DEPT OF BLDGS121185635 Job Number
ES514980732 Scan Code

GACE consulting engineers pc

January 6, 2015

Martin Rebholz
Manhattan Borough Commissioner
280 Broadway
New York, NY 10007

Re: 45 Park Place
New York, NY
B4176.00

Dear Mr. Rebholz,

This letter is to confirm that GACE Consulting Engineers has performed a structural peer review of the plans and specifications submitted by the WSP Group for the above referenced project. The peer review was done in accordance with the 2008 NYC BC section 1627.6. The following documents were submitted and reviewed:

- Structural, architectural and MEP drawings for 45 Park Place dated July 14th, 2014.
- Geotechnical report submitted by Pillori Associates and dated September 2014
- Wind Tunnel Study submitted by RWDI and dated January 21, 2014.

The details of our review are outlined in the attached peer review report dated December 12, 2014. This report was submitted to the WSP group and all comments have been acknowledged and are pending updated drawings.

Thank you,

GACE Consulting Engineers, P.C.

Chok Pan Wong

STATE OF NEW YORK
CHOK-PAN WONG
No. 082265
LICENSED PROFESSIONAL ENGINEER

Chok-Pan Wong, PE
Associate Principal

CC: Matt McMillen, Susan Haynes, Michael McLaughlin, Susan Erdelyi Hamos

I:\projs\B41xx\B4176.00 45 Park Place- Peer Review\Letters\L01-20150106.docx

45 Park Place – Peer Review
B4176.00

Prepared for:

Soho Properties, Inc.
31 West 27th Street, 9th Floor
New York, New York 10001

Prepared by:

GACE Consulting Engineers, PC
31 West 27th Street, 6th Floor
New York, New York 10001

December 12, 2014

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Items 1.0 & 2.0

1.0 Introduction

This report is provided as a peer review of 45 Park Place located in lower Manhattan, New York. The project consists of a 44-story residential building, and was prepared by WSP Cantor Seinuk. The approximate height of the building is 690 feet. The structural system for the building is flat plate concrete construction. The lateral system of the building consists of a core of concrete shear walls and link beams as well as concrete outrigger wall beams at the 12th and 41st floors. Two levels of slosh damper tanks are to be placed above the 42nd floor to control building motions. The main tower will be founded on high capacity caissons which will be socketed into competent rock.

2.0 Scope of Service

The scope of our work was to perform a peer review as defined in the 2008 New York City Building code section 1627.6. The reference material for the review consists of the following documents: structural, architectural, and mechanical drawings for 45 Park Place dated July 14th 2014 issued for "12 Far D.O.B. Issue" accompanied by AutoCAD files sent on November 6th 2014. The geotechnical report dated September 2014 and the structural wind load study dated January 21, 2014 were used as reference for this review. GACE reviewed these drawing as per requirements listed in the 2008 New York City Building Code.

No response required

Item 2.1

2.1 Conformance of Design Loads to New York City Building Code

The dead and live load schedule shown on FO-001 was reviewed and found to be in general conformance with 2008 NYCBC. Due to the height and slenderness of the building a project specific wind tunnel study was used to determine the wind loads on the building. This conforms with standard engineering practice for this type of building. The seismic load criteria as shown on FO-001 was also reviewed in conjunction with afore mentioned geotechnical report. The seismic criteria shown on the structural drawing does not reflect the referenced short and long term spectral response as referenced in 1615.1 of the 2008 NYCBC. If a site specific study was performed the information will be required to verify the Seismic Design Category used is appropriate for the site.

We have reviewed our analysis model and have designed the building for seismic design category C. FO-001 has been corrected to show seismic design category C and the appropriate short and long-term spectral response values.

This is acceptable pending 100% CD.

Item 2.2

2.2 Conformance of Structural Design Criteria

The design criteria as shown on FO-001 generally conforms to the 2008 NYCBC pending the confirmation of seismic design criteria.

No response required, see response above.

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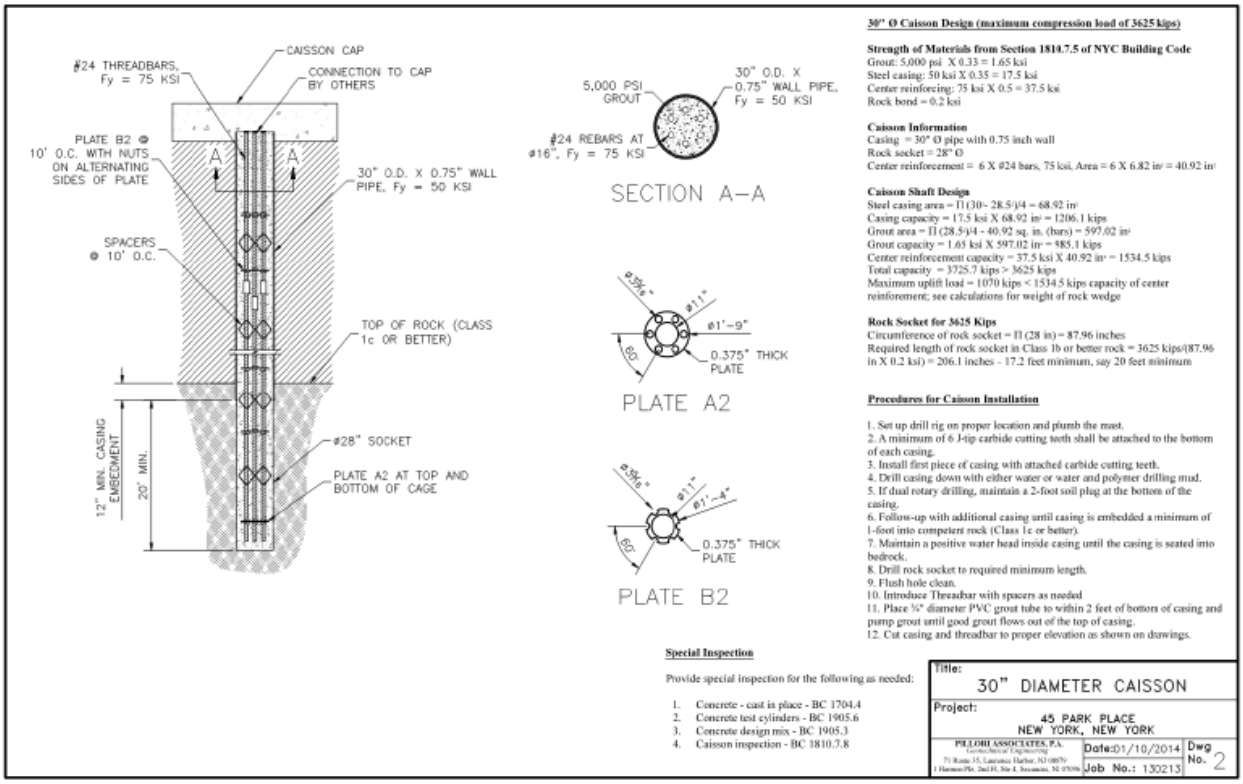
Item 2.3

2.3 Geotechnical Report Review

The foundations were reviewed in conjunction with the aforementioned geotechnical report. The design intent follows the general recommendations of the report. However, the report references high capacity caissons but does not specify a design or capacity of the caissons that are being specified in the structural drawings.

High capacity caissons were designed my Pillori Associates in a separate document. Cut sheet shown below:



This is adequate pending 100% CD referencing or showing this document.

Item 2.4

2.4 Complete Structural Load Path

The building was assessed for a complete structural load path. We have the following concerns:

a)

- Column 7 is walked between the 2nd and 3rd floors and rests on a column/buttress at the 1st floor. However, the buttress does not exist below the 1st floor. Its not clear how the transition is made between the 1st and cellar floors.

Column 7 at the 2nd floor sits on a N-S running shear wall that continues to the foundation. The buttress between the 1st floor and underside of the 2nd has been sized to maintain minimum bearing capacity and was not required below the 1st floor because the load distributes along the wall.

This is adequate.

b) • Column 3 at 3rd floor overhangs column below.

Column #3, at 3rd floor showed a transition from a 24x48 column above to a 42x36 column below. We have increased the walked column to be 42x42; the overlap of these columns is 24x42 with sufficient bearing capacity.

This is adequate pending changes made for 100%CD.

c)

• Not clear how the outrigger beam spanning between column 1 and shear wall 4 is connected at the 41st floor.

Sheet S-410 shows the reinforcement for the E-W perimeter wall connecting Col-1, sheet S-949 shows the elevation of SW-4 connecting the outrigger to the core. An elevation will be provided in the 100%CD set.

Please provide elevation for outrigger running east-west between SW-4 and column 1 for review.

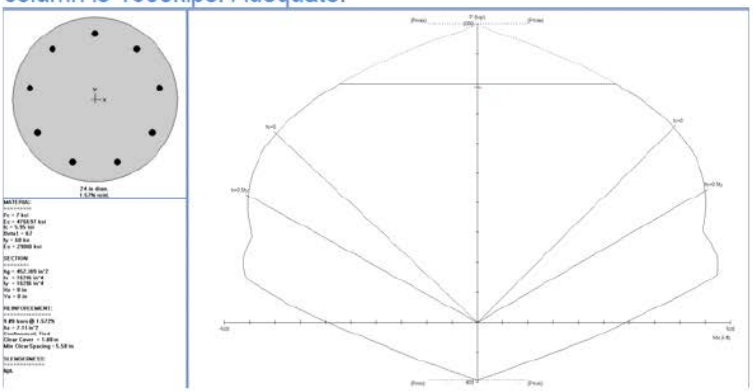
Item 2.5

2.5 Independent Calculation Comparison

Independent calculations were performed for a portion of various structural elements including transfer beams, shear walls, columns, slabs, and caisson caps. Designs were reviewed based on the factored loads from the column schedule provided on S-950.00. Based on our calculations the elements below do not appear to have sufficient structural capacity for the loads shown in the column schedule.

a) • Column 1 on the 37th floor

Column 1, supporting floor 38 is 7ksi 24" round with 9-#8 and demand of 1578kips. Capacity for this column is 1600kips. Adequate.



This is adequate.

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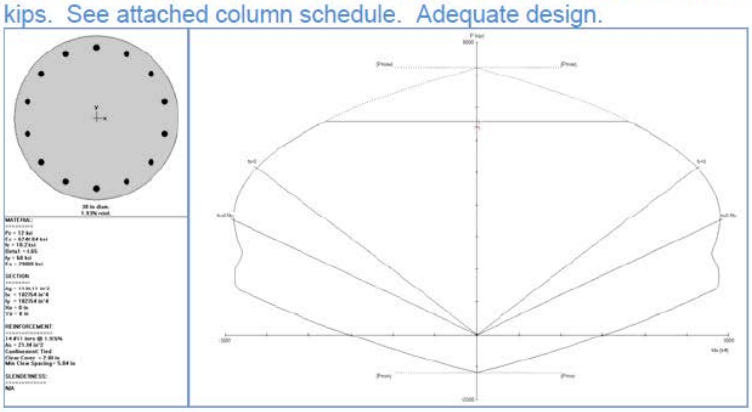
b) • Column 2 on the 1st floor and the 37th floor

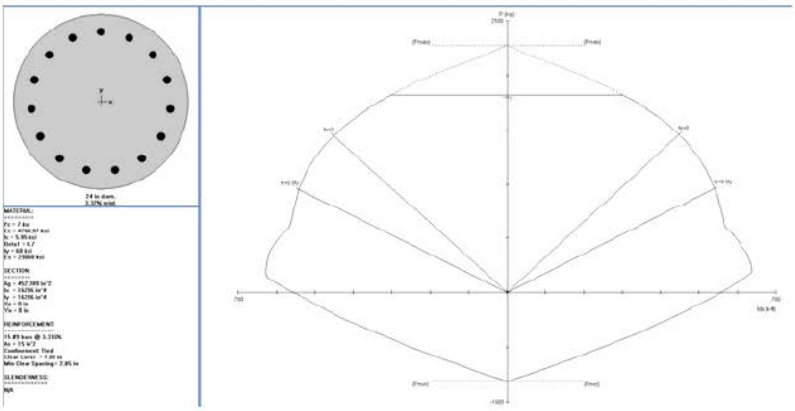
Column 2

1. Supporting floor 2 is 38" round with a capacity of 6500kips, demand shown in 12FAR column schedule was 6578 kips. We have increased the reinforcement to 14-#11, with a capacity of 6580 kips. See attached column schedule. Adequate design.



Beam at mezzanine is only bracing the column in one direction please provide calculation to showing the beam is sufficient to brace the column out of plane.

2. Supporting floor 38 has a capacity of 1820kips, and demand of 1800. Adequate design.



This is adequate.

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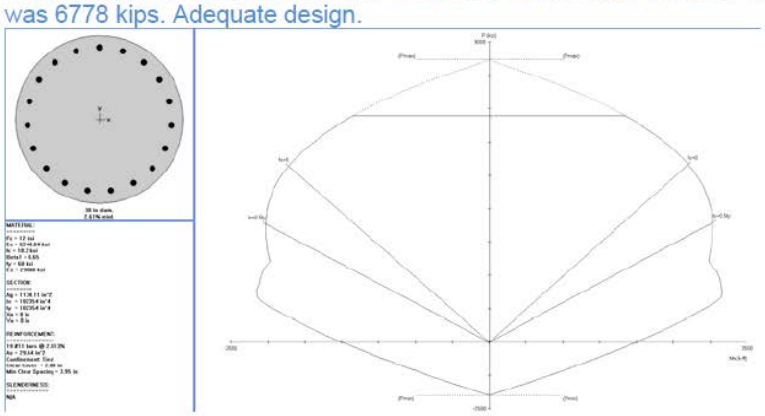
c) • Column 3 on the 1st floor and 11th floor

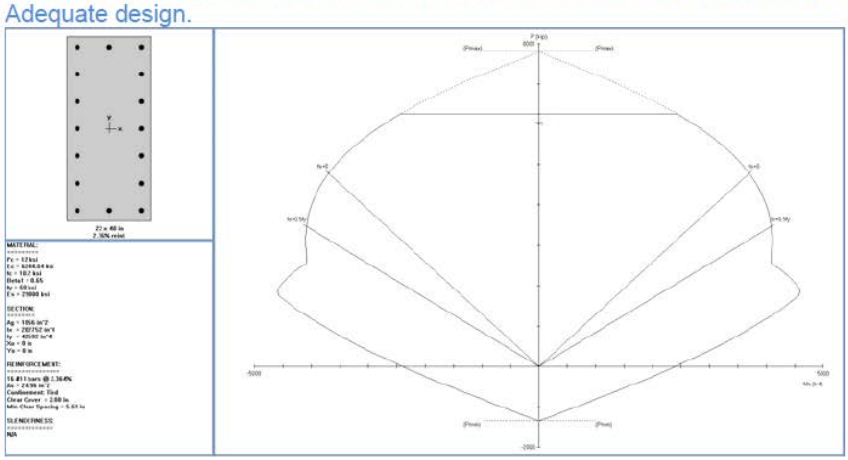
Column 3

1. Supporting floor 2 is 38" round with a capacity of 6780kips, demand shown in column schedule was 6778 kips. Adequate design.



This is adequate.

2. Supporting floor 12 is 22x48 with 16-#11. Demand is 6050 kips and capacity is 6250 kips. Adequate design.



This is adequate.

d) • Caisson caps CC3 and CC2A

CC3 and CC2A are caisson caps at the base of a 15 story concrete wall. The wall will act as a very deep beam distributing the loading in the N-S direction. Pilasters extend from the foundation to the underside of the 3rd floor to better center the loading over the caisson centers.

Please provide punching shear calculations, and confirm that the caisson cap confinement is adequate.

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e) • Transfer wall beam at 12th floor supporting column 10

Column 10 reaction is 2340kips, wall is 20ft long and 16ft tall. The wall was designed as a deep beam. Bottom reinforcement shown to have Lenton terminators. Design adequate.

Please provide calculations for all design requirements for this beam.

f) • 28B1, 28B2, 28B4 Beams 28B1, 28B2, & 28B3 have been designed and checked:

CONCRETE BEAM DESIGN — **WSP CANTOR SEINUK**

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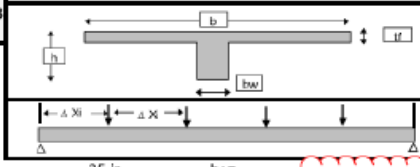
PROJECT=	45 Park Place	Date:	2014
JOB#=	b13.04740	Code:	ACI-318-95
LEVEL#=		28	
BEAM #=	28B1		



INT/EXT=	Int (Interior or Exterior span)						
b=	36 in						
bw=	36 in						
h=	39 in						
tf=	0 in						
d1=	4 in	d=	35 in	be=			
L=	20 ft	Ae=	1404 in2	A(Gross)=	4-#5@6 = 2.48in2/ft - OK		
Wsid=	0 psf	XT=	19.5 in	WDL=			
Wsid=	1457.142857 lbs/ft	Ig (+)=	177957 in4	Ig(Negative)=	177957 in4		
WLL=	0 psf	St=	9126 in3	St(Negative)=	9126 in3		
WLL=	611.7647059 lbs/ft	Sb=	9126 in3	Sb(Negative)=	9126 in3		

Col 14 in schedule is 650kips

POINT LOADS: Note: Coordinates Xi below must be entered sequentially from left to right

DS: #	Δ Xi (FT)	Xi(FT)	FD(K)	FSDL(K)	FL(K)	FU(K)	FU*X	DEF.COEF
1	14	14	279.4285714	0	160.3529412	663.8	9293.2	1584
2	4	18	0	0	0	0	0	592
	4	22	0	0	0	0	0	-592
	4	26	0	0	0			-1584

14-#11 OK

f'c=	8,000 psi	Ec=	5098 ksi				
fy=	60,000 psi	GamaC=	150 pcf	n=	5.7		
PD=	1462.5 lb/ft	frc=	671 psi				
PSID=	1457.1 lb/ft	PS=	3531 lb/ft	SUM FD=	279 k		
PLL=	611.8 lb/ft	PU=	5126 lb/ft	SUM FL=	160 k		
VUmax=	515.9 k	VLU=	250.4 k	VRU=	515.9 k		
VC.FI=	191.6 k	N=	5.4 SQR(f'c)	X(v=0)=	48.8 ft		
VSmax=	324.3 k	Avmax=	2.18 in2/FT	Total Per ft.	OK		

MLu	M1U	M2U	M3U	M4U	MUMID	MRu	MU(+)max	Mu0
0	3003	1022	-1042	-3188	2248	0	3003	3003

ρmax.tf=	0.0000	ρmax.rc=	0.0327	ρmax.T=	0.0327
ρmin=	0.004	Asmin=	5.63	in2	
MU0=	3003.3 k-ft	Ro =	0.0170 *OK*		
MU+=	3003.3 k-ft	As(RQ'D)=	21.45 in2		
wL2/ 8.00		AS(PV'D)=	21.45 in2	Postive Reinforcement	

C1(in)	Icr1(in4)	C2(in)	Icr2(in4)	C(in)	Icr(in4)	Mcr(k-ft)	Ieff(in4)
12.4	85205	12.4	85205	12.4	85205	510	86597

LEFT END FIXITY:

LF%=	0	%	WL2/				MD-=	0	k-ft
							MSDL-=	0	k-ft
							MLL-=	0	k-ft
Ms-(K')	Mu-(K')	Asl-(In2)	ρ-	C(IN)	Icr-(IN4)		Mcr-(k-ft)	Ieff- (in4)	
0	0	0.00	0.0000	0.0	0		510	177957	

RIGHT END FIXITY:

RF%=	0	%	WL2/				MD-=	0	k-ft
							MSDL-=	0	k-ft
							MLL-=	0	k-ft
Ms-(K')	Mu-(K')	Asl-(In2)	ρ-	C(IN)	Icr-(IN4)		Mcr-(k-ft)	**Ieff- (in4)**	
0	0	0.00	0.0000	0.0	0		510	**177957**	

DEFLECTIONS:

Initial Δ=	D.(1+λ0) + 0.5SIDL		λ0=	1	Ieff= 86597 in4
Long Term Δ=	λ1.D +λ2.SIDL +0.5SIDL+0.25LL λ2 +LL		λ1=	1	Ieff/Ig= 0.49
Total Δ=	Initial Δ+ Long Term Δ - Camber		λ2=	2	Δ DL= 0.16 in
					Δ SDL= 0.01 in
					Δ LL= 0.09 in

	Δ INITIAL	Δ LONG TRM		Δ TOTAL- Camber			
DFL=in	0.32	0.32		0.64		CAMBER (Sugg.)=	0 in
L/DFL=	753	755	**	377	**	CAMBER= 0	in
						Splice Factor=	1.2
						Rebar=	550 lbs/yd3

**: Refer to ACI 318 for appropriate deflection limitation

This is adequate.

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PROJECT=	45 Park Place			Date:	2014
JOB#=	b13.04740			Code:	ACI-318-95
LEVEL#=			28		
BEAM #=	28B2				
INT/EXT=	I (Interior or Exterior span)				
b=	60 in				
bw=	42 in				
h=	42 in				
tf=	12 in				
d1=	5 in	d=	37 in	be=	
L=	23 ft	Ae=	1980 in2	A(Gross)=	
Wsid=	0 psf	XT=	19.4 in	WDL=	
Wsid=	848.5714286 lbs/ft	Ig (+)=	305198 in4	Ig(Negative)=	259308 in4
WLL=	0 psf	St=	15761 in3	St(Negative)=	12348 in3
WLL=	225.8823529 lbs/ft	Sb=	13483 in3	Sb(Negative)=	12348 in3

POINT LOADS: Note: Coordinates Xi below must be entered sequentially from left to right

DS: #	Δ Xi (FT)	Xi(FT)	FD(K)	FSDL(K)	FL(K)	FU(K)	FU*X	DEF.COEF
1	18	18	412.2857143	0	206.3529412	928	16704	1858.75
2	1	19	0	0	0	0	0	1523
3	1	20	0	0	0	0	0	1163.25
4	1	21	0	0	0	0	0	785.5

f'c=	8,000 psi	Ec=	5098 ksi		
fy=	60,000 psi	GamaC=	150 pcf	n=	5.7
PD=	2062.5 lb/ft	frc=	671 psi		
PSID=	848.6 lb/ft	PS=	3137 lb/ft	SUM FD=	412 k
PLL=	225.9 lb/ft	PU=	4460 lb/ft	SUM FL=	206 k
VUmax=	777.5 k	VLU=	253.0 k	VRU=	777.5 k
VC.FI=	236.3 k	N=	6.6 SQR(f'c)	X(v=0)=	56.7 ft
VSmax=	541.3 k	Avmax=	3.44 in2/FT	Total Per ft.	OK

MLu	M1U	M2U	M3U	M4U	MUMID	MRu	MU(+)max	Mu0
0	3832	3075	2313	1546	2615	0	3832	3832

ρmax.tf=	0.0118	ρmax.rc=	0.0327	ρmax.T=	0.0445
ρmin=	0.004	Asmin=	6.95	in2	
MU0=	3832.0 k-ft	Ro =	0.0167 *OK*		
MU+=	3832.0 k-ft	As(RQ'D)=	25.89 in2		
wL2/ 8.00		AS(PV'D)=	25.89 in2	Postive Reinforcement	

C1(in)	Icr1(in4)	C2(in)	Icr2(in4)	C(in)	Icr(in4)	Mcr(k-ft)	Ieff(in4)
11.2	126132	11.3	126134	11.2	126132	754	130046

LEFT END FIXITY:

LF%=	0	% WL2/				MD-=	0	k-ft
						MSDL-=	0	k-ft
						MLL-=	0	k-ft
Ms-(K')	Mu-(K')	Asl-(In2)	ρ-	C(IN)	Icr-(IN4)	Mcr-(k-ft)	Ieff- (in4)	
0	0	0.00	0.0000	0.0	0	690	259308	

RIGHT END FIXITY:

RF%=	0	% WL2/				MD-=	0	k-ft
						MSDL-=	0	k-ft
						MLL-=	0	k-ft
Ms-(K')	Mu-(K')	Asl-(In2)	ρ-	C(IN)	Icr-(IN4)	Mcr-(k-ft)	**Ieff- (in4)**	
0	0	0.00	0.0000	0.0	0	690	**259308**	

DEFLECTIONS:

Initial Δ=	D.(1+λ0) + 0.5SIDL	λ0=	1	Ieff=	130046 in4
Long Term Δ=	λ1.D +λ2.SIDL +0.5SIDL+0.25LL λ2 +LL	λ1=	1	Ieff/Ig=	0.43
Total Δ=	Initial Δ+ Long Term Δ - Camber	λ2=	2	Δ DL=	0.19 in
				Δ SDL=	0.01 in
				Δ LL=	0.09 in

	Δ INITIAL	Δ LONG TRM		Δ TOTAL- Camber			
DFL=in	0.38	0.33		0.71		CAMBER (Sugg.)=	0 in
L/DFL=	734	825	**	388	**	CAMBER=	0 in
						Splice Factor=	1.2
**: Refer to ACI 318 for appropriate deflection limitation						Rebar=	666 lbs/yd3

7-#5@6 = 4.34in2/ft - OK

Col 15 in schedule is 910kips

21-#11 OK

This is adequate.

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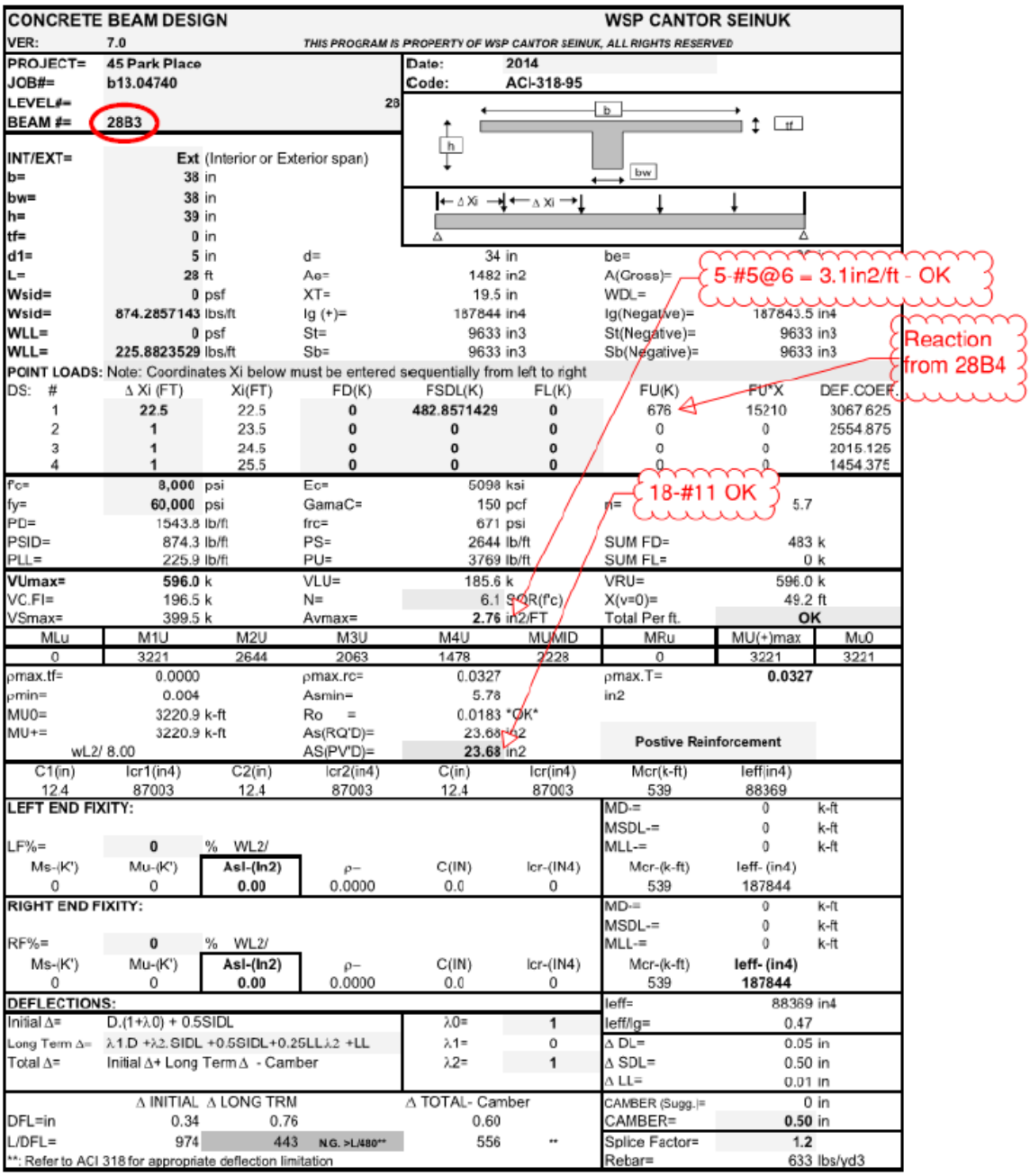

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PROJECT=	45 Park Place		Date:	2014	
JOB#=	b13.04740		Code:	ACI-318-95	
LEVEL#=		28			
BEAM #=	28B3				
INT/EXT=	Ext (Interior or Exterior span)				
b=	38 in				
bw=	38 in				
h=	39 in				
tf=	0 in				
d1=	5 in	d=	34 in	be=	
L=	28 ft	Ae=	1482 in2	A(Gross)=	
Wsid=	0 psf	XT=	19.5 in	WDL=	
Wsid=	874.2857143 lbs/ft	Ig (+)=	187844 in4	Ig(Negative)=	187843.5 in4
WLL=	0 psf	St=	9633 in3	St(Negative)=	9633 in3
WLL=	225.8823529 lbs/ft	Sb=	9633 in3	Sb(Negative)=	9633 in3

POINT LOADS: Note: Coordinates Xi below must be entered sequentially from left to right

DS: #	Δ Xi (FT)	Xi(FT)	FD(K)	FSDL(K)	FL(K)	FU(K)	FU*X	DEF.COEF.
1	22.5	22.5	0	482.8571429	0	676	15210	3067.625
2	1	23.5	0	0	0	0	0	2554.875
3	1	24.5	0	0	0	0	0	2015.125
4	1	25.5	0	0	0	0	0	1454.375

f'c=	8,000 psi	Ec=	5098 ksi				
fy=	60,000 psi	GamaC=	150 pcf	n=	5.7		
PD=	1543.8 lb/ft	frc=	671 psi				
PSID=	874.3 lb/ft	PS=	2644 lb/ft	SUM FD=	483 k		
PLL=	225.9 lb/ft	PU=	3769 lb/ft	SUM FL=	0 k		
VUmax=	596.0 k	VLU=	185.6 k	VRU=	596.0 k		
VC.FI=	196.5 k	N=	6.1 SQR(f'c)	X(v=0)=	49.2 ft		
VSmax=	399.5 k	Avmax=	2.76 in2/FT	Total Per ft.	OK		

MLu	M1U	M2U	M3U	M4U	MUMID	MRu	MU(+)max	Mu0
0	3221	2644	2063	1478	2228	0	3221	3221

ρmax.tf=	0.0000	ρmax.rc=	0.0327	ρmax.T=	0.0327
ρmin=	0.004	Asmin=	5.78	in2	
MU0=	3220.9 k-ft	Ro =	0.0183 *OK*		
MU+=	3220.9 k-ft	As(RQ'D)=	23.68 in2		
wL2/ 8.00		AS(PV'D)=	23.68 in2	Postive Reinforcement	

C1(in)	Icr1(in4)	C2(in)	Icr2(in4)	C(in)	Icr(in4)	Mcr(k-ft)	Ieff(in4)
12.4	87003	12.4	87003	12.4	87003	539	88369

LEFT END FIXITY:

LF%=	0	% WL2/				MD-=	0	k-ft
						MSDL-=	0	k-ft
						MLL-=	0	k-ft
Ms-(K')	Mu-(K')	Asl-(In2)	ρ-	C(IN)	Icr-(IN4)	Mcr-(k-ft)	Ieff- (in4)	
0	0	0.00	0.0000	0.0	0	539	187844	

RIGHT END FIXITY:

RF%=	0	% WL2/				MD-=	0	k-ft
						MSDL-=	0	k-ft
						MLL-=	0	k-ft
Ms-(K')	Mu-(K')	Asl-(In2)	ρ-	C(IN)	Icr-(IN4)	Mcr-(k-ft)	**Ieff- (in4)**	
0	0	0.00	0.0000	0.0	0	539	**187844**	

DEFLECTIONS:

Initial Δ=	D.(1+λ0) + 0.5SIDL	λ0=	1	Ieff=	88369 in4
Long Term Δ=	λ1.D +λ2.SIDL +0.5SIDL+0.25LLλ2 +LL	λ1=	0	Ieff/Ig=	0.47
Total Δ=	Initial Δ+ Long Term Δ - Camber	λ2=	1	Δ DL=	0.05 in
				Δ SDL=	0.50 in
				Δ LL=	0.01 in

	Δ INITIAL	Δ LONG TRM		Δ TOTAL- Camber		CAMBER (Sugg.)=	0 in
DFL=in	0.34	0.76		0.60		CAMBER=	**0.50** in
L/DFL=	974	443	N.G. >L/480**	556	**	Splice Factor=	1.2
						Rebar=	633 lbs/yd3

**: Refer to ACI 318 for appropriate deflection limitation

5-#5@6 = 3.1in2/ft - OK

Reaction from 28B4

18-#11 OK

This is adequate. Please provide calculations for 28B4.

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g) • Column 3 transition between 1st and 2nd floor and 2nd and 3rd.

Column 3 Transition:

1. 3rd floor: 24x48 column to a 42x42 column aligned on north and west faces:

Brg Check @ 3rd Floor Walk	
Brg_{E-W} =	24
Brg_{N-S} =	42
A_{BRG} =	1008
Pu_{BRG}=	6562
$\phi(0.85f'cA)$=	6683
D/C =	0.98

2. 2nd floor: 42x42 column to a 38" round column

Brg Check @ 2nd Floor Walk	
Brg_{E-W} =	
Brg_{N-S} =	
A_{BRG} =	1080
Pu_{BRG}=	6667
$\phi(0.85f'cA)$=	7160
D/C =	0.93

This is adequate for new columns size of 42"x42" at the 2nd floor to be confirmed with 100% CD.

Item 2.6

2.6 Verification of Performance-Specified Structural Components

2 levels of slosh damper tanks are being provided above the 42nd floor slab. The tanks are referenced in the referenced wind tunnel study report. However, no specifications have been provided regarding the tanks or the impact on the building motion as stated in the wind load study. These should be provided.

Slosh tanks and columns are designed to support the water water weight. Refer to S-420 and S-970 for reinforcement of slosh tanks.

No specifications have been provided regarding the tanks or the impact on the building motion as stated in the wind load study.

Item 2.7

2.7 Confirmation of Structural Integrity Provisions of the Code

Structural integrity provisions base on NYC Building Code 2008 Section 1626 were reviewed for key elements of the structure. All transfer beams and supporting columns were reviewed. Any deficiencies found were stated above in section 2.5.

No response required

Item 2.8

2.8 Conformance with Architectural Plans

Upon preliminary review of architectural drawings there were some discrepancies between some architectural plans and structural drawings. The discrepancies are listed below:

a)

- Architectural drawings are calling out an opening below on A-134(42nd Floor) next to column 13. Structural drawings do not show an opening here.

Penetrations at the roof of the building will be coordinated in the 100% CD set.

This is adequate pending 100% CD.

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b)

- Elevator machines are shown on A-134. Its not clear if structure has been designed to support the elevator machines.

The 42 floor is 30" thick for massing. The top and bottom reinforcement of #7@9" OC. was designed for the elevator machines.

This is adequate.

c)

- A-119 and A-120 are showing a larger balcony extend than S-170 is showing for the 18th and 19th floor. S-170 reflects only the balcony and slab edge of the 17th floor.

The columns of the 17, 18 & 19th floors are sloping; the slab extends to meet this slope. The slab has been designed for the worst condition.

The design of the slab is adequate but the dimensions are not coordinated.

d)

- Slosh damper detail 1 on S-970 does not reflect the architectural section on A-303.

Per recommendations from RWDI, we have updated the slosh damper to be 3 tanks. Structural drawings have been updated to include the 3 tanks.

Please provide information and plans regarding this change.

e)

- The top of slab elevations on S-170 through S-290 on the west side of the building are not indicated for the change in elevation at the step. It is unclear if it is a step in the slab or a depression in slab, and if it matches the architectural intent on A-272 through A-275.

The balconies are 10" thick. The 2" drop has been coordinated.

This is adequate pending 100% CD.

f)

- There are some mechanical openings on S-030 on the south side of SW-3 and on the west side of SW-7 that do not look coordinated. They appear to be going through the shear walls below.

These will be coordinated for to 100%CD documents.

This is adequate pending 100% CD.

g)

- On S-001there appears to be an opening missing south of the storm water detention tank as shown on A-103.

Drafting error, the cellar opening at the southwest corner will be coordinated for to 100%CD documents.

This is adequate pending 100% CD.

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h)

- Architectural and structural slab elevations do not match. A300 has multiple elevations shown.

The structure governs; we will coordinate.

This is adequate pending 100% CD.

i)

- Reference drawings: S-020.00 through S-050.00 and A-109 through A-112.00. Column 1 on the second floor says 36 inch diameter on A-109 but 38 inch diameter on S-950.00. Please confirm.

The structure governs; architect has been notified of the mislabeled size.

This is adequate pending 100% CD.

j)

- Column 2 on S-150.00 through S-170.00 is rectangular which does not match the column 2 on A-116.00 through A-120.00 that is circular.

These will be coordinated for to 100%CD documents.

This is adequate pending 100% CD.

k)

- A-127.00 and A-128.00 shows column 2 as 26 inches in diameter, and S-950.00 shows the column from the 28th floor to the 30th floor as 28 inches in diameter.

The structure governs; architect has been notified of the mislabeled size.

This is adequate pending 100% CD.

l)

- A-127.00 shows column 13 as 26 inches in diameter, and S-950 shows column 13 on the 28th floor as 28 inches in diameter.

The structure governs, architect has been notified of the mislabeled size.

This is adequate pending 100% CD.

m)

- A-127.00 through A-128.00 shows column 15 as 22 inches x 24 inches, where S-950 shows column 15 for 28th through 35th floor as 22 inches x 18 inches, and for 36th floor as 24 inches x 24 inches.

Structure governs, column 15 is to be 18x22 from 28th to underside of 37th. The architect has been notified of the mislabeled size.

This is adequate pending 100% CD.

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n)

- S-370.00 though S-400.00 show circular columns on plan for column 3, but on S-590 column 3 for applicable floors calls out 24 inches x24 inches. Where A-129.00 through A-132.00 shows a column of 24 inch diameter.

The structure governs, architect has been notified of the mislabeled size, columns are round and stacking.

This is adequate pending 100% CD.

o)

- S-950.00 shows that column 17 starts at the 37th floor with size 14 inches x 18 inches, but column 17 does not start on plan until S-380.00 and A-130.00 respectively. The dimension provided on A-130.00 is 18 inches x 16 inches, which is in conflict with the dimension provided on S-950.00.

The structure governs; column 17 is 14x18 starting on the 38th floor and ending at the underside of the 42nd floor.

This is adequate pending 100% CD.

p)

- There are openings shown on A-132.00 south of SW-1 and east of SW-3 which are not reflected on S-400.00.

These will be coordinated for to 100%CD documents.

This is adequate pending 100% CD.

Item 2.9

2.9 Major Mechanical Units Accommodated in Structural Plans

Mechanical drawings dated July 14th 2014 issued for "12 Far D.O.B Issue" were reviewed in conjunction with structural drawings. Currently there is no dunnage provided for any major mechanical units. Confirmation that no dunnage is required for any major mechanical units will need to be provided. To confirm all mechanical units are accommodated weights of some units will need to be provided. The weights and locations of mechanical units located on M-309.00, the gas generator located on M-332.00, and the mechanical units located on M-333.00 will need to be provided for completion of the review. Currently on M-301 it shows mechanical ducts going through SW-3 and SW-7 which do not look coordinated with the structural drawings.

Equipment weights are shown on M-601:
Chillers = 10.3kips
Boilers: = 3.65kips
AHU's = 3.2kips
Cooling Tower = 17.1kips

There have been some modifications to the locations of some of these units. Slabs will be designed accordingly and reflected in 100%CD Set.

This is adequate pending 100% CD.

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Item 2.10

2.10 General Completeness of Structural Plans and Specifications

Structural drawings were reviewed for general completeness and clarity. With this review there were some areas that needed clarification listed below:

a)

- Please confirm the loads in the column schedule are up to date and correct for the referenced reviewed structural drawings.

Loads in column schedule are current; refinements to column sizing and reinforcement described in the preceding pages are included in the attached column schedule.

This is adequate.

b)

- Detail 1 on S-940.00 states 56 #11 bars is required from foundation to the 5th floor in the area located in SW-3 second group from the north most point. From the cellar to the 2nd floor there is only 4'-0" by 2'-0" column that is present in this area and it is unclear where the 56 #11 bars will be placed.

Shear wall rebar at the north end of SW3 & SW-4 will be revised to be 4- rows of #11 @ 6 in the 100%CD set.

This is adequate pending information shown on 100% CD.

c)

- On S-943.00 link beam schedule LB1 from the 17th through the 21st floor has an embedded steel section within the link beam/shear wall which will develop 4'-0" or 5'-0" depending on the section in the embedded steel section detail table. This will interrupt the jamb steel located on S-940.00 in that location. Structural drawings do not indicate a detail to resolve this connection.

Flange width for steel link beams is +/-12" and the wall is 18" thick. There is sufficient room for jamb reinforcement to extend on each side of the steel link beam.

This is not reflected on the shear wall reinforcement plan on S-940. The plan shows jamb steel in rows of 5 bars in this location. This is adequate if a detail is provided for these floors and the wall was designed for the rebar in locations indicated by WSP.

- The link beam schedule on S-943.00 only provides continuous top reinforcement for most link beams. Please confirm bottom reinforcing is also required or provide calculations.

The table column for top reinforcement should have read "top & bottom" reinforcement. Fixed in 100%CD set.

This is adequate pending 100% CD.

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d)

- On S-140.00 south of the elevator shaft there is a beam labeled BM. It does not have a size or reinforcement called out.

Drop beams at the elevator have been labeled TB2 and will be included in the 100%CD set. Reinforcement to be similar to MB1 shown on S-015.

This is adequate pending 100% CD.

e)

- S-015.00 provides a beam schedule with a beam of MB1, but there is no beam with that label on plan.

MB1 refers to the typical beam south of the elevator. The "BM" has been relabeled on S-015.

This is adequate pending 100% CD.

f)

- From S-020.00 through S-130.00 there is no beam schedule for beam with label BM.

Drop beams at the elevator have been labeled TB2 and will be included in the 100%CD set. Reinforcement to be similar to MB1 shown on S-015

This is adequate pending 100% CD.

g)

- On S-410.00 and S-420.00 there is LB6 located west of SW-1 but there is no reinforcement provided on S-943.00 link beam schedule or shown in elevations.

Link beams at the roof will be coordinated on the 100%CD set of drawings.

This is adequate pending 100% CD.

h)

- The capacity of the caissons provided in caisson schedule on FO-200.00 is 1750T. Several caissons show loads in excess of 3500k on FO-100. Please confirm whether the referenced reviewed structural drawings show correct and up to date loads on the foundations.

Refer to section 2.3. High capacity caissons show a designed capacity of 3725 kips. Shear wall ends have been grouped to maintain an average demand less than 3725 kips. The loads shown on FO-100 are conservative with a minimum 10% increase of the wind loading.

This is adequate pending 100% CD to provide this information.

i)

- It appears the columns and walls below the 3rd floor on S-030.00 do not match the walls and columns provided on S-015.00 for the mezzanine between 2nd and 3rd floor.

S-015 shows the perimeter concrete framing necessary to support the curtain wall.

The walls south of SW-3 and columns 2 and 3 below the 3rd floor do not match what is provided on S-015 for the mezzanine.

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j)

- S-130.00 shows reinforcement top, bottom and mid-depth of slab with what appears to be anchor plates at the end of the bars. The plates are not called out or detailed. Please clarify.

These bar ends indicate Lenton terminator heads, a note has been added to drawings.

This is adequate pending 100% CD.

k)

- Wall reinforcement south of SW-4 is unclear on S-130.00 and S-140.00.

These bars are shown to address stresses in the slab due to the outrigger floor.

The reinforcement in the wall not the slab was unclear. Please show how 36#11 will fit within the 10" wall on S-130 and S-140.

l)

- Tie reinforcing not shown for sloped columns 12 and 13 at 25th floor.

Refer to typical column reinforcement on S-955

Please clarify whether ties in the slab are required.

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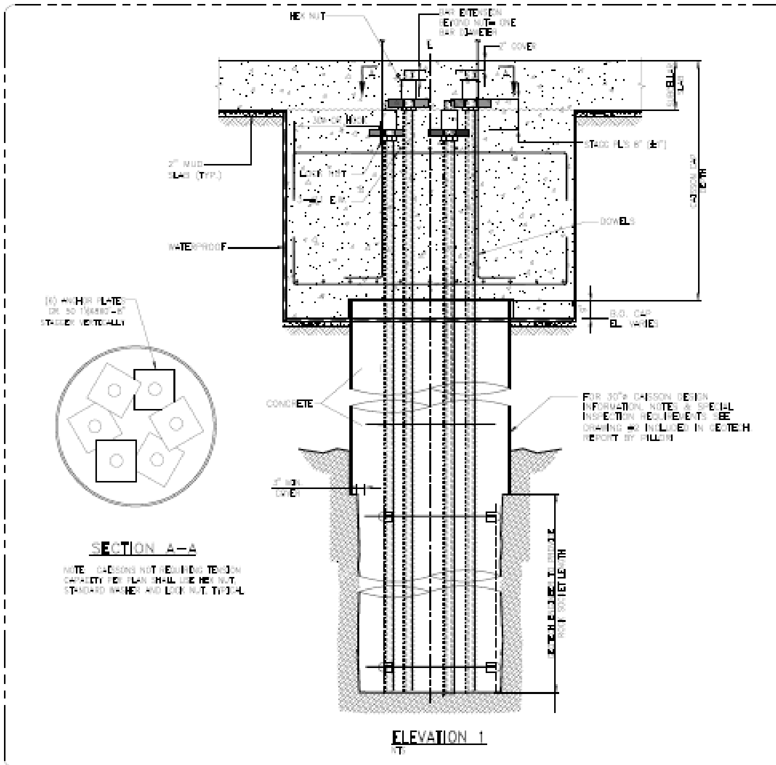
- Tie-down rock at pressure slab detail is provided on FO-203. Anchor size is not shown.

m) Plans do not indicate locations of tie-down anchors.

A detail has been added in an RFI response below:



n)

CAISSON SCHEDULE						
QUANTITY	CASING DIAMETER	SOCKET DEPTH	DRILL SOCKET DIAMETER	No. OF BARS PER CAISSON GR 97	CAISSON COMPRESSION CAPACITIES	GROUT COMPRESSION STRENGTH
43	30	20'-0"	28"	6-#24 GR 75	1250T	5 ksi
4	12	PER GEOTECH	PER GEOTECH	1-#20	350T	5 ksi
3	12	PER GEOTECH	PER GEOTECH	1-#20	150T	5 ksi

TYPICAL SECTION THRU CAISSON CAP

INFORMATION SHOWN ON THIS DETAIL IS SUBJECT TO REVIEW BY GEOTECHNICAL ENGINEER.

n)

Please provide tension capacity of the caisson and geotechnical engineer confirmation of caisson capacity.

n)

- Tie-down rock at pressure slab detail is provided on FO-203. Anchor size is not shown. Plans do not indicate locations of tie-down anchors.

No tie-down rock anchors are required. The foundation slab is above design water levels. Detail removed.

This is adequate.