US Army Corps of Engineers®
New York District

Harlem River Shore Based Measures Actionable Elements

Cost Engineering Appendix

New York – New Jersey Harbor and Tributaries Coastal Storm Risk Management Feasibility Study

Appendix B1

July 2025

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LIST OF ACRONYMS

AE	Actionable Element
AMF	Access Material Factor
ARA	Abbreviated Risk Analysis
CCI	Construction Cost Index
CSRM	Coastal Storm Risk Management
CWCCIS	Civil Works Construction Cost Index System
CWWBS	Civil Works Work Breakdown Structure
ENR	Engineering News Record
ER	Engineer Regulation
G&A	General and Administrative
GIS	Geographic Information System
NYNJHAT	New York–New Jersey Harbor and Tributaries Coastal Storm Risk Management Feasibility Study
HOOH	Home Office Overhead
JOOH	Job Office Overhead
MCASES	Micro-Computer Aided Cost Estimating System
MCI	Materials Cost Index
MCLEM	Marine Crew Labor and Equipment
MII	MCASES Second Generation
MPT	Maintenance and Protection of Traffic
NYD	New York District
SBM	Shore-Based Measures
SIOH	Supervision, Inspection, and Overhead
USACE	United States Army Corps of Engineers

1 Introduction

The New York District (NYD) Corps of Engineers is conducting a feasibility level study to evaluate coastal storm risk management (CSRM) on the New York New Jersey Harbors and Tributaries Study (NYNJHAT) area.

As the next step, the study will seek construction authorization for limited elements referred to as Actionable Elements (AEs). The AEs included in this task order will primarily be comprised of critical infrastructure facilities.

This appendix presents the cost estimate developed for one of the AEs along the East Harlem River Drive, to achieve a Class 4 cost estimate per United State Army Corps of Engineers (USACE) Engineer Regulation (ER) 1110-2-1302. The cost estimate was developed in the Micro-Computer Aided Cost Estimating System (MCASES) Second Generation (MII) cost estimate software and followed the cost estimate approach developed for the NYNJHAT.

2 Cost Estimating Methodology

2.1 Scope of Work Summary

This section presents a narrative on the development of the construction cost estimate for the following elements:

2.2 Cost Estimate Development

Project quantities were developed for typical measure cross-sections primarily using Microsoft Excel calculations for major elements following design development. Linear foot costs for typical measures were developed in MII as assemblies, relying heavily on cost book data. Within MII, the quantity measure assemblies are multiplied by the length of each measure attributed to the specific site.

The typical features developed in MII include:

- Floodwall
- Deployable Flood Barrier – Vehicle Gate
- Anchored Combi-wall
- Tunnel Span

Site specific modifiers, such as population density, site access, and staging conditions, were applied as productivity, marine crew labor and equipment (MCLEM), and access material factor (AMF) markups within MII to account for construction cost variability at each site.

2.3 Relocation Cost Estimating

Relocation costs include removing, relocating, or reconstructing property of others, such as roads, railroads, cemeteries, utilities, buildings, and other structures, and includes real estate planning and acquisition expenses. For the NYNJHAT, relocations costs for each project were developed at a Class 5 level without site-specific investigations or surveys. A parametric formula for relocation costs was developed from recent similar projects in the Northeast using a best-fit exponential equation relating site-specific characteristics of the project area to the cost per foot for

relocations. A linear foot unit cost of $13,263 (2022Q3) was escalated to the effective price level and adopted for this cost estimate.

3 Cost Estimate Assumptions

The cost estimate was developed in MII with the assumptions described in this section.

3.1 Effective Price Level

The price level for the cost estimate is Q4 2025 USD.

3.2 Cost Book

Cost book items are from the 2024 MII English Cost Book.

3.3 Labor Rates

Labor rates are Davis-Bacon prevailing wages based on General Decision Number: NY20250003 05/23/2025, and General Decision Number: NY20250001 02/21/2025, downloaded from SAM.gov June 2, 2025.

3.4 Equipment Rates

Equipment rates are from the MII Equipment 2024 Region 1 library.

3.5 Material Rates

Material costs were generally derived from the 2024 MII English Cost Book. For larger cost drivers in the project (e.g., steel hydraulic gates and tunnel span truss), reference projects were used to develop material costs.

3.6 Direct Cost Markups

3.6.1 Effective Price Level Markups

The following escalation factors were applied to escalate the Cost Book items to the current price level (2025 Q4):

- 8.01%%; 2022 Q3 to current (2025 Q4)(For Relocations). Calculated using CWICCS 30 September 2024, 02-Relocations
- 2.80%; 2024 Q2 USD to 2025 Q4 USD (for Equipment). Calculated using ENR (Engineering News Record) Construction Cost Index (CCI) for USA (date range Jan-24 to Jun-25).
- 1.75%; 2024 Q2 USD to 2025 Q4 USD (for Cost Book materials). Calculated using ENR Materials Cost Index (MCI) for USA (date range Jan-24 to Jun-25).

3.6.2 Productivity Markups

Productivity is applied on all costs built up with a crew-based approach. A productivity markup is applied to account for major productivity drivers in marine construction (e.g., Onboard and Warm-up, Disembark, Equipment Downtime, etc.). The total productivity markup for Harlem River SBM AE is 64.8% as established during NYNJHAT through a Geographic Information System (GIS) evaluation of site-specific conditions. See Section 3.6.3 for a description of site-specific modifiers.

3.6.3 Site-Specific Modifier Markups

As adopted for NYNJHAT, the baseline linear foot cost assemblies created from RSMeans Cost Book cost items were modified for site-specific conditions. Site-specific markups were applied to reflect the staging, site access, and population density conditions for along the Harlem River SBM AE. The site-specific modifier score ranged from 3 to 9 points with a lower score correlating to poor staging conditions, poor site access, and/or population dense project sites. Markups include:

- Marine Crew Labor and Equipment Markup (70%) – the baseline feature assembly cost estimate assumes land-based construction. This markup is applied to items that will require marine-based construction (i.e. anchored combi-wall and tunnel span).
- Access Material Factor (50%) – accounts for increased material cost due to poor site access (e.g., costs associated with trucking, barges, and transloading material to job site from remote laydown area).
- Phasing/Maintenance and Protection of Traffic (MPT)/Traffic – A 10% markup is applied to upland cost items (i.e., floodwall and vehicular gate).

3.6.4 Overtime Markups

Overtime is applied on all costs built up with a crew-based approach. The overtime markup assumes (5) 10-hour days per week with a 1.5 multiplier after (5) 8-hour days per week.

3.6.5 Additional Direct Cost Markups

The following additional direct cost markups were applied to the cost estimate:

- 10% allowance for mobilization and demobilization
- 2% allowance for general conditions
- 2% allowance for appurtenances, transitions, existing structure modifications, etc.

3.6.6 Sales Tax

An 8.875% sales tax has been applied to the direct cost of materials (New York State – 4.0%, New York City – 4.875).

3.7 Contractor Markups

3.7.1 Contracting Strategy

Contracting assumptions for the application of contractor markups in the MII cost estimate are:

- The prime contractor will self-perform the floodwall and anchored combi-wall construction. A sub-contractor will construct the deployable flood barrier and tunnel span. The above strategy results in
- The project delivery method will be design-bid-build.

3.7.2 Job Office Overhead

Job Office Overhead (JOOH) is also referred to as general conditions or field office overhead. The general contractor's JOOH is applied as a running percentage at 13%. The subcontractor's JOOH is applied as a running percentage at 5%.

3.7.3 Home Office Overhead

Home Office Overhead (HOOH) is commonly referred to as general and administrative (G&A) costs. The general contractor's HOOH is applied as a running percentage at 3.9%. The subcontractor's profit HOOH is applied as a running percentage at 5%.

3.7.4 Profit

As adopted for the NYNJHAT, the general contractor's profit is applied as a running percentage at 11% and applied for sub-contractors a running percentage at 10%.

3.7.5 Bonds

The general contractor's bonds are applied as a running percentage 2% and applied for sub-contractors a running percentage at 0%.

3.7.6 Insurance

The general contractor's insurance premium costs are applied as a running percentage 3% and applied for sub-contractors a running percentage at 0%.

3.8 Owner Markups

The following Owner Markups are included in the MII cost estimate.

3.8.1 Escalation to Mid-point of Construction

Escalation to Mid-point of Construction is not included in this estimate. This was requested by USACE to match inputs in the USACE Total Project Cost Summary (TPCS) spreadsheet.

3.8.2 Contingency

Contingencies are not included in the MII cost estimate. This was requested by USACE to match inputs in the USACE Total Project Cost Summary (TPCS) spreadsheet.

3.8.3 SIOH

Supervisions, Inspection, and Overhead (SIOH) is not included in the MII cost estimate.

4 Construction Cost Estimate Summary

The cost estimate by Civil Works Work Breakdown Structure (CWWBS) is presented in Table 1.

Table 1: Harlem River SBM AE Cost Summary Table

Feat. Acct	Description	Total Cost
02	RELOCATIONS	$60,010,000
11	LEVEES AND FLOODWALLS	$259,400,000
	Total	**$319,410,000**

5 Annex 6.1 – MII Report

Estimated by	Baird
Designed by	Baird
Prepared by	Carl Swatzell
Preparation Date	7/10/2025
Effective Date of Pricing	7/10/2025
Estimated Construction Time	600 Days

Designed by
Baird

Estimated by
Baird

Prepared by
Carl Swatzell

Design Document
Document Date 7/10/2025
District New York
Contact Caleb Barth
Budget Year 2024
UOM System Original

Direct Costs
LaborCost
EQCost
MatlCost
SubBidCost
Allowance
Disposal Fee
UserCost3
UserCost4
UserCost5

Timeline/Currency
Preparation Date 7/10/2025
Escalation Date 9/30/2024
Eff. Pricing Date 7/10/2025
Estimated Duration 600 Day(s)

Currency US dollars
Exchange Rate 1.000000

Costbook CB24EN: 2024 MII English Costbook

Labor : NewYorkCtyNYLabor20250602

Labor Rates
LaborCost1
LaborCost2
LaborCost3
LaborCost4

Equipment EP24R01: MII Equipment 2024 Region 01

Region 01 - NORTHEAST, (2024)

Sales Tax	8.88
Working Hours per Year	1,330
Labor Adjustment Factor	1.14
Cost of Money	4.63
Cost of Money Discount	25.00
Tire Recap Cost Factor	1.50
Tire Recap Wear Factor	1.80
Tire Repair Factor	0.15
Equipment Cost Factor	1.00
Standby Depreciation Factor	0.50

Fuel

Electricity	0.181
Gas	3.118
Diesel Off-Road	3.801
Diesel On-Road	3.801

Shipping Rates

Over 0 CWT	106.88
Over 240 CWT	87.48
Over 300 CWT	75.64
Over 400 CWT	67.28
Over 500 CWT	99.65
Over 700 CWT	85.41
Over 800 CWT	44.01

Date	Author	Note

Direct Cost Markups	Category	Method
Esc to Current 2022Q3 to 2025Q4 8.01% *LaborCost* *EQCost* *MatlCost* *SubBidCost* *ShipCost* *Allowance* *Disposal Fee* *UserCost3* *UserCost4* *UserCost5*	MiscDirect	Running % on Selected Costs
EQCost Escalate to Current 2.80% *EQCost*	MiscDirect	Running % on Selected Costs
RSMMatlCost Escalate to Current 1.75% *MatlCost*	MiscDirect	Running % on Selected Costs
GovMatlCost Escalate to Current 6.66% *MatlCost*	MiscDirect	Running % on Selected Costs
Access Material Factor 50% *MatlCost*	MiscDirect	Running % on Selected Costs
Productivity Overtime	Productivity Overtime	Productivity Overtime

	Days/Week	*Hours/Shift*	*Shifts/Day*	*1st Shift*	*2nd Shift*	*3rd Shift*
Standard	*5.00*	*8.00*	*1.00*	*8.00*	*0.00*	*0.00*
Actual	*5.00*	*8.00*	*1.00*	*10.00*	*0.00*	*0.00*

Day	*OT Factor*	*Working*	*OT Percent*	*FCCM Percent*
Monday	*1.50*	*Yes*	*10.00*	*(20.00)*
Tuesday	*1.50*	*Yes*		
Wednesday	*1.50*	*Yes*		
Thursday	*1.50*	*Yes*		
Friday	*1.50*	*Yes*		
Saturday	*1.50*	*No*		
Sunday	*2.00*	*No*		

Sales Tax 8.875% *MatlCost*	TaxAdj	Running % on Selected Costs
Mobilization 10% *LaborCost* *EQCost* *MatlCost* *SubBidCost*	MiscDirect	Running % on Selected Costs

ShipCost
Allowance
Disposal Fee
UserCost3
UserCost4
UserCost5

General Conditions 2% MiscDirect Running % on Selected Costs
LaborCost
EQCost
MatlCost
SubBidCost
ShipCost
Allowance
Disposal Fee
UserCost3
UserCost4
UserCost5

AppurtTransMod 2% MiscDirect Running % on Selected Costs
LaborCost
EQCost
MatlCost
SubBidCost
ShipCost
Allowance
Disposal Fee
UserCost3
UserCost4
UserCost5

Phasing/MPT/Traffic 10% MiscDirect Running % on Selected Costs
LaborCost
EQCost
MatlCost
SubBidCost
ShipCost
Allowance
Disposal Fee
UserCost3
UserCost4
UserCost5

Marine Construction 70% MiscDirect Running % on Selected Costs
LaborCost
EQCost
MatlCost
SubBidCost
ShipCost
Allowance
Disposal Fee

UserCost3
UserCost4
UserCost5

Contractor Markups	Category	Method
JOOH	JOOH	Running %
HOOH	HOOH	Running %
Profit	Profit	Running %
Profit WG	Profit	Profit Weighted Guidelines

Guideline	*Value*	*Weight*	*Percentage*
Risk	*0.090*	*20*	*1.80*
Difficulty	*0.100*	*15*	*1.50*
Size	*0.030*	*15*	*0.45*
Period	*0.120*	*15*	*1.80*
Invest (Contractor's)	*0.120*	*5*	*0.60*
Assist (Assistance by)	*0.120*	*5*	*0.60*
SubContracting	*0.080*	*25*	*2.00*
Total		*100*	*8.75*

Bond	Bond	Running %
Excise Tax	Excise	Running %
Insurance	MiscContract	Running %

Owner Markups	Category	Method
Esc to Mid Construction 15.58%	Escalation	Running %
Contingency	Contingency	Running %
SIOH	SIOH	Running %

Description	Quantity	UOM	ContractCost	Escalation	Contingency	SIOH	MiscOwner	ProjectCost	C/O
Project Cost Summary Report			**319,403,885.68**	**0.00**	**0.00**	**0.00**	**0.00**	**319,403,885.68**	
			319,403,885.68					*319,403,885.68*	
Base Bid	**1.00**	**EA**	**319,403,885.68**	**0.00**	**0.00**	**0.00**	**0.00**	**319,403,885.68**	
			60,008,959.43					*60,008,959.43*	
02 Relocations	**1.00**	**EA**	**60,008,959.43**	**0.00**	**0.00**	**0.00**	**0.00**	**60,008,959.43**	
			14,325.37					*14,325.37*	
0001 Relocations	**4,189.00**	**LF**	**60,008,959.43**	**0.00**	**0.00**	**0.00**	**0.00**	**60,008,959.43**	
			14,325.37	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*14,325.37*	
USR Relocations	4,189.00	LF	60,008,959.43	0.00	0.00	0.00	0.00	60,008,959.43	
(Note: $13,263 / LF deveolped from HATS for East Harlem 2022Q3)									
			259,394,926.25					*259,394,926.25*	
11 Levees & Floodwalls	**1.00**	**EA**	**259,394,926.25**	**0.00**	**0.00**	**0.00**	**0.00**	**259,394,926.25**	
			16,879.59					*16,879.59*	
0002 Floodwall (south)	**80.00**	**LF**	**1,350,366.81**	**0.00**	**0.00**	**0.00**	**0.00**	**1,350,366.81**	
(Note: Assemblies makeup and quantities based on "QTO_Draft_20250610 Rev1 MN" Reinforced Concrete for Floodwall 2.69 CY Steel Sheet Pile (NZ26) 0.31 TN Excavation 2.20 CY Micropile (12") 0.33 EA Micropile casing tonnage 0.26 TN Micropile grout volume 0.86 CY)									
			1,918.26	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*1,918.26*	
USR 033053406300 Structural concrete, in place, cantilever retaining wall (3000 psi), 8' high, level backfill loading, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing	215.20	CY	412,810.22	0.00	0.00	0.00	0.00	412,810.22	
(Note: Initial Material Cost = $260/CY. From RSM 033113350400 $198.00/CY for 5000psi concrete. From RSM 033113350150 $184.00/CY for 3500psi concrete. Increse material cost by $14/CY to $274/CY.)									
			9,919.27	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*9,919.27*	
RSM 314116100300 Sheet piling, steel, 27 psf, 20' excavation, per ton, left in place, excludes wales	24.80	TON	245,997.80	0.00	0.00	0.00	0.00	245,997.80	
(Note: References RSM 314116100300 and 314116100600. Interpolate using 27 psf(1.6188ton/hr) and 38(2.3750) psf to obtain crew output for NZ 26 30.99lb/sf. (2.3750-1.6188)/(38-27)=(X-1.6188)/(30.99-27), X=1.804ton/hr)									
			155.13	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*155.13*	
USR IDW-DISPOSE IDW Disposal Fee	176.00	EA	27,302.05	0.00	0.00	0.00	0.00	27,302.05	
(Note: Does not include haul. Engineering judgement based on USACE Green Brook Flood Risk Management project. Task details based on engineering judgement of the Cost Estimator.)									
			28.46	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*28.46*	
RSM 312316130110 Excavating, trench or continuous footing, common earth, 3/4 C.Y. excavator, 4' to 6' deep, excavator, excludes sheeting or dewatering	176.00	BCY	5,009.26	0.00	0.00	0.00	0.00	5,009.26	
			957.49	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*957.49*	
USR 316333105040 Concrete-filled steel piles, pressure grouted pin pile, cased, end bearing, up to 50 ton, 5" diameter, less than 20' long, priced using 200 piles, 60' long, unless specified otherwise, excludes pile caps or mobilization	639.94	VLF	612,733.87	0.00	0.00	0.00	0.00	612,733.87	
(Note: assume for vehicle gate foundation 24.60ton * 2000lb/ton / 65.48lb/lf / 32EA = 23.48 VLF/pile. for floodwall 0.26ton * 2000lb/ton / 65.48lb/lf / 0.33EA = 24.24 (5.563 in / 2)^2 *pi = 24.29									

Description	Quantity	UOM	ContractCost	Escalation	Contingency	SIOH	MiscOwner	ProjectCost	C/O
in3 (12.75 in / 2)^2 *pi = 127.61 in3 $43.0 *(127.61 in3 / 24.29 in3) = $225.90/VLF changed crew output from 20vlf/hr to 10vlf/hr)									
			2,004.90	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*2,004.90*	
USR Coal Tar Epoxy Coating	23.20	TON	46,513.60	0.00	0.00	0.00	0.00	46,513.60	
(Note: assume $700/ton. Task details based on engineering judgement of the Cost Estimator. Floodwall Steel Sheet Pile (NZ26) 0.31 TN/lf (Assume 60% coating. Assuming extends 5ft below concrete). Micropile casing tonnage 0.26 TN/lf (Assume 40% coating. Assuming extends 5ft below concrete). Epoxy Q*(0.31*0.6+0.26*0.4))									
			35,120.07					*35,120.07*	
0003 Deployable Flood Barrier - Vehicle Gate (south)	**40.00**	**LF**	**1,404,802.66**	**0.00**	**0.00**	**0.00**	**0.00**	**1,404,802.66**	
(Note: Assemblies makeup and quantities based on "QTO_Draft_20250610 Rev1 MN" Reinforced Concrete for Gate Foundation 201.29 CY / 80 ft = 2.516125 cy/ft Sheet Pile (NZ26) 27.90 TN / 80 ft = 0.34875 ton/ft Micropile (12"x0.5") 32.00 EA / 80 ft = 0.4 ea/ft micropile casing tonnage 24.60 TN / 80 ft = 0.3075 tn/ft micropile grout volume 82.13 CY / 80 ft = 1.026625 cy/ft Structural Steel 17.56 TN / 80 ft = 0.2195 tn/ft Excavation 198.33 CY / 80 ft = 2.479125 cy/ft)									
			2,315.57	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*2,315.57*	
USR 033053406300 Structural concrete, in place, cantilever retaining wall (3000 psi), 8' high, level backfill loading, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing	100.65	CY	233,050.56	0.00	0.00	0.00	0.00	233,050.56	
(Note: Initial Material Cost = $260/CY. From RSM 033113350400 $198.00/CY for 5000psi concrete. From RSM 033113350150 $184.00/CY for 3500psi concrete. Increse material cost by $14/CY to $274/CY.)									
			12,010.32	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*12,010.32*	
RSM 314116100300 Sheet piling, steel, 27 psf, 20' excavation, per ton, left in place, excludes wales	13.95	TON	167,544.00	0.00	0.00	0.00	0.00	167,544.00	
(Note: References RSM 314116100300 and 314116100600. Interpolate using 27 psf(1.6188ton/hr) and 38(2.3750) psf to obtain crew output for NZ 26 30.99lb/sf. (2.3750-1.6188)/(38-27)=(X-1.6188)/(30.99-27), X=1.804ton/hr)									
			1,158.34	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*1,158.34*	
USR 316333105040 Concrete-filled steel piles, pressure grouted pin pile, cased, end bearing, up to 50 ton, 5" diameter, less than 20' long, priced using 200 piles, 60' long, unless specified otherwise, excludes pile caps or mobilization	375.68	VLF	435,165.21	0.00	0.00	0.00	0.00	435,165.21	
(Note: assume for vehicle gate foundation 24.60ton * 2000lb/ton / 65.48lb/lf / 32EA = 23.48 VLF/pile. for floodwall 0.26ton * 2000lb/ton / 65.48lb/lf / 0.33EA = 24.24 (5.563 in / 2)^2 *pi = 24.29 in3 (12.75 in / 2)^2 *pi = 127.61 in3 $43.0 *(127.61 in3 / 24.29 in3) = $225.90/VLF changed crew output from 20vlf/hr to 10vlf/hr)									
			56,187.62	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*56,187.62*	
USR Structural Steel(Vehicular Gate) TON	8.78	TON	493,327.29	0.00	0.00	0.00	0.00	493,327.29	
(Note: assumed $5,600 per ton(from RSM 051223772000). Add 100% contingency for rollers, hardware, botmmisc. steel, etc. material - $11,200/ton Add 50% more contengency for electrical/hydraulic items. material - $16,800/ton Add 60% for installation: $16,800/ton * 1.6 = $26,880 / TON)									
			188.13	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*188.13*	
USR IDW-DISPOSE IDW Disposal Fee	99.17	EA	18,655.73	0.00	0.00	0.00	0.00	18,655.73	
(Note: Does not include haul. Engineering judgement based on USACE Green Brook Flood Risk Management project. Task details based on engineering judgement of the Cost Estimator.)									
			34.27	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*34.27*	
RSM 312316130110 Excavating, trench or continuous footing, common earth, 3/4 C.Y. excavator, 4' to 6' deep, excavator, excludes sheeting or dewatering	99.17	BCY	3,398.02	0.00	0.00	0.00	0.00	3,398.02	
			2,431.44	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*2,431.44*	
USR Coal Tar Epoxy Coating	22.07	TON	53,661.84	0.00	0.00	0.00	0.00	53,661.84	
(Note: assume $700/ton. Task details based on engineering judgement of the Cost Estimator. Deployable Flood Barrier Sheet Pile (NZ26) 27.90 TN / 80 ft = 0.34875 ton/ft (Assume 60% coating.									

Description	Quantity	UOM	ContractCost	Escalation	Contingency	SIOH	MiscOwner	ProjectCost	C/O
Assuming extends 5ft below concrete). micropile casing tonnage 24.60 TN / 80 ft = 0.3075 tn/ft (Assume 40% coating. Assuming extends 5ft below concrete). Structural Steel 17.56 TN / 80 ft = 0.2195 tn/ft (Assume 100% coating). Epoxy Q*(0.34875*0.6+0.3075*0.4+0.2195*1))									
			52,180.48					*52,180.48*	
0004 Anchored Combi Wall	**3,636.00**	**LF**	**189,728,210.50**	**0.00**	**0.00**	**0.00**	**0.00**	**189,728,210.50**	
(Note: Assemblies makeup and quantities based on "QTO_Draft_20250610 Rev1 MN" Reinforced Concrete for Combiwall 3.02 CY Bracing (Pipe 16 X-Strong) 0.10 TN Combi-Wall (36" Dia. Pipe/NZ-19) 1.48 TN Batter Pile (30" Dia. X 0.625") 1.74 TN)									
			3,060.92	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*3,060.92*	
USR 033053406300 Structural concrete, in place, cantilever retaining wall (3000 psi), 8' high, level backfill loading, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing	10,980.72	CY	33,611,082.50	0.00	0.00	0.00	0.00	33,611,082.50	
(Note: Initial Material Cost = $260/CY. From RSM 033113350400 $198.00/CY for 5000psi concrete. From RSM 033113350150 $184.00/CY for 3500psi concrete. Increse material cost by $14/CY to $274/CY.)									
			22,637.54	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*22,637.54*	
USR 051223171600 Column, structural, 6" to 12" dia, extra strong pipe, incl shop primer, cap & base plate, bolts, converted to per ton	363.60	TON	8,231,010.71	0.00	0.00	0.00	0.00	8,231,010.71	
(Note: converted to per ton)									
			14,534.27	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*14,534.27*	
RSM 314116100600 Sheet piling, steel, 38 psf, 25' excavation, per ton, left in place, excludes wales	5,381.28	TON	78,212,983.16	0.00	0.00	0.00	0.00	78,212,983.16	
(Note: Currently assuming 36inx0.438in with NZ19. assuming NZ Length / Pipe Length at 100% = 38.0lb/sf)									
			8,241.20	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*8,241.20*	
USR 316223134100 Concrete-filled steel piles, steel, pipe piles, no concrete, 50' long, 18" diameter, 59 lb./L.F., excludes mobilization or demobilization, converted to 36"x0.625" pipe per ton	6,326.64	TON	52,139,107.16	0.00	0.00	0.00	0.00	52,139,107.16	
(Note: Initial Material = 46.50/VLF, convert to ton using default 59 lb/lf, $46.5/VLF / 59lb/lf * 2000lb/ton = $1,576.27/ton Initial Crew Output = 44.3750VLF/hr, use same production rate converted to 36"x0.625" pipe with 236.4lb/ft, 44.375VLF/hr * 236lb/lf / 2000lb/ton = 5.23625TON/hr)									
			18.65	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*18.65*	
USR Dredge and Fill	72,720.00	CY	1,355,964.21	0.00	0.00	0.00	0.00	1,355,964.21	
(Note: This Item was added for backfill behind structure. From the construction of the Verrazano Narrows Sector Gate Islands we used $6.10-6.14 / CY to dredge nearby and fill the islands. round up to $7. ~20ft LOP offset, 20' x 27' x1' per foot of structure / 27ft3/cy = 20CY/LF)									
			3,098.48	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*3,098.48*	
USR Coal Tar Epoxy Coating	5,221.30	TON	16,178,062.76	0.00	0.00	0.00	0.00	16,178,062.76	
(Note: assume $700/ton. Task details based on engineering judgement of the Cost Estimator. Anchored Combi Wall Combi-Wall (36" Dia. Pipe/NZ-19) 1.48 TN/lf (Assume 50%. Assuming extends 10-15ft below mudline). Batter Pile (30" Dia. X 0.625") 1.74 TN/lf (Assume 40%. Assuming extends 10-15ft below mudline). Epoxy Q*(1.48*0.5+1.74*0.4))									
			396,705.82					*396,705.82*	
0005 Tunnel Span	**155.00**	**LF**	**61,489,402.37**	**0.00**	**0.00**	**0.00**	**0.00**	**61,489,402.37**	
(Note: Assemblies makeup and quantities based on "QTO_Draft_20250610 Rev1 MN" Jacket Structure -Steel Pipe Piles (60"dia x 1" thick) 2825.00 TN / 155 ft = 18.22580645 tn/ft Jacket Structure-Framing (W40x211) 87.00 TN / 155 ft = 1.187096774 tn/ft Truss Members (Member sizes vary) 560.00 TN / 155 ft = 3.612903226 tn/ft Truss Plate (0.38" Plate) 49.61 TN / 155 ft = 0.320064516 tn/ft Sheetpile Connection (SIZE) 12.96 TN / 155 ft = 0.083612903 tn/ft Jacket Structure-Steel Pipe Bracing (30" Dia. X 1") 451.00 TN / 155 ft = 2.909677419 tn/ft)									
			9,043.74	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*9,043.74*	
USR 316223134100 Concrete-filled steel piles, steel, pipe piles, no concrete, 50' long, 18" diameter, 59 lb./L.F., excludes mobilization or	2,825.00	TON	25,548,576.69	0.00	0.00	0.00	0.00	25,548,576.69	

Description	Quantity	UOM	ContractCost	Escalation	Contingency	SIOH	MiscOwner	ProjectCost	C/O
demobilization (Note: Initial RSM 316333105040 item details: Material = $46.50/VLF, Crew Output = 44.3750VLF/hr. Convert VLF to TON. Material $46.50/ft / 59lb/ft * 2000lb/ton = $1,576.27/ton. Convert Crew Output VLF/hr to TON/hr. 44.3750vlf/hr * 630.7lb/ft / 2000lb/ton = 13.978125 TON/hr. 630.7lb/ft from skyline product manual for 60inx1in pipe. Change crew item from 50 ton crane to 100 ton crane)									
			20,674.13	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*20,674.13*	
USR 051223757900 Structural steel beam or girder, 100-ton project, 1 to 2 story building, W36x231, A992 steel, shop fabricated, incl shop primer, bolted connections	184.00	TON	3,804,040.23	0.00	0.00	0.00	0.00	3,804,040.23	
(Note: Initial for W36x231 material = $430.00/LF, Crew Output = 140.6250FT/hr, 231lb/ft. Convert material LF to TON. $430/lf / 231lb/ft *2000lb/ton = $3,722.94/TON Convert crew output LF/hr to TON/hr. 140.6250ft/hr * 231lb/ft / 2000lb/ton = 16.2421875TON/hr)									
			28,945.14	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*28,945.14*	
USR Tunnel Span Truss TON	560.00	TON	16,209,276.72	0.00	0.00	0.00	0.00	16,209,276.72	
(Note: assumed $5,600 per ton(from RSM 051223772000). material - $5,600/ton Add 60% for installation: $5,600/ton * 1.6 = $8,960 / TON use same cost from above calculated gate for truss and plates)									
			28,945.14	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*28,945.14*	
USR Tunnel Span Plates TON	49.61	TON	1,435,968.25	0.00	0.00	0.00	0.00	1,435,968.25	
(Note: assumed $5,600 per ton(from RSM 051223772000). material - $5,600/ton Add 60% for installation: $5,600/ton * 1.6 = $8,960 / TON use same cost from above calculated gate for truss and plates)									
			8,374.25	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*8,374.25*	
USR 314116102500 Sheet piling, wales, connections and struts, 2/3 salvage	12.96	TON	108,530.31	0.00	0.00	0.00	0.00	108,530.31	
(Note: convert $520.00/TON for 2/3 salvage to no salvage. $520.00/ton * 3ea = $1,560/TON)									
			9,644.68	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*9,644.68*	
USR 316223134100 Concrete-filled steel piles, steel, pipe piles, no concrete, 50' long, 18" diameter, 59 lb./L.F., excludes mobilization or demobilization (30")	451.00	TON	4,349,748.67	0.00	0.00	0.00	0.00	4,349,748.67	
(Note: Initial RSM 316333105040 item details: Material = $46.50/VLF, Crew Output = 44.3750VLF/hr. Convert VLF to TON. Material $46.50/ft / 59lb/ft * 2000lb/ton = $1,576.27/ton. Convert Crew Output VLF/hr to TON/hr. 44.3750vlf/hr * 310.0lb/ft / 2000lb/ton = 6.878125 TON/hr. 310.0lb/ft from skyline product manual for 30inx1in pipe. Change crew item from 50 ton crane to 100 ton crane)									
			3,757.68	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*3,757.68*	
USR Coal Tar Epoxy Coating	2,670.07	TON	10,033,261.51	0.00	0.00	0.00	0.00	10,033,261.51	
(Note: assume $700/ton. Task details based on engineering judgement of the Cost Estimator. Tunnel Span Jacket Structure -Steel Pipe Piles (60"dia x 1" thick) 2825.00 TN / 155 ft = 18.22580645 tn/ft (assume 50% coating). Jacket Structure-Framing (W40x211) 87.00 TN / 155 ft = 1.187096774 tn/ft (Assume 100% coating). Truss Members (Member sizes vary) 560.00 TN / 155 ft = 3.612903226 tn/ft (Assume 100% coating). Truss Plate (0.38" Plate) 49.61 TN / 155 ft = 0.320064516 tn/ft (Assume 100% coating). Sheetpile Connection (SIZE) 12.96 TN / 155 ft = 0.083612903 tn/ft (Assume 100% coating). Jacket Structure-Steel Pipe Bracing (30" Dia. X 1") 451.00 TN / 155 ft = 2.909677419 tn/ft (Assume 100% coating). Epoxy Q*(18.22580645*0.5+1.187096774+3.612903226+0.320064516+0.083612903+2.909677419))									
			35,120.07					*35,120.07*	
0006 Deployable Flood Barrier - Vehicle Gate (north)	**40.00**	**LF**	**1,404,802.66**	**0.00**	**0.00**	**0.00**	**0.00**	**1,404,802.66**	
(Note: Assemblies makeup and quantities based on "QTO_Draft_20250610 Rev1 MN" Reinforced Concrete for Gate Foundation 201.29 CY / 80 ft = 2.516125 cy/ft Sheet Pile (NZ26) 27.90 TN / 80 ft = 0.34875 ton/ft Micropile (12"x0.5") 32.00 EA / 80 ft = 0.4 ea/ft micropile casing tonnage 24.60 TN / 80 ft = 0.3075 tn/ft micropile grout volume 82.13 CY / 80 ft = 1.026625 cy/ft Structural Steel 17.56 TN / 80 ft = 0.2195 tn/ft Excavation 198.33 CY / 80 ft = 2.479125 cy/ft)									
			2,315.57	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*2,315.57*	

Description	Quantity	UOM	ContractCost	Escalation	Contingency	SIOH	MiscOwner	ProjectCost	C/O
USR 033053406300 Structural concrete, in place, cantilever retaining wall (3000 psi), 8' high, level backfill loading, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing	100.65	CY	233,050.56	0.00	0.00	0.00	0.00	233,050.56	
(Note: Initial Material Cost = $260/CY. From RSM 033113350400 $198.00/CY for 5000psi concrete. From RSM 033113350150 $184.00/CY for 3500psi concrete. Increse material cost by $14/CY to $274/CY.)									
			12,010.32	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*12,010.32*	
RSM 314116100300 Sheet piling, steel, 27 psf, 20' excavation, per ton, left in place, excludes wales	13.95	TON	167,544.00	0.00	0.00	0.00	0.00	167,544.00	
(Note: References RSM 314116100300 and 314116100600. Interpolate using 27 psf(1.6188ton/hr) and 38(2.3750) psf to obtain crew output for NZ 26 30.99lb/sf. (2.3750-1.6188)/(38-27)=(X-1.6188)/(30.99-27), X=1.804ton/hr)									
			1,158.34	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*1,158.34*	
USR 316333105040 Concrete-filled steel piles, pressure grouted pin pile, cased, end bearing, up to 50 ton, 5" diameter, less than 20' long, priced using 200 piles, 60' long, unless specified otherwise, excludes pile caps or mobilization	375.68	VLF	435,165.21	0.00	0.00	0.00	0.00	435,165.21	
(Note: assume for vehicle gate foundation 24.60ton * 2000lb/ton / 65.48lb/lf / 32EA = 23.48 VLF/pile. for floodwall 0.26ton * 2000lb/ton / 65.48lb/lf / 0.33EA = 24.24 (5.563 in / 2)^2 *pi = 24.29 in3 (12.75 in / 2)^2 *pi = 127.61 in3 $43.0 *(127.61 in3 / 24.29 in3) = $225.90/VLF changed crew output from 20vlf/hr to 10vlf/hr)									
			56,187.62	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*56,187.62*	
USR Structural Steel(Vehicular Gate) TON	8.78	TON	493,327.29	0.00	0.00	0.00	0.00	493,327.29	
(Note: assumed $5,600 per ton(from RSM 051223772000). Add 100% contingency for rollers, hardware, botmmisc. steel, etc. material - $11,200/ton Add 50% more contengency for electrical/hydraulic items. material - $16,800/ton Add 60% for installation: $16,800/ton * 1.6 = $26,880 / TON)									
			188.13	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*188.13*	
USR IDW-DISPOSE IDW Disposal Fee	99.17	EA	18,655.73	0.00	0.00	0.00	0.00	18,655.73	
(Note: Does not include haul. Engineering judgement based on USACE Green Brook Flood Risk Management project. Task details based on engineering judgement of the Cost Estimator.)									
			34.27	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*34.27*	
RSM 312316130110 Excavating, trench or continuous footing, common earth, 3/4 C.Y. excavator, 4' to 6' deep, excavator, excludes sheeting or dewatering	99.17	BCY	3,398.02	0.00	0.00	0.00	0.00	3,398.02	
			2,431.44	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*2,431.44*	
USR Coal Tar Epoxy Coating	22.07	TON	53,661.84	0.00	0.00	0.00	0.00	53,661.84	
(Note: assume $700/ton. Task details based on engineering judgement of the Cost Estimator. Deployable Flood Barrier Sheet Pile (NZ26) 27.90 TN / 80 ft = 0.34875 ton/ft (Assume 60% coating. Assuming extends 5ft below concrete). micropile casing tonnage 24.60 TN / 80 ft = 0.3075 tn/ft (Assume 40% coating. Assuming extends 5ft below concrete). Structural Steel 17.56 TN / 80 ft = 0.2195 tn/ft (Assume 100% coating). Epoxy Q*(0.34875*0.6+0.3075*0.4+0.2195*1))									
			16,879.59					*16,879.59*	
0007 Floodwall (north)	**238.00**	**LF**	**4,017,341.26**	**0.00**	**0.00**	**0.00**	**0.00**	**4,017,341.26**	
(Note: Assemblies makeup and quantities based on "QTO_Draft_20250610 Rev1 MN" Reinforced Concrete for Floodwall 2.69 CY Steel Sheet Pile (NZ26) 0.31 TN Excavation 2.20 CY Micropile (12") 0.33 EA Micropile casing tonnage 0.26 TN Micropile grout volume 0.86 CY)									
			1,918.26	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*1,918.26*	
USR 033053406300 Structural concrete, in place, cantilever retaining wall (3000 psi), 8' high, level backfill loading, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing	640.22	CY	1,228,110.41	0.00	0.00	0.00	0.00	1,228,110.41	
(Note: Initial Material Cost = $260/CY. From RSM 033113350400 $198.00/CY for 5000psi concrete. From RSM 033113350150 $184.00/CY for 3500psi concrete. Increse material cost by $14/CY to $274/CY.)									

Description	Quantity	UOM	ContractCost	Escalation	Contingency	SIOH	MiscOwner	ProjectCost	C/O
			9,919.27	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*9,919.27*	
RSM 314116100300 Sheet piling, steel, 27 psf, 20' excavation, per ton, left in place, excludes wales	73.78	TON	731,843.46	0.00	0.00	0.00	0.00	731,843.46	
(Note: References RSM 314116100300 and 314116100600. Interpolate using 27 psf(1.6188ton/hr) and 38(2.3750) psf to obtain crew output for NZ 26 30.99lb/sf. (2.3750-1.6188)/(38-27)=(X-1.6188)/(30.99-27), X=1.804ton/hr)									
			155.13	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*155.13*	
USR IDW-DISPOSE IDW Disposal Fee	523.60	EA	81,223.60	0.00	0.00	0.00	0.00	81,223.60	
(Note: Does not include haul. Engineering judgement based on USACE Green Brook Flood Risk Management project. Task details based on engineering judgement of the Cost Estimator.)									
			28.46	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*28.46*	
RSM 312316130110 Excavating, trench or continuous footing, common earth, 3/4 C.Y. excavator, 4' to 6' deep, excavator, excludes sheeting or dewatering	523.60	BCY	14,902.55	0.00	0.00	0.00	0.00	14,902.55	
			957.49	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*957.49*	
USR 316333105040 Concrete-filled steel piles, pressure grouted pin pile, cased, end bearing, up to 50 ton, 5" diameter, less than 20' long, priced using 200 piles, 60' long, unless specified otherwise, excludes pile caps or mobilization	1,903.81	VLF	1,822,883.28	0.00	0.00	0.00	0.00	1,822,883.28	
(Note: assume for vehicle gate foundation 24.60ton * 2000lb/ton / 65.48lb/lf / 32EA = 23.48 VLF/pile. for floodwall 0.26ton * 2000lb/ton / 65.48lb/lf / 0.33EA = 24.24 (5.563 in / 2)^2 *pi = 24.29 in3 (12.75 in / 2)^2 *pi = 127.61 in3 $43.0 *(127.61 in3 / 24.29 in3) = $225.90/VLF changed crew output from 20vlf/hr to 10vlf/hr)									
			2,004.90	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*2,004.90*	
USR Coal Tar Epoxy Coating	69.02	TON	138,377.96	0.00	0.00	0.00	0.00	138,377.96	
(Note: assume $700/ton. Task details based on engineering judgement of the Cost Estimator. Floodwall Steel Sheet Pile (NZ26) 0.31 TN/lf (Assume 60% coating. Assuming extends 5ft below concrete). Micropile casing tonnage 0.26 TN/lf (Assume 40% coating. Assuming extends 5ft below concrete). Epoxy Q*(0.31*0.6+0.26*0.4))									

Description	Quantity	UOM	Contractor	DirectCost	SubCMU	CostToPrime	PrimeCMU	ContractCost	C/O
Contract Cost Summary Report				**241,225,911.99**	**8,238,500.83**	**189,455,453.39**	**69,939,472.86**	**319,403,885.68**	
				241,225,911.99		*189,455,453.39*		*319,403,885.68*	
Base Bid	**1.00**	**EA**	**Prime**	**241,225,911.99**	**8,238,500.83**	**189,455,453.39**	**69,939,472.86**	**319,403,885.68**	
				60,008,959.43		*0.00*		*60,008,959.43*	
02 Relocations	**1.00**	**EA**		**60,008,959.43**	**0.00**	**0.00**	**0.00**	**60,008,959.43**	
				14,325.37		*0.00*		*14,325.37*	
0001 Relocations	**4,189.00**	**LF**		**60,008,959.43**	**0.00**	**0.00**	**0.00**	**60,008,959.43**	
				181,216,952.56		*189,455,453.39*		*259,394,926.25*	
11 Levees & Floodwalls	**1.00**	**EA**	**Prime**	**181,216,952.56**	**8,238,500.83**	**189,455,453.39**	**69,939,472.86**	**259,394,926.25**	
				12,328.42		*12,328.42*		*16,879.59*	
0002 Floodwall (south)	**80.00**	**LF**	**Prime**	**986,273.55**	**0.00**	**986,273.55**	**364,093.25**	**1,350,366.81**	
				21,150.94		*25,650.80*		*35,120.07*	
0003 Deployable Flood Barrier - Vehicle Gate (south)	**40.00**	**LF**	**Sub**	**846,037.61**	**179,994.50**	**1,026,032.11**	**378,770.54**	**1,404,802.66**	
				38,111.29		*38,111.29*		*52,180.48*	
0004 Anchored Combi Wall	**3,636.00**	**LF**	**Prime**	**138,572,656.99**	**0.00**	**138,572,656.99**	**51,155,553.51**	**189,728,210.50**	
				238,914.73		*289,743.84*		*396,705.82*	
0005 Tunnel Span	**155.00**	**LF**	**Sub**	**37,031,782.96**	**7,878,511.83**	**44,910,294.79**	**16,579,107.58**	**61,489,402.37**	
				21,150.94		*25,650.80*		*35,120.07*	
0006 Deployable Flood Barrier - Vehicle Gate (north)	**40.00**	**LF**	**Sub**	**846,037.61**	**179,994.50**	**1,026,032.11**	**378,770.54**	**1,404,802.66**	
				12,328.42		*12,328.42*		*16,879.59*	
0007 Floodwall (north)	**238.00**	**LF**	**Prime**	**2,934,163.83**	**0.00**	**2,934,163.83**	**1,083,177.43**	**4,017,341.26**	

Description	Quantity	UOM	Contractor	DirectLabor	DirectEQ	DirectMatl	DirectSubBid	DirectUserCost	DirectCost	DirectCost	C/O
Project Direct Costs Report				**34,197,719.93**	**3,649,436.60**	**131,056,701.22**	**72,322,054.25**	**0.00**	**241,225,911.99**	**241,225,911.99**	
				34,197,719.93	*3,649,436.60*	*131,056,701.22*	*72,322,054.25*		*241,225,911.99*	*241,225,911.99*	
Base Bid	**1.00**	**EA**	**Prime**	**34,197,719.93**	**3,649,436.60**	**131,056,701.22**	**72,322,054.25**	**0.00**	**241,225,911.99**	**241,225,911.99**	
				0.00	*0.00*	*0.00*	*60,008,959.43*		*60,008,959.43*	*60,008,959.43*	
02 Relocations	**1.00**	**EA**		**0.00**	**0.00**	**0.00**	**60,008,959.43**	**0.00**	**60,008,959.43**	**60,008,959.43**	
				0.00	*0.00*	*0.00*	*14,325.37*		*14,325.37*	*14,325.37*	
0001 Relocations	**4,189.00**	**LF**		**0.00**	**0.00**	**0.00**	**60,008,959.43**	**0.00**	**60,008,959.43**	**60,008,959.43**	
				0.00	*0.00*	*0.00*	*14,325.37*		*14,325.37*	*14,325.37*	
USR Relocations	4,189.00	LF		0.00	0.00	0.00	60,008,959.43	0.00	60,008,959.43	60,008,959.43	
(Note: $13,263 / LF deveolped from HATS for East Harlem 2022Q3)											
				34,197,719.93	*3,649,436.60*	*131,056,701.22*	*12,313,094.82*		*181,216,952.56*	*181,216,952.56*	
11 Levees & Floodwalls	**1.00**	**EA**	**Prime**	**34,197,719.93**	**3,649,436.60**	**131,056,701.22**	**12,313,094.82**	**0.00**	**181,216,952.56**	**181,216,952.56**	
				4,315.10	*331.40*	*7,432.66*	*249.26*		*12,328.42*	*12,328.42*	
0002 Floodwall (south)	**80.00**	**LF**	**Prime**	**345,207.79**	**26,511.98**	**594,613.06**	**19,940.72**	**0.00**	**986,273.55**	**986,273.55**	
(Note: Assemblies makeup and quantities based on "QTO_Draft_20250610 Rev1 MN" Reinforced Concrete for Floodwall 2.69 CY Steel Sheet Pile (NZ26) 0.31 TN Excavation 2.20 CY Micropile (12") 0.33 EA Micropile casing tonnage 0.26 TN Micropile grout volume 0.86 CY)											
				821.39	*6.48*	*573.18*	*0.00*		*1,401.05*	*1,401.05*	
USR 033053406300 Structural concrete, in place, cantilever retaining wall (3000 psi), 8' high, level backfill loading, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing	215.20	CY	Prime	176,762.90	1,395.10	123,348.08	0.00	0.00	301,506.08	301,506.08	
(Note: Initial Material Cost = $260/CY. From RSM 033113350400 $198.00/CY for 5000psi concrete. From RSM 033113350150 $184.00/CY for 3500psi concrete. Increse material cost by $14/CY to $274/CY.)											
				1,447.12	*358.74*	*5,438.92*	*0.00*		*7,244.78*	*7,244.78*	
RSM 314116100300 Sheet piling, steel, 27 psf, 20' excavation, per ton, left in place, excludes wales	24.80	TON	Prime	35,888.45	8,896.79	134,885.29	0.00	0.00	179,670.53	179,670.53	
(Note: References RSM 314116100300 and 314116100600. Interpolate using 27 psf(1.6188ton/hr) and 38(2.3750) psf to obtain crew output for NZ 26 30.99lb/sf. (2.3750-1.6188)/(38-27)=(X-1.6188)/(30.99-27), X=1.804ton/hr)											

Description	Quantity	UOM	Contractor	DirectLabor	DirectEQ	DirectMatl	DirectSubBid	DirectUserCost	DirectCost	DirectCost	C/O
				0.00	*0.00*	*0.00*	*113.30*		*113.30*	*113.30*	
USR IDW-DISPOSE IDW Disposal Fee	176.00	EA	Prime	0.00	0.00	0.00	19,940.72	0.00	19,940.72	19,940.72	
(Note: Does not include haul. Engineering judgement based on USACE Green Brook Flood Risk Management project. Task details based on engineering judgement of the Cost Estimator.)											
				17.28	*3.51*	*0.00*	*0.00*		*20.79*	*20.79*	
RSM 312316130110 Excavating, trench or continuous footing, common earth, 3/4 C.Y. excavator, 4' to 6' deep, excavator, excludes sheeting or dewatering	176.00	BCY	Prime	3,041.16	617.48	0.00	0.00	0.00	3,658.64	3,658.64	
				202.39	*24.38*	*472.56*	*0.00*		*699.33*	*699.33*	
USR 316333105040 Concrete-filled steel piles, pressure grouted pin pile, cased, end bearing, up to 50 ton, 5" diameter, less than 20' long, priced using 200 piles, 60' long, unless specified otherwise, excludes pile caps or mobilization	639.94	VLF	Prime	129,515.28	15,602.61	302,407.34	0.00	0.00	447,525.23	447,525.23	
(Note: assume for vehicle gate foundation 24.60ton * 2000lb/ton / 65.48lb/lf / 32EA = 23.48 VLF/pile. for floodwall 0.26ton * 2000lb/ton / 65.48lb/lf / 0.33EA = 24.24 (5.563 in / 2)^2 *pi = 24.29 in3 (12.75 in / 2)^2 *pi = 127.61 in3 $43.0 *(127.61 in3 / 24.29 in3) = $225.90/VLF changed crew output from 20vlf/hr to 10vlf/hr)											
				0.00	*0.00*	*1,464.33*	*0.00*		*1,464.33*	*1,464.33*	
USR Coal Tar Epoxy Coating	23.20	TON	Prime	0.00	0.00	33,972.35	0.00	0.00	33,972.35	33,972.35	
(Note: assume $700/ton. Task details based on engineering judgement of the Cost Estimator. Floodwall Steel Sheet Pile (NZ26) 0.31 TN/lf (Assume 60% coating. Assuming extends 5ft below concrete). Micropile casing tonnage 0.26 TN/lf (Assume 40% coating. Assuming extends 5ft below concrete). Epoxy Q*(0.31*0.6+0.26*0.4))											
				4,478.10	*379.11*	*8,585.23*	*7,708.50*		*21,150.94*	*21,150.94*	
0003 Deployable Flood Barrier - Vehicle Gate (south)	**40.00**	**LF**	**Sub**	**179,124.03**	**15,164.47**	**343,409.08**	**308,340.03**	**0.00**	**846,037.61**	**846,037.61**	
(Note: Assemblies makeup and quantities based on "QTO_Draft_20250610 Rev1 MN" Reinforced Concrete for Gate Foundation 201.29 CY / 80 ft = 2.516125 cy/ft Sheet Pile (NZ26) 27.90 TN / 80 ft = 0.34875 ton/ft Micropile (12"x0.5") 32.00 EA / 80 ft = 0.4 ea/ft micropile casing tonnage 24.60 TN / 80 ft = 0.3075 tn/ft micropile grout volume 82.13 CY / 80 ft = 1.026625 cy/ft Structural Steel 17.56 TN / 80 ft = 0.2195 tn/ft Excavation 198.33 CY / 80 ft = 2.479125 cy/ft)											
				814.88	*6.48*	*573.18*	*0.00*		*1,394.54*	*1,394.54*	
USR 033053406300	100.65	CY	Sub	82,013.86	652.46	57,687.58	0.00	0.00	140,353.90	140,353.90	

Description	Quantity	UOM	Contractor	DirectLabor	DirectEQ	DirectMatl	DirectSubBid	DirectUserCost	DirectCost	DirectCost	C/O
Structural concrete, in place, cantilever retaining wall (3000 psi), 8' high, level backfill loading, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing											
(Note: Initial Material Cost = $260/CY. From RSM 033113350400 $198.00/CY for 5000psi concrete. From RSM 033113350150 $184.00/CY for 3500psi concrete. Increse material cost by $14/CY to $274/CY.)											
				1,435.51	*358.74*	*5,438.92*	*0.00*		*7,233.18*	*7,233.18*	
RSM 314116100300	13.95	TON	Sub	20,025.38	5,004.45	75,872.98	0.00	0.00	100,902.80	100,902.80	
Sheet piling, steel, 27 psf, 20' excavation, per ton, left in place, excludes wales											
(Note: References RSM 314116100300 and 314116100600. Interpolate using 27 psf(1.6188ton/hr) and 38(2.3750) psf to obtain crew output for NZ 26 30.99lb/sf. (2.3750-1.6188)/(38-27)=(X-1.6188)/(30.99-27), X=1.804ton/hr)											
				200.67	*24.38*	*472.56*	*0.00*		*697.61*	*697.61*	
USR 316333105040	375.68	VLF	Sub	75,386.25	9,159.65	177,530.86	0.00	0.00	262,076.76	262,076.76	
Concrete-filled steel piles, pressure grouted pin pile, cased, end bearing, up to 50 ton, 5" diameter, less than 20' long, priced using 200 piles, 60' long, unless specified otherwise, excludes pile caps or mobilization											
(Note: assume for vehicle gate foundation 24.60ton * 2000lb/ton / 65.48lb/lf / 32EA = 23.48 VLF/pile. for floodwall 0.26ton * 2000lb/ton / 65.48lb/lf / 0.33EA = 24.24 (5.563 in / 2)^2 *pi = 24.29 in3 (12.75 in / 2)^2 *pi = 127.61 in3 $43.0 *(127.61 in3 / 24.29 in3) = $225.90/VLF changed crew output from 20vlf/hr to 10vlf/hr)											
				0.00	*0.00*	*0.00*	*33,838.80*		*33,838.80*	*33,838.80*	
USR Structural Steel(Vehicular Gate) TON	8.78	TON	Sub	0.00	0.00	0.00	297,104.68	0.00	297,104.68	297,104.68	
(Note: assumed $5,600 per ton(from RSM 051223772000). Add 100% contingency for rollers, hardware, botmmisc. steel, etc. material - $11,200/ton Add 50% more contengency for electrical/hydraulic items. material - $16,800/ton Add 60% for installation: $16,800/ton * 1.6 = $26,880 / TON)											
				0.00	*0.00*	*0.00*	*113.30*		*113.30*	*113.30*	
USR IDW-DISPOSE	99.17	EA	Sub	0.00	0.00	0.00	11,235.35	0.00	11,235.35	11,235.35	

Description	Quantity	UOM	Contractor	DirectLabor	DirectEQ	DirectMatl	DirectSubBid	DirectUserCost	DirectCost	DirectCost	C/O
IDW Disposal Fee											
(Note: Does not include haul. Engineering judgement based on USACE Green Brook Flood Risk Management project. Task details based on engineering judgement of the Cost Estimator.)											
				17.13	*3.51*	*0.00*	*0.00*		*20.64*	*20.64*	
RSM 312316130110 Excavating, trench or continuous footing, common earth, 3/4 C.Y. excavator, 4' to 6' deep, excavator, excludes sheeting or dewatering	99.17	BCY	Sub	1,698.54	347.91	0.00	0.00	0.00	2,046.45	2,046.45	
				0.00	*0.00*	*1,464.33*	*0.00*		*1,464.33*	*1,464.33*	
USR Coal Tar Epoxy Coating	22.07	TON	Sub	0.00	0.00	32,317.66	0.00	0.00	32,317.66	32,317.66	
(Note: assume $700/ton. Task details based on engineering judgement of the Cost Estimator. Deployable Flood Barrier Sheet Pile (NZ26) 27.90 TN / 80 ft = 0.34875 ton/ft (Assume 60% coating. Assuming extends 5ft below concrete). micropile casing tonnage 24.60 TN / 80 ft = 0.3075 tn/ft (Assume 40% coating. Assuming extends 5ft below concrete). Structural Steel 17.56 TN / 80 ft = 0.2195 tn/ft (Assume 100% coating). Epoxy Q*(0.34875*0.6+0.3075*0.4+0.2195*1))											
				8,600.49	*913.50*	*28,324.93*	*272.38*		*38,111.29*	*38,111.29*	
0004 Anchored Combi Wall	**3,636.00**	**LF**	**Prime**	**31,271,380.61**	**3,321,480.39**	**102,989,434.24**	**990,361.75**	**0.00**	**138,572,656.99**	**138,572,656.99**	
(Note: Assemblies makeup and quantities based on "QTO_Draft_20250610 Rev1 MN" Reinforced Concrete for Combiwall 3.02 CY Bracing (Pipe 16 X-Strong) 0.10 TN Combi-Wall (36" Dia. Pipe/NZ-19) 1.48 TN Batter Pile (30" Dia. X 0.625") 1.74 TN)											
				1,339.78	*10.02*	*885.82*	*0.00*		*2,235.62*	*2,235.62*	
USR 033053406300 Structural concrete, in place, cantilever retaining wall (3000 psi), 8' high, level backfill loading, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing	10,980.72	CY	Prime	14,711,703.59	110,014.76	9,726,961.02	0.00	0.00	24,548,679.37	24,548,679.37	
(Note: Initial Material Cost = $260/CY. From RSM 033113350400 $198.00/CY for 5000psi concrete. From RSM 033113350150 $184.00/CY for 3500psi concrete. Increse material cost by $14/CY to $274/CY.)											
				4,953.66	*652.94*	*10,927.29*	*0.00*		*16,533.89*	*16,533.89*	
USR 051223171600 Column, structural, 6" to 12" dia, extra strong pipe, incl shop primer, cap & base plate, bolts, converted to per ton	363.60	TON	Prime	1,801,149.86	237,408.03	3,973,162.88	0.00	0.00	6,011,720.77	6,011,720.77	

Description	Quantity	UOM	Contractor	DirectLabor	DirectEQ	DirectMatl	DirectSubBid	DirectUserCost	DirectCost	DirectCost	C/O
(Note: converted to per ton)											
				1,788.73	*421.12*	*8,405.61*	*0.00*		*10,615.46*	*10,615.46*	
RSM 314116100600 Sheet piling, steel, 38 psf, 25' excavation, per ton, left in place, excludes wales	5,381.28	TON	Prime	9,625,650.24	2,266,191.10	45,232,931.30	0.00	0.00	57,124,772.64	57,124,772.64	
(Note: Currently assuming 36inx0.438in with NZ19. assuming NZ Length / Pipe Length at 100% = 38.0lb/sf)											
				811.31	*111.89*	*5,095.96*	*0.00*		*6,019.16*	*6,019.16*	
USR 316223134100 Concrete-filled steel piles, steel, pipe piles, no concrete, 50' long, 18" diameter, 59 lb./L.F., excludes mobilization or demobilization, converted to 36"x0.625" pipe per ton	6,326.64	TON	Prime	5,132,876.92	707,866.51	32,240,333.67	0.00	0.00	38,081,077.10	38,081,077.10	
(Note: Initial Material = 46.50/VLF, convert to ton using default 59 lb/lf, $46.5/VLF / 59lb/lf * 2000lb/ton = $1,576.27/ton Initial Crew Output = 44.3750VLF/hr, use same production rate converted to 36"x0.625" pipe with 236.4lb/ft, 44.375VLF/hr * 236lb/lf / 2000lb/ton = 5.23625TON/hr)											
				0.00	*0.00*	*0.00*	*13.62*		*13.62*	*13.62*	
USR Dredge and Fill	72,720.00	CY	Prime	0.00	0.00	0.00	990,361.75	0.00	990,361.75	990,361.75	
(Note: This Item was added for backfill behind structure. From the construction of the Verrazano Narrows Sector Gate Islands we used $6.10-6.14 / CY to dredge nearby and fill the islands. round up to $7. ~20ft LOP offset, 20' x 27' x1' per foot of structure / 27ft3/cy = 20CY/LF)											
				0.00	*0.00*	*2,263.05*	*0.00*		*2,263.05*	*2,263.05*	
USR Coal Tar Epoxy Coating	5,221.30	TON	Prime	0.00	0.00	11,816,045.36	0.00	0.00	11,816,045.36	11,816,045.36	
(Note: assume $700/ton. Task details based on engineering judgement of the Cost Estimator. Anchored Combi Wall Combi-Wall (36" Dia. Pipe/NZ-19) 1.48 TN/lf (Assume 50%. Assuming extends 10-15ft below mudline). Batter Pile (30" Dia. X 0.625") 1.74 TN/lf (Assume 40%. Assuming extends 10-15ft below mudline). Epoxy Q*(1.48*0.5+1.74*0.4))											
				7,715.42	*1,240.27*	*161,399.11*	*68,559.93*		*238,914.73*	*238,914.73*	
0005 Tunnel Span	**155.00**	**LF**	**Sub**	**1,195,890.29**	**192,242.14**	**25,016,861.91**	**10,626,788.63**	**0.00**	**37,031,782.96**	**37,031,782.96**	
(Note: Assemblies makeup and quantities based on "QTO_Draft_20250610 Rev1 MN" Jacket Structure -Steel Pipe Piles (60"dia x 1" thick) 2825.00 TN / 155 ft = 18.22580645 tn/ft Jacket Structure-Framing (W40x211) 87.00 TN / 155 ft = 1.187096774 tn/ft Truss Members (Member sizes vary) 560.00 TN / 155 ft = 3.612903226 tn/ft Truss Plate (0.38" Plate) 49.61 TN / 155 ft = 0.320064516 tn/ft Sheetpile Connection (SIZE) 12.96 TN / 155 ft = 0.083612903 tn/ft Jacket Structure-Steel Pipe Bracing (30" Dia. X 1") 451.00 TN / 155 ft = 2.909677419 tn/ft)											
				301.01	*49.59*	*5,095.96*	*0.00*		*5,446.56*	*5,446.56*	
USR 316223134100 Concrete-filled steel piles, steel, pipe piles, no concrete, 50' long, 18"	2,825.00	TON	Sub	850,361.32	140,081.82	14,396,100.08	0.00	0.00	15,386,543.22	15,386,543.22	

Description	Quantity	UOM	Contractor	DirectLabor	DirectEQ	DirectMatl	DirectSubBid	DirectUserCost	DirectCost	DirectCost	C/O
diameter, 59 lb./L.F., excludes mobilization or demobilization											
(Note: Initial RSM 316333105040 item details: Material = $46.50/VLF, Crew Output = 44.3750VLF/hr. Convert VLF to TON. Material $46.50/ft / 59lb/ft * 2000lb/ton = $1,576.27/ton. Convert Crew Output VLF/hr to TON/hr. 44.3750vlf/hr * 630.7lb/ft / 2000lb/ton = 13.978125 TON/hr. 630.7lb/ft from skyline product manual for 60inx1in pipe. Change crew item from 50 ton crane to 100 ton crane)											
				378.46	*36.48*	*12,035.99*	*0.00*		*12,450.93*	*12,450.93*	
USR 051223757900 Structural steel beam or girder, 100-ton project, 1 to 2 story building, W36x231, A992 steel, shop fabricated, incl shop primer, bolted connections	184.00	TON	Sub	69,636.12	6,711.91	2,214,622.23	0.00	0.00	2,290,970.26	2,290,970.26	
(Note: Initial for W36x231 material = $430.00/LF, Crew Output = 140.6250FT/hr, 231lb/ft. Convert material LF to TON. $430/lf / 231lb/ft *2000lb/ton = $3,722.94/TON Convert crew output LF/hr to TON/hr. 140.6250ft/hr * 231lb/ft / 2000lb/ton = 16.2421875TON/hr)											
				0.00	*0.00*	*0.00*	*17,432.11*		*17,432.11*	*17,432.11*	
USR Tunnel Span Truss TON	560.00	TON	Sub	0.00	0.00	0.00	9,761,981.65	0.00	9,761,981.65	9,761,981.65	
(Note: assumed $5,600 per ton(from RSM 051223772000). material - $5,600/ton Add 60% for installation: $5,600/ton * 1.6 = $8,960 / TON use same cost from above calculated gate for truss and plates)											
				0.00	*0.00*	*0.00*	*17,432.11*		*17,432.11*	*17,432.11*	
USR Tunnel Span Plates TON	49.61	TON	Sub	0.00	0.00	0.00	864,806.98	0.00	864,806.98	864,806.98	
(Note: assumed $5,600 per ton(from RSM 051223772000). material - $5,600/ton Add 60% for installation: $5,600/ton * 1.6 = $8,960 / TON use same cost from above calculated gate for truss and plates)											
				0.00	*0.00*	*5,043.36*	*0.00*		*5,043.36*	*5,043.36*	
USR 314116102500 Sheet piling, wales, connections and struts, 2/3 salvage	12.96	TON	Sub	0.00	0.00	65,362.01	0.00	0.00	65,362.01	65,362.01	
(Note: convert $520.00/TON for 2/3 salvage to no salvage. $520.00/ton * 3ea = $1,560/TON)											
				611.74	*100.77*	*5,095.96*	*0.00*		*5,808.47*	*5,808.47*	
USR 316223134100 Concrete-filled steel piles, steel, pipe piles, no concrete, 50' long, 18" diameter, 59 lb./L.F., excludes mobilization or demobilization (30")	451.00	TON	Sub	275,892.85	45,448.41	2,298,280.05	0.00	0.00	2,619,621.31	2,619,621.31	

Description	Quantity	UOM	Contractor	DirectLabor	DirectEQ	DirectMatl	DirectSubBid	DirectUserCost	DirectCost	DirectCost	C/O
(Note: Initial RSM 316333105040 item details: Material = $46.50/VLF, Crew Output = 44.3750VLF/hr. Convert VLF to TON. Material $46.50/ft / 59lb/ft * 2000lb/ton = $1,576.27/ton. Convert Crew Output VLF/hr to TON/hr. 44.3750vlf/hr * 310.0lb/ft / 2000lb/ton = 6.878125 TON/hr. 310.0lb/ft from skyline product manual for 30inx1in pipe. Change crew item from 50 ton crane to 100 ton crane)											
				0.00	*0.00*	*2,263.05*	*0.00*		*2,263.05*	*2,263.05*	
USR Coal Tar Epoxy Coating	2,670.07	TON	Sub	0.00	0.00	6,042,497.54	0.00	0.00	6,042,497.54	6,042,497.54	
(Note: assume $700/ton. Task details based on engineering judgement of the Cost Estimator. Tunnel Span Jacket Structure -Steel Pipe Piles (60"dia x 1" thick) 2825.00 TN / 155 ft = 18.22580645 tn/ft (assume 50% coating). Jacket Structure-Framing (W40x211) 87.00 TN / 155 ft = 1.187096774 tn/ft (Assume 100% coating). Truss Members (Member sizes vary) 560.00 TN / 155 ft = 3.612903226 tn/ft (Assume 100% coating). Truss Plate (0.38" Plate) 49.61 TN / 155 ft = 0.320064516 tn/ft (Assume 100% coating). Sheetpile Connection (SIZE) 12.96 TN / 155 ft = 0.083612903 tn/ft (Assume 100% coating). Jacket Structure-Steel Pipe Bracing (30" Dia. X 1") 451.00 TN / 155 ft = 2.909677419 tn/ft (Assume 100% coating). Epoxy Q*(18.22580645*0.5+1.187096774+3.612903226+0.320064516+0.083612903+2.909677419))											
				4,478.10	*379.11*	*8,585.23*	*7,708.50*		*21,150.94*	*21,150.94*	
0006 Deployable Flood Barrier - Vehicle Gate (north)	**40.00**	**LF**	**Sub**	**179,124.03**	**15,164.47**	**343,409.08**	**308,340.03**	**0.00**	**846,037.61**	**846,037.61**	
(Note: Assemblies makeup and quantities based on "QTO_Draft_20250610 Rev1 MN" Reinforced Concrete for Gate Foundation 201.29 CY / 80 ft = 2.516125 cy/ft Sheet Pile (NZ26) 27.90 TN / 80 ft = 0.34875 ton/ft Micropile (12"x0.5") 32.00 EA / 80 ft = 0.4 ea/ft micropile casing tonnage 24.60 TN / 80 ft = 0.3075 tn/ft micropile grout volume 82.13 CY / 80 ft = 1.026625 cy/ft Structural Steel 17.56 TN / 80 ft = 0.2195 tn/ft Excavation 198.33 CY / 80 ft = 2.479125 cy/ft)											
				814.88	*6.48*	*573.18*	*0.00*		*1,394.54*	*1,394.54*	
USR 033053406300 Structural concrete, in place, cantilever retaining wall (3000 psi), 8' high, level backfill loading, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing	100.65	CY	Sub	82,013.86	652.46	57,687.58	0.00	0.00	140,353.90	140,353.90	
(Note: Initial Material Cost = $260/CY. From RSM 033113350400 $198.00/CY for 5000psi concrete. From RSM 033113350150 $184.00/CY for 3500psi concrete. Increse material cost by $14/CY to $274/CY.)											
				1,435.51	*358.74*	*5,438.92*	*0.00*		*7,233.18*	*7,233.18*	
RSM 314116100300 Sheet piling, steel, 27 psf, 20' excavation, per ton, left in place, excludes wales	13.95	TON	Sub	20,025.38	5,004.45	75,872.98	0.00	0.00	100,902.80	100,902.80	
(Note: References RSM 314116100300 and 314116100600. Interpolate using 27 psf(1.6188ton/hr) and 38(2.3750) psf to obtain crew output for NZ 26 30.99lb/sf. (2.3750-1.6188)/(38-27)=(X-1.6188)/(30.99-27), X=1.804ton/hr)											
				200.67	*24.38*	*472.56*	*0.00*		*697.61*	*697.61*	
USR 316333105040 Concrete-filled steel	375.68	VLF	Sub	75,386.25	9,159.65	177,530.86	0.00	0.00	262,076.76	262,076.76	

Description	Quantity	UOM	Contractor	DirectLabor	DirectEQ	DirectMatl	DirectSubBid	DirectUserCost	DirectCost	DirectCost	C/O
piles, pressure grouted pin pile, cased, end bearing, up to 50 ton, 5" diameter, less than 20' long, priced using 200 piles, 60' long, unless specified otherwise, excludes pile caps or mobilization											
(Note: assume for vehicle gate foundation 24.60ton * 2000lb/ton / 65.48lb/lf / 32EA = 23.48 VLF/pile. for floodwall 0.26ton * 2000lb/ton / 65.48lb/lf / 0.33EA = 24.24 (5.563 in / 2)^2 *pi = 24.29 in3 (12.75 in / 2)^2 *pi = 127.61 in3 $43.0 *(127.61 in3 / 24.29 in3) = $225.90/VLF changed crew output from 20vlf/hr to 10vlf/hr)											
				0.00	*0.00*	*0.00*	*33,838.80*		*33,838.80*	*33,838.80*	
USR Structural Steel(Vehicular Gate) TON	8.78	TON	Sub	0.00	0.00	0.00	297,104.68	0.00	297,104.68	297,104.68	
(Note: assumed $5,600 per ton(from RSM 051223772000). Add 100% contingency for rollers, hardware, botmmisc. steel, etc. material - $11,200/ton Add 50% more contengency for electrical/hydraulic items. material - $16,800/ton Add 60% for installation: $16,800/ton * 1.6 = $26,880 / TON)											
				0.00	*0.00*	*0.00*	*113.30*		*113.30*	*113.30*	
USR IDW-DISPOSE IDW Disposal Fee	99.17	EA	Sub	0.00	0.00	0.00	11,235.35	0.00	11,235.35	11,235.35	
(Note: Does not include haul. Engineering judgement based on USACE Green Brook Flood Risk Management project. Task details based on engineering judgement of the Cost Estimator.)											
				17.13	*3.51*	*0.00*	*0.00*		*20.64*	*20.64*	
RSM 312316130110 Excavating, trench or continuous footing, common earth, 3/4 C.Y. excavator, 4' to 6' deep, excavator, excludes sheeting or dewatering	99.17	BCY	Sub	1,698.54	347.91	0.00	0.00	0.00	2,046.45	2,046.45	
				0.00	*0.00*	*1,464.33*	*0.00*		*1,464.33*	*1,464.33*	
USR Coal Tar Epoxy Coating	22.07	TON	Sub	0.00	0.00	32,317.66	0.00	0.00	32,317.66	32,317.66	
(Note: assume $700/ton. Task details based on engineering judgement of the Cost Estimator. Deployable Flood Barrier Sheet Pile (NZ26) 27.90 TN / 80 ft = 0.34875 ton/ft (Assume 60% coating. Assuming extends 5ft below concrete). micropile casing tonnage 24.60 TN / 80 ft = 0.3075 tn/ft (Assume 40% coating. Assuming extends 5ft below concrete). Structural Steel 17.56 TN / 80 ft = 0.2195 tn/ft (Assume 100% coating). Epoxy Q*(0.34875*0.6+0.3075*0.4+0.2195*1))											
				4,315.10	*331.40*	*7,432.66*	*249.26*		*12,328.42*	*12,328.42*	
0007 Floodwall (north)	**238.00**	**LF**	**Prime**	**1,026,993.18**	**78,873.14**	**1,768,973.85**	**59,323.65**	**0.00**	**2,934,163.83**	**2,934,163.83**	
(Note: Assemblies makeup and quantities based on "QTO_Draft_20250610 Rev1 MN" Reinforced Concrete for Floodwall 2.69 CY Steel Sheet Pile (NZ26) 0.31 TN Excavation 2.20 CY Micropile (12") 0.33 EA Micropile casing tonnage 0.26 TN Micropile grout volume 0.86 CY)											
				821.39	*6.48*	*573.18*	*0.00*		*1,401.05*	*1,401.05*	

Description	Quantity	UOM	Contractor	DirectLabor	DirectEQ	DirectMatl	DirectSubBid	DirectUserCost	DirectCost	DirectCost	C/O
USR 033053406300 Structural concrete, in place, cantilever retaining wall (3000 psi), 8' high, level backfill loading, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing	640.22	CY	Prime	525,869.63	4,150.43	366,960.53	0.00	0.00	896,980.59	896,980.59	
(Note: Initial Material Cost = $260/CY. From RSM 033113350400 $198.00/CY for 5000psi concrete. From RSM 033113350150 $184.00/CY for 3500psi concrete. Increse material cost by $14/CY to $274/CY.)											
				1,447.12	*358.74*	*5,438.92*	*0.00*		*7,244.78*	*7,244.78*	
RSM 314116100300 Sheet piling, steel, 27 psf, 20' excavation, per ton, left in place, excludes wales	73.78	TON	Prime	106,768.15	26,467.96	401,283.74	0.00	0.00	534,519.84	534,519.84	
(Note: References RSM 314116100300 and 314116100600. Interpolate using 27 psf(1.6188ton/hr) and 38(2.3750) psf to obtain crew output for NZ 26 30.99lb/sf. (2.3750-1.6188)/(38-27)=(X-1.6188)/(30.99-27), X=1.804ton/hr)											
				0.00	*0.00*	*0.00*	*113.30*		*113.30*	*113.30*	
USR IDW-DISPOSE IDW Disposal Fee	523.60	EA	Prime	0.00	0.00	0.00	59,323.65	0.00	59,323.65	59,323.65	
(Note: Does not include haul. Engineering judgement based on USACE Green Brook Flood Risk Management project. Task details based on engineering judgement of the Cost Estimator.)											
				17.28	*3.51*	*0.00*	*0.00*		*20.79*	*20.79*	
RSM 312316130110 Excavating, trench or continuous footing, common earth, 3/4 C.Y. excavator, 4' to 6' deep, excavator, excludes sheeting or dewatering	523.60	BCY	Prime	9,047.46	1,836.99	0.00	0.00	0.00	10,884.45	10,884.45	
				202.39	*24.38*	*472.56*	*0.00*		*699.33*	*699.33*	
USR 316333105040 Concrete-filled steel piles, pressure grouted pin pile, cased, end bearing, up to 50 ton, 5" diameter, less than 20' long, priced using 200 piles, 60' long,	1,903.81	VLF	Prime	385,307.95	46,417.77	899,661.84	0.00	0.00	1,331,387.56	1,331,387.56	

Description	Quantity	UOM	Contractor	DirectLabor	DirectEQ	DirectMatl	DirectSubBid	DirectUserCost	DirectCost	DirectCost	C/O
unless specified otherwise, excludes pile caps or mobilization											
(Note: assume for vehicle gate foundation 24.60ton * 2000lb/ton / 65.48lb/lf / 32EA = 23.48 VLF/pile. for floodwall 0.26ton * 2000lb/ton / 65.48lb/lf / 0.33EA = 24.24 (5.563 in / 2)^2 *pi = 24.29 in3 (12.75 in / 2)^2 *pi = 127.61 in3 $43.0 *(127.61 in3 / 24.29 in3) = $225.90/VLF changed crew output from 20vlf/hr to 10vlf/hr)											
				0.00	*0.00*	*1,464.33*	*0.00*		*1,464.33*	*1,464.33*	
USR Coal Tar Epoxy Coating	69.02	TON	Prime	0.00	0.00	101,067.74	0.00	0.00	101,067.74	101,067.74	
(Note: assume $700/ton. Task details based on engineering judgement of the Cost Estimator. Floodwall Steel Sheet Pile (NZ26) 0.31 TN/lf (Assume 60% coating. Assuming extends 5ft below concrete). Micropile casing tonnage 0.26 TN/lf (Assume 40% coating. Assuming extends 5ft below concrete). Epoxy Q*(0.31*0.6+0.26*0.4))											

Description	Quantity	UOM	BareCost	Productivity	Overtime	TaxAdj	MiscDirect	Payroll	WCI	DirectCost	C/O
Project Bare to Direct Report			**112,610,909.37**	**5,165,790.39**	**645,972.76**	**5,560,789.36**	**108,395,394.79**	**4,789,501.38**	**4,057,553.94**	**241,225,911.99**	
			112,610,909.37	*5,165,790.39%*	*645,972.76%*					*241,225,911.99*	
Base Bid	**1.00**	**EA**	**112,610,909.37**	**5,165,790.39**	**645,972.76**	**5,560,789.36**	**108,395,394.79**	**4,789,501.38**	**4,057,553.94**	**241,225,911.99**	
			55,558,707.00	*0.00%*	*0.00%*					*60,008,959.43*	
02 Relocations	**1.00**	**EA**	**55,558,707.00**	**0.00**	**0.00**	**0.00**	**4,450,252.43**	**0.00**	**0.00**	**60,008,959.43**	
			13,263.00	*0.00%*	*0.00%*					*14,325.37*	
0001 Relocations	**4,189.00**	**LF**	**55,558,707.00**	**0.00**	**0.00**	**0.00**	**4,450,252.43**	**0.00**	**0.00**	**60,008,959.43**	
			13,263.00	*0.00%*	*0.00%*	*0.00%*	*8.01%*	*0.00%*	*0.00%*	*14,325.37*	
USR Relocations	4,189.00	LF	55,558,707.00	0.00	0.00	0.00	4,450,252.43	0.00	0.00	60,008,959.43	
(Note: $13,263 / LF deveolped from HATS for East Harlem 2022Q3)											
			57,052,202.37	*5,165,790.39%*	*645,972.76%*					*181,216,952.56*	
11 Levees & Floodwalls	**1.00**	**EA**	**57,052,202.37**	**5,165,790.39**	**645,972.76**	**5,560,789.36**	**103,945,142.36**	**4,789,501.38**	**4,057,553.94**	**181,216,952.56**	
			5,555.02	*982.48%*	*135.02%*					*12,328.42*	
0002 Floodwall (south)	**80.00**	**LF**	**444,401.73**	**78,598.07**	**10,801.95**	**38,502.50**	**336,944.12**	**41,124.37**	**35,900.81**	**986,273.55**	
(Note: Assemblies makeup and quantities based on "QTO_Draft_20250610 Rev1 MN" Reinforced Concrete for Floodwall 2.69 CY Steel Sheet Pile (NZ26) 0.31 TN Excavation 2.20 CY Micropile (12") 0.33 EA Micropile casing tonnage 0.26 TN Micropile grout volume 0.86 CY)											
			587.49	*64.80%*	*10.00%*	*7,987.06%*	*78.55%*	*14.29%*	*21.89%*	*1,401.05*	
USR 033053406300 Structural concrete, in place, cantilever retaining wall (3000 psi), 8' high, level backfill loading, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing	215.20	CY	126,427.92	36,657.31	5,503.11	7,987.06	84,800.75	22,281.28	17,848.65	301,506.08	
(Note: Initial Material Cost = $260/CY. From RSM 033113350400 $198.00/CY for 5000psi concrete. From RSM 033113350150 $184.00/CY for 3500psi concrete. Increse material cost by $14/CY to $274/CY.)											
			3,335.35	*64.80%*	*10.00%*	*8,734.12%*	*78.55%*	*14.29%*	*21.89%*	*7,244.78*	
RSM 314116100300 Sheet piling, steel, 27 psf, 20' excavation, per ton, left in place, excludes wales	24.80	TON	82,716.70	9,975.04	1,035.57	8,734.12	69,402.01	4,138.72	3,668.37	179,670.53	
(Note: References RSM 314116100300 and 314116100600. Interpolate using 27 psf(1.6188ton/hr) and 38(2.3750) psf to obtain crew output for NZ 26 30.99lb/sf. (2.3750-1.6188)/(38-27)=(X-1.6188)/(30.99-27), X=1.804ton/hr)											
			90.00	*64.80%*	*10.00%*	*0.00%*	*78.55%*	*0.00%*	*0.00%*	*113.30*	
USR IDW-DISPOSE IDW Disposal Fee	176.00	EA	15,840.00	0.00	0.00	0.00	4,100.72	0.00	0.00	19,940.72	
(Note: Does not include haul. Engineering judgement based on USACE Green Brook Flood Risk Management project. Task details based on engineering judgement of the Cost Estimator.)											
			8.33	*64.80%*	*10.00%*	*0.00%*	*78.55%*	*14.29%*	*21.89%*	*20.79*	

Description	Quantity	UOM	BareCost	Productivity	Overtime	TaxAdj	MiscDirect	Payroll	WCI	DirectCost	C/O
RSM 312316130110 Excavating, trench or continuous footing, common earth, 3/4 C.Y. excavator, 4' to 6' deep, excavator, excludes sheeting or dewatering	176.00	BCY	1,465.31	800.75	96.92	0.00	622.80	334.23	338.63	3,658.64	
			315.21	*64.80%*	*10.00%*	*19,581.54%*	*78.55%*	*14.29%*	*21.89%*	*699.33*	
USR 316333105040 Concrete-filled steel piles, pressure grouted pin pile, cased, end bearing, up to 50 ton, 5" diameter, less than 20' long, priced using 200 piles, 60' long, unless specified otherwise, excludes pile caps or mobilization	639.94	VLF	201,711.79	31,164.98	4,166.34	19,581.54	162,485.27	14,370.15	14,045.16	447,525.23	
(Note: assume for vehicle gate foundation 24.60ton * 2000lb/ton / 65.48lb/lf / 32EA = 23.48 VLF/pile. for floodwall 0.26ton * 2000lb/ton / 65.48lb/lf / 0.33EA = 24.24 (5.563 in / 2)^2 *pi = 24.29 in3 (12.75 in / 2)^2 *pi = 127.61 in3 $43.0 *(127.61 in3 / 24.29 in3) = $225.90/VLF changed crew output from 20vlf/hr to 10vlf/hr)											
			700.00	*64.80%*	*10.00%*	*2,199.78%*	*78.55%*	*0.00%*	*0.00%*	*1,464.33*	
USR Coal Tar Epoxy Coating	23.20	TON	16,240.00	0.00	0.00	2,199.78	15,532.57	0.00	0.00	33,972.35	
(Note: assume $700/ton. Task details based on engineering judgement of the Cost Estimator. Floodwall Steel Sheet Pile (NZ26) 0.31 TN/lf (Assume 60% coating. Assuming extends 5ft below concrete). Micropile casing tonnage 0.26 TN/lf (Assume 40% coating. Assuming extends 5ft below concrete). Epoxy Q*(0.31*0.6+0.26*0.4))											
			12,131.97	*1,037.54%*	*141.42%*					*21,150.94*	
0003 Deployable Flood Barrier - Vehicle Gate (south)	**40.00**	**LF**	**485,278.64**	**41,501.74**	**5,656.71**	**22,236.49**	**252,622.46**	**21,373.00**	**17,368.58**	**846,037.61**	
(Note: Assemblies makeup and quantities based on "QTO_Draft_20250610 Rev1 MN" Reinforced Concrete for Gate Foundation 201.29 CY / 80 ft = 2.516125 cy/ft Sheet Pile (NZ26) 27.90 TN / 80 ft = 0.34875 ton/ft Micropile (12"x0.5") 32.00 EA / 80 ft = 0.4 ea/ft micropile casing tonnage 24.60 TN / 80 ft = 0.3075 tn/ft micropile grout volume 82.13 CY / 80 ft = 1.026625 cy/ft Structural Steel 17.56 TN / 80 ft = 0.2195 tn/ft Excavation 198.33 CY / 80 ft = 2.479125 cy/ft)											
			587.49	*64.80%*	*10.00%*	*3,735.40%*	*78.55%*	*14.29%*	*20.17%*	*1,394.54*	
USR 033053406300 Structural concrete, in place, cantilever retaining wall (3000 psi), 8' high, level backfill loading, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing	100.65	CY	59,127.96	17,143.94	2,573.70	3,735.40	39,659.72	10,420.54	7,692.65	140,353.90	
(Note: Initial Material Cost = $260/CY. From RSM 033113350400 $198.00/CY for 5000psi concrete. From RSM 033113350150 $184.00/CY for 3500psi concrete. Increse material cost by $14/CY to $274/CY.)											
			3,335.35	*64.80%*	*10.00%*	*4,912.94%*	*78.55%*	*14.29%*	*20.17%*	*7,233.18*	

Description	Quantity	UOM	BareCost	Productivity	Overtime	TaxAdj	MiscDirect	Payroll	WCI	DirectCost	C/O
RSM 314116100300 Sheet piling, steel, 27 psf, 20' excavation, per ton, left in place, excludes wales	13.95	TON	46,528.15	5,610.96	582.51	4,912.94	39,038.63	2,328.03	1,901.59	100,902.80	
(Note: References RSM 314116100300 and 314116100600. Interpolate using 27 psf(1.6188ton/hr) and 38(2.3750) psf to obtain crew output for NZ 26 30.99lb/sf. (2.3750-1.6188)/(38-27)=(X-1.6188)/(30.99-27), X=1.804ton/hr)											
			315.21	*64.80%*	*10.00%*	*11,495.51%*	*78.55%*	*14.29%*	*20.17%*	*697.61*	
USR 316333105040 Concrete-filled steel piles, pressure grouted pin pile, cased, end bearing, up to 50 ton, 5" diameter, less than 20' long, priced using 200 piles, 60' long, unless specified otherwise, excludes pile caps or mobilization	375.68	VLF	118,416.67	18,295.67	2,445.89	11,495.51	95,388.39	8,436.12	7,598.51	262,076.76	
(Note: assume for vehicle gate foundation 24.60ton * 2000lb/ton / 65.48lb/lf / 32EA = 23.48 VLF/pile. for floodwall 0.26ton * 2000lb/ton / 65.48lb/lf / 0.33EA = 24.24 (5.563 in / 2)^2 *pi = 24.29 in3 (12.75 in / 2)^2 *pi = 127.61 in3 $43.0 *(127.61 in3 / 24.29 in3) = $225.90/VLF changed crew output from 20vlf/hr to 10vlf/hr)											
			26,880.00	*64.80%*	*10.00%*	*0.00%*	*78.55%*	*0.00%*	*0.00%*	*33,838.80*	
USR Structural Steel(Vehicular Gate) TON	8.78	TON	236,006.40	0.00	0.00	0.00	61,098.28	0.00	0.00	297,104.68	
(Note: assumed $5,600 per ton(from RSM 051223772000). Add 100% contingency for rollers, hardware, botmmisc. steel, etc. material - $11,200/ton Add 50% more contengency for electrical/hydraulic items. material - $16,800/ton Add 60% for installation: $16,800/ton * 1.6 = $26,880 / TON)											
			90.00	*64.80%*	*10.00%*	*0.00%*	*78.55%*	*0.00%*	*0.00%*	*113.30*	
USR IDW-DISPOSE IDW Disposal Fee	99.17	EA	8,924.85	0.00	0.00	0.00	2,310.50	0.00	0.00	11,235.35	
(Note: Does not include haul. Engineering judgement based on USACE Green Brook Flood Risk Management project. Task details based on engineering judgement of the Cost Estimator.)											
			8.33	*64.80%*	*10.00%*	*0.00%*	*78.55%*	*14.29%*	*20.17%*	*20.64*	
RSM 312316130110 Excavating, trench or continuous footing, common earth, 3/4 C.Y. excavator, 4' to 6' deep, excavator, excludes sheeting or dewatering	99.17	BCY	825.61	451.17	54.61	0.00	350.91	188.32	175.83	2,046.45	
			700.00	*64.80%*	*10.00%*	*2,092.64%*	*78.55%*	*0.00%*	*0.00%*	*1,464.33*	
USR Coal Tar Epoxy Coating	22.07	TON	15,449.00	0.00	0.00	2,092.64	14,776.02	0.00	0.00	32,317.66	
(Note: assume $700/ton. Task details based on engineering judgement of the Cost Estimator. Deployable Flood Barrier Sheet Pile (NZ26) 27.90 TN / 80 ft = 0.34875 ton/ft (Assume 60% coating. Assuming extends 5ft below concrete). micropile casing tonnage 24.60 TN / 80 ft = 0.3075 tn/ft (Assume 40% coating. Assuming extends 5ft below concrete). Structural Steel 17.56 TN / 80 ft = 0.2195 tn/ft (Assume 100% coating). Epoxy Q*(0.34875*0.6+0.3075*0.4+0.2195*1))											
			11,212.15	*1,259.79%*	*156.86%*					*38,111.29*	
0004 Anchored Combi	**3,636.00**	**LF**	**40,767,366.01**	**4,580,614.42**	**570,344.28**	**4,315,100.51**	**80,173,631.41**	**4,419,531.39**	**3,746,068.97**	**138,572,656.99**	

Description	Quantity	UOM	BareCost	Productivity	Overtime	TaxAdj	MiscDirect	Payroll	WCI	DirectCost	C/O
Wall											
(Note: Assemblies makeup and quantities based on "QTO_Draft_20250610 Rev1 MN" Reinforced Concrete for Combiwall 3.02 CY Bracing (Pipe 16 X-Strong) 0.10 TN Combi-Wall (36" Dia. Pipe/NZ-19) 1.48 TN Batter Pile (30" Dia. X 0.625") 1.74 TN)											
			587.49	*64.80%*	*10.00%*	*407,544.86%*	*138.55%*	*14.29%*	*21.89%*	*2,235.62*	
USR 033053406300 Structural concrete, in place, cantilever retaining wall (3000 psi), 8' high, level backfill loading, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing	10,980.72	CY	6,451,066.83	1,870,463.23	280,799.94	407,544.86	11,601,679.99	2,169,188.33	1,767,936.20	24,548,679.37	
(Note: Initial Material Cost = $260/CY. From RSM 033113350400 $198.00/CY for 5000psi concrete. From RSM 033113350150 $184.00/CY for 3500psi concrete. Increse material cost by $14/CY to $274/CY.)											
			4,794.22	*64.80%*	*10.00%*	*166,469.48%*	*138.55%*	*14.29%*	*21.89%*	*16,533.89*	
USR 051223171600 Column, structural, 6" to 12" dia, extra strong pipe, incl shop primer, cap & base plate, bolts, converted to per ton	363.60	TON	1,743,177.09	280,516.48	26,213.13	166,469.48	3,358,235.27	258,534.95	178,574.37	6,011,720.77	
(Note: converted to per ton)											
			3,158.56	*64.80%*	*10.00%*	*1,895,190.96%*	*138.55%*	*14.29%*	*21.89%*	*10,615.46*	
RSM 314116100600 Sheet piling, steel, 38 psf, 25' excavation, per ton, left in place, excludes wales	5,381.28	TON	16,997,080.22	1,644,074.67	170,682.11	1,895,190.96	33,944,979.77	1,299,075.99	1,173,688.92	57,124,772.64	
(Note: Currently assuming 36inx0.438in with NZ19. assuming NZ Length / Pipe Length at 100% = 38.0lb/sf)											
			1,803.82	*64.80%*	*10.00%*	*1,350,820.90%*	*138.55%*	*14.29%*	*21.89%*	*6,019.16*	
USR 316223134100 Concrete-filled steel piles, steel, pipe piles, no concrete, 50' long, 18" diameter, 59 lb./L.F., excludes mobilization or demobilization, converted to 36"x0.625" pipe per ton	6,326.64	TON	11,412,094.67	785,560.04	92,649.10	1,350,820.90	23,121,350.78	692,732.13	625,869.48	38,081,077.10	
(Note: Initial Material = 46.50/VLF, convert to ton using default 59 lb/lf, $46.5/VLF / 59lb/lf * 2000lb/ton = $1,576.27/ton Initial Crew Output = 44.3750VLF/hr, use same production rate converted to 36"x0.625" pipe with 236.4lb/ft, 44.375VLF/hr * 236lb/lf / 2000lb/ton = 5.23625TON/hr)											
			7.00	*64.80%*	*10.00%*	*0.00%*	*138.55%*	*0.00%*	*0.00%*	*13.62*	
USR Dredge and Fill	72,720.00	CY	509,040.00	0.00	0.00	0.00	481,321.75	0.00	0.00	990,361.75	
(Note: This Item was added for backfill behind structure. From the construction of the Verrazano Narrows Sector Gate Islands we used $6.10-6.14 / CY to dredge nearby and fill the islands. round up to $7. ~20ft LOP offset, 20' x 27' x1' per foot of structure / 27ft3/cy = 20CY/LF)											

Description	Quantity	UOM	BareCost	Productivity	Overtime	TaxAdj	MiscDirect	Payroll	WCI	DirectCost	C/O
			700.00	*64.80%*	*10.00%*	*495,074.31%*	*138.55%*	*0.00%*	*0.00%*	*2,263.05*	
USR Coal Tar Epoxy Coating	5,221.30	TON	3,654,907.20	0.00	0.00	495,074.31	7,666,063.85	0.00	0.00	11,816,045.36	
(Note: assume $700/ton. Task details based on engineering judgement of the Cost Estimator. Anchored Combi Wall Combi-Wall (36" Dia. Pipe/NZ-19) 1.48 TN/lf (Assume 50%. Assuming extends 10-15ft below mudline). Batter Pile (30" Dia. X 0.625") 1.74 TN/lf (Assume 40%. Assuming extends 10-15ft below mudline). Epoxy Q*(1.48*0.5+1.74*0.4))											
			87,405.05	*1,224.16%*	*137.92%*					*238,914.73*	
0005 Tunnel Span	**155.00**	**LF**	**13,547,782.21**	**189,745.15**	**21,377.29**	**1,048,168.43**	**21,926,913.15**	**163,754.62**	**134,042.11**	**37,031,782.96**	
(Note: Assemblies makeup and quantities based on "QTO_Draft_20250610 Rev1 MN" Jacket Structure -Steel Pipe Piles (60"dia x 1" thick) 2825.00 TN / 155 ft = 18.22580645 tn/ft Jacket Structure-Framing (W40x211) 87.00 TN / 155 ft = 1.187096774 tn/ft Truss Members (Member sizes vary) 560.00 TN / 155 ft = 3.612903226 tn/ft Truss Plate (0.38" Plate) 49.61 TN / 155 ft = 0.320064516 tn/ft Sheetpile Connection (SIZE) 12.96 TN / 155 ft = 0.083612903 tn/ft Jacket Structure-Steel Pipe Bracing (30" Dia. X 1") 451.00 TN / 155 ft = 2.909677419 tn/ft)											
			1,664.02	*64.80%*	*10.00%*	*603,174.68%*	*138.55%*	*14.29%*	*20.17%*	*5,446.56*	
USR 316223134100 Concrete-filled steel piles, steel, pipe piles, no concrete, 50' long, 18" diameter, 59 lb./L.F., excludes mobilization or demobilization	2,825.00	TON	4,700,869.43	135,367.92	15,367.58	603,174.68	9,719,414.25	115,872.96	96,476.39	15,386,543.22	
(Note: Initial RSM 316333105040 item details: Material = $46.50/VLF, Crew Output = 44.3750VLF/hr. Convert VLF to TON. Material $46.50/ft / 59lb/ft * 2000lb/ton = $1,576.27/ton. Convert Crew Output VLF/hr to TON/hr. 44.3750vlf/hr * 630.7lb/ft / 2000lb/ton = 13.978125 TON/hr. 630.7lb/ft from skyline product manual for 60inx1in pipe. Change crew item from 50 ton crane to 100 ton crane)											
			3,827.24	*64.80%*	*10.00%*	*92,789.30%*	*138.55%*	*14.29%*	*20.17%*	*12,450.93*	
USR 051223757900 Structural steel beam or girder, 100-ton project, 1 to 2 story building, W36x231, A992 steel, shop fabricated, incl shop primer, bolted connections	184.00	TON	704,211.49	10,458.20	1,023.83	92,789.30	1,465,935.10	10,287.61	6,264.73	2,290,970.26	
(Note: Initial for W36x231 material = $430.00/LF, Crew Output = 140.6250FT/hr, 231lb/ft. Convert material LF to TON. $430/lf / 231lb/ft *2000lb/ton = $3,722.94/TON Convert crew output LF/hr to TON/hr. 140.6250ft/hr * 231lb/ft / 2000lb/ton = 16.2421875TON/hr)											
			8,960.00	*64.80%*	*10.00%*	*0.00%*	*138.55%*	*0.00%*	*0.00%*	*17,432.11*	
USR Tunnel Span Truss TON	560.00	TON	5,017,600.00	0.00	0.00	0.00	4,744,381.65	0.00	0.00	9,761,981.65	
(Note: assumed $5,600 per ton(from RSM 051223772000). material - $5,600/ton Add 60% for installation: $5,600/ton * 1.6 = $8,960 / TON use same cost from above calculated gate for truss and plates)											
			8,960.00	*64.80%*	*10.00%*	*0.00%*	*138.55%*	*0.00%*	*0.00%*	*17,432.11*	
USR Tunnel Span Plates TON	49.61	TON	444,505.60	0.00	0.00	0.00	420,301.38	0.00	0.00	864,806.98	
(Note: assumed $5,600 per ton(from RSM 051223772000). material - $5,600/ton Add 60% for installation: $5,600/ton * 1.6 = $8,960 / TON use same cost from above calculated gate for truss and plates)											
			1,560.00	*64.80%*	*10.00%*	*2,738.57%*	*138.55%*	*0.00%*	*0.00%*	*5,043.36*	
USR 314116102500 Sheet piling, wales, connections	12.96	TON	20,217.60	0.00	0.00	2,738.57	42,405.84	0.00	0.00	65,362.01	

Description	Quantity	UOM	BareCost	Productivity	Overtime	TaxAdj	MiscDirect	Payroll	WCI	DirectCost	C/O
and struts, 2/3 salvage											
(Note: convert $520.00/TON for 2/3 salvage to no salvage. $520.00/ton * 3ea = $1,560/TON)											
			1,754.61	*64.80%*	*10.00%*	*96,294.44%*	*138.55%*	*14.29%*	*20.17%*	*5,808.47*	
USR 316223134100 Concrete-filled steel piles, steel, pipe piles, no concrete, 50' long, 18" diameter, 59 lb./L.F., excludes mobilization or demobilization (30")	451.00	TON	791,329.09	43,919.03	4,985.89	96,294.44	1,614,197.84	37,594.05	31,300.99	2,619,621.31	
(Note: Initial RSM 316333105040 item details: Material = $46.50/VLF, Crew Output = 44.3750VLF/hr. Convert VLF to TON. Material $46.50/ft / 59lb/ft * 2000lb/ton = $1,576.27/ton. Convert Crew Output VLF/hr to TON/hr. 44.3750vlf/hr * 310.0lb/ft / 2000lb/ton = 6.878125 TON/hr. 310.0lb/ft from skyline product manual for 30inx1in pipe. Change crew item from 50 ton crane to 100 ton crane)											
			700.00	*64.80%*	*10.00%*	*253,171.45%*	*138.55%*	*0.00%*	*0.00%*	*2,263.05*	
USR Coal Tar Epoxy Coating	2,670.07	TON	1,869,049.00	0.00	0.00	253,171.45	3,920,277.09	0.00	0.00	6,042,497.54	
(Note: assume $700/ton. Task details based on engineering judgement of the Cost Estimator. Tunnel Span Jacket Structure -Steel Pipe Piles (60"dia x 1" thick) 2825.00 TN / 155 ft = 18.22580645 tn/ft (assume 50% coating). Jacket Structure-Framing (W40x211) 87.00 TN / 155 ft = 1.187096774 tn/ft (Assume 100% coating). Truss Members (Member sizes vary) 560.00 TN / 155 ft = 3.612903226 tn/ft (Assume 100% coating). Truss Plate (0.38" Plate) 49.61 TN / 155 ft = 0.320064516 tn/ft (Assume 100% coating). Sheetpile Connection (SIZE) 12.96 TN / 155 ft = 0.083612903 tn/ft (Assume 100% coating). Jacket Structure-Steel Pipe Bracing (30" Dia. X 1") 451.00 TN / 155 ft = 2.909677419 tn/ft (Assume 100% coating). Epoxy Q*(18.22580645*0.5+1.187096774+3.612903226+0.320064516+0.083612903+2.909677419))											
			12,131.97	*1,037.54%*	*141.42%*					*21,150.94*	
0006 Deployable Flood Barrier - Vehicle Gate (north)	**40.00**	**LF**	**485,278.64**	**41,501.74**	**5,656.71**	**22,236.49**	**252,622.46**	**21,373.00**	**17,368.58**	**846,037.61**	
(Note: Assemblies makeup and quantities based on "QTO_Draft_20250610 Rev1 MN" Reinforced Concrete for Gate Foundation 201.29 CY / 80 ft = 2.516125 cy/ft Sheet Pile (NZ26) 27.90 TN / 80 ft = 0.34875 ton/ft Micropile (12"x0.5") 32.00 EA / 80 ft = 0.4 ea/ft micropile casing tonnage 24.60 TN / 80 ft = 0.3075 tn/ft micropile grout volume 82.13 CY / 80 ft = 1.026625 cy/ft Structural Steel 17.56 TN / 80 ft = 0.2195 tn/ft Excavation 198.33 CY / 80 ft = 2.479125 cy/ft)											
			587.49	*64.80%*	*10.00%*	*3,735.40%*	*78.55%*	*14.29%*	*20.17%*	*1,394.54*	
USR 033053406300 Structural concrete, in place, cantilever retaining wall (3000 psi), 8' high, level backfill loading, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing	100.65	CY	59,127.96	17,143.94	2,573.70	3,735.40	39,659.72	10,420.54	7,692.65	140,353.90	
(Note: Initial Material Cost = $260/CY. From RSM 033113350400 $198.00/CY for 5000psi concrete. From RSM 033113350150 $184.00/CY for 3500psi concrete. Increse material cost by $14/CY to $274/CY.)											
			3,335.35	*64.80%*	*10.00%*	*4,912.94%*	*78.55%*	*14.29%*	*20.17%*	*7,233.18*	
RSM 314116100300 Sheet piling, steel, 27 psf, 20' excavation, per ton, left in place, excludes wales	13.95	TON	46,528.15	5,610.96	582.51	4,912.94	39,038.63	2,328.03	1,901.59	100,902.80	

Description	Quantity	UOM	BareCost	Productivity	Overtime	TaxAdj	MiscDirect	Payroll	WCI	DirectCost	C/O
(Note: References RSM 314116100300 and 314116100600. Interpolate using 27 psf(1.6188ton/hr) and 38(2.3750) psf to obtain crew output for NZ 26 30.99lb/sf. (2.3750-1.6188)/(38-27)=(X-1.6188)/(30.99-27), X=1.804ton/hr)											
			315.21	*64.80%*	*10.00%*	*11,495.51%*	*78.55%*	*14.29%*	*20.17%*	*697.61*	
USR 316333105040 Concrete-filled steel piles, pressure grouted pin pile, cased, end bearing, up to 50 ton, 5" diameter, less than 20' long, priced using 200 piles, 60' long, unless specified otherwise, excludes pile caps or mobilization	375.68	VLF	118,416.67	18,295.67	2,445.89	11,495.51	95,388.39	8,436.12	7,598.51	262,076.76	
(Note: assume for vehicle gate foundation 24.60ton * 2000lb/ton / 65.48lb/lf / 32EA = 23.48 VLF/pile. for floodwall 0.26ton * 2000lb/ton / 65.48lb/lf / 0.33EA = 24.24 (5.563 in / 2)^2 *pi = 24.29 in3 (12.75 in / 2)^2 *pi = 127.61 in3 $43.0 *(127.61 in3 / 24.29 in3) = $225.90/VLF changed crew output from 20vlf/hr to 10vlf/hr)											
			26,880.00	*64.80%*	*10.00%*	*0.00%*	*78.55%*	*0.00%*	*0.00%*	*33,838.80*	
USR Structural Steel(Vehicular Gate) TON	8.78	TON	236,006.40	0.00	0.00	0.00	61,098.28	0.00	0.00	297,104.68	
(Note: assumed $5,600 per ton(from RSM 051223772000). Add 100% contingency for rollers, hardware, botmmisc. steel, etc. material - $11,200/ton Add 50% more contengency for electrical/hydraulic items. material - $16,800/ton Add 60% for installation: $16,800/ton * 1.6 = $26,880 / TON)											
			90.00	*64.80%*	*10.00%*	*0.00%*	*78.55%*	*0.00%*	*0.00%*	*113.30*	
USR IDW-DISPOSE IDW Disposal Fee	99.17	EA	8,924.85	0.00	0.00	0.00	2,310.50	0.00	0.00	11,235.35	
(Note: Does not include haul. Engineering judgement based on USACE Green Brook Flood Risk Management project. Task details based on engineering judgement of the Cost Estimator.)											
			8.33	*64.80%*	*10.00%*	*0.00%*	*78.55%*	*14.29%*	*20.17%*	*20.64*	
RSM 312316130110 Excavating, trench or continuous footing, common earth, 3/4 C.Y. excavator, 4' to 6' deep, excavator, excludes sheeting or dewatering	99.17	BCY	825.61	451.17	54.61	0.00	350.91	188.32	175.83	2,046.45	
			700.00	*64.80%*	*10.00%*	*2,092.64%*	*78.55%*	*0.00%*	*0.00%*	*1,464.33*	
USR Coal Tar Epoxy Coating	22.07	TON	15,449.00	0.00	0.00	2,092.64	14,776.02	0.00	0.00	32,317.66	
(Note: assume $700/ton. Task details based on engineering judgement of the Cost Estimator. Deployable Flood Barrier Sheet Pile (NZ26) 27.90 TN / 80 ft = 0.34875 ton/ft (Assume 60% coating. Assuming extends 5ft below concrete). micropile casing tonnage 24.60 TN / 80 ft = 0.3075 tn/ft (Assume 40% coating. Assuming extends 5ft below concrete). Structural Steel 17.56 TN / 80 ft = 0.2195 tn/ft (Assume 100% coating). Epoxy Q*(0.34875*0.6+0.3075*0.4+0.2195*1))											
			5,555.02	*982.48%*	*135.02%*					*12,328.42*	
0007 Floodwall (north)	**238.00**	**LF**	**1,322,095.15**	**233,829.27**	**32,135.81**	**114,544.94**	**1,002,408.76**	**122,345.00**	**106,804.90**	**2,934,163.83**	
(Note: Assemblies makeup and quantities based on "QTO_Draft_20250610 Rev1 MN" Reinforced Concrete for Floodwall 2.69 CY Steel Sheet Pile (NZ26) 0.31 TN Excavation 2.20 CY Micropile (12") 0.33 EA Micropile casing tonnage 0.26 TN Micropile grout volume 0.86 CY)											
			587.49	*64.80%*	*10.00%*	*23,761.50%*	*78.55%*	*14.29%*	*21.89%*	*1,401.05*	
USR 033053406300	640.22	CY	376,123.06	109,055.51	16,371.76	23,761.50	252,282.24	66,286.80	53,099.73	896,980.59	

Description	Quantity	UOM	BareCost	Productivity	Overtime	TaxAdj	MiscDirect	Payroll	WCI	DirectCost	C/O
Structural concrete, in place, cantilever retaining wall (3000 psi), 8' high, level backfill loading, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing											
(Note: Initial Material Cost = $260/CY. From RSM 033113350400 $198.00/CY for 5000psi concrete. From RSM 033113350150 $184.00/CY for 3500psi concrete. Increse material cost by $14/CY to $274/CY.)											
			3,335.35	*64.80%*	*10.00%*	*25,984.00%*	*78.55%*	*14.29%*	*21.89%*	*7,244.78*	
RSM 314116100300 Sheet piling, steel, 27 psf, 20' excavation, per ton, left in place, excludes wales	73.78	TON	246,082.19	29,675.75	3,080.83	25,984.00	206,470.97	12,312.68	10,913.41	534,519.84	
(Note: References RSM 314116100300 and 314116100600. Interpolate using 27 psf(1.6188ton/hr) and 38(2.3750) psf to obtain crew output for NZ 26 30.99lb/sf. (2.3750-1.6188)/(38-27)=(X-1.6188)/(30.99-27), X=1.804ton/hr)											
			90.00	*64.80%*	*10.00%*	*0.00%*	*78.55%*	*0.00%*	*0.00%*	*113.30*	
USR IDW-DISPOSE IDW Disposal Fee	523.60	EA	47,124.00	0.00	0.00	0.00	12,199.65	0.00	0.00	59,323.65	
(Note: Does not include haul. Engineering judgement based on USACE Green Brook Flood Risk Management project. Task details based on engineering judgement of the Cost Estimator.)											
			8.33	*64.80%*	*10.00%*	*0.00%*	*78.55%*	*14.29%*	*21.89%*	*20.79*	
RSM 312316130110 Excavating, trench or continuous footing, common earth, 3/4 C.Y. excavator, 4' to 6' deep, excavator, excludes sheeting or dewatering	523.60	BCY	4,359.30	2,382.22	288.35	0.00	1,852.83	994.33	1,007.42	10,884.45	
			315.21	*64.80%*	*10.00%*	*58,255.08%*	*78.55%*	*14.29%*	*21.89%*	*699.33*	
USR 316333105040 Concrete-filled steel piles, pressure grouted pin pile, cased, end bearing, up to 50 ton, 5" diameter, less than 20' long, priced using 200 piles, 60' long, unless specified otherwise, excludes pile caps or mobilization	1,903.81	VLF	600,092.59	92,715.80	12,394.87	58,255.08	483,393.68	42,751.19	41,784.34	1,331,387.56	
(Note: assume for vehicle gate foundation 24.60ton * 2000lb/ton / 65.48lb/lf / 32EA = 23.48 VLF/pile. for floodwall 0.26ton * 2000lb/ton / 65.48lb/lf / 0.33EA = 24.24 (5.563 in / 2)^2 *pi = 24.29 in3 (12.75 in / 2)^2 *pi = 127.61 in3 $43.0 *(127.61 in3 / 24.29 in3) = $225.90/VLF changed crew output from 20vlf/hr to 10vlf/hr)											
			700.00	*64.80%*	*10.00%*	*6,544.36%*	*78.55%*	*0.00%*	*0.00%*	*1,464.33*	
USR Coal Tar Epoxy Coating	69.02	TON	48,314.00	0.00	0.00	6,544.36	46,209.38	0.00	0.00	101,067.74	

Description	Quantity	UOM	BareCost	Productivity	Overtime	TaxAdj	MiscDirect	Payroll	WCI	DirectCost	C/O

(Note: assume $700/ton. Task details based on engineering judgement of the Cost Estimator. Floodwall Steel Sheet Pile (NZ26) 0.31 TN/lf (Assume 60% coating. Assuming extends 5ft below concrete). Micropile casing tonnage 0.26 TN/lf (Assume 40% coating. Assuming extends 5ft below concrete). Epoxy Q*(0.31*0.6+0.26*0.4))

Description	Quantity	UOM	DirectLabor	DirectEQ	DirectMatl	DirectSubBid	DirectUserCost	DirectShip	DirectCost	C/O
Job Office Overhead Direct Cost Report										

Description	Quantity	UOM	BareCost	Productivity	Overtime	TaxAdj	MiscDirect	Payroll	WCI	DirectCost	C/O
Job Office Overhead Bare to Direct Report											

Description	LaborRate	CrewHours	MemberType	MemberRate	ManHours	LaborCost	EQHours	EQCost	CrewCost
Crews (Bare Costs) by Contractor, Report		**9,209.65**			**108,431.78**	**12,733,054.59**	**21,035.74**	**1,889,578.10**	**14,622,632.70**
Prime	**LaborCost1**	**9,209.65**		**0.00**	**108,431.78**	**12,733,054.59**	**21,035.74**	**1,889,578.10**	**14,622,632.70**
					2.00	*245.34*	*1.00*	*66.87*	*312.21*
RSM B12F 1 Equip Oper Heavy + 1 Laborer + 1 hyd excavator, crawler, .75 CY	LaborCost1	28.79			57.58	7,063.37	28.79	1,925.23	8,988.60
MIL B-EQOPRCRB Equip. Operators Crane with Boom Pay			Journeyman	169.01	1.00	169.01			
MIL B-LABORER Laborers, (Semi-Skilled)			Journeyman	76.33	1.00	76.33			
GEN H25Z3182 HYDRAULIC EXCAVATOR, CRAWLER, 30,600 LBS (13.9 MT), 0.69 CY (0.53 M3) BUCKET, 18.4' (5.6 M) MAX DIGGING DEPTH			EP / Average	66.87			1.00	66.87	
					8.00	*998.09*	*3.00*	*193.40*	*1,191.49*
RSM B19 5 Pile Driver + 2 Equip Oper Heavy + 1 crane, crawler, 50 ton + 1 pile hammer, 18,100 FT-LBS w Lead	LaborCost1	1,864.57			14,916.53	1,861,004.61	5,593.70	360,603.17	2,221,607.78
MIL B-PILEDRVR Pile Drivers			Foreman	106.98	1.00	106.98			
MIL B-PILEDRVR Pile Drivers			Journeyman	105.38	4.00	421.52			
MIL B-EQOPRCRB Equip. Operators Crane with Boom Pay			Journeyman	169.01	2.00	338.02			
MIL B-EQOPROIL Equip. Operators, Oilers / Grade Checker			Journeyman	131.57	1.00	131.57			
EP C90MX001 CRANES, MECHANICAL, LATTICE BOOM, TRUCK MTD, 30 TON, 50' BOOM, DRAGLINE/CLAMSHELL CAPABLE, 6X4			EP / Average	153.60			1.00	153.60	
GEN P10Z4840 PILE HAMMER ACCESSORIES, PILE LEADS, SWING, 8" X 26" X 84' (20 CM X 66 CM X 25.6 M)			EP / Average	13.44			1.00	13.44	
GEN P20Z4880 PILE HAMMER, SINGLE ACTING, DIESEL, 31,320 FT-LBS (42.4 KJ) (ADD LEADS & CRANE)			EP / Average	26.35			1.00	26.35	
					8.00	*998.09*	*2.00*	*328.48*	*1,326.57*
RSM B40 5 Pile Drivers + 1 crane, crawler, 50 ton w pile hammer + leads + 1 generator	LaborCost1	3,580.94			28,647.50	3,574,097.66	7,161.87	1,176,277.52	4,750,375.18
MIL B-EQOPROIL Equip. Operators, Oilers / Grade Checker			Journeyman	131.57	1.00	131.57			
MIL B-PILEDRVR Pile Drivers			Foreman	106.98	1.00	106.98			
MIL B-EQOPRCRB Equip. Operators Crane with Boom Pay			Journeyman	169.01	2.00	338.02			
MIL B-PILEDRVR Pile Drivers			Journeyman	105.38	4.00	421.52			

Description	LaborRate	CrewHours	MemberType	MemberRate	ManHours	LaborCost	EQHours	EQCost	CrewCost
EP C90MX001 CRANES, MECHANICAL, LATTICE BOOM, TRUCK MTD, 30 TON, 50' BOOM, DRAGLINE/CLAMSHELL CAPABLE, 6X4			EP / Average	153.60			1.00	153.60	
GEN P30Z4920 PILE HAMMER, DRIVER/EXTRACTOR, VIBRATORY, 100 TON (890 KN)FORCE DRIVE (ADD CRANE)			EP / Average	174.88			1.00	174.88	
					7.00	*769.37*	*4.00*	*123.69*	*893.06*
RSM B48 4 Laborer + 1 Equip Oper Heavy + 1 Equip Oper Light + 1 centrifugal water pump, wheel, 6" + 1 suction hose + 1 discharge hose + 1 drill rig, truck mtd	LaborCost1	392.55			2,747.87	302,018.76	1,570.21	48,555.71	350,574.46
MIL B-EQOPROIL Equip. Operators, Oilers / Grade Checker			Journeyman	131.57	1.00	131.57			
MIL B-EQOPRLT Equip. Operators, Light			Journeyman	162.47	1.00	162.47			
MIL B-LABORER Laborers, (Semi-Skilled)			Foreman	77.33	1.00	77.33			
MIL B-EQOPRCRB Equip. Operators Crane with Boom Pay			Journeyman	169.01	1.00	169.01			
MIL B-LABORER Laborers, (Semi-Skilled)			Journeyman	76.33	3.00	228.99			
GEN P50Z5095 PUMP HOSE, SUCTION, 6" (153 MM) DIA x 20' (6.1 M) LENGTH, W/COUPLING/SECTION			EP / Average	0.58			1.00	0.58	
GEN P50Z5099 PUMP HOSE, DISCH, 6" (15 CM) DIA X 50' (15M) WITH COUPLING (PER SECTION)			EP / Average	0.55			1.00	0.55	
GEN P60Z5410 PUMP, WATER, CENTRIFUGAL, DEWATERING, WHEEL, 6" (15 CM) DIA, 1,825 GPM (6.9 M3M) @ 40' (12.2 M) HEAD (ADD HOSES)			EP / Average	2.95			1.00	2.95	
GEN D30Z2890 DRILL, EARTH / AUGER, MULTI-PURPOSE, 8" (20CM) DIA, 250' (76.2M) DEPTH, 7,000 FT-LBS (9.5KNM) TORQUE W/45KGVW (20.4MT) TRUCK (ADD COST FOR DRILL STEEL AND CUTTING EDGE WEAR)			EP / Average	119.62			1.00	119.62	
					25.00	*2,714.49*	*2.00*	*28.55*	*2,743.04*
RSM C14D 19 Carpenter + 2 Rodmen + 2 Laborer + 1 Cement Finisher + 1 Equip Oper Medium + 1 conc pump, 117 cy/hr, truck mtd + 1 conc vib, 2.5" dia w 7.5 HP generator	LaborCost1	2,087.50			52,187.57	5,666,505.06	4,175.01	59,599.02	5,726,104.08

Description	LaborRate	CrewHours	MemberType	MemberRate	ManHours	LaborCost	EQHours	EQCost	CrewCost
MIL B-LABORER Laborers, (Semi-Skilled)			Journeyman	76.33	2.00	152.66			
MIL B-CARPNTER Carpenters			Journeyman	105.38	18.00	1,896.84			
MIL B-RODMAN Rodmen, (Reinforcing)			Journeyman	149.22	2.00	298.44			
MIL B-EQOPRMED Equip. Operators, Medium			Journeyman	166.97	1.00	166.97			
MIL B-CEMTFINR Cement Finishers			Journeyman	92.60	1.00	92.60			
MIL B-CARPNTER Carpenters			Foreman	106.98	1.00	106.98			
EP C55MU001 CONCRETE PUMP, 25 CY/HR, SINGLE, TRAILER MTD			EP / Average	23.55			1.00	23.55	
GEN XMEZ9520 CONCRETE VIBRATOR, 2.5" (63.5 MM) DIA, W/7.5 HP (5.6 KW) GENERATOR			Non-EP / Average	5.00			1.00	5.00	
					7.00	*1,048.68*	*1.00*	*188.76*	*1,237.44*
RSM E2 5 Structural Steel Worker + 1 Equip Oper Heavy + 1 crane, lattice boom, 100 ton	LaborCost1	641.27			4,488.89	672,486.86	641.27	121,045.69	793,532.55
MIL B-STRSTEEL Structural Steel Workers			Foreman	151.22	1.00	151.22			
MIL B-EQOPROIL Equip. Operators, Oilers / Grade Checker			Journeyman	131.57	1.00	131.57			
MIL B-EQOPRCRB Equip. Operators Crane with Boom Pay			Journeyman	169.01	1.00	169.01			
MIL B-STRSTEEL Structural Steel Workers			Journeyman	149.22	4.00	596.88			
GEN C80Z2190 CRANES, HYDRAULIC, TRUCK MTD, 80T (72.6MT), 128' (39M) BOOM, 8X4X4			EP / Average	188.76			1.00	188.76	
Sub	**LaborCost1**	**614.04**		**0.00**	**5,385.85**	**649,878.29**	**1,864.88**	**121,571.75**	**771,450.04**
					2.00	*245.34*	*1.00*	*66.87*	*312.21*
RSM B12F 1 Equip Oper Heavy + 1 Laborer + 1 hyd excavator, crawler, .75 CY	LaborCost1	8.16			16.32	2,002.40	8.16	545.79	2,548.18
MIL B-EQOPRCRB Equip. Operators Crane with Boom Pay			Journeyman	169.01	1.00	169.01			
MIL B-LABORER Laborers, (Semi-Skilled)			Journeyman	76.33	1.00	76.33			
GEN H25Z3182 HYDRAULIC EXCAVATOR, CRAWLER, 30,600 LBS (13.9 MT), 0.69 CY (0.53 M3) BUCKET, 18.4' (5.6 M) MAX DIGGING DEPTH			EP / Average	66.87			1.00	66.87	
					8.00	*998.09*	*2.00*	*328.48*	*1,326.57*
RSM B40 5 Pile Drivers + 1 crane, crawler, 50 ton w pile hammer + leads + 1 generator	LaborCost1	23.87			190.93	23,821.13	47.73	7,839.81	31,660.94
MIL B-EQOPROIL Equip. Operators, Oilers / Grade Checker			Journeyman	131.57	1.00	131.57			

Description	LaborRate	CrewHours	MemberType	MemberRate	ManHours	LaborCost	EQHours	EQCost	CrewCost
MIL B-PILEDRVR Pile Drivers			Foreman	106.98	1.00	106.98			
MIL B-EQOPRCRB Equip. Operators Crane with Boom Pay			Journeyman	169.01	2.00	338.02			
MIL B-PILEDRVR Pile Drivers			Journeyman	105.38	4.00	421.52			
EP C90MX001 CRANES, MECHANICAL, LATTICE BOOM, TRUCK MTD, 30 TON, 50' BOOM, DRAGLINE/CLAMSHELL CAPABLE, 6X4			EP / Average	153.60			1.00	153.60	
GEN P30Z4920 PILE HAMMER, DRIVER/EXTRACTOR, VIBRATORY, 100 TON (890 KN)FORCE DRIVE (ADD CRANE)			EP / Average	174.88			1.00	174.88	
					7.00	*769.37*	*4.00*	*123.69*	*893.06*
RSM B48 4 Laborer + 1 Equip Oper Heavy + 1 Equip Oper Light + 1 centrifugal water pump, wheel, 6" + 1 suction hose + 1 discharge hose + 1 drill rig, truck mtd	LaborCost1	115.95			811.65	89,208.93	463.80	14,342.16	103,551.09
MIL B-EQOPROIL Equip. Operators, Oilers / Grade Checker			Journeyman	131.57	1.00	131.57			
MIL B-EQOPRLT Equip. Operators, Light			Journeyman	162.47	1.00	162.47			
MIL B-LABORER Laborers, (Semi-Skilled)			Foreman	77.33	1.00	77.33			
MIL B-EQOPRCRB Equip. Operators Crane with Boom Pay			Journeyman	169.01	1.00	169.01			
MIL B-LABORER Laborers, (Semi-Skilled)			Journeyman	76.33	3.00	228.99			
GEN P50Z5095 PUMP HOSE, SUCTION, 6" (153 MM) DIA x 20' (6.1 M) LENGTH, W/COUPLING/SECTION			EP / Average	0.58			1.00	0.58	
GEN P50Z5099 PUMP HOSE, DISCH, 6" (15 CM) DIA X 50' (15M) WITH COUPLING (PER SECTION)			EP / Average	0.55			1.00	0.55	
GEN P60Z5410 PUMP, WATER, CENTRIFUGAL, DEWATERING, WHEEL, 6" (15 CM) DIA, 1,825 GPM (6.9 M3M) @ 40' (12.2 M) HEAD (ADD HOSES)			EP / Average	2.95			1.00	2.95	
GEN D30Z2890 DRILL, EARTH / AUGER, MULTI-PURPOSE, 8" (20CM) DIA, 250' (76.2M) DEPTH, 7,000 FT-LBS (9.5KNM) TORQUE W/45KGVW (20.4MT) TRUCK (ADD COST FOR DRILL STEEL AND CUTTING EDGE WEAR)			EP / Average	119.62			1.00	119.62	

Description	LaborRate	CrewHours	MemberType	MemberRate	ManHours	LaborCost	EQHours	EQCost	CrewCost
					25.00	*2,714.49*	*2.00*	*28.55*	*2,743.04*
RSM C14D 19 Carpenter + 2 Rodmen + 2 Laborer + 1 Cement Finisher + 1 Equip Oper Medium + 1 conc pump, 117 cy/hr, truck mtd + 1 conc vib, 2.5" dia w 7.5 HP generator	LaborCost1	35.50			887.52	96,366.79	71.00	1,013.56	97,380.35
MIL B-LABORER Laborers, (Semi-Skilled)			Journeyman	76.33	2.00	152.66			
MIL B-CARPNTER Carpenters			Journeyman	105.38	18.00	1,896.84			
MIL B-RODMAN Rodmen, (Reinforcing)			Journeyman	149.22	2.00	298.44			
MIL B-EQOPRMED Equip. Operators, Medium			Journeyman	166.97	1.00	166.97			
MIL B-CEMTFINR Cement Finishers			Journeyman	92.60	1.00	92.60			
MIL B-CARPNTER Carpenters			Foreman	106.98	1.00	106.98			
EP C55MU001 CONCRETE PUMP, 25 CY/HR, SINGLE, TRAILER MTD			EP / Average	23.55			1.00	23.55	
GEN XMEZ9520 CONCRETE VIBRATOR, 2.5" (63.5 MM) DIA, W/7.5 HP (5.6 KW) GENERATOR			Non-EP / Average	5.00			1.00	5.00	
					10.00	*1,498.34*	*2.00*	*195.66*	*1,694.00*
RSM E5 7 Structural Steel Worker + 1 Equip Oper Heavy + 1 Welder + 1 crane, lattice boom, 100 ton + 1 welder, 300 amp	LaborCost1	17.48			174.82	26,194.41	34.96	3,420.61	29,615.02
MIL B-EQOPROIL Equip. Operators, Oilers / Grade Checker			Journeyman	131.57	1.00	131.57			
MIL B-STRSTEEL Structural Steel Workers			Journeyman	149.22	5.00	746.10			
MIL B-STRSTEEL Structural Steel Workers			Foreman	151.22	2.00	302.44			
MIL B-WELDERS Welders, Structural Steel			Journeyman	149.22	1.00	149.22			
MIL B-EQOPRCRB Equip. Operators Crane with Boom Pay			Journeyman	169.01	1.00	169.01			
GEN C80Z2190 CRANES, HYDRAULIC, TRUCK MTD, 80T (72.6MT), 128' (39M) BOOM, 8X4X4			EP / Average	188.76			1.00	188.76	
GEN W35Z8640 WELDER, ENGINE DRIVEN, DIESEL, DC-CC, 300 AMP, 3 KW			EP / Average	6.90			1.00	6.90	
					8.00	*998.09*	*3.00*	*228.55*	*1,226.64*
USR B19 5 Pile Driver + 2 Equip Oper Heavy + 1 crane, crawler, 50 ton + 1 pile hammer, 18,100 FT-LBS w Lead (changed to 100 ton crane)	LaborCost1	413.07			3,304.59	412,284.63	1,239.22	94,409.82	506,694.45

Description	LaborRate	CrewHours	MemberType	MemberRate	ManHours	LaborCost	EQHours	EQCost	CrewCost
MIL B-PILEDRVR Pile Drivers			Journeyman	105.38	4.00	421.52			
MIL B-EQOPRCRB Equip. Operators Crane with Boom Pay			Journeyman	169.01	2.00	338.02			
MIL B-EQOPROIL Equip. Operators, Oilers / Grade Checker			Journeyman	131.57	1.00	131.57			
MIL B-PILEDRVR Pile Drivers			Foreman	106.98	1.00	106.98			
GEN P10Z4840 PILE HAMMER ACCESSORIES, PILE LEADS, SWING, 8" X 26" X 84' (20 CM X 66 CM X 25.6 M)			EP / Average	13.44			1.00	13.44	
GEN P20Z4880 PILE HAMMER, SINGLE ACTING, DIESEL, 31,320 FT-LBS (42.4 KJ) (ADD LEADS & CRANE)			EP / Average	26.35			1.00	26.35	
GEN C80Z2190 CRANES, HYDRAULIC, TRUCK MTD, 80T (72.6MT), 128' (39M) BOOM, 8X4X4			EP / Average	188.76			1.00	188.76	

	Description	SUIExperience	SUIRate	FICA	FUIRate	PayrollTax	State	ContractorClass	WCIBaseRate	WCIExperience	WCIRate
Contractors Labor Payroll Markup Report											
1	**Prime**	**80.00**	**5.84**	**7.65**	**0.80**	**14.29**	**NY**	**Concrete Work -- NOC**	**25.75**	**85.00**	**21.89**
1.1	**Sub**	**80.00**	**5.84**	**7.65**	**0.80**	**14.29**	**NY**	**Steel Erection -- NOC**	**23.73**	**85.00**	**20.17**

Description	LaborRate	LaborType	ManHours	BaseWage	Travel	TaxableFringe	NonTaxFringe	Subsistence	Payroll	WCI	Overtime	Total
Labor by Contractor, Report												
Prime												
				57.05	*0.00*	*48.33*	*0.00*	*0.00*				*140.23*
Carpenters	LaborCost1	Journeyman	37,575.05	2,143,656.47	0.00	1,816,002.05	0.00	0.00	626,000.92	469,192.81	214,365.65	5,269,217.89
				58.65	*0.00*	*48.33*	*0.00*	*0.00*				*142.62*
Carpenters	LaborCost1	Foreman	2,087.50	122,432.03	0.00	100,889.00	0.00	0.00	35,348.86	26,797.31	12,243.20	297,710.41
				57.72	*0.00*	*34.88*	*0.00*	*0.00*				*125.86*
Cement Finishers	LaborCost1	Journeyman	2,087.50	120,490.65	0.00	72,812.09	0.00	0.00	31,004.76	26,372.39	12,049.07	262,728.96
				94.76	*0.00*	*36.95*	*0.00*	*37.30*				*224.86*
Equip. Operators Crane with Boom Pay	LaborCost1	Journeyman	11,953.62	1,132,725.00	0.00	441,686.25	0.00	445,870.01	306,461.25	247,925.18	113,272.50	2,687,940.19
				88.22	*0.00*	*36.95*	*0.00*	*37.30*				*210.07*
Equip. Operators, Light	LaborCost1	Journeyman	392.55	34,631.06	0.00	14,504.85	0.00	14,642.24	7,640.90	7,579.87	3,463.11	82,462.01
				92.72	*0.00*	*36.95*	*0.00*	*37.30*				*217.67*
Equip. Operators, Medium	LaborCost1	Journeyman	2,087.50	193,553.25	0.00	77,133.22	0.00	77,863.85	44,113.53	42,363.97	19,355.32	454,383.14
				57.32	*0.00*	*36.95*	*0.00*	*37.30*				*166.40*
Equip. Operators, Oilers / Grade Checker	LaborCost1	Journeyman	6,479.33	371,394.99	0.00	239,411.11	0.00	241,678.87	107,256.48	81,289.08	37,139.50	1,078,170.03
				49.28	*0.00*	*27.05*	*0.00*	*0.00*				*106.42*
Laborers, (Semi-Skilled)	LaborCost1	Journeyman	5,381.46	265,198.12	0.00	145,568.37	0.00	0.00	77,347.42	58,045.24	26,519.81	572,678.97
				50.28	*0.00*	*27.05*	*0.00*	*0.00*				*105.31*
Laborers, (Semi-Skilled)	LaborCost1	Foreman	392.55	19,737.58	0.00	10,618.57	0.00	0.00	4,690.90	4,320.06	1,973.76	41,340.87
				58.65	*0.00*	*48.33*	*0.00*	*0.00*				*142.37*
Pile Drivers	LaborCost1	Foreman	5,445.50	319,378.76	0.00	263,181.17	0.00	0.00	90,901.41	69,904.03	31,937.88	775,303.24
				57.05	*0.00*	*48.33*	*0.00*	*0.00*				*140.00*
Pile Drivers	LaborCost1	Journeyman	21,782.01	1,242,663.82	0.00	1,052,724.67	0.00	0.00	357,790.22	271,988.04	124,266.38	3,049,433.14
				58.45	*0.00*	*90.77*	*0.00*	*0.00*				*190.82*
Rodmen, (Reinforcing)	LaborCost1	Journeyman	4,175.01	244,029.06	0.00	378,965.23	0.00	0.00	95,875.01	53,411.86	24,402.91	796,684.07
				60.45	*0.00*	*90.77*	*0.00*	*0.00*				*192.97*
Structural Steel	LaborCost1	Foreman	641.27	38,764.76	0.00	58,208.06	0.00	0.00	14,411.37	8,484.64	3,876.48	123,745.30

Description	LaborRate	LaborType	ManHours	BaseWage	Travel	TaxableFringe	NonTaxFringe	Subsistence	Payroll	WCI	Overtime	Total
Workers				*58.45*	*0.00*	*90.77*	*0.00*	*0.00*				*190.02*
Structural Steel Workers	LaborCost1	Journeyman	2,565.08	149,928.89	0.00	232,832.25	0.00	0.00	56,839.05	32,815.69	14,992.89	487,408.77
Sub												
				57.05	*0.00*	*48.33*	*0.00*	*0.00*				*138.87*
Carpenters	LaborCost1	Journeyman	639.02	36,455.86	0.00	30,883.64	0.00	0.00	10,404.24	7,353.33	3,645.59	88,742.65
				58.65	*0.00*	*48.33*	*0.00*	*0.00*				*141.22*
Carpenters	LaborCost1	Foreman	35.50	2,082.13	0.00	1,715.76	0.00	0.00	587.35	419.98	208.21	5,013.42
				57.72	*0.00*	*34.88*	*0.00*	*0.00*				*124.48*
Cement Finishers	LaborCost1	Journeyman	35.50	2,049.11	0.00	1,238.27	0.00	0.00	513.69	413.32	204.91	4,419.30
				94.76	*0.00*	*36.95*	*0.00*	*37.30*				*225.77*
Equip. Operators Crane with Boom Pay	LaborCost1	Journeyman	1,015.48	96,226.44	0.00	37,521.81	0.00	37,877.23	28,609.47	19,409.35	9,622.64	229,266.94
				88.22	*0.00*	*36.95*	*0.00*	*37.30*				*208.86*
Equip. Operators, Light	LaborCost1	Journeyman	115.95	10,229.16	0.00	4,284.38	0.00	4,324.96	2,293.25	2,063.27	1,022.92	24,217.93
				92.72	*0.00*	*36.95*	*0.00*	*37.30*				*215.46*
Equip. Operators, Medium	LaborCost1	Journeyman	35.50	3,291.64	0.00	1,311.76	0.00	1,324.18	728.38	663.94	329.16	7,649.07
				57.32	*0.00*	*36.95*	*0.00*	*37.30*				*166.33*
Equip. Operators, Oilers / Grade Checker	LaborCost1	Journeyman	570.37	32,693.79	0.00	21,075.29	0.00	21,274.92	9,961.53	6,594.50	3,269.38	94,869.42
				49.28	*0.00*	*27.05*	*0.00*	*0.00*				*104.78*
Laborers, (Semi-Skilled)	LaborCost1	Journeyman	427.02	21,043.32	0.00	11,550.77	0.00	0.00	5,798.68	4,244.54	2,104.33	44,741.64
				50.28	*0.00*	*27.05*	*0.00*	*0.00*				*104.63*
Laborers, (Semi-Skilled)	LaborCost1	Foreman	115.95	5,830.00	0.00	3,136.46	0.00	0.00	1,406.27	1,175.94	583.00	12,131.67
				57.05	*0.00*	*48.33*	*0.00*	*0.00*				*140.28*
Pile Drivers	LaborCost1	Journeyman	1,747.76	99,709.78	0.00	84,469.30	0.00	0.00	30,911.94	20,111.96	9,970.98	245,173.96
				58.65	*0.00*	*48.33*	*0.00*	*0.00*				*142.66*
Pile Drivers	LaborCost1	Foreman	436.94	25,626.55	0.00	21,117.33	0.00	0.00	7,860.09	5,169.00	2,562.65	62,335.62
				58.45	*0.00*	*90.77*	*0.00*	*0.00*				*189.43*
Rodmen,	LaborCost1	Journeyman	71.00	4,150.05	0.00	6,444.83	0.00	0.00	1,602.97	837.09	415.01	13,449.94

Description	LaborRate	LaborType	ManHours	BaseWage	Travel	TaxableFringe	NonTaxFringe	Subsistence	Payroll	WCI	Overtime	Total
(Reinforcing)												
				58.45	*0.00*	*90.77*	*0.00*	*0.00*				*189.01*
Structural Steel Workers	LaborCost1	Journeyman	87.41	5,109.20	0.00	7,934.34	0.00	0.00	1,936.93	1,030.55	510.92	16,521.94
				60.45	*0.00*	*90.77*	*0.00*	*0.00*				*191.93*
Structural Steel Workers	LaborCost1	Foreman	34.96	2,113.61	0.00	3,173.73	0.00	0.00	785.76	426.33	211.36	6,710.79
				58.45	*0.00*	*90.77*	*0.00*	*0.00*				*189.01*
Welders, Structural Steel	LaborCost1	Journeyman	17.48	1,021.84	0.00	1,586.87	0.00	0.00	387.39	206.11	102.18	3,304.39

Description	CostType	ConditionType	Manufacturer	EQHours	Ownership	Operating	Total
Equipment by Contractor, Report				**21,035.74**	**604,275.77**	**1,256,640.67**	**1,860,916.43**
Prime				**21,035.74**	**604,275.77**	**1,256,640.67**	**1,860,916.43**
EP C55MU001 CONCRETE PUMP, 25 CY/HR, SINGLE, TRAILER MTD	EP	Average	MU MULTIQUIP, INC.	2,087.50	*5.47* 11,413.39	*17.93* 37,432.37	*23.40* 48,845.76
EP C90MX001 CRANES, MECHANICAL, LATTICE BOOM, TRUCK MTD, 30 TON, 50' BOOM, DRAGLINE/CLAMSHELL CAPABLE, 6X4	EP	Average	MX MANITEX	5,445.50	*55.04* 299,718.31	*95.22* 518,538.71	*150.26* 818,257.01
GEN C80Z2190 CRANES, HYDRAULIC, TRUCK MTD, 80T (72.6MT), 128' (39M) BOOM, 8X4X4	EP	Average	GK GENERIC EQUIPMENT	641.27	*66.73* 42,792.87	*118.27* 75,844.15	*185.00* 118,637.02
GEN D30Z2890 DRILL, EARTH / AUGER, MULTI-PURPOSE, 8" (20CM) DIA, 250' (76.2M) DEPTH, 7,000 FT-LBS (9.5KNM) TORQUE W/45KGVW (20.4MT) TRUCK (ADD COST FOR DRILL STEEL AND CUTTING EDGE WEAR)	EP	Average	GK GENERIC EQUIPMENT	392.55	*38.55* 15,132.66	*79.45* 31,188.24	*118.00* 46,320.90
GEN H25Z3182 HYDRAULIC EXCAVATOR, CRAWLER, 30,600 LBS (13.9 MT), 0.69 CY (0.53 M3) BUCKET, 18.4' (5.6 M) MAX DIGGING DEPTH	EP	Average	GK GENERIC EQUIPMENT	28.79	*27.79* 800.22	*38.05* 1,095.59	*65.85* 1,895.81
GEN P10Z4840 PILE HAMMER ACCESSORIES, PILE LEADS, SWING, 8" X 26" X 84' (20 CM X 66 CM X 25.6 M)	EP	Average	GK GENERIC EQUIPMENT	1,864.57	*5.29* 9,856.16	*7.98* 14,877.71	*13.27* 24,733.87
GEN P20Z4880 PILE HAMMER, SINGLE ACTING, DIESEL, 31,320 FT-LBS (42.4 KJ) (ADD LEADS & CRANE)	EP	Average	GK GENERIC EQUIPMENT	1,864.57	*6.36* 11,854.05	*19.83* 36,979.28	*26.19* 48,833.33
GEN P30Z4920 PILE HAMMER, DRIVER/EXTRACTOR, VIBRATORY, 100 TON (890 KN)FORCE DRIVE (ADD CRANE)	EP	Average	GK GENERIC EQUIPMENT	3,580.94	*47.16* 168,862.73	*126.51* 453,020.31	*173.66* 621,883.04
GEN P50Z5095 PUMP HOSE, SUCTION, 6" (153 MM) DIA x 20' (6.1 M) LENGTH, W/COUPLING/SECTION	EP	Average	GK GENERIC EQUIPMENT	392.55	*0.18* 70.11	*0.39* 154.60	*0.57* 224.70
GEN P50Z5099 PUMP HOSE, DISCH, 6" (15 CM) DIA X 50' (15M) WITH COUPLING (PER SECTION)	EP	Average	GK GENERIC EQUIPMENT	392.55	*0.17* 66.61	*0.37* 146.89	*0.54* 213.50
GEN P60Z5410 PUMP, WATER, CENTRIFUGAL, DEWATERING, WHEEL, 6" (15 CM) DIA, 1,825 GPM (6.9 M3M) @ 40' (12.2 M) HEAD (ADD HOSES)	EP	Average	GK GENERIC EQUIPMENT	392.55	*0.89* 347.88	*2.04* 799.61	*2.92* 1,147.49
GEN XMEZ9520 CONCRETE VIBRATOR, 2.5" (63.5 MM) DIA, W/7.5 HP (5.6 KW) GENERATOR	Non-EP	Average	GK GENERIC EQUIPMENT	2,087.50	*1.09* 2,283.73	*3.90* 8,141.26	*4.99* 10,424.99
Sub				**1,864.88**	**41,077.05**	**78,421.96**	**119,499.01**

Description	CostType	ConditionType	Manufacturer	EQHours	Ownership	Operating	Total
					5.47	*17.93*	*23.40*
EP C55MU001 CONCRETE PUMP, 25 CY/HR, SINGLE, TRAILER MTD	EP	Average	MU MULTIQUIP, INC.	35.50	194.10	636.59	830.69
					55.04	*95.22*	*150.26*
EP C90MX001 CRANES, MECHANICAL, LATTICE BOOM, TRUCK MTD, 30 TON, 50' BOOM, DRAGLINE/CLAMSHELL CAPABLE, 6X4	EP	Average	MX MANITEX	23.87	1,313.61	2,272.67	3,586.28
					66.73	*118.27*	*185.00*
GEN C80Z2190 CRANES, HYDRAULIC, TRUCK MTD, 80T (72.6MT), 128' (39M) BOOM, 8X4X4	EP	Average	GK GENERIC EQUIPMENT	430.56	28,731.62	50,922.63	79,654.25
					38.55	*79.45*	*118.00*
GEN D30Z2890 DRILL, EARTH / AUGER, MULTI-PURPOSE, 8" (20CM) DIA, 250' (76.2M) DEPTH, 7,000 FT-LBS (9.5KNM) TORQUE W/45KGVW (20.4MT) TRUCK (ADD COST FOR DRILL STEEL AND CUTTING EDGE WEAR)	EP	Average	GK GENERIC EQUIPMENT	115.95	4,469.82	9,212.24	13,682.06
					27.79	*38.05*	*65.85*
GEN H25Z3182 HYDRAULIC EXCAVATOR, CRAWLER, 30,600 LBS (13.9 MT), 0.69 CY (0.53 M3) BUCKET, 18.4' (5.6 M) MAX DIGGING DEPTH	EP	Average	GK GENERIC EQUIPMENT	8.16	226.86	310.59	537.44
					5.29	*7.98*	*13.27*
GEN P10Z4840 PILE HAMMER ACCESSORIES, PILE LEADS, SWING, 8" X 26" X 84' (20 CM X 66 CM X 25.6 M)	EP	Average	GK GENERIC EQUIPMENT	413.07	2,183.52	3,295.99	5,479.51
					6.36	*19.83*	*26.19*
GEN P20Z4880 PILE HAMMER, SINGLE ACTING, DIESEL, 31,320 FT-LBS (42.4 KJ) (ADD LEADS & CRANE)	EP	Average	GK GENERIC EQUIPMENT	413.07	2,626.13	8,192.34	10,818.48
					47.16	*126.51*	*173.66*
GEN P30Z4920 PILE HAMMER, DRIVER/EXTRACTOR, VIBRATORY, 100 TON (890 KN)FORCE DRIVE (ADD CRANE)	EP	Average	GK GENERIC EQUIPMENT	23.87	1,125.46	3,019.35	4,144.81
					0.18	*0.39*	*0.57*
GEN P50Z5095 PUMP HOSE, SUCTION, 6" (153 MM) DIA x 20' (6.1 M) LENGTH, W/COUPLING/SECTION	EP	Average	GK GENERIC EQUIPMENT	115.95	20.71	45.66	66.37
					0.17	*0.37*	*0.54*
GEN P50Z5099 PUMP HOSE, DISCH, 6" (15 CM) DIA X 50' (15M) WITH COUPLING (PER SECTION)	EP	Average	GK GENERIC EQUIPMENT	115.95	19.68	43.39	63.06
					0.89	*2.04*	*2.92*
GEN P60Z5410 PUMP, WATER, CENTRIFUGAL, DEWATERING, WHEEL, 6" (15 CM) DIA, 1,825 GPM (6.9 M3M) @ 40' (12.2 M) HEAD (ADD HOSES)	EP	Average	GK GENERIC EQUIPMENT	115.95	102.76	236.19	338.94
					1.37	*5.48*	*6.85*
GEN W35Z8640 WELDER, ENGINE DRIVEN, DIESEL, DC-CC, 300 AMP, 3 KW	EP	Average	GK GENERIC EQUIPMENT	17.48	23.95	95.87	119.82
					1.09	*3.90*	*4.99*
GEN XMEZ9520 CONCRETE VIBRATOR, 2.5" (63.5 MM) DIA, W/7.5	Non-EP	Average	GK GENERIC	35.50	38.84	138.45	177.29

Description	CostType	ConditionType	Manufacturer	EQHours	Ownership	Operating	Total
HP (5.6 KW) GENERATOR			EQUIPMENT				