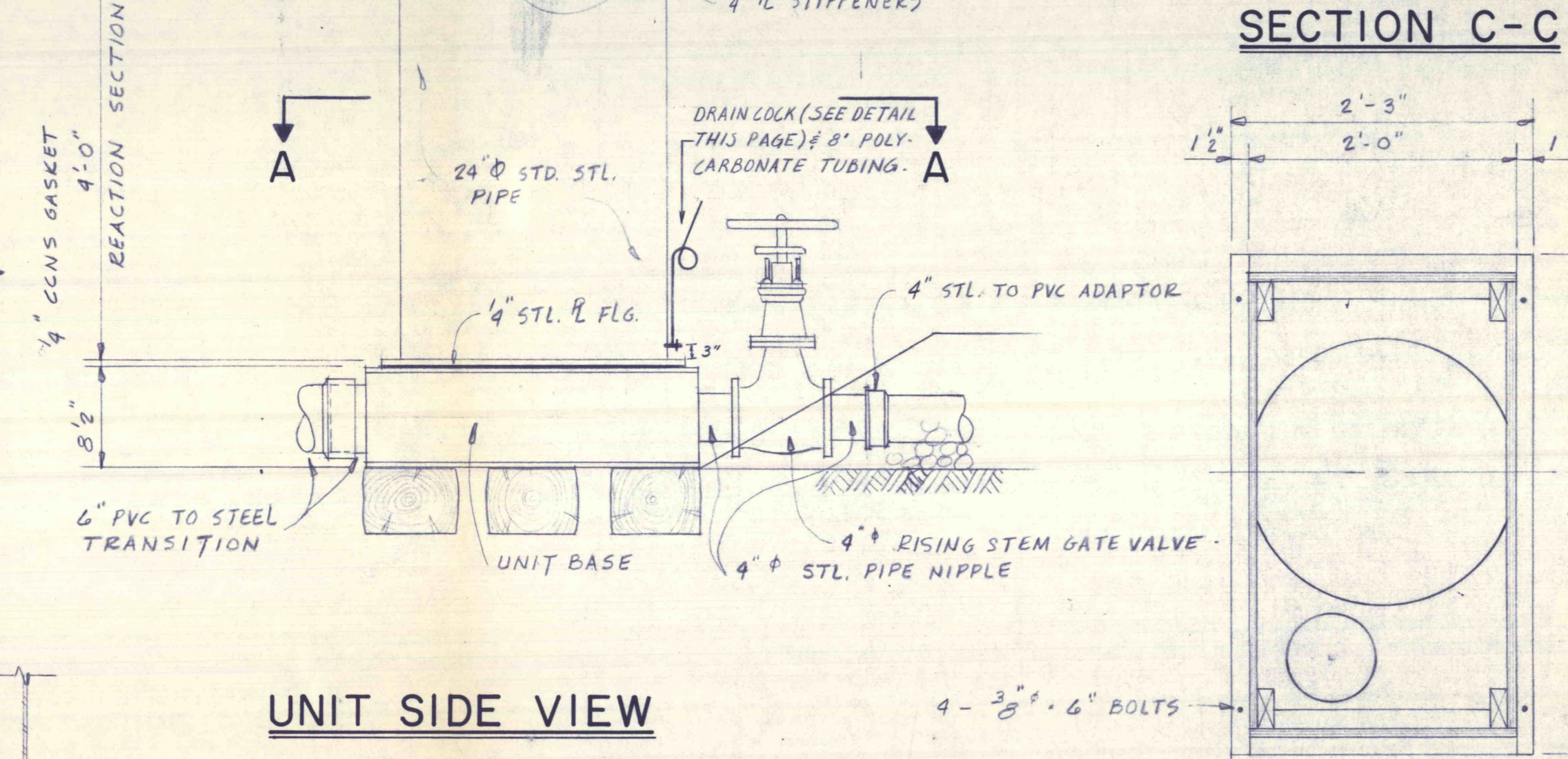


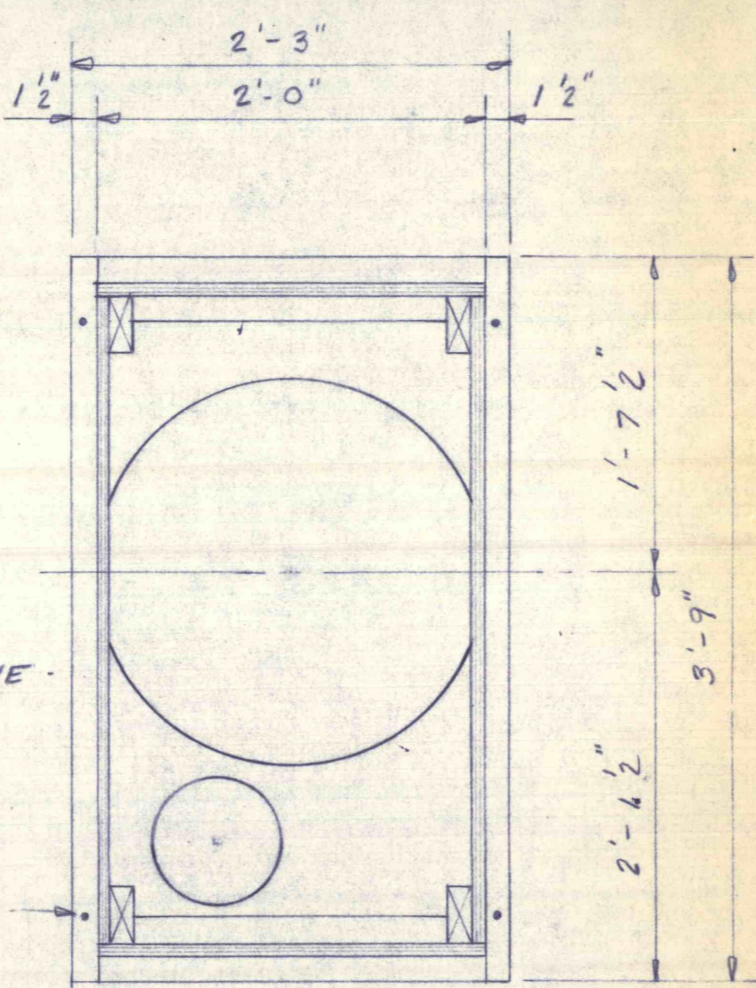
**DRAIN COCK**  
NOT TO SCALE



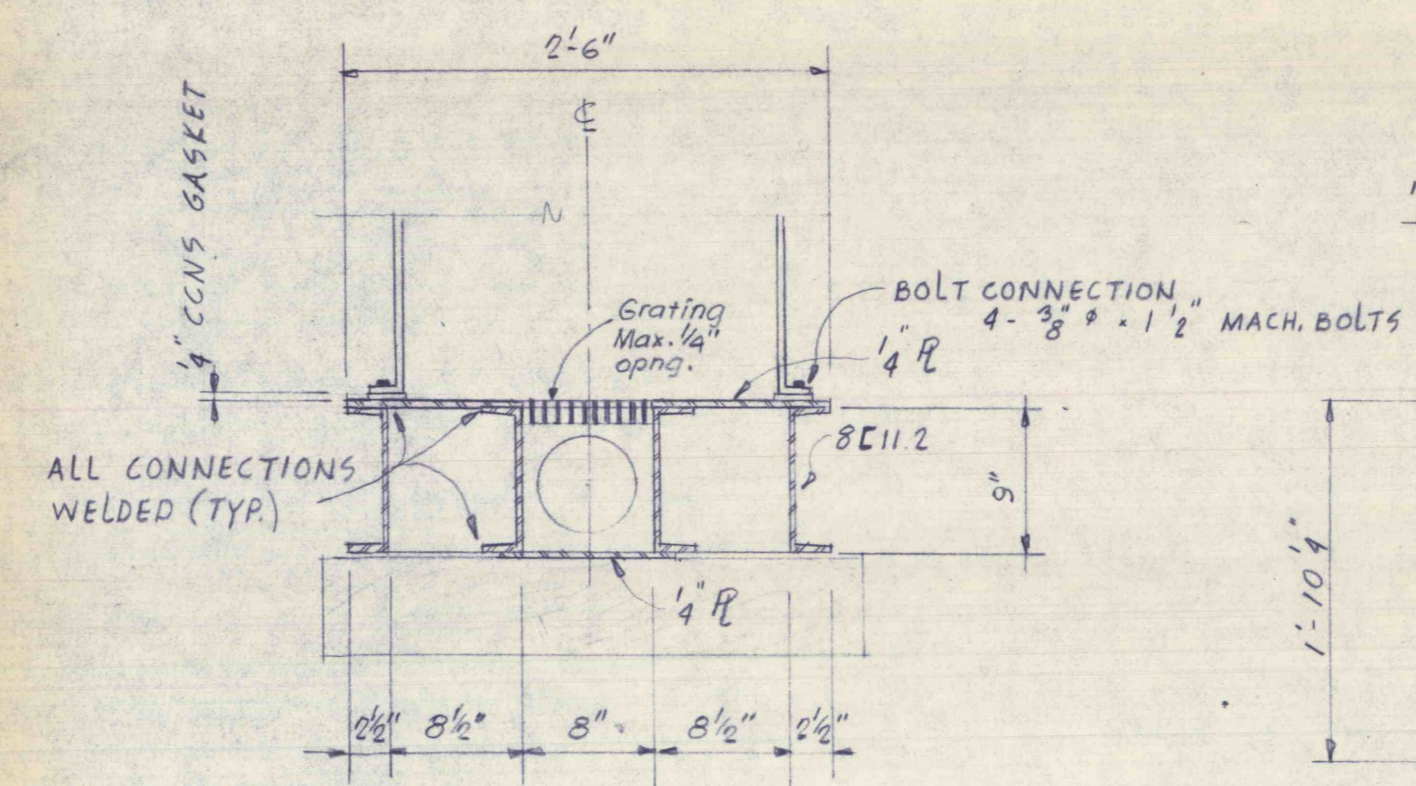
**SECTION C-C**



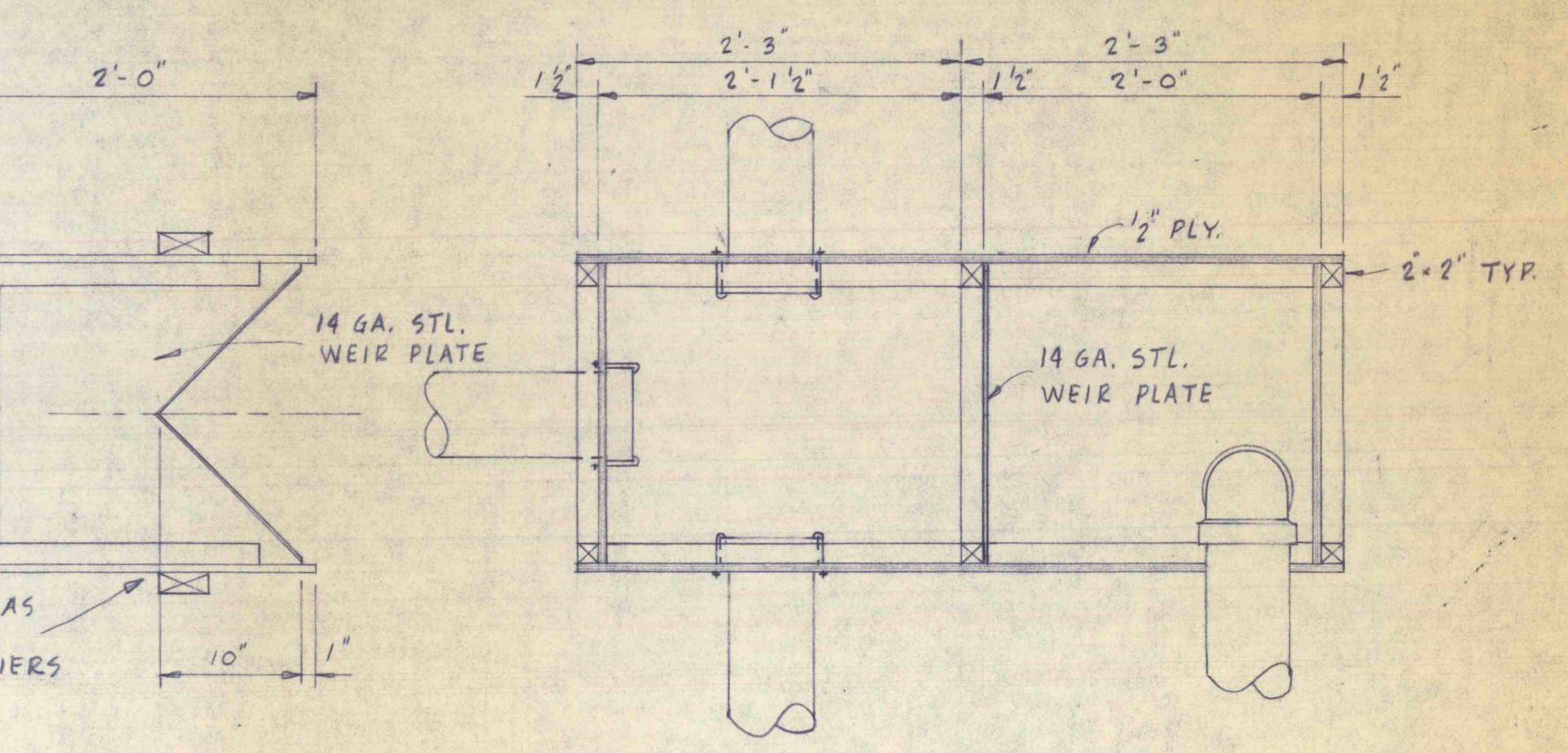
**UNIT SIDE VIEW**



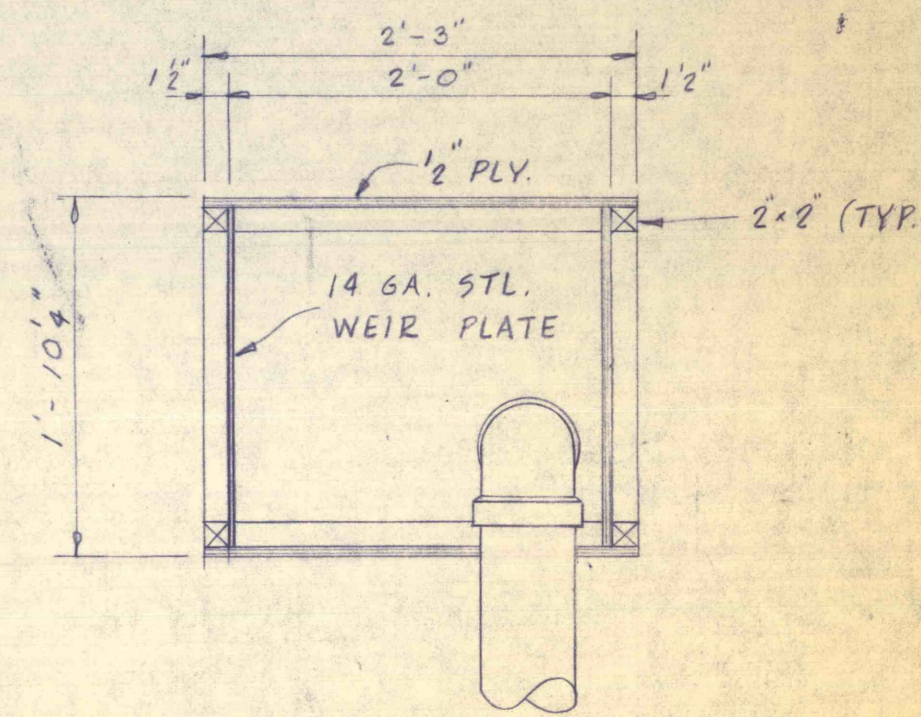
**SECTION D-D**



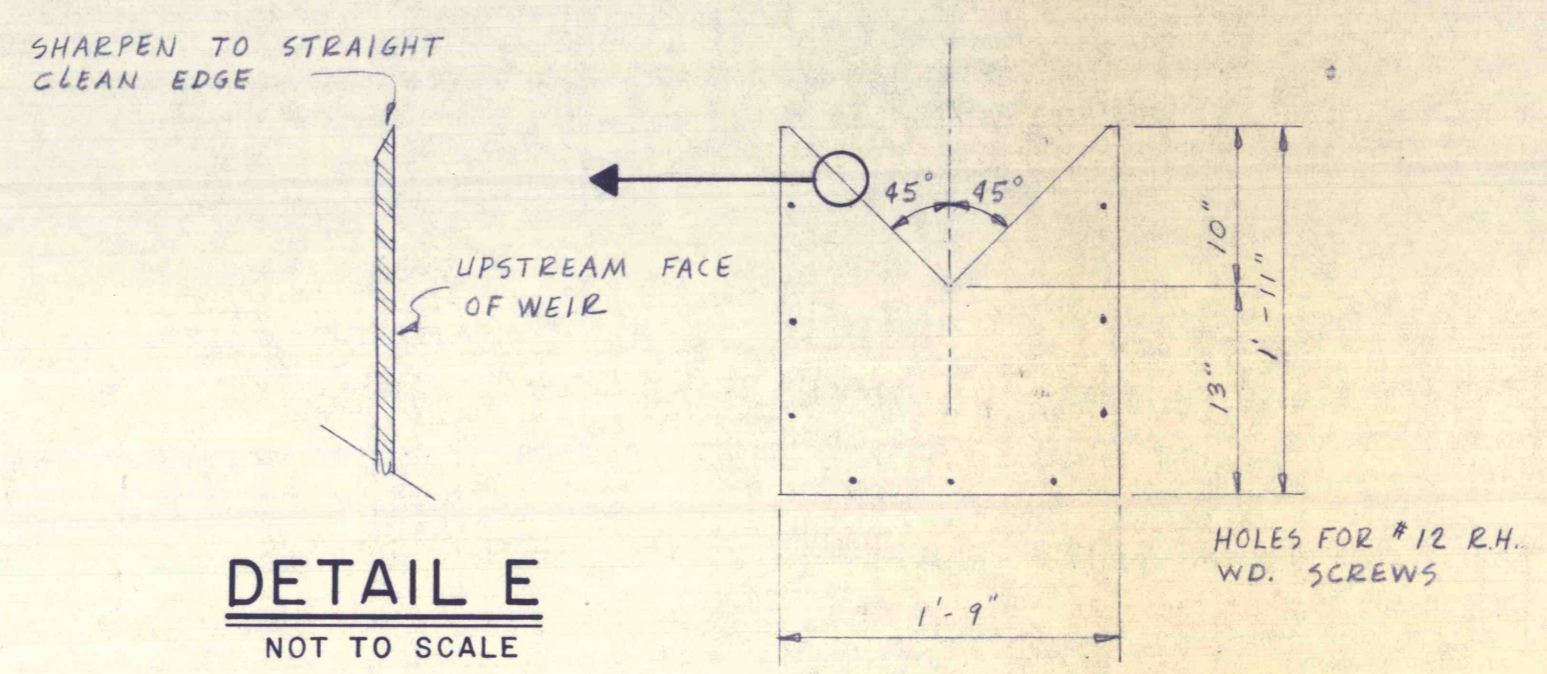
**SECTION B-B**



**DIVISION and WEIR BOX**

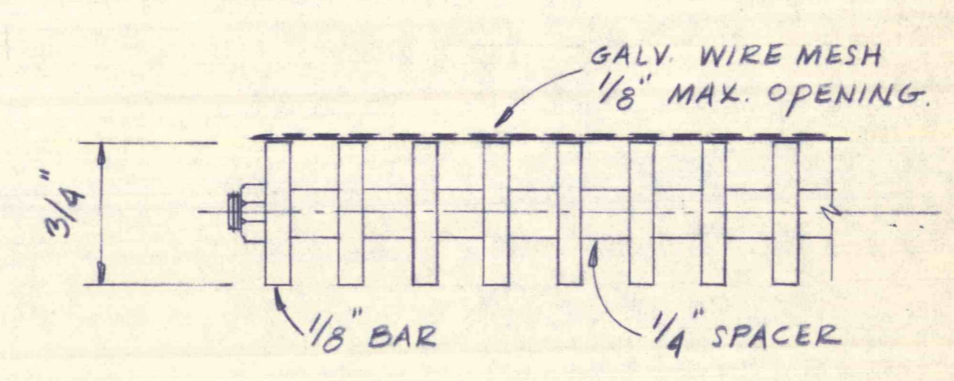


**WEIR BOX**



**DETAIL E**  
NOT TO SCALE

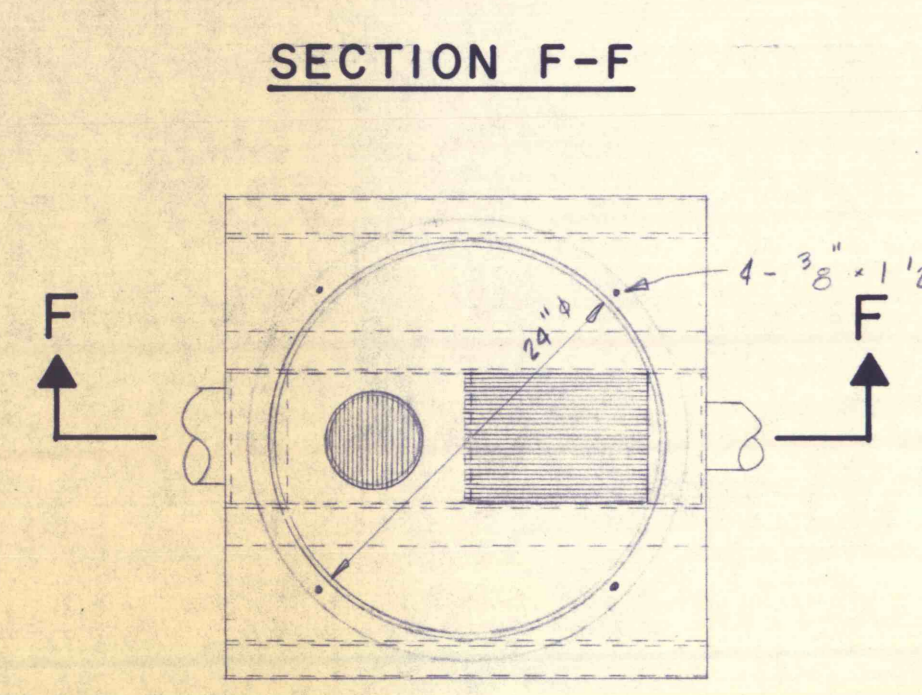
**WEIR PLATE DETAIL**



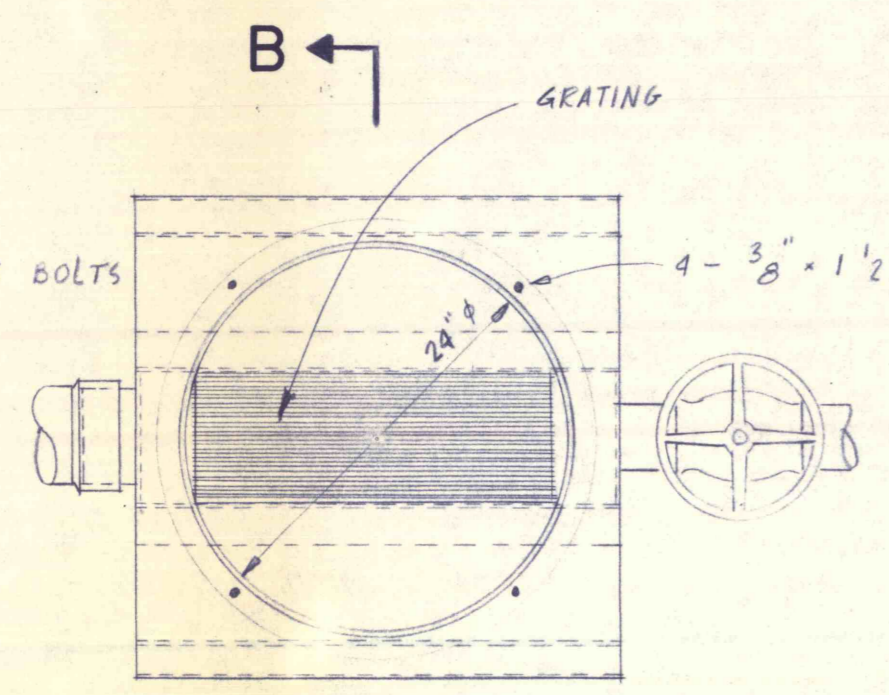
**GRATE CONSTRUCTION**  
NOT TO SCALE

**OPTIONAL CONSTRUCTION**

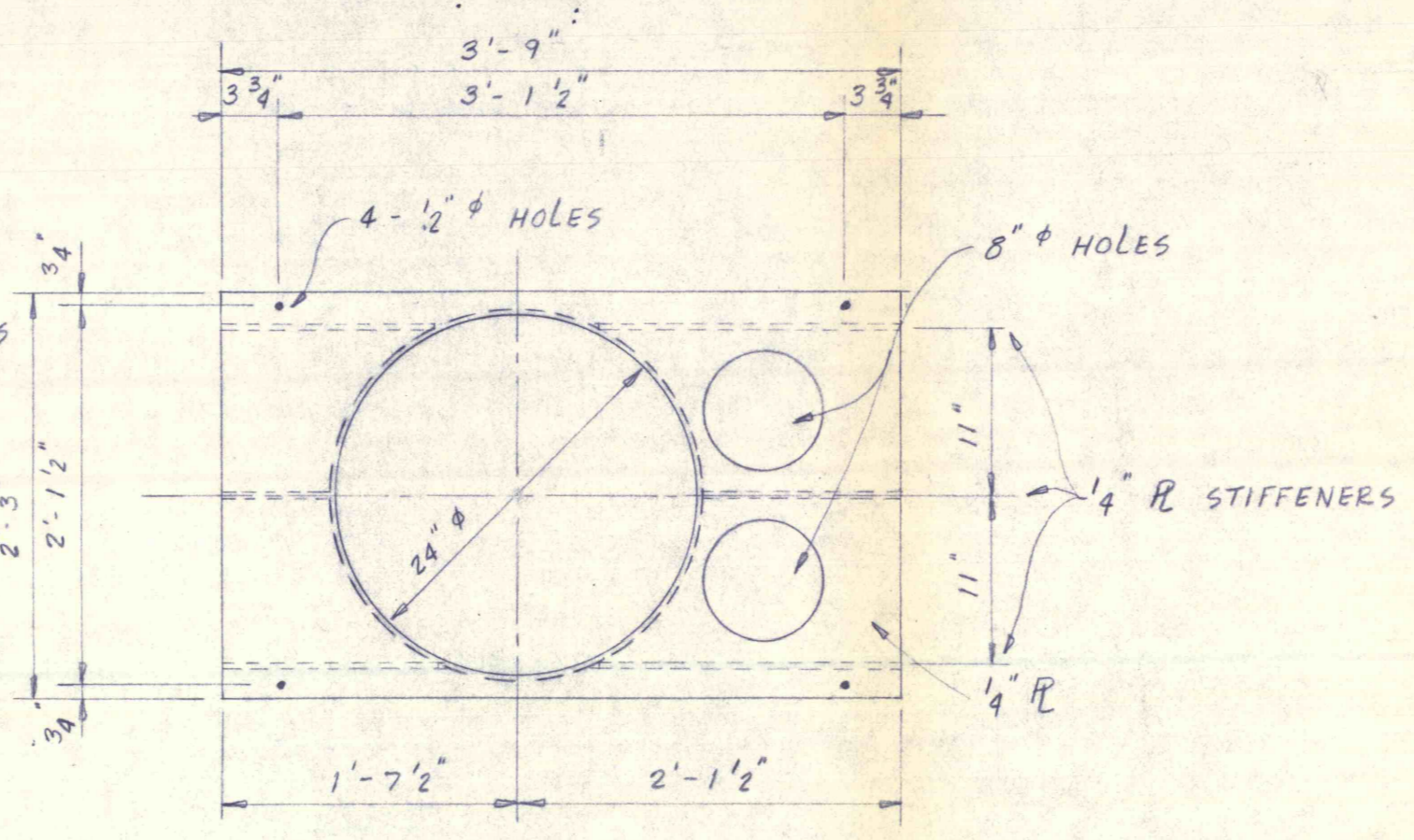
STAMPED OR PUNCHED METAL GRILLS OR GRATES MAY BE USED IF ADEQUATE STRUCTURAL SUPPORT IS PROVIDED AND THE GRILL WILL RETAIN STONE GREATER THAN 1/8". OPEN AREA OF GRATE SHALL BE GREATER THAN 40% OF THE AREA.



**SECTION A-A**  
ALTERNATING FLOW UNITS



**SECTION A-A**  
UPFLOW-DOWNFLOW UNITS



**UNIT TOP DETAIL**

**NOTES:**

1. ALL WOOD CONNECTIONS TO BE #12 x 2" F.H. WOOD SCREWS @ 6" MAXIMUM.
2. CAULK ALL MATING WOOD SURFACES BEFORE ASSEMBLING CONTROL SECTIONS.
3. CONTROL SECTION MUST BE WATERTIGHT. 6" FIBERGLASS CLOTH OR OTHER APPROVED MATERIAL JOINT WATERPROOFING SHALL BE APPLIED.
4. ALL BOLTS TO BE STAINLESS STEEL.

| NO.   | DATE | REVISION                   | APPR. |
|---|------|----------------------------|-------|
| SUBMITTED   |      |                            |       |
| APPROVED  |      | <i>Andrew E. Friedrich</i> |       |
| PROFESSIONAL<br>CHIEF - DIVISION OF MINE AREA RESTORATION |      |                            |       |
| APPROVED  |      | <i>B. E. Kuhl</i>          |       |
| DIRECTOR - BUREAU OF RESOURCES PROGRAMMING                |      |                            |       |



COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL RESOURCES  
OFFICE OF RESOURCES MANAGEMENT  
CONTRACT NO. SL 135-10-102.1

QUAKAKE TUNNEL  
DEMONSTRATION PROJECT  
PACKER TWP. CARBON CO., PA.  
GEO - Technical Services  
CONSULTING ENGINEERS & GEOLOGISTS  
851 So. 19th St. HARRISBURG, PENNA.

**UPFLOW-DOWNFLOW UNIT & WEIR BOX**

|                      |                     |                         |
|----------------------|---------------------|-------------------------|
| DRAWN BY<br>J.L.T.   | DATE<br>MAY 1977    | DRAWING NO.<br>14 of 18 |
| CHECKED BY<br>S.J.M. | SCALE<br>1" = 1'-0" |                         |

**UNIT BASE DETAILS**