

**20 OF 30**

REVISIONS:  
 SCALE: Noted  
 SHEET: 20 OF 30

DESIGN: JAK  
 DIT/DNAV  
 APPROVED: 08/06  
 DATE: 47284246  
 PROJECT NUMBER: 17284246

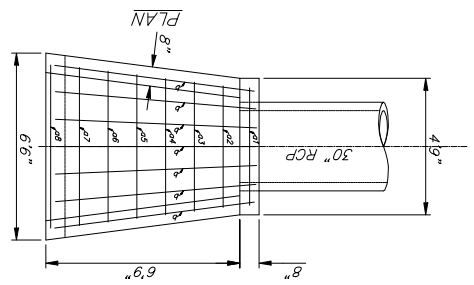
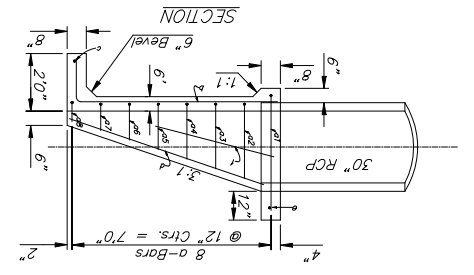
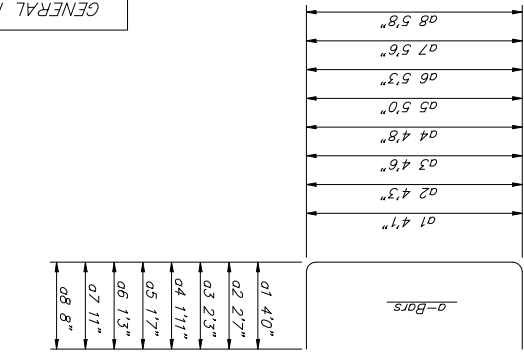
**Baughman**  
 Engineering Company, P.A. 315 Elm St., Waltham, MA 02154  
 1 PLANING | 1 SURVEYING | 1 ARCHITECTURE | 1 CIVIL ENGINEERING | 1 ELECTRICAL ENGINEERING | 1 MECHANICAL ENGINEERING | 1 STRUCTURAL ENGINEERING

HEADWALL FOR 30" RCP

A Deduction in Concrete Quantities Has Been Made for Pipe Openings Through the Headwall  
 \* Field Band or Cut Reinforcing as Required for Clearance  
 All Concrete Reinforcement to be #4 Rebar  
 All Rebar to Have Min. of 1/2" Conc. Cover

| Bar         | Shape | No. | Length      | Weight |
|-------------|-------|-----|-------------|--------|
| a1          |       | 1   | 12'1"       | 8.07   |
| a2          |       | 1   | 9'5"        | 6.29   |
| a3          |       | 1   | 9'0"        | 6.01   |
| a4          |       | 1   | 8'2"        | 5.68   |
| a5          |       | 1   | 8'2"        | 5.46   |
| a6          |       | 1   | 7'9"        | 5.18   |
| a7          |       | 1   | 7'4"        | 4.90   |
| a8          |       | 1   | 7'0"        | 4.68   |
| b           |       | 7   | 8'6"        | 55.07  |
| c           |       | 1   | 6'0"        | 4.01   |
| d           |       | 2   | 7'6"        | 10.02  |
| e           |       | 1   | 4'5"        | 2.95   |
| f           |       | 2   | 4'3"        | 5.68   |
| Total Rebar |       |     | 104.00 Lbs. |        |
| Concrete    |       |     | 2.19 C.Y.   |        |

REBAR SCHEDULE



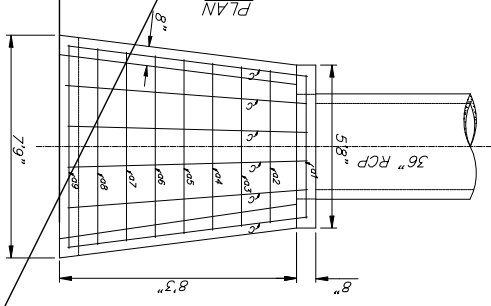
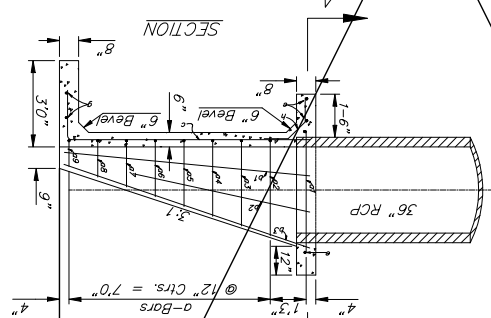
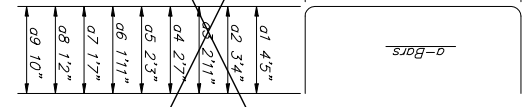
- GENERAL NOTES
1. ALL PIPES SHALL BE FLUSH CUT PRIOR TO BEING CAST INTO CONCRETE HEADWALL.
  2. CONCRETE USED IN HEADWALL CONSTRUCTION SHALL BE SAME AS PER CITY STANDARD PAVING MIX EXCEPT THAT IT SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4000 PSI.
  3. ALL EXPOSED EDGES SHALL BE BEVELED 1/2".
  4. REINFORCING STEEL SHALL COMPLY TO A.S.T.M. DESIGNATION A615 GRADE 60. ALL DIMENSIONS RELATIVE TO REINFORCING STEEL ARE TO CENTERLINE OF BAR UNLESS OTHERWISE NOTED.
  5. THE "REIN. CONC. HEADWALL" SHALL BE PAID FOR AT THE UNIT PRICE BID PER EACH IN PLACE WHICH SHALL INCLUDE ALL LABOR, MATERIALS, EXCAVATION, CONCRETE, REINFORCING STEEL AND ALL OTHER INCIDENTAL ITEMS NECESSARY TO COMPLETE THE WORK. MATERIAL QUANTITIES SHOWN ARE FOR INFORMATION ONLY.

HEADWALL FOR 36" RCP

A Deduction in Concrete Quantities Has Been Made for Pipe Openings Through the Headwall  
 \* Field Band or Cut Reinforcing as Required for Clearance  
 All Concrete Reinforcement to be #4 Rebar  
 All Rebar to Have Min. of 1/2" Conc. Cover

| Bar         | Shape | No. | Length      | Weight |
|-------------|-------|-----|-------------|--------|
| a1          |       | 1   | 14'0"       | 9.35   |
| a2          |       | 1   | 11'10"      | 7.90   |
| a3          |       | 1   | 11'3"       | 7.52   |
| a4          |       | 1   | 10'10"      | 7.24   |
| a5          |       | 1   | 10'5"       | 6.96   |
| a6          |       | 1   | 10'0"       | 6.68   |
| a7          |       | 1   | 9'7"        | 6.40   |
| a8          |       | 1   | 9'0"        | 6.01   |
| a9          |       | 1   | 8'7"        | 5.73   |
| b1          |       | 2   | 8'5"        | 11.24  |
| b2          |       | 2   | 4'7"        | 6.12   |
| b3          |       | 2   | 9'0"        | 12.02  |
| c           |       | 6   | 10'4"       | 41.42  |
| d1          |       | 4   | 1'6"        | 4.01   |
| d2          |       | 4   | 1'0"        | 2.23   |
| e           |       | 3   | 5'4"        | 10.69  |
| f           |       | 4   | 3'0"        | 8.02   |
| g           |       | 2   | 7'0"        | 9.35   |
| h           |       | 6   | 2'6"        | 18.02  |
| Total Rebar |       |     | 178.91 Lbs. |        |
| Concrete    |       |     | 3.20 C.Y.   |        |

REBAR SCHEDULE



HEADWALL FOR 42" RCP

A Deduction in Concrete Quantities Has Been Made for Pipe Openings Through the Headwall  
 \* Field Band or Cut Reinforcing as Required for Clearance  
 All Concrete Reinforcement to be #4 Rebar  
 All Rebar to Have Min. of 1/2" Conc. Cover

| Bar         | Shape | No. | Length      | Weight |
|-------------|-------|-----|-------------|--------|
| a1          |       | 1   | 15'7"       | 10.41  |
| a2          |       | 1   | 13'10"      | 9.24   |
| a3          |       | 1   | 13'5"       | 8.96   |
| a4          |       | 1   | 12'6"       | 8.68   |
| a5          |       | 1   | 12'0"       | 8.35   |
| a6          |       | 1   | 11'8"       | 7.79   |
| a7          |       | 1   | 11'3"       | 7.52   |
| a8          |       | 1   | 10'9"       | 7.18   |
| a9          |       | 1   | 10'5"       | 6.96   |
| a10         |       | 1   | 10'5"       | 6.96   |
| a11         |       | 1   | 10'2"       | 6.68   |
| b1          |       | 2   | 10'2"       | 13.58  |
| b2          |       | 2   | 7'3"        | 9.69   |
| b3          |       | 2   | 10'8"       | 14.25  |
| c           |       | 7   | 12'0"       | 56.11  |
| d1          |       | 4   | 1'3"        | 3.34   |
| d2          |       | 4   | 9"          | 2.00   |
| e           |       | 3   | 5'10"       | 11.69  |
| f           |       | 4   | 3'0"        | 30.06  |
| g           |       | 2   | 8'0"        | 10.69  |
| h           |       | 6   | 2'6"        | 6.68   |
| Total Rebar |       |     | 247.93 Lbs. |        |
| Concrete    |       |     | 10.12 C.Y.  |        |

REBAR SCHEDULE

