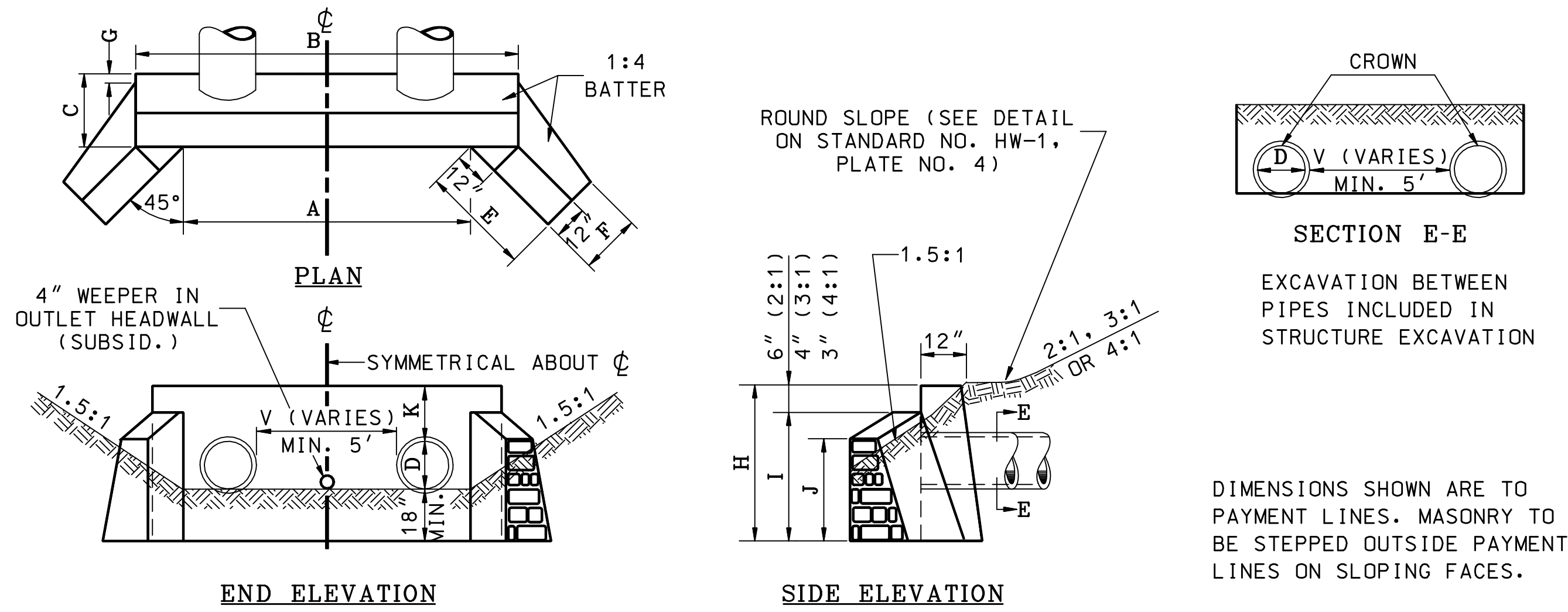


| REVISION DATE |
|---------------|
| 07-13-2001    |
| 06-16-2010    |
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\*DGN FILE NAME  
HW-3



SECTION E-E  
EXCAVATION BETWEEN PIPES INCLUDED IN STRUCTURE EXCAVATION

DIMENSIONS SHOWN ARE TO PAYMENT LINES. MASONRY TO BE STEPPED OUTSIDE PAYMENT LINES ON SLOPING FACES.

2:1 SLOPE (FOR 3:1 AND 4:1 SLOPES SEE PLATE 2)

| DIAMETER D INCHES | QUANTITIES IN CUBIC YARDS, PER HEADER |                                  |                        |  | DIMENSIONS |         |       |        |        |        |       |       |        |       |  |
|-------------------|---------------------------------------|----------------------------------|------------------------|--|------------|---------|-------|--------|--------|--------|-------|-------|--------|-------|--|
|                   | M.R.M. V=5'                           | M.R.M. PER FOOT ADD. LENGTH V=5' | EXC. FOR 1' DEPTH V=5' | EXC. PER FOOT ADD. LENGTH 1 FOOT DEPTH | A          | B       | C     | E      | F      | G      | H     | I     | J      | K     |  |
| 24                | 4.40                                  | 0.300                            | 3.08                   | 0.157                                  | 10'-0"     | 12'-10" | 2'-3" | 2'-11" | 1'-11" | 0'-6"  | 5'-0" | 4'-6" | 3'-10" | 1'-6" |  |
| 30                | 5.56                                  | 0.348                            | 3.60                   | 0.163                                  | 11-2       | 14-0    | 2-5   | 3-6    | 2-0    | 0-5    | 5-6   | 5-0   | 4-1    | 1-6   |  |
| 36                | 6.71                                  | 0.389                            | 4.03                   | 0.167                                  | 12-4       | 15-2    | 2-6   | 4-1    | 2-1    | 0-4    | 6-0   | 5-6   | 4-4    | 1-6   |  |
| 42                | 8.75                                  | 0.458                            | 4.68                   | 0.173                                  | 13-6       | 16-4    | 2-8   | 5-0    | 2-2    | 0-3    | 6-9   | 6-3   | 4-10   | 1-9   |  |
| 48                | 10.43                                 | 0.515                            | 5.29                   | 0.179                                  | 14-8       | 17-6    | 2-10  | 5-8    | 2-3    | 0-2    | 7-3   | 6-9   | 5-1    | 1-9   |  |
| 54                | 12.07                                 | 0.562                            | 5.85                   | 0.182                                  | 15-10      | 18-8    | 2-11  | 6-3    | 2-4    | 0-1    | 7-9   | 7-3   | 5-4    | 1-9   |  |
| 60                | 14.09                                 | 0.624                            | 6.47                   | 0.188                                  | 17-0       | 19-10   | 3-1   | 6-10   | 2-5    | 0-1    | 8-3   | 7-9   | 5-8    | 1-9   |  |
| 66                | 16.05                                 | 0.675                            | 7.03                   | 0.191                                  | 18-2       | 21-0    | 3-2   | 7-5    | 2-6    | 0-0    | 8-9   | 8-3   | 5-11   | 1-9   |  |
| 72                | 18.41                                 | 0.742                            | 7.63                   | 0.198                                  | 19'-4"     | 22'-2"  | 3'-4" | 8'-1"  | 2'-7"  | -0'-1" | 9'-3" | 8'-9" | 6'-3"  | 1'-9" |  |

3:1 SLOPE

| DIAMETER D INCHES | QUANTITIES IN CUBIC YARDS, PER HEADER |                                  |                        |  | DIMENSIONS |         |       |       |       |       |       |        |        |       |  |
|-------------------|---------------------------------------|----------------------------------|------------------------|--|------------|---------|-------|-------|-------|-------|-------|--------|--------|-------|--|
|                   | M.R.M. V=1.5                          | M.R.M. PER FOOT ADD. LENGTH V=5' | EXC. FOR 1' DEPTH V=5' | EXC. PER FOOT ADD. LENGTH 1 FOOT DEPTH | A          | B       | C     | E     | F     | G     | H     | I      | J      | K     |  |
| 24                | 4.77                                  | 0.300                            | 3.27                   | 0.157                                  | 10'-0"     | 12'-10" | 2'-3" | 3'-6" | 2'-0" | 0'-6" | 5'-0" | 4'-8"  | 4'-1"  | 1'-6" |  |
| 30                | 6.08                                  | 0.348                            | 3.83                   | 0.163                                  | 11-2       | 14-0    | 2-5   | 4-3   | 2-1   | 0-6   | 5-6   | 5-2    | 4-5    | 1-6   |  |
| 36                | 7.38                                  | 0.389                            | 4.34                   | 0.167                                  | 12-4       | 15-2    | 2-6   | 4-11  | 2-2   | 0-4   | 6-0   | 5-8    | 4-9    | 1-6   |  |
| 42                | 9.72                                  | 0.458                            | 5.06                   | 0.173                                  | 13-6       | 16-4    | 2-8   | 6-0   | 2-4   | 0-3   | 6-9   | 6-5    | 5-3    | 1-9   |  |
| 48                | 11.59                                 | 0.515                            | 5.69                   | 0.179                                  | 14-8       | 17-6    | 2-10  | 6-8   | 2-5   | 0-3   | 7-3   | 6-11   | 5-7    | 1-9   |  |
| 54                | 13.52                                 | 0.562                            | 6.27                   | 0.182                                  | 15-10      | 18-8    | 2-11  | 7-5   | 2-6   | 0-2   | 7-9   | 7-5    | 5-11   | 1-9   |  |
| 60                | 15.80                                 | 0.624                            | 6.92                   | 0.188                                  | 17-0       | 19-10   | 3-1   | 8-1   | 2-7   | 0-1   | 8-3   | 7-11   | 6-3    | 1-9   |  |
| 66                | 18.10                                 | 0.675                            | 7.58                   | 0.191                                  | 18-2       | 21-0    | 3-2   | 8-10  | 2-8   | 0-0   | 8-9   | 8-5    | 6-7    | 1-9   |  |
| 72                | 20.80                                 | 0.742                            | 8.26                   | 0.198                                  | 19'-4"     | 22'-2"  | 3'-4" | 9'-6" | 2'-9" | 0-0   | 9'-3" | 8'-11" | 6'-11" | 1'-9" |  |

4:1 SLOPE

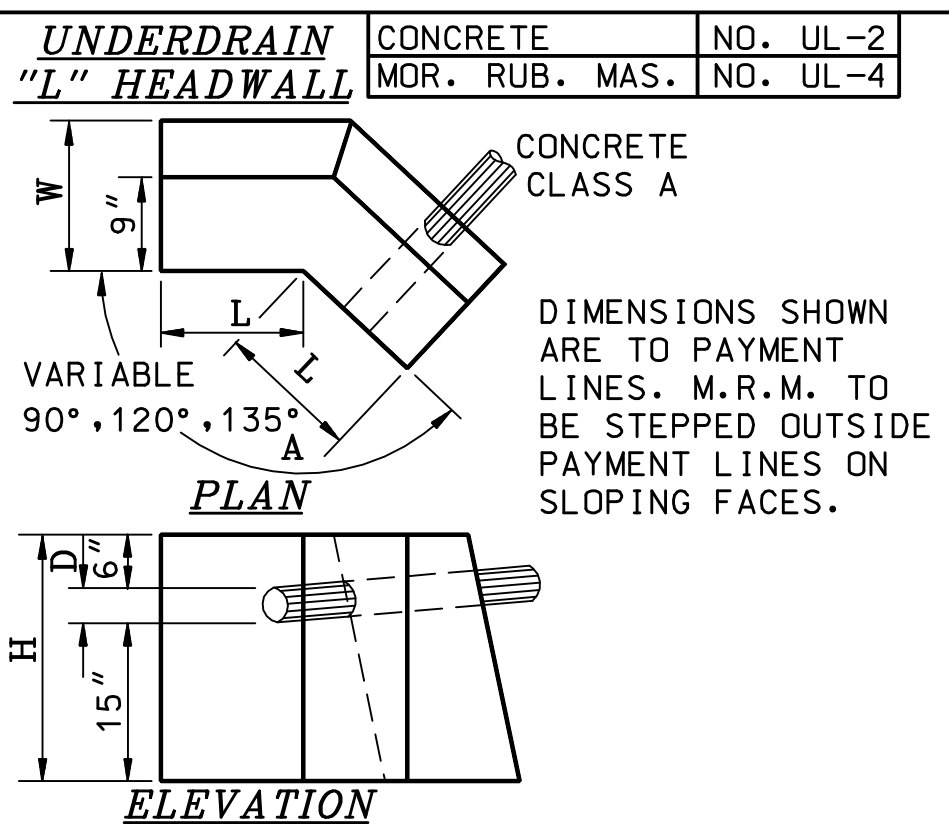
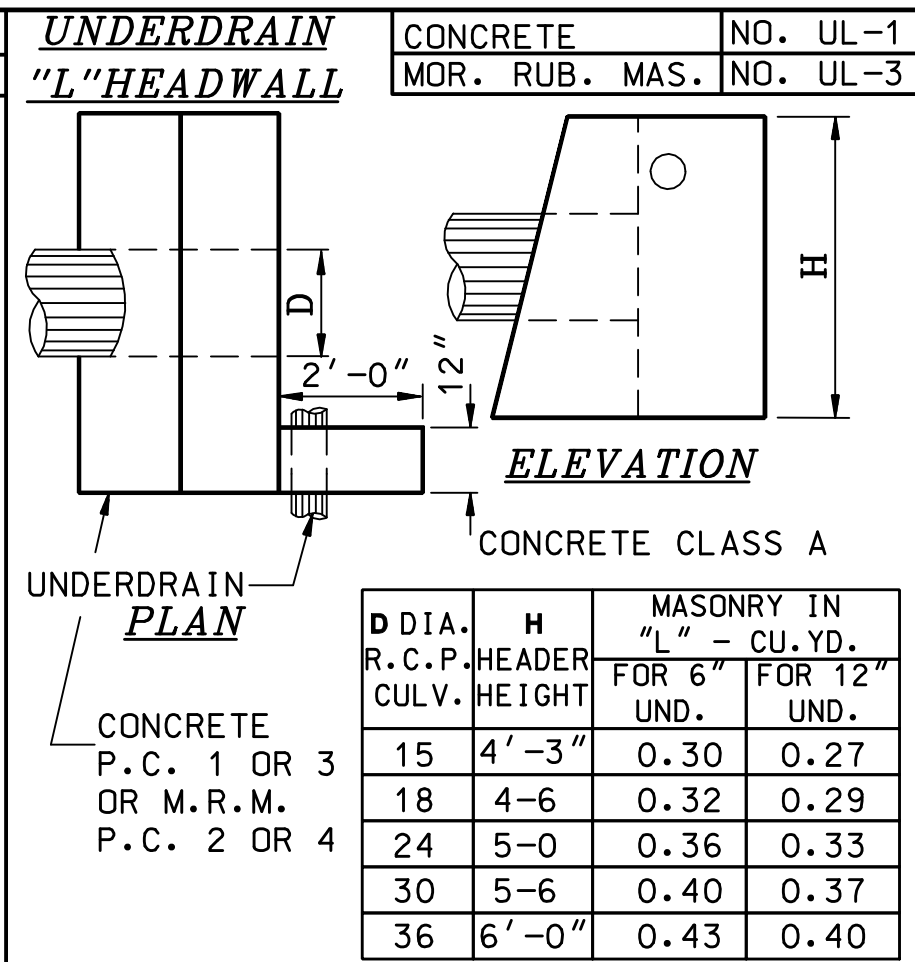
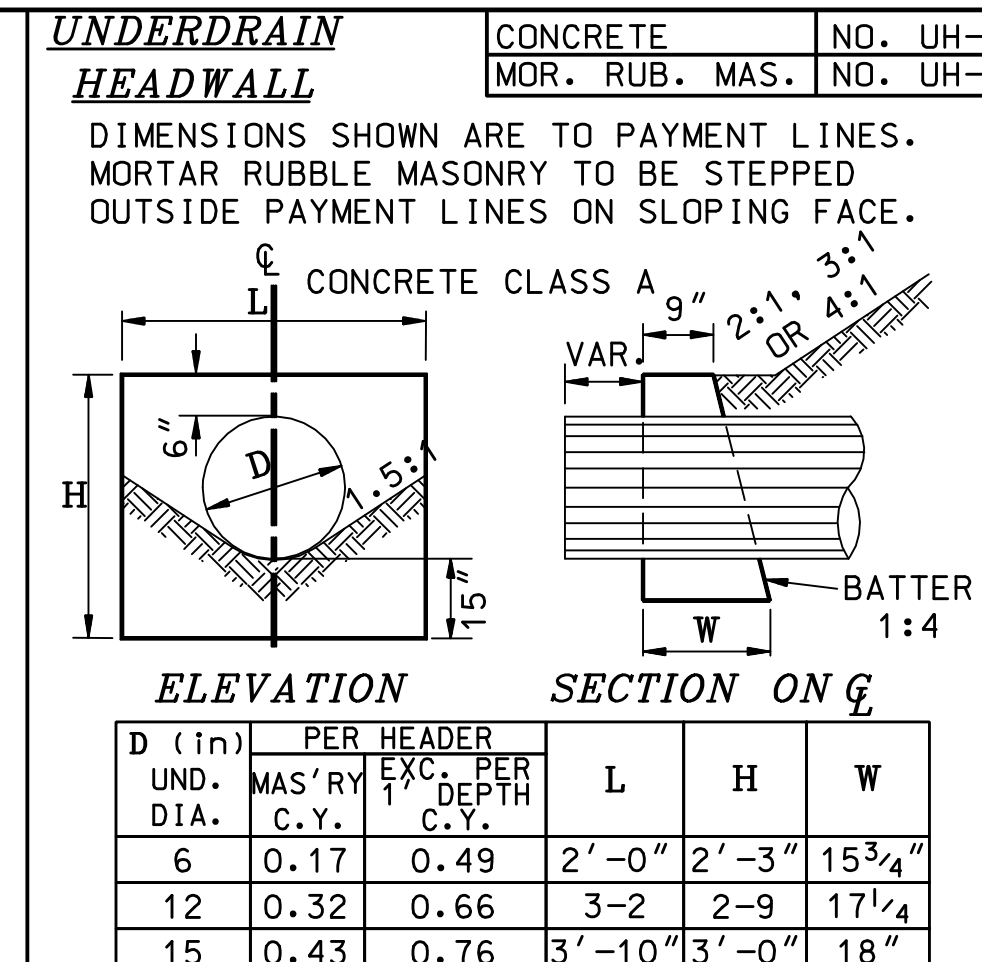
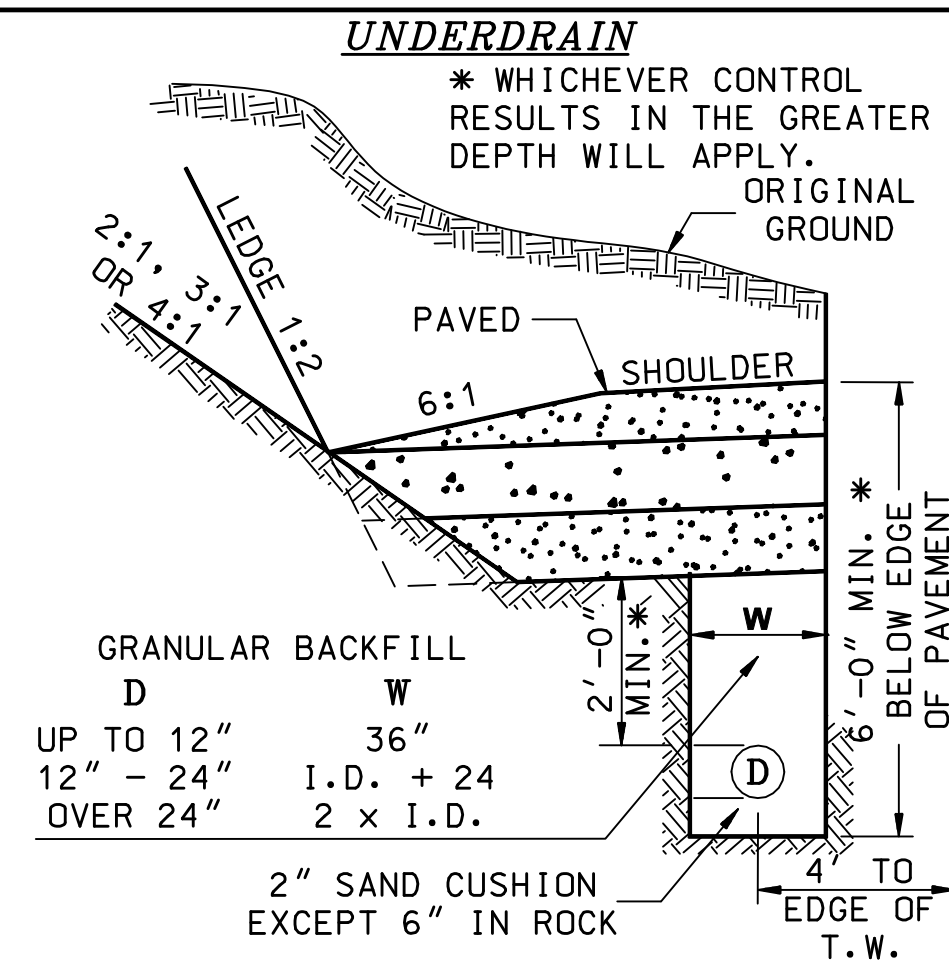
| DIAMETER D INCHES | QUANTITIES IN CUBIC YARDS, PER HEADER |                                  |                        |  | DIMENSIONS |         |       |        |        |       |       |       |       |       |  |
|-------------------|---------------------------------------|----------------------------------|------------------------|--|------------|---------|-------|--------|--------|-------|-------|-------|-------|-------|--|
|                   | M.R.M. V=1.5                          | M.R.M. PER FOOT ADD. LENGTH V=5' | EXC. FOR 1' DEPTH V=5' | EXC. PER FOOT ADD. LENGTH 1 FOOT DEPTH | A          | B       | C     | E      | F      | G     | H     | I     | J     | K     |  |
| 24                | 5.01                                  | 0.300                            | 3.39                   | 0.157                                  | 10'-0"     | 12'-10" | 2'-3" | 3'-10" | 2'-1"  | 0'-6" | 5'-0" | 4'-9" | 4'-3" | 1'-6" |  |
| 30                | 6.37                                  | 0.348                            | 3.94                   | 0.163                                  | 11-2       | 14-0    | 2-5   | 4-7    | 2-2    | 0-6   | 5-6   | 5-3   | 4-7   | 1-6   |  |
| 36                | 7.79                                  | 0.389                            | 4.47                   | 0.167                                  | 12-4       | 15-2    | 2-6   | 5-4    | 2-3    | 0-4   | 6-0   | 5-9   | 5-0   | 1-6   |  |
| 42                | 10.30                                 | 0.458                            | 5.25                   | 0.173                                  | 13-6       | 16-4    | 2-8   | 6-6    | 2-5    | 0-3   | 6-9   | 6-6   | 5-6   | 1-9   |  |
| 48                | 12.34                                 | 0.515                            | 5.90                   | 0.179                                  | 14-8       | 17-6    | 2-10  | 7-3    | 2-6    | 0-3   | 7-3   | 7-0   | 5-11  | 1-9   |  |
| 54                | 14.46                                 | 0.562                            | 6.52                   | 0.182                                  | 15-10      | 18-8    | 2-11  | 8-1    | 2-7    | 0-2   | 7-9   | 7-6   | 6-3   | 1-9   |  |
| 60                | 16.85                                 | 0.624                            | 7.23                   | 0.188                                  | 17-0       | 19-10   | 3-1   | 8-10   | 2-8    | 0-1   | 8-3   | 8-0   | 6-7   | 1-9   |  |
| 66                | 19.41                                 | 0.675                            | 7.89                   | 0.191                                  | 18-2       | 21-0    | 3-2   | 9-7    | 2-9    | 0-0   | 8-9   | 8-6   | 7-0   | 1-9   |  |
| 72                | 22.26                                 | 0.742                            | 8.62                   | 0.198                                  | 19'-4"     | 22'-2"  | 3'-4" | 10'-5" | 2'-10" | 0-0   | 9'-3" | 9'-0" | 7'-4" | 1'-9" |  |

NHDOT STANDARD PLANS  
MORTAR RUBBLE MASONRY HEADWALLS WITH 45° WINGS  
FOR TWIN R. C. PIPES P.C.-10

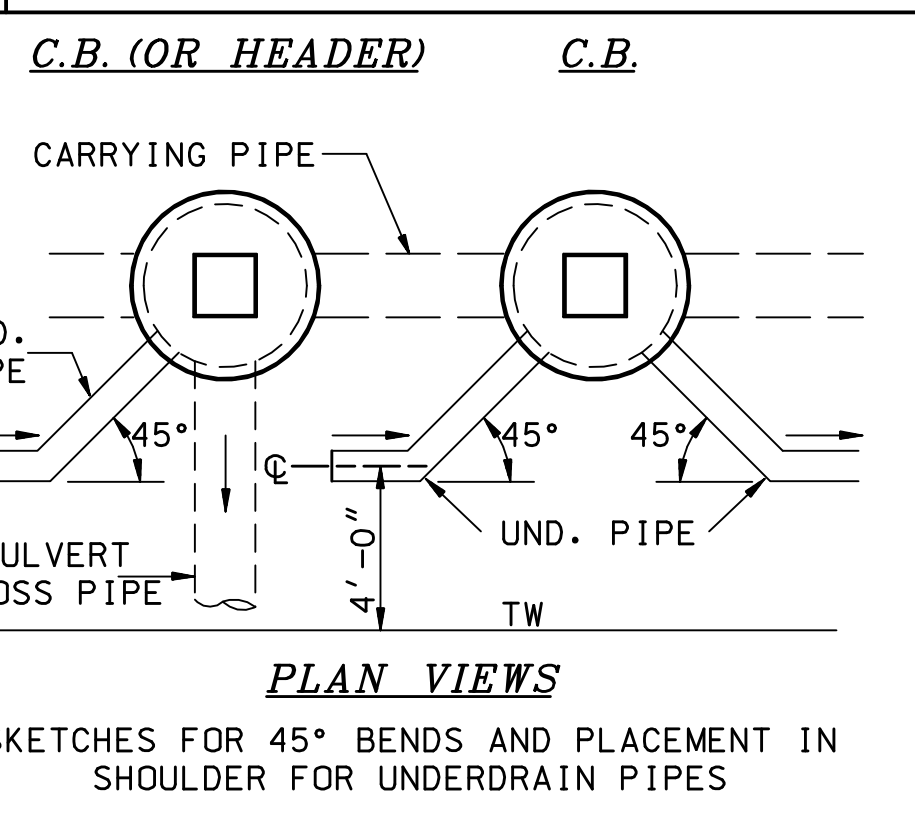
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|------------|----------|
| 06-16-2010 | 1        |
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|            | HW-3     |

NHDOT STANDARD PLANS  
MORTAR RUBBLE MASONRY HEADWALLS WITH 45° WINGS  
FOR TWIN R. C. PIPES P.C.-10

| REV. DATE  | PLATE    |
|------------|----------|
| 06-16-2010 | 2        |
|            | STANDARD |
|            | HW-3     |



| D (in) UND. DIA. | A    | PER HEADER  |                     | L     | H     | W       |
|------------------|------|-------------|---------------------|-------|-------|---------|
|                  |      | MAS'RY C.Y. | EXC. PER DEPTH C.Y. |       |       |         |
| 6                | 90°  | 0.30        | 0.71                | 1'-3" | 2'-3" | 15 3/4" |
| 6                | 120° | 0.26        | 0.65                | 1-3   | 2-3   | 15 3/4" |
| 6                | 135° | 0.25        | 0.62                | 1-3   | 2-3   | 15 3/4" |
| 12               | 90°  | 0.54        | 0.95                | 2-0   | 2-9   | 17 1/4" |
| 12               | 120° | 0.49        | 0.87                | 2-0   | 2-9   | 17 1/4" |
| 12               | 135° | 0.47        | 0.84                | 2-0   | 2-9   | 17 1/4" |
| 15               | 90°  | 0.72        | 1.10                | 2-6   | 3-0   | 18"     |
| 15               | 120° | 0.66        | 1.02                | 2-6   | 3-0   | 18"     |
| 15               | 135° | 0.64        | 0.99                | 2-6   | 3-0   | 18"     |
| 18               | 90°  | 0.85        | 1.20                | 2-9   | 3-3   | 18 3/4" |
| 18               | 120° | 0.79        | 1.11                | 2-9   | 3-3   | 18 3/4" |
| 18               | 135° | 0.77        | 1.07                | 2-9   | 3-3   | 18 3/4" |
| 24               | 90°  | 1.25        | 1.46                | 3-6   | 3-9   | 20 1/4" |
| 24               | 120° | 1.18        | 1.37                | 3-6   | 3-9   | 20 1/4" |
| 24               | 135° | 1.14        | 1.32                | 3'-6" | 3'-9" | 20 1/4" |



NHDOT STANDARD PLANS  
UNDERDRAIN HEADWALLS & UNDERDRAIN "L" HEADWALLS

| REV. DATE  | PLATE    |
|------------|----------|
| 06-16-2010 | 3        |
|            | STANDARD |
|            | HW-3     |

NHDOT STANDARD PLANS

| REV. DATE  | PLATE    |
|------------|----------|
| 06-16-2010 | 4        |
|            | STANDARD |
|            | HW-3     |