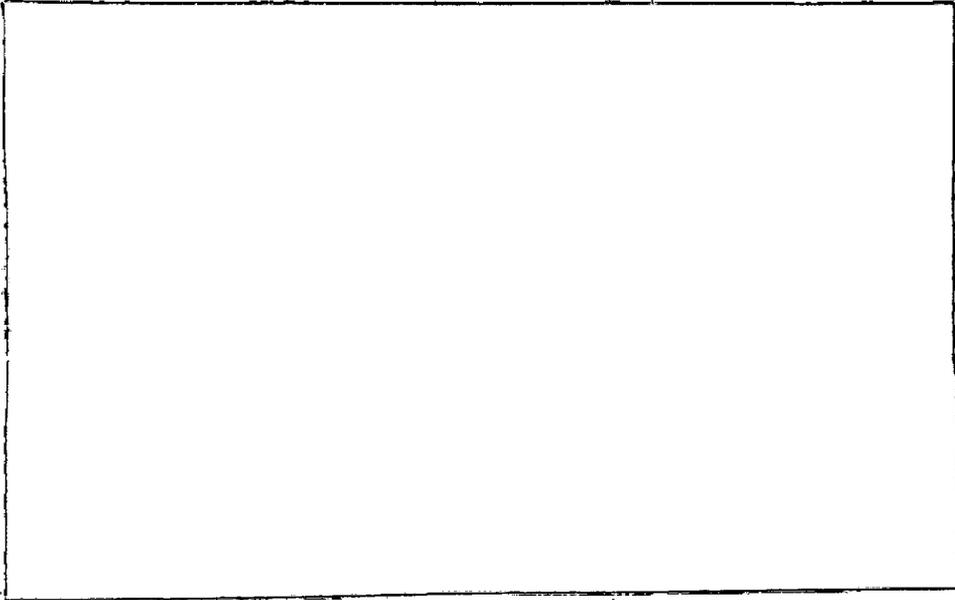


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RECORDED

SEP 15 1974

INTERSTATE COMMERCE COMMISSION



CONTRACTOR BETHLEHEM STEEL CORPORATION

COPY No. 4 DATE 1974  
AMERICAN ELECTRIC POWER SERVICE CORP.  
COMPANY as agent for an Operating Company  
(to be designated later)

SUBJECT \_\_\_\_\_  
RAILROAD COAL CARS

CONTRACT No. 3466 CIA No. -

THIS CONTRACT, made as of September 27, 1974 ,  
between AMERICAN ELECTRIC POWER SERVICE CORPORATION, a New York  
corporation, as agent for an Operating Company of the American  
Electric Power System (name to be designated later), (herein  
called "Purchaser"), and BETHLEHEM STEEL CORPORATION, a Delaware  
corporation (herein called "Seller"),

W I T N E S S E T H ,

T H A T :

1. Subject to the terms and conditions hereinafter  
set forth, Seller agrees to construct, sell and deliver to Pur-  
chaser and Purchaser agrees to purchase from Seller and accept  
delivery of Two Thousand One Hundred (2,100) 100-Ton triple  
hopper coal cars (hereinafter referred to individually as a "Car"  
and collectively as the "Cars"). The Cars are to be constructed  
in accordance with Seller's "General Conditions" and the designs  
and specifications of Seller's Proposal dated September 12, 1973  
and attachments thereto (other than the "Terms and Conditions of  
Sale", but including "Freight Car Escalation"), as supplemented  
by Seller's letters dated November 29, 1973, December 21, 1973,  
January 30, 1974 and July 12, 1974, and by Seller's Specification  
No. 3400-379 dated July 23, 1974, and in accordance with such  
modifications thereof as may be agreed upon in writing by Purchaser  
and Seller. Seller's document, entitled "General Conditions",  
is attached hereto as Exhibit A and made a part hereof. Seller's  
Proposal, attachments, supplemental letters and the Specification  
described in the next preceding sentence are attached hereto as  
Exhibit B and made a part hereof.

2. The Cars will be constructed at Seller's plant at Johnstown, Pennsylvania. Production of the first One Thousand Five Hundred (1,500) Cars is scheduled to commence in October, 1974 and to be completed by December 31, 1974. Production of the remaining Six Hundred (600) Cars is scheduled to commence in July, 1975 and to be completed by August 31, 1975.

3. Seller agrees to arrange for the shipment and delivery of each Car to Purchaser at railroad yards at Youngstown, Ohio, freight charges prepaid. Purchaser agrees to insure the interests of Seller in each Car from the time such Car leaves the Seller's plant at Johnstown, Pennsylvania while enroute to and until delivered to Purchaser or its agent at Youngstown, Ohio. Shipment of each Car as aforesaid shall not take place until final inspection on behalf of the Purchaser, as evidenced by a certificate of inspection signed on behalf of Purchaser, which final inspection shall be made at Seller's plant, Johnstown, Pennsylvania. The Seller will grant to inspectors or other authorized representatives of the Purchaser reasonable access to its plant. Upon inspection of each Car as aforesaid, the Purchaser assumes with respect thereto the full responsibility and risk of loss or damage and shall not be released from its obligations hereunder with respect to payment or otherwise in the event of any damage to or the destruction or loss of any Car or all the Cars; provided, however, that the Manufacturer shall not be relieved from its warranty set forth in Exhibit A.

4. Subject to the terms and conditions of this Contract and in consideration of the undertakings of Seller as herein set forth, Purchaser agrees to pay or cause to be paid in cash for each of the

first One Thousand Five Hundred (1,500) Cars a purchase price of NINETEEN THOUSAND SIX HUNDRED FORTY THREE DOLLARS (\$19,643.00) and for each of the remaining Six Hundred (600) Cars a purchase price of NINETEEN THOUSAND NINE HUNDRED FORTY THREE DOLLARS (\$19,943.00), each such price being f.o.b. Seller's plant, Johnstown, Pennsylvania. Terms of payment shall be as set forth in Seller's document, entitled "Terms of Payment", attached hereto as Exhibit C and made a part hereof.

5. If any provision of Exhibit B is inconsistent with any provision hereof or of Exhibit A or Exhibit C, the provision hereof or of Exhibit A or Exhibit C shall supersede such inconsistent provision. In any event, Seller's specifications for the Cars shall govern.

IN WITNESS WHEREOF, the parties hereto have caused this agreement to be signed as of the day and year first above written.

AMERICAN ELECTRIC POWER SERVICE CORPORATION

By

Donald C. Cook  
Chairman of the Board

BETHLEHEM STEEL CORPORATION

By

Vice President

COMMONWEALTH OF PENNSYLVANIA, }  
COUNTY OF LEHIGH, } ss.

On this *2nd* day of October, 1974, before me personally appeared *A. M. Leed*, to me personally known, who being by me duly sworn, says that he is a Vice President of BETHLEHEM STEEL CORPORATION; that one of the seals affixed to the foregoing instrument is the corporate seal of said corporation; that said instrument was signed and sealed on behalf of said corporation by authority of its Board of Directors and he acknowledged that the execution of the foregoing instrument was the free act and deed of said corporation.

*J. H. Vary*  
NOTARY PUBLIC

My Commission Expires *July 27, 1978* [Seal]

STATE OF NEW YORK }  
COUNTY OF NEW YORK } ss.

On this *27<sup>th</sup>* day of *September*, 1974, before me personally appeared Donald C. Cook, to me personally known, who being by me duly sworn, says that he is the Chairman of the Board of AMERICAN ELECTRIC POWER SERVICE CORPORATION; that one of the seals affixed to the foregoing instrument is the corporate seal of said corporation, that said instrument was signed and sealed on behalf of said corporation by authority of its Board of Directors and he acknowledged that the execution of the foregoing instrument was the free act and deed of said corporation.

WILLIAM E. OLSON,  
Notary Public, State of New York  
No. 31-8217715  
Qualified in New York County  
Commission Expires March 30, 1976

*William Olson*  
NOTARY PUBLIC

GENERAL CONDITIONS

**EXHIBIT A**

1. Delay. The Seller shall not be responsible for any delays in delivery or for any other failure to perform hereunder resulting from causes beyond the Seller's reasonable control, including, but not limited to, acts of God, war or war conditions, riot, embargoes, acts of civil or military authorities, fires, floods, explosions, accidents, acts, omissions or delays by the Purchaser, quarantine restrictions, mill conditions, strikes, differences with workmen, delays in transportation, shortage of cars, fuel, labor or materials, including delays in receiving necessary materials or delays of carriers or subcontractors, or any other cause beyond the reasonable control of the Seller.

2. Seller's Warranty. The Seller warrants that the Cars will be built in accordance with the designs and specifications set forth or referred to in the contract (such contract, including the Exhibits attached thereto, being herein called the "Contract") to which this document entitled "General Conditions" is attached and warrants that the Cars will be free from defects in material (except as to specialties incorporated therein which were specified or supplied by the Purchaser and not manufactured by the Seller), workmanship or design (except as to designs specified by the Purchaser and not developed or purported to be developed by the Seller) under normal use and service, the Seller's obligation under this Paragraph 2 being limited to making good at its plant (or at the option of the Seller at a place designated by the Seller and agreed upon by the Buyer) any part or parts of any Car, including labor involved in the replacement or repair of such part

or parts, which Car shall be returned to the Seller, transportation charges prepaid, within one year after delivery of such Car, and which the Seller's examination shall disclose to its reasonable satisfaction to have been thus defective. In no event shall the Seller be liable to anyone for any incidental, special or consequential damages of any kind in connection with the Contract or anything done by the Seller hereunder or pursuant hereto. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND OF ALL OTHER OBLIGATIONS OR LIABILITIES ON THE PART OF THE SELLER, EXCEPT FOR ITS SPECIFIC OBLIGATIONS SET FORTH IN THE CONTRACT. The Seller neither assumes nor authorizes any person to assume for it any other liability in connection with the construction and delivery of the Cars, except as aforesaid. The Seller further agrees that the inspection of any Car as provided in the Contract shall not be deemed a waiver or modification by the Purchaser of any of its rights under this Paragraph 2. It is further understood and agreed that the word "design(s)" as used herein and in Paragraph 3 hereof and the word "specialities" as used herein shall be deemed to include articles, materials, systems, formulae and processes.

3. Patent Indemnities. Except in case of designs, processes or combinations specified by the Purchaser and not developed or purported to be developed by the Seller, and articles and materials specified by the Purchaser and not manufactured by the Seller, the Seller agrees to indemnify, protect and hold harmless the Purchaser from and against any and all liability, claims, demands, costs, charges and expenses, including royalty payments and counsel fees, in any manner imposed upon or accruing

against the Purchaser because of the use in or about the construction or operation of the Cars of any design, process, combination, article or material infringing or claimed to infringe on any United States patent or other right. The Purchaser likewise will indemnify, protect and hold harmless the Seller from and against any and all liability, claims, demands, costs, charges and expenses, including royalty payments and counsel fees, in any manner imposed upon or accruing against the Seller because of the use in or about the construction or operation of the Cars of any design, process or combination specified by the Purchaser and not developed or purported to be developed by the Seller, or article or material specified by the Purchaser and not manufactured by the Seller, which infringes or is claimed to infringe on any United States patent or other right. The Seller agrees to and hereby does, to the extent legally possible without impairing any claim, right or cause of action hereinafter referred to, transfer, assign, set over and deliver to the Purchaser every claim, right and cause of action which the Seller has or hereafter shall have against the originator or seller or sellers of any design, process, combination, article or material specified by the Purchaser and used by the Seller in or about the construction or operation of the Cars on the ground that any such design, process, combination, article or material or operation thereof infringes or is claimed to infringe on any patent or other right, and the Seller further agrees to execute and deliver to the Purchaser all and every such further assurances as may be reasonably requested by the Purchaser more fully to effectuate the assignment, transfer and delivery of every such claim, right and cause of action. The Seller will give prompt written notice to the Purchaser of any claim known to

the Seller on the basis of which liability may be charged against the Purchaser hereunder, and the Purchaser will give prompt written notice to the Seller of any claim known to the Purchaser on the basis of which liability may be charged against the Seller hereunder.

4. Designation of Ultimate Purchaser. Purchaser is acting as agent for an operating company of the American Electric Power System in executing the Contract and agrees to designate such operating company as the purchaser of the Cars prior to the commencement of construction of the Cars. Purchaser shall promptly notify Seller in writing upon the designation by Purchaser of such operating company, and Seller's Credit Department shall have 20 business days from the receipt of such notice to approve or disapprove of such operating company as the purchaser of the Cars. If such operating company is not approved by Seller's Credit Department, Seller may, at its sole option, terminate this Agreement without further obligation hereunder. If such operating company is approved by Seller, Purchaser, Seller and such operating company shall enter into a contract supplemental to the Contract substituting such operating company for American Electric Power Service Corporation as the Purchaser under the Contract.

5. Purchaser's Indemnification. The Purchaser agrees to save, indemnify and keep harmless the Seller from and against all losses, damages, injuries, liabilities, claims, and demands whatsoever (and expenses in connection therewith, including counsel fees), except due to any act or omission of the Seller, as manufacturer of the Cars, arising out of retention by the Seller of security title to the Cars or out of the use and operation thereof by the Purchaser during the period when security

title thereto remains in the Seller. This covenant of indemnity shall continue in full force and effect notwithstanding the full payment of the indebtedness in respect of the Purchase Price and the conveyance of the Cars, as provided herein, or the termination of the Contract.

6. Recordation. The Purchaser will, at its expense, cause the Contract and any amendments or supplements thereto to be duly filed and recorded with the Interstate Commerce Commission in accordance with Section 20c of the Interstate Commerce Act and wherever else required by law or reasonably requested by the Seller for the purpose of proper protection of the security interest of the Seller in the Cars. The Seller will not deliver any of the Cars to the Purchaser until the aforesaid filings and recordations have been effected.

7. Maintenance; Loss or Destruction. So long as the Seller retains security title in the Cars, the Purchaser agrees at its own cost and expense to maintain and keep each Car in good order and repair, reasonable wear and tear expected. In the event of loss or destruction of, or irreparable damage to, any of the Cars from any cause whatsoever during the time the Seller retains security title therein, the Purchaser shall promptly and fully inform the Seller in regard to such loss, destruction or damage, and the Purchaser shall promptly pay to the Seller an amount equal to the Purchase Price of each Car so lost, destroyed or irreparably damaged, plus interest, if any, payable in respect of such Purchase Price to the date of payment.

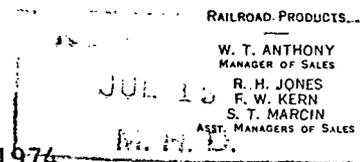
8. Compliance with Laws, Rules and Regulations. So long as the Seller retains security title in the Cars, the Seller agrees at all times to keep the Cars free and clear of all taxes, assess-

ments, liens, and encumbrances, and covenants that the Cars at all times will be maintained, used and operated under and in lawful compliance with the laws, rules and regulations to which they may be subject in any local, state or federal jurisdiction.

# Bethlehem Steel Corporation

BETHLEHEM, PA. 18016

J. G. WHITE, JR.  
GENERAL MANAGER OF SALES  
D. S. ARNOT  
J. D. CUMMINGS  
ASST. GEN. MANAGERS OF SALES



July 12, 1974

American Electric Power  
Service Corporation  
2 Broadway  
New York, NY 10004

Attention: Mr. F. P. Keane

Gentlemen:                      Subject: 1500 Triple Hopper Coal Cars  
100-Ton, 4,000 Cu. Ft. Level Capacity  
Your Order No.: Letter dated 10/17/73  
Our Order No.: (DF) 3400-379 (1000 Cars)  
Our Order No.: (DF) 3400-387 ( 500 Cars)

We are detailing below for your records the adjustments in price per car for all known changes in specifications that you have approved to date.

Base Price Per Car September 12, 1973 ..... \$19,200.00  
F.O.B. our plant, Johnstown, PA

Alt. #1. For substituting A-441 Steel in the center  
sills for V-50 Steel ..... ADD 9.73 per car

Alt. #2. For adding 6 inner inner coils per truck  
spring grouping (24 per car) ..... ADD 33.62 per car

(Based on an allowance of \$187.42 for truck  
springs instead of \$153.80 shown on our  
9/12/73 allowance sheet.)

Alt. #3. For thickness changes in plates as follows:  
Hopper chutes, crossridge sheets,  
floor sheets and longitudinal hoods  
from 5/16" to 1/4", hopper doors  
from 3/8" to 5/16", side and end  
sheets from 1/4" to 7/32" (All  
to remain Mayari-R Steel) ..... DEDUCT 341.81 per car

Alt. #4. For furnishing the Roller Bearing Adapters  
with hardened crowns and thrust  
collars ..... ADD 6.40 per car

(Based on obtaining adapters @ \$90.40 per  
car set instead of \$84.00 shown on our  
allowance sheet of 9/12/73.)

Alt. #5. For changing side stakes and side stake  
rivets to Mayari-R and applying the ACI  
labels and painting and stencilling the  
car bodies as follows:

- a. Entire underframe between bolsters,  
including the inside of the bolster  
beam web and the underside of side  
sill horizontal leg, to receive one  
coat of #1 black car cement.
- b. The side sheet area between the bolster  
stake and the next stake inboard on all  
four corners of the car will be painted  
from side sill to side top chord with  
one coat (3 mils minimum) of direct-to-metal  
black finish paint. These areas are for  
the direct (no separate lettering boards)  
application of reporting marks, road  
numbers, light weight, capacity, load  
limit, ACI labels and consolidated stencil.
- c. All riveted laps and joints to receive  
one coat of primer paint except where  
application may interfere with proper  
welding.
- d. The rotary coupler end (or ends) of car  
will be given one coat of direct-to-metal  
yellow or a primer and one coat of yellow  
finish paint (minimum 3 mils) applied  
to the end sheet and both end side  
sheets.

- e. Stencil paint (one coat) will be white when applied to black background or to an unpainted surface. It will be black when applied to a yellow surface.

Except as noted above all remaining body surfaces will remain unpainted to attain a "weathering effect" ..... ADD \$33.00 per car

(Based on obtaining paint at following prices per gallon: Primer, \$2.35; car cement, \$0.74; black finish, \$3.00; yellow finish, \$3.73; white stencil, \$4.25)

- Alt. #6. Applying lockbolts on the pedestal frame keys ..... ADD 1.27 per car

(Based on obtaining the lockbolts and collars at \$3.36 per car set.)

- Alt. #7. Substituting M-F pedestal key retainer for Bethlehem key retainer ..... ADD 18.67 per car

(Based on obtaining M-F retainers at \$25.00 per car set.)

- Alt. #8. Install one bolt in each hopper door to prevent accidental opening ..... ADD 6.55 per car

- Alt. #9. For furnishing draft sill castings with separable instead of integral center plates.

- a. From Buckeye (900 car sets) add \$420.37 per car. Based on furnishing Grade "B" draft sill castings with striker and center filler cast integral; for use with separable center plates and for use with Type "F" rotating couplers. Separate body center plate to be Grade "C" cast steel with vertical face machined to 90°.

The above add per car is based on obtaining the draft sill castings from Buckeye at \$1,070.00 per car set and the body center plates from Buckeye at \$148.00 per car set (\$138.00 for the castings and \$10.00 for the 90° machining).

b. From Pratt & Letchworth (600 car sets)  
add \$524.88 per car. Based on draft  
sill castings and center plates same  
as described above except the vertical  
face of the center plate will not  
be machined and will have a taper of  
approximately 3/4 degree. The above  
add per car is based on obtaining  
the draft sill castings from P&L  
at \$1,053.82 per car set plus a  
pattern charge of \$129.07 per car  
(\$77,447.00 ÷ 600 cars) and the  
body center plates from P&L at \$139.87  
per car set.

Prorating the adds detailed under a.  
and b. above over the 1500 cars this  
alternate #9 amounts to an add

of ..... ADD \$462.17 per car

Alt. #10. For attaching the body center plates  
to the draft sill castings by means  
of 4 lockbolts with collars and 8  
Mayari-R rivets instead of 12 standard  
rivets ..... ADD 7.67 per car

(This add is based on obtaining the lockbolts  
and collars at \$5.16 per car set.)

Alt. #11. For applying a Bail Type uncoupling  
device on the rotary end of the car  
instead of a conventional uncoupling  
device (non-rotary end will have a  
conventional Stanray uncoupling  
device) ..... ADD 96.59 per car

(The above add is based on obtaining the  
Bail Type uncoupling device for the "A"  
end from Stanray at \$41.50 each and the  
Standard double operating rotary coupler  
device from Stanray at \$34.90 each.)

Alt. #12. For changing the coupler pin and yoke  
support to a 10" channel (to suit AAR  
Plate No. 545-A requirements) on all  
cars with 1 rotary and 1 non-rotary  
coupler prorated over all 1500 cars .. ADD 5.65 per car

Alt. #13. On the Specialty Allowance Sheets which were part of our base quotation dated September 12, 1973, we showed an allowance of \$707.75 per car set for couplers, yokes, and auxiliary coupler parts from American Steel Foundries. You are aware that we have ordered 1100 car sets of this equipment from National Castings and 400 car sets from American Steel Foundries. Also you approved the substitution of our 10" channel at 28.5# of V-50 Steel for the cast yoke head support on the rotary ends of cars equipped with American Steel Foundry couplers.

The above changes amount to a prorated add of ..... ADD \$103.48 per car

We have summarized below the new allowances for the coupler specialty items and the change in the car price:

From American Steel Foundries

396 cars with 1 rotary and 1 non-rotary coupler add \$101.80 per car. Based on the following allowances per car:

- 1 - Fixed End Coupler \$225.85
- 1 - Fixed End Coupler Yoke - including 1 - follower Y46HTE and 1 - pin No. Y-47 131.35
- 1 - Rotary End Coupler 257.40
- 1 - Rotary End Coupler Yoke - including 1 - follower and 2 retainer keys 181.45
- Total Allowance Per Car \$796.05

4 cars with 2 rotary couplers add \$196.95 per car. Based on the following allowances per car:

- 2 - Rotary End Couplers \$514.80
- 2 - Rotary End Coupler Yokes each including 1 follower and 2 retainer keys 362.90
- Total Allowance Per Car \$877.70

American Electric Power  
Service Corporation

- 6 -

July 12, 1974

From National Casting Div.

1089 cars with 1 rotary and 1 non-rotary coupler add \$102.45 per car. Based on the following allowances per car:

1 - Fixed End Coupler	\$224.25
1 - Fixed End Coupler Yoke including 1 follower	115.75
1 - Rotary End Coupler	248.10
1 - Rotary End Coupler Yoke including 1 coupler pin; 1 pin support; 1 pin support bolt and 1 rotary connection	175.15
1 - Rotary End Cast Steel Yoke Support #38057-1	46.95
Total Allowance Per Car	\$810.20

11 cars with 2 rotary couplers add \$232.65 per car. Based on the following allowances per car:

2 - Rotary End Couplers	\$496.20
2 - Rotary End Coupler Yokes each including 1 coupler pin; 1 pin support; 1 pin support bolt and 1 rotary connection	350.30
2 - Rotary End Cast Steel Yoke Supports #38057-1	93.90
Total Allowance Per Car	\$940.40

According to our calculations the above adjustments amount to an ADD of \$442.99 per car and result in a tentative revised price per car of \$19,642.99 F.O.B. our plant, Johnstown, Pennsylvania.

Please note the above price is subject to adjustment for increases in labor and increases in Bethlehem materials since September 12, 1973, changes in price of specialty items from those shown on our September 12, 1973 proposal except as may be modified by the above alternates, and by any additional specification changes and does not include any scrap surcharges. We will advise you in a subsequent letter our best estimate of the additional amount for these changes.

We trust that the above is in accordance with your understanding and that it agrees with your records.

Very truly yours,

BETHLEHEM STEEL CORPORATION

W. T. Anthony  
Manager of Sales *WTA*

LWUhl:djm



EXHIBIT "B"

# Bethlehem Steel Corporation

BETHLEHEM, PA. 18016

J. G. WHITE, JR.  
GENERAL MANAGER OF SALES  
D. S. ARNOT  
J. D. CUMMINGS  
ASST. GEN. MANAGERS OF SALES



RAILROAD PRODUCTS  
W. T. ANTHONY  
MANAGER OF SALES  
R. H. JONES  
F. W. KERN  
S. T. MARCIN  
ASST. MANAGERS OF SALES

December 21, 1973

Mr. F. P. Keane  
American Electric Power  
Service Corporation  
2 Broadway  
New York, New York 10004

Dear Mr. Keane:      Subject: 1500 Triple Hopper Coal Cars

In accordance with our conversation in your office on December 18, 1973, we wish to confirm that it is necessary that we advance the building schedule of the entire 1500 - 100-ton open-top hopper cars covered by your letter orders dated October 17, 1973 and December 4, 1973.

As explained to you, in view of the current and projected heavy upsurge of coal production and coal movement and strong demand on carbuilders for production of coal hopper cars, we have deemed it necessary to make every effort to increase our car-building capabilities to meet this national crisis.

Accordingly, we propose to begin construction of your cars the last week of August 1974 at the rate of 16 cars per working day until the 3rd week of September. At that time, construction will be increased to 32 cars per day. This will result in the initial 1000 cars being completed before the end of October 1974. To facilitate production, we then plan to follow the initial 1000-car lot with the additional 500 cars you have placed with us, completing the entire 1500-car order by the 3rd week of November 1974.

*Bethlehem Steel Corporation*

Mr. F. P. Keane  
American Electric Power  
Service Corporation

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December 21, 1973

We are making similar advances in our schedule regarding all coal hopper cars currently on our books. We trust this earlier delivery is acceptable to you and you will make the necessary financial arrangement to accept these cars as shipped.

Very truly yours,

BETHLEHEM STEEL CORPORATION

*W. Anthony*  
Manager of Sales

WTA:hrm





*Bethlehem Steel Corporation*

American Electric Power  
Service Corporation

- 2 -

September 12, 1973

This proposal is based upon the use in the construction of these cars of steel plates, shapes, bars, sheets, pipe, bolts, rivets, wheels and axles of Bethlehem Steel Corporation manufacture and is subject to the "Terms and Conditions" BSC Com. 1a (Rev. F 4-72) and "Freight Car Escalation" BSC Form 21326 (Rev. B 1-65) hereto attached and made a part hereof.

We appreciate receiving this opportunity to quote on these cars and hope that we can be of service to you.

Very truly yours,

BETHLEHEM STEEL CORPORATION  
E. H. Goodwin, Manager of Sales

By:

CSNorvath:FRS:cad

Attachments

**TERMS AND CONDITIONS OF SALE**

All proposals, negotiations and representations, if any, regarding this transaction and made prior to the date of this quotation or proposal are merged herein.

**PRICES**—All prices, whether herein named or heretofore quoted or proposed, shall be adjusted to the Seller's prices in effect at the time of shipment.

If transportation charges from point of origin of the shipment to a designated point are included in the prices herein named or heretofore quoted—

(a) any changes in transportation charges shall be for the account of the Buyer;

(b) except as otherwise stated in the Seller's quotation, the Seller shall not be responsible for switching, spotting, handling, storage, demurrage or any other transportation or accessorial service, nor for any charges incurred therefor, unless such charges are included in the applicable tariff freight rate from shipping point to the designated point.

**TAXES**—Any taxes which the Seller may be required to pay or collect, under any existing or future law, upon or with respect to the sale, purchase, delivery, storage, processing, use or consumption of any of the material covered hereby, including taxes upon or measured by the receipts from the sale thereof, shall be for the account of the Buyer, who shall promptly pay the amount thereof to the Seller upon demand.

**DELAY**—The Seller shall be excused for any delay in performance due to acts of God, war, riot, embargoes, acts of civil or military authorities, fires, floods, accidents, quarantine restrictions, mill conditions, strikes, differences with workmen, delays in transportation, shortage of cars, fuel, labor or materials, or any circumstance or cause beyond the control of the Seller in the reasonable conduct of its business.

**INSPECTION**—The Buyer may inspect, or provide for inspection, at the place of manufacture. Such inspection shall be so conducted as not to interfere unreasonably with the manufacturer's operations, and consequent approval or rejection shall be made before shipment of the material. Notwithstanding the foregoing, if, upon receipt of such material by the Buyer, the same shall appear not to conform to any contract resulting from this quotation or proposal between the Buyer and the Seller, the Buyer shall immediately notify the Seller of such condition and afford the Seller a reasonable opportunity to inspect the material. No material shall be returned without the Seller's consent.

**EXCLUSION OF WARRANTIES**—THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PURPOSE ARE EXCLUDED FROM ANY CONTRACT RESULTING FROM THIS QUOTATION OR PROPOSAL.

**BUYER'S REMEDIES**—If the material furnished to the Buyer shall fail, whether due to Seller's negligent acts or omissions, or otherwise, to conform to any contract resulting from this proposal or to any express or implied warranty, the Seller shall replace such non-conforming material at the original point of delivery and shall furnish instructions for its disposition. Any transportation charges involved in such disposition shall be for the Seller's account.

The Buyer's exclusive and sole remedy on account or in respect of the furnishing of material that shall fail, whether due to Seller's negligent acts or omissions, or otherwise, to conform to any contract resulting from this proposal or to any express or implied warranty, shall be to secure replacement thereof as aforesaid. The Seller shall not be liable for any special or consequential damages or any labor expended on any such material or for any special, direct, indirect, incidental or consequential damages to anyone by reason of the fact that such material does not conform to any contract resulting from this proposal or to any express or implied warranty.

**PERMISSIBLE VARIATIONS, STANDARDS AND TOLERANCES**—Except in the particulars specified by Buyer and expressly agreed to in writing by Seller, all material shall be produced in accordance with Seller's standard practices. All material, including that produced to meet an exact specification, shall be subject to tolerances and variations consistent with usages of the trade and regular mill practices concerning: dimension, weight, straightness, section, composition and mechanical properties; normal variations in surface, internal conditions and quality; deviations from tolerances and variations consistent with practical testing and inspection methods; and regular mill practices concerning over and under shipments.

**PATENTS**—The Seller shall indemnify the Buyer against any judgment for damages and costs which may be rendered against the Buyer in any suit brought on account of the alleged infringement of any United States patent by any product supplied by the Seller hereunder, unless made in accordance with materials, designs or specifications furnished or designated by the Buyer, in which case the Buyer shall indemnify the Seller against any judgment for damages and costs which may be rendered against the Seller in any suit brought on account of the alleged infringement of any United States patent by such product or by such materials, designs or specifications; provided that prompt written notice be given to the party from whom indemnity is sought of the bringing of the suit and that an opportunity be given such party to settle or defend it as that party may see fit and that every reasonable assistance in settling or defending it shall be rendered. Neither the Seller nor the Buyer shall in any event be liable to the other for special, indirect, incidental or consequential damages arising out of or resulting from infringement of patents.

**CREDIT APPROVAL**—Shipments, deliveries and performance of work shall at all times be subject to the approval of the Seller's Credit Department. The Seller may at any time decline to make any shipment or delivery or perform any work except upon receipt of payment or security or upon terms and conditions satisfactory to such Department.

**TERMS OF PAYMENT**—Subject to the provisions of CREDIT APPROVAL above, terms of payment are as shown in the accompanying quotation and shall be effective from date of invoice. A cash discount shall not be allowed on any transportation charges included in delivered prices.

**COMPLIANCE WITH LAWS**—The Seller intends to comply with all laws applicable to its performance of any contract resulting from this quotation or proposal.

**RENEGOTIATION**—The Seller assumes only such liability with respect to renegotiation of contracts or subcontracts to which it is a party as may be lawfully imposed upon the Seller under the provisions of any Renegotiation Act applicable to any contract resulting from this quotation or proposal.

**NON-WAIVER BY SELLER**—Waiver by the Seller of a breach of any of the terms and conditions of any contract resulting from this quotation or proposal shall not be construed as a waiver of any other breach.

**ACCEPTANCE OF PURCHASE ORDERS**—ANY PURCHASE ORDER PURSUANT TO THE ACCOMPANYING QUOTATION OR PROPOSAL SHALL NOT RESULT IN A CONTRACT UNTIL IT IS ACCEPTED AND ACKNOWLEDGED BY THE SELLER'S GENERAL SALES OFFICE AT BETHLEHEM, PENNSYLVANIA.

**BETHLEHEM STEEL CORPORATION****FREIGHT CAR ESCALATION**

The price per car herein stated is based upon the prices for the component materials and the average hourly employment cost (as hereinafter defined) of all employees in the Car Shop in the Johnstown, Pa. Plant of Bethlehem Steel Corporation applicable to the fabrication and construction of such cars in effect as of September 12, 1973 ; and said price per car is subject to revision as hereinafter provided.

If the price of any component material shall be increased or decreased after September 12, 1973 then, in respect of any such material thereafter furnished or purchased and used for the manufacture of any of said cars, there shall be a corresponding adjustment in the stated price per car.

In the case of such component materials which shall have been or shall be manufactured by Bethlehem Steel Corporation the term "price" as hereinbefore used means the amount at which such material shall have been or shall be charged to the Car Shop of Bethlehem Steel Corporation by another division, department or plant of Bethlehem Steel Corporation, such amount to be the established price base of Bethlehem Steel Corporation f.o.b. the point of production, plus the applicable established extras of Bethlehem Steel Corporation and the cost of transportation from such point of production to said Car Shop.

If the said average hourly employment cost of all employees in said Car Shop shall be increased or decreased, then there shall be a corresponding adjustment in the stated price per car which shall be determined as follows: For each one-tenth cent increase or decrease in the average hourly employment cost of all employees in said Car Shop which shall occur between September 12, 1973 and the date of shipment of any of said cars the stated price for each of such cars shall be increased or decreased, as the case may be,  $\$ 1.177$ .

The average hourly employment cost of all employees in the Car Shop of the Johnstown, Pa. Plant of Bethlehem Steel Corporation, referred to above, reflects the applicable salaries and standard hourly wage rates together with the applicable incentive compensation, cost of living adjustment, shift premium, and employee benefits such as but not limited to vacations, paid holidays, Sunday and holiday premiums, supplemental unemployment benefits, insurance benefits, pensions and others.

Any and all increases or decreases, as the case may be, in such average hourly employment cost shall from time to time and as required be certified to the Buyer by an authorized representative of the Seller and as thus certified shall be conclusive between the Seller and the Buyer.

SPECIALTY ALLOWANCE SHEETS  
TRIPLE HOPPER CARS, 100-TON, FOR AMERICAN ELECTRIC POWER CORPORATION  
BETHLEHEM STEEL CORPORATION PROPOSAL OF SEPTEMBER 12, 1973 - ESTIMATE #18804

<u>Description</u>	<u>Supplier</u>	<u>Allowance Per Car</u>
Air Brakes - Sched. ABD 1012, Cylinder with plain pressure head, socket weld swivel flange fittings, less retainer valve. Includes Straight Angle Cocks and 33" Hose.	Westinghouse Air Brake Co.	\$704.76
Air Brake Retainer Valve #6000-A	Sloan Valve Co.	12.30
ACI Labels - AAR Approved	3M Company	5.35
Body Brake Levers, to consist of: 1 Floating Lever 1 Auxiliary Lever	Schaefer Equipment Co.	15.84
Brake Regulator - Automatic Double Acting	Ellcon-National, Inc.	102.75
End Platforms - 8" x 60", AAR Approved, 2 per car.	Apex Railway Products Co.	13.57
End Caps Prop. Patent, Dwg. 2022 C	Schaefer Equipment Co.	5.00
Corner Castings, Patt. No. CS-629-MOD	Dayton Malleable Iron Co.	114.70
Defect Card Holder, "Cheeper"	Western Rwy. Devices Co.	1.08
Draft Gears - Mark 50, AAR Spec. M-901-E	Cardwell-Westinghouse Co.	396.00
Couplers & Yokes High Tensile Gr. E Steel Swivel or Rotary End 1 Coupler Type "F" Rotary, Patt. S-591-HTE, Dwg. 014653-N 1 Yoke, Patt. 3748-HTE, Dwg. 014894-A 1 Front Follower Dwg. 014958 1 Retainer Key Dwg. 014651-1-D 1 Yoke Head Support 014483-D Fixed End 1 Coupler Type "F" Non-Rotary Patt. S-613-HTE, Dwg. 014856 1 Yoke Y-45A HTE Design 1 Follower Y-46-HTE	American Steel Foundries	707.75
Inside Brace Foot, Forging C-1020 Steel	Schaefer Equip. Co.	25.80
Inside Brace Tubing, 5 x 3 x 3/8 @ 16.84# Sp. A 500 Gr. "B" CBS.	Welded Tube Co.	58.20

SPECIALTY ALLOWANCE SHEETS

TRIPLE HOPPER CARS, 100-TON, FOR AMERICAN ELECTRIC POWER CORPORATION  
BETHLEHEM STEEL CORPORATION PROPOSAL OF SEPTEMBER 12, 1973 - ESTIMATE #18804

<u>Description</u>	<u>Supplier</u>	<u>Allowance</u> <u>Per Car</u>
Draft Sill Castings - Cast Steel, Gr. "C" for use with CSC 13 x 41.2# center sill. Includes Integral Striker, Center Filler and Center Plate. Striker portion arranged for use with Type "F" couplers, complete with carrier castings with a hardened wear plate and springs. "A" end casting arranged for application of rotary couplers. Center plate bowl machined and hardened. ASF Dwg. 015268 Special 5/23/73.	American Steel Foundries	\$818.30
Hand Brakes - AAR Approved, Vertical Wheel, Non-Spin with sheave wheel.	Ellcon-National, Inc.	93.25
Hopper Door Frames, Cast Steel Gr. B, Single Cam Type Locks, and Hinges.	Wine Rwy. App. Div.	552.35
Pipe Rod, 1-3/8" dia. x 2'2-1/4"	Schaefer Equipment Co.	4.20
Pipe Clamps - "wright" / for 1-1/4" pipe	Illinois Railway Equip. Co.	11.55
Bolsters - Cast Steel, Grade "C" in Gr. "B" Sections - for 100 Ton ASF Ride Control 3-11/16" Spring Travel and Stucki HS-6 Supplemental Snubbers, center plate cast integral, bottom rod to pass below bolster, and for separate side bearings. Dead lever fulcrum bracket not required. The price includes vertical wear ring welded continuously and horizontal wear liner in the 16" dia. center plate bowl. Bearing surface of center plate machined to 500 micro in or less. Includes friction pocket wear liners.	American Steel Foundries Finish Center Plate Cont. Weld Wear Ring Horiz. Liner Pocket Wear Liners	636.00 12.30 55.90 26.10 43:00
Bottom Rod Guards "Creco"	Chicago Rwy. Equip. Co.	6.10
Brake Beams, AAR #18, Uni. Type	Chicago Rwy. Equip. Co.	174.00
Brake Beam Wear Plates	Mid-West Forgings Co.	7.86
Brake Shoes, 2" thick High Friction Composition Type H4	Railway Friction Products Co.	34.40
Brake Shoe Keys - "Lockey"	Abex Corporation	2.89

SPECIALTY ALLOWANCE SHEETS  
TRIPLE HOPPER CARS, 100-TON, FOR AMERICAN ELECTRIC POWER CORPORATION  
BETHLEHEM STEEL CORPORATION PROPOSAL OF SEPTEMBER 12, 1973 - ESTIMATE #18804

<u>Description</u>	<u>Supplier</u>	<u>Allowance Per Car</u>
Roller Bearings, Heavy Duty, AP, 6-1/2" x 12" for use with narrow pedestal side frames. Without heat indicators & snap rings. Includes lubricant fittings.	Timken Co.	\$830.16
Roller Bearing Adapters, for 6-1/2" x 12" narrow pedestal side frame.	Dayton Malleable Iron Co.	84.00
Side Frames - Cast Steel, Grade "C" in Gr. "B" Sections - Narrow Pedestal Type, spring plankless, spring plateless, 100 Ton Capacity for 6-1/2" x 12" Roller Bearings. Arranged for Unit Brake Beams and 3-11/16" Spring Travel Snubbers with Stucki HS-6 Supplemental Snubbers. Brake Hanger Brackets not required. Includes bolting and welding wear plates for side beams.	American Steel Foundries	1,009.60
	Welding & Bolting Wear Plates	14.00
Snubbers - ASF Ride Control for 100-Ton Truck with 3-11/16" Spring Travel with bolted and welded wear plates.	American Steel Foundries	82.70
Supplemental Snubbers Type HS-6	A. Stucki Co.	495.20
Truck Levers, 4 pcs. with 8" x 14" hole centers, 1-1/8" dia. holes, Dwg. 2489 Mod.	Schaefer Equipment Co.	25.56
Truck Lever Connections, 3 hole jaw, 3'2" hole centers, 1-1/8" dia. holes Dwg. 1209-B.	Schaefer Equipment Co.	23.90
Truck Side Bearings, Constant Contract	American Steel Foundries	153.34
Truck Springs - 3-11/16" Travel, 100 Ton, for ASF Ride Control Trucks, 24 outer, 32 inner coils.	Colt Industries	153.80
Wheels, 36" Dia., One-Wear, AAR Design W-36, Specification AAR M-107-71, Class "C" with 1-5/8" minimum rim thickness.	Bethlehem Steel Corporation	No Allowance

SPECIALTY ALLOWANCE SHEETS  
TRIPLE HOPPER CARS, 100-TON, FOR AMERICAN ELECTRIC POWER CORPORATION  
BETHLEHEM STEEL CORPORATION PROPOSAL OF SEPTEMBER 12, 1973 - ESTIMATE #18804

<u>Description</u>	<u>Supplier</u>	<u>Allowance Per Car</u>
Axles, AAR Standard 6-1/2" x 12" Roller Bearing, Design D-11-1971, AAR Specification M-101-72 Grade "F".	Bethlehem Steel Corporation	No Allowance
Finish Paint - Direct to Metal, #UC-41730 Black, with 41.3% solids by volume.	Pittsburgh Plate Glass Co.	2.40 gal.
Side Top Chords, 5 x 4-1/2 x 7/16 Section with integral shaker bar, Spec. ASTM A-441, Gr. 50	Inland Steel Co.	298.85

SPECIALTY ALLOWANCE SHEETS

TRIPLE HOPPER CARS, 100-TON, FOR AMERICAN ELECTRIC POWER CORPORATION  
BETHLEHEM STEEL CORPORATION PROPOSAL OF SEPTEMBER 12, 1973 - ESTIMATE #18804

<u>Description</u>	<u>Supplier</u>	<u>Allowance Per Car</u>
Axles, AAR Standard 6-1/2" x 12" Roller Bearing, Design D-11-1971, AAR Specification M-101-72 Grade "F".	Bethlehem Steel Corporation	No Allowance
Finish Paint - Direct to Metal, #UC-41730 Black, with 41.3% solids by volume.	Pittsburgh Plate Glass Co.	2.40 gal.
Side Top Chords, 5 x 4-1/2 x 7/16 Section with integral shaker bar, Spec. ASTM A-441, Gr. 50	Inland Steel Co.	298.85



BETHLEHEM STEEL CORPORATION  
JOHNSTOWN, PA.  
RAILWAY & INDUSTRIAL CARS

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SPECIFICATION 3400-379

1000 - 100 TON TRIPLE HOPPER CARS

FOR

AMERICAN ELECTRIC POWER SERVICE CORPORATION

SERIES:

ARRANGEMENT DRAWING F-67524

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See Strength  
Engineering

SPECIFICATION

FOR

100 TON TRIPLE HOPPER CARS

FOR

AMERICAN ELECTRIC POWER SERVICE CORPORATION

I. GENERAL DESCRIPTION

A. General Dimensions

1. Length:

Over Striking Castings -----	50' - 5-1/2"
Over Pulling Faces of Free Couplers -----	53' - 1"
Over End Sills -----	47' - 9-1/4"
Inside -----	47' - 8-13/16"
Between Truck Centers -----	40' - 6"

2. Width:

Inside -----	9' - 9-1/2"
Over Corner Posts -----	9' - 10-7/16"
Over Side Top Chords -----	10' - 6-5/8"
Over Sill Steps -----	9' - 7-13/16"
Over Side Stakes - Extreme Width -----	10' - 6-11/16"

3. Height:

Rail to Top of Side Top Chords -----	12' - 8-1/2"
Rail to Top of Side Top Chord Integral Shaker Bar - Extreme Height --	12' - 9"
Rail to Bottom of Center Sill -----	2' - 4-3/8"
Rail to Bottom of End Sill -----	3' - 5-5/16"
Rail to Bottom of Side Sill -----	3' - 5-13/16"
Rail to Working Point on Hopper Chute -----	1' - 3-3/4"
Rail to Center Plate Bearing Surface -----	2' - 1-1/16"
Rail to Center of Coupler -----	2' - 10-1/2"
Of Side Assembly Over Integral Shaker Bar -----	9' - 3-3/16"

I. GENERAL DESCRIPTION (CONTINUED)

A. General Dimensions (Cont'd)

4. Trucks:

Track Gauge -----	4' - 8-1/2"
Wheel Base -----	5' - 10"
Side Bearing Centers -----	4' - 2"
Size of Journals -----	6-1/2" x 12"
Center to Center of Journals -----	6' - 7"
Diameter of Wheels -----	36"

5. Capacity:

Nominal -----	200,000 lbs.
Cubic - Level -----	4000 Cu. Ft.
Cubical Including 10" Average Heap -----	4389 Cu. Ft.

6. Weight:

Car Body (Est.) -----	39,900 lbs.
Two Trucks (Est.) -----	20,700 lbs.
Total -----	60,600 lbs.
Gross Rail Load -----	263,000 lbs.

B. General Remarks

The car described in this specification is a 100 ton all steel open top triple hopper car having six transverse doors designed to operate independently of each other.

Cars must be built in the best, most substantial and workmanlike manner according to the true intent and meaning of these specifications notwithstanding that everything required is not particularly mentioned in the specification. With the following exceptions, cars will conform with all AAR requirements.

1. Center plate diameter to be 15-7/8" over wear ring.
2. Center plate height will be 2' - 1-1/16"
3. Rotary Coupler - not AAR standard
4. Brake pipe cock - location at ends of car not AAR standard

Car will be within AAR Plate "B" and conform to all Office of Safety, Department of Transportation, safety requirements.

Design and construction of car will provide structural capability which will permit unloading by means of rotary unloading devices.

I. GENERAL DESCRIPTION (CONTINUED)

B. General Remarks (Cont'd)

Uncoupled cars with springs solid will negotiate a 164' radius curve without truck interference. Uncoupled cars will negotiate a vertical curve of 276' with 75% spring deflection and 2" wheel wear. No deviation from drawings or specifications will be permitted without written consent from the American Electric Power Service Corporation or their representative.

C. Patents and Guarantee

Patents, patent rights, patent protection, claims and liabilities and guarantee to be as covered by contract.

D. Materials

Builder shall furnish all material necessary for the completion of these cars, notwithstanding that same is not herein specifically mentioned.

Materials are to be the best of their kind, free from flaws and thoroughly capable of performing the service required.

Material used in the construction of these cars will meet the following specifications unless noted elsewhere in these specifications.

Plates - ASTM A-113 Grade A. Plates in contact with lading except inside brace to side connection and all side stakes shall be in accordance with ASTM A-242 except cold formed items to be A-242 modified to 40,000 psi min. yield.

Shapes - ASTM A 36.

Bars - AISI M-1012

Grab Irons and Handholds - ASTM A-576 Grade C-1015.

Sheets and Strips - ASTM A 569 or 570, hot rolled quality, commercial grade, .20% min. cu.

Door Hinge Pins - AISI C-1017 or C-1018.

Brake Pipe - ASTM A 53.

Steel for rivets shall conform to ASTM Specification A-502, latest revision, or to ASTM Specification A 242. Since cars will not be painted, rivets on sides and ends whose heads on the outside of the car bear against ASTM A 242 steel are to be ASTM A-242 material.

## I. GENERAL DESCRIPTION (CONTINUED)

### E. Bolts and Nuts

Unless otherwise specified, all bolts and nuts are to be threaded to the coarse thread series in accordance with the Unified Screw Thread Standard Class 2A External and Class 2B Internal Threads for Class 2 Fit of the American Standard for Screw Threads. Bolt heads to be in accordance with American Standard Regular Square unless otherwise noted.

High strength hexagon head steel bolts, ASTM A-449, must be used for securing ride control side bearing, reservoir, cylinder, "ABD" valve, and coupler pin support.

Self-locking cap screws must be used for securing all flanged pipe fittings on reservoir, ABD valve pipe bracket and brake cylinder.

Bolts for end platforms to be carriage head square neck galvanized with galvanized speed lock nut, ends of bolts thoroughly riveted over or chisel checked. Bolts for body side bearings to be #3 high strength plow bolts meeting ASTM Specification A 449.

All bolts to be fitted with lock nuts having full nylon ring inserts unless otherwise noted in these specifications or indicated on drawings. Bolts at brake badge plate, actuator lever, regulator protection plate and door frames to have square nuts. Bolts with regular square nuts are to be riveted over, chisel checked or tack welded to nuts.

### F. Welding

Welding shall be done by the electric metallic arc process.

Electrodes for welding to be of the class and type best suited for the kind of steel to be welded and to meet the necessary requirements for strength and impact.

The edges and surfaces to be joined together shall be accurately cut to size and form and shall be cleaned of all oil, grease, paint, water, scale or rust for a reasonable distance from the welding edge to provide a clean welding surface.

Welding symbols shown on drawings are in accordance with American Welding Society Standards.

All slag or flux remaining on any bead of welding shall be removed before laying down the next successive bead. Any cracks that appear on the surface of the bead of welding shall be removed before depositing the next successive bead of welding. Finished welds to have slag and flux deposits removed.

## I. GENERAL DESCRIPTION (CONTINUED)

### F. Welding (continued)

Welding procedure shall be such that it will meet all phases of inspection covered by AAR Recommended Practice to assure acceptable weld quality.

When using submerged arc welding processes, the welding flux material and electrode material shall be sufficiently controlled to eliminate formation of welding defects in excess of those allowable under AAR Recommended Practice.

Properly controlled low hydrogen welding processes shall be used on all low alloy, high strength steels so as to eliminate hydrogen from the weldment. This applies when welding LAHT steel to LAHT steel or to plain carbon steel.

AAR Recommended Practice shall be followed in grounding work pieces. All journal bearing interfaces of equipment must be protected from arc burn or local severe heating due to welding current by use of additional ground after car is trucked.

All slag or flux to be removed before welding structure is painted.

Where welding is done on the underside of the welding groove, prior to welding second side of the groove, the root of the initial weld must be gouged, chipped or otherwise removed to sound metal before welding is started from the second side to insure complete penetration of the welding applied to the second side.

### G. Riveting

Riveting must be done in a thorough and workmanlike manner in every respect.

Holes must match and have full bearing all around for the rivets. Holes must be reamed where necessary and the use of drift pins to enlarge unmatched holes will not be permitted.

Reaming shall be done after pieces are assembled. Pieces must be firmly bolted together so that they are in close contact.

All parts must be securely and tightly clamped or bolted together before riveting and in no case shall the rivets be depended upon to draw the parts together.

It will be permissible for rivets to be driven cold with rolled mushroom type head on driven side; however, when hot rivets are used they shall be heated uniformly to a light cherry red and driven while hot. All rivets must be free from slag, scale and carbon deposit. When driven, they must

I. GENERAL DESCRIPTION (CONTINUED)

G. Riveting (continued)

be tight and completely fill the holes, and have full concentric heads in contact with the surfaces of the member riveted. Rivet heads of the same size rivets must be of uniform size throughout the work.

Loose, burned or otherwise defective rivets must be replaced. In removing rivets, care must be taken not to injure the adjacent metal.

The eight rivets connecting the separable body center plate to the draft sill casting must be ASTM A-502, Grade 2 high strength or Mayari "R".

H. Castings

Castings entering into the construction of these cars shall meet A.A.R. requirements for cast steel or malleable iron castings. Where required, castings must carry in raised letters and figures the customer's pattern classification.

I. Inspection

These cars will be inspected by representatives of the American Electric Power Service Corporation or their designated agents. Access to the works of the builder for the purpose of inspection is to be granted to the authorized representatives of the customer at any time during the construction of these cars. Such necessary facilities and reasonable assistance required for the purpose of complete inspection and tests are to be furnished by the builder.

Two complete sets of drawings and specifications are to be furnished to the customer's representatives for use during construction of these cars.

J. Workmanship

All material and workmanship must be of the best quality and work accurately fitted to gages and templates to insure thorough interchangeability of parts.

All forgings and pressed steel parts entering into the construction of these cars are to be made in accordance with the drawings, but are to permit slight variations which in no way affect the efficiency of the part or the construction of the car as a whole.

K. Builder shall furnish the American Electric Power Service Corporation four sets of 8" x 11" photographs of the following:

## I. GENERAL DESCRIPTION (CONTINUED)

### K. Photographs (Continued)

1. Trucks
2. Side Elevation of Car - Both Sides
3. Elevation "A" End
4. Elevation "B" End
5. Interior of Car
6. Combination Side & End View "BL" Corner
7. Top View
8. Several stages of construction - body and truck

### L. Lubrication of Truck Center Plate

Each truck center plate is to be thoroughly cleaned and lubricated with a 50-50 mixture by volume of Molybdenum Disulphide Powder suspended in mineral spirits. To be brushed on all contact surfaces of truck center plate bowl to a depth of 1/16".

## II. UNDERFRAME

### A. Center Sill

One per car, consisting of two CSC 13 x 41.2# channel sections of ASTM A 441 steel joined together at toe of upper flange with a continuous weld and welded to cast steel draft sill per AAR Plt. No. 526.

### B. Center Sill Separators

Seven per car, 1/2" plate. Six welded to bottom surface of center sill bottom flange, one at each crossbearer, one at center of car, one near each bolster and one between crossbearer and bolster on "A" end of car. One separator located between crossbearer and bolster on "B" end of car welded to top surface of center sill bottom flange.

### C. Body Bolster

Two per car, built-up welded design. Each bolster to consist of a 3/8" web plate and an 8" x 1/2" top cover plate, both of ASTM A-572 Grade 50 steel. Web plate riveted to sides at stakes through 4" x 3-1/2" x 3/8" clip angles. Clip angles to be welded to web plate. Bolster web plate to be securely welded to bolster reinforcement plate. Top cover plate to be tipped, 30 degrees to suit slope of floor.

### D. Bolster Reinforcement

Two per car, 2 1/4" x 1/2" plate, ASTM A 572 Grade 50, with front edge tapered to 1" x 1" at side sill. To be welded to horizontal flange of side sill and top of draft sill.

## II. UNDERFRAME (CONTINUED)

### E. Bolster Stiffeners

Four per car, triangular shape gusset of 5/16" plate flanged against and welded to intermediate floor sheet, welded and lockbolted at bottom to center sill web and flanged against and riveted to bolster web plate.

### F. Side Bearing Arrangement

Four per car. Each arrangement to consist of a 7/16" tie plate of ASTM A-572 Grade 50 steel riveted and lockbolted to draft sill; a 4" x 5/8" wear plate and 4" wide fillers of proper thickness to obtain required relationship to constant contact side bearing wear plates, to be held in place by two 3/4" diameter high strength plow bolts. Two web plates, 5/16" thick, to extend from side bearing tie plate to underside of the bolster reinforcement plate and from web of draft sill to a 7/16" thick channel shaped strut with a 7/16" thick filler, forming a box section. A 5" x 7/16", steel gusset is to be applied adjacent to each bolt. Webs, strut, strut filler and gusset to be of ASTM A-572 Grade 50 steel. Bolster reinforcement plate to be stiffened on each side of bolster web above side bearing with 5" x 3/8" flats.

### G. Diagonal Brace Assembly

Four per car, each to consist of 5" x 3-1/2" x 3/8" angle welded to corner casting and bolster reinforcement plate.

### H. End Sill

Two per car, 5" x 3-1/2" x 5/16" angle ASTM A-441 applied with 5" leg vertical. End sill is to be welded to top of draft sill and riveted and welded to the corner casting.

### I. Crossbearer

Two per car, W16 x 36#, riveted to sides at stakes through 8-1/2" x 1/2" connection plates. Connection plates to be welded to beam. Crossbearer bottom flange to be welded to crossbearer and center sill gusset. Each side of top flange to be bent 30 degrees to suit slope of floor. Crossbearer beam material specification: C-.12 Max; Mn-.60 max. P-.045 max. S-.05 max.

### J. Crossbearer to Center Sill Gusset

Eight per car, triangular shape gusset of 5/16" plate flanged against and welded to crossridge floor sheet, welded to web of center sill and crossbearer beam.

## III. DRAFT GEAR AND ATTACHMENTS

### A. Draft Sills

Two per car, cast steel, Grade B, 4' - 11-3/4" overhang, having bolster center brace, front and rear draft lugs and striker cast integral. Draft sill to be arranged for type "F" couplers and furnished with coupler carrier

### III. DRAFT GEAR AND ATTACHMENTS (CONTINUED)

#### A. Draft Sills (continued)

castings assembled with retainer plates attached to draft sill with 3/4" diameter lockbolts. Coupler carrier wear plates, AISI C-1095, of the proper thickness to obtain desired coupler height to be furnished and welded to carrier casting by car builder.

#### B. Body Center Plate

Two per car AAR M-201 Grade C with contact bearing surfaces hardened to a brinell of 321 min. to 378 max. 15-7/8" diameter bowl with 1" thick flange, total depth 3-1/4". Vertical side wall of bowl to be machined 90° to the horizontal bearing surface or cast with a 3/4" maximum draft. Top and bottom surfaces finished to 250 micro inches or less over 90% of the bearing area. Applied to draft sill with 8-7/8" diameter ASTM A-502 Grade 2 high strength or Mayari "R" rivets and 4-7/8" diameter lockbolts.

#### C. King Pin

Two per car, 2" diameter by 15" long.

#### D. Draft Gear

Two per car, meeting A.A.R. Specification M-901-E latest revision for 24-5/8" pocket.

#### E. Draft Gear Followers

Followers for ASF rotary and fixed couplers furnished with yoke. Followers for National fixed couplers furnished with yoke. Followers for National rotary couplers to be AISI C-1045 steel heat treated to 241-311 BHN, AAR Catalogue No. Y-44.

#### F. Draft Gear Carrier

Two per car, 8" x 5/8" plate to be offset to suit coupler yoke.

#### G. Draft Gear Safety Plate

Two per car, 8" x 5/8" flat plates attached to flanges of draft sill forward of standard carrier.

#### H. Couplers

Two per car, high tensile cast steel type "F". Coupler on "A" end of car to be for rotary operation. Coupler on "B" end of car to be nonrotary operation. Ten cars to be equipped with a rotary type "F" coupler on both ends of the car. rotary couplers to have "ball" type lockbolts.

#### I. Coupler Yoke

Two per car, high tensile cast steel quenched and tempered suitable for use with couplers described above.

### III. DRAFT GEAR AND ATTACHMENTS (CONTINUED)

#### J. Coupler Release

Non-rotary end of car to have two uncoupling rods so car may be uncoupled from either side.

Rotary end uncoupling rod to be single "bail" type.

Ten cars with rotary couplers on both ends to have double "bail" rods. These cars can be uncoupled from either side of car on both ends.

#### K. Pin and Yoke Support

To be a casting at National rotary end only and a MC10 x 28.5# channel at both the non-rotary and ASF rotary ends. Support channel at non-rotary end to have two 3" x 3/8" fillers and a 8" x 1/4" x 0' - 10" wear plate of AISI C-1095 steel applied. Support for ASF rotary end to have two 3" x 7/8" fillers and a 8" x 1/4" x 0' - 11" wear plate of AISI C-1095 steel applied. Supports to be secured to draft sill casting with 1" diameter high strength bolts.

### IV. SIDES

#### A. Side Sill

Two per car, 5" x 3-1/2" x 5/16" rolled angle extending full length of car to be ASTM A 441 steel.

#### B. Top Chord

Two per car, bulb angle 5" x 4-1/2" x 21.45# with integral shaker bar extending from corner post to corner post to be ASTM A-441 steel. To be attached to side sheets with 3/4" rivets.

#### C. Side Sheets

Six per car, 7/32" plate. Center sheet to extend from bolster post to bolster post having vertical indentures above floor sheets pressed outward between side stakes. Indentations to be 1/2" to 3/4" deep measured from straight edge on inside of side sheet. End sheet to extend from bolster post to corner post.

#### D. Side Stakes

Twenty-six per car, hat shaped pressing of 1/4" steel applied at each bolster, crossbearer and at three locations between each of these. Stakes at bolster must bear against horizontal flange of side sill. All other stakes must bear against web of top chord.

IV. SIDES (CONTINUED)

E. Side Ladder Stile

Four per car, 2-1/2" x 1/2" bar riveted to side sill and end side sheet.

F. Inside Brace

Fabricated design, 4 per car. To be 5" x 3" x 3/8" tubing of ASTM A-500 Grade 50 steel with a 5/8" plate welded to one end and a forged crossridge foot welded to opposite end. To be riveted to side at crossridge stake and to crossbearer beam through floor sheet.

V. ENDS

A. Corner Posts

Four per car, 3-1/2" x 3-1/2" x 1/4" rolled angles.

B. Corner Cap

Four per car, Schaefer drop forged welded to web of side and end top chords.

C. End Post

Four per car, 5" x 3-1/2" x 1/4" angle, with 5" leg pressed to form zee shape section.

D. End Sheet

Two per car, 7/32" plate extending continuously from corner post to corner post.

E. End Top Chord

Two per car, bulb angle 5" x 4-1/2" x 19.1 pound extending continuously from corner post to corner post to be ASTM A-441 steel.

F. End Ladder Stile

Three per car, 2-1/2" x 1/2" bar.  
One per car 3" x 3" x 1/4" angle at "BL" corner also serving as H.E. support.

G. Corner Castings

Four per car, cast steel Grade D with roping staple and uncoupling bracket cast integral.

## VI. FLOORS

### A. End Floor Sheet

Two per car, 1/4" plate flanged and welded to side sheet. Lower edge of plate to weld to bolster top cover plate, upper edge flanged and riveted to end sheet forming an angle of 42 degrees and 12 minutes with the rail. Floor to be stiffened by a 5" x 3-1/2" x 3/8" angle riveted to underside of floor.

### B. Intermediate Floor Sheet

Two per car, 1/4" plate flanged and welded to side sheets. Upper edge welded to bolster top cover plate, lower edge to be offset under hopper chute. Intermediate floor forms an angle of 30 degrees with the rail.

### C. Crossridge Sheet

Two per car, 1/4" plate flanged against and welded to side sheets. To extend between door frames and/or hopper chutes forming an angle of 30 degrees with the rail. Crossridge sheet at hopper chute to be offset to form a lap joint with the chute. Crossridge sheets to weld to hopper frames.

### D. Hopper Chute

Six per car, one piece 1/4" plate riveted to side sheet at side sill and to web of center sill. Datum point to be 1' - 3-3/4" above rail. To lap intermediate floor or crossridge sheet and weld thereto. Hopper chute to weld to hopper door frame.

### E. Longitudinal Hood

Three per car, 1/4" plate extending between crossridges and between crossridge and intermediate floor and to be welded thereto. To be riveted to center sill web.

## VII. DOOR FRAMES AND FIXTURES

### A. Door Frames

Six per car, cast steel having a door opening of 25-1/2" x 35-1/2" with hinge butts cast integral. To be welded to hopper chutes and welded to crossridge sheets. To be suitable for use with Wine single hopper cam locks.

### B. Doors

Six per car, single operating type of 5/16" plate. To be rectangular flanged pen shape.

### C. DOOR HINGES

Twelve per car, cast steel riveted to door.

VII. DOOR FRAMES AND FIXTURES (CONTINUED)

D. Hinge Pins

Twelve per car, 1" diameter head type with 3/16" locktite cotter.

E. Door Locks

Six sets per car, for single operating doors, to be Wine single hopper cam type. Prior to shipment doors to be closed and door locks to be made inoperative by applying a squarehead bolt and nut through the locking pawl.

VIII. SAFETY APPLIANCES

A. Grab Irons - Ladder Irons

To be made of 3/4" diameter stock secured with 5/8" diameter rivets and located in accordance with Department of Transportation requirements. Handholds over 36" in length to be 1" diameter.

B. Ladders

Eight per car, two on each side and two on each end formed by applying ladder rungs between corner posts and the respective stiles.

C. Sill Step

Four per car, made from 1-3/4" x 1/2" bar. Each step to have one additional tread.

D. End Platform

Two per car, one piece perforated plate type 8-1/8" x 62" long supported by four braces.

IX. MISCELLANEOUS

A. Defect Card Holder

One per car attached to bolster web "BL" corner of car by welding.

B. Route Card Board

Two per car, soft wood, route card board bracket to be welded to side sheet at "BR" and "AL" corners of car.

C. Jacking Pads

Not required. Bolster post to bear against bottom flange of side sill forming support for jacking at centerline of bolster.

X. BRAKES

A. Air Brake Equipment

To be Schedule ABD-1012 freight brake equipment consisting of the following parts:

- 1 - ABD Valve
- 1 - 10" x 12" ABU-1 Brake Cylinder
- 1 - Combined Auxiliary and Emergency Reservoir
- 1 - Combined Dirt Collector and Cutout Cock
- 1 - Branch Pipe Special 1" Straight Welded Fitting
- 2 - Straight Cocks 1-1/4"
- 2 - Hoses 1-3/8" x 33"
- 1 - Release Control Retaining Valve

All fittings for the above equipment to be socket welded type.

B. Brake Pipe

All air brake piping to be extra heavy pipe. Trainline to be secured with Wright pipe clamps. Retainer line to be 3/8", branch pipe 1", and 3/4" pipe between AB valve and reservoir and AB valve and cylinder. After bending and before application to air brake equipment, pipe must be thoroughly blown out to remove all scale and other foreign matter. Pipe joint compound to be applied to male threads only. All pipe work when completed is to be tested with soap suds with 110 pounds of air pressure. Trainline joints to be welded except at nipple at straight cock. Straight cocks to be located on "BR" and "AR" corners. Air brake pipe does not cross through the center sill.

Car with rotary coupler on both ends to have straight cocks applied to the "BL" and "AR" corners of car.

C. Straight Cock Support Assembly

Two per car, welded to the underside of the end sill. To be designed to locate straight cock 1' - 6" from center of car, 2' - 10-1/2" above the rail, except "BL" corner of special car which will have straight cock located 1' - 8-1/2" from center of car and 3' - 3-15/16" above the rail.

D. ABD Valve Support

One per car, 3/8" U-shape plate welded to top of draft sill.

E. Cylinder Support

One per car, 1/2" flanged U-shape plate welded to top of bolster reinforcement plate.

X. BRAKES (CONTINUED)

F. Reservoir Supports

Two per car, one at auxiliary end of reservoir to be 3/8" plate riveted to vertical leg of side sill angle and stiffened with a 5/16" gusset. One at emergency end of reservoir to be a 2-1/2" x 1/2" bar riveted to bolster web, welded to bolster reinforcement plate and stiffened with a 3/8" gusset.

G. Release Rod

Two piece design of 1/2" diameter rods with formed eye on end, supported at each diagonal brace with 2" x 1/4" clip.

H. Dead Lever Fulcrum Body

One per car, 3/4" plate welded to bottom flange of center sill.

I. Center Rod Supports

Two per car, 3/8" flat.

J. Brake Lever Supports

Three per car, 3/4" x 3/4" bars except 1" x 1" bar at actuator lever fulcrum, welded to bottom flange of center sill.

K. Brake Badge Plate

One per car, etched stainless steel indicating drilling of levers. To be attached to web of bolster beam at "BL" corner of car with two 1/2" diameter bolts with 1/2" diameter washers and square nuts. Bolts to be chisel checked or nut to be welded to bolts.

L. Brake Regulator

One per car, double acting automatic type located in center rod below center sill. Piston travel to be maintained at 7".

M. Brake Rigging

Actual measured braking force must not be less than 6.5% of the gross rail load and not more than 30% of the lightweight of car. Rods, levers and pins to be designed to withstand 90 psi cylinder pressure without exceeding A.A.R. stress limitations. Total measured hand brake force should not be less than 11 percent of the gross rail load.

N. Push Rod

One per car; 1-3/4" diameter by 2' - 2-1/4" long with single hole jaw.

X. BRAKES (CONTINUED)

O. Brake Pins

Pins to be "Excello" hardened and ground, 1-3/32" diameter except pins at brake regulator 1-7/32" diameter. Pins to be equipped with 5/16" "locktite" A-5 cotters.

P. Retainer Valve Support

One per car, 1/4" angle shaped bracket welded to diagonal brace at "BR" corner of car.

Q. Heat Shield

One per car, formed 1/8" sheet, bolted to four 2" x 3/8" supports welded to web of center sill.

XI. HAND BRAKE

A. Upper Unit

One per car, AAR approved, vertical wheel non-spin type with short release handle, to operate in harmony with the air brake and to produce braking power in accordance with AAR requirements. To be bolted to mounting plate which is riveted and welded between end post and end ladder stile.

B. Sheave Wheel

One per car, to be AAR 8" mean diameter type.

C. Horizontal Hand Brake Chain

One per car, 9/16" BBB Chain

D. Sheave Wheel Bracket

1/2" pressed plate, welded to end sill.

XII. TRUCKS

A. General Description

Trucks to be 100 ton capacity, arranged for 4' - 8-1/2" track gauge, 5' - 10" wheel base, 36" diameter wheels, 3-11/16" spring travel, 6-1/2" x 12" roller bearings with grease fittings. Unit type brake beams, 2' - 1-1/16" center plate height, ASF Ride Control Snubbing and Stucki HS-6 snubbers. ASF constant contact type side bearings located 2' - 1" each side of center of truck.

## XII. TRUCKS (CONTINUED)

### B. Side Frames

Four per car, cast steel, Grade "B" or Grade "C" in Grade "B" sections, narrow pedestal type. Side frame wear plates to be lockbolted and welded to side frames by foundry and to be free of paint and foreign matter.

### C. Bolsters

Two per car, cast steel, Grade "C" in Grade "B" sections. Center plate bowl to be 16" diameter with 1/4" vertical wear ring of type 304 stainless steel or manganese steel and 1/4" manganese drop-in type horizontal wear liner, 1-3/4" rim height above horizontal wear liner. Bolsters arranged for Stucki Hydraulic snubbers.

### D. Snubbers

Eight per car to be ride control with increased column pressure built-in type for 100 ton trucks with 3-11/16" spring travel.

### E. Side Frame Pedestal Jaw Adapters

Eight per car, AAR Spec. M-924-LR. Crown and thrust shoulders to be hardened.

### F. Roller Bearings

Eight per car, 6-1/2" x 12" heavy duty type with grease fittings.

### G. Springs

Each car set to include 24 D5 outer coils, 32 D5 inner coils having 3-11/16" travel as shown on A.A.R. Manual page D-73-1971 and 24 inner coil overload springs 2" O.D. 3/8" diameter wire 9-7/16" free height.

### H. Separable Snubbers

Four per car, to be A. Stucki Company's HS-6 Hydraulic Snubber located in spring basket.

### I. Brake Beams

Four per car, A.A.R. approved #18 Unit type with heads to reject cast iron shoes.

### J. Side Bearings

Four per car, ASP ride control, constant contact type. To be fastened to truck bolster at 4" - 2" centers with high strength 7/8" diameter bolts with heavy full nylon insert lock nuts.

XII. TRUCKS (CONTINUED)

K. Brake Shoes

Eight per car, 2" thick composition.

L. Brake Shoe Keys

Eight per car, spring steel type.

M. Brake Beam Wear Plates

Eight per car, AAR standard unit type D-30-1965.

N. Brake Levers

Four per car, 8" x 14" drilling with brake pin holes 1-1/8" diameter. Levers bent 8-1/2 degrees 4" above center hole.

O. Bottom Rods

Two per car, forged steel three hole jaw type, 38" between centers of inside holes. To pass below bolster.

P. Narrow Pedestal Frame Keys

Eight per car, MF two piece welded design, lockbolted to side frame with the use of flanged collars.

Q. Wheels

Eight per car, AAR standard H-36. AAR Specification M-107 latest revision, Class "C". Minimum rim thickness of 1-5/8".

R. Axles

Four per car, AAR standard with 6-1/2" x 12" journals. AAR design D-11-71 AAR Specification M-101 L.R., Grade "F".

S. Wheel Mounting

Mounting pressure to be in upper half of AAR pressure range. Tolerance of 20% of the days production may be 5 tons under.

T. Bottom Rod Guards

Four per car, single loop type for offset bottom rod.

XIII. PAINTING AND STENCILING

A. Body

### XIII. PAINING AND STENCILING (CONTINUED)

#### A. Body (continued)

##### 1. Laps and Joints

All riveted laps and joints except those which will be welded later to be given a coat of zinc chromate primer.

##### 2. Inaccessible Surfaces

With the exception of the side stakes all surfaces of underframe and body of car inaccessible after assembly to be given a coat of zinc chromate primer before assembly.

##### 3. Cleaning

Exterior of car body, including sides, ends and end floor sheets to be grit blasted to a finish as described in Steel Structures Painting Council Surface Preparation Specification SSPC-SP 6-63 for No. 6 Commercial Blast Cleaning. Balance of exterior of car to be grit blasted to a finish as described in Steel Structures Painting Council Surface Preparation Specification SSPC-SP 7-63 for No. 7 Brush-Off Blast Cleaning.

Air brake equipment, hand brake, couplers, draft gears, slack adjuster and door locks must be thoroughly protected to prevent damage by grit blasting. Trucks must be removed prior to blasting. Car body must be thoroughly blown clean to remove all residual grit prior to replacing trucks.

##### 4. Painting

Exterior of sides, except as noted for stenciling, ends, end floor sheets and portion of car from bolster to end of car are not to be painted. Entire underframe between bolsters including the inside of center sill, side of bolster beam towards center of car, outside surface of slope floor between bolsters, outside surface of hopper chutes, hopper doors, inside surface of sides below floor and underneath surface of horizontal leg of side sill to receive one coat of No. 1 black car cement. End side sheets from bolster stake to corner post and end sheets to be primed and painted yellow on the end of the car that has rotary coupler. Corner posts and end posts are also to be painted yellow from top chord to bottom of end sheet. Stenciling on yellow end to be with black paint, balance of stenciling to be with yellow paint.

##### 5. Weighing and Stenciling

Light weighing and stenciling of cars to be in accordance with Interchange Rule 70.

XIII. PAINING AND STENCILING (CONTINUED)

A. Body (continued)

5. Weighing and Stenciling (continued)

Side panels adjacent to and immediately inboard of the bolster stakes on both ends of both sides of car are to be painted black from side stake to side stake and from side top chord to side sill. The painted panel on the left facing the car will carry the reporting marks, the series numbers, the nominal capacity, the lightweight and load limit. The painted panel on the right will carry the consolidated stencil, one above the other and the ACI label.

6. ACI Labels

To be in accordance with AAR requirements and applied directly to side sheets.

B. Trucks

Trucks are not to be painted except for light coat of paint applied to side frames and bolsters by foundry.

SPECIALTY LIST - BODY

<u>ITEM</u>	<u>MANUFACTURER</u>
ACI Labels	Info Incorporated
Air Brakes and Fittings	750 C/S Westinghouse Air Brake Company 250 C/S New York Air Brake Company
Bolster Center Filler	Integral Part of Draft sill
Brake Badge Plate - Stainless Steel	Roemer Industries, Inc.
Brake Levers (except Cylinder Lever)	Schaefer Equipment Company
Brake Pins	Excello Corporation
Brake Regulator	Ellicon National
Brake Rod Jaws	Schaefer Equipment Company
Car Cement	Car Shop Stock
Center Plate	300 C/S P&L 700 C/S Buckeye
Center Plate Lubricant	Molybdenum Disulphide (Car Shop Stock)
Chain - Hand Brake	Campbell Chain Company
Corner Castings	Union Specialty
Corner Caps	Schaefer Equipment Company
Cotter Pins - Standard	Standard Horse Nail Corporation - Car Shop Stock Gustin-Bacon Manufacturing Company
Coupler Release	Standard Railway Equipment Division Stanray Corporation
Coupler Yokes	700 C/S National Castings Division 300 C/S ASF
Couplers	700 C/S National Castings Division 300 C/S ASF

SPECIALTY LIST - BODY (CONTINUED)

<u>ITEM</u>	<u>MANUFACTURER</u>
Dead Lever Clevis Bracket	Pittsburgh Forgings Company
Defect Card Holder	Western Railway Appliance Company
Door Frames	Wine Railway Appliance - Unitcast Division Midland-Ross Corporation
Door Hinges	Wine Railway Appliance - Unitcast Division Midland-Ross Corporation
Door Locks	Wine Railway Appliance - Unitcast Division Midland-Ross Corporation
Draft Gears - Mark 50	Cardwell - Westinghouse Company
Draft Sills	300 C/S P&L 700 C/S Buckeye Steel Castings
End Platforms	Morton Manufacturing Company
Hand Brakes	600 C/S Ellcon-National, Incorporated 400 C/S Miner
Inside Brace Foot	Schaefer Equipment Company
Lock Bolt Fasteners	Huck Manufacturing Company
Lock Bolt Fasteners	Bethlehem Steel Corporation
Lock Nuts - Full Ring Nylon Inserts	Abbott Screw and Manufacturing Company
Lock Nuts - Galvanized Speed Lock	MacLean Fogg Lock Nut Company
Lumber - Route Card Board	Car Shop Stock
Paint - Stencil - Brown - Yellow - Black	
- Primer - Lap & Joint Primer	
Pipe Clamps - "Wright" Welded Type	Illinois Railway Equipment Company
Pipe Couplings	Penstan Supply Inc.

SPECIALTY LIST - BODY (CONTINUED)

<u>ITEM</u>	<u>MANUFACTURER</u>
Pipe Joint Compound	Car Shop Stock
Push Rods	Schaefer Equipment Company
Side Bearing Wear Plate	Henry Miller.
Striker	Integral with Draft Sill
Structural Tubing	Welded Tube Company
Welding Flux	Car Shop Stock
Welding Rods	Car Shop Stock
Welding Rings	Pittsburgh Gage and Supply Company
Welding Studs	KSM Division - Omark Industries, Inc. (Car Shop Stock)
Yoke Support - Front	700 C/S National Castings Division 300 C/S ASF (fabricated by car builder)
Bulb Angle with Integral Shaker Bar	Inland Steel Company

NOTE: All body material not listed above to be of Bethlehem Steel Corporation's manufacture.

SPECIALTY LIST - TRUCK

<u>ITEM</u>	<u>MANUFACTURER</u>
Bolsters	250 C/S American Steel Foundries 50 C/S Dresser 700 C/S Scullin Steel
Bottom Rod Guards	Chicago Railway Equipment Division Co.
Brake Beam Wear Plates	Unit Truck Corporation
Brake Beams - #18 Unit Type	500 C/S Chicago Railway Equipment 500 C/S Davis Brake Beam
Brake Pins	Excello Corporation
Brake Shoe Keys	Abex Corporation
Brake Shoes	Abex Corporation
Cotters - Locktite	Gustin-Bacon Manufacturing Company
Levers - Truck	Schaefer Equipment Company
Lock Nuts	Abbott Screw and Manufacturing Company
Pedestal Retainer Keys	MacLean Fogg Lock Nut Company
Roller Bearings	The Timken Company
Roller Bearing Adapters	600 C/S Dayton Malleable Iron Company 200 C/S R. H. Little 200 C/S Albion
Side Bearings - ASF Ride Control	American Steel Foundries
Side Frames	250 C/S American Steel Foundries 50 C/S Dresser 700 C/S Scullin
Snubbing - Supplemental - HS-6 Hydraulic	A. Stucki Company
Springs	500 C/S Union Spring Company 200 C/S Henry Miller 200 C/S Crucible 100 C/S Alco
Truck Lever Connection	Schaefer Equipment Company

NOTE: All truck material not listed above to be of Bethlehem Steel Corporation's manufacture.

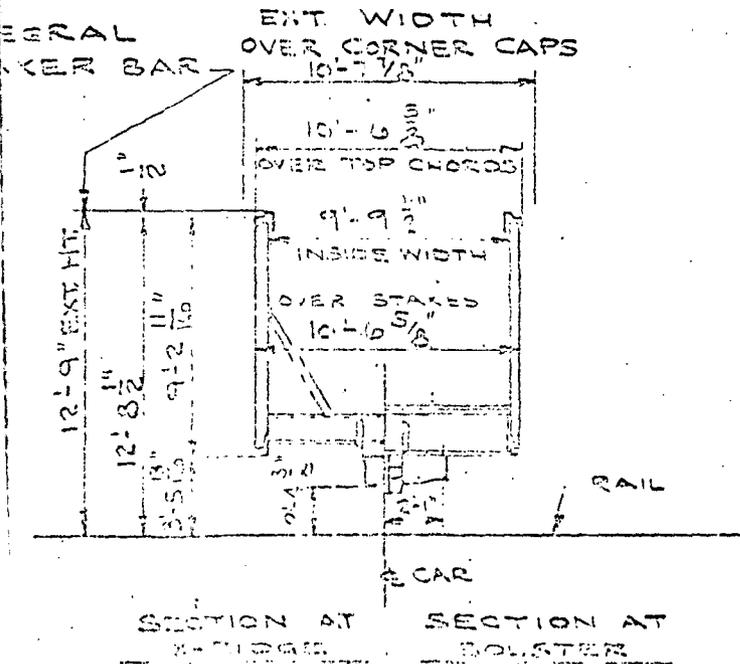
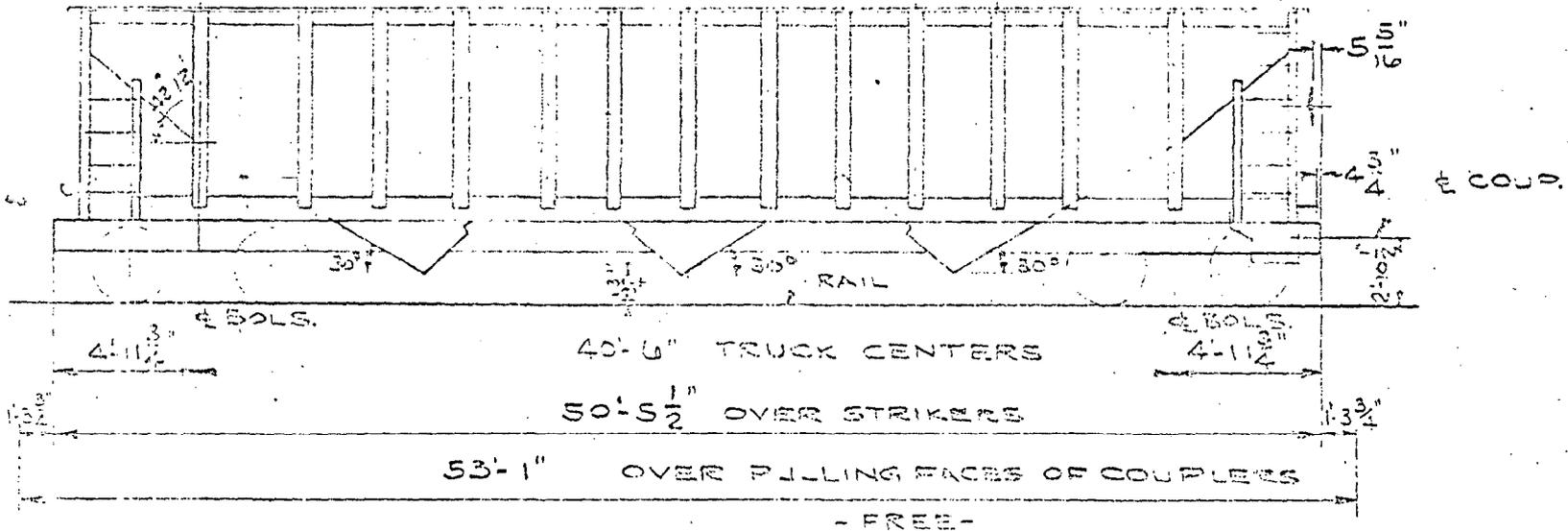
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Lock Nuts	Abbott Screw and Manufacturing Company
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Roller Bearings	The Timken Company
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Side Bearings - ASF Ride Control	American Steel Foundries
Side Frames	250 C/S American Steel Foundries 50 C/S Dresser 700 C/S Scullin
Snubbing - Supplemental - HS-6 Hydraulic	A. Stucki Company
Springs	500 C/S Union Spring Company 200 C/S Henry Miller 200 C/S Crucible 100 C/S Alco
Truck Lever Connection	Schaefer Equipment Company

NOTE: All truck material not listed above to be of Bethlehem Steel Corporation's  
manufacture.

47'-8 $\frac{1}{2}$ " INTERIOR LENGTH

1<sup>st</sup> CAR



CAPACITY

LEVEL ----- 4000 CU. FT.  
10" AVG HEAP --- 4389 CU. FT.

REV "A" 2-8-74 SLOPE OF END FLOOR  
SHT. CHGD. TO AGREE WITH SPEC.

BETHLEHEM STEEL CORPORATION  
HARRISBURG AND INDUSTRIAL PARK  
100 TON TRIPLE HOPPER CAR  
AV. 200 100

TERMS OF PAYMENT

Payment for the Cars shall be made to the office of the Seller at Bethlehem, Pennsylvania, or elsewhere as designated by Seller, upon presentation of an invoice in quadruplicate covering Cars theretofore accepted and delivered. The purchase prices set forth in the contract (such contract, including the Exhibits attached thereto, being herein called "Contract") to which this document entitled "Terms of Payment" is attached are subject to adjustment as provided for in the Contract or as may otherwise be agreed to by Seller and Purchaser and in any event shall be adjusted to Seller's prices in effect at the time of shipment. The term "Purchase Price" as used herein shall mean such purchase prices as so adjusted and shall include freight charges, if any, prepaid by the Seller from Johnstown, Pennsylvania to Youngstown, Ohio. Cars will be invoiced in groups of 100 Cars, and the amount set forth in each invoice presented shall be due and payable twenty (20) days after the date of such invoice. Invoices or credit memoranda covering any adjustments provided for in the Contract may, at the Seller's election, be presented currently or upon completion of the work and shall be payable twenty (20) days after the date of such invoice or credit memoranda.

If the Purchase Price for a Car is not paid when due, the Purchaser agrees to pay to Seller interest on such Purchase Price at the annual rate of 2% above the Prime Rate (as hereinafter defined) from such twentieth (20th) day after the date of the invoice covering such Car to and including the day payment of such Purchase Price is made to Seller. Interest calculations hereunder shall be made on a daily basis with respect

rate per annum equal to the rate which Manufacturers Hanover Trust Company, New York, New York would charge for 90 day loans to borrowers of the highest credit standing for the period such interest is payable.

In the event that Purchaser fails to pay the Purchase Price of a Car within twenty (20) days after the date of the invoice covering such Car, the Seller may take such actions and exercise such remedies as it may deem appropriate to enforce Seller's obligation to pay such Purchase Price and interest thereon, if any, or to recover full possession of such Car or as may otherwise be permitted by law and may refuse to construct, sell and deliver to the Buyer any other Cars covered by the Contract; provided, however, that the taking of such actions or the exercising of such remedies shall not relieve the Purchaser of its obligations to make payment to the Seller of any amount herein specified.

The Seller shall and hereby does retain a security interest in each Car until the Seller shall have been paid the Purchase Price in respect of such Car pursuant to the Contract, notwithstanding the delivery of the Car to and the possession and use thereof by the Purchaser. Upon payment of the Purchase Price with respect to a Car, including interest, if any, thereon, Seller, if requested so to do, will deliver a bill of sale transferring all right, title and interest of the Seller in and to the Cars covered thereby to the Purchaser or, in case of prior assignment as hereinafter provided, to the assignee or the trustee under any equipment trust agreement or conditional sale agreement, which bill of sale will warrant that title to the Car at the time of delivery thereof to the Purchaser was free of all

claims, liens, security interests and encumbrances of any nature of, or arising from, through or under, the Seller except as created by the Contract.

In the event the Purchaser desires to finance the acquisition of the Cars through the medium of an equipment trust, conditional sale agreement, or otherwise, the Purchaser, as an incident thereto, may assign its interest in the Contract; provided, however, that such assignment and any document requiring execution by Seller shall be submitted for Seller's prior approval, which approval shall not be unreasonably withheld, and shall not affect or modify the terms of payment hereinabove specified, nor release the Purchaser from its obligation to purchase and pay for the Cars in the event that the assignee shall fail to pay for the Cars in accordance with the terms hereof.

All payments to be made or caused to be made by the Purchaser hereunder will be free of expense to the Seller with respect to the amount of any local, state or federal taxes (other than net income taxes, gross receipts taxes [except gross receipts taxes in the nature of or in lieu of sales taxes], franchises taxes measured by net income based on such receipts, excess profit taxes and similar taxes), assessments, license fees, charges, fines and penalties, all of which the Purchaser, as the case may be, assumes and agrees to pay on demand in addition to the Purchase Price, including interest thereon, if any, of the Cars.

In case any change or modification is made by the Seller in the specifications for the Cars increasing or decreasing the cost thereof or of any of them, the Seller will make a proper deduction from the Purchase Price for any such decrease and the

Purchaser will pay for any such increase, and in case any change or modification is made in the specifications as heretofore agreed upon, a proper allowance for delay in delivery occasioned by such change will be made.