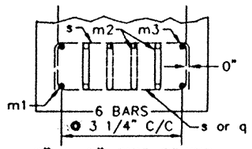
## SECTION A – A

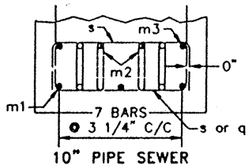
SPACING DIAGRAMS FOR MAIN LONGITUDINAL STEEL FOR s, q, AND x BARS SEE NOTE 2

KEY

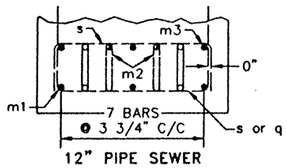
TRUSS BAR — TRUSS BAR FROM ADJACENT SPAN — STRAIGHT BAR



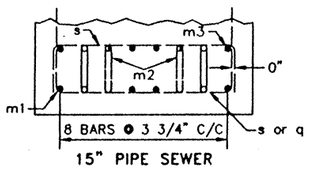

6" & 8" PIPE SEWER



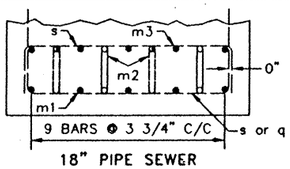

10" PIPE SEWER



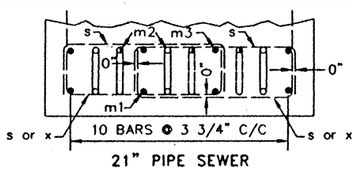

12" PIPE SEWER



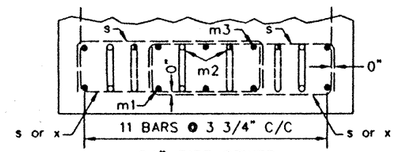

15" PIPE SEWER



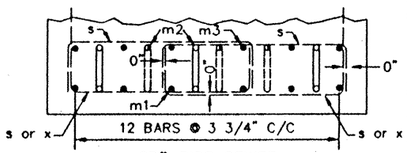

18" PIPE SEWER




21" PIPE SEWER




24" PIPE SEWER




27" PIPE SEWER

# BAR SCHEDULE PER 12' SPAN

GIVEN: NO.–SIZE, LENGTH, SPACING

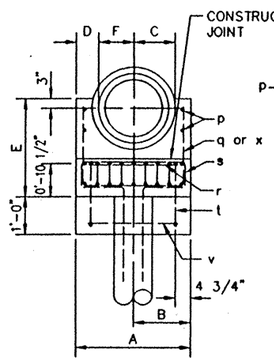
| BAR | 6" & 8" | 10" | 12" | 15" | 18" | 21" | 24" | 27" | SHAPE | POSITION |
|---|---|---|---|---|---|---|---|---|---|---|
| $m_1$ | 2–#8(1"ø) SEE NOTE 1. SEE SECT. A–A | 3–#8(1"ø) SEE NOTE 1. SEE SECT. A–A | 3–#8(1"ø) SEE NOTE 1. SEE SECT. A–A | 4–#8(1"ø) SEE NOTE 1. SEE SECT. A–A | 5–#8(1"ø) SEE NOTE 1. SEE SECT. A–A | 4–#8(1"ø) SEE NOTE 1. SEE SECT. A–A | 5–#8(1"ø) SEE NOTE 1. SEE SECT. A–A | 6–#8(1"ø) SEE NOTE 1. SEE SECT. A–A | STR. | LONGITUDINAL BOTTOM OF CRADLE |
| $m_2$ | 2–#8(1"ø) 18'–9" NOTE 4. SEE SECT. A–A | 2–#8(1"ø) 18'–9" NOTE 4. SEE SECT. A–A | 2–#8(1"ø) 18'–9" NOTE 4. SEE SECT. A–A | 2–#8(1"ø) 18'–9" NOTE 4. SEE SECT. A–A | 2–#8(1"ø) 18'–9" NOTE 4. SEE SECT. A–A | 3–#8(1"ø) 18'–9" NOTE 4. SEE SECT. A–A | 3–#8(1"ø) 18'–9" NOTE 4. SEE SECT. A–A | 3–#8(1"ø) 18'–9" NOTE 4. SEE SECT. A–A | BENT | LONGITUDINAL BOTTOM OF CRADLE AND BENT OVER SUPPORT |
| $m_3$ | 2–#8(1"ø) SEE NOTE 1. SEE SECT. A–A | 2–#8(1"ø) SEE NOTE 1. SEE SECT. A–A | 3–#8(1"ø) SEE NOTE 1. SEE SECT. A–A | 4–#8(1"ø) SEE NOTE 1. SEE SECT. A–A | 5–#8(1"ø) SEE NOTE 1. SEE SECT. A–A | 4–#8(1"ø) SEE NOTE 1. SEE SECT. A–A | 5–#8(1"ø) SEE NOTE 1. SEE SECT. A–A | 6–#8(1"ø) SEE NOTE 1. SEE SECT. A–A | STR. | LONGITUDINAL TOP OF CRADLE |
| p | 2–#4(1/2"ø) SEE NOTE 1. AS SHOWN | 2–#4(1/2"ø) SEE NOTE 1. AS SHOWN | 2–#4(1/2"ø) SEE NOTE 1. AS SHOWN | 4–#4(1/2"ø) SEE NOTE 1. 0'–5" | 4–#4(1/2"ø) SEE NOTE 1. 0'–6" | 4–#4(1/2"ø) SEE NOTE 1. 0'–7" | 4–#4(1/2"ø) SEE NOTE 1. 0'–8" | 4–#4(1/2"ø) SEE NOTE 1. 0'–9" | STR. | LONGITUDINAL SIDE OF CRADLE |
| q or x | 18–#4(1/2"ø) 4'–2 1/2"NOTE 4. 8" C–C | 18–#4(1/2"ø) 4'–8" NOTE 4. 8" C–C | 18–#4(1/2"ø) 5'–2" NOTE 4. 8" C–C | 18–#4(1/2"ø) 5'–10" NOTE 4. 8" C–C | 24–#4(1/2"ø) 6'–8" NOTE 4. 8" C–C | 36–#4(1/2"ø) 4'–8" NOTE 4. 8" C–C | 36–#4(1/2"ø) 5'–2" NOTE 4. 8" C–C | 36–#4(1/2"ø) 5'–4" NOTE 4. 8" C–C | BENT | LONG VERTICAL STIRRUPS IN CRADLE |
| r | 2–#8(1" ø) 1'–6" 1'–4" | 2–#8(1"ø) 1'–9" 1'–4" | 2–#8(1"ø) 2'–0" 1'–4" | 3–#8(1"ø) 2'–4" 0'–8" | 3–#8(1"ø) 2'–8" 0'–8" | 4–#8(1"ø) 3'–0" 0'–5 1/4" | 5–#8(1"ø) 3'–4" 0'–4" | 6–#8(1"ø) 3'–8" 0'–3 1/4" | STR. | UPPER TRANSVERSE HORIZONTAL IN CAPITAL |
| s | 18–#4(1/2"ø) 2'–7" NOTE 4. 8" C–C | 18–#4(1/2"ø) 2'–10" NOTE 4. 8" C–C | 18–#4(1/2"ø) 3'–1" NOTE 4. 8" C–C | 18–#4(1/2"ø) 3'–5" NOTE 4. 8" C–C | 24–#4(1/2"ø) 3'–9" NOTE 4. 8" C–C | 36–#4(1/2"ø) 3'–2" NOTE 4. 8" C–C | 36–#4(1/2"ø) 3'–6" NOTE 4. 8" C–C | 36–#4(1/2"ø) 3'–6" NOTE 4. 8" C–C | BENT | SHORT VERTICAL STIRRUPS IN CRADLE |
| t | 2–#3(3/8"ø) 7'–1" NOTE 4. AS SHOWN | 2–#3(3/8"ø) 7'–1" NOTE 4. AS SHOWN | 2–#3(3/8"ø) 7'–1" NOTE 4. AS SHOWN | 2–#3(3/8"ø) 7'–1" NOTE 4. AS SHOWN | 2–#3(3/8"ø) 7'–1" NOTE 4. AS SHOWN | 2–#3(3/8"ø) 7'–1" NOTE 4. AS SHOWN | 2–#3(3/8"ø) 7'–1" NOTE 4. AS SHOWN | 2–#3(3/8"ø) 7'–1" NOTE 4. AS SHOWN | BENT | VERTICAL STIRRUPS IN CAPITAL |
| u | 4–#5(5/8"ø) 3'–11" NOTE 4. AS SHOWN | 4–#5(5/8"ø) 3'–11" NOTE 4. AS SHOWN | 4–#5(5/8"ø) 3'–11" NOTE 4. AS SHOWN | 4–#5(5/8"ø) 3'–11" NOTE 4. AS SHOWN | 4–#5(5/8"ø) 3'–11" NOTE 4. AS SHOWN | 4–#5(5/8"ø) 3'–11" NOTE 4. AS SHOWN | 4–#5(5/8"ø) 3'–11" NOTE 4. AS SHOWN | 4–#5(5/8"ø) 3'–11" NOTE 4. AS SHOWN | BENT | PILE DOWELS |
| v | 2–#8(1"ø) 1'–6" 1'–4" | 2–#8(1"ø) 1'–9" 1'–4" | 2–#8(1"ø) 2'–0" 1'–4" | 2–#8(1"ø) 2'–4" 1'–4" | 2–#8(1"ø) 2'–8" 1'–4" | 2–#8(1"ø) 3'–0" 1'–4" | 2–#8(1"ø) 3'–4" 1'–4" | 2–#8(1"ø) 3'–8" 1'–4" | STR. | LOWER TRANSVERSE HORIZONTAL IN CAPITAL |

## CRADLE DIMENSIONS

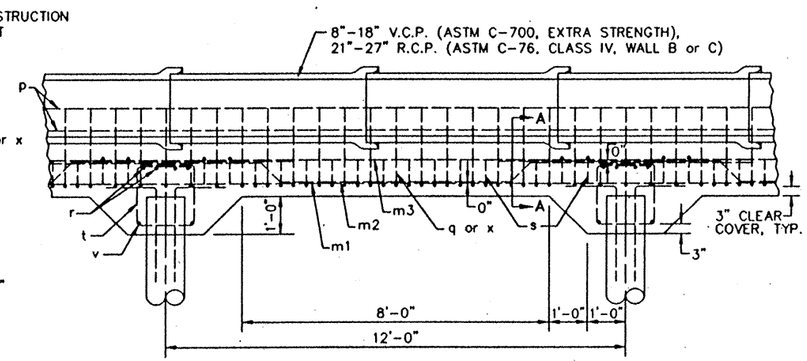
| PIPE DIA | A | B | C NOTE 3. | D | E | F |
|---|---|---|---|---|---|---|
| 6" | 2'–0" | 1'–0" | 0'–5" | 0'–8¼" | 1'–11¼" | 0'–3¾" |
| 8" | 2'–0" | 1'–0" | 0'–6½" | 0'–7" | 1'–11¼" | 0'–5" |
| 10" | 2'–3" | 1'–1½" | 0'–7½" | 0'–7½" | 2'–0½" | 0'–6" |
| 12" | 2'–6" | 1'–3" | 0'–9¼" | 0'–7¾" | 2'–2" | 0'–7¼" |
| 15" | 2'–10" | 1'–5" | 0'–11½" | 0'–7¾" | 2'–4" | 0'–9¼" |
| 18" | 3'–2" | 1'–7" | 1'–1" | 0'–8" | 2'–7" | 0'–11" |
| 21" | 3'–6" | 1'–9" | 1'–3¼" | 0'–7" | 2'–8" | 1'–2" |
| 24" | 3'–10" | 1'–11" | 1'–5¼" | 0'–7¼" | 2'–10" | 1'–3¾" |
| 27" | 4'–2" | 2'–1" | 1'–7¼" | 0'–7½" | 3'–0" | 1'–5½" |

## BAR DIMENSIONS

| PIPE DIA | G | H | J | CONCRETE CU. YD./FT. | REIN. STL. LBS./FT. NOTE 1. | PILE CAP. TONS |
|---|---|---|---|---|---|---|
| 6" | 1'–5¼" | 1'–6" | | 0.149 | 32.6 | 30 |
| 8" | 1'–5¼" | 1'–6" | | 0.142 | 32.6 | 30 |
| 10" | 1'–6½" | 1'–9" | | 0.165 | 36.7 | 35 |
| 12" | 1'–8" | 2'–0" | | 0.189 | 40.9 | 35 |
| 15" | 1'–10" | 2'–4" | | 0.220 | 50.6 | 40 |
| 18" | 2'–1" | 2'–8" | | 0.264 | 62.0 | 40 |
| 21" | 2'–2" | 2'–0½" | 0'–7½" | 0.275 | 62.6 | 50 |
| 24" | 2'–4" | 2'–4¼" | 0'–7½" | 0.311 | 71.8 | 55 |
| 27" | 2'–6" | 2'–4¼" | 0'–7½" | 0.349 | 79.9 | 60 |



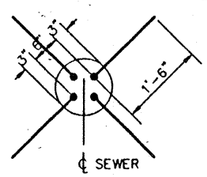

TRANSVERSE SECTION

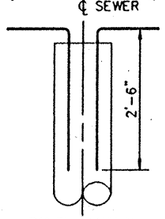



LONGITUDINAL SECTION

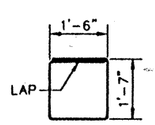
NOTES:

1. STEEL QUANTITIES ARE FOR ESTIMATING PURPOSES ONLY. A 40 DIAMETER LAP IS FIGURED FOR ALL SPLICES AND A STOCK BAR LENGTH OF 20' IS FIGURED FOR ALL STRAIGHT BARS. THE STEEL QUANTITY PAID SHALL BE THE ACTUAL WEIGHT OF STEEL IN PLACE.
2. SEE LONGITUDINAL SECTION FOR s, q, AND x BAR POSITIONS.
3. 'C' DIMENSION IS OUTSIDE RADIUS OF BELL FOR WALL C R.C.P.
4. LENGTH GIVEN IN TABLES FOR BENT BARS IS APPROXIMATELY THE LENGTH ALONG THE CENTERLINE OF THE BAR. SEE DETAIL FOR DIMENSIONS.
5. POSITIONS OF TRUSS BARS WILL BE REVERSED IN ALTERNATE SPANS.
6. THE MINIMUM RADIUS OF BENT BARS SHALL BE 3 BAR DIAMETERS. THE RADIUS OF A BEND IS TO THE INSIDE OF THE BAR.
7. ALL REINFORCING STEEL SHALL HAVE A MIMIMUM COVER OF 3".
8. LENGTH OF LAP FOR SPLICING REINFORCEMENT SHALL BE 40 BAR DIAMETERS.
9. DIMENSIONS FOR REINFORCING BARS ARE OUT TO OUT.
10. AT THE LIMITS OF EACH POUR A BULKHEAD OR OTHER SUITABLE METHOD SHALL BE USED TO PROVIDE A PROPER JOINT IN KEEPING WITH GOOD ENGINEERING PRACTICE.
11. ALL CONCRETE SHALL BE CLASS "C".

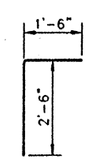


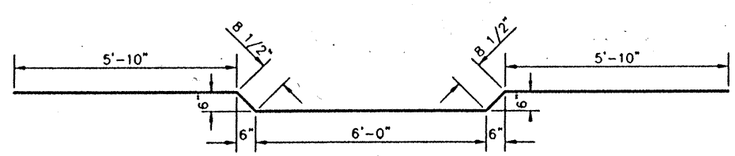

PILE DOWEL BAR DETAIL



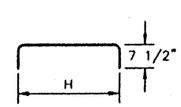

t BAR



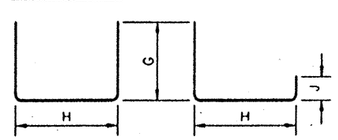

u BAR




m2 BAR




s BAR




q BAR (6"–18") x BAR (21"–27")

DO NOT SCALE – USE DIMENSIONS ONLY

CITY OF AKRON
BUREAU OF ENGINEERING

CONSTRUCTION STANDARD DWG. No. S–4

2-12-98
MANAGER, DESIGN DIVISION

MANAGER, CONSTRUCTION DIVISION

CITY ENGINEER

# PILE SUPPORT
## 6"–27" PIPE SEWERS
## 10'–16' DEEP

AUTOCAD DRAWING – STD_S-4.DWG February 11, 1998

REVISIONS: