

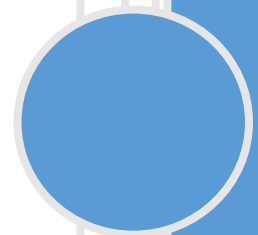
PHASE II

APPENDIX 3

Structural Modifications and Cost Analysis

HORSETOOTH ENGINEERING, LLC

7/17/2015



School: Barton

Item	Section	Description	Structural Requirements	UNITS	QUANTITY	COST/UNIT	ADDITIONAL FRAMING	TOTAL	SUMS
S1	2	Opening and roofing for relief hood. 18"x18" curb; 120 lbs.	Angle framing around new opening for deck and curb support.						
			back to load bearing masonry wall. Frame new openings for supply and return air through wood decking with 2x framing.	LF	30	\$30.00	\$250.00	\$1,250.00	
	9	New RTU: 5400 lbs.	Existing roof structure in the anticipated area is open web steel joists. Reinforce existing steel joists for approximetly 10' each joist. Frame new opening for supply and return air <u>\$3,750.00</u>						

School: Beattie

Item	Section	Description	Structural Requirements	UNITS	QUANTITY	COST/UNIT	ADDITIONAL
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School: Bennett

Item	Section	Description	Structural Requirements	UNITS	QUANTITY	COST/UNIT	ADDITIONAL FRAMING	TOTAL	SUMS
M1	14	New MAU-1: 3'x6'; 750 lbs.	Provide steel channel in joist space to support MAU. Provide wood framed opening.						

School: Blevins

Item	Section	Description
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School: Centennial

Item	Section	Description	Structural Requirements	UNITS	QUANTITY	COST/UNIT	ADDITIONAL FRAMING	TOTAL	SUMS
S1	6	Support RTU-1, 6,000 CFM; 5,500lbs; 30x5	2004 building addition - Remove existing RTU and place new unit in same spot. Saw cut new opening through concrete deck. Assume (1) new openings.	EA	1	\$500.00		\$500.00	\$3,000.00
	7	Support RTU-2, 3,000 CFM; 5,000lbs.; 29x4.5	2004 building addition - Remove existing RTU and place new unit in same spot. Saw cut new opening through concrete deck. Assume (1) new openings.	EA	1	\$500.00		\$500.00	
	8	Support RTU-3, 6,000 CFM; 5,500lbs; 30x5	2004 building addition - Remove existing RTU and place new unit on existing KCS joists. Provide channel for curb support. Assume (2) new openings.	LF	36	\$30.00	\$600.00	\$1,680.00	
S1	7	Support RTU-4, 5,000lbs.; 29x5	2004 building addition - Remove existing RTU and place new unit on existing KCS joists. Provide channel for curb support. Assume (1) new openings.	LF	72	\$30.00	\$300.00	\$2,460.00	\$4,000.00
	8	Support RTU-5, 2,500lbs.; 8x8	2004 building addition - Remove existing RTU and place new unit on existing KCS joists. Provide channel for curb support. Assume (1) new openings.	LF	24	\$30.00	\$300.00	\$1,020.00	
S2	8	Support RTU-5, 2,500lbs.; 8x8	2004 building addition - Remove existing RTU and place new unit on existing KCS joists. Provide channel for curb support. Assume (1) new openings.	LF	24	\$30.00	\$300.00	\$1,020.00	\$2,000.00
		New chiller.		SF	150	\$25.00		\$3,750.00	
		New cooling tower.		SF	150	\$25.00		\$3,750.00	

School: CPL-E

Item	Section	Description	Structural Requirements	UNITS	QUANTITY	COST/UNIT	ADDITIONAL FRAMING	TOTAL	SUMS
11		Support RTU-1; 5000lbs; 30'x5'							

School: CPL-M

Item	Section	Description	Structural Requirements	UNITS	QUANTITY	COST/UNIT	ADDITIONAL FRAMING	TOTAL	SUMS
11	Support RTU-1	5000lbs: 30'x5'	Existing roof structure in the anticipated area is open web steel joist "K" series. Joist spacing is approx. 4'-0" o.c. Existing RTU to be replaced with this unit. Relocate new unit on short span 10" joists. Existing joists have the additional capacity to support the unit. Provide channel for curb support and angle frame for duct penetrations (2 new). Existing roof structure in the anticipated area is 16" open web	LF	60	\$30.00	\$450.00	\$2,250.00	
12	Support RTU-2	5000lbs: 29'x5'							

School: Dunn

Item	Section	Description	Structural Requirements	UNITS	QUANTITY	COST/UNIT	ADDITIONAL FRAMING	TOTAL	Sums
11	Support RTU-1;	2500 lbs; 8'x8'	1992 Addition - Demo existing RTU and place new unit at the same spot. Assume (1) addition opening.	EA	1	\$300.00		\$300.00	
12	Support RTU-2;	5500 lbs.; 30'x5'	1948 building - Existing roof structure in the anticipated area is 24" open web steel joists at 4'-0" o.c. Reinforce joists the full length for new equipment support. Assume (2) additional openings (wood framed). 1987 Addition - Existing roof structure in the anticipated area is open web steel joist "H" series). Existing joist spacing is approx. 4'-0" o.c. The existing joists in this area do not have the additional capacity to support any new equipment nor additional snow drift due to new equipment. Reinforce existing joist webs	LF	300	\$45.00	\$400.00	\$13,900.00	
13	Support RTU-3;	5000 lbs.; 29'x4'							

School: Eyestone

Item	Section	Description	Structural Requirements	UNITS
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School: Fullana

Item	Section	Description	Structural Requirements	UNITS	QUANTITY	COST/UNIT	ADDITIONAL FRAMING	TOTAL	SUMS
S1	5	Access platform for indoor AHU-1	Composite steel mezzanine	SF	200	\$30.00		\$6,000.00	\$6,000.00
S2	6	Support RTU-2: 2500 lbs.: 8'x8'	Existing roof structure is unknown. It is anticipated that the framing is open web steel joists at 4'-0" o.c. Reinforce joists the full length for new equipment support. Assume (2) additional openings.	LF	120	\$45.00	\$600.00	\$6,000.00	\$6,000.00
	7	Support CU-1: 300 lbs.	Existing framing appears to be adequate to support new equipment. Support new CU on existing supports/pad.					\$0.00	

School: Harris

Item	Section	Description	Structural Requirements	UNITS	QUANTITY	COST/UNIT	ADDITIONAL FRAMING	TOTAL	SUMS
S1	5	OA Hood on roof: 24"x24"	Existing roof assumed to be wood framed. Provide framing around opening.	EA	1	\$200.00		\$200.00	\$1,000.00
	9	Support RTU-1, 1,500lbs.: 7x5.5	Existing roof assumed to be steel joists with wood framed decking. Reinforce existing steel joists and provide framing around new opening.	LF	90	\$45.00	\$200.00	\$4,250.00	
	10	Support RTU-2, 5,500lbs.: 30x5	2002 building addition - Remove existing RTU and place new unit on existing structure. Assume (1) new openings.	EA	1	\$500.00		\$500.00	
S3	9	Support RTU-1, 1,500lbs.: 7x5.5							

School: Irish

Item	Section	Description	Structural Requirements
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School: Kruse

Item	Section	Description	Structural Requirements	UNITS	QUANTITY	COST/UNIT	ADDITIONAL FRAMING	TOTAL	SUMS
S1	3	Support RTU-1; 1500lbs; 5'x8"	Existing roof structure in the anticipated area is open web steel joist "K" series. Existing joist spacing is approx. 4'-0" o.c. Reinforce existing joist webs and chords for the additional load (partial length) for additional shear load. Provide angle frame at duct penetrations and channels for curb support.	LF	24	\$45.00	\$780.00	\$1,860.00	\$2,000.00
		New chiller.	Concrete pad.	SF	150	\$25.00		\$3,750.00	

School: Lab/Polaris

Item	Section	Description	Structural Requirements	UNITS	QUANTITY	COST/UNIT	ADDITIONAL FRAMING	TOTAL	SUMS
S1	13	Opening and roofing for relief hood.; 120lbs.							

School: Laurel

Item	Section	Description	Structural Requirements	UNITS	QUANTITY	COST/UNIT	ADDITIONAL FRAMING	TOTAL	SUMS
S1	3	Support RTU-1; 1500lbs; 5'x8'							

School: Lesher

Item	Section	Description	Structural Requirements	UNITS	QUANTITY	COST/UNIT	ADDITIONAL FRAMING	TOTAL	SUMS
10		Support RTU-2: 6500lbs: 30'x6'	Existing roof structure in the anticipated area is fabricated deep trusses and long span steel decking. Truss spacing is approx. 1(c-0.0023(7023(')-5(s-)32.7(9023-0")32.303(r))-4						

School: Livermore

Item	Section	Description
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School: Lopez

Item	Section	Description	Structural Requirements	UNITS	QUANTITY	COST/UNIT	ADDITIONAL FRAMING	TOTAL	SUMS
S1	21	Support RTU-1, 10,000lbs.: 38x8 - 2 locations	Existing roof structure in the anticipated area is open web steel joist "16H" series. Existing joist spacing is approx. 4'-0" o.c. Locate new unit near joist end and load bearing wall. Reinforce joists for partial length Provide new channels for curb support. Assume (2) new opening through deck.	LF	180	\$45.00	\$6,000.00	\$14,100.00	\$46,000.00
	22	Support RTU-2, 1,500lbs.: 5.5x7.5 - 2 locations	Existing roof structure in the anticipated area is open web steel joist "16H" series. Existing joist spacing is approx. 4'-0" o.c. Reinforce joists for partial length Provide new channels for curb support. Assume (2) new opening through deck.	LF	32	\$45.00	\$2,160.00	\$3,600.00	
	23	Support RTU-3, 7,500lbs.: 34x6.5	Existing roof structure in the anticipated area is open web steel joist "16H" series. Existing joist spacing is approx. 4'-0" o.c. Locate new unit near joist end and load bearing wall. Reinforce joists for partial length Provide new channels for curb support. Assume (2) new opening through deck.	LF	56	\$45.00	\$2,400.00	\$4,920.00	
	24	Support RTU-4, 4,500lbs.: 29X4.5	Existing roof structure in the anticipated area is open web steel joist "10K" series. Existing joist spacing is approx. 5'-4" o.c. Locate new unit on short span joists. Provide new channels for curb support. Assume (2) new opening through deck.	LF	60	\$30.00	\$600.00	\$2,400.00	
	25	Support RTU-5, 5,000lbs.: 30x5	Existing roof structure in the anticipated area is open web steel joist "LH" series. Existing joist spacing is approx. 4'-0" o.c. Reinforce joists for new unit (assume 8 joists). Assume (2) new opening through deck.	LF	280	\$45.00	\$2,400.00	\$15,000.00	
	26	Support RTU-6, 5,500lbs.: 30x5	Existing roof structure in the anticipated area is open web steel joist "10H" series. Existing joist spacing is approx. 4'-0" o.c. Existing joists appear to have the capacity to support new equipment. Locate new unit near joist end and load bearing wall. Provide new channels for curb support. Assume (2) new opening through deck.	LF	48	\$30.00	\$600.00	\$2,040.00	
	27	Support RTU-7, 1,500lbs.: 5.5x7.5	Existing roof structure in the anticipated area is open web steel joist "16H" series. Existing joist spacing is approx. 4'-0" o.c. Reinforce joists for partial length Provide new channels for curb support. Assume (2) new opening through deck.	LF	24	\$45.00	\$1,080.00	\$2,160.00	
	28	Support MAU-1, 1,500lbs.: 3x11.5	Existing roof structure in the anticipated area is open web steel joist "16H" series. Existing joist spacing is approx. 4'-0" o.c. Locate new unit near joist end and load bearing wall. Reinforce joists for partial length Provide new channels for curb support. Assume (2) new opening through deck.	LF	16	\$45.00	\$840.00	\$1,560.00	
S2	25	Support RTU-5, 5,000lbs.: 30x5	Existing roof structure in the anticipated area is open web steel joist "LH" series. Existing joist spacing is approx. 4'-0" o.c. Reinforce joists for new unit (assume 8 joists). Assume (2) new opening through deck.	LF	280	\$45.00	\$2,400.00	\$15,000.00	\$23,000.00
	26	Support RTU-6, 5,500lbs.: 30x5	Existing roof structure in the anticipated area is open web steel joist "10H" series. Existing joist spacing is approx. 4'-0" o.c. Existing joists appear to have the capacity to support new equipment. Locate new unit near joist end and load bearing wall. Provide new channels for curb support. Assume (2) new opening through deck.	LF	48	\$30.00	\$600.00	\$2,040.00	
	27	Support RTU-7, 1,500lbs.: 5.5x7.5	Existing roof structure in the anticipated area is open web steel joist "16H" series. Existing joist spacing is approx. 4'-0" o.c. Reinforce joists for partial length Provide new channels for curb support. Assume (2) new opening through deck.	LF	24	\$45.00	\$1,080.00	\$2,160.00	
	28	Support MAU-1, 1,500lbs.: 3x11.5	Existing roof structure in the anticipated area is open web steel joist "16H" series. Existing joist spacing is approx. 4'-0" o.c. Locate new unit near joist end and load bearing wall. Reinforce joists for partial length Provide new channels for curb support. Assume (2) new opening through deck.	LF	16	\$45.00	\$840.00	\$1,560.00	
	29	Support CU-1, 2,000lbs.: 5x8 - 3 locations	Locate new unit over existing column. Provide new channels for curb support.	LF	48	\$30.00		\$1,440.00	
S3	30	Support RTU-1a, 8,500lbs.: 27x8 - 2 locations	Existing roof structure in the anticipated area is open web steel joist "16H" series. Existing joist spacing is approx. 4'-0" o.c. Locate new unit near joist end and load bearing wall. Reinforce joists for partial length Provide new channels for curb support. Assume (2) new opening through deck.	LF	120	\$45.00	\$4,800.00	\$10,200.00	\$31,000.00
	22	Support RTU-2, 1,500lbs.: 5.5x7.5	Existing roof structure in the anticipated area is open web steel joist "16H" series. Existing joist spacing is approx. 4'-0" o.c. Reinforce joists for partial length Provide new channels for curb support. Assume (2) new opening through deck.	LF	32	\$45.00	\$2,160.00	\$3,600.00	
	31	Support RTU-3a, 7,000lbs.: 22X8	Existing roof structure in the anticipated area is open web steel joist "16H" series. Existing joist spacing is approx. 4'-0" o.c. Locate new unit near joist end and load bearing wall. Reinforce joists for partial length Provide new channels for curb support. Assume (2) new opening through deck.	LF	40	\$45.00	\$2,040.00	\$3,840.00	
	32	Support RTU-4a, 2,500lbs.: 7.5X8	Existing roof structure in the anticipated area is open web steel joist "10K" series. Existing joist spacing is approx. 5'-4" o.c. Locate new unit on short span joists. Provide new channels for curb support. Assume (2) new opening through deck.	LF	16	\$30.00	\$600.00	\$1,080.00	
	33	Support RTU-5a, 2,500lbs.: 8x7.5	Existing roof structure in the anticipated area is open web steel joist "LH" series. Existing joist spacing is approx. 4'-0" o.c. Assume reinforce 3 additional joists. Provide new channels for curb support. Assume (2) new opening through deck.	LF	100	\$45.00	\$1,080.00	\$5,580.00	
	34	Support RTU-6a, 7,000lbs.: 22x8	Existing roof structure in the anticipated area is open web steel joist "10H" series. Existing joist spacing is approx. 4'-0" o.c. Existing joists appear to have the capacity to support new equipment. Locate new unit near joist end and load bearing wall. Provide new channels for curb support. Assume (2) new opening through deck.	LF	64	\$30.00	\$600.00	\$2,520.00	
	27	Support RTU-7, 1,500lbs.: 5.5x7.5	Existing roof structure in the anticipated area is open web steel joist "16H" series. Existing joist spacing is approx. 4'-0" o.c. Reinforce joists for partial length Provide new channels for curb support. Assume (2) new opening through deck.	LF	24	\$45.00	\$1,080.00	\$2,160.00	
	28	Support MAU-1, 1,500lbs.: 3x11.5	Existing roof structure in the anticipated area is open web steel joist "16H" series. Existing joist spacing is approx. 4'-0" o.c. Locate new unit near joist end and load bearing wall. Reinforce joists for partial length Provide new channels for curb support. Assume (2) new opening through deck.	LF	16	\$45.00	\$840.00	\$1,560.00	
		New cooling tower		SF	150	\$25.00		\$3,750.00	
		New chiller		SF	150	\$25.00		\$3,750.00	

School: McGraw

Item	Section	Description	Structural Requirements	UNITS	QUANTITY	COST/UNIT	ADDITIONAL FRAMING
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School: Mountain View

Item	Section	Description	Structural Requirements	UNITS	QUANTITY	COST/UNIT	ADDITIONAL FRAMING	TOTAL	SUMS
S1	8	Support RTU-1: 1500lbs: 5'x8"	Provide new wood curb and frame new opening. Reinforce existing structure with new steel channel.	LF	45	\$45.00	\$600.00	\$2,625.00	\$3,000.00
S2	7	Support Exhaust Fan (48" sq. : 350 lbs.)	Provide new wood curb and framing for new opening.	EA	1	\$200.00		\$200.00	\$1,000.00

School: Olander

Item	Section	Description	Structural Requirements	UNITS	QUANTITY	COST/UNIT	ADDITIONAL FRAMING	TOTAL	SUMS
			Existing roof structure in the anticipated area is open web						
12		Support RTU-1; 10000lbs; 37'x8'							

School: Preston

Item	Section	Description	Structural Requirements	UNITS	QUANTITY	COST/UNIT	ADDITIONAL FRAMING	TOTAL	SUMS
S1	7	Support RTU-1, 7,500lbs.; 34x6.5	Existing roof assumed to be steel joists and metal decking. Place unit near beam line to minimize reinforcing. Reinforce the ends of joists. Provide channel for curb support. Assume (2) new opening.	LF	40	\$45.00	\$2,700.00		

School: Red Feather

Item

School: Riffenburgh

Item Section

School: Rocky

Item	Section	Description	Structural Requirements	UNITS	QUANTITY	COST/UNIT	ADDITIONAL FRAMING	TOTAL	SUMS
		Support RTU-1; 7500lbs; 34'x6.5' - 1 Location							

Item	Section	Description	Structural Requirements	UNITS	QUANTITY	COST/UNIT	ADDITIONAL FRAMING	TOTAL	SUMS
S1	17	Support RTU-1, 7,500lbs.: 34x6.5 - 3 Locations	Existing roof structure in the anticipated area is open web steel joist "16H" series . Existing joist spacing is approx. 4'-0" o.c. Existing joists appear to have the capacity to support new equipment. Locate new unit near joist end and load bearing wall. Provide new channels for curb support. Assume (2) new opening through deck.	LF	216	\$30.00	\$1,800.00	\$8,280.00	\$18,000.00
	18	Support RTU-2, 4,500lbs.: 29x4.5	Existing roof structure in the anticipated area is open web steel joist "24K" series . Existing joist spacing is approx. 4'-0" o.c. Existing joists appear to have the capacity to support new equipment. Locate new unit near joist end. Provide new channels for curb support. Assume (2) new opening through deck.	LF	64	\$30.00	\$600.00	\$2,520.00	
	19	Support RTU-3, 5,000lbs.: 30x5	Existing roof structure in the anticipated area is open web steel joist "16H" series . Existing joist spacing is approx. 4'-0" o.c. Existing joists appear to have the capacity to support new equipment. Locate new unit near joist end. Provide new channels for curb support. Assume (1) new opening through deck.	LF	64	\$30.00	\$600.00	\$2,520.00	
	20	Support RTU-4, 5,500lbs.: 30X5	Existing roof structure in the anticipated area is open web steel joist "10H" series . Existing joist spacing is approx. 4'-0" o.c. Existing joists appear to have the capacity to support new equipment. Locate new unit near joist end and load bearing wall. Provide new channels for curb support. Assume (2) new opening through deck.	LF	64	\$30.00	\$600.00	\$2,520.00	
	21	Support RTU-5, 1,500lbs.: 5.5x7.5	Existing roof structure in the anticipated area is open web steel joist "16H" series . Existing joist spacing is approx. 4'-0" o.c. Existing joists appear to have the capacity to support new equipment. Locate new unit near joist end. Provide new channels for curb support. Assume (2) new opening through deck.	LF	16	\$30.00	\$600.00	\$1,080.00	
	22	Support MAU-1, 1,500lbs.: 3x11.5	Existing roof structure in the anticipated area is open web steel joist "16H" series . Existing joist spacing is approx. 4'-0" o.c. Existing joists appear to have the capacity to support new equipment. Locate new unit near joist end. Provide new channels for curb support. Assume (1) new opening through deck.	LF	24	\$30.00	\$300.00	\$1,020.00	
S2	20	Support RTU-4, 5,500lbs.: 30X5	Existing roof structure in the anticipated area is open web steel joist "10H" series . Existing joist spacing is approx. 4'-0" o.c. Existing joists appear to have the capacity to support new equipment. Locate new unit near joist end and load bearing wall. Provide new channels for curb support. Assume (2) new opening through deck.	LF	64	\$30.00	\$600.00	\$2,520.00	\$22,000.00
	21	Support RTU-5, 1,500lbs.: 5.5x7.5	Existing roof structure in the anticipated area is open web steel joist "16H" series . Existing joist spacing is approx. 4'-0" o.c. Existing joists appear to have the capacity to support new equipment. Locate new unit near joist end. Provide new channels for curb support. Assume (2) new opening through deck.	LF	16	\$30.00	\$600.00	\$1,080.00	
	22	Support MAU-1, 1,500lbs.: 3x11.5	Existing roof structure in the anticipated area is open web steel joist "16H" series . Existing joist spacing is approx. 4'-0" o.c. Existing joists appear to have the capacity to support new equipment. Locate new unit near joist end. Provide new channels for curb support. Assume (1) new opening through deck.	LF	24	\$30.00	\$300.00	\$1,020.00	
	23	Support RTU-6, 5,000lbs.: 30x5	Existing roof structure in the anticipated area is open web steel joist "LH" series . Existing joist spacing is approx. 4'-0" o.c. Reinforce joists for new unit (assume 8 joists). Assume (2) new opening through deck.	LF	280	\$45.00	\$2,400.00	\$15,000.00	
	24	Support CU-1, 2000lbs: 5x8 - 3 Locations	Existing roof structure in the anticipated area is open web steel joist "16H" series . Existing joist spacing is approx. 4'-0" o.c. Existing joists appear to have the capacity to support new equipment. Locate new unit near joist end and load bearing wall. Provide new channels for curb support.	LF	48	\$30.00		\$1,440.00	
S3	25	Support RTU-1a, 7,500lbs.: 22x8 - 3 Locations	Existing roof structure in the anticipated area is open web steel joist "16H" series . Existing joist spacing is approx. 4'-0" o.c. Existing joists appear to have the capacity to support new equipment. Locate new unit near joist end and load bearing wall. Provide new channels for curb support. Assume (2) new opening through deck.	LF	144	\$30.00	\$1,800.00	\$6,120.00	\$14,000.00
	26	Support RTU-2a, 2,500lbs.: 7.5x8	Existing roof structure in the anticipated area is open web steel joist "24K" series . Existing joist spacing is approx. 4'-0" o.c. Existing joists appear to have the capacity to support new equipment. Locate new unit near joist end. Provide new channels for curb support. Assume (2) new opening through deck.	LF	16	\$30.00	\$600.00	\$1,080.00	
	27	Support RTU-3a, 2,500lbs.: 7.5X8	Existing roof structure in the anticipated area is open web steel joist "16H" series . Existing joist spacing is approx. 4'-0" o.c. Existing joists appear to have the capacity to support new equipment. Locate new unit near joist end. Provide new channels for curb support. Assume (1) new opening through deck.	LF	64	\$30.00	\$600.00	\$2,520.00	
	28	Support RTU-4a, 7,000lbs.: 22X8	Existing roof structure in the anticipated area is open web steel joist "10H" series . Existing joist spacing is approx. 4'-0" o.c. Existing joists appear to have the capacity to support new equipment. Locate new unit near joist end and load bearing wall. Provide new channels for curb support. Assume (2) new opening through deck.	LF	48	\$30.00	\$600.00	\$2,040.00	
	21	Support RTU-5, 1,500lbs.: 5.5x7.5	Existing roof structure in the anticipated area is open web steel joist "16H" series . Existing joist spacing is approx. 4'-0" o.c. Existing joists appear to have the capacity to support new equipment. Locate new unit near joist end. Provide new channels for curb support. Assume (2) new opening through deck.	LF	16	\$30.00	\$600.00	\$1,080.00	
	22	Support MAU-1, 1,500lbs.: 3x11.5	Existing roof structure in the anticipated area is open web steel joist "16H" series . Existing joist spacing is approx. 4'-0" o.c. Existing joists appear to have the capacity to support new equipment. Locate new unit near joist end. Provide new channels for curb support. Assume (1) new opening through deck.	LF	24	\$30.00	\$300.00	\$1,020.00	
		New cooling tower		SF	150	\$25.00		\$3,750.00	
		New chiller		SF	150	\$25.00		\$3,750.00	

School: Timnath

Item	Section	Description	Structural Requirements	UNITS	QUANTITY	COST/UNIT	ADDITIONAL FRAMING	TOTAL	SUMS
S1	4	Support for RTU-1: 5000lbs							

School: Webber

Item	Section	Description	Structural Requirements	UNITS	QUANTITY	COST/UNIT	ADDITIONAL FRAMING	TOTAL	SUMS
S1	12	Support RTU-1; 1500lbs; 6'x7'	Existing roof structure in the anticipated area is open web steel joist "K" series. Existing joist spacing is approx. 5'-0" o.c. Remove existing RTU and place new unit in same spot. Provide new channels for curb support. Assume (1) new opening through deck.	LF	12	\$30.00	\$300.00	\$660.00	\$1,000.00
		New chiller.	Concrete pad.	SF	250	\$25.00		\$6,250.00	
		New cooling tower.	Concrete pad.	SF	300	\$25.00		\$7,500.00	

School: Wellington

Item

School: Werner

Item	Section	Description	Structural Requirements	UNITS	QUANTITY	COST/UNIT	ADDITIONAL
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ITEM	UNITS	COST
ANGLE FRAME FOR NEW OPENINGS THROUGH METAL DECK (6' OPENINGS)	EACH	\$700
2X WOOD FRAMED OPENING THROUGH PLYWOOD DECK	EACH	\$200
STEEL JOIST REINFORCING (CHORDS, WEBS, ENDS)	LF	\$45
FRAMING ABOVE THE METAL ROOF DECK TO TRANSFER LOADS	LF	\$30
FOUNDATION/SLAB FOR CHILLER/COOLING TOWER	SF	\$25
MODIFY EXISTING MECHANIC STRUCTURE	EACH	\$4,000
MECHANICAL PLATFORM ABOVE ROOF	SF	\$35
STEEL REINFORCING CHANNEL JOIST UNDER RTU AT EXISTING 2X WOOD JOISTS	LF	\$30
REINFORCE STEEL BEAM	LF	\$25
STEEL ANGLE CURB/DECK SUPPORT	LF	\$30
ANGLE FRAME FOR NEW OPENINGS THROUGH METAL DECK (2' OPENINGS)	EACH	\$300
SAW CUT NEW DUCT OPENING THROUGH CONCRETE (4' square)	EACH	\$500
NEW ROOF JOISTS AND DECKING	SF	\$20
SAW CUT NEW DUCT OPENING THROUGH CONCRETE (2' square)	EACH	\$150
SMALL PLATFORM FOR DX UNITS - CLP	EACH	\$4,000
REPLACE CMU WALL	SF	\$10
4" SLAB ON DECK FOR CURB	SF	\$5
MEZZANINE - COMPOSITE SLAB	SF	\$30

TYPICAL PLATFORM LBS STEEL

Beams	3000
Posts	350
Braces	1000
Beam reinf	150
Frame sq. f	380