

INTER-OFFICE MEMORANDUM

TO : See Distribution
BY :

DATE : September 12, 1967

FROM : G. A. Fincand

CC: RLS TO

AT : *G. A. Fincand*
Hickelstein Construction

FOR INFO : 100

SUBJECT : Kaiser Engineers' Weekly Field Activity Report



Transmitted herewith is the subject report for the week ending September 12, 1967.

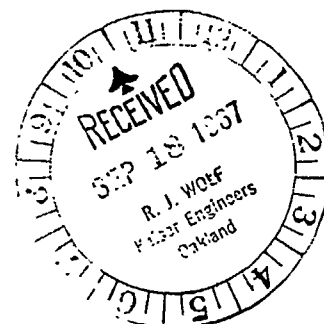
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KEN 003951

KAISER ENGINEERS
WEEKLY FIELD ACTIVITY REPORT
Week Ending September 12, 1967

WEATHER: Clear and cool
throughout the
period.

Client: Armco Steel Corporation

Location: Middletown, Ohio

Job Number: 6471

TEMPERATURE: Maximum - 85 degrees

Minimum - 44 degrees

JOB VISITORS

B. Prochazka, N. W. Schuchman, I. D. Thunder, P. Zorena
R. J. Wolf, J. Robinson, Bill Frank, O. H. Hanson

SUMMARY FORCE REPORT

	<u>Kaiser Engineers</u>		<u>Subcontractors</u>	<u>Foothill Electric</u>	<u>Total</u>
	<u>Exempt</u>	<u>Non-Exempt</u>			
Management	5	3		1	9
General Supervision	18	3	22	6	49
Field Engineering	47	28	11	12	98
Warehs. & Mtl. Control	3	9		2	14
Survey	2	23	4		29
Office Srv. & Repro.		9			9
Clerical			16	21	37
Craft *	—	<u>1,851</u>	<u>1,179</u>	<u>625</u>	<u>3,655</u>
TOTAL	75	1,926	1,232	667	3,900

* Average for week of men on payroll.

Average for week of Crafts is as follows:

Kaiser Engineers	1,697
Subcontractors	1,129
Foothill Electric	<u>575</u>

Total Crafts Working 3,401

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PROJECT PROGRESS

1. 7148 - HOT STRIP MILL

- 1.1 Excavation and Backfill: 6,889 cubic yards of backfill was completed during the period for a total to date of 887,384 cubic yards.
- 1.2 Concrete: 325 cubic yards of concrete was placed for a total to date of 209,139 cubic yards. The major concrete pour this period was the slab-on-grade between the steam trench and the slab reject car near column line 1.
- 1.3 Structural and Miscellaneous Steel: At the Clarifier Building, the miscellaneous steel platforms and walkways are now complete. Remaining work consists mainly of outside ladders and monorails. Miscellaneous ironwork in the Hot Strip Mill was continued during the period in all areas. Progress was continued at roughers #4, 5 and 6 on floor plates and pipe covers in the flume area. 8" handrail work is now near completion at the extractor side of the furnaces. The dry scale removal plates, rails and walkways at the furnace charging side and extractor side was continued during the period. This work is now 75% complete. Rails and rail stops for the transfer cars in the slab yard are now 80% complete. Assembly of transfer cars is now in progress. Progress was also maintained on stairway entrances in the main mill aisle of the Hot Strip Mill. Installation of lay down blooms are complete and the lay down slabs in the main mill aisle are now 85% complete. Progress continued on grating installation at the charging end of furnace #1 and in the downcoiler area. Floor plate and handrail installation for the coil conveyor facility was also in progress during the period. An estimated 500 tons of miscellaneous steel and hatch covers remain to be installed in the Hot Strip Mill.
- 1.4 Roofing and Siding: 600 square feet of Stealox siding was installed during the period at the X-ray house facility for a total Hot Strip Mill quantity of 653,693 square feet.
- 1.5 Heating and Ventilating: Progress was continued during the period on bag house installation at the Hot Strip Mill. Bag house units #8, 9 and 3 are now complete. At bag houses #4, 5 and 15, the main work remaining consists of electrical lighting and power wiring. The electrical work at these three bag houses is now 30% complete. At bag house #1, the electrical work is 80% complete. Bag houses #2, 6 and 7 are now 75% complete. Remaining activities consist of electrical power wiring, lighting, intake duct work, fan guards, clean-up and painting. The remaining five bag houses are now 70% complete. During the period, fan plenum installation was continued at bag houses #11, 12 and 13. At the Clarification Plant, no progress was recorded on heating and ventilating systems; however, the work areas are being made available for progress to continue on the completion of these

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units next period. At the finishing mill director, R2 director, and extractor director room, the diffusers are now being installed. This installation will complete these three units. At the downcoiler director room, remaining air conditioning consists of setting the condensing unit with piping and electrician installation to follow. At the downcoiler conveyor director room, duct work is scheduled to proceed next period. During the period, progress continued on installation of heating and ventilating ducts at the slab yard scheduling office. At the boiler house control room and the instrument repair house, diffusers were installed for completion of these air conditioning units.

- 1.6 Mechanical: Eichleay continued with a full work force in all areas of the Hot Strip Mill during the period. In the furnace area, erection of furnace pusher #2 drives, charging table #12, table #11, and furnace pusher #3 were in progress during the period. In the rougher area, progress consisted mainly of installation of vertical scalebreaker side guides and edger adjustments, installation of roughers #1, 2 and 3 spindles and carriers. In the finisher area, progress was continued on the looper drive shafts, air gap adjustments for the main mill drive motors and main drive torque tubes. At the downcoiler and coil conveyor facility, progress continued on installation of the #3 pinch roll machine, installation of hot runcut table motors, installation of auxiliary drives and motors and coil conveyors #7, 8, 9 and 10. At Scale Pit #3, erection of the scale removal system continued during the period. The structural framing at the north end of the scale pit was 60% complete at the close of this period. Eichleay Corporation worked Saturday, September 9, on mechanical items in the rougher and finisher areas of the Hot Strip Mill.

The following uncoupled tests were accomplished during the period: the finishing mill #2 and 3 turntables, vertical scalebreaker edger housing adjustments and vertical scalebreaker centering side guides. Uncoupled tests for the vertical scalebreaker are now completed. Uncoupled tests were started at the furnace approach table #8 during the period. Coupled tests were completed for delay tables #1, 2 and 3 north of rougher #6. Coupled tests were initiated at the vertical scalebreaker on the main drive with rolls in place. Westinghouse initiated area sequence tests at rougher #6. Auto-roll sequence tests were started at rougher #5. Completion of lube oil #4 is presently affecting the testing schedule for the furnace pusher area. A test run was completed at the #2 roll grinder facility in the Roll Shop and one roll was successfully ground. This grinder is now essentially complete except for punch list items and Armco take-over.

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- 1.7 Piping: During the period, 8,844 linear feet of piping was installed for a total to date of 248,118 linear feet. The remaining quantity to complete is 103,631 linear feet. Major piping systems worked on during the period were: grease, hydraulic system 18, hydraulic system 17, hydraulic system 15, mill cooling water, furnace cooling water, clarified water sample system, plant air, chemical system, heating - ventilating and instrumentation piping. The Sier-Bath pump for lube oil #4 was returned from the factory after rework during the period. This completes all rework for the Sier-Bath pumps. Hydro testing was completed on hydraulic system 12 and pickling of this system is now in progress. Repickling and flushing was complete for lube oil #4 during the period and permanent oil will be installed in the tank on September 14th. Morgoil #1 is scheduled for repickling next period. Delta Pipe Line Contractors maintained good progress on service piping in the Hot Strip Mill during the period. A total of 2,468 linear feet of service piping was installed during the period for a total to date of 14,102 linear feet. This contract is now 30% complete.
- 1.8 Electrical: Foothill Electric Corporation installed 18,000 lbs. of exposed conduit during the period for a total to date of 1,198,000 lbs. or 98% complete. 211 lbs. of embedded conduit was installed for a total to date of 1,493,000 lbs. or 98% complete. 2,400 feet of 2.4 KV cable was installed for a total to date of 31,000 feet or 71% complete. 43,000 feet of low voltage cable was installed for a total to date of 1,250,000 feet or 85% complete. 700 low voltage terminations were accomplished for a total to date of 25,800 or 85% complete. 21,000 feet of control cable was installed for a total to date of 1,534,000 feet or 89% complete. 1,300 control cable terminations were accomplished for a total to date of 36,400 or 63% complete. 12,000 feet of computer cable was installed for a total to date of 506,000 feet or 62% complete. 700 computer cable terminations were accomplished for a total to date of 12,400 or 41% complete. 4,000 lbs. of lighting conduit and 7,000 feet of lighting wire was installed during the period. 133 lbs. of structural grounding was installed for a total to date of 128,000 lbs. or 96% complete.
- 1.9 Miscellaneous Subcontracts: At the Clarifier facility, Bay Construction Company completed installation of the Walker Processing equipment, however, they are scheduled to return to the job site on September 18 for final check out of their equipment.

Bilbrey Masonry Contractory erected block work for the recorder room at column 61 and 62 along E-line. His remaining work will consist mainly of punch list items.

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Moeschl-Edwards continued with installation of vent doors at the pump house. All doors are now at the job site for the pump house facility. During the period, field measurements were completed for twenty openings along E-line of the Hot Strip Mill for door fabrication. Seven more openings are remaining to be framed and measured for door fabrication.

During the period, Myron Cornish Company continued with accoustical ceiling installation in the boiler house control room, the instrument repair room and director rooms along E-line.

The Owens-Corning Fiberglas Company insulated 204 feet of 165 lb. steam line during the period. Approximately 12,000 feet of 165 lb. steam lines have been insulated to date. Insulation of the deaerator and storage tanks is now 90% complete. Insulation of the condensate tanks at Elevation 154 remains at 70% complete.

Salem-Brosius maintained good progress on the three reheat slab furnaces during the period. At #1 furnace, refractory work was continued on the lining of the waste gas stack which will complete next period. Gas refractories were installed in the unit #1 dampers during the period and up-take refractory installation was initiated this period. Progress continued on the check out of furnace pipelines at unit #1 and revamping of water supply piping to furnace #3. Wire pulling and termination work was continued at furnace #1 throughout the period. Furnace #1 is now 91.6% complete and the overall furnace contract completion is 79% complete.

Babcock and Wilcox maintained progress during the period on installation of ventilating ducts, combustion air ducts and lagging for unit #1. Work was also continued on unit #2 induced draft fan, bearing and rotor installation, #3 inlet air duct and hot gas duct installation and installation of refractory lining in the #2 combustion air transition. This subcontract is now 65% complete.

The Mo Piping (Contractor for the Waste Heat Boiler 2 $\frac{1}{2}$ " and over piping) is now 86% complete. During the period, progress consisted mainly of pipe installation as follows: 12" treated water piping, 12" boiler feed piping, 6" fuel oil headers, drain lines, steam piping to #3 boiler drum and steam piping to the F.D. and I.D. fan turbines. Piping changes are still being made by Dravo design in this area.

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Norm Woolley (Contractor for the Waste Heat Boiler 2" and under piping) is now 33% complete. This contractor is continuing to have difficulty in increasing his piping forces. During the period, progress was recorded on atomizing steam piping to the #1 boiler burners, condensate piping between the condensate pumps and the desuperheaters, trim piping at the forced draft fan turbines for unit #1 and the 2" fuel oil return line below Elevation 154.

Minneapolis-Honeywell (Instrumentation Contractor for the Waste Heat Boiler Area) is now 22% complete. During the period, installation of instrument piping was continued at #1 boiler between Elevation 173 and 192. 1/2" stainless steel tubing was installed between the master control panel and the steam drums for units #1 and 2.

2. 7146 - SLAB MILL

2.1 Excavation and Backfill: 5,369 cubic yards of backfill was completed during the period for a total to date of 167,410 cubic yards.

2.2 Concrete: 802 cubic yards of concrete was placed for a total to date of 42,864 cubic yards. Major concrete pours during the period were: the perimeter walls for the Scale Pit #4, third lift, crop conveyor north wall, first lift, scarfer flume slab between E-line and Scale Pit #4, the wall along E-line between column 9 and 10 and the mill office building foundation.

2.3 Structural and Miscellaneous Steel: Bag house support steel was completed for all five bag houses during the period. Side wall panels and hopper installation was initiated on bag house #1. Cover plates over the crop conveyor to E-line was started.

2.6 Mechanical: During the period, Eichleay Corporation installed landing tables for transfer car #1 and continued with progress on the slab shear motor generator in the mill aisle. Progress was maintained on the mill approach table #3 motor bases, mill runout table #10 motor bases, scarfer runout table #13, piler #1, scarfer approach table #11, the vertical mill bed plates and the horizontal mill separators. Eichleay is maintaining a work force of 40 men on mechanical installation in this area.

2.7 Piping: Hunter (Piping Contractor for the Slab Mill Piping) during the period continued with installation of equipment setting and piping in the slab mill oil cellar and in the slab mill main aisle. Hunter's work force is now 60 men on the job site with half the crews working in the main mill aisle and the other half in the oil cellar. During the period, progress was continued on lube oil systems #3, 6 and 7 along the west wall of the basement. Mill water piping was also continued in the basement. In the main mill aisle, progress was continued on plant air piping, natural gas piping, oxygen and grease header piping.

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- 2.8 Electrical: 8,000 lbs. of embedded conduit was installed during the period for a total to date of 577,000 lbs. or 90% complete. 300 feet of cable tray was installed for a total to date of 11,000 feet or 79% complete.
3. 7143 - SOAKING PITS
- 3.1 Excavation and Backfill: 28 cubic yards of backfill was accomplished for a total to date of 111,018 cubic yards.
- 3.2 Concrete: 291 cubic yards of concrete was placed for a total to date of 26,388 cubic yards. Major concrete pours during the period were: charging track slabs, loading dock walls Y to Z-line at column 2.5, the Y-line trench wall between stack #4 and 5 and the drive house cable trench walls.
- 3.3 Structural and Miscellaneous Steel: 25 tons of structural steel was erected during the period for a total to date of 4,014 tons. Ohio Valley expects to complete structural steel erection at the east end of the mill this week. Erection of the east ingot buggy drive house was initiated during the period.
- 3.4 Roofing and Siding: 4,300 square feet of Stealox siding was installed for a total to date of 87,268 square feet.
- 3.6 Mechanical: Loftus Engineering during the period completed the refractory lining for the six soaking pit stacks. The refractory installation for arches and collecting flues for battery #6 is complete and 85% complete on battery #5. The steel plate installation for battery #5 pits is essentially complete. Loftus also maintained good progress on pipe installation at battery #5 and 6 during the period. The 16" coke oven gas and 12" natural gas manifolds have been installed. The burner gas piping at battery #6 and battery #5 is near completion. Liner plate installation was initiated in battery #4 and battery #5 and 6 recuperators are now being set in place. Progress was generally good in this area during the period.
4. 7128 - BASIC OXYGEN SHOP
- 4.1 Excavation and Backfill: 4,503 cubic yards of excavation was completed for a total to date of 167,578 cubic yards. 24,514 cubic yards of backfill was completed for a total to date of 165,547 cubic yards. Period excavation consisted mainly of the N2 sphere footings and backfill progress for the period was accomplished along G and H lines and at the hot metal reladling pit.
- 4.2 Concrete: 920 cubic yards of concrete was placed for a total to date of 15,294 cubic yards. Major concrete work during the period consisted of the bay slab for the ladle reline pit, 8 footings along D-line and E-line, 14 piers along E, F and G column line and the reladle walkway slab.

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- 4.3 Structural and Miscellaneous Steel: 38 tons of structural steel was erected in the Mold Yard for a total to date of 1,901 tons. Roof trusses for this building are now complete between column 24 and column 2. Erection of girts and purlins are complete between column 24 and column 18 and bolt-up has been completed on the structural steel between column 24 and column 7. This building will be ready for roofing and siding by next period. Seven car loads of structural steel arrived at the job site for the main B.O.F. Building.
5. 7145 - STRIPPER BUILDING
- 5.3 Structural and Miscellaneous Steel: 118 tons of structural steel was erected for a total to date of 615 tons. 8 of the 13 roof trusses for this building were erected during the period and is expected to complete next period.
6. 7150, 7156 and 7159 - PICKLE AREA
- 6.1 Excavation and Backfill: Backfill work was continued in the Green Coil Storage facility in both aisles. Grading and compaction was in progress and this area is almost up to grade.
- 6.2 Concrete: 526 cubic yards of concrete was placed at the Pickle Line facility during the period for a total to date of 5,647 cubic yards. 22 cubic yards of concrete was placed at the Pickle Coil Storage for a total to date of 2,493 cubic yards. 114 cubic yards of concrete was placed in the Green Coil Storage for a total to date of 5,587 cubic yards. Major concrete pours during the period consisted of entry motor room slab between column 20 and 23 in the pickle facility, the maintenance aisle slab and electrical underground duct encasement at the Green Coil Storage facility.
- 6.3 Structural and Miscellaneous Steel: During the period, structural bolt-up and completion of girts and purlins were continued and portions of the building has been released for roofing and siding.
- 6.4 Roofing and Siding: 1,600 square feet of siding was installed at the Pickle Building for a total to date of 96,364 square feet. 15,000 square feet of roofing was installed for a total to date of 66,752 square feet. In the Green Coil Storage, 13,680 square feet of roofing was installed for a total to date of 13,680 square feet.

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- 6.8 Electrical: At the Green Coil Storage facility, the embedded conduit installation along A-line coil conveyor is now 95% complete. Underground conduit work at the control room and at manhole #104 is now 95% complete and backfill is in progress. Progress was continued during the period on the underground conduit bank connecting the Green Coil Storage control room to the Hot Strip Mill at column 65. Installation of crane collector rails has been completed in the Green Coil Storage Building except for additional holes being added to the rail splices. In the Pickle Line Building, work was continued during the period on installation of conduit brackets for lighting feeders.

7. UTILITIES

7105 - Water - Work Order by McGraw - Water Treatment Plant: The Water Treatment Plant is now complete and ready for full operation. During the period, the warm process system was checked out and final balancing of the system is near completion. Minor punch list items are being completed and a formal acceptance by Armco is now being scheduled. At the River Pump Station, the factory representative for the Delaval pump was at the job site and checked out the pump operations. This pump is now on stream. The gland seal cooling water filter is not functioning correctly and the factory representative has been notified of this filter condition and will check out the filter by next period.

7109 - Pipeline: 238 cubic yards of backfill was completed during the period. During the period, progress was continued by Delta Pipeline on installation of gas reducing and metering station piping and equipment at Yankee Road. Modifications to the valve station at Jefferson Road was also accomplished during the period.

7110 - Power Distribution: During the period, R. H. Bouligny, Inc. completed installation of manhole #2 for the 13.8 KV underground power line to the Basic Oxygen facility. Progress was continued on the first section of underground electrical duct work to manhole #3. Foundation excavation for tower #14 was completed during the period and the leveling pad was poured. Seven of the eight towers for this power line are now erected. At the cold finishing substation, the ground mat has been completed and the subgrade is being backfilled up to Elevation 107. Two of the three towers leading to the Mold Preparation Building are now erected. Progress was continued on the third tower (tower #22) during the period. Progress was also continued on the underground duct run to the Stripper Building rectifier station.

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7111 - Sanitary Sewers: 560 cubic yards of backfill was completed during the period for a total to date of 49,862 cubic yards. Delta Pipeline continued with installation of manhole covers and concrete tops have been placed for the E and F manholes from #570 through #578 in the Steelmaking Area. Forming for concrete placing has been completed at manholes #557 through #560, #553 and #554 in the south area.

7112 - Drainage and Site Development: 35,795 cubic yards of excavation was accomplished during the period for a total to date of 548,938 cubic yards. 15,861 cubic yards of backfill was made for a total to date of 838,179 cubic yards. During the period, Delta Pipeline Contractors initiated excavation for storm sewer piping at the southwest corner of the Basic Oxygen furnace area.

7113 - Trackwork: During the period, DHS Corporation laid 723 feet of track and one turnout along the east side of the Hot Strip Mill near Scale Pit #3. 1,056 feet of track was laid north of the Mold Yard. Ballast was placed at the west end of the Stripper Building during the period. Estimated trackwork at completion is now 171,700 feet. To date 78,720 feet has been installed.

7114 - Locker Rooms: David L. Smith Construction Company continued with progress of the south area locker room during the period. Preparations for floor slab and underground drainage installation was continued during the period. Miscellaneous steel erection associated with the locker room structural was also in progress throughout the period. At the Steelmaking Area, erection of the structural framing for the locker has been completed and the contractor is now waiting on delivery of miscellaneous steel. Granular backfill in preparation for the floor slab was initiated during the period. Fabrication of the columns for the locker room building was discovered to be in error by 1 foot too long. Metal Products is taking action in correcting this condition and project engineering is in the process of revising drawings to show necessary changes resulting from this error.

7186 - Lagoon: 14,779 cubic yards of excavation was accomplished during the period for a total to date of 77,208 cubic yards. 19,757 cubic yards of backfill was completed for a total to date of 64,334 cubic yards.

Prepared by:

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Approved by:

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