



**UNR Engineering Building
Concept Design
Reno, NV**

Programmatic Estimate Statement of Probable Cost
April 30, 2015
Cumming Project No. 15-00410.00

Prepared for Hershenow + Klippenstein

TABLE OF CONTENTS

	Page
1. Project Introduction / Qualifications	
a. Introduction.....	3
2. Cost Summaries	
a. Construction Cost Summary.....	6
b. Construction Cost Summary By System.....	7
3. Control Areas	
a. Schedule Of Areas And Control Quantities.....	8
4. Construction Cost Back Up	
a. Buildings.....	10
i. Buildings Summary By System.....	11
ii. Building 1.....	12
b. Sitework.....	18

INTRODUCTION

Project Description

The Portion of Work for this estimate involves the construction of the a new Engineering Building on the Campus of University of Nevada Reno. This new facility will be a 4-story steel structure building, with a mix of glass and stucco exterior all systems. Along the West side of the project includes an approximately 20' high retaining wall, that will be

Basis of Estimate

This estimate is based on the Programmatic Estimate drawing package dated XX-XX-XX, prepared by XXXXX Architects, received on xxx-xx-xx along with verbal direction by the architect and engineer.

1	Civil drawings:	Odyssey Engineering Concept Plan Dated 3/20/2015
2	Architectural drawings:	h+k Conceptual Floor Plans Dated 3/5/2015
3	Structural drawings:	none
4	Plumbing drawings:	none
5	Mechanical drawings:	none
6	Electrical drawings:	none
7	Landscape drawings:	none
8	Interior design drawings:	none
9	Outline specifications	none

Construction Schedule

Costs included herein have been based upon a construction period of 18 months. Any costs for excessive overtime to meet accelerated schedule milestone dates are not included in this estimate.

Basis for Quantities

Wherever possible, this estimate has been based upon the actual measurement of different items of work. For the remaining items, parametric measurements were used in conjunction with references from other projects of a similar nature.

Basis for Unit Costs

Unit costs as contained herein are based on current Reno, NV - Merit Shop prices.. Subcontractor's overhead and profit is included in each line item unit cost. This overhead and profit covers each subcontractor's cost for labor burden, materials and equipment sales taxes, field overhead, home office overhead, and profit. The general contractor's overhead and profit is shown separately on the Summary.

Sources for Pricing

This estimate was prepared by a team of qualified cost consultants experienced in estimating construction costs at all stages of design. These consultants have used pricing data from Cumming's database for construction, updated to reflect current conditions in the Reno, NV area. In some cases, quotes were solicited from outside sources to substantiate in-house pricing data.

Subcontractor's Mark-ups

Depending on the trade, subcontractor mark-ups can range from 5% to 15% of the raw cost for that particular item of work. It should be noted that Design Assist Sub Contractors may influence Sub Contractor costs.

INTRODUCTION

Design Allowances

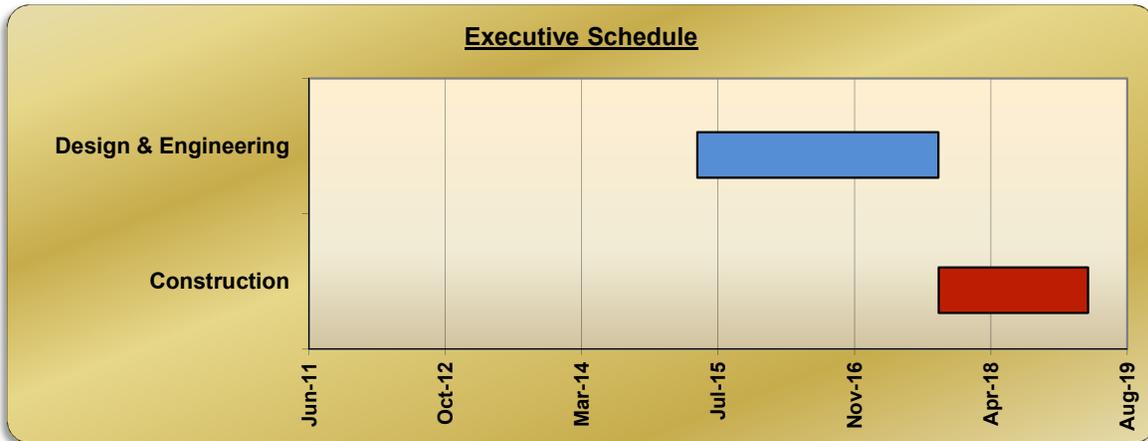
An allowance of 16.0% for undeveloped design details has been included in the summary of this estimate. As the design of each system is further developed, details which historically increase cost became apparent and must be incorporated into the estimate.

General Contractor's Overhead and Profit

Jobsite general conditions, home office overhead, profit, and bond are shown on the Summary of this estimate. It is our opinion that for this project, a rate of 11.8% is appropriate to cover these mark-ups. (7.0% for General Conditions, 1.8% for Bonds & Insurance and 3.0% for Overhead and Profit)

Schedule

	Start Date	Finish Date	Duration		
Design & Engineering	Apr-15	Sep-17	884 Days	29 Months	2.4 Years
Construction	Oct-17	Apr-19	547 Days	18 Months	1.5 Years



Escalation Allowance

All subcontract prices herein are reflective of current prices. Escalation has been included on the summary level to take through to a mid point of construction.

Estimated start date: Oct-17
 Estimated completion date: Apr-19
 Midpoint of construction: Jul-18

Year	Rate
2015	6.8%
2016	6.8%
2017	4.5%
2018	4.0%

INTRODUCTION

Construction Contingency

It is prudent for all program budgets to include an allowance for change orders which occur during construction. These change orders normally increase the cost of the project. It is recommended that a 5 - 10% contingency is carried in this respect. These costs are not included within this estimate.

Items Excluded from the Base Estimate

- 1 Professional fees, inspections and testing.
- 2 Escalation beyond midpoint of construction, (07/01/18)
- 3 Plan check fees and building permit fees.
- 4 Furnishings, fixtures and equipment (FF&E), except built-in cabinets, counters and other casework indicated.
- 5 Major site and building structures demolition unless noted in body of estimate.
- 6 Costs of hazardous material surveys, abatements, and disposals unless noted in estimate.
- 7 Costs of offsite construction unless noted in estimate.
- 8 Construction contingency costs.

Items Affecting the Cost Estimate

- 1 Items which may change the estimated construction cost include, but are not limited to:
- 2 Modifications to the scope of work included in this estimate.
- 3 Restrictive technical specifications or excessive contract conditions.
- 4 Any specified item of equipment, material, or product that cannot be obtained from at least 3 different sources.
- 5 Any other non-competitive bid situations.
- 6 Bids delayed beyond the projected schedule.

Statement of Probable Cost

Cumming has no control over the cost of labor and materials, the general contractor's or any subcontractor's method of determining prices, or competitive bidding and market conditions. This opinion of the probable cost of construction is made on the basis of the experience, qualifications, and best judgment of a professional consultant familiar with the construction industry. Cumming, however, cannot and does not guarantee that proposals, bids, or actual construction costs will not vary from this or subsequent cost estimates.

Cumming has no control over the quality, completeness, intricacy, constructability, or coordination of design documents. Cumming also has no control over the amount of funds available for the project. We, therefore, cannot be responsible for any design revision costs incurred in the event that this estimate is in excess of the budget.

Cumming's staff of professional cost consultants has prepared this estimate in accordance with generally accepted principles and practices. This staff is available to discuss its contents with any interested party.

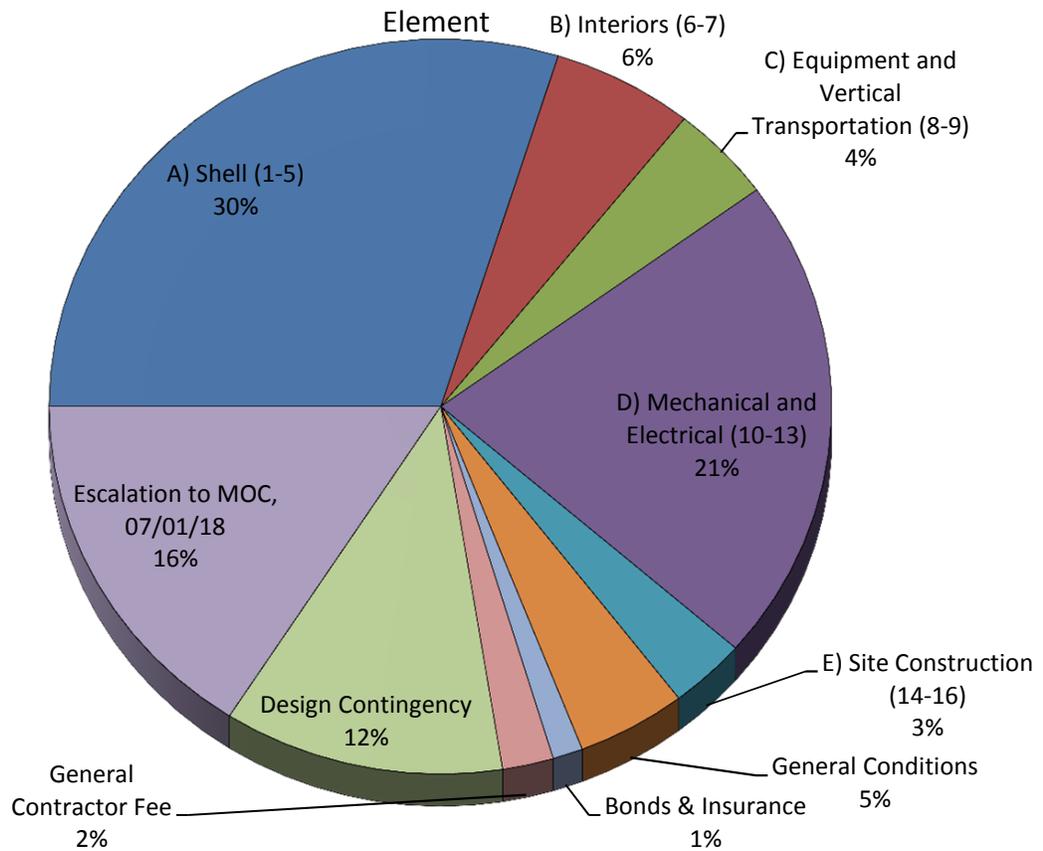
Recommendations for Cost Control

Cumming recommends that the Owner and the Architect carefully review this entire document to insure that it reflects their design intent. Requests for modifications of any apparent errors or omissions to this document must be made to Cumming within ten days of receipt of this estimate, otherwise, it will be understood that the contents have been concurred with and accepted. If the project is over budget, or there are unresolved budgeting issues, alternate systems/schemes should be evaluated before proceeding into further design phases.

It is recommended that further cost estimates be prepared throughout design by Cumming to determine overall cost changes subsequent to the preparation of this preliminary estimate. These future estimates will have detailed breakdowns indicating materials by type, kind, and size, priced by their respective units of measure.

CONSTRUCTION COST SUMMARY

Element	Area	Cost / SF	Total
A Engineering Building	87,000	\$686.04	\$59,685,520
D SITEWORK	60,000	\$57.93	\$3,475,726
TOTAL ESTIMATED CONSTRUCTION COST	87,000 SF	\$725.99 / SF	\$63,161,245



UNR Engineering Building
Reno, NV
Estimate Summary by Category
Programmatic Estimate

04/30/15

Element	A				D			TOTAL		
	BUILDING 1				SITEWORK			87,000 sf		
	Subtotal	Total	Cost/SF	Cost/SF	Subtotal	Total	Cost/SF	Subtotal	Total	Cost/SF
A) Shell (1-5)		\$18,614,384		\$213.96		\$236,873	\$3.95		\$18,851,257	\$216.68
1 Foundations	\$2,017,778		\$23.19					\$2,017,778		
2 Vertical Structure	\$1,590,439		\$18.28		\$236,873			\$1,827,313		
3 Floor & Roof Structures	\$5,042,410		\$57.96					\$5,042,410		
4 Exterior Cladding	\$9,150,494		\$105.18					\$9,150,494		
5 Roofing and Waterproofing	\$813,262		\$9.35					\$813,262		
B) Interiors (6-7)		\$3,690,136		\$42.42					\$3,690,136	\$42.42
6 Interior Partitions, Doors and Glazing	\$2,073,712		\$23.84					\$2,073,712		
7 Floor, Wall and Ceiling Finishes	\$1,616,424		\$18.58					\$1,616,424		
C) Equipment and Vertical Transportation (8-9)		\$2,702,728		\$31.07					\$2,702,728	\$31.07
8 Function Equipment and Specialties	\$2,050,528		\$23.57					\$2,050,528		
9 Stairs and Vertical Transportation	\$652,200		\$7.50					\$652,200		
D) Mechanical and Electrical (10-13)		\$13,547,986		\$155.72					\$13,547,986	\$155.72
10 Plumbing Systems	\$1,989,924		\$22.87					\$1,989,924		
11 Heating, Ventilation and Air Conditioning	\$5,472,862		\$62.91					\$5,472,862		
12 Electrical Lighting, Power and Communications	\$5,660,068		\$65.06					\$5,660,068		
13 Fire Protection Systems	\$425,132		\$4.89					\$425,132		
E) Site Construction (14-16)						\$2,008,352	\$33.47		\$2,008,352	\$23.08
14 Site Preparation and Demolition					\$793,615			\$793,615		
15 Site Paving, Structures & Landscaping					\$499,159			\$499,159		
16 Utilities on Site					\$715,578			\$715,578		
Subtotal Cost		\$38,555,233		\$443.16		\$2,245,225	\$37.42		\$40,800,458	\$468.97
General Conditions	7.0%	\$2,698,866		\$31.02		\$157,166	\$2.62		\$2,856,032	\$32.83
Bonds & Insurance	1.8%	\$742,574		\$8.54		\$43,243	\$0.72		\$785,817	\$9.03
General Contractor Fee	3.0%	\$1,259,900		\$14.48		\$73,369	\$1.22		\$1,333,269	\$15.32
Design Contingency	16.0%	\$6,921,052		\$79.55		\$403,040	\$6.72		\$7,324,092	\$84.18
Escalation to MOC, 07/01/18	18.95%	\$9,507,894		\$109.29		\$553,683	\$9.23		\$10,061,577	\$115.65
Total Construction Cost		\$59,685,520		\$686.04		\$3,475,726	\$57.93		\$63,161,245	\$725.99

Schedule of Areas and Control Quantities

UNR Engineering Building
Schedule of Areas and Control Quantities
Programmatic Estimate

04/30/15

Schedule of Areas	North Building	South Building	SF
1. Enclosed Areas			
	North Building	South Building	
Level 1	7,000	14,500	21,500
Level 2	6,000	12,000	18,000
Level 3	7,500	16,500	24,000
Level 4	7,500	16,000	23,500
Total Enclosed	28,000	59,000	87,000
Total Gross Floor Area	28,000	59,000	87,000

Control Quantities	North Building	TOTAL QTY	U/M
Gross Area	87,000	87,000	sf
Enclosed Area	87,000	87,000	sf
Unenclosed Area	-	-	sf
Shell Space			sf
Number of Stories	4	4	ea
Typical Floor Perimeter	1,219	1,219	lf
Height of typical floor	15.0	15	lf
Height of Building (Above Grade)	60	60	lf
Basement			y / n
Basement Retaining Wall Area	12,000	12,000	sf
CY of Concrete (Building only)			cy
Tons of Rebar (Building only)			tn
Tons of Steel (Building only)	1,118	1,118	tn
Superstructure System			
LF of Casework			lf
Gross Façade Area (incl parapets)	73,140	73,140	sf
Finished Façade Wall Area (excl glazing)	36,140	36,140	sf
Façade Windows or Glazing Area	37,000	37,000	sf
Roof Area - Total	24,000	24,000	sf
Canopy Area			sf
Number of Interior Doors			ea
SF of Interior Partition Framing			sf
SF of Interior Partition Drywall			sf
SF of Interior Partition Insulation			sf
SF of Gypboard Ceiling & Soffit Framing			sf
Elevators	2	2	ea
Lbs of Ductwork			lbs
Total Site Area		59,450	sf
Finished Site Area		37,950	sf

Quantity Ratios	Engineering Buildin	#REF!	TOTAL RATIO
CY of Concrete per SF of GFA	-	-	-
Lbs of Rebar per CY of Concrete			
Lbs of Steel per SF of GFA	25.71		25.71
LF of Casework per SF of GFA	-		-
SF of Glazing per SF of Façade	0.51		0.51
SF of Façade per SF of GFA	0.84		0.84
# of Interior Doors per SF of GFA	-		-
SF of Partion Framing per SF of GFA	-		-
SF of Partion Drywall per SF of Partion Framing			
SF of Partion Insulation per SF of Partion Framing			
SF of Ceiling Drywall per SF of GFA	-		-
Lbs of Ductwork per SF of GFA	-		-

Engineering Building

PROJECT SUMMARY - BUILDING 1

Element	Subtotal	Total	Cost / SF	Cost / SF
A) Shell (1-5)		\$18,614,384		\$213.96
1 Foundations	\$2,017,778		\$23.19	
2 Vertical Structure	\$1,590,439		\$18.28	
3 Floor & Roof Structures	\$5,042,410		\$57.96	
4 Exterior Cladding	\$9,150,494		\$105.18	
5 Roofing and Waterproofing	\$813,262		\$9.35	
B) Interiors (6-7)		\$3,690,136		\$42.42
6 Interior Partitions, Doors and Glazing	\$2,073,712		\$23.84	
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C) Equipment and Vertical Transportation (8-9)		\$2,702,728		\$31.07
8 Function Equipment and Specialties	\$2,050,528		\$23.57	
9 Stairs and Vertical Transportation	\$652,200		\$7.50	
D) Mechanical and Electrical (10-13)		\$13,547,986		\$155.72
10 Plumbing Systems	\$1,989,924		\$22.87	
11 Heating, Ventilation and Air Conditioning	\$5,472,862		\$62.91	
12 Electrical Lighting, Power and Communications	\$5,660,068		\$65.06	
13 Fire Protection Systems	\$425,132		\$4.89	
E) Site Construction (14-16)				
14 Site Preparation and Demolition				
15 Site Paving, Structures & Landscaping				
16 Utilities on Site				
Subtotal		\$38,555,233		\$443.16
General Conditions	7.0%	\$2,698,866		\$31.02
Subtotal		\$41,254,100		\$474.19
Bonds & Insurance	1.8%	\$742,574		\$8.54
Subtotal		\$41,996,673		\$482.72
General Contractor Fee	3.0%	\$1,259,900		\$14.48
Subtotal		\$43,256,574		\$497.20
Design Contingency	16.0%	\$6,921,052		\$79.55
Subtotal		\$50,177,625		\$576.75
Escalation to MOC, 07/01/18	18.95%	\$9,507,894		\$109.29
TOTAL ESTIMATED CONSTRUCTION COST		<u>\$59,685,520</u>		\$686.04

Total Area: **87,000** SF

DETAIL ELEMENTS - BUILDING 1

Element	Quantity	Unit	Unit Cost	Total
1 Foundations				
Basement Excavation				
Mass Excavation				See Sitework
Basement Excavation Backfill				See Sitework
Export, assume 10 mile round trip				See Sitework
Temporary Shoring	17,872	sf	\$22.95	\$410,162
Overexcavation and Recomaction				
Remove 12" section beneath building - asphalt	24,000	sf	\$1.25	\$30,000
Remove imported fill and recompact, allow 3'	2,667	cy	\$25.00	\$66,667
Import structural fill, 2'	1,778	cy	\$30.00	\$53,333
Scarify bottom of excavation	24,000	sf	\$0.50	\$12,000
Layout	24,000	sf slab	\$0.44	\$10,560
Deep foundations, allow	87,000	sf	\$6.50	\$565,500
Spread Footings, allow 1/400sf, 5' square x 4' deep	60	ea	\$2,648.15	\$158,889
Continuous Footings, allow	2,400	lf	\$211.85	\$508,444
Grade Beams, perimeter, allow 4' x 2'	651	lf	\$211.85	\$137,844
Pile Foundations (including mobilization):				
Miscellaneous				
Elevator pit	2	ea	\$14,836.23	\$29,672
Perimeter drain	651	lf	\$53.34	\$34,706
Total - Foundations			\$23.19	<u>\$2,017,778</u>
2 Vertical Structure				
Basement Walls				
Basement Walls Concrete, 5000 psi	733	cy	\$350.00	\$256,667
Basement Walls Formwork	12,000	sf	\$9.07	\$108,840
Basement Walls Reinforcement (180 # / cy)	132,000	lbs	\$0.82	\$108,240
Structural Steel (Non-OSHPD Pricing)				
Steel columns, WF, allow 6psf	287	tn	\$3,500.00	\$1,004,850
Fireproofing to steelwork	287	tn	\$389.56	\$111,843
Total - Vertical Structure			\$18.28	<u>\$1,590,439</u>
3 Floor & Roof Structures				
Slab On Grade 5" thick, 3000 psi	24,000	sf	\$10.00	\$240,000
Structural steel framing, allow 19psf	831	tn	\$3,500.00	\$2,909,375
Floor deck fill and metal deck	87,500	sf	\$12.00	\$1,050,000
Miscellaneous				
Miscellaneous metals and concrete	87,500	sf	\$7.00	\$612,500
Miscellaneous				
Expansion joint / cover	1,500	lf	\$134.55	\$201,825
Miscellaneous metals, allowance	87,000	sf	\$0.23	\$20,010
Rough Carpentry				
Miscellaneous Rough Carpentry:				
Miscellaneous blocking/strapping and backing	87,000	sf	\$0.10	\$8,700

DETAIL ELEMENTS - BUILDING 1

Element	Quantity	Unit	Unit Cost	Total
Total - Floor & Roof Structures			\$57.96	<u>\$5,042,410</u>
4 Exterior Cladding				
Brick	37,000	sf	\$15.00	\$555,000
Glazing	57,000	sf	\$100.00	\$5,700,000
Cast Stone	13,000	sf	\$35.00	\$455,000
Metal Wall Panel	10,200	sf	\$50.00	\$510,000
Metal Soffits / Fascia	16,000	sf	\$50.00	\$800,000
Mechanical Screen/Louver	11,600	sf	\$75.00	\$870,000
Exterior Walls And Parapets				
Parapet framing	3,408	sf	\$25.00	\$85,206
Rear face of parapet	3,408	sf	\$35.00	\$119,288
Exterior Doors				
Glass Entry doors	4	ea	\$10,000.00	\$40,000
First level support doors	1	ls	\$10,000.00	\$10,000
Roof level support doors	1	ls	\$6,000.00	\$6,000
Miscellaneous - detailing, canopies, sunshades, soffits, etc.				w/above
Total - Exterior Cladding			\$105.18	<u>\$9,150,494</u>
5 Roofing and Waterproofing				
Waterproofing				
Elevator pit, base and walls	2,560	sf	\$4.04	\$10,342
Waterproofing at retaining wall, drain tile	12,000	sf	\$8.00	\$96,000
Roofing				
Single ply membrane roofing	24,000	sf	\$18.00	\$432,000
Sheetmetal (on a SF GFA basis), or.....	87,000	gfa	\$3.00	\$261,000
Miscellaneous				
Caulking allowance	87,000	gfa	\$0.16	\$13,920
Total - Roofing and Waterproofing			\$9.35	<u>\$813,262</u>
6 Interior Partitions, Doors and Glazing				
Interior Partitions				
Lab Space Partitions, Doors & Glazing	26,300	sf	\$40.00	\$1,052,000
Support Space Partitions, Doors & Glazing	3,608	sf	\$30.00	\$108,240
Office Space Partitions, Doors & Glazing	13,490	sf	\$16.00	\$215,840
Other Space Partitions, Doors & Glazing	43,602	sf	\$16.00	\$697,632
Total - Interior Partitions, Doors and Glazing			\$23.84	<u>\$2,073,712</u>
7 Floor, Wall and Ceiling Finishes				
Interior Finishes:				
Floors				
Lab Space Floor, Wall & Ceiling finishes	26,300	sf	\$26.00	\$683,800
Support Space Floor, Wall & Ceiling finishes	3,608	sf	\$22.00	\$79,376
Office Space Floor, Wall & Ceiling finishes	13,490	sf	\$18.00	\$242,820
Other Space Floor, Wall & Ceiling finishes	43,602	sf	\$14.00	\$610,428

UNR Engineering Building

Reno, NV

Programmatic Estimate

04/30/15

DETAIL ELEMENTS - BUILDING 1

Element	Quantity	Unit	Unit Cost	Total
Total - Floor, Wall and Ceiling Finishes			\$18.58	<u>\$1,616,424</u>
8 Function Equipment and Specialties				
Function Equipment and Specialties				
Lab Space	26,300	sf	\$55.00	\$1,446,500
Support Space	3,608	sf	\$25.00	\$90,200
Office Space	13,490	sf	\$9.00	\$121,410
Other Space	43,602	sf	\$9.00	\$392,418
Total - Function Equipment and Specialties			\$23.57	<u>\$2,050,528</u>
9 Stairs and Vertical Transportation				
Stairs				
Stair, metal pan, concrete fill, 4'-8" wide	14	fit	\$25,000.00	\$350,000
Elevators - including smoke containment curtain assembly				
Hydro , per stop	5	stop	\$28,906.07	\$144,530
Traction, per stop	5	stop	\$31,533.90	\$157,670
Total - Stairs and Vertical Transportation			\$7.50	<u>\$652,200</u>
10 Plumbing Systems				
Dean's Office Complex	3,740	sf	\$12.00	\$44,880
CSE Faculty Offices	850	sf	\$12.00	\$10,200
Rest of College New Faculty Offices	3,800	sf	\$12.00	\$45,600
Shared Teaching Labs & Computer Labs	6,328	sf	\$20.00	\$126,560
Clean Room	2,520	sf	\$33.00	\$83,160
Flexible Dry Research Labs (Average Size Unit)	14,000	sf	\$19.00	\$266,000
Flexible Wet Research Labs (Average Size Unit)	6,000	sf	\$65.00	\$390,000
Lab Support Allocations (Average Size Unit)	1,400	sf	\$44.00	\$61,600
Post Doc and Graduate Student Cubicles	6,000	sf	\$12.00	\$72,000
Building Facilities	4,420	sf	\$10.00	\$44,200
Other Space	38,442	sf	\$22.00	\$845,724
Total - Plumbing Systems			\$22.87	<u>\$1,989,924</u>
11 Heating, Ventilation and Air Conditioning				
Dean's Office Complex	3,740	sf	\$34.00	\$127,160
CSE Faculty Offices	850	sf	\$34.00	\$28,900
Rest of College New Faculty Offices	3,800	sf	\$34.00	\$129,200
Shared Teaching Labs & Computer Labs	6,328	sf	\$84.00	\$531,552
Clean Room	2,520	sf	\$175.00	\$441,000
Flexible Dry Research Labs (Average Size Unit)	14,000	sf	\$88.00	\$1,232,000
Flexible Wet Research Labs (Average Size Unit)	6,000	sf	\$140.00	\$840,000
Lab Support Allocations (Average Size Unit)	1,400	sf	\$61.00	\$85,400
Post Doc and Graduate Student Cubicles	6,000	sf	\$34.00	\$204,000

DETAIL ELEMENTS - BUILDING 1

Element	Quantity	Unit	Unit Cost	Total
Building Facilities	4,420	sf	\$28.00	\$123,760
Other Space	38,442	sf	\$45.00	\$1,729,890
Total - Heating, Ventilation and Air Conditioning			\$62.91	<u>\$5,472,862</u>
12 Electrical Lighting, Power and Communications				
Power and Lighting				
Service and Distribution	86,067	sf	\$7.66	\$659,273
EM Service and Distribution	86,067	sf	\$5.00	\$430,335
HVAC Equipment connections	86,067	sf	\$4.00	\$344,268
Light fixtures Fluor	86,067	sf	\$8.00	\$688,536
Light controls	86,067	sf	\$2.00	\$172,134
Light conduit and cable	86,067	sf	\$2.25	\$193,651
Convenience Power	59,767	sf	\$5.35	\$319,753
Convenience Power Lab	26,300	sf	\$8.00	\$210,400
Convenience Power specialty equipment connections	86,067	sf	\$2.50	\$215,168
Fire Alarm system	86,067	sf	\$3.75	\$322,751
Telephone Data System	86,067	sf	\$6.50	\$559,436
P/A System	86,067	sf		
Sound masking	86,067	sf	\$0.35	\$30,123
A/V System rough only	86,067	sf	\$1.00	\$86,067
Security System rough only	86,067	sf	\$1.00	\$86,067
A/V System equipment lab and teaching	86,067	sf	\$8.50	\$731,570
Security System equipment	86,067	sf	\$2.33	\$200,536
Misc				
Temp lighting and power	86,067	sf	\$0.50	\$43,034
Fire stopping and seals	86,067	sf	\$0.25	\$21,517
Electrical General conditions and cad 3D	1	ls	\$345,450.17	\$345,450
Total - Electrical Lighting, Power and Communications			\$65.06	<u>\$5,660,068</u>
13 Fire Protection Systems				
Dean's Office Complex	3,740	sf	\$4.25	\$15,895
CSE Faculty Offices	850	sf	\$4.25	\$3,613
Rest of College New Faculty Offices	3,800	sf	\$4.25	\$16,150
Shared Teaching Labs & Computer Labs	6,328	sf	\$4.25	\$26,894
Clean Room	2,520	sf	\$9.00	\$22,680
Flexible Dry Research Labs (Average Size Unit)	14,000	sf	\$4.25	\$59,500
Flexible Wet Research Labs (Average Size Unit)	6,000	sf	\$5.50	\$33,000
Lab Support Allocations (Average Size Unit)	1,400	sf	\$4.25	\$5,950
Post Doc and Graduate Student Cubicles	6,000	sf	\$4.25	\$25,500
Building Facilities	4,420	sf	\$4.25	\$18,785
Other Space	42,862	sf	\$4.60	\$197,165

DETAIL ELEMENTS - BUILDING 1

Element	Quantity	Unit	Unit Cost	Total
<i>Total - Fire Protection Systems</i>			\$4.89	<u>\$425,132</u>
14 Site Preparation and Demolition				
<i>Total - Site Preparation and Demolition</i>				
15 Site Paving, Structures & Landscaping				
<i>Total - Site Paving, Structures & Landscaping</i>				
16 Utilities on Site				
<i>Total - Utilities on Site</i>				

SITework

PROJECT SUMMARY - SITEWORK

Element	Subtotal	Total	Cost / SF	Cost / SF
A) Shell (1-5)		\$236,873		\$3.95
1 Foundations				
2 Vertical Structure	\$236,873		\$3.95	
3 Floor & Roof Structures				
4 Exterior Cladding				
5 Roofing and Waterproofing				
B) Interiors (6-7)				
6 Interior Partitions, Doors and Glazing				
7 Floor, Wall and Ceiling Finishes				
C) Equipment and Vertical Transportation (8-9)				
8 Function Equipment and Specialties				
9 Stairs and Vertical Transportation				
D) Mechanical and Electrical (10-13)				
10 Plumbing Systems				
11 Heating, Ventilation and Air Conditioning				
12 Electrical Lighting, Power and Communications				
13 Fire Protection Systems				
E) Site Construction (14-16)		\$2,008,352		\$33.47
14 Site Preparation and Demolition	\$793,615		\$13.23	
15 Site Paving, Structures & Landscaping	\$499,159		\$8.32	
16 Utilities on Site	\$715,578		\$11.93	
Subtotal		\$2,245,225		\$37.42
General Conditions	7.0%	\$157,166		\$2.62
Subtotal		\$2,402,391		\$40.04
Bonds & Insurance	1.8%	\$43,243		\$0.72
Subtotal		\$2,445,634		\$40.76
General Contractor Fee	3.0%	\$73,369		\$1.22
Subtotal		\$2,519,003		\$41.98
Design Contingency	16.0%	\$403,040		\$6.72
Subtotal		\$2,922,043		\$48.70
Escalation to MOC, 07/01/18	18.95%	\$553,683		\$9.23
TOTAL ESTIMATED CONSTRUCTION COST		<u>\$3,475,726</u>		\$57.93

Total Area: **60,000** SF

DETAIL ELEMENTS - SITEWORK

Element	Quantity	Unit	Unit Cost	Total
1 Foundations				
<hr/>				
Total - Foundations				
2 Vertical Structure				
Retaining Walls				
Basement Walls Concrete, 5000 psi	367	cy	\$350.00	\$128,333
Basement Walls Formwork	6,000	sf	\$9.07	\$54,420
Basement Walls Reinforcement (180 # / cy)	66,000	lbs	\$0.82	\$54,120
Total - Vertical Structure				<u>\$236,873</u>
3 Floor & Roof Structures				
<hr/>				
Total - Floor & Roof Structures				
4 Exterior Cladding				
<hr/>				
Total - Exterior Cladding				
5 Roofing and Waterproofing				
<hr/>				
Total - Roofing and Waterproofing				
6 Interior Partitions, Doors and Glazing				
<hr/>				
Total - Interior Partitions, Doors and Glazing				
7 Floor, Wall and Ceiling Finishes				
<hr/>				
Total - Floor, Wall and Ceiling Finishes				
8 Function Equipment and Specialties				
<hr/>				
Total - Function Equipment and Specialties				
9 Stairs and Vertical Transportation				
<hr/>				
Total - Stairs and Vertical Transportation				
10 Plumbing Systems				
<hr/>				
Total - Plumbing Systems				
11 Heating, Ventilation and Air Conditioning				

DETAIL ELEMENTS - SITEWORK

Element	Quantity	Unit	Unit Cost	Total
<hr/>				
Total - Heating, Ventilation and Air Conditioning				
12 Electrical Lighting, Power and Communications				
<hr/>				
Total - Electrical Lighting, Power and Communications				
13 Fire Protection Systems				
<hr/>				
Total - Fire Protection Systems				
14 Site Preparation and Demolition				
Utility demolition				
Demolition of Single Family Homes	6	ea	\$15,000.00	\$90,000
Demolition of Free Standing Garages	5	ea	\$10,000.00	\$50,000
Demolition of Misc. Site Improvements	5	ea	\$5,000.00	\$25,000
Underground Power to Building	1	lf	\$100,000.00	\$100,000
Earthwork				
Field staking / layout	67,650	sf	\$0.05	\$3,383
Clear and grub site	67,650	sf	\$0.05	\$3,383
Mass Excavation	35,000	cy	\$5.74	\$200,900
Export, assume 10 mile round trip	35,000	cy	\$9.00	\$315,000
Fine grading	35,000	sf	\$0.14	\$4,900
Erosion control	35,000	sf	\$0.03	\$1,050
Total - Site Preparation and Demolition				<u>\$793,615</u>
15 Site Paving, Structures & Landscaping				
AC paving				
Misc. Asphalt Paving	1	sf	\$20,000.00	\$20,000
Hardscape				
Concrete Stairs & Seating @ learning space	1,720	lf	\$75.00	\$129,000
Concrete Stairs Landings, integral w stairs	1,500	sf	\$35.00	\$52,500
Sculptured Concrete Bollards	8	ea	\$5,000.00	\$40,000
Sculptured Concrete Seating/Table	5	ea	\$5,000.00	\$25,000
Concrete paving, 4" thick, including sub base, reinforcement, and integral color finish	10,000	sf	\$12.00	\$120,000
Concrete Curbs				
Concrete curbs & gutter	400	lf	\$20.36	\$8,144
Landscape				
Planting				
Landscape & Irrigation Allowance	1	sf	\$100,000.00	\$100,000

UNR Engineering Building

Reno, NV

Programmatic Estimate

04/30/15

DETAIL ELEMENTS - SITEWORK

Element	Quantity	Unit	Unit Cost	Total
Site Specialties				
Removable bollards, 8" square steel	8	ea	\$564.36	\$4,515
Total - Site Paving, Structures & Landscaping				<u>\$499,159</u>
16 Utilities on Site				
Fire Water				
Water line, 8" pvc C900 cl 200, incl t & bf	200	lf	\$64.06	\$12,812
Fire hydrants	2	ea	\$3,729.09	\$7,458
Post indicator valves	1	ea	\$2,646.64	\$2,647
Gate valve, 6"	1	ea	\$494.89	\$495
Fire department connection	1	ea	\$1,580.24	\$1,580
Domestic Water				
PVC, 4" pipe, incl t & bf	210	lf	\$50.00	\$10,500
Water meter, 4"	1	ea	\$12,638.17	\$12,638
Domestic Water - Excavate trench	47	cy	\$14.78	\$690
Domestic Water - Backfill trench with excavated material	33	cy	\$10.79	\$352
Domestic Water - Sand bed for new trench	7	cy	\$25.37	\$178
Sanitary Sewer				
8" Sanitary sewer line, incl t & bf	175	lf	\$52.38	\$9,167
Manholes	1	ea	\$3,283.23	\$3,283
Sewer cleanouts	2	ea	\$826.68	\$1,653
Storm Drainage				
Piping, inc trench & backfill:				
12" PVC pipe	207	lf	\$52.39	\$10,845
Curb Inlet	4	ea	\$3,767.61	\$15,070
Storm drain manhole	1	ea	\$3,283.23	\$3,283
Gas Piping:				
Medium pressure gas system, 4", plastic, incl t & bf	100	lf	\$34.74	\$3,474
Gas meter	1	ea	\$4,252.39	\$4,252
Site Power and Lighting				
Site Power and Distribution primary and em	1	ls	\$275,000.00	\$275,000
Site Data Distribution	1	ls	\$145,200.00	\$145,200
Site Lighting and controls	1	ls	\$150,000.00	\$150,000
Site security allowance	1	ls	\$45,000.00	\$45,000
Total - Utilities on Site				<u>\$715,578</u>