



**LOUISIANA**  
POWER & LIGHT

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October 12, 1984

W3P84-2862  
3-A1.01.04

Director of Nuclear Reactor Regulation  
Attention: Mr. G. W. Knighton, Chief  
Licensing Branch No. 3  
Division of Licensing  
U. S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Dear Mr. Knighton:

Subject: Waterford 3 SES  
Docket No. 50-382  
MASONRY BLOCK WALLS

- References:
- 1) NRC Inspection & Enforcement Bulletin No. 80-11, dated 5/8/80
  - 2) LPL 14934 from D.L. Aswell (LP&L) to A. Schwencer (NRC), dated 8/22/80
  - 3) LP&L letter W3K84-0842 from R.S. Leddick to R.C. DeYoung (NRC), dated 4/11/84
  - 4) NRC Inspection & Enforcement Report No. 80-07 (Waterford 3), dated 5/14/84

By Reference 1, the NRC requested that LP&L review the design bases for masonry walls.

In Reference 2, LP&L addressed IEB 80-11 and stated that no seismic Category I equipment was attached to masonry block walls at Waterford 3.

In Reference 3, LP&L committed to a program designed to review design adequacy and as-built conditions for the Waterford 3 masonry block walls.

In Reference 4, the findings of the NRC Construction Appraisal Team (CAT) indicated that further review of documentation for the masonry block walls would be required.

On September 25-27, 1984, the NRC experts (Dr. P. T. Kuo and Mr. F. Rinaldi) visited the Waterford 3 site and reviewed documentation pertinent to design and construction of the masonry walls. During their visit, the inspectors determined that the material available for review was insufficient and requested that LP&L provide some additional information.

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PDR ADOCK 05000382  
G PDR

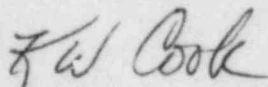
*Boo!*  
*Limited Dist*

Mr. G. W. Knighton, Chief  
W3P84-2862  
Page 2

Enclosed is the additional information requested by the NRC reviewers. It is provided in the format of responses to the sixteen confirmatory items identified during the site visit. Once the material is given NRC review, LP&L is prepared to visit and discuss any further information or details on the Waterford 3 masonry walls construction.

If you have any questions, please contact C. E. Wuller at (504) 464-3499.

Very truly yours,



K.W. Cook  
Nuclear Support & Licensing Manager

KWC:GEW:sms

cc: E.L. Blake (w/o enclosure), W.M. Stevenson (w/o enclosure), J. Wilson,  
G.L. Constable, P.T. Kuo, F. Rinaldi

MEMORANDUM

September 28, 1984  
ES-10106-84

TO: M. Yates/J. Houghtaling

FROM: J. DeBruin *John DeBruin*

SUBJECT: LOUISIANA POWER & LIGHT COMPANY  
WATERFORD STEAM ELECTRIC STATION  
1984 - 1165 MW INSTALLATION - UNIT NO. 3  
FOLLOWUP ACTION PLAN FOR CLOSURE OF MASONRY  
BLOCK WALLS CAT ITEM 6.2/6.3

Attached is the list of confirmatory items emanating from the NRR audit of the Masonry Block Wall design and installation. Four (4) of the sixteen (16) items have been resolved. Closure of the remaining items will be accomplished as follows:

- 1) Analysis is required to close the remaining items. Responsibilities has been delegated as noted below:
  - a) W.T. Teng shall resolve Item No. 3 in conjunction with the Civil SAG Group in New York.
  - b) All other open items requiring analysis will be performed at site under the direction of Gabe Aliberti.
- 2) Gabe Aliberti will coordinate with Bob Bagnetto of LP&L Project Engineering to expedite LP&L validation activities.
- 3) John DeBruin will prepare the draft letter to NRC for LP&L's use in transmitting the final documentation package to NRC. The Plan is submit the package by 10/8/84.
- 4) Gabe Aliberti will provide photographic documentation of the core drill results. This will be submitted as part of the package.
- 5) A followup meeting with NRC is to be held in mid October in Bethesda, MD in order to close the remaining open items.

JD/cl

cc: B. Grant  
E. Kowalski  
J. Tompeck  
J. Costello  
R. Bur'ski - LP&L  
J. Hart  
G. Aliberti  
ESSE File P.83

CAT/REG11

LOUISIANA POWER & LIGHT COMPANY  
 WATERFORD SES - UNIT NO. 3

9/28/84  
 3:30 PM

SUMMARY OF CONFIRMATORY  
 ITEMS STEMMING FROM  
 NRR EVALUATION OF  
 MASONRY BLOCK WALLS  
 NRC CAT ITEM NO. 6.2 & 6.3

ITEM NO.	NRC REVIEW STATUS	QUESTION	RESPONSE
1.	Open	Verify structural adequacy of concrete curb used to support Hollow Block Walls. Consider shear and bending loads in analysis. Verify adequacy of lap splice detail. Verify adequacy of FCR-CH-891.	Verification of curb structural adequacy is provided in Calc. Pkg. No. 1. Package No. 1 also provides verification of lap splice details and the embedded plate detail shown in FCR-CH-891.
2.	Open	Verify structural adequacy of vertical support for removable solid block wall under bearing, bending and shear loads, at diaphragm locations. Are test reports available?	Calculation Package No. 2 provides verification of vertical support for solid block wall. Structural adequacy has been verified by analysis. No tests were deemed necessary.
3.	Open	Clarify how the seismic acceleration value of .3g was selected for use in calculations. Confirm weight calculation. Confirm height limits used in analysis with as-built conditions.  Provide frequency analysis for both solid block and or hollow block walls. Provide frequency analysis for Wall S1 and S21.	A final report will be submitted by 10/8/84. Refer to the attached Memo No. ES-10131-84 for status.
4.	Resolved	Verify that yield stress of rebar is still within .9fy when multiplier is 2.	Verification is provided in Calc. Package No. 4

ITEM NO.	NRC REVIEW STATUS	QUESTION	RESPONSE
5.	Open	Verify the structural adequacy of Masonry Walls when miscellaneous non-seismic loads are considered. Select Walls S1, H2, H13, and W29 for this analysis.	Calculation Package No. 5 provides verification of wall S1. Verification of walls H2, H13 & W29 will be provided by 10/8/84.
6.	Resolved	Confirm impact loads are low due to adjacent cable tray support material motion during a seismic event. Wall S2 typical.	Confirmation is provided in Calculation Pkg. No. 6
7.	Open	Provide connection details between perpendicular block walls and block wall to reinforced concrete wall, and L-shaped wall connections to diaphragm. (Example S6)	Connection details & specifications are provided in Package No. 7.
8.	Open	Confirm that block placement on wall H6/H7 is the exception. In this case blocks are staggered in lieu of vertical stacking as is typical for other hollow block walls. Verify structural adequacy of detail DN which is not presently covered in CAT Response.	Confirmation of acceptable block placement is provided in attached Memo No. ES-10130-84. Structural adequacy of detail DN is verified as noted in the attached Calc. Package No. 8.
9.	Open	Verify structural adequacy of walls 78, 79 & 80 (Stair well no. 7) due to slab loads.	Verification is provided in Calc. Package No. 9.
10.	Open	Identify mechanism of load transfer between multiwythe walls. Verify as-built details used at diaphragm interface and structural adequacy of the as-built condition. Based on inspection observations during audit, justify the adequacy as-built spacing between wythe for solid block walls. Provide documentation of inspection results.	Documentation and verification will be provided by 10/8/84.

ITEM NO.	NRC REVIEW STATUS	QUESTION	RESPONSE
11.	Open	Provide status of unfinished block wall in CCW Heat Exchanger Room A.	Refer to the attached LP&L draft memo on plans for wall repairs. A formal letter will be submitted.
12.	Open	Provide a summary of block wall versus boundary conditions.	Summary data will be provided by 10/8/84.
13.	Resolved	Provide calculation for dur-oval using corrected yield stress value.	Refer to Calc. Pkg. No. 13 for verification.
14.	Open	Verify allowable stress table used in calculations.	Corrected table will be furnished. Calculation results are not expected to be affected, & this will be verified. Data to be provided by 10/8/84.
15.	Resolved	Clarify the modulus used in wall analysis.	Modulus of Elasticity is used in analysis.
16.	Open	Verify that code minimum reinforcement requirements are met for vertical and horizontal reinforcement.	Data will be submitted by 10/8/84. This will be done & calculations will be furnished.

BY A. LEON DATE 10/6/84SHEET 1 OF 1CHKD. BY K. Shick DATE 10/6/84OFS NO. \_\_\_\_\_ DEPT. NO. 653CLIENT LP&LPROJECT WATERFORD #3SUBJECT CONC. BLOCK WALLS - CONC. CURBITEM # 1

1. ACCORDING TO CALCULATIONS DONE ON 3/15/84 FOR CONC. BLOCK WALLS REVIEW, SH 5 & 6 OF 11, COPY ATTACHED); AT BOTT. OF CONC. CURB :  
 $M = 12.15 \text{ k-ft} \quad \& \quad V = 2.03 \text{ k}$  FOR  $b = 16"$ ,  $W = .36 \text{ k/ft}$
2. THE REINFORCEMENT PROVIDED IS #6 @ 12 OR 2#6 ON 16" WHICH IS CONSERVATIVE.
3. ACI 318-63 ALLOWS THE USE OF WORKING-STRESS OR ULTIMATE STRENGTH. THEREFORE TO SIMPLIFY CALCULATIONS, WORKING-STRESS IS USED, IN SAFE SIDE.  
 FOR  $f'_c = 4.0 \text{ KSI}$ ,  $f_s = .40 f_y = .40 \times 60 = 24.0 \text{ KSI}$ ,  $\rho = .88$   
 $A_s \text{ REQ'D} = 12.15 \times 12 / 24.0 \times .88 \times 9 = .77 \text{ in}^2 < .83 \text{ OK!}$
4. FOR  $f'_c = 4.0 \text{ KSI}$ ,  $f_s = 24 \text{ KSI}$ ,  $K = 295 \text{ psi}$ ,  $k = .38$ ,  $\rho = .88$ ,  $b = 16"$  (CONSERV.)  
 $M = K b d^2 \therefore \underline{d \text{ REQ'D}} = (12.15 \times 12 / 295 \times 16)^{.5} = \underline{5.6"} < \underline{9"} \text{ OK!}$
5. SHEAR :  
 $\underline{v} = 2030 / 16 \times 9 = \underline{14.1 \text{ psi}} < \underline{1.1 \sqrt{f'_c}} = 70 \text{ (ACI 318-63)} \text{ OK!}$
6. CONC. CURB UNDER BENDING & AXIAL LOAD (COMPRESSION), ;  
 AXIAL LOAD =  $.36 \times 30 \times (1.0 + .30) = 14.0 \text{ k}$ ,  $\alpha = 3"$ ,  $(.5h - d) = 3"$   
 MOMENT @  $\phi$  OF REINF. =  $12.15 \times 12 + 14.0 \times 3 = 188 \text{ k-in}$   
 $A_s \text{ TOT} = 188 / 24.0 \times .85 \times 9 - 14.0 / 24.0 = 1.02 - .58 = .44 \text{ in}^2 < .83 \text{ OK!}$   
 $\underline{f_c} = 2 \times 188 / .38 \times .88 \times 16 \times 9^2 = .868 \text{ KSI} = \underline{868 \text{ psi}} < \underline{.45 f'_c} = 1800 \text{ (ACI 318-63)} \text{ OK!}$

BY A. LEON DATE 10/4/84

SHEET 1 OF 3

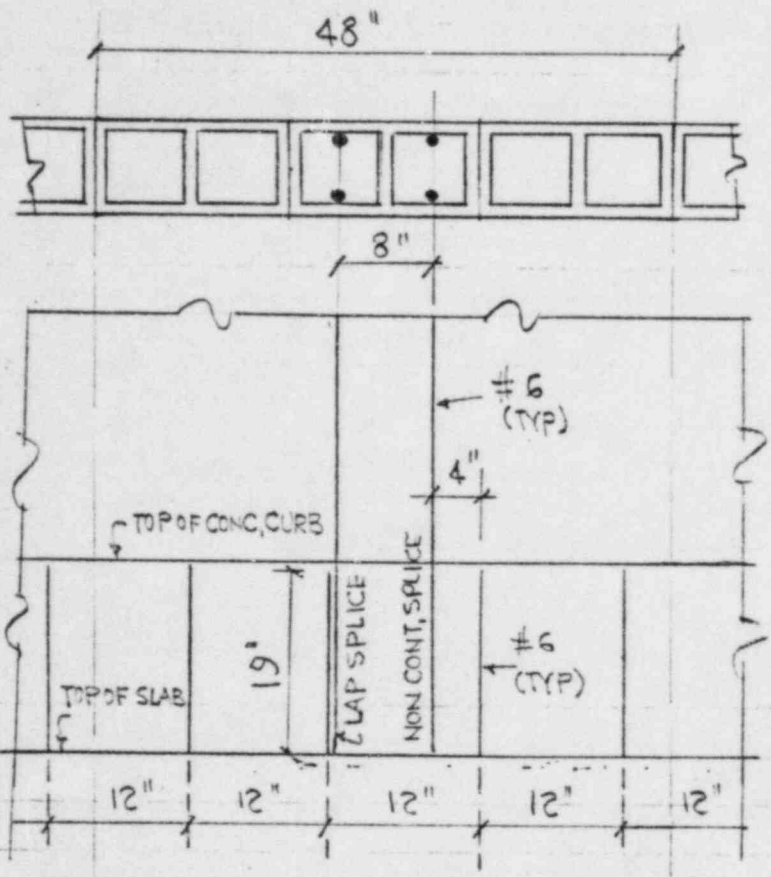
CHKD. BY [Signature] DATE 10/2/84

OFS NO. \_\_\_\_\_ DEPT. NO. 653

CLIENT LP&L

PROJECT WATERFORD #3

SUBJECT CONC. BLOCK WALLS - LAP SPLICE FOR REBARS - ITEM #1



1. REFERENCES :
  - 1.1 DWG. G-765 502
  - 1.2 CONC. BLOCK WALLS-REVIEW, CALCULATIONS DONE ON 3/15/84
  - 1.3 ACI 318-71 CODE
  - 1.4 FCR-CH-891 (COPY ATTACH'D)

- 2.1 LAP SPLICE :
  - 2.2. FOR EA. 48" OF BLOCK WALL THERE ARE 2 #6 AND BOTH ARE SPLICED, THEREFORE THE SPLICE IS ON 100% OF BARS.

2.3, ACCORDING TO ACI 318-71, SECT, 7.6.3.2, § 7.6.3.7.2, WHEN  $f_s = 24 \text{ KSI} < 1.5 f_y = 30 \text{ KSI}$  AND MORE THAN 75% OF BARS ARE SPLICED, THE SPLICE IS CLASS B  $1.3 l_d$ .

2.4, ACCORDING TO ACI 318-71, SECT, 12.5, d, WHEN REBARS SPACING IS AT LEAST 6",  $l_d$  CAN BE REDUCED 20%



## EBASCO SERVICES INCORPORATED

SH 3 OF 5

BY A. LEON DATE 10/4/84SHEET 2 OF 3CHKD. BY R. Mink DATE 10/4/84

OFS NO. \_\_\_\_\_

DEPT. NO. 653CLIENT LP & LPROJECT WATERFORD #3SUBJECT CONC. BLOCK WALLS - LAP SPLICE FOR REBARSITEM # 1

2.5 THEREFORE :

$$\text{LENGTH OF SPLICED REQUIRED} = 1.3 \times 8 l_d = 1.04 l_d$$

2.6 FOR #6 @  $F_y = 60 \text{ KSI}$ , PER ACI 318-71,  $l_d = 18"$  (TABLE ATTACHED), THEREFORE :

$$\text{LENGTH OF SPLICED REQUIRED} = 1.04 \times 18 = \underline{18.72"} < \underline{19"} \text{ OK} \checkmark$$

$$\text{SPLICE PROVIDED} = \underline{19"} \checkmark$$

2.7 ACCORDING TO ACI 318-71, SECT. 7.5.4, FOR NONCONTACT SPLICES, BARS CANNOT BE SPACED LARGER THAN THE REQ'D SPLICE/5 :

$$\text{REQ'D SPLICE} = 18.72"$$

$$\underline{\text{SPACE}} = \underline{18.72/5} = \underline{4.68"} > \underline{4"} \text{ (SPACING PROVIDED) OK} \checkmark$$

2.8 BASED ON THESE CALCULATIONS, THE LAP SPLICE OF 19" PROVIDED IS ADEQUATE.

## EBASCO SERVICES INCORPORATED

SH 4 OF 5

BY <sup>A.</sup> A. LEON DATE 10/3/84

SHEET 3 OF 3

CHKD. BY K. Shih DATE 10/2/84

OFS NO. \_\_\_\_\_

DEPT. NO. 653

CLIENT LP&amp;L

PROJECT WATERFORD # 3

SUBJECT CONG. BLOCK WALLS - FCR-CH-891:DETAIL (C).

ITEM # 1

1. LENGTH OF 1'-7" FOR #6 DWLS IS ADEQUATE TO PROVIDE THE REQUIRED SPLICE LENGTH FOR CONG. BLOCK WALL REBARS, ACCORDING TO SH 3 OF 5 OF ITEM #1.

2. THE EMBEDMENT LENGTH OF 1'-6" INTO THE CONCRETE FLOOR IS ADEQUATE ACCORDING TO ACI 318-71 SECT 12.3.1 & 12.3.5.1 WHICH FOR #6 BARS IS 1'-6". SEE TABLE FOR  $l_d$ , ATTACHED.

BY Y. LIU DATE 9/27/84

SHEET 1 OF 1

CHKD. BY D. DATE 10/5/84

OFS NO. 2865.046 DEPT. NO. 653

CLIENT L. P. & L.

PROJECT WATERFORD #3

SUBJECT AS-BUILT ATTACHMENT REVIEW

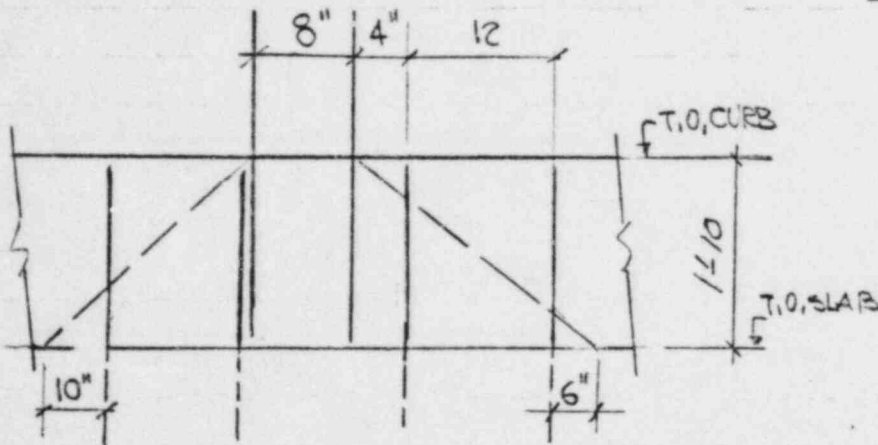
ITEM # 1

DETAIL (A) OF FCR-CH-891:

CHECK EMBEDDED RE @ BOTT OF CONC. BLOCK WALL:

EMBEDDED RE P-22 } SEE DWGS. G-895 S53 & S55

SHEAR = 2.025 K } SH 5 & 6 OF CALCULATIONS DONE  
 MOMENT = 12.15 K } ON 3/15/84 FOR CONC. BLOCK REVIEW.



THE MOMENT TAKEN BY THE 2 #6 BARS SPACED 8" AT TOP OF CURB SPREADS DUE TO REDISTRIBUTION OF STRESSES IN THE CONC. CURB TO A BAND WIDTH OF  $8 + 22 \times 2 = 52"$  WITHIN WHICH THERE ARE 4 #6 BARS TO TAKE THE MOMENT AT BOTTOM OF THE CURB. THEREFORE THE MOMENT ON 2 #6 BARS AT THE BOTT. OF THE CURB IS  $15 \times 12.15 = 6.07$  K. SAME CRITERIA APPLIES FOR THE SHEAR: SHEAR AT BOTT. OF CURB = 1.01 K

INTERACTION FORMULA:

$$\frac{1.01}{54.5} + \frac{6.07 \times 12}{103} = 0.02 + 0.71 = 0.73 < 1.0$$

$\sim 45.7 \text{ K} \times 2.25"$  OK ✓

NOTE: ALLOWABLES LOADS FOR EMBEDDED RE TAKEN FROM EMB. RE CALCULATIONS. COPY ATTACHED..

FOR REFERENCE ONLY

ITEM #1

3.8.3.2 Applicable Codes Standards and Specifications

## 3.8.3.2.1 General Codes and Standards

## a) Concrete Internal Structures

All concrete internal structures are designed in accordance with applicable portion of ACI 318-63, Ultimate Strength Design Part IV B, with the exception that ACI 318-71 is used for design of reinforcing steel splices. A listing of other standard codes or standards is as follows:

- 1) ACI-214-65 - Recommended Practice for Evaluation of Compression Test Results of Field Concrete
- 2) ACI-301-66 - Specification for Structural Concrete for Buildings (Exceptions noted in Subsection 3.8.3.6.1.2)  
ACI-301-72
- 3) ACI-315-65 - Manual of Standard Practice for Detailing Reinforced Concrete
- 4) ACI-347-68 - Recommended Practice for Concrete Formwork
- 5) ACI-211.1-70 (Formerly ACI-613-54) - Recommended Practice for  
ACI-211.1-74 Selecting Proportions for Normal Weight Concrete
- 6) ACI-304-73 (Formerly ACI-614-59) - Recommended Practice for  
Measuring, Mixing, Transporting and Placing  
Concrete
- 7) ACI (1967) - Manual of Concrete Inspection
- 8) CRSI-65 - Recommended Practice for Placing Reinforcing Bars  
(20th Edition)
- 9) ANSI N45.2.5 - 1974 - Supplementary Quality Assurance Requirements for Installation, Inspection and Testing of Structural Concrete and Structural Steel During the Construction Phase of Nuclear Power Plants.

ACI-349, "Proposed Code Requirements for Nuclear Safety Related Concrete Structures" was not used in Waterford-3 design.

## b) Steel Internal Structures

The design, fabrication, erection and inspection and testing of the steel internal structures comply with the applicable requirements of the documents listed below. Specific sections of these documents which have been followed are indicated in the following:

- 1) American Society of Mechanical Engineers (ASME) "Boiler and Pressure Vessel Code," 1971,

Table 404. Allowable Stresses in Concrete for Working-stress Design of Buildings\*†

Description	Allowable stresses					
	For any strength of concrete in accordance with sec. 502 of ACI 318-63	For strength of concrete shown below				
		$f'_c = 2,500$ psi	$f'_c = 3,000$ psi	$f'_c = 4,000$ psi	$f'_c = 5,000$ psi	
Modulus of elasticity ratio $n$ :	29,000,000					
	$w^{1.33} \sqrt{f'_c}$ $90 < w < 155$ $n \geq 6$					
For concrete weighing 145 lb per cu ft (see Sec. 1102 of ACI 318-63).....	$n$	10	9	8	7	
Flexural $f_c$ :						
Extreme fiber stress in compression.....	$f_c$	0.45 $f'_c$	1,125	1,350	1,800	2,250
Extreme fiber stress in tension in plain concrete footings and walls.....	$f_c$	1.6 $\sqrt{f'_c}$	80	88	102	113
Shear $v$ (as a measure of diagonal tension at a distance $d$ from the face of the support):						
Beams with no web reinforcement†.....	$v_c$	1.1 $\sqrt{f'_c}$	55†	60†	70†	78†
Joists with no web reinforcement.....	$v_c$	1.2 $\sqrt{f'_c}$	61	66	77	86
Members with vertical or inclined web reinforcement or properly combined bent bars and vertical stirrups.....	$v$	5 $\sqrt{f'_c}$	250	274	316	354
Slabs and footings (peripheral shear, Sec. 1207 of ACI 318-68)†.....	$v_c$	2 $\sqrt{f'_c}$	100†	110†	126†	141†
Bearing $f_c$ :						
On full area.....		0.25 $f'_c$	625	750	1,000	1,250
On one-third area or less‡.....		0.375 $f'_c$	938	1,125	1,500	1,875

\* ACI Standard Building Code Requirements for Reinforced Concrete, ACI 318-63.

† Members subject to stresses produced by wind or earthquake forces combined with other loads may be proportioned for stresses one-third greater than those specified if the section thus required is not less than that needed for the combination of dead and live load. For shear values for lightweight aggregate concrete see Sec. 1208 of ACI 318-63.

‡ This increase shall be permitted only when the least distance between the edges of the loaded and unloaded areas is a minimum of one-fourth of the parallel side dimension of the loaded area. The allowable bearing stress on a reasonably concentric area greater than one-third but less than the full area shall be interpolated between the values given.

## Reinforcement 20.2—Minimum splice lengths

FOR REFERENCE ONLY

ITEM #1

		MINIMUM SPLICE LENGTHS $f'_c = 4,000 \text{ psi}$										
		TENSION BARS								COMPRESSION BARS		
		REGULAR BARS				TOP BARS				OPEN	ENCLOSED	
		CLASS				CLASS					TIES	SPIRALS
FOOTNOTE REFERENCES		A	B	C	D	A	B	C	D	6	7	8
BAR SIZE	$f_y$ ksi	$l_d$	$1.3l_d$	$1.7l_d$	$2.0l_d$	$l_{dt}$	$1.3l_{dt}$	$1.7l_{dt}$	$2.0l_{dt}$	$l_{dc}$	$0.83l_{dc}$	$0.75l_{dc}$
3	40	12	12	12	12	12	12	14	17	12	12	12
	50	12	12	13	15	12	14	18	21	12	12	12
	60	12	12	15	18	13	16	21	25	12	12	12
	80	15	20	26	30	21	27	36	42	14	15	14
4	40	12	12	14	16	12	15	19	22	12	12	12
	50	12	13	17	20	14	18	24	28	13	12	12
	60	12	16	20	24	17	22	29	34	15	13	12
	80	20	26	34	40	28	36	48	56	24	20	18
5	40	12	13	17	20	14	18	24	28	13	12	12
	50	13	16	21	25	18	23	30	35	14	13	12
	60	15	20	26	30	21	27	36	42	14	16	14
	80	25	33	43	50	35	46	60	70	30	25	23
6	40	12	16	20	24	17	22	29	34	15	13	12
	50	15	20	26	30	21	27	36	42	19	16	14
	60	18	23	31	36	25	33	43	50	23	19	17
	80	30	39	51	60	42	55	71	84	34	30	27
7	40	15	20	26	30	21	28	36	43	18	15	13
	50	19	25	32	38	27	35	45	53	22	18	16
	60	23	30	39	46	32	41	54	64	24	22	20
	80	38	49	65	76	53	69	90	106	42	35	32
8	40	20	26	34	40	28	36	48	56	20	17	15
	50	25	33	43	50	35	44	60	70	25	21	19
	60	30	39	51	60	42	55	71	84	30	25	23
	80	50	65	85	100	70	91	119	140	48	40	36
9	40	25	33	43	51	35	46	60	71	23	19	17
	50	32	41	54	63	44	58	75	89	28	23	21
	60	38	49	65	76	53	69	91	106	34	28	25
	80	63	82	108	127	89	115	151	177	54	45	41
10	40	32	42	55	64	45	59	77	90	25	21	19
	50	40	52	68	80	54	73	96	113	32	26	24
	60	48	63	82	96	64	88	115	135	38	32	29
	80	80	104	137	161	113	146	191	225	61	51	46
11	40	40	51	67	79	55	72	94	111	28	23	21
	50	49	64	84	99	69	90	117	138	35	29	26
	60	59	77	101	118	83	108	141	166	42	35	32
	80	99	128	168	197	138	180	235	276	68	56	51

All Table Values are in inches  
 For "Footnote and References," see Reinforcement 20.5  
 Table Value Multipliers for Various Conditions:

Bars Spaced 6" or More (Splice Length): 0.8	Code Ref. 12.5 (a)
3 Bar Bundles: 1.20	7.5.3, 12.7
4 Bar Bundles: 1.33	7.5.3, 12.7
Sand Lightweight Concrete: 1.18	12.5.1 (1)
All Lightweight Concrete: 1.33	12.5.1 (c)
$f'_c < 3,000 \text{ psi}$ : 1.33	7.7.1.1

DESIGN  
 HANDBOOK  
 ACI 318-71

FOR HOLLOW MASONRY WITH NO INSPECTION THE MATERIAL PROPERTIES AND DESIGN PARAMETERS TO BE USED ARE:

$$E_s = 29 \times 10^6 \text{ psi}$$

$$f_s = 24000 \text{ psi [GRADE 60]}$$

$$E_m = 675000 \text{ psi}$$

$$f_m = 225 \text{ psi} \times 2.5 = 562.5 \text{ psi}$$

$$m = \frac{E_s}{E_m} = \frac{29 \times 10^6}{675000} = 43$$

$$n = \frac{f_s}{f_m} = \frac{24000}{562.5} = 42.67$$

$$k = \frac{n}{n+r} = \frac{43}{43+42.67} = 0.502$$

$$j = 1 - \frac{k}{3} = 1 - \frac{0.502}{3} = 0.832$$

$$K = \frac{1}{2} f_m j k = \frac{1}{2} (562.5)(0.832)(0.502) = 117.5$$

$$M = K b d^2 \quad \text{OR} \quad M = A_s \cdot f_s \cdot j \cdot d$$

1) 12" CONC. BLOCK WALL REINFORCED AS SHOWN ON PAGE 3.

$$b = 16", \quad d = 9", \quad d' = 2\frac{5}{8}, \quad j = 0.832, \quad k = 0.502,$$

$$A_s = A'_s = 0.88 \text{ in}^2 \quad (2 \cdot \#6 \text{ EA. FACE})$$

$$f_m = 562.5 \text{ psi}$$

ALLOWABLE MOMENT:

MASONRY COMP. CONTROLS

$$M = \frac{f_m}{2} k j b d^2$$

$$M = \frac{0.5625}{2} (0.502)(0.832)(16)(9)^2 = 152.2 \text{ K.in}$$

$$= \boxed{12.68 \text{ K.FT}}$$

REINF. STEEL TENSION CONTROL

$$M = A_s \cdot f_s \cdot j \cdot d$$

$$M = 0.88 \times 24 \times 0.832 \times 9 = 158 \text{ K.in} = 13.18 \text{ K.FT}$$

USE

DATE 3-15-84

SHEET 1 OF 11

DATE 3-22-87

DWG NO. 4794 385 DEPT. NO. 653

LPEL

WATERFORD #3

FOR REFERENCE

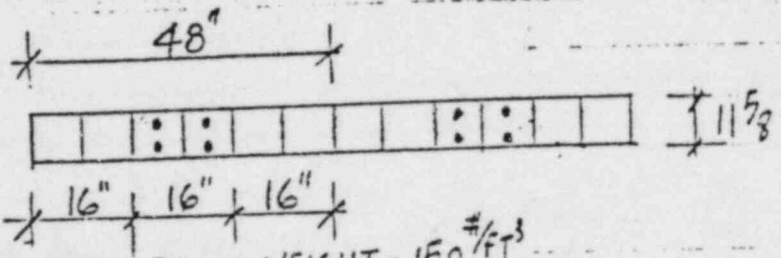
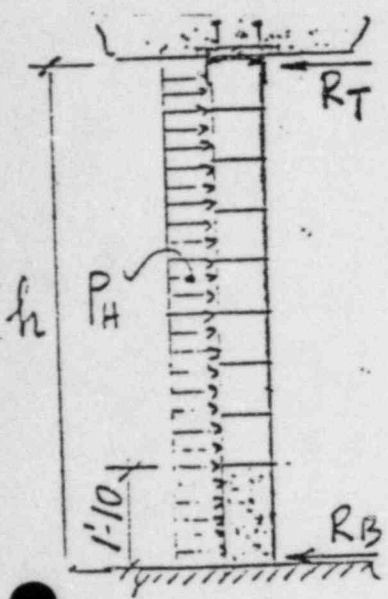
CONC. BLOCK WALLS

ONLY

ITEM # 1

INVESTIGATE REINF. SECTION AS A BEAM :

ASSUME BOTTOM FIXED SUPPORT AND TOP SIMPLE SUPPORT.



REINF. CONC. BLOCK WEIGHT = 150 #/FT<sup>3</sup>  
 HOLLOW, " " = 60 #/FT<sup>3</sup>

$$W_1 = 1.33 (0.150) = 0.20 \text{ K/FT}$$

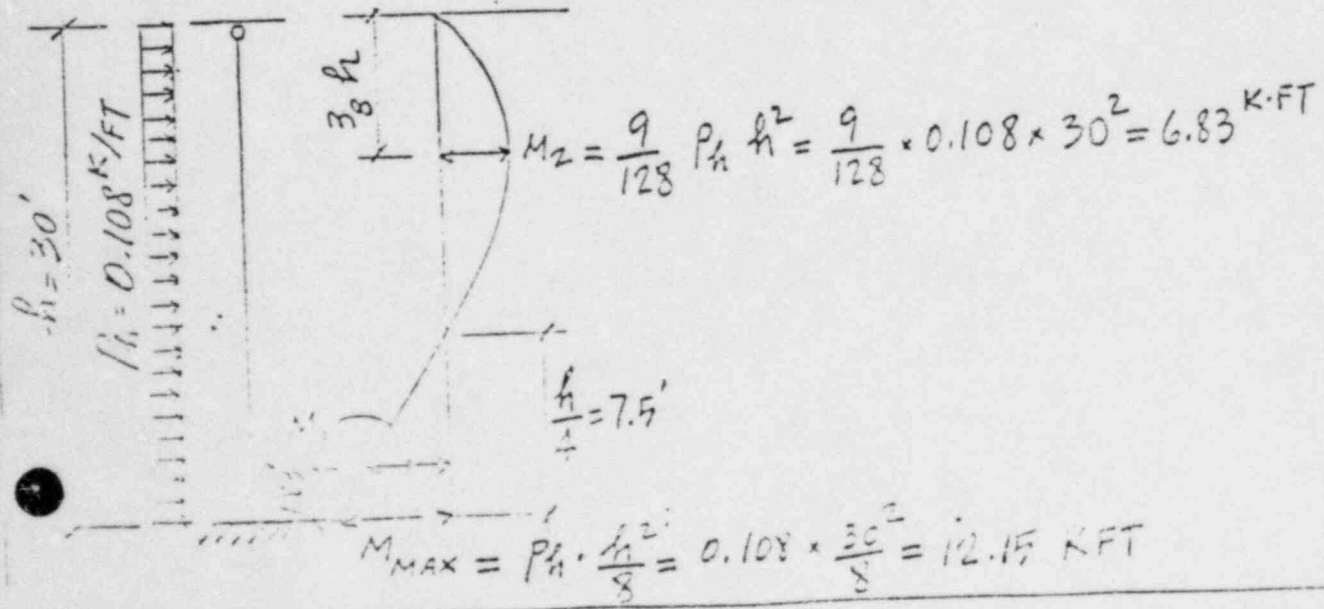
$$W_2 = 2.67 (0.060) = 0.16 \text{ K/FT}$$

$$W = 0.36 \text{ K/FT}$$

FOR HORIZ. EQ. FACTOR = 0.3

$$P_h = 0.36 \text{ K/FT} \times 0.3 = 0.108 \text{ K/FT OF BEAM}$$

CHECK MASONRY WALL STRESSES FOR 30' HIGH WALL :



$$M_{MAX} = P_h \cdot \frac{h^2}{8} = 0.108 \times \frac{30^2}{8} = 12.15 \text{ KFT}$$



DATE 3-15-84

SHEET 6 OF 11

DATE 3-22-84

CFS NO. 4294.285 DEPT. NO. 653

L P &amp; L

WATERFORD #3

FOR REFERENCE

CONC. BLOCK WALLS

ONLY

ITEM #1

FIND REACTIONS:

$$R_B = \frac{5}{8} P_h \cdot h = \frac{5}{8} \times 0.108 \times 30 = 2.025^k$$

$$R_T = \frac{3}{8} P_h \cdot h = \frac{3}{8} \times 0.108 \times 30 = 1.215^k$$

FIND  $M_1$  = MOMENT AT TOP OF CURB LEVEL:

$$M_1 \approx \left( \frac{5.67}{7.5} \right) 12.15 = 9.19 \text{ K.FT} < 12.68 \text{ K.FT} \quad \underline{\underline{OK}}$$

CHECK SHEAR AT THE TOP OF CURB LEVEL:

$$V = 2.025^k - 1.83(0.108) = 1.827^k$$

$$v = \frac{V}{b \cdot j \cdot d} = \frac{1827}{16 \times 0.832 \times 9} = 15.2 \text{ psi} < 25 \times 1.3 = 32.5 \text{ psi} \quad \underline{\underline{OK}}$$

CONCLUSION: 12" THICK CONCRETE BLOCK WALLS AS HIGH AS 30' ARE ACCEPTABLE AS CONSTRUCTED AND REINFORCED.

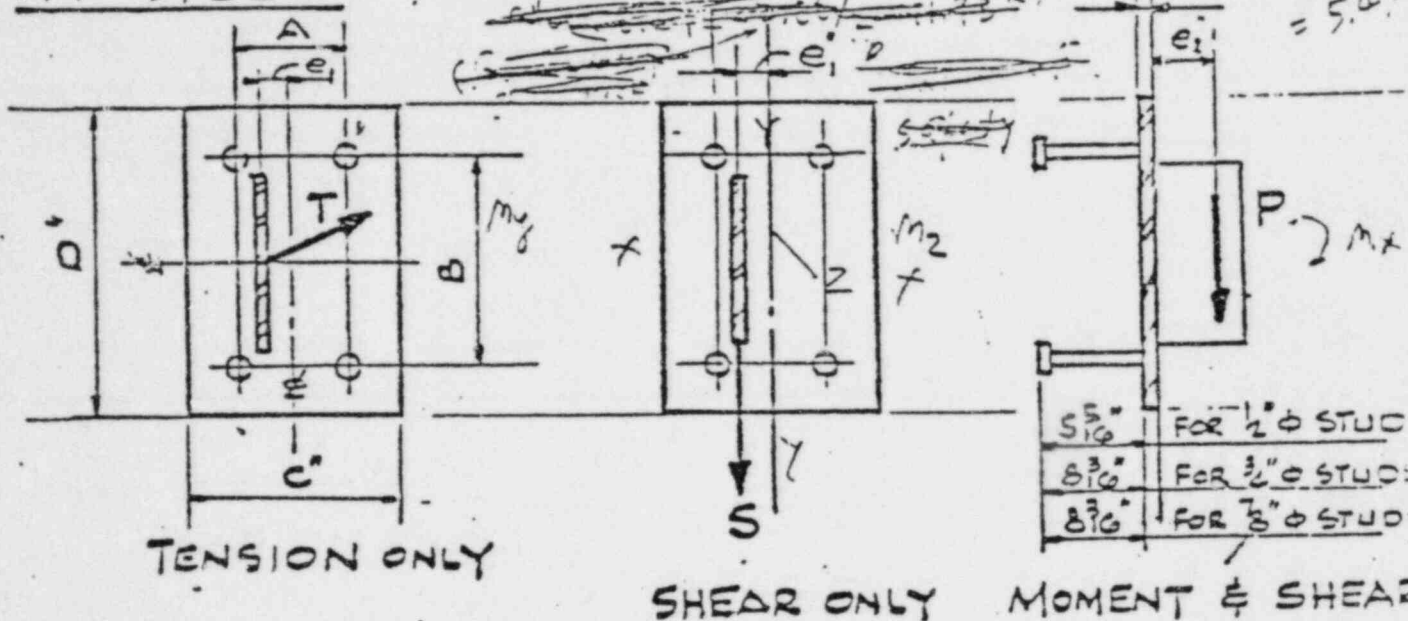
CLIENT LOUISIANA POWER & LIGHT COMPANY

PROJECT WATERFORD UNIT #3

SUBJECT EMBEDDED P.S. FOR REFERENCE ONLY

ITEM #1

(4) - STUDS



STUDS	EMB. P.						ECC.		ALLOWABLE LOAD		
	DIA.	"A"	"B"	"t"	"C"	"D"	$e_1$	$e_2$	"T"	"S"	"P"
P-15 <sub>4</sub>	1/2" $\phi$	6"	6"	3/4"	8"	8"	2"	2 1/4"	12.7 <sup>K</sup>	15.2 <sup>K</sup>	10.6
P-17 <sub>6</sub>	3/4" $\phi$	6"	6"	1"	10"	10"	2"	2 1/4"	21.6 <sup>K</sup>	34.2 <sup>K</sup>	23.8
P-20 <sub>4</sub>	3/4" $\phi$	6"	1'-0"	1"	10"	1'-4"	2"	2 1/4"	28.6 <sup>K</sup>	40.0 <sup>K</sup>	33.6
P-21 <sub>4</sub>	3/4" $\phi$	6"	1'-0"	1 1/2"	10"	1'-4"	2"	2 1/4"	28.6 <sup>K</sup>	40.0 <sup>K</sup>	33.6
P-22 <sub>4</sub>	7/8" $\phi$	6"	1'-0"	1"	12"	1'-4"	2"	2 1/4"	38.9 <sup>K</sup>	54.5 <sup>K</sup>	45.7
P-23 <sub>4</sub>	7/8" $\phi$	6"	1'-0"	1 1/2"	12"	1'-4"	2"	2 1/4"	38.9 <sup>K</sup>	54.5 <sup>K</sup>	45.7
P-36 <sub>1/4</sub>	1" $\phi$	6"	1'-0"	3/4"	8"	1'-6"	2"	2 1/4"	12.7 <sup>K</sup>	17.7 <sup>K</sup>	14.9
P-41 <sub>4</sub>	1/2" $\phi$	4"	4"	3/4"	6"	6"	2"	2 1/4"	8.0 <sup>K</sup>	13.0 <sup>K</sup>	7.
P-16.1/2	3/4" $\phi$	0	6"	3/4"	6"	12"	2"	2 1/4"	10.8	17.1	11.9

EBASCO SERVICES INCORPORATED  
FIELD CHANGE REQUEST

Section 1 thru 4 to be filled out by Construction  
Section 5 to be filled out by Engineering

FOR REFERENCE ONLY,

ITEM # 1  
- IMMINENT

PROJECT WATERFORD #3 SFS NO. \_\_\_\_\_ FIELD CHANGE NO. FCR-CH-891

To G.E. BRUNDAGE (PER PROCEDURE E-371) Dept ESSE-CIVIL (C-4) Location EMBERB Date 12-9-77

Re:  Drawing No. G-765502 Title \_\_\_\_\_  
 Spec. No. G-555503 Title \_\_\_\_\_  
 Other G-557503, 559503, 561501, G-590

1. DESCRIPTION (Items involved, submit sketch if applicable)

A 1'-10" HIGH CONCRETE CURB IS REQUIRED FOR ALL PERMANENT CONCRETE BLOCKWALLS. DOWELS FOR THESE CURBS WERE TO BE INSTALLED IN THE CONCRETE SLAB PRIOR TO PLACEMENT OF CONCRETE. IN ORDER TO AVOID DAMAGE TO THESE DOWELS, EMBEDDED PLATES (HAVING RESTEEL WELDED TO THEM @ A LATER DATE) HAD BEEN DESIGNED AND INSTALLED IN THE SLAB. HOWEVER, DUE TO DESIGN ERROR, NEITHER (SEE ATTACH SHEET)

2. REASONS FOR CHANGE (If from disposition of nonconformance report, list report number)

TO ENSURE PROPER CONSTRUCTION OF CONCRETE CURB AND CONCRETE BLOCKWALLS.

RECOMMENDED DISPOSITION (Submit sketch if applicable)  Minor Change  Major Change

CONSTRUCT CONCRETE CURB AND BLOCKWALLS AS STATED BELOW AND ON ATTACHED SHEET WHERE EMBEDDED PLATES HAD BEEN INSTALLED IN THE SLAB, CAD WELL A #6 BAR 1'-7" LONG (EF) @ 12" (+/- 2 1/2" IN CONTACT WITH EDGE OF EMBEDDED PLATE MOVE RESTEEL TO AVOID PLATE AND FALL CONCRETE) TO THE PLATE. SEE SKETCH I A & B FOR DETAILS AND LOCATIONS

SR RESIDENT ENGINEER (Signature) <u>A. [Signature]</u>	DATE <u>12-13-77</u>	PROJECT Supt CONCURRENCE (Signature) <u>J-O. Booth</u>	DATE <u>12-14-77</u>
---	-------------------------	---	-------------------------

5. DISPOSITION

EBASCO SERVICES, INC.  
**RECEIVED**  
DEC 14 1977  
11:30  
DOCUMENT CONTROL DEPT.  
WATERFORD 3 FIELD

- Not Approved (give reason) \_\_\_\_\_
- Considered Minor Change - Approved per Recommended Disposition - Design Documents will not be formally revised; field to maintain as-built records.
- Considered Major Change - Action will be taken as prescribed on \_\_\_\_\_

PROJECT DISCIPLINE/ESSE DESIGNER (Signature) <u>C. Liu / AB</u>	DATE <u>12/14/77</u>	SUPERVISING ENGINEER/ESSE DESIGNER (Signature) <u>G. Brundage</u>	DATE <u>12/14/77</u>
--	-------------------------	--	-------------------------

Supervising Engineer signs and returns to LDE for transmittal to Sr Resident Engineer with copies to:  
 Project Engineer \_\_\_\_\_  
 Project Manager \_\_\_\_\_  
 Esse PE \_\_\_\_\_  
 Coordinator \_\_\_\_\_  
 Others as Required PC Gill  
 DOCUMENT ACCOUNTABLE C. Brundage  
41. TULLO  
R. L. FEAL  
 DEC 14 1977  
 301

BY GL DATE 12-12-77

NEW YORK

SHEET 1 OF 4CHKD. BY CH DATE 12-12-77

FCR-CH-891

OFS NO. \_\_\_\_\_

DEPT. NO. \_\_\_\_\_

CLIENT LP&LPROJECT WSES, UNIT #3

SUBJECT \_\_\_\_\_

1) DESCRIPTION

EMBEDDED PLATES NOR DOWELS HAVE BEEN INSTALLED @ SEVERAL LOCATIONS THROUGHOUT THE BUILDING. ALSO DRAWING G 776 CALLS FOR A  $1" \times \frac{3}{16}"$  SLOT IN CONCRETE WALLS TO BE USED FOR DOVETAILED. SINCE THIS SLOT HAD NOT BEEN REFERENCED ON THE C&H DRAWINGS AND THE UNAVAILABILITY OF MATERIAL @ TIME OF CONCRETE PLACEMENT, THE SLOT FOR THE DOVETAILED HAD NOT BEEN INSTALLED.

3) RECOMMENDED DISPOSITION

- ② WHERE THERE ARE NEITHER EMBEDDED PLATES OR DOWELS IN THE SLAB, DRILL A  $1\frac{1}{4}" \times 1\text{'-}6"$  HOLE, COAT IT <sup>WITH</sup> SIKO-DUR HI-MODE EPOXY, INSTALL A #6 BAR 3'-1" LONG HAVING A 1'-7" PROJECTION AND THEN GROUT WITH CLASS F TYPE MORTAR SEE SKETCH I B & C FOR DETAILS.
- ③ WHERE CONCRETE BLOCK WALLS ARE TO HAVE A VERTICAL CONNECTION WITH A CONCRETE WALL AND THE SLOT FOR THE DOVETAILED HAS NOT BEEN INSTALLED, DRILL A  $\frac{3}{8}" \times 1\frac{1}{8}"$  HEX NUT SLEEVE ANCHOR RED HEAD @ 24" VERTICALLY AND ATTACH A 6 GA CORR. GAL STRAP TO IT. SEE SKETCH I D. IN CASES WHERE REGLETS HAVE BEEN INSTALLED, ADJUST THE DOVETAILED TO FIT INSIDE THE SLOT.
- ④ FOR VERTICAL REINFORCEMENT OF CONCRETE BLOCK WALLS INSTALL 4-#6 BARS @ 48" O.C MAX. FOR INSTALLATION DETAILS OF THIS RESTEEL SEE SKETCHES 2 & 3.

BY GL DATE 12-12-77

NEW YORK

SHEET 2 OF 4

CHKD. BY CH DATE 12-12-77 FOR-CH-891

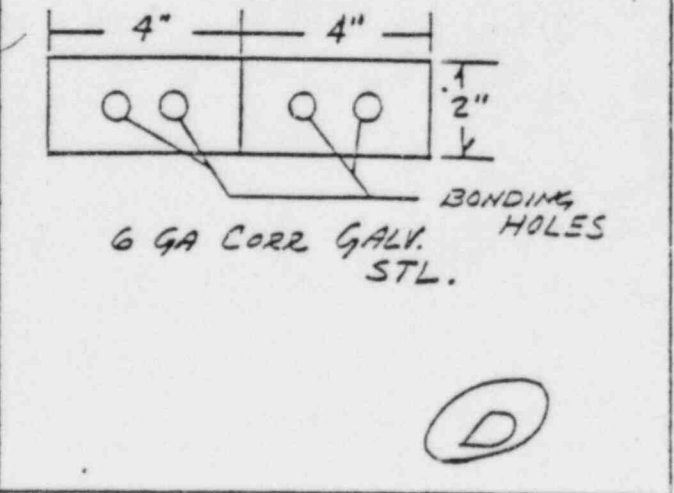
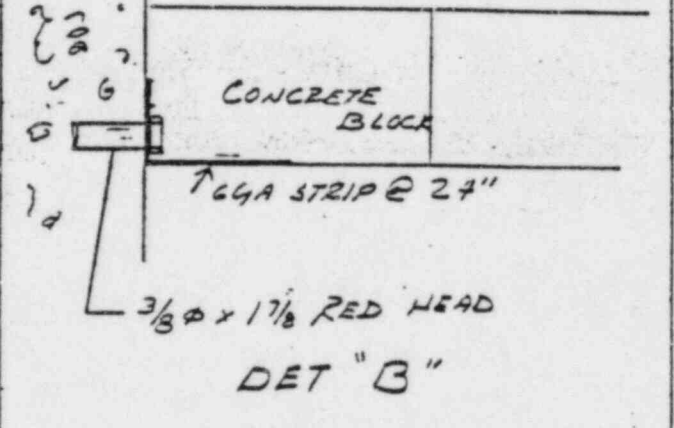
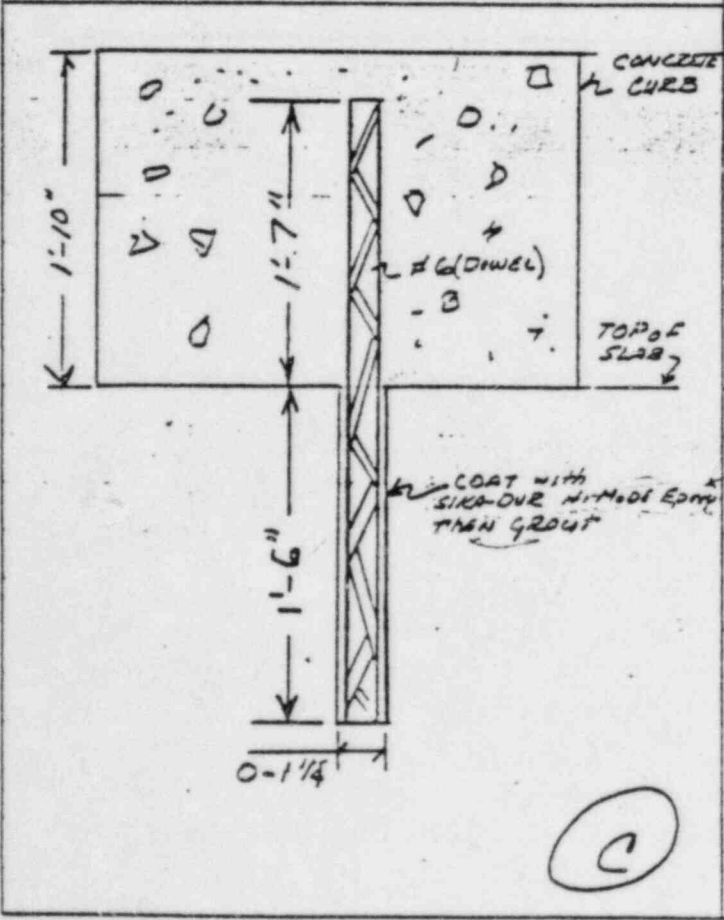
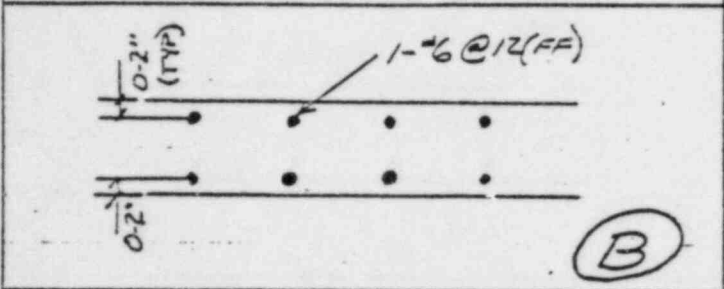
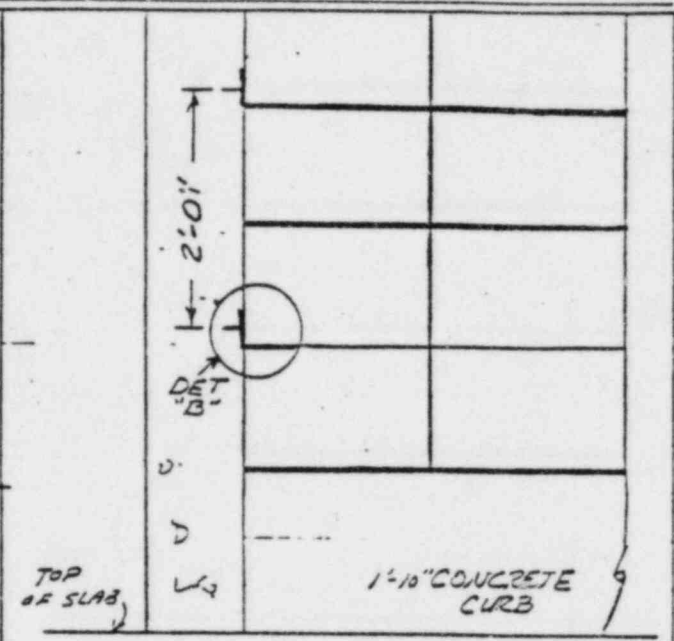
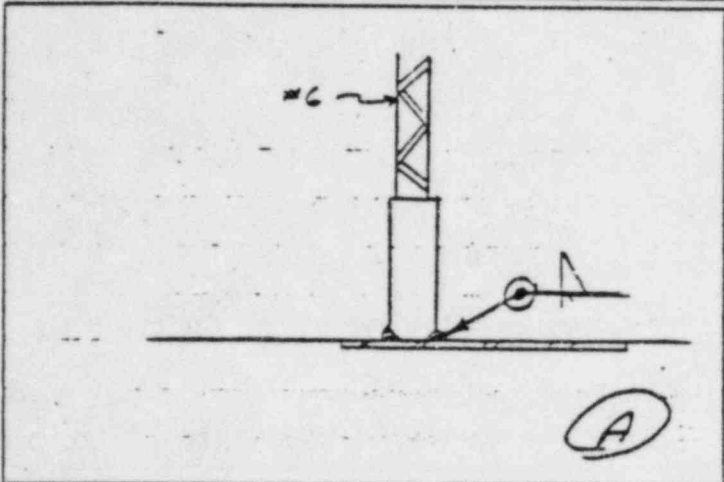
OFS NO. \_\_\_\_\_

DEPT. NO. \_\_\_\_\_

CLIENT WSES

PROJECT WSES, Unit #3

SUBJECT SKETCH 1



BY GU DATE 12-12-77

NEW YORK

SHEET 3 OF 4

CHKD. BY CH DATE 12-12-77

FCR-CH-891

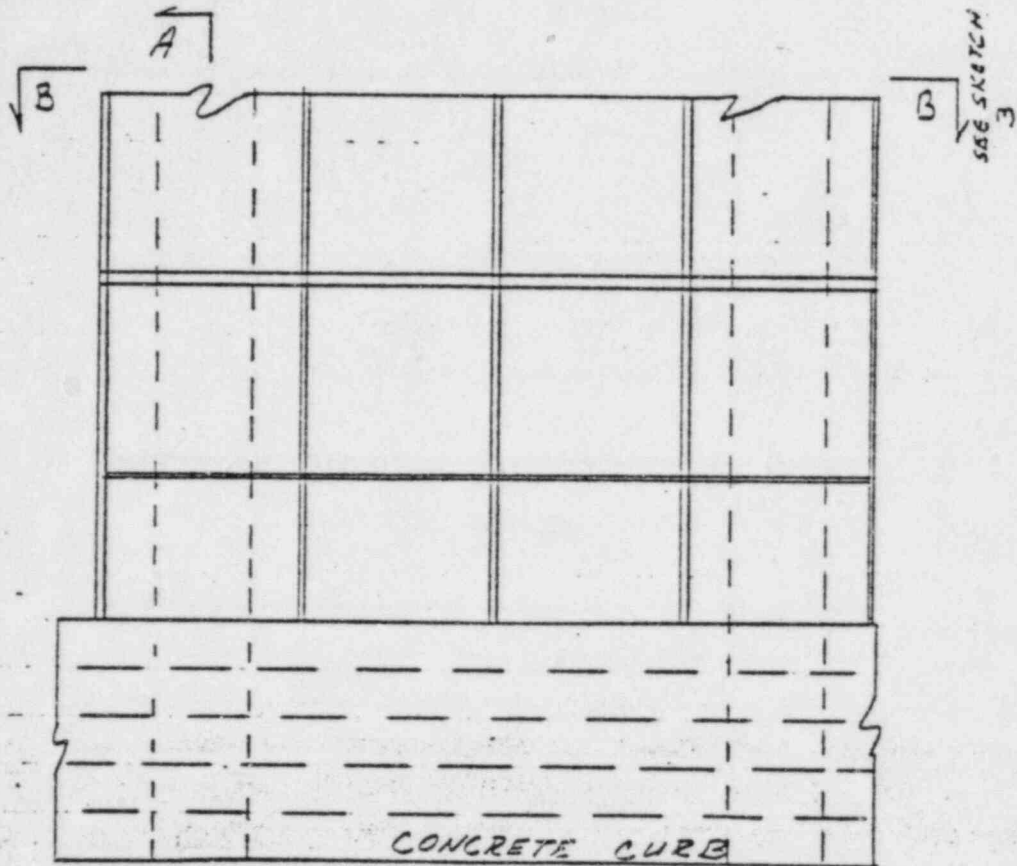
OFS NO. \_\_\_\_\_

DEPT. NO. \_\_\_\_\_

CLIENT LP&I

PROJECT WSES, UNIT #3

SUBJECT SKETCH 2



A  
SEE SKETCH 3

ELEVATION

BY YH DATE 12-12-77

NEW YORK

SHEET 4 OF 4

CHKD. BY CR DATE 12-12-77

FCR-CH-891

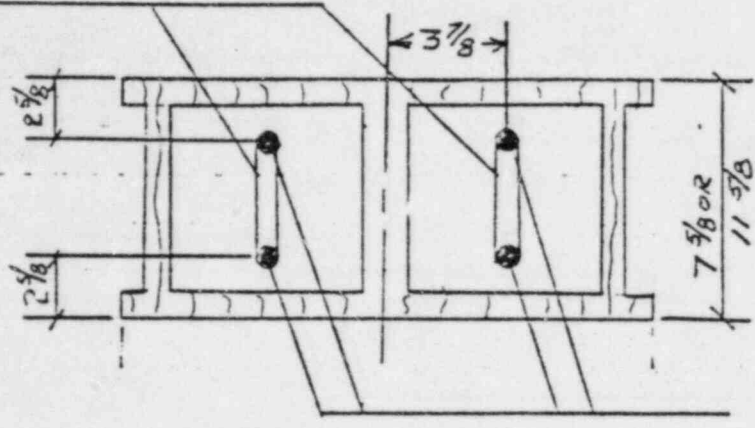
OFS NO. \_\_\_\_\_ DEPT. NO. \_\_\_\_\_

CLIENT LPL

PROJECT WSES UNIT #3

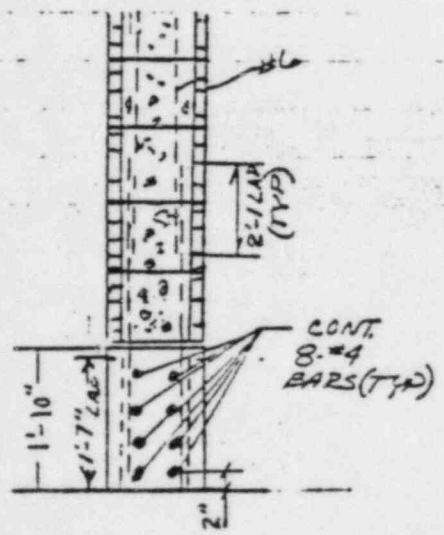
SUBJECT SKETCH 3

#2 TIES IN ALTERNATE COURSES (TYP)

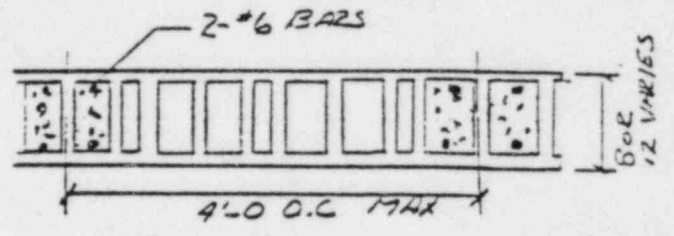


4-#6 BARS AT 48 O.C MAX.  
FILL CORES WITH CONC.

TYPICAL REINFG  
FOR 8" & 12" CONC BLK



SECT A-A



TYP. PERMANENT CONC BLOCK  
WALL (STACKED BONDED)  
SECT B-B

BY A. LEON DATE 9/25/81

SHEET 1 OF 1

CHKD. BY EPH DATE 1/21/82

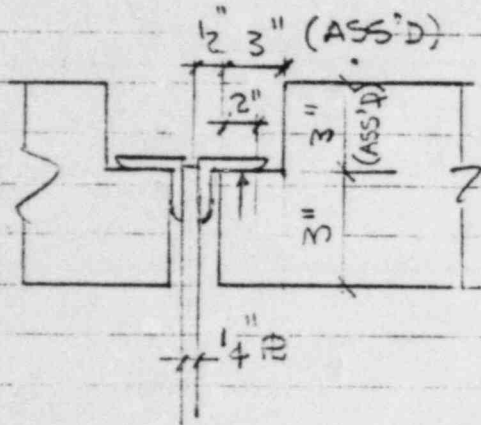
OFS NO. \_\_\_\_\_ DEPT. NO. 372

CLIENT LP & L

PROJECT WATER POND # 2

SUBJECT CONC. BLOCK WALLS - LATERAL SUPPORT

CONC. BLOCK WALL - SIDE SUPPORT. - 10' C/C.



WALL THICKNESS = 4.5' (6-ROWS)

1. LOADS:  $w = 140 \#/\text{CF}$   
 $R = .140 \times 4.5 \times 5' \times 8''/12'' = 2.1 \text{ K (FOR 8" COURSE)}$
2. EARTHQUAKE FACTOR = .30
3. HOR. LOAD =  $2.1 \times .3 = .63 \text{ K/1}$
4. SHEAR AT THE REDUCED SECTION:  
 $U = 630/8 \times 3 = 26.25 \text{ psi} \approx 20 \times 1.3 = 26. \text{ (NRC-SRP)}$
5. BEARING.

ASSUMED AREA FOR BEARING: (MASONRY)

$2'' \times 8'' = 16 \text{ in}^2$

$630 \#/16 = 39.4 \text{ psi} < 170 \text{ OK} \checkmark$

6. REQ'D THICKNESS OF L:

$M = .63 \times 1.5 = .95 \text{ K-in} \quad F_c = 27 \text{ KSI}$

$S = .95/27 = .04 = \frac{1}{6} \times 8 \times t^2 \therefore$

$t = .16'' < .25'' \text{ OK} \checkmark$



DATE 9/27/84

FILE REF. ES-10131-84

TO J. DeBruin

OFFICE LOCATION

FROM

B. Grant BG

OFFICE LOCATION

SUBJECT

LOUISIANA POWER & LIGHT COMPANY  
WATERFORD SES - UNIT NO. 3  
MASONRY WALLS SEISMIC ANALYSIS

The basis for the 0.3G aseismic design of the hollow block masonry walls was a frequency analysis of plate models of walls with various boundary conditions, and enveloping dimensions which was compared with acceleration values in the Floor Response Spectra for the DBE for 2% damping.

During the NRC Audit of CAT Item 6.2/6.3 we were requested to justify the use of the 0.3G acceleration. We were also requested to consider dynamic models more representative of the walls' internal structural action than the homogeneous plate model, specifically a beam model.

Our preliminary calculations show that frequency analysis of a beam model with one end fixed and the other simply supported, when compared with the 2% damping spectrum, can justify the 0.3G acceleration value used in the design except for the 30ft. high stair towers at Floor Elevation -35 ft.

For the 30 ft. stair towers we must refine our analysis in order to justify the design. There are two items to be performed by SAG-NY to accomplish this:

- (1) The damping value allowed for masonry construction is 7%. This will yield considerably lower accelerations in the frequency range of interest, than seen at 2% damping perhaps about 30% - 40% lower. We have never generated 7% damping Floor Response Spectra and will therefore develop appropriate correction factors for the 2% spectra.
- (2) The structural action of the wall will be more accurately represented by a beam-column model so that the vertical boundary conditions can be appreciated.

These two tasks will take about a week to perform. Accordingly we should have a report ready to send to the NRC by October 8, which will provide the requested justifications for aseismic design of all walls.

BG/tw

cc: J. Houghtaling, E. Kowalski, R. Alexandru, Z.T. Shi, W.T. Teng, G. Aliberti,  
G. Wu, L. Biller, B. Grant, R. Esnes, A. Bishara, ESSE File P. 83

DATE October 5, 1984 FILE REF: 8Q-A-10d

TO J DeBruin

OFFICE LOCATION 80/2WTC

FROM Z T Shi/W T Teng

OFFICE LOCATION 80/2WTC

SUBJECT LOUISIANA POWER & LIGHT COMPANY  
WATERFORD SES. UNIT NO. 3  
MASONRY BLOCK WALL SEISMIC ANALYSISRefs: 1) ES-10131-84 (B Grant to J DeBruin) dated 9/27/84  
2) ES-10106-84 (J DeBruin to M Yates/J Houghtaling)  
dated 9/28/84

As a result of NRC-SEB audit on the subject masonry block walls, we have committed to perform a seismic analysis to justify the use of the 0.3g acceleration using beam model. This memorandum, in response to the two references, is to provide the required analysis and to indicate that the 0.3g is adequate to be used in the masonry block wall design.

Attachment 1 shows a table of benchmark seismic analysis results for five types which may envelop all masonry block walls in this project. The table is self-explanatory with five notes describing the wall types, wall height conservatism, stiffness conservatism, as well as the derivation of design "g" values.

Attachments 2-1 and 2-2 are the floor response spectra curves established for 5% damping at Elevation (-35') and (-4') respectively. Computer printouts are also attached for ready pick-up of the "g" values.

Attachment 3 shows the weight calculations used in the seismic analysis.

As-built wall heights are given in the table prepared for NRC Audit item: #12.

Based on the above analysis, we conclude that the use of 0.3g in the design of the masonry block wall is justifiable.

ZTS;WTT:nr

Attachments 1, 2-1, 2-2 &amp; 3

cc: J Houghtaling  
B Grant  
L Biller  
G Aliberti  
J Costello  
J Tompeck  
J HartE S Kowalski  
R Alexandru  
Z T Shi  
W T Teng  
Project Record File

Concrete Masonry Block WallsBenchmark Seismic Analysis Results

	Wall Thickness (In)	Boundary Condition (Note 1)	Wall Height (Ft) (Note 3)	Frequency (HZ) (Note 4)	Acceleration (G) (Note 5)
1	12	A	30	5.46	0.25
2	12	B	16	4.70	0.27
3	8	A	15	13.99	0.20
4	8	B	12	4.94	0.26
5	6	C	10 (Note 2)	22.20	0.20

## (1) Boundary Condition

- A - top pin, bottom fix, sides free.  
 B - top free, bottom fix, sides free.  
 C - simply supported at 2 ends.

## (2) Span horizontally

- (3) Wall heights include 1'-10" high of reinforced concrete start wall. However, the 3-D model for frequency analysis, except wall (2), this 1'-10" reinforced concrete wall was treated as a masonry block wall, therefore, the actual frequency of the concrete masonry wall will be larger than those listed in the table.
- (4) The 3-D model for the frequency analysis is based beam - column concept, and the stiffness was derived from Reinforced Concrete and Masonry Block Wall only. The stiffness contributed from Dur-o-wal was not considered, therefore, the actual rigidity of the Masonry Block Wall is more rigid than the frequency resulted from analysis.
- (5) The seismic required design "g" values were obtained from the 5% damping DBE response spectra curves, which were generated at EL-35'.00 and EL-4'.0. The use of 5% damping DBE response spectra curves is in accordance with the requirement specified in Waterford FSAR Table 3.7-1.

I H CHOU DATE 10/5/84

SHEET 1 OF 1 SH30F11

D. BY Z T SHI DATE 10/5/84

OFFS NO. 2864.055 DEPT. 549 ITEM # 3

INT L P # 1

PROJECT WATERFORD NO. 3

POT CONCRETE BLOCK WALLS

WEIGHT COMPUTATION

1) 12" THICK CONC HOLLOW BLOCK WALL

(4'-0 STRIP, 2 HOLLOW BLOCKS &amp; 1 REINFORCED BLOCK)

LINEAR WEIGHT OF HOLLOW BLOCKS (2)

$$= 60 \frac{\#}{\text{LF}} \times \frac{16}{12} \times 2 = 160 \frac{\#}{\text{FT}}$$

LINEAR WEIGHT OF REINFORCED BLOCK (1)

$$= 150 \times \frac{16}{12} \times 1 = 200 \frac{\#}{\text{FT}}$$

THEREFORE UNIT WT OF BLOCK WALL

$$= 160 + 200 = 360 \frac{\#}{\text{FT VERTICALLY}}$$

2) 8" THICK CONC HOLLOW BLOCK WALL

(4'-0 STRIP)

UNIT WT OF BLOCK WALL

$$= 40 \times \frac{16}{12} \times 2 + 150 \times \frac{8}{12} \times \frac{16}{12} \times 1 = 240 \frac{\#}{\text{FT VERTICALLY}}$$

3) 6" THICK SLID BLOCK WALL

(8" STRIP)

$$\text{UNIT WT.} = \frac{6 \times 8}{144} \times 150 = 50 \frac{\#}{\text{FT HORIZONTALLY}}$$

SH 4 OF 11  
ITEM # 3

RAB, E-W, DBE, EL. -4.0 MP. 38.0

FL. SPECTRA DP=5.0%

ATTACHMENT 2-2

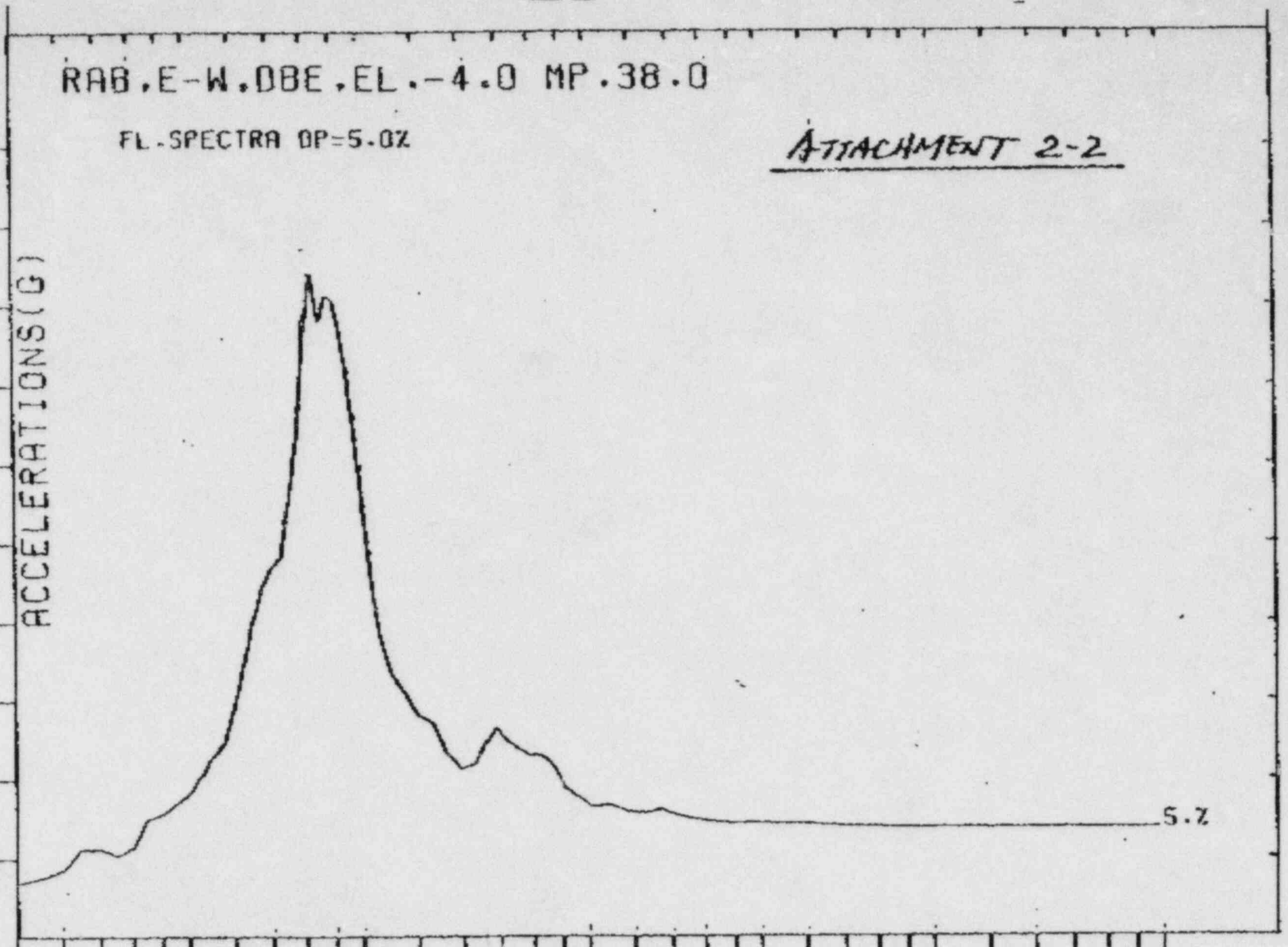
1.50  
1.35  
1.20  
1.05  
0.90  
0.75  
0.60  
0.45  
0.30  
0.15

ACCELERATIONS (G)

0.50 1.00 2.00 5.00 10.00 20.00 50.00

FREQUENCIES (CPS)

5.2

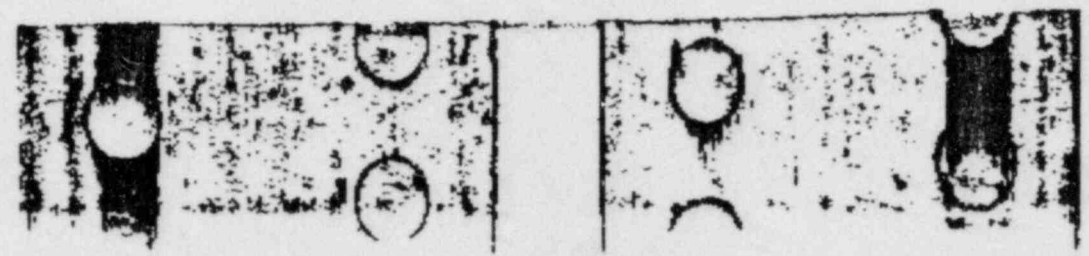
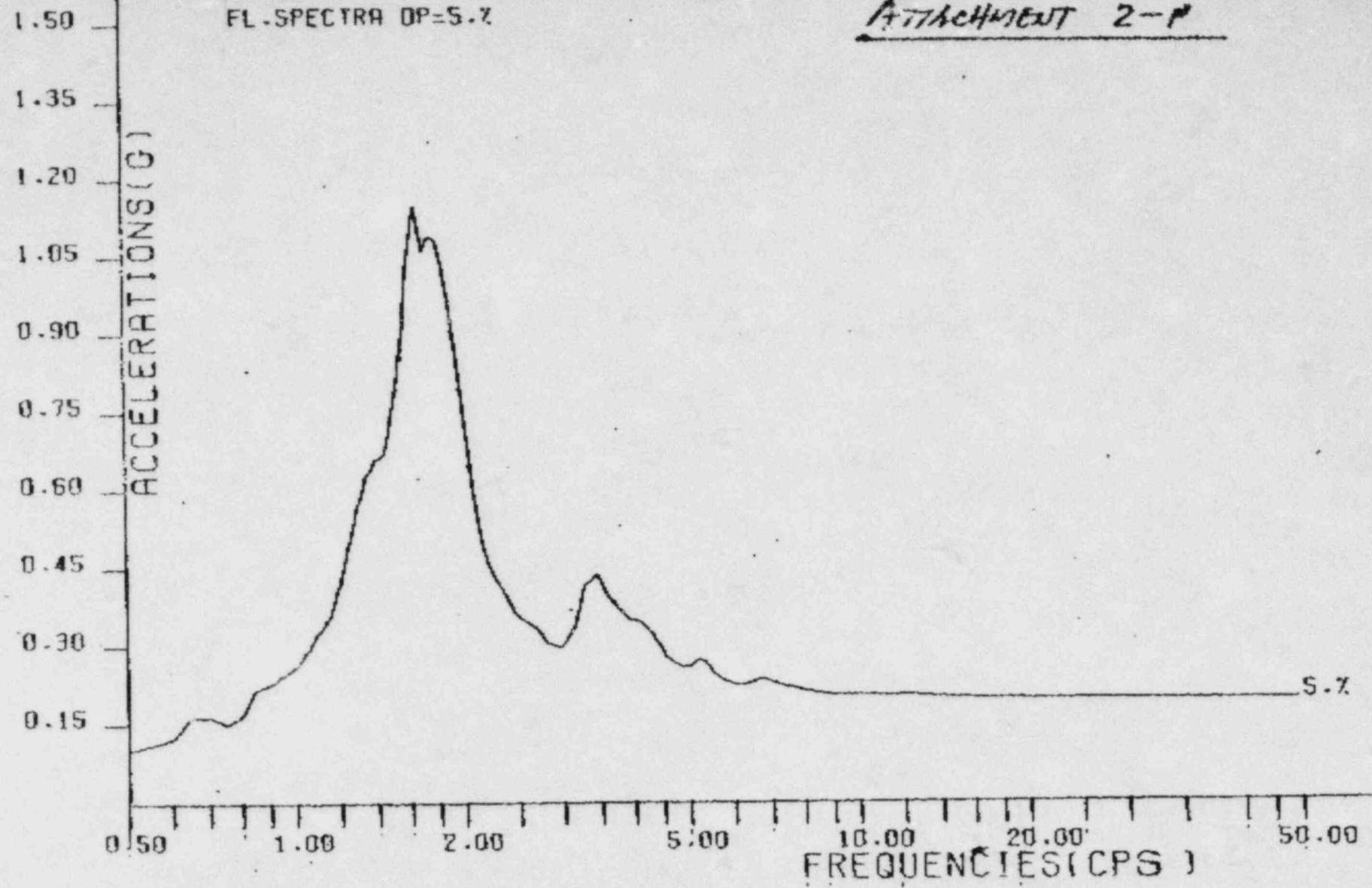


SH50F11  
ITEM # 3

FON MAT DBE EL.-35.0

TO: BGA BNT (6.92.2007)  
ATTACHMENT 2-P

FL-SPECTRA DP=5.7



FLOOD ACCELERATION SPECTRA FOR NAIS POINT NO. 39

(TRANSLATIONAL ACCELERATION)

MAT FDN

FREQ	PERIOD	DAMPING FACTOR	TIME	DAMPING FACTOR	TIME	DAMPING FACTOR	TIME	DAMPING FACTOR	TIME
1	0.500	0.020	2.000000	0.106530	4.92	0.101485	6.38	0.097925	4.09
2	0.550	0.020	1.816182	0.124719	13.43	0.112688	6.08	0.107567	4.06
3	0.600	0.020	1.666667	0.144717	6.63	0.124864	6.60	0.115218	6.01
4	0.650	0.020	1.538462	0.166881	6.54	0.166801	6.34	0.149276	6.53
5	0.700	0.020	1.428571	0.200287	12.95	0.166882	6.50	0.154463	6.50
6	0.750	0.020	1.333333	0.163707	7.67	0.151695	6.48	0.146748	6.48
7	0.800	0.020	1.250000	0.191940	8.15	0.167881	6.94	0.157076	6.92
8	0.850	0.020	1.176471	0.235857	8.96	0.217262	6.04	0.187944	6.88
9	0.900	0.020	1.111111	0.321099	13.53	0.227627	7.98	0.199496	6.85
10	0.950	0.020	1.052632	0.290240	8.50	0.245016	8.58	0.217751	6.38
11	1.000	0.020	1.000000	0.315686	9.46	0.260970	8.35	0.235538	8.34
12	1.050	0.020	0.952381	0.457758	13.50	0.291081	13.47	0.250386	8.31
13	1.100	0.020	0.909091	0.485290	13.88	0.327287	13.81	0.288199	6.82
14	1.150	0.020	0.869565	0.392256	7.24	0.353419	7.22	0.327251	6.81
15	1.200	0.020	0.833333	0.475281	7.22	0.416476	7.20	0.380423	7.18
16	1.250	0.020	0.800000	0.604826	7.19	0.497671	7.57	0.442525	7.16
17	1.300	0.020	0.769231	0.726698	7.16	0.574012	7.14	0.509372	7.13
18	1.350	0.020	0.740741	0.814764	7.12	0.631198	7.10	0.544860	7.10
19	1.400	0.020	0.714286	0.835234	7.08	0.658313	7.07	0.568937	7.06
20	1.450	0.020	0.689655	0.851306	13.41	0.676870	7.04	0.578673	7.03
21	1.500	0.020	0.666667	1.178789	15.85	0.759403	14.06	0.645709	15.73
22	1.550	0.020	0.645161	1.250152	8.00	0.866048	16.97	0.737720	13.70
23	1.600	0.020	0.625000	1.942490	14.90	1.053046	14.00	0.840720	13.67
24	1.650	0.020	0.606061	2.013121	14.47	1.167360	13.64	0.887954	13.64
25	1.700	0.020	0.588235	1.802571	13.59	1.082696	13.60	0.847710	4.88
26	1.750	0.020	0.571429	1.699231	11.71	1.089422	4.88	0.894159	4.86
27	1.800	0.020	0.555556	1.493841	6.83	1.080578	4.83	0.899650	4.85
28	1.850	0.020	0.540541	1.363435	6.10	1.025778	6.81	0.869511	6.81
29	1.900	0.020	0.526316	1.207467	4.78	0.942709	6.79	0.814982	6.79
30	1.950	0.020	0.512821	1.047450	4.76	0.846292	6.77	0.747786	6.78
31	2.000	0.020	0.500000	0.888067	4.74	0.746112	6.76	0.674863	6.76
32	2.050	0.020	0.487805	0.839813	13.21	0.649292	6.75	0.604846	4.76
33	2.100	0.020	0.476190	0.763591	12.41	0.565025	4.74	0.543457	4.75
34	2.150	0.020	0.465116	0.668345	12.62	0.502152	4.74	0.493525	4.75
35	2.200	0.020	0.454545	0.625884	12.59	0.462463	4.74	0.457684	4.76
36	2.250	0.020	0.444444	0.525178	10.45	0.438736	4.74	0.432043	4.76
37	2.300	0.020	0.434783	0.485100	10.42	0.420972	4.74	0.411443	4.76
38	2.350	0.020	0.425532	0.463358	8.15	0.403563	6.73	0.392272	4.76
39	2.400	0.020	0.416667	0.445863	8.92	0.385680	6.73	0.373013	4.73
40	2.450	0.020	0.408163	0.399717	4.72	0.363995	4.73	0.352706	4.73
41	2.500	0.020	0.400000	0.395557	4.64	0.354308	4.63	0.333534	4.63
42	2.557	0.020	0.376364	0.381746	4.61	0.336276	4.19	0.324018	4.19
43	2.614	0.020	0.355366	0.297816	6.18	0.304314	6.18	0.303595	4.18
44	2.671	0.020	0.336587	0.349215	10.45	0.297840	10.43	0.295617	4.18
45	2.728	0.020	0.319693	0.387991	11.00	0.331849	4.77	0.325329	4.76
46	2.785	0.020	0.304414	0.339089	4.77	0.418576	4.76	0.379199	4.75
47	2.842	0.020	0.290529	0.352138	4.74	0.437451	4.74	0.396536	4.74
48	2.899	0.020	0.277855	0.435065	14.65	0.393593	4.73	0.376515	4.73
49	2.956	0.020	0.266248	0.410583	4.72	0.371547	4.72	0.352986	4.72

11-30-11

SH80F15  
 SH70F11  
 ITEM #3

55	4.698000	0.212857	0.267429	4.70	0.266431	6.70	0.268595	4.70
56	4.855000	0.205973	0.266286	6.50	0.258769	4.70	0.262001	4.70
57	5.012000	0.199521	0.261509	4.15	0.261729	4.70	0.261699	4.70
58	5.169000	0.193461	0.258416	4.71	0.273130	4.70	0.262099	4.70
59	5.326000	0.187758	0.257120	4.68	0.267745	4.69	0.258244	4.69
60	5.483000	0.182382	0.257853	4.67	0.257827	4.68	0.267517	4.69
61	5.640000	0.177305	0.260338	4.69	0.237392	4.69	0.238570	4.69
62	5.797000	0.172563	0.251473	4.67	0.229323	4.69	0.232067	4.69
63	5.954000	0.167954	0.210456	4.71	0.224366	4.69	0.227951	4.69
64	6.111000	0.163639	0.234716	4.70	0.225080	4.70	0.226635	4.70
65	6.268000	0.159341	0.216749	4.93	0.224321	4.70	0.226647	4.70
66	6.425000	0.155642	0.236917	4.72	0.238240	4.70	0.228560	4.70
67	6.582000	0.151930	0.259721	4.70	0.235568	4.70	0.238329	4.70
68	6.739000	0.148390	0.255322	4.68	0.235568	4.69	0.230637	4.69
69	6.896000	0.145032	0.234883	4.69	0.231593	4.69	0.228710	4.69
70	7.053000	0.141784	0.224270	4.69	0.227211	4.69	0.225862	4.69
71	7.210000	0.138694	0.227537	4.69	0.223894	4.69	0.225123	4.69
72	7.367000	0.135740	0.217593	4.69	0.220994	4.69	0.220704	4.69
73	7.524000	0.132908	0.221679	4.69	0.219233	4.69	0.218645	4.69
74	7.681000	0.130191	0.222391	4.68	0.217420	4.69	0.216634	4.69
75	7.840000	0.127559	0.218566	4.68	0.215326	4.68	0.214612	4.69
76	8.000000	0.125000	0.214459	4.68	0.212158	4.68	0.212381	4.69
77	8.160000	0.117861	0.221282	4.68	0.207349	4.69	0.207726	4.69
78	8.320000	0.111458	0.201774	4.71	0.203722	4.69	0.205128	4.69
79	8.480000	0.105731	0.204965	4.69	0.205102	4.69	0.205268	4.69
80	8.640000	0.100563	0.206259	4.69	0.205245	4.69	0.205096	4.69
81	8.800000	0.095877	0.205096	2.35	0.204755	2.35	0.204639	2.35
82	8.960000	0.091609	0.203027	2.35	0.203739	2.35	0.203874	2.35
83	9.120000	0.087704	0.203695	2.35	0.203637	2.35	0.203608	2.35
84	9.280000	0.084118	0.206054	2.35	0.204276	2.35	0.203654	2.35
85	9.440000	0.080615	0.206298	2.35	0.206001	2.35	0.203303	2.35
86	9.600000	0.077760	0.202287	2.35	0.202458	2.35	0.202248	2.35
87	9.760000	0.074920	0.201592	2.35	0.201399	2.35	0.201257	2.35
88	9.920000	0.072294	0.200361	2.35	0.200302	2.35	0.200318	2.35
89	10.080000	0.069842	0.199118	2.35	0.199354	2.35	0.199520	2.35
90	10.240000	0.067549	0.197580	2.35	0.198813	2.35	0.199002	2.35
91	10.400000	0.065402	0.196779	2.34	0.198770	2.35	0.198697	2.35
92	10.560000	0.063387	0.196029	2.35	0.198323	2.35	0.198297	2.35
93	10.720000	0.061493	0.194948	2.35	0.197723	2.35	0.197834	2.35
94	10.880000	0.059769	0.194736	2.35	0.197225	2.35	0.197445	2.35
95	11.040000	0.058205	0.195800	2.35	0.196908	2.35	0.197226	2.35
96	11.200000	0.056833	0.197799	2.35	0.197553	2.35	0.197309	2.35
97	11.360000	0.054927	0.199648	2.35	0.197714	2.35	0.197402	2.35
98	11.520000	0.053499	0.198897	2.35	0.197416	2.35	0.197296	2.35
99	11.680000	0.052143	0.197562	2.35	0.196978	2.35	0.196928	2.35
100	11.840000	0.050854	0.195698	2.35	0.196319	2.35	0.196533	2.35
101	12.000000	0.049628	0.195237	1.57	0.196107	1.57	0.196404	1.57
102	12.160000	0.048459	0.196414	1.57	0.196300	1.57	0.196438	1.57
103	12.320000	0.047344	0.197166	1.57	0.196543	1.57	0.196522	1.57
104	12.480000	0.046279	0.196932	1.57	0.196812	1.57	0.196374	1.57
105	12.640000	0.045261	0.196301	1.57	0.196586	1.57	0.196578	1.57
106	12.800000	0.044287	0.196644	1.57	0.196395	1.57	0.196371	1.57
107	12.960000	0.043354	0.196919	1.57	0.196615	1.57	0.196553	1.57
108	13.120000	0.042459	0.196375	1.57	0.196557	1.57	0.196504	1.57
109	13.280000	0.041601	0.196231	1.57	0.196435	1.57	0.196440	1.57
110	13.440000	0.040750	0.196156	1.57	0.196363	1.57	0.196385	1.57
111	13.600000	0.039905	0.196315	1.57	0.196263	1.57	0.196356	1.57
112	13.760000	0.039065	0.196502	1.57	0.196310	1.57	0.196253	1.57



SH 8 OF 11  
ITEM #3

114	71.250000	0.032000	0.195814	1.18	0.195407	1.18	0.195801	1.18
117	52.500000	0.030749	0.195765	1.18	0.195774	1.18	0.195769	1.18
118	33.750000	0.029430	0.195752	1.18	0.195737	1.18	0.195751	1.18
119	35.000000	0.028571	0.195728	1.18	0.195695	1.18	0.195690	1.18
120	36.250000	0.027586	0.195594	1.18	0.195643	1.18	0.195650	1.18
121	37.500000	0.026667	0.195409	1.18	0.195623	1.18	0.195625	1.18
122	38.750000	0.025806	0.195284	1.18	0.195623	1.18	0.195607	1.18
123	40.000000	0.025000	0.195242	1.18	0.195589	1.18	0.195578	1.18
124	41.250000	0.024242	0.195242	0.94	0.195572	0.94	0.195572	0.94
125	42.500000	0.023529	0.195550	0.94	0.195542	0.94	0.195544	0.94
126	43.750000	0.022857	0.195491	0.94	0.195516	0.94	0.195521	0.94
127	45.000000	0.022222	0.195495	0.94	0.195583	0.94	0.195564	0.94
128	46.250000	0.021622	0.195522	0.94	0.195496	0.94	0.195494	0.94
129	47.500000	0.021053	0.195498	0.94	0.195484	0.94	0.195482	0.94
130	48.800000	0.020492	0.195480	0.94	0.195474	0.94	0.195470	0.94

MAXIMUM ACCEL 2.013125 1.147360 0.189658

FLORIDA ACCELERATION SPECTRA FOR MASS POINT NO. 38

(TRANSLATIONAL ACCELERATIONS)

PERIOD	DAMPING FACTOR	TIME	DAMPING FACTOR	TIME	DAMPING FACTOR	TIME
1	0.020	6.13	0.107837	0.102744	0.070	6.18
2	0.020	13.43	0.126292	0.114138	0.108947	6.06
3	0.020	6.45	0.148033	0.128101	0.118138	6.57
4	0.020	6.56	0.201534	0.168879	0.153399	6.53
5	0.020	12.85	0.213621	0.169570	0.159103	6.50
6	0.020	7.59	0.167280	0.156725	0.153786	6.48
7	0.020	9.15	0.199189	0.173140	0.162691	6.91
8	0.020	9.07	0.294624	0.224924	0.195844	6.88
9	0.020	13.53	0.333250	0.234666	0.209308	6.85
10	0.020	9.39	0.301831	0.255455	0.227535	6.37
11	0.020	9.56	0.331828	0.273032	0.248848	6.34
12	0.020	13.59	0.479661	0.306905	0.262793	6.31
13	0.020	13.48	0.507034	0.343668	0.303513	6.82
14	0.020	7.24	0.409372	0.368236	0.347573	6.81
15	0.020	7.22	0.697755	0.436201	0.400586	6.80
16	0.020	7.19	0.635967	0.523245	0.465446	7.16
17	0.020	7.16	0.768107	0.607850	0.530311	7.13
18	0.020	7.12	0.865912	0.672034	0.580526	7.09
19	0.020	7.08	0.894336	0.705902	0.610592	7.04
20	0.020	13.51	0.920766	0.723886	0.624613	7.05
21	0.020	15.03	1.279132	0.826904	0.700915	13.75
22	0.020	9.84	1.340258	0.942651	0.803676	13.70
23	0.020	14.96	2.132210	1.151486	0.919768	13.67
24	0.020	14.97	2.216495	1.261469	0.975865	13.64
25	0.020	13.59	1.992921	1.172224	0.965806	6.88
26	0.020	13.42	1.896409	1.217942	1.000521	6.86
27	0.020	4.53	1.673361	1.269399	1.006399	6.83
28	0.020	4.81	1.555045	1.152089	0.974534	6.81
29	0.020	4.78	1.363231	1.063721	0.915000	4.79
30	0.020	6.76	1.187955	0.952214	0.842479	6.78
31	0.020	4.75	1.032575	0.865135	0.761983	4.77
32	0.020	13.21	0.966589	0.730851	0.683849	4.74
33	0.020	12.91	0.892272	0.641537	0.616967	4.73
34	0.020	12.62	0.785893	0.526322	0.559222	6.75
35	0.020	12.60	0.741214	0.537298	0.520160	6.74
36	0.020	10.64	0.615710	0.502570	0.495262	6.74
37	0.020	10.62	0.578284	0.480348	0.472604	6.74
38	0.020	6.59	0.564537	0.472004	0.455743	6.73
39	0.020	8.12	0.567034	0.456311	0.435600	6.73
40	0.020	4.72	0.494806	0.439352	0.416534	4.72
41	0.020	4.71	0.484033	0.422602	0.398590	4.44
42	0.020	6.42	0.478848	0.406293	0.376381	4.42
43	0.020	6.40	0.353375	0.347872	0.342641	6.19
44	0.020	6.40	0.326098	0.321340	0.322762	6.19
45	0.020	10.42	0.358122	0.329284	0.324514	6.19
46	0.020	4.78	0.452752	0.370509	0.346292	6.74
47	0.020	4.76	0.486029	0.396651	0.366188	6.73
48	0.020	14.46	0.393991	0.371496	0.357304	6.73
49	0.020	4.75	0.395246	0.358670	0.346822	6.73
50	0.020	4.73	0.382045	0.350610	0.338770	6.73

RAB

380 = 4

SH 90F11  
ITEM # 3

35

SH 110015  
SH 10011  
ITEM # 3

55	4.68000	8.20857	0.27876	10.18	0.27086	6.70	0.271094	4.70
56	4.85000	0.20973	0.27000	6.68	0.24204	6.70	0.261335	4.70
57	5.01200	8.19521	0.24362	3.91	0.24832	4.70	0.252953	4.70
58	5.16900	0.19461	0.24333	4.18	0.24869	4.71	0.250182	4.70
59	5.32600	0.18758	0.27028	4.70	0.252094	4.70	0.249704	4.70
60	5.48300	0.18382	0.245306	4.70	0.248599	4.70	0.247028	4.70
61	5.64000	0.179305	0.240978	4.70	0.243723	4.70	0.245523	4.70
62	5.79700	0.17503	0.23593	4.69	0.239336	4.70	0.240297	4.70
63	5.95400	0.170954	0.230913	4.71	0.234816	4.78	0.238156	4.70
64	6.11100	0.166959	0.226034	4.78	0.230599	4.70	0.237105	4.70
65	6.26800	0.163041	0.221269	4.15	0.22663	4.71	0.236708	4.70
66	6.42500	0.159142	0.216490	4.72	0.222709	4.71	0.237515	4.70
67	6.58200	0.155293	0.211716	4.72	0.218837	4.70	0.238298	4.70
68	6.73900	0.151494	0.206943	4.69	0.214935	4.78	0.237147	4.70
69	6.89600	0.147745	0.202070	4.69	0.211033	4.70	0.234546	4.70
70	7.05300	0.144046	0.197200	4.69	0.207131	4.70	0.231687	4.70
71	7.21000	0.140397	0.192327	4.69	0.203229	4.69	0.229084	4.70
72	7.36700	0.136748	0.187454	4.69	0.199327	4.69	0.226778	4.70
73	7.52400	0.133099	0.182581	4.69	0.195425	4.69	0.224909	4.70
74	7.68100	0.129450	0.177708	4.69	0.191523	4.69	0.223374	4.70
75	7.83800	0.125801	0.172835	4.69	0.187621	4.69	0.221847	4.70
76	7.99500	0.122152	0.167962	4.69	0.183719	4.69	0.220487	4.70
77	8.15200	0.118503	0.163089	4.69	0.179817	4.70	0.217757	4.70
78	8.30900	0.114854	0.158216	4.71	0.175915	4.70	0.216382	4.70
79	8.46600	0.111205	0.153343	4.70	0.172013	4.70	0.216566	4.70
80	8.62300	0.107556	0.148470	4.70	0.168111	4.70	0.216159	4.70
81	8.78000	0.103907	0.143597	4.70	0.164209	2.35	0.215421	2.35
82	8.93700	0.100258	0.138724	2.35	0.160307	2.35	0.214706	2.35
83	9.09400	0.096609	0.133851	2.35	0.156405	2.35	0.214633	2.35
84	9.25100	0.092960	0.128978	2.35	0.152503	2.35	0.214178	2.35
85	9.40800	0.089311	0.124105	2.35	0.148601	2.35	0.213236	2.35
86	9.56500	0.085662	0.119232	2.35	0.144699	2.35	0.212091	2.35
87	9.72200	0.082013	0.114359	2.35	0.140797	2.35	0.211107	2.35
88	9.87900	0.078364	0.109486	2.35	0.136895	2.35	0.210194	2.35
89	10.03600	0.074715	0.104613	2.35	0.132993	2.35	0.209525	2.35
90	10.19300	0.071066	0.099740	2.35	0.129091	2.35	0.209397	2.35
91	10.35000	0.067417	0.094867	2.35	0.125189	2.35	0.209589	2.35
92	10.50700	0.063768	0.089994	2.35	0.121287	2.35	0.209050	2.35
93	10.66400	0.060119	0.085121	2.35	0.117385	2.35	0.208599	2.35
94	10.82100	0.056470	0.080248	2.35	0.113483	2.35	0.208249	2.35
95	10.97800	0.052821	0.075375	2.35	0.109581	2.35	0.207997	2.35
96	11.13500	0.049172	0.070502	2.35	0.105679	2.35	0.207860	2.35
97	11.29200	0.045523	0.065629	2.35	0.101777	2.35	0.207790	2.35
98	11.44900	0.041874	0.060756	2.35	0.097875	2.35	0.207698	2.35
99	11.60600	0.038225	0.055883	2.35	0.093973	2.35	0.207595	2.35
100	11.76300	0.034576	0.051010	2.36	0.090071	2.36	0.207535	2.35
101	11.92000	0.030927	0.046137	2.36	0.086169	2.36	0.207486	1.57
102	12.07700	0.027278	0.041264	1.57	0.082267	1.57	0.207231	1.57
103	12.23400	0.023629	0.036391	1.57	0.078365	1.57	0.207719	1.57
104	12.39100	0.020000	0.031518	1.57	0.074463	1.57	0.207662	1.57
105	12.54800	0.016351	0.026645	1.57	0.070561	1.57	0.207598	1.57
106	12.70500	0.012702	0.021772	1.57	0.066659	1.57	0.207532	1.57
107	12.86200	0.009053	0.016899	1.57	0.062757	1.57	0.207453	1.57
108	13.01900	0.005404	0.012026	1.57	0.058855	1.57	0.207375	1.57
109	13.17600	0.001755	0.007153	1.57	0.054953	1.57	0.207304	1.57
110	13.33300	0.000000	0.002280	1.57	0.051051	1.57	0.207256	1.57

114	31.250000	0.032000	1.18	0.204904	1.18	0.204886	1.18
117	32.500000	0.030700	1.18	0.204852	1.18	0.204843	1.18
118	33.750000	0.029430	1.18	0.204794	1.18	0.204796	1.18
119	35.000000	0.028171	1.18	0.204741	1.18	0.204742	1.18
120	36.250000	0.027186	1.18	0.204698	1.18	0.204707	1.18
121	37.500000	0.026657	1.18	0.204716	1.18	0.204691	1.18
122	38.750000	0.025806	1.18	0.204675	1.18	0.204653	1.18
123	40.000000	0.025000	1.18	0.204593	1.18	0.204661	1.18
124	41.250000	0.024242	0.94	0.204554	0.94	0.204567	0.94
125	42.500000	0.023529	0.94	0.204537	0.94	0.204543	0.94
126	43.750000	0.022857	0.94	0.204537	0.94	0.204534	0.94
127	45.000000	0.022222	0.94	0.204550	0.94	0.204523	0.94
128	46.250000	0.021622	0.94	0.204528	0.94	0.204500	0.94
129	47.500000	0.021053	0.94	0.204469	0.94	0.204454	0.94
130	48.800000	0.020492	0.94	0.204398	0.94	0.204396	0.94

MAXIMUM ACCEL 2.216495 1.241669 1.006399

4	39	1	0.020	2.0131
5	39	1	0.030	1.1474
6	39	1	0.070	0.8997

BY G.W.J. DATE 9/17/84

SHEET 1 OF 3

CHKD. BY K. Stuch DATE 10-1-84

DEPT. 653  
NO. 653

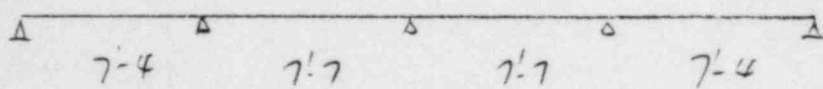
CLIENT LP & L

PROJECT WATERFORD S.E.S #3

SUBJECT CONCRETE MASONRY BLOCK WALLS ITEM # 3

CONSIDER THE WALL AS A BEAM SUPPORTED BY THE EMBEDDED STEEL IP, SPANNING HORIZONTALLY

FREQUENCY ANALYSIS OF THE BEAM



ASSUME THE SPANS ARE EQUAL IN LENGTH, SAY 7'-7  
TAKE A 12" STRIP

FROM TABLE 8-3d (BLEVINS: FORMULAS.)

$$f_i = \frac{\chi_i^2}{2\pi L^2} \left[ \frac{EIg}{w} \right]^{1/2}$$

FOR NUMBER OF SPAN = 4

$$\chi_1 = 3.142$$

$$E = 675,000 \text{ psi}$$

$$I = \frac{1}{12} (12)(6)^3 = 216 \text{ in}^4$$

$$w = 140 \times 5 \times 1 = 70 \text{ lb/ft} = 5.83 \text{ lb/in}$$

$$L = 7'-7 = 91 \text{ in}$$

$$f_1 = \frac{(3.142)^2}{2\pi (91)^2} \left[ \frac{675,000 \times 216 \times 386.4}{5.83} \right]^{1/2}$$

$$= \underline{\underline{18.7 \text{ Hz}}}$$

USING "g" VALUE = 0.3 IS JUSTIFIED.

BY G WU DATE 9/2/84

SHEET 2 OF 3

CHKD. BY K Sluiter DATE 10-1-84

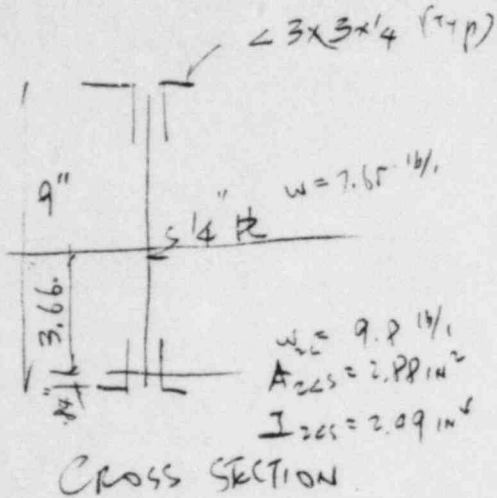
OFS NO. \_\_\_\_\_ DEPT. 653  
NO. \_\_\_\_\_

CLIENT LP & L

PROJECT WATERFORD S.E.S #2

SUBJECT CONCRETE MASONRY BLOCK WALL SI ITEM # 3

FREQUENCY OF THE SUPPORTING STEEL C.



STEEL C IS SUPPORT BY TWO ANGLES AT EACH SIDE, AND WELDED ON THE TOP & BOTTOM OF CEILING & FLOOR.

$$I = 2.49 \times 2 + 2.88 \times 3.66^2 \times 2 + \frac{1}{12} (1 \times 9)^3$$

$$= 92.81 \text{ in}^4$$

SPAN  $l = 29.5' = 354''$

$E = 29,000,000 \text{ psi}$

$w = 7.65 + 2 \times 9.8 = 27.25 \text{ lb/ft} = 2.27 \text{ lb/in}$

$g = 386.4$

FROM TABLE P-1, (BLEVINS: FORMULAS)

$$f_i = \frac{\lambda_i^2}{2\pi l^2} \left( \frac{EI}{w} \right)^{1/2}$$

$$f_1 = \frac{(4.73)^2}{2\pi (354)^2} \left( \frac{29,000,000 \times 92.81}{27.25} \right)^{1/2}$$

$= \underline{\underline{18.9 \text{ Hz}}}$

## EBASCO SERVICES INCORPORATED

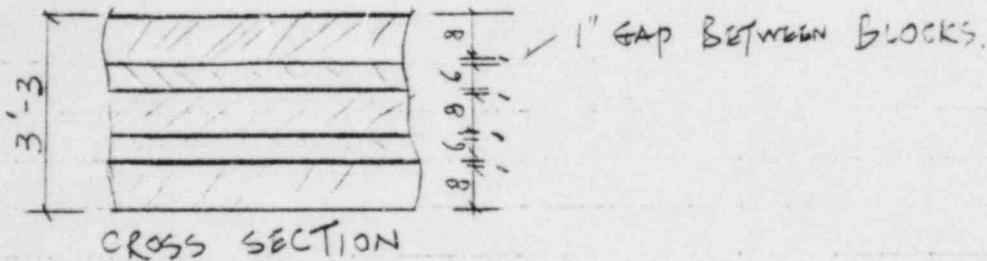
BY G. WU DATE 10/3/84SHEET 3 OF 3CHKD. BY K... DATE ...OFS NO. 100 4294.385 DEPT. 653 NO. 653CLIENT LP & LPROJECT WATERFORD S.E.S. #3SUBJECT CONCRETE MASONRY BLOCK WALL - WALL S21 ITEM # 3

## WALL DIMENSIONS

REF. 765 S01

L x H x THICK  
 10' x 21' x 3'-3

WALL HAS DUR-O-WALL P EVERY COURSE.  
 WALL IS DESIGNED TO SPAN HORIZONTALLY.



TAKE ONE COURSE OF WALL 8" HIGH, 10' IN SPAN  
 ASSUME SIMPLY SUPPORTED AT BOTH ENDS AND ALSO  
 ASSUME WALLS ARE ACTING INDEPENDENTLY, FOR 6" THK WALL  
 FREQUENCY: FROM TABLE 8-1 (BLEVING FORMULAS)

$$f = \frac{\lambda_1^2}{2\pi L^2} \left[ \frac{EIg}{W} \right]^{1/2}$$

$$E = 675,000 \text{ psi}$$

$$g = 386.4 \text{ in/sec}^2$$

$$I = \frac{1}{12} (8)(6)^3 = 144 \text{ in}^4$$

$$W = 6 \times 8 \times 150 \times \frac{1}{128} = 4.17 \text{ in}^3$$

$$\lambda_1 = \pi$$

$$f = \frac{\pi^2}{2\pi L^2} \left[ \frac{EIg}{W} \right]^{1/2}$$

$$= \frac{\pi}{2 \times (10 \times 12)^2} \left[ \frac{675000 \times 144 \times 386.4}{4.17} \right]^{1/2} = \underline{\underline{10.4 \text{ Hz}}}$$

$f = \sqrt{\left(\frac{39}{6}\right)^2} \times 10.4 = 67.6 \text{ Hz}$ . FOR A 39" WALL ACTS AS ONE UNIT DUE TO Z STRAPS.

BY W.T. DATE 9/27/84SHEET 1 OF 2CHKD. BY K.S.H. DATE 10-3-84OFS NO. \_\_\_\_\_ DEPT. NO. 653CLIENT LMPLPROJECT WATERBURY JCC UNIT NO. 3SUBJECT CONCRETE BLOCK WALLSITEM # 4

NRC, APENDIX 'A' TO SRP, SECT 3.3.4,  
paragraph 3(a) permits the  
allowable working stress for reinforcement to be  
multiplied by a factor of 2.

$$\text{Allowable } F_s = 2 \times f_s = 2 \times 24,000 = 48,000 \text{ psi}$$

(ASTM A-615 Grade 60)

$$0.9 F_y = 0.9 \times 60,000 = 54,000 \text{ psi}$$

$$\therefore \underline{F_s < 0.9 F_y}$$



BY G. A. [unclear] DATE 9-26-84

SHEET 2 OF 2

CHKD. BY [unclear] DATE 9-27-84

OFS NO. 2355.193 DEPT. NO. 633

CLIENT LT & L

PROJECT WATERFORD S.B.C. #2

SUBJECT CONCRETE BLOCK WALLS ITEM #4

SEE EBASCO CALCS OF 3.15.84  
PAGE 7

STRESS USED =  $0.40 F_y = 24 \text{ ksi}$

FACTOR OF 2 =  $\frac{0.80 F_y}{0.9 F_y}$   
 $\therefore \underline{\underline{OK}}$

BY A. LEON DATE 9/26/84SHEET 1 OF 15

CHKD. BY \_\_\_\_\_ DATE \_\_\_\_\_

OFS NO. \_\_\_\_\_ DEPT. NO. 653CLIENT P & LPROJECT WATERFORD # 3SUBJECT CONC. BLOCK WALLS - WALL S1ITEM # 5

## 1. CRITERIA :

- 1.1 DUROWALL IS EVALUATED FOR 7'-7" SPANS WITH THE MOST CRITICAL LOADS BASED ON SH 2 & 3 OF CALCULATIONS.
- 1.2 LOADS OF SH 2 & 3 OF CALCULATIONS WERE BASED ON SKETCHES FROM MECH. & ELECT. DISCIPLINES.
- 1.3 LOADS FOR ELECT. FIXTURES (LESS THAN 10#) ARE NOT SHOWN.
- 1.4 THE WALL THICKNESS IS 12" TOTAL CONSISTING OF TWO-6" WALLS WHICH ARE TREATED INDEPENDENTLY.  
SOUTH SIDE WALL WILL CARRY ALL THE SOUTH SIDE LOADS & NORTH SIDE WALL, ALL THE NORTH SIDE LOADS.
- 1.5 FOR THE DUROWALL, THE MOST CRITICAL LOADS ARE  $F_z$  &  $M_y$ .  
FOR MECH. LOADS;  $F_y$  FOR ELECT. & DEAD LOAD OF WALL.
- 1.6 FOR 7'-7" BAYS, THE CRITICAL CONDITIONS ARE :  
SOUTH SIDE WALL : EL. -10'-6", BAY BET. ③ & ④  
NORTH SIDE WALL : EL. -15', BAY BET. ③ & ②
- 1.7 FOR 7'-4" BAYS, THE LOADS ARE SMALLER THAN FOR 7'-7" BAY THEREFORE NO CALCULATIONS REQ'D.
- 1.8 FOR THE LATERAL SUPPORTS THE CRITICAL LOADS ARE  $F_z$ ,  $M_x$  &  $M_y$ .  
FOR MECH. LOADS.  $F_y$  FOR ELECT. & DEAD LOAD OF WALL.

## 2. REFERENCES :

- 2.1 DWG. G-765 502
- 2.2 CALCULATIONS FOR CONC. BLOCK WALL REVIEW DONE ON 3/15/84
- 2.3 FIELD SKETCHES FOR MECH. & ELECT. ATTACHMENTS.  
SH. 13, 14 & 15 OF 15 OF THIS CALCULATIONS.

BY A. LEON DATE 2/25/81

CHKD. BY \_\_\_\_\_ DATE \_\_\_\_\_

CLIENT LP&L

PROJECT WATERFORD # 3

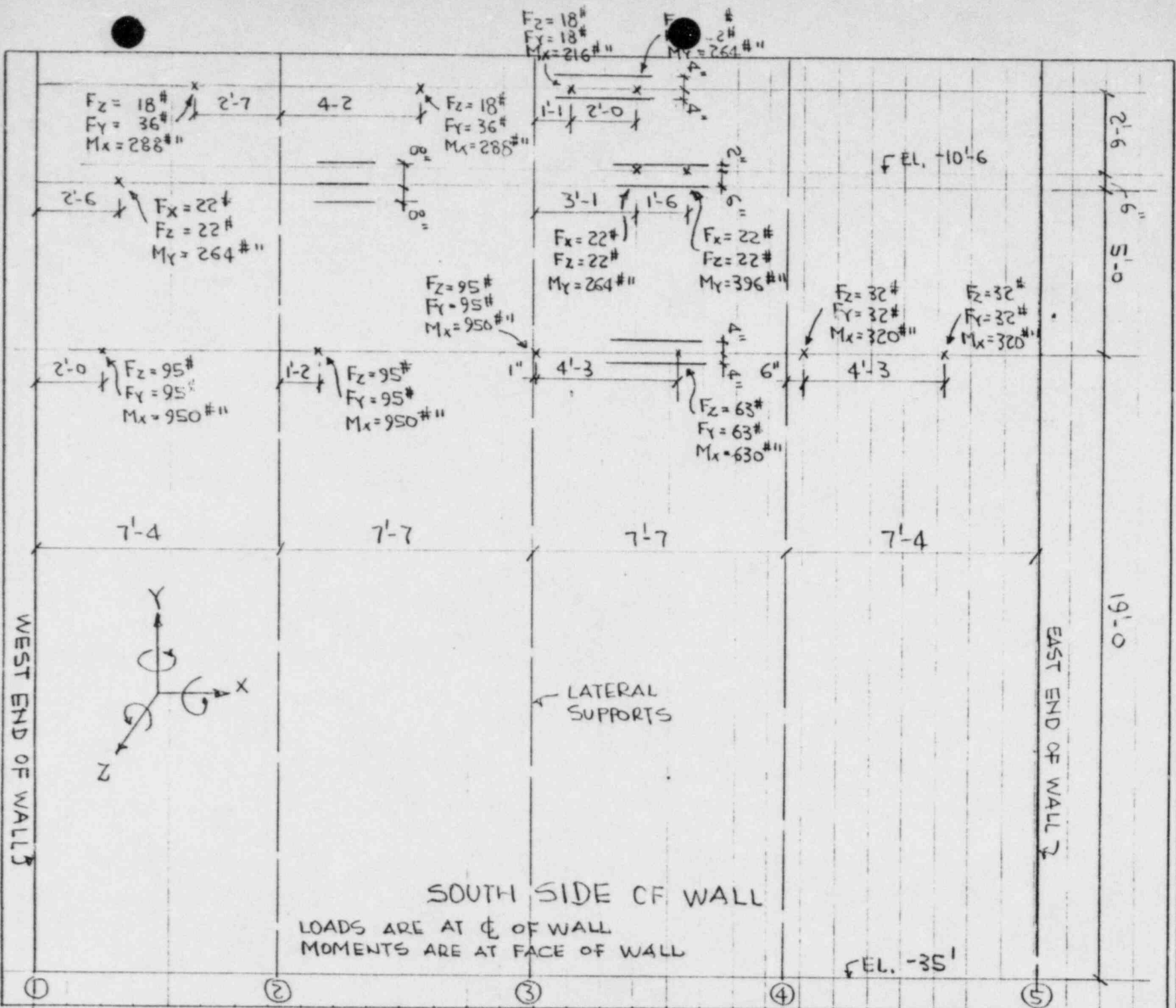
SUBJECT CONC. BLOCK WALLS - WALL S1

OFS NO. \_\_\_\_\_

SHEET 2 OF 15

DEPT. 653

ITEM # 5



581-9-41

BY A. LEONI DATE 9/26/84

CHKD. BY K. J. J. DATE 10-4-84

OFFS NO. \_\_\_\_\_

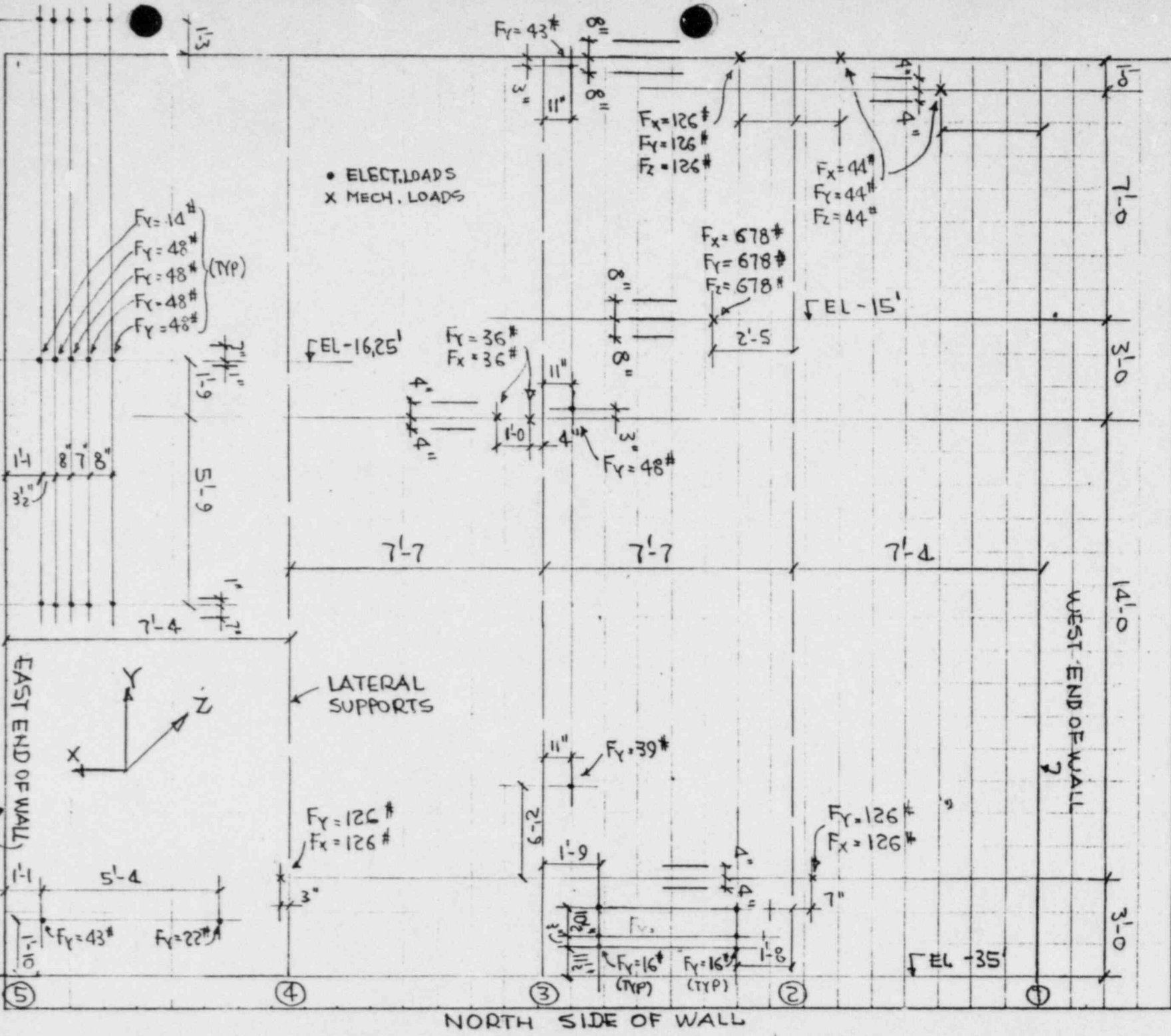
SHEET 3 OF 15

DEPT. NO. 653

CLIENT LP&L  
 PROJECT WATERFORD #3

SUBJECT CONC. BLOCK WALLS - WALL S1

ITEM # 5



BY A. LEONI DATE 9/26/84

SHEET 4 OF 15

CHKD. BY \_\_\_\_\_ DATE 10-3-84

OFS NO. \_\_\_\_\_ DEPT. NO. 653

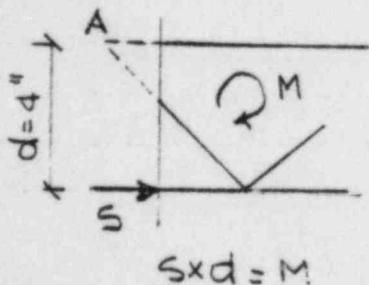
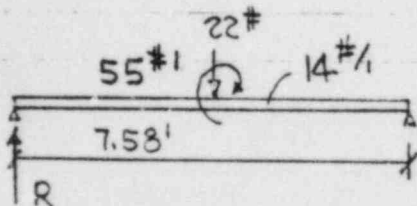
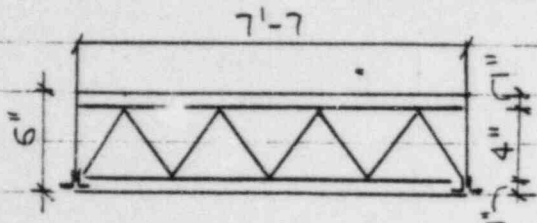
CLIENT LP & L

PROJECT WATERFORD #3

SUBJECT CONC. BLOCK WALLS - WALL S1

ITEM # 5

I- SOUTH SIDE WALL - BAY BET. ③ & ④ - EL. - 10.5'



1. LOADS :

1.1 WALL :  $w = 140 \text{ \#/cft.}$

1.2 NO ELECT. LOADS.

1.3 MECH. LOADS :

BECAUSE LOADS ARE AT  $\phi$  OF WALL, FOR ONE 6" WALL IS HALF THE LOAD,

$F_z = 22 \times .5 = 11\#$  AT TWO LOCATIONS.

$M_y = 264\#'' = 22\#'$

$M_y = 396\#'' = 33\#'$

1.3.1 TO SIMPLIFY CALCULATIONS, ASSUME

$F_z = 11 \times 2 = 22\#$  AT HALF SPAN

$M_y = 22 + 33 = 55\#'$  AT HALF SPAN.

1.4 VERTICAL LOADS :

1.4.1  $w = 140 \times \frac{6}{12} \times \frac{8}{12} = 46.7\#'$  (FOR 6" WYTHE @ 8" COURSE).

1.5 HORIZONTAL LOADS :

1.5.1 EARTHQUAKE FACTOR = .39

1.5.2  $H_w = 46.7 \times .3 = 14\#'$

1.5.3  $F_z = 22\#$

1.6 MOMENTS :

1.6.1  $M_y = 55\#'$

2. FORCES & MOMENTS FOR DUROWALL :

2.1  $R = 14 \times 7.58 \times .5 + 22 \times .5 + 55/7.58 = 53.1 + 11.0 + 7.3 = 71.4\#$

2.2  $M = .125 \times 14 \times 7.58^2 + .25 \times 22 \times 7.58 + 55 \times .5 = 100.5 + 41.7 + 27.5 = 169.7\#'$

2.3  $s = M/d = 169.7 \times 12/4 = 509.1\#$

3. STRESSES AT DUROWALL :  $F_y = 65 \text{ KSI}, F_t = .6 F_y = 39.0 \text{ KSI}$

3.1 AREA OF  $3/16\phi$  WIRE =  $\pi \times .19^2/4 = .028 \text{ in}^2$

3.2  $f_t = 509.1 / .028 = 18182 \text{ PSI} \approx 18.2 \text{ KSI} < 39.0$  OK. ✓

3.3 SHEAR ON CONC. BLOCK WALL :  $b = 8$ ,

$v = 71.4 / 6 \times 8 = 1.5 \text{ PSI} < 20 \times 1.2 = 26$  OK. ✓

BY A. LEON DATE 9/26/84

SHEET 5 OF 15

CHKD. BY P. Hunt DATE 10-2-84

OFS NO. \_\_\_\_\_ DEPT. NO. 653

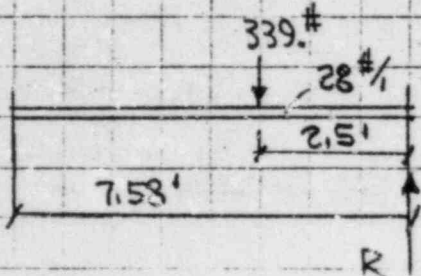
CLIENT LP&L

PROJECT WATERFORD #3

SUBJECT CONC. BLOCK WALLS - WALL S1

ITEM # 5

II - NORTH SIDE WALL - BAY BET. (3) & (2) - EL. -15.0'



4. LOADS :

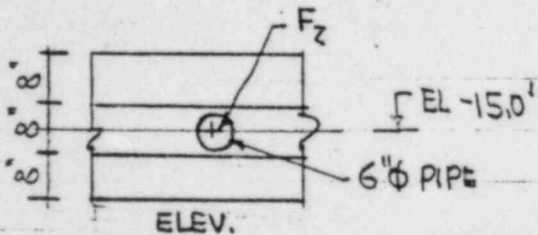
4.1 WALL :  $w = 140 \text{ \#/cft. (REF 1.1)}$

4.2 NO ELECT. LOADS

4.3 MECH. LOADS :

LOADS ARE AT  $\phi$  OF WALL, FOR ONE 6" WALL IS HALF THE LOAD.

$F_z = 678 \times .5 = 339 \text{ \# (SH 3)}$



4.4 VERTICAL LOADS :

4.4.1  $w = 140 \text{ \#/ft}$

4.5 HORIZ. LOADS :

4.5.1  $H_w = 14 \text{ \#} \times 2 = 28 \text{ \#/ft (2 COURSES, 2 TRUSSES CONSERV. ASSUMPT.)}$

4.5.2  $F_z = 339 \text{ \# (REF. 4.3)}$

$F_z$  IS DISTRIBUTED ON 2 TRUSSES (CONSERV. ASSUMPT.)

5. FORCES & MOMENTS FOR DUROWALL :

5.1  $R = 28 \times 7.58 \times .5 + 339 \times (7.58 - 2.50) / 7.58 = 106.1 + 227.2 = 333.3 \text{ \#}$

5.2  $M = 333.3 \times 2.50 - .5 \times 28 \times 2.50^2 = 833.2 - 87.5 = 745.7 \text{ \#ft}$

5.3  $S = 745.7 \times 12 / 4 = 2237.1 \text{ \#}$

$S = 2237.1 / 2 = 1118.6 \text{ \#/PER TRUSS}$

6. STRESS AT DUROWALL :

6.1  $f_t = 1118.6 / 0.28 = 39950 \text{ psi} = 40.0 \text{ KSI} < .9 F_y = .9 \times 65 = 58.5 \text{ OK}$

6.2 SHEAR ON CONC. BLOCK WALL :

$v = 333.3 / 6 \times 16 = 3.5 \text{ psi} < 20 \times 1.3 = 26 \text{ OK}$

BY A. LEON DATE 9/26/84

SHEET 6 OF 15

CHKD. BY [Signature] DATE [Signature]

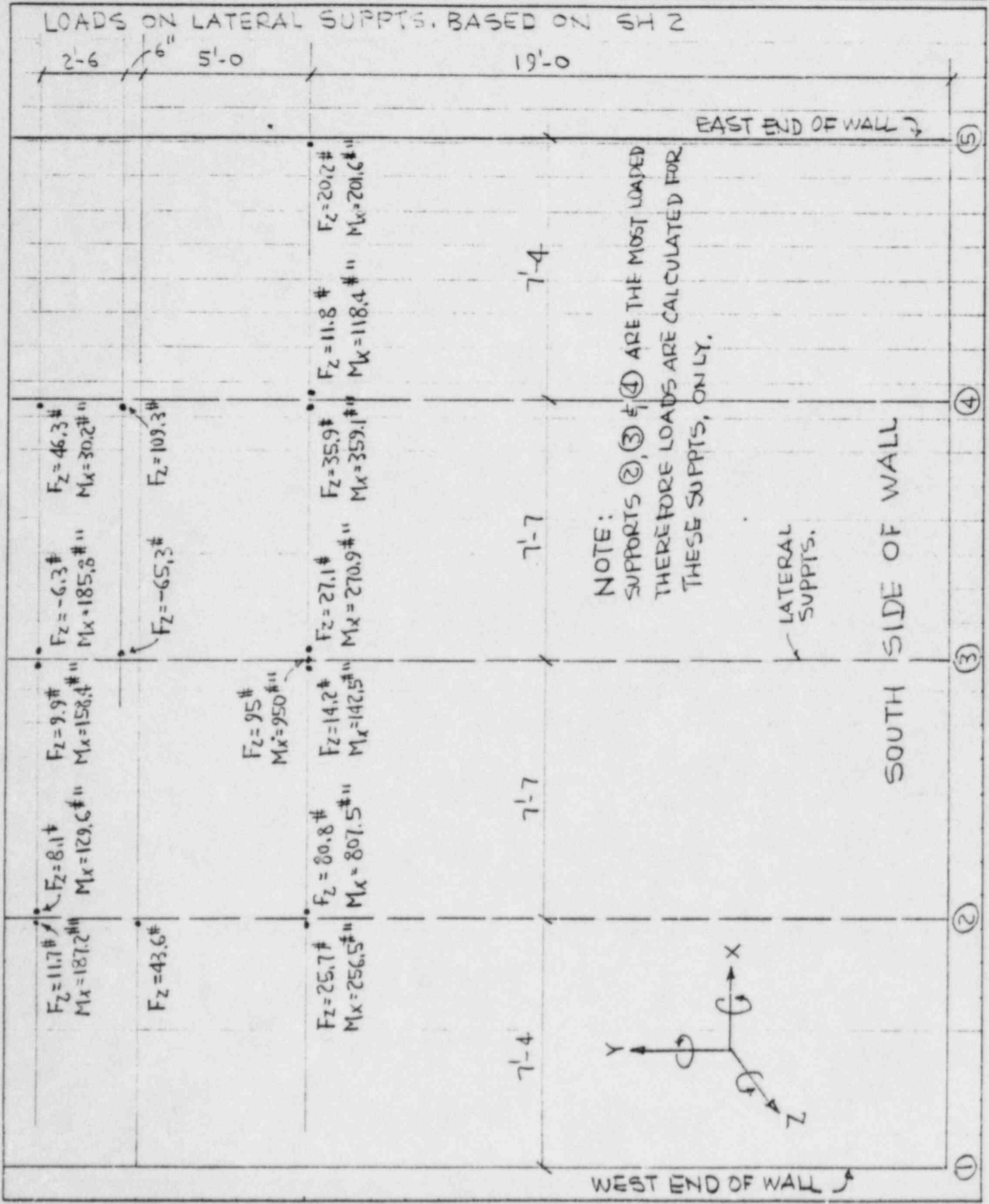
OFS NO. \_\_\_\_\_ DEPT. NO. 653

CLIENT LP & L

PROJECT WATERFORD #3

SUBJECT CONC. BLOCK WALL - WALL S1 ITEM 5

LOADS ON LATERAL SUPPTS. BASED ON SH 2



BY A. LEON DATE 9/26/84

SHEET 7 OF 15

CHKD. BY R. Sh... DATE 10-7-84

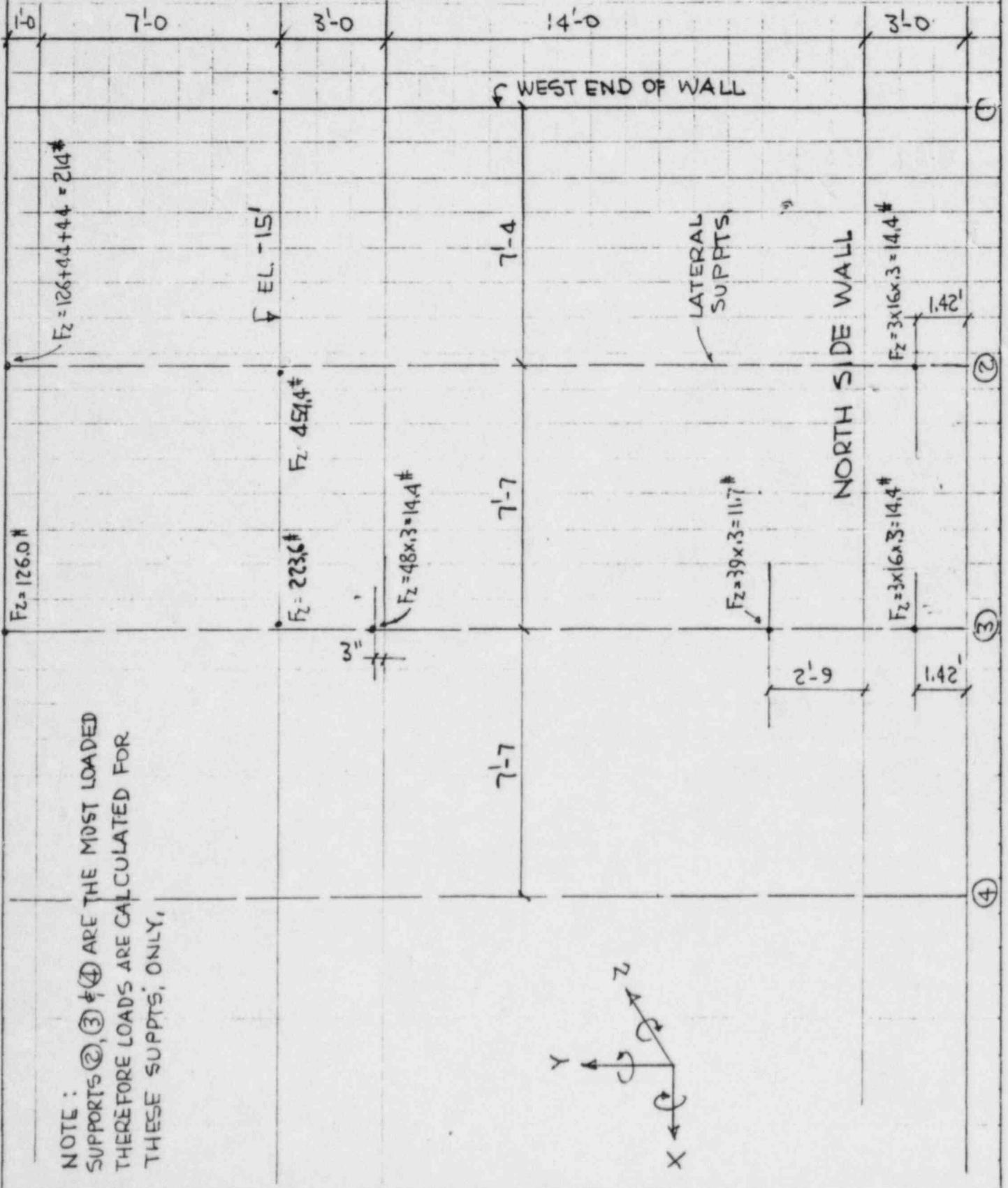
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CLIENT LP&L

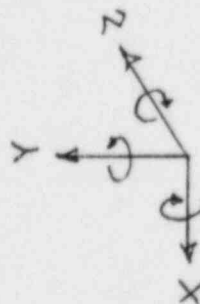
PROJECT WATERFORD #3

SUBJECT CONC. BLOCK WALLS - WALL S1 ITEM # 5

LOADS ON LATERAL SUPPTS. BASED ON SH 3.



NOTE: SUPPORTS ②, ③ & ④ ARE THE MOST LOADED THEREFORE LOADS ARE CALCULATED FOR THESE SUPPTS, ONLY.





BY A. LEON DATE 9/26/84

SHEET 8 OF 15

CHKD. BY [Signature] DATE [Signature]

OFS NO. \_\_\_\_\_ DEPT. NO. 653

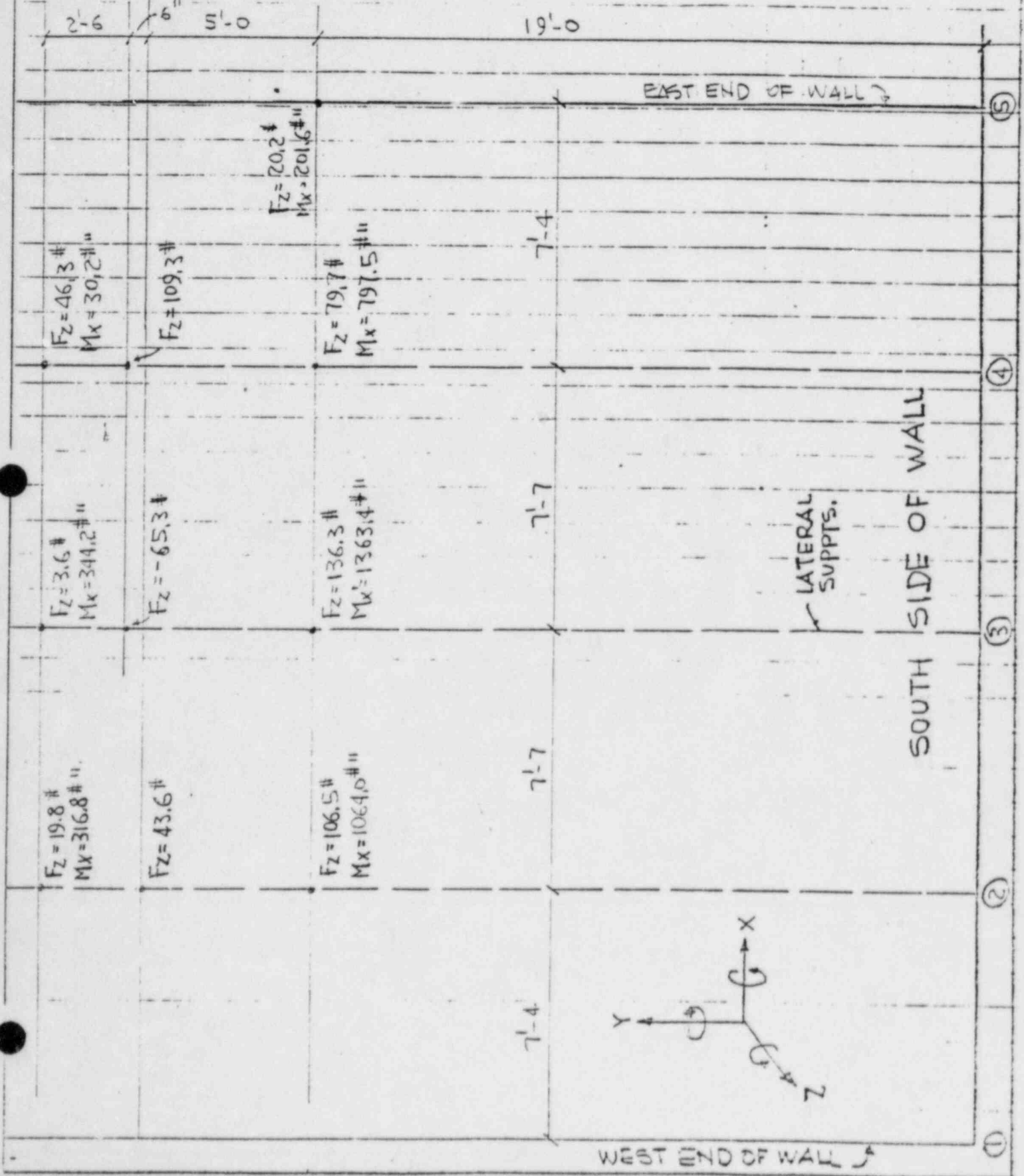
CLIENT LP & L

PROJECT WATERFORD #3

SUBJECT CONC. BLOCK WALLS - WALL S1

ITEM # 5

LOADS BASED ON SFG



BY A. LEON DATE 9/26/84

SHEET 9 OF 15

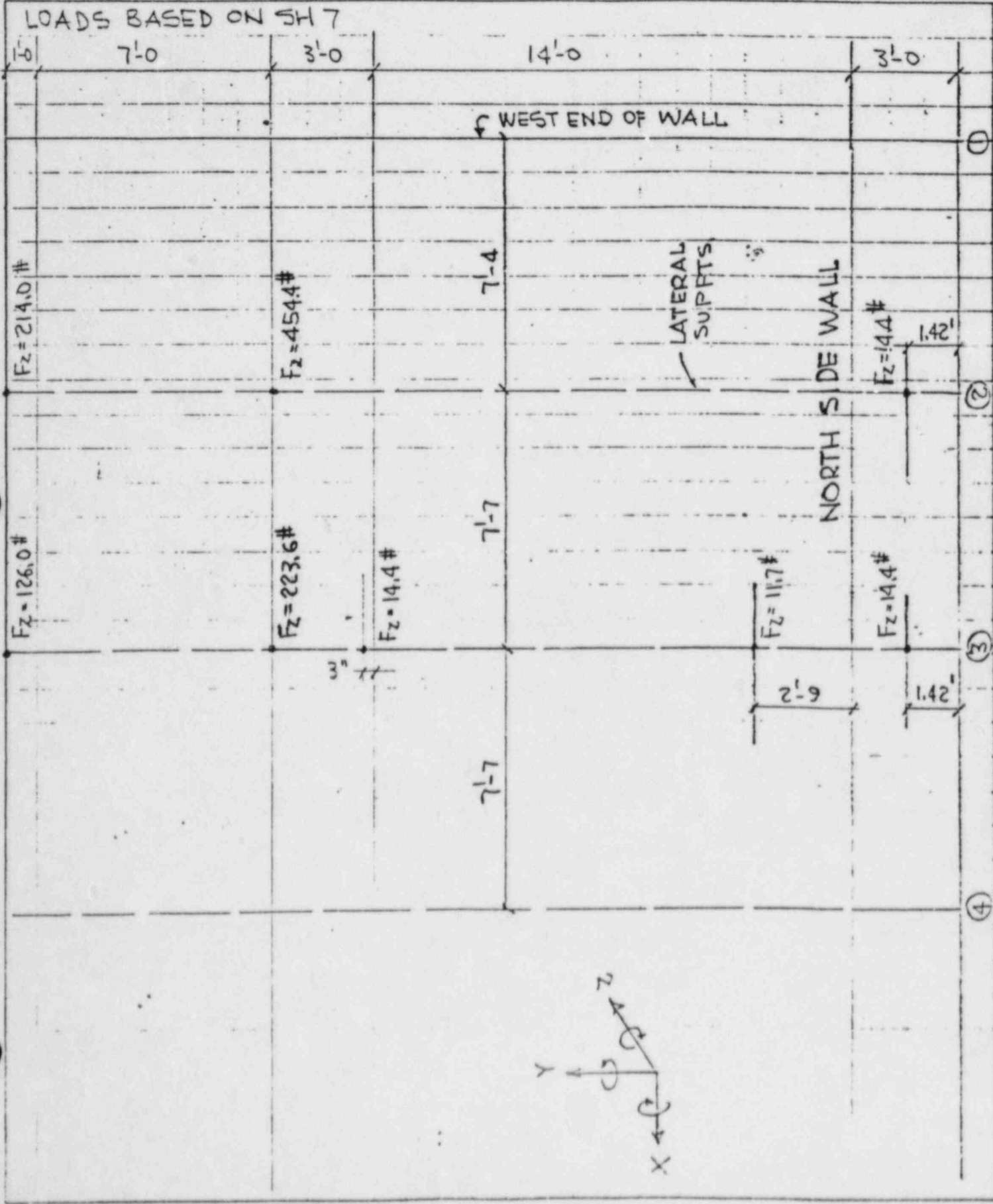
CHKD. BY [Signature] DATE 10-2-84

OFS NO. \_\_\_\_\_ DEPT. NO. 653

CLIENT LP&L

PROJECT WATERFORD #3

SUBJECT CONC. BLOCK WALLS WALL S1 ITEM #5



BY A. LEON DATE 9/26/84

SHEET 10 OF 15

CHKD. BY K. K... DATE 10-28-84

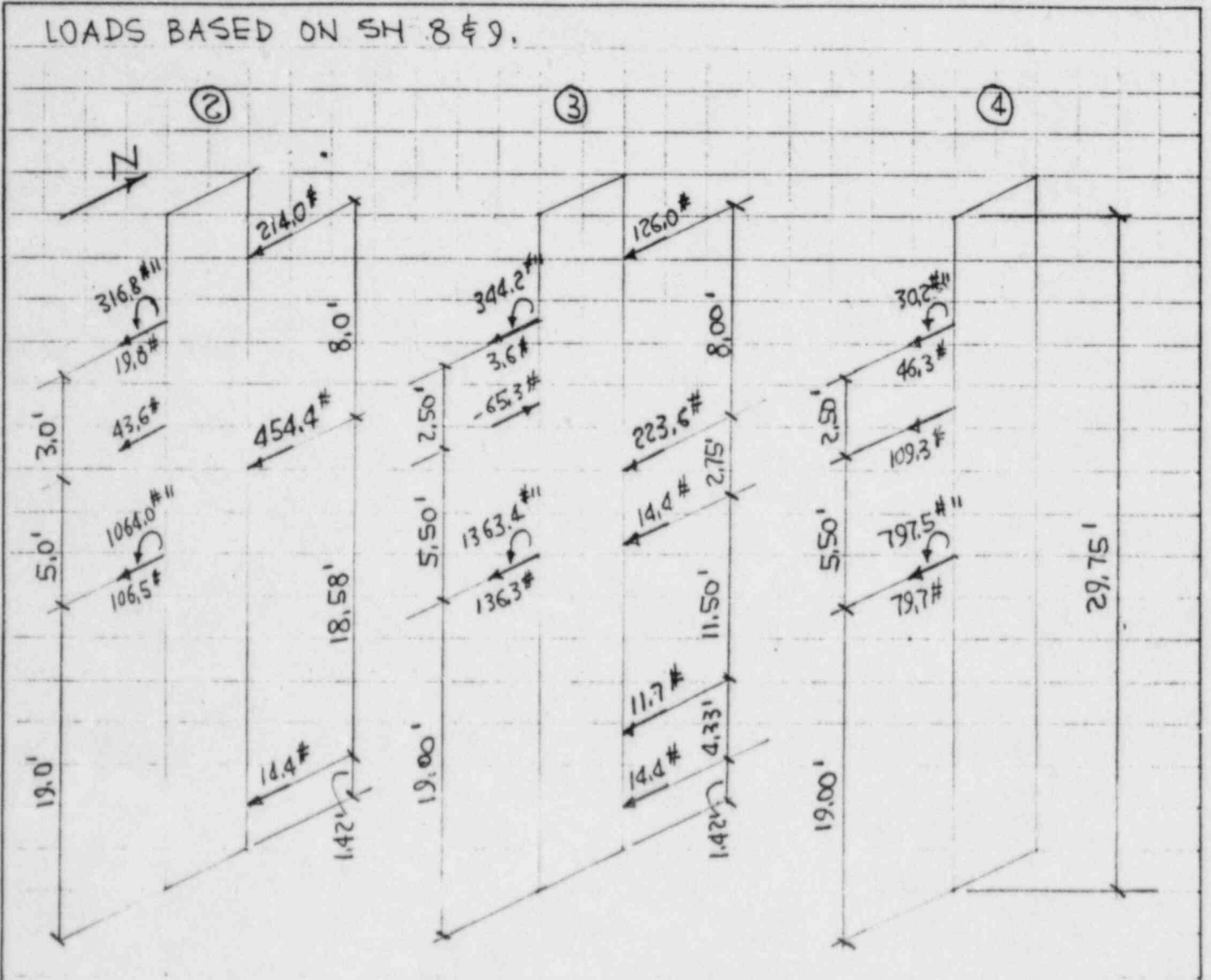
OFS NO. \_\_\_\_\_ DEPT. NO. 653

CLIENT LP & L

PROJECT WATERFORD #3

SUBJECT CONC. BLOCK WALLS - WALL S1 ITEM # 5

LOADS BASED ON SH 8 & 9.



NOTE: LATERAL SUPPORTS ② & ③ ARE THE MOST LOADED. A CLOSE INSPECTION OF THE LOADS SHOW THAT SUPPORT ② IS THE CRITICAL ONE THEREFORE THIS SUPPT. IS ANALYSED.

BY A. LEON DATE 9/27/84

SHEET 11 OF 15

CHKD. BY A. Leon DATE 10-2-84

OFS NO. \_\_\_\_\_ DEPT. NO. 653

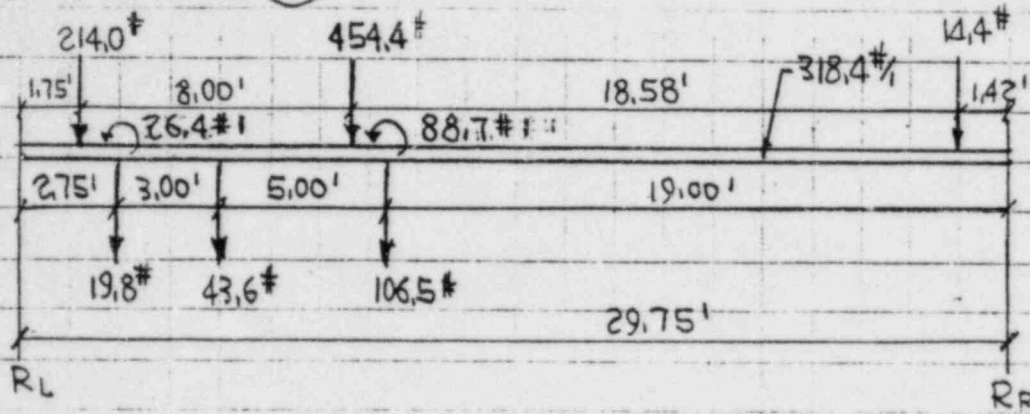
CLIENT LP&L

PROJECT WATERFORD #3

SUBJECT CONC. BLOCK WALLS - WALL S1

ITEM #5

LATERAL SUPPORT (2) :



1. LOADS DUE TO WALL :

$$W = 140 \times 7.58' = 1061.2 \#/\text{ft}$$

$$\text{HORIZ. LOAD, } H_w = 1061.2 \times 3 = 318.4 \#/\text{ft}$$

$$2. M_{x_1} = 316.8 \#'' = 26.4 \#'\text{-ft}$$

$$M_{x_2} = 1064.0 \#'' = 88.7 \#'\text{-ft}$$

$$3. R_L = .5 \times 318.4 \times 29.75 + 214.0 \times \left(\frac{28.00^{.94}}{29.75}\right) + 454.4 \times \left(\frac{20.00^{.67}}{29.75}\right) + 14.4 \times \left(\frac{1.42^{.91}}{29.75}\right) + 19.8 \times \left(\frac{27.00^{.81}}{29.75}\right) + 43.6 \times \left(\frac{24.00^{.81}}{29.75}\right) + 106.5 \times \left(\frac{19.00^{.64}}{29.75}\right) + 26.4/29.75 + 88.7/29.75$$

$$= 4736.2 + 201.2 + 304.4 + .7 + 18.0 + 35.3 + 68.2 + .9 + 3.0$$

$$= 5367.9 \# \approx 5.4 \text{ K}$$

$$R_R = 318.4 \times 29.75 + 214.0 + 454.4 + 14.4 + 19.8 + 43.6 + 106.5 - 5367.9$$

$$= 9472.4 + 852.7 - 5367.9$$

$$= 4957.2 \# \approx 5.0 \text{ K}$$

$$4. M_{\text{MAX}} @ 15.52' = 4957.2 \times 15.52 - 14.4 \times 14.10 - .5 \times 318.4 \times 15.52^2$$

$$= 76935.7 - 203.0 - 38346.6$$

$$= 38386.1 \#'\text{-ft} \approx 38.4 \text{ K}'\text{-ft}$$

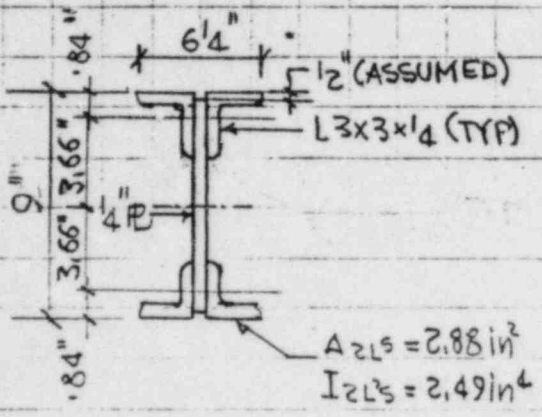
BY A. LEON DATE 9/27/84  
 CHKD. BY A. Smith DATE 10.2.84  
 CLIENT LP&L

SHEET 12 OF 15  
 DEPT. NO. 653

OFS NO. \_\_\_\_\_

PROJECT WATERFORD #3  
 SUBJECT CONC. BLOCK WALLS - WALL S1 ITEM # 5

5. - STRESSES ON BUILT UP BEAM :



5.1 LOADS :

$R = 5.4 \text{ K}$   
 $M = 38.4 \text{ K} \times 12 = 460.8 \text{ K}''$

5.2 PROPERTIES OF SECTION :

5.2.1  $\text{AREA} = 2.88 \times 2 + 8 \times 2.5 = 7.76 \text{ in}^2$   
 5.2.2  $I = 2.49 \times 2 + 2.88 \times 2 \times 3.66^2 + .25 \times 8^3 / 12$   
 $= 4.98 + 77.16 + 10.67$   
 $= 92.81 \text{ in}^4$   
 5.2.3  $S = 92.81 / 4.50 = 20.62 \text{ in}^3$

5.3 STRESSES :  $F_b = 24 \text{ KSI}, F_v = 14.5 \text{ KSI}$

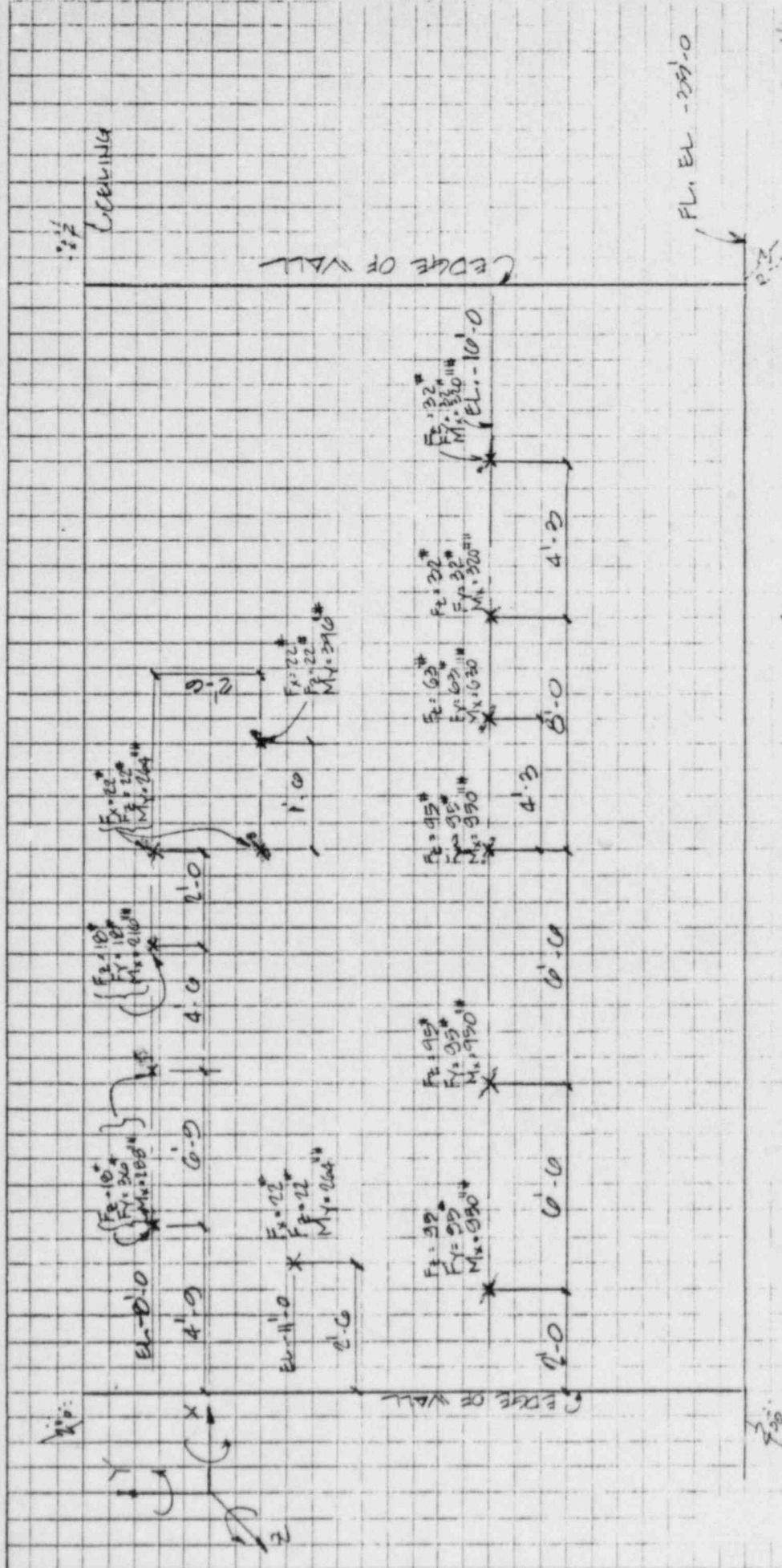
$f_b = 460.8 / 20.62 = 22.35 \text{ KSI} < 24 \text{ OK}$   
 $f_v = 5.4 / 2.00 = 2.70 \text{ KSI} < 14.5 \text{ OK}$

6. - BASED ON THESE CALCULATIONS, WALL S1 IS STRUCTURALLY ADEQUATE AS BUILT.

ITEM # 5

OPS NO. LAB-156A  
 BY PM  
 DEPT. NO. ESSE  
 DATE 7.25.84  
 CHECKED BY \_\_\_\_\_ DATE \_\_\_\_\_

CLIENT UP & L  
 PROJECT VATERFORD #3  
 SUBJECT PIPE SUPPORT LOADS ON WALL S



EL. LKG NORTH (N.T.S.)

MOMENTS ARE AT FACE OF WALL

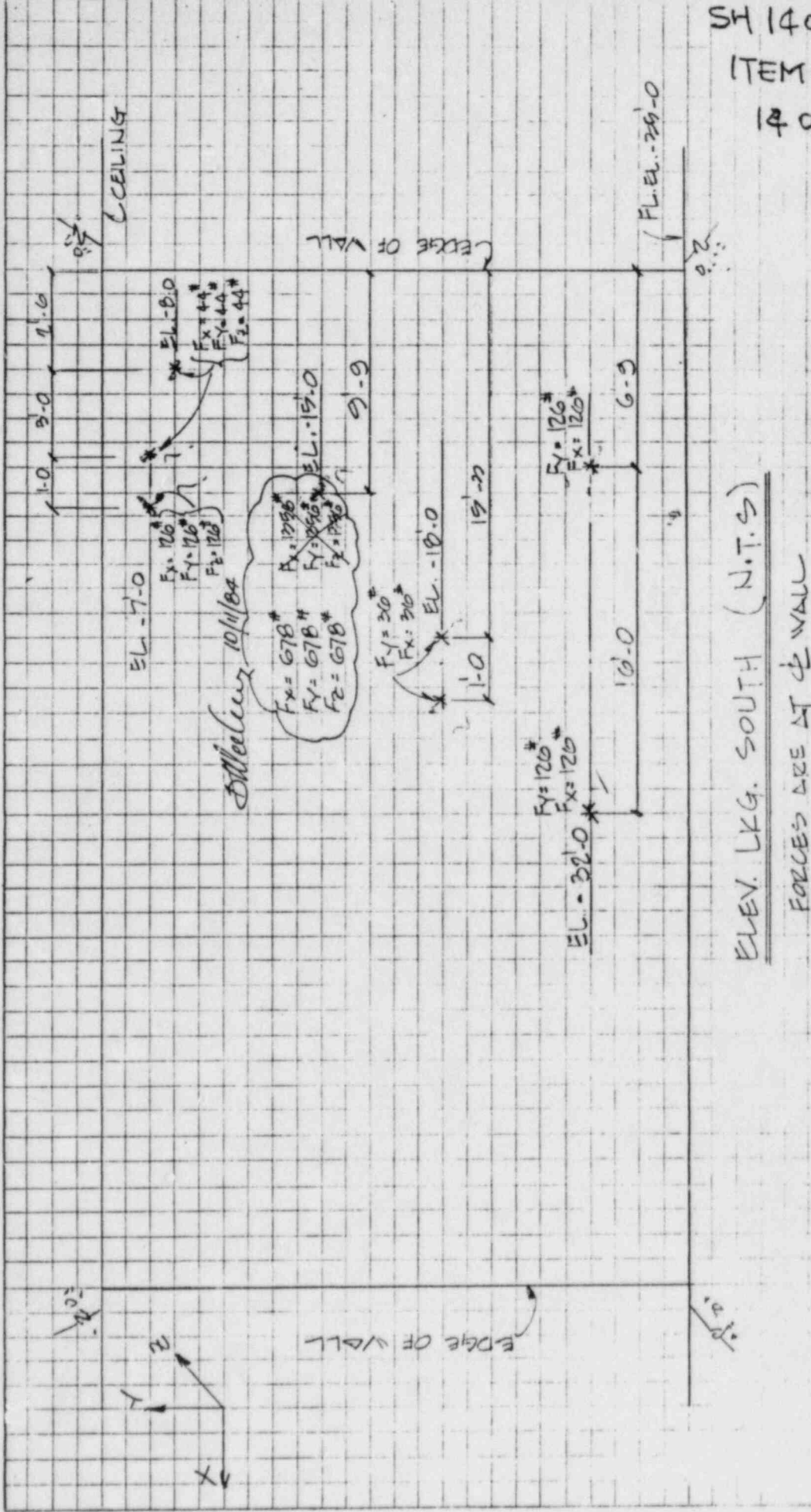
13 OF 42  
 15  
 10

ITEM #5

OPR. NO. 100-15104  
BY DM  
CHECKED BY JHS  
DEPT. NO. E-548  
DATE 9-25-84  
DATE 9-25-84

SH 140F42  
ITEM #5  
14 OF 15

CLIENT: UP&L  
PROJECT: WATERFORD #3  
SUBJECT: PIPE SUPPORT LOADS ON WALL



ELEV. LKG. SOUTH (N.T.S)

FORCES ARE AT CE WALL

BY WJC DATE \_\_\_\_\_

SHEET 15 OF 15

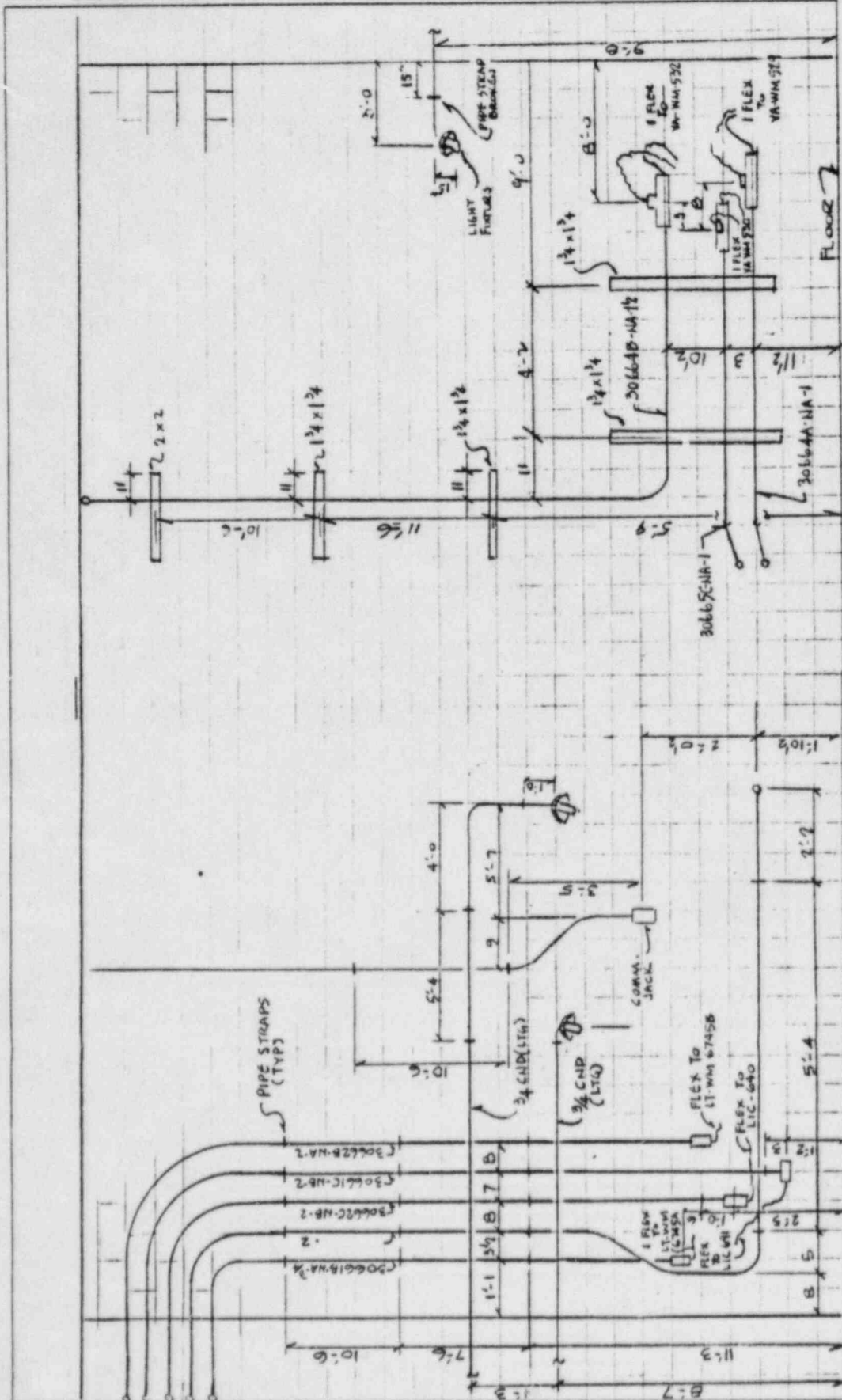
CHKD. BY \_\_\_\_\_ DATE \_\_\_\_\_

OFS NO. \_\_\_\_\_ DEPT. NO. \_\_\_\_\_

CLIENT \_\_\_\_\_

PROJECT ELECT. ATTACHMENTS - WALL 51

ITEM # 5



NORTH FACE OF WALL



BY A. LEON DATE 9/29/84

SHEET 1 OF 12

CHKD. BY [Signature] DATE 10-7-84

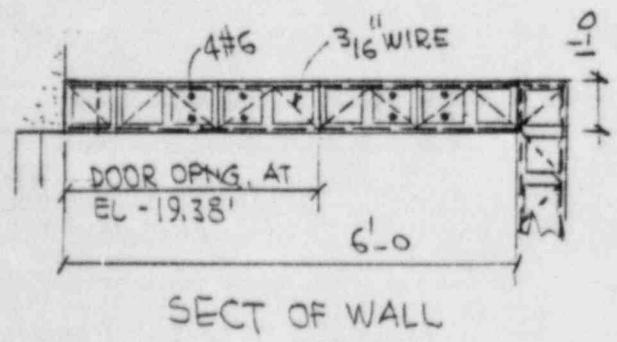
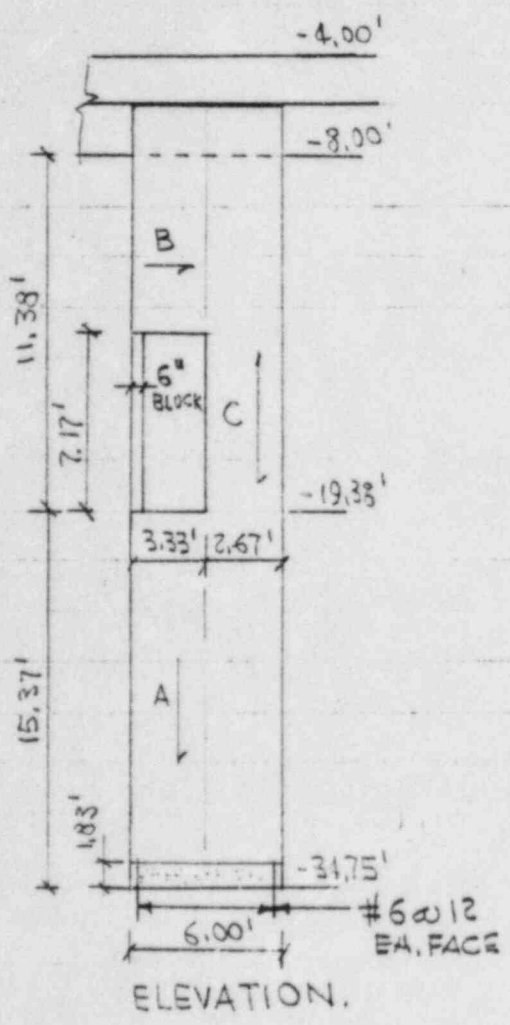
OFS NO. \_\_\_\_\_ DEPT. NO. 653

CLIENT DPL

PROJECT WATERFORD # 3

SUBJECT CONC. BLOCK WALLS - WALL H-2.

ITEM # 3



1. REFERENCES:
  - 1.1 DWG. G-760 502
  - 1.2 FIELD SKETCHES FROM MECH. 9/26/84  
ELECT. 9/26-9/28/84
  - 1.3 CALCULATIONS DONE ON 3/15/84

2. CRITERIA:
  - 2.1 WALL H-2 IS EVALUATED IN 3-SECT. SECT. 'A' IS CONSIDERED AS CANTILEVER FROM EL. -34.75' TO EL. -19.38'. SECT. 'B' IS CONSIDERED AS CANTILEVER HORIZONTALLY THRU THE DUROBLOCK TRANSFERRING THE LOADS TO SECT. 'C' WHICH IS CONSIDERED FIXED AT EL. -34.75' AND SIMPLE SUPPORTED AT EL. -8.00'.
  - 2.2 SECT. 'A' & SECT. 'C' HAVE 2 CELLS FILLED WITH CONC. & 4 #6 VERT. CONTINUOUS.
  - 2.3 LOADS OF SH? OF CALC. ARE BASED ON SKETCHES FROM MECH. & ELECT. DISCIPLINES.
  - 2.4 THE CRITICAL LOADS FOR SECT. 'A' ARE  $F_z$  &  $M_x$  FOR MECH. &  $F_y$  FOR ELECT & OWN WEIGHT.
  - 2.5 THE CRITICAL LOADS FOR SECT. 'B' ARE  $F_z$  &  $M_y$  FOR MECH &  $F_y$  FOR ELECT. & OWN WEIGHT.
  - 2.6 THE CRITICAL LOADS FOR SECT. 'C' ARE  $F_z$  &  $M_x$  FOR MECH. &  $F_y$  FOR ELECT. & OWN WEIGHT.

BY A. LEON DATE 9/27/84

SHEET 2 OF 12

CHKD. BY K. [Signature] DATE 10-2-84

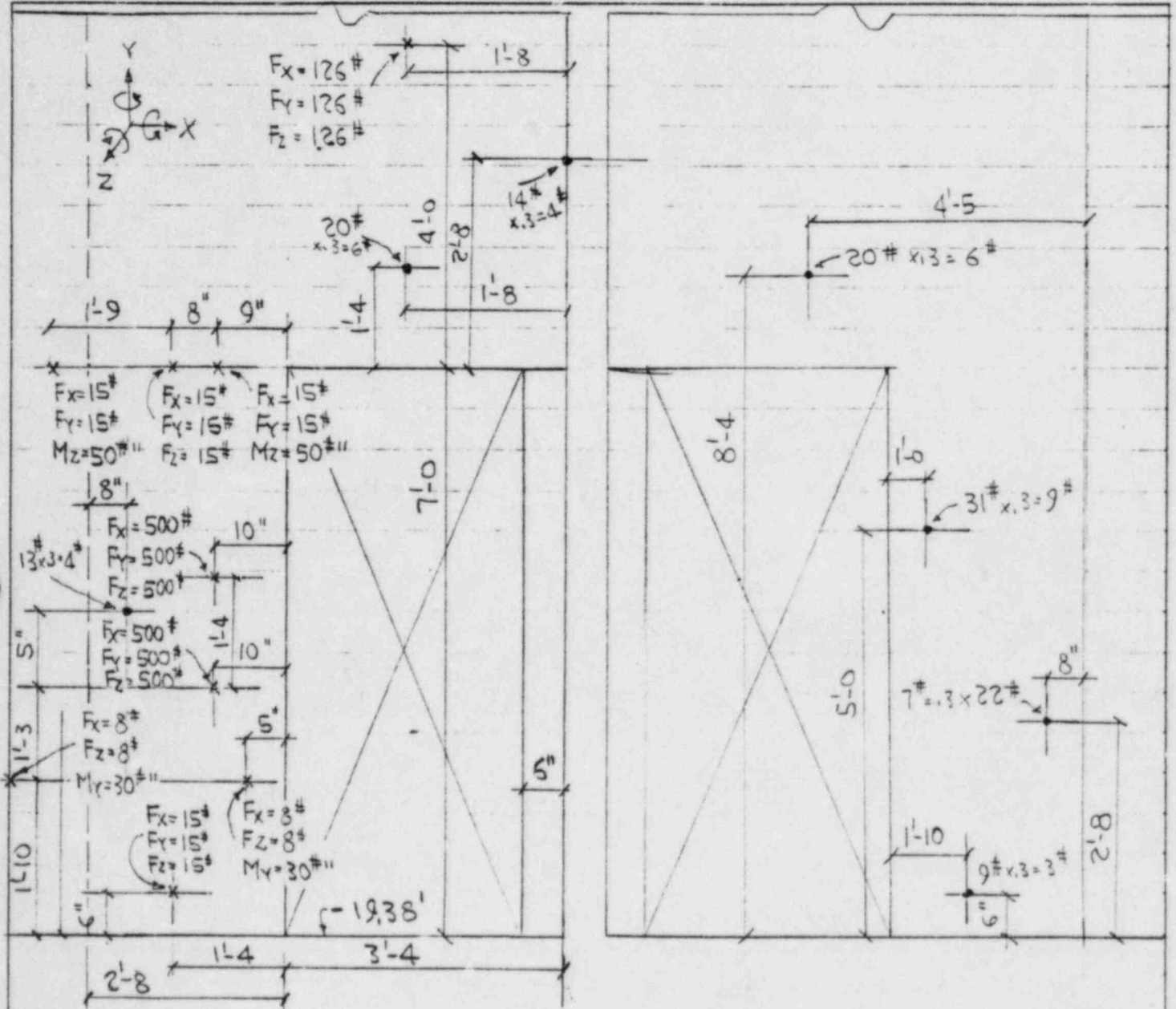
OFS NO. \_\_\_\_\_ DEPT. NO. 553

CLIENT LP=L

PROJECT WATERFORD #3

SUBJECT CONC. BLOCK WALLS - WALL H-2

ITEM # 3



EAST SIDE OF WALL

WEST SIDE OF WALL

NOTE: FOR MECH. AND ELECT. LOADS IT IS ASSUMED 30% OF WALL WGT. FROM EL -34.75' TO EL -19.38' FOR SECT. 'C'.

BY A. LEON DATE 9/29/91

SHEET 3 OF 12

CHK'D BY K. J. J. DATE 12/1/91

DEPT. NO. 653

CLIENT LP&L

PROJECT WATERFORD #3

SUBJECT CONC. BLOCK WALLS - WALL H-2.

ITEM # 3

OWN WEIGHT : SECT. 'A' :  $1.33 \times 150 + 2.00 \times 60 = 320 \#$

$H_w = 320 \times .3 = 96 \# / 1$  (VERT)

SECT. 'B' : (SAME AS SECT 'A')

$H_w = 96 \# / 1$  (VERT) =  $96 / 3.33' = 29 \# / 1'$  (HORIZ.)

SECT. 'C' :  $1.33 \times 150 + 1.33 \times 60 = 279 \#$

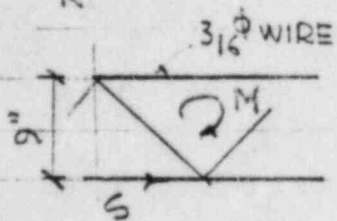
$H_w = 279 \times .3 = 84 \# / 1$  (VERT)

SECT. 'B' :  $b = 16"$ ,  $H_w = 29 \times 1.33' = 39 \# / 1$  (HORIZ.)



$R = 39 \times 3.33 + 126.0 = 129.9 + 126.0 = 255.9 \#$

$M = 129.9 \times 3.33 / 2 + 126.0 \times 1.66 = 216.3 + 209.2 = 425.5 \#'$



STRESSES ON DUROBLOCK :

$S = 425.5 \times 12 / 9 = 567.7 \#$

$A = 12 \times .19^2 / 4 = .028 \text{ in}^2$

$F_y = 65 \text{ KSI}$ ,  $F_t = .6 F_y = 39 \text{ KSI}$

$f_t = 567.7 / .028 = 20275 \text{ psi} \approx 20.2 \text{ KSI} < 39, \text{ OK}$

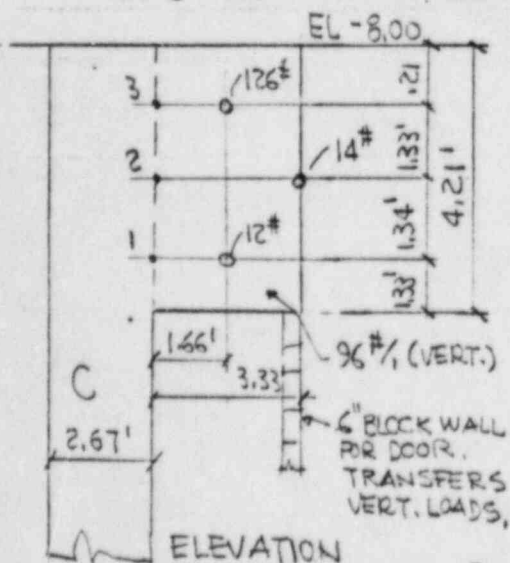
SHEAR ON CONC. WALL :

$b = 16$ ,  $j = .85$ ,  $d = 1.25"$  (SHELL THICKNESS)

$v = 255.9 / 1.25 \times 16 \times .85 = 15.1 \text{ psi} < 25, \text{ OK}$

\* Since there is a 6" block wall for door Duct-to-wall takes Horiz Loads

LOADS TRANSFERRED FROM SECT. 'B' TO SECT. 'C' :



$F_{z1} = 12 \#$   $M_{y1} = 12 \times 1.66 \approx 20 \#'$

$F_{z2} = 4 \#$   $M_{y2} = 4 \times 3.33 \approx 14 \#'$

$F_{z3} = 126 \#$   $M_{y3} = 126 \times 1.66 \approx 209 \#'$

DISTRIBUTED LOAD :

$w = 96 \# / 1$

$M_{y_w} = 96 \times 1.67 \approx 160 \# / 1$

CONCENTRATED LOADS ARE SO CLOSE

THAT THEY OVERLAP, TO SIMPLIFY

CALCULATIONS USE :

$w_f = (12 + 4 + 126) / 4.21 = 34 \# / 1$

$M_{y_f} = (20 + 14 + 209) / 4.21 = 58 \# / 1$

BEARING ON 6" BLOCK : TOTAL LOAD  $[(20+20) \times 1.3 + 126 + 320 \times 4.21 \times 1.3] \times .5 = 965 \#$ , BEARING  $= 965 / 72 = 13 \text{ psi} < 169 \text{ OK}$

BY A. LEON DATE 9/29/84

SHEET 4 OF 12

CHKD. BY [Signature] DATE 10-2-84

OFS NO. \_\_\_\_\_ DEPT. NO. 533

CLIENT LP&L

PROJECT WATERFORD #3

SUBJECT CONC. BLOCK WALLS - WALL H-2

ITEM # 5

$W_{TOP} = 96 + 34 = 130 \#/\text{ft}$        $M_{Y_{WT}} = 160 + 58 = 218 \#/\text{ft}$   
 $M_{Y_{WT}}$  IS REDISTRIBUTED THRU THE DUROWALL TO THE SOUTH WALL.

STRESSES ON DUROWALL:

$M = 218 + 132 \times 2.67 = 218 + 352 = 570 \#/\text{ft}$

$b = 16"$

$M = 570 \times 1.33 = 758 \#/\text{ft}$

$S = 758 \times 12/9 = 1011 \#$

$f_t = 1011 / 1028 = 36.1 \text{ KSI} < 39.0$       OK ✓

THEREFORE THE LOADS TRANSFERRED FROM SECT 'B' TO SECT 'C' ARE  $W' = 130 \#/\text{ft}$  ON THE TOP 4.21'.

SECT. 'C':

LOADS FOR MECH & ELECT. ATTACHMENTS =  $84 \#/\text{ft}$  ( $\approx 31.6 \#/\text{ft}^2$ )



844.2	$M_L = 2135.0 \times 8.3 - .5 \times 84 \times 8.3^2 - 132 \times 4.2 \times 6.2$	1407.0
489.5	$- 15 \times 3.6 - 9 \times 1.9 - 504 \times 1.3$	64.9
182.9	$= 10663.5 \#/\text{ft} \approx 10.7 \text{ K}$	1110.7
11.1		3.9
5.8		3.2
311.0	$M_R = 2135.0 \times 26.8 - .5 \times 84 \times 26.8^2 - 132 \times 4.2 \times 24.7$	193.0
279.0	$- .5 \times 84 \times 15.4^2 - 15 \times 22.1 - 9 \times 20.4 - 504 \times 19.8$	229.0
2.9	$- 507 \times 18.5 - 8 \times 17.2 - 18 \times 15.9$	4.1
7.6	$= -16900.1 \#/\text{ft} \approx -16.9 \text{ K}$	10.4
$R_L = 2135.0$		$R_R = 3025.2$

$V_{1.83'} = 3025.2 - 168 \times 1.83 = 2717.8 \#$

$M_{1.83'} = 3025.2 \times 1.83 - .5 \times 168 \times 1.83^2 - 16900.1 = -11645.3 \#/\text{ft} \approx -11.6 \text{ K}$       OK ✓

WHICH IS LESS THAN  $12.68 \text{ K}$  ACCORDING TO SH4 OF 11 OF CALCULATIONS DONE ON 3/15/84, (COPY ATTACHED). THEREFORE CONC. BLOCK WALL IS OK.

BY A. LEON DATE 9/29/84

SHEET 5 OF 12

CHKD. BY [Signature] DATE 10-2-84

OFS NO. \_\_\_\_\_ DEPT. NO. 653

CLIENT LD=L

PROJECT WATERFORD # 3

SUBJECT CONC. BLOCK WALLS - WALL H-2.

ITEM # 5

$\underline{U} = 2713 / 16 \times .85 \times 9 = \underline{22.7} < 25 \text{ psi}$  OK ✓

CONC. CURB :  $M = 16.9 \text{ k}^1$ ,  $V = 3.1 \text{ k}$   $b = 2.67'$   $d = 10''$   $j = .85$   
 AS PROVIDED IS #6 @ 12'; FOR  $b = 2.67'$  THERE IS AT LEAST  $3 \#6 = 1.32 \text{ in}^2$

$\underline{A_s} = 16.9 \times 12 / 24 \times 10 \times .85 = .99 \text{ in}^2 < 1.32$  OK ✓

RESISTING MOMENT FOR THE CONC. SECTION :

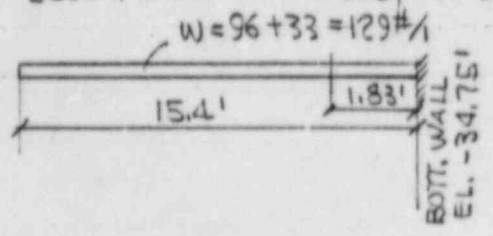
FOR  $f'_c = 4 \text{ KSI}$ ,  $f_y = 60 \text{ KSI}$ ,  $f_c = 1.8 \text{ KSI}$ ,  $f_s = 24 \text{ KSI}$ ,  $n = 8$ ,  $K = 295 \text{ psi}$

$\underline{M_{RES.}} = Kbd^2 = 295 \times (2.67 \times 12) \times 10^2 / 12 = \underline{78.8 \text{ k}^1}$

THEREFORE THE CONC. CURB IS OK ✓

SECT 'A'

LOADS FOR MECH. & ELECT. ATTACHMENTS: ACCORDING TO MECH. & ELECT. FIELD SKETCHES, THE LOADS DUE TO ATTACH. ARE VERY SMALL. CONSERVATIVELY ASSUME  $10 \#/ft'$ .  $W = 10 \times 3.33 = 33 \#/ft'$  (VERT.)



$W = 96 + 33 = 129 \#/ft'$   
 $R = 129 \times 15.4 = 1986.6 \#$   
 $M = .5 \times 129 \times 15.4^2 = 15296.8 \#^1 \approx 15.3 \text{ k}^1$   
 $V_{1.83} = 1986.6 - 129 \times 1.83 = 1750.5 \# \approx 1.8 \text{ k}$   
 $M_{1.83} = 1986.6 \times 1.83 - .5 \times 129 \times 1.83^2 = 15296.8 - 11877.3 \#^1 \approx 11.9 \text{ k}^1$

WHICH IS LESS THAN  $12.7 \text{ k}^1$  ACCORDING TO SH 4 OF 11 OF CALCULATIONS DONE ON 3/15/84 (COPY ATTACHED). THEREFORE CONC. BLOCK WALL IS OK ✓

$\underline{U} = 1751 / 16 \times .85 \times 9 = \underline{14.3 \text{ psi}} < 25$  OK ✓

CONC. CURB DOES NOT REQUIRED TO BE CHECKED BECAUSE MOMENT AND SHEAR ARE LESS THAN THE ONES USED TO CHECK CONC. CURB FOR SECT. 'C',

BY SURKMANIAN DATE 9-26-84

SHEET 6 OF 12

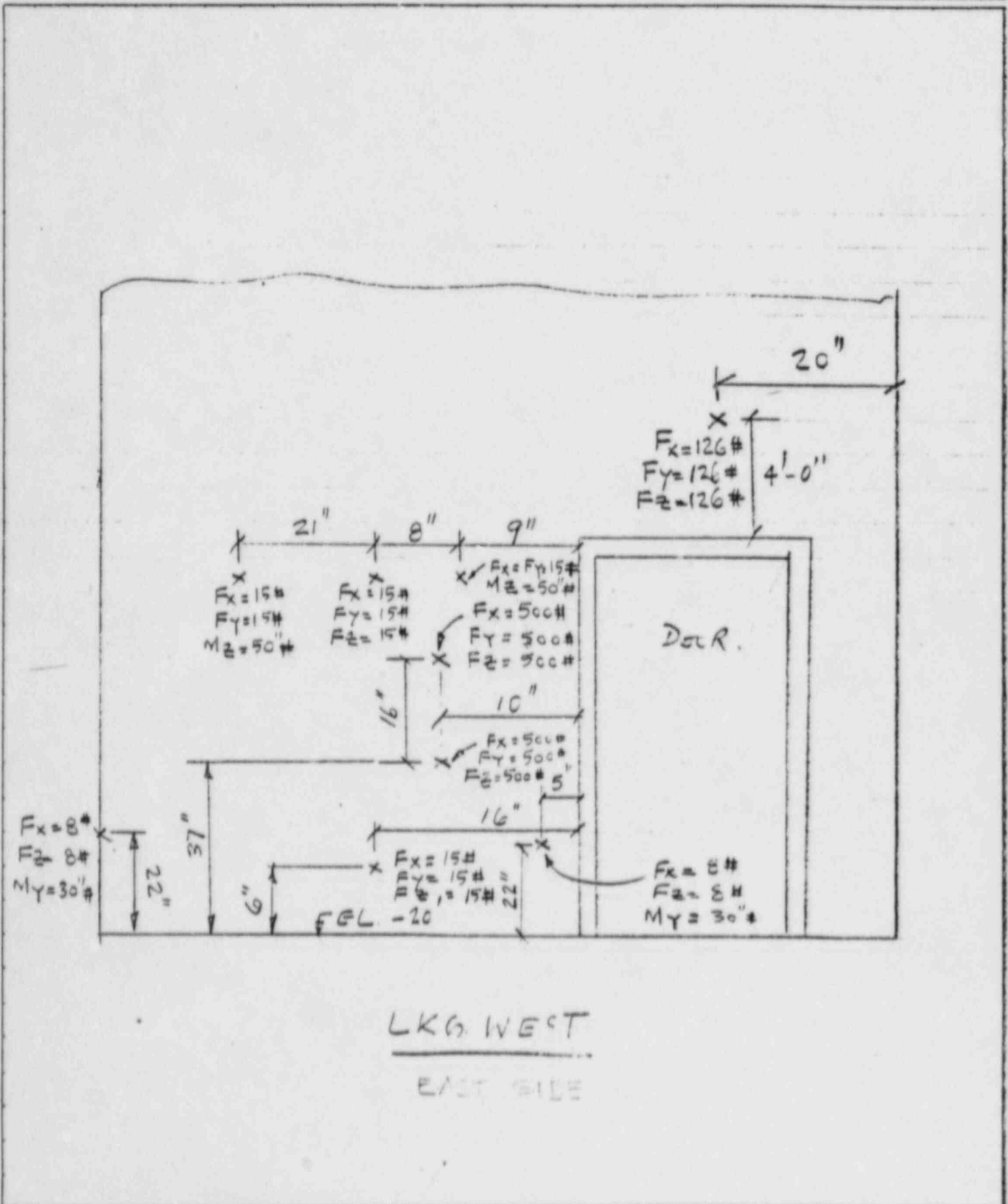
CHKD. BY \_\_\_\_\_ DATE \_\_\_\_\_

DPS NO. LCU-1564 DEPT. ESS

CLIENT L.P. & L

PROJECT WATERFORD SES UNIT 3

SUBJECT S/K LOADS ON BRICK WALL (H.2)



LKG WEST  
EAST SIDE

94220F42

70F12  
ITEM # 5

1'-8" TO SUPT.  
ON DIFF WALL

Bruce Lewis

WALL H 2

4'-5"

2'-0"

2"

20# (ASS'D)

SHALL  
BOX

4.29 x 1.5 @ 7'

1 1/2" TO WALL

20# (ASS'D)  
FIRE  
BOX

1165

8'-4"

9'-9"

11'-6"

150 x 23 @ 1'

4'-5"

4.29 x 5' = 22'

3/4" 1.50%

4.29 x 1.5

1 1/2" TO WALL

1 1/2"  $\phi$  S6-7904102-11

SUPT. ON H 12 @ 2'-5"

10"

2'-8"

1 1/2" TO WALL

FLR EL. 20'

FACING EAST EL. 20'

INSIDE OF STAIRWAY # 6

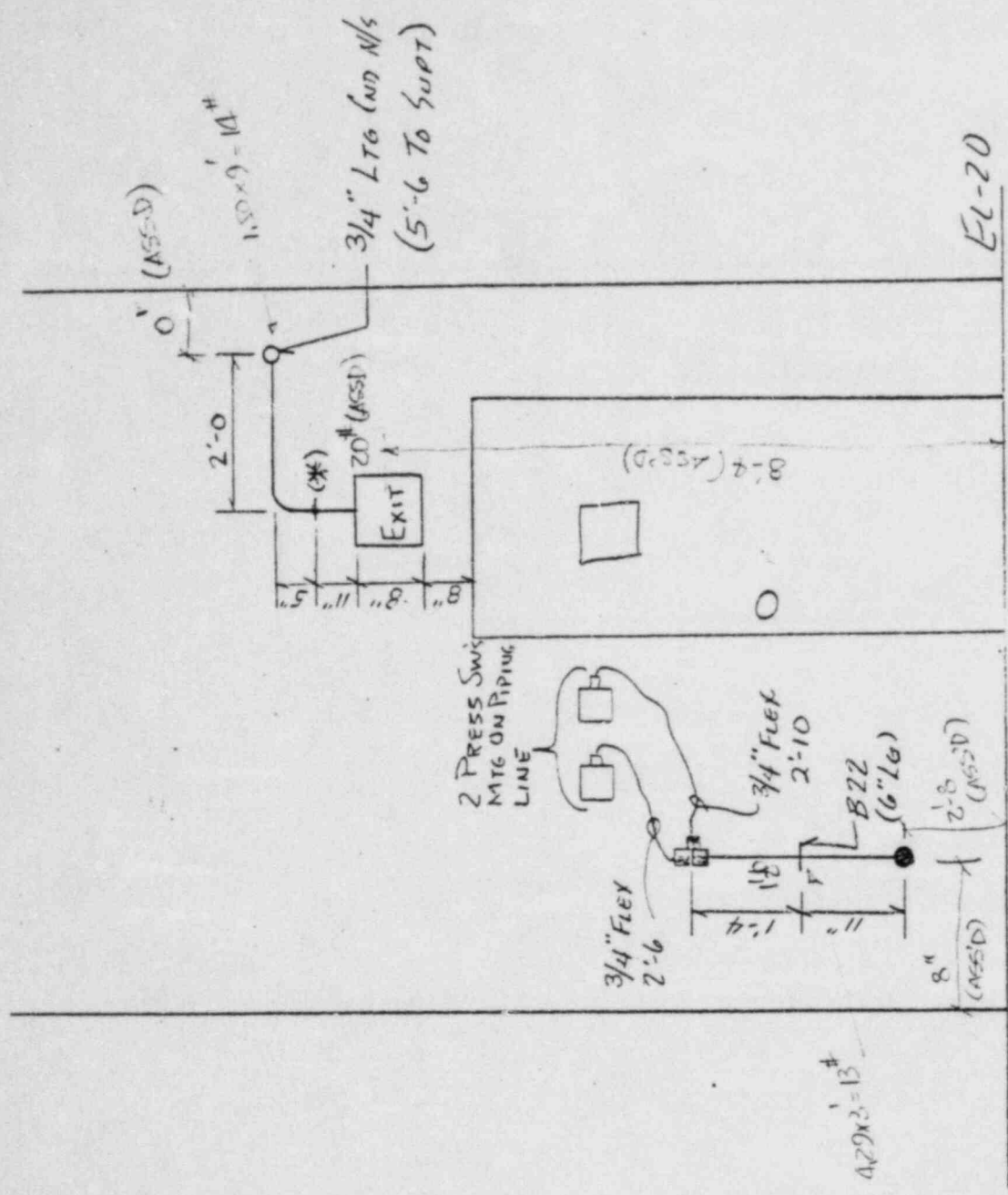
BL

WALL CLIP

9-26-84

T. Peterson  
 5-24-54

5423 OF 42  
 3 OF 12  
 ITEM # 5



A2 WALL LOOKING WEST

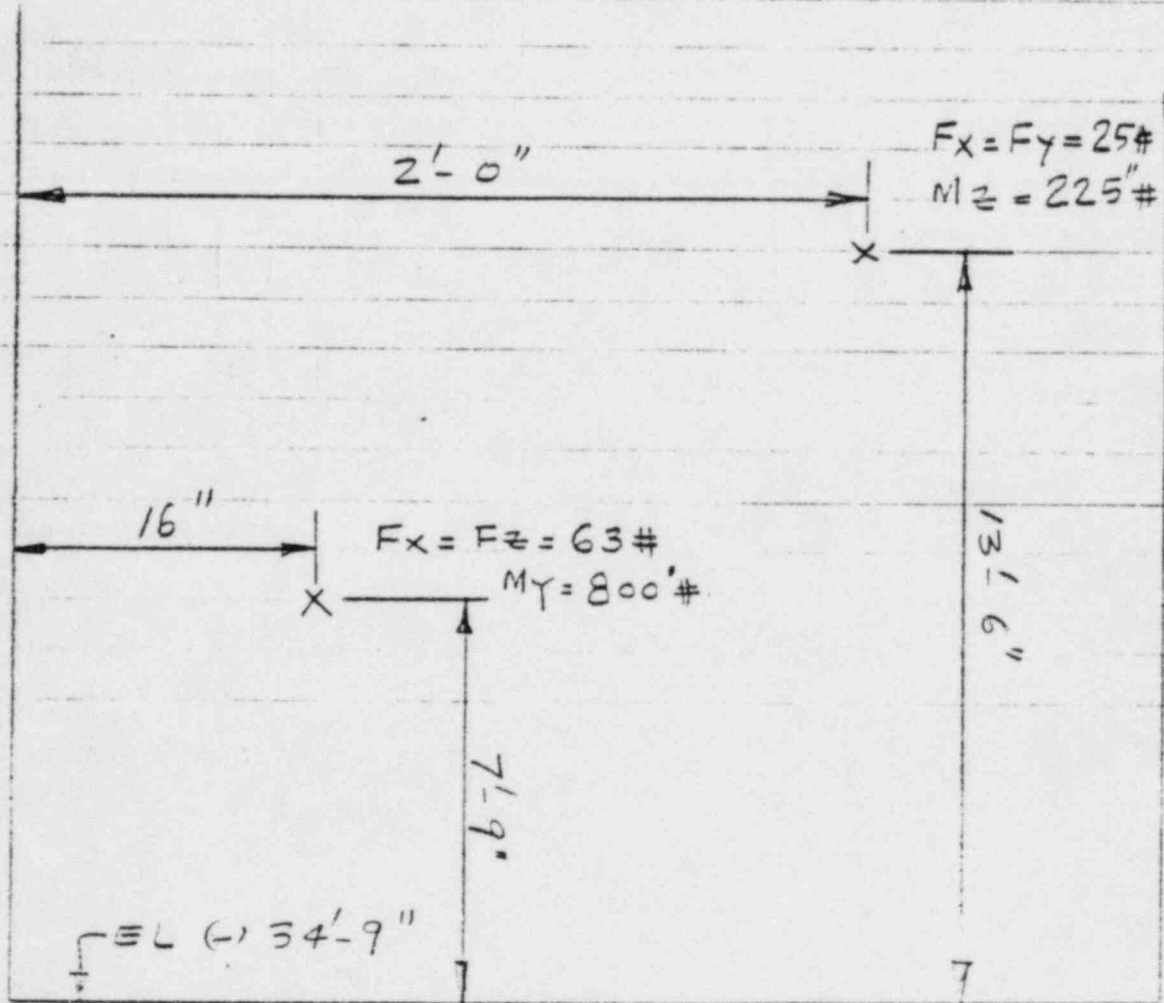


BY THS DATE 10-1-84  
CHKD. BY DM DATE 10-1-84

SHEET 9 OF 12  
OFFS NO. L00-1564 DEPT. ESS  
NO. ESS

L.P. #L

CLIENT \_\_\_\_\_  
PROJECT WATERFORD SES UNIT 3 ITEM # 5  
SUBJECT BLOCK WALL (H-2) (PIPE SUPPORT) LEADS



ELE. LKG WEST

BY TL ROBINSON DATE 10-1-84

SHEET 10 OF 12

CHKD. BY \_\_\_\_\_ DATE \_\_\_\_\_

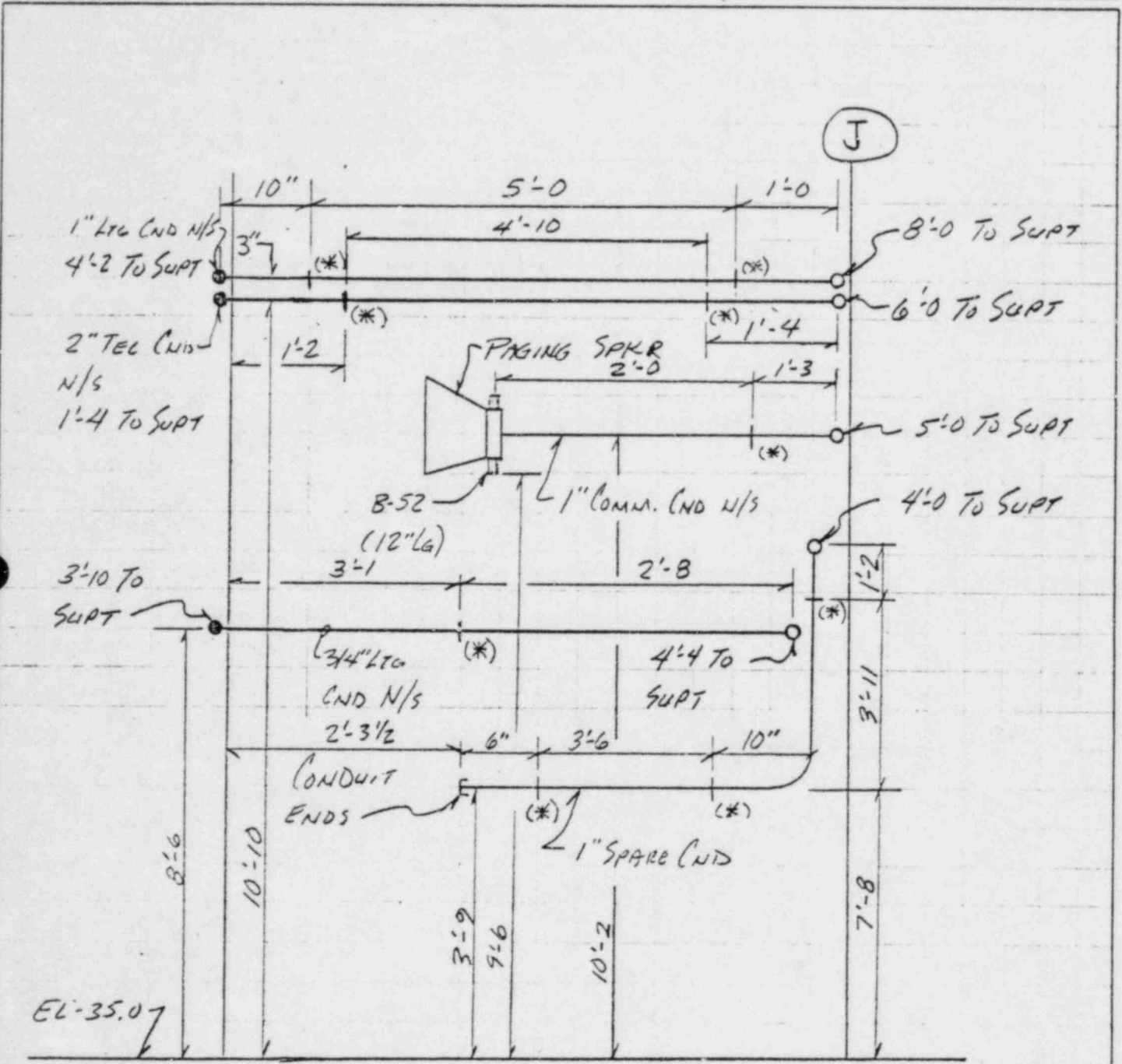
OFS NO. \_\_\_\_\_ DEPT. \_\_\_\_\_ NO. \_\_\_\_\_

CLIENT CP&C

PROJECT WATERFORD SES #3

SUBJECT CONC. BLOCK WALL (#2 WALL @ EL-35.0)

ITEM # 5



H2 WALL @ EL-35.0 LOOKING WEST

\* = CONDUIT STRAP B-288 SA 20

BY J. ROBINSON DATE 10/2/84

SHEET 11 OF 12

CHKD. BY \_\_\_\_\_ DATE \_\_\_\_\_

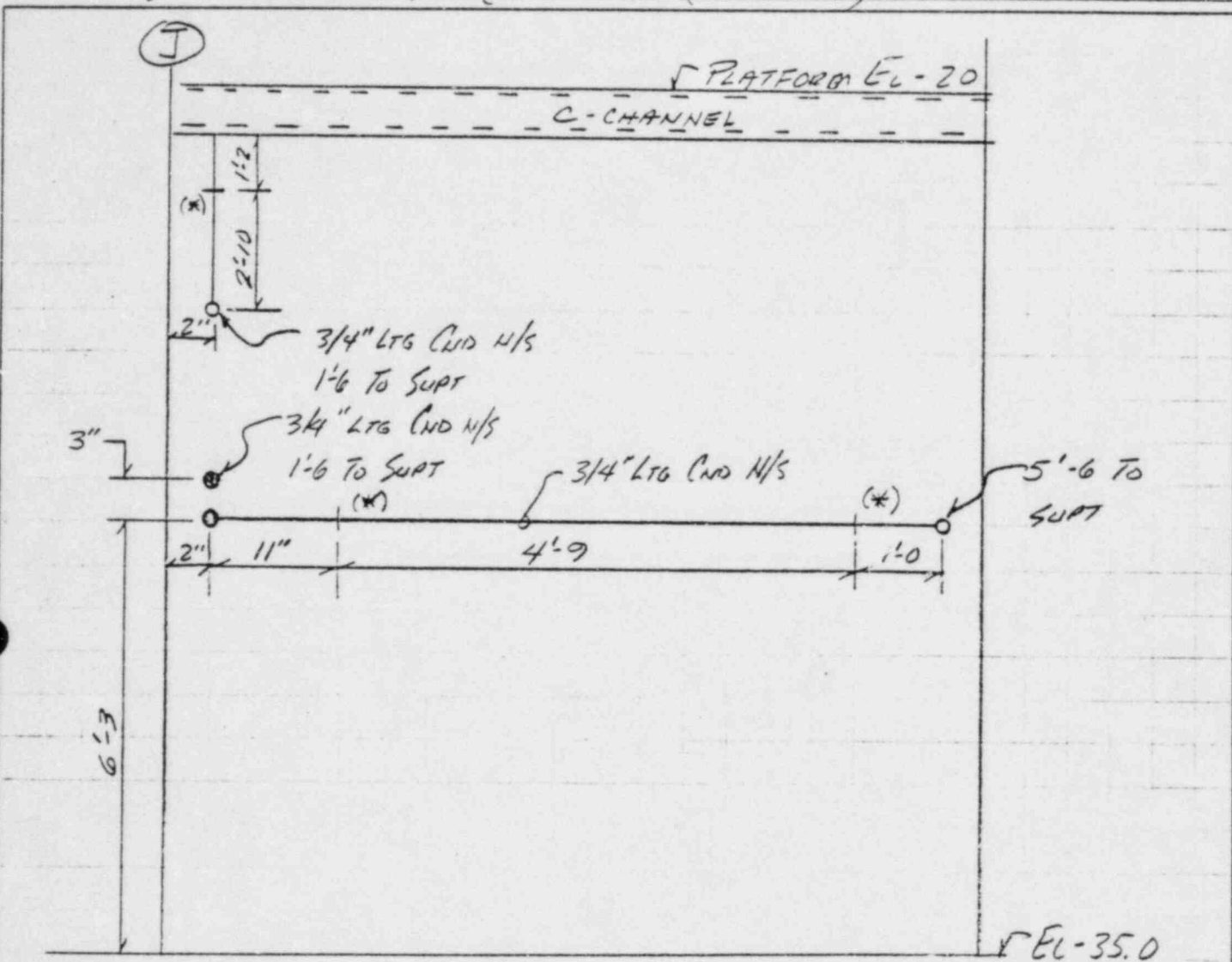
OFS NO. \_\_\_\_\_ DEPT. NO. ESSE

CLIENT CP&L

PROJECT WATERFORD SES #3

SUBJECT CONC. BEAM WALL (H2 WALL @ EL-35)

ITEM # 5



H2 WALL @ EL-35.0 LOOKING EAST

BY B. LEWIS DATE 10-1-84

SHEET 12 OF 12

CHKD. BY \_\_\_\_\_ DATE \_\_\_\_\_

OFS NO. \_\_\_\_\_ DEPT. NO. ESSE

CLIENT LP&L

PROJECT UNTERFORD #3

SUBJECT I & C ATTACHMENTS WALL H-2 ITEM #5

THERE ARE NO I & C INST.'S, INST LINES, OR SUPPORTS ATTACHED TO WALL H-2, ELEV -34.75' TO -19.38'

BY G W U DATE 9/27/84

SHEET 1 OF 7

CHKD. BY K Chik DATE 9/29/84

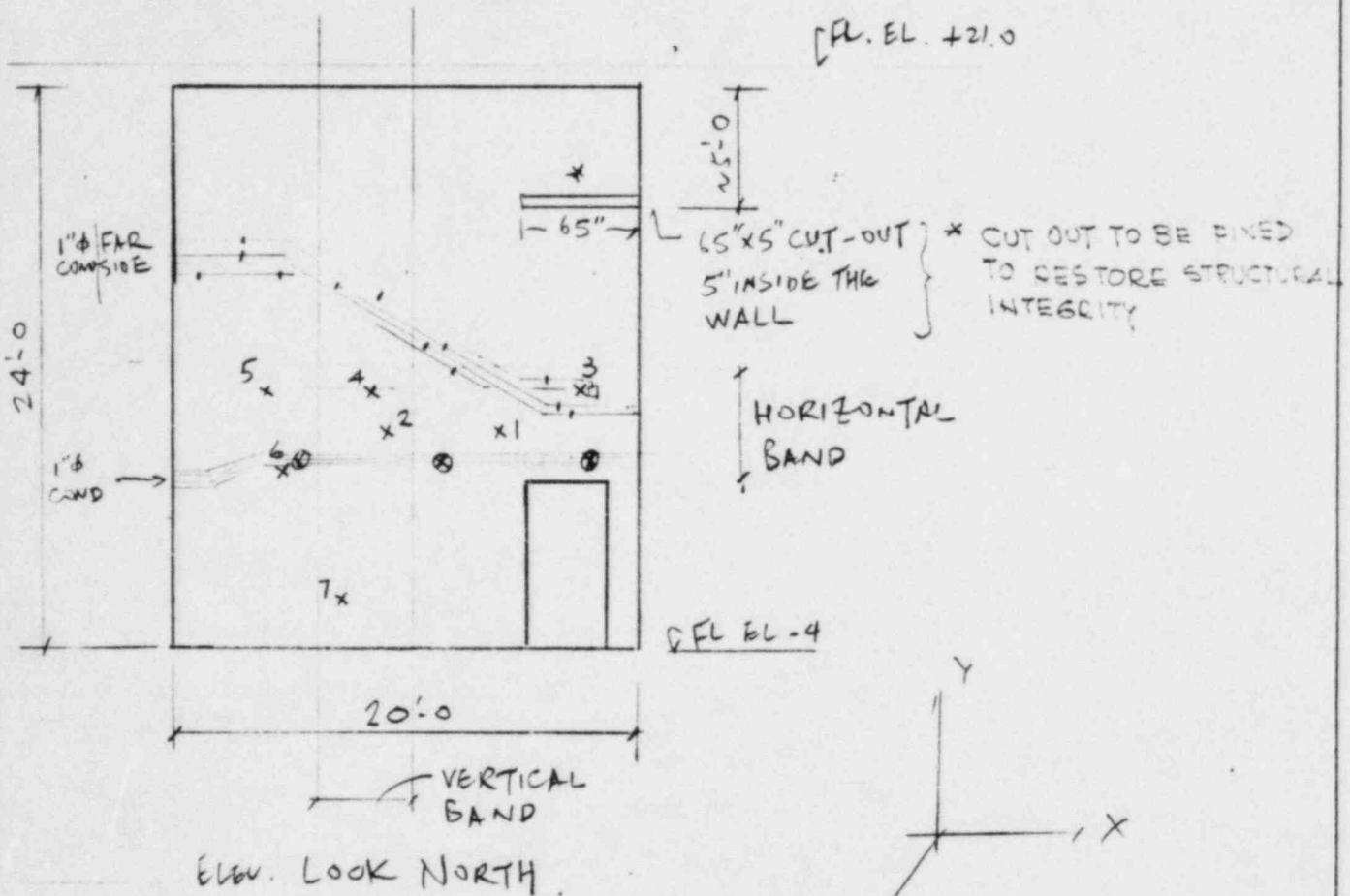
OFS NO. \_\_\_\_\_ DEPT. NO. 653

CLIENT LP & L

PROJECT WATERFORD S.E.S. #3

SUBJECT CONCRETE MASONRY WALL H 13 ITEM # 5

REF: DWG. G760502



FOR MECH. & ELECT. LOADS, SEE SH5, 6 & 7 OF 7.

THE PIPING AND ELECTRICAL COND LOADS ARE CONCENTRATED IN THE TWO BANDS OF WALL.

THE CONDUITS SUPPORTED BY THE WALL ARE GENERALLY 1" φ CONDUIT WEIGHTS 2.33 LB/FT ITS EFFECT ON THE WALL IS MINIMUM.

P 2.  $F_y = 75^{\#}$ ,  $M_x = 2400^{\#}$   
 P 4.  $F_y = 18^{\#} = F_z$ ,  $M_x = 324^{\#}$   
 P 7.  $F_x = F_y = F_z = 126^{\#}$

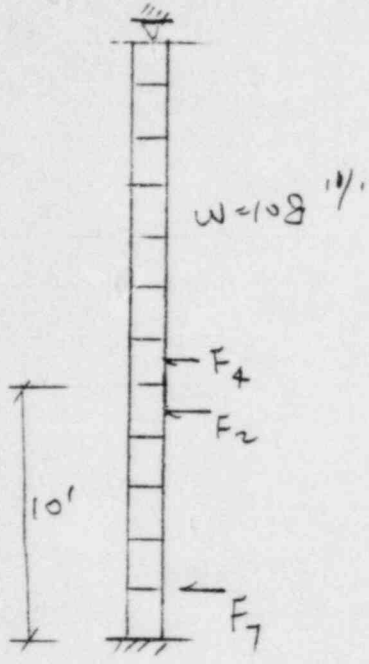
P 1.  $F_y = 100^{\#}$ ,  $M_x = 3200^{\#}$   
 P 3.  $F_y = F_z = 18^{\#}$ ,  $M_x = 324^{\#}$   
 P 5.  $F_y = F_z = 18^{\#}$ ,  $M_x = 324^{\#}$   
 P 6.  $F_y = 63^{\#}$ ,  $M_x = 2000^{\#}$

BY G W U DATE 9/27/84  
 CHKD. BY ... DATE 9/29/84  
 CLIENT LP & L

SHEET 2 OF 7  
 DEPT. 653  
 OFS NO. \_\_\_\_\_

PROJECT WATERFORD S.E.S #3  
 SUBJECT CONCRETE BLOCK WALL H13 ITEM # 5

① CHECK WALL AS A 48" WIDE VERTICAL STRIP.



D.L.  $w = \frac{2 \times 60 + 150}{3} = 90 \text{ lb/ft}$   
 $\times 4$   
 $\frac{360 \text{ lb/ft}}$

SEISMIC LOAD  $w = .3 \times 360 = 108 \text{ lb/ft}$

$F_7$  IS SO CLOSE TO THE FIXED END ITS EFFECT ON THE BEAM IS NEGLIGIBLE.

CONSIDER  $F_2$  &  $F_4$  ACT ON THE SAME POINT WITH A FORCE =  $F_2 + F_4$

$M_{2,4} = M_{x2} + M_{x4} = 2400 + 324 = 2724 \text{ ft-lb}$

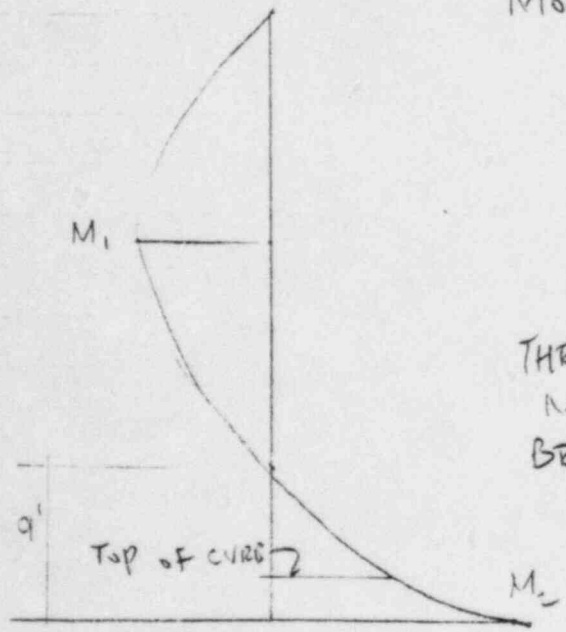
MOMENT DUE TO D.L.

$M_1 = \frac{q}{128} w l^2 = \frac{q}{128} (108)(24)^2 = 4374 \text{ ft-lb}$   
 $= 52,488 \text{ in-lb}$

$M_2 = \frac{w l^2}{8} = \frac{108}{8} (24)^2 = 7776 \text{ ft-lb}$   
 $= 93,312 \text{ in-lb}$

THE PIPING LOAD ACTS NEAR THE ZERO MOMENT ZONE ON THE BEAM WILL BE ADDED TO THE END.

$M = \frac{M_{1,4}}{2} \left( \frac{3 \times 14^2}{24^2} - 1 \right) = 0.01 M_{1,4} = 27.24 \text{ ft-lb}$



M-DIAG  
V.L.

HOWEVER @  $M_1$ , THE MOMENT DUE TO  $M_{2,4}$  IS ABOUT  $\frac{1}{4} (2724) = 680 \text{ ft-lb}$

BY E. Wu DATE 9/27/84

SHEET 3 OF 7

CHKD. BY [Signature] DATE 9-27-84

OFS NO. \_\_\_\_\_ DEPT. NO. 653

CLIENT LP & L

PROJECT WATERFORD S.E.S. #2

SUBJECT CONCRETE BLOCK WALL - H13 ITEM # 5

$$M_1 = 52,488 + 6P_0 = 53,688 \text{ " \#}$$

SAY  $M_1 = 53,700 \text{ " \#}$

$$\underline{\underline{A_s}} = \frac{M}{f_y j d} = \frac{53700}{24000 \times 9} = 0.28 \text{ " } < 0.88 \text{ "}$$

(2 #6) o.k.

$$M_2 = 93,312 \text{ " \#}$$

SAY  $M_2 = 94,000 \text{ " \#}$

$$A_s = \frac{M}{f_y j d} = \frac{94000}{24000 \times 9} = 0.49 \text{ " } < 0.88 \text{ "}$$

o.k.

REACTION AT BOTTOM

$$R = \frac{5}{8} w l = \frac{5}{8} (108)(24) = 1620 \text{ lb}$$

CHECK SHEAR SAY  $R = 2000 \text{ \#}$

$$\underline{\underline{v}} = \frac{R}{bd} = \frac{2000}{48 \times 9} = \underline{\underline{4.6 \text{ psi}}} < 28 \text{ psi}$$

o.k.

BY G. Wu DATE 9/27/84

SHEET 4 OF 7

CHKD. BY \_\_\_\_\_ DATE 7/22/85

OFS NO. \_\_\_\_\_ DEPT. 653  
NO. \_\_\_\_\_

CLIENT LP & L

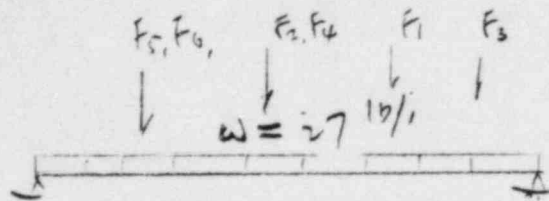
PROJECT WATERFORD S.E.S #2

SUBJECT CONCRETE MASONRY WALL H13 ITEM # 5

⊖ CHECK WALL WITH A HORIZONTAL STRIP CONSISTS OF 4 COURSES. WIDTH =  $4 \times 8 = 32"$  AND ASSUME IT IS SIMPLY-SUPPORTED AT ENDS

D.L.  $w = 90 \text{ lb/ft}$

$w = 0.3 \times 90 = 27 \text{ lb/ft}$



LOADING FROM  $F_1$  THRU  $F_4$  ARE  $F_2$ 'S

$F_y$  &  $M_x$  ARE NOT IN EFFECT.

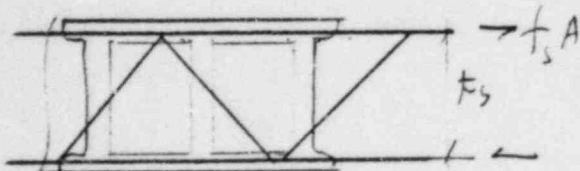
THE ONLY  $F_2$ 'S ARE  $F_{23} = F_{25} = 1 \text{ k}^{\#}$ , VERY SMALL.

MOMENT DUE TO D.L

$M_+ = \frac{1}{8} w L^2 = \frac{1}{8} (27)(19)^2 = 1218 \text{ k}^{\#} = 74,620 \text{ in}^{\#}$

SAY  $M_+ = 15,000 \text{ in}^{\#}$

THIS MOMENT WILL BE RESISTED BY THE DUR-O-WALL TRUSS.  $\phi = 3/16"$ ,  $A = \frac{\pi}{4} (\phi)^2 = .028 \text{ in}^2$



STRESS ON 2 DUR-O-WALL OVER 4 COURSES

$f = \frac{M}{2At_c} = \frac{15,000 \text{ in}^{\#}}{2 \times 2 \times 10 \times 2} = 26,800 \text{ psi}$

$< .6 F_y = .6 \times 65 = 39 \text{ KSI}$  ✓

OK.



BY SUFK DATE 9-26-84

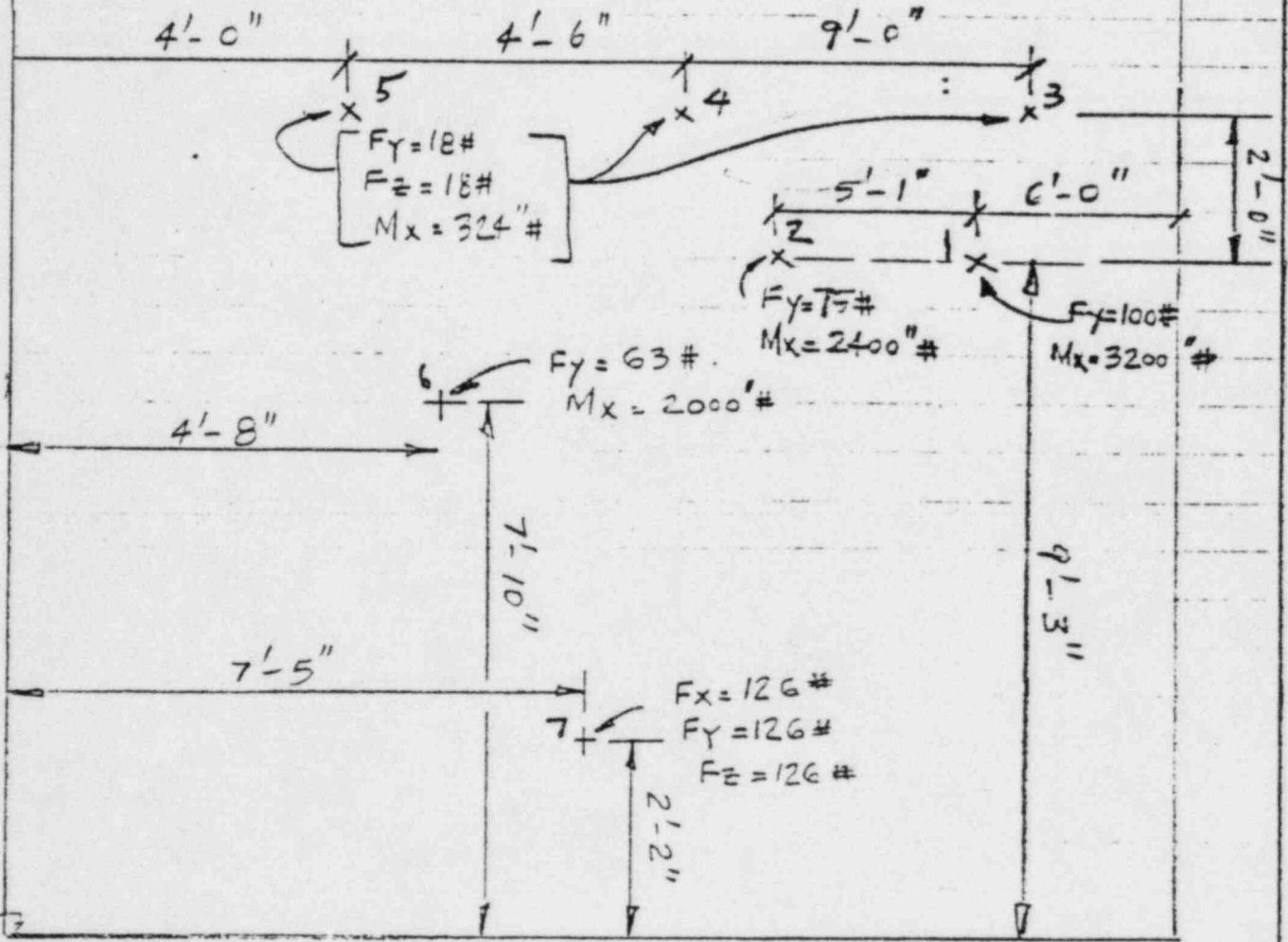
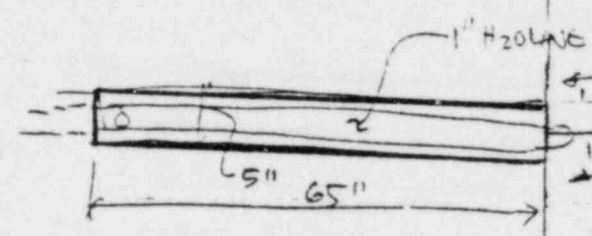
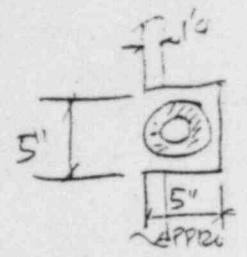
SHEET 5 OF 7

CHKD. BY \_\_\_\_\_ DATE \_\_\_\_\_

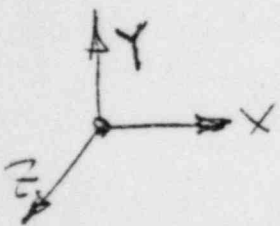
OFS NO. LCO-1564 DEPT. NO. ESSE

L.P #L

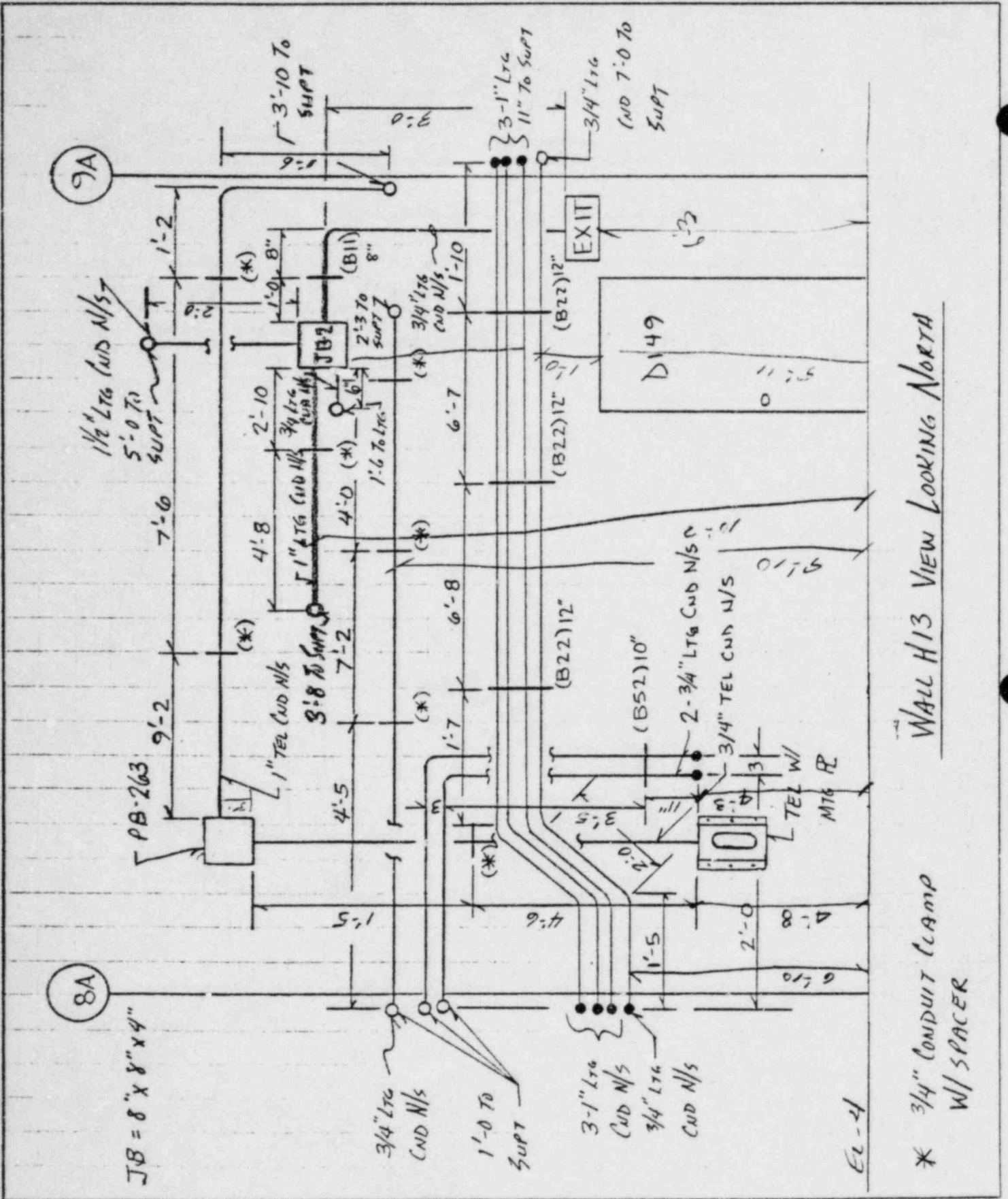
CLIENT \_\_\_\_\_  
PROJECT WATERFORD SES UNIT 3  
SUBJECT S/R LOADS ON BLOCK WALL (H-13) ITEM#5



EL-4'-0"



ELE. LKG NORTH



WALL H13 VIEW LOOKING NORTH

\* 3/4" CONDUIT CLAMP  
W/ SPACER

BY T. Rogan DATE 5-25-81

CHKD. BY \_\_\_\_\_ DATE \_\_\_\_\_

CLIENT LPBL

PROJECT WATERPARK SETS #3

SUBJECT WALL H13 & STAIRWAY #C

51330F42 SHEET 6 OF 7

DEPT. NO. \_\_\_\_\_

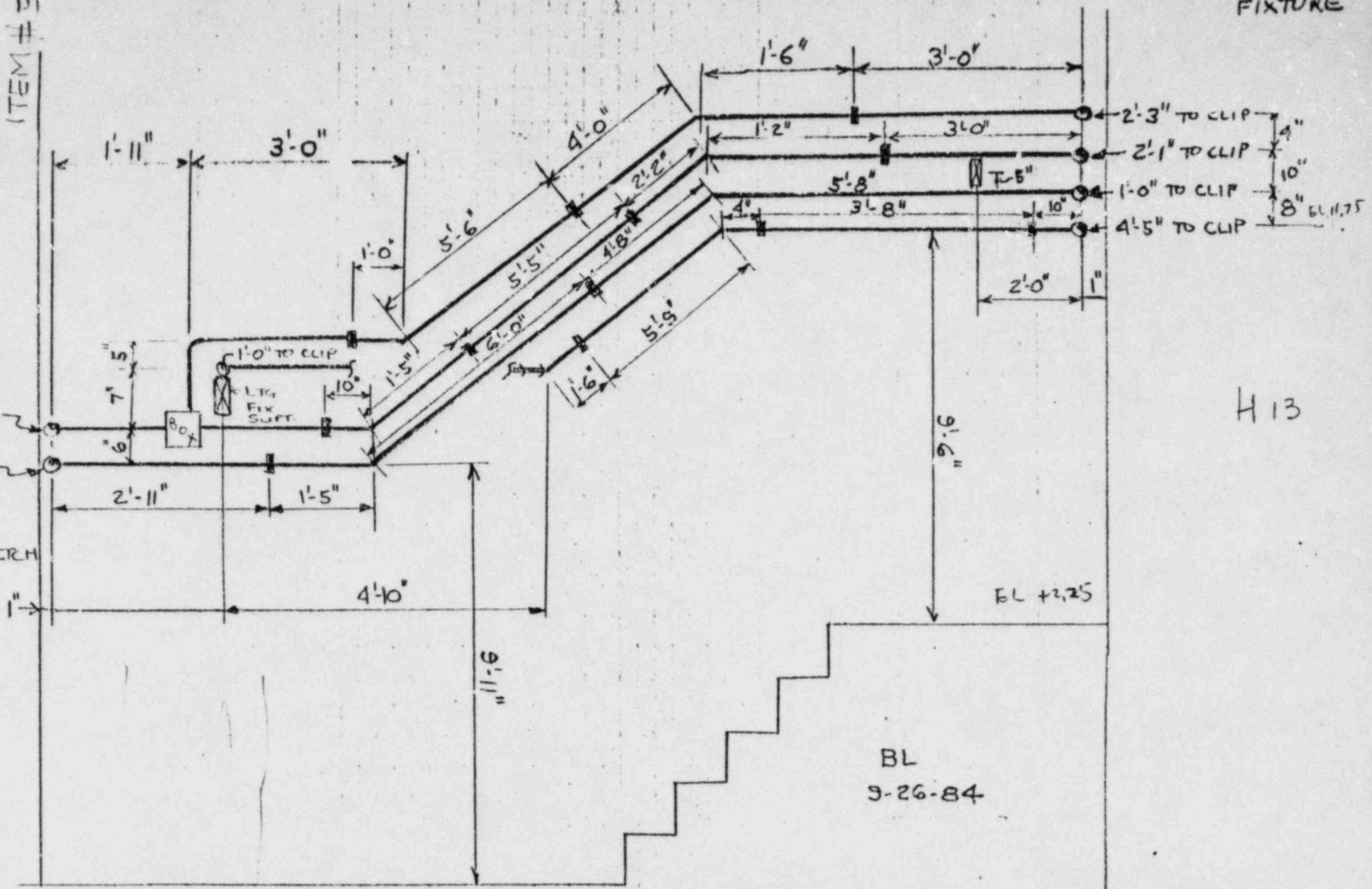
OFS NO. \_\_\_\_\_

EBASCO SERVICES INCORPORATED

☒ = SUPT FOR LIGHT FIXTURE

SH 34 OF 42  
7 OF 7  
ITEM # 5

CONT ON OTHER SKETCH



H 13

EL +2.25

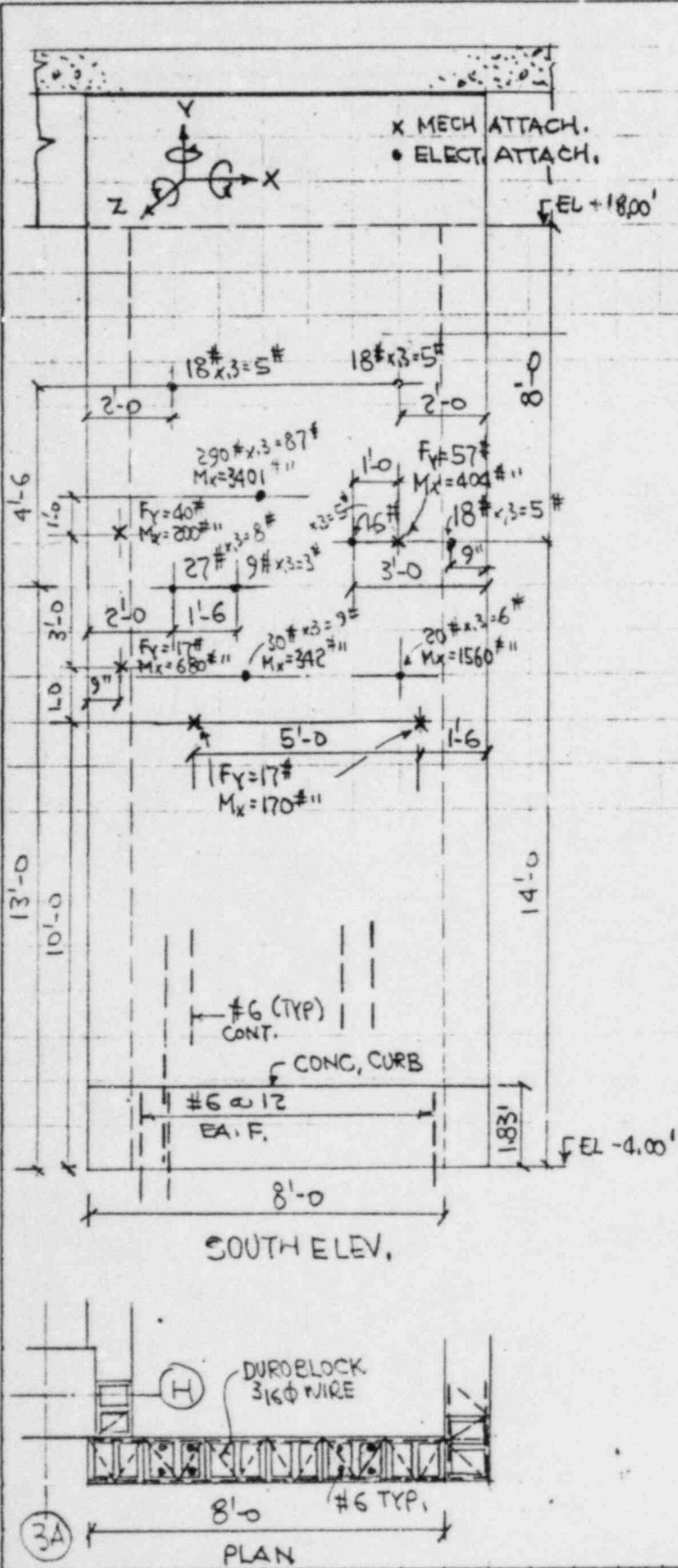
BL  
9-26-84

FLR ELEV. (-) 4'-0" FACING So.  
INSIDE STAIRWELL

BY A. LEON DATE 9/30/84  
 CHKD. BY K. Shea DATE 10-4-84  
 CLIENT LP & L  
 PROJECT WATERFORD #3  
 SUBJECT CONC. BLOCK WALLS - W29

SHEET 1 OF 8  
 DEPT. 653  
 OFS NO. \_\_\_\_\_  
 NO. \_\_\_\_\_

ITEM #5



1. REFERENCES:
- 1.1 DWG. G-760502
  - 1.2 FIELD SKETCHES FROM MECH, 9/26/84  
ELECT. 9/28/84
  - 1.3 CALCULATIONS DONE ON 3/15/84

2. CRITERIA:
- CASE A - CHECK REINF. WITHOUT AXIAL LOAD.
  - CASE B - CHECK COMP. STRESS OF MASONRY WITH AXIAL LOAD.
- 2.1 WALL W29 IS EVALUATED AS FIXED AT EL -4.00' & SIMPLE SUPPORTED AT EL +18.00'
- 2.2 THE CRITICAL LOADS ARE  $F_z$  &  $M_x$  FOR MECH. LOADS AND  $F_y$  &  $M_x$  FOR ELECT. & OWN WGT LOADS.
- 2.3 THE DUROBLOCK (TRUSS) REDISTRIBUTES THE LOADS ON THE WHOLE WIDTH OF THE WALL.
- 2.4 IF WALL IS NOT STRUCT ABEQ, VERIFY WITH PLATE ACTION OF WALL

3. LOADS:
- 3.1 OWN WGT:  $b = 48"$   
 $W = 1.33' \times 150 + 2.67' \times 60 = 360 \# / (VERT.)$   
 HORIZ. COMP =  $360 \times 3 = 108 \# / (VERT.)$

- 3.2 MECH & ELECT: FROM FIELD SKETCH ELECT. LOADS WHEN ATTACHED WITH ANCHOR  $\#6$  GENERATES FIXITY AT THE WALL AND THEREFORE IS A MOMENT THAT FOR EARTHQUAKE WILL BE AFFECTED BY 1.3g.

- 3.3. EARTHQUAKE FACTOR = 1.3g.

BY A. LEON DATE 10/1/84

SHEET 2 OF 8

CHKD. BY K. Shih DATE 10-1-84

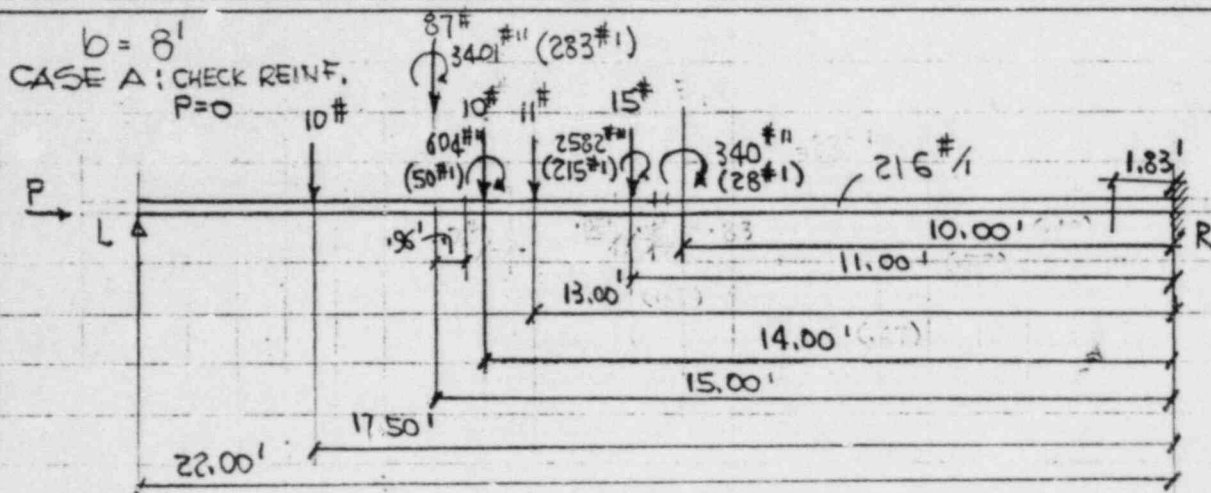
DEPT. NO. 653

CLIENT LP&L

PROJECT WATERFORD #3

SUBJECT CONC. BLOCK WALLS - W29

ITEM # 5



$$1782.0 \quad M_R = 1817.3 \times 22.0 - .5 \times 216 \times 22^2 \quad 2970.0$$

$$7.0 \quad -10 \times 17.50 - 87 \times 15.0 - 10 \times 14.0 \quad 3.0$$

$$46.9 \quad -11 \times 13 - 15 \times 11 + 283 \quad 40.1$$

$$4.8 \quad + 50 + 215 + 28 \quad 5.2$$

$$4.6 \quad = -13643.4 \#1 \approx -13.6 \text{ Kf} \quad 6.4$$

$$4.7 \quad \quad \quad \quad \quad \quad \quad 10.3$$
  

$$- 17.4 \quad + 17.4$$

$$- 3.0 \quad + 3.0$$

$$- 11.0 \quad + 11.0$$

$$- 1.3 \quad + 1.3$$
  

$$R = 1817.3 \approx 1.8 \text{ K}$$

$$M_{1.83} = 1817.3 \times 7.96 - .5 \times 216 \times 7.96^2 \quad 3067.7 \approx 3.1$$

$$-10 \times 3.46 - 87 \times 3.96 + 283 \quad = 7787.5 \#1 \approx 7.8 \text{ Kf}$$

$$M_{1.83} = 3067.7 \times 1.83 - .5 \times 216 \times 1.83^2 - 13643.4$$

$$= -8391.2 \#1 \approx -8.4 \text{ Kf}$$

$$V_{1.83} = 3067.7 - 216 \times 1.83$$

$$= 2672.4 \# \approx 2.7 \text{ K}$$

THEREFORE MAX. MOM. FOR THE BLOCK WALL = -8.4 Kf FOR b=96" ACCORDING TO SH 4 OF 11 OF CALCULATIONS DONE ON 3/15/84, (COPY ATTACHED), THE ALLOW. MOMENT FOR 48" IS 12.7 KI AND FOR 96" IS  $12.7 \times 2 = 25.4 \text{ KI}$  WHICH IS LARGER THAN THE ACTUAL MOMENT THEREFORE CONC. BLOCK WALL IS OK.

$$v = 2672.4 / 16 \times 2 \times 9 = 9.3 \text{ psi} < 20 \times 1.3 = 26 \text{ OK}$$
  
 CONC. CURB  

$$M = 13.6 \text{ Kf} \quad V = 3.1 \text{ K} \quad b = 96" \quad d = 10" \quad j = .85 \quad A_s = \#6 @ 12 = 3.52 \text{ in}^2$$

$$A_s = 13.6 \times 12 / 24 \times 10 \times .85 = 1.80 \text{ in}^2 < 3.52 \text{ OK}$$

BY A. LEON DATE 10/6/84

SHEET 3 OF 8

CHKD. BY R. Shih DATE 10/6-84

OFS NO. \_\_\_\_\_ DEPT. NO. 653

CLIENT LP&L

PROJECT WATERFORD # 3

SUBJECT CONC. BLOCK WALLS - WALL W29 -

ITEM # 5

GASE B: CHECK MASONRY STRESS WITH P (AXIAL FORCE);

CHECKING OF WALL UNDER COMBINED BENDING & AXIAL LOAD:

1. VERTICAL FORCES ON FACE OF WALL (ELECT. ATTACHMNTS.)

$$F_y = 18 + 18 + 290 + 16 + 18 + 27 + 9 + 30 + 20 = 446 \#$$

$$F_{y \text{ SEISMIC}} = 446 \times (1 + .30) = 580 \# = .6 \text{ K}$$

2. VERTICAL FORCES @  $\phi$  OF WALL (MECH. ATTCH MTS.)

$$F_y = 40 + 57 + 17 + 17 + 17 = 148 \#$$

3. WIGHT OF WALL =  $360 \# \times 2 \times (22.0' - 1.83') = 14522 \#$

$$F_{y \text{ SEISM}} = 14522 \times (1 + .30) = 18879 \#$$

$$\text{TOTAL } F_y \text{ @ } \phi \text{ WALL} = 18879 + 148 = 19207 \# \approx 19.2 \text{ K}$$

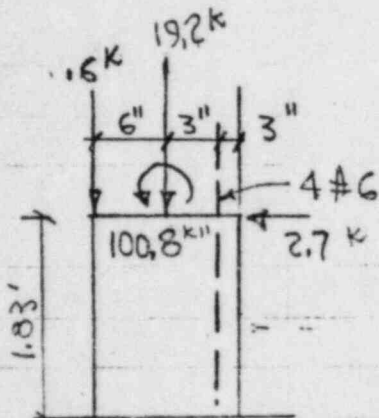
$$\text{FROM SH 2 OF 3, } M = 8.4 \text{ K}', V = 2.7 \text{ K}$$

$$M = 8.4 \times 12 = 100.8 \text{ K}''$$

TAKING MOMENTS ABOUT  $\phi$  OF REINFORCEMENT:

$$M_{\text{TOT.}} = 100.8 + .6 \times 9 + 18.1 \times 3 = 160.5 \text{ K}''$$

$$j = .83, F_s = 24 \text{ KSI, } d = 9, b = 32''$$



AREA OF  $b = 96''$  SECTION:

$$A_4 \text{ HOLLOW BLOCKS} = 4 \times [12 \times 16 - [(16 - 1.25 \times 3) \times (12 - 1.25 \times 2)]] = 302 \text{ in}^2$$

$$A_2 \text{ SOLID BLOCKS} = 2 \times 12 \times 16 = 384 \text{ in}^2$$

$$A_{\text{TOT.}} = 686 \text{ in}^2$$

$$f_{mP} = [(19.2 + .6) / 686] \times 1000 = 29 \text{ psi}; f_{mM} = (2 \times 160.5 / .502 \times .832 \times 32 \times 9^2) \times 1000 = 297 \text{ psi}$$

$$f_{m \text{ TOT.}} = 29 + 297 = 326 \text{ psi} < 223 \times 2.5 = 558 \text{ OK.}$$

FOR PROPERTIES & DESIGN PARAMETERS, SEE CALCULATIONS DONE ON 3/15/84 FOR CONC. BLOCK WALLS. (SH 4 OF 11, COPY ATTACHED).

CONCRETE CURB:  $b = 96''$ ,  $d = 9$ ,  $j = .85$ ,  $f_c = 4 \text{ KSI}$ ,  $f_s = 24 \text{ KSI}$

$$F_y \text{ @ } \phi \text{ WALL} = 19.2 + .150 \times 1.83' \times 8' \times 1.0' = 21.4 \text{ K}$$

$$F_y \text{ @ FACE} = .6 \text{ K}$$

$$M_{\text{TOT. @ BOTT. WALL}} = 100.8 + 2.7 \times 1.83 \times 12 = 160.1 \text{ K}''$$

$$M \text{ @ REINF.} = 160.1 + .6 \times 9 + 21.4 \times 3 = 229.7 \text{ K}''$$

$$f_{cM} = (2 \times 229.7 / .375 \times .875 \times 96 \times 9^2) \times 1000 = 180 \text{ psi.}$$

$$f_{cP} = [(21.4 + .6) / 96 \times 12] \times 1000 = 19$$

$$f_{c \text{ TOT.}} = 19 + 180 = 199 \text{ psi} < .45 f_c = 1800 \text{ OK.}$$

BY TL. ROBINSON DATE 9-28-84

SHEET 4 OF 8

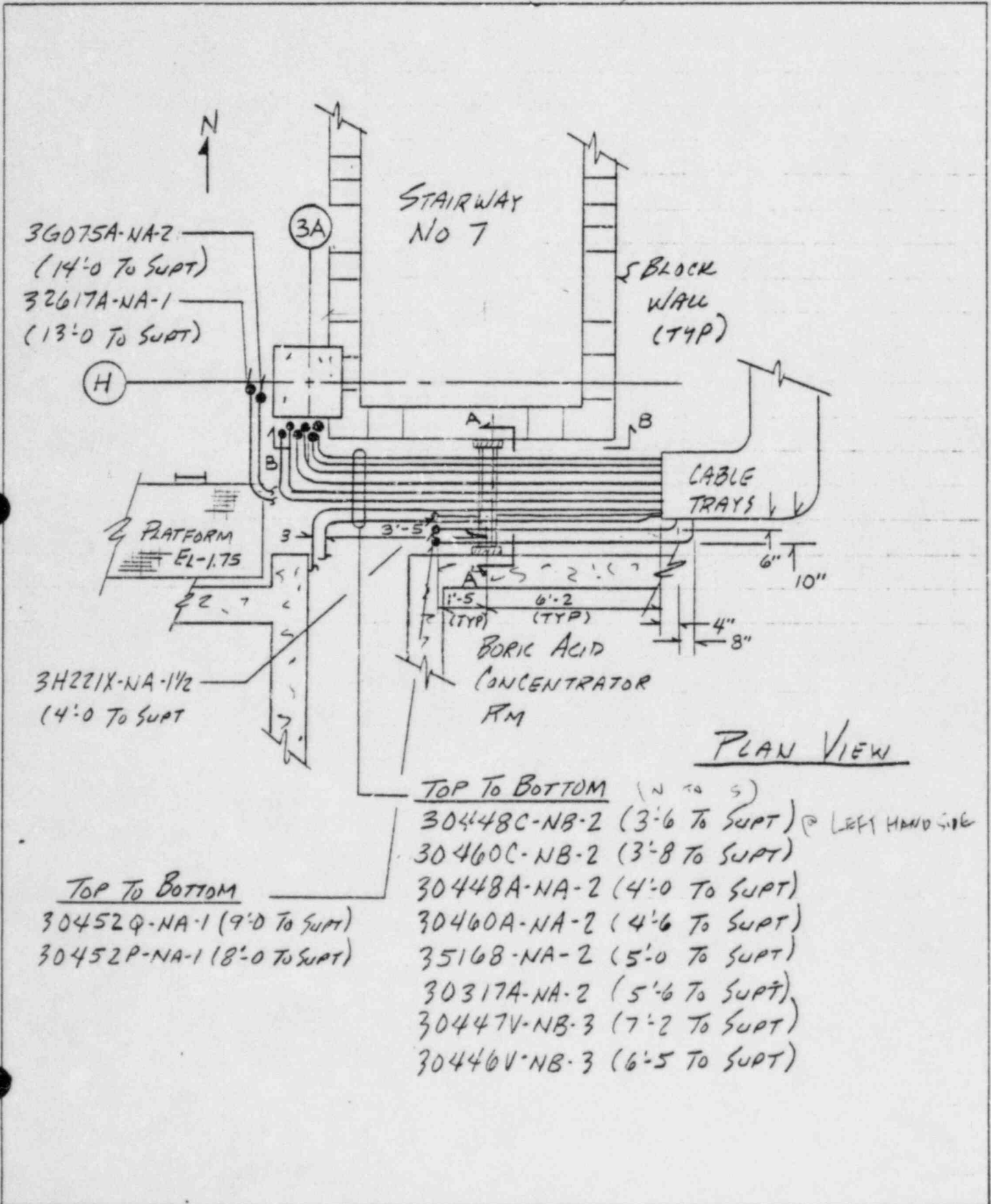
CHKD. BY \_\_\_\_\_ DATE \_\_\_\_\_

OFS NO. \_\_\_\_\_ DEPT. ENGR NO. \_\_\_\_\_

CLIENT LP&L

PROJECT WATERFORD SES #3

SUBJECT CONDUITS ATTACHED TO BLOCK WALLS (W29) WALL W29 ITS #5



BY T.L. ROBINSON DATE 9-28-84

SHEET 5 OF 8

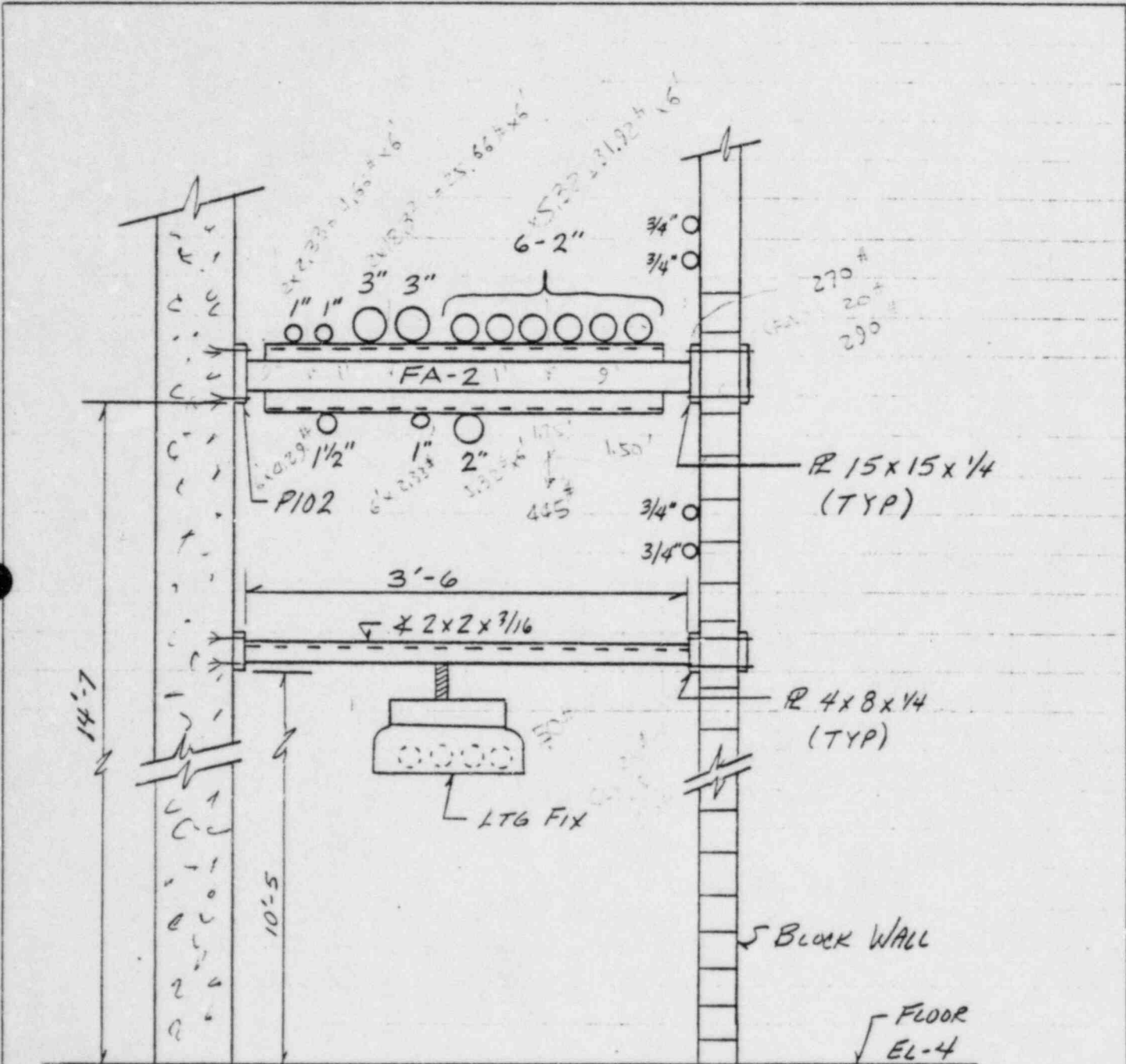
CHKD. BY \_\_\_\_\_ DATE \_\_\_\_\_

OFS NO. \_\_\_\_\_ DEPT. NO. ESSE

CLIENT CP&L

PROJECT WATERFORD SES #3

SUBJECT CONDUITS ATTACHED TO BLOCK WALLS WALL W29 ITEM # 3



SECTION "A-A"



BY T.L. ROBINSON DATE 9-28-84

SHEET 6 OF 8

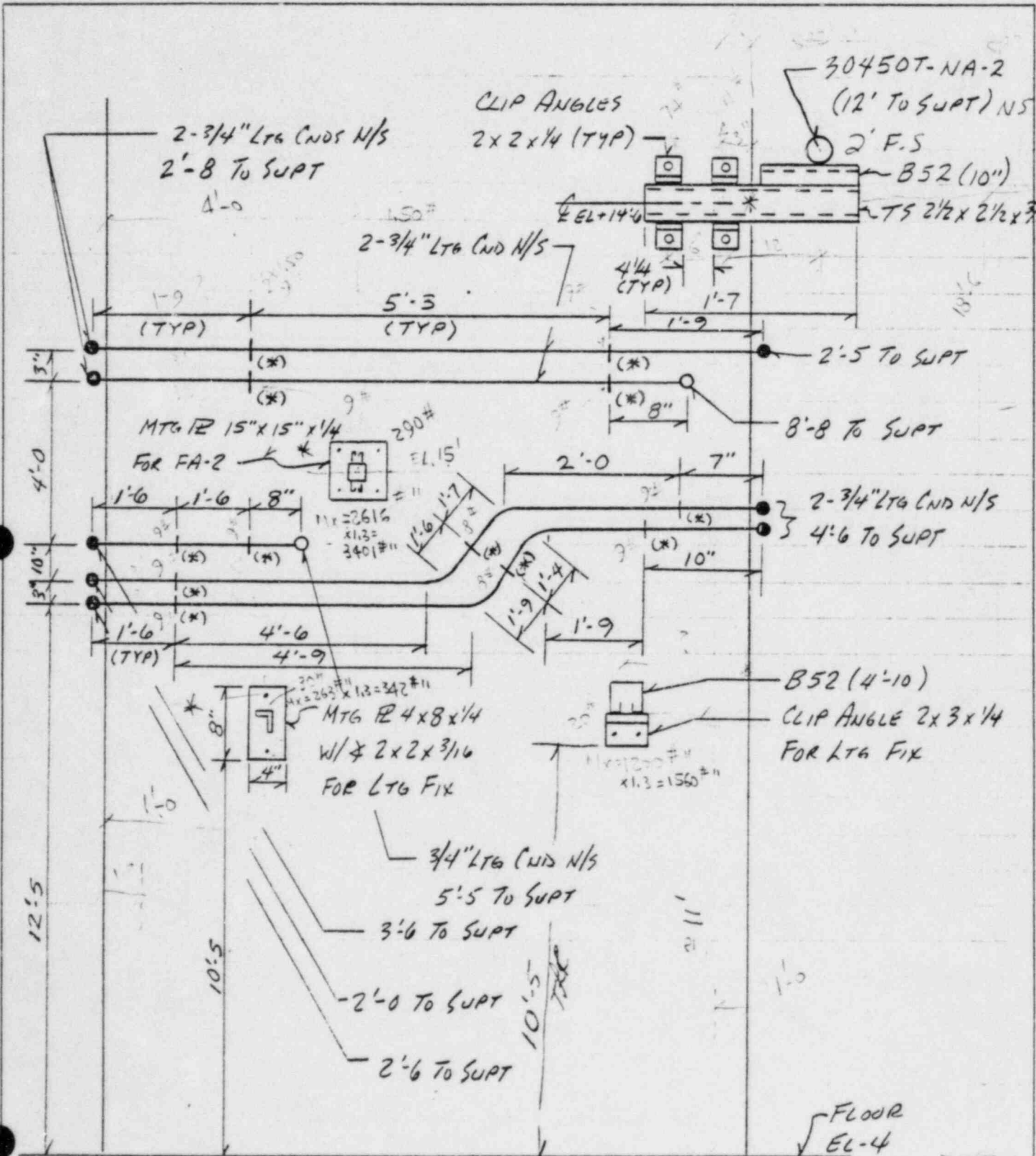
CHKD. BY \_\_\_\_\_ DATE \_\_\_\_\_

OFS NO. \_\_\_\_\_ DEPT. NO. \_\_\_\_\_

CLIENT CP&L

PROJECT WATERFORD SET #3

SUBJECT CONDUITS ATTACHED TO BLOCK WALLS WALL W29 1-11-83



SECTION "B-B"

BY T.L. ROBINSON DATE 9-28-84

SHEET 7 OF 8

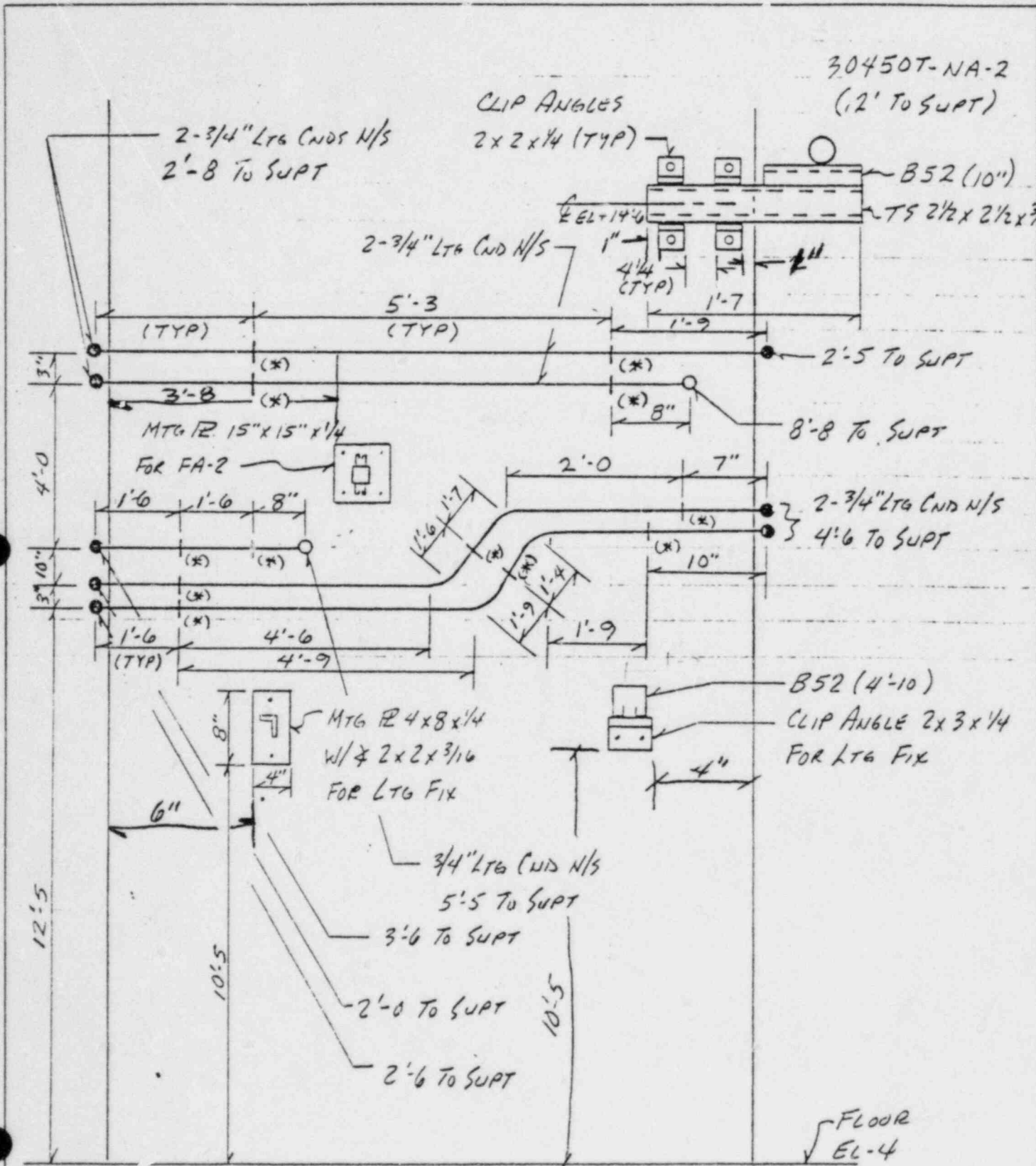
CHKD. BY DATE

OFS NO. DEPT. NO.

CLIENT CP&L

PROJECT WATERFORD SES #3

SUBJECT CONDUITS ATTACHED TO BLOCK WALLS WALL W29 ITEM # 3



SECTION "B-B"

BY GNN DATE 9-26-84

SHEET 8 OF 8

CHKD. BY \_\_\_\_\_ DATE \_\_\_\_\_

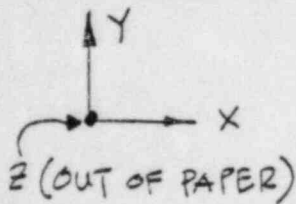
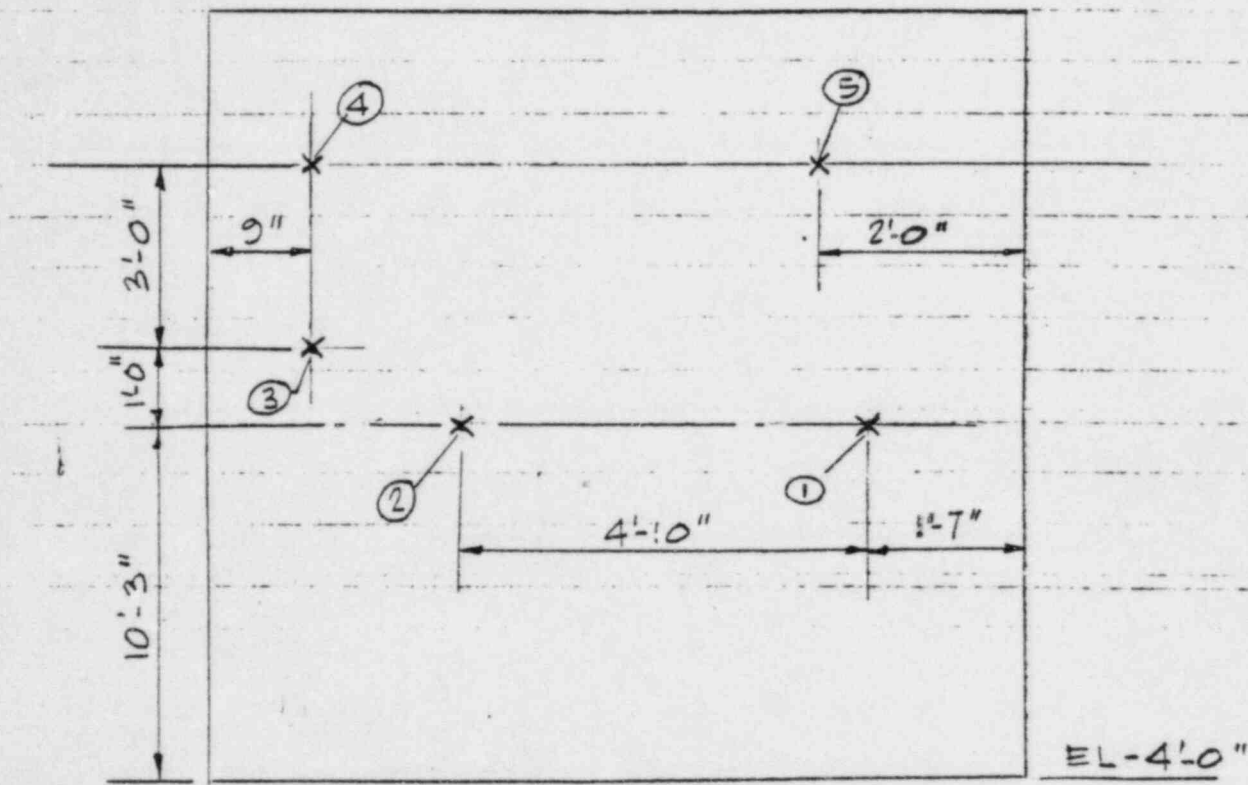
OFS NO. LOU-1564 DEPT. NO. ESSE

CLIENT LP&L

PROJECT WATERFORD #3

SUBJECT PIPE SUPPORT LOADS ON BLOCK WALL W-29

ITEM # 5



W-29 LOOKING NORTH  
(NOT TO SCALE)

FORCES & MOMENTS ACTING ON THE FACE OF THE WALL

- ①  $FY = 17 \#$      $MX = 170 \text{ IN-}\#$
- ②  $FY = 17 \#$      $MX = 170 \text{ IN-}\#$
- ③  $FY = 17 \#$      $MX = 680 \text{ IN-}\#$
- ④  $FY = 40 \#$      $MX = 200 \text{ IN-}\#$
- ⑤  $FY = 57 \#$      $MX = 404 \text{ IN-}\#$

FOR HOLLOW MASONRY WITH NO INSPECTION THE MATERIAL PROPERTIES AND DESIGN PARAMETERS TO BE USED ARE:

$$E_s = 29 \times 10^6 \text{ psi}$$

$$f_s = 24000 \text{ psi [GRADE 60]}$$

$$E_m = 675000 \text{ psi}$$

$$f_m = 225 \text{ psi} \times 2.5 = 562.5 \text{ psi}$$

$$n = \frac{E_s}{E_m} = \frac{29 \times 10^6}{675000} = 43$$

$$r = \frac{f_s}{f_m} = \frac{24000}{562.5} = 42.67$$

$$k = \frac{n}{n+r} = \frac{43}{43+42.67} = 0.502$$

$$j = 1 - \frac{k}{3} = 1 - \frac{0.502}{3} = 0.832$$

$$K = \frac{1}{2} f_m j k = \frac{1}{2} (562.5)(0.832)(0.502) = 117.5$$

$$M = K b d^2 \text{ OR } M = A_s \cdot f_s \cdot j \cdot d$$

1) 12" CONC. BLOCK WALL REINFORCED AS SHOWN ON PAGE 3.

$$b = 16", \quad d = 9", \quad d' = 2\frac{5}{8}, \quad j = 0.832, \quad k = 0.502,$$

$$A_s = A'_s = 0.88 \text{ in}^2 \text{ (2-#6 EA. FACE)}$$

$$f_m = 562.5 \text{ psi}$$

ALLOWABLE MOMENT:

MASONRY COMP. CONTROLS

$$M = \frac{f_m}{2} k j b d^2$$

$$M = \frac{0.5625}{2} (0.502)(0.832)(16)(9)^2 = 152.2 \text{ K.in}$$

$$= \boxed{12.68 \text{ K.FT}}$$

REINF. STEEL TENSION CONTROL

$$M = A_s \cdot f_s \cdot j \cdot d$$

$$M = 0.88 \cdot 24 \cdot 0.832 \cdot 9 = 158 \text{ K.in} = 13.18 \text{ K.FT}$$

USE

## EBASCO SERVICES INCORPORATED

BY D. MERLINSKY DATE 10-8-84 FOR REFERENCESHEET 1 OF 2CHKD. BY SUBRAMANIAM DATE 10-8-84

ONLY

OFS NO. LOW. 1564 DEPT. NO. ESSE

CLIENT \_\_\_\_\_

LP &amp; L

PROJECT \_\_\_\_\_

WATERFORD # 3

ITEM # 5

SUBJECT \_\_\_\_\_

FPL'S DUE TO PIPE SUPPORTS ON CONCRETE BLOCK WALLS.

FOOTPRINT LOADS ON CONCRETE BLOCK WALLS WERE COMPUTED USING FOLLOWING CONSIDERATIONS AND ASSUMPTIONS:

- 1). ALL PIPES WERE ASSUMED TO BE SCHEDULE 80 FILLED WITH WATER.
- 2). MAXIMUM SPANS AS RECOMMENDED BY THE CODE WERE ASSUMED
- 3). LATERAL LOADS, WHERE APPLICABLE, WERE ASSUMED TO BE OF THE SAME MAGNITUDE AS DEAD WEIGHT LOAD. (UNLESS OTHERWISE NOTED)
- 4). WHERE PIPE WAS EMBEDDED INTO THE WALL, MOMENTS INDUCED ON EITHER SIDE OF THE WALL WERE ASSUMED TO CANCEL OUT.
- 5). WHERE PIPE WAS PASSING THROUGH A PIPE SLEEVE AND WAS SUPPORTED VERTICALLY AND Laterally ON EITHER BOTH SIDES OF THE WALL, RESULTANT MOMENT AT WALL & MASS WAS ASSUMED TO BE ZERO.
- 6). LOADS FOR CANTILEVER TYPE SUPPORTS ARE GIVEN AT THE FACE OF THE WALL

EXAMPLES ON SMT. 2 ILLUSTRATE THE METHOD OF FPL COMPUTATIONS.

BY D. MERLINSKY DATE 10-8-84 FOR REFERENCE

SHEET 2 OF 2

CHKD. BY SUBRAMANIAN DATE 10-8-84

ONLY  
LP & L

OFS NO. LOU. 1564 DEPT. NO. ESSE

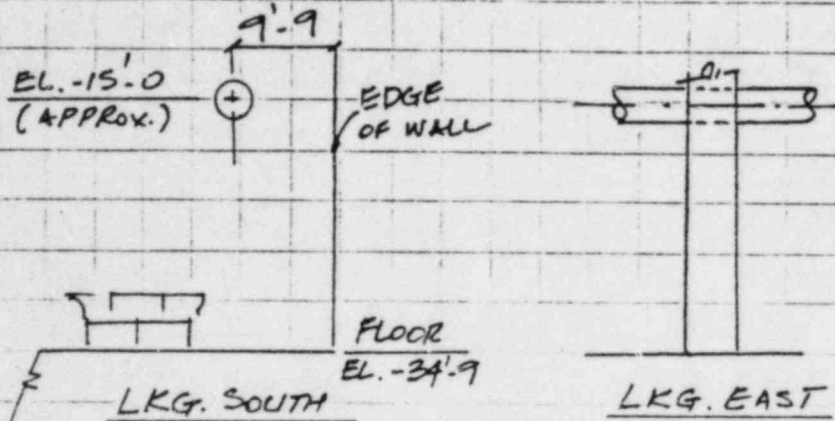
CLIENT \_\_\_\_\_

PROJECT WATERFORD # 3

ITEM # 5

SUBJECT FPL'S DUE TO PIPE SUPPORTS ON CONCRETE BLOCK WALLS.

EXAMPLE # 1 6"  $\phi$  DRAINAGE LINE PASSING THROUGH AND EMBEDDED INTO THE WALL.

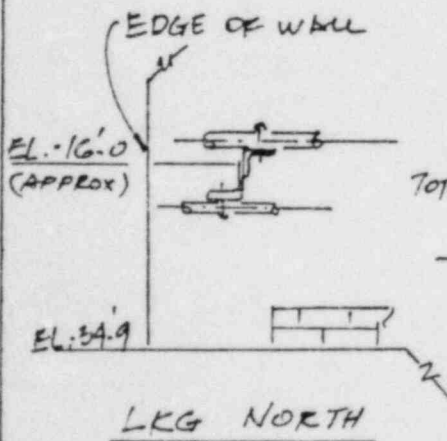


MAX. SPAN = 17 FEET ; WEIGHT PER FOOT = 39.9 #/FT  
WEIGHT OF SPAN = 17 x 39.9 = 678 #

$$F_x = F_y = F_z = \frac{2 \times 678}{2} = 678 \# \quad M_x = M_y = M_z = 0$$

$g = .5$  SEE ASSUMPTION # 4 SHT. 1

EXAMPLE # 2 CANTILEVER TYPE SUPPORT SIMULTANEOUSLY PROVIDING RESTRAINT FOR 1"  $\phi$  (INSULATED) & 2"  $\phi$  LINES 10" FROM THE WALL FACE.



MAX. SPAN 1"  $\phi$  - 7'  
2"  $\phi$  - 10'

TOTAL WEIGHT OF SPAN 1"  $\phi$  (2" INSUL) = 7(2.17 + .31 + 1.9) = 30.66  
2"  $\phi$  = 10(5.02 + 1.28) = 63.00

TOTAL  $F_y = F_z = 93.66 \approx 95 \#$   
 $M_x = 95 \times 10 = 950 \#'$

NOTE: DUE TO THE USE OF ASSUMPTIONS STATED ON SHT. 1, LOADS CALCULATED ABOVE ARE CONSERVATIVE.

BY Y. LIU DATE 9/26/84

SHEET 1 OF 1

CHKD. BY [Signature] DATE 10-1-84

OFFS NO. 2865.046 DEPT. NO. 653

CLIENT L. P. & L

PROJECT WATERFORD #3

SUBJECT SEISMIC SUPPORT C313 REVIEW

ITEM # 6

RAB EL. -410 a VALUE

JBE 0.38 0.33 } SEE ATTACHED  
 DBE 0.53 0.52 } 'g' VALUE

FOR ACTUAL GAP SEE ATTACH'D SH A-2EA3

SINCE THIS SEISMIC SUPPORT HAS A NATURAL

FREQUENCY OF  $38.3 \text{ Hz} > 33 \text{ Hz}$   
 FOR MIN. FREQUENCY ALLOWED SEE ATT. A-5

THIS SUPPORT IS IN THE RIGID SUPPORT RANGE

WE CAN USE ITS SUPPORT WT TIMES ACCELERATION COEFFICIENT AS STATIC LOAD ON SUPPORT

1. FOR JOINTS SEISMIC LOAD. ASSUME ALL CABLES

+ TRAYS + MISC LOAD (SEE ATTACHED SH A-1)

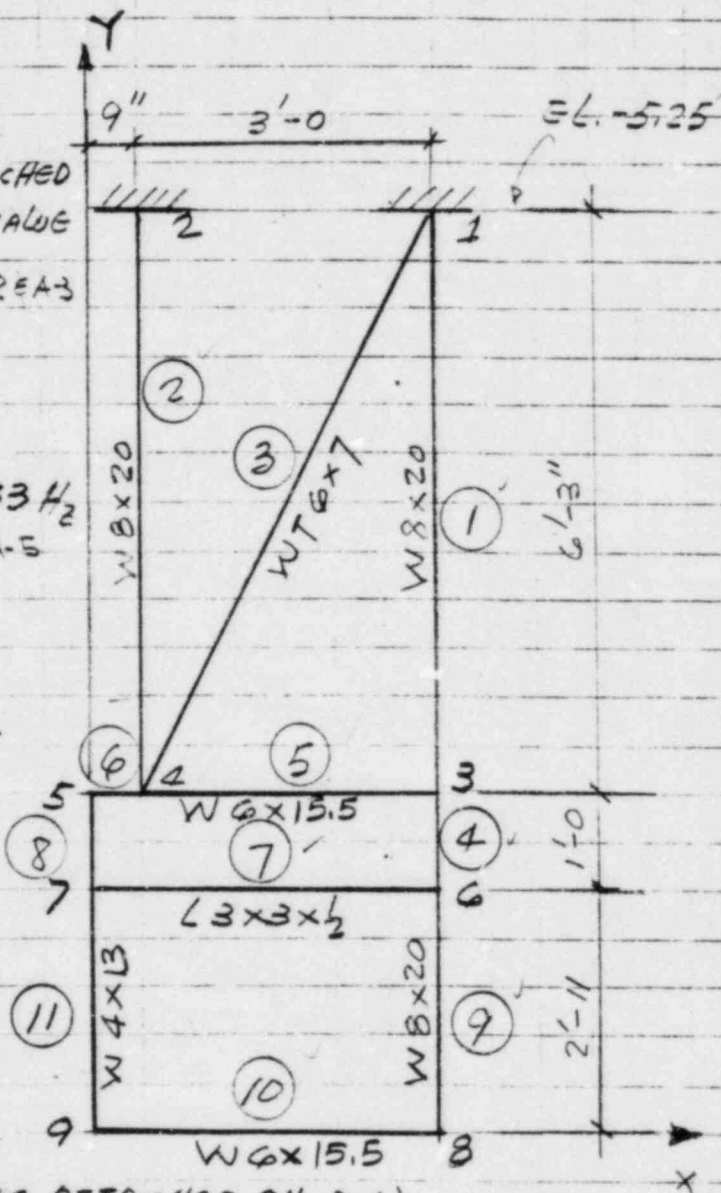
ARE ACTING EQUALLY ON JOINTS 6, 7, 8 & 9

$$W = \frac{1}{4} (900 + 869) = 0.1 \text{ K}$$

SEISMIC FORCE @ JOINTS 6, 7, 8 & 9 WILL BE

$$F = 0.44 \times 0.153 = 0.23 \text{ K}$$

2, FOR MEMBER SEISMIC FORCE USE ACTING ON JOINT 3 & 5







PAGE 2

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100																																																																																																																																																																																																																																																																																																								
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EBASCO SERVICES INCORPORATED

SH 6 OF 13

BY T. Lio DATE 7-26-84

SHEET 9 OF     

CHKD. BY K. S. P. DATE 10-1-84

OFFS NO. 4294.381 DEPT. NO. 653

CLIENT LP & L

PROJECT WATERFORD SES UNIT NO. 3

SUBJECT BEAM & GIRDER EVALUATION : STRUDL INPUT

ITEM # 6

~~LOADING COMBINATION 101 COMB 1 1.0 2 1.0~~

\$

LOADING LIST ALL  
STIFFNESS ANALYSIS

OUTPUT DEC 2

OUTPUT BY MEMBER END

LIST REACTIONS FORCE

LIST MAX STRESS ALL SEC FRA NS 3 0.0 0.5 1.0

SECT FR NS 3 0.0 0.5 1.0

~~LOADING LIST 101~~

LIST DISP

PARAMETERS

~~'UNLCE' 5.0 MPM TO (this is only for BRACED BEAMS)~~

~~'CODE' 'SP69'~~

~~CHECK CODE MEM~~

QTIME

FINISH

FROM OUTPUT RESULTS - (SEE ATTACHED A-2)

JT. No.	JT HORIZONTAL DISPL.	
5	0.01"	} < 1/32" (0.03") OK
7	0.01"	
9	0.02"	

RYLTU 6:41 SEP 26 84

CYBER	EBAS0772	2155	JESJCL	16.42.19	26 SEP 84	YL
CYBER	EBAS0772	2155	JESMSG	16.42.19	26 SEP 84	YL
CYBER	EBAS0772	2155	SYMSG	16.42.20	26 SEP 84	YL
CYBER	EBAS0772	2155	GO.FT06F001	16.42.21	26 SEP 84	YL

```

*****
*
*
*          MCAUTO ICES EXECUTIVE SYSTEM
*
*          RELEASE 4.2 - 06 JUN 1984
*
*    TIME- 16:41:13          DATE- SEP 26, 1984
*
*          MODEL 81          VS2 REL 3.8
*
*
*
*****

```

PAGE -

STRU DL 'YLIU'

```

*****
*
*   MCAUTO STRU DL          RELEASE 4.11A JUL 1984
*   MCAUTO STRU DL INTERACTIVE GRAPHICS    RELEASE 3.11
*   MCAUTO STRU DL BATCH GRAPHICS          RELEASE 1.11
*   MCAUTO STRU DL DYNAL                   RELEASE 6.11
*   MCAUTO STRU DL DESIGN GROUP            RELEASE 1.11
*   MCAUTO STRU DL RECON                    RELEASE 1.11
*   MCAUTO STRU DL NONLINEAR               RELEASE 1.11
*   MCAUTO STRU DL TOWER                    RELEASE 1.11
*   MCAUTO STRU DL DANOS                    RELEASE 2.11
*
*
*          TIME 16.41.21, 9/26/84
*
*          DATA POOL SIZE 30640 BYTES
*
*****

```

TYPE SPACE FRAME  
SCAN CONDITION ON  
UNIT KIP INCH DEG  
JOINT COORDINATES

1	45.	122.	0.	S
2	9.	122.	0.	S
3	45.	47.	0.	
4	9.	47.	0.	
5	0.	47.	0.	
6	45.	35.	0.	
7	0.	35.	0.	
8	45.	0.	0.	
9	0.	0.	0.	

A-2  
STRU DL output of C313

ITEM #6  
S47 OF 13

MEMBER INCIDENCES

1 1 3  
2 2 4  
3 1 4  
4 3 6  
5 3 4  
6 4 5  
7 6 7  
8 5 7  
9 6 8  
10 8 9  
11 7 9

CONSTANTS

E 29000. ALL  
POISSON 0.3 ALL  
DENSITY 0.283 ALL  
BETA 90. 3  
BETA 180. 7

MEMBER PROPERTIES

1 4 9 TABLE 'STEELW' 'W8X20'  
2 TABLE 'STEELW' 'W8X20'  
8 11 TABLE 'STEELW' 'W4X13'  
5 & 10 TABLE 'STEELW' 'W6X15'  
3 TABLE 'STEELWT' 'WT6X7'  
7 TABLE 'STEELL' 'L30308'

LOADING 2

JOINT LOAD

3 FOR Y -.283 FOR X -.15  
4 FOR Y -.283 FOR X -.15  
6 FOR Y -0.46 FOR X -0.24  
7 FOR Y -0.46 FOR X -0.24  
8 FOR Y -0.46 FOR X -0.24  
9 FOR Y -0.46 FOR X -0.24

LOADING LIST ALL

STIFFNESS ANALYSIS

\*\*\*\* STRUDL MESSAGE - BANDWIDTH STATISTICS ARE AS FOLLOWS :

THE MAXIMUM BANDWIDTH IS 3 AND OCCURS AT JOINT 6  
THE AVERAGE BANDWIDTH IS 1.57  
THE STANDARD DEVIATION IS 0.90

OUTPUT DEC 2

OUTPUT BY MEMBER END  
LIST REACTIONS FORCE

SH80F13  
ITEM#6

PROBLEM - YLIU TITLE - NONE GIVEN

ACTIVE UNITS INCH PIPS DEG. FAHR SEC LBM

MEMBER FORCES

MEMBER	LOADING	JOINT	/-----FORCES-----//	FORCES			MOMENTS		
				AXIAL	SHEAR Y	SHEAR Z	TORSION	MOMENT Y	MOMENT Z
1			START						
1	2	1	END	-1.94	0.12	0.00	-0.00	0.01	8.50
1	2	3	START	1.94	-0.12	-0.00	0.00	-0.01	0.14
2	2	2	END	1.43	0.23	0.00	-0.00	-0.01	11.05
2	2	4	START	-1.43	-0.23	-0.00	0.00	-0.00	6.35
3	2	1	END	-2.10	0.00	0.00	0.00	-0.15	0.00
3	2	4	START	2.10	-0.00	-0.00	-0.00	-0.08	0.01
4	2	3	END	-1.22	0.55	0.00	-0.02	0.01	9.38
4	2	6	START	1.22	-0.55	-0.00	0.02	-0.02	-2.74
5	2	3	END	0.59	0.44	0.00	0.00	-0.02	9.52
5	2	4	START	-0.59	-0.44	-0.00	-0.00	-0.01	6.20
6	2	4	END	-0.31	0.62	0.00	0.01	0.01	0.23
6	2	5	START	0.41	-0.62	-0.00	-0.01	-0.02	5.33
7	2	6	END	0.01	-0.04	0.00	-0.02	-0.02	-0.88

PAGE - 6

MEMBER FORCES

MEMBER	LOADING	JOINT	/-----FORCES-----//	FORCES			MOMENTS		
				AXIAL	SHEAR Y	SHEAR Z	TORSION	MOMENT Y	MOMENT Z
7			END						
7	2	7	START	-0.01	0.04	-0.00	0.02	-0.02	-0.13
7	2	5	END	-0.62	0.41	-0.00	-0.01	-0.01	5.50
7	2	7	START	0.62	-0.41	0.00	0.02	0.01	-0.13

ITEM # 6

S49 OF 13

6	END	-0.72	0.32	-0.00	0.00	-0.00
8	START	0.72	-0.32	0.00	0.00	0.00
8	END	-0.08	0.26	0.00	0.00	-0.00
9	START	0.08	-0.26	-0.00	-0.00	0.00
7	END	-0.20	0.16	0.00	0.00	0.00
9	START	0.20	-0.16	-0.00	-0.00	-0.00

SUPPORT JOINT REACTION LOADS

JOINT	LOADING	FORCES			MOMENTS			
		X FORCE	Y FORCE	Z FORCE	X MOMENT	Y MOMENT	Z MOMENT	
1	GLOBAL	2	1.03	3.84	-0.00	0.01	-0.01	8.66
2	GLOBAL	2	0.23	-1.43	0.00	-0.01	0.00	11.05

LIST MAX STRESS ALL SEC FRA NS 3 0.0 0.5 1.0

PAGE - 7

PAGE - 8

\*\*\*\*\*  
 \*RESULTS OF LATEST ANALYSES\*  
 \*\*\*\*\*

PROBLEM - YL 'U TITLE - NONE GIVEN

ACTIVE UNITS INCH KIPS DEG. FAHR SEC LBM

INTERNAL MEMBER RESULTS

MEMBER MAXIMUM STRESS

MEMBER	MEMBER MAXIMUM STRESS			STRESS		
	MAX NORMAL	AT SECTION	LOAD	MIN NORMAL	AT SECTION	LOAD
1	0.83	0.0 FR 2		-0.17	0.0 FR 2	
2	0.41	0.0 FR 2		-0.89	0.0 FR 2	
3	1.28	0.0 FR 2		0.77	0.0 FR 2	

ITEM # 6  
 SH10 OF 13



4	0.76	0.0	FR	2	0.0	FR	2	
5	0.83	0.0	FR	2	-1.00	FR	2	
6	0.63	1.000	FR	2	-0.45	1.000	FR	2
7	0.89	1.000	FR	2	-0.89	1.000	FR	2
8	1.15	0.0	FR	2	-0.82	0.0	FR	2
9	0.57	1.000	FR	2	-0.33	1.000	FR	2
10	0.78	0.0	FR	2	-0.74	0.0	FR	2
11	0.82	1.000	FR	2	-0.72	1.000	FR	2

PAGE - 9

SECT FR NS 3 0.0 0.5 1.0  
LIST DISP

PAGE - 10

\*\*\*\*\*  
\*RESULTS OF LATEST ANALYSES\*  
\*\*\*\*\*

PROBLEM - YLIU TITLE - NONE GIVEN

ACTIVE UNITS INCH KIPS DEG. FAHR SEC LBM

JOINT DISPLACEMENTS - SUPPORTS

JOINT	LOADING	DISPLACEMENTS			ROTATIONS		
		X DISP	Y DISP	Z DISP	X ROT	Y ROT	Z ROT
1	GLOBAL	2	0.0	0.0	0.0	0.0	0.0
2	GLOBAL	2	0.0	0.0	0.0	0.0	0.0

JOINT DISPLACEMENTS - FREE JOINTS

JOINT	LOADING	DISPLACEMENTS			ROTATIONS		
		X DISP	Y DISP	Z DISP	X ROT	Y ROT	Z ROT
3	GLOBAL	2	-0.01	-0.00	0.00	-0.00	-0.01
4	GLOBAL	2	-0.01	0.00	-0.00	0.00	-0.01
5	GLOBAL	2	-0.01	0.00	-0.00	0.00	-0.01
6	GLOBAL	2	-0.01	-0.00	0.00	-0.00	-0.01

ITEM # 6

SH110F13

7	GLOBAL	2	-0.01	0.00	-0.00	0.00	0.01	-0.01
8	GLOBAL	2	-0.02	-0.00	0.00	-0.00	-0.01	-0.01
9	GLOBAL	2	-0.02	0.00	-0.00	0.00	-0.01	-0.00

Page - 11

OTIME  
TOTAL CPU TIME 0 MINUTES, 2.400 SECONDS  
TOTAL I/O TIME 0 MINUTES, 21.420 SECONDS  
FINISH

Page - 12

```

*****
*                                     *
*                               WARNING *
*                                     *
* IBM REPORT NUMBER USERS, NOTE THAT BEGINNING 14 OCTOBER 1984 THIS *
* IS NO LONGER AVAILABLE IN THE FORM: *
* // *REPORT NUMBER=XXXXX,XXX *
* CONTACT A MCAUTO CONSULTANT FOR AN ALTERNATE FORMAT. *
*****

```

\*\*\*\*\* FOLLOWING IS A SUMMARY OF MAJOR STRUCL BUGS - SEPTEMBER 1984

- 4.9-621 INCORRECT RESULTS WERE OBTAINED FOR ANY LOADING CONDITIONS CONSISTING OF CENTRIFUGAL LOADS.
- 4.10-720 INCORRECT STRESS RESULTANTS NY AND NXY WERE PRINTED BY LIST NODAL COMMAND FOR THE CSIG, PSR, PSRCSH, LST, LSR, IPLQ, IPLOC SH, IPQQ, AND IPCQ ELEMENTS. THIS PROBLEM HAS BEEN CORRECTED ON PRODUCTION WITH RELEASE 4.10A.
- 4.10-769 INCORRECT MAX AND MIN STRESS RESULTANTS NY AND NXY ARE BEING PRINTED BY LIST NODAL WITH ENVELOPE COMMAND FOR THE PLANE STRESS/PLANE STRAIN ELEMENTS. THIS PROBLEM HAS BEEN CORRECTED ON PRODUCTION WITH RELEASE 4.11.
- 4.10-786 LIST SECTION DISPLACEMENT COMMAND GIVES INCONSISTENT RESULTS FOR MEMBERS HAVING MEMBER END JOINT SIZE. THE PROGRAM HAS BEEN MODIFIED WITH RELEASE 4.11A SO THAT MEMBER SECTION DISPLACEMENTS WILL NOT BE LISTED FOR MEMBERS DEFINED WITH END JOINT SIZE.
- 4.10-800 INCORRECT MEMBER LOADS MAY BE GENERATED BY THE SPECIAL PROCESSOR PROGRAM 'DCCRELOA' FOR PLANE FRAME AND SPACE FRAME MEMBERS. THIS PROBLEM HAS BEEN CORRECTED ON PRODUCTION WITH RELEASE 4.11A.

ITEM #6  
5412 OF 13

FOR INFORMATION/DOCUMENTATION ON ANY NEW ENHANCEMENT LISTED, CALL THE  
MICRUTO STRUDL USER SUPPORT GROUP, OUTSIDE MISSOURI. THE TOLL

FREE NUMBER IS 1-800-622-0070. INSIDE MISSOURI, CALL COLLECT AT  
(314) 282-5555.

1. FINITE ELEMENT OUTPUT HAS BEEN MODIFIED. ADDED WITH RELEASE 4.9A.
2. MULTIPLE JOINT RESTRAINT CAPABILITY. LINEAR CONSTRAINT EQUATIONS OF MULTIPLE JOINTS, RIGID LINKS, AND COUPLED DISPLACEMENT CONDITIONS MAY BE SPECIFIED. ADDED WITH RELEASE 4.10A.
3. AN OPTION FOR AUTOMATIC SELECTION OF DYNAMIC DEGREES OF FREEDOM FOR KINEMATIC CONDENSATION. ADDED WITH RELEASE 4.10A.

CYBER EBAS0772 2155 00.FT10F001 16.42.24 26 SEP 84 YL YL

STRUDL SURCHARGE REPORT

JOB ID: YLIU TITLE: NONE GIVEN

DATE: 9/25/84

<u>TASKS</u>	<u>DESCRIPTIVE NOTES</u>			<u>FEE UNITS</u>
STIFFNESS ANALYSIS	NO. JOINTS: 9	NO. MEMBERS AND ELEMENTS: 11	NO. LOADINGS: 1	10

SHIROE 13  
ITEM # 5

BRP

DATE 8-22-77

AKD. BY ASL/STAM

DATE 8-13-80

OFFS NO. \_\_\_\_\_

DEPT. NO. \_\_\_\_\_

FOR REFERENCE ONLY

CLIENT \_\_\_\_\_

PROJECT \_\_\_\_\_

ITEM #6

SUBJECT \_\_\_\_\_

STRUCTURE :- AUX. BLDG..

"g" VALUES AT DIFFERENT ELEV. FOR PERIOD - 0.2 SEC., 0.5% d<sub>s</sub>

ELEV. FT.	MASS PT		O B E			D B E			REMARK
	V	H	X	Y	Z	X	Y	Z	
-4.0	39	38	.38	.30	.33	.53	.45	.52	
21.0	38	37	.38	.27	.38	.65	.47	.68	
46.0	37	36	.56	.28	.40	.87	.45	.67	
69.0	36	35	.72	.28	.43	1.13	.42	.72	
84.5	35	34	.80	.32	.45	1.32	.52	.76	
100.0	34	33	.90	.30	.48	1.55	.54	.76	

# FOR REFERENCE ONLY

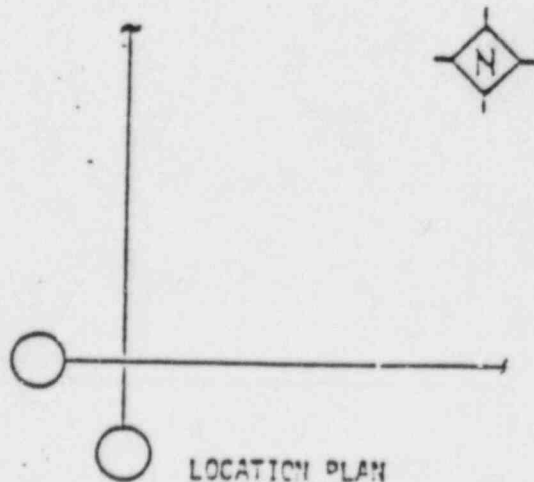
EBASCO SERVICES INCORPORATED

BY KS Lee DATE 4/19/84  
 CHKD. BY SW DATE 05/03/84  
 CLIENT \_\_\_\_\_ LP&L  
 PROJECT WATERFORD UNIT # 3  
 SUBJECT HVAC/ELECT SEISMIC SUPPORT EVALUATION ITEM # 6

SHEET A-1 OF \_\_\_\_\_  
 OPS NO. 4394.611 DEPT. NO. 653  
2865,055

CALC. NO : _____ SUPT. NO (HV/EL): <u>C313</u> HV/EL. DWG. NO : <u>G37755</u> CIVIL DWG. NO : <u>G69554</u> LINE NO : _____ P. SUPP. NO : _____	1) Original Design Loads: SUPP. NO: (CIVIL) <u>E170</u> Support D.L. <u>565</u> Lb Cable Trays Loaded (500ft+ 400ft) <u>900</u> Lb <u>W</u> = Total Design Load <u>1465</u> Lb <hr/> 2) Extg. Loads Support D.L. <u>565</u> Lb Cables + Trays (A+(1+N)10#)L <u>900</u> Lb Misc. Loads <u>869</u> Lb Pipe Support _____ Lb <u>W<sub>I</sub></u> = Total Extg. Load = <u>2334</u> Lb <hr/> ORIGINAL FREQUENCY = <u>38.3</u> Hz = f ORIGINAL STRESS = <u>0.12</u> ksi = f' ✓
--	--

ELEVATION



LOCATION PLAN

EBASCO SERVICES INCORPORATED

BY K. SHIH DATE 10-7-84

SHEET A-2 OF     

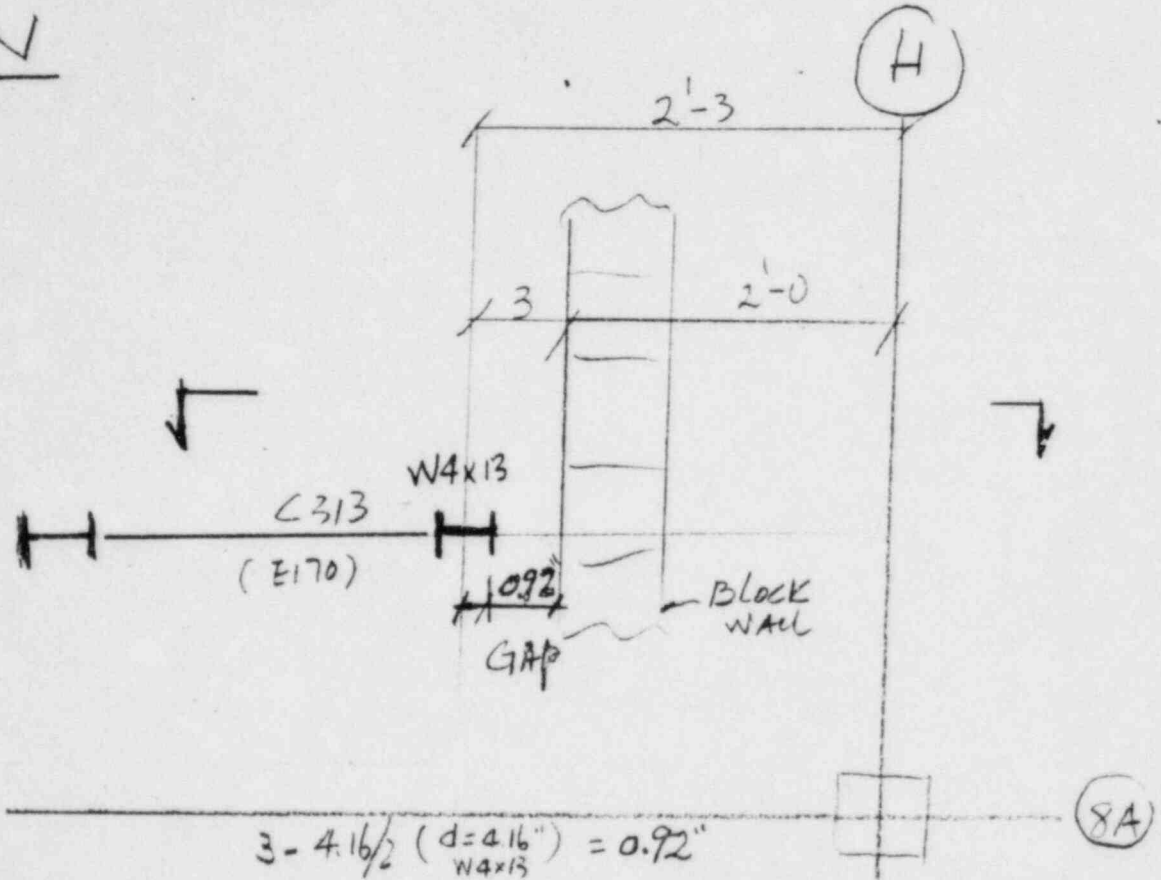
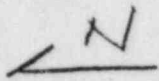
CHKD. BY      DATE     

OFS NO.      DEPT. 653

CLIENT LP & L

PROJECT WATERFORD S.E.S. #3

SUBJECT WALL Location & GAP Item 6



$GAP = 0.92" > DEF = 0.02"$

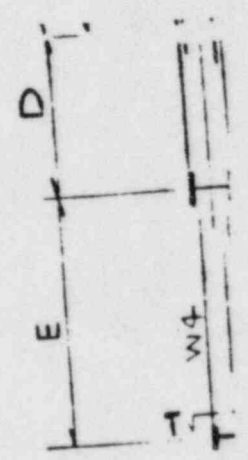
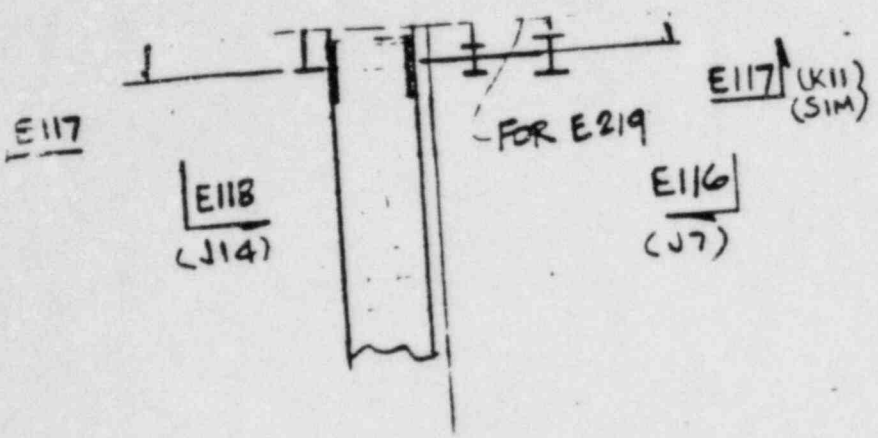
NOTE.: Conc. DWG 6765-402  
G 695-404.

PARTIAL PLAN

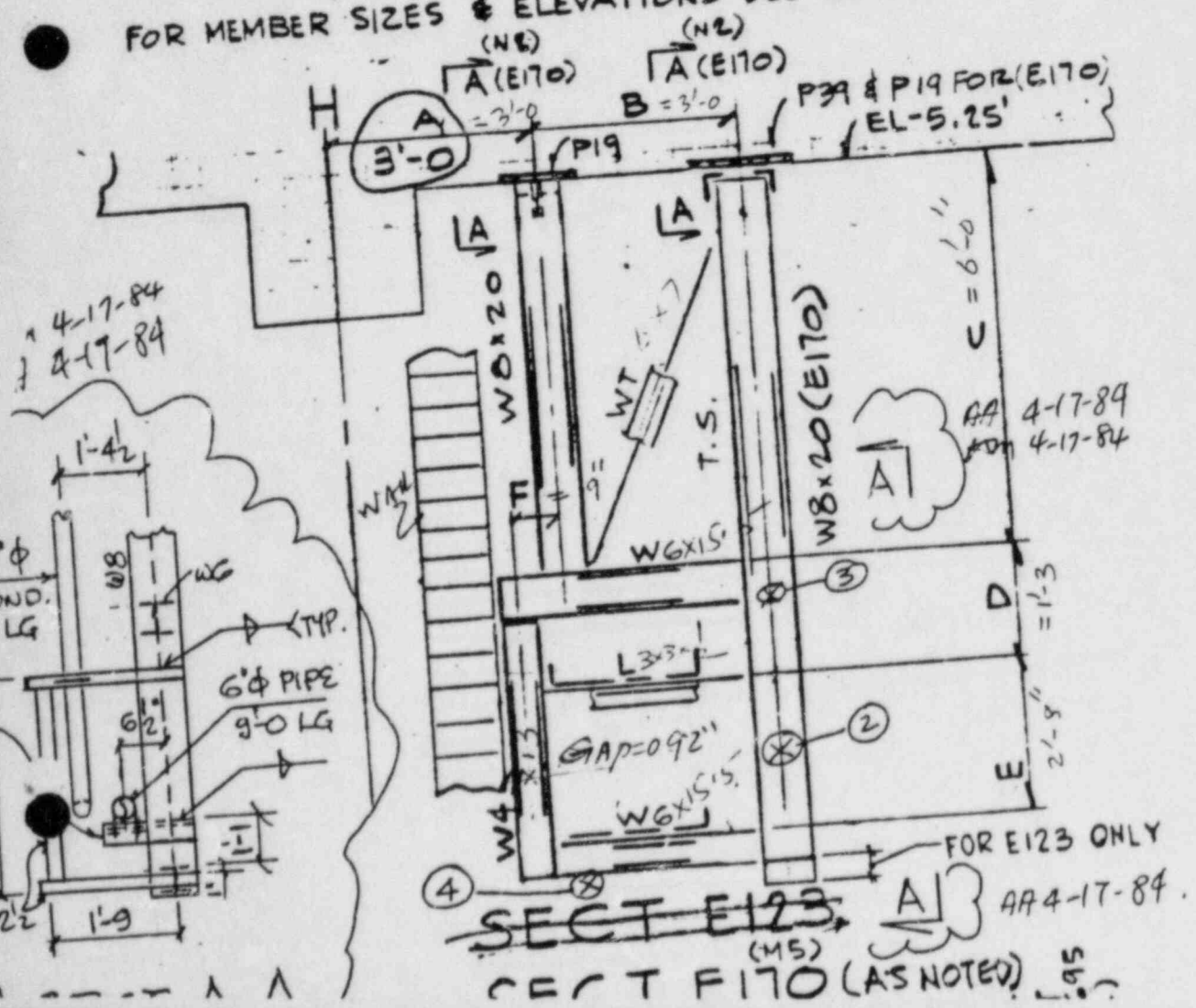
4.16  
2.05  
3  
2.08  
4.2  
1.1

A-3

ITEM # 6



**PART PLAN**  
FOR MEMBER SIZES & ELEVATIONS SEE SECTS



wn te  
suppc  
ing i

d.re

- 
- 
-

EBASCO SERVICES INCORPORATED

A-4

DATE 2/19/84  
DATE 05/03/84

SHEET 1a OF  
OFS NO. 2865.055 DEPT. NO. 653

LP & L

PROJECT WATERFORD UNIT #3  
SUBJECT HVAC/ELEC SEISMIC SUPPORT EVALUATION

ITEM # 6

SUPP. NO: C-313

a. FREQUENCY CHECK :

- 1. Original Frequency : 38.3
- 2. Allowable loads per Table 3 :  $> 5.0^k$
- 3. Actual added loads :  $0.869^k$

Support O K, actual load is less than allowable loads.

Need further analysis, see following pages.

b. STRESS CHECK ON VERTICAL MEMBER :

- 1. Type of support from tables : 1B
- 2. Allowable loads from tables :  $3^k$
- 3. Actual added loads :  $0.869^k$

Support O K, actual loads less than allowable loads.

Need further analysis see following pages

Need platform steel check

c. STRESS CHECK ON HORIZONTAL MEMBER :

Member OK. No further analysis required

Member needs further analysis. see attached pages



Ebasco Definition of Criteria for Cable Tray Supports

A5  
ITEM #6

On the basis of the NRC guides, SRP's and codes, referred to in the previous section, Ebasco has prepared several guides which may also be applicable for the analysis and design of trays, conduits and their supports. These are

- a. "Seismic Considerations for Seismic Category I Equipment and Equipment Supports," Ebasco Specification 7-75 Ta, 1975.
- b. "Guidelines for the Design of Conduit Systems in Seismic Category I Buildings of Nuclear Power Plants," Electrical Engineering Guides and Data-G16-10, April, 1976.
- c. "Procedure for Establishing the Maximum Exposed Conduit Spans in Seismic Category I Buildings of Nuclear Power Plants," Electrical Engineering Guides and Data -G16-9, June, 1976, and December, 1976.
- d. "Cable Tray Design and Installation Practices for Power and Control Cables in Nonnuclear Installations," Electrical Engineering Guides and Data, G38am-1.

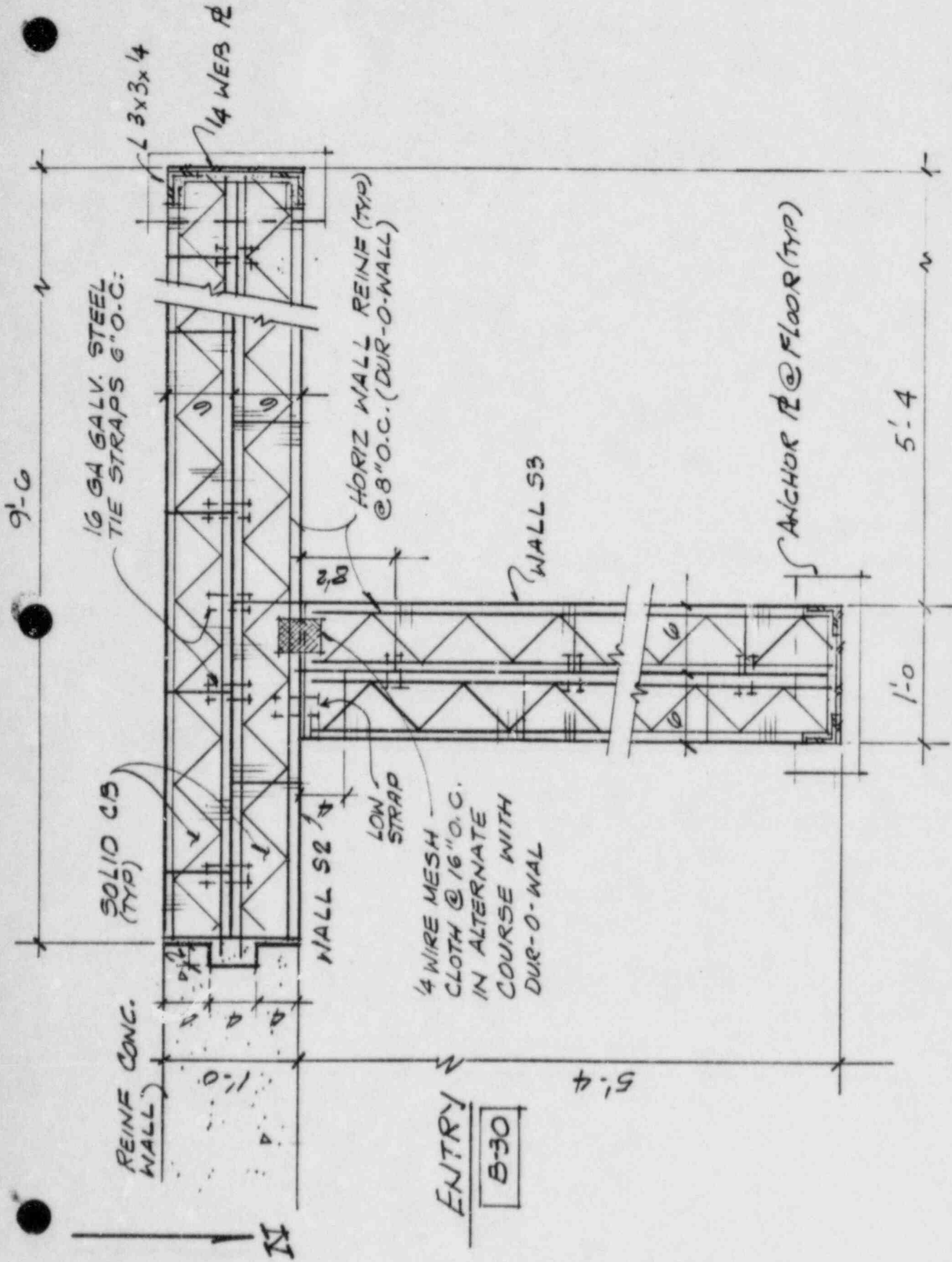
The above documents have the purpose of providing some guidance for the analysis, design, procurement and installation of cable tray/conduit subsystems. Originally, in the past, the standard practice was to furnish restraints of rigid design, i.e. fundamental frequency equal to or greater than 33 Hz. This was done, to allow the usage of the floor response spectra for the qualification of the tray/conduit and in accordance with the state of the art and the NRC requirements, in lieu of complete analyses of the subsystems. The trays/conduits were qualified based on the assumption that the restraints provide a nonyielding simple support. These rigid restraints were provided to suit the tray/conduit layout. The layouts were generally made with no advance considerations given to easy and effective supporting system. Generally all supports were built up of steel members with I, C and L sections. Unistruts or equivalent elements were not used, due to insufficient documen-

tation to satisfy the QA requirements. Due to randomness of tray/conduit layouts the resulting support systems were of many different configurations to suit these layouts. Generally shelf to vertical connections as well as vertical member to ceiling connections were treated as hinged.

Recently on St. Lucie #2 and Waterford projects, the supports were treated not as "rigid". This resulted in some savings in the weight and configuration of supports. In this application since the response spectra exhibit essentially flat variation of the acceleration with respect to frequency over a large range of frequencies, attempt was made to limit the support frequencies at approximately 16 Hz. Studies were performed on complete 3D model of a system consisting of various numbers of spans, and also with approximate model of the same system. This was done to establish the amplification factors due to flexibility of supports, multispan coupling effects and multimode effects. This approach resulted in realistic treatment of the problem and in appreciable reduction in support weight.

BY: J. SANTOSPIRITO/10-3-84  
 CHECKED BY: K. SHIH 10-8-84

SHEET OF 3  
 ITEM # 7



PART PLAN EL -34.75' 1'-0" SOLID CB WALL (EAST COL LINE SA/W)

1" = 1'-0"  
 6-765502

1'-0" CONC BLOCK REINF. (STACK BOND SEISMIC DESIGN)

VERT. WALL REINF (HOLLOW BLOCK)

4'-0" O.C. MAX

ENCLOSED AREA OR SHAFT

PRE-FAB CORNER ASSEM (3/8 TO 28" MAX) HORIZ WALL REINF.

#2 TIES @ ALTER. CS.

4-#6 BARS (AT 4'-0" O.C. MAX)

HORIZ-WALL REINF EVERY 2ND COURSE (TYP)

1/4" WIRE MESH CLOTH EVERY ALTER CS (16" OC)

1'-4" TYP STRECHER

4'-0" O.C. MAX

FILL CELLS W/ MORTAR MINIMUM COMPRESSIVE STRENGTH 2,500 PSI (TYP)

VERTICAL WALL REINF (HOLLOW BLOCK)

TYP PLAN @ CORNER HOLLOW CONCRETE BLOCKS

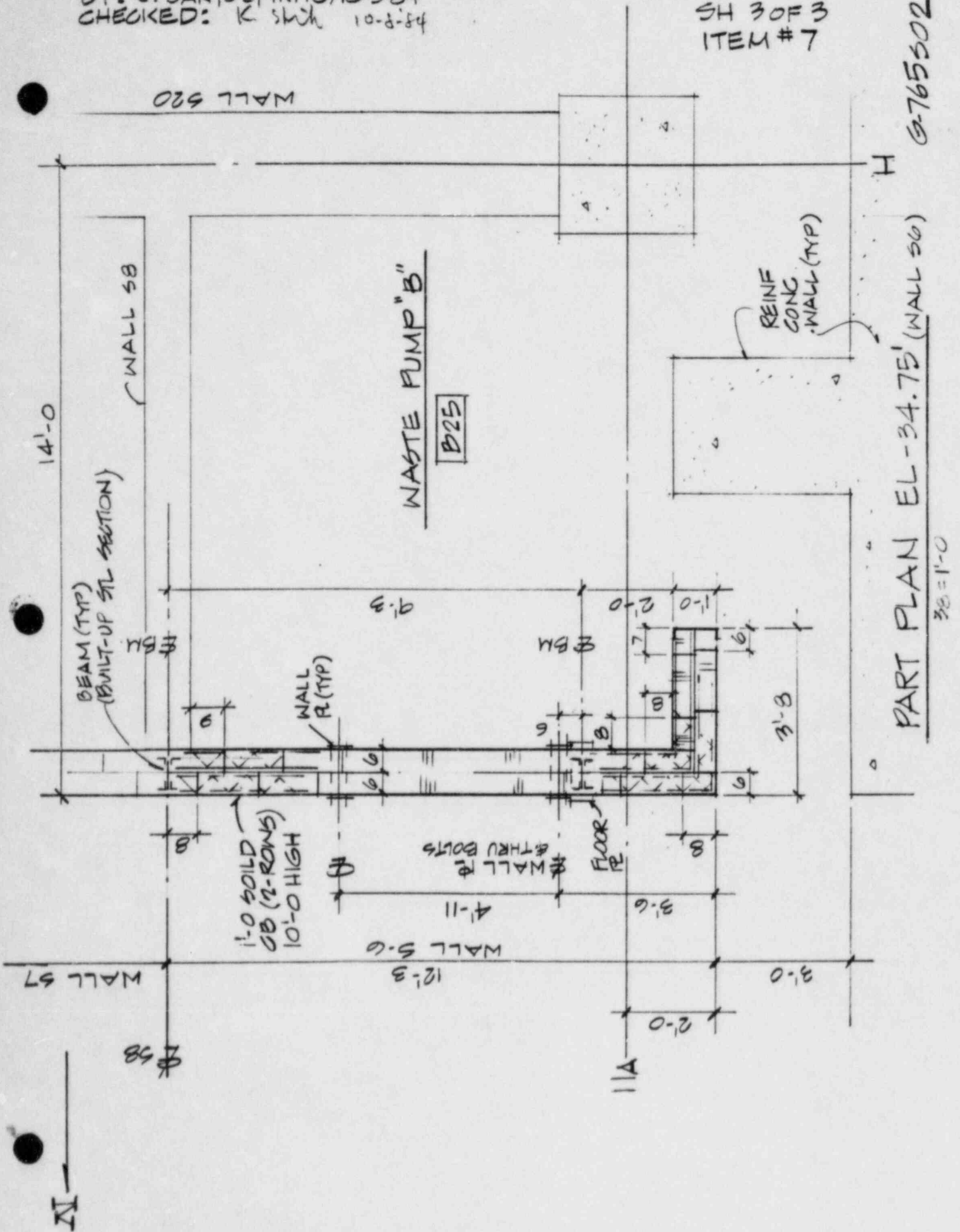
BY: J. SANTOPRITO/10.3.84  
CHKD BY: K. SAKA/10.3.84

SH 2 OF 3  
ITEM # 7

BY: J. SANTOSPIRITO/10-3-84  
CHECKED: K skh 10-8-84

SH 3 OF 3  
ITEM #7

G-765502



FOR REFERENCE ONLY.

Project Identification

No. LOU-1564.738

Order No. \_\_\_\_\_

EBASCO SERVICES, INC.

RECEIVED

DEC 09 1977

ENGINEERING  
DOCUMENT DEPT.  
WATERFORD 3 FIELD  
R3

EBASCO SERVICES INCORPORATED

SPECIFICATION EBASCO

MASONRY

NON-NUCLEAR SAFETY CLASS

WITH SEISMIC CONSIDERATIONS

NOTICE

SEE FIELD CHANGE REQUEST

NO. (S) AS-672, AS-809, AS-1179  
FOR APPROVED CHANGES  
TO THIS DOCUMENT.

PURCHASER: EBASCO SERVICES INCORPORATED, AGENT

OWNER: LOUISIANA POWER & LIGHT COMPANY

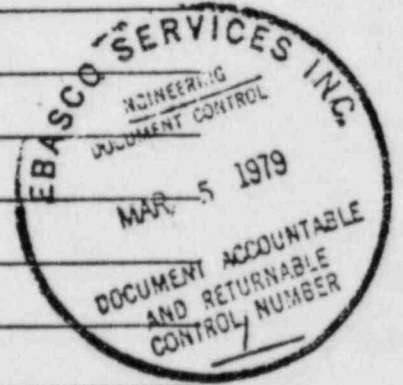
OPERATING COMPANY: LOUISIANA POWER & LIGHT COMPANY

PROJECT: WATERFORD STEAM ELECTRIC STATION

UNIT NO.: 3 NETINAL KW 1165 MW

LOCATION: ST CHARLES PARISH, LOUISIANA

SELLER: \_\_\_\_\_



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Revisions	Date	Prepared By:	Reviewed By:	Pages Affected
Original	10/31/72	J Ihnat	D E Houghton	All
R1	1/31/73	J Ihnat	D E Houghton	2,3,4,5,6

FIELD CHANGE REQUEST

NO. PH-1215  
DATE: 9/14/82

LPL Consent - LPL Letter No 5177, dated May 13, 1973

Project Identification

No. LOJ 1564.738

ITEM # 7

REV. NO.	DATE	PAGES AFFECTED	PREPARED BY	QA REVIEWED BY	REVIEWED BY
R2	2/26/76	All	K Ilachinski <i>KI</i>		D Houghton <i>DH</i>
R3	12/23/77	1, 3, 5, 6, 7, 8, 9	K Ilachinski <i>KI</i>		D E Houghton

EBASCO SERVICES INCORPORATED

ITEM # 7

EBASCO SPECIFICATION

MASONRY

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Project Identification  
No. LOU 1564.738

ITEM # 7

1. SCOPE

This specification covers materials and installation of concrete block masonry, shielding block and accessory materials in accordance with the drawings and as specified herein.

R2

2. STANDARDS AND CODES

.1 The materials herein specified shall comply with the latest revision in effect at the date of the purchase order, or as mutually agreed to subsequent to date of the order by Purchaser and Seller, of all currently approved applicable regulations, safety codes, specifications and standards including applicable technical definitions as acknowledged and accepted in the industry as listed in the various sections below, but not limited thereto. The documents so listed set forth the minimum requirements. They may be exceeded by the Seller if, in his judgement, superior or more economical designs or materials are available, subject to Purchaser's approval.

R2

.2 All services, designs, equipment and material sold or otherwise provided to Purchaser by Seller shall comply with all Federal, State and local laws, regulations, codes and all applicable specifications and standards including but not limited to those specified herein in each case as in effect at the date of order placement.

R2

.3 All material and services hereunder shall comply with the Occupational Safety and Health Act of 1970 (OSHA) including all the latest revisions thereto and all applicable standards thereunder.

R2

.4 Specifications

R2

American Society for Testing and Materials ASTM

ASTM C-90	Hollow Load Bearing Concrete Masonry Units
ASTM C-145	Solid Load Bearing Concrete Masonry Units
ASTM C-150	Portland Cement
ASTM C-270	Mortar for Unit Masonry
ASTM C-476	Mortar and Grout for Reinforced Masonry
ASTM C-404	Aggregates for Masonry Grout
ASTM C-207	Hydrated Lime for Masonry Purposes
ASTM C-33	Concrete Aggregates
ASTM C-144	Aggregate for Masonry Mortar
ASTM E-119	Fire Tests of Building Construction and Materials
ASTM A-615	Deformed and Plain Eillet-Steel Bars for Concrete Reinforcement
ASTM D-1055	Sponge and Expanded Cellular Rubber Products
ASTM C-637	Aggregate for Radiation Shielding Concrete

American National Standards Institute ANSI

N101.6	Concrete Radiation Shields
N45.2.2	Packaging, Shipping, Receiving, Storage and Handling of Items for Nuclear Power Plants (During the Construction Phase)

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Masonry

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3. DELIVERY OF MATERIALS

All masonry materials shall be so shipped, delivered, handled and stored as to prevent the intrusion of foreign matter and the damage of materials by water, breakage, chipping or staining. Cement, lime and other manufactured materials shall be delivered in unbroken containers plainly marked with Manufacturer's name and brand and shall be stored in their original containers in a manner that will permit identification until ready for use.

4. STORAGE OF MATERIALS

.1 Concrete blocks shall be stacked in piles clear of the earth and shall be protected on top against the weather with an approved cover. Blocks which are stored for a period of time shall be stacked on sides with block courses separated vertically with 1 x 2 in. wood strips.

.2 Sand shall be stored so as to be protected from dirt or foreign matter. Material subject to deterioration such as cement and lime shall be stored in weathertight sheds with floors elevated at least 12 in. above grade. All packages showing evidence of water or other damage shall be rejected, removed from the jobsite and replaced at no extra cost to the Purchaser.

5. MATERIALS

Masonry materials used in the erection of masonry walls shall conform to the following standards:

.1 Concrete Block

.01 Concrete block for exterior and interior (non-shielding) walls shall be hollow load bearing units, Grade N-1 and conforming to ASTM C-90. Block shall be of thickness shown on drawings with nominal face dimensions of 8" x 16" with 2 cells per block and plain ends. A vertical reinforcing two cell block with one end open may be used. Special starter block heights shall be furnished where shown on drawings.

.02 Concrete block units shall be composed of normal weight aggregate, conforming to ASTM C-33, except that cinders will not be acceptable. Units which are exposed to view or painted shall have uniform appearance.

.03 All units shall be steam cured with a moisture content expressed as a percentage of total absorption of not more than 40 percent at time of delivery.

.04 Should units exceed the moisture limitations prior to laying, drying shall be accomplished by approved means until they meet the above moisture requirements.

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5. MATERIALS (Cont'd)

.1 Concrete Block (Cont'd)

- .05 Test to determine moisture content at time of delivery shall be paid for by Supplier. R1
- .06 The Supplier of the concrete blocks shall certify that the block units have a maximum shrinkage of not more than .03 percent from saturated to oven dry condition. R1
- .07 Concrete block walls shall have fire-resistance ratings indicated on drawings. Fire rated concrete block shall bear U.L.I. Classification Marking. R1

.2 Shielding Concrete Block

- .01 Shielding concrete block, used for filling openings in concrete shielding walls, and as elsewhere shown on drawings shall be steam cured, solid concrete block units with no voids, and a minimum uniform density of 138 pounds per cubic foot. Compressive strength shall be 4000 psi minimum. R3
- .02 Concrete block shall conform to ASTM C-145, Grade N-1, manufactured from normal weight aggregates in compliance with ASTM C-33, and conforming to ANSI N 101.6 except that no fly ash or cinders shall be used. The moisture content shall not exceed 45 percent at the time of delivery. R1
- .03 Blocks shall be formed true and square and shall have all surfaces finished smooth to form an effective nuclear shield when laid up dry with no mortar in the joints. R1
- .04 Blocks shall be of thicknesses shown on drawings with nominal face dimensions of 8" x 16", with special starter block heights furnished, where shown on drawings and/or required, to permit staggering the horizontal joints of all layers. At least one block for each layer at each opening, shall be furnished with approved lifting devices, cast into the block, to permit starting removal of the block layer (wythe). R1

.3 Reinforcing Rods

Shall be deformed intermediate grade, new billet steel, conforming to ASTM A-615, Grade 60. R1

.4 Masonry Horizontal Reinforcing

For interior walls shall be extra heavyweight "Dur-O-Wal" truss type as manufactured by Dur-O-Wal Inc. or approved alternate, of "Brite" Steel finish. For exterior concrete block walls shall be extra heavyweight "Dur-O-Wal" truss type or approved alternate with galvanized steel side rods and R1

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Masonry

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No. LOU 1564.738

ITEM # 7

5. MATERIALS (Cont'd)

.4 Masonry Horizontal Reinforcing (Cont'd)

truss rods and shall conform to ASTM A-116, Class 3. All corner and tee assemblies shall be prefabricated.

.5 Rigid Steel Strap Anchors

Shall be 2" x 3/16" galvanized with ends turned down at least 2 inches. R2

.6 Ties

For partitions to walls or partitions to partitions shall be strips of metal lath or 1/4 inch mesh galvanized hardware cloth. R1

.7 Control Joint Material

Shall be "Weatherite R", conforming to ASTM D-1056, as manufactured by Williams Equipment & Supply Co. Inc. or approved alternate. R2

.8 Portland Cement

Shall conform to ASTM C-150, Type II. R2

.9 Hydrated Lime

Shall conform to ASTM C-207, Type S. R2

.10 Sand

Shall consist of clean, hard, sharp, durable particles and shall not contain a total of more than 5% by volume of loam, mica, clay or other deleterious substances, and shall conform to ASTM C-144, all passing a No. 8 sieve. R2

.11 Water

Shall be free from any injurious amounts of acid, alkali, salts, oil, sediment, or organic matter. R2

.12 Metal Lath

For wall ties or as a base for concrete fill in block cavities shall be 3/8" diamond mesh, 3.4 lbs per square yard. R2

.13 Grout

Shall be white Portland Cement Type, conforming to ASTM C-476. R2

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6. MORTAR MIXING

.1 Mortar shall comply with the property specification for Type S-mortar as set forth in ASTM Standard C-270 (for non-seismically designed). Mortar and grout for reinforced masonry (seismically designed) shall comply with ASTM C-476. R3

.2 Mortar shall be thoroughly mixed and only in quantity needed for immediate use. Any mortar or grout not used within 1½ hours after initial mixing shall be discarded. R2

.3 Mortars that have stiffened within this time interval because of evaporation of moisture may be retempered to restore workability by adding water. Harsh, nonplastic mortar should not be retempered or used.

.4 Only machine-mixing shall be used, except for small jobs when hand mixing is specifically authorized by the Engineer. At least five minutes of mixing time shall elapse after all of the material has been placed in the mixer before any mortar is discharged. Water shall be used in the quantity necessary to give proper workability. R1

.5 All mortar shall consist of the following proportions by volume: R2

a) non-seismically designed masonry walls:

1 part Portland Cement

½ part Hydrated Lime

4 parts Sand

b) for seismically designed masonry walls follow ASTM C-476 for minimum compressive strength of 2500 psi.

7. WORKMANSHIP AND INSTALLATION

.1 Masonry work shall not be erected when the ambient temperature (adjacent to the work area) is 40° F, and falling except by written permission of the Engineer. When masonry work is authorized during temperature below 40° F, provision shall be made for heating and drying of materials and protecting the completed work in a manner acceptable to Engineer. R3

.2 At the end of each day, or whenever the progress of erecting walls is interrupted, the top of walls shall be protected against rain entering vertical cells.

8. STANDARD CONCRETE BLOCK

.1 Laying of block shall be in accordance with the recommended Practices for Laying Concrete Block by the Portland Cement Association. R1

.2 When masonry must be laid in extremely hot weather, or drying wind conditions, or under daily hot sun exposure, appropriate measures must be taken to shelter the work and preserve the necessary moisture of the mortar. If curing in extremely hot weather is required, it shall be done by dampening the masonry surfaces with a light fog spray so that water does not run down the surfaces.

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No. LOU 1564.734

ITEM #7

8. STANDARD CONCRETE BLOCK (Cont'd)

.3 Concrete block shall be laid plumb, straight and true to line and to dimensions shown on the drawings. Concrete block (non seismic design) shall be laid with vertical joints staggered (running bond) in all areas unless otherwise shown on drawings. Concrete block walls designed for seismic criteria shall be laid with both horizontal and vertical joints continuous (stack bond). All joints shall not exceed 3/8". All exposed edges of block shall be sharp and true. No blocks less than one-half nominal length will be permitted. Wherever blocks have to be cut, the cuts shall be made square using a carbondum saw. Where plaster occurs, joints shall be raked 1/4" to form key for plaster. All exposed interior concrete unit joints, both vertical and horizontal, shall be tooled to a neat and slightly concave surface. Units installed around door frames, windows and lower openings, control joints, built-in items and where units support brackets, anchors or similar support shall be filled in solid with mortar.

R2

R1

.4 Full mortar bedding shall be used for the first course on the foundation and where cells are filled in solidly with mortar. Otherwise, face shell bedding shall be used. Where vertical reinforcement occurs, the cells shall be filled with mortar.

R2

.5 Where fresh masonry joins masonry that is partially or totally set, the exposed surface of the masonry wall already in place shall be cleaned and dampened when necessary to obtain the best possible bond with the new work. All loose masonry units and mortar shall be removed.

.6 Partitions shall be full height and shall be anchored to construction above as shown on drawings, unless otherwise noted.

R2

.7 Control joint material, flashing, reinforcing, anchors, lintels, pipe sleeves etc, as shown on the drawings, and as required shall be installed as the work progresses. Control joints shall be kept free of mortar.

R2

.8 Where vinyl base occurs on exposed block walls, a skim coat of neat cement plaster 4" high and sufficient to completely cover the area behind the base shall be applied. The skim coat shall be trowelled smooth and even to provide sufficient base for cementing the base. The top of the skim coat shall be feathered back to the wall, just below the top of the base.

R2

9. HORIZONTAL WALL REINFORCEMENT

.1 Spacing for interior walls shall be at 16 in. on centers vertically, unless noted otherwise on the drawings. Reinforcement shall be placed in first and second bed joints above and below openings. Reinforcement in first bed joints immediately above and below openings shall be a minimum of 10 feet in either direction beyond the opening or from column to column, whichever is less; in second bed joint it shall exceed 2 ft 0 in. beyond each side of opening. Reinforcement shall be lapped a minimum of 6 in. to insure continuity. Pre-

R2

R1

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No. LOU 1564.738

9. HORIZONTAL WALL REINFORCEMENT (Cont'd)

- .1 (Cont'd)  
fabricated corner reinforcement shall be of unequal length returns, one return to be a minimum of 48 in., the other return a minimum of 40 in. and shall be staggered in alternate courses.
- .2 Courses receiving reinforcement shall first receive full mortar bedding prior to embedding reinforcement so as to obtain proper bonding, and covered with an additional spread of mortar if necessary to insure full embedment.
- .3 Horizontal reinforcement splices shall be staggered vertically so that no splices in two adjoining courses are less than 8 in. horizontally apart. R2
- .4 Ties for partitions abutting partitions or walls shall be strips of metal lath or 1/4 in. mesh galvanized hardware cloth placed across the joints between the two walls. Ties shall be placed every 16 in. o.c. vertically in alternate courses with the Dur-O-Wal horizontal reinforcement in partitions. R2
- .5 Wall reinforcement shall not pass through control joints but shall be cut back 4 in. from edge of joints.

10. VERTICAL WALL REINFORCEMENT

- .1 Vertical wall reinforcement shall consist of steel reinforcing rods of the sizes detailed on the drawings. Bars shall be accurately placed and securely held in position at top and bottom before mortar is placed. R1
- .2 Splices in vertical reinforcing bars shall be made only at such points and in such manner that the structural strength of the member will not be reduced.
- .3 All vertical reinforcing bars shall be completely embedded in mortar and shall have a minimum of masonry cover of 1 1/2 inches, and mortar shall conform to ASTM C-476. R3
- .4 All block cores containing vertical reinforcement shall be filled with mortar (no filler block shall be used). Blocks shall be laid up so as to preserve the unobstructed vertical continuity of the cores to be filled. Mortar fins protruding from joints shall be removed before filling the cores. In filling vertical cores, the mortar placement shall not exceed four feet in height. During placement, the mortar fill shall be rodded or puddled to insure complete filling of the core. If the core filling is discontinued for one hour or more, the mortar shall be terminated 1 1/2 inches below the top of the block. R2

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No. LOU 1564.738

11. SHIELDING BLOCK

.1 Shielding block shall be laid as shown on drawings, with at least one block per layer (wythe) containing a cast-in lifting device to permit removal. Blocks are to be laid in running bond. Each layer (wythe) is to be laid so that both horizontal and vertical joints are staggered with the joints of all other layers. Staggering of the horizontal joints in each layer may be achieved by having each first course of a different height. R2

.2 Cutting of shielding block shall be done carefully with a masonry saw to avoid chipping or cracking of block. Any blocks that are not cut true and square shall be rejected. R2

.3 The jambs, bottom and heads of all shielding block openings shall be filled solid with mortar conforming to ASTM C-476, except that heavy weight aggregate conforming to ASTM C-637 be used. Each layer shall have these joints filled before installing the next layer. R2  
R3

12. CONTROL JOINT CAULKING

.1 Control joint surfaces shall be prepared for caulking in strict accordance with the Manufacturer's instructions. Surfaces shall be clean, dry and free of loose particles and laitance. Refer to caulking Specification No. LOU 1564.741G for additional information. R2

13. CLEANING AND REMOVAL

.1 Care must be exercised during erection to protect the faces of masonry from being smeared or splattered with mortar, grout or splashing from activities performed on scaffolds; should faces be smeared or splattered, they shall be immediately cleaned before the mortar or grout has set. R2

.2 At the completion of the masonry work, all masonry work shall be cleaned down and scaffolding and equipment removed. Debris, refuse and surplus material shall be cleaned up and removed from the premises.

14. CERTIFICATES

.1 Supplier shall furnish a certificate from an independent laboratory, stating compliance of the shielding block with these specifications, particularly with regard to aggregates, density and uniformity thereof and squareness of the block. R2

.2 Supplier shall submit a certificate stating compliance of block with fire resisting rating.

15. SAMPLES

.1 Samples of all masonry shall be submitted for approval of finish and surface texture. R2



Ebasco Specification  
Masonry

ITEM #7

Project Identification  
No. LOU 1564.738

16. SEISMICALLY DESIGNED MASONRY CONSIDERATIONS

R3

.1 This revision to Specification LOU 1564.738 shall apply to masonry with seismically designed considerations. Materials shall be furnished in accordance with this addendum, Specification Ebasco LOU 1564.738, the purchase order and designated Ebasco design drawings. Should there be any conflict between this addendum and Specification Ebasco LOU 1564.738, the provisions of this addendum shall govern.

.2 Seller shall submit all test strength documentation along with material certification prior to shipping for the purchasers review and acceptance for the concrete block, horizontal wall reinforcement (Dur-o-wall) and the vertical wall rebars.

R3

.3 Tests of mortar and grout for reinforced masonry shall comply with ASTM C-476, shall be documented, and shall be available for the purchasers review and acceptance.

R3

.4 Seller shall be responsible for conformance to this specification. Any material found not to conform to specification Ebasco LOU 1564.738 or this addendum, whether upon delivery or after installation shall be rejected.

R3

.5 The Vendor shall specify the requirements to ensure that components to be furnished herein will be protected from any deterioration due to long term storage. Vendor is to submit requirements to Purchaser for review.

R3

These components shall be stored at level D as defined by ANSI N45.2.2.

FOR REFERENCE ONLY  
SYSTEM STATUS SHEET

ITEM #7

Date 8-30-82

FCR or DEN No. CH-1315

Start-Up System 99C DD

1a) System Release Cut-Off  
has occurred \_\_\_\_\_

1) System Release Cut-Off  
has not occurred ✓

1b) Complete work before  
System Release:  
N/A  
Yes 1 No  
(Asst. Supt. Start-Up Initial;  
If "NO" Complete Item 3)

\* Below review not required if  
this block checked.

Review By:

B. J. Farrell 11/8/82  
Asst. Supt. Start-Up

1c) Priority No. N/A

Senior Resident Engineer

2) System was released on  
N/A  
(Complete Item 3)

Project Superintendent

3) Post System Release  
Work Authorization No.  
N/A  
(Obtain from LP&L Start-Up)

N/A  
Assistant Construction Superintendent

4) Work Assignment  
a) Affected By/Contractor  
GEO Letter  
6752-C-2141 EBASCO

b) Code \_\_\_\_\_ Non-Code \_\_\_\_\_

c) Work Assigned To:

- 1) Ebasco Force Account...
- 2) Contractor.....

_____ App. R	_____ CCB
_____ Env. Reg.	_____ CIWA
_____ IE Bull.	_____ FJO
_____ Lic. Comm.	_____ N/A
_____ NRC Quest.	_____ TMI

DOCUMENTATION CHANGE ONLY  
BY 11/8/82

SEP 20 1982 ENTRY

EBASCO Civil  
EBASCO SERVICES INCORPORATED  
FIELD CHANGE REQUEST

LOGBOOK  
OCT 21 1982  
ENTRY

ITEM # 7

Section 1 thru 5 to be filled out by Construction. Section 6 to be filled out by Engineering.

PROJECT Waterford SES Unit 3 OFFS NO. \_\_\_\_\_ FIELD CHANGE NO. FCR-CH-1315

To J. De Bruin Dept E.S.S.E. Location Site Date 8-30-82

Re:  Drawing No. \_\_\_\_\_ Title \_\_\_\_\_

Spec No. 1564.738 R3 Title Masonry Non-Nuclear Safety Class with Seismic Considerations

Other \_\_\_\_\_

1. DESCRIPTION (Items involved, submit sketch if applicable)

Mortar mix for seismic block walls per ASTM-C 476  
CONSIDERED

EBASCO SERVICES, INC.  
WATERFORD III  
DOCUMENT CONTROL  
NOV 10 1982  
Document Accountable  
AND RETURNABLE  
CONTROL NUMBER  
501

2. AREA OF CHANGE

- Technical  Major  Minor
- Cost  Major (> \$100,000)  Minor (< \$100,000)
- Schedule  Major (Critical Path)  Minor (Noncrit Path)

3. REASONS FOR CHANGE (If from disposition of nonconformance report, list report number)

ASTM-C476-80 does not address mortars, it only addresses grouts.

4. RECOMMENDED DISPOSITION (Submit sketch if applicable)  Minor Change  Major Change

All references in 1564.738 to ASTM-C 476 shall be changed to ASTM-C 270. Refer to sections 6.1, 6.5b, 10.3, 11.3 and 16.3 of 1564.738.

Craig A. Mc Bride

Sr RESIDENT ENGINEER (Signature) <u>J. W. Yeager</u>	DATE <u>9/3/82</u>	PROJECT Supt. CONCURRENCE (Signature) <u>[Signature]</u>	DATE <u>9/14/82</u>
--	--------------------	--	---------------------

6. DISPOSITION

- Not Approved (give reason)
- Considered Minor Change - Approved per Recommended Disposition - Design Documents will not be formally revised; field to maintain as-built records.
- Considered Major Change - Action will be taken as prescribed on DCN--
- Generic Impact - For feedback consideration. Copy to Mgr of Feedback Program (Engrg) - NY Office).

EBASCO SERVICES, INC.  
RECEIVED

NOV 8 1982  
ENGINEERING  
DOCUMENT DEPT.  
WATERFORD 3 FIELD

LEAD DISCIPLINE OR ESSE DESIGNEE (Signature) <u>[Signature]</u>	DATE <u>9.10.82</u>	SUPERVISING ENGR OR ESSE DESIGNEE (Signature) <u>[Signature]</u>	DATE <u>9/14/82</u>
---	---------------------	--	---------------------

Supervising Engineer signs and returns to LDE for transmittal to Sr Resident Engineer with copies to:

- Project Engineer ESSE PE Others as Required H. LIGH
- Project Manager Coordinator H. MILDE
- Project Supt Proj Cost/Sched Engr P. C. LIU
- PO&B (NOT) CONSTR CTRL Supt J. McCABE

831/11-76



EBASCO SERVICES INCORPORATED

FIELD CHANGE REQUEST

FOR REFERENCE ONLY



IMMINENT ITEM #7

Sections 1 thru 4 to be filled out by Construction  
Section 5 to be filled out by Engineering

PROJECT WATERFORD-3 OPS NO. \_\_\_\_\_ FIELD CHANGE NO. FCR-45-1179

To W. HUBRICH Dept ESSE Location SITE Date 1/17/79  
(PER PROCEDURE E-37)

Re:  Drawing No. \_\_\_\_\_ Title \_\_\_\_\_  
 Spec No. LOU 1564.738 Title MASONRY  
 Other \_\_\_\_\_

1. DESCRIPTION (Items involved, submit sketch if applicable)  
PARA. 11.3 OF SUBJECT SPEC CALLS FOR USE OF HEAVY-WEIGHT AGGREGATE IN MORTAR FILL AROUND SHIELDING WALLS. AGGREGATE TO CONFORM TO ASTM C-637.

2. REASONS FOR CHANGE (If from disposition of nonconformance report, list report number)  
AGGREGATE IS COSTLY, DIFFICULT TO OBTAIN AND APPARENTLY NOT NECESSARY.

3. RECOMMENDED DISPOSITION (Submit sketch if applicable)  Minor Change  Major Change  
DELETE REQUIREMENTS OF PARA 11.3 AND USE MORTAR WITH NORMAL WEIGHT AGGREGATE.

4. SR RESIDENT ENGINEER (Signature) [Signature] DATE 1/19/79 PROJECT SUPERVISOR CONCURRENCE (Signature) [Signature] DATE 1/14/79

5. DISPOSITION  
 Not Approved (give reason) \_\_\_\_\_  
 Considered Minor Change - Approved per Recommended Disposition - Design Documents not be formally revised; field to maintain as-built records.  
 Considered Major Change - Action will be taken as prescribed on OCN- \_\_\_\_\_  
EBASCO SERVICES, INC. RECEIVED JAN 25 1979 9:45  
ENGINEERING DOCUMENT DEPT. WATERFORD 3

LEAD DISCIPLINE/ESSE DESIGNER (Signature) [Signature] DATE 1/24/79 SUPERVISOR/ENGINEER/ESSE DESIGNER (Signature) [Signature] DATE 1-25-79

Supervising Engineer signs and returns to LEDE for transmittal to Sr Resident Engineer with copies to:  
Project Engineer Esse PE Others as Required K. ELACHINSKI  
Project Manager Coordinator A. GROSS  
Project Supt H. TUPAL  
C. LOUTO  
G. NELSON

FIELD CHANGE REQUEST  
FOR REFERENCE ONLY

ITEM # 7

Section 1 thru 4 to be filled out by Construction  
Section 5 to be filled out by Engineering

NON IMMEDIATE

PROJECT WATERFORD-3 OPS NO. \_\_\_\_\_ FIELD CHANGE NO. FCR-AS-809

To G. BRUNDAGE Dept ESSE Location SITE Date 6/20/78  
(PER PROCEDURE E-37)

Re:  Drawing No. \_\_\_\_\_ Title \_\_\_\_\_  
 Spec No. LOU 1564.738 Title MASONRY  
 Other \_\_\_\_\_

1. DESCRIPTION (Items involved, submit sketch if applicable)  
SECTION 9.1 OF REFERENCED SPEC. CALLS FOR PREFABRICATED CORNER REINFORCEMENT WITH UNEQUAL LENGTH RETURNS OF A MIN. OF 28" & 40".

2. REASONS FOR CHANGE (If from disposition of nonconformance report, list report number)  
THE ABOVE IS A NON-STANDARD SIZE & WILL RESULT IN INCREASED COST.

3. RECOMMENDED DISPOSITION (Submit sketch if applicable)  Minor Change  Major Change  
CHANGE REQUIREMENTS OF PREFABRICATED CORNER REINFORCEMENT TO HAVE UNEQUAL LENGTH RETURNS OF 36" & 28"

Sr. Resident Engineer (Signature) [Signature] DATE 6-20-78 PROJECT Supt. CONCURRENCE (Signature) [Signature] DATE 6-20-78

5. DISPOSITION EBASCO SERVICES, INC.

RECEIVED

JUN 29 1978

8.00

ENGINEERING

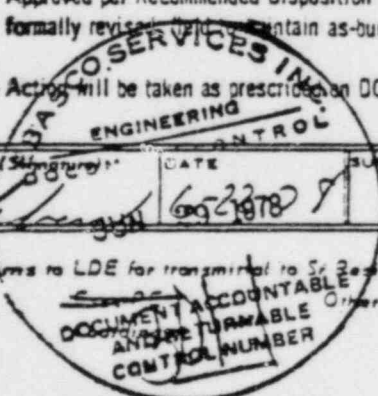
DOCUMENT DEPT.

WATERFORD 3 FIELD

Not Approved (give reason) \_\_\_\_\_  
 Considered Minor Change - Approved per Recommended Disposition - Design Documents will not be formally revised but will contain as-built records.  
 Considered Major Change - Action will be taken as prescribed on DCN - \_\_\_\_\_

LEAD DISCIPLINE/ESSE DESIGNER (Signature) [Signature] DATE 6-22-78 SUPERVISING ENGINEER/ESSE DESIGNER (Signature) [Signature] DATE 6/22/78

Supervising Engineer signs and returns to LDE for transmittal to Sr. Resident Engineer with copies to:  
Project Engineer  
Project Manager  
A. GROSS  
R. TEAL  
C. LEUTE



Section 1 thru 4 to be filled out by Construction  
Section 5 to be filled out by Engineering

FOR REFERENCE ONLY

PROJECT	OPS NO.	FIELD CHANGE NO.
WATERFORD SES # 3		FCR- <del>AS 617</del>

To E BRUNDAGE Dept ESSE Location SITE Date 3-6-78  
(PER PROCEDURE E-37)

Re:  Drawing No. \_\_\_\_\_ Title \_\_\_\_\_  
 Spec No. LOU1564.738 Title MASONRY  
 Other \_\_\_\_\_

1. DESCRIPTION (Items involved, submit sketch if applicable) The last sentence of SECTION 5.07 of the above spec. states, "Fire rated concrete block shall bear U.L. Inc Classification Marking."

2. REASONS FOR CHANGE (If from disposition of nonconformance report, list report number)  
It is not practical to mark every concrete block - standard commercial practice is to furnish certification of ASTM compliance

3. RECOMMENDED DISPOSITION (Submit sketch if applicable)  Minor Change  Major Change

Change the last sentence to read, "Fire rated concrete block shall ~~meet~~ be certified to U.L. I. Classification Requirements."

Sr RESIDENT ENGINEER (Signature)	DATE	SUPV CONCURRENT (Signature)	DATE
<u>W.C. Higgs for B.D. FOWLER</u>	<u>3-7-78</u>	<u>[Signature]</u>	<u>3/8/78</u>

5. DISPOSITION

Not Approved (give reason) \_\_\_\_\_

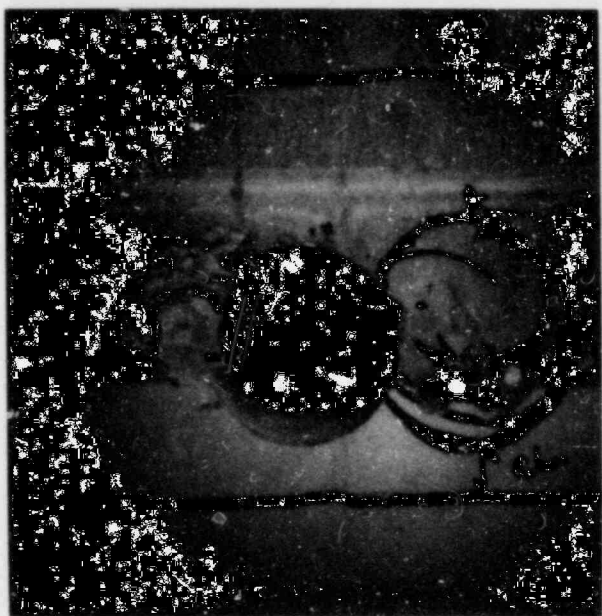
Considered Minor Change - Approved per Recommended Disposition - Design documents will not be formally revised; field to maintain as-is.

Considered Major Change - Action will be taken as prescribed.

EBASCO SERVICES, INC.  
**RECEIVED**  
MAR 8 1978  
3:10  
ENGINEERING DOCUMENT DEPT.  
WATERFORD 3 FIELD

LEAD DISCIPLINE/ESSE DESIGNEE (Signature)	DATE	SUPERVISING ENGINEER/ESSE DESIGNEE (Signature)	DATE
<u>[Signature]</u>	<u>3-8-78</u>	<u>E Brundage</u>	<u>3/8/78</u>

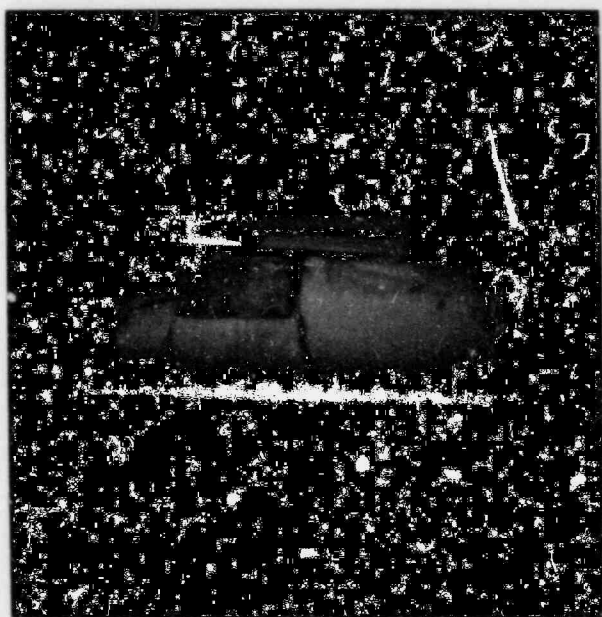
Supervising Engineer signs and returns to LDE for transmittal to Sr Resident Engineer with copies to:  
 Project Engineer Esse PE Others as Required K. ILACHINSKI  
 Project Manager Coordinator C. LEUTE  
R. TEAL



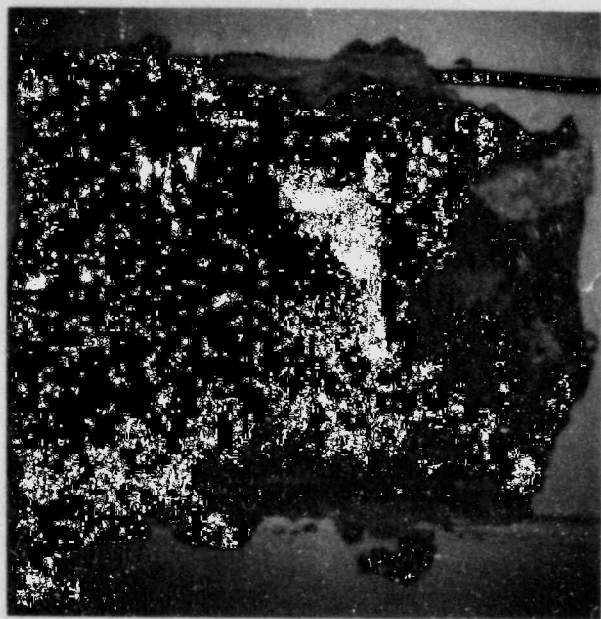
CORE HOLE S-1



CORE HOLE S-1



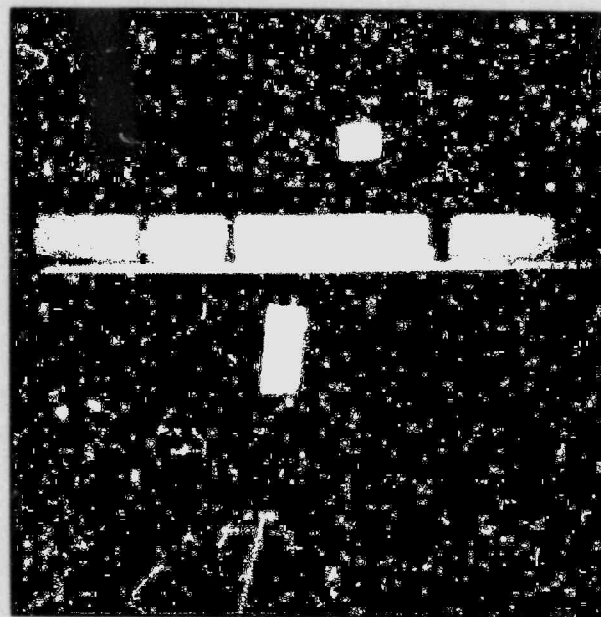
CORE HOLE S-1



CORE HOLE S-21



CORE HOLE S-21



CORE HOLE S-21



DATE 9/27/84

FILE REF ES-10130-84

TO J. DeBruin

OFFICE LOCATION

FROM <sup>BG</sup> B. Grant/G. Aliberti <sup>GA</sup>

OFFICE LOCATION

SUBJECT LOUISIANA POWER & LIGHT COMPANY  
WATERFORD SES - UNIT NO. 3  
CONCRETE MASONRY BLOCK WALLS

The concrete masonry block wall H6 and H7 located at Elevator Machine Room EL.-34.75' are constructed with running bond pattern instead of stack bond. The walls are 8" concrete block above the 1'-10 concrete curb from EL. -32.67' to EL. -24.67 with a 6" slab over. They are reinforced with vertical reinforcement @ 48" o.c. in the block cells and with duro-wal every other courses. The structural analysis indicates that the walls are adequate for the applied loads.

Therefore the drawing can be revised to denote block pattern and to be accepted as-built. WALLS H7 & H6 ARE THE EXCEPTION AS THAT THE BLOCKS ARE OF RUNNING BOND INSTEAD OF STACK

BG/GA/tw

BOND  
GA 9-27-84

cc: J. Houghtaling  
E. Kowalski  
B. Grant  
G. Aliberti  
A. Bishara  
B. Esnes  
L. Biller  
ESSE File P. 83

BY G. Alberti DATE 9-26-84

SHEET 1 OF 1

CHKD. BY K. Shul DATE 9-30-84

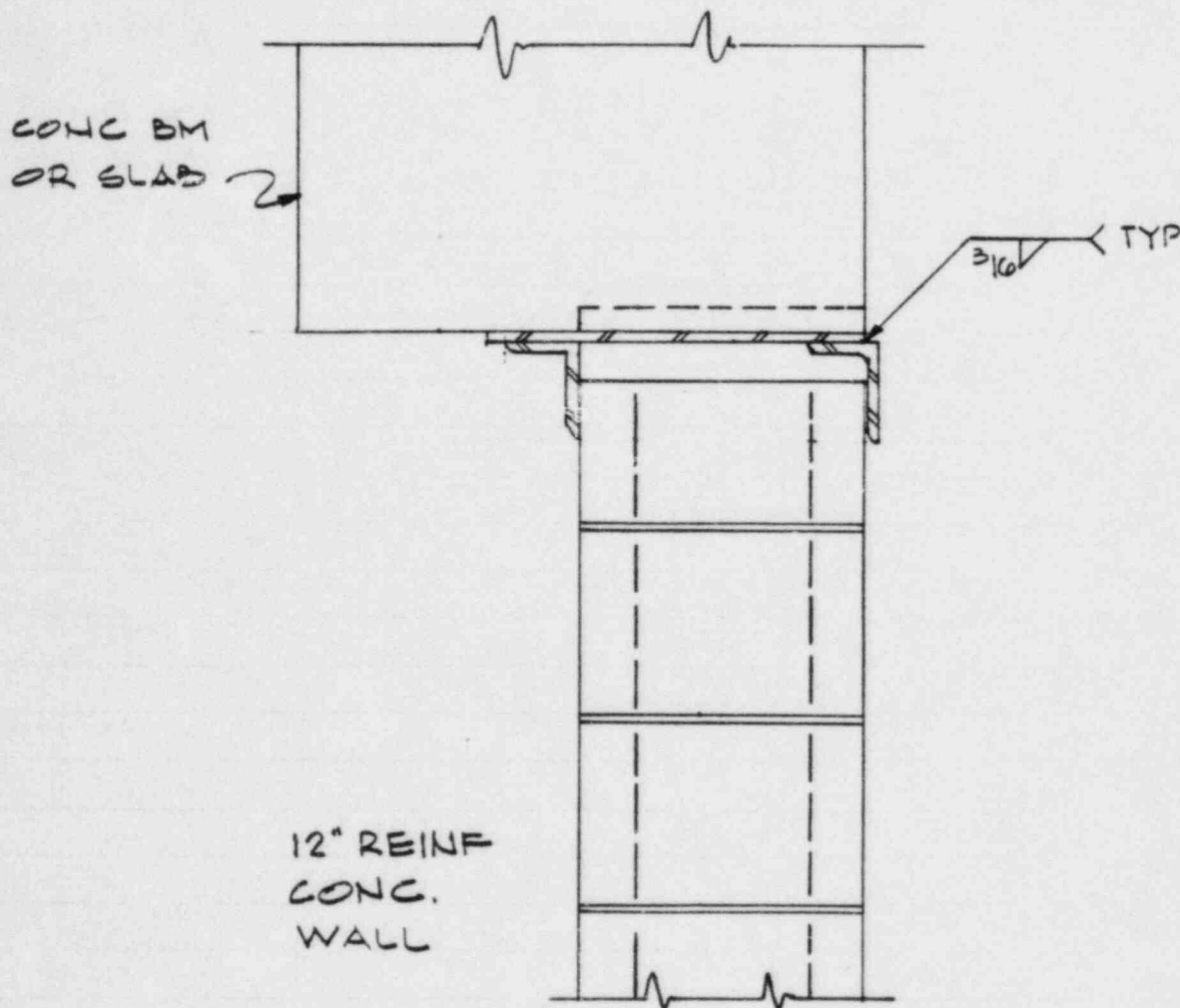
OFS NO. \_\_\_\_\_ DEPT. NO. 653

CLIENT LP & L

PROJECT WATERFORD SES #3

SUBJECT CONCRETE BLOCK WALLS ITEM # 3

PART DET DN  
REF DWG G-700503



BY E. KRIVKOV DATE 9-27-84

SHEET 1 OF 1

CHKD. BY KSK DATE 9-30-84

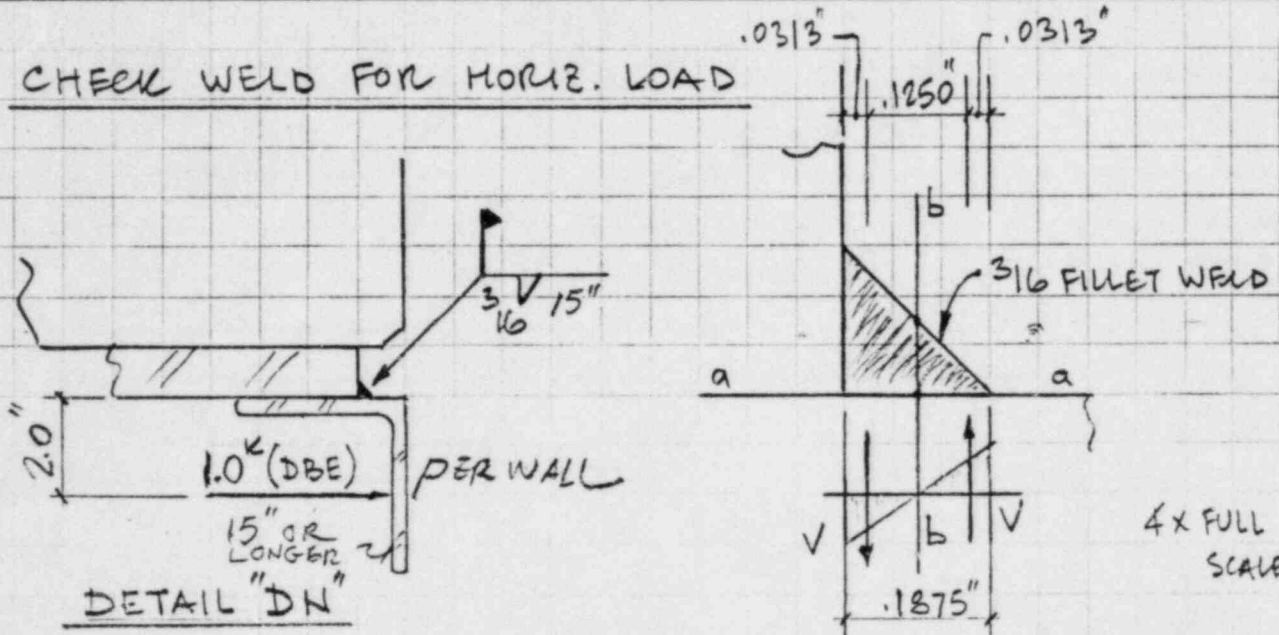
OFS NO. \_\_\_\_\_ DEPT. NO. 653

CLIENT LP & L

PROJECT WATERFORD #3

SUBJECT CONCRETE BLOCK WALLS. ITEM # 8

CHECK WELD FOR HORIZ. LOAD



ASSUME THAT  $\frac{3}{16}$  FILLET WELD IS RESISTING (15" LG)

$$M = 1.0^k \times 2.0' = 2.0^k \cdot \text{in} \quad \& \quad H = 1.0^k \quad P_H = 1.0^k \div 15' = .07^k/\text{in}$$

$$S_{\text{WELD}} = 15'' \times .1875^2 \div 6 = .0879 \text{ in}^3 \quad f_v = .07 \div (\frac{3}{16}) \times .707 = .53^k/\text{in}$$

$$f_b = 2.0 \div .0879 = 22.76 \text{ ksi} \quad 22.76 \div 21.0 = 1.08 \therefore 8\% \text{ OVER}$$

$$f_R = (22.76^2 + .53^2)^{1/2} = 22.77 \text{ ksi} < 21.0 \times 1.3 = 27.3 \text{ ksi} \quad \text{"DBE"}$$

CHECK WELD FOR MOMENT DUE TO V @ SECT b-b

$$V = 2.0 \div .1250 = 16.0^k \quad \text{OR} \quad V' = 16.0^k \div 15'' = 1.07^k/\text{lin. in}$$

$$S_1 = 1.0 \times .0938^2 \div 6 = .0015 \text{ in}^3/\text{in}$$

$$M_{bb} = 1.07^k \times (.1250 \div 2 - .0313) = .0333^k \cdot \text{in}/\text{in}$$

$$f_{1b} = .0333 \div .0015 = 22.26 \text{ ksi} \quad 22.26 \div 21.0 = 1.06 \therefore 6\% \text{ OVER}$$

$\therefore$  OK BECAUSE LOADING IS "DBE"

CONCLUSION:

WELD IS ACCEPTABLE AS BUILT.

BY G Wu DATE 9/26/84

SHEET 1 OF 4

CHKD. BY K Shih DATE 9-30-84

OFS NO. \_\_\_\_\_ DEPT. NO. 653

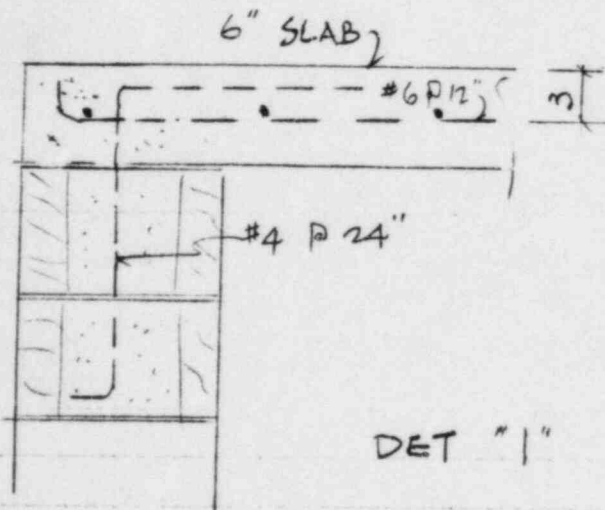
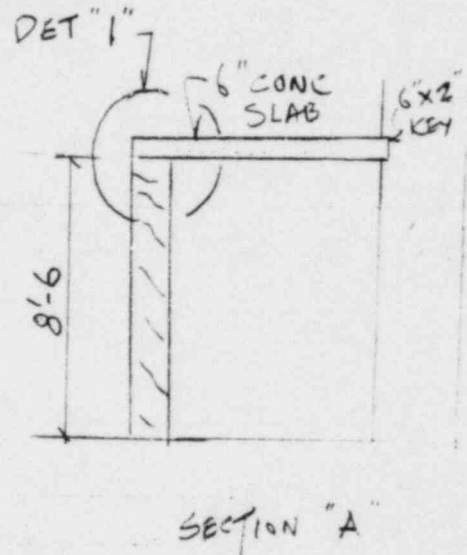
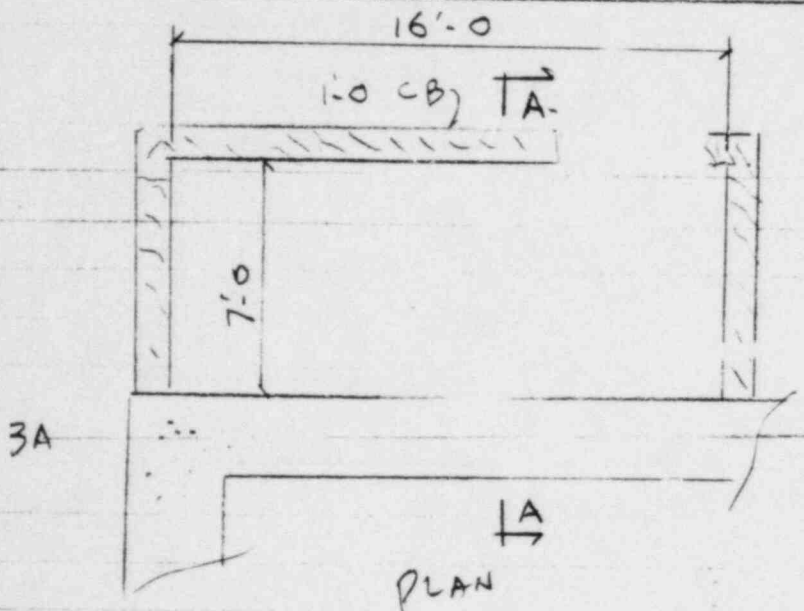
CLIENT LP & L

PROJECT WATERFORD III

SUBJECT CONCRETE MASONRY WALL

ITEM # 9

WALLS 78, 79 & 80 (STAIRWELL #7)



THE 6" CONCRETE SLAB SUPPORTED THREE SIDES ON BLOCK WALL IS KEYED INTO THE CONC REINF. WALL ON COL LINE 3A

THE WIDTH TO LENGTH RATIO =  $\frac{8}{18} = .44$

THE SLAB SHALL BE TREATED AS ONE WAY SLAB

REF: G760 S02  
G572 S01

BY G. WU DATE 9/26/84

SHEET 2 OF 4

CHKD. BY K. Chiu DATE 9-30-84

OFS NO. \_\_\_\_\_ DEPT. NO. \_\_\_\_\_

CLIENT LP & L

PROJECT WATERFORD III

SUBJECT CONCRETE MASONRY WALL

ITEM # 9

**QUESTION NO. 9**

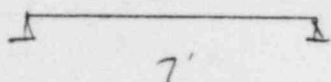
FOR 6" CONCRETE SLAB

$W = 150 \times .5 = 75 \text{ lb/ft D.L.}$

$W = 30 \text{ lb/ft L.L.}$

① TAKE 1' STRIP OF SLAB.

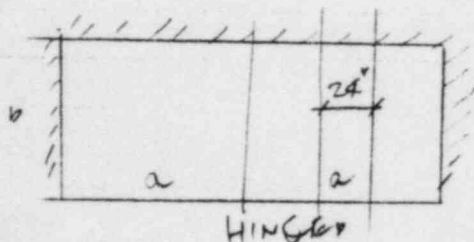
$w = 105 \text{ lb/ft}$



ASSUME SIMPLY-SUPPORTED

$M_{+} = \frac{1}{8} w l^2 = \frac{1}{8} (105) (7)^2 = 643.1 \text{ ft-lb}$   
 $= 7717.5 \text{ in-lb}$

$j = .73$   
 $d = 3"$



$A_s = \frac{M}{f_s j d} = \frac{7717.5}{24,000 \times .73 \times 3} = 0.120"$   
 $< .200$   
 O.K.

\* #4 @ 24" REINF. HAS BEEN PROVIDED @ THE TOP OF THE BLOCK WALL.

② ASSUMED THE SLAB IS FIXED @ THE BLOCK WALL AND HINGED AT THE CONC WALL

$M = 0.0664 p b^2 = 0.0664 \times 105 \times (7)^2 = 311.6 \text{ ft-lb} = 4099.5 \text{ in-lb}$

[  $\frac{a}{b} \approx 1$ . ENR'S MONOGRAPH NO. 27 ]

FOR 24" OF SLAB

$M = 2 \times 4099.5 = 8199 \text{ in-lb}$

$A_s \text{ (REQ'D)} = \frac{M}{f_s j d} = \frac{8199}{24,000 \times .73 \times 3} = 0.13"$   
 $< .200$  O.K.

③ CONSIDER A BEAM 24" WIDE. FIXED AT ONE END & HINGED @ OTHER

$M_{MAX} = \frac{1}{8} w l^2 = \frac{1}{8} (105) (7)^2 = 643.1 \text{ ft-lb}$

THIS IS SAME AS CASE ① & IS O.K.

BY G WU DATE 9/26/84

SHEET 3 OF 4

CHKD. BY K. Shultz DATE 9-30-84

OFS NO. \_\_\_\_\_ DEPT. NO. \_\_\_\_\_

CLIENT LP & L

PROJECT WATERFORD II

SUBJECT CONCRETE MASONRY WALL ITEM # 9

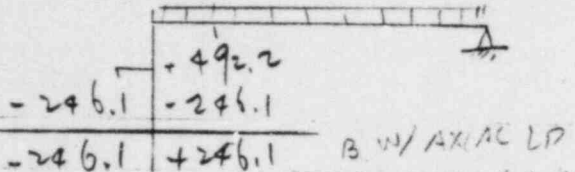
③ ASSUME SLAB & WALL ACT AS A BAND OF 1' WIDTH

$w = 105 \frac{1}{4}$

$M_L = \frac{wL^2}{12} = \frac{105 \times 7.5^2}{12} = 492.2$

A no AXIAL LD

ASSUME "I" =  $\frac{I}{2}$  ARE THE SAME FOR THE 6" SLAB AND THE 12" BLOCK WALL.



$105 \times \frac{25}{2} = 1312.5$  (AVG)  
 $8.5$  WALL  $8.5 \times 9 = 765$  #/  
 DESIGN  $p = 765 \times 1.3 = 995$  #/  
 $\frac{p}{A} = \frac{995}{86} = 12$  psi

$M = 246.1 \times 12 = 2953.2$  #"

$K = \frac{M}{f_m h^2} = \frac{2953.2}{12(6)^2} = 6.8$

$A_s = \frac{2953.2}{4000 \times 3 \times 6} = 1.023$  "

\*A = 1 HOLLOW WALL  
 NET AREA in  $\square$   
 SEE SH. A-1

$f_m = \frac{2(K)}{R U} = \frac{2(6.8)}{0.5(0.8)} = 34$  psi

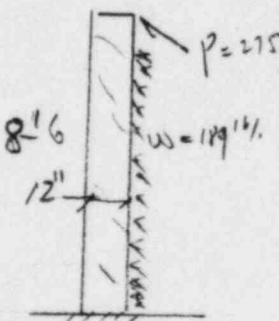
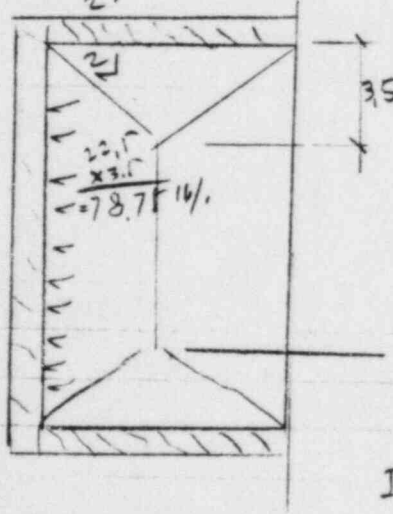
< 1 " O.K

TOTAL  $f_m = 12 + 34 = 46$  psi <  $169 \times 1.3$  psi O.K

④ ASSUME UNDER EARTHQUAKE CONDITION, BLOCK WALLS TAKE ALL THE HORIZONTAL LOAD.

FROM THE 6" SLAB

$w = .3 \times 150 \times .5 = 22.5$  #/ft  
 $\times 3.5 \times 7.5 = 275.6$  #



$I = \frac{1}{12} (12)(8.5 \times 12)^3$

FOR BLOCK WALL  
 $w = .3 \times 7 \times 90 = 189$  #/ft  
 DEFLECTION @ TOP OF THE SHORT WALL ( $\rightarrow$ )

$\Delta = \frac{Pl^3}{3EI} + \frac{wl^4}{8EI}$   
 $= \frac{8^3}{EI} \left[ \frac{P}{3} + \frac{w \cdot 8}{8} \right]$   
 $= \frac{(8.5 \times 12)^3}{675000 \times \frac{1}{12} (17 \times 12)^3} \left[ \frac{275.6}{3} + \frac{189 \times 8}{8} \right]$   
 $= .00043$ "  
 VERY SMALL

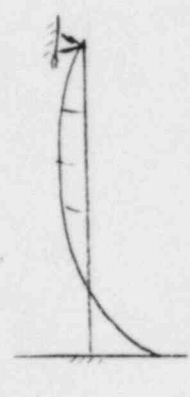
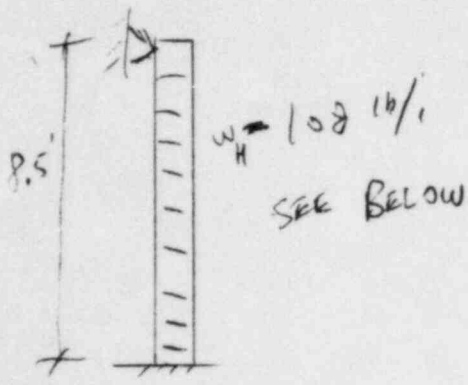
SINCE THE  $\Delta$  IS SO SMALL, THE SLAB EARTHQUAKE LOAD HAS LITTLE EFFECT ON THE BLOCK WALL DESIGN.

BY GWU DATE 9/26/84  
 CHKD. BY K SKH DATE 9-30-84  
 CLIENT LP & L

SHEET 4 OF 4  
 DEPT. 653  
 OFS NO. \_\_\_\_\_  
 NO. \_\_\_\_\_

PROJECT WATERFORD S.E.S. #3  
 SUBJECT CONCRETE MASONRY WALL ITEM # 9

(A) CHECK WALL UNDER HORIZONTAL LOAD



$$M_{Max} = \frac{w_H L^2}{8} = \frac{108 \times 8.5^2}{8}$$

$$= 975.4 \text{ ft} \cdot \text{lb}$$

$$= 1170.5 \text{ in} \cdot \text{lb}$$

$$A_s = \frac{M}{f_s j d} = \frac{1170.5}{24000 \times 0.73 \times 9}$$

$$= 0.06 \text{ in}^2$$

FOR 12" WALL,  $w = \frac{2 \times 60 + 150}{3} = 90 \text{ lb/ft}$   
 FOR A STRIP OF 48",  $w = 4 \times 90 = 360 \text{ lb/ft}$

SHEAR

$$V = \int_0^L (108) \times 8.5$$

$$= 570 \text{ lb}$$

$\frac{570}{2 \times 48 \times 9} = 1.6 \text{ psi} < 200 \text{ psi}$

$\frac{570}{2 \times 48 \times 9} = 1.6 \text{ psi} < 200 \text{ psi}$

THE HORIZONTAL FORCE  $w = 0.3 \times 360 = 108 \text{ lb/ft}$

CONCLUSION:

THE 6" CONCRETE SLAB ON TOP OF THE BLOCK WALL CAN BE SAFELY SUPPORTED BY THE WALL.

BY G. WU DATE 9/26/84  
 CHKD. BY K. Gill DATE 10-1-84  
 CLIENT LP & L

SHEET 1 OF 1  
 DEPT. 653  
 NO.         

OFS NO.         

PROJECT WATERFORD S.E.S. #3  
 SUBJECT CONCRETE MASONRY WALL ITEM # 16

HOLLOW BLOCK WALL - 12" THICK

VERTICAL REINF. BARS 4-#6 @ 48"  
 HORIZONTAL DUR-O-WALL TRUSS WITH 3/16" ROD @  
 EVERY OTHER COURSE

$A_{S.V} = .44 \times 4 = 1.76 \text{ } \square \text{ } \swarrow \text{No. 9 GAGE DIAGONAL}$

$A_{S.H} = \frac{\pi}{4} (3/16)^2 \times 2 + \frac{\pi}{4} (1.15)^2 \cos^2 51^\circ = .066 \text{ } \square \text{ } \swarrow \text{Two COURSES}$

\* THE AVERAGE HORIZONTAL CROSS-SECTIONAL AREA FOR A HOLLOW BLOCK IS 114.4  $\square \text{ } \swarrow$

$A_{VERT} = \frac{114.4 \times 8}{16} = 57.2 \text{ } \square \text{ } \times 2 = 114.4 \text{ } \square \text{ } \swarrow$

VERTICAL STEEL =  $\frac{A_{S.V}}{A_H} = \frac{1.76}{114.4} = .015$

HORIZONTAL STEEL =  $\frac{A_{S.H}}{A_V} = \frac{0.066}{114.4} = .00057$

HORIZONTAL + VERTICAL =  $.015 + .00057 = .01557$

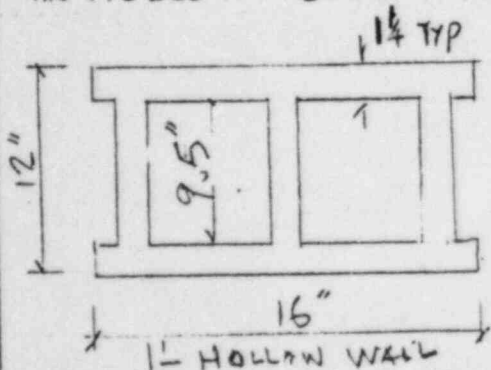
By Code \*\*  
 11.3.2.2

.0007

.0007

.002

\* HOLLOW BLOCK AREA



HOLLOW BLOCK

$A_{HORIZ.} = 1.25 \times 16 \times 2 + 1.25 \times 9.5 \times 3 = 40 + 35.6 = 75.6 \text{ } \square \text{ } \swarrow$

SOLID BLOCK

$A_{HORIZ.} = 16 \times 12 = 192 \text{ } \square \text{ } \swarrow$

NET AREA =  $114.4 \times \frac{12}{16} = 86 \text{ } \square \text{ } \swarrow$   
 FOR A 48" WIDTH

FOR A 48" WIDTH  $A_H = \frac{2 \times 75.6 + 192}{3} = 114.4 \text{ } \square \text{ } \swarrow$

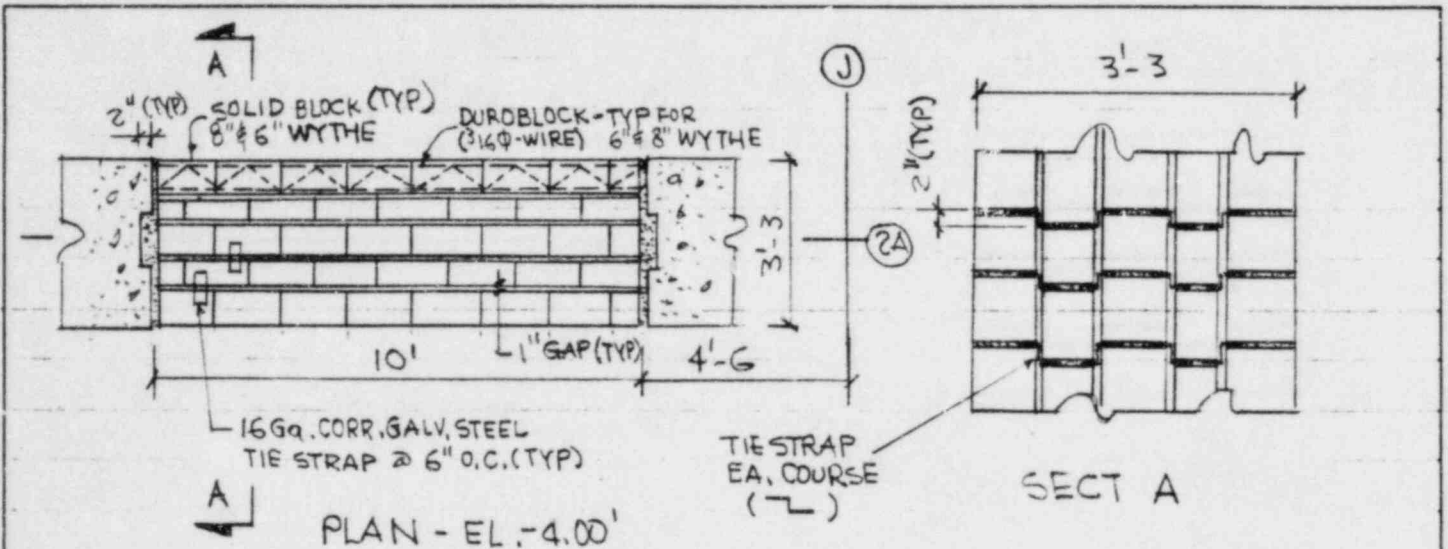
\*\* ACI 531



BY A. LEON DATE 10/2/84  
 CHKD. BY peh DATE 10-3-84  
 CLIENT LP&L  
 PROJECT WATERFORD #3  
 SUBJECT CONC. BLOCK WALLS - WALL S21 - LOAD TRANSFER FOR MULTI WYTHE WALL

SHEET 1 OF 2  
 DEPT. NO. 653  
 OFS NO. \_\_\_\_\_

ITEM #10



1. REFERENCES:

- 1.1 DWGS. G-765501 & G-765502.
- 1.2 CALCULATIONS FOR CONC. BLOCK WALLS - REVIEW DONE ON 3/15/84.

2. CRITERIA:

- 2.1 EA. WYTHE IS EVALUATED AS STANDING BY ITSELF, THE CRITICAL ONES ARE 6" WYTHE
- 2.2 THE WALL IS CONSIDERED AS SPANNING HORIZONTALLY.

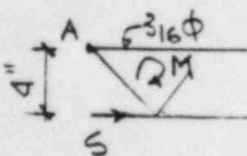
3. STRESSES ON DUROBLOCK:

$W = 140 \text{ \#/cf.}$

FOR 6" WYTHE & 8" HEIGHT (1-COURSES),  $W = 140 \times \frac{6}{12} \times .67 = 47 \text{ \#/}$

FOR SEISMIC FACTOR OF .39 THE HORIZ. LOAD =  $.3 \times 47 = 14 \text{ \#/}$

$M = .125 \times 14 \times 10^2 = 175 \text{ \#}$       $V = .5 \times 14 \times 10 = 70 \text{ \#}$



$S = 175 \times 12 / 4 = 525 \text{ \#}$      AREA WIRE =  $\pi \times (.19)^2 / 4 = .028 \text{ in}^2$   
 $f_t = 525 / .028 = 18750 \text{ psi} = 18.7 \text{ KSI} < .60 \times 65 = 39 \text{ OK}$

SHEAR ON GROUT:

$u = 70 / 6 \times 8 \times .85 = 1.7 \text{ psi} < 20 \times 1.3 = 26 \text{ OK}$

8" WYTHE IS NOT CRITICAL COMPARED WITH THE 6" WYTHE, THEREFORE IS OK.  
 DEFLECTION OF 6" WYTHE  $\therefore \Delta = 5 \times 14 \times 120^4 / 384 \times 675000 \times (8 \times 6^3 / 12) \approx 38" < 5"$   
 SPACE AMONG WYTHES IS 1" FROM FIELD INFORMATION.

BY A. LEON DATE 10/2/84SHEET 2 OF 2CHKD. BY R. Phil DATE 10-4-84OFS NO. \_\_\_\_\_ DEPT. NO. 653CLIENT LP&LPROJECT WATERFORD # 3ITEM # 10SUBJECT CONC. BLOCK WALLS - WALL S21 - LOAD TRANSFER FOR MULTI WYTHE WALLS

1. THEREFORE EA. WYTHE STANDS BY ITSELF BECAUSE THE SPACE AMONG WYTHES IS 1" AND THE DEFLECTION OF THE WYTHE IS 38". WYTHES DO NOT TOUCH. THE WYTHES ARE TIED TOGETHER WITH 16G $\alpha$ . CORRUGATED GALVANIZED STEEL TIE STRAPS AT 6" O.C.
2. THE WYTHES THRU THE DUROBLOCK ADEQUATELY TRANSPORT THE HORIZONTAL LOAD, GENERATED UNDER EARTH QUAKE CONDITIONS, TO THE CONC. WALLS THRU THE GROUT WHICH IS ADEQUATE TO TRANSFER THE LOAD.
3. BEARING ON GROUT :  
 $W = 3.25' \times 140 \times 10' = 4550 \#$  ;  $H = 4550 \times 3 = 1365 \#$   
 $BEARING = 1365 / (2' \times 12' \times 2.5 (NRC-SRP)) = 23 \text{ psi} < 169 \text{ OK}$  ✓
4. BASED ON THE ABOVE, WALL S21 IS ADEQUATE 'AS BUILT'

BY A. LEON DATE 10/5/84SHEET 1 OF 1CHKD. BY R. SHIH DATE 10-5-84

OFS NO. \_\_\_\_\_ DEPT. NO. \_\_\_\_\_

CLIENT LD&LPROJECT WATERFORD #3SUBJECT CONC. BLOCK WALLS - AS BUILT DETAILS ADEQUACY - ITEM #10

1. THE AS BUILT DETAILS USED AT DIAPHRAGM INTERFACE AND STRUCTURAL ADEQUACY OF THE AS BUILT CONDITION WAS EVALUATED ON ITEM #2, COPY ATTACHED.

BY A. LEON DATE 9/25/81  
 CHKD. BY GWU DATE 9/25/84  
 CLIENT LP & L

FOR REFERENCE  
 ONLY

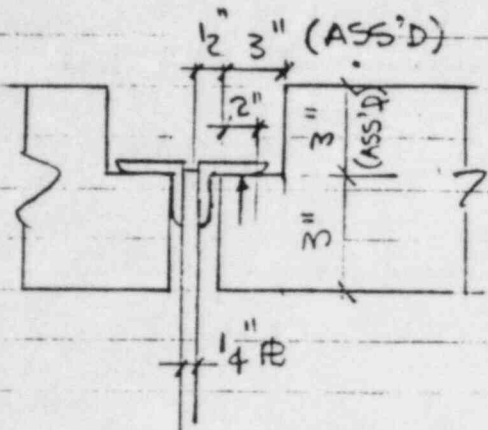
SHEET 1 OF 1  
 DEPT. 653  
 NO. 653

OFS NO. \_\_\_\_\_

PROJECT WATERFORD # 3  
 SUBJECT CONC. BLOCK WALLS - LATERAL SUPPORTS

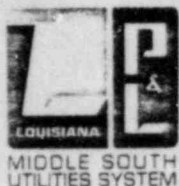
ITEM 10  
 (ITEM # 2)

CONC. BLOCK WALL - SIDE SUPPORT, - 10' C/C.



WALL THICKNESS = 4.5' (6-ROWS)

1. LOADS:  $w = 140 \#/\text{CF}$   
 $R = .140 \times 4.5' \times 5' \times 8"/12" = 2.1 \text{ K (FOR 8" COURSE)}$
2. EARTHQUAKE FACTOR = .30
3. HOR. LOAD =  $2.1 \times .3 = .63 \text{ K/1}$
4. SHEAR AT THE REDUCED SECTION:  
 $U = 630/8 \times 3 = 26.25 \text{ PSI} \approx 20 \times 1.3 = 26. \text{ (NRC-SRT)}$
5. BEARING:  
 ASSUMED AREA FOR BEARING: (MASONRY)  
 $2" \times 8" = 16 \text{ in}^2$   
 $630 \#/16 = 39.4 \text{ PSI} < 170 \text{ OK} \checkmark$
6. REQ'D THICKNESS OF L:  
 $M = .63 \times 1.5 = .95 \text{ K-in}$       $F_c = 27 \text{ PSI}$   
 $S = .95/27 = .04 = \frac{1}{6} \times 8 \times t^2 \therefore$   
 $t = .16" < .25" \text{ OK} \checkmark$



**LOUISIANA**  
POWER & LIGHT / INTER-OFFICE CORRESPONDENCE

October 12, 1984

SCRATCH MEMORANDUM

TO: K.W. Cook

FROM: R.F. Burski

SUBJECT: WATERFORD SES UNIT NO. 3  
STATUS OF MASONRY BLOCK WALL IN BETWEEN CCW  
HEAT EXCHANGER A ROOM AND PIPE CHASE

As you are aware, the subject wall has not been completed, in order to allow access for LP&L Plant Staff monitoring and verification activities, related to piping and pipe support systems during post core hot functional testing. This wall is scheduled to be completed subsequent to these activities.

During the field surveillance on September 25, 1984, several discrepancies were noted in the construction of this wall, such as loose bolts, incomplete grouting and inordinate spacing between wythes. These conditions are attributed to the partially completed status of the wall as discussed above. Noted deviations from specified design details will be corrected during the completion process.

It should be also noted that at present, a design change is under consideration by LP&L involving the addition of permanent access into the pipe chase. The attached LP&L CIWA 840056 provides the background related to the proposed change.

*R.F. Burski*  
R.F. Burski

RFB/st

cc: T.F. Gerrets, R.P. Barkhurst, N.S. Carns, D.E. Dobson, R.S. Leddick,  
R.W. Prados, File

ORIGINATOR: DON PRUETT | DEPT: PE | DATE: 1/4/84 | TIME: 0800 | SYSTEM NO AND TITLE: 19-36-STRUCTURES | EQUIP-LCC-BLDC-ELEV: RAB+Z1

WORK NAME AND UNID NO.: PIPE CHASE - RAB -4 TO +Z1 | 76. REFERENCE: 1564 - G 554 SOI | XX SH20F2

REF # 1564 - G 556 SOI | 76. REFERENCE: 1564 - G 763 SOI | ITEM # 11

DESCRIPTION OF PROBLEM:

PIPE CHASE ON NORTH SIDE OF WALL AT "L" LINE BETWEEN COLUMN LINES "3A" & "5A" SHOWN ON REFERENCED DRAWINGS IS DESIGNED TO BE SEALED USING CONCRETE BLOCKS PLACED IN THE CONSTRUCTION OPENINGS AT EL. -4 AND +Z1. THIS PIPE CHASE HAS APPROX. 80 HANGERS, SWIZZERS, OR SPRING CANS WHICH MUST BE INSPECTED THROUGHOUT THE LIFE OF THE PLANT AS PART OF THE INSERVICE INSPECTION PROGRAM. CLOSING THE EXISTING CONSTRUCTION OPENINGS WITH CONCRETE BLOCK WILL NOT PROVIDE THE NECESSARY ACCESS TO THIS CHASE.

SIGNATURE: [Signature] | DATE: 1-4-84 |  SEE APPENDIX PAGE

PRIORITY	II. CONDITION CATEGORY	III. CONDITION STATUS	II. CA TYPE	III. LICENSEE EVENT REPORT	II. FAILURE MODE	III. FAILURE DETECTION	II. SYS. STATUS	III. EFF ON SYSTEM	II. EFF ON PLANT	III. PLANT CONCL.
1.9	NA	N/A	NS-CA	YES	N/A	N/A	N/A	N/A	N/A	10

DISPOSITION: ORIGINAL |  INVALID REPORT |  CONTROLLED MAINT. | 21. ASSIGNED WORK GROUP: ESSE-CNIL

QUESTION TO ESSE |  UNCONTROLLED MAINT. | ACTION DUE DATE: 1-13-84

CONTROLS REQUIRED	YES	NO	PROCEDURES
UNFINED SPACE ENTRY		<input checked="" type="checkbox"/>	
ISOLATION WORK PERMIT		<input checked="" type="checkbox"/>	OWGS. OR OTHER REF. MATL.
LOGGING		<input checked="" type="checkbox"/>	OTHER: -
EE/PWR APPROVAL REQ.		<input checked="" type="checkbox"/>	

INITIAL CORRECTIVE ACTION: WHERE POSSIBLE, IDENTIFY RETEST REQUIREMENTS

ESSE EVALUATE AND PROVIDE DESIGN WHICH WILL ALLOW EASY ACCESS TO THIS CHASE SUCH AS HOLLOW METAL DOORS AT +Z1.

PREPARED BY: [Signature] | DATE: 1-4-84 | APPROVED BY: [Signature] | DATE: 1-4-84 |  SEE APPENDIX PAGE

USE:  YES |  NO

CC SIGNATURE & DATE

Revision 6  
Attachment 5, 1 - Page 1 of 2  
SAI-04

EX NO.

TITLE:

ITEM #11

A hollow metal doors as access to pipe chase is not feasible. Pipe chase enclosure walls are design to withstand three hour fire rating & radiation dose rate level greater than 100.0 mr/hr. Existing are four through accesses which satisfy this criteria.

They are located, two at (EL. + 21) & two at (EL. -4) between column lines 3A & 5A. These accesses are sealed by removable concrete block wall panels. Each panel can be dismantle within approximately 20 manhours. This include disposal of contaminated mortar, removal and stacking of the blocks with durowalls which is reused. The duration to reinstalled panels are 16 manhours per panel.

If your inservice inspection programs will be more frequent that your refuel outage then the need for easier access will exist, also provision will have to be made for access within the pipe chase to the equipment being serviced. The pipe chase is 56'-0 high without intermediate floors which would make frequent servicing of instruments & equipment within the pipe chase time consuming.

The final inservice inspection procedures for this pipe chase need to be evaluated, if they are frequent enough to warrant the change in design. If this is so then there are several options to be selected from such as

- 1) Provide 2'-0 thick concrete motorized door on track at one of the existing panels. This would be the most easy access but by far the most expensive.
- 2) The blowdown heat exchanger room and pipe chase at FL EL -4'-0 both have radiation dose rate level greater than 100.0 mr/hr. The difference in radiation level maybe so minute that the access panel in this area can be replaced by a removable 3 hr/fire rating panel with a light weight free standing shielding in front of it. The difference in radiation level may cause the shielding to need a lifting device.
- 3) Provide 2'-0 thick concrete labyrinthine wall on the north side of the pipe chase with controlled access gate & 3 hr./fire rating removable panels at one of the existing panels.

All three schemes would have catwalks and ladders within the pipe chase.

cc: Dick Diener NY

J. Houghtaling

B. Grant

L. Biller

## FOLLOW-UP ACTION

NY

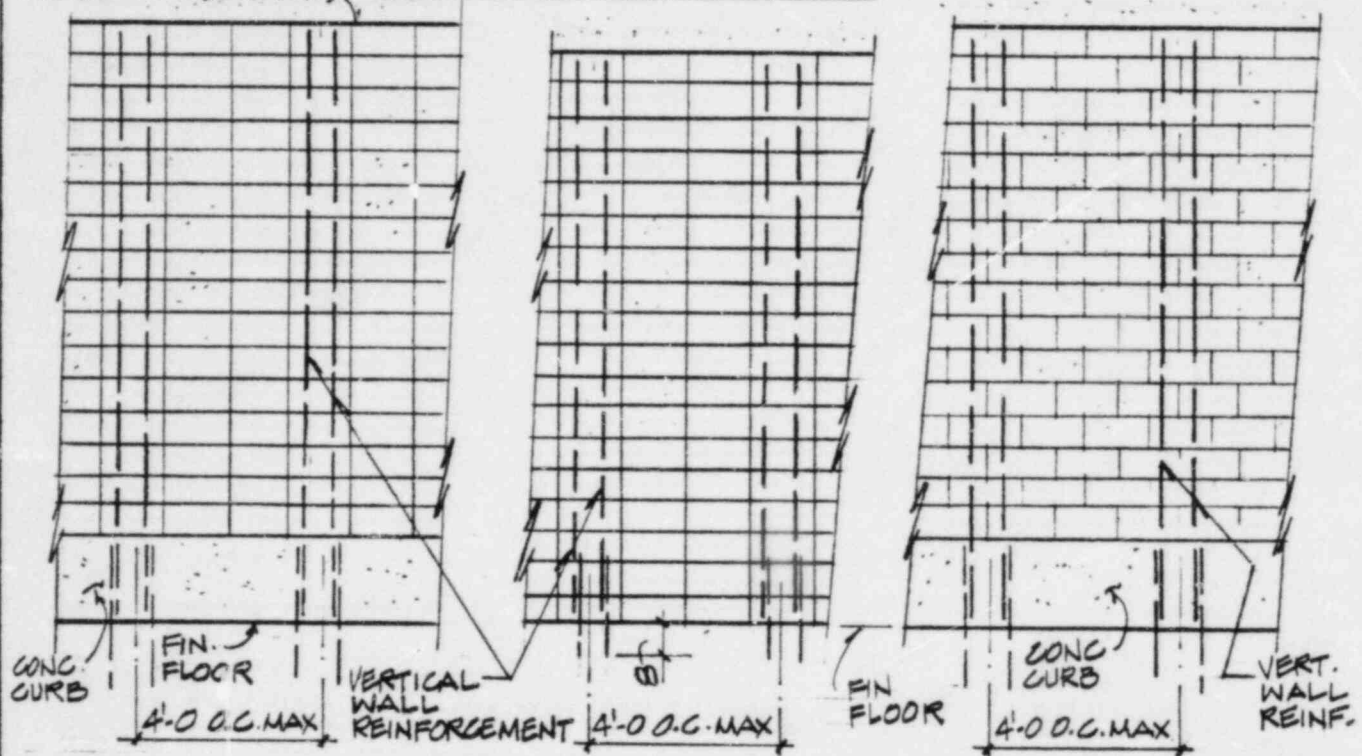
ESSE

OTHER

Bill Grant: 5/2/84  
 Cy Beu 5-2-84

# REINFORCED MASONRY HOLLOW CONC. BLOCK WALL

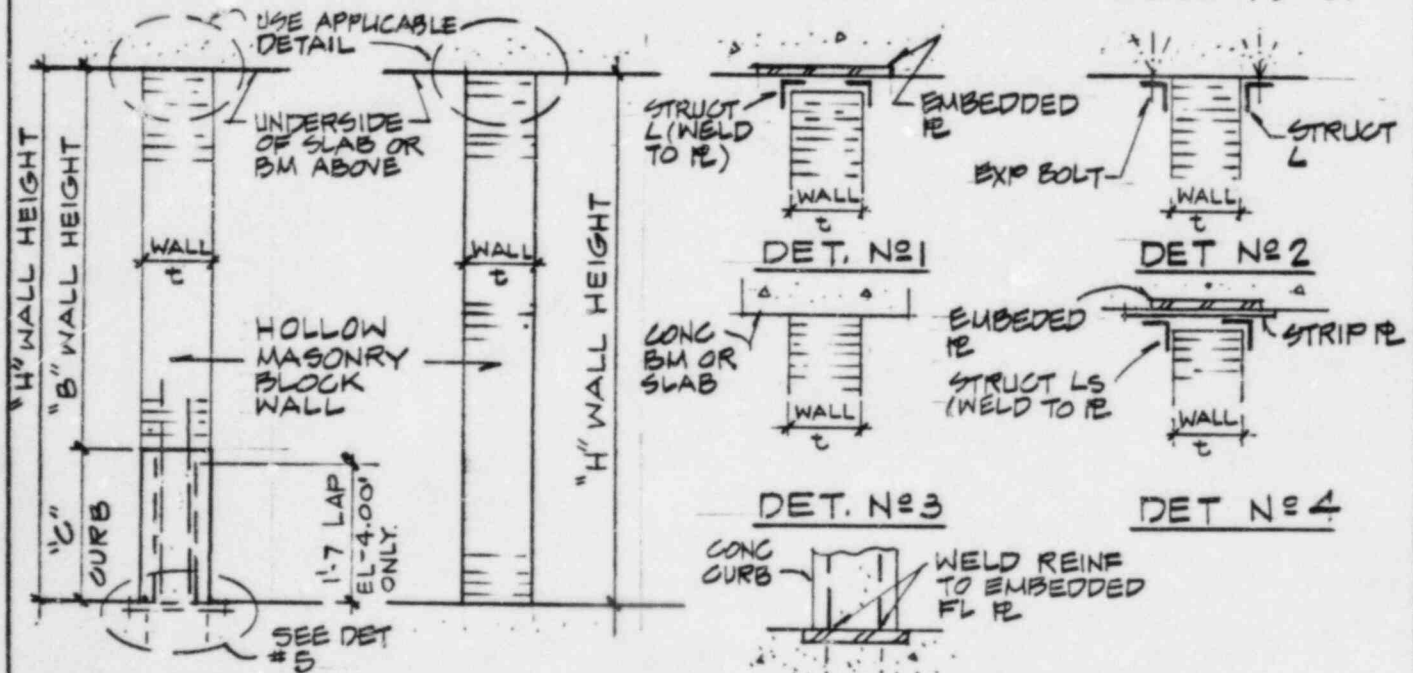
LINE OF SLAB OR BEAM ABOVE (TYP) TYPES & DETAILS



**ELEVATION WALL #1**  
(STACK BOND)  
HORIZ. WALL REINF. EVERY 2ND CG

**ELEVATION WALL #2**  
(STACK BOND)  
HORIZ. WALL REINF. EVERY 2ND CG

**ELEVATION WALL #3**  
(RUNNING BOND)  
HORIZ. WALL REINF. EVERY 2ND CG



**WALL TYPE A**  
(WITH CONC CURB)

**WALL TYPE B**  
(WITHOUT CONC CURB)

**DET #5**  
"AT FL EL-4.00'  
ONLY"

**NOTE:**

WORK THIS SHEET  
WITH DWGS  
G-760501, G-760502,  
G-760503 G-765502  
& G-771505.

BY: J. SANTOSPIRITO 10-4-84 **WALL DETAILS**

CHECKED BY: GW 10-6-84



EBASCO SERVICES INCORPORATED

BY J. SANTOSPIRITO DATE 10-4-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

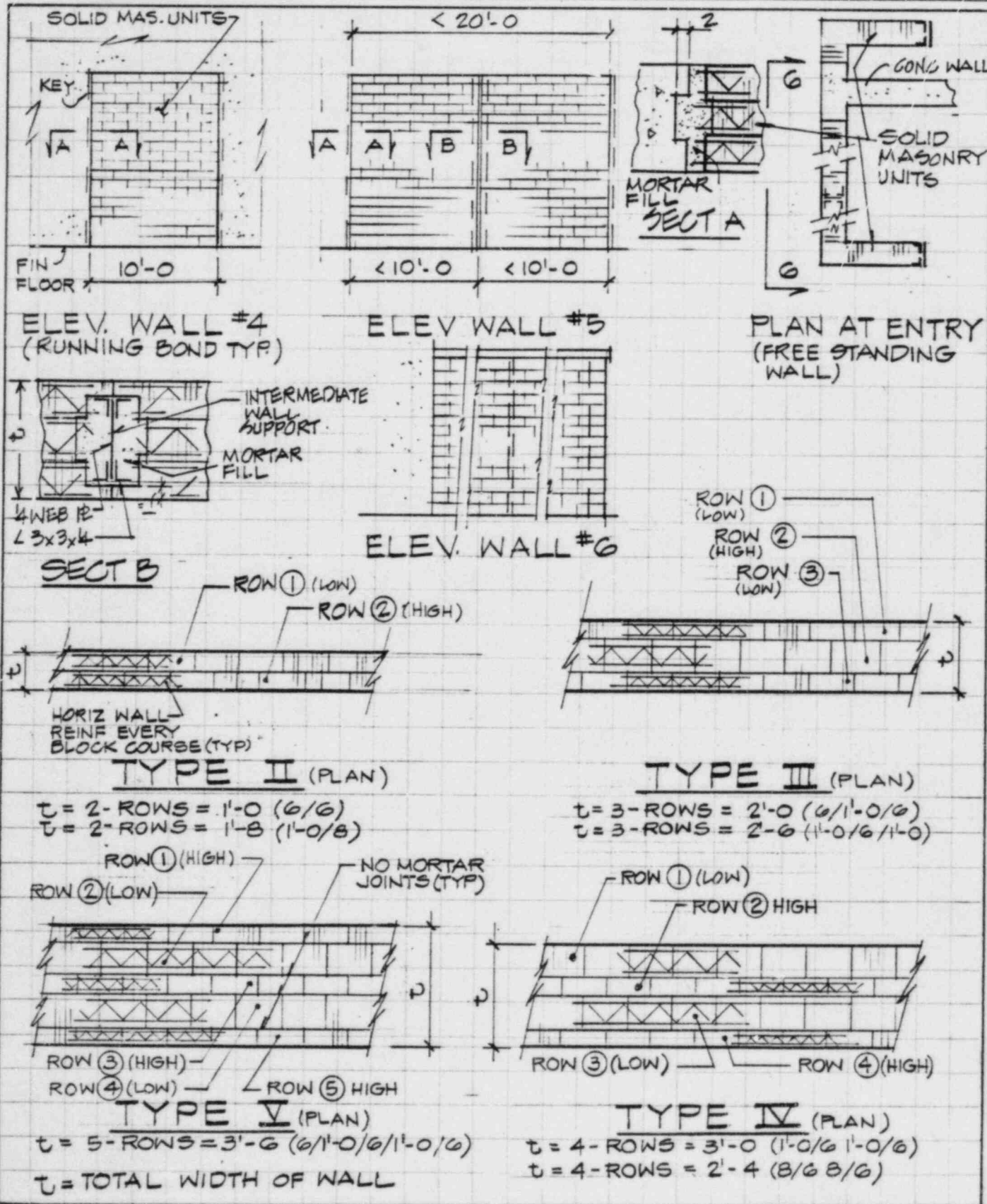
CHKD. BY G.W. DATE 10-8-84

OFS NO. \_\_\_\_\_ DEPT. NO. \_\_\_\_\_

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



EBASCO SERVICES INCORPORATED

BY J. SANTOSFRITO DATE 10-5-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

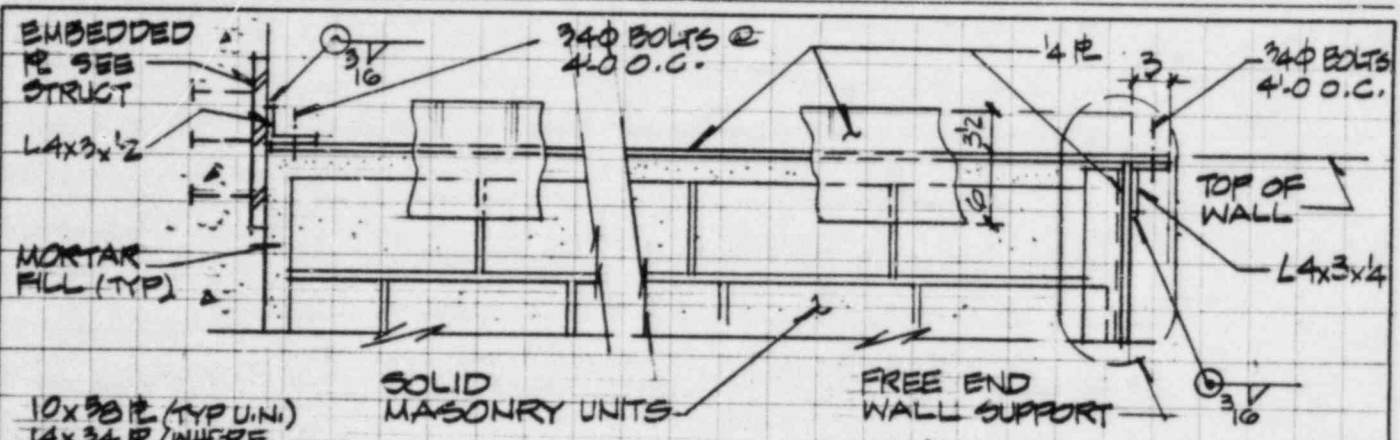
CHKD. BY S.W DATE 10-8-84

OFS NO. \_\_\_\_\_ DEPT. NO. \_\_\_\_\_

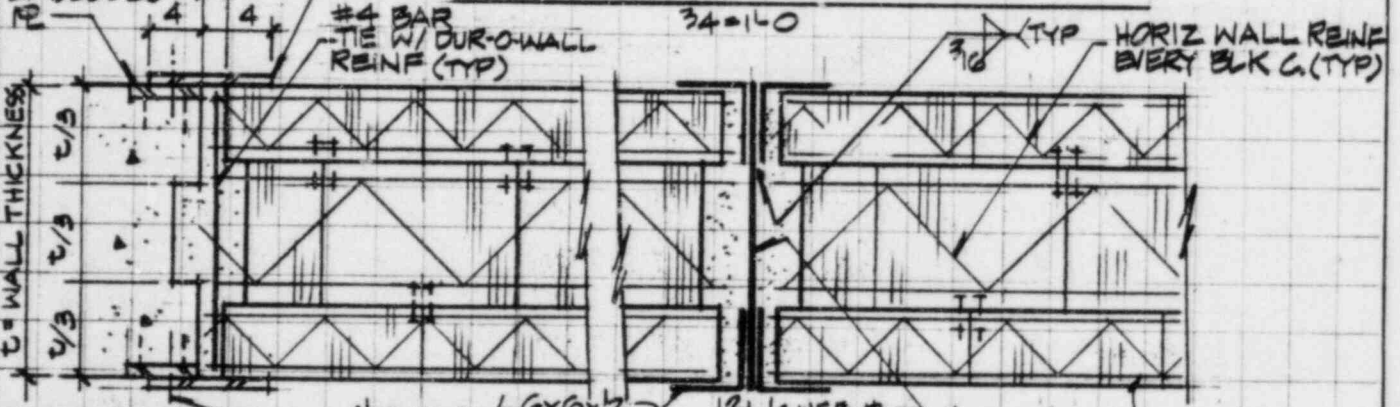
CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

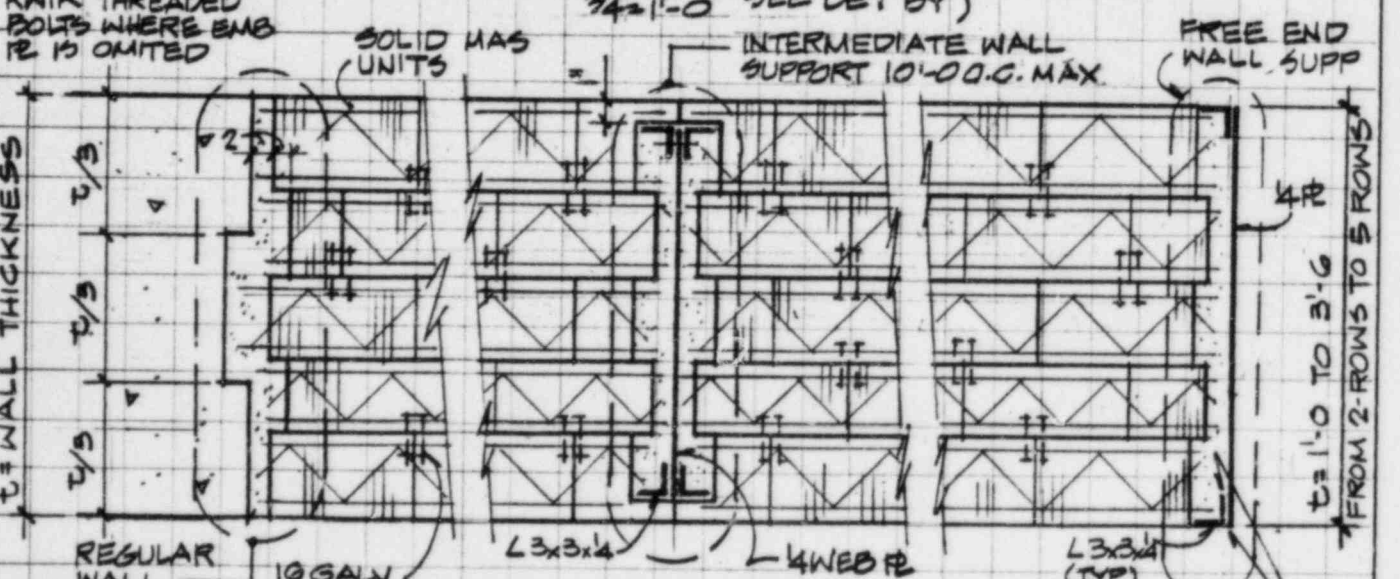
SUBJECT CONCRETE MASONRY BLOCK WALLS



DET BV (ELEVATION T.O. WALL)



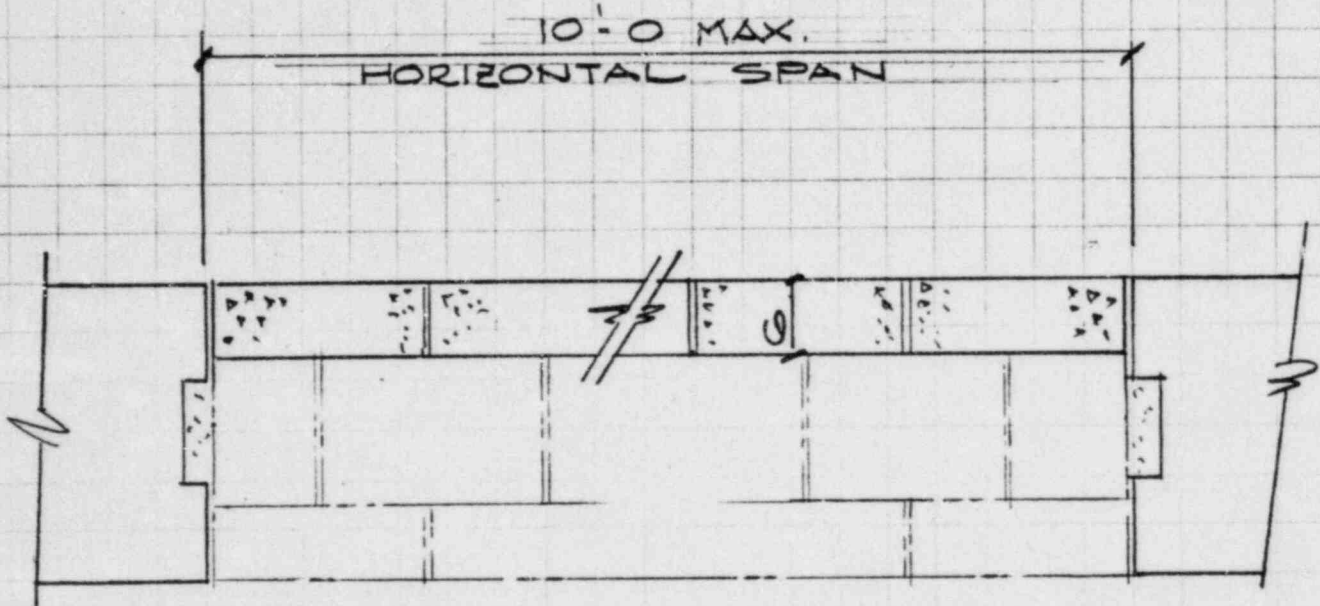
DET BZ PLAN (FOR ADDITIONAL INFOR. SEE DET BV)



DET BY PLAN

BY G. WU DATE 10-12-84 SHEET \_\_\_\_\_ OF \_\_\_\_\_  
CHKD. BY ca DATE 10/12/84 OFS NO. 2865-058 DEPT. NO. 653  
CLIENT LOUISIANA POWER & LIGHT  
PROJECT WATERFORD #3  
SUBJECT CONCRETE MASONRY BLOCK WALLS

SOLID BLOCK



PLAN

FREQUENCY  $f = 22.21 \text{ Hz}$

EBASCO SERVICES INCORPORATED

BY G. WU DATE 10-12-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

CHKD. BY α. DATE 10/12/84

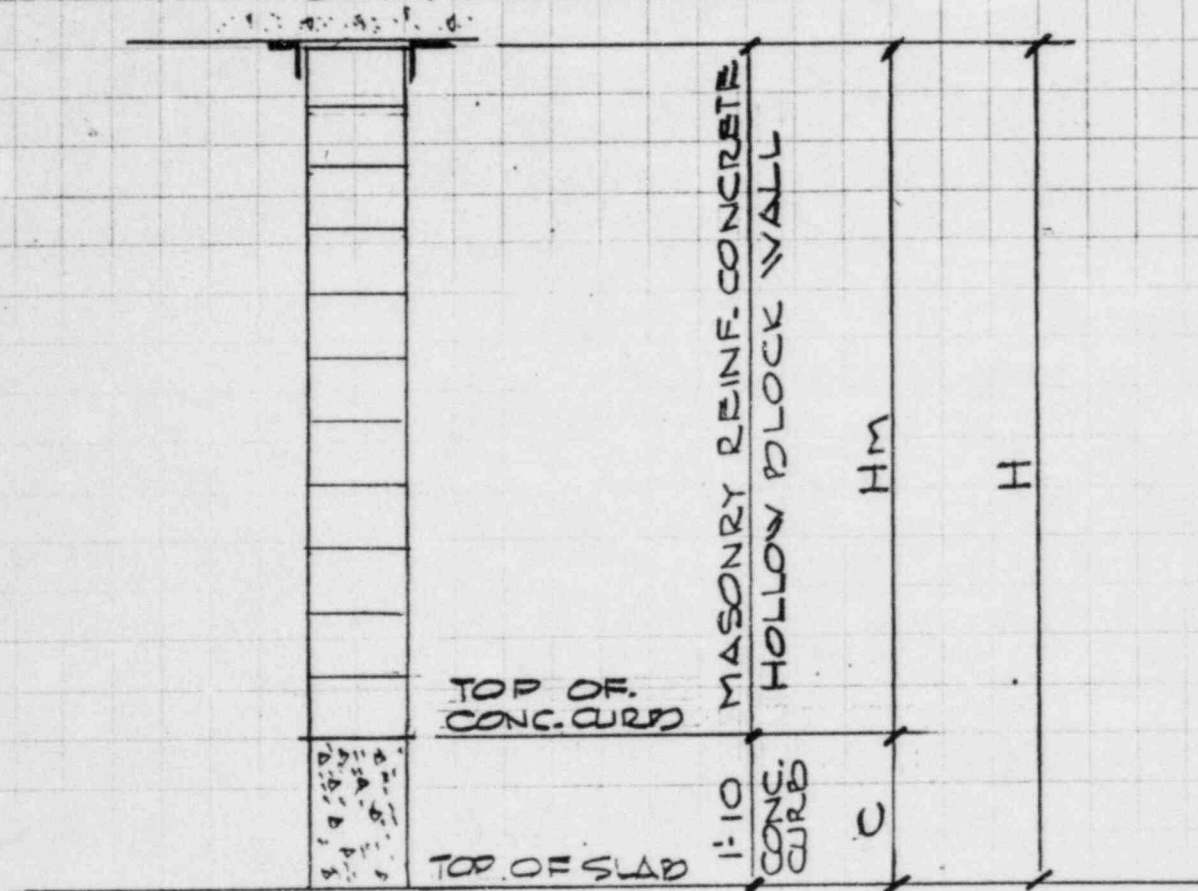
OFS NO. 2865-058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS

CONC. MASONRY BLOCK WALL  
LIMITING CONDITIONS



WALL THICKNESS "t" INCHES	MAX. HEIGHT "H" - FEET		FREQUENCY Hz		REMARKS
	HINGED	CANTI-LEVER	HINGED	CANTI-LEVER	
8	24'-0	12'-3	5.49	4.80	
12	30'-0	17'-0	5.46	4.15	

EBASCO SERVICES INCORPORATED

BY G. FISCHIONI DATE 10-6-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

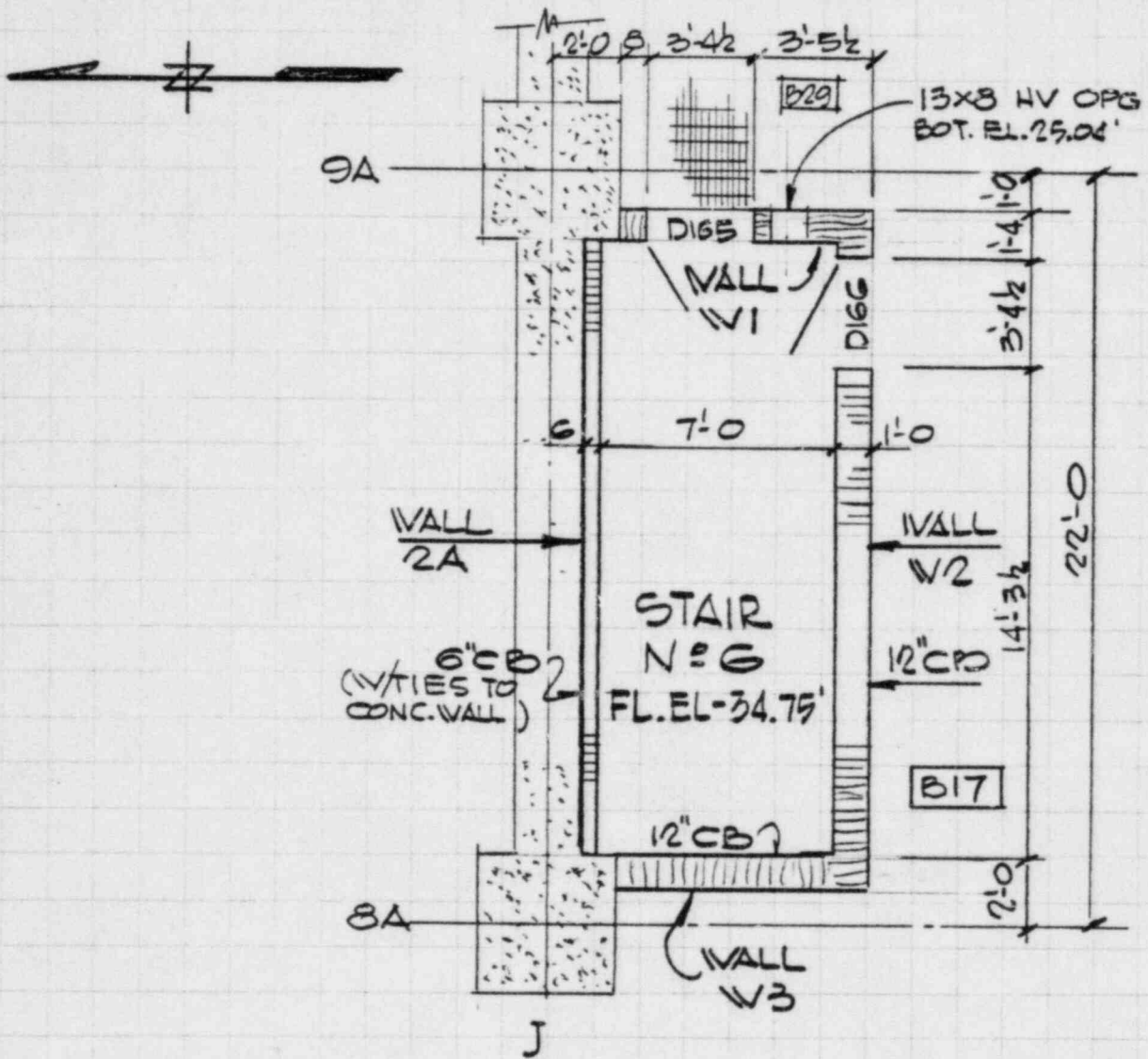
CHKD. BY J.S. DATE 10-8-84

OFS NO. 2365-05B DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PLAN @ EL. -34.75' ± -15.50'  
SCALE 3/16" = 1'-0"

REF. DVG. G-765502

BY G. WU DATE 10-8-84

CHKD. BY J. M. K. DATE 10.9.84

CLIENT LOUISIANA POWER & LIGHT CO

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS

SHEET 2865-058 OF 653  
DEPT. NO. 653

## DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS						
W	H	S	t = INCH.	W = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV WALL NO	HOLLOW UNITS			SOLID UNITS			
									BOT.	TOP		INTERMEDIATE DIAPHRAM			
										FIXED	HINGED	FREE	EXIST.	HINGED	CANTILEVERED
1	H2		12	7'-6"	27'-2"	A	1	1	✓	✓					
2	H1		12	20'-0"	27'-2"	A	1	1	✓	✓					
2A	-		6	18'-0"	26'-8"	B	3	2	*	*					
3	H3		12	7'-6"	27'-2"	A	4	1	✓	✓					

REMARKS: \* WALL IS SELF-SUPPORTING DUE TO THE EMBEDDED TIE STRAPS ALONG THE LENGTH OF THE WALL

EBASCO SERVICES INCORPORATED

BY G. FISCHIONI DATE 10-6-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

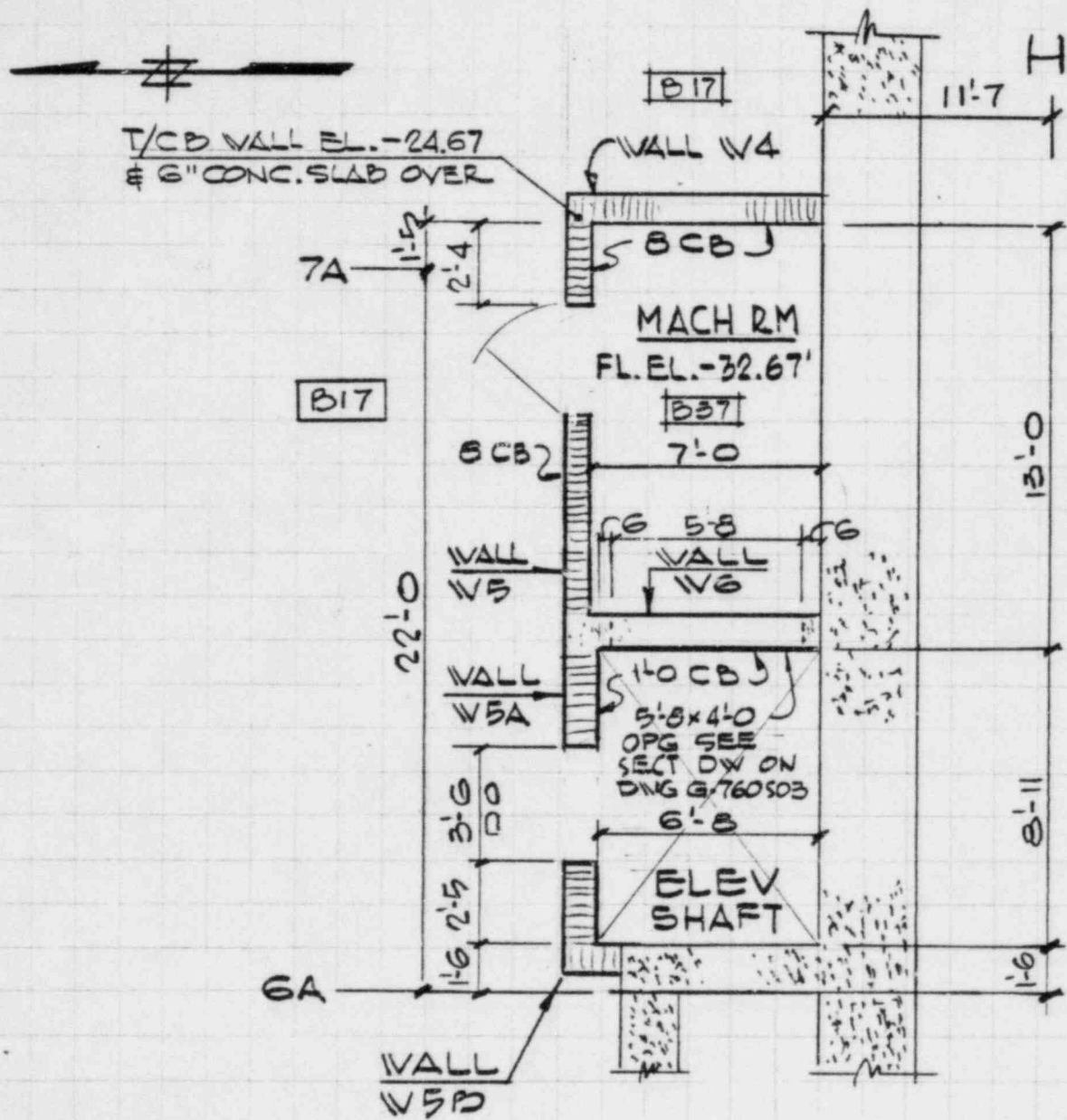
CHKD. BY J.S. DATE 10-8-84

OFS NO. 2865-058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PLAN AT EL. -32.67

SCALE  $\frac{3}{8} = 1'-0$

REF. DWG. G-765502

EBASCO SERVICES INCORPORATED

BY G.W.V. DATE 10-8-84

CHKD. BY G. Williams DATE 10-9-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

OFS NO. 2865-058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS

DATA - SEISMIC MASONRY

WALL NO	WALL DIMEN.			WALL TYPES & DETS		DESIGN PARAMETERS						
	W	H	S	T = INCH.	W = FEET (FT.)	H = FT.	ELEV WALL NO	HOLLOW UNITS		SOLID UNITS		
								POTT.	TOP	INTERMEDIATE	DIAPHRAM	
								FIXED	HINGED	EXIST.	HINGED	CANTILEVERED
4	H7	8	S	8	7:8	10:0	3	✓	✓			
5	H6	8	S	8	12:8	10:0	3	✓	✓			
5A		12	S	12	10:11	*	1	✓	✓			
5B		12	S	12	1:8	*	1	✓	✓			
6		12	S	12	7:0	**	**	**	**			

REMARKS: \* CANNOT BE VERIFIED DUE TO EQUIP. ABOVE  
 \*\* INACCESSIBLE



EBASCO SERVICES INCORPORATED

BY G. FISCHIONI DATE 10-6-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

CHKD. BY J.S. DATE 10-8-84

OFS NO. 2869-053 DEPT. NO. 653

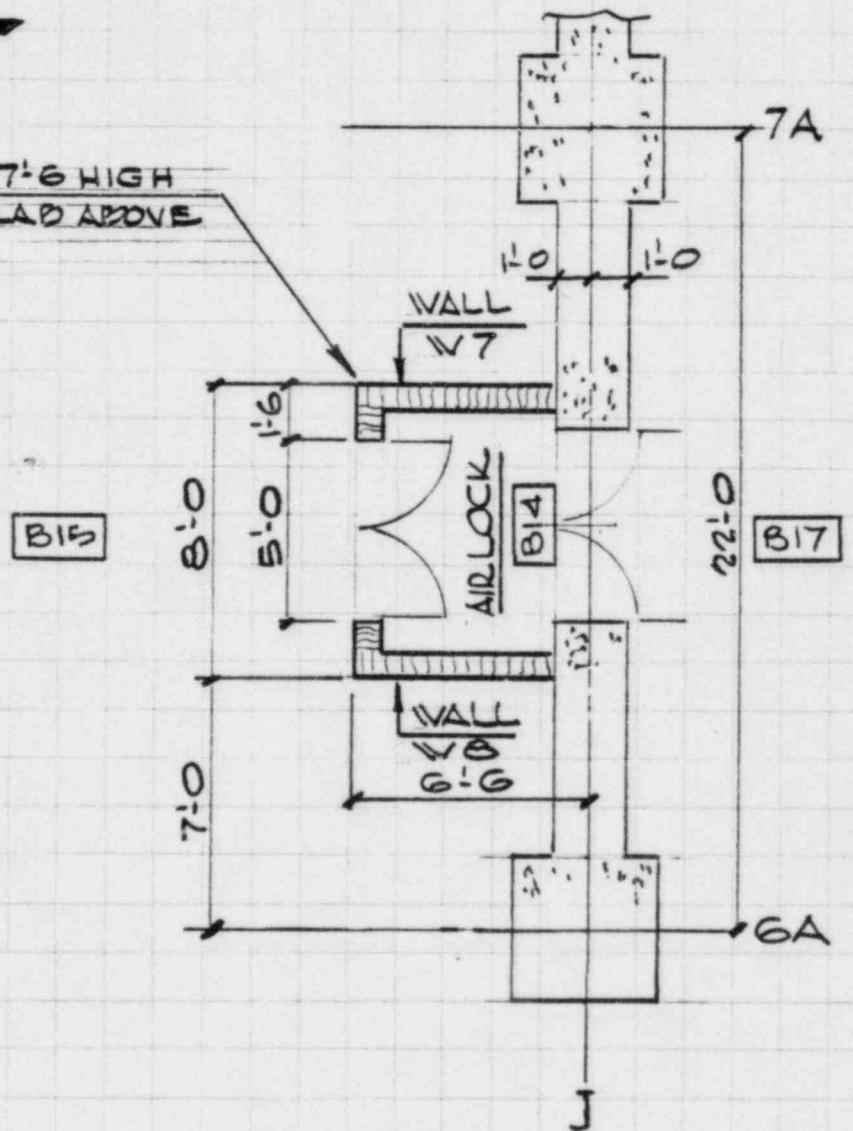
CLIENT LOUISIANA POWER & LIGHT CO

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



8 CPD 7'-6" HIGH  
W/6" SLAB ABOVE



PLAN AT AIRLOCK EL-34.75'

3/16" = 1'-0"

REF. DWG G-765502

BY G.W.U. DATE 10-8-84  
 CHKD. BY G. Williams DATE 10-9-84  
 CLIENT LOUISIANA POWER & LIGHT CO. OFS NO. 2865-058 DEPT. NO. 653  
 PROJECT WATERFORD #3 SHEET      OF     

SUBJECT CONCRETE MASONRY BLOCK WALLS

## DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS					
									HOLLOW UNITS			SOLID UNITS		
W	H	S	t = INCH.	W = FEET (FT)	H = FT. HEIGHT	TYPE	DETAIL	ELEV WALL NO	BOTT.	TOP		INTERMEDIATE DIAPHRAM		
									FIXED	HINGED	FREE	EXIST.	HINGED	CANTILEVERED
7	HII		8	7'-0	7'-4	A	3	1	✓	✓				
8	-		8	7'-0	7'-4	A	3	1	✓	✓				

REMARKS:

EBASCO SERVICES INCORPORATED

BY G. FISCHIONI DATE 10-6-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

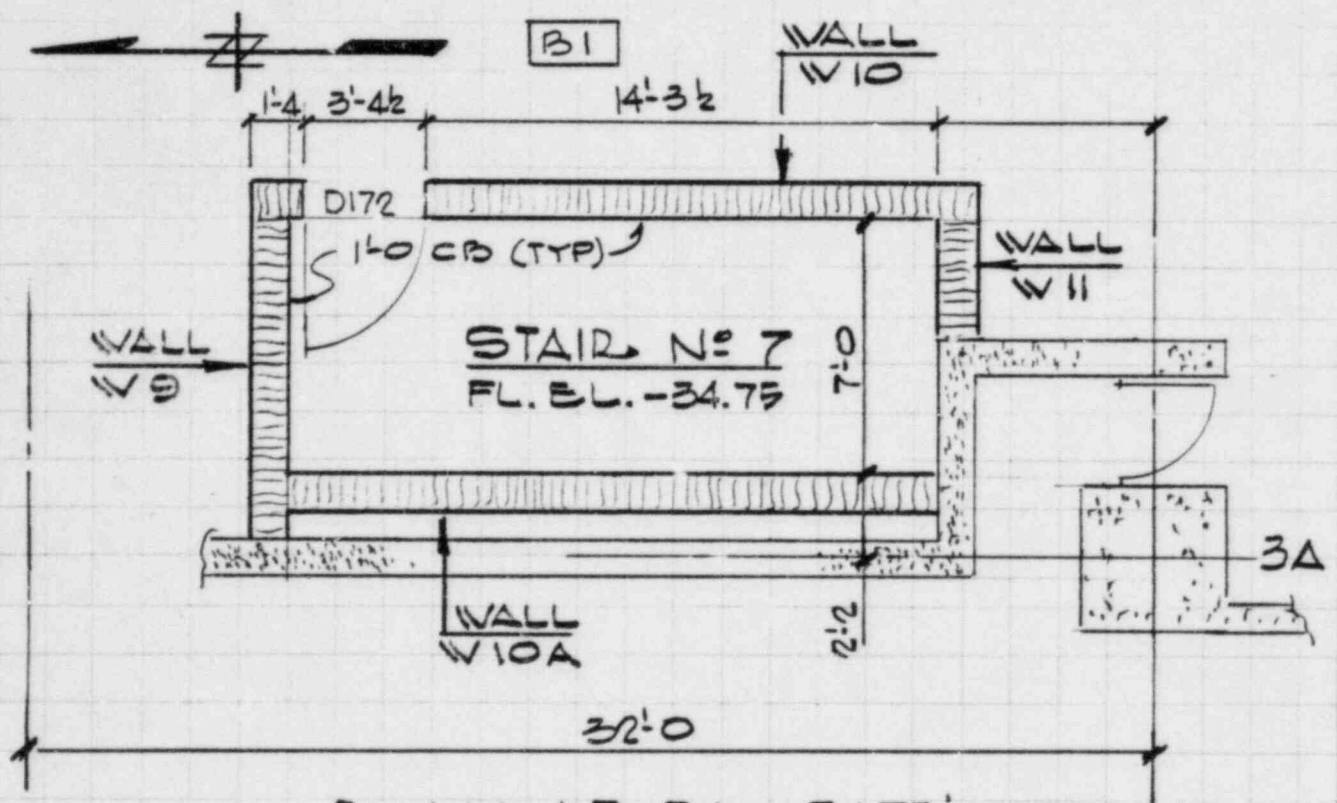
CHKD. BY J.S. DATE 10-8-84

OFS NO. 2865-058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PLAN AT EL. -34.75'

$\frac{3}{8}'' = 1'-0$

REF. DWG G-765502

EBASCO SERVICES INCORPORATED

BY G. Wu DATE 10-8-84

SHEET        OF       

CHKD. BY [Signature] DATE 10-9-84

OFS NO. 2865-058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS

DATA - SEISMIC MASONRY

WALL NO	W	H	WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS												
			T = INCH.	W = FEET (FT.)	H = FT. H <sub>E</sub> = FT. H <sub>OUT</sub>	TYPE	DETAIL	ELEV WALL NO	HOLLOW UNITS		SOLID UNITS										
									POTT.	TOP	FIXED	HINGED	FREE	EXIST.	HINGED	CANTILEVERED					
9	H8		12	9'8	30'6	A	1		1	✓	✓										
10	H9		12	20'0	30'6	A	1		1	✓	✓										
10A	-		12	18'0	30'6	A	1		1	✓	✓										
11	H10		12	4'6	30'6	A	1		1	✓	✓										

REMARKS:

EBASCO SERVICES INCORPORATED

BY G. FISCHIONI DATE 10-6-84

CHKD. BY J.S. DATE 10-8-84

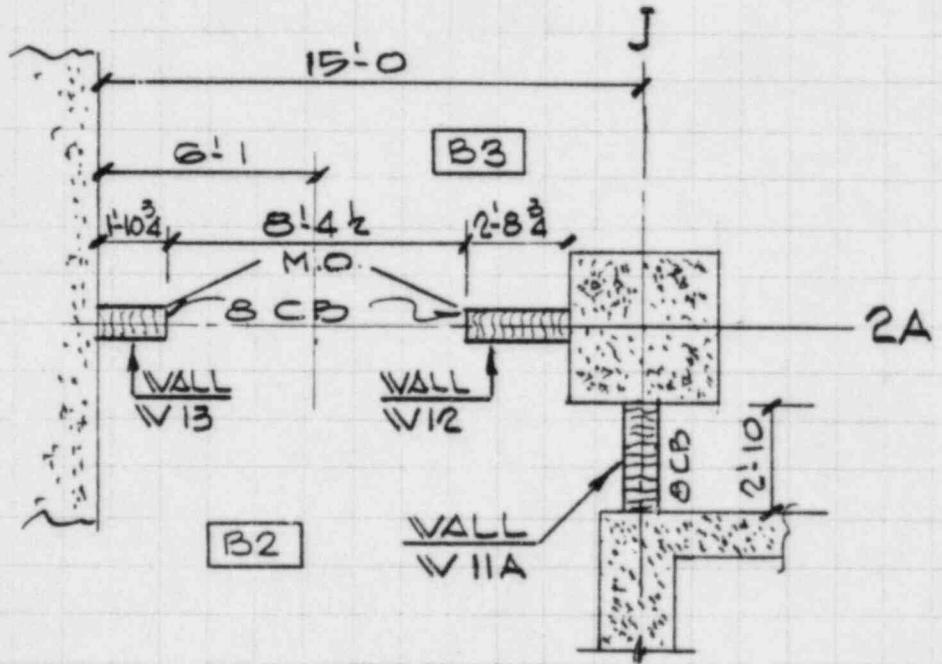
SHEET \_\_\_\_\_ OF \_\_\_\_\_

OFS NO. 2865-055 DEPT. 653  
NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PART PLAN  
TOP/CONC. WALL  
EL. -20.00

REF. DWG. G-765502

EBASCO SERVICES INCORPORATED

BY G. WU DATE 10-8-84  
CHKD. BY Q. Di. Wu DATE 10.9.84

SHEET \_\_\_\_\_ OF \_\_\_\_\_  
DEPT. NO. 653  
OFS NO. 1865-058

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3  
SUBJECT CONCRETE MASONRY BLOCK WALLS

# DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS						
W	H	S	t = INCH.	W = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV WALL NO	HOLLOW UNITS			SOLID UNITS			
									INTERMEDIATE DIAPHRAM						
									BOOTT.	TOP	FREE	EXIST.	HINGED	CANTILEVERED	
FIXED	HINGED	FREE	EXIST.	HINGED	CANTILEVERED										
11A	H14		8	2'-10"	22'-4"	*	3								
12			8	2'-8 3/4"	22'-4"	A ‡	3	1	✓		✓				
13	H51		8	1'-10 3/4"	22'-4"	A ‡	3	1	✓		✓				

REMARKS: \* WALL SPANS HORIZONTALLY  
‡ WALL STARTS ON TOP OF 10'-0" HIGH REINF. CONC WALL

EBASCO SERVICES INCORPORATED

BY G. FISCHIONI DATE 10-6-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

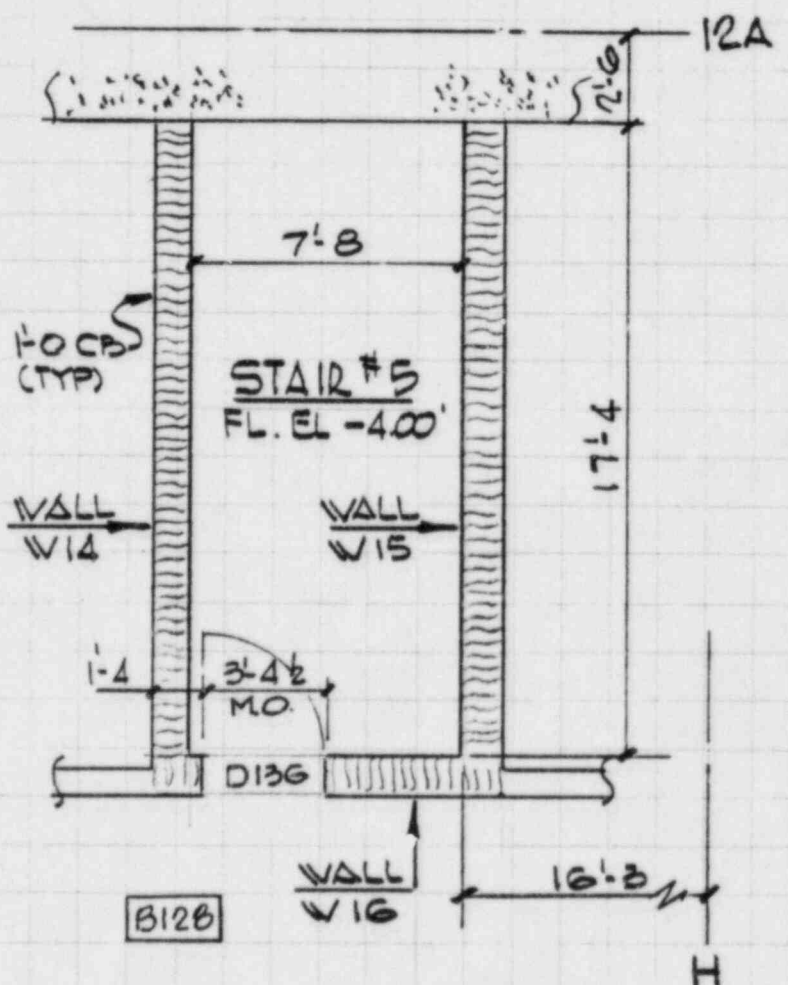
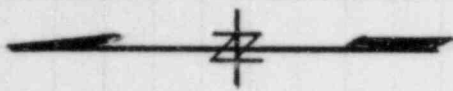
CHKD. BY JS. DATE 10-8-84

OFS NO. 2865-058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PLAN @ EL - 4.00  
3/16" = 1'-0"

REF DWG. G-765501

BY G. WU DATE 10-8-84

CHKD. BY J. Smith DATE 10-9-84

CLIENT LOUISIANA RIVER & LIGHT CO.

WATERFORD # 3

SUBJECT

CONCRETE MASONRY BLOCK WALLS

OFS NO.

2865-058

SHEET \_\_\_\_\_ OF \_\_\_\_\_

DEPT. NO. 653

## DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS						
W	H	S	t = INCH.	W = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV WALL NO	HOLLOW UNITS			SOLID UNITS			
									BOTT.	TOP		INTERMEDIATE DIAPHRAM			
									FIXED	HINGED	FREE	EXIST.	HINGED	CANTILEVERED	
14	H18		12	17'-8"	9'-2"	A	1	1	✓	✓					
15	H20		12	17'-8"	9'-2"	A	1	1	✓	✓					
16			12	9'8"	10'-4"	A	1	1	✓	✓					

REMARKS:



EBASCO SERVICES INCORPORATED

BY G. FISCHIONI DATE 10-6-84

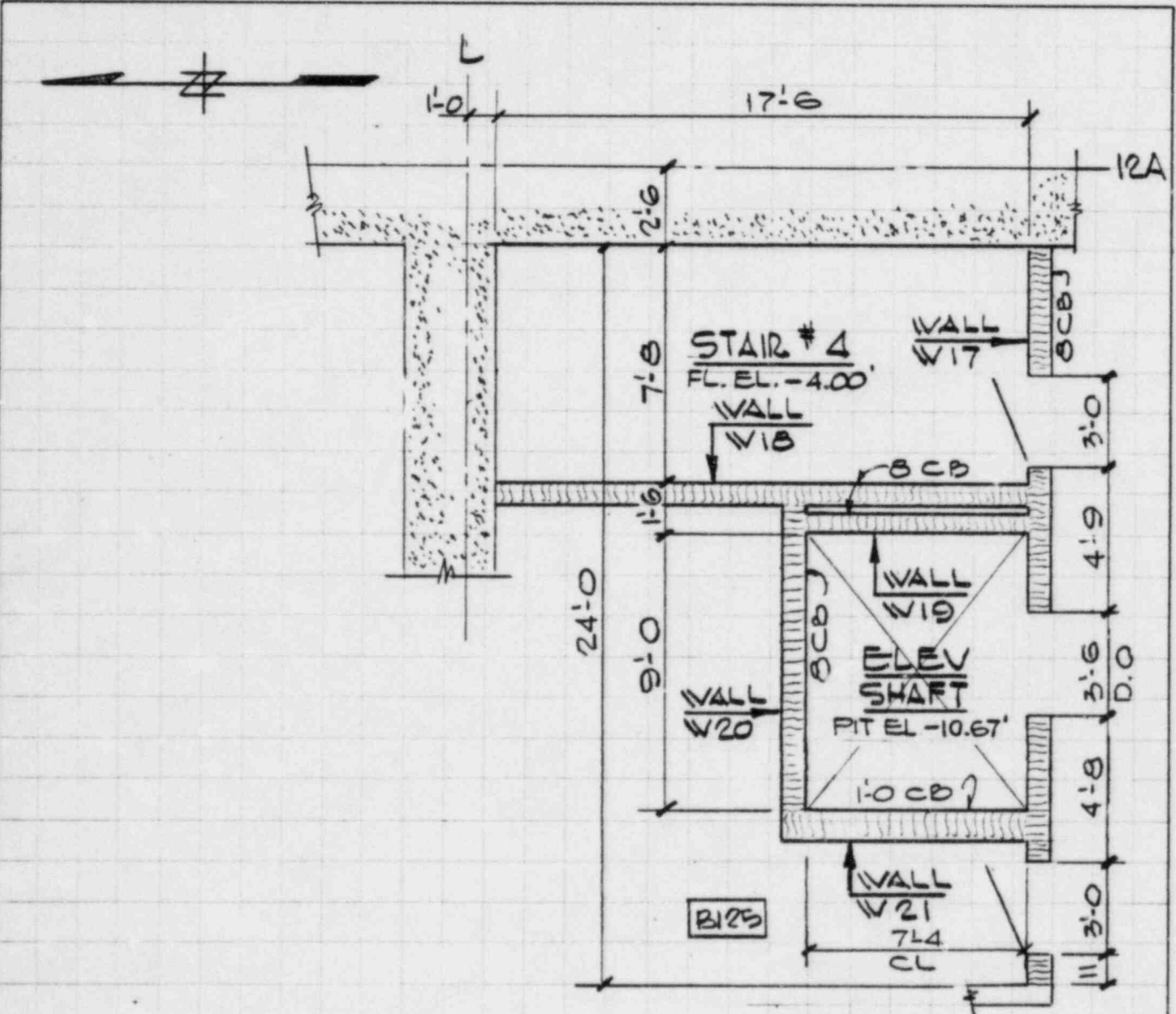
CHKD. BY J.S DATE 10-8-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_  
 OFS NO. 2865-058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO

PROJECT WATERFORD # 3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PLAN.  
 $\frac{3}{16}'' = 1'-0''$

REF DWG G-77550?

BY G. WU DATE 10-8-84

CHKD. BY P. Alford DATE 10-9-84

OFFS. NO. 2865-059 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

SUBJECT

CONCRETE MASONRY BLOCK WALLS

WATERFORD # 3

DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS					
W	H	S	t = INCH.	W = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV. WALL NO	HOLLOW UNITS			SOLID UNITS		
									BOTT.	TOP		INTERMEDIATE DIAPHRAM		
									FIXED	HINGED	FREE	EXIST.	HINGED	CANTILEVERED
17			8	24'-0	9'-2	A	1	1	✓	✓				
18			8	17'-6	9'-2	A	1	1	✓	✓				
19			8	7'-4	*	*	*	*	*	*				
20			8	11'-0	10'-4	A	1	1	✓	✓				
21			12	8'-0	9'-2	A	1	1	✓	✓				

REMARKS: \* INACCESSIBLE

EBASCO SERVICES INCORPORATED

BY G. FISHIONI DATE 10.6.84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

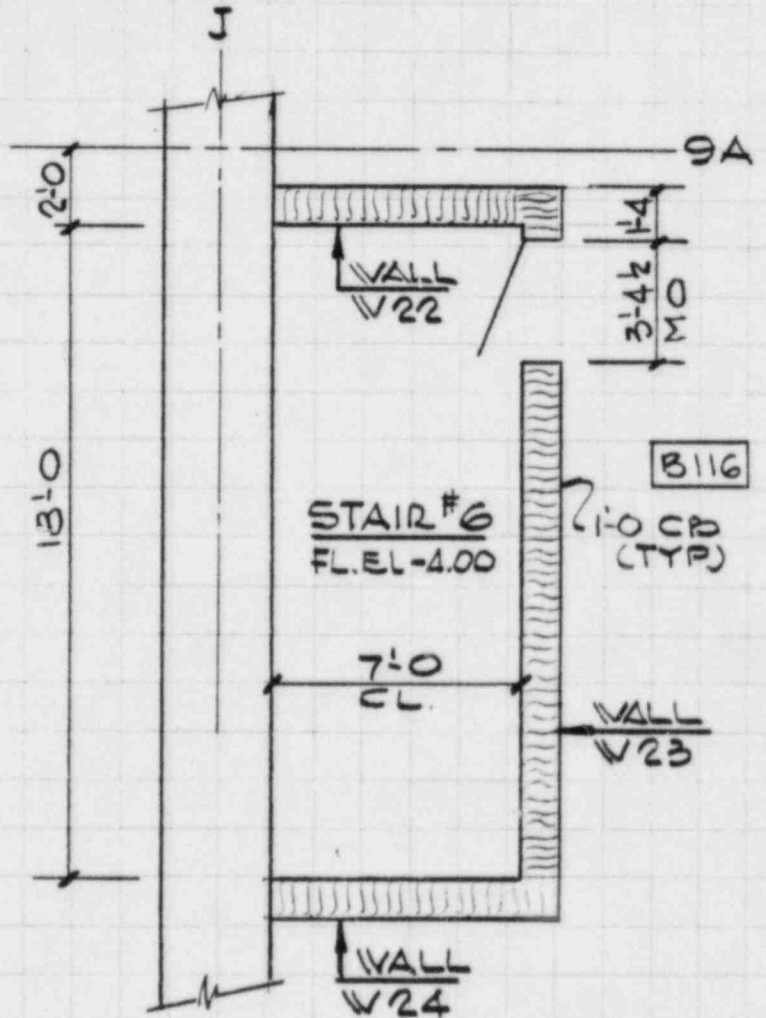
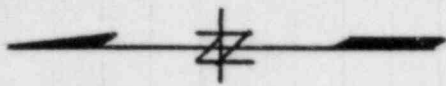
CHKD. BY J.S DATE 10.8.84

OFS NO. 2865-058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PLAN @ EL -4.00

3/16" = 1'-0

REF. DWG G-765501

BY G.W. DATE 10-8-84

CHKD. BY J. Allard DATE 10-9-84

CLIENT LOUISIANA POWER & LIGHT CO

WATERFORD #3

OFFS. NO. 1865-058 SHEET      OF     

DEPT. NO. 653

SUBJECT CONCRETE MASONRY BLOCK WALLS

# DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS					
									HOLLOW UNITS			SOLID UNITS		
W	H	S	t = INCH.	W = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV WALL NO	BOT.			INTERMEDIATE DIAPHRAM		
									FIXED	HINGED	FREE	EXIST.	HINGED	CANTILEVERED
22			12	8'-0"	23'-10"	A	4	1	/	/				
23	H13		12	20'-0"	22'-6"	A	4	1	/	/				
24			12	8'-0"	19'-4"	A	4	1	/	/				

REMARKS:

EBASCO SERVICES INCORPORATED

BY G. FISCHIONI DATE 10-6-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

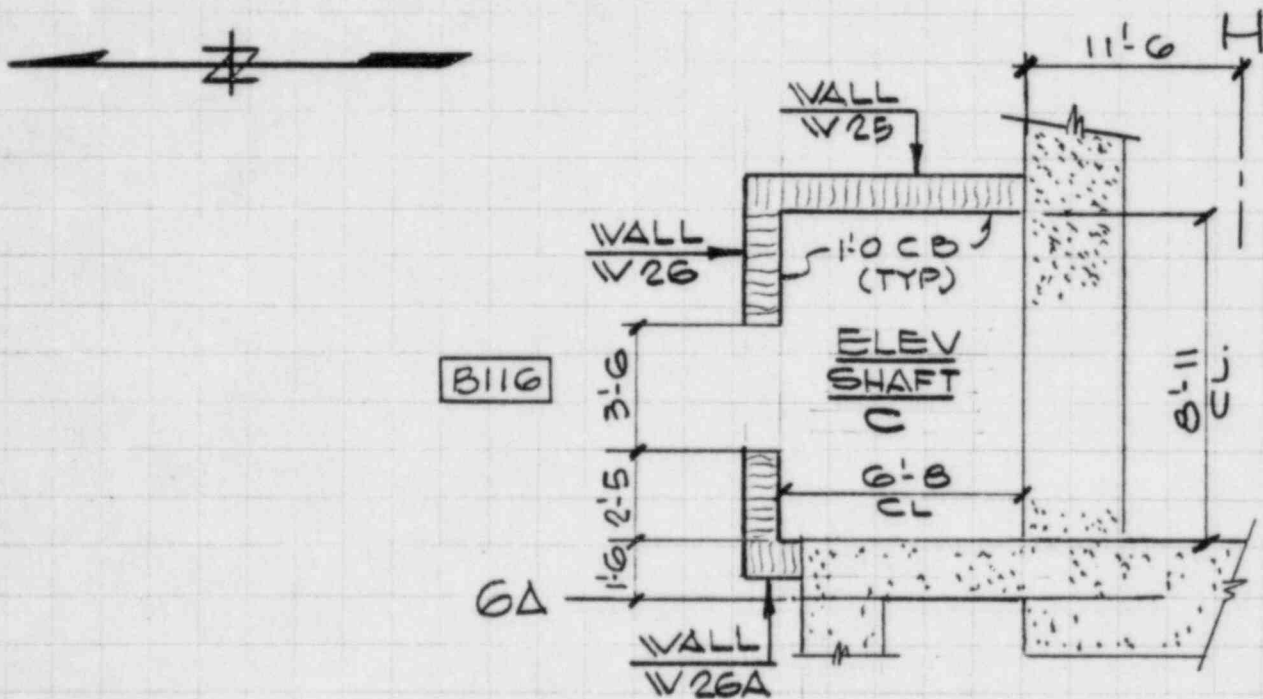
CHKD. BY J.S. DATE 10-8-84

OFS NO. 2565-058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD # 3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PLAN @ EL - 4.00

$\frac{3}{16} = 1'-0$

BY G. WU DATE 10-8-84  
 CHKD. BY g. Miller DATE 10-9-84  
 CLIENT LOUISIANA POWER & LIGHT CO SHEET 2865-05B OF 653

PROJECT WATERFORD # 3  
 SUBJECT CONCRETE MASONRY BLOCK WALLS

# DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS					
W	H	S	t = INCH.	W = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV WALL NO	HOLLOW UNITS			SOLID UNITS		
									BOT.		TOP	INTERMEDIATE DIAPHRAM		
									FIXED	HINGED	FREE	EXIST.	HINGED	CANTILEVERED
25	H9		12	7'-8	21'-10	A	1	1	✓	✓				
26	H8		12	10'-11	21'-10	A	1	1	✓	✓				
26A			12	1'-8	21'-10	A	1	1	✓	✓				

REMARKS:

EBASCO SERVICES INCORPORATED

BY G. FISHIONI DATE 10-6-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

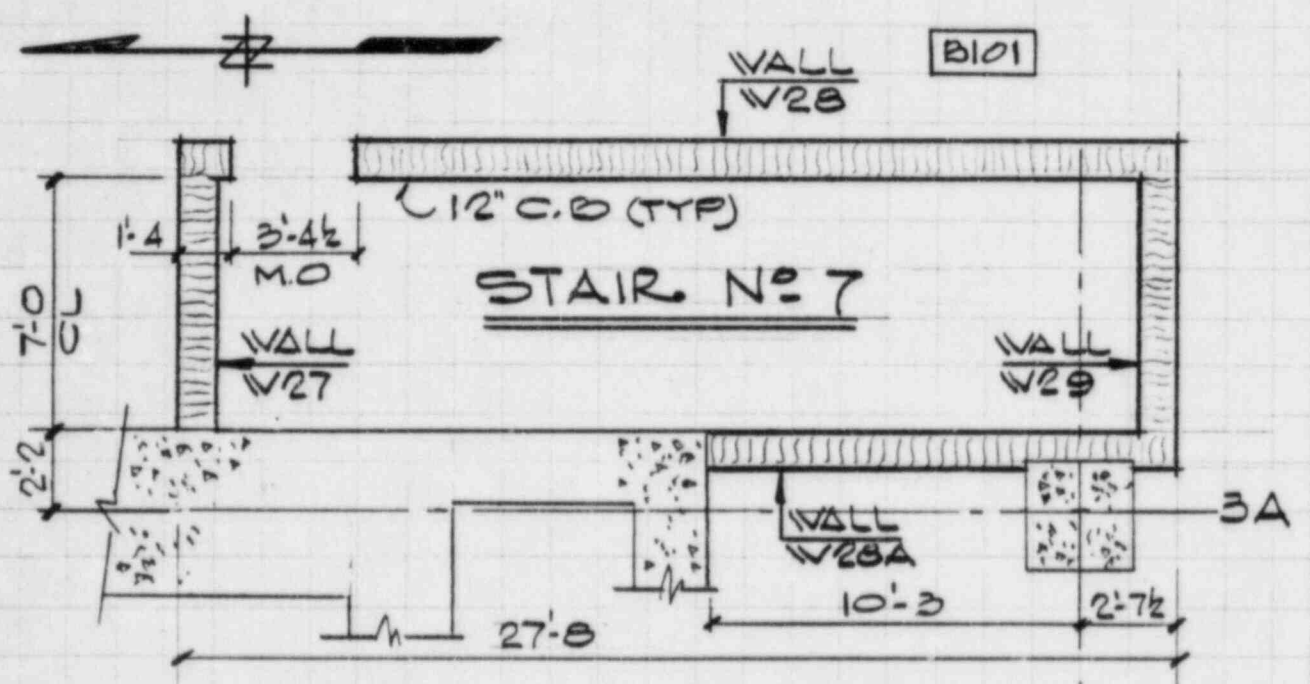
CHKD. BY J.S. DATE 10-8-84

OFS NO. 2865-058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PLAN @ EL. -4.00'

$\frac{3}{16} = 1'-0$

REF. DWG. G-765501

EBASCO SERVICES INCORPORATED

BY G. Wu DATE 10-8-84

CHKD. BY [Signature] DATE 10-9-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

OFFS NO. 2865-058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS

DATA - SEISMIC MASONRY

W	H	S	WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS									
			T = INCH.	W = FEET (FT)	H = FT. H <sub>e</sub> = GUT	TYPE	DETAIL	ELEV WALL NO	HOLLOW UNITS		SOLID UNITS							
									POTT.	TOP	INTERMEDIATE DIAPHRAM	EXIST.	HINGED	CANTILEVERED				
															FIXED	HINGED	FREE	
27			12	8'0	21'10	A	1		✓	✓								
28	H12		12	27'8	21'10	A	1		✓	✓								
28A			12	12'10 1/2	21'10	A	1		✓	✓								
29			12	9'0	20'6	A	2		✓	✓								

REMARKS:



EBASCO SERVICES INCORPORATED

BY G. FISCHIONI DATE 10-6-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

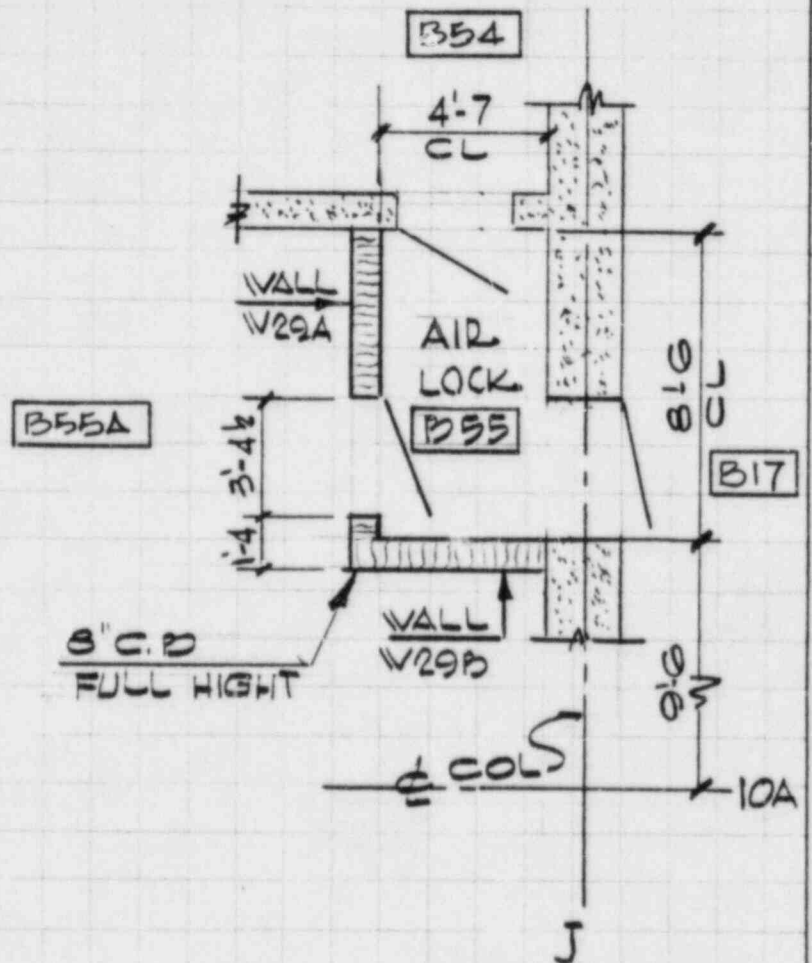
CHKD. BY J.S. DATE 10-8-84

OFS NO. 2565-053 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PLAN AT EL - 15.50'  
3/16 = 1/10

REF. DWG G-765501

EBASCO SERVICES INCORPORATED

BY G. WU DATE 10-8-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

CHKD. BY G. Wilkins DATE 10-9-84

OFS NO. 2865-058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD # 3

SUBJECT CONCRETE MASONRY BLOCK WALLS

DATA - SEISMIC MASONRY

WALL NO	WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS									
	W	H	S	U = INCH.	W = FEET (FT)	H = FT. HEIGHT	TYPE	DETAIL	ELEV WALL NO	HOLLOW UNITS			SOLID UNITS			
										FIXED	HINGED	FREE	EXIST.	HINGED	CANTILEVERED	
																TOP
29A			S	9'-2"	8'-6"	8'-6"	A	2	1							
29B			S	5'-3"	8'-6"	8'-6"	A	2	1							

REMARKS:

EBASCO SERVICES INCORPORATED

BY J. SANTOSPIRITO DATE 10-6-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

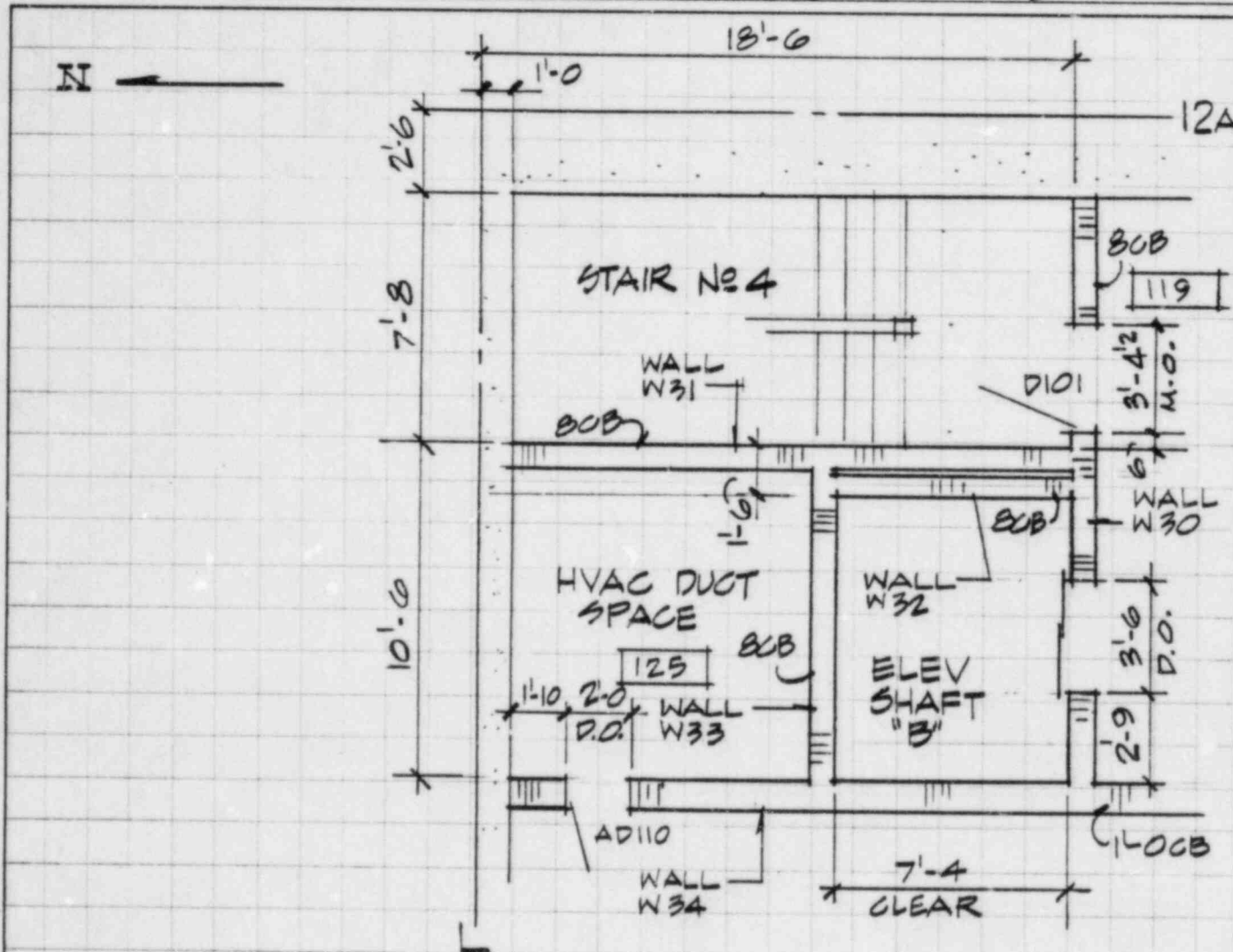
CHKD. BY G.F. DATE 10-8-84

OFS NO. 2865-058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO

PROJECT WATERFORD # 3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PART PLAN EL 7.00'  
RAB 3/8 = 1'-0" REFER DWG G-765 301

EBASCO SERVICES INCORPORATED

BY G. WU DATE 10-8-84

CHKO. BY P. Althoff DATE 10-9-84  
 CLIENT LOUISIANA POWER & LIGHT CO

SHEET \_\_\_\_\_ OF \_\_\_\_\_  
 DEPT. NO. 653  
 OFF. NO. 2855-058

PROJECT WATERFORD #3  
 SUBJECT CONCRETE MASONRY BLOCK WALLS

### DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS					
W	H	S	t = INCH.	W = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV WALL NO	HOLLOW UNITS			SOLID UNITS		
									BOTTM.			INTERMEDIATE DIAPHRAM		
									FIXED	HINGED	FREE	EXIST.	HINGED	CANTILEVERED
30			8	18'-2"	11'-2"	A	4	1	✓	✓				
31			8	17'-10"	11'-2"	A	1	1	✓	✓				
32			8	7'-4"	*									
33			12	9'-10"	11'-9"	A	1	1	✓	✓				

REMARKS: \* INACCESSIBLE

5/1/84

EBASCO SERVICES INCORPORATED

BY J. SANTOSPIRITO DATE 10-6-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

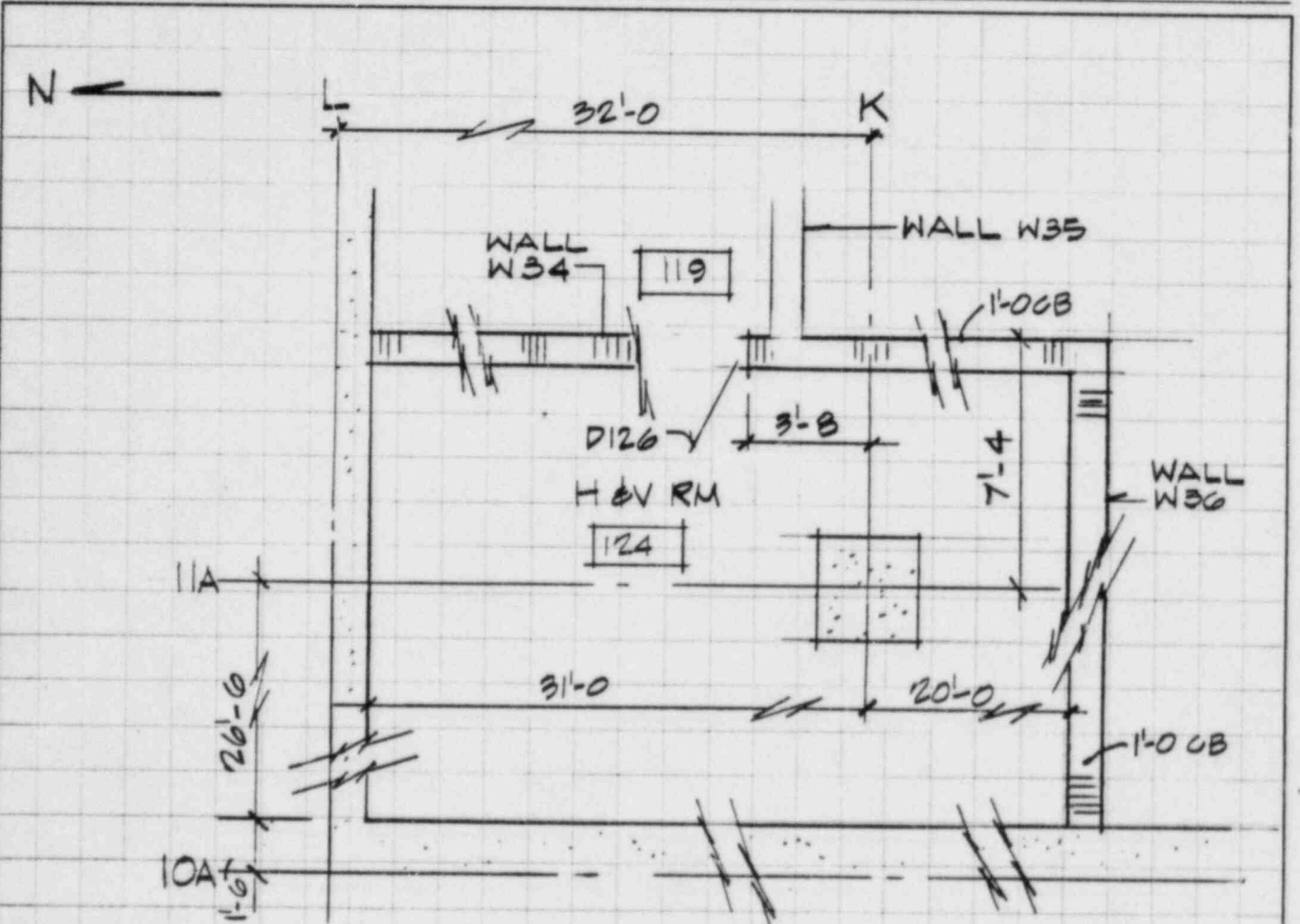
CHKD. BY GF DATE 10-8-84

OFS NO. 2865-058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PART PLAN EL. 7.00'  
RAB 316 = 1'-0" REFER DWG 6765501

BY G. WU DATE 10-8-84  
 CHKD. BY G. Wu DATE 10-9-84  
 CLIENT LOUISIANA POWER & LIGHT CO.  
 PROJECT WATERFORD # 3  
 SUBJECT CONCRETE MASONRY BLOCK WALLS  
 SHEET      OF       
 DEPT. NO. 2865-058 NO. 653

### DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS							
W	H	S	t = INCH.	w = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV WALL NO	HOLLOW UNITS			SOLID UNITS				
									BOT.			INTERMEDIATE DIAPHRAM				
									FIXED	HINGED	FREE	EXIST.	HINGED	CANTILEVERED		
34			12	51'-0	13'-2	A	2	1	✓	✓						
36	H32		12	33'-10	13'-2	A	2	1	✓	✓						

REMARKS:

EBASCO SERVICES INCORPORATED

BY G. FISCHIONI DATE 10-6-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

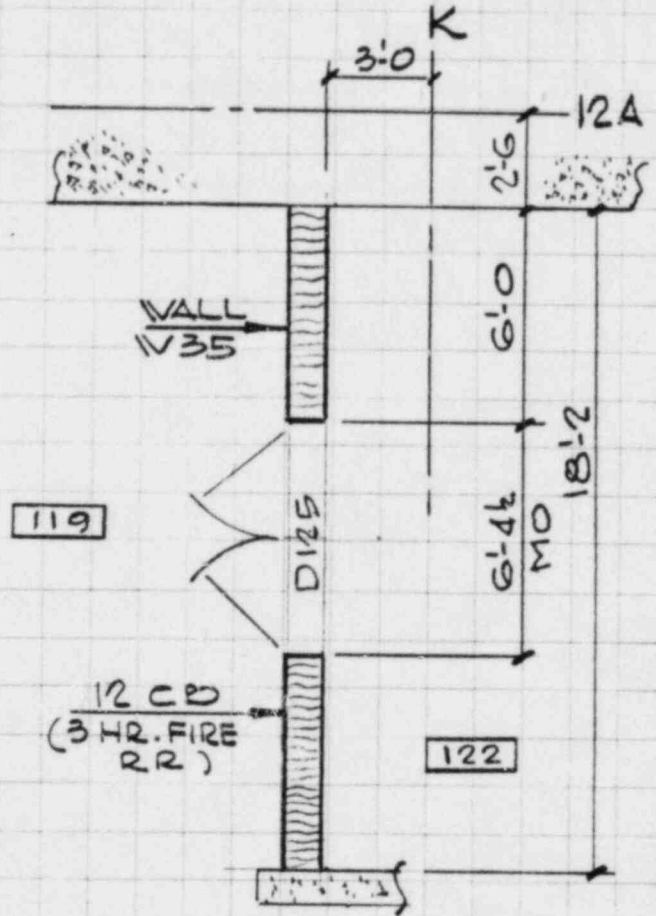
CHKD. BY J.S. DATE 10-8-84

OFS NO. 2865-058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PLAN @ EL + 7.00'

3/8 = 1-0

REF. DWG G-765501

BY E. WU DATE 10-8-84

CHKD. BY G. Sullivan DATE 10-9-84

CLIENT LOUISIANA POWER & LIGHT CO

SHEET          OF           
DEPT. NO. 653

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS

# DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS							
W	H	S	t = INCH.	W = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV WALL NO	HOLLOW UNITS			SOLID UNITS				
									BOT.		TOP	INTERMEDIATE DIAPHRAM				
									FIXED	HINGED	FREE	EXIST.	HINGED	CANTILEVERED		
35	43		12	18 1/2	13 1/2	A	1	1	✓	✓						

REMARKS:



EBASCO SERVICES INCORPORATED

BY G. FISCHIONI DATE 10-8-84

CHKD. BY J.S. DATE 10-8-84

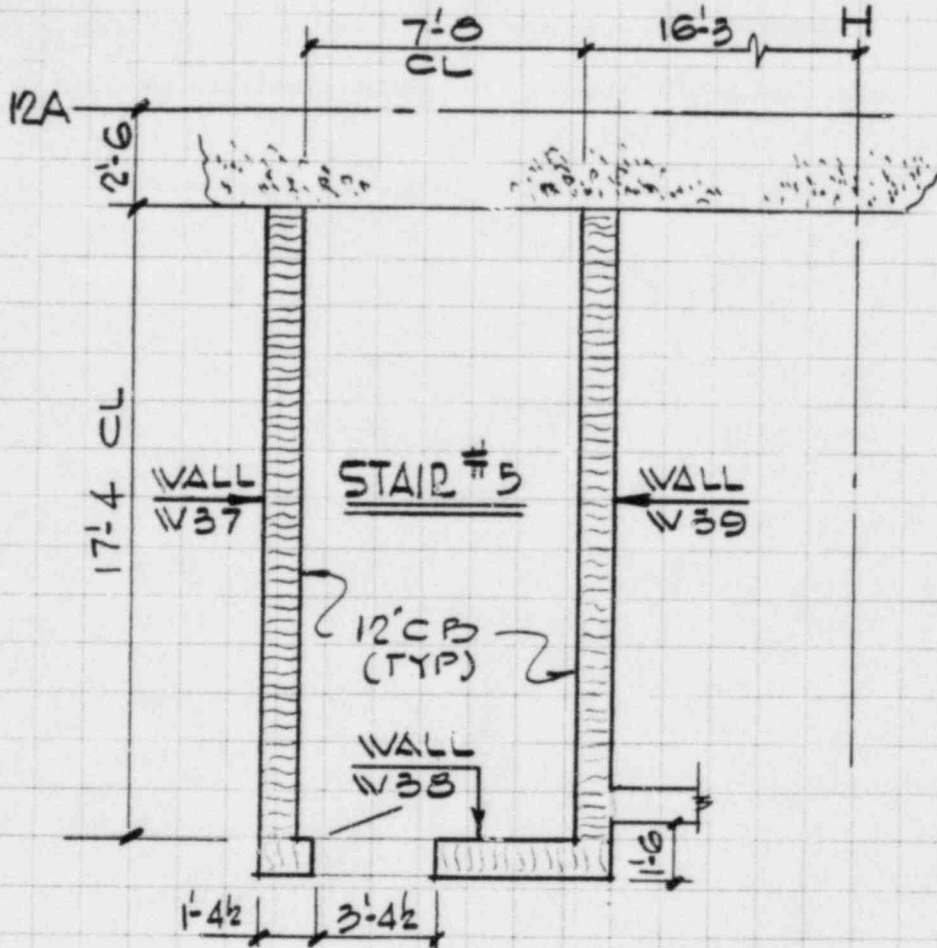
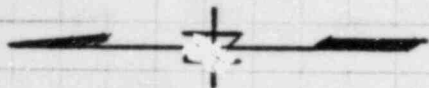
SHEET \_\_\_\_\_ OF \_\_\_\_\_

OFS NO. 65-055 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PLAN @ EL. +7.00'

$\bar{x}_c = 1'-0$

REF. DWG G-765501

BY G. WU DATE 10-8-84

CHKD. BY P. Dillman DATE 10-9-84

CLIENT

LOUISIANA POWER & LIGHT CO

SHEET 1 OF 2  
DEPT. NO. 653

PROJECT  
SUBJECT

CONCRETE MASONRY BLOCK WALLS  
WATERFORD # 3

### DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS						
									HOLLOW UNITS			SOLID UNITS			
W	H	S	t = INCH.	W = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV. WALL NO	BOT.		TOP		INTERMEDIATE DIAPHRAM		
									FIXED	HINGED	FREE	EXIST.	HINGED	CANTILEVERED	
37			12	18'-4	11'-2	A	1	1	✓	✓					
38			12	9'-8	12'-6	A	1	1	✓	✓					
39	H31		12	18'-4	11'-2	A	1	1	✓	✓					

REMARKS:

EBASCO SERVICES INCORPORATED

BY G. FISCHIONI DATE 10-6-84

CHKD. BY J.S. DATE 10-8-84

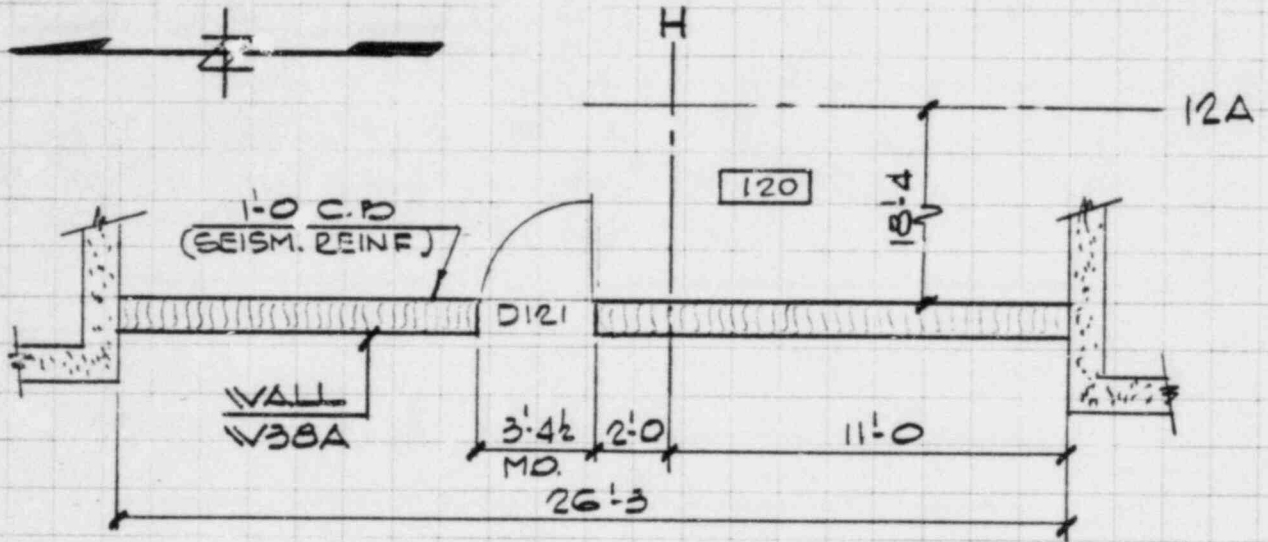
SHEET \_\_\_\_\_ OF \_\_\_\_\_

OFS NO. 2865-058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PLAN @ EL. +7.00'

$\frac{3}{16} = 1'-0$

122

REF. DWG G-775502

**EBASCO SERVICES INCORPORATED**

BY G. WU DATE 10-8-84

CHKD. BY C. O'Brien DATE 10.9.84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

OFS NO. 2865-058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS

**DATA - SEISMIC MASONRY**

WALL NO		WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS			
W	H	T = INCH.	N = FEET (FT)	H = FT. H <sub>e</sub> = 'GHT	TYPE	DETAIL	ELEV WALL NO	HOLLOW UNITS		SOLID UNITS	
								POTT.	TOP	INTERMEDIATE DIAPHRAM	EXIST. HINGED CANTILEVERED
								FIXED	HINGED FREE		
38A	H33	1/2	26-3	13-2	A	2	1	✓	✓		

REMARKS:

EBASCO SERVICES INCORPORATED

BY G. FISCHIONI DATE 10-6-84

CHKD. BY J.S. DATE 10-8-84

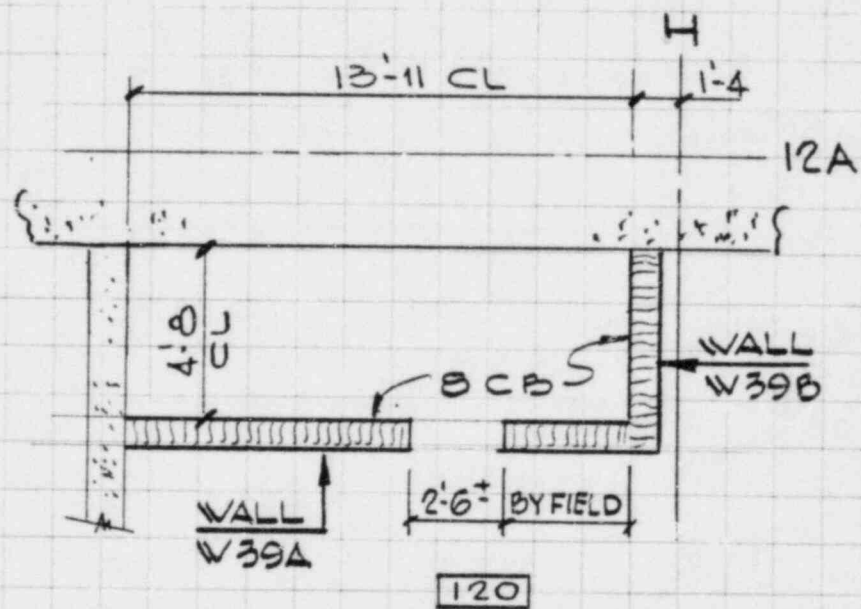
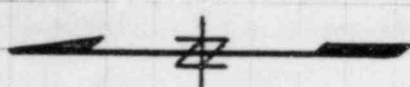
SHEET \_\_\_\_\_ OF \_\_\_\_\_

OFF. NO. 1365-058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PLAN @ EL +7.00'

$\frac{3}{16} = 1'-0$

REF. DWG G-775502

BY G. WU DATE 10-8-84  
 CHKD. BY P. Williams DATE 10-9-84  
 CLIENT LOUISIANA POWER & LIGHT CO.  
 SHEET        OF         
 DEPT. NO. 1865-058  
 NO. 653

# DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS					
									HOLLOW UNITS			SOLID UNITS		
W	H	S	t = INCH.	W = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV WALL NO	POTT.		INTERMEDIATE DIAPHRAM			
									FIXED	HINGED	FREE	EXIST.	HINGED	CANTILEVERED
39A			8	14'-7"	13'-0"	A	2	1	✓	✓				
39B			8	5'-4"	13'-0"	A	2	1	✓	✓				

REMARKS:

PROJECT CONCRETE MASONRY BLOCK WALLS  
 SUBJECT WATERFORD # 3

EBASCO SERVICES INCORPORATED

BY G. FISCHIONI DATE 10-6-84

CHKD. BY J.S. DATE 10-8-84

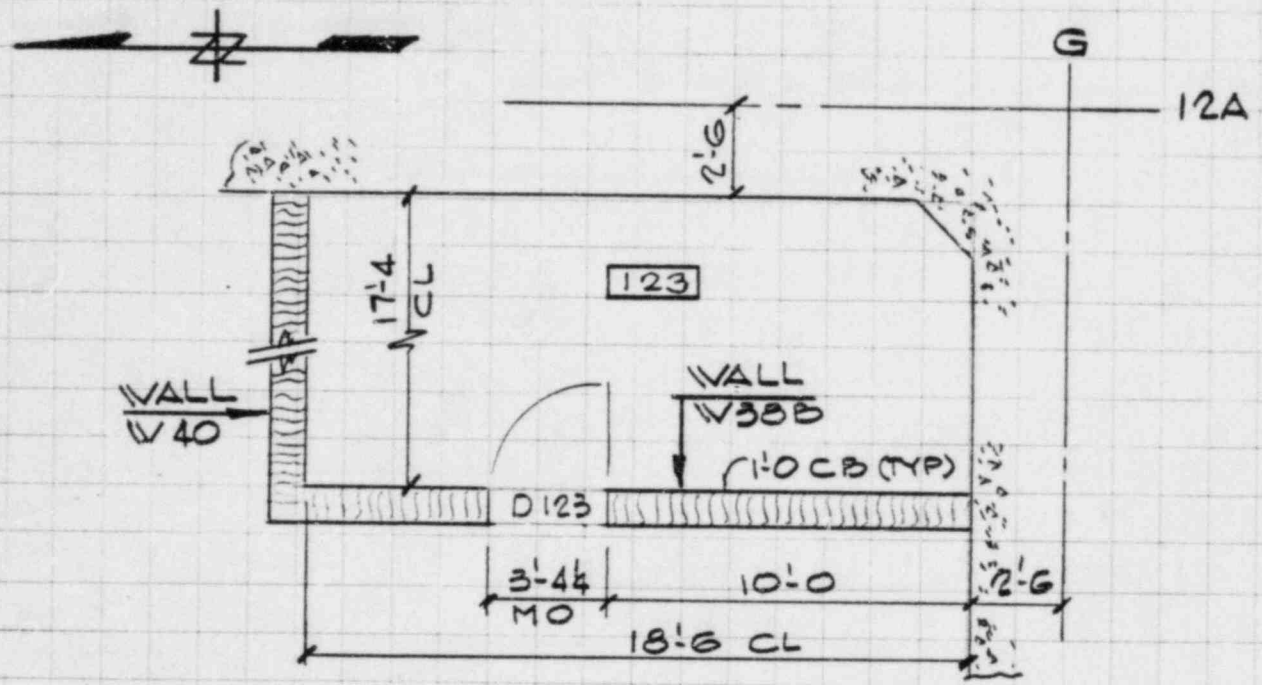
SHEET \_\_\_\_\_ OF \_\_\_\_\_

OFS NO. 2865-058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PLAN @ EL +7.00'

EBASCO SERVICES INCORPORATED

BY G. W. W. DATE 10-8-84  
 CHKD. BY P. D. ... DATE 10-9-84  
 CLIENT LOUISIANA POWER & LIGHT CO.  
 PROJECT WATERFORD #3  
 SUBJECT CONCRETE MASONRY BLOCK WALLS

SHEET        OF         
 DEPT. NO.       

## DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS					
W	H	S	t = INCH.	N = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV WALL NO	HOLLOW UNITS			SOLID UNITS		
									POTT.		TOP	INTERMEDIATE DIAPHRAM		
									FIXED	HINGED	FREE	EXIST.	HINGED	CANTILEVERED
38B			12	19'-6	13'-2	A	2	1	✓	✓				
40			12	18'-4	12'-11	A	2	1	✓	✓				

REMARKS:



EBASCO SERVICES INCORPORATED

WALLS: W41, W42, W42A, W42B, W43, W44, W45, W46, W47

BY BILAK DATE 10-6-84

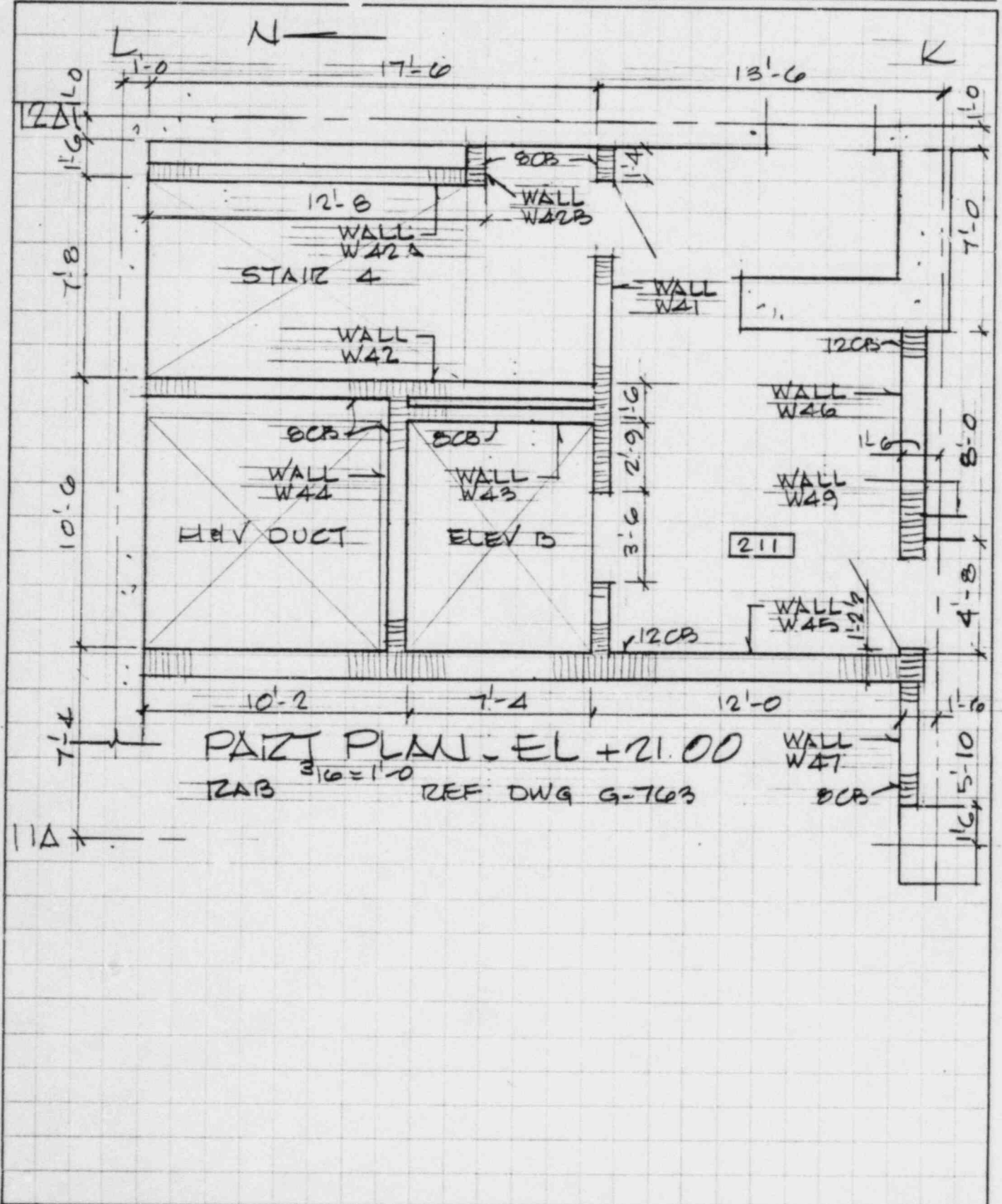
CHKD. BY GF. DATE 10-8-84

EET \_\_\_\_\_ OF \_\_\_\_\_  
OFS NO. 2865-058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



BY C. W. W. DATE 10-8-84  
 CHKD. BY J. White DATE 10-9-84  
 CLIENT LOUISIANA POWER & LIGHT CO. OFS. NO. \_\_\_\_\_  
 PROJECT WATERFORD #3 SHEET \_\_\_\_\_ OF \_\_\_\_\_  
 SUBJECT CONCRETE MASONRY BLOCK WALLS DEPT. NO. \_\_\_\_\_

## DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS					
W	H	S	t = INCH.	W = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV WALL NO	HOLLOW UNITS			SOLID UNITS		
									INTERMEDIATE DIAPHRAM					
									BOTT. FIXED	TOP HINGED	FREE	EXIST.	HINGED	CANTILEVERED
41			8	19'-8	11'-2	A	4	1	✓	✓				
42			8	17'-6	11'-2	A	1	1	✓	✓				
42A			8	12'-8	12'-6	A	1	1	✓	✓				
42B			8	1'-6	12'-6	A	1	1	✓	✓				
43			8	7'-4	*									
44			12	9'-10	*									
45			12	29'-6	13'-2	A	2	1	✓	✓				
46			12	13'-8	13'-2	A	2	1	✓	✓				
47			8	4'-10	10'-0	B	-	2	✓		✓			

REMARKS: \* INACCESSIBLE

EBASCO SERVICES INCORPORATED

BY BILAK DATE 10-6-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

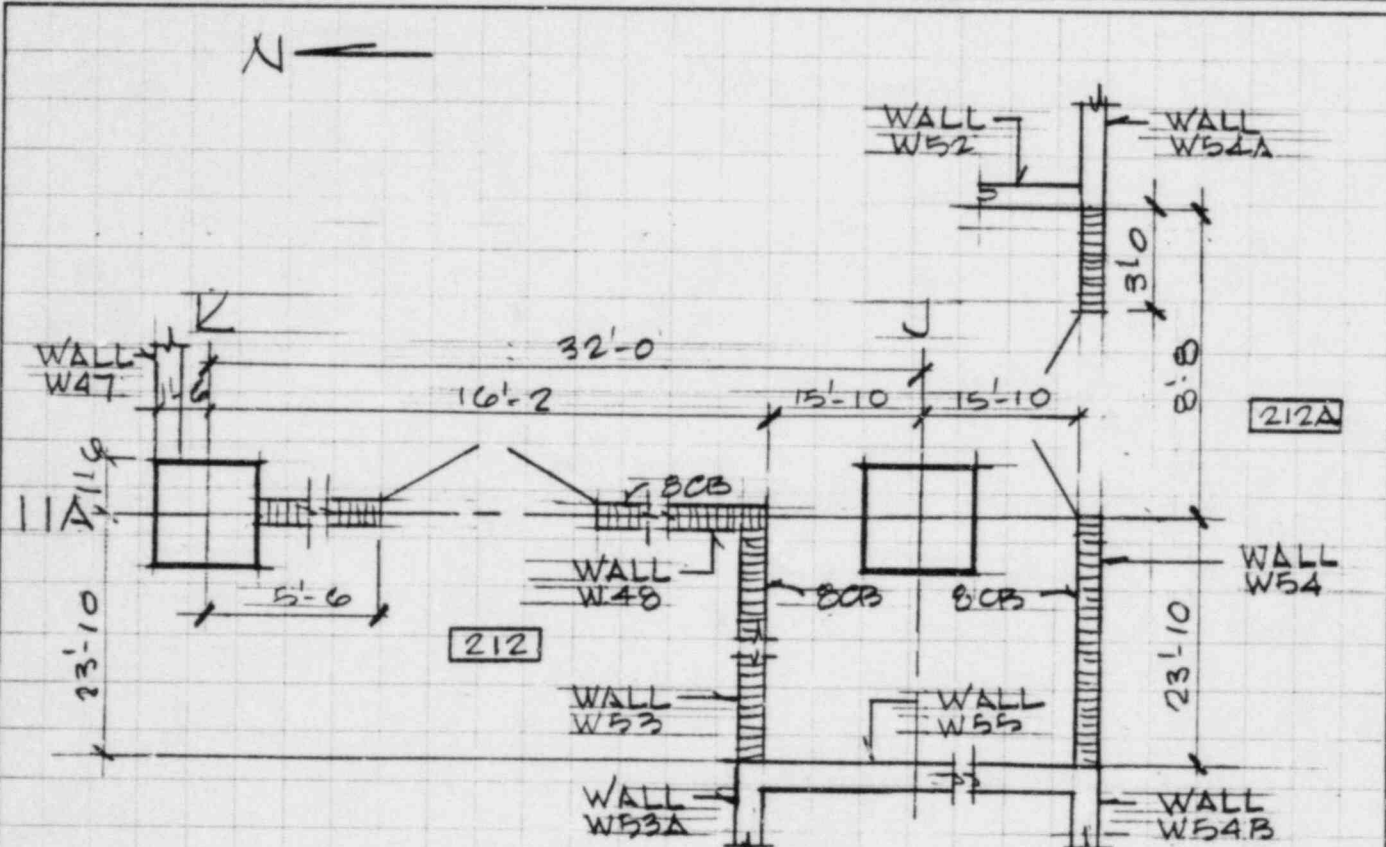
CHKD. BY J.S. DATE 10-8-84

OFS NO. 2865-053 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO

PROJECT WATERFORD # 3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PART PLAN - EL + 21.00  
ZAB 316 = 1-0 REF DWG G763

EBASCO SERVICES INCORPORATED

BY G. Wu DATE 10-8-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

CHKD. BY [Signature] DATE 10-9-84

OFS NO. \_\_\_\_\_ DEPT. NO. \_\_\_\_\_

CLIENT LOUISIANA POWER & LIGHT CO

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS

DATA - SEISMIC MASONRY

WALL NO	W H S	WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS										
		T = INCH.	W = FEET (FT)	H = FT. HEIGHT	TYPE	DETAIL	ELEV WALL NO	HOLLOW UNITS		SOLID UNITS								
								FIXED	HINGED	TOP	HINGED	FREE	EXIST.	HINGED	CANTILEVERED			
48		8	14'-8	10'-0	B	-	2	✓										
53		8	24'-2	9'-2	A	-	1	✓										
54	H23	8	32'-6	9'-10	A	-	1	✓										

REMARKS:

BY BILAK DATE 10-6-84

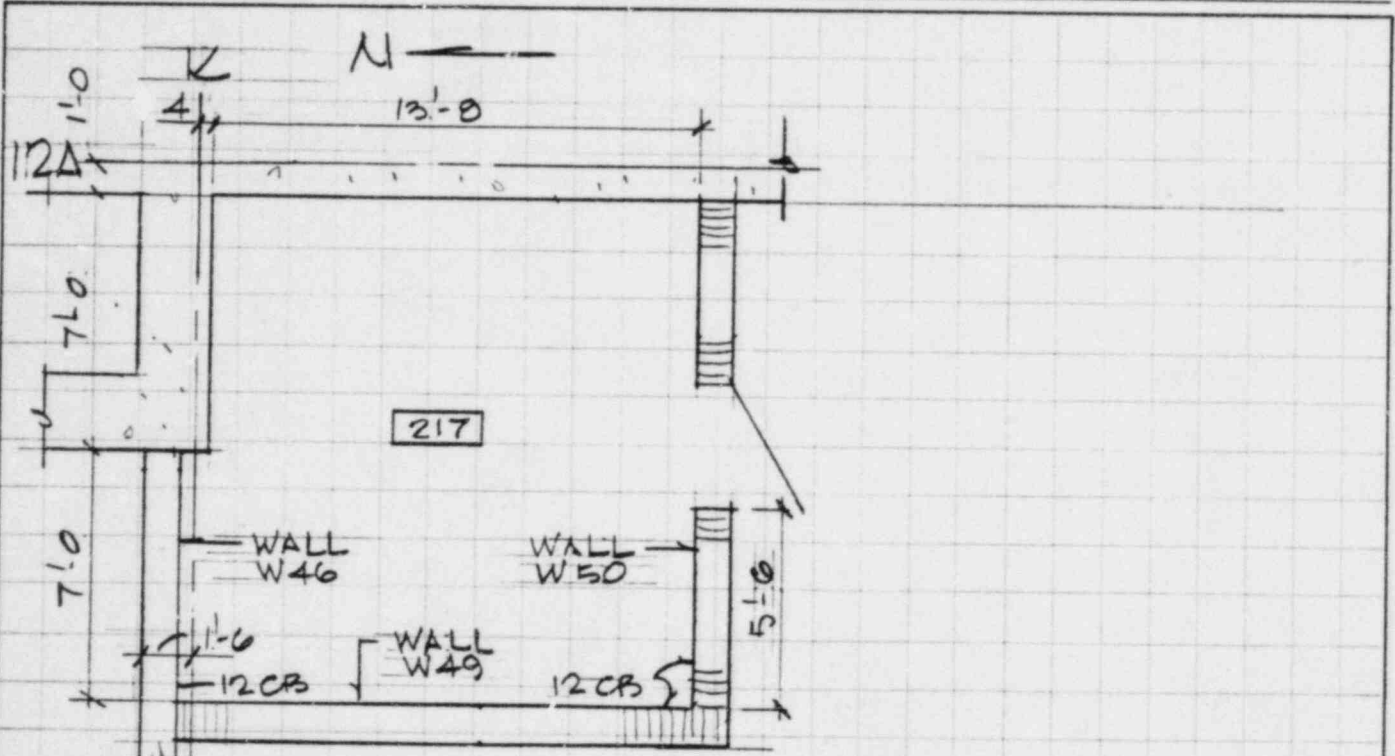
CHKD. BY G.F. DATE 10-8-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_  
OFS NO. 2865-058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD # 3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PART PLAN - EL +21.00

3/16" = 1'-0"  
ZABS REF DWG G-763

BY S. WU DATE 10-8-84

CHKD. BY J. M. [unclear] DATE 10.9.84

CLIENT LOUISIANA POWER & LIGHT CO

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS

SHEET \_\_\_\_\_ OF \_\_\_\_\_

DEPT. NO. \_\_\_\_\_

## DATA - SEISMIC MASONRY

WALL NO.			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS					
W	H	S	t = INCH.	W = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV WALL NO.	HOLLOW UNITS			SOLID UNITS		
									INTERMEDIATE DIAPHRAM					
									BOTT. FIXED	TOP HINGED	FREE	EXIST.	HINGED	CANTILEVERED
49			12	14'-6	13'-2	A	2	1	✓	✓				
50			12	15'-0	13'-2	A	2	1	✓	✓				

REMARKS:

EBASCO SERVICES INCORPORATED

BY BILAK DATE 10-6-84

CHKD. BY J.S. DATE 10-8-84

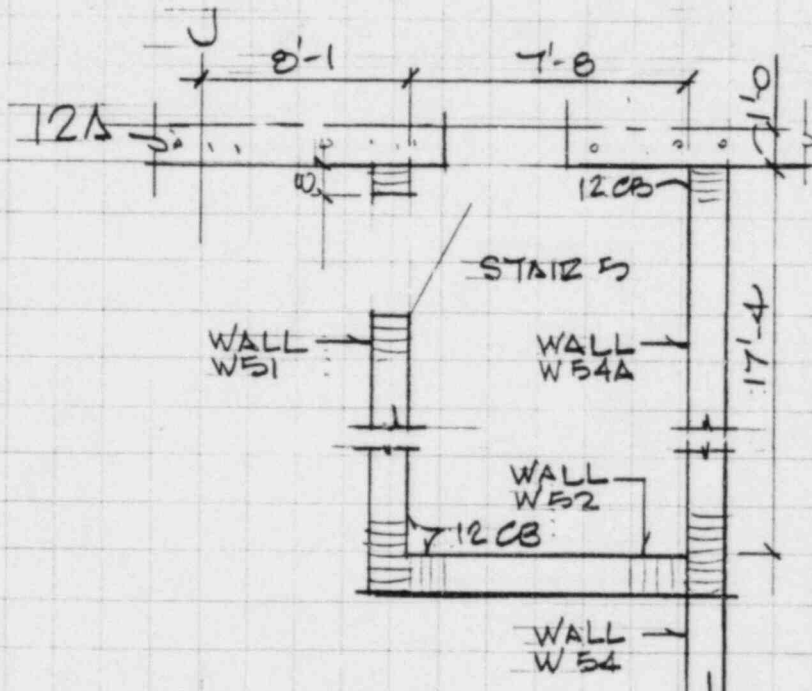
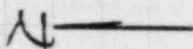
SHEET \_\_\_\_\_ OF \_\_\_\_\_

OFS NO. 2865-058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PART PLAN - EL+21.00  
TAB <sup>3/16</sup> = 1-0 REF DWG G-763

BY G.W.U. DATE 10-8-84  
 CHKD. BY P. Williams DATE 10.9.84  
 CLIENT LOUISIANA POWER & LIGHT CO OFS NO. CO  
 PROJECT WATERFORD #3 DEPT. NO. \_\_\_\_\_  
 SUBJECT CONCRETE MASONRY BLOCK WALLS

## DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS					
W	H	S	t = INCH.	W = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV. WALL NO	HOLLOW UNITS			SOLID UNITS		
									TOP			INTERMEDIATE DIAPHRAM		
									FIXED	HINGED	FREE	EXIST.	HINGED	CANTILEVERED
51			12	18'-4	13'-2	A	2	1	✓	✓				
52			12	8'-8	13'-2	A	2	1	✓	✓				
54A	H25		12	18'-4	13'-2	A	2	1	✓	✓				

REMARKS:



EBASCO SERVICES INCORPORATED

BY BILAK DATE 10-6-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

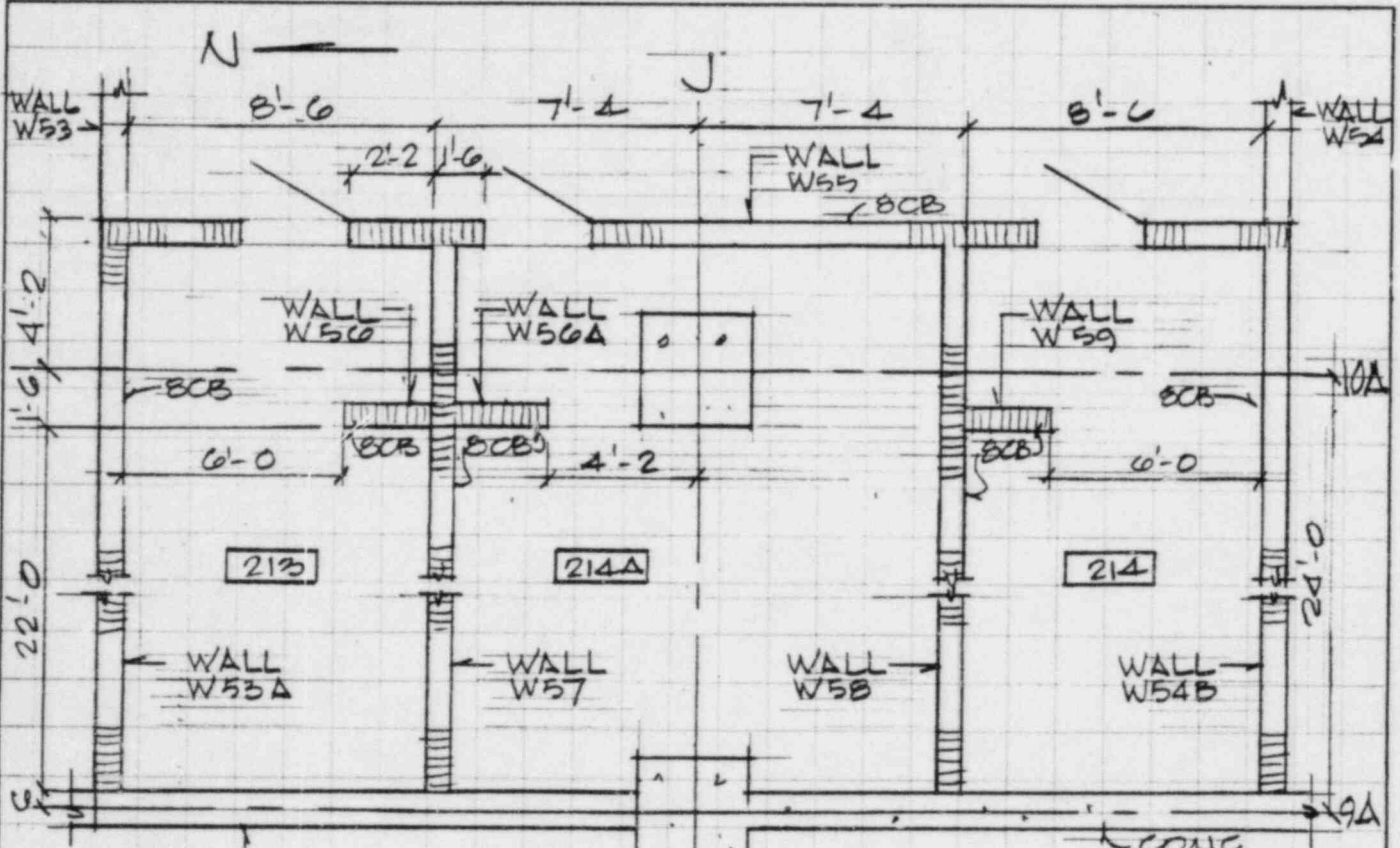
CHKD. BY G.F DATE 10-8-84

OFS NO. 2865-058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PART PLAN EL+21.00  
RAB 316 = 1'-0" REF DWG G-703

BY G. WU DATE 10-8-84

CHKD. BY J. Miller DATE 10-9-84

CLIENT LOUISIANA POWER & LIGHT CO

PROJECT WATERFORD #3  
SUBJECT CONCRETE MASONRY BLOCK WALLS

OFS NO. \_\_\_\_\_

SHEET \_\_\_\_\_ OF \_\_\_\_\_

DESIGN NO. \_\_\_\_\_

# DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS					
W	H	S	t = INCH.	W = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV WALL NO	HOLLOW UNITS			SOLID UNITS		
									INTERMEDIATE DIAPHRAM					
									EXIST.	HINGED	CANTILEVERED			
53A			8	28'-2	7'-10	A	3	1	✓		✓			
54B	H23		8	28'-2	7'-10	A	3	1	✓		✓			
55			8	33'-0	7'-10	A	3	1	✓		✓			
56			8	2'-6	9'-10	B	3	2	✓		✓			
56A			8	3'-2	9'-10	B	3	2	✓		✓			
57			8	27'-6	7'-10	A	3	1	✓		✓			
58			8	27'-6	7'-10	A	3	1	✓		✓			
59			8	2'-6	8'-0	B	3	2	✓		✓			

REMARKS:

EBASCO SERVICES INCORPORATED

BY BILAK DATE 10-6-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

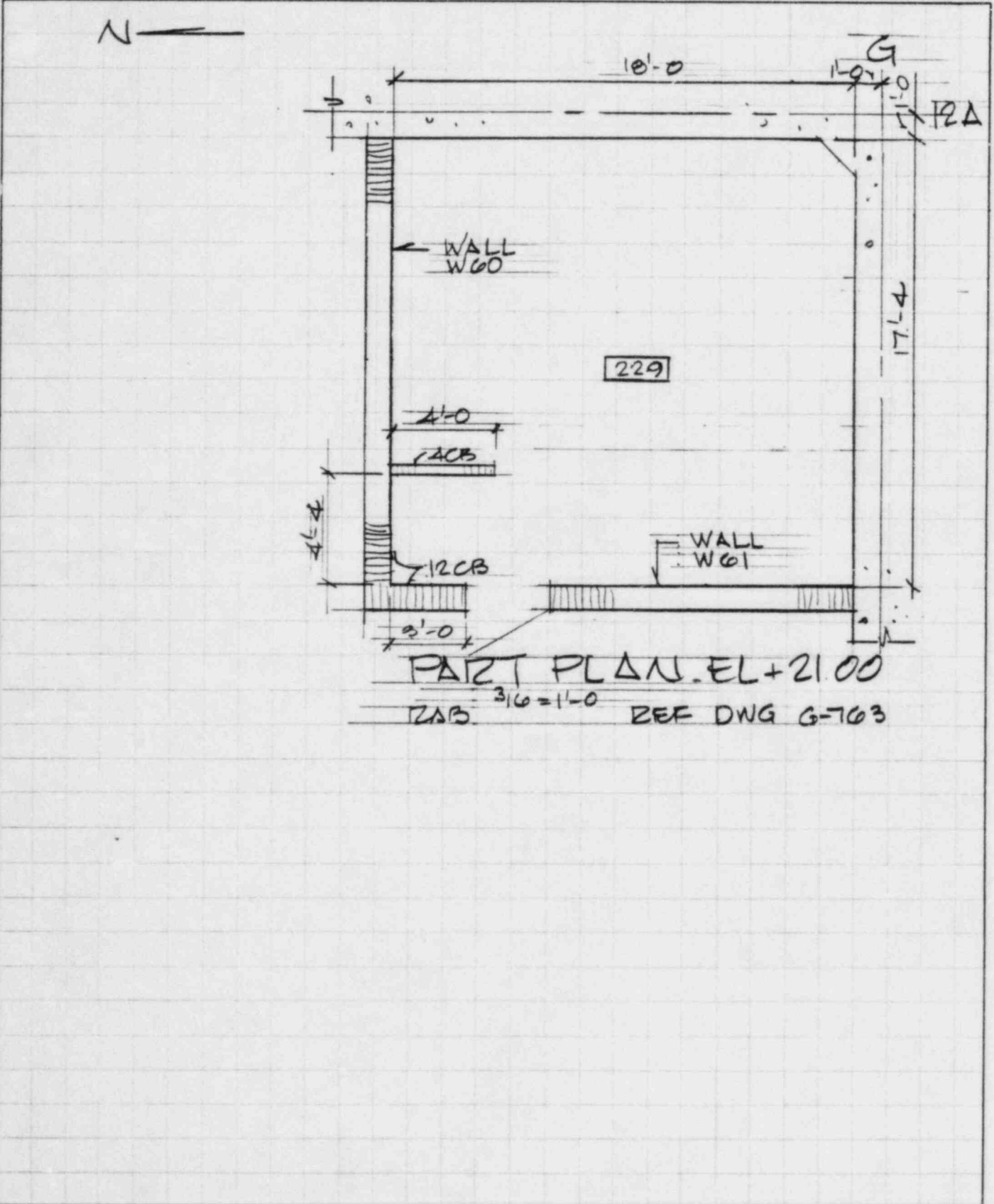
CHKD. BY J.S. DATE 10-8-84

OFS NO. 2865-038 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



EBASCO SERVICES INCORPORATED

BY G. WU DATE 10-8-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

CHKD. BY C. O. L... DATE 10-9-84

DEPT. NO. \_\_\_\_\_

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS

DATA - SEISMIC MASONRY

WALL NO	WALL DIMEN.		WALL TYPES & DETS		DESIGN PARAMETERS																	
	W	H	T	S	TYPE	DETAIL	ELEV. WALL NO	HOLLOW UNITS	SOLID UNITS													
								POTT.	INTERMEDIATE DIAPHRAM													
								FIXED	EXIST.													
								HINGED	HINGED													
								FREE	GANTILEVERED													
								TOP														
60			12		A	3	1	✓														
61	H24		12		A	3	1	✓														

REMARKS:

BY BILAK DATE 10-6-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

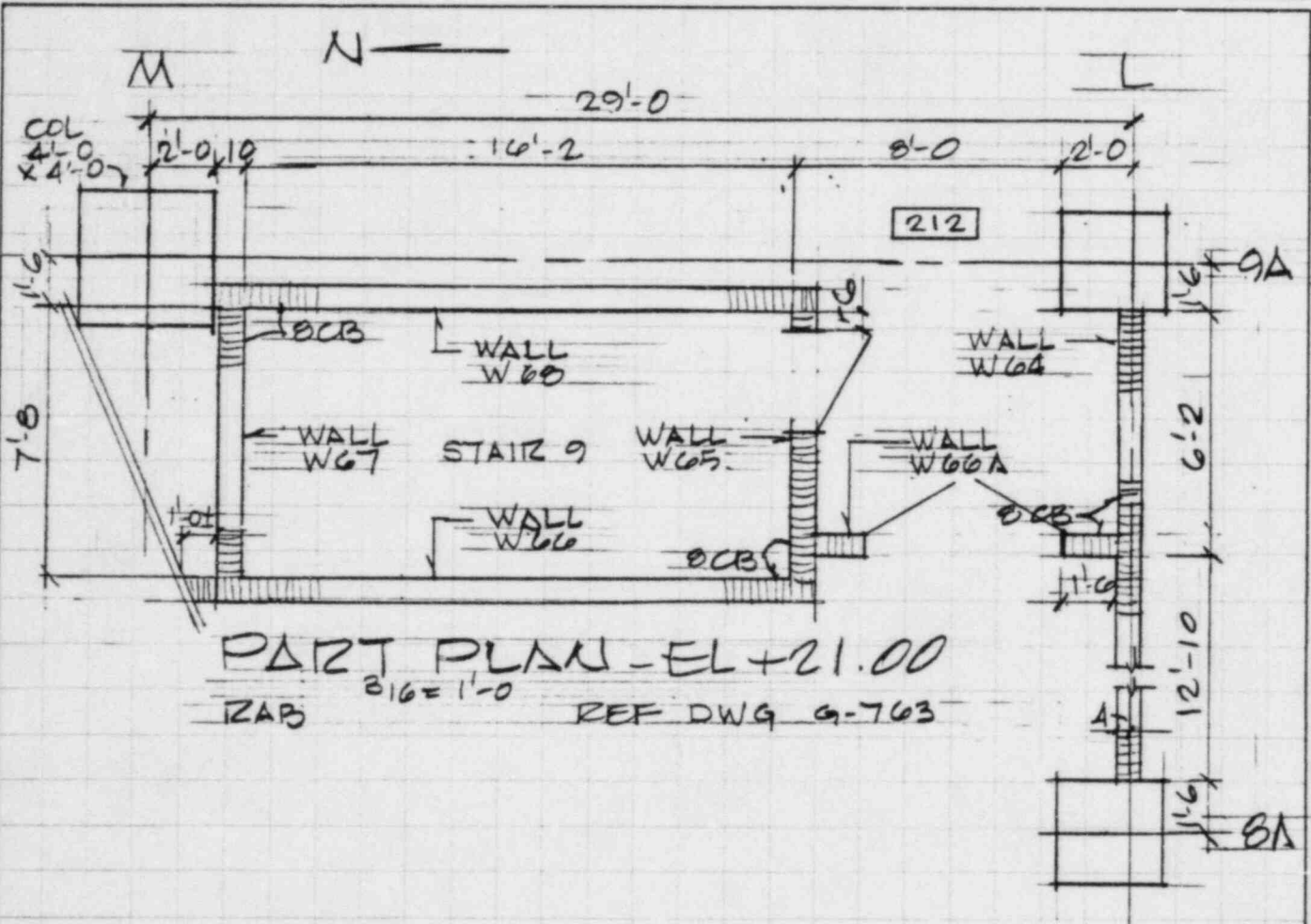
CHKD. BY G.F. DATE 10-8-84

OFS NO. 2865-058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PART PLAN - EL +21.00

RAB 3/16 = 1'-0 REF DWG 9-763

BY G.W.U. DATE 10-8-84

CHKD. BY J. Blalock DATE 10.9.84

CLIENT LOUISIANA POWER & LIGHT CO

OFS NO. \_\_\_\_\_

DEPT. NO. \_\_\_\_\_

SHEET \_\_\_\_\_ OF \_\_\_\_\_

PROJECT WATERFORD #3  
SUBJECT CONCRETE MASONRY BLOCK WALLS

# DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS						
W	H	S	t = INCH.	W = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV WALL NO	HOLLOW UNITS			SOLID UNITS			
									BOT.		TOP	INTERMEDIATE DIAPHRAM			
									FIXED	HINGED	FREE	EXIST.	HINGED	CANTILEVERED	
64			8	19'-0	11'-2	A	2	1	✓	✓					
65			8	9'-0	13'-2	A	4	1	✓	✓					
66			8	17'-10	13'-2	A	4	1	✓	✓					
66A	H53		8	9'-0	9'-4	B	-	2	✓		✓				
67			8	7'-8	11'-10	A	4	1	✓	✓					
68			8	17'-8	11'-10	A	4	1	✓	✓					

REMARKS:

EBASCO SERVICES INCORPORATED

BY BILAK DATE 10-6-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

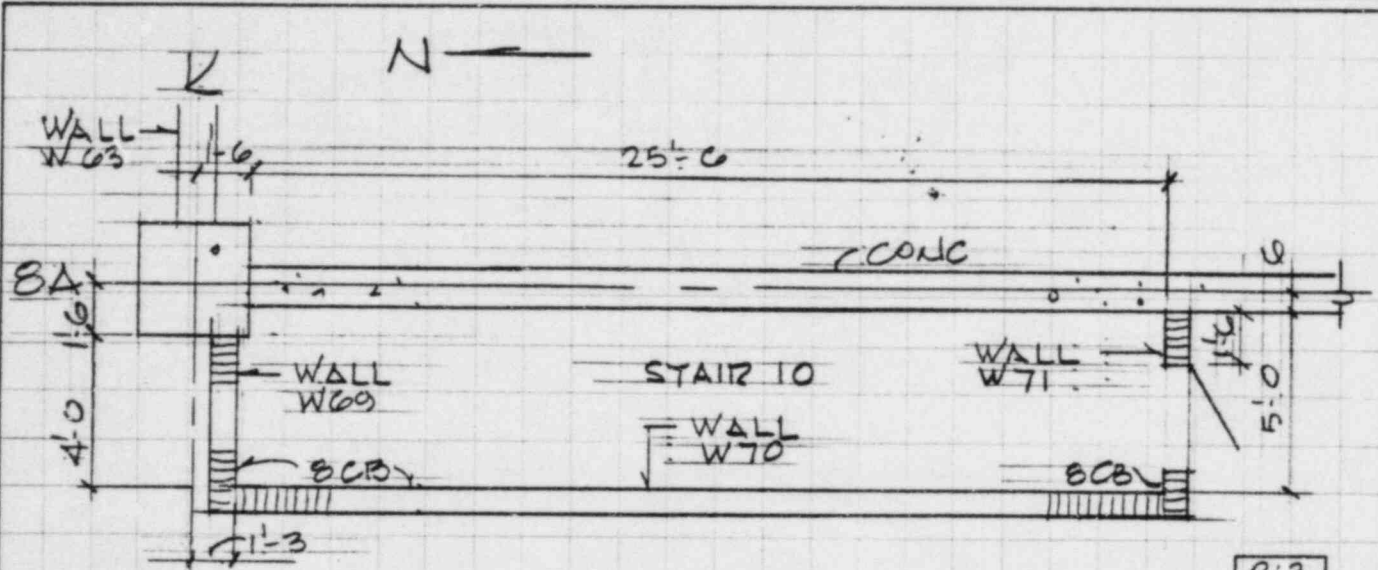
CHKD. BY J.S DATE 10-8-84

OFS NO. 2865-053 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PART PLAN EL + 21.00  
RAB <sup>316=140</sup> REF DWG G-763

BY G.W.U. DATE 10-8-84

CHKD. BY [Signature] DATE 10-9-84

CLIENT LOUISIANA POWER & LIGHT CO

PROJECT WATERFORD #3 CONCRETE MASONRY BLOCK WALLS

SHEET \_\_\_\_\_ OF \_\_\_\_\_  
DEPT. NO. \_\_\_\_\_

# DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS									
W	H	S	t = INCH.	W = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV WALL NO	HOLLOW UNITS			SOLID UNITS						
									TOP		INTERMEDIATE		DAPHRAM		EXIST.	HINGED	CANTILEVERED	
									FIXED	HINGED	FREE							
69			8	4'-8	13'-2	A	4	1	✓	✓								
70			8	2'-1	13'-2	A	4	1	✓	✓								
71			8	5'-8	13'-2	A	4	1	✓	✓								

REMARKS:



EBASCO SERVICES INCORPORATED

BY BILAK DATE 10-6-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

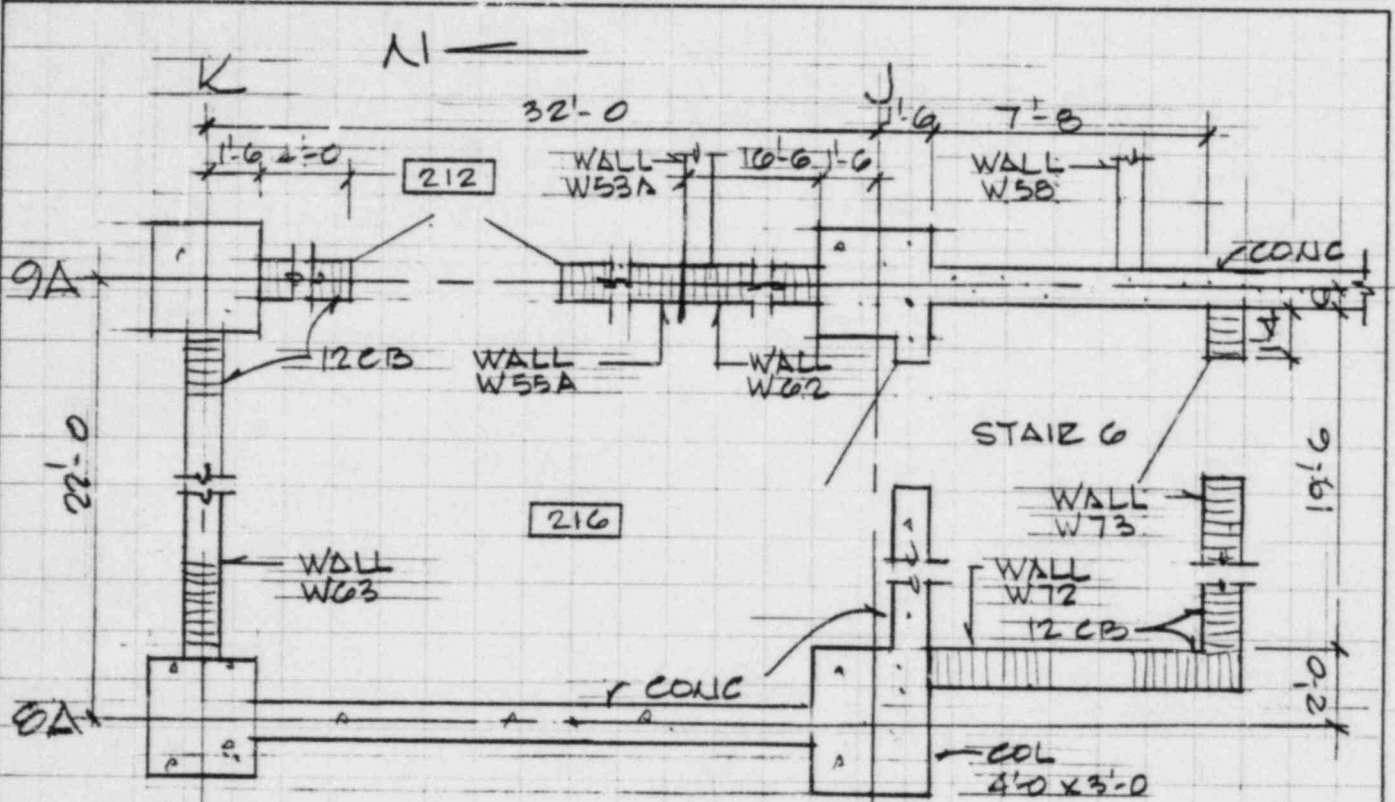
CHKD. BY G.F. DATE 10-8-84

OFS NO. 2865-058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PART PLAN - EL +21.00  
RAB 316=1'-0 REF DWG G-763

# DATA - SEISMIC MASONRY

EBASCO SERVICES INCORPORATED

BY G W U DATE 10-8-84  
 CHKD. BY [Signature] DATE 10.9.84  
 CLIENT LOUISIANA POWER & LIGHT CO OFS. NO. \_\_\_\_\_  
 PROJECT WATERFORD #3 DEPT. NO. \_\_\_\_\_  
 SUBJECT CONCRETE MASONRY BLOCK WALLS

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS						
W	H	S	t = INCH.	N = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV WALL NO	HOLLOW UNITS			SOLID UNITS			
									DOTT.	TOP		INTERMEDIATE DIAPHRAM			
										FIXED	HINGED	FREE	EXIST.	HINGED	CANTILEVERED
55A			12	12'-6	11'-2	A	2	1	✓	✓					
62			12	16'-6	7'-10	A	3	1	✓		✓				
63	H26		12	19'-0	11'-2	A	2	1	✓	✓					
72			12	8'-8	9'-10	A	4	1	✓	✓					
73			12	20'-6	13'-2	A	4	1	✓	✓					

REMARKS:

EBASCO SERVICES INCORPORATED

BY J. SANTOSPINTO DATE 10-6-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

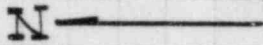
CHKD. BY G.F. DATE 10-8-84

OFS NO. 2865-028 DEPT. NO. 653

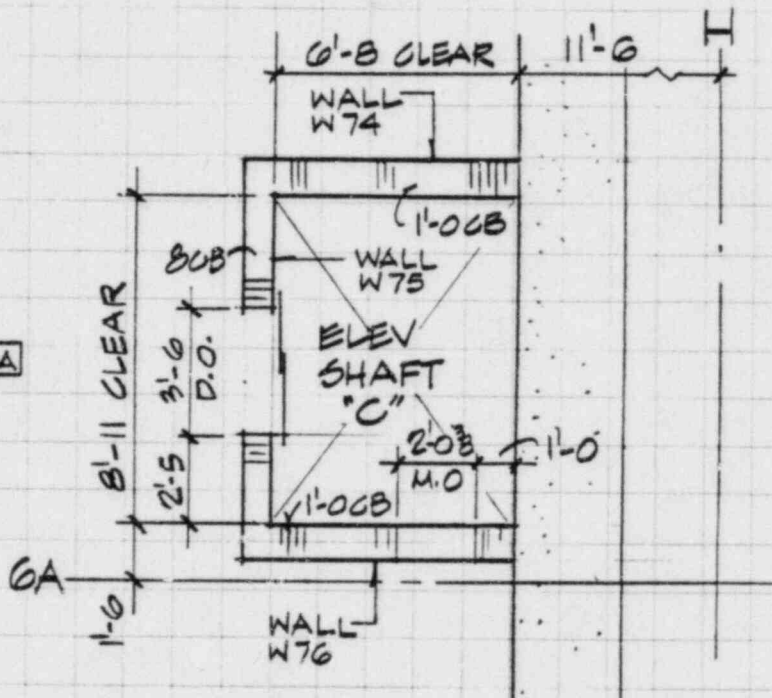
CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



225A



PART PLAN EL. 21.00'  
RAB 3/16 = 1'-0  
REFER DWG G-763

BY G.W.U. DATE 10-8-84

CHKD. BY [Signature] DATE 10.9.84

CLIENT LOUISIANA POWER & LIGHT CO OFS. NO. \_\_\_\_\_

PROJECT WATERFORD #3 CONCRETE MASONRY BLOCK WALLS

SHEET \_\_\_\_\_ OF \_\_\_\_\_  
DEPT. NO. \_\_\_\_\_

## DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS					
W	H	S	t = INCH.	N = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV. WALL NO	HOLLOW UNITS			SOLID UNITS		
									BOT.		TOP	INTERMEDIATE DIAPHRAM		
									FIXED	HINGED	FREE	EXIST.	HINGED	CANTILEVERED
74			12	7'-4	13'-2	A	3	1	✓		✓			
75			8	10'-11	13'-2	A	3	1	✓		✓			
76			12	7'-4	13'-2	A	3	1	✓		✓			

REMARKS:

EBASCO SERVICES INCORPORATED

BY J. SANTOSPIRITO DATE 10-6-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

CHKD. BY GF DATE 10-8-84

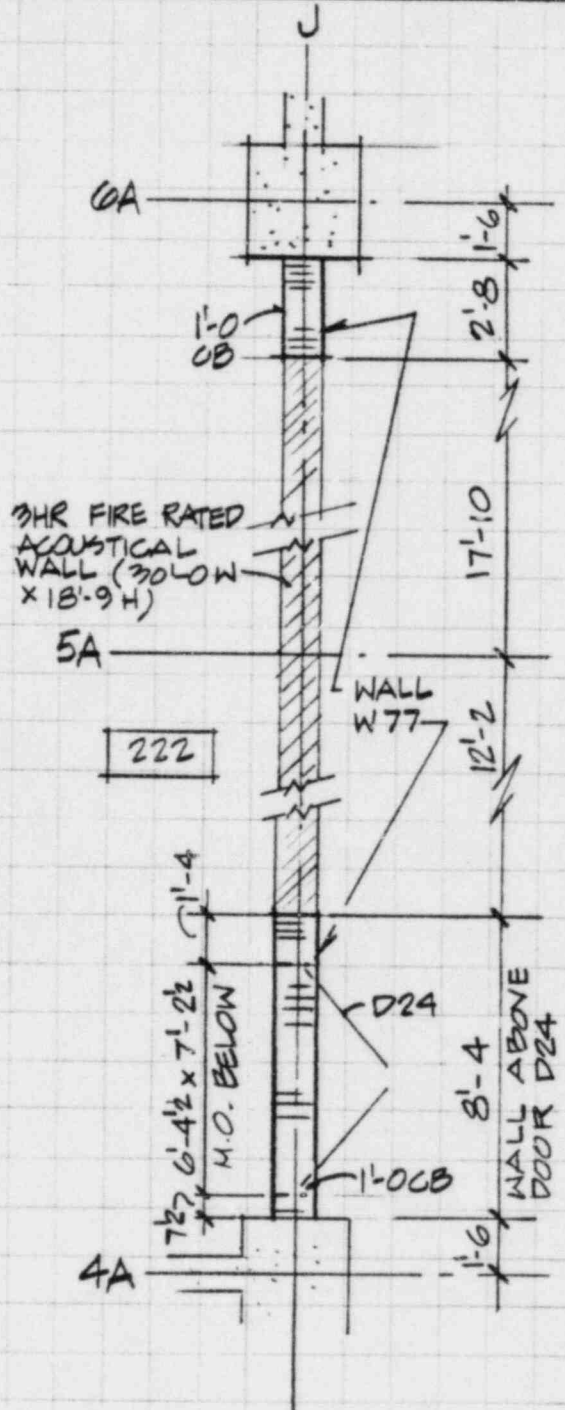
OFS NO. 2865-058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS

N ←



PART PLAN EL. 21.00'  
RAB 3/16=1'-0" REFER DWG 6763

BY G W U DATE 10-8-84

CHKD. BY [Signature] DATE 10-9-84

CLIENT LOUISIANA POWER & LIGHT CO

OFS NO. \_\_\_\_\_

SHEET \_\_\_\_\_ OF \_\_\_\_\_  
DEPT. NO. \_\_\_\_\_

PROJECT WATERFORD #3  
SUBJECT CONCRETE MASONRY BLOCK WALLS

## DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS						
W	H	S	t = INCH.	W = FEET (FT)	H = FT. HEIGHT	TYPE	DETAIL	ELEV WALL NO	HOLLOW UNITS			SOLID UNITS			
									INTERMEDIATE DIAPHRAM						
									BOTT.	TOP	FREE	EXIST.	HINGED	CANTILEVERED	
77	H27 H29		12	4'-0	20'-0	B	3	2	*						

REMARKS: \* WALL SPANS HORIZONTALLY

EBASCO SERVICES INCORPORATED

BY J. SANTOSPIVITO DATE 10-6-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

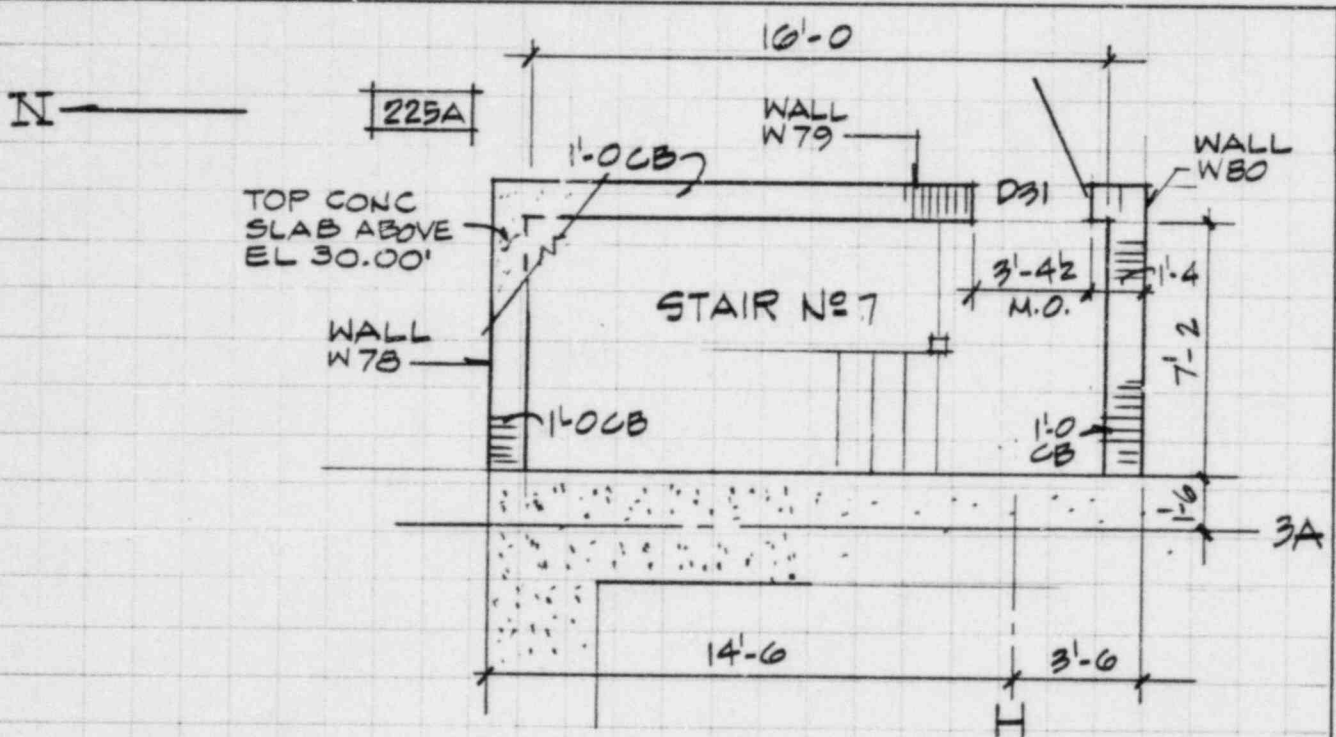
CHKD. BY GF DATE 10-8-84

OFS NO. 2865-058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD # 3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PART PLAN EL 21.00'  
RAB 3/16" = 1'-0" REFER DNG 6-763

BY G. W. DATE 10-8-84  
 CHKD. BY J. Michael DATE 10-9-84  
 CLIENT LOUISIANA POWER & LIGHT CO OFS NO. \_\_\_\_\_  
 PROJECT WATERFORD #3 DEPT. NO. \_\_\_\_\_  
 SUBJECT CONCRETE MASONRY BLOCK WALLS

## DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS							
W	H	S	t = INCH.	W = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV. WALL NO	HOLLOW UNITS			SOLID UNITS				
									BOT. TOP			INTERMEDIATE DIAPHRAM				
									FIXED	HINGED	FREE	EXIST.	HINGED	CANTILEVERED		
78			12	8'-2	9'-0	A	3	1	✓	✓						
79			12	18'-0	9'-0	A	3	1	✓	✓						
80			12	8'-2	9'-0	A	3	1	✓	✓						

REMARKS:



EBASCO SERVICES INCORPORATED

BY BILAK DATE 10-6-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

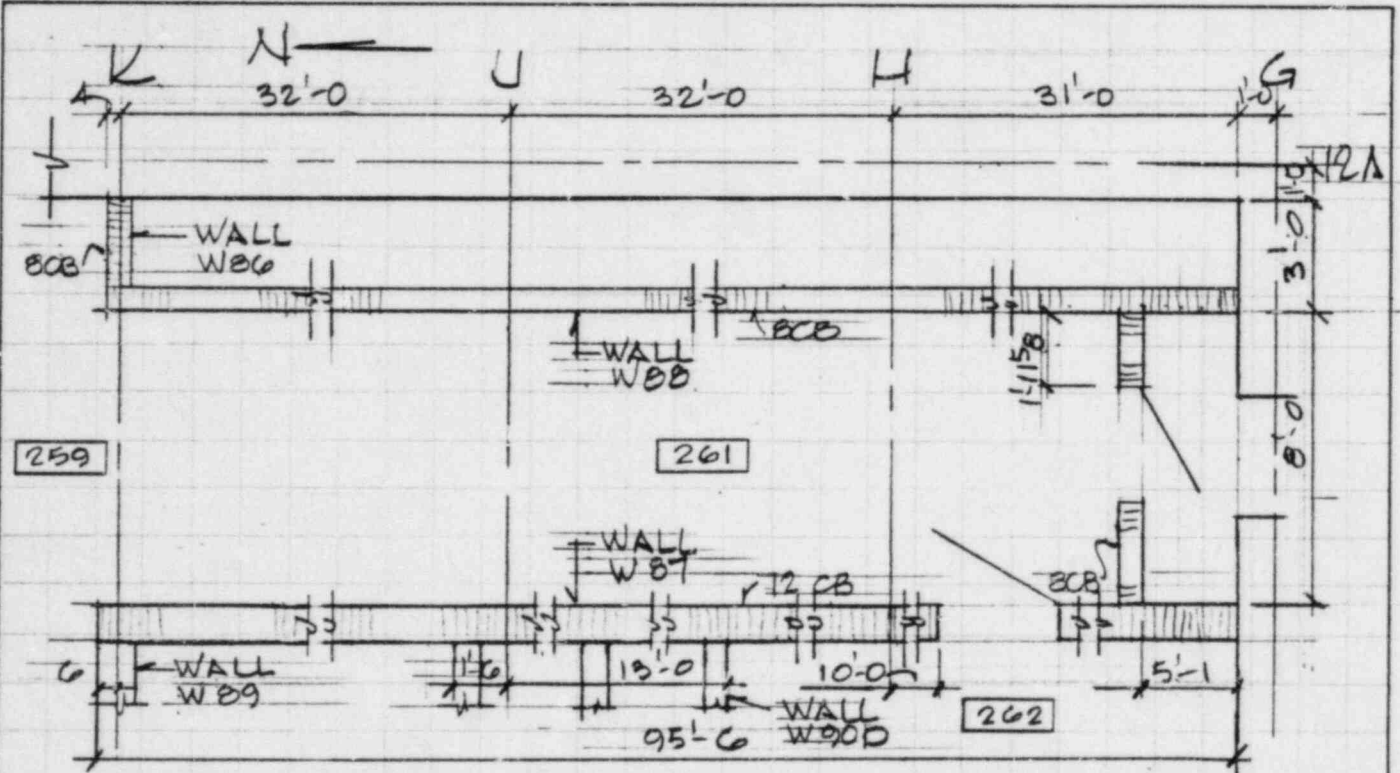
CHKD. BY G.F DATE 10-8-84

OFS NO. 2865-058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PART PLAN - EL +35.00

8/16 = 1'-0

TAB

REF DWG G-765501

BY A.W.U. DATE 10-8-84  
 CKD. BY P. Alshew DATE 10-9-84  
 CLIENT LOUISIANA POWER & LIGHT CO OFS. NO. \_\_\_\_\_  
 PROJECT WATERFORD #3 DEPT. NO. \_\_\_\_\_  
 SUBJECT CONCRETE MASONRY BLOCK WALLS

DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS								
W	H	S	t = INCH.	W = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV. WALL NO	HOLLOW UNITS			SOLID UNITS					
									BOTTL.			INTERMEDIATE DIAPHRAM					
									FIXED	HINGED	FREE	EXIST.	HINGED	CANTILEVERED			
86			8	3'-0	7'-2	A	4	1	✓	✓							
87	H35		12	95'-6	9'-10	A	4	1	✓	✓							
88	H54		8	95'-6	9'-10	A	4	1	✓	✓							

REMARKS:

EBASCO SERVICES INCORPORATED

BY BILAK DATE 10-6-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

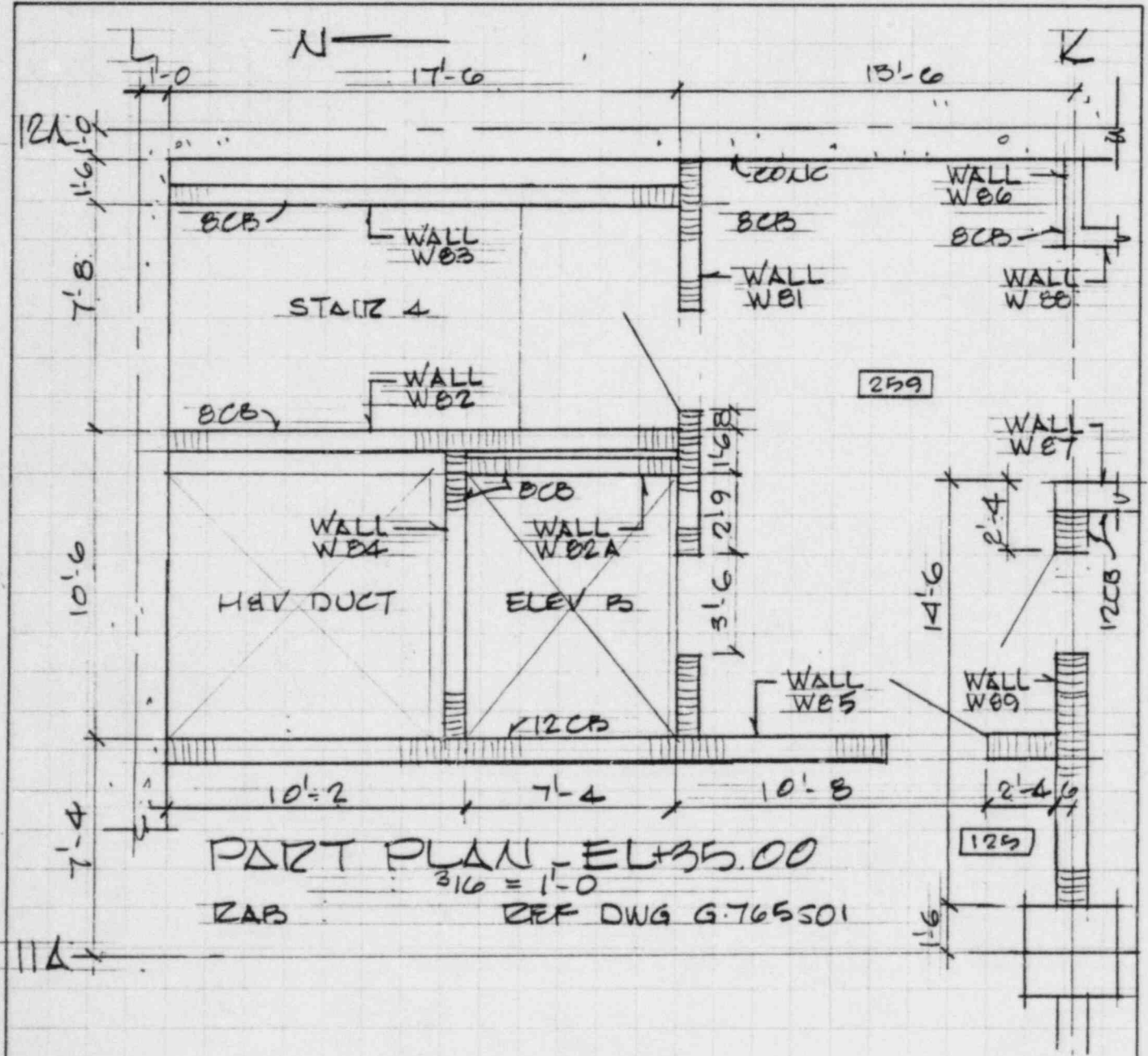
CHKD. BY J.S. DATE 10-8-84

OFS NO. 2865-055 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



EBASCO SERVICES INCORPORATED

BY FISCHER DATE 10-8-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

CHKD. BY G.W. DATE 10-8-84

OFS NO. 2865.058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS

DATA - SEISMIC MASONRY

WALL NO	WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS						
	W	H	S	T = INCH.	W = FEET (FT)	H = FT. H <sub>e</sub> <sup>3/4</sup>	TYPE	DETAIL	ELEV WALL NO	HOLLOW UNITS		SOLID UNITS	
										FIXED	HINGED	FREE	EXIST.
W81				8	19'-8"	8'-6"	A	4	/	✓	✓		
W82				8	17'-6"	8'-6"	A	4	/	✓	✓		
W82A				8	7'-4"	*							
W83				8	17'-6"	9'-10"	A	4	/	✓	✓		
W84				8	9'-10"	*							
W85	H34			12	30'-6"	9'-10"	A	2	/	✓	✓		
W89				12	13'-6"	7'-10"	A	4	/	✓	✓		

REMARKS: \* INACCESSIBLE

EBASCO SERVICES INCORPORATED

BY PSILAK DATE 10-6-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

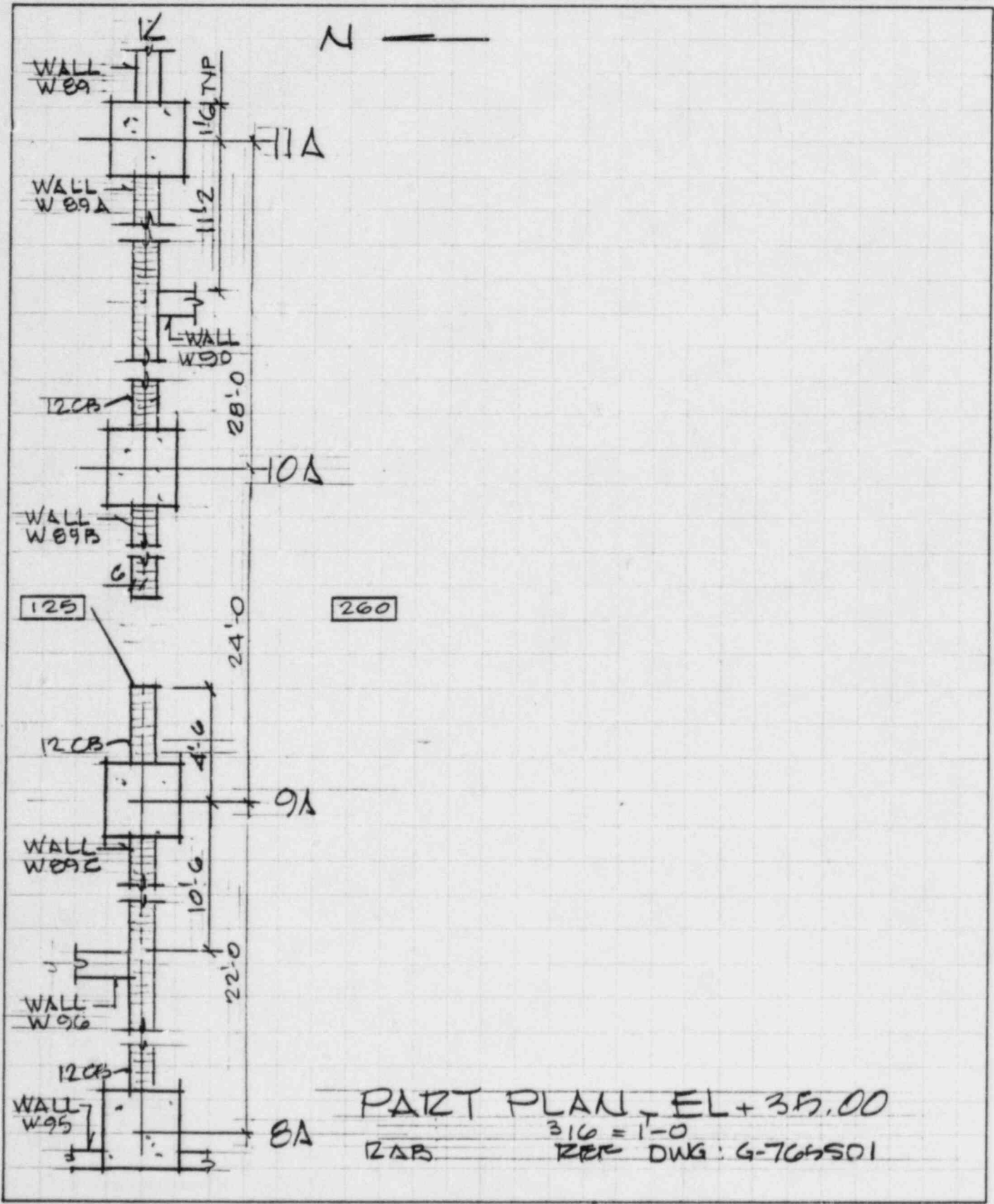
CHKD. BY J.S DATE 10-8-84

OFS NO. 2865-058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PART PLAN, EL + 35.00  
3/16 = 1'-0"  
REF DWG: G-764501

BY FISCHER DATE 10-8-84

CHKO. BY G.W. DATE 10-8-84

CLIENT LOUISIANA POWER & LIGHT CO

WATERFORD #3

SUBJECT PROJECT CONCRETE MASONRY BLOCK WALLS

SHEET \_\_\_ OF \_\_\_

OFS NO. 2865058 DEPT. NO. 653

# DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS							
W	H	S	t= INCH.	W= FEET (FT.)	H=FT. HEIGHT	TYPE	DETAIL	ELEV WALL NO	HOLLOW UNITS			SOLID UNITS				
									BOT.		TOP	INTERMEDIATE DIAPHRAM				
									FIXED	HINGED	FREE	EXIST.	HINGED	CANTILEVERED		
82A			12	25'-0"	7'-10"	A	2	/	✓	✓						
82B	H37		12	21'-0"	7'-10"	A	2	/	✓	✓						
82C			12	19'-0"	7'-10"	A	2	/	✓	✓						

REMARKS:

EBASCO SERVICES INCORPORATED

BY BILAK DATE 10-6-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

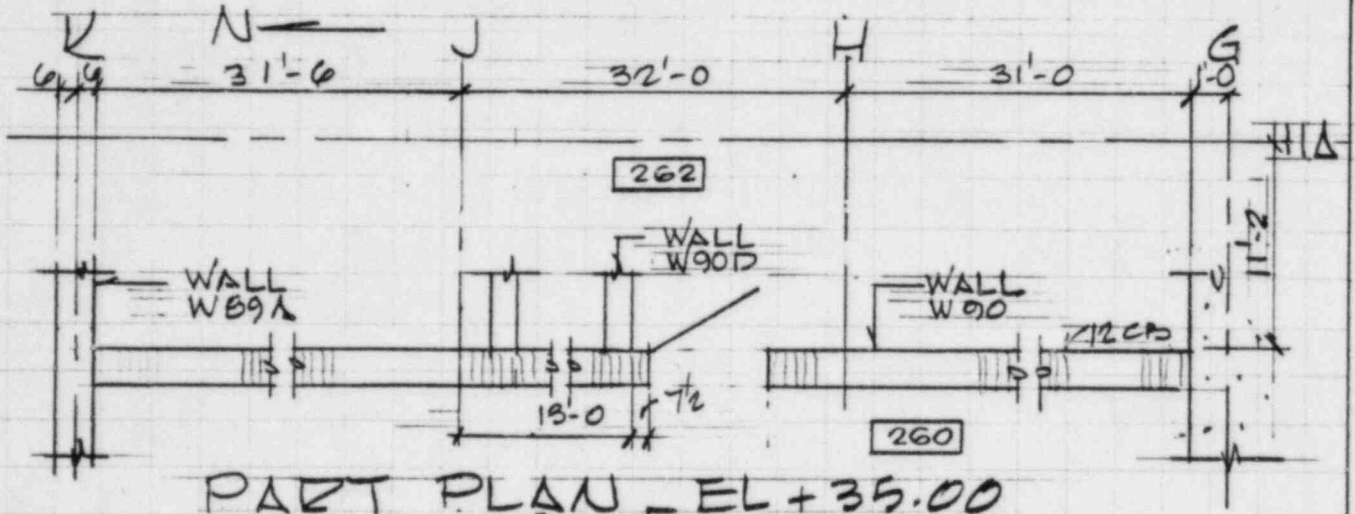
CHKD. BY G.F DATE 10-8-84

OFS NO. 2865-058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PART PLAN - EL + 35.00  
316 - 1'-0  
IZAB REF DWG G-765 501

BY FISCHER DATE 10-8-84

CHKD. BY G.W. DATE 10-8-84

CLIENT \_\_\_\_\_ CLIENT L.P&L

PROJECT \_\_\_\_\_ PROJECT WATERFORD #3

SUBJECT \_\_\_\_\_ SUBJECT CONCRETE MASONRY BLOCK WALLS

SHEET \_\_\_\_\_ OF \_\_\_\_\_  
 DEPT. NO. 653  
 OFS NO. 2665,058

# DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS					
									HOLLOW UNITS			SOLID UNITS		
W	H	S	T = INCH.	W = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV. WALL NO	BOTTL.		INTERMEDIATE DIAPHRAM			
									FIXED	HINGED	FREE	EXIST.	HINGED	CANTILEVERED
90	H5		12	24'6	2'10	A	Z	1	✓	✓				

REMARKS:



EBASCO SERVICES INCORPORATED

BY BILAK DATE 10-6-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

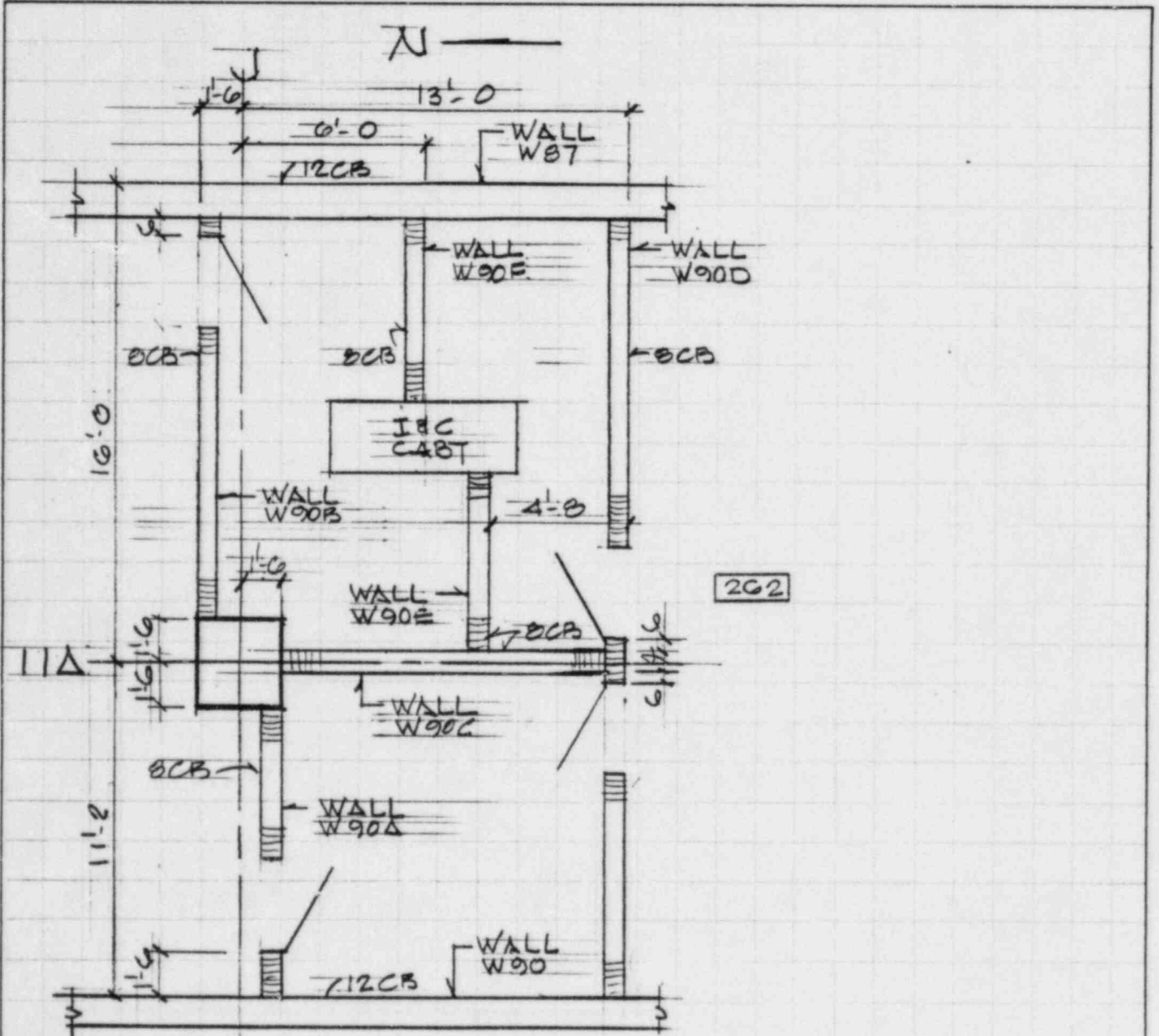
CHKD. BY J.S DATE 10-8-84

OFS NO. 2865-058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD # 3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PART PLAN - EL + 35.00  
3/16 = 1/0  
IZAB REF DNG G-765501

EBASCO SERVICES INCORPORATED

BY FISCHER DATE 10-8-84

CHKD. BY G.Wu DATE 10-8-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_  
OFS NO. 2865.058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS

DATA - SEISMIC MASONRY																			
W	H	S	WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS										
			T = INCH.	W = FEET (FT.)	H = FT. H <sub>e</sub> LIGHT	TYPE	DETAIL	ELEV WALL NO	HOLLOW UNITS		SOLID UNITS								
									FIXED	HINGED	TOP	HINGED	FREE	EXIST.	HINGED	CANTILEVERED			
20A			8	9'-8"	6'-4"	B	*	2	✓										
20B			8	13'-6"	6'-4"	B	*	2	✓										
20C			8	10'-10"	6'-4"	B	*	2	✓										
20D			8	26'-2"	6'-4"	B	*	2	✓										
20E			8	6'-0"	6'-4"	B	*	2	✓										
20F			8	6'-2"	6'-4"	B	*	2	✓										

REMARKS: \* FREE STANDING - NO CONN AT TOP

EBASCO SERVICES INCORPORATED

BY BILAK DATE 10-6-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

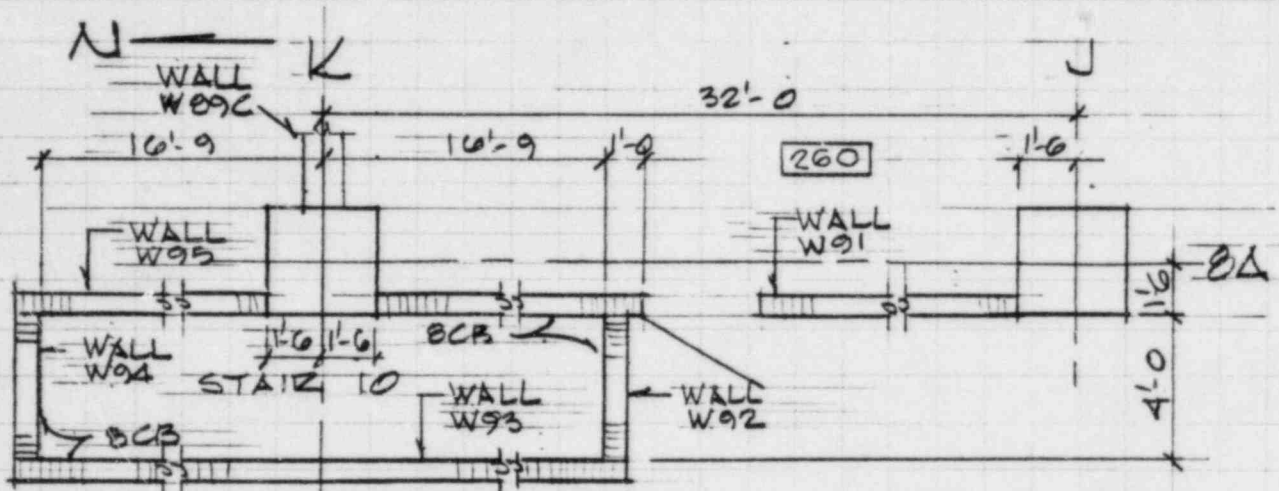
CHKD. BY G.F. DATE 10-8-84

OFS NO. 2865-023 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD # 3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PART PLAN EL + 35.00  
3/16 = 1'-0  
REF DWG G-769501  
ZAB

EBASCO SERVICES INCORPORATED

BY FISCHER DATE 10-8-84

CHKD. BY G.W. DATE 10-8-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_  
 OFS NO. 2865.058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS

DATA - SEISMIC MASONRY															
WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS						
									HOLLOW UNITS		SOLID UNITS				
W	H	S	T = INCH.	W = FEET (FT.)	H = FT.	TYPE	DETAIL	ELEV WALL NO	BOTT. FIXED	TOP HINGED	FREE	EXIST. HINGED	INTERMEDIATE DAPHRAM	CANTILEVERED	
01			8	29'-0"	7'-2"	A	2	1	✓	✓					
02			8	4'-8"	9'-10"	A	4	1	✓	✓					
03	H38		8	34'-10"	9'-10"	A	4	1	✓	✓					
04			8	5'-4"	9'-10"	A	4	1	✓	✓					
05			8	15'-3"	7'-2"	A	4	1	✓	✓					

REMARKS:

EBASCO SERVICES INCORPORATED

BY BILAK DATE 10-6-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

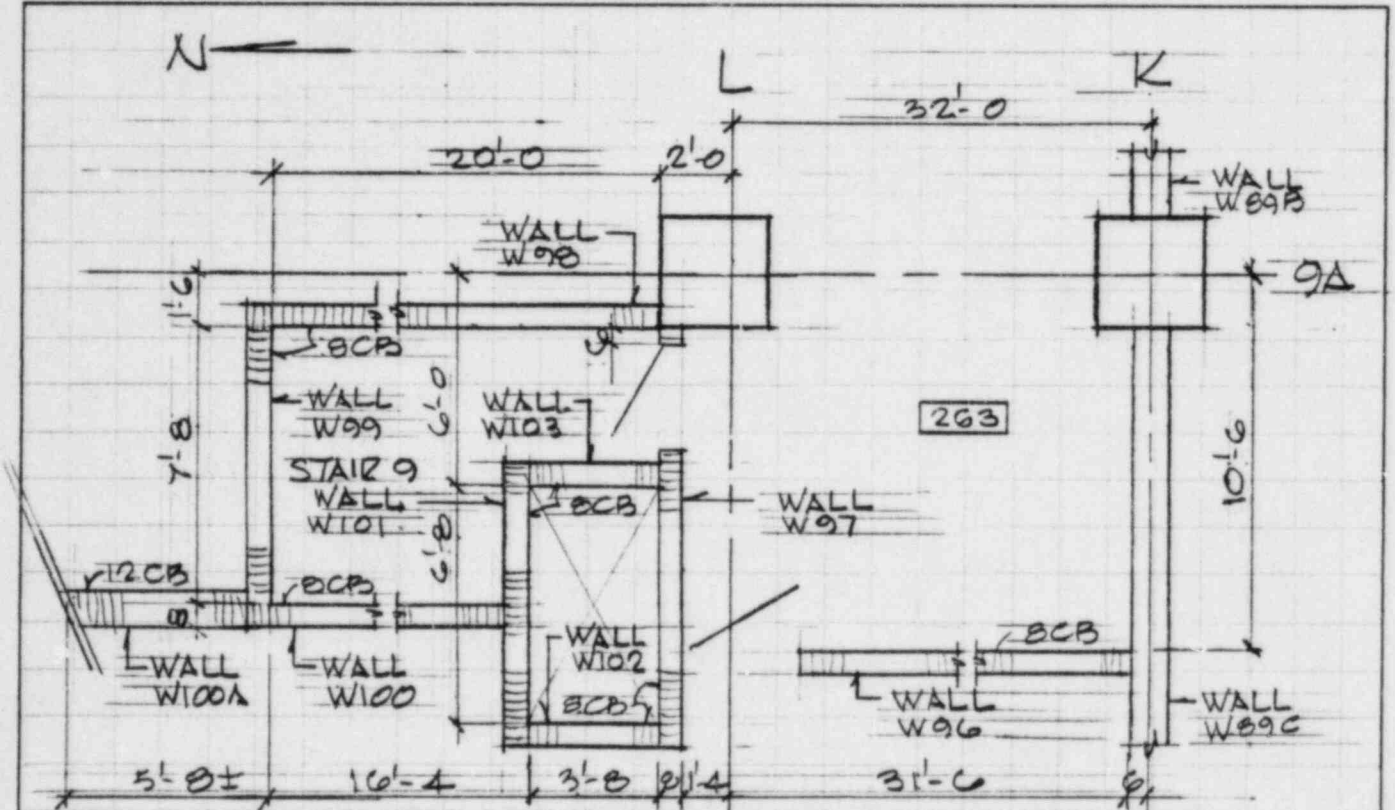
CHKD. BY JS. DATE 10-8-84

OFS NO. 2865-058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD # 3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PART PLAN - EL + 35.00

ZAB

REF DWG G-765 501

EBASCO SERVICES INCORPORATED

BY FISCHER DATE 10-8-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

CHKD. BY G.W. DATE 10-8-84

OFS NO. \_\_\_\_\_ DEPT. NO. \_\_\_\_\_

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS

DATA - SEISMIC MASONRY															
WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS						
									HOLLOW UNITS		SOLID UNITS				
W	H	S	t = INCH.	WE FEET (FT)	H = FT. HEIGHT	TYPE	DETAIL	ELEV WALL NO	BOOTT.	HINGED	FREE	EXIST.	HINGED	DIAPHRAM	CANTILEVERED
96	H43		12	32-10	9'-10	A	2	1	✓	✓					
97			8	8'-0	7'-2	A	3	1	✓	✓	✓				
98	H42		8	20'-8	5'-2	A	4	1	✓	✓					
99	H41		8	9'-0	9'-2	A	2	1	✓	✓					
100	H40		8	16'-4	9'-2	A	2	1	✓	✓					
100A			12	5'-8	9'-10	A	2	1	✓	✓					
101			8	8'-0	9'-10	A	2	1	✓	✓					
102			8	5'-0	9'-10	A	2	1	✓	✓					
103			8	4'-4	9'-10	A	4	1	✓	✓					

REMARKS:

EBASCO SERVICES INCORPORATED

BY J. SANTOSPIRITO DATE 10-6-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

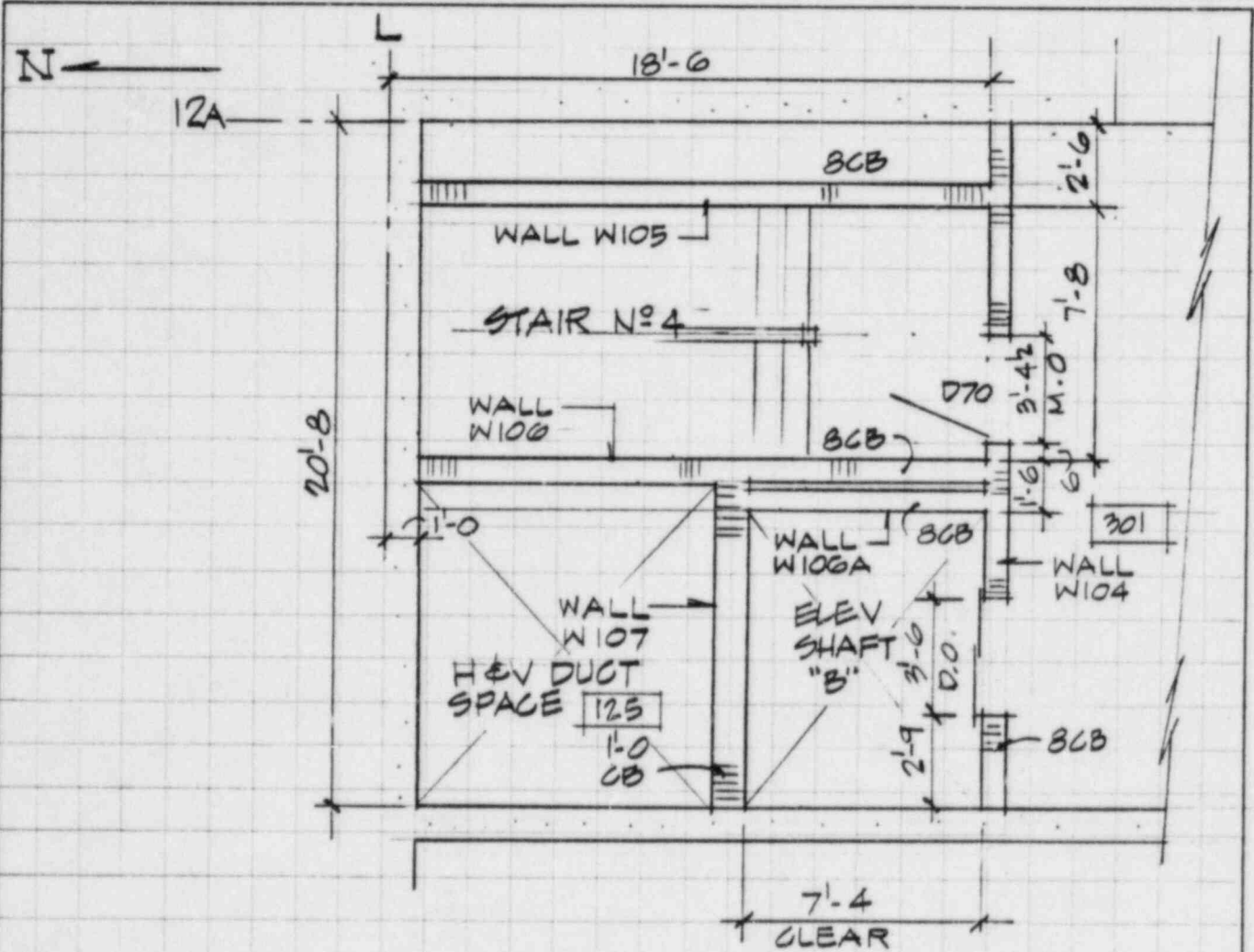
CHKD. BY GF DATE 10-9-84

OFS NO. 2865-053 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PART PLAN EL 46.00'  
RAB 3/16=1'-0" REFER DWG G764

BY FISCHER DATE 10-8-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

CHKD. BY G.WU DATE 10-8-84

DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS

## DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS					
W	H	S	T = INCH.	WE = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV WALL NO	HOLLOW UNITS			SOLID UNITS		
									BOT.	TOP		INTERMEDIATE DIAPHRAM		
										FIXED	HINGED	FREE	EXIST.	HINGED
104			8	20'-8	10'-6	A	1	1	✓	✓				
105			8	17'-6	20'-6	A	2	1	✓	✓				
106			8	17'-6	20'-6	A	2	1	✓	✓				
106A			8	7'-4	*									
107			12		*									

REMARKS: \*INACCESSIBLE



EBASCO SERVICES INCORPORATED

BY G. FISCHIONI DATE 10-6-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

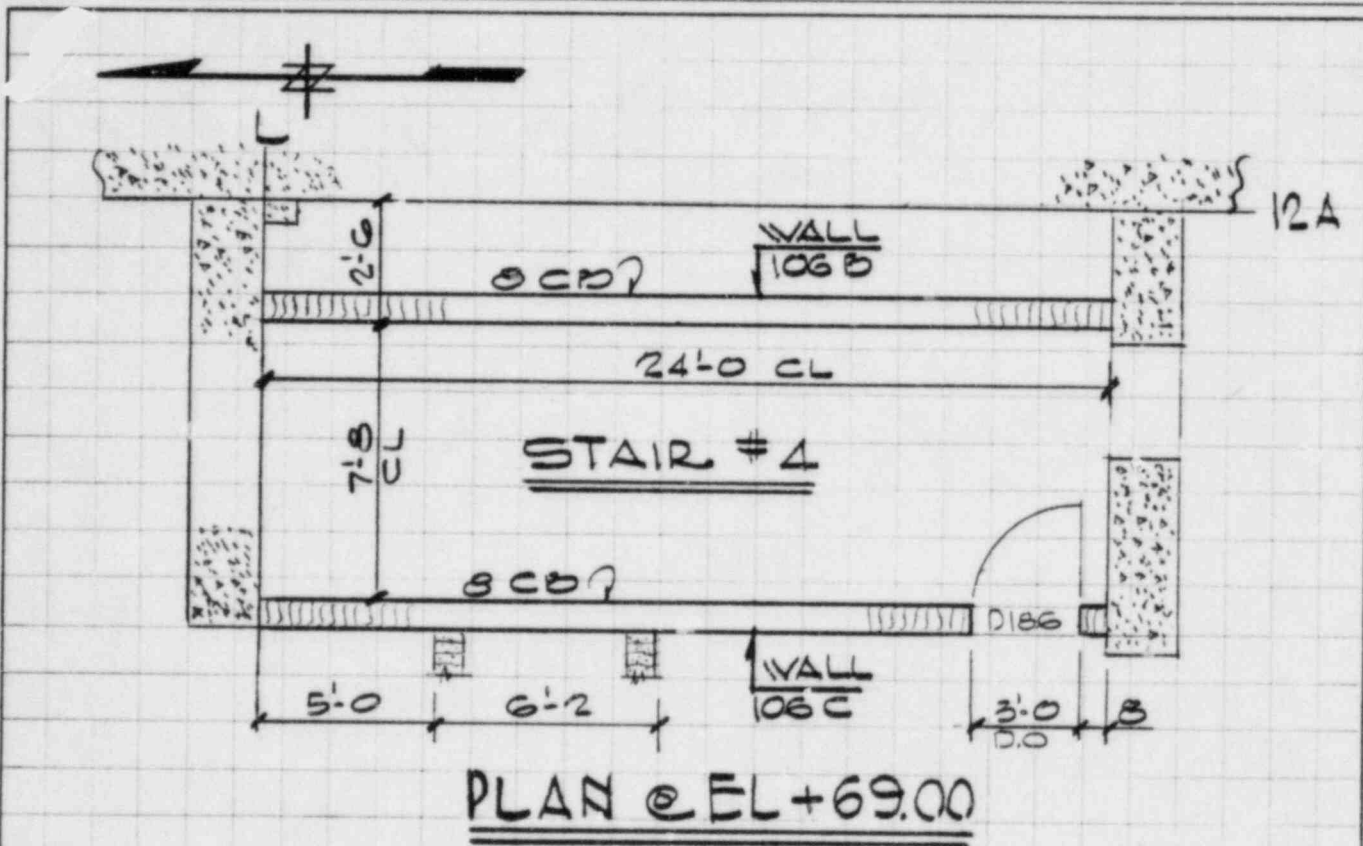
CHKD. BY J.S. DATE 10-8-84

OFS NO. 2865-053 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



REF. DWG G-771503

BY FISCHER DATE 10-8-84

CHKD. BY G.W. DATE 10-8-84

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS

SHEET 2865.058 OF 653

DEPT. NO. 653

## DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS							
W	H	S	T= INCH.	W= FEET (FT.)	H=FT. HEIGHT	TYPE	DETAIL	ELEV WALL NO	HOLLOW UNITS			SOLID UNITS				
									BOTT.		TOP	INTERMEDIATE DIAPHRAM				
									FIXED	HINGED	FREE	EXIST.	HINGED	CANTILEVERED		
106B			8	24-0	9-10	A	1	1	✓	✓						
106C/H49			8	24-0	9-2	A	1	1	✓	✓						

REMARKS:

501/B-01

EBASCO SERVICES INCORPORATED

BY G. FISCHIONI DATE 10-6-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

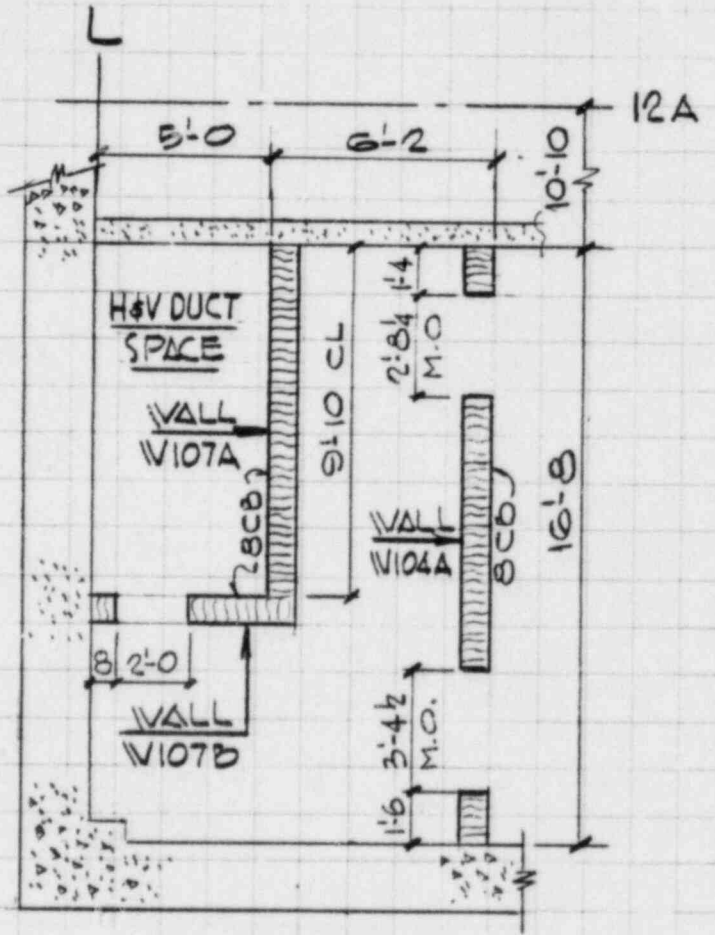
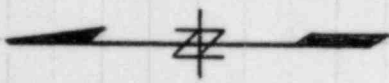
CHKD. BY J.S. DATE 10-8-84

OFS NO. 2865-058 DEPT. 653  
NO. \_\_\_\_\_

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PLAN @ EL. +69.00'

REF. DWG G-771503

BY FISCHER DATE 10-8-84

CHKD. BY G.W. DATE 10-8-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

OFS NO. 2865.058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS

**DATA - SEISMIC MASONRY**

WALL NO.		WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS				
W	H	T = INCH.	N = FEET (FT)	H = FT.	TYPE	DETAIL	ELEV. WALL NO.	HOLLOW UNITS		SOLID UNITS		
S								FIXED	HINGED	TOP	INTERMEDIATE	EXIST.
104A	H48	8	16'-8"	9'-2"	A	1	1	✓	✓			
107A	H50	8	10'-6"	9'-10"	A	2	1	✓	✓			
107B		8	5'-8"	9'-10"	A	2	1	✓	✓			

REMARKS:

EBASCO SERVICES INCORPORATED

BY J. SANTOSPIRITO DATE 10-6-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

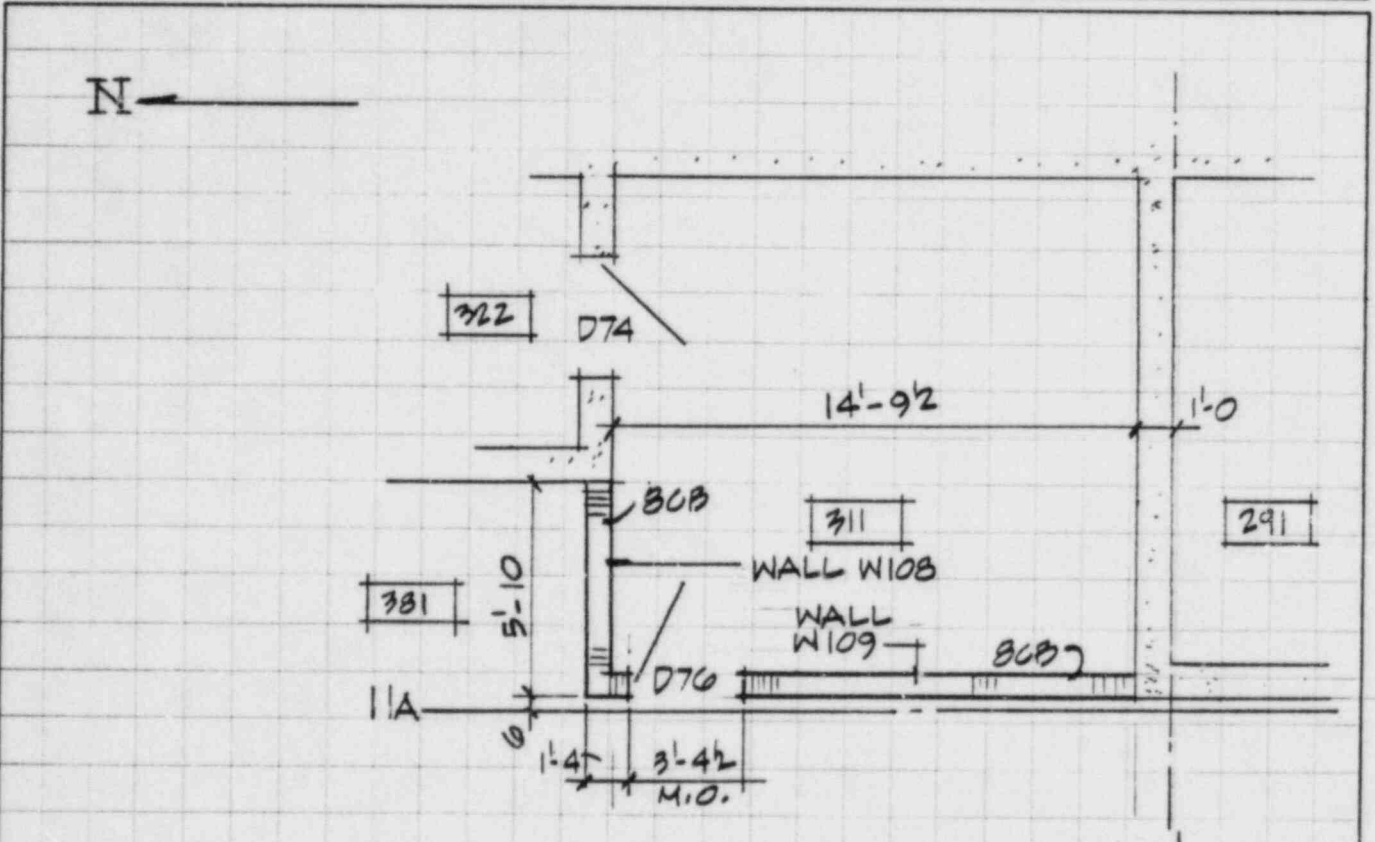
CHKD. BY G.F DATE 10-8-84

OFS NO. 2865-058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PART PLAN EL. 46.00  
3/16" = 1'-0"  
RAB REFER DWG G-764

BY FISCHER DATE 10-8-84  
 CHKD. BY G.W. DATE 10-8-84  
 CLIENT LOUISIANA POWER & LIGHT CO  
 PROJECT WATERFORD #3  
 SUBJECT CONCRETE MASONRY BLOCK WALLS  
 SHEET        OF         
 DEPT. NO. 2865058  
 NO. 653

## DATA - SEISMIC MASONRY

WALL N <sup>o</sup>			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS									
W	H	S	t = INCH.	w = FEET (FT.)	H = FT.  HEIGHT	TYPE	DETAIL	ELEV WALL N <sup>o</sup>	HOLLOW UNITS			SOLID UNITS						
									POTT.		TOP		INTERMEDIATE DIAPHRAM					
									FIXED	HINGED	FREE	EXIST.	HINGED	CANTILEVERED				
108			8	5'-10"	*													
109	H46		8	15'-5 1/2"	*													

REMARKS: \* CERAMIC TILE FIN. NO VISUAL INSPEC. POSSIBLE

581/B-81

EBASCO SERVICES INCORPORATED

BY J. SANTOSPIRITO DATE 10-6-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

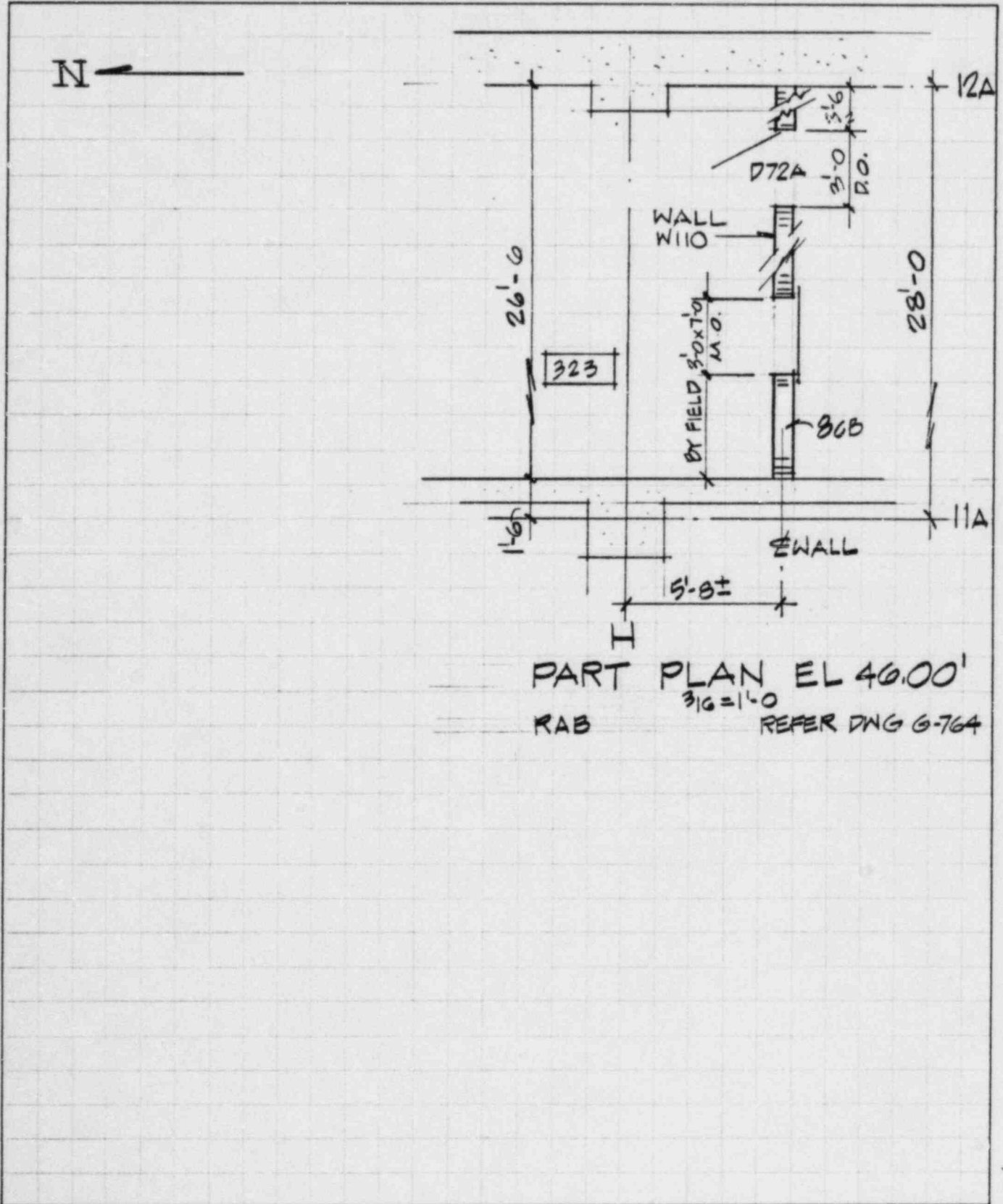
CHKD. BY G.F. DATE 10-8-84

OFS NO. 2865-058 DEPT. 673

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD # 3

SUBJECT CONCRETE MASONRY BLOCK WALLS



BY ESCHER DATE 10-8-84

CHKD. BY G.W. DATE 10-8-84

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD # 3

SUBJECT CONCRETE MASONRY BLOCK WALLS

SHEET 2865.058 OF 653  
DEPT. NO.

# DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS							
W	H	S	t = INCH.	W = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV. WALL NO	HOLLOW UNITS			SOLID UNITS				
									BOT.	TOP		INTERMEDIATE DIAPHRAM				
										FIXED	HINGED	FREE	EXIST.	HINGED	CANTILEVERED	
110	H47		8	26'-6"	8'-0"	B	-	2	✓		✓					

REMARKS:

581/8-81



EBASCO SERVICES INCORPORATED

BY J. SANTOS PIRI TO DATE 10-6-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

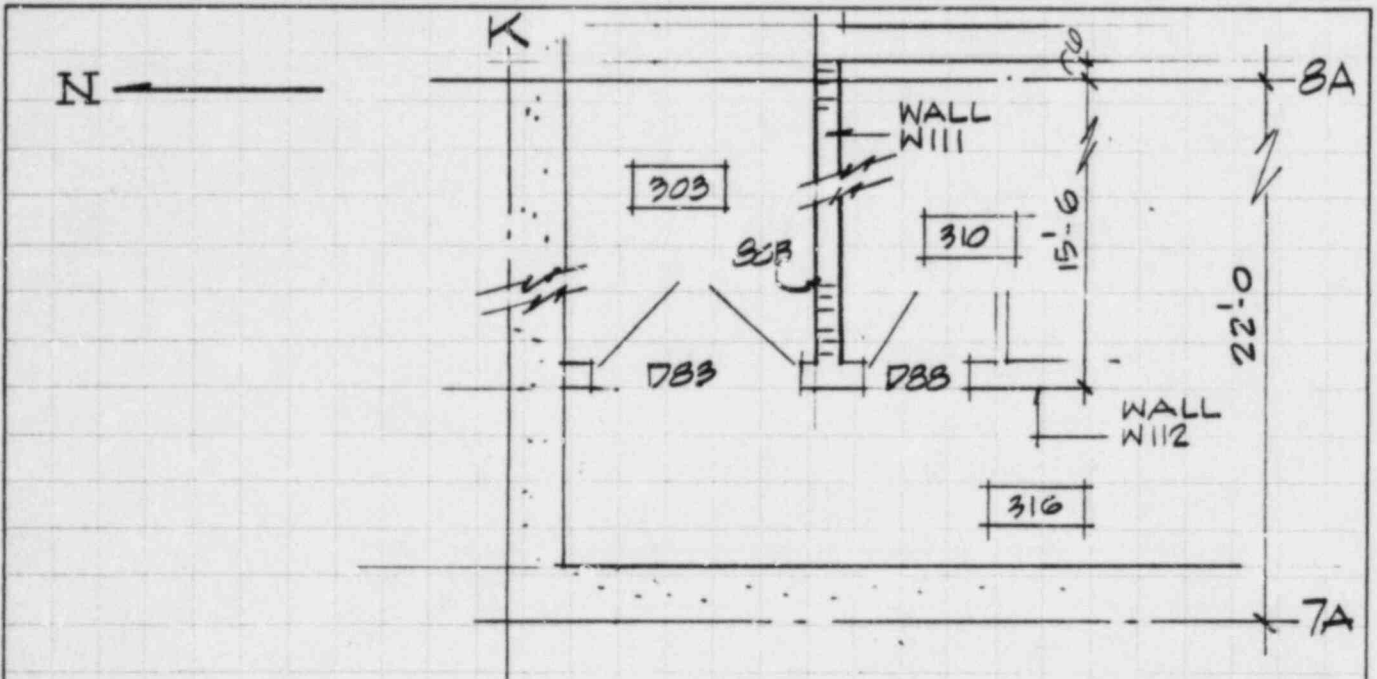
CHKD. BY G.F. DATE 10-8-84

OFS NO. 2365-053 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PART PLAN EL 46.00'  
RAB 316140 REFER DWG G-764



EBASCO SERVICES INCORPORATED

BY J. SANTOPRIMO DATE 10-6-84

SHEET 1 OF 2

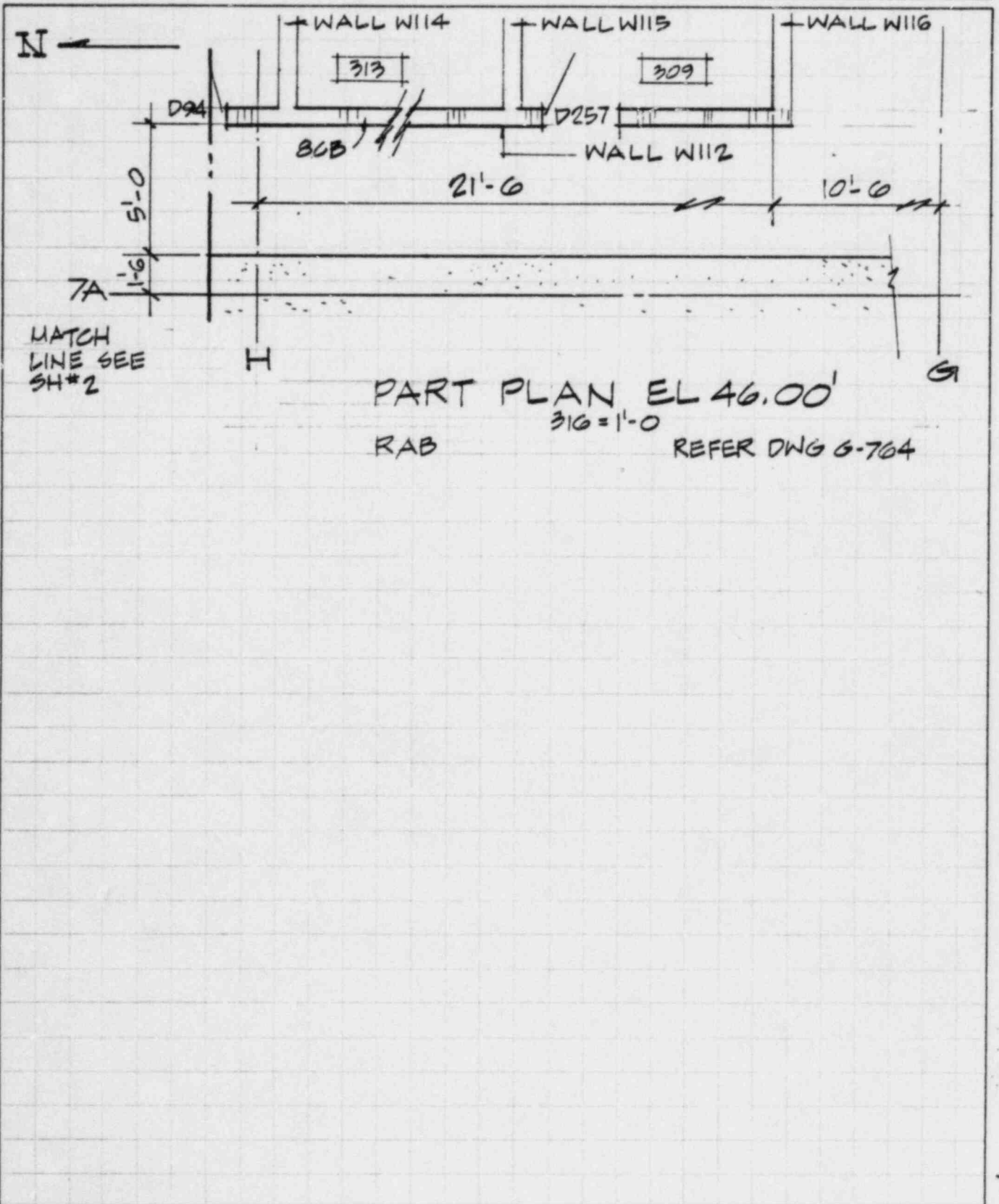
CHKD. BY GF DATE 10-8-84

OFS NO. 1865-058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD # 3

SUBJECT CONCRETE MASONRY BLOCK WALLS SH#1



EBASCO SERVICES INCORPORATED

BY J. SANTOSPIRITO DATE 10-6-84

SHEET 2 OF 2

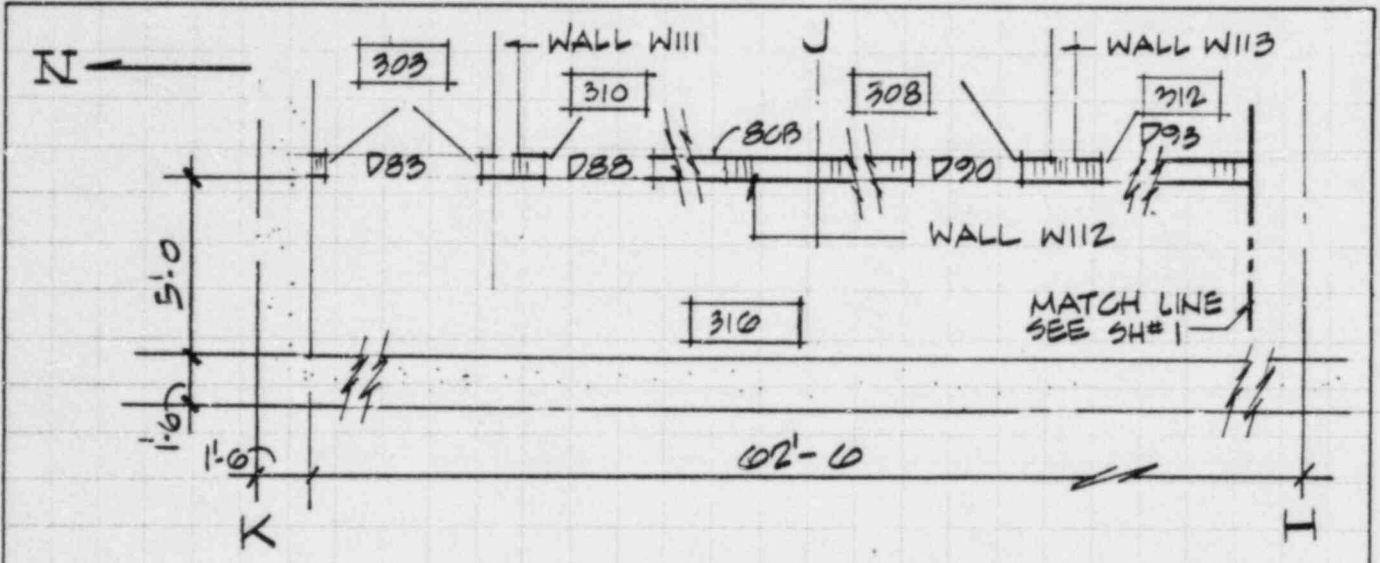
CHKD. BY G.F. DATE 10-8-84

OFS NO. 2865-058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD # 3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PART PLAN EL 46.00'  
RAB 310=1'-0 REFER DNG G-764



EBASCO SERVICES INCORPORATED

BY J. SANTOSPIRITO DATE 10-6-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

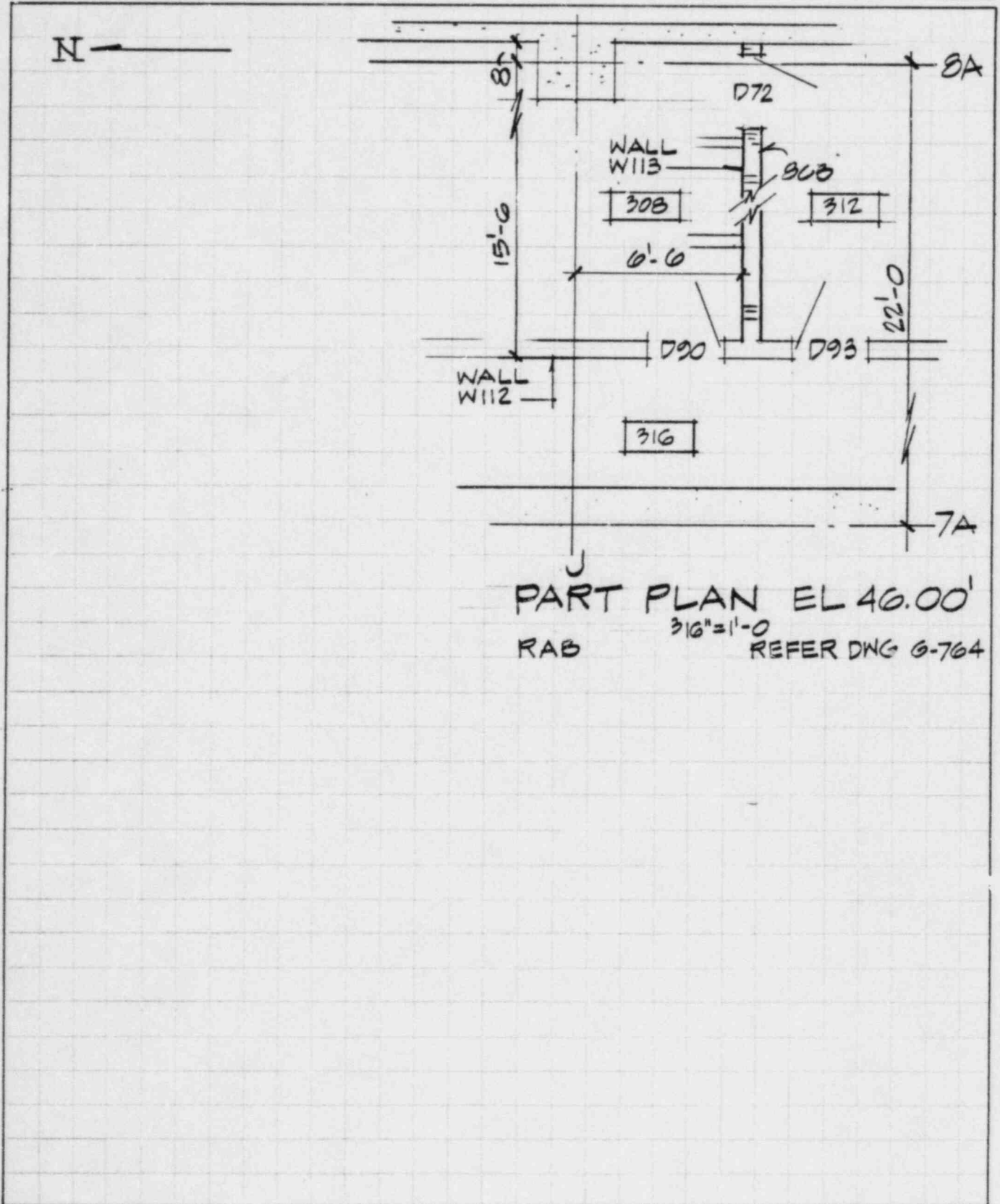
CHKD. BY GF DATE 10-8-84

OFS NO. 2865-058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS





EBASCO SERVICES INCORPORATED

BY J. SANTOSPIRITO DATE 10-6-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

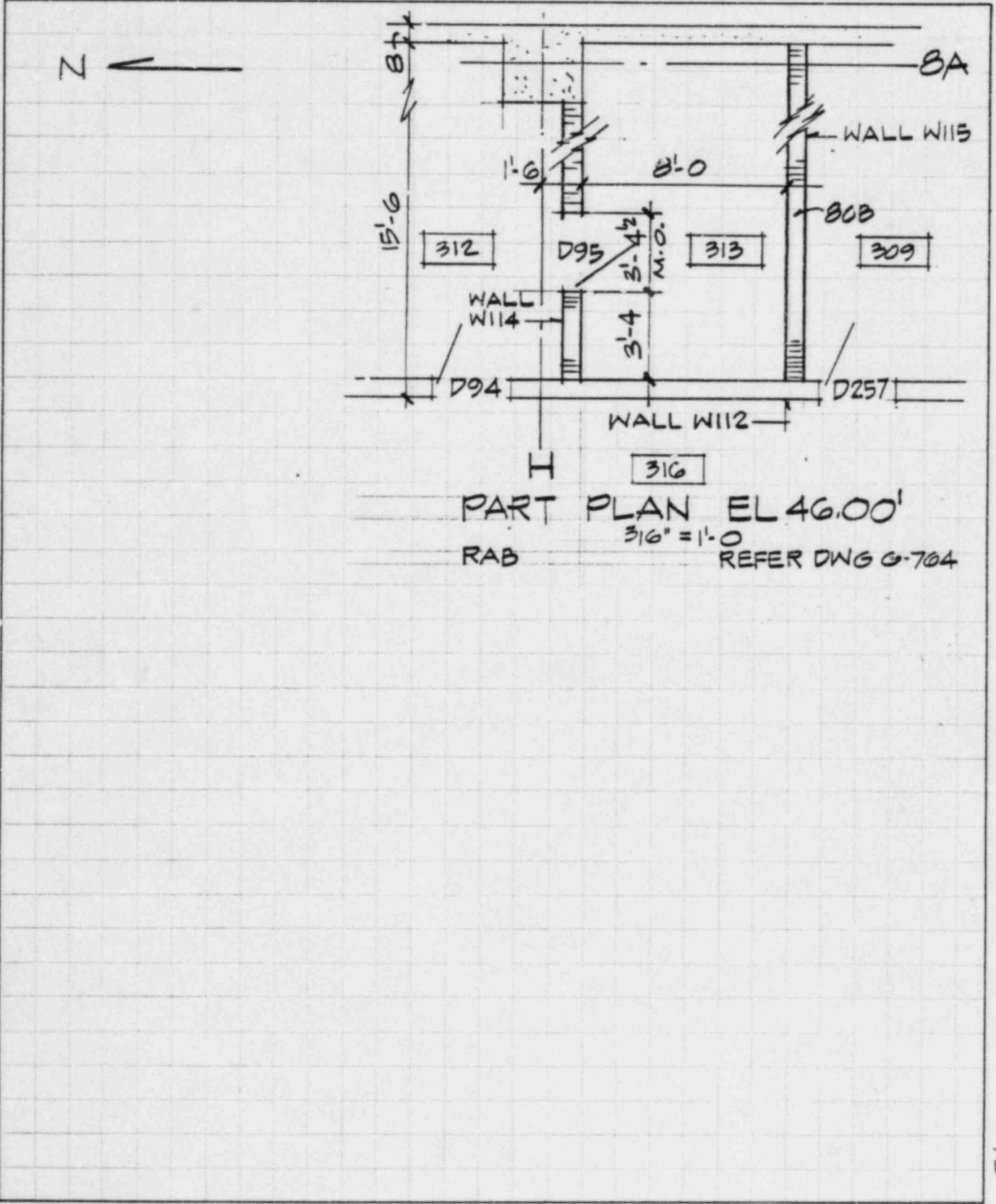
CHKD. BY GF DATE 10-8-84

CFS NO. 2365-058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS





BY FISCHER DATE 10-8-84

CHKD. BY G.W. DATE 10-8-84

CLIENT LOUISIANA POWER & LIGHT CO

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS

SHEET \_\_\_\_\_ OF \_\_\_\_\_  
DEPT. NO. 653  
OFFS NO. 2865.058

### DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS							
W	H	S	T = INCH.	W = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV. WALL NO.	HOLLOW UNITS			SOLID UNITS				
									BOT.			INTERMEDIATE DIAPHRAM				
									FIXED	HINGED	FREE	EXIST.	HINGED	CANTILEVERED		
114			8	13'-2	*											
115			8	14'-10	*											

REMARKS: \* INACCESSIBLE

EBASCO SERVICES INCORPORATED

BY J. SANTOSPITO DATE 10-6-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

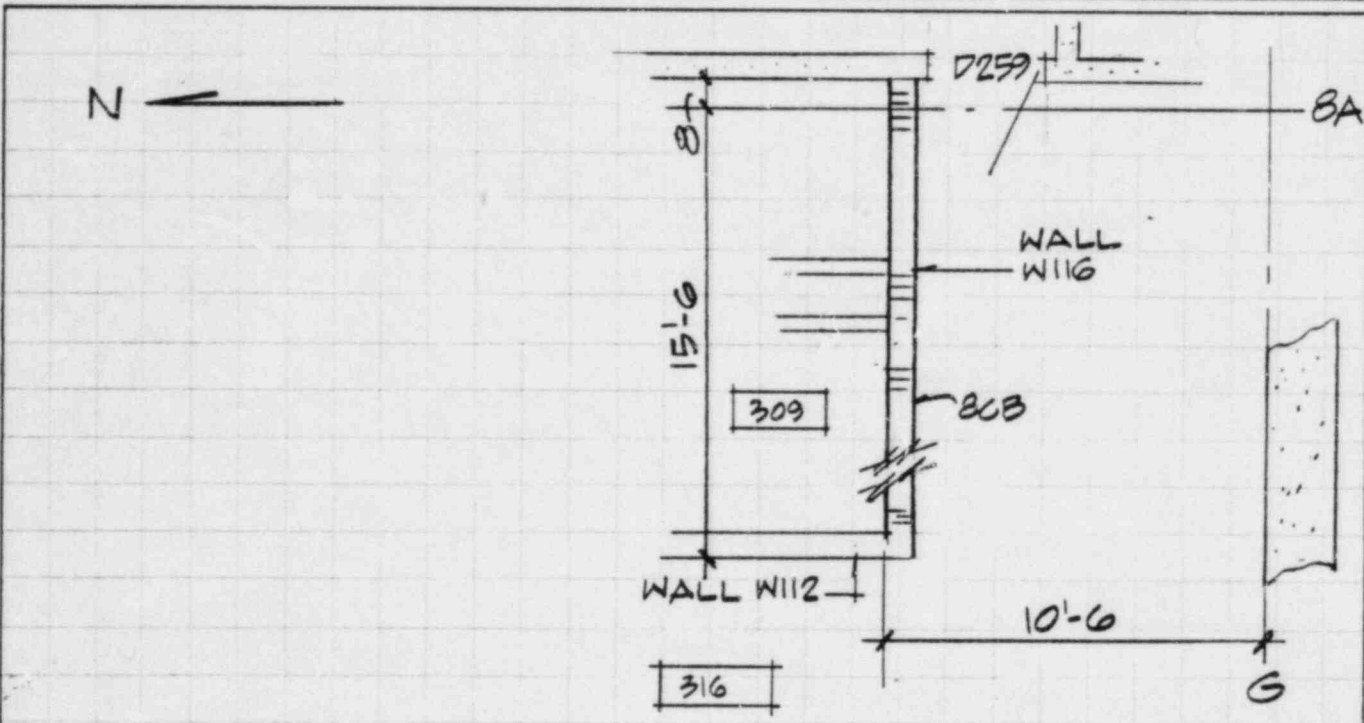
CHKD. BY GF DATE 10-8-84

OFS NO. 2865-058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PART PLAN EL 46.00'

RAB

316 = 1'-0" REFER DWG G-764

69



EBASCO SERVICES INCORPORATED

BY J. SANTOSPIRITO DATE 10-6-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

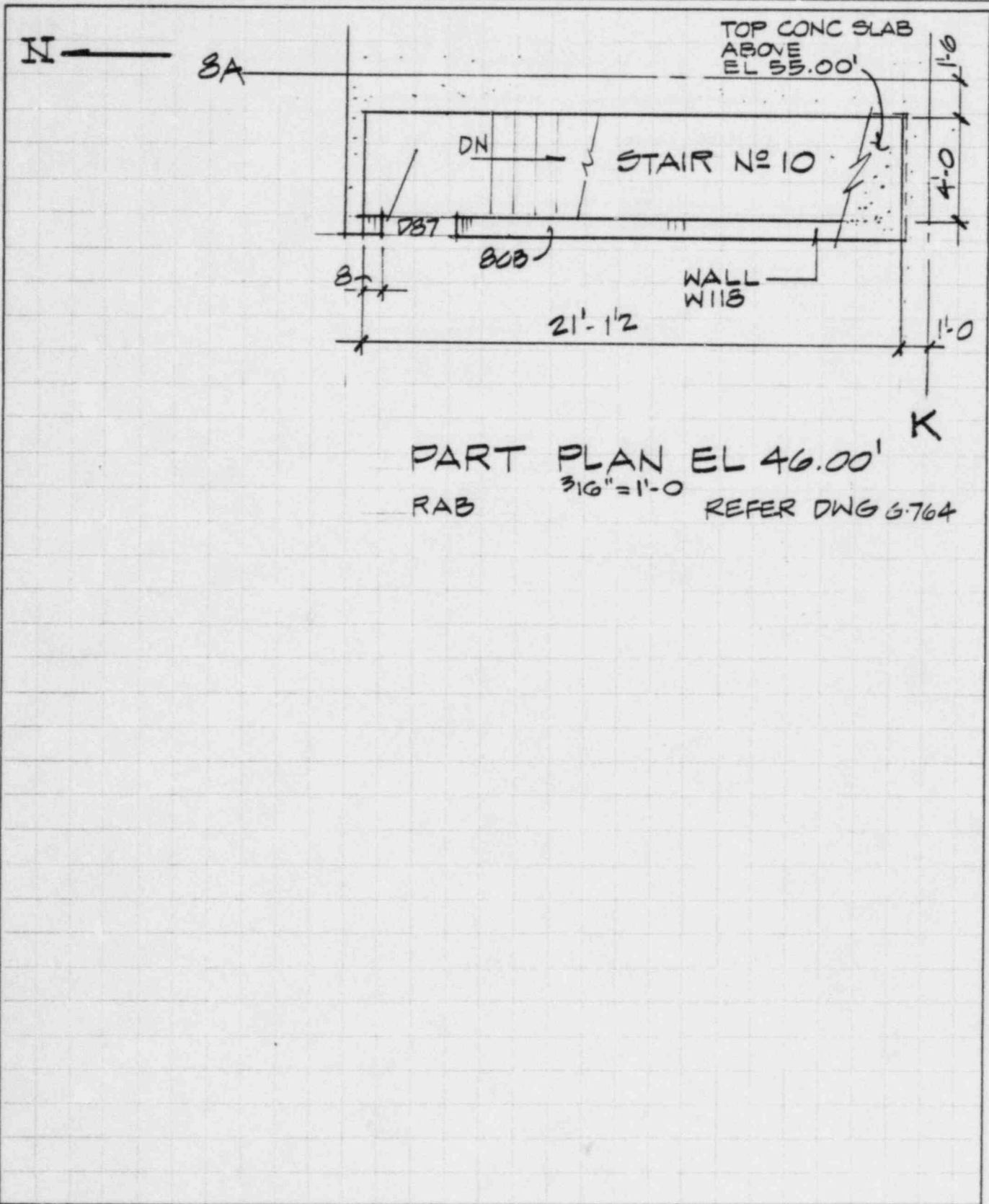
CHKD. BY GF DATE 10-8-84

OFS NO. 2865-098 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO

PROJECT WATERFORD # 3

SUBJECT CONCRETE MASONRY BLOCK WALLS



BY FISCHER DATE 10-8-84

CHKD. BY G.W. DATE 10-8-84

CLIENT LOUISIANA POWER & LIGHT CO

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS

SHEET \_\_\_\_\_ OF \_\_\_\_\_  
 OFS NO. 2865,058 DEPT. NO. 653

# DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS						
W	H	S	T = INCH.	N = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV. WALL NO	HOLLOW UNITS			SOLID UNITS			
									BOTT.		TOP	INTERMEDIATE DIAPHRAM			
									FIXED	HINGED	FREE	EXIST.	HINGED	CANTILEVERED	
118			8	2 1/2	8LG	A	3	1	✓	✓					

REMARKS:

561/3-81

EBASCO SERVICES INCORPORATED

BY J. SANTOSPIRITO DATE 10-6-84

CHKD. BY GF DATE 10-8-84

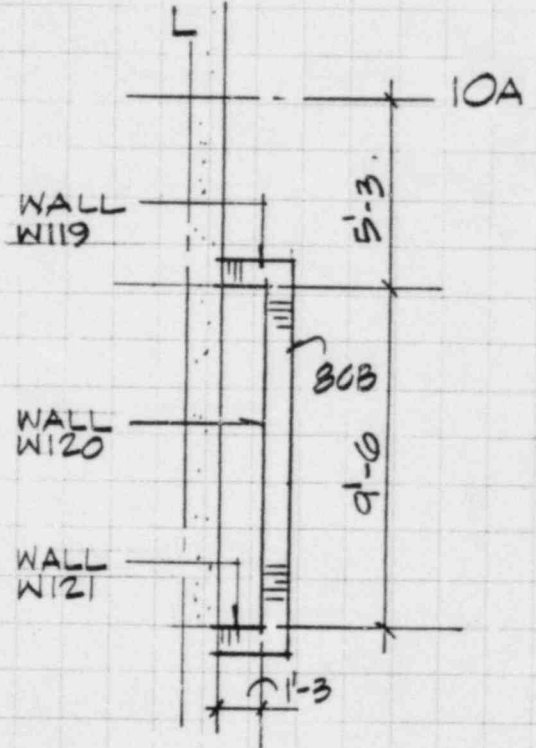
SHEET \_\_\_\_\_ OF \_\_\_\_\_

OFS NO. 2865-053 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PART PLAN EL 46.00'  
RAB 316 = 1'-0" REFER DWG G-764

BY FISCHER DATE 10-8-84

CHKD. BY G.W. DATE 10-8-84

CLIENT LOUISIANA POWER & LIGHT CO

OSN NO.

2865058

DEPT. NO. 653

PROJECT

WATERFORD #3

SUBJECT

CONCRETE MASONRY BLOCK WALLS

SHEET OF

### DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS									
W	H	S	t = INCH.	W = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV WALL NO	HOLLOW UNITS			SOLID UNITS						
									BOT.		TOP	INTERMEDIATE DIAPHRAM						
									FIXED	HINGED	FREE	EXIST.	HINGED	CANTILEVERED				
119			8	1'-11"	*													
120	H44		8	10'-10"	*													
121			8	1'-11"	*													

REMARKS: \*FIRE BLANKET ON WALL, NO VISUAL INSPEC POSSIBLE.

EBASCO SERVICES INCORPORATED

BY J. SANTOSPIRITO DATE 10.6.84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

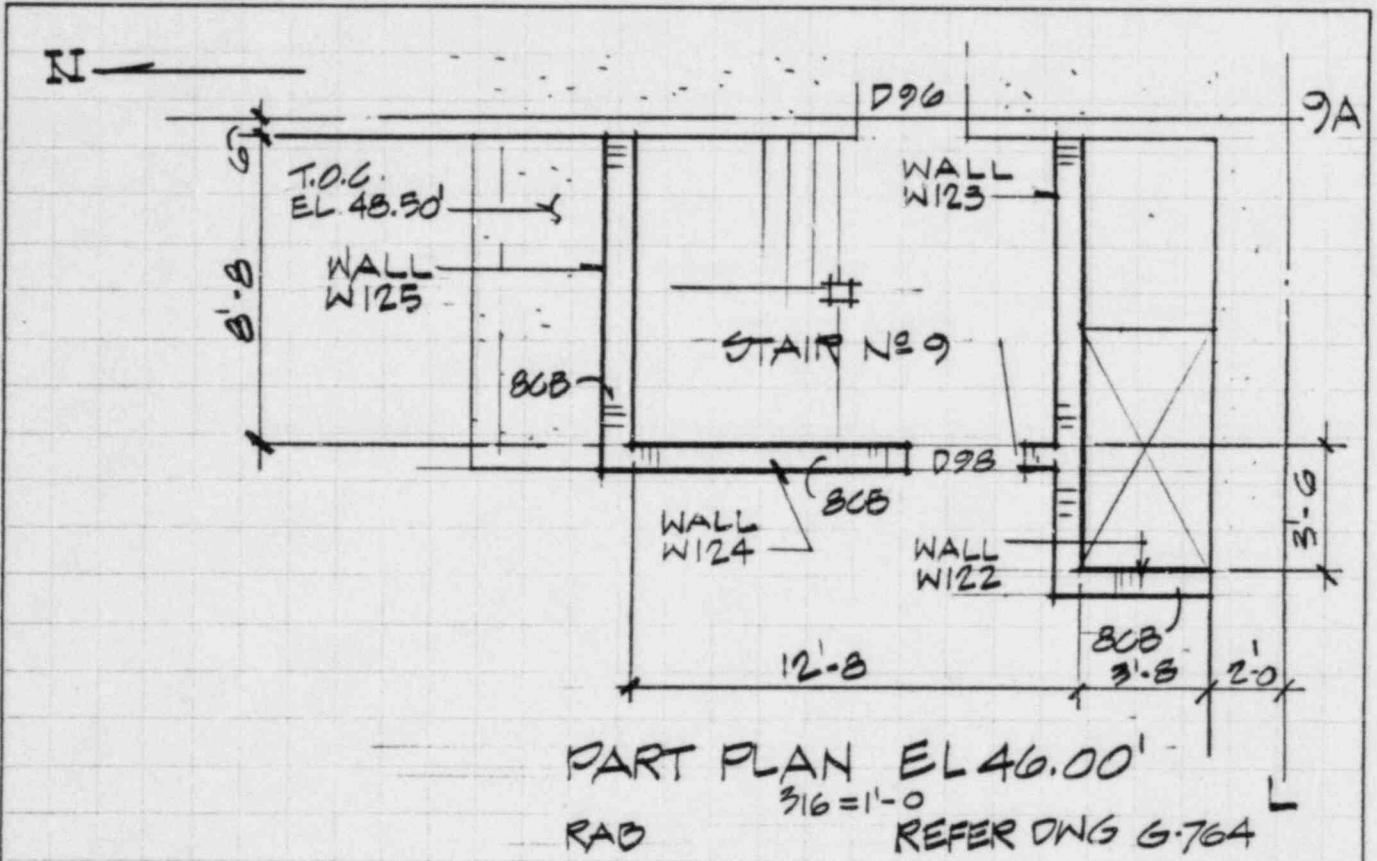
CHKD. BY G.F. DATE 10.8.84

OFS NO. 2865-058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS





BY FISCHER DATE 10-8-84

CHKD. BY G.W. DATE 10-8-84

CLIENT LOUISIANA POWER & LIGHT CO

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS

SHEET      OF     

OFS NO. 2865,058 DEPT. NO. 653

## DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS						
W	H	S	t = INCH.	W = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV WALL NO	HOLLOW UNITS			SOLID UNITS			
									INTERMEDIATE DIAPHRAM						
									BOTT.	TOP		EXIST.	HINGED	CANTILEVERED	
									FIXED	HINGED	FREE				
122			8	4'-4	20'-9	A	1	1		✓	✓				
123			8	12'-2	20'-9	A	1	1		✓	✓				
124			8	12'-8	8'-6	A	3	1		✓		✓			
125			8	9'-4	4'-10	B	3	2		✓		✓			

REMARKS:

581/8-81

EBASCO SERVICES INCORPORATED

BY J. SANTOSPRITO DATE 10-7-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

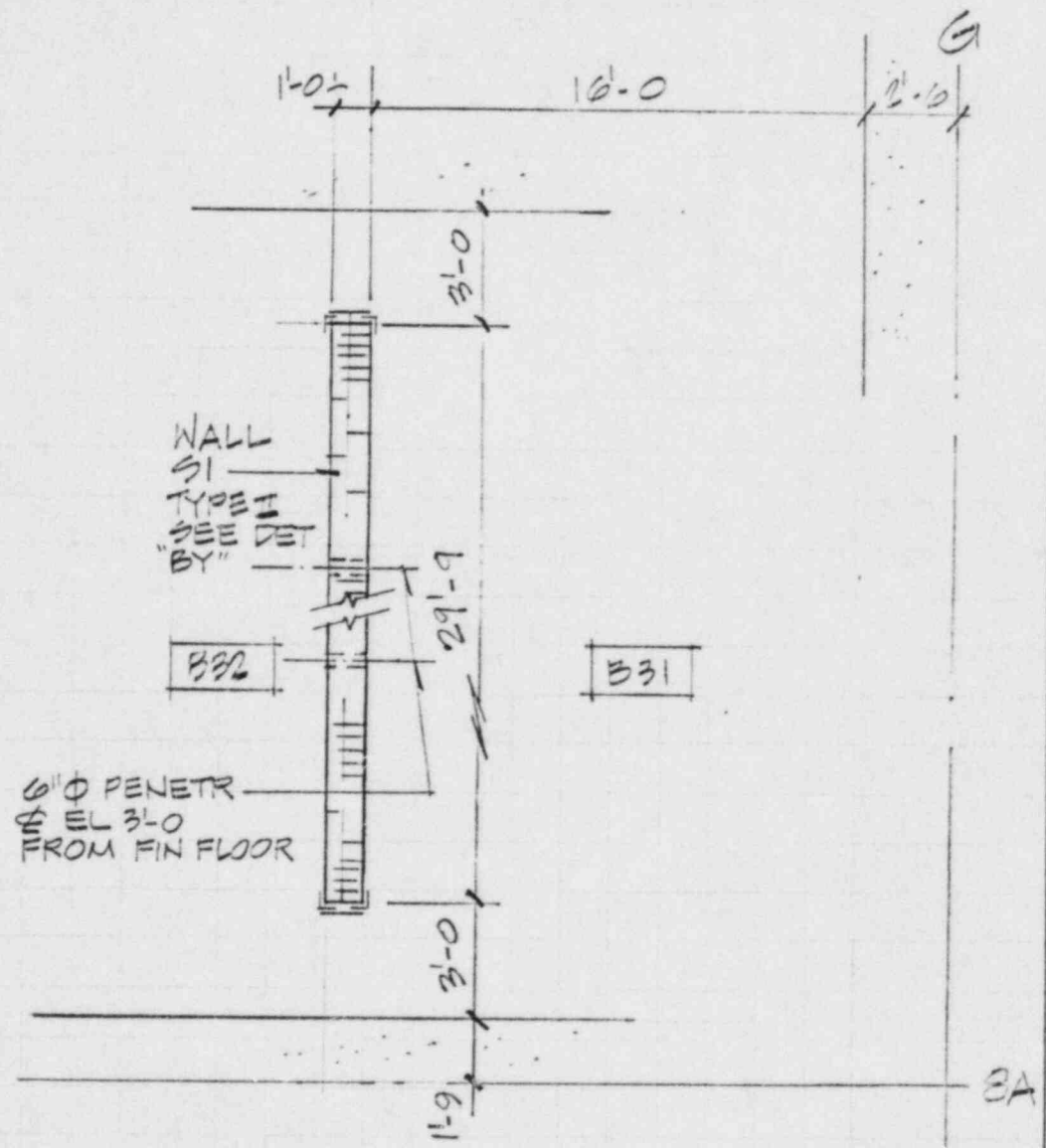
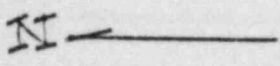
CHKD. BY GF DATE 10-8-84

OFS NO. 6367-023 DEPT. G-33 NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD FS

SUBJECT CONCRETE MASONRY BLOCK WALLS



PART PLAN EL-34.75  
316=1'-0  
RAB REFER DWG G-765-02

BY GW DATE 10-8-84  
 CHKD. BY W.H.H. DATE 10.9.84  
 CLIENT LOUISIANA POWER & LIGHT CO. OFS. NO. 2865.058 SHEET        OF         
 PROJECT WATERFORD #3 DEPT.         
 SUBJECT CONCRETE MASONRY BLOCK WALLS NO.       

# DATA - SEISMIC MASONRY

WALL NO.			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS					
W	H	S	t = INCH.	W = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV WALL NO.	HOLLOW UNITS			SOLID UNITS		
									TOP			INTERMEDIATE DIAPHRAM		
									BOOTT.	HINGED	FREE	EXIST.	HINGED	CANTILEVERED
		SI	12	29'-9"	27'-0"	II	"BY"	5				✓	✓	

REMARKS:

581/8-81

EBASCO SERVICES INCORPORATED

BY J. SANTOSPIRITO DATE 10-7-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

CHKD. BY GF DATE 10-10-84

OFS NO. 2865-058 DEPT. NO. 633

CLIENT LOUISIANA POWER & LIGHT CO

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS

N —————

2"  $\phi$  PENETR  
@ EL. 24'-0"  
ABOVE FIN FLOOR

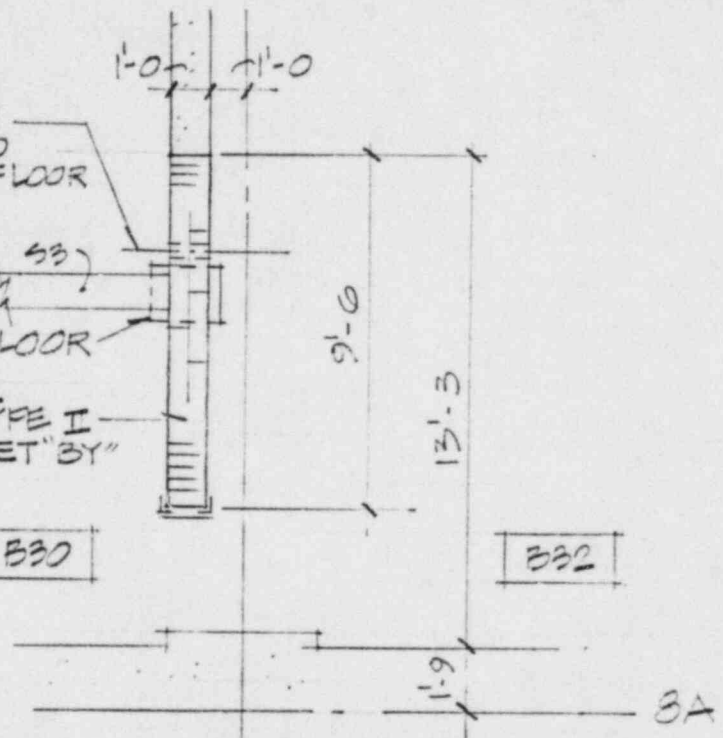
53)

1/2" ON FLOOR

WALL  
S2 TYPE I  
SEE DET "BY"

B30

B32



PART PLAN EL-34.75'  
RAB  
3/16" = 1'-0"  
REFER DWG G-765  
502

EBASCO SERVICES INCORPORATED

BY G WU DATE 10-8-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

CHKD. BY J. Dicks DATE 10-9-84

OFS NO. 2363.033 DEPT. NO. \_\_\_\_\_

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS

DATA - SEISMIC MASONRY

WALL NO	WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS														
	W	H	S	T = INCH.	N = FEET (FT.)	H = FT. H <sub>E</sub> = HEIGHT	TYPE	DETAIL	ELEV WALL NO	HOLLOW UNITS		SOLID UNITS									
										FIXED	HINGED	TOP	INTERMEDIATE	EXIST.	HINGED	DIAPHRAM	CANTILEVERED				

REMARKS:

EBASCO SERVICES INCORPORATED

BY J. SANTOSPIRITO DATE 10-7-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

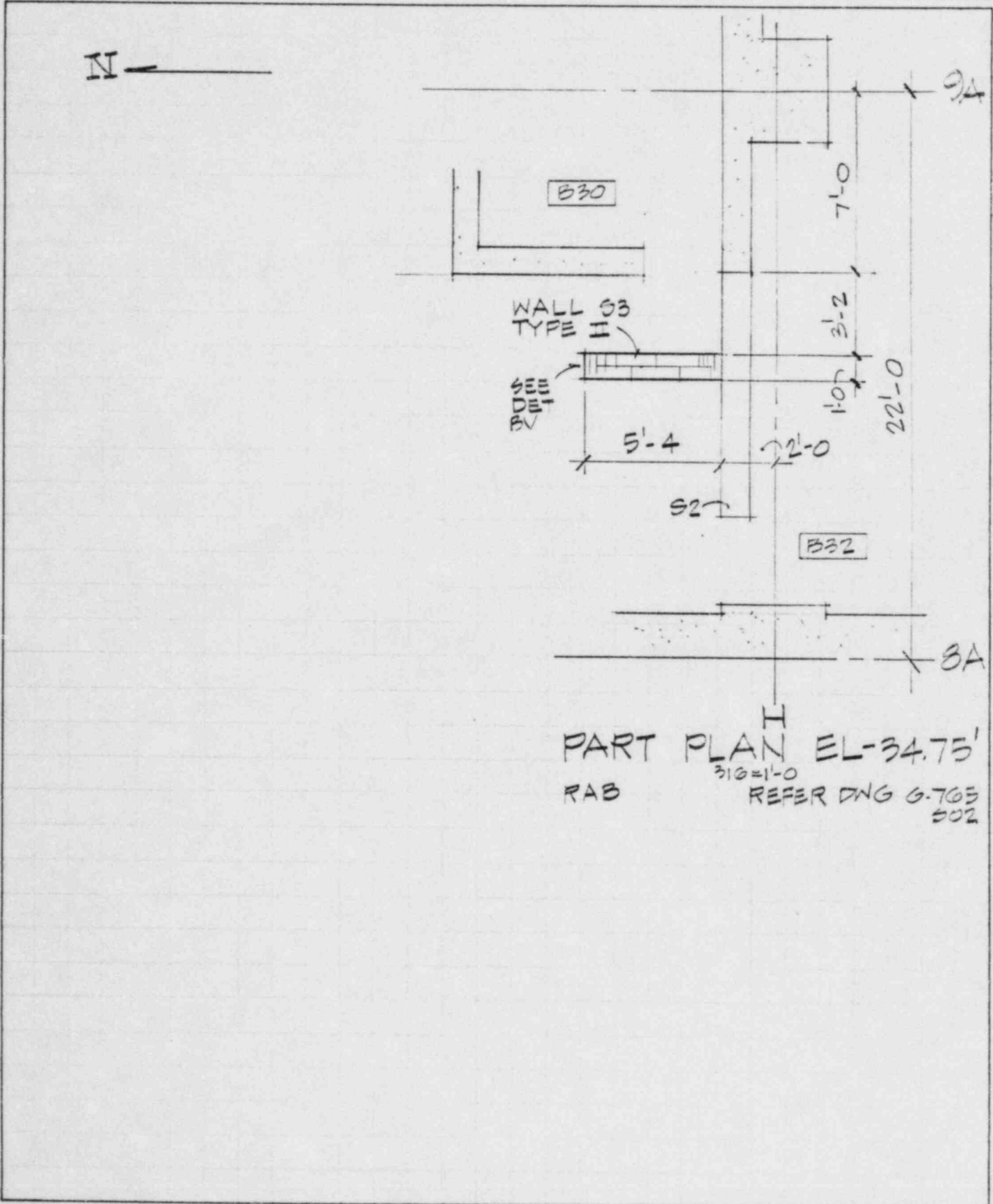
CHKD. BY GF DATE 10-9-84

OFS NO. 2565-003 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PART PLAN EL-34.75'  
RAB  
3/16=1'-0"  
REFER DWG G-703  
502

EBASCO SERVICES INCORPORATED

BY G WU DATE 10-8-84

CHKD. BY [Signature] DATE 10-9-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

OFS NO. 2865.033 DEPT. NO. \_\_\_\_\_

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS

DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS							
W	H	S	T = INCH.	N = FEET (FT.)	H = FT. H <sub>E</sub> LGHT	TYPE	DETAIL	ELEV WALL NO	HOLLOW UNITS		SOLID UNITS					
									BOTT.	TOP	HINGED	FREE	EXIST.	HINGED	CANTILEVERED	
		S3	12	5'-4"	10'-3"	II	"BV"	6								

REMARKS:

EBASCO SERVICES INCORPORATED

BY J. SANTO-PRITO DATE 10-7-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

CHKD. BY GE DATE 10-3-84

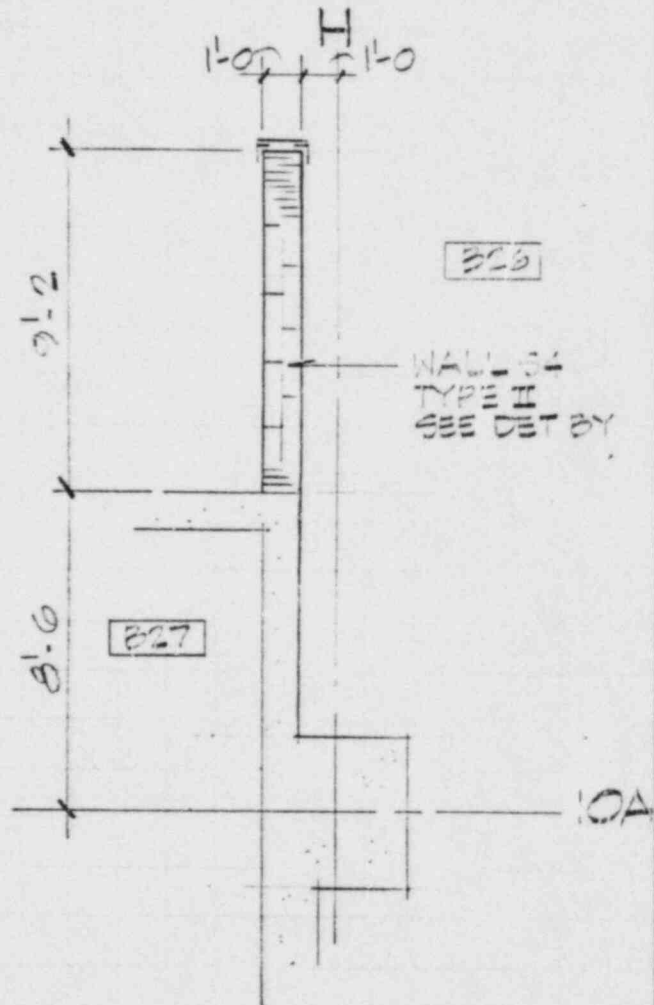
OFS NO. 1365-003 DEPT. NO. 552

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS

N —————



PART PLAN EL-54.75'  
RAB  
316=1'-0"  
REFER DNG G-765  
502



EBASCO SERVICES INCORPORATED

BY G. WU DATE 10-8-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

CHKD. BY [Signature] DATE 10-9-84

OFS NO. 2365.033 DEPT. NO. \_\_\_\_\_

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS

DATA - SEISMIC MASONRY

WALL NO	W H S	WALL DIMEN.		WALL TYPES & DETS			DESIGN PARAMETERS															
		T = INCH.	W = FEET (FT.)	H = FT.	TYPE	DETAIL	ELEV WALL NO	HOLLOW UNITS		SOLID UNITS												
				HEIGHT				FIXED	HINGED	TOP	INTERMEDIATE	DIAPHRAM	EXIST.	HINGED	CANTILEVERED							
							II	"BY"	4													

REMARKS:

EBASCO SERVICES INCORPORATED

BY J. SANTOSPIRITO DATE 10-7-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

CHKD. BY JE DATE 10-8-84

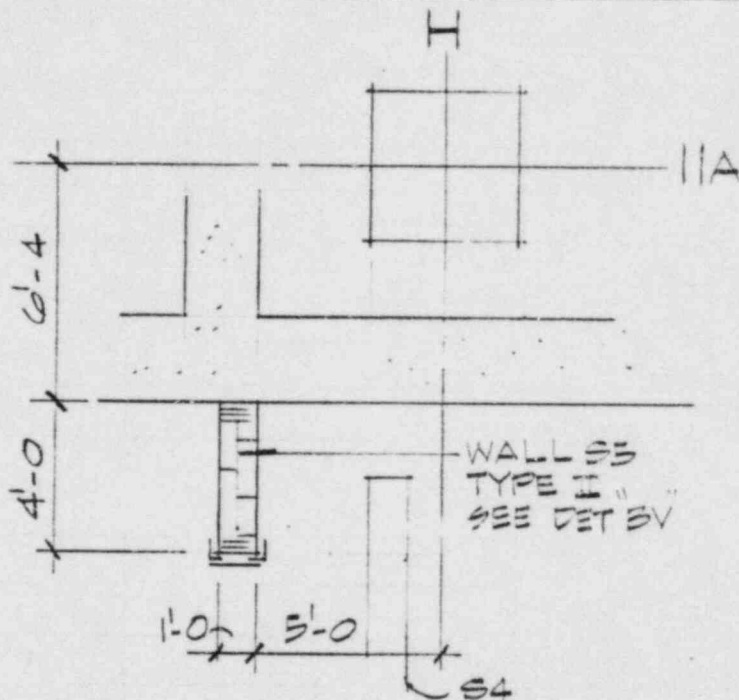
OFS NO. 1305-055 DEPT. NO. 655

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALL

N —————



PART PLAN EL-34.75'  
RAB  
310=1'-0"  
REFER DWG G-765  
302

EBASCO SERVICES INCORPORATED

BY G. Wu DATE 10-8-87

SHEET \_\_\_\_\_ OF \_\_\_\_\_

CHKD. BY R. White DATE \_\_\_\_\_

OFS NO. 2865.038 DEPT. NO. \_\_\_\_\_

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS

DATA - SEISMIC MASONRY

WALL NO.		WALL DIMEN.		WALL TYPES & DETS			DESIGN PARAMETERS						
W	H	t = INCH.	w = FEET (FT)	H = FT.	ELEV WALL NO.	TYPE	DETAIL	HOLLOW UNITS	SOLID UNITS				
				H <sub>EIGHT</sub>				POTT.	INTERMEDIATE	EXIST.	HINGED	CANTILEVERED	
								FIXED	HINGED	FREE			
S5	S	12	4-6	14-3		II	"BV"						
					6								

REMARKS:

EBASCO SERVICES INCORPORATED

BY J. SANTOSPIRITO DATE 10-7-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

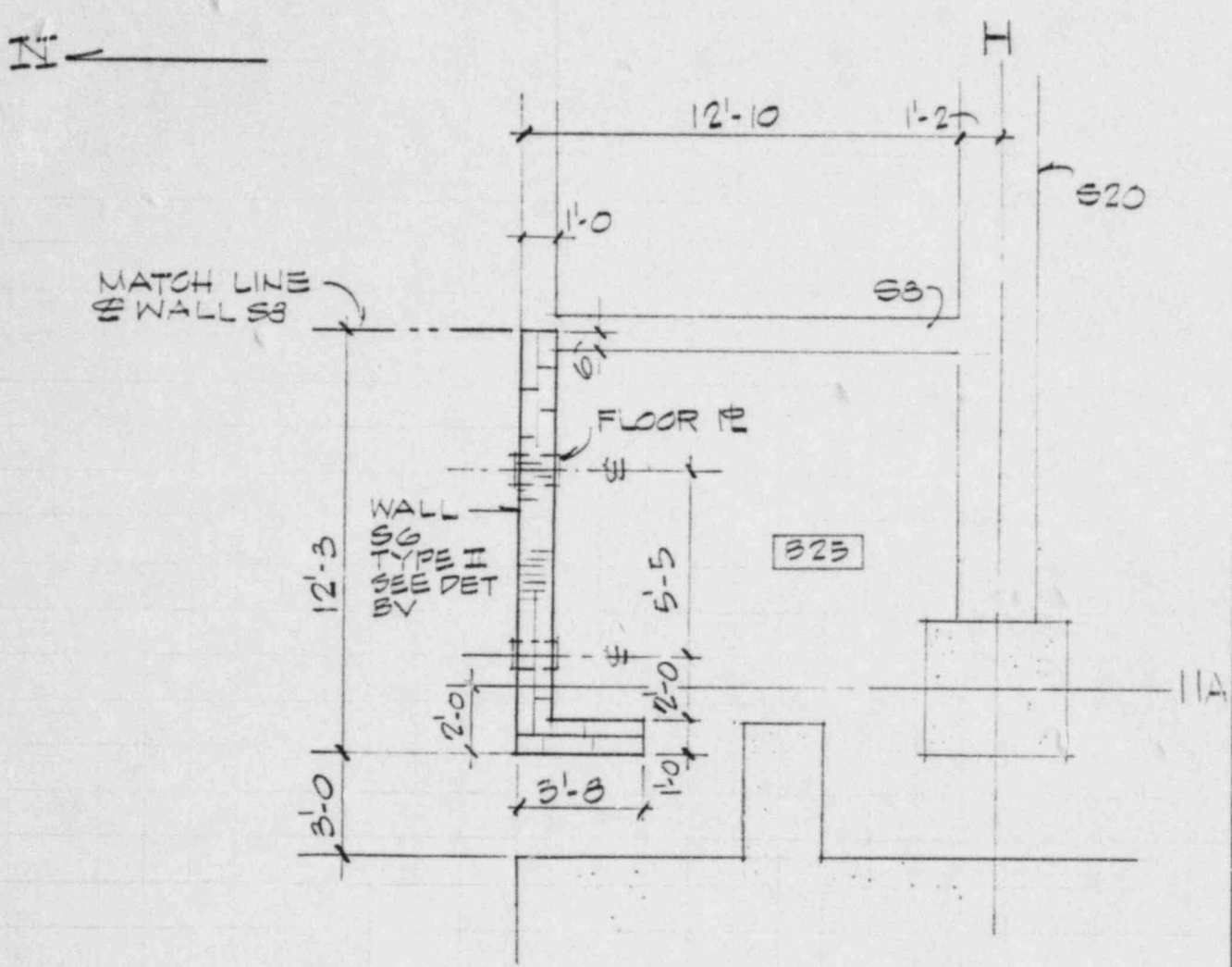
CHKD. BY G.F. DATE 10-3-84

OFS NO. 1865-785 DEPT. NO. 573

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PART PLAN EL-34.75'  
 3/8" = 1'-0"  
 RAB REFER DWG G-765  
 502

EBASCO SERVICES INCORPORATED

BY G WU DATE 10-8-84

CHKD. BY [Signature] DATE 10-9-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

CLIENT LOUISIANA POWER & LIGHT CO.

OFS NO. 2865.033 DEPT. NO. \_\_\_\_\_

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS

DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS					
W	H	S	T = INCH.	N = FEET (FT.)	H = FT. H' EIGHT	TYPE	DETAIL	ELEV WALL NO	HOLLOW UNITS		SOLID UNITS			
									BOTT.	TOP	EXIST.	INTERMEDIATE	DIAPHRAM	HINGED CANTILEVERED
									FIXED	HINGED	FREE			
		S6	12	12'-3	9'-10	II	.BY"	6						✓

REMARKS:

EBASCO SERVICES INCORPORATED

BY J. SANTOSPIRITO DATE 10-7-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

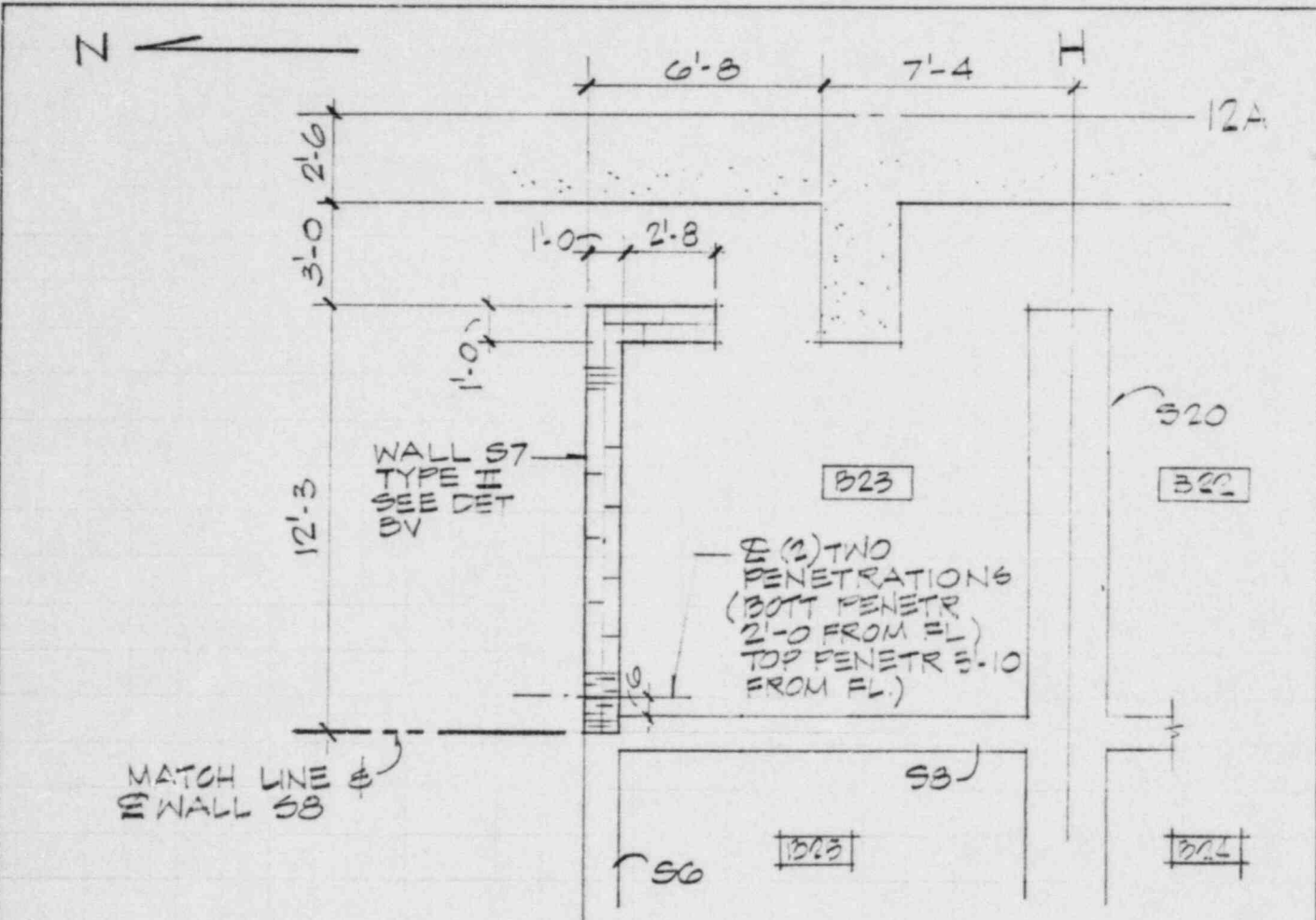
CHKD. BY \_\_\_\_\_ DATE 10-8-84

OFS NO. 1365-053 DEPT. NO. 652

CLIENT LOUISIANA POWER & LIGHT CO

PROJECT WATERFORD FS

SUBJECT CONCRETE MASONRY BLOCK WALL



PART PLAN EL-34.75'  
3/16 = 1'-0"  
RAB REFER DWG 6-705  
502

BY G. Wu DATE 10-8-84

CHKO. BY J. M. White DATE 10-9-84

CLIENT LOUISIANA POWER & LIGHT CO.

OFS NO. 2865.05B DEPT. NO. \_\_\_\_\_

SHEET \_\_\_\_\_ OF \_\_\_\_\_

PROJECT WATERFORD # 3

SUBJECT CONCRETE MASONRY BLOCK WALLS

## DATA - SEISMIC MASONRY

WALL NO.			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS						
W	H	S	t = INCH.	W = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV WALL NO.	HOLLOW UNITS			SOLID UNITS			
									TOP			INTERMEDIATE DIAPHRAM			
									BOOTT.	HINGED	FREE	EXIST.	HINGED	CANTILEVERED	
		57	12	12'-3	9'-10	II	"BV"	6					✓		✓

REMARKS:

EBASCO SERVICES INCORPORATED

BY J. SANTOSPIRITO DATE 10-7-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

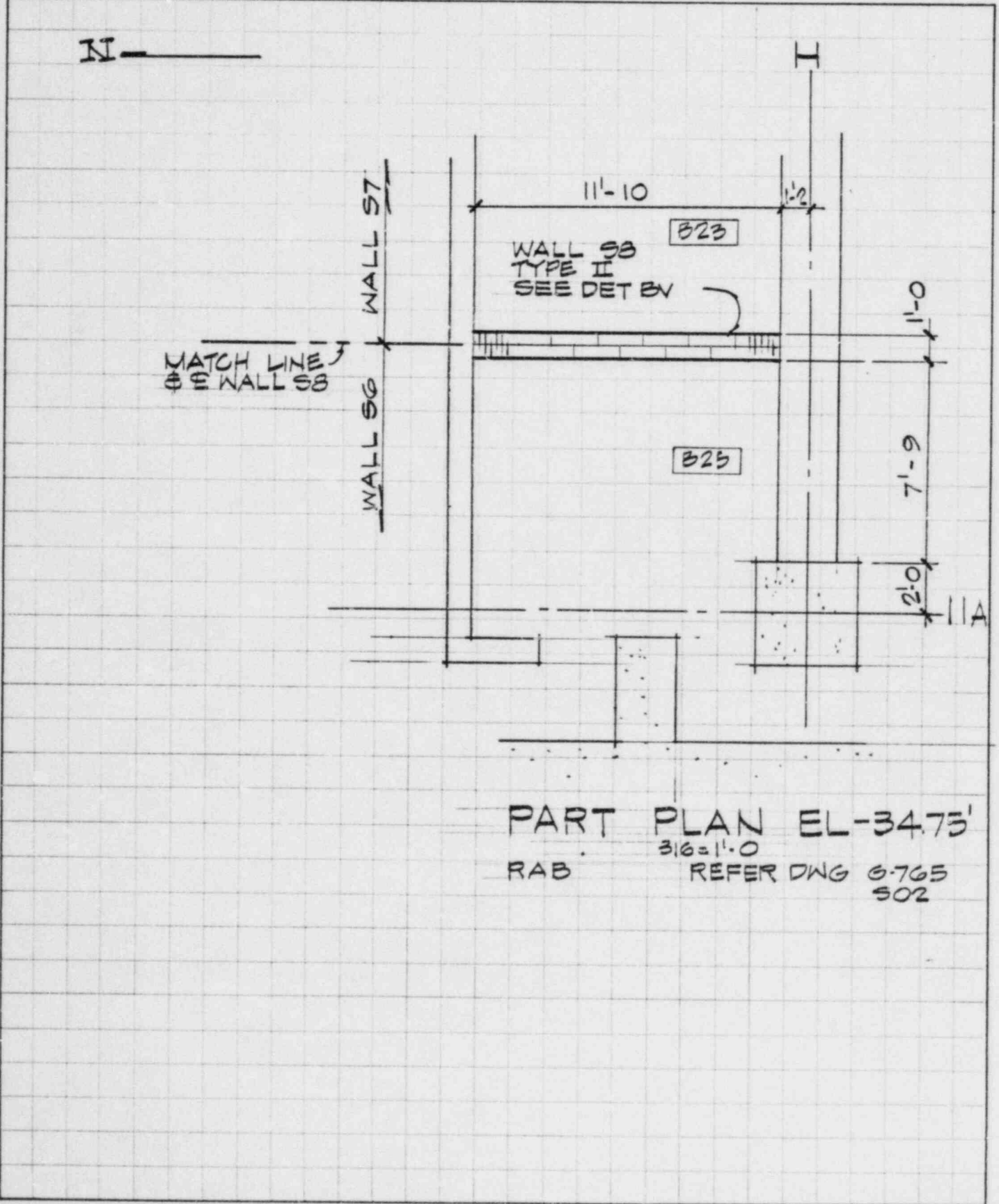
CHKD. BY GF DATE 10-8-84

OFS NO. 2865-098 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS





BY G. WU DATE 10-8-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

CHKD. BY A. M. ... DATE 10-9-84 OFS NO. 2865.03B DEPT. NO. \_\_\_\_\_

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD # 3

SUBJECT CONCRETE MASONRY BLOCK WALLS

# DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS					
W	H	S	t = INCH.	W = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV WALL NO	HOLLOW UNITS			SOLID UNITS		
									BOTT.	TOP		INTERMEDIATE DIAPHRAM		
										FIXED	HINGED	FREE	EXIST.	HINGED
		S8	12	11'-10	9'-10	II	"BV"	5				✓		✓

REMARKS:

EBASCO SERVICES INCORPORATED

BY BILAK DATE 10-7-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

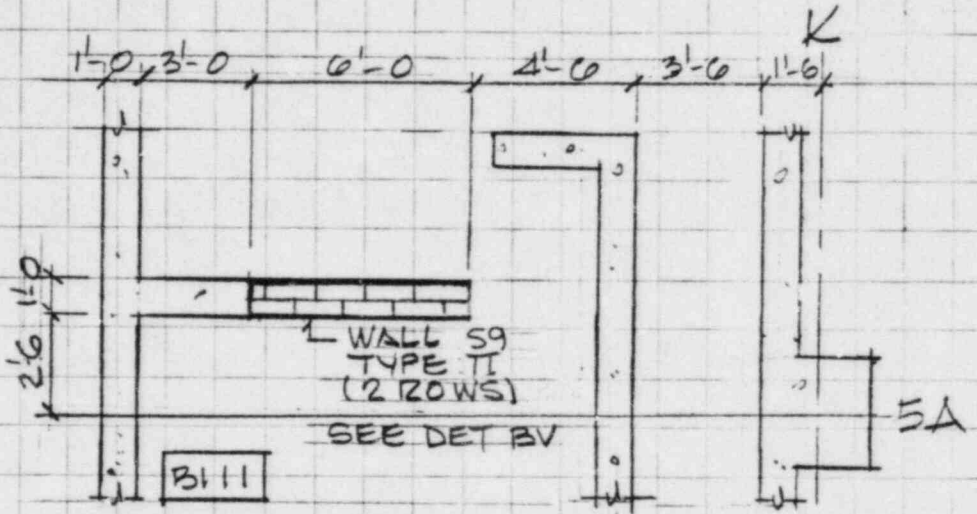
CHKD. BY J.S. DATE 10-8-84

OFS NO. 2865-058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PART PLAN EL-4.00

2AB <sup>316</sup> = 1'-0" REF DWG G-765501

BY G. W. W. DATE 10-8-84  
 CHKD. BY R. Quinn DATE 10-4-84  
 CLIENT LOUISIANA POWER & LIGHT CO. OFS NO. 2865.038 DEPT. NO. \_\_\_\_\_  
 PROJECT WATERFORD # 3  
 SUBJECT CONCRETE MASONRY BLOCK WALLS

# DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS						
W	H	S	t = INCH.	W = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV WALL NO	HOLLOW UNITS			SOLID UNITS			
									BOTT.	TOP		INTERMEDIATE DIAPHRAM			
									FIXED	HINGED	FREE	EXIST.	HINGED	CANTILEVERED	
		S9	12	6'-0	12'-9	II	"BV"	6							

REMARKS:

EBASCO SERVICES INCORPORATED WALL S10

BY BILAK DATE 10-7-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

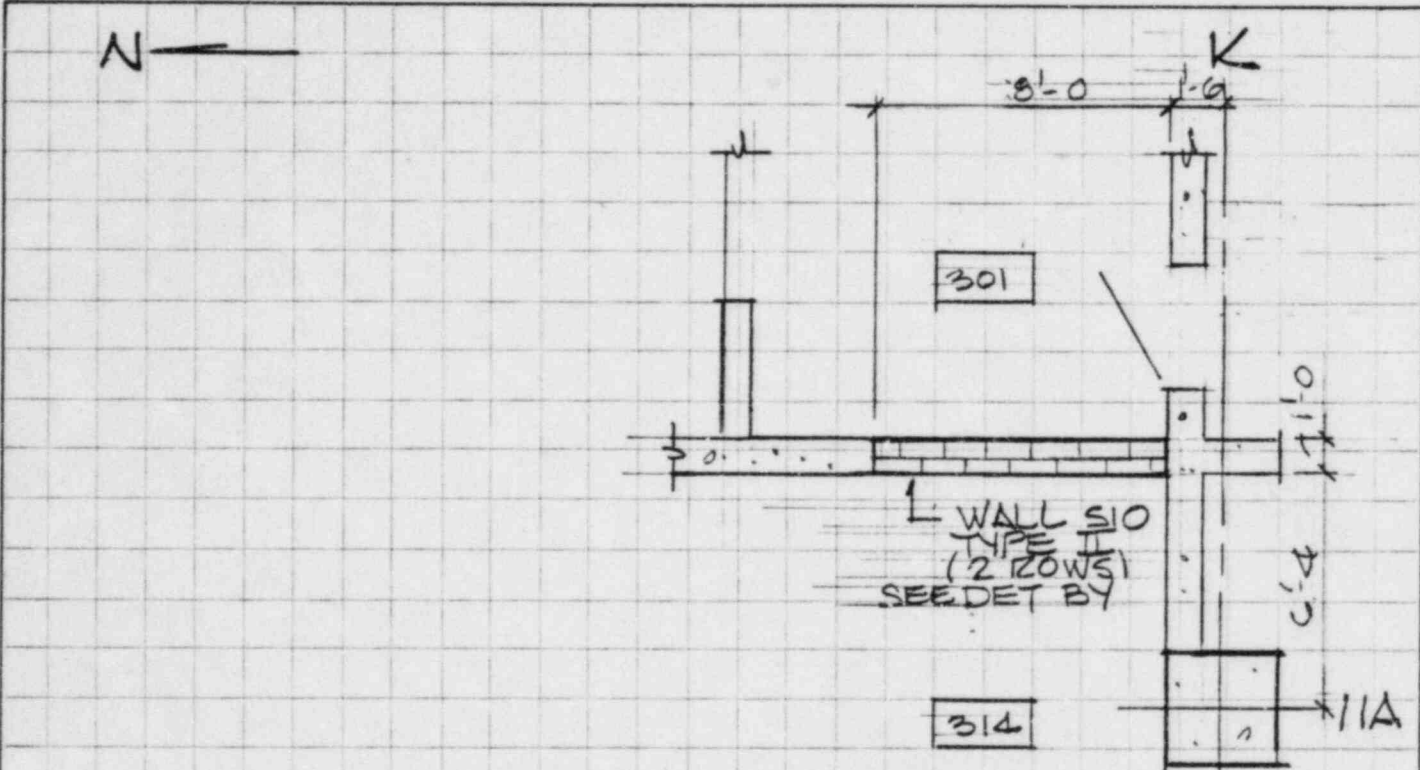
CHKD. BY G.F. DATE 10-8-84

OFFS NO. 2865-058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PART PLAN EL. +46.00  
 ZAB 316=110 REF DWG G-760501

BY G.WU DATE 10-8-84

CHKD. BY J. Quik DATE 10-9-84

CLIENT LOUISIANA POWER & LIGHT CO.

SHEET          OF           
DEPT.           
NO.           
OFS NO. 2865.038

PROJECT WATERFORD # 3

SUBJECT

CONCRETE MASONRY BLOCK WALLS

# DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS							
W	H	S	T = INCH.	W = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV WALL NO	HOLLOW UNITS			SOLID UNITS				
									INTERMEDIATE DIAPHRAM							
									BOTT.	TOP		EXIST.	HINGED	CANTILEVERED		
FIXED	HINGED	FREE														
		S10	12	8-0	8-0	II	"BY"	4								

REMARKS:

EBASCO SERVICES INCORPORATED

BY BILAK DATE 10-7-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

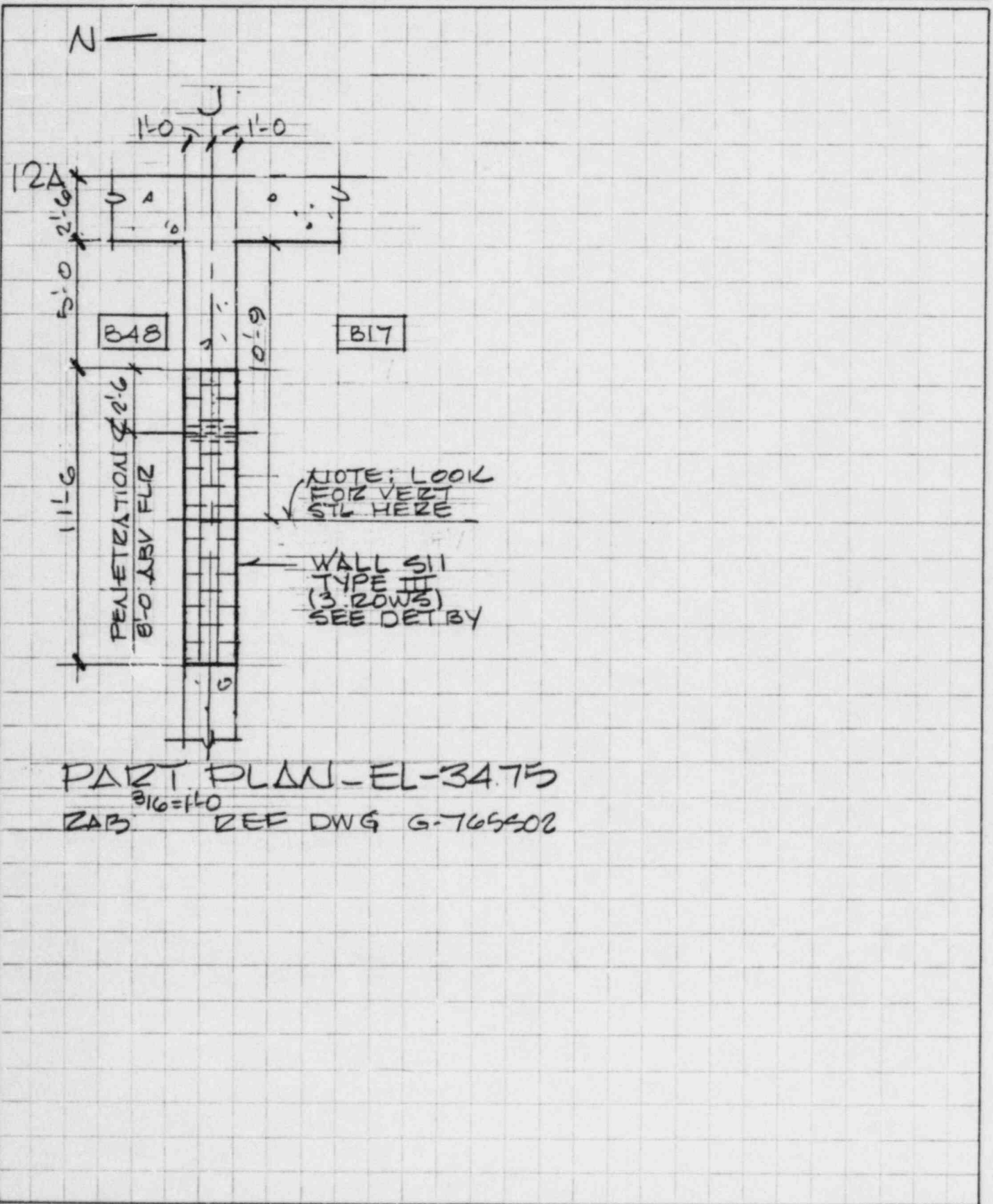
CHKD. BY J.S. DATE 10-8-84

OFS NO. 2865-058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PART PLAN - EL - 34.75  
ZAB REF DWG G-765402

BY G. WU DATE 10-8-84

CHKD. BY [Signature] DATE 10-9-84

SHEET      OF       
DEPT.       
NO.     

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS

# DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS							
W	H	S	T = INCH.	W = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV WALL NO	HOLLOW UNITS			SOLID UNITS				
									BOT.	TOP		INTERMEDIATE DIAPHRAM				
										FIXED	HINGED	FREE	EXIST.	HINGED	CANTILEVERED	
		S11	24	11'-6	9'-11	III	"BY"	5						✓	✓	

REMARKS:

EBASCO SERVICES INCORPORATED

BY BILAK DATE 10-7-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

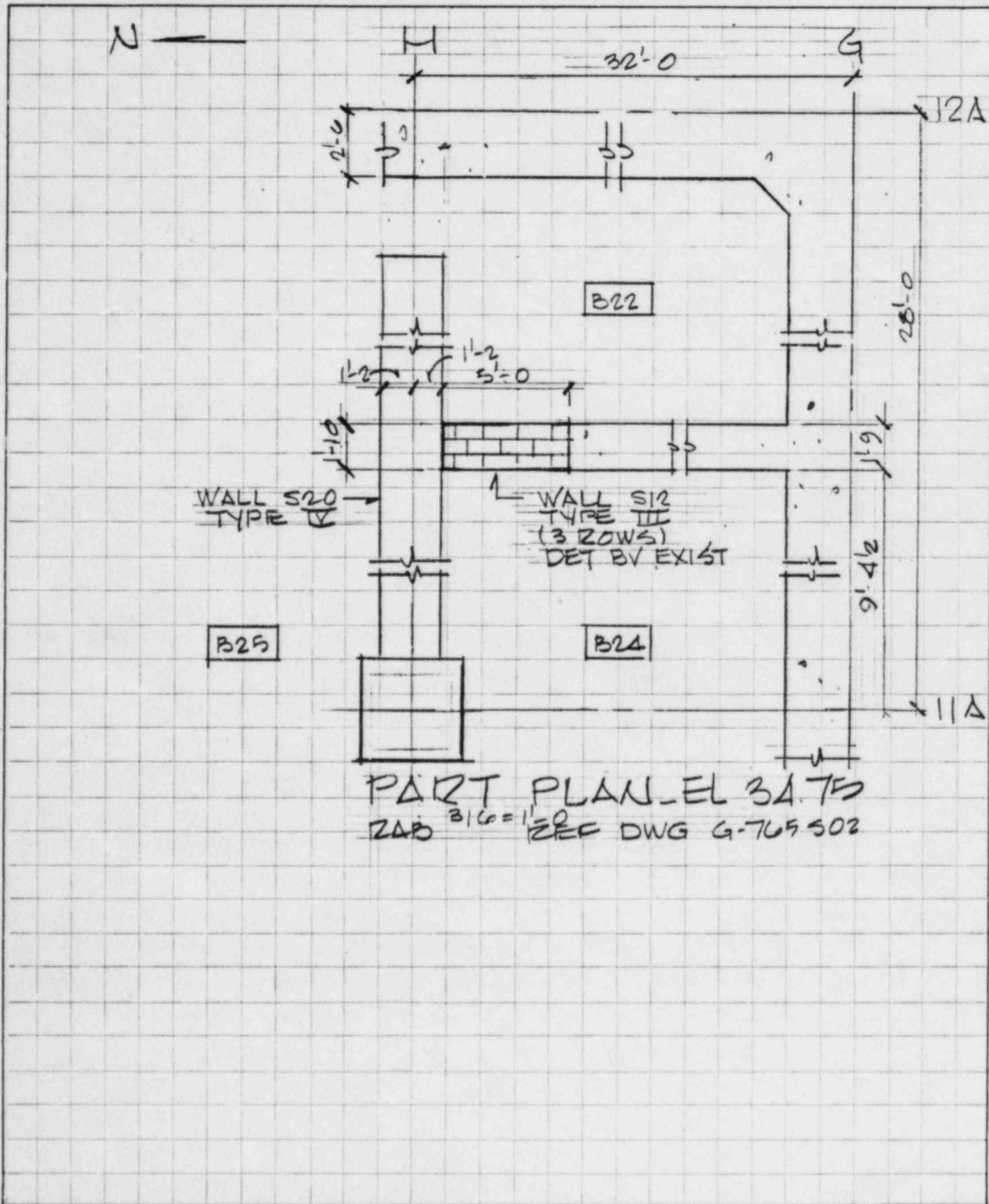
CHKD. BY G.F. DATE 10-8-84

OFS NO. 2865-053 DEPT. NO. 653

CLIENT LOUISIANA TOWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS





BY G.W.U. DATE 10-8-84

CHKD. BY R. ... DATE 11.9.84

SHEET \_\_\_ OF \_\_\_ DEPT. NO. ...

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS

# DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS							
W	H	S	t = INCH.	W = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV WALL NO	HOLLOW UNITS			SOLID UNITS				
									POTT.		TOP		INTERMEDIATE DIAPHRAM			
									FIXED	HINGED	FREE	EXIST.	HINGED	CANTILEVERED		
		S12	22	5'-0	14'-0	III	"BV"	4								

REMARKS:

EBASCO SERVICES INCORPORATED

BY BILAK DATE 10-7-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

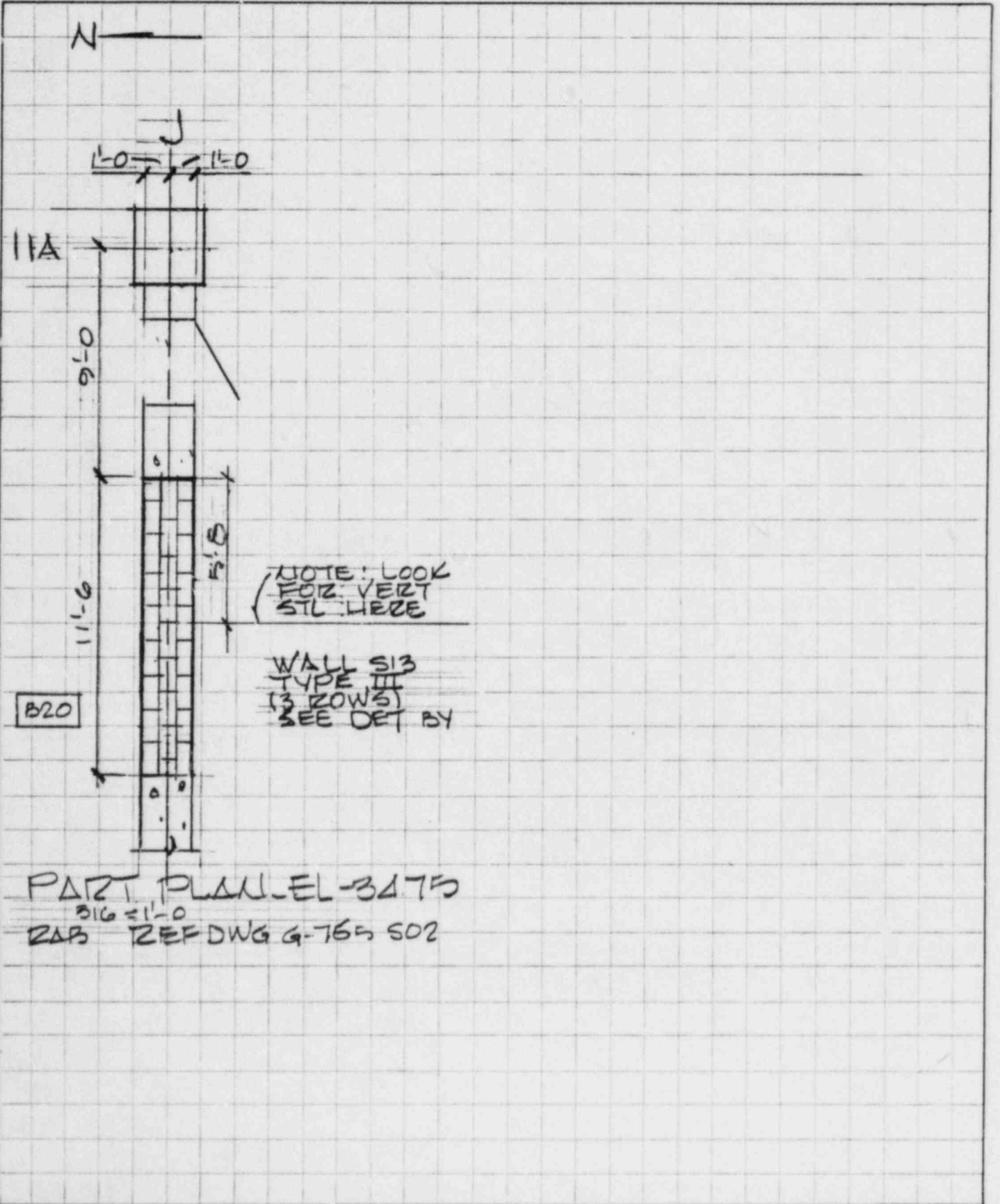
CHKD. BY J.S. DATE 10-8-84

OFS NO. 2865-058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



NOTE: LOOK FOR VERT STL HERE

WALL S13 TYPE III (3 ROWS) SEE DET BY

PART PLAN - EL - 3475

REF DWG G-765 S02

BY G W U DATE 10-8-84

CHKD. BY H. J. [signature] DATE 10-9-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_  
DEPT. \_\_\_\_\_  
OFS NO. 2865.058

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT

CONCRETE MASONRY BLOCK WALLS

# DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS						
W	H	S	T = INCH.	W = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV WALL NO	HOLLOW UNITS			SOLID UNITS			
									BOTT.	TOP		INTERMEDIATE DIAPHRAM			
									FIXED	HINGED	FREE	EXIST.	HINGED	CANTILEVERED	
		S13	24	11'-6	9'-11.	III	"BY"	5					✓	✓	

REMARKS:

EBASCO SERVICES INCORPORATED

BY BILAK DATE 10-7-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

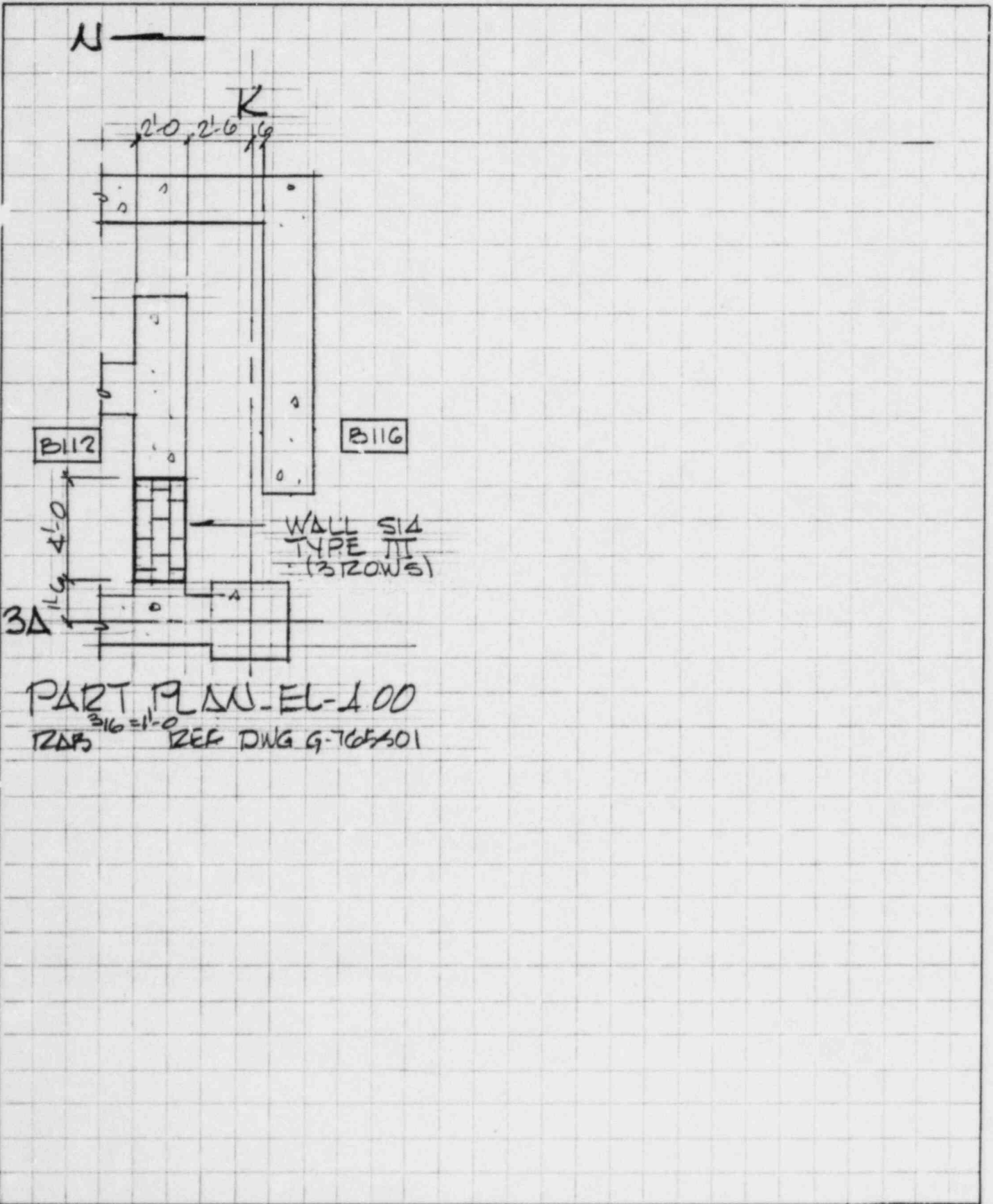
CHKD. BY G.F. DATE 10-8-84

OFS NO. LOU2865.058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PART PLAN - EL-1.00

TRAP <sup>3/16 = 1'-0</sup> REF DWG G-765301

EBASCO SERVICES INCORPORATED

BY G. W. J. DATE 10-8-84  
 CHKD. BY G. Williams DATE 10.9.84  
 CLIENT LOUISIANA POWER & LIGHT CO. OFS NO. 2865.058 SHEET      OF       
 PROJECT WATERFORD #3 SUBJECT CONCRETE MASONRY BLOCK WALLS

DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS						
W	H	S	t = INCH.	W = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV WALL NO	HOLLOW UNITS			SOLID UNITS			
									BOTT.	TOP		INTERMEDIATE DIAPHRAM			
									FIXED	HINGED	FREE	EXIST.	HINGED	CANTILEVERED	
		S14	24	4'-0	10'-0	III		4							

REMARKS:

EBASCO SERVICES INCORPORATED

BY PSILAK DATE 10-7-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

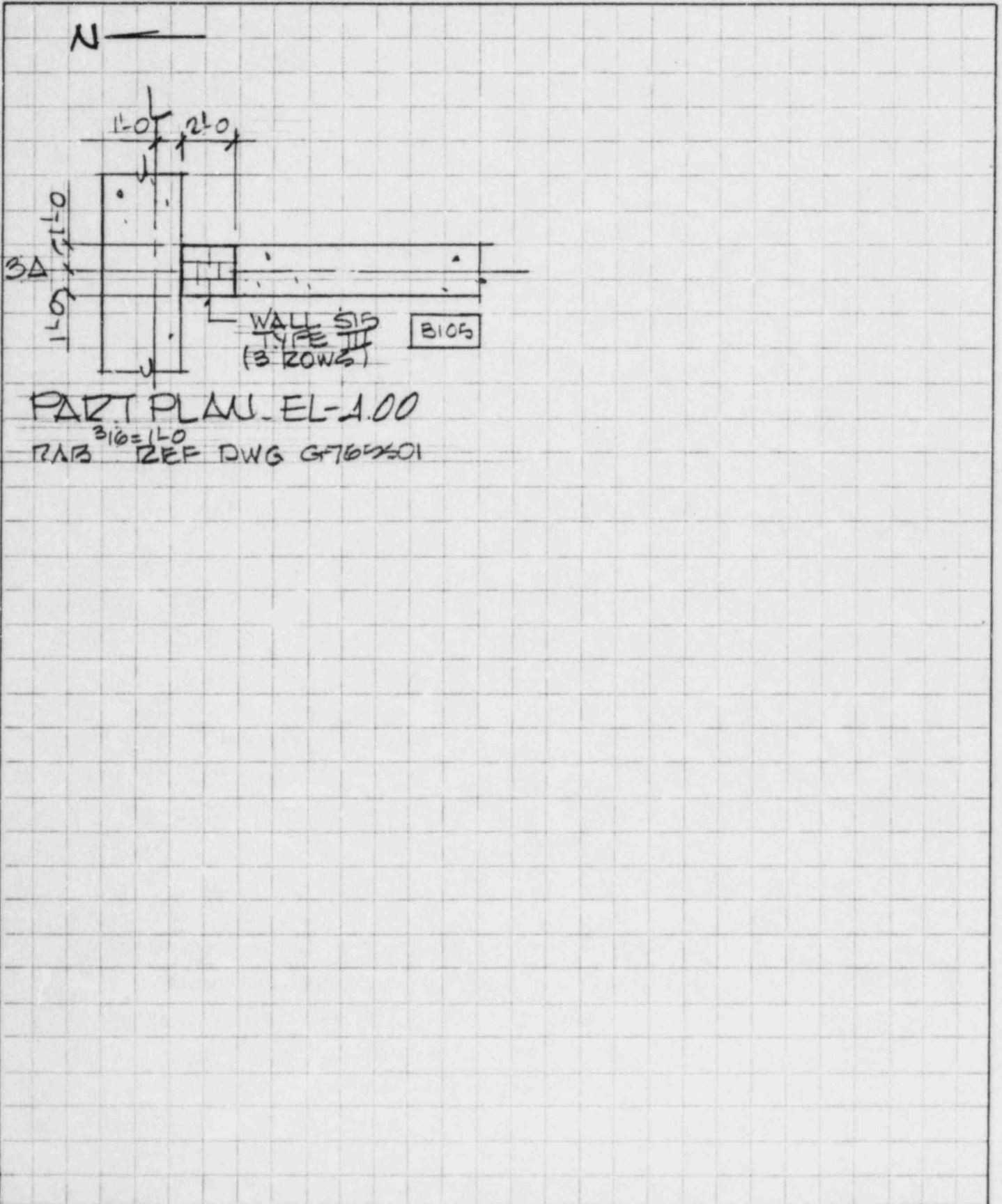
CHKD. BY J.S. DATE 10-8-84

OFS NO. LOU2865,058 DEPT. G53  
NO. 653

CLIENT LOUISIANA POWER & LIGHT CO

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



BY G.W.V. DATE 10-8-84  
 CHKD. BY J. Williams DATE 10-9-84  
 CLIENT LOUISIANA POWER & LIGHT CO. OFS NO. 2865-038 DEPT. NO. \_\_\_\_\_  
 PROJECT WATERFORD # 3  
 SUBJECT CONCRETE MASONRY BLOCK WALLS

## DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS						
W	H	S	t = INCH.	W = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV WALL NO	HOLLOW UNITS			SOLID UNITS			
									BOTT.			INTERMEDIATE DIAPHRAM			
									FIXED	HINGED	FREE	EXIST.	HINGED	CANTILEVERED	
		*S15	24	2'-0	2'-0	III		4							

REMARKS: \* WALL AT EL +9.0' COVERED BY MORTAR

501/8-81

SHEET \_\_\_\_\_ OF \_\_\_\_\_

EBASCO SERVICES INCORPORATED

BY BILAL DATE 10-7-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

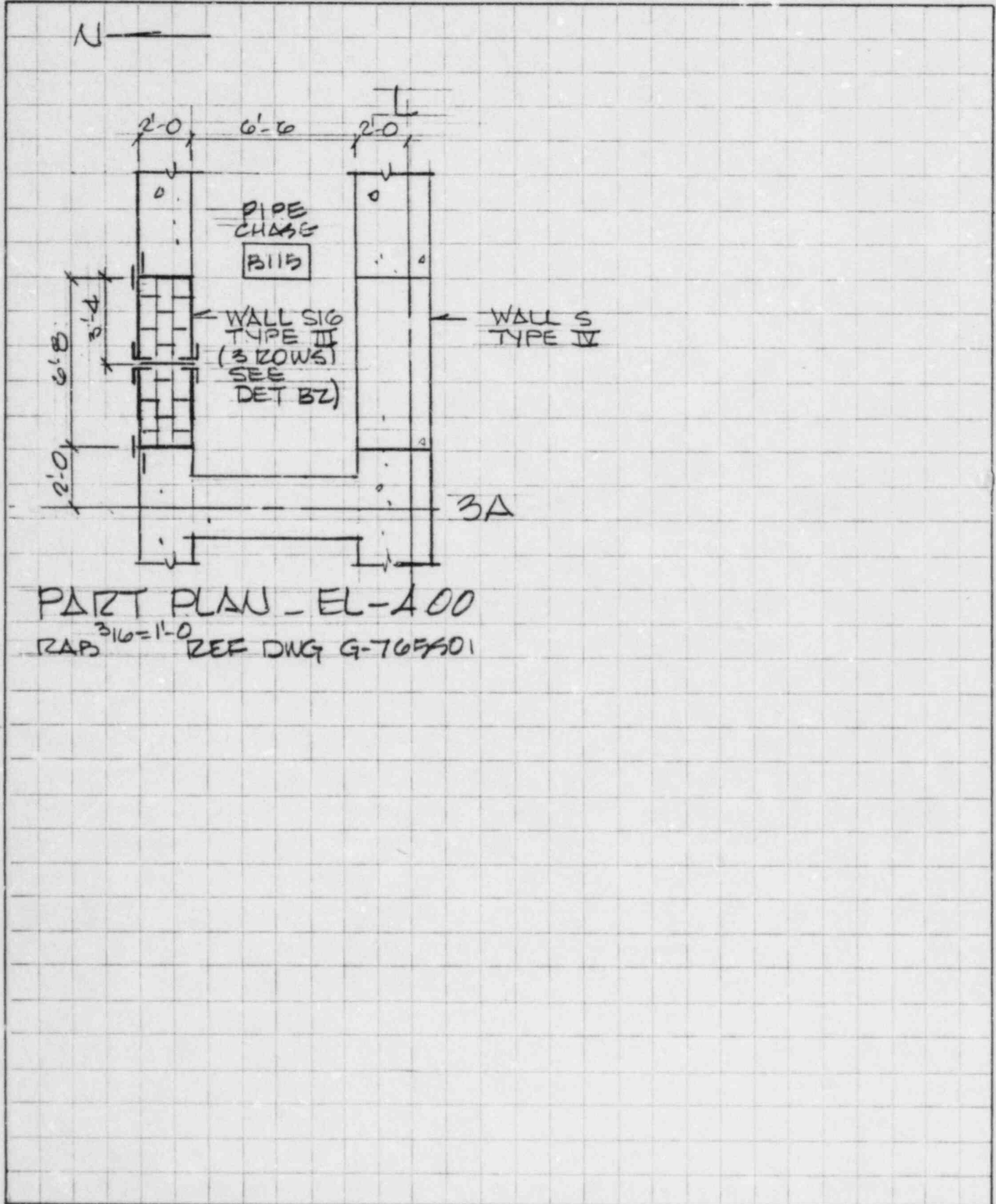
CHKD. BY G.F. DATE 10-8-84

OFS NO. LOU2865.058 DEPT. G53  
NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS





EBASCO SERVICES INCORPORATED

BY G. WU DATE 10-8-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

CHKD. BY [Signature] DATE 10/9/84

OFS NO. 2865.033 DEPT. NO. \_\_\_\_\_

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS

**DATA - SEISMIC MASONRY**

WALL NO	H	S	WALL DIMEN.		WALL TYPES & DETS			DESIGN PARAMETERS										
			T = INCH.	W = FEET (FT.)	H = FT.	TYPE	DETAIL	ELEV WALL NO	HOLLOW UNITS		SOLID UNITS							
			24	6'-8"	7'-10"				FIXED	HINGED TOP	EXIST.	HINGED TOP	EXIST.	HINGED TOP				
		S16	24	6'-8"	7'-10"	III	"BZ"	5				✓		✓				

REMARKS:

EBASCO SERVICES INCORPORATED

BY BILAK DATE 10-7-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

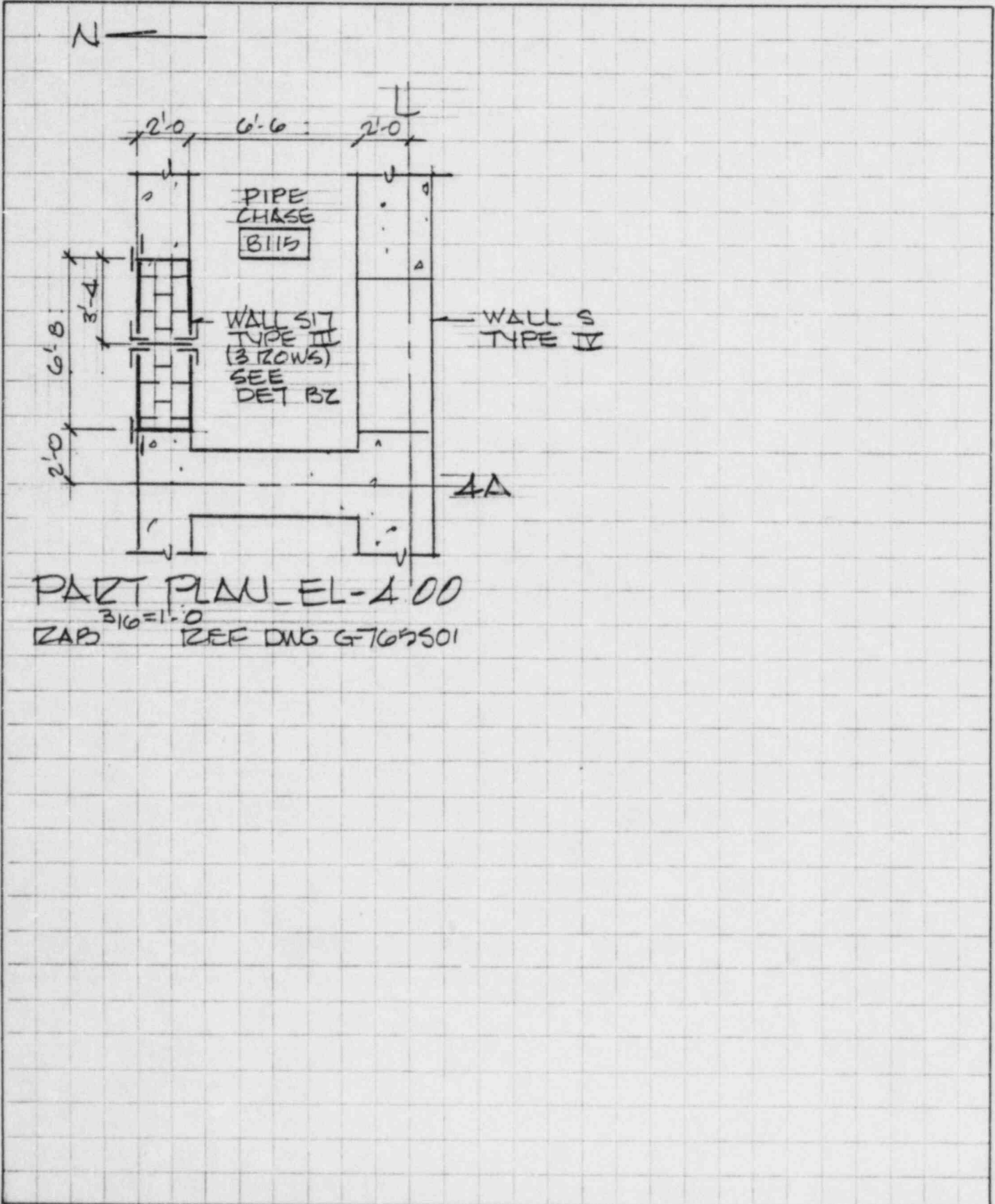
CHKD. BY J.S. DATE 10-8-84

OFS NO. LOU2865.058 DEPT. NO. 053

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



BY G. W. U. DATE 10-8-84 SHEET        OF         
 CHKD. BY W. J. H. DATE 10-9-84 OFS. NO. 2865.033 DEPT.         
 CLIENT LOUISIANA POWER & LIGHT CO.  
 PROJECT WATERFORD # 3  
 SUBJECT CONCRETE MASONRY BLOCK WALLS

# DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS					
									HOLLOW UNITS			SOLID UNITS		
W	H	S	t = INCH.	W = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV WALL NO	BOT.		INTERMEDIATE DIAPHRAM			
									FIXED	HINGED	FREE	EXIST.	HINGED	CANTILEVERED
		S17	24	6'-8	8'-0	III	"Bz"	5				✓	✓	

REMARKS:

EBASCO SERVICES INCORPORATED

BY BILAK DATE 10-7-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

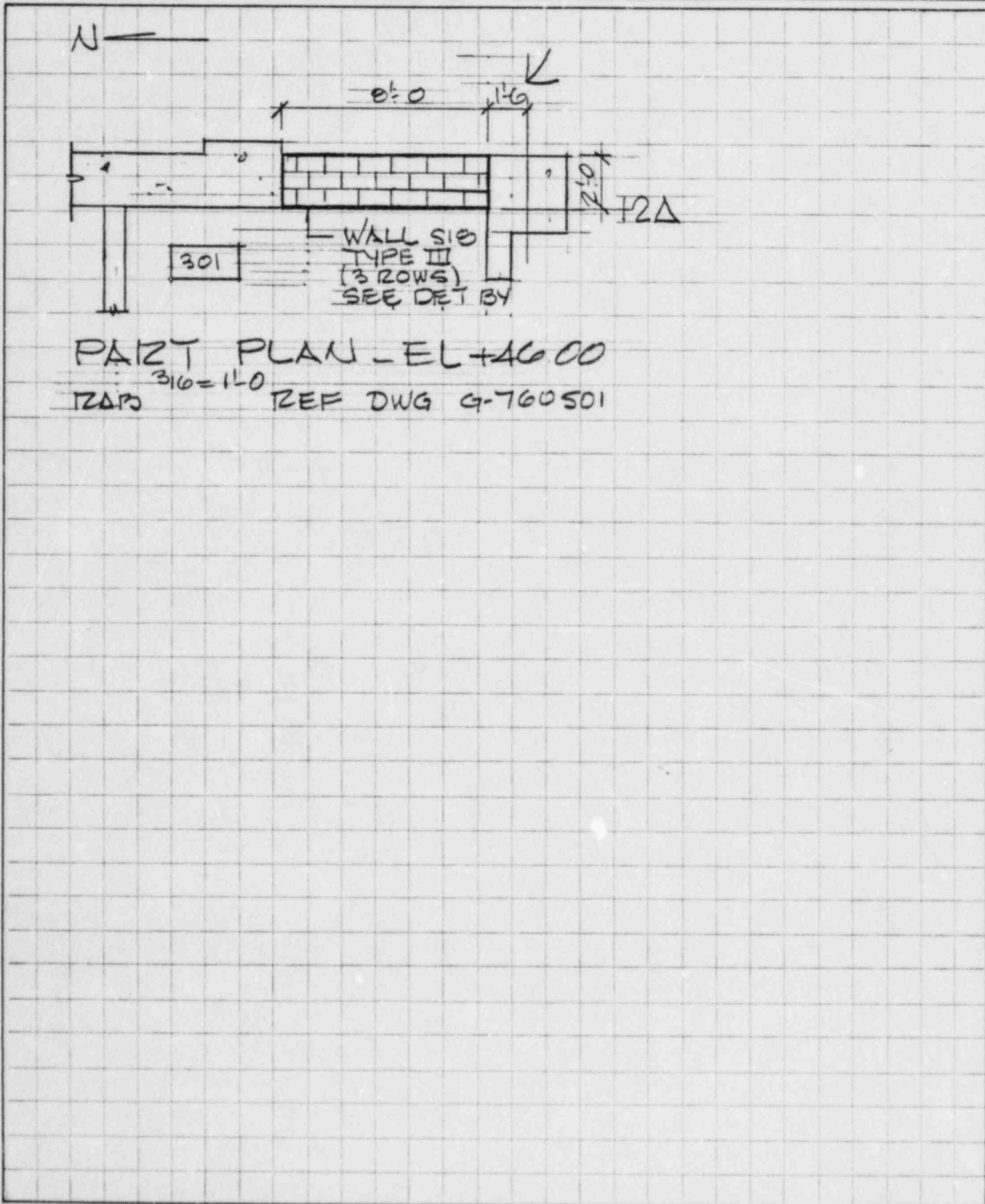
CHKD. BY GF. DATE 10-8-84

OFS NO. LOU2865.058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



BY G. W. WJ DATE 10-8-84

CHKD. BY W. D. L. DATE 10-9-84

SHEET        OF         
 DEPT.         
 NO.       

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS

## DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS							
									HOLLOW UNITS			SOLID UNITS				
W	H	S	t= INCH.	W= FEET (FT.)	H=FT. HEIGHT	TYPE	DETAIL	ELEV WALL NO	BOT.		TOP		INTERMEDIATE DIAPHRAM			
									FIXED	HINGED	FREE	EXIST.	HINGED	CANTILEVERED		
		S18	24	8'-0	8'-0	III	"BY"	4								

REMARKS:

EBASCO SERVICES INCORPORATED

BY BILAK DATE 10-7-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

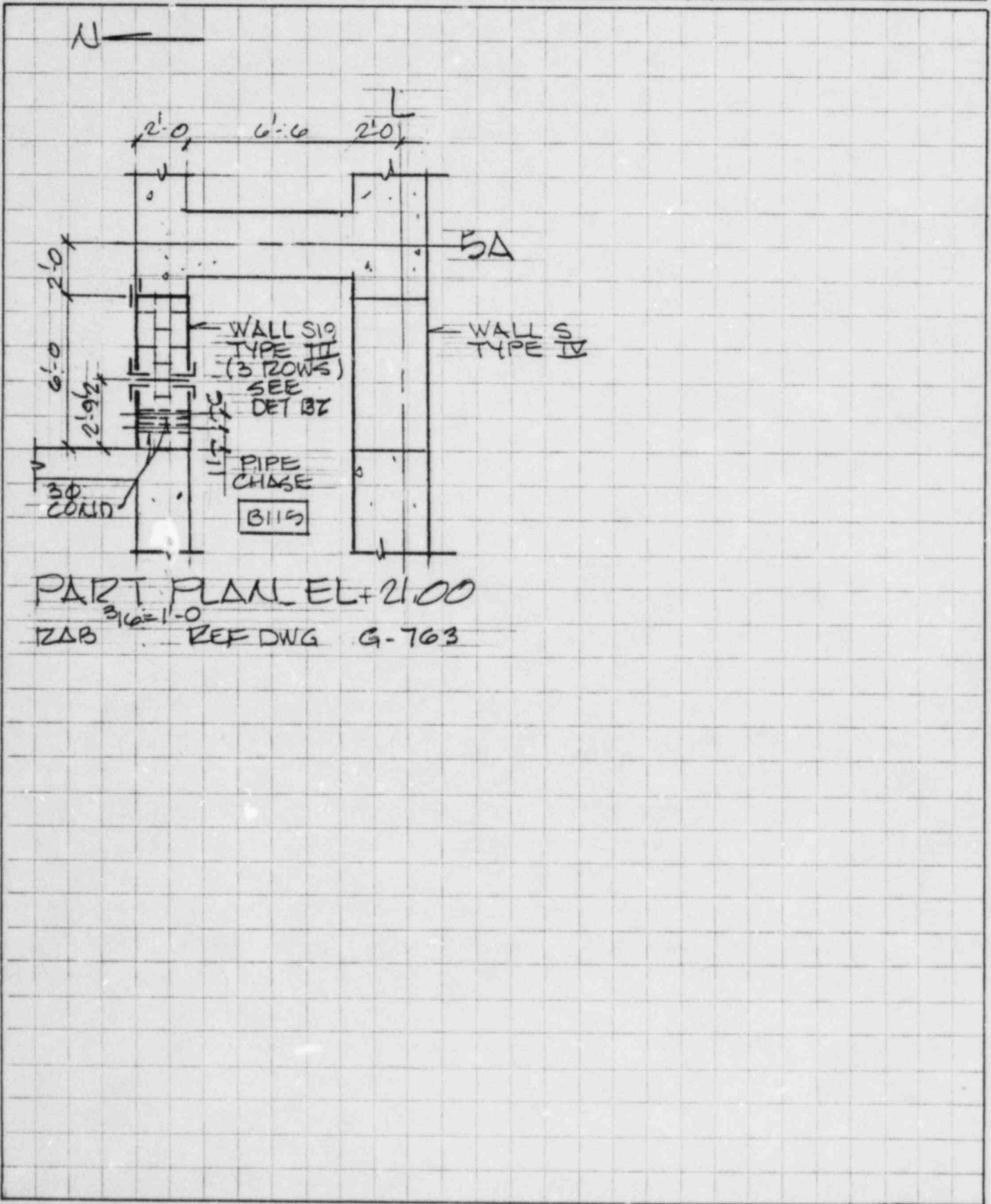
CHKD. BY J.S. DATE 10-8-84

OFS NO. LOU2865.058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



BY G. WU DATE 10-9-84

CHKD. BY P. M. [Signature] DATE 10-9-84 OFFS NO. 2865.03B DEPT. NO.

SHEET \_\_\_\_\_ OF \_\_\_\_\_

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT

CONCRETE MASONRY BLOCK WALLS

# DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS						
W	H	S	t = INCH.	W = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV WALL NO	HOLLOW UNITS			SOLID UNITS			
									BOTT.	TOP		INTERMEDIATE DIAPHRAM			
									FIXED	HINGED	FREE	EXIST.	HINGED	CANTILEVERED	
		519	24	6'-0	8'-0	III	"BZ"	5					✓	✓	

REMARKS:

EBASCO SERVICES INCORPORATED

BY BILAK DATE 10-7-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

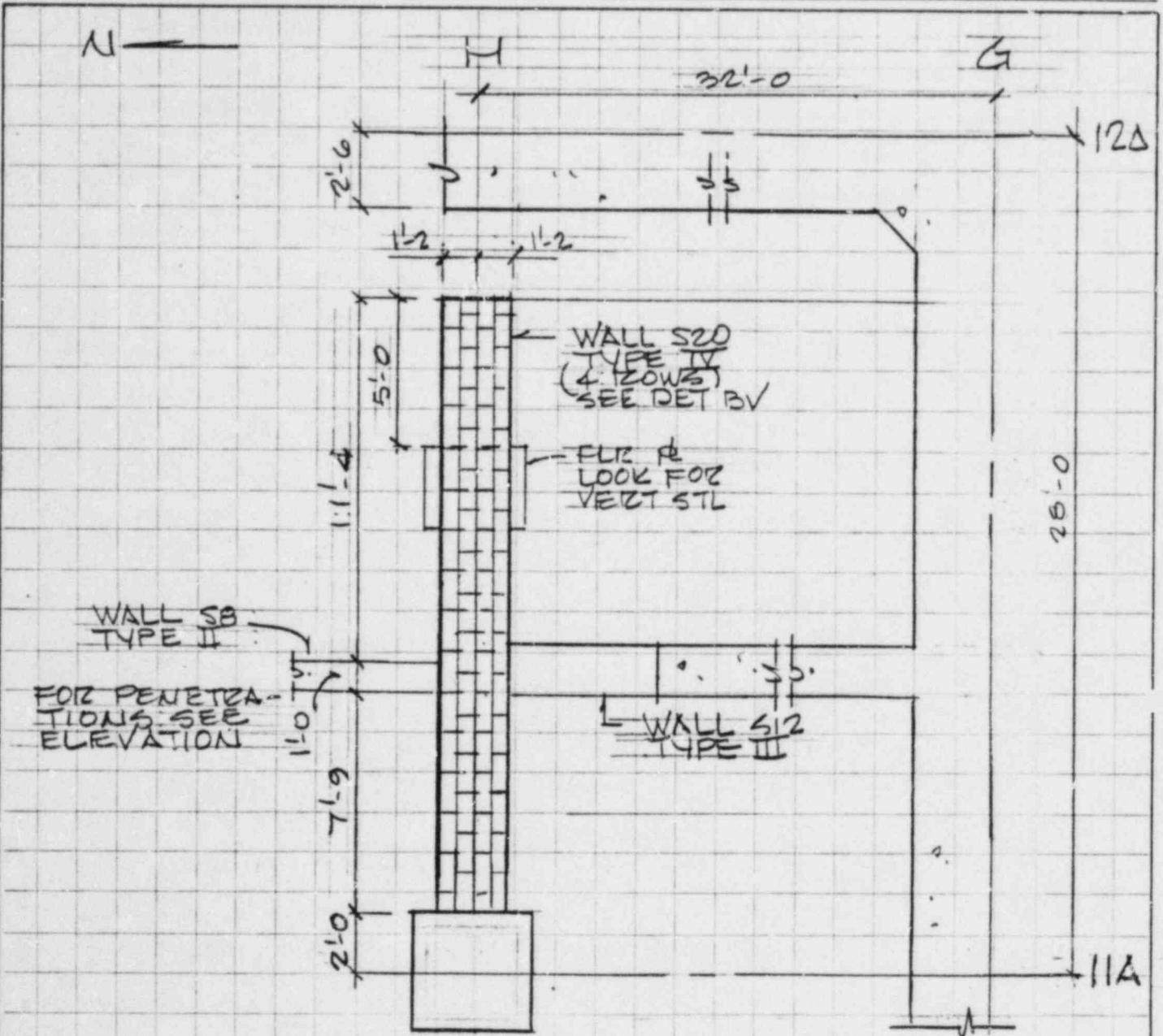
CHKD. BY GF DATE 10-8-84

OFS NO. \_\_\_\_\_ DEPT. NO. \_\_\_\_\_

CLIENT LOUISIANA POWER & LIGHT

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PART PLAN - EL. - 34.75  
ZAB <sup>316=1-0</sup> REF DWG G-764502



BY G.W.U. DATE 10-8-84

CHKD. BY [Signature] DATE 10.9.84

CLIENT LOUISIANA POWER & LIGHT CO.

OFS NO. 2865.033 DEPT. NO.           

SHEET          OF         

PROJECT WATERFORD #3  
SUBJECT CONCRETE MASONRY BLOCK WALLS

# DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS						
W	H	S	t = INCH.	W = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV WALL NO	HOLLOW UNITS			SOLID UNITS			
									BOTT.	TOP		INTERMEDIATE DIAPHRAM			
									FIXED	HINGED	FREE	EXIST.	HINGED	CANTILEVERED	
		S20	28	20'-1	13'-9	IV	"BV"	5					✓	✓	

REMARKS:

EBASCO SERVICES INCORPORATED

BY E. FISCHIONI DATE 10-7-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

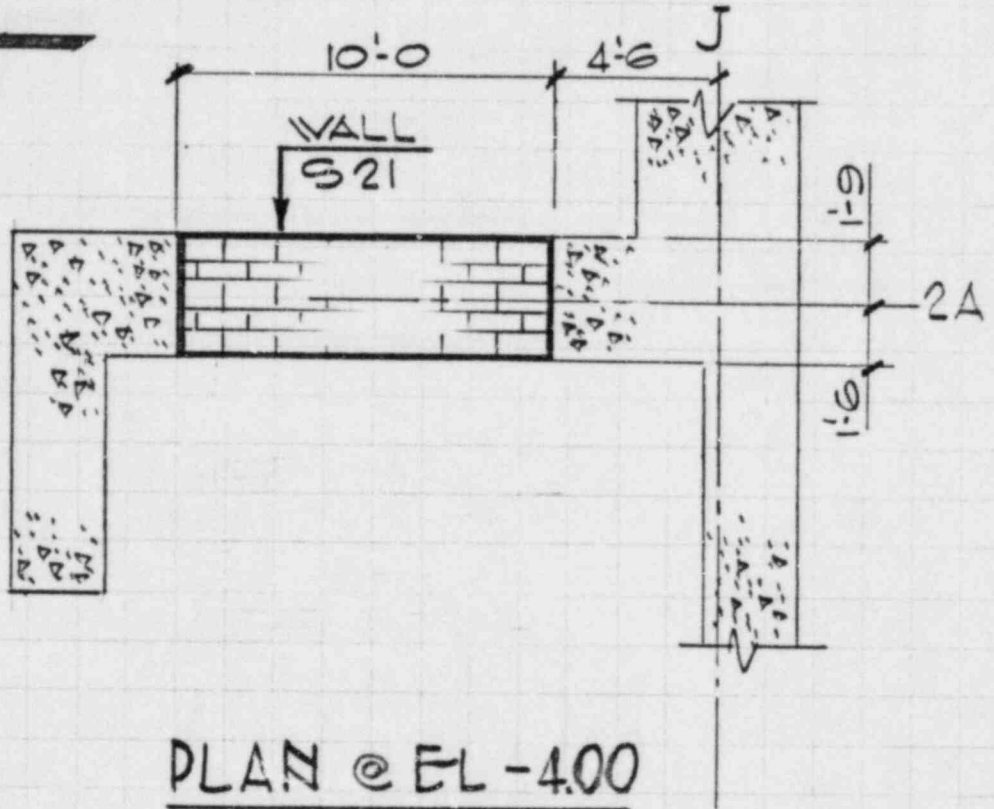
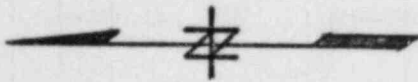
CHKD. BY J.S. DATE 10-8-84

OFS NO. LOU2865.058 DEPT. 653  
NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PLAN @ EL - 4.00

3/16" = 1'-0"

REF. DWG. G-763501  
G-354502

BY G. WU DATE 10-8-84

CHKD. BY William DATE 10-9-84

CLIENT LOUISIANA POWER & LIGHT CO. OFS NO. 2865.038 DEPT. NO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS

# DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS								
W	H	S	t = INCH.	W = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV WALL NO	HOLLOW UNITS			SOLID UNITS					
									BOTT.	TOP		INTERMEDIATE DIAPHRAM					
										FIXED	HINGED	FREE	EXIST.	HINGED	CANTILEVERED		
		S21	39	10'-0	21'-11	IV	"BY"	4									

REMARKS:

EBASCO SERVICES INCORPORATED

BY G. FISCHIONI DATE 10.7.84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

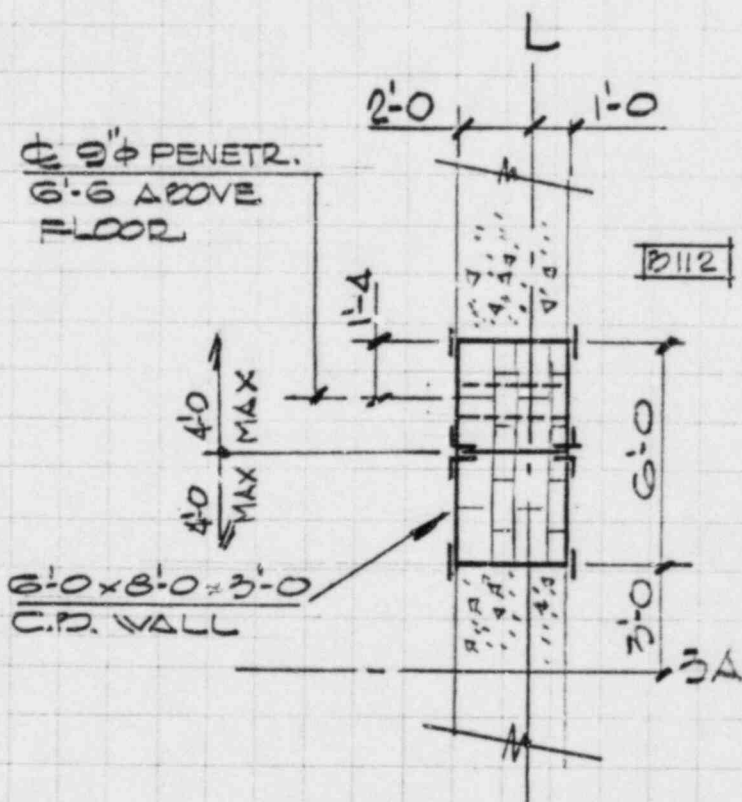
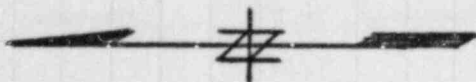
CHKD. BY J.S. DATE 10-8-84

OFS NO. 2865-098 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PLAN @ EL. -4.00'

$\frac{3}{16} = 1'-0$

REF. DWG G-765501  
DET BZ G-765502

BY E. WU DATE 10-8-84

CHKD. BY D. M. M. DATE 10.9.84

CLIENT LOUISIANA POWER & LIGHT CO.

OFS NO. 2865.038 DEPT. NO. \_\_\_\_\_

SHEET \_\_\_\_\_ OF \_\_\_\_\_

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS

# DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS						
									HOLLOW UNITS			SOLID UNITS			
W	H	S	T = INCH.	N = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV WALL NO	BOT.		TOP		INTERMEDIATE DIAPHRAM		
									FIXED	HINGED	FREE	EXIST.	HINGED	CANTILEVERED	
		S22	36	6'-0	8'-0	IV	"BZ"	5					✓	✓	

REMARKS:

EBASCO SERVICES INCORPORATED

BY G. FISHIONI DATE 10-7-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

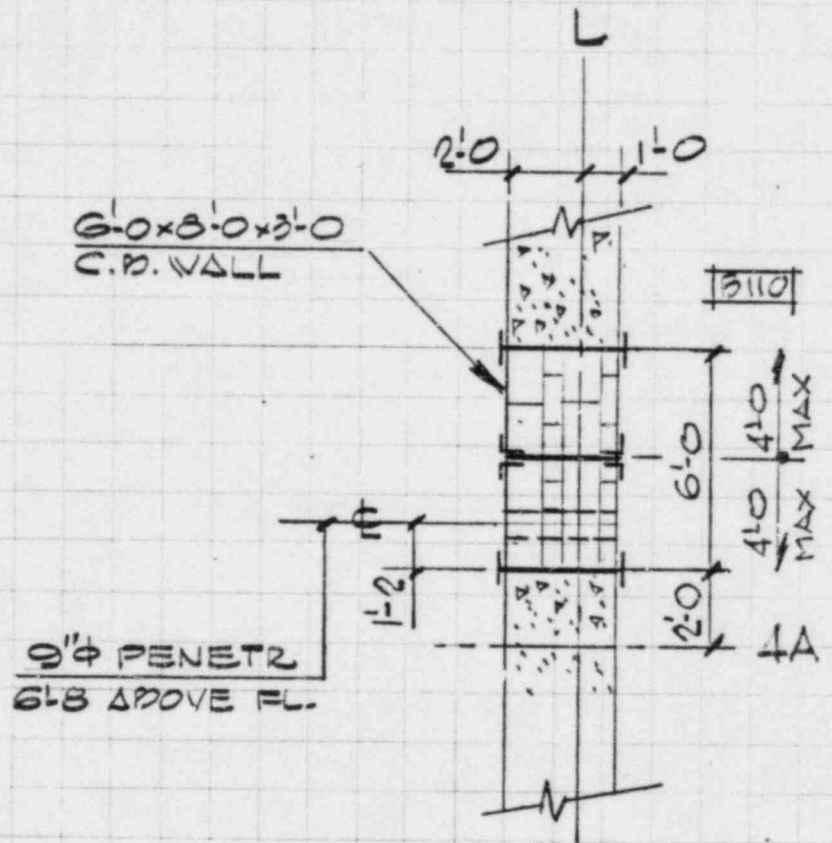
CHKD. BY J.S. DATE 10-8-84

OFFS NO. LOU2865.058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PLAN @ EL -4.00'

$3/16" = 1'-0"$

REF. DWG. G-765501  
DET. DE G-765502

BY G. W. W. DATE 10-8-84

CHKD. BY A. W. W. DATE 10/9/84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

CLIENT LOUISIANA POWER & LIGHT CO. DEPT. NO. \_\_\_\_\_

PROJECT WATERFORD # 3

SUBJECT CONCRETE MASONRY BLOCK WALLS

DATA - SEISMIC MASONRY

WALL NO.			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS					
W	H	S	T = INCH.	W = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV WALL NO.	HOLLOW UNITS			SOLID UNITS		
									BOTT.	TOP		INTERMEDIATE DIAPHRAM		
									FIXED	HINGED	FREE	EXIST.	HINGED	CANTILEVERED
		S23	36	6'-0	8'-0	IV	"BZ"	5				✓	✓	

REMARKS:

EBASCO SERVICES INCORPORATED

BY G. FISCHONI DATE 10-7-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

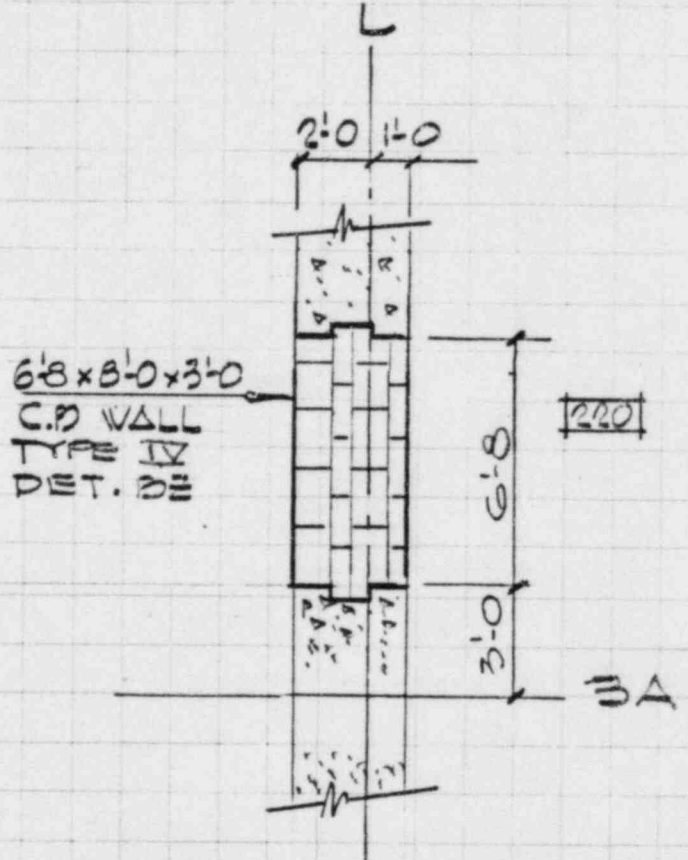
CHKD. BY J.S. DATE 10-8-84

OFS NO. LOU 2865.058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALL



PLAN @ EL + 21.00'

$\frac{3}{16} = 1'-0$

REF. DWG. G-763



BY G. WU DATE 10-8-84

CHKD. BY G. Wu DATE 10-9-84 SHEET \_\_\_\_\_ OF \_\_\_\_\_

CLIENT LOUISIANA POWER & LIGHT CO. OFFS NO. 2865.058 DEPT. NO. \_\_\_\_\_

PROJECT WATERFORD # 3

SUBJECT CONCRETE MASONRY BLOCK WALLS

# DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS					
W	H	S	t = INCH.	W = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV WALL NO	HOLLOW UNITS			SOLID UNITS		
									INTERMEDIATE DIAPHRAM					
									BOTT.	TOP		EXIST.	HINGED	CANTILEVERED
FIXED	HINGED	FREE	EXIST.	HINGED	CANTILEVERED									
		S24	36	6'-8	8'-0	IV	"BE"	5				✓	✓	

REMARKS:

501/6-81

EBASCO SERVICES INCORPORATED

BY G. FISCHIONI DATE 10-7-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

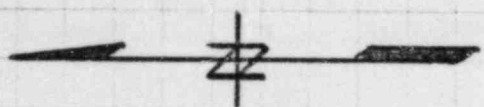
CHKD. BY J.S. DATE 10-8-84

OFS NO. LOU 2865.058 DEPT. NO. G53

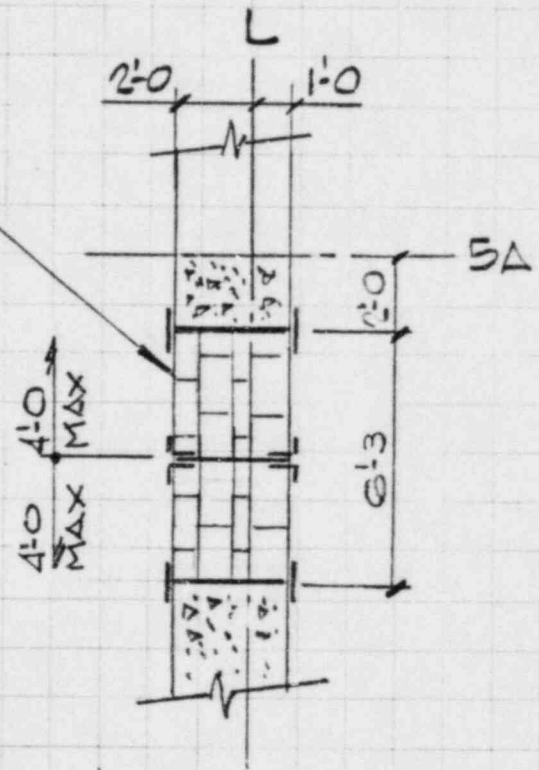
CLIENT LOUISIANA POWER & LIGHT

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



6'-8" x 8'-0" x 3'-0"  
C/D WALL



PLAN @ EL. +21.00'

$\frac{3}{16} = 1'-0"$

REF. DWG G-763

DET. PE G-765S02

BY A. W. W. DATE 10-8-84

CHKD. BY W. H. H. DATE 10-9-84

CLIENT LOUISIANA POWER & LIGHT CO.

SHEET 2865.038 OF      
DEPT.      
NO.    

PROJECT WATERFORD #3  
SUBJECT CONCRETE MASONRY BLOCK WALLS

# DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS						
W	H	S	t = INCH.	W = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV WALL NO	HOLLOW UNITS			SOLID UNITS			
									BOTT.	TOP		INTERMEDIATE DIAPHRAM.			
									FIXED	HINGED	FREE	EXIST.	HINGED	CANTILEVERED	
		S25	36	6'-3	8'-0	II	"BZ"	5					✓	✓	

REMARKS:

EBASCO SERVICES INCORPORATED

BY G. FISCHIONI DATE 10-7-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

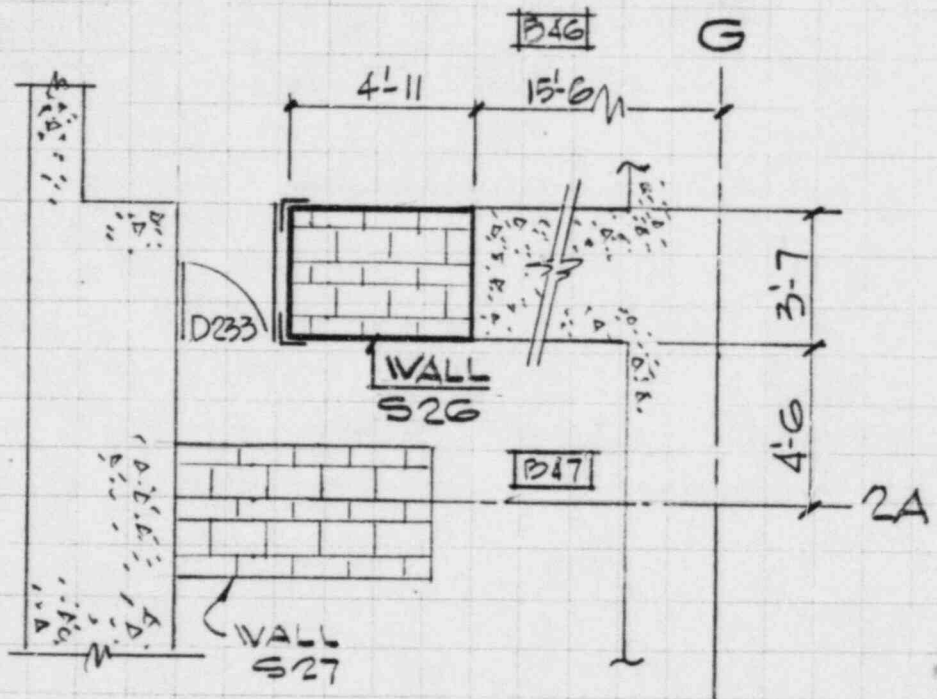
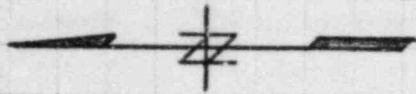
CHKD. BY J.S. DATE 10-8-84

OFS NO. LOU2865.058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PLAN @ EL - 34.75'

3/8" = 1'-0"

REF. DWG G-765S02

BY G. WU DATE 10-8-84

CHKD. BY J. Miller DATE 10-9-84

CLIENT LOUISIANA POWER & LIGHT CO.

OFS NO. 2865.058

SHEET      OF     

DEPT. NO.     

PROJECT WATERFORD #3  
SUBJECT CONCRETE MASONRY BLOCK WALLS

# DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS									
W	H	S	t = INCH.	W = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV WALL NO	HOLLOW UNITS			SOLID UNITS						
									BOT.		TOP		INTERMEDIATE DIAPHRAM					
									FIXED	HINGED	FREE	EXIST.	HINGED	CANTILEVERED				
		S26	43	4'-11	17'-4	I	"BY"	6										

REMARKS:

EBASCO SERVICES INCORPORATED

BY G. FISCHIONI DATE 10-7-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

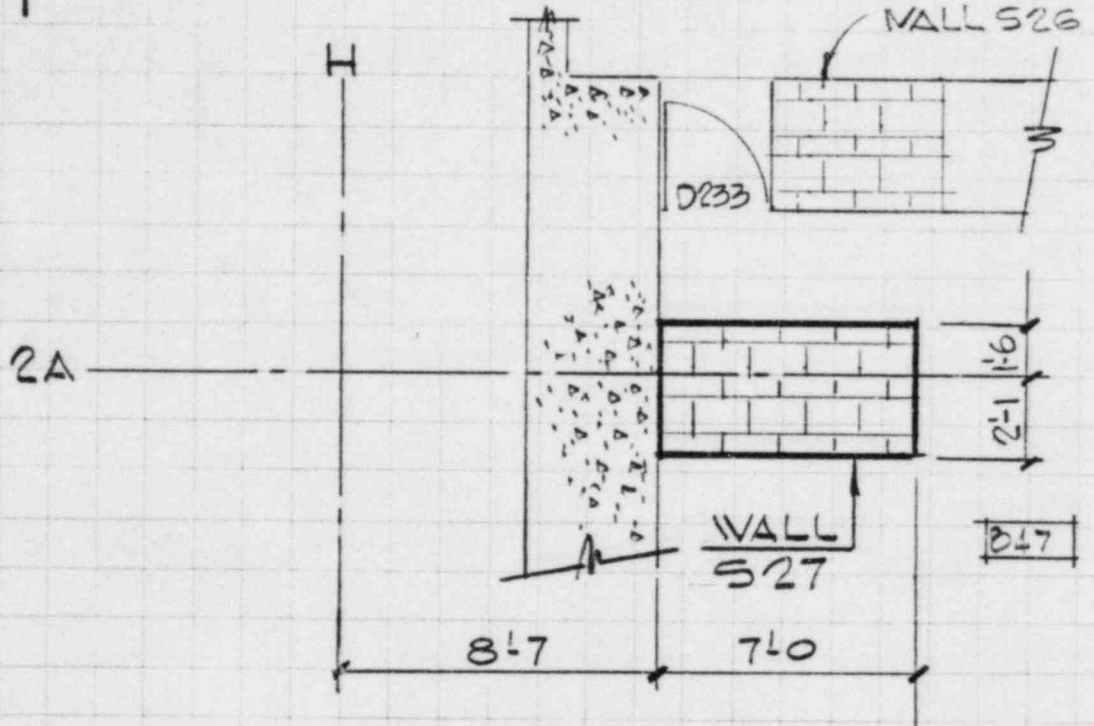
CHKD. BY J.S. DATE 10-8-84

OFS NO. LOU2865.058 DEPT. NO. G53

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PLAN @ EL - 34.75'

$\frac{3}{8} = 1'-0$

REF. DWG G-765502

BY G. W. D. DATE 10-8-84

CHKD. BY [Signature] DATE 10.9.84

CLIENT LOUISIANA POWER & LIGHT CO.

OFFS. NO. 2865.058 SHEET      OF     

PROJECT WATERFORD # 3  
 SUBJECT CONCRETE MASONRY BLOCK WALLS

# DATA - SEISMIC MASONRY

WALL NO.			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS										
W	H	S	t = INCH.	W = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV WALL NO.	HOLLOW UNITS			SOLID UNITS							
									BOT.		TOP	INTER		DIAPHRAM					
									FIXED	HINGED	FREE	EXIST.	HINGED	CANTILEVERED					
		521	43	7'-0	17'-0	I	"BV"	6											

REMARKS:

EBASCO SERVICES INCORPORATED

BY G. FICHIONI DATE 10-7-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

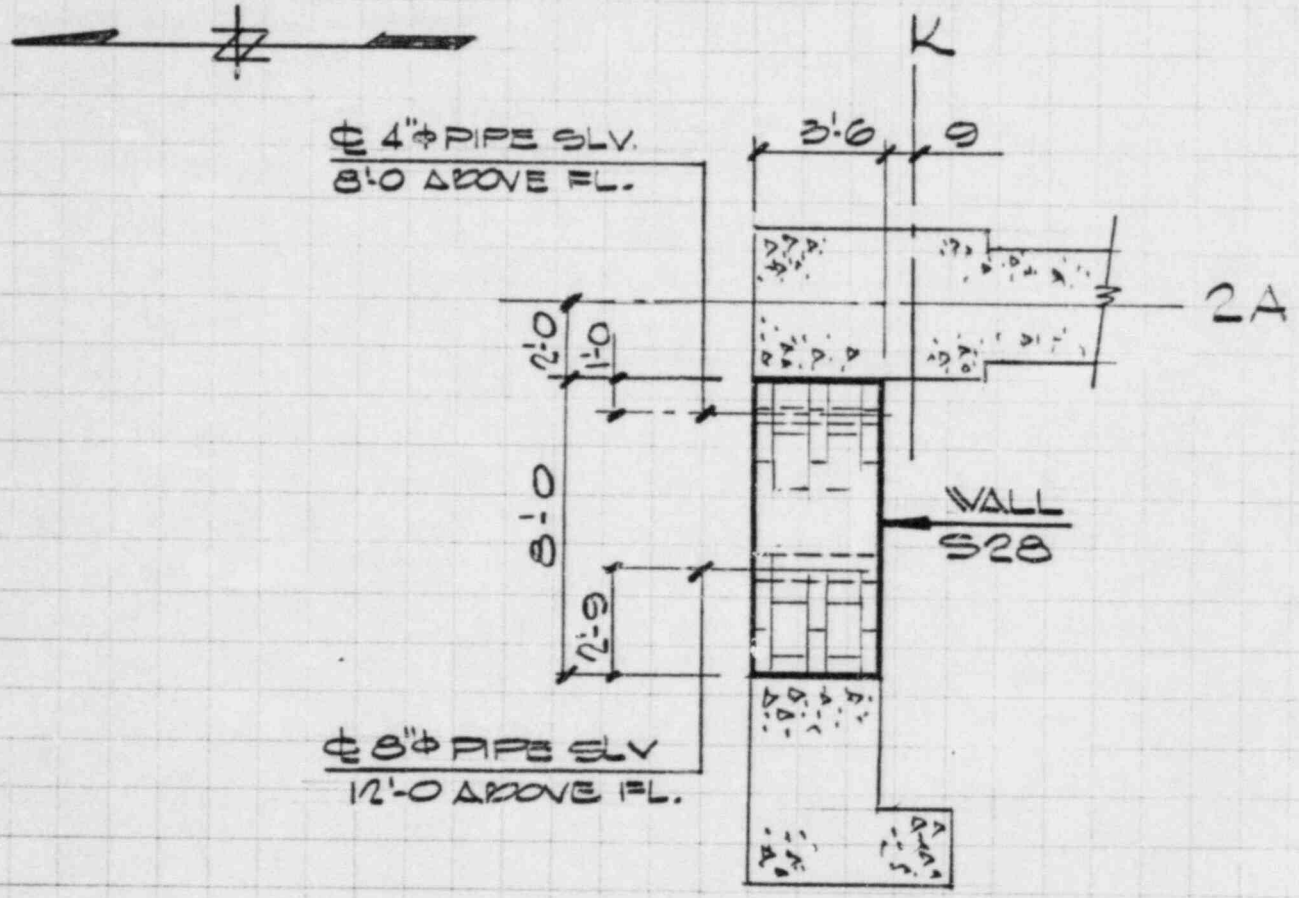
CHKD. BY J.S. DATE 10-8-84

OFS NO. LOU 2865.058 DEPT. NO. 650

CLIENT LOUISIANA POWER & LIGHT CO

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PLAN @ EL. -34.75'

$\frac{3}{16} = 1'-0$

REF. DWG G-765502



BY G. WU DATE 10-8-84

SHEET          OF         

CHKD. BY W. H. HARRIS DATE 10-9-84 OFS. NO. 2865.058 DEPT. NO.         

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD # 3

SUBJECT CONCRETE MASONRY BLOCK WALLS

# DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS						
W	H	S	t = INCH.	N = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV WALL NO	HOLLOW UNITS			SOLID UNITS			
									POTT.	TOP		INTERMEDIATE DIAPHRAM			
									FIXED	HINGED	FREE	EXIST.	HINGED	CANTILEVERED	
		S28	42	8'-0	19'-6	V	"BY"	4							

REMARKS:

EBASCO SERVICES INCORPORATED

BY G. FISCHIONI DATE 10-7-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

CHKD. BY J.S. DATE 10-8-84

OFS NO. LOU2865.058 DEPT. NO. 653

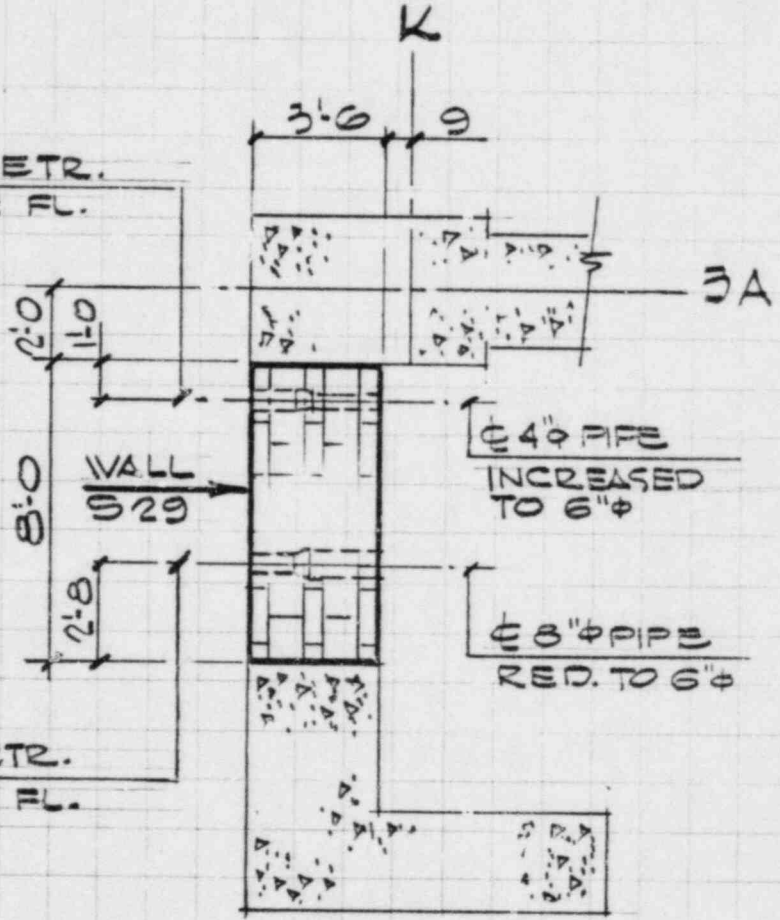
CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



Ø 6"Ø PENETR.  
13'-4 ABOVE FL.



Ø 6"Ø PENETR.  
3'-0 ABOVE FL.

PLAN @ EL. -34.75'

$\frac{3}{16} = 1'-0$

REF. DWG G-765 S02  
G-570 S02

BY G.W.U. DATE 10-8-84

CHKD. BY [Signature] DATE 10-9-84

CLIENT LOUISIANA POWER & LIGHT CO.

OFFS. NO. 2865-038

DEPT. NO.

SHEET  OF

PROJECT WATERFORD #3

SUBJECT

CONCRETE MASONRY BLOCK WALLS

# DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS					
W	H	S	t = INCH.	N = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV WALL NO	HOLLOW UNITS			SOLID UNITS		
									BOTT.	TOP		INTERMEDIATE DIAPHRAM		
									FIXED	HINGED	FREE	EXIST.	HINGED	CANTILEVERED
		S29	42	8'-0	19'-4	I	"BY"	4						

REMARKS:

EBASCO SERVICES INCORPORATED

BY G. FISCHIONI DATE 10.7.84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

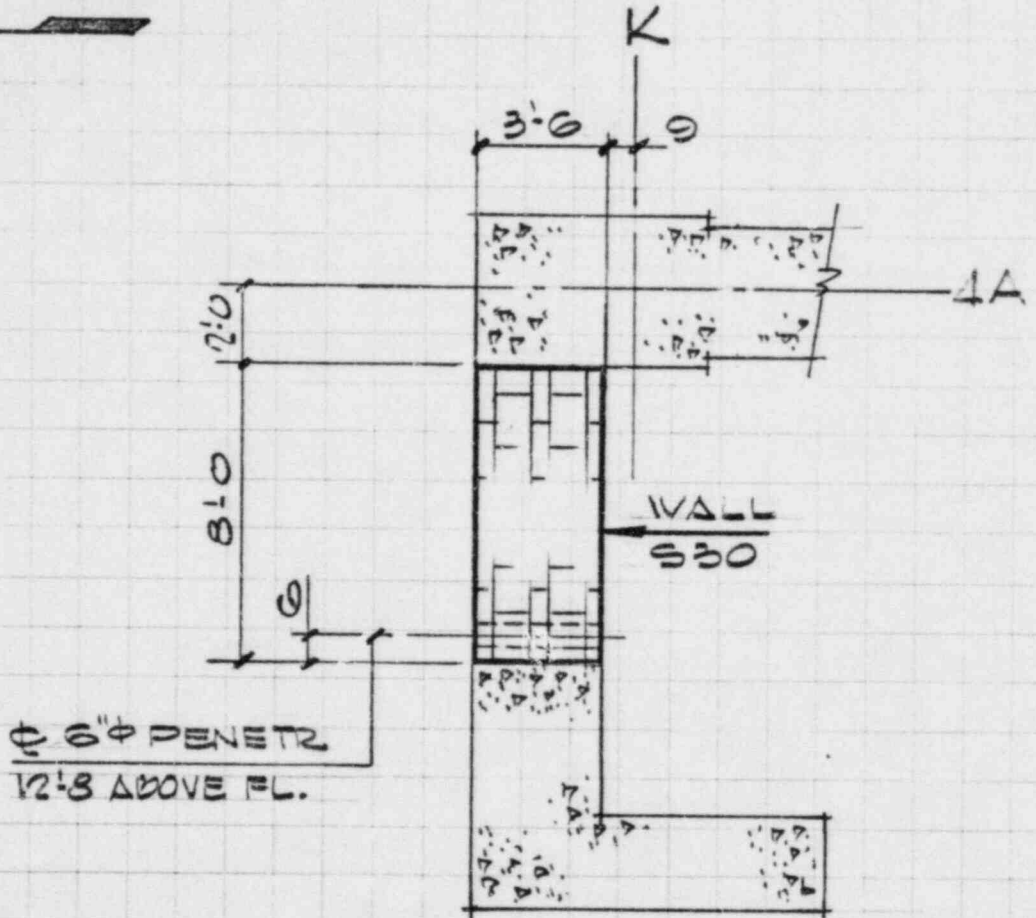
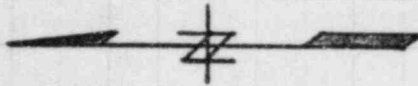
CHKD. BY J.S. DATE 10.8.84

OFS NO. LOU1865.058 DEPT. NO. 653

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



$\phi$  6"  $\phi$  PENETR  
12"  $\delta$  ABOVE FL.

PLAN @ EL - 34.75'

$\frac{3}{4} = 1-0$

REF. DWG G-765502  
G-570502

BY G. WU DATE 10-8-84  
 CHKD. BY P. M. [Signature] DATE 10-9-84  
 CLIENT LOUISIANA POWER & LIGHT CO. OFS NO. 2865.038 DEPT. NO. \_\_\_\_\_  
 PROJECT WATERFORD # 3  
 SUBJECT CONCRETE MASONRY BLOCK WALLS

# DATA - SEISMIC MASONRY

WALL NO			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS						
W	H	S	t = INCH.	W = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV WALL NO	HOLLOW UNITS			SOLID UNITS			
									BOTT.	TOP		INTERMEDIATE DIAPHRAM			
									FIXED	HINGED	FREE	EXIST.	HINGED	CANTILEVERED	
		S30	42	8'-0	19'-4	V	"BY"	4							

REMARKS:

EBASCO SERVICES INCORPORATED

BY G. FISCHIONI DATE 10-7-84

SHEET \_\_\_\_\_ OF \_\_\_\_\_

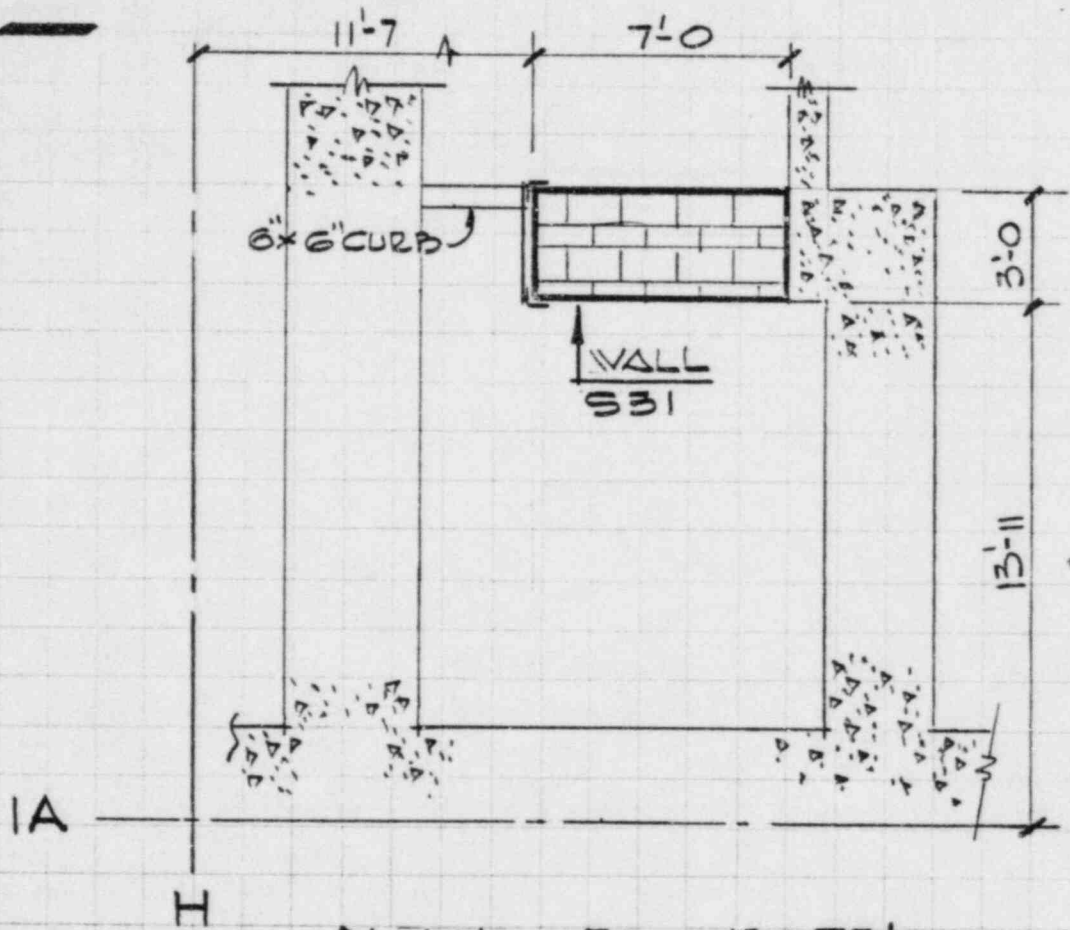
CHKD. BY J.S DATE 10-8-84

OFS NO. LOU2865.058 DEPT. NO. G53

CLIENT LOUISIANA POWER & LIGHT CO.

PROJECT WATERFORD #3

SUBJECT CONCRETE MASONRY BLOCK WALLS



PLAN @ EL - 34.75'

3/16" = 1'-0"

REF. DWG. G-765502

BY G WU DATE 10-8-84  
CHKD. BY G.W.L. DATE 10-9-84  
CLIENT LOUISIANA POWER & LIGHT CO. OFFS NO. 2865.058 SHEET      OF       
PROJECT WATERFORD # 3 DEPT.       
SUBJECT CONCRETE MASONRY BLOCK WALLS

DATA - SEISMIC MASONRY

WALL N <sup>o</sup>			WALL DIMEN.			WALL TYPES & DETS			DESIGN PARAMETERS						
W	H	S	t = INCH.	W = FEET (FT.)	H = FT. HEIGHT	TYPE	DETAIL	ELEV WALL N <sup>o</sup>	HOLLOW UNITS			SOLID UNITS			
									BOTT.	TOP		INTERMEDIATE DIAPHRAM			
									FIXED	HINGED	FREE	EXIST.	HINGED	CANTILEVERED	
		S31	36	7'-0	18'-0	IV	"BV"	6							

REMARKS:

BY GJM DATE 3-15-84

REV. 1 CA 9-20-84

SHEET 1 OF 2

CHKD. BY JM DATE 3-16-84

LOUISIANA POWER & LIGHT CO. OFS NO. \_\_\_\_\_

DEPT. NO. \_\_\_\_\_

CLIENT WATERFORD STEAM ELECTRIC STATION

PROJECT 1977 1165 MW INSTALLATION - UNIT 3

SUBJECT CONC BLOCK WALL DUR-O-WAL REINFORCEMENT ITEM # 13

FROM DUR-O-WAL MANUAL:

REF: G-765502

TRUSS DESIGN: SIDE RODS WORK TOGETHER. DIAGONAL CROSS RODS HELP RESIST LONGITUDINAL TENSILE STRESSES.

EFFECTIVE AREA INCLUDES SIDE RODS PLUS DIAGONAL CROSS ROD AREA TIMES COSINE OF ANGLE BET. CROSS ROD & SIDE ROD.

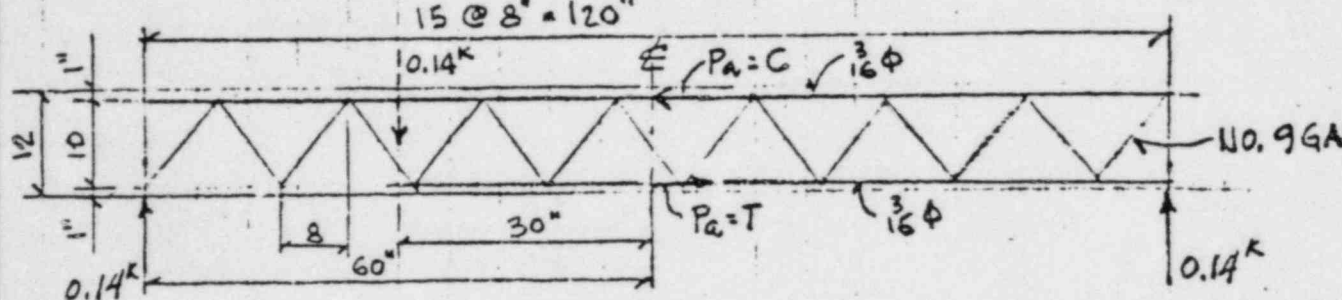
WIRE ASTM A82,  $F_y = 70$  KSI

TRUSS: 2 -  $\frac{3}{16}$   $\phi$  SIDE RODS + NO. 9 GA CROSS RODS. EFFECTIVE AREA

	$d$ IN	EFF AREA IN <sup>2</sup>	WT PER FT LBS
12" WALL	10	0.066	0.276
8" "	6	0.069	0.257

GIVEN: WALL WT = 140 #/CU  
SEISMIC FACTOR = 0.3 G  
TRUSSES VERTICALLY @ 8" SPG, 10' LONG  
CROSS ROD CONN @ 16" TO SIDE RODS

12" WALL UNIFORM LOAD TO TRUSS,  $w = \frac{8}{12} \times 0.14 \times 0.3 = 0.028$  K/LIN FT  
① IF SIMPLE TRUSS TAKING TENSION & COMPRESSION  $R = 0.028 \times \frac{10'}{2} = 0.14$  K



DIAGONAL  $H = 0.14 \times \frac{8}{10} = 0.112$  K

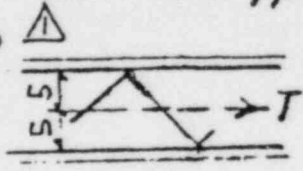
$C = (10^2 + 8^2)^{0.5} = 12.81$   $P_2 = 0.14 \times \frac{12.81}{10} = 0.18$  K  
#9 GA BAR  $A = \frac{\pi d^2}{4} = \frac{\pi (0.1483)^2}{4} = 0.01727$  in<sup>2</sup>  
 $f_a = \frac{0.18}{0.01727} = 10.42$  KSI <  $(70) \times 0.6 = 42$  KSI OK

CHORD MAX  $P_2 = 0.14 \times \frac{30}{10} = 0.42$  K  $A = \left(\frac{3}{16}\right)^2 \times \frac{\pi}{4} = 0.0276$  in<sup>2</sup>  
 $f_a = \frac{0.42}{0.0276} = 15.22$  KSI <  $(70) \times 0.6 = 42$  KSI OK  
SINCE CHORDS ARE CONT. LATERALLY SUPPORTED, NO REDUCTION HAS TO BE APPLIED.

② WITH EFFECTIVE STL AREA (STEEL TAKING TENSION ONLY, MORTAR & CONC. TAKES COMPRESSION)

MAX  $T = 0.14 \times \frac{30}{5} = 0.84$  K

STEEL  $f_a = \frac{0.84}{0.066} = 12.73$  KSI <  $(70) \times 0.6 = 42$  KSI OK





## EBASCO SERVICES INCORPORATED

BY A. J. A. DATE 3-15-84 REV  $\Delta$  GA 9-26-84SH 20F2  
SHEET 2 OF 2CHKD. BY AM DATE 3-16-84

OFS NO. \_\_\_\_\_

DEPT. NO. \_\_\_\_\_

CLIENT LOUISIANA POWER & LIGHT CO.WATERFORD STEAM ELECTRIC STATIONPROJECT 1477 1165 MW INSTALLATION - UNIT 3SUBJECT CONC BLOCK WALL DUR-O-WAL REINFORCEMENTITEM # 138" WALL UNIFORM LOAD TO TRUSS,  $w = \frac{8}{12} \times \frac{8}{12} \times 0.14 \times 0.3 = 0.0187 \text{ k/lin ft}$ ① IF SIMPLE TRUSS TAKING TENS. & CONTR.,  $R = 0.0187 \times \frac{10}{2} = 0.0935 \text{ k}$ CHORD MAX  $P_c = 0.0935 \times \frac{30}{6} = 0.468 \text{ k}$ 

$$\text{MAX } f_a = \frac{0.468}{0.0276} = 16.94 \text{ ksi} < \frac{42}{39.0} \text{ OK}$$

② WITH EFFECTIVE STEEL AREA:  $\Delta$ 

$$\text{MAX } T = 0.0935 \times \frac{30}{3} = 0.935 \text{ k}$$

$$\text{STEEL } f_a = \frac{0.935}{0.069} = 13.55 \text{ ksi} < \frac{42}{39.0} \text{ OK}$$

 $\Delta$

BY A. LEON DATE 9/27/84

CHKD. BY 256 DATE 10-4-84

SHEET 1 OF 1

DEPT. NO. 653

CLIENT LP&L

PROJECT WATERFORD #3

ITEM # 14

SUBJECT MAX ALLOWABLE WORKING STRESSES FOR REINFORCED SOLID AND HOLLOW UNIT MASONRY.

TYPE OF STRESS AS PER ACI-JURNAL AUGUST 1978-TABLE 10.1 (psi)	$f'_m = 1350 \text{ psi}$	
	ENGINEERING OR ARCHITECTURAL INSPECTION REQUIRED	YES
COMPRESSION - FLEXURAL ( $.33 f'_m$ ); MAX=1200	446	223
SHEAR :		
a) NOSHEAR REINFORCEMENT		
FLEXURAL ( $1.1 \sqrt{f'_m}$ ); MAX=50	40	20
SHEAR WALLS		
$M/Vd \geq 1$ ( $.9 \sqrt{f'_m}$ ); MAX=34	33	16
$M/Vd < 1$ ( $2.0 \sqrt{f'_m}$ ); MAX=40	40	20
b) REINFORCING TAKING ENTIRE SHEAR		
FLEXURAL ( $3.0 \sqrt{f'_m}$ ); MAX=150	110	55
SHEAR WALLS		
$M/Vd \geq 1$ ( $1.5 \sqrt{f'_m}$ ); MAX=75	55	28
$M/Vd < 1$ ( $2.0 \sqrt{f'_m}$ ); MAX=45	45	23
MODULUS OF ELASTICITY ( $1000 f'_m$ )	1350000	675000
MODULUS OF RIGIDITY ( $400 f'_m$ )	540000	N.A.
BEARING ON FULL AREA ( $.25 f'_m$ ); MAX=900	338	169
BEARING ON 1/3 OR LESS OF AREA ( $.375 f'_m$ ) (MAX=1200)	506	253

\* AS PER 10.1.5 OF "BUILDING CODE REQUIREMENTS FOR CONCRETE MASONRY STRUCTURES (PROPOSED AS ACI STANDARD).

N/A NOT APPLY

EBASCO SERVICES INCORPORATED

BY <sup>cc.</sup> A. LEON DATE 10/5/84

SHEET 1 OF 1

CHKD. BY K. Shih DATE 10-5-84

OFS NO. \_\_\_\_\_ DEPT. NO. 653

CLIENT LP&L

PROJECT WATERFORD # 3

SUBJECT CONC. BLOCK WALLS, - MODULUS USED.

ITEM # 15

1. THE MODULUS USED IN WALL ANALYSIS IS THE MODULUS OF ELASTICITY. SEE ITEM # 14

BY G. WU DATE 9/26/84  
 CHKD. BY K. S. J. DATE 10-1-84  
 CLIENT LP & L  
 PROJECT WATERFORD S.E.S. #3  
 SUBJECT CONCRETE MASONRY WALL

SHEET 1 OF 1  
 DEPT. 653  
 NO. \_\_\_\_\_

ITEM # 16

HOLLOW BLOCK WALL - 12" THICK

VERTICAL REINF. BARS 4-#6 @ 48"  
 HORIZONTAL DUR-O-WALL TRUSS WITH 3/16" ROD @  
 EVERY OTHER COURSE

$A_{SV} = .44 \times 4 = 1.76 \text{ } \checkmark \text{ NO. 9 GAGE DIAGONAL}$

$A_{SH} = \frac{\pi}{4} (3/16)^2 \times 2 + \frac{\pi}{4} (1.15)^2 \cos^2 51^\circ = .066 \text{ } \checkmark$

\* THE AVERAGE HORIZONTAL CROSS-SECTIONAL AREA FOR A HOLLOW BLOCK IS 114.4"

$A_{AVER} = \frac{114.4 \times 8}{16} = 57.2 \text{ } \checkmark \text{ TWO COURSES} \times 2 = 114.4 \text{ } \checkmark$

VERTICAL STEEL =  $\frac{A_{SV}}{A_H} = \frac{1.76}{114.4} = .015$

HORIZONTAL STEEL =  $\frac{A_{SH}}{A_V} = \frac{0.066}{114.4} = .00057$

HORIZONTAL + VERTICAL =  $.015 + .00057 = .01557$

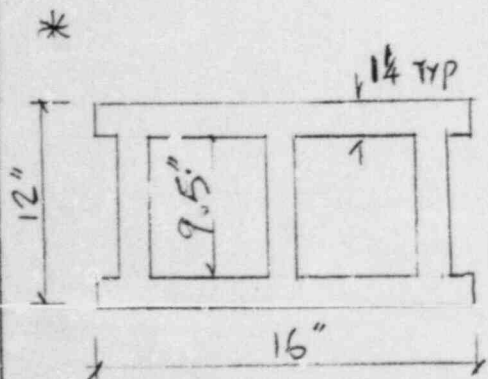
By Code \*\*  
11.3.2.2

.0007

.0007

.0002

\*\* ACI 531



HOLLOW BLOCK

$A_{HORIZ.} = 1.25 \times 16 \times 2 + 1.25 \times 9.5 \times 3 = 40 + 35.6 = 75.6 \text{ } \checkmark$

SOLID BLOCK

$A_{HORIZ.} = 16 \times 12 = 192 \text{ } \checkmark$

For a 48" width.  $A_H = \frac{2 \times 75.6 + 192}{3} = 114.4 \text{ } \checkmark$

BY E. KRIVCOV DATE 9-27-84

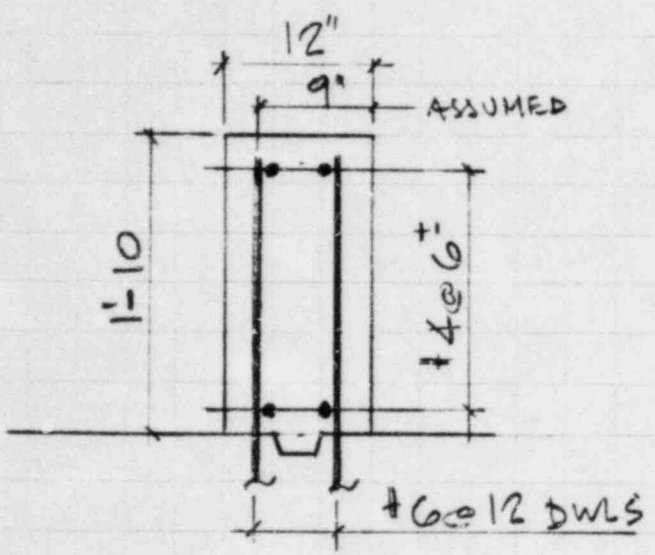
SHEET 1 OF 1

CHKD. BY K. Shih DATE 10-6-84

OFS NO. \_\_\_\_\_ DEPT. NO. 653

CLIENT \_\_\_\_\_ LP & L  
 PROJECT \_\_\_\_\_ WATERFORD #3  
 SUBJECT \_\_\_\_\_ MIN REINFG REQ'D. FOR 12" WIDE CURBS ITEM # 16

REF. DWG. NO. G765302



$$A_s^{HORIZ} = .40 \text{ in}^2/\text{FT EF} (+4@6 \text{ EF})$$

(PROVIDED)

$$A_s^{VERT} = .44 \text{ in}^2/\text{FT EF} (+6@12 \text{ EF})$$

(PROVIDED)

REINFG. PROVIDED

"A" - CONSIDERING CURBS AS A WALL

$$A_s^{VERT} \text{ REQ'D. PER FT} = 12 \times 12 \times .0015 = .22 \text{ in}^2/\text{FT BF OR } .11 \text{ in}^2/\text{FT EF} < .40$$

$$A_s^{HORIZ} \text{ REQ'D PER FT} = 12 \times 12 \times .0025 = .36 \text{ in}^2/\text{FT BF OR } .18 \text{ in}^2/\text{FT EF} < .44$$

"B" - CONSIDERING CURBS AS A FLEXURAL MEMBER

$$A_s^{VERT} = 12 \times 9 \times .0033 = .36 \text{ in}^2/\text{FT} < .44 \text{ in}^2$$