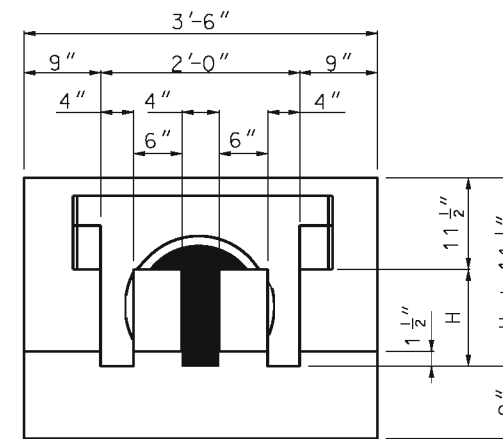
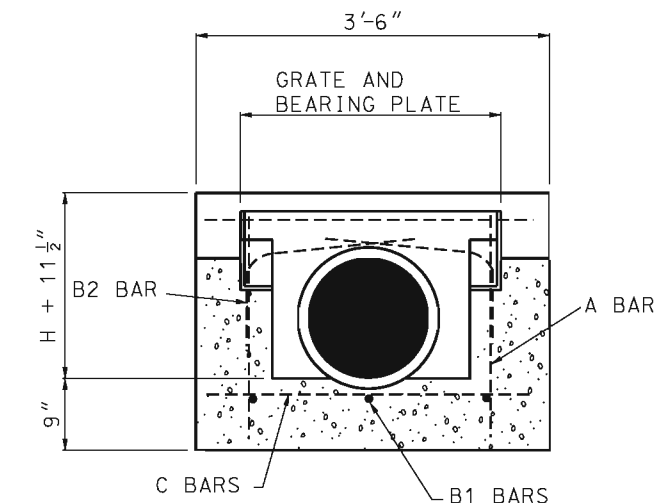


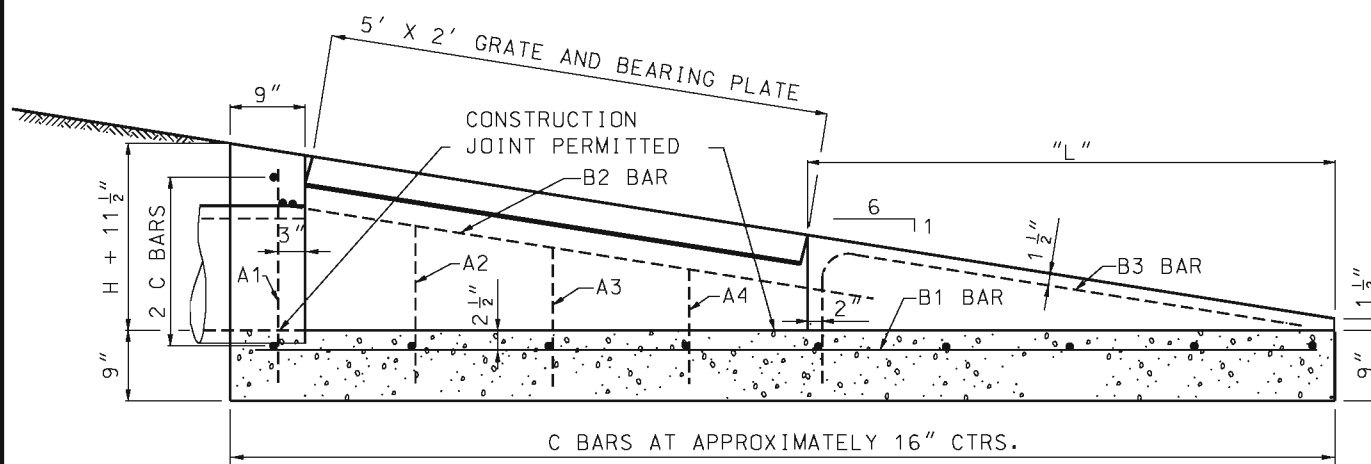
PLAN VIEW



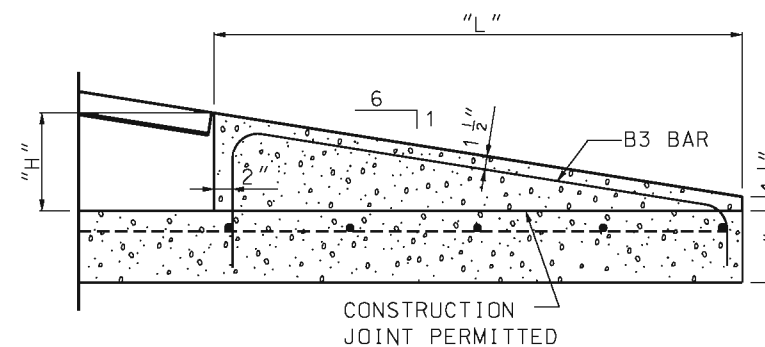
END SECTION



SECTION A-A



SECTION B-B



SECTION C-C

GENERAL NOTES:

USE RIGHT ANGLE HEADWALL FOR ALL INSTALLATIONS. SKEW PIPE BY USING A BEVELED END OR ELBOW ON PIPE. IN SPECIAL CASES, HEADWALL MAY BE TURNED TO FIT PIPE SKEW AND 1V TO 6H SLOPE WARPED TO FIT HEADWALL.

ALL CONCRETE SHALL BE CLASS "B".

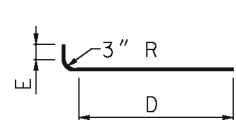
THIS DRAWING AND THE CONCRETE QUANTITIES SHOWN ARE BASED ON THE USE OF CONCRETE PIPE. QUANTITIES OF CONCRETE SHOWN WILL BE USED FOR PAYMENT REGARDLESS OF ANY QUANTITY CHANGES NECESSARY DUE TO THE USE OF ANY OTHER TYPE PIPE SPECIFIED OR PERMITTED.

FLOW LINE OF HEADWALL IS TO BE PLACED HORIZONTALLY.

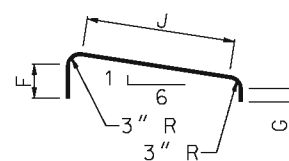
PRECAST NOTES:

THE CONTRACTOR MAY, SUBJECT TO APPROVAL OF THE ENGINEER, FURNISH PRECAST UNITS IN LIEU OF CAST-IN-PLACE. IF A PRECAST UNIT IS FURNISHED, IT SHALL CONFORM IN ALL RESPECTS TO THE THE REQUIREMENTS FOR CAST-IN-PLACE UNITS INCLUDING DIMENSIONS AND REINFORCEMENT, EXCEPT THAT THE FORMS MAY BE TAPERED TO FACILITATE REMOVAL OF THE UNIT FROM THE FORMS. SHOP DRAWINGS OF THE PRECAST UNIT SHALL BE SUBMITTED FOR APPROVAL PRIOR TO FIRST USE OF THE PRECASTING FORMS.

| PIPE SIZE | DIMENSIONS | | | QUANTITIES | | REINFORCING | | | | | | | | | | | | | | | | | | | | |
|-----------|------------|-------|--------------|-------------|------------|-------------|--------|------------|--------|------------|--------|------------|--------|------------|--------|------------|-------|-------|------------|-----|--------|----|-----------|--------|-----|--------|
| | "H" | "L" | TOTAL LENGTH | CONC. C. Y. | STEEL LBS. | #4 A1 BARS | | #4 A2 BARS | | #4 A3 BARS | | #4 A4 BARS | | #4 B1 BARS | | #4 B2 BARS | | | #4 B3 BARS | | | | #4 C BARS | | | |
| | | | | | | NO. | LENGTH | NO. | LENGTH | NO. | LENGTH | NO. | LENGTH | NO. | LENGTH | NO. | E | D | LENGTH | NO. | F | G | J | LENGTH | NO. | LENGTH |
| 12" | 9" | 3'-9" | 9'-6" | 1.5 | 70 | 2 | 2'-0" | 2 | 1'-6" | 2 | 1'-3" | 2 | 1'-0" | 3 | 9'-3" | 2 | 1'-5" | 5'-8" | 7'-6" | 4 | 11" | 5" | 2'-11" | 5'-0" | 8 | 3'-3" |
| 15" | 1'-0" | 5'-3" | 11'-0" | 1.8 | 80 | 2 | 2'-3" | 2 | 1'-9" | 2 | 1'-6" | 2 | 1'-3" | 3 | 10'-9" | 2 | 1'-5" | 5'-8" | 7'-6" | 4 | 1'-2" | 5" | 4'-5" | 6'-9" | 9 | 3'-3" |
| 18" | 1'-3" | 6'-9" | 12'-6" | 2.2 | 90 | 2 | 2'-6" | 2 | 2'-0" | 2 | 1'-9" | 2 | 1'-6" | 3 | 12'-3" | 2 | 1'-5" | 5'-8" | 7'-6" | 4 | 1'-5" | 5" | 5'-11" | 8'-6" | 10 | 3'-3" |
| 21" | 1'-6" | 8'-3" | 14'-0" | 2.6 | 100 | 2 | 2'-9" | 2 | 2'-3" | 2 | 2'-0" | 2 | 1'-9" | 3 | 13'-9" | 2 | 1'-5" | 5'-8" | 7'-6" | 4 | 1'-8" | 5" | 7'-5" | 10'-3" | 11 | 3'-3" |
| 24" | 1'-9" | 9'-9" | 15'-6" | 3.0 | 110 | 2 | 3'-0" | 2 | 2'-6" | 2 | 2'-3" | 2 | 2'-0" | 3 | 15'-3" | 2 | 1'-5" | 5'-8" | 7'-6" | 4 | 1'-11" | 5" | 8'-11" | 12'-0" | 12 | 3'-3" |



B2 BARS



B3 BARS

BENDING DETAILS

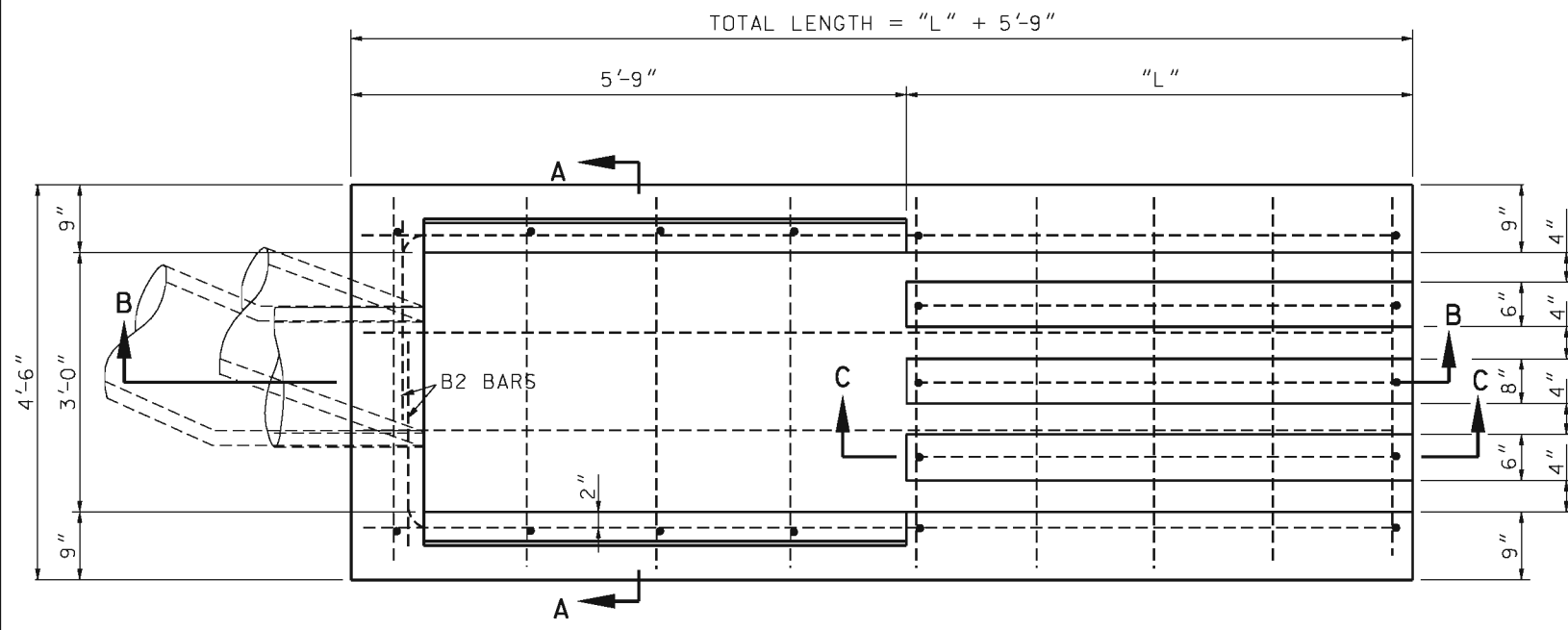
MoDOT MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
 105 WEST CAPITOL JEFFERSON CITY, MO 65102
 1-888-ASK-MODOT (1-888-275-6636)

STATE OF MISSOURI
 DENNIS W. HECKMAN
 NUMBER PE-27141
 PROFESSIONAL ENGINEER
 THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

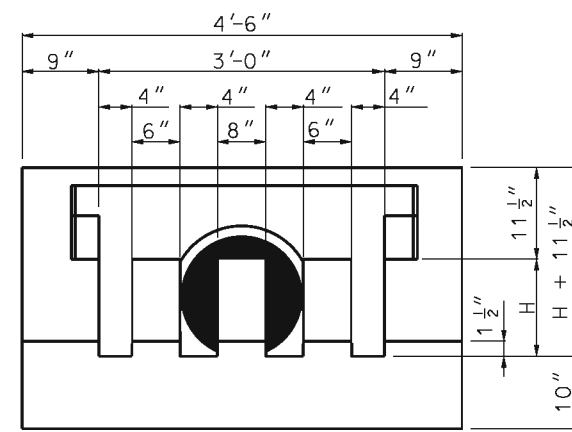
PIPE CULVERT HEADWALLS
 TYPE S
 12" TO 24" DIAMETERS
 - 1V:6H SLOPES

| | | |
|----------------------------|----------------|---------------------|
| DATE EFFECTIVE: 08/01/2006 | 604.05D | SHEET NO. 1 OF 2 |
| DATE PREPARED: 9/3/2009 | | |

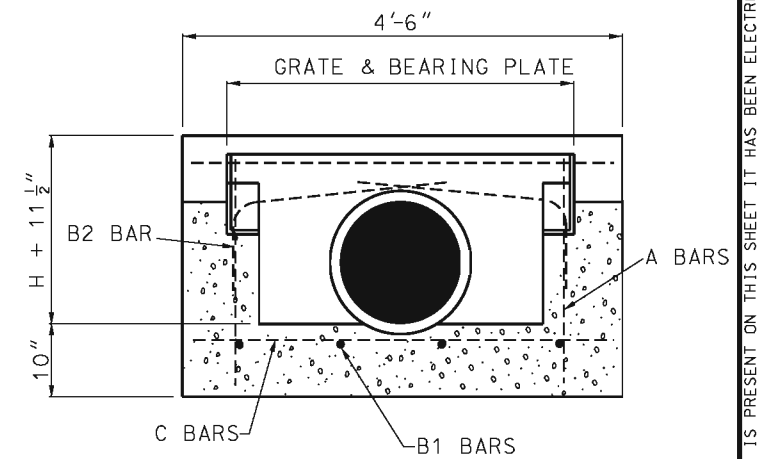
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



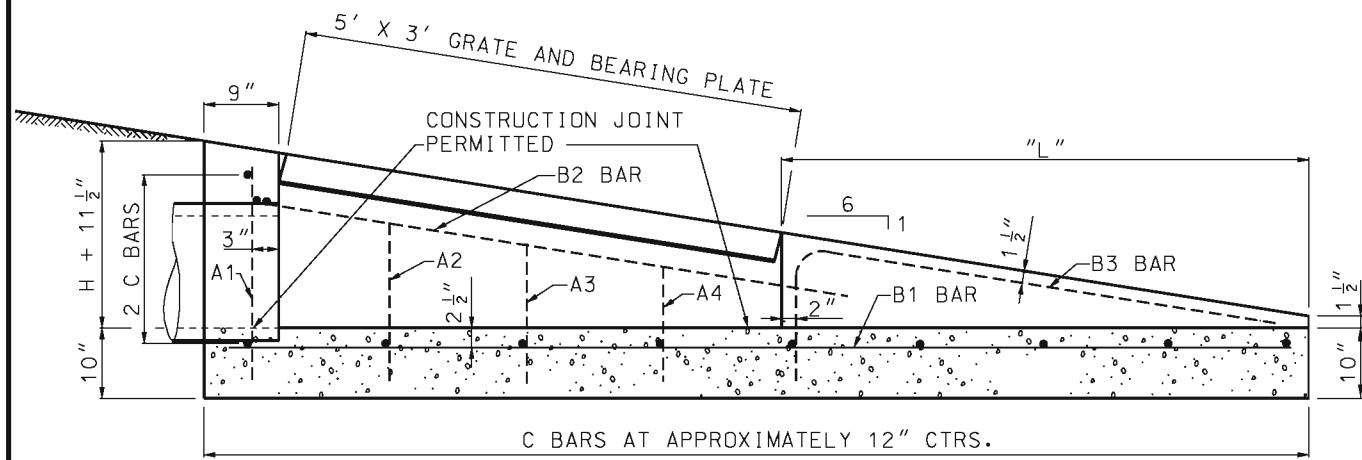
PLAN VIEW



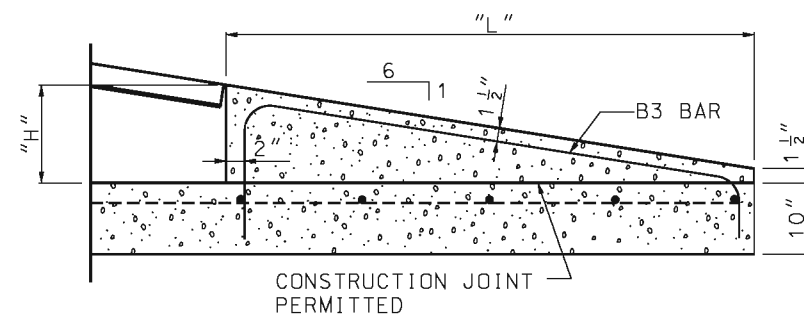
END SECTION



SECTION A-A



SECTION B-B



SECTION C-C

| PIPE SIZE | DIMENSIONS | | | QUANTITIES | | REINFORCING | | | | | | | | | | | | | | | | | | | | |
|-----------|------------|--------|--------------|------------|---------------|-------------|--------|------------|--------|------------|--------|------------|--------|------------|--------|------------|--------|-------|------------|-----|--------|-----------|---------|--------|-----|--------|
| | "H" | "L" | TOTAL LENGTH | CONC. C. | STEEL Y. LBS. | #4 A1 BARS | | #4 A2 BARS | | #4 A3 BARS | | #4 A4 BARS | | #4 B1 BARS | | #4 B2 BARS | | | #4 B3 BARS | | | #4 C BARS | | | | |
| | | | | | | NO. | LENGTH | NO. | LENGTH | NO. | LENGTH | NO. | LENGTH | NO. | LENGTH | NO. | E | D | LENGTH | NO. | F | G | J | LENGTH | NO. | LENGTH |
| 27" | 2'-0" | 11'-3" | 17'-0" | 4.5 | 160 | 2 | 3'-3" | 2 | 2'-9" | 2 | 2'-6" | 2 | 2'-3" | 4 | 16'-9" | 2 | 1'-11" | 5'-8" | 8'-0" | 5 | 2'-2" | 5" | 10'-5" | 13'-9" | 18 | 4'-3" |
| 30" | 2'-3" | 12'-9" | 18'-6" | 5.0 | 170 | 2 | 3'-6" | 2 | 3'-0" | 2 | 2'-9" | 2 | 2'-6" | 4 | 18'-3" | 2 | 1'-11" | 5'-8" | 8'-0" | 5 | 2'-5" | 5" | 11'-11" | 15'-6" | 19 | 4'-3" |
| 36" | 2'-9" | 15'-9" | 21'-6" | 6.1 | 200 | 2 | 4'-0" | 2 | 3'-6" | 2 | 3'-3" | 2 | 3'-0" | 4 | 21'-3" | 2 | 1'-11" | 5'-8" | 8'-0" | 5 | 2'-11" | 5" | 14'-11" | 19'-0" | 21 | 4'-3" |

GENERAL NOTES:

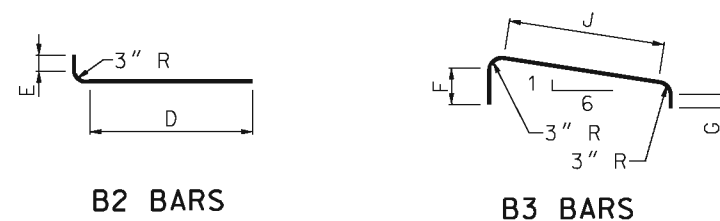
SEE GENERAL NOTES ON SHEET 1.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
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PIPE CULVERT HEADWALLS
 TYPE S
 27" TO 36" DIAMETERS
 - 1V:6H SLOPES

| | | | |
|-----------------|------------|----------------|-----------|
| DATE EFFECTIVE: | 08/01/2006 | 604.05D | SHEET NO. |
| DATE PREPARED: | 9/3/2009 | | 2 OF 2 |



BENDING DETAILS

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.