PROJECT: GSA - 517 GOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS RUN 2
DATE: FEB. 19. 1992

****

WALL NUMBER 17

Wall height? ====> 11 ft. f'c: 3000 psi

Wall length? ====> 9.5 ft. fv: 40 ksi

Thickness? ======> 8 in. Ec: 3122.018 ksi

Av: ==========> 0.2 sq. in.

d: ==========> 91.2 in.

s: ==========> 10 in. Vs: 72.96 kips

****

WALL NO.	LEVEL	AXIAL SHEAR kips	TORSIONAL SHEAR kips	CUM. TOT. SHEAR kips	FACTORED ULT. CAP. kips	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL in.
17	ROOF	9.3	1.7	11	175.885	0.0813	0.0014
	8	8.1	1.5	20.6	177.661	0.1507	0.0027
	7	7.1	1.3	29	179.438	0.2101	0.0038
	6	6.1	1.1	36.2	181.214	0.2597	0.0048
	5	5.1	1	42.3	182.991	0.3005	0.0056
	4	4.2	0.8	47.3	184.767	0.3328	0.0063
	3	3.2	0.6	51.1	186.544	0.3561	0.0068
	2	2.2	0.4	53.7	188.320	0.3707	0.0071
	1	0.4	0	54.1	190.097	0.3700	0.0072

PROJECT: GSA - 517 GOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS RUN 2
DATE: FEB. 19. 1992

****

WALL NUMBER 18

Wall height? ====> 11 ft. f'c: 3000 psi

Wall length? ====> 7 ft. fv: 40 ksi

Thickness? ======> 8 in. Ec: 3122.018 ksi

Av: ==========> 0.2 sq. in.

d: ==========> 67.2 in.

s: ==========> 10 in. Vs: 53.76 kips

****

WALL NO.	LEVEL	AXIAL SHEAR kips	TORSIONAL SHEAR kips	CUM. TOT. SHEAR kips	FACTORED ULT. CAP. kips	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL in.
18	ROOF	4.5	0.8	5.3	129.599	0.0532	0.0009
	8	3.9	0.7	9.9	130.908	0.0983	0.0017
	7	3.4	0.6	13.9	132.217	0.1367	0.0025
	6	2.9	0.5	17.3	133.526	0.1684	0.0031
	5	2.5	0.5	20.3	134.835	0.1957	0.0036
	4	2	0.4	22.7	136.144	0.2168	0.0041
	3	1.5	0.3	24.5	137.453	0.2317	0.0044
	2	1	0.2	25.7	138.762	0.2408	0.0046
	1	0.2	0	25.9	140.071	0.2404	0.0045

PROJECT: GSA - 517 GOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS RUN 2
DATE: FEB. 19. 1992

****

WALL NUMBER 19

Wall height? ====>	11 ft.	f'c:	3000 psi
Wall length? ====>	7 ft.	fv:	40 ksi
Thickness? ======>	8 in.	Ec:	3122.018 ksi
Av: ==========>	0.2 sq. in.		
d: ==========>	67.2 in.		
s: ==========>	10 in.	Vs:	53.76 kips

****

WALL NO.	LEVEL	AXIAL SHEAR kips	TORSIONAL SHEAR kips	CUM. TOT. SHEAR kips	FACTORED ULT. CAP. kips	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL in.
19	ROOF	0	0	0	129.599	0.0000	0
	8	3.9	0.8	4.7	130.908	0.0467	0.0008
	7	3.4	0.7	8.8	132.217	0.0865	0.0015
	6	2.9	0.6	12.3	133.526	0.1198	0.0022
	5	2.5	0.5	15.3	134.835	0.1475	0.0027
	4	2	0.4	17.7	136.144	0.1690	0.0032
	3	1.5	0.3	19.5	137.453	0.1844	0.0035
	2	1	0.2	20.7	138.762	0.1939	0.0037
	1	0.2	0	20.9	140.071	0.1940	0.0037

APPENDIX C

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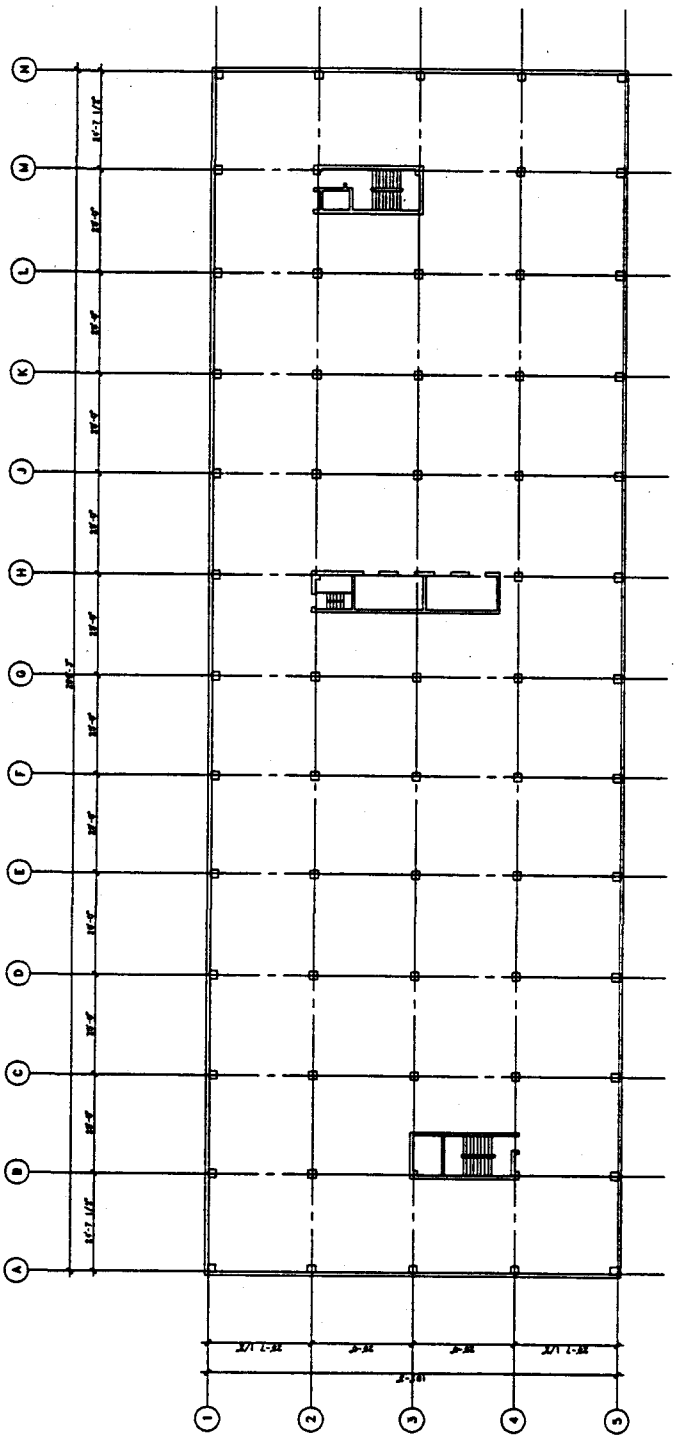

TYPICAL FLOOR PLAN
SCALE: 1/16" = 1'-0"

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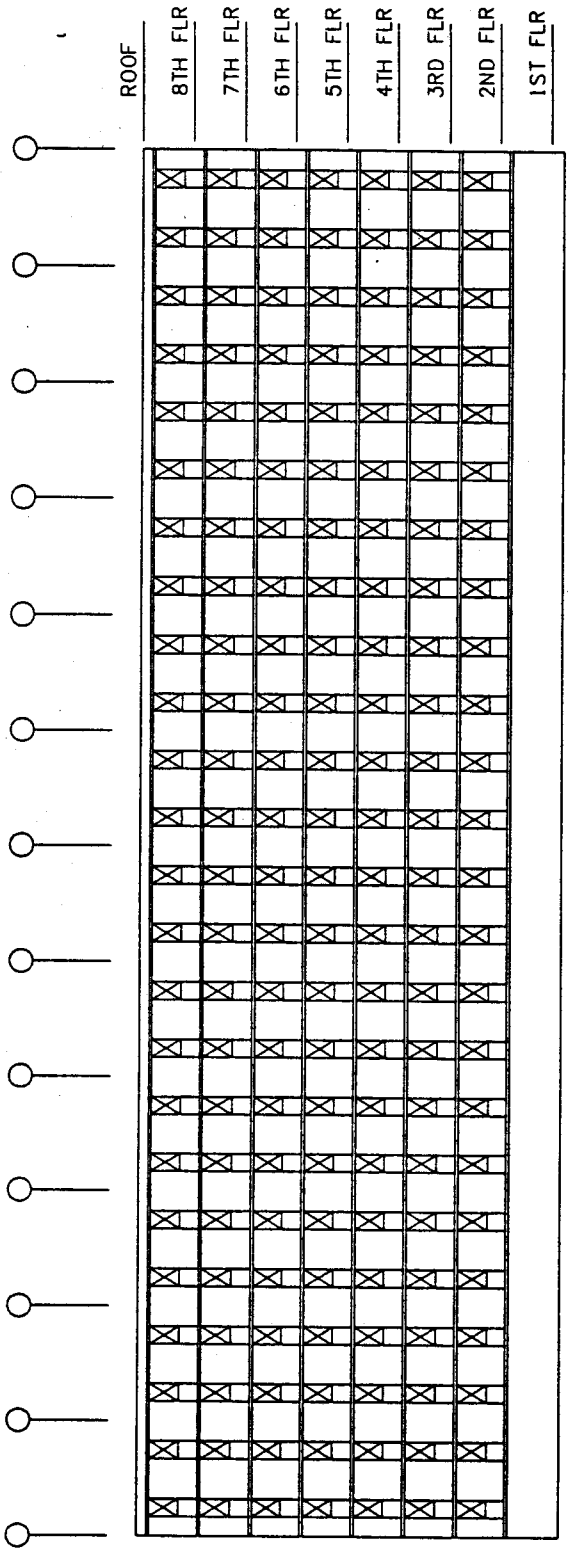

ELEVATION
N.T.S.

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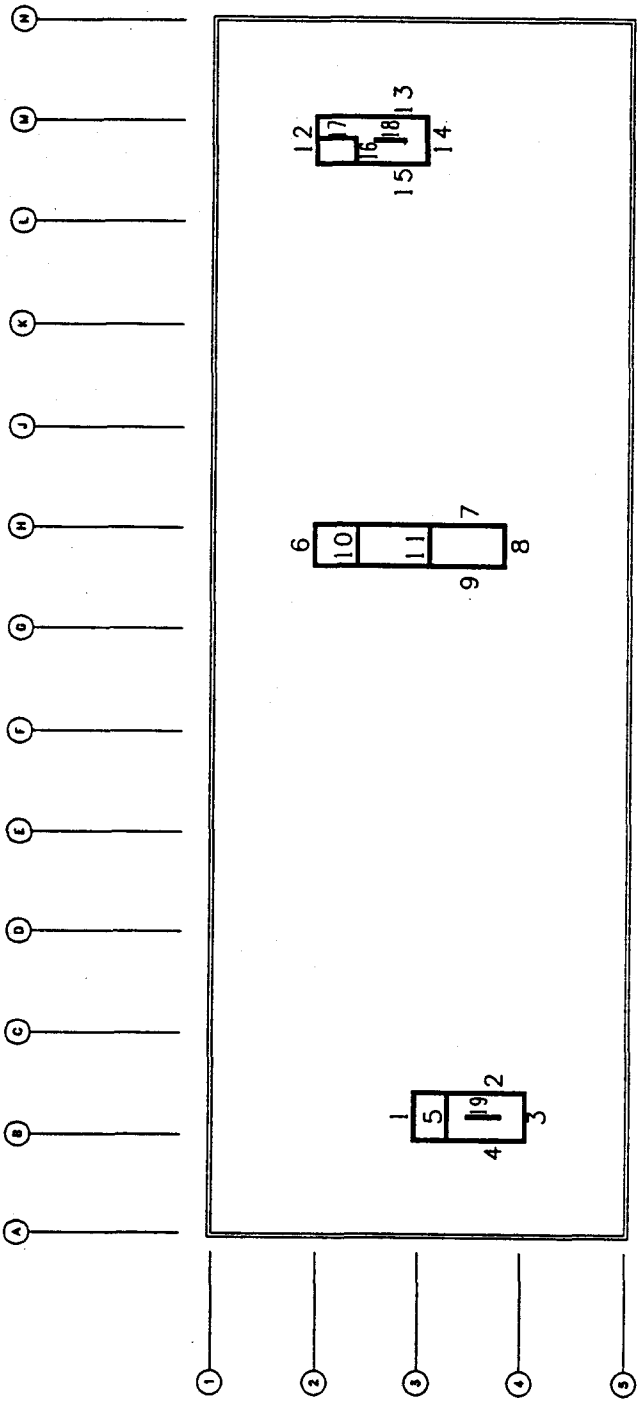

SHEAR WALL PLAN

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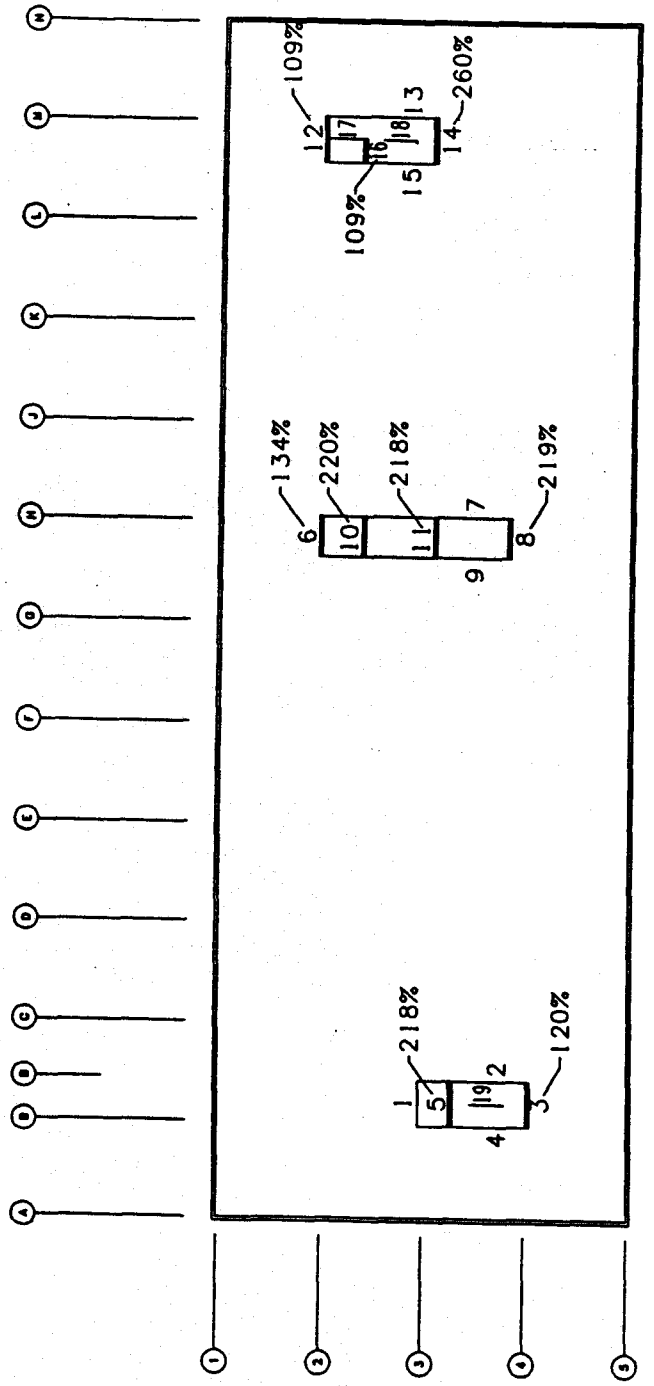

OVERSTRESSED WALLS

APPENDIX D

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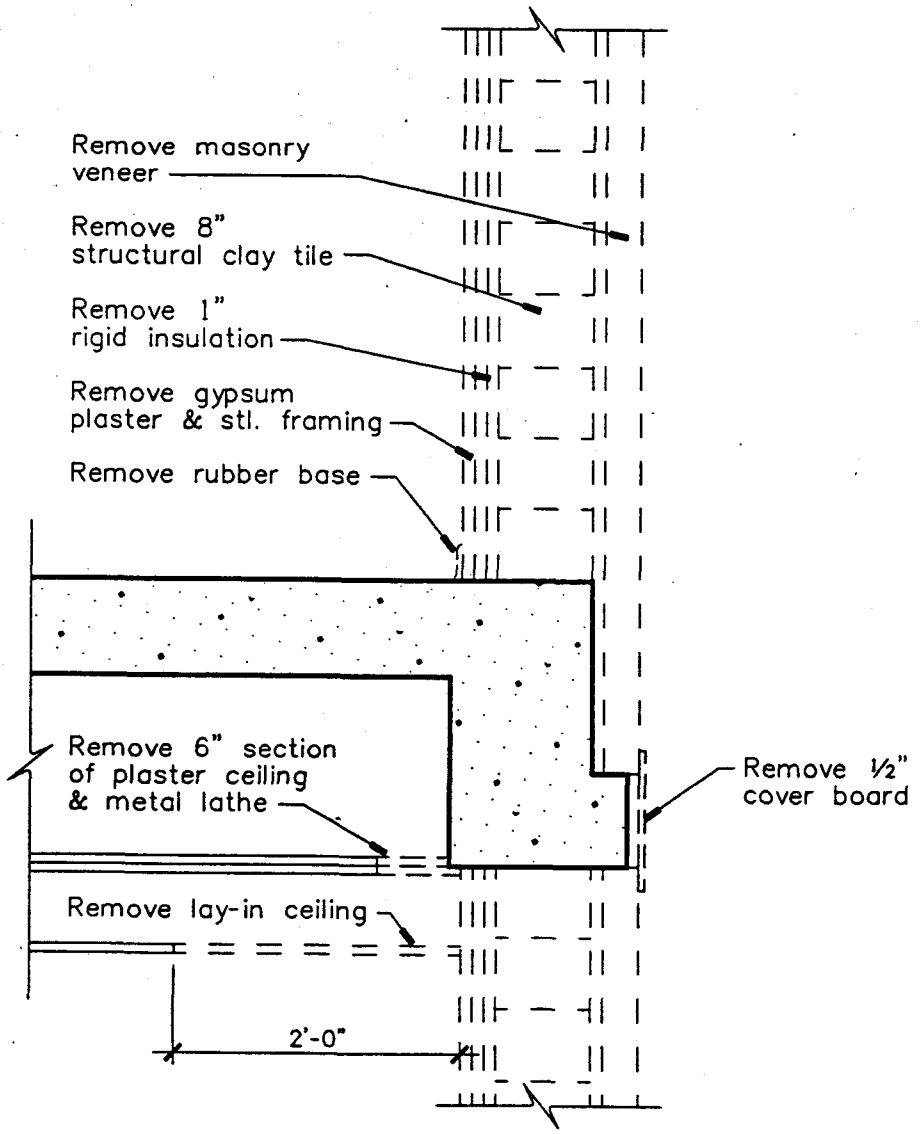

1

DETAIL

SCALE: 3/4"= 1'-0"

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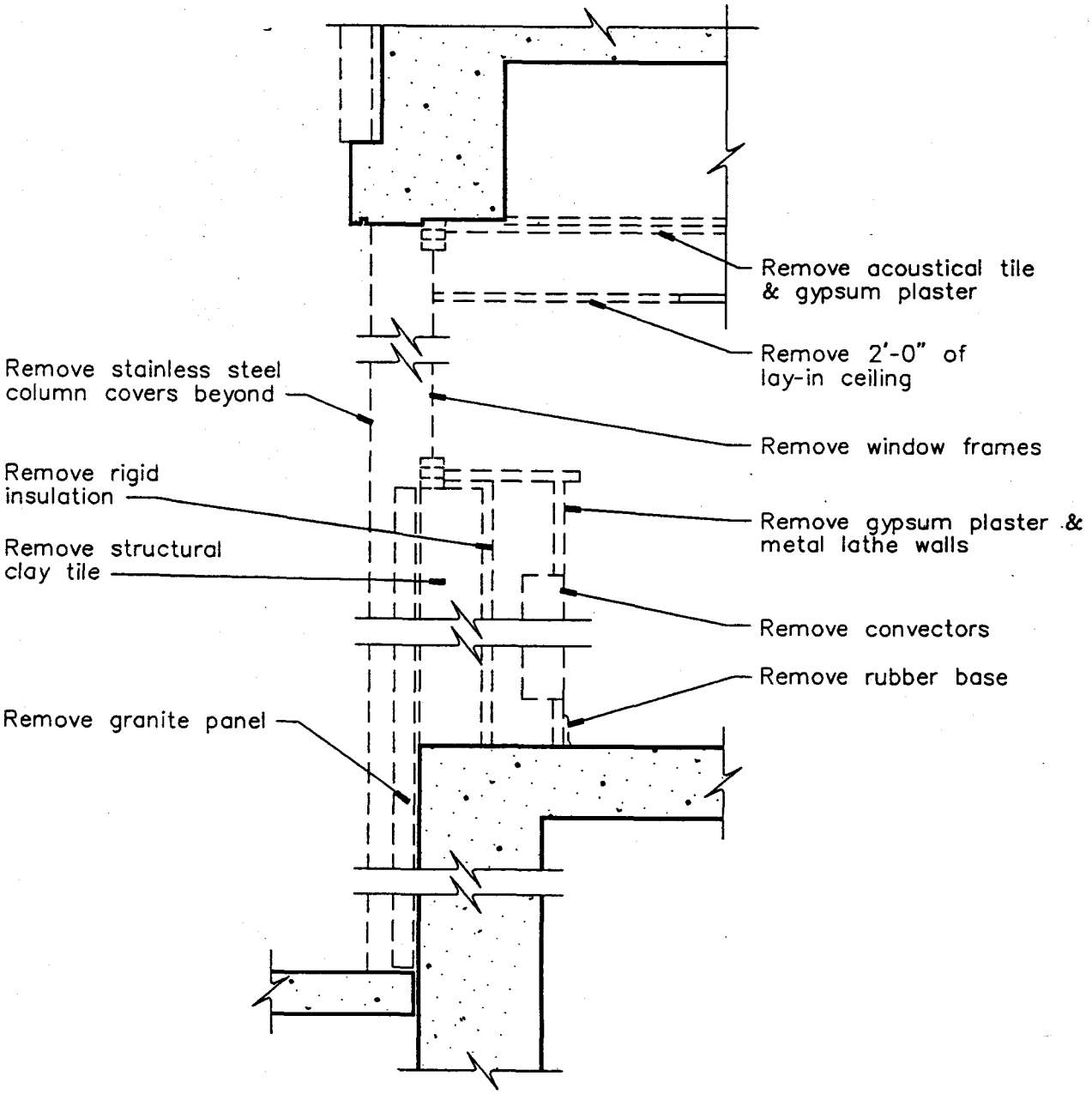

1A

DETAIL

SCALE: 3/4"= 1'-0"

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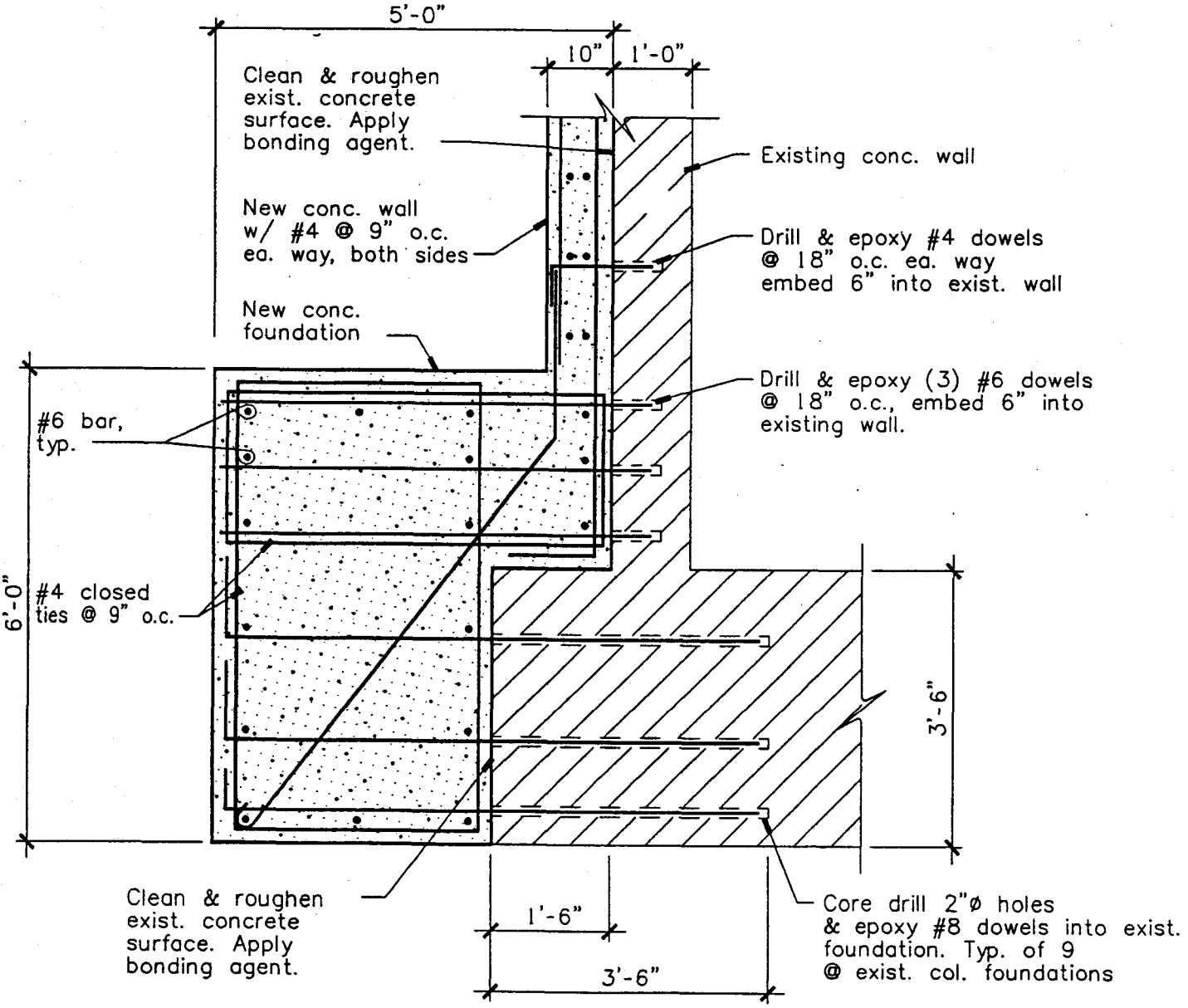

2

CONCEPTUAL FOUNDATION DETAIL @ EXISTING COLUMN FOOTING

SCALE: 1/2"= 1'-0"

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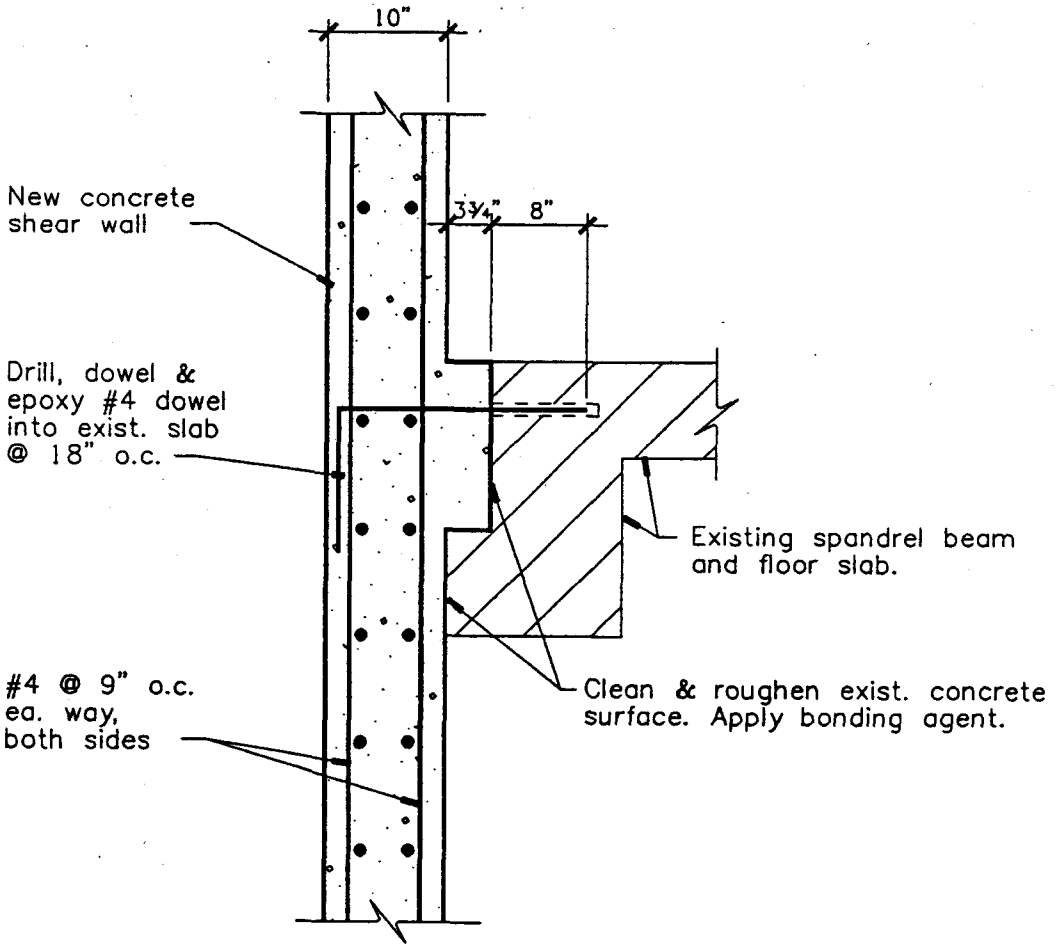

3

TYPICAL SHEAR WALL/FLOOR SLAB CONNECTION DETAIL

SCALE: 3/4"= 1'-0"

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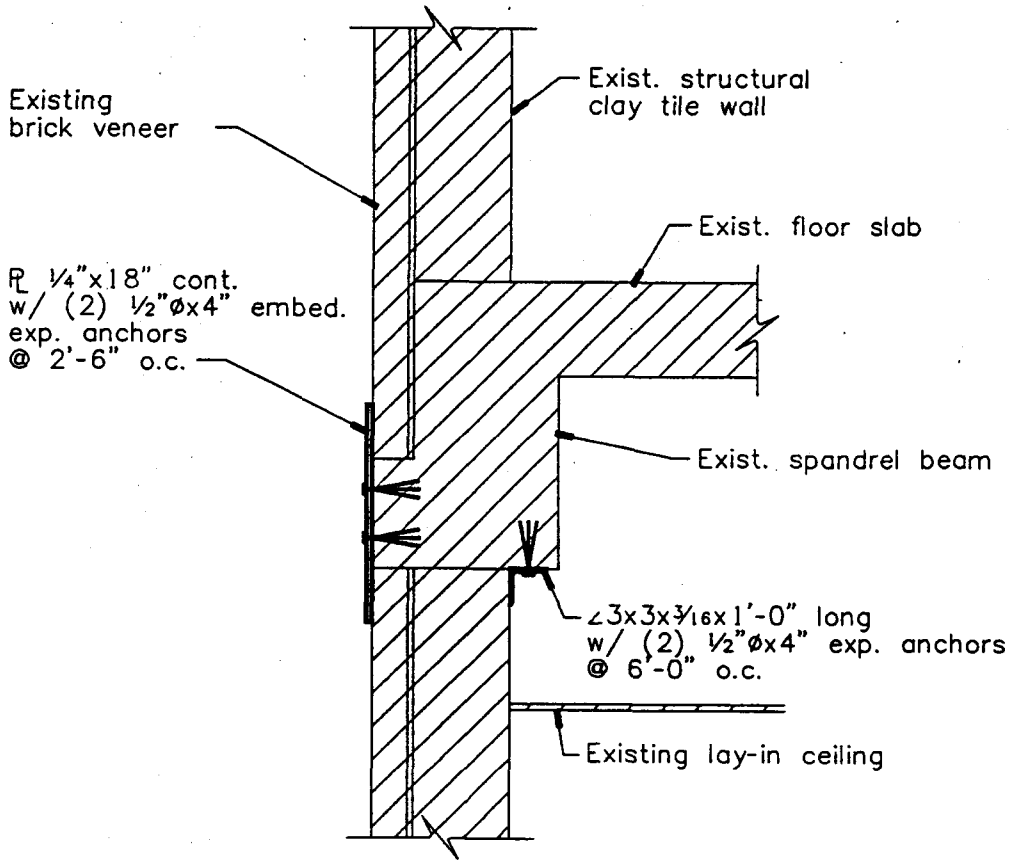

4

LATERAL SUPPORT FOR EXISTING EXTERIOR WALL

SCALE: 3/4"= 1'-0"

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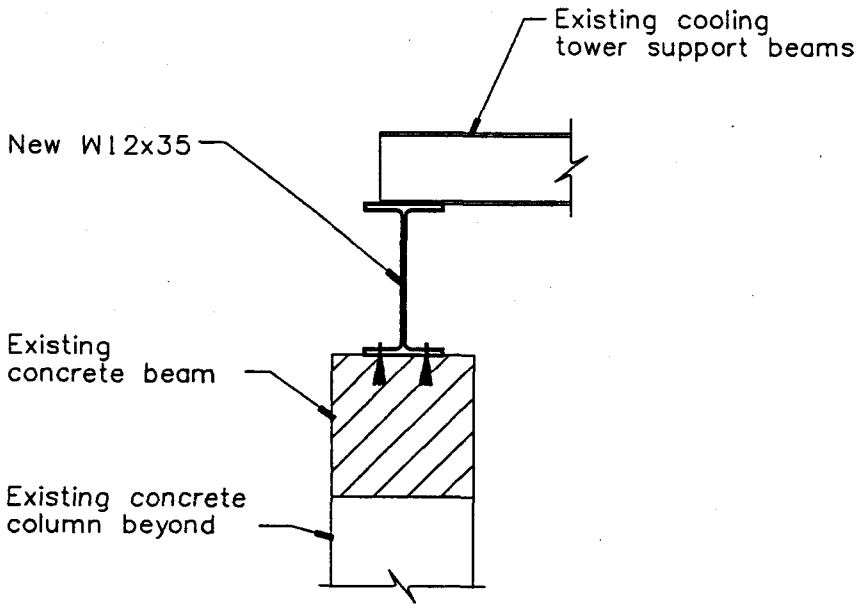

5

COOLING TOWER SUPPORT DETAIL

SCALE: 3/4"= 1'-0"

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Project _____
Subject _____
Project No. _____ Date _____ By _____

- ☐ Memorandum
- ☐ Telephone record
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- ☐ _____

COST ESTIMATE - OPTION 1A

100% OF SEISMIC FORCE

Copies to:

June 1990

Designing to Shape the Future

STATEMENT OF PROBABLE COST:OPTION 1A File No: 91062111

Project: GSA SEISMIC ANALYSIS
Location: 517 GOLD AVE., SW
Estimate No: 2 LBL: $1,452,438
Date: MARCH 26, 1992 $0

Description	Quantity	/Unit	TOTAL COST: Unit	Total	Summary:
DIVISION 1: General Requirements					
OFFICE TRAILER	10	MO	$165	$1,650	
TEMP. UTILITIES	10	MO	$600	$6,000	
PROJ. MGR.	20	WEEK	$1,620	$32,400	
SUPERINTENDENT	40	WEEK	$1,380	$55,200	
SCAFFOLDING	10	MO	$8,160	$81,600	
TESTING	1	LS	$25,000	$25,000	
BARRIERS	1	LS	$15,000	$15,000	
CRANE	10	MO	$8,000	$80,000	
PERMIT/BOND/INS.	1	LS	$42,000	$42,000	
CLEANUP	1	LS	$10,000	$10,000	
				$0	
				$0	
SUBTOTAL: General Requirements					$348,850
DIVISION 2: Site Work					
DEMO SIDEWALK	70	SY	$6.25	$438	
DEMO CURB & GUTTER	100	LF	$4.28	$428	
DEMO PAVEMENT	115	SY	$5.90	$679	
CLEAN & ROUGHEN WALL	1,107	SF	$5.20	$5,756	
HAUL	215	CY	$13.40	$2,881	
REMOVE BRICK WALL	5,340	SF	$2.50	$13,350	
REMOVE STRUCTURAL CLAY TILE	3,360	SF	$2.90	$9,744	
REMOVE PLASTER FINISH	4,260	SF	$0.70	$2,982	
REMOVE METAL PANELS	896	SF	$0.60	$538	
REMOVE WINDOW FRAMES	56	EA	$23.00	$1,288	
REMOVE STUCCO	2,100	SF	$0.50	$1,050	
REMOVE GRANITE PANEL	305	SF	$4.00	$1,220	
REMOVE RIBBON WINDOW 1ST FL	2	EA	$16.00	$32	
EXCAVATION	1,185	CY	$7.38	$8,745	
SHORING	4,640	SF	$7.95	$36,888	
STRUCT. FILL	178	CY	$13.55	$2,412	
COMPACTION	178	CY	$4.83	$860	
BACKFILL	859	CY	$2.15	$1,847	
COMPACTION	859	CY	$3.25	$2,792	
SIDEWALK	630	SF	$3.85	$2,426	
CURB & GUTTER	100	LF	$9.70	$970	
PAVEMENT	1,035	SY	$23.90	$24,737	
				$0	
				$0	
				$0	
SUBTOTAL: Site Work					$122,061
DIVISION 3: Concrete					

STATEMENT OF PROBABLE COST:OPTION 1A File No: 91062111

Project: GSA SEISMIC ANALYSIS
Location: 517 GOLD AVE., SW
Estimate No: 2 LBL: $1,452,438
Date: MARCH 26, 1992 $0

Description	Quantity	/Unit	TOTAL COST: Unit	Total	Summary:
DRILL & DOWEL FDN	200	EA	$51.75	$10,350	
BONDING AGENT - FDN	10	GAL	$50.00	$500	
DRILL & DOWEL WALL	240	EA	$17.25	$4,140	
BONDING AGENT - WALL	24	GAL	$50.00	$1,200	
FDN FORMWORK	990	SFCA	$7.05	$6,980	
FORMWORK (BELOW GRADE)	2,268	SFCA	$15.00	$34,020	
FORMWORK (ABOVE GRADE)	10,150	SFCA	$12.00	$121,800	
FDN. CONC (INCL. REINF.)	242	CY	$325.00	$78,650	
WALL (BELOW GRADE, REINF)	90	CY	$390.00	$35,100	
WALL REINF	20	TON	$1,160.00	$23,200	
WALL CONC.	367	CY	$70.00	$25,690	
PLACING WALL CONC.	367	CY	$31.00	$11,377	
FORM LINER	10,150	SF	$4.00	$40,600	
ROUGHEN FLRS.	1,864	SF	$5.20	$9,693	
DRILL & DOWEL FLRS.	536	EA	$17.25	$9,246	
				$0	
				$0	
				$0	
				$0	
SUBTOTAL: Concrete					$412,545
DIVISION 4: Masonry					
				$0	
				$0	
				$0	
				$0	
SUBTOTAL: Masonry					$0
DIVISION 5: Metals					
WALL PLATE	43	TON	$2,000.00	$86,200	
WALL ANGLES	5,250	LB	$1.66	$8,715	
ANCHOR PLATE	4,506	EA	$17.25	$77,729	
				$0	
				$0	
				$0	
				$0	
SUBTOTAL: Metals					$172,644
DIVISION 6: Wood & Plastics					
				$0	
				$0	
				$0	
				$0	

STATEMENT OF PROBABLE COST:OPTION 1A File No: 91062111

Project: GSA SEISMIC ANALYSIS
Location: 517 GOLD AVE., SW
Estimate No: 2 LBL: $1,452,438
Date: MARCH 26, 1992 $0

Description	Quantity /Unit	TOTAL COST: Unit	Total	Summary:
SUBTOTAL: Wood & Plastics				$0
DIVISION 7: Thermal & Moisture Protection				
BATT INSUL. 3"	6,602 SF	$0.45	$2,971	
SEALANT	1 LS	$4,500.00	$4,500	
			$0	
			$0	
			$0	
			$0	
			$0	
			$0	
			$0	
			$0	
			$0	
			$0	
SUBTOTAL: Thermal & Moisture Protection				$7,471
DIVISION 8: Doors & Windows				
ALUM. WINDOW FRAME 4'X4'	1,021 SF	$11.00	$11,231	
INSULATED/TINTED GLAZING	1,146 SF	$14.20	$16,273	
			$0	
			$0	
			$0	
			$0	
			$0	
			$0	
			$0	
			$0	
			$0	
SUBTOTAL: Doors & Windows				$27,504
DIVISION 9: Finishes				
GYP. BD. 5/8" TYPE X	6,602 SF	$0.87	$5,744	
MTL STUDS	6,602 SF	$0.73	$4,819	
EXTERIOR SHEATHING	6,602 SF	$0.90	$5,942	
PAINTING - INTERIOR WALLS	6,602 SF	$0.20	$1,320	
VCT 12X12	400 SF	$3.40	$1,360	
VINYL BASE	400 LF	$1.40	$560	
EXTEND LAY-IN CEILING	400 SF	$2.50	$1,000	
SEAL EXTERIOR WALL	8,200 SF	$3.00	$24,600	
			$0	
			$0	

STATEMENT OF PROBABLE COST:OPTION 1A File No: 91062111

Project: GSA SEISMIC ANALYSIS
Location: 517 GOLD AVE., SW
Estimate No: 2 LBL: $1,452,438
Date: MARCH 26, 1992 $0

Description	Quantity /Unit	TOTAL COST: Unit	Total	Summary:
**********				
			$0	
			$0	
SUBTOTAL: Finishes				$45,345
DIVISION 10: Specialties				
			$0	
			$0	
			$0	
			$0	
SUBTOTAL: Specialties				$0
DIVISION 11: Equipment				
			$0	
			$0	
			$0	
			$0	
SUBTOTAL: Equipment				$0
DIVISION 12: Furnishings				
BLINDS 1"	896 SF	$2.66	$2,383	
			$0	
			$0	
			$0	
			$0	
			$0	
			$0	
			$0	
			$0	
			$0	
			$0	
			$0	
SUBTOTAL: Furnishings				$2,383
DIVISION 13: Special Construction				
			$0	
			$0	
			$0	
			$0	
SUBTOTAL: Special Construction				$0
DIVISION 14: Conveying Systems				

STATEMENT OF PROBABLE COST:OPTION 1A File No: 91062111

Project: GSA SEISMIC ANALYSIS
Location: 517 GOLD AVE., SW
Estimate No: 2 LBL: $1,452,438
Date: MARCH 26, 1992 $0

Description	Quantity /Unit	TOTAL COST: Unit	Total	Summary:
			$0	
			$0	
			$0	
			$0	
SUBTOTAL: Conveying Systems				$0
DIVISION 15: Mechanical				
REMOVE & REPLACE CONVECTORS	1 LS	$5,000.00	$5,000	
			$0	
			$0	
			$0	
		Subtotal:		$5,000
Subcontractor OH & P:	15 %		$750	
SUBTOTAL: Mechanical				$5,750
DIVISION 16: Electrical				
			$0	
			$0	
			$0	
			$0	
		Subtotal:		$0
Subcontractor OH & P:	%		$0	
SUBTOTAL: Electrical				$0

SUBTOTAL: Divisions 1 - 16 $1,144,553

CONTRACTOR OH & P: 20 % $228,911

SUBTOTAL: $1,373,464

N M GROSS RECEIPTS TAX: 5.75 % $78,974

STATEMENT OF PROBABLE COST:OPTION 1A File No: 91062111

Project: GSA SEISMIC ANALYSIS
Location: 517 GOLD AVE., SW
Estimate No: 2 LBL: $1,452,438
Date: MARCH 26, 1992 $0

Description	Quantity /Unit	TOTAL COST: Unit	Total	Summary:

****

TOTAL CONSTRUCTION COST: $1,452,438

****

Square Foot Cost Analysis: 244,800 SF $5.93 /SF

****

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COST ESTIMATE - OPTION 1A

80% OF SEISMIC FORCE

Copies to:

June 1990

Designing to Shape the Future

STATEMENT OF PROBABLE COST:OPTION 1A - 80% OF FORCE File No: 91062111

Project: GSA SEISMIC ANALYSIS
Location: 517 GOLD AVE., SW
Estimate No: 2 LBL: $1,441,545
Date: MARCH 26, 1992 $0

Description	Quantity	/Unit	TOTAL COST: Unit	Total	Summary:
DIVISION 1: General Requirements					
OFFICE TRAILER	10	MO	$165	$1,650	
TEMP. UTILITIES	10	MO	$600	$6,000	
PROJ. MGR.	20	WEEK	$1,620	$32,400	
SUPERINTENDENT	40	WEEK	$1,380	$55,200	
SCAFFOLDING	10	MO	$8,160	$81,600	
TESTING	1	LS	$25,000	$25,000	
BARRIERS	1	LS	$15,000	$15,000	
CRANE	10	MO	$8,000	$80,000	
PERMIT/BOND/INS.	1	LS	$42,000	$42,000	
CLEANUP	1	LS	$10,000	$10,000	
				$0	
				$0	
SUBTOTAL: General Requirements					$348,850
DIVISION 2: Site Work					
DEMO SIDEWALK	70	SY	$6.25	$438	
DEMO CURB & GUTTER	100	LF	$4.28	$428	
DEMO PAVEMENT	115	SY	$5.90	$679	
CLEAN & ROUGHEN WALL	1,107	SF	$5.20	$5,756	
HAUL	215	CY	$13.40	$2,881	
REMOVE BRICK WALL	5,340	SF	$2.50	$13,350	
REMOVE STRUCTURAL CLAY TILE	3,360	SF	$2.90	$9,744	
REMOVE PLASTER FINISH	4,260	SF	$0.70	$2,982	
REMOVE METAL PANELS	896	SF	$0.60	$538	
REMOVE WINDOW FRAMES	56	EA	$23.00	$1,288	
REMOVE STUCCO	2,100	SF	$0.50	$1,050	
REMOVE GRANITE PANEL	305	SF	$4.00	$1,220	
REMOVE RIBBON WINDOW 1ST FL	2	EA	$16.00	$32	
EXCAVATION	1,185	CY	$7.38	$8,745	
SHORING	4,640	SF	$7.95	$36,888	
STRUCT. FILL	178	CY	$13.55	$2,412	
COMPACTION	178	CY	$4.83	$860	
BACKFILL	859	CY	$2.15	$1,847	
COMPACTION	859	CY	$3.25	$2,792	
SIDEWALK	630	SF	$3.85	$2,426	
CURB & GUTTER	100	LF	$9.70	$970	
PAVEMENT	1,035	SY	$23.90	$24,737	
				$0	
				$0	
				$0	
SUBTOTAL: Site Work					$122,061
DIVISION 3: Concrete					

STATEMENT OF PROBABLE COST:OPTION 1A - 80% OF FORCE File No: 91062111

Project: GSA SEISMIC ANALYSIS
Location: 517 GOLD AVE., SW
Estimate No: 2 LBL: $1,441,545
Date: MARCH 26, 1992 $0

Description	Quantity	/Unit	TOTAL Unit	COST: Total	Summary:
DRILL & DOWEL FDN	200	EA	$51.75	$10,350	
BONDING AGENT - FDN	10	GAL	$50.00	$500	
DRILL & DOWEL WALL	240	EA	$17.25	$4,140	
BONDING AGENT - WALL	24	GAL	$50.00	$1,200	
FDN FORMWORK	990	SFCA	$7.05	$6,980	
FORMWORK (BELOW GRADE)	2,268	SFCA	$15.00	$34,020	
FORMWORK (ABOVE GRADE)	10,150	SFCA	$12.00	$121,800	
FDN. CONC (INCL. REINF.)	242	CY	$325.00	$78,650	
WALL (BELOW GRADE, REINF)	90	CY	$390.00	$35,100	
WALL REINF	13	TON	$1,160.00	$14,616	
WALL CONC.	367	CY	$70.00	$25,690	
PLACING WALL CONC.	367	CY	$31.00	$11,377	
FORM LINER	10,150	SF	$4.00	$40,600	
ROUGHEN FLRS.	1,864	SF	$5.20	$9,693	
DRILL & DOWEL FLRS.	536	EA	$17.25	$9,246	
				$0	
				$0	
				$0	
				$0	
SUBTOTAL: Concrete					$403,961
DIVISION 4: Masonry					
				$0	
				$0	
				$0	
				$0	
SUBTOTAL: Masonry					$0
DIVISION 5: Metals					
WALL PLATE	43	TON	$2,000.00	$86,200	
WALL ANGLES	5,250	LB	$1.66	$8,715	
ANCHOR PLATE	4,506	EA	$17.25	$77,729	
				$0	
				$0	
				$0	
				$0	
SUBTOTAL: Metals					$172,644
DIVISION 6: Wood & Plastics					
				$0	
				$0	
				$0	
				$0	

STATEMENT OF PROBABLE COST:OPTION 1A - 50% OF FORCE File No: 71062111

Project: GSA SEISMIC ANALYSIS
Location: 517 GOLD AVE., SW
Estimate No: 2 LBL: $1,441,343
Date: MARCH 26, 1992 $0

Description	Quantity /Unit	TOTAL COST: Unit	Total	Summary:
SUBTOTAL: Wood & Plastics				$0
DIVISION 7: Thermal & Moisture Protection				
BATT INSUL. 3"	6,602 SF	$0.45	$2,971	
SEALANT	1 LS	$4,500.00	$4,500	
			$0	
			$0	
			$0	
			$0	
			$0	
			$0	
			$0	
			$0	
			$0	
			$0	
SUBTOTAL: Thermal & Moisture Protection				$7,471
DIVISION 8: Doors & Windows				
ALUM. WINDOW FRAME 4'X4'	1,021 SF	$11.00	$11,231	
INSULATED/TINTED GLAZING	1,146 SF	$14.20	$16,273	
			$0	
			$0	
			$0	
			$0	
			$0	
			$0	
			$0	
			$0	
			$0	
			$0	
SUBTOTAL: Doors & Windows				$27,5[illegible]
DIVISION 9: Finishes				
GYP. BD. 5/8" TYPE X	6,602 SF	$0.87	$5,744	
MTL STUDS	6,602 SF	$0.73	$4,819	
EXTERIOR SHEATHING	6,602 SF	$0.90	$5,942	
PAINTING - INTERIOR WALLS	6,602 SF	$0.20	$1,320	
VCT 12X12	400 SF	$3.40	$1,360	
VINYL BASE	400 LF	$1.40	$560	
EXTEND LAY-IN CEILING	400 SF	$2.50	$1,000	
SEAL EXTERIOR WALL	8,200 SF	$3.00	$24,600	
			$0	
			$0	

STATEMENT OF PROBABLE COST:OPTION 1A - 80% OF FORCE File No: 71062111

Project: GSA SEISMIC ANALYSIS
Location: 517 GOLD AVE., SW
Estimate No: 2 LBL: $1,441,047
Date: MARCH 26, 1992 $/

Description	Quantity /Unit	TOTAL COST: Unit	Total	Summary:
			$0	
			$0	
SUBTOTAL: Finishes				$45,345
DIVISION 10: Specialties				
			$0	
			$0	
			$0	
			$0	
SUBTOTAL: Specialties				$0
DIVISION 11: Equipment				
			$0	
			$0	
			$0	
			$0	
SUBTOTAL: Equipment				$0
DIVISION 12: Furnishings				
BLINDS 1"	896 SF	$2.66	$2,383	
			$0	
			$0	
			$0	
			$0	
			$0	
			$0	
			$0	
			$0	
			$0	
			$0	
			$0	
SUBTOTAL: Furnishings				$2,383
DIVISION 13: Special Construction				
			$0	
			$0	
			$0	
			$0	
SUBTOTAL: Special Construction				$0
DIVISION 14: Conveying Systems				

STATEMENT OF PROBABLE COST:OPTION 1A - 80% OF FORCE File No: 91062111

Project: GSA SEISMIC ANALYSIS
Location: 517 GOLD AVE., SW
Estimate No: 2 LBL: $1,441,545
Date: MARCH 26, 1992 $0

Description	Quantity /Unit	TOTAL COST: Unit	Total	Summary:
**********				
			$0	
			$0	
			$0	
			$0	
SUBTOTAL: Conveying Systems				$0
DIVISION 15: Mechanical				
REMOVE & REPLACE CONVECTORS	1 LS	$5,000.00	$5,000	
			$0	
			$0	
			$0	
		Subtotal:		$5,000
Subcontractor OH & P:	15 %		$750	
SUBTOTAL: Mechanical				$5,750
DIVISION 16: Electrical				
			$0	
			$0	
			$0	
			$0	
		Subtotal:		$0
Subcontractor OH & P	%		$0	
SUBTOTAL: Electrical				$0
**********				
SUBTOTAL: Divisions 1 - 16				$1,135,967
CONTRACTOR OH & P:	20 %		$227,194	
SUBTOTAL:				$1,363,161
N M GROSS RECEIPTS TAX:	5.75 %		$78,382	
**********				

STATEMENT OF PROBABLE COST:OPTION 1A - 60% OF FORCE File No: 91062111

Project: GSA SEISMIC ANALYSIS
Location: 517 GOLD AVE., SW
Estimate No: 2 LBL: $1,441,545
Date: MARCH 26, 1992 $0

Description	Quantity /Unit	TOTAL COST: Unit	Total	Summary:
TOTAL CONSTRUCTION COST:				$1,441,545

Square Foot Cost Analysis: 244,800 SF $5.89 /SF

BPLW
Architects & Engineers, Inc.
2400 Louisiana Blvd. NE
AFC #5 Suite 400
Albuquerque, NM 87110
(505) 881-2759
63 East Main Street
Suite 602
Mesa, AZ 85201
(602) 827-2759

Project _____
Subject _____
Project No. _____ Date _____ By _____

- ☐ Memorandum
- ☐ Telephone record
- ☐ Note to the file
- ☐ Minutes of meeting
- ☐ To be typed
- ☐ _____

STRUCTURAL ANALYSIS

OPTION 1A

Copies to:

June 1990

Designing to Shape the Future

PAGE: _____

PROJECT : CBA SEISMIC ANALYSI
SUBJECT : OPTION 1A
FLR 1 DIAPHRAGM
DATE : MARCH 23 92 BY : ___JMW___

LATERAL & TORSIONAL FORCE DISTRIBUTION FOR RIGID DIAPHRAGMS

DESCRIPTION :

DIAPHRAGM LEVEL :

> Lateral Shear Force @ CM Acting Along 'X' Axis = 69.03 kips
> Lateral Shear Force @ CM Acting Along 'Y' Axis = 69.03 kips

> 'X' DIST. TO C. M. = 150 ft MAX. 'Y' DIM. = 300 ft
> 'Y' DIST. TO C. M. = 51 ft MAX. 'X' DIM. = 102 ft
(Used for Min Eccentricity)

DETERMINE CENTER OF RIGIDITY

--> WALLS/FRAMES PARALLEL TO 'Y' AXIS

WALL I.D. NUMBER	WALL THICKNESS (in)	WALL LENGTH (ft)	WALL HEIGHT (ft)	X-DIST. FROM DATUM	END TYPE FIXED=0 CANT=1	H / L	RELATIVE STIFFNESS WALL/FRAME	STIFFNESS x DISTANCE
2	10	24	13.5	35.08	1	0.563	3.473070139	121.84
4	12	27.33	13.5	24.33	1	0.494	5.091665546	123.88
7	12	24	13.5	175.67	1	0.583	4.167684167	732.14
9	10	46	13.5	166.42	1	0.293	8.490031173	1412.91
13	10	27.33	13.5	275.75	1	0.494	4.243054621	1170.02
15	10	27.33	13.5	264.92	1	0.494	4.243054621	1124.07
17	8	9.5	13.5	270	1	1.421	0.423500937	114.35
18	8	7.83	13.5	270	1	1.724	0.259671537	70.11
19	8	7.83	13.5	30	1	1.724	0.259671537	7.79
24	12	100	13.5	0.5	1	0.135	24.10559213	12.05
25	12	100	13.5	299.5	1	0.135	24.10559213	7219.62

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PROJECT : GSA SEISMIC ANALYSI
SUBJECT : OPTION 1A
FLR 1 DIAPHRAGM
DATE : MARCH 23 92 BY : ___JMW_____

--> WALLS/FRAMES PARALLEL TO 'X' AXIS

WALL I.D. NUMBER	WALL THICKNESS (in)	WALL LENGTH (ft)	WALL HEIGHT (ft)	Y-DIST FROM DATUM	END TYPE FIXED=0 CANT=1	H / L	RELATIVE STIFFNESS WALL/FRAME	STIFFNESS x DISTANCE
1	10	8.33	13.5	50.75	1	1.621	0.380717764	19.32
3	10	11.67	13.5	25.08	1	1.157	0.862423700	21.63
5	8	10	13.5	42.83	1	1.350	0.479909777	20.55
6	10	6.67	13.5	75.75	1	2.024	0.212383195	16.09
8	10	10.17	13.5	30.58	1	1.327	0.624758933	19.11
10	8	10	13.5	66	1	1.350	0.479909777	31.67
11	8	10	13.5	48.33	1	1.350	0.479909777	23.19
12	8	6.17	13.5	74.33	1	2.188	0.137561345	10.22
14	10	11.67	13.5	49.25	1	1.157	0.862423700	42.47
16	8	6.17	13.5	67	1	2.188	0.137561345	9.22
22	12	300	13.5	0.5	1	0.045	73.87461262	36.94
23	12	300	13.5	101.5	1	0.045	73.87461262	7498.27
20	10	34	13.5	-0.5	1	0.397	5.780731092	-2.89
21	10	34	13.5	102.5	1	0.397	5.780731092	592.52

X - DISTANCE TO CENTER OF RIGIDITY = 153.54 ft
Y - DISTANCE TO CENTER OF RIGIDITY = 50.95 ft

X - ECC. FROM CENTER OF MASS = 3.54 ft
Y - ECC. FROM CENTER OF MASS = -0.15 ft

MIN. ECCENTRICITY =.05 * Max Length= 15.00 ft

DESIGN ECCENTRICITIES (From Center of Mass)

X : ECCENTRICITY = 15.00 ft
Y : ECCENTRICITY = 15.00 ft

DETERMINE WALL/FRAME FORCES DUE TO SHEAR & TORSION

TORSIONS :
With Force Acting Along 'Y' Axis = 1,035 ft-kips
With Force Acting Along 'X' Axis = 1,035 ft-kips

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PROJECT : GSA SEISMIC ANALYSI
SUBJECT : OPTION 1A
FLR 1 DIAPHRAGM
DATE : MARCH 23 92 BY : ___JMW_____

--> WALLS/FRAMES PARALLEL TO 'Y' AXIS

WALL I.D. NUMBER	RELATIVE STIFF. WALL/FRAME	DIST. TO CENTER OF RIGIDITY	RIGIDITY x DISTANCE	RIGIDITY x DIST^2	-- FORCES -- LATERAL FORCE	TORSIONAL FORCE	Alternate Tors. Force	TOTAL FORCE (kips)	UNIT FORCE (klf)
2	3.473	-118.46	-411.43	48.739	3.0	0.2	0.2	3.3	0.14
4	5.092	-129.21	-657.91	85.010	4.5	0.4	0.4	4.8	0.18
7	4.168	22.13	92.22	2.041	3.6	0.1	0.1	3.7	0.15
9	8.490	12.88	109.33	1.408	7.4	0.1	0.1	7.5	0.16
13	4.243	122.21	518.53	63.368	3.7	0.3	0.3	4.0	0.15
15	4.243	111.38	472.58	52.635	3.7	0.3	0.3	4.0	0.15
17	0.424	116.46	49.32	5.744	0.4	.0	.0	0.4	0.04
18	0.260	116.46	30.24	3.522	0.2	.0	.0	0.2	0.03
19	0.260	-123.54	-32.08	3.963	0.2	.0	.0	0.2	0.03
24	24.106	-153.04	-3689.19	564.603	21.1	2.2	2.2	23.3	0.23
25	24.106	145.96	3519.39	513.534	21.1	2.1	2.1	23.2	0.23

--> WALLS/FRAMES PARALLEL TO 'X' AXIS

WALL I.D. NUMBER	RELATIVE STIFFNESS WALL/FRAME	DIST. TO CENTER OF RIGIDITY	RIGIDITY x DISTANCE	RIGIDITY x DIST^2	-- FORCES -- LATERAL FORCE	TORSIONAL FORCE	Alternate Tors. Force	TOTAL FORCE (kips)	UNIT FORCE (klf)
1	0.381	-0.10	-0.04	0	0.2	.0	.0	0.2	0.02
3	0.862	-25.77	-22.23	573	0.4	.0	.0	0.4	0.03
5	0.480	-8.02	-3.85	31	0.2	.0	.0	0.2	0.02
6	0.212	24.90	5.29	132	0.1	.0	.0	0.1	0.01
8	0.625	-20.27	-12.67	257	0.3	.0	.0	0.3	0.03
10	0.480	15.15	7.27	110	0.2	.0	.0	0.2	0.02
11	0.480	-2.52	-1.21	3	0.2	.0	.0	0.2	0.02
12	0.138	23.48	3.23	76	0.1	.0	.0	0.1	0.01
14	0.862	-1.60	-1.38	2	0.4	.0	.0	0.4	0.03
16	0.138	16.15	2.22	36	0.1	.0	.0	0.1	0.01
22	73.875	-50.35	-3719.83	187.306	31.1	2.2	2.2	33.3	0.11
23	73.875	50.65	3741.50	189.495	31.1	2.2	2.2	33.3	0.11
20	5.781	-51.35	-296.86	15.245	2.4	0.2	0.2	2.6	0.08
21	5.781	51.65	298.56	15.419	2.4	0.2	0.2	2.6	0.08

PAGE: _____
PROJECT : GSA SEISMIC ANALYSI
SUBJECT : OPTION 1A
FLR 2 DIAPHRAGM
DATE : MARCH 23 92 BY : ___JMW_____

LATERAL & TORSIONAL FORCE DISTRIBUTION FOR RIGID DIAPHRAGMS

DESCRIPTION :

DIAPHRAGM LEVEL :

> Lateral Shear Force @ CM Acting Along 'X' Axis = 125.27 kips
> Lateral Shear Force @ CM Acting Along 'Y' Axis = 125.27 kips

> 'X' DIST. TO C. M. = 150 ft MAX. 'X' DIM. = 300 ft
> 'Y' DIST. TO C. M. = 51 ft MAX. 'Y' DIM. = 102 ft
(Used for Min Eccentricity)

DETERMINE CENTER OF RIGIDITY

--> WALLS/FRAMES PARALLEL TO 'Y' AXIS

WALL I.D. NUMBER	WALL THICKNESS (in)	WALL LENGTH (ft)	WALL HEIGHT (ft)	X-DIST. FROM DATUM	END TYPE FIXED=0 CANT=1	H / L	RELATIVE STIFFNESS WALL/FRAME	STIFFNESS x DISTANCE
2	10	27.33	11	35.08	1	0.402	5.675608795	199.10
4	10	27.33	11	24.25	1	0.402	5.675608795	137.63
7	10	23.5	11	175.75	1	0.468	4.592653735	807.16
9	10	46	11	166.42	1	0.239	10.79323681	1796.21
13	10	27.33	11	275.75	1	0.402	5.675608795	1565.05
15	10	27.33	11	264.92	1	0.402	5.675608795	1503.58
17	8	9.5	11	270	1	1.158	0.688467985	185.89
18	8	7	11	270	1	1.571	0.329443403	88.95
19	8	7	11	30	1	1.571	0.329443403	9.88

PAGE: _____

PROJECT : GSA SEISMIC ANALYSI

SUBJECT : OPTION 1A

FLR 2 DIAPHRAGM

DATE : MARCH 23 92 BY : ___JMW___

--> WALLS/FRAMES PARALLEL TO 'X' AXIS

WALL I.D. NUMBER	WALL THICKNESS (in)	WALL LENGTH (ft)	WALL HEIGHT (ft)	Y-DIST FROM DATUM	END TYPE FIXED=0 CANT=1	H / L	RELATIVE STIFFNESS WALL/FRAME	STIFFNESS x DISTANCE
1	10	5.17	11	50.75	1	2.128	0.185555936	9.42
3	10	6.5	11	25.08	1	1.692	0.340645505	8.54
5	8	10	11	42.83	1	1.100	0.773036487	33.11
6	10	7	11	75.75	1	1.571	0.411804254	31.19
8	10	10	11	30.58	1	1.100	0.966295609	29.55
10	8	10	11	66	1	1.100	0.773036487	51.02
11	9	10	11	48.33	1	1.100	0.773036487	37.36
12	8	6.17	11	74.33	1	1.783	0.237968939	17.69
14	10	11.6	11	49.25	1	0.948	1.332120775	65.61
16	8	6.17	11	67	1	1.783	0.237968939	15.94
20	10	34	11	-0.5	1	0.324	7.534351613	-3.77
21	10	34	11	102.5	1	0.324	7.534351613	772.27

X - DISTANCE TO CENTER OF RIGIDITY = 159.59 ft
Y - DISTANCE TO CENTER OF RIGIDITY = 50.61 ft

X - ECC. FROM CENTER OF MASS = 9.59 ft
Y - ECC. FROM CENTER OF MASS = -0.39 ft

MIN. ECCENTRICITY =.05 * Max Length= 15.00 ft

DESIGN ECCENTRICITIES (From Center of Mass)

X : ECCENTRICITY = 15.00 ft
Y : ECCENTRICITY = 15.00 ft

DETERMINE WALL/FRAME FORCES DUE TO SHEAR & TORSION

TORSIONS :
With Force Acting Along 'Y' Axis = 1,879 ft-kips
With Force Acting Along 'X' Axis = 1,879 ft-kips

PAGE: ____

PROJECT : GSA SEISMIC ANALYSI
SUBJECT : OPTION 1A
FLR 2 DIAPHRAGM
DATE : MARCH 23 92 BY : ____JNW____

--> WALLS/FRAMES PARALLEL TO 'Y' AXIS

WALL I.D. NUMBER	RELATIVE STIFF. WALL/FRAME	DIST. TO CENTER OF RIGIDITY	RIGIDITY x DISTANCE	RIGIDITY x DIST^2	-- FORCES -- LATERAL FORCE	TORSIONAL FORCE	Alternate Tors. Force	TOTAL FORCE (kips)	UNIT FORCE (kif)
2	5.676	-124.51	-706.66	87,984	18.0	3.4	3.4	21.4	0.78
4	5.676	-135.34	-768.12	103,956	18.0	3.7	3.7	21.7	0.79
7	4.593	16.16	74.23	1,200	14.6	0.4	0.4	14.9	0.64
9	10.793	6.83	73.74	504	34.3	0.4	0.4	34.6	0.75
13	5.676	116.16	659.29	76,585	18.0	3.2	3.2	21.2	0.78
15	5.676	105.33	597.82	62,970	18.0	2.9	2.9	20.9	0.76
17	0.688	110.41	76.02	8,393	2.2	0.4	0.4	2.6	0.27
18	0.329	110.41	36.37	4,016	1.0	0.2	0.2	1.2	0.17
19	0.329	-129.59	-42.69	5,532	1.0	0.2	0.2	1.3	0.19

--> WALLS/FRAMES PARALLEL TO 'X' AXIS

WALL I.D. NUMBER	RELATIVE STIFFNESS WALL/FRAME	DIST. TO CENTER OF RIGIDITY	RIGIDITY x DISTANCE	RIGIDITY x DIST^2	-- FORCES -- LATERAL FORCE	TORSIONAL FORCE	Alternate Tors. Force	TOTAL FORCE (kips)	UNIT FORCE (kif)
1	0.186	0.14	0.03	0	1.1	.0	.0	1.1	0.21
3	0.341	-25.53	-8.70	222	2.0	.0	.0	2.1	0.32
5	0.773	-7.78	-6.02	47	4.6	.0	.0	4.6	0.46
6	0.412	25.14	10.35	260	2.4	.0	.0	2.5	0.36
8	0.966	-20.03	-19.36	388	5.7	0.1	0.1	5.8	0.58
10	0.773	15.39	11.89	183	4.6	0.1	0.1	4.6	0.46
11	0.773	-2.28	-1.76	4	4.6	.0	.0	4.6	0.46
12	0.238	23.72	5.64	134	1.4	.0	.0	1.4	0.23
14	1.332	-1.36	-1.82	2	7.9	.0	.0	7.9	0.68
16	0.238	16.39	3.90	64	1.4	.0	.0	1.4	0.23
20	7.534	-51.11	-385.10	19,684	44.7	1.8	1.8	46.6	1.37
21	7.534	51.39	390.94	20,285	44.7	1.9	1.9	46.6	1.37

PAGE: _____

PROJECT : GSA SEISMIC ANALYSI
SUBJECT : OPTION 1A
FLR 3 DIAPHRAGM
DATE : MARCH 23 92 BY : ___JMW___

LATERAL & TORSIONAL FORCE DISTRIBUTION FOR RIGID DIAPHRAGMS

DESCRIPTION :

DIAPHRAGM LEVEL :

> Lateral Shear Force @ CM Acting Along 'X' Axis = 181.51 kips
> Lateral Shear Force @ CM Acting Along 'Y' Axis = 181.51 kips

> 'X' DIST. TO C. M. = 150 ft MAX. 'X' DIM. = 300 ft
> 'Y' DIST. TO C. M. = 51 ft MAX. 'Y' DIM. = 102 ft
(Used for Min Eccentricity)

DETERMINE CENTER OF RIGIDITY

--> WALLS/FRAMES PARALLEL TO 'Y' AXIS

WALL I.D. NUMBER	WALL THICKNESS (in)	WALL LENGTH (ft)	WALL HEIGHT (ft)	X-DIST. FROM DATUM	END TYPE FIXED=0 CANT=1	H / L	RELATIVE STIFFNESS WALL/FRAME	STIFFNESS x DISTANCE
2	10	27.33	11	35.08	1	0.402	5.675608795	199.10
4	10	27.33	11	24.25	1	0.402	5.675608795	137.63
7	10	23.5	11	175.75	1	0.468	4.592653735	807.16
9	10	46	11	166.42	1	0.239	10.79323681	1796.21
13	10	27.33	11	275.75	1	0.402	5.675608795	1565.05
15	10	27.33	11	264.92	1	0.402	5.675608795	1503.58
17	8	9.5	11	270	1	1.158	0.688467985	185.89
18	8	7	11	270	1	1.571	0.329443403	88.95
19	8	7	11	30	1	1.571	0.329443403	9.88

PAGE: _____

PROJECT : GSA SEISMIC ANALYSI

SUBJECT : OPTION 1A

FLR 3 DIAPHRAGM

DATE : MARCH 23 92 BY : ___JMW_____

--> WALLS/FRAMES PARALLEL TO 'X' AXIS

WALL I.D. NUMBER	WALL THICKNESS (in)	WALL LENGTH (ft)	WALL HEIGHT (ft)	Y-DIST FROM DATUM	END TYPE FIXED=0 CANT=1	H / L	RELATIVE STIFFNESS WALL/FRAME	STIFFNESS x DISTANCE
1	10	5.17	11	50.75	1	2.128	0.185555936	9.42
3	10	6.5	11	25.08	1	1.692	0.340645505	8.54
5	8	10	11	42.83	1	1.100	0.773036487	33.11
6	10	7	11	75.75	1	1.571	0.411804254	31.19
8	10	10	11	30.58	1	1.100	0.966295609	29.55
10	8	10	11	66	1	1.100	0.773036487	51.02
11	8	10	11	48.33	1	1.100	0.773036487	37.36
12	8	6.17	11	74.33	1	1.783	0.237968939	17.69
14	10	11.6	11	49.25	1	0.948	1.332120775	65.61
16	8	6.17	11	67	1	1.783	0.237968939	15.94
20	10	34	11	-0.5	1	0.324	7.534351613	-3.77
21	10	34	11	102.5	1	0.324	7.534351613	772.27

X - DISTANCE TO CENTER OF RIGIDITY = 159.59 ft
Y - DISTANCE TO CENTER OF RIGIDITY = 50.61 ft

X - ECC. FROM CENTER OF MASS = 9.59 ft
Y - ECC. FROM CENTER OF MASS = -0.39 ft

MIN. ECCENTRICITY =.05 * Max Length= 15.00 ft

DESIGN ECCENTRICITIES (From Center of Mass)

X : ECCENTRICITY = 15.00 ft
Y : ECCENTRICITY = 15.00 ft

DETERMINE WALL/FRAME FORCES DUE TO SHEAR & TORSION

TORSIONS :
With Force Acting Along 'Y' Axis = 2,723 ft-kips
With Force Acting Along 'X' Axis = 2,723 ft-kips

PAGE: _____

PROJECT : GSA SEISMIC ANALYSI
SUBJECT : OPTION 1A
FLR 3 DIAPHRAGM
DATE : MARCH 23 92 BY : ___JMW___

--) WALLS/FRAMES PARALLEL TO 'Y' AXIS

WALL I.D. NUMBER	RELATIVE STIFF. WALL/FRAME	DIST. TO CENTER OF RIGIDITY	RIGIDITY x DISTANCE	RIGIDITY x DIST^2	-- FORCES -- LATERAL FORCE	TORSIONAL FORCE	Alternate Tors. Force	TOTAL FORCE (kips)	UNIT FORCE (klf)
2	5.676	-124.51	-706.66	87,984	26.1	4.9	4.9	31.0	1.14
4	5.676	-135.34	-768.12	103,956	26.1	5.3	5.3	31.5	1.15
7	4.593	16.16	74.23	1,200	21.1	0.5	0.5	21.7	0.92
9	10.793	6.83	73.74	504	49.7	0.5	0.5	50.2	1.09
13	5.676	116.16	659.29	76,585	26.1	4.6	4.6	30.7	1.12
15	5.676	105.33	597.82	62,970	26.1	4.1	4.1	30.3	1.11
17	0.688	110.41	76.02	8,393	3.2	0.5	0.5	3.7	0.39
18	0.329	110.41	36.37	4,016	1.5	0.3	0.3	1.8	0.25
19	0.329	-129.59	-42.69	5,532	1.5	0.3	0.3	1.8	0.26

--) WALLS/FRAMES PARALLEL TO 'X' AXIS

WALL I.D. NUMBER	RELATIVE STIFFNESS WALL/FRAME	DIST. TO CENTER OF RIGIDITY	RIGIDITY x DISTANCE	RIGIDITY x DIST^2	-- FORCES -- LATERAL FORCE	TORSIONAL FORCE	Alternate Tors. Force	TOTAL FORCE (kips)	UNIT FORCE (klf)
1	0.186	0.14	0.03	0	1.6	.0	.0	1.6	0.31
3	0.341	-25.53	-8.70	222	2.9	0.1	0.1	3.0	0.46
5	0.773	-7.78	-6.02	47	6.6	.0	.0	6.7	0.67
6	0.412	25.14	10.35	260	3.5	0.1	0.1	3.6	0.52
8	0.966	-20.03	-19.36	388	8.3	0.1	0.1	8.4	0.84
10	0.773	15.39	11.89	183	6.6	0.1	0.1	6.7	0.67
11	0.773	-2.28	-1.76	4	6.6	.0	.0	6.7	0.67
12	0.238	23.72	5.64	134	2.0	.0	.0	2.1	0.34
14	1.332	-1.36	-1.82	2	11.5	.0	.0	11.5	0.99
16	0.238	16.39	3.90	64	2.0	.0	.0	2.1	0.34
20	7.534	-51.11	-385.10	19,684	64.8	2.7	2.7	67.5	1.98
21	7.534	51.89	390.94	20,285	64.8	2.7	2.7	67.5	1.99

PAGE: _____

PROJECT : GSA SEISMIC ANALYSI
SUBJECT : OPTION 1A
FLR 4 DIAPHRAGM
DATE : MARCH 23 92 BY : ___JMW_____

LATERAL & TORSIONAL FORCE DISTRIBUTION FOR RIGID DIAPHRAGMS

DESCRIPTION :

DIAPHRAGM LEVEL :

> Lateral Shear Force @ CM Acting Along 'X' Axis = 237.76 kips
> Lateral Shear Force @ CM Acting Along 'Y' Axis = 237.76 kips

> 'X' DIST. TO C. M. = 150 ft MAX. 'X' DIM. = 300 ft
> 'Y' DIST. TO C. M. = 51 ft MAX. 'Y' DIM. = 102 ft
(Used for Min Eccentricity)

DETERMINE CENTER OF RIGIDITY

--> WALLS/FRAMES PARALLEL TO 'Y' AXIS

WALL I.D. NUMBER	WALL THICKNESS (in)	WALL LENGTH (ft)	WALL HEIGHT (ft)	X-DIST. FROM DATUM	END TYPE FIXED=0 CANT=1	H / L	RELATIVE STIFFNESS WALL/FRAME	STIFFNESS x DISTANCE
2	10	27.33	11	35.08	1	0.402	5.675608795	199.10
4	10	27.33	11	24.25	1	0.402	5.675608795	137.63
7	10	23.5	11	175.75	1	0.468	4.592653735	807.16
9	10	46	11	166.42	1	0.239	10.79323681	1796.21
13	10	27.33	11	275.75	1	0.402	5.675608795	1565.05
15	10	27.33	11	264.92	1	0.402	5.675608795	1503.58
17	8	9.5	11	270	1	1.158	0.688467985	185.89
18	8	7	11	270	1	1.571	0.329443403	88.95
19	8	7	11	30	1	1.571	0.329443403	9.88

PAGE: _____

PROJECT : GSA SEISMIC ANALYSI

SUBJECT : OPTION 1A

FLR 4 DIAPHRAGM

DATE : MARCH 23 92 BY : ___JMW___

--> WALLS/FRAMES PARALLEL TO 'X' AXIS

WALL I.D. NUMBER	WALL THICKNESS (in)	WALL LENGTH (ft)	WALL HEIGHT (ft)	Y-DIST FROM DATUM	END TYPE FIXED=0 CANT=1	H / L	RELATIVE STIFFNESS WALL/FRAME	STIFFNESS x DISTANCE
1	10	5.17	11	50.75	1	2.128	0.185555936	9.42
3	10	6.5	11	25.08	1	1.692	0.340645505	8.54
5	8	10	11	42.83	1	1.100	0.773036487	33.11
6	10	7	11	75.75	1	1.571	0.411804254	31.19
8	10	10	11	30.58	1	1.100	0.966295609	29.55
10	8	10	11	66	1	1.100	0.773036487	51.02
11	8	10	11	48.33	1	1.100	0.773036487	37.36
12	8	6.17	11	74.33	1	1.783	0.237968939	17.69
14	10	11.6	11	49.25	1	0.948	1.332120775	65.61
16	8	6.17	11	67	1	1.783	0.237968939	15.94
20	10	34	11	-0.5	1	0.324	7.534351613	-3.77
21	10	34	11	102.5	1	0.324	7.534351613	772.27

X - DISTANCE TO CENTER OF RIGIDITY = 159.59 ft
Y - DISTANCE TO CENTER OF RIGIDITY = 50.61 ft

X - ECC. FROM CENTER OF MASS = 9.59 ft
Y - ECC. FROM CENTER OF MASS = -0.39 ft

MIN. ECCENTRICITY =.05 * Max Length= 15.00 ft

DESIGN ECCENTRICITIES (From Center of Mass)

X : ECCENTRICITY = 15.00 ft
Y : ECCENTRICITY = 15.00 ft

DETERMINE WALL/FRAME FORCES DUE TO SHEAR & TORSION

TORSIONS :
With Force Acting Along 'Y' Axis = 3,566 ft-kips
With Force Acting Along 'X' Axis = 3,566 ft-kips

PAGE: _____

PROJECT : GSA SEISMIC ANALYSI

SUBJECT : OPTION 1A

FLR 4 DIAPHRAGM

DATE : MARCH 23 92 BY : ___JMW___

--> WALLS/FRAMES PARALLEL TO 'Y' AXIS

WALL I.D. NUMBER	RELATIVE STIFF. WALL/FRAME	DIST. TO CENTER OF RIGIDITY	RIGIDITY x DISTANCE	RIGIDITY x DIST^2	-- FORCES -- LATERAL FORCE	TORSIONAL FORCE	Alternate Tors. Force	TOTAL FORCE (kips)	UNIT FORCE (klf)
2	5.676	-124.51	-706.66	87,984	34.2	6.4	6.4	40.6	1.49
4	5.676	-135.34	-768.12	103,956	34.2	7.0	7.0	41.2	1.51
7	4.593	16.16	74.23	1,200	27.7	0.7	0.7	28.4	1.21
9	10.793	6.83	73.74	504	65.1	0.7	0.7	65.7	1.43
13	5.676	116.16	659.29	76,585	34.2	6.0	6.0	40.2	1.47
15	5.676	105.33	597.82	62,970	34.2	5.4	5.4	39.7	1.45
17	0.688	110.41	76.02	8.393	4.2	0.7	0.7	4.8	0.51
18	0.329	110.41	36.37	4.016	2.0	0.3	0.3	2.3	0.33
19	0.329	-129.59	-42.69	5.532	2.0	0.4	0.4	2.4	0.34

--> WALLS/FRAMES PARALLEL TO 'X' AXIS

WALL I.D. NUMBER	RELATIVE STIFFNESS WALL/FRAME	DIST. TO CENTER OF RIGIDITY	RIGIDITY x DISTANCE	RIGIDITY x DIST^2	-- FORCES -- LATERAL FORCE	TORSIONAL FORCE	Alternate Tors. Force	TOTAL FORCE (kips)	UNIT FORCE (klf)
1	0.186	0.14	0.03	0	2.1	.0	.0	2.1	0.40
3	0.341	-25.53	-8.70	222	3.8	0.1	0.1	3.9	0.60
5	0.773	-7.78	-6.02	47	8.7	0.1	0.1	8.8	0.88
6	0.412	25.14	10.35	260	4.6	0.1	0.1	4.7	0.68
8	0.966	-20.03	-19.36	388	10.9	0.2	0.2	11.1	1.11
10	0.773	15.39	11.89	183	8.7	0.1	0.1	8.8	0.88
11	0.773	-2.28	-1.76	4	8.7	.0	.0	8.7	0.87
12	0.238	23.72	5.64	134	2.7	0.1	0.1	2.7	0.44
14	1.332	-1.36	-1.82	2	15.0	.0	.0	15.0	1.30
16	0.238	16.39	3.90	64	2.7	.0	.0	2.7	0.44
20	7.534	-51.11	-385.10	19,684	84.9	3.5	3.5	88.4	2.60
21	7.534	51.89	390.94	20,285	84.9	3.6	3.6	88.5	2.60

PAGE: _____

PROJECT : GSA SEISMIC ANALYSI
SUBJECT : OPTION 1A
FLR 5 DIAPHRAGM
DATE : MARCH 23 92 BY : ___JMW_____

LATERAL & TORSIONAL FORCE DISTRIBUTION
FOR RIGID DIAPHRAGMS

ESCRIPTION :

IAPHRAGM LEVEL :

> Lateral Shear Force @ CM Actino Along 'X' Axis = 294 kips
> Lateral Shear Force @ CM Acting Along 'Y' Axis = 294 kips

> 'X' DIST. TO C. M. = 150 ft MAX. 'X' DIM. = 300 ft
> 'Y' DIST. TO C. M. = 51 ft MAX. 'Y' DIM. = 102 ft
(Used for Min Eccentricity)

DETERMINE CENTER OF RIGIDITY

--> WALLS/FRAMES PARALLEL TO 'Y' AXIS

WALL I.D. NUMBER	WALL THICKNESS (in)	WALL LENGTH (ft)	WALL HEIGHT (ft)	X-DIST. FROM DATUM	END TYPE FIXED=0 CANT=1	H / L	RELATIVE STIFFNESS WALL/FRAME	STIFFNESS x DISTANCE
2	10	27.33	11	35.08	1	0.402	5.675608795	199.10
4	10	27.33	11	24.25	1	0.402	5.675608795	137.63
7	10	23.5	11	175.75	1	0.468	4.592653735	807.16
9	10	46	11	166.42	1	0.239	10.79323681	1796.21
13	10	27.33	11	275.75	1	0.402	5.675608795	1565.05
15	10	27.33	11	264.92	1	0.402	5.675608795	1503.58
17	8	9.5	11	270	1	1.158	0.688467985	185.89
18	8	7	11	270	1	1.571	0.329443403	88.95
19	8	7	11	30	1	1.571	0.329443403	9.88

PAGE: _____

PROJECT : GSA SEISMIC ANALYSI

SUBJECT : OPTION 1A

FLR 5 DIAPHRAGM

DATE : MARCH 23 92 BY : ___JMW_____

--> WALLS/FRAMES PARALLEL TO 'X' AXIS

WALL I.D. NUMBER	WALL THICKNESS (in)	WALL LENGTH (ft)	WALL HEIGHT (ft)	Y-DIST FROM DATUM	END TYPE FIXED=0 CANT=1	H / L	RELATIVE STIFFNESS WALL/FRAME	STIFFNESS x DISTANCE
1	10	5.17	11	50.75	1	2.128	0.185555936	9.42
3	10	6.5	11	25.08	1	1.692	0.340643505	8.54
5	8	10	11	42.83	1	1.100	0.773036487	33.11
6	10	7	11	75.75	1	1.571	0.411804254	31.19
9	10	10	11	30.58	1	1.100	0.966295609	29.55
10	8	10	11	66	1	1.100	0.773036487	51.02
11	8	10	11	48.33	1	1.100	0.773036487	37.36
12	8	6.17	11	74.33	1	1.783	0.237968939	17.69
14	10	11.6	11	49.25	1	0.948	1.332120775	65.61
16	8	6.17	11	67	1	1.783	0.237968939	15.94
20	10	34	11	-0.5	1	0.324	7.534351613	-3.77
21	10	34	11	102.5	1	0.324	7.534351613	772.27

X - DISTANCE TO CENTER OF RIGIDITY = 159.59 ft
Y - DISTANCE TO CENTER OF RIGIDITY = 50.61 ft

X - ECC. FROM CENTER OF MASS = 9.59 ft
Y - ECC. FROM CENTER OF MASS = -0.39 ft

MIN. ECCENTRICITY =.05 * Max Length= 15.00 ft

DESIGN ECCENTRICITIES (From Center of Mass)

X : ECCENTRICITY = 15.00 ft
Y : ECCENTRICITY = 15.00 ft

DETERMINE WALL/FRAME FORCES DUE TO SHEAR & TORSION

TORSIONS :
With Force Acting Along 'Y' Axis = 4,410 ft-kips
With Force Acting Along 'X' Axis = 4,410 ft-kips

PAGE: _____

PROJECT : GSA SEISMIC ANALYSI
SUBJECT : OPTION 1A
FLR 5 DIAPHRAGM
DATE : MARCH 23 92 BY : ___JMW___

--> WALLS/FRAMES PARALLEL TO 'Y' AXIS

WALL I.D. NUMBER	RELATIVE STIFF. WALL/FRAME	DIST. TO CENTER OF RIGIDITY	RIGIDITY x DISTANCE	RIGIDITY x DIST^2	-- FORCES -- LATERAL FORCE	TORSIONAL FORCE	Alternate Tors. Force	TOTAL FORCE (kips)	UNIT FORCE (klf)
2	5.676	-124.51	-706.66	87,984	42.3	7.9	7.9	50.3	1.84
4	5.676	-135.34	-768.12	103,956	42.3	8.6	8.6	50.9	1.86
7	4.393	16.16	74.23	1,200	34.2	0.8	0.8	35.1	1.49
9	10.793	6.83	73.74	504	80.5	0.8	0.8	81.3	1.77
13	5.676	116.16	659.29	76,585	42.3	7.4	7.4	49.7	1.82
15	5.676	105.33	597.82	62,970	42.3	6.7	6.7	49.0	1.79
17	0.688	110.41	76.02	8,393	5.1	0.9	0.9	6.0	0.63
18	0.329	110.41	36.37	4,016	2.5	0.4	0.4	2.9	0.41
19	0.329	-129.59	-42.69	5,532	2.5	0.5	0.5	2.9	0.42

--> WALLS/FRAMES PARALLEL TO 'X' AXIS

WALL I.D. NUMBER	RELATIVE STIFFNESS WALL/FRAME	DIST. TO CENTER OF RIGIDITY	RIGIDITY x DISTANCE	RIGIDITY x DIST^2	-- FORCES -- LATERAL FORCE	TORSIONAL FORCE	Alternate Tors. Force	TOTAL FORCE (kips)	UNIT FORCE (klf)
1	0.186	0.14	0.03	0	2.6	.0	.0	2.6	0.50
3	0.341	-25.53	-8.70	222	4.7	0.1	0.1	4.8	0.75
5	0.773	-7.78	-6.02	47	10.8	0.1	0.1	10.8	1.08
6	0.412	25.14	10.35	260	5.7	0.1	0.1	5.9	0.84
8	0.966	-20.03	-19.36	388	13.5	0.2	0.2	13.7	1.37
10	0.773	15.39	11.89	183	10.8	0.1	0.1	10.9	1.09
11	0.773	-2.28	-1.76	4	10.8	.0	.0	10.8	1.08
12	0.238	23.72	5.64	134	3.3	0.1	0.1	3.4	0.55
14	1.332	-1.36	-1.82	2	18.6	.0	.0	18.6	1.60
16	0.238	16.39	3.90	64	3.3	.0	.0	3.4	0.54
20	7.534	-51.11	-385.10	19,684	105.0	4.3	4.3	109.3	3.21
21	7.534	51.89	390.94	20,285	105.0	4.4	4.4	109.4	3.22

PAGE: _____

PROJECT : SSA SEISMIC ANALYSI
SUBJECT : OPTION 1A
FLR & DIAPHRAGM
DATE : MARCH 23 92 BY : ___JMW_____

LATERAL & TORSIONAL FORCE DISTRIBUTION FOR RIGID DIAPHRAGMS

ESCRIPTION :

DIAPHRAGM LEVEL :

> Lateral Shear Force @ CM Acting Along 'X' Axis = 350.25 kips
> Lateral Shear Force @ CM Acting Along 'Y' Axis = 350.25 kips

> 'X' DIST. TO C. M. = 150 ft MAX. 'X' DIM. = 300 ft
> 'Y' DIST. TO C. M. = 51 ft MAX. 'Y' DIM. = 102 ft
(Used for Min Eccentricity)

TERMINE CENTER OF RIGIDITY

--> WALLS/FRAMES PARALLEL TO 'Y' AXIS

WALL I.D. NUMBER	WALL THICKNESS (in)	WALL LENGTH (ft)	WALL HEIGHT (ft)	X-DIST. FROM DATUM	END TYPE FIXED=0 CANT=1	h / L	RELATIVE STIFFNESS WALL/FRAME	STIFFNESS x DISTANCE
2	10	27.33	11	35.08	1	0.402	5.675608795	199.10
4	10	27.33	11	24.25	1	0.402	5.675608795	137.63
7	10	23.5	11	175.75	1	0.465	4.592653735	807.16
9	10	46	11	166.42	1	0.239	10.79323681	1796.21
13	10	27.33	11	275.75	1	0.402	5.675608795	1565.05
15	10	27.33	11	264.92	1	0.402	5.675608795	1503.58
17	8	9.5	11	270	1	1.158	0.688467985	185.89
18	8	7	11	270	1	1.571	0.329443403	88.95
19	8	7	11	30	1	1.571	0.329443403	9.88

PAGE: _____

PROJECT : GSA SEISMIC ANALYSI
SUBJECT : OPTION 1A
FLR 6 DIAPHRAGM
DATE : MARCH 23 92 BY : ___JMW_____

--> WALLS/FRAMES PARALLEL TO 'X' AXIS

WALL I.D. NUMBER	WALL THICKNESS (in)	WALL LENGTH (ft)	WALL HEIGHT (ft)	Y-DIST FROM DATUM	END TYPE FIXED=0 CANT=1	H / L	RELATIVE STIFFNESS WALL/FRAME	STIFFNESS x DISTANCE
1	10	5.17	11	50.75	1	2.128	0.185555936	9.42
3	10	6.5	11	25.08	1	1.692	0.340645505	8.54
5	8	10	11	42.83	1	1.100	0.773036487	33.11
6	10	7	11	75.75	1	1.571	0.411804254	31.19
8	10	10	11	30.58	1	1.100	0.966295609	29.55
10	8	10	11	66	1	1.100	0.773036487	51.02
11	8	10	11	48.33	1	1.100	0.773036487	37.36
12	8	6.17	11	74.33	1	1.783	0.237968939	17.69
14	10	11.6	11	49.25	1	0.948	1.332120775	65.61
16	8	6.17	11	67	1	1.783	0.237968939	15.94
20	10	34	11	-0.5	1	0.324	7.534351613	-3.77
21	10	34	11	102.5	1	0.324	7.534351613	772.27

X - DISTANCE TO CENTER OF RIGIDITY = 159.59 ft
Y - DISTANCE TO CENTER OF RIGIDITY = 50.61 ft

X - ECC. FROM CENTER OF MASS = 9.59 ft
Y - ECC. FROM CENTER OF MASS = -0.39 ft

MIN. ECCENTRICITY =.05 * Max Length= 15.00 ft

DESIGN ECCENTRICITIES (From Center of Mass)

X : ECCENTRICITY = 15.00 ft
Y : ECCENTRICITY = 15.00 ft

DETERMINE WALL/FRAME FORCES DUE TO SHEAR & TORSION

TORSIONS :
With Force Acting Along 'Y' Axis = 5.254 ft-kips
With Force Acting Along 'X' Axis = 5.254 ft-kips

PAGE: _____

PROJECT : GSA SEISMIC ANALYSI

SUBJECT : OPTION 1A

FLR 6 DIAPHRAGM

DATE : MARCH 23 92 BY : ___JMW_____

--> WALLS/FRAMES PARALLEL TO 'Y' AXIS

WALL I.D. NUMBER	RELATIVE STIFF. WALL/FRAME	DIST. TO CENTER OF RIGIDITY	RIGIDITY x DISTANCE	RIGIDITY x DIST^2	-- FORCES -- LATERAL FORCE	TORSIONAL FORCE	Alternate Tors. Force	TOTAL FORCE (kips)	UNIT FORCE (klf)
2	5.676	-124.51	-706.66	87.984	50.4	9.5	9.5	59.9	2.19
4	5.676	-135.34	-768.12	103.956	50.4	10.3	10.3	60.7	2.22
7	4.593	16.16	74.23	1.200	40.8	1.0	1.0	41.8	1.78
9	10.793	6.83	73.74	504	95.9	1.0	1.0	96.8	2.11
13	5.676	116.16	659.29	76.585	50.4	8.8	8.8	59.2	2.17
15	5.676	105.33	597.82	62.970	50.4	8.0	8.0	58.4	2.14
17	0.688	110.41	76.02	8.393	6.1	1.0	1.0	7.1	0.75
18	0.329	110.41	36.37	4.016	2.9	0.5	0.5	3.4	0.49
19	0.329	-129.59	-42.69	5.532	2.9	0.6	0.6	3.5	0.50

--> WALLS/FRAMES PARALLEL TO 'X' AXIS

WALL I.D. NUMBER	RELATIVE STIFFNESS WALL/FRAME	DIST. TO CENTER OF RIGIDITY	RIGIDITY x DISTANCE	RIGIDITY x DIST^2	-- FORCES -- LATERAL FORCE	TORSIONAL FORCE	Alternate Tors. Force	TOTAL FORCE (kips)	UNIT FORCE (klf)
1	0.186	0.14	0.03	0	3.1	.0	.0	3.1	0.60
3	0.341	-25.53	-8.70	222	5.7	0.1	0.1	5.8	0.89
5	0.773	-7.78	-6.02	47	12.8	0.1	0.1	12.9	1.29
6	0.412	25.14	10.35	260	6.8	0.1	0.1	7.0	1.00
8	0.966	-20.03	-19.36	388	16.0	0.3	0.3	16.3	1.63
10	0.773	15.39	11.89	183	12.8	0.2	0.2	13.0	1.30
11	0.773	-2.28	-1.76	4	12.8	.0	.0	12.9	1.29
12	0.238	23.72	5.64	134	4.0	0.1	0.1	4.0	0.65
14	1.332	-1.36	-1.82	2	22.1	.0	.0	22.1	1.91
16	0.238	16.39	3.90	64	4.0	0.1	0.1	4.0	0.65
20	7.534	-51.11	-385.10	19.684	125.1	5.2	5.2	130.2	3.83
21	7.534	51.89	390.94	20.285	125.1	5.2	5.2	130.3	3.83

PAGE: _____
PROJECT : GSA SEISMIC ANALYSI
SUBJECT : OPTION 1A
FLR 7 DIAPHRAGM
DATE : MARCH 23 92 BY : ___JMW___

LATERAL & TORSIONAL FORCE DISTRIBUTION FOR RIGID DIAPHRAGMS

DESCRIPTION :

DIAPHRAGM LEVEL :

> Lateral Shear Force @ CM Acting Along 'X' Axis = 406.49 kips
> Lateral Shear Force @ CM Acting Along 'Y' Axis = 406.49 kips

> 'X' DIST. TO C. M. = 150 ft MAX. 'X' DIM. = 300 ft
> 'Y' DIST. TO C. M. = 51 ft MAX. 'Y' DIM. = 102 ft
(Used for Min Eccentricity)

DETERMINE CENTER OF RIGIDITY

--> WALLS/FRAMES PARALLEL TO 'Y' AXIS

WALL I.D. NUMBER	WALL THICKNESS (in)	WALL LENGTH (ft)	WALL HEIGHT (ft)	X-DIST. FROM DATUM	END TYPE FIXED=0 CANT=1	H / L	RELATIVE STIFFNESS WALL/FRAME	STIFFNESS x DISTANCE
2	10	27.33	11	35.08	1	0.402	5.675608795	199.10
4	10	27.33	11	24.25	1	0.402	5.675608795	137.63
7	10	23.5	11	175.75	1	0.468	4.592653735	807.16
9	10	46	11	166.42	1	0.239	10.79323681	1796.21
13	10	27.33	11	275.75	1	0.402	5.675608795	1565.05
15	10	27.33	11	264.92	1	0.402	5.675608795	1503.58
17	8	9.5	11	270	1	1.158	0.688467985	185.89
18	8	7	11	270	1	1.571	0.329443403	88.95
19	8	7	11	30	1	1.571	0.329443403	9.88

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PROJECT : GSA SEISMIC ANALYSI

SUBJECT : OPTION 1A

FLR 7 DIAPHRAGM

DATE : MARCH 23 92 BY : ____JMW _____

--> WALLS/FRAMES PARALLEL TO 'X' AXIS

WALL I.D. NUMBER	WALL THICKNESS (in)	WALL LENGTH (ft)	WALL HEIGHT (ft)	Y-DIST FROM DATUM	END TYPE FIXED=0 CANT=1	H / L	RELATIVE STIFFNESS WALL/FRAME	STIFFNESS x DISTANCE
1	10	5.17	11	50.75	1	2.128	0.185555936	9.42
3	10	6.5	11	25.08	1	1.692	0.340645505	8.54
5	8	10	11	42.83	1	1.100	0.773036487	33.11
6	10	7	11	75.75	1	1.571	0.411804254	31.19
8	10	10	11	30.58	1	1.100	0.966293609	29.55
10	8	10	11	66	1	1.100	0.773036487	51.02
11	8	10	11	48.33	1	1.100	0.773036487	37.36
12	8	6.17	11	74.33	1	1.783	0.237968939	17.69
14	10	11.6	11	49.25	1	0.948	1.332120775	65.61
16	8	6.17	11	67	1	1.783	0.237968939	15.94
20	10	34	11	-0.5	1	0.324	7.534351613	-3.77
21	10	34	11	102.5	1	0.324	7.534351613	772.27

X - DISTANCE TO CENTER OF RIGIDITY = 159.59 ft
Y - DISTANCE TO CENTER OF RIGIDITY = 50.61 ft

X - ECC. FROM CENTER OF MASS = 9.59 ft
Y - ECC. FROM CENTER OF MASS = -0.39 ft

MIN. ECCENTRICITY =.05 * Max Length= 15.00 ft

DESIGN ECCENTRICITIES (From Center of Mass)

X : ECCENTRICITY = 15.00 ft
Y : ECCENTRICITY = 15.00 ft

DETERMINE WALL/FRAME FORCES DUE TO SHEAR & TORSION

TORSIONS :
With Force Acting Along 'Y' Axis = 6.097 ft-kips
With Force Acting Along 'X' Axis = 6.097 ft-kips

PAGE: _____

PROJECT : GSA SEISMIC ANALYSI
SUBJECT : OPTION 1A
FLR 7 DIAPHRAGM
DATE : MARCH 23 92 BY : ___DMW___

--> WALLS/FRAMES PARALLEL TO 'Y' AXIS

WALL I.D. NUMBER	RELATIVE STIFF. WALL/FRAME	DIST. TO CENTER OF RIGIDITY	RIGIDITY x DISTANCE	RIGIDITY x DIST^2	-- FORCES -- LATERAL FORCE	TORSIONAL FORCE	Alternate Tors. Force	TOTAL FORCE (kips)	UNIT FORCE (kif)
2	5.676	-124.51	-706.66	87,984	58.5	11.0	11.0	69.5	2.54
4	5.676	-135.34	-768.12	103,956	58.5	11.9	11.9	70.4	2.58
7	4.593	16.16	74.23	1,200	47.3	1.2	1.2	48.5	2.06
9	10.793	6.83	73.74	504	111.3	1.1	1.1	112.4	2.44
13	5.676	116.16	659.29	76,585	58.5	10.2	10.2	68.7	2.52
15	5.676	105.33	597.82	62,970	58.5	9.3	9.3	67.8	2.48
17	0.688	110.41	76.02	8,393	7.1	1.2	1.2	8.3	0.87
18	0.329	110.41	36.37	4,016	3.4	0.6	0.6	4.0	0.57
19	0.329	-129.59	-42.69	5,532	3.4	0.7	0.7	4.1	0.56

--> WALLS/FRAMES PARALLEL TO 'X' AXIS

WALL I.D. NUMBER	RELATIVE STIFFNESS WALL/FRAME	DIST. TO CENTER OF RIGIDITY	RIGIDITY x DISTANCE	RIGIDITY x DIST^2	-- FORCES -- LATERAL FORCE	TORSIONAL FORCE	Alternate Tors. Force	TOTAL FORCE (kips)	UNIT FORCE (kif)
1	0.186	0.14	0.03	0	3.6	.0	.0	3.6	0.69
3	0.341	-25.53	-8.70	222	6.6	0.1	0.1	6.7	1.03
5	0.773	-7.78	-6.02	47	14.9	0.1	0.1	15.0	1.50
6	0.412	25.14	10.35	260	7.9	0.2	0.2	8.1	1.16
8	0.966	-20.03	-19.36	388	18.6	0.3	0.3	18.9	1.89
10	0.773	15.39	11.89	183	14.9	0.2	0.2	15.1	1.51
11	0.773	-2.28	-1.76	4	14.9	.0	.0	14.9	1.49
12	0.238	23.72	5.64	134	4.6	0.1	0.1	4.7	0.78
14	1.332	-1.36	-1.82	2	25.7	.0	.0	25.7	2.21
16	0.238	16.39	3.90	64	4.6	0.1	0.1	4.6	0.73
20	7.534	-51.11	-385.10	19,684	145.1	6.0	6.0	151.1	4.45
21	7.534	51.89	390.94	20,285	145.1	6.1	6.1	151.2	4.45

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PROJECT :GSA SEISMIC ANALYSI
SUBJECT :OPTION 1A
FLR 8 DIAPHRAGM
DATE :MARCH 23 92 BY : ___JMW_____

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SEISMIC ANALYSI
ON 1A
8 DIAPHRAGM
H 23 92 BY : ___JMW _____

RSIONAL FORCE DISTRIBUTION
R RIGID DIAPHRAGMS

RELATIVE STIFFNESS WALL/FRAME	STIFFNESS x DISTANCE
15555936	9.42
10645505	8.54
73036487	33.11
11804254	31.19
16295609	29.55
73036487	51.02
73036487	37.36
37968939	17.69
32120775	65.61
37968939	15.94
34351613	-3.77
34351613	772.27

Acting Along 'X' Axis = 462.73 kips
Acting Along 'Y' Axis = 462.73 kips

150 ft MAX. 'X' DIM. = 300 ft
51 ft MAX. 'Y' DIM. = 102 ft
(Used for Min Eccentricity)

TY

TO ' AXIS

H	WALL HEIGHT (ft)	X-DIST. FROM DATUM	END TYPE FIXED=0 CANT=1	H / L	RELATIVE STIFFNESS WALL/FRAME	STIFFNESS x DISTANCE
	11	35.09	1	0.402	5.675608795	199.10
	11	24.25	1	0.402	5.675608795	137.63
	11	175.75	1	0.468	4.592653735	807.16
	11	166.42	1	0.239	10.79323681	1796.21
	11	275.75	1	0.402	5.675608795	1565.05
	11	264.92	1	0.402	5.675608795	1503.58
	11	270	1	1.158	0.688467985	185.89
	11	270	1	1.571	0.329443403	88.95
	11	30	1	1.571	0.329443403	9.88

X - DISTANCE TO CENTER OF RIGIDITY = 159.59 ft
Y - DISTANCE TO CENTER OF RIGIDITY = 50.61 ft

X - ECC. FROM CENTER OF MASS = 9.59 ft
Y - ECC. FROM CENTER OF MASS = -0.39 ft

MIN. ECCENTRICITY =.05 * Max Length= 15.00 ft

DESIGN ECCENTRICITIES (From Center of Mass)

X : ECCENTRICITY = 15.00 ft
Y : ECCENTRICITY = 15.00 ft

DETERMINE WALL/FRAME FORCES DUE TO SHEAR & TORSION

TORSIONS :
With Force Acting Along 'Y' Axis = 6,941 ft-kips
With Force Acting Along 'X' Axis = 6,941 ft-kips

PAGE: _____

PROJECT : SSA SEISMIC ANALYSI
SUBJECT : OPTION 1A
FLR & DIAPHRAGM
DATE : MARCH 23 92 BY : ___JMW___

--> WALLS/FRAMES PARALLEL TO 'Y' AXIS

WALL I.D. NUMBER	RELATIVE STIFF. WALL/FRAME	DIST. TO CENTER OF RIGIDITY	RIGIDITY x DISTANCE	RIGIDITY x DIST^2	-- FORCES -- LATERAL FORCE	TORSIONAL FORCE	Alternate Tors. Force	TOTAL FORCE (kips)	UNIT FORCE (klf)
2	5.676	-124.51	-706.66	87,984	66.6	12.5	12.5	79.1	2.89
4	5.676	-135.34	-768.12	103.956	66.6	13.6	13.6	80.2	2.93
7	4.393	16.16	74.23	1,200	53.9	1.3	1.3	55.2	2.35
9	10.793	6.83	73.74	504	126.6	1.3	1.3	127.9	2.78
13	5.676	116.16	659.29	76.585	66.6	11.7	11.7	78.3	2.86
15	5.676	105.33	597.82	62,970	66.6	10.6	10.6	77.2	2.82
17	0.688	110.41	76.02	8.393	8.1	1.3	1.3	9.4	0.99
18	0.329	110.41	36.37	4.016	3.9	0.6	0.6	4.5	0.64
19	0.329	-129.59	-42.69	5.532	3.9	0.8	0.8	4.6	0.66

--> WALLS/FRAMES PARALLEL TO 'X' AXIS

WALL I.D. NUMBER	RELATIVE STIFFNESS WALL/FRAME	DIST. TO CENTER OF RIGIDITY	RIGIDITY x DISTANCE	RIGIDITY x DIST^2	-- FORCES -- LATERAL FORCE	TORSIONAL FORCE	Alternate Tors. Force	TOTAL FORCE (kips)	UNIT FORCE (klf)
1	0.186	0.14	0.03	0	4.1	.0	.0	4.1	0.79
3	0.341	-25.53	-8.70	222	7.5	0.2	0.2	7.6	1.17
5	0.773	-7.78	-6.02	47	17.0	0.1	0.1	17.1	1.71
6	0.412	25.14	10.35	260	9.0	0.2	0.2	9.2	1.32
8	0.966	-20.03	-19.36	388	21.2	0.3	0.3	21.5	2.15
10	0.773	15.39	11.89	183	17.0	0.2	0.2	17.2	1.72
11	0.773	-2.28	-1.76	4	17.0	.0	.0	17.0	1.70
12	0.238	23.72	5.64	134	5.2	0.1	0.1	5.3	0.86
14	1.332	-1.36	-1.82	2	29.2	.0	.0	29.2	2.52
16	0.238	16.39	3.90	64	5.2	0.1	0.1	5.3	0.86
20	7.534	-51.11	-385.10	19.684	165.2	6.8	6.8	172.0	5.06
21	7.534	51.89	390.94	20.285	165.2	6.9	6.9	172.1	5.06

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PROJECT : GBA SEISMIC ANALYSI
SUBJECT : OPTION 1A
ROOF DIAPHRAGM
DATE : MARCH 23 92 BY : ___JMN___

LATERAL & TORSIONAL FORCE DISTRIBUTION FOR RIGID DIAPHRAGMS

ESCRIPTION :

DIAPHRAGM LEVEL :

> Lateral Shear Force @ CM Acting Along 'X' Axis = 529.75 kips
> Lateral Shear Force @ CM Acting Along 'Y' Axis = 529.75 kips

> 'X' DIST. TO C. M. = 160.69 ft MAX. 'X' DIM. = 300 ft
> 'Y' DIST. TO C. M. = 51.68 ft MAX. 'Y' DIM. = 102 ft
(Used for Min Eccentricity)

TERMINE CENTER OF RIGIDITY

--> WALLS/FRAMES PARALLEL TO 'Y' AXIS

WALL I.D. NUMBER	WALL THICKNESS (in)	WALL LENGTH (ft)	WALL HEIGHT (ft)	X-DIST. FROM DATUM	END TYPE FIXED=0 CANT=1	H / L	RELATIVE STIFFNESS WALL/FRAME	STIFFNESS x DISTANCE
2	10	27.33	11	35.08	1	0.402	5.675608795	199.10
4	10	27.33	11	24.25	1	0.402	5.675608795	137.63
7	10	23.5	11	175.75	1	0.468	4.592653735	807.16
9	10	46	11	166.42	1	0.239	10.79322691	1796.21
13	10	27.33	11	275.75	1	0.402	5.675608795	1565.05
15	10	27.33	11	264.92	1	0.402	5.675608795	1503.58
17	8	9.5	11	270	1	1.158	0.688467985	185.89
18	8	7	11	270	1	1.571	0.329443403	88.95

--> WALLS/FRAMES PARALLEL TO 'X' AXIS

WALL I.D. NUMBER	WALL THICKNESS (in)	WALL LENGTH (ft)	WALL HEIGHT (ft)	Y-DIST FROM DATUM	END TYPE FIXED=0 CANT=1	H / L	RELATIVE STIFFNESS WALL/FRAME	STIFFNESS x DISTANCE
1	10	5.17	11	50.75	1	2.128	0.185555936	9.42
3	10	6.5	11	25.08	1	1.692	0.340645505	8.54
5	8	10	11	42.83	1	1.100	0.773036487	33.11
6	10	7	11	75.75	1	1.571	0.411804254	31.19
8	10	10	11	30.58	1	1.100	0.966295609	29.55
10	8	10	11	66	1	1.100	0.773036487	51.02
11	8	10	11	48.33	1	1.100	0.773036487	37.36
12	8	6.17	11	74.33	1	1.783	0.237968939	17.69
14	10	11.6	11	49.25	1	0.948	1.332120775	65.61
16	8	6.17	11	67	1	1.783	0.237968939	15.94
20	10	34	11	-0.5	1	0.324	7.534351613	-3.77

1	21	10	34	11	102.5	1	0.324	7.534351e13	772.27

X - DISTANCE TO CENTER OF RIGIDITY = 160.68 ft
Y - DISTANCE TO CENTER OF RIGIDITY = 50.61 ft

X - ECC. FROM CENTER OF MASS = -0.01 ft
Y - ECC. FROM CENTER OF MASS = -1.07 ft

MIN. ECCENTRICITY =.05 * Max Length= 15.00 ft

DESIGN ECCENTRICITIES (From Center of Mass)

X : ECCENTRICITY = 15.00 ft
Y : ECCENTRICITY = 15.00 ft

DETERMINE WALL/FRAME FORCES DUE TO SHEAR & TORSION

TORSIONS :
With Force Acting Along 'Y' Axis = 7,946 ft-kips
With Force Acting Along 'X' Axis = 7,946 ft-kips

PAGE: _____

PROJECT : GSA SEISMIC ANALYSI
SUBJECT : OPTION 1A
ROOF DIAPHRAGM
DATE : MARCH 23 92 BY : ___JMW___

--> WALLS/FRAMES PARALLEL TO 'Y' AXIS

WALL I.D. NUMBER	RELATIVE STIFF. WALL/FRAME	DIST. TO CENTER OF RIGIDITY	RIGIDITY x DISTANCE	RIGIDITY x DIST^2	-- FORCES -- LATERAL FORCE	TORSIONAL FORCE	Alternate Tors. Force	TOTAL FORCE (kips)	UNIT FORCE (klf)
2	5.676	-125.60	-712.85	89.534	76.9	14.6	14.6	91.5	3.35
4	5.676	-136.43	-774.32	105.640	76.9	15.9	15.9	92.8	3.40
7	4.593	15.07	69.21	1,043	62.2	1.4	1.4	63.6	2.71
9	10.793	5.74	61.96	356	146.2	1.3	1.3	147.5	3.21
13	5.676	115.07	653.10	75.152	76.9	13.4	13.4	90.3	3.30
15	5.676	104.24	591.63	61.672	76.9	12.2	12.2	89.0	3.26
17	0.688	109.32	75.26	8.228	9.3	1.5	1.5	10.9	1.14
18	0.329	109.32	36.01	3,937	4.5	0.7	0.7	5.2	0.74

--> WALLS/FRAMES PARALLEL TO 'X' AXIS

WALL I.D. NUMBER	RELATIVE STIFFNESS WALL/FRAME	DIST. TO CENTER OF RIGIDITY	RIGIDITY x DISTANCE	RIGIDITY x DIST^2	-- FORCES -- LATERAL FORCE	TORSIONAL FORCE	Alternate Tors. Force	TOTAL FORCE (kips)	UNIT FORCE (klf)
1	0.186	0.14	0.03	0	4.7	.0	.0	4.7	0.90
3	0.341	-25.53	-8.70	222	8.6	0.2	0.2	8.7	1.34
5	0.773	-7.78	-6.02	47	19.4	0.1	0.1	19.5	1.95
6	0.412	25.14	10.35	260	10.3	0.2	0.2	10.6	1.51
8	0.966	-20.03	-19.36	388	24.3	0.4	0.4	24.7	2.47
10	0.773	15.39	11.89	183	19.4	0.2	0.2	19.7	1.97
11	0.773	-2.28	-1.76	4	19.4	.0	.0	19.4	1.94
12	0.238	23.72	5.64	134	6.0	0.1	0.1	6.1	0.99
14	1.332	-1.36	-1.82	2	33.4	.0	.0	33.5	2.89
16	0.238	16.39	3.90	64	6.0	0.1	0.1	6.1	0.98
20	7.534	-51.11	-385.10	19,684	189.2	7.9	7.9	197.1	5.80
21	7.534	51.89	390.94	20,285	189.2	8.0	8.0	197.2	5.80

PROJECT: GSA - 517 GOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS OPT 1A
DATE: MARCH 23, 1992

****

WALL NUMBER 1

Wall height? ====> 11 ft. f'c: 3000 psi

Wall length? ====> 5.17 ft. fy: 40 ksi

Thickness? ======> 10 in. Ec: 3122.018 ksi

Av: ==========> 0.22 sq. in.

d: ==========> 49.632 in.

s: ==========> 9 in. Vs: 48.02706 kips

****

WALL NO.	LEVEL	AXIAL SHEAR (kips)	TORSIONAL SHEAR (kips)	CUM. TOT. SHEAR (kips)	FACTORED ULT. CAP. (kips)	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL (in.)
1	ROOF	4.7	0	4.7	118.710	0.0515	0.0009
	8	4.1	0	8.8	119.919	0.0954	0.0017
	7	3.6	0	12.4	121.127	0.1331	0.0024
	6	3.1	0	15.5	122.336	0.1647	0.0030
	5	2.6	0	18.1	123.544	0.1905	0.0035
	4	2.1	0	20.2	124.753	0.2105	0.0039
	3	1.6	0	21.8	125.961	0.2250	0.0042
	2	1.1	0	22.9	127.170	0.2341	0.0044
	1	0.2	0	23.1	128.378	0.2339	0.0045

PROJECT: GSA - 517 GOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS OPT 1A
DATE: MARCH 23, 1992

****

WALL NUMBER 2

Wall height? ====> 11 ft. f'c: 3000 psi

Wall length? ====> 27.33 ft. fv: 40 ksi

Thickness? ======> 10 in. Ec: 3122.018 ksi

Av: ==========> 0.22 sq. in.

d: ==========> 262.368 in.

s: ==========> 9 in. Vs: 256.5376 kips

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WALL NO.	LEVEL	AXIAL SHEAR kips	TORSIONAL SHEAR kips	CUM. TOT. SHEAR kips	FACTORED ULT. CAP. kips	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL in.
2	ROOF	76.9	14.6	91.5	627.537	0.1896	0.0033
	8	66.6	12.5	170.6	633.925	0.3499	0.0063
	7	58.5	11	240.1	640.314	0.4875	0.0089
	6	50.4	9.5	300	646.702	0.6031	0.0111
	5	42.3	7.9	350.2	653.091	0.6971	0.0130
	4	34.2	6.4	390.8	659.479	0.7704	0.0145
	3	26.1	4.9	421.8	665.867	0.8233	0.0156
	2	18	3.4	443.2	672.256	0.8571	0.0164
	1	3	0.2	446.4	678.644	0.8551	0.0165

PROJECT: GSA - 517 GOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS RUN 2
DATE: FEB. 19, 1992

****

WALL NUMBER 3

Wall height? ====> 11 ft. f c: 3000 psi

Wall length? ====> 6.5 ft. fv: 40 ksi

Thickness? ======> 10 in. Ec: 3122.018 ksi

Av: ==========> 0.22 sq. in.

d: ==========> 62.4 in.

s: ==========> 9 in. Vs: 61.01333 kips

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WALL NO.	LEVEL	AXIAL SHEAR kips	TORSIONAL SHEAR kips	CUM. TOT. SHEAR kips	FACTORED ULT. CAP. kips	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL in.
3	ROOF	8.6	0.2	8.8	149.249	0.0767	0.0013
	8	7.5	0.2	16.5	150.769	0.1423	0.0025
	7	6.6	0.1	23.2	152.288	0.1980	0.0036
	6	5.7	0.1	29	153.807	0.2451	0.0045
	5	4.7	0.1	33.8	155.327	0.2829	0.0052
	4	3.8	0.1	37.7	156.846	0.3125	0.0058
	3	2.9	0.1	40.7	158.365	0.3341	0.0063
	2	2	0	42.7	159.885	0.3472	0.0066
	1	0.4	0	43.1	161.404	0.3471	0.0067

PROJECT: GSA - 517 GOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS OPT 1A
DATE: MARCH 23, 1992

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WALL NUMBER 4

Wall height? ====> 11 ft. f'c: 3000 psi

Wall length? ====> 27.33 ft. fy: 40 ksi

Thickness? ======> 10 in. Ec: 3122.018 ksi

Av: ==========> 0.22 sq. in.

d: ==========> 262.368 in.

s: ==========> 9 in. Vs: 256.5376 kips

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WALL NO.	LEVEL	AXIAL SHEAR	TORSIONAL SHEAR	CUM. TOT. SHEAR	FACTORED ULT. CAP.	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL
		kips	kips	kips	kips		in.
4	ROOF	76.9	15.9	92.8	627.537	0.1722	0.0034
	8	66.6	13.6	173	633.925	0.3548	0.0064
	7	58.5	11.9	243.4	640.314	0.4942	0.0090
	6	50.4	10.3	304.1	646.702	0.6113	0.0112
	5	42.3	8.6	355	653.091	0.7066	0.0131
	4	34.2	7	396.2	659.479	0.7810	0.0147
	3	26.1	5.3	427.6	665.867	0.8348	0.0158
	2	18	3.7	449.3	672.256	0.8689	0.0166
	1	4.5	0.4	454.2	678.644	0.8701	0.0168

PROJECT: GSA - 517 GOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS OPT 1A
DATE: MARCH 23, 1992

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- WALL NUMBER 5

Wall height? ====> 11 ft. f'c: 3000 psi

Wall length? ====> 10 ft. fy: 40 ksi

Thickness? ======> 8 in. Ec: 3122.018 ksi

Av: ==========> 0.2 sq. in.

d: ==========> 96 in.

s: ==========> 10 in. Vs: 76.8 kips

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WALL NO.	LEVEL	AXIAL SHEAR kips	TORSIONAL SHEAR kips	CUM. TOT. SHEAR kips	FACTORED ULT. CAP. kips	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL in.
5	ROOF	19.4	0.1	19.5	185.142	0.1369	0.0024
	8	17	0.1	36.6	187.012	0.2544	0.0046
	7	14.9	0.1	51.6	188.882	0.3531	0.0065
	6	12.8	0.1	64.5	190.752	0.4396	0.0081
	5	10.8	0.1	75.4	192.622	0.5089	0.0095
	4	8.7	0.1	84.2	194.492	0.5628	0.0106
	3	6.6	0	90.8	196.362	0.6011	0.0115
	2	4.6	0	95.4	198.232	0.6256	0.0121
	1	0.2	0	95.6	200.102	0.6211	0.0121

PROJECT: GSA - 517 GOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANAL:SIE OPT 14
DATE: MARCH 23, 1992

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WALL NUMBER 6

Wall height? ====> 11 ft. f'c: 3000 psi

Wall length? ====> 7 ft. fy: 40 ksi

Thickness? ======> 10 in. Ec: 3122.018 ksi

Av: ==========> 0.22 sq. in.

d: ==========> 67.2 in.

s: ==========> 9 in. Vs: 65.70666 kips

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WALL NO.	LEVEL	AXIAL SHEAR kips	TORSIONAL SHEAR kips	CUM. TOT. SHEAR kips	FACTORED ULT. CAP. kips	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL in.
6	ROOF	10.3	0.2	10.5	160.730	0.0849	0.0015
	8	9	0.2	19.7	162.366	0.1577	0.0028
	7	7.9	0.2	27.8	164.002	0.2204	0.0040
	6	6.8	0.2	34.8	165.639	0.2731	0.0050
	5	5.7	0.1	40.6	167.275	0.3155	0.0058
	4	4.6	0.1	45.3	168.711	0.3486	0.0065
	3	3.5	0.1	48.9	170.547	0.3727	0.0070
	2	2.4	0	51.3	172.184	0.3373	0.0074
	1	0.1	0	51.4	173.820	0.3844	0.0074

PROJECT: GSA - 517 GOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS OPT 1A
DATE: MARCH 23,1992

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WALL NUMBER 7

Wall height? ====> 11 ft. f'c: 3000 psi

Wall length? ====> 23.5 ft. fv: 40 ksi

Thickness? ======> 10 in. Ec: 3122.018 ksi

Av: ==========> 0.22 sq. in.

d: ==========> 225.6 in.

s: ==========> 9 in. Vs: 220.5866 kips

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WALL NO.	LEVEL	AXIAL SHEAR kips	TORSIONAL SHEAR kips	CUM. TOT. SHEAR kips	FACTORED ULT. CAP. kips	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL in.
7	ROOF	62.2	1.4	63.6	539.595	0.1532	0.0017
	8	53.9	1.3	118.8	545.088	0.2833	0.0051
	7	47.3	1.2	167.3	550.581	0.3950	0.0072
	6	40.8	1	209.1	556.074	0.4888	0.0090
	5	34.2	0.8	244.1	561.567	0.5651	0.0105
	4	27.7	0.7	272.5	567.060	0.6247	0.0117
	3	21.1	0.5	294.1	572.553	0.6678	0.0127
	2	14.6	0.4	309.1	578.046	0.6952	0.0133
	1	3.6	0.1	312.8	583.540	0.6967	0.0138

PROJECT: GSA - 517 GOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS OPT 1A
DATE: MARCH 23, 1992

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WALL NUMBER, 8

Wall height? ====> 11 ft. f'c: 3000 psi

Wall length? ====> 10 ft. fv: 40 ksi

Thickness? ======> 10 in. Ec: 3122.018 ksi

Av: ==========> 0.22 sq. in.

d: ==========> 96 in.

s: ==========> 9 in. Vs: 93.86666 kips

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WALL NO.	LEVEL	AXIAL SHEAR (kips)	TORSIONAL SHEAR (kips)	CUM. TOT. SHEAR (kips)	FACTORED ULT. CAP. (kips)	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL (in.)
8	ROOF	24.3	0.4	24.7	229.614	0.1398	0.0025
	8	21.2	0.4	46.3	231.952	0.2597	0.0047
	7	18.6	0.3	65.2	234.289	0.3619	0.0066
	6	16	0.3	81.5	236.627	0.4479	0.0082
	5	13.5	0.2	95.2	238.964	0.3179	0.0096
	4	10.9	0.2	106.3	241.302	0.5727	0.0107
	3	8.3	0.1	114.7	243.639	0.6120	0.0116
	2	5.7	0.1	120.5	245.977	0.6368	0.0122
	1	0.3	0	120.8	248.314	0.6324	0.0122

PROJECT: GSA - 517 GOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS OPT 1A
DATE: MARCH 23, 1992

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WALL NUMBER 9

Wall height? ====> 11 ft. f'c: 3000 psi

Wall length? ====> 46 ft. fy: 40 ksi

Thickness? ======> 10 in. Ec: 3122.018 ksi

Av: ==========> 0.22 sq. in.

d: ==========> 441.6 in.

s: ==========> 9 in. Vs: 431.7866 kips

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WALL NO.	LEVEL	AXIAL SHEAR kips	TORSIONAL SHEAR kips	CUM. TOT. SHEAR kips	FACTORED ULT. CAP. kips	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL in.
9	ROOF	146.2	1.3	147.5	1056.22	0.1815	0.0032
	8	126.6	1.3	275.4	1066.98	0.3355	0.0060
	7	111.3	1.1	387.8	1077.73	0.4678	0.0085
	6	95.9	1	484.7	1088.48	0.5789	0.0106
	5	80.5	0.8	566	1099.23	0.6694	0.0124
	4	65.1	0.7	631.8	1109.99	0.7400	0.0139
	3	49.7	0.5	682	1120.74	0.7911	0.0150
	2	34.3	0.4	716.7	1131.49	0.8234	0.0158
	1	7.4	0.1	724.2	1142.24	0.8242	0.0159

PROJECT: GSA - 517 GOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS OPT 1A
DATE: MARCH 23, 1992

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WALL NUMBER 10

Wall height? ====> 11 ft. f'c: 3000 psi

Wall length? ====> 10 ft. fv: 40 ksi

Thickness? ======> 8 in. Ec: 3122.018 ksi

Av: ==========> 0.2 sq. in.

d: ==========> 96 in.

s: ==========> 10 in. Vs: 76.8 kips

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WALL NO.	LEVEL	AXIAL SHEAR kips	TORSIONAL SHEAR kips	CUM. TOT. SHEAR kips	FACTORED ULT. CAP. kips	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL in.
10	ROOF	19.4	0.2	19.6	185.142	0.1376	0.0024
	8	17	0.2	36.8	187.012	0.2558	0.0046
	7	14.9	0.2	51.9	188.882	0.3572	0.0068
	6	12.8	0.2	64.9	190.752	0.4423	0.0082
	5	10.8	0.2	75.9	192.622	0.5122	0.0096
	4	8.7	0.1	84.7	194.492	0.5661	0.0107
	3	6.6	0.1	91.4	196.362	0.6051	0.0116
	2	4.6	0.1	96.1	198.232	0.6302	0.0121
	1	0.2	0	96.3	200.102	0.6256	0.0122

PROJECT: GSA - 917 GOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS OPT 1A
DATE: MARCH 23, 1992

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WALL NUMBER 11

Wall height? ====> 11 ft. f'c: 3000 psi

Wall length? ====> 10 ft. fy: 40 ksi

Thickness? ======> 8 in. Ec: 3122.018 ksi

Av: ==========> 0.2 sq. in.

d: ==========> 96 in.

s: ==========> 10 in. Vs: 75.8 kips

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WALL NO.	LEVEL	AXIAL SHEAR kips	TORSIONAL SHEAR kips	CUM. TOT. SHEAR kips	FACTORED ULT. CAP. kips	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL in.
11	ROOF	19.4	0	19.4	185.142	0.1362	0.0024
	8	17	0	36.4	187.012	0.2530	0.0046
	7	14.9	0	51.3	188.862	0.3531	0.0063
	6	12.8	0	64.1	190.752	0.4368	0.0081
	5	10.8	0	74.9	192.622	0.5055	0.0095
	4	8.7	0	83.6	194.492	0.5588	0.0106
	3	6.6	0	90.2	196.362	0.5972	0.0114
	2	4.6	0	94.8	198.232	0.6217	0.0120
	1	0.2	0	95	200.102	0.6172	0.0120

PROJECT: GSA - 517 GOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS OPT 1A
DATE: MARCH 23, 1992

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WALL NUMBER 12

Wall height? ====> 11 ft. f'c: 3000 psi

Wall length? ====> 6.17 ft. fv: 40 ksi

Thickness? ======> 8 in. Ec: 3122.018 ksi

Av: ==========> 0.2 sq. in.

d: ==========> 59.232 in.

s: ==========> 10 in. Vs: 47.3856 kips

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WALL NO.	LEVEL	AXIAL SHEAR kips	TORSIONAL SHEAR kips	CUM. TOT. SHEAR kips	FACTORED ULT. CAP. kips	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL in.
12	ROOF	6	0.1	6.1	114.232	0.0694	0.0012
	8	5.2	0.1	11.4	115.386	0.1284	0.0023
	7	4.6	0.1	16.1	116.540	0.1796	0.0033
	6	4	0.1	20.2	117.694	0.2231	0.0041
	5	3.3	0.1	23.6	118.848	0.2561	0.0048
	4	2.7	0.1	26.4	120.001	0.2860	0.0054
	3	2	0	28.4	121.155	0.3047	0.0058
	2	1.4	0	29.8	122.309	0.3167	0.0061
	1	0.1	0	29.9	123.463	0.3148	0.0061

PROJECT: GSA - 317 GOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS OPT 1A
DATE: MARCH 23, 1992

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WALL NUMBER 13

Wall height? ====> 11 ft. f'c: 3000 psi

Wall length? ====> 27.33 ft. fv: 40 ksi

Thickness? ======> 10 in. Ec: 3122.018 ksi

Av: ==========> 0.22 sq. in.

d: ==========> 262.368 in.

s: ==========> 9 in. Vs: 256.5376 kips

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WALL NO.	LEVEL	AXIAL SHEAR kips	TORSIONAL SHEAR kips	CUM. TOT. SHEAR kips	FACTORED ULT. CAP. kips	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL in.
13	ROOF	76.9	13.4	90.3	627.537	0.1871	0.0033
	8	66.6	11.7	168.6	633.925	0.3458	0.0062
	7	58.5	10.2	237.3	640.314	0.4818	0.0088
	6	50.4	8.8	296.5	646.703	0.5960	0.0110
	5	42.3	7.4	346.2	653.091	0.6891	0.0128
	4	34.2	6	386.4	659.479	0.7617	0.0143
	3	26.1	4.6	417.1	665.867	0.8143	0.0154
	2	18	3.2	438.3	672.256	0.8476	0.0162
	1	3.6	0.3	442.2	678.644	0.8471	0.0164

PROJECT: GSA - 317 GOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS OFT 1A
DATE: MARCH 23, 1992

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WALL NUMBER 14

Wall height? ====> 11 ft. f'c: 3000 psi

Wall length? ====> 11.6 ft. fv: 40 ksi

Thickness? =======> 10 in. Ec: 3122.018 ksi

Av: ==========> 0.22 sq. in.

d: ==========> 111.36 in.

s: ==========> 9 in. Vs: 108.9253 kips

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WALL NO.	LEVEL	AXIAL SHEAR	TORSIONAL SHEAR	CUM. TOT. SHEAR	FACTORED ULT. CAP.	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL
		kips	kips	kips	kips		in.
14	ROOF	33.4	0	33.4	266.353	0.1630	0.0029
	8	29.2	0	62.6	269.064	0.3025	0.0054
	7	25.7	0	68.3	271.776	0.4224	0.0077
	6	22.1	0	110.4	274.487	0.5229	0.0096
	5	18.6	0	129	277.199	0.6050	0.0112
	4	15	0	144	279.910	0.6688	0.0126
	3	11.5	0	155.5	282.622	0.7153	0.0136
	2	7.9	0	163.4	285.333	0.7445	0.0143
	1	0.4	0	163.8	288.045	0.7393	0.0143

PROJECT: BBA - 817 GOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS OPT 1A
DATE: MARCH 23, 1992

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WALL NUMBER 15

Wall height? ====> 11 ft. f'c: 3000 psi

Wall length? ====> 27.33 ft. fv: 40 ksi

Thickness? ======> 10 in. Ec: 3122.018 ksi

Av: ==========> 0.22 sq. in.

d: ==========> 262.368 in.

s: ==========> 9 in. Vs: 336.5376 kips

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WALL NO.	LEVEL	AXIAL SHEAR kips	TORSIONAL SHEAR kips	CUM. TOT. SHEAR kips	FACTORED ULT. CAP. kips	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL in.
15	ROOF	76.9	12.2	89.1	627.537	0.1846	0.0033
	8	66.6	10.6	166.3	633.925	0.3410	0.0061
	7	58.5	9.3	234.1	640.314	0.4753	0.0086
	6	50.4	8	292.5	646.702	0.5880	0.0108
	5	42.3	6.7	341.5	653.091	0.6798	0.0126
	4	34.2	5.4	381.1	659.479	0.7512	0.0141
	3	26.1	4.1	411.3	665.867	0.8030	0.0152
	2	18	2.9	432.2	672.256	0.8358	0.0160
	1	3.7	0.3	436.2	678.644	0.8386	0.0162

PROJECT: GSA - 517 GOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS OPT 1A
DATE: MARCH 23,1992

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WALL NUMBER 16

Wall height? ====> 11 ft. f'c: 3000 psi

Wall length? ====> 6.17 ft. fy: 40 ksi

Thickness? ======> 8 in. Ec: 3122.018 ksi

Av: ==========> 0.2 sq. in.

d: ==========> 59.232 in.

s: ==========> 10 in. Vs: 47.3856 kips

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WALL NO.	LEVEL	AXIAL SHEAR (kips)	TORSIONAL SHEAR (kips)	CUM. TOT. SHEAR (kips)	FACTORED ULT. CAP. (kips)	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL (in.)
16	ROOF	6	0.1	6.1	114.232	0.0694	0.0012
	8	5.2	0.1	11.4	115.386	0.1284	0.0023
	7	4.6	0.1	16.1	116.540	0.1776	0.0033
	6	4	0.1	20.2	117.694	0.2231	0.0041
	5	3.3	0	23.5	118.848	0.2571	0.0048
	4	2.7	0	26.2	120.001	0.2838	0.0053
	3	2	0	28.2	121.155	0.3026	0.0058
	2	1.4	0	29.6	122.309	0.3146	0.0060
	1	0.1	0	29.7	123.463	0.3127	0.0061

PROJECT: SSA - 517 SOLL
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS SPT 14
DATE: MARCH 23, 1992

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WALL NUMBER 17

Wall height? ====> 11 ft. f'c: 3000 psi

Wall length? ====> 9.5 ft. fy: 40 ksi

Thickness? ======> 8 in. Ec: 3122.018 ksi

Av: ==========> 0.2 sq. in.

d: ==========> 91.2 in.

s: ==========> 10 in. Vs: 72.76 kips

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WALL NO.	LEVEL	AXIAL SHEAR	TORSIONAL SHEAR	CUM. TOT. SHEAR	FACTORED ULT. CAP.	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL
		kips	kips	kips	kips		in.
17	ROOF	9.3	1.5	10.8	175.885	0.0798	0.0014
	8	8.1	1.3	20.2	177.661	0.1478	0.0026
	7	7.1	1.2	28.5	179.438	0.2065	0.0038
	6	6.1	1	35.6	181.214	0.2554	0.0047
	5	5.1	0.9	41.6	182.991	0.2955	0.0055
	4	4.2	0.7	46.5	184.767	0.3272	0.0061
	3	3.2	0.5	50.2	186.544	0.3499	0.0067
	2	2.2	0.4	52.8	188.320	0.3645	0.0070
	1	0.4	0	53.2	190.097	0.3638	0.0071

PROJECT: GSA - 617 SOLD
JOB NO.: 91063.0
SUBJECT: SHEAR WALL ANALYSIS OFT 1A
DATE: MARCH 23, 1992

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WALL NUMBER 18

Wall height? ====> 11 ft. f'c: 3000 psi

Wall length? ====> 7 ft. fy: 40 ksi

Thickness? ======> 8 in. Ec: 3122.018 ksi

Av: ==========> 0.2 sq. in.

d: ==========> 67.2 in.

s: ==========> 10 in. Vs: 53.76 kips

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WALL NO.	LEVEL	AXIAL SHEAR kips	TORSIONAL SHEAR kips	CUM. TOT. SHEAR kips	FACTORED ULT. CAP. kips	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL in.
18	ROOF	4.5	0.7	5.2	127.577	0.0521	0.0006
	8	3.9	0.6	9.7	130.908	0.0963	0.0012
	7	3.4	0.6	13.7	132.217	0.1347	0.0024
	6	2.9	0.5	17.1	133.526	0.1668	0.0031
	5	2.5	0.4	20	134.835	0.1928	0.0036
	4	2	0.3	22.3	136.144	0.2129	0.0040
	3	1.5	0.3	24.1	137.453	0.2279	0.0043
	2	1	0.2	25.3	138.762	0.2370	0.0045
	1	0.2	0	25.5	140.071	0.2367	0.0046

PROJECT: GSA - 517 GOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS OPT 1A
DATE: MARCH 23, 1992

****

WALL NUMBER 19

Wall height? ====> 11 ft. f'c: 3000 psi

Wall length? ====> 7 ft. fy: 40 ksi

Thickness? ======> 8 in. Ec: 3122.016 ksi

Av: ==========> 0.2 sq. in.

d: ==========> 67.2 in.

s: ==========> 10 in. Vs: 53.76 kips

****

WALL NO.	LEVEL	AXIAL SHEAR kips	TORSIONAL SHEAR kips	CUM. TOT. SHEAR kips	FACTORED ULT. CAP. kips	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL in.
19	ROOF	0	0	0	129.577	0.0000	0
	8	3.9	0.8	4.7	130.908	0.0467	0.0008
	7	3.4	0.7	8.8	132.217	0.0865	0.0015
	6	2.9	0.6	12.3	133.526	0.1198	0.0022
	5	2.5	0.5	15.3	134.835	0.1475	0.0027
	4	2	0.4	17.7	136.144	0.1690	0.0032
	3	1.5	0.3	19.5	137.453	0.1844	0.0035
	2	1	0.2	20.7	138.762	0.1939	0.0037
	1	0.2	0	20.9	140.071	0.1940	0.0037

PROJECT: GSA - 517 GOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS OPT 1A
DATE: MARCH 23, 1992

****

- WALL NUMBER 20

Wall height? ====> 11 ft. f'c: 4000 psi

Wall length? ====> 34 ft. fy: 60 ksi

Thickness? ======> 10 in. Ec: 3604.996 ksi

Av: ==========> 0.4 sq. in.

d: ==========> 326.4 in.

s: ==========> 9 in. Vs: 870.4 kips

****

WALL NO.	LEVEL	AXIAL SHEAR kips	TORSIONAL SHEAR kips	CUM. TOT. SHEAR kips	FACTORED ULT. CAP. kips	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL in.
20	ROOF	189.2	7.9	197.1	1326.83	0.1931	0.0058
	8	163.2	6.8	369.1	1334.78	0.3595	0.0110
	7	145.1	6	520.2	1342.72	0.5036	0.0155
	6	125.1	5.2	650.5	1350.67	0.6261	0.0194
	5	105	4.3	759.8	1358.62	0.7270	0.0226
	4	84.9	3.5	848.2	1366.57	0.8069	0.0253
	3	64.8	2.7	915.7	1374.51	0.8661	0.0273
	2	44.7	1.8	962.2	1382.46	0.9048	0.0287
	1	2.4	0.2	964.8	1390.41	0.9021	0.0288

PROJECT: GSA - 517 GOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS OPT 1A
DATE: MARCH 23, 1992

****

WALL NUMBER 21

Wall height? ====> 11 ft. f'c: 4000 psi

Wall length? ====> 34 ft. fy: 60 ksi

Thickness? ======> 10 in. Ec: 3604.996 ksi

Av: ==========> 0.4 sq. in.

d: ==========> 326.4 in.

s: ==========> 9 in. Vs: 370.4 kips

****

WALL NO.	LEVEL	AXIAL SHEAR (kips)	TORSIONAL SHEAR (kips)	CUM. TOT. SHEAR (kips)	FACTORED ULT. CAP. (kips)	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL (in.)
20	ROOF	189.2	8	197.2	1326.83	0.1932	0.0058
	8	165.2	6.9	369.3	1334.72	0.3597	0.0110
	7	145.1	6.1	520.5	1342.72	0.5039	0.0155
	6	125.1	5.2	650.8	1350.67	0.6264	0.0194
	5	105	4.4	760.2	1358.62	0.7274	0.0227
	4	84.9	3.6	848.7	1366.57	0.8074	0.0253
	3	64.8	2.7	916.2	1374.51	0.8665	0.0273
	2	44.7	1.9	962.8	1382.46	0.9054	0.0287
	1	2.4	0.2	965.4	1390.41	0.9026	0.0288

PROJECT: BSA - 317 GOLD
JOB NO.: 91062.0
SUBJECT: OPTION 1A - 80%
DATE: MARCH 23, 1992

****

WALL NUMBER 20

Wall height? ====> 11 ft. f'c: 4000 psi

Wall length? ====> 34 ft. fy: 60 ksi

Thickness? ======> 10 in. Ec: 3604.996 ksi

Av: ==========> 0.4 sq. in.

d: ==========> 326.4 in.

s: ==========> 14 in. Vs: 559.0428 kips

****

WALL NO.	LEVEL	AXIAL SHEAR kips	TORSIONAL SHEAR kips	CUM. TOT. SHEAR kips	FACTORED ULT. CAP. kips	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL in.
20	ROOF	151.4	6.3	157.7	1062.60	0.1929	0.0047
	8	132.2	5.4	295.3	1070.55	0.3586	0.0088
	7	116.1	4.8	416.2	1078.49	0.5017	0.0124
	6	100.1	4.2	520.5	1086.44	0.6228	0.0155
	5	84	3.4	607.9	1094.39	0.7221	0.0181
	4	67.9	2.8	678.6	1102.34	0.8003	0.0202
	3	51.8	2.2	732.6	1110.28	0.8578	0.0216
	2	35.8	1.4	769.8	1118.23	0.8947	0.0229
	1	1.9	0.2	771.9	1126.18	0.8910	0.0230

BPLW
Architects & Engineers, Inc.
2400 Louisiana Blvd. NE
AFC #5 Suite 400
Albuquerque, NM 87110
(505) 881-2759
63 East Main Street
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Mesa, AZ 85201
(602) 827-2759

Project _____
Subject _____
Project No. _____ Date _____ By _____

- ☐ Memorandum
- ☐ Telephone record
- ☐ Note to the file
- ☐ Minutes of meeting
- ☐ To be typed
- ☐ _____

OPTIONS 1B

STRUCTURAL ANALYSIS

Copies to:

June 1990

Designing to Shape the Future

BPLW

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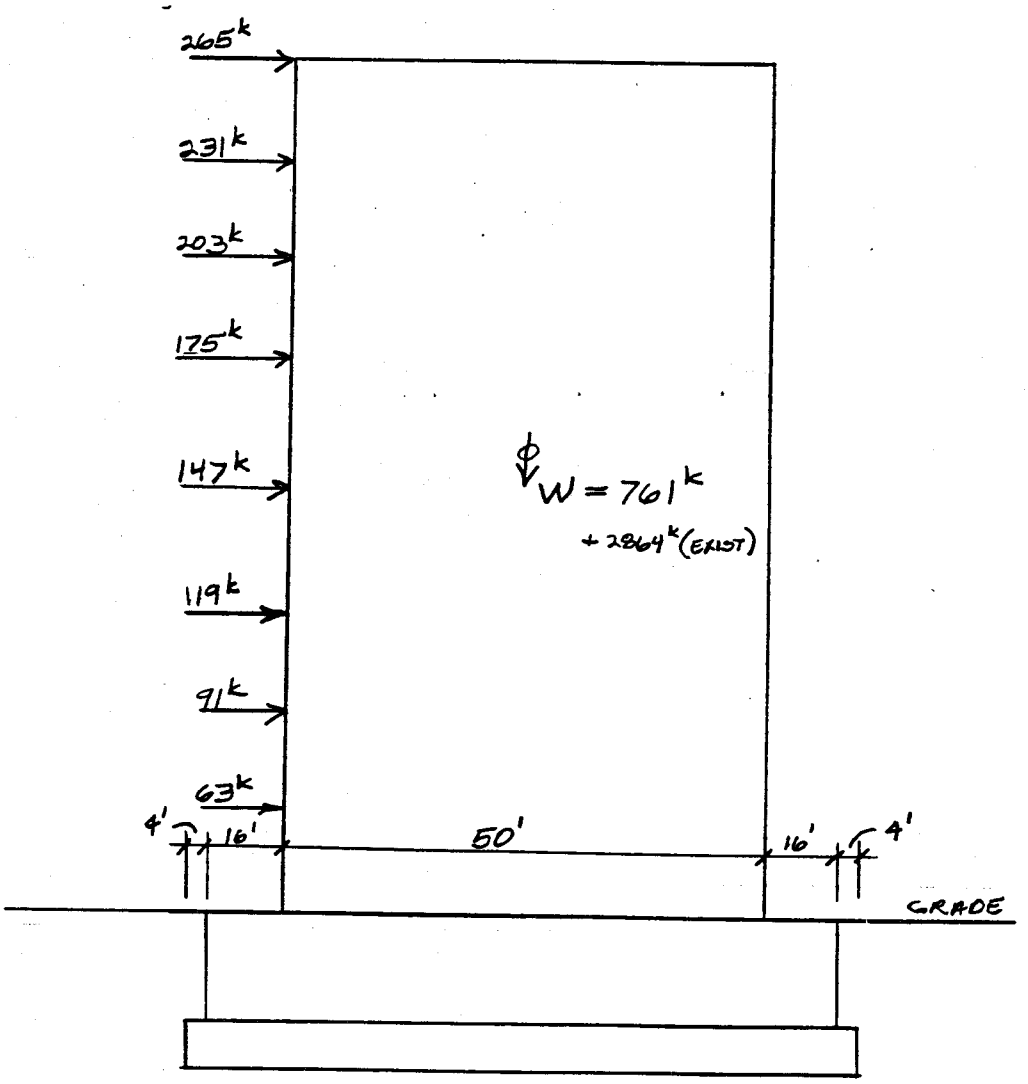
Project GSA SEISMIC ANAL.

Subject OPTIONS 1A & 1B

Project No. 91062.001 Date 2/28/92 By JMW

- ☐ Memorandum
- ☐ Telephone record
- ☐ Note to the file
- ☐ Minutes of meeting
- ☐ To be typed
- ☐ _____



$$\Sigma M_A = -70{,}714^{1\text{-}k} + 163{,}125 = 92{,}411 \ 1\text{-}k$$

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Project
Subject
Project No. Date By

☐ Memorandum
☐ Telephone record
☐ Note to the file
☐ Minutes of meeting
☐ To be typed
☐

LENGTH OF WALL REQ'D - CHECK 50' w/ (4) 3'-10" WINDOWS

$V_u = 1.5(1329) = 2658^k$

$l_w = 50 - 4(3.83) = 34.67' = 416''$

$d = .8\, l_w = 333''$
$h = 12''$
$f'_c = 4000$
$N_u = 50(150) = 7500^{\#}$

REINF: #6 @ 8" o.c. (2 MATS)
$A_v = .44\ in^2$
$f_y = 60{,}000$ psi
$s_2 = 8''$

$$V_c = \left[3.3\left(\frac{\sqrt{4000}}{1000}\right)(12)(333)\right] + \left[\frac{7.5(333)}{4(416)}\right]$$

$= 835.5^k$

$$V_s = (2)\left(\frac{.44(60)(333)}{8}\right) = 2197.8^k$$

$\phi V_n = .85(3033.3) = 2578^k$ X N.G.

TRY #7 @ 9"

$$V_s = 2\left(\frac{.60(60)(333)}{9}\right) = 2664^k$$

$\phi V_n = 2974.6^k > 2658^k$ ✓ OK

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Project _____

Subject _____

Project No. _____ Date _____ By _____

- ☐ Memorandum
- ☐ Telephone record
- ☐ Note to the file
- ☐ Minutes of meeting
- ☐ To be typed
- ☐ _____

OPTION 2A

SEISMIC ANALYSIS

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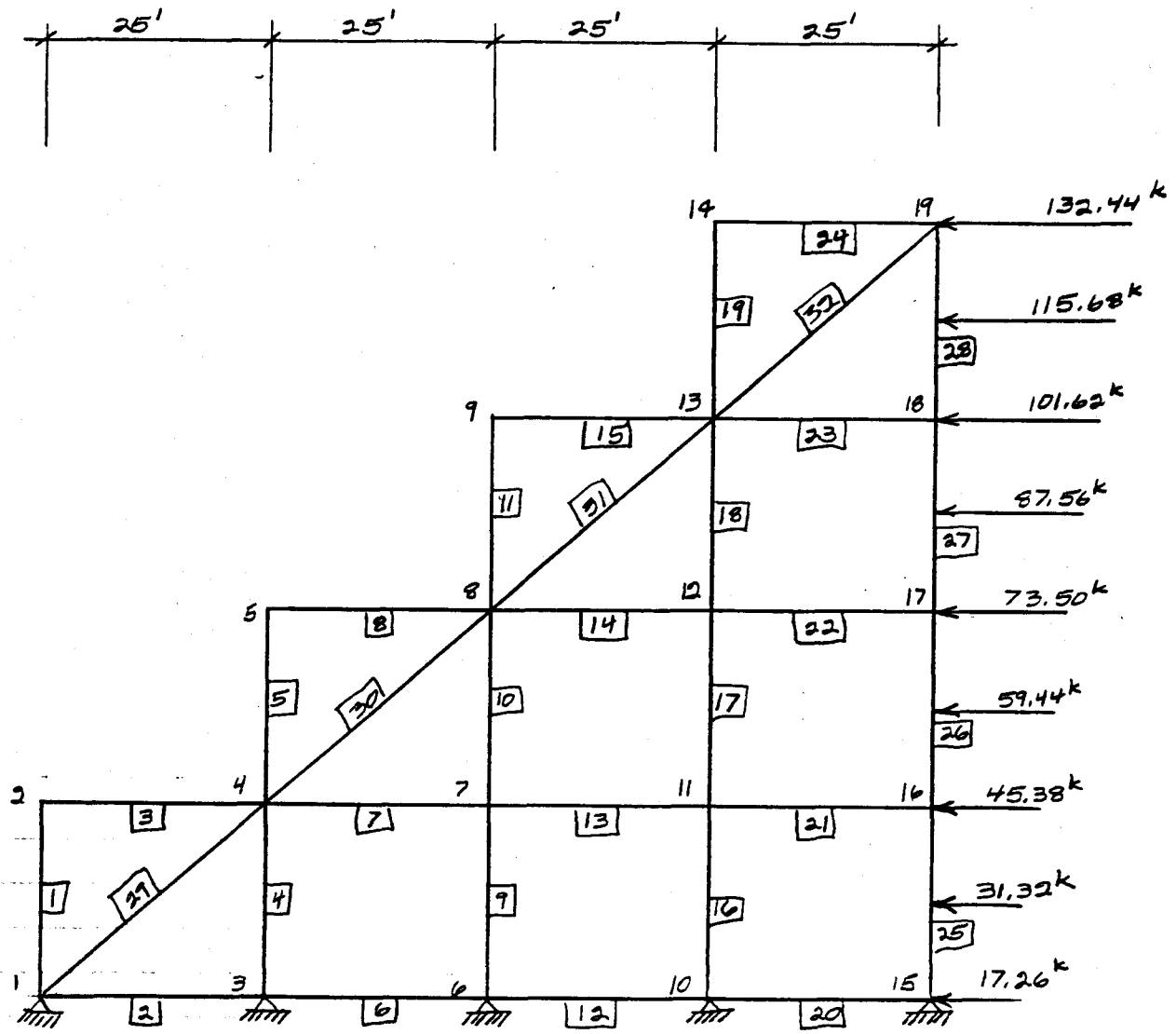
Project GSA SEISMIC ANAL.

Subject OPTION 2A

Project No. 91062.001 Date 2/26/92 By JMW

- ☐ Memorandum
- ☐ Telephone record
- ☐ Note to the file
- ☐ Minutes of meeting
- ☐ To be typed
- ☐ _____



Copies to:

Designing to Shape the Future

PROGRAM : General Frame Analysis v1.58
BPLW. INC.
JOB : GSA - 517 GOLD - EXTERIOR FRAME
RUN : 1

PAGE NO.
TIME : Wed Feb 26 14:08:27 199
JOB NO. : 1

N O D A L I N F O R M A T I O N

NODE NO	NODAL COORDINATES X	Y	SUPPORT CONDITIONS CODE	PX STIFF	PY STIFF	M STIFF
Units :	Ft	Ft		K /In	K /In	K -In /Deg
1	0.000	0.000	H			
2	0.000	22.000				
3	25.000	0.000	H			
4	25.000	22.000				
5	25.000	44.000				
6	50.000	0.000	H			
7	50.000	22.000				
8	50.000	44.000				
9	50.000	66.000				
10	75.000	0.000	H			
11	75.000	22.000				
12	75.000	44.000				
13	75.000	66.000				
14	75.000	88.000				
15	100.000	0.000	H			
16	100.000	22.000				
17	100.000	44.000				
18	100.000	66.000				
19	100.000	88.000				

E L E M E N T I N F O R M A T I O N

ELEM NO	NE NODE	PE NODE	ELEM LENGTH	BETA ANGLE	PROP TYPE	ELEM TYPE	NE HINGE	PE HINGE
		Units :	Ft	Deg				
1	1	2	22.000	90.00	1	BEAM		
2	1	3	25.000	0.00	1	BEAM		
3	2	4	25.000	0.00	1	BEAM		
4	3	4	22.000	90.00	1	BEAM		
5	4	5	22.000	90.00	1	BEAM		
6	3	6	25.000	0.00	1	BEAM		
7	4	7	25.000	0.00	1	BEAM		
8	5	8	25.000	0.00	1	BEAM		
9	6	7	22.000	90.00	1	BEAM		
10	7	8	22.000	90.00	1	BEAM		
11	8	9	22.000	90.00	1	BEAM		
12	6	10	25.000	0.00	1	BEAM		
13	7	11	25.000	0.00	1	BEAM		
14	8	12	25.000	0.00	1	BEAM		
15	9	13	25.000	0.00	1	BEAM		
16	10	11	22.000	90.00	1	BEAM		
17	11	12	22.000	90.00	1	BEAM		
18	12	13	22.000	90.00	1	BEAM		
19	13	14	22.000	90.00	1	BEAM		

E L E M E N T I N F O R M A T I O N

EM N	NE NODE	PE NODE	ELEM LENGTH	BETA ANGLE	PROP TYPE	ELEM TYPE	NE HINGE	PE HINGE
20	10	15	25.000	0.00	1	BEAM		
21	11	16	25.000	0.00	1	BEAM		
22	12	17	25.000	0.00	1	BEAM		
23	13	18	25.000	0.00	1	BEAM		
24	14	19	25.000	0.00	1	BEAM		
25	15	16	22.000	90.00	1	BEAM		
26	16	17	22.000	90.00	1	BEAM		
27	17	18	22.000	90.00	1	BEAM		
28	18	19	22.000	90.00	1	BEAM		
29	1	4	33.302	41.35	2	BEAM	Y	Y
30	4	8	33.302	41.35	2	BEAM	Y	Y
31	8	13	33.302	41.35	2	BEAM	Y	Y
32	13	19	33.302	41.35	2	BEAM	Y	Y

P R O P E R T Y I N F O R M A T I O N

PROP ND	SECTION NAME	MODULUS	AREA	I	DIST
		Units : K /In 2	In2	In4	Ft
1	W24X76	2.9e+004	22.4	2.1e+003	
2	W14X109	2.9e+004	32	1.24e+003	

E L E M E N T L O A D I N F O R M A T I O N

ID NO	LOAD CASE	LOAD TYPE	LOAD SYS	DIST SPEC		DIST	PX	PY	M
					Units :	Ft	K /Ft	K /Ft	Ft-K /Ft
scription : SEISMIC									
ement List : 1.4.9.16.25									
1	1	CONC	GLO	FRAC	B	0.50	-6.26	0.00	0.00
scription : SEISMIC									
ement List : 5.10.17.26									
2	1	CONC	GLO	FRAC	B	0.50	-14.86	0.00	0.00
scription : SEISMIC									
ement List : 11.18.27									
3	1	CONC	GLO	FRAC	B	0.50	-29.19	0.00	0.00
scription : SEISMIC									
ement List : 19.28									
4	1	CONC	GLO	FRAC	B	0.50	-57.84	0.00	0.00

ELEMENT LOAD INFORMATION

REC NO	LOAD CASE	LOAD TYPE	LOAD SYS	DIST SPEC		DIST	PX	PY	M
Description : DEAD LOAD									
Element List : 1-28									
5	2	UNIF	GLO	FRAC	B	0.00	0.00	-0.07	0.00
					E	1.00	0.00	-0.07	0.00

NODAL LOAD INFORMATION

REC NO	LOAD CASE	LOAD TYPE	PX DX	PY DY	M BETA
		Units :	K Ft	K Ft	Ft-K Deg
Description : SEISMIC					
Node List : 15					
1	1	FORCE	-17.26	0.00	0.00
Description : SEISMIC					
Node List : 16					
2	1	FORCE	-45.38	0.00	0.00
Description : SEISMIC					
Node List : 17					
3	1	FORCE	-73.50	0.00	0.00
Description : SEISMIC					
Node List : 18					
4	1	FORCE	-101.62	0.00	0.00
Description : SEISMIC					
Node List : 19					
5	1	FORCE	-132.44	0.00	0.00

N O D A L D I S P L A C E M E N T S

ODE NO	LOAD COMB	DX	DY	ROTATION
	Units :	In	In	Deg

ALL COMBINATIONS:

MB 1 : 1.00 X CASE 1

MB 2 : 1.50 X CASE 1
+ 1.20 X CASE 2

1	1	0.0000	0.0000	0.0687
	2	0.0000	0.0000	0.1014
2	1	-0.4632	-0.0029	0.0428
	2	-0.6928	-0.0051	0.0624
3	1	0.0000	0.0000	0.0298
	2	0.0000	0.0000	0.0448
4	1	-0.4656	0.0221	0.0668
	2	-0.6964	0.0308	0.1001
5	1	-0.9214	0.0199	0.0394
	2	-1.3767	0.0267	0.0564
6	1	0.0000	0.0000	0.0419
	2	0.0000	0.0000	0.0627
7	1	-0.4956	0.0469	0.0582
	2	-0.7414	0.0664	0.0866
8	1	-0.9218	0.0936	0.0663
	2	-1.3774	0.1341	0.0992
9	1	-1.3178	0.0926	0.0214
	2	-1.9669	0.1319	0.0290
10	1	0.0000	0.0000	0.0372
	2	0.0000	0.0000	0.0555

N O D A L D I S P L A C E M E N T S

NODE NO	LOAD COMB	DX	DY	ROTATION
11	1	-0.5230	0.0692	0.0625
	2	-0.7825	0.0985	0.0934
12	1	-0.9734	0.1395	0.0475
	2	-1.4548	0.2000	0.0705
13	1	-1.3146	0.2103	0.0578
	2	-1.9622	0.3041	0.0869
14	1	-1.5180	0.2130	-0.0250
	2	-2.2685	0.3072	-0.0394
15	1	0.0000	0.0000	0.0697
	2	0.0000	0.0000	0.1058
16	1	-0.5473	0.0735	0.0873
	2	-0.8190	0.1061	0.1314
17	1	-1.0167	0.1428	0.0716
	2	-1.5197	0.2069	0.1078
18	1	-1.3821	0.2087	0.0621
	2	-2.0635	0.3038	0.0935
19	1	-1.5070	0.2711	-0.0443
	2	-2.2521	0.3966	-0.0639

DF3 Filed on /S/SES/JMW Path - Job ID Letter is Q

E L E M E N T R E P O R T S

SIGN CONVENTION : BEAM DESIGNERS

ELEM NO	LOAD COMB	NODE NO	AXIAL	SHEAR	MOMENT	MAX MOM/DEFL	DIST
		Units :	K	K	K -Ft	K -Ft /In	Ft

LOAD COMBINATIONS:

COMB 1 : 1.00 X CASE 1

COMB 2 : 1.50 X CASE 1
+ 1.20 X CASE 2

E L E M E N T R E P O R T S

SIGN CONVENTION : BEAM DESIGNERS

EM N	LOAD COMB	NODE NO	AXIAL	SHEAR	MOMENT	MAX MOM/DEFL	DIST
1	1	1	-7.0918	-11.3274	98.7147		
		2	-7.0918	-5.0634	-81.5847	0.0362	15.45
	2	1	-13.3632	-17.2194	150.4934		
		2	-11.5680	-7.8234	-124.9775	0.0549	15.48
2	1	1	0.0000	6.9804	-98.7147		
		3	0.0000	6.9804	75.7952	0.0434	6.74
	2	1	0.0000	11.3822	-150.4934		
		3	0.0000	9.3422	108.5612	0.0625	6.59
3	1	2	-5.0634	7.0918	-81.5847		
		4	-5.0634	7.0918	95.7115	-0.0363	18.79
	2	2	-7.8234	11.5680	-124.9775		
		4	-7.8234	9.5280	138.7217	-0.0564	18.61
4	1	3	54.3341	-12.7828	135.7727		
		4	54.3341	-6.5188	-76.5447	-0.0340	5.09
	2	3	74.8153	-19.0966	202.7767		
		4	76.6105	-9.7006	-113.9921	-0.0507	5.09
5	1	4	-5.4875	-15.8219	123.9766		
		5	-5.4875	-0.9619	-60.6453	0.0471	14.28
	2	4	-10.9322	-23.8447	186.3247		
		5	-9.1370	-1.5547	-93.0684	0.0722	14.26
6	1	3	0.0000	5.0823	-59.9775		
		6	0.0000	5.0823	67.0791	-0.0236	19.05
	2	3	0.0000	8.6407	-94.2155		
		6	0.0000	6.6007	96.3021	-0.0365	18.87
7	1	4	-64.9773	8.1812	-104.8098		
		7	-64.9773	8.1812	99.7202	0.0329	5.59
	2	4	-97.4342	13.2896	-161.5950		
		7	-97.4342	11.2496	145.1445	0.0485	5.49

E L E M E N T R E P O R T S
SIGN CONVENTION : BEAM DESIGNERS

ELEM NO	LOAD COMB	NODE NO	AXIAL	SHEAR	MOMENT	MAX MOM/DEFL	DIST
8	1	5	-0.9619	5.4875	-60.6453		
		8	-0.9619	5.4875	76.5412	-0.0323	18.41
	2	5	-1.5547	9.1370	-93.0684		
		8	-1.5547	7.0970	109.8556	-0.0508	18.16
9	1	6	115.3156	-13.6629	138.5267		
		7	115.3156	-7.3989	-93.1524	-0.0280	4.50
	2	6	162.4153	-20.4753	207.4102		
		7	164.2105	-11.0793	-139.6904	-0.0418	4.49
10	1	7	115.0758	-12.9732	104.5642	-38.1408	11.00
		8	115.0758	1.8868	-17.3857	0.0236	14.18
	2	7	165.8687	-19.3995	156.3130	-57.0818	11.00
		8	167.6639	2.8905	-25.2866	0.0351	14.17
11	1	8	-2.4246	-22.2993	149.9685	-95.3239	11.00
		9	-2.4246	6.8877	-19.5594	0.0755	12.74
	2	8	-6.3723	-33.5703	225.3346	-143.9388	11.00
		9	-4.5771	10.2102	-31.6267	0.1150	12.74
12	1	6	0.0000	5.6065	-71.4475		
		10	0.0000	5.6065	68.7143	0.0220	5.52
	2	6	0.0000	9.3974	-111.1080		
		10	0.0000	7.3574	98.3274	0.0319	5.37
13	1	7	-59.4030	7.9414	-97.9963		
		11	-59.4030	7.9414	100.5387	-0.0301	19.56
	2	7	-89.1139	12.9078	-150.8589		
		11	-89.1139	10.8678	146.3352	-0.0463	19.43
14	1	8	-111.8153	6.8219	-90.8131		
		12	-111.8153	6.8219	79.7348	0.0329	6.05
	2	8	-167.5972	11.2636	-140.7657		
		12	-167,5972	9.2236	115.3253	0.0483	5.93

E L E M E N T R E P O R T S

SIGN CONVENTION : BEAM DESIGNERS

ELEM NO	LOAD COMB	NODE NO	AXIAL	SHEAR	MOMENT	MAX MOM/DEFL	DIST
	1	9	6.8877	2.4246	-19.5594		
		13	6.8877	2.4246	41.0554	-0.0278	16.54
	2	9	10.2102	4.5771	-31.6267		
		13	10.2102	2.5371	57.3012	-0.0454	16.13
	1	10	170.3097	-14.7820	153.8351		
		11	170.3097	-8.5180	-102.4658	-0.0341	4.74
	2	10	241.3704	-22.1571	230.6009		
		11	243.1656	-12.7611	-153.4983	-0.0512	4.74
	1	11	172.8664	-15.2573	121.9502		
		12	172.8664	-0.3973	-50.2499	0.0396	14.39
	2	11	249.0369	-22.8480	182.3620		
		12	250.8321	-0.5580	-75.1044	0.0596	14.38
	1	12	174.3972	-18.5077	126.7688	-76.8158	11.00
		13	174.3972	10.6793	40.6567	0.0412	12.11
	2	12	255.0822	-27.6383	189.1246	-114.8962	11.00
		13	256.8774	16.1422	62.6684	0.0612	12.09
	1	13	6.4838	-34.0024	187.1802	-186.8468	11.00
		14	6.4838	23.8376	75.3663	0.1395	11.57
	2	13	6.9218	-51.1971	282.2027	-280.9655	11.00
		14	8.7170	35.5629	110.2263	0.2106	11.58
20	1	10	0.0000	7.5752	-85.1208		
		15	0.0000	7.5752	104.2604	-0.0422	18.56
	2	10	0.0000	12.4510	-132.2736		
		15	0.0000	10.4110	153.5004	-0.0658	18.42
21	1	11	-52.6637	10.4981	-123.8773		
		16	-52.6637	10.4981	138.5744	-0.0487	19.05
	2	11	-79.0270	16.7391	-189.5251		
		16	-79.0270	14.6991	203.4516	-0.0745	18.95