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IN REPLY REFER TO
AGAM-P (M) (24 Apr 68) FOR OT RD 681275

30 April 1968

SUBJECT: Operational Report - Lessons Learned, Headquarters, 577th
Engineer Battalion (Const), Period Ending 31 January 1968 (U)

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Major General, USA
The Adjutant General

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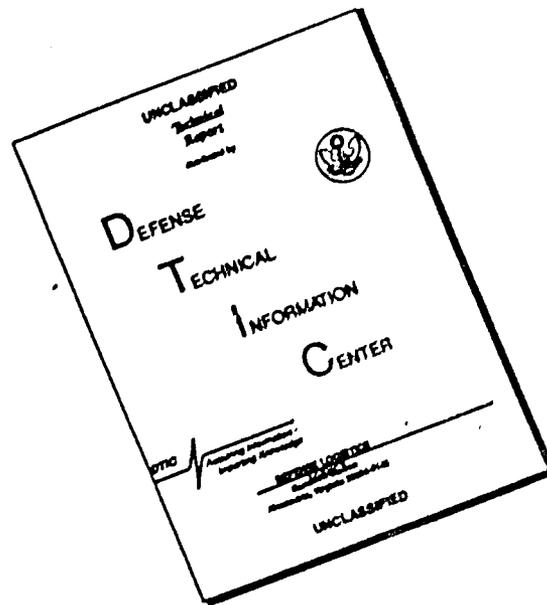
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DEPARTMENT OF THE ARMY
HEADQUARTERS, 577TH ENGINEER BATTALION (CONSTRUCTION)
APO US Forces 96316

EGACBD-3

31 January 1968

SUBJECT: Operational Report - Lessons Learned (RCS CSFOR-65), for
Quarterly Period Ending 31 January 1968

THRU: Commanding Officer
35th Engineer Group
APO 96312

Commanding General
18th Engineer Brigade
ATTN: AVDC-C
APO 96377

Commanding General
United States Army Engineer Command, Vietnam
ATTN: AVCC-PO
APO 96491

Commanding General
United States Army, Vietnam
ATTN: AVGC-DH
APO 96307

Commander in Chief
United States Army, Pacific
ATTN: GPDP-OP
APO 96558

TO: Assistant Chief of Staff for Force Development
Department of the Army (ACSFOR DA)
Washington, D.C. 20310

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Section 1, Significant Organization or Unit Activities

1. Command:

a. LTC John R. Mc Donald commanded the battalion throughout the reporting period.

b. Headquarters Company. 1LT Richard G. Basaraba assumed command of Headquarters Company from 1LT George Orena on 20 November 1967.

c. Company B. CPT George F. Rubin assumed command of Company B from 1LT Robert L. Herndon on 20 January 1968.

d. Company D. 1LT William Booth assumed command of Company D from MAJ Norris B. Green on 27 November 1967.

2. Personnel, Administration, Morale, and Discipline:

a. The assigned strength of the battalion during the reporting period varied from 90% to 94% of the authorized strength. The most critical shortages were in grades E-5 and E-6, which were short an average of 31% and 23% respectively.

b. On 22 January 1968 the battalion was visited by Representatives Cederburg and Talcott, members of the Military Construction Subcommittee, House of Representatives, United States Congress, who toured several of the battalion's MCA projects.

c. During this period the battalion achieved considerably increased effectiveness in productivity of local national hire personnel. Though allocations for both permanent hire and temporary (AIK) hire were reduced during the period (authorized 174 and 72 respectively as of 31 January), those Vietnamese personnel hired have become more capable in the execution of their jobs, thus reducing the amount of supervision required. Particular benefit resulted from the use of Vietnamese carpenters, automotive repairmen and helpers, and KP's. The continued employment of these personnel is highly advantageous, both toward improved utilization of military personnel and the training of a skilled group in the Vietnamese populace. The Civilian Personnel Office was made a separate staff section on 22 November 1967. The section consists of one officer (additional duty as Communications Officer), one EM and a local national interpreter.

3. Intelligence and counter intelligence: The general intensity of enemy activity in the 577th Engineer Battalion area of responsibility subsided considerably from the previous reporting period. However, on the last two days of the period, a major VC/NVA Tet offensive was evident throughout Vietnam.

4. Plans, Operations and Training:

a. The battalion was engaged in construction operations throughout the quarter (92 days). No major troop movements or training not directly concerned with operations were performed.

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b. At 0430 Hrs 10 November 1967, Typhoon Freida struck the Tuy Hoa - Phu Hiep area with winds gauged at Phu Hiep Army Airfield in excess of 125 miles per hour. The majority of tropical wood design buildings in the cantonment area suffered some degree of damage. Each unit quickly undertook self-help repairs with material assistance from the Installation Engineer. The Nichimen 75'x202' hangar under construction at the Phu Hiep Army Airfield lost its entire roof and two timber frame maintenance buildings in the battalion area were completely destroyed. The typhoon caused considerable damage to the port facilities at Vung Ro Bay (VRB). Thirty feet of causeway connecting the beach to the DeLong pier were washed out. A 45-foot M-4 fixed span was installed to keep the pier in operation. One concrete LST land ramp was undermined and totally destroyed by the wave action. A sea wall will be constructed to protect the beach facilities from any recurrence. The 1500-foot road from Alpha to Bravo beach, which had been blasted and cut from solid rock 10 feet above sea level, was completely washed away. Repair of this road is still underway.

c. Company A continued to provide equipment and engineer direct support maintenance in support of battalion operations. Development was initiated on a quarry and crusher site at Vung Ro Bay to provide rock for repair of Port Lane facilities destroyed during Typhoon Frieda, and for the QL-1 upgrading program.

d. Company B continued the repair and maintenance of National Highway QL-1 using 1,500 CY of cold mix asphalt. The company constructed approaches to the Free World Forces Cantonment (FWF) access road bridge which had been completed at the end of the previous quarter by the 553rd Engineer Company (FB). Here Company B used 13,110 CY of fill and 2,000 CY of 3-inch-minus rock. A 1.1-mile section of QL-1 between the FWF Cantonment and Vung Ro Bay was raised and widened and drainage structures were installed. Construction was initiated on bridge QL1238.000, a 120-foot, 2-span, steel-stringer bridge with concrete abutments and a fluted steel pile center pier. The company completed the 203rd Aviation Company MER, a 20' x 100' ration breakdown shed in the Tuy Hoa Sub Area Command (THSAC) Class I Facility, a 20' x 96' Microwave Relay building for the 261st Signal Company, eight helipads for the 50th Medical Detachment MER, and a 40' x 100' technical supply warehouse for the 339th Aviation Company.

e. On November 1967, after finishing the 380-man cantonment and other port facilities at Port Lane, Vung Ro Bay, Company C moved to the FWF Cantonment Area to begin work on the heliport at Phu Hiep Army Airfield. This facility includes landing pads, revetments, refueling facilities, ammunition supply points, interconnecting service roads, and hover lanes for 96 UH-1B and UH-1D helicopters. This project has occupied the majority of the available effort of Company C during the period. Company C also completed MERs for three company sized units and provided technical supervision for the self-help construction of one aviation company cantonment area.

f. Company D was employed primarily in construction of the Phu Hiep Army Airfield Support Facilities. Construction continued on two 75' x 202' aircraft maintenance hangars. A 44-foot control tower was erected and is in temporary use, awaiting delivery of the instrument package for completion. The company completed a pad for Ground Controlled Approach (GCA) instruments and a 10,000 SY hardstand storage area. A platoon of Company D was deployed to Ninh Hoa on 1 December 1967 and is currently constructing the 48th Aviation Company

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MER, maintaining QL-1 from Ninh Hoa to Vung Ro Bay, and performing assigned operational support missions.

g. The 553rd Engineer Company performed continuous maintenance of all tactical bridging within this unit's area of responsibility. The company performed the vertical construction of seven Pascoe steel 40' x 100' warehouses in the Tuy Hoa Sub Area Command (THSAC) Class I and Class II and IV yards. The company continued to transport supplies from Cam Ranh Bay Depot to Phu Hiep in support of the 577th Engineer Battalion (Construction). The First Platoon remained attached to the 14th Engineer Battalion (Combat) at Dong Ba Thin.

h. The 572nd Engineer Company provided continuous equipment support to the 577th Engineer Battalion and other units of the 35th Engineer Group during the reporting period. The company continued to operate the quarry at Chap Chai Mountain, producing 50,815 CY of blast rock during the period. An additional secondary crusher was placed in operation at the Tuy Hoa Air Force Base site. The site produced 15,895 CY of crushed rock during the period. The First Platoon remained attached to the 14th Engineer Battalion (Combat) at Dong Ba Thin.

i. Deployment of the 547th Engineer Platoon (Asphalt).

(1) The 547th Engineer Platoon, organized under TO&E 5-114D, was activated on 1 March 1967 at Fort Lewis, Washington. The platoon was originally attached to the 63rd Engineer Battalion (Construction) and was subsequently attached to the 339th Engineer Battalion (Construction) on 1 April 1967. Personnel assigned to TO&E positions were drawn from engineer units at Fort Lewis.

(2) June 1967 was originally scheduled for the platoon's deployment to Vietnam. However, deployment was delayed due to nonavailability of equipment. On 29 April 1967 the platoon deployed to Fort Irwin, California and was attached to the 610th Construction Support Company for a two-week training program. The unit returned to Fort Lewis on 13 May 1967. At this time equipment and personnel readiness dates were set at 25 September 1967 and 10 October 1967, respectively. A CMMI was conducted on 26 July 1967 by the Sixth US Army CMMI team with the platoon attaining a superior rating of 92%. The platoon intensified its pre-deployment preparation efforts during the summer months. POM inspections were accomplished on 15 September 1967 with the unit achieving a satisfactory rating. Packing was completed on 23 September 1967 and personnel departed on pre-deployment leave, returning on 8 October 1967. Several platoon members took early leave and returned to assist in equipment loading. The unit's equipment was loaded on the ship "Brookville" at Tacoma, Washington during the period 5 - 7 October. Two members of the platoon were detailed to accompany the equipment on the Brookville which departed on 7 October.

(3) On 10 October the main party departed from Tacoma on the USNS Walker. The advance party, consisting of the platoon leader and one EM, departed by plane from Seattle - Tacoma Airport, stopping briefly at Travis AFB, and arrived in RVN at Bien Hoa. This party then traveled to 35th Engineer Group Headquarters at Cam Ranh Bay and subsequently to the 577th Engineer Battalion Headquarters at Phu Hiep, arriving on 23 October. The main body arrived at

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Qui Nhon on 30 October and proceeded to Phu Hiep by air, arriving on 31 October. The equipment arrived at Qui Nhon on 31 October and TCMD's were immediately prepared to move the equipment to Vung Ro Bay. The move was completed on 15 November and the equipment was convoyed to the Phu Hiep cantonment area during the next 3 days. Two weeks were required to deprocess the equipment from shipment. The asphalt plant, 3 rollers, 2 pavers and 2 test sets did not arrive with the initial shipment. While awaiting arrival of the asphalt plant, the platoon was primarily employed in preparation of surface treatments and dust palliation. The major task accomplished was a double surface treatment of a 24' wide, 3-mile road.

(4) The asphalt plant was located in Qui Nhon on 15 December 1967. Another asphalt plant belonging to the 51st Engineer Platoon (Asphalt), stationed at Qui Nhon, was located at Cam Ranh Bay at the same time, and 18th Engineer Brigade directed that the two plants be exchanged. The exchange was accomplished, and the plant arrived at Port Lane, Vung Ro Bay, on 27 January 1968. After three days of transporting components to Phu Hiep, erection of the plant was initiated at a previously prepared site.

(5) As of the end of this reporting period the three rollers and asphalt test set have not been located, and only one of the two asphalt pavers has arrived. Due to the misshipment of critical equipment, the 547th Engineer Platoon (Asphalt) lost approximately 30 days of construction time.

j. The 577th Engineer Battalion continued to support the 173rd Airborne Brigade (Separate) as a part of Operation Bolling. During the period 31 December 1967 to 9 January 1968, a platoon of Company C was deployed to Highway LTL 6B to perform emergency repairs of four bypasses on that route. On 13 January, the 553rd Engineer Company replaced a blown Bailey bridge north of Tuy Hoa on QL-1. The 45-foot M-4 fixed span was installed in six hours, including removal of the destroyed Bailey span.

k. During the reporting period the road responsibility of the 577th Engineer Battalion was expanded to include Vietnamese National Highway QL-1 from Ninh Hoa north to its intersection with Highway LTL 6B, a distance of 102km. Presently, a reinforced platoon of Company D is operating out of Ninh Hoa. One squad from Company C and one squad from Company A are operating at Vung Ro Bay. The remainder of the 577th Engineer Battalion plus attachments are operating out of the Free World Forces Cantonment Area, Phu Hiep, RVN. At the end of this reporting period, Company B was preparing to move a forward CP and the bulk of its earthmoving equipment to a bivouac site astride Highway QL-1, 12km from the FWF Cantonment Area.

l. On 17 December 1967 the 577th Engineer Battalion executed Operation Overlay, a unique project to widen seven one-lane culverts along Highway QL-1 by placement of timber overlay two-lane bridges. The operation was accomplished in one day in order to avoid closing this critical segment of QL-1 for longer than absolutely necessary. Company C constructed two 40-foot bridges, each having a pile pier at midspan. Company B and the 553rd Engineer Company each constructed two 20-foot bridges, and Company D constructed one 20-foot bridge.

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The road was reopened within fifteen hours of the initiation of the operation. (See Incl 1, CP ORD, 11-67).

m. During 18 - 23 January 1968, one platoon of Company D was deployed from Ninh Hoa west on Highway HL 21 in order to perform emergency repairs of six bypasses in support of the 23rd ARVN Division's road opening operation. All work sites for the project were located in terrain subject to VC/NVA activity, and were from 32 to 50 kilometers from available materials, which severely compounded the logistical aspects of the mission.

n. During 18 - 20 January 1968 the 553rd Engineer Company took part in three convoys conducted by the 47th ARVN Regiment to haul Tet supplies from Tuy Hoa to Cung Son (35 miles). During the three-day mission, two 2½ ton trucks belonging to the 553rd Engineer Company were destroyed by enemy mines.

5. Logistics:

a. Supply:

(1) Throughout this reporting period the battalion continued to assume a major role in supporting itself logistically from Cam Ranh Bay Depot, 175 km distant. Due to changes in priorities and organizations of supporting transportation units, the movement of Class II and IV and some Class I supplies to the Phu Hiep area was severely restricted. As a result, the battalion transported more than 2,000 tons of materials, supplies and equipment during the reporting period. The 553rd Engineer Company under its secondary mission was tasked to provide transportation with its 2½ ton cargo and 5-ton bridge trucks supported by all available low-bed trailer trucks from the battalion.

(2) The battalion's prefabrication yard neared its one-millionth board foot of lumber production. Cantonment buildings were produced for the 3383-man cantonment, 1962-man cantonment, and numerous MER and WABTOC structures. Increased reliance upon local national carpenters released progressively more enlisted men to other essential tasks.

(3) During the period, the S-4 construction materials yard was upgraded to a more manageable facility. Stock record cards were established for all line items in the inventory, which numbered over 300, and a complete re-warehousing was accomplished for the 40,000 square yard storage area.

(4) Critical shortage of equipment during the period included bucket loaders (14 authorized, 8 on hand), asphalt distributors (3 authorized, 1 on hand), compaction equipment (25 authorized, 13 on hand, counting all types of rollers), and water distributors (6 authorized, 3 on hand).

b. Maintenance: The battalion with attached units had an average deadline rate of 4.4% during this reporting period for the 296 items selected by 35th Engineer Group as critical equipment. This low deadline rate provided the battalion with maximum equipment availability and was accomplished in spite of the continued shortage of repair parts. The battalion experienced a 64% fill from 11,458 requisitions. No relief from the parts supply situation is expected in the next quarter. The number of dues-out for the battalion has remained

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between 4,000 to 6,000 line items for the past eight months.

c. Communications: In addition to routine battalion radio and telephone service, the battalion communications section supported the battalion by acquiring and installing thirteen new-family vehicular mounted radios, acquiring and installing 38 civilian type telephones, and installing ten additional lines on the battalion switchboard. The battalion communications section also established an FM radio station for Company D at Ninh Hoa.

6. Force Development: The 577th Engineer Battalion is organized under TO&E 5-115E. Current attachments are the 553rd Engineer Company (FB) (-), the 572nd Engineer Company (LE) (-) and the 547th Engineer Platoon (Asphalt). One platoon from the 553rd Engineer Company and one platoon from the 572nd Engineer Company remain detached and attached to the 14th Engineer Battalion (Combat). (See Incl 2).

7. Command Management: None

8. Inspector General: None

9. Information: None

10. Civil Affairs: In support of the local Civic Action Program, contributions of food and clothing were made to refugees and to Catholic and Protestant orphanages and schools. Desks and benches were built in the battalion prefabrication yard and delivered to a Tuy Hoa Protestant school. Scrap lumber was collected and distributed to the needy for use as firewood. The program was conducted under the auspices of the unit Chaplain in coordination with local Civil Affairs advisory personnel. Under MEDCAP, unit medical personnel furnished treatment and supplies for minor illnesses and injuries to an average of 150 Vietnamese civilians weekly.

Section 2, Part I, Observations (Lessons Learned)

1. Personnel: None

2. Operations:

a. Item: Transportation of large beams and girders.

Discussion: For bridge construction, long heavy beams and girders must often be transported over narrow winding roads where operation of 25 ton tractor-trailers is difficult and hazardous due to the overhang of the beams. A dolly-trailer was constructed from a salvaged M61 water distributor chassis and the goose-neck of a 25-T trailer (see sketch, Incl 3). The tractor chassis was cut off behind the cab, and the rear section was modified by eliminating the inside duals, providing a wider wheel base. Angle iron was used for bracing to prevent sliding of the beams. Four-foot long U-bolts were fabricated to secure the beams and a pintle hook was attached to pull the dolly when not hauling beams. The gooseneck of a 25-T trailer was modified by using angle iron as bracing to prevent sliding of the beams and again four-foot long U-bolts were used to secure the beams (see sketch, Incl 3).

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Observation: Transportation of long length beams can be made easier through the use of a dolly-trailer.

- b. Item: Wind segregation of crushed rock.

Discussion: The prevailing winds in the Tuy Hoa area commonly have a velocity of 10 - 20 miles per hour or more. The majority of fines are therefore blown away during crusher operations before the product reaches the stockpile. To reduce this effect, a combination hopper extension and closed chute was constructed on the stockpile conveyor. As the product leaves the main discharge conveyor, the closed chute shields the fines from the wind as they drop to the stockpile conveyor. In addition, the rear part of the chute was inclined at an angle to absorb the impact of the falling rock, helping to protect the conveyor belt.

Observation: Wind separation and belt damage can be reduced by the use of an enclosed box chute.

- c. Item: Prefabricated fluted steel pile cap.

Discussion: To drive an 18-inch diameter fluted steel pile, a cap must be prefabricated since the pile cap normally found with the 3,000-pound hammer is too small. A 5/8 inch thick steel plate was cut 18 inches square, with three 6-inch pieces of #6 rebar welded at 4 1/2 inch intervals on both sides of the plate. (See Incl 4).

Observation: A pile cap adaptor can be fabricated from locally available materials which will provide adequate control for driving fluted steel piles.

- d. Item: Preventing erosion of steep fill area.

Discussion: Company C was assigned the task of repairing and maintaining the Port Lane dock facility at Vung Ro Bay, RVN. The majority of the effort was spent in preventing massive erosion of steep fill areas between storage terraces. Eroding soil from the base slope soon filled the ditches and reduced their capacity by 50% or more. UCAR 131, primarily a dust palliative, was employed to provide a surface that would protect the ditches from erosion by wind and rain. The UCAR 131 was diluted to a ratio of 7 parts UCAR 131 to 5 parts water. This emulsion was then hand sprayed on the slopes at an application rate of 0.5 gallons per square yard. A raking crew worked ahead of the spray bar to smooth the side slopes. The resultant surface was a pale white elastic coating that was hard enough to walk on after three days drying time and would repel water.

Observation: UCAR 131 is an effective agent for controlling erosion in areas where there is little or no traffic.

- e. Item: Assembly of expedient asphalt distributor.

Discussion: Asphalt distributors were in short supply and in great demand. The nonavailability of a distributor prompted the improvisation of an expedient distributor. The distributor was constructed using a 2 1/2 ton truck, a

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section of 60" culvert, a generator, an electric pump, a POL bladder, and a pipe. When assembled, the unit has the capability to distribute cutback or emulsified asphalt for use as a dust palliative. (See Incl 5).

Observation: From materials and equipment normally available, an expedient asphalt distributor can be constructed and used for application of asphalt cutback.

f. Item: J-bolts for 75' x 202' Maintenance Hangar.

Discussion: During Typhoon Freida the roof of the Nichimen 75' x 202' steel maintenance hangar at the Phu Hiep Army Airfield was subjected to a high dynamic wind loading and was blown off. The roof was constructed of heavy gage corrugated metal sheeting fastened to the roof purlins by use of 3/16-inch diameter J-bolts. It was observed that the bolts failed by bending (straightening out) and became disengaged from the purlins. No additional bolts were on hand to replace the damaged ones and experiments were conducted using a self-tapping screw driven thru the sheet metal into the purlin. This screw provided adequate holding power and had the advantage of easy and rapid installation. (See Incl 6).

Observation: The large J-bolts supplied with the Nichimen 75' x 202' maintenance hangar are inadequate. A self-tapping screw which is adequate and easier to install can be substituted.

g. Item: Roof damage to standard tropical frame buildings during Typhoon Freida.

Discussion: Roofing and portions of purlins were lost during the high winds of Typhoon Freida. The sheet metal roofing had been attached using common nails since roofing nails were not available when the buildings were constructed. Loss occurred when the overhang on the ends of the buildings began to vibrate with the high winds. As the vibration increased, the nails worked loose and the metal roof peeled back. The losses could have been avoided by installing a support from the roof overhang to the side of the building to dampen the vibration, and by reducing the overhang to provide less exposed surface area for the wind.

Observation: Reduction of the length of overhang from four to two feet and the installation of supports from the overhangs to the building can aid greatly in preventing the loss of roofs due to high winds.

h. Item: Sand stabilization of road with decomposed granite (DG).

Discussion: Experiments conducted by the battalion indicate that using DG with clear beach sand will result in a stabilized surface with a design California Bearing Ratio (CBR) which exceeds that of the DG used alone. The proper ratio of sand to DG must be determined in the laboratory by using mechanical analysis and CBR tests. The DG is placed on the sand in the desired lift thickness. Next a rototiller dry mixes the DG and the sand together by tilling to a predetermined depth (usually twice the DG lift thickness). Water is added

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to the tilled mixture to raise it to optimum moisture content (OMC) and it is rolled with a ten-ton roller.

Observation: Sand can be effectively stabilized by thoroughly mixing it with DG using a rototiller. The result is a soil which has greater strength and is less vulnerable to the effects of water than was the original DG.

i. Item: Failure of M8A1 Mat on Phu Hiep Army Airfield.

Discussion: Phu Hiep Army Airfield is a 3,500-foot runway constructed of M8A1 mat over a one inch sand blanket over 10" of sand-cement base. A recent inspection of the mat on the airfield revealed a large number of weld failures. This weld is a factory weld in the mat which connects the retainer plate over the locking pins to the mat. When this plate is gone the mat can come apart, and loose pins and retainer plates on the runway create a safety hazard to aircraft. (See Incl 7). Investigation revealed the following:

(1) Over 800 sorties of C130 aircraft and 3,000 of OV-1 Mohawk aircraft have landed on the surface.

(2) The failures took place at the touchdown points on both ends of the field and in the propeller reversal zone at about midlength of the runway.

(3) The runway is adjacent to the South China Sea, thus exposing it to salt water.

Observation: The M8A1 mat at Phu Hiep Army Airfield has exceeded its design life of 200 C-130 sorties. The airfield will be in operation for an undetermined period of time and will require ever-increasing maintenance.

3. Training: None

4. Intelligence: None

5. Logistics:

a. Item: Starter on model 2380 Rough Terrain Crane.

Discussion: Due to premature failure of starters and nonavailability of parts on model 2380 Rough Terrain Cranes, considerable downtime has been logged. It was discovered that a starter and solenoid for a Clark Model 175A Scoop Loader fit the crane and performed its function. The starter has been closely observed for a period of two months and no detrimental effects have been noted.

Observation: A starter and solenoid for a Clark model 175A Scoop Loader can be used in a model 2380 Rough Terrain Crane.

b. Item: Loading a 75TPH Eagle primary rock crusher.

Discussion: When loading a 75TPH Eagle primary crusher by a 5 ton dump truck, considerable wear resulted on the drive system for the hopper and

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feeder belt. Originally the existing hopper was enlarged with plate steel to accommodate this increased load. However, the feeder pan and drive mechanism frequently broke down due to the constant impact and the increased volume of material on the feeder belt. Leaving a layer of cushion material on the chain to lessen the impact helped, but did not eliminate the problem. A combination chute and storage hopper was constructed. The chute was designed to absorb the majority of the impact and to prevent the feeder belt from holding more than its designed load at any one time. (See Incl 8).

Observation: Down time due to impact loading of the feeder assembly can be eliminated by dumping down a chute which also serves as a storage hopper.

- c. Item: Cleaning of spray bar on asphalt distributor.

Discussion: Cleaning the spray bar on an asphalt distributor is a difficult process but necessary for proper operation. To eliminate this time consuming job, a trough of half-55-gallon drums was welded and filled with cleaning solvent. After operation, the distributor was backed up to the trough and the spray bar lowered into it, thus allowing the spray bar to soak for an extended period of time.

Observation: Spray bar cleaning can be made easier through the use of a solvent trough.

Section 2, Part II, Recommendations

1. Personnel: None

2. Operations: This battalion would be considerably aided in its mission accomplishment in Vietnam by augmentation with certain items of equipment uniquely fitted to the unit's current construction tasks. These items are common items of commercial equipment and are listed below with their most important potential applications in Vietnam. It is recommended that these items of equipment be made available to units in Vietnam through normal supply channels. It is absolutely essential that the system also provides the necessary maintenance back-up, commercial manuals, and repair parts.

a. Traxcavator: The operation of rubber tired mounted front-end loaders in a rock quarry leads to a constant problem of flat tires and excessive wear on the machine. Each loader is down for several hours daily while repairs are made. Crawler-front loaders (traxcavators) are designed for quarry use and are essential to construction battalion operations in Vietnam.

b. Angle Dozers: An angle dozer is the most effective piece of equipment for cutting large drainage ditches for airfields, making sidehill cuts, and working on difficult slopes where a grader has neither the power or the capability. This highly valuable piece of equipment is in constant demand and is not available.

c. Vibrating Plate Compactor: In many projects there is no substitute for a vibrating plate compactor. Availability of this piece of equipment would provide better quality construction at a considerable savings of men and equipment. This is especially true in culvert installation, building foundation

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construction, and countless other small-to-medium compaction tasks. In particular, VPC's are essential for consolidating sand, which is a principle construction material throughout Vietnam.

d. Marshall Stability Test Sets: The asphalt platoon has as organic equipment a hot mix plant. The platoon does not have the capability to design or test its own asphalt nor is such capability available anywhere in the battalion. There is no civilian contractor in this area who has the capability to assist the unit. The Marshall Stability Test Set should be organic to an asphalt platoon.

3. Training: None

4. Intelligence: None

5. Logistics: The construction battalion must rely on its nearest direct support unit to perform needed repairs on ordnance equipment. In many areas in Vietnam, the density of ordnance equipment supported by a DS maintenance unit far exceeds its capability. Construction units receive a lower priority for repair than combat units. As a result, equipment is often deadlined for long periods of time while waiting to be repaired. It is strongly recommended that the construction battalion be given back its ordnance DS capability in order to perform timely maintenance and insure efficient utilization of the unit's equipment.

8 Incl Withdrawn, Hqs, DA

~~1. OP ORD 11-67, 577th EBC~~

2. Organization, 577th EBC

3. Dolly Trailer

4. Fluted Steel Pile Cap Adaptor

5. Expedient Asphalt Distributor

6. Roofing Fasteners for Hangar

7. Surface Failure of Phu Hiep Army Airfield

8. Dumping Chute for 75TPH Primary Crusher


JOHN R. MC DONALD

LTC, CE

Commanding

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EGA-3 (31 January 1968) 1st Ind Maj Luther/tb/2500
SUBJECT: Operational Report - Lessons Learned (RCS CSFOR-65) for Quarterly
Period Ending 31 January 1968

DA, Headquarters, 35th Engineer Group (Const), APO 96312, 24 February 1968

TO: Commanding General, 18th Engineer Brigade, APO 96377

1. I have reviewed the Operational Report-Lessons Learned submitted by the 577th Engineer Battalion (Const) and consider it an accurate account of unit activities and accomplishments with the following additional comment:

Section 1, paragraph 4b: The sections of the access road between beaches Alpha and Bravo which were washed away by Typhoon Freida were limited to those areas which had been built up using blast rock fill. The entire length of this road is now being placed on a solid rock ledge. The blast rock removed to form this ledge is being used in the repair of the De Long causeway and is being stockpiled for future use for the upgrading of National Highway 1.

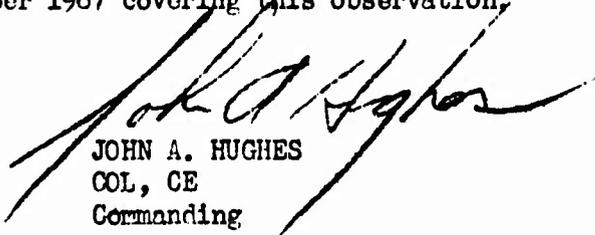
2. I concur with the observations and recommendations of the battalion commander with the following additional comments:

a. Section 1, 5b Maintenance: The 69th Maintenance Battalion at Cam Ranh Bay has assumed control of the unit which provides maintenance support to the Tuy Hoa area. This battalion has been appraised of the need for better repair parts supply to Tuy Hoa.

b. Section 2, Part I 2d: Note should be made that the 87th Engr Bn (Const) has experienced failure of UCAR 131 when treated sections of ground are subjected to high velocity water runoff. It appears that the value of UCAR 131 as a water erosion preventative is dependent on the material upon which it is placed, the depth of penetration and the volume and velocity of water passed over the area. UCAR 131 has proven to be acceptable as a dust palliative on untravelled areas.

c. Section 2, Part I 2i: The M8A1 matting failure reported at Phu Hiep is strikingly similar to the M8A1 matting failure witnessed by the 14th Engr Bn at Bao Loc Airfield.

d. Section 2, Part I 5a: An Equipment Improvement Recommendation (EIR) was submitted on 20 December 1967 covering this observation.


JOHN A. HUGHES
COL, CE
Commanding

cc: 577th Engr Bn

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AVBC-C (31 Jan 68) 2nd Ind CPT Ellegood/ltn/DBT-163
SUBJECT: Operational Report - Lessons Learned (RCS CSFOR-65), for
Quarterly Period Ending 31 January 1968.

Headquarters, 18th Engineer Brigade, APO 96377 3 FEB 1968

TO: Commanding General, U.S. Army Engineer Command, Vietnam (Prov)
ATTN: AVCC-P&O, APO 96491

1. This Headquarters has reviewed the Operational Report - Lessons Learned submitted by the 577th Engineer Battalion (Construction) and considers it to be an excellent account of the activities of the Battalion during the reporting period ending 31 January 1968.

2. The comments of the Battalion Commander and the Group Commander are concurred in with the following comments added:

a. Reference Section II, Part 1, Item 2i; this Headquarters has initiated a study to determine the extent and nature of the failures of MSA matting. While the results of the study are not final, indications are that these failures are limited to points of maximum stress and that they can be readily detected and repaired through normal maintenance procedures.

b. Reference Section II, Part 2, Item 2; it has been recommended that Class IV equipment pools be established within each Group's AOR. If this is accomplished, each Group will have a pool of specialized construction equipment available to them for unique construction requirements.

c. Reference Section II, Part 2, Item 5; while consideration will be given to reconstituting the Ordnance Direct support capability of the Engineer Construction Battalion during the next MTOE action, every effort must be made to make the existing system effective. The 35th Engineer Group is in contact with the maintenance unit supporting the 577th Engineer Battalion and this maintenance difficulty is expected to be resolved shortly.

Harold J. St Clair
HEROLD J. ST CLAIR
Colonel, CE
Deputy Commander

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AVCC-P&O (31 Jan 68) 3rd Ind
SUBJECT: Operational Report-Lessons Learned (RCS CSFCR-65) for Quarterly
Period Ending 31 Jan 68

HEADQUARTERS, UNITED STATES ARMY ENGINEER COMMAND
VIETNAM (PROV), APO 96491 15 MAR 1968

TC: Commanding General, United States Army Vietnam, ATTN: AVHCC-DST,
APO 96375

The attached ORLL, submitted by the 577th Engineer Battalion (Const), has
been reviewed by this headquarters and is considered adequate.

FOR THE COMMANDER:

John Thorton 1LT, AGC
for RICHARD B. BIRD
Captain, AGC
Assistant Adjutant General

1

AVHGC-DST (31 Jan 68) 4th Ind
SUBJECT: Operational Report - Lessons Learned (RCS CSFOR-65), for
Quarterly Period Ending 31 January 1968

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HEADQUARTERS, UNITED STATES ARMY VIETNAM, APO San Francisco 96375 21 MAR 1968

TO: Commander in Chief, United States Army, Pacific, ATTN: GPOP-DT,
APO 96558

1. This headquarters has reviewed the Operational Report-Lessons Learned for the quarterly period ending 31 January 1968 from Headquarters, 577th Engineer Battalion (Const) (WBAQAA) as indorsed.

2. Concur with report as indorsed. Report is considered adequate.

3. A copy of this indorsement will be furnished to the reporting unit through channels.

FOR THE COMMANDER:



CHARLES A. BYRD
Major, MG
Assistant Adjutant General

Copy furnished:
HQ USAECV (P)
HQ 577th Engr Bn (Const)

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GPOP-DT (31 Jan 68) 5th Ind
SUBJECT: Operational Report of HQ, 577th Engineer Battalion (Const) for
Period Ending 31 Jan 68 (RCS CSFOR-65)

HQ, US Army, Pacific, APO San Francisco 96558 12 APR 1968

TO: Assistant Chief of Staff for Force Development, Department of the
Army, Washington, D. C. 20310

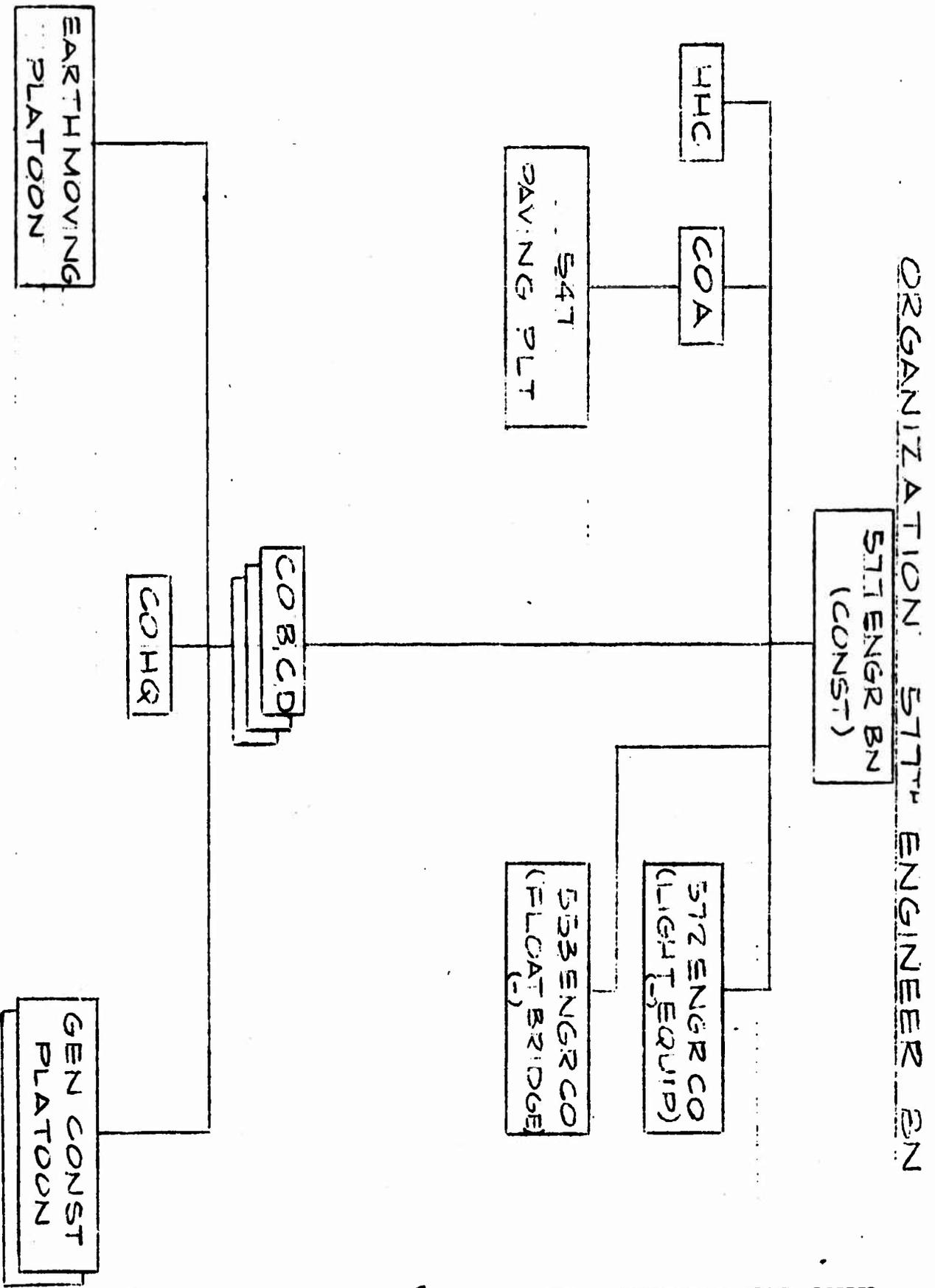
This headquarters has evaluated subject report and forwarding indorsements
and concurs in the report as indorsed.

FOR THE COMMANDER IN CHIEF:

C. L. Shortt

C.L. SHORTT
CPT, AGC
Asst AG

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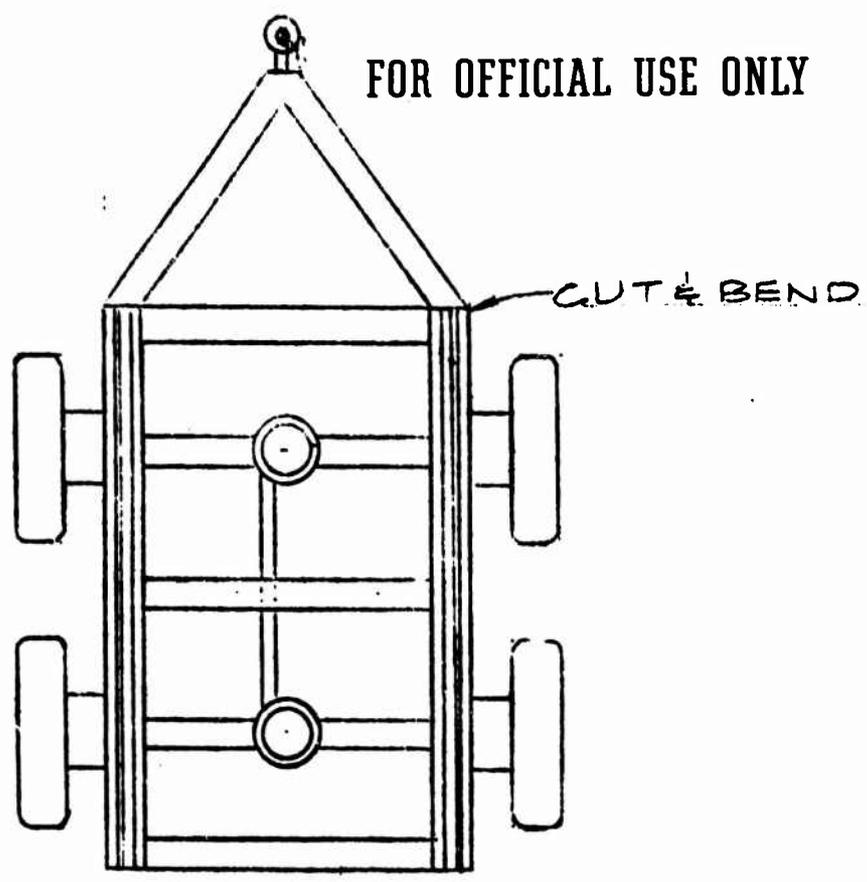


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2 1

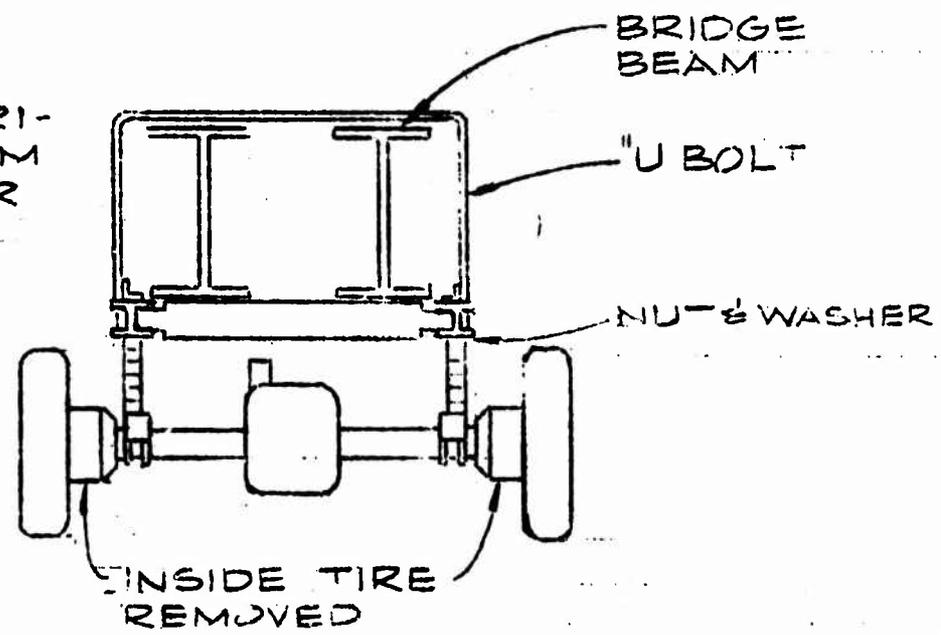
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PLAN

NOTE
FRAME FABRI-
CATED FROM
"I" BEAMS OR
CHANNEL



DOLLY TRAILER

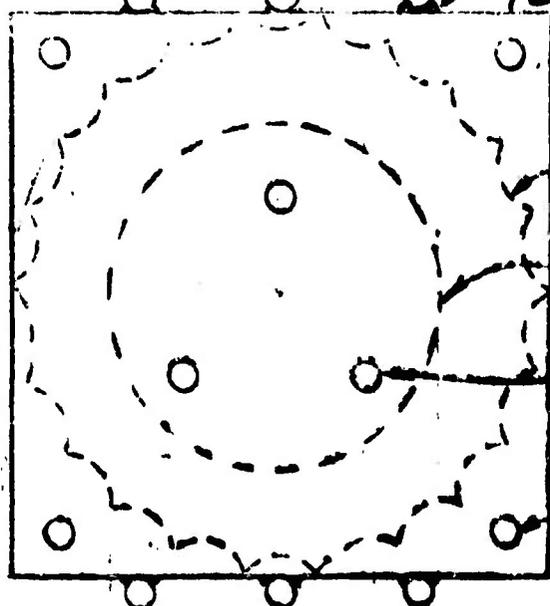
INCL. 3

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#6 REBAR

SPOT WELD
TO PLATE



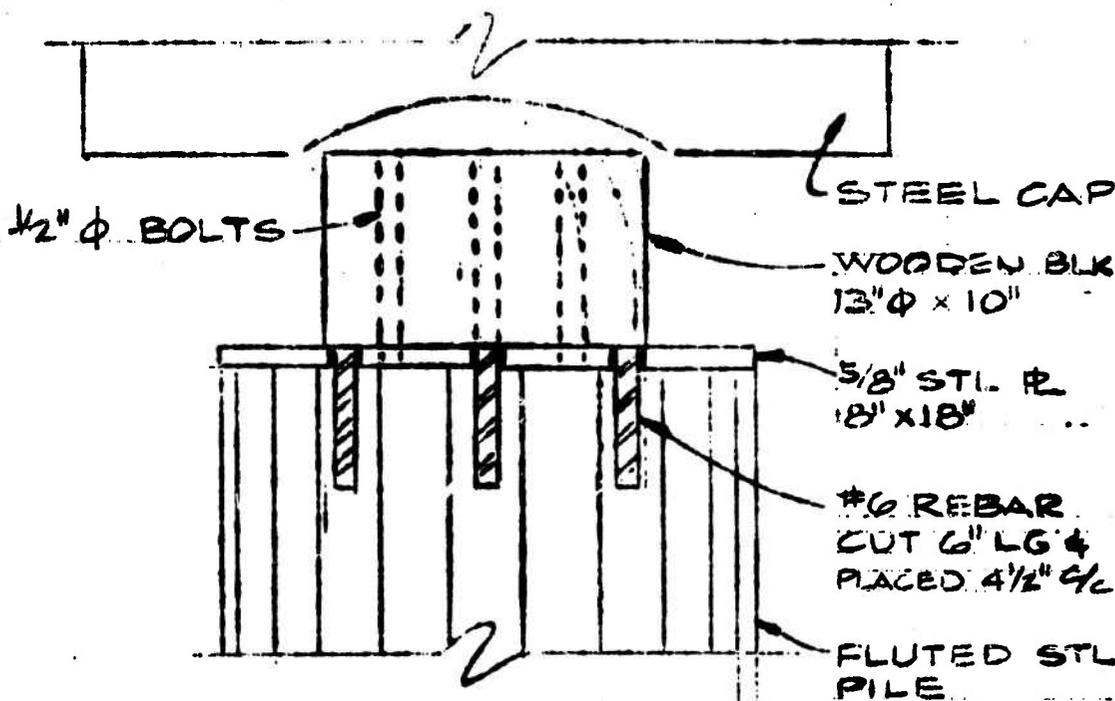
FLUTED STL.
PILE (BELOW)

WOODEN BLK
(ABOVE)

3/8" ϕ BOLT
HOLES (TYP)

1" ϕ SLING
HOLES

PLAN OF ADAPTOR



STEEL CAP

1/2" ϕ BOLTS

WOODEN BLK
13" ϕ x 10"

5/8" STL. P.
18" x 18"

#6 REBAR
CUT 6" LG &
PLACED 4 1/2" ϕ

FLUTED STL
PILE

ELEV. OF ADAPTOR

FLUTED STL PILE CAP ADAPTOR

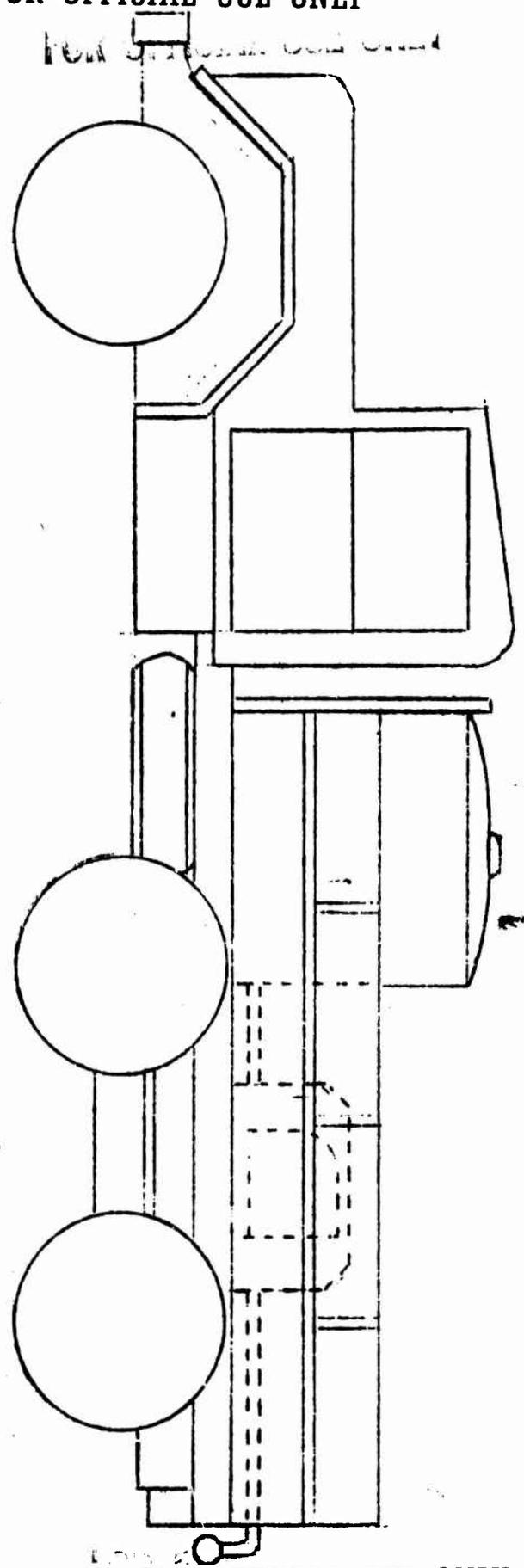
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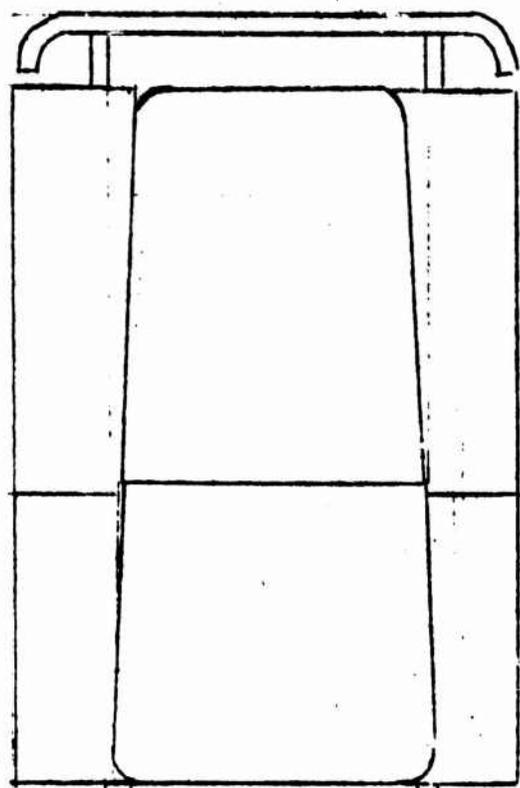
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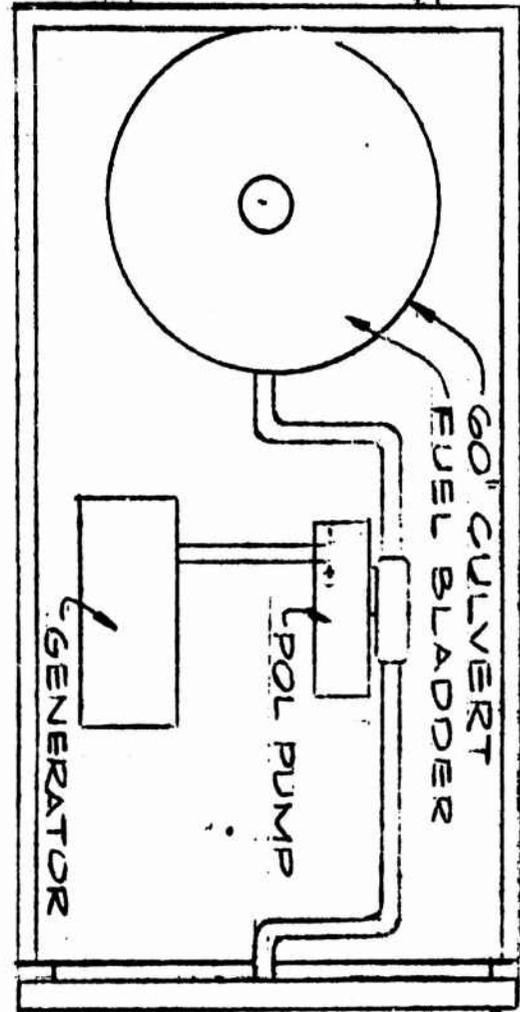
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EXPEDIENT ASPHALT DISTRIBUTOR

20



DISTRIBUTOR BAR

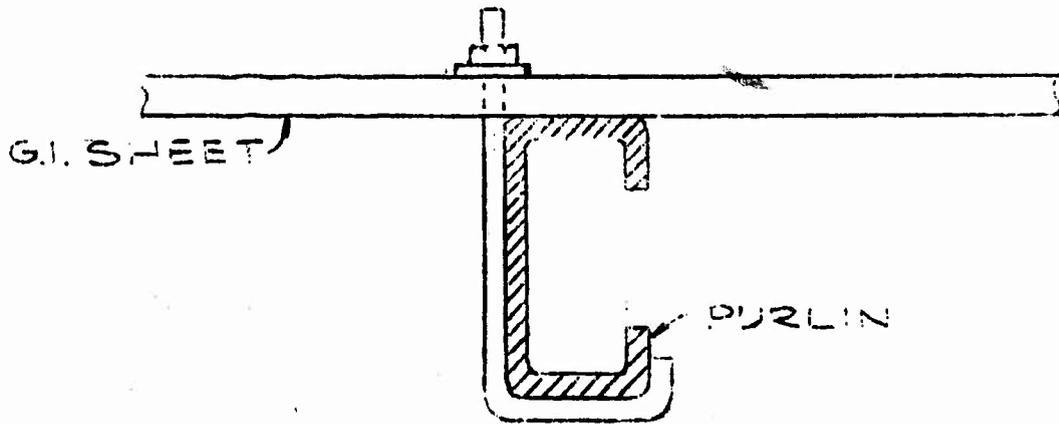
60" CULVERT
FUEL BLADDER

FUEL PUMP

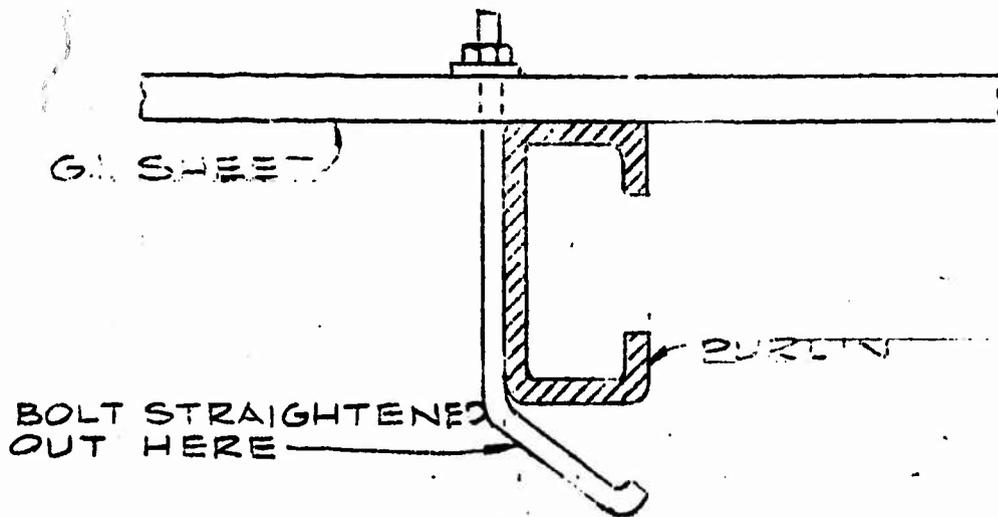
GENERATOR

27

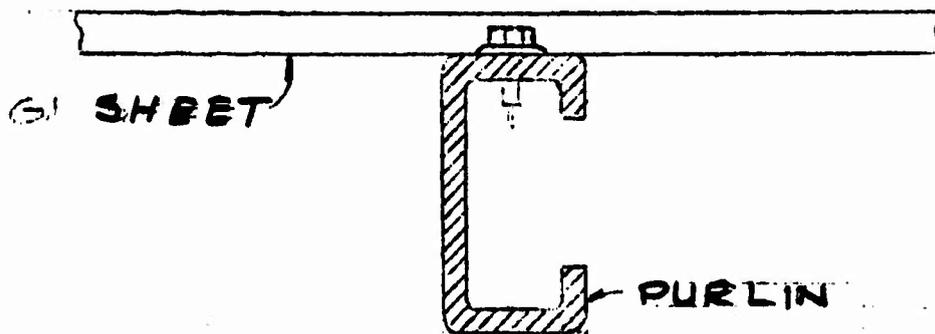
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ROOFING FASTENERS FOR HANGAR



A. J-BOLT INSTALLED



B. FAILURE OF J-BOLT



C. SELF TAPPING SCREW

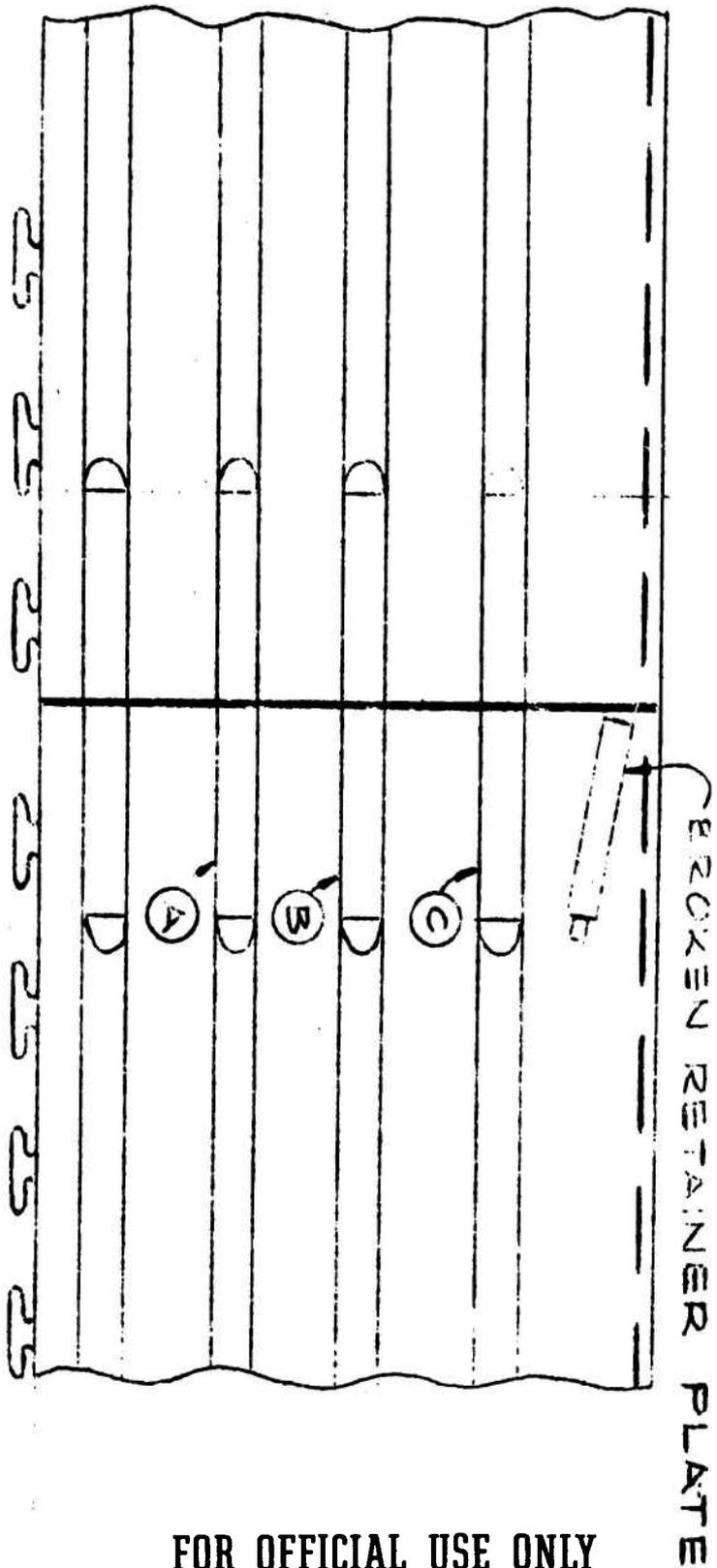
INCL 6

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- 1 WELD CRACKED AT CONNECTOR (A)
- 2 CONNECTOR RETAINER PLATE (B)
- RAISED & FAILED, EXPOSING END CONNECTORS (C)

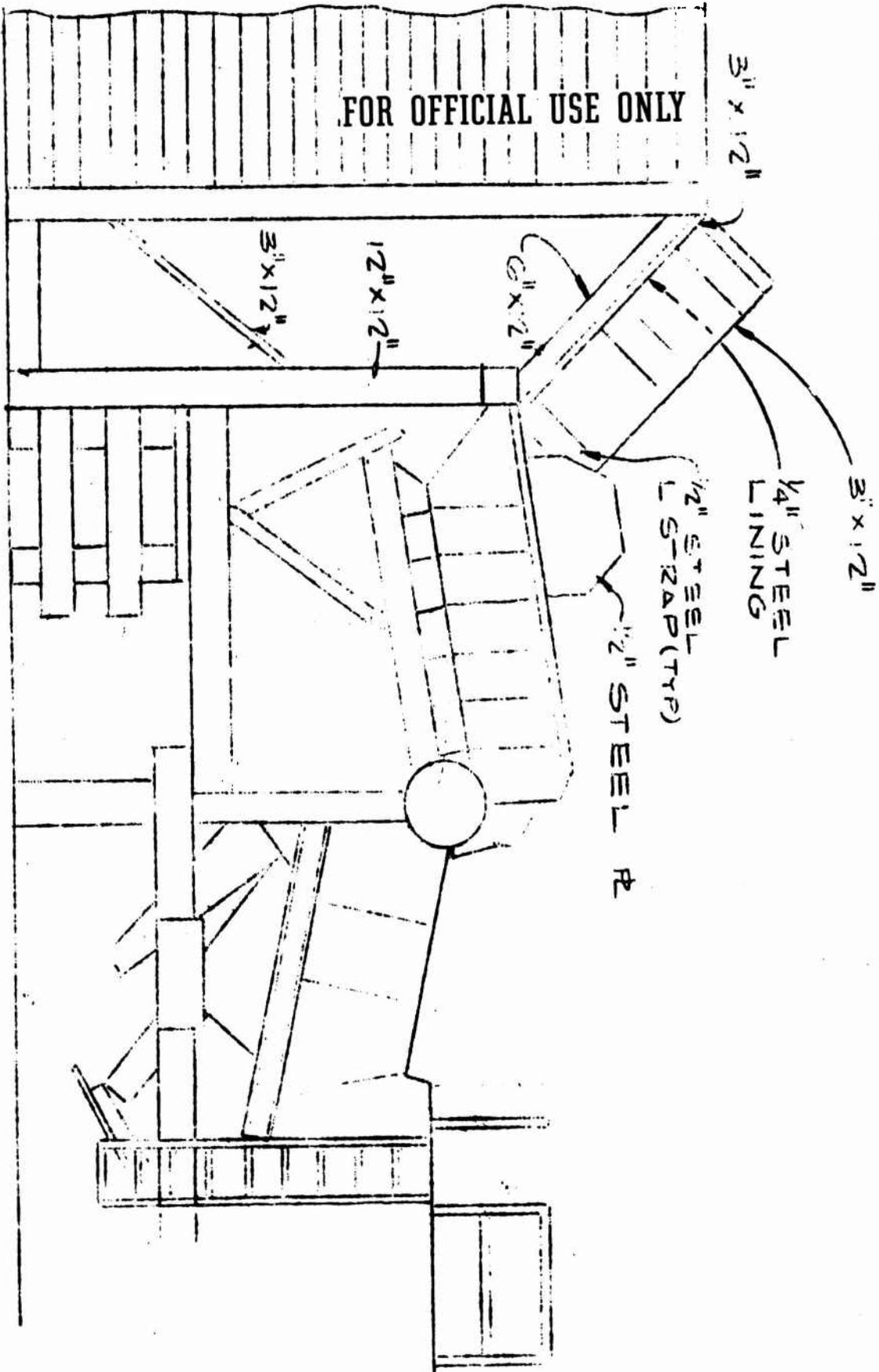


SURFACE FAILURE
OF
PHU HIEP ARMY AIRFIELD

INCL 7

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DUMPING CHUTE FOR 75TPH PRIMARY CRUSHER



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INCL 8

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DOCUMENT CONTROL DATA - R & D

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