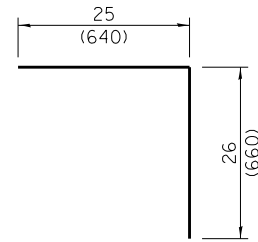
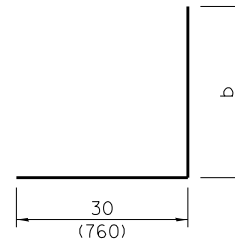


**DIMENSIONS OF STRAIGHT BARS**

Bar	Size	Length	Bar	Size	Length
b	No. 5 (No. 16)	8'-3" (2.51 m)	b <sub>16</sub>	No. 4 (No. 13)	20'-3" (6.17 m)
b <sub>1</sub>	No. 5 (No. 16)	9'-0" (2.74 m)	b <sub>17</sub>	No. 4 (No. 13)	21'-0" (6.4 m)
b <sub>2</sub>	No. 5 (No. 16)	9'-6" (2.9 m)	b <sub>18</sub>	No. 4 (No. 13)	22'-6" (6.86 m)
b <sub>3</sub>	No. 5 (No. 16)	10'-3" (3.12 m)	b <sub>19</sub>	No. 4 (No. 13)	24'-0" (7.32 m)
b <sub>4</sub>	No. 4 (No. 13)	11'-3" (3.43 m)	b <sub>20</sub>	No. 4 (No. 13)	24'-9" (7.54 m)
b <sub>5</sub>	No. 4 (No. 13)	12'-0" (3.66 m)	b <sub>21</sub>	No. 4 (No. 13)	27'-0" (8.23 m)
b <sub>6</sub>	No. 4 (No. 13)	13'-0" (3.96 m)	b <sub>22</sub>	No. 4 (No. 13)	29'-6" (8.99 m)
b <sub>7</sub>	No. 4 (No. 13)	13'-6" (4.11 m)	h <sub>8</sub>	No. 4 (No. 13)	5'-3" (1.6 m)
b <sub>8</sub>	No. 4 (No. 13)	14'-0" (4.27 m)	h <sub>9</sub>	No. 4 (No. 13)	6'-6" (1.98 m)
b <sub>9</sub>	No. 4 (No. 13)	14'-9" (4.5 m)	h <sub>10</sub>	No. 4 (No. 13)	7'-6" (2.29 m)
b <sub>10</sub>	No. 4 (No. 13)	15'-6" (4.72 m)	h <sub>11</sub>	No. 4 (No. 13)	8'-9" (2.67 m)
b <sub>11</sub>	No. 4 (No. 13)	16'-3" (4.95 m)	h <sub>12</sub>	No. 4 (No. 13)	9'-3" (2.82 m)
b <sub>12</sub>	No. 4 (No. 13)	16'-9" (5.11 m)	h <sub>13</sub>	No. 4 (No. 13)	10'-9" (3.28 m)
b <sub>13</sub>	No. 4 (No. 13)	17'-6" (5.33 m)	h <sub>14</sub>	No. 4 (No. 13)	12'-3" (3.73 m)
b <sub>14</sub>	No. 4 (No. 13)	18'-6" (5.64 m)	w	No. 4 (No. 13)	6'-0" (1.83m)
b <sub>15</sub>	No. 4 (No. 13)	19'-6" (5.94 m)	w <sub>1</sub>	No. 4 (No. 13)	10'-0" (3.05 m)



**No. 4 (No. 13) BAR-d**



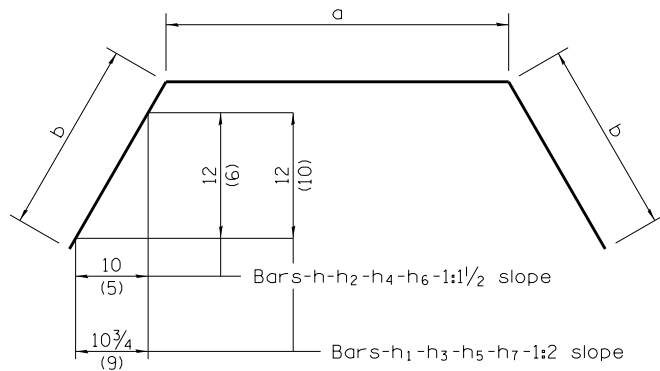
**BARS - v to v8**

**BARS IN ONE END SECTION**

66 (1650) Pipe				72 (1800) Pipe				78 (1950) Pipe				84 (2100) Pipe			
66-1/2 (1.65-1/2)		66-2 (1.65-2)		72-1/2 (1.8-1/2)		72-2 (1.8-2)		78-1/2 (1.95-1/2)		78-2 (1.95-2)		84-1/2 (2.1-1/2)		84-2 (2.1-2)	
BARS	No.	BARS	No.	BARS	No.	BARS	No.	BARS	No.	BARS	No.	BARS	No.	BARS	No.
d	12	d	14	d	14	d	17	d	16	d	19	d	17	d	20
b	2	b	2	b <sub>1</sub>	2	b <sub>1</sub>	2	b <sub>2</sub>	2	b <sub>2</sub>	2	b <sub>3</sub>	2	b <sub>3</sub>	2
b <sub>4</sub>	1	b <sub>4</sub>	1	b <sub>5</sub>	1	b <sub>5</sub>	1	b <sub>5</sub>	1	b <sub>5</sub>	1	b <sub>6</sub>	1	b <sub>6</sub>	1
b <sub>7</sub>	1	b <sub>7</sub>	1	b <sub>8</sub>	1	b <sub>8</sub>	1	b <sub>8</sub>	1	b <sub>9</sub>	1	b <sub>9</sub>	1	b <sub>9</sub>	1
b <sub>10</sub>	1	b <sub>10</sub>	1	b <sub>11</sub>	1	b <sub>11</sub>	1	b <sub>11</sub>	1	b <sub>11</sub>	1	b <sub>12</sub>	1	b <sub>12</sub>	1
b <sub>13</sub>	2	b <sub>13</sub>	1	b <sub>14</sub>	1	b <sub>14</sub>	1	b <sub>14</sub>	1	b <sub>14</sub>	1	b <sub>14</sub>	1	b <sub>14</sub>	1
		b <sub>15</sub>	1	b <sub>16</sub>	2	b <sub>16</sub>	1	b <sub>16</sub>	1	b <sub>17</sub>	1	b <sub>17</sub>	1	b <sub>17</sub>	1
		b <sub>17</sub>	2	b <sub>18</sub>	1	b <sub>18</sub>	1	b <sub>18</sub>	2	b <sub>18</sub>	1	b <sub>18</sub>	1	b <sub>18</sub>	1
				b <sub>19</sub>	2	b <sub>19</sub>	2	b <sub>20</sub>	1	b <sub>20</sub>	1	b <sub>19</sub>	2	b <sub>20</sub>	1
								b <sub>21</sub>	2	b <sub>21</sub>	2	b <sub>21</sub>	1	b <sub>21</sub>	1
												b <sub>22</sub>	2	b <sub>22</sub>	2
h	2	h <sub>1</sub>	2	h <sub>2</sub>	2	h <sub>3</sub>	2	h <sub>4</sub>	2	h <sub>5</sub>	2	h <sub>6</sub>	2	h <sub>7</sub>	2
h <sub>8</sub>	8	h <sub>10</sub>	8	h <sub>9</sub>	10	h <sub>12</sub>	10	h <sub>10</sub>	12	h <sub>13</sub>	12	h <sub>11</sub>	12	h <sub>14</sub>	12
v	4	v	4	v	4	v	4	v	4	v	4	v	4	v	4
v <sub>1</sub>	4	v <sub>1</sub>	6	v <sub>1</sub>	4	v <sub>1</sub>	8	v <sub>1</sub>	4	v <sub>1</sub>	8	v <sub>1</sub>	4	v <sub>1</sub>	6
v <sub>2</sub>	4	v <sub>2</sub>	4	v <sub>2</sub>	4	v <sub>3</sub>	6	v <sub>2</sub>	4	v <sub>2</sub>	6	v <sub>2</sub>	4	v <sub>2</sub>	4
v <sub>4</sub>	8	v <sub>4</sub>	10	v <sub>4</sub>	10	v <sub>5</sub>	10	v <sub>4</sub>	8	v <sub>4</sub>	6	v <sub>4</sub>	4	v <sub>4</sub>	6
h <sub>8</sub>	4	h <sub>9</sub>	4	h <sub>8</sub>	4	h <sub>10</sub>	4	h <sub>9</sub>	4	h <sub>11</sub>	4	h <sub>10</sub>	4	h <sub>12</sub>	4
w	2	w	2	w	2	w <sub>1</sub>	2	w	2	w <sub>1</sub>	2	w <sub>1</sub>	2	w <sub>1</sub>	2

**DIMENSIONS OF BENT BARS**

No. 5 (No. 16) - bars v to v <sub>8</sub>			No. 5 (No. 16) - bars h to h <sub>7</sub>		
BAR	b	TOTAL LENGTH	BAR	a	TOTAL LENGTH
v	39 (990)	5'-9" (1.75 m)	h	7'-0" (2.13 m)	11'-0" (3.35 m)
v <sub>1</sub>	4'-0" (1.22 m)	6'-6" (1.98 m)	h <sub>1</sub>	7'-0" (2.13 m)	11'-0" (3.35 m)
v <sub>2</sub>	5'-0" (1.52 m)	7'-6" (2.28 m)	h <sub>2</sub>	7'-7" (2.31 m)	11'-6" (3.51 m)
v <sub>3</sub>	5'-6" (1.68 m)	8'-0" (2.44 m)	h <sub>3</sub>	7'-7" (2.31 m)	11'-6" (3.51 m)
v <sub>4</sub>	6'-0" (1.83 m)	8'-6" (2.59 m)	h <sub>4</sub>	8'-2" (2.49 m)	12'-0" (3.65 m)
v <sub>5</sub>	6'-6" (1.98 m)	9'-0" (2.74 m)	h <sub>5</sub>	8'-2" (2.49 m)	12'-0" (3.65 m)
v <sub>6</sub>	7'-0" (2.13 m)	9'-6" (2.89 m)	h <sub>6</sub>	8'-9" (2.67 m)	12'-9" (3.89 m)
v <sub>7</sub>	7'-6" (2.29 m)	10'-0" (3.05 m)	h <sub>7</sub>	8'-9" (2.67 m)	12'-9" (3.89 m)
v <sub>8</sub>	8'-0" (2.44 m)	10'-6" (3.2 m)			



**BARS - h to h7**

**DIMENSIONS AND QUANTITIES**

Design No.	Nominal Inside Dia. of Pipe	Slope of Wing Walls	Dimensions					Concrete 2 End Secs. cu. yds. (m <sup>3</sup> )	Reinf. Bars 2 End Secs. lbs. (kg)
			A	C	D	E	F		
D66-1/2 (D1.65-1/2)	66 (1650)	1:1/2	5'-4" (1.65 m)	6'-6 1/2" (2.0 m)	7'-4 1/2" (2.25 m)	18'-5" (5.63 m)	7'-10" (2.39 m)	10.2 (7.8)	660 (300)
D66-2 (D1.65-2)	66 (1650)	1:2	7'-1" (2.18 m)	6'-6 1/2" (2.0 m)	7'-4 1/2" (2.25 m)	21'-11" (6.69 m)	10'-3 1/2" (3.14 m)	13.5 (10.3)	820 (372)
D72-1/2 (D1.8-1/2)	72 (1800)	1:1/2	6'-2" (1.9 m)	7'-1" (2.16 m)	7'-11 1/2" (2.43 m)	20'-8" (6.3 m)	9'-0" (2.74 m)	12.4 (9.5)	770 (350)
D72-2 (D1.8-2)	72 (1800)	1:2	8'-2" (2.51 m)	7'-1" (2.16 m)	7'-11 1/2" (2.43 m)	24'-8" (7.54 m)	11'-10" (3.61 m)	16.5 (12.6)	1020 (463)
D78-1/2 (D1.95-1/2)	78 (1950)	1:1/2	6'-11" (2.12 m)	7'-7 1/2" (2.32 m)	8'-6 1/2" (2.6 m)	22'-9" (6.93 m)	10'-0 1/2" (3.06 m)	14.5 (11.1)	910 (413)
D78-2 (D1.95-2)	78 (1950)	1:2	9'-3" (2.82 m)	7'-7 1/2" (2.32 m)	8'-6 1/2" (2.6 m)	27'-5" (8.37 m)	13'-4 1/2" (4.08 m)	19.6 (15.0)	1210 (550)
D84-1/2 (D2.1-1/2)	84 (2100)	1:1/2	7'-9" (2.38 m)	8'-2" (2.49 m)	9'-1 1/2" (2.78 m)	25'-0" (7.63 m)	11'-3" (3.43 m)	17.1 (13.1)	1090 (495)
D84-2 (D2.1-2)	84 (2100)	1:2	10'-4" (3.17 m)	8'-2" (2.49 m)	9'-1 1/2" (2.78 m)	30'-2" (9.2 m)	14'-10 3/4" (4.54 m)	23.2 (17.7)	1360 (617)