[redacted]

AVHGC-DST (9 Feb 69) 3d Ind
SUBJECT: Operational Report of 39th Engineer Battalion (Combat) for Period Ending 31 January 1969, RCS CSFOR-65 (R1)

HEADQUARTERS, UNITED STATES ARMY, VIETNAM, APO San Francisco 96375 7 APR 1969

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

1. (U) This headquarters has reviewed the Operational Report-Lessons Learned for the quarterly period ending 31 January 1969 from Headquarters, 39th Enginser Battalion (Combat).

2. (U) Comments follow:

a. (C) Reference item concerning the Anchoring of MSAl Matting, page 18, paragraph 2b(10), nonconcur. Page 11-7 of TM 5-366 specifies the method of anchoring MSAl matting. In instances where the standard anchoring method is unsuitable U-type pickets may be driven, bent over, and welded to the matting to serve as anchors. Another method of anchoring matting is the use of T-17 membrane anchors driven through the matting to hold down the center area. The use of U-type pickets and T-17 membrane anchors is widespread in RVN and considered to be a satisfactory method of anchoring matting.

b. (U) Reference item concerning Life of 25 Amp Voltage Regulator, NSN 2920-335-4677, page 19, paragraph 2E(1), and 2d Indorsement, paragraph 2b; nonconcur. Basic comment from the 39th Engineer Battalion recommends four radiator mounts be installed between the voltage regulator and the fire wall of 2½ ton and 5 ton multifuel vehicles to reduce vibration and prolong the life of the voltage regulator. The 18th Engineer Brigade nonconcurred in this recommendation. The use of the radiator mounts would result in early failure of the voltage regulator. Tank Automotive Command representatives from Customer Assistance Office-Vietnam (CAO-V) agree that the mounts should not be used. Unit will be advised not to use the radiator mounts. No further action by DA is required.

c. (U) Reference item concerning Brake Shoe Guide for 5 ton Vehicles, page 19, paragraph 2E(2); nonconcur. Local fabrication of the brake shoe guide pin is not recommended except in emergency situations. Tank Automotive Command (TACOM) representatives at CAO-V stated that threading the pin and securing it in place with a nut, as suggested, could result in early failure of the brakes. Recommend the unit submit an Equipment Improvement Recommendation so that TACOM can evaluate the suggested field repair. Unit will be advised not to fabricate the pin until receipt of advice from TACOM.

DOWNGRADED AT 3 YEAR INTERVALS;
DECLASSIFIED AFTER 12 YEARS
DOD DIR 5200.10

DECLASSIFIED BY

CH DST DIV	
CH MS BR	
CH DOC BR	
CH ENG BR	
A/O	

GROUP 4
Downgraded at 3 year intervals
Declassified after 12 years
DOD DIR 5200.10 Applies

[redacted]

AVHGC-DST (9 Feb 69) 3d Ind
SUBJECT: Operational Report of 39th Engineer Battalion (Combat) for Period Ending 31 January 1969, RCS CSFOR-65 (R1)

d. (U) Reference item concerning Replacement Hydrovacs, page 20, paragraph 2E(4); concur. Careful inspection of replacement hydrovacs obtained from supply or maintenance channels will ensure that faulty units are not installed on vehicles. When faulty hydrovacs are discovered, the unit should report the discrepancy so that the source of the faulty repair work can be isolated and eliminated. No action required at higher headquarters.

e. (U) Reference item concerning Modification of Steering Linkage of 440 Grader, page 21, paragraph 2E(8); nonconcur. The repair of steering linkage with mild steel bar stock is not recommended from a safety standpoint. This linkage is subjected to twisting stresses and is designed to be able to withstand these stresses. Bar stock is a softer material and is not able to take the physical abuse that the linkage should be able to withstand. The suggested repair should be used in an emergency only, and the operator cautioned to operate the equipment with extreme care. Unit will be informed by separate correspondence. No further action is required by this or higher headquarters.

FOR THE COMMANDER:

C. D. WILSON
1LT, AGC
Assistant Adjutant General

3 Incl
nc

Cy furn:
39th Engr Bn
18th Engr Bde

MFR: ORLL was staffed through:

G-4: MAJ Kaplan/4578
ENGR: MAJ Emig/4750

ACTION OFFICER: MAJ STEWART/LBN 4433

CONCURRENCE/NONCONCURRENCE: ENGR LTC 4 Apr 69

GROUP 4
Downgraded at 3 year intervals
Declassified after 12 years
DOD DIR 5200.10 Applies

AVBC-HC (31 Jan 69) 2nd Ind
SUBJECT: Operational Report of the 39th Engineer Battalion for the Period Ending 31 January 1969, RCS CSFOR 65 (R1)

DA, Headquarters, 18th Engineer Brigade, APO 96377

TO: Commanding General, U.S. Army Vietnam, ATTN: AVHGC-DST, APO 96375

1. (U) This headquarters has reviewed the Operational Report - Lessons Learned for the 39th Engineer Battalion (Combat) as indorsed by the 45th Engineer Group (Construction). This report is considered to be an excellent account of the Battalion's activities for the reporting period.

2. (C) This headquarters concurs with the observations and recommendations of the Battalion and Group Commanders, with the following exceptions in addition to the action outlined in the recommendations and comments:

a. Reference: Section 2, paragraph B(7). Steps should be taken to destroy expended smoke grenade canisters if there is no further use for them. The canister should not be allowed to fall into enemy hands.

b. Reference: Section 2, paragraph E(1). Vibration is not considered a primary cause of short voltage regulator life. Further, the use of radiator mounts in the manner suggested would result in their early failure and consequently, the permanent damage to the regulator.

JOHN H. ELDER, JR.
Colonel, CE
Commanding

CF:
39th Engr Bn
45th Engr Gp

EUD-3 (31 Jan 69) 1st Ind
SUBJECT: Operational Report of the 39th Engineer Battalion (Combat) for the Period Ending 31 January 1969

DA, Headquarters, 45th Engineer Group (Const), APO 96306, 18 February 1969

TO: Commanding General, 18th Engineer Brigade, ATTN: AVBC-C, APO 96377

1. The Operational Report - Lessons Learned of the 39th Engineer Battalion (Combat) has been reviewed by this headquarters and is considered to be an excellent account of the 39th Engineer Battalion's activities during the reporting period ending 31 January 1969.

2. This headquarters concurs with the observations and recommendations of the Battalion Commander with the following comment added: Reference: Section 2, paragraph b (10). A standard method of anchoring M8A1 matting is given in TM 5-366.

JOHN G. WAGGENER
COL CE
Commanding

REGRADED UNCLASSIFIED WHEN SEPARATED
FROM CLASSIFIED ENCLOSURES

~~CONFIDENTIAL~~

DEPARTMENT OF THE ARMY
HEADQUARTERS, 39TH ENGINEER BATTALION (COMBAT)
APO San Francisco 96325

EGD-BA-3

9 February 1969

SUBJECT: Operational Report of 39th Engineer Battalion (Combat) for Period Ending 31 January 1969, RCS CSFOR-65 (R1)

THRU: Commanding Officer
45th Engineer Group
ATTN: S-3
APO 96308

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

Commanding General
United States Army, Vietnam
ATTN: AVHGC (DST)
APO 96375

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

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

DOWNGRADED AT 3 YEAR INTERVALS;
DECLASSIFIED AFTER 12 YEARS
DOD DIR 5200.10

~~CONFIDENTIAL~~

1. (C) Section 1. Operations: Significant Activities

A. (C) General:

(1) (C) Organization:

During the reporting period, the 39th Engineer Battalion (Combat) consisted of a Headquarters and Headquarters Company, and four lettered line companies. The Third platoon of the 630th Engineer Company (Light Equipment) remained attached to Company C until its return to its parent company on 24 November 1968 when the 630th Engineer Company (LE) (-) was attached to the 39th Engineer Battalion (Combat) from the 14th Engineer Battalion. The 1st platoon of the 511th Engineer Company Panel Bridge) remained attached to Headquarters and Headquarters Company for rations, maintenance, and operational control. On 18 December 1968, the headquarters platoon of the 511th Engineer Company (PB) was also attached to the 39th Engineer Battalion (Combat). See inclosure 1.

(2) (C) Command: The 39th Engineer Battalion (Combat) remained under the command of the Commanding Officer, 45th Engineer Group. The battalion remained in support of the Americal Division throughout the reporting period, with Headquarters and Headquarters Company at the same location within the CHU LAI base perimeter (BT 533037). Incumbent commanders at the close of the reporting period were as follows:

CO, 39th Engr Bn	-	LTC Tenho R. Hukkala
CO, Co A, 39th Engr Bn	-	CPT George R. Paul II
CO, Co B, 39th Engr Bn	-	1LT John A. Bornmann
CO, Co C, 39th Engr Bn	-	1LT Gregory L. McClendon
CO, Co D, 39th Engr Bn	-	CPT Edward J. Rashid
CO, HHC, 39th Engr Bn	-	CPT Paul A. Reh
CO, 511th Panel Bridge Co	-	1LT Wilbur H. Boutin
CO, 630th Light Equipment Co	-	CPT Torrence M. Wilson

(3) (C) Major Activities: In addition to LOC minesweeping and maintenance of Route QL-1, the major activities during the reporting period included: upgrading of Route HL-535 from LZ BALDY (BT 142452) to LZ ROSS (BT 028342); renovating and enlarging the ASP at LZ BALDY: widening Route QL-1 from MO DUC (BS 733543) to the SONG VE RIVER (BS 639635) to meet MACV standards; upgrading and repair of bridges and drainage structures along QL-1 from MO DUC (BS 733543) to the SONG TRA KHUC RIVER (BS 642745) and from QUANG NGAI (BS 642747) to BINH SON (BS 601922); construction of aircraft revetments at CHU LAI airfield; provision of hardstands at the KY HA helicopter maintenance facility.

(a) Route HL-535 was being upgraded to a military standard Class 50, single lane road to allow access to LZ ROSS from LZ BALDY, primarily in support of the elements of the 196th Light Infantry Brigade. This mission included improving drainage, adding culverts, and placing fill.

(b) The ASP at LZ BALDY was enlarged and improved. This project consisted of improving drainage in the area with ditches and culverts, construction of a berm, and upgrading roads in the ASP area.

(c) Upgrade of the 12.4 km section of Route QL-1 from MO DUC to the SONG VE RIVER was essentially completed during the report period. This consisted of hauling fill, compaction, and finish work, plus improvement and widening of drainage structures.

[redacted]

(d) Revetment walls were built at the CHU LAI airstrip for the protection of USAF OV-1 aircraft. The revetment consisted of 2 rows of M8A1 matting 42" apart and 7 mats high. Sand was placed between the rows of matting and a total of 960' of revetment was erected in the report period.

(4) (C) Activities of Headquarters Company:

Throughout the reporting period, Headquarters Company was located at the CHU LAI Base Camp with the 39th Engineer Battalion Headquarters. Headquarters Company continued its mission of supporting the line companies and accomplishing engineer support tasks for the Americal Division within the CHU LAI Base area. The 630th Engineer Company (LE) (-) and 511th Engineer Company (PB) (-) joined the 39th Engineer Battalion during the report period. Both units staged through the Battalion area. Messing and initial assistance in administration, maintenance, and supply were provided each of these companies. Principal tasks completed included:

(a) Periodic grading of Route QL-1 from CHU LAI (BT525038) to BINH SON (BS597927) and of various internal roads within the CHU LAI Base area.

(b) Providing equipment packets to line units to enhance construction on upgrading of Routes QL-1 and HL-535.

(c) Restoration and movement of SEA huts within the CHU LAI base area.

(5) (C) Activities of Company A:

Throughout the reporting period Company A was located with the 39th Engineer Headquarters at CHU LAI (BT534026). During this period the unit had the mission of minesweeping and general road maintenance of QL-1 from CHU LAI to BINH SON (BS596928) and various projects at CHU LAI. At the beginning of the period Company A continued the construction of a TOC Bunker for Subsector VIII of the CHU LAI Defense Command (CLDC) and the extension of the matting at the KY HA maintenance area. Projects initiated during this period included construction of a 35-ft observation tower for CLDC, a combination wash rack and pump house facility for the 23d S&T Battalion, revetment walls for the USAF at CHU LAI airfield, revetment walls for computer vans at Americal Division Headquarters, 2 concrete pads for the 312th Evac Hospital, a base area for the 511th Engineer Company (Panel Bridge), and a concrete pad for the 43rd Signal Battalion.

The TOC Bunker for Subsector VIII CLDC was a 24'x30'x10' structure placed on a 10-inch reinforced concrete pad started on 26 October 1968. The bunker with walls three feet thick was completed on 24 November. The KY HA project consisted of removing old aluminum runway matting, recompacting the 60,000 SF area and installing M8A1 matting. To provide adequate drainage, 425 feet of 48-inch and 60-inch corrugated metal pipe were laid in half culvert open drainage ditches. Fifty-six CY of asphalt were used to pave the area between the old matting and new matting. The project, having been delayed several times due to heavy rains was 98% complete at the end of the report period.

On 2 November one platoon completed replacing a culvert at BS567985 with four tubes of 36-inch CMP. The culvert had been destroyed by the enemy on 28 October 1968 and was replaced without closing QL-1.

[redacted]

On the night of 10 November the enemy destroyed a 40 foot steel stringer bridge at BS 568979. On 12 November a bypass for the bridge was completed with the installation of two 60-inch CMP culverts and placing of 931 cubic yards of fill. On 21 November the company began replacing the bridge with a new steel stringer bridge and completed it on 24 November. Also on 21 November, the company began relocating the Battalion dispensary and building a 35-foot Observation tower on the perimeter of Subsector VIII, CLDC. The relocation of the dispensary involved the movement of two 16'x32' wood hutments and placing them end to end. This was completed on 25 November.

On 25 November 1968 Company A began construction of a 50'x100' concrete wash rack for the Americal Division. A pump house was also built for the wash rack as part of this project. The wash rack and pump house were completed on 16 December 1968.

On 29 November Company A initiated construction of a series of revetment walls at CHU LAI airfield. This consisted of removing expedient 55-gallon drums and building new permanent revetments of M8A1 matting. The walls, 12'3" tall, consisted of two parallel rows of matting 42 inches apart, and seven rows high. The mats were braced with rebar and filled with sand. The 960 feet of wall will provide protected bays for nine OV-1 aircraft at the airfield. Construction was still in progress at the end of the report period with 65% of the project complete.

Construction started on 10 December of revetment walls and roof to protect a computer van adjacent to the Americal Division TOC. This project was completed on 19 December.

On 16 December the company began construction of a concrete floor for the 43rd Signal Battalion. The 16'x100' slab was completed on 23 December. Work started on 23 December on the construction of a base area for the 511th Engineer Company (PP) (-) at CHU LAI. This consisted of constructing a company CP, supply building, company shower, and water tower. This assistance was completed on 10 January 1969. Work at the 312th Evacuation Hospital began on 6 January. This project consisted of clearing an area for two reinforced concrete pads, one 15'x20' and one pad 20'x20'. After construction of the pads an open drainage culvert was also installed. Work at the 312th was completed on 25 January 1969.

Enemy activity in Company A's AO throughout the period was at an extremely low level. However, on 20 January a 5-ton dump truck from Company A detonated a 40-pound charge near BINH SON in the only mining incident for the company during the report period. The explosion resulted in one KHA and one WHA. The vehicle was a total loss.

During the report period, Company A had placed 511 feet of culvert, hauled 4637 CY of fill, and poured 133 CY of concrete. Twelve projects had been completed; and 3 different projects were underway at the end of the report period.

(6) (C) Activities of Company B:

Throughout the report period, Company B remained at LZ DOTTIE (BS 632854). The assigned missions included the road maintenance and upgrading of bridges and drainage structures on highway QL-1 from QUANG NGAI (BS 642747) to BINH SON (BS 601922), a total distance of 18 km. In addition, Company B conducted a daily minesweep of Route QL-1 between BS 601922 and BS 633811, a distance of 12 km.

At the start of the report period, there were three projects already in progress: at BS 638757 a blown pile bent timber bridge, QL1-415, and its north abutment had to b

placed; at BS 633811 a blown bridge was replaced with 8 each 60" culverts; and at BS 609904 a blown timber pile bent bridge, QL1-417, had to be repaired.

Enemy activity increased during the month of November, hampering repair work. On 2 November a culvert was blown, and three 50' sections of 60" culvert were emplaced at BS 633811. On 6 November the road was cratered, and the work party received sniper fire at BS 609904. On 9 November another culvert was blown at BS 619881. On 12 November, in the vicinity of BS 619881 the road was cratered again; a command detonated mine was exploded, killing 2 Vietnamese and wounding 1; and another command detonated mine was found in the road. On 16 November bridge QL1-415 was completed. This involved driving 13 piles, placing 2 caps, 11 stringers, decking and treadway, as well as repairing the north abutment and building a bypass. The project was accomplished through the joint efforts of Company B with Company A, 104th ARVN Engineer Battalion. On 18 and 19 November, two more culverts at BS 636796 and BS 629828 were blown. Also on 19 November, a VN lambretta detonated a mine at BS 629829 resulting in three VN killed and 4 VN wounded. On 20 November, a VN motor bike, passing by the minesweep team, detonated a mine at BS 619881 resulting in three VN killed, 11 VN wounded, and 5 US wounded.

On 23 November, a VN truck detonated a mine at BS 629832, causing 5 VN to be killed and 8 VN to be wounded. Also on 23 November, one platoon from Company B reorganized as Infantry to sweep an area from which it had been receiving sniper fire. The sweep resulted in 7 VC killed with 2 US wounded. On 28 and 29 November two more mines were found, one 15 lbs and one 30 lbs, at BS 619881 and BS 575903.

In December, enemy activities subsided with the majority of incidents involving sporadic sniper fire. On 3 December, a 10 lb mine was discovered in the road. On 16 December, 2nd Platoon of Company B was airlifted to HA THANH Special Forces Camp to assist US and CIDG personnel there in constructing a new TOC, repairing a dispensary, reshaping and draining the airfield and constructing approximately 100 perimeter bunkers. Also on 16 December, a project to construct four gun pads for the D Battery, 1/82 Arty located at LZ DOTTIE, was assigned. On 17 December, four mines were found and one culvert blown in the section of QL-1 from BS 620826 to BS 609906. On 27 December, the bridge at QL1-417 was completed. This involved driving 10 piles, placing caps, 64 stringers, 5 spans of decking, treadway and curbing, as well as repair of abutments and upgrade of bypass. This project was also a joint effort with Company A, 104th ARVN Engr Bn.

On 9 January, a VN bus detonated a mine at BS 629828 resulting in 12 VN killed and 18 VN wounded. On 10 January, a 10 lb mine was found at BS 630825 and a culvert was blown at BS 630825. On 15 January, the southwest corner of QL1-417 was blown. Three piles on the end dam, three stringers, one cap, one curb and a section of decking had to be replaced. Also on 15 January, four of the eight 60" culverts at BS 633811 were blown. The resulting hole was filled to allow traffic to resume as soon as possible. The road was re-opened by 1400 hours. On 16 January, the 2nd Platoon returned to LZ DOTTIE after finishing their assigned tasks at the HA THANH SF camp. Also on 16 January, two 10 lb mines were found near BS 633811. On 17 January, the project of building the artillery gun pads was changed from 4 pads to 3. However, there was a delay in completion due to non-availability of materials. Also on 17 January, while returning to LZ DOTTIE from a work site, one platoon was ambushed at BS 639828. The platoon received 100-150 rounds of automatic weapons fire and 2 mortar rounds. One US was lightly wounded. On 20 January, another culvert was blown at BS 631823. On the night of 22 January, Company B received 5 mortar rounds in its perimeter at DOTTIE. For the reporting period, Company B had placed 954 feet of culvert for drainage, hauled 14,076 cubic yards of fill for drainage and road upgrade, and poured 53 cubic yards of concrete.

(7) (C) Activities of Company C

Throughout the reporting period, Company C was located at LZ SNOOPY (BS 704610), with the exception of the third platoon which remained at LZ BRONCO (BS 814378) until 20 November 1968. The third platoon's mission was upgrading an existing dirt runway to a C-130 Type II airstrip surfaced with MX-19 matting. The assigned mission of Company C with the third platoon, 630th Engineer Company (LE) attached, was the widening of QL-1 to MACV standards from MO DUC (BS 733543) to the SONG VE RIVER (BS-695635). Company C's mission also included the maintenance, widening and upgrading of bridges and drainage structures from MO DUC to the SONG TRA KHUC RIVER (BS 642-745), a total of 22.7 km; and daily minesweep of QL-1 between MO DUC and the SONG VE RIVER, a distance of 12.4 km.

On 2 November, a bypass which had washed out at Bridge QL1-410 (BS 685658) during Typhon Hester on 21 October 1968, was reconstructed. On 30 November, the dry span at QL1-410 was removed in preparation for repair of the north abutment and two northern spans of 20 feet each. Repairs were made on the abutments at bridges QL1-404 (BS 728556), QL1-405 (BS 706617), and QL1-406 (BS 695635). Three by twelve material was used to repair the decking and treadway at QL1-408 (BS 695635) and QL1-409 (BS 691646).

Extensive effort was begun on 13 November 1968 to improve the defense of LZ SNOOPY. By 16 November 1968, the following had been accomplished: fields of fire for guard bunkers cleared; 60% of a perimeter defensive berm completed utilizing 3000 CY of laterite; an outpost bunker was built 60 meters outside the bunker line at the start of a draw in order to provide early warning to the LZ; and revetments for protection of vehicles were 70% completed. At 0245 hours on 17 November, LZ SNOOPY and an adjacent ARVN fire base were subjected to a coordinated VC mortar and ground attack with 35 mortars, 8 RPG rockets, 3 B40 rockets, 3 satchel charges, and numerous grenades striking the company area. After the initial half-hour of concentrated indirect and direct fire, occasional mortar fire continued until 0530 hours. Gunships and flareships were on the scene by 0300 hours and provided close air support for three-and-one-half hours. At daylight a search of the perimeter showed 14 enemy dead who had penetrated the defensive wire at three points. Four AK 47's and numerous hand grenades were captured. In addition, two VC who were seen retreating were captured by a pursuing patrol from Company C 300 meters north of the LZ. Company C had 3 guard bunkers take direct hits with rockets, one vehicle took minor damage, one storage area was 30% destroyed, and one living bunker 25% destroyed. However, there were only two friendly casualties. Later in the day on 17 November, an additional 33 enemy bodies were found by ARVN's in a shallow grave one km south of LZ SNOOPY. Nine awards for valor were recommended as a result of this action.

Also on 17 November 1968, a concrete abutment was destroyed at QL1-409 (BS 691-646). A replacement 80-foot Bailey Bridge was delivered to the site on the afternoon of 18 November, and was installed by 1200 hours on 19 November.

On 20 November the third platoon, Company C, returned from LZ BRONCO to LZ SNOOPY. At LZ BRONCO, the platoon placed 1160 feet of airstrip, using MX-19 matting to complete the repair of Dusseau Army airfield. In addition, a 150 foot x 150 foot turnaround was added using MX-19 matting. The north parking area was replaced using M8A1 panels. A row of anchor mats was installed with the north anchorage system. Field access adapters were installed at 150 foot intervals to facilitate replacement of damaged panels and repair of the subgrade. Significant accomplishments were the continuous use of 1900 feet of runway for C-4A traffic during construction and the up-

grading and reuse of 75% of the old MX-19 matting which had been placed twice before. Although many rainstorms intervened, the airstrip was never closed because of an unserviceable runway.

On 22 November 1968, the third platoon, 630th Engineer Company (LE), working on QL-1 (BS 724577), came under automatic weapons fire from a platoon sized enemy force approximately 200 meters off the road. Artillery and gunships were called. After the enemy was driven off, a Montagnard force swept the area, found 14 enemy dead and captured five VC suspects. On the night of 23 November, the LZ received 20 mortar rounds with negligible damage and casualties. On 25 November, the company was provided two APC's by the 56th Light Infantry Brigade for minesweep and work party security.

December was marked by moderate enemy action, continued emphasis on maintenance of equipment, and improvement of LZ defenses. Additional emphasis was placed on Civic Action projects, hauling of fill, and bridge construction. The north abutment was excavated at QLL-410 (BS 685658) on 2 December, and construction started on the destroyed two 20-foot spans of an 80-foot four span single lane pile bent timber bridge. The bridge was completed on 15 December, but was blown that night with 75% of the bridge destroyed. The north abutment, 2 spans and two bents were 100% destroyed. Work was immediately started to rebuild the bridge. Work at Bridge QLL-412 (BS 659700) was started on 3 December. On 9 December 1968, the installation of wing walls and deadmen was initiated at bridge QLL-404 (BS 728556). This was followed by the removal of deteriorated decking and treadway and the installation of new material at Bridge QLL-406 (BS 706618) on 10 December 1968. Also 11 December saw the beginning of excavation for an additional 20-foot span to Bridge QLL-405 (BS-707617).

In an effort to decrease mining activity and for dust control purposes, 13,010 square yards of road were stabilized with 3,905 gallons of peneprime. Fifteen thousand gallons of water were also spread for dust control. From BS 736533 to BS 726-563, 18,00 square yards of roadway were stabilized with 600 CY of rock. Civic Action efforts increased in December with 395 man hours and 84 equipment hours expended in this area: 388 CY of laterite were hauled, spread, and compacted for a market place in DONG CAT; 11,800 square meters of land were cleared for a 300 meter pioneer road and stabilized living areas; and 30 feet of 36-inch CMP and 50 feet of 60-inch CMP were placed on LOC and a secondary road for civic action purposes as well as drainage. Work continued in the LZ with the construction of two platoon demolition and ammunition storage bunkers, seven squad ammo bunkers, one new guard bunker, and 11 fire barrels. Five hundred feet of triple concertina and 2100 square feet of tangle foot were placed around the LZ perimeter wire.

January was marked by decreased enemy action, temporary closing of QL-1 due to rain, and continued emphasis on fill haul and drainage structures. Bridge QLL-405 (BS 707617) was completed to include refurnishing of the south abutment and placing the south deadman. Materials were located at QLL-412 (BS 659700) for a 60-meter pile bent timber bridge and pile driving was started in concert with Company A, 104th ARVN Engineers. Emphasis was placed on drainage construction and eight footers and seven headwalls were poured using 30 CY of reinforced concrete. Thirty-five feet of CMP were installed on the LOC.

Civic Action projects and Medcap program efforts continued with 65 man hours and 25 equipment hours expended. Operations were hampered considerably during the first two weeks in January 1969 due to rain. With eight inches falling on 7 and 8 January,

QL-1 was closed at QL1-412 for two days due to high water. The bypass at QL1-410 was damaged but remained passable. During January, Company C had hauled and compacted 3200 CY of laterite and the third platoon, 630th Engineer Company (LE) had hauled and compacted 5100 CY of laterite. One hundred and thirty square yards of open storage area had been prepared for installation of a POL supply point. One thousand feet of triple concertina had been placed, a 100 meter area outside the perimeter wire was cleared, and repair of Bridge QL1-406 started.

By the end of the reporting period the upgrade of QL-1 from MO DUC to SONG VE had been completed. All drainage structures had been completed with minor repair of two bridges and construction of the remainder of one pile bent timber bridge remaining to be done.

During the report period Company C had placed 608 feet of culvert, hauled 7110 CY of fill, and poured 36 CY of concrete. Company C completed one project, the airfield at DUC PHO, and continued the mission of upgrading QL-1 from MO DUC (BS 733543) to the SONG VE RIVER (BS 695635).

(8) (C) Activities of Company D.

Throughout the report period Company D was located at LZ BALDY (BT 134443). The primary mission of Company D was the upgrading and maintenance of approximately 20 kilometers of Route HL-535, a vital main supply route linking LZ ROSS (BT 027342) with LZ BALDY. Secondary missions included the enlargement and improvement of the ASP at LZ BALDY, and assisting the USMC 9th Engineer Battalion in construction of a base camp and rock crusher site.

Two weeks prior to the beginning of this reporting period, Company D had reopened Route HL-535 to military convoys by the construction of multiple culverts at four different locations where the road had been washed out by typhon rains. With the 196th LIB providing security for the daily minesweep and construction operations, Company D hauled and placed 24,000 CY of fill and compacted and crowned seven and one-half km to include grading and ditching. An important part of the operation was providing adequate drainage. This required the installation of 474 feet of culvert, including 280 feet of 60-inch culvert. The construction of headwalls for these culvert sites required 8,875 sandbags, 9 CY of concrete, and 41 CY of rock. As a result of this massive effort, Company D was able to reduce the convoy time from LZ BALDY to LZ ROSS from three-and-one-half hours to thirty minutes. In addition, the initial 1.5km of road was widened to 2-lanes to accommodate east-west traffic to the Marine Corps crusher site.

The mission of enlarging and improving the ASP at LZ BALDY was assigned to Company D. This mission was complicated by the continuous use of the existing facilities. Work was begun by constructing a road around the ASP to eliminate unnecessary traffic congestion. Subsequently, three additional storage modules were constructed. As these became available for use, munitions were relocated and drainage problems corrected in the existing modules. The existing modules were then enlarged and reshaped. To accomplish this, 474 feet of culvert was installed, 4364 CY of fill placed and shaped for berms, and 175 meters of road constructed. As the period ended, waterproofing of the modules utilizing peneprime had begun.

Also during this period, Company D assisted the USMC 9th Engineer Battalion in constructing a base camp and rock crusher site. This project included clearing the

area and constructing access roads and hardstand areas. Thus far, 2200 meters of road has been constructed, 38,000 SM has been cleared of brush and sparse trees, and 18,230 cubic meters of spoil has been relocated.

To improve defensive positions at LZ BALDY, Company D hauled 1446 CY of fill for berms and bunkers. Twenty-one supplementary firing positions were constructed.

Close coordination with security elements of the 196th LIB throughout the report period helped keep the casualty figures at only one WHA and negative KHA. Mines, however, have been a considerable problem causing the loss of two 5-ton dump trucks, one D7E dozer, and one 25-ton trailer.

(9) (C) Activities of the 511th Engineer Company (PB)

At the beginning of the report period, Headquarters and 2nd platoon were located at DA NANG, with the 1st platoon located at CHU LAI under the operational control of the 39th Engr Bn (Cbt). During this period the 1st platoon was given the mission of hauling fill material for upgrading of QL-1 in the CHU LAI area.

On 15 December 1968, Headquarters Platoon received a warning order to move to CHU LAI, under operational control of the 39th Engr Bn (Cbt). The move was completed on 18 December.

During this report period, the 1st Platoon hauled 180 feet of double single Bailey Bridge to elements of Co "C" 39th Engr Bn (Cbt) for installation along Route QL-1. The platoon also hauled 5,101 CY of rock, 2,526 CY fill and 168 barrels of peneprime for Co D, 39th Engr Bn. Also during the period the unit has set up a new command post in the CHU LAI area. This included all troop facilities with the exception of a mess hall.

(10) (C) Activities of the 630th Engineer Company (Light Equipment)

At the beginning of the reporting period, the third platoon of the 630th Engineer Company (LE) was located at LZ SNOOPY (BS 704610), attached to Company C of the 39th Engr Bn. The primary mission of the 630th was the upgrading of QL-1 to MACV standards from MO DUC (BS 733543) to the SONG VE RIVER (BS 695635). The remainder of the 630th was located at LZ NANCY (YD 443395) under the 14th Engr Bn (Cbt) until 22 November. Leaving the second platoon at LZ NANCY attached to the 14th Engr Bn, the 630th (-) moved by LST to CHU LAI and was attached to the 39th Engr Bn. From CHU LAI, the unit continued to LZ DOTTIE (BS 632854) with the mission of maintaining QL-1 from BINH SON (BS 603719) to QUANG NGAI (BS 600922).

The LZ DOTTIE perimeter was established prior to the unit's arrival, but the defensive positions required improvement. The unit proceeded to add defensive wire, clear fields of fire and build bunkers for defensive and living purposes.

While working with Company C, 39th Engr Bn, the third platoon of the 630th chiefly conducted a haul mission. During November, the unit hauled over 7,000 CY of fill for the widening of QL-1 from approximately BS 724571 to BS 665691. In addition, the platoon filled 3,700 sandbags for the improvement of defensive positions at LZ SNOOPY (BS 704610) and placed concertina and barbed wire on the perimeter.

On 5 December, the 630th, located at LZ DOTTIE, started their mission of maintaining QL-1 and continued to build their positions for living and defensive purposes on the LZ. The unit hauled and compacted fill and graded QL-1 from approximately BS 625852 to BS 608908. On 11 December, a mess hall was started by the element at LZ DOTTIE. Also a wash rack was constructed. On 18 December, the 630th began preparing a quarry site at BS 622845. For seven days the unit removed brush and overburden from the quarry site. On 26 December, the first holes were drilled, explosives set and rock blasted. On the next day, 27 December, 50 CY of rock was removed from the quarry site. During this period, the third platoon remained at LZ SNOOPY working with Company C on the upgrading of QL-1.

On 6 January, revetment walls were constructed around the motor pool at LZ DOTTIE with 1,700 sandbags. On 22 January, the element at LZ DOTTIE began preparations for a move from LZ DOTTIE to QUANG NGAI (BS 603719) in order to be better positioned for the upgrading of QL-1 from BS 673685 to BS 668687. The element at QUANG NGAI will be collocated with Company A, 104th ARVN Engineer Battalion. During the move, a maintenance element was also established at CHU LAI. The moves to QUANG NGAI and CHU LAI were completed on 28 January. The quarter ended with a platoon at LZ SNOOPY performing road work with Company C, a maintenance element at CHU LAI and the remainder at QUANG NGAI performing additional upgrading operations on QL-1.

B. (C) INTELLIGENCE:

(1) Reconnaissance:

During the reporting period, the Battalion Reconnaissance Section performed reconnaissance missions to update route information for planning further maintenance and upgrade operations on Route QL-1. Ground reconnaissance of the area adjacent to QL-1 between BS 719590 to BS 647724 was performed to obtain information on possible rock quarry sites and borrow pits. During the period 27 ground reconnaissance/escort missions were accomplished.

(2) Enemy Activity:

During the reporting period enemy activity increased during the middle portion of November, decreased during December, and remained moderate during January.

(a) Mines: During the reporting period, the Battalion encountered 47 mines within its AO. The majority of these mines consisted of a bamboo pressure type firing device, flashlight batteries, and an electric blasting cap attached to explosive charges ranging in size from 10 to 40 pounds. Of the 47 mines encountered, 11 were anti-personnel type (4 M-14, 1 M-16A1 and 6 small charges of explosives with pressure-type activating devices). A total of 21 mines were detonated by vehicles or personnel during this period; two of these were command detonated. Of the total, 4 were small AP mines and caused no damage or casualties, 6 were detonated by VN civilian vehicles, and 11 were detonated by US military vehicles. US casualties due to mines were one KHA, and 17 WHA. VN casualties in the AO due to mines were 26 KHA and 15 VN WHA. Three of the mines detonated by Vietnamese were detonated prior to minesweep. The following is a breakdown of mines detected versus mines detonated by month:

MONTH	DETECTED	DETONATED	TOTAL
November	7	13	20
December	10	2	12
January	9	6	15
TOTAL	26	21	47

(b) Booby Traps: During this period the battalion encountered 7 booby traps. The majority of these consisted of trip-wired grenades. In one instance a one-pound block of C-4 with a chemical delay detonator was placed inside the cab of a truck. The following is a breakdown of booby traps by month:

MONTH	DETECTED	DETONATED	TOTAL
November	2	1	3
December	2	1	3
January	1	0	1
TOTAL	5	2	7

(c) Other enemy-initiated activity during the report period was as follows:

TYPE	NOVEMBER	DECEMBER	JANUARY	TOTAL
Sniper Attacks	22	22	25	69
Ambushes	2	0	0	2
Mortar Attacks	4	0	2	6
Bridges Blown	2	1	1	4
Culverts Blown	5	1	3	9
Ground Probes	3	0	0	3
Road Obstacles	1	1	0	2
TOTAL	39	25	31	95

(3) Weather Data: During November and December the rainfall was very light. It increased considerably during January. Two days of extremely heavy rain on 7 and 8 January caused extensive damage to QL-1 just south of BINH SON. Route QL-1 was closed from 8 to 10 January due to washouts in the vicinity of BS 609906 and BS 603917 and damage to bridge approaches at BS 659700. Average rainfall by month was as follows:

MONTH	AVERAGE RAINFALL FOR PERIOD*
November	7.52
December	2.10
January	16.34
TOTAL	25.96

*Average from readings at LZ DOTTIE, LZ SNOOPY, LZ BALDY, AND CHU LAI.

C. (C) CASUALTIES: Casualties during the report period were relatively light:

	WHA	KHA	KNH
HHC	1	0	0
Co A	2	1	0
Co B	8	0	0
Co C	1	0	0
Co D	1	0	0
630th	2	0	0
511th	0	0	0
TOTAL	15	1	0

D. (C) OPERATIONS AND TRAINING.

(1.) During the report period, the Battalion worked a normal seven day work week. Time was allotted on Sundays for mandatory training, religious services, and maintenance of equipment. A total of 52 hours of mandatory training was conducted by the Battalion. In addition to Tool Box Safety lectures and daily motor stables, one hour per week was allotted to maintenance and safety training. Four potential career NCO's attended the combat leadership course conducted by the Americal Division Combat Center, compared to seven during the previous report period. The decrease was caused by a cut back in allocations from the Combat Center. A total of 366 new in-country personnel attended the Americal Replacement Training Center during the period.

(2) During the report period, units of this Battalion were engaged in 91 company days of direct combat support operations. The remaining time was spent on construction tasks not directly related to combat operations.

E. (C) MOVEMENTS:

1. Company moves:

[redacted]

a. 22 November thru 25 November, 630th Engineer Company (LE) (-) from LZ NANCY (YD 443395) to LZ DOTTIE (BS 632854), staging through CHU LAI (BT 532037).

b. 29 January, 630th Engineer Company (LE) (-) from LZ DOTTIE (BS 632854) to QUANG NGAI (BS 603719).

2. Platoon moves:

a. 29 October, First platoon 511th Engineer Company from NAN-O-BEACH (AT-928846) to CHU LAI (BT 532037).

b. 16 December, Second platoon, Company B from LZ DOTTIE (BS 632854) to HA THANH (BS 392701) and returned on 15 January.

c. 18 December, Headquarters Platoon, 511th Engineer Company (PB) from PHU BAI (YD 505126) to CHU LAI (BT 532037).

d. 26 January, First platoon, 511th Engineer Company from CHU LAI (BT 532-037) to LZ SNOOPY (BS 705611).

e. 29 January, Third Platoon, Company B from LZ DOTTIE (BS 632854) to QUANG NGAI (BS 603719).

3. SUMMARY: A total of 4.5 company days were expended in moving units of the Battalion.

F. (C) SUPPLY:

(1) General: During the report period all supply support for Companies A, B, and C was provided through the Battalion S-4 section. Company D continued to be supported in Class I and III supplies by the 8th Support Battalion at LZ BALDY. All other classes of supply for Company D were provided by the Battalion supply section. The S-4 section was also responsible for the turn-in of all weapons and mine detectors to the 588th Maintenance Company (Direct Support) for repair.

(2) Logistics Support: Logistics support was provided by the following organizations:

(a) 23rd Supply and Transport Battalion, located at CHU LAI, organic to the Americal Division.

(b) 8th Support Battalion, located at LZ BALDY, an organic support battalion of the 196th Light Infantry Brigade, Americal Division.

(c) 588th Maintenance Company (DS), located at CHU LAI, organic to the 80th General Support Group.

(3) Combat losses during the report period included:

(a)	Truck Dump 5 Ton	28 Nov 68
(b)	Truck Dump 5 Ton	30 Nov 68

[redacted]

[redacted]

(c) Semi-trailer 25 Ton — 30 Nov 68

(d) Truck Dump 5 Ton — 7 Jan 69

(e) Tractor FT (D7E) — 7 Jan 69

(4) Critical shortages of equipment within the Battalion and attached companies continued to hamper operational capabilities. These shortages were:

(a) Scoop Loader — 4 each

(b) Truck, Dump 5 Ton — 21 each

(c) Air Compressor 250 CFM — 7 each

(d) Truck, Utility ¼ Ton — 17 each

(e) Bituminous Distributor — 3 each

(5) During this report period a new TOE and MTOE (5-36G & 5-37G) were implemented. There were three primary items of equipment added which will greatly improve the efficiency and security of the Battalion; however, these items were not yet on hand:

(a) Bituminous Distributor — 1 each

(b) Sheeps Foot Roller — 1 each

(c) Starlight Scope — 12 each

(6) At the end of the report period the S-4 section was operating water points at CHU LAI, LZ DOTTIE, QUANG NGAI and LZ SNOOPY with a total daily output of 31,500 gallons.

G. (C) MAINTENANCE:

(1) General. The maintenance situation has shown a significant improvement with a steadily decreasing deadline rate. At the end of the report period the overall average deadline rate was 8.8 percent, as opposed to 19.0 percent at the end of the previous report period. This outstanding reduction was due to continued command emphasis on maintenance management and improved responsiveness in repair parts support.

(2) Support. The 588th Maintenance Company (Direct Support) continued to provide direct support maintenance for the Battalion. The Authorized Stockage List (ASL) of the 588th Maintenance Company increased to approximately 3500 lines and the zero balance decreased to approximately 50% (as opposed to 3,200 lines with 76% zero balance at end of previous report period.) Equipment age and engineer repair parts supply continued to be the primary difficulties in equipment maintenance.

(3) Prescribed Load List (PLL) and Repair Parts Summary. Following is a summary of the PLL stockage level and requisitioning experience during the report period. The 511th and 630th Engineer Companies are not included in these data due to their move and change of DSU's during the report period.

[redacted]

[redacted]

(a) PLL. The overall percentage of PLL line items at zero balance for the Battalion was 55 percent, ranging from a high of 67% in B Company to a low of 46% in D Company. The fact that the percent zero balance remained exactly the same as that at the end of the previous report period was due to a complete revision of all PLL's and addition of some 100 lines per company to reflect demand supported fringe items.

(b) Requisitioning

(1) Regular Requisitions

Number Submitted	4,124
Cancelled	134
Filled	446
Percent Filled	10.8%

(2) Red Ball Requisitions

Number Submitted	401
Cancelled	61
Filled	176
Percent Filled	43.8%

The above statistics reflect an increase of 8.8% in fill of Red Ball requisitions over the previous report period, but a decrease of 0.7% in fill of regular requisitions.

H. (U) MEDICAL:

The medical section continued to stress the importance of preventive medicine through routine inspections, immunizations, and periodic re-training of company aidmen. The major health problem involved malaria, with a total of 15 cases during November-December-January. Each case was directly attributable to a lack of preventive measures on the part of individual soldiers. Command emphasis on the malaria prevention program continues.

I. (C) CIVIC ACTION:

(1) During this period, a total of approximately 95 man days of Civic Action assistance was rendered. The projects included clearing land for a refugee camp at AN TAN (BT 500067), construction of incinerators for the hospital in QUANG NGAI (BS 642747), hauling fill for a market place and playground at THIET TRUONG (BS 730530), and hauling fill for the DONG CAT School (BS 734544). Two hundred and ten VN civilians were also treated under the MEDCAP Program during this period.

(2) During the report period turn-ins under the Volunteer Informant Program were double the amount turned in during the previous period. Since December 1967, the 39th Engineer Battalion has paid out almost $ 2 million piasters through this pro-

[redacted]

gram. Monthly turn-ins were:

ITEM	NOVEMBER	DECEMBER	JANUARY
Mines	264	120	65
Grenades	10[illegible]	152	95
40mm Rounds	68	175	131
60mm Rounds	132	194	40
81mm Rounds	90	37	2
105mm Rounds	170	77	41
155mm Rounds	22	5	15
4.2" Rounds	1	3	0
Small Rockets	0	1	0
57mm Rounds	24	15	3
EXPENDITURES	407,500 $ VN	270,200 $ VN	169,900 $ VN

TOTAL EXPENDITURES: 847,600 $ VN

2. (C) Section 2. Lessons Learned: Commander's Observations, Evaluations, and recommendations:

A. PERSONNEL: None.

B. OPERATIONS:

(1) (U) Removal of Head Boards

(a) OBSERVATION: In a recent mine incident, one of this unit's D7E dozers detonated a 40 pound inverted shaped charge. The blast ejected the operator and hurled him approximately 40 feet. The operator received minor injuries from the blast. If this mine had been detonated by a front wheel of a 5-ton dump, it is certain that the driver and assistant driver would have had little or no chance of survival after collision with the canvas top of the cab or the head board of the dump bed.

(b) EVALUATION: After removal of these obstructions, the driver's chances of survival should increase considerably. After investigation, it has been found that the loaded capacity of the vehicle would not be hampered to any great extent.

(c) RECOMMENDATION: Remove canvas cab tops and heard boards from vehicles in selected areas of heavy mining activity.

(2) (U) Extra Use of the Loader, H90M

(a) OBSERVATION: It was noted that when repairing a blown or damaged culvert, the compacted culvert base was often ruined by using a dozer to remove the culvert.

(b) EVALUATION: Since a dozer was the only piece of equipment used previously, twice as much work had to be done on culvert repair because the soil had to be recompacted. Due to the extremely fluid characteristic of much of the soil in the AO, this often amounted to 3 or 4 days work. However, having a loader sink its front teeth into a section of culvert 48" or less in diameter, and less than 10 feet in lenght, the culvert could be removed, leaving a compacted mold into which the new culvert could be placed.

(c) RECOMENDATION: Use the loader to remove sections of culvert 48" or less in diameter, and 10 feet or less in length.

(3) (C) Mine Clearing:

(a) OBSERVATION: The enemy knows that whenever he destroys a strategic bridge or culvert, the LOC must be reopened as soon as possible to traffic.

(b) EVALUATION: When the enemy destroys a bridge or culvert, he supplements this by placing mines in the immediate area, hoping to catch either the vehicles or the personnel repairing the item

(c) RECOMMENDATION: When repairing an item, a deliberate sweep of 250 meters should be made on both sides of the site prior to any work.

(4) (C) Job Site Security:

(a) OBSERVATION: The enemy emplaces anti-personnel mines on established security positions, if used day after day at a project site.

(b) EVALUATION: When working at a certain site, there is a tendency to place security in the same positions every day.

(c) RECOMMENDATION: When working at a specific location for more than two days, the positions of the security should be altered daily, even if this means giving up the more favorable positions. Also, each security position should be checked both visually and with the use of mine detectors.

(5) (U) Use of Permanent Cable to Guide Pile.

(a) OBSERVATION: Presently there is no guide to hold piles in a pile driving rig.

(b) EVALUATION: While driving piles it was necessary to continually tie piles into the pile driving rig. Welding a chain link on both sides of the pile leads and using a steel cable with two snap links saves effort and time when preparing piles for driving and is safer.

(c) RECOMMENDATIONS: That an alteration be made to pile leads in order to prepare piles for driving quickly and safely.

(6) (C) Detection of Road Mines.

(a) OBSERVATION: A large percentage of road mines have had decoy material such as shrapnel, placed 20 meters on either side of the mine.

(b) EVALUATION: The metal was placed in a number of locations from 20 meters either side of the mine to positions within 2 meters of the mine.

(c) RECOMMENDATION: When a large amount of metal is located in limited area, minesweep teams should conduct a more deliberate type mine sweep.

(7) (C) Reuse of the Smoke Grenade Canister by the VC.

(a) OBSERVATION: Smoke grenade canisters are used by the VC to make hand grenades or booby traps.

(b) EVALUATION: The expended smoke grenade can be made into an effective hand grenade. The canister is repacked with explosives, a percussion cap placed in the firing end, and the original striker used again. Once armed, the grenade detonates instantly upon release of the striker.

(c) RECOMMENDATION: All smoke grenades found outside a secure area should be treated as a booby trap and blown in place.

(8) (C) Movement of Hutments to New Locations.

(a) OBSERVATION: The movement of the tropical wooden hutments proved to be a significant problem due to their length.

(b) EVALUATION: A 32 foot long building is too long to move with the use of a 25 ton lowbed unless extensions are added. Two 24 foot long 12 inch timbers can be placed on the lowbed, allowing for a six foot overhang from the end of the lowbed. After the timbers have been placed on the lowbed, they should be chained to the lowbed itself. A sling was made to allow a crane to pick up the hutments and set them on the vehicle. The sling was constructed of four 8"x8"x16 feet long timbers bolted together to form a square. From the middle of each timber, a nylon helicopter sling extends to the center of the square. At the middle of the square it fastens to a slip ring. The crane's hook picks up the entire rig by this ring. Two 20 feet long 6"x6" timbers are slid underneath the house's 16 foot width to act as cradles. Hanging down from each of the four corners of the "square sling" is an 18 foot long helicopter sling with a loop at the bottom. The loop slips over each end of the timber cradles. When this is accomplished the wood hutment can then be lifted off the ground and placed on a 25 ton lowbed. Once the hutment reaches its new site, the crane sets it down on 55 gallon barrels until a new substructure can be built onto it. When the substructure is complete, the hutment is slowly lowered to the ground by use of 5 ton jacks.

(c) RECOMMENDATION: When it becomes necessary to move standard wooden hutments such a frame and trailer extensions should be fabricated. (Inclosure 2)

(9) (E) Drainage System on Revetment Walls.

(a) OBSERVATION: Construction of M8A1 matting revetment walls on aircraft parking aprons can pose problems with drainage.

(b) EVALUATION: A revetment wall was constructed on a metal mat parking apron. The matting provided a stable, strong and level surface for the construction of the revetment wall; however, drainage proved to be a problem. The drainage from the apron surface was into the revetment wall itself; therefore, a drainage system had to be made to allow for the flow of water through the revetment wall.

(c) RECOMMENDATION: When constructing a revetment wall for aircraft parking, the easiest means of providing a drainage system through the revetment wall is to cut a half circle at the base of the wall to allow the installation of a half culvert. Tar should be used to ensure that water will not flow between the matting and the base of the revetment wall. (Inclosure 3)

(10) (C) Anchoring of M8A1 Matting.

(a) OBSERVATION: A maintenance hardstand project involved laying M8A1 matting and then anchoring the matting to the ground. No standard method of anchoring the matting is known.

(b) EVALUATION: Once the M8A1 matting was laid, various methods of anchoring were tried. None were completely satisfactory. The best solution involved driving "U" shaped pickets into the ground with the "U" part facing the matting; approximately six inches of the picket were left above ground level. A hack saw was used to split the pickets down the middle. Once the pickets had been split down the middle, they were bent so that one side of the picket overlapped the other side and then both

halves were welded to the matting. This proved to be very effective in anchoring the matting.

(c) RECOMMENDATIONS: (1) That commanders consider the above as an expedient means of anchoring M8A1 matting. (2) That hardware be developed which provides a convenient, effective means of anchoring M8A1 matting.

C. TRAINING: None

D. INTELLIGENCE

(1) (C) Voluntary Informant Program.

(a) OBSERVATION: Under the Voluntary Informant Program (VIP), Vietnamese Nationals are encouraged to turn in unexpended or faulty ammunition, (dud rounds) to US troops for piasters, thereby denying one source of explosive supply to the enemy.

(b) EVALUATION: Many of the artillery projectiles exchanged for cash were found to be filled with sand or mud. By accepting such rounds, US troops are allowing the Vietnamese to profit without denying explosives to the enemy.

(c) RECOMMENDATION: A system of inspections should be established to insure that any rounds purchased are still intact. Although this is difficult, a thorough inspection of each round may show that the projectile has been tampered with. Rounds filled with mud or sand are noticeably heavier, and a fuse wrench can be used to determine whether the explosive has been removed.

E. LOGISTICS

(1) (U) Life of 25 Amp Voltage Regulator, FSN 2920-335-4677.

(a) OBSERVATION: There have been problems of short life with voltage regulators on the 2½-ton and 5-ton multifuel vehicles.

(b) EVALUATION: The limited life of these voltage regulators is due to the excessive vibration of the vehicle. The regulators are mounted on the fire wall and therefore receive vibrations directly from the engine and road.

(c) RECOMMENDATION: Four each upper Radiator Mounts, FS 2510-832-5655, from a ¼ Ton may be installed between the regulator and the fire wall. A small ground strap has to be fabricated to go from the regulator base to the fire wall to insure that the unit is properly grounded.

(2) (U) Brake Shoe Guide for 5-ton Vehicles.

(a) OBSERVATION: Replacements for the brake shoe guide pin, FSN 5315-740-9378, are not yet available in RVN.

(b) EVALUATION: Replacement pins can readily be made on the lathe in a shop set #2. These pins can be made to be installed with a nut rather than being peened.

(c) RECOMMENDATION: When not available through supply channels, brake shoe guide pins should be made on the lathe of shop set #2.

(3) (U) Short Life of Hydrovacs on 2½-ton and 5-ton Vehicles.

(a) OBSERVATION: In RVN, the life of hydrovacs on 2½-ton and 5-ton v ehicles has been greatly reduced.

(b) EVALUATION: Condensation forming in the hydrovac results in internal failure. This condensation is caused by operator's failure to drain air tanks daily. Command emphasis on this point at motor stables can greatly reduce the need for replacement of hydrovacs.

(c) RECOMMENDATION: Commanders make sure that operators drain air tanks daily.

C4

(4) (U) Replacement Hydrovacs.

(a) OBSERVATION: It has been noted that all "new" hydrovacs received through supply channels are in fact not new, but rebuilt. Upon close inspection it was noted that some of these hydrovacs had missing parts.

(b) EVALUATION: In some cases, use of such faulty hydrovacs as replacements can make it more difficult to diagnose other problems with vehicles.

(c) RECOMMENDATION: Replacement hydrovacs should be checked carefully before installation.

(5) (U) Fuel Filters for 290's.

(a) OBSERVATION: Substandard diesel fuel with heavy water content caused 290 tractors to have unnecessary down-time.

(b) EVALUATION: When the 290's are operating for long periods of time the fuel filters should be drained 2 to 3 times daily. This care and check on fuel filters will cut down on the deadline rate of 290's.

(c) RECOMMENDATION: That above policy for care of equipment be initiated as a check for operators and supervisors.

(6) (U) Rusting of Kitchen Utensils.

(a) OBSERVATION: It has been noted that due to the humid climate, burner units grills, unused cooking parts, and utensils tend to rust very quickly.

(b) EVALUATION: Regardless how well these items are packed, humidity and wet weather encountered in a move on a LST tend to rust these items quickly.

(c) RECOMMENDATION: When storing or moving mess equipment, a light coat of salad oil should be used on all equipment that is used for preparation of food. A light coat of mineral oil should be used on burner units and immersion heaters. Any oil containing salt should not be used.

(7) (U) Substitution of Generators on 10-ton Tractor.

(a) OBSERVATION: During the preparation for a road march a 10-ton tractor generator became inoperative.

(b) EVALUATION: There were no 60 Amp generators available. It is practical in warm areas to reduce the 10-ton tractor system to a 12 volt system and use a 25 Amp generator and regulator as a temporary expedient.

(c) RECOMMENDATION: That commanders consider the above solution in emergency situations.

(8) (U) Modification of Steering Linkage on 440 Grader. -64

(a) OBSERVATION: During a road building project one of the graders (Westinghouse 440) was deadlined for steering arm linkage.

(b) EVALUATION: One of the weak points on a Westinghouse 440 grader is the steering linkage. When the lower steering shaft shears the splines it is completely useless, and a new shaft has to be ordered. The old shaft can be made serviceable until the new shaft becomes available by welding a link made from 3/4 inch stock.

(c) RECOMMENDATION: A link made from 3/4 inch stock will keep the equipment operational until the new shaft becomes available.

(9) (U) Cleanliness of the 16S Concrete Mixer.

(a) OBSERVATION: Extensive use of a 16S concrete mixer leaves a thin film of concrete over much of the outside. This is often very difficult to remove.

(b) EVALUATION: Medium or heavy weight lubrication oil can be wiped all over the outside of the mixer prior to use. This prevents the water, and consequently the concrete, from adhering to the metal of the machine; the heavier the oil, the better results. Much less concrete collects on the outside; that which does is very easily removed.

(c) RECOMMENDATION: That OE-30 engine oil be spread over 16S mixers prior to use.

F. ORGANIZATION: None

G. OTHER:

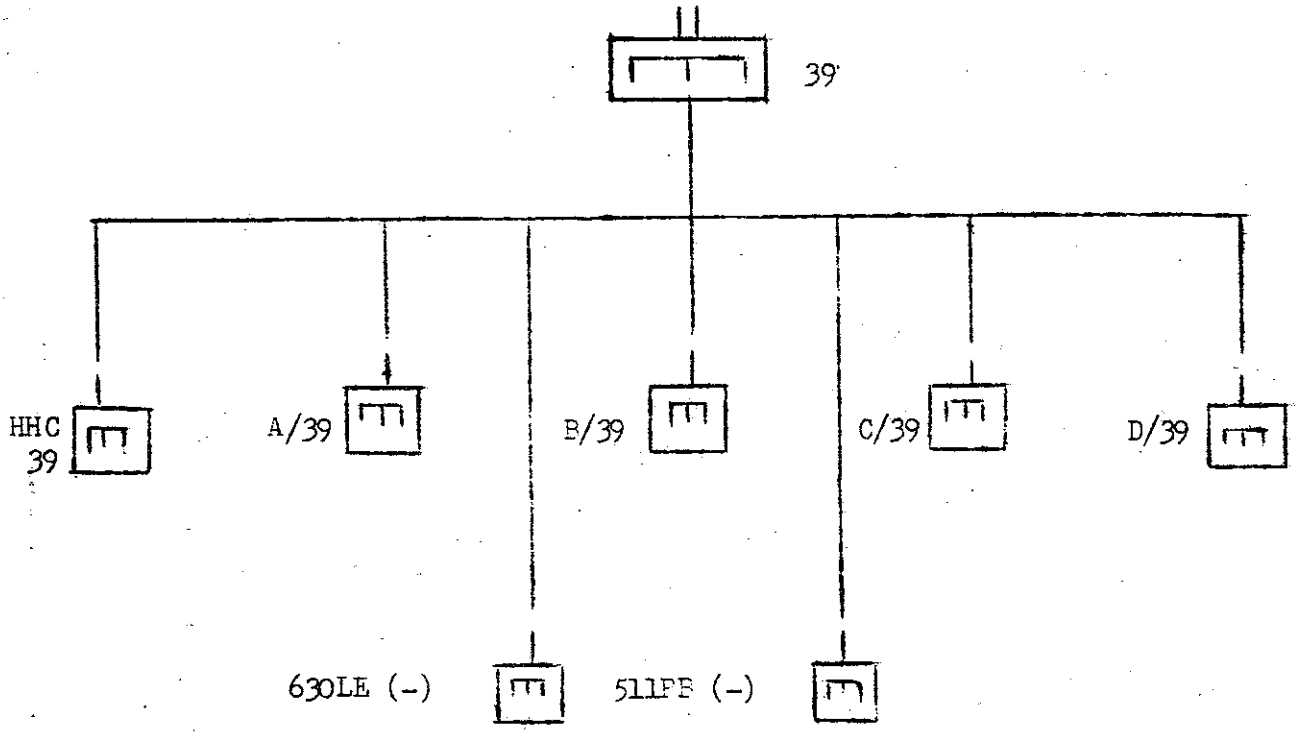
(1) (U) Escape and Evasion: None

T. R. Hukkala
T. R. HUKKALA
LTC, CE
Commanding

DISTRIBUTION:
6 - CO, 45th Engr GP, ATTN: S-3
8 - CG, 18th Engr Bde, ATTN: AVBC-C
3 - CG, USARV, ATTN: AVHCG (DST)
2 - CINCUSARPAC, ATTN: GPOP-DT

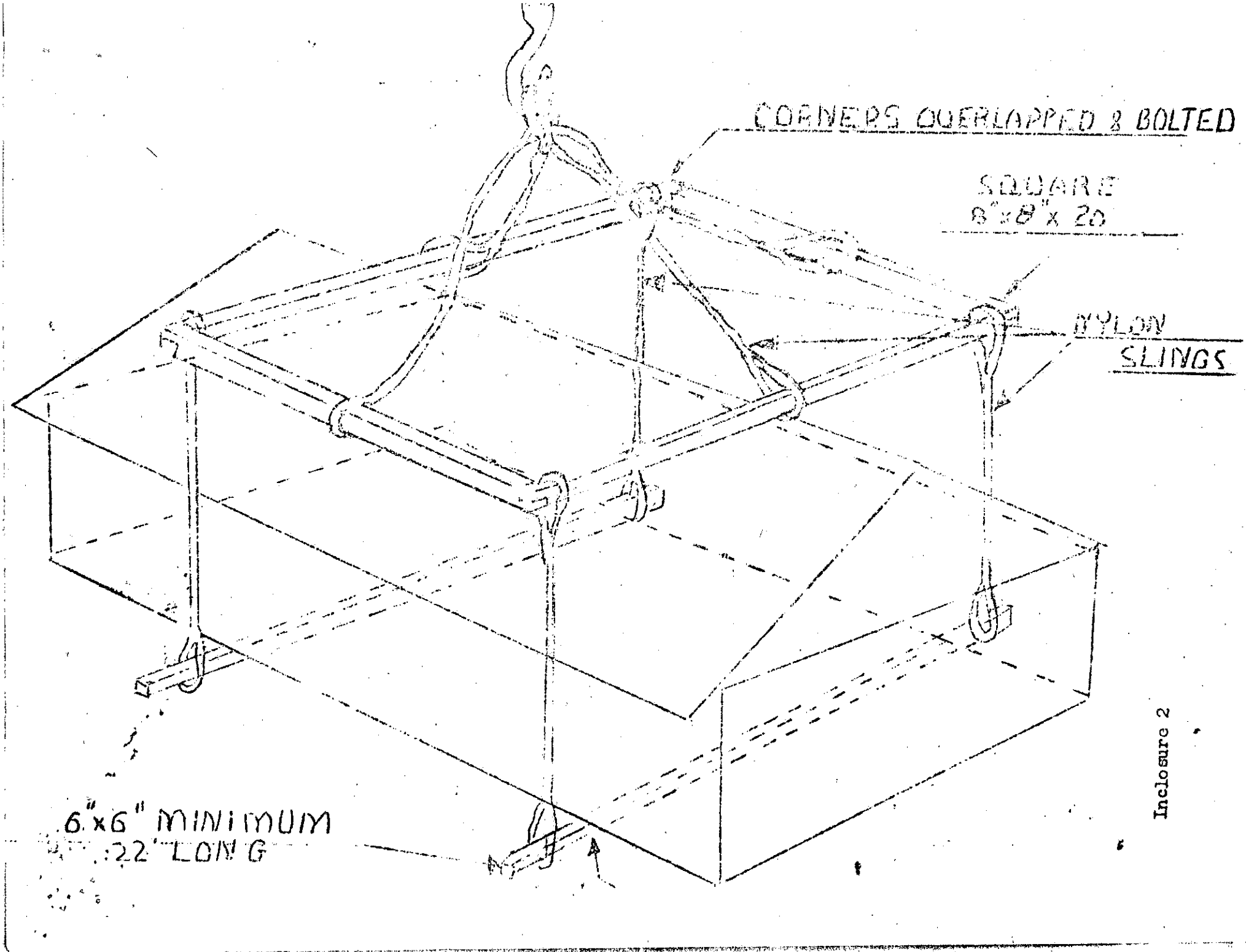
[redacted]

ORGANIZATION, 39TH ENGINEER BATTALION (CET) (A)

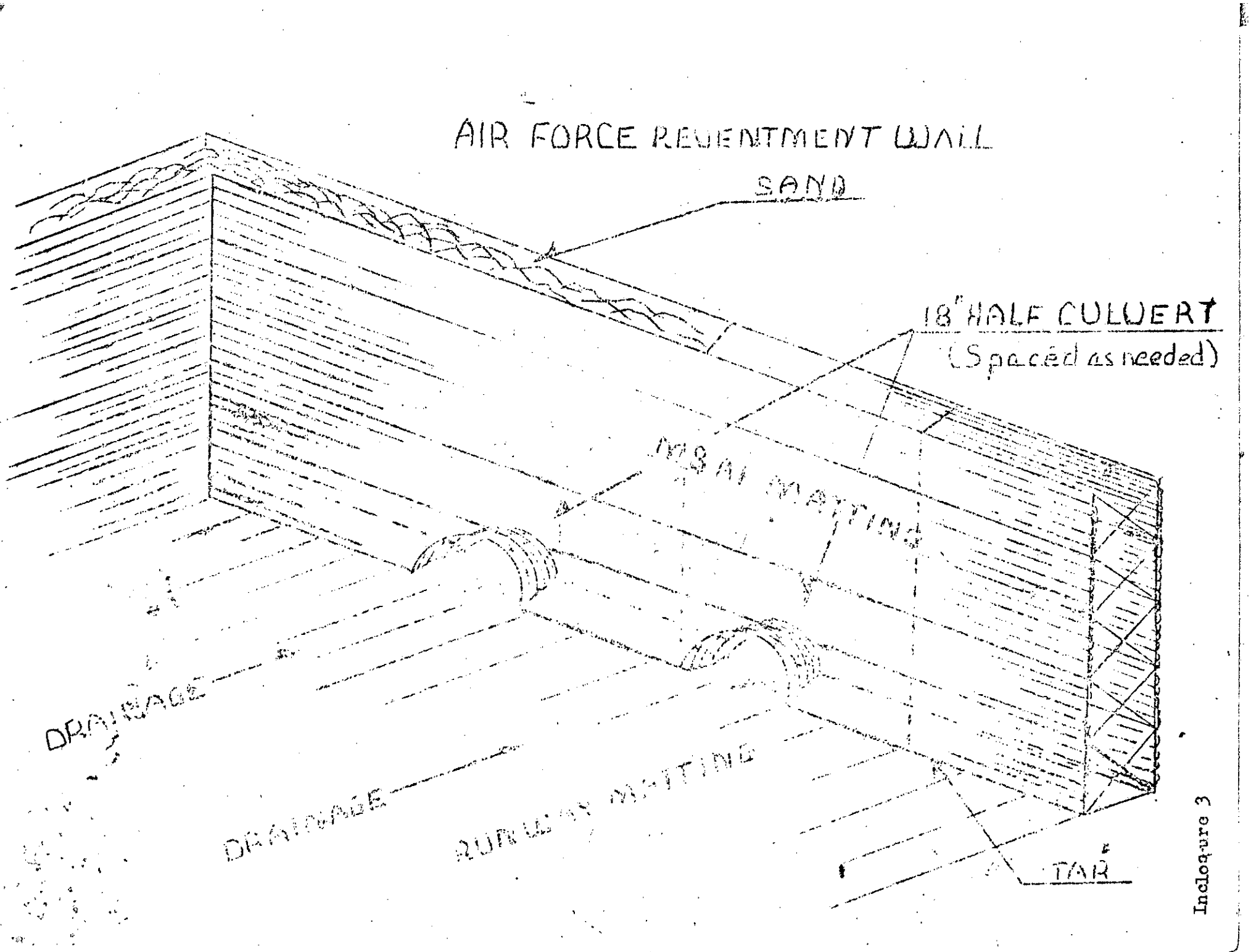


Inclosure 1

[redacted]


CORNERS OVERLAPPED & BOLTED
SQUARE
8'x8'x 20
NYLON
SLINGS
6"x6" MINIMUM
22' LONG

Inclosure 2


AIR FORCE REVETMENT WALL
SAND
18" HALF CULVERT
(Spaced as needed)
MSA MATTING
DRAINAGE
DRAINAGE
RUNWAY MATTING
TAR

Incloqure 3