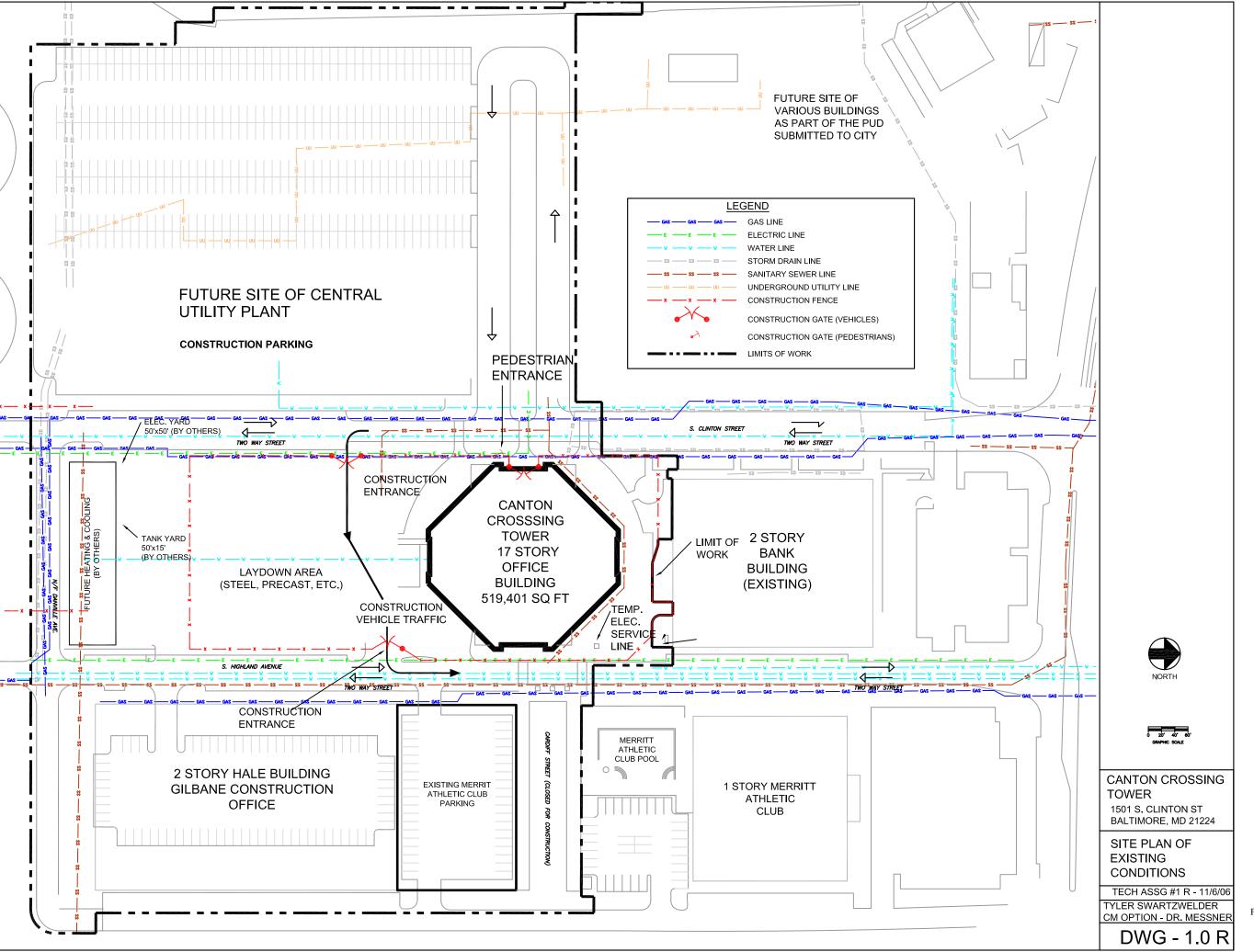


Tyler Swartzwelder Construction Management Option

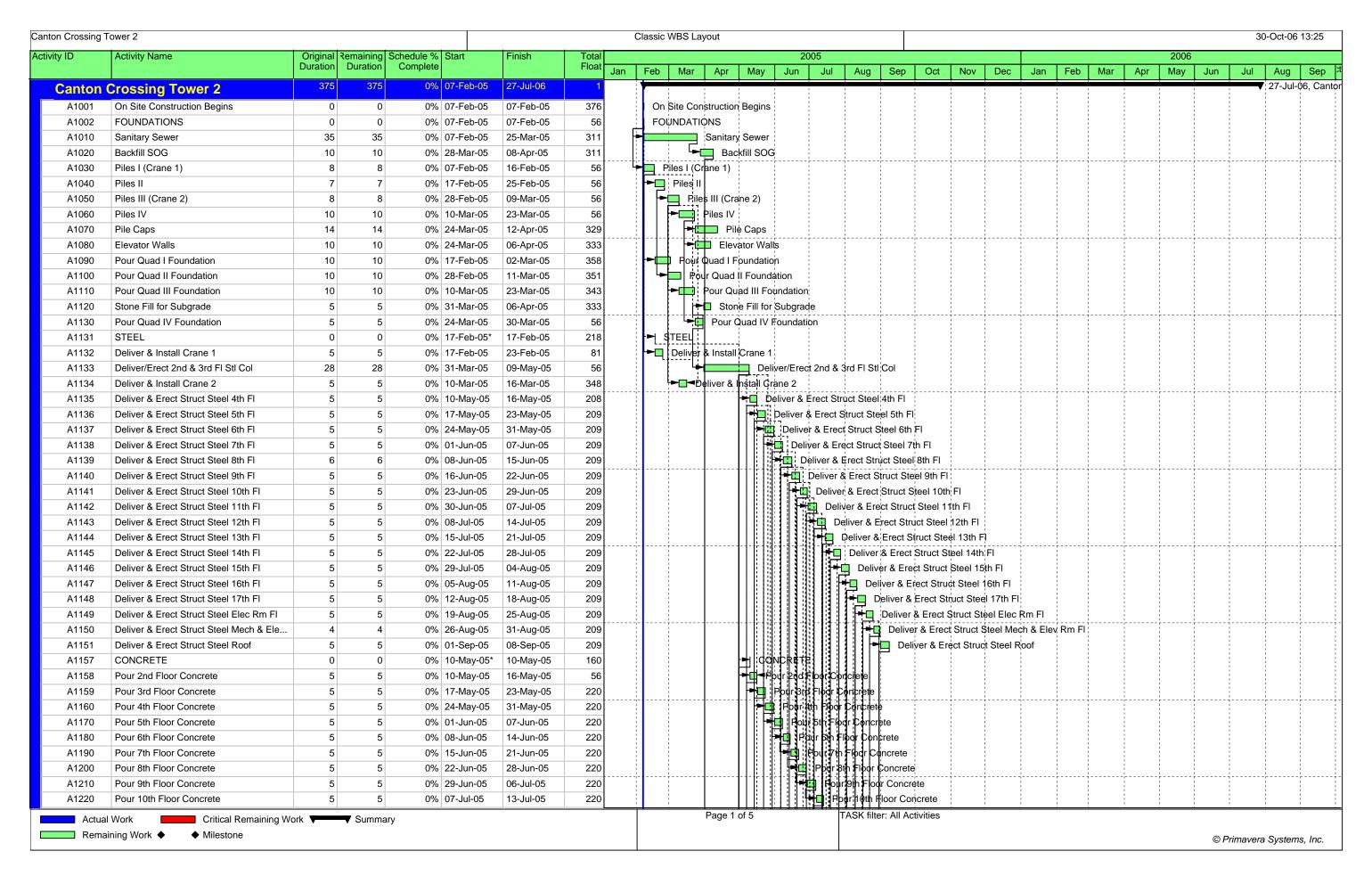
### APPENDIX ~ PROJECT LOGISTICS

SITE LOGISTICS PLAN

DETAILED PROJECT SCHEDULE



Page 2



ivity ID	Activity Name	Original Remain			Finish	Total			200	)5											2006				
		Duration Durat	tion Com	plete		Float Jan	Feb Mar Apr	May	Jun	Jul	Au	g S	ep O	ct Nov	v [	Dec .	Jan	Feb M	lar Ap	or I	May	Jun	Jul	Aug	S
A1230	Pour 11th Floor Concrete	5	5	0% 14-Jul-05	20-Jul-05	220					Pour 1	1th Flo	or Concr	ete			1								1
A1240	Pour 12th Floor Concrete	5	5	0% 21-Jul-05	27-Jul-05	220					Poui	r 12th F	loor Con	crete			1				!				1
A1250	Pour 13th Floor Concrete	5	5	0% 28-Jul-05	03-Aug-05	220				-	Pc	ur 13th	Floor Co	oncrete	i		i			<u>.</u>	<u>.</u> .	j.			L
A1260	Pour 14th Floor Concrete	5	5	0% 04-Aug-05	10-Aug-05	220				4		Pour 14	Ith Floor	Concrete			1				1				1
A1270	Pour 15th Floor Concrete	5	5	0% 11-Aug-05	17-Aug-05	220					1	Pour	15th Floo	r Concret	te		1								1
A1280	Pour 16th Floor Concrete	5	5	0% 18-Aug-05	24-Aug-05	220					╽╽┡┪	Pou	ır 16th Fl	oor Concr	rete										
A1290	Pour 17th Floor Concrete	5	5	0% 25-Aug-05	31-Aug-05	220						P P	our 17th	Floor Con	crete		1				!				1
A1300	Pour Elec Rm Floor Concrete	5	5	0% 01-Sep-05	08-Sep-05	220							Pour Ele	c Rm Floo	or Cor	orete				<u>.</u>					Ĺ
A1310	Pour Mech Rm Floor Concrete	5	5	0% 09-Sep-05	15-Sep-05	220						<b>-</b>	] Pour M	lech Rm I	Floor (	Concrete	1	 			1		1		1
A1320	Place SOG	7	7	0% 25-Apr-05	03-May-05	314		] Place \$	soc					i I			1				1				1
A1321	PRECAST	0	0	0% 10-May-05*	10-May-05	160		<del>-</del>    FRE¢	CAST								1				!				
A1530	Precast 2nd Floor (2nd Shift Mobile)	7	7	0% 17-May-05	25-May-05	194			recast 2	nd Flo	oor (2n	d Shift I	Mobile)				1				1				1
A1540	Precast 3rd Floor (2nd Shift Tower)	7	7	0% 26-May-05	06-Jun-05	194			Preca	st 3rd	Floor (	2nd Sh	ift Tower	)		j									
A1545	Precast 4th Floor (2nd Shift Tower)	7	7	0% 07-Jun-05	15-Jun-05	194			Pre	cast 4	th Floo	or (‡nd	Shift Tow	/er)			1				!		-		1
A1550	Precast 5th Floor (2nd Shift Tower)	4	4	0% 16-Jun-05	21-Jun-05	195			1 <del>11 - 11</del> : 1 : 1	1 1::1 1	1 1 1 1	1 1,	d Shift To	r	i	1			i		1				1
A1560	Precast 6th Floor (2nd Shift Tower)	4	4	0% 22-Jun-05	27-Jun-05	196				Preca	st 6 h	loor (2	nd Shift	Tower)		1 1 1	1	1			1 1 1	!	!		
A1570	Precast 7th Floor (2nd Shift Tower)	4	4	0% 28-Jun-05	01-Jul-05	197				Prec	ast 7th	Floor (	2nd Shift	Tower)	i	i !	į				i !				1
A1580	Precast 8th Floor (2nd Shift Tower)	4	4	0% 05-Jul-05	08-Jul-05	198			<del>     </del>	Pre	ecast 8	th Hoo	r (2nd Sh	ift Tower)	)		1				1				
A1590	Precast 9th Floor (2nd Shift Tower)	4	4	0% 11-Jul-05	14-Jul-05	199			11114	F	recast	9th Flo	or (2nd S	Shift Towe	er)										
A1600	Precast 10th Floor (2nd Shift Tower)	4	4	0% 15-Jul-05	20-Jul-05	200					Precas	st 10th	Floor (2n	d Shift To	ower)		1				!				i
A1610	Precast 11th Floor (1st & 2nd Shift)	2	2	0% 21-Jul-05	22-Jul-05	203					Preca	st 11th	Floor (1s	st & 2nd S	Shift)		1	 			1		1		1
A1620	Precast 12th Floor (1st & 2nd Shift)	2	2	0% 25-Jul-05	26-Jul-05	206					Plec	ast 12tl	h Floor (1	st & 2nd	Shift)		1				!				i
A1630	Precast 13th Floor (1st & 2nd Shift)	2	2	0% 27-Jul-05	28-Jul-05	209					Pred	ast 13t	th Floor (	1st & 2nd	Shift)		1	1			!		1		1
A1640	Precast 14th Floor (1st & 2nd Shift)	2	2	0% 29-Jul-05	01-Aug-05	212			11111		Pie	ecast 14	4th Floor	(1st & 2nd	d Shift	)									:
A1650	Precast 15th Floor (1st & 2nd Shift)	2	2	0% 05-Aug-05	08-Aug-05	212					- <del></del>	recast	15th Floo	or (1st & 2	2nd Sh	ift)	!				1		-		1
A1660	Precast 16th Floor (1st & 2nd Shift)	2	2	0% 12-Aug-05	15-Aug-05	224					-	Precas	st 16th Fl	oor (1st &	2nd	Shift)	į				: :		į		:
A1670	Precast 17th Floor (1st & 2nd Shift)	2	2	0% 19-Aug-05	22-Aug-05	221						Prec	cast 17th	Floor (1st	t & 2n	d Shift)	1	1			!		-		1
A1680	Precast Gables (1st & 2nd Shift)	16	16	0% 09-Sep-05	30-Sep-05	209						-	Pr	ecast Gab	; ble\$ (1	st & 2nd	Shift)								:
A1681	WINDOWS	0	0	0% 19-May-05*	19-May-05	153	÷	┧╫╢Ѿҝ	NDOWS	- - -	<b>                                     </b>	1-1:													
A1700	Install Windows 2nd Floor	5	5	0% 26-May-05	02-Jun-05	198			Instal	Windo	ws 2nd	Floor		i I			i !	1 1 1			1		1		1
A1710	Install Windows 3rd Floor	5	5	0% 07-Jun-05	13-Jun-05	196			Inst	all Wir	ndows	3rd Floo	or	!			1				!				i
A1720	Install Windows 4th Floor	5	5	0% 16-Jun-05	22-Jun-05	194		- 11   11   11   11	1-1   1		1 1 1 1	vs 4th F					1				1				i !
A1730	Install Windows 5th Floor	5	5	0% 23-Jun-05	29-Jun-05	194			1		1 3 1 1	ows 5th	- 1	!				1							
A1740	Install Windows 6th Floor	5	5	0% 30-Jun-05	07-Jul-05	194	÷	#1-#1:1	1-1-1				6th Floor	<u>†</u>											[
A1750	Install Windows 7th Floor	5	5	0% 08-Jul-05	14-Jul-05	194			🛱	<del>r</del> 1 1 1	1 1 1 1	t la '	s 7th Floo	or		i	į				: :		į		1
A1760	Install Windows 8th Floor	5	5	0% 15-Jul-05	21-Jul-05	194				$H \cup I$	1311	1 13	ws 8th Fl	;			1	1			!		-		1
A1770	Install Windows 9th Floor	5	5	0% 22-Jul-05	28-Jul-05	194				▎▐▃▋	1111	1 10 1	dows 9th	i	i	1	į		į	ĺ	: : :	i			1
A1780	Install Windows 10th Floor	5	5	0% 29-Jul-05	04-Aug-05	194				🗐	† 1 I I	1 17	indows 10	i		1	1				1				
A1790	Install Windows 11th Floor	5	5	0% 05-Aug-05	11-Aug-05	194		#1-##1	<del> - - - - -</del>	- - -	F#-1-1-	49-49-4		11th Floo	<del> </del>	j					<u>i</u> -				; - ·
A1800	Install Windows 12th Floor	5	5	0% 12-Aug-05	18-Aug-05	194				$ \  \  \  $	1 1 1 1	1 16 1	i i	s 12th Flo	i	1 1 1	1				 	!	-		1
A1810	Install Windows 13th Floor	5	5	0% 19-Aug-05	25-Aug-05	194				$ \  \  \  $		1 13	1	ows 13th F	- 1	1	1				1	1			į
A1820	Install Windows 14th Floor	5	5	0% 26-Aug-05	01-Sep-05	194				$ \  \  \  $		₩ 10 :	i i	dows 14th	i	r		1			1				1
A1830	Install Windows 15th Floor	5	5	0% 02-Sep-05	09-Sep-05	194				$ \  \  \  $		H	- 1	/indows 1	- 1	- :	1	1 1 1			1 1 1	!			
A1840	Install Windows 16th Floor	5	5	0% 12-Sep-05	16-Sep-05	214	<del></del>	#1-##	<del> - - -  -  -  -  -  -  -  -  -  -  -  -</del>	╂╌╂╌┠╌	┟╂╂╂	┧╸╬╼╬╺		Windows	<u>+</u>										ŗ-
A1850	Install Windows 17th Floor	5	5	0% 19-Sep-05	23-Sep-05	214				$ \  \  \  $		_1   13	<b>-</b> ;	all Window	- 1	- 1	1				1				
A1860	Install Storefront Windows	30	30	0% 12-Sep-05	21-Oct-05	194				$ \  \  \  $			4.11.50		- 1	front Win	dows			i	i !	i	į		1
A1870	Install Curtain Wall	30	30	0% 12-Sep-05	21-Oct-05	194				$ \  \  \  $				Install	i	i					1				
-,,,,,,,					2. 00. 00	104	<u>:                                    </u>	<u> </u>	<u> </u>	Щ					- Guita	•••		<u> </u>	<u> </u>	<u>    i                                </u>	<u> </u>		<u> </u>		_

Activity ID	Activity Name	Original Duration		Schedule % Start Complete	Finish	Total Float								005											ı					2006					
A 4 0 7 4	D. The state of							Feb	Mar	Apr	Ma	ay I	Jun	Ju	11	Aug	)	Sep		Oct	No		Dec	Jar	ו F	eb	Mar	Ap	pr	May	Jun	Ju	Α	lug	Sep
A1871	Building Enclosure	0	0	0% 24-Oct-05	40.1405	194					┟╢╁		REPRO			-					Bullo	ingEr	ıcıosu	re ¦							<u> </u>				
A1872	FIREPROOFING	0	0	0% 19-May-05	19-May-05	153	l : I					<b>-</b>     ;	- 1   1		1 1 1				-		<u> </u>			!	!						! !				
A1880	Deliver & Install Fireproofing Ground Flr	5	5	0% 03-Jun-05	09-Jun-05	288					Ш	- 1 - 1 - 1	]   Deli		1 1 1	111	1 1	•	٠,	und I	-ir				1				į				į	į	
A1890	Deliver & Install Fireproofing 2nd Flr	5	5	0% 10-May-05	16-May-05	305	I ; I					- I - I - I	ver & li		1 1 1	1 1 1	I b		1		1			!	1	!					 				
A1900	Deliver & Install Fireproofing 3rd Flr	5	5	0% 10-May-05	16-May-05	305	!					- 1 - 1: 1	ver & I	! I I	1 1 1	.	I E														! ! !				
A1910	Deliver & Install Fireproofing 4th Flr	5	5	0% 17-May-05	23-May-05	300					<b>         </b>	- 4 - 4 - 4	eliver 8	-1-1-	F - F - I-	· - -'- -					1			i ! !							 				
A1920	Deliver & Install Fireproofing 5th Flr	5	5	0% 24-May-05	31-May-05	295					╽║┕	- 1 - 11 - 1	Delive		1 1 3	1 1 1	I I:	_	- :		-										! !				
A1930	Deliver & Install Fireproofing 6th Flr	5	5	0% 01-Jun-05	07-Jun-05	290	1	-			i II	4	] Deli	'	1 1 1	1 1 1	I I'				1				1				-		 	1	1	-	
A1940	Deliver & Install Fireproofing 7th Flr	5	5	0% 08-Jun-05	14-Jun-05	285					i II	4		eliver	& Ins	stall F	irep	roofii	nģ 7tl	h Flr											! ! !				
A1950	Deliver & Install Fireproofing 8th Flr	6	6	0% 16-Jun-05	23-Jun-05	278					i II		+	'	1 1 1		I I'								i			i	į		! !		į		
A1960	Deliver & Install Fireproofing 9th Flr	6	6	0% 23-Jun-05	30-Jun-05	273					i II		┖┿┖╪	i De	liver	& Inst	tali F	Firep	roofir	ng 9th	ı Flr			:	1						! !			1	
A1970	Deliver & Install Fireproofing 10th Flr	5	5	0% 30-Jun-05	07-Jul-05	269					[]			<b>—</b> [c	elive	er & Ir	nstal	II Fire	proo	fing 1	Oth I	lr									i !				
A1980	Deliver & Install Fireproofing 11th Flr	5	5	0% 08-Jul-05	14-Jul-05	264					i II		با	+	Deli	iver &	Inst	tall F	irepro	oofing	11tl	ı Flţ			1 1 1	}					( ( (	1			
A1990	Deliver & Install Fireproofing 12th Flr	5	5	0% 15-Jul-05	21-Jul-05	259								L-	1 1 4	1 1 1	I I!				1	2th ∳lr		:	 	 					! !				
A2000	Deliver & Install Fireproofing 13th Flr	5	5	0% 22-Jul-05	28-Jul-05	254		į			1	į		ļ <b>Ļ</b>	1 1 1	111	ji		- i - i			13th F	lr .	1	i 1 1				i		1 1 1	1	1	į	
A2010	Deliver & Install Fireproofing 14th Flr	5	5	0% 29-Jul-05	04-Aug-05	249					i II			1	1 1 1	111	I I:		- 1	•		a 14th			1	;					! ! !			1	
A2020	Deliver & Install Fireproofing 15th Flr	5	5	0% 05-Aug-05	11-Aug-05	244					1-11					<u> </u>	Delive	er & l	Instal	 I Fire	proof	ing 15	th Flr	j 	<u>-</u>										
A2030	Deliver & Install Fireproofing 16th Flr	5	5	0% 12-Aug-05	18-Aug-05	239	l : I				i II				Į.	1 1 1	I li		- 1		ì	ofing		i	!						 			1	
A2040	Deliver & Install Fireproofing 17th Flr	5	5	0% 19-Aug-05	25-Aug-05	234					i II								1		1 -	roofin		1	i 1				į		! !		į		
A2050	Deliver & Install Fireproofing Elec Rm Flr	5	5	0% 26-Aug-05	01-Sep-05	229					i II				- 1		l li		i		i :	i	-	¦∙ ec Rm	Flr						! !			1	
A2060	Deliver & Install Fireproofing Mech Rm Flr	5	5	0% 01-Sep-05	08-Sep-05	225	!				i II					L			- 1		1	1.	•	!	Rm Fl	lr.							į	į	
A2000 A2070	Deliver & Install Fireproofing Elev Flr/Roof	5	5	0% 01-Sep-05	15-Sep-05	220				'	1-11										1				Flr/R						! !				
	MECHANICAL/ELECTRICAL/PLUMBING	0	0		· ·		l ;					J NAT	CHAN	i CAL	/E. E	CTDI	- 1		- 1		iistai	riieb	TOOTIN	j Liev	FII/IN	OOI					! ! !				
A2071			-	0% 19-May-05	19-May-05	153		1	١.		1 11—	_ ,		1	1		ICAL	L/PL(	UIVIDI ¦	NG	1			:	1 1 1	1		-	1		! ! !	1	1		
A2080	SOG Underground Electric	20		0% 11-Apr-05	06-May-05	311					ПП	- 1	Jnderg	1	- 1																! !				
A2090	Underground Sanitary Plumbing	10		0% 11-Apr-05	22-Apr-05	314	: .				1 11	- !	nd Sar	1		_	9				1			1							- 			1	
A2100	Underground Storm Plumbing	10		0% 11-Apr-05	22-Apr-05	314				<b>-</b>	4-41		nd Sta	L							ļ			! !							! ! !				
A2110	Underground Domestic Water (Plumbing)	2	2	0% 11-Apr-05	12-Apr-05	322	1 :		ľ	<b>≻</b> li Un	I II -	- 1	- :	i	- 1		- 1	ng)			į				i			į	į		! !		į	į	
A2120	Underground Gas Vent (Plumbing)	8	8	0% 11-Apr-05	20-Apr-05	316			4	<b>-</b>	1 11	- 1	nd Gas	1	1 1		٠,١				1				1	!					! ! !				
A2130	MEP Rough In 2nd Floor	5	5	0% 10-May-05	16-May-05	170	i i		į		79	i	P Roug	7	i		i				İ					į			į		: !		į	į	
A2140	MEP Rough In 1st Floor	15	15	0% 10-May-05	31-May-05	295	l : I						MEP F	: "							1			:	1						! !			- 1	
A2150	MEP Rough In 3rd Floor	5	5	0% 17-May-05	23-May-05	170	l j. l .				4 - 4 - F <del>-</del>		EP Ro	L							i	i											<u>.</u>	i	
A2160	MEP Rough In 4th Floor	5	5	0% 24-May-05	31-May-05	170					┊║┝╸	<b>-</b> _	MEP F	Rougl	h In¦4	th Flo	oor				1				1						 			-	
A2170	MEP Rough In 5th Floor	5	5	0% 01-Jun-05	07-Jun-05	170					<u> </u>	<b>-</b>	MER	Rou	ıgh İr	n 5th I	Floo	or													! ! !				
A2180	MEP Rough In 6th Floor	5	5	0% 08-Jun-05	14-Jun-05	170			-		1	-	■ М¢	ĖΡ Rα	ough	In 6tl	th Flo	oor			1				1	1					 		1	-	
A2190	MEP Rough In 7th Floor	5	5	0% 15-Jun-05	21-Jun-05	170			1		$\  \ $	F	<u>-</u> !	MEP	Roug	gh In	7th I	Floor	r		1				1 1 1	1			-		! !				
A2200	MEP Rough In 8th Floor	5	5	0% 22-Jun-05	28-Jun-05	170		1	į		$\  \ $		-	ME	P Ro	ugh l	In 8tl	h Flo	or		1			!	1	; ;		1	1		[ [	!	1	Ì	
A2210	MEP Rough In 9th Floor	5	5	0% 29-Jun-05	06-Jul-05	170	:				<u> </u>	-1-1:1	<b> </b>	i N	ΛΕΡ Ι	Rough	h l'n	9th F	loor		1														
A2220	MEP Rough In 10th Floor	5	5	0% 07-Jul-05	13-Jul-05	170		į	į					-	MEF	Rou	ugh I	In 10	th	or	1			1	i 1 1				į		! !	1		į	
A2230	MEP Rough In 11th Floor	5	5	0% 14-Jul-05	20-Jul-05	170	!	!	1		$\  \ $				1	EP R	- 1		1		1				1 1 1	1			1		! ! !				
A2240	MEP Rough In 12th Floor	5	5	0% 21-Jul-05	27-Jul-05	170		į	į						- ;	MEP			- 1		i	i		1	i 1 1				į		[ [		i !		
A2250	MEP Rough In 13th Floor	5	5	0% 28-Jul-05	03-Aug-05	170	: .	!	1		$\  \ $			:1 1 1	_ ' '	ME		-	- 1		1				1 1 1	!			1	1	! ! !		1		
A2260	MEP Rough In 14th Floor	5	5	0% 04-Aug-05	10-Aug-05	170					<del>[-  - -</del>	-   -				M		<del>-</del>			1				<u>-</u>						1				
A2270	MEP Rough In 15th Floor	5	5	0% 11-Aug-05	17-Aug-05	170	1 :	!							117	= ··· <b>≻</b> ■	- 1		- 1		i	- 1		!	1 1 1	1			1		! !	-		-	
A2270 A2280	MEP Rough In 16th Floor	5	5	0% 11-Aug-05	24-Aug-05	210	!				$\  \ $					_			Rough		1			:	1	1					! !				
A2200 A2290	MEP Rough In 17th Floor	5	5	0% 25-Aug-05	31-Aug-05	210	i i		į						$ \  \  $		- ;		- 1		i	Floor		1	1	į			į		1 1 1	!	1	į	
	-	5	-					!	1		$\  \ $					115			- 1	-	1		n Ela-	: : :	1 1 1	!			1		1 1 1		1	-	
A2300	MEP Rough In Mech Pro Floor	5	5	0% 01-Sep-05	08-Sep-05	210						-  -  -  -			-  -  -			<del>-</del>			1	ect Rr			<u>-</u>						<u> </u>				
A2310	MEP Rough In Mech Rm Floor	5	5	0% 09-Sep-05	15-Sep-05	210		-	1		Ш				Ш			<u>"</u>	INIFL	Koug	n in	Me¢h	KM FI	oor	1				1		!	!	- !		
	al Work Critical Remaining Work ♦ Milestone	ork 🔻	Summar	у					F	Page 3	of 5				TA	ASK fi	ilter:	All A	Activit	ies											©	Primav	era Sv	retoms	

ivity ID	Activity Name	Original Duration	Remaining S Duration	chedule % Start Complete	Finish	Total Float			T			2005								-			1 = -				200					
A2320	MEP Rough In Elev Floor	5	5	0% 16-Sep-05	22-Sep-05	210	Jan Fe	b Mar	Apr N	May	Jun	J I:T I	ul	Aug		Sep		)ct	No		Dec Floor:	Jan	Feb	)	Mar	Apr	May	Jun	Jul	Aı	ug	Se
A2320 A2340	Mech T/O, Fixt, Air Dev, Coil Hook Up 2	5	5	0% 17-May-05	22-Sep-05 23-May-05	300					Mech T				- 6 1	_	i	i	, •	i	FIOOI		1	į								
A2340 A2350	Mech T/O, Fixt, Air Dev, Coil Hook Up 3	5	5	0% 17-May-05	31-May-05	295				11 1 1		1.1	111	1 1 1	- I: I	- 1	1	i i		1			-									
	· · · · · · · · · · · · · · · · · · ·	5	-							1 1 1	Mech	111	111	1 1 1	10 1		1		1				1	1				1	-	!		
A2360	Mech T/O, Fixt, Air Dev, Coil Hook Up 4	-	5	0% 01-Jun-05	07-Jun-05	290					Me	1-1-1	-111-	- 4 - 4 - 1	- 4j- 4 -	- 4				+ :			¦ - <del> </del>			 						
A2370	Mech T/O, Fixt, Air Dev, Coil Hook Up 5	5	5	0% 08-Jun-05	14-Jun-05	285					<u> </u>	111	т/ф, <b>F</b>	1 1 1	P 1	- 1			17		1		1	1		-		1		1		
A2380	Mech T/O, Fixt, Air Dev, Coil Hook Up 6	5	5	0% 15-Jun-05	21-Jun-05	280						101 1	111	1 1 1	- 10 1	- 1	1	- 0	1	th Flo	1		-					1		: :		
A2390	Mech T/O, Fixt, Air Dev, Coil Hook Up 7	5	5	0% 22-Jun-05	28-Jun-05	275						101 1	1 1 1	1 1 1	- 13 1		- 1	- 1		7th F	- :		1	1		-		1		1		
A2400	Mech T/O, Fixt, Air Dev, Coil Hook Up 8	5	5	0% 29-Jun-05	06-Jul-05	270					-	ו <u>ר</u> יין '	1 1 1	1 1 1	P 1		1		1	1	Floor		-									
A2410	Mech T/O, Fixt, Air Dev, Coil Hook Up 9	5	5	0% 07-Jul-05	13-Jul-05	265					! ! <b>!</b>		-111-	- 4 - 4 - 1	- 4i- 4 -	-	j			# :	th Floo		ļ - <del>-</del>			ļ						
A2420	Mech T/O, Fixt, Air Dev, Coil Hook Up 1	5	5	0% 14-Jul-05	20-Jul-05	260						<b></b> [	1 1 1	1 1 1	11: 1	- 1					10th		-									
A2430	Mech T/O, Fixt, Air Dev, Coil Hook Up 1	5	5	0% 21-Jul-05	27-Jul-05	255		Ì				4	111		- 1- 1-		1	1	i	1		Floor	1	į		į	į	i		į	į	
A2440	Mech T/O, Fixt, Air Dev, Coil Hook Up 1	5	5	0% 28-Jul-05	03-Aug-05	250					! !		+	Me	ch¦T/	φ, F	ixt, A	ir De	v, Co	il Hool	k Up 1	2th Flo	or				-	-		1		
A2450	Mech T/O, Fixt, Air Dev, Coil Hook Up 1	5	5	0% 04-Aug-05	10-Aug-05	245							L <del>-</del> [	i N	lech -	T∤O,	Fixt,	Air D	ev, C	oilHo	ok Up	13th F	loor	į				į		į		
A2460	Mech T/O, Fixt, Air Dev, Coil Hook Up 1	5	5	0% 11-Aug-05	17-Aug-05	240						1	١,	<b>+</b> •	Mec	h T/C	O¦ Fix	t, Air	Dev,	Coil F	look Ų	p 14th	Floor						1			_
A2470	Mech T/O, Fixt, Air Dev, Coil Hook Up 1	5	5	0% 18-Aug-05	24-Aug-05	170						-		L-	Me	ech 7	T/O, F	ixt, A	ir De	v, Coi	l Hook	Up 15	th Floo	or			1		-			-
A2480	Mech T/O, Fixt, Air Dev, Coil Hook Up 1	5	5	0% 25-Aug-05	31-Aug-05	230					! !	-	1	-	<u> </u>	Mech	n ¦T/O	, Fixt	Air [	Dev, C	oil Ho	k Up 1	6th Flo	oor			1	}	1	1	1	
A2490	Mech T/O, Fixt, Air Dev, Coil Hook Up 1	5	5	0% 01-Sep-05	08-Sep-05	225								اا	-	Me	eợh T	/O, F	xt, Ai	r Dev,	Coil	look U <sub>l</sub>	17th	Floo	r		-					
A2500	Mech T/O, Fixt, Air Dev, Coil Hook Up	5	5	0% 09-Sep-05	15-Sep-05	220						i			-	<u> </u>	; Mech	T/O,	Fixt,	Air	v, Coil	Hook	Up Ele	c Flo	or	į	į	i	i	į	į	
A2510	Mech T/O, Fixt, Air Dev, Coil Hook Up	5	5	0% 16-Sep-05	22-Sep-05	215					!				լ Լ,		Med	h T/C	D, Fix	t, Åir [	Dev, ¢	oil Hoo	k Up M	/lech	Floor		-			1		
A2520	Mech T/O, Fixt, Air Dev, Coil Hook Up	5	5	0% 23-Sep-05	29-Sep-05	210					¦							;		🛊 :	i-		ook Up			: r		‡				
A2530	Mech Balancing	65	65	0% 25-Aug-05	28-Nov-05	170							1	_	<u> </u>		_;	1		- 1	- :	alancin	1	1			-	1	-	1		
A2531	ELEVATORS	0	0	0% 19-May-05	19-May-05	153				<b>→</b>   F	LEVAT	: ORS						i		_  '''		alai loli l	9					1				
A2540	Install Elevator Frames	50	50	0% 19-May-05	29-Jul-05	153						φιτο	- 1	Insta	i II Elo	wato	r Era	mac	!	i			1	į		İ		1				
A2540 A2550	Elevator 1-4 Power Up	75	75	0% 01-Aug-05	14-Nov-05	178					:	1	T.	IIISta	11 1-10	valu	n i la	illes		Flove	tor 1	Powe	rlln				-			1		
	'					153					; 									Lieva						<u> </u>						
A2560	Elevator 5-8 Power Up	100	100	0% 01-Aug-05	21-Dec-05	_					RYWA	.i			- 1		1	!	!	1		evalui	5-8 Pc	JWEI	υþ					1		
A2561	DRYWALL	7	0	0% 19-May-05	19-May-05	303				_	i	i i		11	0 1					i			į	į		į	į	į	i	į	į	
A2570	Install & Finish Drywall 2nd Floor		7	0% 17-May-05	25-May-05	56					Install		- 1	-	- :		- :		! !				1	1				1	-			
A2580	Install & Finish Drywall 3rd Floor	7	7	0% 26-May-05	06-Jun-05	56					_	1	Finish	-			1															
A2590	Install & Finish Drywall 4th Floor	7	7	0% 07-Jun-05	15-Jun-05	56				-	<del></del>		& Fin					4														
A2600	Install & Finish Drywall 5th Floor	7	7	0% 16-Jun-05	24-Jun-05	56					<b>-</b> -	1																				
A2610	Install & Finish Drywall 6th Floor	7	7	0% 27-Jun-05	06-Jul-05	56						—	Install				1	1	i .		1		1	1				1		1		
A2620	Install & Finish Drywall 7th Floor	7	7	0% 07-Jul-05	15-Jul-05	56						1: —	Inst		- :		- :						-									
A2630	Install & Finish Drywall 8th Floor	7	7	0% 18-Jul-05	26-Jul-05	56								Install			, -	1	1				1	i				1				
A2640	Install & Finish Drywall 09th Floor	7	7	0% 27-Jul-05	04-Aug-05	56						li.l.	<b>-</b>	Ins	tall &	Fini	ish Di	rywal	09th	Floor												
A2650	Install & Finish Drywall 10th Floor	7	7	0% 05-Aug-05	15-Aug-05	56									Instal	II & F	Finish	Dryv	wall 1	Oth Fl	oor		1	i				1				
A2660	Install & Finish Drywall 11th Floor	7	7	0% 16-Aug-05	24-Aug-05	56						li l		-	Ins	stall	& Fin	ish D	rywal	l 11th	Floor		-				-	-		!		
A2670	Install & Finish Drywall 12th Floor	7	7	0% 25-Aug-05	02-Sep-05	56								-	•	Insta	al & F	inish	Dryv	val 12	th Flo	or	į				-	į		į		
A2680	Install & Finish Drywall 13th Floor	7	7	0% 06-Sep-05	14-Sep-05	56									-	lr	nstall	& Fir	hish C	)rywal	l 13th	loor	1 1 1				-		1	:	!	
A2690	Install & Finish Drywall 14th Floor	7	7	0% 15-Sep-05	23-Sep-05	56										-	Inst	all &	Finisl	n D <mark>ryv</mark>	vall 14	h Floo	r					į				
A2700	Install & Finish Drywall 15th Floor	7	7	0% 26-Sep-05	04-Oct-05	56						15-1-	1-1:		1:1:	-	<u> </u>	nstall	l & Fi	nish D	rywall	15th F	or				-	+				
A2710	Install & Finish Drywall 16th Floor	7	7	0% 05-Oct-05	13-Oct-05	56											سے	1	1		,		Floor				-	!				
A2720	Install & Finish Drywall 17th Floor	7	7	0% 14-Oct-05	24-Oct-05	56													1	1			7th Flo	1			-		-	1	1	
A2721	DOORS	0	0	0% 19-May-05	19-May-05	303				┪╏	ors							Γ'	 			•								1	1	
A2730	Install Door Frames	40	40	0% 16-Jun-05	11-Aug-05	244					: 1 - 1 -	1: 1		l Ir	nstall	Don	r Fra	mes	! !		i		1	1			-	-	1	1	i	
A2731	CARPETS & FLOORING	0	0	0% 19-May-05	19-May-05	303				<b>-</b>		16-6-		.   -	-1-1-1-																	
A2740	Install Carpets & Flooring	120	120	0% 17-May-05	03-Nov-05	185		į			ARPET								Inc	tali C	arnete	& Floo	rina	i			1		i	1	1	
A2740 A2741	PAINT	0	0	0% 17-May-05	19-May-05	303					AINT											∞ i 100	9	1			1			1	1	
741	LAMINI	U	U	070 19-Iviay-05	13 Iviay-03	303		i	1 1	<u> </u>	ן איייך ק	$\mathbf{E} \perp$	1 15	1 1	131				: :	- 1			i	i		i	i	į	i	<u> </u>		_

Remaining Work •

Milestone

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Tyler Swartzwelder Construction Management Option

#### APPENDIX – RESEARCH TOPIC

# INDIVIDUAL LEED CHECKLIST SPREADSHEETS PENN STATE VS. OTHER UNIVERSITIES DEVELOPER GUIDES

						Core & Sh	nell Projects	3					
	LEED-CS V1.0(Pilot)/2.0 Points	Harbor Side Office Center	Waterfront Technology Center @ Camden	420 Deleware Drive	Abercorn Common	111 South Wacker Drive	Banner Bank Building	1 Crescent Drive	Collaborative Innovation Center	East Hills Center	Main Street @ NorthField Stapleton	Totals	
		Silver	Gold	Silver	Silver	Gold	Platinum	Platinum	Gold	Gold	Silver		
	Sustainable Sites											160	
Prereq 1	Construction Activity Pollution Prevention	X	Х	Х	X	Х	Х	Х	Х	Х	X	10	
Credit 1	Site Selection	X	Х		X	Х	Х	Х	Х	Х	X	9	90%
Credit 2	Development Density & Community Connectivity		Х			Х	Х	Х	Х			5	50%
Credit 3	Brownfield Redevelopement	X	Х				Х	Х		Х	Х	6	60%
	Alternative Transportation: Public Transportation Access	X	Х		Х	Х	Х	Х	Х	Х		8	80%
	Alternative Transportation: Bicycle Storage & Changing Rooms			Х	Х	Х	Х	Х	Х			6	60%
	Alternative Transportation: Low-Emitting & Fuel-Efficient Vehicles		Х	Х	Х	Х	Х	Х		Х		7	70%
Credit 4.4	Alternative Transportation: Parking Capacity	X	Х		Х	Х	Х		Х	Х		7	70%
	Site Development: Protect of Restore Habitat					Х						1	10%
Credit 5.2	Site Development: Maximize Open Space					Х		Х				2	20%
Credit 6.1	Stormwater Design: Quantity Control	X			Х	Х	Х	Х	Х	Х	Х	8	80%
Credit 6.2	Stormwater Design: Quality Control	X			Х		Х	Х		Х	Х	6	60%
Credit 7.1	Construction Activity Pollution Prevention	X				Х	Х	Х	Х		Х	6	60%
Credit 7.2	Heat Island Effect, Roof	X	Х	Х	Х	Х	Х	Х	Х	Х	Х	10	100%
Credit 8	Light Pollution Reduction			Х			Х	Х		Х		4	40%
Credit 9	Tenant Design & Construction Guidelines	X	Х	Х	Х		Х	Х	Х	Х	Х	9	90%
												94	59%
	Water Efficiency											50	
	Water Efficient Landscaping: Reduce by 50%	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	10	100%
	Water Efficient Landscaping: No Potable Use or No Irrigation		Х	Х	Х	Х	Х	Х	Х	Х		8	80%
Credit 2	Innovative Wastewater Technologies						Х		Х			2	20%
Credit 3.1	Water Use Reduction: 20% Reduction	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	10	100%
Credit 3.2	Water Use Reduction: 30% Reduction	Х		Х	Х	Х	Х	Х	Х	Х	Х	9	90%
												39	78%
	Energy & Atmosphere					.,			.,		.,	170	
Prereq 1	Fundamental Commissioning of the Building Energy Systems	X	Х	Х	Х	Х	Х	Х	Х	Х	X	10	
Prereq 2	Minimum Energy Performance	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	10	
	Fundamental Refrigerant Management	X	X	Х	X	Х	Х	X	X	X	Х	10	
Credit 1	Optimize Energy Performance	XXX	XX	Х	XXXX			XXXXX	XXX	XXXXX		23	230%
	10.5% New Buildings or 3.5% Existing Building Renovations												
	14% New Buildings or 7% Existing Building Renovations												
	17.5% New Buildings or 10.5% Existing Building Renovations												
	21% New Buildings or 14% Existing Building Renovations	ļ											
	24.5% New Buildings or 17.5% Existing Building Renovations	ļ											
	28% New Buildings or 21% Existing Building Renovations	ļ											
	31.5% New Buildings or 24.5% Existing Building Renovations	ļ											
0 " -	35% New Buildings or 28% Existing Building Renovations							1					
Credit 2	On-Site Renewable Energy	1	.,	<b></b>									0001
Credit 3	Enhanced Commissioning	L	Х	Х						L .,		2	20%
Credit 4	Enhanced Refrigerant Management	Х	.,			Х	Х	V	.,	Х	X	5	50%
Credit 5.1	Measurement & Verification - Base Building	ļ	Х	<b></b>				XX	Х	L .,	XX	6	60%
Credit 5.2	Measurement & Verification - Tenant Sub-metering	ļ						Х		Х	Х	3	30%
Credit 6	Green Power	1										00	0%
L		]		l	]		l	1				69	41%

	Materials & Resources											120	
Prereq 1	Storage & Collection of Recyclables	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	10	
	Building Reuse: Maintain 25% of Existing Walls, Floors & Roof					Х	Х					2	20%
Credit 1.2	Building Reuse: Maintain 50% of Existing Walls, Floors & Roof					Х	Х					2	20%
Credit 1.3	Building Reuse: Maintain 75% of Interior Non-Structural Elements	Х	Х	Х	Х			Х	Х	Х		7	70%
Credit 2.1	Construction Waste Management: Divert 50% from Disposal	Х	Х	Х	Х			Х	Х	Х		7	70%
Credit 2.2	Construction Waste Management: Divert 75% from Disposal		Х								Х	2	20%
Credit 3	Materials Reuse: 1%	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	10	100%
Credit 4.1	Recycled Content: 10% (post-consumer + ½ pre-consumer)	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	10	100%
Credit 4.2	Recycled Content: 20% (post-consumer + ½ pre-consumer)	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	10	100%
Credit 5.1	Regional Materials: 10% Extracted, Processed & Manufactured Reg	Х	Х	Х	Х			Х	Х	Х	Х	8	80%
Credit 5.2	Regional Materials: 20% Extracted, Processed & Manufactured Reg											0	0%
Credit 6	Certified Wood		Х	Х								2	20%
												70	58%
	Indoor Environmental Quality											160	
Prereq 1	Minimum IAQ Performance	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	10	i
Prereq 2	Environmental Tobacco Smoke (ETS) Control	Х	Х	Х	Х	Х	Х	Х	X	Х	Х	10	I
Credit 1	Outdoor Air Delivery Monitoring	Х	Х	Х		Х	Х	Х	Х			7	70%
Credit 2	Increased Ventilation			Х	Х	Х	Х		Х			5	50%
Credit 3	Construction IAQ Management Plan: During Construction	Х	Х		Х			Х	X	Х	X	7	70%
Credit 4.1	Low-Emitting Materials: Adhesives & Sealants	Х	Х	Х	Х	0.6	0.6	Х	Х	Х		9	90%
Credit 4.2	Low-Emitting Materials: Paints & Coatings	Х	Х	Х	Х	0.6	0.6	Х	Х		Х	9	90%
Credit 4.3	Low-Emitting Materials: Carpet Systems	Х	Х	Х				Х	Х		Х	7	70%
Credit 4.4	Low-Emitting Materials: Composite Wood & Agrifiber Products			Х		Х	Х	Х				4	40%
Credit 5	Indoor Chemical & Pollutant Source Control	Х	Х	Х		Х	Х	Х				6	60%
Credit 6.1	Controllability of Systems: Perimeter					Х	Х		Х			3	30%
Credit 6.2	Controllability of Systems: Non-Perimeter					Х	Х		Х			3	30%
Credit 7.1	Thermal Comfort: Comply with ASHRAE 55-1992	Х	Х		Х	Х	Х	Х	X		X	8	80%
Credit 7.2	Thermal Comfort: Permanent Monitoring System	Х	Х			Х	Х	Х	Х		Х	7	70%
	Daylight & Views: Daylight 75% of Spaces	Х	Х			Х	Х	Х	X	Х	Х	8	80%
Credit 8.2	Daylight & Views: Views for 90% of Spaces	Х	Х	Х		Х	Х	Х	Х	X	Х	9	90%
												112	70%
	Innovation & Design Process											50	
Credit 1.1	Innovation in Design: Provide Specific Title		Х	Х		Х	Х	Х	Х	X	Х	8	80%
Credit 1.2	Innovation in Design: Provide Specific Title		Х		Х	Х	Х	Х	Х	Х	Х	8	80%
Credit 1.3	Innovation in Design: Provide Specific Title		Х	Х	Х	Х	Х	Х	Х	Х	Х	9	90%
Credit 1.4	Innovation in Design: Provide Specific Title				Х	Х	Х	Х	Х	Х	Х	7	70%
Credit 2	LEED® Accredited Professional	Х	Х	Х	Х	Х	Х	Х	X	Х	Х	10	100%
												42	84%
	Totals (pre-certification estimates)	32	36	28	31	36	36	46	40	35	30	350	35

					Hig	her Education	n Projects						
		Contonfor	O A -li 0		Inter.	Clemson	Central		Dadmand		John		
		Center for	Orr Admission &	Skenandoa		University's	College	Innovation	Redmond	Coffin Street	Mitchell		
	LEED-NC V2.1 Points (Higher Education)	Inter.	College	House	Science &	Advanced	Housing	Center	Campus	Dormatories	Center at	Totals	
		Engineering	Relations Bldg		Tech. I	Material	Phase 2		Facility		USM		
		Silver	Gold	Silver	Silver	Silver	Gold	Certified	Silver	Silver	Certified		
	Sustainable Sites			0	-	0				-		150	
Prereg 1	Erosion & Sedimentation Control	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	10	
Credit 1	Site Selection	X	X	X	X	X	X	X	X	X	X	10	100%
Credit 2	Development Density				X				- ~			1	10%
Credit 3	Brownfield Redevelopment				X							1	10%
Credit 4.1	Alternative Transportation, Public Transportation Access	Х	Х	Х	X	Х		Х				6	60%
Credit 4.2	Alternative Transportation, Public Pransportation, Possess	X		X	X	X	Х		Х	Х	Х	8	80%
Credit 4.3	Alternative Transportation, Alternative Fuel Vehicles		Х				X					2	20%
Credit 4.4	Alternative Transportation, Parking Capacity and Carpooling					х			Х			2	20%
Credit 5.1	Reduced Site Disturbance. Protect or Restore Open Space	х				x			_ ^			2	20%
Credit 5.1	Reduced Site Disturbance, Project of Restore Open Space  Reduced Site Disturbance, Development Footprint	<del>  ^</del>	х	Х	<del> </del>	X	Х	Х	Х	Х	Х	9	90%
Credit 6.1	Stormwater Management, Rate and Quantity	X	X	_^_	1	X	X	<del>  ^</del>	X	x	_^	6	60%
Credit 6.1	Stormwater Management, Rate and Quantity  Stormwater Management, Treatment	<del>  ^</del>	X	1	Х		^	<del> </del>	^	X		3	30%
Credit 6.2	Landscape & Exterior Design to Reduce Heat Islands, Non-Roof	Х	X	1			Х	<del> </del>	Х			4	40%
Credit 7.1	Landscape & Exterior Design to Reduce Heat Islands, Non-Roof	x	^		Х		^	Х		Х		4	40%
Credit 7.2	Light Pollution Reduction		Х		X			X	-	_ ^		3	30%
Credit 6	Light Pollution Reduction		^		^							71	47%
	Water Efficiency											50	47%
One dit 4.4		V	V	V		V	V	V		V	V		900/
Credit 1.1	Water Efficient Landscaping, Reduce by 50%	X	X	X		X	X	Х		X	X	8	80%
Credit 1.2	Water Efficient Landscaping, No Potable Use or No Irrigation	Х	Х	Х		Х	Х			X	Х	7	70%
Credit 2	Innovative Wastewater Technologies	- v					V			Х		1	10%
Credit 3.1	Water Use Reduction, 20% Reduction	X			Х	Х	X	X		-	Х	6	60%
Credit 3.2	Water Use Reduction, 30% Reduction	Х				Х	Х	Х				4	40% 52%
	Energy & Atmosphere											26 200	52%
Prereq 1	Fundamental Building Systems Commissioning	Х	Х	Х	Х	х	Х	Х	Х	Х	Х	10	
Prereg 2	Minimum Energy Performance	X	X	X	X	x	X	X	X	x	X	10	
Prereq 3	CFC Reduction in HVAC&R Equipment	x	X	X	X	X	X	X	X	X	X	10	
Credit 1	Optimize Energy Performance		XXXXXX	XXXXXX	XXXX	XXXX	XXXXX	XXXXXX	XXXXX	xxxxxxx	XXXX	53	530%
Credit 1	15% New Buildings or 5% Existing Building Renovations		*****	*****	^^^^	***	****	^^^^	^^^^	*****	^^^^	55	330 /6
	20% New Buildings or 10% Existing Building Renovations	+			-			1	-				
	25% New Buildings or 15% Existing Building Renovations	+			-			1	-				
-	30% New Buildings of 15% Existing Building Renovations	+			+			1		+		1	
	35% New Buildings or 20% Existing Building Renovations 35% New Buildings or 25% Existing Building Renovations			-						-		-	
	40% New Buildings or 25% Existing Building Renovations  40% New Buildings or 30% Existing Building Renovations	+		-	-			<b> </b>		<b>-</b>		<del>                                     </del>	
		+		-	-			<b> </b>		<b>-</b>		<del>                                     </del>	
	45% New Buildings or 35% Existing Building Renovations	+		1	<del>                                     </del>			<del> </del>		<del>                                     </del>		1	-
	50% New Buildings or 40% Existing Building Renovations	+		1	<del>                                     </del>			<del> </del>		<del>                                     </del>		1	-
	55% New Buildings or 45% Existing Building Renovations	+		1	<del>                                     </del>			<del> </del>		<del>                                     </del>		1	-
0 - 11 0 4	60% New Buildings or 50% Existing Building Renovations	+		1	1			1		<b>.</b>			
Credit 2.1	Renewable Energy, 5%	+		1	1			1		<b>.</b>			
Credit 2.2	Renewable Energy, 10%	+		1	1			1		<b>.</b>			
Credit 2.3	Renewable Energy, 20%	<b>—</b> •	v	1				1	V	<b>.</b>		-	500/
Credit 3	Additional Commissioning	Х	Х	ļ	Х		Х	ļ	Х			5	50%
Credit 4	Ozone Depletion			ļ		Х	Х	ļ	Х		Х	4	40%
Credit 5	Measurement & Verification		X	L			Х	ļ				2	20%
Credit 6	Green Power	Х	Х	Х			Х				Х	5	50%
												99	50%

	Materials & Resources											140	
	Storage & Collection of Recyclables	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	10	
Credit 1.1	Building Reuse, Maintain 75% of Existing Shell			Х	Х							2	20%
Credit 1.2	Building Reuse, Maintain 100% of Shell			Х								1	10%
	Building Reuse, Maintain 100% Shell & 50% Non-Shell			Х								1	10%
Credit 2.1	Construction Waste Management, Divert 50%	Х	Х	Х	Х	Х		Х	Х	Х	Х	9	90%
Credit 2.2	Construction Waste Management, Divert 75%	Х	Х	Х	Х	Х			Х	Х	Х	8	80%
Credit 3.1	Resource Reuse, Specify 5%		Х		Х							2	20%
Credit 3.2	Resource Reuse, Specify 10%				Х							1	10%
Credit 4.1	Recycled Content, Specify 5% (post-consumer + ½ post-industrial)	Х		Х	Х	Х	Х	Х	Х	Х	Х	9	90%
Credit 4.2	Recycled Content, Specify 10% (post-consumer + ½ post-industrial)	Х			Х			Х	Х	Х	Х	6	60%
Credit 5.1	Local/Regional Materials, 20% Manufactured Locally	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	10	100%
Credit 5.2	Local/Regional Materials, of 20% Above, 50% Harvested Locally	Х	Х	Х	Х			Х	Х	Х		7	70%
Credit 6	Rapidly Renewable Materials												0%
Credit 7	Certified Wood							Х	Х		Х	3	30%
												69	49%
	Indoor Environmental Quality											170	
Prereq 1	Minimum IAQ Performance	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	10	100%
Prereq 2	Environmental Tobacco Smoke (ETS) Control	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	10	100%
Credit 1	Carbon Dioxide (CO <sub>2</sub> ) Monitoring	х	Х		Х		х	Х	Х		Х	7	70%
Credit 2	Ventilation Effectiveness			1	X	Х				İ		2	20%
	Construction IAQ Management Plan, During Construction	х	Х		X	X	х		Х	Х		7	70%
Credit 3.2	Construction IAQ Management Plan, Before Occupancy	X		1		X	X	Х	X			5	50%
Credit 4.1	Low-Emitting Materials, Adhesives & Sealants	X		х		X	X	X	X	Х	Х	8	80%
	Low-Emitting Materials, Paints	X	Х	X	Х		X	X	X	X	X	9	90%
	Low-Emitting Materials, Carpet	X	X	X	X	Х	X	X	X	X	X	10	100%
	Low-Emitting Materials, Composite Wood & Agrifiber	1					X	X	X		X	4	40%
	Indoor Chemical & Pollutant Source Control	Х	Х	Х	Х	Х	X		X	Х	X	9	90%
	Controllability of Systems, Perimeter		Х	Х			Х			Х		4	40%
	Controllability of Systems, Non-Perimeter			X		Х	X			X		4	40%
	Thermal Comfort, Comply with ASHRAE 55-1992	Х	Х	Х	Х	Х	Х		Х	Х	Х	9	90%
	Thermal Comfort, Permanent Monitoring System	Х	Х			Х	Х		Х		Х	6	60%
	Davlight & Views, Davlight 75% of Spaces		Х	Х					Х	Х		4	40%
Credit 8.2	Daylight & Views, Views for 90% of Spaces		Х	Х		Х	Х		Х	Х		6	60%
	, , , , , , , , , , , , , , , , , , , ,											114	67%
	Innovation & Design Process											50	
Credit 1.1	Innovation in Design: Provide Specific Title	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	10	100%
Credit 1.2	Innovation in Design: Provide Specific Title	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	10	100%
	Innovation in Design: Provide Specific Title	Х	Х		Х		Х	Х		Х		6	60%
Credit 1.4	Innovation in Design: Provide Specific Title	Х	Х		Х		Х					4	40%
Credit 2	LEED™ Accredited Professional	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	10	100%
												40	80%
	Totals (pre-certification estimates)	33	39	33	35	33	39	31	35	36	29	343	34.3

					Ov	vn/Occupy Pr	ojects						
		Yukon Base	Wind NRG	BCBS of	Pfizer	Alberici	Institute of	Ampere	Stantec	Sprint Bldg	Winrock		
	LEED-NC V2.1 Points (Owner Build/Occupy)	Facility	Partners, LLC	MA	Research	Corporate	EcoTourism	Annex	Centre	14	Intl Office	Totals	
		,	,		Unit	Headqtrs							
		Silver	Gold	Certified	Silver	Platinum	Gold	Silver	Silver	Certified	Gold	4.50	
D 4	Sustainable Sites		V	V				V		v	٧.	150	
	Erosion & Sedimentation Control	X	Х	Х	X	X	Х	X	X	Х	Х	10	
	Site Selection	Х			Х	X		Х	X	1		5 1	400/
	Development Density				Х	Х			Α				10%
	Brownfield Redevelopment	v		v		X	V	v	v	V	v	2	20%
	Alternative Transportation, Public Transportation Access Alternative Transportation, Bicycle Storage & Changing Rooms	X	Х	X	X	X	Х	X	X	X	X	9	90%
	Alternative Transportation, Alternative Fuel Vehicles	X	^	^	^	^	Х	^	^		_ ^	2	20%
	Alternative Transportation, Alternative Fuel Vehicles  Alternative Transportation, Parking Capacity and Carpooling	^	Х		Х	Х	X	Х	Х	Х	Х	8	80%
	Reduced Site Disturbance, Protect or Restore Open Space		^		^_	X	X	^	^	_ ^	X	3	30%
	Reduced Site Disturbance, Protect of Restore Open Space		Х			X	X	Х		Х	^	5	50%
	Stormwater Management, Rate and Quantity		^			X	^	^	Х	X	-	3	30%
	Stormwater Management, Rate and Quantity  Stormwater Management, Treatment			Х		X		Х	^	X		4	40%
	Landscape & Exterior Design to Reduce Heat Islands,N-Roof			X	Х	X	Х	X	Х	X	Х	8	80%
	Landscape & Exterior Design to Reduce Heat Islands, Nacon	Х	х	X	X	x	^	X	X	_ ^	X	8	80%
	Light Pollution Reduction	^	X	^	^	X	х	X				4	40%
Credit 6	Light Foliation Reduction		^				^	^				81	54%
	Water Efficiency											50	0 1 70
Credit 1 1	Water Efficient Landscaping, Reduce by 50%	Х	Х	Х	Х	Х		Х	Х		Х	8	80%
	Water Efficient Landscaping, No Potable Use or No Irrigation		X		X	X		X	X		X	6	60%
	Innovative Wastewater Technologies					X						1	10%
	Water Use Reduction, 20% Reduction	Х	Х	Х	Х	X	Х	Х	Х	Х	Х	10	100%
	Water Use Reduction, 30% Reduction	X	X			X		X	X		X	6	60%
												31	62%
	Energy & Atmosphere											200	
Prereq 1	Fundamental Building Systems Commissioning	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	10	
Prereq 2	Minimum Energy Performance	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	10	
Prereq 3	CFC Reduction in HVAC&R Equipment	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	10	
Credit 1	Optimize Energy Performance	XXXXXXX	XXXXXXXXX	XXXX	XXXXX	(XXXXXXXXXX	XXXXXXX	XXXX	XXXX	XXXX	XXXXXX	62	620%
	15% New Buildings or 5% Existing Building Renovations												
	20% New Buildings or 10% Existing Building Renovations												
	25% New Buildings or 15% Existing Building Renovations												
	30% New Buildings or 20% Existing Building Renovations	<u> </u>											
	35% New Buildings or 25% Existing Building Renovations												
	40% New Buildings or 30% Existing Building Renovations									1			
	45% New Buildings or 35% Existing Building Renovations												
	50% New Buildings or 40% Existing Building Renovations												
	55% New Buildings or 45% Existing Building Renovations												
	60% New Buildings or 50% Existing Building Renovations					<b>.</b>							
	Renewable Energy, 5%	X	X			X						3	30%
	Renewable Energy, 10%	Х	Х			Х						3	30%
	Renewable Energy, 20%	Х	Х	L ,,		Х				ļ	L .,	3	30%
	Additional Commissioning			Х	Х	Х		.,	Х	ļ.,,	X	5	50%
Credit 4	Ozone Depletion					Х	Х	Х	Х	Х	Х	6	60%
Credit 5	Measurement & Verification					Х				<del>  ,</del>	<u> </u>	<u> </u>	500/
Credit 6	Green Power	X					Х		Х	Х	Х	5	50%
L						1				l	1	117	59%

	Materials & Resources											140	
Prereg 1	Storage & Collection of Recyclables	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	10	
Credit 1.1	Building Reuse, Maintain 75% of Existing Shell						Х	Х				2	20%
	Building Reuse, Maintain 100% of Shell						Х					1	10%
	Building Reuse, Maintain 100% Shell & 50% Non-Shell												0%
	Construction Waste Management. Divert 50%	Х	Х	Х	Х	Х	Х	Х	Х		Х	9	90%
Credit 2.2	Construction Waste Management, Divert 75%	Х	Х	Х	Х	Х	Х	Х	Х		Х	9	90%
	Resource Reuse, Specify 5%					Х	Х					2	20%
Credit 3.2	Resource Reuse, Specify 10%						Х					1	10%
Credit 4.1	Recycled Content, Specify 5% (post-consumer + ½ post-industrial)	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	10	100%
Credit 4.2	Recycled Content, Specify 10% (post-consumer + ½ post-industrial)	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	10	100%
	Local/Regional Materials, 20% Manufactured Locally	Х	Х	Х	Х	Х		Х	Х	Х	Х	9	90%
Credit 5.2	Local/Regional Materials, of 20% Above, 50% Harvested Locally	Х	Х	Х		Х		Х	Х	Х	Х	8	80%
Credit 6	Rapidly Renewable Materials					Х						1	10%
Credit 7	Certified Wood		Х		Х	Х						3	30%
												75	54%
	Indoor Environmental Quality											170	
Prereq 1	Minimum IAQ Performance	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	10	100%
Prereq 2	Environmental Tobacco Smoke (ETS) Control	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	10	100%
Credit 1	Carbon Dioxide (CO <sub>2</sub> ) Monitoring	Х			Х	х	х		Х	Х	Х	7	70%
Credit 2	Ventilation Effectiveness					Х				Х	Х	3	30%
Credit 3.1	Construction IAQ Management Plan, During Construction			Х	Х	Х	Х				Х	5	50%
	Construction IAQ Management Plan, Before Occupancy	Х		Х	Х	Х					Х	5	50%
	Low-Emitting Materials, Adhesives & Sealants	Х	Х	Х	Х	Х	Х		Х	Х	Х	9	90%
	Low-Emitting Materials, Paints	Х	Х	Х	Х	Х	Х	Х	Х		Х	9	90%
	Low-Emitting Materials, Carpet	Х	Х	Х		Х	Х	Х	Х	Х	Х	9	90%
	Low-Emitting Materials, Composite Wood & Agrifiber		Х	Х	Х		Х	Х				5	50%
Credit 5	Indoor Chemical & Pollutant Source Control			Х	Х	Х	Х		Х		Х	6	60%
Credit 6.1	Controllability of Systems, Perimeter		Х			Х		Х				3	30%
	Controllability of Systems, Non-Perimeter		Х	Х		Х					Х	4	40%
Credit 7.1	Thermal Comfort, Comply with ASHRAE 55-1992		Х		Х	Х	Х	Х	Х		Х	7	70%
Credit 7.2	Thermal Comfort, Permanent Monitoring System		Х		Х	Х	Х		Х		Х	6	60%
Credit 8.1	Daylight & Views, Daylight 75% of Spaces		Х					Х			Х	3	30%
Credit 8.2	Daylight & Views, Views for 90% of Spaces	Х	Х			Х	Х	Х	Х		Х	7	70%
												108	64%
	Innovation & Design Process											50	
	Innovation in Design: Provide Specific Title	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	10	100%
Credit 1.2	Innovation in Design: Provide Specific Title	Х	Х	Х		Х	Х	Х	Х	Х	Х	9	90%
	Innovation in Design: Provide Specific Title		Х	Х		Х	Х	Х	Х	Х	Х	8	80%
	Innovation in Design: Provide Specific Title		Х	Х		Х			Х		Х	5	50%
Credit 2	LEED™ Accredited Professional	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	10	100%
												42	84%
	Totals (pre-certification estimates)	35	44	31	33	60	39	36	38	26	43	385	38.5

			-		Build	l-Lease/Se	ell Projects					,	
		Public	1	BCBSM/	Michigan		Town	Two			Ī		<del>                                     </del>
1	LEED-NC V2.1 Points (Build/Sell/Lease)	Health	Tumwater	Steketees	Renewal	ORNL E.	Center E	Pot.	NAR DC		One Pot.	Totals	
	LEED NO VENT ONNO (Bundroom/Loudo)	Sciences	Office	Building	Energy	Campus	Blda II	Yard	Bldg	MW Reg	Yard	Totalo	
-		Certified	Gold	Certified	Gold	Certified	Certified	Gold	Silver	Gold	Gold		
	Sustainable Sites	Cortinoa	Goid	Cortinoa	Cold	Cortinoa	Continua	Cold	Ge.	Colu	00.0	150	
Prereg 1	Erosion & Sedimentation Control	Х	Х	Х	Х	Х	Х	Х	Х	х	Х	10	
	Site Selection	x	x	X		<del></del>	X	X	X	x	X	8	80%
	Development Density	X		X			_^	X	X		X	5	50%
	Brownfield Redevelopment	X	<del>                                     </del>	X	Х		-	X	X	Х	X	6	60%
	Alternative Transportation, Public Transportation Access	X	Х	X	X		-	X	X		X	7	70%
	Alternative Transportation, Public Transportation Access  Alternative Transportation, Bicycle Storage & Changing Rooms	x	X		X	Х	Х	X	X	Х	X	9	90%
	Alternative Transportation, Alternative Fuel Vehicles				X	<b>_^</b> _		X	X		X	4	40%
		<b></b>	Х		X	Х	Х	x		х	X	7	70%
	Alternative Transportation, Parking Capacity and Carpooling Reduced Site Disturbance, Protect or Restore Open Space	<del> </del>	X		X	X		X					
			X			<b>X</b>	ļ	_ X	<del></del>	<del></del>	<del> </del>	2	40%
	Reduced Site Disturbance, Development Footprint				X	igwdown		<del></del>		Х			20%
	Stormwater Management, Rate and Quantity	.,	X		Х	igwdown	X	<u> </u>		<u> </u>	X	4	40%
	Stormwater Management, Treatment	X	Х				Х	X	<u> </u>	X	Х	6	60%
	Landscape & Exterior Design to Reduce Heat Islands,N-Roof	Х			Х	Х		Х	X	X	Х	7	70%
	Landscape & Exterior Design to Reduce Heat Islands, Roof		Х		Х	Х	Х	Х	Х	Х		7	70%
Credit 8	Light Pollution Reduction			Х	Х	Х		<b></b>	Х			4	40%
												90	60%
	Water Efficiency											50	
	Water Efficient Landscaping, Reduce by 50%	Х	Х		Х	Х	Х	Х	Х	X	Х	9	90%
	Water Efficient Landscaping, No Potable Use or No Irrigation	Х	Х		Х	Х		Х	Х	Х	Х	8	80%
	Innovative Wastewater Technologies										ļ		0%
	Water Use Reduction, 20% Reduction		Х	Х	Х		Х	Х	Х	Х	Х	8	80%
Credit 3.2	Water Use Reduction, 30% Reduction		Х		Х			Х	Х	Х	Х	6	60%
												31	62%
	Energy & Atmosphere											200	
	Fundamental Building Systems Commissioning	Х	Х	Х	Х	Х	Х	Х	Х	X	Х	10	
	Minimum Energy Performance	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	10	
	CFC Reduction in HVAC&R Equipment	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	10	
	Optimize Energy Performance		XXXXXX	XXXXX	XXXXXXX	XXX	XXXXXX	XX	XXXX	XXX	XXX	39	390%
	15% New Buildings or 5% Existing Building Renovations									<u> </u>	ļ		
	20% New Buildings or 10% Existing Building Renovations												
	25% New Buildings or 15% Existing Building Renovations												
	30% New Buildings or 20% Existing Building Renovations												
	35% New Buildings or 25% Existing Building Renovations												
	40% New Buildings or 30% Existing Building Renovations												
	45% New Buildings or 35% Existing Building Renovations						ŀ						
	50% New Buildings or 40% Existing Building Renovations												
	55% New Buildings or 45% Existing Building Renovations		I										
	60% New Buildings or 50% Existing Building Renovations												
	Renewable Energy, 5%				Х							1	
Credit 2.2	Renewable Energy, 10%				Х							1	
Credit 2.3	Renewable Energy, 20%				Х							1	
Credit 3	Additional Commissioning		Х			Х		Х		Х	Х	5	50%
Credit 4	Ozone Depletion		Х		Х	Х	Х	Х			Х	6	60%
Credit 5	Measurement & Verification					Х				Х	Х	3	30%
											· ·	6	60%
Credit 6	Green Power	Х	1		Х	ļ i		Х	Х	Х	Х	0	00 /0

	Materials & Resources											140	
Prereg 1	Storage & Collection of Recyclables	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	10	
	Building Reuse, Maintain 75% of Existing Shell			X								1	10%
	Building Reuse, Maintain 100% of Shell			Х								1	10%
	Building Reuse, Maintain 100% Shell & 50% Non-Shell												0%
	Construction Waste Management, Divert 50%	Х	Х		Х	Х	Х	Х		Х	Х	8	80%
Credit 2.2	Construction Waste Management, Divert 75%	Х	Х		Х		Х					4	40%
	Resource Reuse, Specify 5%												0%
Credit 3.2	Resource Reuse, Specify 10%												0%
Credit 4.1	Recycled Content, Specify 5% (post-consumer + ½ post-industrial)	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	10	100%
	Recycled Content, Specify 10% (post-consumer + ½ post-industrial)	Х	Х		Х	Х	Х	Х		Х	Х	8	80%
	Local/Regional Materials, 20% Manufactured Locally	Х	Х	Х	Х		Х	Х	Х	Х	Х	9	90%
	Local/Regional Materials, of 20% Above, 50% Harvested Locally	Х	Х				Х	Х	Х	Х	Х	7	70%
	Rapidly Renewable Materials												0%
	Certified Wood			Х				Х		Х	Х	4	40%
												62	44%
	Indoor Environmental Quality											170	
Prereq 1	Minimum IAQ Performance	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	10	100%
Prereq 2	Environmental Tobacco Smoke (ETS) Control	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	10	100%
Credit 1	Carbon Dioxide (CO <sub>2</sub> ) Monitoring		х	х	Х	Х		Х	Х	Х	Х	8	80%
Credit 2	Ventilation Effectiveness				X					X		2	20%
	Construction IAQ Management Plan, During Construction	Х	Х		X	Х		Х		X	Х	7	70%
	Construction IAQ Management Plan, Before Occupancy	X	X		X	X		X			X	6	60%
	Low-Emitting Materials, Adhesives & Sealants	X	X	Х	X	X		X		Х	X	8	80%
	Low-Emitting Materials, Paints		Х	Х	Х	Х	Х	Х	Х	Х	Х	9	90%
	Low-Emitting Materials, Carpet	Х	X	X	X	X	X	X	X	X	X	10	100%
	Low-Emitting Materials, Composite Wood & Agrifiber			Х			Х	Х			Х	4	40%
Credit 5	Indoor Chemical & Pollutant Source Control	Х	Х	Х	Х			Х	Х	Х	Х	8	80%
Credit 6.1	Controllability of Systems, Perimeter												0%
Credit 6.2	Controllability of Systems, Non-Perimeter												0%
Credit 7.1	Thermal Comfort, Comply with ASHRAE 55-1992		Х	Х				Х	Х	Х	Х	6	60%
Credit 7.2	Thermal Comfort, Permanent Monitoring System		Х	Х				Х		Х	Х	5	50%
Credit 8.1	Daylight & Views, Daylight 75% of Spaces								Х	Х		2	20%
	Daylight & Views, Views for 90% of Spaces		Х	Х	Х		Х	Х	Х	Х	Х	7	70%
												102	60%
	Innovation & Design Process											50	
Credit 1.1	Innovation in Design: Provide Specific Title	Х	Х		Х	Х		Х	Х	Х	Х	8	80%
Credit 1.2	Innovation in Design: Provide Specific Title	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	10	100%
Credit 1.3	Innovation in Design: Provide Specific Title	Х	Х		Х	Х		Х	Х	Х	Х	8	80%
Credit 1.4	Innovation in Design: Provide Specific Title	Х	Х		Х		Х	Х	Х	Х	Х	8	80%
Credit 2	LEED™ Accredited Professional	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	10	100%
			ĺ									44	88%
	Totals (pre-certification estimates)	26	41	27	46	27	28	42	33	40	43	353	35.3

	PENN STATE UNIVERSITY VS. OTHER RESEA				EADOULIN (EDOUE)
	LEED-NC V2.1 Points (Higher Education)		E UNIVERSITY		SEARCH UNIVERSITIES
4	Sustainable Sites		ble Points = 30		ossible Points = 150
ereq 1	Erosion & Sedimentation Control	2		10	4000/
edit 1	Site Selection	0		10	100%
edit 2	Development Density	0		1	10%
edit 3	Brownfield Redevelopment	0		1	10%
redit 4.1	Alternative Transportation, Public Transportation Access	0		6	60%
redit 4.2	Alternative Transportation, Bicycle Storage & Changing Rooms	1		8	80%
redit 4.3	Alternative Transportation, Alternative Fuel Vehicles	0		2	20%
redit 4.4	Alternative Transportation, Parking Capacity and Carpooling	0		2	20%
redit 5.1	Reduced Site Disturbance, Protect or Restore Open Space	0		2	20%
redit 5.2	Reduced Site Disturbance, Development Footprint	1		9	90%
redit 6.1	Stormwater Management, Rate and Quantity	2		6	60%
redit 6.2	Stormwater Management, Treatment	1		3	30%
redit 7.1	Landscape & Exterior Design to Reduce Heat Islands, Non-Roof	0		4	40%
redit 7.2	Landscape & Exterior Design to Reduce Heat Islands, Roof	1		4	40%
redit 8	Light Pollution Reduction	0		3	30%
		8	27%	71	47%
	Water Efficiency		ble Points = 10		ossible Points = 50
redit 1.1	Water Efficient Landscaping, Reduce by 50%	0		8	80%
redit 1.2	Water Efficient Landscaping, No Potable Use or No Irrigation	0		7	70%
redit 2	Innovative Wastewater Technologies	0		1	10%
redit 3.1	Water Use Reduction, 20% Reduction	2		6	60%
redit 3.2	Water Use Reduction, 30% Reduction	1		4	40%
		3	30%	26	52%
	Energy & Atmosphere		ble Points = 40		ossible Points = 200
ereq 1	Fundamental Building Systems Commissioning	2		10	
ereq 2	Minimum Energy Performance	2		10	
ereq 3	CFC Reduction in HVAC&R Equipment	2		10	
edit 1	Optimize Energy Performance			53	530%
	15% New Buildings or 5% Existing Building Renovations	2			
	20% New Buildings or 10% Existing Building Renovations	2			
	25% New Buildings or 15% Existing Building Renovations	2			
	30% New Buildings or 20% Existing Building Renovations	2			
	35% New Buildings or 25% Existing Building Renovations	2			
	40% New Buildings or 30% Existing Building Renovations	2			
	45% New Buildings or 35% Existing Building Renovations	1			
	50% New Buildings or 40% Existing Building Renovations	1			
	55% New Buildings or 45% Existing Building Renovations	1			
	60% New Buildings or 50% Existing Building Renovations	1			
redit 2.1	Renewable Energy, 5%	1			
redit 2.2	Renewable Energy, 10%	0			
redit 2.3	Renewable Energy, 20%	2			
redit 3	Additional Commissioning	2		5	50%
redit 4	Ozone Depletion	2		4	40%
redit 5	Measurement & Verification	0		2	20%
redit 6	Green Power	2		5	50%
		31	78%	99	50%
	Materials & Resources	Total Possil	ble Points = 28	Total Po	ossible Points = 140
ereq 1	Storage & Collection of Recyclables	2		10	
edit 1.1	Building Reuse, Maintain 75% of Existing Shell	0		2	20%
	Building Reuse, Maintain 100% of Shell	0		1	10%
edit 1.2	Building Reuse, Maintain 100% Shell & 50% Non-Shell	0	1	1	10%
edit 1.3		2		9	90%
edit 1.3 edit 2.1	Construction Waste Management, Divert 50%	2		9	90% 80%
redit 1.2 redit 1.3 redit 2.1 redit 2.2 redit 3.1		2 2 0		9 8 2	90% 80% 20%

Credit 4.1	Recycled Content, Specify 5% (post-consumer + ½ post-industrial)	2		9	90%
Credit 4.2	Recycled Content, Specify 10% (post-consumer + ½ post-industrial)	1		6	60%
Credit 5.1	Local/Regional Materials, 20% Manufactured Locally	2		10	100%
Credit 5.2	Local/Regional Materials, of 20% Above, 50% Harvested Locally	2		7	70%
Credit 6	Rapidly Renewable Materials	0			0%
Credit 7	Certified Wood	2		3	30%
		15	54%	69	49%
	Indoor Environmental Quality	Total Possik	ole Points = 34	Tot	tal Possible Points = 170
Prereq 1	Minimum IAQ Performance	2		10	100%
Prereq 2	Environmental Tobacco Smoke (ETS) Control	2		10	100%
Credit 1	Carbon Dioxide (CO <sub>2</sub> ) Monitoring	2		7	70%
Credit 2	Ventilation Effectiveness	0		2	20%
Credit 3.1	Construction IAQ Management Plan, During Construction	2		7	70%
Credit 3.2	Construction IAQ Management Plan, Before Occupancy	2		5	50%
Credit 4.1	Low-Emitting Materials, Adhesives & Sealants	2		8	80%
Credit 4.2	Low-Emitting Materials, Paints	2		9	90%
Credit 4.3	Low-Emitting Materials, Carpet	2		10	100%
Credit 4.4	Low-Emitting Materials, Composite Wood & Agrifiber	2		4	40%
Credit 5	Indoor Chemical & Pollutant Source Control	2		9	90%
Credit 6.1	Controllability of Systems, Perimeter	2		4	40%
Credit 6.2	Controllability of Systems, Non-Perimeter	1		4	40%
Credit 7.1	Thermal Comfort, Comply with ASHRAE 55-1992	0		9	90%
Credit 7.2	Thermal Comfort, Permanent Monitoring System	2		6	60%
Credit 8.1	Daylight & Views, Daylight 75% of Spaces	1		4	40%
Credit 8.2	Daylight & Views, Views for 90% of Spaces	0		6	60%
		26	76%	114	67%
	Innovation & Design Process	Total Possik	ole Points = 10	То	tal Possible Points = 50
Credit 1.1	Innovation in Design: Provide Specific Title	2		10	100%
Credit 1.2	Innovation in Design: Provide Specific Title	2		10	100%
Credit 1.3	Innovation in Design: Provide Specific Title	1		6	60%
Credit 1.4	Innovation in Design: Provide Specific Title	2		4	40%
0 111 0	LEED™ Accredited Professional	2		10	100%
Credit 2					
Credit 2	7,00,00,00,00,00,00,00,00,00,00,00,00,00	9	90% ORE = 46 - GOLD	40	80% LEED SCORE = 42 - GOLD

	LEED Guide for Core and Shell	Developers	
	LEED-CS V1.0(Pilot)/2.0 Points	Guide Data	
		% of Research Projects	Compliance Effort
	Sustainable Sites		
Prereq 1	Construction Activity Pollution Prevention	100%	Mandatory Compliance
Credit 1	Site Selection	90%	Mandatory Compliance
Credit 2	Development Density & Community Connectivity	50%	Significant Effort
Credit 3	Brownfield Redevelopement	60%	Significant Effort
Credit 4.1	Alternative Transportation: Public Transportation Access	80%	Mandatory Compliance
Credit 4.2	Alternative Transportation: Bicycle Storage & Changing Rooms	60%	Significant Effort
Credit 4.3	Alternative Transportation: Low-Emitting and Fuel-Efficient Vehicles	70%	Significant Effort
Credit 4.4	Alternative Transportation: Parking Capacity	70%	Significant Effort
Credit 5.1	Site Development: Protect of Restore Habitat	10%	Minimal Effort
Credit 5.2	Site Development: Maximize Open Space	20%	Minimal Effort
Credit 6.1	Stormwater Design: Quantity Control	80%	Mandatory Compliance
Credit 6.2	Stormwater Design: Quality Control	60%	Significant Effort
Credit 7.1	Construction Activity Pollution Prevention	60%	Significant Effort
Credit 7.2	Heat Island Effect, Roof	100%	Mandatory Compliance
Credit 8	Light Pollution Reduction	40%	Adequate Effort
Credit 9	Tenant Design & Construction Guidelines	90%	Mandatory Compliance
	Water Efficiency		
Credit 1.1	Water Efficient Landscaping: Reduce by 50%	100%	Mandatory Compliance
Credit 1.2	Water Efficient Landscaping: No Potable Use or No Irrigation	80%	Mandatory Compliance
Credit 2	Innovative Wastewater Technologies	20%	Minimal Effort
Credit 3.1	Water Use Reduction: 20% Reduction	100%	Mandatory Compliance
Credit 3.2	Water Use Reduction: 30% Reduction	90%	Mandatory Compliance

	Energy & Atmosphere		
Prereq 1	Fundamental Commissioning of the Building Energy Systems	100%	Mandatory Compliance
Prereq 2	Minimum Energy Performance	100%	Mandatory Compliance
Prereq 3	Fundamental Refrigerant Management	100%	Mandatory Compliance
Credit 1	Optimize Energy Performance	29% of Credit 1	Adequate Effort
	10.5% New Buildings or 3.5% Existing Building Renovations		
	14% New Buildings or 7% Existing Building Renovations		
	17.5% New Buildings or 10.5% Existing Building Renovations		
	21% New Buildings or 14% Existing Building Renovations		
	24.5% New Buildings or 17.5% Existing Building Renovations		
	28% New Buildings or 21% Existing Building Renovations		
	31.5% New Buildings or 24.5% Existing Building Renovations		
	35% New Buildings or 28% Existing Building Renovations		
Credit 2	On-Site Renewable Energy	0%	Minimal Effort
Credit 3	Enhanced Commissioning	20%	Minimal Effort
Credit 4	Enhanced Refrigerant Management	50%	Significant Effort
Credit 5.1	Measurement & Verification - Base Building	60%	Significant Effort
Credit 5.2	Measurement & Verification - Tenant Sub-metering	30%	Adequate Effort
Credit 6	Green Power	0%	Minimal Effort
	Materials & Resources		
Prereq 1	Storage & Collection of Recyclables	100%	Mandatory Compliance
Credit 1.1	Building Reuse: Maintain 25% of Existing Walls, Floors & Roof	20%	Minimal Effort
Credit 1.2	Building Reuse: Maintain 50% of Existing Walls, Floors & Roof	20%	Minimal Effort
Credit 1.3	Building Reuse: Maintain 75% of Interior Non-Structural Elements	70%	Significant Effort
Credit 2.1	Construction Waste Management: Divert 50% from Disposal	70%	Significant Effort
Credit 2.2	Construction Waste Management: Divert 75% from Disposal	20%	Minimal Effort
Credit 3	Materials Reuse: 1%	100%	Mandatory Compliance
Credit 4.1	Recycled Content: 10% (post-consumer + ½ pre-consumer)	100%	Mandatory Compliance
Credit 4.2	Recycled Content: 20% (post-consumer + ½ pre-consumer)	100%	Mandatory Compliance
Credit 5.1	Regional Materials: 10% Extracted, Processed & Manufactured Reg.	80%	Mandatory Compliance
Credit 5.2	Regional Materials: 20% Extracted, Processed & Manufactured Reg.	0%	Minimal Effort
Credit 6	Certified Wood	20%	Minimal Effort

	Indoor Environmental Quality		
Prereq 1	Minimum IAQ Performance	100%	Mandatory Compliance
Prereq 2	Environmental Tobacco Smoke (ETS) Control	100%	Mandatory Compliance
Credit 1	Outdoor Air Delivery Monitoring	70%	Significant Effort
Credit 2	Increased Ventilation	50%	Significant Effort
Credit 3	Construction IAQ Management Plan: During Construction	70%	Significant Effort
Credit 4.1	Low-Emitting Materials: Adhesives & Sealants	90%	Mandatory Compliance
Credit 4.2	Low-Emitting Materials: Paints & Coatings	90%	Mandatory Compliance
Credit 4.3	Low-Emitting Materials: Carpet Systems	70%	Significant Effort
Credit 4.4	Low-Emitting Materials: Composite Wood & Agrifiber Products	40%	Adequate Effort
Credit 5	Indoor Chemical & Pollutant Source Control	60%	Significant Effort
Credit 6.1	Controllability of Systems: Perimeter	30%	Adequate Effort
Credit 6.2	Controllability of Systems: Non-Perimeter	30%	Adequate Effort
Credit 7.1	Thermal Comfort: Comply with ASHRAE 55-1992	80%	Mandatory Compliance
Credit 7.2	Thermal Comfort: Permanent Monitoring System	70%	Significant Effort
Credit 8.1	Daylight & Views: Daylight 75% of Spaces	80%	Mandatory Compliance
Credit 8.2	Daylight & Views: Views for 90% of Spaces	90%	Mandatory Compliance
	Innovation & Design Process		
Credit 1.1	Innovation in Design: Provide Specific Title	80%	Mandatory Compliance
Credit 1.2	Innovation in Design: Provide Specific Title	80%	Mandatory Compliance
Credit 1.3	Innovation in Design: Provide Specific Title	90%	Mandatory Compliance
Credit 1.4	Innovation in Design: Provide Specific Title	70%	Significant Effort
Credit 2	LEED® Accredited Professional	100%	Mandatory Compliance

LEED Guide for Higher Education Developers			
	LEED-NC V2.1 Points (Higher Education)	Guide Data	
		% of Research Projects	Compliance Effort
	Sustainable Sites		
Prereq 1	Erosion & Sedimentation Control	100%	Mandatory Compliance
Credit 1	Site Selection	100%	Mandatory Compliance
Credit 2	Development Density	10%	Minimal Effort
Credit 3	Brownfield Redevelopment	10%	Minimal Effort
Credit 4.1	Alternative Transportation, Public Transportation Access	60%	Significant Effort
Credit 4.2	Alternative Transportation, Bicycle Storage & Changing Rooms	80%	Mandatory Compliance
Credit 4.3	Alternative Transportation, Alternative Fuel Vehicles	20%	Minimal Effort
Credit 4.4	Alternative Transportation, Parking Capacity and Carpooling	20%	Minimal Effort
Credit 5.1	Reduced Site Disturbance, Protect or Restore Open Space	20%	Minimal Effort
Credit 5.2	Reduced Site Disturbance, Development Footprint	90%	Mandatory Compliance
Credit 6.1	Stormwater Management, Rate and Quantity	60%	Significant Effort
Credit 6.2	Stormwater Management, Treatment	40%	Adequate Effort
Credit 7.1	Landscape & Exterior Design to Reduce Heat Islands, Non-Roof	40%	Adequate Effort
Credit 7.2	Landscape & Exterior Design to Reduce Heat Islands, Roof	40%	Adequate Effort
Credit 8	Light Pollution Reduction	30%	Adequate Effort
	Water Efficiency		
Credit 1.1	Water Efficient Landscaping, Reduce by 50%	80%	Mandatory Compliance
Credit 1.2	Water Efficient Landscaping, No Potable Use or No Irrigation	70%	Significant Effort
Credit 2	Innovative Wastewater Technologies	10%	Minimal Effort
Credit 3.1	Water Use Reduction, 20% Reduction	60%	Significant Effort
Credit 3.2	Water Use Reduction, 30% Reduction	40%	Adequate Effort

	Energy & Atmosphere		1
Prereq 1	Fundamental Building Systems Commissioning	100%	Mandatory Compliance
Prereq 2	Minimum Energy Performance	100%	Mandatory Compliance
Prereq 3	CFC Reduction in HVAC&R Equipment	100%	Mandatory Compliance
Credit 1	Optimize Energy Performance	53% of Credit 1	Significant Effort
	15% New Buildings or 5% Existing Building Renovations		
	20% New Buildings or 10% Existing Building Renovations		
	25% New Buildings or 15% Existing Building Renovations		
	30% New Buildings or 20% Existing Building Renovations		
	35% New Buildings or 25% Existing Building Renovations		
	40% New Buildings or 30% Existing Building Renovations		
	45% New Buildings or 35% Existing Building Renovations		
	50% New Buildings or 40% Existing Building Renovations		
	55% New Buildings or 45% Existing Building Renovations		
	60% New Buildings or 50% Existing Building Renovations		
Credit 2.1	Renewable Energy, 5%	0%	Minimal Effort
Credit 2.2	Renewable Energy, 10%	0%	Minimal Effort
Credit 2.3	Renewable Energy, 20%	0%	Minimal Effort
Credit 3	Additional Commissioning	50%	Significant Effort
Credit 4	Ozone Depletion	40%	Adequate Effort
Credit 5	Measurement & Verification	20%	Minimal Effort
Credit 6	Green Power	50%	Significant Effort
	Materials & Resources		
Prereq 1	Storage & Collection of Recyclables	100%	Mandatory Comliance
Credit 1.1	Building Reuse, Maintain 75% of Existing Shell	20%	Minimal Effort
Credit 1.2	Building Reuse, Maintain 100% of Shell	10%	Minimal Effort
Credit 1.3	Building Reuse, Maintain 100% Shell & 50% Non-Shell	10%	Minimal Effort
Credit 2.1	Construction Waste Management, Divert 50%	90%	Mandatory Comliance
Credit 2.2	Construction Waste Management, Divert 75%	80%	Mandatory Comliance
Credit 3.1	Resource Reuse, Specify 5%	20%	Minimal Effort
Credit 3.2	Resource Reuse, Specify 10%	10%	Minimal Effort
	Recycled Content, Specify 5% (post-consumer + ½ post-industrial)	90%	Mandatory Comliance
Credit 4.2	Recycled Content, Specify 10% (post-consumer + ½ post-industrial)	60%	Significant Effort
Credit 5.1	Local/Regional Materials, 20% Manufactured Locally	100%	Mandatory Comliance
Credit 5.2	Local/Regional Materials, of 20% Above, 50% Harvested Locally	70%	Significant Effort
Credit 6	Rapidly Renewable Materials	0%	Minimal Effort
Credit 7	Certified Wood	30%	Adequate Effort

	Indoor Environmental Quality		
Prereq 1	Minimum IAQ Performance	100%	Mandatory Comliance
Prereq 2	Environmental Tobacco Smoke (ETS) Control	100%	Mandatory Comliance
Credit 1	Carbon Dioxide (CO <sub>2</sub> ) Monitoring	70%	Significant Effort
Credit 2	Ventilation Effectiveness	20%	Minimal Effort
Credit 3.1	Construction IAQ Management Plan, During Construction	70%	Significant Effort
Credit 3.2	Construction IAQ Management Plan, Before Occupancy	50%	Significant Effort
Credit 4.1	Low-Emitting Materials, Adhesives & Sealants	80%	Mandatory Comliance
Credit 4.2	Low-Emitting Materials, Paints	90%	Mandatory Comliance
Credit 4.3	Low-Emitting Materials, Carpet	100%	Mandatory Comliance
Credit 4.4	Low-Emitting Materials, Composite Wood & Agrifiber	40%	Adequate Effort
Credit 5	Indoor Chemical & Pollutant Source Control	90%	Mandatory Comliance
Credit 6.1	Controllability of Systems, Perimeter	40%	Adequate Effort
	Controllability of Systems, Non-Perimeter	40%	Adequate Effort
Credit 7.1	Thermal Comfort, Comply with ASHRAE 55-1992	90%	Mandatory Comliance
Credit 7.2	Thermal Comfort, Permanent Monitoring System	60%	Significant Effort
Credit 8.1	Daylight & Views, Daylight 75% of Spaces	40%	Adequate Effort
Credit 8.2	Daylight & Views, Views for 90% of Spaces	60%	Significant Effort
	Innovation & Design Process		
Credit 1.1	Innovation in Design: Provide Specific Title	100%	Mandatory Comliance
Credit 1.2	Innovation in Design: Provide Specific Title	100%	Mandatory Comliance
Credit 1.3	Innovation in Design: Provide Specific Title	60%	Significant Effort
Credit 1.4	Innovation in Design: Provide Specific Title	40%	Adequate Effort
Credit 2	LEED™ Accredited Professional	100%	Mandatory Comliance

LEED Guide for Own/Occupy Developers			
	LEED-NC V2.1 Points (Higher Education)	Guide Data	
		% of Research Projects	Compliance Effort
	Sustainable Sites		
Prereq 1	Erosion & Sedimentation Control	100%	Mandatory Compliance
Credit 1	Site Selection	50%	Significant Effort
Credit 2	Development Density	10%	Minimal Effort
Credit 3	Brownfield Redevelopment	20%	Minimal Effort
Credit 4.1	Alternative Transportation, Public Transportation Access	90%	Mandatory Compliance
Credit 4.2	Alternative Transportation, Bicycle Storage & Changing Rooms	90%	Mandatory Compliance
Credit 4.3	Alternative Transportation, Alternative Fuel Vehicles	20%	Minimal Effort
Credit 4.4	Alternative Transportation, Parking Capacity and Carpooling	80%	Mandatory Compliance
Credit 5.1	Reduced Site Disturbance, Protect or Restore Open Space	30%	Adequate Effort
Credit 5.2	Reduced Site Disturbance, Development Footprint	50%	Significant Effort
Credit 6.1	Stormwater Management, Rate and Quantity	30%	Adequate Effort
Credit 6.2	Stormwater Management, Treatment	40%	Adequate Effort
Credit 7.1	Landscape & Exterior Design to Reduce Heat Islands, Non-Roof	80%	Mandatory Compliance
Credit 7.2	Landscape & Exterior Design to Reduce Heat Islands, Roof	80%	Mandatory Compliance
Credit 8	Light Pollution Reduction	40%	Adequate Effort
	Water Efficiency		
Credit 1.1	Water Efficient Landscaping, Reduce by 50%	80%	Mandatory Compliance
Credit 1.2	Water Efficient Landscaping, No Potable Use or No Irrigation	60%	Significant Effort
Credit 2	Innovative Wastewater Technologies	10%	Minimal Effort
Credit 3.1	Water Use Reduction, 20% Reduction	100%	Mandatory Compliance
Credit 3.2	Water Use Reduction, 30% Reduction	60%	Significant Effort

	Energy & Atmosphere		
Prereq 1	Fundamental Building Systems Commissioning	100%	Mandatory Compliance
Prereq 2	Minimum Energy Performance	100%	Mandatory Compliance
Prereq 3	CFC Reduction in HVAC&R Equipment	100%	Mandatory Compliance
Credit 1	Optimize Energy Performance	62% of Credit 1	Significant Effort
	15% New Buildings or 5% Existing Building Renovations		
	20% New Buildings or 10% Existing Building Renovations		
	25% New Buildings or 15% Existing Building Renovations		
	30% New Buildings or 20% Existing Building Renovations		
	35% New Buildings or 25% Existing Building Renovations		
	40% New Buildings or 30% Existing Building Renovations		
	45% New Buildings or 35% Existing Building Renovations		
	50% New Buildings or 40% Existing Building Renovations		
	55% New Buildings or 45% Existing Building Renovations		
	60% New Buildings or 50% Existing Building Renovations		
Credit 2.1	Renewable Energy, 5%	30%	Adequate Effort
Credit 2.2	Renewable Energy, 10%	30%	Adequate Effort
Credit 2.3	Renewable Energy, 20%	30%	Adequate Effort
Credit 3	Additional Commissioning	50%	Significant Effort
Credit 4	Ozone Depletion	60%	Significant Effort
Credit 5	Measurement & Verification	0%	Minimal Effort
Credit 6	Green Power	5%	Minimal Effort
	Materials & Resources		
Prereq 1	Storage & Collection of Recyclables	100%	Mandatory Comliance
Credit 1.1	Building Reuse, Maintain 75% of Existing Shell	20%	Minimal Effort
Credit 1.2	Building Reuse, Maintain 100% of Shell	10%	Minimal Effort
Credit 1.3	Building Reuse, Maintain 100% Shell & 50% Non-Shell	0%	Minimal Effort
Credit 2.1	Construction Waste Management, Divert 50%	90%	Mandatory Comliance
Credit 2.2	Construction Waste Management, Divert 75%	90%	Mandatory Comliance
Credit 3.1	Resource Reuse, Specify 5%	20%	Minimal Effort
Credit 3.2	Resource Reuse, Specify 10%	10%	Minimal Effort
	Recycled Content, Specify 5% (post-consumer + ½ post-industrial)	10%	Minimal Effort
Credit 4.2	Recycled Content, Specify 10% (post-consumer + ½ post-industrial)	10%	Minimal Effort
	Local/Regional Materials, 20% Manufactured Locally	90%	Mandatory Comliance
Credit 5.2	Local/Regional Materials, of 20% Above, 50% Harvested Locally	80%	Mandatory Comliance
Credit 6	Rapidly Renewable Materials	10%	Minimal Effort
Credit 7	Certified Wood	30%	Adequate Effort

	Indoor Environmental Quality		
Prereq 1	Minimum IAQ Performance	100%	Mandatory Comliance
Prereq 2	Environmental Tobacco Smoke (ETS) Control	100%	Mandatory Comliance
Credit 1	Carbon Dioxide (CO <sub>2</sub> ) Monitoring	70%	Significant Effort
Credit 2	Ventilation Effectiveness	30%	Adequate Effort
Credit 3.1	Construction IAQ Management Plan, During Construction	50%	Significant Effort
Credit 3.2	Construction IAQ Management Plan, Before Occupancy	50%	Significant Effort
Credit 4.1	Low-Emitting Materials, Adhesives & Sealants	90%	Mandatory Comliance
Credit 4.2	Low-Emitting Materials, Paints	90%	Mandatory Comliance
Credit 4.3	Low-Emitting Materials, Carpet	90%	Mandatory Comliance
Credit 4.4	Low-Emitting Materials, Composite Wood & Agrifiber	50%	Significant Effort
Credit 5	Indoor Chemical & Pollutant Source Control	60%	Significant Effort
Credit 6.1	Controllability of Systems, Perimeter	30%	Adequate Effort
	Controllability of Systems, Non-Perimeter	40%	Adequate Effort
Credit 7.1	Thermal Comfort, Comply with ASHRAE 55-1992	70%	Significant Effort
Credit 7.2	Thermal Comfort, Permanent Monitoring System	60%	Significant Effort
Credit 8.1	Daylight & Views, Daylight 75% of Spaces	30%	Adequate Effort
Credit 8.2	Daylight & Views, Views for 90% of Spaces	70%	Significant Effort
	Innovation & Design Process		
Credit 1.1	Innovation in Design: Provide Specific Title	100%	Mandatory Comliance
Credit 1.2	Innovation in Design: Provide Specific Title	90%	Mandatory Comliance
Credit 1.3	Innovation in Design: Provide Specific Title	80%	Mandatory Comliance
Credit 1.4	Innovation in Design: Provide Specific Title	50%	Significant Effort
Credit 2	LEED™ Accredited Professional	100%	Mandatory Comliance

LEED Guide for Build-Lease/Sell Developers			
	LEED-NC V2.1 Points (Higher Education)	Guide Data	
		% of Research Projects	Compliance Effort
	Sustainable Sites		
Prereq 1	Erosion & Sedimentation Control	100%	Mandatory Compliance
Credit 1	Site Selection	80%	Mandatory Compliance
Credit 2	Development Density	50%	Significant Effort
Credit 3	Brownfield Redevelopment	60%	Significant Effort
Credit 4.1	Alternative Transportation, Public Transportation Access	70%	Significant Effort
Credit 4.2	Alternative Transportation, Bicycle Storage & Changing Rooms	90%	Mandatory Compliance
Credit 4.3	Alternative Transportation, Alternative Fuel Vehicles	40%	Adequate Effort
Credit 4.4	Alternative Transportation, Parking Capacity and Carpooling	70%	Significant Effort
Credit 5.1	Reduced Site Disturbance, Protect or Restore Open Space	40%	Adequate Effort
Credit 5.2	Reduced Site Disturbance, Development Footprint	20%	Minimal Effort
Credit 6.1	Stormwater Management, Rate and Quantity	40%	Adequate Effort
Credit 6.2	Stormwater Management, Treatment	60%	Significant Effort
Credit 7.1	Landscape & Exterior Design to Reduce Heat Islands, Non-Roof	70%	Significant Effort
Credit 7.2	Landscape & Exterior Design to Reduce Heat Islands, Roof	70%	Significant Effort
Credit 8	Light Pollution Reduction	40%	Adequate Effort
	Water Efficiency		
Credit 1.1	Water Efficient Landscaping, Reduce by 50%	90%	Mandatory Compliance
Credit 1.2	Water Efficient Landscaping, No Potable Use or No Irrigation	80%	Mandatory Compliance
Credit 2	Innovative Wastewater Technologies	0%	Minimal Effort
Credit 3.1	Water Use Reduction, 20% Reduction	80%	Mandatory Compliance
Credit 3.2	Water Use Reduction, 30% Reduction	60%	Significant Effort

	Energy & Atmosphere		
Prereq 1	Fundamental Building Systems Commissioning	100%	Mandatory Compliance
Prereq 2	Minimum Energy Performance	100%	Mandatory Compliance
Prereq 3	CFC Reduction in HVAC&R Equipment	100%	Mandatory Compliance
Credit 1	Optimize Energy Performance	39% of Credit 1	Adequate Effort
	15% New Buildings or 5% Existing Building Renovations		
	20% New Buildings or 10% Existing Building Renovations		
	25% New Buildings or 15% Existing Building Renovations		
	30% New Buildings or 20% Existing Building Renovations		
	35% New Buildings or 25% Existing Building Renovations		
	40% New Buildings or 30% Existing Building Renovations		
	45% New Buildings or 35% Existing Building Renovations		
	50% New Buildings or 40% Existing Building Renovations		
	55% New Buildings or 45% Existing Building Renovations		
	60% New Buildings or 50% Existing Building Renovations		
Credit 2.1	Renewable Energy, 5%	10%	Minimal Effort
Credit 2.2	Renewable Energy, 10%	10%	Minimal Effort
Credit 2.3	Renewable Energy, 20%	10%	Minimal Effort
Credit 3	Additional Commissioning	50%	Significant Effort
Credit 4	Ozone Depletion	60%	Significant Effort
Credit 5	Measurement & Verification	30%	Adequate Effort
Credit 6	Green Power	60%	Significant Effort
	Materials & Resources		
Prereq 1	Storage & Collection of Recyclables	100%	Mandatory Comliance
Credit 1.1	Building Reuse, Maintain 75% of Existing Shell	10%	Minimal Effort
Credit 1.2	Building Reuse, Maintain 100% of Shell	10%	Minimal Effort
Credit 1.3	Building Reuse, Maintain 100% Shell & 50% Non-Shell	0%	Minimal Effort
Credit 2.1	Construction Waste Management, Divert 50%	80%	Mandatory Comliance
Credit 2.2	Construction Waste Management, Divert 75%	40%	Adequate Effort
Credit 3.1	Resource Reuse, Specify 5%	0%	Minimal Effort
Credit 3.2	Resource Reuse, Specify 10%	0%	Minimal Effort
Credit 4.1	Recycled Content, Specify 5% (post-consumer + ½ post-industrial)	100%	Mandatory Comliance
Credit 4.2	Recycled Content, Specify 10% (post-consumer + ½ post-industrial)	80%	Mandatory Comliance
Credit 5.1	Local/Regional Materials, 20% Manufactured Locally	90%	Mandatory Comliance
Credit 5.2	Local/Regional Materials, of 20% Above, 50% Harvested Locally	70%	Significant Effort
Credit 6	Rapidly Renewable Materials	0%	Minimal Effort
Credit 7	Certified Wood	40%	Adequate Effort

	Indoor Environmental Quality		
Prereq 1	Minimum IAQ Performance	100%	Mandatory Comliance
Prereq 2	Environmental Tobacco Smoke (ETS) Control	100%	Mandatory Comliance
Credit 1	Carbon Dioxide (CO <sub>2</sub> ) Monitoring	70%	Significant Effort
Credit 2	Ventilation Effectiveness	20%	Minimal Effort
Credit 3.1	Construction IAQ Management Plan, During Construction	70%	Significant Effort
Credit 3.2	Construction IAQ Management Plan, Before Occupancy	60%	Significant Effort
Credit 4.1	Low-Emitting Materials, Adhesives & Sealants	80%	Mandatory Comliance
Credit 4.2	Low-Emitting Materials, Paints	90%	Mandatory Comliance
Credit 4.3	Low-Emitting Materials, Carpet	100%	Mandatory Comliance
Credit 4.4	Low-Emitting Materials, Composite Wood & Agrifiber	40%	Adequate Effort
Credit 5	Indoor Chemical & Pollutant Source Control	80%	Significant Effort
Credit 6.1	Controllability of Systems, Perimeter	0%	Minimal Effort
Credit 6.2	Controllability of Systems, Non-Perimeter	0%	Minimal Effort
Credit 7.1	Thermal Comfort, Comply with ASHRAE 55-1992	60%	Significant Effort
Credit 7.2	Thermal Comfort, Permanent Monitoring System	50%	Significant Effort
Credit 8.1	Daylight & Views, Daylight 75% of Spaces	20%	Minimal Effort
Credit 8.2	Daylight & Views, Views for 90% of Spaces	70%	Significant Effort
	Innovation & Design Process		
Credit 1.1	Innovation in Design: Provide Specific Title	80%	Mandatory Comliance
Credit 1.2	Innovation in Design: Provide Specific Title	100%	Mandatory Comliance
Credit 1.3	Innovation in Design: Provide Specific Title	80%	Mandatory Comliance
Credit 1.4	Innovation in Design: Provide Specific Title	80%	Mandatory Comliance
Credit 2	LEED™ Accredited Professional	100%	Mandatory Comliance



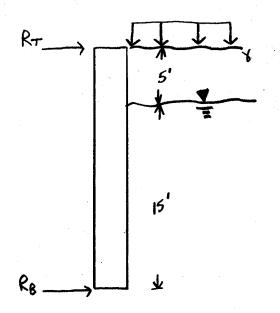
Baltimore, Maryland

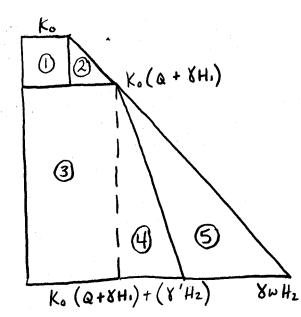
Tyler Swartzwelder Construction Management Option

## APPENDIX – TECHNICAL ANALYSIS 1

TOWER AS AN INDEPENDENT SYSTEM

BASEMENT WALL CALCULATIONS, SECTIONS, & ENERCALC PRINTOUTS





$$P_{0} = K_{0} Q H_{1} + \frac{1}{2} K_{0} X H_{1}^{2} + K_{0} (Q + X H_{1}) H_{2} + \frac{1}{2} K_{0} X' H_{2}^{2} + \frac{1}{2} X_{w} H_{2}^{2}$$

$$= 0.5 (50 PSF) 5' + \frac{1}{2} (0.5) 120 PCF (5')^{2} + 0.5 (50 PSF + 120 PCF (8')) 15' + \frac{1}{2} (0.5) 87.6 PCF (15')^{2} + \frac{1}{2} (62.4 PCF) (15')^{2}$$

$$= 125 + 150 + 4875 + 4927.5 + 7020$$

$$= 17697.5 LB$$

$$ZM_{B} = P_{0}\bar{z} = P_{1} (17.5') + P_{2} (16.67') + P_{3} (7.5') + 5' (P4+P_{5}) = 110990' LB$$

$$\bar{z} = M_{B} = \frac{110990 FT}{17697.5 LB} = 6.27 FT$$

#### WALL DESIGN

TRY 20" TK WALL:

$$Ru = \frac{Mu}{4bd^2} = \frac{110990 FTLB}{0.9(10'')^2(12'')} = 1233.2 \text{ IN·LB}$$

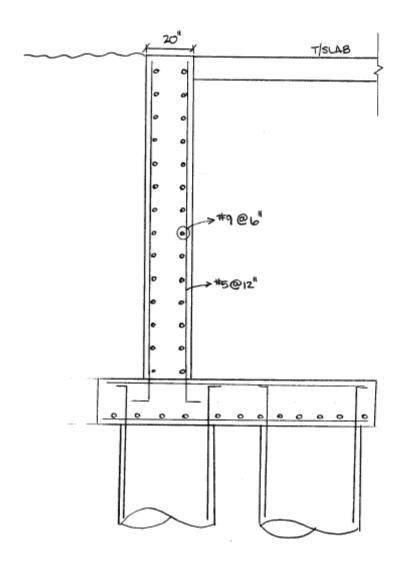
$$Q = 0.85 fc \left(1 - \sqrt{1 - 2Ru}\right)$$

$$f = \frac{0.85 \, f'_{c} \left(1 - \sqrt{1 - \frac{2R_{u}}{0.85 f'_{c}}}\right)}{F_{g} \left(1 - \sqrt{1 - \frac{2(1233.2 \, \text{IN LB})}{0.85(4000 \, \text{PS}1)}}\right)}$$

$$= \frac{0.85 \, (4000 \, \text{PS}1)}{60000 \, \text{PS}1} \left(1 - \sqrt{1 - \frac{2(1233.2 \, \text{IN LB})}{0.85(4000 \, \text{PS}1)}}\right)$$

\* USE 2 LOWS OF 49@ 6"O.C. HORIZ

CK CONC -D 
$$V_c = 2If_c^1 bd = 2I4000PSL(12*)(17*) = 21503.5 LB$$
 $V_u/\phi = \frac{1214BLB}{0.15} = \frac{16197.3 LB}{16197.3 LB} \le 21503.5 LB : OK$ 
 $A_v = \frac{V_u}{\phi F_y M} = \frac{16197.3 LB}{60000PSL(0.6)} = 0.45 M^2$ 
 $USE = \frac{456}{5} = \frac{12}{5} = \frac{16197.3 LB}{5} = 0.45 M^2$ 



Title : Dsgnr: Description : Job # Date: 8:46AM, 4 APR 07

Scope:

Code Ref: ACI 318-02, 1997 UBC, 2003 IBC, 2003 NFPA 5000

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#### **Restrained Retaining Wall Design**

Page 1 thesis.ecw:Calculations

#### Description

**Thesis** 

Criteria		
Contract to the second		
Retained Height	=	20.00 ft
Wall height above soil	=	0.00 ft
Total Wall Height	=	20.00 ft
Top Support Height	=	20.00 ft
Slope Behind Wall	=	0.00 : 1
Height of Soil over Toe	=	0.00 in
Soil Density	=	150.00 pcf
Wind on Stem	=	0.0 psf

Soil Data		
	alitarian ito	
Allow Soil Bearing		3,000.0 psf
Equivalent Fluid Pressure	Meth	od
Heel Active Pressure	=	25.0
Toe Active Pressure	=	0.0
Passive Pressure	=	225.0
•		
Footing  Soil Friction	_	0.300
•	-	0.500
Soil height to ignore		
for passive pressure	=	0.00 in

Footing Strengths & Di	mens	sions
fc = 4,000 psi Min. As %	Fy = =	60,000 psi 0.0018
Toe Width Heel Width Total Footing Width	= -	2.17 ft 3.83 6.00
Footing Thickness	=	16.00 in
Key Width Key Depth Key Distance from Toe Cover @ Top = 3.00 in	= = = ()	0.00 in 0.00 in 0.00 ft Btm.= 3.00 in

#### **Surcharge Loads**

Surcharge Over Heel = 50.0 psf
>>>NOT Used To Resist Sliding & Overturn
Surcharge Over Toe = 0.0 psf
NOT Used for Sliding & Overturning

#### **Axial Load Applied to Stem**

Axial Dead Load	=	0.0 lbs
Axial Live Load	=	0.0 lbs
Axial Load Eccentricity	=	0.0 in

Uniform	<b>Lateral Load</b>	Applied to Stem

Lateral Load	=	0.0 #/ft
Height to Top	=	0.00 ft
Height to Bottom	=	0 00 ft

Adjacent Footing Load		
A line of Eq. (in I		2 0 11
Adjacent Footing Load	=	0.0 lbs
Footing Width	=	0.00 ft
Eccentricity	=	0.00 in
Wall to Ftg CL Dist	=	0.00 ft
Footing Type		Line
Base Above/Below Soil at Back of Wall	=	0.0 ft

#### **Design Summary**

Total Bearing Loadresultant ecc.	=	12,493 lbs 1,24 in
coaltaint coo.		1.27
Soil Pressure @ Toe	=	2,298 psf OK
Soil Pressure @ Heel	=	1,867 psf OK
Allowable	=	3,000 psf
Soil Pressure Less	Thar	
ACI Factored @ Toe	=	3,217 psf
ACI Factored @ Heel	=	2,614 psf
Footing Shear @ Toe	=	40.8 psi OK
Footing Shear @ Heel	=	65.9 psi OK
Allowable	=	107.5 psi
Reaction at Top	=	1,062.5 lbs
Reaction at Bottom	=	4,804.2 lbs

Sliding Calcs Slab Resists All Sliding! Lateral Sliding Force = 4,804.2 lbs

#### **Concrete Stem Construction**

Thickness	=	20.00 in	Fy	=	60,000 psi
Wall Weight	=	241.7 pcf	fc	=	4,000 psi
Stem is FIXE	O to				

	@	Top Support	Mmax Between Top & Base	@ Base of Wall
		Stem OK	Stem OK	Stem OK
Design height	=	20.00 ft	11.08 ft	0.00 ft
Rebar Size	=	# 5	# 9	# 9
Rebar Spacing	=	12.00 in	6.00 in	6.00 in
Rebar Placed at	=	Edge	Edge	Edge
Rebar Depth 'd'	=	16.50 in	16.50 in	16.50 in
Design Data ————				
fb/FB + fa/Fa	=	0.000	0.078	0.173
MuActual	=	0.0 ft-#	10,521.0 ft-#	23,375.5 ft-#
Mn * PhiAllowable	=	22,698.6 ft-#	135225.0 ft-#	135225.0 ft-#
Shear Force @ this height	=	1,806.2 lbs		6,977.1 lbs
ShearActual	=	9.12 psi		35.24 psi
ShearAllowable	=	107.52 psi	• • •	107.52 psi
Rebar Lap Required	=	18.50 in	41.62 in	
Rebar embedment into foot	ing	= '		9.00 in

#### Footing Design Results

The state of the s	20 C 10 C		
		Toe	<u>Heel</u>
Factored Pressure	=	3,217	2,614 psf
Mu' : Upward	=	7,380	0 ft-#
Mu' : Downward	=	657	10,680 ft-#
Mu: Design	=	6,722	10,680 ft-#
Actual 1-Way Shear	=	40.84	65.94 psi
Allow 1-Way Shear	=	107 52	107.52 nsi

#### Other Acceptable Sizes & Spacings:

Toe: # 5 @ 12.00 in	-or-	#4@ 9.00 in, #5@ 14.00 in, #6@ 19.75 in, #7@ 26.
Heel:# 5 @ 12.00 in	-or-	#4@ 9.00 in, #5@ 14.00 in, #6@ 19.75 in, #7@ 26.
Kev: No kev defined	-01-	No key defined

Title : Dsgnr: Description : Job #

Date: 8:46AM, 4 APR 07

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**Restrained Retaining Wall Design** 

Page 2 thesis.ecw:Calculations

Description

Thesis

Summary of Forces on Footing: S	lab RESISTS sliding,	stem is FIXED at footing
Earne acting on facting for sail pressure		

Forces acting on footing for soil pressure

>>> Sliding Forces are restrained by the adjacent slab

Load & Moment Summar				
Moment @ Top of Footing	-		=	-13,750.3 ft-#
Surcharge Over Heel	=	lbs	ft	ft-#
Axial Dead Load on Stem	=	lbs	ft	ft-#
Soil Over Toe	=	lbs	ft	ft-#
Surcharge Over Toe	=	lbs	ft	ft-#
Stem Weight	=	4,833.3 lbs	3.00 ft	14,500.0 ft-#
Soil Over Heel	=	6,500.0 lbs	4.92 ft	31,958.3 ft-#
Footing Weight	=	1,160.0 lbs	3.00 ft	3,480.0 ft-#
Total Vertical Force	=	12,493,3 lbs	Base Moment =	36.188.1 ft-#

Soil Pressure Resulting Moment =

1,291.9ft-#



Saltimore, Maryland

Tyler Swartzwelder Construction Management Option

## APPENDIX – TECHNICAL ANALYSIS 2 CAST-IN-PLACE CAISSON VS. PRECAST PILES

## CAISSON LOAD DETERMINATIONS CAISSON LOAD ANALYSIS

	Caisson Redesign Calculations														
Column	Floor (ft^2)	Roof (ft^2)	DL-bsmt (psf)	DL-floor (psf)	DL-roof (psf)	Total Dead (lbs)	LL-bsmt (psf)	LL-floor (psf)	LL-roof (psf)	Total Live (lbs)	WL (psf)	WL (lbs)	Non-WL (lbs)	Final Load (kips)	Caisson Size (Colors from Depth Charts)
A-2	5,168	160	190	57	25	356,336	100	100	30	552,000			1,310,803	1,311	D = 66"
A-3	11,560	480	190	57	25	800,120	100	100	30	1,238,400			2,941,584	2,942	D = 90"
A-4	11,560	480	190	57	25	800,120	100	100	30	1,238,400			2,941,584	2,942	D = 90"
A-5	6,800	160	190	57	25	467,600	100	100	30	724,800			1,720,800	1,721	D = 84"
A.2-1.8	5,032		190	57	25	343,064	100	100	30	532,800			1,264,157	1,264	D = 66"
A.8-1.2	5,032		190	57	25	343,064	100	100	30	532,800			1,264,157	1,264	D = 66"
E.2-5.8	5,032		190	57	25	343,064	100	100	30	532,800			1,264,157	1,264	D = 66"
E.8-5.2	5,032		190	57	25	343,064	100	100	30	532,800			1,264,157	1,264	D = 66"
A.2-5.2	2,788		190	57	25	190,076	100	100	30	295,200			700,411	700	D = 60"
A.8-5.8	2,176		190	57	25	148,352	100	100	30	230,400			546,662	547	D = 60"
E.2-1.2	2,176		190	57	25	148,352	100	100	30	230,400			546,662	547	D = 60"
E.8-1.8	2,788		190	57	25	190,076	100	100	30	295,200			700,411	700	D = 60"
B-1	5,168	160	190	57	25	356,336	100	100	30	552,000			1,310,803	1,311	D = 66"
B-2	18,476	588	190	57	25	1,274,328	100	100	30	1,973,922			4,687,470	4,687	D = 114"
B-3	16,256	1,256	190	57	25	1,139,677	100	100	30	1,758,904	600	3,127,476		3,127	D = 90"
B-4	18,324	1,256	190	57	25	1,280,666	100	100	30	1,977,868	600	3,515,627		3,516	D = 96"
B-5	18,840	588	190	57	25	1,299,145	100	100	30	2,012,464			4,778,915	4,779	D = 114"
B-6	7,072	160	190	57	25	486,144	100	100	30	753,600			1,789,133	1,789	D = 84"
B.3-3.5	4,644	512	190	57	25	329,412	100	100	30	507,078	3,500	907,971		908	D = 60"
B.3-4.6	2,892		190	57	25	197,166	100	100	30	306,212	3,500	548,411		548	D = 60"
C-1	11,560	432	190	57	25	798,920	100	100	30	1,236,960			2,937,840	2,938	D = 90"
C-2	22,344	1,192	190	57	25	1,553,135	100	100	30	2,401,595	600	4,266,317		4,266	D = 114"
C-3	15,360	832	190	57	25	1,067,991	100	100	30	1,651,313	3,500	2,938,502		2,939	D = 90"
C-3.5	13,356		190	57	25	910,565	100	100	30	1,414,165	3,500	2,512,443		2,512	D = 84"
C-4	11,504	832	190	57	25	805,102	100	100	30	1,243,031	3,500	2,214,753		2,215	D = 84"
C-4.6	7,376		190	57	25	502,870	100	100	30	780,988	3,500	1,390,032		1,390	D = 66"
C-5	15,532	1,192	190	57	25	1,088,717	100	100	30	1,680,325	600	2,987,745		2,988	D = 90"

						Caisso	n Redesi	gn Calcul	ations (d	cont'd)					
Column	Floor (ft^2)	Roof (ft^2)	DL-bsmt (psf)	DL-floor (psf)	DL-roof (psf)	Total Dead (lbs)	LL-bsmt (psf)	LL-floor (psf)	LL-roof (psf)	Total Live (lbs)	WL (psf)	WL (lbs)	Non-WL (lbs)	Final Load (kips)	Caisson Size (Colors from Depth Charts)
C-6	11,560	480	190	57	25	800,120	100	100	30	1,238,400			2,941,584	2,942	D = 90"
D-1	11,560	480	190	57	25	800,120	100	100	30	1,238,400			2,941,584	2,942	D = 90"
D-2	15,532	1,192	190	57	25	1,088,717	100	100	30	1,680,325	600	2,987,745		2,988	D = 90"
D-2.3	7,376		190	57	25	502,870	100	100	30	780,988	3,500	1,390,032		1,390	D = 66"
D-3	11,504	832	190	57	25	805,102	100	100	30	1,243,031	3,500	2,214,753		2,215	D = 84"
D-3.5	13,356	512	190	57	25	923,365	100	100	30	1,429,525	3,500	2,543,163		2,543	D = 90"
D-4	15,360	832	190	57	25	1,067,991	100	100	30	1,651,313	3,500	2,938,502		2,939	D = 90"
D-5	22,344	1,192	190	57	25	1,553,135	100	100	30	2,401,595	600	4,266,317		4,266	D = 114"
D-6	11,560	432	190	57	25	798,920	100	100	30	1,236,960			2,937,840	2,938	D = 90"
D.7-2.3	2,892		190	57	25	197,166	100	100	30	306,212	3,500	548,411		548	D = 60"
D.7-3.5	4,644		190	57	25	316,612	100	100	30	491,718	3,500	877,251		877	D = 60"
E-1	7,072	160	190	57	25	486,144	100	100	30	753,600			1,789,133	1,789	D = 84"
E-2	18,840	588	190	57	25	1,299,145	100	100	30	2,012,464			4,778,915	4,779	D = 114"
E-3	18,324	1,256	190	57	25	1,280,666	100	100	30	1,977,868	600	3,515,627		3,516	D = 114"
E-4	16,256	1,256	190	57	25	1,139,677	100	100	30	1,758,904	600	3,127,476		3,127	D = 90"
E-5	18,476	588	190	57	25	1,274,328	100	100	30	1,973,922			4,687,470	4,687	D = 114"
E-6	5,168	160	190	57	25	356,336	100	100	30	552,000			1,310,803	1,311	D = 66"
F-2	6,800	160	190	57	25	467,600	100	100	30	724,800			1,720,800	1,721	D = 84"
F-3	11,560	480	190	57	25	800,120	100	100	30	1,238,400		-	2,941,584	2,942	D = 90"
F-4	11,560	480	190	57	25	800,120	100	100	30	1,238,400	-		2,941,584	2,942	D = 90"
F-5	5,168	160	190	57	25	356,336	100	100	30	552,000			1,310,803	1,311	D = 66"

			S	izing Index @	50' Depth			
Diameter (in)	Diameter (ft)	Kips	S A @ 50'	Skin Friction	Added KIPS	Total w/ SF	SW	Capacity (kips)
36	3	212	485	777	-1123	-911	30	-881
42	3.5	289	569	910	-990	-701	41	-660
48	4	377	653	1046	-854	-477	53	-424
54	4.5	477	739	1182	-718	-241	68	-173
60	5	589	825	1319	-581	9	83	92
66	5.5	713	911	1458	-442	271	101	372
72	6	848	999	1598	-302	547	120	667
78	6.5	995	1087	1740	-160	835	141	976
84	7	1155	1177	1882	-18	1137	164	1301
90	7.5	1325	1266	2026	126	1452	188	1639
96	8	1508	1357	2171	271	1779	214	1993
102	8.5	1702	1449	2318	418	2120	241	2361
108	9	1909	1541	2466	566	2474	270	2744
114	9.5	2126	1634	2614	714	2841	301	3142
120	10	2356	1728	2765	865	3221	334	3555
126	10.5	2598	1823	2916	1016	3614	368	3982
132	11	2851	1918	3069	1169	4020	404	4424
138	11.5	3116	2014	3223	1323	4439	441	4880
				izing Index @	60' Depth			
Diameter (in)	Diameter (ft)	Kips	S A @ 60'	Skin Friction	Added KIPS	Total w/ SF	SW	Capacity (kips)
36	3	212	580	927	-973	-761	36	-724
42	3.5	289	679	1086	-814	-525	49	-476
48	4	377	779	1247	-653	-276	64	-212
54	4.5	477	880	1408	-492	-15	81	66
60	5	589	982	1571	-329	260	100	360
66	5.5	713	1084	1735	-165	548	121	669
72	6	848	1188	1900	0	848	144	992
78	6.5	995	1292	2067	167	1162	169	1331
84	7	1155	1396	2234	334	1489	196	1685
90	7.5	1325	1502	2403	503	1829	225	2054
96	8	1508	1608	2574	674	2182	256	2438
102	8.5	1702	1716	2745	845	2547	289	2837
108	9	1909	1824	2918	1018	2926	324	3251
114	9.5	2126	1932	3092	1192	3318	361	3680
120	10	2356	2042	3267	1367	3723	401	4124
126	10.5	2598	2152	3444	1544	4142	442	4583
132	11	2851	2264	3622	1722	4573	485	5057
138	11.5	3116	2375	3801	1901	5017	530	5547
D: (1)	I 5: (6) I	10		izing Index @			0147	10 11 11 1
Diameter (in)	Diameter (ft)	Kips	S A @ 70'	Skin Friction	Added KIPS	Total w/ SF	SW	Capacity (kips)
36	3	212	674	1078 1262	-822	-610	42	-568
42	3.5	289	789		-638	-349	57	-292
48	4	377	905	1448	-452	-75	75	-1 200
54 60	4.5 5	477 589	1021 1139	1634 1822	-266 -78	211 511	95 117	306 628
66	5.5	713	1139	2011	-78 111	824	117	965
72	6	848	1376	2202	302	1150		1318
78	6.5	995	1496	2393	493	1489	168 197	1686
84	7	1155	1616	2586	686	1841	229	2070
90	7.5	1325	1738	2780	880	2206	263	2469
96	8	1525	1860	2976	1076	2584	299	2883
102	8.5	1702	1983	3172	1272	2975	338	3312
102	9	1909	2106	3370	1470	3379	379	3757
114	9.5	2126	2231	3569	1669	3796	422	4218
120	10	2356	2356	3770	1870	4226	467	4693
126	10.5	2598	2482	3972	2072	4669	515	5185
132	11	2851	2609	4175	2275	5126	565	5691
138	11.5	3116	2737	4379	2479	5595	618	6213
130	11.5	3110	2131	7010	4713	5555	010	0213

Sizing Index @ 80' Depth											
Diameter (in)	Diameter (ft)	Kips	S A @ 80'	Skin Friction	Added KIPS	Total w/ SF	SW	Capacity (kips)			
36	3	212	768	1229	-671	-459	48	-411			
42	3.5	289	899	1438	-462	-173	65	-108			
48	4	377	1030	1649	-251	126	85	211			
54	4.5	477	1163	1860	-40	438	108	546			
60	5	589	1296	2073	173	763	134	896			
66	5.5	713	1430	2288	388	1100	162	1262			
72	6	848	1565	2503	603	1451	192	1644			
78	6.5	995	1700	2720	820	1815	226	2041			
84	7	1155	1836	2938	1038	2193	262	2454			
90	7.5	1325	1973	3157	1257	2583	300	2883			
96	8	1508	2111	3378	1478	2986	342	3328			
102	8.5	1702	2250	3600	1700	3402	386	3788			
108	9	1909	2389	3823	1923	3831	433	4264			
114	9.5	2126	2529	4047	2147	4273	482	4755			
120	10	2356	2670	4273	2373	4729	534	5263			
126	10.5	2598	2812	4499	2599	5197	589	5786			
132	11	2851	2955	4727	2827	5678	646	6325			
138	11.5	3116	3098	4957	3057	6173	706	6879			
			S	izing Index @	90' Depth						
Diameter (in)	Diameter (ft)	Kips	S A @ 90'	Skin Friction	Added KIPS	Total w/ SF	SW	Capacity (kips)			
36	3	212	862	1380	-520	-308	54	-254			
42	3.5	289	1009	1614	-286	3	74	76			
48	4	377	1156	1850	-50	327	96	423			
54	4.5	477	1304	2087	187	664	122	785			
60	5	589	1453	2325	425	1014	150	1164			
66	5.5	713	1603	2564	664	1377	182	1559			
72	6	848	1753	2805	905	1753	216	1969			
78	6.5	995	1904	3047	1147	2142	254	2396			
84	7	1155	2056	3290	1390	2544	294	2839			
90	7.5	1325	2209	3534	1634	2960	338	3298			
96	8	1508	2362	3780	1880	3388	385	3772			
102	8.5	1702	2517	4027	2127	3829	434	4263			
108	9	1909	2672	4275	2375	4284	487	4770			
114	9.5	2126	2828	4525	2625	4751	542	5293			
120	10	2356	2985	4775	2875	5231	601	5832			
126	10.5	2598	3142	5027	3127	5725	662	6387			
132	11	2851	3300	5280	3380	6231	727	6958			
138	11.5	3116	3459	5535	3635	6751	795	7546			