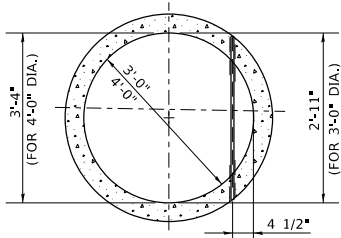
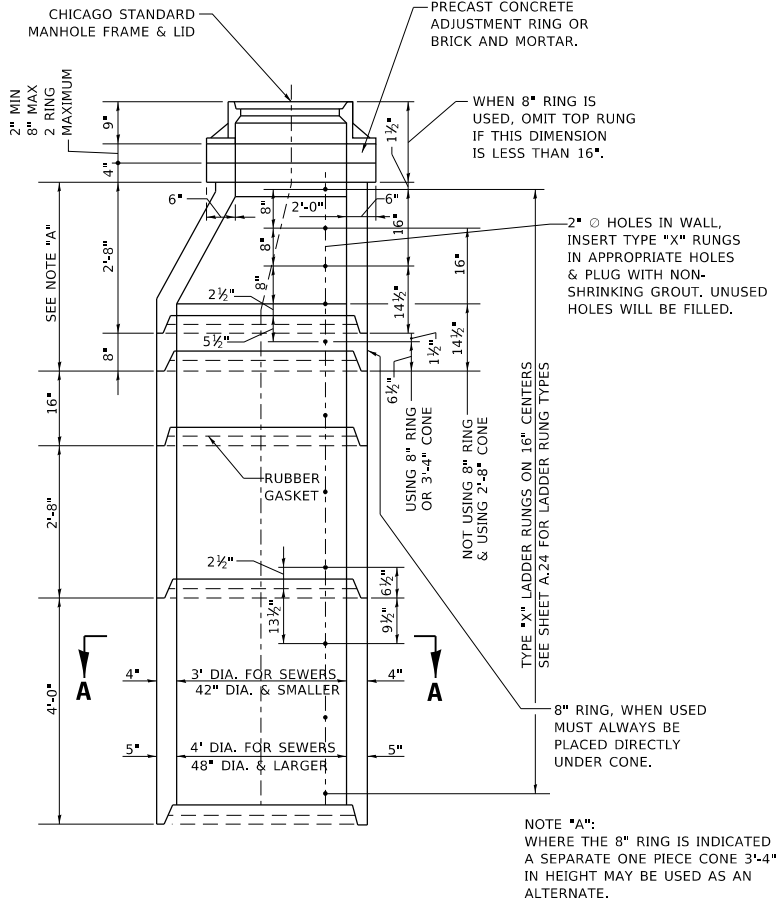


MODEL Default
FILE Name: p:\wuldet-cw.bentley.com\PI\WDDOT\Documents\DOT Office\DLrdrct. 1\Projects\DLH5422\2-ACADD\BalsCAD\Prints\0909.dgn

| NUMBER OF PRECAST RINGS REQUIRED FOR MANHOLES OF VARIOUS HEIGHTS | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|---------------|-------|-------|----|----|---------------------------|------------------------|--|---------------|-------|-------|----|----|---------------------------|------------------------|--|---------------|-------|-------|----|----|---------------------------|
| TOTAL HEIGHT "H" | 9" FRAME + 2'-8" CORBEL = 3'-5" | PRECAST RINGS | | | | | BRICK AND/OR MORTAR | TOTAL HEIGHT "H" | 9" FRAME + 2'-8" CORBEL = 3'-5" | PRECAST RINGS | | | | | BRICK AND/OR MORTAR | TOTAL HEIGHT "H" | 9" FRAME + 2'-8" CORBEL = 3'-5" | PRECAST RINGS | | | | | BRICK AND/OR MORTAR |
| | | 4'-0" | 2'-8" | 1'-4" | 8" | 4" | | | | 4'-0" | 2'-8" | 1'-4" | 8" | 4" | | | | 4'-0" | 2'-8" | 1'-4" | 8" | 4" | |
| 5'-0" | 3'-5" | | | 1 | | | | 3" | 12'-0" | 3'-5" | 2 | | | 1 | 3" | 19'-0" | 3'-5" | 3 | 1 | 1 | 3" | | |
| 1" | * | | | 1 | | | | 4" | 1" | * | 2 | | | 1 | 4" | 1" | * | 3 | 1 | 1 | 4" | | |
| 2" | * | | | | | 1 | | 1" | 2" | * | 2 | | 1 | 1 | 1" | 2" | * | 3 | 1 | 1 | 1" | | |
| 3" | * | | | 1 | | | | 2" | 3" | * | 2 | | | 1 | 2" | 3" | * | 3 | 1 | 1 | 2" | | |
| 4" | * | | | | | 1 | | 3" | 4" | * | 2 | | 1 | 1 | 3" | 4" | * | 3 | 1 | 1 | 3" | | |
| 5" | * | | | 1 | | | | 4" | 5" | * | 2 | | 1 | 1 | 4" | 5" | * | 3 | 1 | 1 | 4" | | |
| 6" | * | | | | | 1 | | 1" | 6" | * | 2 | | 1 | 1 | 1" | 6" | * | 4 | | | 1" | | |
| 7" | * | | | 1 | | | | 2" | 7" | * | 2 | | 1 | 1 | 2" | 7" | * | 4 | | | 2" | | |
| 8" | * | | | | | 1 | | 3" | 8" | * | 2 | | 1 | 1 | 3" | 8" | * | 4 | | | 3" | | |
| 9" | * | | | 1 | | | | 4" | 9" | * | 2 | | 1 | 1 | 4" | 9" | * | 4 | | | 4" | | |
| 10" | * | | | | | 1 | | 1" | 10" | * | 2 | | 1 | 1 | 1" | 10" | * | 4 | | 1 | 1" | | |
| 11" | * | | | 1 | | | | 2" | 11" | * | 2 | | 1 | 1 | 2" | 11" | * | 4 | | | 2" | | |
| 6'-0" | 3'-5" | | | 1 | | | | 1 | 3" | 13'-0" | 3'-5" | 2 | | 1 | 3" | 20'-0" | 3'-5" | 4 | | 1 | 3" | | |
| 1" | * | | | 1 | | | | 1 | 4" | 1" | * | 2 | | 1 | 4" | 1" | * | 4 | | 1 | 4" | | |
| 2" | * | | | | | 1 | | 1" | 2" | * | 2 | | 1 | 1 | 1" | 2" | * | 4 | | 1 | 1" | | |
| 3" | * | | | 1 | | | | 2" | 3" | * | 2 | | 1 | 1 | 2" | 3" | * | 4 | | 1 | 2" | | |
| 4" | * | | | | | 1 | | 3" | 4" | * | 2 | | 1 | 1 | 3" | 4" | * | 4 | | 1 | 3" | | |
| 5" | * | | | 1 | | | | 4" | 5" | * | 2 | | 1 | 1 | 4" | 5" | * | 4 | | 1 | 4" | | |
| 6" | * | | | | | 1 | | 1" | 6" | * | 2 | | 1 | 1 | 1" | 6" | * | 4 | | 1 | 1" | | |
| 7" | * | | | 1 | | | | 2" | 7" | * | 2 | | 1 | 1 | 2" | 7" | * | 4 | | 1 | 2" | | |
| 8" | * | | | | | 1 | | 3" | 8" | * | 2 | | 1 | 1 | 3" | 8" | * | 4 | | 1 | 3" | | |
| 9" | * | | | 1 | | | | 4" | 9" | * | 2 | | 1 | 1 | 4" | 9" | * | 4 | | 1 | 4" | | |
| 10" | * | | | | | 1 | | 1" | 10" | * | 2 | | 1 | 1 | 1" | 10" | * | 4 | | 1 | 1" | | |
| 11" | * | | | 1 | | | | 2" | 11" | * | 2 | | 1 | 1 | 2" | 11" | * | 4 | | 1 | 2" | | |
| 7'-0" | 3'-5" | | | 1 | | | | 1 | 3" | 14'-0" | 3'-5" | 2 | | 1 | 3" | 21'-0" | 3'-5" | 4 | | 1 | 3" | | |
| 1" | * | | | 1 | | | | 1 | 4" | 1" | * | 2 | | 1 | 4" | 1" | * | 4 | | 1 | 4" | | |
| 2" | * | | | | | 1 | | 1" | 2" | * | 2 | | 1 | 1 | 1" | 2" | * | 4 | | 1 | 1" | | |
| 3" | * | | | 1 | | | | 2" | 3" | * | 2 | | 1 | 1 | 2" | 3" | * | 4 | | 1 | 2" | | |
| 4" | * | | | | | 1 | | 3" | 4" | * | 2 | | 1 | 1 | 3" | 4" | * | 4 | | 1 | 3" | | |
| 5" | * | | | 1 | | | | 4" | 5" | * | 2 | | 1 | 1 | 4" | 5" | * | 4 | | 1 | 4" | | |
| 6" | * | | | | | 1 | | 1" | 6" | * | 2 | | 1 | 1 | 1" | 6" | * | 4 | | 1 | 1" | | |
| 7" | * | | | 1 | | | | 2" | 7" | * | 2 | | 1 | 1 | 2" | 7" | * | 4 | | 1 | 2" | | |
| 8" | * | | | | | 1 | | 3" | 8" | * | 2 | | 1 | 1 | 3" | 8" | * | 4 | | 1 | 3" | | |
| 9" | * | | | 1 | | | | 4" | 9" | * | 2 | | 1 | 1 | 4" | 9" | * | 4 | | 1 | 4" | | |
| 10" | * | | | | | 1 | | 1" | 10" | * | 2 | | 1 | 1 | 1" | 10" | * | 4 | | 1 | 1" | | |
| 11" | * | | | 1 | | | | 2" | 11" | * | 2 | | 1 | 1 | 2" | 11" | * | 4 | | 1 | 2" | | |
| 8'-0" | 3'-5" | | | 1 | | | | 1 | 3" | 15'-0" | 3'-5" | 2 | | 1 | 3" | 22'-0" | 3'-5" | 4 | | 1 | 3" | | |
| 1" | * | | | 1 | | | | 1 | 4" | 1" | * | 2 | | 1 | 4" | 1" | * | 4 | | 1 | 4" | | |
| 2" | * | | | | | 1 | | 1" | 2" | * | 2 | | 1 | 1 | 1" | 2" | * | 4 | | 1 | 1" | | |
| 3" | * | | | 1 | | | | 2" | 3" | * | 2 | | 1 | 1 | 2" | 3" | * | 4 | | 1 | 2" | | |
| 4" | * | | | | | 1 | | 3" | 4" | * | 2 | | 1 | 1 | 3" | 4" | * | 4 | | 1 | 3" | | |
| 5" | * | | | 1 | | | | 4" | 5" | * | 2 | | 1 | 1 | 4" | 5" | * | 4 | | 1 | 4" | | |
| 6" | * | | | | | 1 | | 1" | 6" | * | 2 | | 1 | 1 | 1" | 6" | * | 4 | | 1 | 1" | | |
| 7" | * | | | 1 | | | | 2" | 7" | * | 2 | | 1 | 1 | 2" | 7" | * | 4 | | 1 | 2" | | |
| 8" | * | | | | | 1 | | 3" | 8" | * | 2 | | 1 | 1 | 3" | 8" | * | 4 | | 1 | 3" | | |
| 9" | * | | | 1 | | | | 4" | 9" | * | 2 | | 1 | 1 | 4" | 9" | * | 4 | | 1 | 4" | | |
| 10" | * | | | | | 1 | | 1" | 10" | * | 2 | | 1 | 1 | 1" | 10" | * | 4 | | 1 | 1" | | |
| 11" | * | | | 1 | | | | 2" | 11" | * | 2 | | 1 | 1 | 2" | 11" | * | 4 | | 1 | 2" | | |
| 9'-0" | 3'-5" | | | 1 | | | | 1 | 3" | 16'-0" | 3'-5" | 3 | | 1 | 3" | 23'-0" | 3'-5" | 4 | | 1 | 3" | | |
| 1" | * | | | 1 | | | | 1 | 4" | 1" | * | 3 | | 1 | 4" | 1" | * | 4 | | 1 | 4" | | |
| 2" | * | | | | | 1 | | 1" | 2" | * | 3 | | 1 | 1 | 1" | 2" | * | 4 | | 1 | 1" | | |
| 3" | * | | | 1 | | | | 2" | 3" | * | 3 | | 1 | 1 | 2" | 3" | * | 4 | | 1 | 2" | | |
| 4" | * | | | | | 1 | | 3" | 4" | * | 3 | | 1 | 1 | 3" | 4" | * | 4 | | 1 | 3" | | |
| 5" | * | | | 1 | | | | 4" | 5" | * | 3 | | 1 | 1 | 4" | 5" | * | 4 | | 1 | 4" | | |
| 6" | * | | | | | 1 | | 1" | 6" | * | 3 | | 1 | 1 | 1" | 6" | * | 5 | | | 1" | | |
| 7" | * | | | 1 | | | | 2" | 7" | * | 3 | | 1 | 1 | 2" | 7" | * | 5 | | | 2" | | |
| 8" | * | | | | | 1 | | 3" | 8" | * | 3 | | 1 | 1 | 3" | 8" | * | 5 | | | 3" | | |
| 9" | * | | | 1 | | | | 4" | 9" | * | 3 | | 1 | 1 | 4" | 9" | * | 5 | | | 4" | | |
| 10" | * | | | | | 1 | | 1" | 10" | * | 3 | | 1 | 1 | 1" | 10" | * | 5 | | 1 | 1" | | |
| 11" | * | | | 1 | | | | 2" | 11" | * | 3 | | 1 | 1 | 2" | 11" | * | 5 | | | 2" | | |
| 10'-0" | 3'-5" | | | 1 | | | | 1 | 3" | 17'-0" | 3'-5" | 3 | | 1 | 3" | 24'-0" | 3'-5" | 5 | | 1 | 3" | | |
| 1" | * | | | 1 | | | | 1 | 4" | 1" | * | 3 | | 1 | 4" | 1" | * | 5 | | 1 | 4" | | |
| 2" | * | | | | | 1 | | 1" | 2" | * | 3 | | 1 | 1 | 1" | 2" | * | 5 | | 1 | 1" | | |
| 3" | * | | | 1 | | | | 2" | 3" | * | 3 | | 1 | 1 | 2" | 3" | * | 5 | | 1 | 2" | | |
| 4" | * | | | | | 1 | | 3" | 4" | * | 3 | | 1 | 1 | 3" | 4" | * | 5 | | 1 | 3" | | |
| 5" | * | | | 1 | | | | 4" | 5" | * | 3 | | 1 | 1 | 4" | 5" | * | 5 | | 1 | 4" | | |
| 6" | * | | | | | 1 | | 1" | 6" | * | 3 | | 1 | 1 | 1" | 6" | * | 5 | | 1 | 1" | | |
| 7" | * | | | 1 | | | | 2" | 7" | * | 3 | | 1 | 1 | 2" | 7" | * | 5 | | 1 | 2" | | |
| 8" | * | | | | | 1 | | 3" | 8" | * | 3 | | 1 | 1 | 3" | 8" | * | 5 | | 1 | 3" | | |
| 9" | * | | | 1 | | | | 4" | 9" | * | 3 | | 1 | 1 | 4" | 9" | * | 5 | | 1 | 4" | | |
| 10" | * | | | | | 1 | | 1" | 10" | * | 3 | | 1 | 1 | 1" | 10" | * | 5 | | 1 | 1" | | |
| 11" | * | | | 1 | | | | 2" | 11" | * | 3 | | 1 | 1 | 2" | 11" | * | 5 | | 1 | 2" | | |
| 11'-0" | 3'-5" | | | 1 | | | | 1 | 3" | 18'-0" | 3'-5" | 3 | | 1 | 3" | 25'-0" | 3'-5" | 5 | | 1 | 3" | | |
| 1" | * | | | 1 | | | | 1 | 4" | 1" | * | 3 | | 1 | 4" | 1" | * | 5 | | 1 | 4" | | |
| 2" | * | | | | | 1 | | 1" | 2" | * | 3 | | 1 | 1 | 1" | 2" | * | 5 | | 1 | 1" | | |
| 3" | * | | | 1 | | | | 2" | 3" | * | 3 | | 1 | 1 | 2" | 3" | * | 5 | | 1 | 2" | | |
| 4" | * | | | | | 1 | | 3" | 4" | * | 3 | | 1 | 1 | 3" | 4" | * | 5 | | 1 | 3" | | |
| 5" | * | | | 1 | | | | 4" | 5" | * | 3 | | 1 | 1 | 4" | 5" | * | 5 | | 1 | 4" | | |
| 6" | * | | | | | 1 | | 1" | 6" | * | 3 | | 1 | 1 | 1" | 6" | * | 5 | | 1 | 1" | | |
| 7" | * | | | 1 | | | | 2" | 7" | * | 3 | | 1 | 1 | 2" | 7" | * | 5 | | 1 | 2" | | |
| 8" | * | | | | | 1 | | 3" | 8" | * | 3 | | 1 | 1 | 3" | 8" | * | 5 | | 1 | 3" | | |
| 9" | * | | | 1 | | | | 4" | 9" | * | 3 | | 1 | 1 | 4" | 9" | * | 5 | | 1 | 4" | | |
| 10" | * | | | | | 1 | | 1" | 10" | * | 3 | | 1 | 1 | 1" | 10" | * | 5 | | 1 | 1" | | |
| 11" | * | | | 1 | | | | 2" | 11" | * | 3 | | 1 | 1 | 2" | 11" | * | 5 | | 1 | 2" | | |



1" \odot LADDER RUNG, TYPE "X", LENGTH 2'-11" OR 3'-4" INSERTED INTO 2" \odot HOLE IN WALL & PLUGGED BY MANUFACTURER WITH NON-SHRINKING GROUT.

SECTION A-A

DETAIL OF PRECAST RINGS

NOTES:

PRECAST CONCRETE RINGS MUST CONFORM TO A.S.T.M. DESIGNATION C76 FOR "REINFORCED CONCRETE CULVERT STORM DRAIN, AND SEWER PIPE." WALL B.

STANDARD LENGTHS OF RINGS ARE: 4'-0", 2'-8", 1'-4", 0'-8" AND 0'-4" COLLAR.

ALL REINFORCEMENT STEEL REQUIRED FOR PRECAST RINGS MUST BE INCLUDED IN THE PRICE BID FOR ALL MANHOLE ITEMS.

ALL PIPE AND FITTINGS 24 INCHES IN DIAMETER AND LARGER MUST BE CLASS III, IV AND V.

REINFORCED CONCRETE PIPE AS SPECIFIED IN THE SPECIFICATIONS FOR "REINFORCED CONCRETE CULVERT STORM DRAIN, AND SEWER PIPE." A.S.T.M. DESIGNATION C76, TABLE III, IV AND V, WALL B OR WALL C WITH CIRCULAR OR ELLIPTICAL REINFORCEMENT

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

CITY OF CHICAGO DRAINAGE DETAILS TYPE "A" MANHOLE PRECAST RISERS, AND RINGS 24" AND LARGER

SCALE: NONE SHEET 1 OF 1 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|-----------|------------------|--------------|--------------|-----------|
| BD600-12 | (BD-09) | CONTRACT NO. | | |
| ILLINOIS | FED. AID PROJECT | | | |