	GRAYS HARBOR COUNT	TV COST ESTIMATES	
	GRAIS HARBOR COONT	1 COST ESTIMATES	
Map Number:	1	Minimum Structure Height:	14
Structure Type:	Tower	Structure Capacity:	300
Location:	Ocean Shores, WA, Ocean City	Safe Haven Square Footage:	3000
Levels:	1	Columns Required:	9
		Piles per Column:	3
Scope			
Site Utilities			\$15,
Excavation-Backfill			\$31,
Foundation			\$178
Structure			\$164
Roofing			\$65
Stairs/Ramps/Guardrails			\$50,
Fire Protection			\$22
Total			\$528,
Design Fees (8%)			\$42
General Conditions (10%)			\$52
Contractor Fees, O&P (15%)			\$79
Construction Contingency (5%)			\$26,
Estimate/Design Contingency (10%)			\$52,
Project Total			\$782,2

			Cost per	1	Installation	Equipment	Location	<u> </u>	
Site Utilities	Quantity	Unit	Unit	Material Cost	Cost	Cost	Factor	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	10	EA			\$116.00	\$185.00	100.00%	\$3,010.00	54 36.50 Mobilization
Fire Water, Ductile Iron Class 250, MJ, 4" diameter	50	LF		\$16.05					Assuming 50' distance from service at street
									RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator 4'-6' deep	35	BCY			\$2.16	\$2.13	108.20%	\$162.46	23 16.13, Excavating Trench
									RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 4" Ductile Iron Piping, MJ	50	LF		\$12.50	\$8.55	\$2.17	108.20%	\$1,256.20	11 Water Utility Distribution Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	6	LCY		\$20.00			108.20%	\$129.84	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	6	LCY			\$7.64	\$14.10	108.20%	\$141.14	16, 31 23 23.20 Hauling
									RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	5	ECY			\$3.05	\$0.34	108.20%	\$18.34	23 23.16 Fill By Borrow & Utility Bedding
									RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	38	LCY			\$0.50	\$1.05	108.20%	\$63.73	23 23.17 General Fill
Storm Service									Assuming 50' distance from service at street
									RSMeans, Building Construction Cost Data, 201, 31 23
Excavate, 3/4 CY Excavator, 6'-10' deep	60	BCY			\$2.88	\$2.85	108.20%	\$371.99	16.13 Excavating Trench
									RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 8" Bituminous Coated	50	LF		\$10.70	\$5.25	\$0.97	108.20%	\$915.37	41 Storm Utility Drainage Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	6	LCY		\$20.00			108.20%	\$129.84	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	6	LCY			\$7.64	\$14.10	108.20%	\$141.14	16, 31 23 23.20 Hauling

								RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	5	ECY		\$3.05	\$0.34	108.20%	\$18.34	23 23.16 Fill By Borrow & Utility Bedding
								RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	38	LCY		\$0.50	\$1.05	108.20%	\$63.73	23 23.17 General Fill
Site Drainage/Area Drains/Catch Basins								Assume 1 area drain for structure
								RSMeans Assemblies Cost Data, 2011, G3030 210,
Concrete, Precast, 4' ID riser, 4' deep	1	EA	\$1,425.00	\$1,200.00	0.00%	108.20%	\$2,840.25	Manholes & Catch Basins
Electrical	50	LF						Assuming 50' distance from service at street
Electrical Service, includes service installation,								RSMeans Assemblies Cost Data, 2011, D 5010 120,
breakers, metering, 20' conduit & wire, 3 phase, 4								Electric Service, 3 Phase - 4 Wire, equipment included
wire, 120/208 volts, 60 A	1	EA	\$960.00	\$920.00		100.50%	\$1,889.40	in installation cost
								RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator, 4'-6' deep	35	BCY		\$2.16	\$2.13	108.20%	\$162.46	23 16.13 Excavating Trench
								RSMeans, Building Construction Cost Data, 2011, 33
Install & Test PVC, type EB 4 @ 3" diameter	50	LF	\$2.00	\$8.05		108.20%	\$543.71	71 19 Electrical Underground Ducts and Manholes
								RSMeans, Building Construction Cost Data, 2011, 26
Wire, 600 volt, copper type THW, solid, #12	50	CLF	\$11.95	\$36.50	0	100.50%	\$2,434.61	05 19.90 Wire
Utility Bedding, For Pipe & Conduit, Not Incl.								Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	19	LCY	\$20.00			108.20%	\$411.16	conversation on June 29th, 2011
								RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	19	LCY		\$7.64	\$14.10	108.20%	\$446.93	16, 31 23 23.20 Hauling
								RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	19	ECY		\$3.05	\$0.34	108.20%	\$69.69	23 23.16 Fill By Borrow & Utility Bedding
								RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	22	LCY		\$0.50	\$1.05	108.20%	\$36.90	23 23.17 General Fill

\$15,257.23

			Cost per		Installation	Equipment	Location		
Excavation-Backfill	Quantity	Unit	Unit	Material Cost	Cost	Cost	Factor	Total Cost	Comments
									RSMeans Building Construction Cost Data, 2011, 01 54
Mobilization	8	EA	\$0.00	\$0.00	\$69.00	\$116.00	100.00%	\$1,480.00	36 - Equipment Mobilization
									Is clear and grub needed for structure in urban
									setting? RSMeans Building Construction Cost Data,
Clear and Grub Site	0.09	ACRE	\$0.00	\$0.00	\$1,750.00	\$1,300.00	108.20%	\$284.10	2011, 31 11 10.10 Clear and Grub Site
									Grade Beams, 3' wide, 3' deep RSMeans Building
									Construction Cost Data, 2011, 31 23 16.16 3/4 CY
									bucket, (Price Included in grade beam foundation
Excavation for Grade Beams	110	BCY	\$0.00	\$0.00	\$0.00	\$0.00	108.20%	\$0.00	price)
									1225 SF mat, 2' deep. RSMeans Building Construction
Excavation for slab, subgrade and capillary break	222	BCY	\$0.00	\$0.00	\$7.20	\$7.17	108.20%	\$3,455.19	Cost Data, 2011, 31 23 16.16 3/4 CY bucket
Removal of Foundation Spoils, Haul of Material, 40									RSMeans Building Construction Cost Data, 2011, 31 05
MPH, cycle 40 MPH	415	LCY			\$7.64	\$14.10	108.20%	\$9,755.05	16, 31 23 23.20 Hauling
									Quote per Quigg Bros, Aberdeen, WA, phone
Backfill Slab, subgrade, capillary break	358	ECY		\$20.00			108.20%	\$7,753.79	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	358	ECY			\$7.64	\$14.10	108.20%	\$8,428.37	16, 31 23 23.20 Hauling
	•		•		•		•	\$31,156.49	

				Cost per		Installation	Equipment	Location		
H	Foundation	Quantity	Unit	Unit	Material Cost	Cost	Cost	Factor	Total Cost	Comments
Γ										Piling needs to 2x the height of the structure which is
I	Piling									23-35'?

									Per phone conversation with Quigg Bros, Aberdeen,
Mobilization for piling	1	EA	\$12,000.00	\$0.00	\$0.00	\$0.00	100.00%	\$12,000.00	WA on June 29th, 2011
									Driven pipe piles 40' long, 18"x.5", per phone
									conversation with Quigg Bros, Aberdeen, WA on June
									29th,2011. Equipment Included in Material/Labor
Battered Piles, 18" Diameter, 30'-40' Deep	27	EA	\$0.00	\$3,500.00	\$1,200.00	\$0.00	100.00%	\$126,900.00	Cost
									RSMeans Assemblies Cost Data 2011, A1010 250 Pile
									Caps (Equipment Costs are included in Installation
Pile Caps, Cap Size 6'-6" x 3'-6" x 37"	9	EA	\$0.00	\$370.00	\$540.00		99.30%	\$8,132.67	Cost)
Foundation Cast-In-Place/Tower									
									RSMeans Assemblies Cost Data 2011, A 1020 210
Grade Beams 30' span, 28" deep, 14" wide, 2 KLF									Grade Beams (Equipment Cost is included in
load	329	LF		\$34.50	\$53.00		99.30%	\$28,554.15	Installation Cost)
									Piling needs to 2x the height of the structure which is
Foundation Cast-In-Place/ Footings for Ramp									23-35'?
									RSMeans Assemblies Cost Data, 2011, A1010 210,
Spread Footings, load 75K, soil capacity 6 KSF, 4'-0"									Spread Footings (Equipment Cost is included in
sq x 12" deep	12	EA	\$0.00	\$94.50	\$167.00	\$0.00	99.30%	\$3,116.03	Installation Cost)

\$178,702.85

			Cast in an		la stallatian	Fi	l a sati a sa		
Structure	Quantity	Unit	Cost per Unit	Material Cost	Installation Cost	Equipment Costs	Location Factor	Total Cost	Comments
ou detaile	ζ,		-					10101 0001	RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	10	EA			\$116.00	\$185.00	100.00%	\$3,010.00	154 36.50 Mobilization
4. 6	-					,		1 - 7	Beam and Column sizes are not determined and
									estimate takes in "best guess" to assume sizes for this
Concrete Structure								\$0.00	project.
									RSMeans Assemblies Cost Data, 2011, B1010 201, CIP
Concrete Columns, rated for 1000 K load, 26"									Column, Round Tied (Equipment Cost included in
round, concrete strength, 6000 PSI	126	VLF		\$158.00	\$7.85	\$0.00	99.30%	\$20,750.82	Installation Cost)
Slab-On-Grade, 6" thick, non-industrial, reinforced,									RSMeans Assemblies Cost Data, 2011, A1030 120,
Ground Floor	3000	SF		\$3.01	\$2.97		99.30%	\$17,814.42	Slab on Grade, Plain & Reinforced
									RSMeans Assemblies Cost Data, 2011, B1010 229
Cast-In-Place Beam and Slab, Two Way, 30x30, 351									Precast Plank with No Topping (Equipment Cost
PSF, 9" thick slab, 2nd Floor (evacuation level)	3000	SF		\$8.95	\$13.60		99.30%	\$67,176.45	included in Installation Cost)
									Wood structure, hip roof to support galvanized steel
Wood Structure									panels
									Supply quote from Levee Lumber, Hoquiam, WA,
									RSMeans Assemblies Cost Data, 2011, B1020 102,
				4	4			4	Roof Construction, Wood/Flat or Pitched (Equipment
Wood Columns 12"x12", 10' High, Select Structural	90	VLF		\$9.85	\$2.62		97.30%	\$1,092.00	Cost included in Installation Cost)
									Supply quote from Levee Lumber, Hoquiam, WA,
2	212			44.0=	44.0=	400.00	0= 000/	45.400.40	RSMeans Building Construction Cost Data 2011, Glued
Perimeter Joists, 3 1/8"x12", GLM 30' span	219	LF		\$4.85	\$1.95	\$22.00	97.30%	\$6,139.40	Laminated Beams 06 18 13.20
									RSMeans Assemblies Cost Data, 2011, B1020 102,
2010 Weed Leist of 4 /211 CDV 1211 OC	2000	CE		62.02	62.05		07.200/	¢44 000 22	Roof Construction, Wood/Flat or Pitched (Equipment
2x10 Wood Joist w/ 1/2" CDX, 12" OC	3000	SF		\$2.02	\$2.05		97.30%	\$11,880.33	Cost included in Installation Cost)
Boof wood/sitched 3"v13" 13" OC w/ shooting									RSMeans Assemblies Cost Data, 2011, B1020 102,
Roof, wood/pitched, 3"x12" 12" OC w/ sheating plywood on roof, 5/16" CDX	4200	SF		\$4.59	\$2.62		97.30%	\$29,464.39	Roof Construction, Wood/Flat or Pitched (Equipment Cost included in Installation Cost)
Weather Proofing/Coatings add 15% (Premium for	4200	31		\$4.59	\$2.02		97.30%	\$29,404.39	Assumed that PTS wood is 15% more compared on
PTS Wood)	\$48,576.11	%	15.00%					\$7,286.42	price difference shown in means
113 44000)	γ -1 0,370.11	/0	13.00/0					\$7,260.42	price unicience shown in means

\$164,614.22

Roofing	Quantity	Unit	Cost per Unit	Material Cost	stallation Cos	լսipment Co	Location Factor	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	4	EA			\$116.00	\$185.00	100.00%	\$1,204.00	54 36.50 Mobilization
									Hip and ridge style roof, peak of roof 15'. (Equipment
Roofing/Hip and Ridge Roof Steel Panels									Cost is included in Installation Cost)
									RSMeans Assemblies Cost Data, 2011, B3010 135,
Flat Roof Steel Panels, Flat Seam, Copper, 1/4" min.									Formed Metal (Equipment Cost is included in
slope, 20 oz, 1.2 PSF	4200	SF		\$9.50	\$5.80		100.30%	\$64,452.78	Installation Cost)

\$65,656.78

Stairs/Ramps/Guardrails	Quantity	Unit	Cost per Uni	Material Cost	nstallation Cos	uipment Co	Location Factor	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	6	EA			\$116.00	\$185.00	100.00%	\$1,806.00	54 36.50 Mobilization
									Beam and Column sizes are not determined and
									estimate takes in "best guess" to assume sizes for this
Exterior Ramp, Rises 20', 5' wide									project.
									RSMeans Assemblies Cost Data, 2011, B1010, 208
Steel Columns, 20' high, Wide Flanged, 6", 12									Steel Columns (Equipment Cost is included in
locations	168	VLF		\$26.50	\$7.85	\$0.00	95.40%	\$5,505.34	Installation Cost)
W Shape Beams and Girders, bay size 15X20,, Total									RSMeans Building Construction Cost Data, 2011,
Load 263 PSF.	800	SF		\$11.70	\$3.82	\$1.50	95.40%	\$12,989.66	Structural Steel Framing, 05 12 23.17
									RSMeans Assemblies Cost Data, 2011, B1010 258,
Floor Construction, Metal Deck/Concrete Fill, Deck									Metal Deck/Concrete Fill (Equipment Cost is included
Span 6 ft, 150 PSF Superimposed Load	800	SF		\$2.38	\$2.38		95.40%	\$3,632.83	in Installation Cost)
									RSMeans Building Construction Cost Data, 2011, 05 05
Weather Proofing/Coatings (Galvanized)	7.5	Tons	\$400.00	\$0.00	0	0	95.40%	\$2,862.00	13.50, Paints and Protective Coatings
									Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building
Hand Rail/Guard Rail	270	LF		\$32.50	\$9.80		95.40%	\$10,895.63	Construction Cost Date 2011, 05 52 Metal Railings
Ladders/Stairs									
Steel ladder to attic space 20" wide bolted to									RSMeans Building Construction Cost Data 2011, 05 51
concrete without cage	10	VLF		\$65.00	\$31.50	\$2.18	95.40%	\$920.61	33 - Vertical Metal Ladders
Accordion Ladder for Escape after Tsunami,									RSMeans Building Construction Cost Data 2011, 11 33
Disappearing Stairs, Heavy duty, 16'-0" ceiling	2	ea		\$1,400.00	\$172.00		95.40%	\$2,999.38	10.10, Disappearing Stairway
Platform Perimeters Railing (120 LF for each									
platform, 2 locations)									
									Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building
Hand Rail/Guard Rail	219	LF		\$32.50	\$9.80		95.40%	\$8,841.16	Construction Cost Date 2011, 05 52 Metal Railings

\$50,452.62

			Cost per		Installation	Equipment	Location		
Fire Protection	Quantity	Unit	Unit	Material Cost	Costs	Cost	Factor	Total Cost	Comments
Fire Protection, Wet Pipe System									
									RSMeans Building Construction Cost Data, 2011, 01 54
Mobilization	4	EA		\$69.00	\$116.00		100.00%	\$740.00	36 - Equipment Mobilization
									RSMeans Square Foot Costs, 2011, D4010 410, Wet
									Pipe Sprinkler Systems (Equipment Cost included in
First Floor, 2000 SF, Light Hazard	3000	SF		\$4.50	\$3.04		97.00%	\$21,941.40	Installation Cost)

\$22,681.40

Map Number:	2	Minimum Structure Height:	14
Structure Type:	Tower	Structure Capacity:	500
Location:	Ocean Shores, WA, Quinault Beach Resort	Safe Haven Square Footage:	5000
Levels	1	Columns Required:	16
		Piles per Column:	3
Scope			Cost
Site Utilities			\$15,257
Excavation-Backfill			\$51,409
Foundation			\$304,325
Structure			\$272,143
Roofing			\$108,625
Stairs/Ramps/Guardrails			\$53,025
Fire Protection			\$37,309
Total			\$842,094
Design Fees (8%)			\$67,368
General Conditions (10%)			\$84,209
Contractor Fees, O&P (15%)			\$126,314
Construction Contingency (5%)			\$42,105
Estimate/Design Contingency (10%)	·		\$84,209
Project Total	-		\$1,246,299

1			Cook as an		to stallation	C. C	Lasatian	ı	T
Site Utilities	Quantity	Unit	Cost per Unit	Material Cost	Installation Cost	Cost	Location Factor	Total Cost	Comments
Site Othities	quantity	- Cilit	0	Widterial cost	COST	COSC	1 4 4 4 4	Total cost	RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	10	EA			\$116.00	\$185.00	100.00%	\$3.010.00	54 36.50 Mobilization
					722000	7-00:00		40,020.00	
Fire Water, Ductile Iron Class 250, MJ, 4" diameter	50	LF		\$16.05					Assuming 50' distance from service at street
									RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator 4'-6' deep	35	BCY			\$2.16	\$2.13	108.20%	\$162.46	23 16.13, Excavating Trench
									RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 4" Ductile Iron Piping, MJ	50	LF		\$12.50	\$8.55	\$2.17	108.20%	\$1,256.20	11 Water Utility Distribution Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	6	LCY		\$20.00			108.20%	\$129.84	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	6	LCY			\$7.64	\$14.10	108.20%	\$141.14	16, 31 23 23.20 Hauling
	-	F.07/			62.05	60.24	400 200/	640.24	RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	5	ECY			\$3.05	\$0.34	108.20%	\$18.34	23 23.16 Fill By Borrow & Utility Bedding
Dockfill Congrel Fill Dy Dozer No Composition	20	LCV			ĆO FO	\$1.05	108.20%	¢62.72	RSMeans, Building Construction Cost Data, 2011, 31 23 23.17 General Fill
Backfill, General Fill By Dozer, No Compaction Storm Service	38	LCY			\$0.50	\$1.05	108.20%	\$63.73	Assuming 50' distance from service at street
Storm Service									RSMeans, Building Construction Cost Data, 201, 31 23
Excavate, 3/4 CY Excavator, 6'-10' deep	60	BCY			\$2.88	\$2.85	108.20%	\$371.99	16.13 Excavating Trench
Excavate, 574 et Excavator, o 10 deep	00	DC1			ÿ2.00	Ş2.03	100.2070	Ş371.33	RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 8" Bituminous Coated	50	LF		\$10.70	\$5.25	\$0.97	108.20%	\$915.37	41 Storm Utility Drainage Piping
Utility Bedding, For Pipe & Conduit, Not Incl.					, -	,		,	Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	6	LCY		\$20.00			108.20%	\$129.84	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	6	LCY			\$7.64	\$14.10	108.20%	\$141.14	16, 31 23 23.20 Hauling
							•		RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	5	ECY			\$3.05	\$0.34	108.20%	\$18.34	23 23.16 Fill By Borrow & Utility Bedding

								RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	38	LCY		\$0.50	\$1.05	108.20%	\$63.73	23 23.17 General Fill
Site Drainage/Area Drains/Catch Basins								Assume 1 area drain for structure
								RSMeans Assemblies Cost Data, 2011, G3030 210,
Concrete, Precast, 4' ID riser, 4' deep	1	EA	\$1,425.00	\$1,200.00	0.00%	108.20%	\$2,840.25	Manholes & Catch Basins
Electrical	50	LF						Assuming 50' distance from service at street
Electrical Service, includes service installation,								RSMeans Assemblies Cost Data, 2011, D 5010 120,
breakers, metering, 20' conduit & wire, 3 phase, 4								Electric Service, 3 Phase - 4 Wire, equipment included
wire, 120/208 volts, 60 A	1	EA	\$960.00	\$920.00		100.50%	\$1,889.40	in installation cost
	·							RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator, 4'-6' deep	35	BCY		\$2.16	\$2.13	108.20%	\$162.46	23 16.13 Excavating Trench
	·							RSMeans, Building Construction Cost Data, 2011, 33
Install & Test PVC, type EB 4 @ 3" diameter	50	LF	\$2.00	\$8.05		108.20%	\$543.71	71 19 Electrical Underground Ducts and Manholes
	·							RSMeans, Building Construction Cost Data, 2011, 26
Wire, 600 volt, copper type THW, solid, #12	50	CLF	\$11.95	\$36.50	0	100.50%	\$2,434.61	05 19.90 Wire
Utility Bedding, For Pipe & Conduit, Not Incl.								Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	19	LCY	\$20.00			108.20%	\$411.16	conversation on June 29th, 2011
	·							RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	19	LCY		\$7.64	\$14.10	108.20%	\$446.93	16, 31 23 23.20 Hauling
	·							RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	19	ECY		\$3.05	\$0.34	108.20%	\$69.69	23 23.16 Fill By Borrow & Utility Bedding
	·							RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	22	LCY		\$0.50	\$1.05	108.20%	\$36.90	23 23.17 General Fill

\$15,257.23

			Cost per		Installation	Equipment	Location		
Excavation-Backfill	Quantity	Unit	Unit	Material Cost	Cost	Cost	Factor	Total Cost	Comments
									RSMeans Building Construction Cost Data, 2011, 01 54
Mobilization	8	EA	\$0.00	\$0.00	\$69.00	\$116.00	100.00%	\$1,480.00	36 - Equipment Mobilization
									Is clear and grub needed for structure in urban
									setting? RSMeans Building Construction Cost Data,
Clear and Grub Site	0.14	ACRE	\$0.00	\$0.00	\$1,750.00	\$1,300.00	108.20%	\$473.50	2011, 31 11 10.10 Clear and Grub Site
									Grade Beams, 3' wide, 3' deep RSMeans Building
									Construction Cost Data, 2011, 31 23 16.16 3/4 CY
									bucket, (Price Included in grade beam foundation
Excavation for Grade Beams	189	BCY	\$0.00	\$0.00	\$0.00	\$0.00	108.20%	\$0.00	price)
								_	1225 SF mat, 2' deep. RSMeans Building Construction
Excavation for slab, subgrade and capillary break	370	BCY	\$0.00	\$0.00	\$7.20	\$7.17	108.20%	\$5,758.64	Cost Data, 2011, 31 23 16.16 3/4 CY bucket
Removal of Foundation Spoils, Haul of Material, 40									RSMeans Building Construction Cost Data, 2011, 31 05
MPH, cycle 40 MPH	699	LCY			\$7.64	\$14.10	108.20%	\$16,434.48	16, 31 23 23.20 Hauling
									Quote per Quigg Bros, Aberdeen, WA, phone
Backfill Slab, subgrade, capillary break	604	ECY		\$20.00			108.20%	\$13,062.92	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH,cycle 40 MPH	604	ECY			\$7.64	\$14.10	108.20%	\$14,199.39	16, 31 23 23.20 Hauling
	\$51,408.93								

Cost per Installation Equipment Location Foundation Unit **Material Cost Total Cost** Quantity Cost Factor Comments Piling needs to 2x the height of the structure which is Piling Per phone conversation with Quigg Bros, Aberdeen, \$12,000.00 WA on June 29th, 2011 Mobilization for piling EΑ \$12,000.00 \$0.00 \$0.00 \$0.00 100.00%

									Driven pipe piles 40' long, 18"x.5", per phone
									conversation with Quigg Bros, Aberdeen, WA on June
									29th,2011. Equipment Included in Material/Labor
Battered Piles, 18" Diameter, 30'-40' Deep	48	EA	\$0.00	\$3,500.00	\$1,200.00	\$0.00	100.00%	\$225,600.00	Cost
									RSMeans Assemblies Cost Data 2011, A1010 250 Pile
									Caps (Equipment Costs are included in Installation
Pile Caps, Cap Size 6'-6" x 3'-6" x 37"	16	EA	\$0.00	\$370.00	\$540.00		99.30%	\$14,458.08	Cost)
Foundation Cast-In-Place/Tower									
									RSMeans Assemblies Cost Data 2011, A 1020 210
Grade Beams 30' span, 28" deep, 14" wide, 2 KLF									Grade Beams (Equipment Cost is included in
load	566	LF		\$34.50	\$53.00		99.30%	\$49,150.99	Installation Cost)
									Piling needs to 2x the height of the structure which is
Foundation Cast-In-Place/ Footings for Ramp									23-35'?
									RSMeans Assemblies Cost Data, 2011, A1010 210,
Spread Footings, load 75K, soil capacity 6 KSF, 4'-0"									Spread Footings (Equipment Cost is included in
sq x 12" deep	12	EA	\$0.00	\$94.50	\$167.00	\$0.00	99.30%	\$3,116.03	Installation Cost)

\$304,325.11

			Cost per		Installation	Fauipment	Location	T T	
Structure	Quantity	Unit	Unit	Material Cost	Cost	Costs	Factor	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	10	EA			\$116.00	\$185.00	100.00%	\$3,010.00	54 36.50 Mobilization
									Beam and Column sizes are not determined and
									estimate takes in "best guess" to assume sizes for this
Concrete Structure								\$0.00	project.
									RSMeans Assemblies Cost Data, 2011, B1010 201, CIP
Concrete Columns, rated for 1000 K load, 26"									Column, Round Tied (Equipment Cost included in
round, concrete strength, 6000 PSI	224	VLF		\$158.00	\$7.85	\$0.00	99.30%	\$36,890.35	Installation Cost)
Slab-On-Grade, 6" thick, non-industrial, reinforced,									RSMeans Assemblies Cost Data, 2011, A1030 120,
Ground Floor	5000	SF		\$3.01	\$2.97		99.30%	\$29,690.70	Slab on Grade, Plain & Reinforced
									RSMeans Assemblies Cost Data, 2011, B1010 229
Cast-In-Place Beam and Slab, Two Way, 30x30, 351									Precast Plank with No Topping (Equipment Cost
PSF, 9" thick slab, 2nd Floor (evacuation level)	5000	SF		\$8.95	\$13.60		99.30%	\$111,960.75	included in Installation Cost)
									Wood structure, hip roof to support galvanized steel
Wood Structure									panels
									Supply quote from Levee Lumber, Hoquiam, WA,
									RSMeans Assemblies Cost Data, 2011, B1020 102,
									Roof Construction, Wood/Flat or Pitched (Equipment
Wood Columns 12"x12", 10' High, Select Structural	160	VLF		\$9.85	\$2.62		97.30%	\$1,941.33	Cost included in Installation Cost)
									Supply quote from Levee Lumber, Hoquiam, WA,
					_				RSMeans Building Construction Cost Data 2011, Glued
Perimeter Joists, 3 1/8"x12", GLM 30' span	283	LF		\$4.85	\$1.95	\$22.00	97.30%	\$7,925.93	Laminated Beams 06 18 13.20
									RSMeans Assemblies Cost Data, 2011, B1020 102,
									Roof Construction, Wood/Flat or Pitched (Equipment
2x10 Wood Joist w/ 1/2" CDX, 12" OC	5000	SF		\$2.02	\$2.05		97.30%	\$19,800.55	Cost included in Installation Cost)
									RSMeans Assemblies Cost Data, 2011, B1020 102,
Roof, wood/pitched, 3"x12" 12" OC w/ sheating					_				Roof Construction, Wood/Flat or Pitched (Equipment
plywood on roof, 5/16" CDX	7000	SF		\$4.59	\$2.62		97.30%	\$49,107.31	Cost included in Installation Cost)
Weather Proofing/Coatings add 15% (Premium for									Assumed that PTS wood is 15% more compared on
PTS Wood)	\$78,775.12	%	15.00%					\$11,816.27	price difference shown in means

\$272,143.19

Roofing	Quantity	Unit	Cost per Unit	Material Cost	stallation Cos	uipment Co	Location Facto	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	4	EA			\$116.00	\$185.00	100.00%	\$1,204.00	54 36.50 Mobilization
									Hip and ridge style roof, peak of roof 15'. (Equipment
Roofing/Hip and Ridge Roof Steel Panels									Cost is included in Installation Cost)
									RSMeans Assemblies Cost Data, 2011, B3010 135,
Flat Roof Steel Panels, Flat Seam, Copper, 1/4" min.									Formed Metal (Equipment Cost is included in
slope, 20 oz, 1.2 PSF	7000	SF		\$9.50	\$5.80			\$107,421.30	Installation Cost)

\$108,625.30

Stairs/Ramps/Guardrails	Quantity	Unit	Cost per Unit	Material Cost	nstallation Co	uipment Co	Location Facto	Total Cost	Comments
-									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	6	EA			\$116.00	\$185.00	100.00%	\$1,806.00	54 36.50 Mobilization
									Beam and Column sizes are not determined and
									estimate takes in "best guess" to assume sizes for this
Exterior Ramp, Rises 20', 5' wide									project.
									RSMeans Assemblies Cost Data, 2011, B1010, 208
Steel Columns, 20' high, Wide Flanged, 6", 12									Steel Columns (Equipment Cost is included in
locations	168	VLF		\$26.50	\$7.85	\$0.00	95.40%	\$5,505.34	Installation Cost)
W Shape Beams and Girders, bay size 15X20,, Total									RSMeans Building Construction Cost Data, 2011,
Load 263 PSF.	800	SF		\$11.70	\$3.82	\$1.50	95.40%	\$12,989.66	Structural Steel Framing, 05 12 23.17
									RSMeans Assemblies Cost Data, 2011, B1010 258,
Floor Construction, Metal Deck/Concrete Fill, Deck									Metal Deck/Concrete Fill (Equipment Cost is included
Span 6 ft, 150 PSF Superimposed Load	800	SF		\$2.38	\$2.38		95.40%	\$3,632.83	in Installation Cost)
									RSMeans Building Construction Cost Data, 2011, 05 05
Weather Proofing/Coatings (Galvanized)	7.5	Tons	\$400.00	\$0.00	0	0	95.40%	\$2,862.00	13.50, Paints and Protective Coatings
									Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building
Hand Rail/Guard Rail	270	LF		\$32.50	\$9.80		95.40%	\$10,895.63	Construction Cost Date 2011, 05 52 Metal Railings
Ladders/Stairs									
Steel ladder to attic space 20" wide bolted to									RSMeans Building Construction Cost Data 2011, 05 51
concrete without cage	10	VLF		\$65.00	\$31.50	\$2.18	95.40%	,	33 - Vertical Metal Ladders
Accordion Ladder for Escape after Tsunami,									RSMeans Building Construction Cost Data 2011, 11 33
Disappearing Stairs, Heavy duty, 16'-0" ceiling	2	ea		\$1,400.00	\$172.00		95.40%	\$2,999.38	10.10, Disappearing Stairway
Platform Perimeters Railing (120 LF for each									
platform, 2 locations)									
									Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building
Hand Rail/Guard Rail	283	LF		\$32.50	\$9.80		95.40%	\$11,413.89	Construction Cost Date 2011, 05 52 Metal Railings

\$53,025.35

			Cost per		Installation	Equipment	Location		
Fire Protection	Quantity	Unit	Unit	Material Cost	Costs	Cost	Factor	Total Cost	Comments
Fire Protection, Wet Pipe System									
									RSMeans Building Construction Cost Data, 2011, 01 54
Mobilization	4	EA		\$69.00	\$116.00		100.00%	\$740.00	36 - Equipment Mobilization
									RSMeans Square Foot Costs, 2011, D4010 410, Wet
									Pipe Sprinkler Systems (Equipment Cost included in
First Floor, 2000 SF, Light Hazard	5000	SF		\$4.50	\$3.04		97.00%	\$36,569.00	Installation Cost)
		-			_	_	_	\$27 200 00	

\$37,309.00

Map Number:	3	Minimum Structure Height:	10
Structure Type:	Tower	Structure Capacity:	1700
Location:	Ocean Shores, WA, Downtown Ocean Shores	Safe Haven Square Footage:	17000
Levels	1	Columns Required:	36
		Piles per Column:	3
Scope			Cost
Site Utilities			\$15,257
Excavation-Backfill			\$161,890
Foundation			\$691,192
Structure			\$835,173
Roofing			\$366,436
Stairs/Ramps/Guardrails			\$61,085
Fire Protection			\$125,075
Total			\$2,256,108
Design Fees (8%)			\$180,489
General Conditions (10%)			\$225,611
Contractor Fees, O&P (15%)			\$338,416
Construction Contingency (5%)			\$112,805
Estimate/Design Contingency (10%)			\$225,611
Project Total			\$3,339,039

			Cost per		Installation	Equipment	Location		
Site Utilities	Quantity	Unit	Unit	Material Cost	Cost	Cost	Factor	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	10	EA			\$116.00	\$185.00	100.00%	\$3,010.00	54 36.50 Mobilization
Sing Makes Durkile lang Class 250 AM All dispression	F0	15		Ć1C 0E					A
Fire Water, Ductile Iron Class 250, MJ, 4" diameter	50	LF		\$16.05					Assuming 50' distance from service at street RSMeans, Building Construction Cost Data, 2011, 31
Excepte 3/4 CV Exceptor 4' 6' door	35	BCY			\$2.16	\$2.13	108.20%	\$162.46	23 16.13, Excavating Trench
Excavate, 3/4 CY Excavator 4'-6' deep	33	DCT			\$2.10	\$2.15	106.20%	\$102.40	RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 4" Ductile Iron Piping, MJ	50	LF		\$12.50	\$8.55	\$2.17	108.20%	\$1,256.20	11 Water Utility Distribution Piping
Utility Bedding, For Pipe & Conduit, Not Incl.	30	LF		\$12.50	3 6.33	32.17	108.20%	\$1,230.20	Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	6	LCY		\$20.00			108.20%	\$129.84	conversation on June 29th, 2011
compaction	Ü	LCI		Ψ20.00			100.2070	Ç123.04	RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	6	LCY			\$7.64	\$14.10	108.20%	\$141.14	16, 31 23 23.20 Hauling
					*****	7 - 11 - 0		,	RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	5	ECY			\$3.05	\$0.34	108.20%	\$18.34	23 23.16 Fill By Borrow & Utility Bedding
									RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	38	LCY			\$0.50	\$1.05	108.20%	\$63.73	23 23.17 General Fill
Storm Service									Assuming 50' distance from service at street
									RSMeans, Building Construction Cost Data, 201, 31 23
Excavate, 3/4 CY Excavator, 6'-10' deep	60	BCY			\$2.88	\$2.85	108.20%	\$371.99	16.13 Excavating Trench
									RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 8" Bituminous Coated	50	LF		\$10.70	\$5.25	\$0.97	108.20%	\$915.37	41 Storm Utility Drainage Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	6	LCY		\$20.00			108.20%	\$129.84	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	6	LCY			\$7.64	\$14.10	108.20%	\$141.14	16, 31 23 23.20 Hauling
									RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	5	ECY			\$3.05	\$0.34	108.20%	\$18.34	23 23.16 Fill By Borrow & Utility Bedding
						4			RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	38	LCY			\$0.50	\$1.05	108.20%	\$63.73	23 23.17 General Fill
Site Drainage/Area Drains/Catch Basins									Assume 1 area drain for structure

								RSMeans Assemblies Cost Data, 2011, G3030 210,
Concrete, Precast, 4' ID riser, 4' deep	1	EA	\$1,425.00	\$1,200.00	0.00%	108.20%	\$2,840.25	Manholes & Catch Basins
Electrical	50	LF						Assuming 50' distance from service at street
Electrical Service, includes service installation,								RSMeans Assemblies Cost Data, 2011, D 5010 120,
breakers, metering, 20' conduit & wire, 3 phase, 4								Electric Service, 3 Phase - 4 Wire, equipment included
wire, 120/208 volts, 60 A	1	EA	\$960.00	\$920.00		100.50%	\$1,889.40	in installation cost
								RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator, 4'-6' deep	35	BCY		\$2.16	\$2.13	108.20%	\$162.46	23 16.13 Excavating Trench
								RSMeans, Building Construction Cost Data, 2011, 33
Install & Test PVC, type EB 4 @ 3" diameter	50	LF	\$2.00	\$8.05		108.20%	\$543.71	71 19 Electrical Underground Ducts and Manholes
								RSMeans, Building Construction Cost Data, 2011, 26
Wire, 600 volt, copper type THW, solid, #12	50	CLF	\$11.95	\$36.50	0	100.50%	\$2,434.61	05 19.90 Wire
Utility Bedding, For Pipe & Conduit, Not Incl.								Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	19	LCY	\$20.00			108.20%	\$411.16	conversation on June 29th, 2011
								RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	19	LCY		\$7.64	\$14.10	108.20%	\$446.93	16, 31 23 23.20 Hauling
								RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	19	ECY		\$3.05	\$0.34	108.20%	\$69.69	23 23.16 Fill By Borrow & Utility Bedding
								RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	22	LCY		\$0.50	\$1.05	108.20%	\$36.90	23 23.17 General Fill

\$15,257.23

			Cost per		Installation	Equipment	Location		
Excavation-Backfill	Quantity	Unit	Unit	Material Cost	Cost	Cost	Factor	Total Cost	Comments
									RSMeans Building Construction Cost Data, 2011, 01 54
Mobilization	8	EA	\$0.00	\$0.00	\$69.00	\$116.00	100.00%	\$1,480.00	36 - Equipment Mobilization
									Is clear and grub needed for structure in urban
									setting? RSMeans Building Construction Cost Data,
Clear and Grub Site	0.49	ACRE	\$0.00	\$0.00	\$1,750.00	\$1,300.00	108.20%	\$1,609.90	2011, 31 11 10.10 Clear and Grub Site
									Grade Beams, 3' wide, 3' deep RSMeans Building
									Construction Cost Data, 2011, 31 23 16.16 3/4 CY
									bucket, (Price Included in grade beam foundation
Excavation for Grade Beams	522	BCY	\$0.00	\$0.00	\$0.00	\$0.00	108.20%	\$0.00	price)
									1225 SF mat, 2' deep. RSMeans Building Construction
Excavation for slab, subgrade and capillary break	1259	BCY	\$0.00	\$0.00	\$7.20	\$7.17	108.20%	\$19,579.39	Cost Data, 2011, 31 23 16.16 3/4 CY bucket
Removal of Foundation Spoils, Haul of Material, 40									RSMeans Building Construction Cost Data, 2011, 31 05
MPH, cycle 40 MPH	2226	LCY			\$7.64	\$14.10	108.20%	\$52,361.35	16, 31 23 23.20 Hauling
									Quote per Quigg Bros, Aberdeen, WA, phone
Backfill Slab, subgrade, capillary break	1923	ECY		\$20.00			108.20%	\$41,619.33	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	1923	ECY			\$7.64	\$14.10	108.20%	\$45,240.21	16, 31 23 23.20 Hauling
· · · · · · · · · · · · · · · · · · ·	·				·		·	\$161.890.18	<u> </u>

\$161,890.18

			Cost per		Installation	Equipment	Location		
Foundation	Quantity	Unit	Unit	Material Cost	Cost	Cost	Factor	Total Cost	Comments
									Piling needs to 2x the height of the structure which is
Piling									23-35'?
									Per phone conversation with Quigg Bros, Aberdeen,
Mobilization for piling	1	EA	\$12,000.00	\$0.00	\$0.00	\$0.00	100.00%	\$12,000.00	WA on June 29th, 2011
									Driven pipe piles 40' long, 18"x.5", per phone
									conversation with Quigg Bros, Aberdeen, WA on June
									29th,2011. Equipment Included in Material/Labor
Battered Piles, 18" Diameter, 30'-40' Deep	108	EA	\$0.00	\$3,500.00	\$1,200.00	\$0.00	100.00%	\$507,600.00	Cost

Roofing	Quantity	Unit	Cost nor Un	it Material Cost	estallation Cod	winment Co	acation Facto	Total Cost	Comments
								\$835,172.81	
PTS Wood)	\$253,269.41	%	15.00%						price difference shown in means
plywood on roof, 5/16" CDX Weather Proofing/Coatings add 15% (Premium for	23800	SF		\$4.59	\$2.62		97.30%	\$166,964.85	
Roof, wood/pitched, 3"x12" 12" OC w/ sheating									RSMeans Assemblies Cost Data, 2011, B1020 102, Roof Construction, Wood/Flat or Pitched (Equipmen
2x10 Wood Joist w/ 1/2" CDX, 12" OC	17000	SF		\$2.02	\$2.05		97.30%	\$67,321.87	RSMeans Assemblies Cost Data, 2011, B1020 102, Roof Construction, Wood/Flat or Pitched (Equipmen Cost included in Installation Cost)
Perimeter Joists, 3 1/8"x12", GLM 30' span	522	LF		\$4.85	\$1.95	\$22.00	97.30%	\$14,614.70	RSMeans Building Construction Cost Data 2011, Gluc Laminated Beams 06 18 13.20
Wood Columns 12"x12", 10' High, Select Structural	360	VLF		\$9.85	\$2.62		97.30%	\$4,367.99	Cost included in Installation Cost) Supply quote from Levee Lumber, Hoquiam, WA,
Weed Columns 43 list 3 list 10 little Color to Construction	250	V4.5		ć0.05	ć2.c2		07.200/	¢4.267.00	Supply quote from Levee Lumber, Hoquiam, WA, RSMeans Assemblies Cost Data, 2011, B1020 102, Roof Construction, Wood/Flat or Pitched (Equipmen
Wood Structure									Wood structure, hip roof to support galvanized steel panels
Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level)	17000	SF		\$8.95	\$13.60		99.30%	\$380,666.55	RSMeans Assemblies Cost Data, 2011, B1010 229 Precast Plank with No Topping (Equipment Cost included in Installation Cost)
Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor	17000	SF		\$3.01	\$2.97		99.30%	\$100,948.38	RSMeans Assemblies Cost Data, 2011, A1030 120, Slab on Grade, Plain & Reinforced
Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI	360	VLF		\$158.00	\$7.85	\$0.00	99.30%	\$59,288.06	RSMeans Assemblies Cost Data, 2011, B1010 201, Cl Column, Round Tied (Equipment Cost included in Installation Cost)
Concrete Structure								\$0.00	estimate takes in "best guess" to assume sizes for th project.
Mobilization of Equipment	10	EA			\$116.00	\$185.00	100.00%	\$3,010.00	RSMeans, Building Construction Cost Data, 2011, 01 54 36.50 Mobilization Beam and Column sizes are not determined and
Structure	Quantity	Unit	Cost per Unit	Material Cost	Installation Cost	Equipment Costs	Location Factor	Total Cost	Comments
			Continue	1	lootelleties	F	1		
Spread Footings, load 75K, soil capacity 6 KSF, 4'-0" sq x 12" deep	12	EA	\$0.00	\$94.50	\$167.00	\$0.00	99.30%	\$3,116.03 \$691,191.64	Spread Footings (Equipment Cost is included in Installation Cost)
Foundation Cast-In-Place/ Footings for Ramp									23-35'? RSMeans Assemblies Cost Data, 2011, A1010 210,
load	1565	LF		\$34.50	\$53.00		99.30%	\$135,944.93	Piling needs to 2x the height of the structure which i
Grade Beams 30' span, 28" deep, 14" wide, 2 KLF									RSMeans Assemblies Cost Data 2011, A 1020 210 Grade Beams (Equipment Cost is included in
Pile Caps, Cap Size 6'-6" x 3'-6" x 37" Foundation Cast-In-Place/Tower	36	EA	\$0.00	\$370.00	\$540.00		99.30%	\$32,530.68	Cost)
									RSMeans Assemblies Cost Data 2011, A1010 250 Pile Caps (Equipment Costs are included in Installation

							RSMeans Assemblies Cost Data, 2011, B3010 135,
Flat Roof Steel Panels, Flat Seam, Copper, 1/4" min.							Formed Metal (Equipment Cost is included in
slope, 20 oz, 1.2 PSF	23800	SF	\$9.50	\$5.80	100.30%	\$365,232.42	Installation Cost)
						\$366,436.42	

Stairs/Ramps/Guardrails	Quantity	Unit	Cost per Uni	Material Cost	nstallation Co	uipment Co	Location Facto	Total Cost	Comments
-									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	6	EA			\$116.00	\$185.00	100.00%	\$1,806.00	54 36.50 Mobilization
									Beam and Column sizes are not determined and
									estimate takes in "best guess" to assume sizes for this
Exterior Ramp, Rises 20', 5' wide									project.
									RSMeans Assemblies Cost Data, 2011, B1010, 208
Steel Columns, 20' high, Wide Flanged, 6", 12									Steel Columns (Equipment Cost is included in
locations	120	VLF		\$26.50	\$7.85	\$0.00	95.40%	\$3,932.39	Installation Cost)
W Shape Beams and Girders, bay size 15X20,, Total									RSMeans Building Construction Cost Data, 2011,
Load 263 PSF.	800	SF		\$11.70	\$3.82	\$1.50	95.40%	\$12,989.66	Structural Steel Framing, 05 12 23.17
									RSMeans Assemblies Cost Data, 2011, B1010 258,
Floor Construction, Metal Deck/Concrete Fill, Deck									Metal Deck/Concrete Fill (Equipment Cost is included
Span 6 ft, 150 PSF Superimposed Load	800	SF		\$2.38	\$2.38		95.40%	\$3,632.83	in Installation Cost)
									RSMeans Building Construction Cost Data, 2011, 05 05
Weather Proofing/Coatings (Galvanized)	7.5	Tons	\$400.00	\$0.00	0	0	95.40%	\$2,862.00	13.50, Paints and Protective Coatings
									Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building
Hand Rail/Guard Rail	270	LF		\$32.50	\$9.80		95.40%	\$10,895.63	Construction Cost Date 2011, 05 52 Metal Railings
Ladders/Stairs									
Steel ladder to attic space 20" wide bolted to									RSMeans Building Construction Cost Data 2011, 05 51
concrete without cage	10	VLF		\$65.00	\$31.50	\$2.18	95.40%	\$920.61	33 - Vertical Metal Ladders
Accordion Ladder for Escape after Tsunami,									RSMeans Building Construction Cost Data 2011, 11 33
Disappearing Stairs, Heavy duty, 16'-0" ceiling	2	ea		\$1,400.00	\$172.00		95.40%	\$2,999.38	10.10, Disappearing Stairway
Platform Perimeters Railing (120 LF for each									
platform, 2 locations)									
									Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building
Hand Rail/Guard Rail	522	LF		\$32.50	\$9.80		95.40%	\$21,046.18	Construction Cost Date 2011, 05 52 Metal Railings
								\$61,084.68	

Cost per Installation Equipment Location Fire Protection Quantity Unit Unit **Material Cost** Costs Cost Factor **Total Cost** Comments Fire Protection, Wet Pipe System RSMeans Building Construction Cost Data, 2011, 01 54 100.00% \$740.00 36 - Equipment Mobilization EΑ \$69.00 \$116.00 Mobilization RSMeans Square Foot Costs, 2011, D4010 410, Wet Pipe Sprinkler Systems (Equipment Cost included in First Floor, 2000 SF, Light Hazard 17000 SF \$4.50 \$3.04 97.00% \$124,334.60 Installation Cost)

\$125,074.60

Map Number:	4	Min. Structure Hgt (ft)	10					
Structure Type:	Berm	Structure Capacity:	800	800				
Location:	Ocean Shores, WA, North Beach	Safe Haven (sq ft)	8000					
	Junior/Senior High School Berm							
Overall Site Square Footage:	24000	Volume of Berm Mater	rial: 4444					
Scope		-		Cost				
Site Utilities				\$49,814				
Excavation-Backfill			\$253,451					
Concrete				\$163,368				
Landscaping				\$57,521				
Construction Totals				\$524,153				
Design Fees (8%)				\$41,932				
General Conditions (10%)				\$52,415				
Contractor Fees, O&P (15%)				\$78,623				
Construction Contingency (5%)				\$26,208				
Estimate/Design Contingency (10%)				\$52,415				
Project Total				\$775,747				
-		•						

			Material	Installation	Eguipment	Location		
Site Utilities	Quantity	Unit	Cost	Cost	Cost	Factor	Total Cost	Comments
Mobilization of Equipment	6	EA		\$116.00	\$185.00	100.00%	\$1,806.00	RSMeans, Building Construction Cost Data, 2011, 01 54 36.50 Mobilization
Domestic Water, Ductile Iron Class 250, MJ, 6" diameter	100	LF				108.20%		Assuming 100' distance from service at street
Excavate, 3/4 CY Excavator 4'-6' deep	70	ВСҮ		\$2.16	\$2.13	108.20%	\$324.92	RSMeans, Building Construction Cost Data, 2011, 31 23 16.13, Excavating Trench
Install & Test, 6" Ductile Iron Piping, MJ	100	LF	\$14.60	\$10.70	\$2.72	108.20%	\$3,031.76	RSMeans, Building Construction Cost Data, 2011, 33 11 Water Utility Distribution Piping
Utility Bedding, For Pipe & Conduit, Not Incl. Compaction	12	LCY	\$20.00			108.20%	\$259.68	Quote per Quigg Bros, Aberdeen, WA, phone conversation on June 29th, 2011
Haul of Material, 40 MPH, cycle 40 MPH	12	LCY		\$7.64	\$14.10	108.20%	\$282.27	RSMeans Building Construction Cost Data, 2011, 31 05 16, 31 23 23.20 Hauling
Compacting Bedding In Trench	10	ECY		\$3.05	\$0.34	108.20%	\$36.68	RSMeans, Building Construction Cost Data, 2011, 31 23 23.16 Fill By Borrow & Utility Bedding
Backfill, General Fill By Dozer, No Compaction	75	LCY		\$0.50	\$1.05	108.20%	\$125.78	RSMeans, Building Construction Cost Data, 2011, 31 23 23.17 General Fill
Storm Drainage								Assuming 100' distance from service at street
Excavate, 3/4 CY Excavator, 6'-10' deep	60	ВСҮ		\$2.88	\$2.85	108.20%	\$371.99	RSMeans, Building Construction Cost Data, 2011, 31 23 16.13 Excavating, Trench
Install & Test, 12" Bituminous Coated	100	LF	\$11.50	\$8.30	\$1.53	108.20%	\$2,307.91	RSMeans, Building Construction Cost Data, 2011, 33 41 Storm Utility Drainage Piping
Utility Bedding, For Pipe & Conduit, Not Incl. Compaction	12	LCY	\$20.00			108.20%	\$259.68	Quote per Quigg Bros, Aberdeen, WA, phone conversation on June 29th, 2011
Haul of Material, 40 MPH, cycle 40 MPH	12	LCY		\$7.64	\$14.10	108.20%	\$282.27	RSMeans Building Construction Cost Data, 2011, 31 05 16, 31 23 23.20 Hauling
Compacting Bedding In Trench	10	ECY		\$3.05	\$0.34	108.20%	\$36.68	RSMeans, Building Construction Cost Data, 2011, 31 23 23.16 Fill By Borrow & Utility Bedding

Backfill, General Fill By Dozer, No Compaction	60	LCY		\$0.50	\$1.05	108.20%	\$100.63	RSMeans, Building Construction Cost Data, 2011, 31 23 23.17 General Fill
Area Drains/Catch Basins								Assuming 6 Area Drains/Catch Basins on Site
Concrete, Precast, 4' ID riser, 4' deep	6	EA	\$1,425.00	\$1,200.00	\$0.00	108.20%	\$17,041.50	RSMeans Assemblies Cost Data, 2011, G3030 210, Manholes & Catch Basins (Equipment Cost included in Installation Cost)
Electrical								Assuming 100' distance from service at street
Excavate, 3/4 CY Excavator, 4'-6' deep	70	ВСҮ		\$2.16	\$2.13	108.20%	\$324.92	RSMeans, Building Construction Cost Data, 2011, 31 23 16.13 Excavating Trench
Install & Test PVC, type EB 4 @ 3" diameter	100	LF	\$2.00	\$8.05		108.20%	\$1,087.41	RSMeans, Building Construction Cost Data, 2011, 33 71 19 Electrical Underground Ducts and Manholes
Utility Bedding, For Pipe & Conduit, Not Incl. Compaction	40	LCY	\$20.00	\$0.00	\$0.00	108.20%	\$865.60	Quote per Quigg Bros, Aberdeen, WA, phone conversation on June 29th, 2011
Haul of Material, 40 MPH, cycle 40 MPH	40	LCY		\$7.64	\$14.10	108.20%	\$940.91	RSMeans Building Construction Cost Data, 2011, 31 05 16, 31 23 23.20 Hauling
Compacting Bedding In Trench	35	ECY		\$3.05	\$0.34	108.20%	\$128.38	RSMeans, Building Construction Cost Data, 2011, 31 23 23.16 Fill By Borrow & Utility Bedding
Backfill, General Fill By Dozer, No Compaction	44	LCY		\$0.50	\$1.05	108.20%	\$73.79	RSMeans, Building Construction Cost Data, 2011, 31 23 23.17 General Fill
Light Pole, Aluminum, 20' high, 1 arm bracket	8	EA	\$1,250.00	\$1,075.00	\$0.00	108.20%	\$20,125.20	RSMeans, Building Construction Cost Data, 2011, 31 23 23.17 General Fill

\$49,813.97

	ı	Material	Installation	Fauinment	Location		
Quantity	Unit	Cost	Cost	Cost	Factor	Total Cost	Comments
							RSMeans Building Construction Cost Data, 2011, 31 13 13, Selective
3	acres		\$320.00	\$525.00	108.20%	\$2,742.87	Clearing
							RSMeans Building Construction Cost Data, 2011, 02 21 13 Site
3	acres	\$32.50	\$565.00	\$35.00	108.20%	\$2,053.10	Surveys
							RSMeans, Building Construction Cost Data, 2011, 01 54 36.50
10	EA		\$69.00	\$116.00	100.00%	\$1,850.00	Mobilization
							Aggregates for Earthwork, Select Structural Fill & Material Cost from
4444	LCY	\$20.00	\$1.75	\$3.44	108.20%	\$121,135.91	Quigg Bros., Aberdeen, WA
4444	LCY		\$7.64	\$14.10	108.20%	\$104,545.24	23.20 Hauling
4115	ECY		\$0.63	\$1.81	108.20%	\$10,864.53	RSMeans Building Construction Data, 2011, 31 23 23.13 Backfill
							RSMeans Building Construction Cost Data, 2011, 32 11 23 Aggregate
5926	SY	\$1.48	\$0.09	\$0.03	108.20%		Base Courses
	3 3 10 4444 4444 4115	3 acres 3 acres 10 EA 4444 LCY 4444 LCY 4415 ECY	3 acres \$32.50 10 EA 4444 LCY \$20.00 4444 LCY 4115 ECY	Quantity Unit Cost Cost 3 acres \$320.00 3 acres \$32.50 \$565.00 10 EA \$69.00 4444 LCY \$20.00 \$1.75 4444 LCY \$7.64 4115 ECY \$0.63	Quantity Unit Cost Cost Cost 3 acres \$320.00 \$525.00 3 acres \$32.50 \$565.00 \$35.00 10 EA \$69.00 \$116.00 4444 LCY \$20.00 \$1.75 \$3.44 4444 LCY \$7.64 \$14.10 4115 ECY \$0.63 \$1.81	Quantity Unit Cost Cost Cost Factor 3 acres \$320.00 \$525.00 108.20% 3 acres \$32.50 \$565.00 \$35.00 108.20% 10 EA \$69.00 \$116.00 100.00% 4444 LCY \$20.00 \$1.75 \$3.44 108.20% 4444 LCY \$7.64 \$14.10 108.20% 4115 ECY \$0.63 \$1.81 108.20%	Quantity Unit Cost Cost Factor Total Cost 3 acres \$320.00 \$525.00 108.20% \$2,742.87 3 acres \$32.50 \$565.00 \$35.00 108.20% \$2,053.10 10 EA \$69.00 \$116.00 100.00% \$1,850.00 4444 LCY \$20.00 \$1.75 \$3.44 108.20% \$121,135.91 4444 LCY \$7.64 \$14.10 108.20% \$104,545.24 4115 ECY \$0.63 \$1.81 108.20% \$10,864.53

\$253,450.61

			Material	Installation		Location		
Concrete	Quantity	Unit	Cost	Cost	Equipment	Factor	Total Cost	Comments
								RSMeans, Building Construction Cost Data, 2011, 01 54 36.50
Mobilization of Equipment	10	EA		\$116.00	\$185.00	100.00%	\$3,010.00	Mobilization
Tsunami Wave Inundation Concrete Wall	268	LF						Based on square root of the berm safe haven area times three walls

Excavation, 6' deep	1610	SF	\$0.00	\$5.30	\$0.00	108.20%	\$9,232.53	Excavation & Backfill, 6' deep, sand, gravel, or common earth. (Equipment Cost included in Installation)
Walls, Cast in place, 6' deep, pumped, 12" thick,	268	LF	\$46.25	\$81.00	\$0.00	99.30%	\$33,905.74	Place, 10' pumped, 12" thick (Equipment Cost included in Installation)
Subdrainage Piping, 4" diameter, PVC, perforated	268	LF	\$2.04	\$3.77	\$0.00	99.30%	\$1,548.07	RSMeans Assemblies Cost Data, 2011, A 2020 220, Subdrainage Piping (Equipment Cost included in Installation)
Stepped Concrete Wall 4' high								88', 86', 82', 72', 60' length walls, 12" thick, 5' high.
5' high wall, pumped, 8" thick	671	LF	\$33.75	\$77.00	\$0.00	99.30%	\$73,773.31	Place, 6' pumped, 8" thick. Material costs have been increased 25% for additional reinforcing required for seismic event and tsunami.
Subdrainage Piping, 4" diameter, PVC, perforated	671	LF	\$2.04	\$3.77	\$0.00	108.20%	\$4,217.06	RSMeans Assemblies Cost Data, 2011, A 2020 220, Subdrainage Piping (Equipment Cost included in Installation)
Sandblast Concrete Heavy Treatment	2683	SF	\$1.46	\$3.31	\$0.52	99.30%	\$14,095.20	RSMeans Building Construction Cost Data, 2011, 03 35 29.60
Concrete or Gravel Platform								
Asphaltic Concrete Paving, 6" stone bse, 2" binder course, 1" toping	8000	SF	\$1.85	\$0.20	\$0.24	108.20%	\$19,822.24	RSMeans Building Construction Cost Data, 2011, 32 12 16.14 Asphaltic Concrete Paving
Haul of Material, 40 MPH, cycle 40 MPH	160	CY		\$7.64	\$14.10	108.20%	\$3,763.63	RSMeans Building Construction Cost Data, 2011, 31 05 16, 31 23 23.20 Hauling

\$163,367.78

			Material	Installation	Equipment	Location		
Landscaping	Quantity	Unit	Costs	Costs	Costs	Factor	Total Cost	Comments
								RSMeans, Building Construction Cost Data, 2011, 01 54 36.50
Mobilization of Equipment	6	EA		\$116.00	\$185.00	100.00%	\$1,806.00	Mobilization
Berm Landscaping								
								RSMeans Building Construction Cost Data, 2011, 32 91 19.13 Top
Top Soil	444	LCY	\$33.00	\$24.00	\$0.00	108.20%	\$27,410.67	Dress by hand, 1 CY for 600 SF
Hydro-Seed	2667	SY	\$0.20	\$0.10	\$0.06	108.20%	\$1,038.72	Mechanical Seeding, 44lb/sy
Tiyuto-seed	2007	31	30.20	Ş0.10	\$0.00	108.20%	\$1,036.72	Mechanical Seeding, 4410/39
Top Soil at Stepped Concrete Walls	50	LCY	\$33.00	\$24.00	\$0.00	108.20%	\$3,064.61	
Fencing at Top of Berm, chain link, 2" post, 1 5/8"								RSMeans Assemblies Cost Data, 2011, G2040 105 Fence &
rail, 9 ga. Galv. Wire 5' high	268	LF	\$17.65	\$4.82	\$0.00	95.40%	\$5,751.98	Guardrails (Equipment Costs are included in Installation)
								RSMeans Building Construction Costs, 2011, 32 84 23.10, sprinkler
Irrigation System	24000	SF	\$0.32	\$0.46	\$0.00	108.20%	\$20,255.04	irrigation system

\$57,521.02

Map Number:	5		Minimum Structure Height (ft)	10
Structure Type:	Berm w/ RC Wall		Structure Capacity:	350
Location:	Ocean Shores, WA, Golf Cours	е	Safe Haven Square Footage:	3500
Overall Site Square Footage:	10500		Volume of Berm Materials (LCY)	1944
Scope				Cost
Site Utilities				\$55,725
Excavation-Backfill				\$121,445
Concrete Retaining Wall Surrounding Berm				\$83,120
Landscaping Concrete				\$51,050
Stairs/Ramps/Guardrails				\$7,764
Landscaping				\$52,711
Construction Totals				\$785,995
Design Fees (8%)				\$62,880
General Conditions (10%)				\$78,600
Contractor Fees, O&P (15%)				\$117,899
Construction Contingency (5%)				\$39,300
Estimate/Design Contingency (10%)	mate/Design Contingency (10%)			\$78,600
Project Total				\$1,163,273

			Cost per		Installation		Location	l .	
Site Utilities	Quantity	Unit	Unit	Material Cost		Equipment	Factor	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	8	EA			\$116.00	\$185.00	100.00%	\$2,408.00	54 36.50 Mobilization
Domestic Water, Ductile Iron Class 250, MJ, 6"									
diameter	100	LF							Assuming 100' distance from service at street
									RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator 4'-6' deep	85	BCY			\$2.16	\$2.13	108.80%	\$396.74	23 16.13, Excavating Trench
									RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 6" Ductile Iron Piping, MJ	100	LF		\$14.60	\$10.70	\$2.72	108.80%	\$3,048.58	11 Water Utility Distribution Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	11	LCY		\$20.00			108.80%	\$239.36	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	11	LCY			\$7.64	\$14.10	108.20%	\$258.75	16, 31 23 23.20 Hauling
									RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	10	ECY			\$3.05	\$0.34	108.80%	\$36.88	23 23.16 Fill By Borrow & Utility Bedding
									RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	94	LCY			\$0.50	\$1.05	108.80%	\$158.52	23 23.17 General Fill
Storm Service									Assuming 200' of storm piping needed
									RSMeans, Building Construction Cost Data, 201, 31 23
Excavate, 3/4 CY Excavator, 6'-10' deep	250	BCY			\$2.88	\$2.85	108.80%	\$1,558.56	16.13 Excavating Trench
									RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 8" Bituminous Coated	200	LF		\$10.70	\$5.25	\$0.97	108.80%	\$3,681.79	41 Storm Utility Drainage Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	25	LCY		\$20.00			108.80%	\$544.00	conversation on June 29th, 2011.
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	25	LCY			\$7.64	\$14.10	108.20%	\$588.07	16, 31 23 23.20 Hauling
									RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	23	ECY			\$3.05	\$0.34	108.80%	\$84.83	23 23.16 Fill By Borrow & Utility Bedding
									RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	284	LCY			\$0.50	\$1.05	108.80%	\$478.94	23 23.17 General Fill
Site Drainage/Area Drains/Catch Basins									Assume 4 area drains for structure

								RSMeans Assemblies Cost Data, 2011, G3030 210,
Concrete, Precast, 4' ID riser, 4' deep	4	EA	\$1,425.00	\$1,200.00	0.00%	108.80%	\$11 424 00	Manholes & Catch Basins (Equipment Cost included in Installation Cost)
Electrical	100	LF	71,423.00	\$1,200.00	0.0070	100.0070	711,424.00	Assuming 100' distance from service at street
Electrical Service, includes service installation,								RSMeans Assemblies Cost Data, 2011, D 5010 120,
breakers, metering, 20' conduit & wire, 3 phase, 4								Electric Service, 3 Phase - 4 Wire, equipment included
wire, 120/208 volts, 60 A	1	EA	\$960.00	\$920.00		100.50%	\$1,889.40	in installation cost
								RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator, 4'-6' deep	85	BCY		\$2.16	\$2.13	108.80%	\$396.74	23 16.13 Excavating Trench
								RSMeans, Building Construction Cost Data, 2011, 33
Install & Test PVC, type EB 4 @ 3" diameter	100	LF	\$2.00	\$8.05		108.80%	\$1,093.44	71 19 Electrical Underground Ducts and Manholes
								RSMeans, Building Construction Cost Data, 2011, 26
Wire, 600 volt, copper type THW, solid, #12	100	CLF	\$11.95	\$36.50	0	100.50%	\$4,869.23	05 19.90 Wire
Utility Bedding, For Pipe & Conduit, Not Incl.								Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	46	LCY	\$20.00			108.80%	\$1,000.96	conversation on June 29th, 2011
								RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	46	LCY		\$7.64	\$14.10	108.20%	\$1,082.04	16, 31 23 23.20 Hauling
								RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	43	ECY		\$3.05	\$0.34	108.80%	\$158.60	23 23.16 Fill By Borrow & Utility Bedding
								RSMeans, Building Construction Cost Data, 2011, 31
Light Pole, Aluminum, 20' high, 1 arm bracket	8	EA	\$1,250.00	\$1,075.00	\$0.00	108.80%	\$20,236.80	23 23.17 General Fill
								RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	54	LCY		\$0.50	\$1.05	108.80%	\$91.07	23 23.17 General Fill

\$55,725.29

			Cost per		Installation		Location		
Excavation-Backfill	Quantity	Unit	Unit	Material Cost	Cost	Equipment	Factor	Total Cost	Comments
									RSMeans Building Construction Cost Data, 2011, 01 54
Mobilization	8	EA	\$0.00	\$0.00	\$69.00	\$116.00	100.00%	\$1,480.00	36 - Equipment Mobilization
									Is clear and grub needed for structure in urban
									setting? RSMeans Building Construction Cost Data,
Clear and Grub Site	1	ACRE	\$0.00	\$0.00	\$1,750.00	\$1,300.00	108.20%	\$3,300.10	2011, 31 11 10.10 Clear and Grub Site
									RSMeans Building Construction Cost Data, 2011, 02 21
Survey Site	1	ACRE		\$32.50	\$565.00	\$35.00	108.20%	\$684.37	13 Site Surveys
Fill Material for Berm									
									RSMeans Building Construction Cost Data, 2011, 31 05
Fill Material, Select Structural Fill, 1 1/2" minus									16, Aggregates for Earthwork, Select Structural Fill &
aggregate	1944	LCY		\$20.00	\$1.75	\$3.44	108.20%	\$52,996.96	Material Cost from Quigg Bros., Aberdeen, WA
									RSMeans Building Construction Data, 2011, 31 23
Compacting Backfill, 6"to 12" lifts, vibrating roller	1800	ECY			\$0.63	\$1.81	108.20%	\$4,753.23	23.13 Backfill
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	1944	LCY			\$7.64	\$14.10	108.20%	\$45,738.54	16, 31 23 23.20 Hauling
Stabilization Fabric, Polypropylene, 6oz/SY, 18"									RSMeans Building Construction Cost Data, 2011, 32 11
lifts, 5082 SF per lift	2593	SY		\$1.48	\$0.09	\$0.03	108.20%	\$4,488.30	23 Aggregate Base Courses
Fill Material at Landscape Walls									
									RSMeans Building Construction Cost Data, 2011, 31 05
									16, Aggregates for Earthwork, Select Structural Fill &
Fill Material, Top Soil	114	CY		\$20.00	\$1.75	\$3.44	108.20%	\$3,095.93	Material Cost from Quigg Bros., Aberdeen, WA
Compacting Backfill, by hand, no compaction, light									RSMeans Building Construction Data, 2011, 31 23
soil	105	LCY			\$19.65	\$0.00	108.20%	\$2,236.15	23.13 Backfill
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	114	LCY			\$7.64	\$14.10	108.20%	\$2,671.91	16, 31 23 23.20 Hauling
			•						

\$121,445.49

				ı					
Concrete Retaining Wall			Cost per		Installation	Equipment	Location		
Surrounding Berm	Quantity	Unit	Unit	Material Cost		Cost	Factor	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	8	EA			\$116.00	\$185.00	100.00%	\$2,408.00	54 36.50 Mobilization
									Built in two sections. First section under grade, 6'
									high, second section built on top of that, 16' high.
Reinforced Concrete Wall									Length of wall 270'.
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	1	EA			\$116.00	\$185.00	95.40%	\$287.15	54 36.50 Mobilization
									RSMeans Assemblies Cost Data, 2011, A 2010 110
Excavation 6 deep', common earth, 4000 SF	1065	SF		\$5.30	\$0.00	\$0.00	108.20%	\$6,106.74	Building Excavation & Backfill
									RSMeans Assemblies Cost Data, 2011, A 2020 110,
									Walls, Cast-in-Place, add 25% to material cost to
Concrete Wall, below grade section, 6' high, 16"									include for additional reinforcing (Equipment included
thick, pumped concrete	177	LF		\$58.75	\$84.50	\$0.00	99.30%	\$25,246.38	in installation cost)
									RSMeans Assemblies Cost Data, 2011, A 2020 110,
									Walls, Cast-in-Place, add 25% to material cost to
Concrete Wall, above grade section, 10' high, 16"									include for additional reinforcing (Equipment included
thick, pumped concrete	177	LF		\$96.88	\$141.00	\$0.00	99.30%	\$41,923.98	in installation cost)
									RSMeans Assemblies Cost Data, 2011, A 2020 220,
									Subdrainage Piping (Equipment included in
Drainage piping, 6" diameter, PVC, perforated,	177	LF		\$4.05	\$4.04		108.20%	\$1,553.57	installation cost)
Aesthetic Treatments for Exposed Concrete									
									RSMeans Building Construction Cost Data, 2011, 03 35
Sandblast Concrete Heavy Treatment	1065	SF		\$1.46	\$3.31	\$0.52	99.30%	\$5,593.86	29.60
								CO2 110 CO	

\$83,119.68

	Ī	ı	Cost per	1	Installation	ı ı	Location	ı	
Landscaping Concrete	Quantity	Unit	Unit	Material Cost		Equipment		Total Cost	Comments
Stepped Concrete Wall 4' high									Length of walls 330' and 320'
									RSMeans Assemblies Cost Data, 2011, A 2020 110,
4' high walls, cast-in-place, 8" thick, pumped									Walls, Cast-in-Place (Equipment included in
concrete	177	LF		\$18.10	\$51.50	\$0.00	99.30%	\$12,266.31	installation cost)
									RSMeans Assemblies Cost Data, 2011, A 2020 220,
									Subdrainage Piping (Equipment Cost included in
Subdrainage Piping, 4" diameter, PVC, perforated	177	LF		\$2.04	\$3.77	\$0.00	108.20%	\$1,115.73	Installation Cost)
Aesthetic Treatments for Exposed Concrete									
									RSMeans Building Construction Cost Data, 2011, 03 35
Sandblast Concrete Heavy Treatment	710	SF		\$1.46	\$3.31	\$0.52	99.30%	\$3,729.24	29.60
Concrete or Gravel Platform									
Asphaltic Concrete Paving, 6" stone bse, 2" binder									RSMeans Building Construction Cost Data, 2011, 32 12
course, 1" toping	3500	SF		\$1.85	\$0.20	\$0.24	108.20%	\$8,672.23	16.14 Asphaltic Concrete Paving
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	105	CY			\$7.64	\$14.10	108.20%	\$2,469.88	16, 31 23 23.20 Hauling
Landscaping Stairs Up Berm									
									RSMeans Building Construction Cost Data 2011, 03 30
Stairs 10' wide, cast on ground, 24 steps	240	LF Nose		\$4.28	\$16.30	\$0.18	95.40%	\$4,712.00	53.40, Concrete in Place
									RSMeans Building Construction Cost Data 2011, 03 30
Stair Landing, cast on ground	200	SF		\$3.29	\$4.29	\$0.05	95.40%	\$1,446.26	53.40, Concrete in Place
									RSMeans Building Construction Cost Data 2011, 05 52
									13.50 Railings, Pipe (add 30% to price for stair
Stair Handrail, 1 1/4" diameter, galvanized	60	LF		\$57.20	\$14.89	\$1.04	95.40%	\$4,126.15	handrail)

Sidewalks									
									Unit SF price only, per RSMeans Square Foot Costs, Residential Modifications/Adjustments/Alternatives,
Flatwork in front of ground floor of tower, 6" thick	2500	CE	¢2.60	60.00		ć0.00	00.200/	¢12 F11 00	Sidewalks, 3000 PSI with mesh (Material, Installation
with wire mesh	3500	SF	\$3.60	\$0.00		\$0.00	99.30%		and Equipment Cost included in Cost per Unit)
								\$51,049.59	
			Cook man	<u> </u>	Installation	[t	Landina	 	
Stairs/Ramps/Guardrails	Quantity	Unit	Cost per Unit	Material Cost	Costs	Equipment Cost	Location Factor	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	2	EA			\$116.00	\$185.00	100.00%	\$602.00	54 36.50 Mobilization
Platform Perimeters Railing (Top wall at Berm)									
Hand Rail/Guard Rail, Galvanized, 2 rail, 1 1/2"									Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building
diameter	177	LF		\$32.50	\$9.80		95.40%	\$7,162.16	Construction Cost Date 2011, 05 52 Metal Railings
								\$7,764.16	
			Cost per		Installation	Equipment	Location		
Landscaping	Quantity	Unit	Unit	Material Cost	Costs	Costs	Factor	Total Cost	Comments
Treated Wood Trellis Walkway 60' x 12'									
Cedar Wood, 2" thick, 40 PSF load at Maximum	720	C.F.		ĆE CE	¢2.02	¢0.00	07.200/	¢c 072 00	RSMeans Assemblies Cost Data, 2011, B1010 266 Wood Deck (Equipment Cost included in Installation
Span	720	SF		\$5.65	\$3.02	\$0.00	97.30%	\$6,073.86	Cost)
									RSMeans Assemblies Cost Data, 2011, B1010 264 Wood Beam & Joist (Equipment Cost included in
Post & Beams	720	SF		\$9.10	\$4.17	\$0.00	97.30%	\$9,296.43	Installation Cost)
Berm/Site Landscaping									
Top Soil	330	LCY		\$33.00	\$24.00	\$0.00	108.20%	\$20,352.42	RSMeans Building Construction Cost Data, 2011, 32 91 19.13 Top Dress by hand, 1 CY for 600 SF

\$7.64

\$0.14

\$0.46

\$0.20

\$0.32

\$14.10

\$0.09

\$0.00

108.20%

108.80%

108.20%

Irrigation System

Haul of Material, 40 MPH, cycle 40 MPH

Mechanical Seeding, 44 lb/MAY

330

778

10500

LCY

SY

SF

\$8,861.58 \$52,710.65

\$363.88

\$7,762.48 16, 31 23 23.20 Hauling

19.13 Mechanical Seeding

23.10, sprinkler irrigation system

RSMeans Building Construction Cost Data, 2011, 31 05

RSMeans Building Construction Cost Data, 2011, 32 92

RSMeans Building Construction Costs, 2011, 32 84

Map Number:	6	Minimum Structure Height:	10
Structure Type:	Tower	Structure Capacity:	350
Location:	Ocean Shores, WA, Airport	Safe Haven Square Footage:	3500
Levels	1	Columns Required:	9
		Piles per Column:	3
Scope			Cost
Site Utilities			\$15,257
Excavation-Backfill			\$35,361
Foundation			\$180,991
Structure			\$181,341
Roofing			\$76,399
Stairs/Ramps/Guardrails			\$49,588
Fire Protection			\$26,338
Total			\$565,275
Design Fees (8%)			\$45,222
General Conditions (10%)			\$56,528
Contractor Fees, O&P (15%)			\$84,791
Construction Contingency (5%)			\$28,264
Estimate/Design Contingency (10%)			\$56,528
Project Total			\$836,607

			Cost per		Installation	Equipment	Location		
Site Utilities	Quantity	Unit	Unit	Material Cost	Cost	Cost	Factor	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	10	EA			\$116.00	\$185.00	100.00%	\$3,010.00	54 36.50 Mobilization
Fire Water, Ductile Iron Class 250, MJ, 4" diameter	50	LF		\$16.05					Assuming 50' distance from service at street
									RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator 4'-6' deep	35	BCY			\$2.16	\$2.13	108.20%	\$162.46	23 16.13, Excavating Trench
									RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 4" Ductile Iron Piping, MJ	50	LF		\$12.50	\$8.55	\$2.17	108.20%	\$1,256.20	11 Water Utility Distribution Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	6	LCY		\$20.00			108.20%	\$129.84	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	6	LCY			\$7.64	\$14.10	108.20%	\$141.14	16, 31 23 23.20 Hauling
									RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	5	ECY			\$3.05	\$0.34	108.20%	\$18.34	23 23.16 Fill By Borrow & Utility Bedding
									RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	38	LCY			\$0.50	\$1.05	108.20%	\$63.73	23 23.17 General Fill
Storm Service									Assuming 50' distance from service at street
									RSMeans, Building Construction Cost Data, 201, 31 23
Excavate, 3/4 CY Excavator, 6'-10' deep	60	BCY			\$2.88	\$2.85	108.20%	\$371.99	16.13 Excavating Trench
									RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 8" Bituminous Coated	50	LF		\$10.70	\$5.25	\$0.97	108.20%	\$915.37	41 Storm Utility Drainage Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	6	LCY		\$20.00			108.20%	\$129.84	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	6	LCY			\$7.64	\$14.10	108.20%	\$141.14	16, 31 23 23.20 Hauling
									RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	5	ECY			\$3.05	\$0.34	108.20%	\$18.34	23 23.16 Fill By Borrow & Utility Bedding

								RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	38	LCY		\$0.50	\$1.05	108.20%	\$63.73	23 23.17 General Fill
Site Drainage/Area Drains/Catch Basins								Assume 1 area drain for structure
								RSMeans Assemblies Cost Data, 2011, G3030 210,
Concrete, Precast, 4' ID riser, 4' deep	1	EA	\$1,425.00	\$1,200.00	0.00%	108.20%	\$2,840.25	Manholes & Catch Basins
Electrical	50	LF						Assuming 50' distance from service at street
Electrical Service, includes service installation,								RSMeans Assemblies Cost Data, 2011, D 5010 120,
breakers, metering, 20' conduit & wire, 3 phase, 4								Electric Service, 3 Phase - 4 Wire, equipment included
wire, 120/208 volts, 60 A	1	EA	\$960.00	\$920.00		100.50%	\$1,889.40	in installation cost
	·							RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator, 4'-6' deep	35	BCY		\$2.16	\$2.13	108.20%	\$162.46	23 16.13 Excavating Trench
	·							RSMeans, Building Construction Cost Data, 2011, 33
Install & Test PVC, type EB 4 @ 3" diameter	50	LF	\$2.00	\$8.05		108.20%	\$543.71	71 19 Electrical Underground Ducts and Manholes
	·							RSMeans, Building Construction Cost Data, 2011, 26
Wire, 600 volt, copper type THW, solid, #12	50	CLF	\$11.95	\$36.50	0	100.50%	\$2,434.61	05 19.90 Wire
Utility Bedding, For Pipe & Conduit, Not Incl.								Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	19	LCY	\$20.00			108.20%	\$411.16	conversation on June 29th, 2011
	·							RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	19	LCY		\$7.64	\$14.10	108.20%	\$446.93	16, 31 23 23.20 Hauling
	·							RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	19	ECY		\$3.05	\$0.34	108.20%	\$69.69	23 23.16 Fill By Borrow & Utility Bedding
	·							RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	22	LCY		\$0.50	\$1.05	108.20%	\$36.90	23 23.17 General Fill

\$15,257.23

			Cost per		Installation	Equipment	Location		
Excavation-Backfill	Quantity	Unit	Unit	Material Cost	Cost	Cost	Factor	Total Cost	Comments
									RSMeans Building Construction Cost Data, 2011, 01 54
Mobilization	8	EA	\$0.00	\$0.00	\$69.00	\$116.00	100.00%	\$1,480.00	36 - Equipment Mobilization
									Is clear and grub needed for structure in urban
									setting? RSMeans Building Construction Cost Data,
Clear and Grub Site	0.10	ACRE	\$0.00	\$0.00	\$1,750.00	\$1,300.00	108.20%	\$331.45	2011, 31 11 10.10 Clear and Grub Site
									Grade Beams, 3' wide, 3' deep RSMeans Building
									Construction Cost Data, 2011, 31 23 16.16 3/4 CY
									bucket, (Price Included in grade beam foundation
Excavation for Grade Beams	118	BCY	\$0.00	\$0.00	\$0.00	\$0.00	108.20%	\$0.00	price)
									1225 SF mat, 2' deep. RSMeans Building Construction
Excavation for slab, subgrade and capillary break	259	BCY	\$0.00	\$0.00	\$7.20	\$7.17	108.20%	\$4,031.05	Cost Data, 2011, 31 23 16.16 3/4 CY bucket
Removal of Foundation Spoils, Haul of Material, 40									RSMeans Building Construction Cost Data, 2011, 31 05
MPH, cycle 40 MPH	472	LCY			\$7.64	\$14.10	108.20%	\$11,102.14	16, 31 23 23.20 Hauling
									Quote per Quigg Bros, Aberdeen, WA, phone
Backfill Slab, subgrade, capillary break	408	ECY		\$20.00			108.20%	\$8,824.52	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	408	ECY			\$7.64	\$14.10	108.20%	\$9,592.25	16, 31 23 23.20 Hauling
·					•		•	\$35,361.41	

			Cost per		Installation	Equipment	Location		
Foundation	Quantity	Unit	Unit	Material Cost	Cost	Cost	Factor	Total Cost	Comments
									Piling needs to 2x the height of the structure which is
Piling									23-35'?
									Per phone conversation with Quigg Bros, Aberdeen,
Mobilization for piling	1	EA	\$12,000.00	\$0.00	\$0.00	\$0.00	100.00%	\$12,000.00	WA on June 29th, 2011

Pile Caps, Cap Size 6'-6" x 3'-6" x 37" Foundation Cast-In-Place/Tower Grade Beams 30' span, 28" deep, 14" wide, 2 KLF load 3 Foundation Cast-In-Place/ Footings for Ramp Spread Footings, load 75K, soil capacity 6 KSF, 4'-0" sq x 12" deep Structure Mobilization of Equipment Concrete Structure Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural	9 355 12 uantity	EA LF EA Unit	\$0.00 \$0.00 \$0.00 Cost per Unit	\$3,500.00 \$370.00 \$34.50 \$94.50	\$1,200.00 \$540.00 \$53.00 \$167.00 Installation Cost	\$0.00 \$0.00 \$0.00	99.30% 99.30% 99.30% Location Factor	\$8,132.67 \$30,842.00 \$3,116.03 \$180,990.71	RSMeans Assemblies Cost Data 2011, A1010 250 Pile Caps (Equipment Costs are included in Installation Cost) RSMeans Assemblies Cost Data 2011, A 1020 210 Grade Beams (Equipment Cost is included in Installation Cost) Piling needs to 2x the height of the structure which is 23-35'? RSMeans Assemblies Cost Data, 2011, A1010 210, Spread Footings (Equipment Cost is included in Installation Cost) Comments
Foundation Cast-In-Place/Tower Grade Beams 30' span, 28" deep, 14" wide, 2 KLF load 3 Foundation Cast-In-Place/ Footings for Ramp Spread Footings, load 75K, soil capacity 6 KSF, 4'-0" sq x 12" deep Structure Mobilization of Equipment Concrete Structure Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural	355 12 uantity	LF EA	\$0.00 Cost per	\$34.50 \$94.50	\$53.00 \$167.00 Installation Cost	Equipment	99.30% 99.30% Location	\$8,132.67 \$30,842.00 \$3,116.03 \$180,990.71	Caps (Equipment Costs are included in Installation Cost) RSMeans Assemblies Cost Data 2011, A 1020 210 Grade Beams (Equipment Cost is included in Installation Cost) Piling needs to 2x the height of the structure which is 23-35'? RSMeans Assemblies Cost Data, 2011, A1010 210, Spread Footings (Equipment Cost is included in Installation Cost) Comments
Foundation Cast-In-Place/Tower Grade Beams 30' span, 28" deep, 14" wide, 2 KLF load 3 Foundation Cast-In-Place/ Footings for Ramp Spread Footings, load 75K, soil capacity 6 KSF, 4'-0" sq x 12" deep Structure Mobilization of Equipment Concrete Structure Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural	355 12 uantity	LF EA	\$0.00 Cost per	\$34.50 \$94.50	\$53.00 \$167.00 Installation Cost	Equipment	99.30% 99.30% Location	\$8,132.67 \$30,842.00 \$3,116.03 \$180,990.71	RSMeans Assemblies Cost Data 2011, A 1020 210 Grade Beams (Equipment Cost is included in Installation Cost) Piling needs to 2x the height of the structure which is 23-35'? RSMeans Assemblies Cost Data, 2011, A1010 210, Spread Footings (Equipment Cost is included in Installation Cost) Comments
Foundation Cast-In-Place/Tower Grade Beams 30' span, 28" deep, 14" wide, 2 KLF load 3 Foundation Cast-In-Place/ Footings for Ramp Spread Footings, load 75K, soil capacity 6 KSF, 4'-0" sq x 12" deep Structure Mobilization of Equipment Concrete Structure Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural	355 12 uantity	LF EA	\$0.00 Cost per	\$34.50 \$94.50	\$53.00 \$167.00 Installation Cost	Equipment	99.30% 99.30% Location	\$30,842.00 \$3,116.03 \$180,990.71	RSMeans Assemblies Cost Data 2011, A 1020 210 Grade Beams (Equipment Cost is included in Installation Cost) Piling needs to 2x the height of the structure which is 23-35'? RSMeans Assemblies Cost Data, 2011, A1010 210, Spread Footings (Equipment Cost is included in Installation Cost) Comments
Grade Beams 30' span, 28" deep, 14" wide, 2 KLF load Foundation Cast-In-Place/ Footings for Ramp Spread Footings, load 75K, soil capacity 6 KSF, 4'-0" sq x 12" deep Structure Mobilization of Equipment Concrete Structure Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural	12 uantity	EA Unit	Cost per	\$94.50	\$167.00 Installation Cost	Equipment	99.30% Location	\$30,842.00 \$3,116.03 \$180,990.71	Grade Beams (Equipment Cost is included in Installation Cost) Piling needs to 2x the height of the structure which is 23-35'? RSMeans Assemblies Cost Data, 2011, A1010 210, Spread Footings (Equipment Cost is included in Installation Cost)
Foundation Cast-In-Place/ Footings for Ramp Spread Footings, load 75K, soil capacity 6 KSF, 4'-0" sq x 12" deep Structure Mobilization of Equipment Concrete Structure Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural	12 uantity	EA Unit	Cost per	\$94.50	\$167.00 Installation Cost	Equipment	99.30% Location	\$30,842.00 \$3,116.03 \$180,990.71	Grade Beams (Equipment Cost is included in Installation Cost) Piling needs to 2x the height of the structure which is 23-35'? RSMeans Assemblies Cost Data, 2011, A1010 210, Spread Footings (Equipment Cost is included in Installation Cost)
Foundation Cast-In-Place/ Footings for Ramp Spread Footings, load 75K, soil capacity 6 KSF, 4'-0" sq x 12" deep Structure Mobilization of Equipment Concrete Structure Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural	12 uantity	EA Unit	Cost per	\$94.50	\$167.00 Installation Cost	Equipment	99.30% Location	\$30,842.00 \$3,116.03 \$180,990.71	Installation Cost) Piling needs to 2x the height of the structure which is 23-35'? RSMeans Assemblies Cost Data, 2011, A1010 210, Spread Footings (Equipment Cost is included in Installation Cost) Comments
Spread Footings, load 75K, soil capacity 6 KSF, 4'-0" sq x 12" deep Structure Mobilization of Equipment Concrete Structure Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural	uantity	Unit	Cost per		Installation Cost	Equipment	Location	\$3,116.03 \$180,990.71 Total Cost	23-35'? RSMeans Assemblies Cost Data, 2011, A1010 210, Spread Footings (Equipment Cost is included in Installation Cost) Comments
Spread Footings, load 75K, soil capacity 6 KSF, 4'-0" sq x 12" deep Structure Mobilization of Equipment Concrete Structure Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural	uantity	Unit	Cost per		Installation Cost	Equipment	Location	\$3,116.03 \$180,990.71 Total Cost	RSMeans Assemblies Cost Data, 2011, A1010 210, Spread Footings (Equipment Cost is included in Installation Cost) Comments
Structure Mobilization of Equipment Concrete Structure Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural	uantity	Unit	Cost per		Installation Cost	Equipment	Location	\$3,116.03 \$180,990.71 Total Cost	Spread Footings (Equipment Cost is included in Installation Cost) Comments
Structure Mobilization of Equipment Concrete Structure Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural	uantity	Unit	Cost per		Installation Cost	Equipment	Location	\$3,116.03 \$180,990.71 Total Cost	Installation Cost) Comments
Structure Mobilization of Equipment Concrete Structure Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural	uantity	Unit	Cost per		Installation Cost	Equipment	Location	\$180,990.71 Total Cost	Comments
Mobilization of Equipment Concrete Structure Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural			-	Material Cost	Cost	1		Total Cost	
Mobilization of Equipment Concrete Structure Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural			-	Material Cost	Cost	1			
Mobilization of Equipment Concrete Structure Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural			-	Material Cost	Cost	1			
Mobilization of Equipment Concrete Structure Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural			Unit	Material Cost		Costs	Factor		
Concrete Structure Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural	10	EA			¢116.00				
Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural					\$116.00	\$185.00	100.00%	\$3,010.00	RSMeans, Building Construction Cost Data, 2011, 01 54 36.50 Mobilization
Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural									Beam and Column sizes are not determined and
Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural									estimate takes in "best guess" to assume sizes for this
round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural									project.
round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural									RSMeans Assemblies Cost Data, 2011, B1010 201, CIP Column, Round Tied (Equipment Cost included in
Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor 3: Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) 3: Wood Structure Wood Columns 12"x12", 10' High, Select Structural	90	VLF		\$158.00	\$7.85	\$0.00	99.30%		Installation Cost)
Ground Floor 3: Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) 3: Wood Structure Wood Columns 12"x12", 10' High, Select Structural	30	VLI		\$138.00	\$7.65	Ş0.00	33.3070		RSMeans Assemblies Cost Data, 2011, A1030 120,
Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural	3500	SF		\$3.01	\$2.97		99.30%		Slab on Grade, Plain & Reinforced
PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural				,					RSMeans Assemblies Cost Data, 2011, B1010 229
PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural									Precast Plank with No Topping (Equipment Cost
Wood Columns 12"x12", 10' High, Select Structural	3500	SF		\$8.95	\$13.60		99.30%		included in Installation Cost)
Wood Columns 12"x12", 10' High, Select Structural									Wood structure, hip roof to support galvanized steel
									panels
									Supply quote from Levee Lumber, Hoquiam, WA,
									RSMeans Assemblies Cost Data, 2011, B1020 102,
				40.0=	40.00		07.000/		Roof Construction, Wood/Flat or Pitched (Equipment
Perimeter Joists, 3 1/8"x12", GLM 30' span 2	90	VLF		\$9.85	\$2.62		97.30%	<u> </u>	Cost included in Installation Cost)
Perimeter Joists, 3 1/8"x12", GLM 30' span 2									Supply quote from Levee Lumber, Hoquiam, WA, RSMeans Building Construction Cost Data 2011, Glue
remitter 30.5t3, 5 1/0 ALZ , GLIVI 50 3pair	237	LF		\$4.85	\$1.95	\$22.00	97.30%		Laminated Beams 06 18 13.20
•			1	رن.+ر	Ų1.JJ	722.00	37.30/0	70,031.31	RSMeans Assemblies Cost Data, 2011, B1020 102,
j									Roof Construction, Wood/Flat or Pitched (Equipment
2x10 Wood Joist w/ 1/2" CDX, 12" OC 3!	3500	SF		\$2.02	\$2.05		97.30%		Cost included in Installation Cost)
3.				,	,				RSMeans Assemblies Cost Data, 2011, B1020 102,
Roof, wood/pitched, 3"x12" 12" OC w/ sheating									Roof Construction, Wood/Flat or Pitched (Equipment
plywood on roof, 5/16" CDX		SF	<u> </u>	\$4.59	\$2.62		97.30%		Cost included in Installation Cost)
Weather Proofing/Coatings add 15% (Premium for	4900								Assumed that PTS wood is 15% more compared on
PTS Wood) \$55,9	4900	%	15.00%						price difference shown in means
								\$181,340.66	
	4900								
Roofing Qua	4900		_			1	ocation Facto	Total Cost	Comments

								RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	4	EA		\$116.00	\$185.00	100.00%	\$1,204.00	54 36.50 Mobilization
								Hip and ridge style roof, peak of roof 15'. (Equipment
Roofing/Hip and Ridge Roof Steel Panels								Cost is included in Installation Cost)
								RSMeans Assemblies Cost Data, 2011, B3010 135,
Flat Roof Steel Panels, Flat Seam, Copper, 1/4" min.								Formed Metal (Equipment Cost is included in
slope, 20 oz, 1.2 PSF	4900	SF	\$9.50	\$5.80		100.30%	\$75,194.91	Installation Cost)
							\$76,398.91	

Stairs/Ramps/Guardrails Cost per Unit Material Costnstallation Cosuipment Colocation Facto Total Cost Quantity Unit Comments RSMeans, Building Construction Cost Data, 2011, 01 Mobilization of Equipment 6 EΑ \$116.00 \$185.00 100.00% \$1,806.00 54 36.50 Mobilization Beam and Column sizes are not determined and estimate takes in "best guess" to assume sizes for this Exterior Ramp, Rises 20', 5' wide RSMeans Assemblies Cost Data, 2011, B1010, 208 Steel Columns, 20' high, Wide Flanged, 6", 12 Steel Columns (Equipment Cost is included in VLF \$26.50 \$7.85 \$0.00 95.40% \$3,932.39 locations 120 Installation Cost) W Shape Beams and Girders, bay size 15X20,, Total RSMeans Building Construction Cost Data, 2011, Load 263 PSF. 800 SF \$11.70 \$3.82 \$1.50 95.40% \$12,989.66 | Structural Steel Framing, 05 12 23.17 RSMeans Assemblies Cost Data, 2011, B1010 258, Floor Construction, Metal Deck/Concrete Fill, Deck Metal Deck/Concrete Fill (Equipment Cost is included Span 6 ft, 150 PSF Superimposed Load 800 SF \$2.38 \$2.38 95.40% \$3,632.83 in Installation Cost) RSMeans Building Construction Cost Data, 2011, 05 05 Weather Proofing/Coatings (Galvanized) 7.5 Tons \$400.00 \$0.00 0 0 95.40% \$2,862.00 13.50, Paints and Protective Coatings Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building 270 LF \$32.50 \$9.80 95.40% \$10,895.63 Construction Cost Date 2011, 05 52 Metal Railings Hand Rail/Guard Rail Ladders/Stairs Steel ladder to attic space 20" wide bolted to RSMeans Building Construction Cost Data 2011, 05 51 concrete without cage 10 VLF \$65.00 \$31.50 \$2.18 95.40% \$920.61 33 - Vertical Metal Ladders RSMeans Building Construction Cost Data 2011, 11 33 Accordion Ladder for Escape after Tsunami, Disappearing Stairs, Heavy duty, 16'-0" ceiling 2 \$1,400.00 \$172.00 95.40% \$2,999.38 10.10, Disappearing Stairway ea Platform Perimeters Railing (120 LF for each platform, 2 locations) Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building Construction Cost Date 2011, 05 52 Metal Railings Hand Rail/Guard Rail LF \$9,549.55 237 \$32.50 \$9.80 95.40%

\$49,588.05

			Cost per		Installation	Equipment	Location		
Fire Protection	Quantity	Unit	Unit	Material Cost	Costs	Cost	Factor	Total Cost	Comments
Fire Protection, Wet Pipe System									
									RSMeans Building Construction Cost Data, 2011, 01 54
Mobilization	4	EA		\$69.00	\$116.00		100.00%	\$740.00	36 - Equipment Mobilization
									RSMeans Square Foot Costs, 2011, D4010 410, Wet
									Pipe Sprinkler Systems (Equipment Cost included in
First Floor, 2000 SF, Light Hazard	3500	SF		\$4.50	\$3.04		97.00%	\$25,598.30	Installation Cost)

\$26,338.30

Map Number:		7				Minimum	Structure F	leight (ft)	10	
Structure Type:		Berm w/	RC Wall			Structure	Capacity:		350	
Location:		Ocean SI	ean Shores, WA, Ocean Shor			Safe Have	n Square Fo	otage:	3500	
		1	nentary Civic Complex				· ·	-		
Overall Site Square Footage:		10500				Volume o	f Berm Mat	erials (LCY	1944	
Scope		l .						•		Cost
Site Utilities										\$55,725
Excavation-Backfill									\$	\$121,445
Concrete Retaining Wall Surrounding Berm										\$83,120
Landscaping Concrete										\$51,050
Stairs/Ramps/Guardrails										\$7,764
Landscaping										\$52,711
Construction Totals									\$78	85,995
Design Fees (8%)										\$62,880
General Conditions (10%)										\$78,600
Contractor Fees, O&P (15%)									\$	\$117,899
Construction Contingency (5%)										\$39,300
Estimate/Design Contingency (10%)										\$78,600
Project Total									\$1,1	63,273
Site Utilities	Quantity	Unit	Cost per Unit	Material Cost	Installation Cost	Equipment	Location Factor	Total Cost	Comments	

			Cost per		Installation		Location		
Site Utilities	Quantity	Unit	Unit	Material Cost		Equipment	Factor	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	8	EA			\$116.00	\$185.00	100.00%	\$2,408.00	54 36.50 Mobilization
Domestic Water, Ductile Iron Class 250, MJ, 6"									
diameter	100	LF							Assuming 100' distance from service at street
									RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator 4'-6' deep	85	BCY			\$2.16	\$2.13	108.80%	\$396.74	23 16.13, Excavating Trench
									RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 6" Ductile Iron Piping, MJ	100	LF		\$14.60	\$10.70	\$2.72	108.80%	\$3,048.58	11 Water Utility Distribution Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	11	LCY		\$20.00			108.80%	\$239.36	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	11	LCY			\$7.64	\$14.10	108.20%	\$258.75	16, 31 23 23.20 Hauling
									RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	10	ECY			\$3.05	\$0.34	108.80%	\$36.88	23 23.16 Fill By Borrow & Utility Bedding
									RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	94	LCY			\$0.50	\$1.05	108.80%	\$158.52	23 23.17 General Fill
Storm Service									Assuming 200' of storm piping needed
									RSMeans, Building Construction Cost Data, 201, 31 23
Excavate, 3/4 CY Excavator, 6'-10' deep	250	BCY			\$2.88	\$2.85	108.80%	\$1,558.56	16.13 Excavating Trench
									RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 8" Bituminous Coated	200	LF		\$10.70	\$5.25	\$0.97	108.80%	\$3,681.79	41 Storm Utility Drainage Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	25	LCY		\$20.00			108.80%	\$544.00	conversation on June 29th, 2011.
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	25	LCY			\$7.64	\$14.10	108.20%	\$588.07	16, 31 23 23.20 Hauling
									RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	23	ECY			\$3.05	\$0.34	108.80%	\$84.83	23 23.16 Fill By Borrow & Utility Bedding
									RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	284	LCY			\$0.50	\$1.05	108.80%	\$478.94	23 23.17 General Fill

Site Drainage/Area Drains/Catch Basins								Assume 4 area drains for structure
								RSMeans Assemblies Cost Data, 2011, G3030 210,
								Manholes & Catch Basins (Equipment Cost included in
Concrete, Precast, 4' ID riser, 4' deep	4	EA	\$1,425.00	\$1,200.00	0.00%	108.80%	\$11,424.00	Installation Cost)
Electrical	100	LF						Assuming 100' distance from service at street
Electrical Service, includes service installation,								RSMeans Assemblies Cost Data, 2011, D 5010 120,
breakers, metering, 20' conduit & wire, 3 phase, 4								Electric Service, 3 Phase - 4 Wire, equipment included
wire, 120/208 volts, 60 A	1	EA	\$960.00	\$920.00		100.50%	\$1,889.40	in installation cost
								RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator, 4'-6' deep	85	BCY		\$2.16	\$2.13	108.80%	\$396.74	23 16.13 Excavating Trench
								RSMeans, Building Construction Cost Data, 2011, 33
Install & Test PVC, type EB 4 @ 3" diameter	100	LF	\$2.00	\$8.05		108.80%	\$1,093.44	71 19 Electrical Underground Ducts and Manholes
								RSMeans, Building Construction Cost Data, 2011, 26
Wire, 600 volt, copper type THW, solid, #12	100	CLF	\$11.95	\$36.50	0	100.50%	\$4,869.23	05 19.90 Wire
Utility Bedding, For Pipe & Conduit, Not Incl.								Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	46	LCY	\$20.00			108.80%	\$1,000.96	conversation on June 29th, 2011
								RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	46	LCY		\$7.64	\$14.10	108.20%	\$1,082.04	16, 31 23 23.20 Hauling
								RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	43	ECY		\$3.05	\$0.34	108.80%	\$158.60	23 23.16 Fill By Borrow & Utility Bedding
								RSMeans, Building Construction Cost Data, 2011, 31
Light Pole, Aluminum, 20' high, 1 arm bracket	8	EA	\$1,250.00	\$1,075.00	\$0.00	108.80%	\$20,236.80	23 23.17 General Fill
								RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	54	LCY		\$0.50	\$1.05	108.80%	\$91.07	23 23.17 General Fill

\$55,725.29

			Cost per		Installation		Location		
Excavation-Backfill	Quantity	Unit	Unit	Material Cost		Equipment	Factor	Total Cost	Comments
									RSMeans Building Construction Cost Data, 2011, 01 54
Mobilization	8	EA	\$0.00	\$0.00	\$69.00	\$116.00	100.00%	\$1,480.00	36 - Equipment Mobilization
									Is clear and grub needed for structure in urban
									setting? RSMeans Building Construction Cost Data,
Clear and Grub Site	1	ACRE	\$0.00	\$0.00	\$1,750.00	\$1,300.00	108.20%	\$3,300.10	2011, 31 11 10.10 Clear and Grub Site
									RSMeans Building Construction Cost Data, 2011, 02 21
Survey Site	1	ACRE		\$32.50	\$565.00	\$35.00	108.20%	\$684.37	13 Site Surveys
Fill Material for Berm									
									RSMeans Building Construction Cost Data, 2011, 31 05
Fill Material, Select Structural Fill, 1 1/2" minus									16, Aggregates for Earthwork, Select Structural Fill &
aggregate	1944	LCY		\$20.00	\$1.75	\$3.44	108.20%	\$52,996.96	Material Cost from Quigg Bros., Aberdeen, WA
									RSMeans Building Construction Data, 2011, 31 23
Compacting Backfill, 6"to 12" lifts, vibrating roller	1800	ECY			\$0.63	\$1.81	108.20%	\$4,753.23	23.13 Backfill
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	1944	LCY			\$7.64	\$14.10	108.20%	\$45,738.54	16, 31 23 23.20 Hauling
Stabilization Fabric, Polypropylene, 6oz/SY, 18"									RSMeans Building Construction Cost Data, 2011, 32 11
lifts, 5082 SF per lift	2593	SY		\$1.48	\$0.09	\$0.03	108.20%	\$4,488.30	23 Aggregate Base Courses
Fill Material at Landscape Walls									
									RSMeans Building Construction Cost Data, 2011, 31 05
									16, Aggregates for Earthwork, Select Structural Fill &
Fill Material, Top Soil	114	CY		\$20.00	\$1.75	\$3.44	108.20%	\$3,095.93	Material Cost from Quigg Bros., Aberdeen, WA
Compacting Backfill, by hand, no compaction, light									RSMeans Building Construction Data, 2011, 31 23
soil	105	LCY			\$19.65	\$0.00	108.20%	\$2,236.15	23.13 Backfill
								**	RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	114	LCY			\$7.64	\$14.10	108.20%	\$2,671.91	16, 31 23 23.20 Hauling

\$121,445.49

Concrete Retaining Wall			Cost per		Installation	Equipment	Location		
Surrounding Berm	Quantity	Unit	Unit	Material Cost		Cost	Factor	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	8	EA			\$116.00	\$185.00	100.00%	\$2,408.00	54 36.50 Mobilization
									Built in two sections. First section under grade, 6'
									high, second section built on top of that, 16' high.
Reinforced Concrete Wall									Length of wall 270'.
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	1	EA			\$116.00	\$185.00	95.40%	\$287.15	54 36.50 Mobilization
									RSMeans Assemblies Cost Data, 2011, A 2010 110
Excavation 6 deep', common earth, 4000 SF	1065	SF		\$5.30	\$0.00	\$0.00	108.20%	\$6,106.74	Building Excavation & Backfill
									RSMeans Assemblies Cost Data, 2011, A 2020 110,
									Walls, Cast-in-Place, add 25% to material cost to
Concrete Wall, below grade section, 6' high, 16"									include for additional reinforcing (Equipment included
thick, pumped concrete	177	LF		\$58.75	\$84.50	\$0.00	99.30%	\$25,246.38	in installation cost)
									RSMeans Assemblies Cost Data, 2011, A 2020 110,
									Walls, Cast-in-Place, add 25% to material cost to
Concrete Wall, above grade section, 10' high, 16"									include for additional reinforcing (Equipment included
thick, pumped concrete	177	LF		\$96.88	\$141.00	\$0.00	99.30%	\$41,923.98	in installation cost)
									RSMeans Assemblies Cost Data, 2011, A 2020 220,
									Subdrainage Piping (Equipment included in
Drainage piping, 6" diameter, PVC, perforated,	177	LF		\$4.05	\$4.04		108.20%	\$1,553.57	installation cost)
Aesthetic Treatments for Exposed Concrete							-		
									RSMeans Building Construction Cost Data, 2011, 03 35
Sandblast Concrete Heavy Treatment	1065	SF		\$1.46	\$3.31	\$0.52	99.30%	\$5,593.86	29.60
								600 440 60	

\$83,119.68

	Ī	ı	Cost per	1	Installation	ı ı	Location	ı	
Landscaping Concrete	Quantity	Unit	Unit	Material Cost		Equipment		Total Cost	Comments
Stepped Concrete Wall 4' high									Length of walls 330' and 320'
									RSMeans Assemblies Cost Data, 2011, A 2020 110,
4' high walls, cast-in-place, 8" thick, pumped									Walls, Cast-in-Place (Equipment included in
concrete	177	LF		\$18.10	\$51.50	\$0.00	99.30%	\$12,266.31	installation cost)
									RSMeans Assemblies Cost Data, 2011, A 2020 220,
									Subdrainage Piping (Equipment Cost included in
Subdrainage Piping, 4" diameter, PVC, perforated	177	LF		\$2.04	\$3.77	\$0.00	108.20%	\$1,115.73	Installation Cost)
Aesthetic Treatments for Exposed Concrete									
									RSMeans Building Construction Cost Data, 2011, 03 35
Sandblast Concrete Heavy Treatment	710	SF		\$1.46	\$3.31	\$0.52	99.30%	\$3,729.24	29.60
Concrete or Gravel Platform									
Asphaltic Concrete Paving, 6" stone bse, 2" binder									RSMeans Building Construction Cost Data, 2011, 32 12
course, 1" toping	3500	SF		\$1.85	\$0.20	\$0.24	108.20%	\$8,672.23	16.14 Asphaltic Concrete Paving
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	105	CY			\$7.64	\$14.10	108.20%	\$2,469.88	16, 31 23 23.20 Hauling
Landscaping Stairs Up Berm									
									RSMeans Building Construction Cost Data 2011, 03 30
Stairs 10' wide, cast on ground, 24 steps	240	LF Nose		\$4.28	\$16.30	\$0.18	95.40%	\$4,712.00	53.40, Concrete in Place
									RSMeans Building Construction Cost Data 2011, 03 30
Stair Landing, cast on ground	200	SF		\$3.29	\$4.29	\$0.05	95.40%	\$1,446.26	53.40, Concrete in Place
									RSMeans Building Construction Cost Data 2011, 05 52
									13.50 Railings, Pipe (add 30% to price for stair
Stair Handrail, 1 1/4" diameter, galvanized	60	LF		\$57.20	\$14.89	\$1.04	95.40%	\$4,126.15	handrail)

Sidewalks									
									Unit SF price only, per RSMeans Square Foot Costs, Residential Modifications/Adjustments/Alternatives, Sidewalks, 3000 PSI with mesh (Material, Installation
Flatwork in front of ground floor of tower, 6" thick with wire mesh	3500	SF	\$3.60	\$0.00		\$0.00	99.30%	\$12,511.80	, , , , , , , , , , , , , , , , , , , ,
with wife mesh	3300	31	75.00	Ş0.00		\$0.00	33.3070	\$51,049.59	and Equipment Cost included in Cost per Onity
								331,043.33	
			Cost per		Installation	Equipment	Location		
Stairs/Ramps/Guardrails	Quantity	Unit	Unit	Material Cost	Costs	Cost	Factor	Total Cost	Comments
Mobilization of Equipment	2	EA			\$116.00	\$185.00	100.00%	\$602.00	RSMeans, Building Construction Cost Data, 2011, 01 54 36.50 Mobilization
Platform Perimeters Railing (Top wall at Berm)									
Hand Rail/Guard Rail, Galvanized, 2 rail, 1 1/2"									Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building
diameter	177	LF		\$32.50	\$9.80		95.40%	\$7,162.16	Construction Cost Date 2011, 05 52 Metal Railings
								\$7,764.16	
		ı	Cook man	<u> </u>	Installation	[Farriage and	Location	1	T
Landscaping	Quantity	Unit	Cost per Unit	Material Cost	Costs	Equipment Costs	Factor	Total Cost	Comments
Treated Wood Trellis Walkway 60' x 12'	-								
Cedar Wood, 2" thick, 40 PSF load at Maximum	720	65		ÅF. CF	42.02	40.00	07.200/	46.073.06	RSMeans Assemblies Cost Data, 2011, B1010 266 Wood Deck (Equipment Cost included in Installation
Span	720	SF		\$5.65	\$3.02	\$0.00	97.30%	\$6,073.86	Cost)
Doot & Dooms	720	C.F.		\$9.10	\$4.17	\$0.00	97.30%	ć0 20C 42	RSMeans Assemblies Cost Data, 2011, B1010 264 Wood Beam & Joist (Equipment Cost included in
Post & Beams Berm/Site Landscaping	720	SF		\$9.10	\$4.17	\$0.00	97.30%	\$9,296.43	Installation Cost)
Merm/Nite Landscaning		ı		1				1	1
Derrity Site Landscaping						1			RSMeans Building Construction Cost Data, 2011, 32 9

\$24.00

\$7.64

\$0.14

\$0.46

\$0.00

\$14.10

\$0.09

\$0.00

108.20%

108.20%

108.80%

108.20%

\$33.00

\$0.20

\$0.32

330

330

778

10500

Top Soil

Haul of Material, 40 MPH, cycle 40 MPH

Mechanical Seeding, 44 lb/MAY

Irrigation System

LCY

LCY

SY

SF

\$8,861.58 **\$52,710.65**

\$7,762.48

\$363.88

\$20,352.42 19.13 Top Dress by hand, 1 CY for 600 SF

16, 31 23 23.20 Hauling

19.13 Mechanical Seeding

23.10, sprinkler irrigation system

RSMeans Building Construction Cost Data, 2011, 31 05

RSMeans Building Construction Cost Data, 2011, 32 92

RSMeans Building Construction Costs, 2011, 32 84

Map Number:	8	Minimum Structure Height:	17
Structure Type:	Tower	Structure Capacity:	350
Location:	Ocean Shores, WA, Ocean Shores BLVD &	Safe Haven Square Footage:	3500
	Taurus BLVD SW		
Levels	1	Columns Required:	9
		Piles per Column:	3
Scope			Cost
Site Utilities			\$15,257
Excavation-Backfill			\$35,361
Foundation			\$180,991
Structure			\$191,716
Roofing			\$76,399
Stairs/Ramps/Guardrails			\$52,341
Fire Protection			\$26,338
Total			\$578,403
Design Fees (8%)			\$46,272
General Conditions (10%)			\$57,840
Contractor Fees, O&P (15%)			\$86,761
Construction Contingency (5%)			\$28,920
Estimate/Design Contingency (10%)			\$57,840
Project Total			\$856,037

						le · .I			
Site Utilities	Quantity	Unit	Cost per Unit	Material Cost	Installation Cost	Equipment Cost	Location Factor	Total Cost	Comments
Site Officies	Quantity	Oilit	Oilit	Waterial Cost	Cost	COSC	Tactor	iotai cost	RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	10	EA			\$116.00	\$185.00	100.00%	\$3,010.00	54 36.50 Mobilization
Nobilization of Equipment	10	LA			\$110.00	\$185.00	100.00%	\$3,010.00	34 30.30 Mobilization
Fire Water, Ductile Iron Class 250, MJ, 4" diameter	50	LF		\$16.05					Assuming 50' distance from service at street
									RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator 4'-6' deep	35	BCY			\$2.16	\$2.13	108.20%	\$162.46	23 16.13, Excavating Trench
									RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 4" Ductile Iron Piping, MJ	50	LF		\$12.50	\$8.55	\$2.17	108.20%	\$1,256.20	11 Water Utility Distribution Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	6	LCY		\$20.00			108.20%	\$129.84	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	6	LCY			\$7.64	\$14.10	108.20%	\$141.14	16, 31 23 23.20 Hauling
									RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	5	ECY			\$3.05	\$0.34	108.20%	\$18.34	23 23.16 Fill By Borrow & Utility Bedding
									RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	38	LCY			\$0.50	\$1.05	108.20%	\$63.73	23 23.17 General Fill
Storm Service									Assuming 50' distance from service at street
									RSMeans, Building Construction Cost Data, 201, 31 23
Excavate, 3/4 CY Excavator, 6'-10' deep	60	BCY			\$2.88	\$2.85	108.20%	\$371.99	16.13 Excavating Trench
									RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 8" Bituminous Coated	50	LF		\$10.70	\$5.25	\$0.97	108.20%	\$915.37	41 Storm Utility Drainage Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	6	LCY		\$20.00			108.20%	\$129.84	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	6	LCY			\$7.64	\$14.10	108.20%	\$141.14	16, 31 23 23.20 Hauling
									RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	5	ECY			\$3.05	\$0.34	108.20%	\$18.34	23 23.16 Fill By Borrow & Utility Bedding

								DOLL D. 11.11 D
								RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	38	LCY		\$0.50	\$1.05	108.20%	\$63.73	23 23.17 General Fill
Site Drainage/Area Drains/Catch Basins								Assume 1 area drain for structure
								RSMeans Assemblies Cost Data, 2011, G3030 210,
Concrete, Precast, 4' ID riser, 4' deep	1	EA	\$1,425.00	\$1,200.00	0.00%	108.20%	\$2,840.25	Manholes & Catch Basins
Electrical	50	LF						Assuming 50' distance from service at street
Electrical Service, includes service installation,								RSMeans Assemblies Cost Data, 2011, D 5010 120,
breakers, metering, 20' conduit & wire, 3 phase, 4								Electric Service, 3 Phase - 4 Wire, equipment included
wire, 120/208 volts, 60 A	1	EA	\$960.00	\$920.00		100.50%	\$1,889.40	in installation cost
								RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator, 4'-6' deep	35	BCY		\$2.16	\$2.13	108.20%	\$162.46	23 16.13 Excavating Trench
								RSMeans, Building Construction Cost Data, 2011, 33
Install & Test PVC, type EB 4 @ 3" diameter	50	LF	\$2.00	\$8.05		108.20%	\$543.71	71 19 Electrical Underground Ducts and Manholes
								RSMeans, Building Construction Cost Data, 2011, 26
Wire, 600 volt, copper type THW, solid, #12	50	CLF	\$11.95	\$36.50	0	100.50%	\$2,434.61	05 19.90 Wire
Utility Bedding, For Pipe & Conduit, Not Incl.								Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	19	LCY	\$20.00			108.20%	\$411.16	conversation on June 29th, 2011
								RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	19	LCY		\$7.64	\$14.10	108.20%	\$446.93	16, 31 23 23.20 Hauling
								RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	19	ECY		\$3.05	\$0.34	108.20%	\$69.69	23 23.16 Fill By Borrow & Utility Bedding
								RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	22	LCY		\$0.50	\$1.05	108.20%	\$36.90	23 23.17 General Fill

\$15,257.23

			Cost per		Installation	Equipment	Location		
Excavation-Backfill	Quantity	Unit	Unit	Material Cost	Cost	Cost	Factor	Total Cost	Comments
									RSMeans Building Construction Cost Data, 2011, 01 54
Mobilization	8	EA	\$0.00	\$0.00	\$69.00	\$116.00	100.00%	\$1,480.00	36 - Equipment Mobilization
									Is clear and grub needed for structure in urban
									setting? RSMeans Building Construction Cost Data,
Clear and Grub Site	0.10	ACRE	\$0.00	\$0.00	\$1,750.00	\$1,300.00	108.20%	\$331.45	2011, 31 11 10.10 Clear and Grub Site
									Grade Beams, 3' wide, 3' deep RSMeans Building
									Construction Cost Data, 2011, 31 23 16.16 3/4 CY
									bucket, (Price Included in grade beam foundation
Excavation for Grade Beams	118	BCY	\$0.00	\$0.00	\$0.00	\$0.00	108.20%	\$0.00	price)
									1225 SF mat, 2' deep. RSMeans Building Construction
Excavation for slab, subgrade and capillary break	259	BCY	\$0.00	\$0.00	\$7.20	\$7.17	108.20%	\$4,031.05	Cost Data, 2011, 31 23 16.16 3/4 CY bucket
Removal of Foundation Spoils, Haul of Material, 40									RSMeans Building Construction Cost Data, 2011, 31 05
MPH, cycle 40 MPH	472	LCY			\$7.64	\$14.10	108.20%	\$11,102.14	16, 31 23 23.20 Hauling
									Quote per Quigg Bros, Aberdeen, WA, phone
Backfill Slab, subgrade, capillary break	408	ECY		\$20.00			108.20%	\$8,824.52	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH,cycle 40 MPH	408	ECY			\$7.64	\$14.10	108.20%	\$9,592.25	16, 31 23 23.20 Hauling
								\$35,361.41	

			Cost per		Installation	Equipment	Location		
Foundation	Quantity	Unit	Unit	Material Cost	Cost	Cost	Factor	Total Cost	Comments
									Piling needs to 2x the height of the structure which is
Piling									23-35'?
									Per phone conversation with Quigg Bros, Aberdeen,
Mobilization for piling	1	EA	\$12,000.00	\$0.00	\$0.00	\$0.00	100.00%	\$12,000.00	WA on June 29th, 2011

Pile Caps, Cap Size 6'-6" x 3'-6" x 37" Foundation Cast-In-Place/Tower Grade Beams 30' span, 28" deep, 14" wide, 2 KLF load Foundation Cast-In-Place/ Footings for Ramp Spread Footings, load 75K, soil capacity 6 KSF, 4'-0" sq x 12" deep Structure Mobilization of Equipment	9 355 12	EA LF EA	\$0.00	\$3,500.00 \$370.00 \$34.50	\$1,200.00 \$540.00 \$53.00	\$0.00	99.30%	\$8,132.67	RSMeans Assemblies Cost Data 2011, A1010 250 Pile Caps (Equipment Costs are included in Installation Cost) RSMeans Assemblies Cost Data 2011, A 1020 210 Grade Beams (Equipment Cost is included in
Foundation Cast-In-Place/Tower Grade Beams 30' span, 28" deep, 14" wide, 2 KLF load Foundation Cast-In-Place/ Footings for Ramp Spread Footings, load 75K, soil capacity 6 KSF, 4'-0" sq x 12" deep Structure	355	LF		\$34.50				\$8,132.67	Caps (Equipment Costs are included in Installation Cost) RSMeans Assemblies Cost Data 2011, A 1020 210 Grade Beams (Equipment Cost is included in
Foundation Cast-In-Place/Tower Grade Beams 30' span, 28" deep, 14" wide, 2 KLF load Foundation Cast-In-Place/ Footings for Ramp Spread Footings, load 75K, soil capacity 6 KSF, 4'-0" sq x 12" deep Structure	355	LF		\$34.50				\$8,132.67	Cost) RSMeans Assemblies Cost Data 2011, A 1020 210 Grade Beams (Equipment Cost is included in
Foundation Cast-In-Place/Tower Grade Beams 30' span, 28" deep, 14" wide, 2 KLF load Foundation Cast-In-Place/ Footings for Ramp Spread Footings, load 75K, soil capacity 6 KSF, 4'-0" sq x 12" deep Structure	355	LF		\$34.50					RSMeans Assemblies Cost Data 2011, A 1020 210 Grade Beams (Equipment Cost is included in
Grade Beams 30' span, 28" deep, 14" wide, 2 KLF load Foundation Cast-In-Place/ Footings for Ramp Spread Footings, load 75K, soil capacity 6 KSF, 4'-0" sq x 12" deep Structure	12		\$0.00		\$53.00		99.30%		Grade Beams (Equipment Cost is included in
Foundation Cast-In-Place/ Footings for Ramp Spread Footings, load 75K, soil capacity 6 KSF, 4'-0" sq x 12" deep Structure	12		\$0.00		\$53.00		99.30%		Grade Beams (Equipment Cost is included in
Foundation Cast-In-Place/ Footings for Ramp Spread Footings, load 75K, soil capacity 6 KSF, 4'-0" sq x 12" deep Structure	12		\$0.00		\$53.00		99.30%		
Spread Footings, load 75K, soil capacity 6 KSF, 4'-0" sq x 12" deep Structure		EA	\$0.00	\$94.50					(IIIStaliation COST)
Spread Footings, load 75K, soil capacity 6 KSF, 4'-0" sq x 12" deep Structure		EA	\$0.00	\$94.50					Piling needs to 2x the height of the structure which is
Structure		EA	\$0.00	\$94.50					23-35'?
Structure		EA	\$0.00	\$94.50					RSMeans Assemblies Cost Data, 2011, A1010 210,
Structure		EA	\$0.00	\$94.50					Spread Footings (Equipment Cost is included in
	Quantity				\$167.00	\$0.00	99.30%		Installation Cost)
	Quantity							\$180,990.71	
	Quantity					ı - · ·			
	Quantity	11	Cost per		Installation	Equipment	Location	Takal Cash	C
Mobilization of Equipment	•	Unit	Unit	Material Cost	Cost	Costs	Factor	Total Cost	Comments
	10	EA			\$116.00	\$185.00	100.00%	\$3,010.00	RSMeans, Building Construction Cost Data, 2011, 01 54 36.50 Mobilization
									Beam and Column sizes are not determined and
									estimate takes in "best guess" to assume sizes for this
Concrete Structure									project.
Concrete Columns, rated for 1000 K load, 26"									RSMeans Assemblies Cost Data, 2011, B1010 201, CIP Column, Round Tied (Equipment Cost included in
round, concrete strength, 6000 PSI	153	VLF		\$158.00	\$7.85	\$0.00	99.30%		Installation Cost)
Slab-On-Grade, 6" thick, non-industrial, reinforced,	155	VLI		Ş138.00	\$7.85	Ş0.00	33.3070		RSMeans Assemblies Cost Data, 2011, A1030 120,
Ground Floor	3500	SF		\$3.01	\$2.97		99.30%		Slab on Grade, Plain & Reinforced
				,					RSMeans Assemblies Cost Data, 2011, B1010 229
Cast-In-Place Beam and Slab, Two Way, 30x30, 351									Precast Plank with No Topping (Equipment Cost
PSF, 9" thick slab, 2nd Floor (evacuation level)	3500	SF		\$8.95	\$13.60		99.30%		included in Installation Cost)
									Wood structure, hip roof to support galvanized steel
Wood Structure									panels
									Supply quote from Levee Lumber, Hoquiam, WA,
									RSMeans Assemblies Cost Data, 2011, B1020 102,
				40.05	40.50		07.000/		Roof Construction, Wood/Flat or Pitched (Equipment
Wood Columns 12"x12", 10' High, Select Structural	90	VLF		\$9.85	\$2.62		97.30%	<u> </u>	Cost included in Installation Cost)
									Supply quote from Levee Lumber, Hoquiam, WA, RSMeans Building Construction Cost Data 2011, Gluer
Perimeter Joists, 3 1/8"x12", GLM 30' span	237	LF		\$4.85	\$1.95	\$22.00	97.30%		Laminated Beams 06 18 13.20
CHINECES 301303, 5 1/0 A12 , OLIVI 30 3pail	231	LI		Ç03	71.55	722.00	37.30/0	70,031.31	RSMeans Assemblies Cost Data, 2011, B1020 102,
									Roof Construction, Wood/Flat or Pitched (Equipment
2x10 Wood Joist w/ 1/2" CDX, 12" OC	3500	SF		\$2.02	\$2.05		97.30%		Cost included in Installation Cost)
									RSMeans Assemblies Cost Data, 2011, B1020 102,
Roof, wood/pitched, 3"x12" 12" OC w/ sheating									Roof Construction, Wood/Flat or Pitched (Equipment
plywood on roof, 5/16" CDX	4900	SF		\$4.59	\$2.62		97.30%	\$34,375.12	Cost included in Installation Cost)
Weather Proofing/Coatings add 15% (Premium for									Assumed that PTS wood is 15% more compared on
Wood)	\$55,958.81	%	15.00%						price difference shown in means
PTS Wood)								\$191,716.07	
ris wood)									
ris wood)									

								RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	4	EA		\$116.00	\$185.00	100.00%	\$1,204.00	54 36.50 Mobilization
								Hip and ridge style roof, peak of roof 15'. (Equipment
Roofing/Hip and Ridge Roof Steel Panels								Cost is included in Installation Cost)
								RSMeans Assemblies Cost Data, 2011, B3010 135,
Flat Roof Steel Panels, Flat Seam, Copper, 1/4" min.								Formed Metal (Equipment Cost is included in
slope, 20 oz, 1.2 PSF	4900	SF	\$9.50	\$5.80		100.30%	\$75,194.91	Installation Cost)
							\$76,398.91	

Stairs/Ramps/Guardrails Cost per Unit Material Costnstallation Cosuipment Colocation Facto Total Cost Quantity Unit Comments RSMeans, Building Construction Cost Data, 2011, 01 Mobilization of Equipment 6 EΑ \$116.00 \$185.00 100.00% \$1,806.00 54 36.50 Mobilization Beam and Column sizes are not determined and estimate takes in "best guess" to assume sizes for this Exterior Ramp, Rises 20', 5' wide RSMeans Assemblies Cost Data, 2011, B1010, 208 Steel Columns, 20' high, Wide Flanged, 6", 12 Steel Columns (Equipment Cost is included in 204 VLF \$26.50 \$7.85 \$0.00 95.40% \$6,685.06 locations Installation Cost) W Shape Beams and Girders, bay size 15X20,, Total RSMeans Building Construction Cost Data, 2011, 800 SF \$11.70 \$3.82 \$1.50 95.40% \$12,989.66 Structural Steel Framing, 05 12 23.17 RSMeans Assemblies Cost Data, 2011, B1010 258, Floor Construction, Metal Deck/Concrete Fill, Deck Metal Deck/Concrete Fill (Equipment Cost is included Span 6 ft, 150 PSF Superimposed Load 800 SF \$2.38 \$2.38 95.40% \$3,632.83 in Installation Cost) RSMeans Building Construction Cost Data, 2011, 05 05 Weather Proofing/Coatings (Galvanized) 7.5 Tons \$400.00 \$0.00 0 0 95.40% \$2,862.00 13.50, Paints and Protective Coatings Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building 270 LF \$32.50 \$9.80 95.40% \$10,895.63 Construction Cost Date 2011, 05 52 Metal Railings Hand Rail/Guard Rail Ladders/Stairs Steel ladder to attic space 20" wide bolted to RSMeans Building Construction Cost Data 2011, 05 51 concrete without cage 10 VLF \$65.00 \$31.50 \$2.18 95.40% \$920.61 33 - Vertical Metal Ladders RSMeans Building Construction Cost Data 2011, 11 33 Accordion Ladder for Escape after Tsunami, Disappearing Stairs, Heavy duty, 16'-0" ceiling 2 \$1,400.00 \$172.00 95.40% \$2,999.38 10.10, Disappearing Stairway ea Platform Perimeters Railing (120 LF for each platform, 2 locations) Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building Construction Cost Date 2011, 05 52 Metal Railings Hand Rail/Guard Rail LF \$9,549.55 237 \$32.50 \$9.80 95.40%

\$52,340.72

		Cost per		Installation	Fauinment	Location		
Quantity	Unit		Material Cost		Cost	Factor	Total Cost	Comments
								RSMeans Building Construction Cost Data, 2011, 01 54
4	EA		\$69.00	\$116.00		100.00%	\$740.00	36 - Equipment Mobilization
								RSMeans Square Foot Costs, 2011, D4010 410, Wet
								Pipe Sprinkler Systems (Equipment Cost included in
3500	SF		\$4.50	\$3.04		97.00%	\$25,598.30	Installation Cost)
	4	4 EA	4 EA	Quantity Unit Unit Material Cost 4 EA \$69.00	Quantity Unit Unit Material Cost Costs 4 EA \$69.00 \$116.00	Quantity Unit Unit Material Cost Costs 4 EA \$69.00 \$116.00	Quantity Unit Unit Material Cost Costs Cost Factor 4 EA \$69.00 \$116.00 100.00%	Quantity Unit Unit Material Cost Costs Cost Factor Total Cost 4 EA \$69.00 \$116.00 100.00% \$740.00

\$26,338.30

Map Number:	9		Minimum Structure Height (ft)	10
Structure Type:	Berm w/ RC Wall		Structure Capacity:	350
Location:	Ocean Shores, WA, Blue Wing	Loop SE &	Safe Haven Square Footage:	3500
	Duck Lake Drive SW			
Overall Site Square Footage:	10500		Volume of Berm Materials (LCY)	1944
Scope				Cost
Site Utilities				\$55,725
Excavation-Backfill				\$121,445
Concrete Retaining Wall Surrounding Berm				\$83,120
Landscaping Concrete				\$51,050
Stairs/Ramps/Guardrails				\$7,764
Landscaping				\$52,711
Construction Totals				\$785,995
Design Fees (8%)				\$62,880
General Conditions (10%)				\$78,600
Contractor Fees, O&P (15%)				\$117,899
Construction Contingency (5%)				\$39,300
Estimate/Design Contingency (10%)				\$78,600
Project Total				\$1,163,273
		-		

			Cost per		Installation		Location		
Site Utilities	Quantity	Unit	Unit	Material Cost	Cost	Equipment	Factor	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	8	EA			\$116.00	\$185.00	100.00%	\$2,408.00	54 36.50 Mobilization
Domestic Water, Ductile Iron Class 250, MJ, 6"									
diameter	100	LF							Assuming 100' distance from service at street
									RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator 4'-6' deep	85	BCY			\$2.16	\$2.13	108.80%	\$396.74	23 16.13, Excavating Trench
									RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 6" Ductile Iron Piping, MJ	100	LF		\$14.60	\$10.70	\$2.72	108.80%	\$3,048.58	11 Water Utility Distribution Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	11	LCY		\$20.00			108.80%	\$239.36	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	11	LCY			\$7.64	\$14.10	108.20%	\$258.75	16, 31 23 23.20 Hauling
									RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	10	ECY			\$3.05	\$0.34	108.80%	\$36.88	23 23.16 Fill By Borrow & Utility Bedding
									RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	94	LCY			\$0.50	\$1.05	108.80%	\$158.52	23 23.17 General Fill
Storm Service									Assuming 200' of storm piping needed
									RSMeans, Building Construction Cost Data, 201, 31 23
Excavate, 3/4 CY Excavator, 6'-10' deep	250	BCY			\$2.88	\$2.85	108.80%	\$1,558.56	16.13 Excavating Trench
									RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 8" Bituminous Coated	200	LF		\$10.70	\$5.25	\$0.97	108.80%	\$3,681.79	41 Storm Utility Drainage Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	25	LCY		\$20.00			108.80%	\$544.00	conversation on June 29th, 2011.
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	25	LCY			\$7.64	\$14.10	108.20%	\$588.07	16, 31 23 23.20 Hauling
					_				RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	23	ECY			\$3.05	\$0.34	108.80%	\$84.83	23 23.16 Fill By Borrow & Utility Bedding
									RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	284	LCY			\$0.50	\$1.05	108.80%	\$478.94	23 23.17 General Fill
Site Drainage/Area Drains/Catch Basins									Assume 4 area drains for structure

								RSMeans Assemblies Cost Data, 2011, G3030 210,
								Manholes & Catch Basins (Equipment Cost included in
Concrete, Precast, 4' ID riser, 4' deep	4	EA	\$1,425.00	\$1,200.00	0.00%	108.80%	\$11,424.00	Installation Cost)
Electrical	100	LF						Assuming 100' distance from service at street
Electrical Service, includes service installation,								RSMeans Assemblies Cost Data, 2011, D 5010 120,
breakers, metering, 20' conduit & wire, 3 phase, 4								Electric Service, 3 Phase - 4 Wire, equipment included
wire, 120/208 volts, 60 A	1	EA	\$960.00	\$920.00		100.50%	\$1,889.40	in installation cost
								RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator, 4'-6' deep	85	BCY		\$2.16	\$2.13	108.80%	\$396.74	23 16.13 Excavating Trench
								RSMeans, Building Construction Cost Data, 2011, 33
Install & Test PVC, type EB 4 @ 3" diameter	100	LF	\$2.00	\$8.05		108.80%	\$1,093.44	71 19 Electrical Underground Ducts and Manholes
								RSMeans, Building Construction Cost Data, 2011, 26
Wire, 600 volt, copper type THW, solid, #12	100	CLF	\$11.95	\$36.50	0	100.50%	\$4,869.23	05 19.90 Wire
Utility Bedding, For Pipe & Conduit, Not Incl.								Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	46	LCY	\$20.00			108.80%	\$1,000.96	conversation on June 29th, 2011
								RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	46	LCY		\$7.64	\$14.10	108.20%	\$1,082.04	16, 31 23 23.20 Hauling
								RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	43	ECY		\$3.05	\$0.34	108.80%	\$158.60	23 23.16 Fill By Borrow & Utility Bedding
								RSMeans, Building Construction Cost Data, 2011, 31
Light Pole, Aluminum, 20' high, 1 arm bracket	8	EA	\$1,250.00	\$1,075.00	\$0.00	108.80%	\$20,236.80	23 23.17 General Fill
								RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	54	LCY		\$0.50	\$1.05	108.80%	\$91.07	23 23.17 General Fill

\$55,725.29

		ſ	Cost per		Installation		Location		I
Excavation-Backfill	Quantity	Unit	Unit	Material Cost		Equipment	Factor	Total Cost	Comments
									RSMeans Building Construction Cost Data, 2011, 01 54
Mobilization	8	EA	\$0.00	\$0.00	\$69.00	\$116.00	100.00%	\$1,480.00	36 - Equipment Mobilization
									Is clear and grub needed for structure in urban
									setting? RSMeans Building Construction Cost Data,
Clear and Grub Site	1	ACRE	\$0.00	\$0.00	\$1,750.00	\$1,300.00	108.20%	\$3,300.10	2011, 31 11 10.10 Clear and Grub Site
									RSMeans Building Construction Cost Data, 2011, 02 22
Survey Site	1	ACRE		\$32.50	\$565.00	\$35.00	108.20%	\$684.37	13 Site Surveys
Fill Material for Berm									
									RSMeans Building Construction Cost Data, 2011, 31 05
Fill Material, Select Structural Fill, 1 1/2" minus									16, Aggregates for Earthwork, Select Structural Fill &
aggregate	1944	LCY		\$20.00	\$1.75	\$3.44	108.20%	\$52,996.96	Material Cost from Quigg Bros., Aberdeen, WA
									RSMeans Building Construction Data, 2011, 31 23
Compacting Backfill, 6"to 12" lifts, vibrating roller	1800	ECY			\$0.63	\$1.81	108.20%	\$4,753.23	23.13 Backfill
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	1944	LCY			\$7.64	\$14.10	108.20%	\$45,738.54	16, 31 23 23.20 Hauling
Stabilization Fabric, Polypropylene, 6oz/SY, 18"									RSMeans Building Construction Cost Data, 2011, 32 12
lifts, 5082 SF per lift	2593	SY		\$1.48	\$0.09	\$0.03	108.20%	\$4,488.30	23 Aggregate Base Courses
Fill Material at Landscape Walls									
									RSMeans Building Construction Cost Data, 2011, 31 05
									16, Aggregates for Earthwork, Select Structural Fill &
Fill Material, Top Soil	114	CY		\$20.00	\$1.75	\$3.44	108.20%	\$3,095.93	Material Cost from Quigg Bros., Aberdeen, WA
Compacting Backfill, by hand, no compaction, light									RSMeans Building Construction Data, 2011, 31 23
soil	105	LCY			\$19.65	\$0.00	108.20%	\$2,236.15	23.13 Backfill
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	114	LCY			\$7.64	\$14.10	108.20%	\$2,671.91	16, 31 23 23.20 Hauling

\$121,445.49

				ı					
Concrete Retaining Wall			Cost per		Installation	Equipment	Location		
Surrounding Berm	Quantity	Unit	Unit	Material Cost		Cost	Factor	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	8	EA			\$116.00	\$185.00	100.00%	\$2,408.00	54 36.50 Mobilization
									Built in two sections. First section under grade, 6'
									high, second section built on top of that, 16' high.
Reinforced Concrete Wall									Length of wall 270'.
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	1	EA			\$116.00	\$185.00	95.40%	\$287.15	54 36.50 Mobilization
									RSMeans Assemblies Cost Data, 2011, A 2010 110
Excavation 6 deep', common earth, 4000 SF	1065	SF		\$5.30	\$0.00	\$0.00	108.20%	\$6,106.74	Building Excavation & Backfill
									RSMeans Assemblies Cost Data, 2011, A 2020 110,
									Walls, Cast-in-Place, add 25% to material cost to
Concrete Wall, below grade section, 6' high, 16"									include for additional reinforcing (Equipment included
thick, pumped concrete	177	LF		\$58.75	\$84.50	\$0.00	99.30%	\$25,246.38	in installation cost)
									RSMeans Assemblies Cost Data, 2011, A 2020 110,
									Walls, Cast-in-Place, add 25% to material cost to
Concrete Wall, above grade section, 10' high, 16"									include for additional reinforcing (Equipment included
thick, pumped concrete	177	LF		\$96.88	\$141.00	\$0.00	99.30%	\$41,923.98	in installation cost)
									RSMeans Assemblies Cost Data, 2011, A 2020 220,
									Subdrainage Piping (Equipment included in
Drainage piping, 6" diameter, PVC, perforated,	177	LF		\$4.05	\$4.04		108.20%	\$1,553.57	installation cost)
Aesthetic Treatments for Exposed Concrete									
									RSMeans Building Construction Cost Data, 2011, 03 35
Sandblast Concrete Heavy Treatment	1065	SF		\$1.46	\$3.31	\$0.52	99.30%	\$5,593.86	29.60
								CO2 110 CO	

\$83,119.68

	Ī	ı	Cost per	1	Installation	ı ı	Location	ı	
Landscaping Concrete	Quantity	Unit	Unit	Material Cost		Equipment		Total Cost	Comments
Stepped Concrete Wall 4' high									Length of walls 330' and 320'
									RSMeans Assemblies Cost Data, 2011, A 2020 110,
4' high walls, cast-in-place, 8" thick, pumped									Walls, Cast-in-Place (Equipment included in
concrete	177	LF		\$18.10	\$51.50	\$0.00	99.30%	\$12,266.31	installation cost)
									RSMeans Assemblies Cost Data, 2011, A 2020 220,
									Subdrainage Piping (Equipment Cost included in
Subdrainage Piping, 4" diameter, PVC, perforated	177	LF		\$2.04	\$3.77	\$0.00	108.20%	\$1,115.73	Installation Cost)
Aesthetic Treatments for Exposed Concrete									
									RSMeans Building Construction Cost Data, 2011, 03 35
Sandblast Concrete Heavy Treatment	710	SF		\$1.46	\$3.31	\$0.52	99.30%	\$3,729.24	29.60
Concrete or Gravel Platform									
Asphaltic Concrete Paving, 6" stone bse, 2" binder									RSMeans Building Construction Cost Data, 2011, 32 12
course, 1" toping	3500	SF		\$1.85	\$0.20	\$0.24	108.20%	\$8,672.23	16.14 Asphaltic Concrete Paving
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	105	CY			\$7.64	\$14.10	108.20%	\$2,469.88	16, 31 23 23.20 Hauling
Landscaping Stairs Up Berm									
									RSMeans Building Construction Cost Data 2011, 03 30
Stairs 10' wide, cast on ground, 24 steps	240	LF Nose		\$4.28	\$16.30	\$0.18	95.40%	\$4,712.00	53.40, Concrete in Place
									RSMeans Building Construction Cost Data 2011, 03 30
Stair Landing, cast on ground	200	SF		\$3.29	\$4.29	\$0.05	95.40%	\$1,446.26	53.40, Concrete in Place
									RSMeans Building Construction Cost Data 2011, 05 52
									13.50 Railings, Pipe (add 30% to price for stair
Stair Handrail, 1 1/4" diameter, galvanized	60	LF		\$57.20	\$14.89	\$1.04	95.40%	\$4,126.15	handrail)

Sidewalks									
									Unit SF price only, per RSMeans Square Foot Costs, Residential Modifications/Adjustments/Alternatives,
Flatwork in front of ground floor of tower, 6" thick	İ								Sidewalks, 3000 PSI with mesh (Material, Installation
with wire mesh	3500	SF	\$3.60	\$0.00		\$0.00	99.30%	\$12,511.80	and Equipment Cost included in Cost per Unit)
		•						\$51,049.59	
			Cost per		Installation	Equipment	Location		
Stairs/Ramps/Guardrails	Quantity	Unit	Unit	Material Cost	Costs	Cost	Factor	Total Cost	Comments
	1								RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	2	EA			\$116.00	\$185.00	100.00%	\$602.00	54 36.50 Mobilization
Platform Perimeters Railing (Top wall at Berm)	<u> </u>								
Hand Rail/Guard Rail, Galvanized, 2 rail, 1 1/2"	İ							4	Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building
diameter	177	LF		\$32.50	\$9.80		95.40%		Construction Cost Date 2011, 05 52 Metal Railings
								\$7,764.16	
		ı				le : .		T	
Landscaping	Quantity	Unit	Cost per Unit	Material Cost	Installation Costs	Equipment Costs	Location Factor	Total Cost	Comments
Landscaping	Quantity	Unit	Ullit	iviateriai Cost	Costs	Costs	ractor	iotai cost	Comments
To a to d Marcal Tooliis Mallores (Ol v. 42)	—								
Treated Wood Trellis Walkway 60' x 12'									DCM cons Assemblies Cost Data 2011 B1010 200
•									RSMeans Assemblies Cost Data, 2011, B1010 266
Cedar Wood, 2" thick, 40 PSF load at Maximum	720	SF		\$5.65	\$3.02	\$0.00	97 30%	\$6,073,86	Wood Deck (Equipment Cost included in Installation
Cedar Wood, 2" thick, 40 PSF load at Maximum	720	SF		\$5.65	\$3.02	\$0.00	97.30%	\$6,073.86	Wood Deck (Equipment Cost included in Installation Cost)
Cedar Wood, 2" thick, 40 PSF load at Maximum	720	SF		\$5.65	\$3.02	\$0.00	97.30%	\$6,073.86	Wood Deck (Equipment Cost included in Installation Cost) RSMeans Assemblies Cost Data, 2011, B1010 264
Cedar Wood, 2" thick, 40 PSF load at Maximum Span	720 720	SF SF		\$5.65 \$9.10	\$3.02	\$0.00	97.30%	\$6,073.86	Wood Deck (Equipment Cost included in Installation Cost)
Treated Wood Trellis Walkway 60' x 12' Cedar Wood, 2" thick, 40 PSF load at Maximum Span Post & Beams Berm/Site Landscaping					·	,			Wood Deck (Equipment Cost included in Installation Cost) RSMeans Assemblies Cost Data, 2011, B1010 264 Wood Beam & Joist (Equipment Cost included in
Cedar Wood, 2" thick, 40 PSF load at Maximum Span Post & Beams					·	,			Wood Deck (Equipment Cost included in Installation Cost) RSMeans Assemblies Cost Data, 2011, B1010 264 Wood Beam & Joist (Equipment Cost included in

\$24.00

\$7.64

\$0.14

\$0.46

\$0.00

\$14.10

\$0.09

\$0.00

108.20%

108.20%

108.80%

108.20%

\$33.00

\$0.20

\$0.32

330

330

778

10500

Top Soil

Irrigation System

Haul of Material, 40 MPH, cycle 40 MPH

Mechanical Seeding, 44 lb/MSY

LCY

LCY

SY

SF

\$8,861.58 **\$52,710.65**

\$363.88

\$20,352.42 19.13 Top Dress by hand, 1 CY for 600 SF

19.13 Mechanical Seeding

23.10, sprinkler irrigation system

\$7,762.48 16, 31 23 23.20 Hauling

RSMeans Building Construction Cost Data, 2011, 31 05

RSMeans Building Construction Cost Data, 2011, 32 92

RSMeans Building Construction Costs, 2011, 32 84

Map Number:	10	Minimum Structure Height:	10
Structure Type:	Tower	Structure Capacity:	350
Location:	Ocean Shores, WA, Cormorant Street	Safe Haven Square Footage:	3500
Levels	1	Columns Required:	9
		Piles per Column:	3
Scope			Cost
Site Utilities			\$15,257
Excavation-Backfill			\$35,361
Foundation			\$180,991
Structure			\$181,341
Roofing			\$76,399
Stairs/Ramps/Guardrails			\$49,588
Fire Protection			\$26,338
Total			\$565,275
Design Fees (8%)			\$45,222
General Conditions (10%)			\$56,528
Contractor Fees, O&P (15%)			\$84,791
Construction Contingency (5%)			\$28,264
Estimate/Design Contingency (10%)			\$56,528
Project Total			\$836,607

			Cost per		Installation	Equipment	Location	T	
Site Utilities	Quantity	Unit	Unit	Material Cost	Cost	Cost	Factor	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	10	EA			\$116.00	\$185.00	100.00%	\$3,010.00	54 36.50 Mobilization
Sine Makes Durable last Class 250 AM All distriction	F0	1.5		Ć4.C 0.E					A
Fire Water, Ductile Iron Class 250, MJ, 4" diameter	50	LF		\$16.05					Assuming 50' distance from service at street
Excavate, 3/4 CY Excavator 4'-6' deep	35	BCY			\$2.16	\$2.13	108.20%	\$162.46	RSMeans, Building Construction Cost Data, 2011, 31 23 16.13, Excavating Trench
Excavate, 5/4 CT Excavator 4 -0 deep	33	BCT			\$2.10	\$2.13	108.2076	\$102.40	RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 4" Ductile Iron Piping, MJ	50	LF		\$12.50	\$8.55	\$2.17	108.20%	\$1,256.20	11 Water Utility Distribution Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	6	LCY		\$20.00			108.20%	\$129.84	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	6	LCY			\$7.64	\$14.10	108.20%	\$141.14	16, 31 23 23.20 Hauling
									RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	5	ECY			\$3.05	\$0.34	108.20%	\$18.34	23 23.16 Fill By Borrow & Utility Bedding
									RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	38	LCY			\$0.50	\$1.05	108.20%	\$63.73	23 23.17 General Fill
Storm Service									Assuming 50' distance from service at street
									RSMeans, Building Construction Cost Data, 201, 31 23
Excavate, 3/4 CY Excavator, 6'-10' deep	60	BCY			\$2.88	\$2.85	108.20%	\$371.99	16.13 Excavating Trench
									RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 8" Bituminous Coated	50	LF		\$10.70	\$5.25	\$0.97	108.20%	\$915.37	41 Storm Utility Drainage Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	6	LCY		\$20.00			108.20%	\$129.84	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	6	LCY			\$7.64	\$14.10	108.20%	\$141.14	16, 31 23 23.20 Hauling
									RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	5	ECY			\$3.05	\$0.34	108.20%	\$18.34	23 23.16 Fill By Borrow & Utility Bedding

								RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	38	LCY		\$0.50	\$1.05	108.20%	\$63.73	23 23.17 General Fill
Site Drainage/Area Drains/Catch Basins								Assume 1 area drain for structure
								RSMeans Assemblies Cost Data, 2011, G3030 210,
Concrete, Precast, 4' ID riser, 4' deep	1	EA	\$1,425.00	\$1,200.00	0.00%	108.20%	\$2,840.25	Manholes & Catch Basins
Electrical	50	LF						Assuming 50' distance from service at street
Electrical Service, includes service installation,								RSMeans Assemblies Cost Data, 2011, D 5010 120,
breakers, metering, 20' conduit & wire, 3 phase, 4								Electric Service, 3 Phase - 4 Wire, equipment included
wire, 120/208 volts, 60 A	1	EA	\$960.00	\$920.00		100.50%	\$1,889.40	in installation cost
	·							RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator, 4'-6' deep	35	BCY		\$2.16	\$2.13	108.20%	\$162.46	23 16.13 Excavating Trench
	·							RSMeans, Building Construction Cost Data, 2011, 33
Install & Test PVC, type EB 4 @ 3" diameter	50	LF	\$2.00	\$8.05		108.20%	\$543.71	71 19 Electrical Underground Ducts and Manholes
	·							RSMeans, Building Construction Cost Data, 2011, 26
Wire, 600 volt, copper type THW, solid, #12	50	CLF	\$11.95	\$36.50	0	100.50%	\$2,434.61	05 19.90 Wire
Utility Bedding, For Pipe & Conduit, Not Incl.								Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	19	LCY	\$20.00			108.20%	\$411.16	conversation on June 29th, 2011
	·							RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	19	LCY		\$7.64	\$14.10	108.20%	\$446.93	16, 31 23 23.20 Hauling
	·							RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	19	ECY		\$3.05	\$0.34	108.20%	\$69.69	23 23.16 Fill By Borrow & Utility Bedding
	·							RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	22	LCY		\$0.50	\$1.05	108.20%	\$36.90	23 23.17 General Fill

			Cost per		Installation	Equipment	Location		
Excavation-Backfill	Quantity	Unit	Unit	Material Cost	Cost	Cost	Factor	Total Cost	Comments
									RSMeans Building Construction Cost Data, 2011, 01 54
Mobilization	8	EA	\$0.00	\$0.00	\$69.00	\$116.00	100.00%	\$1,480.00	36 - Equipment Mobilization
									Is clear and grub needed for structure in urban
									setting? RSMeans Building Construction Cost Data,
Clear and Grub Site	0.10	ACRE	\$0.00	\$0.00	\$1,750.00	\$1,300.00	108.20%	\$331.45	2011, 31 11 10.10 Clear and Grub Site
									Grade Beams, 3' wide, 3' deep RSMeans Building
									Construction Cost Data, 2011, 31 23 16.16 3/4 CY
									bucket, (Price Included in grade beam foundation
Excavation for Grade Beams	118	BCY	\$0.00	\$0.00	\$0.00	\$0.00	108.20%	\$0.00	price)
									1225 SF mat, 2' deep. RSMeans Building Construction
Excavation for slab, subgrade and capillary break	259	BCY	\$0.00	\$0.00	\$7.20	\$7.17	108.20%	\$4,031.05	Cost Data, 2011, 31 23 16.16 3/4 CY bucket
Removal of Foundation Spoils, Haul of Material, 40									RSMeans Building Construction Cost Data, 2011, 31 05
MPH, cycle 40 MPH	472	LCY			\$7.64	\$14.10	108.20%	\$11,102.14	16, 31 23 23.20 Hauling
									Quote per Quigg Bros, Aberdeen, WA, phone
Backfill Slab, subgrade, capillary break	408	ECY		\$20.00			108.20%	\$8,824.52	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	408	ECY			\$7.64	\$14.10	108.20%	\$9,592.25	16, 31 23 23.20 Hauling
·					•		•	\$35,361.41	

\$35,361.41

			Cost per		Installation	Equipment	Location		
Foundation	Quantity	Unit	Unit	Material Cost	Cost	Cost	Factor	Total Cost	Comments
									Piling needs to 2x the height of the structure which is
Piling									23-35'?
									Per phone conversation with Quigg Bros, Aberdeen,
Mobilization for piling	1	EA	\$12,000.00	\$0.00	\$0.00	\$0.00	100.00%	\$12,000.00	WA on June 29th, 2011

									Driven pipe piles 40' long, 18"x.5", per phone conversation with Quigg Bros, Aberdeen, WA on June 29th,2011. Equipment Included in Material/Labor
Battered Piles, 18" Diameter, 30'-40' Deep	27	EA	\$0.00	\$3,500.00	\$1,200.00	\$0.00	100.00%	\$126,900.00	
									RSMeans Assemblies Cost Data 2011, A1010 250 Pile
			40.00	40=0.00	4= 40 00		00 000/	40.400.67	Caps (Equipment Costs are included in Installation
Pile Caps, Cap Size 6'-6" x 3'-6" x 37"	9	EA	\$0.00	\$370.00	\$540.00		99.30%	\$8,132.67	Cost)
Foundation Cast-In-Place/Tower									DCM cons Assemblies Cost Data 2011, A 1020 210
Grade Beams 30' span, 28" deep, 14" wide, 2 KLF									RSMeans Assemblies Cost Data 2011, A 1020 210 Grade Beams (Equipment Cost is included in
load	355	LF		\$34.50	\$53.00		99.30%	\$30.842.00	Installation Cost)
1000	333			Ç54.50			33.3070	\$30,042.00	Piling needs to 2x the height of the structure which is
Foundation Cast-In-Place/ Footings for Ramp									23-35'?
, , ,									RSMeans Assemblies Cost Data, 2011, A1010 210,
Spread Footings, load 75K, soil capacity 6 KSF, 4'-0"									Spread Footings (Equipment Cost is included in
sq x 12" deep	12	EA	\$0.00	\$94.50	\$167.00	\$0.00	99.30%	\$3,116.03	Installation Cost)
								\$180,990.71	
Characterine			Cost per		Installation	Equipment	Location		
Structure	Quantity	Unit	Unit	Material Cost	Cost	Costs	Factor	Total Cost	Comments
Mobilization of Equipment	10	EA			\$116.00	\$185.00	100.00%	\$3,010.00	RSMeans, Building Construction Cost Data, 2011, 01 54 36.50 Mobilization
									Beam and Column sizes are not determined and
								60.00	estimate takes in "best guess" to assume sizes for this
Concrete Structure								\$0.00	project.
Concrete Columns, rated for 1000 K load, 26"									RSMeans Assemblies Cost Data, 2011, B1010 201, CIP Column, Round Tied (Equipment Cost included in
round, concrete strength, 6000 PSI	90	VLF		\$158.00	\$7.85	\$0.00	99.30%	\$14,822.01	Installation Cost)
Slab-On-Grade, 6" thick, non-industrial, reinforced,	30	VLI		\$138.00	۷7.65	Ş0.00	33.3070	714,022.01	RSMeans Assemblies Cost Data, 2011, A1030 120,
Ground Floor	3500	SF		\$3.01	\$2.97		99.30%	\$20.783.49	Slab on Grade, Plain & Reinforced
					, -			, ,, ,,	RSMeans Assemblies Cost Data, 2011, B1010 229
Cast-In-Place Beam and Slab, Two Way, 30x30, 351									Precast Plank with No Topping (Equipment Cost
PSF, 9" thick slab, 2nd Floor (evacuation level)	3500	SF		\$8.95	\$13.60		99.30%	\$78,372.53	included in Installation Cost)
									Wood structure, hip roof to support galvanized steel
Wood Structure									panels
									Supply quote from Levee Lumber, Hoquiam, WA,
									RSMeans Assemblies Cost Data, 2011, B1020 102,
		=		40.0=	40.50		0= 000/	44 000 00	Roof Construction, Wood/Flat or Pitched (Equipment
Wood Columns 12"x12", 10' High, Select Structural	90	VLF		\$9.85	\$2.62		97.30%	\$1,092.00	Cost included in Installation Cost)
									Supply quote from Levee Lumber, Hoquiam, WA, RSMeans Building Construction Cost Data 2011, Gluec
Perimeter Joists, 3 1/8"x12", GLM 30' span	237	LF		\$4.85	\$1.95	\$22.00	97.30%	\$6,631.31	Laminated Beams 06 18 13.20
Termicier Joists, 3 1/0 x12 , OLIVI 30 Span	231	LF	+	۲۵۰۰۰۲	ر5.1ب	٧٤.٥٥	37.30/0	70,031.31	RSMeans Assemblies Cost Data, 2011, B1020 102,
									Roof Construction, Wood/Flat or Pitched (Equipment
2x10 Wood Joist w/ 1/2" CDX, 12" OC	3500	SF		\$2.02	\$2.05		97.30%	\$13,860.39	Cost included in Installation Cost)
. , . , , ,								, , ,	RSMeans Assemblies Cost Data, 2011, B1020 102,
Roof, wood/pitched, 3"x12" 12" OC w/ sheating									Roof Construction, Wood/Flat or Pitched (Equipment
plywood on roof, 5/16" CDX	4900	SF		\$4.59	\$2.62		97.30%	\$34,375.12	Cost included in Installation Cost)
Weather Proofing/Coatings add 15% (Premium for									Assumed that PTS wood is 15% more compared on
PTS Wood)	\$55,958.81	%	15.00%					\$8,393.82	price difference shown in means
								\$181,340.66	
Roofing	Quantity	Unit	Cost per Uni	Material Cost	stallation Cos	uipment Co	Location Facto	Total Cost	Comments
									1

								RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	4	EA		\$116.00	\$185.00	100.00%	\$1,204.00	54 36.50 Mobilization
								Hip and ridge style roof, peak of roof 15'. (Equipment
Roofing/Hip and Ridge Roof Steel Panels								Cost is included in Installation Cost)
								RSMeans Assemblies Cost Data, 2011, B3010 135,
Flat Roof Steel Panels, Flat Seam, Copper, 1/4" min.								Formed Metal (Equipment Cost is included in
slope, 20 oz, 1.2 PSF	4900	SF	\$9.50	\$5.80		100.30%	\$75,194.91	Installation Cost)
							\$76,398.91	

Stairs/Ramps/Guardrails Cost per Unit Material Costhstallation Cosuipment Colocation Facto Total Cost Quantity Unit Comments RSMeans, Building Construction Cost Data, 2011, 01 Mobilization of Equipment 6 EΑ \$116.00 \$185.00 100.00% \$1,806.00 54 36.50 Mobilization Beam and Column sizes are not determined and estimate takes in "best guess" to assume sizes for this Exterior Ramp, Rises 20', 5' wide RSMeans Assemblies Cost Data, 2011, B1010, 208 Steel Columns, 20' high, Wide Flanged, 6", 12 Steel Columns (Equipment Cost is included in VLF \$26.50 \$7.85 \$0.00 95.40% \$3,932.39 120 Installation Cost) W Shape Beams and Girders, bay size 15X20,, Total RSMeans Building Construction Cost Data, 2011, 800 SF \$11.70 \$3.82 \$1.50 95.40% Structural Steel Framing, 05 12 23.17 RSMeans Assemblies Cost Data, 2011, B1010 258, Floor Construction, Metal Deck/Concrete Fill, Deck Metal Deck/Concrete Fill (Equipment Cost is included Span 6 ft, 150 PSF Superimposed Load 800 SF \$2.38 \$2.38 95.40% \$3,632.83 in Installation Cost) RSMeans Building Construction Cost Data, 2011, 05 05 Weather Proofing/Coatings (Galvanized) 7.5 Tons \$400.00 \$0.00 0 0 95.40% \$2,862.00 13.50, Paints and Protective Coatings Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building 270 LF \$32.50 \$9.80 95.40% \$10,895.63 Construction Cost Date 2011, 05 52 Metal Railings Hand Rail/Guard Rail Ladders/Stairs Steel ladder to attic space 20" wide bolted to RSMeans Building Construction Cost Data 2011, 05 51 concrete without cage 10 VLF \$65.00 \$31.50 \$2.18 95.40% \$920.61 33 - Vertical Metal Ladders RSMeans Building Construction Cost Data 2011, 11 33 Accordion Ladder for Escape after Tsunami, Disappearing Stairs, Heavy duty, 16'-0" ceiling 2 \$1,400.00 \$172.00 95.40% \$2,999.38 10.10, Disappearing Stairway ea Platform Perimeters Railing (120 LF for each platform, 2 locations) Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building Construction Cost Date 2011, 05 52 Metal Railings Hand Rail/Guard Rail \$9.549.55 237 LF \$32.50 \$9.80 95.40%

Cost per Installation Equipment Location Fire Protection Quantity Unit Unit Material Cost Costs Cost Factor **Total Cost** Comments Fire Protection, Wet Pipe System RSMeans Building Construction Cost Data, 2011, 01 54 \$69.00 \$116.00 100.00% \$740.00 Mobilization EΑ 36 - Equipment Mobilization RSMeans Square Foot Costs, 2011, D4010 410, Wet Pipe Sprinkler Systems (Equipment Cost included in First Floor, 2000 SF, Light Hazard 3500 SF \$4.50 \$3.04 97.00% \$25,598.30 Installation Cost)

\$26,338.30

\$49,588.05

Map Number:	11	Minimum Structure Height:	14
Structure Type:	Tower	Structure Capacity:	350
Location:	Ocean Shores, WA, Ocean Shores Blvd &	Safe Haven Square Footage:	3500
	Marine View Drive SW		
Levels	1	Columns Required:	9
		Piles per Column:	3
Scope	<u> </u>		Cost
Site Utilities			\$15,257
Excavation-Backfill			\$35,361
Foundation			\$180,991
Structure			\$187,269
Roofing			\$76,399
Stairs/Ramps/Guardrails			\$51,161
Fire Protection			\$26,338
Total			\$572,777
Design Fees (8%)			\$45,822
General Conditions (10%)			\$57,278
Contractor Fees, O&P (15%)			\$85,917
Construction Contingency (5%)			\$28,639
Estimate/Design Contingency (10%)			\$57,278
Project Total			\$847,710

			Cost per	1	Installation	Equipment	Location		
Site Utilities	Quantity	Unit	Unit	Material Cost		Cost	Factor	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	10	EA			\$116.00	\$185.00	100.00%	\$3,010.00	54 36.50 Mobilization
Fire Water, Ductile Iron Class 250, MJ, 4" diameter	50	LF		\$16.05					Assuming 50' distance from service at street
									RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator 4'-6' deep	35	BCY			\$2.16	\$2.13	108.20%	\$162.46	23 16.13, Excavating Trench
									RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 4" Ductile Iron Piping, MJ	50	LF		\$12.50	\$8.55	\$2.17	108.20%	\$1,256.20	11 Water Utility Distribution Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	6	LCY		\$20.00			108.20%	\$129.84	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	6	LCY			\$7.64	\$14.10	108.20%	\$141.14	16, 31 23 23.20 Hauling
									RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	5	ECY			\$3.05	\$0.34	108.20%	\$18.34	23 23.16 Fill By Borrow & Utility Bedding
									RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	38	LCY			\$0.50	\$1.05	108.20%	\$63.73	23 23.17 General Fill
Storm Service									Assuming 50' distance from service at street
									RSMeans, Building Construction Cost Data, 201, 31 23
Excavate, 3/4 CY Excavator, 6'-10' deep	60	BCY			\$2.88	\$2.85	108.20%	\$371.99	16.13 Excavating Trench
									RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 8" Bituminous Coated	50	LF		\$10.70	\$5.25	\$0.97	108.20%	\$915.37	41 Storm Utility Drainage Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	6	LCY		\$20.00			108.20%	\$129.84	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	6	LCY			\$7.64	\$14.10	108.20%	\$141.14	16, 31 23 23.20 Hauling

								RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	5	ECY		\$3.05	\$0.34	108.20%	\$18.34	23 23.16 Fill By Borrow & Utility Bedding
								RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	38	LCY		\$0.50	\$1.05	108.20%	\$63.73	23 23.17 General Fill
Site Drainage/Area Drains/Catch Basins								Assume 1 area drain for structure
								RSMeans Assemblies Cost Data, 2011, G3030 210,
Concrete, Precast, 4' ID riser, 4' deep	1	EA	\$1,425.00	\$1,200.00	0.00%	108.20%	\$2,840.25	Manholes & Catch Basins
Electrical	50	LF						Assuming 50' distance from service at street
Electrical Service, includes service installation,								RSMeans Assemblies Cost Data, 2011, D 5010 120,
breakers, metering, 20' conduit & wire, 3 phase, 4								Electric Service, 3 Phase - 4 Wire, equipment included
wire, 120/208 volts, 60 A	1	EA	\$960.00	\$920.00		100.50%	\$1,889.40	in installation cost
								RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator, 4'-6' deep	35	BCY		\$2.16	\$2.13	108.20%	\$162.46	23 16.13 Excavating Trench
								RSMeans, Building Construction Cost Data, 2011, 33
Install & Test PVC, type EB 4 @ 3" diameter	50	LF	\$2.00	\$8.05		108.20%	\$543.71	71 19 Electrical Underground Ducts and Manholes
								RSMeans, Building Construction Cost Data, 2011, 26
Wire, 600 volt, copper type THW, solid, #12	50	CLF	\$11.95	\$36.50	0	100.50%	\$2,434.61	05 19.90 Wire
Utility Bedding, For Pipe & Conduit, Not Incl.								Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	19	LCY	\$20.00			108.20%	\$411.16	conversation on June 29th, 2011
								RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	19	LCY		\$7.64	\$14.10	108.20%	\$446.93	16, 31 23 23.20 Hauling
								RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	19	ECY		\$3.05	\$0.34	108.20%	\$69.69	23 23.16 Fill By Borrow & Utility Bedding
								RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	22	LCY		\$0.50	\$1.05	108.20%	\$36.90	23 23.17 General Fill

			Cost per		Installation	Equipment	Location		
Excavation-Backfill	Quantity	Unit	Unit	Material Cost	Cost	Cost	Factor	Total Cost	Comments
									RSMeans Building Construction Cost Data, 2011, 01 54
Mobilization	8	EA	\$0.00	\$0.00	\$69.00	\$116.00	100.00%	\$1,480.00	36 - Equipment Mobilization
									Is clear and grub needed for structure in urban
									setting? RSMeans Building Construction Cost Data,
Clear and Grub Site	0.10	ACRE	\$0.00	\$0.00	\$1,750.00	\$1,300.00	108.20%	\$331.45	2011, 31 11 10.10 Clear and Grub Site
									Grade Beams, 3' wide, 3' deep RSMeans Building
									Construction Cost Data, 2011, 31 23 16.16 3/4 CY
									bucket, (Price Included in grade beam foundation
Excavation for Grade Beams	118	BCY	\$0.00	\$0.00	\$0.00	\$0.00	108.20%	\$0.00	price)
									1225 SF mat, 2' deep. RSMeans Building Construction
Excavation for slab, subgrade and capillary break	259	BCY	\$0.00	\$0.00	\$7.20	\$7.17	108.20%	\$4,031.05	Cost Data, 2011, 31 23 16.16 3/4 CY bucket
Removal of Foundation Spoils, Haul of Material, 40									RSMeans Building Construction Cost Data, 2011, 31 05
MPH, cycle 40 MPH	472	LCY			\$7.64	\$14.10	108.20%	\$11,102.14	16, 31 23 23.20 Hauling
									Quote per Quigg Bros, Aberdeen, WA, phone
Backfill Slab, subgrade, capillary break	408	ECY		\$20.00			108.20%	\$8,824.52	conversation on June 29th, 2011
					•				RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	408	ECY			\$7.64	\$14.10	108.20%	\$9,592.25	16, 31 23 23.20 Hauling
			•		•		•	\$35,361.41	

Location Factor **Total Cost** Comments

Foundation Quantity Unit Unit **Material Cost** Cost Cost Piling needs to 2x the height of the structure which is Piling 23-35'?

Cost per

Installation Equipment

									Per phone conversation with Quigg Bros, Aberdeen,
Mobilization for piling	1	EA	\$12,000.00	\$0.00	\$0.00	\$0.00	100.00%	\$12,000.00	WA on June 29th, 2011
									Driven pipe piles 40' long, 18"x.5", per phone
									conversation with Quigg Bros, Aberdeen, WA on June
									29th,2011. Equipment Included in Material/Labor
Battered Piles, 18" Diameter, 30'-40' Deep	27	EA	\$0.00	\$3,500.00	\$1,200.00	\$0.00	100.00%	\$126,900.00	Cost
									RSMeans Assemblies Cost Data 2011, A1010 250 Pile
									Caps (Equipment Costs are included in Installation
Pile Caps, Cap Size 6'-6" x 3'-6" x 37"	9	EA	\$0.00	\$370.00	\$540.00		99.30%	\$8,132.67	Cost)
Foundation Cast-In-Place/Tower									
									RSMeans Assemblies Cost Data 2011, A 1020 210
Grade Beams 30' span, 28" deep, 14" wide, 2 KLF									Grade Beams (Equipment Cost is included in
load	355	LF		\$34.50	\$53.00		99.30%	\$30,842.00	Installation Cost)
									Piling needs to 2x the height of the structure which is
Foundation Cast-In-Place/ Footings for Ramp									23-35'?
									RSMeans Assemblies Cost Data, 2011, A1010 210,
Spread Footings, load 75K, soil capacity 6 KSF, 4'-0"									Spread Footings (Equipment Cost is included in
sq x 12" deep	12	EA	\$0.00	\$94.50	\$167.00	\$0.00	99.30%	\$3,116.03	Installation Cost)

\$180,990.71

			Cost per		Installation	Equipment	Location		
Structure	Quantity	Unit	Unit	Material Cost	Cost	Costs	Factor	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	10	EA			\$116.00	\$185.00	100.00%	\$3,010.00	54 36.50 Mobilization
									Beam and Column sizes are not determined and
									estimate takes in "best guess" to assume sizes for this
Concrete Structure									project.
									RSMeans Assemblies Cost Data, 2011, B1010 201, CIP
Concrete Columns, rated for 1000 K load, 26"									Column, Round Tied (Equipment Cost included in
round, concrete strength, 6000 PSI	126	VLF		\$158.00	\$7.85	\$0.00	99.30%	<u> </u>	Installation Cost)
Slab-On-Grade, 6" thick, non-industrial, reinforced,									RSMeans Assemblies Cost Data, 2011, A1030 120,
Ground Floor	3500	SF		\$3.01	\$2.97		99.30%	\$20,783.49	Slab on Grade, Plain & Reinforced
									RSMeans Assemblies Cost Data, 2011, B1010 229
Cast-In-Place Beam and Slab, Two Way, 30x30, 351									Precast Plank with No Topping (Equipment Cost
PSF, 9" thick slab, 2nd Floor (evacuation level)	3500	SF		\$8.95	\$13.60		99.30%		included in Installation Cost)
									Wood structure, hip roof to support galvanized steel
Wood Structure									panels
									Supply quote from Levee Lumber, Hoquiam, WA,
									RSMeans Assemblies Cost Data, 2011, B1020 102,
									Roof Construction, Wood/Flat or Pitched (Equipment
Wood Columns 12"x12", 10' High, Select Structural	90	VLF		\$9.85	\$2.62		97.30%	\$1,092.00	Cost included in Installation Cost)
									Supply quote from Levee Lumber, Hoquiam, WA,
									RSMeans Building Construction Cost Data 2011, Glued
Perimeter Joists, 3 1/8"x12", GLM 30' span	237	LF		\$4.85	\$1.95	\$22.00	97.30%	\$6,631.31	Laminated Beams 06 18 13.20
									RSMeans Assemblies Cost Data, 2011, B1020 102,
									Roof Construction, Wood/Flat or Pitched (Equipment
2x10 Wood Joist w/ 1/2" CDX, 12" OC	3500	SF		\$2.02	\$2.05		97.30%	\$13,860.39	Cost included in Installation Cost)
									RSMeans Assemblies Cost Data, 2011, B1020 102,
Roof, wood/pitched, 3"x12" 12" OC w/ sheating									Roof Construction, Wood/Flat or Pitched (Equipment
plywood on roof, 5/16" CDX	4900	SF		\$4.59	\$2.62		97.30%	1 - 7	Cost included in Installation Cost)
Weather Proofing/Coatings add 15% (Premium for									Assumed that PTS wood is 15% more compared on
PTS Wood)	\$55,958.81	%	15.00%						price difference shown in means
	· · · · · · · · · · · · · · · · · · ·							\$187,269.47	

	Unit Cost per Unit Material Cost stallat	on Costuipment C	Location Factor	Total Cost	Comments
					RSMeans, Building Construction Cost Data, 2011, 01
	EA \$11	.00 \$185.00	100.00%	\$1,204.00	54 36.50 Mobilization
					Hip and ridge style roof, peak of roof 15'. (Equipment
					Cost is included in Installation Cost)
					RSMeans Assemblies Cost Data, 2011, B3010 135,
					Formed Metal (Equipment Cost is included in
	SF \$9.50 \$5	30	100.30%	\$75,194.91	Installation Cost)
F	SI	\$9.50 \$5.8	\$9.50 \$5.80	\$9.50 \$5.80 100.30%	\$9.50 \$5.80 100.30% \$75,194.91

\$76,398.91

Stairs/Ramps/Guardrails	Quantity	Unit	Cost per Unit	Material Cost	nstallation Cos	uipment Co	Location Facto	Total Cost	Comments
, ,	•								RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	6	EA			\$116.00	\$185.00	100.00%	\$1,806.00	54 36.50 Mobilization
									Beam and Column sizes are not determined and
									estimate takes in "best guess" to assume sizes for this
Exterior Ramp, Rises 20', 5' wide									project.
									RSMeans Assemblies Cost Data, 2011, B1010, 208
Steel Columns, 20' high, Wide Flanged, 6", 12									Steel Columns (Equipment Cost is included in
locations	168	VLF		\$26.50	\$7.85	\$0.00	95.40%	\$5,505.34	Installation Cost)
W Shape Beams and Girders, bay size 15X20,, Total									RSMeans Building Construction Cost Data, 2011,
Load 263 PSF.	800	SF		\$11.70	\$3.82	\$1.50	95.40%	\$12,989.66	Structural Steel Framing, 05 12 23.17
									RSMeans Assemblies Cost Data, 2011, B1010 258,
Floor Construction, Metal Deck/Concrete Fill, Deck									Metal Deck/Concrete Fill (Equipment Cost is included
Span 6 ft, 150 PSF Superimposed Load	800	SF		\$2.38	\$2.38		95.40%	\$3,632.83	in Installation Cost)
									RSMeans Building Construction Cost Data, 2011, 05 05
Weather Proofing/Coatings (Galvanized)	7.5	Tons	\$400.00	\$0.00	0	0	95.40%	\$2,862.00	13.50, Paints and Protective Coatings
									Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building
Hand Rail/Guard Rail	270	LF		\$32.50	\$9.80		95.40%	\$10,895.63	Construction Cost Date 2011, 05 52 Metal Railings
Ladders/Stairs									
Steel ladder to attic space 20" wide bolted to									RSMeans Building Construction Cost Data 2011, 05 51
concrete without cage	10	VLF		\$65.00	\$31.50	\$2.18	95.40%	\$920.61	33 - Vertical Metal Ladders
Accordion Ladder for Escape after Tsunami,									RSMeans Building Construction Cost Data 2011, 11 33
Disappearing Stairs, Heavy duty, 16'-0" ceiling	2	ea		\$1,400.00	\$172.00		95.40%	\$2,999.38	10.10, Disappearing Stairway
Platform Perimeters Railing (120 LF for each									
platform, 2 locations)									
									Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building
Hand Rail/Guard Rail	237	LF		\$32.50	\$9.80		95.40%	\$9,549.55	Construction Cost Date 2011, 05 52 Metal Railings
•								¢E1 161 01	

\$51,161.01

			Cost per		Installation	Equipment	Location		
Fire Protection	Quantity	Unit	Unit	Material Cost	Costs	Cost	Factor	Total Cost	Comments
Fire Protection, Wet Pipe System									
									RSMeans Building Construction Cost Data, 2011, 01 54
Mobilization	4	EA		\$69.00	\$116.00		100.00%	\$740.00	36 - Equipment Mobilization
									RSMeans Square Foot Costs, 2011, D4010 410, Wet
									Pipe Sprinkler Systems (Equipment Cost included in
First Floor, 2000 SF, Light Hazard	3500	SF		\$4.50	\$3.04		97.00%	\$25,598.30	Installation Cost)

\$26,338.30

Map Number:	12	Minimum Structure Height:	10
Structure Type:	Tower	Structure Capacity:	500
Location:	Ocean Shores, WA, Emeritus Senior	Safe Haven Square Footage:	5000
	Living		
Levels	1	Columns Required:	16
		Piles per Column:	3
Scope			Cost
Site Utilities			\$15,257
Excavation-Backfill			\$51,409
Foundation			\$304,325
Structure			\$261,603
Roofing			\$108,625
Stairs/Ramps/Guardrails			\$51,452
Fire Protection			\$37,309
Total			\$829,981
Design Fees (8%)			\$66,398
General Conditions (10%)			\$82,998
Contractor Fees, O&P (15%)			\$124,497
Construction Contingency (5%)			\$41,499
Estimate/Design Contingency (10%)			\$82,998
Project Total			\$1,228,372

			Cost per		Installation	Equipment	Location		
Site Utilities	Quantity	Unit	Unit	Material Cost	Cost	Cost	Factor	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	10	EA			\$116.00	\$185.00	100.00%	\$3,010.00	54 36.50 Mobilization
Fire Water, Ductile Iron Class 250, MJ, 4" diameter	50	LF		\$16.05					Assuming 50' distance from service at street
The water, bactile non class 250, ws, 4 diameter	30			Ş10.03					RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator 4'-6' deep	35	BCY			\$2.16	\$2.13	108.20%	\$162.46	23 16.13, Excavating Trench
, ,					,	·		·	RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 4" Ductile Iron Piping, MJ	50	LF		\$12.50	\$8.55	\$2.17	108.20%	\$1,256.20	11 Water Utility Distribution Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	6	LCY		\$20.00			108.20%	\$129.84	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	6	LCY			\$7.64	\$14.10	108.20%	\$141.14	16, 31 23 23.20 Hauling
									RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	5	ECY			\$3.05	\$0.34	108.20%	\$18.34	23 23.16 Fill By Borrow & Utility Bedding
									RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	38	LCY			\$0.50	\$1.05	108.20%	\$63.73	23 23.17 General Fill
Storm Service									Assuming 50' distance from service at street
									RSMeans, Building Construction Cost Data, 201, 31 23
Excavate, 3/4 CY Excavator, 6'-10' deep	60	BCY			\$2.88	\$2.85	108.20%	\$371.99	16.13 Excavating Trench
									RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 8" Bituminous Coated	50	LF		\$10.70	\$5.25	\$0.97	108.20%	\$915.37	41 Storm Utility Drainage Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	6	LCY		\$20.00			108.20%	\$129.84	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	6	LCY			\$7.64	\$14.10	108.20%	\$141.14	16, 31 23 23.20 Hauling

								RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	5	ECY		\$3.05	\$0.34	108.20%	\$18.34	23 23.16 Fill By Borrow & Utility Bedding
								RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	38	LCY		\$0.50	\$1.05	108.20%	\$63.73	23 23.17 General Fill
Site Drainage/Area Drains/Catch Basins								Assume 1 area drain for structure
								RSMeans Assemblies Cost Data, 2011, G3030 210,
Concrete, Precast, 4' ID riser, 4' deep	1	EA	\$1,425.00	\$1,200.00	0.00%	108.20%	\$2,840.25	Manholes & Catch Basins
Electrical	50	LF						Assuming 50' distance from service at street
Electrical Service, includes service installation,								RSMeans Assemblies Cost Data, 2011, D 5010 120,
breakers, metering, 20' conduit & wire, 3 phase, 4								Electric Service, 3 Phase - 4 Wire, equipment included
wire, 120/208 volts, 60 A	1	EA	\$960.00	\$920.00		100.50%	\$1,889.40	in installation cost
								RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator, 4'-6' deep	35	BCY		\$2.16	\$2.13	108.20%	\$162.46	23 16.13 Excavating Trench
								RSMeans, Building Construction Cost Data, 2011, 33
Install & Test PVC, type EB 4 @ 3" diameter	50	LF	\$2.00	\$8.05		108.20%	\$543.71	71 19 Electrical Underground Ducts and Manholes
								RSMeans, Building Construction Cost Data, 2011, 26
Wire, 600 volt, copper type THW, solid, #12	50	CLF	\$11.95	\$36.50	0	100.50%	\$2,434.61	05 19.90 Wire
Utility Bedding, For Pipe & Conduit, Not Incl.								Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	19	LCY	\$20.00			108.20%	\$411.16	conversation on June 29th, 2011
								RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	19	LCY		\$7.64	\$14.10	108.20%	\$446.93	16, 31 23 23.20 Hauling
								RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	19	ECY		\$3.05	\$0.34	108.20%	\$69.69	23 23.16 Fill By Borrow & Utility Bedding
								RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	22	LCY		\$0.50	\$1.05	108.20%	\$36.90	23 23.17 General Fill

			Cost per		Installation	Equipment	Location		
Excavation-Backfill	Quantity	Unit	Unit	Material Cost	Cost	Cost	Factor	Total Cost	Comments
									RSMeans Building Construction Cost Data, 2011, 01 54
Mobilization	8	EA	\$0.00	\$0.00	\$69.00	\$116.00	100.00%	\$1,480.00	36 - Equipment Mobilization
									Is clear and grub needed for structure in urban
									setting? RSMeans Building Construction Cost Data,
Clear and Grub Site	0.14	ACRE	\$0.00	\$0.00	\$1,750.00	\$1,300.00	108.20%	\$473.50	2011, 31 11 10.10 Clear and Grub Site
									Grade Beams, 3' wide, 3' deep RSMeans Building
									Construction Cost Data, 2011, 31 23 16.16 3/4 CY
									bucket, (Price Included in grade beam foundation
Excavation for Grade Beams	189	BCY	\$0.00	\$0.00	\$0.00	\$0.00	108.20%	\$0.00	price)
									1225 SF mat, 2' deep. RSMeans Building Construction
Excavation for slab, subgrade and capillary break	370	BCY	\$0.00	\$0.00	\$7.20	\$7.17	108.20%	\$5,758.64	Cost Data, 2011, 31 23 16.16 3/4 CY bucket
Removal of Foundation Spoils, Haul of Material, 40									RSMeans Building Construction Cost Data, 2011, 31 05
MPH, cycle 40 MPH	699	LCY			\$7.64	\$14.10	108.20%	\$16,434.48	16, 31 23 23.20 Hauling
									Quote per Quigg Bros, Aberdeen, WA, phone
Backfill Slab, subgrade, capillary break	604	ECY		\$20.00			108.20%	\$13,062.92	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	604	ECY			\$7.64	\$14.10	108.20%	\$14,199.39	16, 31 23 23.20 Hauling
								\$51,408.93	

Foundation	Quantity	Unit	Cost per Unit	Material Cost	Installation Cost	Equipment Cost	Location Factor	Total Cost	Comments
Piling									Piling needs to 2x the height of the structure which is 23-35'?

									Per phone conversation with Quigg Bros, Aberdeen,
Mobilization for piling	1	EA	\$12,000.00	\$0.00	\$0.00	\$0.00	100.00%	\$12,000.00	WA on June 29th, 2011
									Driven pipe piles 40' long, 18"x.5", per phone
									conversation with Quigg Bros, Aberdeen, WA on June
									29th,2011. Equipment Included in Material/Labor
Battered Piles, 18" Diameter, 30'-40' Deep	48	EA	\$0.00	\$3,500.00	\$1,200.00	\$0.00	100.00%	\$225,600.00	Cost
									RSMeans Assemblies Cost Data 2011, A1010 250 Pile
									Caps (Equipment Costs are included in Installation
Pile Caps, Cap Size 6'-6" x 3'-6" x 37"	16	EA	\$0.00	\$370.00	\$540.00		99.30%	\$14,458.08	Cost)
Foundation Cast-In-Place/Tower									
									RSMeans Assemblies Cost Data 2011, A 1020 210
Grade Beams 30' span, 28" deep, 14" wide, 2 KLF									Grade Beams (Equipment Cost is included in
load	566	LF		\$34.50	\$53.00		99.30%	\$49,150.99	Installation Cost)
									Piling needs to 2x the height of the structure which is
Foundation Cast-In-Place/ Footings for Ramp									23-35'?
									RSMeans Assemblies Cost Data, 2011, A1010 210,
Spread Footings, load 75K, soil capacity 6 KSF, 4'-0"									Spread Footings (Equipment Cost is included in
sq x 12" deep	12	EA	\$0.00	\$94.50	\$167.00	\$0.00	99.30%	\$3,116.03	Installation Cost)

\$304,325.11

						- · .			
Structure	Quantity	Unit	Cost per Unit	Material Cost	Installation Cost	Equipment Costs	Location Factor	Total Cost	Comments
ou detaile	ζ,		-					10101 0001	RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	10	EA			\$116.00	\$185.00	100.00%	\$3,010.00	54 36.50 Mobilization
4. 6	-					,		1 2/2 2 2 2	Beam and Column sizes are not determined and
									estimate takes in "best guess" to assume sizes for this
Concrete Structure								\$0.00	project.
									RSMeans Assemblies Cost Data, 2011, B1010 201, CIP
Concrete Columns, rated for 1000 K load, 26"									Column, Round Tied (Equipment Cost included in
round, concrete strength, 6000 PSI	160	VLF		\$158.00	\$7.85	\$0.00	99.30%	\$26,350.25	Installation Cost)
Slab-On-Grade, 6" thick, non-industrial, reinforced,									RSMeans Assemblies Cost Data, 2011, A1030 120,
Ground Floor	5000	SF		\$3.01	\$2.97		99.30%	\$29,690.70	Slab on Grade, Plain & Reinforced
									RSMeans Assemblies Cost Data, 2011, B1010 229
Cast-In-Place Beam and Slab, Two Way, 30x30, 351									Precast Plank with No Topping (Equipment Cost
PSF, 9" thick slab, 2nd Floor (evacuation level)	5000	SF		\$8.95	\$13.60		99.30%	\$111,960.75	included in Installation Cost)
									Wood structure, hip roof to support galvanized steel
Wood Structure									panels
									Supply quote from Levee Lumber, Hoquiam, WA,
									RSMeans Assemblies Cost Data, 2011, B1020 102,
				4	4			4	Roof Construction, Wood/Flat or Pitched (Equipment
Wood Columns 12"x12", 10' High, Select Structural	160	VLF		\$9.85	\$2.62		97.30%	\$1,941.33	Cost included in Installation Cost)
									Supply quote from Levee Lumber, Hoquiam, WA,
2				44.0=	44.0=	400.00	0= 000/	4= 00= 00	RSMeans Building Construction Cost Data 2011, Glued
Perimeter Joists, 3 1/8"x12", GLM 30' span	283	LF		\$4.85	\$1.95	\$22.00	97.30%	\$7,925.93	Laminated Beams 06 18 13.20
									RSMeans Assemblies Cost Data, 2011, B1020 102,
2010 March Latint / 1 /211 CDV 1211 OC	5000	CE		62.02	62.05		07.200/	¢40,000 FF	Roof Construction, Wood/Flat or Pitched (Equipment
2x10 Wood Joist w/ 1/2" CDX, 12" OC	5000	SF		\$2.02	\$2.05		97.30%	\$19,800.55	Cost included in Installation Cost)
Boof wood/sitched 3"v13" 13" OC w/ shooting									RSMeans Assemblies Cost Data, 2011, B1020 102,
Roof, wood/pitched, 3"x12" 12" OC w/ sheating plywood on roof, 5/16" CDX	7000	SF		\$4.59	\$2.62		97.30%	\$49,107.31	Roof Construction, Wood/Flat or Pitched (Equipment Cost included in Installation Cost)
Weather Proofing/Coatings add 15% (Premium for	7000	3F		\$4.59	\$2.62		97.30%	\$49,107.31	Assumed that PTS wood is 15% more compared on
PTS Wood)	\$78,775.12	%	15.00%					\$11.816.27	price difference shown in means
113 44000)	710,113.12	/0	13.00/0					\$11,610.27	price unicience shown in means

\$261,603.09

Roofing	Quantity	Unit	Cost per Unit	Material Cost	stallation Cos	լսipment Co	Location Factor	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	4	EA			\$116.00	\$185.00	100.00%	\$1,204.00	54 36.50 Mobilization
									Hip and ridge style roof, peak of roof 15'. (Equipment
Roofing/Hip and Ridge Roof Steel Panels									Cost is included in Installation Cost)
									RSMeans Assemblies Cost Data, 2011, B3010 135,
Flat Roof Steel Panels, Flat Seam, Copper, 1/4" min.									Formed Metal (Equipment Cost is included in
slope, 20 oz, 1.2 PSF	7000	SF		\$9.50	\$5.80		100.30%	\$107,421.30	Installation Cost)

\$108,625.30

Stairs/Ramps/Guardrails	Quantity	Unit	Cost per Unit	Material Cost	nstallation Co	uipment Co	Location Facto	Total Cost	Comments
-									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	6	EA			\$116.00	\$185.00	100.00%	\$1,806.00	54 36.50 Mobilization
									Beam and Column sizes are not determined and
									estimate takes in "best guess" to assume sizes for this
Exterior Ramp, Rises 20', 5' wide									project.
									RSMeans Assemblies Cost Data, 2011, B1010, 208
Steel Columns, 20' high, Wide Flanged, 6", 12									Steel Columns (Equipment Cost is included in
locations	120	VLF		\$26.50	\$7.85	\$0.00	95.40%	\$3,932.39	Installation Cost)
W Shape Beams and Girders, bay size 15X20,, Total									RSMeans Building Construction Cost Data, 2011,
Load 263 PSF.	800	SF		\$11.70	\$3.82	\$1.50	95.40%	\$12,989.66	Structural Steel Framing, 05 12 23.17
									RSMeans Assemblies Cost Data, 2011, B1010 258,
Floor Construction, Metal Deck/Concrete Fill, Deck									Metal Deck/Concrete Fill (Equipment Cost is included
Span 6 ft, 150 PSF Superimposed Load	800	SF		\$2.38	\$2.38		95.40%	\$3,632.83	in Installation Cost)
									RSMeans Building Construction Cost Data, 2011, 05 05
Weather Proofing/Coatings (Galvanized)	7.5	Tons	\$400.00	\$0.00	0	0	95.40%	\$2,862.00	13.50, Paints and Protective Coatings
									Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building
Hand Rail/Guard Rail	270	LF		\$32.50	\$9.80		95.40%	\$10,895.63	Construction Cost Date 2011, 05 52 Metal Railings
Ladders/Stairs									
Steel ladder to attic space 20" wide bolted to									RSMeans Building Construction Cost Data 2011, 05 51
concrete without cage	10	VLF		\$65.00	\$31.50	\$2.18	95.40%	\$920.61	33 - Vertical Metal Ladders
Accordion Ladder for Escape after Tsunami,									RSMeans Building Construction Cost Data 2011, 11 33
Disappearing Stairs, Heavy duty, 16'-0" ceiling	2	ea		\$1,400.00	\$172.00		95.40%	\$2,999.38	10.10, Disappearing Stairway
Platform Perimeters Railing (120 LF for each platform, 2 locations)									
									Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building
Hand Rail/Guard Rail	283	LF		\$32.50	\$9.80		95.40%	\$11,413.89	Construction Cost Date 2011, 05 52 Metal Railings
								\$51,452,40	

\$51,452.40

			Cost per		Installation	Equipment	Location		
Fire Protection	Quantity	Unit	Unit	Material Cost	Costs	Cost	Factor	Total Cost	Comments
Fire Protection, Wet Pipe System									
									RSMeans Building Construction Cost Data, 2011, 01 54
Mobilization	4	EA		\$69.00	\$116.00		100.00%	\$740.00	36 - Equipment Mobilization
									RSMeans Square Foot Costs, 2011, D4010 410, Wet
									Pipe Sprinkler Systems (Equipment Cost included in
First Floor, 2000 SF, Light Hazard	5000	SF		\$4.50	\$3.04		97.00%	\$36,569.00	Installation Cost)
				•	•	•	•	627 200 00	

\$37,309.00

Map Number:	13	Minimum Structure Height:	14
Structure Type:	Tower	Structure Capacity:	350
Location:	Ocean Shores, WA, Wowona Ave. SE &	Safe Haven Square Footage:	3500
	Tonquin Ave. SW		
Levels	1	Columns Required:	9
		Piles per Column:	3
Scope	·		Cost
Site Utilities			\$15,257
Excavation-Backfill			\$35,361
Foundation			\$180,991
Structure			\$187,269
Roofing			\$76,399
Stairs/Ramps/Guardrails			\$51,161
Fire Protection			\$26,338
Total			\$572,777
Design Fees (8%)			\$45,822
General Conditions (10%)			\$57,278
Contractor Fees, O&P (15%)			\$85,917
Construction Contingency (5%)			\$28,639
Estimate/Design Contingency (10%)			\$57,278
Project Total			\$847,710

			Cost per		Installation	Equipment			
Site Utilities	Quantity	Unit	Unit	Material Cost	Cost	Cost	Factor	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	10	EA			\$116.00	\$185.00	100.00%	\$3,010.00	54 36.50 Mobilization
Fire Water, Ductile Iron Class 250, MJ, 4" diameter	50	LF		\$16.05					Assuming 50' distance from service at street
				7=0:00					RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator 4'-6' deep	35	BCY			\$2.16	\$2.13	108.20%	\$162.46	23 16.13, Excavating Trench
·									RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 4" Ductile Iron Piping, MJ	50	LF		\$12.50	\$8.55	\$2.17	108.20%	\$1,256.20	11 Water Utility Distribution Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	6	LCY		\$20.00			108.20%	\$129.84	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	6	LCY			\$7.64	\$14.10	108.20%	\$141.14	16, 31 23 23.20 Hauling
									RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	5	ECY			\$3.05	\$0.34	108.20%	\$18.34	23 23.16 Fill By Borrow & Utility Bedding
									RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	38	LCY			\$0.50	\$1.05	108.20%	\$63.73	23 23.17 General Fill
Storm Service									Assuming 50' distance from service at street
									RSMeans, Building Construction Cost Data, 201, 31 23
Excavate, 3/4 CY Excavator, 6'-10' deep	60	BCY			\$2.88	\$2.85	108.20%	\$371.99	16.13 Excavating Trench
									RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 8" Bituminous Coated	50	LF		\$10.70	\$5.25	\$0.97	108.20%	\$915.37	41 Storm Utility Drainage Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	6	LCY		\$20.00			108.20%	\$129.84	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	6	LCY			\$7.64	\$14.10	108.20%	\$141.14	16, 31 23 23.20 Hauling

								RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	5	ECY		\$3.05	\$0.34	108.20%	\$18.34	23 23.16 Fill By Borrow & Utility Bedding
								RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	38	LCY		\$0.50	\$1.05	108.20%	\$63.73	23 23.17 General Fill
Site Drainage/Area Drains/Catch Basins								Assume 1 area drain for structure
								RSMeans Assemblies Cost Data, 2011, G3030 210,
Concrete, Precast, 4' ID riser, 4' deep	1	EA	\$1,425.00	\$1,200.00	0.00%	108.20%	\$2,840.25	Manholes & Catch Basins
Electrical	50	LF						Assuming 50' distance from service at street
Electrical Service, includes service installation,								RSMeans Assemblies Cost Data, 2011, D 5010 120,
breakers, metering, 20' conduit & wire, 3 phase, 4								Electric Service, 3 Phase - 4 Wire, equipment included
wire, 120/208 volts, 60 A	1	EA	\$960.00	\$920.00		100.50%	\$1,889.40	in installation cost
								RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator, 4'-6' deep	35	BCY		\$2.16	\$2.13	108.20%	\$162.46	23 16.13 Excavating Trench
								RSMeans, Building Construction Cost Data, 2011, 33
Install & Test PVC, type EB 4 @ 3" diameter	50	LF	\$2.00	\$8.05		108.20%	\$543.71	71 19 Electrical Underground Ducts and Manholes
								RSMeans, Building Construction Cost Data, 2011, 26
Wire, 600 volt, copper type THW, solid, #12	50	CLF	\$11.95	\$36.50	0	100.50%	\$2,434.61	05 19.90 Wire
Utility Bedding, For Pipe & Conduit, Not Incl.								Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	19	LCY	\$20.00			108.20%	\$411.16	conversation on June 29th, 2011
								RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	19	LCY		\$7.64	\$14.10	108.20%	\$446.93	16, 31 23 23.20 Hauling
								RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	19	ECY		\$3.05	\$0.34	108.20%	\$69.69	23 23.16 Fill By Borrow & Utility Bedding
								RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	22	LCY		\$0.50	\$1.05	108.20%	\$36.90	23 23.17 General Fill

			Cost per		Installation	Equipment	Location		
Excavation-Backfill	Quantity	Unit	Unit	Material Cost	Cost	Cost	Factor	Total Cost	Comments
									RSMeans Building Construction Cost Data, 2011, 01 54
Nobilization	8	EA	\$0.00	\$0.00	\$69.00	\$116.00	100.00%	\$1,480.00	36 - Equipment Mobilization
									Is clear and grub needed for structure in urban
									setting? RSMeans Building Construction Cost Data,
Clear and Grub Site	0.10	ACRE	\$0.00	\$0.00	\$1,750.00	\$1,300.00	108.20%	\$331.45	2011, 31 11 10.10 Clear and Grub Site
									Grade Beams, 3' wide, 3' deep RSMeans Building
									Construction Cost Data, 2011, 31 23 16.16 3/4 CY
									bucket, (Price Included in grade beam foundation
Excavation for Grade Beams	118	BCY	\$0.00	\$0.00	\$0.00	\$0.00	108.20%	\$0.00	price)
									1225 SF mat, 2' deep. RSMeans Building Construction
Excavation for slab, subgrade and capillary break	259	BCY	\$0.00	\$0.00	\$7.20	\$7.17	108.20%	\$4,031.05	Cost Data, 2011, 31 23 16.16 3/4 CY bucket
Removal of Foundation Spoils, Haul of Material, 40									RSMeans Building Construction Cost Data, 2011, 31 05
MPH, cycle 40 MPH	472	LCY			\$7.64	\$14.10	108.20%	\$11,102.14	16, 31 23 23.20 Hauling
									Quote per Quigg Bros, Aberdeen, WA, phone
Backfill Slab, subgrade, capillary break	408	ECY		\$20.00			108.20%	\$8,824.52	conversation on June 29th, 2011
					•				RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	408	ECY			\$7.64	\$14.10	108.20%	\$9,592.25	16, 31 23 23.20 Hauling
			•		•		•	\$35,361.41	

Location **Total Cost** Comments

Foundation Quantity Unit Unit **Material Cost** Cost Cost Factor Piling needs to 2x the height of the structure which is Piling 23-35'?

Cost per

Installation Equipment

									Per phone conversation with Quigg Bros, Aberdeen,
Mobilization for piling	1	EA	\$12,000.00	\$0.00	\$0.00	\$0.00	100.00%	\$12,000.00	WA on June 29th, 2011
									Driven pipe piles 40' long, 18"x.5", per phone
									conversation with Quigg Bros, Aberdeen, WA on June
									29th,2011. Equipment Included in Material/Labor
Battered Piles, 18" Diameter, 30'-40' Deep	27	EA	\$0.00	\$3,500.00	\$1,200.00	\$0.00	100.00%	\$126,900.00	Cost
									RSMeans Assemblies Cost Data 2011, A1010 250 Pile
									Caps (Equipment Costs are included in Installation
Pile Caps, Cap Size 6'-6" x 3'-6" x 37"	9	EA	\$0.00	\$370.00	\$540.00		99.30%	\$8,132.67	Cost)
Foundation Cast-In-Place/Tower									
									RSMeans Assemblies Cost Data 2011, A 1020 210
Grade Beams 30' span, 28" deep, 14" wide, 2 KLF									Grade Beams (Equipment Cost is included in
load	355	LF		\$34.50	\$53.00		99.30%	\$30,842.00	Installation Cost)
									Piling needs to 2x the height of the structure which is
Foundation Cast-In-Place/ Footings for Ramp									23-35'?
									RSMeans Assemblies Cost Data, 2011, A1010 210,
Spread Footings, load 75K, soil capacity 6 KSF, 4'-0"									Spread Footings (Equipment Cost is included in
sq x 12" deep	12	EA	\$0.00	\$94.50	\$167.00	\$0.00	99.30%	\$3,116.03	Installation Cost)

\$180,990.71

				1		F			
Structure	Quantity	Unit	Cost per Unit	Material Cost	Installation Cost	Equipment Costs	Location Factor	Total Cost	Comments
Structure	Quantity	Ullit	Unit	iviateriai Cost	Cost	Costs	ractor	iotai cost	***************************************
Mahilinetin of Facilian art	10	ГА			¢446.00	Ć10F 00	100.000/	¢2.010.00	RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	10	EA			\$116.00	\$185.00	100.00%	\$3,010.00	54 36.50 Mobilization
									Beam and Column sizes are not determined and
								¢0.00	estimate takes in "best guess" to assume sizes for this
Concrete Structure								\$0.00	project.
Concrete Columns, rated for 1000 K load, 26"									RSMeans Assemblies Cost Data, 2011, B1010 201, CIP
<i>'</i>	126	VLF		\$158.00	\$7.85	\$0.00	99.30%	\$20,750.82	Column, Round Tied (Equipment Cost included in Installation Cost)
round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced,	120	VLF		\$158.00	\$7.85	\$0.00	99.30%	\$20,750.82	RSMeans Assemblies Cost Data, 2011, A1030 120,
Ground Floor	3500	SF		\$3.01	\$2.97		99.30%	¢20.782.40	Slab on Grade, Plain & Reinforced
Ground Floor	3500	31		\$3.01	\$2.97		99.30%	\$20,783.49	,
Cook to Diago Decree and Clab True Way 20, 20, 20, 254									RSMeans Assemblies Cost Data, 2011, B1010 229
Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level)	3500	SF		\$8.95	\$13.60		99.30%	\$78.372.53	Precast Plank with No Topping (Equipment Cost included in Installation Cost)
PSF, 9 thick slab, 2nd Floor (evacuation level)	3500	SF.		\$8.95	\$13.60		99.30%	\$78,372.53	
Wood Structure									Wood structure, hip roof to support galvanized steel panels
wood Structure									Supply quote from Levee Lumber, Hoguiam, WA,
									RSMeans Assemblies Cost Data, 2011, B1020 102,
									Roof Construction, Wood/Flat or Pitched (Equipment
Wood Columns 12"x12", 10' High, Select Structural	90	VLF		\$9.85	\$2.62		97.30%	\$1,092.00	Cost included in Installation Cost)
WOOd Coldiniis 12 x12 , 10 High, Select Structural	90	VLF		\$9.65	\$2.02		97.30%	\$1,092.00	Supply quote from Levee Lumber, Hoquiam, WA,
									RSMeans Building Construction Cost Data 2011, Glued
Perimeter Joists, 3 1/8"x12", GLM 30' span	237	LF		\$4.85	\$1.95	\$22.00	97.30%	\$6,631.31	Laminated Beams 06 18 13.20
refilleter Joists, 3 1/6 x12 , GEW 30 3pan	237			Ç4.65	\$1.55	\$22.00	37.3070	\$0,031.31	RSMeans Assemblies Cost Data, 2011, B1020 102,
									Roof Construction, Wood/Flat or Pitched (Equipment
2x10 Wood Joist w/ 1/2" CDX, 12" OC	3500	SF		\$2.02	\$2.05		97.30%	\$13,860.39	Cost included in Installation Cost)
= 1.000 1010t W/ 1/2 0DA, 12 00	3300	31		72.02	Ψ <u>2.03</u>		37.3070	Ç13,000.33	RSMeans Assemblies Cost Data, 2011, B1020 102,
Roof, wood/pitched, 3"x12" 12" OC w/ sheating									Roof Construction, Wood/Flat or Pitched (Equipment
plywood on roof, 5/16" CDX	4900	SF		\$4.59	\$2.62		97.30%	\$34,375.12	Cost included in Installation Cost)
Weather Proofing/Coatings add 15% (Premium for	.555	<u> </u>		Ų	Ŷ2.02		37.0070	+5.,5.5.12	Assumed that PTS wood is 15% more compared on
PTS Wood)	\$55,958.81	%	15.00%					\$8,393.82	price difference shown in means
·	•			1				\$187,269.47	:
								, , , , , , , , , , , , , , , , , , , ,	

Quantity	Unit	Cost per Unit	Material Cost	stallation Cos	uipment Co	Location Factor	Total Cost	Comments
								RSMeans, Building Construction Cost Data, 2011, 01
4	EA			\$116.00	\$185.00	100.00%	\$1,204.00	54 36.50 Mobilization
								Hip and ridge style roof, peak of roof 15'. (Equipment
								Cost is included in Installation Cost)
								RSMeans Assemblies Cost Data, 2011, B3010 135,
								Formed Metal (Equipment Cost is included in
4900	SF		\$9.50	\$5.80		100.30%	\$75,194.91	Installation Cost)
	4	4 EA	4 EA	4 EA	4 EA \$116.00	4 EA \$116.00 \$185.00	4 EA \$116.00 \$185.00 100.00%	4 EA \$116.00 \$185.00 100.00% \$1,204.00

\$76,398.91

Stairs/Ramps/Guardrails	Quantity	Unit	Cost per Uni	Material Cost	nstallation Co	quipment Co	Location Facto	Total Cost	Comments
-									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	6	EA			\$116.00	\$185.00	100.00%	\$1,806.00	54 36.50 Mobilization
									Beam and Column sizes are not determined and
									estimate takes in "best guess" to assume sizes for this
Exterior Ramp, Rises 20', 5' wide									project.
									RSMeans Assemblies Cost Data, 2011, B1010, 208
Steel Columns, 20' high, Wide Flanged, 6", 12									Steel Columns (Equipment Cost is included in
locations	168	VLF		\$26.50	\$7.85	\$0.00	95.40%	\$5,505.34	Installation Cost)
W Shape Beams and Girders, bay size 15X20,, Total									RSMeans Building Construction Cost Data, 2011,
Load 263 PSF.	800	SF		\$11.70	\$3.82	\$1.50	95.40%	\$12,989.66	Structural Steel Framing, 05 12 23.17
									RSMeans Assemblies Cost Data, 2011, B1010 258,
Floor Construction, Metal Deck/Concrete Fill, Deck									Metal Deck/Concrete Fill (Equipment Cost is included
Span 6 ft, 150 PSF Superimposed Load	800	SF		\$2.38	\$2.38		95.40%	\$3,632.83	in Installation Cost)
									RSMeans Building Construction Cost Data, 2011, 05 05
Weather Proofing/Coatings (Galvanized)	7.5	Tons	\$400.00	\$0.00	0	0	95.40%	\$2,862.00	13.50, Paints and Protective Coatings
									Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building
Hand Rail/Guard Rail	270	LF		\$32.50	\$9.80		95.40%	\$10,895.63	Construction Cost Date 2011, 05 52 Metal Railings
Ladders/Stairs									
Steel ladder to attic space 20" wide bolted to									RSMeans Building Construction Cost Data 2011, 05 51
concrete without cage	10	VLF		\$65.00	\$31.50	\$2.18	95.40%	\$920.61	33 - Vertical Metal Ladders
Accordion Ladder for Escape after Tsunami,									RSMeans Building Construction Cost Data 2011, 11 33
Disappearing Stairs, Heavy duty, 16'-0" ceiling	2	ea		\$1,400.00	\$172.00		95.40%	\$2,999.38	10.10, Disappearing Stairway
Platform Perimeters Railing (120 LF for each									
platform, 2 locations)									
									Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building
Hand Rail/Guard Rail	237	LF		\$32.50	\$9.80		95.40%	\$9,549.55	Construction Cost Date 2011, 05 52 Metal Railings
								\$51,161.01	

			Cost per		Installation	Equipment	Location		
Fire Protection	Quantity	Unit	Unit	Material Cost	Costs	Cost	Factor	Total Cost	Comments
Fire Protection, Wet Pipe System									
									RSMeans Building Construction Cost Data, 2011, 01 54
Mobilization	4	EA		\$69.00	\$116.00		100.00%	\$740.00	36 - Equipment Mobilization
									RSMeans Square Foot Costs, 2011, D4010 410, Wet
									Pipe Sprinkler Systems (Equipment Cost included in
First Floor, 2000 SF, Light Hazard	3500	SF		\$4.50	\$3.04		97.00%	\$25,598.30	Installation Cost)

\$26,338.30

Map Number:	14		Minimum Structure Height (ft)	17
Structure Type:	Berm w/ RC Wall		Structure Capacity:	500
Location:	Ocean Shores, WA, Spinnaker Park		Safe Haven Square Footage:	5000
Overall Site Square Footage	15000		Volume of Berm Materials (LCY)	4722
Scope				Cost
Site Utilities				\$55,725
Excavation-Backfill				\$461,418
Concrete Retaining Wall Surrounding Berm				\$130,987
Landscaping Concrete				\$79,356
Stairs/Ramps/Guardrails				\$9,162
Landscaping				\$56,664
Construction Totals				\$785,995
Design Fees (8%)				\$62,880
General Conditions (10%)				\$78,600
Contractor Fees, O&P (15%)				\$117,899
Construction Contingency (5%)				\$39,300
Estimate/Design Contingency (10%)				\$78,600
Project Total				\$1,163,273

	1	ı	Cost per		Installation		Location		
Site Utilities	Quantity	Unit	Unit	Material Cost		Equipment	Factor	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	8	EA			\$116.00	\$185.00	100.00%	\$2,408.00	54 36.50 Mobilization
Domestic Water, Ductile Iron Class 250, MJ, 6"									
diameter	100	LF							Assuming 100' distance from service at street
									RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator 4'-6' deep	85	BCY			\$2.16	\$2.13	108.80%	\$396.74	23 16.13, Excavating Trench
									RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 6" Ductile Iron Piping, MJ	100	LF		\$14.60	\$10.70	\$2.72	108.80%	\$3,048.58	11 Water Utility Distribution Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	11	LCY		\$20.00			108.80%	\$239.36	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	11	LCY			\$7.64	\$14.10	108.20%	\$258.75	16, 31 23 23.20 Hauling
									RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	10	ECY			\$3.05	\$0.34	108.80%	\$36.88	23 23.16 Fill By Borrow & Utility Bedding
									RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	94	LCY			\$0.50	\$1.05	108.80%	\$158.52	23 23.17 General Fill
Storm Service									Assuming 200' of storm piping needed
									RSMeans, Building Construction Cost Data, 201, 31 23
Excavate, 3/4 CY Excavator, 6'-10' deep	250	BCY			\$2.88	\$2.85	108.80%	\$1,558.56	16.13 Excavating Trench
									RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 8" Bituminous Coated	200	LF		\$10.70	\$5.25	\$0.97	108.80%	\$3,681.79	41 Storm Utility Drainage Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	25	LCY		\$20.00			108.80%	\$544.00	conversation on June 29th, 2011.
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	25	LCY			\$7.64	\$14.10	108.20%	\$588.07	16, 31 23 23.20 Hauling
									RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	23	ECY			\$3.05	\$0.34	108.80%	\$84.83	23 23.16 Fill By Borrow & Utility Bedding
									RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	284	LCY			\$0.50	\$1.05	108.80%	\$478.94	23 23.17 General Fill
Site Drainage/Area Drains/Catch Basins									Assume 4 area drains for structure

								RSMeans Assemblies Cost Data, 2011, G3030 210,
								Manholes & Catch Basins (Equipment Cost included in
Concrete, Precast, 4' ID riser, 4' deep	4	EA	\$1,425.00	\$1,200.00	0.00%	108.80%	\$11,424.00	Installation Cost)
Electrical	100	LF						Assuming 100' distance from service at street
Electrical Service, includes service installation,								RSMeans Assemblies Cost Data, 2011, D 5010 120,
breakers, metering, 20' conduit & wire, 3 phase, 4								Electric Service, 3 Phase - 4 Wire, equipment included
wire, 120/208 volts, 60 A	1	EA	\$960.00	\$920.00		100.50%	\$1,889.40	in installation cost
								RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator, 4'-6' deep	85	BCY		\$2.16	\$2.13	108.80%	\$396.74	23 16.13 Excavating Trench
								RSMeans, Building Construction Cost Data, 2011, 33
Install & Test PVC, type EB 4 @ 3" diameter	100	LF	\$2.00	\$8.05		108.80%	\$1,093.44	71 19 Electrical Underground Ducts and Manholes
								RSMeans, Building Construction Cost Data, 2011, 26
Wire, 600 volt, copper type THW, solid, #12	100	CLF	\$11.95	\$36.50	0	100.50%	\$4,869.23	05 19.90 Wire
Utility Bedding, For Pipe & Conduit, Not Incl.								Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	46	LCY	\$20.00			108.80%	\$1,000.96	conversation on June 29th, 2011
								RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	46	LCY		\$7.64	\$14.10	108.20%	\$1,082.04	16, 31 23 23.20 Hauling
								RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	43	ECY		\$3.05	\$0.34	108.80%	\$158.60	23 23.16 Fill By Borrow & Utility Bedding
								RSMeans, Building Construction Cost Data, 2011, 31
Light Pole, Aluminum, 20' high, 1 arm bracket	8	EA	\$1,250.00	\$1,075.00	\$0.00	108.80%	\$20,236.80	23 23.17 General Fill
								RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	54	LCY		\$0.50	\$1.05	108.80%	\$91.07	23 23.17 General Fill

\$55,725.29

			Cost per		Installation		Location		
Excavation-Backfill	Quantity	Unit	Unit	Material Cost	Cost	Equipment	Factor	Total Cost	Comments
									RSMeans Building Construction Cost Data, 2011, 01 54
Mobilization	8	EA	\$0.00	\$0.00	\$69.00	\$116.00	100.00%	\$1,480.00	36 - Equipment Mobilization
									Is clear and grub needed for structure in urban
									setting? RSMeans Building Construction Cost Data,
Clear and Grub Site	1	ACRE	\$0.00	\$0.00	\$1,750.00	\$1,300.00	108.20%	\$3,300.10	2011, 31 11 10.10 Clear and Grub Site
									RSMeans Building Construction Cost Data, 2011, 02 21
Survey Site	1	ACRE		\$32.50	\$565.00	\$35.00	108.20%	\$684.37	13 Site Surveys
Fill Material for Berm									
									RSMeans Building Construction Cost Data, 2011, 31 05
Fill Material, Select Structural Fill, 1 1/2" minus									16, Aggregates for Earthwork, Select Structural Fill &
aggregate	4722	LCY		\$20.00	\$1.75	\$3.44	108.20%	\$128,706.91	Material Cost from Quigg Bros., Aberdeen, WA
									RSMeans Building Construction Data, 2011, 31 23
Compacting Backfill, 6"to 12" lifts, vibrating roller	4372	ECY			\$0.63	\$1.81	108.20%	\$11,543.56	23.13 Backfill
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH,cycle 40 MPH	4722	LCY			\$7.64	\$14.10	108.20%	\$111,079.32	16, 31 23 23.20 Hauling
Stabilization Fabric, Polypropylene, 6oz/SY, 18"'									RSMeans Building Construction Cost Data, 2011, 32 11
lifts, 5082 SF per lift	6296	SY		\$1.48	\$0.09	\$0.03	108.20%	\$10,900.15	23 Aggregate Base Courses
Fill Material at Landscape Walls									
									RSMeans Building Construction Cost Data, 2011, 31 05
									16, Aggregates for Earthwork, Select Structural Fill &
Fill Material, Top Soil	2749	LCY		\$20.00	\$1.75	\$3.44	108.20%	\$74,931.89	Material Cost from Quigg Bros., Aberdeen, WA
Compacting Backfill, by hand, no compaction, light									RSMeans Building Construction Data, 2011, 31 23
soil	2546	ECY			\$19.65	\$0.00	108.20%	\$54,122.43	23.13 Backfill
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH,cycle 40 MPH	2749	LCY			\$7.64	\$14.10	108.20%	\$64,669.28	16, 31 23 23.20 Hauling
		_			_			\$461 419 01	

\$461,418.01

Concrete Retaining Wall			Cost per		Installation	Equipment	Location		
Surrounding Berm	Quantity	Unit	Unit	Material Cost		Cost	Factor	Total Cost	Comments
Mobilization of Equipment	8	EA			\$116.00	\$185.00	100.00%	\$2,408.00	RSMeans, Building Construction Cost Data, 2011, 01 54 36.50 Mobilization
Reinforced Concrete Wall									Built in two sections. First section under grade, 6' high, second section built on top of that, 16' high. Length of wall 270'.
Mobilization of Equipment	1	EA			\$116.00	\$185.00	95.40%	\$287.15	RSMeans, Building Construction Cost Data, 2011, 01 54 36.50 Mobilization
Excavation 6 deep', common earth, 4000 SF	1273	SF		\$5.30	\$0.00	\$0.00	108.20%	\$7,298.95	RSMeans Assemblies Cost Data, 2011, A 2010 110 Building Excavation & Backfill
Concrete Wall, below grade section, 6' high, 16"				450 55	40.4.50	40.00	00.000/	400 4== 00	RSMeans Assemblies Cost Data, 2011, A 2020 110, Walls, Cast-in-Place, add 25% to material cost to include for additional reinforcing (Equipment included
thick, pumped concrete Concrete Wall, above grade section, 16' high, 16" thick, pumped concrete	212	LF LF		\$58.75	\$84.50 \$225.00	\$0.00	99.30%	, ,	in installation cost) RSMeans Assemblies Cost Data, 2011, A 2020 110, Walls, Cast-in-Place, add 25% to material cost to include for additional reinforcing (Equipment included in installation cost)
Drainage piping, 6" diameter, PVC, perforated,	212	LF		\$4.05	\$4.04		108.20%	\$1,856.87	RSMeans Assemblies Cost Data, 2011, A 2020 220, Subdrainage Piping (Equipment included in installation cost)
Aesthetic Treatments for Exposed Concrete					•				
Sandblast Concrete Heavy Treatment	1697	SF		\$1.46	\$3.31	\$0.52	99.30%	\$8,914.59	RSMeans Building Construction Cost Data, 2011, 03 35 29.60

\$130,986.67

				T					
Laurelaure d'aux Carrantes			Cost per		Installation	l	Location		
Landscaping Concrete	Quantity	Unit	Unit	Material Cost	Cost	Equipment	Factor	Total Cost	Comments
Stepped Concrete Wall 4' high									Length of walls 330' and 320'
									RSMeans Assemblies Cost Data, 2011, A 2020 110,
4' high walls, cast-in-place, 8" thick, pumped									Walls, Cast-in-Place (Equipment included in
concrete	424	LF		\$18.10	\$51.50	\$0.00	99.30%	\$29,322.08	installation cost)
									RSMeans Assemblies Cost Data, 2011, A 2020 220,
									Subdrainage Piping (Equipment Cost included in
Subdrainage Piping, 4" diameter, PVC, perforated	424	LF		\$2.04	\$3.77	\$0.00	108.20%	\$2,667.10	Installation Cost)
Aesthetic Treatments for Exposed Concrete									
									RSMeans Building Construction Cost Data, 2011, 03 35
Sandblast Concrete Heavy Treatment	1697	SF		\$1.46	\$3.31	\$0.52	99.30%	\$8,914.59	29.60
Concrete or Gravel Platform									
Asphaltic Concrete Paving, 6" stone bse, 2" binder									RSMeans Building Construction Cost Data, 2011, 32 12
course, 1" toping	5000	SF		\$1.85	\$0.20	\$0.24	108.20%	\$12,388.90	16.14 Asphaltic Concrete Paving
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	139	CY			\$7.64	\$14.10	108.20%	\$3,267.04	16, 31 23 23.20 Hauling
Landscaping Stairs Up Berm									
									RSMeans Building Construction Cost Data 2011, 03 30
Stairs 10' wide, cast on ground, 24 steps	240	LF Nose		\$4.28	\$16.30	\$0.18	95.40%	\$4,712.00	53.40, Concrete in Place
									RSMeans Building Construction Cost Data 2011, 03 30
Stair Landing, cast on ground	200	SF		\$3.29	\$4.29	\$0.05	95.40%	\$1,446.26	53.40, Concrete in Place
·									RSMeans Building Construction Cost Data 2011, 05 52
									13.50 Railings, Pipe (add 30% to price for stair
Stair Handrail, 1 1/4" diameter, galvanized	60	LF		\$57.20	\$14.89	\$1.04	95.40%	\$4,126.15	handrail)
Sidewalks									

									Unit SF price only, per RSMeans Square Foot Costs,
									Residential Modifications/Adjustments/Alternatives,
Flatwork in front of ground floor of tower, 6" thick									Sidewalks, 3000 PSI with mesh (Material, Installation
with wire mesh	3500	SF	\$3.60	\$0.00		\$0.00	99.30%		and Equipment Cost included in Cost per Unit)
								\$79,355.91	
			Cost per		Installation	Equipment	Location		
Stairs/Ramps/Guardrails	Quantity	Unit	Unit	Material Cost	Costs	Cost	Factor	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	2	EA			\$116.00	\$185.00	100.00%	\$602.00	54 36.50 Mobilization
Platform Perimeters Railing (Top wall at Berm)									
Hand Rail/Guard Rail, Galvanized, 2 rail, 1 1/2"									Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building
diameter	212	LF		\$32.50	\$9.80		95.40%	\$8,560.42	Construction Cost Date 2011, 05 52 Metal Railings
								\$9,162.42	
			Cost per		Installation	Equipment	Location		
Landscaping	Quantity	Unit	Unit	Material Cost	Costs	Costs	Factor	Total Cost	Comments
Treated Wood Trellis Walkway 60' x 12'									
									RSMeans Assemblies Cost Data, 2011, B1010 266

			Cost per		Installation	Equipment	Location		
Landscaping	Quantity	Unit	Unit	Material Cost	Costs	Costs	Factor	Total Cost	Comments
Treated Wood Trellis Walkway 60' x 12'									
									RSMeans Assemblies Cost Data, 2011, B1010 266
Cedar Wood, 2" thick, 40 PSF load at Maximum									Wood Deck (Equipment Cost included in Installation
Span	720	SF		\$5.65	\$3.02	\$0.00	97.30%	\$6,073.86	Cost)
									RSMeans Assemblies Cost Data, 2011, B1010 264
									Wood Beam & Joist (Equipment Cost included in
Post & Beams	720	SF		\$9.10	\$4.17	\$0.00	97.30%	\$9,296.43	Installation Cost)
Berm/Site Landscaping									
									RSMeans Building Construction Cost Data, 2011, 32 91
Top Soil	330	LCY		\$33.00	\$24.00	\$0.00	108.20%	\$20,352.42	19.13 Top Dress by hand, 1 CY for 600 SF
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	330	LCY			\$7.64	\$14.10	108.20%	\$7,762.48	16, 31 23 23.20 Hauling
									RSMeans Building Construction Cost Data, 2011, 32 92
Mechanical Seeding, 44 lb/MSY	1111	SY		\$0.20	\$0.14	\$0.09	108.80%	\$519.82	19.13 Mechanical Seeding
									RSMeans Building Construction Costs, 2011, 32 84
Irrigation System	15000	SF		\$0.32	\$0.46	\$0.00	108.20%	\$12,659.40	23.10, sprinkler irrigation system

\$56,664.41

Map Number:	15		Minimum Structure Height (ft)	14
Structure Type:	Berm w/ RC Wall		Structure Capacity:	350
Location:	Ocean Shores, WA, Ocean City	State Park	Safe Haven Square Footage:	3500
	Campground			
Overall Site Square Footage	10500		Volume of Berm Materials (LCY)	2722
Scope	·			Cost
Site Utilities				\$55,725
Excavation-Backfill				\$318,713
Concrete Retaining Wall Surrounding Berm				\$110,032
Landscaping Concrete				\$67,978
Stairs/Ramps/Guardrails				\$7,764
Landscaping				\$52,711
Construction Totals				\$785,995
Design Fees (8%)				\$62,880
General Conditions (10%)				\$78,600
Contractor Fees, O&P (15%)				\$117,899
Construction Contingency (5%)				\$39,300
Estimate/Design Contingency (10%)			·	\$78,600
Project Total				\$1,163,273

			Cost per		Installation		Location		
Site Utilities	Quantity	Unit	Unit	Material Cost	Cost	Equipment	Factor	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	8	EA			\$116.00	\$185.00	100.00%	\$2,408.00	54 36.50 Mobilization
Domestic Water, Ductile Iron Class 250, MJ, 6"									
diameter	100	LF							Assuming 100' distance from service at street
									RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator 4'-6' deep	85	BCY			\$2.16	\$2.13	108.80%	\$396.74	23 16.13, Excavating Trench
									RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 6" Ductile Iron Piping, MJ	100	LF		\$14.60	\$10.70	\$2.72	108.80%	\$3,048.58	11 Water Utility Distribution Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	11	LCY		\$20.00			108.80%	\$239.36	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	11	LCY			\$7.64	\$14.10	108.20%	\$258.75	16, 31 23 23.20 Hauling
									RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	10	ECY			\$3.05	\$0.34	108.80%	\$36.88	23 23.16 Fill By Borrow & Utility Bedding
									RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	94	LCY			\$0.50	\$1.05	108.80%	\$158.52	23 23.17 General Fill
Storm Service									Assuming 200' of storm piping needed
									RSMeans, Building Construction Cost Data, 201, 31 23
Excavate, 3/4 CY Excavator, 6'-10' deep	250	BCY			\$2.88	\$2.85	108.80%	\$1,558.56	16.13 Excavating Trench
									RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 8" Bituminous Coated	200	LF		\$10.70	\$5.25	\$0.97	108.80%	\$3,681.79	41 Storm Utility Drainage Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	25	LCY		\$20.00			108.80%	\$544.00	conversation on June 29th, 2011.
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	25	LCY			\$7.64	\$14.10	108.20%	\$588.07	16, 31 23 23.20 Hauling
					_				RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	23	ECY			\$3.05	\$0.34	108.80%	\$84.83	23 23.16 Fill By Borrow & Utility Bedding
									RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	284	LCY			\$0.50	\$1.05	108.80%	\$478.94	23 23.17 General Fill
Site Drainage/Area Drains/Catch Basins									Assume 4 area drains for structure

								RSMeans Assemblies Cost Data, 2011, G3030 210,
Concrete, Precast, 4' ID riser, 4' deep	4	EA	\$1,425.00	\$1,200.00	0.00%	108.80%	\$11 424 00	Manholes & Catch Basins (Equipment Cost included in Installation Cost)
Electrical	100	LF	71,423.00	\$1,200.00	0.0070	100.0070	711,424.00	Assuming 100' distance from service at street
Electrical Service, includes service installation,								RSMeans Assemblies Cost Data, 2011, D 5010 120,
breakers, metering, 20' conduit & wire, 3 phase, 4								Electric Service, 3 Phase - 4 Wire, equipment included
wire, 120/208 volts, 60 A	1	EA	\$960.00	\$920.00		100.50%	\$1,889.40	in installation cost
								RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator, 4'-6' deep	85	BCY		\$2.16	\$2.13	108.80%	\$396.74	23 16.13 Excavating Trench
								RSMeans, Building Construction Cost Data, 2011, 33
Install & Test PVC, type EB 4 @ 3" diameter	100	LF	\$2.00	\$8.05		108.80%	\$1,093.44	71 19 Electrical Underground Ducts and Manholes
								RSMeans, Building Construction Cost Data, 2011, 26
Wire, 600 volt, copper type THW, solid, #12	100	CLF	\$11.95	\$36.50	0	100.50%	\$4,869.23	05 19.90 Wire
Utility Bedding, For Pipe & Conduit, Not Incl.								Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	46	LCY	\$20.00			108.80%	\$1,000.96	conversation on June 29th, 2011
								RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	46	LCY		\$7.64	\$14.10	108.20%	\$1,082.04	16, 31 23 23.20 Hauling
								RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	43	ECY		\$3.05	\$0.34	108.80%	\$158.60	23 23.16 Fill By Borrow & Utility Bedding
								RSMeans, Building Construction Cost Data, 2011, 31
Light Pole, Aluminum, 20' high, 1 arm bracket	8	EA	\$1,250.00	\$1,075.00	\$0.00	108.80%	\$20,236.80	23 23.17 General Fill
								RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	54	LCY		\$0.50	\$1.05	108.80%	\$91.07	23 23.17 General Fill

\$55,725.29

		ı							
Formula of Book CII			Cost per		Installation		Location		
Excavation-Backfill	Quantity	Unit	Unit	Material Cost	Cost	Equipment	Factor	Total Cost	Comments
									RSMeans Building Construction Cost Data, 2011, 01 54
Mobilization	8	EA	\$0.00	\$0.00	\$69.00	\$116.00	100.00%	\$1,480.00	36 - Equipment Mobilization
									Is clear and grub needed for structure in urban
									setting? RSMeans Building Construction Cost Data,
Clear and Grub Site	1	ACRE	\$0.00	\$0.00	\$1,750.00	\$1,300.00	108.20%	\$3,300.10	2011, 31 11 10.10 Clear and Grub Site
									RSMeans Building Construction Cost Data, 2011, 02 21
Survey Site	1	ACRE		\$32.50	\$565.00	\$35.00	108.20%	\$684.37	13 Site Surveys
Fill Material for Berm									
									RSMeans Building Construction Cost Data, 2011, 31 05
Fill Material, Select Structural Fill, 1 1/2" minus									16, Aggregates for Earthwork, Select Structural Fill &
aggregate	2722	LCY		\$20.00	\$1.75	\$3.44	108.20%	\$74,195.75	Material Cost from Quigg Bros., Aberdeen, WA
									RSMeans Building Construction Data, 2011, 31 23
Compacting Backfill, 6"to 12" lifts, vibrating roller	2521	ECY			\$0.63	\$1.81	108.20%	\$6,654.52	23.13 Backfill
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	2722	LCY			\$7.64	\$14.10	108.20%	\$64,033.96	16, 31 23 23.20 Hauling
Stabilization Fabric, Polypropylene, 6oz/SY, 18"									RSMeans Building Construction Cost Data, 2011, 32 11
lifts, 5082 SF per lift	3630	SY		\$1.48	\$0.09	\$0.03	108.20%	\$6,283.61	23 Aggregate Base Courses
Fill Material at Landscape Walls									
									RSMeans Building Construction Cost Data, 2011, 31 05
									16, Aggregates for Earthwork, Select Structural Fill &
Fill Material, Top Soil	2300	LCY		\$20.00	\$1.75	\$3.44	108.20%	\$62,692.52	Material Cost from Quigg Bros., Aberdeen, WA
Compacting Backfill, by hand, no compaction, light									RSMeans Building Construction Data, 2011, 31 23
soil	2130	ECY			\$19.65	\$0.00	108.20%	\$45,282.08	23.13 Backfill
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	2300	LCY			\$7.64	\$14.10	108.20%	\$54,106.21	16, 31 23 23.20 Hauling
		•	•	•		•		\$218 712 11	

\$318,713.11

		1							
Concrete Retaining Wall			Cost per		Installation	Equipment	Location		
Surrounding Berm	Quantity	Unit	Unit	Material Cost		Cost	Factor	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	8	EA			\$116.00	\$185.00	100.00%	\$2,408.00	54 36.50 Mobilization
									Built in two sections. First section under grade, 6'
									high, second section built on top of that, 16' high.
Reinforced Concrete Wall									Length of wall 270'.
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	1	EA			\$116.00	\$185.00	95.40%	\$287.15	54 36.50 Mobilization
									RSMeans Assemblies Cost Data, 2011, A 2010 110
Excavation 6 deep', common earth, 4000 SF	1065	SF		\$5.30	\$0.00	\$0.00	108.20%	\$6,106.74	Building Excavation & Backfill
									RSMeans Assemblies Cost Data, 2011, A 2020 110,
									Walls, Cast-in-Place, add 25% to material cost to
Concrete Wall, below grade section, 6' high, 16"									include for additional reinforcing (Equipment included
thick, pumped concrete	177	LF		\$58.75	\$84.50	\$0.00	99.30%	\$25,246.38	in installation cost)
									RSMeans Assemblies Cost Data, 2011, A 2020 110,
									Walls, Cast-in-Place, add 25% to material cost to
Concrete Wall, above grade section, 16' high, 16"									include for additional reinforcing (Equipment included
thick, pumped concrete	177	LF		\$155.00	\$225.00	\$0.00	99.30%	\$66,971.21	in installation cost)
									RSMeans Assemblies Cost Data, 2011, A 2020 220,
									Subdrainage Piping (Equipment included in
Drainage piping, 6" diameter, PVC, perforated,	177	LF		\$4.05	\$4.04		108.20%	\$1,553.57	installation cost)
Aesthetic Treatments for Exposed Concrete									
									RSMeans Building Construction Cost Data, 2011, 03 35
Sandblast Concrete Heavy Treatment	1420	SF		\$1.46	\$3.31	\$0.52	99.30%	\$7,458.48	29.60
							•	C110 021 F2	

\$110,031.53

		T	Cost per	T	Installation		Location		
Landscaping Concrete	Quantity	Unit	Unit	Material Cost		Equipment	Factor	Total Cost	Comments
Stepped Concrete Wall 4' high						7. 1			Length of walls 330' and 320'
									RSMeans Assemblies Cost Data, 2011, A 2020 110,
4' high walls, cast-in-place, 8" thick, pumped									Walls, Cast-in-Place (Equipment included in
concrete	355	LF		\$18.10	\$51.50	\$0.00	99.30%	\$24,532.61	installation cost)
									RSMeans Assemblies Cost Data, 2011, A 2020 220,
									Subdrainage Piping (Equipment Cost included in
Subdrainage Piping, 4" diameter, PVC, perforated	355	LF		\$2.04	\$3.77	\$0.00	108.20%	\$2,231.46	Installation Cost)
Aesthetic Treatments for Exposed Concrete									
									RSMeans Building Construction Cost Data, 2011, 03 35
Sandblast Concrete Heavy Treatment	1420	SF		\$1.46	\$3.31	\$0.52	99.30%	\$7,458.48	29.60
Concrete or Gravel Platform									
Asphaltic Concrete Paving, 6" stone bse, 2" binder									RSMeans Building Construction Cost Data, 2011, 32 12
course, 1" toping	3500	SF		\$1.85	\$0.20	\$0.24	108.20%	\$8,672.23	16.14 Asphaltic Concrete Paving
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	97	CY			\$7.64	\$14.10	108.20%	\$2,286.93	16, 31 23 23.20 Hauling
Landscaping Stairs Up Berm									
									RSMeans Building Construction Cost Data 2011, 03 30
Stairs 10' wide, cast on ground, 24 steps	240	LF Nose		\$4.28	\$16.30	\$0.18	95.40%	\$4,712.00	53.40, Concrete in Place
									RSMeans Building Construction Cost Data 2011, 03 30
Stair Landing, cast on ground	200	SF		\$3.29	\$4.29	\$0.05	95.40%	\$1,446.26	53.40, Concrete in Place
									RSMeans Building Construction Cost Data 2011, 05 52
									13.50 Railings, Pipe (add 30% to price for stair
Stair Handrail, 1 1/4" diameter, galvanized	60	LF		\$57.20	\$14.89	\$1.04	95.40%	\$4,126.15	handrail)

Sidewalks									
Flatwork in front of ground floor of tower, 6" thick									Unit SF price only, per RSMeans Square Foot Costs, Residential Modifications/Adjustments/Alternatives, Sidewalks, 3000 PSI with mesh (Material, Installation
with wire mesh	3500	SF	\$3.60	\$0.00		\$0.00	99.30%	\$12,511.80	and Equipment Cost included in Cost per Unit)
		L						\$67,977.91	
Stairs/Ramps/Guardrails	Quantity	Unit	Cost per Unit	Material Cost	Installation Costs	Equipment Cost	Location Factor	Total Cost	Comments
Mobilization of Equipment	2	EA			\$116.00	\$185.00	100.00%	\$602.00	RSMeans, Building Construction Cost Data, 2011, 01 54 36.50 Mobilization
Platform Perimeters Railing (Top wall at Berm)									
Hand Rail/Guard Rail, Galvanized, 2 rail, 1 1/2"	177	LF		\$32.50	\$9.80		95.40%	\$7,162.16	Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building Construction Cost Date 2011, 05 52 Metal Railings
diameter	1//	LF		\$32.30	\$3.60	l l	33.4076	\$7,764.16	Construction Cost Date 2011, 03 32 Wetai Railings
								¥7,70 III20	
			Cost per		Installation	Equipment	Location		
Landscaping	Quantity	Unit	Unit	Material Cost	Costs	Costs	Factor	Total Cost	Comments
Treated Wood Trellis Walkway 60' x 12'									
Cedar Wood, 2" thick, 40 PSF load at Maximum Span	720	SF		\$5.65	\$3.02	\$0.00	97.30%	\$6,073.86	RSMeans Assemblies Cost Data, 2011, B1010 266 Wood Deck (Equipment Cost included in Installation Cost)
				·				. ,	RSMeans Assemblies Cost Data, 2011, B1010 264 Wood Beam & Joist (Equipment Cost included in
Post & Beams	720	SF		\$9.10	\$4.17	\$0.00	97.30%	\$9,296.43	Installation Cost)
Berm/Site Landscaping									
Top Soil	330	LCY		\$33.00	\$24.00	\$0.00	108.20%	\$20,352.42	RSMeans Building Construction Cost Data, 2011, 32 91 19.13 Top Dress by hand, 1 CY for 600 SF

\$7.64

\$0.14

\$0.46

\$14.10

\$0.09

\$0.00

108.20%

108.80%

108.20%

\$0.20

\$0.32

330

778

10500

Irrigation System

Haul of Material, 40 MPH, cycle 40 MPH

Mechanical Seeding, 44 lb/MSY

LCY

SY

SF

\$8,861.58 \$52,710.65

\$363.88

\$7,762.48 16, 31 23 23.20 Hauling

19.13 Mechanical Seeding

23.10, sprinkler irrigation system

RSMeans Building Construction Cost Data, 2011, 31 05

RSMeans Building Construction Cost Data, 2011, 32 92

RSMeans Building Construction Costs, 2011, 32 84

Map Number:	16	Minimum Structure Height:	10
Structure Type:	Tower	Structure Capacity:	350
Location:	Ocean Shores, WA, Duck Lake Drive	Safe Haven Square Footage:	3500
Levels	1	Columns Required:	9
		Piles per Column:	3
Scope			Cost
Site Utilities			\$15,257
Excavation-Backfill			\$35,361
Foundation			\$180,991
Structure			\$181,341
Roofing			\$76,399
Stairs/Ramps/Guardrails			\$49,588
Fire Protection			\$26,338
Total			\$565,275
Design Fees (8%)			\$45,222
General Conditions (10%)			\$56,528
Contractor Fees, O&P (15%)			\$84,791
Construction Contingency (5%)			\$28,264
Estimate/Design Contingency (10%)			\$56,528
Project Total			\$836,607

	T T		Cost per		Installation	Equipment	Location	T	
Site Utilities	Quantity	Unit	Unit	Material Cost		Cost	Factor	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	10	EA			\$116.00	\$185.00	100.00%	\$3,010.00	54 36.50 Mobilization
Fire Water, Ductile Iron Class 250, MJ, 4" diameter	50	LF		\$16.05					Assuming 50' distance from service at street
									RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator 4'-6' deep	35	BCY			\$2.16	\$2.13	108.20%	\$162.46	23 16.13, Excavating Trench
								_	RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 4" Ductile Iron Piping, MJ	50	LF		\$12.50	\$8.55	\$2.17	108.20%	\$1,256.20	11 Water Utility Distribution Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	6	LCY		\$20.00			108.20%	\$129.84	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	6	LCY			\$7.64	\$14.10	108.20%	\$141.14	16, 31 23 23.20 Hauling
									RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	5	ECY			\$3.05	\$0.34	108.20%	\$18.34	23 23.16 Fill By Borrow & Utility Bedding
									RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	38	LCY			\$0.50	\$1.05	108.20%	\$63.73	23 23.17 General Fill
Storm Service									Assuming 50' distance from service at street
									RSMeans, Building Construction Cost Data, 201, 31 23
Excavate, 3/4 CY Excavator, 6'-10' deep	60	BCY			\$2.88	\$2.85	108.20%	\$371.99	16.13 Excavating Trench
·									RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 8" Bituminous Coated	50	LF		\$10.70	\$5.25	\$0.97	108.20%	\$915.37	41 Storm Utility Drainage Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	6	LCY		\$20.00			108.20%	\$129.84	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	6	LCY			\$7.64	\$14.10	108.20%	\$141.14	16, 31 23 23.20 Hauling
. ,						1			RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	5	ECY			\$3.05	\$0.34	108.20%	\$18.34	23 23.16 Fill By Borrow & Utility Bedding
					•				RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	38	LCY			\$0.50	\$1.05	108.20%	\$63.73	23 23.17 General Fill

Site Drainage/Area Drains/Catch Basins								Assume 1 area drain for structure
								RSMeans Assemblies Cost Data, 2011, G3030 210,
Concrete, Precast, 4' ID riser, 4' deep	1	EA	\$1,425.00	\$1,200.00	0.00%	108.20%	\$2,840.25	Manholes & Catch Basins
Electrical	50	LF						Assuming 50' distance from service at street
Electrical Service, includes service installation,								RSMeans Assemblies Cost Data, 2011, D 5010 120,
breakers, metering, 20' conduit & wire, 3 phase, 4								Electric Service, 3 Phase - 4 Wire, equipment included
wire, 120/208 volts, 60 A	1	EA	\$960.00	\$920.00		100.50%	\$1,889.40	in installation cost
								RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator, 4'-6' deep	35	BCY		\$2.16	\$2.13	108.20%	\$162.46	23 16.13 Excavating Trench
								RSMeans, Building Construction Cost Data, 2011, 33
Install & Test PVC, type EB 4 @ 3" diameter	50	LF	\$2.00	\$8.05		108.20%	\$543.71	71 19 Electrical Underground Ducts and Manholes
								RSMeans, Building Construction Cost Data, 2011, 26
Wire, 600 volt, copper type THW, solid, #12	50	CLF	\$11.95	\$36.50	0	100.50%	\$2,434.61	05 19.90 Wire
Utility Bedding, For Pipe & Conduit, Not Incl.								Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	19	LCY	\$20.00			108.20%	\$411.16	conversation on June 29th, 2011
								RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	19	LCY		\$7.64	\$14.10	108.20%	\$446.93	16, 31 23 23.20 Hauling
								RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	19	ECY		\$3.05	\$0.34	108.20%	\$69.69	23 23.16 Fill By Borrow & Utility Bedding
								RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	22	LCY		\$0.50	\$1.05	108.20%	\$36.90	23 23.17 General Fill

			Cost per		Installation	Equipment	Location		
Excavation-Backfill	Quantity	Unit	Unit	Material Cost	Cost	Cost	Factor	Total Cost	Comments
									RSMeans Building Construction Cost Data, 2011, 01 54
Mobilization	8	EA	\$0.00	\$0.00	\$69.00	\$116.00	100.00%	\$1,480.00	36 - Equipment Mobilization
									Is clear and grub needed for structure in urban
									setting? RSMeans Building Construction Cost Data,
Clear and Grub Site	0.10	ACRE	\$0.00	\$0.00	\$1,750.00	\$1,300.00	108.20%	\$331.45	2011, 31 11 10.10 Clear and Grub Site
									Grade Beams, 3' wide, 3' deep RSMeans Building
									Construction Cost Data, 2011, 31 23 16.16 3/4 CY
									bucket, (Price Included in grade beam foundation
Excavation for Grade Beams	118	BCY	\$0.00	\$0.00	\$0.00	\$0.00	108.20%	\$0.00	price)
									1225 SF mat, 2' deep. RSMeans Building Construction
Excavation for slab, subgrade and capillary break	259	BCY	\$0.00	\$0.00	\$7.20	\$7.17	108.20%	\$4,031.05	Cost Data, 2011, 31 23 16.16 3/4 CY bucket
Removal of Foundation Spoils, Haul of Material, 40									RSMeans Building Construction Cost Data, 2011, 31 05
MPH, cycle 40 MPH	472	LCY			\$7.64	\$14.10	108.20%	\$11,102.14	16, 31 23 23.20 Hauling
									Quote per Quigg Bros, Aberdeen, WA, phone
Backfill Slab, subgrade, capillary break	408	ECY		\$20.00			108.20%	\$8,824.52	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH,cycle 40 MPH	408	ECY			\$7.64	\$14.10	108.20%	\$9,592.25	16, 31 23 23.20 Hauling
								\$35,361.41	

			Cost per		Installation	Equipment	Location		
Foundation	Quantity	Unit	Unit	Material Cost	Cost	Cost	Factor	Total Cost	Comments
									Piling needs to 2x the height of the structure which is
Piling									23-35'?
									Per phone conversation with Quigg Bros, Aberdeen,
Mobilization for piling	1	EA	\$12,000.00	\$0.00	\$0.00	\$0.00	100.00%	\$12,000.00	WA on June 29th, 2011

Pile Caps, Cap Size 6'-6" x 3'-6" x 37" Foundation Cast-In-Place/Tower Grade Beams 30' span, 28" deep, 14" wide, 2 KLF load 3 Foundation Cast-In-Place/ Footings for Ramp Spread Footings, load 75K, soil capacity 6 KSF, 4'-0" sq x 12" deep Structure Mobilization of Equipment Concrete Structure Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural	9 355 12 uantity	EA LF EA Unit EA	\$0.00 \$0.00 \$0.00 Cost per Unit	\$3,500.00 \$370.00 \$34.50 \$94.50	\$1,200.00 \$540.00 \$53.00 \$167.00 Installation Cost	\$0.00 \$0.00 \$0.00	99.30% 99.30% 99.30% Location Factor	\$8,132.67 \$30,842.00 \$3,116.03 \$180,990.71	RSMeans Assemblies Cost Data 2011, A1010 250 Pile Caps (Equipment Costs are included in Installation Cost) RSMeans Assemblies Cost Data 2011, A 1020 210 Grade Beams (Equipment Cost is included in Installation Cost) Piling needs to 2x the height of the structure which is 23-35'? RSMeans Assemblies Cost Data, 2011, A1010 210, Spread Footings (Equipment Cost is included in Installation Cost) Comments
Foundation Cast-In-Place/Tower Grade Beams 30' span, 28" deep, 14" wide, 2 KLF load 3 Foundation Cast-In-Place/ Footings for Ramp Spread Footings, load 75K, soil capacity 6 KSF, 4'-0" sq x 12" deep Structure Mobilization of Equipment Concrete Structure Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural	355 12 uantity	LF EA	\$0.00 Cost per	\$34.50 \$94.50	\$53.00 \$167.00 Installation Cost	Equipment	99.30% 99.30% Location	\$8,132.67 \$30,842.00 \$3,116.03 \$180,990.71	Caps (Equipment Costs are included in Installation Cost) RSMeans Assemblies Cost Data 2011, A 1020 210 Grade Beams (Equipment Cost is included in Installation Cost) Piling needs to 2x the height of the structure which is 23-35'? RSMeans Assemblies Cost Data, 2011, A1010 210, Spread Footings (Equipment Cost is included in Installation Cost) Comments
Foundation Cast-In-Place/Tower Grade Beams 30' span, 28" deep, 14" wide, 2 KLF load 3 Foundation Cast-In-Place/ Footings for Ramp Spread Footings, load 75K, soil capacity 6 KSF, 4'-0" sq x 12" deep Structure Mobilization of Equipment Concrete Structure Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural	355 12 uantity	LF EA	\$0.00 Cost per	\$34.50 \$94.50	\$53.00 \$167.00 Installation Cost	Equipment	99.30% 99.30% Location	\$8,132.67 \$30,842.00 \$3,116.03 \$180,990.71	RSMeans Assemblies Cost Data 2011, A 1020 210 Grade Beams (Equipment Cost is included in Installation Cost) Piling needs to 2x the height of the structure which is 23-35'? RSMeans Assemblies Cost Data, 2011, A1010 210, Spread Footings (Equipment Cost is included in Installation Cost) Comments
Foundation Cast-In-Place/Tower Grade Beams 30' span, 28" deep, 14" wide, 2 KLF load 3 Foundation Cast-In-Place/ Footings for Ramp Spread Footings, load 75K, soil capacity 6 KSF, 4'-0" sq x 12" deep Structure Mobilization of Equipment Concrete Structure Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural	355 12 uantity	LF EA	\$0.00 Cost per	\$34.50 \$94.50	\$53.00 \$167.00 Installation Cost	Equipment	99.30% 99.30% Location	\$30,842.00 \$3,116.03 \$180,990.71	RSMeans Assemblies Cost Data 2011, A 1020 210 Grade Beams (Equipment Cost is included in Installation Cost) Piling needs to 2x the height of the structure which is 23-35'? RSMeans Assemblies Cost Data, 2011, A1010 210, Spread Footings (Equipment Cost is included in Installation Cost) Comments
Grade Beams 30' span, 28" deep, 14" wide, 2 KLF load Foundation Cast-In-Place/ Footings for Ramp Spread Footings, load 75K, soil capacity 6 KSF, 4'-0" sq x 12" deep Structure Mobilization of Equipment Concrete Structure Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural	12 uantity	EA Unit	Cost per	\$94.50	\$167.00 Installation Cost	Equipment	99.30% Location	\$30,842.00 \$3,116.03 \$180,990.71	Grade Beams (Equipment Cost is included in Installation Cost) Piling needs to 2x the height of the structure which is 23-35'? RSMeans Assemblies Cost Data, 2011, A1010 210, Spread Footings (Equipment Cost is included in Installation Cost)
Foundation Cast-In-Place/ Footings for Ramp Spread Footings, load 75K, soil capacity 6 KSF, 4'-0" sq x 12" deep Structure Mobilization of Equipment Concrete Structure Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural	12 uantity	EA Unit	Cost per	\$94.50	\$167.00 Installation Cost	Equipment	99.30% Location	\$30,842.00 \$3,116.03 \$180,990.71	Grade Beams (Equipment Cost is included in Installation Cost) Piling needs to 2x the height of the structure which is 23-35'? RSMeans Assemblies Cost Data, 2011, A1010 210, Spread Footings (Equipment Cost is included in Installation Cost)
Foundation Cast-In-Place/ Footings for Ramp Spread Footings, load 75K, soil capacity 6 KSF, 4'-0" sq x 12" deep Structure Mobilization of Equipment Concrete Structure Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural	12 uantity	EA Unit	Cost per	\$94.50	\$167.00 Installation Cost	Equipment	99.30% Location	\$30,842.00 \$3,116.03 \$180,990.71	Installation Cost) Piling needs to 2x the height of the structure which is 23-35'? RSMeans Assemblies Cost Data, 2011, A1010 210, Spread Footings (Equipment Cost is included in Installation Cost) Comments
Spread Footings, load 75K, soil capacity 6 KSF, 4'-0" sq x 12" deep Structure Mobilization of Equipment Concrete Structure Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural	uantity	Unit	Cost per		Installation Cost	Equipment	Location	\$3,116.03 \$180,990.71 Total Cost	23-35'? RSMeans Assemblies Cost Data, 2011, A1010 210, Spread Footings (Equipment Cost is included in Installation Cost) Comments
Spread Footings, load 75K, soil capacity 6 KSF, 4'-0" sq x 12" deep Structure Mobilization of Equipment Concrete Structure Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural	uantity	Unit	Cost per		Installation Cost	Equipment	Location	\$3,116.03 \$180,990.71 Total Cost	RSMeans Assemblies Cost Data, 2011, A1010 210, Spread Footings (Equipment Cost is included in Installation Cost) Comments
Structure Mobilization of Equipment Concrete Structure Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural	uantity	Unit	Cost per		Installation Cost	Equipment	Location	\$3,116.03 \$180,990.71 Total Cost	Spread Footings (Equipment Cost is included in Installation Cost) Comments
Structure Mobilization of Equipment Concrete Structure Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural	uantity	Unit	Cost per		Installation Cost	Equipment	Location	\$3,116.03 \$180,990.71 Total Cost	Installation Cost) Comments
Structure Mobilization of Equipment Concrete Structure Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural	uantity	Unit	Cost per		Installation Cost	Equipment	Location	\$180,990.71 Total Cost	Comments
Mobilization of Equipment Concrete Structure Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural			-	Material Cost	Cost	1		Total Cost	
Mobilization of Equipment Concrete Structure Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural			-	Material Cost	Cost	1			
Mobilization of Equipment Concrete Structure Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural			-	Material Cost	Cost	1			
Mobilization of Equipment Concrete Structure Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural			Unit	Material Cost		Costs	Factor		
Concrete Structure Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural	10	EA			¢116.00				
Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural					\$116.00	\$185.00	100.00%	\$3,010.00	RSMeans, Building Construction Cost Data, 2011, 01 54 36.50 Mobilization
Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural									Beam and Column sizes are not determined and
Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural									estimate takes in "best guess" to assume sizes for this
round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural									project.
round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural									RSMeans Assemblies Cost Data, 2011, B1010 201, CIP Column, Round Tied (Equipment Cost included in
Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor 3: Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) 3: Wood Structure Wood Columns 12"x12", 10' High, Select Structural	90	VLF		\$158.00	\$7.85	\$0.00	99.30%		Installation Cost)
Ground Floor 3: Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) 3: Wood Structure Wood Columns 12"x12", 10' High, Select Structural	30	VLI		\$138.00	\$7.65	Ş0.00	33.3070		RSMeans Assemblies Cost Data, 2011, A1030 120,
Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural	3500	SF		\$3.01	\$2.97		99.30%		Slab on Grade, Plain & Reinforced
PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural				,					RSMeans Assemblies Cost Data, 2011, B1010 229
PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural									Precast Plank with No Topping (Equipment Cost
Wood Columns 12"x12", 10' High, Select Structural	3500	SF		\$8.95	\$13.60		99.30%		included in Installation Cost)
Wood Columns 12"x12", 10' High, Select Structural									Wood structure, hip roof to support galvanized steel
									panels
									Supply quote from Levee Lumber, Hoquiam, WA,
									RSMeans Assemblies Cost Data, 2011, B1020 102,
				40.0=	40.00		07.000/		Roof Construction, Wood/Flat or Pitched (Equipment
Perimeter Joists, 3 1/8"x12", GLM 30' span 2	90	VLF		\$9.85	\$2.62		97.30%	<u> </u>	Cost included in Installation Cost)
Perimeter Joists, 3 1/8"x12", GLM 30' span 2									Supply quote from Levee Lumber, Hoquiam, WA, RSMeans Building Construction Cost Data 2011, Gluet
remitted 30303, 5 1/0 ALZ , GLIVI 30 3pair	237	LF		\$4.85	\$1.95	\$22.00	97.30%		Laminated Beams 06 18 13.20
•			1	رن.+ر	Ų1.JJ	722.00	37.30/0	70,031.31	RSMeans Assemblies Cost Data, 2011, B1020 102,
j									Roof Construction, Wood/Flat or Pitched (Equipment
2x10 Wood Joist w/ 1/2" CDX, 12" OC 3!	3500	SF		\$2.02	\$2.05		97.30%		Cost included in Installation Cost)
3.				,	,				RSMeans Assemblies Cost Data, 2011, B1020 102,
Roof, wood/pitched, 3"x12" 12" OC w/ sheating									Roof Construction, Wood/Flat or Pitched (Equipment
plywood on roof, 5/16" CDX		SF	<u> </u>	\$4.59	\$2.62		97.30%		Cost included in Installation Cost)
Weather Proofing/Coatings add 15% (Premium for	4900								Assumed that PTS wood is 15% more compared on
PTS Wood) \$55,9	4900	%	15.00%						price difference shown in means
								\$181,340.66	
	4900								
Roofing Qua	4900		_			1	ocation Facto	Total Cost	Comments

									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	4	EA			\$116.00	\$185.00	100.00%	\$1,204.00	54 36.50 Mobilization
									Hip and ridge style roof, peak of roof 15'. (Equipment
Roofing/Hip and Ridge Roof Steel Panels									Cost is included in Installation Cost)
									RSMeans Assemblies Cost Data, 2011, B3010 135,
Flat Roof Steel Panels, Flat Seam, Copper, 1/4" min.									Formed Metal (Equipment Cost is included in
slope, 20 oz, 1.2 PSF	4900	SF		\$9.50	\$5.80		100.30%	\$75,194.91	Installation Cost)
			•	· ·			•	676 200 04	

\$76,398.91

Stairs/Ramps/Guardrails	Quantity	Unit	Cost per Unit	Material Cost	nstallation Cos	uipment Co	Location Factor	Total Cost	Comments
oranie, manipo, oranie and manipo	Qualitary .					10			RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	6	EA			\$116.00	\$185.00	100.00%	\$1,806.00	54 36.50 Mobilization
	-				722000	7 - 00 - 00		7-,000.00	Beam and Column sizes are not determined and
									estimate takes in "best guess" to assume sizes for this
Exterior Ramp, Rises 20', 5' wide									project.
									RSMeans Assemblies Cost Data, 2011, B1010, 208
Steel Columns, 20' high, Wide Flanged, 6", 12									Steel Columns (Equipment Cost is included in
locations	120	VLF		\$26.50	\$7.85	\$0.00	95.40%	\$3,932.39	Installation Cost)
W Shape Beams and Girders, bay size 15X20,, Total									RSMeans Building Construction Cost Data, 2011,
Load 263 PSF.	800	SF		\$11.70	\$3.82	\$1.50	95.40%	\$12,989.66	Structural Steel Framing, 05 12 23.17
									RSMeans Assemblies Cost Data, 2011, B1010 258,
Floor Construction, Metal Deck/Concrete Fill, Deck									Metal Deck/Concrete Fill (Equipment Cost is included
Span 6 ft, 150 PSF Superimposed Load	800	SF		\$2.38	\$2.38		95.40%	\$3,632.83	in Installation Cost)
									RSMeans Building Construction Cost Data, 2011, 05 05
Weather Proofing/Coatings (Galvanized)	7.5	Tons	\$400.00	\$0.00	0	0	95.40%	\$2,862.00	13.50, Paints and Protective Coatings
									Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building
Hand Rail/Guard Rail	270	LF		\$32.50	\$9.80		95.40%	\$10,895.63	Construction Cost Date 2011, 05 52 Metal Railings
Ladders/Stairs									
Steel ladder to attic space 20" wide bolted to									RSMeans Building Construction Cost Data 2011, 05 51
concrete without cage	10	VLF		\$65.00	\$31.50	\$2.18	95.40%	\$920.61	33 - Vertical Metal Ladders
Accordion Ladder for Escape after Tsunami,									RSMeans Building Construction Cost Data 2011, 11 33
Disappearing Stairs, Heavy duty, 16'-0" ceiling	2	ea		\$1,400.00	\$172.00		95.40%	\$2,999.38	10.10, Disappearing Stairway
Platform Perimeters Railing (120 LF for each									
platform, 2 locations)									
									Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building
Hand Rail/Guard Rail	237	LF		\$32.50	\$9.80		95.40%	\$9,549.55	Construction Cost Date 2011, 05 52 Metal Railings

\$49,588.05

			Cost per		Installation	Equipment	Location		
Fire Protection	Quantity	Unit	Unit	Material Cost	Costs	Cost	Factor	Total Cost	Comments
Fire Protection, Wet Pipe System									
									RSMeans Building Construction Cost Data, 2011, 01 54
Mobilization	4	EA		\$69.00	\$116.00		100.00%	\$740.00	36 - Equipment Mobilization
									RSMeans Square Foot Costs, 2011, D4010 410, Wet
									Pipe Sprinkler Systems (Equipment Cost included in
First Floor, 2000 SF, Light Hazard	3500	SF		\$4.50	\$3.04		97.00%	\$25,598.30	Installation Cost)

\$26,338.30

Map Number:	17	Minimum Structure Height:	10
Structure Type:	Tower	Structure Capacity:	350
Location:	Ocean Shores, WA, Ocean Lake Way & N	Safe Haven Square Footage:	3500
	Port Loop		
Levels	1	Columns Required:	9
		Piles per Column:	3
Scope			Cost
Site Utilities			\$15,257
Excavation-Backfill			\$35,361
Foundation			\$180,991
Structure			\$181,341
Roofing			\$76,399
Stairs/Ramps/Guardrails			\$49,588
Fire Protection			\$26,338
Total			\$565,275
Design Fees (8%)			\$45,222
General Conditions (10%)			\$56,528
Contractor Fees, O&P (15%)			\$84,791
Construction Contingency (5%)			\$28,264
Estimate/Design Contingency (10%)			\$56,528
Project Total			\$836,607

			Cost per		Installation	Equipment			
Site Utilities	Quantity	Unit	Unit	Material Cost	Cost	Cost	Factor	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	10	EA			\$116.00	\$185.00	100.00%	\$3,010.00	54 36.50 Mobilization
Fire Water, Ductile Iron Class 250, MJ, 4" diameter	50	LF		\$16.05					Assuming 50' distance from service at street
				7=0:00					RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator 4'-6' deep	35	BCY			\$2.16	\$2.13	108.20%	\$162.46	23 16.13, Excavating Trench
·									RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 4" Ductile Iron Piping, MJ	50	LF		\$12.50	\$8.55	\$2.17	108.20%	\$1,256.20	11 Water Utility Distribution Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	6	LCY		\$20.00			108.20%	\$129.84	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	6	LCY			\$7.64	\$14.10	108.20%	\$141.14	16, 31 23 23.20 Hauling
									RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	5	ECY			\$3.05	\$0.34	108.20%	\$18.34	23 23.16 Fill By Borrow & Utility Bedding
									RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	38	LCY			\$0.50	\$1.05	108.20%	\$63.73	23 23.17 General Fill
Storm Service									Assuming 50' distance from service at street
									RSMeans, Building Construction Cost Data, 201, 31 23
Excavate, 3/4 CY Excavator, 6'-10' deep	60	BCY			\$2.88	\$2.85	108.20%	\$371.99	16.13 Excavating Trench
									RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 8" Bituminous Coated	50	LF		\$10.70	\$5.25	\$0.97	108.20%	\$915.37	41 Storm Utility Drainage Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	6	LCY		\$20.00			108.20%	\$129.84	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	6	LCY			\$7.64	\$14.10	108.20%	\$141.14	16, 31 23 23.20 Hauling

								RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	5	ECY		\$3.05	\$0.34	108.20%	\$18.34	23 23.16 Fill By Borrow & Utility Bedding
								RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	38	LCY		\$0.50	\$1.05	108.20%	\$63.73	23 23.17 General Fill
Site Drainage/Area Drains/Catch Basins								Assume 1 area drain for structure
								RSMeans Assemblies Cost Data, 2011, G3030 210,
Concrete, Precast, 4' ID riser, 4' deep	1	EA	\$1,425.00	\$1,200.00	0.00%	108.20%	\$2,840.25	Manholes & Catch Basins
Electrical	50	LF						Assuming 50' distance from service at street
Electrical Service, includes service installation,								RSMeans Assemblies Cost Data, 2011, D 5010 120,
breakers, metering, 20' conduit & wire, 3 phase, 4								Electric Service, 3 Phase - 4 Wire, equipment included
wire, 120/208 volts, 60 A	1	EA	\$960.00	\$920.00		100.50%	\$1,889.40	in installation cost
								RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator, 4'-6' deep	35	BCY		\$2.16	\$2.13	108.20%	\$162.46	23 16.13 Excavating Trench
								RSMeans, Building Construction Cost Data, 2011, 33
Install & Test PVC, type EB 4 @ 3" diameter	50	LF	\$2.00	\$8.05		108.20%	\$543.71	71 19 Electrical Underground Ducts and Manholes
								RSMeans, Building Construction Cost Data, 2011, 26
Wire, 600 volt, copper type THW, solid, #12	50	CLF	\$11.95	\$36.50	0	100.50%	\$2,434.61	05 19.90 Wire
Utility Bedding, For Pipe & Conduit, Not Incl.								Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	19	LCY	\$20.00			108.20%	\$411.16	conversation on June 29th, 2011
								RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	19	LCY		\$7.64	\$14.10	108.20%	\$446.93	16, 31 23 23.20 Hauling
								RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	19	ECY		\$3.05	\$0.34	108.20%	\$69.69	23 23.16 Fill By Borrow & Utility Bedding
								RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	22	LCY		\$0.50	\$1.05	108.20%	\$36.90	23 23.17 General Fill

			Cost per		Installation	Equipment	Location		
Excavation-Backfill	Quantity	Unit	Unit	Material Cost	Cost	Cost	Factor	Total Cost	Comments
									RSMeans Building Construction Cost Data, 2011, 01 54
Mobilization	8	EA	\$0.00	\$0.00	\$69.00	\$116.00	100.00%	\$1,480.00	36 - Equipment Mobilization
									Is clear and grub needed for structure in urban
									setting? RSMeans Building Construction Cost Data,
Clear and Grub Site	0.10	ACRE	\$0.00	\$0.00	\$1,750.00	\$1,300.00	108.20%	\$331.45	2011, 31 11 10.10 Clear and Grub Site
									Grade Beams, 3' wide, 3' deep RSMeans Building
									Construction Cost Data, 2011, 31 23 16.16 3/4 CY
									bucket, (Price Included in grade beam foundation
Excavation for Grade Beams	118	BCY	\$0.00	\$0.00	\$0.00	\$0.00	108.20%	\$0.00	price)
									1225 SF mat, 2' deep. RSMeans Building Construction
Excavation for slab, subgrade and capillary break	259	BCY	\$0.00	\$0.00	\$7.20	\$7.17	108.20%	\$4,031.05	Cost Data, 2011, 31 23 16.16 3/4 CY bucket
Removal of Foundation Spoils, Haul of Material, 40									RSMeans Building Construction Cost Data, 2011, 31 05
MPH, cycle 40 MPH	472	LCY			\$7.64	\$14.10	108.20%	\$11,102.14	16, 31 23 23.20 Hauling
									Quote per Quigg Bros, Aberdeen, WA, phone
Backfill Slab, subgrade, capillary break	408	ECY		\$20.00			108.20%	\$8,824.52	conversation on June 29th, 2011
					•				RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	408	ECY			\$7.64	\$14.10	108.20%	\$9,592.25	16, 31 23 23.20 Hauling
			•		•		•	\$35,361.41	

Location **Total Cost** Comments

Cost per Installation Equipment Foundation Quantity Unit Unit **Material Cost** Cost Cost Factor Piling needs to 2x the height of the structure which is Piling 23-35'?

									Per phone conversation with Quigg Bros, Aberdeen,
Mobilization for piling	1	EA	\$12,000.00	\$0.00	\$0.00	\$0.00	100.00%	\$12,000.00	WA on June 29th, 2011
									Driven pipe piles 40' long, 18"x.5", per phone
									conversation with Quigg Bros, Aberdeen, WA on June
									29th,2011. Equipment Included in Material/Labor
Battered Piles, 18" Diameter, 30'-40' Deep	27	EA	\$0.00	\$3,500.00	\$1,200.00	\$0.00	100.00%	\$126,900.00	Cost
									RSMeans Assemblies Cost Data 2011, A1010 250 Pile
									Caps (Equipment Costs are included in Installation
Pile Caps, Cap Size 6'-6" x 3'-6" x 37"	9	EA	\$0.00	\$370.00	\$540.00		99.30%	\$8,132.67	Cost)
Foundation Cast-In-Place/Tower									
									RSMeans Assemblies Cost Data 2011, A 1020 210
Grade Beams 30' span, 28" deep, 14" wide, 2 KLF									Grade Beams (Equipment Cost is included in
load	355	LF		\$34.50	\$53.00		99.30%	\$30,842.00	Installation Cost)
									Piling needs to 2x the height of the structure which is
Foundation Cast-In-Place/ Footings for Ramp									23-35'?
									RSMeans Assemblies Cost Data, 2011, A1010 210,
Spread Footings, load 75K, soil capacity 6 KSF, 4'-0"									Spread Footings (Equipment Cost is included in
sq x 12" deep	12	EA	\$0.00	\$94.50	\$167.00	\$0.00	99.30%	\$3,116.03	Installation Cost)

\$180,990.71

			Cost per		Installation	Equipment	Location		
Structure	Quantity	Unit	Unit	Material Cost	Cost	Costs	Factor	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	10	EA			\$116.00	\$185.00	100.00%	\$3,010.00	54 36.50 Mobilization
									Beam and Column sizes are not determined and
									estimate takes in "best guess" to assume sizes for this
Concrete Structure								\$0.00	project.
									RSMeans Assemblies Cost Data, 2011, B1010 201, CIP
Concrete Columns, rated for 1000 K load, 26"									Column, Round Tied (Equipment Cost included in
round, concrete strength, 6000 PSI	90	VLF		\$158.00	\$7.85	\$0.00	99.30%	\$14,822.01	Installation Cost)
Slab-On-Grade, 6" thick, non-industrial, reinforced,									RSMeans Assemblies Cost Data, 2011, A1030 120,
Ground Floor	3500	SF		\$3.01	\$2.97		99.30%	\$20,783.49	Slab on Grade, Plain & Reinforced
									RSMeans Assemblies Cost Data, 2011, B1010 229
Cast-In-Place Beam and Slab, Two Way, 30x30, 351									Precast Plank with No Topping (Equipment Cost
PSF, 9" thick slab, 2nd Floor (evacuation level)	3500	SF		\$8.95	\$13.60		99.30%	\$78,372.53	included in Installation Cost)
									Wood structure, hip roof to support galvanized steel
Wood Structure									panels
									Supply quote from Levee Lumber, Hoquiam, WA,
									RSMeans Assemblies Cost Data, 2011, B1020 102,
									Roof Construction, Wood/Flat or Pitched (Equipment
Wood Columns 12"x12", 10' High, Select Structural	90	VLF		\$9.85	\$2.62		97.30%	\$1,092.00	Cost included in Installation Cost)
									Supply quote from Levee Lumber, Hoquiam, WA,
									RSMeans Building Construction Cost Data 2011, Glue
Perimeter Joists, 3 1/8"x12", GLM 30' span	237	LF		\$4.85	\$1.95	\$22.00	97.30%	\$6,631.31	Laminated Beams 06 18 13.20
									RSMeans Assemblies Cost Data, 2011, B1020 102,
					_				Roof Construction, Wood/Flat or Pitched (Equipment
2x10 Wood Joist w/ 1/2" CDX, 12" OC	3500	SF		\$2.02	\$2.05		97.30%	\$13,860.39	Cost included in Installation Cost)
									RSMeans Assemblies Cost Data, 2011, B1020 102,
Roof, wood/pitched, 3"x12" 12" OC w/ sheating					_				Roof Construction, Wood/Flat or Pitched (Equipment
plywood on roof, 5/16" CDX	4900	SF		\$4.59	\$2.62		97.30%	\$34,375.12	Cost included in Installation Cost)
Weather Proofing/Coatings add 15% (Premium for	4== 0== 0.4	.,	4.5.000/					40.000.00	Assumed that PTS wood is 15% more compared on
PTS Wood)	\$55,958.81	%	15.00%						price difference shown in means
								\$181,340.66	

Quantity	Unit	Cost per Unit	Material Cost	stallation Cos	uipment Co	Location Factor	Total Cost	Comments
								RSMeans, Building Construction Cost Data, 2011, 01
4	EA			\$116.00	\$185.00	100.00%	\$1,204.00	54 36.50 Mobilization
								Hip and ridge style roof, peak of roof 15'. (Equipment
								Cost is included in Installation Cost)
								RSMeans Assemblies Cost Data, 2011, B3010 135,
								Formed Metal (Equipment Cost is included in
4900	SF		\$9.50	\$5.80		100.30%	\$75,194.91	Installation Cost)
	4	4 EA	4 EA	4 EA	4 EA \$116.00	4 EA \$116.00 \$185.00	4 EA \$116.00 \$185.00 100.00%	4 EA \$116.00 \$185.00 100.00% \$1,204.00

\$76,398.91

Stairs/Ramps/Guardrails	Quantity	Unit	Cost per Uni	Material Cost	nstallation Co	uipment Co	Location Factor	Total Cost	Comments
-									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	6	EA			\$116.00	\$185.00	100.00%	\$1,806.00	54 36.50 Mobilization
									Beam and Column sizes are not determined and
									estimate takes in "best guess" to assume sizes for this
Exterior Ramp, Rises 20', 5' wide									project.
									RSMeans Assemblies Cost Data, 2011, B1010, 208
Steel Columns, 20' high, Wide Flanged, 6", 12									Steel Columns (Equipment Cost is included in
locations	120	VLF		\$26.50	\$7.85	\$0.00	95.40%	\$3,932.39	Installation Cost)
W Shape Beams and Girders, bay size 15X20,, Total									RSMeans Building Construction Cost Data, 2011,
Load 263 PSF.	800	SF		\$11.70	\$3.82	\$1.50	95.40%	\$12,989.66	Structural Steel Framing, 05 12 23.17
									RSMeans Assemblies Cost Data, 2011, B1010 258,
Floor Construction, Metal Deck/Concrete Fill, Deck									Metal Deck/Concrete Fill (Equipment Cost is included
Span 6 ft, 150 PSF Superimposed Load	800	SF		\$2.38	\$2.38		95.40%	\$3,632.83	in Installation Cost)
									RSMeans Building Construction Cost Data, 2011, 05 05
Weather Proofing/Coatings (Galvanized)	7.5	Tons	\$400.00	\$0.00	0	0	95.40%	\$2,862.00	13.50, Paints and Protective Coatings
									Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building
Hand Rail/Guard Rail	270	LF		\$32.50	\$9.80		95.40%	\$10,895.63	Construction Cost Date 2011, 05 52 Metal Railings
Ladders/Stairs									
Steel ladder to attic space 20" wide bolted to									RSMeans Building Construction Cost Data 2011, 05 51
concrete without cage	10	VLF		\$65.00	\$31.50	\$2.18	95.40%	\$920.61	33 - Vertical Metal Ladders
Accordion Ladder for Escape after Tsunami,									RSMeans Building Construction Cost Data 2011, 11 33
Disappearing Stairs, Heavy duty, 16'-0" ceiling	2	ea		\$1,400.00	\$172.00		95.40%	\$2,999.38	10.10, Disappearing Stairway
Platform Perimeters Railing (120 LF for each									
platform, 2 locations)									
									Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building
Hand Rail/Guard Rail	237	LF		\$32.50	\$9.80		95.40%	\$9,549.55	Construction Cost Date 2011, 05 52 Metal Railings
								\$49,588.05	

Cost per Installation Equipment Location Fire Protection Quantity Unit Unit **Material Cost Total Cost** Comments Costs Cost Factor Fire Protection, Wet Pipe System RSMeans Building Construction Cost Data, 2011, 01 54 \$740.00 Mobilization 4 EΑ \$69.00 \$116.00 100.00% 36 - Equipment Mobilization RSMeans Square Foot Costs, 2011, D4010 410, Wet Pipe Sprinkler Systems (Equipment Cost included in SF \$4.50 \$3.04 97.00% \$25,598.30 Installation Cost) First Floor, 2000 SF, Light Hazard 3500

\$26,338.30

Map Number:		18				Minimum	Structure	Height (ft)	17		
Structure Type:		Berm w/	RC Wall			Structure	Capacity:		350		
Location:		Ocean S	hores. WA	, North Razo	or Clam	Safe Have	n Square F	ootage:	3500		
			Butterclan								
Overall Site Square Footage		10500				Volume o	f Berm Mat	erials (LCY	3306		
Scope								•	Cos		
Site Utilities									\$55,725		
Excavation-Backfill									\$351,106		
Concrete Retaining Wall Surrounding Berm									\$110,032		
Landscaping Concrete									\$67,978		
Stairs/Ramps/Guardrails									\$7,764		
Landscaping									\$52,711		
Construction Totals									\$785,995		
Design Fees (8%)									\$62,880		
General Conditions (10%)									\$78,600		
Contractor Fees, O&P (15%)									\$117,899		
Construction Contingency (5%)									\$39,300		
Estimate/Design Contingency (10%)					Ş						
Project Total									\$1,163,273		
_											
Site Utilities	Quantity	Unit	Cost per Unit	Material Cost	Installation Cost	Equipment	Location Factor	Total Cost	Comments		
						1			RSMeans, Building Construction Cost Data, 2011, 01		
	1					1 .		l .	The state of the s		

			Cost per		Installation		Location		
Site Utilities	Quantity	Unit	Unit	Material Cost	Cost	Equipment	Factor	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	8	EA			\$116.00	\$185.00	100.00%	\$2,408.00	54 36.50 Mobilization
Domestic Water, Ductile Iron Class 250, MJ, 6"									
diameter	100	LF							Assuming 100' distance from service at street
									RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator 4'-6' deep	85	BCY			\$2.16	\$2.13	108.80%	\$396.74	23 16.13, Excavating Trench
									RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 6" Ductile Iron Piping, MJ	100	LF		\$14.60	\$10.70	\$2.72	108.80%	\$3,048.58	11 Water Utility Distribution Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	11	LCY		\$20.00			108.80%	\$239.36	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	11	LCY			\$7.64	\$14.10	108.20%	\$258.75	16, 31 23 23.20 Hauling
									RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	10	ECY			\$3.05	\$0.34	108.80%	\$36.88	23 23.16 Fill By Borrow & Utility Bedding
									RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	94	LCY			\$0.50	\$1.05	108.80%	\$158.52	23 23.17 General Fill
Storm Service									Assuming 200' of storm piping needed
									RSMeans, Building Construction Cost Data, 201, 31 23
Excavate, 3/4 CY Excavator, 6'-10' deep	250	BCY			\$2.88	\$2.85	108.80%	\$1,558.56	16.13 Excavating Trench
									RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 8" Bituminous Coated	200	LF		\$10.70	\$5.25	\$0.97	108.80%	\$3,681.79	41 Storm Utility Drainage Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	25	LCY		\$20.00			108.80%	\$544.00	conversation on June 29th, 2011.
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	25	LCY			\$7.64	\$14.10	108.20%	\$588.07	16, 31 23 23.20 Hauling
									RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	23	ECY			\$3.05	\$0.34	108.80%	\$84.83	23 23.16 Fill By Borrow & Utility Bedding
									RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	284	LCY			\$0.50	\$1.05	108.80%	\$478.94	23 23.17 General Fill

Site Drainage/Area Drains/Catch Basins								Assume 4 area drains for structure
								RSMeans Assemblies Cost Data, 2011, G3030 210,
								Manholes & Catch Basins (Equipment Cost included in
Concrete, Precast, 4' ID riser, 4' deep	4	EA	\$1,425.00	\$1,200.00	0.00%	108.80%	\$11,424.00	Installation Cost)
Electrical	100	LF						Assuming 100' distance from service at street
Electrical Service, includes service installation,								RSMeans Assemblies Cost Data, 2011, D 5010 120,
breakers, metering, 20' conduit & wire, 3 phase, 4								Electric Service, 3 Phase - 4 Wire, equipment included
wire, 120/208 volts, 60 A	1	EA	\$960.00	\$920.00		100.50%	\$1,889.40	in installation cost
								RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator, 4'-6' deep	85	BCY		\$2.16	\$2.13	108.80%	\$396.74	23 16.13 Excavating Trench
								RSMeans, Building Construction Cost Data, 2011, 33
Install & Test PVC, type EB 4 @ 3" diameter	100	LF	\$2.00	\$8.05		108.80%	\$1,093.44	71 19 Electrical Underground Ducts and Manholes
								RSMeans, Building Construction Cost Data, 2011, 26
Wire, 600 volt, copper type THW, solid, #12	100	CLF	\$11.95	\$36.50	0	100.50%	\$4,869.23	05 19.90 Wire
Utility Bedding, For Pipe & Conduit, Not Incl.								Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	46	LCY	\$20.00			108.80%	\$1,000.96	conversation on June 29th, 2011
								RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	46	LCY		\$7.64	\$14.10	108.20%	\$1,082.04	16, 31 23 23.20 Hauling
								RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	43	ECY		\$3.05	\$0.34	108.80%	\$158.60	23 23.16 Fill By Borrow & Utility Bedding
								RSMeans, Building Construction Cost Data, 2011, 31
Light Pole, Aluminum, 20' high, 1 arm bracket	8	EA	\$1,250.00	\$1,075.00	\$0.00	108.80%	\$20,236.80	23 23.17 General Fill
								RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	54	LCY		\$0.50	\$1.05	108.80%	\$91.07	23 23.17 General Fill

\$55,725.29

			Cost per		Installation		Location		
Excavation-Backfill	Quantity	Unit	Unit	Material Cost		Equipment	Factor	Total Cost	Comments
									RSMeans Building Construction Cost Data, 2011, 01 54
Mobilization	8	EA	\$0.00	\$0.00	\$69.00	\$116.00	100.00%	\$1,480.00	36 - Equipment Mobilization
									Is clear and grub needed for structure in urban
									setting? RSMeans Building Construction Cost Data,
Clear and Grub Site	1	ACRE	\$0.00	\$0.00	\$1,750.00	\$1,300.00	108.20%	\$3,300.10	2011, 31 11 10.10 Clear and Grub Site
									RSMeans Building Construction Cost Data, 2011, 02 21
Survey Site	1	ACRE		\$32.50	\$565.00	\$35.00	108.20%	\$684.37	13 Site Surveys
Fill Material for Berm									
									RSMeans Building Construction Cost Data, 2011, 31 05
Fill Material, Select Structural Fill, 1 1/2" minus									16, Aggregates for Earthwork, Select Structural Fill &
aggregate	3306	LCY		\$20.00	\$1.75	\$3.44	108.20%	\$90,094.83	Material Cost from Quigg Bros., Aberdeen, WA
									RSMeans Building Construction Data, 2011, 31 23
Compacting Backfill, 6"to 12" lifts, vibrating roller	3061	ECY			\$0.63	\$1.81	108.20%	\$8,080.49	23.13 Backfill
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	3306	LCY			\$7.64	\$14.10	108.20%	\$77,755.53	16, 31 23 23.20 Hauling
Stabilization Fabric, Polypropylene, 6oz/SY, 18"'									RSMeans Building Construction Cost Data, 2011, 32 11
lifts, 5082 SF per lift	4407	SY		\$1.48	\$0.09	\$0.03	108.20%	\$7,630.10	23 Aggregate Base Courses
Fill Material at Landscape Walls									
									RSMeans Building Construction Cost Data, 2011, 31 05
									16, Aggregates for Earthwork, Select Structural Fill &
Fill Material, Top Soil	2300	LCY		\$20.00	\$1.75	\$3.44	108.20%	\$62,692.52	Material Cost from Quigg Bros., Aberdeen, WA
Compacting Backfill, by hand, no compaction, light									RSMeans Building Construction Data, 2011, 31 23
soil	2130	ECY			\$19.65	\$0.00	108.20%	\$45,282.08	23.13 Backfill
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	2300	LCY	1		\$7.64	\$14.10	108.20%	\$54,106.21	16, 31 23 23.20 Hauling

\$351,106.22

		1							
Concrete Retaining Wall			Cost per		Installation	Equipment	Location		
Surrounding Berm	Quantity	Unit	Unit	Material Cost		Cost	Factor	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	8	EA			\$116.00	\$185.00	100.00%	\$2,408.00	54 36.50 Mobilization
									Built in two sections. First section under grade, 6'
									high, second section built on top of that, 16' high.
Reinforced Concrete Wall									Length of wall 270'.
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	1	EA			\$116.00	\$185.00	95.40%	\$287.15	54 36.50 Mobilization
									RSMeans Assemblies Cost Data, 2011, A 2010 110
Excavation 6 deep', common earth, 4000 SF	1065	SF		\$5.30	\$0.00	\$0.00	108.20%	\$6,106.74	Building Excavation & Backfill
									RSMeans Assemblies Cost Data, 2011, A 2020 110,
									Walls, Cast-in-Place, add 25% to material cost to
Concrete Wall, below grade section, 6' high, 16"									include for additional reinforcing (Equipment included
thick, pumped concrete	177	LF		\$58.75	\$84.50	\$0.00	99.30%	\$25,246.38	in installation cost)
									RSMeans Assemblies Cost Data, 2011, A 2020 110,
									Walls, Cast-in-Place, add 25% to material cost to
Concrete Wall, above grade section, 16' high, 16"									include for additional reinforcing (Equipment included
thick, pumped concrete	177	LF		\$155.00	\$225.00	\$0.00	99.30%	\$66,971.21	in installation cost)
									RSMeans Assemblies Cost Data, 2011, A 2020 220,
									Subdrainage Piping (Equipment included in
Drainage piping, 6" diameter, PVC, perforated,	177	LF		\$4.05	\$4.04		108.20%	\$1,553.57	installation cost)
Aesthetic Treatments for Exposed Concrete									
									RSMeans Building Construction Cost Data, 2011, 03 35
Sandblast Concrete Heavy Treatment	1420	SF		\$1.46	\$3.31	\$0.52	99.30%	\$7,458.48	29.60
							•	C110 021 F2	

\$110,031.53

		T	Cost per	T	Installation		Location		
Landscaping Concrete	Quantity	Unit	Unit	Material Cost		Equipment	Factor	Total Cost	Comments
Stepped Concrete Wall 4' high						7. 1			Length of walls 330' and 320'
									RSMeans Assemblies Cost Data, 2011, A 2020 110,
4' high walls, cast-in-place, 8" thick, pumped									Walls, Cast-in-Place (Equipment included in
concrete	355	LF		\$18.10	\$51.50	\$0.00	99.30%	\$24,532.61	installation cost)
									RSMeans Assemblies Cost Data, 2011, A 2020 220,
									Subdrainage Piping (Equipment Cost included in
Subdrainage Piping, 4" diameter, PVC, perforated	355	LF		\$2.04	\$3.77	\$0.00	108.20%	\$2,231.46	Installation Cost)
Aesthetic Treatments for Exposed Concrete									
									RSMeans Building Construction Cost Data, 2011, 03 35
Sandblast Concrete Heavy Treatment	1420	SF		\$1.46	\$3.31	\$0.52	99.30%	\$7,458.48	29.60
Concrete or Gravel Platform									
Asphaltic Concrete Paving, 6" stone bse, 2" binder									RSMeans Building Construction Cost Data, 2011, 32 12
course, 1" toping	3500	SF		\$1.85	\$0.20	\$0.24	108.20%	\$8,672.23	16.14 Asphaltic Concrete Paving
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	97	CY			\$7.64	\$14.10	108.20%	\$2,286.93	16, 31 23 23.20 Hauling
Landscaping Stairs Up Berm									
									RSMeans Building Construction Cost Data 2011, 03 30
Stairs 10' wide, cast on ground, 24 steps	240	LF Nose		\$4.28	\$16.30	\$0.18	95.40%	\$4,712.00	53.40, Concrete in Place
									RSMeans Building Construction Cost Data 2011, 03 30
Stair Landing, cast on ground	200	SF		\$3.29	\$4.29	\$0.05	95.40%	\$1,446.26	53.40, Concrete in Place
									RSMeans Building Construction Cost Data 2011, 05 52
									13.50 Railings, Pipe (add 30% to price for stair
Stair Handrail, 1 1/4" diameter, galvanized	60	LF		\$57.20	\$14.89	\$1.04	95.40%	\$4,126.15	handrail)

Sidewalks									
									Unit SF price only, per RSMeans Square Foot Costs,
									Residential Modifications/Adjustments/Alternatives,
Flatwork in front of ground floor of tower, 6" thick									Sidewalks, 3000 PSI with mesh (Material, Installation
with wire mesh	3500	SF	\$3.60	\$0.00		\$0.00	99.30%		and Equipment Cost included in Cost per Unit)
								\$67,977.91	
States (Danser (Committee))			Cost per		Installation	Equipment	Location		
Stairs/Ramps/Guardrails	Quantity	Unit	Unit	Material Cost	Costs	Cost	Factor	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	2	EA			\$116.00	\$185.00	100.00%	\$602.00	54 36.50 Mobilization
Platform Perimeters Railing (Top wall at Berm)									
Hand Rail/Guard Rail, Galvanized, 2 rail, 1 1/2"									Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building
diameter	177	LF		\$32.50	\$9.80		95.40%	\$7,162.16	Construction Cost Date 2011, 05 52 Metal Railings
								\$7,764.16	
Laurelana de la constante de l			Cost per		Installation	Equipment	Location		_
Landscaping	Quantity	Unit	Unit	Material Cost	Costs	Costs	Factor	Total Cost	Comments
Treated Wood Trellis Walkway 60' x 12'									
									RSMeans Assemblies Cost Data, 2011, B1010 266
Cedar Wood, 2" thick, 40 PSF load at Maximum									Wood Deck (Equipment Cost included in Installation
Span	720	SF		\$5.65	\$3.02	\$0.00	97.30%	\$6,073.86	Cost)
									RSMeans Assemblies Cost Data, 2011, B1010 264
									Wood Beam & Joist (Equipment Cost included in
Post & Beams	720	SF		\$9.10	\$4.17	\$0.00	97.30%	\$9,296.43	Installation Cost)
Berm/Site Landscaping									
								1	RSMeans Building Construction Cost Data, 2011, 32 9

\$24.00

\$7.64

\$0.14

\$0.46

\$0.00

\$14.10

\$0.09

\$0.00

108.20%

108.20%

108.80%

108.20%

\$33.00

\$0.20

\$0.32

330

330

778

10500

Top Soil

Irrigation System

Haul of Material, 40 MPH, cycle 40 MPH

Mechanical Seeding, 44 lb/MSY

LCY

LCY

SY

SF

\$8,861.58 **\$52,710.65**

\$363.88

\$20,352.42 19.13 Top Dress by hand, 1 CY for 600 SF

19.13 Mechanical Seeding

23.10, sprinkler irrigation system

\$7,762.48 16, 31 23 23.20 Hauling

RSMeans Building Construction Cost Data, 2011, 31 05

RSMeans Building Construction Cost Data, 2011, 32 92

RSMeans Building Construction Costs, 2011, 32 84

Map Number:	19		Minimum Structure Height (ft)	10	
Structure Type:	Berm w/ RC Wall		Structure Capacity:	350	
Location:	Ocean Shores, WA, North Ra	Ocean Shores, WA, North Razor Clam		3500	
	Drive & Butterclam St. SW	Drive & Butterclam St. SW			
Overall Site Square Footage	10500		Volume of Berm Materials (LCY) 1944		
Scope					Cost
Site Utilities					\$55,725
Excavation-Backfill					\$275,522
Concrete Retaining Wall Surrounding Berm					\$110,032
Landscaping Concrete					\$67,978
Stairs/Ramps/Guardrails					\$7,764
Landscaping					\$52,711
Construction Totals					\$785,995
Design Fees (8%)					\$62,880
General Conditions (10%)					\$78,600
Contractor Fees, O&P (15%)					\$117,899
Construction Contingency (5%)					\$39,300
Estimate/Design Contingency (10%)					\$78,600
Project Total					\$1,163,273

			Cost per		Installation		Location		
Site Utilities	Quantity	Unit	Unit	Material Cost	Cost	Equipment	Factor	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	8	EA			\$116.00	\$185.00	100.00%	\$2,408.00	54 36.50 Mobilization
Domestic Water, Ductile Iron Class 250, MJ, 6"									
diameter	100	LF							Assuming 100' distance from service at street
									RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator 4'-6' deep	85	BCY			\$2.16	\$2.13	108.80%	\$396.74	23 16.13, Excavating Trench
									RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 6" Ductile Iron Piping, MJ	100	LF		\$14.60	\$10.70	\$2.72	108.80%	\$3,048.58	11 Water Utility Distribution Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	11	LCY		\$20.00			108.80%	\$239.36	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	11	LCY			\$7.64	\$14.10	108.20%	\$258.75	16, 31 23 23.20 Hauling
									RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	10	ECY			\$3.05	\$0.34	108.80%	\$36.88	23 23.16 Fill By Borrow & Utility Bedding
									RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	94	LCY			\$0.50	\$1.05	108.80%	\$158.52	23 23.17 General Fill
Storm Service									Assuming 200' of storm piping needed
									RSMeans, Building Construction Cost Data, 201, 31 23
Excavate, 3/4 CY Excavator, 6'-10' deep	250	BCY			\$2.88	\$2.85	108.80%	\$1,558.56	16.13 Excavating Trench
									RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 8" Bituminous Coated	200	LF		\$10.70	\$5.25	\$0.97	108.80%	\$3,681.79	41 Storm Utility Drainage Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	25	LCY		\$20.00			108.80%	\$544.00	conversation on June 29th, 2011.
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	25	LCY			\$7.64	\$14.10	108.20%	\$588.07	16, 31 23 23.20 Hauling
					_				RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	23	ECY			\$3.05	\$0.34	108.80%	\$84.83	23 23.16 Fill By Borrow & Utility Bedding
									RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	284	LCY			\$0.50	\$1.05	108.80%	\$478.94	23 23.17 General Fill
Site Drainage/Area Drains/Catch Basins									Assume 4 area drains for structure

								RSMeans Assemblies Cost Data, 2011, G3030 210,
								Manholes & Catch Basins (Equipment Cost included in
Concrete, Precast, 4' ID riser, 4' deep	4	EA	\$1,425.00	\$1,200.00	0.00%	108.80%	\$11,424.00	Installation Cost)
Electrical	100	LF						Assuming 100' distance from service at street
Electrical Service, includes service installation,								RSMeans Assemblies Cost Data, 2011, D 5010 120,
breakers, metering, 20' conduit & wire, 3 phase, 4								Electric Service, 3 Phase - 4 Wire, equipment included
wire, 120/208 volts, 60 A	1	EA	\$960.00	\$920.00		100.50%	\$1,889.40	in installation cost
								RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator, 4'-6' deep	85	BCY		\$2.16	\$2.13	108.80%	\$396.74	23 16.13 Excavating Trench
								RSMeans, Building Construction Cost Data, 2011, 33
Install & Test PVC, type EB 4 @ 3" diameter	100	LF	\$2.00	\$8.05		108.80%	\$1,093.44	71 19 Electrical Underground Ducts and Manholes
								RSMeans, Building Construction Cost Data, 2011, 26
Wire, 600 volt, copper type THW, solid, #12	100	CLF	\$11.95	\$36.50	0	100.50%	\$4,869.23	05 19.90 Wire
Utility Bedding, For Pipe & Conduit, Not Incl.								Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	46	LCY	\$20.00			108.80%	\$1,000.96	conversation on June 29th, 2011
								RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	46	LCY		\$7.64	\$14.10	108.20%	\$1,082.04	16, 31 23 23.20 Hauling
								RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	43	ECY		\$3.05	\$0.34	108.80%	\$158.60	23 23.16 Fill By Borrow & Utility Bedding
								RSMeans, Building Construction Cost Data, 2011, 31
Light Pole, Aluminum, 20' high, 1 arm bracket	8	EA	\$1,250.00	\$1,075.00	\$0.00	108.80%	\$20,236.80	23 23.17 General Fill
								RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	54	LCY		\$0.50	\$1.05	108.80%	\$91.07	23 23.17 General Fill

\$55,725.29

			Cost per		Installation		Location		
Excavation-Backfill	Quantity	Unit	Unit	Material Cost		Equipment	Factor	Total Cost	Comments
Executation backing	ζ,	0				_qpc	1 4 4 4 4	10101 0001	RSMeans Building Construction Cost Data, 2011, 01 5-
Mobilization	8	EA	\$0.00	\$0.00	\$69.00	\$116.00	100.00%	\$1.480.00	36 - Equipment Mobilization
THE CONTRACTOR			φοισσ	ψ0.00	φυσίου	ψ110.00	100.0070	\$1,100.00	Is clear and grub needed for structure in urban
									setting? RSMeans Building Construction Cost Data,
Clear and Grub Site	1	ACRE	\$0.00	\$0.00	\$1,750.00	\$1,300.00	108.20%	\$3,300.10	2011, 31 11 10.10 Clear and Grub Site
									RSMeans Building Construction Cost Data, 2011, 02 21
Survey Site	1	ACRE		\$32.50	\$565.00	\$35.00	108.20%	\$684.37	13 Site Surveys
Fill Material for Berm									
									RSMeans Building Construction Cost Data, 2011, 31 05
Fill Material, Select Structural Fill, 1 1/2" minus									16, Aggregates for Earthwork, Select Structural Fill &
aggregate	1944	LCY		\$20.00	\$1.75	\$3.44	108.20%	\$52,996.96	Material Cost from Quigg Bros., Aberdeen, WA
									RSMeans Building Construction Data, 2011, 31 23
Compacting Backfill, 6"to 12" lifts, vibrating roller	1800	ECY			\$0.63	\$1.81	108.20%	\$4,753.23	23.13 Backfill
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	1944	LCY			\$7.64	\$14.10	108.20%	\$45,738.54	16, 31 23 23.20 Hauling
Stabilization Fabric, Polypropylene, 6oz/SY, 18"									RSMeans Building Construction Cost Data, 2011, 32 12
lifts, 5082 SF per lift	2593	SY		\$1.48	\$0.09	\$0.03	108.20%	\$4,488.30	23 Aggregate Base Courses
Fill Material at Landscape Walls									
									RSMeans Building Construction Cost Data, 2011, 31 05
									16, Aggregates for Earthwork, Select Structural Fill &
Fill Material, Top Soil	2300	LCY		\$20.00	\$1.75	\$3.44	108.20%	\$62,692.52	Material Cost from Quigg Bros., Aberdeen, WA
Compacting Backfill, by hand, no compaction, light									RSMeans Building Construction Data, 2011, 31 23
soil	2130	ECY			\$19.65	\$0.00	108.20%	\$45,282.08	23.13 Backfill
	2200	1.67/			67.64	64446	400 2001	AF4 406 24	RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	2300	LCY			\$7.64	\$14.10	108.20%	\$54,106.21 \$275 522 30	16, 31 23 23.20 Hauling

\$275,522.30

		1							
Concrete Retaining Wall			Cost per		Installation	Equipment	Location		
Surrounding Berm	Quantity	Unit	Unit	Material Cost		Cost	Factor	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	8	EA			\$116.00	\$185.00	100.00%	\$2,408.00	54 36.50 Mobilization
									Built in two sections. First section under grade, 6'
									high, second section built on top of that, 16' high.
Reinforced Concrete Wall									Length of wall 270'.
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	1	EA			\$116.00	\$185.00	95.40%	\$287.15	54 36.50 Mobilization
									RSMeans Assemblies Cost Data, 2011, A 2010 110
Excavation 6 deep', common earth, 4000 SF	1065	SF		\$5.30	\$0.00	\$0.00	108.20%	\$6,106.74	Building Excavation & Backfill
									RSMeans Assemblies Cost Data, 2011, A 2020 110,
									Walls, Cast-in-Place, add 25% to material cost to
Concrete Wall, below grade section, 6' high, 16"									include for additional reinforcing (Equipment included
thick, pumped concrete	177	LF		\$58.75	\$84.50	\$0.00	99.30%	\$25,246.38	in installation cost)
									RSMeans Assemblies Cost Data, 2011, A 2020 110,
									Walls, Cast-in-Place, add 25% to material cost to
Concrete Wall, above grade section, 16' high, 16"									include for additional reinforcing (Equipment included
thick, pumped concrete	177	LF		\$155.00	\$225.00	\$0.00	99.30%	\$66,971.21	in installation cost)
									RSMeans Assemblies Cost Data, 2011, A 2020 220,
									Subdrainage Piping (Equipment included in
Drainage piping, 6" diameter, PVC, perforated,	177	LF		\$4.05	\$4.04		108.20%	\$1,553.57	installation cost)
Aesthetic Treatments for Exposed Concrete									
									RSMeans Building Construction Cost Data, 2011, 03 35
Sandblast Concrete Heavy Treatment	1420	SF		\$1.46	\$3.31	\$0.52	99.30%	\$7,458.48	29.60
							•	C110 021 F2	

\$110,031.53

	ı	Г	Cost year	1	Installation		Location	ı	
Landscaping Concrete	Quantity	Unit	Cost per Unit	Material Cost		Equipment	Factor	Total Cost	Comments
	Quantity	Ollit	Onit	iviateriai Cost	Cost	Equipment	ractor	iotai Cost	
Stepped Concrete Wall 4' high									Length of walls 330' and 320'
									RSMeans Assemblies Cost Data, 2011, A 2020 110,
4' high walls, cast-in-place, 8" thick, pumped									Walls, Cast-in-Place (Equipment included in
concrete	355	LF		\$18.10	\$51.50	\$0.00	99.30%	\$24,532.61	installation cost)
									RSMeans Assemblies Cost Data, 2011, A 2020 220,
									Subdrainage Piping (Equipment Cost included in
Subdrainage Piping, 4" diameter, PVC, perforated	355	LF		\$2.04	\$3.77	\$0.00	108.20%	\$2,231.46	Installation Cost)
Aesthetic Treatments for Exposed Concrete									
									RSMeans Building Construction Cost Data, 2011, 03 35
Sandblast Concrete Heavy Treatment	1420	SF		\$1.46	\$3.31	\$0.52	99.30%	\$7,458.48	29.60
Concrete or Gravel Platform									
Asphaltic Concrete Paving, 6" stone bse, 2" binder									RSMeans Building Construction Cost Data, 2011, 32 12
course, 1" toping	3500	SF		\$1.85	\$0.20	\$0.24	108.20%	\$8,672.23	16.14 Asphaltic Concrete Paving
· -									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	97	CY			\$7.64	\$14.10	108.20%	\$2,286.93	16, 31 23 23.20 Hauling
Landscaping Stairs Up Berm									
									RSMeans Building Construction Cost Data 2011, 03 30
Stairs 10' wide, cast on ground, 24 steps	240	LF Nose		\$4.28	\$16.30	\$0.18	95.40%	\$4,712.00	53.40, Concrete in Place
<u>-</u>									RSMeans Building Construction Cost Data 2011, 03 30
Stair Landing, cast on ground	200	SF		\$3.29	\$4.29	\$0.05	95.40%	\$1,446.26	53.40, Concrete in Place
									RSMeans Building Construction Cost Data 2011, 05 52
									13.50 Railings, Pipe (add 30% to price for stair
Stair Handrail, 1 1/4" diameter, galvanized	60	LF		\$57.20	\$14.89	\$1.04	95.40%	\$4,126.15	handrail)

Sidewalks									
Flatwork in front of ground floor of tower, 6" thick									Unit SF price only, per RSMeans Square Foot Costs, Residential Modifications/Adjustments/Alternatives, Sidewalks, 3000 PSI with mesh (Material, Installation
with wire mesh	3500	SF	\$3.60	\$0.00		\$0.00	99.30%		and Equipment Cost included in Cost per Unit)
								\$67,977.91	
			1 .					,	
Stairs/Ramps/Guardrails	Quantity	Unit	Cost per Unit	Material Cost	Installation Costs	Equipment Cost	Location Factor	Total Cost	Comments
Mobilization of Equipment	2	EA			\$116.00	\$185.00	100.00%	\$602.00	RSMeans, Building Construction Cost Data, 2011, 01 54 36.50 Mobilization
Platform Perimeters Railing (Top wall at Berm)									
Hand Rail/Guard Rail, Galvanized, 2 rail, 1 1/2"				400.50	40.00		0= 100/	4= 152 15	Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building
diameter	177	LF		\$32.50	\$9.80		95.40%		Construction Cost Date 2011, 05 52 Metal Railings
								\$7,764.16	
			Cost per		Installation	Equipment	Location		
Landscaping	Quantity	Unit	Unit	Material Cost	Costs	Costs	Factor	Total Cost	Comments
Treated Wood Trellis Walkway 60' x 12'									
Cedar Wood, 2" thick, 40 PSF load at Maximum Span	720	SF		\$5.65	\$3.02	\$0.00	97.30%	\$6,073.86	RSMeans Assemblies Cost Data, 2011, B1010 266 Wood Deck (Equipment Cost included in Installation Cost)
2	720	C.F.		40.40	Ć4.47	.	07.200/	¢0.206.42	RSMeans Assemblies Cost Data, 2011, B1010 264 Wood Beam & Joist (Equipment Cost included in
Post & Beams	720	SF		\$9.10	\$4.17	\$0.00	97.30%	\$9,296.43	Installation Cost)
Berm/Site Landscaping									
Top Soil	330	LCY		\$33.00	\$24.00	\$0.00	108.20%	420.252.42	RSMeans Building Construction Cost Data, 2011, 32 9: 19.13 Top Dress by hand, 1 CY for 600 SF

\$7.64

\$0.14

\$0.46

\$14.10

\$0.09

\$0.00

108.20%

108.80%

108.20%

\$0.20

\$0.32

330

778

10500

Irrigation System

Haul of Material, 40 MPH, cycle 40 MPH

Mechanical Seeding, 44 lb/MSY

LCY

SY

SF

\$8,861.58 \$52,710.65

\$363.88

\$7,762.48 16, 31 23 23.20 Hauling

19.13 Mechanical Seeding

23.10, sprinkler irrigation system

RSMeans Building Construction Cost Data, 2011, 31 05

RSMeans Building Construction Cost Data, 2011, 32 92

RSMeans Building Construction Costs, 2011, 32 84

Map Number:	20	Minimum Structure Height:	10
Structure Type:	Tower	Structure Capacity:	350
Location:	Ocean Shores, WA, Mt. Olympus	Safe Haven Square Footage:	3500
Levels	1	Columns Required:	9
		Piles per Column:	3
Scope			Cost
Site Utilities			\$15,257
Excavation-Backfill			\$35,361
Foundation			\$180,991
Structure			\$181,341
Roofing			\$76,399
Stairs/Ramps/Guardrails			\$49,588
Fire Protection			\$26,338
Total			\$565,275
Design Fees (8%)			\$45,222
General Conditions (10%)			\$56,528
Contractor Fees, O&P (15%)			\$84,791
Construction Contingency (5%)			\$28,264
Estimate/Design Contingency (10%)			\$56,528
Project Total			\$836,607

	T T		Cost per		Installation	Equipment	Location	T	
Site Utilities	Quantity	Unit	Unit	Material Cost		Cost	Factor	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	10	EA			\$116.00	\$185.00	100.00%	\$3,010.00	54 36.50 Mobilization
Fire Water, Ductile Iron Class 250, MJ, 4" diameter	50	LF		\$16.05					Assuming 50' distance from service at street
									RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator 4'-6' deep	35	BCY			\$2.16	\$2.13	108.20%	\$162.46	23 16.13, Excavating Trench
								_	RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 4" Ductile Iron Piping, MJ	50	LF		\$12.50	\$8.55	\$2.17	108.20%	\$1,256.20	11 Water Utility Distribution Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	6	LCY		\$20.00			108.20%	\$129.84	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	6	LCY			\$7.64	\$14.10	108.20%	\$141.14	16, 31 23 23.20 Hauling
									RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	5	ECY			\$3.05	\$0.34	108.20%	\$18.34	23 23.16 Fill By Borrow & Utility Bedding
									RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	38	LCY			\$0.50	\$1.05	108.20%	\$63.73	23 23.17 General Fill
Storm Service									Assuming 50' distance from service at street
									RSMeans, Building Construction Cost Data, 201, 31 23
Excavate, 3/4 CY Excavator, 6'-10' deep	60	BCY			\$2.88	\$2.85	108.20%	\$371.99	16.13 Excavating Trench
·									RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 8" Bituminous Coated	50	LF		\$10.70	\$5.25	\$0.97	108.20%	\$915.37	41 Storm Utility Drainage Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	6	LCY		\$20.00			108.20%	\$129.84	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	6	LCY			\$7.64	\$14.10	108.20%	\$141.14	16, 31 23 23.20 Hauling
. ,						1			RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	5	ECY			\$3.05	\$0.34	108.20%	\$18.34	23 23.16 Fill By Borrow & Utility Bedding
					•				RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	38	LCY			\$0.50	\$1.05	108.20%	\$63.73	23 23.17 General Fill

Site Drainage/Area Drains/Catch Basins								Assume 1 area drain for structure
								RSMeans Assemblies Cost Data, 2011, G3030 210,
Concrete, Precast, 4' ID riser, 4' deep	1	EA	\$1,425.00	\$1,200.00	0.00%	108.20%	\$2,840.25	Manholes & Catch Basins
Electrical	50	LF						Assuming 50' distance from service at street
Electrical Service, includes service installation,								RSMeans Assemblies Cost Data, 2011, D 5010 120,
breakers, metering, 20' conduit & wire, 3 phase, 4								Electric Service, 3 Phase - 4 Wire, equipment included
wire, 120/208 volts, 60 A	1	EA	\$960.00	\$920.00		100.50%	\$1,889.40	in installation cost
								RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator, 4'-6' deep	35	BCY		\$2.16	\$2.13	108.20%	\$162.46	23 16.13 Excavating Trench
								RSMeans, Building Construction Cost Data, 2011, 33
Install & Test PVC, type EB 4 @ 3" diameter	50	LF	\$2.00	\$8.05		108.20%	\$543.71	71 19 Electrical Underground Ducts and Manholes
								RSMeans, Building Construction Cost Data, 2011, 26
Wire, 600 volt, copper type THW, solid, #12	50	CLF	\$11.95	\$36.50	0	100.50%	\$2,434.61	05 19.90 Wire
Utility Bedding, For Pipe & Conduit, Not Incl.								Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	19	LCY	\$20.00			108.20%	\$411.16	conversation on June 29th, 2011
								RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	19	LCY		\$7.64	\$14.10	108.20%	\$446.93	16, 31 23 23.20 Hauling
								RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	19	ECY		\$3.05	\$0.34	108.20%	\$69.69	23 23.16 Fill By Borrow & Utility Bedding
								RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	22	LCY		\$0.50	\$1.05	108.20%	\$36.90	23 23.17 General Fill

			Cost per		Installation	Equipment	Location		
Excavation-Backfill	Quantity	Unit	Unit	Material Cost	Cost	Cost	Factor	Total Cost	Comments
			4	4		4		4	RSMeans Building Construction Cost Data, 2011, 01 54
Mobilization	8	EA	\$0.00	\$0.00	\$69.00	\$116.00	100.00%	\$1,480.00	36 - Equipment Mobilization
									Is clear and grub needed for structure in urban
									setting? RSMeans Building Construction Cost Data,
Clear and Grub Site	0.10	ACRE	\$0.00	\$0.00	\$1,750.00	\$1,300.00	108.20%	\$331.45	2011, 31 11 10.10 Clear and Grub Site
									Grade Beams, 3' wide, 3' deep RSMeans Building
									Construction Cost Data, 2011, 31 23 16.16 3/4 CY
									bucket, (Price Included in grade beam foundation
Excavation for Grade Beams	118	BCY	\$0.00	\$0.00	\$0.00	\$0.00	108.20%	\$0.00	price)
									1225 SF mat, 2' deep. RSMeans Building Construction
Excavation for slab, subgrade and capillary break	259	BCY	\$0.00	\$0.00	\$7.20	\$7.17	108.20%	\$4,031.05	Cost Data, 2011, 31 23 16.16 3/4 CY bucket
Removal of Foundation Spoils, Haul of Material, 40									RSMeans Building Construction Cost Data, 2011, 31 05
MPH, cycle 40 MPH	472	LCY			\$7.64	\$14.10	108.20%	\$11,102.14	16, 31 23 23.20 Hauling
									Quote per Quigg Bros, Aberdeen, WA, phone
Backfill Slab, subgrade, capillary break	408	ECY		\$20.00			108.20%	\$8,824.52	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	408	ECY			\$7.64	\$14.10	108.20%	\$9,592.25	16, 31 23 23.20 Hauling
				-		-		\$35,361.41	

			Cost per		Installation	Equipment	Location		
Foundation	Quantity	Unit	Unit	Material Cost	Cost	Cost	Factor	Total Cost	Comments
									Piling needs to 2x the height of the structure which is
Piling									23-35'?
									Per phone conversation with Quigg Bros, Aberdeen,
Mobilization for piling	1	EA	\$12,000.00	\$0.00	\$0.00	\$0.00	100.00%	\$12,000.00	WA on June 29th, 2011

Pile Caps, Cap Size 6'-6" x 3'-6" x 37" Foundation Cast-In-Place/Tower Grade Beams 30' span, 28" deep, 14" wide, 2 KLF load 3 Foundation Cast-In-Place/ Footings for Ramp Spread Footings, load 75K, soil capacity 6 KSF, 4'-0" sq x 12" deep Structure Mobilization of Equipment Concrete Structure Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural	9 355 12 uantity	EA LF EA Unit EA	\$0.00 \$0.00 \$0.00 Cost per Unit	\$3,500.00 \$370.00 \$34.50 \$94.50	\$1,200.00 \$540.00 \$53.00 \$167.00 Installation Cost	\$0.00 \$0.00 \$0.00	99.30% 99.30% 99.30% Location Factor	\$8,132.67 \$30,842.00 \$3,116.03 \$180,990.71	RSMeans Assemblies Cost Data 2011, A1010 250 Pile Caps (Equipment Costs are included in Installation Cost) RSMeans Assemblies Cost Data 2011, A 1020 210 Grade Beams (Equipment Cost is included in Installation Cost) Piling needs to 2x the height of the structure which is 23-35'? RSMeans Assemblies Cost Data, 2011, A1010 210, Spread Footings (Equipment Cost is included in Installation Cost) Comments
Foundation Cast-In-Place/Tower Grade Beams 30' span, 28" deep, 14" wide, 2 KLF load 3 Foundation Cast-In-Place/ Footings for Ramp Spread Footings, load 75K, soil capacity 6 KSF, 4'-0" sq x 12" deep Structure Mobilization of Equipment Concrete Structure Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural	355 12 uantity	LF EA	\$0.00 Cost per	\$34.50 \$94.50	\$53.00 \$167.00 Installation Cost	Equipment	99.30% 99.30% Location	\$8,132.67 \$30,842.00 \$3,116.03 \$180,990.71	Caps (Equipment Costs are included in Installation Cost) RSMeans Assemblies Cost Data 2011, A 1020 210 Grade Beams (Equipment Cost is included in Installation Cost) Piling needs to 2x the height of the structure which is 23-35'? RSMeans Assemblies Cost Data, 2011, A1010 210, Spread Footings (Equipment Cost is included in Installation Cost) Comments
Foundation Cast-In-Place/Tower Grade Beams 30' span, 28" deep, 14" wide, 2 KLF load 3 Foundation Cast-In-Place/ Footings for Ramp Spread Footings, load 75K, soil capacity 6 KSF, 4'-0" sq x 12" deep Structure Mobilization of Equipment Concrete Structure Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural	355 12 uantity	LF EA	\$0.00 Cost per	\$34.50 \$94.50	\$53.00 \$167.00 Installation Cost	Equipment	99.30% 99.30% Location	\$8,132.67 \$30,842.00 \$3,116.03 \$180,990.71	RSMeans Assemblies Cost Data 2011, A 1020 210 Grade Beams (Equipment Cost is included in Installation Cost) Piling needs to 2x the height of the structure which is 23-35'? RSMeans Assemblies Cost Data, 2011, A1010 210, Spread Footings (Equipment Cost is included in Installation Cost) Comments
Foundation Cast-In-Place/Tower Grade Beams 30' span, 28" deep, 14" wide, 2 KLF load 3 Foundation Cast-In-Place/ Footings for Ramp Spread Footings, load 75K, soil capacity 6 KSF, 4'-0" sq x 12" deep Structure Mobilization of Equipment Concrete Structure Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural	355 12 uantity	LF EA	\$0.00 Cost per	\$34.50 \$94.50	\$53.00 \$167.00 Installation Cost	Equipment	99.30% 99.30% Location	\$30,842.00 \$3,116.03 \$180,990.71	RSMeans Assemblies Cost Data 2011, A 1020 210 Grade Beams (Equipment Cost is included in Installation Cost) Piling needs to 2x the height of the structure which is 23-35'? RSMeans Assemblies Cost Data, 2011, A1010 210, Spread Footings (Equipment Cost is included in Installation Cost) Comments
Grade Beams 30' span, 28" deep, 14" wide, 2 KLF load Foundation Cast-In-Place/ Footings for Ramp Spread Footings, load 75K, soil capacity 6 KSF, 4'-0" sq x 12" deep Structure Mobilization of Equipment Concrete Structure Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural	12 uantity	EA Unit	Cost per	\$94.50	\$167.00 Installation Cost	Equipment	99.30% Location	\$30,842.00 \$3,116.03 \$180,990.71	Grade Beams (Equipment Cost is included in Installation Cost) Piling needs to 2x the height of the structure which is 23-35'? RSMeans Assemblies Cost Data, 2011, A1010 210, Spread Footings (Equipment Cost is included in Installation Cost)
Foundation Cast-In-Place/ Footings for Ramp Spread Footings, load 75K, soil capacity 6 KSF, 4'-0" sq x 12" deep Structure Mobilization of Equipment Concrete Structure Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural	12 uantity	EA Unit	Cost per	\$94.50	\$167.00 Installation Cost	Equipment	99.30% Location	\$30,842.00 \$3,116.03 \$180,990.71	Grade Beams (Equipment Cost is included in Installation Cost) Piling needs to 2x the height of the structure which is 23-35'? RSMeans Assemblies Cost Data, 2011, A1010 210, Spread Footings (Equipment Cost is included in Installation Cost)
Foundation Cast-In-Place/ Footings for Ramp Spread Footings, load 75K, soil capacity 6 KSF, 4'-0" sq x 12" deep Structure Mobilization of Equipment Concrete Structure Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural	12 uantity	EA Unit	Cost per	\$94.50	\$167.00 Installation Cost	Equipment	99.30% Location	\$30,842.00 \$3,116.03 \$180,990.71	Installation Cost) Piling needs to 2x the height of the structure which is 23-35'? RSMeans Assemblies Cost Data, 2011, A1010 210, Spread Footings (Equipment Cost is included in Installation Cost) Comments
Spread Footings, load 75K, soil capacity 6 KSF, 4'-0" sq x 12" deep Structure Mobilization of Equipment Concrete Structure Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural	uantity	Unit	Cost per		Installation Cost	Equipment	Location	\$3,116.03 \$180,990.71 Total Cost	23-35'? RSMeans Assemblies Cost Data, 2011, A1010 210, Spread Footings (Equipment Cost is included in Installation Cost) Comments
Spread Footings, load 75K, soil capacity 6 KSF, 4'-0" sq x 12" deep Structure Mobilization of Equipment Concrete Structure Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural	uantity	Unit	Cost per		Installation Cost	Equipment	Location	\$3,116.03 \$180,990.71 Total Cost	RSMeans Assemblies Cost Data, 2011, A1010 210, Spread Footings (Equipment Cost is included in Installation Cost) Comments
Structure Mobilization of Equipment Concrete Structure Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural	uantity	Unit	Cost per		Installation Cost	Equipment	Location	\$3,116.03 \$180,990.71 Total Cost	Spread Footings (Equipment Cost is included in Installation Cost) Comments
Structure Mobilization of Equipment Concrete Structure Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural	uantity	Unit	Cost per		Installation Cost	Equipment	Location	\$3,116.03 \$180,990.71 Total Cost	Installation Cost) Comments
Structure Mobilization of Equipment Concrete Structure Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural	uantity	Unit	Cost per		Installation Cost	Equipment	Location	\$180,990.71 Total Cost	Comments
Mobilization of Equipment Concrete Structure Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural			-	Material Cost	Cost	1		Total Cost	
Mobilization of Equipment Concrete Structure Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural			-	Material Cost	Cost	1			
Mobilization of Equipment Concrete Structure Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural			-	Material Cost	Cost	1			
Mobilization of Equipment Concrete Structure Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural			Unit	Material Cost		Costs	Factor		
Concrete Structure Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural	10	EA			¢116.00				
Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural					\$116.00	\$185.00	100.00%	\$3,010.00	RSMeans, Building Construction Cost Data, 2011, 01 54 36.50 Mobilization
Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural									Beam and Column sizes are not determined and
Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural									estimate takes in "best guess" to assume sizes for this
round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural									project.
round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural									RSMeans Assemblies Cost Data, 2011, B1010 201, CIP Column, Round Tied (Equipment Cost included in
Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor 3: Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) 3: Wood Structure Wood Columns 12"x12", 10' High, Select Structural	90	VLF		\$158.00	\$7.85	\$0.00	99.30%		Installation Cost)
Ground Floor 3: Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) 3: Wood Structure Wood Columns 12"x12", 10' High, Select Structural	30	VLI		\$138.00	\$7.65	Ş0.00	33.3070		RSMeans Assemblies Cost Data, 2011, A1030 120,
Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural	3500	SF		\$3.01	\$2.97		99.30%		Slab on Grade, Plain & Reinforced
PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural				,					RSMeans Assemblies Cost Data, 2011, B1010 229
PSF, 9" thick slab, 2nd Floor (evacuation level) Wood Structure Wood Columns 12"x12", 10' High, Select Structural									Precast Plank with No Topping (Equipment Cost
Wood Columns 12"x12", 10' High, Select Structural	3500	SF		\$8.95	\$13.60		99.30%		included in Installation Cost)
Wood Columns 12"x12", 10' High, Select Structural									Wood structure, hip roof to support galvanized steel
									panels
									Supply quote from Levee Lumber, Hoquiam, WA,
									RSMeans Assemblies Cost Data, 2011, B1020 102,
				40.0=	40.00		07.000/		Roof Construction, Wood/Flat or Pitched (Equipment
Perimeter Joists, 3 1/8"x12", GLM 30' span 2	90	VLF		\$9.85	\$2.62		97.30%	<u> </u>	Cost included in Installation Cost)
Perimeter Joists, 3 1/8"x12", GLM 30' span 2									Supply quote from Levee Lumber, Hoquiam, WA, RSMeans Building Construction Cost Data 2011, Glue
remitter 30.5t3, 5 1/0 ALZ , GLIVI 50 3pair	237	LF		\$4.85	\$1.95	\$22.00	97.30%		Laminated Beams 06 18 13.20
•				رن.+ر	Ų1.JJ	722.00	37.30/0	70,031.31	RSMeans Assemblies Cost Data, 2011, B1020 102,
j									Roof Construction, Wood/Flat or Pitched (Equipment
2x10 Wood Joist w/ 1/2" CDX, 12" OC 3!	3500	SF		\$2.02	\$2.05		97.30%		Cost included in Installation Cost)
3.				,	,				RSMeans Assemblies Cost Data, 2011, B1020 102,
Roof, wood/pitched, 3"x12" 12" OC w/ sheating									Roof Construction, Wood/Flat or Pitched (Equipment
plywood on roof, 5/16" CDX		SF	<u> </u>	\$4.59	\$2.62		97.30%		Cost included in Installation Cost)
Weather Proofing/Coatings add 15% (Premium for	4900								Assumed that PTS wood is 15% more compared on
PTS Wood) \$55,9	4900	%	15.00%						price difference shown in means
								\$181,340.66	
	4900								
Roofing Qua	4900		_			1	ocation Facto	Total Cost	Comments

								RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	4	EA		\$116.00	\$185.00	100.00%	\$1,204.00	54 36.50 Mobilization
								Hip and ridge style roof, peak of roof 15'. (Equipment
Roofing/Hip and Ridge Roof Steel Panels								Cost is included in Installation Cost)
								RSMeans Assemblies Cost Data, 2011, B3010 135,
Flat Roof Steel Panels, Flat Seam, Copper, 1/4" min.								Formed Metal (Equipment Cost is included in
slope, 20 oz, 1.2 PSF	4900	SF	\$9.50	\$5.80		100.30%	\$75,194.91	Installation Cost)
							\$76,398.91	

Stairs/Ramps/Guardrails Cost per Unit Material Costnstallation Cosuipment Colocation Facto Total Cost Quantity Unit Comments RSMeans, Building Construction Cost Data, 2011, 01 Mobilization of Equipment 6 EΑ \$116.00 \$185.00 100.00% \$1,806.00 54 36.50 Mobilization Beam and Column sizes are not determined and estimate takes in "best guess" to assume sizes for this Exterior Ramp, Rises 20', 5' wide RSMeans Assemblies Cost Data, 2011, B1010, 208 Steel Columns, 20' high, Wide Flanged, 6", 12 Steel Columns (Equipment Cost is included in VLF \$26.50 \$7.85 \$0.00 95.40% \$3,932.39 120 Installation Cost) W Shape Beams and Girders, bay size 15X20,, Total RSMeans Building Construction Cost Data, 2011, 800 SF \$11.70 \$3.82 \$1.50 95.40% \$12,989.66 | Structural Steel Framing, 05 12 23.17 RSMeans Assemblies Cost Data, 2011, B1010 258, Floor Construction, Metal Deck/Concrete Fill, Deck Metal Deck/Concrete Fill (Equipment Cost is included Span 6 ft, 150 PSF Superimposed Load 800 SF \$2.38 \$2.38 95.40% \$3,632.83 in Installation Cost) RSMeans Building Construction Cost Data, 2011, 05 05 Weather Proofing/Coatings (Galvanized) 7.5 Tons \$400.00 \$0.00 0 0 95.40% \$2,862.00 13.50, Paints and Protective Coatings Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building 270 LF \$32.50 \$9.80 95.40% \$10,895.63 Construction Cost Date 2011, 05 52 Metal Railings Hand Rail/Guard Rail Ladders/Stairs Steel ladder to attic space 20" wide bolted to RSMeans Building Construction Cost Data 2011, 05 51 concrete without cage 10 VLF \$65.00 \$31.50 \$2.18 95.40% \$920.61 33 - Vertical Metal Ladders RSMeans Building Construction Cost Data 2011, 11 33 Accordion Ladder for Escape after Tsunami, Disappearing Stairs, Heavy duty, 16'-0" ceiling 2 \$1,400.00 \$172.00 95.40% \$2,999.38 10.10, Disappearing Stairway ea Platform Perimeters Railing (120 LF for each platform, 2 locations) Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building Construction Cost Date 2011, 05 52 Metal Railings Hand Rail/Guard Rail \$9.549.55 237 LF \$32.50 \$9.80 95.40%

Installation Location Cost per Equipment Fire Protection Quantity Unit Unit **Material Cost** Costs **Total Cost** Cost Factor Comments Fire Protection, Wet Pipe System RSMeans Building Construction Cost Data, 2011, 01 54 Mobilization 4 EΑ \$69.00 \$116.00 100.00% \$740.00 36 - Equipment Mobilization RSMeans Square Foot Costs, 2011, D4010 410, Wet Pipe Sprinkler Systems (Equipment Cost included in

\$4.50

First Floor, 2000 SF, Light Hazard

3500

SF

\$25,598.30 **\$26,338.30**

Installation Cost)

97.00%

\$49,588.05

\$3.04

Map Number:	1	Minimum Structure Height:	17
Structure Type:	Tower	Structure Capacity:	1500
Location:	Westport, WA, Marina	Safe Haven Square Footage:	15000
Levels	1	Columns Required:	25
		Piles per Column:	3
Scope			Cost
Site Utilities			\$15,257
Excavation-Backfill			\$138,958
Foundation			\$496,622
Structure			\$754,965
Roofing			\$323,468
Stairs/Ramps/Guardrails			\$62,561
Fire Protection			\$110,447
Total			\$1,902,278
Design Fees (8%)			\$152,182
General Conditions (10%)			\$190,228
Contractor Fees, O&P (15%)			\$285,342
Construction Contingency (5%)			\$95,114
Estimate/Design Contingency (10%)			\$190,228
Project Total			\$2,815,371

	T T		Cost per		Installation	Equipment	Location	T	
Site Utilities	Quantity	Unit	Unit	Material Cost		Cost	Factor	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	10	EA			\$116.00	\$185.00	100.00%	\$3,010.00	54 36.50 Mobilization
Fire Water, Ductile Iron Class 250, MJ, 4" diameter	50	LF		\$16.05					Assuming 50' distance from service at street
									RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator 4'-6' deep	35	BCY			\$2.16	\$2.13	108.20%	\$162.46	23 16.13, Excavating Trench
								_	RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 4" Ductile Iron Piping, MJ	50	LF		\$12.50	\$8.55	\$2.17	108.20%	\$1,256.20	11 Water Utility Distribution Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	6	LCY		\$20.00			108.20%	\$129.84	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	6	LCY			\$7.64	\$14.10	108.20%	\$141.14	16, 31 23 23.20 Hauling
									RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	5	ECY			\$3.05	\$0.34	108.20%	\$18.34	23 23.16 Fill By Borrow & Utility Bedding
									RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	38	LCY			\$0.50	\$1.05	108.20%	\$63.73	23 23.17 General Fill
Storm Service									Assuming 50' distance from service at street
									RSMeans, Building Construction Cost Data, 201, 31 23
Excavate, 3/4 CY Excavator, 6'-10' deep	60	BCY			\$2.88	\$2.85	108.20%	\$371.99	16.13 Excavating Trench
·									RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 8" Bituminous Coated	50	LF		\$10.70	\$5.25	\$0.97	108.20%	\$915.37	41 Storm Utility Drainage Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	6	LCY		\$20.00			108.20%	\$129.84	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	6	LCY			\$7.64	\$14.10	108.20%	\$141.14	16, 31 23 23.20 Hauling
. ,						1			RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	5	ECY			\$3.05	\$0.34	108.20%	\$18.34	23 23.16 Fill By Borrow & Utility Bedding
					•				RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	38	LCY			\$0.50	\$1.05	108.20%	\$63.73	23 23.17 General Fill

Site Drainage/Area Drains/Catch Basins								Assume 1 area drain for structure
								RSMeans Assemblies Cost Data, 2011, G3030 210,
Concrete, Precast, 4' ID riser, 4' deep	1	EA	\$1,425.00	\$1,200.00	0.00%	108.20%	\$2,840.25	Manholes & Catch Basins
Electrical	50	LF						Assuming 50' distance from service at street
Electrical Service, includes service installation,								RSMeans Assemblies Cost Data, 2011, D 5010 120,
breakers, metering, 20' conduit & wire, 3 phase, 4								Electric Service, 3 Phase - 4 Wire, equipment included
wire, 120/208 volts, 60 A	1	EA	\$960.00	\$920.00		100.50%	\$1,889.40	in installation cost
								RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator, 4'-6' deep	35	BCY		\$2.16	\$2.13	108.20%	\$162.46	23 16.13 Excavating Trench
								RSMeans, Building Construction Cost Data, 2011, 33
Install & Test PVC, type EB 4 @ 3" diameter	50	LF	\$2.00	\$8.05		108.20%	\$543.71	71 19 Electrical Underground Ducts and Manholes
								RSMeans, Building Construction Cost Data, 2011, 26
Wire, 600 volt, copper type THW, solid, #12	50	CLF	\$11.95	\$36.50	0	100.50%	\$2,434.61	05 19.90 Wire
Utility Bedding, For Pipe & Conduit, Not Incl.								Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	19	LCY	\$20.00			108.20%	\$411.16	conversation on June 29th, 2011
								RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	19	LCY		\$7.64	\$14.10	108.20%	\$446.93	16, 31 23 23.20 Hauling
								RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	19	ECY		\$3.05	\$0.34	108.20%	\$69.69	23 23.16 Fill By Borrow & Utility Bedding
								RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	22	LCY		\$0.50	\$1.05	108.20%	\$36.90	23 23.17 General Fill

			Cost per		Installation	Equipment	Location		
Excavation-Backfill	Quantity	Unit	Unit	Material Cost	Cost	Cost	Factor	Total Cost	Comments
									RSMeans Building Construction Cost Data, 2011, 01 54
Mobilization	8	EA	\$0.00	\$0.00	\$69.00	\$116.00	100.00%	\$1,480.00	36 - Equipment Mobilization
									Is clear and grub needed for structure in urban
									setting? RSMeans Building Construction Cost Data,
Clear and Grub Site	0.43	ACRE	\$0.00	\$0.00	\$1,750.00	\$1,300.00	108.20%	\$1,420.50	2011, 31 11 10.10 Clear and Grub Site
									Grade Beams, 3' wide, 3' deep RSMeans Building
									Construction Cost Data, 2011, 31 23 16.16 3/4 CY
									bucket, (Price Included in grade beam foundation
Excavation for Grade Beams	408	BCY	\$0.00	\$0.00	\$0.00	\$0.00	108.20%	\$0.00	price)
									1225 SF mat, 2' deep. RSMeans Building Construction
Excavation for slab, subgrade and capillary break	1111	BCY	\$0.00	\$0.00	\$7.20	\$7.17	108.20%	\$17,275.93	Cost Data, 2011, 31 23 16.16 3/4 CY bucket
Removal of Foundation Spoils, Haul of Material, 40									RSMeans Building Construction Cost Data, 2011, 31 05
MPH, cycle 40 MPH	1899	LCY			\$7.64	\$14.10	108.20%	\$44,674.26	16, 31 23 23.20 Hauling
									Quote per Quigg Bros, Aberdeen, WA, phone
Backfill Slab, subgrade, capillary break	1641	ECY		\$20.00			108.20%	\$35,509.25	conversation on June 29th, 2011
					•		•		RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH,cycle 40 MPH	1641	ECY			\$7.64	\$14.10	108.20%	\$38,598.56	16, 31 23 23.20 Hauling
		•	•	•	•		•	\$138,958.50	

			Cost per		Installation	Equipment	Location		
Foundation	Quantity	Unit	Unit	Material Cost	Cost	Cost	Factor	Total Cost	Comments
									Piling needs to 2x the height of the structure which is
Piling									23-35'?
									Per phone conversation with Quigg Bros, Aberdeen,
Mobilization for piling	1	EA	\$12,000.00	\$0.00	\$0.00	\$0.00	100.00%	\$12,000.00	WA on June 29th, 2011

Pattered Biles 19" Diameter 20' 40' Doop	75	ΕΛ	\$0.00	¢3 500 00	¢1 200 00	\$0.00	100.009/		Driven pipe piles 40' long, 18"x.5", per phone conversation with Quigg Bros, Aberdeen, WA on June 29th,2011. Equipment Included in Material/Labor
Battered Piles, 18" Diameter, 30'-40' Deep	75	EA	\$0.00	\$3,500.00	\$1,200.00	\$0.00	100.00%	\$352,500.00	RSMeans Assemblies Cost Data 2011, A1010 250 Pile
									Caps (Equipment Costs are included in Installation
Pile Caps, Cap Size 6'-6" x 3'-6" x 37"	25	EA	\$0.00	\$370.00	\$540.00		99.30%	\$22,590.75	Cost)
Foundation Cast-In-Place/Tower			φσ.σσ	ψ370.00	φ5 .0.00		33.3070	ψ 22 /330.73	
·									RSMeans Assemblies Cost Data 2011, A 1020 210
Grade Beams 30' span, 28" deep, 14" wide, 2 KLF									Grade Beams (Equipment Cost is included in
load	1225	LF		\$34.50	\$53.00		99.30%	\$106,415.02	Installation Cost)
Foundation Cast-In-Place/ Footings for Ramp									Piling needs to 2x the height of the structure which is 23-35'?
									RSMeans Assemblies Cost Data, 2011, A1010 210,
Spread Footings, load 75K, soil capacity 6 KSF, 4'-0"			40.00	404.50	446=00	40.00			Spread Footings (Equipment Cost is included in
sq x 12" deep	12	EA	\$0.00	\$94.50	\$167.00	\$0.00	99.30%		Installation Cost)
								\$496,621.80	
			Cost per		Installation	Equipment	Location	1	
Structure	Quantity	Unit	Unit	Material Cost	Cost	Costs	Factor	Total Cost	Comments
Mobilization of Equipment	10	EA			\$116.00	\$185.00	100.00%	\$3,010.00	RSMeans, Building Construction Cost Data, 2011, 01 54 36.50 Mobilization
									Beam and Column sizes are not determined and estimate takes in "best guess" to assume sizes for this
Concrete Structure									project.
Concrete Structure								<u> </u>	RSMeans Assemblies Cost Data, 2011, B1010 201, CIP
Concrete Columns, rated for 1000 K load, 26"									Column, Round Tied (Equipment Cost included in
round, concrete strength, 6000 PSI	425	VLF		\$158.00	\$7.85	\$0.00	99.30%	\$69,992.85	Installation Cost)
Slab-On-Grade, 6" thick, non-industrial, reinforced,				·	•				RSMeans Assemblies Cost Data, 2011, A1030 120,
Ground Floor	15000	SF		\$3.01	\$2.97		99.30%	\$89,072.10	Slab on Grade, Plain & Reinforced
									RSMeans Assemblies Cost Data, 2011, B1010 229
Cast-In-Place Beam and Slab, Two Way, 30x30, 351									Precast Plank with No Topping (Equipment Cost
PSF, 9" thick slab, 2nd Floor (evacuation level)	15000	SF		\$8.95	\$13.60		99.30%		included in Installation Cost)
Wood Structure									Wood structure, hip roof to support galvanized steel panels
									Supply quote from Levee Lumber, Hoquiam, WA,
									RSMeans Assemblies Cost Data, 2011, B1020 102, Roof Construction, Wood/Flat or Pitched (Equipment
Wood Columns 12"x12", 10' High, Select Structural	250	VLF		\$9.85	\$2.62		97.30%	\$3.033.33	Cost included in Installation Cost)
Wood coldinis 12 x12 , 10 mgn, sciect structural	250	V E1		Ş3.03	72.02		37.3070	75,033.33	Supply quote from Levee Lumber, Hoquiam, WA,
									RSMeans Building Construction Cost Data 2011, Glued
Perimeter Joists, 3 1/8"x12", GLM 30' span	490	LF		\$4.85	\$1.95	\$22.00	97.30%	\$13,728.12	Laminated Beams 06 18 13.20
									RSMeans Assemblies Cost Data, 2011, B1020 102,
			1					1	Roof Construction, Wood/Flat or Pitched (Equipment
2x10 Wood Joist w/ 1/2" CDX, 12" OC	15000	SF	1	\$2.02	\$2.05		97.30%		Cost included in Installation Cost)
			1					1	RSMeans Assemblies Cost Data, 2011, B1020 102,
Roof, wood/pitched, 3"x12" 12" OC w/ sheating	24600	6-	1	64-0	42.52		07.000	64.47.004.65	Roof Construction, Wood/Flat or Pitched (Equipment
plywood on roof, 5/16" CDX Weather Proofing/Coatings add 15% (Premium for	21000	SF	+	\$4.59	\$2.62		97.30%	\$147,321.93	Cost included in Installation Cost) Assumed that PTS wood is 15% more compared on
PTS Wood)	\$223,485.02	%	15.00%					\$33,522.75	price difference shown in means
	7223, TO3.02	70	13.00/0	1				\$754,964.97	prior amerence snown in means
								7134,304.31	
Doofing			1.					1	
Roofing	Quantity	Unit	Cost per Uni	Material Cost	istallation Cos	Juipment Co	Location Facto	Total Cost	Comments

								RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	4	EA		\$116.00	\$185.00	100.00%	\$1,204.00	54 36.50 Mobilization
								Hip and ridge style roof, peak of roof 15'. (Equipment
Roofing/Hip and Ridge Roof Steel Panels								Cost is included in Installation Cost)
								RSMeans Assemblies Cost Data, 2011, B3010 135,
Flat Roof Steel Panels, Flat Seam, Copper, 1/4" min.								Formed Metal (Equipment Cost is included in
slope, 20 oz, 1.2 PSF	21000	SF	\$9.50	\$5.80		100.30%	\$322,263.90	Installation Cost)
·							6000 ACT 00	

\$323,467.90

Stairs/Ramps/Guardrails	Quantity	Unit	Cost per Uni	Material Cost	nstallation Co	uipment Co	Location Facto	Total Cost	Comments
Councy round poy Council and the	Quality	• • • • • • • • • • • • • • • • • • • •				junpinioni Go			RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	6	EA			\$116.00	\$185.00	100.00%	\$1,806.00	154 36.50 Mobilization
modification of Equipment					φ110.00	Ψ100.00	10010070		Beam and Column sizes are not determined and
									estimate takes in "best guess" to assume sizes for this
Exterior Ramp, Rises 20', 5' wide									project.
									RSMeans Assemblies Cost Data, 2011, B1010, 208
Steel Columns, 20' high, Wide Flanged, 6", 12									Steel Columns (Equipment Cost is included in
locations	204	VLF		\$26.50	\$7.85	\$0.00	95.40%	\$6,685.06	Installation Cost)
W Shape Beams and Girders, bay size 15X20,, Total									RSMeans Building Construction Cost Data, 2011,
Load 263 PSF.	800	SF		\$11.70	\$3.82	\$1.50	95.40%	\$12,989.66	Structural Steel Framing, 05 12 23.17
									RSMeans Assemblies Cost Data, 2011, B1010 258,
Floor Construction, Metal Deck/Concrete Fill, Deck									Metal Deck/Concrete Fill (Equipment Cost is included
Span 6 ft, 150 PSF Superimposed Load	800	SF		\$2.38	\$2.38		95.40%	\$3,632.83	in Installation Cost)
									RSMeans Building Construction Cost Data, 2011, 05 05
Weather Proofing/Coatings (Galvanized)	7.5	Tons	\$400.00	\$0.00	0	0	95.40%	\$2,862.00	13.50, Paints and Protective Coatings
									Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building
Hand Rail/Guard Rail	270	LF		\$32.50	\$9.80		95.40%	\$10,895.63	Construction Cost Date 2011, 05 52 Metal Railings
Ladders/Stairs									
Steel ladder to attic space 20" wide bolted to									RSMeans Building Construction Cost Data 2011, 05 51
concrete without cage	10	VLF		\$65.00	\$31.50	\$2.18	95.40%	\$920.61	33 - Vertical Metal Ladders
Accordion Ladder for Escape after Tsunami,									RSMeans Building Construction Cost Data 2011, 11 33
Disappearing Stairs, Heavy duty, 16'-0" ceiling	2	ea		\$1,400.00	\$172.00		95.40%	\$2,999.38	10.10, Disappearing Stairway
Platform Perimeters Railing (120 LF for each									
platform, 2 locations)									
									Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building
Hand Rail/Guard Rail	490	LF		\$32.50	\$9.80		95.40%	\$19,769.44	Construction Cost Date 2011, 05 52 Metal Railings
								¢62 E60 62	

\$62,560.62

			Cost per		Installation	Equipment	Location		
Fire Protection	Quantity	Unit	Unit	Material Cost	Costs	Cost	Factor	Total Cost	Comments
Fire Protection, Wet Pipe System									
									RSMeans Building Construction Cost Data, 2011, 01 54
Mobilization	4	EA		\$69.00	\$116.00		100.00%	\$740.00	36 - Equipment Mobilization
									RSMeans Square Foot Costs, 2011, D4010 410, Wet
									Pipe Sprinkler Systems (Equipment Cost included in
First Floor, 2000 SF, Light Hazard	15000	SF		\$4.50	\$3.04		97.00%	\$109,707.00	Installation Cost)

\$110,447.00

Map Number:	2	Minimum Structure Height:	17
Structure Type:	Tower	Structure Capacity:	1000
Location:	Westport, WA, Adams & Washington	Safe Haven Square Footage:	10000
Levels	1	Columns Required:	16
		Piles per Column:	3
Scope	<u> </u>		Cost
Site Utilities			\$15,257
Excavation-Backfill			\$92,702
Foundation			\$324,684
Structure			\$504,719
Roofing			\$216,047
Stairs/Ramps/Guardrails			\$58,933
Fire Protection			\$73,878
Total			\$1,286,220
Design Fees (8%)			\$102,898
General Conditions (10%)			\$128,622
Contractor Fees, O&P (15%)			\$192,933
Construction Contingency (5%)			\$64,311
Estimate/Design Contingency (10%)			\$128,622
Project Total			\$1,903,606

		ı	Cookman	ı	Installation	Faurinmant	Leastien		T.
Site Utilities	Quantity	Unit	Cost per Unit	Material Cost	Installation Cost	Equipment Cost	Location Factor	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	10	EA			\$116.00	\$185.00	100.00%	\$3,010.00	54 36.50 Mobilization
Fire Water, Ductile Iron Class 250, MJ, 4" diameter	50	LF		\$16.05					Assuming 50' distance from service at street
									RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator 4'-6' deep	35	BCY			\$2.16	\$2.13	108.20%	\$162.46	23 16.13, Excavating Trench
									RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 4" Ductile Iron Piping, MJ	50	LF		\$12.50	\$8.55	\$2.17	108.20%	\$1,256.20	11 Water Utility Distribution Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	6	LCY		\$20.00			108.20%	\$129.84	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	6	LCY			\$7.64	\$14.10	108.20%	\$141.14	16, 31 23 23.20 Hauling
									RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	5	ECY			\$3.05	\$0.34	108.20%	\$18.34	23 23.16 Fill By Borrow & Utility Bedding
									RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	38	LCY			\$0.50	\$1.05	108.20%	\$63.73	23 23.17 General Fill
Storm Service									Assuming 50' distance from service at street
									RSMeans, Building Construction Cost Data, 201, 31 23
Excavate, 3/4 CY Excavator, 6'-10' deep	60	BCY			\$2.88	\$2.85	108.20%	\$371.99	16.13 Excavating Trench
									RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 8" Bituminous Coated	50	LF		\$10.70	\$5.25	\$0.97	108.20%	\$915.37	41 Storm Utility Drainage Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	6	LCY		\$20.00			108.20%	\$129.84	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	6	LCY			\$7.64	\$14.10	108.20%	\$141.14	16, 31 23 23.20 Hauling
					•		•		RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	5	ECY			\$3.05	\$0.34	108.20%	\$18.34	23 23.16 Fill By Borrow & Utility Bedding
									RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	38	LCY			\$0.50	\$1.05	108.20%	\$63.73	23 23.17 General Fill

Site Drainage/Area Drains/Catch Basins								Assume 1 area drain for structure
								RSMeans Assemblies Cost Data, 2011, G3030 210,
Concrete, Precast, 4' ID riser, 4' deep	1	EA	\$1,425.00	\$1,200.00	0.00%	108.20%	\$2,840.25	Manholes & Catch Basins
Electrical	50	LF						Assuming 50' distance from service at street
Electrical Service, includes service installation,								RSMeans Assemblies Cost Data, 2011, D 5010 120,
breakers, metering, 20' conduit & wire, 3 phase, 4								Electric Service, 3 Phase - 4 Wire, equipment included
wire, 120/208 volts, 60 A	1	EA	\$960.00	\$920.00		100.50%	\$1,889.40	in installation cost
								RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator, 4'-6' deep	35	BCY		\$2.16	\$2.13	108.20%	\$162.46	23 16.13 Excavating Trench
								RSMeans, Building Construction Cost Data, 2011, 33
Install & Test PVC, type EB 4 @ 3" diameter	50	LF	\$2.00	\$8.05		108.20%	\$543.71	71 19 Electrical Underground Ducts and Manholes
								RSMeans, Building Construction Cost Data, 2011, 26
Wire, 600 volt, copper type THW, solid, #12	50	CLF	\$11.95	\$36.50	0	100.50%	\$2,434.61	05 19.90 Wire
Utility Bedding, For Pipe & Conduit, Not Incl.								Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	19	LCY	\$20.00			108.20%	\$411.16	conversation on June 29th, 2011
								RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	19	LCY		\$7.64	\$14.10	108.20%	\$446.93	16, 31 23 23.20 Hauling
								RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	19	ECY		\$3.05	\$0.34	108.20%	\$69.69	23 23.16 Fill By Borrow & Utility Bedding
								RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	22	LCY		\$0.50	\$1.05	108.20%	\$36.90	23 23.17 General Fill

			Cost per		Installation	Equipment	Location		
Excavation-Backfill	Quantity	Unit	Unit	Material Cost	Cost	Cost	Factor	Total Cost	Comments
									RSMeans Building Construction Cost Data, 2011, 01 54
Mobilization	8	EA	\$0.00	\$0.00	\$69.00	\$116.00	100.00%	\$1,480.00	36 - Equipment Mobilization
									Is clear and grub needed for structure in urban
									setting? RSMeans Building Construction Cost Data,
Clear and Grub Site	0.29	ACRE	\$0.00	\$0.00	\$1,750.00	\$1,300.00	108.20%	\$947.00	2011, 31 11 10.10 Clear and Grub Site
									Grade Beams, 3' wide, 3' deep RSMeans Building
									Construction Cost Data, 2011, 31 23 16.16 3/4 CY
									bucket, (Price Included in grade beam foundation
Excavation for Grade Beams	267	BCY	\$0.00	\$0.00	\$0.00	\$0.00	108.20%	\$0.00	price)
									1225 SF mat, 2' deep. RSMeans Building Construction
Excavation for slab, subgrade and capillary break	741	BCY	\$0.00	\$0.00	\$7.20	\$7.17	108.20%	\$11,517.29	Cost Data, 2011, 31 23 16.16 3/4 CY bucket
Removal of Foundation Spoils, Haul of Material, 40									RSMeans Building Construction Cost Data, 2011, 31 05
MPH, cycle 40 MPH	1259	LCY			\$7.64	\$14.10	108.20%	\$29,621.15	16, 31 23 23.20 Hauling
									Quote per Quigg Bros, Aberdeen, WA, phone
Backfill Slab, subgrade, capillary break	1088	ECY		\$20.00			108.20%	\$23,544.32	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	1088	ECY			\$7.64	\$14.10	108.20%	\$25,592.68	16, 31 23 23.20 Hauling
		-	-		-		-	\$92,702.44	

			Cost per		Installation	Equipment	Location		
Foundation	Quantity	Unit	Unit	Material Cost	Cost	Cost	Factor	Total Cost	Comments
									Piling needs to 2x the height of the structure which is
Piling									23-35'?
									Per phone conversation with Quigg Bros, Aberdeen,
Mobilization for piling	1	EA	\$12,000.00	\$0.00	\$0.00	\$0.00	100.00%	\$12,000.00	WA on June 29th, 2011

Debtored Diles 40ll Discussors 20l 40l Desc	40		¢0.00	¢3.500.00	Ć1 200 00	¢0.00	100.00%		Driven pipe piles 40' long, 18"x.5", per phone conversation with Quigg Bros, Aberdeen, WA on June 29th,2011. Equipment Included in Material/Labor
Battered Piles, 18" Diameter, 30'-40' Deep	48	EA	\$0.00	\$3,500.00	\$1,200.00	\$0.00	100.00%	\$225,600.00	RSMeans Assemblies Cost Data 2011, A1010 250 Pile
									Caps (Equipment Costs are included in Installation
Pile Caps, Cap Size 6'-6" x 3'-6" x 37"	16	EA	\$0.00	\$370.00	\$540.00		99.30%	\$14,458.08	
Foundation Cast-In-Place/Tower	10		\$0.00	Ç370.00	Ç3 10.00		33.3070	Ç11,130.00	Costy
									RSMeans Assemblies Cost Data 2011, A 1020 210
Grade Beams 30' span, 28" deep, 14" wide, 2 KLF									Grade Beams (Equipment Cost is included in
load	800	LF		\$34.50	\$53.00		99.30%		Installation Cost)
									Piling needs to 2x the height of the structure which is
Foundation Cast-In-Place/ Footings for Ramp									23-35'?
									RSMeans Assemblies Cost Data, 2011, A1010 210,
Spread Footings, load 75K, soil capacity 6 KSF, 4'-0"					4				Spread Footings (Equipment Cost is included in
sq x 12" deep	12	EA	\$0.00	\$94.50	\$167.00	\$0.00	99.30%		Installation Cost)
								\$324,684.11	
			Cost non		Installation	Cautanaant	Lasatian	1	
Structure	Quantity	Unit	Cost per Unit	Material Cost	Cost	Equipment Costs	Location Factor	Total Cost	Comments
Mobilization of Equipment	10	EA			\$116.00	\$185.00	100.00%	\$3,010.00	RSMeans, Building Construction Cost Data, 2011, 01 54 36.50 Mobilization
									Beam and Column sizes are not determined and
									estimate takes in "best guess" to assume sizes for this
Concrete Structure			_						project.
Consents Columns and disa 1000 Kilond 201									RSMeans Assemblies Cost Data, 2011, B1010 201, CIP
Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI	272	VLF		\$158.00	\$7.85	\$0.00	99.30%	\$44,795.42	Column, Round Tied (Equipment Cost included in Installation Cost)
Slab-On-Grade, 6" thick, non-industrial, reinforced,	272	VLF		\$136.00	\$7.65	\$0.00	99.30%	\$44,795.42	RSMeans Assemblies Cost Data, 2011, A1030 120,
Ground Floor	10000	SF		\$3.01	\$2.97		99.30%	\$59 381 40	Slab on Grade, Plain & Reinforced
Ground Froot	10000	J1		γ3.01	Ψ2.57		33.3070		RSMeans Assemblies Cost Data, 2011, B1010 229
Cast-In-Place Beam and Slab, Two Way, 30x30, 351									Precast Plank with No Topping (Equipment Cost
PSF, 9" thick slab, 2nd Floor (evacuation level)	10000	SF		\$8.95	\$13.60		99.30%		included in Installation Cost)
· · · · · · · · · · · · · · · · · · ·									Wood structure, hip roof to support galvanized steel
Wood Structure									panels
									Supply quote from Levee Lumber, Hoquiam, WA,
									RSMeans Assemblies Cost Data, 2011, B1020 102,
				_					Roof Construction, Wood/Flat or Pitched (Equipment
Wood Columns 12"x12", 10' High, Select Structural	160	VLF		\$9.85	\$2.62		97.30%	\$1,941.33	Cost included in Installation Cost)
									Supply quote from Levee Lumber, Hoquiam, WA,
Perimeter Joists, 3 1/8"x12", GLM 30' span	400	LF		\$4.85	\$1.95	\$22.00	97.30%	\$11 209 06	RSMeans Building Construction Cost Data 2011, Glued Laminated Beams 06 18 13.20
renineter Juists, 3 1/0 x12 , GLIVI 30 Span	400	LF	+	۶ 4 .05	31.3 2	344.00	37.3070	311,200.30	RSMeans Assemblies Cost Data, 2011, B1020 102,
			1					1	Roof Construction, Wood/Flat or Pitched (Equipment
2x10 Wood Joist w/ 1/2" CDX, 12" OC	10000	SF	1	\$2.02	\$2.05		97.30%	\$39,601.10	Cost included in Installation Cost)
	1		1	,	,				RSMeans Assemblies Cost Data, 2011, B1020 102,
Roof, wood/pitched, 3"x12" 12" OC w/ sheating			1					1	Roof Construction, Wood/Flat or Pitched (Equipment
plywood on roof, 5/16" CDX	14000	SF		\$4.59	\$2.62		97.30%	\$98,214.62	Cost included in Installation Cost)
Weather Proofing/Coatings add 15% (Premium for									Assumed that PTS wood is 15% more compared on
PTS Wood)	\$150,966.01	%	15.00%					<u> </u>	price difference shown in means
			<u></u>					\$504,719.23	
Roofing				Material Cost					

								RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	4	EA		\$116.00	\$185.00	100.00%	\$1,204.00	54 36.50 Mobilization
								Hip and ridge style roof, peak of roof 15'. (Equipment
Roofing/Hip and Ridge Roof Steel Panels								Cost is included in Installation Cost)
								RSMeans Assemblies Cost Data, 2011, B3010 135,
Flat Roof Steel Panels, Flat Seam, Copper, 1/4" min.								Formed Metal (Equipment Cost is included in
slope, 20 oz, 1.2 PSF	14000	SF	\$9.50	\$5.80		100.30%	\$214,842.60	Installation Cost)

\$216,046.60

xterior Ramp, Rises 20', 5' wide teel Columns, 20' high, Wide Flanged, 6", 12	Stairs/Ramps/Guardrails	Quantity	Unit	Cost per Unit	Material Cost	nstallation Co	uipment Co	Location Facto	Total Cost	Comments
xterior Ramp, Rises 20', 5' wide teel Columns, 20' high, Wide Flanged, 6", 12	-									RSMeans, Building Construction Cost Data, 2011, 01
estimate takes in "best guess" to assume sizes for this project. RSMeans Assemblies Cost Data, 2011, B1010, 208 Steel Columns, 20' high, Wide Flanged, 6", 12 by Stape Beams and Girders, bay size 15X20,, Total and 263 PSF. 800 SF \$11.70 \$3.82 \$1.50 \$95.40% \$12,989.66 \$12,999.86 \$12,999.86 \$12,999.88 \$12,99	Mobilization of Equipment	6	EA			\$116.00	\$185.00	100.00%	\$1,806.00	54 36.50 Mobilization
xterior Ramp, Rises 20', 5' wide teel Columns, 20' high, Wide Flanged, 6", 12										Beam and Column sizes are not determined and
teel Columns, 20' high, Wide Flanged, 6", 12										estimate takes in "best guess" to assume sizes for this
teel Columns, 20' high, Wide Flanged, 6", 12	Exterior Ramp, Rises 20', 5' wide									project.
vertions 204 VLF \$26.50 \$7.85 \$0.00 95.40% \$6,685.06 Installation Cost) W Shape Beams and Girders, bay size 15X20,, Total oad 263 PSF. 800 SF \$11.70 \$3.82 \$1.50 95.40% \$12,989.66 Structural Steel Framing, 05 12 23.17 RSMeans Building Construction Cost Data, 2011, B1010 258, Metal Deck/Concrete Fill, Deck pan 6 ft, 150 PSF Superimposed Load 800 SF \$2.38 \$2.38 95.40% \$3,632.83 in Installation Cost) Weather Proofing/Coatings (Galvanized) 7.5 Tons \$400.00 \$0.00 0 95.40% \$2,862.00 13.50, Paints and Protective Coatings Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building Construction Cost Data 2011, 05 50 oncrete without cage 10 VLF \$65.00 \$31.50 \$2.18 95.40% \$2,999.38 10.10, Disappearing Stairs, Heavy duty, 16"-0" ceiling 2 ea \$1,400.00 \$172.00 95.40% \$2,999.38 10.10, Disappearing Stairway Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building Construction Cost Data 2011, 1133 1140 1140 1133 1172" diameter, RSMeans Building Construction Cost Data 2011, 1133 1140 1140 1140 1140 1140 1140 1140										RSMeans Assemblies Cost Data, 2011, B1010, 208
Whape Beams and Girders, bay size 15X20,, Total oad 263 PSF. 800 SF \$11.70 \$3.82 \$1.50 95.40% \$12,989.66 Structural Steel Framing, 05 12 23.17 RSMeans Building Construction Cost Data, 2011, bit of 100 258, Metal Deck/Concrete Fill, Deck pan 6 ft, 150 PSF Superimposed Load 800 SF \$2.38 \$2.38 95.40% \$3,632.83 Installation Cost) Weather Proofing/Coatings (Galvanized) 7.5 Tons \$400.00 \$0.00 0 95.40% \$2,862.00 13.50, Paints and Protective Coatings land Rail/Guard Rail 270 LF \$32.50 \$9.80 95.40% \$10,895.63 Construction Cost Data 2011, 05 51 and 2011, 05 52 Metal Railings adders/Stairs teel ladder to attic space 20" wide bolted to oncrete without cage 10 VLF \$65.00 \$31.50 \$2.18 95.40% \$920.61 33. Vertical Metal Ladders RSMeans Building Construction Cost Data 2011, 133 isappearing Stairs, Heavy duty, 16'-0" ceiling 2 ea \$1,400.00 \$172.00 95.40% \$2,999.38 10.10, Disappearing Stairway Galvanized, 2 Rail, 11/2" diameter, RSMeans Building Construction Cost Data 2011, 1133 isappearing Stairs, Heavy duty, 16'-0" ceiling 2 ea \$1,400.00 \$172.00 95.40% \$2,999.38 10.10, Disappearing Stairway	Steel Columns, 20' high, Wide Flanged, 6", 12									Steel Columns (Equipment Cost is included in
oad 263 PSF. 800 SF \$11.70 \$3.82 \$1.50 95.40% \$12,989.66 Structural Steel Framing, 05 12 23.17 RSMeans Assemblies Cost Data, 2011, B1010 258, Metal Deck/Concrete Fill, Deck pan 6 ft, 150 PSF Superimposed Load 800 SF \$2.38 \$2.38 95.40% \$3,632.83 in Installation Cost) Veather Proofing/Coatings (Galvanized) 7.5 Tons \$400.00 \$0.00 0 95.40% \$2,862.00 13.50, Paints and Protective Coatings Idand Rail/Guard Rail adders/Stairs teel ladder to attic space 20" wide bolted to oncrete without cage 10 VLF \$65.00 \$31.50 \$2.18 95.40% \$92.061 33 - Vertical Metal Ladders Cocordion Ladder for Escape after Tsunami, Pisappearing Stairs, Heavy duty, 16'-0" ceiling 2 ea \$1,400.00 \$172.00 \$172.00 \$95.40% \$2.999.38 10.10, Disappearing Stairway Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building Construction Cost Data 2011, 11 35 11 12 11 12 11 12 11 12 11 12 11 13 11 12 11 12 11 13 11 12 11 12 11 13 11 12 11 12 11 13 11 12 11 13 11 13 11 14 15 11 12 11 12 11 13 11 14 15 11 12 11 12 11 13 11 14 15 11 12 11 12 11 13 11 14 15 11 14 11 14 11 14 11 14 11 14 11 14 11 15 11 14 15 14	locations	204	VLF		\$26.50	\$7.85	\$0.00	95.40%	\$6,685.06	Installation Cost)
RSMeans Assemblies Cost Data, 2011, B1010 258, Metal Deck/Concrete Fill, Deck pan 6 ft, 150 PSF Superimposed Load 800 SF \$2.38 \$2.38 95.40% \$3,632.83 in Installation Cost) Weather Proofing/Coatings (Galvanized) 7.5 Tons \$400.00 \$0.00 0 95.40% \$2,862.00 13.50, Paints and Protective Coatings Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building Construction Cost Data 2011, 05 0 95.40% \$10,895.63 Construction Cost Date 2011, 05 52 Metal Raillings adders/Stairs teel ladder to attic space 20" wide bolted to oncrete without cage 10 VLF \$65.00 \$31.50 \$2.18 95.40% \$920.61 \$33 - Vertical Metal Ladders ccordion Ladder for Escape after Tsunami, isappearing Stairs, Heavy duty, 16'-0" ceiling 12 ea \$1,400.00 \$172.00 \$172.00 \$95.40% \$2,999.38 \$10.10, Disappearing Stairway Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building Construction Cost Data 2011, 11 33 11 11 11 11 11 11 11 11 11 11 11	W Shape Beams and Girders, bay size 15X20,, Total									RSMeans Building Construction Cost Data, 2011,
loor Construction, Metal Deck/Concrete Fill, Deck pan 6 ft, 150 PSF Superimposed Load 800 SF \$2.38 \$2.38 95.40% \$3,632.83 in Installation Cost) RSMeans Building Construction Cost Data, 2011, 05 0 RSMeans Building Construction Cost Data, 2011, 05 0 800 SF \$2.38 \$2.38 95.40% \$2,862.00 13.50, Paints and Protective Coatings Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building Secure Without Case and Secure Wi	Load 263 PSF.	800	SF		\$11.70	\$3.82	\$1.50	95.40%	\$12,989.66	<u>.</u>
pan 6 ft, 150 PSF Superimposed Load 800 SF \$2.38 \$2.38 95.40% \$3,632.83 in Installation Cost) RSMeans Building Construction Cost Data, 2011, 05 0 RSMeans Building Construction Cost Data, 2011, 05 0 13.50, Paints and Protective Coatings Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building Sadders/Stairs teel ladder to attic space 20" wide bolted to oncrete without cage cocordion Ladder for Escape after Tsunami, isappearing Stairs, Heavy duty, 16'-0" ceiling 2 ea \$1,400.00 \$172.00 95.40% \$2,999.38 10.10, Disappearing Stairway Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building Construction Cost Data 2011, 11 33 10.10, Disappearing Stairway Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building Construction Cost Data 2011, 11 33 10.10, Disappearing Stairway Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building Construction Cost Data 2011, 11 35 10.10, Disappearing Stairway Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building Construction Cost Data 2011, 11 35 10.10, Disappearing Stairway Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building Construction Cost Data 2011, 11 35 10.10, Disappearing Stairway										RSMeans Assemblies Cost Data, 2011, B1010 258,
Veather Proofing/Coatings (Galvanized) 7.5 Tons \$400.00 \$0.00 0 95.40% \$2,862.00 13.50, Paints and Protective Coatings Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building RSMeans Building Construction Cost Data 2011, 05 52 Metal Railings adders/Stairs teel ladder to attic space 20" wide bolted to oncrete without cage cocordion Ladder for Escape after Tsunami, isappearing Stairs, Heavy duty, 16'-0" ceiling 2 ea \$1,400.00 \$172.00 95.40% \$2,999.38 10.10, Disappearing Stairway latform Perimeters Railing (120 LF for each latform, 2 locations) Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building	Floor Construction, Metal Deck/Concrete Fill, Deck									Metal Deck/Concrete Fill (Equipment Cost is included
Veather Proofing/Coatings (Galvanized) 7.5 Tons \$400.00 \$0.00 0 95.40% \$2,862.00 13.50, Paints and Protective Coatings Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building land Rail/Guard Rail 270 LF \$32.50 \$9.80 95.40% \$10,895.63 Construction Cost Date 2011, 05 52 Metal Railings adders/Stairs teel ladder to attic space 20" wide bolted to oncrete without cage 10 VLF \$65.00 \$31.50 \$2.18 95.40% \$920.61 33 - Vertical Metal Ladders coordion Ladder for Escape after Tsunami, bisappearing Stairs, Heavy duty, 16'-0" ceiling latform Perimeters Railing (120 LF for each latform, 2 locations) Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building	Span 6 ft, 150 PSF Superimposed Load	800	SF		\$2.38	\$2.38		95.40%	\$3,632.83	in Installation Cost)
Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building Construction Cost Date 2011, 05 52 Metal Railings adders/Stairs teel ladder to attic space 20" wide bolted to oncrete without cage 10 VLF \$65.00 \$31.50 \$2.18 95.40% \$920.61 33 - Vertical Metal Ladders (Construction Cost Data 2011, 11 33 and isappearing Stairs, Heavy duty, 16'-0" ceiling 2 ea \$1,400.00 \$172.00 95.40% \$2,999.38 10.10, Disappearing Stairway Integrating (120 LF for each latform, 2 locations) Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building Construction Cost Data 2011, 11 33 and isappearing Stairs, Heavy duty, 16'-0" ceiling 2 ea \$1,400.00 \$172.00 95.40% \$2,999.38 Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building Construction Cost Data 2011, 11 33 and isappearing Stairs, Heavy duty, 16'-0" ceiling 2 ea \$1,400.00 \$172.00 95.40% \$2,999.38 Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building Construction Cost Data 2011, 11 33 and isappearing Stairway										RSMeans Building Construction Cost Data, 2011, 05 05
land Rail/Guard Rail 270 LF \$32.50 \$9.80 95.40% \$10,895.63 Construction Cost Date 2011, 05 52 Metal Railings adders/Stairs teel ladder to attic space 20" wide bolted to oncrete without cage 10 VLF \$65.00 \$31.50 \$2.18 95.40% \$920.61 33 - Vertical Metal Ladders accordion Ladder for Escape after Tsunami, bisappearing Stairs, Heavy duty, 16'-0" ceiling 2 ea \$1,400.00 \$172.00 95.40% \$2,999.38 10.10, Disappearing Stairway latform Perimeters Railing (120 LF for each latform, 2 locations) Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building	Weather Proofing/Coatings (Galvanized)	7.5	Tons	\$400.00	\$0.00	0	0	95.40%	\$2,862.00	13.50, Paints and Protective Coatings
adders/Stairs teel ladder to attic space 20" wide bolted to oncrete without cage 10 VLF \$65.00 \$31.50 \$2.18 95.40% \$920.61 33 - Vertical Metal Ladders accordion Ladder for Escape after Tsunami, obsappearing Stairs, Heavy duty, 16'-0" ceiling 2 ea \$1,400.00 \$172.00 95.40% \$2,999.38 10.10, Disappearing Stairway latform Perimeters Railing (120 LF for each latform, 2 locations) Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building										Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building
teel ladder to attic space 20" wide bolted to oncrete without cage 10 VLF \$65.00 \$31.50 \$2.18 95.40% \$920.61 33 - Vertical Metal Ladders and some coordinates and some coordinates are supported by the coordinates and some coordinates are supported by the coordinate	Hand Rail/Guard Rail	270	LF		\$32.50	\$9.80		95.40%	\$10,895.63	Construction Cost Date 2011, 05 52 Metal Railings
oncrete without cage 10 VLF \$65.00 \$31.50 \$2.18 95.40% \$920.61 33 - Vertical Metal Ladders accordion Ladder for Escape after Tsunami, bisappearing Stairs, Heavy duty, 16'-0" ceiling 2 ea \$1,400.00 \$172.00 95.40% \$2,999.38 10.10, Disappearing Stairway latform Perimeters Railing (120 LF for each latform, 2 locations) Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building	Ladders/Stairs									
coordion Ladder for Escape after Tsunami, bisappearing Stairs, Heavy duty, 16'-0" ceiling 2 ea \$1,400.00 \$172.00 95.40% \$2,999.38 10.10, Disappearing Stairway latform Perimeters Railing (120 LF for each latform, 2 locations) Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building	Steel ladder to attic space 20" wide bolted to									RSMeans Building Construction Cost Data 2011, 05 51
pisappearing Stairs, Heavy duty, 16'-0" ceiling 2 ea \$1,400.00 \$172.00 95.40% \$2,999.38 10.10, Disappearing Stairway latform Perimeters Railing (120 LF for each latform, 2 locations) Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building	concrete without cage	10	VLF		\$65.00	\$31.50	\$2.18	95.40%	\$920.61	33 - Vertical Metal Ladders
latform Perimeters Railing (120 LF for each latform, 2 locations) Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building	Accordion Ladder for Escape after Tsunami,									RSMeans Building Construction Cost Data 2011, 11 33
latform, 2 locations) Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building	Disappearing Stairs, Heavy duty, 16'-0" ceiling	2	ea		\$1,400.00	\$172.00		95.40%	\$2,999.38	10.10, Disappearing Stairway
Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building	Platform Perimeters Railing (120 LF for each									
	platform, 2 locations)									
land Rail/Guard Rail 400 LF \$32.50 \$9.80 95.40% \$16,141.68 Construction Cost Date 2011, 05 52 Metal Railings										, , , ,
	Hand Rail/Guard Rail	400	LF		\$32.50	\$9.80		95.40%	\$16,141.68	Construction Cost Date 2011, 05 52 Metal Railings

\$58,932.86

			Cost per		Installation	Equipment	Location		
Fire Protection	Quantity	Unit	Unit	Material Cost	Costs	Cost	Factor	Total Cost	Comments
Fire Protection, Wet Pipe System									
									RSMeans Building Construction Cost Data, 2011, 01 54
Mobilization	4	EA		\$69.00	\$116.00		100.00%	\$740.00	36 - Equipment Mobilization
									RSMeans Square Foot Costs, 2011, D4010 410, Wet
									Pipe Sprinkler Systems (Equipment Cost included in
First Floor, 2000 SF, Light Hazard	10000	SF		\$4.50	\$3.04		97.00%	\$73,138.00	Installation Cost)

\$73,878.00

Map Number:	3	Minimum Structure Height:	14
Structure Type:	Tower	Structure Capacity:	900
Location:	Westport, WA, Forrest & Newell	Safe Haven Square Footage:	9000
Levels	1	Columns Required:	16
		Piles per Column:	3
Scope	·		Cost
Site Utilities			\$15,257
Excavation-Backfill			\$84,595
Foundation			\$321,117
Structure			\$451,974
Roofing			\$194,562
Stairs/Ramps/Guardrails			\$56,925
Fire Protection			\$66,564
Total			\$1,190,994
Design Fees (8%)			\$95,280
General Conditions (10%)			\$119,099
Contractor Fees, O&P (15%)			\$178,649
Construction Contingency (5%)			\$59,550
Estimate/Design Contingency (10%)			\$119,099
Project Total			\$1,762,672

		ı	Cookman	ı	Installation	Faurinmant	Leastien		T.
Site Utilities	Quantity	Unit	Cost per Unit	Material Cost	Installation Cost	Equipment Cost	Location Factor	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	10	EA			\$116.00	\$185.00	100.00%	\$3,010.00	54 36.50 Mobilization
Fire Water, Ductile Iron Class 250, MJ, 4" diameter	50	LF		\$16.05					Assuming 50' distance from service at street
									RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator 4'-6' deep	35	BCY			\$2.16	\$2.13	108.20%	\$162.46	23 16.13, Excavating Trench
									RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 4" Ductile Iron Piping, MJ	50	LF		\$12.50	\$8.55	\$2.17	108.20%	\$1,256.20	11 Water Utility Distribution Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	6	LCY		\$20.00			108.20%	\$129.84	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	6	LCY			\$7.64	\$14.10	108.20%	\$141.14	16, 31 23 23.20 Hauling
									RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	5	ECY			\$3.05	\$0.34	108.20%	\$18.34	23 23.16 Fill By Borrow & Utility Bedding
									RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	38	LCY			\$0.50	\$1.05	108.20%	\$63.73	23 23.17 General Fill
Storm Service									Assuming 50' distance from service at street
									RSMeans, Building Construction Cost Data, 201, 31 23
Excavate, 3/4 CY Excavator, 6'-10' deep	60	BCY			\$2.88	\$2.85	108.20%	\$371.99	16.13 Excavating Trench
									RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 8" Bituminous Coated	50	LF		\$10.70	\$5.25	\$0.97	108.20%	\$915.37	41 Storm Utility Drainage Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	6	LCY		\$20.00			108.20%	\$129.84	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	6	LCY			\$7.64	\$14.10	108.20%	\$141.14	16, 31 23 23.20 Hauling
					•		•		RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	5	ECY			\$3.05	\$0.34	108.20%	\$18.34	23 23.16 Fill By Borrow & Utility Bedding
									RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	38	LCY			\$0.50	\$1.05	108.20%	\$63.73	23 23.17 General Fill

Site Drainage/Area Drains/Catch Basins								Assume 1 area drain for structure
								RSMeans Assemblies Cost Data, 2011, G3030 210,
Concrete, Precast, 4' ID riser, 4' deep	1	EA	\$1,425.00	\$1,200.00	0.00%	108.20%	\$2,840.25	Manholes & Catch Basins
Electrical	50	LF						Assuming 50' distance from service at street
Electrical Service, includes service installation,								RSMeans Assemblies Cost Data, 2011, D 5010 120,
breakers, metering, 20' conduit & wire, 3 phase, 4								Electric Service, 3 Phase - 4 Wire, equipment included
wire, 120/208 volts, 60 A	1	EA	\$960.00	\$920.00		100.50%	\$1,889.40	in installation cost
								RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator, 4'-6' deep	35	BCY		\$2.16	\$2.13	108.20%	\$162.46	23 16.13 Excavating Trench
								RSMeans, Building Construction Cost Data, 2011, 33
Install & Test PVC, type EB 4 @ 3" diameter	50	LF	\$2.00	\$8.05		108.20%	\$543.71	71 19 Electrical Underground Ducts and Manholes
								RSMeans, Building Construction Cost Data, 2011, 26
Wire, 600 volt, copper type THW, solid, #12	50	CLF	\$11.95	\$36.50	0	100.50%	\$2,434.61	05 19.90 Wire
Utility Bedding, For Pipe & Conduit, Not Incl.								Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	19	LCY	\$20.00			108.20%	\$411.16	conversation on June 29th, 2011
								RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	19	LCY		\$7.64	\$14.10	108.20%	\$446.93	16, 31 23 23.20 Hauling
								RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	19	ECY		\$3.05	\$0.34	108.20%	\$69.69	23 23.16 Fill By Borrow & Utility Bedding
								RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	22	LCY		\$0.50	\$1.05	108.20%	\$36.90	23 23.17 General Fill

Francisco Bart CII			Cost per			Equipment			_
Excavation-Backfill	Quantity	Unit	Unit	Material Cost	Cost	Cost	Factor	Total Cost	Comments
									RSMeans Building Construction Cost Data, 2011, 01 54
Mobilization	8	EA	\$0.00	\$0.00	\$69.00	\$116.00	100.00%	\$1,480.00	36 - Equipment Mobilization
									Is clear and grub needed for structure in urban
									setting? RSMeans Building Construction Cost Data,
Clear and Grub Site	0.26	ACRE	\$0.00	\$0.00	\$1,750.00	\$1,300.00	108.20%	\$852.30	2011, 31 11 10.10 Clear and Grub Site
									Grade Beams, 3' wide, 3' deep RSMeans Building
									Construction Cost Data, 2011, 31 23 16.16 3/4 CY
									bucket, (Price Included in grade beam foundation
Excavation for Grade Beams	253	BCY	\$0.00	\$0.00	\$0.00	\$0.00	108.20%	\$0.00	price)
									1225 SF mat, 2' deep. RSMeans Building Construction
Excavation for slab, subgrade and capillary break	667	BCY	\$0.00	\$0.00	\$7.20	\$7.17	108.20%	\$10,365.56	Cost Data, 2011, 31 23 16.16 3/4 CY bucket
Removal of Foundation Spoils, Haul of Material, 40									RSMeans Building Construction Cost Data, 2011, 31 05
MPH, cycle 40 MPH	1150	LCY			\$7.64	\$14.10	108.20%	\$27,040.76	16, 31 23 23.20 Hauling
									Quote per Quigg Bros, Aberdeen, WA, phone
Backfill Slab, subgrade, capillary break	993	ECY		\$20.00			108.20%	\$21,493.30	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	993	ECY			\$7.64	\$14.10	108.20%	\$23,363.21	16, 31 23 23.20 Hauling
				•		•		\$84.595.13	

\$84,595.13

			Cost per		Installation	Equipment	Location		
Foundation	Quantity	Unit	Unit	Material Cost	Cost	Cost	Factor	Total Cost	Comments
									Piling needs to 2x the height of the structure which is
Piling									23-35'?
									Per phone conversation with Quigg Bros, Aberdeen,
Mobilization for piling	1	EA	\$12,000.00	\$0.00	\$0.00	\$0.00	100.00%	\$12,000.00	WA on June 29th, 2011

	10		40.00	¢3.500.00	44 200 00	to 00	100.000		Driven pipe piles 40' long, 18"x.5", per phone conversation with Quigg Bros, Aberdeen, WA on June 29th,2011. Equipment Included in Material/Labor
Battered Piles, 18" Diameter, 30'-40' Deep	48	EA	\$0.00	\$3,500.00	\$1,200.00	\$0.00	100.00%	\$225,600.00	RSMeans Assemblies Cost Data 2011, A1010 250 Pile
									Caps (Equipment Costs are included in Installation
Pile Caps, Cap Size 6'-6" x 3'-6" x 37"	16	EA	\$0.00	\$370.00	\$540.00		99.30%	\$14,458.08	
Foundation Cast-In-Place/Tower	10	LA	\$0.00	Ş370.00	Ç540.00		33.3070	714,430.00	Costy
- Canada do Casa III - I accop i con ci									RSMeans Assemblies Cost Data 2011, A 1020 210
Grade Beams 30' span, 28" deep, 14" wide, 2 KLF									Grade Beams (Equipment Cost is included in
load	759	LF		\$34.50	\$53.00		99.30%		Installation Cost)
									Piling needs to 2x the height of the structure which is
Foundation Cast-In-Place/ Footings for Ramp									23-35'?
									RSMeans Assemblies Cost Data, 2011, A1010 210,
Spread Footings, load 75K, soil capacity 6 KSF, 4'-0"									Spread Footings (Equipment Cost is included in
sq x 12" deep	12	EA	\$0.00	\$94.50	\$167.00	\$0.00	99.30%		Installation Cost)
								\$321,117.09	
			C- :		In stall 11	Facility 1	Lance of		
Structure	Quantity	Unit	Cost per Unit	Material Cost	Installation Cost	Equipment Costs	Location Factor	Total Cost	Comments
Mobilization of Equipment	10	EA			\$116.00	\$185.00	100.00%	\$3,010.00	RSMeans, Building Construction Cost Data, 2011, 01 54 36.50 Mobilization
									Beam and Column sizes are not determined and
									estimate takes in "best guess" to assume sizes for this
Concrete Structure			_					· ·	project.
Comments Columns and of the 1000 Kilond 2011									RSMeans Assemblies Cost Data, 2011, B1010 201, CIP
Concrete Columns, rated for 1000 K load, 26"	224	VLF		¢150.00	\$7.85	\$0.00	00.200/	¢3C 900 3E	Column, Round Tied (Equipment Cost included in Installation Cost)
round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced,	224	VLF	+	\$158.00	\$7.85	\$0.00	99.30%	\$36,890.35	RSMeans Assemblies Cost Data, 2011, A1030 120,
Ground Floor	9000	SF		\$3.01	\$2.97		99.30%	\$53 443 26	Slab on Grade, Plain & Reinforced
Ground Floor	3000	J1		γ3.01	Ψ2.57		33.3070		RSMeans Assemblies Cost Data, 2011, B1010 229
Cast-In-Place Beam and Slab, Two Way, 30x30, 351									Precast Plank with No Topping (Equipment Cost
PSF, 9" thick slab, 2nd Floor (evacuation level)	9000	SF		\$8.95	\$13.60		99.30%		included in Installation Cost)
									Wood structure, hip roof to support galvanized steel
Wood Structure									panels
									Supply quote from Levee Lumber, Hoquiam, WA,
									RSMeans Assemblies Cost Data, 2011, B1020 102,
									Roof Construction, Wood/Flat or Pitched (Equipment
Wood Columns 12"x12", 10' High, Select Structural	160	VLF		\$9.85	\$2.62		97.30%	\$1,941.33	Cost included in Installation Cost)
									Supply quote from Levee Lumber, Hoquiam, WA,
Devimentary leights 2.1/9"v12" CLM 20" size-in	270		1	64.05	Ć1 OF	¢22.00	07.200/	610 622 75	RSMeans Building Construction Cost Data 2011, Glued
Perimeter Joists, 3 1/8"x12", GLM 30' span	379	LF		\$4.85	\$1.95	\$22.00	97.30%	\$10,633.75	Laminated Beams 06 18 13.20
									RSMeans Assemblies Cost Data, 2011, B1020 102, Roof Construction, Wood/Flat or Pitched (Equipment
2x10 Wood Joist w/ 1/2" CDX, 12" OC	9000	SF	1	\$2.02	\$2.05		97.30%	\$35 640 99	Cost included in Installation Cost)
2.12 1.300 3015t W/ 1/2 CD/1, 12 OC	3000	- 51	1	Y2.02	Y2.03		37.3070		RSMeans Assemblies Cost Data, 2011, B1020 102,
Roof, wood/pitched, 3"x12" 12" OC w/ sheating			1						Roof Construction, Wood/Flat or Pitched (Equipment
plywood on roof, 5/16" CDX	12600	SF	1	\$4.59	\$2.62		97.30%	\$88,393.16	Cost included in Installation Cost)
Weather Proofing/Coatings add 15% (Premium for		-		,					Assumed that PTS wood is 15% more compared on
PTS Wood)	\$136,609.23	%	15.00%					\$20,491.38	price difference shown in means
			•					\$451,973.57	
Roofing	Quantity	Unit	Cost per Uni	Material Cost	etallation Cod	uuinment Co	ocation Facto	Total Cost	Comments
	Quantity	OIIIL	Cost her our	iviaterial COSE	istanation COS	and the co	Location Facili	iotal Cost	Comments

								RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	4	EA		\$116.00	\$185.00	100.00%	\$1,204.00	54 36.50 Mobilization
								Hip and ridge style roof, peak of roof 15'. (Equipment
Roofing/Hip and Ridge Roof Steel Panels								Cost is included in Installation Cost)
								RSMeans Assemblies Cost Data, 2011, B3010 135,
Flat Roof Steel Panels, Flat Seam, Copper, 1/4" min.								Formed Metal (Equipment Cost is included in
slope, 20 oz, 1.2 PSF	12600	SF	\$9.50	\$5.80		100.30%	\$193,358.34	Installation Cost)

\$194,562.34

Stairs/Ramps/Guardrails	Quantity	Unit	Cost per Unit	Material Cost	nstallation Cos	uipment Co	Location Facto	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	6	EA			\$116.00	\$185.00	100.00%	\$1,806.00	54 36.50 Mobilization
									Beam and Column sizes are not determined and
									estimate takes in "best guess" to assume sizes for this
Exterior Ramp, Rises 20', 5' wide									project.
									RSMeans Assemblies Cost Data, 2011, B1010, 208
Steel Columns, 20' high, Wide Flanged, 6", 12									Steel Columns (Equipment Cost is included in
locations	168	VLF		\$26.50	\$7.85	\$0.00	95.40%	\$5,505.34	Installation Cost)
W Shape Beams and Girders, bay size 15X20,, Total									RSMeans Building Construction Cost Data, 2011,
Load 263 PSF.	800	SF		\$11.70	\$3.82	\$1.50	95.40%	\$12,989.66	Structural Steel Framing, 05 12 23.17
									RSMeans Assemblies Cost Data, 2011, B1010 258,
Floor Construction, Metal Deck/Concrete Fill, Deck									Metal Deck/Concrete Fill (Equipment Cost is included
Span 6 ft, 150 PSF Superimposed Load	800	SF		\$2.38	\$2.38		95.40%	\$3,632.83	in Installation Cost)
									RSMeans Building Construction Cost Data, 2011, 05 05
Weather Proofing/Coatings (Galvanized)	7.5	Tons	\$400.00	\$0.00	0	0	95.40%	\$2,862.00	13.50, Paints and Protective Coatings
									Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building
Hand Rail/Guard Rail	270	LF		\$32.50	\$9.80		95.40%	\$10,895.63	Construction Cost Date 2011, 05 52 Metal Railings
Ladders/Stairs									
Steel ladder to attic space 20" wide bolted to									RSMeans Building Construction Cost Data 2011, 05 51
concrete without cage	10	VLF		\$65.00	\$31.50	\$2.18	95.40%	\$920.61	33 - Vertical Metal Ladders
Accordion Ladder for Escape after Tsunami,									RSMeans Building Construction Cost Data 2011, 11 33
Disappearing Stairs, Heavy duty, 16'-0" ceiling	2	ea		\$1,400.00	\$172.00		95.40%	\$2,999.38	10.10, Disappearing Stairway
Platform Perimeters Railing (120 LF for each									
platform, 2 locations)									
									Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building
Hand Rail/Guard Rail	379	LF		\$32.50	\$9.80		95.40%	\$15,313.34	Construction Cost Date 2011, 05 52 Metal Railings
			•	•	•		•	\$E6 024 90	i

\$56,924.80

			Cost per		Installation	Equipment	Location		
Fire Protection	Quantity	Unit	Unit	Material Cost	Costs	Cost	Factor	Total Cost	Comments
Fire Protection, Wet Pipe System									
									RSMeans Building Construction Cost Data, 2011, 01 54
Mobilization	4	EA		\$69.00	\$116.00		100.00%	\$740.00	36 - Equipment Mobilization
									RSMeans Square Foot Costs, 2011, D4010 410, Wet
									Pipe Sprinkler Systems (Equipment Cost included in
First Floor, 2000 SF, Light Hazard	9000	SF		\$4.50	\$3.04		97.00%	\$65,824.20	Installation Cost)

\$66,564.20

Map Number:	4	Minimum Structure Height:	17
Structure Type:	Tower	Structure Capacity:	900
Location:	Westport, WA, Surf & Ocean	Safe Haven Square Footage:	9000
Levels	1	Columns Required:	16
		Piles per Column:	3
Scope	<u> </u>		Cost
Site Utilities			\$15,257
Excavation-Backfill			\$84,595
Foundation			\$321,117
Structure			\$459,879
Roofing			\$194,562
Stairs/Ramps/Guardrails			\$58,105
Fire Protection			\$66,564
Total			\$1,200,079
Design Fees (8%)			\$96,006
General Conditions (10%)			\$120,008
Contractor Fees, O&P (15%)			\$180,012
Construction Contingency (5%)			\$60,004
Estimate/Design Contingency (10%)			\$120,008
Project Total			\$1,776,117

			Cost per		Installation	Equipment	Location		
Site Utilities	Quantity	Unit	Unit	Material Cost	Cost	Cost	Factor	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	10	EA			\$116.00	\$185.00	100.00%	\$3,010.00	54 36.50 Mobilization
Fire Water, Ductile Iron Class 250, MJ, 4" diameter	50	LF		\$16.05					Assuming 50' distance from service at street
									RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator 4'-6' deep	35	BCY			\$2.16	\$2.13	108.20%	\$162.46	23 16.13, Excavating Trench
									RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 4" Ductile Iron Piping, MJ	50	LF		\$12.50	\$8.55	\$2.17	108.20%	\$1,256.20	11 Water Utility Distribution Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	6	LCY		\$20.00			108.20%	\$129.84	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	6	LCY			\$7.64	\$14.10	108.20%	\$141.14	16, 31 23 23.20 Hauling
									RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	5	ECY			\$3.05	\$0.34	108.20%	\$18.34	23 23.16 Fill By Borrow & Utility Bedding
									RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	38	LCY			\$0.50	\$1.05	108.20%	\$63.73	23 23.17 General Fill
Storm Service									Assuming 50' distance from service at street
									RSMeans, Building Construction Cost Data, 201, 31 23
Excavate, 3/4 CY Excavator, 6'-10' deep	60	BCY			\$2.88	\$2.85	108.20%	\$371.99	16.13 Excavating Trench
									RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 8" Bituminous Coated	50	LF		\$10.70	\$5.25	\$0.97	108.20%	\$915.37	41 Storm Utility Drainage Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	6	LCY		\$20.00			108.20%	\$129.84	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	6	LCY			\$7.64	\$14.10	108.20%	\$141.14	16, 31 23 23.20 Hauling
					•				RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	5	ECY			\$3.05	\$0.34	108.20%	\$18.34	23 23.16 Fill By Borrow & Utility Bedding

								RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	38	LCY		\$0.50	\$1.05	108.20%	\$63.73	23 23.17 General Fill
Site Drainage/Area Drains/Catch Basins								Assume 1 area drain for structure
								RSMeans Assemblies Cost Data, 2011, G3030 210,
Concrete, Precast, 4' ID riser, 4' deep	1	EA	\$1,425.00	\$1,200.00	0.00%	108.20%	\$2,840.25	Manholes & Catch Basins
Electrical	50	LF						Assuming 50' distance from service at street
Electrical Service, includes service installation,								RSMeans Assemblies Cost Data, 2011, D 5010 120,
breakers, metering, 20' conduit & wire, 3 phase, 4								Electric Service, 3 Phase - 4 Wire, equipment included
wire, 120/208 volts, 60 A	1	EA	\$960.00	\$920.00		100.50%	\$1,889.40	in installation cost
								RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator, 4'-6' deep	35	BCY		\$2.16	\$2.13	108.20%	\$162.46	23 16.13 Excavating Trench
								RSMeans, Building Construction Cost Data, 2011, 33
Install & Test PVC, type EB 4 @ 3" diameter	50	LF	\$2.00	\$8.05		108.20%	\$543.71	71 19 Electrical Underground Ducts and Manholes
								RSMeans, Building Construction Cost Data, 2011, 26
Wire, 600 volt, copper type THW, solid, #12	50	CLF	\$11.95	\$36.50	0	100.50%	\$2,434.61	05 19.90 Wire
Utility Bedding, For Pipe & Conduit, Not Incl.								Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	19	LCY	\$20.00			108.20%	\$411.16	conversation on June 29th, 2011
								RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	19	LCY		\$7.64	\$14.10	108.20%	\$446.93	16, 31 23 23.20 Hauling
								RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	19	ECY		\$3.05	\$0.34	108.20%	\$69.69	23 23.16 Fill By Borrow & Utility Bedding
								RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	22	LCY		\$0.50	\$1.05	108.20%	\$36.90	23 23.17 General Fill

			Cost per		Installation	Equipment	Location		
Excavation-Backfill	Quantity	Unit	Unit	Material Cost	Cost	Cost	Factor	Total Cost	Comments
									RSMeans Building Construction Cost Data, 2011, 01 54
Mobilization	8	EA	\$0.00	\$0.00	\$69.00	\$116.00	100.00%	\$1,480.00	36 - Equipment Mobilization
									Is clear and grub needed for structure in urban
									setting? RSMeans Building Construction Cost Data,
Clear and Grub Site	0.26	ACRE	\$0.00	\$0.00	\$1,750.00	\$1,300.00	108.20%	\$852.30	2011, 31 11 10.10 Clear and Grub Site
									Grade Beams, 3' wide, 3' deep RSMeans Building
									Construction Cost Data, 2011, 31 23 16.16 3/4 CY
									bucket, (Price Included in grade beam foundation
Excavation for Grade Beams	253	BCY	\$0.00	\$0.00	\$0.00	\$0.00	108.20%	\$0.00	price)
									1225 SF mat, 2' deep. RSMeans Building Construction
Excavation for slab, subgrade and capillary break	667	BCY	\$0.00	\$0.00	\$7.20	\$7.17	108.20%	\$10,365.56	Cost Data, 2011, 31 23 16.16 3/4 CY bucket
Removal of Foundation Spoils, Haul of Material, 40									RSMeans Building Construction Cost Data, 2011, 31 05
MPH, cycle 40 MPH	1150	LCY			\$7.64	\$14.10	108.20%	\$27,040.76	16, 31 23 23.20 Hauling
									Quote per Quigg Bros, Aberdeen, WA, phone
Backfill Slab, subgrade, capillary break	993	ECY		\$20.00			108.20%	\$21,493.30	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	993	ECY			\$7.64	\$14.10	108.20%	\$23,363.21	16, 31 23 23.20 Hauling
	•	•	•					\$84,595.13	

			Cost per		Installation	Equipment	Location		
Foundation	Quantity	Unit	Unit	Material Cost	Cost	Cost	Factor	Total Cost	Comments
									Piling needs to 2x the height of the structure which is
Piling									23-35'?
									Per phone conversation with Quigg Bros, Aberdeen,
Mobilization for piling	1	EA	\$12,000.00	\$0.00	\$0.00	\$0.00	100.00%	\$12,000.00	WA on June 29th, 2011

	10		40.00	¢3.500.00	44 200 00	40.00	100.000		Driven pipe piles 40' long, 18"x.5", per phone conversation with Quigg Bros, Aberdeen, WA on June 29th,2011. Equipment Included in Material/Labor
Battered Piles, 18" Diameter, 30'-40' Deep	48	EA	\$0.00	\$3,500.00	\$1,200.00	\$0.00	100.00%	\$225,600.00	RSMeans Assemblies Cost Data 2011, A1010 250 Pile
									Caps (Equipment Costs are included in Installation
Pile Caps, Cap Size 6'-6" x 3'-6" x 37"	16	EA	\$0.00	\$370.00	\$540.00		99.30%	\$14,458.08	
Foundation Cast-In-Place/Tower	10		\$0.00	Ç370.00	Ç3 10.00		33.3070	\$14,430.00	costy
									RSMeans Assemblies Cost Data 2011, A 1020 210
Grade Beams 30' span, 28" deep, 14" wide, 2 KLF									Grade Beams (Equipment Cost is included in
load	759	LF		\$34.50	\$53.00		99.30%		Installation Cost)
Foundation Cast-In-Place/ Footings for Ramp									Piling needs to 2x the height of the structure which is 23-35'?
									RSMeans Assemblies Cost Data, 2011, A1010 210,
Spread Footings, load 75K, soil capacity 6 KSF, 4'-0"			4		4	4			Spread Footings (Equipment Cost is included in
sq x 12" deep	12	EA	\$0.00	\$94.50	\$167.00	\$0.00	99.30%		Installation Cost)
								\$321,117.09	
	l l		Cost per	1	Installation	Equipment	Location	ı	
Structure	Quantity	Unit	Unit	Material Cost	Cost	Costs	Factor	Total Cost	Comments
Mobilization of Equipment	10	EA			\$116.00	\$185.00	100.00%	\$3,010.00	RSMeans, Building Construction Cost Data, 2011, 01 54 36.50 Mobilization
									Beam and Column sizes are not determined and
Concrete Structure									estimate takes in "best guess" to assume sizes for this project.
Concrete Structure			+					<u> </u>	RSMeans Assemblies Cost Data, 2011, B1010 201, CIP
Concrete Columns, rated for 1000 K load, 26"									Column, Round Tied (Equipment Cost included in
round, concrete strength, 6000 PSI	272	VLF		\$158.00	\$7.85	\$0.00	99.30%	\$44,795.42	Installation Cost)
Slab-On-Grade, 6" thick, non-industrial, reinforced,				·	•				RSMeans Assemblies Cost Data, 2011, A1030 120,
Ground Floor	9000	SF		\$3.01	\$2.97		99.30%	\$53,443.26	Slab on Grade, Plain & Reinforced
									RSMeans Assemblies Cost Data, 2011, B1010 229
Cast-In-Place Beam and Slab, Two Way, 30x30, 351									Precast Plank with No Topping (Equipment Cost
PSF, 9" thick slab, 2nd Floor (evacuation level)	9000	SF		\$8.95	\$13.60		99.30%		included in Installation Cost)
Wood Structure									Wood structure, hip roof to support galvanized steel panels
									Supply quote from Levee Lumber, Hoquiam, WA,
									RSMeans Assemblies Cost Data, 2011, B1020 102,
Wood Columns 12"x12", 10' High, Select Structural	160	VLF		\$9.85	\$2.62		97.30%	\$1.941.33	Roof Construction, Wood/Flat or Pitched (Equipment Cost included in Installation Cost)
Wood Coldmins 12 x12 , 10 mgn, select structural	100	VLI		79.63	\$2.02		37.3070	\$1,541.55	Supply quote from Levee Lumber, Hoquiam, WA,
									RSMeans Building Construction Cost Data 2011, Glued
Perimeter Joists, 3 1/8"x12", GLM 30' span	379	LF		\$4.85	\$1.95	\$22.00	97.30%	\$10,633.75	Laminated Beams 06 18 13.20
				-					RSMeans Assemblies Cost Data, 2011, B1020 102,
									Roof Construction, Wood/Flat or Pitched (Equipment
2x10 Wood Joist w/ 1/2" CDX, 12" OC	9000	SF		\$2.02	\$2.05		97.30%		Cost included in Installation Cost)
									RSMeans Assemblies Cost Data, 2011, B1020 102,
Roof, wood/pitched, 3"x12" 12" OC w/ sheating	42622	6-		64-0	42.52		07.000	¢00.000.1-	Roof Construction, Wood/Flat or Pitched (Equipment
plywood on roof, 5/16" CDX Weather Proofing/Coatings add 15% (Premium for	12600	SF		\$4.59	\$2.62		97.30%	\$88,393.16	Cost included in Installation Cost) Assumed that PTS wood is 15% more compared on
PTS Wood)	\$136,609.23	%	15.00%					\$20,491.38	price difference shown in means
	Ç130,003.23	70	13.00/0	1				\$459,878.65	prior amerence snown in means
								7.23,070.03	
Doofing			L	I I					
Roofing	Quantity	Unit	Cost per Uni	Material Cost	stallation Cos	Juipment Co	Location Facto	Total Cost	Comments

								RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	4	EA		\$116.00	\$185.00	100.00%	\$1,204.00	54 36.50 Mobilization
								Hip and ridge style roof, peak of roof 15'. (Equipment
Roofing/Hip and Ridge Roof Steel Panels								Cost is included in Installation Cost)
								RSMeans Assemblies Cost Data, 2011, B3010 135,
Flat Roof Steel Panels, Flat Seam, Copper, 1/4" min.								Formed Metal (Equipment Cost is included in
slope, 20 oz, 1.2 PSF	12600	SF	\$9.50	\$5.80		100.30%	\$193,358.34	Installation Cost)

\$194,562.34

Stairs/Ramps/Guardrails	Quantity	Unit	Cost per Uni	Material Cost	nstallation Co	uipment Co	Location Factor	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	6	EA			\$116.00	\$185.00	100.00%	\$1,806.00	54 36.50 Mobilization
									Beam and Column sizes are not determined and
									estimate takes in "best guess" to assume sizes for this
Exterior Ramp, Rises 20', 5' wide									project.
									RSMeans Assemblies Cost Data, 2011, B1010, 208
Steel Columns, 20' high, Wide Flanged, 6", 12									Steel Columns (Equipment Cost is included in
locations	204	VLF		\$26.50	\$7.85	\$0.00	95.40%	\$6,685.06	Installation Cost)
W Shape Beams and Girders, bay size 15X20,, Total									RSMeans Building Construction Cost Data, 2011,
Load 263 PSF.	800	SF		\$11.70	\$3.82	\$1.50	95.40%	\$12,989.66	Structural Steel Framing, 05 12 23.17
									RSMeans Assemblies Cost Data, 2011, B1010 258,
Floor Construction, Metal Deck/Concrete Fill, Deck									Metal Deck/Concrete Fill (Equipment Cost is included
Span 6 ft, 150 PSF Superimposed Load	800	SF		\$2.38	\$2.38		95.40%	\$3,632.83	in Installation Cost)
									RSMeans Building Construction Cost Data, 2011, 05 05
Weather Proofing/Coatings (Galvanized)	7.5	Tons	\$400.00	\$0.00	0	0	95.40%	\$2,862.00	13.50, Paints and Protective Coatings
									Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building
Hand Rail/Guard Rail	270	LF		\$32.50	\$9.80		95.40%	\$10,895.63	Construction Cost Date 2011, 05 52 Metal Railings
Ladders/Stairs									
Steel ladder to attic space 20" wide bolted to									RSMeans Building Construction Cost Data 2011, 05 51
concrete without cage	10	VLF		\$65.00	\$31.50	\$2.18	95.40%	\$920.61	33 - Vertical Metal Ladders
Accordion Ladder for Escape after Tsunami,									RSMeans Building Construction Cost Data 2011, 11 33
Disappearing Stairs, Heavy duty, 16'-0" ceiling	2	ea		\$1,400.00	\$172.00		95.40%	\$2,999.38	10.10, Disappearing Stairway
Platform Perimeters Railing (120 LF for each									
platform, 2 locations)									
									Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building
Hand Rail/Guard Rail	379	LF		\$32.50	\$9.80		95.40%	\$15,313.34	Construction Cost Date 2011, 05 52 Metal Railings
			-					\$58,104.52	

			Cost per		Installation	Equipment	Location		
Fire Protection	Quantity	Unit	Unit	Material Cost	Costs	Cost	Factor	Total Cost	Comments
Fire Protection, Wet Pipe System									
									RSMeans Building Construction Cost Data, 2011, 01 54
Mobilization	4	EA		\$69.00	\$116.00		100.00%	\$740.00	36 - Equipment Mobilization
									RSMeans Square Foot Costs, 2011, D4010 410, Wet
									Pipe Sprinkler Systems (Equipment Cost included in
First Floor, 2000 SF, Light Hazard	9000	SF		\$4.50	\$3.04		97.00%	\$65,824.20	Installation Cost)
								CCC FC4 30	

\$66,564.20

Map Number:	5	Minimum St	ructure H	11
Structure Type:	Berm	Structure Ca	pacity:	1500
Location:	Westport, WA, Ocosta School	Safe Haven	Square Foo	15000
Overall Site Square Footage:	45000	Volume of B	erm Mate	9167
Scope				Co
Site Utilities				\$49,81
Excavation-Backfill				\$515,68
Concrete				\$247,12
Landscaping				\$103,81
Construction Totals				\$916,43
Design Fees (8%)				\$73,31
General Conditions (10%)				\$91,64
Contractor Fees, O&P (15%)				\$137,46
Construction Contingency (5%)				\$45,82
Estimate/Design Contingency (10%)				\$91,64
Project Total			•	\$1,356,32

Site Utilities	Quantity	Unit	Material Cost	Installation	Equipment	Location	Total Cost	Comments
Site Offities	Quantity	Unit	Cost	Cost	Cost	Factor	iotai Cost	RSMeans, Building Construction Cost Data, 2011, 01 54 36.50
Mobilization of Equipment	6	EA		\$116.00	\$185.00	100.00%	\$1,806.00	Mobilization
Domestic Water, Ductile Iron Class 250, MJ, 6"				Ģ110.00	ψ103.00	100.0070	ψ1,000.00	THOUSE EACH
diameter	100	LF				108.20%		Assuming 100' distance from service at street
								RSMeans, Building Construction Cost Data, 2011, 31 23 16.13,
Excavate, 3/4 CY Excavator 4'-6' deep	70	BCY		\$2.16	\$2.13	108.20%	\$324.92	Excavating Trench
Install & Test, 6" Ductile Iron Piping, MJ	100	LF	\$14.60	\$10.70	\$2.72	108.20%	\$3,031.76	RSMeans, Building Construction Cost Data, 2011, 33 11 Water Utility Distribution Piping
Utility Bedding, For Pipe & Conduit, Not Incl.					·			Quote per Quigg Bros, Aberdeen, WA, phone conversation on June
Compaction	12	LCY	\$20.00			108.20%	\$259.68	29th, 2011
								RSMeans Building Construction Cost Data, 2011, 31 05 16, 31 23
Haul of Material, 40 MPH, cycle 40 MPH	12	LCY		\$7.64	\$14.10	108.20%	\$282.27	23.20 Hauling
Commontino Daddino la Taranda	10	FCV		¢2.05	ć0 24	100 200/	¢26.60	RSMeans, Building Construction Cost Data, 2011, 31 23 23.16 Fill By
Compacting Bedding In Trench	10	ECY		\$3.05	\$0.34	108.20%	\$36.68	Borrow & Utility Bedding RSMeans, Building Construction Cost Data, 2011, 31 23 23.17
Backfill, General Fill By Dozer, No Compaction	75	LCY		\$0.50	\$1.05	108.20%	\$125.78	General Fill
				70.00	7-100		7220110	
Storm Drainage								Assuming 100' distance from service at street
								RSMeans, Building Construction Cost Data, 2011, 31 23 16.13
Excavate, 3/4 CY Excavator, 6'-10' deep	60	BCY		\$2.88	\$2.85	108.20%	\$371.99	Excavating, Trench
	100		444.50	40.00	44.50	400.000/	40.00=04	RSMeans, Building Construction Cost Data, 2011, 33 41 Storm Utility
Install & Test, 12" Bituminous Coated	100	LF	\$11.50	\$8.30	\$1.53	108.20%	\$2,307.91	Drainage Piping
Utility Bedding, For Pipe & Conduit, Not Incl. Compaction	12	LCY	\$20.00			108.20%	\$259.68	Quote per Quigg Bros, Aberdeen, WA, phone conversation on June 29th, 2011
Compaction	12	LCI	Ş20.00			100.2070	\$233.08	RSMeans Building Construction Cost Data, 2011, 31 05 16, 31 23
Haul of Material, 40 MPH, cycle 40 MPH	12	LCY		\$7.64	\$14.10	108.20%	\$282.27	23.20 Hauling
				·	·			RSMeans, Building Construction Cost Data, 2011, 31 23 23.16 Fill By
Compacting Bedding In Trench	10	ECY		\$3.05	\$0.34	108.20%	\$36.68	Borrow & Utility Bedding
								RSMeans, Building Construction Cost Data, 2011, 31 23 23.17
Backfill, General Fill By Dozer, No Compaction	60	LCY		\$0.50	\$1.05	108.20%	\$100.63	General Fill
Area Drains/Catch Pasins								Assuming 6 Area Drains/Catch Pasins on Site
Area Drains/Catch Basins	1							Assuming 6 Area Drains/Catch Basins on Site

Concrete, Precast, 4' ID riser, 4' deep	6	EA	\$1,425.00	\$1,200.00	\$0.00	108.20%	\$17,041.50	RSMeans Assemblies Cost Data, 2011, G3030 210, Manholes & Catch Basins (Equipment Cost included in Installation Cost)
Electrical								Assuming 100' distance from service at street
Excavate, 3/4 CY Excavator, 4'-6' deep	70	ВСҮ		\$2.16	\$2.13	108.20%	\$324.92	RSMeans, Building Construction Cost Data, 2011, 31 23 16.13 Excavating Trench
Install & Test PVC, type EB 4 @ 3" diameter	100	LF	\$2.00	\$8.05		108.20%	\$1,087.41	RSMeans, Building Construction Cost Data, 2011, 33 71 19 Electrical Underground Ducts and Manholes
Utility Bedding, For Pipe & Conduit, Not Incl. Compaction	40	LCY	\$20.00	\$0.00	\$0.00	108.20%	\$865.60	Quote per Quigg Bros, Aberdeen, WA, phone conversation on June 29th, 2011
Haul of Material, 40 MPH, cycle 40 MPH	40	LCY		\$7.64	\$14.10	108.20%	\$940.91	RSMeans Building Construction Cost Data, 2011, 31 05 16, 31 23 23.20 Hauling
Compacting Bedding In Trench	35	ECY		\$3.05	\$0.34	108.20%	\$128.38	RSMeans, Building Construction Cost Data, 2011, 31 23 23.16 Fill By Borrow & Utility Bedding
Backfill, General Fill By Dozer, No Compaction	44	LCY		\$0.50	\$1.05	108.20%	\$73.79	RSMeans, Building Construction Cost Data, 2011, 31 23 23.17 General Fill
Light Pole, Aluminum, 20' high, 1 arm bracket	8	EA	\$1,250.00	\$1,075.00	\$0.00	108.20%	\$20,125.20	RSMeans, Building Construction Cost Data, 2011, 31 23 23.17 General Fill

\$49,813.97

			Material	Installation	Equipment	Location		
Excavation-Backfill	Quantity	Unit	Cost	Cost	Cost	Factor	Total Cost	Comments
Site Preparation								
Clear & Grub	3	acres		\$320.00	\$525.00	108.20%	\$2,742.87	RSMeans Building Construction Cost Data, 2011, 31 13 13, Selective Clearing
Survey Site	3	acres	\$32.50	\$565.00	\$35.00	108.20%	\$2,053.10	RSMeans Building Construction Cost Data, 2011, 02 21 13 Site Surveys
Mobilization of Equipment	10	EA		\$69.00	\$116.00	100.00%	\$1,850.00	RSMeans, Building Construction Cost Data, 2011, 01 54 36.50 Mobilization
Material Costs								
Fill Material, Select Structural Fill, 1 1/2" minus aggregate	9167	LCY	\$20.00	\$1.75	\$3.44	108.20%	\$249,842.82	Aggregates for Earthwork, Select Structural Fill & Material Cost from Quigg Bros., Aberdeen, WA
Haul of Material, 40 MPH, cycle 40 MPH	9167	LCY		\$7.64	\$14.10	108.20%	\$215,624.57	RSMeans Building Construction Cost Data, 2011, 31 05 16, 31 23 23.20 Hauling
Placement of Material								
Compacting Backfill, 6"to 12" lifts, vibrating roller	8488	ECY		\$0.63	\$1.81	108.20%	\$22,408.09	RSMeans Building Construction Data, 2011, 31 23 23.13 Backfill
Stabilization Fabric, Polypropylene, 6oz/SY, 18"' lifts, 5082 SF per lift	12222	SY	\$1.48	\$0.09	\$0.03	108.20%	\$21,159.11	RSMeans Building Construction Cost Data, 2011, 32 11 23 Aggregat Base Courses

\$515,680.55

			Material	Installation		Location		
Concrete	Quantity	Unit	Cost	Cost	Equipment	Factor	Total Cost	Comments
								RSMeans, Building Construction Cost Data, 2011, 01 54 36.50
Mobilization of Equipment	10	EA		\$116.00	\$185.00	100.00%	\$3,010.00	Mobilization
Tsunami Wave Inundation Concrete Wall	367	LF						Based on square root of the berm safe haven area times three walls
								Excavation & Backfill, 6' deep, sand, gravel, or common earth.
Excavation, 6' deep	2205	SF	\$0.00	\$5.30	\$0.00	108.20%	\$12,642.16	(Equipment Cost included in Installation)

								Place, 10' pumped, 12" thick (Equipment Cost included in
Walls, Cast in place, 6' deep, pumped, 12" thick,	367	LF	\$46.25	\$81.00	\$0.00	99.30%	\$46,427.35	Installation)
								RSMeans Assemblies Cost Data, 2011, A 2020 220, Subdrainage
Subdrainage Piping, 4" diameter, PVC, perforated	367	LF	\$2.04	\$3.77	\$0.00	99.30%	\$2,119.79	Piping (Equipment Cost included in Installation)
Stepped Concrete Wall 4' high								88', 86', 82', 72', 60' length walls, 12" thick, 5' high.
								Place, 6' pumped, 8" thick. Material costs have been increased 25%
5' high wall, pumped, 8" thick	1010	LF	\$33.75	\$77.00	\$0.00	99.30%	\$111,120.08	for additional reinforcing required for seismic event and tsunami.
								RSMeans Assemblies Cost Data, 2011, A 2020 220, Subdrainage
Subdrainage Piping, 4" diameter, PVC, perforated	1010	LF	\$2.04	\$3.77	\$0.00	108.20%	\$6,351.89	Piping (Equipment Cost included in Installation)
Sandblast Concrete Heavy Treatment	4042	SF	\$1.46	\$3.31	\$0.52	99.30%	\$21,230.71	RSMeans Building Construction Cost Data, 2011, 03 35 29.60
Concrete or Gravel Platform								
Asphaltic Concrete Paving, 6" stone bse, 2" binder								RSMeans Building Construction Cost Data, 2011, 32 12 16.14
course, 1" toping	15000	SF	\$1.85	\$0.20	\$0.24	108.20%	\$37,166.70	Asphaltic Concrete Paving
								RSMeans Building Construction Cost Data, 2011, 31 05 16, 31 23
Haul of Material, 40 MPH, cycle 40 MPH	300	CY		\$7.64	\$14.10	108.20%	\$7,056.80	23.20 Hauling

\$247,125.49

			Material	Installation	Equipment	Location		
Landscaping	Quantity	Unit	Costs	Costs	Costs	Factor	Total Cost	Comments
								RSMeans, Building Construction Cost Data, 2011, 01 54 36.50
Mobilization of Equipment	6	EA		\$116.00	\$185.00	100.00%	\$1,806.00	Mobilization
Berm Landscaping								
								RSMeans Building Construction Cost Data, 2011, 32 91 19.13 Top
Top Soil	833	LCY	\$33.00	\$24.00	\$0.00	108.20%	\$51,395.00	Dress by hand, 1 CY for 600 SF
Hydro-Seed	5000	SY	\$0.20	\$0.10	\$0.06	108.20%	\$1,947.60	Mechanical Seeding, 44lb/sy
Top Soil at Stepped Concrete Walls	75	LCY	\$33.00	\$24.00	\$0.00	108.20%	\$4,616.02	
Fencing at Top of Berm, chain link, 2" post, 1 5/8"								RSMeans Assemblies Cost Data, 2011, G2040 105 Fence &
rail, 9 ga. Galv. Wire 5' high	367	LF	\$17.65	\$4.82	\$0.00	95.40%	\$7,876.23	Guardrails (Equipment Costs are included in Installation)
				1				RSMeans Building Construction Costs, 2011, 32 84 23.10, sprinkler
Irrigation System	45000	SF	\$0.32	\$0.46	\$0.00	108.20%	\$37,978.20	irrigation system

\$103,813.05

Map Number:	6	Minimum Structure Height:	14
Structure Type:	Tower	Structure Capacity:	900
Location:	Westport, WA, HWY 105 & W Bonge	Safe Haven Square Footage:	9000
Levels	1	Columns Required:	16
		Piles per Column:	3
Scope			Cost
Site Utilities			\$15,257
Excavation-Backfill			\$84,595
Foundation			\$321,117
Structure			\$451,974
Roofing			\$194,562
Stairs/Ramps/Guardrails			\$56,925
Fire Protection			\$66,564
Total			\$1,190,994
Design Fees (8%)			\$95,280
General Conditions (10%)			\$119,099
Contractor Fees, O&P (15%)			\$178,649
Construction Contingency (5%)			\$59,550
Estimate/Design Contingency (10%)			\$119,099
Project Total			\$1,762,672

		ı	Cookman	ı	Installation	Faurinmant	Leastien		T.
Site Utilities	Quantity	Unit	Cost per Unit	Material Cost	Installation Cost	Equipment Cost	Location Factor	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	10	EA			\$116.00	\$185.00	100.00%	\$3,010.00	54 36.50 Mobilization
Fire Water, Ductile Iron Class 250, MJ, 4" diameter	50	LF		\$16.05					Assuming 50' distance from service at street
									RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator 4'-6' deep	35	BCY			\$2.16	\$2.13	108.20%	\$162.46	23 16.13, Excavating Trench
									RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 4" Ductile Iron Piping, MJ	50	LF		\$12.50	\$8.55	\$2.17	108.20%	\$1,256.20	11 Water Utility Distribution Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	6	LCY		\$20.00			108.20%	\$129.84	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	6	LCY			\$7.64	\$14.10	108.20%	\$141.14	16, 31 23 23.20 Hauling
									RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	5	ECY			\$3.05	\$0.34	108.20%	\$18.34	23 23.16 Fill By Borrow & Utility Bedding
									RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	38	LCY			\$0.50	\$1.05	108.20%	\$63.73	23 23.17 General Fill
Storm Service									Assuming 50' distance from service at street
									RSMeans, Building Construction Cost Data, 201, 31 23
Excavate, 3/4 CY Excavator, 6'-10' deep	60	BCY			\$2.88	\$2.85	108.20%	\$371.99	16.13 Excavating Trench
									RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 8" Bituminous Coated	50	LF		\$10.70	\$5.25	\$0.97	108.20%	\$915.37	41 Storm Utility Drainage Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	6	LCY		\$20.00			108.20%	\$129.84	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	6	LCY			\$7.64	\$14.10	108.20%	\$141.14	16, 31 23 23.20 Hauling
					•		•		RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	5	ECY			\$3.05	\$0.34	108.20%	\$18.34	23 23.16 Fill By Borrow & Utility Bedding
									RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	38	LCY			\$0.50	\$1.05	108.20%	\$63.73	23 23.17 General Fill

Site Drainage/Area Drains/Catch Basins								Assume 1 area drain for structure
								RSMeans Assemblies Cost Data, 2011, G3030 210,
Concrete, Precast, 4' ID riser, 4' deep	1	EA	\$1,425.00	\$1,200.00	0.00%	108.20%	\$2,840.25	Manholes & Catch Basins
Electrical	50	LF						Assuming 50' distance from service at street
Electrical Service, includes service installation,								RSMeans Assemblies Cost Data, 2011, D 5010 120,
breakers, metering, 20' conduit & wire, 3 phase, 4								Electric Service, 3 Phase - 4 Wire, equipment included
wire, 120/208 volts, 60 A	1	EA	\$960.00	\$920.00		100.50%	\$1,889.40	in installation cost
								RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator, 4'-6' deep	35	BCY		\$2.16	\$2.13	108.20%	\$162.46	23 16.13 Excavating Trench
								RSMeans, Building Construction Cost Data, 2011, 33
Install & Test PVC, type EB 4 @ 3" diameter	50	LF	\$2.00	\$8.05		108.20%	\$543.71	71 19 Electrical Underground Ducts and Manholes
								RSMeans, Building Construction Cost Data, 2011, 26
Wire, 600 volt, copper type THW, solid, #12	50	CLF	\$11.95	\$36.50	0	100.50%	\$2,434.61	05 19.90 Wire
Utility Bedding, For Pipe & Conduit, Not Incl.								Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	19	LCY	\$20.00			108.20%	\$411.16	conversation on June 29th, 2011
								RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	19	LCY		\$7.64	\$14.10	108.20%	\$446.93	16, 31 23 23.20 Hauling
								RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	19	ECY		\$3.05	\$0.34	108.20%	\$69.69	23 23.16 Fill By Borrow & Utility Bedding
								RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	22	LCY		\$0.50	\$1.05	108.20%	\$36.90	23 23.17 General Fill

			Cost per		Installation	Equipment	Location		
Excavation-Backfill	Quantity	Unit	Unit	Material Cost	Cost	Cost	Factor	Total Cost	Comments
									RSMeans Building Construction Cost Data, 2011, 01 54
Mobilization	8	EA	\$0.00	\$0.00	\$69.00	\$116.00	100.00%	\$1,480.00	36 - Equipment Mobilization
									Is clear and grub needed for structure in urban
									setting? RSMeans Building Construction Cost Data,
Clear and Grub Site	0.26	ACRE	\$0.00	\$0.00	\$1,750.00	\$1,300.00	108.20%	\$852.30	2011, 31 11 10.10 Clear and Grub Site
									Grade Beams, 3' wide, 3' deep RSMeans Building
									Construction Cost Data, 2011, 31 23 16.16 3/4 CY
									bucket, (Price Included in grade beam foundation
Excavation for Grade Beams	253	BCY	\$0.00	\$0.00	\$0.00	\$0.00	108.20%	\$0.00	price)
									1225 SF mat, 2' deep. RSMeans Building Construction
Excavation for slab, subgrade and capillary break	667	BCY	\$0.00	\$0.00	\$7.20	\$7.17	108.20%	\$10,365.56	Cost Data, 2011, 31 23 16.16 3/4 CY bucket
Removal of Foundation Spoils, Haul of Material, 40									RSMeans Building Construction Cost Data, 2011, 31 05
MPH, cycle 40 MPH	1150	LCY			\$7.64	\$14.10	108.20%	\$27,040.76	16, 31 23 23.20 Hauling
									Quote per Quigg Bros, Aberdeen, WA, phone
Backfill Slab, subgrade, capillary break	993	ECY		\$20.00			108.20%	\$21,493.30	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	993	ECY			\$7.64	\$14.10	108.20%	\$23,363.21	16, 31 23 23.20 Hauling
	-		_					\$84,595.13	

			Cost per		Installation	Equipment	Location		
Foundation	Quantity	Unit	Unit	Material Cost	Cost	Cost	Factor	Total Cost	Comments
									Piling needs to 2x the height of the structure which is
Piling									23-35'?
									Per phone conversation with Quigg Bros, Aberdeen,
Mobilization for piling	1	EA	\$12,000.00	\$0.00	\$0.00	\$0.00	100.00%	\$12,000.00	WA on June 29th, 2011

	10		40.00	¢3.500.00	44 200 00	to 00	100.000		Driven pipe piles 40' long, 18"x.5", per phone conversation with Quigg Bros, Aberdeen, WA on June 29th,2011. Equipment Included in Material/Labor
Battered Piles, 18" Diameter, 30'-40' Deep	48	EA	\$0.00	\$3,500.00	\$1,200.00	\$0.00	100.00%	\$225,600.00	RSMeans Assemblies Cost Data 2011, A1010 250 Pile
									Caps (Equipment Costs are included in Installation
Pile Caps, Cap Size 6'-6" x 3'-6" x 37"	16	EA	\$0.00	\$370.00	\$540.00		99.30%	\$14,458.08	
Foundation Cast-In-Place/Tower	10	LA	\$0.00	Ş370.00	Ç540.00		33.3070	714,430.00	Costy
- Canada do Casa III - I accop i con ci									RSMeans Assemblies Cost Data 2011, A 1020 210
Grade Beams 30' span, 28" deep, 14" wide, 2 KLF									Grade Beams (Equipment Cost is included in
load	759	LF		\$34.50	\$53.00		99.30%		Installation Cost)
									Piling needs to 2x the height of the structure which is
Foundation Cast-In-Place/ Footings for Ramp									23-35'?
									RSMeans Assemblies Cost Data, 2011, A1010 210,
Spread Footings, load 75K, soil capacity 6 KSF, 4'-0"									Spread Footings (Equipment Cost is included in
sq x 12" deep	12	EA	\$0.00	\$94.50	\$167.00	\$0.00	99.30%		Installation Cost)
								\$321,117.09	
			C- :		In stall 11	Facility 1	Lance of		
Structure	Quantity	Unit	Cost per Unit	Material Cost	Installation Cost	Equipment Costs	Location Factor	Total Cost	Comments
Mobilization of Equipment	10	EA			\$116.00	\$185.00	100.00%	\$3,010.00	RSMeans, Building Construction Cost Data, 2011, 01 54 36.50 Mobilization
									Beam and Column sizes are not determined and
									estimate takes in "best guess" to assume sizes for this
Concrete Structure			_					· ·	project.
Comments Columns and of the 1000 Kilond 2011									RSMeans Assemblies Cost Data, 2011, B1010 201, CIP
Concrete Columns, rated for 1000 K load, 26"	224	VLF		¢150.00	\$7.85	\$0.00	00.200/	¢3C 900 3E	Column, Round Tied (Equipment Cost included in Installation Cost)
round, concrete strength, 6000 PSI Slab-On-Grade, 6" thick, non-industrial, reinforced,	224	VLF	+	\$158.00	\$7.85	\$0.00	99.30%	\$36,890.35	RSMeans Assemblies Cost Data, 2011, A1030 120,
Ground Floor	9000	SF		\$3.01	\$2.97		99.30%	\$53 443 26	Slab on Grade, Plain & Reinforced
Ground Floor	3000	J1		γ3.01	Ψ2.57		33.3070		RSMeans Assemblies Cost Data, 2011, B1010 229
Cast-In-Place Beam and Slab, Two Way, 30x30, 351									Precast Plank with No Topping (Equipment Cost
PSF, 9" thick slab, 2nd Floor (evacuation level)	9000	SF		\$8.95	\$13.60		99.30%		included in Installation Cost)
									Wood structure, hip roof to support galvanized steel
Wood Structure									panels
									Supply quote from Levee Lumber, Hoquiam, WA,
									RSMeans Assemblies Cost Data, 2011, B1020 102,
									Roof Construction, Wood/Flat or Pitched (Equipment
Wood Columns 12"x12", 10' High, Select Structural	160	VLF		\$9.85	\$2.62		97.30%	\$1,941.33	Cost included in Installation Cost)
									Supply quote from Levee Lumber, Hoquiam, WA,
Devimentary leights 2.1/9"v12" CLM 20" strain	270		1	64.05	Ć1 OF	¢22.00	07.200/	610 622 75	RSMeans Building Construction Cost Data 2011, Glued
Perimeter Joists, 3 1/8"x12", GLM 30' span	379	LF		\$4.85	\$1.95	\$22.00	97.30%	\$10,633.75	Laminated Beams 06 18 13.20
									RSMeans Assemblies Cost Data, 2011, B1020 102, Roof Construction, Wood/Flat or Pitched (Equipment
2x10 Wood Joist w/ 1/2" CDX, 12" OC	9000	SF	1	\$2.02	\$2.05		97.30%	\$35 640 99	Cost included in Installation Cost)
2.12 1.300 3015t W/ 1/2 CD/1, 12 OC	3000	- 51	1	Y2.02	Y2.03		37.3070		RSMeans Assemblies Cost Data, 2011, B1020 102,
Roof, wood/pitched, 3"x12" 12" OC w/ sheating			1						Roof Construction, Wood/Flat or Pitched (Equipment
plywood on roof, 5/16" CDX	12600	SF	1	\$4.59	\$2.62		97.30%	\$88,393.16	Cost included in Installation Cost)
Weather Proofing/Coatings add 15% (Premium for		-		,					Assumed that PTS wood is 15% more compared on
PTS Wood)	\$136,609.23	%	15.00%					\$20,491.38	price difference shown in means
			•					\$451,973.57	
Roofing	Quantity	Unit	Cost per Uni	Material Cost	etallation Cod	uuinment Co	ocation Facto	Total Cost	Comments
	Quantity	OIIIL	Cost her our	iviaterial COSE	istanation COS	and the co	Location Facili	iotal Cost	Comments

								RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	4	EA		\$116.00	\$185.00	100.00%	\$1,204.00	54 36.50 Mobilization
								Hip and ridge style roof, peak of roof 15'. (Equipment
Roofing/Hip and Ridge Roof Steel Panels								Cost is included in Installation Cost)
								RSMeans Assemblies Cost Data, 2011, B3010 135,
Flat Roof Steel Panels, Flat Seam, Copper, 1/4" min.								Formed Metal (Equipment Cost is included in
slope, 20 oz, 1.2 PSF	12600	SF	\$9.50	\$5.80		100.30%	\$193,358.34	Installation Cost)

\$194,562.34

Stairs/Ramps/Guardrails	Quantity	Unit	Cost per Uni	Material Cost	nstallation Cos	uipment Co	Location Facto	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	6	EA			\$116.00	\$185.00	100.00%	\$1,806.00	54 36.50 Mobilization
									Beam and Column sizes are not determined and
									estimate takes in "best guess" to assume sizes for this
Exterior Ramp, Rises 20', 5' wide									project.
									RSMeans Assemblies Cost Data, 2011, B1010, 208
Steel Columns, 20' high, Wide Flanged, 6", 12									Steel Columns (Equipment Cost is included in
locations	168	VLF		\$26.50	\$7.85	\$0.00	95.40%	\$5,505.34	Installation Cost)
W Shape Beams and Girders, bay size 15X20,, Total									RSMeans Building Construction Cost Data, 2011,
Load 263 PSF.	800	SF		\$11.70	\$3.82	\$1.50	95.40%	\$12,989.66	Structural Steel Framing, 05 12 23.17
									RSMeans Assemblies Cost Data, 2011, B1010 258,
Floor Construction, Metal Deck/Concrete Fill, Deck									Metal Deck/Concrete Fill (Equipment Cost is included
Span 6 ft, 150 PSF Superimposed Load	800	SF		\$2.38	\$2.38		95.40%	\$3,632.83	in Installation Cost)
									RSMeans Building Construction Cost Data, 2011, 05 05
Weather Proofing/Coatings (Galvanized)	7.5	Tons	\$400.00	\$0.00	0	0	95.40%	\$2,862.00	13.50, Paints and Protective Coatings
									Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building
Hand Rail/Guard Rail	270	LF		\$32.50	\$9.80		95.40%	\$10,895.63	Construction Cost Date 2011, 05 52 Metal Railings
Ladders/Stairs									
Steel ladder to attic space 20" wide bolted to									RSMeans Building Construction Cost Data 2011, 05 51
concrete without cage	10	VLF		\$65.00	\$31.50	\$2.18	95.40%	\$920.61	33 - Vertical Metal Ladders
Accordion Ladder for Escape after Tsunami,									RSMeans Building Construction Cost Data 2011, 11 33
Disappearing Stairs, Heavy duty, 16'-0" ceiling	2	ea		\$1,400.00	\$172.00		95.40%	\$2,999.38	10.10, Disappearing Stairway
Platform Perimeters Railing (120 LF for each									
platform, 2 locations)									
									Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building
Hand Rail/Guard Rail	379	LF		\$32.50	\$9.80		95.40%	\$15,313.34	Construction Cost Date 2011, 05 52 Metal Railings
								ĆEC 034 00	

\$56,924.80

			Cost per		Installation	Equipment	Location		
Fire Protection	Quantity	Unit	Unit	Material Cost	Costs	Cost	Factor	Total Cost	Comments
Fire Protection, Wet Pipe System									
									RSMeans Building Construction Cost Data, 2011, 01 54
Mobilization	4	EA		\$69.00	\$116.00		100.00%	\$740.00	36 - Equipment Mobilization
									RSMeans Square Foot Costs, 2011, D4010 410, Wet
									Pipe Sprinkler Systems (Equipment Cost included in
First Floor, 2000 SF, Light Hazard	9000	SF		\$4.50	\$3.04		97.00%	\$65,824.20	Installation Cost)

\$66,564.20

Map Number:	7	Minimum Structure Height:	14
Structure Type:	Tower	Structure Capacity:	550
Location:	Grayland, WA	Safe Haven Square Footage:	5500
Levels	1	Columns Required:	16
		Piles per Column:	3
Scope			Cost
Site Utilities			\$15,257
Excavation-Backfill			\$55,647
Foundation			\$306,724
Structure			\$294,678
Roofing			\$119,367
Stairs/Ramps/Guardrails			\$53,582
Fire Protection			\$40,966
Total			\$886,222
Design Fees (8%)			\$70,898
General Conditions (10%)			\$88,622
Contractor Fees, O&P (15%)			\$132,933
Construction Contingency (5%)			\$44,311
Estimate/Design Contingency (10%)			\$88,622
Project Total			\$1,311,608

			Cost per		Installation	Equipment	Location	T	
Site Utilities	Quantity	Unit	Unit	Material Cost	Cost	Cost	Factor	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	10	EA			\$116.00	\$185.00	100.00%	\$3,010.00	54 36.50 Mobilization
Sine Makes Durable last Class 250 AM All distriction	F0	1.5		Ć4.C OF					A
Fire Water, Ductile Iron Class 250, MJ, 4" diameter	50	LF		\$16.05					Assuming 50' distance from service at street
Excavate, 3/4 CY Excavator 4'-6' deep	35	BCY			\$2.16	\$2.13	108.20%	\$162.46	RSMeans, Building Construction Cost Data, 2011, 31 23 16.13, Excavating Trench
Excavate, 5/4 CT Excavator 4 -0 deep	33	BCT			\$2.10	\$2.13	108.2076	\$102.40	RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 4" Ductile Iron Piping, MJ	50	LF		\$12.50	\$8.55	\$2.17	108.20%	\$1,256.20	11 Water Utility Distribution Piping
Utility Bedding, For Pipe & Conduit, Not Incl.					,				Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	6	LCY		\$20.00			108.20%	\$129.84	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	6	LCY			\$7.64	\$14.10	108.20%	\$141.14	16, 31 23 23.20 Hauling
									RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	5	ECY			\$3.05	\$0.34	108.20%	\$18.34	23 23.16 Fill By Borrow & Utility Bedding
									RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	38	LCY			\$0.50	\$1.05	108.20%	\$63.73	23 23.17 General Fill
Storm Service									Assuming 50' distance from service at street
									RSMeans, Building Construction Cost Data, 201, 31 23
Excavate, 3/4 CY Excavator, 6'-10' deep	60	BCY			\$2.88	\$2.85	108.20%	\$371.99	16.13 Excavating Trench
									RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 8" Bituminous Coated	50	LF		\$10.70	\$5.25	\$0.97	108.20%	\$915.37	41 Storm Utility Drainage Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	6	LCY		\$20.00			108.20%	\$129.84	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	6	LCY			\$7.64	\$14.10	108.20%	\$141.14	16, 31 23 23.20 Hauling
									RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	5	ECY			\$3.05	\$0.34	108.20%	\$18.34	23 23.16 Fill By Borrow & Utility Bedding

								RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	38	LCY		\$0.50	\$1.05	108.20%	\$63.73	23 23.17 General Fill
Site Drainage/Area Drains/Catch Basins								Assume 1 area drain for structure
								RSMeans Assemblies Cost Data, 2011, G3030 210,
Concrete, Precast, 4' ID riser, 4' deep	1	EA	\$1,425.00	\$1,200.00	0.00%	108.20%	\$2,840.25	Manholes & Catch Basins
Electrical	50	LF						Assuming 50' distance from service at street
Electrical Service, includes service installation,								RSMeans Assemblies Cost Data, 2011, D 5010 120,
breakers, metering, 20' conduit & wire, 3 phase, 4								Electric Service, 3 Phase - 4 Wire, equipment included
wire, 120/208 volts, 60 A	1	EA	\$960.00	\$920.00		100.50%	\$1,889.40	in installation cost
								RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator, 4'-6' deep	35	BCY		\$2.16	\$2.13	108.20%	\$162.46	23 16.13 Excavating Trench
								RSMeans, Building Construction Cost Data, 2011, 33
Install & Test PVC, type EB 4 @ 3" diameter	50	LF	\$2.00	\$8.05		108.20%	\$543.71	71 19 Electrical Underground Ducts and Manholes
								RSMeans, Building Construction Cost Data, 2011, 26
Wire, 600 volt, copper type THW, solid, #12	50	CLF	\$11.95	\$36.50	0	100.50%	\$2,434.61	05 19.90 Wire
Utility Bedding, For Pipe & Conduit, Not Incl.								Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	19	LCY	\$20.00			108.20%	\$411.16	conversation on June 29th, 2011
								RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	19	LCY		\$7.64	\$14.10	108.20%	\$446.93	16, 31 23 23.20 Hauling
								RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	19	ECY		\$3.05	\$0.34	108.20%	\$69.69	23 23.16 Fill By Borrow & Utility Bedding
								RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	22	LCY		\$0.50	\$1.05	108.20%	\$36.90	23 23.17 General Fill

			Cost per		Installation	Equipment	Location		
Excavation-Backfill	Quantity	Unit	Unit	Material Cost	Cost	Cost	Factor	Total Cost	Comments
									RSMeans Building Construction Cost Data, 2011, 01 54
Mobilization	8	EA	\$0.00	\$0.00	\$69.00	\$116.00	100.00%	\$1,480.00	36 - Equipment Mobilization
									Is clear and grub needed for structure in urban
									setting? RSMeans Building Construction Cost Data,
Clear and Grub Site	0.16	ACRE	\$0.00	\$0.00	\$1,750.00	\$1,300.00	108.20%	\$520.85	2011, 31 11 10.10 Clear and Grub Site
									Grade Beams, 3' wide, 3' deep RSMeans Building
									Construction Cost Data, 2011, 31 23 16.16 3/4 CY
									bucket, (Price Included in grade beam foundation
Excavation for Grade Beams	198	BCY	\$0.00	\$0.00	\$0.00	\$0.00	108.20%	\$0.00	price)
									1225 SF mat, 2' deep. RSMeans Building Construction
Excavation for slab, subgrade and capillary break	407	BCY	\$0.00	\$0.00	\$7.20	\$7.17	108.20%	\$6,334.51	Cost Data, 2011, 31 23 16.16 3/4 CY bucket
Removal of Foundation Spoils, Haul of Material, 40									RSMeans Building Construction Cost Data, 2011, 31 05
MPH, cycle 40 MPH	756	LCY			\$7.64	\$14.10	108.20%	\$17,794.10	16, 31 23 23.20 Hauling
									Quote per Quigg Bros, Aberdeen, WA, phone
Backfill Slab, subgrade, capillary break	654	ECY		\$20.00			108.20%	\$14,143.61	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	654	ECY			\$7.64	\$14.10	108.20%	\$15,374.11	16, 31 23 23.20 Hauling
								\$55,647.18	

Cost per Installation Equipment Location Foundation **Material Cost Total Cost** Quantity Unit Cost Factor Comments Piling needs to 2x the height of the structure which is Piling Per phone conversation with Quigg Bros, Aberdeen, \$12,000.00 WA on June 29th, 2011 Mobilization for piling EΑ \$12,000.00 \$0.00 \$0.00 \$0.00 100.00%

			40.00	40.700.00	4.0000	40.00			Driven pipe piles 40' long, 18"x.5", per phone conversation with Quigg Bros, Aberdeen, WA on June 29th,2011. Equipment Included in Material/Labor
Battered Piles, 18" Diameter, 30'-40' Deep	48	EA	\$0.00	\$3,500.00	\$1,200.00	\$0.00	100.00%	\$225,600.00	
									RSMeans Assemblies Cost Data 2011, A1010 250 Pile Caps (Equipment Costs are included in Installation
Pile Caps, Cap Size 6'-6" x 3'-6" x 37"	16	EA	\$0.00	\$370.00	\$540.00		99.30%	\$14,458.08	
Foundation Cast-In-Place/Tower	10	LA	\$0.00	\$370.00	Ç540.00		33.3070	714,430.00	Costy
									RSMeans Assemblies Cost Data 2011, A 1020 210
Grade Beams 30' span, 28" deep, 14" wide, 2 KLF									Grade Beams (Equipment Cost is included in
load	593	LF		\$34.50	\$53.00		99.30%		Installation Cost)
									Piling needs to 2x the height of the structure which is
Foundation Cast-In-Place/ Footings for Ramp									23-35'?
									RSMeans Assemblies Cost Data, 2011, A1010 210,
Spread Footings, load 75K, soil capacity 6 KSF, 4'-0"									Spread Footings (Equipment Cost is included in
sq x 12" deep	12	EA	\$0.00	\$94.50	\$167.00	\$0.00	99.30%		Installation Cost)
								\$306,724.11	
	,			,	1 1 11 11	- · ·			
Structure	Quantity	Unit	Cost per Unit	Material Cost	Installation Cost	Equipment Costs	Location Factor	Total Cost	Comments
Structure	Quantity	Oiiit	Oille	iviateriai cost	Cost	COSES	Tactor	iotai cost	
Mobilization of Equipment	10	EA			\$116.00	\$185.00	100.00%	\$3,010.00	RSMeans, Building Construction Cost Data, 2011, 01 54 36.50 Mobilization
									Beam and Column sizes are not determined and
									estimate takes in "best guess" to assume sizes for this
Concrete Structure								· ·	project.
Concrete Columns, rated for 1000 K load, 26"									RSMeans Assemblies Cost Data, 2011, B1010 201, CIP Column, Round Tied (Equipment Cost included in
round, concrete strength, 6000 PSI	224	VLF		\$158.00	\$7.85	\$0.00	99.30%	\$36,890.35	Installation Cost)
Slab-On-Grade, 6" thick, non-industrial, reinforced,	224	VLI		Ç138.00	\$7.65	Ş0.00	33.3070	\$30,830.33	RSMeans Assemblies Cost Data, 2011, A1030 120,
Ground Floor	5500	SF		\$3.01	\$2.97		99.30%	\$32,659.77	Slab on Grade, Plain & Reinforced
				,					RSMeans Assemblies Cost Data, 2011, B1010 229
Cast-In-Place Beam and Slab, Two Way, 30x30, 351									Precast Plank with No Topping (Equipment Cost
PSF, 9" thick slab, 2nd Floor (evacuation level)	5500	SF		\$8.95	\$13.60		99.30%		included in Installation Cost)
									Wood structure, hip roof to support galvanized steel
Wood Structure									panels
									Supply quote from Levee Lumber, Hoquiam, WA,
									RSMeans Assemblies Cost Data, 2011, B1020 102,
	4.50			40.05	40.50		0= 000/	44.044.00	Roof Construction, Wood/Flat or Pitched (Equipment
Wood Columns 12"x12", 10' High, Select Structural	160	VLF		\$9.85	\$2.62		97.30%	\$1,941.33	Cost included in Installation Cost)
									Supply quote from Levee Lumber, Hoquiam, WA, RSMeans Building Construction Cost Data 2011, Gluet
Perimeter Joists, 3 1/8"x12", GLM 30' span	297	LF		\$4.85	\$1.95	\$22.00	97.30%	\$8.312.79	Laminated Beams 06 18 13.20
crimeter 301313, 3 1/0 A12 , GLIVI 30 3pail	231	LI	1	γ - .03	71.77	722.00	37.3070	70,312.73	RSMeans Assemblies Cost Data, 2011, B1020 102,
									Roof Construction, Wood/Flat or Pitched (Equipment
2x10 Wood Joist w/ 1/2" CDX, 12" OC	5500	SF		\$2.02	\$2.05		97.30%	\$21,780.61	Cost included in Installation Cost)
2x10 W000 3013t W/ 1/2 CDX, 12 OC					· ·				RSMeans Assemblies Cost Data, 2011, B1020 102,
2X10 W000 30/3t W/ 1/2 CBX, 12 OC								1	
Roof, wood/pitched, 3"x12" 12" OC w/ sheating									Roof Construction, Wood/Flat or Pitched (Equipment
Roof, wood/pitched, 3"x12" 12" OC w/ sheating plywood on roof, 5/16" CDX	7700	SF		\$4.59	\$2.62		97.30%	\$54,018.04	Cost included in Installation Cost)
Roof, wood/pitched, 3"x12" 12" OC w/ sheating plywood on roof, 5/16" CDX Weather Proofing/Coatings add 15% (Premium for				\$4.59	\$2.62		97.30%		Cost included in Installation Cost) Assumed that PTS wood is 15% more compared on
Roof, wood/pitched, 3"x12" 12" OC w/ sheating plywood on roof, 5/16" CDX	7700 \$86,052.76	SF %	15.00%	\$4.59	\$2.62		97.30%	\$12,907.91	Cost included in Installation Cost)
Roof, wood/pitched, 3"x12" 12" OC w/ sheating plywood on roof, 5/16" CDX Weather Proofing/Coatings add 15% (Premium for			15.00%	\$4.59	\$2.62		97.30%		Cost included in Installation Cost) Assumed that PTS wood is 15% more compared on
Roof, wood/pitched, 3"x12" 12" OC w/ sheating plywood on roof, 5/16" CDX Weather Proofing/Coatings add 15% (Premium for			15.00%	\$4.59	\$2.62		97.30%	\$12,907.91	Cost included in Installation Cost) Assumed that PTS wood is 15% more compared on

								RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	4	EA		\$116.00	\$185.00	100.00%	\$1,204.00	54 36.50 Mobilization
								Hip and ridge style roof, peak of roof 15'. (Equipment
Roofing/Hip and Ridge Roof Steel Panels								Cost is included in Installation Cost)
								RSMeans Assemblies Cost Data, 2011, B3010 135,
Flat Roof Steel Panels, Flat Seam, Copper, 1/4" min.								Formed Metal (Equipment Cost is included in
slope, 20 oz, 1.2 PSF	7700	SF	\$9.50	\$5.80		100.30%	\$118,163.43	Installation Cost)
							\$119,367.43	

Stairs/Ramps/Guardrails Cost per Unit Material Costnstallation Cosuipment Colocation Facto Total Cost Quantity Unit Comments RSMeans, Building Construction Cost Data, 2011, 01 Mobilization of Equipment 6 EΑ \$116.00 \$185.00 100.00% \$1,806.00 54 36.50 Mobilization Beam and Column sizes are not determined and estimate takes in "best guess" to assume sizes for this Exterior Ramp, Rises 20', 5' wide RSMeans Assemblies Cost Data, 2011, B1010, 208 Steel Columns, 20' high, Wide Flanged, 6", 12 Steel Columns (Equipment Cost is included in VLF \$26.50 \$7.85 \$0.00 95.40% \$5,505.34 168 Installation Cost) W Shape Beams and Girders, bay size 15X20,, Total RSMeans Building Construction Cost Data, 2011, 800 SF \$11.70 \$3.82 \$1.50 95.40% Structural Steel Framing, 05 12 23.17 RSMeans Assemblies Cost Data, 2011, B1010 258, Floor Construction, Metal Deck/Concrete Fill, Deck Metal Deck/Concrete Fill (Equipment Cost is included Span 6 ft, 150 PSF Superimposed Load 800 SF \$2.38 \$2.38 95.40% \$3,632.83 in Installation Cost) RSMeans Building Construction Cost Data, 2011, 05 05 Weather Proofing/Coatings (Galvanized) 7.5 Tons \$400.00 \$0.00 0 0 95.40% \$2,862.00 13.50, Paints and Protective Coatings Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building 270 LF \$32.50 \$9.80 95.40% \$10,895.63 Construction Cost Date 2011, 05 52 Metal Railings Hand Rail/Guard Rail Ladders/Stairs Steel ladder to attic space 20" wide bolted to RSMeans Building Construction Cost Data 2011, 05 51 concrete without cage 10 VLF \$65.00 \$31.50 \$2.18 95.40% \$920.61 33 - Vertical Metal Ladders RSMeans Building Construction Cost Data 2011, 11 33 Accordion Ladder for Escape after Tsunami, Disappearing Stairs, Heavy duty, 16'-0" ceiling 2 \$1,400.00 \$172.00 95.40% \$2,999.38 10.10, Disappearing Stairway ea Platform Perimeters Railing (120 LF for each platform, 2 locations) Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building Construction Cost Date 2011, 05 52 Metal Railings Hand Rail/Guard Rail \$11,970,99 297 LF \$32.50 \$9.80 95.40%

Installation Location Cost per Equipment Fire Protection Quantity Unit Unit **Material Cost** Costs **Total Cost** Cost Factor Comments Fire Protection, Wet Pipe System RSMeans Building Construction Cost Data, 2011, 01 54 Mobilization 4 EΑ \$69.00 \$116.00 100.00% \$740.00 36 - Equipment Mobilization RSMeans Square Foot Costs, 2011, D4010 410, Wet Pipe Sprinkler Systems (Equipment Cost included in First Floor, 2000 SF, Light Hazard 5500 SF \$4.50 \$3.04 97.00% \$40,225.90 Installation Cost)

\$40,965.90

\$53,582.45

Map Number:	8	Minimum Structure Height:	17
Structure Type:	Tower	Structure Capacity:	550
Location:	Grayland, WA, HWY 105	Safe Haven Square Footage:	5500
Levels	1	Columns Required:	16
		Piles per Column:	3
Scope	•		Cost
Site Utilities			\$15,257
Excavation-Backfill			\$55,647
Foundation			\$306,724
Structure			\$302,583
Roofing			\$119,367
Stairs/Ramps/Guardrails			\$54,762
Fire Protection			\$40,966
Total			\$895,307
Design Fees (8%)			\$71,625
General Conditions (10%)			\$89,531
Contractor Fees, O&P (15%)			\$134,296
Construction Contingency (5%)			\$44,765
Estimate/Design Contingency (10%)			\$89,531
Project Total			\$1,325,054

			Cost per		Installation	Equipment	Location		
Site Utilities	Quantity	Unit	Unit	Material Cost	Cost	Cost	Factor	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	10	EA			\$116.00	\$185.00	100.00%	\$3,010.00	54 36.50 Mobilization
Fire Water, Ductile Iron Class 250, MJ, 4" diameter	50	LF		\$16.05					Assuming 50' distance from service at street
				72000					RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator 4'-6' deep	35	BCY			\$2.16	\$2.13	108.20%	\$162.46	23 16.13, Excavating Trench
									RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 4" Ductile Iron Piping, MJ	50	LF		\$12.50	\$8.55	\$2.17	108.20%	\$1,256.20	11 Water Utility Distribution Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	6	LCY		\$20.00			108.20%	\$129.84	conversation on June 29th, 2011
Haul of Material, 40 MPH, cycle 40 MPH	6	LCY			\$7.64	\$14.10	108.20%	\$141.14	RSMeans Building Construction Cost Data, 2011, 31 05 16, 31 23 23.20 Hauling
Compacting Bedding In Trench	5	ECY			\$3.05	\$0.34	108.20%	\$18.34	RSMeans, Building Construction Cost Data, 2011, 31 23 23.16 Fill By Borrow & Utility Bedding
Backfill, General Fill By Dozer, No Compaction	38	LCY			\$0.50	\$1.05	108.20%	\$63.73	RSMeans, Building Construction Cost Data, 2011, 31 23 23.17 General Fill
Storm Service									Assuming 50' distance from service at street

								RSMeans, Building Construction Cost Data, 201, 31 23
Excavate, 3/4 CY Excavator, 6'-10' deep	60	BCY		\$2.88	\$2.85	108.20%	\$371.99	16.13 Excavating Trench
								RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 8" Bituminous Coated	50	LF	\$10.70	\$5.25	\$0.97	108.20%	\$915.37	41 Storm Utility Drainage Piping
Utility Bedding, For Pipe & Conduit, Not Incl.								Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	6	LCY	\$20.00			108.20%	\$129.84	conversation on June 29th, 2011
								RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	6	LCY		\$7.64	\$14.10	108.20%	\$141.14	16, 31 23 23.20 Hauling
								RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	5	ECY		\$3.05	\$0.34	108.20%	\$18.34	23 23.16 Fill By Borrow & Utility Bedding
								RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	38	LCY		\$0.50	\$1.05	108.20%	\$63.73	23 23.17 General Fill
Site Drainage/Area Drains/Catch Basins								Assume 1 area drain for structure
								RSMeans Assemblies Cost Data, 2011, G3030 210,
Concrete, Precast, 4' ID riser, 4' deep	1	EA	\$1,425.00	\$1,200.00	0.00%	108.20%	\$2,840.25	Manholes & Catch Basins
Electrical	50	LF						Assuming 50' distance from service at street
Electrical Service, includes service installation,								RSMeans Assemblies Cost Data, 2011, D 5010 120,
breakers, metering, 20' conduit & wire, 3 phase, 4								Electric Service, 3 Phase - 4 Wire, equipment included
wire, 120/208 volts, 60 A	1	EA	\$960.00	\$920.00		100.50%	\$1,889.40	in installation cost
								RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator, 4'-6' deep	35	BCY		\$2.16	\$2.13	108.20%	\$162.46	23 16.13 Excavating Trench
								RSMeans, Building Construction Cost Data, 2011, 33
Install & Test PVC, type EB 4 @ 3" diameter	50	LF	\$2.00	\$8.05		108.20%	\$543.71	71 19 Electrical Underground Ducts and Manholes
								RSMeans, Building Construction Cost Data, 2011, 26
Wire, 600 volt, copper type THW, solid, #12	50	CLF	\$11.95	\$36.50	0	100.50%	\$2,434.61	05 19.90 Wire
Utility Bedding, For Pipe & Conduit, Not Incl.								Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	19	LCY	\$20.00			108.20%	\$411.16	conversation on June 29th, 2011
								RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	19	LCY		\$7.64	\$14.10	108.20%	\$446.93	16, 31 23 23.20 Hauling
								RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	19	ECY		\$3.05	\$0.34	108.20%	\$69.69	23 23.16 Fill By Borrow & Utility Bedding
								RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	22	LCY		\$0.50	\$1.05	108.20%	\$36.90	23 23.17 General Fill
							\$15.257.23	

			Cost per		Installation	Equipment	Location		
Excavation-Backfill	Quantity	Unit	Unit	Material Cost	Cost	Cost	Factor	Total Cost	Comments
									RSMeans Building Construction Cost Data, 2011, 01 54
Mobilization	8	EA	\$0.00	\$0.00	\$69.00	\$116.00	100.00%	\$1,480.00	36 - Equipment Mobilization
									Is clear and grub needed for structure in urban
									setting? RSMeans Building Construction Cost Data,
Clear and Grub Site	0.16	ACRE	\$0.00	\$0.00	\$1,750.00	\$1,300.00	108.20%	\$520.85	2011, 31 11 10.10 Clear and Grub Site
									Grade Beams, 3' wide, 3' deep RSMeans Building
									Construction Cost Data, 2011, 31 23 16.16 3/4 CY
									bucket, (Price Included in grade beam foundation
Excavation for Grade Beams	198	BCY	\$0.00	\$0.00	\$0.00	\$0.00	108.20%	\$0.00	price)
									1225 SF mat, 2' deep. RSMeans Building Construction
Excavation for slab, subgrade and capillary break	407	BCY	\$0.00	\$0.00	\$7.20	\$7.17	108.20%	\$6,334.51	Cost Data, 2011, 31 23 16.16 3/4 CY bucket
Removal of Foundation Spoils, Haul of Material, 40									RSMeans Building Construction Cost Data, 2011, 31 05
MPH, cycle 40 MPH	756	LCY			\$7.64	\$14.10	108.20%	\$17,794.10	16, 31 23 23.20 Hauling
									Quote per Quigg Bros, Aberdeen, WA, phone
Backfill Slab, subgrade, capillary break	654	ECY		\$20.00			108.20%	\$14,143.61	conversation on June 29th, 2011

									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	654	ECY			\$7.64	\$14.10	108.20%	\$15,374.11	16, 31 23 23.20 Hauling
								\$55,647.18	
			Cost per		Installation	Equipment	Location		
Foundation	Quantity	Unit	Unit	Material Cost	Cost	Cost	Factor	Total Cost	Comments
Piling									Piling needs to 2x the height of the structure which is 23-35'?
Mobilization for piling	1	EA	\$12,000.00	\$0.00	\$0.00	\$0.00	100.00%	\$12,000.00	Per phone conversation with Quigg Bros, Aberdeen, WA on June 29th, 2011
Battered Piles, 18" Diameter, 30'-40' Deep	48	EA	\$0.00	\$3,500.00	\$1,200.00	\$0.00	100.00%	\$225,600.00	Driven pipe piles 40' long, 18"x.5", per phone conversation with Quigg Bros, Aberdeen, WA on June 29th,2011. Equipment Included in Material/Labor Cost
Pile Caps, Cap Size 6'-6" x 3'-6" x 37"	16	EA	\$0.00	\$370.00	\$540.00		99.30%	\$14,458.08	RSMeans Assemblies Cost Data 2011, A1010 250 Pile Caps (Equipment Costs are included in Installation Cost)
Grade Beams 30' span, 28" deep, 14" wide, 2 KLF load	593	LF		\$34.50	\$53.00		99.30%	\$51,550.00	RSMeans Assemblies Cost Data 2011, A 1020 210 Grade Beams (Equipment Cost is included in Installation Cost)
Foundation Cast-In-Place/ Footings for Ramp									Piling needs to 2x the height of the structure which is 23-35'?
Spread Footings, load 75K, soil capacity 6 KSF, 4'-0" sq x 12" deep	12	EA	\$0.00	\$94.50	\$167.00	\$0.00	99.30%	\$3,116.03	RSMeans Assemblies Cost Data, 2011, A1010 210, Spread Footings (Equipment Cost is included in Installation Cost)
								\$306,724.11	
				ı		I			
Structure	Quantity	Unit	Cost per Unit	Material Cost	Installation Cost	Equipment Costs	Location Factor	Total Cost	Comments
Structure	Quantity	Oilit	Offic	iviateriai Cost	Cost	Costs	ractor	iotai cost	RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	10	EA			\$116.00	\$185.00	100.00%	\$3,010.00	54 36.50 Mobilization
Concrete Structure								\$0.00	Beam and Column sizes are not determined and estimate takes in "best guess" to assume sizes for this project.
Concrete Columns, rated for 1000 K load, 26" round, concrete strength, 6000 PSI	272	VLF		\$158.00	\$7.85	\$0.00	99.30%	\$44,795.42	RSMeans Assemblies Cost Data, 2011, B1010 201, CIP Column, Round Tied (Equipment Cost included in Installation Cost)
Slab-On-Grade, 6" thick, non-industrial, reinforced, Ground Floor	5500	SF		\$3.01	\$2.97		99.30%	\$32,659.77	RSMeans Assemblies Cost Data, 2011, A1030 120, Slab on Grade, Plain & Reinforced
Cast-In-Place Beam and Slab, Two Way, 30x30, 351 PSF, 9" thick slab, 2nd Floor (evacuation level)	5500	SF		\$8.95	\$13.60		99.30%		RSMeans Assemblies Cost Data, 2011, B1010 229 Precast Plank with No Topping (Equipment Cost included in Installation Cost)
Wood Structure									Wood structure, hip roof to support galvanized steel panels
Wood Columns 12"x12", 10' High, Select Structural	160	VLF		\$9.85	\$2.62		97.30%	\$1,941.33	Supply quote from Levee Lumber, Hoquiam, WA, RSMeans Assemblies Cost Data, 2011, B1020 102, Roof Construction, Wood/Flat or Pitched (Equipment Cost included in Installation Cost)
Perimeter Joists, 3 1/8"x12", GLM 30' span	297	LF		\$4.85	\$1.95	\$22.00	97.30%		Supply quote from Levee Lumber, Hoquiam, WA, RSMeans Building Construction Cost Data 2011, Glued-Laminated Beams 06 18 13.20

				•					
									RSMeans Assemblies Cost Data, 2011, B1020 102,
									Roof Construction, Wood/Flat or Pitched (Equipment
2x10 Wood Joist w/ 1/2" CDX, 12" OC	5500	SF		\$2.02	\$2.05		97.30%	\$21,780.61	Cost included in Installation Cost)
									RSMeans Assemblies Cost Data, 2011, B1020 102,
Roof, wood/pitched, 3"x12" 12" OC w/ sheating									Roof Construction, Wood/Flat or Pitched (Equipment
plywood on roof, 5/16" CDX	7700	SF		\$4.59	\$2.62		97.30%	\$54,018.04	Cost included in Installation Cost)
Weather Proofing/Coatings add 15% (Premium for									Assumed that PTS wood is 15% more compared on
PTS Wood)	\$86,052.76	%	15.00%					\$12,907.91	price difference shown in means
								\$302,582.69	
		T.	<u> </u>			ı	ľ		
Roofing	Quantity	Unit	Cost per Uni	Material Cost	stallation Cos	uipment Co	Location Facto	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	4	EA			\$116.00	\$185.00	100.00%	\$1,204.00	54 36.50 Mobilization
									Hip and ridge style roof, peak of roof 15'. (Equipment
Roofing/Hip and Ridge Roof Steel Panels									Cost is included in Installation Cost)
									RSMeans Assemblies Cost Data, 2011, B3010 135,
Flat Roof Steel Panels, Flat Seam, Copper, 1/4" min.									Formed Metal (Equipment Cost is included in
slope, 20 oz, 1.2 PSF	7700	SF		\$9.50	\$5.80		100.30%	\$118,163.43	Installation Cost)
								\$119,367.43	
	ı	ı		1		ı		1	
Stairs/Ramps/Guardrails	Quantity	Unit	Cost per Uni	Material Cost	nstallation Cos	uipment Co	Location Facto	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	6	EA			\$116.00	\$185.00	100.00%	\$1,806.00	54 36.50 Mobilization
									Beam and Column sizes are not determined and
									estimate takes in "best guess" to assume sizes for this
Exterior Ramp, Rises 20', 5' wide									project.
									RSMeans Assemblies Cost Data, 2011, B1010, 208
Steel Columns, 20' high, Wide Flanged, 6", 12									Steel Columns (Equipment Cost is included in
locations	204	VLF		\$26.50	\$7.85	\$0.00	95.40%	\$6,685.06	Installation Cost)
W Shape Beams and Girders, bay size 15X20,, Total									RSMeans Building Construction Cost Data, 2011,
Load 263 PSF.	800	SF		\$11.70	\$3.82	\$1.50	95.40%	\$12,989.66	Structural Steel Framing, 05 12 23.17
									RSMeans Assemblies Cost Data, 2011, B1010 258,
Floor Construction, Metal Deck/Concrete Fill, Deck									Metal Deck/Concrete Fill (Equipment Cost is included
Span 6 ft, 150 PSF Superimposed Load	800	SF		\$2.38	\$2.38		95.40%	\$3,632.83	in Installation Cost)
									RSMeans Building Construction Cost Data, 2011, 05 0
Weather Proofing/Coatings (Galvanized)	7.5	Tons	\$400.00	\$0.00	0	0	95.40%	\$2,862.00	13.50, Paints and Protective Coatings
									Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building
Hand Rail/Guard Rail	270	LF		\$32.50	\$9.80		95.40%	\$10,895.63	Construction Cost Date 2011, 05 52 Metal Railings
Ladders/Stairs				ļ					
Steel ladder to attic space 20" wide bolted to		,		405	40	40		40.5	RSMeans Building Construction Cost Data 2011, 05 51
concrete without cage	10	VLF		\$65.00	\$31.50	\$2.18	95.40%	\$920.61	33 - Vertical Metal Ladders
		1	1						RSMeans Building Construction Cost Data 2011, 11 33
Accordion Ladder for Escape after Tsunami,				A	A				
Disappearing Stairs, Heavy duty, 16'-0" ceiling	2	ea		\$1,400.00	\$172.00		95.40%	\$2,999.38	10.10, Disappearing Stairway
Disappearing Stairs, Heavy duty, 16'-0" ceiling Platform Perimeters Railing (120 LF for each	2	ea		\$1,400.00	\$172.00		95.40%	\$2,999.38	10.10, Disappearing Stairway
Disappearing Stairs, Heavy duty, 16'-0" ceiling	2	ea		\$1,400.00	\$172.00		95.40%	\$2,999.38	, ,, ,
Disappearing Stairs, Heavy duty, 16'-0" ceiling Platform Perimeters Railing (120 LF for each platform, 2 locations)									Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building
Disappearing Stairs, Heavy duty, 16'-0" ceiling Platform Perimeters Railing (120 LF for each	2 297	ea LF		\$1,400.00 \$32.50	\$172.00 \$9.80		95.40% 95.40%	\$2,999.38 \$11,970.99 \$54,762.17	Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building Construction Cost Date 2011, 05 52 Metal Railings

Fire Protection Quantity Unit Unit Material Cost Costs Cost Factor Total Cost Comments

Fire Protection, Wet Pipe System

							RSMeans Building Construction Cost Data, 2011, 01 54
Mobilization	4	EA	\$69.00	\$116.00	100.00%	\$740.00	36 - Equipment Mobilization
							RSMeans Square Foot Costs, 2011, D4010 410, Wet
							Pipe Sprinkler Systems (Equipment Cost included in
First Floor, 2000 SF, Light Hazard	5500	SF	\$4.50	\$3.04	97.00%	\$40,225.90	Installation Cost)

\$40,965.90

Map Number:	9	Minimum Structure Height (ft)	10
Structure Type:	Building/Fire Station	Structure Capacity:	550
Location:	Grayland, McDermontt Lane	Safe Haven Square Footage:	5500
Overall Site Square Footage		-	
Scope			Cost
Site Utilities			\$36,509
Excavation-Backfill			\$26,578
Foundation			\$254,012
Structure			\$188,273
Exterior Walls			\$96,042
Roofing			\$14,094
Stairs			\$54,727
Interior Finishes			\$36,786
Mechanical			\$74,647
Electrical			\$35,482
Plumbing			\$44,934
Fire Protection			\$19,155
Landscaping			\$53,903
Total			\$935,144
Design Fees (8%)			\$74,811
General Conditions (10%)			\$93,514
Contractor Fees, O&P (15%)			\$140,272
Construction Contingency (5%)			\$46,757
Estimate/Design Contingency (10%)			\$93,514
Project Total			1,384,013

			Cost per		Installation		Location		
Site Utilities	Quantity	Unit	Unit	Material Cost	Cost	Equipment	Factor	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	8	EA			\$116.00	\$185.00	100.00%	\$2,408.00	54 36.50 Mobilization
Domestic Water, Ductile Iron Class 250, MJ, 6"									
diameter	100	LF							Assuming 100' distance from service at street
									RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator 4'-6' deep	70	BCY			\$2.16	\$2.13	108.20%	\$324.92	23 16.13, Excavating Trench
									RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 6" Ductile Iron Piping, MJ	100	LF		\$14.60	\$10.70	\$2.72	108.20%	\$3,031.76	11 Water Utility Distribution Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	12	LCY		\$20.00			108.80%	\$261.12	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	12	LCY			\$7.64	\$14.10	108.20%	\$282.27	16, 31 23 23.20 Hauling
·									RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	10	ECY			\$3.05	\$0.34	108.20%	\$36.68	23 23.16 Fill By Borrow & Utility Bedding
					•	,		·	RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	75	LCY			\$0.50	\$1.05	108.20%	\$125.78	23 23.17 General Fill
, , , ,					•	,		·	
Fire Water, Ductile Iron Class 250, MJ, 6" diameter	100	LF							Assuming 100' distance from service at street
									RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator 4'-6' deep	70	BCY			\$2.16	\$2.13	108.20%	\$324.92	23 16.13, Excavating Trench
					7	7=:=0		70202	RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 6" Ductile Iron Piping, MJ	100	LF		\$14.60	\$10.70	\$2.72	108.20%	\$3,031,76	11 Water Utility Distribution Piping
Utility Bedding, For Pipe & Conduit, Not Incl.	100	-		Ş14.00	\$10.70	<i>γ</i> 2.72	100.2070	75,031.70	Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	12	LCY		\$20.00			108.80%	\$261.12	conversation on June 29th, 2011
Compaction		LCI		Ç20.00			100.0070	Ψ201.12	RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	12	LCY			\$7.64	\$14.10	108.20%	\$282.27	16, 31 23 23.20 Hauling
riadi or iviaterial, 40 ivii 11, eyele 40 ivii 11	12	LCI			Ş7.0 4	714.10	100.2070	7202.27	RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	10	ECY			\$3.05	\$0.34	108.20%	\$36.68	23 23.16 Fill By Borrow & Utility Bedding
compacting bedding in trenen	10	LCI			75.05	Ş0.5 4	100.2070	750.00	RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	75	LCY			\$0.50	\$1.05	108.20%	\$125.78	23 23.17 General Fill
Sewage	73	LCI			Ç0.50	Ş1.03	100.2070	Ϋ123.76	Assuming 100' distance from service at street
Sewage									RSMeans, Building Construction Cost data, 2011, 31
Excavate, 3/4 CY Excavator, 6'-10' deep	120	BCY			\$2.88	\$2.85	108.20%	\$743.98	23 16.13 Excavating Trench
Excavate, 574 of Excavator, 0 10 deep	120	DCI			Ψ 2 .00	ψ 2 .03	100.2070	ψ7 43.30	RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 8" SDR 35, B&S	100	LF		\$7.60	\$2.75		108.20%	\$1,119.87	31 Sanitary Utility Sewerage Piping
Utility Bedding, For Pipe & Conduit, Not Incl.	100			\$7.00	Ψ 2. 73		100.2070	71,113.07	Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	12	LCY		\$20.00			108.80%	\$261.12	conversation on June 29th, 2011
Compaction		LCI		Ç20.00			100.0070	Ψ201.12	RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	12	LCY			\$7.64	\$14.10	108.20%	\$282.27	16, 31 23 23.20 Hauling
riadi di Material, 40 Mir II, Cycle 40 Mir II	12	LCI			Ş7.0 4	Ş14.10	100.2070	7202.27	RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	10	ECY			\$3.05	\$0.34	108.20%	\$36.68	23 23.16 Fill By Borrow & Utility Bedding
Compacting Bedding in Trenen	10	LCI			75.05	Ş0.5 4	100.2070	750.00	RSMeans, Building Construction Cost Data, 2011, 31
Packfill Ganaral Fill By Dozar No Compaction	120	ICV			¢n En	\$1.05	100 20%	\$221.44	l
Backfill, General Fill By Dozer, No Compaction Storm Service	138	LCY			\$0.50	\$1.05	108.20%	\$231.44	23 23.17 General Fill Assuming 100' distance from service at street
Storm Service			1	+					RSMeans, Building Construction Cost Data, 201, 31 23
Excavate, 3/4 CY Excavator, 6'-10' deep	120	BCY			\$2.88	\$2.85	108.20%	\$743.98	16.13 Excavating Trench
Lacavaic, 3/4 CT Lacavaiot, 0 -10 deep	120	BCT	-		γ 2.00	26.۵5	100.2070	\$143.30	RSMeans, Building Construction Cost Data, 2011, 33
Install 9 Tost 9" Dituminary Coated	100	15		¢10.70	ĆE OF	¢0.07	100 200/	¢1 020 74	, , ,
Install & Test, 8" Bituminous Coated Utility Bedding, For Pipe & Conduit, Not Incl.	100	LF	-	\$10.70	\$5.25	\$0.97	108.20%	\$1,830.74	41 Storm Utility Drainage Piping
, ,	12	ICV		\$20.00			100 000/	\$261.12	Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	12	LCY		\$20.00			108.80%	\$261.12	conversation on June 29th, 2011

					1		l	DCM cons Duilding Construction Cost Data 2011 21 05
Haul of Material, 40 MPH, cycle 40 MPH	12	LCY		\$7.64	\$14.10	108.20%	\$282.27	RSMeans Building Construction Cost Data, 2011, 31 05 16, 31 23 23.20 Hauling
Compacting Bedding In Trench	10	ECY		\$3.05	\$0.34	108.20%	\$36.68	RSMeans, Building Construction Cost Data, 2011, 31 23 23.16 Fill By Borrow & Utility Bedding
Backfill, General Fill By Dozer, No Compaction	138	LCY		\$0.50	\$1.05	108.20%	\$231.44	RSMeans, Building Construction Cost Data, 2011, 31 23 23.17 General Fill
Site Drainage								Perimeter of the building + 25%
,								RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator, 6'-10' deep	140	BCY		\$2.88	\$2.85	108.20%	\$867.98	23 16.13 Excavating, Trench
								RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 8" Bituminous Coated	224	LF	\$10.70	\$5.25	\$0.97	108.20%	\$4,100.87	41 Storm Utility Drainage Piping
Utility Bedding, For Pipe & Conduit, Not Incl.								Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	25	LCY	\$20.00			108.80%	\$544.00	conversation on June 29th, 2011
								RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	25	LCY		\$7.64	\$14.10	108.20%	\$588.07	16, 31 23 23.20 Hauling
								RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	20	ECY		\$3.05	\$0.34	108.20%	\$73.36	23 23.16 Fill By Borrow & Utility Bedding
								RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	150	LCY		\$0.50	\$1.05	108.20%	\$251.57	23 23.17 General Fill
Electrical								Assuming 100' distance from service at street
Electrical Service, includes service installation,								RSMeans Assemblies Cost Data, 2011, D 5010 120,
breakers, metering, 20' conduit & wire, 3 phase, 4								Electric Service, 3 Phase - 4 Wire, equipment included
wire, 120/208 volts, 60 A	1	EA	\$960.00	\$920.00		100.50%	\$1,889.40	in installation cost
								RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator, 4'-6' deep	70	BCY		\$2.16	\$2.13	108.20%	\$324.92	23 16.13 Excavating Trench
								RSMeans, Building Construction Cost Data, 2011, 33
Install & Test PVC, type EB 4 @ 3" diameter	100	LF	\$2.00	\$8.05		108.20%	\$1,087.41	71 19 Electrical Underground Ducts and Manholes
								RSMeans, Building Construction Cost Data, 2011, 26
Wire, 600 volt, copper type THW, solid, #12	100	CLF	\$11.95	\$36.50	0	100.50%	\$4,869.23	05 19.90 Wire
Utility Bedding, For Pipe & Conduit, Not Incl.								Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	38	LCY	\$20.00			108.80%	\$826.88	conversation on June 29th, 2011
								RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	38	LCY		\$7.64	\$14.10	108.20%	\$893.86	16, 31 23 23.20 Hauling
								RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	35	ECY		\$3.05	\$0.34	108.20%	\$128.38	23 23.16 Fill By Borrow & Utility Bedding
								RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	44	LCY		\$0.50	\$1.05	108.20%	\$73.79	23 23.17 General Fill
Natural Gas								Assuming 100' distance from service at street
								RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator, 4'-6' deep	70	BCY		\$2.16	\$2.13	108.20%	\$324.92	23 16.13 Excavating Trench
Install and test 60 PSI 40' joints with coupling, 3"								RSMeans, Building Construction Cost Data, 2011, 33
diameter SDR 11	100	LF	\$5.35	\$4.19	\$1.06	108.20%	\$1,146.92	51 13.10 Piping, Gas Service and Distribution
Utility Bedding, For Pipe & Conduit, Not Incl.								Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	38	LCY	\$20.00			108.80%	\$826.88	conversation on June 29th, 2011
								RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	38	LCY		\$7.64	\$14.10	108.20%	\$893.86	16, 31 23 23.20 Hauling
								RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	35	ECY		\$3.05	\$0.34	108.20%	\$128.38	23 23.16 Fill By Borrow & Utility Bedding
								RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	44	LCY		\$0.50	\$1.05	108.20%	\$73.79	23 23.17 General Fill
			•	-	•			<u> </u>

\$36,509.16

Excavation-Backfill	Quantity	Unit	Cost per Unit	Material Cost	Installation Cost	Equipment Cost	Location Factor	Total Cost	Comments
EXCAVACIOII-DACKIIII	Quantity	Ollit	Onit	Material Cost	Cost	Cost	ractor	iotai Cost	
	_								RSMeans Building Construction Cost Data, 2011, 01 54
Mobilization	4	EA	\$0.00	\$0.00	\$69.00	\$116.00	100.00%	\$740.00	36 - Equipment Mobilization
									Assumed site area to be 4X building pad, RSMeans
									Building Construction Cost Data, 2011, 31 11 10.10
Clear and Grub Site	0.53	ACRE	\$0.00	\$0.00	\$1,750.00	\$1,300.00	108.20%	\$1,749.05	Clear and Grub Site
								Included in	Grade Beams, 3' wide, 3' deep, 568 lf. RSMeans
								grade beam	Building Construction Cost Data, 2011, 31 23 16.16
								foundation	3/4 CY bucket, (Price Included in grade beam
Excavation for Grade Beams	0	BCY	\$0.00	\$0.00	\$7.20	\$7.17	108.20%	price	foundation price)
									3360 SF mat, 2' deep. RSMeans Building Construction
Excavation for slab, subgrade and capillary break	250	BCY	\$0.00	\$0.00	\$7.20	\$7.17	108.20%	\$3,887.09	Cost Data, 2011, 31 23 16.16 3/4 CY bucket
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Spoils, 40 MPH, cycle 40 MPH	311	LCY			\$7.64	\$14.10	108.20%	\$7,315.55	16, 31 23 23.20 Hauling
									Quote per Quigg Bros, Aberdeen, WA, phone
Fill Material for Capillary Break	270	BCY		\$20.00			108.80%	\$5,875.20	conversation on June 29th, 2011
									RSMeans Building Construction Data, 2011, 31 23
Compacting Backfill, 6"to 12" lifts, vibrating roller	250	ECY			\$0.63	\$1.81	108.20%	\$660.02	23.13 Backfill
· · · · · ·									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	270	CY			\$7.64	\$14.10	108.20%	\$6,351.12	16, 31 23 23.20 Hauling
			•					\$26,578.04	

			Cost per		Installation	Equipment	Location		
Foundation	Quantity	Unit	Unit	Material Cost	Cost	Cost	Factor	Total Cost	Comments
Piling									
									Driven pipe piles 40' long, 16"x.5", Condon Johnson
									Quote, Equipment Included in Material/Labor Cost
Piles, 18" Diameter, 30'-40' Deep	1680	LF	\$0.00	\$55.00	\$15.00	\$0.00	100.00%	\$117,600.00	(Equipment Cost included in Installation Cost)
									RSMeans Assemblies Cost Data 2011, A1010 250 Pile
Pile Caps, 3 Piles Per Cap, 6'-6" x 3'-6" x 37"	6	EA	\$0.00	\$370.00	\$540.00		99.90%	\$5,454.54	Caps (Equipment Cost included in Installation Cost)
									RSMeans Assemblies Cost Data 2011, A1010 250 Pile
Pile Caps, 2 Piles Per Cap, 6'-6" x 3'-6" x 37"	12	EA	\$0.00	\$375.00	\$540.00		99.90%	\$10,969.02	Caps (Equipment Cost included in Installation Cost)
Mobilization for Piling	1	EA	\$35,000.00					\$35,000.00	Condon Johnson Quote
Foundation/ Footings for Ramp									
									RSMeans Assemblies Cost Data, 2011, A1010 210,
Spread Footings, load 75K, soil capacity 6 KSF, 4'-0"									Spread Footings (Equipment Cost included in
sq x 12" deep	12	EA	\$0.00	\$94.50	\$167.00	\$0.00	99.90%	\$3,134.86	Installation Cost)
									RSMeans Assemblies Cost Data 2011, A 1020 210
Grade Beams 40' span, 40" deep, 12" wide, 2 KLF									Grade Beams (Equipment Cost included in Installation
load	416	LF		\$29.50	\$56.00		99.90%	\$35,532.43	Cost)
					•		•		RSMeans Assemblies Cost Data, 2011, A 1030 120,
Ground Floor Slab, 8" thick, Heavy Industrial,						1			Slab On Grade (Equipment Cost included in
Reinforced	3360	SF		\$5.70	\$8.10		99.90%	\$46,321.63	Installation Cost)
			•	•				\$254,012.49	

\$254,012.49

			Cost per		Installation	Equipment	Location		
Structure	Quantity	Unit	Unit	Material Cost	Cost	Costs	Factor	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	6	EA			\$116.00	\$185.00	100.00%	\$1,806.00	54 36.50 Mobilization

								Four walls identified, 2 @ 24'x16', 2 @ 40'x20',
								RSMeans Assemblies Cost Data, 2011, B2010 101,
Sheer Walls, Assume Cast In Place Concrete Wall,								Cast In Place Concrete (Equipment Cost included in
12" thick, 5000 psi, plainer finish.	2368	SF	\$7.25	16.25		99.90%	\$55,592.35	Installation Cost)
								RSMeans Assemblies Cost Data, 2011, B1010 Steel
								Columns (Equipment Cost included in Installation
Steel Columns, 500K load, 20' high, 12" diameter	360	VLF	\$158.00	7.85	0	95.40%	\$56,959.52	Cost)
Bay Size (ft) 20x25, Beam x Gird, Superimposed								RSMeans Assemblies Cost Data, 2011, B1010 241 W
Load (PSF) 200, to take on anticipated seismic								3500 Shape Beams & Girders (Equipment Cost
event and safe haven platform	2560	SF	\$13.95	4.48		95.40%	\$45,010.48	included in Installation Cost)
Bay Size (ft) 20x25, Beam x Gird, Superimposed								RSMeans Assemblies Cost Data, 2011, B1010 241 W
Load (PSF) 40 for roof above office								2900 Shape Beams & Girders (Equipment Cost
space/attic/common area	960	SF	\$5.35	2.19		95.40%	\$6,905.43	included in Installation Cost)
								RSMeans Assemblies Cost Data, 2011, B1010 261,
Wood framed floor for attic space above								Wood Joists, included 1/2" CDX floor (Equipment Cost
offices/common area, 2x12 joists at 12" OC	960	SF	\$2.32	2.07		97.30%	\$4,100.61	included in Installation Cost)
Roof Concrete Floor, at safe haven platform								
includes pan decking, concrete, wire mesh, finish								RSMeans Assemblies Cost Data, 2011, B1010 258
floor, 8' deck span,200 superimposed load, PSF, 4"								Metal Deck/Concrete Fill (Equipment Cost included in
thick	3520	SF	\$2.60	2.49		99.90%	\$17,898.88	Installation Cost)

\$188,273.29

			Cost per		Installation		Location		
Exterior Walls	Quantity	Unit	Unit	Material Cost	Cost	Cost	Factor	Total Cost	Comments
									RSMeans Assemblies Cost Data, 2011, B2010 117,
									Split Face Block Wall, Regular Weight, Entire enclosure
									surrounding bays that store the fire trucks (20' high)
									and half the height of the common area (8' high).
Split Block Exterior Facing, Regular Weight, No Core									Remove the SF of the garage doors. (Equipment Cost
Fill, 8x8x16, Un-Reinforced	2912	SF		\$4.16	8.35		109.20%	\$39,780.60	included in Installation Cost)
									RSMeans Assemblies Cost Data, 2011, B2010 148,
									Panel Shingle & Lap Siding, Upper 8' of Common Area
Wood Siding, 3-5/8" metal studs, 16 GA. 24" OC									portion of building (Equipment Cost included in
insulation wall, 1"x6" cedar drop siding	864	SF		\$7.20	5.5		97.30%	\$10,676.53	Installation Cost)
									RSMeans Square Foot Costs, 2011, Exterior Enclosure,
									2030 Exterior Doors, includes common area only
									(Material, Installation and Equipment Cost included in
Exterior Doors	960	SF	\$4.25				101.80%	\$4,153.44	Cost per Unit)
									RSMeans Square Foot Costs, 2011, Exterior Enclosure,
									2020 Exterior Windows, includes common area only
									(Material, Installation and Equipment Cost included in
Exterior Windows	960	SF	\$1.92				101.80%	\$1,876.38	Cost per Unit)
									Cost of door based on 12'x12' garage door RSMeans,
									Assemblies Cost Data, 2011, B2030 220, Exterior
									Doors, 8 doors total, front and rear loading
									(Equipment Cost included in Installation Cost). Cost
									per square foot for the materials of a 12'x12' door was
Garage Doors, Steel 24 Ga. Overhead, Sectional,									used for a 12'x18' door. \$6 a square foot was used for
Electric Operation, 12'x18'	8	EA		\$3,561.00	\$1,296.00		101.80%	\$39,555.41	installation.

\$96,042.36

			Cost per		Installation	Equipment	Location		
Roofing	Quantity	Unit	Unit	Material Cost	Costs	Cost	Factor	Total Cost	Comments
									RSMeans Assemblies Cost Data, 2011, B3010 105,
Built-Up Roof Covering, Asphalt base sheets & 3									Built Up Roofing (Equipment Cost included in
plies #15 asphalt felt, mopped	3520	SF		\$0.91	\$1.66		100.30%	\$9,073.54	Installation Cost)
									RSMeans Square Foot Costs, 2011, M.220, Fire
									Station, B30 Roofing (Equipment Cost included in
Roof Opening, skylights, roof hatches	3520	SF		\$0.14			101.80%	\$501.67	Installation Cost)
									RSMeans Assemblies Cost Data, 2011, G2040 105,
Guardrail, fence, chain link, 2" post, 1 5/8" rail, 9									Fence & Guardrails, surrounding the safe haven area.
ga. Galve wire, 5' high	208	LF		\$17.95	\$4.82		95.40%	\$4,518.30	(Equipment Cost included in Installation Cost)
								\$14,093.51	

Cost per Installation Equipment Location Stairs/Ramps Quantity Unit **Material Cost** Factor Total Cost Comments Cost Cost Interior Stairs, 2 flights, 16 risers, with landing, RSMeans Assemblies Cost Data, 2011, C2010 110, steel, grate type w/nosing & rails Each \$7,875.00 \$1,975.00 \$0.00 95.40% \$9,396.90 Beam and Column sizes are not determined and estimate takes in "best guess" to assume sizes for this Exterior Ramp, Rises 20', 6' wide RSMeans Assemblies Cost Data, 2011, B1010, 208 Steel Columns, 20' high, Wide Flanged, 6", 12 Steel Columns (Equipment Cost included in 240 VLF \$26.50 \$7.85 \$0.00 95.40% \$7,864.78 Installation Cost) W Shape Beams and Girders, bay size 15X20,, Total RSMeans Building Construction Cost Data, 2011, Load 263 PSF. 900 SF \$11.70 \$3.82 \$1.50 95.40% \$14,613.37 Structural Steel Framing, 05 12 23.17 RSMeans Assemblies Cost Data, 2011, B1010 258, Floor Construction, Metal Deck/Concrete Fill, Deck Metal Deck/Concrete Fill (Equipment Cost included in Span 6 ft, 150 PSF Superimposed Load 900 SF \$2.38 \$2.38 99.30% \$4,254.01 Installation Cost) RSMeans Building Construction Cost Data, 2011, 05 05 \$2,862.00 Weather Proofing/Coatings (Galvanized) 7.5 Tons \$400.00 \$0.00 0 0 95.40% 13.50, Paints and Protective Coatings Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building Hand Rail/Guard Rail 270 LF \$32.50 \$9.80 95.40% \$10,895.63 Construction Cost Date 2011, 05 52 Metal Railings Ladders/Stairs For Post-Tsunami Escape Steel ladder attached to exterior 20" wide bolted to RSMeans Building Construction Cost Data 2011, 05 51 \$1,841.22 20 VLF \$65.00 \$31.50 \$2.18 95.40% 33 - Vertical Metal Ladders concrete without cage Accordion Ladder for Escape after Tsunami, RSMeans Building Construction Cost Data 2011, 11 33 Disappearing Stairs, Heavy duty, 16'-0" ceiling \$172.00 95.40% \$2,999.38 10.10, Disappearing Stairway 2 ea \$1,400.00

Installation Equipment Cost per Location Interior Finishes Quantity Unit Unit Material Cost Cost Cost Factor **Total Cost** Comments RSMeans Square Foot Costs, 2011M.230 Fire Station, Interiors, Common Space and Upstairs Only (Materials, Installation and Equipment Cost included Interior Walls 1920 SF \$8.84 103.40% \$17.549.88 in Cost per Unit) RSMeans Square Foot Costs, 2011M.230 Fire Station, Interiors (Materials, Installation and Equipment Cost 1920 SF \$3.26 93.30% \$5,839.83 included in Cost per unit) **Painting** RSMeans Square Foot Costs, 2011M.230 Fire Station, Interiors (Materials, Installation and Equipment Cost Flooring 1920 SF \$2.25 106.40% \$4,596.48 included in Cost per Unit)

\$54,727.29

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									RSMeans Square Foot Costs, 2011M.230 Fire Station,
0.11151.1.1	4000	o=	40.00				400 000/	44.050.00	Interiors (Materials, Installation and Equipment Cost
Ceiling Finishes	1920	SF	\$2.20				103.30%	\$4,363.39	included in Cost per Unit) RSMeans Square Foot Costs, 2011M.230 Fire Station,
									· · ·
Interior Doors	1920	SF	\$2.27				101.80%	\$4,436.85	Interiors (Materials, Installation and Equipment Cost included in Cost per Unit)
Interior Doors	1920	31	\$2.27				101.60%	1 1	included in Cost per Offit)
								\$36,786.43	
	<u> </u>					T= · ·			1
Machanical	0	11	Cost per		Installation		Location	T-4-1 C4	Community
Mechanical	Quantity	Unit	Unit	Material Cost	Cost	Cost	Factor	Total Cost	Comments
									RSMeans Square Foot Costs, 2011, M.220, D30, HVAC
L	2500	0=	404.04				0= 100/	4-464-0-	(Material, Installation and Equipment Cost included in
Mechanical	3520	SF	\$21.84				97.10%	\$74,647.37	Cost per Unit)
HVAC Equipment								Included	
Rough-In								Included	
Finish Trim Testing/Commissioning								Included Included	
resting/ commissioning								\$74,647.37	
								\$74,047.37	
	T		Cost per		Installation	Equipment	Location	T	l
Electrical	Quantity	Unit	Unit	Material Cost	Cost	Cost	Factor	Total Cost	Comments
	Qualitity	SF	Oilit	Waterial Cost	Cost	COSC	Tactor	iotai cost	Comments
Electrical		31							DCManna Causaya Foot Costs 2011 M 220 Fire
Electrical Service/Distribution, 400 amp service,									RSMeans Square Foot Costs, 2011, M.220, Fire Station, D50, Electrical (Material, Installation and
panel board and feeders	3520	SF	\$1.44				100.50%	\$5,094.14	Equipment Cost included in Cost per Unit)
parier board and reeders	3320	31	71.44				100.50%	75,054.14	RSMeans Square Foot Costs, 2011, M.220, Fire
									Station, D50, Electrical (Material, Installation and
Lighting & Branch Wiring	3520	SF	\$6.46				100.50%	\$22,852,90	Equipment Cost included in Cost per Unit)
Eighting & Erdhen Willing	3320	3.	\$0.40				100.5070	722,032.30	RSMeans Square Foot Costs, 2011, M.220, Fire
									Station, D50, Electrical (Material, Installation and
Communications & Security	3520	SF	\$1.88				100.50%	\$6,650.69	Equipment Cost included in Cost per Unit)
,			72.00					70,000.00	RSMeans Square Foot Costs, 2011, M.230, Fire
									Station, D50, Electrical (Material, Installation and
Emergency generator, 15 kW	3520	SF	\$0.25				100.50%	\$884.40	Equipment Cost included in Cost per Unit)
			ų.				L	\$35,482.13	
			Cost per		Installation	Equipment	Location		
Plumbing	Quantity	Unit	Unit	Material Cost	Cost	Cost	Factor	Total Cost	Comments
Plumbing									
									RSMeans Square Foot Costs, 2011, M.220 Fire Station
									D20 Plumbing (Material, Installation and Equipment
Plumbing Fixtures	3520	SF	\$9.33				97.00%	\$31,856.35	Cost included in Cost per Unit)
									RSMeans Square Foot Costs, 2011, M.220 Fire Station
									D20 Plumbing (Material, Installation and Equipment
Gas fired water heater	3520	SF	\$2.65				97.00%	\$9,048.16	Cost included in Cost per Unit)
									RSMeans Square Foot Costs, 2011, M.220 Fire Station
	05							4.0	D20 Plumbing (Material, Installation and Equipment
Roof Drain System	3520	SF	\$1.18				97.00%	\$4,028.99	Cost included in Cost per Unit)
								\$44,933.50	
	_					-			
Fine Duetestien			Cost per		Installation	Equipment	Location		
Fire Protection	Quantity	Unit	Unit	Material Cost	Cost	Cost	Factor	Total Cost	Comments
Fire Protection	<u> </u>		<u> </u>			1			

							RSMeans Square Foot Costs, 2011, M.230 Fire Station,
							Fire Protection (Material, Installation and Equipment
Sprinklers	3520	SF	\$4.38		97.00%	\$14,955.07	Cost included in Cost per Unit)
							RSMeans Square Foot Costs, 2011, M.230 Fire Station,
							Fire Protection (Material, Installation and Equipment
Standpipes, wet, class III	3520	SF	\$1.23		97.00%	\$4,199.71	Cost included in Cost per Unit)
						\$19,154.78	

			Cost per		Installation	Equipment	Location		
Landscaping	Quantity	Unit	Unit	Material Cost	Costs	Costs	Factor	Total Cost	Comments
									RSMeans Building Construction Cost Data, 2011, 01 54
Mobilization	4	EA	\$0.00	\$0.00	\$69.00	\$116.00	108.20%	\$800.68	36 - Equipment Mobilization
Site Paving		SF					108.20%		
									RSMeans Assemblies Cost Data, 2011, G2040, 810,
									Flagpoles, (Equipment Cost included in Installation
Flagpoles, on grade, aluminum, tapered, 20' high	1	EA		\$970.00	\$585.00		108.20%	\$1,682.51	Cost)
									RSMeans Assemblies Cost Data, 2011, G2010 210
Driveways, 8" thick, 24' wide, bituminous conc.									Roadway Pavement (Equipment Cost included in
Paving	200	LF		\$138.00	\$63.00		108.20%	\$43,496.40	Installation Cost)
									RSMeans Assemblies Cost Data, 2011, G2030 120,
									Concrete Sidewalk (Equipment Cost included in
Concrete Sidewalks, 4" thick, 4" gravel base, 4' wide	150	LF		\$8.45	\$13.25		108.20%	\$3,521.91	Installation Cost)
Planting		SF							
									RSMeans Building Construction Cost Data, 2011, 32 84
Irrigation, residential system, custom, 1" supply	3000	SF		\$0.32	\$0.46		108.20%	\$2,531.88	23.10, Sprinkler Irrigation System
Furnish and place, truck dumped, screened, 4"									RSMeans Building Construction Cost Data, 2011, 32 91
deep	333	SY		\$4.13	\$0.38	\$0.25	108.20%	\$1,715.06	19.13 Topsoil Placement and Grading
							•		RSMeans Building Construction Cost Data, 2011, 32 92
Mechanical Seeding, 44 lb/MAY	333	SY		\$0.20	\$0.14	\$0.09	108.20%	\$154.93	19.13 Mechanical Seeding
								\$53,903.37	

SAFE HAVEN COST ESTIMATES: PAGE A-172

Map Number:	1		Minimum Structure Height (ft)	16
Structure Type:	Berm w/ RC Wall		Structure Capacity:	300
Location:	Taholah, Senior Apartments		Safe Haven Square Footage:	3000
Overall Site Square Footage	9000		Volume of Berm Materials (LCY	2667
Scope				Cost
Site Utilities				\$55,725
Excavation-Backfill				\$303,605
Concrete Retaining Wall Surrounding Berm				\$102,069
Landscaping Concrete				\$63,874
Stairs/Ramps/Guardrails				\$7,233
Landscaping				\$51,393
Construction Totals				\$785,995
Design Fees (8%)				\$62,880
General Conditions (10%)				\$78,600
Contractor Fees, O&P (15%)				\$117,899
Construction Contingency (5%)				\$39,300
Estimate/Design Contingency (10%)				\$78,600
Project Total				\$1,163,273

			Cost per		Installation		Location	l .	
Site Utilities	Quantity	Unit	Unit	Material Cost		Equipment	Factor	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	8	EA			\$116.00	\$185.00	100.00%	\$2,408.00	54 36.50 Mobilization
Domestic Water, Ductile Iron Class 250, MJ, 6"									
diameter	100	LF							Assuming 100' distance from service at street
									RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator 4'-6' deep	85	BCY			\$2.16	\$2.13	108.80%	\$396.74	23 16.13, Excavating Trench
									RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 6" Ductile Iron Piping, MJ	100	LF		\$14.60	\$10.70	\$2.72	108.80%	\$3,048.58	11 Water Utility Distribution Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	11	LCY		\$20.00			108.80%	\$239.36	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	11	LCY			\$7.64	\$14.10	108.20%	\$258.75	16, 31 23 23.20 Hauling
									RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	10	ECY			\$3.05	\$0.34	108.80%	\$36.88	23 23.16 Fill By Borrow & Utility Bedding
									RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	94	LCY			\$0.50	\$1.05	108.80%	\$158.52	23 23.17 General Fill
Storm Service									Assuming 200' of storm piping needed
									RSMeans, Building Construction Cost Data, 201, 31 23
Excavate, 3/4 CY Excavator, 6'-10' deep	250	BCY			\$2.88	\$2.85	108.80%	\$1,558.56	16.13 Excavating Trench
									RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 8" Bituminous Coated	200	LF		\$10.70	\$5.25	\$0.97	108.80%	\$3,681.79	41 Storm Utility Drainage Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	25	LCY		\$20.00			108.80%	\$544.00	conversation on June 29th, 2011.
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	25	LCY			\$7.64	\$14.10	108.20%	\$588.07	16, 31 23 23.20 Hauling
									RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	23	ECY			\$3.05	\$0.34	108.80%	\$84.83	23 23.16 Fill By Borrow & Utility Bedding
									RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	284	LCY			\$0.50	\$1.05	108.80%	\$478.94	23 23.17 General Fill
Site Drainage/Area Drains/Catch Basins									Assume 4 area drains for structure

								RSMeans Assemblies Cost Data, 2011, G3030 210,
								Manholes & Catch Basins (Equipment Cost included in
Concrete, Precast, 4' ID riser, 4' deep	4	EA	\$1,425.00	\$1,200.00	0.00%	108.80%	\$11,424.00	Installation Cost)
Electrical	100	LF						Assuming 100' distance from service at street
Electrical Service, includes service installation,								RSMeans Assemblies Cost Data, 2011, D 5010 120,
breakers, metering, 20' conduit & wire, 3 phase, 4								Electric Service, 3 Phase - 4 Wire, equipment included
wire, 120/208 volts, 60 A	1	EA	\$960.00	\$920.00		100.50%	\$1,889.40	in installation cost
								RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator, 4'-6' deep	85	BCY		\$2.16	\$2.13	108.80%	\$396.74	23 16.13 Excavating Trench
								RSMeans, Building Construction Cost Data, 2011, 33
Install & Test PVC, type EB 4 @ 3" diameter	100	LF	\$2.00	\$8.05		108.80%	\$1,093.44	71 19 Electrical Underground Ducts and Manholes
								RSMeans, Building Construction Cost Data, 2011, 26
Wire, 600 volt, copper type THW, solid, #12	100	CLF	\$11.95	\$36.50	0	100.50%	\$4,869.23	05 19.90 Wire
Utility Bedding, For Pipe & Conduit, Not Incl.								Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	46	LCY	\$20.00			108.80%	\$1,000.96	conversation on June 29th, 2011
								RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	46	LCY		\$7.64	\$14.10	108.20%	\$1,082.04	16, 31 23 23.20 Hauling
								RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	43	ECY		\$3.05	\$0.34	108.80%	\$158.60	23 23.16 Fill By Borrow & Utility Bedding
								RSMeans, Building Construction Cost Data, 2011, 31
Light Pole, Aluminum, 20' high, 1 arm bracket	8	EA	\$1,250.00	\$1,075.00	\$0.00	108.80%	\$20,236.80	23 23.17 General Fill
								RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	54	LCY		\$0.50	\$1.05	108.80%	\$91.07	23 23.17 General Fill

\$55,725.29

		1							
	_		Cost per		Installation	_	Location		
Excavation-Backfill	Quantity	Unit	Unit	Material Cost	Cost	Equipment	Factor	Total Cost	Comments
									RSMeans Building Construction Cost Data, 2011, 01 54
Mobilization	8	EA	\$0.00	\$0.00	\$69.00	\$116.00	100.00%	\$1,480.00	36 - Equipment Mobilization
									Is clear and grub needed for structure in urban
									setting? RSMeans Building Construction Cost Data,
Clear and Grub Site	1	ACRE	\$0.00	\$0.00	\$1,750.00	\$1,300.00	108.20%	\$3,300.10	2011, 31 11 10.10 Clear and Grub Site
									RSMeans Building Construction Cost Data, 2011, 02 21
Survey Site	1	ACRE		\$32.50	\$565.00	\$35.00	108.20%	\$684.37	13 Site Surveys
Fill Material for Berm									
									RSMeans Building Construction Cost Data, 2011, 31 05
Fill Material, Select Structural Fill, 1 1/2" minus									16, Aggregates for Earthwork, Select Structural Fill &
aggregate	2667	LCY		\$20.00	\$1.75	\$3.44	108.20%	\$72,681.55	Material Cost from Quigg Bros., Aberdeen, WA
									RSMeans Building Construction Data, 2011, 31 23
Compacting Backfill, 6"to 12" lifts, vibrating roller	2469	ECY			\$0.63	\$1.81	108.20%	\$6,518.72	23.13 Backfill
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	2667	LCY			\$7.64	\$14.10	108.20%	\$62,727.15	16, 31 23 23.20 Hauling
Stabilization Fabric, Polypropylene, 6oz/SY, 18"'									RSMeans Building Construction Cost Data, 2011, 32 11
lifts, 5082 SF per lift	3556	SY		\$1.48	\$0.09	\$0.03	108.20%	\$6,155.38	23 Aggregate Base Courses
Fill Material at Landscape Walls									
									RSMeans Building Construction Cost Data, 2011, 31 05
									16, Aggregates for Earthwork, Select Structural Fill &
Fill Material, Top Soil	2130	LCY		\$20.00	\$1.75	\$3.44	108.20%	\$58,041.99	Material Cost from Quigg Bros., Aberdeen, WA
Compacting Backfill, by hand, no compaction, light									RSMeans Building Construction Data, 2011, 31 23
soil	1972	ECY			\$19.65	\$0.00	108.20%	\$41,923.06	23.13 Backfill
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	2130	LCY			\$7.64	\$14.10	108.20%	\$50,092.61	16, 31 23 23.20 Hauling
			•	•				\$202 604 91	

\$303,604.91

		1							
Concrete Retaining Wall			Cost per		Installation	Equipment	Location		
Surrounding Berm	Quantity	Unit	Unit	Material Cost		Cost	Factor	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	8	EA			\$116.00	\$185.00	100.00%	\$2,408.00	54 36.50 Mobilization
									Built in two sections. First section under grade, 6'
									high, second section built on top of that, 16' high.
Reinforced Concrete Wall									Length of wall 270'.
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	1	EA			\$116.00	\$185.00	95.40%	\$287.15	54 36.50 Mobilization
									RSMeans Assemblies Cost Data, 2011, A 2010 110
Excavation 6 deep', common earth, 4000 SF	986	SF		\$5.30	\$0.00	\$0.00	108.20%	\$5,653.75	Building Excavation & Backfill
									RSMeans Assemblies Cost Data, 2011, A 2020 110,
									Walls, Cast-in-Place, add 25% to material cost to
Concrete Wall, below grade section, 6' high, 16"									include for additional reinforcing (Equipment included
thick, pumped concrete	164	LF		\$58.75	\$84.50	\$0.00	99.30%	\$23,373.61	in installation cost)
									RSMeans Assemblies Cost Data, 2011, A 2020 110,
									Walls, Cast-in-Place, add 25% to material cost to
Concrete Wall, above grade section, 16' high, 16"									include for additional reinforcing (Equipment included
thick, pumped concrete	164	LF		\$155.00	\$225.00	\$0.00	99.30%	\$62,003.29	in installation cost)
									RSMeans Assemblies Cost Data, 2011, A 2020 220,
									Subdrainage Piping (Equipment included in
Drainage piping, 6" diameter, PVC, perforated,	164	LF		\$4.05	\$4.04		108.20%	\$1,438.33	installation cost)
Aesthetic Treatments for Exposed Concrete									
									RSMeans Building Construction Cost Data, 2011, 03 35
Sandblast Concrete Heavy Treatment	1315	SF		\$1.46	\$3.31	\$0.52	99.30%	\$6,905.21	29.60
	_							¢102.000.22	

\$102,069.33

			Cost per		Installation		Location		
Landscaping Concrete	Quantity	Unit	Unit	Material Cost	Cost	Equipment	Factor	Total Cost	Comments
Stepped Concrete Wall 4' high									Length of walls 330' and 320'
4' high walls, cast-in-place, 8" thick, pumped concrete	329	LF		\$18.10	\$51.50	\$0.00	99.30%	\$22,712.78	RSMeans Assemblies Cost Data, 2011, A 2020 110, Walls, Cast-in-Place (Equipment included in installation cost)
Subdrainage Piping, 4" diameter, PVC, perforated	329	LF		\$2.04	\$3.77	\$0.00	108.20%	\$2,065.93	RSMeans Assemblies Cost Data, 2011, A 2020 220, Subdrainage Piping (Equipment Cost included in Installation Cost)
Aesthetic Treatments for Exposed Concrete									
Sandblast Concrete Heavy Treatment	1315	SF		\$1.46	\$3.31	\$0.52	99.30%	\$6,905.21	RSMeans Building Construction Cost Data, 2011, 03 35 29.60
Concrete or Gravel Platform									
Asphaltic Concrete Paving, 6" stone bse, 2" binder course, 1" toping	3000	SF		\$1.85	\$0.20	\$0.24	108.20%	\$7,433.34	RSMeans Building Construction Cost Data, 2011, 32 12 16.14 Asphaltic Concrete Paving
Haul of Material, 40 MPH, cycle 40 MPH	83	CY			\$7.64	\$14.10	108.20%	\$1,960.22	RSMeans Building Construction Cost Data, 2011, 31 05 16, 31 23 23.20 Hauling
Landscaping Stairs Up Berm									
Stairs 10' wide, cast on ground, 24 steps	240	LF Nose		\$4.28	\$16.30	\$0.18	95.40%	\$4,712.00	RSMeans Building Construction Cost Data 2011, 03 30 53.40, Concrete in Place
Stair Landing, cast on ground	200	SF		\$3.29	\$4.29	\$0.05	95.40%	\$1,446.26	RSMeans Building Construction Cost Data 2011, 03 30 53.40, Concrete in Place
									RSMeans Building Construction Cost Data 2011, 05 52 13.50 Railings, Pipe (add 30% to price for stair
Stair Handrail, 1 1/4" diameter, galvanized	60	LF		\$57.20	\$14.89	\$1.04	95.40%	\$4,126.15	handrail)

Sidewalks									
Flatwork in front of ground floor of tower, 6" thick with wire mesh	3500	SF	\$3.60	\$0.00		\$0.00	99.30%	\$12,511.80	Unit SF price only, per RSMeans Square Foot Costs, Residential Modifications/Adjustments/Alternatives, Sidewalks, 3000 PSI with mesh (Material, Installation and Equipment Cost included in Cost per Unit)
								\$63,873.69	
Stairs/Ramps/Guardrails	Quantity	Unit	Cost per Unit	Material Cost	Installation Costs	Equipment Cost	Location Factor	Total Cost	Comments
Mobilization of Equipment	2	EA			\$116.00	\$185.00	100.00%	\$602.00	RSMeans, Building Construction Cost Data, 2011, 01 54 36.50 Mobilization
Platform Perimeters Railing (Top wall at Berm)									
Hand Rail/Guard Rail, Galvanized, 2 rail, 1 1/2" diameter	164	LF		\$32.50	\$9.80		95.40%	\$6,630.87	Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building Construction Cost Date 2011, 05 52 Metal Railings
								\$7,232.87	
			Cost per		Installation	Equipment	Location	1	T
Landscaping	Quantity	Unit	Unit	Material Cost	Costs	Costs	Factor	Total Cost	Comments
Treated Wood Trellis Walkway 60' x 12'									
Cedar Wood, 2" thick, 40 PSF load at Maximum Span	720	SF		\$5.65	\$3.02	\$0.00	97.30%	\$6,073.86	RSMeans Assemblies Cost Data, 2011, B1010 266 Wood Deck (Equipment Cost included in Installation Cost)
Post & Beams	720	SF		\$9.10	\$4.17	\$0.00	97.30%	\$9,296.43	RSMeans Assemblies Cost Data, 2011, B1010 264 Wood Beam & Joist (Equipment Cost included in Installation Cost)
Berm/Site Landscaping									
Top Soil	330	LCY		\$33.00	\$24.00	\$0.00	108.20%	\$20,352.42	RSMeans Building Construction Cost Data, 2011, 32 9: 19.13 Top Dress by hand, 1 CY for 600 SF

\$7.64

\$0.14

\$0.46

\$0.20

\$0.32

\$14.10

\$0.09

\$0.00

108.20%

108.80%

108.20%

Haul of Material, 40 MPH, cycle 40 MPH

Mechanical Seeding, 44 lb/MAY

Irrigation System

330

667

9000

LCY

SY

SF

\$7,595.64 **\$51,392.72**

\$311.89

\$7,762.48 16, 31 23 23.20 Hauling

19.13 Mechanical Seeding

23.10, sprinkler irrigation system

RSMeans Building Construction Cost Data, 2011, 31 05

RSMeans Building Construction Cost Data, 2011, 32 92

RSMeans Building Construction Costs, 2011, 32 84

Map Number:	2	Min. Structure Hgt (ft)	16
Structure Type:	Berm	Structure Capacity:	400
Location:	Taholah, WA, Elementary School	Safe Haven(sq ft)	4000
Overall Site Square Footage:	12000	Volume of Berm Materia	al: 3556
Scope			Cost
Site Utilities			\$49,814
Excavation-Backfill			\$204,090
Concrete			\$150,584
Landscaping			\$31,887
Construction Totals			\$436,374
Design Fees (8%)			\$34,910
General Conditions (10%)			\$43,637
Contractor Fees, O&P (15%)			\$65,456
Construction Contingency (5%)			\$21,819
Estimate/Design Contingency (10%)			\$43,637
Project Total			\$645,834

			Material	Installation	Equipment	Location		
Site Utilities	Quantity	Unit	Cost	Cost	Cost	Factor	Total Cost	Comments
Mobilization of Equipment	6	EA		\$116.00	\$185.00	100.00%	\$1,806.00	Mobilization
Domestic Water, Ductile Iron Class 250, MJ, 6"								
diameter	100	LF				108.20%		Assuming 100' distance from service at street
Excavate, 3/4 CY Excavator 4'-6' deep	70	ВСҮ		\$2.16	\$2.13	108.20%	\$324.92	RSMeans, Building Construction Cost Data, 2011, 31 23 16.13, Excavating Trench
Install & Test, 6" Ductile Iron Piping, MJ	100	LF	\$14.60	\$10.70	\$2.72	108.20%	\$3,031.76	RSMeans, Building Construction Cost Data, 2011, 33 11 Water Utility Distribution Piping
Utility Bedding, For Pipe & Conduit, Not Incl. Compaction	12	LCY	\$20.00			108.20%	\$259.68	Quote per Quigg Bros, Aberdeen, WA, phone conversation on June 29th, 2011
Haul of Material, 40 MPH, cycle 40 MPH	12	LCY		\$7.64	\$14.10	108.20%	\$282.27	RSMeans Building Construction Cost Data, 2011, 31 05 16, 31 23 23.20 Hauling
Compacting Bedding In Trench	10	ECY		\$3.05	\$0.34	108.20%	\$36.68	RSMeans, Building Construction Cost Data, 2011, 31 23 23.16 Fill By Borrow & Utility Bedding
Backfill, General Fill By Dozer, No Compaction	75	LCY		\$0.50	\$1.05	108.20%	\$125.78	RSMeans, Building Construction Cost Data, 2011, 31 23 23.17 General Fill
Storm Drainage								Assuming 100' distance from service at street
Excavate, 3/4 CY Excavator, 6'-10' deep	60	ВСҮ		\$2.88	\$2.85	108.20%	\$371.99	RSMeans, Building Construction Cost Data, 2011, 31 23 16.13 Excavating, Trench
Install & Test, 12" Bituminous Coated	100	LF	\$11.50	\$8.30	\$1.53	108.20%	\$2,307.91	RSMeans, Building Construction Cost Data, 2011, 33 41 Storm Utility Drainage Piping
Utility Bedding, For Pipe & Conduit, Not Incl. Compaction	12	LCY	\$20.00			108.20%	\$259.68	Quote per Quigg Bros, Aberdeen, WA, phone conversation on June 29th, 2011
Haul of Material, 40 MPH, cycle 40 MPH	12	LCY		\$7.64	\$14.10	108.20%	\$282.27	RSMeans Building Construction Cost Data, 2011, 31 05 16, 31 23 23.20 Hauling
Compacting Bedding In Trench	10	ECY		\$3.05	\$0.34	108.20%	\$36.68	RSMeans, Building Construction Cost Data, 2011, 31 23 23.16 Fill By Borrow & Utility Bedding
Backfill, General Fill By Dozer, No Compaction	60	LCY		\$0.50	\$1.05	108.20%	\$100.63	RSMeans, Building Construction Cost Data, 2011, 31 23 23.17 General Fill

Area Drains/Catch Basins								Assuming 6 Area Drains/Catch Basins on Site
Concrete, Precast, 4' ID riser, 4' deep	6	EA	\$1,425.00	\$1,200.00	\$0.00	108.20%	\$17,041.50	RSMeans Assemblies Cost Data, 2011, G3030 210, Manholes & Catch Basins (Equipment Cost included in Installation Cost)
Electrical								Assuming 100' distance from service at street
Excavate, 3/4 CY Excavator, 4'-6' deep	70	ВСҮ		\$2.16	\$2.13	108.20%	\$324.92	RSMeans, Building Construction Cost Data, 2011, 31 23 16.13 Excavating Trench
Install & Test PVC, type EB 4 @ 3" diameter	100	LF	\$2.00	\$8.05		108.20%	\$1,087.41	RSMeans, Building Construction Cost Data, 2011, 33 71 19 Electrical Underground Ducts and Manholes
Utility Bedding, For Pipe & Conduit, Not Incl. Compaction	40	LCY	\$20.00	\$0.00	\$0.00	108.20%	\$865.60	Quote per Quigg Bros, Aberdeen, WA, phone conversation on June 29th, 2011
Haul of Material, 40 MPH, cycle 40 MPH	40	LCY		\$7.64	\$14.10	108.20%	\$940.91	RSMeans Building Construction Cost Data, 2011, 31 05 16, 31 23 23.20 Hauling
Compacting Bedding In Trench	35	ECY		\$3.05	\$0.34	108.20%	\$128.38	RSMeans, Building Construction Cost Data, 2011, 31 23 23.16 Fill By Borrow & Utility Bedding
Backfill, General Fill By Dozer, No Compaction	44	LCY		\$0.50	\$1.05	108.20%	\$73.79	RSMeans, Building Construction Cost Data, 2011, 31 23 23.17 General Fill
Light Pole, Aluminum, 20' high, 1 arm bracket	8	EA	\$1,250.00	\$1,075.00	\$0.00	108.20%	\$20,125.20	RSMeans, Building Construction Cost Data, 2011, 31 23 23.17 General Fill
		•	•			•	\$49,813.97	

Excavation-Backfill Quantity Unit Cost Cost Cost Total Cost Cost Cost Cost Cost Cost Cost Cost								1	
Site Preparation 3 acres \$320.00 \$525.00 108.20% \$2,742.87 RSMeans Building Construction Cost Data, 2011, 31 13 13, Select Clearing Survey Site 3 acres \$32.50 \$565.00 \$35.00 108.20% \$2,053.10 RSMeans Building Construction Cost Data, 2011, 02 21 13 Site Surveys Mobilization of Equipment 10 EA \$69.00 \$116.00 100.00% \$1,850.00 Mobilization Material Costs Fill Material, Select Structural Fill, 1 1/2" minus aggregate 3556 LCY \$20.00 \$1.75 \$3.44 108.20% \$96,908.73 Quigg Bros., Aberdeen, WA Haul of Material, 40 MPH, cycle 40 MPH 3556 LCY \$7.64 \$14.10 108.20% \$83,636.20 23.20 Hauling Placement of Material Compacting Backfill, 6"to 12" lifts, vibrating roller 3292 ECY \$0.63 \$1.81 108.20% \$8,691.62 RSMeans Building Construction Data, 2011, 31 23 23.13 Backfill				Material	Installation	Equipment	Location		
Survey Site 3 acres \$32.00 \$525.00 108.20% \$2,742.87 Clearing RSMeans Building Construction Cost Data, 2011, 31 13 13, Select Survey Site 3 acres \$32.50 \$565.00 \$35.00 108.20% \$2,053.10 Survey Survey Survey Site 3 acres \$32.50 \$565.00 \$35.00 108.20% \$2,053.10 Survey	Excavation-Backfill	Quantity	Unit	Cost	Cost	Cost	Factor	Total Cost	Comments
Clear & Grub 3 acres \$320.00 \$525.00 108.20% \$2,742.87 Clearing	Site Preparation								
Survey Site 3 acres \$32.50 \$565.00 \$35.00 108.20% \$2,053.10 RSMeans Building Construction Cost Data, 2011, 02 21 13 Site Survey Site 3 acres \$32.50 \$565.00 \$35.00 108.20% \$2,053.10 RSMeans Building Construction Cost Data, 2011, 01 54 36.50 Mobilization of Equipment 10 EA \$69.00 \$116.00 100.00% \$1,850.00 Mobilization Material Costs Fill Material, Select Structural Fill, 1 1/2" minus aggregate 3556 LCY \$20.00 \$1.75 \$3.44 108.20% \$96,908.73 Quigg Bros., Aberdeen, WA RSMeans Building Construction Cost Data, 2011, 31 05 16, 31 2 4 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2									RSMeans Building Construction Cost Data, 2011, 31 13 13, Selective
Survey Site 3 acres \$32.50 \$565.00 \$35.00 108.20% \$2,053.10 Surveys Mobilization of Equipment 10 EA \$69.00 \$116.00 100.00% \$1,850.00 Mobilization Material Costs Fill Material, Select Structural Fill, 1 1/2" minus aggregate 3556 LCY \$20.00 \$1.75 \$3.44 108.20% \$96,908.73 Quigg Bros., Aberdeen, WA Haul of Material, 40 MPH, cycle 40 MPH 3556 LCY \$7.64 \$14.10 108.20% \$83,636.20 23.20 Hauling Placement of Material Compacting Backfill, 6"to 12" lifts, vibrating roller 3292 ECY \$0.63 \$1.81 108.20% \$8,691.62 RSMeans Building Construction Data, 2011, 31 23 23.13 Backfills	Clear & Grub	3	acres		\$320.00	\$525.00	108.20%	\$2,742.87	Clearing
Mobilization of Equipment 10 EA \$69.00 \$116.00 100.00% \$1,850.00 Mobilization Material Costs Fill Material, Select Structural Fill, 1 1/2" minus aggregate 3556 LCY \$20.00 \$1.75 \$3.44 108.20% \$96,908.73 Quigg Bros., Aberdeen, WA Haul of Material, 40 MPH, cycle 40 MPH 3556 LCY \$7.64 \$14.10 108.20% \$83,636.20 Placement of Material Compacting Backfill, 6"to 12" lifts, vibrating roller 3292 ECY \$0.63 \$1.81 108.20% \$8,691.62 RSMeans Building Construction Data, 2011, 31 23 23.13 Backfill									RSMeans Building Construction Cost Data, 2011, 02 21 13 Site
Material Costs Fill Material, Select Structural Fill, 1 1/2" minus aggregate 3556 LCY \$20.00 \$1.75 \$3.44 108.20% \$96,908.73 Quigg Bros., Aberdeen, WA RSMeans Building Construction Cost Data, 2011, 31 05 16, 31 2 Haul of Material Placement of Material Compacting Backfill, 6"to 12" lifts, vibrating roller 3292 ECY \$0.63 \$1.81 108.20% \$8,691.62 RSMeans Building Construction Data, 2011, 31 23 23.13 Backfill	Survey Site	3	acres	\$32.50	\$565.00	\$35.00	108.20%	\$2,053.10	Surveys
Material Costs Fill Material, Select Structural Fill, 1 1/2" minus aggregate 3556 LCY \$20.00 \$1.75 \$3.44 108.20% \$96,908.73 Quigg Bros., Aberdeen, WA Haul of Material, 40 MPH, cycle 40 MPH 3556 LCY \$7.64 \$14.10 108.20% \$83,636.20 23.20 Hauling Placement of Material Compacting Backfill, 6"to 12" lifts, vibrating roller 3292 ECY \$0.63 \$1.81 108.20% \$8,691.62 RSMeans Building Construction Data, 2011, 31 23 23.13 Backfill									RSMeans, Building Construction Cost Data, 2011, 01 54 36.50
Fill Material, Select Structural Fill, 1 1/2" minus aggregate 3556 LCY \$20.00 \$1.75 \$3.44 108.20% \$96,908.73 Quigg Bros., Aberdeen, WA RSMeans Building Construction Cost Data, 2011, 31 05 16, 31 2 Placement of Material Compacting Backfill, 6"to 12" lifts, vibrating roller 3292 ECY \$0.63 \$1.81 108.20% \$8,691.62 RSMeans Building Construction Data, 2011, 31 23 23.13 Backfill	Mobilization of Equipment	10	EA		\$69.00	\$116.00	100.00%	\$1,850.00	Mobilization
Fill Material, Select Structural Fill, 1 1/2" minus aggregate 3556 LCY \$20.00 \$1.75 \$3.44 \$108.20% \$96,908.73 Quigg Bros., Aberdeen, WA RSMeans Building Construction Cost Data, 2011, 31 05 16, 31 2 23.20 Hauling Compacting Backfill, 6"to 12" lifts, vibrating roller 3292 ECY \$0.63 \$1.81 \$108.20% \$8,691.62 RSMeans Building Construction Data, 2011, 31 23 23.13 Backfill									
aggregate 3556 LCY \$20.00 \$1.75 \$3.44 108.20% \$96,908.73 Quigg Bros., Aberdeen, WA Haul of Material, 40 MPH, cycle 40 MPH 3556 LCY \$7.64 \$14.10 108.20% \$83,636.20 RSMeans Building Construction Cost Data, 2011, 31 05 16, 31 2 23.20 Hauling Placement of Material Compacting Backfill, 6"to 12" lifts, vibrating roller 3292 ECY \$0.63 \$1.81 108.20% \$8,691.62 RSMeans Building Construction Data, 2011, 31 23 23.13 Backfill	Material Costs								
Haul of Material, 40 MPH, cycle 40 MPH 3556 LCY \$7.64 \$14.10 108.20% \$83,636.20 RSMeans Building Construction Cost Data, 2011, 31 05 16, 31 2 23.20 Hauling Placement of Material Compacting Backfill, 6"to 12" lifts, vibrating roller 3292 ECY \$0.63 \$1.81 108.20% \$8,691.62 RSMeans Building Construction Data, 2011, 31 23 23.13 Backfill	Fill Material, Select Structural Fill, 1 1/2" minus								Aggregates for Earthwork, Select Structural Fill & Material Cost from
Haul of Material, 40 MPH, cycle 40 MPH 3556 LCY \$7.64 \$14.10 108.20% \$83,636.20 23.20 Hauling Placement of Material Compacting Backfill, 6"to 12" lifts, vibrating roller 3292 ECY \$0.63 \$1.81 108.20% \$8,691.62 RSMeans Building Construction Data, 2011, 31 23 23.13 Backfill	aggregate	3556	LCY	\$20.00	\$1.75	\$3.44	108.20%	\$96,908.73	Quigg Bros., Aberdeen, WA
Placement of Material Compacting Backfill, 6"to 12" lifts, vibrating roller 3292 ECY \$0.63 \$1.81 108.20% \$8,691.62 RSMeans Building Construction Data, 2011, 31 23 23.13 Backfill									RSMeans Building Construction Cost Data, 2011, 31 05 16, 31 23
Compacting Backfill, 6"to 12" lifts, vibrating roller 3292 ECY \$0.63 \$1.81 108.20% \$8,691.62 RSMeans Building Construction Data, 2011, 31 23 23.13 Backfill	Haul of Material, 40 MPH, cycle 40 MPH	3556	LCY		\$7.64	\$14.10	108.20%	\$83,636.20	23.20 Hauling
Compacting Backfill, 6"to 12" lifts, vibrating roller 3292 ECY \$0.63 \$1.81 108.20% \$8,691.62 RSMeans Building Construction Data, 2011, 31 23 23.13 Backfill									
	Placement of Material								
	Compacting Backfill, 6"to 12" lifts, vibrating roller	3292	ECY		\$0.63	\$1.81	108.20%	\$8,691.62	RSMeans Building Construction Data, 2011, 31 23 23.13 Backfill
Stabilization Fabric, Polypropylene, 6oz/SY, 18" RSMeans Building Construction Cost Data, 2011, 32 11 23 Aggr	Stabilization Fabric, Polypropylene, 6oz/SY, 18"'								RSMeans Building Construction Cost Data, 2011, 32 11 23 Aggregate
lifts, 5082 SF per lift 4741 SY \$1.48 \$0.09 \$0.03 108.20% \$8,207.17 Base Courses	lifts, 5082 SF per lift	4741	SY	\$1.48	\$0.09	\$0.03	108.20%	\$8,207.17	Base Courses

\$204,089.68

			Material	Installation		Location		1
Concrete	Quantity	Unit	Cost	Cost	Equipment	Factor	Total Cost	Comments
								RSMeans, Building Construction Cost Data, 2011, 01 54 36.50
Mobilization of Equipment	10	EA		\$116.00	\$185.00	100.00%	\$3,010.00	Mobilization

Tsunami Wave Inundation Concrete Wall	190	LF						Based on square root of the berm safe haven area times three walls
Excavation, 6' deep	1138	SF	\$0.00	\$5.30	\$0.00	108.20%	\$6,528.38	Excavation & Backfill, 6' deep, sand, gravel, or common earth. (Equipment Cost included in Installation)
Walls, Cast in place, 6' deep, pumped, 12" thick,	190	LF	\$46.25	\$81.00	\$0.00	99.30%	\$23,974.98	Place, 10' pumped, 12" thick (Equipment Cost included in Installation)
Subdrainage Piping, 4" diameter, PVC, perforated	190	LF	\$2.04	\$3.77	\$0.00	99.30%	\$1,094.65	RSMeans Assemblies Cost Data, 2011, A 2020 220, Subdrainage Piping (Equipment Cost included in Installation)
Stepped Concrete Wall 4' high								88', 86', 82', 72', 60' length walls, 12" thick, 5' high.
5' high wall, pumped, 8" thick	759	LF	\$33.75	\$77.00	\$0.00	99.30%	\$83,464.97	Place, 6' pumped, 8" thick. Material costs have been increased 25% for additional reinforcing required for seismic event and tsunami.
Subdrainage Piping, 4" diameter, PVC, perforated	759	LF	\$2.04	\$3.77	\$0.00	108.20%	\$4,771.06	RSMeans Assemblies Cost Data, 2011, A 2020 220, Subdrainage Piping (Equipment Cost included in Installation)
Sandblast Concrete Heavy Treatment	3036	SF	\$1.46	\$3.31	\$0.52	99.30%	\$15,946.90	RSMeans Building Construction Cost Data, 2011, 03 35 29.60
Concrete or Gravel Platform								
Asphaltic Concrete Paving, 6" stone bse, 2" binder course, 1" toping	4000	SF	\$1.85	\$0.20	\$0.24	108.20%	\$9,911.12	RSMeans Building Construction Cost Data, 2011, 32 12 16.14 Asphaltic Concrete Paving
Haul of Material, 40 MPH, cycle 40 MPH	80	СҮ		\$7.64	\$14.10	108.20%	\$1,881.81	RSMeans Building Construction Cost Data, 2011, 31 05 16, 31 23 23.20 Hauling

\$150,583.87

Landscaping	Quantity	Unit	Material Costs	Installation Costs	Equipment Costs	Location Factor	Total Cost	Comments
Landscaping	Quantity	Oilit	COSES	COSES	COSES	Tactor	iotai cost	
AA LUU VIII GE V	6			¢446.00	6405.00	400.000/	¢4 000 00	RSMeans, Building Construction Cost Data, 2011, 01 54 36.50
Mobilization of Equipment	6	EA		\$116.00	\$185.00	100.00%	\$1,806.00	Mobilization
Berm Landscaping								
,, ,								RSMeans Building Construction Cost Data, 2011, 32 91 19.13 Top
Top Soil	222	LCY	\$33.00	\$24.00	\$0.00	108.20%	\$13,705.33	Dress by hand, 1 CY for 600 SF
Hydro-Seed	1333	SY	\$0.20	\$0.10	\$0.06	108.20%	\$519.36	Mechanical Seeding, 44lb/sy
Top Soil at Stepped Concrete Walls	56	LCY	\$33.00	\$24.00	\$0.00	108.20%	\$3,467.21	
Fencing at Top of Berm, chain link, 2" post, 1 5/8"								RSMeans Assemblies Cost Data, 2011, G2040 105 Fence &
rail, 9 ga. Galv. Wire 5' high	190	LF	\$17.65	\$4.82	\$0.00	95.40%	\$4,067.27	Guardrails (Equipment Costs are included in Installation)
								RSMeans Building Construction Costs, 2011, 32 84 23.10, sprinkler
Irrigation System	12000	SF	\$0.32	\$0.46	\$0.00	108.20%	\$10,127.52	irrigation system

\$31,886.69

Map Number:	3	Minimum Structure Height:	16
Structure Type:	Tower	Structure Capacity:	200
Location:	Taholah, WA, Park Place	Safe Haven Square Footage:	2000
Levels	1	Columns Required:	9
		Piles per Column:	3
Scope			Cost
Site Utilities			\$15,257
Excavation-Backfill			\$22,547
Foundation			\$173,463
Structure			\$122,104
Roofing			\$44,173
Stairs/Ramps/Guardrails			\$49,617
Fire Protection			\$15,368
Total			\$442,529
Design Fees (8%)			\$35,402
General Conditions (10%)			\$44,253
Contractor Fees, O&P (15%)			\$66,379
Construction Contingency (5%)			\$22,126
Estimate/Design Contingency (10%)			\$44,253
Project Total			\$654,942

		l	Cost per		Installation	Equipment	Location	1	
Site Utilities	Quantity	Unit	Unit	Material Cost		Cost	Factor	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	10	EA			\$116.00	\$185.00	100.00%	\$3,010.00	54 36.50 Mobilization
Fire Water, Ductile Iron Class 250, MJ, 4" diameter	50	LF		\$16.05					Assuming 50' distance from service at street
									RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator 4'-6' deep	35	BCY			\$2.16	\$2.13	108.20%	\$162.46	23 16.13, Excavating Trench
									RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 4" Ductile Iron Piping, MJ	50	LF		\$12.50	\$8.55	\$2.17	108.20%	\$1,256.20	11 Water Utility Distribution Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	6	LCY		\$20.00			108.20%	\$129.84	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	6	LCY			\$7.64	\$14.10	108.20%	\$141.14	16, 31 23 23.20 Hauling
									RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	5	ECY			\$3.05	\$0.34	108.20%	\$18.34	23 23.16 Fill By Borrow & Utility Bedding
									RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	38	LCY			\$0.50	\$1.05	108.20%	\$63.73	23 23.17 General Fill
Storm Service									Assuming 50' distance from service at street
									RSMeans, Building Construction Cost Data, 201, 31 23
Excavate, 3/4 CY Excavator, 6'-10' deep	60	BCY			\$2.88	\$2.85	108.20%	\$371.99	16.13 Excavating Trench
									RSMeans, Building Construction Cost Data, 2011, 33
Install & Test, 8" Bituminous Coated	50	LF		\$10.70	\$5.25	\$0.97	108.20%	\$915.37	41 Storm Utility Drainage Piping
Utility Bedding, For Pipe & Conduit, Not Incl.									Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	6	LCY		\$20.00			108.20%	\$129.84	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	6	LCY			\$7.64	\$14.10	108.20%	\$141.14	16, 31 23 23.20 Hauling
									RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	5	ECY			\$3.05	\$0.34	108.20%	\$18.34	23 23.16 Fill By Borrow & Utility Bedding

								RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	38	LCY		\$0.50	\$1.05	108.20%	\$63.73	23 23.17 General Fill
Site Drainage/Area Drains/Catch Basins								Assume 1 area drain for structure
								RSMeans Assemblies Cost Data, 2011, G3030 210,
Concrete, Precast, 4' ID riser, 4' deep	1	EA	\$1,425.00	\$1,200.00	0.00%	108.20%	\$2,840.25	Manholes & Catch Basins
Electrical	50	LF						Assuming 50' distance from service at street
Electrical Service, includes service installation,								RSMeans Assemblies Cost Data, 2011, D 5010 120,
breakers, metering, 20' conduit & wire, 3 phase, 4								Electric Service, 3 Phase - 4 Wire, equipment included
wire, 120/208 volts, 60 A	1	EA	\$960.00	\$920.00		100.50%	\$1,889.40	in installation cost
								RSMeans, Building Construction Cost Data, 2011, 31
Excavate, 3/4 CY Excavator, 4'-6' deep	35	BCY		\$2.16	\$2.13	108.20%	\$162.46	23 16.13 Excavating Trench
								RSMeans, Building Construction Cost Data, 2011, 33
Install & Test PVC, type EB 4 @ 3" diameter	50	LF	\$2.00	\$8.05		108.20%	\$543.71	71 19 Electrical Underground Ducts and Manholes
								RSMeans, Building Construction Cost Data, 2011, 26
Wire, 600 volt, copper type THW, solid, #12	50	CLF	\$11.95	\$36.50	0	100.50%	\$2,434.61	05 19.90 Wire
Utility Bedding, For Pipe & Conduit, Not Incl.								Quote per Quigg Bros, Aberdeen, WA, phone
Compaction	19	LCY	\$20.00			108.20%	\$411.16	conversation on June 29th, 2011
								RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	19	LCY		\$7.64	\$14.10	108.20%	\$446.93	16, 31 23 23.20 Hauling
								RSMeans, Building Construction Cost Data, 2011, 31
Compacting Bedding In Trench	19	ECY		\$3.05	\$0.34	108.20%	\$69.69	23 23.16 Fill By Borrow & Utility Bedding
								RSMeans, Building Construction Cost Data, 2011, 31
Backfill, General Fill By Dozer, No Compaction	22	LCY		\$0.50	\$1.05	108.20%	\$36.90	23 23.17 General Fill

\$15,257.23

			Cost per		Installation	Equipment	Location		
Excavation-Backfill	Quantity	Unit	Unit	Material Cost	Cost	Cost	Factor	Total Cost	Comments
									RSMeans Building Construction Cost Data, 2011, 01 54
Mobilization	8	EA	\$0.00	\$0.00	\$69.00	\$116.00	100.00%	\$1,480.00	36 - Equipment Mobilization
									Is clear and grub needed for structure in urban
									setting? RSMeans Building Construction Cost Data,
Clear and Grub Site	0.06	ACRE	\$0.00	\$0.00	\$1,750.00	\$1,300.00	108.20%	\$189.40	2011, 31 11 10.10 Clear and Grub Site
									Grade Beams, 3' wide, 3' deep RSMeans Building
									Construction Cost Data, 2011, 31 23 16.16 3/4 CY
									bucket, (Price Included in grade beam foundation
Excavation for Grade Beams	89	BCY	\$0.00	\$0.00	\$0.00	\$0.00	108.20%	\$0.00	price)
									1225 SF mat, 2' deep. RSMeans Building Construction
Excavation for slab, subgrade and capillary break	148	BCY	\$0.00	\$0.00	\$7.20	\$7.17	108.20%	\$2,303.46	Cost Data, 2011, 31 23 16.16 3/4 CY bucket
Removal of Foundation Spoils, Haul of Material, 40									RSMeans Building Construction Cost Data, 2011, 31 05
MPH, cycle 40 MPH	297	LCY			\$7.64	\$14.10	108.20%	\$6,985.97	16, 31 23 23.20 Hauling
									Quote per Quigg Bros, Aberdeen, WA, phone
Backfill Slab, subgrade, capillary break	257	ECY		\$20.00			108.20%	\$5,552.78	conversation on June 29th, 2011
									RSMeans Building Construction Cost Data, 2011, 31 05
Haul of Material, 40 MPH, cycle 40 MPH	257	ECY			\$7.64	\$14.10	108.20%	\$6,035.88	16, 31 23 23.20 Hauling
								\$22,547.48	

			Cost per		Installation	Equipment	Location		
Foundation	Quantity	Unit	Unit	Material Cost	Cost	Cost	Factor	Total Cost	Comments
									Piling needs to 2x the height of the structure which is
Piling									23-35'?
									Per phone conversation with Quigg Bros, Aberdeen,
Mobilization for piling	1	EA	\$12,000.00	\$0.00	\$0.00	\$0.00	100.00%	\$12,000.00	WA on June 29th, 2011

									Driven pipe piles 40' long, 18"x.5", per phone
									conversation with Quigg Bros, Aberdeen, WA on June
									29th,2011. Equipment Included in Material/Labor
Battered Piles, 18" Diameter, 30'-40' Deep	27	EA	\$0.00	\$3,500.00	\$1,200.00	\$0.00	100.00%	\$126,900.00	Cost
									RSMeans Assemblies Cost Data 2011, A1010 250 Pile
									Caps (Equipment Costs are included in Installation
Pile Caps, Cap Size 6'-6" x 3'-6" x 37"	9	EA	\$0.00	\$370.00	\$540.00		99.30%	\$8,132.67	Cost)
Foundation Cast-In-Place/Tower									
									RSMeans Assemblies Cost Data 2011, A 1020 210
Grade Beams 30' span, 28" deep, 14" wide, 2 KLF									Grade Beams (Equipment Cost is included in
load	268	LF		\$34.50	\$53.00		99.30%	\$23,314.36	Installation Cost)
									Piling needs to 2x the height of the structure which is
Foundation Cast-In-Place/ Footings for Ramp									23-35'?
									RSMeans Assemblies Cost Data, 2011, A1010 210,
Spread Footings, load 75K, soil capacity 6 KSF, 4'-0"									Spread Footings (Equipment Cost is included in
sq x 12" deep	12	EA	\$0.00	\$94.50	\$167.00	\$0.00	99.30%	\$3,116.03	Installation Cost)

\$173,463.07

			Cost per		Installation	Equipment	Location		
Structure	Quantity	Unit	Unit	Material Cost	Cost	Costs	Factor	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	10	EA			\$116.00	\$185.00	100.00%	\$3,010.00	54 36.50 Mobilization
									Beam and Column sizes are not determined and
									estimate takes in "best guess" to assume sizes for this
Concrete Structure								\$0.00	project.
									RSMeans Assemblies Cost Data, 2011, B1010 201, CIP
Concrete Columns, rated for 1000 K load, 26"									Column, Round Tied (Equipment Cost included in
round, concrete strength, 6000 PSI	144	VLF		\$158.00	\$7.85	\$0.00	99.30%	\$23,715.22	Installation Cost)
Slab-On-Grade, 6" thick, non-industrial, reinforced,									RSMeans Assemblies Cost Data, 2011, A1030 120,
Ground Floor	2000	SF		\$3.01	\$2.97		99.30%	\$11,876.28	Slab on Grade, Plain & Reinforced
									RSMeans Assemblies Cost Data, 2011, B1010 229
Cast-In-Place Beam and Slab, Two Way, 30x30, 351									Precast Plank with No Topping (Equipment Cost
PSF, 9" thick slab, 2nd Floor (evacuation level)	2000	SF		\$8.95	\$13.60		99.30%	\$44,784.30	included in Installation Cost)
									Wood structure, hip roof to support galvanized steel
Wood Structure									panels
									Supply quote from Levee Lumber, Hoquiam, WA,
									RSMeans Assemblies Cost Data, 2011, B1020 102,
									Roof Construction, Wood/Flat or Pitched (Equipment
Wood Columns 12"x12", 10' High, Select Structural	90	VLF		\$9.85	\$2.62		97.30%	\$1,092.00	Cost included in Installation Cost)
									Supply quote from Levee Lumber, Hoquiam, WA,
									RSMeans Building Construction Cost Data 2011, Glued
Perimeter Joists, 3 1/8"x12", GLM 30' span	179	LF		\$4.85	\$1.95	\$22.00	97.30%	\$5,012.80	Laminated Beams 06 18 13.20
									RSMeans Assemblies Cost Data, 2011, B1020 102,
									Roof Construction, Wood/Flat or Pitched (Equipment
2x10 Wood Joist w/ 1/2" CDX, 12" OC	2000	SF		\$2.02	\$2.05		97.30%	\$7,920.22	Cost included in Installation Cost)
							<u>-</u>		RSMeans Assemblies Cost Data, 2011, B1020 102,
Roof, wood/pitched, 3"x12" 12" OC w/ sheating									Roof Construction, Wood/Flat or Pitched (Equipment
plywood on roof, 5/16" CDX	2800	SF		\$4.59	\$2.62		97.30%	\$19,642.92	Cost included in Installation Cost)
Weather Proofing/Coatings add 15% (Premium for							<u>-</u>		Assumed that PTS wood is 15% more compared on
PTS Wood)	\$33,667.94	%	15.00%					\$5,050.19	price difference shown in means

\$122,103.94

Roofing	Quantity	Unit	Cost per Unit	Material Cost	stallation Cos	uipment Co	Location Facto	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	4	EA			\$116.00	\$185.00	100.00%	\$1,204.00	54 36.50 Mobilization
									Hip and ridge style roof, peak of roof 15'. (Equipment
Roofing/Hip and Ridge Roof Steel Panels									Cost is included in Installation Cost)
									RSMeans Assemblies Cost Data, 2011, B3010 135,
Flat Roof Steel Panels, Flat Seam, Copper, 1/4" min.									Formed Metal (Equipment Cost is included in
slope, 20 oz, 1.2 PSF	2800	SF		\$9.50	\$5.80		100.30%	\$42,968.52	Installation Cost)

\$44,172.52

Stairs/Ramps/Guardrails	Quantity	Unit	Cost per Uni	Material Cost	nstallation Cos	uipment Co	Location Factor	Total Cost	Comments
									RSMeans, Building Construction Cost Data, 2011, 01
Mobilization of Equipment	6	EA			\$116.00	\$185.00	100.00%	\$1,806.00	54 36.50 Mobilization
									Beam and Column sizes are not determined and
									estimate takes in "best guess" to assume sizes for this
Exterior Ramp, Rises 20', 5' wide									project.
									RSMeans Assemblies Cost Data, 2011, B1010, 208
Steel Columns, 20' high, Wide Flanged, 6", 12									Steel Columns (Equipment Cost is included in
locations	192	VLF		\$26.50	\$7.85	\$0.00	95.40%	\$6,291.82	Installation Cost)
W Shape Beams and Girders, bay size 15X20,, Total									RSMeans Building Construction Cost Data, 2011,
Load 263 PSF.	800	SF		\$11.70	\$3.82	\$1.50	95.40%	\$12,989.66	Structural Steel Framing, 05 12 23.17
									RSMeans Assemblies Cost Data, 2011, B1010 258,
Floor Construction, Metal Deck/Concrete Fill, Deck									Metal Deck/Concrete Fill (Equipment Cost is included
Span 6 ft, 150 PSF Superimposed Load	800	SF		\$2.38	\$2.38		95.40%	\$3,632.83	in Installation Cost)
									RSMeans Building Construction Cost Data, 2011, 05 05
Weather Proofing/Coatings (Galvanized)	7.5	Tons	\$400.00	\$0.00	0	0	95.40%	\$2,862.00	13.50, Paints and Protective Coatings
									Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building
Hand Rail/Guard Rail	270	LF		\$32.50	\$9.80		95.40%	\$10,895.63	Construction Cost Date 2011, 05 52 Metal Railings
Ladders/Stairs									
Steel ladder to attic space 20" wide bolted to									RSMeans Building Construction Cost Data 2011, 05 51
concrete without cage	10	VLF		\$65.00	\$31.50	\$2.18	95.40%	\$920.61	33 - Vertical Metal Ladders
Accordion Ladder for Escape after Tsunami,									RSMeans Building Construction Cost Data 2011, 11 33
Disappearing Stairs, Heavy duty, 16'-0" ceiling	2	ea		\$1,400.00	\$172.00		95.40%	\$2,999.38	10.10, Disappearing Stairway
Platform Perimeters Railing (120 LF for each									
platform, 2 locations)									
				1					Galvanized, 2 Rail, 1 1/2" diameter, RSMeans Building
Hand Rail/Guard Rail	179	LF		\$32.50	\$9.80		95.40%	\$7,218.78	Construction Cost Date 2011, 05 52 Metal Railings

\$49,616.72

			Cost per		Installation	Equipment	Location		
Fire Protection	Quantity	Unit	Unit	Material Cost	Costs	Cost	Factor	Total Cost	Comments
Fire Protection, Wet Pipe System									
									RSMeans Building Construction Cost Data, 2011, 01 54
Mobilization	4	EA		\$69.00	\$116.00		100.00%	\$740.00	36 - Equipment Mobilization
									RSMeans Square Foot Costs, 2011, D4010 410, Wet
									Pipe Sprinkler Systems (Equipment Cost included in
First Floor, 2000 SF, Light Hazard	2000	SF		\$4.50	\$3.04		97.00%	\$14,627.60	Installation Cost)
				•	•		•	645 267 60	

\$15,367.60