

ADDENDUM 1

Current Inspector Salaries

Per WV Code §22A-1-9, §22A-1-11, §22A-1-12, §22A-1-13 and §22A-1-24, the Director of the Office of Miners' Health, Safety and Training has the authority and responsibility to set the minimum salaries to be paid to Mine Safety Instructors, Surface Mine Inspectors, Underground Mine Inspectors, Electrical Inspectors, Mine Foreman Examiner, Assistant Inspector-at-Large and Inspector-at-Large. The new minimum salary schedule below is effective July 1, 2007 for each of these classes.

Additionally, Legislative rule 36 CSR 44 requires an additional \$250/month for each mine rescue team member.

Title	Minimum Salary	Mine Rescue Team Minimum Salary
Safety Instructor	\$43,728	\$46,728
Surface Mine Inspector	\$44,880	\$47,880
Underground Mine Inspector	\$45,768	\$48,768
Electrical Inspector	\$47,592	\$50,592
Chief Electrical Inspector	\$51,276	\$54,276
Chief Diesel Inspector	\$51,276	\$54,276
Mine Rescue Coordinator	\$51,276	\$54,276
Mine Personnel Examiner	\$53,124	\$56,124
Assistant Inspector-at-Large	\$53,124	\$56,124
Inspector-at-Large	\$57,480	\$60,480

ADDENDUM 2

Charts for 36 CSR 23

Surface Construction Operations Within the Coal Mining Industry

CSR §36-23. Surface Construction Operations Within the Coal Mining Industry

PLEASE NOTE:

Those provisions deemed unnecessary by OSHA as being outdated and redundant have been deleted.

Please see 29 CFR 1926, as amended August 30, 1996.

Charts / Tables affected (now obsolete):

Table 27	Table 45
Table 28	Table 46
Table 43	Table 48
Table 44	

Table F-1 FIRE EXTINGUISHERS DATA
















	WATER TYPE				FOAM	CARBON DIOXIDE	DRY CHEMICAL			
							SODIUM OR POTASSIUM BICARBONATE	MULTI-PURPOSE ABC		
										
CLASS A WOOD, PAPER, TRASH HAVING GLOWING EMBERS 	YES	YES	YES	YES	YES	NO <small>(CERT. LABEL REQUIRED)</small>	NO <small>(CERT. LABEL REQUIRED)</small>	NO <small>(CERT. LABEL REQUIRED)</small>	YES	YES
CLASS B FLAMMABLE LIQUIDS GASOLINE, OIL, PAINTS, GREASE, ETC. 	NO	NO	NO	NO	YES	YES	YES	YES	YES	YES
CLASS C ELECTRICAL EQUIPMENT FIRES 	NO	NO	NO	NO	NO	YES	YES	YES	YES	YES
CLASS D COMBUSTIBLE METALS 	SPECIAL EXTINGUISHING AGENTS APPROVED BY RECOGNIZED TESTING									
METHOD OF OPERATION	PULL PIN, SQUEEZE HANDLE	TURN UPSIDE DOWN AND BUMP	PUMP HANDLE	TURN UPSIDE DOWN	TURN UPSIDE DOWN	PULL PIN, SQUEEZE LEVER	RUPTURE CARTRIDGE, SQUEEZE LEVER	PULL PIN, SQUEEZE HANDLE	PULL PIN, SQUEEZE HANDLE	RUPTURE CARTRIDGE, SQUEEZE LEVER
RANGE	30' - 40'	30' - 40'	30' - 40'	30' - 40'	30' - 40'	3' - 5'	5' - 30'	5' - 20'	5' - 30'	5' - 30'
MAINTENANCE	CHECK AIR PRESSURE GAUGE MONTHLY	WEIGH GAS CARTRIDGE AND ADD WATER IF REQUIRED ANNUALLY	DISCHARGE AND FILL WITH WATER ANNUALLY	DISCHARGE ANNUALLY RECHARGE	DISCHARGE ANNUALLY RECHARGE	WEIGH SEMI-ANNUALLY	WEIGH GAS CARTRIDGE, CHECK CONDITION OF DRY CHEMICAL ANNUALLY	CHECK GAS PRESSURE GAUGE AND CONDITION OF DRY CHEMICAL ANNUALLY	CHECK GAS PRESSURE GAUGE AND CONDITION OF DRY CHEMICAL ANNUALLY	WEIGH GAS CARTRIDGE, CHECK CONDITION OF DRY CHEMICAL ANNUALLY

Table 1

Table 2

STORAGE IN INSIDE ROOMS			
Fire Protection Provided¹	Fire Resistance	Maximum Floor Area (ft²)	Total Allowable Quantities (gal/ft² floor area)
Yes	2 hr.	500	10
No	2 hr.	500	4*
Yes	1 hr.	150	5*
No	1 hr.	150	2

Table 3
TABLE F-4

Heating appliances	Minimum clearance, (inches)		
	Sides	Rear	Chimney Connector
Room heater, circulating type.....	12	12	18
Room heater, radiant type.....	36	36	18

Tables 4 and 5

Figure G-1



Figure G-2

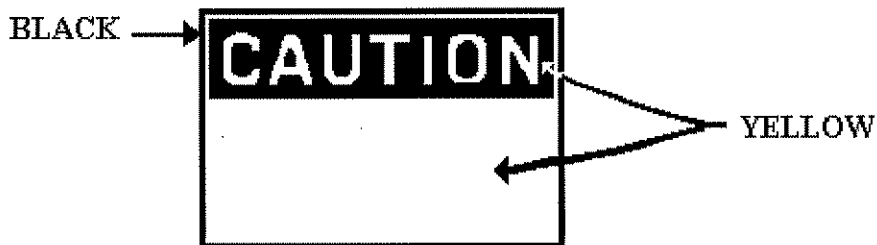
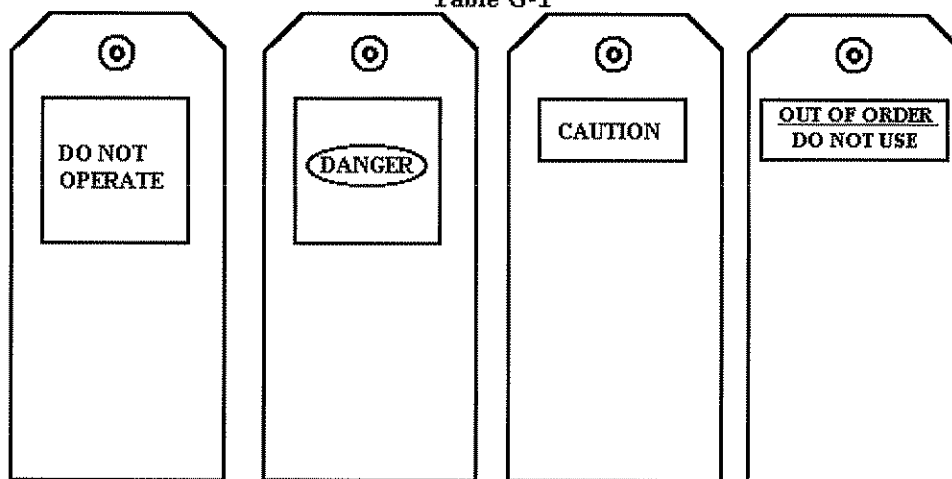


Table G-1



White tag - White letters on a red square

White tag - White letters on red oval with a black square

Yellow tag - Yellow letters on a black background

White tag - White letters on a black background

Basic Stock (Background)	Safety Colors (Ink)	Copy Specification (Letters)
White	Red	Do Not Operate
White	Black and Red	Danger
Yellow	Black	Caution
White	Black	Out of Order Do Not Use

Table 6

Table 7

TABLE H - 1. -- RATED CAPACITY (WORKING LOAD LIMIT),
FOR ALLOY STEEL CHAIN SLINGS (1)

Rated Capacity (Working Load Limit), Pounds
[Horizontal angles shown in parentheses] (2)

Chain size, inches	Single branch sling-- 90 deg. loading	Double sling vertical angle (1)				Triple and quadruple sling vertical angle (1)		
		30 deg. (60 deg.)	45 deg. (45 deg.)	60 deg. (30 deg.)	30 deg. (60 deg.)	45 deg. (45 deg.)	60 deg. (30 deg.)	
1/4.....	3,250	5,560	4,550	3,250	8,400	6,800	4,900	
3/8.....	6,600	11,400	9,300	6,600	17,000	14,000	9,900	
1/2.....	11,250	19,500	15,900	11,250	29,000	24,000	17,000	
5/8.....	16,500	28,500	23,300	16,500	43,000	35,000	24,500	
3/4.....	23,000	39,800	32,500	23,000	59,500	48,500	34,500	
7/8.....	28,750	49,800	40,600	28,750	74,500	61,000	43,000	
1.....	38,750	67,100	54,800	38,750	101,000	82,000	58,000	
1 1/8...	44,500	77,000	63,000	44,500	115,500	94,500	66,500	
1 1/4...	57,500	99,500	81,000	57,500	149,000	121,500	86,000	
1 3/8...	67,000	116,000	94,000	67,000	174,000	141,000	100,500	
1 1/2...	80,000	138,000	112,900	80,000	207,000	169,000	119,500	
1 3/4...	100,000	172,000	140,000	100,000	258,000	210,000	150,000	

Footnote(1) Other grades of proof tested steel chain include Proof Coil, BBB Coil and Hi-Test Chain. These grades are not recommended for overhead lifting and therefore are not covered by this code

Footnote(1) Rating of multileg slings adjusted for angle of loading measured as the included angle between the inclined leg and the vertical.

Footnote(2) Rating of multileg slings adjusted for angle of loading between the inclined leg and the horizontal plane of the load.

Table 8
TABLE H - 2. -- MAXIMUM ALLOWABLE WEAR
AT ANY POINT OF LINK

Chain size, (inches)	Maximum allowable wear (inch)
1/4	3/64
3/8	5/64
1/2	7/64
5/8	9/64
3/4	5/32
7/8	11/64
1	3/16
1 1/8	7/32
1 1/4	1/4
1 3/8	9/32
1 1/2	5/16
1 3/4	11/32

Table 9

TABLE H - 3. -- RATED CAPACITIES FOR SINGLE LEG SLINGS

6x19 and 6x37 Classification Improved Plow Steel Grade Rope
With Fiber Core (FC)

Rope		Rated capacities, tons (2,000 lb)						Rated capacities, tons (2,000 lb)		
Dia (inches)	Constr	Vertical			Choker			Vertical Basket(1)		
		HT	MS	S	HT	MS	S	HT	MS	S
1/4	6x19	0.49	0.51	0.55	0.37	0.38	0.41	0.99	1.0	1.1
5/16	6x19	0.76	0.79	0.85	0.57	0.59	0.64	1.5	1.6	1.7
3/8	6x19	1.1	1.1	1.2	0.80	0.85	0.91	2.1	2.2	2.4
7/16	6x19	1.4	1.5	1.6	1.1	1.1	1.2	2.9	3.0	3.3
1/2	6x19	1.8	2.0	2.1	1.4	1.5	1.6	3.7	3.9	4.3
9/16	6x19	2.3	2.5	2.7	1.7	1.9	2.0	4.6	5.0	5.4
5/8	6x19	2.8	3.1	3.3	2.1	2.3	2.5	5.6	6.2	6.7
3/4	6x19	3.9	4.4	4.8	2.9	3.3	3.6	7.8	8.8	9.5
7/8	6x19	5.1	5.9	6.4	3.9	4.5	4.8	10.0	12.0	13.0
1	6x19	6.7	7.7	8.4	5.0	5.8	6.3	13.0	15.0	17.0
1 1/8	6x19	8.4	9.5	10.0	6.3	7.1	7.9	17.0	19.0	21.0
1 1/4	6x37	9.8	11.0	12.0	7.4	8.3	9.2	20.0	22.0	25.0
1 3/8	6x37	12.0	13.0	15.0	8.9	10.0	11.0	24.0	27.0	30.0
1 1/2	6x37	14.0	16.0	17.0	10.0	12.0	13.0	28.0	32.0	35.0
1 5/8	6x37	16.0	18.0	21.0	12.0	14.0	15.0	33.0	27.0	41.0
1 3/4	6x37	19.0	21.0	24.0	14.0	16.0	18.0	38.0	43.0	48.0
2	6x37	25.0	28.0	31.0	18.0	21.0	23.0	49.0	55.0	62.0

Footnote(1) These values only apply when the D/d ratio for HT slings is 10 or greater, and for MS and S Slings is 20 or greater where:
D=Diameter of curvature around which the body of the sling is bent;
d=Diameter of rope.

HT = Hand Tucked Splice and Hidden Tuck Splice.

For hidden tuck splice (IWRC) use values in HT columns.

MS = Mechanical Splice.

S = Swaged or Zinc Poured Socket.

Table 10

TABLE H - 4. -- RATED CAPACITIES FOR SINGLE LEG SLINGS

6x19 and 6x37 Classification Improved Plow Steel Grade Rope
With Independent Wire Rope Core (IWRC)

Rope		Rated capacities, tons (2,000 lb)						Rated capacities, tons (2,000 lb)		
Dia (inches)	Constr	Vertical			Choker			Vertical Basket(1)		
		HT	MS	S	HT	MS	S	HT	MS	S
1/4	6x19	0.53	0.56	0.59	0.40	0.42	0.44	1.0	1.1	1.2
5/16	6x19	0.81	0.87	0.92	0.61	0.65	0.69	1.6	1.7	1.8
3/8	6x19	1.1	1.2	1.3	0.86	0.93	0.98	2.3	2.5	2.6
7/16	6x19	1.5	1.7	1.8	1.2	1.3	1.3	3.1	3.4	3.5
1/2	6x19	2.0	2.2	2.3	1.5	1.6	1.7	3.9	4.4	4.6
9/16	6x19	2.5	2.7	2.9	1.8	2.1	2.2	4.9	5.5	5.8
5/8	6x19	3.0	3.4	3.6	2.2	2.5	2.7	6.0	6.8	7.2
3/4	6x19	4.2	4.9	5.1	3.1	3.6	3.8	8.4	9.7	10.0
7/8	6x19	5.5	6.6	6.9	4.1	4.9	5.2	11.0	13.0	14.0
1	6x19	7.2	8.5	9.0	5.4	6.4	6.7	14.0	17.0	18.0
1 1/8	6x19	9.0	10.0	11.0	6.8	7.8	8.5	18.0	21.0	23.0
1 1/4	6x37	10.0	12.0	13.0	7.9	9.2	9.9	21.0	24.0	26.0
1 3/8	6x37	13.0	15.0	16.0	9.6	11.0	12.0	25.0	29.0	32.0
1 1/2	6x37	15.0	17.0	19.0	11.0	13.0	14.0	30.0	35.0	38.0
1 5/8	6x37	18.0	20.0	22.0	13.0	15.0	17.0	35.0	41.0	44.0
1 3/4	6x37	20.0	24.0	26.0	15.0	18.0	19.0	41.0	47.0	51.0
2	6x37	26.0	30.0	33.0	20.0	23.0	25.0	53.0	61.0	66.0

Footnote(1) These values only apply when the D/d ratio for HT slings is 10 or greater, and for MS and S slings is 20 or greater where:
D=Diameter of curvature around which the body of the sling is bent;
d=Diameter of rope.

HT = Hand Tucked Splice. For hidden tuck splice (IWRC) use Table

H-3 values in HT column.

MS = Mechanical Splice.

S = Swaged or Zinc Poured Socket.

Table 11

TABLE H - 5. -- RATED CAPACITIES FOR SINGLE LEG SLINGS

Cable Laid Rope -- Mechanical Splice Only

7x7x7 & 7X7X19 Constructions Galvanized Aircraft Grade Rope
 7x6x19 IWRC Construction Improved Plow Steel Grade Rope

Rope		Rated capacities, tons (2,000 lb.)		
Dia (inches)	Constr	Vertical	Choker	Vertical basket(1)
1/4	7x7x7.....	0.50	0.38	1.0
3/8	7x7x7.....	1.1	0.81	2.2
1/2	7x7x7.....	1.8	1.4	3.7
5/8	7x7x7.....	2.8	2.1	5.5
3/4	7x7x7.....	3.8	2.9	7.6
5/8	7x7x19.....	2.9	2.2	5.8
3/4	7x7x19.....	4.1	3.0	8.1
7/8	7x7x19.....	5.4	4.0	11.0
1	7x7x19.....	6.9	5.1	14.0
1 1/8	7x7x19.....	8.2	6.2	16.0
1 1/4	7x7x19.....	9.9	7.4	20.0
3/4	(2)7x6x19	3.8	2.8	7.6
7/8	(2)7x6x19	5.0	3.8	10.0
1	(2)7x6x19	6.4	4.8	13.0
1 1/8	(2)7x6x19	7.7	5.8	15.0
1 1/4	(2)7x6x19	9.2	6.9	18.0
1 5/16	(2)7x6x19	10.0	7.5	20.0
1 3/8	(2)7x6x19	11.0	8.2	22.0
1 1/2	(2)7x6x19	13.0	9.6	26.0

Footnote(1) These values only apply when the D/d ratio is 10 or greater where:

D=Diameter of curvature around which the body of the sling is bent;
 d=Diameter of rope.

Footnote(2) IWRC.

Table 12

TABLE H - 6. -- RATED CAPACITIES FOR SINGLE LEG SLINGS

8-Part and 6-Part Braided Rope
 6x7 and 6x19 Construction Improved Plow Steel Grade Rope
 7x7 Construction Galvanized Aircraft Grade Rope

Component ropes		Rated capacities, tons (2,000 lb)					
Diameter (inches)	Constr	Vertical		Choker		Basket vertical to 30 deg. (1)	
		8-Part	6-Part	8-Part	6-Part	8-Part	6-Part
3/32.....	6x7	0.42	0.32	0.32	0.24	0.74	0.55
1/8.....	6x7	0.76	0.57	0.57	0.42	1.3	0.98
3/16.....	6x7	1.7	1.3	1.3	0.94	2.9	2.2
3/32.....	7x7	0.51	0.39	0.38	0.29	0.89	0.67
1/8.....	7x7	0.95	0.71	0.71	0.53	1.6	1.2
3/16.....	7x7	2.1	1.5	1.5	1.2	3.6	2.7
3/16.....	6x19	1.7	1.3	1.3	0.98	3.0	2.2
1/4.....	6x19	3.1	2.3	2.3	1.7	5.3	4.0
5/16.....	6x19	4.8	3.6	3.6	2.7	8.3	6.2
3/8.....	6x19	6.8	5.1	5.1	3.8	12.0	8.9
7/16.....	6x19	9.3	6.9	6.9	5.2	16.0	12.0
1/2.....	6x19	12.0	9.0	9.0	6.7	21.0	15.0
9/16.....	6x19	15.0	11.0	11.0	8.5	26.0	20.0
5/8.....	6x19	19.0	14.0	14.0	10.0	32.0	24.0
3/4.....	6x19	27.0	20.0	20.0	15.0	46.0	35.0
7/8.....	6x19	36.0	27.0	27.0	20.0	62.0	47.0
1.....	6x19	47.0	35.0	35.0	26.0	81.0	61.0

Footnote(1) These values only apply when the D/d ratio is 20 or greater where: D=Diameter of curvature around which the body of the sling is bent; d=Diameter of component rope.

Table 13
 TABLE H - 7. -- RATED CAPACITIES FOR 2-LEG
 AND 3-LEG BRIDLE SLINGS

6x19 and 6x37 Classification Improved Plow Steel
 Grade Rope With Fiber Core (FC)

Rope		Rated capacities, tons (2,000 lb)						Rated capacities, tons (2,000 lb)					
Dia [inches]	Constr	2-Leg bridle slings						3-Leg bridle slings					
		30 deg(1) (60 deg)(2)		45 deg. angle		60 deg(1) (30 deg)(2)		30 deg(1) (60 deg)(2)		45 deg. angle		60 deg(1) (30 deg)(2)	
		HT	MS	HT	MS	HT	MS	HT	MS	HT	MS	HT	MS
1/4	6x19	0.85	0.88	0.70	0.72	0.49	0.51	1.3	1.3	1.0	1.1	0.74	0.76
5/16	6x19	1.3	1.4	1.1	1.1	0.76	0.79	2.0	2.0	1.6	1.7	1.1	1.2
3/8	6x19	1.8	1.9	1.5	1.6	1.1	1.1	2.8	2.9	2.3	2.4	1.6	1.7
7/16	6x19	2.5	2.6	2.0	2.2	1.4	1.5	3.7	4.0	3.0	3.2	2.1	2.3
1/2	6x19	3.2	3.4	2.6	2.8	1.8	2.0	4.8	5.1	3.9	4.2	2.8	3.0
9/16	6x19	4.0	4.3	3.2	3.5	2.3	2.5	6.0	6.5	4.9	5.3	3.4	3.7
5/8	6x19	4.8	5.3	4.0	4.4	2.8	3.1	7.3	8.0	5.9	6.5	4.2	4.6
3/4	6x19	6.8	7.6	5.5	6.2	3.9	4.4	10.0	11.0	8.3	9.3	5.8	6.6
7/8	6x19	8.9	10.0	7.3	8.4	5.1	5.9	13.0	15.0	11.0	13.0	7.7	8.9
1	6x19	11.0	13.0	9.4	11.0	6.7	7.7	17.0	20.0	14.0	16.0	10.0	11.0
1 1/8	6x19	14.0	16.0	12.0	13.0	8.4	9.5	22.0	24.0	18.0	20.0	13.0	14.0
1 1/4	6x37	17.0	19.0	14.0	16.0	9.8	11.0	25.0	29.0	21.0	23.0	15.0	17.0
1 3/8	6x37	20.0	23.0	17.0	19.0	12.0	13.0	31.0	35.0	25.0	28.0	18.0	20.0
1 1/2	6x37	24.0	27.0	20.0	22.0	14.0	16.0	36.0	41.0	30.0	33.0	21.0	24.0
1 5/8	6x37	28.0	32.0	23.0	26.0	16.0	18.0	43.0	48.0	35.0	39.0	25.0	28.0
1 3/4	6x37	33.0	37.0	27.0	30.0	19.0	21.0	49.0	56.0	40.0	45.0	28.0	32.0
2	6x37	43.0	48.0	35.0	39.0	25.0	28.0	64.0	72.0	52.0	59.0	37.0	41.0

HT = Hand Tucked Splice.
 MS = Mechanical Splice.
 Footnote(1) Vertical angles.
 Footnote(2) Horizontal angles.

Table 14
 TABLE H - 8. -- RATED CAPACITIES FOR 2-LEG
 AND 3-LEG BRIDLE SLINGS

6x19 and 6x37 Classification Improved Plow Steel
 Grade Rope With Independent Wire Rope Core (IWRC)

Rope		Rated capacities, tons (2,000 lb)						Rated capacities, tons (2,000 lb)					
Dia (inches)	Constr	2-Leg bridle slings						3-Leg bridle slings					
		30 deg. (1) (60 deg.) (2)		45 deg. angle		60 deg. (1) (30 deg.) (2)		30 deg. (1) (60 deg.) (2)		45 deg. angle		60 deg. (1) (30 deg.) (2)	
		HT	MS	HT	MS	HT	MS	HT	MS	HT	MS	HT	MS
1/4	6x19	0.92	0.97	0.75	0.79	0.53	0.56	1.4	1.4	1.1	1.2	0.79	0.84
5/16	6x19	1.4	1.5	1.1	1.2	0.81	0.87	2.1	2.3	1.7	1.8	1.2	1.3
3/8	6x19	2.0	2.1	1.6	1.8	1.1	1.2	3.0	3.2	2.4	2.6	1.7	1.9
7/16	6x19	2.7	2.9	2.2	2.4	1.5	1.7	4.0	4.4	3.3	3.6	2.3	2.5
1/2	6x19	3.4	3.8	2.8	3.1	2.0	2.2	5.1	5.7	4.2	4.6	3.0	3.3
9/16	6x19	4.3	4.8	3.5	3.9	2.5	2.7	6.4	7.1	5.2	5.8	3.7	4.1
5/8	6x19	5.2	5.9	4.2	4.8	3.0	3.4	7.8	8.8	6.4	7.2	4.5	5.1
3/4	6x19	7.3	8.4	5.9	6.9	4.2	4.9	11.0	13.0	8.9	10.0	6.3	7.3
7/8	6x19	9.6	11.0	7.8	9.3	5.5	6.6	14.0	17.0	12.0	14.0	8.3	9.9
1	6x19	12.0	15.0	10.0	12.0	7.2	8.5	19.0	22.0	15.0	18.0	11.0	13.0
1 1/8	6x19	16.0	18.0	13.0	15.0	9.0	10.0	23.0	27.0	19.0	22.0	13.0	16.0
1 1/4	6x37	18.0	21.0	15.0	17.0	10.0	12.0	27.0	32.0	22.0	26.0	16.0	18.0
1 3/8	6x37	22.0	25.0	18.0	21.0	13.0	15.0	33.0	38.0	27.0	31.0	19.0	22.0
1 1/2	6x37	26.0	30.0	21.0	25.0	15.0	17.0	39.0	45.0	32.0	37.0	23.0	26.0
1 5/8	6x37	31.0	35.0	25.0	29.0	18.0	20.0	46.0	53.0	38.0	43.0	27.0	31.0
1 3/4	6x37	35.0	41.0	29.0	33.0	20.0	24.0	53.0	61.0	43.0	50.0	31.0	35.0
2	6x37	46.0	53.0	37.0	43.0	26.0	30.0	68.0	79.0	56.0	65.0	40.0	46.0

HT = Hand Tucked Splice.
 MS = Mechanical Splice.
 Footnote(1) Vertical angles.
 Footnote(2) Horizontal angles.

Table 15

TABLE H - 9. -- RATED CAPACITIES FOR 2-LEG
AND 3-LEG BRIDLE SLINGS

Cable Laid Rope - Mechanical Splice Only
7x7x7 and 7x7x19 Construction Galvanized Aircraft Grade Rope
7x6x19 IWRC Construction Improved Plow Steel Grade Rope

Rope		Rated capacities, tons (2,000 lb)			Rated capacities, tons (2,000 lb)		
Dia (inches)	Constr	2-Leg bridle slings			3-Leg bridle slings		
		30 deg. (1) (60 deg.) (2)	45 deg. angle	60 deg. (1) (30 deg.) (2)	30 deg. (1) (60 deg.) (2)	45 deg. angle	60 deg. (1) (30 deg.) (2)
1/4.....	7x7x7.....	0.87	0.71	0.50	1.3	1.1	0.75
3/8.....	7x7x7.....	1.9	1.5	1.1	2.8	2.3	1.6
1/2.....	7x7x7.....	3.2	2.6	1.8	4.8	3.9	2.8
5/8.....	7x7x7.....	4.8	3.9	2.8	7.2	5.9	4.2
3/4.....	7x7x7.....	6.6	5.4	3.8	9.9	8.1	5.7
5/8.....	7x7x19.....	5.0	4.1	2.9	7.5	6.1	4.3
3/4.....	7x7x19.....	7.0	5.7	4.1	10.0	8.6	6.1
7/8.....	7x7x19.....	9.3	7.6	5.4	14.0	11.0	8.1
1.....	7x7x19.....	12.0	9.7	6.9	18.0	14.0	10.0
1 1/8.....	7x7x19.....	14.0	12.0	8.2	21.0	17.0	12.0
1 1/4.....	7x7x19.....	17.0	14.0	9.9	26.0	21.0	15.0
3/4.....	7x6x19 IWRC.	6.6	5.4	3.8	9.9	8.0	5.7
7/8.....	7x6x19 IWRC.	8.7	7.1	5.0	13.0	11.0	7.5
1.....	7x6x19 IWRC.	11.0	9.0	6.4	17.0	13.0	9.6
1 1/8.....	7x6x19 IWRC.	13.0	11.0	7.7	20.0	16.0	11.0
1 1/4.....	7x6x19 IWRC.	16.0	13.0	9.2	24.0	20.0	14.0
1 5/16....	7x6x19 IWRC.	17.0	14.0	10.0	26.0	21.0	15.0
1 3/8.....	7x6x19 IWRC.	19.0	15.0	11.0	28.0	23.0	16.0
1 1/2.....	7x6x19 IWRC.	22.0	18.0	13.0	33.0	27.0	19.0

Footnote(1) Vertical angles.
Footnote(2) Horizontal angles.

Table 16

TABLE H- 10. -- RATED CAPACITIES FOR 2-LEG AND 3-LEG BRIDLE SLINGS

8-Part and 6-Part Braided Rope
 6x7 and 6x19 Construction Improved Plow Steel Grade Rope
 7x7 Construction Galvanized Aircraft Grade Rope

Rope		Rated capacities, tons (2,000 lb)						Rated capacities, tons (2,000 lb)					
Dia (in.)	Constr	2-Leg bridle sling						3-Leg bridle sling					
		30 deg(1) (60 deg) (2)		45 deg angle		60 deg (1) (30 deg) (2)		30 deg(1) (60 deg) (2)		45 deg angle		60 deg(1) (30 deg) (2)	
		8-Part	6-Part	8-Part	6-Part	8-Part	6-Part	8-Part	6-Part	8-Part	6-Part	8-Part	6-Part
3/32	6x7	0.74	0.55	0.60	0.45	0.42	0.32	1.1	0.83	0.90	0.68	0.64	0.48
1/8	6x7	1.3	0.98	1.1	0.80	0.76	0.57	2.0	1.5	1.6	1.2	1.1	0.85
3/16	6x7	2.9	2.2	2.4	1.8	1.7	1.3	4.4	3.3	3.6	2.7	2.5	1.9
3/32	7x7	0.89	0.67	0.72	0.55	0.51	0.39	1.3	1.0	1.1	0.82	0.77	0.58
1/8	7x7	1.6	1.2	1.3	1.0	0.95	0.71	2.5	1.8	2.0	1.5	1.4	1.1
3/16	7x7	3.6	2.7	2.9	2.2	2.1	1.5	5.4	4.0	4.4	3.3	3.1	2.3
3/16	6x19	3.0	2.2	2.4	1.8	1.7	1.3	4.5	3.4	3.7	2.8	2.6	1.9
1/4	6x19	5.3	4.0	4.3	3.2	3.1	2.3	8.0	6.0	6.5	4.9	4.6	3.4
5/16	6x19	8.3	6.2	6.7	5.0	4.8	3.6	12.0	9.3	10.0	7.6	7.1	5.4
3/8	6x19	12.0	8.9	9.7	7.2	6.8	5.1	18.0	13.0	14.0	11.0	10.0	7.7
7/16	6x19	16.0	12.0	13.0	9.8	9.3	6.9	24.0	18.0	20.0	15.0	14.0	10.0
1/2	6x19	21.0	15.0	17.0	13.0	12.0	9.0	31.0	23.0	25.0	19.0	18.0	13.0
9/16	6x19	26.0	20.0	21.0	16.0	15.0	11.0	39.0	29.0	32.0	24.0	23.0	17.0
5/8	6x19	32.0	24.0	26.0	20.0	19.0	14.0	48.0	36.0	40.0	30.0	28.0	21.0
3/4	6x19	46.0	35.0	38.0	28.0	27.0	20.0	69.0	52.0	56.0	42.0	40.0	30.0
7/8	6x19	62.0	47.0	51.0	38.0	36.0	27.0	94.0	70.0	76.0	57.0	54.0	40.0
1	6x19	81.0	61.0	66.0	50.0	47.0	35.0	122.0	91.0	99.0	74.0	70.0	53.0

Footnote(1) Vertical angles.
 Footnote(2) Horizontal angles.

A-2m

Table 17

TABLE H - 11. -- RATED CAPACITIES FOR STRAND LAID GROMMET
 -- HAND TUCKED

Improved Plow Steel Grade Rope

Rope body		Rated capacities, tons (2,000 lb)		
Dia (inches)	Constr	Vertical	Choker	Vertical basket(1)
1/4	7x19	0.85	0.64	1.7
5/16	7x19	1.3	1.0	2.6
3/8	7x19	1.9	1.4	3.8
7/16	7x19	2.6	1.9	5.2
1/2	7x19	3.3	2.5	6.7
9/16	7x19	4.2	3.1	8.4
5/8	7x19	5.2	3.9	10.0
3/4	7x19	7.4	5.6	15.0
7/8	7x19	10.0	7.5	20.0
1	7x19	13.0	9.7	26.0
1 1/8	7x19	16.0	12.0	32.0
1 1/4	7x37	18.0	14.0	37.0
1 3/8	7x37	22.0	16.0	44.0
1 1/2	7x37	26.0	19.0	52.0

Footnote(1) These values only apply when the D/d ratio is 5 or greater where: D=Diameter of curvature around which rope is bent. d=Diameter of rope body.

Table 18

TABLE H - 12. -- RATED CAPACITIES FOR CABLE LAID GROMMET
 -- HAND TUCKED

7x6x7 and 7x6x19 Constructions Improved Plow Steel Grade Rope
 7x7x7 Construction Galvanized Aircraft Grade Rope

Cable body		Rated capacities, tons (2,000 lb)		
Dia (inches)	Constr	Vertical	Choker	Vertical basket(1)
3/8	7x6x7	1.3	0.95	2.5
9/16	7x6x7	2.8	2.1	5.6
5/8	7x6x7	3.8	2.8	7.6
3/8	7x7x7	1.6	1.2	3.2
9/16	7x7x7	3.5	2.6	6.9
5/8	7x7x7	4.5	3.4	9.0
5/8	7x6x19	3.9	3.0	7.9
3/4	7x6x19	5.1	3.8	10.0
15/16	7x6x19	7.9	5.9	16.0
1 1/8	7x6x19	11.0	8.4	22.0
1 5/16	7x6x19	15.0	11.0	30.0
1 1/2	7x6x19	19.0	14.0	39.0
1 11/16	7x6x19	24.0	18.0	49.0
1 7/8	7x6x19	30.0	22.0	60.0
2 1/4	7x6x19	42.0	31.0	84.0
2 5/8	7x6x19	56.0	42.0	112.0

Footnote(1) These values only apply when the D/d ratio is 5 or greater where: D=Diameter of curvature around which cable body is bent., d=Diameter of cable body.

Table 19

TABLE H - 13. -- RATED CAPACITIES FOR STRAND LAID
 ENDLESS SLINGS
 -- MECHANICAL JOINT

Improved Plow Steel Grade Rope

Rope body		Rated capacities, tons (2,000 lb)		
Dia (inches)	Constr	Vertical	Choker	Vertical basket(1)
1/4	(2)6x19	0.92	0.69	1.8
3/8	(2)6x19	2.0	1.5	4.1
1/2	(2)6x19	3.6	2.7	7.2
5/8	(2)6x19	5.6	4.2	11.0
3/4	(2)6x19	8.0	6.0	16.0
7/8	(2)6x19	11.0	8.1	21.0
1	(2)6x19	14.0	10.0	28.0
1 1/8	(2)6x19	18.0	13.0	35.0
1 1/4	(2)6x37	21.0	15.0	41.0
1 3/8	(2)6x37	25.0	19.0	50.0
1 1/2	(2)6x37	29.0	22.0	59.0

Footnote(1) These values only apply when the D/d ratio is 5 or greater where: D=Diameter of curvature around which rope is bent. d=Diameter of rope body.

Footnote(2) IWRC.

Table 20

TABLE H - 14. -- RATED CAPACITIES FOR CABLE LAID
 ENDLESS SLINGS
 -- MECHANICAL JOINT

7x7x7 and 7x7x19 Constructions Galvanized Aircraft Grade Rope
 7x6x19 Construction Improved Plow Steel Grade Rope

Cable body		Rated capacities, tons (2,000 lb)		
Dia (inches)	Constr	Vertical	Choker	Vertical basket(1)
1/4	7x7x7	0.83	0.62	1.6
3/8	7x7x7	1.8	1.3	3.5
1/2	7x7x7	3.0	2.3	6.1
5/8	7x7x7	4.5	3.4	9.1
3/4	7x7x7	6.3	4.7	12.0
5/8	7x7x19	4.7	3.5	9.5
3/4	7x7x19	6.7	5.0	13.0
7/8	7x7x19	8.9	6.6	18.0
1	7x7x19	11.0	8.5	22.0
1 1/8	7x7x19	14.0	10.0	28.0
1 1/4	7x7x19	17.0	12.0	33.0
3/4	(2)7x6x19	6.2	4.7	12.0
7/8	(2)7x6x19	8.3	6.2	16.0
1	(2)7x6x19	10.0	7.9	21.0
1 1/8	(2)7x6x19	13.0	9.7	26.0
1 1/4	(2)7x6x19	16.0	12.0	31.0
1 3/8	(2)7x6x19	18.0	14.0	37.0
1 1/2	(2)7x6x19	22.0	16.0	43.0

Footnote(1) These values only apply when the D/d value is 5 or greater where: D=Diameter of curvature around which cable body is bent. d=Diameter of cable body.

Footnote(2) IWRC.

Table 21

TABLE H -15. -- MANILA ROPE SLINGS

[Angle of rope to vertical shown in parentheses]

		Rated capacity in pounds (safety factor=3)						Rated capacity in pounds (safety factor=5)						
		Eye and eye sling						Endless sling						
Rope dia. nominal in inches	Nominal weight per 100 ft in pounds	Minimum breaking strength in pounds	Basket hitch; horizontal			Basket hitch; Angel of rope to horizontal			Basket hitch; horizontal			Basket hitch; Angel of rope to horizontal		
			90 deg (0 deg)	60 deg (30 deg)	45 deg (45 deg)	30 deg (60 deg)	90 deg (0 deg)	60 deg (30 deg)	45 deg (45 deg)	30 deg (60 deg)	90 deg (0 deg)	60 deg (30 deg)	45 deg (45 deg)	30 deg (60 deg)
			Vertical hitch	Choker hitch	Vertical hitch	Choker hitch	Vertical hitch	Choker hitch	Vertical hitch	Choker hitch	Vertical hitch	Choker hitch	Vertical hitch	Choker hitch
1/2	7.5	2,650	550	250	900	750	550	950	500	1,900	1,700	1,400	1,400	950
9/16	10.4	3,450	700	350	1,200	1,000	700	1,200	600	2,500	2,200	1,800	1,800	1,200
5/8	13.3	4,400	900	450	1,500	1,200	900	1,600	800	3,200	2,700	2,200	2,200	1,600
3/4	16.7	5,400	1,100	550	1,900	1,500	1,100	2,000	950	3,900	3,400	2,800	2,800	2,000
13/16	19.5	6,500	1,300	650	2,300	1,800	1,300	2,300	1,200	4,700	4,100	3,300	3,300	2,300
7/8	22.5	7,700	1,500	750	2,700	2,200	1,500	2,800	1,400	5,600	4,800	3,900	3,900	2,800
1 1/8	27.0	9,000	1,800	900	3,100	2,600	1,800	3,200	1,600	6,500	5,600	4,600	4,600	3,200
1 1/16	31.3	10,500	2,100	1,100	3,600	3,000	2,100	3,800	1,900	7,600	6,600	5,400	5,400	3,800
1 1/8	36.0	12,000	2,400	1,200	4,200	3,400	2,400	4,300	2,200	8,600	7,500	6,100	6,100	4,300
1 1/4	41.7	13,500	2,700	1,400	4,700	3,800	2,700	4,900	2,400	9,700	8,400	6,900	6,900	4,900
1 5/16	47.9	15,000	3,000	1,500	5,200	4,300	3,000	5,400	2,700	11,000	9,400	7,700	7,700	5,400
1 1/2	59.9	18,500	3,700	1,850	6,400	5,200	3,700	6,700	3,300	13,500	11,500	9,400	9,400	6,700
1 5/8	74.6	22,500	4,500	2,300	7,800	6,400	4,500	8,100	4,100	16,000	14,000	11,500	11,500	8,000
1 3/4	89.3	26,500	5,300	2,700	9,260	7,500	5,300	9,500	4,800	19,000	16,500	13,500	13,500	9,590
2	107.5	31,000	6,200	3,100	10,500	8,800	6,200	11,000	5,600	22,500	19,500	16,000	16,000	11,000
2 1/3	125.0	36,000	7,200	3,600	12,500	10,000	7,200	13,000	6,500	26,000	22,500	18,500	18,500	13,000
2 1/4	146.0	41,000	8,200	4,100	14,000	11,500	8,200	15,000	7,400	29,500	25,500	21,000	21,000	15,000
2 1/2	166.7	46,500	9,300	4,700	16,000	13,000	9,300	16,500	8,400	33,500	29,000	23,500	23,500	16,500
2 5/8	190.8	52,000	10,500	5,200	18,000	14,500	10,500	18,500	9,500	37,500	32,500	26,500	26,500	18,500

Table 22
TABLE H - 16. -- NYLON ROPE SLINGS

[Angle of rope to vertical shown in parentheses]

Rope dia. nominal in inches	Nominal weight per 100 ft in pounds	Eye and eye sling						Endless sling					
		Rated capacity in pounds (safety factor=9)			Basket hitch; Angel of rope to horizontal			Rated capacity in pounds (safety factor=9)			Basket hitch; Angel of rope to horizontal		
		Vertical hitch	Choker hitch	90 deg (0 deg)	60 deg (30 deg)	45 deg (45 deg)	30 deg (60 deg)	Vertical hitch	Choker hitch	90 deg (0 deg)	60 deg (30 deg)	45 deg (45 deg)	30 deg (60 deg)
1/2	6.5	700	350	1,400	1,200	950	700	1,200	600	2,400	2,100	1,700	1,200
9/16	8.3	850	400	1,700	1,500	1,200	850	1,500	750	3,000	2,600	2,200	1,500
5/8	10.5	1,100	550	2,200	1,900	1,600	1,100	2,000	1,100	4,000	3,400	2,800	2,000
3/4	14.5	1,500	750	3,000	2,600	2,100	1,500	2,700	1,400	5,400	4,700	3,800	2,700
13/16	17.0	1,800	900	3,600	3,100	2,600	1,800	3,200	1,600	6,400	5,600	4,600	3,200
7/8	20.0	2,100	1,100	4,200	3,700	3,000	2,100	3,800	1,900	7,600	6,600	5,400	3,800
1 1/16	26.0	2,600	1,300	5,300	4,600	3,700	2,600	4,800	2,400	9,500	8,200	6,700	4,800
1 1/8	29.0	3,000	1,500	6,100	5,300	4,300	3,000	5,500	2,700	11,000	9,500	7,700	5,500
1 1/4	34.0	3,500	1,700	7,000	6,000	5,000	3,500	6,300	3,100	12,500	11,000	8,900	6,300
1 1/2	40.0	4,000	2,000	7,900	6,900	5,600	4,000	7,100	3,600	14,500	12,500	10,000	7,100
1 5/16	45.0	4,500	2,300	9,100	7,900	6,400	4,500	8,200	4,100	16,500	14,000	12,000	8,200
1 1/2	55.0	5,600	2,800	11,000	9,700	7,900	5,600	10,000	5,000	20,000	17,500	14,000	10,000
1 5/8	68.0	6,900	3,400	13,500	12,000	9,700	6,900	12,500	6,200	24,500	21,500	17,500	12,500
1 3/4	83.0	8,200	4,100	16,500	14,500	11,500	8,200	15,000	7,400	29,500	27,500	21,000	15,000
2	95.0	9,700	4,900	19,500	17,000	13,500	9,700	17,500	8,700	35,000	30,500	24,500	17,500
2 1/8	109.0	11,000	5,600	22,500	19,500	16,000	11,000	20,000	10,000	40,500	35,000	28,500	20,000
2 1/4	129.0	13,000	6,600	26,500	23,000	18,500	13,000	24,000	12,000	47,500	41,000	33,500	24,000
2 1/2	149.0	15,000	7,400	29,500	25,500	21,000	15,000	26,500	13,500	53,000	46,000	37,500	26,500
2 5/8	168.0	17,100	8,600	34,000	29,500	24,000	17,000	31,000	15,500	61,500	53,500	43,500	31,000

Table 23

TABLE H - 17. --- POLYESTER ROPE SLINGS

[Angle of rope to vertical shown in parentheses]

		Rated capacity in pounds (safety factor=9)						Rated capacity in pounds (safety factor=9)									
		Eye and eye sling						Endless sling									
Rope dia. nomi- nal inches	Mini- mum break- ing strength in pounds	Vertical hitch		Basket hitch; Angel of rope to horizontal		Vertical hitch		Vertical hitch		Basket hitch; Angel of rope to horizontal		Vertical hitch		Basket hitch; Angel of rope to horizontal			
		cal	hitch	cal	hitch	cal	hitch	cal	hitch	cal	hitch	cal	hitch	cal	hitch		
		90 deg	60 deg	45 deg	30 deg	90 deg	60 deg	45 deg	30 deg	90 deg	60 deg	45 deg	30 deg	90 deg	60 deg	45 deg	30 deg
		(0 deg)	(30 deg)	(45 deg)	(60 deg)	(0 deg)	(30 deg)	(45 deg)	(60 deg)	(0 deg)	(30 deg)	(45 deg)	(60 deg)	(0 deg)	(30 deg)	(45 deg)	(60 deg)
1/2	8.0	700	1,400	1,200	950	700	1,400	1,200	950	700	1,400	1,200	950	600	2,400	2,100	1,700
9/16	10.2	850	1,700	1,500	1,200	850	1,700	1,500	1,200	850	1,700	1,500	1,200	750	3,000	2,600	2,200
5/8	13.0	1,100	2,100	1,800	1,500	1,100	2,100	1,800	1,500	1,100	2,100	1,800	1,500	950	3,800	3,300	2,700
3/4	17.5	1,300	2,600	2,300	1,900	1,300	2,600	2,300	1,900	1,300	2,600	2,300	1,900	1,200	4,800	4,100	3,400
13/16	21.0	1,600	3,300	2,800	2,300	1,600	3,300	2,800	2,300	1,600	3,300	2,800	2,300	1,500	5,900	5,100	4,200
7/8	25.0	1,900	3,800	3,300	2,700	1,900	3,800	3,300	2,700	1,900	3,800	3,300	2,700	1,700	6,800	5,900	4,800
1	30.5	2,300	4,600	4,000	3,300	2,300	4,600	4,000	3,300	2,300	4,600	4,000	3,300	2,100	8,400	7,200	5,900
1 1/16	34.5	2,700	5,400	4,700	3,800	2,700	5,400	4,700	3,800	2,700	5,400	4,700	3,800	2,400	9,700	8,400	6,900
1 1/8	40.0	3,100	6,200	5,400	4,400	3,100	6,200	5,400	4,400	3,100	6,200	5,400	4,400	2,800	11,000	9,700	7,900
1 1/4	46.3	3,500	7,000	6,100	5,000	3,500	7,000	6,100	5,000	3,500	7,000	6,100	5,000	3,200	12,500	11,000	8,900
1 5/16	52.5	4,000	8,000	7,000	5,600	4,000	8,000	7,000	5,600	4,000	8,000	7,000	5,600	3,600	14,500	12,500	10,000
1 1/2	66.8	4,900	9,900	8,600	7,000	4,900	9,900	8,600	7,000	4,900	9,900	8,600	7,000	4,400	18,000	15,500	12,500
1 5/8	82.0	6,000	12,000	10,400	8,500	6,000	12,000	10,400	8,500	6,000	12,000	10,400	8,500	5,500	21,500	19,000	15,500
1 3/4	98.0	7,200	14,500	12,500	10,000	7,200	14,500	12,500	10,000	7,200	14,500	12,500	10,000	6,400	26,000	22,500	18,000
2	118.0	8,400	17,000	14,500	12,000	8,400	17,000	14,500	12,000	8,400	17,000	14,500	12,000	7,600	30,500	26,500	21,500
2 1/8	135.0	9,700	19,500	17,000	13,500	9,700	19,500	17,000	13,500	9,700	19,500	17,000	13,500	8,700	35,000	30,500	24,500
2 1/4	157.0	11,500	22,500	19,500	16,000	11,500	22,500	19,500	16,000	11,500	22,500	19,500	16,000	10,000	40,500	35,000	29,000
2 1/2	181.0	13,000	26,000	22,500	18,000	13,000	26,000	22,500	18,000	13,000	26,000	22,500	18,000	11,500	46,500	40,000	33,000
2 5/8	205.0	14,500	29,000	25,000	20,500	14,500	29,000	25,000	20,500	14,500	29,000	25,000	20,500	13,000	52,000	45,000	37,000

Table 24
TABLE N-184-19. -- POLYPROPYLENE ROPE SLINGS

[Angle of rope to vertical shown in parentheses]

Rope dia. nominal in inches	Nominal wt. per 100 ft in pounds	Eye and eye sling						Endless sling					
		Vertical hitch			Basket hitch; Angel of rope to horizontal			Vertical hitch			Basket hitch; Angel of rope to horizontal		
		Choker hitch	90 deg (0 deg)	45 deg (45 deg)	30 deg (60 deg)	Choker hitch	90 deg (0 deg)	45 deg (45 deg)	30 deg (60 deg)	Choker hitch	90 deg (0 deg)	45 deg (45 deg)	30 deg (60 deg)
1/2	4.7	645	325	1,290	1,120	910	645	1,160	580	2,320	2,010	1,640	1,160
9/16	6.1	780	390	1,560	1,350	1,100	780	1,400	700	2,810	2,430	1,990	1,400
5/8	7.5	950	475	1,900	1,650	1,340	950	1,710	855	3,420	2,960	2,420	1,710
3/4	10.7	1,300	650	2,600	2,250	1,840	1,300	2,340	1,170	4,680	4,050	3,310	2,340
13/16	12.7	1,520	760	3,040	2,630	2,150	1,520	2,740	1,370	5,470	4,740	3,870	2,740
7/8	15.0	1,760	880	3,520	3,050	2,490	1,760	3,170	1,580	6,340	5,490	4,480	3,170
1	18.0	2,140	1,070	4,280	3,700	3,030	2,140	3,850	1,930	7,700	6,670	5,450	3,860
1 1/16	20.4	2,450	1,230	4,900	4,240	3,460	2,450	4,410	2,210	8,820	7,640	6,240	4,410
1 1/8	23.7	2,800	1,400	5,600	4,850	3,960	2,800	5,040	2,520	10,100	8,730	7,130	5,040
1 1/4	27.0	3,210	1,610	6,420	5,560	4,540	3,210	5,780	2,890	11,600	10,000	8,170	5,780
1 5/16	30.5	3,600	1,800	7,200	6,240	5,090	3,600	6,480	3,240	13,000	11,200	9,170	6,480
1 1/2	38.5	4,540	2,270	9,080	7,860	6,420	4,540	8,170	4,090	16,300	14,200	11,600	8,170
1 5/8	47.5	5,510	2,760	11,000	9,540	7,790	5,510	9,920	4,960	19,800	17,200	14,000	9,920
1 3/4	57.0	6,580	3,290	13,200	11,400	9,300	6,580	11,800	5,920	23,700	20,500	16,800	11,800
2	69.0	7,960	3,980	15,900	13,800	11,300	7,960	14,300	7,160	28,700	24,800	20,300	14,300
2 1/8	80.0	9,330	4,670	18,700	16,200	13,200	9,330	16,800	8,400	33,600	29,100	23,800	16,800
2 1/4	92.0	10,600	5,300	21,200	18,400	15,000	10,600	19,100	9,540	38,200	33,100	27,000	19,100
2 1/2	107.0	12,200	6,100	24,400	21,100	17,300	12,200	22,000	11,000	43,900	38,000	31,100	22,000
2 5/8	120.0	13,800	6,900	27,600	23,900	19,600	13,800	24,800	12,400	49,700	43,000	35,100	24,800

See Figs. N-184-4 and N-184-5 for sling configuration descriptions.

Table 25

TABLE H - 19. -- SAFE WORKING LOADS FOR SHACKLES

(In tons of 2,000 pounds)

Material size (inches)	Pin diameter (inches)	Safe working load
1/2	5/8	1.4
5/8	3/4	2.2
3/4	7/8	3.2
7/8	1	4.3
1	1 1/8	5.6
1 1/8	1 1/4	6.7
1 1/4	1 3/8	8.2
1 3/8	1 1/2	10.0
1 1/2	1 5/8	11.9
1 3/4	2	16.2
2	2 1/4	21.2

Table 26TABLE H - 20. -- NUMBER AND SPACING OF
U-BOLT WIRE ROPE CLIPS

Improved plow steel, rope diameter (inches)	Number of clips		Minimum spacing (inches)
	Drop forged	Other material	
1/2	3	4	3
5/8	3	4	3 3/4
3/4	4	5	4 1/2
7/8	4	5	5 1/4
1	5	6	6
1 1/8	6	6	6 3/4
1 1/4	6	7	7 1/2
1 3/8	7	7	8 1/4
1 1/2	7	8	9

Table 29
Material Working Load

All planking shall be Scaffold Grade as recognized by grading rules for the species of wood used. The maximum permissible spans for 2- X 9-inch or wider planks are shown in the following table:

	Material				
	Full thickness undressed lumber			Nominal thickness lumber	
Working load (p.s.f.).....	25	50	75	25	50
Permissible span (ft.).....	10	8	6	8	9

Table 30

TABLE D-7 - MINIMUM NOMINAL SIZE AND MAXIMUM SPACING OF MEMBERS OF SINGLE POLE SCAFFOLDS - LIGHT DUTY

	Maximum height of scaffold	
	20 feet	60 feet
Uniformly distributed load.....	Not to exceed 25 pounds per square foot.	
Poles or uprights.....	2 by 4 in.....	4 by 4 in.
Pole spacing (longitudinal).....	6 ft. 0 in.....	10 ft. 0 in.
Maximum width of scaffold.....	5 ft. 0 in.....	5 ft. 0 in.
Bearers or putlogs to 3 ft. 0 in. width.....	2 by 4 in.....	2 by 4 in.
Bearers or putlogs to 5 ft. 0 in. width.....	2 by 6 in. or 3 by 4 in.	2 by 6 in. or 3 by 4 in. (rough).
Ledgers.....	1 by 4 in.....	1 1/4 by 9 in.
Planking.....	1 1/4 by 9 in. (rough).....	2 by 9 in.
Vertical spacing of horizontal members.....	7 ft. 0 in.....	7 ft. 0 in.
Bracing, horizontal and diagonal.	1 by 4 in.....	1 by 4 in.
Tie-ins.....	1 by 4 in.....	1 by 4 in.
Toeboards.....	4 in. high (minimum).....	4 in. high (minimum)
Guardrail.....	2 by 4 in.....	2 by 4 in.

All members except planking are used on edge.

Table 31TABLE D-8 - MINIMUM NOMINAL SIZE AND MAXIMUM SPACING OF MEMBERS
OF SINGLE POLE SCAFFOLDS - MEDIUM DUTY

Uniformly distributed load.....	Not to exceed 50 pounds per square foot.
Maximum height of scaffold.....	60 ft.
Poles or uprights.....	4 by 4 in.
Pole spacing (longitudinal).....	8 ft. 0 in.
Maximum width of scaffold.....	5 ft. 0 in.
Bearers or putlogs.....	2 by 9 in. or 3 by 4 in.
Spacing of bearers or putlogs.....	8 ft. 0 in.
Ledgers.....	2 by 9 in.
Vertical spacing of horizontal members.	9 ft. 0 in.
Bracing, horizontal.....	1 by 6 in. or 1 1/4 by 4 in.
Bracing, diagonal.....	1 by 4 in.
Tie-ins.....	1 by 4 in.
Planking.....	2 by 9 in.
Toeboards.....	4 in. high (minimum).
Guardrail.....	2 by 4 in.

All members except planking are used on edge.

Table 32TABLE D-9 - MINIMUM NOMINAL SIZE AND MAXIMUM SPACING OF
MEMBERS OF SINGLE POLE SCAFFOLDS - HEAVY DUTY

Uniformly distributed load.....	Not to exceed 75 pounds per square foot.
Maximum height of scaffold.....	60 ft.
Poles or uprights.....	4 by 4 in.
Pole spacing (longitudinal).....	6 ft. 0 in.
Maximum width of scaffold.....	5 ft. 0 in.
Bearers or putlogs.....	2 by 9 in. or 3 by 5 in. (rough)
Spacing of bearers or putlogs.....	6 ft. 0 in.
Ledgers.....	2 by 9 in.
Vertical spacing of horizontal members.	6 ft. 6 in.
Bracing, horizontal and diagonal.....	2 by 4 in.
Tie-ins.....	1 by 4 in.
Planking.....	2 by 9 in.
Toeboards.....	4 in. high (minimum).
Guardrail.....	2 by 4 in.

All members except planking are used on edge.

Table 33

TABLE D-10 - MINIMUM NOMINAL SIZE AND MAXIMUM SPACING OF MEMBERS OF INDEPENDENT POLE SCAFFOLDS - LIGHT DUTY

	Maximum height of scaffold	
	20 feet	60 feet
Uniformly distributed load.....	Not to exceed 25 pounds per square foot.	
Poles or uprights.....	2 by 4 in.....	4 by 4 in.
Pole spacing (longitudinal).....	6 ft. 0 in.....	10 ft. 0 in.
Pole spacing (transverse).....	6 ft. 0 in.....	10 ft. 0 in.
Ledgers.....	1 1/4 by 4 in....	1 1/4 by 9 in.
Bearers to 3 ft. 0 in. span.....	2 by 4 in.....	2 by 4 in.
Bearers to 10 ft. 0 in. span.....	2 by 6 in. or 3 by 4 in....	2 by 9 in. (rough) or 3 by 8 in.
Planking.....	1 1/4 by 9 in....	2 by 9 in.
Vertical spacing of horizontal members.....	7 ft. 0 in.....	7 ft. 0 in.
Bracing, horizontal and diagonal.	1 by 4 in.....	1 by 4 in.
Tie-ins.....	1 by 4 in.....	1 by 4 in.
Toeboards.....	4 in. high.....	4 in. high (minimum)
Guardrail.....	2 by 4 in.....	2 by 4 in.

All members except planking are used on edge.

Table 34TABLE D-11 - MINIMUM NOMINAL SIZE AND MAXIMUM SPACING OF MEMBERS
OF INDEPENDENT POLE SCAFFOLDS - MEDIUM DUTY

Uniformly distributed load.....	Not to exceed 50 pounds per square foot.
Maximum height of scaffold.....	60 ft.
Poles or uprights.....	4 by 4 in.
Pole spacing (longitudinal).....	8 ft. 0 in.
Pole spacing (transverse).....	8 ft. 0 in.
Ledgers.....	2 by 9 in.
Vertical spacing of horizontal members....	6 ft. 0 in.
Spacing of bearers.....	8 ft. 0 in.
Bearers.....	2 by 9 in. (rough) or 2 by 10 in.
Bracing, horizontal.....	1 by 6 in. or 1 1/4 by 4 in.
Bracing, diagonal.....	1 by 4 in.
Tie-ins.....	1 by 4 in.
Planking.....	2 by 9 in.
Toeboards.....	4 in. high (minimum).
Guardrail.....	2 by 4 in.

All members except planking are used on edge.

Table 35TABLE D-12 - MINIMUM NOMINAL SIZE AND MAXIMUM SPACING OF MEMBERS
OF INDEPENDENT POLE SCAFFOLDS - HEAVY DUTY

Uniformly distributed load.....	Not to exceed 75 pounds per square foot.
Maximum height of scaffold.....	60 ft.
Poles or uprights.....	4 by 4 in.
Pole spacing (longitudinal).....	6 ft. 0 in.
Pole spacing (transverse).....	8 ft. 0 in.
Ledgers.....	2 by 9 in.
Vertical spacing of horizontal members.	4 ft. 6 in.
Bearers.....	2 by 9 in. (rough)
Bracing, horizontal and diagonal.....	2 by 4 in.
Tie-ins.....	1 by 4 in.
Planking.....	2 by 9 in.
Toeboards.....	4 in. high (minimum).
Guardrail.....	2 by 4 in.

All members except planking are used on edge.

Table 36

TABLE D-13 - TUBE AND COUPLER SCAFFOLDS - LIGHT DUTY

Uniformly distributed load.....	Not to exceed 25 p.s.f.
Post spacing (longitudinal).....	10 ft. 0 in.
Post spacing (transverse).....	6 ft. 0 in.

Working levels	Additional planked levels	Maximum height
1	8	125 ft.
2	4	125 ft.
3	0	91 ft. 0 in.

Table 37

TABLE D-14 - TUBE AND COUPLER SCAFFOLDS - MEDIUM DUTY

Uniformly distributed load.....	Not to exceed 50 p.s.f.
Post spacing (longitudinal).....	8 ft. 0 in.
Post spacing (transverse).....	6 ft. 0 in.

Working levels	Additional planked levels	Maximum height
1	6	125 ft.
2	0	78 ft. 0 in.

Table 38

TABLE D-15 - TUBE AND COUPLER SCAFFOLDS - HEAVY DUTY

Uniformly distributed load.....	Not to exceed 75 p.s.f.
Post spacing (longitudinal).....	6 ft. 6 in.
Post spacing (transverse).....	6 ft. 0 in.

Working levels	Additional planked levels	Maximum height
1	6	125 ft.

Table 39

TABLE D-16 - MINIMUM NOMINAL SIZE AND MAXIMUM SPACING OF MEMBERS OF OUTRIGGER SCAFFOLDS

	Light duty	Medium duty
Maximum scaffold load.....	25 p.s.f.....	50 p.s.f.
Outrigger size.....	2 x 10 in.....	3 x 10 in.
Maximum outrigger spacing...	10 ft. 0 in....	6 ft. 0 in.
Planking.....	2 x 9 in.....	2 x 9 in.
Guardrail.....	2 x 4 in.....	2 x 4 in.
Guardrail uprights.....	2 x 4 in.....	2 x 4 in.
Toeboards (minimum).....	4 in.....	4 in.

Table 40

TABLE D-17 - SCHEDULE FOR LADDER-TYPE PLATFORMS

	Length of platform (feet)		
	12	14 & 16	18 & 20
Side stringers, minimum cross section (finished sizes):			
At ends (in.).....	1 3/4 x 2 3/4	1 3/4 x 2 3/4	1 3/4 x 3
At middle (in.)....	1 3/4 x 3 3/4	1 3/4 x 3 3/4	1 1/4 x 4
Reinforcing strip (minimum) (1).....			
Rungs (2).....			
Tie rods:			
Number (minimum)...	3	4	4
Diameter (minimum).	1/4 in	1/4 in	1/4 in
Flooring, minimum finished size (in.)..	1/2 x 2 3/4	1/2 x 2 3/4	1/2 x 2 3/4

TABLE D-17 - SCHEDULE FOR LADDER-TYPE PLATFORMS
[CONTINUED]

	Length of platform (feet)	
	22 & 24	28 & 30
Side stringers, minimum cross section (finished sizes):		
At ends (in.).....	1 3/4 x 3	1 3/4 x 3 1/2
At middle (in.)....	1 3/4 x 4 1/4	1 3/4 x 5
Reinforcing strip (minimum) (1).....		
Rungs (2).....		
Tie rods:		
Number (minimum)...	5	6
Diameter (minimum).	1/4 in	1/4 in
Flooring, minimum finished size (in.)..	1/2 x 3/4	1/2 x 2 3/4

Footnote(1) A 1/8 x 7/8-in, steel reinforcing strip or its equivalent shall be attached to the side or underside full length.

Footnote(2) Rungs shall be 1 1/8-in. minimum, diameter with at least 7/8-in. diameter tenons, and the maximum spacing shall be 12 in. center to center.

Table 41

TABLE D-18 - MINIMUM DIMENSIONS FOR BRICKLAYERS' SQUARE SCAFFOLD MEMBERS

Members	Dimensions (Inches)
Bearers or horizontal members.....	2 by 6
Legs.....	2 by 6
Braces at corners.....	1 by 6
Braces diagonally from center frame..	1 by 8

Table 42

TABLE D-19 - MINIMUM DIMENSIONS FOR HORSE SCAFFOLD MEMBERS

Members	Dimensions (Inches)
Horizontal members or bearers	3 by 4
Legs	1 1/4 by 4 1/2
Longitudinal brace between legs	1 by 6
Gusset brace at top of legs	1 by 8
Half diagonal braces	1 1/4 by 4 1/2

Table 47

**TABLE B-1
MAXIMUM ALLOWABLE SLOPES**

SOIL OR ROCK TYPE	MAXIMUM ALLOWABLE SLOPES (H:V)(1) FOR EXCAVATIONS LESS THAN 20 FEET DEEP(3)
STABLE ROCK	VERTICAL (90°)
TYPE A (2)	3/4:1 (53°)
TYPE B	1:1 (45°)
TYPE C	1 1/2:1 (34°)

Footnote(1) Numbers shown in parentheses next to maximum allowable slopes are angles expressed in degrees from the horizontal. Angles have been rounded off.

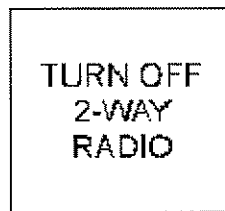


Figure 1. Excavations Made in Type C Soil
All simple slope excavations 20 feet or less in depth shall have a maximum allowable slope of 1 1/2:1.

Table 49



About 48" x 48"



About 42" x 36"

ADDENDUM 3

Appendix A and B

48 CSR 8

