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July 15, 1983

SD-329
SD-330

Mr J J Harrison
U S Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, IL 60137

| PRINCIPAL STAFF | | | |
|-----------------|--|------|--|
| RA | | ENF | |
| D/RA | | SCS | |
| A/RA | | PAO | |
| DPRP | | SLO | |
| DRMA | | IRC | |
| DRMSP | | | |
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MIDLAND ENERGY CENTER GWO 7020
RESPONSE TO NRC REGION III QUESTIONS
OF JULY 14, 1983 MEETING
File: 0485.16 UFI: 42*05*22*04 Serial: CSC-6792
12*32

On July 14, 1983, the Region III Staff raised certain questions relating to drilling of the soil in the area of the Service Water Pump Structure, technical problems encountered in the drilling of Wells #502 and #503, the procedure for drilling in "Q" concrete, and certain comments in the Stone and Webster "Independent Assessment Report No. 41". The Staff requested that the Company respond in writing to these questions. The Staff also asked that the Company provide justification for continuing soils work in light of the above questions.

Although the Company recognizes the significance of the Staff's concern, we believe that the clarifications and proposed corrective actions provided in this response will satisfactorily resolve these concerns. The following explains the nature of the problems, answers the Staff's questions as we understand them, and provides a more detailed justification for continuing soils work.

ITEMS RELATING TO SERVICE WATER PUMP STRUCTURE

NRC Region III Staff requested information relating to the drilling of Well #521 and Piezometer #LS-7 in the vicinity of the Service Water Pump Structure.

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Well #521 is a dewatering well near the Service Water Pump Structure. An excavation permit was properly obtained and executed in accordance with all applicable procedures before well drilling began. The location of the well was surveyed, verified and marked, as were underground utilities in the vicinity of Well #521. The drill rig was set up on a stake marking an underground utility rather than the stake designating Well #521. Spencer, White and Prentis and Bechtel Field Engineers verified this as the proper location. Quality Control verified that the drilling rig was positioned within allowable tolerances relative to this stake. When drilling proceeded, an obstruction was encountered at approximately elevation 619.5 feet. Drilling was stopped and gravel was found in the drill bit. It has been determined that the obstruction is most likely bedding material for a non-Q prestressed concrete pipe connecting the service water system to the cooling tower. It is not known whether the pipe itself was hit. An investigation is planned to inspect the pipe for damage.

In the case of piezometer #LS-7, drilling also occurred at a wrong location, as a result of misinterpreting a Field Change Request (FCR). Again, the excavation permit system procedures were followed. Prior to drilling, the field organization submitted an FCR to Project Engineering, asking for a change in the location of this piezometer, along with other wells, to avoid interferences with underground utilities and soldier piles. Project Engineering approved certain relocations, revised some proposed relocations, and added additional relocation. When the FCR came back from Project Engineering approved, the Field Engineers and QC inspector failed to notice the revised location for piezometer #LS-7 made by Project Engineering. As a result, the piezometer was drilled in an incorrect location.

As previously indicated, the excavation permit procedures were followed in the above two incidents. We believe that the incidents resulted from work processes which, although basically adequate, were not specific enough to avoid error. Corrective actions are as follows:

- A. We are establishing a new procedure for identifying location markers. Markers for utilities or obstructions will be a different color from those marking drilling location. All responsible personnel will be trained in this procedure before further drilling is implemented.
- B. We are requiring Bechtel Field Engineers to verify and sign for drill rig locations before drilling commences. These individuals will be responsible, on a single point basis, for making sure drilling occurs at the correct location.
- C. Bechtel Field Engineers will be required to be present during field operations.
- D. Spencer, White and Prentis (SW&P) has been directed to provide additional personnel to assure full coverage of field operations.
- E. The PQCI's will be expanded adding clarity to the related inspection activities. This will require the QCE to compare coordinates on the location marker to design documents.

F. Bechtel and SW&P Field Engineers and QCE's will be trained to the new requirements established above.

The Staff also questioned why an MPQAD stop work order was not issued on Saturday, July 9, 1983 when drilling at an incorrect location for Well #521 was first discovered.

The incident relating to hole #521 resulted from a mistake by the Field Engineers in identifying the field markings for the drilling location. The excavation permit system and other applicable procedures were followed. Past work has been successfully carried out using the same procedures which were in place for this Well. After the incident was discovered, Bechtel Construction took immediate corrective action by stopping drilling and resurveying the location markers in the vicinity. Although we recognized the seriousness of this incident, particularly in light of the past drilling problems at Midland, MPQAD did not feel that the incident alone warranted a stop work order.

The second incident, relating to Piezometer #LS-7 was discovered on Monday, July 11, 1983. The actual drilling began on Saturday, July 9, 1983. Shortly after discovering that the drilling was at the wrong location, a verbal directive stopping all SWPS related drilling was issued. A written direction followed that afternoon.

The two different location errors, although caused by different circumstances, indicate that issues existed which must be resolved prior to continuing drilling by Spencer, White and Prentis. The stop work order would have been issued by MPQAD on this basis alone, regardless of whether the NRC discussions had occurred on July 11, 1983. The corrective action described above will be in place before affected drilling work resumes.-

TECHNICAL PROBLEMS ENCOUNTERED IN THE DRILLING OF WELLS #502 and #503

During the process of drilling dewatering Well #502, problems were encountered with materials caving into the hole. Because of our inability to keep the hole open, we decided to abandon this well.

Dewatering Well #503 was started approximately the same time that problems with Well #502 were experienced. Dewatering Well #503 has not experienced problems similar to those noted for Well #502. Nevertheless, because the two wells are only five feet apart, we suspended drilling on Well #503, and conducted a technical evaluation of alternatives for completing wells in that area. An acceptable approach towards completing Well #503 in accordance with existing procedures has been determined.

To avoid caving of holes in this area, future holes will be drilled using one of the following methods: (1) Use of a "Becker" hammer drill, which allows the hole to be cased and drilled at the same time, or (2) Use of smaller diameter wells similar to those used in the interior of the SWPS. We believe either of these methods will solve the problem relative to the dewatering wells on the east side of the SWPS.

PROCEDURES FOR DRILLING IN Q-CONCRETE

The NRC was presented with information during the July 14, 1983 meeting pertaining to a stop work order concerning drilling in Q-concrete. PQCI C-1.60, Rev. 6, Concrete Drilling and Cutting of Reinforcing Steel, was considered inadequate to cover inspection of concrete drilling for work performed by FSO Direct Hire Work Forces. A recent FCR (C-5880 to Specification C-231) allows holes to be drilled in "Q" concrete and does not require QC inspection when a ground fault detector and carbide bit are used. The present PQCI revision does not require QC verification of these attributes; it only requires sampling inspection to be performed for drilling in "Q" listed concrete and block walls.

A stop work order for concrete drilling by FSO Direct Hire Work Forces was required until the PQCI could be revised and implemented. The PQCI's applicable to Mergentime and SW&P work requires 100 percent QC inspection and are not affected by this FCR.

The PQCI is being revised to require verification of the drilling method utilized in "Q" concrete and block walls. This PQCI will be revised prior to resuming work.

Further, a QAR is being issued by MPQAD to evaluate the impact of the PQCI's use for drilled holes in the balance of the plant and whether corrective action is required for previous work performed. Concrete drilling inspection plans for HVAC and B&W will also be evaluated for adequacy as a close-out to this QAR.

STAFF CONCERNS WITH STONE AND WEBSTER COMMENTS IN REPORT NO. 41

The Region III Staff expressed concerns over a number of items noted by Stone and Webster in the "Independent Assessment of Underpinning Report No. 41." The company's response to those concerns is as follows:

A. Page 3 - Quality Control, Documentation and Records

Concern: Timely resolution of outstanding NCR's continues to be a nagging problem.

Response: A discussion was held with the Region III Staff relative to the number of NCR's issued and time required for resolution (Attachment 1). A program is in place to identify adverse trends and take corrective action. Significant improvements have been realized as evidenced by the attached charts and considerable emphasis is being placed in these areas by all Soils Remedial Organizations to improve the results. Personnel have been assigned the responsibility in each action organization to coordinate responses and make sure that follow-up commitments are made within their respective organizations. Action is also taken during the Weekly Project Soils Management Meetings, as required, to assure continuing improvement in addressing quality items and closure of NCR's.

B. Item 3 - Notes of 6/27/83 Meeting

Concern: Use of dry-pack grout for pier leveling plates in lieu of pressure grout.

Response: Dry-pack grout is used for temporary pier leveling plates. As previously discussed with the staff, pressure grouting will be used for all permanent pier leveling plates.

C. Item 4 - Notes of 6/27/83 Meeting

Concern: Use of superplasticizer concrete.

Response: As previously agreed, CPCo will submit the concrete mix design using superplasticizer and receive NRC concurrence prior to using this mix.

D. Item 7 - Notes of 6/27/83 Meeting

Concern: Grouting of void between existing fill and West Auxiliary Building Foundation.

Response: The attached report (Attachment 2) addresses the grouting of the gap encountered between the soil and the Auxiliary Building Foundation.

E. Item 8 - Notes of 6/27/83 Meeting

Concern: Slope layback extending under the Unit 1 EPA.

Response: The limits of the drift north of Piers E/W 8 were at the discretion of the Resident Geotechnical Engineer (RGE) and the design drawings recognized the RGE's responsibility to authorize changes as necessitated by field conditions. Since the work was completed in accordance with quality requirements, a Non-Conformance Report was not issued.

F. Item 6 - Notes of 6/28/83 Meeting

Concern: Specification requirement for furnishing grout.

Response: Project Engineering dispositioned NCR FSO-286 relative to furnishing grout by clarifying the requirements and Mergentime Procedure MCP-35.000 will be revised accordingly.

G. Item 2 - Notes of 6/29/83 Meeting

Concern: Electrical IPIN's.

Response: A QA reinspection of IR's with associated IPIN's in the Auxiliary Building monitoring system is being conducted. The status of this reinspection was discussed with R. Landsman and R. Gardner on July 14, 1983.

H. Item 3 - Notes of 6/29/83 Meeting

Concern: Number of attached changes to drawings.

Response: MPQAD Soils had raised a question regarding the number of unincorporated changes to drawings in QAR #F-326 dated 6/20/83. This QAR is open. As part of the closure to this QAR, consideration will be given to the fact that CPCo Volume II Quality Assurance Program Manual Procedure #6-1 sets a limit of four attachments to a drawing for design documents prepared by CPCo. The final closure to the open QAR will satisfactorily address the quality concern related to the number of unincorporated attachments to drawings.

Concern: Use of FCR's and NCR's.

Response: The project adopted a position in June, 1983 to clearly establish the requirement that NCR's are required for "after the fact" FCR's; ie. FCR's written to obtain approval of "as built" conditions which do not conform to design requirements. This position clearly indicates that the Field Engineer is responsible for causing an NCR to be initiated whenever it is desired to use an FCR to get approval of an "as-built" condition which is not in accordance with design requirements. This requirement has been incorporated in Bechtel Field Procedures FPD-2.000 as Revision 9. (This revision is in the final distribution as of this date.) In addition, MPQAD Procedure F-2M, Control of Nonconforming Items, has been revised (Revision 6-Effectivity of 8/29/83) and requires an NCR to be written for any item that is nonconforming and "is at a point in the construction process where it should be in compliance with the applicable design or program requirements and it is not." These actions will programmatically require that NCR's are written for "after the fact" FCR situations.

Stone and Webster indicated that the term "field as-built condition" in this item referred to the original constructed conditions which are encountered during the underpinning work activities and not as a result of current work activities.

I. Item 3 - Notes of 6/30/83 Meeting

Concern: Acceptability of the pumped grout test program for pier leveling plates.

Response: The pumped grout test program has been completed and the results of this program are included as Attachment 3.

J. Item 4 - Notes of 6/30/83 Meeting

Concern: Over excavation under the Unit 1 EPA.

Response: Refer to Item E.

K. Item 2 - Notes of 7/1/83 Meeting

Concern: Number of outstanding drawing changes.

Response: Refer to Item H.

L. Item 3 - Notes of 7/1/83 Meeting

Concern: Pumped grout test program.

Response: Refer to Item I.

M. Item 4 - Notes of MPQAD 6/28/83 Meeting

Concern: Instruction memorandum on issuing QC hold tags.

Response: The memorandum in question did not provide programmatic directions for issuing QC hold tags, but addressed action by FSO and MPQAD to avoid confusion that may occur when hold tags are placed.

DISCUSSION OF JUSTIFICATION FOR CONTINUING SOILS WORK

Because of the concerns previously discussed in this letter, the Region III Staff has asked whether the soils work at Midland should be allowed to continue. We recognize and acknowledge the Region's concerns, which we share, with aspects of the performance of soils remedial work thus far. We are mindful of the need for continuing close attention, and extensive management involvement, to correct deficiencies and avoid errors. As previously described, steps are being taken to correct the deficiencies of concern to the Staff, as expressed in meetings this week.

On the question of whether these concerns warrant an overall stoppage of soils remedial work at Midland, we believe the answer is no. In our opinion, the concerns, while valid, do not run deep enough or are not widespread enough to call into question the overall integrity of the work, or the soundness of as-built hardware.

In our opinion the most serious of the various items cited by the NRC are the drilling incidents. We acknowledge that there have been drilling problems at the Midland Site in the past; however, the two drilling incidents discussed above occurred after a period of successful implementation of involved procedures. The drilling rig mislocations that occurred appear to be caused primarily by too narrow a view of the inspection requirements and lack of specific verification of proper drill rig locations by both field engineers and QC personnel. The entire corrective actions listed previously will, we believe, prevent recurrence of this and possible related problems. In addition, the drilling has been stopped until the corrective actions noted herein are implemented.

Another item referenced by the NRC is an MPQAD stop work order related to drilling in "Q" concrete. Corrective actions, including the issuance of a revised PQCI, are being taken. This represents a case where our Quality Organization identified a problem and stopped work until corrective action has been taken.

Additionally, the NRC had concerns about comments in Stone and Webster's Report No. 41. None of these items resulted in a Stone and Webster nonconformance. By contrast, when deemed appropriate, Stone and Webster has issued nonconformances in carrying out their responsibilities as an independent assessor. We take seriously the need to consider all Stone and Webster comments, and where appropriate, initiate corrective action in our work activities. Without understating the significance of Stone and Webster's comments, we do not believe any of them question the basic adequacy of the work in the soils area.

In summary, while we have not achieved perfection, the quality of our final product is meeting design requirements and commitments. Our Quality Organization and Field Engineers are finding and correcting problems. The substantial upgrading of our quality effort in 1982 has achieved noticeable and acceptable results. The Stone and Webster 90-day assessment of the underpinning work has not identified any major problems. Indeed, Stone and Webster determined that the initial underpinning work, which constitutes the significant activities presently being accomplished, was being performed with a high degree of quality and since this report was issued, Stone and Webster has not advised us of any situation which would change this assessment. Based on all of these factors and in consideration of the overall quality of the work, we believe the soils work at Midland should continue. Continuing basic attention to detail by the Soils Organization with overview and involvement by Stone and Webster and NRC Region III will insure immediate identification and resolution of concerns and provide adequate assurance that the soils activities are successfully completed.

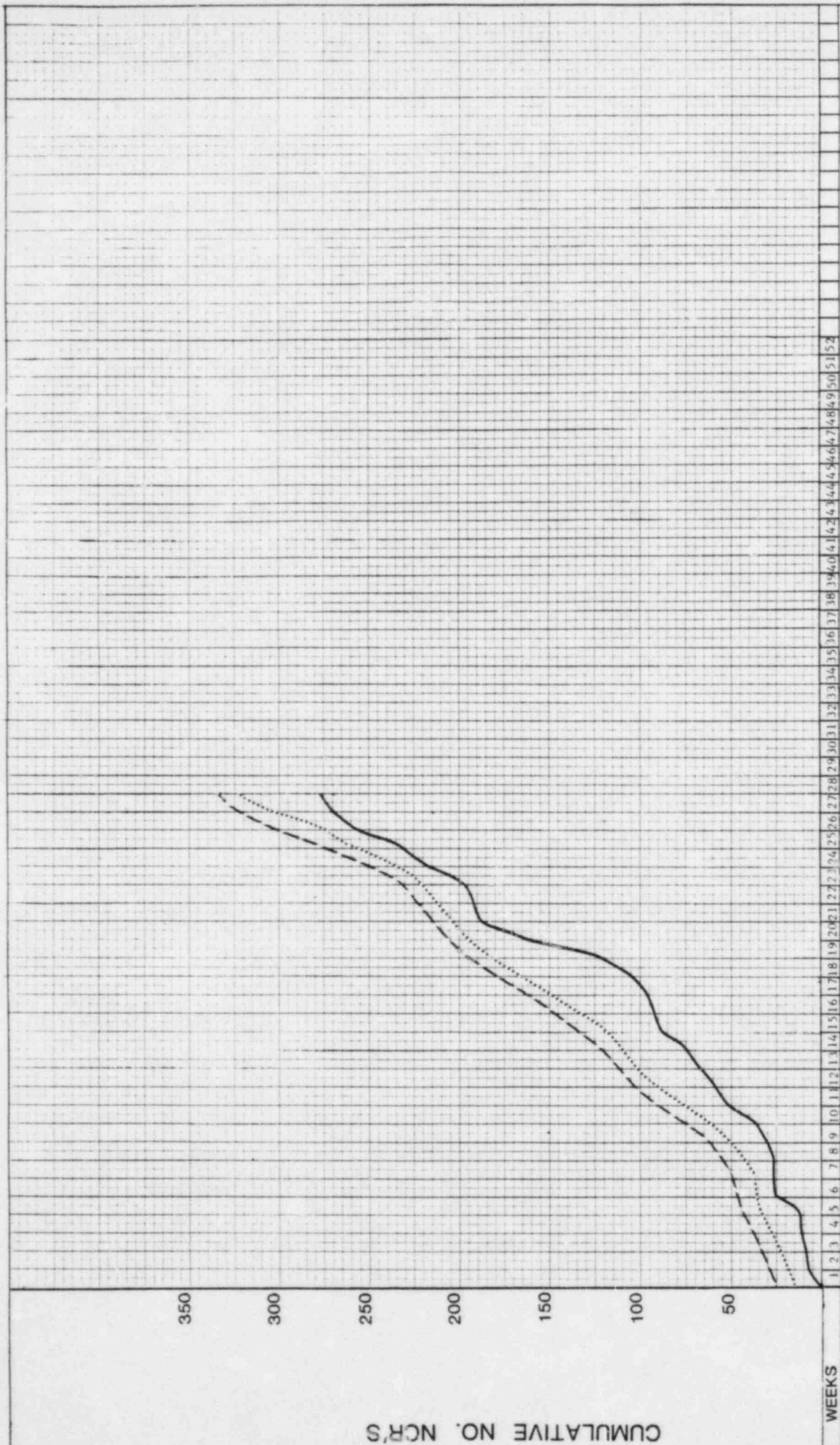
J. Mooney

EXPLANATION OF GRAPHS 1 AND 2

The weekly periods begin with Week 1, January 1 through January 15, 1983, and end with Week 27, July 10 through July 16, 1983.

Graph 1: The cumulative number of NCR's is plotted for each week. The broken/slashed line represents all FSO NCR's written. The dotted line represents FSO NCR's written and corrected for those NCR's inherited from the Balance of Plant. These "inherited" NCR's predate the FSO organization and represent long term Non-"Q" soil replacement. The solid line represents the number of NCR's closed.

Graph 2: The average time to close an NCR for a given week is plotted for each week. The number shown beside each point is the number of NCR's used that week to determine the average.



| | | | | | | | | | |
|--|--|----------------------------------|-----------------------------|----------------------------|-----------------------------|------------------------------|------------------------------------|--|---|
| <div style="display: flex; align-items: center;"> <div> <p>TITLE</p> <p>GRAPH 1</p> </div> </div> | | <p>JOB NO</p> <p>7220</p> | <p>REV</p> <p>10</p> | <p>BY</p> <p>10</p> | <p>CKD</p> <p>10</p> | <p>APVL</p> <p>10</p> | <p>DATE</p> <p>10/10/10</p> | <p>LEGEND</p> <p>— NO. WRITTEN</p> <p>..... NO. WRITTEN (CORRECTED)</p> <p>----- NO. NCR'S PREVIOUSLY INHERITED</p> <p>_____ NO. CLOSED</p> | <p>SOURCE</p> <p>BECHTEL P&O</p> |
|--|--|----------------------------------|-----------------------------|----------------------------|-----------------------------|------------------------------|------------------------------------|--|---|



TITLE

GRAPH 2

JOB NO.
7220

LEGEND:

SOURCE:

BECHTEL FSO

AVERAGE NO. DAYS TO CLOSE

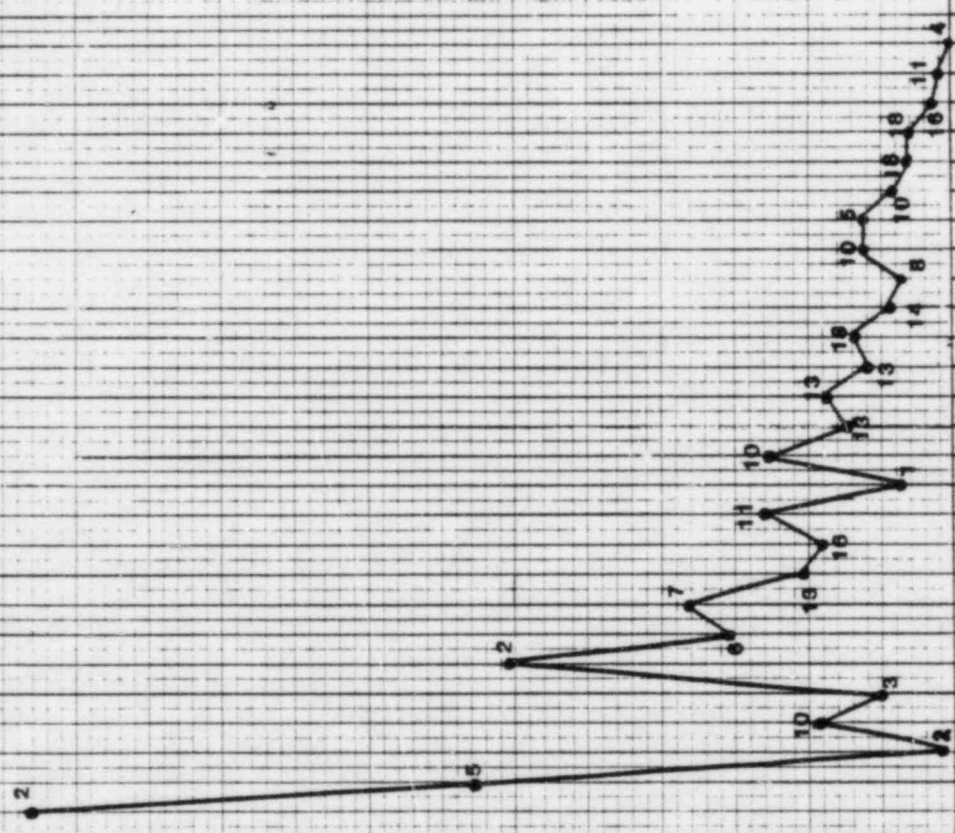
150

100

50

WEEKS

JAN FEB MAR APR MAY JUN JUL AUG SEPT OCT NOV DEC



MIDLAND UNITS 1 AND 2 - UCS 7220
RESIDENT GEOTECHNICAL ENGINEER REPORTDate 6-22-83
Shift DAY
ABPage 1 of 2

Description

Remarks

PIERS WQ W11, W12 ALSO EQ FULL E12

- (1) W12 CONTINUED BHDS DIAI GAUGE SETTING RDGS. OF TOP/TIP OF THE PIERS. TESTING OF WEDGES CONTINUED PIER PIT W-8 (ACCESS DRIET.)

- (2) THE PIER PIT HAS BEEN COVERED ^{TEMPORARILY} WITH PLUMWOOD

- (3) MERTENTINE EXTENDED EXCAVATION NORTH OF PIER PIT. THE TIE WAS EXTENDED TO WITHIN THE DISTANCE OF 3' FROM NORTH EDGE OF THE ROAD TO 2'-0" ± BERM WAS PROVIDED WITH A NEARLY VERT CLAY FACE ABOVE THE DRIET FLOOR AND 1:1 ± SLOPE IN CLAYEY FILL WAS EXCAVATED DUE NORTH. IT WAS NOTED THAT 18" ± THICK LAYER OF SAND WAS LOCATED UNDER THE MUD MAT & FILL CONCRETE PART OF THE MUD MAT WAS ALSO REMOVED.

NOTE REG. ITEM #3

RGE NOTED THAT A SMALL VOID 1/4" TO 1/2", 2' TO 4' ± WIDE WAS LOCATED

DIRECTLY UNDER MUD MAT AND ABOVE 18" ±

THICK LAYER OF SAND

THE EXTENT OF THESE

VOIDS HAS NOT BEEN

DETERMINED YET AND

IT IS EXPECTED THAT

THIS INSPECTION SHOULD BE COMPLETED ON 6/23/83

- EXCAVATION FOR THE (N-S) BULKHEAD (WEST SIDE)

- (4) STARTED CHIPPING GROUT AT THE (N-E) SECTION OF THE EXCAVATION, EAST OF THE EASTERN DRIET SET LAGGING. (THIS GROUT WAS POURED IN THE SLOPE LAYBACK AT THE ^{EAST} END OF THE DRIET.)

PIER PIT W-8 ACCESS DRIET (CONTINUED)

- (5) NOTE: EXPOSED DSB-2W AT THE (N-E) SECTION. SOME SATURATED CLAYEY MATERIAL WAS NOTED AT THE DSB-2W CASING. THERE WAS NO INDICATION THAT CHIPPING OF THE ADJACENT GROUT DAMAGED THIS DSB.

- (6) RBE ADVISED THAT AN EXCESSIVE MVMT. (SETTLE.) OF THE STRUCTURE HAS BEEN RECORDED AT DSB-2W, AND THAT ROUTINE REJACKING ON PIER W-9, DUE TO THE MVMT OF THE STRUCTURE, WOULD BE REQUIRED.

FS-03-03

FOR INFORMATION ONLY

7220

PIER W-9

- (7) COMPLETED ROUTINE REJACKING ^{DUE} TO THE MVMT. OF STRUCTURE ON NTR SHIRT TODAY. APPLIED 110% OF TIE LOAD AND HELD IT FOR 30 MINS. ALL WEDGES WERE FOUND TIGHT (COULD NOT BE MADE LOOSE WITH A CLAW HAMMER). TOTAL SETTLE. OF TOP OF PIER W-9 STRUCTURE TO DATE WAS 0.480". IT WAS DECIDED TO DRIVE WEDGES

Signed Richard P. CasbyDate 6-22-83Reviewed by W. W. W. W.Date 6-30-83DATE - 1. 1983
PAGE - 1. 1983

MIDLAND UNITS 1 AND 2 - JOB 7220
RESIDENT GEOTECHNICAL ENGINEER REPORT

Date 6-22-83
Shift DAY
AB

Page 2 of 2

| No. | Description | Remarks |
|--------|---|---------|
| 7 | AND DETRACKLIZE THE JACKS AFTER 0.002" | |
| CONTIN | SETTLE IN A PERIOD OF 60 MINS. MINIM WAS RECORDED | |
| | RSE ADVISED RGE TO TERMINATE THE RETACKING. | |
| | THE PRESSURE DROP DURING DRIVING OF THE WEDGES WAS | |
| | 67.5 PSI. FINAL PRESSURE OF 25 PSI WAS REACHED | |
| | BY 12:45 HRS | |
| | PIER W-10 | |
| 8 | NO ACTIVITY NOTED AT THE TIER TODAY | |
| | PIER KC-2 | |
| 9 | CURING OF PIER CONCRETE CONTINUED | |
| 10 | UPPER TELL-TALE ID HAS BEEN DRYPACKED | |
| | PIER E-8 | |
| 11 | THE UPPER PIT SECTION WAS COVERED WITH PLYWOOD | |
| | PIER E-8 (ACCESS DRIET), AREA NORTH OF PIER E-8 | |
| 12 | NOTE: RGE AGREED TO REVISE THE PROPOSED | |
| | NORTH SLOPE FROM 1:1 TO 1 HORIZ: 3 VERT | |
| | AND THUS LIMIT THE EXCAVATION MINIM | |
| | UNDER AUX BLDG. THE TWITTER DISCUSSED | |
| | THIS REVISION WITH MRS. D. WILLIAMS & | |
| | KILGORE THIS MORNING. | |
| | EXCAVATION FOR (N-S) BULKHEAD (EAST SIDE) | |
| 13 | STARTED BREAKING OUT A SECTION OF "KAYBACK | |
| | GROUT" AT THE (N-W) SECTION. | |
| 14 | LAID OUT LOCATION OF HILT BOLTS AT ID'S (WEST | |
| | SIDE) | |
| | PIER E-10 | |
| 15 | COMPLETED LOAD TRANSFER, 110% OF SPEC LOAD, | |
| | AT 3:00 PM TODAY AFTER "0.009" SETTLE | |
| | CRITERIA IN 24 HRS" WERE REACHED AND SATISFIED | |
| | TOTAL SETTLE AT TOP OF TIER W/OT. STRUCTURE WAS .172" | |
| | RSE ADVISED THAT THE JACKS WOULD BE ACTIVE | |
| | FOR A LONGER PERIOD OF TIME (WEDGES WILL NOT | |
| | BE DRIVEN) AND W/OT WOULD READ GAUGES | |
| | EVERY 8 HRS. RGE WILL NOT PARTICIPATE IN THE | |
| | READING OF THE GAUGES. | |
| | PIER KC-11 | |
| 16 | UPPER TELL-TALE: DRYPACKING, HAS BEEN REPLACED | |

RS-003-03

FOR INFORMATION ONLY

7220

Signed Richard F. Casley Date 6-23-83

Reviewed by J. M. Langel Date 6-30-83

DESCRIPTION

DATE - 6.27.83
PAGE - 1. APPROVED

MIDLAND UNITS 1 AND 2 - JCS 7220
RESIDENT GEOTECHNICAL ENGINEER REPORT

Date 6-23-83
Shift DAY
AE

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6

DESCRIPTION

REMARKS

- PIERS W9, W11, W12 ALSO EQ F11 & F12
- (1) WTE CONTINUED BHP'S DIAL GAUGE SETTING PICS. AT TOP & TIP OF THE PIERS.
- (2) NOTE: RSE ADVISED RGE THAT "ROUTINE RETACKING" DUE TO THE MOVING OF THE STRUCTURE" WOULD BE ACTIVATED TO 110% OF SPEC LOADS ON PIERS W9, W11 & W12. RETACKING OF W9, W11 & W12 STARTED AT 11:07AM, 2:35PM & 5:11PM RESPECTIVELY.

- (3) THE FOLLOWING RESULTS WERE NOTED ON DAY & NTR SHIFTS

| PIER NO | TOTAL SETT. TO DATE (DAY SHIFT) | TOTAL SETT. TO DATE (NTR SHIFT) | NUMBER OF WEDGES SET | 110%* | 125%* |
|---------|---------------------------------|---------------------------------|----------------------|-------|-------|
| W9 | .488"/110% | .513/125%* | 0 | (2) | |
| W11 | .697"/110% | .708/125% | 0 | 0 | |
| W12 | .344"/110% | .356/125% | 0 | (2) | |

- (4) $\Delta 4$ - 0.002" (DAY SHIFT) (*) RSE DECIDED TO INCREASE THE LOAD FROM 110% TO 125% OF SPEC. LOAD AT APPROX 8PM

NOTE: 4 HR. READINGS WERE TAKEN ON ALL THREE PIERS BY END OF THE NTR SHIFT. DUE TO EXCESSIVE MOVING OF STRUCTURE THE "ROUTINE RETACKING" STATUS WAS CHANGED TO "NON-ROUTINE"

PIER PIT 10-B

- (5) CONTINUED WORK ON SHAFT, REBARS AND CLEAN UP OF THE PITS. PLACING OF THE CONCRETE HAS AGAIN BEEN DELAYED DUE TO PROBLEMS WITH INSTALL. OF REMAINING RE-BARS.

PIER W-10

- (6) NO ACTIVITY NOTED AT THE PIER TODAY

PIER KC-2

- (7) NO ACTIVITY NOTED AT THE PIER TODAY

ACCESS DRIFT TO PIER PIT 10-B

- (8) NO ACTIVITY AT NORTH OR SOUTH SIDES OF THE PIT EXCAVATION FOR (N-S) BULK HEAD (N-E SECTION OF ACCESS DRIFT PIT W-8)

NOTE: REG. NORTH SIDE OF ACCESS DRIFT (PIER PIT W-8) RSGFE CHECKED EXTENT OF THE 1/4" TO 1/2" GAPS UNDER THE MUD MAT ALONG NORTH LIMIT OF LAYBACK EXCAV. WITH 1/4" x 1" LATH PROBE 4'-6" MAX DEPTH OF THE GAPS WAS NOTED. STEEL TAPE/12' PENETRATED UP TO 12' INTO THE GAPS IN PROX. OF EXCAV. (N-S) OF THE PIT W-8

Signed Richard L. Casby

Date 6-24-83

Reviewed by J. Wangel

Date 6-30-83

APP - J. J. JENSEN
APP - J. J. JENSEN

FOR INFORMATION ONLY

MIDLAND UNITS 1 AND 2 - JCS 7220
RESIDENT GEOTECHNICAL ENGINEER REPORT

Date 6-23-83
Sheet DAY
AE

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6

Description

Remarks

- 9) MORGENTHAU HAS BEEN DRILLING HOLES FOR HULT
BOLTS AT 1st & 2nd POST P_2 (N-E CORNER WITH DRIFT)
- 10) NO ADDITIONAL EXCAVATION FOR THE (N-S) BULKHEAD
IN PROGRESS TODAY

PIER E-8

- 11) HAMMERHEAD SECTION OF PIT - HAS BEEN COVERED WITH
PLYWOOD

ACCESS DRIFT TO PIER E-B & EXCAVATION FOR (N-S) - BULKHEAD

- 12) NOTE: RGE DISCUSSED THE STATUS
OF BULKHEAD EXCAVATION WITH RSGFEL MORGENTHAU
IT WAS AGREED TO PERMIT AN ADDITIONAL
EXCAV AT (N-W) SECTION OF THE ACCESS DRIFT INCL
BREAKING OUT OF 18" \pm THICK FILL CONCRETE
& MUD MAT IN (E-W) DIRECTION. THIS SPACE
WAS REQUIRED TO INSTALL BULKHEAD P_2 &
POSTS (ROOM TO TORQUE THE BOLTS)

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1220

PIER E-10

- 13) STRUCTURE SUPPORTED ON "ACTIVE JACKS" AT
110% OF SPEC LOAD READINGS HAVE BEEN TAKEN
AT 1 HR & 2 HR TIME INTERVALS

PIER KC-11

- 14) CURING OF THE UPPER TELL - TALE P_2 DRYFACE CONTINUED
- 15) RGE (R COSBY & E GRAY) COMPLETED PREPARATION
OF "AS BUILT" EXTENT OF EXCAVATIONS UNDER AUX
BIDG. ALONG THE NORTH SIDE OF ACCESS DRIFTS
TO PIERS E-B & W-9. TODAY SKETCHES WERE
PREPARED

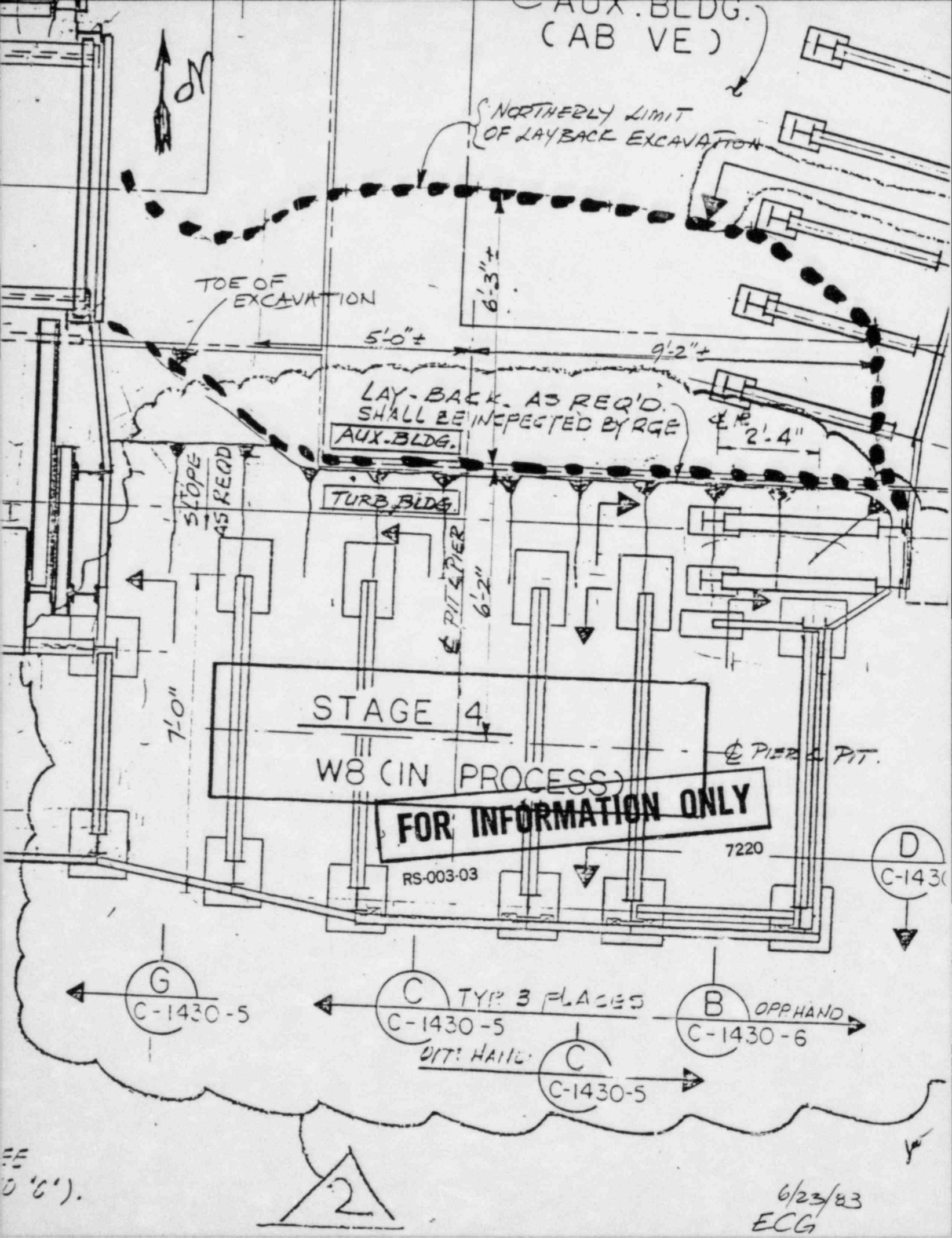
(3) SHEETS OF SKETCHES
ATTACHED TO THIS REPORT

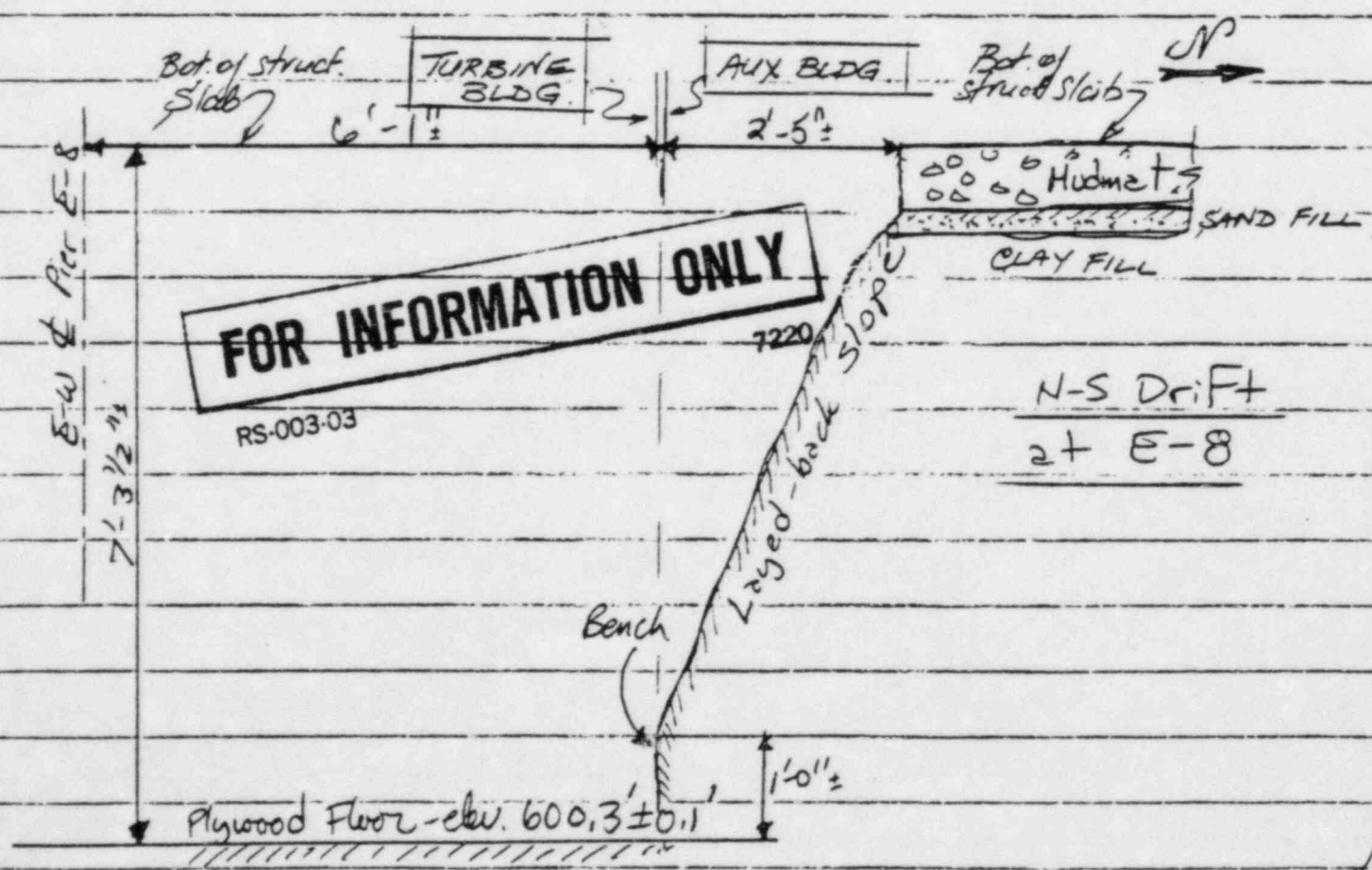
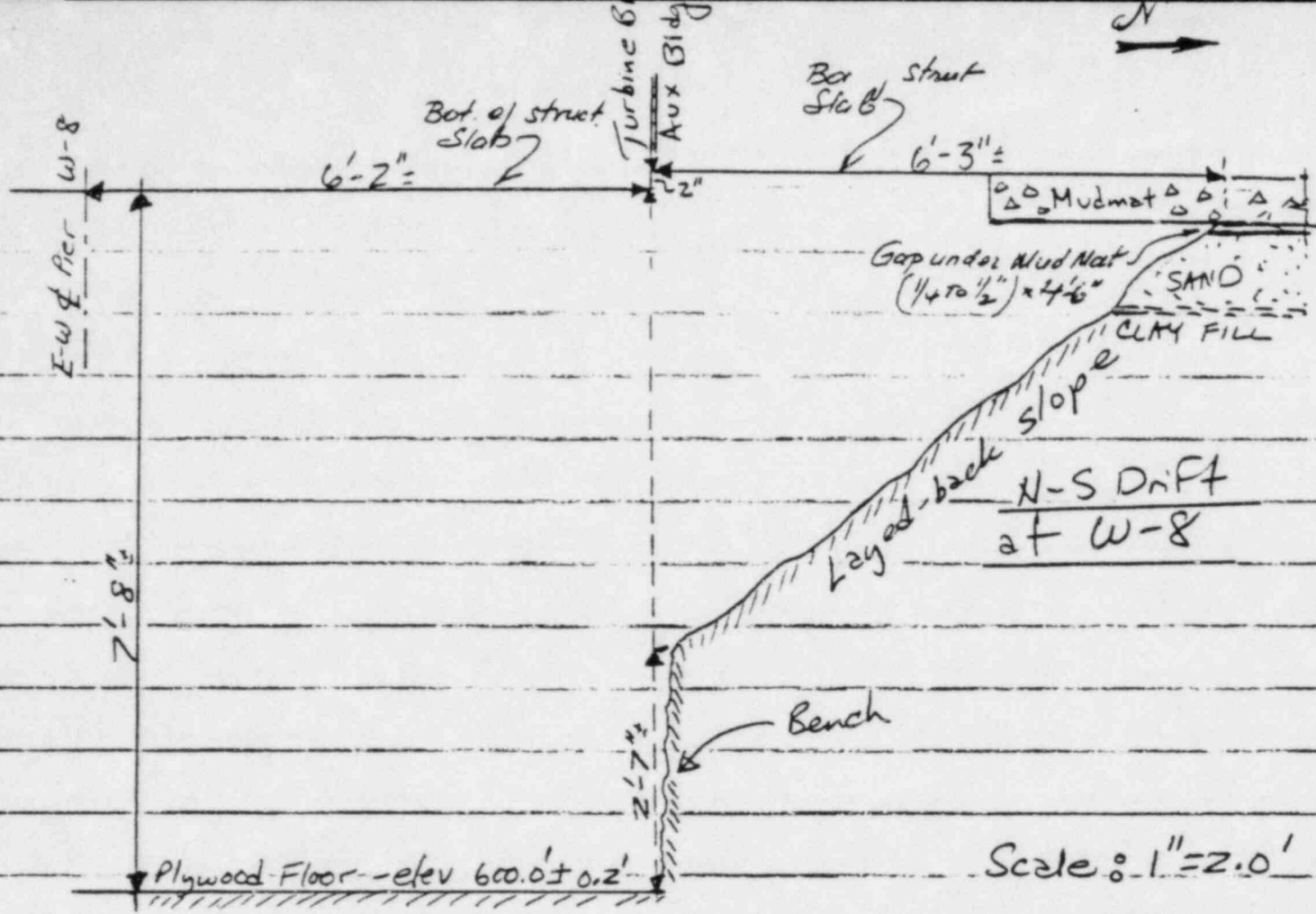
Signed Richard L. Cosby Date 6-24-83

Reviewed by J. W. Wynn Date 6-30-83

Checklist

DATE - 1. CHECKED
PAGE - 1. APPROVED





6/24/83

MIDLAND UNITS 1 AND 2 - JOB 7220
RESIDENT GEOTECHNICAL ENGINEER REPORT

Date 6/26/83
Shift NIGHT - E
AB

Page 1 of 1

| No. | Description | Remarks |
|-----|---|---|
| | West Shaft | |
| | Pier KC-2 | FOR INFORMATION ONLY |
| 1. | No activity | |
| | Pier W8 | |
| 1. | No activity | |
| | Pier W9 | |
| 1. | "Non-routine" repacking at 125% S.L. Continued. At of 12:56 a.m. Pier top movement was 13 mil in last 48 hours. 4 hour readings Continued. | |
| 1. | Pier W10 started placing jacks. | |
| | N-S Bulkhead North of W8 | |
| 1. | Filled void north of layback area. 180 gals of neat cement grout ($\frac{3}{4}$ water : 1) were used. grout pressures ranged from approx. 20 to 80psi Signed QC IR and stated that RGE concurred with F.E. grouting operation was acceptable. QC hold on bearing PL on knee brace* of 2 nd set | * See sketch attached. * PL improperly Shimmed Sk. on QC tag. |
| | East Shaft | |
| | Pier KC-11 | |
| 1. | Started placing jacks on top of pier. | |
| | Pier E8 | |
| 1. | No activity | |
| | Pier E10 | |
| 1. | 110% S.L. maintained. 8 hour readings Continued. At of 12:35 a.m. movement was 3 mils in last 24 hours. | |
| | N-S Bulkhead North of E8 | |
| 1. | QC hold on bearing PL on 2 nd post due to gap between PL & str. Conc. wider than $\frac{1}{16}$ ". | |

Signed

Alan Tang

Date

6/27/83

Date

DISTRIBUTION

RAGE - E. C. VIKI
PGE - J. ANDERSON

ATTACHMENT C
TO MCP 15.000

FOR
INFORMATION ONLY

GROUT PLACEMENT PLAN

Prepared By: DE Roader (MFE)
Approved By: T. J. Miller (REG FE)
W. D. (REG)

Location: 11' NORTH OF WEST 8

Plate Orientation: N/A

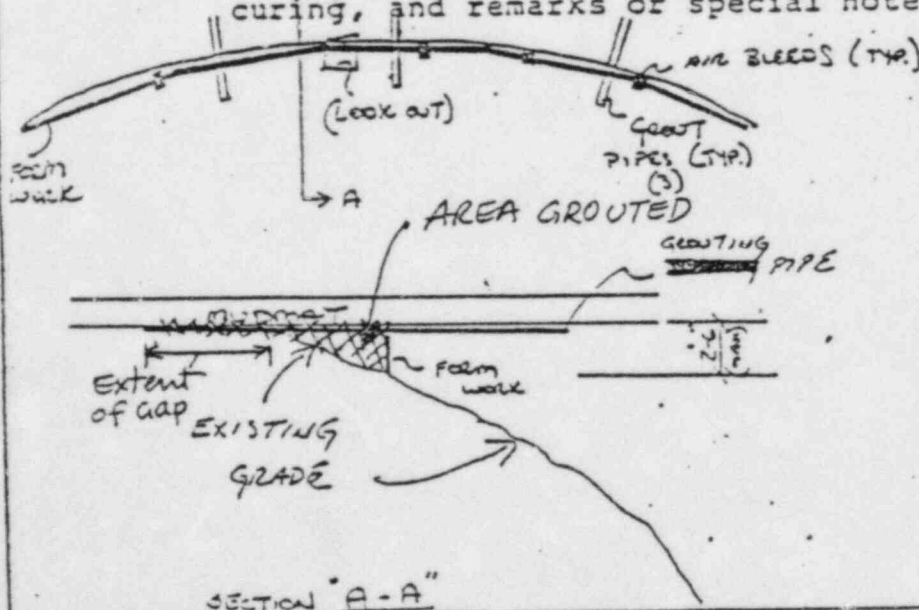
Type of Grout: CEMENT

Method of Grout Placement:

| | |
|-------------------------------------|-------------------------------------|
| <input type="checkbox"/> | Gravity |
| <input type="checkbox"/> | Pressure - Hand Pump |
| <input checked="" type="checkbox"/> | Pressure - Mechanically Driven Pump |

Maximum Grout Pressure: 150 (For pressure grout placement with a mechanically driven pump only.)


Sketch: (Indicate plate orientation, location of forms, location of vent holes and/or vent pipes, grouting sequence to avoid air entrapment, location of grout pipes, edge treatment for curing, and remarks or special notes.)



FORM CURE

NOTE:

- ① PIPE LOCATIONS MAY VARY DUE TO RESISTANCE WHILE BEING PLACED.
- ② AIR BLEEDS AS NECESSARY
- ③ OBSERVATION PORTS AS REQUIRED.
- ④ FORMWORK MAY VARY DEPENDING ON SOIL CONDITIONS (ACTUAL).
- ⑤ MAX. SPACING OF GROUT TIES 10'.

 AREA GROUTED

F7220-C195-28-7 (2)

ATTACHMENT FOR DAILY REPORT 6/26/83
NIGHT SHIFT (E.)