

INTER-OFFICE MEMORANDUM



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March 19, 1968

FROM

O. A. Finsand

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O.A. Finsand
Middletown Construction

JOB NO.

7100

SUBJECT Kaiser Engineers Weekly Field Activity Report

Transmitted herewith is the subject report for the week ending March 19, 1968.

OAF/sec

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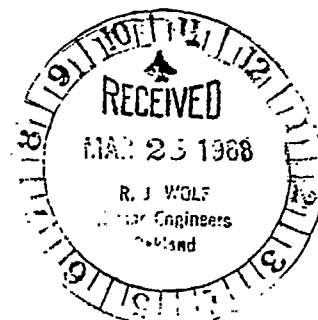
Armco

D. C. Osborne
C. G. Kramer
F. W. Barnes
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J. S. Lotz
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R. J. Wolf (Oakland)
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KEN 004407

KAISER ENGINEERS

WEEKLY FIELD ACTIVITY REPORT Week ending March 19, 1968

WEATHER: Fair weather throughout
most of the period with
sleet on March 13th.

CLIENT: Armco Steel Corporation

LOCATION: Middletown, Ohio

JOB NUMBER: 6471

TEMPERATURE: Maximum - 75 degrees
Minimum - 11 degrees

JOB VISITORS

none

SUMMARY FORCE REPORT

	Kaiser Engineers		<u>Subcontractors</u>	<u>Foothill Electric</u>	<u>Total</u>
	<u>Exempt</u>	<u>Non-Exempt</u>			
Management	4	4		1	9
General Supervision	18	2	18	5	43
Field Engineering	42	15	11	14	82
Warehs. & Mtl. Control	3	7		1	11
Survey	1	14	3		18
Office Srv. & Repro.	1	5			6
Clerical			14	16	30
Craft *	—	<u>804</u>	<u>958</u>	<u>620</u>	<u>2,382</u>
TOTAL	69	851	1,004	657	2,581

* Average for week of men on payroll.

Average for week of Crafts is as follows:

Kaiser Engineers	742
Subcontractors	908
Foothill Electric	<u>564</u>
Total Crafts Working	2,214

KEN 004408

WEEKLY FIELD ACTIVITIES REPORT
Week Ending March 19, 1968

GENERAL COMMENTS

The overall electrical manpower employed by Foothill Electric averaged 625 men for the month of February, dropped off abruptly to 560 men on the first of March and this latter number has been the average up to this date. We did not have the required number of men during February or thus far in March. We have averaged approximately 245 men in the Slab Mill for the past two weeks. Prior to that we had considerably less. It appears now that we are within 15 or 20 men of our Slab Mill needs. The problem in the Skaking Pits has been solved and as of this report we have approximately 40 men employed there. We are expecting more men from Canada next week.

Although I feel that we are much better organized in the Slab Mill now with testing engineers and supervision as well as personnel required for the electrical construction activities, there is no indication that we can improve the Slab Mill completion date. As a matter of fact, we have had some slippages in our current testing program and the situation is being analyzed in detail at this time to determine if we can reasonably expect to make up the lost time.

Except for a brief period of clear weather from March 13 through March 19, outside work has suffered because of rains and at the date of this report we are experiencing an unseasonable snow storm with some 4 inches of snow falling and the snow has not stopped yet. The most critical area of work affected by inclement weather is of course the Basic Oxygen Plant where very little siding and roofing has been placed. Roadwork and paving will be out of the question for sometime now.

rm/GLR

KEN 004409

WEEKLY FIELD ACTIVITY REPORT
Week Ending March 19, 1968

PROJECT PROGRESS

1. 7148 - HOT STRIP MILL

- 1.3 Structural and Miscellaneous Steel: An average work force of twenty-four ironworkers was maintained in the hot strip mill during the period. In the furnace area, progress continued on the installation of the maintenance walkway at the 193 foot elevation for the 16 inch steamline. Progress was also continued on the installation of the scale shield under the extractors and various safety handrails at the skip hoist and dry scale reject car. In the finisher area, the roll rig cover plates were installed, the water shield in the flume at column 46 and all maintenance platforms in this area have now been completed. In the runout area, the checkered plate for the runout motor coupling guard was installed and the grating has been replaced in the runout pipe trench. In the downcoiler area, the wrapper roll transfer car rail is being installed and the downcoiler maintenance platforms have been replaced. An average work force of ten sheetmetal workers was maintained during the period. The roofing and siding at the skip hoist entrance has been completed. In the finisher area, the fume exhaust system flexible connections have been completed. The installation of guards at the downcoilers was also completed during the period.
- 1.5 Heating and Ventilating: Progress continued on the completion of items for the inspection of the bag houses. Bags were installed during the period for bag houses 7, 9 and 10,
- 1.6 Mechanical: During the period, Eichleay Corporation maintained an average work force of twenty-two men in the hot strip mill on remaining equipment installation and support of Westinghouse testing programs. In the furnace area, entry skids were installed for the #3 reheat furnace. Check out and testing of the dry scale removal system was initiated. Some wheel clearance problems were encountered on the dry scale skip hoist. The factory representative is scheduled to arrive at the job site on Monday to establish corrective requirements for this unit. The drag scrapers were also partially checked and the Saurmann Brothers representative is scheduled to be at the job site next period for final testing of the scraper system. In the finishing mill area, uncoupled tests were accomplished on the fume elimination fan motor this period. At the downcoilers, electrical check-out by Westinghouse was continued throughout the period. All tests for the downenders were completed and the three downcoilers are scheduled to be released to Armco operations on March 25, 1968. In the coil conveyor area, modification requirements for coil conveyor 6 was completed. Over travel stops on the downenders are presently being installed. The coil conveyor system is also scheduled to be released to Armco operations on March 25th. At scale pit 3, testing was initiated on the wet scale drag system this period. In the roll shop, installation of the roll and chock assembly for the slab mill rolls is complete. The Mesta erector is scheduled to arrive at the job site on March 25th for erection of the third roll grinder apart from the spindle which is not at the job site and is scheduled to arrive late in April.

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WEEKLY FIELD ACTIVITY REPORT
Week Ending March 19, 1968

- 1.7 Piping: During the period, 210 feet of pipe was installed for a total to date of 342,672 feet. A minor amount of piping now remains to be installed for the grease piping in scale pit #3. This will be completed early next period. The well water piping for the deluge valves in the fire system has been completed. The sump pump returned from Cleveland is presently under test in the hot strip mill and the installation of the remainder of these pumps will follow if the tests are successful. During the period, a pipefitter force of forty-two men was maintained on hot strip mill piping.
- 1.8 Electrical: During the period, Foothill Electric installed 4,900 lbs. of exposed conduit for a total to date of 1,553,800 lbs. or 98% complete. 3,000 feet of low voltage cable was installed for a total to date of 1,962,000 feet or 99% complete. 80 low voltage cable terminations were made for a total to date of 33,390 or 99% complete. 1,600 feet of control cable was installed for a total to date of 2,067,500 feet or 99% complete. 150 control cable terminations were made for a total to date of 62,600 or 99% complete. 4,700 feet of computer cable was installed for a total to date of 949,000 feet. 55 computer cable terminations were made for a total to date of 31,150. 1,600 lbs. of lighting conduit and 4,000 feet of lighting wiring was installed during the period. 1,400 feet of cable and 68 communications and TV terminations were made. 200 lbs. of structure grounding was installed for a total to date of 146,900 lbs. or 96% complete. An average work force of one hundred and sixty-seven electricians worked in the hot strip mill this period.
- 1.9 Miscellaneous Subcontracts; Owens Corning Fiberglas Company maintained an average work force of twenty-nine men on insulation during the period. Progress continued on the insulation of the overhead steamline with 1,179 feet being insulated during the period. In the boiler house, progress was continued on the insulation of the steam lines.

Delta Pipeline Constructors continued installation of the 10 inch well water drops during the period. Faulty oxygen valves were being replaced in preparation for the pickling and cleaning operations in the oxygen line. Hangers and supports were also installed during the period. A work force of thirty-two men was maintained during the period.

Salem-Brosius continued with refractory work and the remaining items include completion of the #3 furnace soak zone hearth and some plastic roof replacement in furnaces #2 and 3. The charge end doors were installed on furnace #3 during the period. Boiler #1 was started up on March 17th with gas fuel. Boiler #2 is down in order that a leaky safety valve can be repaired. The repair work on the #3 F.D. fan shaft continued and a new bearing will be installed during next period.

Stuart Painting Company maintained an average work force of seventeen men in the hot strip mill during the period. Progress was maintained on the painting of service piping and miscellaneous steel located north of column 42 and at all elevations in the boiler house.

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WEEKLY FIELD ACTIVITY REPORT
Week Ending March 19, 1968

2. 7146 - SLAB MILL

- 2.2 Concrete: 80 cubic yards of concrete was placed during the period for a total to date of 48,832 cubic yards. Major concrete pours consisted of the crop conveyor slab west of scale pit 4 and two sections of the railroad slab on the east side of scale pit 4.
- 2.3 Structural and Miscellaneous Steel: During the period, twenty-six ironworkers continued with miscellaneous iron installation in the slab mill area. The bridge section for gantry crane 364 was erected and bolt-up of the crane is in progress. Stairways and access platforms at the north end of the scale pit was completed apart from handrail and grating installation. In the bag house area, thirty-one sheetmetal workers continued with the completion of remaining ducts and plenum work on the five slab mill units. Bag houses 3 and 4 were completed this period. Completion of the sheetmetal work on remaining bag houses is expected next week.
- 2.6 Mechanical: Michleay Corporation maintained an average work force of fifty men on mechanical installation in the slab mill. In the main mill aisle, installation continued mainly on the crop pusher drives, the dry scale skip hoist system and the scarfer fume elimination system. The stack and separator for the fume elimination system was installed and installation of related ductwork was initiated. Erection of the ingot buggy assembly was also completed together with the ingot buggy slack cable idlers. In the motor room, the lower section of the upper horizontal mill motor stator was installed and installation of the rotor is scheduled for next period. The stator for the vertical mill motor is being transported to the slab mill motor room and disassembled. Installation of the lower section is scheduled for next period. The base plates and pedestals for this motor are now in place and leveled. Major items grouted this week were: slab pusher drives, manipulator power track base, scarfer fume exhaust stack and separator, some building columns and the dry scale skip hoist rail beam pockets. All mechanical motors have been set in place apart from the dry scale skip hoist motors and the large mill drive motors.
- 2.7 Piping: Hunter Corporation maintained an average work force of sixty men on slab mill piping during the period. Piping installation was continued through Saturday, March 16th. Major piping systems installed during the period were: natural gas, oxygen, well water, clarified water, circulating oil system 11, circulating oil system 3, hydraulic system 2, waste oil piping and grease piping. 1,034 feet of piping was installed for a total to date of 32,779 linear feet. 20,813 feet remain to be installed. Lube oil 6 has been pickled, flushed and permanent oil is now in the system. Pickling and flushing of lube oils 5 and 7 were completed on March 16th. Permanent oil is scheduled to be placed in the system next period. Lube oil 11 was hydro tested this period and pickling of the system was started at the close of this period. The main plant air loop in the main mill aisle was pressure tested as well.

KEN 004412

WEEKLY FIELD ACTIVITY REPORT
Week Ending March 19, 1968

2.8 Electrical: Foothill Electric maintained an average work force of two hundred and forty-eight men in the slab mill during the period. Coupled runs were accomplished on all auxiliary motor generator sets #1 and 2. Concentrated electrical progress was maintained on the bag house units during the period. The fan motor for bag house 4 was bumped for rotation. During the period, Foothill Electric installed 6,500 lbs. of exposed conduit for a total to date of 151,300 lbs. or 86% complete. 250 lbs. of structure grounding was installed for a total to date of 30,700 lbs. or 61% complete. 40,000 feet of low voltage cable was installed for a total to date of 233,000 feet or 47% complete. 700 low voltage terminations were made for a total to date of 2,800 or 42% complete. 15,000 feet of control cable was installed for a total to date of 89,700 feet or 38% complete. 349 control cable terminations were made for a total to date of 1,030 or 10% complete. 2,200 feet of computer cable was installed for a total to date of 21,000 feet or 30% complete. 720 computer terminations were made for a total to date of 3,200 or 71% complete. 270 lbs. of conduit and 4,400 feet of lighting wire were installed.

3. 7143- SOAKING PITS

3.3 Structural and Miscellaneous Steel: Ironworkers in the soaking pit area worked on punch list items for bridge cranes 356 and 358 together with erection of the hoist for the cinder dump bucket which is scheduled to be set in place next period. Sheetmetal workers continued with installation of ventilation duct runs for the battery room.

3.6 Mechanical: Loftus Engineering maintained an average work force of one hundred and eighteen men on battery installation during the period. Installation of refractory continued on pits 1 through 8 and at the close of the period, pit refractories were completed in all pits except pits 1 through 4. These pits are expected to complete next period. Brickwork on all battery archways and collecting flues is complete together with bulkhead seals. At batteries 5 and 6, Loftus continued with the testing and check-out of mechanical and electrical equipment. A punch list is presently being developed for battery 6 to serve as a guide for completion of all batteries. Additional reinforcing requirements has been completed for six cover frames. These covers are now ready for ramming which is scheduled to begin during the first part of April. Installation of the coke breeze conveyor system was completed except for hand wheels, electrical requirements and piping. The cinder bucket dump unit has been assembled and some modification will be required to make it fit the skip hoist hopper. A preliminary safety inspection was made on crane 358 and 366. Installation of the tongs for crane 358 is scheduled for next period. Crane 366 was energized this period.

WEEKLY FIELD ACTIVITY REPORT
Week Ending March 19, 1968

- 3.7 Piping: Delta Pipeline Constructors maintained an average work force of thirty-two men on service piping in the soaking pit area. The compressed air piping was essentially complete this period apart from eight additional drops along Y line. Preparations are now underway for the pressure testing of this system. The natural gas piping is expected to complete next week and steam pipe the following week. During the period, 1,222 feet of piping was installed for a total to date of 16,343 feet. 9,412 feet of piping remains to be installed by this contractor.
- 3.8 Electrical: Foothill Electric installed 170 lbs. of exposed conduit this period for a total to date of 92,300 lbs. or 66% complete. 800 lbs. of lighting conduit was installed and 65 lbs. of structural grounding. A very limited amount of electrical progress was recorded in the soaking pit area this period.
4. 7128 - BASIC OXYGEN SHOP AND MOLD YARD
- 4.1 Excavation and Backfill: 1,895 cubic yards of excavation was accomplished this period for a total to date of 214,157 cubic yards. 768 cubic yards of backfill was completed for a revised total to date of 273,419 cubic yards. Excavation included pipelines, manholes and the west wall of the electrical control room.
- 4.2 Concrete: 103 cubic yards of concrete was placed for a total to date of 20,689 cubic yards. This concrete included the service floor from column 21 to 22 and, at the mold yard, the mixing station floor slab and curb between column 20 to 21, the canteen foundation and the wall and door steps for the rectifier building. Preparations continued for the concrete in the clarifier sludge tunnel base slab and sump pit.
- 4.3 Structural and Miscellaneous Steel: 377 tons of structural steel was erected at the main B.O.F. facility for a total to date of 7,564 tons (excluding 328 tons of anchor bolts and base plates). At the mold yard, erection of the spray cleaning stations started on March 19th. 8 tons of steel was erected for a total to date of 2,142 tons. At the main B.O.F. building, no work was done on March 13th or after 1:00 p.m. on March 14th when a fatal accident occurred. Work continued on the changes required for scrap pre-heating. Welding continued on the hoppers and the wear plates. Erection of charging aisle crane 501 continued during the period.
- 4.4 Roofing and Siding: At the mold yard, 3,170 square feet of roofing was completed during the period at the west end of the building. The erection of the vents between column 1 and 2 started on March 18th. At the main B.O.F. building, 1,337 square feet of siding was installed at the freight elevator.

WEEKLY FIELD ACTIVITY REPORT
Week Ending March 19, 1968

- 4.7 Piping: Installation of service piping at the mold yard continued during the period. At the main B.O.F. building, erection of brackets for the roof drain from D to E line from column 17 to 21 was started on March 19th. Installation of the grease and lube system for the charging aisle crane 501 continued during the period together with installation of lube and grease systems for the lance hood crane 506. Installation of service piping from the track hopper building to the mold yard building was also in progress.
- 4.8 Electrical: At the main B.O.F. building, progress continued on the wiring of the charging aisle crane 501 and the lance crane 506. Erection of the collector rail brackets in the charging aisle on D line between column 17 and 21 was initiated during the period. Laying of conduit continued from electric manhole 7 to manhole 6. At the mold yard, progress was continued on the conduit run to the transportation office. Wiring of crane 521 continued during the period and the crane motors for crane 522 were tested during the period. An Armco safety inspection tour was held on March 18th and a punch list developed.
- 4.9 Miscellaneous Subcontracts: Delta Pipeline Constructors were completing the underground utility piping in the office and lab building area.

McGraw Construction Company continued on the built-up roofing, floor decking and underground piping for the office and lab building. Erection of siding is to start during next period.

DHS Corporation continued installation of the teeming area track and this is scheduled to complete at the end of next period.

Stuart Painting Company has completed the painting of purlins and trusses at the mold yard. Remaining work consists of a small quantity of miscellaneous steel and painting of the base plates.

5. 7145 - STRIPPER BUILDING

The concrete for the stripper building was completed during the period with 5 cubic yards placed for the steps of the rectifier building and the electrical equipment pad at column 3 a. The lube and grease piping for crane 354 was completed on March 15th. The wiring of the repair crane 354 has been completed and the collector rail and brackets are to be erected during next period. The siding for the stripper building was completed on March 15th. The heating and ventilating equipment erection was completed during the period apart from wiring and miscellaneous vents. Crane 354 was energized on the 19th of March in order to test the motors. Reeving of tong column and completion of lubrication is expected to complete by Ohio Valley Riggers next period in order to have the crane ready for test and then ready for operation on April 1st. Electrical work was started in the extractor pit on March 18th.

WEEKLY FIELD ACTIVITY REPORT
Week Ending March 19, 1968

6. 7150, 7156 and 7159 - PICKLE AREA

- 6.2 Concrete: 333 cubic yards of concrete was placed on pickle line #4 during the period for a total to date of 12,185 cubic yards. Major concrete pours for the period included the walls for #10 electric manhole, the sump for the fume scrubber, the north lean-to floor slab between column 17 and 18 and conduit encasement between columns 35 and 40 for pickle line #4. On pickle line #5, 145 cubic yards of concrete was placed for a to date total of 7,029 cubic yards. This concrete included the first lift of the walls for catenary pit #2 and the piers and footings between column 20 and 21. In the green coil storage building, placing of the slag floor continued and is now approximately 70% complete.
- 6.3 Structural and Miscellaneous Steel: In the green coil storage area, Ohio Valley is working on punch list items for final completion. In the pickled coil storage building, welding of crane rails continued together with installation of safety cable and bolting up of the top cord of the roof from the expansion joint to the west end of the building.
- 6.4 Roofing and Siding: The fascia on the south lean-to roof was completed during the period. Steelex sheeting was installed over the vent doors in the south lean-to of the pickle building. Installation of roofing continued on the pickled coil storage building. During the period, 18,606 square feet of roofing was installed on the pickled coil storage building for a total to date of 18,606 square feet.
- 6.6 Mechanical: Ohio Valley continued equipment setting in the pickle lines during the period. Equipment set on #4 line included the rail car stops at the end of the looper car, bottom strip conveyor rails, top cable drum and #3 pinch roll and roll drive. On #5 pickle line, the erection of the support steel for the looper car structure continued together with the fabrication of lifting beams for the pickle tanks. Equipment delivered to the site during the period included the looper car stops for #5 line strip conveyor rolls and brackets and pickle tank support beams. In the green coil storage building, the coil tongs and magnet for the overhead cranes have been brought into the building.
- 6.7 Piping: Delta Pipeline Constructors maintained one crew in the pickle line during the period. Progress included prefabrication and installation of pipe supports for plant air, natural gas and oxygen systems in the maintenance shop and pickle building. Total piping installed to date is now 4,260 feet. In the green coil storage building, Norm Woolley was installing hangers for the 2 inch plant air line together with 320 feet of 2 inch plant air line at column line 1.
- 6.8 Electrical: In the green coil storage building, lighting conduit has been completed from column 16 to 10 on C line and has been started from C line across to B line. In the pickle line building, conduit drops have been run from the high bay feeders to the #4 motor room. Work continued on the disconnect switches on the north wall of the #4 entry motor room.

WEEKLY FIELD ACTIVITY REPORT
Week Ending March 19, 1968

7160 - COLD MILL

During the period, 7,645 cubic yards of excavation was completed for a total to date of 11,375 cubic yards. Approved for construction drawings were received for the perimeter parapet walls. Drawings are promised for the remaining piers and footings next period.

7. UTILITIES

7160 - Air Distribution System: The two air compressors in the pump house were worked on during the period to complete the remaining problems which developed during operational run-in. The oil leaks at the bearings were finally resolved and it was found necessary to provide identical lubrication piping for both compressors so that separate drain lines would be provided from each bearing to the 4 inch main return. In addition, 3/32 inch diameter orifices were installed in the supply lines to each bearing to relieve pressure build up. These compressors were accepted by Armco for operations with the following exceptions:

1. New top works are to be furnished by Worthington for the automatic dump valves. Delivery of these will be confirmed next period and installed under the supervision of a Hagan service representative.
2. Two new Fenwal temperature switches will be required for the lube oil reservoirs. These are also on order by Worthington. An additional coupling may have to be installed at each lube oil reservoir when the switches are received.
3. Excessive vibration on the oil discharge line of each oil pump will have to be corrected. Worthington agreed to contact their Buffalo office concerning this vibration and make the necessary corrections through the Delaval pump manufacturer. These compressors are presently in service supplying plant air to the hot strip mill.

7110 - Power Distribution: In the melt area substation, the auxiliary cubicle containing the pilot wire checking relays and the isolating transformers has now been installed. At the cold finish substation, the auxiliary cubicle has been completed. This required a one day power outage on the 13.8 KV switchgear bus #2. A scheduled power outage on March 16th in substation 604 enabled all work on the continuous paralleling scheme and the relocation of the meters to be completed.

WEEKLY FIELD ACTIVITY REPORT
Week Ending March 19, 1968

7111 - Sanitary Sewers: Reflushing of the trunk line in the steelmaking area was completed during the period. Flushing was accomplished from manholes 569 to 582 with large quantities of debris being removed from the line. The subcontractor will now repair leaks at several manholes.

7112 - Drainage and Site Development: 1,746 cubic yards of excavation was completed during the period for a total to date of 795,223 cubic yards. 2,956 cubic yards of backfill was placed for a total to date of 1,046,765 cubic yards. Delta Pipeline Constructors placed 82 feet of 12 inch CMP, 120 feet of 18 inch CMP, 120 feet of 21 inch CMP and 80 feet of 24 inch CMP in the steelmaking area during the period. Westinghouse Electric Corporation has now completed thirteen of the eighteen railroad lighting towers to date. The foundations for the four 60 foot towers in parking lot #1 have been completed. All the steel towers have been painted and the installation of the cages is underway.

7113 - Trackwork: DMS Corporation installed 970 feet of track and three turnouts in the steelmaking area during the period. Walter L. Follmer, Inc. has started the construction of the Crawford Street entrance. During the period, stripping of the top soil was started but was slowed due to inclement weather.

7114 - Locker Rooms: In the steelmaking area locker room, installation of acoustical ceiling was essentially completed during the period in the waiting room and the east and west locker area. Lighting and plumbing fixture mounting continued together with the insulation of water piping and the storage tank. Interior and exterior surface painting continued and is now nearing completion.

7186 - Waste Disposal for the Pickle Facility: During the period, the pipe and acid trench walls were poured in the waste disposal building. Forming for the aeration and flocculation tanks continued together with electric manholes 1 and 2 and the electrical raceways. The three limestone bins were set in the building during the period and all the structural steel has now been painted. Pipefitters are now installing the roof drains in the building. Foothill Electric has set conduit stubs in electric manholes 1 and 2 formwork. Progress was continued on running the duct bank west of manhole 2 towards the disposal well.

/sec

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Approved by G. L. Roberts
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Construction Manager