

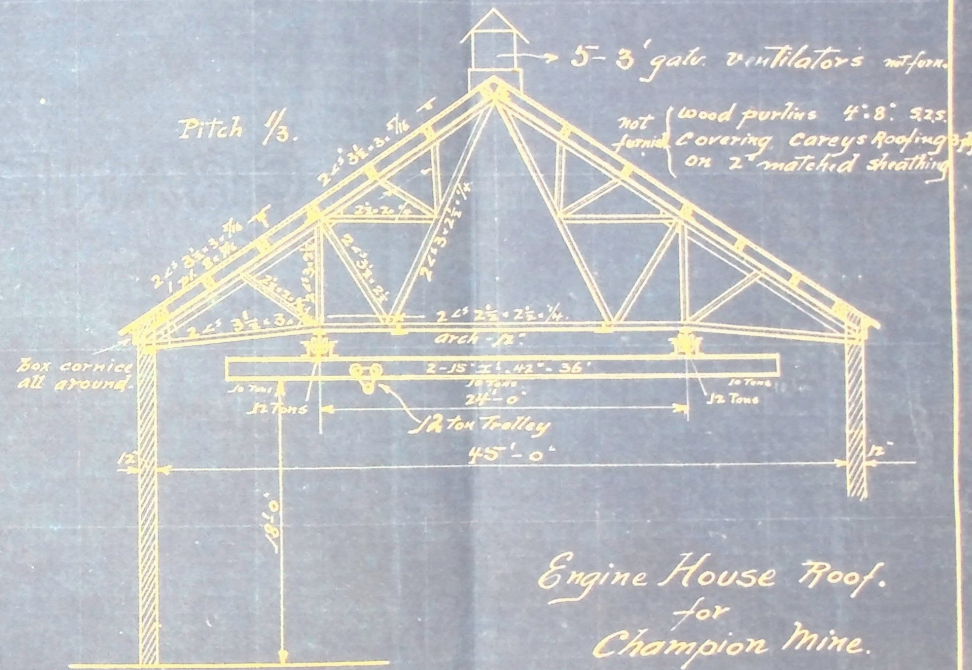
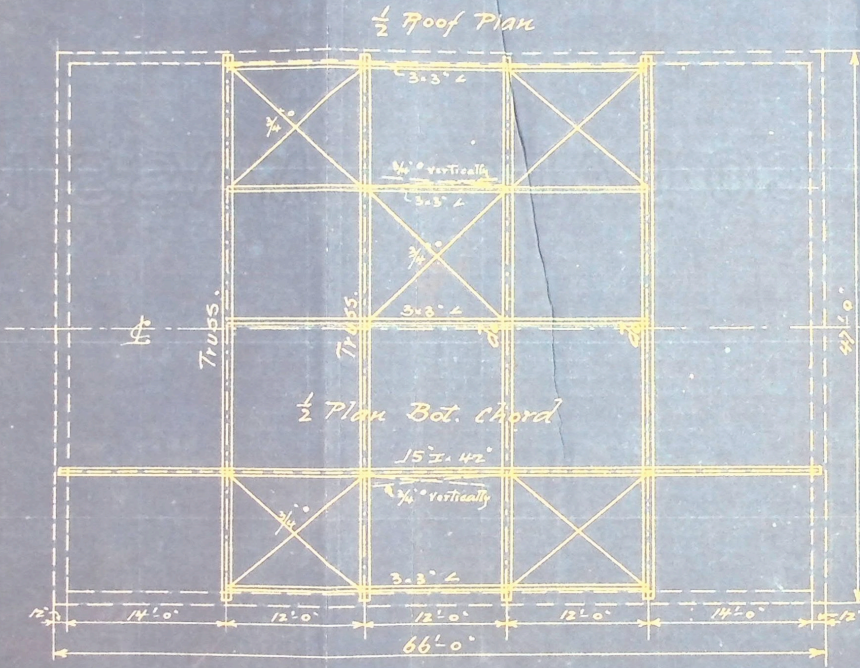
F. WEINHAGEN, President.
 WM. HINRICHS, Vice-President.
 H. A. WAGNER, Sec'y and Treasurer.

WISCONSIN BRIDGE AND IRON COMPANY, Milwaukee, Wis.

STRAIN AND SECTION SHEET.

QUOTATIONS are cash, free on board cars at our works unless otherwise noted, and are subject to strikes or any delays beyond our control.

Form 8-1 M 8-04.



Engine House Roof.
 for
 Champion Mine.

GENERAL DATA AND LOADS

Length of Span:
 Panels:
 Depth:
 Roadway:
 Sidewalk:
 Dead weight:
 Live load:
 Capacity of Floor System:

lbs. per lineal foot:
 lbs. per lineal foot:
 Tons per panel:

DATA FOR FLOOR SYSTEM

Floorbeams:
 Cantilevers:
 Roadway Stringers:
 Sidewalk Stringers:
 Roadway planks:
 Wheel guards:

web:
 web:
 flanges:
 flanges:
 Sidewalk planks:
 Railing:

GENERAL SPECIFICATIONS AND NOTES

Working stresses: *Std.*
 Metal: *Medium Steel.*
 Material shall be as marked on this sheet or of equivalent strength:

2-Roofs required.

5/07

WISCONSIN BRIDGE & IRON CO.
NORTH MILWAUKEE, WIS.

SHOP LIST OF BOLTS, RIVETS, ETC.

DESCRIPTION *Roof Trusses for E. Engine Houses*
FOR *Champion Copper Co. Painesdale Mich*

BILL No. *301* CONT No. *5103*
Made by *Zuleger* Date *4-8-07*
Checked *Schor* Date *4-8-07*

QUANTITIES LISTED INCLUDE EXTRA FOR WASTAGE, LOSS, ETC.

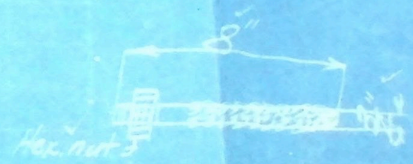
ROUND HEAD RIVETS

BOLTS

No. Req'd	POSITION OR REFERENCE	CLASS	SIZE	LENGTH INCHES	NO. OF HEADS	REMARKS	CLASS	SIZE	LENGTH INCHES	NO. OF HEADS	REMARKS
-----------	--------------------------	-------	------	------------------	--------------------	---------	-------	------	------------------	-----------------	---------

MISCELLANEOUS

*Note: This material to be gotten
out-stance and shipped
in advance of all other material
B.F.N. 4/14/07*



*Req'd - 16 - Anchors (as shown)
3/4" - 0-8"*

*Material billed for 1 - Building
E. Reg'd*

#3 Engine house = 150 squares
#2 Rock House = 56 1/2 "

o.d.v. 10/19/22

	Wgt. per Square	COST PER SQUARE			Total Double Roof
		FOB, <i>Panville</i> Material	Labor	Total	
Extra *A* Shingles	180	\$5.00	\$4.00	\$9.00	\$13.60
Century Asbestos Shingles, 16" x 16", 13 x 13 to weather	283	13.83	3.00	16.83	21.43
Flexstone Slate Surfaced Shingles, 8" x 12 3/4", 420 per square	230	7.75	4.00	11.75	16.35
Flexstone Strip Shingle, 32" x 10", 112 per square	190	6.75	3.00	9.75	14.35
Flexstone Roofing, regular weight	80	3.35	2.50	5.85	10.45
" " Ex. Heavy	100	4.32	2.50	6.82	11.42
Barrett's Slate Surfaced Roofing, 3 ply	80	2.50	2.50	5.00	9.85 9.85
" Type "A" built-up roof	195	6.04	4.00	10.04	14.64
Carey's Style C extra heavy weight					
Magnesia Flexible Cement Roofing	100	6.01	3.00	9.01	13.61
Johns-Manville 4-ply Heavy Brooks brand Asbestos Roofing, sheets 32" x 80"	90	6.96	3.00	9.96	14.56
Bird & Sons Neponset Heavy Asphalt Built-Up Roofing, 4 ply	152	5.70	4.00	9.70	14.30
H. H. Robertson Co. Process Metal, #26	138	12.58	2.50	15.08	19.68
" " " " " " #28	112	11.25	2.50	13.75	18.35
Am. Rolling Mill Co. #2 gauge Armco Cor. Iron	178	9.55	2.50	12.05	16.65
Am. Sheet & Tin Plate Co. #20 Keystone Cor. Iron	178	7.71	2.50	10.21	14.81
3 Ply Ruberoid	55#	3.50	2.50	6.00	10.60
I. E. Swift Co. "Stalwart"	75	2.75	2.50	5.25	9.85
Transite Corrugated Wood	350#	18.23	2.50	20.73	
Cor. Asbestos Protected Roofing, 4 ply, 24 gauge	200#	16.26	2.50	18.76	
Cor. Slate Surfaced Asbestos Pro- tected Roofing, 24 gauge, 3 ply	200#	16.96	2.50	19.46	
14 oz. Copper, #26 gauge <i>for gutter</i>	88	20.10	<i>5.55</i>	<i>25.65</i>	
20 " " #2 "	125	23.00			
24 " " #21 "	150	31.00			

There would be about 7 squares of gutter on the #3 roof

Requisition No. _____

ENGINEER'S OFFICE

F. P. No. 12-A

Drawn by H. Merwin

TRIMOUNTAIN MINING CO.

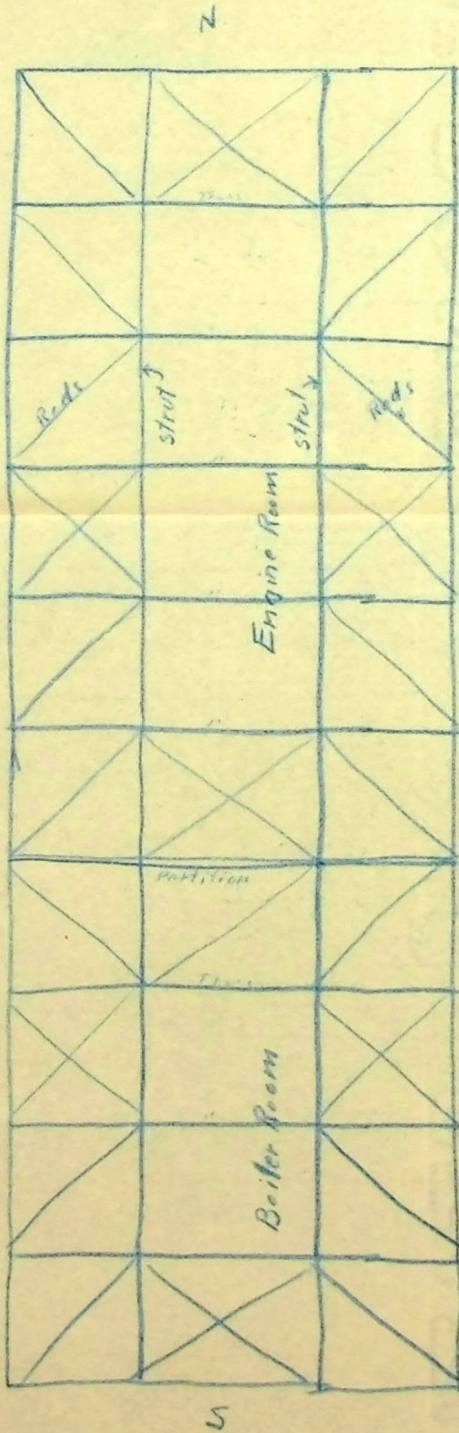
1342-B,
Champion office

Checked by _____

TRIMOUNTAIN, MICH.

Date Mar. 30 1911

SUBJECT Roof Bracing at #3 Engine House



*Plan on Bottom Chord
No Rods on Rafters.*

Copy

South Range, Mich. Sept 1st 1973

M. Champion Capper Co

Painesdale Mich.

SUOMI LUMBER COMPANY.

RIISKI & KOIVUNEN, PROPRIETORS.

DEALERS IN BUILDING SUPPLIES.

CONTRACTORS

Windows
Doors
Lime
Cement
Phone 597-M

Porch Columns
Wood Pulp
Lath
Shingles
P. O. Lock Box C

House no	Contract to Lay Roofs.			
156	Highland Street	1862 sq ft	944	
158	" "	1862 " "	944	
162	" "	1862 " "	944	
166	Logans Street	944 sq ft	944	
168	" "	944 " "	944	
172	" "	944 " "	1862	
176	" "	944 " "	1862	
178	" "	944 " "	1862	
		<u>10,306 sq ft</u>		
	@ 7.75 per square			798 72

South Range, Mich.

July 28th

1923

M. Champion Copper Co

Painesdale Mich

SUOMI LUMBER COMPANY.

RIISKI & KOIVUNEN, PROPRIETORS.

DEALERS IN BUILDING SUPPLIES.

CONTRACTORS

Windows
Doors
Lime
Cement
Phone 597-M

Porch Columns
Wood Pulp
Lath
Shingles
P. O. Lock Box C

To Lay Roof and Roofing as follows

162 ✓	Ingois Street	944 sq ft
158 ✓	" "	944 " "
156 ✓	" "	944 " "
167 ✓	Highland St	944 " "
165 ✓	" "	944 " "
161 ✓	" "	944 " "
157 ✓	" "	944 " "
159 ✓	" "	944 " "
155 ✓	" "	944 " "
151 ✓	" "	944 " "
149 ✓	" "	944 " "
147 ✓	" "	944 " "
		<u>9440 " "</u>

at 7.75 per square

731.60

South Range, Mich.

191

M

To **SUOMI LUMBER COMPANY, Dr.**

Riiski & Kolvunen, Props.

Contractors and Dealers in Building Supplies,

Windows, Doors, Lime, Cement, Porch Columns

Wood Pulp, Lath, Shingles.

Phone 597 M

P. O. Lock Box C

Roofs including

Double roof Per sq. # 12 70Roof with Paper Per sq.
laid on shingles. 525

M

To **SUOMI LUMBER COMPANY, Dr.**

Rilski & Kolvunen, Props.

Contractors and Dealers in Building Supplies,

Windows, Doors, Lime, Cement, Porch Columns

Wood Pulp, Lath, Shingles.

Phone 597 M

P. O. Lock Box C

65 ft 2x2 - Hem.	55
Roofing	260
14 Lin ft 1x4	30
14 " " 1x2	15
108 sq ft H. Board No 3,	270
5 # Corn Nails	25
1 # Rft	10
Ridge Boards	180
Labour	425
	<hr/>
	1270

COPPER RANGE COMPANY
PURCHASING DEPARTMENT

CHAMPION COPPER COMPANY
TRIMOUNTAIN MINING COMPANY
ATLANTIC MINING COMPANY
MICHIGAN SMELTING COMPANY

JOHN M. WAGNER
PURCHASING AGENT
OFFICE: MASONIC BUILDING
50-52 SHELDEN STREET

HOUGHTON, MICH., September 27, 1922.

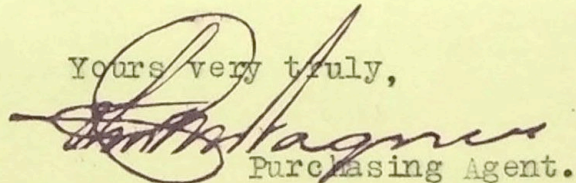
Mr. H. T. Mercer, C. E.,
Painesdale, Michigan.

Dear Sir:

Subject: Copper gutters for roof.

We are informed by Mr. Ray L. Eggleston that it will cost approximately \$35 to \$40 for labor and solder to lay 720 square feet of sheet copper gutters in a plain one-third pitch roof on the No. 3 engine house at the Trimountain mine.

Yours very truly,


Purchasing Agent.

BDN/MAH

7.2) 40.000 (5.55
36 0
4 00
360
400

ord. 1922
40¢ - 40¢ = 45

	Wgt. per Square	COST PER SQUARE			Total Double Roof
		Material	Labor	Total	
Extra *A* Shingles	180	\$5.00	\$4.00	\$9.00	\$13.60
Century Asbestos Shingles, 16" x 16", 13 x 13 to weather <i>H. Matthews</i>	283	13.83	3.00	16.83	21.43
Flexstone Slate Surfaced Shingles, 8" x 12 $\frac{3}{4}$ ", 420 per square <i>asbestos J. Hanwell</i>	230	7.75 <i>7.45 + ft =</i>	4.00	11.75	16.35
Flexstone Strip Shingle, 32" x 10", 112 per square <i>" " m strips of 4 ends = 90</i>	190	6.75 <i>6.50 + ft.</i>	3.00	9.75	14.35
Flexstone Roofing, regular weight	80	3.35	2.50	5.85	10.45
" " Ex. Heavy <i>4.00 curlets</i>	100	4.32	2.50	6.82	11.42
Barrett's Slate Surfaced Roofing, 3 ply	80	2.50	2.50	5.00	9.55 9.55
" Type "A" built-up roof	195	6.04	4.00	10.04	14.64
Carey's Style C extra heavy weight					
Magnesia Flexible Cement Roofing	100	6.01	3.00	9.01	13.61
Johns-Manville 4-ply Heavy Brooks brand Asbestos Roofing, sheets 32" x 80"	90	6.96	3.00	9.96	14.56
Bird & Sons Neponset Heavy Asphalt Built-Up Roofing, 4 ply	152	5.70	4.00	9.70	14.30
H. H. Robertson Co. Process Metal, #26	138	12.58	2.50	15.08	19.68
" " " " " " #28	112	11.25	2.50	13.75	18.35
Am. Rolling Mill Co. #2 gauge Armco Cor. Iron	178	9.55	2.50	12.05	16.65
Am. Sheet & Tin Plate Co. #20 Keystone Cor. Iron	178	7.71	2.50	10.21	14.81
3 Ply Ruberoid	55#	3.50	2.50	6.00	10.60
I. E. Swift Co. "Stalwart"	75	2.75	2.50	5.25	9.85
Transite Corrugated Wood	350#	18.23	2.50	20.73	
Cor. Asbestos Protected Roofing, 4 ply, 24 gauge	200#	16.26	2.50	18.76	
Cor. Slate Surfaced Asbestos Pro- tected Roofing, 24 gauge, 3 ply	200#	16.96	2.50	19.46	
14 oz. Copper, #26 gauge	88	20.10			
20 " " #2 "	125	23.00			
24 " " #21 "	150	31.00			

Dep. 1922

Prices per Square

Roofing	Material	Labor	Total
<u>H.H. Robertson Co. - Process Metal</u> corrugated, black			
No. 26 gauge	\$12.58	\$2.25	\$14.83
No. 28 "	11.25	2.25	13.50
<u>Bird & Son - Neponset heavy asphalt</u> built-up roofing, 4 ply	4.70	2.50	7.20
<u>Johns-Manville, Inc. - 4 ply heavy</u> Brooks brand of asbestos roofing, in flat sheets, size 32" x 80"	6.65	2.50	9.15
<u>The Philip Carey Co. - Style "C" extra</u> heavy weight magnesia flexible cement roofing	6.20	2.50	8.70
<u>The Barrett Co. - specification</u> type "A" roof, bonded for 10 yrs.	5.42	2.75	8.17
<u>American Rolling Mill Co. - No. 20 gage</u> "Armco" iron roofing, 2½" corruga- tions, galvanized	8.55	2.25	10.80
<u>American Sheet & Tin Plate Co. - No. 20</u> gauge Keystone "Apollo" best bloom copper bearing steel sheets, galvanized, 2½" corrugations	6.71	2.25	8.96
<u>The Ruberoid Company - 3 ply heavy</u> Ruberoid roofing, 55 lbs. per sq.	2.95	2.50	5.45
<u>I. E. Swift Co. - 3 ply "Stalwart"</u> asphalt roofing	2.25	2.50	4.75

For double roof, add:

Lumber	\$2.85 per square
Labor	<u>1.75</u> " "
Total	\$4.60 " "

H.W. Johns-Manville Co.'s 4-ply Heavy Brooks brand of asbestos roofing.

Construction:

1. Layer of white asbestos felt.
2. Layer of waterproof asphalt cement.
3. Layer of asbestos saturated felt.
4. Layer of waterproof asphalt cement.
5. Layer of asbestos saturated felt.
6. Layer of waterproof asphalt cement.
7. Layer of asbestos saturated felt.

Weight, per square, complete, about 82 lbs.

Price of material only, including galvanized nails and lap cement, f.o.b. Milwaukee, per square,

\$3.80

Will furnish and apply for \$5.50 per square

This roofing was used on the Power House of the Baltic stamp mill, built March, 1910, and was also used on several buildings of the Copper Range R.R. Co., including the new ice house at Coles Creek.

H.W. Johns-Manville Co.'s 3-ply Brooks brand of asbestos roofing.

Construction:

1. Layer of white asbestos felt.
2. Layer of waterproof asphalt cement.
3. Layer of asbestos saturated felt.
4. Layer of waterproof asphalt cement.
5. Layer of asbestos saturated felt.

Weight per square, complete about 55 lbs.

Price of material only, including galvanized nails and lap cement, f.o.b. Milwaukee, per square, about

\$2.85

Will furnish and apply for \$4.50 per square

Subject: Roofing.

March 20, 1912.

H.W. Johns-Manville Co.'s Standard-Manville brand of asbestos roofing.

Construction:

1. Layer of white asbestos felt.
2. Layer of waterproof asphalt cement.
3. Layer of heavy canvas burlap.
4. Layer of waterproof asphalt cement.
5. Layer of asbestos saturated felt.
6. Layer of waterproof asphalt cement.
7. Layer of white asbestos felt.

Weight per square, complete, about 70 lbs.

Price of material only, including galvanized nails
and lap cement, f.o.b. Milwaukee, per square,

about \$4.00

This roofing is not carried in stock, but is made
up on special order.

Note that it has a burlap center.

Carey's magnesia flexible cement roofing.

Construction:

1. Layer of woolen felt.
2. Layer of asphalt cement composition.
3. Layer of burlap imbedded into cement.
4. Layer of asphalt compound imbedded into burlap.
5. Finished asphalt surface.

Weight per square, 80 lbs.

Price of material only complete, including $1\frac{1}{2}$ lbs. large head roofing nails, $\frac{1}{2}$ gallon lap cement and one gallon magnesia paint, f.o.b. Chicago, per square, \$3.50

Price of 183 squares applied and maintained in water-tight condition and guaranteed for 5 years, per square \$4.50

Price of 183 squares applied and maintained in water-tight condition and guaranteed for 10 years, per square, \$5.00

This roofing is used on many of the mine and mill buildings in the Copper Country.

Paroid Roofing.

Construction:

2 ply Paroid roofing, made of two layers of heavy wool felt, saturated with an asphalt waterproofing compound.

Weight per square, about 55 lbs.

Price, including tin caps, nails and cement for laps, f.o.b. Houghton, Mich., per square, \$3.00

This roofing was used on the building in which the belt sand conveyor is installed at Redridge, Mich.

Ruberoid roofing, manufactured by The Standard Paint Company.

Construction:

3 ply Ruberoid roofing is made of three layers of wool felt, saturated with a waterproofing compound.

Weight per square, 54 lbs.

Price of material only, including necessary tin caps, nails and Ruberine cement for application, f.o.b.

Houghton, Mich., per square,

\$2.50

This roofing was used on several large buildings of the Michigan Smelting Company.

Barrett's Amatite ready roofing.

Construction:

Barrett's Amatite ready roofing is made up of two sheets of Barrett's standard tarred felt and two layers of waterproofing composition. Into the top layer of the composition is embedded a heavy finishing coat of evenly sized white grit.

Price complete with nails, caps and cement per square, f.o.b. Houghton, Mich.

\$1.75

Asbestos protected metal roofing, Duckback brand.

Construction:

Asbestos protected metal roofing is made of annealed steel sheets, immersed at high temperature in a bath of asphaltum compound, after which asbestos is applied to both sides of the coated steel sheet.

Price, No. 24 gauge metal, 2½" corrugations, f.o.b.

Canton, Mass., per square,

\$10.00

This roofing was used on the horse-shoeing shop at Painesdale, Mich.

Barrett's Weatherproof Roofing.

Construction:

This roofing is made of a strong, heavy all-wool felt, saturated with a waterproofing compound and coated on both sides.

Weight, complete, per square, 52 lbs.

Price, complete with nails, caps and cement,

f.o.b. Houghton, per square, about

\$3.00

Rex flintkote roofing.

Construction:

3-ply flintkote roofing is made of three layers of wool felt, saturated with a waterproofing compound, and sanded on the surface exposed to weather.

Weight per square about 50 lbs.

Price, including lap cement, nails and caps for application, f.o.b. Houghton, per square, \$3.50

Lonabond canvas roofing.

Construction:

Lonabond canvas roofing, is made of a heavy grade of cotton duck, (10 oz. per yard) saturated and coated with a waterproofing compound.

Weight per square, 45 lbs.

Price, complete with nails and cement for application, f.o.b. Houghton, per square, \$3.75

This roofing was used on the new Copper Range R.R. Co. shops.

Other felt roofings.

Johns-Manville 3 ply Regal roofing, f.o.b. Milwaukee, per square, \$1.85

Carey's 3-ply Peerless roofing, f.o.b. Chicago, per square, \$1.85

I.E. Swift Co.'s 3-ply Vulcanite roofing, f.o.b. Houghton, per square, \$2.50

Sept. 19 22

Prices per Square

Roofing	Material	Labor	Total	
✓ <u>H.H. Robertson Co. - Process Metal corrugated, black</u>				
No. 26 gauge	\$12.58	\$2.25	\$14.83	19.43
No. 28 "	11.25	2.25	13.50	19.40
✓ <u>Bird & Son - Neponset heavy asphalt built-up roofing, 4 ply</u>	4.70	2.50	7.20	11.50
✓ <u>Johns-Manville, Inc. - 4 ply heavy Brooks brand of asbestos roofing, in flat sheets, size 32" x 80"</u>	6.65	2.50	9.15	13.75
✓ <u>The Philip Carey Co. - Style "C" extra heavy weight magnesia flexible cement roofing</u>	5.70 6.20	2.50	8.26 8.70	12.50
✓ <u>The Barrett Co. - specification type "A" roof, bonded for 10 yrs.</u>	5.42	2.75	8.17	12.77
✓ <u>American Rolling Mill Co. - No. 20 gage "Armco" iron roofing, 2½" corrugations, galvanized</u>	8.55	2.25	10.80	15.40
✓ <u>American Sheet & Tin Plate Co. - No. 20 gauge Keystone "Apollo" best bloom copper bearing steel sheets, galvanized, 2½" corrugations</u>	6.71	2.25	8.96	13.50
<u>The Ruberoid Company - 3 ply heavy Ruberoid roofing, 55 lbs. per sq.</u>	2.95	2.50	5.45	10.05
<u>I. E. Swift Co. - 3 ply "Stalwart" asphalt roofing</u>	2.75 2.25	2.50	5.25 4.75	9.85

Total with Double Roof

✓ Barretts 3ply slate surfaced (Suomi Lumber Co) 2.50 2.50 5.00 9.60
 ✓ Ex. * A * shingles 5.00 4.00 9.00 13.60

For double roof, add:

Lumber	\$2.85 per square
Labor	1.75 " "
Total	\$4.60 " "

5.00
 6.75
 4.60
 11.35
 7.00
 4.60

6.75 double roof, we furnish lumber
 Suomi Lumber Co

The Barrett Company,
10 South LaSalle St.,
Chicago, Ill., Sept. 25, 1922.

Copper Range Company,
John M. Wagner, P. A.,
Houghton, Michigan.

Dear Sir:

Subject: Roofing.

We promptly received your inquiry of Sept. 19th and referred this to Mr. Mungavin, our representative, who calls in your territory but find that his schedule did not permit of his getting over to see you until the early part of next week. Rather than delay our quotations, we are giving you these direct and will appreciate your considering them as we are very anxious to secure your order. Unquestionably, the prices at which we are offering these materials will prove to you that it is an economy to buy now. We quote you as follows, f.o.b. cars Chicago:

	<u>C.L.</u>	<u>L.C.L.</u>
Everlastic slate surfaced roofing red or green, complete with cement and nails	2.16 \$1.85	2.58 \$2.10 rl.
Everlastic single shingles, red or green	5.00	5.50 sq.

A full sized sample of the red and the green Everlastic single shingle, as well as a sample of the slate surfaced roofing, is being sent you under separate cover with booklets descriptive of both. By comparison with materials of similar nature we know you will also recognize the superquality of these goods and we assure you that the maximum amount of service can be obtained by the application of our products.

Having no control over applying asphalt shingles and prepared roofings, we have never been called on to submit any guarantee in connection with the life of roofings, but we have known of instances where the roll roofing has given satisfaction as high as ten or twelve years without repairs or maintenance of any kind. The asphalt shingles have only been manufactured for the past 8 or 9 years, but we know that some of the first roofs on which asphalt shingles were applied are giving them good service.

The situation affecting costs on raw materials is a little unfortunate, and, therefore, we cannot guarantee our prices for an indefinite period, but are obliged to quote you as above for acceptance within five days from date and subject to change without special notice. Terms, 30-2-10.

Yours very truly,

THE BARRETT COMPANY

H. R. Hansen,

Asst. Sales Manager.

Copy for
Mr. H. T. Mercer,
Sept. 26, 1922.

5.00
2.25
6.75
2.60
9.60
7.00
2.81
9.35

COPY

JOHNS-MANVILLE, Inc.

Michigan Ave. & 18th St.,
Chicago, Ill.

September 11, 1922.

Mr. John M. Wagner, P. A.,
Copper Range Company,
Houghton, Michigan.

Dear Sir:

Mr. Kitts has referred your letter of September 7th requesting prices on Asbestos Shingles suitable for use on engine and boiler houses, to us for attention, and requests that we send you full size samples of our No. 60 and No. 9 Gray Asbestos shingles. These will reach you under separate cover.

Enclosed is booklet fully describing Transite asbestos shingles and which shows the many styles, sizes and colors in which they may be procured.

On the styles as mentioned above, we are pleased to quote you as follows, f.o.b. factory, Riverdale, Illinois.

	<u>L.C.L.</u>	<u>C.L.</u>	<u>WEIGHT</u>
No. 60 Gray shingles per square	\$12.25	\$11.05	320 lbs.
No. 9 Gray shingles per square	10.85	10.00	300 lbs.
Gray double course starters for same per C.Lin.ft.	9.10	8.05	185 lbs.
Gray ridge roll per C.Lin.ft	17.50 - L.C.L. and C.L. 510 lbs.		

Factory is in a position to make prompt shipment.

Yours very truly,

JOHNS-MANVILLE, Inc.
Western Division

E. L. Jankowski

Copy for
Mr. H. T. Mercer,
September 18, 1922.

Building Materials Dept.

COPPER RANGE COMPANY

PURCHASING DEPARTMENT

CHAMPION COPPER COMPANY
 TRIMOUNTAIN MINING COMPANY
 ATLANTIC MINING COMPANY
 MICHIGAN SMELTING COMPANY

JOHN M. WAGNER
 PURCHASING AGENT
 OFFICE: MASONIC BUILDING
 50-52 SHELDEN STREET

HOUGHTON, MICH., September 1, 1922.

Mr. H. T. Mercer, C. E.,
 Painesdale, Michigan.

Dear Sir:

Subject: Roofing.

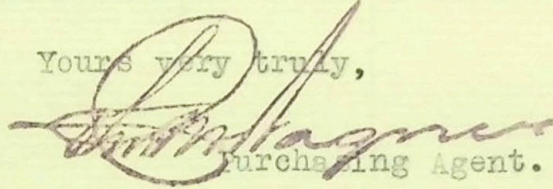
Supplementing our letter of August 12th, we have received an additional quotation from Johns-Manville, Inc., on several types of roofing made by them, and we are able to give you the following information:

	Weight per square	Price per square		F.O.B.	
		C.L.	L.C.L.		
Flexstone red or green slate surfaced shingles (without nails)					
Individual shingles 8" x 12-3/4", 420 shingles per 100 sq.ft.	230 lbs.	\$7.00	\$7.45	Milwaukee,	Wis.
Strip shingles 32" x 10" 4 in strip, 112 strips per square	190 lbs.	6.10	6.50	"	"
Flexstone red or green slate surfaced roofing.					
Regular weight	80 lbs.	3.10	3.55	"	"
Extra heavy	100 lbs.	4.00	4.65	"	"
Add freight rate per 100 lbs.		.31½	.48½		
Minimum car = 40,000 lbs.					

	<u>Weight per square</u>	<u>Price per square</u>		<u>F.O.B.</u>	
		C.L.	L.C.L.		
<u>Transite corrugated wood</u>	350 lbs.	\$15.50	\$17.50	Nashua, N.H.	
<u>Add freight rate per 100 lbs.</u>		.78	1.03		
Minimum car = 36,000 lbs.					
<u>Corrugated asbestos protected roofing</u>					
24 gauge, 4 ply	200 lbs.	14.70	15.55	Manville, N.J.	
<u>Corrugated slate sur- faced asbestos protected roofing.</u>					
24 gauge, 3 ply		15.40	16.25	"	"
<u>Add freight rate per 100 lbs.</u>		.78	1.03		
Minimum car = 36,000 lbs.					
<u>Miscellaneous roofing materials</u>					
Regal roof coating, black					
50 gal. drum		\$0.50 per gallon, f.o.b. Milwaukee, Wis.			
25 gal. drum		.55	"	"	"
Asbestos roof putty, black					
500 lb. drum		\$29.00 net	"	"	"
300 lb. drum		18.25 net	"	"	"
150 lb. drum		11.20 net	"	"	"
50 lb. can		3.75 net	"	"	"
Fibrous enamel, black					
50 gal. drum		\$ 0.80 per gallon, " " " "			
25 gal. drum		.85	"	"	"
Fibrous enamel, red					
50 gal. drum		\$ 1.15 " " " "			
25 gal. drum		1.20	"	"	"

We are expecting literature describing the above mentioned roofings and materials, as well as samples of the same, and we shall be pleased to submit them to you for your examination if you are interested.

Yours very truly,


Purchasing Agent.

BDN/MAH

COPPER RANGE COMPANY

PURCHASING DEPARTMENT

CHAMPION COPPER COMPANY
 TRIMOUNTAIN MINING COMPANY
 ATLANTIC MINING COMPANY
 MICHIGAN SMELTING COMPANY

JOHN M. WAGNER
 PURCHASING AGENT
 OFFICE: MASONIC BUILDING
 50-52 SHELDEN STREET

HOUGHTON, MICH., August 12, 1922.

Mr. H. T. Mercer,
 Painesdale, Michigan.

Dear Sir:

Subject: Roofing.

In compliance with your request for information as to the cost of roofing, we give below a summary of quotations we have received on several kinds of roofing, namely:

	Carload Lot	Less Carload	F.O.B.
	<u>Price Per Sq.</u>	<u>Price Per Sq.</u>	<u>Price Per Sq.</u>

① H. H. Robertson Company

Robertson Process Metal,
 corrugated, black

No. 20 gauge	\$14.50	\$16.00	Pittsburgh
No. 22 "	13.50	15.00	"
No. 24 "	12.50	14.00	"
Fasteners, for steel frame work	1.00	1.00	"
Fasteners, for wood frame work	.50	.50	"
<i>24 gauge</i>	<i>11.75</i>	<i>13.25</i>	<i>13.75</i>
<i>28 gauge</i>	<i>10.65</i>	<i>12.15</i>	<i>12.65</i>

② Bird & Son

Bird's Neponset heavy asphalt
 built-up roofing, 4 ply

	7.50 ^{4.70} ^{2.75}	Chicago
	<i>7.45</i>	

③ Johns-Manville, Inc.

4 ply heavy Brooks brand of
 asbestos roofing, in flat
 sheets, size 32" x 80"

	6.65 ^{2.75}	Milwaukee
	<i>9.40</i>	

Mr. H. T. Mercer-2-

Less Carload
Price Per Sq. F.O.B.

④ The Philip Carey Company ✓

Carey's style "C" extra heavy
weight magnesia flexible cement
roofing

\$ 6.20 ^{Labor} 3 Chicago 9.75

⑤ The Barrett Company

Barrett specification type "A" roof,
bonded for 10 years.

Over board sheathing:

One ply No. 25 red rosin sized
sheathing 5 lbs. @ 2.70 per
cwt. 0.135

Four plies Barrett specifica-
tion felt 2.55

Barrett specification
pitch 195 lbs. @ 1.40 per
cwt. 2.73

\$5.415 ^{2.75} Chicago 8.17

⑥ American Rolling Mill Co.

No. 20 gauge "Armco" iron
roofing, 2-1/2" corrugations,
galvanized

8.55 ^{2.00} Pittsburgh 10.55

⑦ American Sheet & Tin Plate Co.

No. 20 gauge Keystone "Apollo" best
bloom copper bearing steel sheets,
galvanized, 2-1/2" corrugations

6.71 ✓ Pittsburgh 8.71

⑧ The Ruberoid Company

3 ply heavy Ruberoid roofing, 55
lbs. per sq.

2.95 ^{2.75} Joliet, Ill.
5.70

Price Per. Sq.

F.O.B.

⑨

I. E. Swift Company

3 ply "Stalwart" asphalt roofing

2.25

Labor

2.75

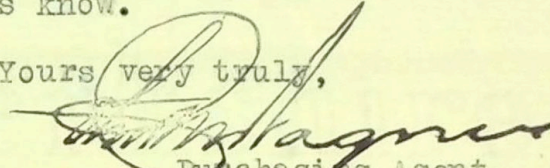
Chicago

Total

5.00

In the event you desire us to obtain any further information, will you please let us know.

Yours very truly,



Purchasing Agent.

BDN/HHT

REQUISITION No.

ENGINEER'S OFFICE

F. P. NO.

DRAWN BY

CHAMPION COPPER CO.

CHECKED BY

PAINESDALE, MICH.

DATE 7/29 1912

SUBJECT Material for Double Roofs (Dwellings)

Double House 30'x34'

Roof sq. ft, exclusive of porch	1345 sq ft rgh. @ 20 =	26.90
720 Lin. ft 2'x3" placed 2' c-c.	= 360 B.M. @ 20	7.20
150 " " ft 1x4 Trim	= 50 B.M. @ 40	2.00
84 Lin. ft 1x12		
84 " " 1x2 Moulding	= 15 B.M. @ 40	0.60
66 " " 1x6 Ridge	= 33 " " "	1.32
Flashing Tin for Chimney		.50
		<u>34.52</u>

2.50 per sq.

Double House 26'-4" x 44'-4" "B" Location Type

Roof sq. ft		
Main	1300	
Kitchen	570	
Total	1870 sq ft exclusive of porch	37.40
950 Lin. ft 2'x3" - 2' c-c	= 475 B.M. @ 20	9.50
160 Lin. ft 1x4 Trim	= 54 " " @ 40	2.16
130 " " 1x12		
130 " " 1x2 Moulding	= 22 " " "	0.88
64 " " 1x6 Ridge	= 32 " " "	1.28
Flashing Tin		.50
		<u>51.72</u>

2.77 per sq.

6 Room 21'-13/4" x 25'-0"

Roof	1040 sq ft. exclusive of porch =	20.80
580 Lin. ft 2x3 - 2' c to c.	= 290 B.M. @ 20 =	5.80
72 " " 1x4 Trim	= 24 B.M. @ 40 =	.96
72 " " 1x12		
72 " " 1x2 Moulding	= 12 B.M. @ 40 =	.48
60 " " 1x6 Ridge	= 30 " " "	1.20
Flashing Tin		.50
		<u>29.74</u>

2.85 per sq.

Condition of Roofs.

Champion Mine.

"F" Compressor House, 59 squares; -
Cor Galv. iron on wood; getting rusty; needs
wire brushing & painting.

F Boiler House, 43 squares; -
cor. Galv. iron on wood; badly rusted in
places; needs painting.

Horse Shoeing Shop, 7 squares; -
Asbestos coated corrugated sheets; some
leaks. needs patching.

Blacksmith Shop, 128 squares; -
Double roof. Cor. Galv. iron on strips;
getting rusty in places and will need
repairs later.

Machine Shop, 123 squares; -
Same as blacksmith shop, but is
in better condition.

⊗ #4 Boiler house, 34 squares.
Corrugated asbestos sheets on purlins.
Full of holes; badly in need of repairs.

#4 Engine house, 31 squares; -
Asbestos shingles on wood; O.K.

3 Engine House, 25 squares:-

Carey's roofing on wood; leaking in places, and needs repairs; might be fixed by using roofing cement and then tarring.

Should have strips of tin or galvanized iron along eaves to keep ice from tearing the roofing.

3 Boiler house, 28 squares:-

Same as # 3 engine house.

2 Engine House, 28 squares:-

Carey's roofing on wood. Seaks on the east side. Should be cemented and have a coat of tar. Fix up eaves.

1 Engine house, 28 squares:-

Carey's roofing on wood. Should be re-painted. and eaves fixed up

* # 1 Boiler house, 28 squares:

Seaks badly. Cor. iron roof on boards.

* # 1 Dry. Cor. iron on wood. Very bad shape. 81 squares.

Condition of Roofs.
Trimountain Mine

- ⊗ # 2 Boiler house, 31 squares;-
Cor. iron on wood; very badly rusted
and broken; needs a new roof.
- # 2 Compressor house, 28 squares;-
Cor. iron on wood; leaks in places
and needs re-laying and some new
sheets.
- # 2 Engine House, 38 squares;-
Carey's roofing on wood; needs
patching, cementing and re-painting.
- Machine Shop, 34 squares;-
Cor. iron on wood. Seaks badly
and should be re-laid and some new
sheets.
- ⊗ # 3 Engine - Boiler House, 135 squares;-
careys roofing on wood. Seaks very
badly. Should have new roofing throughout
might possibly be fixed with cement and
re-painting.

#4 engine house; 40 squares;-
 careys roofing on wood; Seaks in
 places; can be fixed with roof cement
 and re-painting. ~~Some~~
 all of the eaves on the buildings covered
 with careys roofing should be protected
 with sheet iron or tin.

#2 Change house, Shingles getting bad,
 80 squares.

Water Reservoir Roof

Pitch 1 1/2" per
in

Page 2

All Steel Construction using 22" Gal. Steel
wt = 125 lb per sq ft

Gal. Steel Cor. 22" Ga. wt = 22 lb per sq ft
Applying @ 150 " " "

88 squares = 13200 sq ft = 2925.00 \$ 572.00

Purlin

With purlin spacing of 12 ft. center to center
require 4 channels per span = 13 wt per ft.
Remainder rows = 2084 lb @ 22 = 466.00
Punching and bolting = 150.00

Beams - 12 ft. center to center require 7' I B of 15 lb
require 9 rows of beams = 11070 lb @ 22 = 2435.40
Ridge Beams 6' @ 154 + 22 = 1576.00
11070 lb @ 22 = 2435.40

Column built up of 3x3x1/2 Angl and 2x2x1/2 Strap. wt of Angl = 61 lb
over 12 ft. length 720 lb.
Wt for col = 200 lbs.
Wt for 12 ft of col = 7200 lb @ 22 = 1584.00
Labor for building col. = 95.00
\$ 219.00 219.00

Correcting Steel col, beam & Purlin 100.00
\$ 1729.00

Concret pier. 2 1/2 x 2 1/2 x 18" 30
\$ 1760.00

Teams and Amortment 240.00
\$ 2000.00

Galv. Iron Con 22 Ga. (see page 3)

572⁰⁰

Parlins:

With parlins spacing of 2 ft. and 13 ft. span. it will require 2x12 lumber.

Required 35 rows. length including 1 ft. lap, 138 ft.

or 4830 lineal ft. of 2x12 = 9660 board ft say 10 M ft @ 18⁰⁰ = 180⁰⁰

Labor 70⁰⁰

Beams using 12x12 fir. required 55 pcs. =

Our length in stock 14 ft. = 55 x 14 = 770 lineal ft.

770 x 12 = 9140 say 10 M ft. at 28 = 280⁰⁰

Labor 30⁰⁰

Team & labor 30⁰⁰

Pipe Colvin.

Concrete column. as shown on page (1.)

Total = 1350

Truss Const. for center only. \$981⁰⁰ - figured 50 ft

Concrete Const. for ends only.

Incl. Concrete beams and slabs. 500 slabs. 90 beam " for 50 ft

\$1570 + 130 Inoid. = 1700

1700

All steel truss construction with steel Parlins. = 7250

1950

" " " " " " Wood " " = 1589

1589

Page 1

Designed for Load of 50 lbs per sq. ft.

Panels 13 X 12 1/2 ft. supported on beams on each side.

Thickness of Panel = 6" Area of steel per foot in width = 6 sq in. (wt per sq ft = 75)

Cubic yds of concrete per square = 1.8 at 500 = 9.00

Pounds of steel per square = 200 at 2 cent = 4.00 (Concrete Bar)

Total cost for slab roof of 84 square @ 13.00 per = say. 1100.00

Substituting Wire rope for bars cost would be reduced to [850.00]

Beams to carry above slabs would have to carry a load of 1100 lbs per ft of length.

this requires a beam 16" deep and 12" wide. area steel for beam = 1.6 sq in.

Cubic yard per beam 13 ft. long = .65 at 5.00 = 3.25

Wt of steel per beam = 71 lb. at 2 cent = 1.45

Cost per beam = 4.70

cost of 50 beams @ 4.70 =

235.00

Columns use 12 X 12 column about 16 ft. long.

Cubic yds per col = .6 at 5.00 = 3.00

Steel per col 7 - 3/4 bars total wt per col = 120 lb at 2 cent = 2.40

Cost per col = 5.40

Cost for 36 col =

195.00

\$1280.00

Concrete for 3 ft sq. 1 1/2 ft deep. at 500 per yd = 2.25

" " Excavation at \$1.30 per = 1.50

Total cost for floor 4.00

Ten floor @ 4.00

= 40.00

Forms and incidental

250
\$1570.00



January 3, 1922

Domestic Price List

ROBERTSON PROCESS METAL CORRUGATED, MANSARD AND FLAT SHEETS—BLACK

F. O. B. FACTORY, AMBRIDGE, PA.
All Prices Subject to Change Without Notice

CORRUGATED AND MANSARD SHEETS (28" wide)— PRICE PER SQUARE (100 sq. ft.)

WEIGHT PER SQUARE
(100 sq. ft.)

GAUGE	CARLOAD (Not Crated)	LESS CARLOAD (Crated)	WEIGHT PER SQUARE (100 sq. ft.)	
			NET	SHIPPING (Crated)
7'-6" 18	\$16.50	\$18.00	272 lbs.	290 lbs.
6'-6" 20	14.50	16.00	218	235
5'-9" 22	13.50	15.00	192	208
4'-9" 24	12.50	14.00	165	180
40# 3'-9" 26	11.75	13.25	138	152
40# 4'-6" 28	10.65	12.15	100	114
40# 4'-6" 30	10.30	11.80	90	104
FLAT SHEETS (30" wide)				
18	\$15.50	\$17.00	254 lbs.	267 lbs.
20	13.50	15.00	204	217
22	12.50	14.00	179	191
24	11.50	13.00	154	165
26	10.75	12.25	128	138

100 sq. per car load.

STANDARD LENGTH SHEETS—5' 0" to 12' 0" inclusive.

WAREHOUSE STOCK—No. 22 and No. 24 gauge standard length sheets ready for immediate shipment at regular prices.

NOTE:—Minimum carload 36,000 pounds.

EXTRAS—

RED COLOR	Add \$1.00 per square.
ALUMINUM COLOR	Add \$2.00 per square.
LENGTH (over 10')	Add \$.50 per square.
ODD LENGTH SHEETS	When figuring on odd length sheets charge for FULL STANDARD LENGTH from which sheets are to be cut.

FASTENERS—

FOR STEEL FRAMEWORK—\$1.00 per 100 sq. ft.
FOR WOOD FRAMEWORK—\$.50 per 100 sq. ft.

BUILDING TRIM—BLACK OR RED COLOR

STANDARD FLASHINGS—

	GIRTH.	PRICE PER LINEAL FOOT		
		No. 20.	No. 22.	Nos. 24 and 26.
Ridge Cap.....	15"	40c	34c	32c
Corrugated Side Wall.....	15"	40	34	32
Corner	15"	44	38	36
End Wall (Flat).....	15"	30	22	20
Window	6"	18	16	15
	10"	23	20	19
Counter	6"	13	11	10
	10"	20	16	15
Gable	24"	50	40	38
	30"	60	50	45
Eave	6"	13	11	10
	10"	20	16	15
	15"	30	26	24
	24"	45	36	34
	30"	50	45	40
Louvers	10"	23	20	19

Export prices upon application.

HH ROBERTSON CO
BUILDING PRODUCTS

Pittsburgh, U. S. A.

OFFICES

- | | |
|---|--|
| BALTIMORE, Md., 425 Equitable Building | CLEVELAND, O., 504 Kirby Building |
| BIRMINGHAM, ALA., 824 Brown-Marx Building | DETROIT, MICH., 1858 Penobscot Building |
| BOSTON, MASS., 50 Congress Street | NEW YORK, 170 Broadway |
| BUFFALO, N. Y., 908 Mutual Life Building | PHILADELPHIA, PA., 1306 Real Estate Trust Building |
| CHICAGO, ILL., 930 Consumers Company Building | PITTSBURGH, PA., 904 First National Bank Building |
| SAN FRANCISCO, CAL., 1007 Hobart Building | |